10--General Fund-- FUND BALANCE -- AGENCY ACCOUNTS -- Revised -- BUDGET-STATUS-REPORT
Fiscal Year 2026 (September 1, 2026 - August 31, 2027)

For the NORTH BEACH SCHOOL DIST #64 School District for the Month of September, 2026

A. REVENUES/OTHER FIN. SOURCES	ANNUAL BUDGET	ACTUAL FOR MONTH	ACTUAL FOR YEAR	ENCUMBRANCES	BALANCE	PERCENT
1000 LOCAL TAXES	2,629,454	89,119.45	89,119.45		2,540,334.55	3.39
2000 LOCAL SUPPORT NONTAX	104,420	6,253.50	6,253.50		98,166.50	5.99
3000 STATE, GENERAL PURPOSE	6,753,111	607,728.44	607,728.44		6,145,382.56	9.00
4000 STATE, SPECIAL PURPOSE	3,663,740	276,657.48	276,657.48		3,387,082.52	7.55
5000 FEDERAL, GENERAL PURPOSE	163,225	.00	.00		163,225.00	0.00
6000 FEDERAL, SPECIAL PURPOSE	1,128,564	91,440.50	91,440.50		1,037,123.50	8.10
7000 REVENUES FR OTH SCH DIST	0	.00	.00		.00	0.00
8000 OTHER AGENCIES AND ASSOCIATES	211,831	18,866.40	18,866.40		192,964.60	8.91
9000 OTHER FINANCING SOURCES	300,000	11,217.08	11,217.08		288,782.92	3.74
Total REVENUES/OTHER FIN. SOURCES	14,954,345	1,101,282.85	1,101,282.85		13,853,062.15	7.36
B. EXPENDITURES						
00 Regular Instruction	6,970,298	480,672.12	480,672.12	4,587,939.26	1,901,686.62	72.72
10 Federal Stimulus	0	.00	.00	0.00	.00	0.00
20 Special Ed Instruction	2,233,753	156,422.14	156,422.14	1,461,390.40	615,940.46	72.43
30 Voc. Ed Instruction	400,533	38,179.33	38,179.33	326,458.12	35,895.55	91.04
40 Skills Center Instruction	0	.00	.00	0.00	.00	0.00
50+60 Compensatory Ed Instruct.	1,579,682	83,580.17	83,580.17	862,992.40	633,109.43	59.92
70 Other Instructional Pgms	150,785	9,819.31	9,819.31	89,442.59	51,523.10	65.83
80 Community Services	435,706	37,019.29	37,019.29	388,103.45	10,583.26	97.57
90 Support Services	3,483,555	708,865.62	708,865.62	1,841,367.50	933,321.88	73.21
Total EXPENDITURES	15,254,312	1,514,557.98	1,514,557.98	9,557,693.72	4,182,060.30	72.58
C. OTHER FIN. USES TRANS. OUT (GL 536)	0	.00	.00			
D. OTHER FINANCING USES (GL 535)	0	.00	.00			
E. UNUSUAL/INFREQUENT–INFLOWS (GL 968)	0	.00	.00		.00	0.00
F. UNUSUAL/INFREQUENT–OUTFLOWS (GL 538)	0	.00	.00		.00	0.00
G. NET CHANGE IN FUND BALANCE (A-B-C-D+E-F)	299,967-	413,275.13-	413,275.13-		113,308.13-	37.77
H. TOTAL BEGINNING FUND BALANCE	645,119		588,347.08			
I. G/L 896, 897, 898 ACCOUNTING CHANGES AND ERROR CORRECTIONS (+OR-)	XXXXXXXXX		.00			
J. TOTAL ENDING FUND BALANCE (G+H + OR - I)	345,152		175,071.95			

K. ENDING FUND BALANCE ACCOUNTS:

G/L 810	Restricted For Other Items	0	.00
G/L 815	Restric Unequalized Deduct Rev	0	.00
G/L 821	Restrictd for Carryover	0	5,881.16
G/L 823	Restricted for Carryover of Tra	0	.00
G/L 825	Restricted for Skills Center	0	.00
G/L 828	Restricted for C/O of FS Rev	0	.00
G/L 830	Restricted for Debt Service	0	.00
G/L 835	Restrictd For Arbitrage Rebate	0	.00
G/L 840	Nonspnd FB - Invent/Prepd Itms	0	.00
G/L 845	Restricted for Self-Insurance	0	.00
G/L 850	Restricted for Uninsured Risks	0	.00
G/L 870	Committed to Other Purposes	0	.00
G/L 872	Committd to Econmc Stabilizatn	0	.00
G/L 873	Committed to Depreciation Sub-F	0	.00
G/L 875	Assigned Contingencies	0	.00
G/L 884	Assigned to Other Cap Projects	0	.00
G/L 888	Assigned to Other Purposes	2,500	2,500.00
G/L 890	Unassigned Fund Balance	299,967-	413,275.13-
G/L 891	Unassigned Min Fnd Bal Policy	642,619	579,965.92
	TOTAL	345,152	175,071.95

20--Capital Projects-- FUND BALANCE -- AGENCY ACCOUNTS -- Revised -- BUDGET-STATUS-REPORT
Fiscal Year 2026 (September 1, 2026 - August 31, 2027)

For the NORTH BEACH SCHOOL DIST #64 School District for the Month of September, 2026

A. REVENUES/OTHER FIN. SOURCES	ANNUAL BUDGET	ACTUAL FOR MONTH	ACTUAL FOR YEAR	ENCUMBRANCES	BALANCE	PERCENT
1000 Local Taxes	300,311	9,133.45	9,133.45		291,177.55	3.04
2000 Local Support Nontax	9,745	772.16	772.16		8,972.84	7.92
3000 State, General Purpose	0	.00	.00		.00	0.00
4000 State, Special Purpose	27,000,000	552,197.34	552,197.34		26,447,802.66	2.05
5000 Federal, General Purpose	0	.00	.00		.00	0.00
6000 Federal, Special Purpose	0	.00	.00		.00	0.00
7000 Revenues Fr Oth Sch Dist	0	.00	.00		.00	0.00
8000 Other Agencies and Associates	0	.00	.00		.00	0.00
9000 Other Financing Sources	0	.00	.00		.00	0.00
Total REVENUES/OTHER FIN. SOURCES	27,310,056	562,102.95	562,102.95		26,747,953.05	2.06
B. EXPENDITURES						
10 Sites	500,000	702.00	702.00	0.00	499,298.00	0.14
20 Buildings	27,000,000	925,126.66	925,126.66	0.00	26,074,873.34	3.43
30 Equipment	0	.00	.00	0.00	.00	0.00
40 Energy	0	.00	.00	0.00	.00	0.00
50 Sales & Lease Expenditure	0	.00	.00	0.00	.00	0.00
60 Bond Issuance Expenditure	0	.00	.00	0.00	.00	0.00
90 Debt	0	.00	.00	0.00	.00	0.00
Total EXPENDITURES	27,500,000	925,828.66	925,828.66	0.00	26,574,171.34	3.37
C. OTHER FIN. USES TRANS. OUT (GL 536)	300,000	11,217.08	11,217.08			
D. OTHER FINANCING USES (GL 535)	0	.00	.00			
E. UNUSUAL/INFREQUENT-INFLOWS (GL 968)	0	.00	.00		.00	0.00
F. UNUSUAL/INFREQUENT-OUTFLOWS (GL 538)	0	.00	.00		.00	0.00
G. NET CHANGE IN FUND BALANCE (A-B-C-D+E-F)	489,944-	374,942.79-	374,942.79-		115,001.21	23.47-
H. TOTAL BEGINNING FUND BALANCE	920,051		753,819.03			
I. G/L 896, 897, 898 ACCOUNTING CHANGES AND ERROR CORRECTIONS (+OR-)	XXXXXXXXX		.00			
J. TOTAL ENDING FUND BALANCE (G+H + OR - I)	430,107		378,876.24			

K. ENDING FUND BALANCE ACCOUNTS:

G/L 810	Restricted For Other Items	0	.00
G/L 825	Restricted for Skills Center	0	.00
G/L 830	Restricted for Debt Service	0	.00
G/L 835	Restrictd For Arbitrage Rebate	0	.00
G/L 840	Nonspnd FB - Invent/Prepd Itms	0	.00
G/L 850	Restricted for Uninsured Risks	0	.00
G/L 861	Restricted from Bond Proceeds	0	.00
G/L 862	Committed from Levy Proceeds	297,560	253,544.12
G/L 863	Restricted from State Proceeds	0	373,631.32-
G/L 864	Restricted from Fed Proceeds	0	.00
G/L 865	Restricted from Other Proceeds	0	.00
G/L 866	Restrictd from Impact Proceeds	0	.00
G/L 867	Restricted from Mitigation Fees	0	.00
G/L 868	Restricted from CTE Carryover R	0	.00
G/L 869	Restricted fr Undistr Proceeds	0	.00
G/L 870	Committed to Other Purposes	0	.00
G/L 889	Assigned to Fund Purposes	132,547	498,963.44
G/L 890	Unassigned Fund Balance	0	.00
	TOTAL	430,107	378,876.24

30--Debt Service Fund-- FUND BALANCE -- AGENCY ACCOUNTS -- Revised -- BUDGET-STATUS-REPORT
Fiscal Year 2026 (September 1, 2026 - August 31, 2027)

For the NORTH BEACH SCHOOL DIST #64 School District for the Month of September , 2026

	ANNUAL BUDGET	ACTUAL FOR MONTH	ACTUAL FOR YEAR	ENCUMBRANCES	BALANCE	PERCENT
A. REVENUES/OTHER FIN. SOURCES						
1000 Local Taxes	0	4,236.10	4,236.10		4,236.10-	0.00
2000 Local Support Nontax	2,952	92.24	92.24		2,859.76	3.12
3000 State, General Purpose	0	.00	.00		.00	0.00
5000 Federal, General Purpose	0	.00	.00		.00	0.00
9000 Other Financing Sources	0	.00	.00		.00	0.00
Total REVENUES/OTHER FIN. SOURCES	2,952	4,328.34	4,328.34		1,376.34-	146.62
B. EXPENDITURES						
Matured Bond Expenditures	0	.00	.00	0.00	.00	0.00
Interest On Bonds	0	.00	.00	0.00	.00	0.00
Interfund Loan Interest	0	.00	.00	0.00	.00	0.00
Bond Transfer Fees	0	.00	.00	0.00	.00	0.00
Arbitrage Rebate	0	.00	.00	0.00	.00	0.00
Underwriter's Fees	0	.00	.00	0.00	.00	0.00
Total EXPENDITURES	0	.00	.00	0.00	.00	0.00
C. OTHER FIN. USES TRANS. OUT (GL 536)	0	.00	.00			
D. OTHER FINANCING USES (GL 535)	0	.00	.00			
E. UNUSUAL/INFREQUENT-INFLOWS (GL 968)	0	.00	.00		.00	0.00
F. UNUSUAL/INFREQUENT-OUTFLOWS (GL 538)	0	.00	.00		.00	0.00
G. NET CHANGE IN FUND BALANCE (A-B-C-D+E-F)	2,952	4,328.34	4,328.34		1,376.34	46.62
H. TOTAL BEGINNING FUND BALANCE	31,287		32,168.55			
I. G/L 896, 897, 898 ACCOUNTING CHANGES AND ERROR CORRECTIONS (+OR-)	XXXXXXXXX		.00			
J. TOTAL ENDING FUND BALANCE (G+H + OR - I)	34,239		36,496.89			
K. ENDING FUND BALANCE ACCOUNTS:						
G/L 810 Restricted for Other Items	0		.00			
G/L 830 Restricted for Debt Service	34,239		36,496.89			
G/L 835 Restrictd For Arbitrage Rebate	0		.00			
G/L 870 Committed to Other Purposes	0		.00			
G/L 889 Assigned to Fund Purposes	0		.00			
G/L 890 Unassigned Fund Balance	0		.00			
TOTAL	34,239		36,496.89			

40--Associated Student Body Fund-- FUND BALANCE -- AGENCY ACCOUNTS -- Revised -- BUDGET-STATUS-REPORT
Fiscal Year 2026 (September 1, 2026 - August 31, 2027)

For the NORTH BEACH SCHOOL DIST #64 School District for the Month of September , 2026

	ANNUAL BUDGET	ACTUAL FOR MONTH	ACTUAL FOR YEAR	ENCUMBRANCES	BALANCE	PERCENT
A. REVENUES						
1000 General Student Body	29,050	2,710.97	2,710.97		26,339.03	9.33
2000 Athletics	89,000	8,608.18	8,608.18		80,391.82	9.67
3000 Classes	4,205	18.25	18.25		4,186.75	0.43
4000 Clubs	8,500	93.00	93.00		8,407.00	1.09
6000 Private Moneys	3,000	180.00	180.00		2,820.00	6.00
Total REVENUES	133,755	11,610.40	11,610.40		122,144.60	8.68
B. EXPENDITURES						
1000 General Student Body	30,050	480.04	480.04	0.00	29,569.96	1.60
2000 Athletics	86,500	3,131.98	3,131.98	0.00	83,368.02	3.62
3000 Classes	3,525	.00	.00	0.00	3,525.00	0.00
4000 Clubs	11,500	.00	.00	0.00	11,500.00	0.00
6000 Private Moneys	13,363	.00	.00	0.00	13,363.00	0.00
Total EXPENDITURES	144,938	3,612.02	3,612.02	0.00	141,325.98	2.49
C. EXCESS OF REVENUES OVER(UNDER) EXPENDITURES (A-B)	11,183-	7,998.38	7,998.38		19,181.38	171.52-
D. UNUSUAL/INFREQUENT–INFLOWS (GL 968)	0	.00	.00		.00	0.00
E. UNUSUAL/INFREQUENT–OUTFLOWS (GL 538)	0	.00	.00		.00	0.00
F. NET CHANGE IN FUND BALANCE (C+D-E)	11,183-	7,998.38	7,998.38		19,181.38	171.52-
G. TOTAL BEGINNING FUND BALANCE	134,383		103,923.04			
H. G/L 896, 897, 898 ACCOUNTING CHANGES AND ERROR CORRECTIONS (+OR-)	XXXXXXXXX		.00			
I. TOTAL ENDING FUND BALANCE (F+G + OR - H)	123,200		111,921.42			
J. ENDING FUND BALANCE ACCOUNTS:						
G/L 810 Restricted for Other Items	0		.00			
G/L 819 Restricted for Fund Purposes	123,200		111,921.42			
G/L 840 Nonspnd FB - Invent/Prepd Itms	0		.00			
G/L 850 Restricted for Uninsured Risks	0		.00			
G/L 870 Committed to Other Purposes	0		.00			
G/L 889 Assigned to Fund Purposes	0		.00			
G/L 890 Unassigned Fund Balance	0		.00			
TOTAL	123,200		111,921.42			

90--Transportation Vehicle Fund-- FUND BALANCE -- AGENCY ACCOUNTS -- Revised -- BUDGET-STATUS-REPORT
Fiscal Year 2026 (September 1, 2026 - August 31, 2027)

For the NORTH BEACH SCHOOL DIST #64 School District for the Month of September , 2026

	ANNUAL	ACTUAL	ACTUAL			
A. REVENUES/OTHER FIN. SOURCES	BUDGET	FOR MONTH	FOR YEAR	ENCUMBRANCES	BALANCE	PERCENT
1000 Local Taxes	0	.00	.00		.00	0.00
2000 Local Nontax	3,540	280.40	280.40		3,259.60	7.92
3000 State, General Purpose	0	.00	.00		.00	0.00
4000 State, Special Purpose	118,355	.00	.00		118,355.00	0.00
5000 Federal, General Purpose	0	.00	.00		.00	0.00
6000 Federal, Special Purpose	0	.00	.00		.00	0.00
8000 Other Agencies and Associates	0	.00	.00		.00	0.00
9000 Other Financing Sources	0	.00	.00		.00	0.00
Total REVENUES/OTHER FIN. SOURCES	121,895	280.40	280.40		121,614.60	0.23
B. EXPENDITURES						
Type 30 Equipment	435,000	.00	.00	0.00	435,000.00	0.00
Type 40 Energy	0	.00	.00	0.00	.00	0.00
Type 60 Bond Levy Issuance	0	.00	.00	0.00	.00	0.00
Type 90 Debt	0	.00	.00	0.00	.00	0.00
Total EXPENDITURES	435,000	.00	.00	0.00	435,000.00	0.00
C. OTHER FIN. USES TRANS. OUT (GL 536)	0	.00	.00			
D. OTHER FINANCING USES (GL 535)	0	.00	.00			
E. UNUSUAL/INFREQUENT–INFLOWS (GL 968)	0	.00	.00		.00	0.00
F. UNUSUAL/INFREQUENT–OUTFLOWS (GL 538)	0	.00	.00		.00	0.00
G. NET CHANGE IN FUND BALANCE (A-B-C-D+E-F)	313,105-	280.40	280.40		313,385.40	100.09-
H. TOTAL BEGINNING FUND BALANCE	446,025		235,593.06			
I. G/L 896, 897, 898 ACCOUNTING CHANGES AND ERROR CORRECTIONS (+OR-)	XXXXXXXXX		.00			
J. TOTAL ENDING FUND BALANCE (G+H + OR - I)	132,920		235,873.46			
K. ENDING FUND BALANCE ACCOUNTS:						
G/L 810 Restricted For Other Items	0		.00			
G/L 819 Restricted for Fund Purposes	132,920		235,873.46			
G/L 830 RESERVE FOR DEBT SERVICE	0		.00			
G/L 835 Restrictd For Arbitrage Rebate	0		.00			
G/L 840 Nonspnd FB - Invent/Prepd Itms	0		.00			
G/L 850 Restricted for Uninsured Risks	0		.00			
G/L 889 Assigned to Fund Purposes	0		.00			
G/L 890 Unassigned Fund Balance	0		.00			
TOTAL	132,920		235,873.46			

********** End of report **********

SUMMARY OF FULL-TIME EQUIVALENT ENROLLMENT AS REPORTED ON FORM P223 FOR SCHOOL YEAR ENDING 2027

North Beach School District No. 64 - (14064) **Grays Harbor County No. 14** **E.S.D 113**

Total K-12 Basic Education Enrollment - including ALE

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
KINDERGARTEN	24.00	28.00									26.00
FIRST	48.00	50.00									49.00
SECOND	49.00	49.00									49.00
THIRD	45.10	45.10									45.10
FOURTH	43.57	43.57									43.57
FIFTH	50.10	49.10									49.60
SIXTH	39.00	39.00									39.00
SEVENTH	42.00	42.00									42.00
EIGHTH	55.85	54.85									55.35
NINTH	62.00	66.00									64.00
TENTH	41.00	40.00									40.50
ELEVENTH	44.12	43.97									44.05
TWELFTH	52.40	52.15									52.28
*** TOTALS	596.14	602.74									599.44

Total K-12 Basic Education Enrollment - By Grade Span - including ALE

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
KINDERGARTEN	24.00	28.00									26.00
GRADES 1-3	142.10	144.10									143.10
GRADE 4	43.57	43.57									43.57
GRADES 5-6	89.10	88.10									88.60
GRADES 7-8	97.85	96.85									97.35
GRADES 9-12	199.52	202.12									200.82
*** TOTALS	596.14	602.74									599.44

SUMMARY OF FULL-TIME EQUIVALENT ENROLLMENT AS REPORTED ON FORM P223 FOR SCHOOL YEAR ENDING 2027

North Beach School District No. 64 - (14064) **Grays Harbor County No. 14** **E.S.D 113**

Total ALE Enrollment

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
KINDERGARTEN	0.00	0.00									0.00
FIRST	0.00	0.00									0.00
SECOND	0.00	0.00									0.00
THIRD	0.00	0.00									0.00
FOURTH	0.00	0.00									0.00
FIFTH	0.00	0.00									0.00
SIXTH	0.00	0.00									0.00
SEVENTH	1.00	0.00									0.50
EIGHTH	3.00	2.00									2.50
NINTH	0.00	2.00									1.00
TENTH	1.00	1.00									1.00
ELEVENTH	11.00	8.00									9.50
TWELFTH	5.00	5.00									5.00
*** TOTALS	21.00	18.00									19.50

Total ALE Enrollment - By Grade Span

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
KINDERGARTEN	0.00	0.00									0.00
GRADES 1-3	0.00	0.00									0.00
GRADE 4	0.00	0.00									0.00
GRADES 5-6	0.00	0.00									0.00
GRADES 7-8	4.00	2.00									3.00
GRADES 9-12	17.00	16.00									16.50
*** TOTALS	21.00	18.00									19.50

SUMMARY OF FULL-TIME EQUIVALENT ENROLLMENT AS REPORTED ON FORM P223 FOR SCHOOL YEAR ENDING 2027

North Beach School District No. 64 - (14064) **Grays Harbor County No. 14** **E.S.D 113**

Total Vocational and Skill Center Enrollment below are included in K-12 Enrollment

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
Total VOC 9-12	30.00	30.75									30.38
Total SK CNTR	0.00	0.00									0.00
Total VOC 7-8	9.60	9.90									9.75

ALE Vocational and ALE Skill Center Enrollment are included in above Total Vocational & Skill Center Enrollment

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
ALE VOC 9-12	0.00	0.00									0.00
ALE SK CNTR	0.00	0.00									0.00
ALE VOC 7-8	0.00	0.00									0.00

Running Start - 9 month average, (Oct - Aug) - Not included in K-12 Enrollment

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	AVERAGE
NONVOC.	0.00	27.34											27.34
VOCATIONAL	0.00	1.00											1.00

Open Doors - 10-month average of the school year's 12 months - not included in K-12 Enrollment

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	AVERAGE
NONVOC.	1.00	0.00											0.50
VOCATIONAL	0.00	0.00											0.00

Report 1251

STATE OF WASHINGTON
SUPERINTENDENT OF PUBLIC INSTRUCTION

RUN October 08,2026 @ 15:06

SUMMARY OF FULL-TIME EQUIVALENT ENROLLMENT AS REPORTED ON FORM P223 FOR SCHOOL YEAR ENDING 2027

North Beach School District No. 64 - (14064) **Grays Harbor County No. 14** **E.S.D 113**

Transition To Kindergarten - Not included in K-12 Enrollment

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
TK FTE	17.60	18.50									18.05

Summary of all Enrollment

	K-12 P-223S	ALE P-223S *	TOTAL P-240	TOTAL P-223	GRAND TOTAL
KINDERGARTEN				26.00	26.00
Grades 1-3				143.10	143.10
Grade 4				43.57	43.57
Grades 5-6				88.60	88.60
Grades 7-8				97.35	97.35
Grades 9-12				200.82	200.82
K-12 TOTAL				599.44	599.44
RUNNING START TOTAL					28.34
OD TOTAL					0.50
TK TOTAL					18.05
GRAND TOTAL					646.33

Vocational Program Totals

	P-223	P-223S	Total Voc Enrollment	ALE P-223	ALE P-223S	Total ALE Voc Enrollment
VOC 7-8	9.75		9.75	0.00		0.00
VOC 9-12	30.38		30.38	0.00		0.00
Skill Cntr	0.00		0.00	0.00		0.00

I hereby certify that all students are reported in accordance with enrollment reporting rules and instructions, and that supporting student records are available for audit.

P. Simpson

Superintendent or Authorized Official

SUMMARY OF HEAD-COUNT ENROLLMENT AS REPORTED ON FORM P223 FOR SCHOOL YEAR ENDING 2027

North Beach School District No. 64 - (14064) **Grays Harbor County No. 14** **E.S.D 113**

Total K-12 Basic Education Enrollment

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
KINDERGARTEN	24	28									26.00
FIRST	48	50									49.00
SECOND	49	49									49.00
THIRD	46	46									46.00
FOURTH	44	44									44.00
FIFTH	51	50									50.50
SIXTH	39	39									39.00
SEVENTH	42	42									42.00
EIGHTH	56	55									55.50
NINTH	62	66									64.00
TENTH	41	40									40.50
ELEVENTH	57	57									57.00
TWELFTH	68	68									68.00
*** TOTALS	627	634									630.50

Total K-12 Basic Education Enrollment - By Grade Span

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
KINDERGARTEN	24	28									26.00
GRADES 1-3	143	145									144.00
GRADE 4	44	44									44.00
GRADES 5-6	90	89									89.50
GRADES 7-8	98	97									97.50
GRADES 9-12	228	231									229.50
*** TOTALS	627	634									630.50

Transition To Kindergarten

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	AVERAGE
Total TK HC	18	19											18.50

SUMMARY OF HEAD-COUNT ENROLLMENT AS REPORTED ON FORM P223 FOR SCHOOL YEAR ENDING 2027

North Beach School District No. 64 - (14064) **Grays Harbor County No. 14** **E.S.D 113**

Running Start - 9 month average, (Oct - Aug)

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	AVERAGE
TOTAL RS.	0	30											30.00
RS ONLY	0	15											15.00

Open Doors - 10-month average of the school year's 12 months

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	AVERAGE
OPEN DOORS.	1	0											0.50

TBIP - 9-month average, (Oct - June)

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
TBIP TK	0	0									0.00
TBIP K-6	6	7									7.00
TBIP 7-12	3	3									3.00
EXITED TBIP	0	0									0.00

Total ALE Enrollment

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
KINDERGARTEN	0	0									0.00
FIRST	0	.0									0.00
SECOND	0	0									0.00
THIRD	0	0									0.00
FOURTH	0	0									0.00
FIFTH	0	0									0.00
SIXTH	0	0									0.00
SEVENTH	1	0									0.50
EIGHTH	3	2									2.50
NINTH	0	2									1.00
TENTH	1	1									1.00
ELEVENTH	11	8									9.50
TWELFTH	5	5									5.00
*** TOTALS	21	18									19.50

Report 1251H

STATE OF WASHINGTON
SUPERINTENDENT OF PUBLIC INSTRUCTION

RUN October 08,2026 @ 15:06

SUMMARY OF HEAD-COUNT ENROLLMENT AS REPORTED ON FORM P223 FOR SCHOOL YEAR ENDING 2027

North Beach School District No. 64 - (14064) **Grays Harbor County No. 14** **E.S.D 113**

Total ALE Enrollment - By Grade Span

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
KINDERGARTEN	0	0									0.00
GRADES 1-3	0	0									0.00
GRADE 4	0	0									0.00
GRADES 5-6	0	0									0.00
GRADES 7-8	4	2									3.00
GRADES 9-12	17	16									16.50
*** TOTALS	21	18									19.50

I hereby certify that all students are reported in accordance with enrollment reporting rules and instructions, and that supporting student records are available for audit.

P. Timpson

Superintendent or Authorized Official

Report 1735T

STATE OF WASHINGTON
SUPERINTENDENT OF PUBLIC INSTRUCTION

RUN October 08,2026 @ 15:07

SPECIAL EDUCATION ENROLLMENT AS REPORTED ON FORM P223H FOR SCHOOL YEAR ENDING 2027

North Beach School District No. 64 - (14064) **Grays Harbor County No. 14** **E.S.D 113**

* 9 month average, October through June.

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	AVERAGE
Ages 3-5	7	7									7.00
TK	2	2									2.00
K-22	109	112									112.00
TOTAL	118	121									121.00

I hereby certify that all students are reported in accordance with enrollment reporting rules and instructions, and that supporting student records are available for audit.

P. Nimpson

Superintendent or Authorized Official

Old Capitol Building
PO Box 47200
Olympia, WA 98504-7200

ospi.k12.wa.us

Washington Office of Superintendent of
PUBLIC INSTRUCTION
Chris Reykdal, Superintendent

September 21, 2026

This serves as your Award notification of federal funds per CFR 200.332(b)

Federal Awarding Agency: United States Department of Agriculture (USDA)
Pass-Through Entity /Administering Agency: Office of Superintendent of Public Instruction
OSPI Contact: Leanne Eko, Chief Nutrition Officer, 360-725-6200

Sponsor name: North Beach School District
Sponsor WINS ID: 159336
Sponsor UEI: NULNVWWEHVK5

For operation of the following United States Department of Agriculture Child Nutrition Program(s):

Program/Project Description	FAIN	ALN
National School Lunch Program (NSLP)	277WAWA3N1199	10.555
School Breakfast Program (SBP)	277WAWA3N1199	10.553

Period of Performance: 10/1/2026– 9/30/2027

Budget Period: Claims for reimbursement of meals, supplements, FFVP operational costs, or milk, must be reported via the Washington Integrated Nutrition System (WINS) within 60 days following the claiming month.

Amount of Federal Funds (obligated by this action): Funds are provided on a reimbursement basis for the School Meal Programs. Reimbursement Rates are set by USDA and can be found here.

Total Amount Federal Funds obligated/committed: Determined by number of reimbursable meals/supplements/milk served to eligible children.

Indirect Cost Rate: Not applicable for meal reimbursements (meals x rate).

These funds are not for Research and Development

MINUTES

North Beach School District No. 64
REGULAR BOARD OF DIRECTOR'S MEETING
North Beach Junior/Senior High and via Zoom
September 15, 2026

CALL TO ORDER
President Don Dowie called the meeting to order at 6:00 p.m.

MEMBERS PRESENT
Members in attendance were Joshua "Josh" Cooper; Donald "Don" Dowie; Rebekah "Beckie" Fruh; John Millan; and Halvar Olstead.

OTHERS PRESENT
Others present were Richard Zimmerman, Superintendent; Shelese McConnell, Interim Business Manager; Wendy McCoy, Principal; Liz Cronin, Principal; Scott Lincoln, Principal; and Patrice Timpson, Executive Assistant.

FLAG SALUTE
The Pledge of Allegiance was recited.

CHANGES OR ADDITIONS TO AGENDA - *None*

RECOGNITION

Donation – Ocean Shores Elementary School recognized the following business/individuals for their donations toward the "Backpack Bonanza School Supplies Drive": The Celtic Sunflower; Susan Lily & Co.; Beach Bom Arts; MK Designs; Oyhut Bay Seaside Resort; Oyhut Bay Grill; Oyhut Bay Real Estate; @Oyhut Outfitters; Corks and Taps; Too Cool Sportswear; The Salty Scoop – Oyhut; The Market at Oyhut; Buck Electric/Ace Hardware; Starlight HiFi; Windermere Real Estate Ocean Shores; Flying Cats Gift Shop Ocean Shores; Seaside Liquidation Outlet; Fresh Market/Seaside Liquidation Outlet #2; Fusion Art Gallery; and Oyhut Motor Works.

Completion of Fundamental Course of Study (FCS) – Danielle Judd, Paraeducator at North Beach Junior/Senior High School was recognized for completing her Fundamental Course of Study.

STAFF/STUDENT SHOWCASE

North Beach Junior/Senior High School Back to School Events – Associated Student Body (ASB) President Dallas Alexander and Vice President Kyla Eden reported on activities and events held since the start of the school year, including the Fall Sports Assembly, increased school spirit, and the first Principal Leadership Meeting. They also announced the upcoming Homecoming Parade scheduled for September 30th and the First Annual 5K Run, in which student leadership will participate.

Principal Wendy McCoy provided additional updates, reporting that the band traveled to the University of Washington to perform alongside students from other schools. She recognized Doug

DRAFT

and Ken Orlando for their assistance in preparing the stands and field for the sports season. Principal McCoy also commended the Food Services staff for their continued efforts to serve students despite the kitchen not being fully operational.

DISCUSSION

Policy Classifications – Director Olstead inquired about the policy classifications. President Dowie explained the difference between them and the necessities of having them on the policies.

Board Member Activities – Director Millan reported attending all football games thus far this season and noted the strong attendance and large crowds. He expressed appreciation for the community's support and student involvement. Director Millan also highlighted the band's performance at Husky Stadium as a positive experience and noted that the football team came out to support the band. He commended the cheer team for its outstanding engagement and participation. Additionally, concerns were raised regarding the lighting on the football field.

BUDGET STATUS

Interim Business Manager Shelese McConnell reported the month ending August, 2026.

General Fund Balance	$588,347
Total Revenue Received	$1,338,884
Apportionment	$1,191,259
Levy (Local)	$18,512
Other	$129,113
Expenditures	$1,245,173
Excess/Deficit in Revenues	$93,711

BOARD REPORT

Budget Oversight Committee – Director Cooper provided an update on several district matters. He reported that the district is owed approximately $130,000 in reimbursements from the IRS. Regarding transportation, he shared that the new bus had broken down and was towed to Tumwater for service. Employee compensation matters are being addressed internally. Director Cooper also reviewed expenses covered by the Board's budget, including WSSDA fees, advertising, and investigation-related costs. Finally, he reported that work is underway on the Board calendar, which is anticipated to be finalized and rolled out in January.

Director Fruh provided an update on the Impact Grant, which helps offset funding shortfalls for students whose families that live on federal property and are exempt from local property taxes. She reported that the application deadline was missed, potentially resulting in the loss of approximately $150,000 in funding. Shelese continues to pursue options to secure the grant despite the missed deadline. The district's budget was developed based on the average grant funding received in previous years.

The Board was advised to consider adopting a resolution by November authorizing interfund borrowing from the Capital Projects (CP) Fund, if necessary, to address potential cash flow challenges in the General Fund (GF). Current efforts to mitigate financial pressures include reducing expenditures and postponing payments. The district will continue working to avoid months with

negative cash balances. Any funds borrowed from the CP Fund must be repaid by the GF, with interest, within one year. Maintaining higher enrollment levels would provide additional revenue, and the anticipated IRS refund would further support the district's financial position. A resolution authorizing potential borrowing from the CP Fund was recommended as a precautionary measure.

Policy and Procedure Oversight Committee – The members on this committee are currently working through the policies. Per policy the Board will need to have a meeting for Goal Settings and to look at the Board Assessment. This is a work in progress.

Design Advisory Committee (DAC) – Director Olstead reported that the group met and discussed various opinions regarding the exterior design of the Junior/Senior High School. The group also explored the potential implications of becoming part of the City of Ocean Shores (OS). It was recommended that the district defer consideration of this change until after the building project is completed, as the city has different policies and code requires than the County, that we already have in place with our current plans.

Safety Committee – Principals are still looking for volunteers for this committee.

SUPERINTENDENT'S REPORT

Superintendent Richard Zimmerman reported:

The 2026–2027 school year is off to a positive start, with enrollment at 645 students by headcount and 613.74 FTE, an increase of 23 students and 26.04 FTE compared to September 2025. Regular meetings with building principals have begun, along with participation in the statewide Principal Supervisor Network through WASA and AWSP.

Facilities planning continues for Pacific Beach Elementary and North Beach Junior/Senior High School. The Master Plan and demographic study, conducted with TCF Architecture and Western Demographics, recommended a K–6 elementary school while preserving the option for future expansion to K–8. The study also determined that the site could accommodate a potential future community center; however, the District has no agreement to include one, and it is not part of the OSPI Seismic Safety Grant.

The District is also establishing a District Safety Committee, with the goal of having it in place by the end of September. The Superintendent reaffirmed the District's focus on attendance, community involvement, and achievement, and thanked staff, administrators, families, community partners, and the Board for their continued support.

Community Center Discussion - President Dowie provided clarification regarding the proposed Community Center, noting that Seabrook paid for the preliminary site study. Potential benefits for students and the community could include access to a swimming pool, gymnasium, meeting rooms, and after-school programs. He emphasized that there are currently no formal agreements or commitments in place regarding the proposed Community Center.

Ocean Shores Elementary Principal Report – *(to be added)*

Pacific Beach Elementary Principal Report – Principal Cronin stated that the school's theme for the year is "Better Together," emphasizing relationships, belonging, and the importance of families, staff, and students working collaboratively to support student success. Staff have spent the first few

weeks establishing positive relationships and routines. Enrollment is being closely monitored as the school continues to grow, with attention to staffing needs to ensure students are adequately supported. The school is also continuing to focus on improving attendance through collaboration with families and implementing the *Kids at Hope* approach, which emphasizes the belief that all children can succeed when supported by caring adults and positive relationships.

North Beach Junior/Senior High Principal Report - *(to be added)*

CORRESPONDENCE

Public Records Requests – The following Public Records Requests were received: Angela Foust for video footage, investigation documents, settlement documents, audit logs and budget documents; Rhea Lumanog, Deltek, Inc., for contract award information; Everett Mansfield for vendor information; and Justin Wenig for vendor financial transactions.

AUDIENCE COMMENTS

- Ryan Retana spoke on payroll issues.

CONSENT AGENDA

On a motion by Director Olstead and seconded by Director Fruh, the Board approved the following Consent Agenda items; all were in favor.

The Minutes of the August 18, 2026 Regular Board Meeting and the August 26, 2026 Special Board Meeting.

The following vouchers as audited and certified by the auditing office as required by RCW 42.24.808, and those expense reimbursement claims certified, as required by RCW 42.24.909, have been recorded on a listing which has been made available to the Board:

Capital Projects Fund numbers 589208-589214 dated September 15, 2026 for $925,828.66.

General Fund numbers 589168-589207 dated September 15, 2026 for $568,350.64; and numbers 586450-586160 dated September 15, 2026 for $130,317.27.

Associated Student Body Fund numbers 589162-589617 dated September 15, 2026 for $3,588.88.

Compensation Tax Fund numbers 589215-589216 dated September 15, 2026 for $42.75.

Payroll Warrant numbers 586073-586094/Direct Deposit numbers 900024755-900024867 dated August 31, 2026 for $919,410.36; warrant numbers 586144-586149/Direct Deposit number 900024868 dated August 31, 2026 for $8,068.22; and warrant number 586161 dated August 31, 2026 for $3,063.48.

The void/reissue of Payroll warrant number 58072 date August 31, 2026 for $1,525.99 due to duplicate check number; and Capital Projects Fund number 586143 dated August 19, 2026 for $3,764.00 due to lost check.

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The retirement of Vicke Weinstein, Special Education Teacher at North Beach Junior/Senior High School (effective August 31, 2026).

The resignations of James Busy as Head Baseball Coach; Cassie Henderson as Special Education Teacher at North Beach Junior/Senior High School (effective September 30, 2026); and Brent Wasche as Senior High Assistant Wrestling Coach.

The extra-curricular activities/advisors as follows: Jodi Brown, TADD Advisor at North Beach Junior/Senior High School; Steven Fry as Knowledge Bowl Advisor at North Beach Senior High School; Beth Rockey as Knowledge Bowl Advisor at North Beach Junior High School; Lisa Sem-Rodrigues as Associated Student Body Advisor at Pacific Beach Elementary; Jeff Simmons for Band at North Beach Junior/Senior High School; Valerie Swanger as Associated Student Body Fund Advisor at Ocean Shores Elementary School; Kevin Traer as Mentor at North Beach Junior/Senior High School; and Benjamin Vogt as Yearbook Advisor at North Beach Junior/Senior High School.

The following Fall Coaching Assignments: Adreyanna Butler as Assistant Junior High Volleyball Coach; Kiona Dycus as Assistant Senior High Volleyball Coach; Chelsea Frank as Head Junior High Cross Country Coach; Kyle Frank as Head Senior High Cross Country Coach; Steven Fry as Assistant Junior High Football Coach; Sharaya Hoefs as Head Junior High Volleyball Coach; Ken Hudson as Assistant Senior High Football Coach; Aaron Miles as Game Supervisor at North Beach Junior/Senior High; Doug Nichols as Assistant Senior High Football Coach; Linnea Papac as Cheer Advisor at North Beach Junior/Senior High; Chris Peck as Head Junior High Football Coach; Brent Wasche as Head Senior High Football Coach; Joel White as Assistant Junior High Football Coach; and Zach Wittstruck as Assistant Senior High Football Coach.

NEW BUSINESS

Approval of Cross Country Trip – *On a motion by Director Cooper and seconded by Director Olstead, the Board approved the North Beach Cross Country Team Trip to participate in the Three Course Challenge at Camp Rilea, Oregon on September 26, 2026; all were in favor.*

Approval of Resolution 27-01 – The Interlocal Purchasing System – *Director Fruh made the motion to approve Resolution 27-01. Director Olstead seconded. Discussion was conducted. The motion passed with Director Millan abstaining.*

Approval of North Beach Junior/Senior High School – Additional Service Request – Environmental Services (Wetland) – *On a motion by Director Olstead and seconded by Director Cooper, the Board approved entering into this additional service request; all were in favor.*

Approval of Pacific Beach Elementary – District Office Code Study – *On a motion by Director Olstead and seconded by Director Fruh, the Board approved the District Office Code study; all were in favor.*

Approval of Washington Student Achievement Council (GEAR UP) Agreement – 2026-2027 SY – *On a motion by Director Fruh and seconded by Director Olstead, the Board approved the 2026-2027 Washington Student Achievement Council (GEAR UP) Agreement; all were in favor.*

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Approval of MOU with Behavioral Health Resources – 2026-2027 SY – *On a motion by Director Fruh and seconded by Director Olstead, the Board approved the MOU with Behavioral Health Resources for the 2026-2027 SY; all were in favor.*

Approval of Suspension of Policy 5310 – Compensation *(Per Policy 1320 – Suspension of Policy)* – Superintendent Zimmerman requested the consideration of a limited, one-time suspension of the applicable provision of Board Policy 5310 regarding the August 15th deadline for certificated staff to submit documentation of clock hours for salary placement, due to an administrative oversight on his part. He is requesting the deadline be extended to August 29th only for the 2026-2027 SY. *On a motion by Director Fruh and seconded by Director Olstead, the Board approved the one-time suspension of the deadline to August 29th for the 2026-2027 school year only; all were in favor.*

UNFINISHED BUSINESS - *None*

NEXT MEETING DATE
October 20, 2026, 6:00 p.m. at Pacific Beach

EXECUTIVE SESSION

At 7:53 p.m., President Dowie called for an Executive Session for the following: To discuss with legal counsel representing the agency matters relating to agency enforcement actions, or to discuss with legal counsel representing the agency litigation or potential litigation to which the agency, the governing body, or a member acting in an official capacity is, or is likely to become, a party, when public knowledge regarding the discussion is likely to result in an adverse legal or financial consequence to the agency *(Per RCW 420.30.110 (1)(i))*; to evaluate the qualifications of an applicant for public employment or to review the performance of a public employee *(Per RCW 42.300.110 (1)(g))*; a Closed Session for consideration of a quasi-judicial matter between named parties, as distinguished from a matter having a general effect on the public or a class or group *(Per Policy 1410); and a* Closed Session for Collective bargaining session with employee organizations or professional negotiations with an employee, including contract negotiations, grievance meetings, and discussion relating to the interpretation or application of a labor agreement, or that portion of a meeting in which the board is planning or adopting the strategy or position to be taken during the course of collective bargaining, professional negotiations, or grievance or mediation proceedings, or reviewing the proposals made in the negotiations or proceedings while in progress *(Per Policy 1410);* He stated the session would be approximately one hour long; with no action to be taken.

At 8:01 p.m., the Board went into Executive Session.

At 9:09 p.m., the Board reconvened into Public Session.

ADJOURNMENT
As there was no further business, the meeting was adjourned at 9:09 p.m.

John Millan, Director District 1

Joshua “Josh” Cooper, Director District 2

Rebekah “Beckie” Fruh, Director District 3

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Halvar Olstead, Director District 4

Donald “Don” Dowie, President/Director District 5

Attested to:

Secretary to the Board/Superintendent

(Minutes prepared by Patrice Timpson)

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Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026CPHJ Thru 1026CPHJ Bank Cash Code 11

Captial Projects Fune

Vendor / Accrual / Account Number	Name / PO # / Batch	Invoice # / Description / Due Date	Inv Date / Detail	C / Check	Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
ARCHAEOL000	ARCHAEOLOGICAL INVESTIGATIO	11945	04/29/2026	R					1,228.00
		Professional Services JH/HS Tsunami Tower							
** L 601 0000 00 0000 0000 0000 0000		1026CPHJ	10/31/2026	N					1,228.00
20 E 530 2231 21 7081 3003 0000 0000 0	1,228.00								
				589260			1,228.00		
BMO HARR000	BMO HARRIS -4956	OCT26-59	09/21/2026	R					1,500.00
		City of OS Building Permit Fee							
** L 601 0000 00 0000 0000 0000 0000		1026CPHJ	10/31/2026	N					1,500.00
20 E 530 2233 21 7102 3004 0000 0000 0	1,500.00								
BMO HARR000	BMO HARRIS -4956	OCT26-60	09/21/2026	R					300.00
		City of OS Building Permit Fee							
** L 601 0000 00 0000 0000 0000 0000		1026CPHJ	10/31/2026	N					300.00
20 E 530 2233 21 7102 3004 0000 0000 0	300.00								
				589261			1,800.00		
CITY OF 001	CITY OF OCEAN SHORES	OCT26-1	09/30/2026	R					52,231.91
		Construction Permit Vertical Evacuation Tower - OSE							
** L 601 0000 00 0000 0000 0000 0000		1026CPHJ	10/31/2026	N					52,231.91
20 E 530 2233 21 7102 3004 0000 0000 0	52,231.91								
				589262			52,231.91		
DEGENKOL001	DEGENKOLB	ARIV1022950	08/31/2026	R					15,628.30
		Project C3616008.00 OSE Tsunami Tower - Professional Services August							
** L 601 0000 00 0000 0000 0000 0000		1026CPHJ	10/31/2026	N					15,628.30
20 E 530 2233 21 7011 3004 0000 0000 0	15,628.30								

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026CPHJ Thru 1026CPHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO # / Detail Amount	1099	Description / Batch	Asset	Lq	Inv Date / Due Date	C / Detail	Check / Account Number	Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
DEGENKOL001	DEGENKOLB	ARIV1023671		Project C3616008.00 OSE Tsunami Tower - Professional Services September			09/30/2026	R						3,142.34
** L 601 0000 00 0000 0000 0000 0000				1026CPHJ			10/31/2026	N						3,142.34
20 E 530 2233 21 7011 3004 0000 0000 0		3,142.34												
								589263				18,770.64		
HALEY & 001	HALEY & ALDRICH, INC.	9076483		Project 0202458-007 Jr/Sr High Professional Services September			09/28/2026	R						21,212.42
** L 601 0000 00 0000 0000 0000 0000				1026CPHJ			10/31/2026	N						21,212.42
20 E 530 2231 21 7081 3002 0000 0000 0		21,212.42												
HALEY & 001	HALEY & ALDRICH, INC.	9076591		Project 0210245-002 PBE Professional Services September			09/30/2026	R						12,693.75
** L 601 0000 00 0000 0000 0000 0000				1026CPHJ			10/31/2026	N						12,693.75
20 E 530 2232 21 7081 3002 0000 0000 0		12,693.75												
								589264				33,906.17		
PERKINS 000	PERKINS COIE LLP	7435366		Project 140995.0803 Construction Projects - Professional Services August			09/15/2026	R						1,776.00
** L 601 0000 00 0000 0000 0000 0000				1026CPHJ			10/31/2026	N						1,776.00
20 E 530 2232 21 7012 3002 0000 0000 0		370.00	NONEM						20 E 530 2233 21 7012 3004 0000 0000 0	1,406.00	NONEM			
								589265				1,776.00		

Grand Total 109,712.72
Total Adjustments 0.00

Check Date 10/20/2026 Posting Date 10/20/2026

Due Date 10/31/2026 Batches 1026CPHJ Thru 1026CPHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO # / Batch	Description	Inv Date / Due Date	C / Detail	Check / Detail Amount / 1099 / Asset / Lq	Invoice Amount / Net Amount

Totals Continued....

Total Discounts	0.00
Net Total	109,712.72

6 Computer Check(s)	109,712.72
0 Manual Check(s)	0.00
0 Void Check(s)	0.00
0 Negative/Minimum Check(s)	0.00
0 Zero Check(s)	0.00
0 Wire Transfer Check(s)	0.00
0 ACH Deposit(s)	0.00

********** End of report **********

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

General Fund

Vendor / Accrual / Account Number	Name	Invoice # / PO # / Batch	Description	Inv Date / Due Date	C / Detail	Check	Invoice Amount / Net Amount
ABERDEEN004	ABERDEEN OFFICE EQUIPMENT,	2947000	Copies - DO	09/28/2026	R		281.54
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ		10/31/2026	N		281.54
10 E 530 9700 13 5610 0640 0000 0000 0	281.54						
ABERDEEN004	ABERDEEN OFFICE EQUIPMENT,	294701	Copies - Jr/Sr High	09/28/2026	R		891.87
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ		10/31/2026	N		891.87
10 E 530 0100 27 5610 2040 0000 0000 0	445.93		10 E 530 0100 27 5610 4010 0000 0000 0	445.94			
ABERDEEN004	ABERDEEN OFFICE EQUIPMENT,	294702	Copies - Jr/Sr High	09/28/2026	R		122.69
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ		10/31/2026	N		122.69
10 E 530 0100 27 5610 2040 0000 0000 0	61.34		10 E 530 0100 27 5610 4010 0000 0000 0	61.35			
ABERDEEN004	ABERDEEN OFFICE EQUIPMENT,	294703	Copies - OSE	09/28/2026	R		1,231.31
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ		10/31/2026	N		1,231.31
10 E 530 0100 27 5610 1030 0000 0000 0	1,231.31						
ABERDEEN004	ABERDEEN OFFICE EQUIPMENT,	294704	Copies - PBE	09/28/2026	R		495.64
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ		10/31/2026	N		495.64
10 E 530 0100 27 5610 1020 0000 0000 0	495.64						
ABERDEEN004	ABERDEEN OFFICE EQUIPMENT,	294705	Copies - Transportation	09/28/2026	R		211.66
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ		10/31/2026	N		211.66
10 E 530 9700 13 5610 0640 0000 0000 0	211.66						
						589266	3,234.71
AMAZON C000	AMAZON CAPITAL SERVICES	146D-KCWF-RN3Q	MISCELLANEOUS ITEMS FOR NATIVE EDUCATION	10/06/2026	R		32.04
** L 601 0000 00 0000 0000 0000 0000		1182600002	1026GFHJ	10/31/2026	N		32.04
10 E 530 6800 27 5610 0640 0000 0000 0	32.04						
AMAZON C000	AMAZON CAPITAL SERVICES	196M-CKVL-64N4	Misc Teacher/Library Supplies	10/07/2026	R		110.10

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Asset	Lq	Description / Batch / Account Number	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
AMAZON C000 Vendor Continued....												
** L 601 0000 00 0000 0000 0000 0000	1172600004				1026GFHJ	10/31/2026	N					110.10
10 E 530 0100 27 5610 1030 0000 0000 0	110.10											
AMAZON C000 AMAZON CAPITAL SERVICES	19X7-6QQR-FKFR				Misc Office/Teacher supplies	09/23/2026	R					291.98
** L 601 0000 00 0000 0000 0000 0000	1172600003				1026GFHJ	10/31/2026	N					291.98
10 E 530 0100 27 5610 1030 0000 0000 0	291.98											
AMAZON C000 AMAZON CAPITAL SERVICES	1CK9-CWYX-GVMJ				MISC. HEALTH ROOM	10/08/2026	R					39.30
** L 601 0000 00 0000 0000 0000 0000	1182500032				1026GFHJ	10/31/2026	N					39.30
10 E 530 0100 26 5610 1020 0000 0000 0	39.30											
AMAZON C000 AMAZON CAPITAL SERVICES	1HCP-H4M3-G369				MISCELLANEOUS ITEMS FOR NATIVE EDUCATION	09/17/2026	R					70.75
** L 601 0000 00 0000 0000 0000 0000	1182600002				1026GFHJ	10/31/2026	N					70.75
10 E 530 6800 27 5610 0640 0000 0000 0	70.75											
AMAZON C000 AMAZON CAPITAL SERVICES	1K1F-9XFL-9VYH				amazon - external wired keypad	09/15/2026	R					14.03
** L 601 0000 00 0000 0000 0000 0000	1722500001				1026GFHJ	10/31/2026	N					14.03
10 E 530 0172 32 5650 0640 0000 0000 1	14.03											
AMAZON C000 AMAZON CAPITAL SERVICES	1K6Q-DNJL-TYYF				MISCELLANEOUS ITEMS FOR NATIVE EDUCATION	09/27/2026	R					1,847.30
** L 601 0000 00 0000 0000 0000 0000	1182600002				1026GFHJ	10/31/2026	N					1,847.30
10 E 530 6800 27 5610 0640 0000 0000 0	1,847.30											
AMAZON C000 AMAZON CAPITAL SERVICES	1YTX-XTY6-LMFG				Mini packs for Para's	10/01/2026	R					28.41
** L 601 0000 00 0000 0000 0000 0000	1182600004				1026GFHJ	10/31/2026	N					28.41
10 E 530 0100 27 5610 1020 2500 0000 1	28.41											
								589267		2,433.91		

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO # / Detail Amount	1099	Description / Batch	Asset	Lq	Account Number	Inv Date / Due Date	C / Detail	Check	Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
ARROW LU000	ARROW LUMBER	100923		Open PO for Arrow				09/30/2026	R						17.00
** L 601 0000 00 0000 0000 0000 0000		1022600010		1026GFHJ				10/31/2026	N						17.00
10 E 530 9700 64 5610 0640 0000 0000 0		17.00													
										589268			17.00		
ASCEND P000	ASCEND PEDIATRIC THERAPY, P	1132		OT Services - September				09/01/2026	R						8,628.75
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ				10/31/2026	N						8,628.75
10 E 530 2400 26 7340 0640 0000 0000 0		8,628.75	NONEM												
										589269			8,628.75		
AWSP 000	AWSP	2026-27		AWSP - Principals Membership Renewals				07/09/2026	R						2,910.00
** L 601 0000 00 0000 0000 0000 0000		1002600005		1026GFHJ				10/31/2026	N						2,910.00
10 E 530 0100 23 7810 1020 0000 0000 0		970.00					10 E 530 0100 23 7810 1030 0000 0000 0				970.00				
10 E 530 0100 23 7810 2040 0000 0000 0		485.00					10 E 530 0100 23 7810 4010 0000 0000 0				485.00				
										589270			2,910.00		
BMO HARR000	BMO HARRIS -4956	9OCT26-58		CTE-CULINARY IGA 26-27				09/22/2026	R						12.75
** L 601 0000 00 0000 0000 0000 0000		1312600005		1026GFHJ				10/31/2026	N						12.75
10 E 530 3165 27 5610 4010 0000 0000 0		12.75													
BMO HARR000	BMO HARRIS -4956	OCT26-15		Verizon - Cell Service				10/08/2026	R						268.10
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ				10/31/2026	N						268.10
10 E 530 9700 13 7530 0640 0000 0000 0		268.10													
BMO HARR000	BMO HARRIS -4956	OCT26-16		GH PUD - DO				09/21/2026	R						140.60
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ				10/31/2026	N						140.60
10 E 530 9700 65 7622 0640 0000 0000 0		140.60													

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Batch	Invoice # / Description / Inv Date / Due Date	C / Detail	Check / Account Number	Invoice Amount / Net Amount / Detail Amount / 1099 / Asset / Lq
BMO HARR000	BMO HARRIS -4956	OCT26-17	R		1,195.49
** L 601 0000 00 0000 0000 0000 0000		GH PUD - PBE 09/21/2026	N		1,195.49
10 E 530 9700 65 7622 1020 0000 0000 0		1026GFHJ 10/31/2026			1,195.49
BMO HARR000	BMO HARRIS -4956	OCT26-18	R		61.53
** L 601 0000 00 0000 0000 0000 0000		GH PUD - PBE 09/21/2026	N		61.53
10 E 530 9700 65 7622 1020 0000 0000 0		1026GFHJ 10/31/2026			61.53
BMO HARR000	BMO HARRIS -4956	OCT26-19	R		279.04
** L 601 0000 00 0000 0000 0000 0000		GH PUD - Maintenance 09/22/2026	N		279.04
10 E 530 9700 65 7622 0640 0000 0000 0		1026GFHJ 10/31/2026			279.04
BMO HARR000	BMO HARRIS -4956	OCT26-20	R		61.53
** L 601 0000 00 0000 0000 0000 0000		GH PUD - Jr/Sr High 09/22/2026	N		61.53
10 E 530 9700 65 7622 2040 0000 0000 0		1026GFHJ 10/31/2026		10 E 530 9700 65 7622 4010 0000 0000 0	30.76 / 30.77
BMO HARR000	BMO HARRIS -4956	OCT26-21	R		3,376.18
** L 601 0000 00 0000 0000 0000 0000		GH PUD - OSE 09/22/2026	N		3,376.18
10 E 530 9700 65 7622 1030 0000 0000 0		1026GFHJ 10/31/2026			3,376.18
BMO HARR000	BMO HARRIS -4956	OCT26-22	R		2,695.18
** L 601 0000 00 0000 0000 0000 0000		GH PUD - Jr/Sr High 09/22/2026	N		2,695.18
10 E 530 9700 65 7622 2040 0000 0000 0		1026GFHJ 10/31/2026		10 E 530 9700 65 7622 4010 0000 0000 0	1,347.59 / 1,347.59
BMO HARR000	BMO HARRIS -4956	OCT26-23	R		878.26
** L 601 0000 00 0000 0000 0000 0000		Motorola - Bus Communications 09/22/2026	N		878.26
10 E 530 9900 51 7530 0640 0000 0000 0		1026GFHJ 10/31/2026			878.26
BMO HARR000	BMO HARRIS -4956	OCT26-24	R		1,423.22
** L 601 0000 00 0000 0000 0000 0000		City of OS Utilities Jr/Sr High 09/21/2026	N		1,423.22
10 E 530 9700 65 7410 2040 0000 0000 0		1026GFHJ 10/31/2026		10 E 530 9700 65 7410 4010 0000 0000 0	711.61 / 711.61

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO #	Description / Batch	Inv Date / Due Date	C / Detail	Check	Invoice Amount / Net Amount
BMO HARR000	BMO HARRIS -4956	OCT26-25	City of OS Utilities OSE	09/21/2026	R		473.83
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		473.83
10 E 530 9700 65 7410 1030 0000 0000 0		473.83					
BMO HARR000	BMO HARRIS -4956	OCT26-26	City of OS Utilities Jr/Sr High	09/21/2026	R		173.86
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		173.86
10 E 530 9700 65 7410 2040 0000 0000 0		86.93	10 E 530 9700 65 7410 4010 0000 0000 0			86.93	
BMO HARR000	BMO HARRIS -4956	OCT26-27	City of OS Utilities OSE	09/21/2026	R		77.85
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		77.85
10 E 530 9700 65 7410 1030 0000 0000 0		77.85					
BMO HARR000	BMO HARRIS -4956	OCT26-28	City of OS Utilities Transportation	09/21/2026	R		110.12
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		110.12
10 E 530 9700 65 7410 0640 0000 0000 0		110.12					
BMO HARR000	BMO HARRIS -4956	OCT26-29	GH County Utilities PBE	09/28/2026	R		179.38
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		179.38
10 E 530 9700 65 7410 1020 0000 0000 0		179.38					
BMO HARR000	BMO HARRIS -4956	OCT26-30	Coast Communications OSE Internet	09/28/2026	R		229.90
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		229.90
10 E 530 9700 65 7530 1030 0000 0000 0		229.90					
BMO HARR000	BMO HARRIS -4956	OCT26-31	Coast Communications Jr/Sr High Internet	09/28/2026	R		82.49
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		82.49
10 E 530 9700 65 7530 0640 0000 0000 0		82.49					

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO #	Detail Amount	1099	Description / Batch	Asset	Lq	Inv Date / Due Date	C / Detail	Check / Account Number	Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
BMO HARR000	BMO HARRIS -4956	OCT26-32			Coast Communications PBE Internet			09/28/2026 10/31/2026	R N						229.90 229.90
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ										
10 E 530 9700 65 7530 0640 0000 0000 0			229.90												
BMO HARR000	BMO HARRIS -4956	OCT26-33			Pitney Bowes Meter Lease			09/29/2026	R						203.95
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ			10/31/2026	N						203.95
10 E 530 9700 13 7442 0640 0000 0000 0			203.95												
BMO HARR000	BMO HARRIS -4956	OCT26-34			Harbor Disposal OSE			10/02/2026	R						226.07
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ			10/31/2026	N						226.07
10 E 530 9700 65 7420 1030 0000 0000 0			226.07												
BMO HARR000	BMO HARRIS -4956	OCT26-35			Harbor Disposal Jr/Sr High			10/02/2026	R						200.36
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ			10/31/2026	N						200.36
10 E 530 9700 65 7420 2040 0000 0000 0			100.18							10 E 530 9700 65 7420 4010 0000 0000 0	100.18				
BMO HARR000	BMO HARRIS -4956	OCT26-36			Harbor Disposal Jr/Sr High			10/02/2026	R						132.02
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ			10/31/2026	N						132.02
10 E 530 9700 65 7420 2040 0000 0000 0			66.01							10 E 530 9700 65 7420 4010 0000 0000 0	66.01				
BMO HARR000	BMO HARRIS -4956	OCT26-37			Harbor Disposal PBE			10/02/2026	R						467.13
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ			10/31/2026	N						467.13
10 E 530 9700 65 7420 1020 0000 0000 0			467.13												
BMO HARR000	BMO HARRIS -4956	OCT26-38			Harbor Disposal OSE			10/02/2026	R						776.97
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ			10/31/2026	N						776.97
10 E 530 9700 65 7420 1030 0000 0000 0			776.97												
BMO HARR000	BMO HARRIS -4956	OCT26-39			Harbor Disposal Jr/Sr High			10/02/2026	R						928.88
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ			10/31/2026	N						928.88
10 E 530 9700 65 7420 2040 0000 0000 0			464.44							10 E 530 9700 65 7420 4010 0000 0000 0	464.44				

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Asset	Lq	Invoice # / Batch / Account Number	Description / Due Date	Inv Date	C / Detail	Check / Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
BMO HARR000	BMO HARRIS -4956				OCT26-40	Harbor Disposal PBE	10/02/2026	R					124.76
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ		10/31/2026	N					124.76
10 E 530 9700 65 7420 1020 0000 0000 0	124.76												
BMO HARR000	BMO HARRIS -4956				OCT26-41	Harbor Disposal DO	10/02/2026	R					82.90
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ		10/31/2026	N					82.90
10 E 530 9700 65 7420 0640 0000 0000 0	82.90												
BMO HARR000	BMO HARRIS -4956				OCT26-42	Lemay Shredding DO	10/02/2026	R					89.29
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ		10/31/2026	N					89.29
10 E 530 9700 65 7420 0640 0000 0000 0	89.29												
BMO HARR000	BMO HARRIS -4956				OCT26-43	NCCEE Gear Up	09/09/2026	R					1,500.00
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ		10/31/2026	N					1,500.00
10 E 530 7901 27 7810 4010 0000 0000 0	1,500.00												
BMO HARR000	BMO HARRIS -4956				OCT26-44	Culligan Water Service	09/15/2026	R					80.93
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ		10/31/2026	N					80.93
10 E 530 9700 13 5610 0640 0000 0000 0	80.93												
BMO HARR000	BMO HARRIS -4956				OCT26-45	Pacific Rim - ITEMS FOR NATIVE ED	09/15/2026	R					489.00
** L 601 0000 00 0000 0000 0000 0000	1182600003				1026GFHJ		10/31/2026	N					489.00
10 L 601 0000 00 0000 0000 0000 0000	-43.23				10 E 530 6800 27 5610 0640 0000 0000 0				532.23				
BMO HARR000	BMO HARRIS -4956				OCT26-46	Themes and Variations ELEMENTARY MUSIC SUBSCRIPTION FOR 26-27 SY	09/28/2026	R					200.00
** L 601 0000 00 0000 0000 0000 0000	1152600005				1026GFHJ		10/31/2026	N					200.00
10 E 530 0100 27 5650 0640 4011 0000 1	200.00												
BMO HARR000	BMO HARRIS -4956				OCT26-47	CHEFS STORE OPEN PO School	09/09/2026	R					1,175.06

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Invoice # / Batch / Asset	Lq	Description / Account Number	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Invoice Amount / Net Amount	Lq
BMO HARR000 Vendor Continued....											
					Store						
** L 601 0000 00 0000 0000 0000 0000	1312600003		1026GFHJ			10/31/2026	N			1,175.06	
10 E 530 3162 27 5610 4010 0000 0000 1	1,175.06										
BMO HARR000 BMO HARRIS -4956	OCT26-48		CHEFS STORE OPEN PO School			09/11/2026	R			100.30	
			Store								
** L 601 0000 00 0000 0000 0000 0000	1312600003		1026GFHJ			10/31/2026	N			100.30	
10 E 530 3162 27 5610 4010 0000 0000 1	100.30										
BMO HARR000 BMO HARRIS -4956	OCT26-49		CHEFS STORE OPEN PO School			09/11/2026	R			163.61	
			Store								
** L 601 0000 00 0000 0000 0000 0000	1312600003		1026GFHJ			10/31/2026	N			163.61	
10 E 530 3162 27 5610 4010 0000 0000 1	163.61										
BMO HARR000 BMO HARRIS -4956	OCT26-50		CTE-PERKINS CPR TRAINING			09/16/2026	R			12.95	
** L 601 0000 00 0000 0000 0000 0000	1312600008		1026GFHJ			10/31/2026	N			12.95	
10 E 530 3860 27 7340 4010 0000 0000 0	12.95										
BMO HARR000 BMO HARRIS -4956	OCT26-51		CTE-PERKINS CPR TRAINING			09/16/2026	R			12.95	
** L 601 0000 00 0000 0000 0000 0000	1312600008		1026GFHJ			10/31/2026	N			12.95	
10 E 530 3860 27 7340 4010 0000 0000 0	12.95										
BMO HARR000 BMO HARRIS -4956	OCT26-52		CTE-PERKINS CPR TRAINING			09/16/2026	R			19.94	
** L 601 0000 00 0000 0000 0000 0000	1312600008		1026GFHJ			10/31/2026	N			19.94	
10 E 530 3860 27 7340 4010 0000 0000 0	19.94										
BMO HARR000 BMO HARRIS -4956	OCT26-53		CTE-MARKETING OPERATIONS FOOD			09/17/2026	R			140.00	
			WORKER CARD								
** L 601 0000 00 0000 0000 0000 0000	1312600002		1026GFHJ			10/31/2026	N			140.00	
10 E 530 3162 27 5610 4010 0000 0000 1	140.00										

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Invoice # / Batch / Asset	Description / Due Date / Lq	Inv Date / Account Number	C / Detail	Check / Detail Amount	1099	Invoice Amount / Net Amount
BMO HARR000	BMO HARRIS -4956		OCT26-54	COMMERICAL ART X-TOOL EQUIPMENT	09/30/2026	R			1,288.28
** L 601 0000 00 0000 0000 0000 0000			1312600010	1026GFHJ	10/31/2026	N			1,288.28
10 E 530 3100 27 5610 4010 0000 0000 1	1,288.28								
BMO HARR000	BMO HARRIS -4956		OCT26-55	X Tool Printer Supplies	10/01/2026	R			845.89
** L 601 0000 00 0000 0000 0000 0000			1312600009	1026GFHJ	10/31/2026	N			845.89
10 E 530 3860 27 5610 4010 0000 0000 0	845.89								
BMO HARR000	BMO HARRIS -4956		OCT26-56	CTE-CULINARY IGA 26-27	09/16/2026	R			276.55
** L 601 0000 00 0000 0000 0000 0000			1312600005	1026GFHJ	10/31/2026	N			276.55
10 E 530 3165 27 5610 4010 0000 0000 0	276.55								
BMO HARR000	BMO HARRIS -4956		OCT26-57	CTE-CULINARY IGA 26-27	09/16/2026	R			207.36
** L 601 0000 00 0000 0000 0000 0000			1312600005	1026GFHJ	10/31/2026	N			207.36
10 E 530 3165 27 5610 4010 0000 0000 0	207.36								
BMO HARR000	BMO HARRIS -4956		OCT26-58	CTE-CULINARY IGA 26-27	09/22/2026	R			124.09
** L 601 0000 00 0000 0000 0000 0000			1312600005	1026GFHJ	10/31/2026	N			124.09
10 E 530 3165 27 5610 4010 0000 0000 0	124.09								
						589271	21,818.45		
BMO HARR001	BMO HARRIS -4949		OCT26-1	Constant Contact	09/23/2026	R			31.03
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ	10/31/2026	N			31.03
10 E 530 9700 12 7530 0640 0000 0000 0	31.03								
						589272	31.03		
BROWNJOD000	JODI M BROWN		OCT26-1	Travel Reimbursement - September	10/06/2026	R			21.28
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ	10/31/2026	N			21.28

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO # / Batch	Description	Inv Date / Due Date	C / Detail	Check	Invoice Amount / Net Amount / Detail Amount	1099	Asset	Lq
BROWNJOD000 Vendor Continued....										
10 E 530 0100 23 8580 4010 0000 0000 0							21.28			
						589273	21.28			
BUCK ELE001	BUCK ELECTRIC	333732	Open PO Buck electric/Ace Hardware Finance Charge	09/30/2026	R		1.51			
** L 601 0000 00 0000 0000 0000 0000		1022600011	1026GFHJ	10/31/2026	N		1.51			
10 E 530 9700 64 5610 0640 0000 0000 0		1.51								
BUCK ELE001	BUCK ELECTRIC	52312/1	Open PO Buck electric/Ace Hardware	08/26/2026	R		75.43			
** L 601 0000 00 0000 0000 0000 0000		1022600011	1026GFHJ	10/31/2026	N		75.43			
10 E 530 9700 64 5610 0640 0000 0000 0		75.43								
BUCK ELE001	BUCK ELECTRIC	52455/1	Open PO Buck electric/Ace Hardware	09/01/2026	R		9.36			
** L 601 0000 00 0000 0000 0000 0000		1022600011	1026GFHJ	10/31/2026	N		9.36			
10 E 530 9700 64 5610 0640 0000 0000 0		9.36								
BUCK ELE001	BUCK ELECTRIC	52457/1	Open PO Buck electric/Ace Hardware	09/01/2026	R		67.61			
** L 601 0000 00 0000 0000 0000 0000		1022600011	1026GFHJ	10/31/2026	N		67.61			
10 E 530 9700 64 5610 0640 0000 0000 0		67.61								
BUCK ELE001	BUCK ELECTRIC	52464/1	Open PO Buck electric/Ace Hardware	09/01/2026	R		157.07			
** L 601 0000 00 0000 0000 0000 0000		1022600011	1026GFHJ	10/31/2026	N		157.07			
10 E 530 9700 64 5610 0640 0000 0000 0		157.07								
BUCK ELE001	BUCK ELECTRIC	52568/1	Open PO Buck electric/Ace Hardware	09/04/2026	R		11.98			

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO # / Detail Amount	1099	Description / Batch	Asset	Lq	Inv Date / Due Date	C / Detail	Check / Account Number	Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
BUCK ELE001	Vendor Continued....													
** L 601 0000 00 0000 0000 0000 0000		1022600011		1026GFHJ			10/31/2026	N						11.98
10 E 530 9700 64 5610 0640 0000 0000 0		11.98												
BUCK ELE001	BUCK ELECTRIC	52700/1		Open PO Buck electric/Ace Hardware			09/10/2026	R						91.59
** L 601 0000 00 0000 0000 0000 0000		1022600011		1026GFHJ			10/31/2026	N						91.59
10 E 530 9700 64 5610 0640 0000 0000 0		91.59												
BUCK ELE001	BUCK ELECTRIC	52816/1		Open PO Buck electric/Ace Hardware			09/14/2026	R						41.45
** L 601 0000 00 0000 0000 0000 0000		1022600011		1026GFHJ			10/31/2026	N						41.45
10 E 530 9700 64 5610 0640 0000 0000 0		41.45												
BUCK ELE001	BUCK ELECTRIC	52901/1		Open PO Buck electric/Ace Hardware			09/17/2026	R						10.89
** L 601 0000 00 0000 0000 0000 0000		1022600011		1026GFHJ			10/31/2026	N						10.89
10 E 530 9700 64 5610 0640 0000 0000 0		10.89												
BUCK ELE001	BUCK ELECTRIC	53254/1		Open PO Buck electric/Ace Hardware			09/29/2026	R						54.08
** L 601 0000 00 0000 0000 0000 0000		1022600011		1026GFHJ			10/31/2026	N						54.08
10 E 530 9700 64 5610 0640 0000 0000 0		54.08												
BUCK ELE001	BUCK ELECTRIC	53321/1		Open PO Buck electric/Ace Hardware			09/30/2026	R						40.35
** L 601 0000 00 0000 0000 0000 0000		1022600011		1026GFHJ			10/31/2026	N						40.35
10 E 530 9700 64 5610 0640 0000 0000 0		40.35												
									589274			561.32		
BUTLELAW001	LAWRENCE BUTLER	OCT26-1		Reimbursement - September			09/14/2026	R						18.23

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Invoice # / Batch / Asset	Lq	Description / Account Number	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Invoice Amount / Net Amount	Lq
BUTLELAW001 Vendor Continued....											
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			18.23	
10 E 530 9900 52 8580 0640 0000 0000 0	18.23										
							589275	18.23			
CALL TOW000 CALL TOWER, INC.	698184		Communications			10/01/2026	R			510.44	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			510.44	
10 E 530 9700 65 7530 0640 0000 0000 0	510.44										
							589276	510.44			
CENTURYL000 CENTURYLINK	OCT26-1		Phone Service - 1600 PBE			09/24/2026	R			81.83	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			81.83	
10 E 530 9700 65 7530 1020 0000 0000 0	81.83										
							589277	81.83			
CENTURYL005 CENTURYLINK	SEPT26-1		Phone Service - 5630			09/08/2026	R			130.95	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			130.95	
10 E 530 9700 65 7530 0640 0000 0000 0	130.95										
CENTURYL005 CENTURYLINK	SEPT26-2		Phone Service - 1893			09/08/2026	R			75.23	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			75.23	
10 E 530 9700 65 7530 1030 0000 0000 0	75.23										
CENTURYL005 CENTURYLINK	SEPT26-3		Phone Service - 7642			09/08/2026	R			179.80	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			179.80	
10 E 530 9700 65 7530 0640 0000 0000 0	179.80										
CENTURYL005 CENTURYLINK	SEPT26-4		Phone Service - 8260			09/08/2026	R			189.27	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			189.27	

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Invoice # / Batch / Asset	Lq	Description / Account Number	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Invoice Amount / Net Amount
CENTURYL005 Vendor Continued....										
10 E 530 9700 65 7530 2040 0000 0000 0	94.64				10 E 530 9700 65 7530 4010 0000 0000 0			94.63		
CENTURYL005 CENTURYLINK	SEPT26-5		Phone Service - 1759			09/08/2026	R			248.58
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			248.58
10 E 530 9700 65 7530 2040 0000 0000 0	124.29				10 E 530 9700 65 7530 4010 0000 0000 0			124.29		
							589278		823.83	
COAST CO006 COAST COMMUNICATIONS CO	OCT26-1		Internet Services - DO			09/30/2026	R			229.90
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			229.90
10 E 530 9700 65 7530 0640 0000 0000 0	229.90									
							589279		229.90	
CONSOLID000 CONSOLIDATED ELEC DISTRIB	0105-1041930		Open PO for CES			09/16/2026	R			157.50
** L 601 0000 00 0000 0000 0000 0000	1022600007		1026GFHJ			10/31/2026	N			157.50
10 E 530 9700 64 5610 0640 0000 0000 0	157.50									
							589280		157.50	
CRONIELI000 ELIZABETH C CRONIN	OCT26-1		Travel reimbursement - September			10/02/2026	R			219.79
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			219.79
10 E 530 0100 23 8580 1020 0000 0000 0	58.21				10 E 530 2100 21 8580 0640 0000 0000 0			161.58		
							589281		219.79	
DAIRY FR000 DAIRY FRESH FARMS	3122625403		Milk			09/11/2026	R			358.76
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			358.76
10 E 530 9800 42 5630 0640 0000 0000 0	358.76									

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Invoice # / Batch	Description / Asset	Lq	Inv Date / Due Date	C / Detail	Check / Account Number	Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
DAIRY FR000	DAIRY FRESH FARMS		3122625411	Milk		09/11/2026	R						271.04
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N						271.04
10 E 530 9800 42 5630 0640 0000 0000 0	271.04												
DAIRY FR000	DAIRY FRESH FARMS		3122626103	Milk		09/18/2026	R						477.46
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			09/30/2026	N						477.46
10 E 530 9800 42 5630 0640 0000 0000 0	477.46												
DAIRY FR000	DAIRY FRESH FARMS		3122626104	Milk - School Store		09/18/2026	R						18.22
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N						18.22
10 E 530 3162 27 5610 4010 0000 0000 1	18.22												
DAIRY FR000	DAIRY FRESH FARMS		3122626111	Milk		09/18/2026	R						288.13
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			09/30/2026	N						288.13
10 E 530 9800 42 5630 0640 0000 0000 0	288.13												
DAIRY FR000	DAIRY FRESH FARMS		3122626804	Milk		09/25/2026	R						478.13
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N						478.13
10 E 530 9800 42 5630 0640 0000 0000 0	478.13												
DAIRY FR000	DAIRY FRESH FARMS		3122626810	Milk		09/25/2026	R						371.23
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N						371.23
10 E 530 9800 42 5630 0640 0000 0000 0	371.23												
DAIRY FR000	DAIRY FRESH FARMS		3122627503	Milk		10/02/2026	R						509.60
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N						509.60
10 E 530 9800 42 5630 0640 0000 0000 0	509.60												
DAIRY FR000	DAIRY FRESH FARMS		3122627504	Milk - School Store		10/02/2026	R						7.73
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N						7.73
10 E 530 3162 27 5610 4010 0000 0000 1	7.73												

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Invoice # / Batch / Asset	Lq	Description / Account Number	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Invoice Amount / Net Amount	Lq
DAIRY FR000	DAIRY FRESH FARMS		3122627510		Milk	10/02/2026	R			314.26	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			314.26	
10 E 530 9800 42 5630 0640 0000 0000 0	314.26										
DAIRY FR000	DAIRY FRESH FARMS		3122628203		Milk	10/09/2026	R			387.29	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			387.29	
10 E 530 9800 42 5630 0640 0000 0000 0	387.29										
DAIRY FR000	DAIRY FRESH FARMS		3122628204		Milk - School Store	10/09/2026	R			22.26	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			22.26	
10 E 530 3162 27 5610 4010 0000 0000 1	22.26										
DAIRY FR000	DAIRY FRESH FARMS		3122628210		Milk	10/09/2026	R			364.75	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			364.75	
10 E 530 9800 42 5630 0640 0000 0000 0	364.75										
								589282		3,868.86	
DELL COM003	DELL COMPUTER CORP		10891507385		Dell - 15 Dell Pro 16 PC16255	09/11/2026	R			17,740.66	
** L 601 0000 00 0000 0000 0000 0000	1722600001		1026GFHJ			10/31/2026	N			17,740.66	
10 E 530 0172 32 5650 0640 0000 0000 1	17,740.66										
								589283		17,740.66	
DELU TAM000	TAMMY DELU		09/09/2026		Reimbursement - September	09/09/2026	R			102.00	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			102.00	
10 E 530 9900 51 7340 0640 0000 0000 0	102.00										
								589284		102.00	
DEPT OF 009	DEPT OF NATURAL RESOURCES		9194554		Forrest Land Assessment	09/17/2026	R			98.76	
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			09/30/2026	N			98.76	

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Asset	Lq	Description / Batch / Account Number	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
DEPT OF 009 Vendor Continued....												
10 E 530 9700 65 7810 0640 0000 0000 0	98.76											
								589285				98.76
ESD 113 002 ESD 113	1002700077				Personnel CoOp 26-27 SY	09/15/2026	R					1,058.77
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N					1,058.77
10 E 530 9700 72 7591 0640 0000 0000 0	1,058.77											
ESD 113 002 ESD 113	3152700013				Gravity Re engagement services - September	10/06/2026	R					1,005.58
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N					1,005.58
10 E 530 0300 27 7591 4010 0000 0000 0	1,005.58											
ESD 113 002 ESD 113	5712700009				PT services - September	10/05/2026	R					4,750.00
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N					4,750.00
10 E 530 2400 26 7340 0640 0000 0000 0	4,750.00											
ESD 113 002 ESD 113	5712700012				Psych Services - September	10/05/2026	R					19,000.00
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N					19,000.00
10 E 530 2400 26 7340 0640 0000 0000 0	19,000.00											
ESD 113 002 ESD 113	5712700048				Psych Services - October	10/12/2026	R					19,000.00
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N					19,000.00
10 E 530 2400 26 7340 0640 0000 0000 0	19,000.00											
ESD 113 002 ESD 113	5712700055				PT Services - October	10/12/2026	R					4,750.00
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N					4,750.00
10 E 530 2400 26 7340 0640 0000 0000 0	4,750.00											
ESD 113 002 ESD 113	7422700063				FINGERPRINTING FOR BACKGROUND CHECKS	10/07/2026	R					84.00

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Batch	Invoice # / Description / Due Date	Inv Date	C / Detail	Check	Invoice Amount / Net Amount
ESD 113 002 Vendor Continued....						
** L 601 0000 00 0000 0000 0000 0000	1022600002	1026GFHJ	10/31/2026	N		84.00
10 E 530 9700 13 7591 0640 0000 0000 1	84.00					
				589286	49,648.35	
FERGUSON005 FERGUSON ENTERPRISES #3007	4975450	Maintenance Supplies	09/30/2026	R		175.43
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ	10/31/2026	N		175.43
10 E 530 9700 64 5610 0640 0000 0000 0	175.43					
				589287	175.43	
FLINN SC002 FLINN SCIENTIFIC	3328907	SCIENCE DEPT-OPEN PO FOR SY 26-27	10/08/2026	R		3,541.23
** L 601 0000 00 0000 0000 0000 0000	1152600003	1026GFHJ	10/31/2026	N		3,541.23
10 L 601 0000 00 0000 0000 0000 0000	-322.25	10 E 530 0100 27 5610 4010 4035 0000 0			3,863.48	
				589288	3,541.23	
GH COLLE001 GH COLLEGE	MSC-0000051377	Summer Running Start	09/02/2026	R		8,246.08
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ	10/31/2026	N		8,246.08
10 E 530 0100 27 7565 4010 0000 0000 0	8,246.08					
				589289	8,246.08	
GH STAMP000 GH STAMP WORKS	67185	Name Plates - Student Board Reps	10/09/2026	R		42.00
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ	10/31/2026	N		42.00
10 E 530 9700 11 5610 0640 0000 0000 0	42.00					
				589290	42.00	

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO #	Detail Amount	1099	Description / Batch	Inv Date / Due Date	C / Detail	Check	Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
GRADUATI001	GRADUATION ALLIANCE INC	GA82081			Student Recovery Services - September	09/01/2026	R						18,005.19
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N						18,005.19
10 E 530 0200 27 7569 4010 0000 0000 0		15,433.02			10 E 530 0200 27 7569 2040 0000 0000 0				2,572.17				
GRADUATI001	GRADUATION ALLIANCE INC	GA82311			Student Recovery Services - October	10/01/2026	R						15,433.02
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N						15,433.02
10 E 530 0200 27 7569 4010 0000 0000 0		13,718.24			10 E 530 0200 27 7569 2040 0000 0000 0				1,714.78				
								589291			33,438.21		
GRAYS HA005	GRAYS HARBOR COUNTY	OCT26-1			Water/Sewer - DO	10/02/2026	R						154.00
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N						154.00
10 E 530 9700 65 7410 0640 0000 0000 0		154.00											
								589292			154.00		
HAHN KAT000	KATHERINE A HAHN	Oct26-1			Reimbursement - ECEAP Requirements	09/09/2026	R						24.95
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	09/30/2026	N						24.95
10 E 530 8800 27 7340 1030 0000 0000 1		24.95											
								589293			24.95		
HARBOR A001	HARBOR AWARDS & ENGRAVING	6933			End of Year Awards	08/14/2026	R						81.36
** L 601 0000 00 0000 0000 0000 0000		1172600002			1026GFHJ	10/31/2026	N						81.36
10 E 530 0100 27 5610 1030 0000 0000 0		81.36											
								589294			81.36		
HOQUIAM 009	HOQUIAM SCHOOL DISTRICT NO.	2526-1106			Bus Maintenance	09/08/2026	R						4,864.71

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Name / Accrual / Account Number	Invoice # / PO # / Batch / Due Date	Description / Inv Date	C / Detail	Check	Invoice Amount / Net Amount
HOQUIAM 009 Vendor Continued....					
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ	10/31/2026	N	4,864.71
10 E 530 9900 29 7340 0640 0000 0000 0	4,864.71				
			589295	4,864.71	
JOHN DEE000 JOHN DEERE FINANCIAL	7121972	Maintenance Supplies	09/01/2026	R	64.88
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ	10/31/2026	N	64.88
10 E 530 9700 64 5610 0640 0000 0000 0	64.88				
			589296	64.88	
JOHNSON 002 JOHNSON CONTROLS FIRE PROTE	25691036	Annual Service - Sprinkler/Fire Alarm Transportation	10/01/2026	R	1,547.18
** L 601 0000 00 0000 0000 0000 0000		1026GFHJ	10/31/2026	N	1,547.18
10 E 530 9700 64 7431 0640 0000 0000 0	1,547.18				
			589297	1,547.18	
JW PEPPE000 JW PEPPER & SONS INC	368804615	BAND-OPEN PO	09/15/2026	R	423.73
** L 601 0000 00 0000 0000 0000 0000	1152600004	1026GFHJ	10/31/2026	N	423.73
10 E 530 0100 27 5610 0640 4011 0000 0	423.73				
JW PEPPE000 JW PEPPER & SONS INC	36880857	BAND-OPEN PO	09/16/2026	R	54.45
** L 601 0000 00 0000 0000 0000 0000	1152600004	1026GFHJ	10/31/2026	N	54.45
10 E 530 0100 27 5610 0640 4011 0000 0	54.45				
JW PEPPE000 JW PEPPER & SONS INC	368819052	BAND-OPEN PO	09/18/2026	R	81.68
** L 601 0000 00 0000 0000 0000 0000	1152600004	1026GFHJ	10/31/2026	N	81.68
10 E 530 0100 27 5610 0640 4011 0000 0	81.68				

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Batch	Invoice # / Description / Inv Date / Due Date	C / Detail	Check	Invoice Amount / Net Amount
JW PEPPE000	JW PEPPER & SONS INC	368844663w BAND-OPEN PO 09/25/2026	R		65.34
** L 601 0000 00 0000 0000 0000 0000		1152600004 1026GFHJ 10/31/2026	N		65.34
10 E 530 0100 27 5610 0640 4011 0000 0		65.34			
JW PEPPE000	JW PEPPER & SONS INC	368862415 BAND-OPEN PO 09/30/2026	R		70.79
** L 601 0000 00 0000 0000 0000 0000		1152600004 1026GFHJ 10/31/2026	N		70.79
10 E 530 0100 27 5610 0640 4011 0000 0		70.79			
JW PEPPE000	JW PEPPER & SONS INC	368864634 BAND-OPEN PO 09/30/2026	R		113.14
** L 601 0000 00 0000 0000 0000 0000		1152600004 1026GFHJ 10/31/2026	N		113.14
10 E 530 0100 27 5610 0640 4011 0000 0		113.14			
JW PEPPE000	JW PEPPER & SONS INC	368915215 BAND-OPEN PO 10/14/2026	R		21.76
** L 601 0000 00 0000 0000 0000 0000		1152600004 1026GFHJ 10/31/2026	N		21.76
10 E 530 0100 27 5610 0640 4011 0000 0		21.76			
JW PEPPE000	JW PEPPER & SONS INC	3689910806 BAND-OPEN PO 10/13/2026	R		17.40
** L 601 0000 00 0000 0000 0000 0000		1152600004 1026GFHJ 10/31/2026	N		17.40
10 E 530 0100 27 5610 0640 4011 0000 0		17.40			
				589298	848.29
KCDA 000	KCDA	300917912 Year Start Office Order 08/20/2026	R		930.48
** L 601 0000 00 0000 0000 0000 0000		1172600001 1026GFHJ 10/31/2026	N		930.48
10 E 530 0100 23 5610 1030 0000 0000 0		930.48			
KCDA 000	KCDA	300922148 Year Start Office Order 09/04/2026	R		24.46
** L 601 0000 00 0000 0000 0000 0000		1172600001 1026GFHJ 10/31/2026	N		24.46
10 E 530 0100 23 5610 1030 0000 0000 0		24.46			
				589299	954.94

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO #	Description / Batch	Inv Date / Due Date	C / Detail	Check	Invoice Amount / Net Amount
MATTHCAR000	CAROL L MATTHEWS	OCT26-1	Travel Reimbursement - September	10/01/2026	R		179.06
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		179.06
10 E 530 2100 26 8580 0640 0000 0000 0		179.06					
					589300		179.06
MB ELECT002	MB ELECTRIC	24775	Shunt test elevators OSE/HS	09/30/2026	R		425.49
** L 601 0000 00 0000 0000 0000 0000		1022600015	1026GFHJ	10/31/2026	N		425.49
10 E 530 9700 64 7340 0640 0000 0000 0		425.49					
					589301		425.49
NORTH BE023	NORTH BEACH REVOLVING FUND	1026GFHJ	Replenishment ACH/Bank Fees	08/31/2026	R		69.50
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		69.50
10 E 530 9700 13 7810 0640 0000 0000 0		59.50	10 E 530 9700 13 5610 0640 0000 0000 1			10.00	
					589302		69.50
NORTHWES007	NORTHWEST TEXTBOOK DEPOSITO	114-389-447	Additional workbooks	09/04/2026	R		885.52
** L 601 0000 00 0000 0000 0000 0000		1002600011	1026GFHJ	10/31/2026	N		885.52
10 E 530 0100 33 5640 1020 0000 0000 0		885.52					
NORTHWES007	NORTHWEST TEXTBOOK DEPOSITO	114-389-589	Additional workbooks	09/09/2026	R		231.59
** L 601 0000 00 0000 0000 0000 0000		1002600011	1026GFHJ	10/31/2026	N		231.59
10 E 530 0100 33 5640 1020 0000 0000 0		231.59					
NORTHWES007	NORTHWEST TEXTBOOK DEPOSITO	114-390-229	Additional Curriculum for OSE	09/25/2026	R		106.34
** L 601 0000 00 0000 0000 0000 0000		1002600012	1026GFHJ	10/31/2026	N		106.34
10 E 530 0100 33 5610 1030 0000 0000 0		106.34					
					589303		1,223.45

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO #	Description / Batch	Inv Date / Due Date	C / Detail	Check	Invoice Amount / Net Amount
NUCE KRI000	KRISTOPHER NUCE	OCT26-1	Travel & Expense Reimbursement - October	10/07/2026	R		173.68
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		173.68
10 E 530 0100 26 7330 0640 0000 0000 0	65.00		10 E 530 0100 26 8580 0640 0000 0000 1	108.68			
					589304		173.68
OSPI 004	OSPI	FY27-152	K-20 Network	09/10/2026	R		1,000.00
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		1,000.00
10 E 530 9773 72 5650 0640 0000 0000 1	1,000.00						
					589305		1,000.00
OSPI - C000	OSPI - CHILD NUTRITION SERV	40640	Commodities	09/30/2026	R		5,903.83
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		5,903.83
10 E 530 9800 42 5630 0640 0000 0000 0	5,903.83						
					589306		5,903.83
PACIFIC 016	PACIFIC LEAGUE	OCT26-1	League Dues JH/HS	08/01/2026	R		300.00
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		300.00
10 E 530 0100 28 7810 4010 0000 0000 1	300.00						
					589307		300.00
PACIFICA000	PACIFICA LAW GROUP, LLP	111419	Legal Services	10/09/2026	R		1,645.00
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ	10/31/2026	N		1,645.00
10 E 530 9700 11 7343 0640 0000 0000 0	1,645.00 NONEM						
					589308		1,645.00
PETROCAR000	PETROCARD	0599307-IN	Fuel	09/08/2026	R		4,314.55

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Invoice # / Batch / Asset	Lq	Description / Due Date / Account Number	Inv Date / Detail / Detail Amount	C	Check / 1099	Invoice Amount / Net Amount
PETROCAR000 Vendor Continued....									
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N		4,314.55
10 E 530 9900 52 5626 0640 0000 0000 0	4,314.55								
PETROCAR000 PETROCARD	0599797-IN		Fuel			09/14/2026	R		4,201.46
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N		4,201.46
10 E 530 9900 52 5626 0640 0000 0000 0	4,201.46								
PETROCAR000 PETROCARD	0600444-IN		Fuel			09/21/2026	R		3,922.05
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			09/30/2026	N		3,922.05
10 E 530 9900 52 5626 0640 0000 0000 0	3,922.05								
PETROCAR000 PETROCARD	0601041-IN		Fuel			09/28/2026	R		3,445.19
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N		3,445.19
10 E 530 9900 52 5626 0640 0000 0000 0	3,445.19								
PETROCAR000 PETROCARD	0601490-IN		Fuel			10/05/2026	R		3,321.69
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N		3,321.69
10 E 530 9900 52 5626 0640 0000 0000 0	3,321.69								
PETROCAR000 PETROCARD	0602019-IN		Fuel			10/12/2026	R		3,312.00
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N		3,312.00
10 E 530 9900 52 5626 0640 0000 0000 0	3,312.00								
PETROCAR000 PETROCARD	599307C-CM		Fuel - Credit			09/08/2026	R		-4,314.55
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N		-4,314.55
10 E 530 9900 52 5626 0640 0000 0000 0	-4,314.55								
PETROCAR000 PETROCARD	599307R-DM		Fuel			09/08/2026	R		3,114.55
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N		3,114.55
10 E 530 9900 52 5626 0640 0000 0000 0	3,114.55								

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Invoice # / Batch / Asset	Lq	Description / Account Number	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Invoice Amount / Net Amount
PETROCAR000	PETROCARD		599797C-CM		Fuel - Credit	09/14/2026	R			-4,201.46
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			-4,201.46
10 E 530 9900 52 5626 0640 0000 0000 0	-4,201.46									
PETROCAR000	PETROCARD		599797R-DM		Fuel	09/14/2026	R			3,001.46
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			3,001.46
10 E 530 9900 52 5626 0640 0000 0000 0	3,001.46									
PETROCAR000	PETROCARD		600444C-CM		Fuel - Credit	09/21/2026	R			-3,922.05
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			-3,922.05
10 E 530 9900 52 5626 0640 0000 0000 0	-3,922.05									
PETROCAR000	PETROCARD		600444R-DM		Fuel	09/21/2026	R			2,913.75
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			2,913.75
10 E 530 9900 52 5626 0640 0000 0000 0	2,913.75									
								589309		19,108.64
SOUTHWES001	SOUTHWEST WASHINGTON ACTIVI		OCT26-1		26-27 WIAA Enrollment Fees	08/01/2026	R			500.00
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			500.00
10 E 530 0100 28 7810 4010 0000 0000 1	500.00									
								589310		500.00
STATE OF003	STATE OF WASHINGTON		L0309795922		Drivers Abstract	10/01/2026	R			30.00
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			30.00
10 E 530 9900 51 7340 0640 0000 0000 0	30.00									
								589311		30.00
SYSCO SE000	SYSCO SEATTLE INC.		755517307		Food Service	09/30/2026	R			891.18
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			891.18

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO # / Detail Amount	1099	Description / Batch	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
SYSCO SE000 Vendor Continued....											
10 E 530 9800 42 5630 0640 0000 0000 0		891.18									
SYSCO SE000	SYSCO SEATTLE INC.	755524546		Food Service - credit memo	10/02/2026	R					-271.00
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ	10/31/2026	N					-271.00
10 E 530 9800 42 5630 0640 0000 0000 0		-271.00									
SYSCO SE000	SYSCO SEATTLE INC.	7555250006		Food Service	10/02/2026	R					275.94
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ	10/31/2026	N					275.94
10 E 530 9800 42 5630 0640 0000 0000 0		275.94									
SYSCO SE000	SYSCO SEATTLE INC.	755525007		Food Service	10/02/2026	R					47.99
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ	10/31/2026	N					47.99
10 E 530 9800 42 5630 0640 0000 0000 0		47.99									
SYSCO SE000	SYSCO SEATTLE INC.	755531101		Food Service - Credit memo	10/05/2026	R					-37.99
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ	10/31/2026	N					-37.99
10 E 530 9800 42 5630 0640 0000 0000 0		-37.99									
SYSCO SE000	SYSCO SEATTLE INC.	755534266		Food Service	10/06/2026	R					500.99
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ	10/31/2026	N					500.99
10 E 530 9800 42 5630 0640 0000 0000 0		500.99									
						589312			1,407.11		
TK ELEVA000	TK ELEVATOR CORPORATION	1000790724		5 year test for Ocean Shores Elevator system Ref # TK-2026-00458387	09/07/2026	R					8,824.85
** L 601 0000 00 0000 0000 0000 0000		1032500001		1026GFHJ	09/30/2026	N					8,824.85
10 E 530 9700 64 7340 0640 0000 0000 0		8,824.85									
TK ELEVA000	TK ELEVATOR CORPORATION	3009851036		Jr/Sr High - Elevator	10/01/2026	R					2,438.07

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Invoice # / Batch / Asset	Lq	Description / Due Date / Account Number	Inv Date / Detail / Detail Amount	C / 1099	Check / Asset	Lq	Invoice Amount / Net Amount
TK ELEVA000 Vendor Continued....										
					Maintenance					
					10/01/2026-12/31/2026					
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N			2,438.07
10 E 530 9700 64 7431 2040 0000 0000 0	1,219.03				10 E 530 9700 64 7431 4010 0000 0000 0	1,219.04				
TK ELEVA000 TK ELEVATOR CORPORATION	3009851523				OSE - Elevator Maintenance	10/01/2026	R			2,076.41
					10/01/2026-12/31/2026					
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N			2,076.41
10 E 530 9700 64 7431 1030 0000 0000 0	2,076.41									
							589313		13,339.33	
US FOODS000 US FOODS - SEATTLE	4891637				Food Service Supplies	09/09/2026	R			23.84
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N			23.84
10 E 530 9800 44 5610 0640 0000 0000 0	23.84									
US FOODS000 US FOODS - SEATTLE	4896200				CTE-BUSINESS MARKETING OPEN	09/10/2026	R			467.03
					PO FOR US FOODS FOR SY 26-27					
** L 601 0000 00 0000 0000 0000 0000	1312600001				1026GFHJ	10/31/2026	N			467.03
10 E 530 3162 27 5610 4010 0000 0000 1	467.03									
US FOODS000 US FOODS - SEATTLE	4896201				Food Service	09/10/2026	R			1,759.52
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N			1,759.52
10 E 530 9800 42 5630 0640 0000 0000 0	1,759.52									
US FOODS000 US FOODS - SEATTLE	4896202				Food Service - Extra	09/10/2026	R			371.38
** L 601 0000 00 0000 0000 0000 0000					1026GFHJ	10/31/2026	N			371.38
10 E 530 9800 42 5630 0640 0000 0000 0	371.38									
US FOODS000 US FOODS - SEATTLE	5103178				CTE-CULINARY-OPEN PO US FOODS	09/14/2026	R			645.17
** L 601 0000 00 0000 0000 0000 0000	1312600011				1026GFHJ	10/31/2026	N			645.17

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Batch	Invoice # / Description / Inv Date / Due Date	C / Detail	Check / Detail Amount / 1099 / Asset / Lq	Invoice Amount / Net Amount
US FOODS000 Vendor Continued....					
10 E 530 3165 27 5610 4010 0000 0000 0				645.17	
US FOODS000	US FOODS - SEATTLE	5103179			2,235.79
** L 601 0000 00 0000 0000 0000 0000		Food Service	R		2,235.79
10 E 530 9800 42 5630 0640 0000 0000 0		1026GFHJ 09/30/2026	N	2,235.79	
US FOODS000	US FOODS - SEATTLE	5103180			49.95
** L 601 0000 00 0000 0000 0000 0000		Food Service Supplies	R		49.95
10 E 530 9800 44 5610 0640 0000 0000 0		1026GFHJ 09/30/2026	N	49.95	
US FOODS000	US FOODS - SEATTLE	5264073			95.68
** L 601 0000 00 0000 0000 0000 0000		Food Service Supplies	R		95.68
10 E 530 9800 44 5610 0640 0000 0000 0		1026GFHJ 10/31/2026	N	95.68	
US FOODS000	US FOODS - SEATTLE	5302530			106.83
** L 601 0000 00 0000 0000 0000 0000		OSE After School Snacks	R		106.83
10 E 530 8802 27 5610 1030 0000 0000 1		1026GFHJ 10/31/2026	N	106.83	
US FOODS000	US FOODS - SEATTLE	5302531			705.59
** L 601 0000 00 0000 0000 0000 0000		Kitchen Supplies - Extra	R		705.59
10 E 530 9800 42 5630 0640 0000 0000 0		1026GFHJ 10/31/2026	N	705.59	
US FOODS000	US FOODS - SEATTLE	5302532			1,502.67
** L 601 0000 00 0000 0000 0000 0000		Food Service	R		1,502.67
10 E 530 9800 42 5630 0640 0000 0000 0		1026GFHJ 10/31/2026	N	1,502.67	
US FOODS000	US FOODS - SEATTLE	5503516			177.14
** L 601 0000 00 0000 0000 0000 0000	1312600011	CTE-CULINARY-OPEN PO US FOODS	R		177.14
10 E 530 3165 27 5610 4010 0000 0000 0		1026GFHJ 10/31/2026	N	177.14	
US FOODS000	US FOODS - SEATTLE	5503517			357.80
		CTE-BUSINESS MARKETING OPEN	R		
		09/30/2026			

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Detail Amount	1099	Invoice # / Batch / Asset	Lq	Description / Account Number	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Invoice Amount / Net Amount
US FOODS000 Vendor Continued....										
					PO FOR US FOODS FOR SY 26-27					
** L 601 0000 00 0000 0000 0000 0000	1312600001		1026GFHJ			10/31/2026	N			357.80
10 E 530 3162 27 5610 4010 0000 0000 1	357.80									
US FOODS000 US FOODS - SEATTLE	5503518		Food Service - Extra			10/01/2026	R			828.68
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			828.68
10 E 530 9800 42 5630 0640 0000 0000 0	828.68									
US FOODS000 US FOODS - SEATTLE	5503519		Food Service			10/01/2026	R			1,930.23
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			1,930.23
10 E 530 9800 42 5630 0640 0000 0000 0	1,930.23									
US FOODS000 US FOODS - SEATTLE	5704964		CTE-CULINARY-OPEN PO US FOODS			10/06/2026	R			485.41
** L 601 0000 00 0000 0000 0000 0000	1312600011		1026GFHJ			10/31/2026	N			485.41
10 E 530 3165 27 5610 4010 0000 0000 0	485.41									
US FOODS000 US FOODS - SEATTLE	5704966		Food Service - Extra			10/08/2026	R			835.25
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			835.25
10 E 530 9800 42 5630 0640 0000 0000 0	835.25									
US FOODS000 US FOODS - SEATTLE	5704967		Food Service - Supplies			10/08/2026	R			55.95
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			55.95
10 E 530 9800 44 5610 0640 0000 0000 0	55.95									
US FOODS000 US FOODS - SEATTLE	5704968		Food Service			10/08/2026	R			1,477.51
** L 601 0000 00 0000 0000 0000 0000			1026GFHJ			10/31/2026	N			1,477.51
10 E 530 9800 42 5630 0640 0000 0000 0	1,477.51									
US FOODS000 US FOODS - SEATTLE	5738964		CTE-CULINARY-OPEN PO US FOODS			10/06/2026	R			30.18
** L 601 0000 00 0000 0000 0000 0000	1312600011		1026GFHJ			10/31/2026	N			30.18
10 E 530 3165 27 5610 4010 0000 0000 0	30.18									
								589314		14,141.60

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO # / Detail Amount	1099	Description / Batch / Asset	Lq	Account Number	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
US OMNI 000	US OMNI & TSACG COMPLIANCE	139581		Retirement Services			10/02/2026	R					50.00
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ			10/31/2026	N					50.00
10 E 530 9700 13 7340 0640 0000 0000 0		50.00											
									589315		50.00		
WA SCHOO000	WA SCHOOL INFO PROCESSING	10026000389		26-27 WSIPC 12 Month EES			10/01/2026	R					6,027.02
** L 601 0000 00 0000 0000 0000 0000		1022600003		1026GFHJ			10/31/2026	N					6,027.02
10 E 530 9773 72 5650 0640 0000 0000 1		6,027.02											
									589316		6,027.02		
WIAA 000	WIAA	46879		Membership - HS			08/05/2026	R					2,485.00
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ			10/31/2026	N					2,485.00
10 E 530 0100 28 7810 4010 0000 0000 1		2,485.00											
WIAA 000	WIAA	47120		Membership - JH			08/05/2026	R					350.00
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ			10/31/2026	N					350.00
10 E 530 0100 28 7810 2040 0000 0000 1		350.00											
									589317		2,835.00		
ZIMMERIC000	RICHARD ZIMMERMAN	09/03/2026		Reimbursement - September			09/03/2026	R					319.20
** L 601 0000 00 0000 0000 0000 0000				1026GFHJ			10/31/2026	N					319.20
10 E 530 9700 12 8580 0640 0000 0000 0		319.20											
									589318		319.20		

Grand Total	235,817.77
Total Adjustments	0.00
Total Discounts	0.00
Net Total	235,817.77

Check Date 10/20/2026 Posting Date 10/20/2026

Due Date 10/31/2026 Batches 1026GFHJ Thru 1026GFHJ Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Batch	Invoice # / Description / Inv Date / Due Date	C / Detail	Check / Account Number	Invoice Amount / Net Amount / Detail Amount	1099	Asset	Lq

Totals Continued....

53	Computer Check(s)	235,817.77
0	Manual Check(s)	0.00
0	Void Check(s)	0.00
0	Negative/Minimum Check(s)	0.00
0	Zero Check(s)	0.00
0	Wire Transfer Check(s)	0.00
0	ACH Deposit(s)	0.00

********** End of report **********

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026ASB Thru 1026ASB Bank Cash Code 11

Associated Student Body Fund

Vendor / Accrual / Account Number	Name	Invoice # / PO # / Detail Amount	Description / Batch	Inv Date / Due Date	C / Detail	Check / Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
AMAZON C000	AMAZON CAPITAL SERVICES	19YL-1H6C-N9JY	Supplies PO 8936	09/24/2026	R					39.48
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N					39.48
40 E 530 4330 00 0000 4010 0000 0000 0		39.48								
AMAZON C000	AMAZON CAPITAL SERVICES	1PPR-C91R-JG4D	Supplies PO 8934	09/17/2026	R					221.17
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N					221.17
40 E 530 1010 00 0000 4010 0000 0000 0		221.17								
AMAZON C000	AMAZON CAPITAL SERVICES	1XDN-H4NK-JKKQ	Supplies PO 8972	09/30/2026	R					72.02
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N					72.02
40 E 530 1010 00 0000 4010 0000 0000 0		72.02								
					589249			332.67		
BMO HARR000	BMO HARRIS -4956	OCT26-1	Amazon - Supplies OSE	10/01/2026	R					21.81
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N					21.81
40 E 530 1070 00 0000 1030 0000 0000 0		21.81								
BMO HARR000	BMO HARRIS -4956	OCT26-10	IGA PO 8953	10/01/2026	R					23.90
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N					23.90
40 E 530 1010 00 0000 4010 0000 0000 0		23.90								
BMO HARR000	BMO HARRIS -4956	OCT26-11	En Route Prevention Summit PO 8958	09/24/2026	R					1,230.00
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N					1,230.00
40 E 530 6080 00 0000 4010 0000 0000 0		1,230.00								
BMO HARR000	BMO HARRIS -4956	OCT26-12	Dugan's Pizza PO 8970	09/25/2026	R					49.39
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N					49.39
40 E 530 2010 00 0000 4010 0000 0000 0		49.39								
BMO HARR000	BMO HARRIS -4956	OCT26-13	Seaside Liquidation PO 8975	10/02/2026	R					32.73

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026ASB Thru 1026ASB Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO #	Detail Amount	1099	Description / Batch	Asset	Lq	Account Number	Inv Date / Due Date	C / Detail	Check	Detail Amount	1099	Asset	Lq	Invoice Amount / Net Amount
BMO HARR000	Vendor Continued....															
** L 601 0000 00 0000 0000 0000 0000					1026ASB				10/31/2026	N						32.73
40 E 530 2010 00 0000 4010 0000 0000 0			32.73													
BMO HARR000	BMO HARRIS -4956	OCT26-14			Ocean Shores IGA PO 8975				10/02/2026	R						237.91
** L 601 0000 00 0000 0000 0000 0000					1026ASB				10/31/2026	N						237.91
40 E 530 2010 00 0000 4010 0000 0000 0			237.91													
BMO HARR000	BMO HARRIS -4956	OCT26-2			Amazon - Supplies PBE - PO 012300				09/28/2026	R						293.64
** L 601 0000 00 0000 0000 0000 0000					1026ASB				10/31/2026	N						293.64
40 E 530 1070 00 0000 1020 0000 0000 0			293.64													
BMO HARR000	BMO HARRIS -4956	OCT26-3			Amazon - Supplies PBE - PO 012300				09/28/2026	R						59.88
** L 601 0000 00 0000 0000 0000 0000					1026ASB				10/31/2026	N						59.88
40 E 530 1070 00 0000 1020 0000 0000 0			59.88													
BMO HARR000	BMO HARRIS -4956	OCT26-4			Walmart - Concessions PO 8908				09/09/2026	R						472.78
** L 601 0000 00 0000 0000 0000 0000					1026ASB				10/31/2026	N						472.78
40 E 530 1300 00 0000 4010 0000 0000 0			472.78													
BMO HARR000	BMO HARRIS -4956	OCT26-5			Walmart - Concessions PO 8908				09/16/2026	R						569.44
** L 601 0000 00 0000 0000 0000 0000					1026ASB				10/31/2026	N						569.44
40 E 530 1300 00 0000 4010 0000 0000 0			569.44													
BMO HARR000	BMO HARRIS -4956	OCT26-6			Athletic.net PO 8938				09/15/2026	R						255.00
** L 601 0000 00 0000 0000 0000 0000					1026ASB				10/31/2026	N						255.00
40 E 530 2070 00 0000 4010 0000 0000 0			255.00													
BMO HARR000	BMO HARRIS -4956	OCT26-7			Swim Outlet PO 9840				09/04/2026	R						138.93
** L 601 0000 00 0000 0000 0000 0000					1026ASB				10/31/2026	N						138.93

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026ASB Thru 1026ASB Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO #	Description / Batch	Inv Date / Due Date	C / Detail	Check	Invoice Amount / Net Amount
		Detail Amount	1099 Asset Lq Account Number			Detail Amount	1099 Asset Lq
BMO HARR000	Vendor Continued....						
40 E 530 2130 00 0000 4010 0000 0000 0		138.93					
BMO HARR000	BMO HARRIS -4956	OCT26-8	TYR.com PO 8941	09/15/2026	R		718.74
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N		718.74
40 E 530 2130 00 0000 4010 0000 0000 0		718.74					
BMO HARR000	BMO HARRIS -4956	OCT26-9	IGA PO 8946	10/01/2026	R		64.88
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N		64.88
40 E 530 1010 00 0000 4010 0000 0000 0		64.88					
					589250	4,169.03	
BNB CAMP000	BNB CAMPS	2510A	BNB Camp-Girls PO 8943	06/03/2026	R		700.00
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N		700.00
40 E 530 2090 00 0000 4010 0000 0000 0		700.00					
					589251	700.00	
BSN SPOR002	BSN SPORTS	935519584	Volleyball Supplies PO 8932	09/16/2026	R		402.02
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N		402.02
40 E 530 2010 00 0000 4010 0000 0000 0		402.02					
					589252	402.02	
CURTIS H000	CURTIS HIGH SCHOOL	OCT26-1	John Payne XC Invite PO 8977	10/03/2026	R		150.00
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N		150.00
40 E 530 2040 00 0000 4010 0000 0000 0		150.00					
					589253	150.00	
MATT CYP000	MATT CYPHERT	18	Football Media Photos PO 1893	09/07/2026	R		190.00

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026ASB Thru 1026ASB Bank Cash Code 11

Vendor / Accrual / Account Number	Name	Invoice # / PO #	Description / Batch	Inv Date / Due Date	C / Detail	Check	Invoice Amount / Net Amount
MATT CYP000	Vendor Continued....						
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N		190.00
40 E 530 2050 00 0000 4010 0000 0000 0		190.00 NONEM					
					589254	190.00	
NORTH BE018	NORTH BEACH SCHOOL DISTRICT	26-41	Reimbursement of incorrectly coded/deposited funds - Credit to CTE School Store PO 8957	05/04/2026	R		1,959.00
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N		1,959.00
40 E 530 1150 00 0000 4010 0000 0000 0		1,959.00					
					589255	1,959.00	
PAPACLIN000	LINNEA PAPAC	OCT26-1	Reimbursement - Cheer Supplies PO 8978	10/03/2026	R		272.76
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N		272.76
40 E 530 4040 00 0000 4010 0000 0000 0		272.76					
					589256	272.76	
SEASIDE 001	SEASIDE HIGH SCHOOL	00001-26	Three Course Challenge:Cross Country Race PO 9874	09/07/2026	R		595.00
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N		595.00
40 E 530 2040 00 0000 4010 0000 0000 0		595.00					
					589257	595.00	
TRAERKEV000	KEVIN A TRAER	000023A	DJ Services PO 8942	09/04/2026	R		300.00
** L 601 0000 00 0000 0000 0000 0000			1026ASB	10/31/2026	N		300.00
40 E 530 1010 00 0000 4010 0000 0000 0		300.00 NONEM					
					589258	300.00	

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026ASB Thru 1026ASB Bank Cash Code 11

Vendor / Accrual / Account Number	Name / PO # / Batch	Invoice # / Description / Due Date	Inv Date	C / Detail	Check	Invoice Amount / Net Amount
US FOODS000	US FOODS - SEATTLE	5503520				
		Concessions PO 8965	10/01/2026	R		392.92
** L 601 0000 00 0000 0000 0000 0000		1026ASB	10/31/2026	N		392.92
40 E 530 1300 00 0000 4010 0000 0000 0	392.92					
				589259	392.92	

Grand Total	9,463.40
Total Adjustments	0.00
Total Discounts	0.00
Net Total	9,463.40

11	Computer Check(s)	9,463.40
0	Manual Check(s)	0.00
0	Void Check(s)	0.00
0	Negative/Minimum Check(s)	0.00
0	Zero Check(s)	0.00
0	Wire Transfer Check(s)	0.00
0	ACH Deposit(s)	0.00

********** End of report **********

Check Date 10/20/2026 Posting Date 10/20/2026
Due Date 10/31/2026 Batches 1026CTHJ Thru 1026CTHJ Bank Cash Code 11

Compensation Tax Fund

Vendor / Accrual / Account Number	Name / PO # / Batch	Invoice # / Description	Inv Date / Due Date	C / Detail	Check	Invoice Amount / Net Amount
DEPARTME002	DEPARTMENT OF REVENUE	CTAX11 20261016AAA Comp Tax owed for Cash Account 11 through 10/31/2026	10/16/2026	R		365.48
** L 601 0000 00 0000 0000 0000 0000		1026CTHJ	10/16/2026	N		365.48
10 L 601 0000 00 0000 0000 0000 0000		365.48				
				589319	365.48	

Grand Total	365.48
Total Adjustments	0.00
Total Discounts	0.00
Net Total	365.48

1 Computer Check(s)	365.48
0 Manual Check(s)	0.00
0 Void Check(s)	0.00
0 Negative/Minimum Check(s)	0.00
0 Zero Check(s)	0.00
0 Wire Transfer Check(s)	0.00
0 ACH Deposit(s)	0.00

********** End of report **********

Patrice Timpson <ptimpson@northbeachschools.org>

Resignation - Jessica Koerber - special education paraeducator

2 messages

Jessica Koerber <jkoerber@northbeachschools.org> Tue, Sep 22, 2026 at 6:12 PM
To: Richard Zimmerman <rzimmerman@northbeachschools.org>
Cc: Jane Johnson <jane.johnson@northbeachschools.org>, Scott Lincoln <slincoln@northbeachschools.org>, Patrice Timpson <ptimpson@northbeachschools.org>, Shelese McConnell <smcconnell@northbeachschools.org>

Good evening,

Please accept this email as formal notification that I am resigning from my position as a special education paraeducator at Ocean Shores Elementary, effective October 8th. I plan to work through the school day Wednesday, October 7th.

I have deeply appreciated the opportunity to support our students and work alongside such a dedicated team.

Upon my resignation, I want to ensure that my status as a substitute paraeducator is kept active in the system so that I can immediately transition into substitute para roles when needed, starting the week of October 12th. Please let me know what paperwork or steps are required to not only keep my substitute profile active and ready for scheduling, but also facilitate a seamless transition with payroll.

Thank you for your guidance, support, and understanding during this transition.

Sincerely,

Jessica Koerber

Patrice Timpson <ptimpson@northbeachschools.org> Wed, Sep 23, 2026 at 8:10 AM
To: Jessica Koerber <jkoerber@northbeachschools.org>

Received. Thank you for being a part of the North Beach Team.
[Quoted text hidden]

Katrina Klokkevold

katrina.klokkevold@yahoo.com 563-210-2704

Employment

Davenport Community School District, Davenport IA

Secretary I

-Greet all visitors
-Answer multi-line phone
-Update daily announcements on school website
-Maintain and update student attendance
-Process incoming and outgoing mail
-Manage conference room calendars
-Serve as primary contact for students, parents and staff
-Coordinate substitute teacher coverage
-Manage student lockers, staff and student parking
-Coordinate student honors event
-Visitor sign-in

Skills

Software
-Infinite Campus
-MS Office Suite
-Google Workspace
-Raptor

Equipment
-Printer/scanner/copy
-MS Teams phone system
-Intercom paging system

Washington State DSHS Division of Vocational Rehabilitation

Rehabilitation Technician

-Conduct interviews with potential customers to explain vocational rehabilitation programs
-Draft and pay Authorization for Purchase of Client Services and products
-Collecting medical records and academic records to be used in determining eligibility
-Enter customer information into electronic databases
-Schedule client appointments with Vocational Rehabilitation Counselors and Benefit Planners
-Register vendors that provide goods and services to DVR customers
-Prepare correspondence to clients, vendors, and others
-Maintain electronic and paper case files
-Credit card custodian: reconciling monthly statement, paying & assembling documentation for the Fiscal department.
-Other extra duties: office supply orders, company car custodian, equipment coordinator.

Granite Falls School District Para-educator/Registered Behavior Technician

-Practiced direct implementation of behavior-analytic services under supervision of a BCBA
-Trained stakeholders in ABA
-Provided instructional support services under the direct supervision

of a certified teacher
-Conducted parental involvement activities
-Provided instructional support in a library and media center

Education

Eastern Gateway community college

Associate of Education 2021
GPA 4.0

TCF Architecture

October 5, 2026

Robert Musial
Project Manager
Educational Service District 112 | Construction Services Group
2500 NE 65th Avenue
Vancouver, WA 98661

Re: North Beach School District
Jr. Sr. High School (JRSRHS)
TCF Project No. 2025-019
Additional Services Request - Fire Flow Testing ASR 02

Dear Robert:

The following additional services request is for fire hydrant flow testing at the Jr. Sr. High School replacement project in Ocean Shores, performed by Sprinx Fire Protection and coordinated by Land Development Consultants, our civil engineer.

The fire flow and pressure figures available for the site are drawn from water purveyor records rather than measured data. Testing hydrants at the site lets us size the fire service and the sprinkler system on real numbers, and confirms early whether a fire pump or other measures will be required. Carrying that question into design development on record data risks a late and expensive change.

- **Fire Hydrant Testing Coordination (LDC, Phase 15):** LDC will coordinate the testing with Sprinx Fire Protection and the local water purveyor, and perform a site visit to observe the testing.
- **Hydrant Flow Testing (Sprinx Fire Protection, Phase 16):** Sprinx will flow one to two hydrants or hydrant outlets per test and measure pressures and flows, write the results up in a report for review, and forward the results to the local water department. Sprinx's proposal is attached behind LDC's.

LDC's change order and Sprinx's proposal are attached. LDC has applied their standard ten percent markup to Sprinx's fee, and TCF's standard consultant markup has been applied to LDC's total.

124 N. "I" Street
Tacoma, WA 98403
253.572.3993

Civil and Fire Flow Testing (see LDC change order)		$	3,596
TCF Markup on Consultants	10%	$	360
Total Additional Services Proposed Fee			**$3,956**

Sprinx excludes permit and inspection fees, protection of landscape areas and site cleanup, screening or capping of catch basins if the water department requires it, notification of nearby residences, and repairs if a hydrant fails to open or close. At this stage there is no contractor under contract, so we have assumed the District and the water purveyor will cover those items. Each test may discharge 6,000 gallons or more.

Testing should be completed before we advance the fire protection design so the results can inform the service sizing. Grays Harbor County has left approval to the county water division and Ocean Shores water, and LDC has confirmed with them that the testing can move forward. The County has asked to witness the testing once it is scheduled. LDC requires signed approval of their change order before they proceed, and Sprinx schedules the testing with the water department after approval.

Please let me know if you have any questions.

Respectfully,
TCF Architecture pllc



Steve Wachtler, AIA
Managing Principal

Attachments:

LDC Change Order for Additional Engineering Services, September 30, 2026, 1 page

Sprinx Fire Protection Hydrant Flow Test proposal, September 21, 2026, 2 pages

LDC | Surveying Engineering Planning

September 30, 2026

TCF Architecture
Attn: Steve Wachtler, AIA
902 North Second Street
Tacoma, WA 98403

RE: Change Order for Additional Engineering Services
North Beach School District – North Beach Jr. Sr. High School in Ocean Shores, WA

Dear Steve:

Land Development Consultants, Inc. (LDC) is currently under contract to perform design for the North Beach Jr. Sr. High School in Ocean Shores, WA. Additional fire hydrant testing services are requested to verify water pressure and flow information. The following scope of services will be provided.

Phase 15 – Fire Hydrant Testing Coordination
LDC will coordinate with Sprinx Fire Protection and perform a site visit to observe fire hydrant testing.

Phase 15 Fixed Fee: $1,200

Phase 16 – Sprinx Fire Hydrant Flow Testing
Please see Attachment A for detailed scope from Sprinx Fire Protection.

Additional Phase 16 Estimated T&M Fee: $2,178 + 10% markup **= $2,395.80**

Prior to commencement, LDC requires signed approval on this Change Order. Please do not hesitate to contact me if you have any questions regarding the enclosed. LDC would like to thank you for your continued business and consideration.

Regards,

LDC, Inc.

Ross Jarvis

Ross Jarvis, PE, Assoc. DBIA
Principal Engineer

Approved:

_____

Signature:

_____

By:

_____

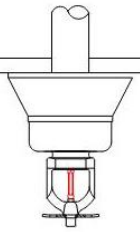
Date:

321 Cleveland Avenue SE, Suite 209 • Tumwater, WA 98501 • ph: 425.806.1869 • fx: 425.482.2893 • www.LDCcorp.com

SPRINX

Fire Protection

A Fire Sprinkler Corporation



TRANSMITTAL

Date:	**September 21, 2026**	Attn:	**Ross Jarvis**
To:	**LDC, Inc.**	Re:	**Hydrant Flow Test Proposal**
Email:	**rjarvis@LDCcorp.com**	From:	**Brian Walder**

We are transmitting ___2___ page (s), including cover sheet. If you have any questions or did not receive a page, call us at 253-853-7780.

MEMO:

Hello,

Here is our proposal for performing the (1) **Hydrant Flow Tests at or near North Beach JR/SR High School 336 WA-115, Ocean Shores, WA..**

Please review and call if you have any questions.

Thank you for requesting this proposal,

Brian Walder

Brian Walder,
President

SPRINX
Fire Protection
A Fire Sprinkler Corporation

Service Proposal
Hydrant Flow Test

Bill To:	LDC, Inc.
Address:	321 Cleveland Ave SE Suite 209
City/State:	Tumwater , WA 98501
Email/Phone:	rjarvis@LDCcorp**.com**

Job Name:	Hydrant Flow Test	**Date:**	September 21, 2026
Address:	336 WA-115,		
City/State:	Ocean Shores, WA 98569		
Contact Person:	Ross Jarvis	**Cell:**	(206) 778-1636

We hereby agree to perform the following service(s) specified below:

Perform (1) Hydrant Flow Test at or near 336 WA-115, Ocean Shores, WA..

We will be flowing (1 to 2) hydrants / hydrant outlets and measuring pressures and flows. All testing results will be written up in a report and submitted to you the owner for review. We will forward the test results to the local water department.

After approval, tests will be scheduled with the local water department.

Hydrant Flow Test and Report $1,850.00

Dechlorinator Tablets $150.00 x 1

Exclusions:

- Permit and Inspection Fees not included in price below.
- All landscape areas must be protected by contractor. No clean-up included in this proposal.
- Not responsible for water damage. We will need to flow the hydrant up to 2 minutes long which could result in a gallon discharge of 6000 gallons or more. If required by water department catch basins will need to be screened off or capped off prior to test.
- All notifications to local residences must be performed by contractor or water department.
- Not responsible for hydrant failure. If hydrant fails to open or close properly, the contractor will be responsible for having repairs completed.

WE hereby agree to perform the services at the above specified price**.**			**$ 2,000.00**
Date:	**September 21, 2026**		**$ 178.00**
Authorized Signature: (**Sprinx Fire Protection, Inc**)	*Brian Walder*		**$ 2,178.00**

Accepted – The above prices and specifications of this Service Proposal is satisfactory and hereby accepted. Proceed with Service Work.

Payment to be paid in full at time of test.
Overdue invoices are subject to interest at 1.5% per month.

Date of Acceptance:

Signature:
(Owner/Representative)

Print Name:



NORTH BEACH SCHOOL DISTRICT

PACIFIC BEACH ELEMENTARY SCHOOL

PACIFIC BEACH, WASHINGTON

SCHEMATIC DESIGN

100% SET

SEPTEMBER 10, 2026

TCF

9/9/2026 7:00:36 PM C:\Users\Sheena\Documents\PBES - ARCH SD_sheena@tcfarchitecture.rvt

PACIFIC BEACH ELEMENTARY SCHOOL

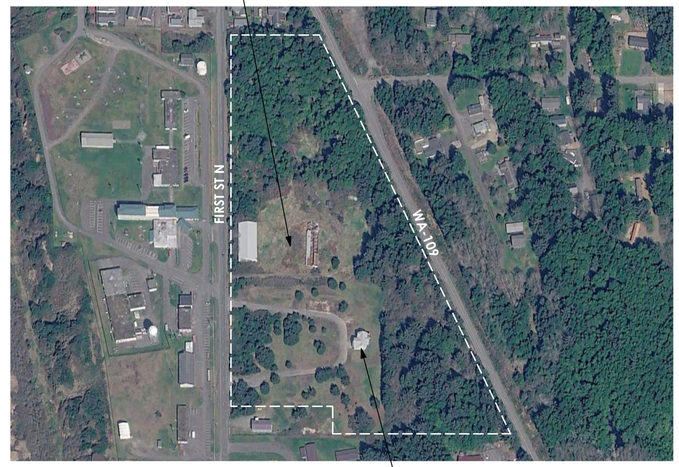
NORTH BEACH SCHOOL DISTRICT

PACIFIC BEACH, WA

100% SCHEMATIC DESIGN



This image is provided for REFERENCE ONLY and is not a part of contract documents.



SITE VICINITY MAP

NTS

PLAN NORTH

PROJECT DIRECTORY

OWNER

NORTH BEACH SCHOOL DISTRICT
50 1st Street N,
Pacific Beach, Washington, 98571

Superintendent: Richard Zimmerman
Email: rzimmerman@northbeachschools.org

Executive Assistant: Patrice Timpson
Email: ptimpson@northbeachschools.org

Maintenance & Operations: Stan Sturgeon
Email: ssturgeon@northbeachschools.org

Principal: Liz Cronin
Email: lcronin@northbeachschools.org

OWNER'S REP

Construction Services Group, ESD 112
2500 NE 65th Avenue
Vancouver, Washington 98661
Phone: (360)750-7500

Associate Director of Design and Construction Management/Project Director: Andrew Twyman
Email: andrew.twyman@esd112.org

Project Manager: Robert Musial
Email: robert.musial@esd112.org

Contact: Manuel Saldivar-Aguirre
Email: manuel.saldivar-aguirre@esd112.org

Contact: Drew Pearson
Email: drew.pearson@esd112.org

ARCHITECT

TCF Architecture PLLC
124 N I Street
Tacoma, Washington 98403
Phone: (253) 572-3993

PIC: Steve Wachtler, AIA
Email: stevew@tcfarchitecture.com

Project Manager: Andrew Hickman
Email: andrew@tcfarchitecture.com

Project Architect: Sheena Hewett
Email: sheena@tcfarchitecture.com

Job Captain: Amanda Stanton
Email: amandas@tcfarchitecture.com

SURVEY

MTN2 Coast
2320 Mottman Rd SW #106
Tumwater, Washington 98512
Phone: (360)688-1949

Contact: PJ Bougal
Email: pj@mtn2coast.com

CIVIL ENGINEER

LDC CORP
321 Cleveland Ave SE, #209
Tumwater, WA 98501
Phone: (360)634-2065

Principal Civil Engineer: Ross Jarvis
Email: rjarvis@LDCcorp.com

Maggie Howsden
Email: mhowsden@LDCcorp.com

LANDSCAPE ARCHITECT

Site Workshop
917 M.L.K. Jr Way
Tacoma, Washington 98405
Phone: (206)285-3026

Principal: Clayton Baudoin
Email: claytonb@siteworkshop.net

Designer: Allison Ong
Email: allisono@siteworkshop.net

Designer: Jack Hyland
Email: jackh@siteworkshop.net

FOOD SERVICES

Clevenger Associates
PO Box 811
Elma, Washington 98541
Phone: (360)482-1163

Principal: Brent Hall
Email: brent@clevengerassoc.com

Project Manager: Doug Hinds
Email: doug@clevengerassoc.com

STRUCTURAL ENGINEER

Degenkolb
600 University Street, Suite 1001
Seattle, Washington 98101
Phone: (206)262-9240

Principal: David Sommer
Email: dsommer@degenkolb.com

Project Engineer: Kyle Steuck
Email: ksteuck@degenkolb.com

MECHANICAL ENGINEER

Metrix Engineers
227 Williams Ave S,
Renton, Washington 98057
Phone: (425)336-2822

Principal: Eric Nordlund
Email: ericn@cmta.com

ELECTRICAL ENGINEER

GFT Engineers
6021 12TH Street E, Suite 200
Fife, WA 98424
Phone: (253)922-0446

Principal: Henry Santos
Email: hmsantos@gftinc.com

ACOUSTICAL CONSULTANT

Tenor Engineering Group
811 1st Ave, Floor 1
Seattle, Washington 98104
Phone: (206)899-5450

Contact: Erik Miller-Klein
Email: erik.mk@tenor-eng.com

COST CONTROL CONSULTANT

RC Cost Group
9727 Coppertop Loop NE, Suite 204
Bainbridge Island, Washington 98110
Phone: (206)565-3286

Contact: Mark Richardson
Email: mark@rccostgroup.com

HARDWARE CONSULTANT

Adams Consulting & Estimating, LLC
2337 N 57th Street
Seattle, Washington 98103
Phone: (206)528-0244

Contact: Gordon Adams
Email: gadams@w-link.net

ENVELOPE CONSULTANT

Nexus
2552 Jefferson Ave
Tacoma, Washington 98402
Phone: (253)625-7090

Principal: Dani Ittner
Email: dittner@nexusbec.com

FINISH CONSULTANT

TM Coatings Consulting Inc.
466 3rd Avenue
Fox Island, Washington 98333
Phone: (253)549-1752

Contact: Torin Mowbray
Email: torin@tmcoatingsconsulting.com

TCF
124 North 'I' St. Tacoma, WA
www.tcfarchitecture.com
P.253.572.3993

Client
NORTH BEACH SCHOOL DISTRICT

Project
2025-010
PACIFIC BEACH ELEMENTARY SCHOOL
58 FIRST ST N
PACIFIC BEACH, WA 98571

Issue & Revision Dates

23 JUNE 2026	65% SD
12 AUGUST 2026	95% SD
10 SEPTEMBER 2026	100% SD

100% SCHEMATIC DESIGN
Not for Construction

Drawn By AMS
Checked By SH

Sheet Title
COVER SHEET

G1.01

Sheet Number Of

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SHEET INDEX

GENERAL	
G0.00	GRAPHIC COVER SHEET
G1.01	COVER SHEET
G1.02	SHEET INDEX
G2.01	ABBREVIATIONS, SYMBOLS, & GENERAL NOTES
G2.02	TYPICAL MOUNTING HEIGHTS
G3.01	CODE SITE PLAN
G3.02a	FIRST FLOOR GROSS AREA & OCCUPANCY GROUP CODE PLAN
G3.03a	OCCUPANT LOAD & EXITING CODE PLAN - FIRST FLOOR PLAN
G3.03b	OCCUPANT LOAD & EXITING CODE PLAN - MECHANICAL ATTIC PLAN
G4.01	3D IMAGES & RENDERINGS
G5.01	PROGRAM AREA PLANS
SURVEY	
SV-1	50 & 58 FIRST ST N PACIFIC BEACH, WA 98562 TOPOGRAPHIC SURVEY
SV-2	50 & 58 FIRST ST N PACIFIC BEACH, WA 98562 TOPOGRAPHIC SURVEY
SV-3	50 & 58 FIRST ST N PACIFIC BEACH, WA 98562 TOPOGRAPHIC SURVEY
SV-4	50 & 58 FIRST ST N PACIFIC BEACH, WA 98562 TOPOGRAPHIC SURVEY
SV-5	50 & 58 FIRST ST N PACIFIC BEACH, WA 98562 TOPOGRAPHIC SURVEY
CIVIL	
C0.00	COVER SHEET
C1.00	DEMOLITION AND TESC PLAN
C2.00	SITE IMPROVEMENT PLAN
C3.00	GRADING AND DRAINAGE PLAN
C4.00	WATER AND SEWER PLAN
C5.00	FRONTAGE IMPROVEMENT PLAN
LANDSCAPE	
L1.11	OVERALL SITE PLAN
L3.20	DETAILS
L3.21	DETAILS
ARCHITECTURE	
A1.01	SITE PLAN
A2.01	FLOOR PLAN GENERAL NOTES & LEGEND
A2.02a	FIRST FLOOR REFERENCE PLAN
A2.02b	FIRST FLOOR FINISH PLAN
A2.03	MECHANICAL ATTIC REFERENCE PLAN
A3.01	REFERENCE ROOF PLAN
A4.01	FIRST FLOOR REFERENCE REFLECTED CEILING PLAN
A5.01	EXTERIOR ELEVATIONS
A6.01	BUILDING SECTIONS
A6.02	BUILDING SECTIONS
A6.03	BUILDING SECTIONS
A21.01	FLOOR TYPES, ASSEMBLIES & GENERAL NOTES
A30.01	GENERAL NOTES TO THE WALL TYPES
A30.02	EXTERIOR WALL TYPES
A31.01	INTERIOR WALL TYPES, ASSEMBLIES & GENERAL NOTES
A31.02	INTERIOR WALL TYPES, ASSEMBLIES & GENERAL NOTES
A40.01	ROOF TYPES, ASSEMBLIES & GENERAL NOTES
A70.01	ROOM FINISH SCHEDULE
A80.01	CASEWORK TYPES
FOOD SERVICE	
FS-1	EQUIPMENT PLAN
STRUCTURAL	
S2.01	FOUNDATION AND FIRST FLOOR FRAMING PLAN
S2.02	MEZZANINE FRAMING PLAN
S2.03	ROOF FRAMING PLAN
S3.01	SECTIONS
MECHANICAL	
M0.01	MECHANICAL LEGEND AND SHEET LIST
M0.02	MECHANICAL ABBREVIATIONS AND GENERAL NOTES
M0.03	MECHANICAL SCHEDULES
M0.04	MECHANICAL SCHEDULES
M0.05	MECHANICAL SCHEDULES
M0.06	MECHANICAL SCHEDULES
M0.07	MECHANICAL SCHEDULES
M0.08	MECHANICAL SCHEDULES
M1.00	MECHANICAL SITE PLAN
M1.01	UNDERGROUND PLUMBING PLAN
M2.01	FIRST FLOOR PLUMBING AND HYDRONIC PLAN
M2.02	MECH ATTIC PLUMBING AND HYDRONIC PLAN
M3.01	FIRST FLOOR HVAC PLAN
M3.02	MECH ATTIC HVAC PLAN
M5.01	ENLARGED MECHANICAL ROOM PLAN
M6.01	MECHANICAL ROOF PLAN
M7.01	FIRST FLOOR FIRE SPRINKLER PLAN
M7.02	MECH ATTIC FIRE SPRINKLER PLAN
M8.01	AIR-TO-WATER HEAT PUMP CHILLED WATER PIPING DIAGRAM
M8.02	AIR-TO-WATER HEAT PUMP HEATING WATER PIPING DIAGRAM
M8.03	AIR-TO-WATER HEAT PUMP HEATING/CHILLED WATER PIPING DIAGRAM
M8.04	AIR-TO-WATER HEAT PUMP WATER HEATER PIPING DIAGRAM
ELECTRICAL	
E0.01	ELECTRICAL LEGEND
E1.01	ELECTRICAL SITE PLAN
E2.01	LIGHTING FLOOR PLAN
E2.02	TYPICAL LIGHTING PLAN
E2.03	TYPICAL LIGHTING PLAN
E3.01	POWER FLOOR PLAN
E3.02	TYPICAL POWER LAYOUT
E3.03	TYPICAL POWER LAYOUT
E3.04	MECHANICAL MEZZANINE POWER PLAN
E3.05	ROOF POWER PLAN
TELECOM	
T0.01	TELECOM LEGEND
T1.01	TELECOM SITE PLAN
T2.01	TELECOM FLOOR PLAN
T3.01	SECURITY FLOOR PLAN
T4.01	TELECOM ENLARGED PLANS

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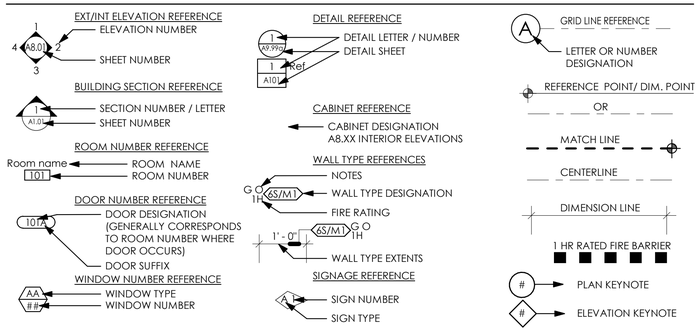
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GENERAL ABBREVIATIONS

NOTE: ALSO SEE GENERAL NOTES AND SCHEDULES FOR ADDITIONAL SPECIFIC ABBREVIATIONS NOT LISTED HERE, SPECIFIC ABBREVIATIONS IN THE SCHEDULES AND GENERAL NOTES SHALL SUPERCEDE THE DEFINITION OF ABBREVIATIONS GIVEN IN THE GENERAL ABBREVIATIONS

@	At
&	And
A	Air Gap
A/C	Air Conditioning
A/V	Audio/Video
AB	Anchor Bolt
ACP	Acoustical Ceiling Panels
ACT	Acoustical Ceiling Tile
ADA	Americans with Disabilities Act
ADD	Additive
ADD'L	Additional
ADJ	Adjustable
ADM	Addendum
ADMIN	Administration or Administrative
AFF	Above Finish Floor
AL	Aluminum
ALT	Alternate
ALUM	Aluminum
ANOD	Anodized
AP	Access Panel
APRX	Approximate
ARCH	Architect (ural)
ASPH	Asphalt
ASST	Assistant
ASSY	Assembly
AUTO	Automatic
AWP	Acoustical Wall Panel
B	Bottom
BD	Board
BEL	Below
BLDG	Building
BLK	Block
BLKG	Blocking and or Backing
BM	Beam
B.O.	Bottom Of
STRUCT	Bottom Of Structure
BOT	Bottom
BPL	Base Plate
BRG	Bearing
BRK	Brick
BS	Back Splash
BTWN	Between
BV	Brick Veneer
CABT	Cabinet
CB	Coved Base
CC	Clear Coating
CFMF	Cold-Formed Metal Framing
CH	Coat Hook
CIP	Cast-In-Place
CIPC	Cast-in-Place Concrete
CJ	Control Joint
C/L	Centerline
CLG	Ceiling
CLR	Clear
CLT	Cross-Laminated Timber
CMU	Concrete Masonry Unit
CO	Cleanout
COJ	Construction Joint
COL	Column
COMP	Composition or Composite
CONC	Concrete
COND	Condition
CONF	Conference
CONST	Construction
CONT	Continuous
CONTR	Contract(or)
COORD	Coordinate
CORR	Corridor
CPL	Compact Plastic Laminate
CPT	Carpet
CT	Ceramic Tile
CTR	Center or Counter
CW	Curtain Wall
CTW	Ceramic Tile Wainscot
DBL	Double
DEG	Degree
DEMO	Demolition
DF	Drinking Fountain
DIAG	Diagonal
DIA	Diameter
DIM	Dimension
DISP	Dispenser
DMPR	Damproofing
DMT	Demountable
DN	Down
DR	Door
DS	Downspout
DW	Dishwasher
DWG	Drawing
DWR	Drawer
(E)	Existing
E	East
EA	Each
EB	Expansion Bolt
EFC	Epoxy Floor Coating
EJ	Expansion Joint
EL	Elevation
ELEC	Electrical
ELEV	Elevation or Elevator
EMER	Emergency
ENCL	Enclosure
EP	Electrical Panel or Epoxy Paint
EPS	Expanded Polystyrene
EQ	Equal
EQP	Equipment
ES	Each Side
EW	Each Way
EXEC	Executive
EXH	Exhaust
EXP	Exposed
EXPN	Expansion
EXT	Exterior
EXTN	Extinguisher
F	Fiberglass
FA	Fire Alarm
FAWP	Fluid-Applied Waterproofing
FAWRB	Fluid-Applied Weather Resistant Barrier
FAP	Fire Alarm Panel
FC	Furring Channel
FCP	Fiber Reinforced Cement Panel
FCL	Fiber Cement Lap Siding
FCV	Fiber Cement V-Groove Siding
FCS	Fiber Cement Shiplap Siding
FC24	Furring Channel
FD	Floor Drain
FE	Fire Extinguisher
FEB	Fire Extinguisher Bracket
FEC	Fire Extinguisher Cabinet
FF	Factory Finish
FFSAM	Foil Faced Self Adhered Membrane
FH	Fire Hydrant
FIN	Finish
FIX	Fixture
FLEX	Flexible
FLR	Floor
FLSH	Flash or Flashing
FND	Feminine Napkin Dispenser
F.O.	Face of
FOB	Face of Brick
FOC	Face of Concrete
FOCL	Face of Column
FOM	Face of Masonry
FOS	Face of Stud
FRL	Fiber Reinforced Laminate
FRLW	Fiber-Reinforced Laminate Wainscot
FRP	Fiberglass Reinforced Panels
FRPW	Fiber-Reinforced Polymer Wainscot
FRT	Fire Retardant Treated
FS	Foreshortened
FSS	Folding Shower Seat
FT	Feet or Foot
FTP	Fire Tape / Mud
FTG	Footing
GA	Gauge
GB	Gypsum Board
GBR	Grab Bar
GALV	Galvanized
GEJ	Gutter Expansion Joint
GFRC	Glass-Fiber-Reinforced Concrete
GL	Glass
H	Height
HBD	Hardboard
HDO	High Density Overlay
HDR	Header
HDW	Hardware
HGT	Height
HM	Hollow Metal
HMP	Horizontal Metal Panel
HORZ	Horizontal
HR	Hour
HSD	Hand Sanitizer Dispensor
HSS	Hollow Structural Section
HT	Height
HTSAM	High Temperature Self Adhered Membrane
HVAC	Heating/Ventilating/Air Conditioning
HWH	Hot Water Heater
ID	Inside Diameter
IF	Insulated Float
IGU	Insulated Glass Unit
IFRM	Intumescent Fire-Resistive Material
INCL	Including
INSUL	Insulation
INT	Interior
INV	Invert
ISO	Isometric
IT	Insulated Tempered
JAN	Janitor
JT	Joint
KIT	Kitchen
KO	Knockout
KS	Knee Space
LAB	Laboratory
LAV	Lavatory
LB	Pound or Lag Bolt
LBL	Label
LBS	Pounds
LF	Linear Foot
LH	Left Hand
LIN	Linoleum
LINS	Linoleum Sheet
LINT	Linoleum Tile
LOC	Location
LP	Light Pole
LT	Light
LTWT	Light Weight
LVR	Louver
LWIC	Lightweight Insulating Concrete
MACH	Machine
MAN	Manual
MAT	Material
MAX	Maximum
MB	Machine Bolt or Marker Board
MBR	Member
MDF	Medium Density Fiberboard
MDFS	Medium Density Fiberboard Stripping
MDFW	Medium Density Fiberboard Wainscot
MDO	Medium Density Overlay
M/E	Mechanical/ Electrical
MEAS	Measure
MECH	Mechanical
MED	Medium
MEMB	Membrane
M/E/P	Mechanical/Electrical/Plumbing
MF	Maple Athletic Flooring
MFR	Manufacturer
MHO	Magnetic Hold Open
MIN	Minimum
MISC	Miscellaneous
MO	Masonry Opening
MOD	Modular
MPS	Metal Panel Siding
MTD	Mounted
MTG	Mounting
MTL	Metal
MULL	Mullion
MW	Microwave Oven
N	North
N/A	Not Applicable
NIC	Not In Contract
NO	Number
NOM	Nominal
NTS	Not to Scale
O/	Over
O/R	Oven/Range
OA	Overall
OC	On Center
OD	Outside Diameter
OFF	Office
OH	Overhead
OPG	Opening
OPH	Opposite Hand
OPP	Opposite
OFCI	Owner Furnished, Contractor Installed
OFOI	Owner Furnished, Owner Installed
OSB	Oriented Strand Board
P	Polished
PAV	Paving
PART	Partition or Partial
PC	Polished Concrete
PCC	Precast Concrete
PEMB	Pre-Engineered Metal Building
PERF	Perforated
PERIM	Perimeter
PJ	Panel Joint
PKG	Parking
PL	Property Line or Panel
PLAM	Plastic Laminate
PR	Pair
PREC	Precast
PREFIN	Pre-finished
PROJ	Project
PS	Purse Shelf
PSF	Pounds/Square Foot
PSI	Pounds/Square Inch
PT	Paint(ed) or Point
PTD	Paper Towel Dispenser
PTRT	Pressure Treated
PW	Plywood
QT	Quarry Tile
QTY	Quantity
R	Radius
RAF	Rubber Athletic Flooring
RB	Rubber Base
RC	Resilient Channel
RCP	Reflected Ceiling Plan
RD	Roof Drain
REF	Refrigerator
REINF	Reinforcing
REL	Relocate
REQ'D	Required
REQ'S	Requirements
RESIL	Resilient
RETG	Retaining
RFG	Roofing
RH	Right Hand or Robe Hook
RECEPT	Reception
RECPT	Receptacle
RECT	Rectangular
REF	Reference
REFL	Reflected
REFR	Refrigerator
RFAM	Reinforced Fluid Applied Membrane
RL	Rain Leader
RM	Room
RO	Rough Opening
ROW	Right-of-Way
RT	Rubber Tile
S	South
SAM	Self Adheared Water Resistant Membrane
SAU	Self-Adheared Underlayment
SB	Splash Block
SC	Solid Core
SCH	Schedule
SCHED	Schedule
SD	Soap Dispenser or Storm Drain
SF	Storefront
SFRM	Sprayed Fire-Resistive Material
SECT	Section
SHT	Sheet
SHTHG	Sheathing
SIM	Similar
SL	Sealed
SM	Sheet Metal
SND	Sanitary Napkin Disposal
SNV	Sanitary Napkin Vendor
SOG	Slab on Grade
SP	Smoke Partition
SPEC'D	Specified
SPECS	Specifications
SQ	Square
SS	Stainless Steel
SSM	Solid Surface Material
SS TWF	Stainless Steel Through-Wall Flashing
SSW	Stainless Steel Wainscot
SSD	See Structural Drawings
SSL	Stain and Seal
ST	Stain
STG	Storage
STL	Steel
STRUCT	Structural
SU	Synthetic Underlayment
SUSP	Suspended
SV	Sheet Vinyl
SW	Shear Wall
SYM	Symmetrical/Symmetry
T	Tempered
TB	Tackboard
TC	Top of Curb
TCS	Tackable Cork Surface
TEL	Telephone
TG	Translucent Glass
T&G	Tongue and Groove
THK	Thick
T.O.	Top of
TPD	Toilet Paper Dispenser
TSCD	Toilet Seat Cover Dispenser
TWF	Through-Wall Flashing
TYP	Typical
UNF	Unfinished
UNO	Unless Noted Otherwise
UR	Urinal
VB	Vapor Barrier
VERT	Vertical
VEST	Vestibule
VIF	Verify in Field
VOL	Volume
VRB	Vented Rubber Base
VWC	Vinyl Wall Covering
VWP	Vinyl Wall Panel
WAF	Wood Athletic Flooring
W	West
WWF	Welded Wire Fabric
W	Width
W/	With
W/D	Washer/Dryer
WB	Wood Base
WC	Water Closet
WD	Wood
WDW	Window
WF	Wide Flange
WGT	Weight
W/O	Without
WOM	Walk-Off Mat
WP	Waterproof
WR	Weather Resistant or Waste Receptacle
WRB	Weather Resistant Barrier
WRBPS	Weather Resistant Barrier Pre-Strip
WS	Wood Stripping
WSS	Wood Staggered Stud
W	Wainscot or Wood Struds
WT	Weight
WWF	Welded Wire Fabric
WVP	Hardwood Veneer Panel
XPS	Extruded Polystyrene Board Insulation

SYMBOLS



GENERAL NOTES

A. GENERAL REQUIREMENTS: IT SHALL BE THE SPECIFIC DUTY AND RESPONSIBILITY OF EACH TRADE AND SUPPLIER TO EXAMINE ALL DRAWINGS, DETAILS AND SPECIFICATIONS, AND TO PROVIDE AND FURNISH PROPER EQUIPMENT, HARDWARE, FIXTURES, MATERIALS, LABOR, ETC., PERTAINING TO THEIR PART OF THE WORK SHOWN OR LISTED IN ANY PART OF THE CONTRACT DOCUMENTS. SCHEDULES ARE FOR THE CONVENIENCE OF THE CONTRACTOR TO ASSIST THEM IN UNDERSTANDING AND CONSTRUCTING THE PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT ALL ITEMS IN THE SCHEDULES REFLECT THE PLANS AND DETAILS. ANY OMISSIONS OR CONTRADICTIONS IN THESE DOCUMENTS SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE CONTRACTOR'S FINAL BID. THE CONTRACTOR'S FINAL BID SHALL BE CONSIDERED TO INCLUDE ALL ITEMS SHOWN AND/OR SPECIFIED OR SCHEDULED FOR A COMPLETE PROJECT.

B. CONFLICTING INFORMATION: IN THE EVENT OF CONFLICTING INFORMATION WITHIN THE DOCUMENTS, IMMEDIATELY CONTACT THE ARCHITECT FOR CLARIFICATION. PROCEEDING WITHOUT SUCH CLARIFICATION IS AT THE CONTRACTORS RISK AND COST.

C. SCALING DRAWINGS: DO NOT SCALE DRAWINGS; CONTACT ARCHITECT FOR ANY MISSING OR INACCURATE DIMENSIONS PRIOR TO PROCEEDING WITH THE WORK.

D. FLOOR TYPES: SEE BUILDING AND WALL SECTIONS FOR FLOOR TYPE CALLOUTS, SEE A21 SERIES SHEETS FOR FLOOR TYPE DESCRIPTIONS.

E. WALL TYPES: SEE FLOOR PLANS, BUILDING AND WALL SECTIONS FOR WALL TYPE CALLOUTS. SEE A30 SERIES SHEETS FOR EXTERIOR WALL TYPE DESCRIPTIONS AND A31 SERIES SHEETS FOR INTERIOR WALL TYPE DESCRIPTIONS.

F. CEILING TYPES: SEE REFLECTED CEILING PLANS FOR CEILING TYPE CALLOUTS AND FOR CEILING TYPE DESCRIPTIONS.

G. ROOF TYPES: SEE BUILDING AND WALL SECTIONS AND ROOF PLAN FOR ROOF TYPE CALLOUTS. SEE A40 SERIES SHEETS FOR ROOF TYPE DESCRIPTIONS.

H. FINISH AND COLOR SCHEDULES: SEE A70 & A71 SERIES SHEETS.

I. SIGNAGE DETAILS: SEE A74 SERIES SHEETS.

J. HAZARDOUS MATERIALS:
1. ALL PRODUCTS AND MATERIALS USED IN THIS PROJECT MUST BE CERTIFIED AS BEING "ASBESTOS FREE," NO EXCEPTIONS.
2. NO PRODUCTS CONTAINING PCB OR OTHER HAZARDOUS MATERIALS SHALL BE USED ON THIS PROJECT, NO EXCEPTIONS.
3. NO PRODUCTS CONTAINING LEAD SHALL BE USED ON THIS PROJECT WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND OWNER.

K. DOWNSPOUTS: THE GENERAL CONTRACTOR SHALL COORDINATE ALL DOWNSPOUT LOCATIONS AND CONNECTIONS TO TIGHTLINES AND STORM DRAINAGE SYSTEM(S) (ALSO SEE NOTE ABOVE). THE ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS ILLUSTRATE AND DIMENSION DOWNSPOUT LOCATIONS AND SHALL TAKE PRECEDENCE. ALSO SEE CIVIL DRAWINGS AND SPECIFICATIONS. COORDINATE ALL REQUIRED FOUNDATION BLOCK-OUTS WITH STRUCTURAL AND CIVIL DRAWINGS.

L. FINISH LUMBER SIZES: THE LUMBER SIZES SHOWN FOR WOOD BLOCKING, BACKING, ETC., WILL NOT BE ACTUAL SIZES BUT NOMINAL SIZES. FINISHED TRIM CALLOUTS WILL BE A "NET" DRESSED SIZE, TYP. UNLESS NOTES OTHERWISE.

M. INSULATION SYSTEMS: THERMAL INSULATION IS INTENDED TO PROVIDE A CONTINUOUS INSULATED BUILDING ENVELOPE, AND SHALL BE INSTALLED AS SUCH. SOUND INSULATION IS INTENDED TO PROVIDE A CONTINUOUS ROOM ENVELOPE, AND SHALL BE INSTALLED AS SUCH. IN BOTH CASES, FILL ALL VOIDS IN ASSEMBLIES WITH INSULATION TO PROVIDE A COMPLETE, THOROUGHLY INSULATED ASSEMBLY.

N. VAPOR BARRIER: CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF THE VAPOR BARRIER MEMBRANE AT THE FLOOR SLAB. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO VAPOR BARRIERS, OR REPLACE THEM PRIOR TO COVER, AS APPROVED. CONTRACTOR SHALL EXERCISE CARE DURING THE INSTALLATION OF THE VAPOR BARRIER TO PROVIDE SPECIFIED OVERLAP BETWEEN INDIVIDUAL SHEETS AND SHALL TAPE ALL JOINTS. SHOULD THE MATERIAL BE TORN OR PUNCTURED, PATCH BY ADDITION OF MATERIAL OVER AFFECTED AREA WITH AT LEAST 12" COVERAGE BEYOND DAMAGE, AND TAPE ALL JOINTS. ALSO SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

O. AIR BARRIER: A CONTINUOUS AIR BARRIER SHALL BE MAINTAINED AT THE BUILDING'S EXTERIOR MEMBRANE LAYER, AND OR FINISH CEILING WHERE INDICATED. SEE GENERAL NOTES TO THE WALL, ROOF, AND CEILING TYPES AND THE REFLECTED CEILING PLAN GENERAL NOTES FOR MORE INFORMATION. ALL JOINTS, PENETRATIONS, RECESSES, AND CONNECTIONS THROUGH THE AIR BARRIER SHALL BE SEALED AND BE AIR TIGHT IN CONSTRUCTION.

P. WALL OPENINGS: COORDINATE WALL OPENING REQUIREMENTS FOR MECHANICAL DUCTS, PIPES, ETC. AND FOR ELECTRICAL CONDUIT WITH MECHANICAL AND ELECTRICAL DRAWINGS AND PROVIDE AS NEEDED. OPENINGS SHALL BE SIZED ONLY AS NEEDED FOR THESE PENETRATIONS AND SHALL BE SEALED AT EDGES FOR SOUND CONTROL AND FIRE-STOPPED PER SPECIFICATIONS AND BUILDING CODE REQUIREMENTS WHERE REQUIRED, TYP.

Q. FIRE SPRINKLER SYSTEM: SPRINKLER PIPES, DRAIN VALVES AND OTHER COMPONENTS OF THE SYSTEM (EXCEPT HEAD) SHALL NOT BE EXPOSED TO VIEW EXCEPT IN MECHANICAL ROOMS, ELECTRICAL ROOMS, CUSTODIAN ROOMS, ROOMS WITH EXPOSED STRUCTURE AND ATTICS, UNLESS NOTED OTHERWISE. PROVIDE ACCESS PANELS/DOORS FOR FIRE SPRINKLER SYSTEM ACCESS WHERE SPRINKLER HEADS, DRAIN VALVES, INSPECTORS, TESTS, ETC. ARE INACCESSIBLE WITHOUT DEMOLITION OF BUILDING ELEMENTS. PANELS SHALL BE OF A FUNCTIONAL SIZE FOR APPLICATION, MEET ALL CODE REQUIREMENTS AND GENERAL CONTRACTOR SHALL COORDINATE WITH THE FIRE SPRINKLER SYSTEM DESIGNER (BIDDER / DESIGN) TO ASSURE ALL SUCH PANELS AND INSTALLATION COSTS ARE INCLUDED IN THE BID. ALL PANELS EXPOSED TO VIEW FROM OCCUPIED SPACES SHALL BE OF A FLUSH DESIGN, PAINTED TO MATCH ADJACENT SURFACES AND FIRE RATED WHERE REQUIRED BY CODE. FIRE SPRINKLER SUB-CONTRACTOR SHALL PROVIDE DRAWINGS CLEARLY INDICATING PROPOSED LOCATIONS OF EXPOSED PIPES, SPRINKLER HEADS AND ACCESS PANELS FOR THE ARCHITECT'S REVIEW AND APPROVAL. SHOULD THE ARCHITECT NOT APPROVE OF PROPOSED LOCATIONS, CONTRACTOR AND SPRINKLER SYSTEM DESIGNER SHALL ENDEAVOR TO WORK WITH THE ARCHITECT TO FIND ACCEPTABLE LOCATIONS. SUCH CHANGES SHALL BE INCLUDED IN THE BID COSTS.

R. DEVICE COORDINATION: ARCHITECTURAL DRAWINGS DO NOT ILLUSTRATE ALL MECHANICAL AND ELECTRICAL ITEMS AND DEVICES. ITEMS AND DEVICES WHICH ARE SHOWN ARE FOR COORDINATION AND LOCATING PURPOSES. SEE MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. LACK OF ILLUSTRATION OF DEVICES AND/OR BUILDING ELEMENTS ON ARCHITECTURAL DRAWINGS DOES NOT EXCLUDE SUCH WORK FROM BID. NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS FOR CLARIFICATION. DO NOT PROCEED WITH WORK WITHOUT CLARIFICATION.

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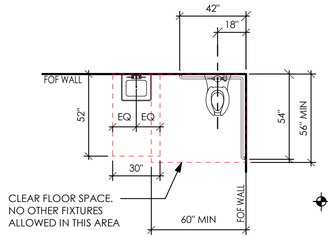
ABBREVIATIONS, SYMBOLS, & GENERAL NOTES

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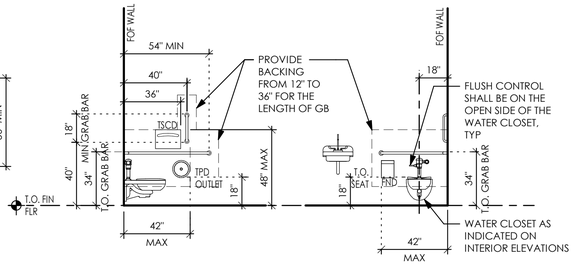
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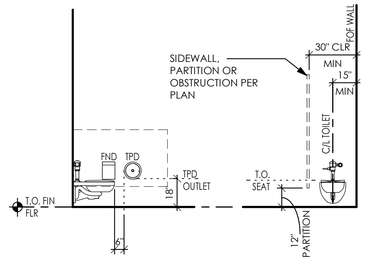
ADA PLUMBING FIXTURE CLEARANCES

ICC A117.1-2017 604.3.1

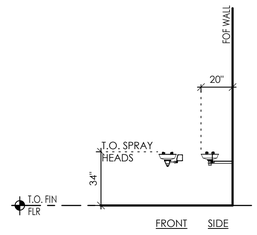


ADA WATER CLOSET

ICC A117.1-2017 604.3.1



STANDARD WATER CLOSET



EMERGENCY EYE WASH AND SHOWER

TYPICAL MOUNTING HEIGHTS AND LOCATIONS

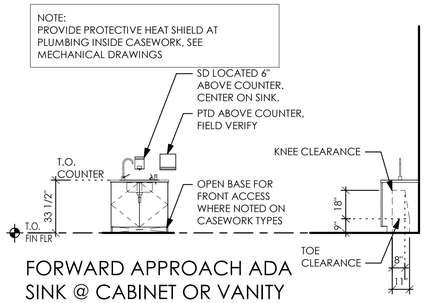
A. ALL FIXTURES AND ACCESSORIES INDICATED TO BE "ADA" COMPLIANT OR "ACCESSIBLE" SHALL FULLY COMPLY WITH ACCESSIBILITY, ADA OR DISABLED CODE REQUIREMENTS OF THE LOCAL JURISDICTION, ANSI 117.1-2017 AND THE ADA (AMERICANS WITH DISABILITIES ACT). ANY CONFLICTS IN THESE DRAWINGS OR BETWEEN CODES AND THE ADA SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IMMEDIATELY FOR CLARIFICATION, PRIOR TO PROCEEDING WITH INSTALLATION.

B. SEE THE INTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF SPECIFIC ITEMS. MOUNTING HEIGHTS AND ORIENTATION MAY VARY FROM STANDARD MOUNTING HEIGHTS SHOWN HEREIN. MOUNTING HEIGHTS SHOWN ON THE INTERIOR ELEVATIONS SHALL SUPERSEDE THOSE ON THE TYPICAL MOUNTING HEIGHTS SHEET. **DIMENSIONS GIVEN FOR TYPICAL MOUNTING HEIGHTS AND LOCATIONS ARE TO FINISH SURFACES.** CONTRACTOR SHALL CAREFULLY COORDINATE ROUGH-IN LOCATIONS TO ACCOUNT FOR FINISH AND WALLBOARD THICKNESS.

C. GENERAL CONTRACTOR SHALL COORDINATE WITH ALL SUBCONTRACTORS TO ASSURE ALL FIXTURES AND ACCESSORIES ARE PLACED. IT IS THE INTENT OF THESE DOCUMENTS TO HAVE ALL FIXTURES AND ACCESSORIES PLACED PER DIMENSIONS INDICATED. FLOOR SLOPES AND FINISHES SHALL BE TAKEN INTO ACCOUNT WHEN LOCATING FIXTURES AND ACCESSORIES.

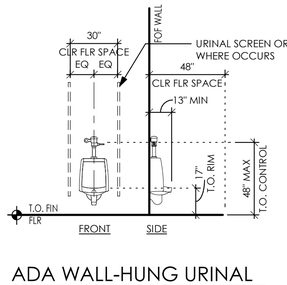
D. GENERAL CONTRACTOR TO PROVIDE BACKING FOR ALL WALL AND CEILING MOUNTED ITEMS INCLUDING NIC, OFOI AND FUTURE ITEMS FOR ALL WALLS AS A PART OF THE BASE BID. INSTALL BACKING PER MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED BY THE CONTRACT DOCUMENTS. SOLICIT INFORMATION FROM OWNER OR ARCHITECT WHERE NEEDED. SEE SPECIFICATIONS AND STRUCTURAL DRAWINGS FOR MORE INFORMATION. CONFIRM MODEL, SIZE AND CONFIGURATION OF OWNER-FURNISHED, CONTRACTOR-INSTALLED TOILET ACCESSORIES BEFORE INSTALLATION OF BACKING IN WALL.

E. NIC, OFOI AND FUTURE WORK: SEE THE FLOOR PLANS, INTERIOR ELEVATIONS AND SPECIFICATIONS FOR INDICATION OF ITEMS NIC (NOT IN CONTRACT), OFCI (OWNER FURNISHED, CONTRACTOR INSTALLED), OFOI (OWNER FURNISHED, OWNER INSTALLED), FUTURE, ETC.



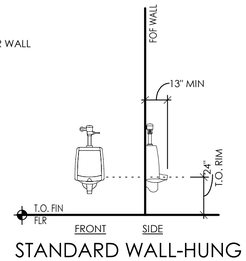
FORWARD APPROACH ADA SINK @ CABINET OR VANITY

ICC A117.1-2017 308.3.2

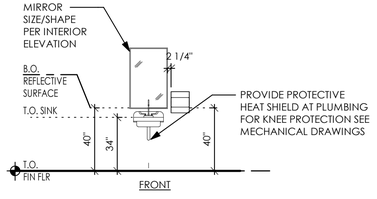


ADA WALL-HUNG URINAL

ICC A117.1-2017 605

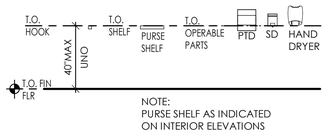


STANDARD WALL-HUNG URINAL



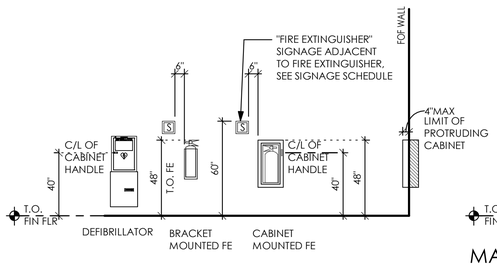
ADA LAVATORY & MIRROR

ICC A117.1-2017 606 AND 306.3



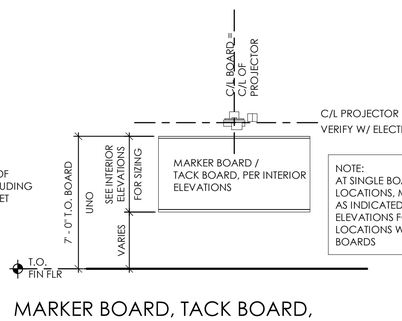
ACCESSORIES @ ADA LAVATORY

ICC A117.1-2017 603.4 AND TABLE 603.6

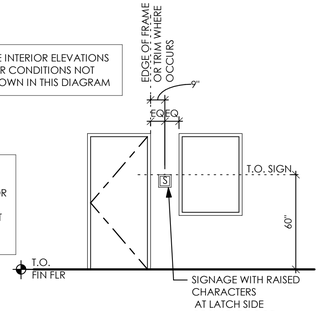


FIRE EXTINGUISHER AND DEFIBRILLATOR

ICC A117.1-2017 307.2 AND NFPA

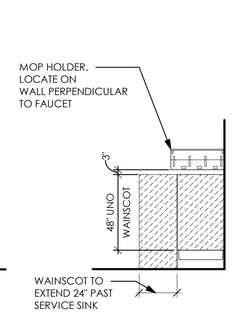


MARKER BOARD, TACK BOARD, AND PROJECTION SCREENS



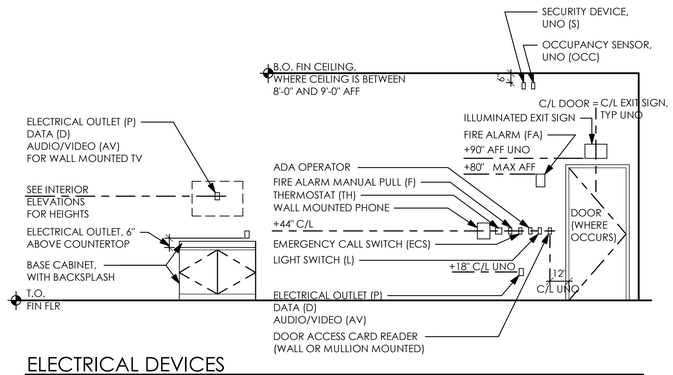
ROOM SIGNAGE

ICC A117.1-2017 703.3.10

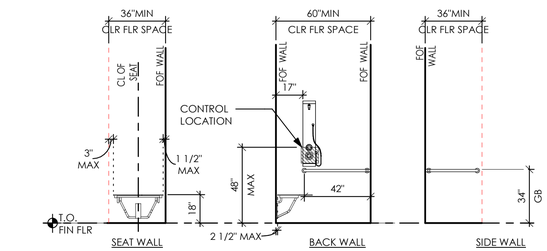


MOP SINK

IBC 1210.2.2

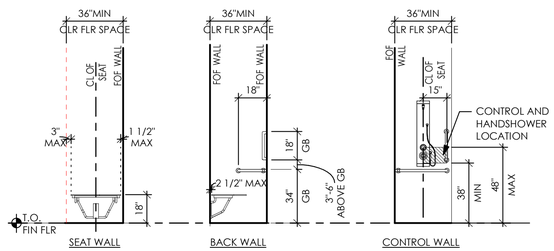


ELECTRICAL DEVICES



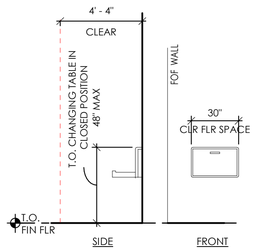
STANDARD ROLL-IN-TYPE SHOWER

ICC A117.1-2017 608.4.2

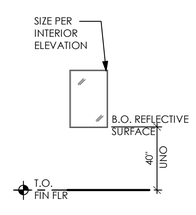


TRANSFER-TYPE SHOWER

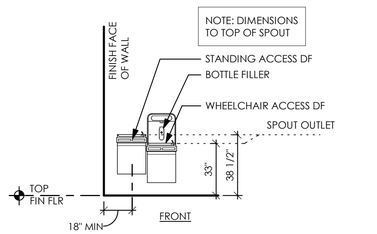
ICC A117.1-2017 608.4.1



DIAPER CHANGING TABLE



MIRROR



STANDARD DRINKING FOUNTAIN & ADA DRINKING FOUNTAIN

ICC A117.1-2017 602

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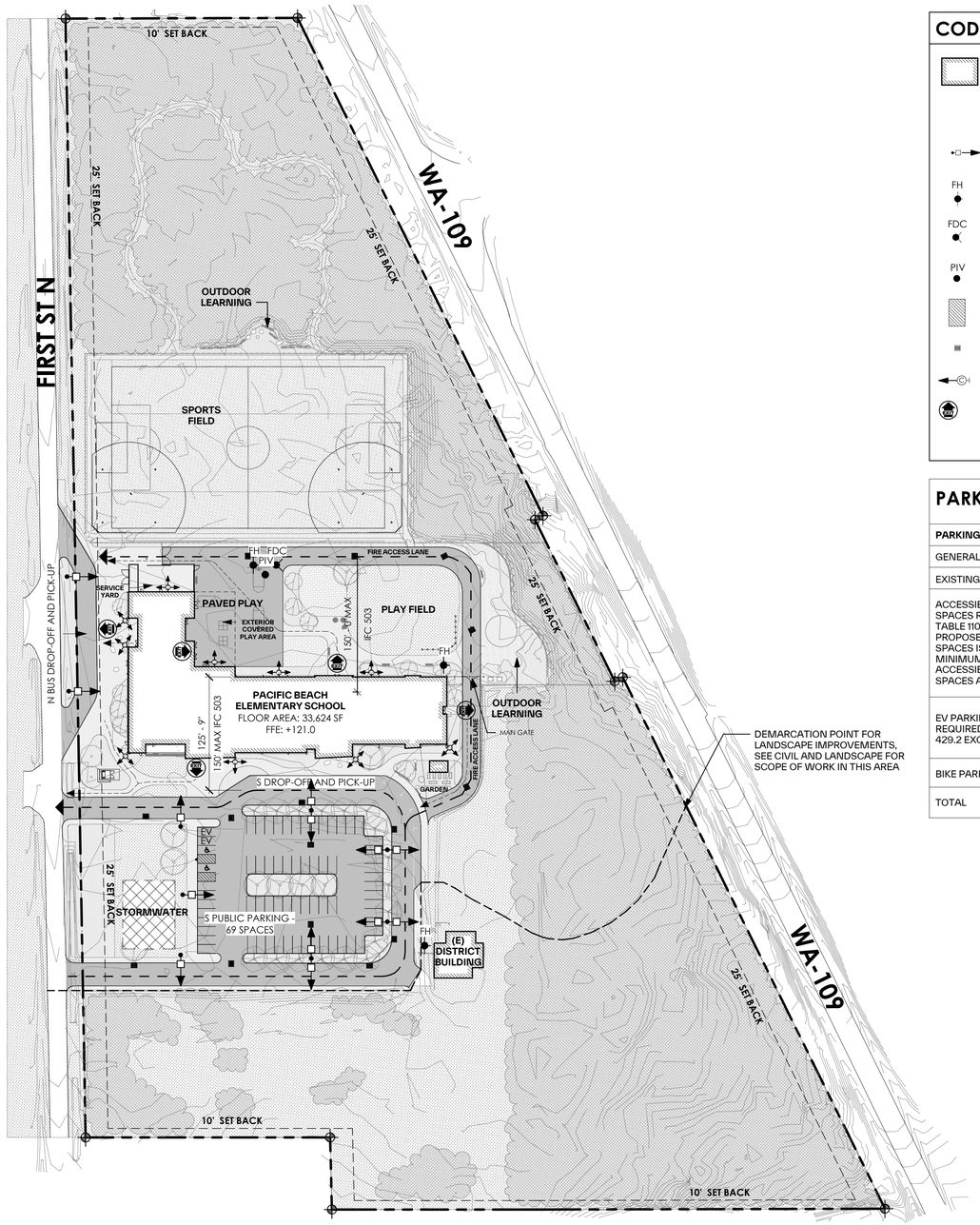
Sheet Title
TYPICAL MOUNTING HEIGHTS

G2.02

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GENERAL NOTES

ALL DIMENSIONS SHOWN ON THIS CODE PLAN ARE FOR THE PURPOSE OF DEMONSTRATING CODE COMPLIANCE. THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL SITE PLAN AND CIVIL DRAWINGS FOR THE ACTUAL CONSTRUCTION DIMENSIONS.

CODE SITE PLAN LEGEND

- BUILDING FOOTPRINT, SEE ARCHITECTURE PLANS
- PLANTINGS, SEE LANDSCAPE
- PAVING, SEE CIVIL
- POLE LIGHTS, SEE ELECTRICAL DRAWINGS
- PROPERTY LINE
- FH — FIRE HYDRANT, SEE CIVIL DRAWINGS
- 6'-0" HIGH EXISTING GALVANIZED CHAINLINK FENCING TO REMAIN
- FDC — FIRE DEPARTMENT CONNECTION, SEE CIVIL DRAWINGS
- BUILDING SETBACK CONCRETE MOW / POUR STRIP - SEE LANDSCAPE DRAWINGS
- PIV — POST INDICATOR VALVE, SEE CIVIL DRAWINGS
- DEMARCATION POINT
- BARRIER FREE PARKING ACCESS AISLE, SEE CIVIL FOR DIMENSIONS
- BARRIER FREE / VAN ACCESSIBLE / CARPOOL PARKING - SEE CIVIL DRAWINGS FOR SIGNAGE
- TYPE 1 CATCH BASIN, SEE CIVIL DRAWINGS
- ACCESSIBLE ROUTE TO SAFE DISPERSAL LOCATION AND PUBLIC RIGHT OF WAY
- SECURITY CAMERAS, SEE ELECTRICAL DRAWINGS
- BUILDING EXITS
- EMERGENCY VEHICLE ROUTE, SEE CIVIL DRAWINGS FOR FIRE LANE STRIPING

PARKING CALCULATIONS

PARKING	MIN. REQ.	PROVIDED	FOOTNOTE:
GENERAL	1 PER STAFF	67	
EXISTING PARKING	-	-	
ACCESSIBLE PARKING SPACES REQUIRED PER IBC TABLE 1106.2; IF TOTAL PROPOSED PARKING SPACES IS 71, THEN A MINIMUM OF 3 ACCESSIBLE PARKING SPACES ARE REQUIRED.	3	3	INCLUDED IN TOTAL PROPOSED PARKING AMOUNT 1 EVR ARE ACCESSIBLE
EV PARKING SPACES REQUIRED PER WAC 429.2 EXCEPTION 2.2	1 PER 200	1 EVR	INCLUDED IN TOTAL PARKING AMOUNT
BIKE PARKING	-	-	
TOTAL		71	

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0 40' 80' 160'

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Sheet Title
CODE SITE PLAN

G3.01

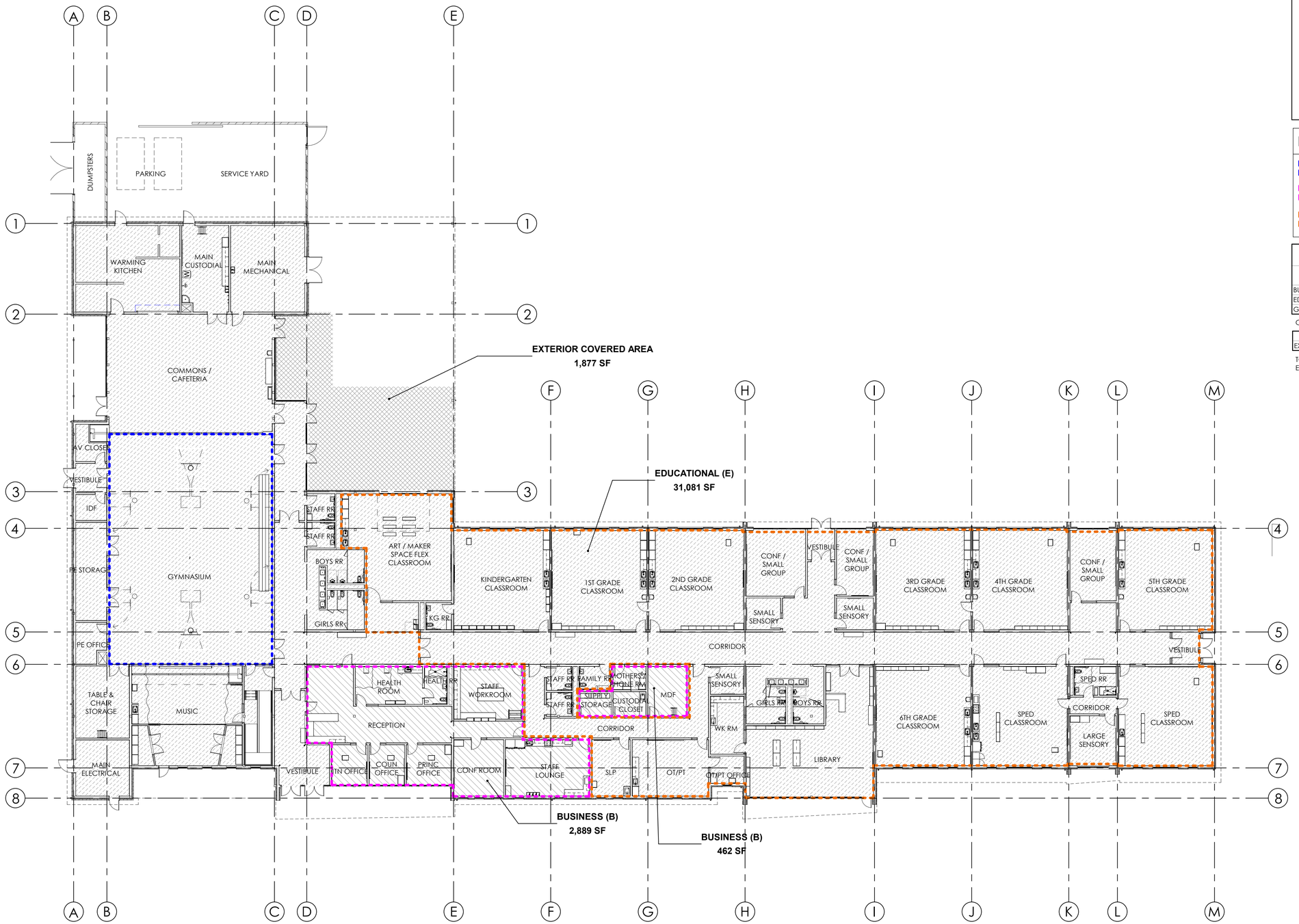
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1 CODE SITE PLAN
1" = 80'-0"

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FIRST FLOOR GROSS AREA AND OCCUPANCY GROUP CODE PLAN

1 — 1/16" = 1'-0"

LEGEND

CODE BUILDING

- EDUCATIONAL GROUP - E
- BUSINESS GROUP - B
- EXTERIOR COVERED AREA
- NON-CONCURRENT EXTERIOR COVERED AREA

BLDG AREA LEGEND

GYM	3,578 SF
BUSINESS	3,351 SF
CLASSROOM WING	17,823 SF

BUILDING GROSS AREA (OSPI)

BUSINESS (B)	3351.33 SF
EDUCATIONAL (E)	31081.18 SF
GRAND TOTAL (OSPI)	34432.51 SF
OSPI TARGET	34,407 SF
EXTERIOR COVERED AREA	1876.97 SF
TOTAL GROSS BUILDING AREA W/ EXTERIOR COVERED AREAS	36309.48 SF

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0 8' 16' 32'

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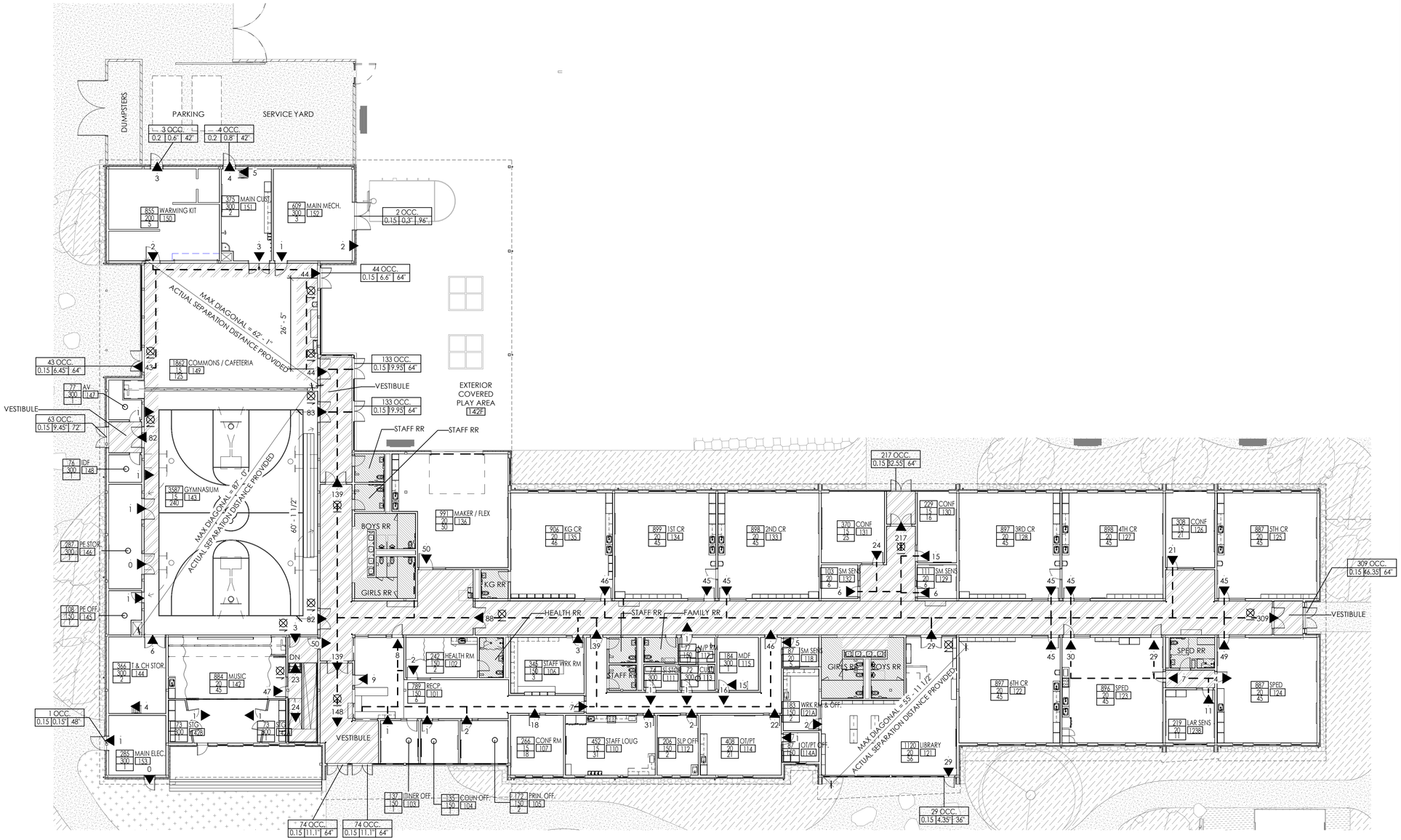
Sheet Title
FIRST FLOOR GROSS AREA & OCCUPANCY GROUP CODE PLAN

Sheet Number G3.02a Of

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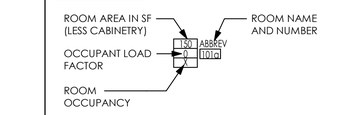


SHEET NOTES

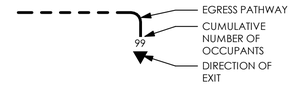
A. FOR EXIT SIGN LOCATIONS, AND TYPES REFER TO ELECTRICAL PLANS
B. FOR FIRE EXTINGUISHER LOCATIONS AND TYPES REFER TO THE FIRE RESISTANCE CODE PLANS
C. FOR PANIC HARDWARE LOCATIONS SEE HARDWARE SCHEDULE IN THE SPECIFICATIONS
D. ALL DOORS IN PATH OF EGRESS ARE REQUIRED TO SWING IN THE DIRECTION OF TRAVEL IF OCC LOAD IS 50 OR MORE

LEGEND

OCCUPANCY TAG



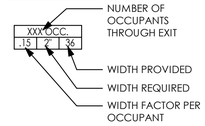
EGRESS PATHWAY & EXIT LOCATION TAG



MEANS OF EGRESS COMPONENT

NON-CONCURRENT OCCUPANT LOAD

EGRESS EXIT WIDTH



EXIT SEPARATION

X' - X" MAX DIAGONAL FOR 2ND EXIT REQUIREMENT AND ASSOCIATED SEPARATION LENGTH DETERMINATION

TRAVEL DISTANCE

DASHED LINE REPRESENTS LONGEST TRAVEL DISTANCE TO AN EXIT PER FLOOR PER BUILDING

ILLUMINATED EXIT SIGNAGE LOCATION WITH BATTERY BACKUP, ARROW INDICATES DIRECTION TO EGRESS

1 FIRST FLOOR OCCUPANT LOAD & EXITING PLAN

1/16" = 1'-0"

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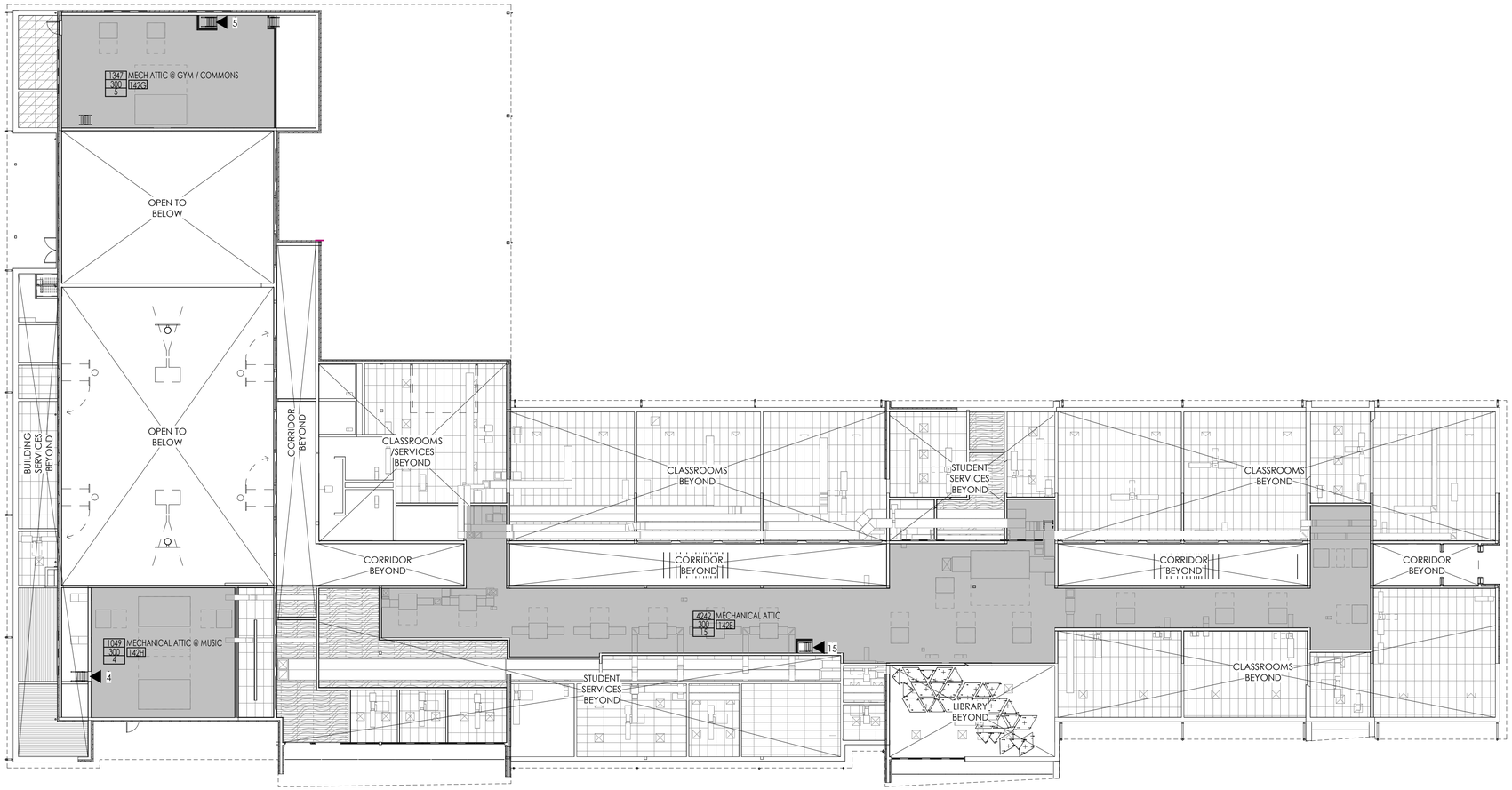
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Sheet Title
OCCUPANT LOAD & EXITING CODE PLAN - FIRST FLOOR PLAN

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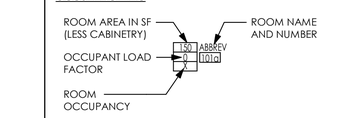


SHEET NOTES

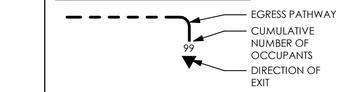
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LEGEND

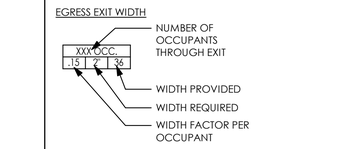
OCCUPANCY TAG



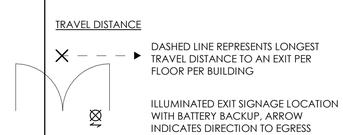
EGRESS PATHWAY & EXIT LOCATION TAG



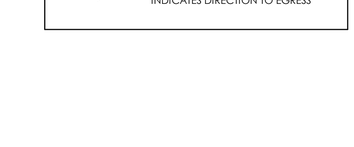
EGRESS EXIT WIDTH



EXIT SEPARATION



TRAVEL DISTANCE



1 MECH ATTIC OCCUPANT LOAD & EXITING PLAN

1/16" = 1'-0"

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Sheet Title
OCCUPANT LOAD & EXITING CODE PLAN - MECHANICAL ATTIC PLAN

Sheet Number G3.03b
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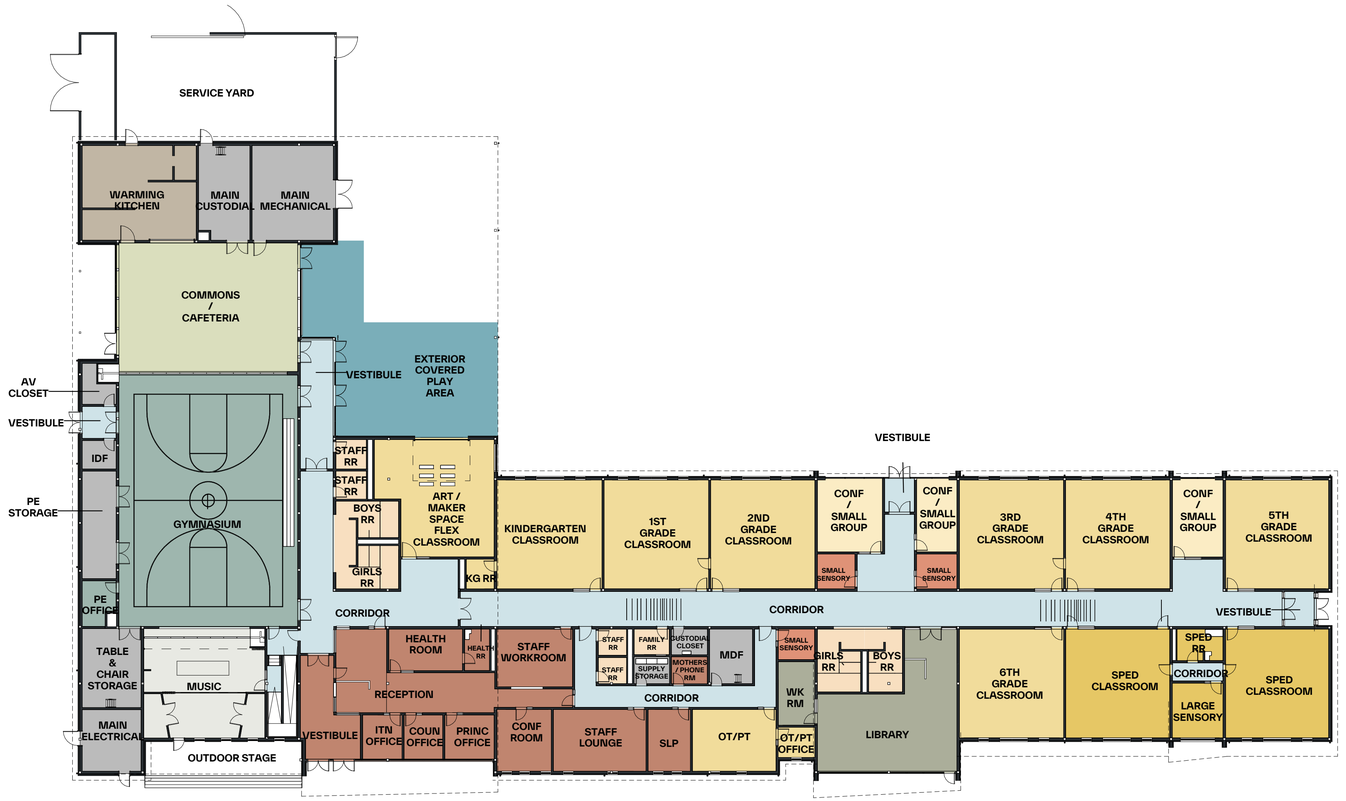
3D IMAGES &
RENDERINGS

G4.01

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1 FIRST FLOOR PROGRAM AREA PLAN

3/64" = 1'-0"

PLAN NORTH

RM - SD AREA SUMMARY

AREA TYPE	NAME	ACTUAL AREA	PROGRAM AREA	DIFFERENCE
ADMINISTRATION	VESTIBULE	358 SF	250 SF	107.66 SF
ADMINISTRATION	RECEPTION	789 SF	390 SF	399.10 SF
ADMINISTRATION	SLP	206 SF	150 SF	56.32 SF
ADMINISTRATION	HEALTH ROOM	242 SF	260 SF	-18.28 SF
ADMINISTRATION	HEALTH RR	82 SF	80 SF	1.55 SF
ADMINISTRATION	STAFF WORKROOM	345 SF	300 SF	44.93 SF
ADMINISTRATION	STAFF LOUNGE	452 SF	450 SF	2.02 SF
ADMINISTRATION	CONF ROOM	266 SF	200 SF	65.58 SF
ADMINISTRATION	PRINC OFFICE	172 SF	140 SF	32.01 SF
ADMINISTRATION	COUN OFFICE	135 SF	120 SF	15.18 SF
ADMINISTRATION	ITN OFFICE	137 SF	120 SF	17.11 SF
ADMINISTRATION	MOTHERS / PHONE RM	77 SF	80 SF	-3.25 SF
ADMINISTRATION		3,260 SF	2,540 SF	
CIRCULATION	VESTIBULE	334 SF	250 SF	84.19 SF
CIRCULATION	VESTIBULE	82 SF	250 SF	-168.01 SF
CIRCULATION	VESTIBULE	75 SF	250 SF	-175.27 SF
CIRCULATION	CORRIDOR	2,664 SF	0 SF	2663.95 SF
CIRCULATION	VESTIBULE	85 SF	250 SF	-164.99 SF
CIRCULATION	CORRIDOR	970 SF	0 SF	970.10 SF
CIRCULATION	CORRIDOR	533 SF	0 SF	532.61 SF
CIRCULATION	CORRIDOR	72 SF	0 SF	72.16 SF
CIRCULATION	RAMP	253 SF		
CIRCULATION		5,068 SF	1,000 SF	
CLASSROOMS	OT/PT	408 SF	350 SF	57.94 SF
CLASSROOMS	OT/PT OFFICE	87 SF	90 SF	-3.06 SF
CLASSROOMS	ART / MAKER SPACE FLEX CLASSROOM	991 SF	900 SF	90.73 SF
CLASSROOMS	KINDERGARTEN CLASSROOM	906 SF	900 SF	6.01 SF
CLASSROOMS	4TH GRADE CLASSROOM	898 SF	875 SF	22.74 SF
CLASSROOMS	5TH GRADE CLASSROOM	887 SF	875 SF	11.90 SF
CLASSROOMS	6TH GRADE CLASSROOM	897 SF	875 SF	22.40 SF
CLASSROOMS	3RD GRADE CLASSROOM	897 SF	875 SF	21.77 SF
CLASSROOMS	1ST GRADE CLASSROOM	899 SF	875 SF	24.33 SF
CLASSROOMS	2ND GRADE CLASSROOM	898 SF	875 SF	23.04 SF
CLASSROOMS	KG RR	65 SF	70 SF	-5.06 SF
CLASSROOMS		7,833 SF	7,560 SF	
CONFERENCE / SMALL GROUP	CONF / SMALL GROUP	308 SF	140 SF	167.55 SF
CONFERENCE / SMALL GROUP	CONF / SMALL GROUP	370 SF	140 SF	229.62 SF
CONFERENCE / SMALL GROUP	CONF / SMALL GROUP	229 SF	140 SF	89.36 SF
CONFERENCE / SMALL GROUP		907 SF	420 SF	

RM - SD AREA SUMMARY

AREA TYPE	NAME	ACTUAL AREA	PROGRAM AREA	DIFFERENCE
CUSTODIAL, DATA, STORAGE	MAIN CUSTODIAL	375 SF	300 SF	74.70 SF
CUSTODIAL, DATA, STORAGE	MDF	184 SF	190 SF	-6.09 SF
CUSTODIAL, DATA, STORAGE	MAIN ELECTRICAL	285 SF	280 SF	5.32 SF
CUSTODIAL, DATA, STORAGE	CUSTODIAL CLOSET	72 SF	50 SF	22.47 SF
CUSTODIAL, DATA, STORAGE	MAIN MECHANICAL	609 SF	600 SF	8.97 SF
CUSTODIAL, DATA, STORAGE	TABLE & CHAIR STORAGE	366 SF	300 SF	66.32 SF
CUSTODIAL, DATA, STORAGE	PE STORAGE	287 SF	200 SF	87.28 SF
CUSTODIAL, DATA, STORAGE	AV CLOSET	77 SF	40 SF	37.02 SF
CUSTODIAL, DATA, STORAGE	SUPPLY STORAGE	74 SF		
CUSTODIAL, DATA, STORAGE	IDF	76 SF		
CUSTODIAL, DATA, STORAGE		2,406 SF	1,960 SF	
EXTERIOR COVERED PLAY AREA	EXTERIOR COVERED PLAY AREA	1,869 SF		
EXTERIOR COVERED PLAY AREA		1,869 SF	0 SF	
GYMNASIUM	GYMNASIUM	3,587 SF	3,500 SF	87.07 SF
GYMNASIUM	PE OFFICE	108 SF	100 SF	8.11 SF
GYMNASIUM		3,695 SF	3,600 SF	
KITCHEN	WARMING KITCHEN	855 SF	850 SF	5.16 SF
KITCHEN		855 SF	850 SF	
LIBRARY	WK RM	183 SF	150 SF	32.63 SF
LIBRARY	LIBRARY	1,120 SF	1,200 SF	-80.36 SF
LIBRARY		1,302 SF	1,350 SF	
MULTI PURPOSE / COMMONS	COMMONS / CAFETERIA	1,862 SF	1,800 SF	62.46 SF
MULTI PURPOSE / COMMONS		1,862 SF	1,800 SF	
MUSIC	MUSIC	884 SF	900 SF	-15.71 SF
MUSIC	STG	73 SF		
MUSIC	STG	73 SF		
MUSIC		1,030 SF	900 SF	

RM - SD AREA SUMMARY

AREA TYPE	NAME	ACTUAL AREA	PROGRAM AREA	DIFFERENCE
RESTROOMS	BOYS RR	173 SF	200 SF	-26.76 SF
RESTROOMS	GIRLS RR	220 SF	200 SF	19.75 SF
RESTROOMS	STAFF RR	58 SF	70 SF	-12.33 SF
RESTROOMS	STAFF RR	58 SF	70 SF	-12.33 SF
RESTROOMS	GIRLS RR	220 SF	200 SF	20.20 SF
RESTROOMS	BOYS RR	185 SF	200 SF	-14.66 SF
RESTROOMS	STAFF RR	70 SF	70 SF	0.46 SF
RESTROOMS	STAFF RR	68 SF	70 SF	-2.44 SF
RESTROOMS	FAMILY RR	70 SF	100 SF	-29.76 SF
RESTROOMS		1,122 SF	1,180 SF	
SMALL SENSORY	SMALL SENSORY	111 SF	60 SF	50.74 SF
SMALL SENSORY	SMALL SENSORY	103 SF	60 SF	43.00 SF
SMALL SENSORY	SMALL SENSORY	87 SF	60 SF	27.05 SF
SMALL SENSORY		301 SF	180 SF	
SPED CLASSROOMS	SPED CLASSROOM	887 SF	850 SF	36.56 SF
SPED CLASSROOMS	SPED RR	112 SF	100 SF	12.16 SF
SPED CLASSROOMS	SPED CLASSROOM	896 SF	850 SF	45.97 SF
SPED CLASSROOMS	LARGE SENSORY	219 SF	200 SF	19.49 SF
SPED CLASSROOMS		2,114 SF	2,000 SF	
TOTAL NET AREA		33,624 SF	25,340 SF	

TCF
124 North 'I' St. Tacoma, WA
www.tcfarchitecture.com
P.253.572.3993

Client
NORTH BEACH SCHOOL DISTRICT

Project
2025-010
PACIFIC BEACH ELEMENTARY SCHOOL
58 FIRST ST N
PACIFIC BEACH, WA 98571

Issue & Revision Dates

23 JUNE 2026	65% SD
12 AUGUST 2026	95% SD
10 SEPTEMBER 2026	100% SD

100% SCHEMATIC DESIGN
Not for Construction

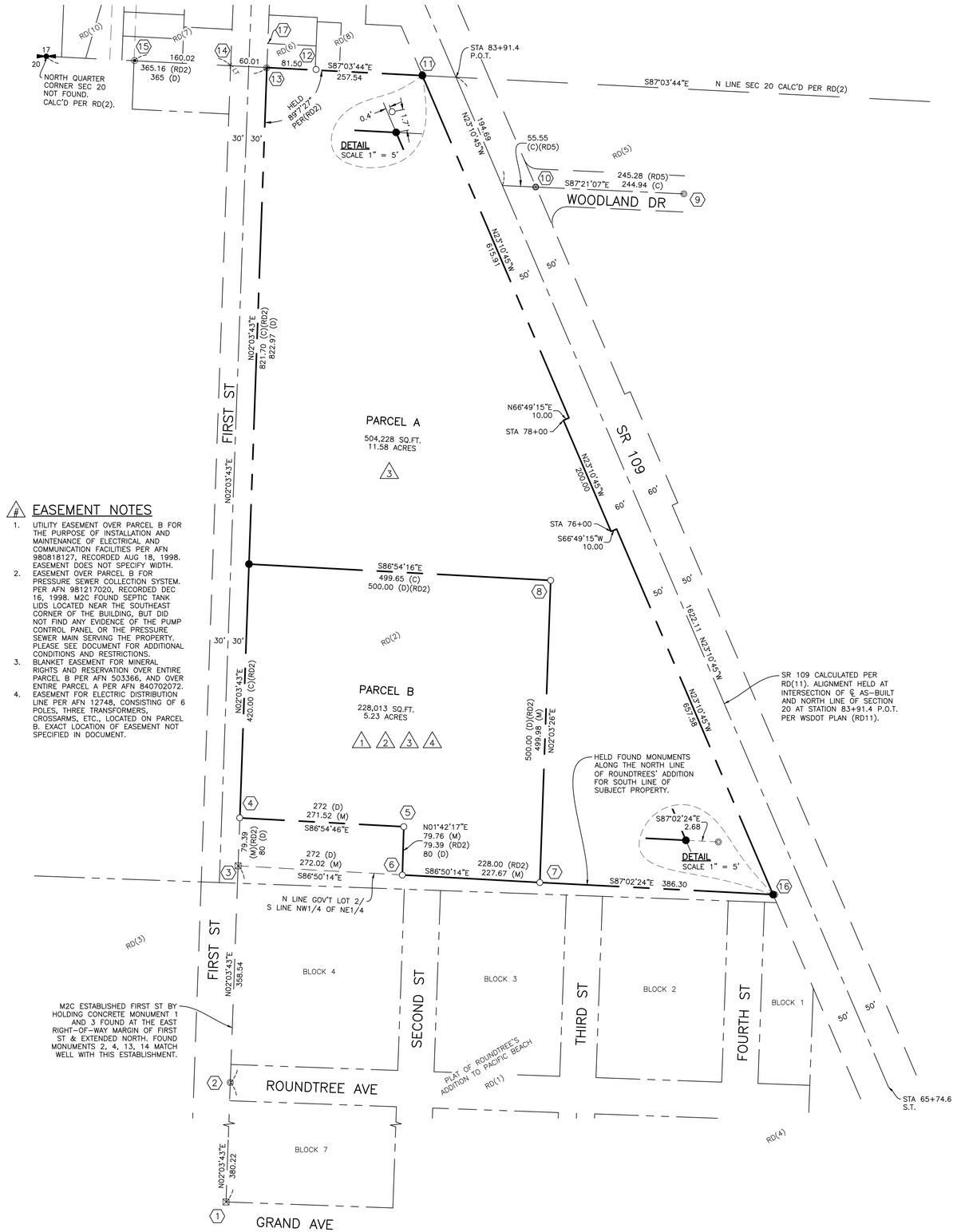
Drawn By AMS
Checked By SH

Sheet Title
PROGRAM AREA PLANS

G5.01

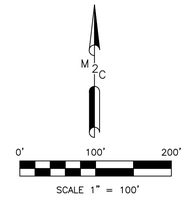
Sheet Number Of

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EASEMENT NOTES

1. UTILITY EASEMENT OVER PARCEL B FOR THE PURPOSE OF INSTALLATION AND MAINTENANCE OF ELECTRICAL AND COMMUNICATION FACILITIES PER AFN 9808181127, RECORDED AUG 18, 1998. EASEMENT DOES NOT SPECIFY WIDTH.
2. EASEMENT OVER PARCEL B FOR PRESSURE SEWER COLLECTION SYSTEM. PER AFN 9812170 20, RECORDED DEC 16, 1998. M2C FOUND SEPTIC TANK LIDS LOCATED NEAR THE SOUTHEAST CORNER OF THE BUILDING, BUT DID NOT FIND ANY EVIDENCE OF THE PUMP CONTROL PANEL OR THE PRESSURE SEWER MAIN SERVING THE PROPERTY. PLEASE SEE DOCUMENT FOR ADDITIONAL CONDITIONS AND RESTRICTIONS.
3. BLANKET EASEMENT FOR MINERAL RIGHTS AND RESERVATION OVER ENTIRE PARCEL B PER AFN 503366, AND OVER ENTIRE PARCEL A PER AFN 8407020 72.
4. EASEMENT FOR ELECTRIC DISTRIBUTION LINE PER AFN 12748, CONSISTING OF 6 POLES, THREE TRANSFORMERS, CROSSARMS, ETC., LOCATED ON PARCEL B. EXACT LOCATION OF EASEMENT NOT SPECIFIED IN DOCUMENT.



DATUM

HORIZONTAL – WASHINGTON STATE PLANE COORDINATES, SOUTH ZONE, NAD 83/2011 BASED ON GPS TIES TO WSDOT MONUMENT PABH A, ID 8243. ALL GPS POINTS WERE SCALED TO GROUND ABOUT M2C CONTROL POINT 5 WITH A PUBLISHED COMBINED SCALED FACTOR OF 0.99997546 PER WSDOT MONUMENT PABH A.

M2C PT 5:
N: 706890.0920
E: 720261.3480

VERTICAL – NAVD 88 BASED ON GPS TIES TO MONUMENT WSDOT MONUMENT PABH A, WITH AN ELEVATION OF 46.680.

RD(#) REFERENCED DOCUMENTS

1. PLAT OF ROUNDTREE'S ADDITION TO PACIFIC BEACH, VOL 4, PG 24.
2. RECORD OF SURVEY, AFN 9408300020, VOL 15, PG 11.
3. RECORD OF SURVEY, AFN 8110140700, VOL 6, PG 16.
4. RECORD OF SURVEY, AFN 9511030360, VOL 16, PG 45.
5. PLAT OF PACIFIC CENTER, AFN 223398.
6. PLAT OF HIGHLAND PARK ADDITION, AFN 2006-12120790.
7. PLAT OF HIGHLAND HEIGHTS ADDITION, VOL 5, PG 27.
8. BOUNDARY LINE ADJUSTMENT, AFN 2021-05070031.
9. PLAT OF FIRST ADDITION TO PACIFIC CENTER, AFN 226082.
10. BOUNDARY LINE ADJUSTMENT, AFN 2006-09120088.
11. WSDOT RIGHT-OF-WAY PLAN, SR 109 PACIFIC BEACH MAIN STREET TO CAMPBELL AVENUE, GRAYS HARBOR COUNTY. APPROVED SEPTEMBER 20, 1955.

LEGAL DESCRIPTION

(DESCRIPTION PER GRAYS HARBOR TITLE COMPANY, SUBDIVISION GUARANTEE ORDER NO. GR-27177, GUARANTEE NO. SGW-08008451, DATED APRIL 29, 2026)

PARCEL A
TPN: 201220120050

THAT PORTION OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 20, TOWNSHIP 20 NORTH, RANGE 12 WEST OF THE WILLAMETTE MERIDIAN, LYING WEST OF HIGHWAY 109 AND THE EAST OF THE NORTHERLY EXTENSION OF THE EAST LINE OF FIRST STREET AS SHOWN ON THE PLAT OF ROUNDTREES ADDITION TO PACIFIC BEACH, AS PER PLAT RECORDED IN VOLUME 4 OF PLATS, PAGE 24, RECORDS OF GRAYS HARBOR COUNTY;
EXCEPT THE SOUTH 500 FEET OF THE WEST 500 FEET THEREOF;
SITUATE IN THE COUNTY OF GRAYS HARBOR, STATE OF WASHINGTON.

PARCEL B
TPN: 201220120010

ALL THAT CERTAIN PIECE OR PARCEL OF LAND LYING AND BEING A PORTION OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 20, TOWNSHIP 20 NORTH, RANGE 12 WEST OF THE WILLAMETTE MERIDIAN, BOUNDED AND PARTICULARLY DESCRIBED AS FOLLOWS:
BEGINNING AT THE NORTH QUARTER CORNER OF THE ABOVE SAID SECTION 20, RUNNING
THENCE SOUTH 89°05'27" EAST 365 FEET TO THE EAST MARGIN OF THE COUNTY ROAD;
THENCE SOUTH 0°02' WEST 822.97 FEET ALONG SAID MARGIN OF THE COUNTY ROAD TO THE TRUE POINT OF BEGINNING;
THENCE SOUTH 88°55' EAST 500 FEET;
THENCE SOUTH 0°02' WEST 500 FEET TO THE SOUTH LINE OF SAID NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 20;
THENCE NORTH 88°55' WEST 500 FEET ALONG SAID SOUTH LINE TO THE EAST MARGIN OF THE COUNTY ROAD;
THENCE NORTH 0°02' EAST 500 FEET ALONG THE SAID MARGIN OF THE COUNTY ROAD TO THE TRUE POINT OF BEGINNING;
EXCEPT THE SOUTH 80 FEET OF THE WEST 272 FEET OF THE ABOVE DESCRIBED PARCEL;
SITUATE IN THE COUNTY OF GRAYS HARBOR, STATE OF WASHINGTON.

MONUMENT NOTES

1. FOUND 6" DIAMETER CONCRETE MONUMENT WITH 3/8" BRASS PIN. HELD POSITION FOR FIRST ST.
2. FOUND 1" INSIDE DIAMETER IRON PIPE IN CONCRETE. ON EASTERLY RIGHT-OF-WAY MARGIN OF FIRST ST, AT CENTERLINE ROUNDTREE AVE.
3. FOUND RAILROAD SPIKE IN CONCRETE. SHOT AT CENTER OF RAILROAD SPIKE. HELD POSITION.
4. FOUND 1/2" REBAR WITH YELLOW CAP MARKED "LS 8070". ON EASTERLY RIGHT-OF-WAY MARGIN OF FIRST ST AT CALCULATED POSITION PER RD(2). HELD FOR CORNER.
5. FOUND 1/2" REBAR WITH YELLOW CAP MARKED "LS 8070". ACCEPTED AND HELD FOR CORNER.
6. FOUND 1/2" REBAR WITH YELLOW CAP MARKED "LS 8070". FOUND ±0.2' SOUTH OF LINE.
7. FOUND 1/2" REBAR WITH YELLOW CAP MARKED "LS 8070". ACCEPTED AND HELD FOR CORNER AND SOUTH LINE.
8. FOUND 1/2" REBAR WITH YELLOW CAP MARKED "LS 8070". ACCEPTED AND HELD FOR CORNER.
9. FOUND LEAD AND TACK IN 2.5" OUTSIDE DIAMETER IRON PIPE, ±0.8' BELOW GRADE. HELD POSITION FOR WOODLAND DR.
10. FOUND LEAD AND TACK IN 2.5" OUTSIDE DIAMETER IRON PIPE IN MONUMENT CASE, ±0.8' BELOW GRADE, 0.32', N87°21'07"W OF CALCULATED EASTERLY RIGHT-OF-WAY MARGIN OF SR 109. HELD POSITION FOR WOODLAND DR.
11. FOUND 1/2" REBAR WITH RED CAP MARKED "HURD LS 12993", ±1.7' N11°W OF CALCULATED POSITION. NOT ACCEPTED FOR CORNER. SET NE CORNER 5/8"X24" LONG REBAR WITH YELLOW PLASTIC CAP MARKED "LS 21013244 LS 24030394".
12. FOUND 1/2" REBAR WITH RED CAP MARKED "HURD LS 12993", ±1' NORTH OF CALCULATED SECTION LINE.
13. FOUND 3/4" OUTSIDE DIAMETER IRON PIPE 0.7' SOUTH AND 0.32' WEST OF INTERSECTION OF RIGHT-OF-WAY & SECTION LINE AS FOUND AND NOTED IN RD(2).
14. FOUND LEAD AND TACK WITH YELLOW WASHER IN ±4' OUTSIDE DIAMETER IRON PIPE AT CALCULATED POSITION.
15. FOUND 1/2" REBAR WITH PINK FLAGGING, N74°E, 1.2' FROM CALCULATED POSITION.
16. FOUND 3/4" OUTSIDE DIAMETER IRON PIPE WITH BROKEN YELLOW CAP, PROTRUDING ±2.6' ABOVE GRADE, 2.68', S87°02'24"E OF THE WESTERLY MARGIN OF SR 109. HELD FOR SOUTH LINE ALIGNMENT. SET SE CORNER 5/8"X24" LONG REBAR WITH YELLOW PLASTIC CAP MARKED "LS 21013244 LS 24030394".
17. FOUND T-POST WITH ORANGE FLAGGING AT CALCULATED CORNER.

SURVEY NOTES

1. INSTRUMENT USED: SOKKIA IX 3" TOTAL STATION AND TOPCON VR GPS.
2. THIS SURVEY MEETS OR EXCEEDS THE STANDARDS OF WAC 332-130-090, 332-130-145.
3. SURVEY COMPLETED 6/15/2026.
4. ALL MONUMENTS SHOWN AS FOUND, VISITED 5/2026. MONUMENT SET 6/2026.
5. PURPOSE OF TOPOGRAPHICAL MAPPING IS FOR FUTURE DEVELOPMENT OF SITE FOR A NEW SCHOOL.
6. CONTOURS WERE ESTABLISHED FROM FIELD MAPPING. 1' CONTOURS SHOWN.
7. MTN2COAST, LLC (M2C) WAS RETAINED BY TCF ARCHITECTURE TO COMPLETE A BOUNDARY AND TOPOGRAPHIC SURVEY OF GRAYS HARBOR COUNTY TPN: 201220120050 & 201220120010.
8. ALL DISTANCES SHOWN ARE ON GROUND SCALE, US SURVEY FEET.
9. OVERALL BOUNDARY AND BOUNDARY ESTABLISHMENT NOTES ARE SHOWN ON THIS SHEET. A RECORD OF SURVEY MAP IS PREPARED SEPARATELY FOR RECORDING.
10. EASEMENT AND ENCUMBRANCES ARE REVIEWED UNDER GRAYS HARBOR TITLE COMPANY, TITLE EXCEPTION SCHEDULE B. SUBDIVISION GUARANTEE ORDER NO. GR-27177, GUARANTEE NO. SGW-08008451, DATED APRIL 29, 2026. PLOTTABLE EASEMENTS (IF ANY) ARE SHOWN AND NOTED ON THE MAP.

LEGEND

- PROPANE TANK
- GUY ANCHOR
- GUY POLE
- POWER JUNCTION BOX
- POWER METER
- POWER POLE
- PP WITH DROP LINE
- PP WITH DROP AND LIGHT
- PP WITH DROP AND TRANSFORMER
- PP WITH TRANSFORMER
- COMMUNICATIONS RISER/PEDESTAL
- TELEPHONE CABINET
- TELEPHONE RISER
- TELEPHONE VAULT/MANHOLE
- SS CLEANOUT
- SEPTIC TANK
- STORM CATCH BASIN
- STORM YARD DRAIN
- CULVERT
- WATER METER
- WATER VALVE
- WATER FIRE HYDRANT

HATCHING

- GRAVEL
- ASPHALT
- CONCRETE

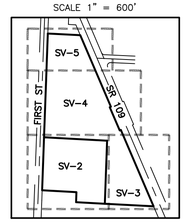
- RHODODENDRON
- AL ALDER
- MP MAPLE
- CT COTTONWOOD
- DECIDUOUS
- C CEDAR
- DF DOUGLAS-FIR
- HF HEMLOCK
- P PINE
- S SPRUCE
- TF TRUE FIR
- WHEEL STOP
- STREET SIGN (AS DESCRIBED)
- P.O.T. POINT OF TIE
- S.T. SPIRAL TO TANGENT
- STA STATIONING
- (C) CALCULATED DIMENSION
- (M) MEASURED DIMENSION
- (D) DEED DIMENSION
- (RD#) RECORD DIMENSION
- FOUND CONCRETE MONUMENT
- FOUND ALUMINUM CAP
- FOUND IRON PIPE
- FOUND LEAD AND TACK
- FOUND MAG NAIL
- FOUND MONUMENT IN CASE
- FOUND REBAR AND CAP
- FOUND REBAR WITHOUT CAP
- SET REBAR AND M2C CONTROL CAP
- SET HUB AND TACK (M2C CONTROL)
- SET SPIKE (M2C CONTROL)
- SET PK NAIL (M2C CONTROL)
- SET 5/8"X24" LONG REBAR WITH YELLOW PLASTIC CAP MARKED "LS 21013244 LS 24030394"

LINE TYPES

- WOOD BOARD FENCE
- CHAIN LINK FENCE
- WIRE FENCE
- IRON FENCE
- GUARDRAIL
- BUILDING LINE
- BUILDING OVERHANG
- TOE TOE TOE — GROUND TOE
- TOP TOP TOP — GROUND TOP
- BRK BRK BRK — GROUND BREAK
- D D D D — STORM LINE
- STORM SWALE
- T T T T — BURIED TELEPHONE
- P P P P — BURIED POWER
- OP OP OP OP — OVERHEAD POWER
- OVERHEAD GUY LINE
- W W W W — WATER LINE
- MAJOR CONTOUR
- MINOR CONTOUR
- SECTION LINE
- SIXTEENTH SECTION LINE
- ROAD CENTERLINE
- ROAD RIGHT-OF WAY
- ROAD RIGHT-OF-WAY VACATED
- EASEMENT LINE
- LOT LINE
- PROPERTY LINE

KEY MAP

SCALE 1" = 600'



AUDITOR'S INDEX: NW1/4 NE1/4, SEC 20, T20N, R12W, W.M.

DATE	6/16/2026
SCALE	1" = 100'
M2C PROJECT NO.:	26-118
DRAWN	MYC
CHECKED	SEP
APPROVED	PBJ

6/16/2026

PAUL E. BOUCHAL JR. STATE OF WASHINGTON 24030394 REGISTERED PROFESSIONAL LAND SURVEYOR

MTN 2 COAST, LLC
PROFESSIONAL LAND SURVEYORS
2320 MOTTMAN RD SW, STE 106
TUMWATER, WA 98512
360.688.1949

PROJECT NAME:
50 & 58 FIRST ST N
PACIFIC BEACH, WA 98562
TOPOGRAPHIC SURVEY

CLIENT NAME:
TCF ARCHITECTURE

SHEET NAME: SV-1

SHEET NO. 1 OF 5

MATCH LINE SEE SHEET SV-4

MATCH LINE SEE SHEET SV-3

CULVERT 12" CPP IE S 118.49

"NAVY GETAWAYS PACIFIC BEACH RV PARK" ENTRANCE SIGN ON WOOD POSTS

CULVERT 18" CPP IE N 117.46

STORM SWALE

CLUMP OF 3

PEDESTRIAN CROSSING NEXT 1/4 MILE

CULVERT 16" RCP IE S 116.95

STOP

CULVERT 12" CPP IE N 118.13

GATE

SDCB 1306 RIM 119.17 IE 6" DI S 118.3

CULVERT 16" RCP IE N 116.83

CLUMP OF 2

CLUMP OF 3

CLUMP OF 6

STORM SWALE

±2' WIDE STORM SWALE

±5.5' TALL PLASTIC FENCE

FIRST ST

NO2°03'43"E 420.00 (C)(RD2)

FOG LINE

YELLOW DASH STRIPE

CULVERT 18" RCP IE S 114.90

NORTH BEACH SCHOOL DISTRICT SIGN ON WOOD POSTS

CULVERT 6" DI IE W 114.16

CULVERT 18" RCP IE N 113.48

CULVERT 12" DI IE S 112.53

CULVERT 12" RCP IE N 111.57

10
N: 706987.13
E: 720266.13
EL: 114.74
MNCC

±7' TALL FENCE LIES SOUTHERLY OF PROPERTY LINE AS DIMENSIONED.

±10' WIDE GRAVEL DRIVE

S86°54'16"E 499.65 (C) 500.00 (D)(RD2)

36
N: 707381.86
E: 720422.43
EL: 119.17
MNHT

GRASS OVERGROWN, SIDEWALK IN DISREPAIR.

DRIVEWAY CUT

PARKING

SDCB 2431 RIM 112.93 IE 6" DI E 112.1

SDCB 2430 RIM 112.88 IE 6" DI E 112.0

SDCB 1251 RIM 116.42 IE 6" DI S 115.6

END OF TRACE SIGNAL

FORD RV & PT CRUISER NORTH OF PROPERTY LINE AS DIMENSIONED.

272 (D)
271.52 (M)
S86°54'46"E

272 (D)
272.02 (M)
S86°50'14"E

N01°42'17"E
79.76 (M)
79.39 (RD2)
80 (D)

79.39 (M)(RD2)
80 (D)

228.00 (RD2)
227.67 (M)
S86°50'14"E

0.3'
0.5'
0.5'
1.0'
2.6'

51
N: 706964.00
E: 720642.14
EL: 112.50
MNCC

52
N: 707153.76
E: 720702.67
EL: 117.09
MNCC

POWER TRANSFORMER ON CONCRETE PAD

DISTRICT OFFICE (SEE DETAIL TO RIGHT)

M2C

0' 30' 60'

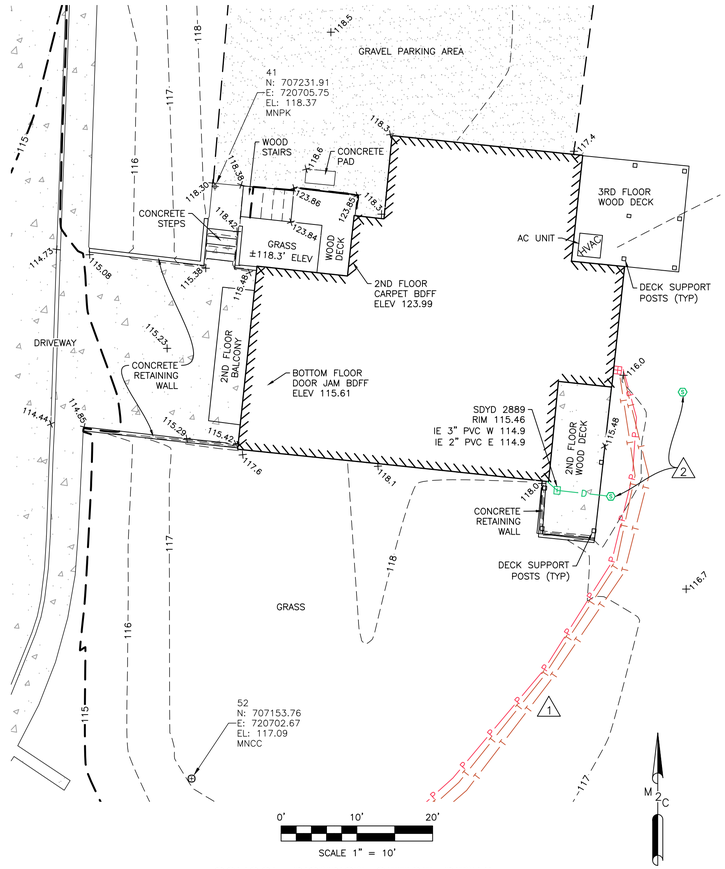
SCALE 1" = 30'

UTILITY NOTE

UTILITIES SHOWN HEREON ARE FROM FIELD MAPPING VISIBLE SURFACE APPURTENANCES, AND MAPPING UTILITY PAINT MARKS FROM A UTILITY LOCATING SERVICE. BURIED UTILITIES ARE ONLY SHOWN AS APPROXIMATE AND SHOULD BE VERIFIED BEFORE CONSTRUCTION.
UTILITY LOCATOR SERVICE WAS UNABLE TO GET A TRACE ON MOST OF THE WATER LINES ON & OFF SITE. WATER LINES SHOWN ON MAP ARE AREAS WHERE WATER LINE WAS TRACEABLE.

EASEMENT NOTES

1. BLANKET EASEMENT OVER PARCEL B FOR THE PURPOSE OF INSTALLATION AND MAINTENANCE OF ELECTRICAL AND COMMUNICATION FACILITY. PER AFN 12749, RECORDED OCT 26, 1956. AND PER AFN 980818127, RECORDED AUG 18, 1998.
2. BLANKET EASEMENT OVER PARCEL B FOR SANITARY SEWER COLLECTION SYSTEM. PER AFN 981217020, RECORDED DEC 16, 1998.
3. BLANKET EASEMENT OVER ENTIRE SITE FOR MINERAL RIGHTS AND RESERVATION. PER AFN 503366, RECORDED JUN 24, 1949. AND PER AFN 840702072, RECORDED JUN 29, 1984.



SCHOOL DISTRICT OFFICE DETAIL

DATE	6/16/2026
SCALE	1" = 30'
M2C PROJECT NO.:	26-118
DRAWN	MYC
CHECKED	SEP
APPROVED	PBJ

6/16/2026

PAUL E. BOUCHAL JR. STATE OF WASHINGTON 24030394 REGISTERED PROFESSIONAL LAND SURVEYOR

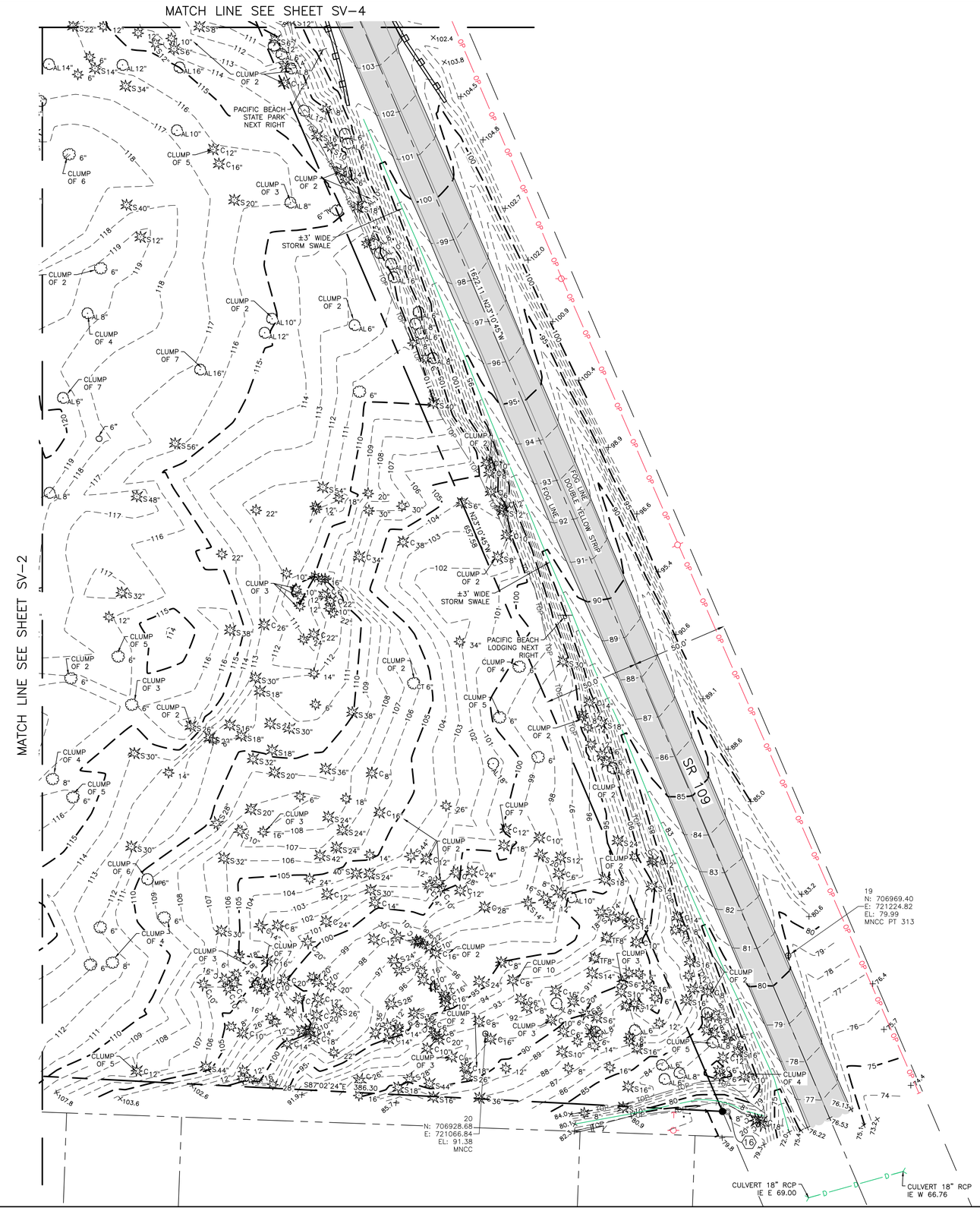
MTN 2 COAST LLC
PROFESSIONAL LAND SURVEYORS
2320 MOTTMAN RD SW, STE 106
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360.688.1949

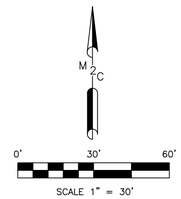
PROJECT NAME:
50 & 58 FIRST ST N
PACIFIC BEACH, WA 98562
TOPOGRAPHIC SURVEY

CLIENT NAME:
TCF ARCHITECTURE

SHEET NAME:
SV-2

SHEET NO.
2 OF 5





UTILITY NOTE

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UTILITY LOCATOR SERVICE WAS UNABLE TO GET A TRACE ON MOST OF THE WATER LINES ON & OFF SITE. WATER LINES SHOWN ON MAP ARE AREAS WHERE WATER LINE WAS TRACEABLE.

LEGEND

- PROPANE TANK
- GUY ANCHOR
- GUY POLE
- POWER JUNCTION BOX
- POWER METER
- POWER POLE
- PP WITH DROP LINE
- PP WITH DROP AND LIGHT
- PP WITH DROP AND TRANSFORMER
- PP WITH TRANSFORMER
- COMMUNICATIONS RISER/PEDESTAL
- TELEPHONE CABINET
- TELEPHONE RISER
- TELEPHONE VAULT/MANHOLE
- SS CLEANOUT
- SEPTIC TANK
- STORM CATCH BASIN
- STORM YARD DRAIN
- CULVERT
- WATER METER
- WATER VALVE
- WATER FIRE HYDRANT

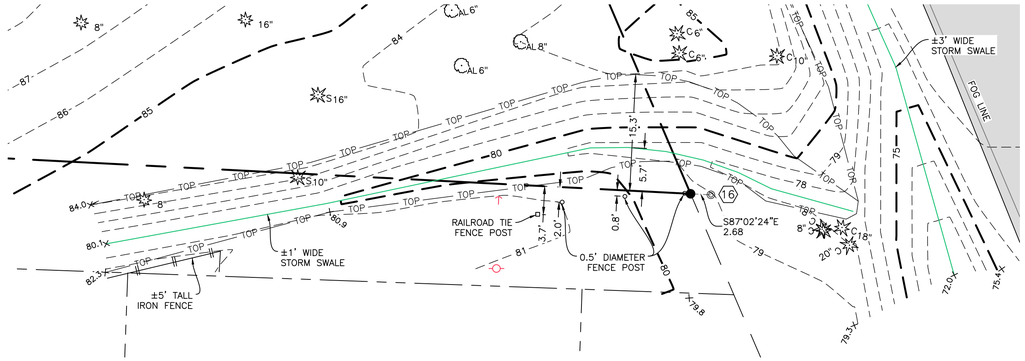
HATCHING

- GRAVEL
- ASPHALT
- CONCRETE

- RHODODENDRON
- AL — ALDER
- MP — MAPLE
- CT — COTTONWOOD
- DECIDUOUS
- C — CEDAR
- DF — DOUGLAS–FIR
- HEMLOCK
- P — PINE
- S — SPRUCE
- TF — TRUE FIR
- WHEEL STOP
- STREET SIGN (AS DESCRIBED)
- P.O.T. — POINT OF TIE
- S.T. — SPIRAL TO TANGENT
- STA — STATIONING
- (C) — CALCULATED DIMENSION
- (M) — MEASURED DIMENSION
- (D) — DEED DIMENSION
- (RD#) — RECORD DIMENSION
- FOUND CONCRETE MONUMENT
- FOUND ALUMINUM CAP
- FOUND IRON PIPE
- FOUND LEAD AND TACK
- FOUND MAG NAIL
- FOUND MONUMENT IN CASE
- FOUND REBAR AND CAP
- FOUND REBAR WITHOUT CAP
- SET REBAR AND M2C CONTROL CAP
- SET HUB AND TACK (M2C CONTROL)
- SET SPIKE (M2C CONTROL)
- SET PK NAIL (M2C CONTROL)
- SET 5/8"X24" LONG REBAR WITH YELLOW PLASTIC CAP MARKED "LS 21013244 LS 24030394"

LINE TYPES

- WOOD BOARD FENCE
- CHAIN LINK FENCE
- WIRE FENCE
- IRON FENCE
- GUARDRAIL
- BUILDING LINE
- BUILDING OVERHANG
- GROUND TOE
- GROUND TOP
- GROUND BREAK
- STORM LINE
- STORM SWALE
- BURIED TELEPHONE
- BURIED POWER
- OVERHEAD POWER
- OVERHEAD GUY LINE
- WATER LINE
- MAJOR CONTOUR
- MINOR CONTOUR
- SECTION LINE
- SIXTEENTH SECTION LINE
- ROAD CENTERLINE
- ROAD RIGHT–OF WAY
- ROAD RIGHT–OF–WAY VACATED
- EASEMENT LINE
- LOT LINE
- PROPERTY LINE



SE CORNER DETAIL
SCALE 1" = 10'

6/16/2026

DATE	6/16/2026
SCALE	1" = 30'
M2C PROJECT NO.:	26–118
DRAWN	MYC
CHECKED	SEP
APPROVED	PBJ

PAUL E. BOUGHAL JR — STATE OF WASHINGTON — 24030394 — REGISTERED — PROFESSIONAL LAND SURVEYOR

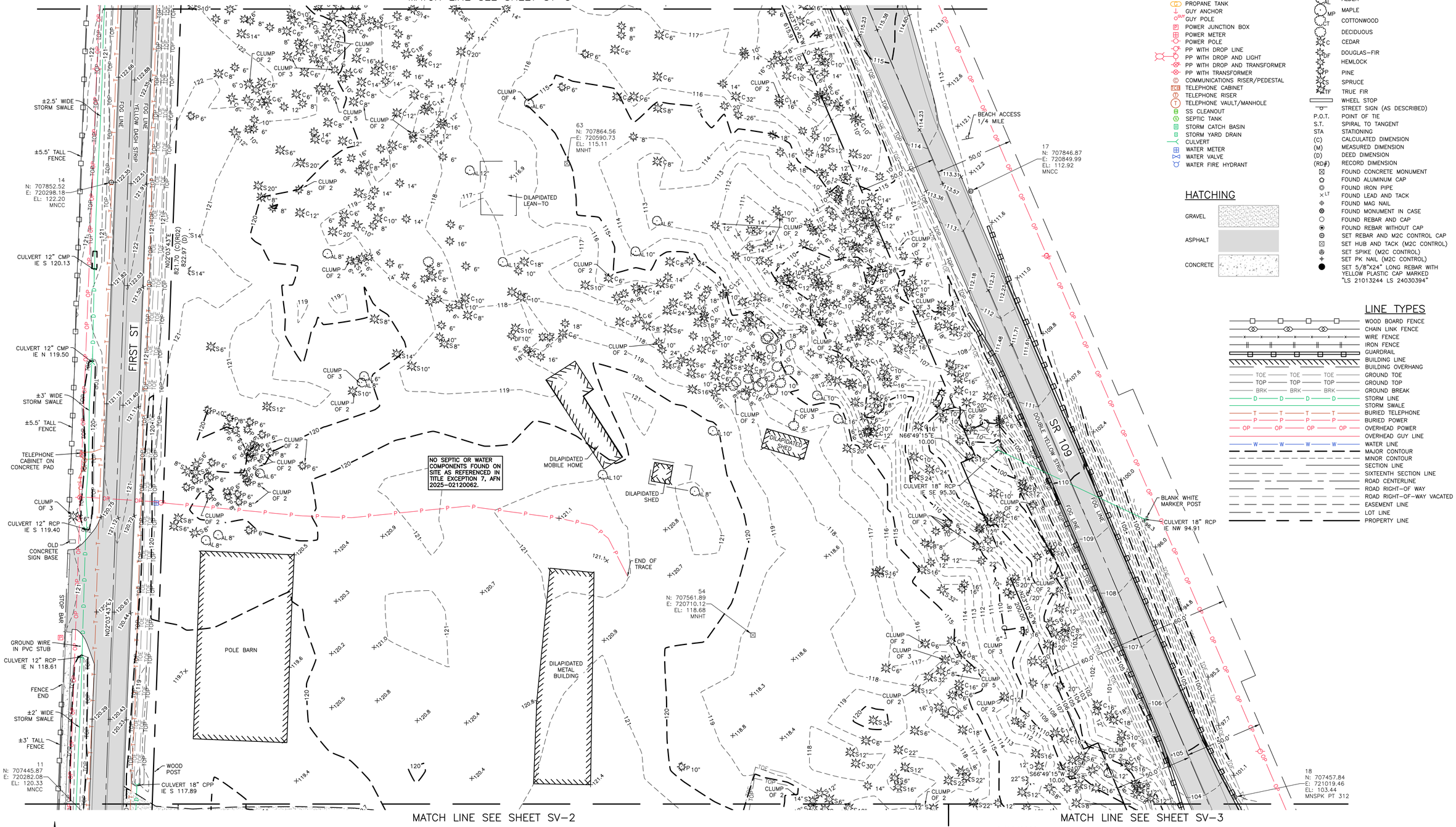
MTN 2 COAST LLC
PROFESSIONAL LAND SURVEYORS
2320 MOTTMAN RD SW, STE 106
TUMWATER, WA 98512
360.688.1949

PROJECT NAME:
50 & 58 FIRST ST N
PACIFIC BEACH, WA 98562
TOPOGRAPHIC SURVEY

CLIENT NAME:
TCF ARCHITECTURE

SHEET NAME:
SV–3

SHEET NO.
3 OF 5



LEGEND

- PROPANE TANK
- GUY ANCHOR
- GUY POLE
- POWER JUNCTION BOX
- POWER METER
- POWER POLE
- PP WITH DROP LINE
- PP WITH DROP AND LIGHT
- PP WITH DROP AND TRANSFORMER
- PP WITH TRANSFORMER
- COMMUNICATIONS RISER/PEDESTAL
- TELEPHONE CABINET
- TELEPHONE RISER
- TELEPHONE VAULT/MANHOLE
- SS CLEANOUT
- SEPTIC TANK
- STORM CATCH BASIN
- STORM YARD DRAIN
- CULVERT
- WATER METER
- WATER VALVE
- WATER FIRE HYDRANT

HATCHING

- GRAVEL
- ASPHALT
- CONCRETE

- RHODODENDRON
- AL ALDER
- MP MAPLE
- CT COTTONWOOD
- DECIDUOUS
- C CEDAR
- DF DOUGLAS-FIR
- HEMLOCK
- PP PINE
- SS SPRUCE
- ATF TRUE FIR
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- STREET SIGN (AS DESCRIBED)
- P.O.T. POINT OF TIE
- S.T. SPIRAL TO TANGENT
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LINE TYPES

- WOOD BOARD FENCE
- CHAIN LINK FENCE
- WIRE FENCE
- IRON FENCE
- GUARDRAIL
- BUILDING LINE
- BUILDING OVERHANG
- TOE — GROUND TOE
- TOP — GROUND TOP
- BRK — GROUND BREAK
- D — STORM LINE
- STORM SWALE
- T — BURIED TELEPHONE
- P — BURIED POWER
- OP — OVERHEAD POWER
- OVERHEAD GUY LINE
- W — WATER LINE
- MAJOR CONTOUR
- MINOR CONTOUR
- SECTION LINE
- SIXTEENTH SECTION LINE
- ROAD CENTERLINE
- ROAD RIGHT-OF WAY
- ROAD RIGHT-OF-WAY VACATED
- EASEMENT LINE
- LOT LINE
- PROPERTY LINE

M2C

0' 30' 60'

SCALE 1" = 30'

UTILITY NOTE

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DATE	6/16/2026
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M2C PROJECT NO.:	26-118
DRAWN	MYC
CHECKED	SEP
APPROVED	PBJ

6/16/2026

PAUL E. BOUGHAL JR
STATE OF WASHINGTON
24030394
REGISTERED
PROFESSIONAL LAND SURVEYOR

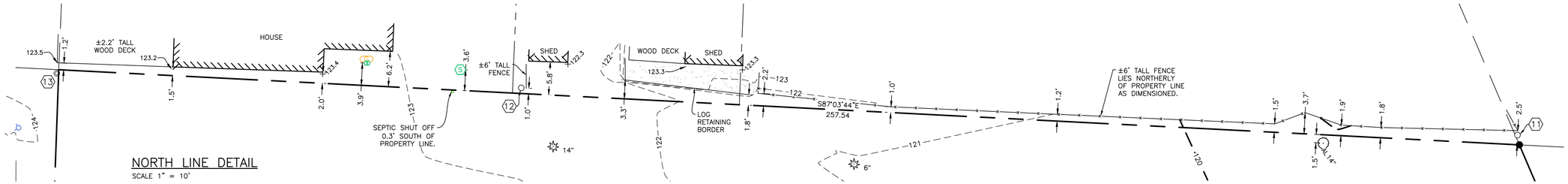
MTN 2 COAST LLC
PROFESSIONAL LAND SURVEYORS
2320 MOTTMAN RD SW, STE 106
TUMWATER, WA 98512
360.688.1949

PROJECT NAME:
50 & 58 FIRST ST N
PACIFIC BEACH, WA 98562
TOPOGRAPHIC SURVEY

CLIENT NAME:
TCF ARCHITECTURE

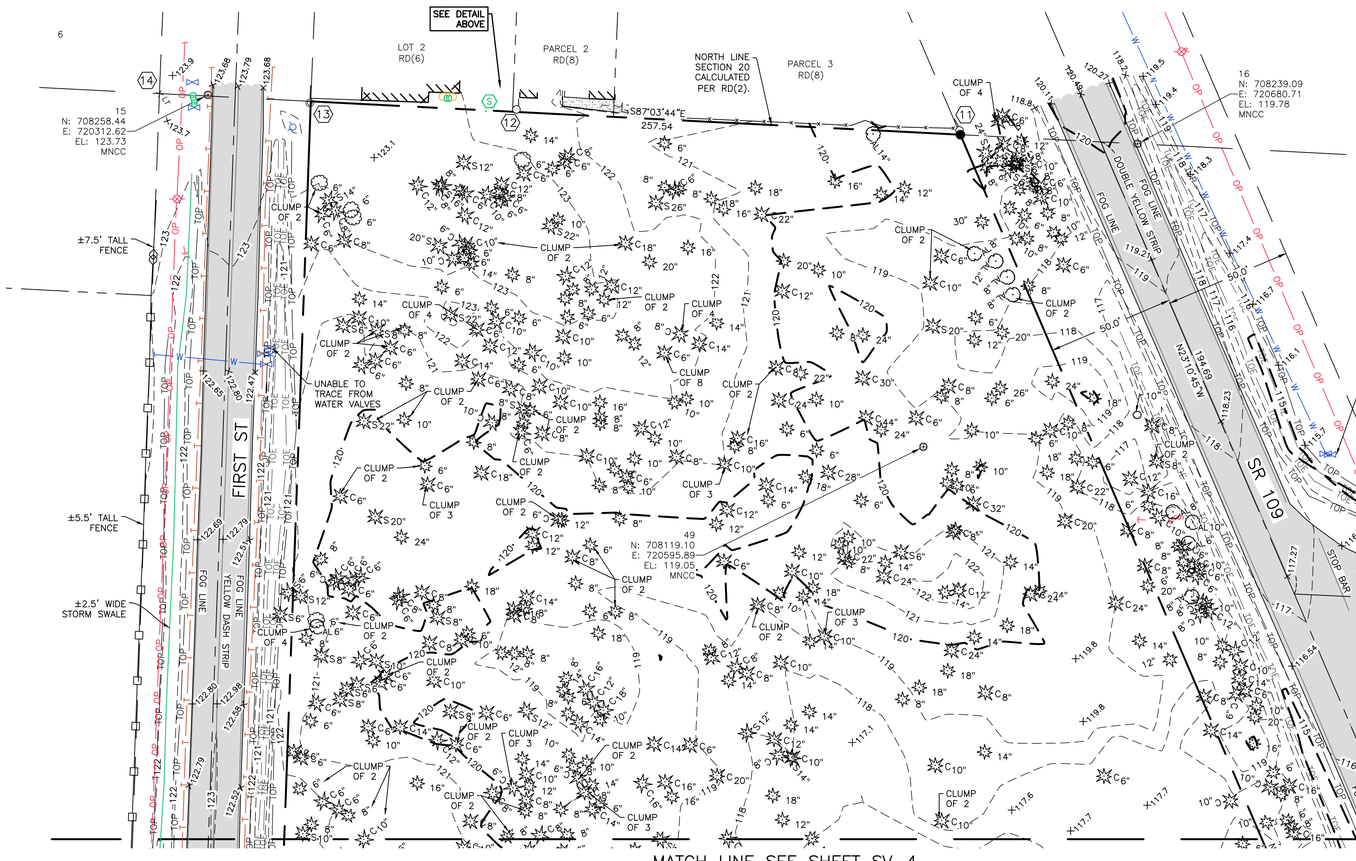
SHEET NAME:
SV-4

SHEET NO.
4 OF 5



NORTH LINE DETAIL

SCALE 1" = 10'



MATCH LINE SEE SHEET SV-4

LINE TYPES

- WOOD BOARD FENCE
- CHAIN LINK FENCE
- WIRE FENCE
- IRON FENCE
- GUARDRAIL
- BUILDING LINE
- BUILDING OVERHANG
- GROUND TOE
- GROUND TOP
- GROUND BREAK
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- STORM SWALE
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LEGEND

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- RHODODENDRON
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M2C

0' 30' 60'

SCALE 1" = 30'

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DATE	6/16/2026
SCALE	1" = 30'
M2C PROJECT NO.:	26-118
DRAWN	MYC
CHECKED	SEP
APPROVED	PBJ

6/16/2026

PAUL E. BOUCHAL JR. STATE OF WASHINGTON 24030394 REGISTERED PROFESSIONAL LAND SURVEYOR

MTN 2 COAST LLC
PROFESSIONAL LAND SURVEYORS
2320 MOTTMAN RD SW, STE 106
TUMWATER, WA 98512
360.688.1949

PROJECT NAME:
50 & 58 FIRST ST N
PACIFIC BEACH, WA 98562
TOPOGRAPHIC SURVEY

CLIENT NAME:
TCF ARCHITECTURE

SHEET NAME:
SV-5

SHEET NO.
5 OF 5

PACIFIC BEACH ELEMENTARY SCHOOL

SCHEMATIC DESIGN

LEGAL DESCRIPTION

(DESCRIPTION PER GRAYS HARBOR TITLE COMPANY, SUBDIVISION GUARANTEE ORDER NO. GR-27177, GUARANTEE NO. SGW-08008451, DATED APRIL 29, 2026)

PARCEL A
TPN: 201220120050

THAT PORTION OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 20, TOWNSHIP 20 NORTH, RANGE 12 WEST OF THE WILLAMETTE MERIDIAN, LYING WEST OF HIGHWAY 109 AND THE EAST OF THE NORTHERLY EXTENSION OF THE EAST LINE OF FIRST STREET AS SHOWN ON THE PLAT OF ROUNDTREES ADDITION TO PACIFIC BEACH, AS PER PLAT RECORDED IN VOLUME 4 OF PLATS, PAGE 24, RECORDS OF GRAYS HARBOR COUNTY;
EXCEPT THE SOUTH 500 FEET OF THE WEST 500 FEET THEREOF;
SITUATE IN THE COUNTY OF GRAYS HARBOR, STATE OF WASHINGTON.

PARCEL B
TPN: 201220120010

ALL THAT CERTAIN PIECE OR PARCEL OF LAND LYING AND BEING A PORTION OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 20, TOWNSHIP 20 NORTH, RANGE 12 WEST OF THE WILLAMETTE MERIDIAN, BOUNDED AND PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTH QUARTER CORNER OF THE ABOVE SAID SECTION 20, RUNNING THENCE SOUTH 89°05'27" EAST 365 FEET TO THE EAST MARGIN OF THE COUNTY ROAD;

THENCE SOUTH 0°02' WEST 822.97 FEET ALONG SAID MARGIN OF THE COUNTY ROAD TO THE TRUE POINT OF BEGINNING;

THENCE SOUTH 88°55' EAST 500 FEET;

THENCE SOUTH 0°02' WEST 500 FEET TO THE SOUTH LINE OF SAID NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 20;

THENCE NORTH 88°55' WEST 500 FEET ALONG SAID SOUTH LINE TO THE EAST MARGIN OF THE COUNTY ROAD;

THENCE NORTH 0°02' EAST 500 FEET ALONG THE SAID MARGIN OF THE COUNTY ROAD TO THE TRUE POINT OF BEGINNING;
EXCEPT THE SOUTH 80 FEET OF THE WEST 272 FEET OF THE ABOVE DESCRIBED PARCEL;
SITUATE IN THE COUNTY OF GRAYS HARBOR, STATE OF WASHINGTON.

DATUM

HORIZONTAL – WASHINGTON STATE PLANE COORDINATES, SOUTH ZONE, NAD 83/2011 BASED ON GPS TIES TO WSDOT MONUMENT PABH A, ID 8243. ALL GPS POINTS WERE SCALED TO GROUND ABOUT M2C CONTROL POINT 5 WITH A PUBLISHED COMBINED SCALED FACTOR OF 0.99997546 PER WSDOT MONUMENT PABH A.

M2C PT 5:
N: 706890.0920
E: 720261.3480

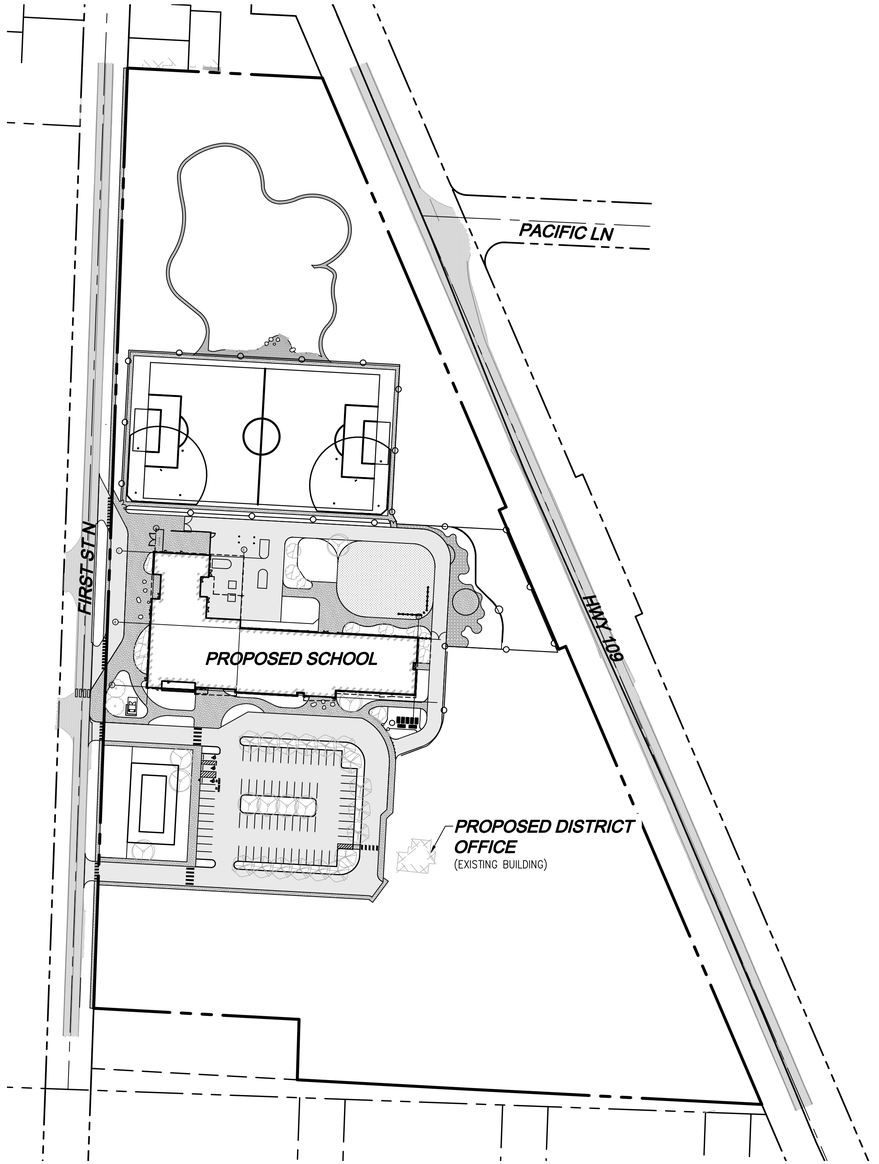
VERTICAL – NAVD 88 BASED ON GPS TIES TO MONUMENT WSDOT MONUMENT PABH A, WITH AN ELEVATION OF 46.680.

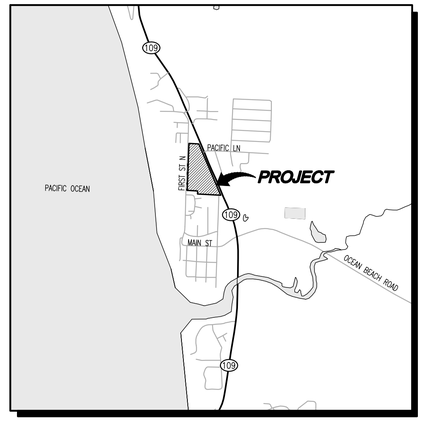
SURVEY NOTES

1. INSTRUMENT USED: SOKKIA IX 3" TOTAL STATION AND TOPCON VR GPS.
2. THIS SURVEY MEETS OR EXCEEDS THE STANDARDS OF WAC 332-130-090, 332-130-145.
3. SURVEY COMPLETED 6/15/2026
4. ALL MONUMENTS SHOWN AS FOUND, VISITED 5/2026. MONUMENT SET 6/2026.
5. PURPOSE OF TOPOGRAPHICAL MAPPING IS FOR FUTURE DEVELOPMENT OF SITE FOR A NEW SCHOOL.
6. CONTOURS WERE ESTABLISHED FROM FIELD MAPPING. 1' CONTOURS SHOWN.
7. MTN2COAST, LLC (M2C) WAS RETAINED BY TCF ARCHITECTURE TO COMPLETE A BOUNDARY AND TOPOGRAPHIC SURVEY OF GRAYS HARBOR COUNTY TPN: 201220120050 & 201220120010.
8. ALL DISTANCES SHOWN ARE ON GROUND SCALE, US SURVEY FEET.
9. OVERALL BOUNDARY AND BOUNDARY ESTABLISHMENT NOTES ARE SHOWN ON THIS SHEET. A RECORD OF SURVEY MAP IS PREPARED SEPARATELY FOR RECORDING.
10. EASEMENT AND ENCUMBRANCES ARE REVIEWED UNDER GRAYS HARBOR TITLE COMPANY, TITLE EXCEPTION SCHEDULE B. SUBDIVISION GUARANTEE ORDER NO. GR-27177, GUARANTEE NO. SGW-08008451, DATED APRIL 29, 2026. PLOTTABLE EASEMENTS (IF ANY) ARE SHOWN AND NOTED ON THE MAP.

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VICINITY MAP
SCALE: 1"=2000'

N

SCALE: 1" = 100'
100' 0 100' 200'

TABLE OF CONTENTS

1 C0.00 COVER SHEET
2 C1.00 DEMOLITION AND TESC PLAN
3 C2.00 SITE IMPROVEMENT PLAN
4 C3.00 GRADING AND DRAINAGE PLAN
5 C4.00 WATER AND SEWER PLAN
6 C5.00 FRONTAGE IMPROVEMENT PLAN

PROJECT INFORMATION

TAX PARCELS:	PARCEL A TPN: 201220120050 PARCEL B TPN: 201220120010
SITE ADDRESS:	50 & 58 FIRST ST N PACIFIC BEACH, WA 98562
SITE AREA:	732,241 SF (16.81 AC)
CURRENT ZONING:	R3 RESORT RESIDENTIAL
PROPOSED ZONING:	R3 RESORT RESIDENTIAL
PROPOSED LAND USE:	SCHOOL
BUILDING SETBACKS:	25' FRONT 5-10' SIDE 25' REAR
WATER:	GRAYS HARBOR COUNTY
SEWER:	GRAYS HARBOR COUNTY
POWER:	GRAYS HARBOR PUD
GAS:	GRAYS HARBOR PUD
TELEPHONE:	CENTURY LINK/COMCAST
CABLE:	COMCAST
SCHOOL DISTRICT:	NORTH BEACH SCHOOL DISTRICT #64
FIRE DISTRICT:	PACIFIC BEACH

CONTACT LIST

OWNER:
NORTH BEACH SCHOOL DISTRICT #64
PO BOX 159
OCEAN SHORES, WA 98569

CIVIL ENGINEER:
LDC, INC.
321 CLEVELAND AVE SE SUITE 209
TUMWATER, WA 98501
CONTACT: ROSS JARVIS, PE, ASSOC. DBIA
PHONE: (360) 634-2065
FAX: (425) 482-2893
EMAIL: rjarvis@ldccorp.com

ARCHITECT:
TCF ARCHITECTURE
902 NORTH SECOND STREET
TACOMA, WA 98403
CONTACT: STEVE WACHTLER, AIA
PHONE: (253) 572-3993
EMAIL: Stevew@tcfarchitecture.com

SURVEYOR:
MTN2COAST
2320 MOTTMAN RD SW, STE 106
TUMWATER, WA 98512
CONTACT: PAUL BOUGHAL JR, PLS
PHONE: (360) 688-1949
EMAIL: pj@mtn2coast.com

TCF
124 North 'I' St. Tacoma, WA
www.tcfarchitecture.com
P.253.572.3993

LDC | Surveying Engineering Planning
Woodinville Tumwater Kent
321 Cleveland Ave SE, #209
Tumwater, WA 98501
T 425.806.1869 www.LDCcorp.com F 425.482.2893

NORTH BEACH SCHOOL DISTRICT

Client
NORTH BEACH SCHOOL DISTRICT

Project
NORTH BEACH SCHOOL DISTRICT
2025-010
PACIFIC BEACH ELEMENTARY
58 FIRST ST N
PACIFIC BEACH, WA 98571

Issue & Revision Dates

23 JUNE 2026	65% SD
12 AUGUST 2026	95% SD
10 SEPTEMBER 2026	100% SD

100% SCHEMATIC DESIGN
Not for Construction

Drawn By AJW
Checked By RDJ

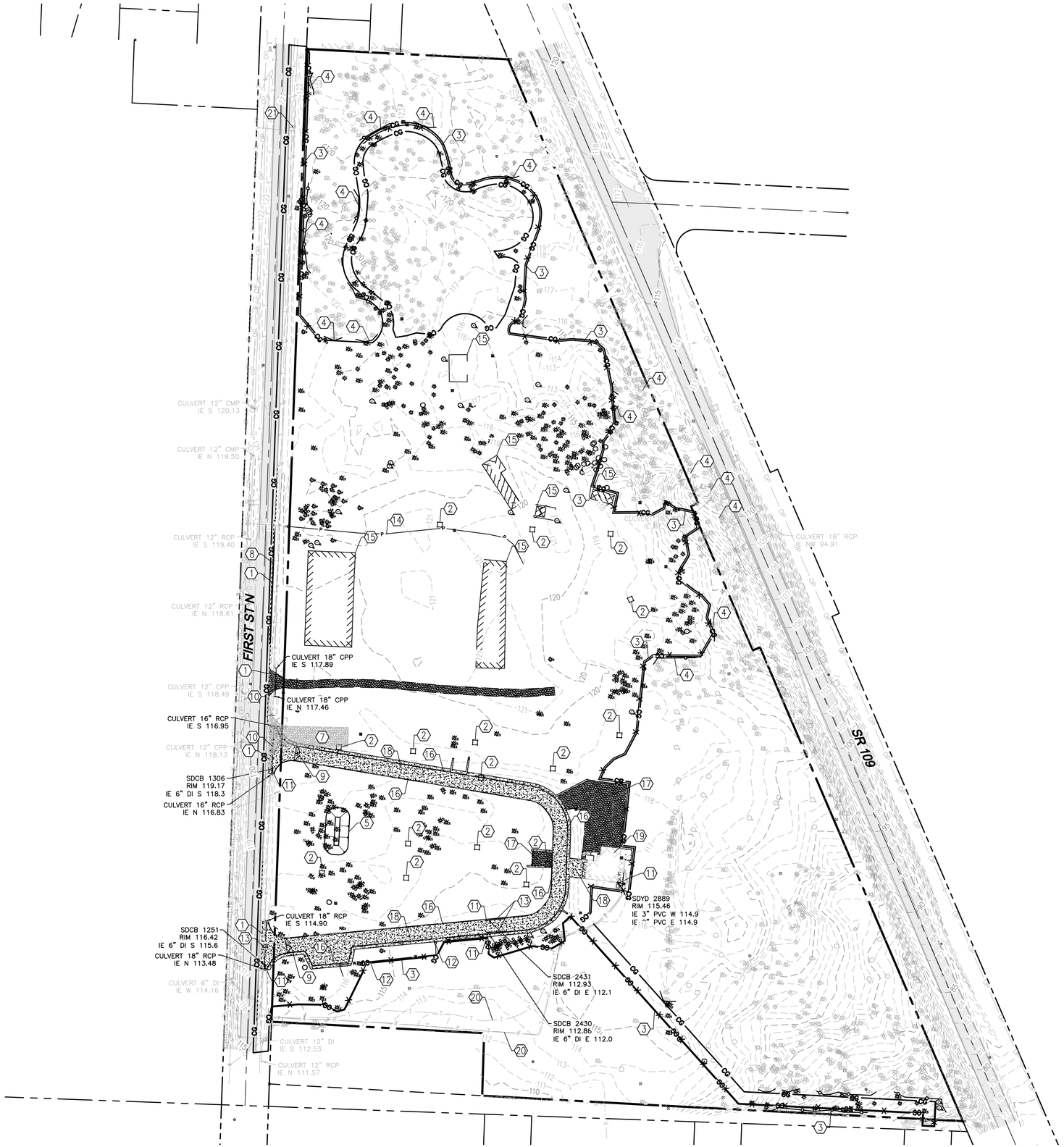
Sheet Title
COVER SHEET

C0.00

Sheet Number 1 of 6

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Drawing: P:\Civil\2026\26-142 Pacific Beach Elementary School\Drawings\Construction\26-142 CV-01.dwg Plotted: Sep 09, 2026 - 2:40pm



SCALE: 1" = 70'

70' 0 70' 140'

LEGEND

- CLEARING LIMITS
- SILT FENCE
- TREE PROTECTION FENCE
- TEMPORARY CONVEYANCE SWALE
- STABILIZED CONSTRUCTION ENTRANCE
- STORM DRAIN INLET PROTECTION
- TEMPORARY SEDIMENT POND
- INSTALL CHECK DAM EVERY 100' OR 2' OF ELEVATION CHANGE
- SAWCUT
- ASPHALT PAVEMENT REMOVAL

(XX) DEMOLITION AND TESC NOTES

1. SAWCUT
2. INSTALL STORM DRAIN INLET PROTECTION
3. INSTALL SILT FENCE
4. INSTALL TREE PROTECTION FENCE
5. INSTALL TEMPORARY SILT POND
6. INSTALL CHECK DAM
7. INSTALL STABILIZED CONSTRUCTION ENTRANCE
8. REMOVE EXISTING ASPHALT PAVEMENT AND HAUL OFF-SITE
9. REMOVE EXISTING GATE, POSTS AND FOUNDATION AND HAUL OFF-SITE
10. REMOVE EXISTING STORM CULVERT AND HAUL OFF-SITE
11. REMOVE EXISTING CATCH BASIN AND HAUL OFF-SITE
12. REMOVE EXISTING FIRE HYDRANT AND WATER LINE AND HAUL OFF-SITE
13. REMOVE EXISTING STORM DRAIN AND HAUL OFF-SITE
14. REMOVE EXISTING POWER LINE
15. DEMOLISH EXISTING STRUCTURE, FOUNDATION AND HAUL OFF-SITE
16. DEMOLISH EXISTING CURB AND HAUL OFF-SITE
17. DEMOLISH EXISTING GRAVEL PAVING AND HAUL OFF-SITE
18. DEMOLISH EXISTING CONCRETE PAVING AND HAUL OFF-SITE
19. PROTECT EXISTING STRUCTURE. DISCONNECT EXISTING WATER AND SEWER SERVICES. SEE UTILITY PLANS FOR NEW CONNECTIONS.
20. PROTECT EXISTING TELECOMMUNICATION LINES. SEE ELECTRICAL SITE PLANS FOR REVISED RE-ROUTING.
21. PROTECT EXISTING FIRE HYDRANT

TCF
124 North 'I' St. Tacoma, WA
www.tcfarchitecture.com
P.253.572.3993

LDC | Surveying Engineering Planning
Woodinville Tumwater Kent
321 Cleveland Ave SE, #209
Tumwater, WA 98501
T 425.806.1869 www.LDCcorp.com F 425.482.2893

Client
NORTH BEACH SCHOOL DISTRICT

Project
NORTH BEACH SCHOOL DISTRICT

2025-010
PACIFIC BEACH ELEMENTARY
58 FIRST ST N
PACIFIC BEACH, WA 98571

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Drawn By	AJW
Checked By	RDJ

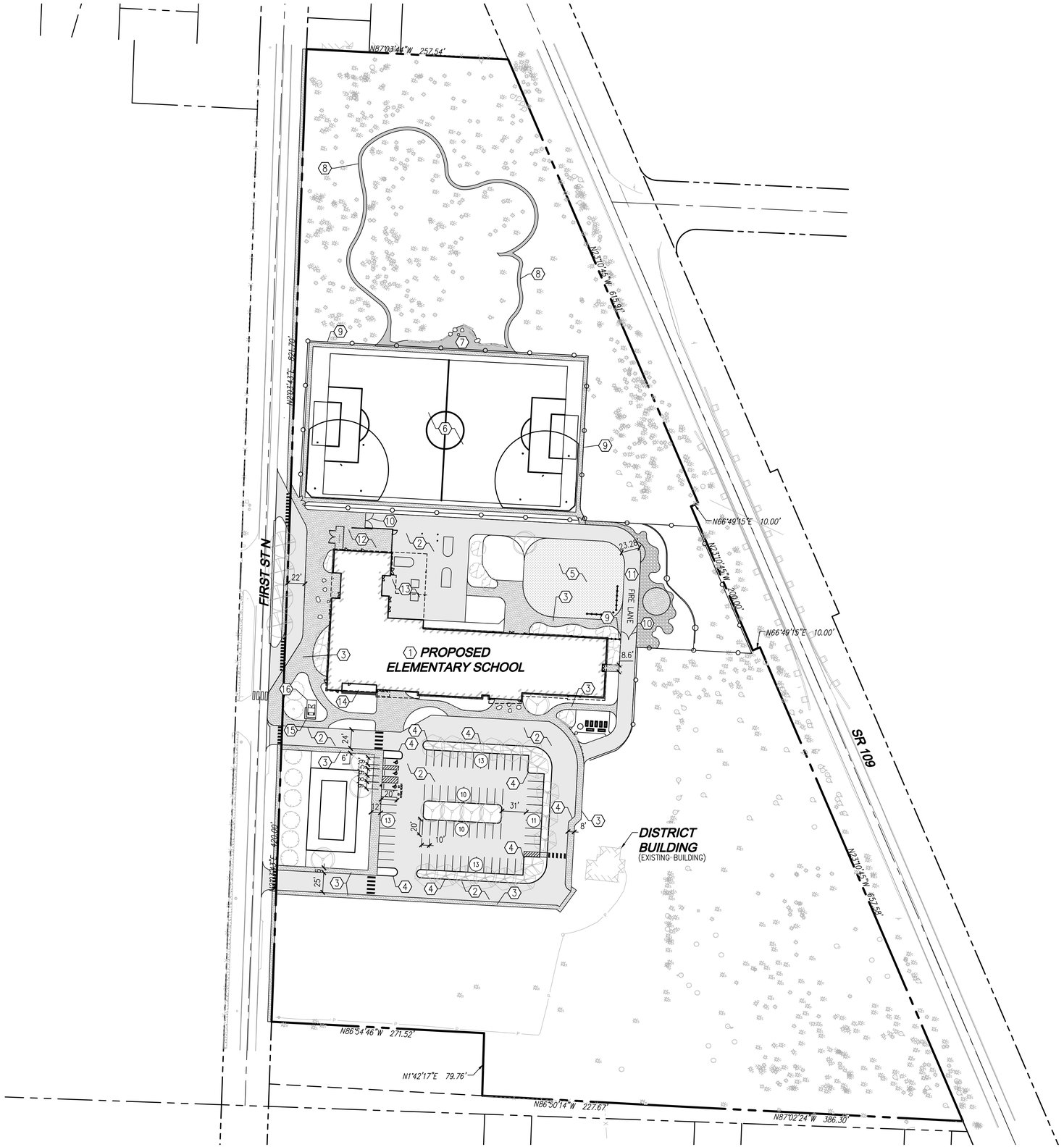
Sheet Title
DEMOLITION AND TESC PLAN

C1.00

Sheet Number 2 Of 6

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Drawing: P:\Civil\2026\C26-142 Pacific Beach Elementary School\Drawings\Construction\C25-142 EC-01.dwg Plotted: Sep 09, 2026 - 2:40pm



SCALE: 1" = 70'

70' 0 70' 140'

LEGEND

- RIGHT OF WAY
- R.O.W. CENTER LINE
- PROPERTY LINE
- BUILDING SETBACK LINE
- PROPOSED BUILDING
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PAVEMENT
- PROPOSED TRAIL
- PROPOSED PLAY FIELD
- PROPOSED CONCRETE CURB
- PROPOSED FENCE
- (X) STALL COUNT

CONSTRUCTION NOTES

1. PROPOSED BUILDING
2. PROPOSED ASPHALT PAVEMENT
3. PROPOSED CONCRETE SIDEWALK
4. PROPOSED CONCRETE CURB
5. PROPOSED PLAY SURFACE
6. PROPOSED SPORTS FIELD
7. PROPOSED OUTDOOR LEARNING SPACE
8. PROPOSED TRAIL
9. PROPOSED FENCE
10. PROPOSED GATE
11. PROPOSED FIRE LANE
12. PROPOSED SERVICE YARD
13. PROPOSED COVERED PLAY AREA
14. PROPOSED OUTDOOR STAGE
15. PROPOSED SCHOOL SIGN
16. PROPOSED TRANSFORMER PAD

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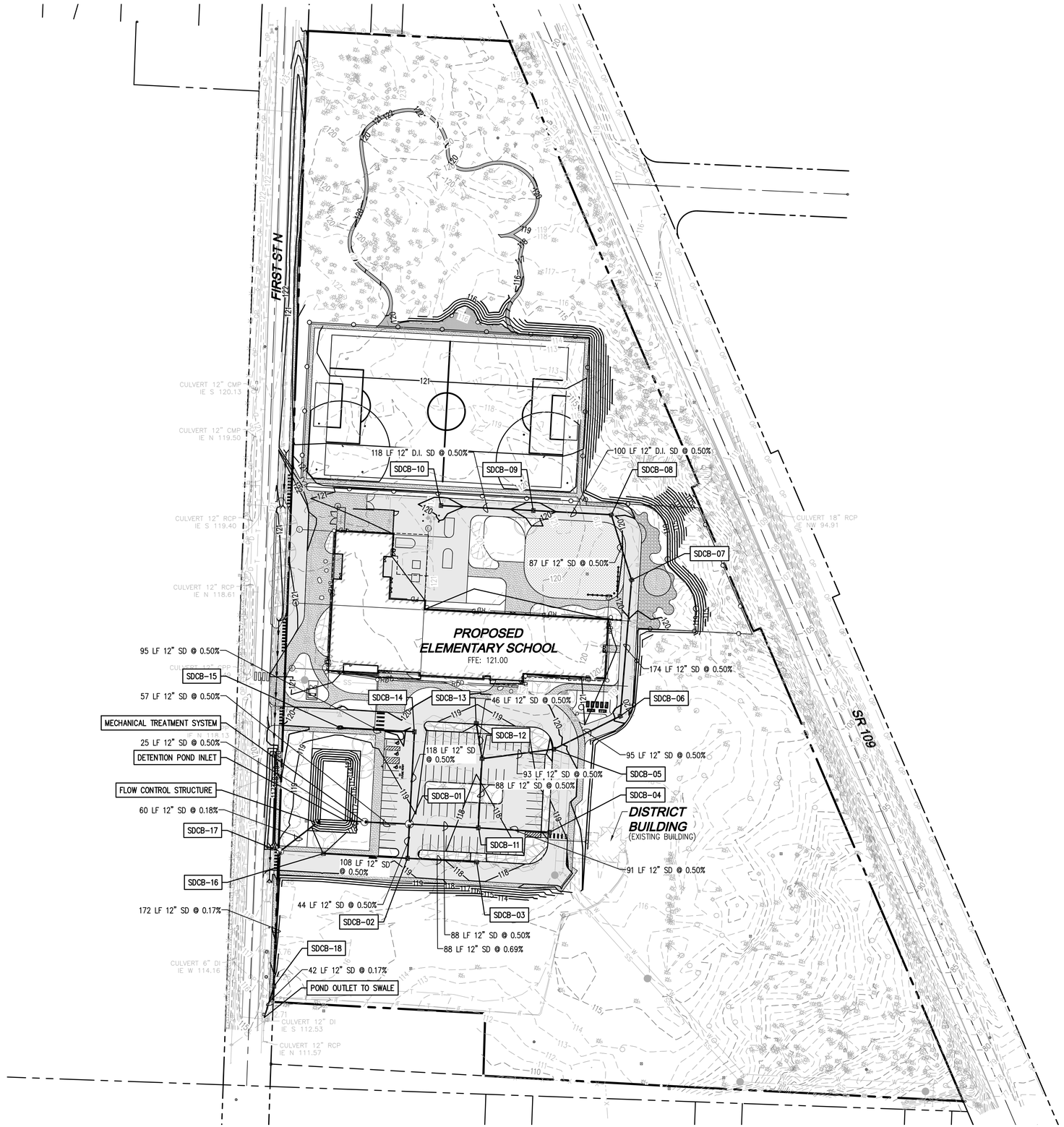
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SITE IMPROVEMENT PLAN

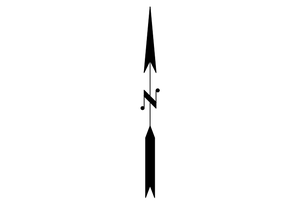
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LEGEND

- PROPOSED STORM DRAIN CLEANOUT
- PROPOSED TYPE 1 CATCH BASIN
- ADS N-12 PVC STORM PIPE
- RD — ASTM D3034 SDR35 PVC ROOF DRAIN LINE
- FD — ASTM D3034 SDR35 PVC FOOTING DRAIN LINE
- PROPOSED CULVERT
- EXISTING CONTOURS
- PROPOSED CONTOURS

STRUCTURE TABLE

NAME	TYPE	RIM	INVERTS
DETENTION POND INLET		114.16	IE=113.08 (12") E
DETENTION POND OUTLET		114.08	IE=113.00 (12") SW
FLOW CONTROL STRUCTURE	TYPE 2-54"ø W/BEEHIVE GRATE	115.02	IE=113.00 (12") SW IE=113.00 (12") NE
MECHANICAL TREATMENT SYSTEM	TYPE 2-48"ø W/ SOLID LOCKING LID	118.06	IE=113.21 (12") E IE=113.21 (12") W
POND OUTLET TO SWALE		113.61	IE=112.53 (12") N
SDCB-01	TYPE 2-54"ø	118.54	IE=113.50 (12") N IE=113.50 (12") S IE=113.50 (12") W IE=113.50 (12") E
SDCB-02	TYPE 1	118.69	IE=113.72 (12") E IE=113.72 (12") N IE=113.72 (12") W
SDCB-03	TYPE 1	117.39	IE=114.33 (12") W
SDCB-04	TYPE 1	118.62	IE=114.40 (12") W
SDCB-05	TYPE 1	119.67	IE=114.84 (12") NE IE=114.84 (12") W
SDCB-06	TYPE 1	119.72	IE=115.31 (12") N IE=115.31 (12") SW
SDCB-07	TYPE 1	119.06	IE=116.18 (12") N IE=116.18 (12") S
SDCB-08	TYPE 1	120.05	IE=116.62 (12") W IE=116.62 (12") S
SDCB-09	TYPE 1	119.71	IE=117.12 (12") W IE=117.12 (12") E
SDCB-10	TYPE 1	119.71	IE=117.71 (12") E
SDCB-11	TYPE 1	117.60	IE=113.94 (12") E IE=113.94 (12") N IE=113.94 (12") W
SDCB-12	TYPE 1	118.21	IE=114.38 (12") N IE=114.38 (12") S IE=114.38 (12") E
SDCB-13	TYPE 1	118.52	IE=114.61 (12") S
SDCB-14	TYPE 1	119.57	IE=114.09 (12") W IE=114.09 (12") S
SDCB-15	TYPE 1	118.95	IE=114.56 (12") E
SDCB-16	TYPE 1	118.01	IE=114.26 (12") E
SDCB-17	TYPE 2-48"ø	118.84	IE=112.89 (12") NE IE=112.89 (12") S
SDCB-18	TYPE 1	115.47	IE=112.60 (12") N IE=112.60 (12") S

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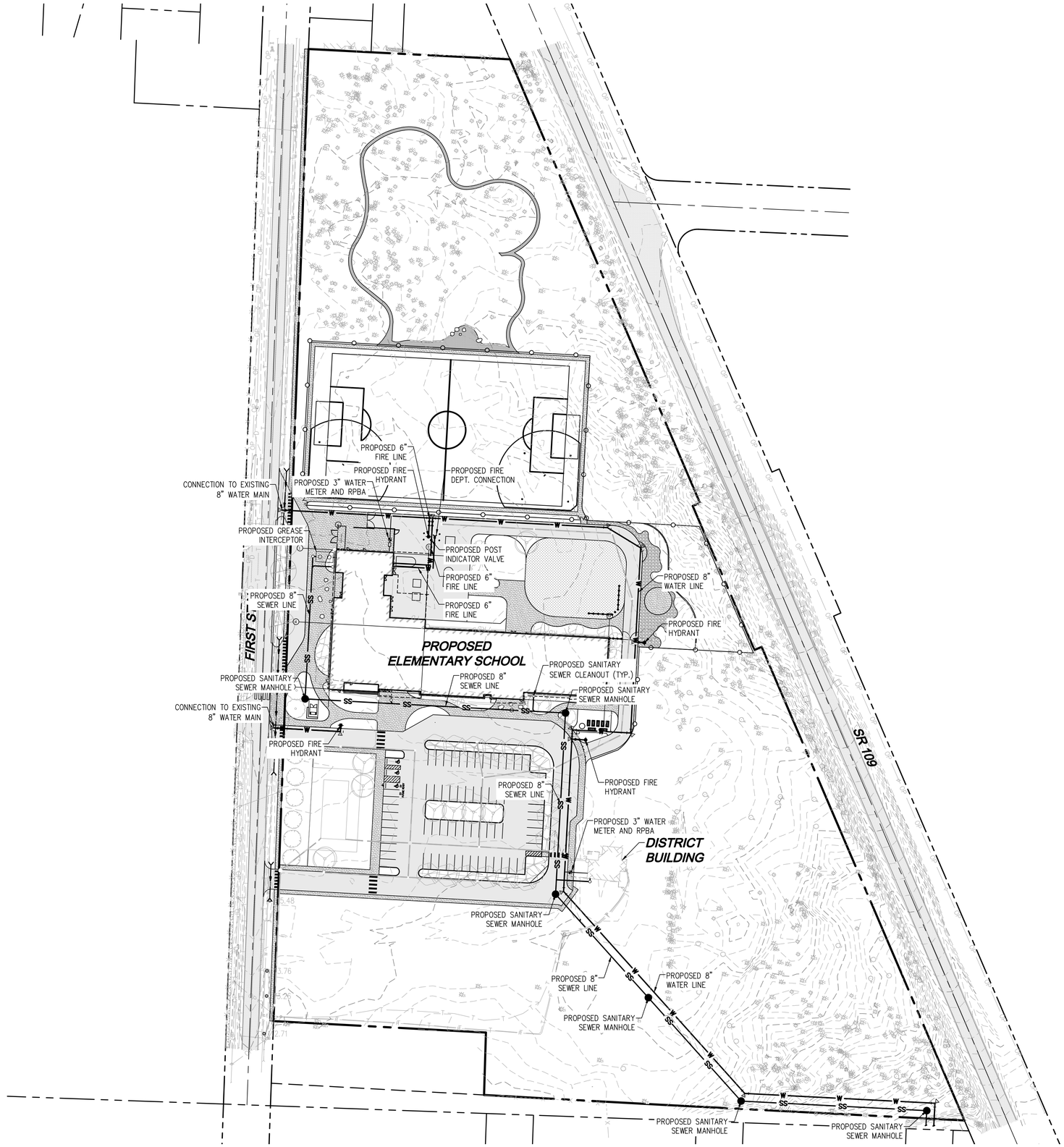
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GRADING AND DRAINAGE PLAN

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N

SCALE: 1" = 70'

70' 0 70' 140'

LEGEND

- W — AWWA C900 PVC DR14 WATER LINE
- PROPOSED POST INDICATOR VALVE
- PROPOSED FIRE DEPARTMENT CONNECTION
- PROPOSED RPBA
- PROPOSED WATER METER
- GATE VALVE
- THRUST BLOCKING
- PROPOSED FIRE HYDRANT
- WATER BEND FITTING
- SS — ASTM D 3034 SDR 35 PVC SANITARY SEWER PIPE
- PROPOSED SANITARY SEWER CLEANOUT
- PROPOSED SANITARY SEWER MANHOLE

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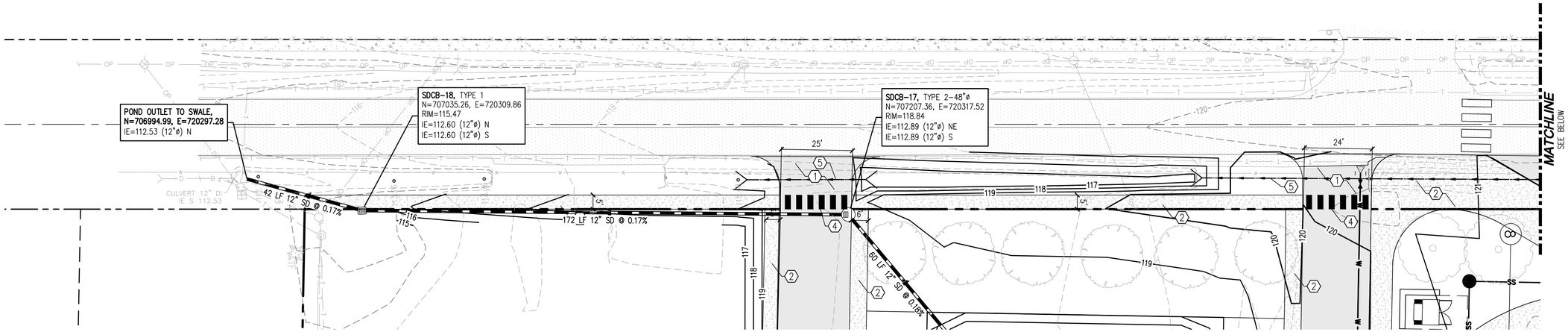
WATER AND SEWER PLAN

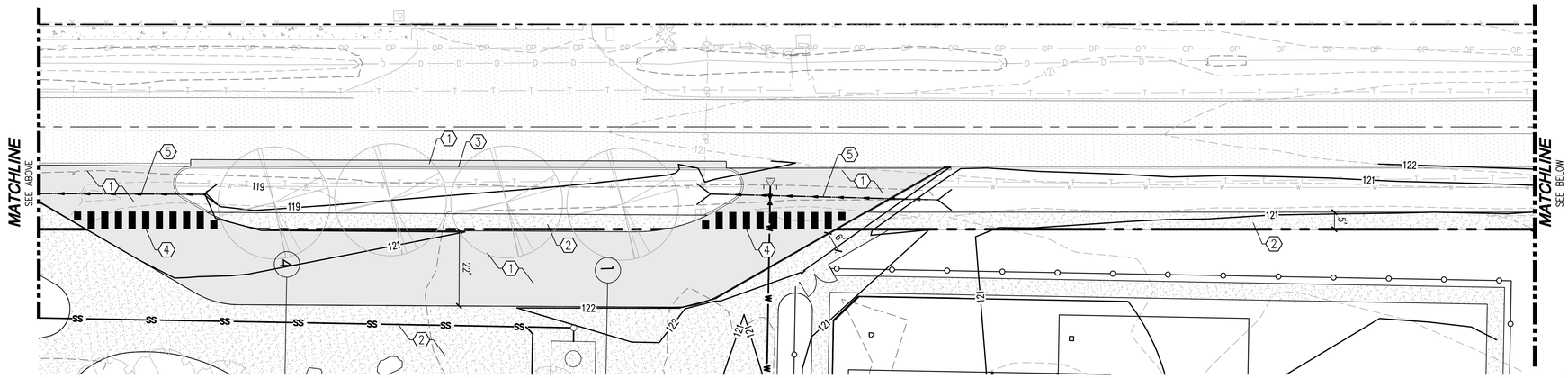
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SCALE: 1" = 20'

20' 0 20' 40'

LEGEND

- RIGHT OF WAY
- R.O.W. CENTER LINE
- PARCEL LINE
- PROPERTY/LOT LINE
- BUILDING SETBACK LINE
- GENERAL EASEMENT LINE
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE CURB
- PROPOSED CULVERT

CONSTRUCTION NOTES

1. PROPOSED ASPHALT PAVEMENT
2. PROPOSED CONCRETE SIDEWALK
3. PROPOSED CONCRETE CURB
4. PROPOSED CROSSWALK
5. PROPOSED CULVERT

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FRONTAGE IMPROVEMENT PLAN

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SD SITE PLAN LEGEND

1. ENTRY PLAZA BOULDERS — 1 / L3.20
2. STUDENT GARDEN — 2 / L3.20
3. GATHERING CIRCLE — 3 / L3.20
4. OUTDOOR EDUCATION — 4 / L3.20
5. PORCH SWING — 5 / L3.20
6. PLAYGROUND EQUIPMENT — 6 / L3.20
7. SWINGS — 7 / L3.20
8. FURNISHINGS — 8 / L3.20
9. ASPHALT SURFACE PLAY — 9 / L3.20
10. COVERED PLAY — 10 / L3.21
11. MULTI-USE SPORT FIELD — 11 / L3.21
12. NATURE SEATING AREA — 12 / L3.21
13. WOODLAND TRAILS — 13 / L3.21
14. PARKING LOT PLANTING — 14 / L3.21
15. PLANTING BUFFER — 15 / L3.21

MATERIALS LEGEND

	ASPHALT PAVING
	CONCRETE PAVING
	ENGINEERED WOOD FIBER PLAY SURFACING
	CRUSHED ROCK
	MULCH SURFACING
	PLANTING AREA
	LAWN
	DETENTION POND



1 SD OVERALL SITE PLAN
1" = 50'-0"

0 25' 50'

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Sheet Title
OVERALL SITE PLAN

L1.11

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Boulders cast into entry plaza paving express a natural landscape character and provide durable site features that facilitate wayfinding, gathering, seating, and informal play.

1 ENTRY PLAZA BOULDERS



A flexible outdoor education classroom mixes natural features and furnishings with soft paving and planting to serve a variety of school and extra-curricular functions.

4 OUTDOOR EDUCATION & TRADITIONAL GARDENS



Fixed playground swings.

7 SWINGS



Structured student garden plots provide a creative outdoor learning environment to facilitate hands-on learning and teaches responsibility and strategic thinking. A greenhouse also provides storage and year-round access to horticultural education.

2 STUDENT GARDEN



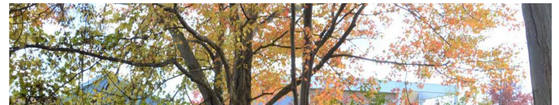
Children's porch swing provides an intimate sensory seating opportunity.

5 PORCH SWING



Site furnishings provide variety and options for seating, gathering, and independent work or play.

8 FURNISHINGS



A gathering circle comprised of logs, stumps, and other natural elements.

3 GATHERING CIRCLE



Fixed play equipment facilitates development of motor skills and risk taking with features such as swings, spinners, climbing structures, and slides.

6 PLAYGROUND



Surface play markings transform expansive asphalt paving into a space for organized games and alternative learning.

9 ASPHALT SURFACE PLAY

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DETAILS

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A covered play area provides weather-protected space for free play, organized games, and congregating.

10 COVERED PLAY



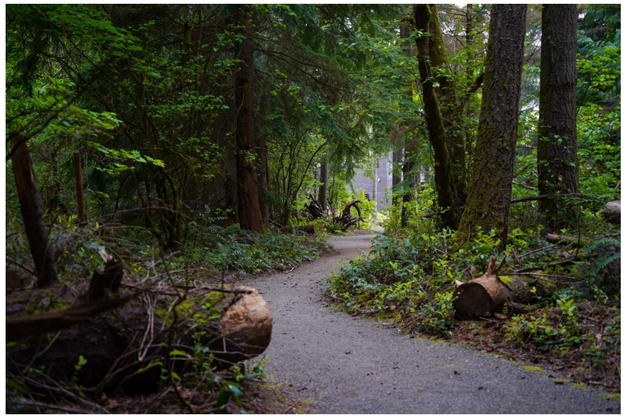
The multi-use natural turf sport field provides a high school regulation size soccer pitch.

11 MULTI-USE SPORT FIELD



Arranged logs and boulders provide an informal opportunity for gathering and seating for spectators at the edge of the sports field.

12 NATURE SEATING AREA



Woodland trails enhance the school's access to existing site ecology and provide educational and recreational opportunities for engaging with local plants and animals.

13 WOODLAND TRAILS



Mixed deciduous and evergreen planting provides year-round interest and seasonal variety to vehicle buffers.

14 PARKING LOT PLANTING



Biodiverse planting buffers provide lush vegetation that nestles the school into the site and enhance the existing ecological conditions.

15 PLANTING BUFFER

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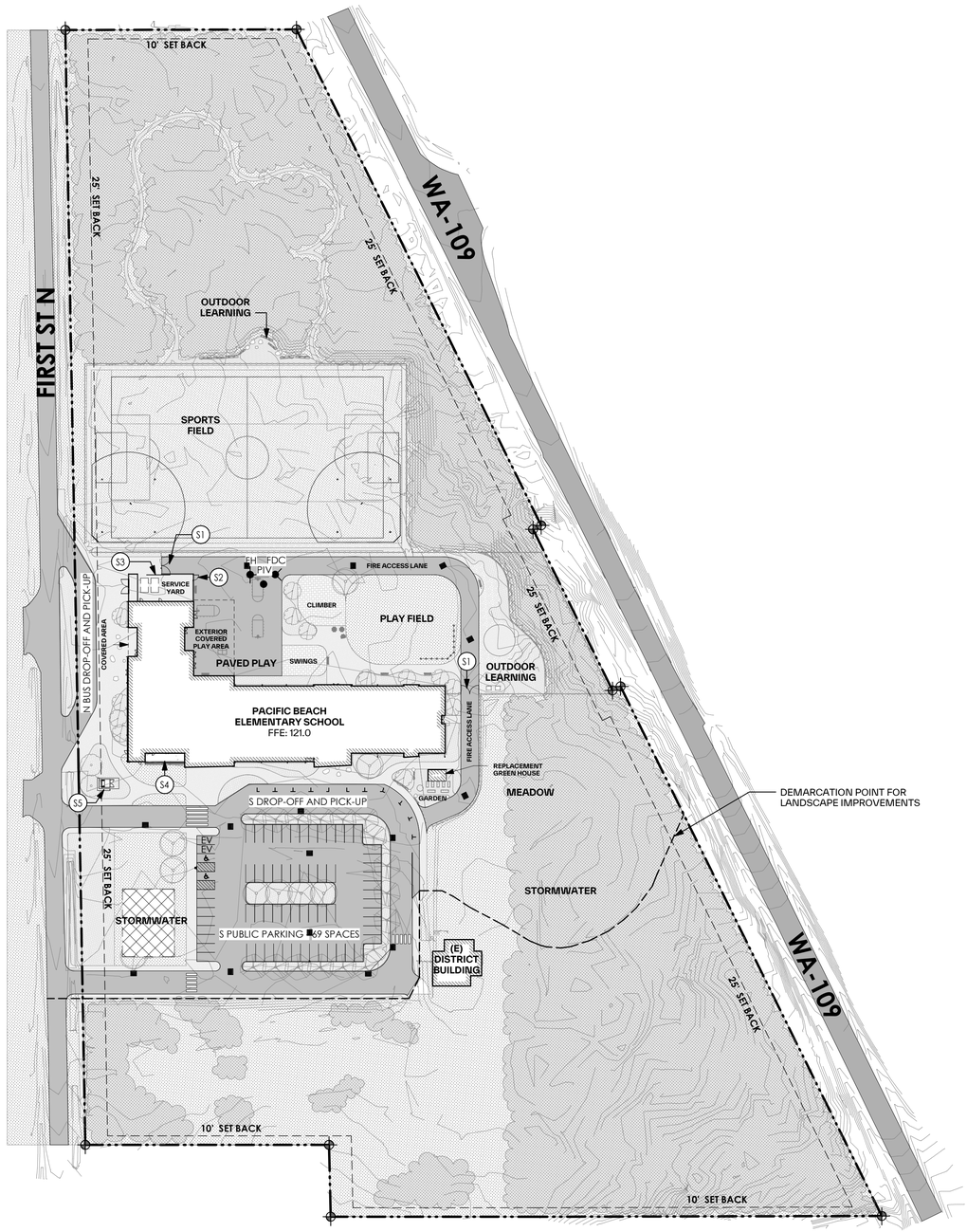
DETAILS

L3.21

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GENERAL NOTES

1. SEE CIVIL DEMO PLANS AND SURFACING PLANS FOR CONTRACTOR'S SURFACING SCOPE OF WORK.

2. SURFACE PAVING SCOPE, SITE UTILITIES, SITE LIGHTING TYPE AND LOCATIONS, LANDSCAPE PLANTINGS SCHEMES ARE SHOWN ON THE ARCHITECTURAL SITE PLAN AND ENLARGED SITE PLANS FOR REFERENCE ONLY - SEE APPLICABLE DESIGN DISCIPLINE FOR EACH - CIVIL, ELECTRICAL AND LANDSCAPE SHEETS FOR THE ABOVE NAMED SCOPES OF WORK ON SITE.

SITE PLAN LEGEND

- PROPERTY LINE
- 'X' SET BACK — SET BACK
- ROOF OVERHANG
- BLACK VINYL COATED CHAINLINK FENCING, HEIGHT PER KEYNOTE
- BUILDING FOOTPRINT
- CONCRETE PAVING AND WALK WAYS, SEE CIVIL AND LANDSCAPE DRAWINGS
- ASPHALT PAVING - SEE CIVIL DWGS
- GRASS / FOREST / PROPOSED PLAY FIELD, SEE LANDSCAPE DRAWINGS
- GROUND COVER, SEE LANDSCAPE DRAWINGS
- GARDEN / OUTDOOR GATHERING, SEE LANDSCAPE DRAWINGS
- MOW STRIP / OUTDOOR CLASSROOM, SEE LANDSCAPE DRAWINGS
- PLAYGROUND, SEE LANDSCAPE DRAWINGS
- SPORTS FIELD, SEE LANDSCAPE DRAWINGS
- STORMWATER RETENTION POND

KEYNOTES

S1	PAIR OF 13' WIDE BY 6' HIGH BLACK VINYL COATED CHAIN LINK SWING GATES
S2	3' WIDE SWING GATE
S3	20' LONG BY 8' HIGH MANUAL HORIZONTAL SIDING GATE
S4	OUTDOOR STAGE
S5	SCHOOL MONUMENT SIGN AND DIGITAL READERBOARD

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NOTE: DRAWING MAY BE REDUCED
0 40' 80' 160'

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SITE PLAN

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1 SITE PLAN
1" = 80'-0"

PLAN NORTH

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GENERAL NOTES

A. SEE GENERAL NOTES ON SHEET G2.01 FOR ADDITIONAL INFORMATION.

B. DIMENSIONING: REFER TO SITE PLANS, DIMENSION PLANS, FLOOR PATTERN PLANS, REFLECTED CEILING PLANS, ELEVATIONS, SECTIONS, INTERIOR ELEVATIONS, ENLARGED FLOOR PLANS, AND DETAILS FOR ADDITIONAL DIMENSIONAL INFORMATION.

EXTERIOR WALLS: ALL DIMENSIONS TO EXTERIOR WALLS ARE TO FACE OF STUD OR EXTERIOR FACE OF MASONRY VENEER, OR CENTERLINE OF COLUMNS U.N.O.

INTERIOR WALLS: ALL DIMENSIONS TO INTERIOR WOOD STUD WALLS ARE TO FACE OF STUD, CENTER OF OPENING OR CENTERLINE OF WOOD COLUMNS, U.N.O.

ABBREVIATIONS:
FOB - FACE OF BRICK
FOC - FACE OF CONCRETE
FOM - FACE OF MASONRY VENEER
FOS - FACE OF STUD
C/L COL - CENTERLINE OF COLUMN
C/L STUD - CENTERLINE OF STUD
C/L FIX - CENTERLINE OF FIXTURE

DOORS: AT DOORS WITHOUT LOCATION DIMENSIONS LOCATE HINGE JAMB PER DIAGRAM IN FLOOR PLAN LEGEND.

MASONRY DIMENSIONS: OVERALL BUILDING PLAN DIMENSIONS AND OPENING DIMENSIONS ARE PRIMARILY BASED UPON ACTUAL MASONRY DIMENSIONS. THE CONTRACTOR MUST CAREFULLY COORDINATE OPENING SIZES AND LOCATIONS AND COORDINATE PLACEMENT OF COORDINATING ITEMS SUCH AS MASONRY PENETRATIONS BY STEEL ITEMS REQUIRING COORDINATION WITH MASONRY JOINTS AND MODULES. MASONRY CUTTING WILL BE REQUIRED AT SOME LOCATIONS BUT THE INTENT OF THE DOCUMENTS IS TO MINIMIZE CUTTING THROUGH CAREFUL COORDINATION BY THE CONTRACTOR.

C. WALL LAYOUT: WALLS ARE TYPICALLY 90 DEGREES FROM A HORIZONTAL PLANE, U.N.O.

D. VERTICAL HEIGHTS ON ARCHITECTURAL DRAWINGS: TOP OF CONCRETE FLOOR SLAB, IS GENERALLY REFERENCED AS ELEVATION 0' - 0" FOR THE MAIN FLOOR LEVEL. ALL OTHER VERTICAL DIMENSION REFERENCE POINTS ABOVE (+) OR BELOW (-) 0' - 0": SEE CIVIL DRAWINGS FOR ACTUAL BUILDING TOP OF SLAB BASE ELEVATION

E. FLOOR SLOPES: AT ROOMS W/ FLOORS SHOWN SLOPED TO DRAIN DO NOT REDUCE SLAB THICKNESS OF SLAB ON GRADE. ONLY MINOR ADJUSTMENTS SHALL BE MADE W/TILE GROUT BASE. UNLESS DIMENSIONED OTHERWISE, FLOOR DRAINS ARE LOCATED AT CENTER OF ROOMS. SEE GENERAL NOTES ON A2.02 FOR FLOOR SLOPE GENERAL NOTES. SEE DETAIL

F. SEE THE A8 SHEETS FOR INTERIOR ELEVATIONS, INTERIOR ELEVATIONS ARE REFERENCED IN EACH ROOM WITH A SYMBOL INDICATING THE WALL ELEVATED AND THE SHEET NUMBER OF THE ELEVATION (SEE LEGEND ON G2.01)

G. SEE INTERIOR ELEVATIONS FOR WALL MOUNTED ITEMS

H. ALL HANDICAP ACCESSIBLE TOILETS AND URINALS SHALL MEET CURRENT STATE RULES AND REGULATIONS FOR BARRIER-FREE DESIGN.

J. SEE SHEET G2.01 FOR SYMBOLS, ABBREVIATIONS, SEE SHEET G2.02 TYPICAL MOUNTING HEIGHTS, SEE SHEET A70.01 FOR FINISH SCHEDULE, SEE DETAIL SHEETS FOR SCHEDULES, DETAILS AND ADDITIONAL NOTES.

K. UNLESS OTHERWISE NOTED, REFER TO SPECIFICATIONS FOR FLOORING REDUCERS, WHERE DIFFERING MATERIALS MEET. PROVIDE APPROPRIATE REDUCER AT ALL TRANSITIONS AS APPROVED WHETHER DETAILED OR NOT. SEE A21 SERIES FOR FLOOR & BASE DETAILS.

L. REFER TO SHEETS SERIES A30 AND A31 FOR WALL TYPES AND GENERAL NOTES TO WALL TYPES, BUILDING & WALL SECTIONS.

M. PROVIDE CONTINUATION OF 1-HR OR 2-HR WALL BARRIER BEHIND ALL RECESSED EQUIPMENT, SUCH AS FIRE EXTINGUISHER CABINETS, ELECTRICAL PANELS, ETC. BY RUNNING GWB BACK AND BEHIND. PROVIDE ADDITIONAL BLOCKING AND BACKING AS REQUIRED.

N. THERMAL AND SOUND INSULATION IS INTENDED TO PROVIDE A CONTINUOUS ENVELOPE AS INDICATED.

P. IN THE EVENT OF CONFLICTING INFORMATION WITHIN THE DOCUMENTS, IMMEDIATELY CONTACT THE ARCHITECT FOR CLARIFICATION, PROCEEDING WITHOUT SUCH CLARIFICATION IS AT THE CONTRACTORS RISK & COST.

Q. THE GENERAL CONTRACTOR SHALL COORDINATE ALL DOWNSPOUT LOCATIONS AND CONNECTIONS TO TIGHTLINES AND STORM DRAINAGE SYSTEM(S), THE ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS ILLUSTRATE AND DIMENSION DOWNSPOUT LOCATIONS AND WILL TAKE PRECEDENCE WHEN INSTALLING ALL ASSOCIATED WORK. ALSO SEE CIVIL DRAWING AND SPECIFICATIONS

R. VAPOR BARRIER: CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF THE VAPOR BARRIER MEMBRANE AT FLOOR SLAB. BACKER ROD, SEALANT, AND OTHER APPROVED MEANS SHALL BE APPLIED CONTINUOUSLY AROUND ALL EXTERIOR DOOR AND WINDOW OPENINGS AND OTHER AREAS OF POTENTIAL AIR INFILTRATION, INCLUDING STRUCTURAL, MECHANICAL, AND ELECTRICAL PENETRATIONS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO VAPOR BARRIERS, OR REPLACE THEM PRIOR TO COVER, AS APPROVED. CONTRACTOR SHALL EXERCISE CARE DURING THE INSTALLATION OF THE VAPOR BARRIER TO PROVIDE SPECIFIED OVERLAP BETWEEN INDIVIDUAL SHEETS AND SHALL TAPE ALL JOINTS. SHOULD THE MATERIAL BE TORN OR PUNCTURED, PATCH BY ADDITION OF MATERIAL OVER AFFECTED AREA WITH AT LEAST 12" COVERAGE BEYOND DAMAGE, AND TAPE ALL JOINTS, ALSO SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

S. DO NOT SCALE DRAWINGS: CONTACT ARCHITECT FOR ANY NEEDED CLARIFICATION.

T. COORDINATE LOCATION OF SIGNS WITH SITE PLAN, INTERIOR AND EXTERIOR ELEVATIONS AND FLOOR PLANS.

U. COORDINATE WALL OPENING REQUIREMENTS FOR MECHANICAL DUCTS, PIPES, ETC. AND FOR ELECTRICAL CONDUIT WITH MECHANICAL AND ELECTRICAL DRAWINGS AND PROVIDE AS NEEDED. OPENINGS SHALL BE SIZED ONLY AS NEEDED FOR THESE PENETRATIONS AND SHALL BE SEALED AT EDGES FOR SOUND CONTROL REQUIREMENTS WHERE REQUIRED, TYP.

V. REFER TO SHEET A30.02 AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON WALL BACKING & BLOCKING REQUIREMENTS.

LEGEND

1HR 6S/MV1 — WALL TYPE REFERENCE, SEE SHEETS SERIES A30.02 AND A31.01 FOR WALL TYPE DESCRIPTIONS, AND WALL TYPE REFERENCE LEGEND

FLOOR BOX, SEE ELECTRICAL, PROVIDE FINISH FLOORING INSERT, TYP.

CEILING HEIGHT CHANGE ABOVE, U.N.O.

FD — FLOOR DRAIN, SEE DTL

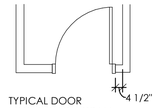
FD — FLOOR DRAIN, WITH LOCALIZED SLOPE, SEE DTL

FS — FLOOR SINK

DS — DOWNSPOUT, SEE GENERAL NOTES

FEC — WALL MOUNTED FIRE EXTINGUISHER IN CABINET

FEB — WALL MOUNTED FIRE EXTINGUISHER ON BRACKET



TYPICAL DOOR LOCATION DIAGRAM



CORNER GUARD, SEE FLOOR PATTERN AND SIGNAGE PLANS FOR LOCATIONS. ALSO SEE CG TYPES ON A72.10, (NOTE: CORNER GUARDS AT KITCHEN ARE SS, REFER TO SHEET FS-4 FOR LOCATIONS)

TYPICAL NEW WALL TYPES

ALL NEW INTERIOR WALLS ARE TYPE 6W/4 UNLESS NOTED OTHERWISE

6W/4

TYPICAL NEW EXTERIOR WALL TYPES

ALL NEW EXTERIOR WALLS ARE 8W/FCP1 OR 8W/MPS1 UNLESS SHOWN OTHERWISE ON EXTERIOR ELEVATIONS AND BUILDING SECTIONS.

8W/FCP1 8W/MPS1

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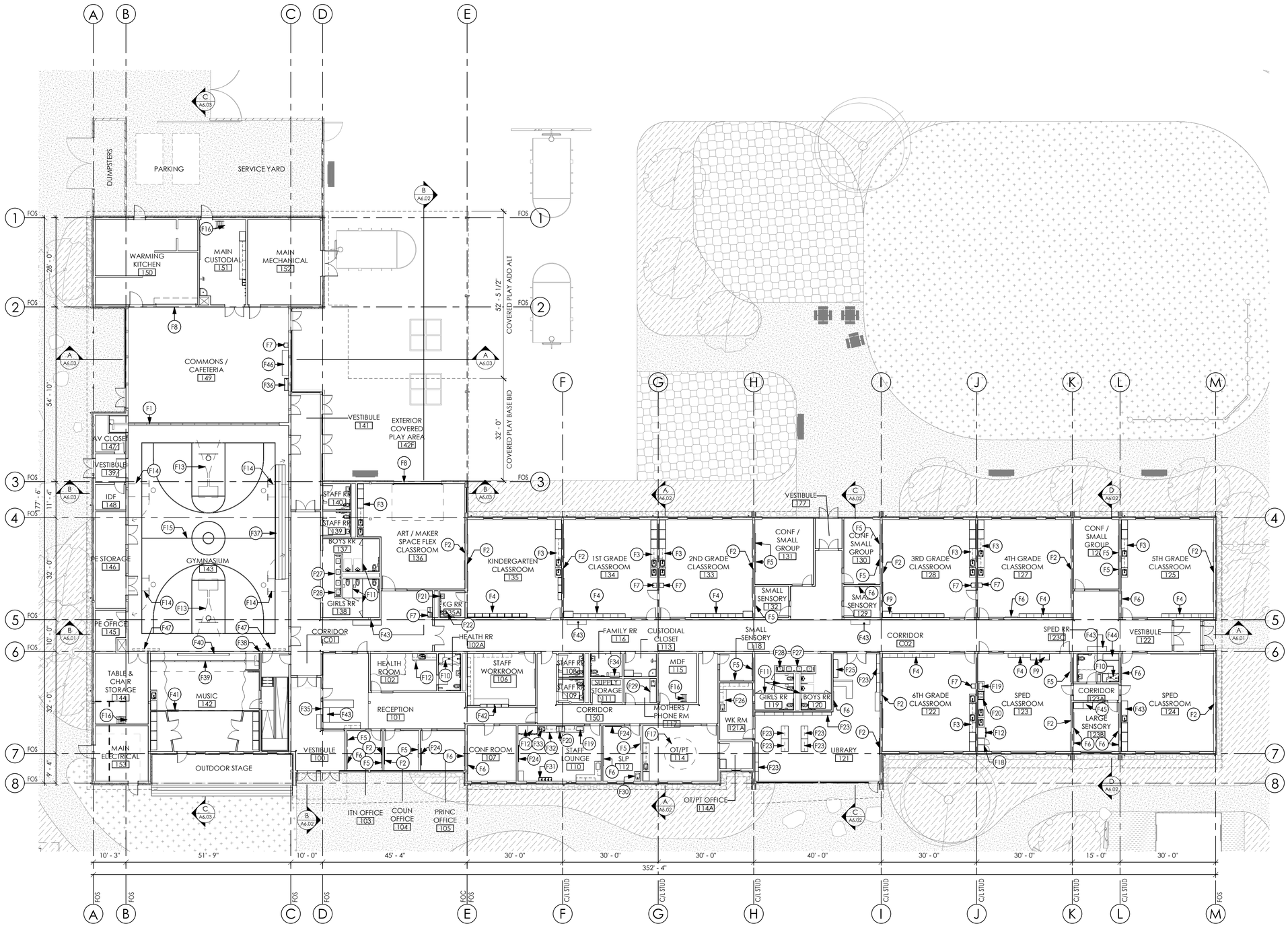
Sheet Title
FLOOR PLAN GENERAL NOTES & LEGEND

A2.01

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1 FIRST FLOOR REFERENCE PLAN

1/16" = 1'-0"

PLAN NORTH

SHEET NOTES:

A. SEE SHEET A2.01 FOR FLOOR PLAN GENERAL NOTES AND LEGEND
B. SEE A30 SERIES SHEETS FOR EXTERIOR WALL TYPE DESCRIPTIONS AND GENERAL NOTES
C. SEE A31 SERIES SHEETS FOR INTERIOR WALL TYPE DESCRIPTIONS AND GENERAL NOTES

KEYNOTES

F1	ELECTRICALLY OPERATED PANEL PARTITION
F2	TYP CLASSROOM TEACHING WALL, SEE SHEET A80.01 FOR TYPICAL LAYOUT
F3	TYP CLASSROOM CASEWORK: SEE A80.01 FOR CASEWORK LAYOUTS
F4	CASEWORK CUBBIES, SEE INTERIOR ELEVATIONS AND A80-SERIES DWGS
F5	MARKERBOARD
F6	TACKBOARD
F7	DRINKING FOUNTAIN W/ BOTTLE FILLER
F8	SECTIONAL OVERHEAD DOOR
F9	FULL HEIGHT STORAGE
F10	SHOWER W/ADA WAND & BENCH SEAT
F11	TOILET PARTITION
F12	REFRIGERATOR
F13	FRONT-FOLD BASKETBALL HOOP W/HEIGHT ADJUSTER & BREAKAWAY RIM, 10' H WALL PADS
F14	SIDE-FOLD BASKETBALL GOAL ABOVE
F15	BASKETBALL AND VOLLEYBALL GAME LINE STRIPING WITH CUSTOM CENTER-COURT LOGO
F16	ALUM SHIPS LADDER
F17	UNISTRUT TRACK FOR SWING ABOVE, SEE RCP
F18	WASHER AND DRYER
F19	MICROWAVE
F20	OVEN/RANGE W/RESIDENTIAL HOOD
F21	CHILD HEIGHT SINK
F22	CHILD HEIGHT TOILET W/GRAB BARS
F23	3' TALL BOOKSHELVES FOR DISPLAY
F24	MONITOR, OFCI
F25	WALL CABINET, DISPLAY CASE
F26	WORK ROOM COUNTERTOP - COUNTERTOP WITH DROP-IN SINK, LOWER 3' BASE CABINETS, WALL MOUNTED CABINETS OVERHEAD
F27	COUNTERTOP WITH DROP-IN SINKS, WALL MOUNTED FAUCETS, WALL MOUNTED MIRRORS WITH SOAP AND PAPER TOWEL DISPENSERS
F28	LOWERED 29" COUNTERTOP WITH DROP-IN SINK, WALL MOUNTED FAUCET, WALL MOUNTED MIRROR
F29	COUNTERTOP WITH DROP-IN SINK, UNDERCOUNTER REFRIGERATOR
F30	COUNTERTOP WITH DROP-IN SINK, LOWER 3' BASE CABINETS, FULL HEIGHT STORAGE
F31	METAL LOCKERS
F32	DISHWASHER
F33	SINK W/ BUBBLER
F34	WALL MOUNTED, RECESSED BABY CHANGING STATION
F35	TRANSACTION WINDOW
F36	CHILD HEIGHT TROUGH SINK
F37	POWERED RETRACTABLE BLEACHERS, 3 ROWS HIGH
F38	ADVANCE SCOREBOARD OPTION, ABOVE
F39	OPERABLE PARTITION W/ACOUSTIC PANELS FACING GYM, MARKERBOARD PANELS FACING MUSIC
F40	CEILING MOUNTED MOTORIZED PROJECTION SCREEN
F41	CYCLORAMA STAGE CURTAIN
F42	STAFF MAILBOXES
F43	BUILT-IN WOOD BENCH, 18"D X 6'L
F44	FREE STANDING CHANGING TABLE
F45	BUILT-IN BENCH WITH SEAT PAD
F46	BUILT-IN CASEWORK FOR TRASH/RECYCLE W/QUARTZ COUNTERTOP
F47	WALL-MOUNTED OVERHEAD MONITOR DISPLAY

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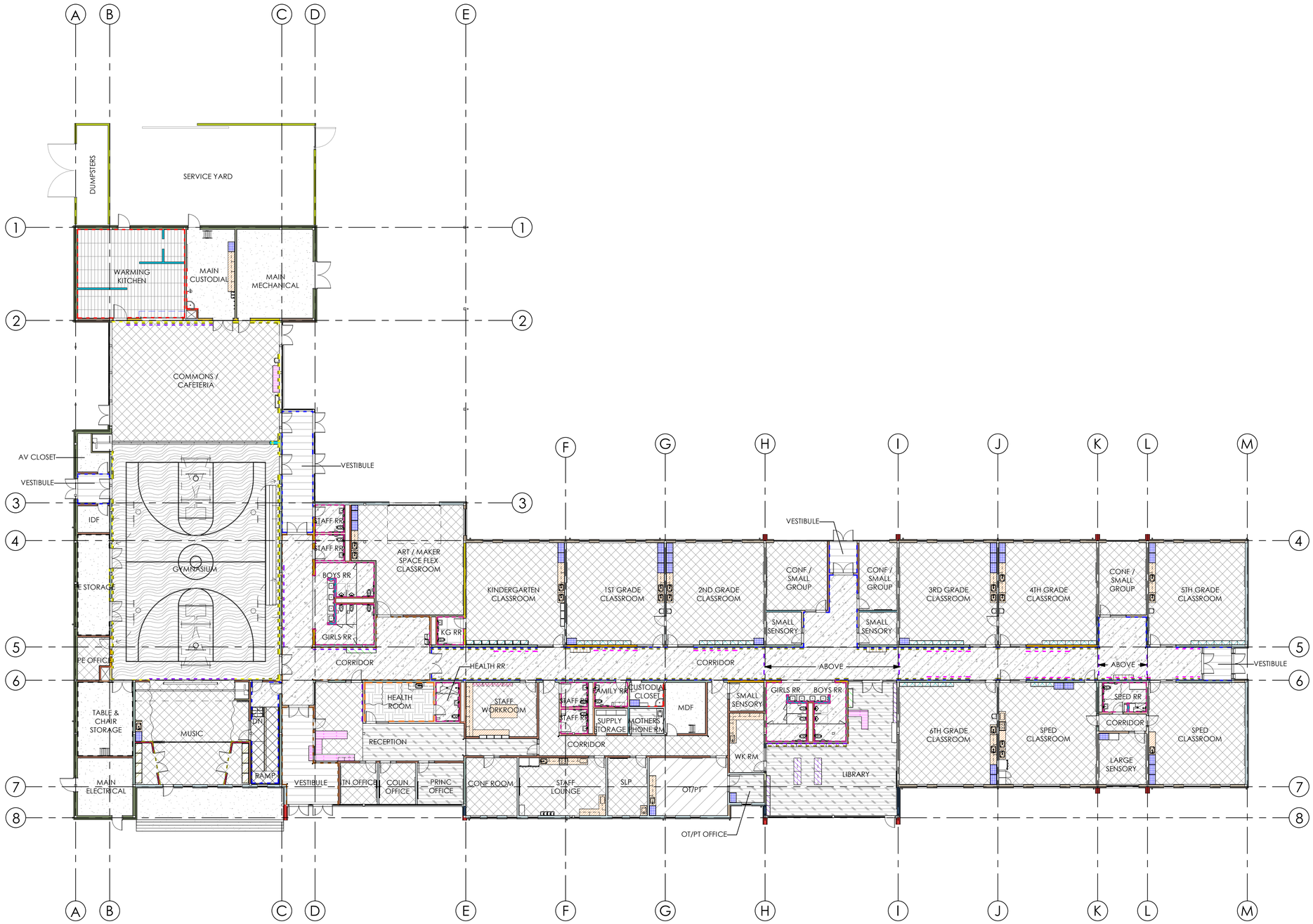
Sheet Title
FIRST FLOOR REFERENCE PLAN

A2.02a

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FLOOR FINISH LEGEND

CONC-SL	SEALED CONCRETE
CPT	CARPET TILE
CONC-P	POLISHED CONCRETE
SV	SHEET VINYL
CT	LARGE FORMAT FLOOR TILE & RECESSED SLAB
RT	RUBBER TILE FLOORING
WOM	SURFACE APPLIED CARPET WALK-OFF-MAT
RAF	RUBBER ATHLETIC FLOORING
MAF	MAPLE ATHLETIC FLOORING
QT	QUARRY TILE

WALL COVERING LEGEND

- COMPACT PLASTIC LAMINATE WAINSCOT, 7'-2" HIGH
- ACOUSTIC WALL PANEL, APPROX 8' TO 12'
- VINYL WALL PANELING, 5'-0" HIGH
- VINYL WALL COVERING 7'-2" HIGH
- COMPACT PLASTIC LAMINATE WAINSCOT, 8'-0" HIGH
- FIBERGLASS REINFORCED PANELS, FULL HEIGHT
- HARDWOOD VENEER WALL PANELING, 7'-2" HIGH
- CERAMIC TILE WAINSCOT, FULL HEIGHT
- VINYL WALL COVERING FULL HEIGHT
- VINYL WALL COVERING, CUSTOM GRAPHIC
- MDF WAINSCOT, 8'-0" HIGH

CASEWORK LEGEND

SEE SHEET A80.01 FOR TYPICAL CLASSROOM TEACHING WALL MARKER BOARD LAYOUT

- FULL HEIGHT STRG CABINETS. ALL CASEWORK TO BE SURFACED WITH PLAM
- BASE CABINETS WITH PLAM COUNTERTOP AND UPPERS
- FULL HEIGHT PLAM FACED CASEWORK CUBBIES FOR STUDENT STORAGE
- 8' H WOOD VENEER DISPLAY CASES
- BOOK SHELF CABINETS
- QUARTZ TOP RECEPTION DESK W/TRACELESS LAMINATE UPPERS AND BASE CABINETS UNO
- UPPER CABINETS
- INSTRUMENT STORAGE FULL HEIGHT
- QUARTZ COUNTERTOP
- BUILT-IN WOOD BENCH

WALL TYPE LEGEND

SEE SHEET A30.02 FOR EXTERIOR WALL TYPE ASSEMBLY
SEE SHEET A31.01 & A31.02 FOR INTERIOR WALL TYPE ASSEMBLY

- WALL TYPE - 4W/1
- WALL TYPE - 4W/2
- WALL TYPE - 4W/4
- WALL TYPE - 6W/1
- WALL TYPE - 6W/2
- WALL TYPE - 6W/4
- WALL TYPE - 6W-P/1
- WALL TYPE - 6W-P/2
- WALL TYPE - 6W-P/3
- WALL TYPE - 8W/1
- WALL TYPE - 8W/4
- WALL TYPE - 8W-P/2
- WALL TYPE - 8W-P/3
- WALL TYPE - 8W-2P/2
- WALL TYPE - 6WSS/3
- WALL TYPE - 8WSS/4
- WALL TYPE - 6WSS-P/1
- WALL TYPE - 6WSS-P/2
- WALL TYPE - 6WSS-P/3
- WALL TYPE - 8WSS-P/2
- WALL TYPE - 8WSS-P/3
- WALL TYPE - 8WSS-2P/1
- WALL TYPE - 8WSS-2P/2
- WALL TYPE - BV1/BV1
- WALL TYPE - 8W/BV1
- WALL TYPE - 8W/BV2
- WALL TYPE - 8W/FCP1
- WALL TYPE - 8W/FCP2
- WALL TYPE - 8W/MPS1
- WALL TYPE - 8W/MPS2
- WALL TYPE - 8W/MPS3

1 FIRST FLOOR FINISH PLAN
1/16" = 1'-0"

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FIRST FLOOR FINISH PLAN

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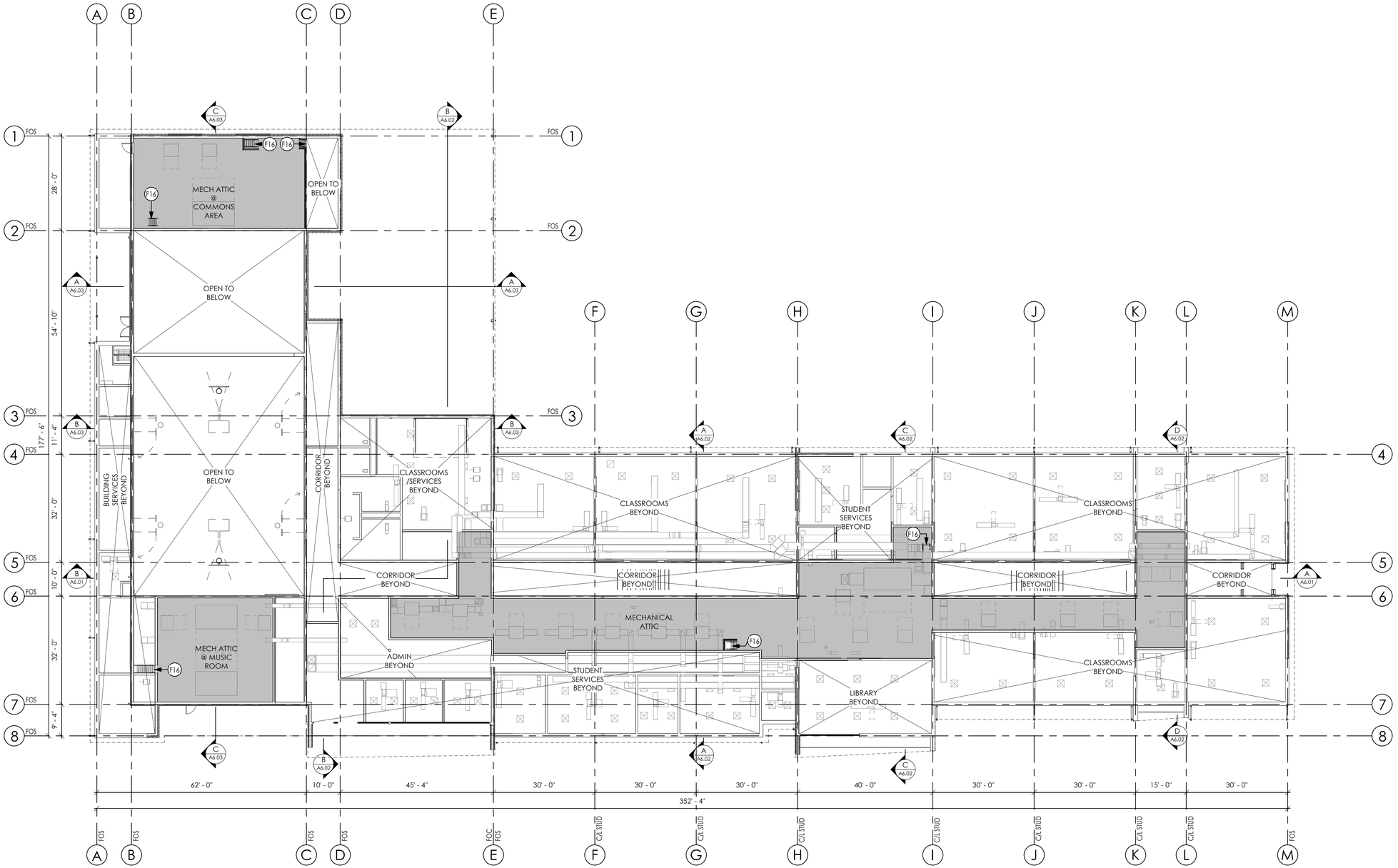
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SHEET NOTES:

A. SEE SHEET A2.01 FOR FLOOR PLAN GENERAL NOTES AND LEGEND
B. SEE A30 SERIES SHEETS FOR EXTERIOR WALL TYPE DESCRIPTIONS AND GENERAL NOTES
C. SEE A31 SERIES SHEETS FOR INTERIOR WALL TYPE DESCRIPTIONS AND GENERAL NOTES

KEYNOTES

F16	ALUM SHIPS LADDER



1 MECHANICAL ATTIC REFERENCE PLAN
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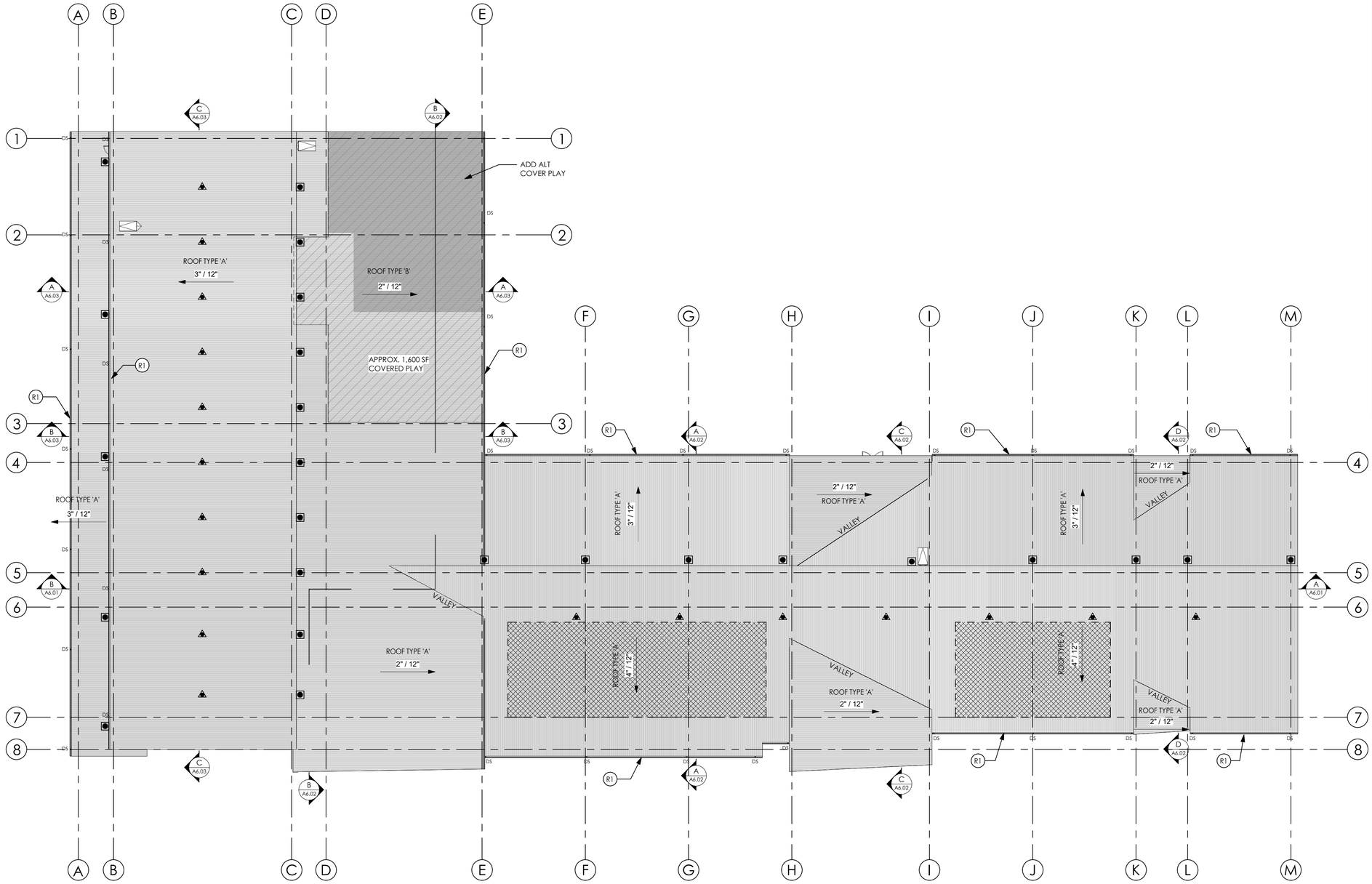
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MECHANICAL ATTIC REFERENCE PLAN

A2.03

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1 REFERENCE ROOF PLAN
1/16" = 1'-0"

GENERAL NOTES

A. OTHER NOTES: SEE GENERAL NOTES ON G2 SERIES SHEETS FOR ADDITIONAL INFORMATION.

B. ROOF PENETRATIONS: ALL ROOF PENETRATIONS SHALL BE LOCATED AWAY FROM ROOF VALLEYS. ALL ROOF PENETRATIONS SHALL BE PROPERLY FLASHED TO DIRECT PRECIPITATION TO GUTTERS AND SCUPPERS IN CONFORMANCE WITH DETAILS AND CURRENT "SMACNA" PUBLISHED STANDARDS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL FOR ITEMS NOT DETAILED. NOT ALL REQUIRED ROOF PENETRATIONS ARE ILLUSTRATED ON ARCHITECTURAL ROOF PLANS. PROVIDE CURBS, FLASHING, CRICKETS, COLLARS, ETC. PER ARCHITECTURAL DETAILS FOR ALL PENETRATIONS AND EQUIPMENT WHETHER SHOWN OR NOT. ALSO SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.

C. POSITIVE ROOF SLOPE: ALL ROOF CONSTRUCTION SHALL PROVIDE POSITIVE SLOPE TO DRAIN IN CONFORMANCE WITH N.R.C.A. PUBLISHED RECOMMENDATIONS. STANDING WATER OR PONDING SHALL NOT BE ACCEPTABLE. NOTE: ALL ROOF SLOPES ON ROOF PLAN ARE SURFACE SLOPE IN DIRECTION OF ARROW, TYP. ALL CRICKETS SLOPE AT 1:12 (SURFACE SLOPE), UNO.

D. SECTION REFERENCES: SEE FLOOR PLANS FOR ADDITIONAL BUILDING AND WALL SECTION REFERENCES.

E. ROOF TYPES AND DETAILS: SEE A40 SERIES SHEETS

F. DOWNSPOUTS: SEE FLOOR PLANS AND EXTERIOR ELEVATIONS FOR EXACT DOWNSPOUT, DOWNSPOUT BRACKET AND CONDUCTOR HEAD LOCATIONS. CAREFULLY COORDINATE WITH CIVIL DRAWINGS AND SUBCONTRACTOR TO ASSURE EXACT ALIGNMENT WITH STORM SEWER LINE CONNECTION AT GRADE.

1. ALL DOWNSPOUTS SIZES GIVEN ARE ID DIMENSIONS. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR RESPECTIVE ROOF-MOUNTED EQUIPMENT AND ROOF PENETRATIONS.

2. PROVIDE TEMPORARY DRAINAGE FROM GUTTERS, SCUPPERS AND ROOF DRAINS AWAY FROM BUILDING UNTIL SUCH TIME AS FINAL DOWNSPOUT INSTALLATION AND CONNECTION TO STORM DRAINAGE SYSTEM.

G. M/E/P EQUIPMENT: REFER TO MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ROOF-MOUNTED EQUIPMENT AND ROOF PENETRATIONS.

LEGEND

- XX"/12" — DIRECTION AND AMOUNT OF DOWNWARD SLOPE OF ROOF SURFACE
- FALL PROTECTION ANCHOR
- WALL-MOUNTED FALL PROTECTION ANCHOR
- ROOF TYPE 'A' STANDING SEAM METAL
- ROOF TYPE 'B' STANDARD SEAM METAL
- PHOTOVOLTAIC ZONE
- ROOF HATCH
- DS — GUTTER WITH 4" DOWNSPOUT, SEE EXTERIOR ELEVATIONS FOR MOUNTING CONDITIONS
- ROOF CRICKET W/1:12 SLOPE UNO

KEYNOTES

R1	ROOF GUTTER AND DOWNSPOUT

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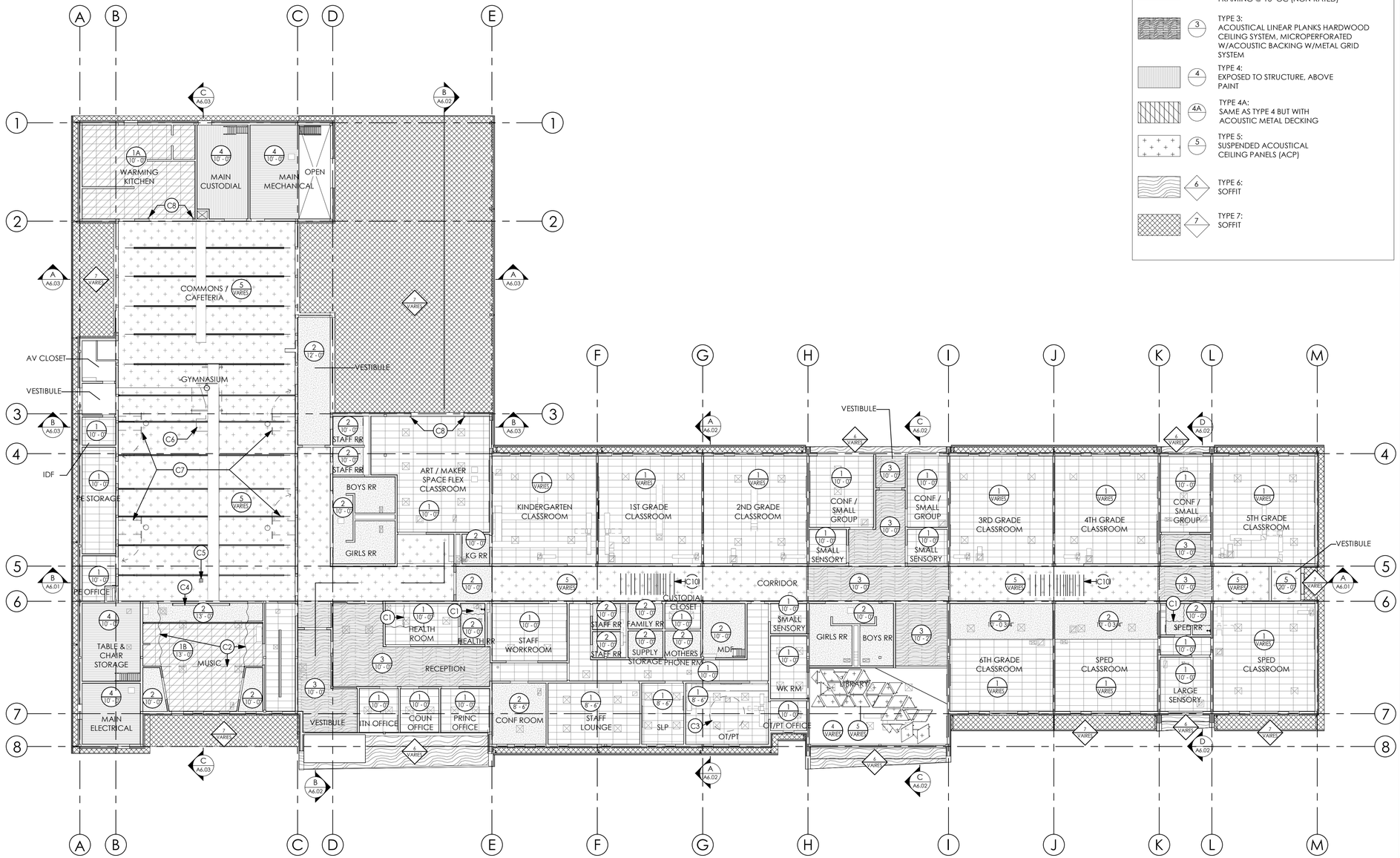
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REFERENCE ROOF PLAN

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1 REFLECTED CEILING REFERENCE PLAN
1/16" = 1'-0"

CEILING & SOFFIT TYPES

- TYPE 1: 2x4 SUSPENDED ACOUSTICAL CEILING PANELS (ACP), EXPOSED GRID (NON-RATED)
- TYPE 1A: 2x4 SUSPENDED ACOUSTICAL CEILING PANELS (ACP), EXPOSED GRID, SCRUBABABLE SURFACE (NON-RATED)
- TYPE 2: (1) LAYER 5/8" TYPE 'X' GWB APPLIED TO METAL CEILING FRAMING. WHERE STRUCTURAL DRAWINGS DO NOT ADDRESS FRAMING SIZE, USE 6" X 20 GAUGE STEEL STUD FRAMING @ 16" OC (NON-RATED) (ACCENT PAINT)
- TYPE 3: ACOUSTICAL LINEAR PLANKS HARDWOOD CEILING SYSTEM, MICROPERFORATED W/ACOUSTIC BACKING W/METAL GRID SYSTEM
- TYPE 4: EXPOSED TO STRUCTURE, ABOVE PAINT
- TYPE 4A: SAME AS TYPE 4 BUT WITH ACOUSTIC METAL DECKING
- TYPE 5: SUSPENDED ACOUSTICAL CEILING PANELS (ACP)
- TYPE 6: SOFFIT
- TYPE 7: SOFFIT

GENERAL NOTES

A. SEE SHEET G2.01 FOR GENERAL NOTES

B. GENERAL CONTRACTOR SHALL COORDINATE THE WORK OF THE APPLICABLE TRADES TO PROVIDE PROPER LOCATIONS AND INSTALLATION OF CEILING ELEMENTS AND SYSTEMS.

C. MECHANICAL AND ELECTRICAL INFORMATION SHOWN ON ARCHITECTURAL REFLECTED CEILING PLANS IS FOR USE IN LOCATING CEILING MOUNTED FIXTURES, DIFFUSERS, GRILLES, ETC. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR QUANTITIES OF DEVICES AND ALL OTHER RELATED INFORMATION.

D. STRUCTURAL ELEMENTS ARE SHOWN FOR CONTRACTORS CONVENIENCE. SEE STRUCTURAL DRAWINGS FOR ACTUAL SIZES AND SPACING OF SUCH ELEMENTS.

E. ALL CEILING HEIGHTS ARE FROM THE TOP OF SLAB OR FLOOR DECKING DIRECTLY BELOW, UNLESS NOTED OTHERWISE.

F. CEILING HEIGHTS ARE NOMINAL HEIGHTS, SEE WALL SECTIONS FOR ACTUAL CONSTRUCTION REQUIREMENTS.

G. IF STAND ALONE LIGHT FIXTURE IS NOT DIMENSIONALLY LOCATED, COORDINATE WITH ARCHITECT.

LEGEND

- CEILING TYPE
- CEILING HEIGHT ABOVE FLOOR BELOW MODIFIER, WHERE APPLICABLE
- SOFFIT TYPE, SEE A40.00
- SOFFIT HEIGHT, FIELD VERIFY MODIFIER, WHERE APPLICABLE
- RECESSED LIGHT FIXTURE (SEE ELECTRICAL)
- SUSPENDED LIGHT FIXTURE (SEE ELECTRICAL)
- EXIT SIGN (SEE ELECTRICAL & INTERIOR ELEVATIONS)
- WALL MOUNTED LIGHT FIXTURE (SEE ELECTRICAL)
- MECHANICAL GRILLE - SUPPLY (SEE MECHANICAL)
- MECHANICAL GRILLE - RETURN, RELIEF OR EXHAUST (SEE MECHANICAL)
- MECHANICAL GRILLE - EXHAUST (SEE MECHANICAL)
- PENDANT LIGHT FIXTURE (SEE ELECTRICAL)
- SUSPENDED LIGHT FIXTURE AT GYM AND MP ROOM (SEE ELECTRICAL)
- SURFACE MOUNTED EXTERIOR EGRESS LIGHT FIXTURE (SEE ELECTRICAL)
- SURFACE MOUNTED EXTERIOR LIGHT FIXTURE (SEE ELECTRICAL)
- WALL MOUNTED EGRESS LIGHT FIXTURE (SEE ELECTRICAL)
- 24"X24" CEILING ACCESS PANEL
- CEILING MOUNTED EXIT SIGN (SEE ELECTRICAL)

KEYNOTES

C1	SHOWER CURTAIN AND ROD, SEE TOILET ACCESSORIES
C2	CYCLORAMA STAGE CURTAIN
C3	ANCHOR POINT FOR SWING
C4	RECESSED PROJECTION SCREEN
C5	PROJECTOR BOX, PROJECTOR, POWER AND DATA ABOVE
C6	FRONT-FOLD BASKETBALL HOOP W/HEIGHT ADJUSTER & BREAKAWAY RIM, 10' H WALL PADS
C7	SIDE-FOLD BASKETBALL GOAL ABOVE
C8	OVERHEAD DOOR HARDWARE
C10	CEILING-MOUNTED ACOUSTIC BAFFLE

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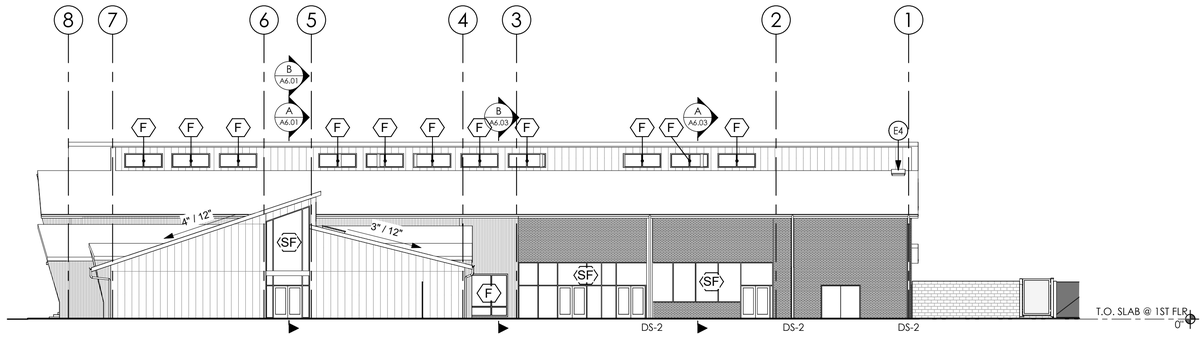
Sheet Title
FIRST FLOOR REFERENCE REFLECTED CEILING PLAN

A4.01

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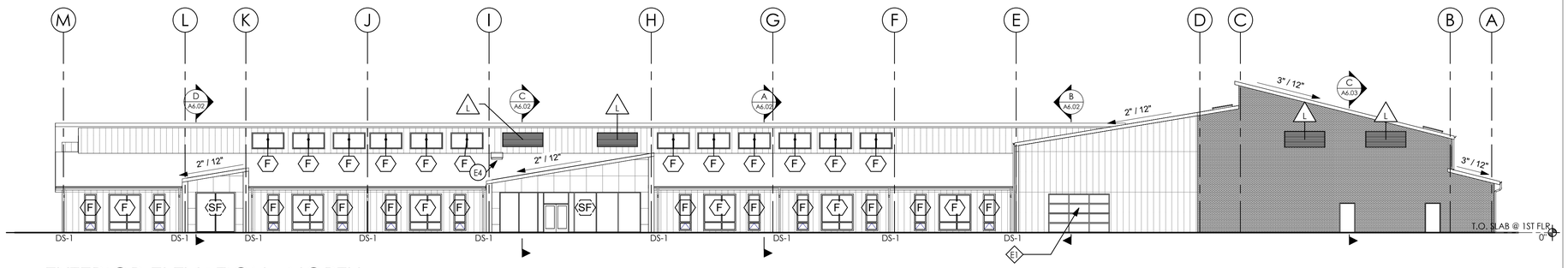
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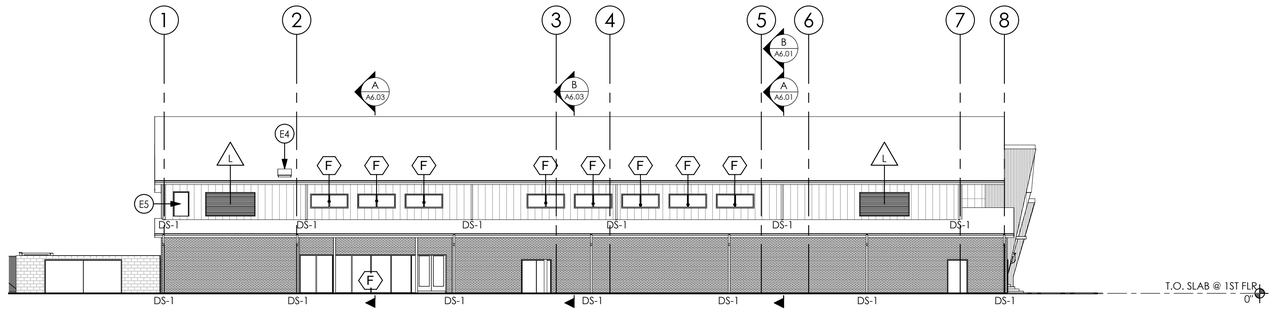
1 EXTERIOR ELEVATION - EAST

1/16" = 1'-0"



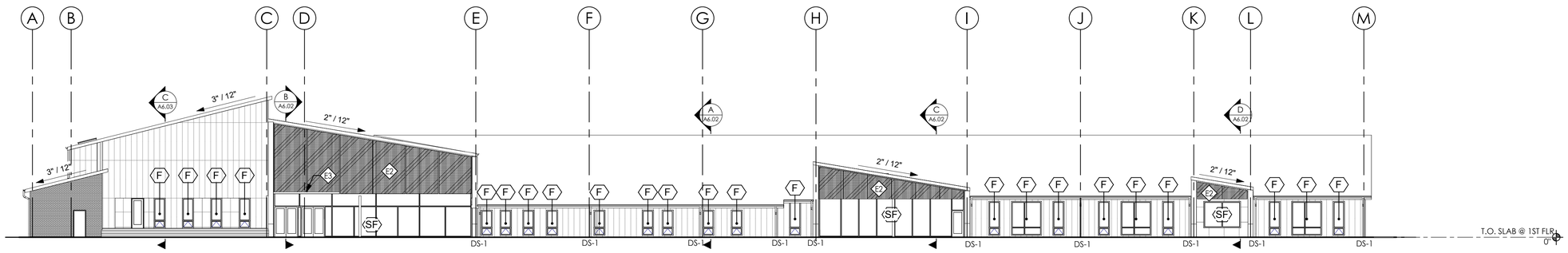
2 EXTERIOR ELEVATION - NORTH

1/16" = 1'-0"



3 EXTERIOR ELEVATION - WEST

1/16" = 1'-0"



4 EXTERIOR ELEVATION - SOUTH

1/16" = 1'-0"

GENERAL NOTES

A. SEE FLOOR PLANS FOR WINDOW TYPES NOT CALLED OUT ON EXTERIOR ELEVATIONS
B. SEE COLOR AND MATERIAL FINISH SCHEDULE ON SHEET A71.00 FOR COLOR TREATMENT AND COLOR DEFINITIONS
C. SEE GENERAL NOTES ON SHEET G2.01 FOR ADDITIONAL INFORMATION
D. ARCHITECTURAL DRAWINGS DO NOT ILLUSTRATE ALL MECHANICAL AND ELECTRICAL ITEMS AND DEVICES. ITEMS AND DEVICES WHICH ARE SHOWN ARE FOR COORDINATION AND LOCATING PURPOSES

LEGEND

- F — FIBERGLASS FRAME
- SF — STOREFRONT
- L — LOUVER
- DS — 4" DIAMETER PAINTED PVC DOWNSPOUT, PAINTED WITH HPC
  MOUNT CENTER OF BRACKETS (HEIGHT GIVEN FROM 0'-0" NOT FF):
  DS-1 @ +2'-0", +5'-6", +8'-0" / +16'-6", +22'-0"
  DS-2 @ +2'-0", +12'-0", & +20'-0"
- AA ## — FRAME REFERENCE
- X1 — LOUVER REFERENCE
- BRICK VENEER
- FIBER CEMENT PANEL, FCP 1
- FIBER CEMENT PANEL, FCP 2
- METAL SIDING
- CMU
- ALUMINUM, CUSTOM WATER JET CUT PANELS

KEYNOTES

E1	SECTIONAL OVERHEAD DOOR
E2	PAINTED, 1/4" CUSTOM WATER JET CUT ALUMINUM METAL PANEL, SUPPORTED BY LIGHT GAUGE BACKING @ 48" OC, FASTENED TO STRUCTURE
E3	POWDER-COATED ALUMINUM PLATE SHEET CANOPY W/ 2X4 ALUMINUM CORE FASTENED TO STRUCTURAL KNIFE PLATES
E4	ROOF HATCH
E5	HM ROOF ACCESS DOOR

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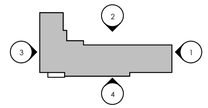
Project

2025-010
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58 FIRST ST N
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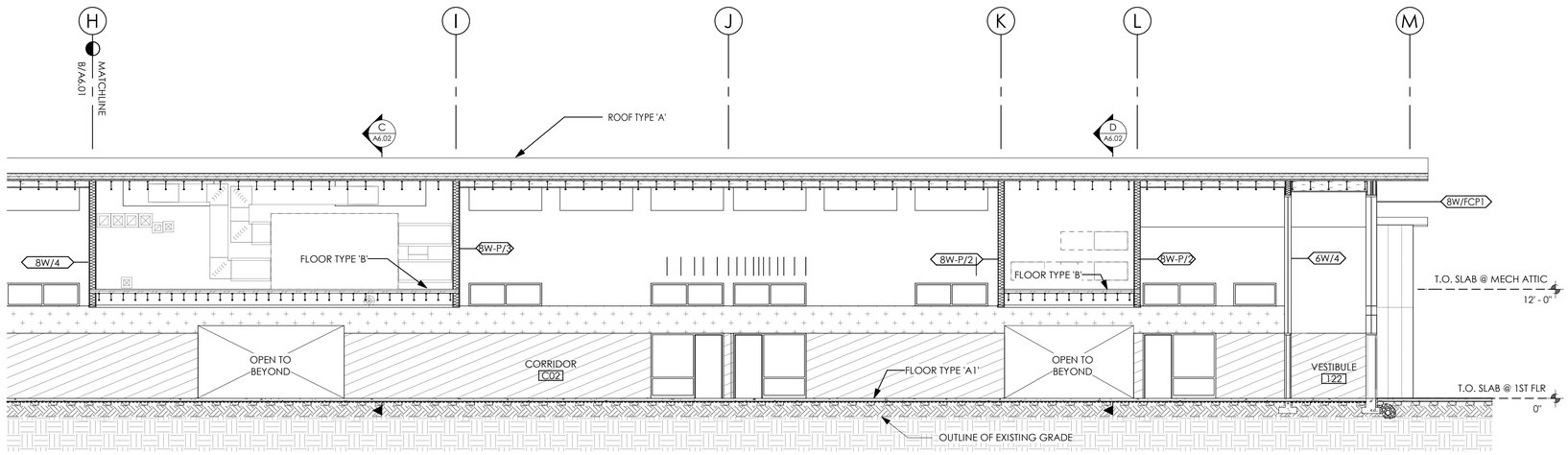
EXTERIOR ELEVATIONS

A5.01

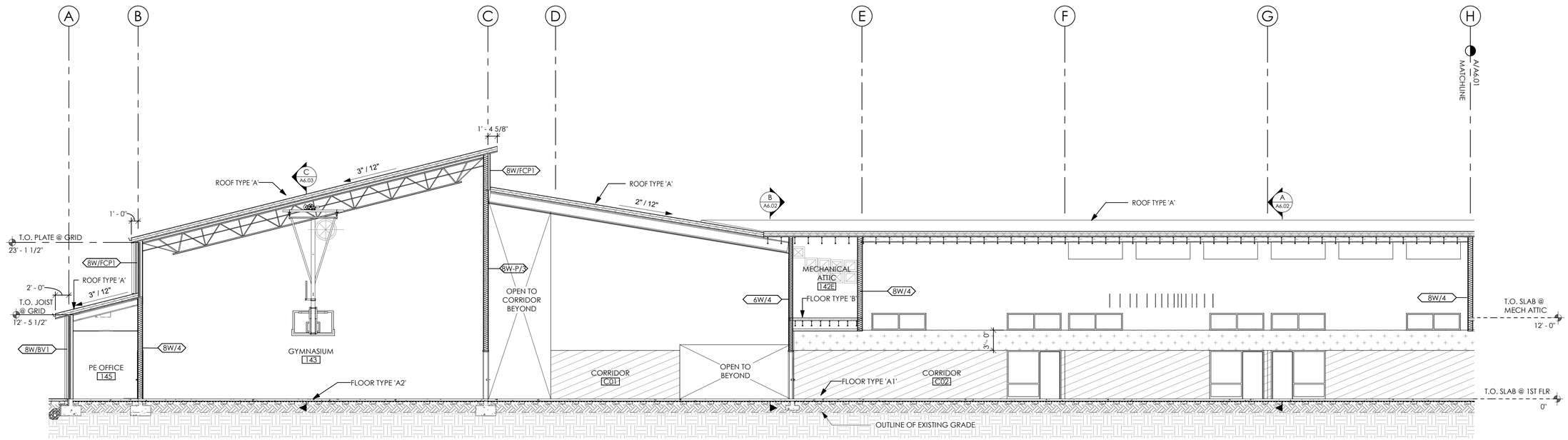
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A BUILDING SECTION
1/8" = 1'-0"



B BUILDING SECTION
1/8" = 1'-0"

SHEET NOTES

A. SEE SHEET A30.01, A30.02 & 31.01 FOR WALL TYPES, BUILDING AND WALL SECTION GENERAL NOTES
B. SEE A2.10 SERIES FOR TYPICAL WALL TYPES NOT NOTED ON BUILDING AND WALL SECTIONS
C. SEE GENERAL NOTES ON SHEET G2.01 FOR ADDITIONAL INFORMATION

BUILDING SECTION LEGEND

- UNDISTURBED EARTH, SEE SPECIFICATIONS
- FILL, SEE SPECIFICATIONS
- CAPILLARY BREAK, SEE SPECIFICATIONS
- GRAVEL BACKFILL, SEE SPECIFICATIONS
- BELOW GRADE INSULATION, SEE SPECIFICATIONS

NOTE: HATCHES SHOW APPROXIMATE LOCATIONS OF FILL, GRAVEL BACKFILL, AND UNDISTURBED EARTH. SEE CIVIL AND STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR EXACT REQUIREMENTS.

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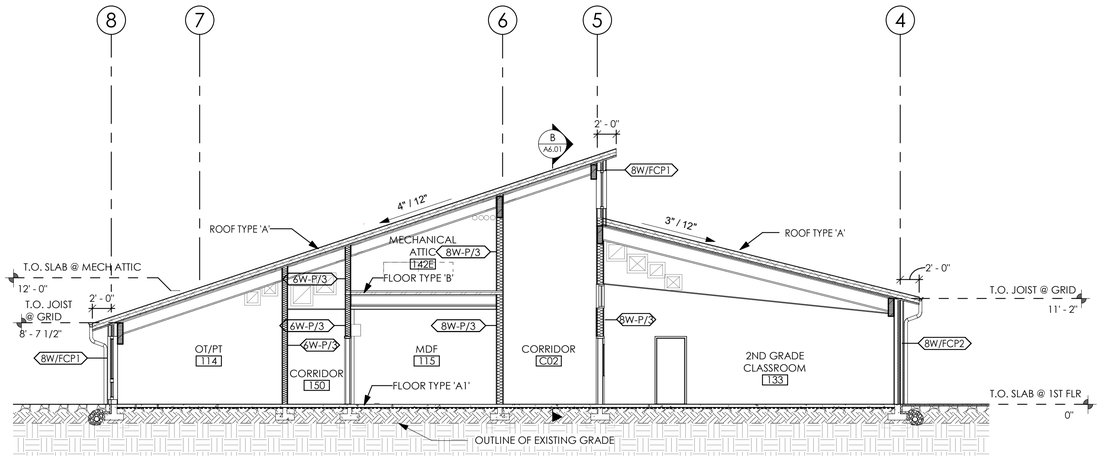
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BUILDING SECTIONS

A6.01

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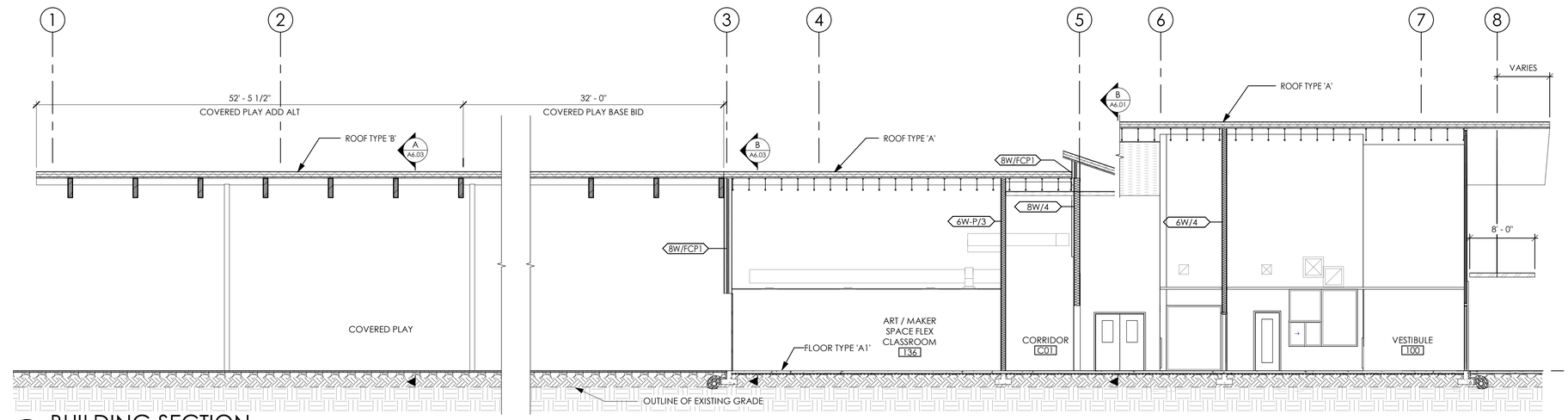
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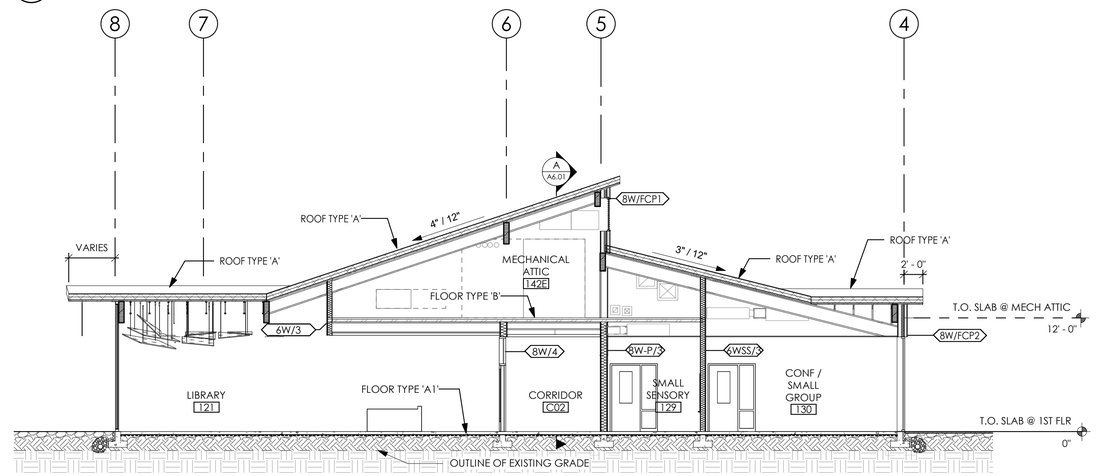
A BUILDING SECTION

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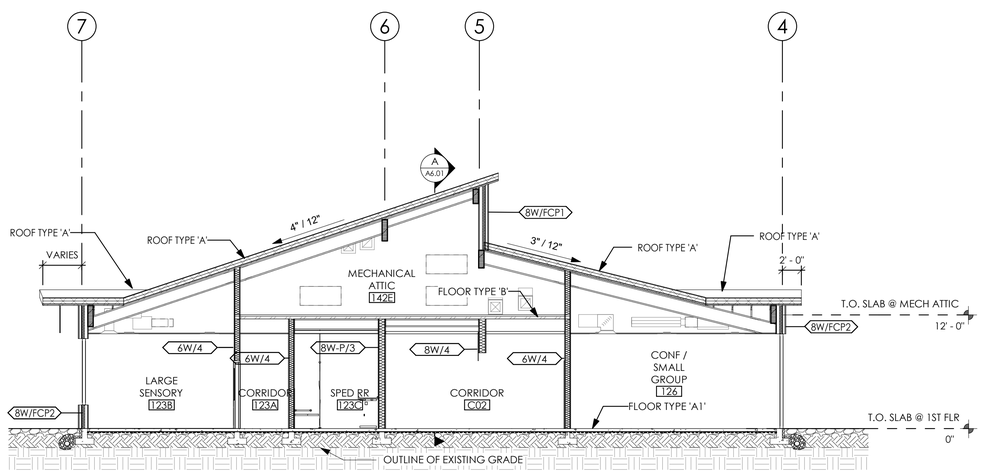
B BUILDING SECTION

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C BUILDING SECTION

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D BUILDING SECTION

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BUILDING SECTION LEGEND

- UNDISTURBED EARTH, SEE SPECIFICATIONS
- FILL, SEE SPECIFICATIONS
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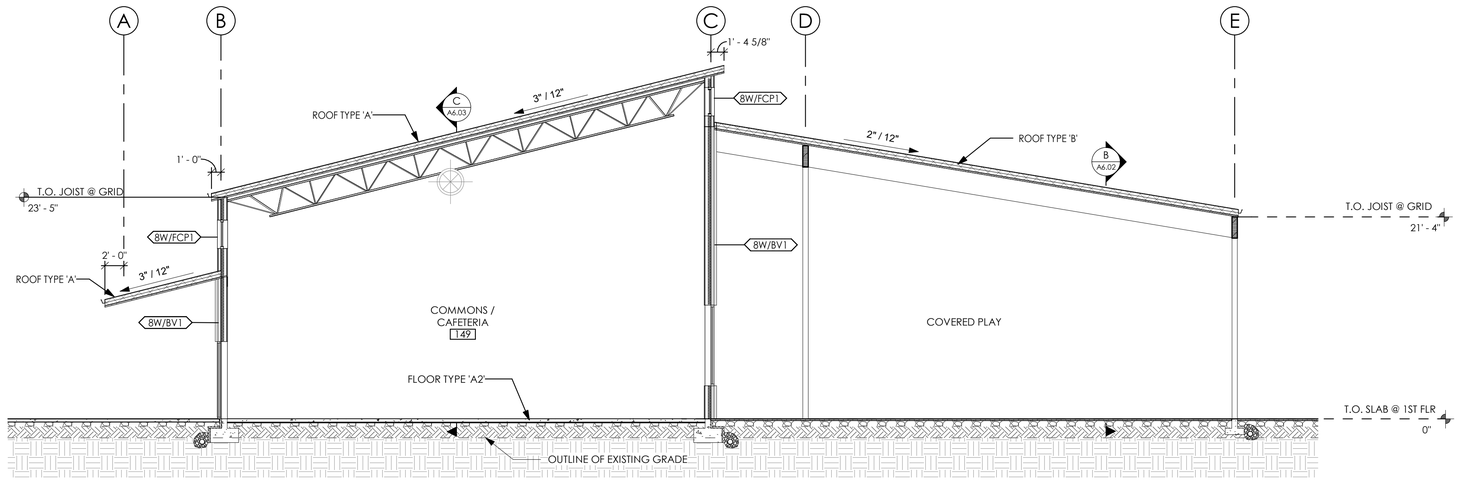
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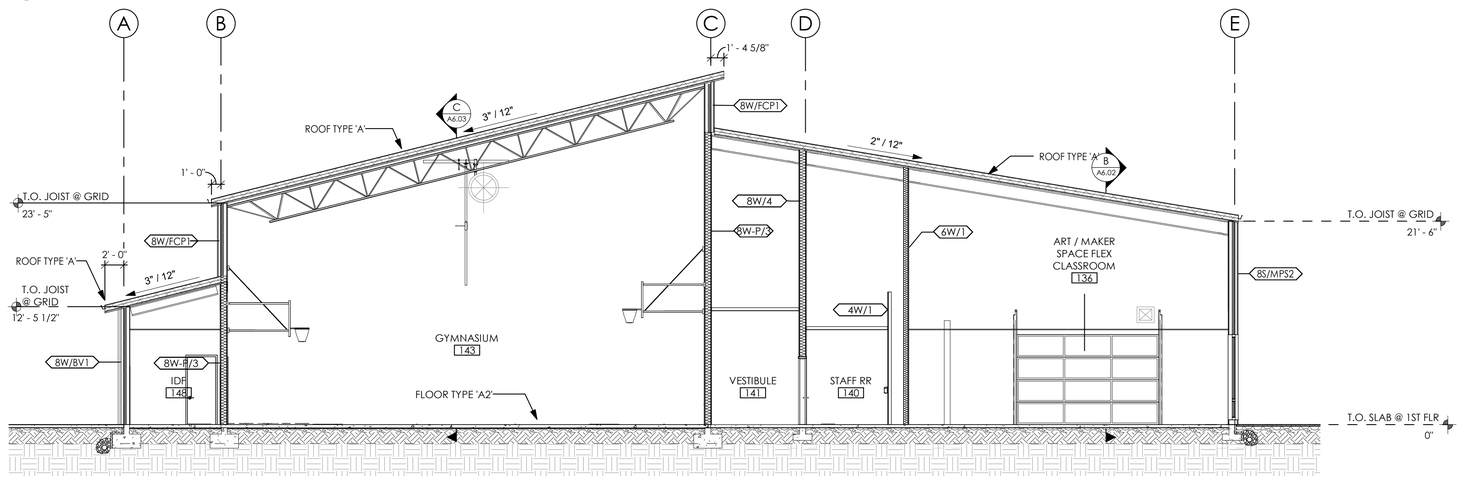
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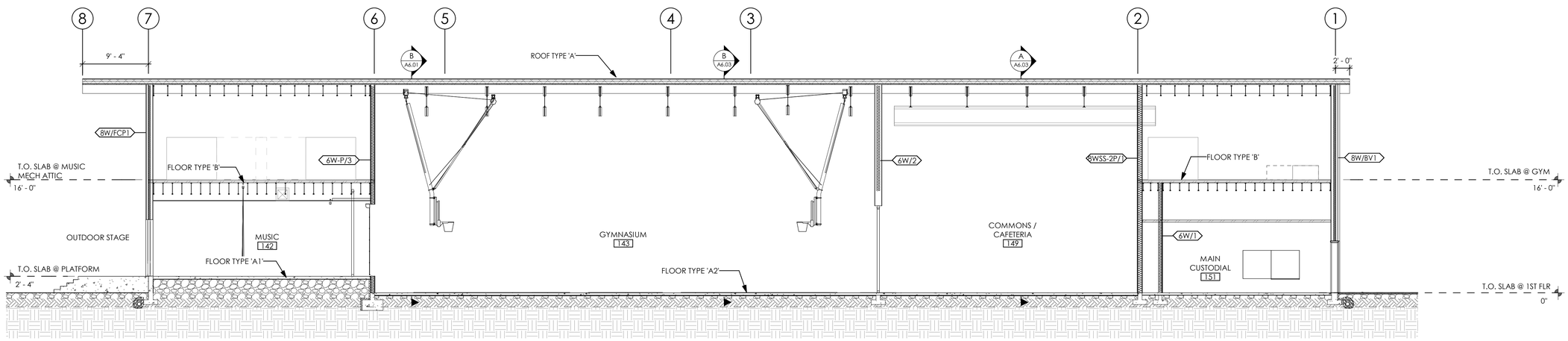
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B BUILDING SECTION
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C BUILDING SECTION
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SHEET NOTES

A. SEE SHEET A30.01, A30.02 & 31.01 FOR WALL TYPES, BUILDING AND WALL SECTION GENERAL NOTES
B. SEE A2.10 SERIES FOR TYPICAL WALL TYPES NOT NOTED ON BUILDING AND WALL SECTIONS
C. SEE GENERAL NOTES ON SHEET G2.01 FOR ADDITIONAL INFORMATION

BUILDING SECTION LEGEND

- UNDISTURBED EARTH, SEE SPECIFICATIONS
- FILL, SEE SPECIFICATIONS
- CAPILLARY BREAK, SEE SPECIFICATIONS
- GRAVEL BACKFILL, SEE SPECIFICATIONS
- BELOW GRADE INSULATION, SEE SPECIFICATIONS

NOTE: HATCHES SHOW APPROXIMATE LOCATIONS OF FILL, GRAVEL BACKFILL, AND UNDISTURBED EARTH. SEE CIVIL AND STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR EXACT REQUIREMENTS.

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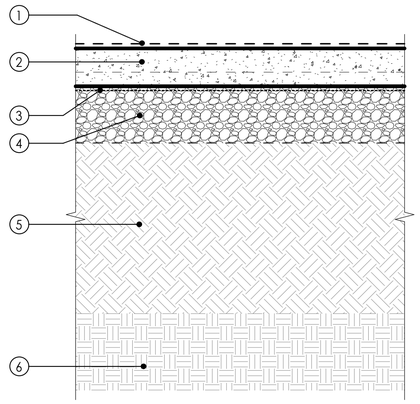
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BUILDING SECTIONS

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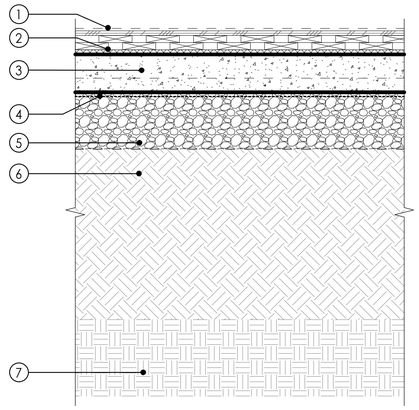
ASSEMBLY

1. FINISH FLOORING, AS SCHEDULED
2. CAST IN PLACE CONCRETE SLAB ON GRADE, SSD
3. VAPOR BARRIER
4. CAPILLARY BREAK, SEE CIVIL
5. FILL, SEE CIVIL
6. UNDISTURBED EARTH

FIRE RATING

1. NON-RATED

FLOOR TYPE A1 - SLAB ON GRADE



ASSEMBLY

1. WOOD GYM FLOORING, AS SCHEDULED
2. 1/2" CLOSED CELL RESILIENT FOAM, AS PER WOOD GYM FLOORING SYSTEM
3. CAST-IN-PLACE CONCRETE SLAB ON GRADE, SSD, RECESSED 2-3/4" TO ALLOW CONSISTENT FINISHED FLOOR LEVEL BETWEEN ADJACENT SPACES
4. VAPOR BARRIER
5. CAPILLARY BREAK, SEE CIVIL
6. FILL, SEE CIVIL
7. UNDISTURBED EARTH

FIRE RATING

1. NON-RATED

FLOOR TYPE A2 - WOOD GYMNASIUM FLOOR

ASSEMBLY

1. MECH PAD, WHERE OCCURS PER PLAN, SEE MECH & STRUCTURAL DRAWINGS
2. CONCRETE TOPPING SLAB, SSD
3. FLOOR SHEATHING, SSD
4. FLOOR FRAMING, SSD
4. ACOUSTICAL BATT INSULATION

FIRE RATING

1. NON-RATED

FLOOR TYPE B - FLOOR AT MECHANICAL ATTIC

GENERAL NOTES

OTHER NOTES: SEE GENERAL NOTES ON G2 SERIES SHEETS FOR ADDITIONAL INFORMATION.

OTHER DRAWINGS: SEE FLOOR PLANS, DIMENSION PLANS AND ENLARGED PLANS FOR ADDITIONAL INFORMATION.

STRUCTURAL REQUIREMENTS: REFER TO STRUCTURAL DRAWINGS AND DETAILS FOR CONCRETE REINFORCING AND OTHER STRUCTURAL REQUIREMENTS.

ATYPICAL CONDITIONS: DETAILS MAY BE LIMITED TO ILLUSTRATION OF TYPICAL CONDITIONS. CONTRACTOR SHALL ADAPT TYPICAL DETAILS FOR VARIANT AND SIMILAR CONDITIONS.

CIVIL COORDINATION: REFER TO CIVIL DRAWINGS AND SPECIFICATIONS FOR MATERIALS BELOW SLABS. COORDINATE CIVIL AND ARCHITECTURAL DETAILING WITH RESPECT TO PERIMETER FOUNDATION DRAINAGE SYSTEMS, RAINLEADER / DOWNSPOUT LOCATIONS AND TIGHTLINE CONNECTIONS.

TOP OF SLAB ELEVATIONS: COORDINATE ALL TOP OF SLAB FLOOR ELEVATIONS WITH FINISHED GRADES. GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT IF/WHEN DISCREPANCIES ARE IDENTIFIED PRIOR TO PROCEEDING.

EXCAVATION AND FILL: THE CONTRACTOR SHALL VERIFY SITE AND SOIL CONDITIONS AND PROVIDE ALL LABOR AND MATERIALS AS NECESSARY TO COMPLETE THE WORK OF THIS CONTRACT. WORK WILL GENERALLY INCLUDE EXCAVATION TO ELEVATIONS REQUIRED BY THIS WORK, AND STRUCTURAL FILL, BACKFILL, TOPSOIL PLACEMENT, GRADING AND OTHER WORK. ALSO SEE CIVIL, STRUCTURAL, AND LANDSCAPE DRAWINGS. SEE THE GEOTECHNICAL REPORT FOR SOILS INFORMATION AVAILABLE TO THE BIDDER.

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FLOOR TYPES, ASSEMBLIES & GENERAL NOTES

A21.01

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GENERAL NOTES TO WALL TYPES , BUILDING & WALL SECTIONS

A. SEE G2.01 FOR ABBREVIATIONS & GENERAL NOTES.

B. ALL WALL TYPES ARE NOT NECESSARILY USED. SEE FLOOR PLANS, BUILDING, WALL, AND VERTICAL CIRCULATION SECTIONS FOR SCOPE.

C. WALL TYPES SHOWN ON FLOOR PLANS GENERALLY APPLY TO THE FULL EXTENT OF THE WALL EVEN WHEN INTERSECTED BY ANOTHER WALL. SEE SECTIONS FOR ADDITIONAL REQUIREMENTS WHICH MAY MODIFY THE WALL TYPES ABOVE THE MAIN FLOOR LEVEL, IN WHICH CASE THE WALL SECTIONS GOVERN.

D. SEE STRUCTURAL DRAWINGS FOR ANCHORAGE AND REINFORCEMENT OF WALLS - INTERIOR & EXTERIOR AND FOR CONCRETE REINFORCING.

E. ALL EXTERIOR WALL TYPES SHALL BE ASSUMED TO RUN FLOOR TO UNDERSIDE OF STRUCTURE ABOVE, UNLESS SPECIFICALLY DETAILED OTHERWISE. SEE SECTIONS AND STRUCTURAL DRAWINGS FOR MORE DETAILED INFORMATION.

F. CONTRACTOR SHALL EXERCISE CARE DURING THE INSTALLATION OF THE VAPOR BARRIER TO PROVIDE AT LEAST 12" OF OVERLAP BETWEEN INDIVIDUAL SHEETS AND SHALL TAPE ALL JOINTS. SHOULD THE MATERIAL BE TORN OR PUNCTURED, PATCH BY ADDITION OF MATERIAL OVER AFFECTED AREA WITH AT LEAST 12" COVERAGE BEYOND DAMAGE, AND TAPE ALL JOINTS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

G. SPRINKLER PIPES, DRAIN VALVES AND OTHER COMPONENTS OF THE SYSTEM (EXCEPT HEAD) SHALL NOT BE EXPOSED TO VIEW EXCEPT IN MECHANICAL ROOMS, ELECTRICAL ROOMS, STORAGE ROOMS, CUSTODIAN ROOMS, ROOMS WITH EXPOSED STRUCTURE AND ATTICS, UNO. PROVIDE ACCESS PANELS/DOORS FOR FIRE SPRINKLER SYSTEM ACCESS WHERE SPRINKLER HEADS, DRAIN VALVES, INSPECTORS, TESTS, ETC. ARE INACCESSIBLE WITHOUT DEMOLITION OF BUILDING ELEMENTS. PANELS SHALL BE OF A FUNCTIONAL SIZE FOR APPLICATION, MEET ALL CODE REQUIREMENTS AND GENERAL CONTRACTOR SHALL COORDINATE WITH THE FIRE SPRINKLER SYSTEM DESIGNER (BIDDER / DESIGN) TO ASSURE ALL SUCH PANELS AND INSTALLATION COSTS ARE INCLUDED IN THE BID. ALL PANELS EXPOSED TO VIEW FROM OCCUPIED SPACES SHALL BE OF A FLUSH DESIGN, PAINTED TO MATCH ADJACENT SURFACES AND FIRE RATED WHERE REQUIRED BY CODE. SPRINKLER SUB-CONTRACTOR SHALL PROVIDE DRAWINGS CLEARLY INDICATING PROPOSED LOCATIONS OF EXPOSED PIPES, SPRINKLER HEADS AND ACCESS PANELS FOR THE ARCHITECT'S REVIEW AND APPROVAL. SHOULD THE ARCHITECT NOT APPROVE OF PROPOSED LOCATIONS, CONTRACTOR AND SPRINKLER SYSTEM DESIGNER SHALL ENDEAVOR TO WORK WITH THE ARCHITECT TO FIND ACCEPTABLE LOCATIONS. SUCH CHANGES SHALL BE INCLUDE IN THE BID.

H. WALL CONSTRUCTION SHALL BE PER THE WALL TYPE AND WALL SECTION REFERENCED AT EACH LOCATION. UNREFERENCED WALLS SHALL BE ASSUMED TO MATCH THE CONSTRUCTION AS CLARIFIED AND CONFIGURED IN SECTIONS AND ELEVATIONS) AS THE MOST SIMILAR ADJACENT WALL REFERENCED. SHOULD THERE BE A DISCREPANCY BETWEEN WALL TYPE REFERENCES AND BUILDING / WALL SECTIONS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE CORRECT CONSTRUCTION WITH THE ARCHITECT.

I. SPACING OF STRUCTURAL AND NON-STRUCTURAL MEMBERS INDICATED ON DRAWINGS IS THE MAXIMUM ALLOWABLE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL LAYOUT PATTERN AND QUANTITIES REQUIRED, PARTICULARLY WITH RESPECT TO LAYOUT DEVIATIONS REQUIRED TO AVOID CONFLICT WITH MECHANICAL DUCTS, CHASES, LIGHT FIXTURES OR OTHER RECESSED EQUIPMENT FOR FIXTURES, ETC. PROVIDE ALL ADDITIONAL FRAMING, HEADERS, ETC., AS REQUIRED TO ACCOMMODATE.

J. COLUMNS (OR OTHER STRUCTURAL MEMBERS); ENGAGED BY PARTITIONS SHALL BE CONCEALED WITHIN WALLS AND FIRE PROTECTED WHERE REQ'D.

K. STUD WALLS:

1. CONSTRUCT ALL STUD WALLS IN ACCORDANCE WITH INDUSTRY STANDARD DETAILS, EXCEPT AS DETAILED ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS WHICH SHALL GOVERN.

2. PROVIDE BLOCKING AS REQUIRED BY CODE, AND AS DETAILED ON ARCHITECTURAL AND STRUCTURAL DRAWINGS.

3. PROVIDE BACKING FOR ALL RAILS, CASEWORK, COUNTERS, OR FIXTURES UNLESS NOTED OTHERWISE. SEE STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR TYPICAL BACKING DETAILS, AND PROVIDE AS REQUIRED BY WEIGHT TO BE SUPPORTED.

4. PROVIDE BACKING FOR ALL WALL MOUNTED EQUIPMENT. VERIFY ALL MOUNTING HEIGHTS AND SPECIAL STRUCTURAL SUPPORT REQUIREMENTS WITH EQUIPMENT MANUFACTURERS BEFORE INSTALLING BACKING AND BLOCKING

5. PROVIDE CONTINUOUS BLOCKING/BACKING IN ALL WALLS, FULL WIDTH:
AT ALL CEILING LINES
AT LOCATIONS SHOWN ON BUILDING & WALL SECTIONS
AT LOCATIONS REQUIRED BY STRUCTURAL DRAWINGS
AS REQUIRED BY SPECIFICATIONS
AS REQUIRED BY CODE
AS REQUIRED FOR BACKING

6. CONTRACTOR TO PROVIDE STUD WALL BACKING PLANS FOR ALL WALLS WITH WALL MOUNTED EQUIPMENT INCLUDING BUT NOT LIMITED TO: RAILINGS, DOORS, AND HOLD-OPENS, VISUAL DISPLAY BOARDS (MARKER AND TACK BOARDS), TOILET PARTITIONS, SIGNAGE, FIRE EXTINGUISHER CABINETS AND BRACKETS, TOILET, BATH AND ROOM ACCESSORIES, MISC. SPECIALTIES AND EQUIPMENT, ELECTRICAL OUTLETS, TOILET PARTITIONS, CASEWORK, DOOR STOPS, DRINKING FOUNTAINS, ETC. INCLUDE ITEMS TO BE MOUNTED IN CONTRACT AS WELL AS NIC, OFCI AND OFOI ITEMS, TYP. AT LOCATIONS AS SHOWN ON DRAWINGS & SPEC SECTION 05400 AND 09260.

7. WHERE EQUIPMENT OR CABINETS ARE SHOWN TO BE RECESSED IN OR MOUNTED ON FIRE-RATED PARTITIONS, THE FINISH SURFACE SHALL BE MADE TO RUN CONTINUOUSLY BEHIND AND AROUND SUCH EQUIPMENT OR CABINETS BEFORE THEIR INSTALLATION TO MAINTAIN FIRE RATING OR IN LIEU THEREOF, BACK PLASTER OR PROTECT BY OTHER APPROVED MEANS ALL PANELS, FIXTURES AND OTHER PENETRATIONS IN PARTITIONS AND CEILINGS IN ORDER TO MAINTAIN REQUIRED FIRE SEPARATIONS AND RATED ASSEMBLIES AS APPROVED BY THE BUILDING OFFICIAL.

8. IN WALLS WHERE SOUND INSULATION IS REQ'D , IT SHALL BE CONTINUOUS FOR THE FULL LENGTH AND FULL HEIGHT OF THE WALL, UNLESS SPECIFICALLY NOTED OTHERWISE.

9. STUD WALLS WHICH ARE NOT CONTINUOUS UP TO THE UNDERSIDE OF STRUCTURE ABOVE, SHALL HAVE THE TOP OF THE WALL BRACED, SEE STRUCTURAL DRAWINGS. WRAP ALL PLATES AND BRACING AS REQUIRED TO ACHIEVE FIRE RATING OF WALL, IF RATED.

L. AT EXTERIOR WALL DOOR OPENINGS TYPICALLY BLOCK OUT TOP OF STEM WALL TO DEPTH OF BOTTOM OF THE INTERIOR SLAB (OR AS DETAILED ON THE STRUCTURAL DRAWING) AND CONTINUE INTERIOR FLOOR SLAB OUT OVER STEM WALL. UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS OR DETAILS. INSTALL 24" LONG #4 REBAR, 1/2 OF LENGTH IN INTERIOR SLAB AND 1/2 OF LENGTH INTO EXTERIOR SLAB; USE (3) BARS PER 3'-0" WIDE DOOR, EQUALLY SPACED, UNLESS OTHERWISE NOTED. ALSO SEE STRUCTURAL DRAWINGS AND TYPICAL THRESHOLD DETAIL AT THESE LOCATIONS.

M. DIMENSIONS:

INTERIOR WALLS:

1. WOOD STUD - INTERIOR WALL DIMENSIONS ARE TAKEN TO CENTERLINE OF COLUMN, CENTERLINE OF WALL, OR FACE OF STUD (FOS), UNO.

EXTERIOR WALLS:
1. WOOD STUD - ALL WOOD STUD WALL DIMENSIONS ARE TAKEN TO CENTERLINE OF COLUMN, CENTERLINE OF WALL, OR FACE OF STUD (FOS), UNO.

2. CONCRETE / MASONRY - CONCRETE FOUNDATION AND CONCRETE MASONRY UNIT WALL DIMENSIONS ARE TAKEN FROM THE FACE OF CONCRETE (FOC), UNO.

N. WALL THICKNESS AND ALIGNMENT:

1. CONTRACTOR SHALL VERIFY AND COORDINATE WALLS AND OTHER FRAMING THAT REQUIRE A NON-TYPICAL WALL THICKNESS DUE TO STRUCTURAL, ELECTRICAL, MECHANICAL, EQUIPMENT, OR OTHER REQUIREMENTS.

2. ON A CONTINUOUS WALL SURFACE WHERE CONSTRUCTION INVOLVES MORE THAN ONE MATERIAL FINISH OR MATERIAL THICKNESS, ALIGN FACE OF FINISH, UNO.

O. GYPSUM WALL BOARD (GB) AND FINISHES:

1. PROVIDE CASING BEADS AT GB EDGES WHEREVER EDGES TERMINATE AGAINST A DIFFERENT MATERIAL, UNO PROVIDE CORNER BEADS AT ALL GB CORNERS, TYPICAL TO ALL SECTIONS OF THIS DRAWING SET.

2. SEE ROOM FINISH SCHEDULE, NOTES AND SPECIFICATIONS FOR TYPES OF GB TO BE USED (I.E. WATER RESISTANT). GENERALLY, USE WATER RESISTANT GYPSUM BOARD ON WALLS OF ALL RESTROOMS, TOILET ROOMS, SHOWERS, KITCHEN AND AT WALLS BEHIND OR ADJACENT TO MOP SINKS, UNLESS NOTED OTHERWISE.

3. FOR ALL LOCATIONS IN ATTICS AND OTHER LOCATIONS NOT EXPOSED TO VIEW WHERE FIRE OR SOUND RATING IS REQUIRED AND WHERE INDICATED ON FINISH SCHEDULE, FIRE TAPE AND MUD ONLY AS REQUIRED TO MEET FIRE AND SOUND RATING REQUIRED, UNLESS NOTED OR SPECIFIED OTHERWISE. NOTE THAT FIRE TAPE AND MUD MAY BE SCHEDULED EVEN WHERE NOT REQUIRED BY CODE, SEE ROOM FINISH SCHEDULE.

4. FOR ALL WALL TYPES, PROVIDE INTERIOR FINISHES PER ROOM FINISH SCHEDULE AND INTERIOR ELEVATIONS.

5. FLOOR AND CEILING FINISHES AND WALL BASES ARE NOT TYPICALLY SHOWN ON WALL SECTIONS OR WALL TYPES, SEE FLOOR PLANS, ROOM FINISH SCHEDULE AND REFLECTED CEILING PLANS.

6. SEE SPECIFICATIONS FOR COMPLETE DESCRIPTION OF TYPES OF GB.

7. INSTALL EXTRA LAYER OF GYP OR PLYWOOD ON THE SAME SIDE OF WALL AS WALL TYPE SYMBOL IN ALL LOCATIONS

8. CONTINUE ALL GYPSUM WALLBOARD LAYERS AND FINISH FROM WALL CORNER TO CORNER PER ROOM FOR A SMOOTH FINISH OVER THE ENTIRE SURFACE.

P. FIRESTOPPING: CONTRACTOR IS RESPONSIBLE TO FIRE CAULK/ SEAL ALL FIRE RATED ASSEMBLIES SMOKE PARTITION, ALL PENETRATIONS OF 2ND AND MECHANICAL ATTIC FLOOR ASSEMBLIES, ALL 1-HOUR ASSEMBLIES, ALL SMOKE PARTITIONS, AND OTHER ASSEMBLIES REQUIRED BY CODE TO BE SEALED AND PROVIDE CODE APPROVED FIRESTOPPING AT ALL PENETRATIONS WHETHER OR NOT THE PENETRATION IS SPECIFICALLY DETAILED OR SPECIFIED - ALL TRADES INCLUDED. "PENETRATIONS" SHALL BE DEFINED PER THE CURRENT EDITION OF THE IBC. OR OTHER GOVERNING CODE(S), AND AT A MINIMUM SHALL INCLUDE ALL CABLES, PIPES, CONDUITS, DUCTS, COLUMNS, BEAMS AND OTHER PENETRATING ITEMS. SEE SPECIFICATIONS SECTION " THROUGH PENETRATION FIRESTOP SYSTEMS" FOR FURTHER DEFINITION. ALL OTHER PENETRATIONS OF BUILDING ASSEMBLIES SHALL BE SEALED FOR SOUND CONTROL PURPOSES BY GB AND TAPE, SEALANT, OR OTHER APPROVED METHODS. ALL COSTS FOR FIRE-RATED AND NON-FIRE-RATED SEALING SHALL BE INCLUDED IN THE BID. ALSO SEE PROJECT INFORMATION AND CODE REVIEW SHEETS.

Q. SOUND CONTROL: AT WALLS ADJOINING POTENTIAL NOISY SPACES SUCH AS MECHANICAL ROOMS, ELEVATORS, ELEVATOR EQUIPMENT ROOMS, GATHERING ROOMS, RESTROOMS, ETC., AND WHERE AN STC RATING IS INDICATED ON THE WALL TYPE ASSEMBLY, COMPLY WITH THE FOLLOWING (NOTE THAT MANY OF THESE REQUIREMENTS MAY BE REQUIRED BY OTHER PORTIONS OF THE DRAWINGS AND SPECIFICATIONS REGARDLESS OF THE USE OF AN 'S' MODIFIER OR NOT):

1. CAULK AND SEAL WALLS AIRTIGHT AT THE TOP AND BOTTOM PER ASTM C919.

2. SEAL THE BACKSIDE OF ELECTRICAL BACKBOXES W/ FIRE PUTTY PADS.

3. APPLY ACOUSTICAL SEALANT AT THE BASE AND FIRST LAYER OF GB ON BOTH SIDES OF EACH FULL HEIGHT WALL ASSEMBLY TO PREVENT SOUND LEAKAGE.

4. CAULK AIRTIGHT W/ ACOUSTICAL SEALANT ALL WALL PENETRATIONS INCLUDING OUTLETS, DUCTS, PIPING AND CONDUIT. THIS APPLIES TO ALL LAYERS OF THE WALL ASSEMBLY INCLUDING EACH LAYER OF GB.

5. EXTEND GB CONTINUOUSLY UP TO FLOOR OR ROOF SHEATHING ABOVE AND SEAL AIRTIGHT. FRAME GB AROUND ALL STRUCTURAL BEAMS, JOISTS, ETC.

R. EXCAVATION & FILL: ARCHITECTURAL DRAWINGS DO NOT ILLUSTRATE THE CONCEPTS OF EXISTING SOIL CONDITIONS

1. REFER TO STRUCTURAL DRAWINGS AND DETAILS FOR CONCRETE REINFORCING AND OTHER STRUCTURAL REQUIREMENTS AND, STRUCTURAL AND CIVIL DRAWINGS FOR RETAINING WALL REQUIREMENTS.

2. DETAILS ARE TYPICAL CONDITIONS.CONTRACTOR SHALL ADAPT TYPICAL DETAILS FOR VARIANT CONDITIONS. FOR VARIANT CONDITIONS TYPICAL DETAILS SHALL BE USED FOR PERFORMANCE CRITERIA.

3. REFER TO CIVIL DRAWINGS AND SPECIFICATIONS FOR MATERIALS BELOW SLABS. COORDINATE CIVIL AND ARCHITECTURAL DETAILING WITH RESPECT TO PERIMETER FOUNDATION DRAINAGE SYSTEMS, RAINLEADER/DOWNSPOUT LOCATIONS AND TIGHTLINE CONNECTIONS.

4. COORDINATE ALL FINISHED FLOOR ELEVATIONS TO MATCH EXISTING FINISH FLOOR ELEVATIONS EXCEPT AS NOTED. GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT IF/WHEN DISCREPANCIES ARE IDENTIFIED PRIOR TO PROCEEDING.

S. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL FRAMING DETAILS.

T. INSULATION IDENTIFICATION: AN IDENDITICACTION MARK SHALL BE APPLIED TO ALL INSULATION MATERIALS. INSTALL INSULATION SUCH THAT MARK IS READILY OBSERVABLE DURING INSPECTION.

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Client
NORTH BEACH SCHOOL DISTRICT

Project
2025-010
PACIFIC BEACH ELEMENTARY SCHOOL
58 FIRST ST N
PACIFIC BEACH, WA 98571

Issue & Revision Dates

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12 AUGUST 2026	95% SD
10 SEPTEMBER 2026	100% SD

100% SCHEMATIC DESIGN
Not for Construction

Drawn By AMS
Checked By SH

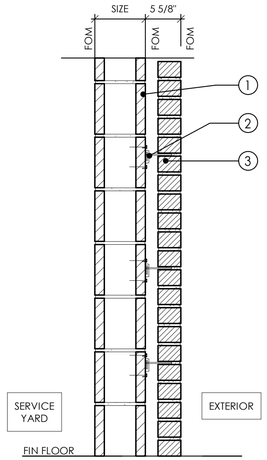
Sheet Title
GENERAL NOTES TO THE WALL TYPES

A30.01

Sheet Number Of

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CONSTRUCTION

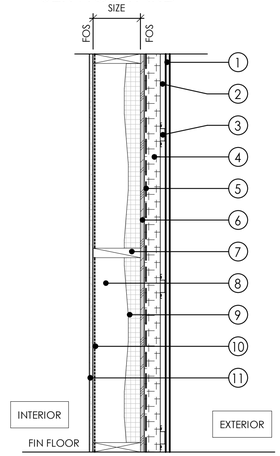
1. CMU
2. MASONRY ANCHOR
3. BV

FIRE RATING

1. NON-RATED

EXTERIOR WALL TYPE — BV1/BV1

SERVICE YARD

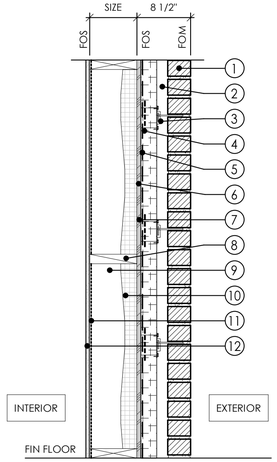


CONSTRUCTION

1. FCP
2. 3/4" MIN AIR SPACE
3. FC24
4. MINERAL FIBER INSULATION, R10 MIN
5. WRB - (AIR BARRIER)
6. PW - PLYWOOD SHEATHING
7. BLOCKING
8. WS
9. SPRAY FOAM INSULATION, R13 MIN
10. VAPOR BARRIER
11. GB

FIRE RATING

1. NON-RATED



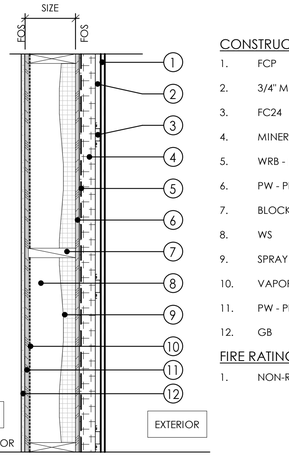
CONSTRUCTION

1. BV
2. AIR SPACE
3. MASONRY ANCHOR
4. SAM TARGET
5. MINERAL FIBER INSULATION, R10 MIN
6. WRB - (AIR BARRIER)
7. PW - PLYWOOD SHEATHING
8. BLOCKING
9. WS
10. SPRAY FOAM INSULATION, R13 MIN
11. VAPOR RETARDER
12. GB

FIRE RATING

1. NON-RATED

EXTERIOR WALL TYPE — W/BV1

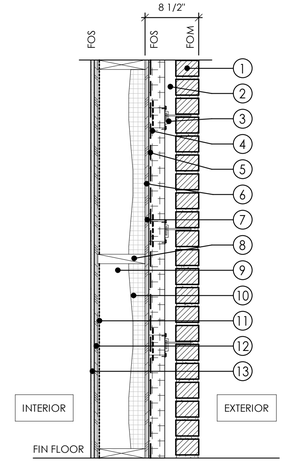


CONSTRUCTION

1. FCP
2. 3/4" MIN AIR SPACE
3. FC24
4. MINERAL FIBER INSULATION, R10 MIN
5. WRB - (AIR BARRIER)
6. PW - PLYWOOD SHEATHING
7. BLOCKING
8. WS
9. SPRAY FOAM INSULATION, R13 MIN
10. VAPOR BARRIER
11. PW - PLYWOOD SHEATHING
12. GB

FIRE RATING

1. NON-RATED



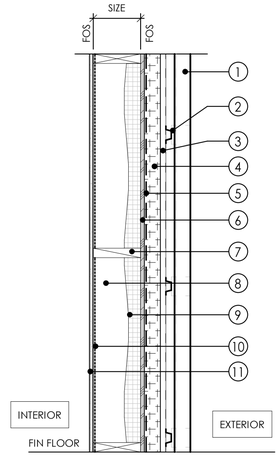
CONSTRUCTION

1. BV
2. AIR SPACE
3. MASONRY ANCHOR
4. SAM TARGET
5. MINERAL FIBER INSULATION, R10 MIN
6. WRB - (AIR BARRIER)
7. PW - PLYWOOD SHEATHING
8. BLOCKING
9. WS
10. SPRAY FOAM INSULATION, R13 MIN
11. VAPOR RETARDER
12. PW - PLYWOOD SHEATHING
13. GB

FIRE RATING

1. NON-RATED

EXTERIOR WALL TYPE — W/BV2



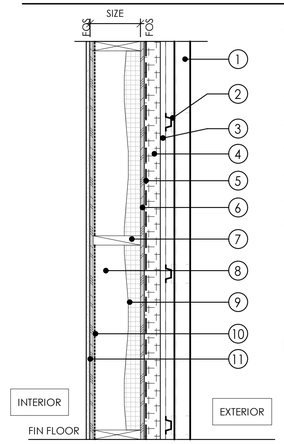
CONSTRUCTION

1. METAL PANEL SIDING
2. RAIN SCREEN STRAPPING
3. VERTICAL FURRING
4. MINERAL FIBER INSULATION, R10 MIN
5. WRB - (AIR BARRIER)
6. PW - PLYWOOD SHEATHING
7. BLOCKING
8. WS
9. BATT INSULATION, R13 MIN
10. VAPOR BARRIER
11. GB

FIRE RATING

1. NON-RATED

EXTERIOR WALL TYPE — W/FCP1



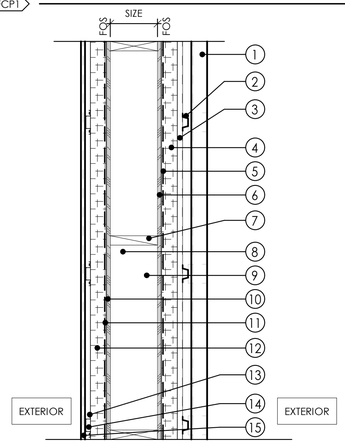
CONSTRUCTION

1. METAL PANEL SIDING
2. RAIN SCREEN STRAPPING
3. VERTICAL FURRING
4. MINERAL FIBER INSULATION, R10 MIN
5. WRB - (AIR BARRIER)
6. PW - PLYWOOD SHEATHING
7. BLOCKING
8. WS
9. BATT INSULATION, R13 MIN
10. VAPOR BARRIER
11. PW - PLYWOOD SHEATHING
12. GB

FIRE RATING

1. NON-RATED

EXTERIOR WALL TYPE — W/FCP2



CONSTRUCTION

1. METAL PANEL SIDING
2. RAIN SCREEN STRAPPING
3. VERTICAL FURRING
4. MINERAL FIBER INSULATION, R10 MIN
5. WRB - (AIR BARRIER)
6. PW - PLYWOOD SHEATHING
7. BLOCKING
8. WS
9. BATT INSULATION, R13 MIN
10. PW - PLYWOOD SHEATHING
11. WRB - (AIR BARRIER)
12. MINERAL FIBER INSULATION, R10 MIN
13. FC24
14. 3/4" MIN AIR SPACE
15. FCP

FIRE RATING

1. NON-RATED

EXTERIOR WALL TYPE — W/MPS1

EXTERIOR WALL TYPE — W/MPS2

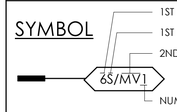
EXTERIOR WALL TYPE — W/MPS3

SHEET NOTES

A. SEE A30.01 FOR GENERAL NOTES TO WALL TYPES, BUILDING AND WALL SECTIONS.

EXTERIOR WALL TYPE LEGEND

SYMBOL



STUD SIZE

NOMINAL DIMENSION OF BASIC WALL WOOD STUD OR MASONRY AS CALLED OUT ON DRAWINGS, LESS FINISHES; 2,4,6, ETC.
NUMBER IS ACTUAL SIZE FOR CONCRETE AND STEEL STUDS, LESS FINISHES

WALL HEIGHT

ALL WALLS ARE FULL HEIGHT FROM POINT OF ORIGIN TO BOTTOM OF FLOOR SHEATHING OR ROOF DECKING/SHEATHING UNLESS NOTED OTHERWISE, SEE BUILDING AND WALL SECTIONS. WALL ASSEMBLIES MUST BE CONSTRUCTED FULLY BETWEEN ALL FLOOR AND ROOF JOIST

CONSTRUCTION

AIR SPACE:
PROVIDE CAVITY SPACE TO ALLOW AIR TO CIRCULATE BETWEEN EXTERIOR FINISH AND SUBSTRATE. SEE DETAILS FOR WIDTH OF CAVITY AND METHOD(S) TO ALLOW AIR CIRCULATION AND WATER DRAINAGE FROM CAVITY.
NATIVE AIR MUST CONFORM TO EPA STANDARDS

BLKG **BLOCKING AND OR BACKING:**
PROVIDE BLOCKING/ BACKING AS REQUIRED BY CODE AND PER GENERAL NOTES, SPECIFICATIONS, AS DETAILED, AT CEILING LINE AND PER REQ. ON A30.01.

BV **BRICK VENEER:**
SEE EXTERIOR ELEVATION AND DETAILS FOR LOCATION/EXTENTS, COURSING AND JOINTS. PROVIDE **BRICK VENEER ANCHORS** AT HORIZONTAL AND VERTICAL SPACING PER SPECIFICATIONS AND STRUCTURAL.

CIPC **CAST IN PLACE CONCRETE:**
SEE STRUCTURAL

CMU CONCRETE MASONRY UNIT

FC24 **FURRING CHANNEL:**
MANUFACTURED 18 GAUGE PERFORATED 3/4" X 4" METAL FURRING CHANNEL HORIZONTALLY ORIENTED, SPACED AT 24" OC MAX

FCP **FIBER REINFORCED CEMENT PANEL:**
SEE EXTERIOR ELEVATIONS FOR JOINT LAYOUTS AND DETAILS. FASTEN TO FURRING PER MFR'S RECOMMENDATIONS.

GB **GYPSUM BOARD:**
PROVIDE A SINGLE LAYER OF 5/8" TYPE 'X' GB
SEE NOTE O. ON A30.01 FOR ADDITIONAL REQUIREMENTS

MPS **METAL PANEL SIDING:**
MATCH WALL 'MS' PANEL WIDTH. ATTACHMENT TO ROOF DECK PER MANUFACTURER'S RECOMMENDATIONS
SEE ROOF TYPES FOR ADDITIONAL REQUIREMENTS

PW **PLYWOOD SHEATHING:**
SEE STRUCTURAL

SAM TARGET
PROVIDE A 4" X 4" MIN SIZE SQUARE SAM "TARGET" PATCH BACKING BETWEEN WRB AND EACH BRICK VENEER TIE

SPRAY FOAM INSULATION
CAVITY INSULATION, SEE WALL TYPE FOR R-VALUE

WRB **WEATHER RESISTANT BARRIER (AIR BARRIER):**
SELF-ADHERED

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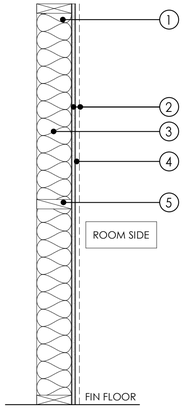
Sheet Title
EXTERIOR WALL TYPES

A30.02

Sheet Number Of

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CONSTRUCTION

1. W - WOOD STUD
2. GB - GYPSUM BOARD. PROVIDE (1) LAYER ON ROOM SIDE OF WALL. PROVIDE A SECOND LAYER OF GB AT RESTROOMS ON RESTROOM SIDE
3. SOUND BATT INSULATION
4. FINISH AS SCHEDULED (NOT SHOWN)
5. BLKG - BACKING/BLOCKING

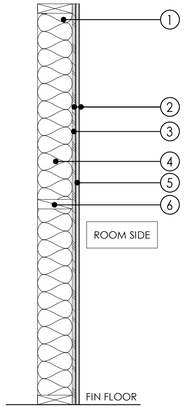
FIRE RATING

1. NON-RATED

SOUND

1. NON-RATED

INTERIOR WALL TYPE _W/1



CONSTRUCTION

1. W - WOOD STUD
2. GB - GYPSUM BOARD. PROVIDE (1) LAYER ON ROOM SIDE OF WALL.
3. PW - PLYWOOD SHEATHING
4. SOUND BATT INSULATION
5. FINISH AS SCHEDULED (NOT SHOWN)
6. BLKG - BACKING/BLOCKING

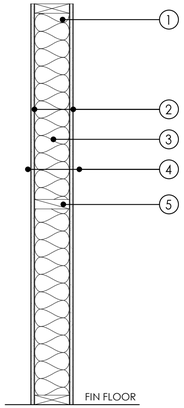
FIRE RATING

1. NON-RATED

SOUND

1. NON-RATED

INTERIOR WALL TYPE _W-P/1



CONSTRUCTION

1. W - WOOD STUD
2. GB - GYPSUM BOARD. PROVIDE (1) LAYERS ON EACH SIDE OF WALL.
3. SOUND BATT INSULATION
4. FINISH AS SCHEDULED (NOT SHOWN)
5. BLKG - BACKING/BLOCKING

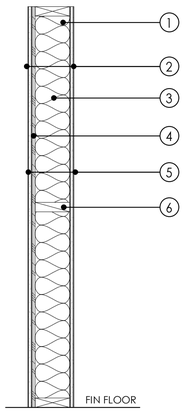
FIRE RATING

1. NON-RATED, EXCEPT WHERE '2HR' IS INDICATED AS A MODIFIER ON THE WALL TYPE SYMBOL

SOUND

1. STC 40 RATED ASSEMBLY WITH 4 INCH STUD. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02
2. STC 45 RATED ASSEMBLY WITH 6 INCH STUD. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02.

INTERIOR WALL TYPE _W/2



CONSTRUCTION

1. W - WOOD STUD
2. GB - GYPSUM BOARD. PROVIDE (1) LAYERS ON EACH SIDE OF WALL.
3. SOUND BATT INSULATION
4. PW - PLYWOOD SHEATHING
5. FINISH AS SCHEDULED (NOT SHOWN)
6. BLKG - BACKING/BLOCKING

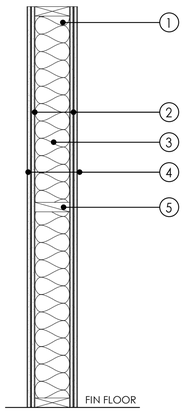
FIRE RATING

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SOUND

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2. STC 45 RATED ASSEMBLY WITH 6 INCH STUD. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02.

INTERIOR WALL TYPE _W-P/2



CONSTRUCTION

1. W - WOOD STUD
2. GB - GYPSUM BOARD. PROVIDE (2) LAYERS ON EACH SIDE OF WALL.
3. SOUND BATT INSULATION
4. FINISH AS SCHEDULED (NOT SHOWN)
5. BLKG - BACKING/BLOCKING

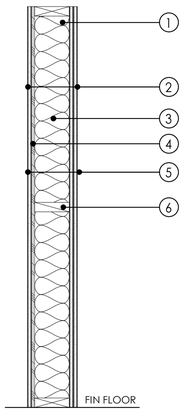
FIRE RATING

1. NON-RATED, EXCEPT WHERE '2HR' IS INDICATED AS A MODIFIER ON THE WALL TYPE SYMBOL

SOUND

1. STC 40 RATED ASSEMBLY WITH 4 INCH STUD. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02
2. STC 45 RATED ASSEMBLY WITH 6 INCH STUD. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02.

INTERIOR WALL TYPE _W/4



CONSTRUCTION

1. W - WOOD STUD
2. GB - GYPSUM BOARD. PROVIDE (2) LAYERS ON ONE SIDE OF THE WALL AND (1) LAYER OPPOSITE SIDE OF THE WALL
3. SOUND BATT INSULATION
4. PW - PLYWOOD SHEATHING
5. FINISH AS SCHEDULED (NOT SHOWN)
6. BLKG - BACKING/BLOCKING

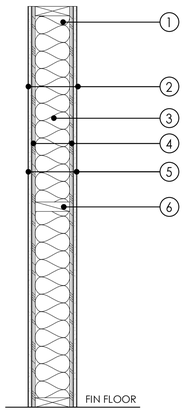
FIRE RATING

1. NON-RATED, EXCEPT WHERE '2HR' IS INDICATED AS A MODIFIER ON THE WALL TYPE SYMBOL

SOUND

1. STC 40 RATED ASSEMBLY WITH 4 INCH STUD. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02
2. STC 45 RATED ASSEMBLY WITH 6 INCH STUD. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02.

INTERIOR WALL TYPE _W-P/3



CONSTRUCTION

1. W - WOOD STUD
2. GB - GYPSUM BOARD. PROVIDE (1) LAYER ON BOTH SIDES OF THE WALL
3. SOUND BATT INSULATION
4. PW - PLYWOOD SHEATHING. PROVIDE (1) LAYER ON BOTH SIDES OF THE WALL.
5. FINISH AS SCHEDULED (NOT SHOWN)
6. BLKG - BACKING/BLOCKING

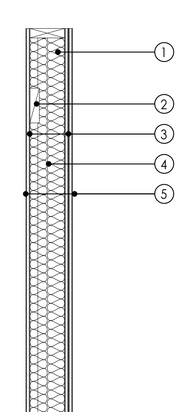
FIRE RATING

1. NON-RATED, EXCEPT WHERE '2HR' IS INDICATED AS A MODIFIER ON THE WALL TYPE SYMBOL

SOUND

1. STC 40 RATED ASSEMBLY WITH 4 INCH STUD. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02
2. STC 45 RATED ASSEMBLY WITH 6 INCH STUD. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02.

INTERIOR WALL TYPE _W-2P/2



CONSTRUCTION

1. W - WOOD STAGGERED STUD
2. BLKG - BACKING/BLOCKING
3. GB - GYPSUM BOARD. PROVIDE (1) LAYER ON ONE SIDE OF THE WALL AND (2) LAYERS ON OTHER SIDE.
4. SOUND BATT INSULATION
5. FINISH AS SCHEDULED (NOT SHOWN)

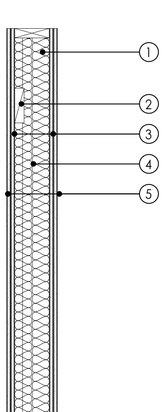
FIRE RATING

1. NON-RATED, EXCEPT WHERE '2HR' IS INDICATED AS A MODIFIER ON THE WALL TYPE SYMBOL

SOUND

1. STC 50 RATED ASSEMBLY. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02

INTERIOR WALL TYPE _WSS/3



CONSTRUCTION

1. W - WOOD STAGGERED STUD
2. BLKG - BACKING/BLOCKING
3. GB - GYPSUM BOARD. PROVIDE (2) LAYERS ON EACH SIDE OF WALL.
4. SOUND BATT INSULATION
5. FINISH AS SCHEDULED (NOT SHOWN)

FIRE RATING

1. NON-RATED, EXCEPT WHERE '2HR' IS INDICATED AS A MODIFIER ON THE WALL TYPE SYMBOL

SOUND

1. STC 55 RATED ASSEMBLY. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02

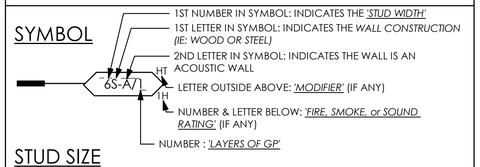
INTERIOR WALL TYPE WSS/4

SHEET NOTES

A. SEE A30.01 FOR GENERAL NOTES TO WALL TYPES, BUILDING AND WALL SECTIONS.

INTERIOR WALL TYPE LEGEND

SYMBOL



STUD SIZE

NOMINAL DIMENSION OF BASIC IMF SIZE AS CALLED OUT ON DRAWINGS, LESS FINISHES; 2, 4, 6, ETC.

WALL HEIGHT

ALL WALLS ARE FULL HEIGHT FROM POINT OF ORIGIN TO BOTTOM OF FLOOR SHEATHING OR ROOF DECKING/SHEATHING UNLESS NOTED OTHERWISE, SEE BUILDING AND WALL SECTIONS. WALL ASSEMBLIES MUST BE CONSTRUCTED FULLY BETWEEN ALL FLOOR AND ROOF JOIST.

CONSTRUCTION

A **AIR GAP:**
PROVIDE SPACE AS NOTED IN WALL TYPE

BATT INSULATION:
PROVIDE UN-FACED, NON-COMBUSTIBLE FOR THE FULL DEPTH OF THE STUD CAVITY (R-21), AT NON-RATED WALLS, CONCEALED SPACES ARE TO BE FULLY FILLED W/NON-COMBUSTIBLE, UN-FACED BATTS.

BLKG **BLOCKING AND OR BACKING:**
PROVIDE BLOCKING/BACKING AT CEILING LINE AND AS REQUIRED BY CODE AND PER REQ. ON A30.01. AT STAGGERED STUD WALLS PROVIDE MINERAL WOOL AT ALL REQUIRED BLOCKING LOCATIONS PER IBC SECTION 718.2.1.5

GB **GYPSUM BOARD:**
PROVIDE 5/8" TYPE 'X' GB TYPICAL UNO, SEE NOTE O. ON A30.01 FOR ADDITIONAL REQUIREMENTS.

AT ASYMMETRICAL WALLS WHERE AN ODD NUMBER OF LAYERS ARE REQUIRED, THE ADDITIONAL LAYERS IS TO BE INSTALLED ON THE SAME SIDE OF THE WALL AS THE WALL TYPE SYMBOL, BUT AT RESTROOMS AND SHOWERS (IF APPLICABLE) THE ADDITIONAL LAYERS ARE TO BE INSTALLED ON THE RESTROOM/SHOWER SIDE.

AT SYMMETRICAL WALLS WHERE THE SAME NUMBER OF LAYERS ARE REQUIRED, APPLY EVENLY TO BOTH SIDES OF THE WALL.

1" GB **GYPSUM SHAFT LINER BOARD:**
PROVIDE 1" TYPE 'X' SHAFT LINER GB. SEE NOTE O. ON A30.01 FOR ADDITIONAL REQUIREMENTS.

PW **PLYWOOD SHEATHING:**
SEE STRUCTURAL

W **WOOD STUD:**
WOOD STUDS TO BE SPACED AT A MINIMUM OF 16" O.C., UNO W/ BLOCKING AT CEILING AND AS REQUIRED BY CODE. ALSO SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION, FRAMING AND BACKING / BLOCKING REQUIREMENTS.

WSS **WOOD STAGGERED STUDS:**
(2) ROWS OF 2X4 WOOD STUDS STAGGERED AT 16" OC ON EACH SIDE, W/ 2X6 HEADER AND FOOTER PLATES UNO, WITH BLOCKING AT CEILING AND AS REQUIRED BY CODE. SEE STRUCTURAL DRAWINGS.

MODIFIERS

HT WALL HEIGHT: EXTEND WALL FRAMING & FINISHES TO 6" ABOVE ADJACENT CEILING.

X OMIT ACOUSTIC INSULATION AT THE WALL CAVITY, NOTE THAT SOUND REQUIREMENTS ARE NOT REQUIRED.

FIRE & SMOKE RATINGS

SP SMOKE PARTITION - DESIGNED TO RESIST THE PASSAGE OF SMOKE AS REQ'D BY IBC 710. EXTEND TO ROOF DECK ABOVE, SEAL ALL PENETRATIONS AND EDGES, W/ FIRESTOP SEALANT. REF TO WALL TYPE GENERAL NOTE 'P' ON A30.01.

1HR ONE-HOUR FIRE BARRIER WALL.

SOUND

PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.01 FOR ANY WALL ASSEMBLY WITH A STC RATING. SEE SHEETS A31.10 AND A31.11 FOR TYPICAL INTERIOR WALL HEAD AND WALL BASED DETAILS AT ACOUSTICALLY RATED ASSEMBLIES.

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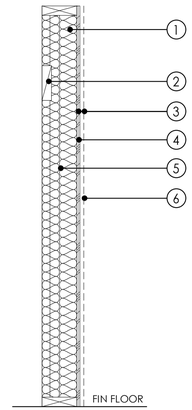
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Sheet Title
INTERIOR WALL TYPES, ASSEMBLIES & GENERAL NOTES

Sheet Number A31.01
Of

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CONSTRUCTION

1. W - WOOD STAGGERED STUD
2. BLKG - BACKING/BLOCKING
3. GB - GYPSUM BOARD. PROVIDE (1) LAYER ON ROOM SIDE OF WALL. PROVIDE A SECOND LAYER OF GB AT RESTROOMS ON RESTROOM SIDE
4. PW - PLYWOOD SHEATHING
5. SOUND BATT INSULATION
6. FINISH AS SCHEDULED (NOT SHOWN)

FIRE RATING

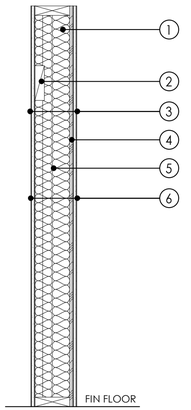
1. NON-RATED, EXCEPT WHERE '2HR' IS INDICATED AS A MODIFIER ON THE WALL TYPE SYMBOL

SOUND

1. NON-RATED

INTERIOR WALL TYPE

WSS-P/1



CONSTRUCTION

1. W - WOOD STAGGERED STUD
2. BLKG - BACKING/BLOCKING
3. GB - GYPSUM BOARD. PROVIDE (1) LAYER ON BOTH SIDES OF THE WALL.
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5. SOUND BATT INSULATION
6. FINISH AS SCHEDULED (NOT SHOWN)

FIRE RATING

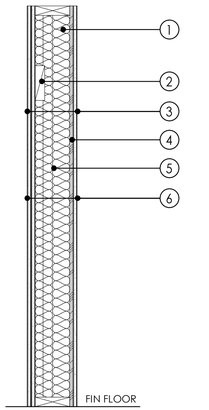
1. NON-RATED, EXCEPT WHERE '2HR' IS INDICATED AS A MODIFIER ON THE WALL TYPE SYMBOL

SOUND

1. STC 50 RATED ASSEMBLY. PROVIDE SOUND CONTROL AS REQUIRED BY NOTE Q ON A30.02

INTERIOR WALL TYPE

WSS-P/2



CONSTRUCTION

1. W - WOOD STAGGERED STUD
2. BLKG - BACKING/BLOCKING
3. GB - GYPSUM BOARD. PROVIDE (1) LAYER ON ONE SIDE OF THE WALL AND (2) LAYERS ON OPPOSITE SIDE OF THE WALL.
4. PW - PLYWOOD SHEATHING. PROVIDE (1) LAYER.
5. SOUND BATT INSULATION
6. FINISH AS SCHEDULED (NOT SHOWN)

FIRE RATING

1. NON-RATED, EXCEPT WHERE '2HR' IS INDICATED AS A MODIFIER ON THE WALL TYPE SYMBOL

SOUND

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INTERIOR WALL TYPE

WSS-P/3

CONSTRUCTION

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4. PW - PLYWOOD SHEATHING. PROVIDE (1) LAYER ON BOTH SIDES OF THE WALL.
5. SOUND BATT INSULATION
6. FINISH AS SCHEDULED (NOT SHOWN)

FIRE RATING

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SOUND

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INTERIOR WALL TYPE

WSS-2P/1

CONSTRUCTION

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INTERIOR WALL TYPE

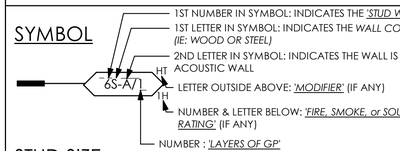
WSS-2P/2

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INTERIOR WALL TYPE LEGEND

SYMBOL



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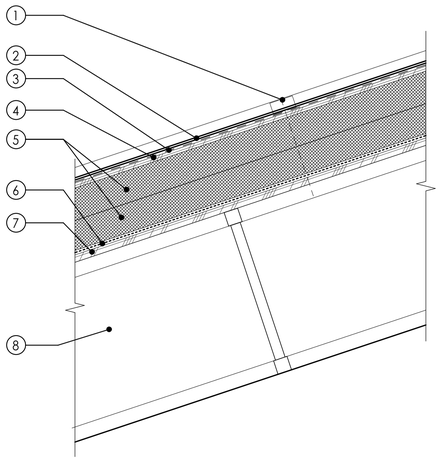
INTERIOR WALL TYPES, ASSEMBLIES & GENERAL NOTES

A31.02

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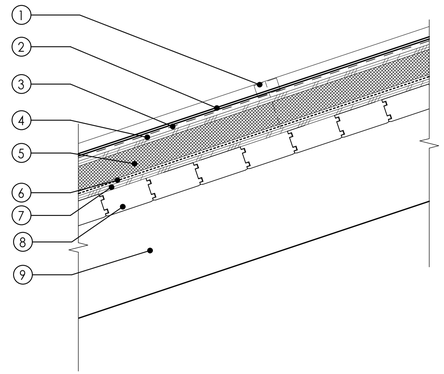
ASSEMBLY

1. METAL ROOF ATTACHMENT THROUGH DECKING PER STRUCTURAL REQ
2. STANDING ROOF PANEL
3. HT UNDERLAYMENT
4. 1/2" PLYWOOD
5. CONTINUOUS RIGID INSULATION (R38 MIN)
6. INTERIM MEMBRANE **(AIR BARRIER)**
7. PLYWOOD DECKING, SEE STRUCTURAL DRAWINGS
8. ROOF FRAMING, SEE STRUCTURAL DRAWINGS

FIRE RATING

1. NON-RATED

ROOF TYPE 'A' - METAL ROOF



ASSEMBLY

1. METAL ROOF ATTACHMENT THROUGH DECKING PER STRUCTURAL REQ
2. METAL ROOF PANEL
3. HT UNDERLAYMENT
4. 1/2" COVER BOARD
5. CONTINUOUS RIGID INSULATION (R38 MIN)
6. INTERIM MEMBRANE **(AIR BARRIER)**
7. ROOF SHEATHING, SSD
8. FLAT DECKING, SEE STRUCTURAL DRAWINGS
9. ROOF FRAMING, SEE STRUCTURAL DRAWINGS

FIRE RATING

1. NON-RATED

ROOF TYPE 'B' - METAL ROOF

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ROOF TYPES, ASSEMBLIES & GENERAL NOTES

A40.01

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ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	Room _ Floor Material	Room _ Base Material	Room _ North Wall Finish	Room _ East Wall Finish	Room _ South Wall Finish	Room _ West Wall Finish	NOTES / REMARKS
100	VESTIBULE	WOM	RB	GB-PT/WVP	GB-PT/WVP	GB-PT/WVP	GB-PT/WVP	
101	RECEPTION	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
102	HEALTH ROOM	SV	RB	GB-PT/VWP	GB-PT/VWP	GB-PT/VWP	GB-PT/VWP	
102A	HEALTH RR	CONC-SL	CT	CT	CT	CT	CT	
103	ITN OFFICE	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
104	COUN OFFICE	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
105	PRINC OFFICE	CPT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
106	STAFF WORKROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
107	CONF ROOM	CPT/RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
108	STAFF RR	CONC-P	CT	CT	CT	CT	CT	
109	STAFF RR	CONC-P	CT	CT	CT	CT	CT	
110	STAFF LOUNGE	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
111	SUPPLY STORAGE	CONC-SL	RB	GB-PT	GB-PT	GB-PT	GB-PT	
112	SLP	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
113	CUSTODIAL CLOSET	CONC-SL	RB	GB-PT/FRPW	GB-PT/FRPW	GB-PT/FRPW	GB-PT/FRPW	
114	OT/PT	RAF	RB	GB-PT	GB-PT	GB-PT	GB-PT	
114A	OT/PT OFFICE	CPT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
115	MDF	CONC-SL	RB	GB-PT	GB-PT	GB-PT	GB-PT	
116	FAMILY RR	CONC-P	CT	CT	CT	CT	CT	
117	MOTHERS / PHONE RM	CPT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
118	SMALL SENSORY	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
119	GIRLS RR	CONC-P	CT	CT	CT	CT	CT	
120	BOYS RR	CONC-P	CT	CT	CT	CT	CT	
121	LIBRARY	CPT	RB	GB-PT/AWP	GB-PT/VWP	GB-PT	GB-PT	
121A	WK RM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
122	6TH GRADE CLASSROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
122	VESTIBULE	WOM	RB	GB-PT/CPL	GB-PT/CPL	GB-PT/CPL	GB-PT/CPL	
123	SPED CLASSROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
123A	CORRIDOR	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
123B	LARGE SENSORY	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
123C	SPED RR	CONC-P	CT	CT	CT	CT	CT	
124	SPED CLASSROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
125	5TH GRADE CLASSROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
126	CONF / SMALL GROUP	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
127	4TH GRADE CLASSROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
128	3RD GRADE CLASSROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
129	SMALL SENSORY	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
130	CONF / SMALL GROUP	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
131	CONF / SMALL GROUP	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
132	SMALL SENSORY	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
133	2ND GRADE CLASSROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
134	1ST GRADE CLASSROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
135	KINDERGARTEN CLASSROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
135A	KG RR	CT	CT	GB-PT/CT	GB-PT/CT	GB-PT/CT	GB-PT/CT	
136	ART / MAKER SPACE FLEX CLASSROOM	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
137	BOYS RR	CONC-P	CT	CT	CT	CT	CT	
138	GIRLS RR	CONC-P	CT	CT	CT	CT	CT	
139	STAFF RR	CONC-P	CT	CT	CT	CT	CT	
139	VESTIBULE	WOM	RB	GB-PT/CPL	GB-PT/CPL	GB-PT/CPL	GB-PT/CPL	
140	STAFF RR	CONC-P	CT	CT	CT	CT	CT	
141	VESTIBULE	WOM	RB	GB-PT/CPL	GB-PT/CPL	GB-PT/CPL	GB-PT/CPL	
142	MUSIC	RT	RB	-	GB-PT/AWP	GB-PT/AWP	GB-PT/AWP	
142A	STG	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
142B	STG	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
142C	RAMP	RT	RB	GB-PT/CPL	GB-PT/CPL	GB-PT/CPL	GB-PT/CPL	
142E	MECHANICAL ATTIC	PW	-	GB	GB	GB	GB	
142F	EXTERIOR COVERED PLAY AREA	-	-	-	-	-	-	SEE CIVIL & LANDSCAPE DWGS
142G	MECH ATTIC @ COMMONS AREA	PW	-	GB	GB	GB	GB	
142H	MECH ATTIC @ MUSIC ROOM	PW	-	GB	GB	GB	GB	
143	GYMNASIUM	MF	RB	-	GB-PT/CPL/AWP	GB-PT/CPL/AWP/ WVP	GB-PT/CPL/AWP	
144	TABLE & CHAIR STORAGE	CONC-SL	RB	GB-PT/MDFW	GB-PT/MDFW	GB-PT/MDFW	GB-PT/MDFW	
145	PE OFFICE	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
146	PE STORAGE	CONC-SL	RB	GB-PT/MDFW	GB-PT/MDFW	GB-PT/MDFW	GB-PT/MDFW	
147	AV CLOSET	CONC-SL	RB	GB-PT	GB-PT	GB-PT	GB-PT	
148	IDF	CONC-SL	RB	GB-PT	GB-PT	GB-PT	GB-PT	
149	COMMONS / CAFETERIA	RT/RAF	RB	GB-PT/CPL/AWP	GB-PT/CPL/AWP	-	GB-PT	
150	WARMING KITCHEN	QT	QT	GB-PT/FRPW	GB-PT/FRPW	GB-PT/FRPW	GB-PT/FRPW	
150	CORRIDOR	RT	RB	GB-PT	GB-PT	GB-PT	GB-PT	
151	MAIN CUSTODIAL	CONC-SL	RB	GB-PT	GB-PT	GB-PT/FRPW	GB-PT/FRPW	
152	MAIN MECHANICAL	CONC-SL	RB	GB-PT	GB-PT	GB-PT	GB-PT	
153	MAIN ELECTRICAL	CONC-SL	RB	GB-PT	GB-PT	GB-PT	GB-PT	
177	VESTIBULE	WOM	RB	GB-PT/CPL	GB-PT/CPL	GB-PT/CPL	GB-PT/CPL	
C01	CORRIDOR	RT	RB	GB-PT/WVP	GB-PT/WVP/CT	GB-PT/WVP	GB-PT/WVP	
C02	CORRIDOR	RT	RB	GB-PT/CPL/AWP	GB-PT/CPL/AWP	GB-PT/CPL/AWP	GB-PT/CPL/AWP	

SHEET NOTES

A. OTHER NOTES: SEE GENERAL NOTES ON G2 SERIES SHEETS FOR ADDITIONAL INFORMATION.
B. WALL TYPES: SEE FLOOR PLANS ON A2 SERIES SHEETS FOR WALL TYPE CALLOUTS
C. GENERAL NOTES: SEE FLOOR PLAN GENERAL NOTES ON A2 SERIES SHEETS AND WALL & BUILDING SECTION AND WALL TYPE NOTES ON A31 AND A32 SERIES SHEETS FOR ADDITIONAL INFORMATION.
D. CEILINGS: SEE REFLECTED CEILING PLANS ON A4 SERIES SHEETS FOR CEILING HEIGHTS, FINISHES, AND SUSPENDED ACOUSTIC BAFFLES (SAB). SEE A35 SERIES SHEETS FOR CEILING DETAILS.
E. FLOOR AND BASE DETAILS: SEE A22 SERIES SHEETS FOR DETAILS.
F. COLOR SCHEDULE: SEE A70 SERIES SHEETS.
G. VARYING FINISH MATERIALS: SEE PLANS AND INTERIOR ELEVATIONS FOR LOCATION AND EXTENT OF MATERIALS AND FINISHES WHERE MORE THAN ONE MATERIAL OR FINISH IS SCHEDULED. ALIGN FACE OF FINISH SURFACES UNLESS NOTED OTHERWISE.
H. BACKING PANELS: PROVIDE PLYWOOD BACKING PANELS FOR TELEPHONE AND ELECTRICAL PANELS AND EQUIPMENT; PAINT WHITE. COORDINATE WITH ELECTRICAL & TELECOMMUNICATION DRAWINGS AND SPECIFICATIONS.
I. HOLLOW METAL FRAMES: THESE ASSEMBLIES ARE NOT NOTED ON THE ROOM FINISH SCHEDULE. SEE OPENING SCHEDULES FOR SPECIFIC REQUIREMENTS. IF A WALL IS FULLY ONE OF THESE ASSEMBLIES, NO MATERIAL OR FINISH IS NOTED ON THE FINISH SCHEDULE.
J. EXPOSED STRUCTURE AND MISCELLANEOUS STEEL FINISH: ALL EXPOSED STEEL STRUCTURE SHALL BE FINISHED WITH HIGH PERFORMANCE COATING(HPC) WHERE EXPOSED, UNLESS SPECIFICALLY NOTED OTHERWISE. GENERALLY, EXPOSED STEEL STRUCTURE AND MISCELLANEOUS STEEL ARE NOT SCHEDULED ON THE FINISH SCHEDULE.
K. GYPSUM WALL BOARD (GWB):
   1. ALL GB SHALL BE TYPE 'X', UNLESS NOTED OTHERWISE. REFERENCE FINISH SCHEDULE AND SPECIFICATIONS FOR SPECIFIC TYPES OF GWB TO BE USED (i.e. WATER RESISTANT).
   2. WATER RESISTANT GB TO BE USED AT RESTROOMS, TOILET ROOMS, SHOWERS, KITCHEN AND WALLS BEHIND OR ADJACENT TO MOP/SERVICE SINKS, AND AS SCHEDULED.
   3. PROVIDE CASING BEADS AT GWB EDGES WHEREVER EDGES TERMINATE AGAINST A DIFFERENT MATERIAL OR AT A REVEAL. PROVIDE CORNER BEADS AT ALL GWB CORNERS, TYPICAL TO ALL SECTIONS OF THIS DRAWING SET.
   4. AT WALLS WITH VWC AND DIGITAL GRAPHICS, PROVIDE GWB W/MUD/TAPE FINISH AND WALL PRIMER AS SPECIFIED FOR PREPARATION AT AREAS OF VINYL WALL COVERING OR DIGITAL GRAPHICS.
L. AT ALL ROOMS WITH WATERPROOF DECK COATING, EXTEND COATING UP WALL 4" MINIMUM.
M. SEE FOOD SERVICE DRAWINGS FOR THE LOCATION OF SS CORNER GUARDS.

LEGEND

AWP	ACOUSTIC WALL PANEL
CB	COVE BASE (SAME FINISH AS FLOOR)
CONC	CONCRETE
CPL	COMPACT PLASTIC LAMINATE
CPT	CARPET
CT	CERAMIC TILE
CTW	CERAMIC TILE WAINSCOT
FRLW	FIBER-REINFORCED LAMINATE WAINSCOT
FRP	FIBERGLASS REINFORCED PANELS
FRPW	FIBER-REINFORCED POLYMER WAINSCOT
MDFW	MEDIUM DENSITY FIBERBOARD WAINSCOT
GB	GYPSUM WALL BOARD
PLAM	PLASTIC LAMINATE
P	POLISHED
PT	PAINT
PW	PLYWOOD
QT	QUARRY TILE
RAF	RUBBER ATHLETIC FLOORING
RB	4" RUBBER BASE
RT	RUBBER TILE
SL	SEALED
SSW	STAINLESS STEEL WAINSCOT
SV	SHEET VINYL
VWC	VINYL WALL COVERING
VWP	VINYL WALL PANEL
MF	MAPLE WOOD GYM FLOORING
WOM	WALK-OFF MAT
WVP	HARDWOOD VENEER PANEL

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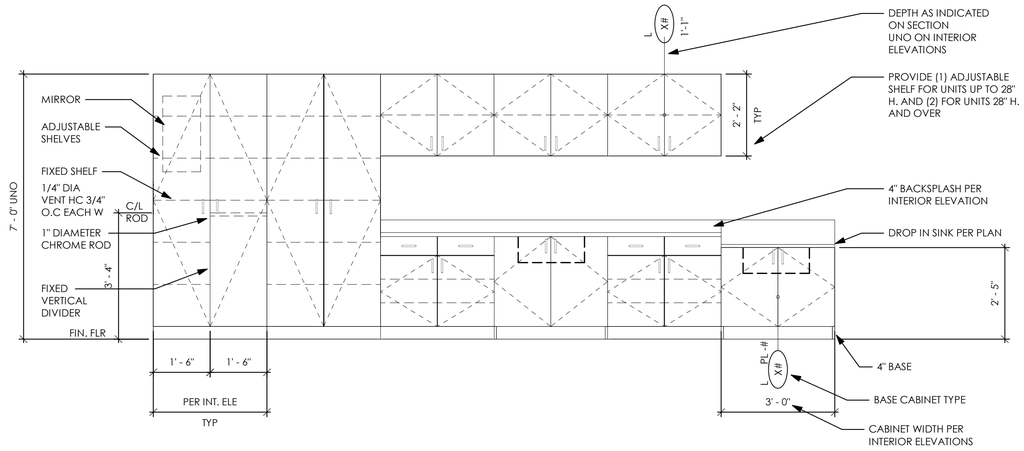
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ROOM FINISH SCHEDULE

A70.01

Sheet Number Of

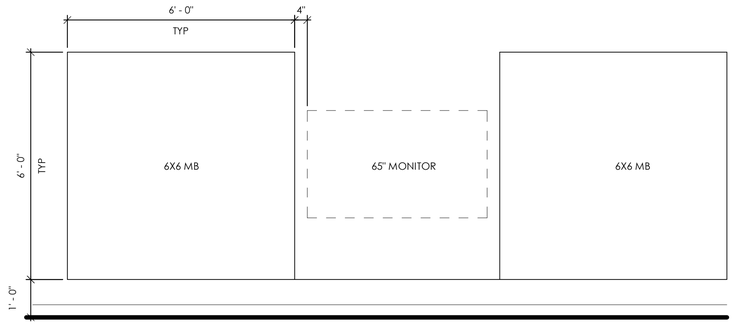
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TYPICAL CLASSROOM CASEWORK KINDERGARTEN

1/2" = 1'-0"



TYPICAL TEACHING WALL

1/2" = 1'-0"

TYPICAL CLASSROOM CASEWORK 1ST-3RD

1/2" = 1'-0"

TYPICAL CUBBIES KINDERGARTEN

1/2" = 1'-0"

TYPICAL CLASSROOM CASEWORK 4TH-6TH

1/2" = 1'-0"

TYPICAL CUBBIES 1ST-6TH

1/2" = 1'-0"

CASEWORK TYPE LEGEND & GENERAL NOTES

SEE INTERIOR ELEVATIONS FOR CALLOUTS AND NOTATIONS NOT SHOWN OR LISTED HERE

1. SEE SHEET G2.01 FOR LEGEND & GENERAL NOTES
2. SEE INTERIOR ELEVATIONS FOR CASEWORK SCHEDULED AND USED FOR THE PROJECT
3. SEE A60-SERIES SHEETS FOR WINDOW SILL DETAILS.
4. ALL CABINETS SHALL BE FROM A SINGLE MANUFACTURER
5. FINISH ALL EXPOSED PORTIONS OF CASEWORK AND COUNTERTOPS
6. BASES ON CASEWORK, AS PROVIDED BY OTHER TRADES, TYPICALLY 4", UNLESS OTHERWISE NOTED.
7. "DEPTH" OF CASEWORK SHOWN ON INTERIOR ELEVATIONS OR IN SCHEDULE INDICATES THE NOMINAL DEPTH OF THE CABINET AND NOT THE COUNTERTOP
8. PROVIDE FILLER PANELS BETWEEN ENDS OF CABINETS AND ADJACENT WALLS AT GAPS OVER 1/4" WIDE, INCLUDING SIDES AND BACKS
9. IN CASE OF CABINET INSTALLATIONS BETWEEN WALLS, VERIFY DIMENSIONS IN FIELD AND PROVIDE FILLER PANEL STRIPS NOT TO EXCEED 2" AT ENDS AND TOPS OR REDUCE END CABINET WIDTH AS REQUIRED TO FIT SPACE AS SHOWN. THIS SHALL BE REFLECTED IN THE SHOP DRAWINGS FOR THE ARCHITECTS REVIEW
10. UPPER AND LOWER CABINET DOORS AND FULL HEIGHT CABINETS SHALL HAVE PULLS MOUNTED VERTICALLY (UNO). DRAWERS SHALL HAVE HORIZONTAL PULLS.
11. COORDINATE HEIGHT AND LOCATION OF BACKING PLATES FOR CASEWORK AS PER MANUFACTURER'S RECOMMENDATIONS. SEE GENERAL NOTES TO THE INTERIOR WALL TYPES ON SHEET A32.01. TYPICAL CASEWORK DETAILS ON SHEET A80.01 AND STRUCTURAL FRAMING DETAILS FOR ADDITIONAL BACKING PLATE AND BLOCKING DETAILS AND REQUIREMENTS
12. ALL SHELVING SHALL BE ADJUSTABLE INCLUDING OPEN SHELVING, UNLESS OTHERWISE NOTED
13. LOCATE TOP OF ALL WALL HUNG CASEWORK 7'-0" ABOVE FINISH FLOOR, UNLESS NOTED OTHERWISE. SEE SCHEDULE AND INTERIOR ELEVATIONS FOR BASE AND WALL CABINET DIMENSIONS
14. UNLESS OTHERWISE NOTED OR SHOWN ON DRAWINGS, ALL FIXED BASE CABINETS SHALL HAVE A BACKSPLASH AS INDICATED ON INTERIOR ELEVATIONS, AND ALSO HAVE A SAME- HEIGHT SIDESPLASH WHERE ENDS OF CABINETS MEET WITH WALLS, AND OTHER CASEWORK AND WHERE CALLED OUT. BACKSPLASHES TO BE AS SCHEDULED ON 3/4" BACKING. BACKSPLASHES SHALL BE SAME MATERIAL AS TOPS.
15. ALL SHELVES, VERTICAL DIVIDERS, AND CABINET INTERIORS SHALL BE FINISHED PER THE SPECIFICATIONS, EXCEPT FINISHED WITH PLASTIC LAMINATE TO MATCH EXTERIOR FINISH AT OPEN OR GLAZED DOOR CASEWORK, AND WHERE CALLED OUT.
16. ALL SHELVES SHALL HAVE ALL EDGES AND ENDS FINISHED AS PER THE SPECIFICATIONS FOR FRONT EDGE FINISH REQUIREMENTS. ALL SHELVES FINISHED WITH PLASTIC LAMINATE TO MATCH EXTERIOR FINISH AT OPEN OR GLAZED DOOR CASEWORK SHALL HAVE EDGES FINISHED WITH SPECIFIED EDGE-BANDING OR P-LAM.
17. ALL CABINETS AND MILLWORK SHALL BE SECURELY ANCHORED TO WALLS AND FLOORS TO CONFORM TO SEISMIC SUPPORT REQUIREMENTS OF THE STATE OF WASHINGTON.
18. CABINET SHOP DRAWINGS SHALL SHOW ACTUAL LOCATIONS OF ELECTRICAL ITEMS AND PLUMBING FIXTURES AND TRIM TO BE INSTALLED. GENERAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF CABINETS AND MILLWORK ITEMS WITH ELECTRICAL SWITCHES, OUTLET LOCATIONS, AND PLUMBING FIXTURES. ANY CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF ANY WORK.
19. ALL TOPS OF UNITS UNDER 72" A.F.F., OR OVER 72" A.F.F. IF VISIBLE FROM AN UPPER BUILDING LEVEL, SHALL BE FURNISHED WITH CONTINUOUS COUNTERTOP OR, WHEN APPROVED BY THE ARCHITECT, INDIVIDUAL PLASTIC LAMINATE FINISH TOP.
20. PROVIDE FILLER PANELS AT ALL GAPS AND VOIDS AT TOPS OF TALL UNITS AND AT TOP AND BOTTOM OF WALL UNITS (UPPER CASEWORK) NOT OTHERWISE CLOSED (I.E. WHERE CONTINUOUS COUNTERTOPS ARE REQUIRED) TO PREVENT PAPER, ETC., FROM COLLECTING BEHIND OR BETWEEN UNITS.
21. EXACT HEIGHT OF INDIVIDUAL DRAWERS IN DRAWER UNITS OR DRAWER/DOOR COMBINATION UNITS IS NOT GIVEN AND IS SUBJECT TO ADJUSTMENT DURING SHOP DRAWING REVIEW AND MAY VARY, DEPENDING ON LOCATION OF UNIT (I.E. TO LINE UP WITH ADJACENT CASEWORK, TRIM, ETC.).
22. CASEWORK SCHEDULE LISTS CABINETS BY TYPE, BUT DOES NOT GIVE QUANTITIES. SEE INTERIOR ELEVATIONS AND FLOOR PLANS TO DETERMINE QUANTITIES.
23. HEIGHTS LISTED FOR BASE CABINETS ARE TO TOP OF COUNTERTOP, UNLESS NOTED OTHERWISE.
24. FLOOR FINISHES SHALL RUN UNDER ALL OPEN CASEWORK IN ALL ROOMS
25. SEE TYPICAL CASEWORK ELEVATION AND SECTION, SEE SHEET A80.01 FOR TYPICAL CASEWORK CONSTRUCTION

MODIFIERS

L LOCKING

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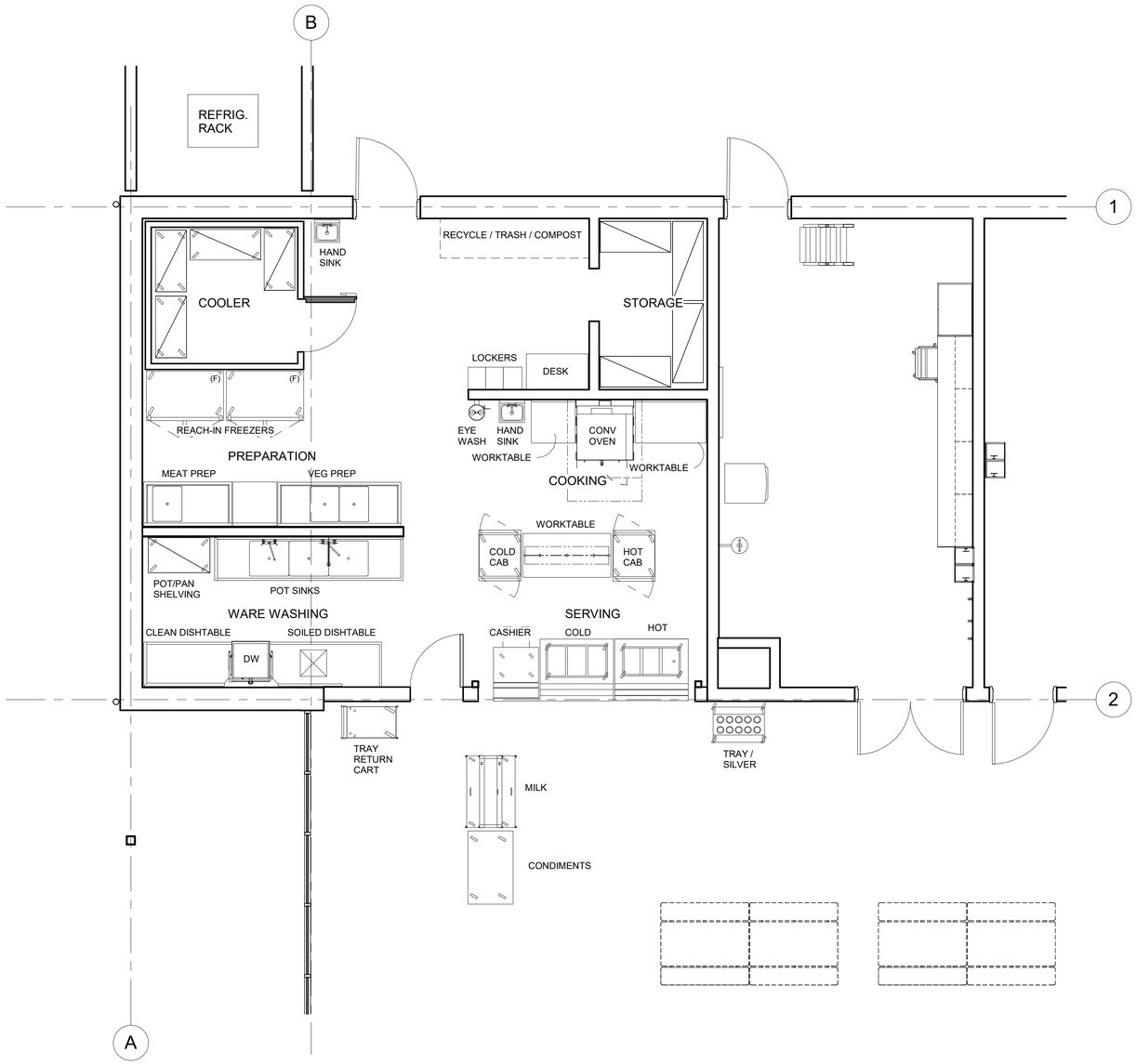
Sheet Title
CASEWORK TYPES

A80.01

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1 EQUIPMENT PLAN

1/4" = 1'-0"

THIS DRAWING IS INTENDED FOR INFORMATION PURPOSES ONLY FOR USE BY THE ARCHITECT AND ENGINEERS TO PREPARE THEIR DOCUMENTS. SEE APPROVED KITCHEN EQUIPMENT CONTRACTOR ROUGH-IN DRAWINGS FOR CONSTRUCTION.

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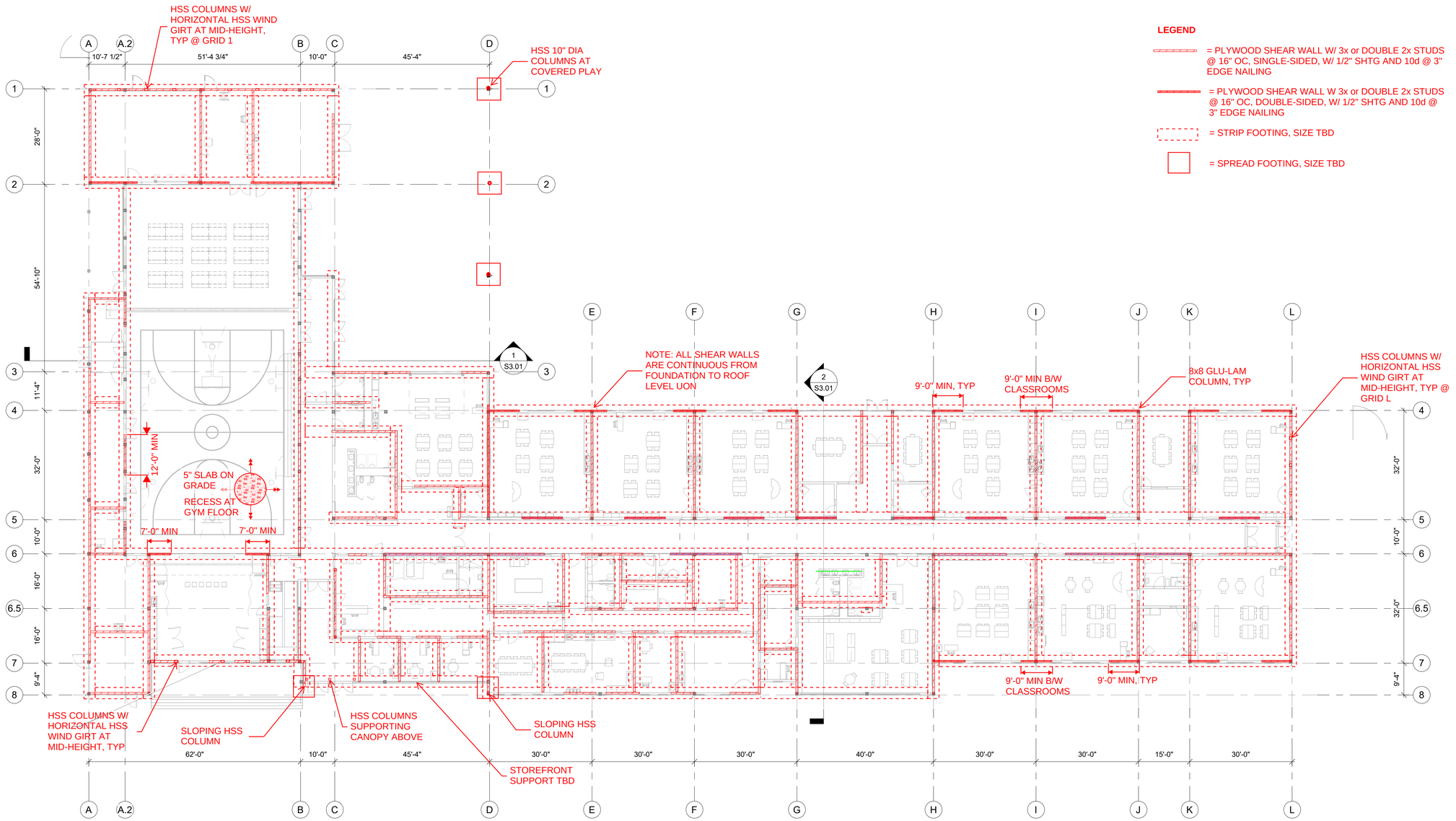
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EQUIPMENT PLAN

FS-1

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1 FOUNDATION AND FIRST FLOOR FRAMING PLAN
1/16" = 1'-0"

SHEET NOTES

1. GROUND IMPROVEMENT AT THE SITE IS REQUIRED PER THE PRELIMINARY GEOTECHNICAL REPORT:
   A. RAMMED-AGGREGATE PIERS ARE RECOMMENDED THROUGHOUT THE ENTIRE STRUCTURAL FOOTPRINT, PLUS A DISTANCE OUTSIDE THE STRUCTURE AS NECESSARY TO MITIGATE LIQUEFACTION
   B. STONE COLUMNS WILL HAVE A MINIMUM EMBEDMENT OF 10 FT BGS AND BE CONCENTRATED ALONG FOOTING LINES AND BENEATH STRUCTURAL COLUMNS
2. T.O. FOOTING = -1'-0" INTERIOR, -2'-0" EXTERIOR

LEGEND

= PLYWOOD SHEAR WALL W/ 3x or DOUBLE 2x STUDS @ 16" OC, SINGLE-SIDED, W/ 1/2" SHTG AND 10d @ 3" EDGE NAILING

= PLYWOOD SHEAR WALL W 3x or DOUBLE 2x STUDS @ 16" OC, DOUBLE-SIDED, W/ 1/2" SHTG AND 10d @ 3" EDGE NAILING

= STRIP FOOTING, SIZE TBD

= SPREAD FOOTING, SIZE TBD

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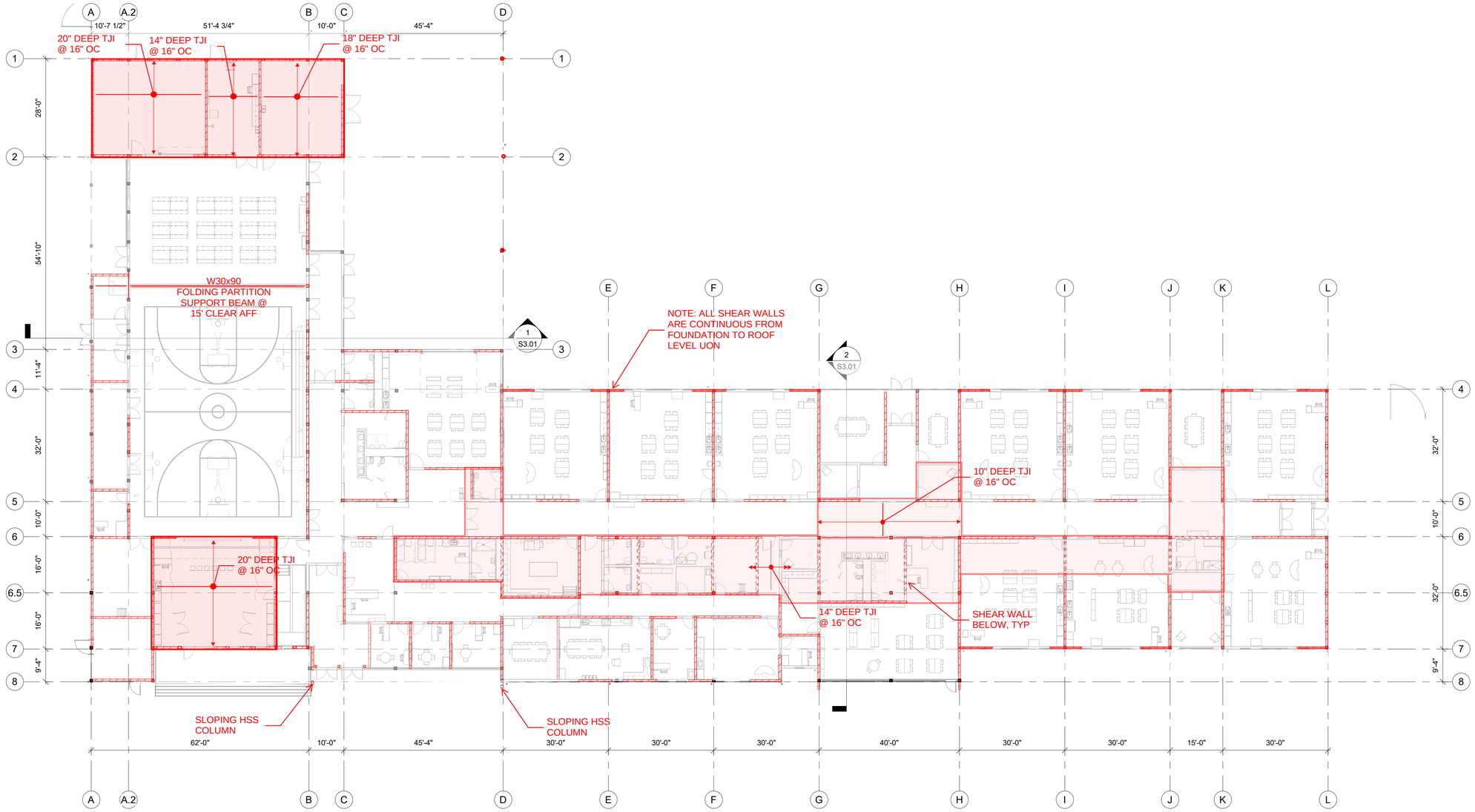
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FOUNDATION AND FIRST FLOOR FRAMING PLAN

S2.01

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1 MEZZANINE FLOOR FRAMING PLAN
1/16" = 1'-0"

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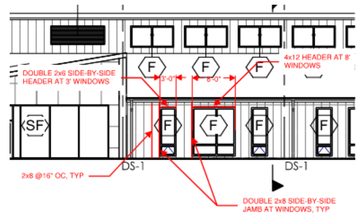
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S2.02

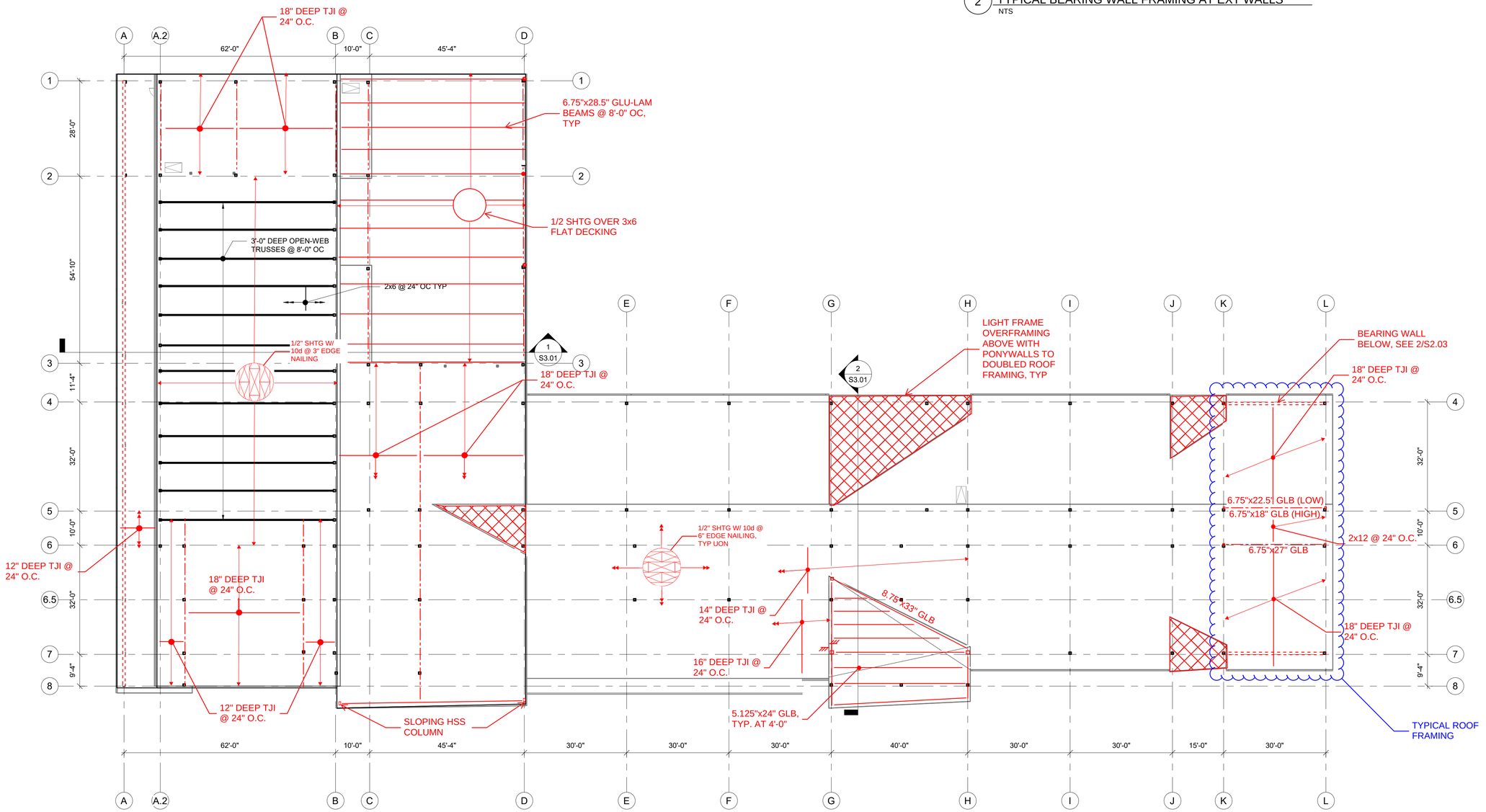
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2 TYPICAL BEARING WALL FRAMING AT EXT WALLS
NTS



1 ROOF FRAMING PLAN
1/16" = 1'-0"

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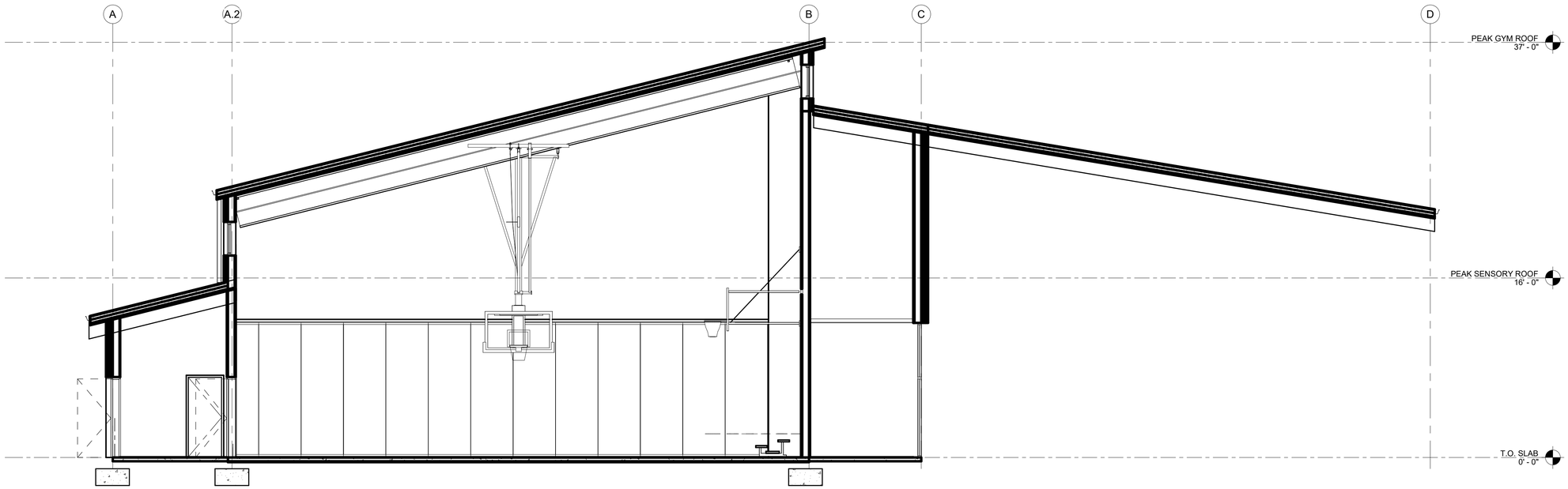
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ROOF FRAMING PLAN

S2.03

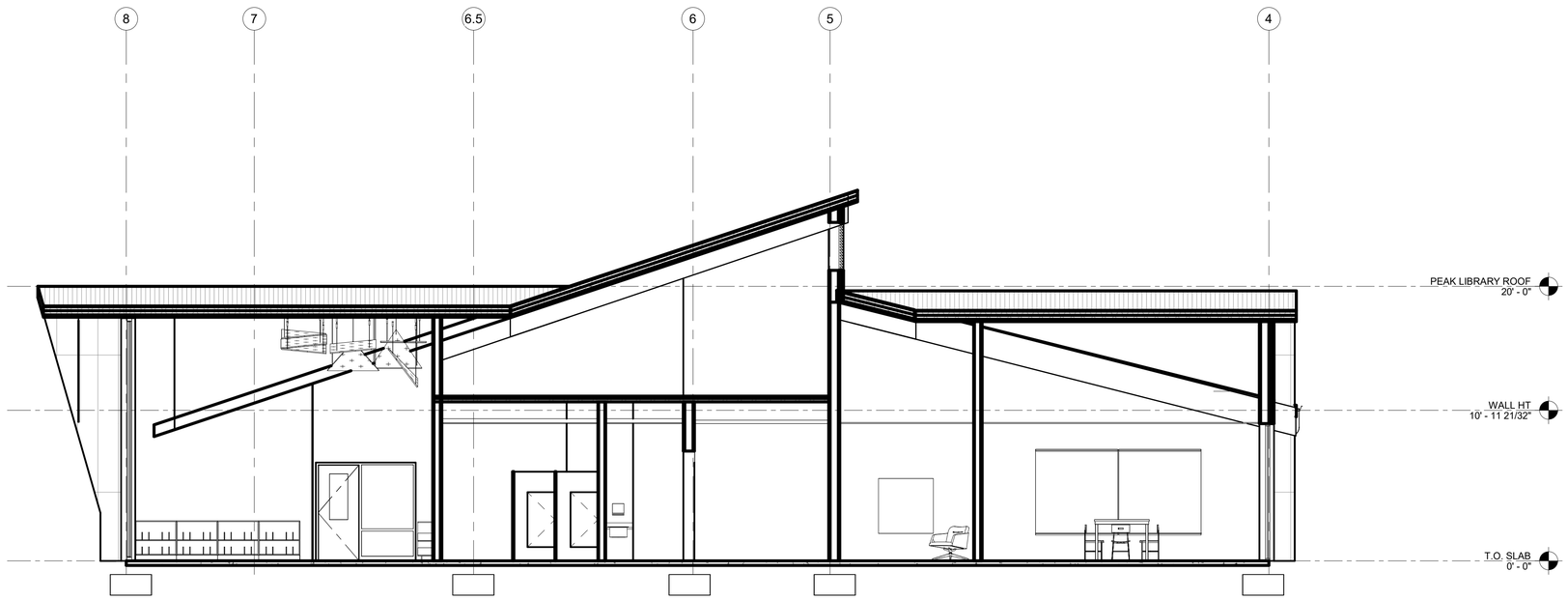
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1 GYM SECTION
3/16" = 1'-0"



2 CLASSROOM SECTION
3/16" = 1'-0"

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REFERENCE SYMBOLS

- NEW MECHANICAL WORK
- EXISTING MECHANICAL WORK
- EXISTING MECHANICAL WORK TO BE DEMOLISHED
- ENLARGED PLAN BORDER
- MATCHLINE
- SECTION IDENTIFIER (1 / MX.X)
- DETAIL OR DRAWING IDENTIFIER (1 / MX.X)
- REVISION CLOUD INDICATES WHERE SECTION APPEARS
- INDICATES REVISION & NUMBER (1)
- FLAG NOTE (1)
- EQUIPMENT IDENTIFIER (AHU-XXX)
- POINT OF CONNECTION
- NORTH ARROW
- MECHANICAL ACCESS

PLUMBING LINE DESIGNATION SYMBOLS

- DOMESTIC COLD WATER (POTABLE)
- DOMESTIC HOT WATER (POTABLE)
- DOMESTIC HOT WATER CIRCULATING (POTABLE)
- SANITARY SEWER ABOVEGROUND
- SANITARY SEWER UNDERGROUND
- VENT PIPING
- GV — GREASE WASTE ABOVEGROUND
- GV — GREASE WASTE UNDERGROUND
- RVL — RAIN WATER LEADER
- DRVL — OVERFLOW RAIN WATER LEADER

HVAC PIPING LINE DESIGNATION SYMBOLS

- HVS — HEATING WATER SUPPLY
- HVR — HEATING WATER RETURN
- CHVS — CHILLED WATER SUPPLY
- CHVR — CHILLED WATER RETURN
- DTS — DUAL TEMPERATURE HEATING AND COOLING WATER SUPPLY
- DTR — DUAL TEMPERATURE HEATING AND COOLING WATER RETURN
- MU — MAKEUP WATER
- C — CONDENSATE DRAIN PIPING
- PC — PUMPED CONDENSATE
- LL — REFRIGERANT LIQUID LINE
- SL — REFRIGERANT SUCTION LINE

PIPING ELEMENTS/VALVING

- VALVE
- CHECK VALVE
- BALANCING VALVE
- THREE WAY CONTROL VALVE
- TWO WAY CONTROL VALVE
- SOLENOID VALVE
- PRESSURE REDUCING VALVE (PRV)
- TEMPERATURE/PRESSURE RELIEF VALVE
- RELIEF/SAFETY VALVE
- MANUAL AIR VENT
- AAV — AUTOMATIC AIR VENT (EXTEND DISCHARGE TO DRAIN)
- FM — FLOW METER
- AUTOMATIC FLOW CONTROL VALVE
- DIRECTION OF FLOW
- R — D — DIRECTION OF PITCH-RISE OR DROP
- STRAINER
- STRAINER WITH BLOW OFF VALVE
- UNION
- ANCHOR
- GUIDE
- FS — FLOW SWITCH
- TT — TEMPERATURE TRANSMITTER
- PT/PS — PRESSURE TRANSMITTER OR PRESSURE SWITCH
- PRESSURE GAUGE
- THERMOMETER
- AQUASTAT
- GAUGE WITH GAUGE COCK & SIPHON (STEAM)
- GAS PRESSURE REGULATOR
- T — BASKET STRAINER
- STEAM TRAP
- EXPANSION JOINT
- VB — VACUUM BREAKER
- FLEXIBLE CONNECTOR
- WM — WATER METER
- GM — GAS METER
- PUMP
- SPRINKLER HEAD
- BACKFLOW PREVENTION DEVICE (REDUCED ZONE)
- BACKFLOW PREVENTION DEVICE (DOUBLE CHECK VALVE ASSEMBLY)
- WATER HAMMER ARRESTER
- HOSE BIBB
- ROOF DRAIN
- FLOOR DRAIN
- FLOOR SINK
- FCO — CLEAN-OUT (FLOOR)
- WCO — CLEAN-OUT (WALL)
- CO — CLEAN-OUT
- PIPE CONTINUES
- PIPE CAP
- VTR — VENT THRU ROOF
- TRENCH DRAIN
- PIPE RISING UP
- PIPE DROPPING DOWN
- PIPE CONNECTION
- PIPE CONNECTION DOWN

DUCTWORK SYMBOLS

- NEW DUCTWORK
- R — D — RISE OR DROP DIRECTION OF AIR FLOW
- INTERNALLY LINED DUCT
- MANUAL VOLUME DAMPER
- BDD — BACKDRAFT DAMPER
- M — MOTOR OPERATED DAMPER
- SD — DUCT SMOKE DETECTOR
- FIRE DAMPER
- SMOKE DAMPER
- COMBINATION FIRE/SMOKE DAMPER
- HORIZONTAL FIRE DAMPER
- HORIZONTAL SMOKE DAMPER
- HORIZONTAL COMBINATION FIRE/SMOKE DAMPER
- FLEXIBLE CONNECTION
- UC — UNDERCUT DOOR
- SUPPLY AIR DUCT SECTION
- RETURN OR OUTSIDE AIR DUCT SECTION
- EXHAUST AIR DUCT SECTION
- RECTANGULAR DUCT UP
- RECTANGULAR DUCT DOWN
- ROUND DUCT UP
- ROUND DUCT DOWN
- FLEXIBLE DUCTWORK

DIFFUSER, REGISTER, AND GRILLE SYMBOLS

- X — XxX CFM — AIR DEVICE TAG
- SUPPLY DIFFUSER
- RETURN OR RELIEF GRILLE
- EXHAUST GRILLE
- SIDEWALL GRILLE (SUPPLY), LOUVER (EXHAUST OR RETURN)
- SIDEWALL GRILLE (RETURN OR EXHAUST), LOUVER (OUTSIDE)
- LINEAR GRILLE
- ROUND DIFFUSER

CONTROLS

- T — ROOM THERMOSTAT SENSOR "THERMOSTAT"
- S — FLAT PLATE TEMPERATURE SENSOR
- P — ROOM PRESSURE SENSOR
- H — ROOM HUMIDITY SENSOR
- CO — ROOM CARBON MONOXIDE SENSOR
- CO2 — ROOM CARBON DIOXIDE SENSOR
- NO2 — ROOM NITROGEN DIOXIDE SENSOR
- OS — OCCUPANCY SENSOR
- VFD — VARIABLE FREQUENCY DRIVE
- STR — STARTER OR STARTER/DISCONNECT
- DDC — DIRECT DIGITAL CONTROL PANEL
- DP — DIFFERENTIAL PRESSURE TRANSMITTER
- CONTROL WIRING
- $ — SWITCH

MECHANICAL SHEET LIST

M0.01	MECHANICAL LEGEND AND SHEET LIST
M0.02	MECHANICAL ABBREVIATIONS AND GENERAL NOTES
M0.03	MECHANICAL SCHEDULES
M0.04	MECHANICAL SCHEDULES
M0.05	MECHANICAL SCHEDULES
M0.06	MECHANICAL SCHEDULES
M0.07	MECHANICAL SCHEDULES
M1.01	UNDERGROUND PLUMBING PLAN
M2.01	FIRST FLOOR PLUMBING AND HYDRONIC PLAN
M2.02	MECH ATTIC PLUMBING AND HYDRONIC PLAN
M3.01	FIRST FLOOR HVAC PLAN
M3.02	MECH ATTIC HVAC PLAN
M5.01	ENLARGED MECHANICAL ROOM PLAN
M6.01	MECHANICAL ROOF PLAN
M7.01	FIRST FLOOR FIRE SPRINKLER PLAN
M7.02	MECH ATTIC FIRE SPRINKLER PLAN
M8.01	AIR-TO-WATER HEAT PUMP CHILLED WATER PIPING DIAGRAM
M8.02	AIR-TO-WATER HEAT PUMP HEATING WATER PIPING DIAGRAM
M8.03	AIR-TO-WATER HEAT PUMP HEATING / CHILLED WATER PIPING DIAGRAM
M8.04	AIR-TO-WATER HEAT PUMP WATER HEATER PIPING DIAGRAM

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M0.01

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ABBREVIATIONS:

Ø	DIAMETER, PHASE
A	COMPRESSED AIR
AAV	AUTOMATIC AIR VENT
ABV	ABOVE
AC	AIR CONDITIONING UNIT
AD	AREA DRAIN, ACCESS DOOR
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
AMB	AMBIENT
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE
ARCH	ARCHITECT
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR-CONDITIONING ENGINEERS, INC.
ATM	ATMOSPHERE
AV	ACID RESISTANT (CHEMICAL) VENT
AW	ACID RESISTANT (CHEMICAL) WASTE
B	BOILER
BDD	BACKDRAFT DAMPER
BF	BELOW FLOOR
BFF	BELOW FINISHED FLOOR
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLW	BELOW
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CONDENSATE DRAIN PIPING
CA	AIR COMPRESSOR
CAP	CAPACITY
CBV	CIRCUIT BALANCING VALVE
CC	COOLING COIL
CD	CEILING DIFFUSER
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER, CABINET HEATER
CHWP	CHILLED WATER PUMP
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWS/R	CHILLED WATER SUPPLY AND RETURN
CI	CAST IRON
CL	CENTER LINE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COMB	COMBUSTION, COMBINATION
COND	CONDENSATE
CONN	CONNECTION
CONT	CONTINUE, CONTROL
CONTR	CONTRACTOR
COP	COEFFICIENT OF PERFORMANCE
CP	CONDENSATE PUMP
CT	COOLING TOWER
CU	CONDENSING UNIT, CUBIC
CV	CHECK VALVE, CONSTANT VOLUME
CW	DOMESTIC COLD WATER
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
CWS/R	CONDENSER WATER SUPPLY AND RETURN
DB	DRY BULB
DC	DUCT COIL, DUST COLLECTOR
DDC	DIRECT DIGITAL CONTROL
DDCV	DOUBLE DETECTOR CHECK VALVE
DEPT	DEPARTMENT
DEG	DEGREE
DF	DRINKING FOUNTAIN
DFU	DRAINAGE FIXTURE UNIT
DH	DUCT HEATER
DI	DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGRAM
DIFF	DIFFERENTIAL
DIM	DIMENSION
DN	DOWN
DOAS	DEDICATED OUTDOOR AIR SYSTEMS
DP	DIFFERENTIAL PRESSURE
DTS	DUAL TEMPERATURE HEATING AND COOLING WATER SUPPLY
DTR	DUAL TEMPERATURE HEATING AND COOLING WATER RETURN
DTS/R	DUAL TEMPERATURE HEATING AND COOLIN WATER SUPPLY AND RETURN
DX	DIRECT EXPANSION
DWG	DRAWING
DWP	DOMESTIC WATER PUMP
(E)	EXISTING
EA	EACH, EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ECG	EGGCRATE GRILLE
EDH	ELECTRIC DUCT HEATER
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
EJ	EXPANSION JOINT
ELEC	ELECTRIC
ELEV	ELEVATION
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
ENT	ENTERING
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETC	AND SO FORTH
EUH	ELECTRIC UNIT HEATER
EVAP	EVAPORATOR, EVAPORATIVE
EW	EYE WASH
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXHAUST
EXT	EXTERIOR, EXTERNAL
F	FIRE SPRINKLER
°F	DEGREES FAHRENHEIT
FC	FLEXIBLE CONNECTOR, FLUID COOLER
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
F/D	FIRE DAMPER
FDC	FIRE DEPARTMENT CONNECTION
FFD	FUNNEL FLOOR DRAIN
FLA	FULL LOAD AMPS
FLR	FLOOR
FLEX	FLEXIBLE
FO	FUEL OIL, FLAT OVAL
FOG	FUEL OIL GAGE
FOP	FUEL OIL PUMP
FOV	FUEL OIL VENT
FP	FIRE PROTECTION, FIRE PUMP
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
F/S/D	COMBINATION FIRE SMOKE DAMPER
FT	FEET, FINNED TUBE
FTR	FINNED TUBE RADIATION
FV	FACE VELOCITY
G	GAS
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GCWR	GLYCOL COOLING WATER RETURN
GCWS	GLYCOL COOLING WATER SUPPLY
GCWS/R	GLYCOL COOLING WATER SUPPLY AND RETURN
GFU	GAS FIRED UNIT
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
GR	GRILLE
GRD	GRILLES, REGISTERS, AND DIFFUSERS
GW	GREASE WASTE
GWB	GYPSUM WALLBOARD
GWH	GAS WATER HEATER
HB	HOSE BIBB
HC	HEATING COIL
HD	HEAD
HOR	HORIZONTAL
HP	HEAT PUMP, HORSEPOWER
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HR	HOUR
HRU	HEAT RECOVERY UNIT
HT	HEIGHT
HTR	HEATER
HX	HEAT EXCHANGER
HVAC	HEATING, VENTILATION & AIR CONDITIONING
HW	DOMESTIC HOT WATER
HWC	DOMESTIC HOT WATER CIRCULATING
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
HWS/R	HEATING WATER SUPPLY AND RETURN
HZ	HERTZ
IAQ	INDOOR AIR QUALITY
I.E.	INVERT ELEVATION
IN	INCH
INCL	INCLUDING
INT	INTERNAL
INV	INVERT
IRR	IRRIGATION WATER
ISP	INTERNAL STATIC PRESSURE
KW	KILOWATT
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LB	POUND
LBS/HR	POUNDS PER HOUR
LD	LINEAR DIFFUSER
LF	LINEAR FEET
LL	REFRIGERANT LIQUID LINE
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LVG	LEAVING
LVR	LOUVER
LWT	LEAVING WATER TEMPERATURE
MAT	MIXED AIR TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	THOUSANDS OF BTUH
MCA	MINIMUM CIRCUIT AMPACITY
MECH	MECHANICAL
MED	MEDIUM
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MOCP	MAXIMUM OVERCURRENT PROTECTION
MPC	MEDIUM PRESSURE CONDENSATE
MPG	MEDIUM PRESSURE GAS
MPS	MEDIUM PRESSURE STEAM
MS	MOP SINK
MTD	MOUNTED
MU	MAKEUP WATER
MUA	MAKEUP AIR UNIT
(N)	NEW
NA	NOT APPLICABLE
NC	NOISE CRITERIA, NORMALLY CLOSED
NEG	NEGATIVE
NO	NORMALLY OPEN
NO.	NUMBER
NOM	NOMINAL
NP	NON-POTABLE
NPCW	NON-POTABLE COLD WATER
NPHW	NON-POTABLE HOT WATER
NPHWC	NON-POTABLE HOT WATER CIRCULATING
NPW	NON-POTABLE WATER
NTS	NOT TO SCALE
O2	OXYGEN
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OCC	OCCUPIED
ORWL	OVERFLOW RAIN WATER LEADER
OSA	OUTSIDE AIR
OT	OFF TOP
OV	OUTLET VELOCITY
P	PRESSURE, PUMP
PC	PUMPED CONDENSATE
PD	PRESSURE DROP
PERF	PERFORATED
PH	PHASE
PIV	POST INDICATOR VALVE
POC	POINT OF CONNECTION
PR	CONDENSATE PUMP RETURN
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PTRV	PRESSURE/TEMPERATURE RELIEF VALVE
PU	PUMP
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
R	REFRIGERANT PIPING
RA	RETURN AIR
RAF	RETURN/RELIEF AIR FAN
RAG	RETURN AIR GRILLE
RAH	RADIANT HEATER
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF	REFERENCE, RETURN/EXHAUST FAN
REG	REGISTER
REL	RELIEF
REQD	REQUIRED
RET	RETURN
RF	RETURN FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY, ROOF HOOD
RHC	REHEAT COIL
RI&C	ROUGH IN AND CONNECT
RLA	RATED LOAD AMPS
RM	ROOM
ROD	ROOF OVERFLOW DRAIN
RPBA	REDUCED PRESSURE BACKFLOW ASSEMBLY
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
RV	RELIEF VALVE
RWL	RAIN WATER LEADER
SA	SUPPLY AIR
SAD	SUPPLY AIR DIFFUSER
SAT	SUPPLY AIR TEMPERATURE
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SCHEM	SCHEMATIC
S/D	SMOKE DAMPER
SF	SUPPLY FAN, SQUARE FOOT
SG	SUPPLY GRILLE
SL	REFRIGERANT SUCTION LINE
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC.
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SRV	SAFETY RELIEF VALVE
SS	STAINLESS STEEL
ST	STORAGE TANK, SOUND TRAP
STD	STANDARD
STM	STEAM
STR	STARTER, STRUCTURAL
SUCT	SUCTION
SUP	SUPPLY
TAB	TESTING, ADJUSTING AND BALANCING
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
TOD	TOP OF DUCT
TOF	TOP OF FOOTING
TOP	TOP OF PIPE
TP	TOTAL PRESSURE
TPRV	TEMPERATURE/PRESSURE RELIEF VALVE
TSP	TOTAL STATIC PRESSURE
T'STAT	THERMOSTAT
TU	TERMINAL UNIT
TYP	TYPICAL
UH	UNIT HEATER
UNOCC	UNOCCUPIED
UP/DN	UP AND DOWN
URN	URINAL
V	VENT, VOLTS
VAC	VACUUM
VAV	VARIABLE AIR VOLUME UNIT
VB	VACUUM BREAKER
VD	VOLUME DAMPER
VEL	VELOCITY
VENT	VENTILATION, VENTILATOR
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THRU ROOF
W	WASTE, WATT, WIDTH
W/	WITH
WB	WET BULB
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
WM	WATER METER
W/O	WITHOUT
WPD	WATER PRESSURE DROP
WSEC	WASHINGTON STATE ENERGY CODE
WSFU	WATER SUPPLY FIXTURE UNIT
WT	WEIGHT
WTD	WATER TEMPERATURE DROP

GENERAL NOTES:

GENERAL:

1. COORDINATE MECHANICAL WORK WITH ELECTRICAL, ARCHITECTURAL, STRUCTURAL, CIVIL AND LANDSCAPE WORK SHOWN ON OTHER CONTRACT DOCUMENTS. PROVIDE ADDITIONAL OFFSETS FOR COORDINATED INSTALLATION WHERE REQUIRED.
2. COORDINATE HVAC, PLUMBING AND FIRE PROTECTION WORK PRIOR TO INSTALLATION. DUCTWORK AND EQUIPMENT ACCESS TAKES PRECEDENCE OVER PIPING FOR AVAILABLE SPACE.
3. WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
4. MAINTAIN A MINIMUM OF 6'-8" CLEARANCE TO UNDERSIDE OF DUCTS, PIPES, CONDUITS, SUSPENDED EQUIPMENT, ETC., IN MECHANICAL ROOM ACCESS SPACES.
5. COORDINATE EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
6. PROVIDE 4" MINIMUM CONCRETE BASES (HOUSEKEEPING PADS) UNDER FLOOR MOUNTED MECHANICAL EQUIPMENT. THIS INCLUDES, BUT IS NOT LIMITED TO BOILERS, CHILLERS, FLUID COOLERS, COOLING TOWERS, PUMPS, EXPANSION TANKS, WATER HEATERS, AND STORAGE TANKS. COMPLY WITH REQUIREMENTS FOR EQUIPMENT BASES AND FOUNDATIONS SPECIFIED IN DIVISION 03.
7. PROVIDE MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION OF MECHANICAL SYSTEMS.
8. LOCATE VALVES, WATER HAMMER ARRESTERS, CLEANOUTS, DAMPERS, CONTROLS AND SIMILAR COMPONENTS SO THAT THEY ARE ACCESSIBLE. PROVIDE ACCESS DOORS FOR MECHANICAL EQUIPMENT INSTALLED BEHIND WALLS, ABOVE INACCESSIBLE CEILINGS AND BELOW FLOORS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT/ENGINEER. INSTALL TAG ON CEILING GRID FRAME TO INDICATE LOCATION AND TYPE OF EQUIPMENT THAT REQUIRES MAINTENANCE. PROVIDE 16 GA, STEEL, FLUSH TYPE ACCESS DOOR WITH CONCEALED HINGE AND SLOT SCREWDRIVER TYPE CAM LATCH. PROVIDE FACTORY PRIMED IN PAINTED SURFACE AREAS FOR FIELD PAINTING. PROVIDE STAINLESS STEEL FOR ALL OTHER AREAS. PROVIDE UL LISTED AND LABELED DOOR WHERE FIRE-RESISTANCE RATING IS INDICATED ON DRAWINGS. ACCESS DOOR SHALL BE SIZED SO THAT ADJACENT EQUIPMENT IS ACCESSIBLE. PROVIDE ACUDOR, ELMDOR, MILCOR, OR APPROVED.
9. COORDINATE ATTACHMENTS TO STRUCTURE TO VERIFY THAT ATTACHMENT POINTS ON EQUIPMENT AND STRUCTURE CAN ACCEPT SEISMIC, WEIGHT, AND OTHER LOADS IMPOSED.
10. MAINTAIN INDICATED FIRE AND SMOKE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT MECHANICAL PENETRATIONS. SEAL PENETRATIONS WITH FIRESTOP MATERIAL. PROVIDE MATERIAL IN ACCORDANCE WITH ASTM E 814 AND UL 1479 3M OR APPROVED. COMPLY WITH REQUIREMENTS SPECIFIED IN DIVISION 07.
11. PROVIDE FIREBLOCKING AND DRAFT STOPPING AT MECHANICAL PENETRATIONS IN COMBUSTIBLE CONCEALED SPACES PER THE INTERNATIONAL BUILDING CODE.
12. REFER TO TYPICAL DETAILS PROVIDED IN THIS DWG SET FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR CONFORMANCE WITH DETAILS.
13. LOCATIONS AND SIZES OF FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH OTHER TRADES INVOLVED. INCLUDE IN THE COST OF MECHANICAL WORK, CUTTING, CORING, PATCHING AND PAINTING OF EXISTING WALLS, CEILINGS, FLOORS AND ROOFS AS REQUIRED TO ACCOMMODATE WORK AS INDICATED IN THE MECHANICAL CONTRACT DOCUMENTS, UNLESS SPECIFICALLY SHOWN ON ARCHITECTURAL DRAWINGS.
14. PROVIDE ELASTOMERIC FOAM MATERIAL ON MECHANICAL EQUIPMENT THAT PRESENT A SAFETY HAZARD. PAINT FOAM MATERIAL WHITE.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFEKEEPING OF HIS OWN PROPERTY ON THE JOB SITE. OWNER ASSUMES NO RESPONSIBILITY FOR PROTECTION OF PROPERTIES AGAINST FIRE, THEFT AND ENVIRONMENTAL CONDITIONS.
16. CLEAN THE JOB SITE DAILY AND REMOVE FROM THE PREMISES ANY DIRT AND DEBRIS CAUSE BY THE PERFORMANCE OF THE WORK INCLUDED IN THIS CONTRACT. BEFORE SUBSTANTIAL COMPLETION, CLEAN EQUIPMENT, FIXTURES, EXPOSED DUCTS, PIPING AND SIMILAR ITEMS.
17. PROVIDE EQUIPMENT THAT FITS INTO THE SPACE ALLOTTED AND ALLOWS ADEQUATE ACCEPTABLE CLEARANCE FOR INSTALLATION, REPLACEMENT, ENTRY, SERVICING AND MAINTENANCE. COORDINATE WITH OTHER TRADES TO ENSURE NO CONFLICT WITH REQUIRED CLEARANCES.
18. PROVIDE OFFSETS IN PIPING WHERE PLUMBING/PIPING WALL IS LOCATED DIRECTLY ABOVE STRUCTURE. OFFSET PIPING INTO CASEWORK OR SHAFT TIGHT TO WALL AND BACK INTO WALL ONCE BELOW STRUCTURE. REFER TO STRUCTURAL DRAWINGS.
19. BUILDING SPACE IS LIMITED. STRONG ATTENTION TO DETAIL AND CARE MUST BE TAKEN WHEN DEVELOPING SHOP DRAWING SO ROUTING IS COORDINATED WITH OTHER DISCIPLINES.
20. MATERIALS WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
21. MECHANICAL EQUIPMENT, PACKAGED UNITS, CONTROL PANELS, MOTOR STARTER, MOTOR CONTROLLERS, VARIABLE FREQUENCY DRIVES AND SIMILAR EQUIPMENT SHALL CARRY A SHORT CIRCUIT CURRENT RATING (SCCR) EQUAL TO OR GREATER THAN AVAILABLE FAULT CURRENT DELIVERED FROM ELECTRICAL SYSTEM. INCLUDE VISIBLE FACTORY NAMEPLATE FOR SUCH EQUIPMENT INDICATING SCCR OF EQUIPMENT IN ACCORDANCE WITH UL 1995 AND UL 508A.

PLUMBING:

1. DOMESTIC WATER TUBE, PIPE, FITTINGS, JOINING MATERIALS, SPECIALTIES, PLUMBING EQUIPMENT, PLUMBING FIXTURES, PLUMBING FITTINGS AND ALL OTHER APPURTENANCES IN CONTACT WITH DRINKING WATER SHALL BE LEAD-FREE EXCEPT THOSE EXPLICITLY EXEMPTED IN SECTION 3874 OF THE SAFE WATER DRINKING ACT. LEAD-FREE SHALL MEAN (A) NOT CONTAINING MORE THAN 0.2 PERCENT LEAD WHEN USED WITH RESPECT TO SOLDER AND FLUX; AND (B) NOT MORE THAN A WEIGHTED AVERAGE OF 0.25 PERCENT LEAD WHEN USED WITH RESPECT TO WETTED SURFACES OF DOMESTIC WATER TUBE, PIPE, FITTINGS, JOINING MATERIALS, SPECIALTIES, PLUMBING EQUIPMENT, PLUMBING FIXTURES, AND PLUMBING FITTINGS.
2. PROVIDE WATER HAMMER ARRESTORS IN DOMESTIC WATER PIPING IN ACCORDANCE WITH PDI-WH 201. INCLUDE ON PIPING SERVING DOMESTIC DISHWASHING MACHINES.
3. PROVIDE LINE SIZE STRAINER UPSTREAM OF EACH BACKFLOW PREVENTER, WATER PRESSURE REDUCING VALVE, CONTROL VALVE, SOLENOID VALVE AND PUMP. PROVIDE SHUTOFF VALVE ON EACH SIDE OF STRAINER.
4. VALVES, EXPANSION FITTINGS/LOOPS, AND PIPING SPECIALTIES SHALL BE FULL SIZE OF PIPE UNLESS NOTED OTHERWISE.

PIPING:

1. PROVIDE AN AUTOMATIC AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING WATER, CHILLED WATER, AND OTHER CLOSED WATER PIPING SYSTEMS. PIPE VENT TO NEAREST DRAIN. PIPING SHALL GRADE TO LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF RISERS AND LOW POINTS.
2. VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
3. VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.
4. PROVIDE UNIONS AND/OR FLANGES AT EACH PIECE OF EQUIPMENT, AT EACH CONTROL VALVE, IN BYPASSES, AND IN LONG PIPING RUNS (100 FEET OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.
5. PROVIDE FLEXIBLE CONNECTORS IN PIPING SYSTEMS CONNECTED TO AIR HANDLING EQUIPMENT, PUMPS, CHILLERS, COOLING TOWERS, AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION.
6. PROVIDE LINE SIZE STRAINER UPSTREAM OF EACH BACKFLOW PREVENTER, WATER PRESSURE REDUCING VALVE, AUTOMATIC FLOW CONTROL VALVE, CONTROL VALVE, SOLENOID VALVE, GAS PRESSURE REGULATOR, AND PUMP. PROVIDE SHUTOFF VALVE ON EACH SIDE OF STRAINER.
7. VALVES, EXPANSION FITTINGS/LOOPS, AND PIPING SPECIALTIES SHALL BE FULL SIZE OF PIPE UNLESS NOTED OTHERWISE.

HVAC/SHEET METAL:

1. DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
2. THE ANNULAR SPACE AROUND DUCTS THAT PENETRATE NON-FIRE RESISTANCE-RATED FLOOR ASSEMBLIES (AND ARE NOT INSTALLED IN A RATED SHAFT ENCLOSURE) SHALL BE PROTECTED WITH AN IBC APPROVED NONCOMBUSTIBLE MATERIAL THAT RESISTS THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION.
3. PROVIDE TEMPORARY COVERS OVER OPEN ENDS OF EQUIPMENT AND DUCTWORK DURING CONSTRUCTION.
4. PROVIDE MANUAL VOLUME DAMPER FOR EACH DIFFUSER, REGISTER, AND GRILLE.
5. PROVIDE DUCT ACCESS DOORS AT DUCT SMOKE DETECTORS, BACKDRAFT DAMPERS, MOTORIZED CONTROL DAMPERS, FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, DUCT MOUNTED COILS, DUCT AIRFLOW STATIONS AND LOUVER PLENUMS.
6. PROVIDE THE FOLLOWING MINIMUM BRANCH DUCT SIZE TO DIFFUSERS, REGISTERS, AND GRILLES, UNLESS NOTED TO USE LARGER SIZE ON DRAWINGS:
   - 6.1. 6"Ø: 100 CFM
   - 6.2. 8"Ø": 200 CFM
   - 6.3. 10"Ø: 300 CFM
   - 6.4. 12"Ø: 450 CFM
   - 6.5. 14"Ø: 600 CFM
   - 6.6. 16"Ø: 750 CFM

ENERGY CODE: *(WASHINGTON STATE ENERGY CODE)*

1. MOTORS: COMPLY WITH MINIMUM FULL LOAD EFFICIENCIES LISTED IN THE WASHINGTON STATE ENERGY CODE.
2. PIPING AND DUCT INSULATION: COMPLY WITH THICKNESS AND TYPES LISTED IN THE WASHINGTON STATE ENERGY CODE.
3. DUCT SEALING: SEAL DUCT TRANSVERSE JOINTS AND LONGITUDINAL SEAMS PER THE WASHINGTON STATE ENERGY CODE.
4. RECORD DRAWINGS: PROVIDE PER THE WASHINGTON STATE ENERGY CODE.
5. OPERATION AND MAINTENANCE MANUALS: PROVIDE PER THE WASHINGTON STATE ENERGY CODE.
6. MAINTENANCE STAFF SYSTEMS OPERATIONAL TRAINING: PROVIDE PER THE WASHINGTON STATE ENERGY CODE.
7. SYSTEM BALANCING: PROVIDE PER THE WASHINGTON STATE ENERGY CODE.
8. MECHANICAL SYSTEMS COMMISSIONING: PROVIDE PER THE WASHINGTON STATE ENERGY CODE.
9. THIS BUILDING AND ITS ENERGY SYSTEMS HAVE BEEN DESIGNED TO COMPLY WITH THE WASHINGTON STATE ENERGY CODE. CONTRACTOR IS RESPONSIBLE FOR CORRECT INSTALLATION OF ENERGY CONSERVATION MEASURES.
10. BUILDING PRESSURE TESTING: COORDINATE PHASING OF BUILDING ENVELOPE LEAKAGE TESTING WITH MECHANICAL SYSTEM SCOPES OF WORK. TEMPORARILY CAP SYSTEMS AS REQUIRED TO FACILITATE LEAKAGE TESTING SCOPE OF WORK.

NON-STRUCTURAL MECHANICAL COMPONENTS:

1. THE FOLLOWING ITEMS ARE TAKEN DIRECTLY FROM THE INTERNATIONAL BUILDING CODE AND FROM THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) STANDARD 7-16. THE CONTRACTOR SHALL REFER TO THE ABOVE FOR ADDITIONAL INFORMATION, EXCEPTIONS, AND FURTHER DESCRIPTIONS. THE CONTRACTOR SHALL ADHERE TO REQUIREMENTS AND AS SUCH, SHALL BE INCLUDED WITHIN BID.
2. IBC 1613.1 SCOPE: ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND NON-STRUCTURAL COMPONENTS THAT ARE PERMANENTLY ATTACHED TO STRUCTURES AND THEIR SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED AND CONSTRUCTED TO RESIST THE EFFECTS OF EARTHQUAKE MOTIONS IN ACCORDANCE WITH CHAPTERS 11, 12, 13, 15, 17 AND 18 OF ASCE 7-16, AS APPLICABLE.
3. IBC 1705.11 CONTRACTOR RESPONSIBILITY: THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF A SEISMIC-FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM, OR SEISMIC-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS.
4. HANGERS AND SEISMIC BRACING FOR THE MECHANICAL SYSTEMS SHALL BE DESIGNED AND PROVIDED BY THE MECHANICAL CONTRACTOR. REFER TO CONTRACTOR SHOP DRAWINGS FOR LOCATIONS OF EQUIPMENT AND HUNG MECHANICAL SYSTEMS. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE SUPPORT SYSTEMS AND DESIGN LOADS FOR HUNG MECHANICAL SYSTEMS WITH THE GENERAL CONTRACTOR AND OTHER TRADES THAT MAY BE IMPACTED.

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MECHANICAL ABBREVIATIONS AND GENERAL NOTES

M0.02

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SINGLE-DUCT AIR TERMINAL UNIT SCHEDULE

TAG	AREA SERVED	SERVED BY	MANUFACTURER / MODEL	PRIMARY AIRFLOW MAX (CFM)	PRIMARY AIRFLOW MIN (CFM)	PRIMARY AIRFLOW ECONOMIZER (CFM)	INLET SIZE (IN)	OUTLET SIZE (IN)	INLET PRESSURE (IN WC)	PRESSURE DROP (IN WC)	HEATING WATER COIL													DIMENSIONS (LxWxHT) (INxINxIN)	WEIGHT (LBS)	NOTES
											TOTAL CAPACITY (MBH)	ZONE MAX HEATING AIRFLOW (CFM)	ZONE MIN HEATING AIRFLOW (CFM)	HEATING EAT (°F)	MAX HEATING DAT (°F)	MAX AIR VEL/APD (FPM/IN)	EWT (°F)	LWT (°F)	FLOW (GPM)	MAX WATER VEL/WPD (FPS/FT HD)	HWS/R RUNOUT SIZE (IN)	CONTROL VALVE TYPE			
VAV-01	CLASSROOM	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-02	CLASSROOM	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-03	CLASSROOM	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-04	CONFERENCE	DOAS-01	NAILOR 3001-4	80			4	10x10	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-05	CONFERENCE	DOAS-01	NAILOR 3001-4	80			4	10x10	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-06	CLASSROOM	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-07	CLASSROOM	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-08	CONFERENCE	DOAS-01	NAILOR 3001-4	80			4	10x10	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-09	CLASSROOM	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-10	MUSIC	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-11	RECEPTION	DOAS-01	NAILOR 3001-4	80			4	10x10	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-12	STAFF LOUNGE	DOAS-01	NAILOR 3001-4	80			4	10x10	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-13	OT/PT	DOAS-01	NAILOR 3001-4	80			4	10x10	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-14	LIBRARY	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-15	CLASSROOM	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-16	CLASSROOM	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-17	CLASSROOM	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-18	MAKER SPACE	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-19	KITCHEN	DOAS-01	NAILOR 3001-9	500			9	14x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-20	CUSTODIAL	DOAS-01	NAILOR 3001-4	80			4	10x10	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-21	CORRIDOR	DOAS-01	NAILOR 3001-8	400			8	12x12 1/2	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-22	LARGE SENSORY	DOAS-01	NAILOR 3001-4	80			4	10x10	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-		1, 2
VAV-23	OFFICE	AHU-03	NAILOR 30RW-9	540			9	14x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-24	OFFICE	AHU-03	NAILOR 30RW-8	410			8	12x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-25	OFFICE	AHU-03	NAILOR 30RW-7	300			7	12x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-26	OFFICE	AHU-03	NAILOR 30RW-7	300			7	12x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-27	OFFICE	AHU-03	NAILOR 30RW-7	300			7	12x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-28	OFFICE	AHU-03	NAILOR 30RW-7	300			7	12x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-29	OFFICE	AHU-03	NAILOR 30RW-7	300			7	12x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-30	OFFICE	AHU-03	NAILOR 30RW-7	300			7	12x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-31	OFFICE	AHU-03	NAILOR 30RW-7	250			7	12x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-32	OFFICE	AHU-03	NAILOR 30RW-7	250			7	12x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-33	OFFICE	AHU-03	NAILOR 30RW-6	200			6	10x10	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-34	OFFICE	AHU-03	NAILOR 30RW-6	200			6	10x10	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-35	OFFICE	AHU-03	NAILOR 30RW-5	100			5	10x10	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-36	OFFICE	AHU-03	NAILOR 30RW-5	100			5	10x10	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2
VAV-37	HEALTH ROOM	AHU-03	NAILOR 30RW-7	300			7	12x12 1/2	0.5	0.5						450/0.15	120	110		4/10		2-WAY		1, 2

NOTES:
1) PROVIDE BELIMO ACTUATORS FOR PRIMARY AIR DAMPER.
2) FACTORY MOUNT SECTION 230900 FURNISHED CONTROLLERS.

DUCTLESS SPLIT-SYSTEM AIR-CONDITIONER AND HEAT PUMP UNIT SCHEDULE

TAG	AREA SERVED	LOCATION	MANUFACTURER/MODEL	INDOOR FAN					HEAT PUMP HEATING				COOLING				ELECTRICAL OUTDOOR UNIT				DIMENSIONS INDOOR/OUTDOOR (LxWxHT) (INxINxIN)	WEIGHT INDOOR/OUTDOOR (LBS)	NOTES
				FLOW (CFM)	FLA (AMPS)	MCA (AMPS)	MOTOR (W)	VOLTAGE/ PHASE V/Ø	CAPACITY (BTU)	MINIMUM CAPACITY (BTU)	OUTDOOR AIR TEMP (°F)	COP	TOTAL CAPACITY (BTU)	MINIMUM CAPACITY (BTU)	OUTDOOR AIR TEMP (°F)	SEER / EER	MCA (AMPS)	MOCP (AMPS)	MAX FUSE (AMPS)	VOLTAGE/ PHASE V/Ø			
SAC-01/SCU-01	MDF	SITE	DAIKIN FTK36BXVJU / RK36BXVJU	920	0.57	1	56	208/1	-	-	-	-	36,000	16,000	95	17.9 / 10.8	25	31	30	208/1	12x48x16/14x38x38	50/175	1, 2, 3, 4, 5, 7
SAC-02/SCU-02	IDF	SITE	DAIKIN FTK24BXVJU / RK24BXVJU	770	0.57	1	56	208/1	-	-	-	-	24,000	10,000	95	17.9 / 10.8	19.5	31	30	208/1	12x48x16/14x38x38	50/175	1, 2, 3, 4, 5, 7

NOTES:
1) EFFICIENCIES ARE IN ACCORDANCE WITH AHRI STANDARD 210/240.
2) AIRSIDE ECONOMIZER NOT REQUIRED PER WSEC C403.3 EXCEPTION 10.
3) PROVIDE WITH WIRED REMOTE CONTROLLER. PROVIDE CONTROL/POWER WIRES AND REFRIGERANT PIPING FROM CONDENSING UNIT TO AC UNIT PER MANUFACTURERS RECOMMENDATIONS.
4) PROVIDE BAS WALL MOUNTED TEMPERATURE SENSOR FOR MONITORING/ALARM.
5) PROVIDE WITH WATER LEVEL DETECTION DEVICE CONFORMING TO UL 508 TO SHUT OFF EQUIPMENT SERVED IN THE EVENT THE PRIMARY CONDENSATE DRAIN IS BLOCKED.
6) PROVIDE WITH CONDENSATE PUMP.
7) PROVIDE WITH LOW AMBIENT COOLING CONTROL.

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HIGH EFFICIENCY VAV SINGLE ZONE AIR-HANDLING UNIT SCHEDULE

TAG	AREA SERVED	LOCATION	MANUFACTURER / MODEL	MIN FAN SPEED (CFM)	MAX HEAT SPEED (CFM)	MAX COOL SPEED (CFM)	MIN CO2 OA AIRFLOW (CFM)	MAX CO2 OA AIRFLOW (CFM)	SUPPLY FANS									RETURN FANS									DIMENSIONS	WEIGHT	NOTES
									AIRFLOW (CFM)	QTY FANS (#)	ESP (IN)	MOTOR (#-HP)	MAX SPEED (RPM)	FLA (AMPS)	MCA (AMPS)	MOP (AMPS)	VOLTAGE/ PHASE (V/Ø)	AIRFLOW (CFM)	QTY FANS (#)	ESP (IN)	MOTOR (#-HP)	MAX SPEED (RPM)	FLA (AMPS)	MCA (AMPS)	MOP (AMPS)	VOLTAGE/ PHASE (V/Ø)	(LxWxHT) (INxINxIN)	(LBS)	
AHU-01	GYM	MECH ATTIC	VTS / AVS						5500	1	1.5	1-7.5					208/3	5500	1	1.5	1-7.5					208/3			
AHU-02	COMMONS	MECH ATTIC	VTS / AVS						3000	1	1.5	1-5.0					208/3	3000	1	1.5	1-5.0					208/3			
AHU-03	ADMIN	MECH ATTIC	VTS / AVS						4600	1	2.25	1-7.5					208/3	4600	1	2.25	1-7.5					208/3			

NOTES:

1) FANS OR FAN ARRAYS WITH A COMBINED MOTOR HP > 5 (KW > 3.7) OR ELECTRICAL IMPUT POWER ≥ 4.1 KW SHALL HAVE A FAN ENERGY INDEX (FEI) OF NOT LESS THAN 1.00 (CONSTANT VOLUME) AND 0.95 (VARIABLE VOLUME) AT THE DESIGN POINT OF OPERATION, AS DETERMINED IN ACCORDANCE WITH AMCA 208 BY AN APPROVED, INDEPENDENT TESTING LABORATORY AND LABELED BY THE MANUFACTURER. FEI FOR FAN ARRAYS SHALL BE CALCULATED IN ACCORDANCE WITH AMCA 208 ANNEX C.
2) PROVIDE FANS WITH VFD AND MOTOR SHAFT GROUNDING SYSTEM FOR VARIABLE FLOW CAPACITY CONTROL. FAN MOTOR VFDS PROVIDED BY AHU MFR.
3) DAMPERS: AMCA CLASS 1A. OUTSIDE AIR AND RETURN AIR ISOLATION DAMPERS.
4) PROVIDE WITH AIRSIDE ECONOMIZER.
5) EQUIPMENT SHALL BE PROVIDED WITH A VISIBLE NAMEPLATE INDICATING THE SCCR RATING IN ACCORDANCE WITH UL REQUIREMENTS. REFER TO ELECTRICAL FOR MINIMUM RATINGS.
6) SUPPLY FAN(S): CLASS I, STEEL, AIRFOIL CENTRIFUGAL PLENUM, DIRECT DRIVE. PROVIDE SPRING ISOLATORS ON FAN.
7) FILTERS: 2 INCH PRE-FILTER AND 4 INCH FINAL FILTER ON OUTSIDE AIR. 2 INCH PRE-FILTER ON RETURN/EXHAUST.
8) PROVIDE (1) 480V/3 PHASE POWER CONNECTIONS TO SUPPLY FAN ARRAYS FOR UNIT POWER AND (1) 120V/1 CONNECTION FOR INTERIOR LIGHTING. LIGHTING SHALL BE LED.
9) INSTALL DUCT SMOKE DETECTOR FURNISHED BY DIV 26 IN RETURN AIR DUCT.
10) PROVIDE FIELD INSTALLED ELECTRICAL WIRING AS REQUIRED FOR SECTIONS SHIPPED SEPARATELY OR FOR KNOCKDOWN CONSTRUCTION.
11) PROVIDE SECONDARY OSA DAMPER POSITION AT [X] CFM AND ADJUST RETURN FAN SPEED WHEN EF-[X] IS IN OPERATION. COORDINATE SETTING WITH BALANCER.
12) OSA FLOWRATE TO BE CONTROLLED BY DEMAND CONTROL VENTILATION AND CO2 SENSOR IN SPACE. UNIT CAPABLE OF ECONOMIZER.

HIGH EFFICIENCY VAV SINGLE ZONE AIR-HANDLING UNIT SCHEDULE - CONTINUED

TAG	AREA SERVED	HEATING WATER COIL									CHILLED WATER COIL									
		TOTAL CAPACITY (MBH)	MAX AIR VEL/APD (FPM/IN)	EAT (°F)	LAT (°F)	FLOW (GPM)	MAX WATER VEL/WPD (FPS/FT HD)	EWT/LWT (°F/°F)	HWS/R RUNOUT SIZE (IN)	CONTROL VALVE TYPE	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	MAX AIR VEL/APD (FPM/IN)	EAT DB/WB (°F/°F)	LAT DB/WB (°F/°F)	FLOW (GPM)	MAX WATER VEL/WPD (FPS/FT HD)	EWT/LWT (°F/°F)	CHWS/R RUNOUT SIZE (IN)	CONTROL VALVE TYPE
AHU-01	GYM		500/.15				4/10		2-WAY				450/.25				4/10			2-WAY
AHU-02	COMMONS		500/.15				4/10		2-WAY				450/.25				4/10			2-WAY
AHU-03	ADMIN		500/.15				4/10		2-WAY				450/.25				4/10			2-WAY

NOTES:

1) REFER TO "HIGH-EFFICIENCY VAV SINGLE ZONE AIR-HANDLING UNIT SCHEDULE".

ENERGY RECOVERY VENTILATOR UNIT SCHEDULE

TAG	AREA SERVED	LOCATION	MANUFACTURER / MODEL	SUPPLY FANS						RETURN/EXHAUST FANS						ELECTRICAL				DIMENSIONS	WEIGHT	NOTES
				AIRFLOW (CFM)	QTY FANS (#)	ESP (IN)	MOTOR (#-HP)	MAX SPEED (RPM)	VOLTAGE/ PHASE (V/Ø)	AIRFLOW (CFM)	QTY FANS (#)	ESP (IN)	MOTOR (#-HP)	MAX SPEED (RPM)	VOLTAGE/ PHASE (V/Ø)	FLA (AMPS)	MCA (AMPS)	MOP (AMPS)	VOLTAGE/ PHASE V/Ø	(LxWxHT) (INxINxIN)	(LBS)	
ERV-01	KITCHEN / PE OFFICE	STORAGE CEILING	VTS / VENTUS	650		0.4			208/3	650		0.4			208/3				208/3			1, 2, 3, 4

NOTES:

1) EQUIPMENT SHALL BE PROVIDED WITH A VISIBLE NAMEPLATE INDICATING THE SCCR RATING IN ACCORDANCE WITH UL REQUIREMENTS. REFER TO ELECTRICAL FOR MINIMUM SCCR RATING REQUIREMENTS.
2) NOTE THAT SOME UNIT RATINGS ARE HIGHER THAN STANDARD 5kA.
3) EFFICIENCIES ARE BASED ON ANSI/SHRI STANDARD 1060, WINTER: 19 DEG F DB OUTSIDE AIR & 70 DEG F DB/ 52.5 DEG F WB. SUMMER: 78 DEG F DB OUTSIDE AIR & 75 DEG F DB.
4) PROVIDE ECM FANS, HANGING BRACKET KIT, AND POTENTIOMETER SPEED CONTROL.

ENERGY RECOVERY VENTILATOR UNIT SCHEDULE - CONTINUED

TAG	AREA SERVED	ENERGY RECOVERY												MOTOR	VOLTAGE/ PHASE
		HX TOTAL EFF (%)	HX SENS EFF (%)	SUPPLY HX VEL/APD (FPM/IN)	EXHAUST HX VEL/APD (FPM/IN)	SUPPLY WINTER		SUPPLY SUMMER		EXHAUST WINTER		EXHAUST SUMMER			
						EAT DB (°F)	LAT DB/WB (°F)	EAT DB (°F)	LAT DB/WB (°F)	EAT DB/WB (°F)	LAT DB/WB (°F)	EAT DB (°F)	LAT DB (°F)	(HP)	(V/Ø)
ERV-01	KITCHEN / PE OFFICE	60	70	500/.15	500/.15	25		83		70 / 52.5		75			

NOTES:

1) REFER TO ENERGY RECOVERY VENTILATOR UNIT SCHEDULE.

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DEDICATED OUTSIDE AIR SYSTEM "DOAS" AIR-HANDLING UNIT SCHEDULE

TAG	AREA SERVED	LOCATION	MANUFACTURER / MODEL	SUPPLY FANS						RETURN/EXHAUST FANS						HEATING WATER COIL									DIMENSIONS	WEIGHT	NOTES
				AIRFLOW (CFM)	QTY FANS (#)	ESP (IN)	MOTOR (#-HP)	MAX SPEED (RPM)	VOLTAGE/ PHASE (V/Ø)	AIRFLOW (CFM)	QTY FANS (#)	ESP (IN)	MOTOR (#-HP)	MAX SPEED (RPM)	VOLTAGE/ PHASE (V/Ø)	TOTAL CAPACITY (MBH)	MAX AIR VEL/APD (FPM/IN)	EAT (°F)	LAT (°F)	FLOW (GPM)	MAX WATER VEL/WPD (FPS/FT HD)	EWT/LWT (°F/°F)	HWS/R RUNOUT SIZE (IN)	CONTROL VALVE TYPE	(LxWxHT) (INxINxIN)	(LBS)	
DOAS-01	CLASSROOM	MECH ATTIC	VTS / AVS	6600	2	2.25	2-7.5		208/3	6600	1	1.25	1-10		208/3		500/.15	45	55		4/10	120/100		2-WAY			

NOTES:
1) FANS OR FAN ARRAYS WITH A COMBINED MOTOR HP > 5 (KW > 3.7) OR ELECTRICAL IMPUT POWER ≥ 4.1 KW SHALL HAVE A FAN ENERGY INDEX (FEI) OF NOT LESS THAN 1.00 (CONSTANT VOLUME) AND 0.95 (VARIABLE VOLUME) AT THE DESIGN POINT OF OPERATION, AS DETERMINED IN ACCORDANCE WITH AMCA 208 BY AN APPROVED, INDEPENDENT TESTING LABORATORY AND LABELED BY THE MANUFACTURER. FEI FOR FAN ARRAYS SHALL BE CALCULATED IN ACCORDANCE WITH AMCA 208 ANNEX C.
2) PROVIDE FANS WITH VFD AND MOTOR SHAFT GROUNDING SYSTEM FOR VARIABLE FLOW CAPACITY CONTROL. FAN MOTOR VFDS PROVIDED BY AHU MFR.
3) DAMPERS: AMCA CLASS 1A. OUTSIDE AIR AND EXHAUST AIR ISOLATION DAMPERS.
4) PROVIDE WITH AIRSIDE ECONOMIZER.
5) ENERGY RECOVERY SHALL BE ENTHALPY WHEEL WITH PURGE SECTION. ENERGY RECOVERY IS RATED AT HEATING DESIGN OUTSIDE AIR TEMPERATURE AND A RETURN/EXHAUST TEMPERATURE OF 70°F DRY BULB AND 30 PERCENT RELATIVE HUMIDITY.
6) SEISMICALLY ANCHOR UNIT TO FLOOR.
7) PROVIDE REMOVABLE SIDE ACCESS PANEL FOR HEAT RECOVERY WHEEL REMOVAL.
8) EQUIPMENT SHALL BE PROVIDED WITH A VISIBLE NAMEPLATE INDICATING THE SCCR RATING IN ACCORDANCE WITH UL REQUIREMENTS. REFER TO ELECTRICAL FOR MINIMUM RATINGS.
9) SUPPLY FAN(S): CLASS I, STEEL, AIRFOIL CENTRIFUGAL PLENUM, DIRECT DRIVE. PROVIDE SPRING ISOLATORS ON FAN.
10) RETURN/EXHAUST FAN(S): CLASS I, STEEL, AIRFOIL CENTRIFUGAL PLENUM, DIRECT DRIVE. PROVIDE SPRING ISOLATORS ON FAN.
11) FILTERS: 2 INCH PRE-FILTER AND 4 INCH FINAL FILTER ON OUTSIDE AIR. 2 INCH PRE-FILTER ON RETURN/EXHAUST PRIOR TO HEAT RECOVERY WHEEL.
12) PROVIDE (1) 480V/3 PHASE POWER CONNECTIONS FOR THE SUPPLY FAN ARRAY, RETURN/EXHAUST FAN ARRAY, AND FOR THE HEAT RECOVERY WHEEL. PROVIDE (1) 120V/1 CONNECTIONS FOR INTERIOR LIGHTING AND RECEPTACLES. LIGHTING SHALL BE LED.
13) PROVIDE FIELD INSTALLED ELECTRICAL WIRING AS REQUIRED FOR SECTIONS SHIPPED SEPARATELY OR FOR KNOCKDOWN CONSTRUCTION.

DEDICATED OUTSIDE AIR SYSTEM "DOAS" AIR-HANDLING UNIT SCHEDULE - CONTINUED

TAG	AREA SERVED	ENERGY RECOVERY													
		HX TOTAL EFF (%)	HX SENS EFF (%)	SUPPLY HX VEL/APD (FPM/IN)	EXHAUST HX VEL/APD (FPM/IN)	SUPPLY WINTER EAT DB (°F)	SUPPLY WINTER LAT DB/WB (°F)	SUPPLY SUMMER EAT DB (°F)	SUPPLY SUMMER LAT DB/WB (°F)	EXHAUST WINTER EAT DB/WB (°F)	EXHAUST WINTER LAT DB/WB (°F)	EXHAUST SUMMER EAT DB (°F)	EXHAUST SUMMER LAT DB (°F)	MOTOR (HP)	VOLTAGE/ PHASE (V/Ø)
DOAS-01	CLASSROOM	60	70	500/.15	500/.15	25		83		70 / 52.5		75			208/3

NOTES:
1) REFER TO DEDICATED OUTSIDE AIR SYSTEM "DOAS" UNIT SCHEDULE.

EXHAUST FAN SCHEDULE

TAG	AREA SERVED	LOCATION	MANUFACTURER / MODEL	FAN			MOTOR				DRIVE TYPE	CONTROL	DIMENSIONS (LxWxHT) (INxINxIN)	WEIGHT (LBS)	NOTES
				FLOW (CFM)	ESP (IN WC)	SPEED (RPM)	POWER (HP)	SPEED (RPM)	TYPE	VOLTAGE/PHASE (V/Ø)					
EF-01	RESTROOMS		GREENHECK / SQ	600			1/4	1725	ECM	115/1	DIRECT	SCHEDULED			1, 2, 9
EF-02	MAIN CUSTODIAL		GREENHECK / SQ	700			1/4	1725	ECM	115/1	DIRECT	SCHEDULED			1, 2
EF-03	HEALTH ROOM		GREENHECK / SQ	200			1/4	1725	ECM	115/1	DIRECT	SCHEDULED			1, 2, 9
EF-04	MAKER SPACE		GREENHECK / SQ	600			1/4	1725	ECM	115/1	DIRECT	SWITCH			1, 2, 4
EF-05	MAKER SPACE		GREENHECK / SQ	600			1/4	1725	ECM	115/1	DIRECT	SWITCH			1, 2, 4
EF-06	RESTROOMS		GREENHECK / SQ	600			1/4	1725	ECM	115/1	DIRECT	SCHEDULED			1, 2, 9
EF-07	MAIN MECHANICAL		GREENHECK / SQ	1000			1/2	1725	ECM	115/1	DIRECT	TEMPERATURE			1, 2
EF-08	MAIN ELECTRICAL		GREENHECK / SQ	1000			1/2	1725	ECM	115/1	DIRECT	TEMPERATURE			1, 2
EF-09	AV CLOSET		GREENHECK / SQ	200			1/4	1725	ECM	115/1	DIRECT	TEMPERATURE			1, 2, 9
EF-10	DISHWASHER		GREENHECK / CUE	1000			1/2	1725	ECM	115/1	DIRECT	SWITCH			1, 3, 4, 7
EF-10	TYPE I KITCHEN HOOD		GREENHECK / CUE	2000			1	1725	ECM	115/1	DIRECT	TYPE 1			1, 3, 5, 7
TF-01	KITCHEN TRANSFER		GREENHECK / SQ	1200			1/2	1725	ECM	115/1	DIRECT	INTERLOCK			1, 10

NOTES:
1) FANS OR FAN ARRAYS WITH A COMBINED MOTOR HP > 1 (KW > 0.75) OR ELECTRICAL IMPUT POWER ≥ 0.89 KW SHALL HAVE A FAN ENERGY INDEX (FEI) OF NOT LESS THAN 1.00 (CONSTANT VOLUME) AND 0.95 (VARIABLE VOLUME) AT THE DESIGN POINT OF OPERATION, AS DETERMINED IN ACCORDANCE WITH AMCA 208 BY AN APPROVED, INDEPENDENT TESTING LABORATORY AND LABELED BY THE MANUFACTURER. FEI FOR FAN ARRAYS SHALL BE CALCULATED IN ACCORDANCE WITH AMCA 208 ANNEX C.
2) PROVIDE CLASS 1A MOTORIZED DAMPER AT EXHAUST OUTLETS, WHICH CLOSE AUTOMATICALLY WHEN SYSTEM OR SPACES IS NOT IN USE OR DURING UNOCCUPIED PERIOD.
3) COORDINATE COLOR WITH ARCHITECT.
4) DIVISION 26 SHALL PROVIDE WALL SWITCH AND WIRING FOR ON/OFF OPERATION.
5) DIV 26 SHALL INTERLOCK FAN OPERATION THROUGH KITCHEN HOOD PANEL.
6) NOT USED.
7) PROVIDE UL-762 APPROVED ECM MOTOR. PROVIDE FAN WITH GREASE RESERVIOR OPTION.
8) NOT USED.
9) PROVIDE WITH GREENHECK VARI-GREEN CONSTANT PRESSURE CONTROLLER. DIV 26 TO PROVIDE SEPARATE POWER TO HOA.
10) ENABLE WITH OPERATION OF EF-10

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FAN COIL UNIT SCHEDULE

TAG	AREA SERVED	LOCATION	MANUFACTURER/MODEL	MAX HEAT SPEED (CFM)	MAX COOL SPEED (CFM)	FAN				HEATING COIL								CHILLED WATER COIL									ELECTRICAL				DIMENSIONS	WEIGHT	NOTES
						FLOW (CFM)	ESP (IN WC)	MOTOR (HP)	VOLTAGE/ PHASE V/Ø	TOTAL CAPACITY (MBH)	EAT (°F)	LAT (°F)	FLOW (GPM)	MAX WATER VEL/WPD (FPS/FT HD)	EWT/LWT (°F/°F)	HWS/R RUNOUT SIZE (IN)	CONTROL VALVE TYPE	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	MAX AIR VEL/APD (FPM/IN)	EAT DB/WB (°F/°F)	LAT DB/WB (°F/°F)	FLOW (GPM)	MAX WATER VEL/WPD (FPS/FT HD)	EWT/LWT (°F/°F)	CHWS/R RUNOUT SIZE (IN)	CONTROL VALVE TYPE	FLA (AMPS)	MCA (AMPS)	MSCP (AMPS)	VOLTAGE/ PHASE V/Ø	(LxWxHT) (INxINxIN)	(LBS)	
FCU-01	CLASSROOM	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-02	CLASSROOM	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-03	CLASSROOM	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-04	CONFERENCE	MECH ATTIC	TITUS/ TBHD			480	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-05	CONFERENCE	MECH ATTIC	TITUS/ TBHD			300	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-06	CLASSROOM	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-07	CLASSROOM	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-08	CONFERENCE	MECH ATTIC	TITUS/ TBHD			300	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-09	CLASSROOM	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-10	MUSIC	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-11	RECEPTION	MECH ATTIC	TITUS/ TBHD			900	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-12	STAFF LOUNGE	MECH ATTIC	TITUS/ TBHD			600	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-13	OT/PT	MECH ATTIC	TITUS/ TBHD			530	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-14	LIBRARY	MECH ATTIC	TITUS/ TBHD			1480	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-15	CLASSROOM	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-16	CLASSROOM	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-17	CLASSROOM	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-18	MAKER SPACE	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-19	KITCHEN	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-20	CUSTODIAL	MECH ATTIC	TITUS/ TBHD			600	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-21	CORRIDOR	MECH ATTIC	TITUS/ TBHD			1200	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	
FCU-22	LARGE SENSORY	MECH ATTIC	TITUS/ TBHD			480	0.8		208/1		68	90		4/10	120/100		2-WAY			450/.25	75	55		4/10	44/54		2-WAY			15	208/1		320	

NOTES:
1) PROVIDE WITH 2" MERV 13 FILTER RACK ASSEMBLY.
2) UNIT SHALL BE FLOOR MOUNTED ON FIELD-FABRICATED STAND. PROVIDE WITH SEISMIC RESTRAINT. SEE M9 SERIES FOR FAN COIL UNIT STAND DETAIL.
3) UNIT SHALL BE HUNG FROM STRUCTURE WITH EXTERNAL SPRING ISOLATORS. PROVIDE WITH SEISMIC RESTRAINT. SEE M9 SERIES FOR HANGING FAN COIL UNIT DETAIL.

UNIT HEATER SCHEDULE

TAG	AREA SERVED	MANUFACTURER / MODEL	FAN	ELECTRIC HEATING			DIMENSIONS (LxWxHT)	WEIGHT	NOTES
			AIRFLOW (CFM)	CAPACITY (KW)	AMPS (AMPS)	VOLTAGE/PHASE (V/Ø)	(INxINxIN)	(LBS)	
UH-01	VESTIBULE	QMARK / EFF 4804	350	3.6	17.3	208/1	16x14x8	30	1, 5
UH-02	VESTIBULE	QMARK / EFF 4804	350	3.6	17.3	208/1	16x14x8	30	1, 5
UH-03	VESTIBULE	QMARK / EFF 4804	350	3.6	17.3	208/1	16x14x8	30	1, 5
UH-04	ENTRANCE	QMARK / EFF 4804	350	3.6	17.3	208/1	16x14x8	30	1, 5
UH-05	MAIN MECHANICAL	QMARK / MUH	350	3	14.5	208/1	16x14x8	30	1, 2
UH-06	MAIN ELECTRICAL	QMARK / MUH	350	3	14.5	208/1	16x14x8	30	1, 2
UH-07	AV CLOSET	QMARK / MUH	350	3	14.5	208/1	16x14x8	30	1, 2
UH-08	RESTROOM	QMARK / MUH	350	3	14.5	208/1	16x14x8	30	1, 2
UH-09	RESTROOM	QMARK / MUH	350	3	14.5	208/1	16x14x8	30	1, 2
UH-10	MECH ATTIC	QMARK / MUH	350	3	14.5	208/1	16x14x8	30	1, 2
UH-11	MECH ATTIC	QMARK / MUH	350	3	14.5	208/1	16x14x8	30	1, 2
UH-12	MECH ATTIC	QMARK / MUH	350	3	14.5	208/1	16x14x8	30	1, 2

NOTES:
1) PROVIDE WITH DISCONNECT SWITCH AND TRANSFORMER/CONTACTOR FOR BAS LOW VOLTAGE CONTROL. COORDINATE CONTROL OPTIONS SECTION 230900 CONTRACTOR.
2) PROVIDE WITH MOUNTING BRACKET AND FAN GUARD.
3) RECESS IN WALL.
4) STANDARD COLOR BY ARCHITECT.

DIFFUSER, REGISTER, AND GRILLE SCHEDULE

TAG	MANUFACTURER / MODEL	TYPE	MATERIAL (NOTE 13)	FINISH	FACE STYLE	FACE SIZE	DUCT INLET	MOUNTING	PATTERN	DAMPERS	ACCESSORIES	NOTES
A	PRICE / SCDA	SQUARE CEILING DIFFUSER	ST	WHITE	-	NOTE 1	NOTE 3	NOTE 4	ADJ	NONE	-	14
D	PRICE / HCD	DRUM LOUVER	AL	WHITE	-	NOTE 2	NOTE 3	SURFACE/DUCT	-	NONE	-	-
E	PRICE / 80F	EGGCRATE GRILLE	AL	WHITE	-	NOTE 2	NOTE 3	NOTE 4	-	NONE	-	-
H	PRICE / 90	HEAVY DUTY RETURN GRILLE	ST	NOTE 8	-	NOTE 2	NOTE 3	NOTE 4	-	NONE	-	-
L	NOTE 9	LOUVER	AL	NOTE 10	-	-	NOTE 11	NOTE 12	-	-	-	-
S	PRICE / 520RS	SUPPLY GRILLE	ST	NOTE 8	-	NOTE 2	NOTE 3	NOTE 4	FA	NONE	-	14
R	PRICE / 530RL	RETURN / EXHAUST GRILLE	ST	NOTE 8	-	NOTE 2	NOTE 3	NOTE 4	-	NONE	-	-
T	PRICE / SPJD	LOW FLOW CEILING DIFFUSER	ST	WHITE	PLAQUE	24x24	6"	NOTE 4	-	NONE	-	-
W	PRICE / RTD	SWIRL INDUCTION DIFFUSER	ST	WHITE	-	NOTE 1	-	NOTE 4	-	NONE	-	-

NOTES:
1) SEE DRAWINGS FOR FACE SIZE (24x24 OR 12x12). PROVIDE 24x24 FOR LAY IN CEILINGS.
2) FACE SIZE DETERMINED FROM DUCT INLET SIZE.
3) SEE AIR DEVICE TAG FOR DUCT INLET SIZE.
4) COORDINATE BORDER TYPE (SURFACE MOUNT, SNAP IN, LAY-IN, SPLINE, DROPPED FACE, AND BEVELED DROP FACE) WITH ARCHITECTURAL CEILING PLANS.
5) COORDINATE BORDER TYPE WITH ARCHITECTURAL CEILING DETAILS.
6) PROVIDE BLACK FOR FACE AND SHELL, BLACK PATTERN CONTROLLER, AND WHITE TEES.
7) NOT USED.
8) PROVIDE CUSTOM COLOR PER ARCHITECT.
9) PROVIDED BY OTHERS.
10) NOT USED.
11) DUCT SIZE SHALL MATCH LOUVER SIZE UNLESS OTHERWISE NOTED.
12) SEE DETAIL FOR MOUNTING REQUIREMENTS.
13) PROVIDE ALUMINUM DIFFUSERS, REGISTERS AND GRILLES IN KITCHENS, LOCKER ROOMS, ROOMS CONTAINING SHOWERS AND OTHER AREAS SUBJECT TO MOISTURE.
14) PROVIDE WITH FIELD ADJUSTABLE VERTICAL TO HORIZONTAL DISCHARGE PATTERN.

ABBREVIATIONS:
ST = STEEL, AL = ALUMINUM, BE = BAKED ENAMEL, AA = ANODIZED ALUMINUM, FA = FULLY ADJUSTABLE, TP = TWO POSITION, OPD = OPPOSED BLADE DAMPERS, ADJ = ADJUSTABLE, BA = BAKED ACRYLIC, BO = BLANK OFF, DB = DIRECTIONAL BLADES, AND P = PLENUM.

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AIR TO WATER HEAT PUMP SCHEDULE

TAG	AREA SERVED	LOCATION	MANUFACTURER / MODEL	TYPE	REFRIGERANT	FLUID TYPE	FLUID VOLUME (GAL)	HYDRONICS RUNOUT (IN)	# OF CIRCUITS (#)	FANS QTY FANS (#)	COMPRESSORS QTY (#)	COOLING CAPACITY AT 36F (MBH)	COOLING FLOW (GPM)	COOLING EWT (F)	COOLING LWT (F)	COOLING WPD (FT HD)	COOLING COP (NOTE 1)	COOLING CAPACITY AT 86F (MBH)	COOLING FLOW (GPM)	COOLING EWT (F)	COOLING LWT (F)	COOLING WPD (FT HD)	COOLING EER (NOTE 1)	COOLING IPLV (NOTE 1)	ELECTRICAL LRA (AMPS)	ELECTRICAL MCA (AMPS)	ELECTRICAL MOP (AMPS)	ELECTRICAL VOLTAGE/ PHASE V/Ø	DIMENSIONS (LxWxHT) (INxINxIN)	WEIGHT (LBS)	NOTES
AWHP-01	BUILDING	SERVICE YARD	AERMEC / NYG0750XK	SCROLL	R-454B																							208/3	107x47x100	4,000	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
AWHP-02	BUILDING	SERVICE YARD	AERMEC / NYG0750XK	SCROLL	R-454B																							208/3	107x47x100	4,000	1, 2, 3, 4, 5, 6, 7, 8, 9, 10

NOTES:
1) EFFICIENCIES ARE IN ACCORDANCE WITH AHRI STANDARD 550/590. COP RATED AT 120 DEG F LEAVING HEATING WATER TEMPERATURE.
2) EQUIPMENT SHALL BE PROVIDED WITH A VISIBLE NAMEPLATE INDICATING THE SCCR RATING IN ACCORDANCE WITH UL REQUIREMENTS. [REFER TO ELECTRICAL FOR MINIMUM RATINGS.] [PROVIDE MINIMUM SCCR OF 65,000 AMPS.]
3) USER INTERFACE SHALL BE MOUNTED ON MODULE BY FACTORY WITHIN NEMA 4X WEATHERPROOF ENCLOSURE AT A LOCATION THAT DOES NOT IMPEDE ON MAINTENANCE ACCESS TO UNIT.
4) PROVIDE HEAT TRACE ON REFRIGERANT TO WATER HEAT EXCHANGER. HEAT TRACE SHALL BE PROVIDED WITH SEPARATE 120/1 POWER CONNECTION [AND POWERED BY EMERGENCY GENERATOR.
5) RATED HEATING CAPACITY AT 47 DEG F IS NO LESS THAN 75% OF THE DESIGN HEATING LOAD AT 29 DEG F.
6) CONTROLS SHALL BE CONFIGURED TO USE THE COMPRESSOR AS THE FIRST STAGE OF HEATING DOWNS TO THE LOWEST EXTERIOR DESIGN TEMPERATURE FOR WHICH THE EQUIPMENT IS RATED EXCEPT FOR DURING START UP OR DEFROST OPERATION.
7) HEATING CAPACITY INCLUDES DERATE DUE TO DEFROST. IF EQUIPMENT SELECTION SOFTWARE DOES NOT INCLUDE DEFROST DERATE, HEAT PUMP SHALL BE SELECTED WITH GREATER HEATING CAPACITY AND A DESCRIPTION OF DEFROST OPERATION AND DERATE CALCULATION SHALL BE INCLUDED IN SUBMITTAL.
8) PROVIDE WITH OUTDOOR THERMAL DISPERSION TYPE FLOW SWITCH (FIELD INSTALLED).
9) PROVIDE WITH LOW AMBIENT COOLING CONTROL DOWN TO 50 DEG F.
10) PROVIDE WITH INTEGRAL PRIMARY PUMP AND VFD. SIZE PUMP AT 94.7 GPM AND 40' OF HEAD.

ELECTRIC BOILER SCHEDULE

TAG	LOCATION	MANUFACTURER / MODEL	HEATING MEDIUM	DESIGN PRESSURE (PSIG)	RELIEF VALVE (PSIG)	WATER VOLUME (GAL)	TURNDOWN	HEATING CAPACITY (MBH)	EWT (°F)	LWT (°F)	DESIGN FLOW (GPM)	HYDRONICS RUNOUT (IN)	ELECTRICAL KW (KW)	ELECTRICAL AMPS (AMPS)	ELECTRICAL VOLTAGE/PHASE (V/Ø)	DIMENSIONS (LxWxHT) (INxINxIN)	OPERATING WEIGHT (LBS)	NOTES
B-01	MECHANICAL	PRECISION / PCW	WATER												208/3			

NOTES:
1) BOILER SHALL BE LOCKED OUT WHEN OUTSIDE AIR TEMPERATURE IS ABOVE 36 DEG F.
2) EQUIPMENT SHALL BE PROVIDED WITH A VISIBLE NAMEPLATE INDICATING THE SCCR RATING IN ACCORDANCE WITH UL REQUIREMENTS. [REFER TO ELECTRICAL FOR MINIMUM RATINGS.] [PROVIDE MINIMUM SCCR OF 65,000 AMPS.]
3) PROVIDE WITH SCR STEP CONTROL FOR INTERSTAGE MODULATING CONTROL.
4) PROVIDE WITH FUSED DISCONNECT, UL508A PANEL LABEL, AND ELECTRICAL SAFETY DOOR INTERLOCK.
5) PROVIDE WITH HARD WIRED CONTROL CONTROL INPUTS FOR START/STOP AND CAPACITY CONTROL. PROVIDE HARD WIRED CONTROL OUTPUTS FOR ALARM[, LOW WATER AND BOILER STATUS]. PROVIDE BACNET INTERFACE FOR ALL OTHER CONTROL INPUTS.
6) [PROVIDE WALL MOUNTED BACNET GATEWAY PANEL TO SERVE ALL BOILERS. PROVIDE CONTROL WIRING FROM GATEWAY TO EACH BOILER CONTROLLER PER BOILER MFR. PROVIDE 120V/1 POWER TO WALL MOUNTED GATEWAY PANEL.]
7) LOCATE BOILER ON CONCRETE HOUSEKEEPING PAD AND SEISMICALLY ANCHOR UNIT.

PUMP SCHEDULE

TAG	SYSTEM SERVED	LOCATION	MANUFACTURER / MODEL	FLOW (GPM)	HEAD (FT)	FLUID	HP (HP)	RPM (RPM)	VOLTAGE/PHASE V/Ø	DIMENSIONS (LxWxHT) (INxINxIN)	OPERATING WEIGHT (LBS)	NOTES
PU-01	HEATING WATER	MECHANICAL	TACO / KS			WATER	10	1800	208/1			1, 2, 3
PU-02	HEATING WATER	MECHANICAL	TACO / KS			WATER	10	1800	208/1			1, 2, 3
PU-03	CHILLED WATER	MECHANICAL	TACO / KS			WATER	15	1800	208/1			1, 2
PU-04	CHILLED WATER	MECHANICAL	TACO / KS			WATER	15	1800	208/1			1, 2
PUHP-01	AWHP CIRC	SERVICE YARD	TACO / KV			WATER	3	1800	208/1			-
PUHP-02	AWHP CIRC	SERVICE YARD	TACO / KV			WATER	3	1800	208/1			-
PU-B01	B-01 CIRC	MECHANICAL	TACO / KV			WATER	1	1800	208/1			-
DPU-01	SUPPLEMENTARY WATER HEATER PUMP	MECHANICAL	TACO / 006E3			WATER	1/6	3300	120/1			5, 6
DPU-02	PRIMARY WATER HEATER PUMP	MECHANICAL	TACO / 006E3			WATER	1/6	3300	120/1			5, 6
DPU-03	DOMESTIC HOT WATER CIRC	MECHANICAL	TACO / 0018E-SF4 SS			WATER	1/6	3300	120/1			4, 5, 6
DPU-04	KITCHEN HOT WATER CIRC	MECHANICAL	TACO / 0018E-SF4 SS			WATER	1/6	3300	120/1			5, 6

NOTES:
1) PROVIDE PUMPS WITH MOTOR SHAFT GROUNDING SYSTEM AND VFD BY 230900 FOR VARIABLE FLOW CAPACITY CONTROL.
2) SEISMICALLY MOUNT PUMP TO HOUSEKEEPING PAD.
3) PUMPS ARE SIZED FOR LEAD/STANDBY OPERATION.
4) BALANCE HOT WATER RECIRC CIRCUIT SETTERS TO 0.75 GPM EACH.
5) PROVIDE PUMPS WITH VARIABLE SPEED EC MOTORS.
6) PUMPS SHALL BE NSF61 RATED TO SERVE DOMESTIC WATER.

EXPANSION TANK SCHEDULE

TAG	SYSTEM SERVED	LOCATION	MANUFACTURER / MODEL	VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	SYSTEM CONN (IN)	DIMENSIONS (DIAxHT) (INxIN)	OPERATING WEIGHT (LBS)	NOTES
ET-01	HEATING WATER	MECHANICAL	AMTROL / 500-L	132	132	1	24x79	1499	1, 2
ET-02	CHILLED WATER	MECHANICAL	AMTROL / 400-L	106	106	1	24x66	1229	1, 2
DET-01	DOMESTIC HW	MECHANICAL	AMTROL / ST-30VC	14	9	3/4	16x19	185	1, 2
DET-02	DOMESTIC CW	MECHANICAL	AMTROL / ST-12C	6.4	3.2	3/4	12x18	80	1, 2
DET-03	NONPOTABLE HW	MECH ATTIC	AMTROL / ST-20VC	8	3.2	3/4	12x19	115	1, 2

NOTES:
1) PROVIDE WITH SIGHT GLASS AND SEISMIC RESTRAINTS.
2) CHARGE TANK TO MAINTAIN MIN 4 PSI AT HIGH POINT IN SYSTEM.
3) ASME RATED TANK.
4) CHARGE TANK TO MATCH INCOMING PRESSURE AT DEVICE CONNECTION.
5) LOCATE TANK ON HOUSEKEEPING PAD.

BUFFER TANK SCHEDULE

TAG	LOCATION	SYSTEM SERVED	MANUFACTURER / MODEL	CAPACITY (GAL)	INLET (IN)	OUTLET (IN)	DIMENSIONS (DIAxHT) (INxIN)	OPERATING WEIGHT (LBS)	NOTES
BT-01	MECHANICAL ROOM	HEATING WATER	TACO / BTL0400F04-125NN	400	4	4	48x65	4346	1, 2, 4
BT-02	MECHANICAL ROOM	CHILLED WATER	TACO / BTH0400F04-125NN	400	4	4	48x65	4346	1, 2, 3

NOTES:
1) BUFFER TANK CONSTRUCTION SHALL COMPLY WITH ASME BOILER AND PRESSURE VESSEL CODE: SECTION VIII, DIV. 1.
2) PROVIDE INTERNAL BAFFLE.
3) PROVIDE ELASTOMERIC INSULATION ON CHILLED WATER BUFFER TANKS.
4) PROVIDE SILICON BLANKET INSULATION ON HEATING WATER BUFFER TANKS.
5) PROVIDE PIPE CONNECTIONS SIZED PER PLANS.
6) PROVIDE VERTICAL BOTTOM BAFFLE, BOTTOM INLET, AND BOTTOM OUTLET.
7) PROVIDE VERTICAL TOP BAFFLE, TOP INLET, AND TOP OUTLET.

AIR SEPARATOR SCHEDULE

TAG	SYSTEM SERVED	LOCATION	MANUFACTURER / MODEL	VOLUME (GAL)	FLOW (GPM)	SYSTEM CONN (IN)	MAX WPD (FT HD)	DIMENSIONS (DIAxHT) (INxIN)	OPERATING WEIGHT (LBS)	NOTES
AS-01	HEATING WATER	MECHANICAL ROOM	SPIROTHERM / VDN-300			3"	2			
AS-02	CHILLED WATER	MECHANICAL ROOM	SPIROTHERM / VDN-400			4"	2			

NOTES:
1) HANG IN ACCESSIBLE LOCATION WITH SPACE FOR AUTOMATIC AIR VENT. PROVIDE SEISMIC BRACING.
2) ELEVATE MIN 6'6" AFF TO BOTTOM OF DEVICE.

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AIR SOURCE HEAT PUMP WATER HEATER SCHEDULE

TAG	SYSTEM SERVED	LOCATION	MANUFACTURER / MODEL	TYPE	REFRIGERANT	CAPACITY AT DESIGN DAY 25°F OAT (MBH)	CAPACITY AT 24°F OAT (MBH)	CAPACITY AT 40°F OAT (MBH)	TEMP SETTING (F)	CW INLET (IN)	HW OUTLET (IN)	WATER FLOW RATE (GPM)	COP (NOTE 4)	FAN TYPE	AIR FLOW RATE (CFM)	ELECTRICAL			DIMENSIONS (LxWxH) (INxINxIN)	OPERATING WEIGHT (LBS)	NOTES
																MCA (AMPS)	MOP (AMPS)	VOLTAGE/PHASE (V/Ø)			
HPWH-01	DOMESTIC HW	SERVICE YARD	AO SMITH / AHPA-060	SCROLL	R-513A	34.9	34.9	40.4	120	1-1/2	1-1/2	-	4.61	BLOWER	1544			208/3	42x39x72	700	1, 2, 3, 4, 5, 6, 7

NOTES:
1) COMBINED HEAT PUMP SYSTEM RATED HEATING CAPACITY AT 40 DEG F DRY BULB IS NO LESS THAN 50% OF THE DESIGN SERVICE WATER HEATING LOAD.
2) COMBINED HEAT PUMP RATED HEATING CAPACITY AT 24 DEG F DRY BULB IS NO LESS THAN 25% OF THE PEAK SERVICE WATER HEATING DEMAND.
3) COP BASED ON WATER HEATED FROM 70°F TO 120°F WITH 80°F ENTERING AIR TEMPERATURE.
4) EQUIPMENT SHALL BE PROVIDED WITH A VISIBLE NAMEPLATE INDICATING THE SCCR RATING IN ACCORDANCE WITH UL REQUIREMENTS. [REFER TO ELECTRICAL FOR MINIMUM RATINGS.] [PROVIDE MINIMUM SCCR OF 65,000 AMPS.]
5) PROVIDE WITH DUAL POWER FEED FOR GENERATOR BACK UP OF FREEZE PROTECTION.
6) PROVIDE WITH FACTORY FURNISHED DIGITAL TANK THERMOSTAT(AND BACNET GATEWAY.
7) PROVIDE WITH FACTORY INSTALLED LOW AMBIENT KIT AND EVAPORATOR COIL CORROSIVE DUTY PACKAGE.

ELECTRIC PRIMARY WATER HEATER SCHEDULE

TAG	SYSTEM SERVED	LOCATION	MANUFACTURER / MODEL	CAPACITY (GAL)	RECOVERY AT 100°F (GPH)	TEMP SETTING (F)	CAPACITY (KW)	ELEMENTS (#)	CW INLET (IN)	HW OUTLET (IN)	GPM	EWT (F)	LWT (F)	ELECTRICAL		DIMENSIONS [(DIAxHT)] [(LxWxH)] [(INxIN)] [(INxINxIN)]	OPERATING WEIGHT (LBS)	NOTES
														AMPS	VOLTAGE/PHASE (V/Ø)			
EPWH-01	DOMESTIC HOT WATER PRIMARY	MECH	AO SMITH / DSE			120						105	120		208/3			1, 2, 3, 4, 5

NOTES:
1) ELECTRICAL RESISTANCE PRIMARY SERVICE IS SIZED FOR MAXIMUM 75% OF THE CALCULATED DEMAND FOR HOT WATER PRODUCTION DURING THE PEAK DEMAND PERIOD AT 25°F OUTDOOR AIR TEMPERATURE.
2) EQUIPMENT SHALL BE PROVIDED WITH A VISIBLE NAMEPLATE INDICATING THE SCCR RATING IN ACCORDANCE WITH UL REQUIREMENTS. REFER TO ELECTRICAL FOR MINIMUM RATINGS.
3) PROVIDE WITH 4" HOUSEKEEPING PAD AND DRAIN PAN.
4) PROVIDE SEISMIC RESTRAINTS TO HOUSEKEEPING PAD AND UNISTRUT FRAME.
5) ELECTRIC WATER HEATERS IN UNCONDITIONED SPACES OR ON CONCRETE FLOORS SHALL BE PLACED ON AN INCOMPRESSIBLE, INSULATED SURFACE WITH A MINIMUM THERMAL RESISTANCE OF R-10.

ELECTRIC SUPPLEMENTAL WATER HEATER SCHEDULE

TAG	SYSTEM SERVED	LOCATION	MANUFACTURER / MODEL	CAPACITY (GAL)	RECOVERY AT 100°F (GPH)	TEMP SETTING (F)	CAPACITY (KW)	ELEMENTS (#)	CW INLET (IN)	HW OUTLET (IN)	GPM	EWT (F)	LWT (F)	ELECTRICAL		DIMENSIONS [(DIAxHT)] [(LxWxH)] [(INxIN)] [(INxINxIN)]	OPERATING WEIGHT (LBS)	NOTES
														AMPS	VOLTAGE/PHASE (V/Ø)			
ESWH-01	DOMESTIC HOT WATER SUPPLEMENTARY	MECH	AO SMITH / DSE			120						105	120		208/3			1, 2, 3, 4, 5, 6

NOTES:
1) TOTAL ELECTRICAL RESISTANCE SUPPLEMENTAL WATER HEATING OUTPUT CAPACITY IS LESS THAN THE PRIMARY WATER HEATING EQUIPMENT AT A 40°F OUTDOOR AIR TEMPERATURE.
2) ELECTRICAL RESISTANCE SUPPLEMENTAL WATER HEATING SHALL NOT OPERATE AT OUTDOOR AIR TEMPERATURES GREATER THAN 40°F AND PRIMARY HEAT PUMP WATER HEATERS SHALL CONTINUE TO OPERATE TOGETHER WITH SUPPLEMENTAL HEATING.
3) EQUIPMENT SHALL BE PROVIDED WITH A VISIBLE NAMEPLATE INDICATING THE SCCR RATING IN ACCORDANCE WITH UL REQUIREMENTS. REFER TO ELECTRICAL FOR MINIMUM RATINGS.
4) PROVIDE WITH 4" HOUSEKEEPING PAD AND DRAIN PAN.
5) PROVIDE SEISMIC RESTRAINTS TO HOUSEKEEPING PAD AND UNISTRUT FRAME.
6) ELECTRIC WATER HEATERS IN UNCONDITIONED SPACES OR ON CONCRETE FLOORS SHALL BE PLACED ON AN INCOMPRESSIBLE, INSULATED SURFACE WITH A MINIMUM THERMAL RESISTANCE OF R-10.

ELECTRONIC MIXING VALVE SCHEDULE

TAG	AREA SERVED	LOCATION	MANUFACTURER / MODEL	SYSTEM SERVED	VALVE SIZE (IN)	TEMPERED WATER FLOW (GPM)	TEMPERED WATER MIN FLOW (GPM)	MIN BLDG RECIRC (GPM)	PRESSURE DROP (PSIG)	INLET SIZE (IN)	OUTLET SIZE (IN)	ELECTRICAL VOLTAGE/PHASE (V/Ø)	NOTES
EMV-01	BUILDING	MECH	HEAT TIMER / ETV PLATINUM PLUS									120/1	1, 2
EMV-02	KITCHEN	MECH	HEAT TIMER / ETV PLATINUM PLUS									120/1	1, 2

NOTES:
1) PROVIDE WITH MIXING VALVE CONTROLLER WITH BUILT IN CONTROL LOGIC, LED DIGITAL DISPLAY, INLET HOT AND COLD WATER TEMPERATURE SENSOR INPUTS, OUTLET HOT WATER TEMPERATURE SENSOR INPUT, HIGH TEMP ALARM OUTPUT, BACNET INTERFACE AND BATTERY BACK UP POWER SUPPLY.
2) PROVIDE WITH OPTIONAL MOTORIZED STAINLESS BALL SAFETY VALVE.

DOMESTIC WATER HEAT PUMP STORAGE TANK SCHEDULE

TAG	SYSTEM SERVED	LOCATION	MANUFACTURER / MODEL	CAPACITY (GAL)	ARRANGEMENT (HOR/VERT)	PRESSURE RATING (PSIG)	RELIEF VALVE (PSIG)	HW INLET (IN)	HW OUTLET (IN)	DIMENSIONS (DIAxHT) (INxIN)	OPERATING WEIGHT (LBS)	NOTES
HPST-01	DOMESTIC HW	MECHANICAL	AO SMITH / TJVHP-500A	450	VERT	125	125	3	3	52x100	5776	1, 2

NOTES:
1) PROVIDE WITH INTERNAL BAFFLE DESIGNED TO ELIMINATE TURBULANCE IN THE TANK.
2) PROVIDE WITH MINIMUM R30 TANK INSULATION.

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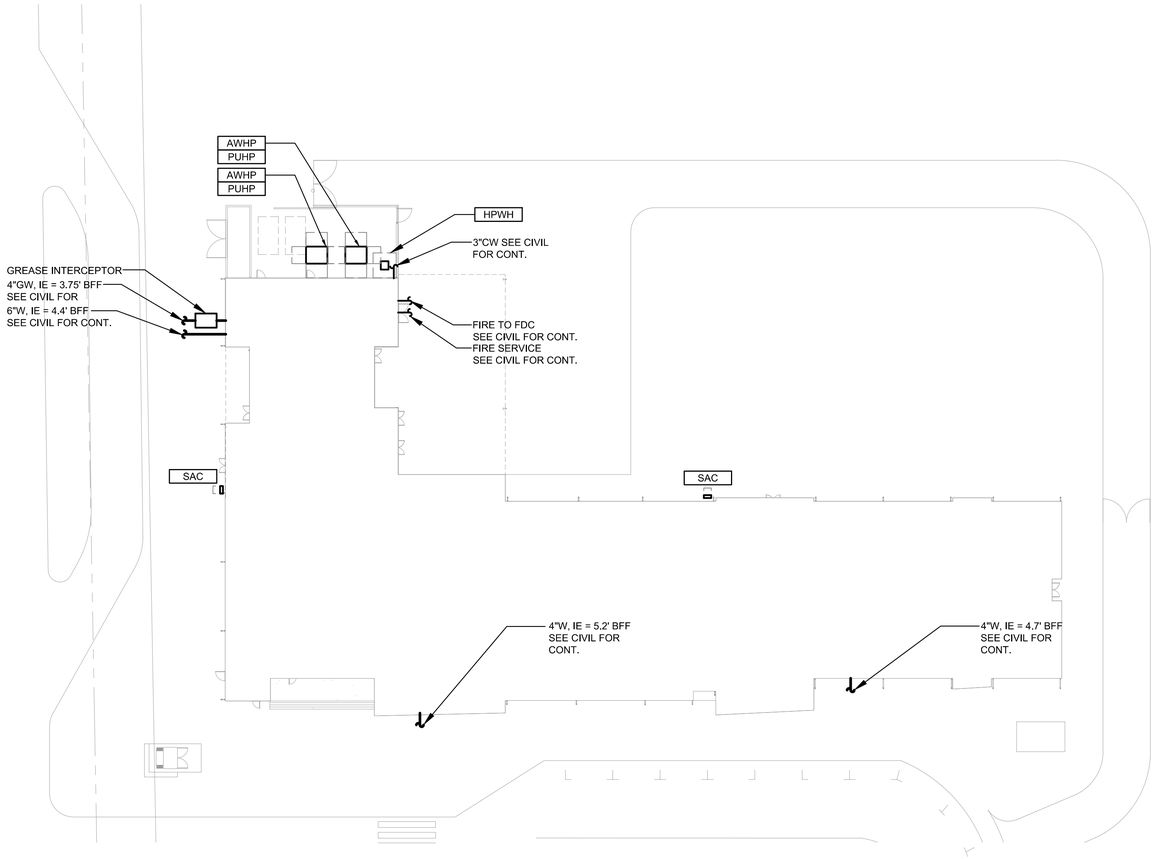
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1 MECHANICAL SITE PLAN
1/32" = 1'-0"

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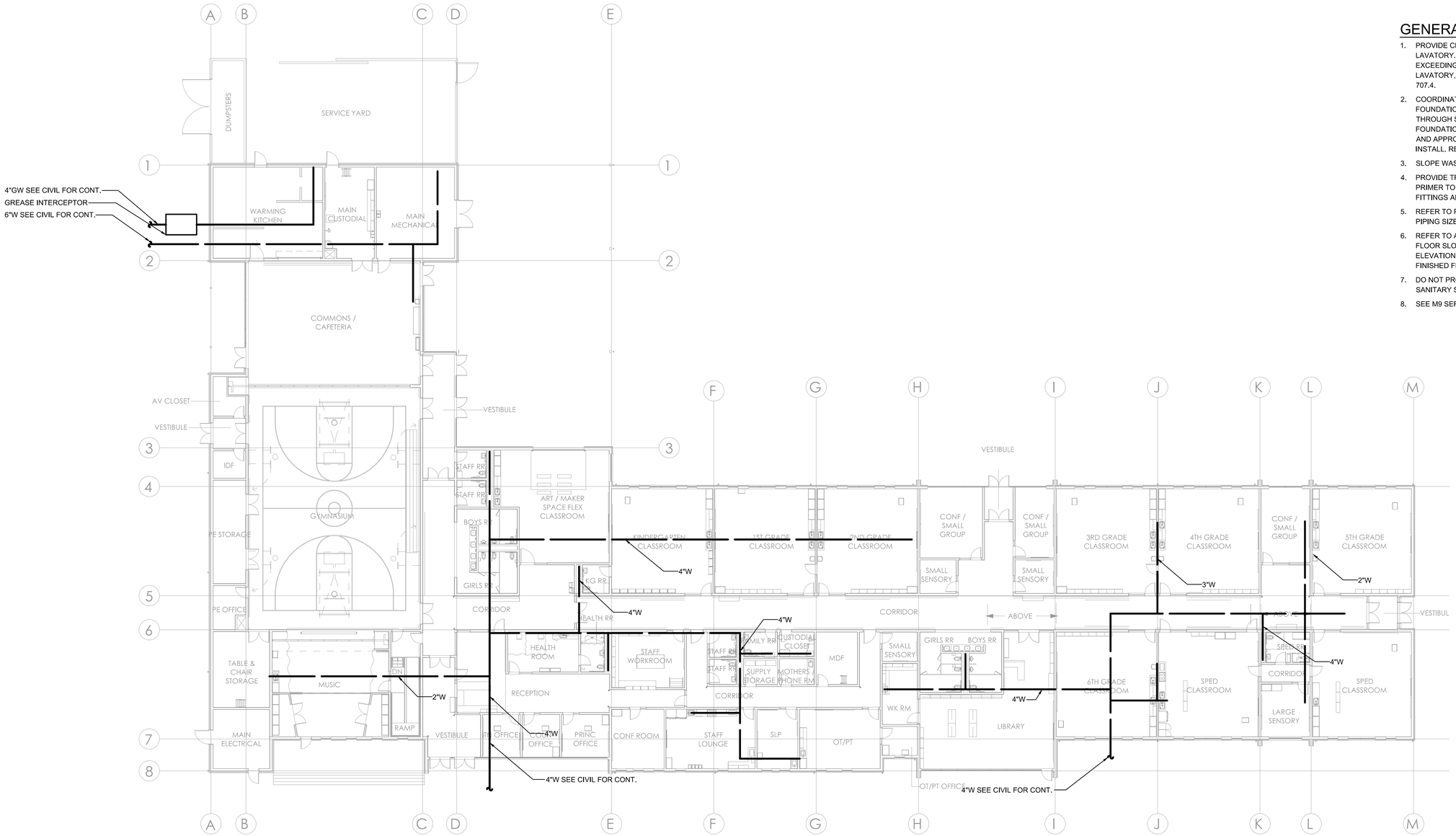
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GENERAL NOTES:

1. PROVIDE CLEANOUTS AT EVERY URINAL, SINK, AND LAVATORY. WHERE THE UPPER TERMINUS OF BRANCH LINES EXCEEDING 5 FEET IN LENGTH DO NOT END WITH A SINK OR LAVATORY, PROVIDE A WALL OR FLOOR CLEANOUT PER UPC 707.4.
2. COORDINATE WASTE PIPE ROUTING WITH STRUCTURAL FOUNDATION PLANS. SLEEVE PIPING WHERE REQUIRED THROUGH STEM WALLS & FOUNDATION. WHERE NOTCHING OF FOUNDATION IS REQUIRED, OBTAIN APPROVAL OF LOCATION AND APPROACH FROM STRUCTURAL ENGINEER PRIOR TO INSTALL. REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
3. SLOPE WASTE/VENT PIPING AT MIN 1/4" PER FOOT.
4. PROVIDE TRAP PRIMER CONNECTION FROM NEAREST TRAP PRIMER TO ALL FLOOR DRAINS, FLOOR SINKS AIR GAP FITTINGS AND OTHER TRAPS REQUIRING PROTECTION.
5. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPING SIZES NOT DIMENSIONED ON PLANS.
6. REFER TO ARCHITECTURAL FLOOR PLANS AND DETAILS FOR FLOOR SLOPE TO FLOOR DRAINS. INSTALL FLOOR DRAIN AT ELEVATION REQUIRED FOR FLOOR DRAIN TO BE FLUSH WITH FINISHED FLOOR ELEVATION.
7. DO NOT PROVIDE DOUBLE WYE FITTINGS IN HORIZONTAL SANITARY SEWER SYSTEM.
8. SEE M9 SERIES FOR FLOOR CLEANOUT DETAIL.

1 UNDERGROUND PLUMBING PLAN

1/16" = 1'-0"

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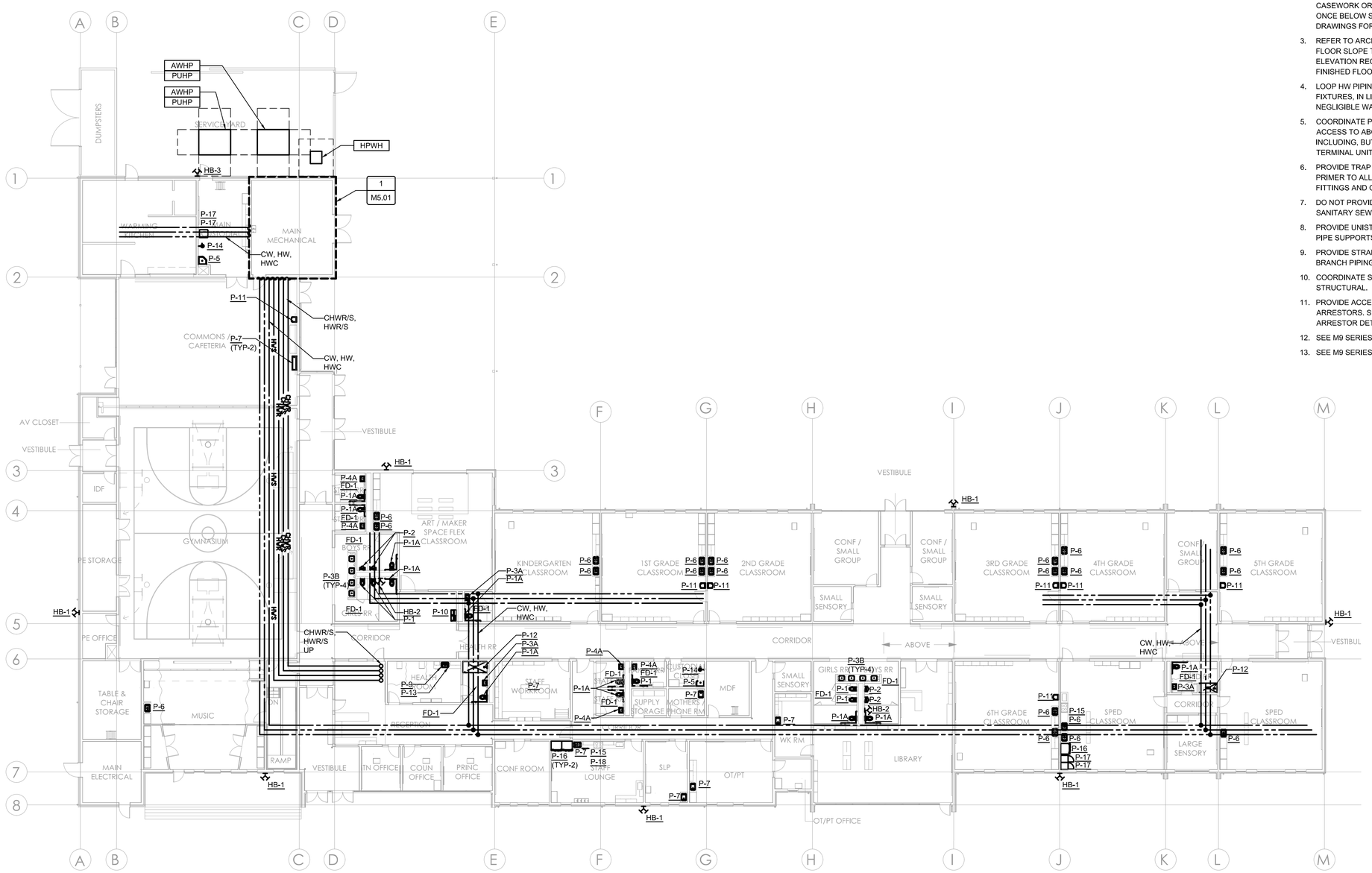
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UNDERGROUND PLUMBING PLAN

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1 FIRST FLOOR PLUMBING AND HYDRONIC PLAN

1/16" = 1'-0"

GENERAL NOTES:

1. PROVIDE CLEANOUTS AT EVERY URINAL, SINK, AND LAVATORY, WHERE THE UPPER TERMINUS OF BRANCH LINES EXCEED 5 FEET IN LENGTH DO NOT END WITH A SINK OR LAVATORY, PROVIDE A WALL OR FLOOR CLEANOUT PER UPC 707.4.
2. PROVIDE OFFSETS IN PIPING WHERE PLUMBING PIPING WALL IS LOCATED DIRECTLY ABOVE STRUCTURE. OFFSET PIPING IN CASEWORK OR SHAFT TIGHT TO WALL AND BACK INTO WALL ONCE BELOW STRUCTURE. REFER TO STRUCTURAL DRAWINGS FOR LOCATIONS.
3. REFER TO ARCHITECTURAL FLOOR PLANS AND DETAILS FOR FLOOR SLOPE TO FLOOR DRAINS. INSTALL FLOOR DRAIN AT ELEVATION REQUIRED FOR FLOOR DRAIN TO BE FLUSH WITH FINISHED FLOOR ELEVATION.
4. LOOP HW PIPING ON PLANS AS SHOWN NEAR LAVATORY FIXTURES, IN LIEU OF RECIRCULATION LOOP, TO PROVIDE NEGLIGIBLE WAIT TIME FOR HOT WATER.
5. COORDINATE PLUMBING TO PROVIDE UNOBSTRUCTED ACCESS TO ABOVE CEILING MECHANICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO DAMPERS, VALVES, AND AIR TERMINAL UNITS.
6. PROVIDE TRAP PRIMER CONNECTION FROM NEAREST TRAP PRIMER TO ALL FLOOR DRAINS, FLOOR SINKS AIR GAP FITTINGS AND OTHER TRAPS REQUIRING PROTECTION.
7. DO NOT PROVIDE DOUBLE WYE FITTINGS IN HORIZONTAL SANITARY SEWER SYSTEM.
8. PROVIDE UNISTRUT MODEL CUSH-A-CLAMP AT ALL UNISTRUT PIPE SUPPORTS.
9. PROVIDE STRAINER AND ISOLATION VALVE ON COLD WATER BRANCH PIPING UPSTREAM OF TRAP PRIMERS.
10. COORDINATE SHEAR WALL AND MASS WALL OPENINGS WITH STRUCTURAL.
11. PROVIDE ACCESS PANEL IN WALL FOR WATER HAMMER ARRESTORS. SEE M9 SERIES FOR WATER HAMMER ARRESTOR DETAIL.
12. SEE M9 SERIES FOR FLOOR CLEANOUT DETAIL.
13. SEE M9 SERIES FOR CONDENSATE DRAIN DETAIL.

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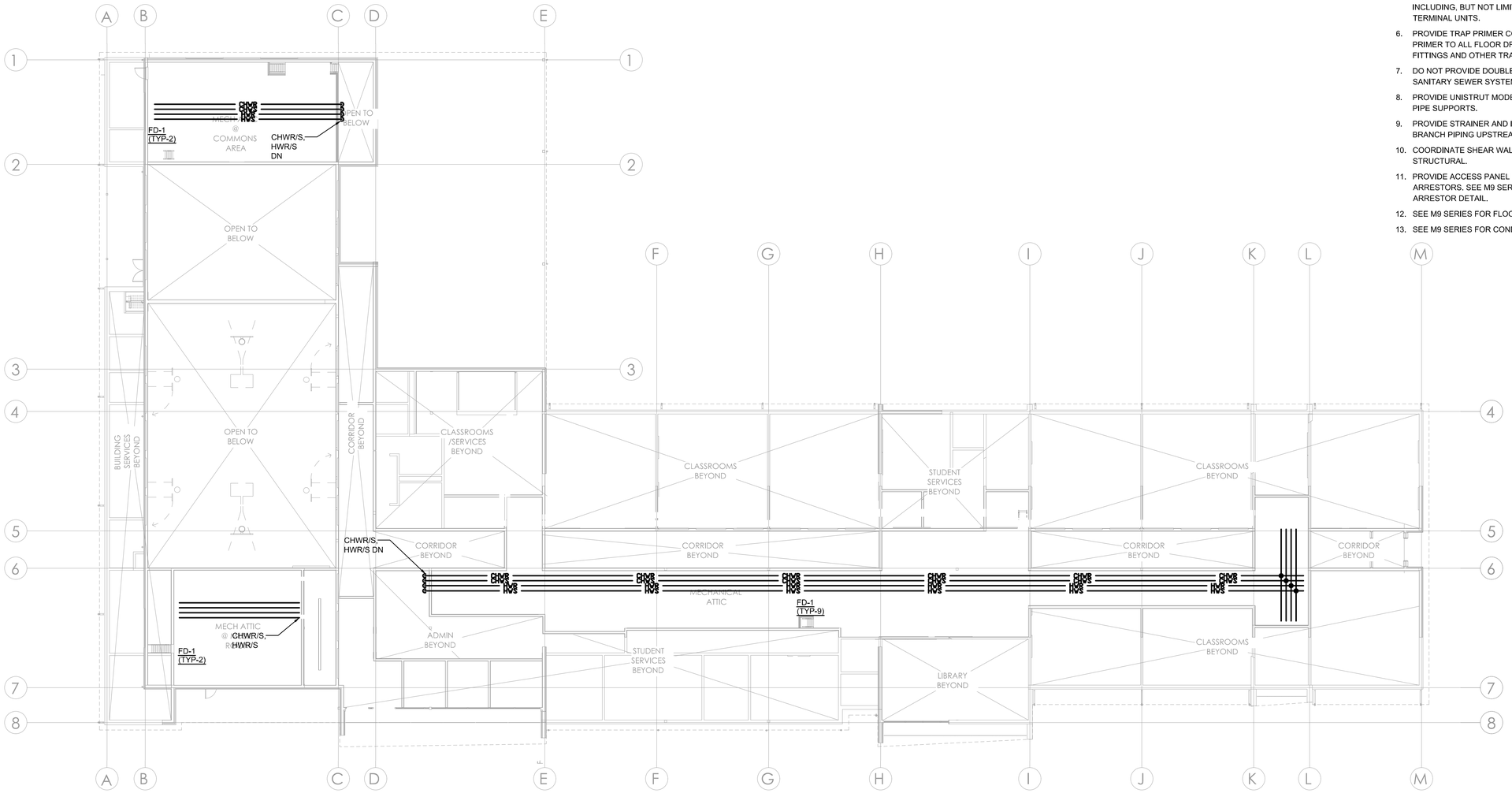
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FIRST FLOOR PLUMBING AND HYDRONIC PLAN

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1 MECH ATTIC PLUMBING AND HYDRONIC PLAN
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GENERAL NOTES:

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2. PROVIDE OFFSETS IN PIPING WHERE PLUMBING PIPING WALL IS LOCATED DIRECTLY ABOVE STRUCTURE. OFFSET PIPING IN CASEWORK OR SHAFT TIGHT TO WALL AND BACK INTO WALL ONCE BELOW STRUCTURE. REFER TO STRUCTURAL DRAWINGS FOR LOCATIONS.
3. REFER TO ARCHITECTURAL FLOOR PLANS AND DETAILS FOR FLOOR SLOPE TO FLOOR DRAINS. INSTALL FLOOR DRAIN AT ELEVATION REQUIRED FOR FLOOR DRAIN TO BE FLUSH WITH FINISHED FLOOR ELEVATION.
4. LOOP HW PIPING ON PLANS AS SHOWN NEAR LAVATORY FIXTURES, IN LIEU OF RECIRCULATION LOOP, TO PROVIDE NEGLIGIBLE WAIT TIME FOR HOT WATER.
5. COORDINATE PLUMBING TO PROVIDE UNOBSTRUCTED ACCESS TO ABOVE CEILING MECHANICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO DAMPERS, VALVES, AND AIR TERMINAL UNITS.
6. PROVIDE TRAP PRIMER CONNECTION FROM NEAREST TRAP PRIMER TO ALL FLOOR DRAINS, FLOOR SINKS AIR GAP FITTINGS AND OTHER TRAPS REQUIRING PROTECTION.
7. DO NOT PROVIDE DOUBLE WYE FITTINGS IN HORIZONTAL SANITARY SEWER SYSTEM.
8. PROVIDE UNISTRUT MODEL CUSH-A-CLAMP AT ALL UNISTRUT PIPE SUPPORTS.
9. PROVIDE STRAINER AND ISOLATION VALVE ON COLD WATER BRANCH PIPING UPSTREAM OF TRAP PRIMERS.
10. COORDINATE SHEAR WALL AND MASS WALL OPENINGS WITH STRUCTURAL.
11. PROVIDE ACCESS PANEL IN WALL FOR WATER HAMMER ARRESTORS. SEE M9 SERIES FOR WATER HAMMER ARRESTOR DETAIL.
12. SEE M9 SERIES FOR FLOOR CLEANOUT DETAIL.
13. SEE M9 SERIES FOR CONDENSATE DRAIN DETAIL.

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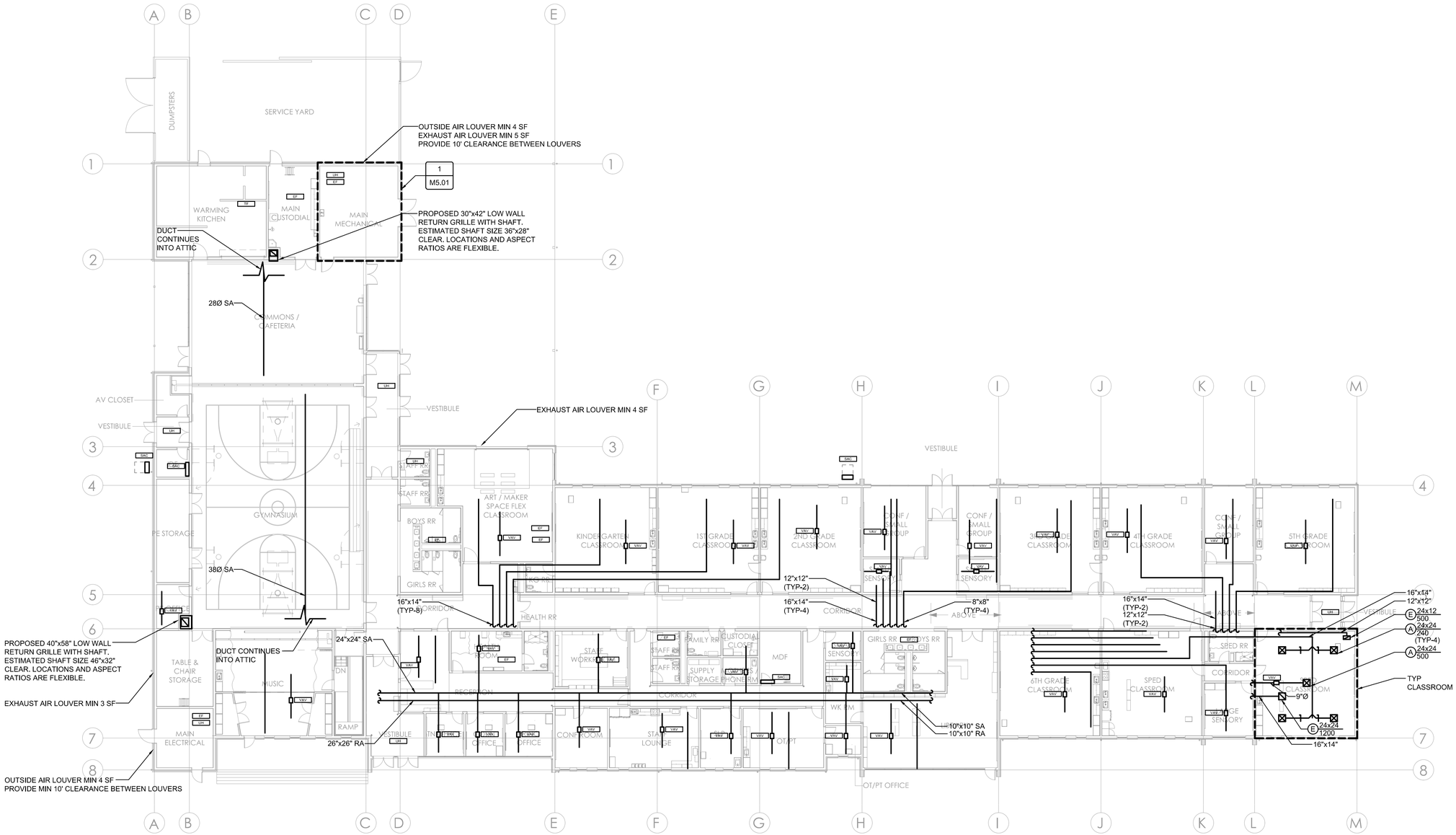
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Sheet Title
MECH ATTIC PLUMBING AND HYDRONIC PLAN

M2.02

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1 FIRST FLOOR HVAC PLAN

1/16" = 1'-0"

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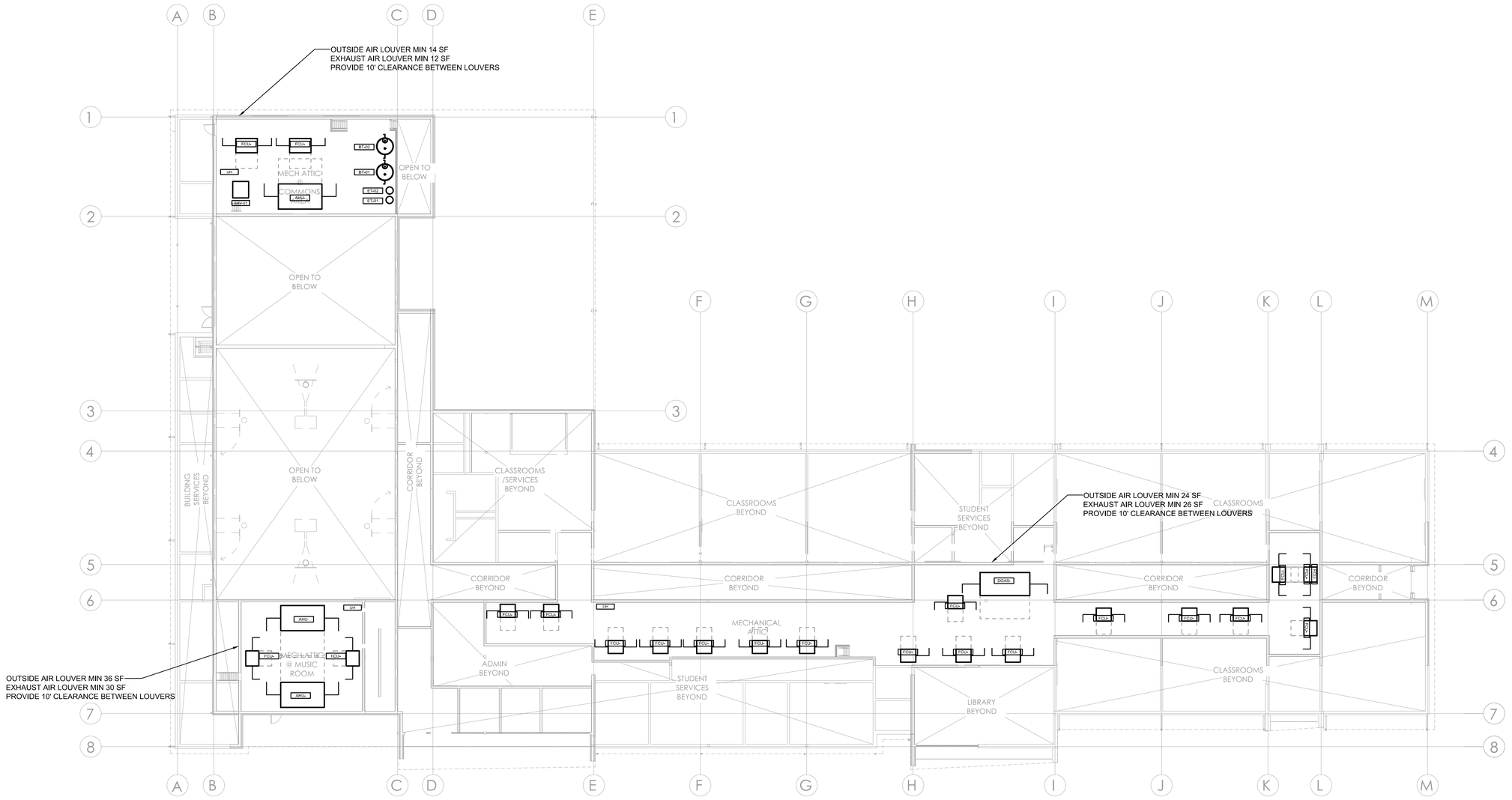
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FIRST FLOOR HVAC PLAN

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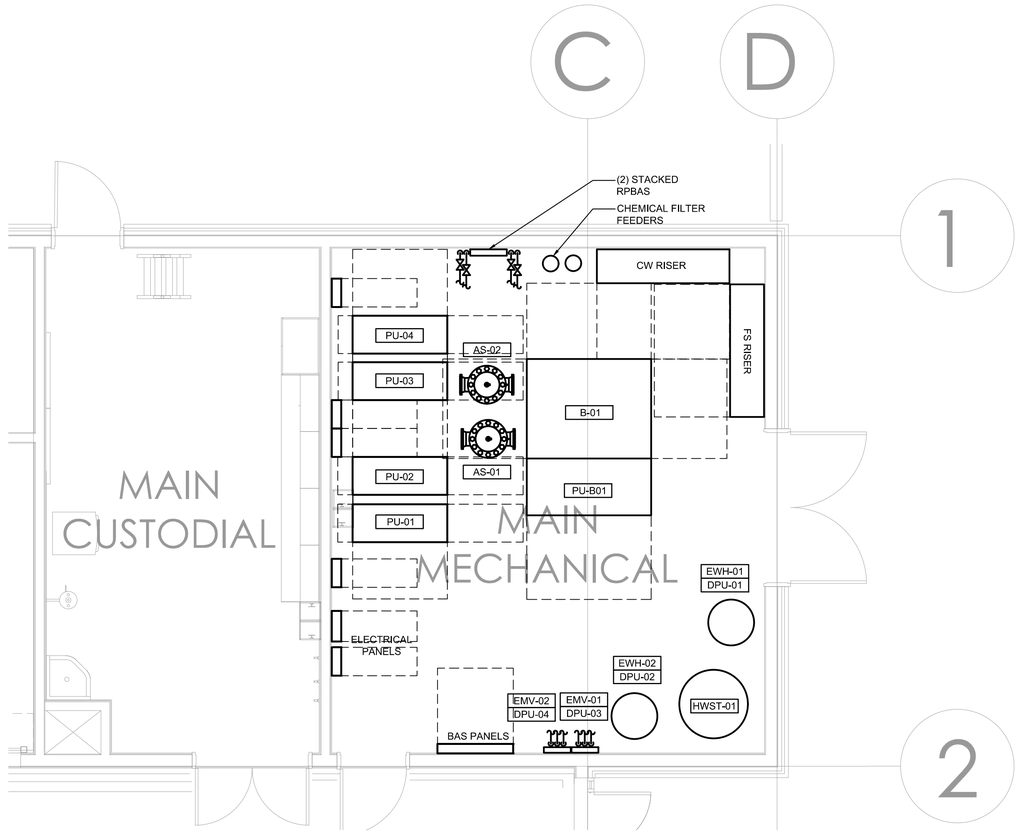
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1 ENLARGED MECHANICAL ROOM PLAN
1/4" = 1'-0"

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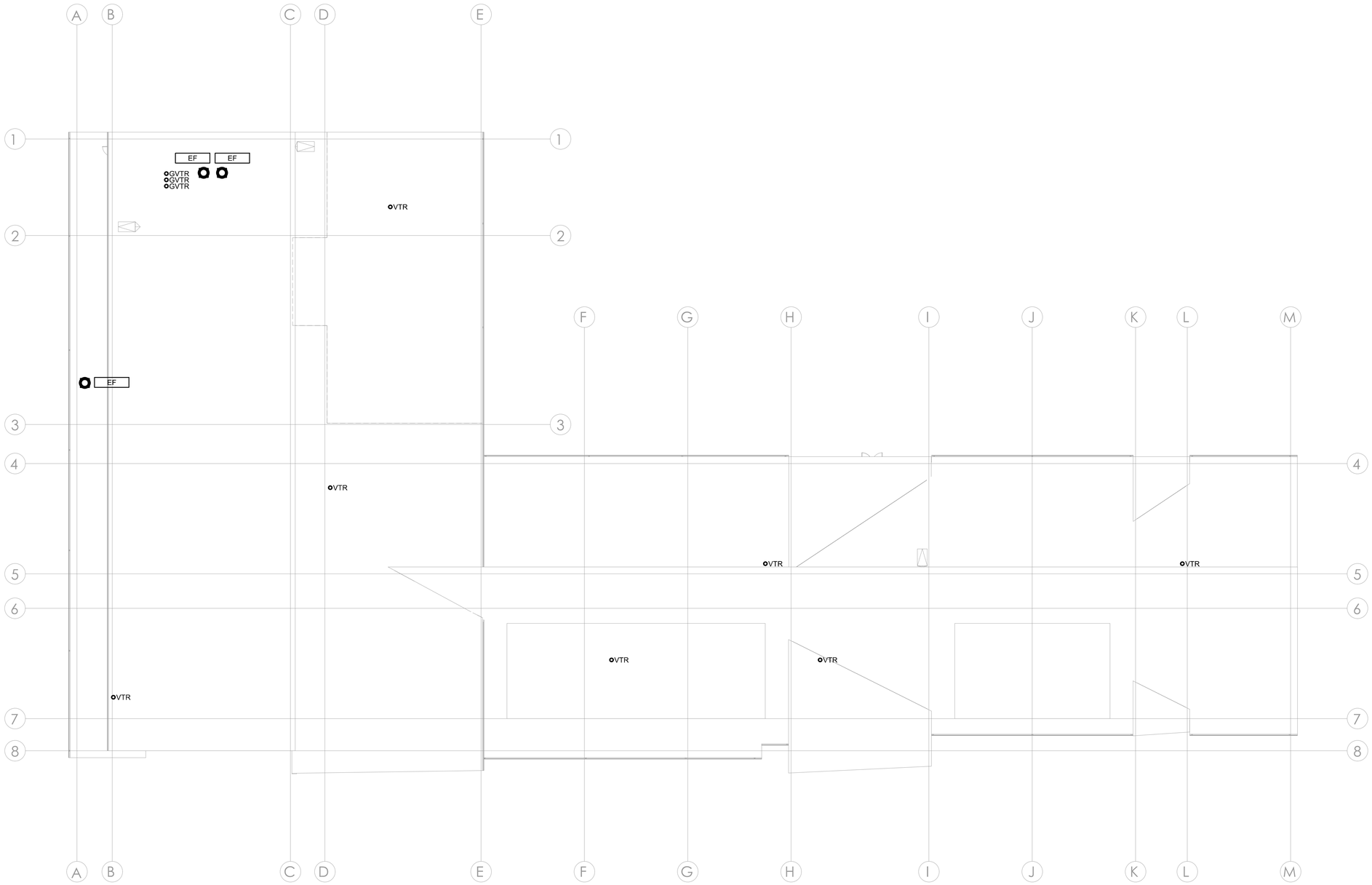
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ENLARGED MECHANICAL ROOM PLAN

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GENERAL NOTES:

1. MAINTAIN MIN 10'-0" CLEARANCE BETWEEN OUTSIDE AIR OPENINGS AND ALL EXHAUST/RELIEF OPENINGS AND PLUMBING VTR'S.
2. PLUMBING VENTS MINIMUM 10 FEET FROM OPENINGS INTO BUILDINGS AS REQUIRED BY CODE.
3. EXTEND VTR'S MINIMUM 14" ABOVE ROOF.

1 MECHANICAL ROOF PLAN

1/16" = 1'-0"

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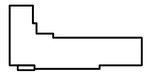
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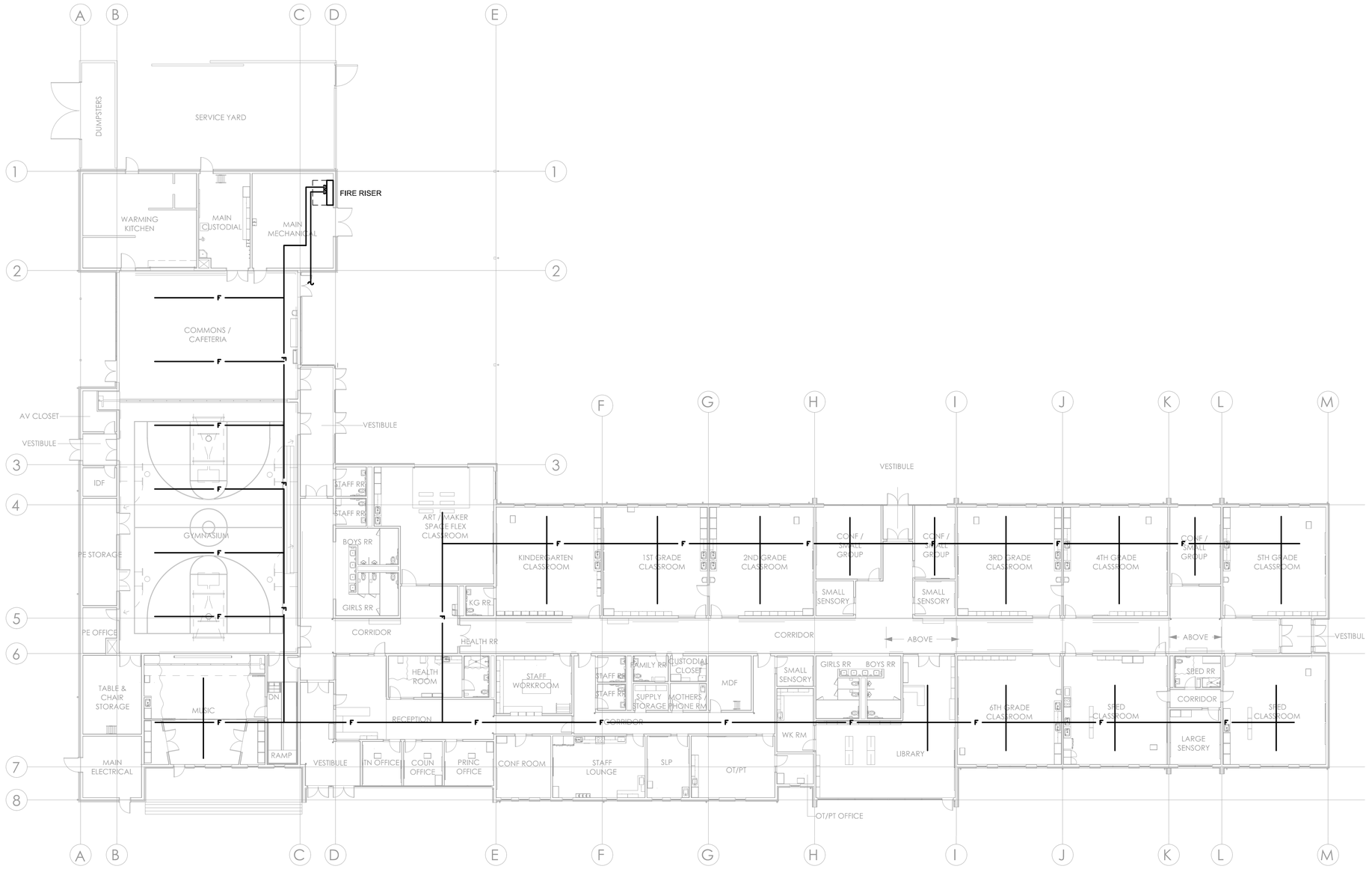
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MECHANICAL ROOF PLAN

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1 FIRST FLOOR FIRE SPRINKLER PLAN

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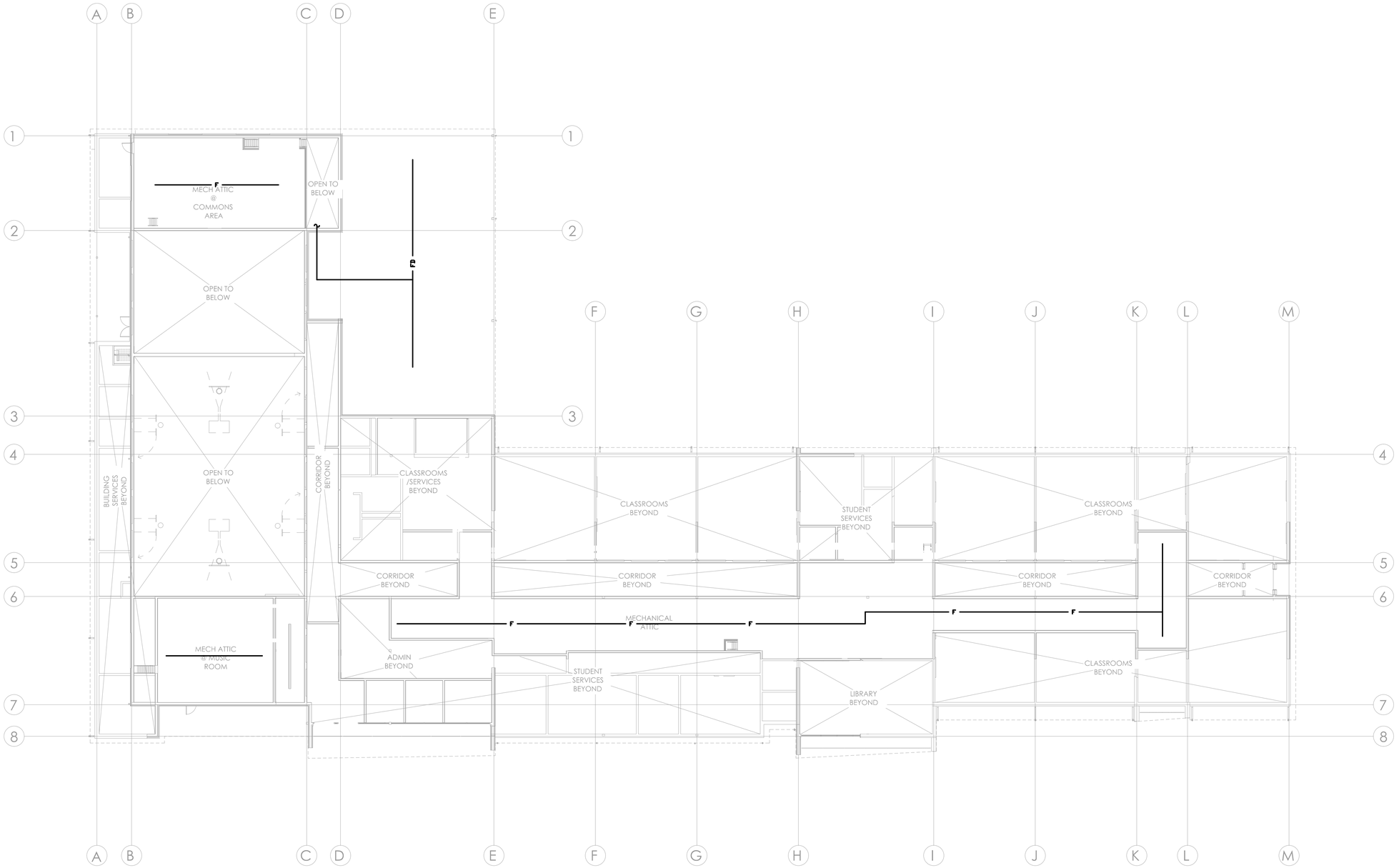
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FIRST FLOOR FIRE SPRINKLER PLAN

M7.01

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MECH ATTIC FIRE SPRINKLER PLAN

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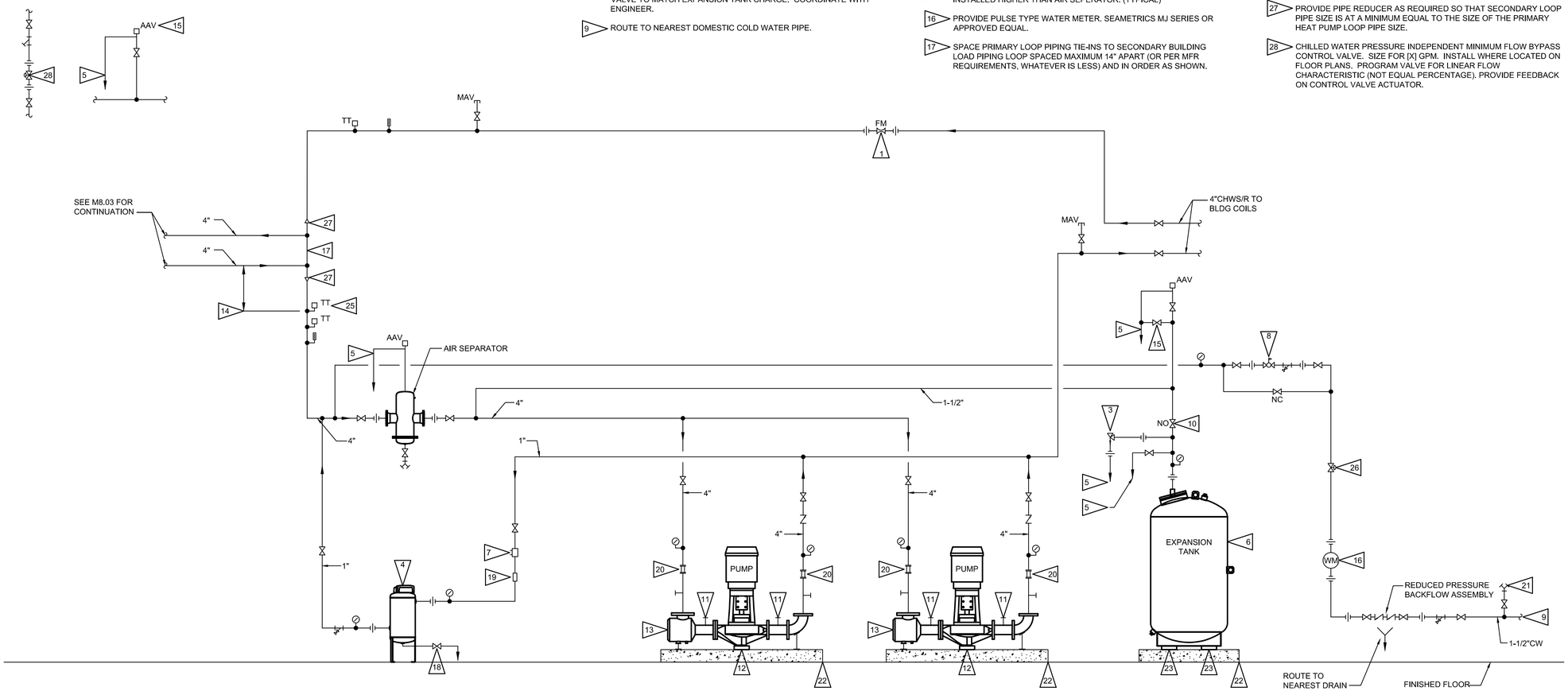
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FLAG NOTES

1. PROVIDE MANUFACTURER REQUIRED STRAIGHT PIPE LENGTH UPSTREAM AND DOWNSTREAM OF FLOW METER.
2. NOT USED.
3. PROVIDE RELIEF VALVE AT [75] PSIG.
4. PROVIDE BYPASS CHEMICAL FILTER FEEDER.
5. ROUTE FULL SIZE TO DRAIN. (TYPICAL)
6. CHARGE EXPANSION TANK TO MAINTAIN A MINIMUM OF 4 PSI AT HIGH POINT OF SYSTEM DURING COLD FILL. APPROXIMATELY [22] PSI.
7. PROVIDE AUTOMATIC FLOW CONTROL VALVE SIZED AT 5 GPM AND 4-57 PSI DIFFERENTIAL PRESSURE.
8. PROVIDE PRESSURE REDUCING VALVE. SET PRESSURE REDUCING VALVE TO MATCH EXPANSION TANK CHARGE. COORDINATE WITH ENGINEER.
9. ROUTE TO NEAREST DOMESTIC COLD WATER PIPE.
10. SET SHUT-OFF VALVE TO OPEN POSITION AND REMOVE HANDLE PRIOR TO STARTING HOT WATER SYSTEM.
11. PROVIDE PIPE AT DISCHARGE AND SUCTION OF PUMPS TO ACCOMMODATE T/P TEST PORTS AND MANUFACTURER RECOMMENDED STRAIGHT LENGTH.
12. ANCHOR TO HOUSEKEEPING PAD. PROVIDE VIBRATION ISOLATORS AND VIBRATION ISOLATION EQUIPMENT BASE PER SPECIFICATIONS.
13. PROVIDE SUCTION DIFFUSER ON INLET TO PUMP. REMOVE START UP SCREEN AFTER SYSTEM FLUSH. ATTACH SCREEN TO SUCTION DIFFUSER FOR VISUAL REMOVAL VERIFICATION.
14. DISTANCE FROM TEE SHALL BE MIN 5 TIMES PIPE DIAMETER (OR PER MFR REQUIREMENTS, WHATEVER IS GREATER).
15. PROVIDE AUTOMATIC AIR VENTS AT PIPING MAINS THAT ARE INSTALLED HIGHER THAN AIR SEPERATOR. (TYPICAL)
16. PROVIDE PULSE TYPE WATER METER. SEAMETRICS MJ SERIES OR APPROVED EQUAL.
17. SPACE PRIMARY LOOP PIPING TIE-INS TO SECONDARY BUILDING LOAD PIPING LOOP SPACED MAXIMUM 14" APART (OR PER MFR REQUIREMENTS, WHATEVER IS LESS) AND IN ORDER AS SHOWN.
18. PROVIDE DRAIN VALVE. ROUTE FULL SIZE TO NEAREST DRAIN.
19. PROVIDE SITE FLOW INDICATOR.
20. PROVIDE FLEX CONNECTION.
21. PROVIDE HOSE CONNECTION VACUUM BREAKER WITH SHUT-OFF VALVE.
22. PROVIDE HOUSEKEEPING PAD. MINIMUM 4" HIGH.
23. ANCHOR TO HOUSEKEEPING PAD.
24. NOT USED.
25. HEAT PUMP MANAGEMENT SYSTEM TEMPERATURE TRANSMITTER.
26. SPRING RETURN, FAIL OPEN CONTROL VALVE.
27. PROVIDE PIPE REDUCER AS REQUIRED SO THAT SECONDARY LOOP PIPE SIZE IS AT A MINIMUM EQUAL TO THE SIZE OF THE PRIMARY HEAT PUMP LOOP PIPE SIZE.
28. CHILLED WATER PRESSURE INDEPENDENT MINIMUM FLOW BYPASS CONTROL VALVE. SIZE FOR [X] GPM. INSTALL WHERE LOCATED ON FLOOR PLANS. PROGRAM VALVE FOR LINEAR FLOW CHARACTERISTIC (NOT EQUAL PERCENTAGE). PROVIDE FEEDBACK ON CONTROL VALVE ACTUATOR.



1 AIR-TO-WATER HEAT PUMP CHILLED WATER PIPING DIAGRAM
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Keyplan

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AIR-TO-WATER HEAT PUMP CHILLED WATER PIPING DIAGRAM

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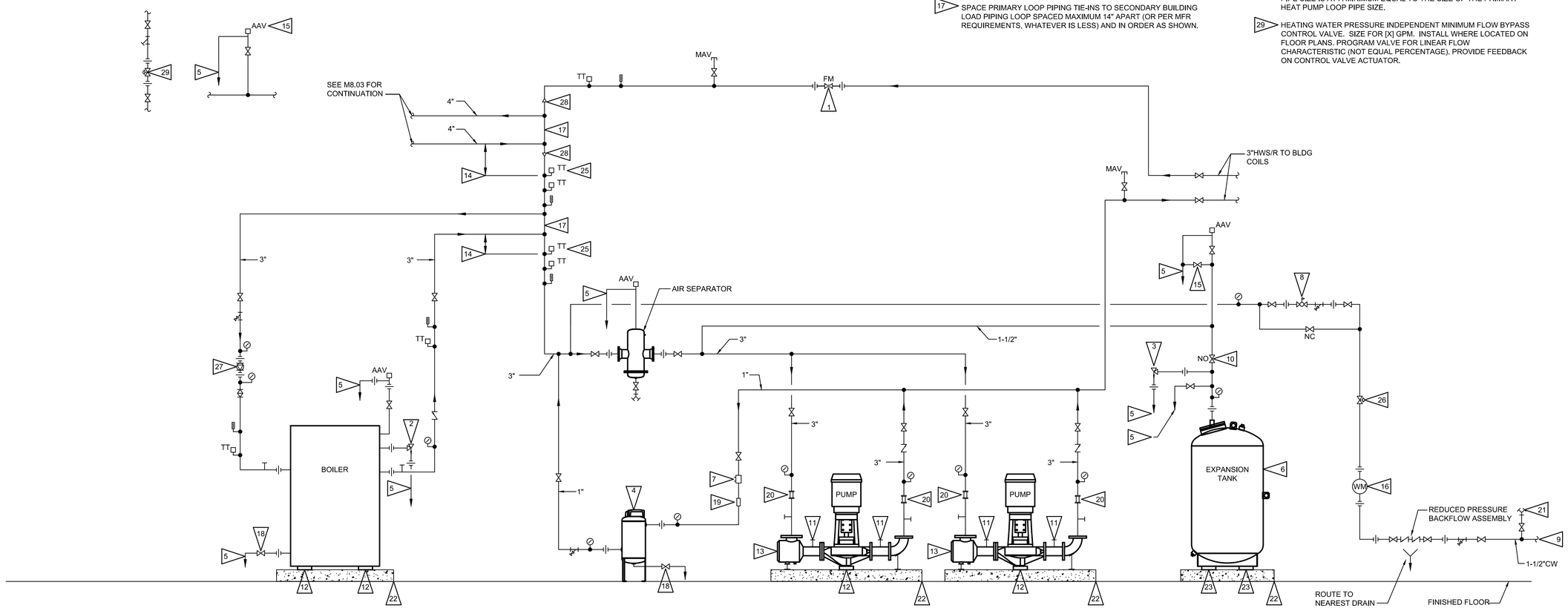
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FLAG NOTES

1. PROVIDE MANUFACTURER REQUIRED STRAIGHT PIPE LENGTH UPSTREAM AND DOWNSTREAM OF FLOW METER.
2. PROVIDE RELIEF VALVE AT [75] PSIG PER MFR'S REQUIREMENTS.
3. PROVIDE RELIEF VALVE AT [75] PSIG.
4. PROVIDE BYPASS CHEMICAL FILTER FEEDER.
5. ROUTE FULL SIZE TO DRAIN. (TYPICAL)
6. CHARGE EXPANSION TANK TO MAINTAIN A MINIMUM OF 4 PSI AT HIGH POINT OF SYSTEM DURING COLD FILL. APPROXIMATELY [22] PSI.
7. PROVIDE AUTOMATIC FLOW CONTROL VALVE SIZED AT 5 GPM AND 4-57 PSI DIFFERENTIAL PRESSURE.
8. PROVIDE PRESSURE REDUCING VALVE. SET PRESSURE REDUCING VALVE TO MATCH EXPANSION TANK CHARGE. COORDINATE WITH ENGINEER.
9. ROUTE TO NEAREST DOMESTIC COLD WATER PIPE.
10. SET SHUT-OFF VALVE TO OPEN POSITION AND REMOVE HANDLE PRIOR TO STARTING HOT WATER SYSTEM.
11. PROVIDE PIPE AT DISCHARGE AND SUCTION OF PUMPS TO ACCOMMODATE T/P TEST PORTS AND MANUFACTURER RECOMMENDED STRAIGHT LENGTH.
12. ANCHOR TO HOUSEKEEPING PAD. PROVIDE VIBRATION ISOLATORS AND VIBRATION ISOLATION EQUIPMENT BASE PER SPECIFICATIONS.
13. PROVIDE SUCTION DIFFUSER ON INLET TO PUMP. REMOVE START UP SCREEN AFTER SYSTEM FLUSH. ATTACH SCREEN TO SUCTION DIFFUSER FOR VISUAL REMOVAL VERIFICATION.
14. TRANSMITTER DISTANCE FROM TEE SHALL BE MIN 3 TO 5 TIMES PIPE DIAMETER (OR PER MFR REQUIREMENTS, WHATEVER IS GREATER).
15. PROVIDE AUTOMATIC AIR VENTS AT PIPING MAINS THAT ARE INSTALLED HIGHER THAN AIR SEPERATOR. (TYPICAL)
16. PROVIDE PULSE TYPE WATER METER. SEAMETRICS MJ SERIES OR APPROVED EQUAL.
17. SPACE PRIMARY LOOP PIPING TIE-INS TO SECONDARY BUILDING LOAD PIPING LOOP SPACED MAXIMUM 14" APART (OR PER MFR REQUIREMENTS, WHATEVER IS LESS) AND IN ORDER AS SHOWN.
18. PROVIDE DRAIN VALVE. ROUTE FULL SIZE TO NEAREST DRAIN.
19. PROVIDE SITE FLOW INDICATOR.
20. PROVIDE FLEX CONNECTION.
21. PROVIDE HOSE CONNECTION VACUUM BREAKER WITH SHUT-OFF VALVE.
22. PROVIDE HOUSEKEEPING PAD. MINIMUM 4" HIGH.
23. ANCHOR TO HOUSEKEEPING PAD.
24. NOT USED.
25. HEAT PUMP MANAGEMENT SYSTEM TEMPERATURE TRANSMITTER.
26. SPRING RETURN, FAIL OPEN CONTROL VALVE.
27. PROVIDE CIRCULATION PUMP. INSTALL LESS THAN 6'-0" AFF.
28. PROVIDE PIPE REDUCER AS REQUIRED SO THAT SECONDARY LOOP PIPE SIZE IS AT A MINIMUM EQUAL TO THE SIZE OF THE PRIMARY HEAT PUMP LOOP PIPE SIZE.
29. HEATING WATER PRESSURE INDEPENDENT MINIMUM FLOW BYPASS CONTROL VALVE. SIZE FOR [X] GPM. INSTALL WHERE LOCATED ON FLOOR PLANS. PROGRAM VALVE FOR LINEAR FLOW CHARACTERISTIC (NOT EQUAL PERCENTAGE). PROVIDE FEEDBACK ON CONTROL VALVE ACTUATOR.



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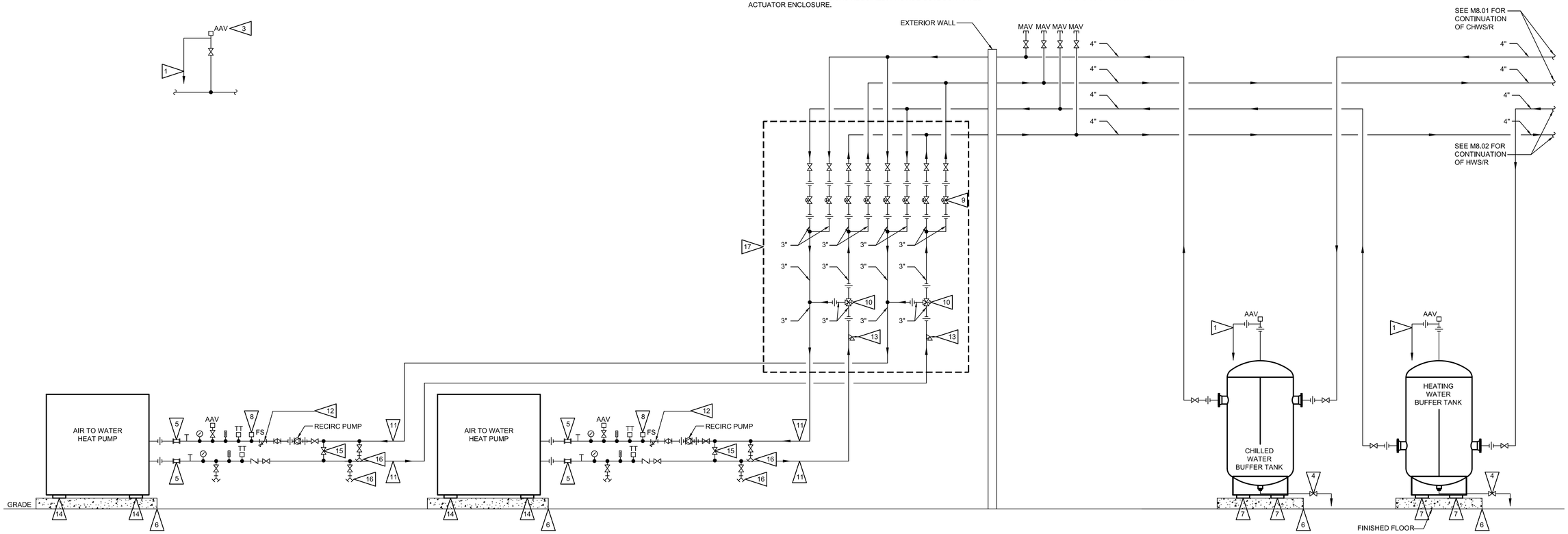
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FLAG NOTES

1. ROUTE FULL SIZE TO DRAIN. (TYPICAL)
2. NOT USED.
3. PROVIDE AUTOMATIC AIR VENTS AT PIPING MAINS THAT ARE INSTALLED HIGHER THAN AIR SEPERATOR. (TYPICAL)
4. PROVIDE DRAIN VALVE. ROUTE FULL SIZE TO NEAREST DRAIN.
5. PROVIDE FLEX CONNECTION.
6. PROVIDE HOUSEKEEPING PAD. MINIMUM 4" HIGH.
7. ANCHOR TO HOUSEKEEPING PAD.
8. PROVIDE HEAT PUMP THERMAL DISPERSION TYPE FLOW SWITCH.
9. SPRING RETURN, FAIL CLOSED 2-WAY CONTROL VALVE. PROVIDE VALVE WITH CONTROL FEEDBACK FOR VALVE STATUS. INSTALL LESS THAN 6'-0" AFF. PROVIDE FLOOR MOUNTED UNISTRUT SUPPORT RACK AS REQUIRED. PROVIDE OUTDOOR RATED ACTUATOR ENCLOSURE. (TYP 12)
10. SPRING RETURN, FAIL OPEN (FAIL POSITION SO FLOW GOES TO SECONDARY LOOP, NOT BACK TO HEAT PUMP) 3-WAY CONTROL VALVE. PROVIDE VALVE WITH CONTROL FEEDBACK FOR VALVE STATUS. INSTALL LESS THAN 6'-0" AFF. PROVIDE FLOOR MOUNTED UNISTRUT SUPPORT RACK AS REQUIRED. PROVIDE OUTDOOR RATED ACTUATOR ENCLOSURE.
11. PROVIDE HEAT TRACE ON EXTERIOR PIPING.
12. PROVIDE 60-MESH STRAINER (OR AS REQUIRED BY HEAT PUMP MFR) WITH BLOW DOWN VALVE.
13. PROVIDE RELIEF VALVE AT [75] PSIG PER MFR'S REQUIREMENTS.
14. ANCHOR TO HOUSEKEEPING PAD. PROVIDE VIBRATION ISOLATORS AND VIBRATION ISOLATION EQUIPMENT BASE PER SPECIFICATIONS.
15. NORMALLY CLOSED BYPASS VALVE. DO NOT FLUSH HYDRONIC SYSTEM THROUGH HEAT PUMP.
16. PROVIDE ISOLATION VALVE AND HOSE CONNECTION FOR HEAT PUMP PIPING LOOP FLUSH. MINIMUM 2 INCH.
17. LOCATE PIPING AND VALVES MOUNTED ALONG EXTERIOR WALL.



1 AIR-TO-WATER HEAT PUMP HEATING / CHILLED WATER PIPING DIAGRAM
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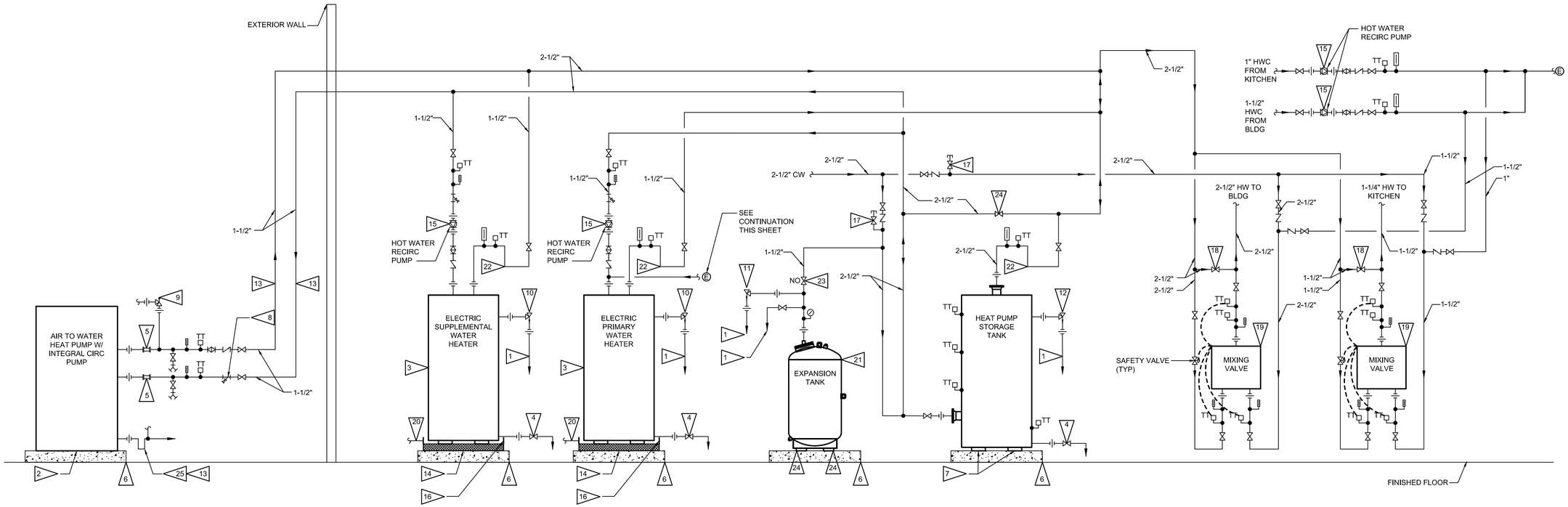
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3. DO NOT COVER CHECK VALVES WITH PIPE INSULATION. PROVIDE REMOVABLE COVERS AT CHECK VALVES.

FLAG NOTES

1. ROUTE FULL SIZE TO DRAIN. (TYPICAL)
2. ANCHOR TO HOUSEKEEPING PAD. PROVIDE VIBRATION ISOLATORS AND VIBRATION ISOLATION EQUIPMENT BASE PER SPECIFICATIONS.
3. SEISMICALLY BRACE WATER HEATER TO WALL. IF WATER HEATER IS NOT LOCATED ADJACENT TO A WALL, SEISMICALLY BRACE WATER HEATER TO UNISTRUT SUPPORT. UNISTRUT SUPPORT SHALL ATTACH TO FLOOR AND TO BUILDING STRUCTURE ABOVE.
4. PROVIDE DRAIN VALVE. ROUTE FULL SIZE TO NEAREST DRAIN.
5. PROVIDE FLEX CONNECTION.
6. PROVIDE HOUSEKEEPING PAD. MINIMUM 4" HIGH.
7. ANCHOR TO HOUSEKEEPING PAD.
8. PROVIDE 60-MESH STRAINER (OR AS REQUIRED BY HEAT PUMP MFR) WITH BLOW DOWN VALVE.
9. PROVIDE RELIEF VALVE AT 100 PSIG PER MFR'S REQUIREMENTS.
10. PROVIDE RELIEF VALVE AT 100 PSIG PER MFR'S REQUIREMENTS.
11. PROVIDE RELIEF VALVE AT 100 PSIG PER MFR'S REQUIREMENTS.
12. PROVIDE RELIEF VALVE AT 100 PSIG PER MFR'S REQUIREMENTS.
13. PROVIDE HEAT TRACE ON EXTERIOR PIPING.
14. PROVIDE INCOMPRESSIBLE INSULATED PAD WITH A MIN R-10.
15. INSTALL PUMP MAXIMUM 7'-0" AFF.
16. PROVIDE GALVANIZED STEEL DRAIN PAN
17. PROVIDE VACUUM RELIEF VALVE INSTALLED 6 INCHES ABOVE WATER HEATER.
18. PROVIDE SIGNAGE AT VALVE THAT STATES "NORMALLY CLOSED EMERGENCY BYPASS VALVE. OPERATOR SHALL SET PLANT AND WATER HEATER TEMPERATURE SETPOINTS TO 120°F PRIOR TO OPENING VALVE."
19. INSTALL MIXING VALVE MAXIMUM 6'-0" AFF.
20. 3/4" COPPER DRAIN PAN DRAIN PIPE. ROUTE TO NEAREST DRAIN.
21. CHARGE EXPANSION TANK PRIOR TO CONNECTING IT TO THE SYSTEM. EXPANSION TANK CHARGE SHALL MATCH SITE WATER PRESSURE OR PRV PRESSURE SETPOINT (WHICHEVER IS LOWER).
22. PROVIDE HEAT TRAP.
23. SET SHUT-OFF VALVE TO OPEN POSITION AND REMOVE HANDLE PRIOR TO STARTING HOT WATER SYSTEM. HANG HANDLE ON ADJACENT PIPE TEE OR APPURTENANCE.
24. PROVIDE SIGNAGE AT VALVE THAT STATES "NORMALLY CLOSED STORAGE TANK MAINTENANCE BYPASS VALVE."
25. PROVIDE CONDENSATE DRAIN PIPE AND CONDENSATE TRAP. PIPE TO DRAIN.



1 AIR-TO-WATER HEAT PUMP WATER HEATER PIPING DIAGRAM
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AIR-TO-WATER HEAT PUMP WATER HEATER PIPING DIAGRAM

M8.04

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ELECTRICAL LEGEND

LIGHTING

SYMBOL	DESCRIPTION
	RECESSED LIGHT FIXTURE
	SURFACE OR PENDANT MOUNT LIGHT FIXTURE (CIRCLE INDICATES RECESSED OR CONCEALED JUNCTION BOX)
	WALL MOUNT LIGHT FIXTURE
	SURFACE OR RECESSED LIGHT FIXTURE
	SURFACE OR PENDANT MOUNT STRIP LIGHT (CIRCLE INDICATES RECESSED OR CONCEALED JUNCTION BOX)
	EMERGENCY EGRESS LIGHT FIXTURE LABELED WITH "E" TO BE CONNECTED TO THE EMERGENCY LIGHTING PANEL "EL". PROVIDE WITH UL924 GTD RELAY, PROVIDE UNSWITCHED LOCAL LIGHTING CIRCUIT IN SAME ROOM FOR POWER SENSING
	EXIT LIGHT FIXTURE (PROVIDE DIRECTION ARROWS AS INDICATED). PROVIDE ADDITIONAL UNSWITCHED HOT LEG.
	WALL MOUNTED EXIT LIGHT FIXTURE (PROVIDE DIRECTION ARROWS AS INDICATED) PROVIDE ADDITIONAL UNSWITCHED HOT LEG.
	POLE LIGHT FIXTURE (ARROW INDICATES DIRECTION OF AIMING FOR OPTICS)

RECEPTACLES

SYMBOL	DESCRIPTION
	TAMPERPROOF DUPLEX RECEPTACLE
G	TAMPERPROOF DUPLEX RECEPTACLE (G INDICATES GROUND FAULT CIRCUIT INTERRUPTER)
C	TAMPERPROOF DUPLEX RECEPTACLE (C INDICATES ABOVE COUNTER)
S	TAMPERPROOF DUBPLEX CONTROLLED(SWITCHED)DUPLEX RECEPTACLE. SEE SHEET E-513 DETAIL #3 FOR ADDITIONAL INFORMATION.
	TAMPERPROOF FOURPLEX RECEPTACLE
S	TAMPERPROOF FOURPLEX COMBINATION UNSWITCHED DUPLEX RECEPTACLE AND CONTROLLED(SWITCHED) DUPLEX RECEPTACLE. SEE SHEET E-513 DETAIL #3 FOR ADDITIONAL INFORMATION.
4	COMBINATION FLOOR BOX. FOURPLEX ISOLATED GROUND RECEPTACLE AND DATA JUNCTION BOX WITH SEPARATE 1" C. TO ACCESSIBLE CEILING OR NEAREST CABLE TRAY LOCATION, UNLESS NOTED OTHERWISE. MAINTAIN COMMUNICATION / DATA OUTLET REQUIREMENTS.
	TAMPERPROOF CEILING MOUNT RECEPTACLE
	DOUBLE DUPLEX DROP CORD WITH KELLUM GRIP
	SPECIAL PURPOSE OUTLET - 1Ø, VOLTAGE AND AMPERES AS INDICATED
	SPECIAL PURPOSE OUTLET - 3Ø, VOLTAGE AND AMPERES AS INDICATED

NOTE : ALL 15 AND 20 AMPERE(125 -250 VOLTS) NONLOCKING-TYPE RECEPTACLES SHALL BE TAMPER RESISTANCE - EXCEPT IN STORAGE, ELECTRICAL, MECHANICAL ROOMS AND JANITOR CLOSET PER NEC 406.12

MISCELLANEOUS

SYMBOL	DESCRIPTION
1	CONSTRUCTION NOTES
W	W INDICATES WEATHERPROOF FOR ALL DEVICES, PROVIDE LOCKING COVER ON RECEPTACLES.
A E2 E3	DETAIL CALL OUT - A INDICATES DETAIL IDENTIFICATION, E2 INDICATES SHEET TAKEN FROM, E3 INDICATES SHEET DRAWN ON
AH1 1	MECHANICAL EQUIPMENT CONNECTION
PZ SZ	DAYLIGHT HARVESTING ZONE "PZ" INDICATES PRIMARY DAYLIGHT ZONE "SZ" INDICATES SECONDARY DAYLIGHT ZONE

SWITCHES

SYMBOL	DESCRIPTION
$	SINGLE POLE SWITCH
$L	LIGHTED SWITCH (LIT WHEN OFF)
$LV	LOW VOLTAGE WALL SWITCH(NUMBER INDICATES QUANTITY OF SWITCH BUTTONS)
$VS	VACANCY SENSOR SWITCH (STAND-ALONE LINE VOLTAGE)
$OS	OCCUPANCY SENSOR SWITCH (STAND-ALONE LINE VOLTAGE)
$3	THREE WAY SWITCH
$4	FOUR WAY SWITCH
a $$ b	MULTI-GANGED SWITCH (LOWER CASE LETTERS INDICATES SWITCHING)
	PUSH BUTTON EMERGENCY SHUTOFF SWITCH
	PUSH-BUTTON CONTROLLER
A 1	MOMENTARY CONTACT SWITCH FOR LOW VOLTAGE LIGHTING (UPPER CASE LETTER INDICATES LIGHTING PANEL, NUMBER INDICATES SWITCH#)
PC	PHOTOCELL CONTROL
VS	CEILING MOUNTED VACANCY SENSOR (LIGHTING CONTROL)
OS	CEILING MOUNTED OCCUPANCY SENSOR (LIGHTING CONTROL)

EQUIPMENT, WIRING AND RACEWAYS

SYMBOL	DESCRIPTION
	CONDUIT STUB OUT (PROVIDE CONCRETE MARKER ON EXTERIOR)
	DEDICATED CONDUIT HOMERUN TO PANEL & CIRCUIT NUMBERS AS INDICATED ON PLANS
	RACEWAY CONCEALED IN WALL OR CEILING
	RACEWAY CONCEALED UNDERGROUND OR UNDER FLOOR SLAB, P = PRIMARY , S = SECONDARY
	MARKS INDICATE NUMBER OF #12 AWG UNLESS NOTED OTHERWISE
	GROUNDING CONDUCTOR
	FLEXIBLE CONDUIT
	GROUNDING SYSTEM PER CODE
J	JUNCTION BOX - SIZE PER CODE (F INDICATES FIRE ALARM SYSTEM)
	MOTOR CONNECTION
$M	MANUAL STARTER
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	COMBINATION DISCONNECT / MAGNETIC MOTOR STARTER
	120/208 VOLT PANELBOARD (OR AT RATED VOLTAGE AS NOTED)
	MAIN DISTRIBUTION BOARD
T	TRANSFORMER
	ENCLOSED CIRCUIT BREAKER, AMPERES AS INDICATED
HH	HANDHOLE
MH	MANHOLE - PRE-CAST CONCRETE W/COVER
SPD	SURGE PROTECTOR
	POWER POLE
	UTILITY POLE
P	POWER VAULT / MANHOLE
M	METER
EV	INSTALLED EV LEVEL 2 SINGLE PORT CHARGING STATION (208V, 1P, 60A EACH PORT)
EVR	READY EV LEVEL SINGLE PORT CHARGING STATION ROUGH-IN (208V, 1P, 60A EACH PORT)

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Keyplan

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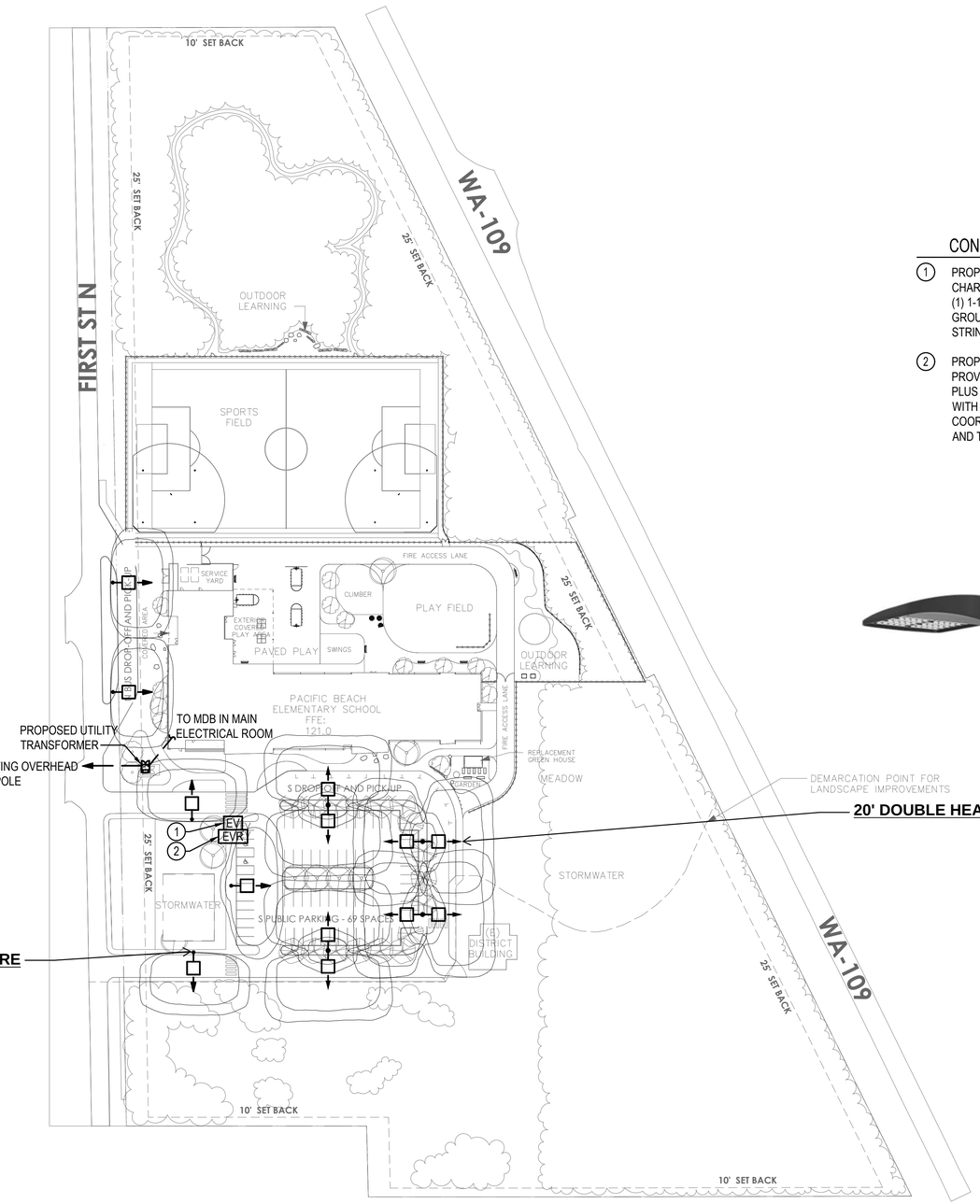
Sheet Title
ELECTRICAL LEGEND

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CONSTRUCTION NOTES

1. PROPOSED LEVEL 2 SINGLE PORT ELECTRIC VEHICLE CHARGING STATION (LV2)(208V, 1Ø, 60A) PROVIDE WITH (1) 1-1/2" CONDUIT WITH (3) #4 AWG-Cu PLUS #10 GROUND. PROVIDE (1) 1" SPARE CONDUIT WITH PULL STRING FOR FUTURE TELECOM.
2. PROPOSED PROVISION FOR EV CHARGER READY. PROVIDE WITH (1) 1-1/2" CONDUIT WITH (3) #4 AWG-Cu PLUS #10 GROUND. PROVIDE (1) 1" SPARE CONDUIT WITH PULL STRING FOR FUTURE TELECOM. COORDINATE EXACT CONDUIT LOCAITON WITH CIVIL AND THE OWNER PRIOR TO ROUGH-IN.

1 ELECTRICAL SITE PLAN
1" = 80'-0"

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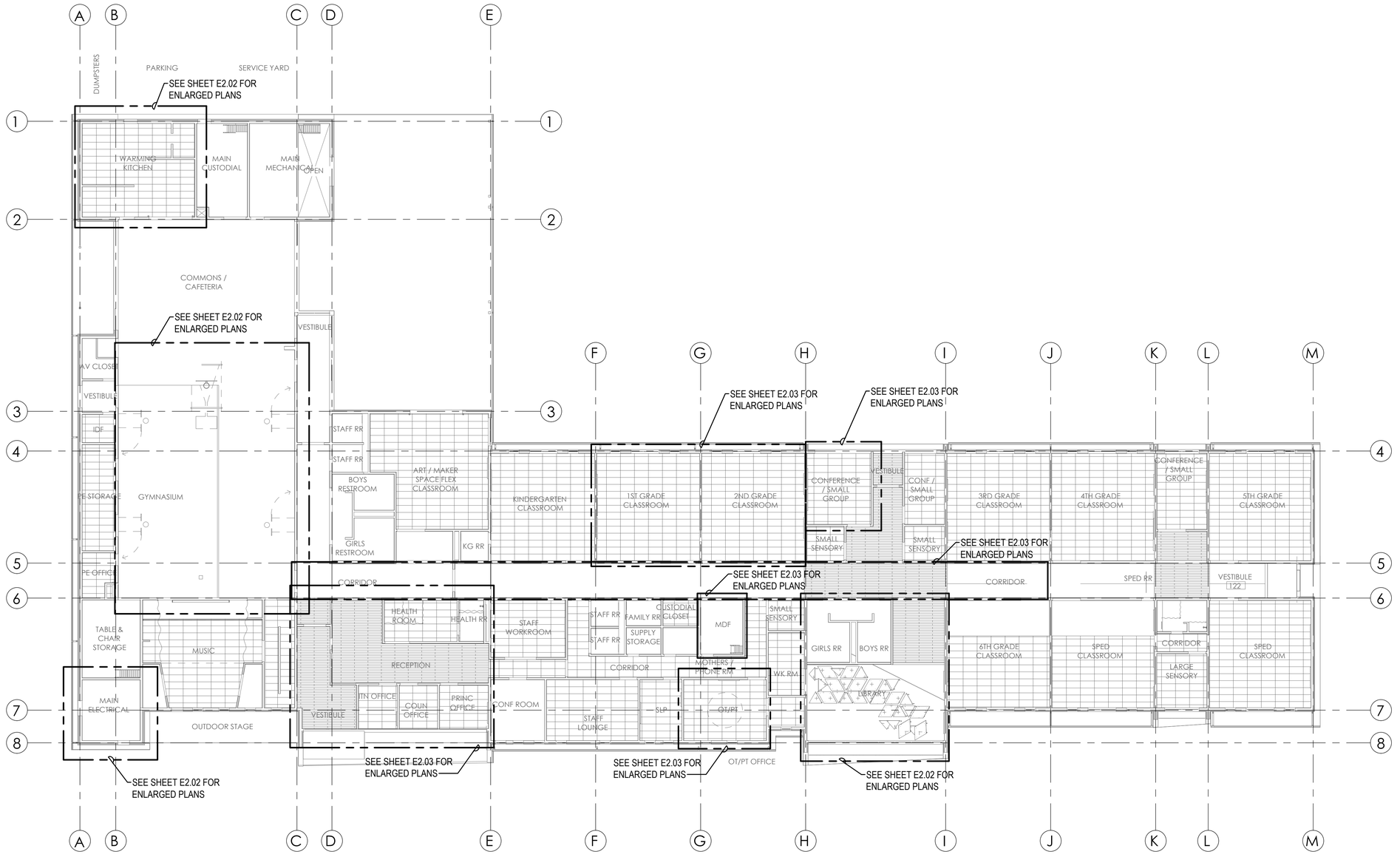
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ELECTRICAL SITE PLAN

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1 LIGHTING FLOOR PLAN

1/16" = 1'-0"

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LIGHTING FLOOR PLAN

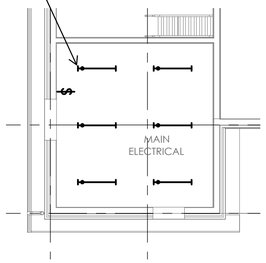
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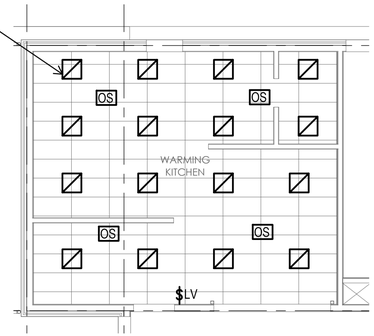
4' LINEAR PENDANT LED FIXTURE





1 MAIN ELECTRICAL LIGHTING LAYOUT
1/8" = 1'-0"

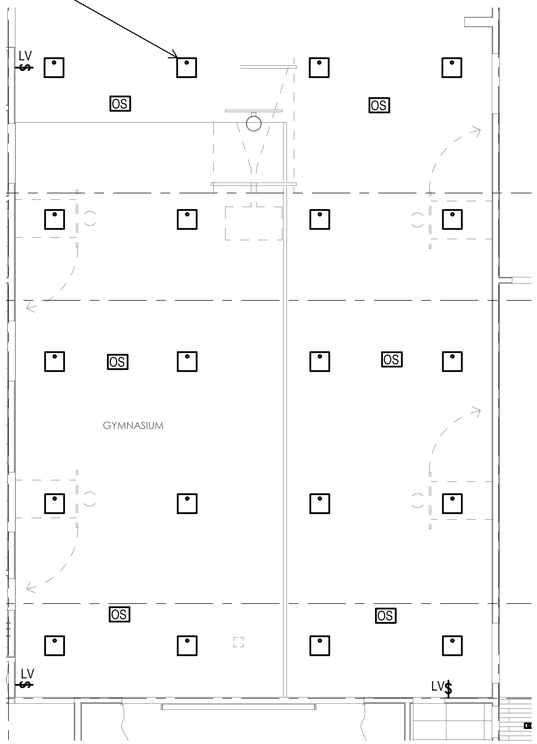
2X2 RECESSED FLAT PANEL LED FIXTURE



3 KITCHEN LIGHTING LAYOUT
1/8" = 1'-0"

20"X26" PENDANT HIGH EFFICENT HIGH BAY LED FIXTURE



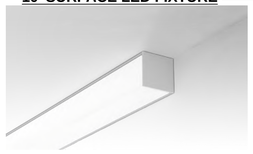


2 GYM LIGHTING LAYOUT
1/8" = 1'-0"

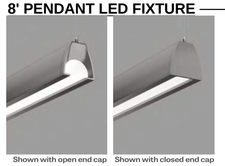
6" DOWNLIGHT CAN LED FIXTURE



10' SURFACE LED FIXTURE



8' PENDANT LED FIXTURE



Shown with open end cap Shown with closed end cap

4 LIBRARY LIGHTING LAYOUT
1/8" = 1'-0"

LIGHTING CONTROLS

VS/OS CEILING MOUNTED OCCUPANCY/VACANCY SENSOR



PC CEILING MOUNTED PHOTOCELL SENSOR



LV$ LIGHTING SWITCH



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TYPICAL LIGHTING PLAN

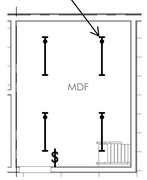
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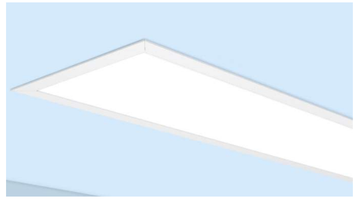
4' LINEAR PENDANT LED FIXTURE

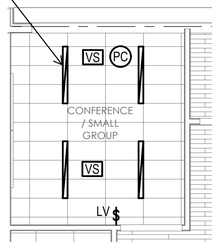




1 MDF LIGHTING LAYOUT
1/8" = 1'-0"

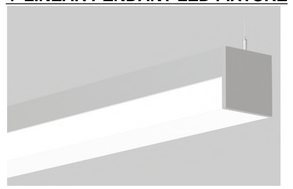
6' LINEAR RECESSED LED FIXTURE

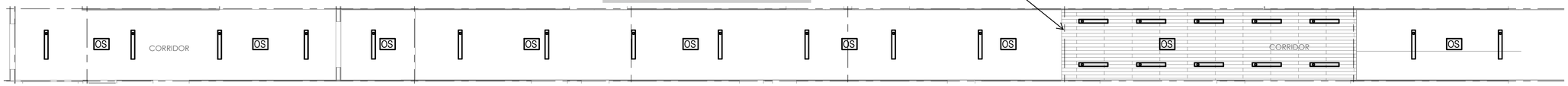




3 TYPICAL CONFERENCE LIGHTING LAYOUT
1/8" = 1'-0"

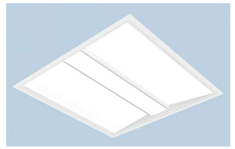
4' LINEAR PENDANT LED FIXTURE





ALTERNATIVE CLASSROOMS

2'x2' TROFFER LED FIXTURE

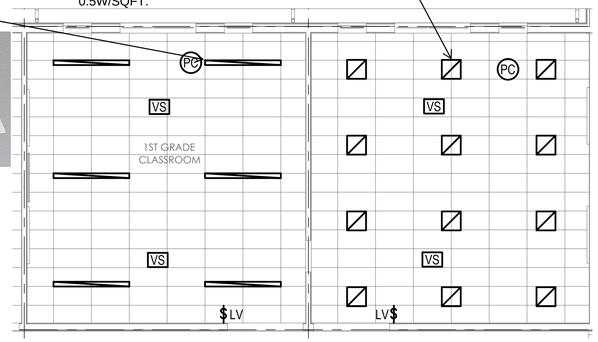


456W TOTAL
118LM/W
0.5W/SQFT.

TYPICAL CLASSROOMS 8' RECESSED LED FIXTURE

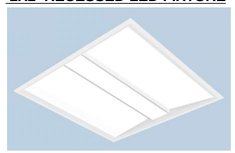


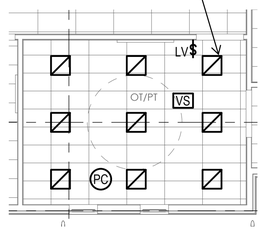
448W TOTAL
164LM/W
0.49W/SQFT.



4 TYPICAL CORRIDOR LIGHTING LAYOUT
1/8" = 1'-0"

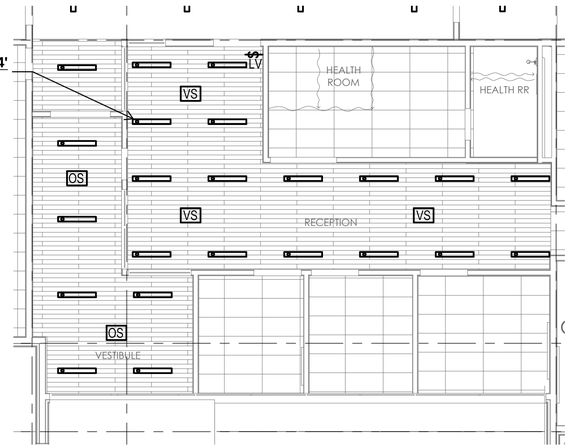
TYPICAL OFFICES AND CLASSROOMS 2X2 RECESSED LED FIXTURE





TYPICAL WOOD CEILING 4' SURFACE LED FIXTURE





2 TYPICAL CLASSROOM LIGHTING LAYOUT
1/8" = 1'-0"

5 TYPICAL OFFICE LIGHTING LAYOUT
1/8" = 1'-0"

6 TYPICAL RECEPTION/VESTIBULE LAYOUT
1/8" = 1'-0"

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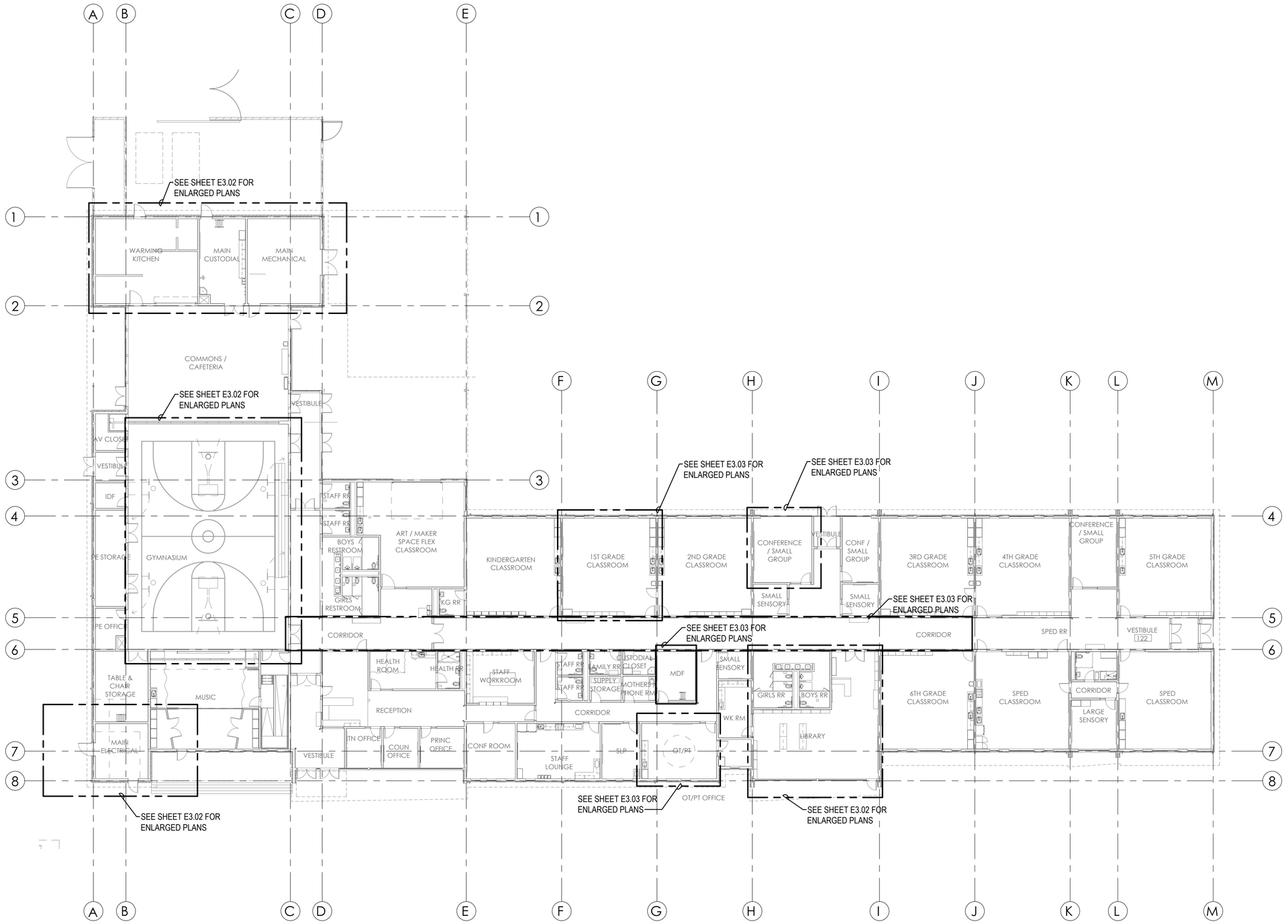
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TYPICAL LIGHTING PLAN

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1 POWER FLOOR PLAN

1/16" = 1'-0"

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0 8' 16' 32'

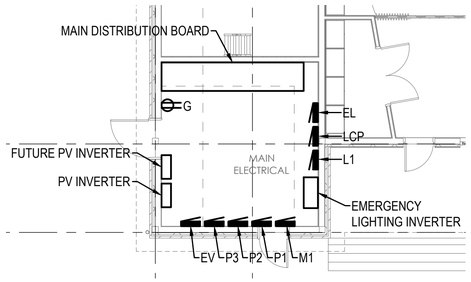
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POWER FLOOR PLAN

E3.01

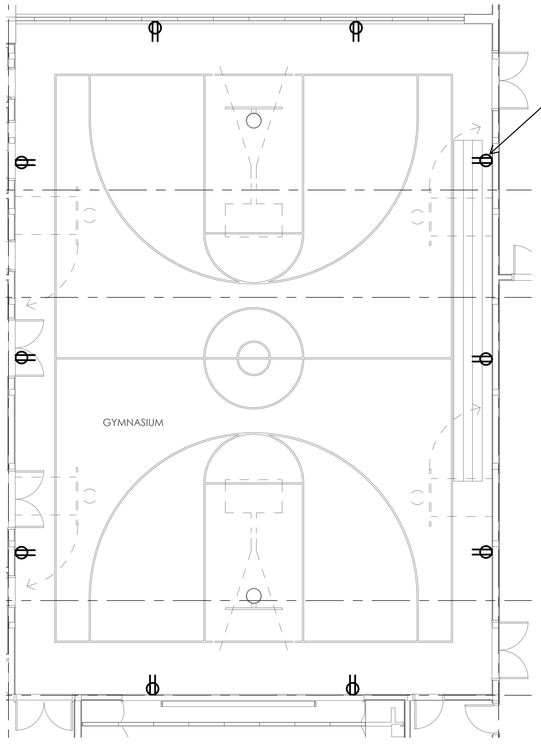
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1 MAIN ELECTRICAL POWER LAYOUT

1/8" = 1'-0"

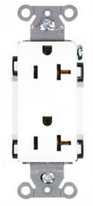


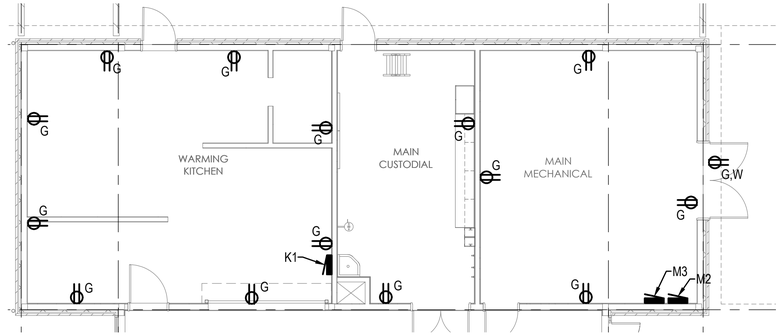
2 GYM POWER LAYOUT

1/8" = 1'-0"

TYPICAL RECEPTACLES:

STANDARD DUPLEX (G) INDICATES GROUND FAULT CIRCUIT INTERRUPTER (C) INDICATES COUNTER (S) INDICATES CONTROLLED





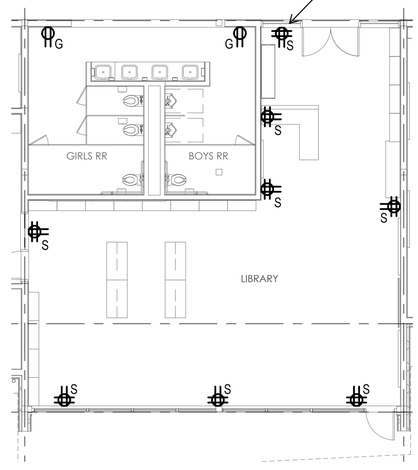
3 KITCHEN/MAIN MECH POWER LAYOUT

1/8" = 1'-0"

TYPICAL RECEPTACLES:

COMBINATION CONTROLLED DUPLEX (S) AND STANDARD DUPLEX UNDER THE SAME COVERPLATE





4 LIBRARY POWER LAYOUT

1/8" = 1'-0"

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TYPICAL POWER LAYOUT

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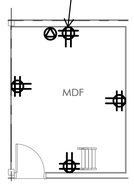
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TYPICAL RECEPTACLES:

STANDARD DUPLEX (G) INDICATES
GROUND FAULT CIRCUIT
INTERRUPTER (C) INDICATES
COUNTER (S) INDICATES
CONTROLLED

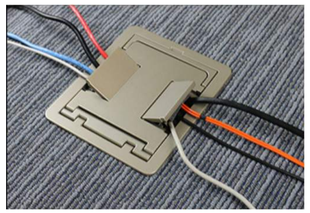


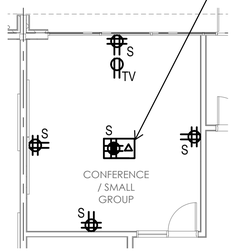


1 MDF POWER LAYOUT
1/8" = 1'-0"

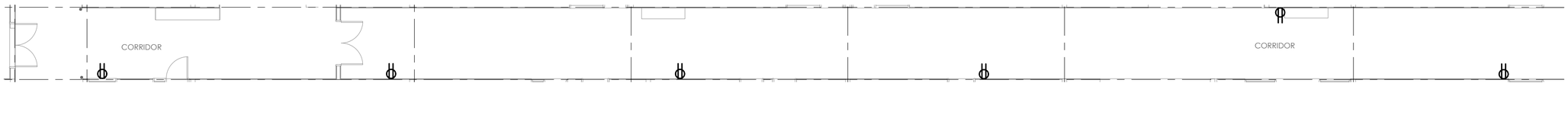
FLOORBOX RECEPTACLES:

COMBINATION FLOORBOX WITH
FLOURPLEX RECEPTACLE
AND 2-PORT DATA





3 TYPICAL CONFERENCE POWER LAYOUT
1/8" = 1'-0"



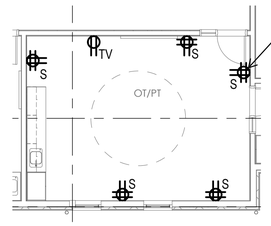
5 TYPICAL CORRIDOR POWER LAYOUT
1/8" = 1'-0"



2 TYPICAL CLASSROOM POWER LAYOUT
1/8" = 1'-0"

TYPICAL RECEPTACLES:

COMBINATION CONTROLLED DUPLEX (S) AND
STANDARD DUPLEX UNDER THE SAME
COVERPLATE





4 TYPICAL OFFICE POWER LAYOUT
1/8" = 1'-0"

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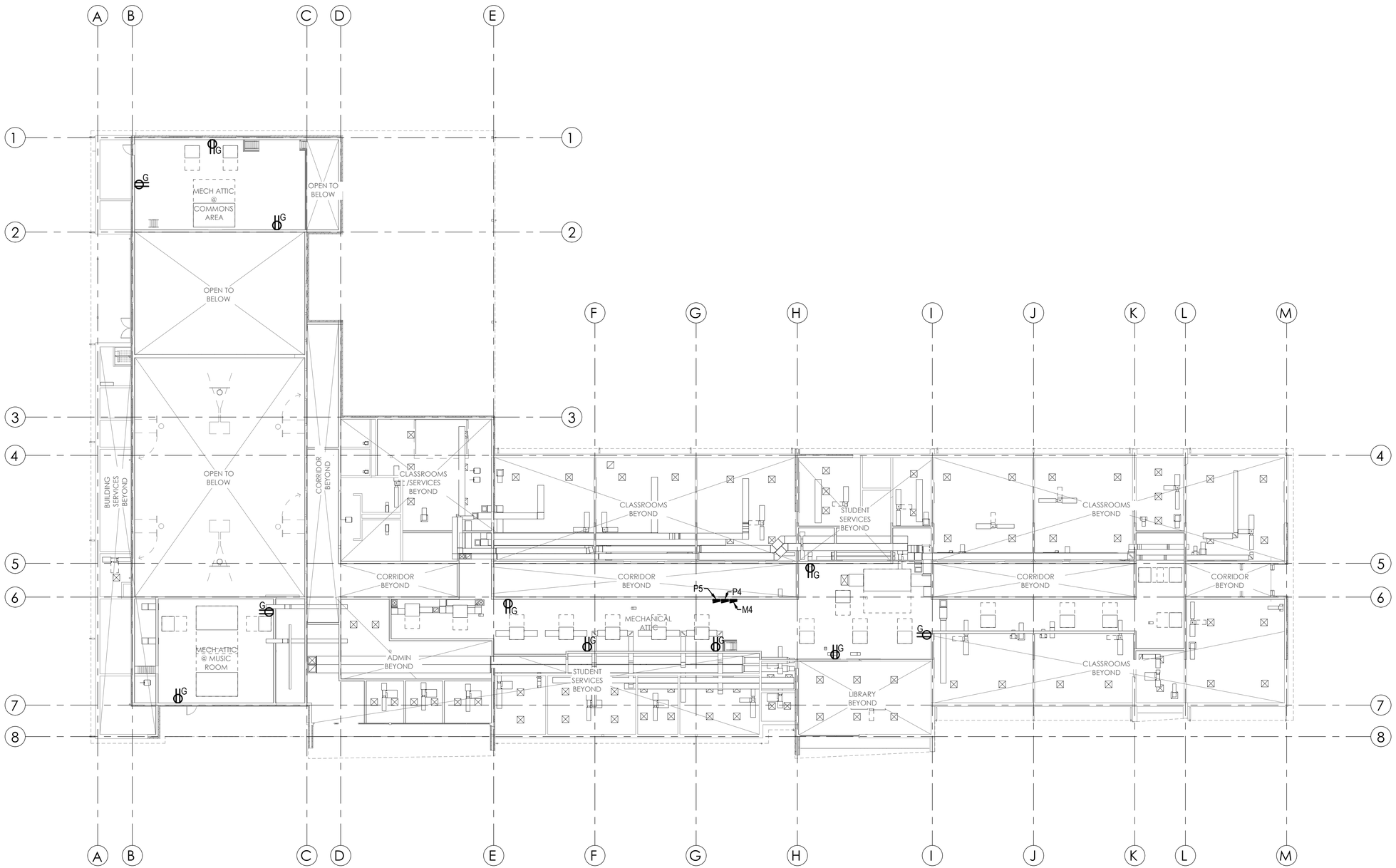
Sheet Title
TYPICAL
POWER
LAYOUT

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1 MECHANICAL MEZZANINE POWER PLAN

1/16" = 1'-0"

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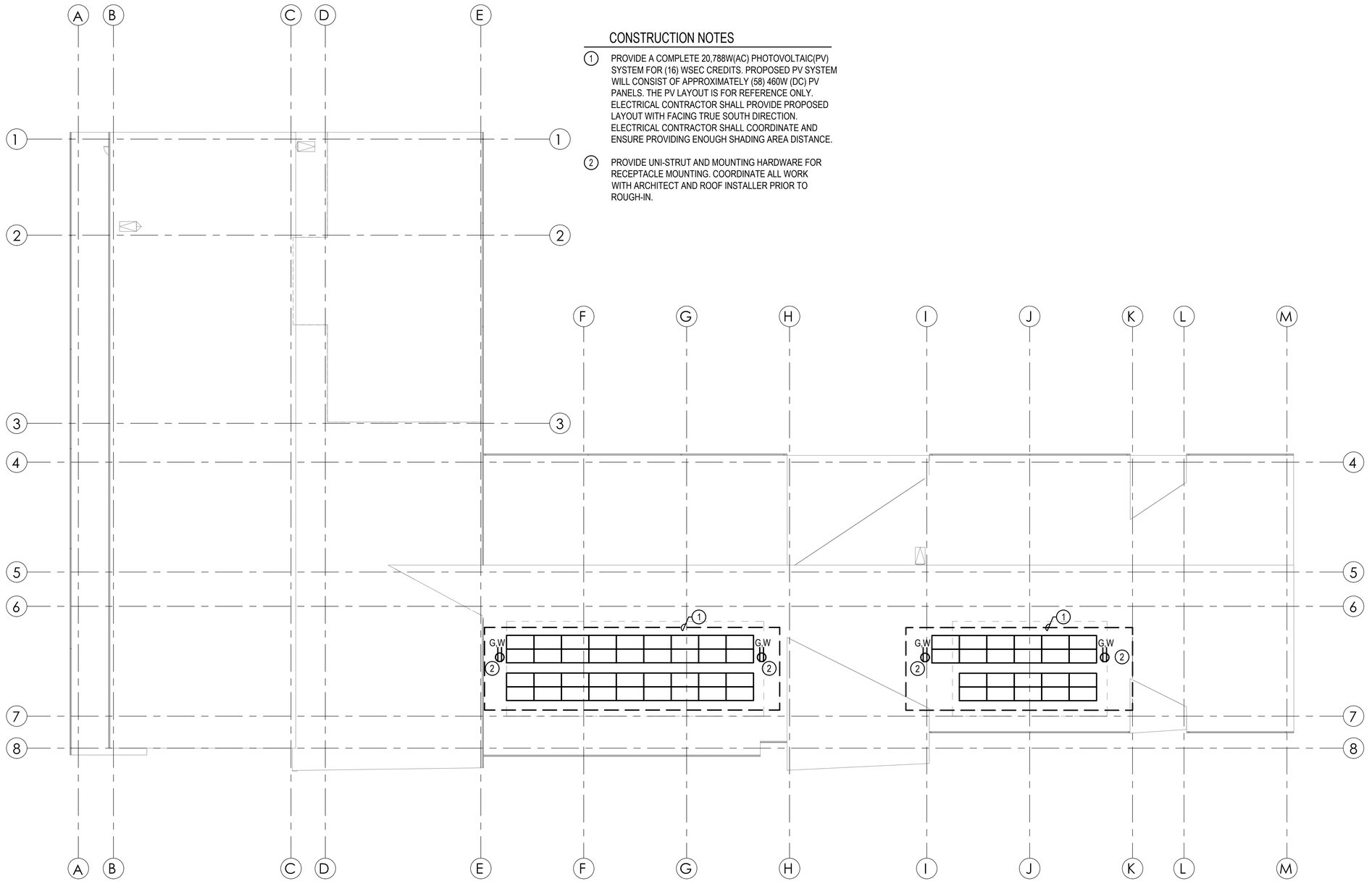
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MECHANICAL MEZZANINE POWER PLAN

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CONSTRUCTION NOTES

1. PROVIDE A COMPLETE 20,788W(AC) PHOTOVOLTAIC(PV) SYSTEM FOR (16) WSEC CREDITS. PROPOSED PV SYSTEM WILL CONSIST OF APPROXIMATELY (58) 460W (DC) PV PANELS. THE PV LAYOUT IS FOR REFERENCE ONLY. ELECTRICAL CONTRACTOR SHALL PROVIDE PROPOSED LAYOUT WITH FACING TRUE SOUTH DIRECTION. ELECTRICAL CONTRACTOR SHALL COORDINATE AND ENSURE PROVIDING ENOUGH SHADING AREA DISTANCE.
2. PROVIDE UNI-STRUT AND MOUNTING HARDWARE FOR RECEPTACLE MOUNTING. COORDINATE ALL WORK WITH ARCHITECT AND ROOF INSTALLER PRIOR TO ROUGH-IN.

1 ROOF POWER PLAN

1/16" = 1'-0"

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ROOF POWER PLAN

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TELECOMM / SYSTEMS LEGEND

SYMBOL	DESCRIPTION
	NETWORK INFRASTRUCTURE
C ▷ #	TELECOMMUNICATIONS OUTLET - WALL MOUNT WITH (2) ACTIVE DATA PORTS AND (2) CAT6 CABLES (4/S BOX WITH SINGLE-GANG MUDRING AND COVER PLATE) WITH ONE (1) 1" CONDUIT TO ACCESSIBLE CEILING SPACE, MOUNT AT +18" AFF UNLESS NOTED OTHERWISE. ("C" INDICATES ABOVE COUNTER, "P" INDICATES PROJECTOR, "S" INDICATES 1-DUAL PORT SURFACE MOUNT TELECOMMUNICATIONS OUTLET WITH ID LABEL, "F" INDICATES FURNITURE INSTALL - MOUNT OUTLETS IN CASEWORK/FURNITURE AND COORDINATE WITH THE CASEWORK INSTALLER PRIOR TO ROUGH-IN) (# INDICATES QUANTITY OF DATA PORTS AND CABLES, IF DIFFERENT THAN 2). REVIEW THE SITE PLANS, FLOOR PLANS, DETAIL SHEETS AND RISER DIAGRAMS FOR ADDITIONAL INFORMATION.
⊳	WIRELESS ACCESS POINT (WAP) TELECOMMUNICATIONS OUTLET - CEILING MOUNT. PROVIDE (2) CAT6A CABLES TO THE JUNCTION BOX ABOVE ACCESSIBLE CEILING. SEE THE TELECOMMUNICATIONS/SYSTEMS DETAILS FOR ADDITIONAL REQUIREMENTS.
WAP ▷	WIRELESS ACCESS POINT (WAP) TELECOMMUNICATIONS OUTLET - WALL MOUNT. PROVIDE (2) CAT6A CABLES TO THE JUNCTION BOX ABOVE ACCESSIBLE CEILING. SEE THE TELECOMMUNICATIONS/SYSTEMS DETAILS FOR ADDITIONAL REQUIREMENTS. PROVIDE 4-11/16" SQUARE DEEP BACK BOX AND (1) 1" CONDUIT TO IDF. PROVIDE ENCLOSURE WHERE NOTED.
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BAR - PROVIDE AS SHOWN ON THE FLOOR PLANS, ENLARGED PLANS, AND DETAILS.
BET	BUILDING ENTRANCE TERMINAL (PROTECTED/FUSED). PROVIDE AS SHOWN ON THE RISER, ENLARGED PLANS, AND DETAILS.
TGB	TELECOMMUNICATIONS GROUNDING BAR - PROVIDE AS SHOWN ON THE FLOOR PLANS, ENLARGED PLANS, AND DETAILS.
DEMARC	SERVICE PROVIDER ENTRY DEMARCATION POINT. LOCATE AS SHOWN ON THE ENLARGED PLANS AND DETAILS.
	ACCESS CONTROL SYSTEM
	GENERAL: INTERCOM EQUIPMENT, WIRING AND MODIFICATION BY CONTRACTOR.
ACPS	ACCESS CONTROL POWER SUPPLY
ACP	ACCESS CONTROL PANEL
CR	PROXIMITY CARD READER - WALL MOUNT TO SINGLE-GANG BOX FLUSH TO WALL SURFACE. SEE ARCHITECTURAL FOR MOUNTING HEIGHT ('M' INDICATES MULLION MOUNT).
D	DOOR POSITION SWITCH (A DPDT SHALL BE PROVIDED AT EACH LOCATION SHOWN [FOR BOTH THE INTRUSION ALARM SYSTEM AND ACCESS CONTROL SYSTEM]). PROVIDED AND INSTALLED BY THE INTRUSION ALARM SYSTEM INSTALLING VENDOR. COORDINATE WITH ALL TRADES, AS REQUIRED.
ED	ELECTRIFIED EXIT DEVICE
✳ LD	LOCKDOWN STROBE - WALL MOUNT AT 96" AFF, UNLESS NOTED OTHERWISE -- PROVIDE SINGLE-GANG BACKBOX WITH SINGLE-GANG BLANK COVER PLATE, WITH (1) 1"C TO ACCESSIBLE CEILING SPACE.
	AUDIO VIDEO SYSTEM
AV1	CLASSROOM A/V SYSTEM TEACHERS INPUT PANEL -WALL MOUNT AT +18" AFF (UNLESS NOTED OTHERWISE) PROVIDE DOUBLE-GANG EXTRA DEEP BACKBOX WITH ACTIVE VIDEO EXTENDER PLATE AND ROUTE 1-1/4" C. TO ACCESSIBLE CEILING. (UNLESS NOTED OTHERWISE).
AV2	CLASSROOM A/V SYSTEM INPUT/OUTPUT PLATE FOR THE MONITOR CART - AT +18" AFF (UNLESS NOTED OTHERWISE). PROVIDE 4-11/16" SQUARE BACK BOX, DUAL GANG MUDRING, AND ROUTE 1-1/4" C. TO ACCESSIBLE CEILING. (UNLESS NOTED OTHERWISE).
AV3	CLASSROOM A/V SYSTEM POE AMPLIFIER -CEILING MOUNT IN ACT GRID NEAR CENTER OF ROOM. SEE CLASSROOM AV DETAILS FOR MORE INFORMATION. PROVIDE ACT CEILING FLUSH MOUNT ENCLOSURE WITH HINGING COVER.
IDM	INFORMATION DISPLAY MONITOR
	INTERCOM
	COMBINATION IP SPEAKER / DIGITAL CLOCK - WALL MOUNT AT 9'-0" TO THE CENTER OF THE DEVICE UNLESS NOTED OTHERWISE. DATA PORT AND CAT6 CABLE PROVIDED BY 272000. PROVIDE THE RECESSED BACKBOX PER THE SPECIFICATIONS WITH (1) 1" CONDUIT TO THE ACCESSIBLE CEILING SPACE. THE TELECOMMUNICATIONS OUTLET SHALL BE LOCATED ABOVE THE ACCESSIBLE CEILING, UNLESS NOTED OTHERWISE.
Ⓢ	INTERCOM LOUDSPEAKER ASSEMBLY - CEILING MOUNT IN ACT GRID, GWB WHERE SHOWN, OR SURFACE MOUNT IN BACK-CAN WITH CONDUIT (NO EXPOSED CABLING PER DIV 27 SPECIFICATIONS).

SYMBOL	DESCRIPTION
	INTRUSION ALARM SYSTEM
IAPS	INTRUSION ALARM POWER SUPPLY
IACP	INTRUSION ALARM CONTROL PANEL
KP	KEY PAD - WALL MOUNT AT 48" AFF, UNLESS NOTED OTHERWISE -- PROVIDE SINGLE-GANG BACKBOX WITH SINGLE-GANG BLANK COVER PLATE, WITH (1) 1"C TO ACCESSIBLE CEILING SPACE.
MS	MOTION SENSOR - WALL MOUNT IN THE CORNER AT +96" AFF, UNLESS OTHERWISE NOTED (LR INDICATES LONG RANGE BEAM). PROVIDE SINGLE-GANG BACKBOX WITH SINGLE-GANG BLANK COVER PLATE, WITH (1) 1"C TO ACCESSIBLE CEILING SPACE.
D	DOOR POSITION SWITCH (A DPDT SHALL BE PROVIDED AT EACH LOCATION SHOWN [FOR BOTH THE INTRUSION ALARM SYSTEM AND ACCESS CONTROL SYSTEM]). PROVIDED AND INSTALLED BY THE INTRUSION ALARM SYSTEM INSTALLING VENDOR. COORDINATE WITH ALL TRADES, AS REQUIRED.
	2-WAY ELEVATOR COMMUNICATION SYSTEM
DIST	ELEVATOR CENTRAL DISTRIBUTION MODULE - WALL MOUNT WHERE SHOWN. SEE SPECIFICATION AND FLOOR PLANS FOR MORE INFORMATION.
	CCTV SYSTEM
	GENERAL: INTERCOM EQUIPMENT, WIRING AND MODIFICATION BY CONTRACTOR.
Ⓒ⊣	CCTV CAMERA - WALL MOUNT. SEE THE CCTV SYSTEM MATRIX, RISER DIAGRAM, MOUNTING DETAILS, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. PROVIDE ONE (1) CAT 6 TELECOM OUTLET FOR EACH CAMERA. ARROWS REPRESENT GENERAL COVERAGE PATTERNS.
⊢Ⓒ	CCTV CAMERA - CEILING MOUNT. SEE THE CCTV SYSTEM MATRIX, RISER DIAGRAM, MOUNTING DETAILS, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. PROVIDE ONE (1) CAT 6 TELECOM OUTLET FOR EACH CAMERA. ARROWS REPRESENT GENERAL COVERAGE PATTERNS.
IDS	VIDEO INTERCOM CAMERA WITH 2-WAY AUDIO ('M' INDICATES MULLION MOUNT).
	MISCELLANEOUS
1	CONSTRUCTION NOTES
1	DEMOLITION NOTES
	ALL DEVICES WITH LIGHT LINE WEIGHT INDICATES EXISTING TO BE RETAINED
	ALL DEVICES WITH DASH LINE INDICATES EXISTING TO BE REMOVED
HH	TELECOM HAND HOLE

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BAS	BUILDING AUTOMATION SYSTEM
BCT	BONDING CONDUCTOR FOR TELECOMMUNICATIONS
BET	BUILDING ENTRANCE TERMINAL
BMS	BUILDING MANAGEMENT SYSTEM
BOT	BOTTOM OF TRAY
C	MOUNT ABOVE COUNTER
C.	CONDUIT
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CO	CONDUIT ONLY
CU	COPPER
DDC	DIRECT DIGITAL CONTROL
EC	ELECTRICAL CONTRACTOR
EF	TELECOMMUNICATIONS ENTRANCE FACILITY (MDF)
ER	TELECOMMUNICATIONS EQUIPMENT ROOM (MDF)
FOC	FIBER OPTIC CABLE
G	GROUND FAULT
GC	GENERAL CONTRACTOR
GE	GROUNDING EQUALIZER
GEC	GROUNDING ELECTRODE CONDUCTOR
GFGI	GOVERNMENT FURNISHED, GOVERNMENT INSTALLED
GR	GROUND
HSS	HIGH SECURITY SWITCH
IDF	INTERMEDIATE DISTRIBUTION FRAME (TR/TE)
LIU	LIGHT INTERFACE UNIT (INCLUDES FIBER SPLICE TRAY AND PATCH PANEL)
MDF	MAIN DISTRIBUTION FRAME (ER/EF)
MM	MULTI MODE (FOC)
REQ'D	REQUIRED
SBG	SUPPLEMENTARY BONDING GRID
SM	SINGLE MODE (FOC)
SPD	SURGE PROTECTIVE DEVICE
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TE	TELECOMMUNICATIONS ENCLOSURE (IDF)
TGB	TELECOMMUNICATIONS GROUNDING BUS BAR
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUS BAR
TR	TELECOMMUNICATIONS ROOM (IDF)
UC	UNDER COUNTER
UG	UNDERGROUND
W	WEATHERPROOF (PROVIDE WEATHERPROOF COVER/DEVICE WHERE SHOWN ON PLANS)
WAP	WIRELESS ACCESS POINT
WG	WIRE GUARD (PROVIDE ON DEVICES WHERE SHOWN ON PLANS)
XMFR	TRANSFORMER

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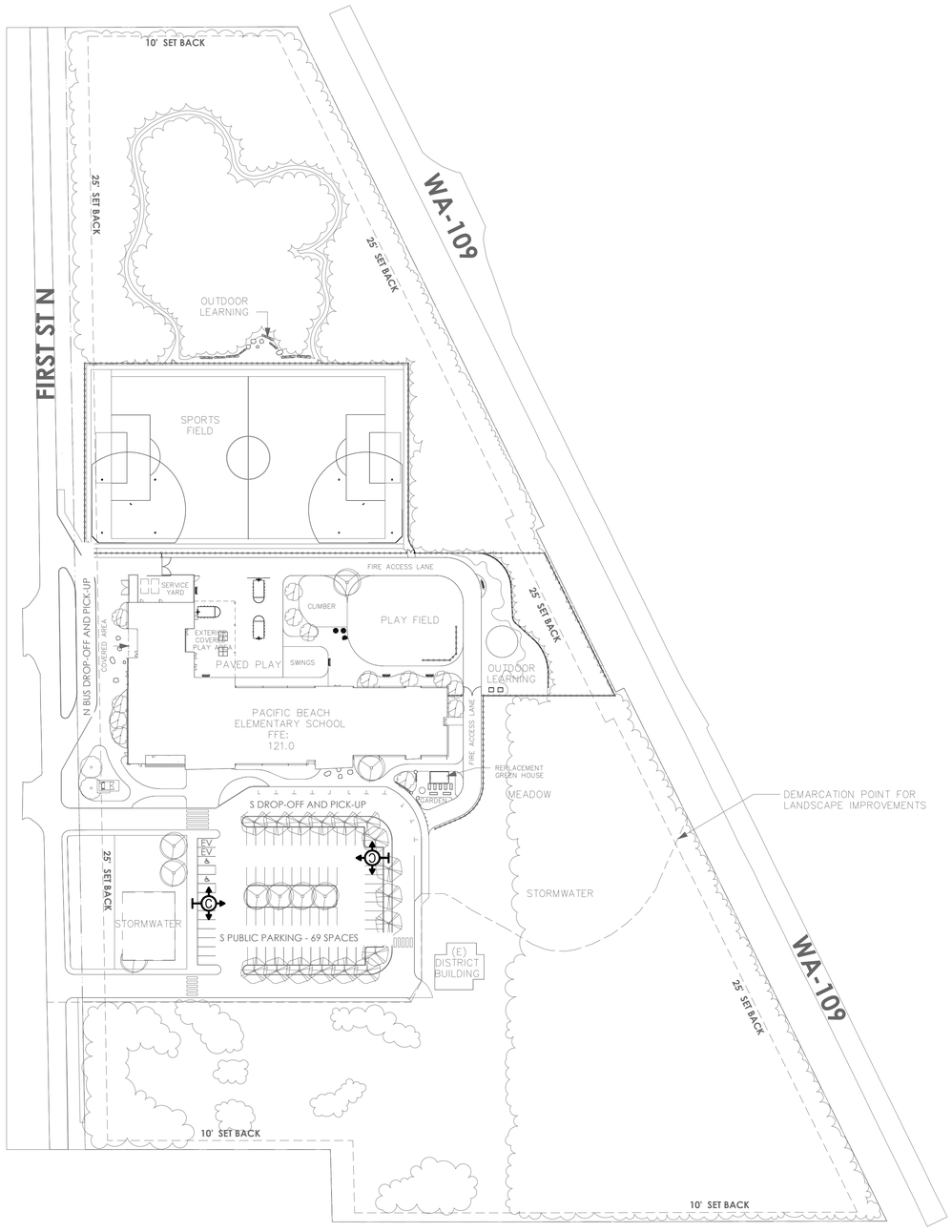
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TELECOM LEGEND

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1 TELECOM SITE PLAN
1" = 80'-0"

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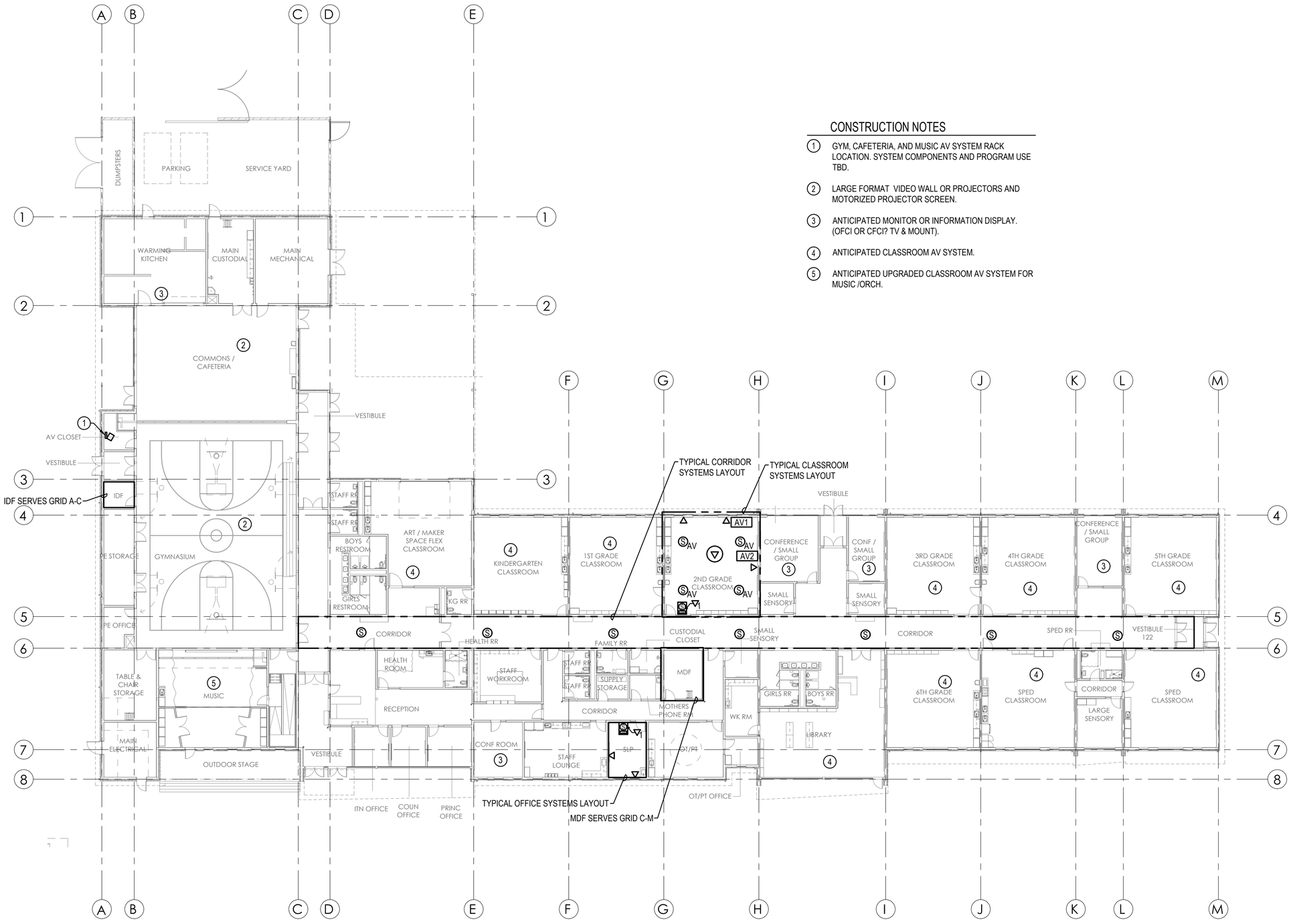
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CONSTRUCTION NOTES

1. GYM, CAFETERIA, AND MUSIC AV SYSTEM RACK LOCATION. SYSTEM COMPONENTS AND PROGRAM USE TBD.
2. LARGE FORMAT VIDEO WALL OR PROJECTORS AND MOTORIZED PROJECTOR SCREEN.
3. ANTICIPATED MONITOR OR INFORMATION DISPLAY. (OFCI OR CFCI? TV & MOUNT).
4. ANTICIPATED CLASSROOM AV SYSTEM.
5. ANTICIPATED UPGRADED CLASSROOM AV SYSTEM FOR MUSIC /ORCH.

1 TELECOM FLOOR PLAN
1/16" = 1'-0"

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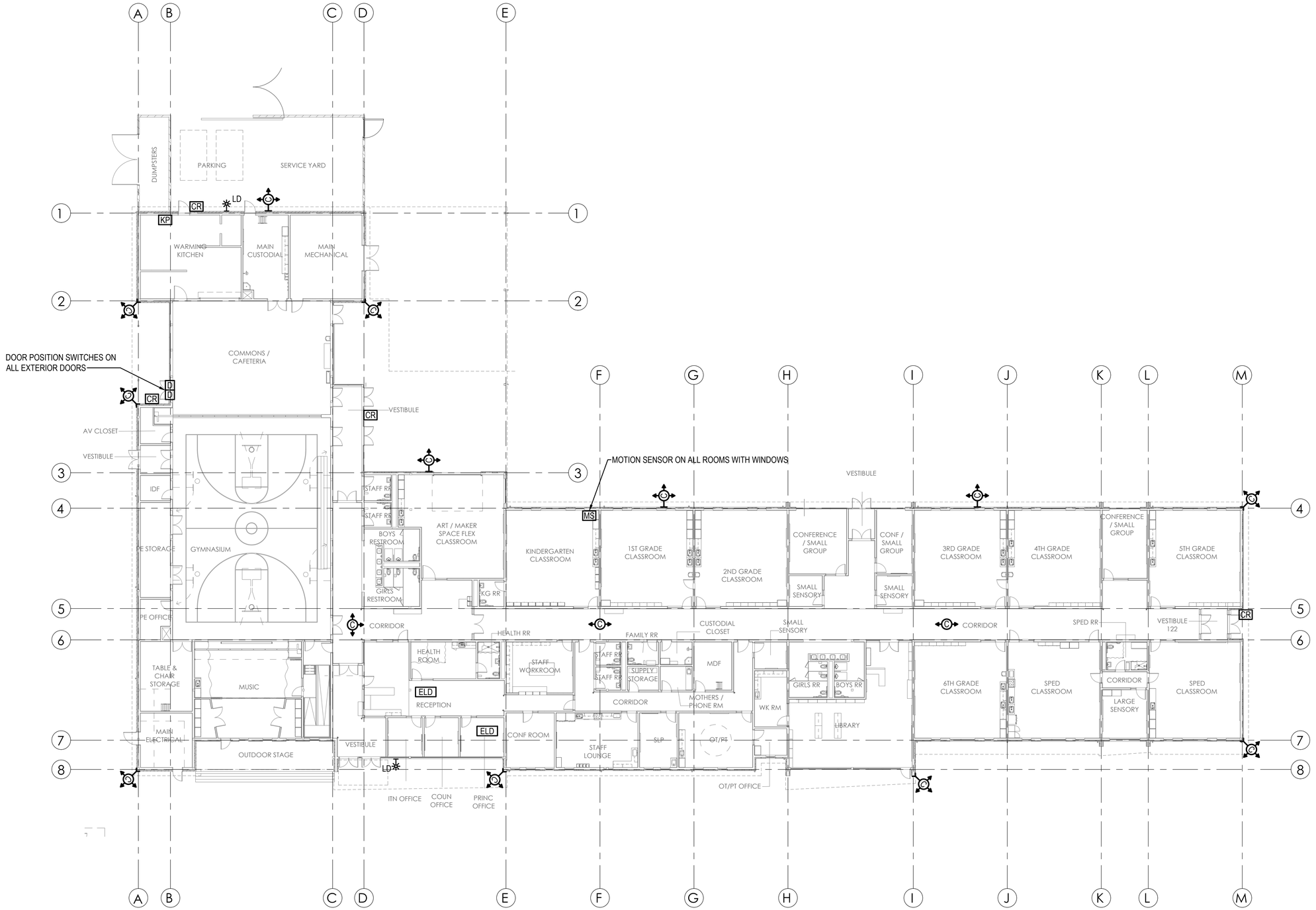
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TELECOM FLOOR PLAN

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1 SECURITY FLOOR PLAN
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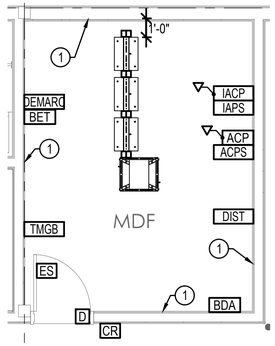
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SECURITY FLOOR PLAN

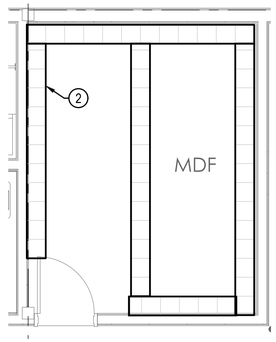
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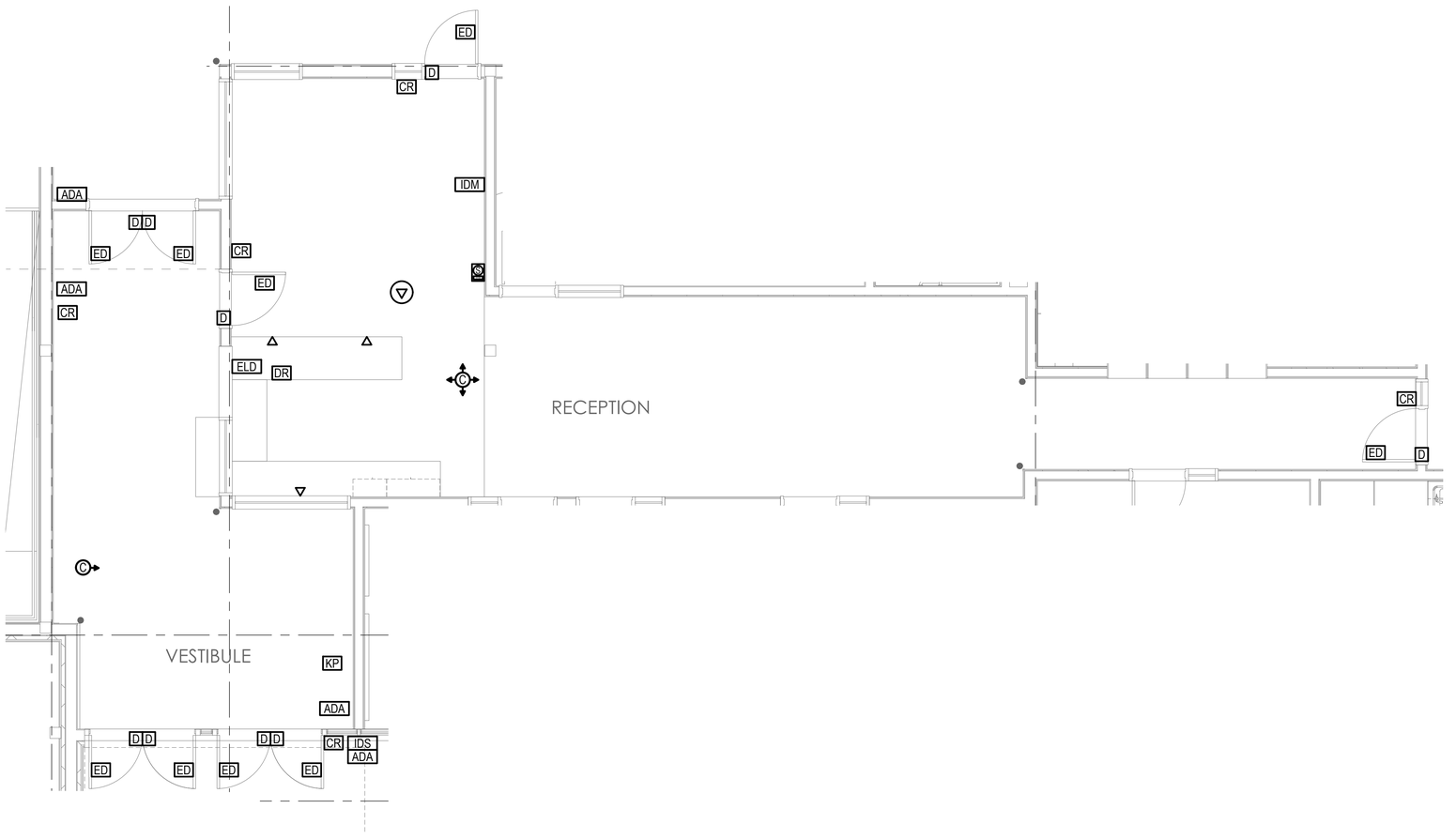
1 FIRST FLOOR ENLARGED MDF
1/4 = 1'-0"



2 FIRST FLOOR ENLARGED RCP MDF
1/4 = 1'-0"

CONSTRUCTION NOTES

1. 3/4" PLYWOOD BACKING BOARD ALL 4 WALLS. PAINTED WITH TWO COATS OF FIRE RATED INTUMESCENT PAINT (WHITE). PROVIDE VERTICAL SHEETS +0'-6" AFF TO +8'-6" AFF.
2. PROVIDE 18" LADDER TRAY AT +7'-4" AFF TYPICAL. PROVIDE RADIUS DROPS AT EACH VERTICAL RACK WIRE MANAGER.



1 ENLARGED VESTIBULE AND RECEPTION AREA
1/4 = 1'-0"

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TELECOM ENLARGED PLANS

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North Beach School District - Pacific Beach Elementary School

Schematic Design

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SEPTEMBER 2026



Table of Contents

01 // INTRODUCTION

- A Introduction
- A Executive Building Summary
- A Design Methodology
- A Sustainability

02 // BASIS OF DESIGN

- A Civil
- A Landscape
- A Architectural
- A Envelope
- A Food Service
- A Structural
- A Mechanical
- A Electrical

03 // DRAWINGS

- A Site Plan
- A Floor Plan

04 // BUDGET CONSIDERATIONS

- A Cost Estimate
- A Value Engineering Options

05 // APPENDIX

- A Project Schedule
- A Cost Estimate
- A Draft Value Engineering Report
- A Cost Control Strategies
- A Systems Comparison
- A Owner Project Requirements
- A WSSP Strategy and Scorecard
- A Preliminary Reports
- A Meeting Minutes



01

Introduction

I. Introduction
II. Executive Building Summary
III. Design Methodology
IV. Sustainability

Introduction

The Pacific Beach Elementary School Schematic Design Report documents the outcomes of the schematic design phase for the North Beach School District's new educational facility in Pacific Beach, Washington. This report serves as a comprehensive summary of design intent, guiding principles, technical strategies, and cost considerations that have shaped the project to date. It consolidates the work of the design team, North Beach School District leadership, and consultant partners, and establishes a clear baseline for advancing into design development.

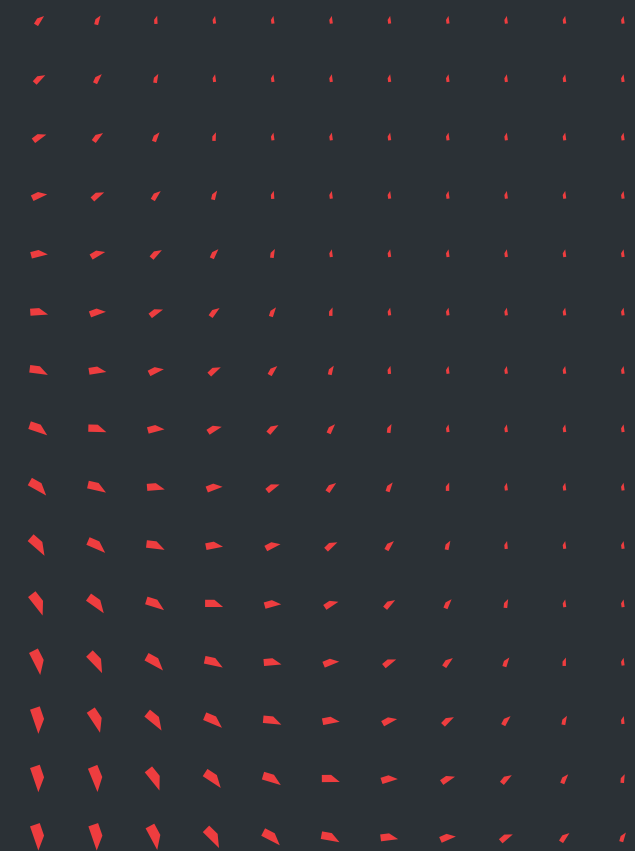
The Pacific Beach Elementary School is envisioned as a forward-looking, flexible, and community-oriented campus that integrates multiple programs under one roof. Anchored by North Beach School District's commitment to preparing students for lifelong learning and civic engagement, the facility will accommodate Pacific Beach Elementary School.

The schematic design process was guided by the District in close collaboration with the project management team from ESD 112 | Construction Services Group, who coordinated workshops, stakeholder engagement sessions, and design advisory meetings. These efforts ensured that educational needs, operational requirements, and long-term community goals were clearly represented in the design. While this introduction provides an overview, the Design Methodology section later in this report documents the process in greater detail.

Key design priorities include adaptability of learning spaces, durability and ease of maintenance, welcoming, yet providing safety and security, daylighting, acoustical performance, sustainability in alignment with the Washington Sustainable Schools Protocol (WSSP 2023), and compliance with the 2021 Washington State Energy Code (WSEC). The project reflects the District's dedication to creating an equitable, safe, and durable facility that will serve as a cornerstone of learning and community engagement in Pacific Beach for decades to come.

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II. Executive Building Summary



Executive Building Summary II

The Pacific Beach Elementary School is planned as a single-story, 34,407 SF educational facility located on First Street N in central Pacific Beach. Designed under Type VB combustible wood construction, the building integrates Elementary level education programs within a facility that locates the facility South of the river and out of the Tsunami inundation zone.

PROGRAMS SERVED

- Pacific Beach Elementary School: Kindergarten through sixth grade with Native Education, OTPT and Resource Classrooms for special education programs

BUILDING SYSTEMS & MATERIALS

- Structure: Wood framing with wood shear walls, engineered wood roof joists and floor trusses with plywood sheathing and concrete topping at the mechanical attic floor.
- Envelope: Durable, low-maintenance cladding (Ceraclad, masonry veneer, and metal panel), aluminum entrance systems with fiberglass windows. Roofing is standing seam metal panel.
- Interiors: Polished concrete and resilient flooring consistent with district standards (Nora rubber tile), and maple athletic flooring selected for sustainability and lifecycle cost.
- Acoustics: Complies with WAC 246-366 (NC-35 classrooms) and ICC A117.1 enhanced acoustics (≤0.6–0.7 second reverberation times), supporting speech intelligibility and student focus.

SUSTAINABILITY & PERFORMANCE

- Washington Sustainable Schools Protocol (WSSP 2023): Preliminary scorecard shows 67 points, which is greater than the Class II baseline of 58 points.
- Washington State Energy Code (WSEC 2021): C406 compliance achieved with required credits met in both categories — 62 Accepted vs 48 required credits in energy efficiency measures (lighting + HVAC) and 23 Accepted vs 15 required credits in load management (HVAC).
- Health & Wellness: Daylighting strategies, low-emitting materials, ducted return air systems, and acoustical design promote trauma-informed, student-centered environments.

Executive Building Summary II

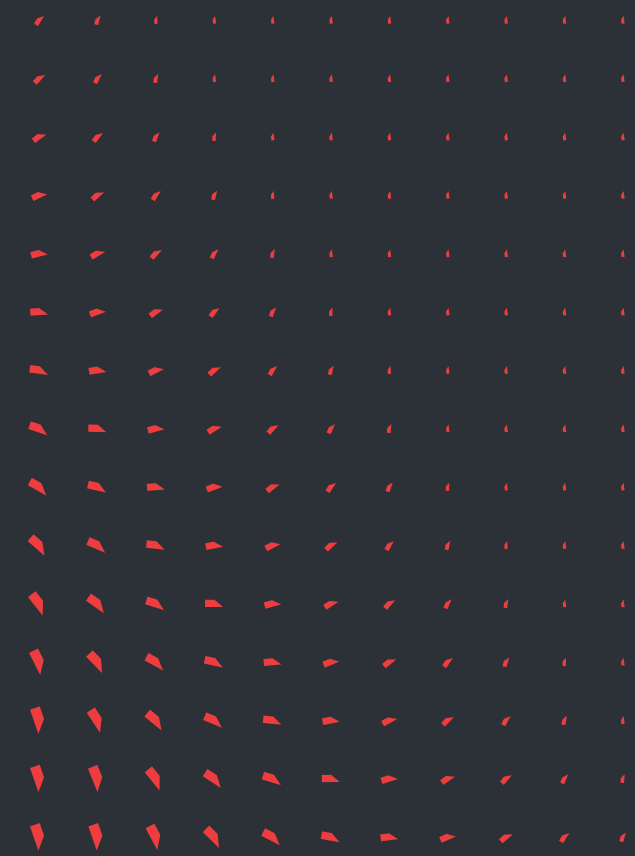
COST & SCHEDULE

- Target MACC: $28,509,971
- Schematic Design Estimate (August 2026): $33.67 million total project cost, including building, sitework, and off-site improvements.
- Additive Alternates under consideration: Increase size of covered play, Concrete outdoor stage/platform, CLT at covered play structure in-lieu of 3x car decking, Residential appliances/equipment to be OFCI, Concrete path in-lieu of Gravel at Sports Field, Artificial turf sports field in-lieu of grass field, Artificial turf playground surfacing in-lieu of engineered wood fiber, Additional 500 LF of fence, Wood Pavilion, Baseball Backstop, and Reduce OSPI Area in estimate from 34,730 to funded maximum of 34,407 SF.
- Delivery: **Design–Bid–Build, with construction start anticipated in August 2027 and substantial completion projected for Fall 2028**

The Pacific Beach Elementary School embodies North Beach School District's commitment to durability, operational efficiency, and seismic resilience, while delivering flexible, welcoming spaces that reflect the educational and social needs of its students and community.

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III. Design Methodology



Design Methodology III

DESIGN METHODOLOGY

The schematic design process for the Pacific Beach Elementary School was highly collaborative, guided by the North Beach School District and facilitated by the project management team from ESD 112 | Construction Services Group. This process engaged administrators, educators, and community representatives to ensure the resulting design reflects both programmatic needs and community values.

STAKEHOLDER ENGAGEMENT

Beginning in October 2025, the design team conducted a series of educational specifications (Ed Spec) workshops with faculty, staff, district representatives, and ESD 112 project managers. These workshops focused on refining requirements for administration/reception, Gym/Performance/Cafeteria/Kitchen Spaces, and classroom environments. The workshops established the foundation for the program and provided clarity on space standards and adjacencies.

To supplement workshop discussions, the District and project team organized site visits to comparable facilities in western Washington, including Littlerock, Peter G Schmidt, and Southworth Elementary Schools, which directly informed design strategies for the Pacific Beach Elementary School.

DESIGN ADVISORY COMMITTEE

A Design Advisory Committee—comprised of North Beach School District leaders, teachers, program staff, and ESD 112 representatives—was convened to guide decision-making and review schematic design progress at key milestones. This group met regularly, holding 5 meetings to ensure that educational goals, operational requirements, and community priorities were consistently integrated into the design process.

DESIGN INSPIRATION AND PROCESS

As a small school district with a student body drawn from a close-knit, rural community, the design team approached the planning of the project with a view to creating a learning environment which both reflects the intimacy of the coastal community it serves and maximizes connections to the natural environment beyond the building.

Having considered several plan configurations with the DAC it was agreed to proceed with an honest and efficient linear arrangement of classrooms extending to the east of the site with the larger volumes of the activity wing located on the west and providing street presence along First Street N. The form of the single-story building responds to the often-harsh weather conditions typically experienced along the Pacific coastline.

Interior spaces are thoughtfully organized to provide diffused daylight to learning spaces creating bright and airy spaces for learning as well as views out to nature. The effect creates important elements of biophilic design and a sense of place within the building.

Throughout the building, material palettes responds appropriately to a damp, salt-laden coastal environment offering longevity and ease of maintenance.

Design Methodology III

DESIGN GOALS:

The design team established several key goals to guide the schematic design process:

- Create flexible and adaptable learning environments that can respond to changing program needs.
- Prioritize supportive learning environment strategies that provide a variety of spaces to support student well-being. This includes small group areas that support informal interaction and semi-private conversations, quiet reflection areas, and a commons designed for larger gathering and a variety of uses ensuring students, staff, and community can access environments suited to a range of activities and learning styles.
- Integrate daylighting and views to enhance learning environments.
- Achieve superior acoustical performance for speech intelligibility.
- Align with North Beach School District material standards for durability, lifecycle value, and a targeted 50–70 year facility lifespan.
- Ensure seismic resilience and long-term safety consistent with the OSPI Seismic Grant intent.
- Incorporate program needs and spatial adjacencies in a way that creates an efficient use of space and supports achieving the project's size and budget goals.
- Produce a cohesive and timeless architectural language that will set the tone for future seismic school replacements for North Beach School District, creating buildings that are clearly and classically recognizable as North Beach schools. This goal also reinforces a sense of community pride and establishes a consistent architectural identity that can serve as a long-term brand for the District's facilities.

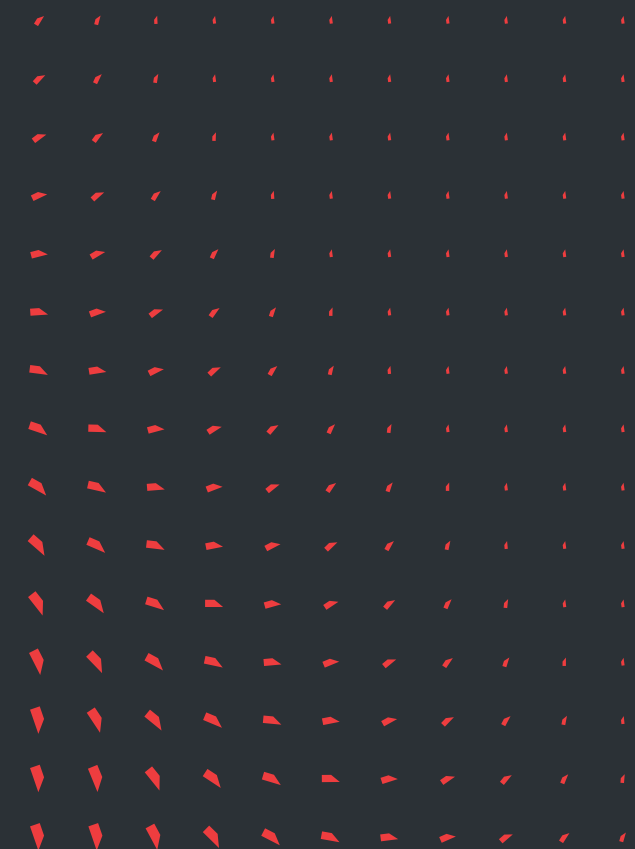
COLLABORATIVE PROCESS

The design team leveraged a collaborative, iterative approach, balancing district standards, owner's project requirements (OPR), and cost estimating feedback. Multiple design options were considered and evaluated for cost, durability, and program alignment before the preferred schematic design was advanced.

Through this collaborative methodology, the Pacific Beach Elementary School design reflects the shared vision of the District, ESD 112, and the community, providing a durable, flexible, and inspiring facility aligned with long-term educational goals. Detailed meeting minutes from this phase are included in the Appendix as a record of discussions and decision-making.

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IV. Sustainability



Sustainability

IV

PROJECT SUSTAINABILITY, HEALTH, AND WELLNESS GOALS

The Pacific Beach Elementary School reflects the North Beach School District's commitment to sustainability, health, and resilience in both building performance and educational experience. The design aligns with the Washington Sustainable Schools Protocol (WSSP 2023) and the 2021 Washington State Energy Code (WSEC) Section C406, ensuring the facility meets or exceeds state requirements while fostering a safe, welcoming, and adaptable environment for students and community.

ENERGY AND ENVIRONMENTAL PERFORMANCE

The project incorporates high-efficiency HVAC, enhanced lighting controls, load management strategies, and a rooftop solar photovoltaic array. Together these exceed code baselines, reduce the building's energy use intensity (EUI), and prepare the facility for future renewable expansion. Native and drought-tolerant landscaping, irrigation sub-metering, and EV charging readiness further reduce environmental impacts.

HEALTH AND WELLNESS

The design emphasizes variety and flexibility in spaces—from large public commons to quiet study areas. This school includes the most current Special Education approach featuring a large space to proactively de-escalate students with a variety of activities and quiet spaces depending on a student's needs. Daylighting, and providing territorial woodland views to the North for classrooms and small group rooms, acoustical treatments, and thermal comfort controls are integrated to promote focus, comfort, and well-being.

The building floor plan is organized to be intuitive and simple to navigate, minimizing barriers to access and providing clear wayfinding throughout. Circulation paths are designed for visibility and simplicity, reducing stress for students, staff, and visitors. At the exterior, the facade and elevations express a welcoming and permanent presence, using durable materials and comfortable forms that celebrate community identity.

DURABILITY AND ADAPTABILITY

Materials and systems are selected for lifecycle value and resilience in Pacific Beach's coastal climate, supporting a 30–50 year service life. The building is planned with flexibility for future program shifts, ensuring long-term relevance and alignment with evolving District and community needs.

OPERATIONS AND ENGAGEMENT

Systems are designed for transparency and ease of management, with submetering, load tracking, and staff training to optimize performance. Green cleaning, food waste reduction, and sustainable operational practices are embedded in long-term facility use.

SUMMARY

Through these strategies, the Pacific Beach Elementary School is positioned as a high-performance, healthy, and resilient educational facility. The design integrates sustainability with health and wellness priorities, ensuring the school is both an efficient building and an inviting, supportive environment that serves the Pacific Beach community for generations.



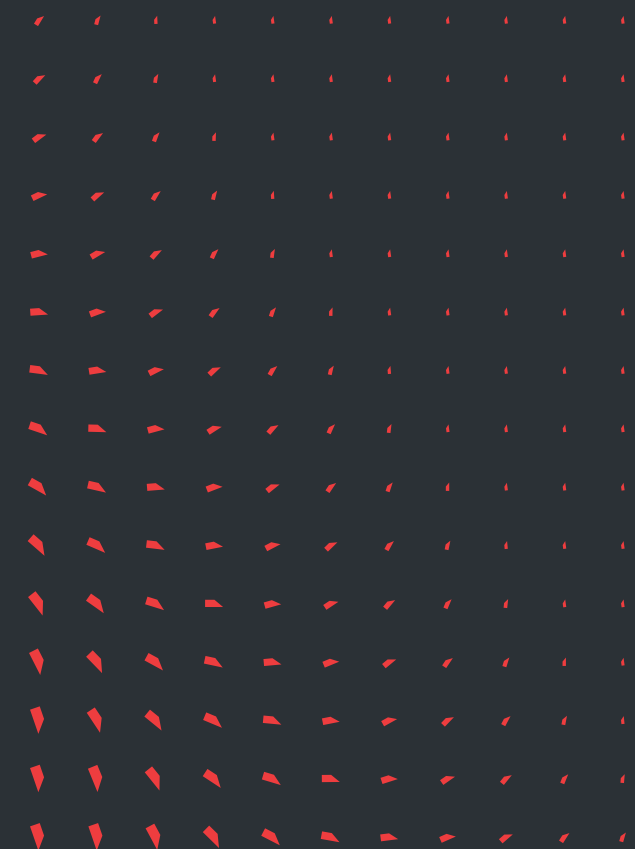
02

Basis of Design

I. Civil
II. Landscape
III. Architectural
IV. Food Service
V. Structural
VI. Mechanical
VII. Electrical

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I. Civil



Civil

The Civil Design for Pacific Beach Elementary School provides the framework for site development, utility connections, and compliance with local, state, and federal regulations. This section outlines the schematic-level Basis of Design for grading, stormwater, utilities, and access. The intent is to support the District's goals for safety, resilience, efficiency, and sustainability while addressing specific site conditions in Pacific Beach.

01 ON-SITE DEVELOPMENT:

A Grading & Hardscape:

The proposed project will construct one new school with associated grass althetic and play fields, service yard, paved play area, and parking lot. Parking is located to the south of the proposed school.

A Geotechnical Overview:

Per soil avaliable from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey, the on-site soils are classified as Halbert muck with 0 to 10 percent slopes. The soil is part of hydrologic soil group C/D and has no infiltrative capacity.

A Storm Drainage:

The project proposes one new stormwater system that will be discharged to the existing ditch located along First St. N. Stormwater management for the site will be designed in accordance with the 2024 Department of Ecology Stormwater Management Manual for Western Washington (2024 SWMMWW).

The site generally slopes to the south towards the existing development of a house and barn. No known stormwater facilities are located on-site.

The project parcel does not have more than 35% of existing impervious coverage and is considered a new development. The proposed project will add 5,000 square feet or more of new and replaced hard surfaces; therefore, Minimum Requirements #1-9 apply to the new and replaced hard surfaces and the converted vegetation.

Per Minimum Requirement #2, the project will prepare a Construction Stormwater Pollution Prevention Plan (SWPPP) that describes the thirteen required elements.

Per Minimum Requirement #6, the proposed project will provide water quality treatment since the project creates more than 5,000 square feet of pollution generating hard surfaces. The proposed project will discharge to the ditch along First Street North that discharges to the Pacific Ocean and is therefore required to provide basic treatment. Potential basic treatment water quality options include biofiltration swales or a mechanical filter.

Per Minimum Requirement #7, the proposed project is flow control exempt as the site discharges to a man-made ditch that has an established outfall above the ordinary high tide mark of the Pacific Ocean. Sites that discharge to salt waterbodies are classified as flow control exempt. The project site will provide a detention pond to attenuate the developed stormwater runoff flows and match the stormwater runoff from the current developed conditions. The detention pond was modeled using the Western Washington Hydrology Model (WWHM 2012). See the table below for a flow control basin breakdown. Note that the detention pond was sized to account for the stormwater runoff generated by the frontage improvments on First Street North.

LAND TYPE DESIGNATIONS	AREA (AC)
PROPOSED BASIN	16.81
IMPERVIOUS	7.63
PERVIOUS	9.18

The proposed flow control basin consists of the on-site improvements that will be conveyed to a detention pond and discharged to the ditch located along First Street North prior to discharging to the Pacific Ocean. In order to detain the stormwater runoff and release it at the current site discharge rates, a detention pond with a total depth of 3 feet (2 feet live storage and 1 foot freeboard) with 3:1 side slopes and a minimum live storage volume of 9,585 CF is required.

A Water & Fire Protection Service:

Per the Grays Harbor County GIS, water is avaliable in First Street North and WA-109. See Figure 1 below.

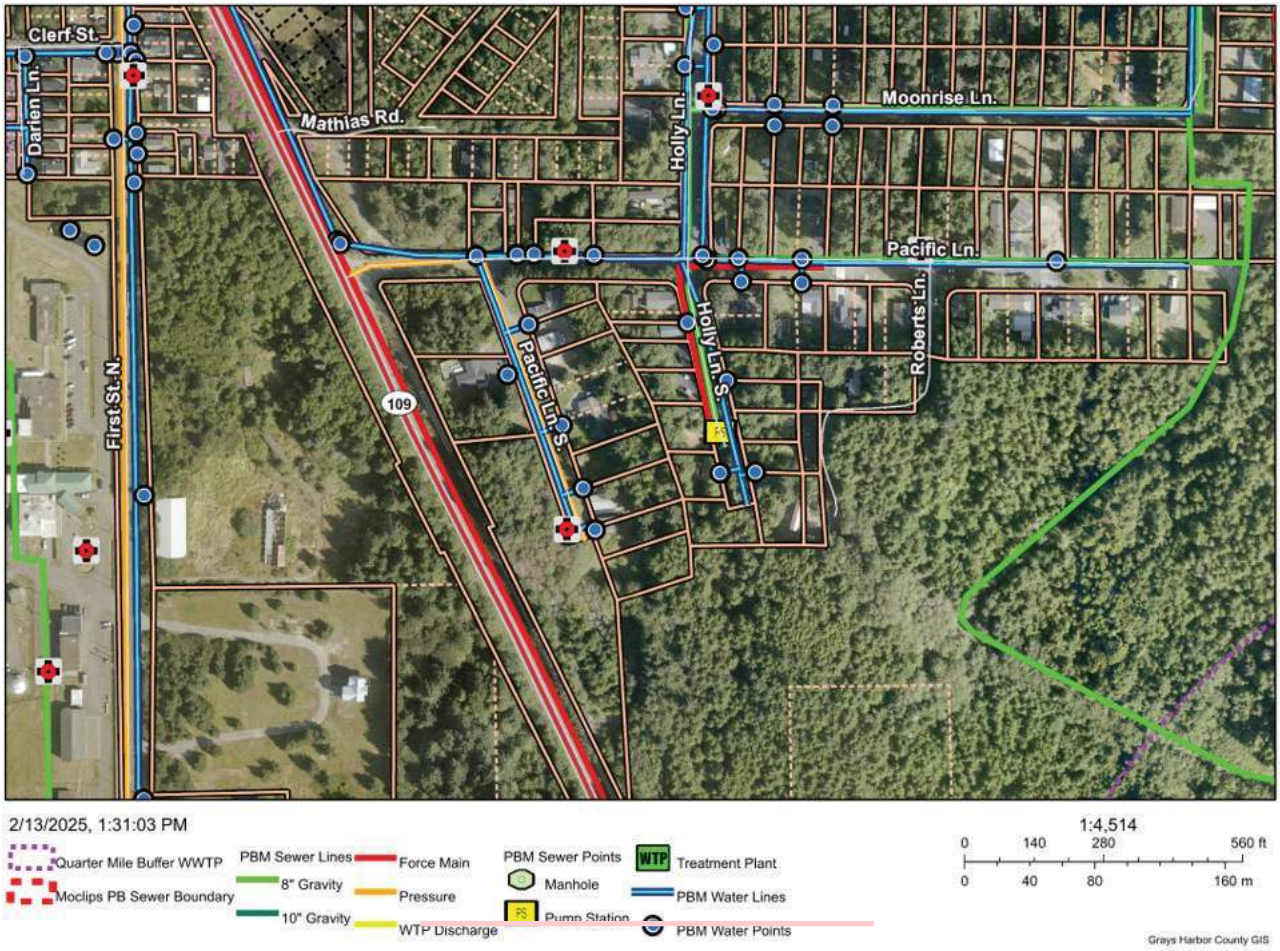


Figure 1. GHC Utility Features

The proposed project will connect to the existing water main located in First Street North for potable water, irrigation, and fire. A new potable water meter and backflow device will Be required for the new building. A new irrigation meter and backflow device will be required for the proposed landscape areas. A fire protection backflow device will be required for the new building. The proposed building will have a fire department connection (FDC) and post indicator valve (PIV). It is anticipated three new fire hydrants are required on-site to provide adequate coverage for the proposed building and overall site. There is an existing fire hydrant located on the northwest property corner along First Street North.

Water pressure and flowrates are not known at this time. Additional study is required to determine if a fire pump will be required.

A Teams meeting with Grays Harbor County was held on May 26, 2026. In that meeting, the County requested the project extend a water main from 4th Street Norh located southeast of the project site to create a looped system.

A Sanitary Sewer Service:

Per the Grays Harbor County GIS shown in Figure 1 above, a sewer pressure main is located within First Street North and a sewer force main is located within WA-109 A Teams meeting with Grays Harbor County was held on May 26, 2026. In that meeting, the County requested the project extend a gravity sanitary sewer main from 4th Street Norh located southeast of the project site instead of connecting to the pressurized sewer main in First Street North.

An exterior grease interceptor is required for the proposed

school as food will be prepared within the proposed kitchen.

02 OFF-SITE DEVELOPMENT:

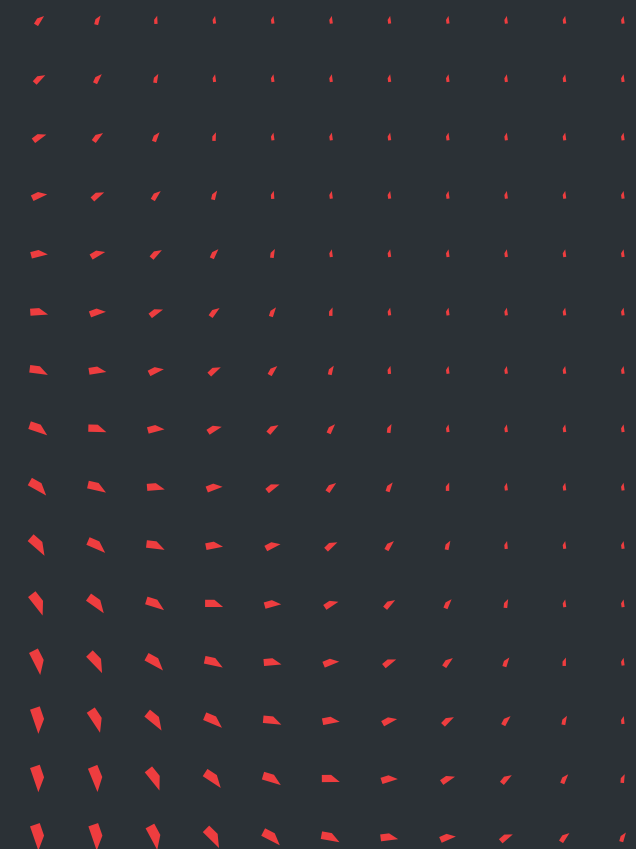
A Roads, Sidewalks, and Pavement:

No new driveway cuts are allowed on WA-109. All site access will be granted from First Street North.

A bus pick-up and drop-off area is proposed on First Street North. Additionally, a sidewalk is proposed along the property frontage. Using available on-line imagery, First Street North appears to be in good condition. Improvements to existing asphalt pavement within WA-109 are not anticipated.

TCF

II. Landscape



Landscape

II

The Schematic Design Phase Basis of Design (Design Criteria), as described herein, generally summarizes the design intent of materials and systems related to the landscape scope to be included in the Schematic Design cost estimate for the North Beach School Pacific Beach Elementary.

TREE RETENTION

All trees outside the limits of excavation are to be protected with 6-foot tall temporary chain link fencing at the dripline of each tree or the treeline, depending on area of work. When the dripline extends over hardscape to remain the fencing shall be placed at the boundary between hardscape and softscape.

PAVING AND FINISHING

- **Type 1:** Cast-in-place (CIP) Concrete Paving: Sidewalks Medium broom finish, tooled joints, no shiners. See civil for horizontal and vertical controls.
- **Type 2:** Cast-in-place (CIP) Concrete Paving: Plazas Topcast Finish, sawcut joints. See civil for horizontal and vertical controls.
- **Type 3:** Vehicular Asphalt Paving: 20' Fire Lane, ref civil
- **Type 4:** Asphalt: Playground Blacktop, ref civil
- **Type 5:** Crushed Rock Path: Nature Trails(2") ¼"minus crushed rock, over (4") 5/8- crushed rock, compacted

PROGRAM AREA

PLAY AREA

- Pedestrian asphalt surfacing Type 4 (ref civil) with painted lines for basketball, hopscotch, foursquare (16' x 16'), tetherball, and art.
- (3) basketball hoops. Basis of Design: Bison Ultimate HangTime Clear 6" Adjustable Systems
- (1) 6' bench seating
- 5-12 year old Climbing structure with slide(s).
- Swing set (approx. 32' x 44'). (2) belt swings, (1) multi-user inclusive swing.
- (1) Group Spinner
- Safety surfacing at swings, climber, and spinner. Synthetic turf with fall attenuation pad, infill, perimeter drainage with cleanouts, and perimeter nailer board. Turf safety surfacing basis of design: Playground Grass (Ultra) by ForeverLawn.
- See Planting and Soil Preparation section for planting.

OUTDOOR EDUCATION & TRADITIONAL GARDENS

- Boulders and natural log seating on crushed rock and wood chip surfacing
- Covered Gathering Ring. 34' DIA crushed rock circle, (20) 12" log rounds for seating. (5)
- 18" wide, 8'-10' long log benches
- Semi-circular wood pavilion
- (1) Porch swing bench on CIP Concrete paving Type 1.
- See Planting and Soil Preparation section for planting.

PLAY FIELD

- Lawn for informal sports play. See Planting and Soil Preparation section for lawn and planting.
- (1) Backstop
- (4) 6' bench seating

MULTI-USE SPORT FIELD

- 200'x350' Artificial Turf Sport Field with Soccer striping
- (2) Backstops
- (2) Soccer goals
- CIP Concrete Paving (Type 1) perimeter walking path
- Subdrainage, Ref Civil

PLAY AREA PLAZA

- CIP Concrete plaza paving Type 2
- (3) 48" square picnic tables and seats, (1) 120"x36" rectangular accessible picnic table and seats.
- (1) 6' Bench seating
- (1) Trash Receptacle, (1) Recycling Receptacle

ENTRY PLAZAS

- Planted areas with natural logs, rootwads, boulders, and mulch for biophilic benefits.
- Boulders located within CIP Concrete Paving Type 2
- Type 1 & Type 2 CIP concrete paving
- Lawn. See Soil Preparation for lawn.
- (2) Trash Receptacle, (2) Recycling Receptacle

STUDENT GARDEN

- (1) 12'x20' Greenhouse – existing
- (10) Raised Garden beds on wood chip surfacing
- In-ground edible plants at edges
- Boulders and natural log seating on wood chip surfacing

NATURE SEATING AREA

- Boulders and natural log seating on wood chip and crushed rock surfacing

SITE FURNISHINGS

BENCH SEATING

- **Basis of Design:** Transit Collection, by Tournesol with recycled plastic lumber seat and back.
- **Quantity:** 6

PICNIC TABLES

- **Basis of Design:** Transit Collection, by Tournesol with recycled plastic lumber integral table and seats
- **Quantity:** 4

BOULDERS

- (12) 2'x2'x1.5' Rounded glacial erratic Boulders
- (8) 3'x2'x2' Rounded glacial erratic Boulders
- (6) 4'x3'x2' Rounded glacial erratic Boulders
- (4) 5'x3' x2' Rounded glacial erratic Boulders

TRASH RECEPTACLES

- **Basis of Design:** Urban Accessories OT Litter Receptacle with door.
- **Quantity:** Assume 3 trash, 3 recycling.

BICYCLE PARKING

- **Basis of Design:** Sportworks ADA-compliant Tofino No-scratch Bike Rack
- **Quantity:** Assume 5 will be required.

FENCE, GATES, BOLLARDS

- 4' Height Wood Garden Fence
- 6' Height Chain Link Perimeter Fence: Black vinyl coated
- (2) 6' Vehicular Swing Gates, (2) 6' Pedestrian gates. All gates shall match the adjacent fence. Gates at play areas to include panic crash bars and hardware and child resistant locks as shown on the plans.
- (4) Removable vehicular bollards
- (3) Chainlink baseball backstops with wood wall backboard

Landscape

II

PLANTING AND SOIL PREPARATION

SHRUB AND TREE PLANTING AREA (PER PLAN)

- A Decompact subgrades to 24" below finish grade.
- A Import 6" of bioretention soil as cap over existing soils, typical.
- A Each tree location shall be decompacted to 24" depth below finish grade, and three times the width of the root ball.
- A 1 gal. shrubs, 1 gal. and 4" groundcover and herbaceous
- A Deciduous / broadleaf trees to be 1.5" caliper. Conifers to be 6'-7' tall.
- A 3" depth of aged med bark mulch or coarse sand. See plans.
- A Maintenance Edge: 12" width of Type 1 Concrete maintenance strip at perimeters of building where adjacent to landscape areas.

SEEDED MEADOW AREA (PER PLAN)

- A Decompact existing soil to 12" below finish grade.
- A Import 6" of bioretention soil as cap over existing soils, typical.
- A Seeded meadow mix
- A 1 gal shrubs and plug perennials

BIORETENTION/DETENTION POND PLANTING AREA (PER PLAN)

- A Planting to meet 2024 Stormwater Management Manual for Western Washington requirements.

LAWN (PER PLAN)

- A Decompact native soil to 12" below finish grade.
- A 8" depth bioretention soil
- A Proof roll
- A Sod (or hydroseed, depending on timing of installation)
- A Basis of design: Premium Sod Seed Mixture by Country Green Turf Farms
- A Maintenance Edge: 12" width of Type 1 Concrete maintenance strip at perimeters of building where adjacent to landscape areas.
- A 1-year establishment period warranty for planting

MULCH

- A 3" depth of aged med wood chips or coarse sand
- A 3" depth of coarse compost mulch in Bioretention/ Detention Pond

IRRIGATION

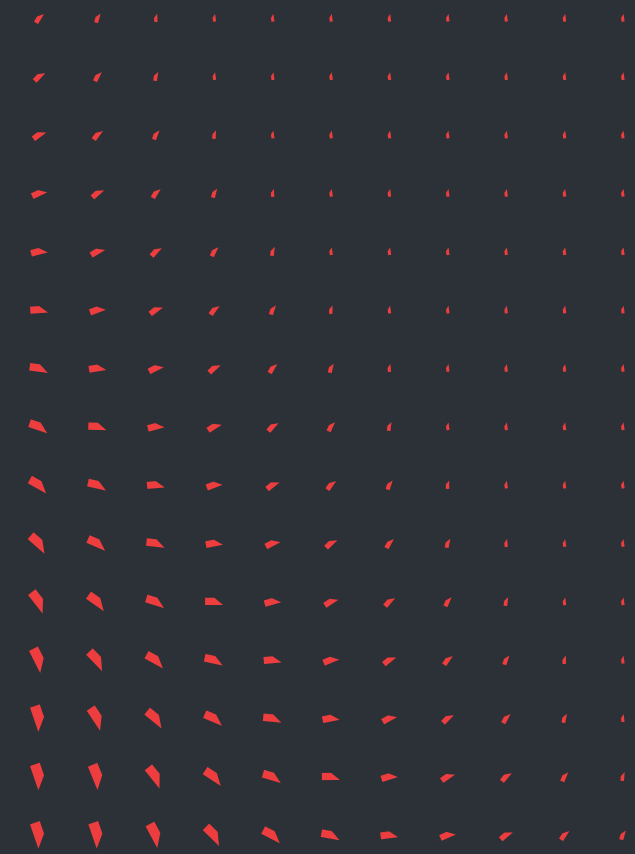
- A Automatic permanent two-wire underground irrigation with rain sensor and flow meter. All new planting and lawn areas to receive permanent irrigation with pop-up rotary spray heads to provide head-to-head uniform coverage. All new trees are to receive dedicated irrigation zones. Assume one point of connection assembly and dedicated irrigation meter. 1-year establishment period warranty for irrigation. See plans for basis of design for controller, valves, spray bodies, and nozzles.

ASSUMPTIONS

- A Site lighting per electrical.
- A Paving (except at play areas), curbs, site walls, and tactile warning per civil.

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III. Architectural



Architectural

III

The Pacific Beach Elementary School is conceived as a durable, efficient, and flexible educational facility that will serve as a community anchor for Pacific Beach and its surrounding region. Designed to Type V-B non-rated construction standards with a projected 30–50 year life expectancy, the building reflects the North Beach School District's commitment to long-term resilience, low-maintenance systems, and high-performance learning environments.

The project integrates the priorities established in the Owner's Project Requirements (July 2026), ensuring alignment with the District's educational mission, sustainability goals, and operational needs. It also responds directly to the Educational Specifications (March 2026), which define the programmatic and spatial requirements for Pacific Beach Elementary School.

Design strategies are guided by compliance with the 2021 Washington State Energy Code (WSEC) and the Washington Sustainable Schools Protocol (WSSP 2023), targeting Class I baseline performance. They also reflect key health and safety standards, including WAC 246-366 for school environmental health, and the Tenor Engineering Acoustical Design Plan (July 2026), which establishes criteria for speech intelligibility and noise control.

Beyond compliance, the design emphasizes trauma-informed principles and community identity, drawing on Pacific Beach's coastal setting and timber heritage. Flexible spaces, daylight-filled interiors, and biophilic finishes will support diverse learners while welcoming families and community members into a facility that is adaptable for multiple uses, both during and beyond the school day.

01 GENERAL BUILDING DESCRIPTION

- A **Building Size:** Single-story facility, 34,321 SF gross floor area building and 1,600 SF covered Play with an Additive Alternate of additional covered play for 2,152 SF.
- A **Programs Housed:** Pacific Beach Elementary School K-5 with Special Education and OTPT Spaces as well as Native Education and Garden programs.
- A **Structural System:** Wood framed walls with plywood sheathing and TJI roof joists with plywood sheathing, concrete slab-on-grade, and Open web floor trusses, plywood sheathing with concrete topping.
- A **Construction Type:** V-B non-rated per International Building Code (IBC).
- A **Seismic Design:** Enhanced performance under the OSPI Seismic Grant Program.
- A **Maximum Allowable Construction Cost (MACC):** $28,509,971
- A **Schematic Design Estimate:** $TBD (Sept, 2026). The team is partnering with Sazan and the North Beach School District to identify savings opportunities to anticipate getting the project in range of acceptable contingencies. Continued evaluation of the estimate will be ongoing to maintain the project budget.

02 BUILDING ENVELOPE

- A **Exterior Walls**
  - B **Cladding 1:** Brick veneer at the activity wing and main entries for durability and impact resistance. This is consistent with District standards for masonry cladding at ground level.
  - B **Cladding 2:** Vertically oriented metal wall panels (example: AEP Span lok), with high-performance fluoropolymer coating for salt-air corrosion resistance.
  - B **Cladding 3 Fiber Cement panel:** (example Ceraclad) prefinished smooth and wood-look panels accent areas.
  - B **Wall Assemblies:** Loadbearing wood stud framing with spray foam insulation, plywood sheathing, continuous mineral wool insulation over a self-adhered WRB/air barrier (e.g., VaproShield WrapShield SA or equal), and rainscreen cladding attachment (Knight Wall or Cascadia system).
  - B **Corrosion Resistance:** All through-wall flashings and fasteners specified as stainless steel to meet ASD standards for coastal durability.
- A **Specialty Walls & Wall Accessories**
  - B **Service Yard Wall:** Natural face CMU wall with

anchored brick veneer flashed with a sheet metal cap.

- **Below-Grade Concrete Walls:** Concrete foundation walls provided with dampproofing or waterproofing at water-critical conditions. Extruded polystyrene insulation (XPS) with minimum R-10 will be installed on the exterior of below-grade walls for thermal performance and moisture resistance. Reference is made to the Civil Basis of Design for foundation drainage measures such as perimeter drains and gravel backfill.
- **Perforated Screen:** 3/8" thick aluminum panel screen, perforated with a custom waterjet pattern, powder coated in a standard RAF color and fastened to structure with structural knife plates welded HSS within the wall. Located at (3) instances on the south elevation from 11'-6" AFF to underside of soffit at the main entrance, library, and SPED services.

Roofs

- **Primary Sloped Roofing:** Standing seam metal roofing (AEP Span™ or equal), with high temperature resistant underlayment and 1 additional layer of underlayment.
- **Performance:** Assemblies designed to meet or exceed WSEC 2021 prescriptive R-values (minimum R-38, target R-49) and achieve minimum SRI values for roof areas.
- **Warranty:** Roofing systems detailed for a minimum 20-year warranty, with design intent for a 20-year service life. Manufacturer's weatherproofing warranties will be specified for standing seam metal roofing.
- **Roof Accessories:** Roof Hatches and/or HM access door at each main roof area.
- **Fall Protection:** Permanent fall protection strap anchors mounted to the wood structure, integrated into the wall design for worker safety and compliance with OSHA standards. Guardian Fall Protection D-rings or similar systems will be specified at roofs.
- **PV Panel Attachments:** Roof designed to accommodate solar PV installations using Ironridge Lynx clamps and L-Foot and horizontal rail systems, ensuring weatherproof integration without roof penetration failures.
- **Roof Access Walkways:** Non-slip walk pads provided along service routes to mechanical equipment to protect membranes and improve maintenance safety. At standing seam roofing, walk pads will be aluminum grate systems mounted on S-5 clips to ensure secure attachment without compromising roof performance.
- **Gutters:** Prefinished sheet metal gutters from AEP Span with marine-grade finish, minimum width of 6 inches and minimum depth of 4 inches, installed with stainless steel fasteners for durability in the coastal environment.
- **Downspouts:** PVC pipe downspouts, minimum 4-inch diameter, tightlined to storm drains. No downspout will daylight at grade. Stainless steel debris strainers will be provided at gutter and downspout inlets for durability and maintenance control.
- **Main Entrance Canopy:** Approximately 20' W x 10' D powder-coated aluminum plate canopy with hollow metal section framing fastened to HSS knife plates through the Administration glazing.

Exterior Windows & Glazing

- **Primary Glazing:** Fiberglass windows (Cascadia or similar) with insulated double-pane low-E glazing (Guardian or similar). Select classrooms include operable awning-style vents for natural ventilation. Performance criteria: maximum U-factor of 0.32, SHGC of 0.40 or lower, and STC ratings of 35–40 at high-noise exposures.
- **Secondary Glazing:** Thermally broken painted aluminum storefront frames (Kawneer or similar), exterior-glazed with double-pane insulated glass using Guardian low-E coating or similar. Performance criteria per WSEC: maximum U-factor of 0.36 and SHGC of 0.40 or lower. Acoustic-rated glazing assemblies specified at street-facing facades to mitigate traffic noise. Laminated glazing will be provided at main entry vestibules and Itinerant, Counselor, and Principal Office at the Administration for enhanced safety and durability.

- B **Window Coverings:** Manually operated roller shades at exterior windows, electrically operated where roller shade elevation makes for difficult access. Draper as the basis of design.

A **Exterior Doors**

- B **Storefront Entrances:** Aluminum storefront entries with thermally broken framing systems (similar to Kawneer Trifab® 451UT), meeting U-factor 0.45 or better, with panic hardware and automatic operators at primary entrances.
- B **Overhead Sectional Door:** Electrically operated aluminum sectional doors with insulated Low-E double-glazing. Clopay; Aluminum Glass Model EX3220 sectional door system, Aluminum full vision with Solarban 70 glazing, black anodized finish. Located at the Art / Maker Space Flex Classroom.
- B **Hollow Metal Entrances:** Curries Mercury thermally broken frames with Curries Q-Maxx insulated metal doors, coated with high-performance finishes to resist marine climate impacts.

A **Insulation**

- B **Interior Walls:** Sound batt insulation at sound-rated walls for the full depth of the stud cavity, and 5/8" minimum thickness Type 'X' drywall is typical.
- B **Exterior Walls:** Continuous exterior insulation, minimum R-21 effective with target R-25, using mineral wool or rigid foam sheathing.
- B **Roof:** Rigid polyisocyanurate insulation at roof decks, minimum R-38 with target R-49.
- B **Below-Grade:** Foundation walls insulated to minimum R-10.
- B **Moisture Resistance:** Insulation types selected for improved thermal performance and resistance to moisture intrusion.

A **Exterior Stair / Platform**

- B **Construction:** Cast-in-place concrete to outdoor platform.
- B **Treads & Nosings:** Cast-in slip-resistant nosings for durability and safety in wet conditions.
- B **Railings:** Hot-dip galvanized steel railings, ground-set into concrete rather than surface-bolted, to enhance corrosion resistance and long-term stability.
- B **Fasteners:** Stainless steel fasteners specified where applicable to maximize durability in the coastal environment.
- B **Integration:** Stairs serve as exterior access to outdoor platform at the southwest corner of the building outside of the Music Room and are coordinated with site circulation. Assemblies are designed for minimal daily use and maintenance.

A **Air & Vapor Control**

- B **System Type:** Self-adhered WRB at exterior wall assemblies and self-adhered interim roofing membrane at roof assemblies serving as the primary air barrier layers.
- B **Details:** Fluid-applied membranes and flashing at penetrations, window frames, and control joints.
- B **Performance:** Designed to comply with WSEC 2021 requirements and enhance overall building envelope tightness, reducing infiltration and improving energy efficiency.

03 INTERIOR FINISHES

A **Interior Doors:**

- B **Typical Doors:** Wood veneer doors with hollow metal frames, stained and sealed to provide warmth and durability. VT Industries as design basis.
- B **Service Doors:** Doors at high-use service areas (mechanical rooms, electrical rooms, etc.) shall be hollow metal leaf with hollow metal frames for durability and security.
- B **Operable Wall at Gym & Commons:** Electrically operated folding panel partition (Advanced Equipment Corporation Alpha Series as design basis) to provide flexibility for large assembly and multipurpose functions.
- B **Acoustic Doors:** Door assemblies with STC ratings of 35 will be provided at spaces requiring enhanced sound isolation.

- B **Access Service Panels:** Access service panels with trim collar (no mud-in), factory primed to be field painted. All doors below 8' elevation will be provided with keyed locks.
- B **Overhead Coiling Door:** Electrically operated custom color aluminum coiling door with stainless steel trims and covers, 8' in height. Overhead Door Model 620 or similar as basis of design. Coiling doors will be available at the Warming Kitchen.

A **Interior Glazing:**

- B **Window Coverings:** Manually operated roller shades at interior glazing locations, electrically operated where elevation makes access difficult. Draper as basis of design.
- B **Vision Panels & Sidelites:** Interior vision panels and sidelites using safety-rated laminated or tempered glazing in hollow metal or aluminum frames. Acoustic laminated glazing used at spaces requiring enhanced sound isolation. No fire-rated glazing assemblies will be provided on this project.
- B **Interior Storefront:** Painted aluminum storefront full height at the Reception, and security vestibules. Kawneer or similar, as design basis. Glazing to be tempered, with laminated glazing provided at designated safety locations.

A **Interior Stairs:**

- B **Floors:** Formed concrete clad with resilient rubber treads and risers (Nora or equivalent District-approved product). Slip-resistant, integral nosings for durability and safety.
- B **Walls:** Painted GB, with 1/8" thick compact plastic laminate (CPL) wainscot at lower walls for impact resistance and durability.
- B **Ceilings:** Painted GB or acoustic ceiling tile with grid per the Reflected Ceiling Plan.
- B **Design Intent:** Assemblies are designed for heavy daily use with long-term maintainability. CPL wainscot protects walls in high-traffic student circulation zones. Enclosures comply with fire-rating requirements while open stairwells provide clear sightlines consistent with trauma-informed design.
- B **Ship ladder access hatch** to mechanical attic from select support spaces per plan.

A **Handrails:**

- B **Material:** Stainless steel, continuous on both sides of stairs per IBC/ADA requirements.
- B **Mounting:** Wall-mounted or guard-mounted as required.
- B **Detailing:** Rounded gripping surface, slip-resistant finish, mounted 34–38 inches above stair nosing per ADA.
- B **Design Intent:** Stainless steel handrails are selected for durability, hygiene, and low maintenance in a coastal, high-use educational setting. Continuous runs improve accessibility, safety, and user comfort.

A **Guardrails:**

- B **Material:** Steel with high-performance coating finish at interior locations.
- B **Height/Spacing:** Minimum 55 inches high (exceeding IBC 42-inch requirement) for enhanced safety in educational environments. Vertical pickets spaced ≤ 4 inches O.C. per IBC.
- B **Mounting:** Anchored into mezzanine framing for long-term stability.
- B **Design Intent:** Guardrails exceed minimum height for student safety and are detailed for durability. Transparent infill (tempered glass or perforated metal) may be used in high-visibility areas to support supervision and open sightlines.

A **Restrooms:**

- B **Floors:** Polished concrete with localized drain slopes.
- B **Walls at Single-Occupant Restrooms:** Full-height ceramic tile for durability and moisture resistance. Full height framed walls forming individual toilet compartments.
- B **Walls at Boys/Girls Restooms:** Full-height ceramic tile for durability and moisture resistance. HPDE forming individual toilet compartments with visibility below.

- B **Ceilings:** Moisture-resistant gypsum board, painted.

A **Corridors:**

- B **Flooring:** Polished concrete is preferred.
- B **Walls:** Painted gypsum board, 7'-2" high 1/8" thick compact plastic laminate (CPL) wainscot at lower walls for impact resistance and durability. Acoustical 1" felt or PET wall panels fastened or adhered to walls, 10'-0" AFF and above, BOD: Impact Acoustics or similar.
- B **Ceilings:** Acoustical 1" felt or PET ceiling panels fastened to underside of roof sheathing for noise control and access at first floor. Painted gypsum board and hardwood veneer plank system at key locations. BOD Acoustic System: Impact Acoustics or similar.
- B **Casework:** (3) 6' L x 18" D solid wood benches in corridor.
- B **Notes:** High-traffic durability prioritized. Provide selected areas for gathering that promote biophilic concepts through custom vinyl wall graphics and/or wall coverings.

A **General Classrooms:**

- B **Resilient Flooring:** Nora rubber tile is preferred
- B **Walls:** Painted gypsum board with tackable and writable wall surfaces integrated. Sound-rated partitions designed to achieve minimum STC ratings per the Acoustical Report (STC 50 at classroom separations).
- B **Ceilings:** Acoustical lay-in ceiling tiles, Armstrong basis of design, with a minimum NRC rating of 0.70 for sound absorption and accessibility to utilities.
- B **Casework:** Typical classrooms will receive plastic laminate casework.
- B **Accessories/Equipment:** Monitor, (2) Magnetic 6×6 Markerboard, Tack boards, Soap dispenser and paper towel dispenser. (1) Custom Built-In Hardwood Veneer Display Case at Art/Maker Space Flex Classroom to Corridor.

A **Administration & Offices:**

- B **Floors:** Carpet tile for acoustical comfort and professional appearance.
- B **Walls:** Painted gypsum board with accent hardwood veneer plank system at select locations.
- B **Ceilings:** Acoustical lay-in ceilings throughout, with accent hardwood ceilings at reception areas, Armstrong basis of design, with a minimum NRC rating of 0.70 for sound absorption and accessibility to utilities.
- B **Casework:** Plastic laminate casework for workrooms and conference room. Main reception will receive a quartz custom countertop with hardwood accents.
- B **Accessories/Equipment:** Monitor, 3×4' Tackboard, under-counter safe and (1) custom display case at Reception.

A **Health Room**

- B **Floors:** Sheet resilient with coved base for sanitation.
- B **Walls:** Painted GB with washable finishes at bed height.
- B **Ceilings:** Acoustical lay-in ceilings NRC ≥ 0.70.
- B **Casework/Fixtures:** Plastic laminate counters with stainless steel sink; lockable storage for medical supplies.
- B **Residential Fixtures:** Provide an ice maker and lockable undercounter refrigerator for secure storage of medications and supplies.
- B **Additional Fixtures:** (2) medical cots with divider curtains for student rest and isolation as needed.
- B **Adjacent Health Toilet:** Restroom with accessible shower, polished concrete flooring, full-height ceramic tile walls, and moisture-resistant GB ceiling.
- B **Design Intent:** Provides a supportive, sanitary, and acoustically private environment for student care. Divider curtains and cots allow for temporary student rest. The adjacent toilet with shower ensures hygiene and emergency use. Durable, washable finishes and secure refrigeration provide long-term maintainability.

- **Cafeteria:**
  - **Floors:** Nora rubber sheet is preferred
  - **Walls:** Painted gypsum board, 1/8" thick compact plastic laminate (CPL) wainscot 8' high for impact resistance and durability. Painted GB above with 335 sq ft of 2" thick felt or PET acoustical wall panels with minimum NRC 0.9 above 10' AFF. Tackable display panels at select locations.
  - **Ceilings:** Acoustical 1" felt or PET ceiling panels fastened to underside of roof sheathing for noise control. Combination of exposed structure with suspended acoustical ceiling clouds (BOD: Impact Acoustics), plus hardwood ceiling accents for warmth and identity.
  - **Casework/Fixtures:** Wall-mounted trough-style handwashing station and drinking fountain with bottle filler. Built-in trash/recycle station with plastic laminate casework and quartz countertop.
  - **A/V:** Built-in projection screen, A/V connections, and recessed speakers.
  - **Accessories/Equipment:** Wall mounted monitors
  - **Operable Wall:** 16'-0" high motor-operated between Gym and Cafeteria.
  - **Design Intent:** A flexible hub for student dining, collaboration, and community events. Durable finishes support high daily traffic while acoustical treatments control reverberation for speech intelligibility.
- **Food Service / Kitchen:**
  - **Flooring:** Quarry tile over recessed slab with coved integral base for sanitation (District Standard approach).
  - **Walls:** FRP panels or stainless-steel wall protection in cooking zones for washability. Painted gypsum board in ancillary storage areas.
  - **Ceilings:** Scrubbable 2×4 ACP.
  - **Equipment Integration:** All finishes coordinated with stainless-steel kitchen equipment for continuous washable surfaces.
- **Gymnasium:**
  - **Flooring:** Hardwood plank flooring (District Standard) for durability, slip resistance, and shock absorption. Striping per program requirements.
  - **Walls:** Painted gypsum board, 1/8" thick compact plastic laminate (CPL) wainscot 8' high for impact resistance and durability. Painted GB above with 335 sq ft of 2" thick felt or PET acoustical wall panels with minimum NRC 0.9 above 10' AFF. Tackable display panels at select locations. Hardwood accents at proscenium.
  - **Ceilings:** Acoustical 1" felt or PET ceiling panels fastened to underside of roof sheathing for noise control.
  - **Equipment Integration:** Front-fold basketball hoops with protective finishes. (3) rows powered bleachers, and (2) 8×4 markerboards.
  - **Operable Wall:** 16' motor operated between Gym and Cafeteria. Assume custom graphic on Gymnasium side with acoustic and/or laminate finish facing Cafeteria.
- **Library**
  - **Function:** Library and Media Center
  - **Flooring:** Carpet in Library, Nora Rubber Tile in Library Workroom.
  - **Walls:** Painted gypsum board with tackable display surfaces and teaching wall. Acoustic clouds fastened to North wall for additional performance as well as school identity.
  - **Ceilings:** Acoustical 1" felt or PET ceiling panels fastened to underside of roof sheathing for noise control. Suspended clouds for supplemental acoustic performance. Wood ceiling over reading & book shelving spaces.
  - **Casework:** Built-in shelving and circulation desk - plastic laminate with quartz countertop at desk. Hardwood veneer display case near circulation desk.

A Library

- B **Function:** Library and Media Center
- B **Flooring:** Carpet in Library, Nora Rubber Tile in Library Workroom.
- B **Walls:** Painted gypsum board with tackable display surfaces and teaching wall. Acoustic clouds fastened to North wall for additional performance as well as school identity.
- B **Ceilings:** Acoustical 1" felt or PET ceiling panels fastened to underside of roof sheathing for noise control. Suspended clouds for supplemental acoustic performance. Wood ceiling over reading & book shelving spaces.
- B **Casework:** Built-in shelving and circulation desk - plastic laminate with quartz countertop at desk. Hardwood veneer display case near circulation desk.

A Music Room

- B **Function:** Music Classroom, performance platform.
- B **Flooring:** Nora Rubber tile is preferred.
- B **Walls:** Painted gypsum board with tackable display surfaces and teaching wall. 2" thick felt or PET acoustical wall panels with minimum NRC 0.9 as needed.
- B **Ceilings:** Acoustical lay-in ceilings NRC ≥ 0.70 with acoustic forms.
- B **Casework:** Built-in storage and associated cabinetry, drop-in sink. Built-in instrument storage in accessory storage room.
- B **Operable Wall:** Motor operated between Music and Gym.
- B **Design Intent:** Can function as a classroom or open to become a performance platform.

A Support Spaces (Storage, Mechanical, Electrical)

- B **Floors:** Clear-sealed concrete.
- B **Walls:** Painted GWB in general storage; moisture-resistant surfaces in food storage.
- B **Ceilings:** Exposed or gypsum board as required.
- B **Casework/Fixtures:** Utility storage shelving, mop sink per plan.
- B **Notes:** Service clearances maintained for maintenance.

A Accessibility & Code Compliance

- B **General Compliance:** The building is designed to fully comply with the 2021 International Building Code (IBC), 2021 Washington State Building Code, 2021 Washington State Energy Code (WSEC), and all referenced standards. Accessibility requirements are provided per the Americans with Disabilities Act (ADA 2010 Standards) and the Washington State Building Code accessibility provisions.
- B **Accessible Routes:** Continuous accessible paths of travel are provided to all occupied spaces, including entries, classrooms, commons, gymnasium, daycare, health/wellness, and outdoor learning areas. Ramps, elevators, and compliant door clearances are incorporated.
- B **Vertical Access:** Ship ladders are provided for access between levels. Interior stairs are supplemented by accessible routes per IBC and ADA.
- B **Restrooms:** All public and instructional restrooms include accessible toilet stalls, grab bars, clear floor spaces, and accessible lavatories with insulated piping. The SPED Toilet includes an accessible shower.
- B **Assembly & Gathering Spaces:** The Commons/ Cafeteria and Gymnasium include accessible seating, companion seating, and assistive listening systems per ADA and IBC Chapter 11.
- B **Instructional Spaces:** General Ed Classrooms and Specialty Classrooms include accessible casework (sink and counter heights) and adaptable furnishings.
- B **Signage:** All required permanent room signage includes raised characters and Braille. Directional signage designed per ADA and WAC standards for legibility and consistency. Supergraphic at Main Exterior West Elevation.
- B **Acoustics & Lighting:** Accessibility is extended to sensory needs Sensory space and Classrooms have

dimable lighting.

- **Acoustics:** Classrooms meet ANSI S12.60 and WAC 246-366 acoustical standards (STC 50+ partitions, NRC ≥ 0.70 ceilings).
- **Lighting:** Complies with ADA and WAC standards for visual comfort, glare reduction, and adequate illumination at all accessible routes.
- **Trauma-Informed Design:** Accessibility is not limited to compliance but incorporates equitable and trauma-informed strategies, including clear sightlines, intuitive wayfinding, and calming finishes.

A Sustainability & Health

The Pacific Beach Elementary School is designed to meet the Washington Sustainable Schools Protocol (WSSP 2023) and the 2021 Washington State Energy Code (WSEC) C406 requirements. These frameworks guide strategies that improve building performance, reduce operational costs, and support student wellness.

- **WSSP 2023:** The project achieves credits across site, water, materials, energy, indoor environmental quality, and operations, emphasizing daylighting, acoustics, indoor air quality, and durable, low-emitting materials.
- **WSEC C406:** The design exceeds the required energy efficiency credits through enhanced lighting, HVAC efficiency, and load management strategies, with flexibility to add renewable readiness or envelope enhancements if needed.
- **Health & Wellness:** Design strategies prioritize daylighting, acoustical control, thermal comfort, and air quality, aligning with trauma-informed and equitable design principles. Natural finishes and community-focused spaces further support occupant wellbeing.

Summary: Together, WSSP and C406 strategies ensure that the South Site Elementary School is a high-performance, resilient, and healthy school environment, balancing sustainability, operational efficiency, and student success.

A Design Life & Future Adaptability

- **Service Life:** Building designed for a 25–35 year lifespan through durable envelope assemblies, high-performance finishes, and maintainable systems.
- **Flexibility:** Classroom layouts and modular partitions allow spaces to be reconfigured as programs evolve, supporting long-term adaptability.
- **Envelope Maintenance:** Wall and roof assemblies detailed to allow for selective replacement of cladding, glazing, and roofing without major structural modifications.
- **Future Expansion:** Site and circulation are designed to allow for potential building additions without disrupting primary functions.
- **Sustainability Integration:** Strategies such as biophilic design and daylighting are intended to remain viable and adaptable across the building's service life.

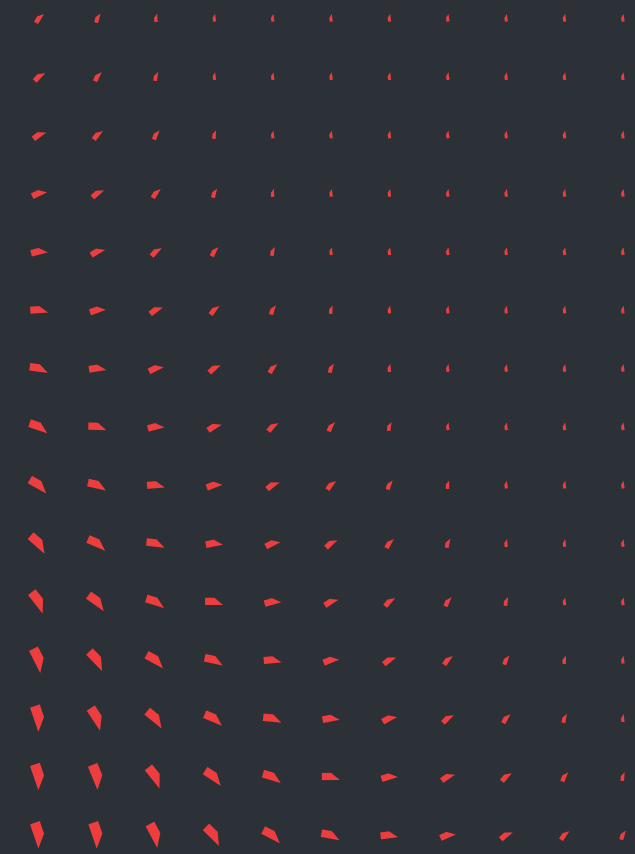
A Summary

The Pacific Beach Elementary School is designed as a durable, efficient, and adaptable educational facility that reflects community identity while supporting the District's diverse programs. The building envelope incorporates proven materials and high-performance insulation to ensure long-term resilience in Pacific Beach's coastal environment. Interior finishes are space-specific, balancing durability, maintainability, and comfort. Large spaces—including the Cafeteria and Gym—are planned for flexibility, community use, and student engagement. The design integrates sustainability and health strategies, such as daylighting, biophilic elements, and acoustical control, to enhance both performance and occupant wellbeing. The Pacific Beach Elementary Center is intended to serve as a lasting community asset aligned with North Beach School District's long-term goals for resilience, quality, and educational excellence.

B

TCF

IV. Envelope



Envelope

IV

INTRODUCTION

Pacific Beach Elementary School will be a new, one-story elementary school building with roughly 33,000 SF total. The project is designed under the 2021 WSBC, 2021 WSEC, and WSSP 2023. Below is a discussion of energy code compliance approach and air barrier basis of design material recommendations.

AIR BARRIER

The new school will include a continuous building air barrier system over the entire exterior envelope (roof, walls, and floor) separating the interior conditioned air from the exterior unconditioned air. The allowable air leakage rate shall not exceeding 0.25 cfm per square foot of exterior envelope area at 75 pa (or 0.3 wg) per the requirements of WSEC section C402.5.3. The continuous air barrier system includes airtight connections to any penetrations, windows, doors, louvers, and between adjacent different types of air barrier systems. At this time, no additional C406 energy credits for enhanced air leakage have been selected.

A Walls

A rainscreen with continuous insulation and the same air and water barrier will be used behind all cladding systems providing a continuous air and water barrier around the entire building. The air and water barrier basis of design will be Vaproshield Wrapshield SA. This system is a vapor permeable self-adhered sheet with fluid-applied flashing for fenestration openings, door openings, and penetrations. All fenestrations and doors will be sealed to the fluid-applied flashing using compatible silicone sealant (DOW 758). Additionally, 2" min of spray foam insulation will be installed in the framed cavity to support the air barrier performance of the assembly.

A Roof

The proposed roof system is a standing seam metal roofing system over rigid insulation on sloped wood deck and truss structure. Basis of design for the air/vapor barrier will be VapAir Seal 725TR, a self-adhered air and vapor barrier installed over the wood structural deck. This product also serves as a temporary roof which allows the structure to be dried in before the finish roof is installed.

A Floor

The floor air barrier system will be 4" min concrete slab on grade. There are currently no floor overhangs (soffits) in this project.

A Thermal Envelope

Insulation values provided below are placeholder assumptions based on the prescriptive requirements in section C402 and will be adjusted accordingly as design progresses. These assumptions are being provided as a guideline for SD design efforts. At this time, no additional C406 energy credits for enhanced thermal envelope have been selected.

Prescriptive Insulation Requirements

ASSEMBLY	REQUIRED INSULATION
ROOF	R-38 ci
WOOD FRAMED WALLS	R-13 in cavity + R-7.5 ci
SLAB ON GRADE	R-10 for 24" (see below)
STOREFRONT	U-0.34
WINDOWS	U-0.26 (fixed) or U-0.28 (operable)
DOORS	U-0.37 (solid) or U-0.60 (glazed)

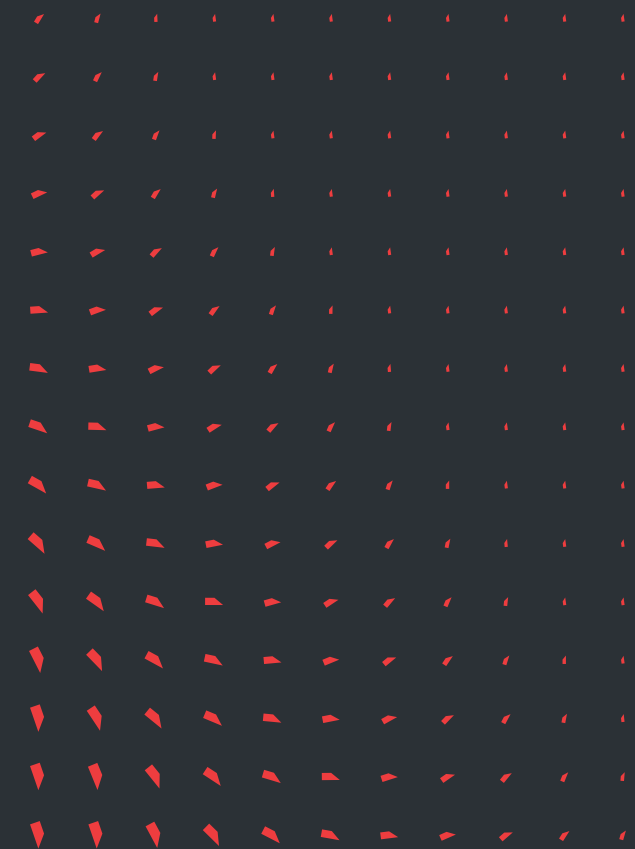
CONTINUOUS INSULATION (CI). Insulating material that is continuous across all structural members without metal thermal bridges other than fasteners that have a total cross-sectional area not greater than 0.04 percent (0.12 percent where all metal thermal bridges are stainless steel) of the envelope surface through which they penetrate, and service openings. It is installed on the interior or exterior or is integral to any opaque surface of the building envelope.

C402.2.4 Slabs-on-grade.

C402.2.4.1 Insulation installation. Where installed, the perimeter insulation shall be placed on the outside of the foundation or on the inside of the foundation wall. The perimeter insulation shall extend downward from the top of the slab for a minimum distance as shown in the table or to the top of the footing, whichever is less, or downward to not less than the bottom of the slab and then horizontally to the interior or exterior

TCF

V. Food Service



Food Service

V

INTRODUCTION

The Schematic Design Phase Basis of Design (Design Criteria), as described herein, generally summarizes the design intent of materials and systems to be included in Schematic Design for the Pacific Beach Elementary School.

FOOD SERVICES:

A The Pacific Beach Elementary School is to include approx. 800 SF kitchen and serving area, serving breakfast and lunch in an open servery for approx. 200 students. For the purposes of establishing design and costs for a warming kitchen, the following requirements are assumed to be a part of the project for the serving kitchen.

SUPPORT:

A A manager's desk & employee lockers will be located in the kitchen with provisions for phone and data lines. Designated compost / trash / recycle bin area within the kitchen. Trash dumpster will be provided in the loading dock area.

EQUIPMENT

A Equipment is to be 100% new (not relocated/reused). Equipment selection is to be based on the number of students, frequency of product / goods deliveries and a few factors such as durability and maintainability; both of which are important in this application. The Equipment is to be commercial grade, and Energy Star rated in categories available and as energy efficient as possible where Energy Star categories are not available.

01 FINISHES

A **Floors**

Commercial Welded Sheet Vinyl type or Quarry Tile finish floors.

B Bases, integral with floor, are to have coved corners

B All floors to be pitched to area drains to ensure elimination of standing water and adequate drainage of floor.

B Design kitchen areas for a minimum 100-lbs./sq. ft. (450 kg.cm2) live load capacity.

A **Walls**

Walls in foodservice areas shall be constructed using waterproof (green) gypboard or non-paper faced product covered full height, with FRP Paneling.

A **Ceilings**

Ceiling surfaces must be smooth, easily cleanable and light in color.

B Lay-in ceiling tile must be non-porous and non-fissured.

A **Lighting**

General lighting fixtures complete with lamps, wiring and switches.

B All exposed lamps MUST be plasticized shatterproof.

B Illumination levels shall be in accordance with local codes or recommendations of the Illuminating Engineering Society (IES) with the following minimum foot candle levels measured 36" above floor line.

B Dry and refrigerated storage areas 25

B Preparation areas 50

B Production areas 70

A **Regulations**

All work and materials shall be in accordance with the latest rules and/or regulations of agencies/authorities having jurisdiction. All regulations, including building codes, and other codes applying to this jurisdiction should be followed. In addition all equipment shall comply with the following:

B Local Health Code

B National Fire Protection Association, Kitchen Ventilators (NFPA-96)

B National Electric Manufacturer's Association (N.E.M.A.)

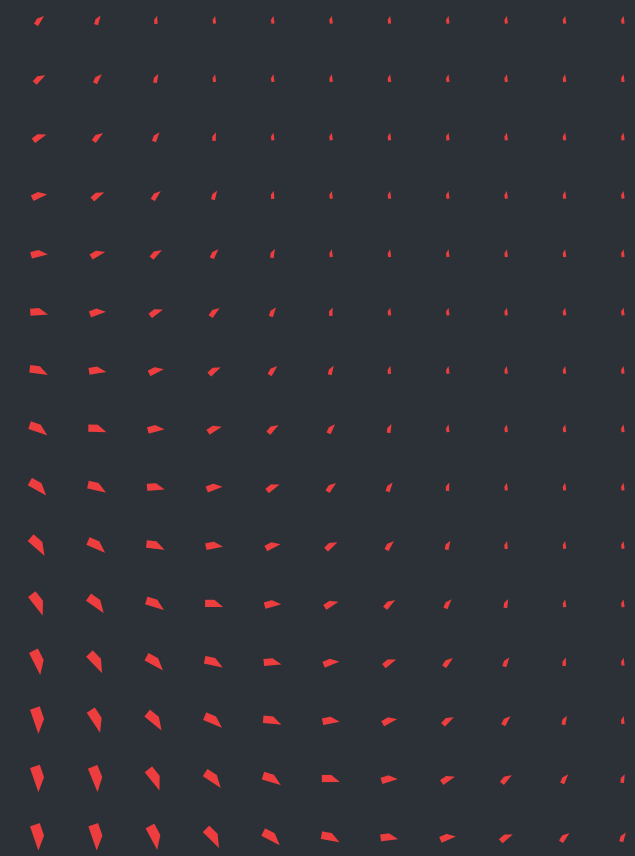
- B Underwriters Laboratories Inc., (U.L.), must bear label. National Electric Code, (N.E.C.)
- B National Sanitation Foundation, (N.S.F.), including NSF-7, must bear label in jurisdictions requiring the same
- B American Society of Mechanical Engineers must carry the (A.S.M.E.) stamp
- B Occupational Safety and Health Act (O.S.H.A.) Standards
- B Hazard Analysis Critical Control Path (H.A.C.C.P.) Standards
- B American Disability Act (A.D.A.) Standards

A **Warranty**

All equipment, fixtures and materials furnished and installed shall be guaranteed against defect in workmanship and material. All repairs and replacements which may have become apparent and necessary by reasons of such defects, during the first year after final completion and acceptance of equipment installation, shall be made without cost and expense to the Owner. All such repairs and replacements shall be made at a time and during hours satisfactory to the Owner.

TCF

VI. Structural



Structural

VI

INTRODUCTION

This narrative summarizes the schematic structural design for Pacific Beach Elementary School. The North Beach School District plans to replace the existing Pacific Beach Elementary with a new elementary school at a new site that is outside of the tsunami inundation zone. The new school building will be approximately 35,000 square feet. The building includes an activity wing containing a gymnasium, cafeteria, music room, and support spaces as well as a classroom and administrative wing and a covered play area.

The new school will be designed under the 2021 International Building Code (IBC), with ASCE 7-16 governing the building design except for seismic demand, which will be determined using ASCE 7-22. The school would represent a substantial hazard to human life in the event of failure due to its function as an elementary school campus. Therefore, the structure is classified as a Risk Category III building. This classification requires the use of a 1.25 seismic importance factor, which is in keeping with an "enhanced safety" structural performance level.

01 GRAVITY FRAMING

- The building will be wood-framed. Typical roof structure will consist of ½" plywood deck over wood I-joists and glu-lam beams spanning to glu-lam columns.
- The gravity system over the roof of the gymnasium and cafeteria will use a different framing system given the large spans. Plywood roof deck will be supported by wood bar joists or deep glu-lam beams.
- It is anticipated that MEP equipment will be located in a primary mechanical room and in three mechanical attics, two in the activity wing and one over the classroom wing. These mezzanines will be framed with a 1-1/2" concrete topping slab over plywood sheathing and wood I-joists. This assumed topping should be confirmed by the acoustical consultant.

02 LATERAL FRAMING

- **Seismic Design Criteria**
  - The final geotechnical report has not been completed. In the interim, Degenkolb is using the information in "Preliminary Geotechnical Engineering Report on Pacific Beach Elementary School Relocation" dated August 2024 by Haley & Aldrich. The seismic design of the building will be based on the spectral response accelerations provided in ASCE 7-22. The soil is characterized as Site Class F. Due to the seismicity at the site, the building will be assigned to Seismic Design Category D.
- **Wind Design Criteria**
  - The project is located in a Special Wind Region. The SEAW White Paper WEC #3-2025 will be used to determine design wind speeds for the structure, in addition to guidance from Grays Harbor County. Per the white paper, the basic wind speed at the site is 130 miles per hour for a risk category III structure, which is consistent with the recommendations from Grays Harbor County.
- **Lateral System**
  - The proposed lateral system for the main building Light Frame Wood Shear Walls. The equivalent lateral force procedure will be followed to design these elements.
- **Exterior Wall Design**
  - Exterior walls supporting cladding will be designed to limit deflections due to service level wind loads. The allowable deflection criteria is dependent on the type of cladding.
    - **Brick veneer cladding:** L/600 out-of-plane deflection
    - **Metal panel cladding:** L/120 out-of-plane deflection

03 FOUNDATIONS

- The foundation system is planned to be shallow reinforced concrete spread footings for columns and strip

footings for the walls. Footings will be designed in accordance with recommendations of the geotechnical engineer and soils report for the site. First floor will be a 5" thick concrete slab on grade.

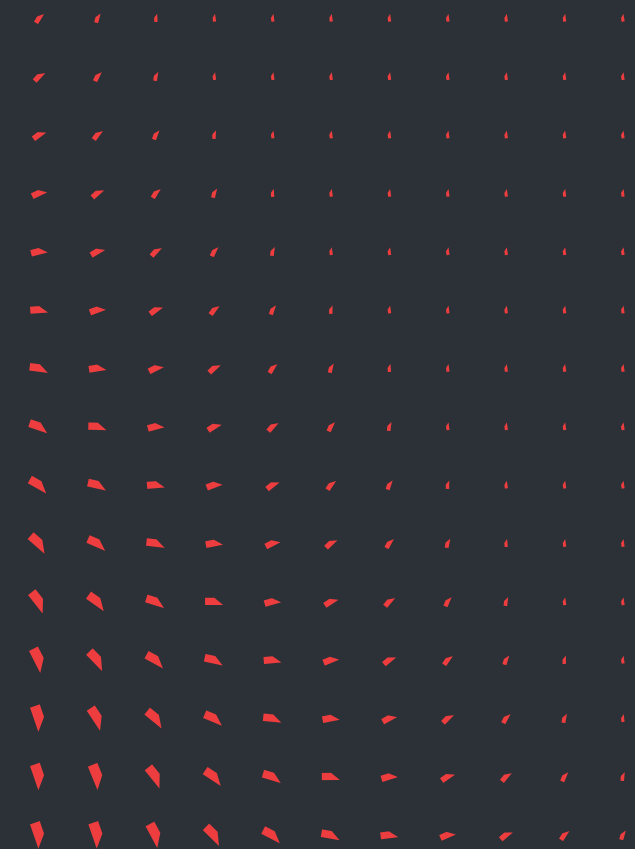
- Per the Geotech report, potentially liquefiable soils are present at the site. Ground improvement, which will likely take the form of rammed aggregate piers, will be required to mitigate liquefaction. The preliminary geotechnical report outlines the expected mitigation system. Further details of the required ground improvements are expected to be provided in the final geotechnical report, with the geotechnical engineer specifying design criteria for the final design of the ground improvement.
- Assumed Geotechnical Parameters
  - SDS = 1.20
  - Soil Site Class: D based on soil properties; F due to the presence of liquefiable layers
  - Allowable soil pressure (D+L): 4000psf (Assumes stone column improvement under footings)
  - 1/3 Increase in bearing pressure when Earthquake or Wind loads are applied

04 MATERIALS

- **Concrete (Foundations, Slab on Grade)**
  - **Concrete:** 4,000 psi, NW
  - **Maximum aggregate size:** 1" typical
  - **Maximum water-to-cement ratio:** 0.45
  - **Base Plate Grout:** 7,000 psi
- **Concrete Masonry Reinforcement**
  - Reinforcement:
    - ASTM A615 (60 KSI) for #5 bars and smaller
    - ASTM A706 (60 KSI) for #6 bars and larger
  - **Welded Bars:** ASTM A706 Grade 60
  - **Bar Splice Couplers:** Type 2 per ACI-318
- **Steel**
  - **Wide Flange:** ASTM A992
  - Channels, Angles, and miscellaneous plates: ASTM A36
  - Hollow Structural Steel (HSS)
    - Rectangular: ASTM A500C
    - Round: ASTM A500C
  - **Pipe:** ASTM A53 Grade B
  - **Base Plates:** ASTM A572 Grade 50
  - **Connection Material/Plates:** ASTM A572 Grade 50
  - **High Strength Bolts:** ASTM A325-N
  - **Welding:** E70XX electrodes
  - **Anchor Rods:** ASTM F1554 Grade 36
- **Wood**
  - **Sawn Lumber:** DF #1 or DF #2
  - **Glue Laminated Timber:** 24F-V4 or -V8 at cantilever spans
  - **Wood I joists:** RedBuilt I Joists or Equivalent
  - **Wood Bar Joists:** RedBuilt Open Web Joists or Equivalent
- **Specification Sections**
  - **03 10 00** Concrete Forming and Accessories
  - **03 20 00** Concrete Reinforcing
  - **03 30 00** Cast-in-Place Concrete
  - **05 12 00** Structural Steel Framing
  - **06 10 00** Rough Carpentry
  - **06 17 13** Engineered Wood Products
  - **06 18 00** Glue-Laminated Construction

TCF

VII. Mechanical



Mechanical VII

INTRODUCTION

A The mechanical system for the Pacific Beach Elementary School project is intended to be a balanced concept to meet project budget, published District Standards and expectations, and new 2021 WSEC requirements; while also adequately addressing and incorporating other equally important design, operational features and project goals including but not limited to programming and integration of spaces, operational and maintenance access needs and reduced system complexity, life cycle cost, occupant comfort, indoor air quality, reduction to ongoing District operational funds, acoustics, aesthetics, future system flexibility.

APPLICABLE CODES AND STANDARDS

The mechanical design shall meet, but not be limited to, the following codes:

- B *International Building Code (IBC)*
- B *International Mechanical Code (IMC)*
- B *International Fire Code (IFC)*
- B *Uniform Plumbing Code (UPC)*
- B *Washington State Energy Code (WSEC)*
- B *National Fire Protection Association (NFPA)*

The mechanical design shall meet, but not be limited to, the following standards:

- B *ASHRAE Standard 52.1 – Gravimetric and Dust Spot Procedures for Testing Air-Cleaning Devices Used in General*
- B *Ventilation for Removing Particulate Matter*
- B *ASHRAE Standard 55 – Thermal Comfort*
- B *ASHRAE Standard 62.1 – Ventilation for Acceptable Indoor Air Quality*
- B *ASHRAE Standard 90.1 – Energy Standard for Buildings Except Low Rise Residential*
- B *SMACNA – Sheet Metal & Air Conditioning Contractors*
- B *WSSP – Washington State Sustainable School Protocol*

HVAC SYSTEM DESIGN CRITERIA:

Table 1- Outdoor Design Temperatures

DESIGN SEASON	TEMPERATURE
OUTDOOR WINTER DB	26 ° F*
OUTDOOR SUMMER DB	79 ° F*

BUILDING ENVELOPE:

A *Building envelope* shall be in compliance with the minimum prescriptive values as defined by the 2021 Washington State Energy Code.

FIRE SPRINKLER SYSTEM:

A *The building* shall be completely sprinkled with wet system coverage in conformance with NFPA 13 and local AHJ requirements. The design shall include a wet pipe system to serve all interior occupied areas and combustible void spaces. Wet system piping shall be black steel with threaded or mechanical grooved joints. Where design coordination allows, non-combustible constructed building overhangs shall be protected with dry sidewall heads off of the wet system; and a dry system shall be provided at overhangs that are too large for dry sidewall head coverage if required by the AHJ.

A *The fire sprinkler service entrance* to the building shall be located within the building at the riser room. Fire system backflow prevention shall consist of a double detector check valve (DDCV) assembly. A fire department connection and post indicator valve shall be located on site downstream of the DDCV by Civil.

PLUMBING SYSTEMS:

- **1. Utilities:** The mechanical systems will be connected to site water, fire and sewer designed by the civil engineer. Connection will be at 5'-0" outside of the building.
- **2. Water Service:** The main building water service will be provided at the Central Plant Room. No boosters are assumed. The service riser will be located in this space and will separately serve the domestic cold water systems, domestic hot water systems, and hydronic heating/cooling systems. Backflow preventers will be located on site per utility district requirements. Water piping services throughout building shall be brazed type L copper for all mains 2-1/2" and larger in size and type L copper with soldered or press fittings for all sizes 2" and below, except where below grade at service entrance location piping shall be brazed type K copper. Piping services will be adequately isolated to provide ease of maintenance.
- **3. Irrigation:** The water service for landscape irrigation will not enter the building and is covered under the Landscape consultant's scope of work. The water service will be separately metered.
- **4. Domestic Hot Water System:** Air to water heat pumps serving storage tanks and backup electric tank-type water heaters will be located in the central plant room to serve fixtures. Hot water systems will be designed with hot water recirculation piping and pumps to keep hot water available at fixtures.
- **5. Plumbing Fixtures:** All plumbing fixtures will be selected for use in vandal resistant applications in conformance with North Beach SD Standards.
- **6. Sanitary Waste and Vent System:** A sanitary waste and vent system will be installed to serve all fixtures within the building. Piping shall be cast-iron with no hub fittings.
- **7. Grease Waste and Vent System:** A gravity type concrete vault style grease interceptor, located outside the building, will be provided for the Kitchen per the AHJ.
- **8. Rain Leader Piping:** Gutters and downspouts assumed by others scope of work with attachment to Civil storm system.
- **9. Natural Gas System:** No natural gas provided on project.

HEATING, VENTILATING AND AIR CONDITIONING (HVAC) SYSTEM:

- **1. Ventilation:** Ventilation systems serving each area of facility are as follows.
  - **Classrooms:** Dedicated outdoor air systems shall serve zones via overhead supply grilles. Central variable volume air handling units (VTS proposed basis of design) will be supplied with air-to-air enthalpy type heat recovery wheels to temper ventilation air with building exhaust air. Air will be served to VAV boxes to modulate airflow demand and close ventilation air dampers when spaces are unoccupied.
  - **Offices:** High efficiency VAV multizone air handling unit (VTS proposed basis of design) shall serve zones with overhead supply air diffusers. Air will be served to VAV boxes to modulate airflow demand and close ventilation air dampers when spaces are unoccupied.
  - **Gym & Commons:** High efficiency VAV air handling units (VTS proposed basis of design) shall serve zones with overhead supply air diffusers. CO2 sensors will be provided for demand control ventilation of the Gym and Commons units and will also be supplied with airside economizer control capability to provide free air cooling to these spaces.
  - **Filters:** MERV 13 final filters with MERV 8 pre-filters on both outside air and MERV 8 on return.
  - **Duct Routing:** Return-air will be fully ducted and ensure no mixing of air between spaces, not plenum type.
- **2. Heating and Cooling:** The main source for heating and cooling dedicated zones are via four-pipe hydronic loop served by air-to-water heat pumps and back-up boiler. Classrooms are served by fan coil units (Titus proposed basis of design). Offices are served by a high

efficiency VAV multizone air handing unit (VTS proposed basis of design) and VAV boxes with hydronic coils. Gym and commons are served by single zone high-efficiency VAV air handling units (VTS proposed basis of design). Attics, mechanical rooms and entry vestibules will be served by ceiling or wall-mounted electric unit heaters providing space freeze protection.

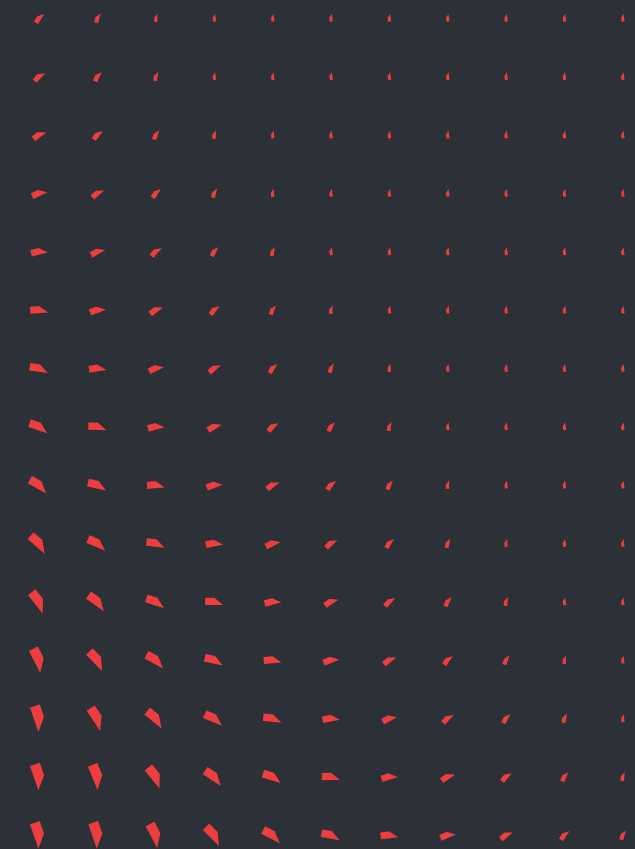
- **3. Air-to-Water Heat Pump:** Two air-to-water heat pumps (Aermec proposed basis of design), located in the service yard, shall be provided to supply low temperature heating water and chilled water to facility. Heat pumps shall be de-coupled from main building hydronic loop and provided with their own in-line circulation pumps and buffer tank to ensure adequate flow and no nuisance tripping of equipment due to controlled valves.
- **4. Boilers:** An electric pony boiler (Precision proposed basis of design) shall be provided to supplement the air-to-water heat pumps at low temperature conditions.
- **5. Bldg Hydronic System:** Interior building hydronic system will be a four-pipe system providing heating and chilled water to facility. Each building hydronic system piping will be served by redundant vertical in-line variable speed split-coupled pumps. An air separator, expansion tank and chemical filter feeder is also provided on each system.
- **6. Building Piping and Valves:** Heating and cooling system piping shall be welded or grooved black steel for all mains 2-1/2" and larger in size and type L soldered or press copper for all sizes 2" and below. Dielectric nipples shall be used at all connection points between dissimilar metals. All control valves located at equipment shall be 3-way or 2-way modulating type.
- **7. Exhaust Systems:** Dedicated exhaust will be provided for all areas of the facility where required (toilet rooms, custodial rooms, kitchen cooking hood, kitchen dishwasher, etc). Exhaust fans will also be provided to handle heat gain from electrical closets and heat pump plant room spaces where split system air conditioning is not required. Fans will be direct drive type with speed controller.
- **8. Ductwork:** Ductwork system shall be galvanized sheet metal throughout and installed per SMACNA standards based on specified pressure classification.
- **9. IDF and Elevator Machine Rooms:** Cooling will be provided by split system air conditioning units.

BUILDING AUTOMATION SYSTEM (BAS)

The mechanical systems in the building will be controlled and monitored by a direct digital energy management control system with BACnet interface and web-based capability. In addition to controlling the mechanical systems, the controls will be capable of monitoring and controlling other systems in the building such as energy metering and lighting and receptacle controls. Basis of design vendor is ATS Automation with Alerton Controls.

TCF

VIII. Electrical



Electrical

VIII

CODES AND STANDARDS

A The electrical design and construction will be in accordance with the applicable requirements of the following:

- B *Washington State Energy Code -- Latest Approved Edition*
- B *International Building Code -- Latest Approved Edition*
- B *National Electric Code (NEC) NFPA 70 -- Latest Approved Edition*
- B *State and County Department of Health*
- B *Washington Sustainable School Protocol (WSSP) -- Latest Approved Edition*
- B *International Fire Code-- Latest Approved Edition*
- B *Local Fire Marshal*
- B *National Fire Protection Association (NFPA)*
- B *Washington Administrative Code (WAC) – latest approved edition*
- B *The Americans with Disabilities Act (ADA)*

SCOPE OF WORK

Provide new electrical systems including power, lighting, fire alarm, data/communications, security access control, intrusion detection, CCTV, DAS Distributed Antenna Systems for first responder radio, audio-visual systems, and intercom clock/speaker systems that meets all current codes including the NEC, WA State Energy, life safety and communication requirements for the new building. Particular attention will be paid to sustainability, life cycle cost, and ease of access, operation and maintenance with selection of systems and products.

ELECTRICAL SYSTEMS

A Power Distribution

The new elementary school building will be served from a new Grays Harbor PUD owned transformer. Underground primary service feeder will be provided per the Grays Harbor PUD requirements. Further coordination with the utility will be required to located the primary service point and location of the transformer.

The main distribution board will be fed at 208Y/120V, three phase, 4-wire. The main distribution board will be provided with 25% spare capacity. Panelboards shall contain bolt on circuit breakers. Branch panels shall contain 25% spare load capacity. Lighting and Mechanical branch panels shall have a minimum of 10% spares and 20% spaces. Receptacles branch panels shall be a minimum of 25% spares.

All conductors will be THW/THWN copper in EMT or GRS. PVC will be permitted underground. Flexible connections shall be limited to motor connections, 6' whips for lighting etc. and shall be liquid tight (PVC coated) metal when outdoors or in wet locations.

To protect the sensitive electronic systems from power surges, at a minimum transient voltage surge protectors will be provided at the main and sub-distribution boards and at each panelboard which serves computer equipment, mechanical equipment with VFD's or LED lighting.

A Electrical Devices

Each classroom will have (2) - (3) standard duplex receptacles located on each wall. There will be duplex computer receptacles located adjacent to each data outlet and for the classroom AV system. GFI duplex receptacles will be provided at each sink, at all locations in the kitchen or when placed within 6' of a water source.

All other occupied rooms will have at least one receptacle on each wall. Desk and computer workstation locations will be provided with at least one duplex receptacle.

Fifty percent of all receptacles installed in classrooms, offices, conference rooms, workrooms, break rooms and at individual workstations will be automatically switched off when not occupied in accordance with the Washington State Energy Code.

Duplex receptacles will be provided at minimum 50' spacing in hallways, just outside of each public and student restroom, on the interior side at exterior doors, and will only be provided on the exterior of the building where required to be within 25' of mechanical equipment or as requested. All exterior receptacles shall be provided

with metallic, locking covers and mounted to mitigate vandalism.

Power will be provided to all equipment specified in other Divisions such as Specialty Equipment, Window Coverings, Powered Partitions and Doors, Gym Equipment and mechanical equipment.

Floorboxes will only be provided where required by code or when there is no other option available.

A Lighting and Exit Signage

Light fixtures will utilize LED light sources and will be located keeping long term maintenance in mind, (i.e. accessible with 8' ladder at interior, and lighting fixture driver and led board accessible from the bottom lens) as much as possible. Classroom and Office Light fixtures will be controlled by occupancy or vacancy sensors with manual local override switches as much as practical. All other lights will be controlled by an integral switch/sensor or simple lighting control relay to meet minimum code requirements.

General lighting with T-Bar ceilings will be provided with recessed 2'x2' LED fixtures. Classroom lighting will be provided with recessed linear LED fixtures in the T-Bar ceiling. Corridor and library with sloped or open high ceilings will be provided with suspended linear LED fixtures. Classroom lighting will be dimmable and controlled through a daylight harvesting system for automatically dimming the lights in response to the quantity of incoming natural light as required by the Washington State Energy Code. Manual local override for dimming and separate on/off switches for teaching wall lights will be provided per WSSP requirements. Interior lighting power density will be designed to comply with the Washington State Energy Code C406.2, 20% reduced lighting power.

The site lighting will utilize LED fixtures on approximately 25' aluminum poles with average light levels of 1.0 foot-candle. 12' Pedestrian light poles will be provided to provide lighting on all site walkways with average light levels of 0.5 foot-candle. The building perimeter lighting will be wall and ceiling or soffit mounted LED fixtures to complement the architectural building exterior. All exterior lighting will be controlled by the lighting control system with a manual bypass switch in the Main Office. Exterior lighting will be automatically dimmed with integral sensors or scheduled to a lighting setback from not later than 12midnight to 6am each night in accordance with the Washington State Energy Code.

Lighting in the Gymnasium will be provided by surface or pendant mounted LED fixtures with dimming and occupancy sensor control. Other areas will typically use lay-in or surface mounted LED fixtures.

Exit signs will use low maintenance LED sources and will be located in corridors and exit doorways.

The emergency power for egress and exit lighting will be provided by use of central emergency lighting inverters. Emergency lighting will be provided for selected light fixtures in each classroom, rooms with occupant loads of 50 or more, corridors, exit passageways, mechanical and electrical rooms, accessible attic or mezzanine spaces, and public restrooms. Exit signs will use low maintenance LED lamps and will be located in corridors and exit doorways.

SPACE TYPE	TARGET MINIMUM ILLUMINATION FOOTCANDLES (FC)	
CLASSROOM	30	
LIBRARY	30	
OFFICE	30	
GYM/COMMONS		30
HALL/STAIRS	10	
RESTROOMS	10	
MEP UTILITY	30	
KITCHEN		50
EXTERIOR ENTRY	1	
EXTERIOR PATHS	0.5	
PARKING AREAS	0.5	

Electrical

VIII

A Electrical Vehicle (EV) Charging

Electrical Vehicle (EV) Charging Stations, EV-Ready Parking Spaces and EV-Capable Parking Spaces will be provided in accordance with Washington Administrative Code regulations and requirements for the Employee parking.

- B EV Now - Provide (1) Dual Port Level 2 EV chargers for a total of (2) parking stalls. (1) ADA parking stall Level 2 EV charger will be provided to comply with the WAC ADA requirements.
- B EV Ready – Provide Circuit Breaker, conduit, wire and outlet to (1) Future Dual Port Level 2 chargers for a total of (2) parking stalls. (1) ADA parking stall future Level 2 EV charger will be provided to comply with the WAC ADA requirements.
- B EV Capable – Provide conduit infrastructure only to (1) Future Dual Port Level 2, (2) Parking Stalls.

A Photovoltaic (PV) System

A roof mounted, grid-tied, photovoltaic (PV) system will be provided in accordance with the Washinton State Non-Residential Energy Code. The PV system will consist of solar panels and support structure, inverter, disconnects, data acquisition and reporting system, wires, cables and optimizers for a complete and operational system. In addition the required roof area and electrical infrastructure and space planning will be provided for solar readiness in accordance with Energy Code requirements.

A Local Area Data Network Distribution

The data networking system will be based on data wire and outlets per the School District Standards. Each classroom will be provided with 2-3 data locations with Category 6 plenum-rated cables routed from the MDF/IDF to each outlet. All data outlets will contain two to four jacks. One (1) outlet will be located near the C.O.W. charging outlet and at the available teacher's desk location. All other occupied rooms or printer locations will receive at least two (2) data outlets, while the principal's office will receive one (1) 2-port Category 6 outlet per wall. All storage rooms will receive at least one (1) data outlet. Four (4) to six (6) outlets will be provided in the library for assisting in computer imaging with C.O.W.s, performed during the summer months by IT. Two (2) Category 6A cables will be provided to each OFCI Wireless Access Point (interior and exterior) with flexible direct-connect pigtails at the device end. One (1) Category 6 cable will be provided to each IP clock/speaker, CCTV camera, access control panel, wireless door controller, AV rack, and information display monitor. Outlets will be provided with single-gang stainless steel plates and label slots. The plate and Category 6 jack inserts shall match the color of the adjacent electrical outlets. Labeling will be consistent with District standards of MDF/IDF # – Rack – Panel – Port (example: 1-1-1-4). Two (2) patch cables will be provided for each network drop with one (1) 1-foot Category 6 or 6A patch cable for patching and one (1) outlet patch cable in the color and length of the District's choosing. The District will provide its color-coding standard for patch cable lengths and final cable labeling preferences.

Telecom rooms will be located throughout the building to ensure all data outlets are within the 295-foot total cable length limit. All Category cabling will be terminated on patch panels within the nearest telecom room. Patch cords of varying lengths will be provided for both ends of each installed outlet.

Telecommunications service will be provided by Coast Communications via cable modem (coaxial) service. Provide a minimum of one (1) 4-inch conduit with pull string from the street to the MDF, including coordination with Coast Communications for a conduit from the nearest service pole to the utility vault. The conduit system shall accommodate a future fiber connection from the local Public Utility District (PUD).

The general approach for telecom utilities has been shown in the SD set and will require careful coordination. At the existing covered play area, a weatherproof telecom enclosure will be provided with conduit and fiber optic cabling routed back to the building, along with power from the electrical system to support a network media converter, wireless access point, and security camera. Backbone cabling between the MDF and each IDF shall consist of six (6)-strand OS2 single-mode fiber optic cable with LC-LCUPC terminations. Exact backbone requirements shall be coordinated with the District technology standards.

Multi-mode indoor/outdoor 2-strand fiber will be provided for exterior CCTV cameras, wireless access points,

outdoor enclosures, and digital displays where distances exceed the maximum Category 6 permanent link distance.

In the MDF room, the rack-mounted fiber enclosure shall support the required backbone fiber terminations. The MDF shall receive four-post square-hole enclosed racks with mesh doors. Fiber terminations shall utilize LC connectors, and a retaining trough shall be provided below each LIU. In the IDF rooms, two-post relay racks shall be provided with rack-mounted fiber enclosures sized for the required fiber count. Each data rack shall include two (2) 9-foot multimode fiber optic patch cords with duplex LC connectors.

Horizontal inside plant cables shall have the following color coding (standards to be confirmed by the

District):

- Horizontal Data Cables – Blue
- CCTV and IP Access Control – Yellow
- IP Intercom/Clock – Purple
- Wireless Access Points – Green

The cabling system shall be provided with a minimum 25-year manufacturer's warranty.

Basket-style cable tray will be provided along major hallways and corridors with cantilever support hardware above accessible ceilings. Cable tray sizing shall be based on cable fill requirements and confirmed with the District during design. Open cabling supported by J-hooks within major corridors shall not be permitted.

The MDF room will receive four-post square-hole enclosed racks with mesh doors, vertical wire management, and ladder cable tray above the racks and around the room perimeter. One (1) online double-conversion UPS with a minimum 2200VA capacity shall be provided. The District may furnish the UPS equipment through E-Rate funding. Network switches shall be Owner Furnished Owner Installed (OFOI). Network racks and cabling infrastructure shall be Contractor Furnished Contractor Installed (CFCI). Wireless Access Points shall be Owner Furnished Contractor Installed (OFCI).

The IDF rooms will receive two-post relay racks with vertical wire management and ladder cable tray. One (1) online double-conversion UPS with a minimum 2200VA capacity shall be provided for each IDF. The District may furnish the UPS equipment through E-Rate funding. Network switches shall be OFOI, and Wireless Access Points shall be OFCI.

A Intercom and Clock/Program System

The intercom/clock system shall be based on either the Rauland Telecenter U IP Intercom platform or the Singlewire InformaCast platform, as selected by the District. A server/central unit will be provided and installed in the MDF room. The system will provide two-way loudspeaker communication, paging announcements, class change bell tones, master clock synchronization, and visual messaging functionality.

The system shall be microprocessor-based, of modular design, FCC approved and shall interface transparently with the District's Grandstream (Asterisk) VoIP telephone system utilizing a SIP trunk connection. It shall utilize the IP network for communication with addressable endpoints. Each classroom

shall be equipped with an IP digital clock/speaker and call switch. The IP clock/speaker display shall provide time display, emergency messaging, lockdown notifications, and other security-related messages.

Speakers in hallways and other common areas shall augment the communication system.

The system shall be integrated with building security systems to support emergency communications and notifications.

A Classroom Audio / Visual Systems

The classroom audio/visual system will be based around the district standard Lightspeed Topcat equipment with wireless media connector/desktop base station.

The classrooms will be equipped with a teacher voice enhancement system that includes ceiling or wall mounted speaker(s), wireless teacher microphone, wireless student microphone, wireless 3.5mm audio input/output desktop device, OFCI Interactive monitor on cart, wireless casting directly to interactive monitor on cart. The Interactive

monitor audio output connects wirelessly to the classroom audio system. The Contractor shall furnish and install all supporting classroom AV infrastructure, including cabling, audio enhancement equipment, teacher connectivity, and system controls.

The owner will provide the model of monitor for coordination of outlets on a teaching wall elevation created by the design engineers.

The audio system shall also be interfaced with the Fire Alarm system to shut down upon alarm and to resume after the alarm has been reset. The audio system shall also be connected to the intercom system for a paging-sensing input override to momentarily lower or "duck" the audio while paging is occurring to maintain the intercom system intelligibility.

A Sound Reinforcement Systems

The new sound system in the Band, Gymnasium and Commons will be a high quality, multi-channel wide frequency sound reinforcement and production system with microphone pick-up and pre-recorded program capabilities. The system will use solid-state dual-channel amplification with distribution to a full-range loudspeaker system and some areas will support 2-way split/combine operation where required. Each area will have AV outlets and a dedicated 7" touch screen controller for system operation.

The main gym will have a projector mounted to the ceiling with a scissor lift and a motorized projector screen mounted to the rear of the proscenium or, alternatively, a multi-functional impact-rated LED video wall scoreboard system which doubles as a presentation screen in lieu of a projector.

The system will support direct-wired production intercom (only where theatrical use is required) and assisted listening for the hearing impaired. The system will be made compatible with either large or small venues.

The system will provide microphone pick-up, recording, dubbing, playback of pre-recorded material, mixing, signal processing, amplification and distribution to a full-range reference monitor loudspeaker system. The system will be wired to support integration with multiple types of inputs.

The audio system shall also be interfaced with the Fire Alarm system to shut down upon alarm and to resume after the alarm has been reset.

A Emergency Responder Radio Coverage Enhancement System or Distributed Antenna System (ERRCS/DAS)

The building will be equipped with an ERCES bi-directional antenna (BDA) system as necessary in order to meet code required RF signal levels throughout the building. The level of required system deployment will be determined by signal testing results performed upon substantial completion of the building envelope (or at an AHJ-approved earlier time when most building construction is completed). Antenna cabling and hardware will be installed for any areas within the building not meeting the code required minimum signal strengths. A preliminary signal test will be performed prior to construction to determine baseline signal levels for the site. Conduit pathways and infrastructure shall be provided per IBC/NFPA for all antenna cabling and shall accommodate full system installation throughout the entire building.

A Intrusion Detection System

The security system will be Bosch and will utilize addressable technology similar to that of the fire alarm system where the location of every door position switch and motion detector can be displayed on the LCD Keypad and reported to the monitoring agency. Door position switches will be located at each exterior door. Motion Sensors will be located in each classroom, in the Administration area, hallways, and the gymnasium.

The LCD keypad shall be located within the main entrance vestibule and service entrance for arm/disarming of the security system. Door contacts and motion sensors shall not be located at the main vestibule to ensure the alarm is not activated while operators disarm the system. All system equipment shall be connected to continuous (emergency) power branch panels to operate while the generator is running.

The system shall be designed to have a minimum of one hour of continuous operation using power supplies with battery backup. This shall accommodate any temporary power outage (from the time that the power is lost to the time that the generator is fully up and running).

The security system shall communicate through a network connection to the monitoring station and not a dedicated (copper) phone line service. The security system shall also integrate with the access control system, lighting control panel, and intercom system as required.

A Closed Circuit Cameras

The Security Camera system and equipment will be provided and installed at various locations on the interior with CAT6 and exterior of the facility and connected back to a central head end. Fiber, network switch, and 120VAC power will be located at designated poles inside of weatherproof junction boxes for pole mount camera installations and perimeter gate locations. Locations of cameras will be determined by the district during the design phase of the project.

Areas of focus for external CCTV coverage include entrances, drive-ways, bus and parent drop off loops, staff parking, playgrounds, and covered play areas.

Areas of focus for internal CCTV coverage include entrances, hallways/corridors, stairways, bathrooms, gymnasiums, and the reception area.

The owner's existing PC's that are connected to the LAN and/or WAN shall accommodate the following features: View Live Video from any site, View Recorded Video from any site, and provide the ability to export video clips from the Video Server to email and external storage devices.

The CCTV system shall be based on the district's existing ExacqVision Network Video Recorder (NVR) platform. AXIS cameras are the district's preferred camera manufacturer and shall be used where practical to maintain consistency with existing installations. The recording server shall be Owner Furnished and shall utilize the existing on-premises server located at the school. The system shall provide a minimum of thirty (30) days of video retention. Existing camera licenses shall be coordinated with the district to determine whether additional licenses are required.

A Card Access System / Emergency Lockdown System

Card Readers shall be located at primary entrances and at locations as directed by the District. When a valid card is presented to the reader, the door shall unlock. At the main entrance there shall be a secure access vestibule with additional programming and door controls available for staff for managing.

The Emergency Lockdown System shall be an integral portion of the Access Control System.

When the Emergency Lock Down button is pressed (located in the school administration area), each of the perimeter doors and interior electrified doors shall lock.

The Graphic Map software shall display the door status of each door. This would indicate if all of the doors are closed or if some are physically propped open.

The access control system shall be integrated into the school district's active directory server for easily synchronizing, adding and removing staff card access permissions.

The computer-based system shall allow access to software menus based on the password protected authorization level. Provided that the system operator is authorized, system functions would include:

- B Change individual or group card holder information, such as; adding, changing, or deleting card holder and user group/door access.
- B Run reports of card holders and/or doors.
- B Remote viewing of the local school Access Control System shall be available from the District
- B Administration building(s) via the district Wide Area Network.

All system equipment shall be connected to continuous (emergency) power branch panels to operate while the generator is running. The system will be designed to have a minimum of one hour of continuous operation using power supplies with battery back-up. This shall accommodate any temporary power outage (from the time that the power is lost to the time that the generator is fully up and running).

All doors shall be locked at all times except during student arrival and departure times per district security standards.

The security system shall also be integrated with the alarm system, classroom electric lock hardware, CCTV system and intercom system.

The basis of the design is Avigilon Alta Cloud, Mercury,

and HID. New systems will utilize local intelligent controllers and a centralized access control server that can be used for future upgrades at other sites. New access control will be provided with 10 year Alta Cloud licenses.

A Fire Alarm/Emergency Communication System

The Fire Alarm / Emergency Communication System shall be a new complete, fully operational, intelligent (analog) and addressable (digital), low voltage 24 Volts D.C. microprocessor-based Fire Alarm / Emergency Communication System that will transmit a signal to the monitoring entity. The basis of design is Silent Knight.

The Fire Alarm / Emergency Communication System shall consist of the Fire Alarm / Emergency Communication System Control Panel, Remote Annunciators, Power Supplies, Graphic Maps, AES Transmitter, Initiation Devices, and Notification Appliances. Initiation Devices shall consist of Smoke Detectors, Heat Detectors, Duct Detectors, Beam Detectors, Carbon Monoxide Detectors, Manual Pull Stations, etc. The listed spacing of Smoke Detectors and Heat Detectors shall be adjusted (de-rated) to account for ceiling heights, sloped ceilings, and beam pockets. Notification appliances shall consist of Strobes, Speakers, Combination Speaker/Strobes, etc.

Automatic smoke detectors will be provided at a minimum throughout all egress corridors and public assembly areas in accordance with current city of Port Angeles municipal code.

The Fire Alarm / Emergency Communication System shall also interface with other systems such as Audio/ Visual Sound Systems, Intercom Systems, Public Address Systems, Smoke and Fire/Smoke Dampers, Duct Smoke Detectors, H.V.A.C. Systems, Magnetic Door Holders, Magnetic Door Releases, Fire Rated Coiling Doors, Fire Rated Shutters, Cooking Hood Fire Suppression Systems, Fire Protection Sprinkler Systems, etc.

All circuits shall be "Class B". All Signaling Line Circuits (SLC), Initiation Circuits, and Notification Circuits, shall be provided with 25% spare capacity. All conduits shall be filled to a maximum fill capacity of 40%. All cabling is to be installed exposed and is not required to be in conduit.

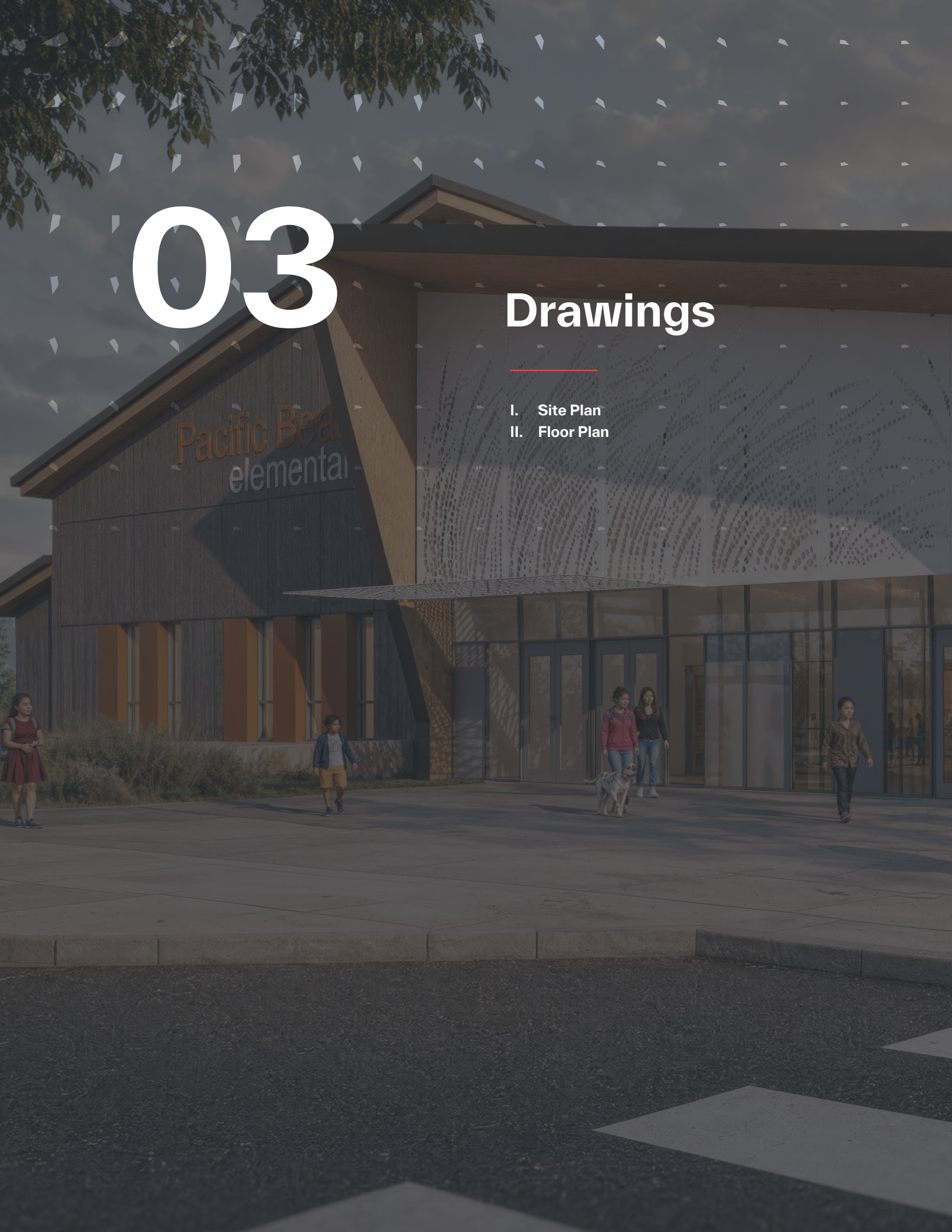
The Fire Alarm / Emergency Communication System shall be provided with back-up batteries to power the entire Fire Alarm / Emergency Communication System for a minimum of 24 hours of standby operation immediately followed by 15 minutes of alarm operation. "Shop Drawing" submittals shall also include equipment submittals, back-up battery calculations and voltage drop calculations.

The Fire Alarm / Emergency Communication System Contractor shall be currently listed and approved by UL for "Proprietary Protective Signal System Listing Program" with a UUJS certificate of compliance and be a NICET certified Level III technician.

The Fire Alarm / Emergency Communication System Contractor shall be capable of Designing, installing, and testing a Fire Alarm / Emergency Communication System in accordance with the latest edition of N.F.P.A. #72. All conduits shall be filled to a maximum fill capacity of 40%.

Fire alarm cabling installed above accessible ceilings shall be allowed to be installed as open cabling.

Provide "d" ring hanger for all open cabling at a maximum spacing of 5'-0" on center. Cabling that is installed in walls, cabling that is installed below 8'-0" in elevation that is subject to damage, and cabling that is installed above inaccessible ceilings shall be installed in conduit.



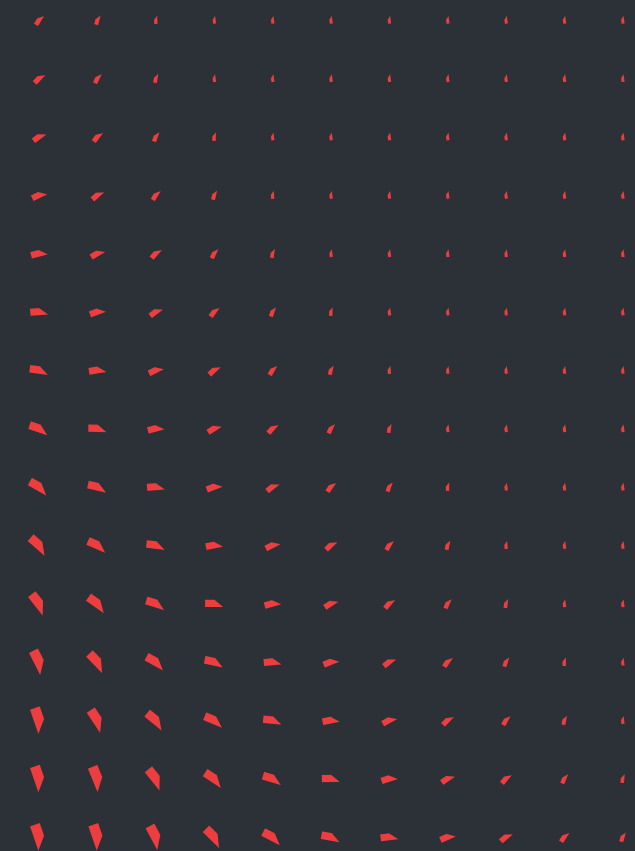
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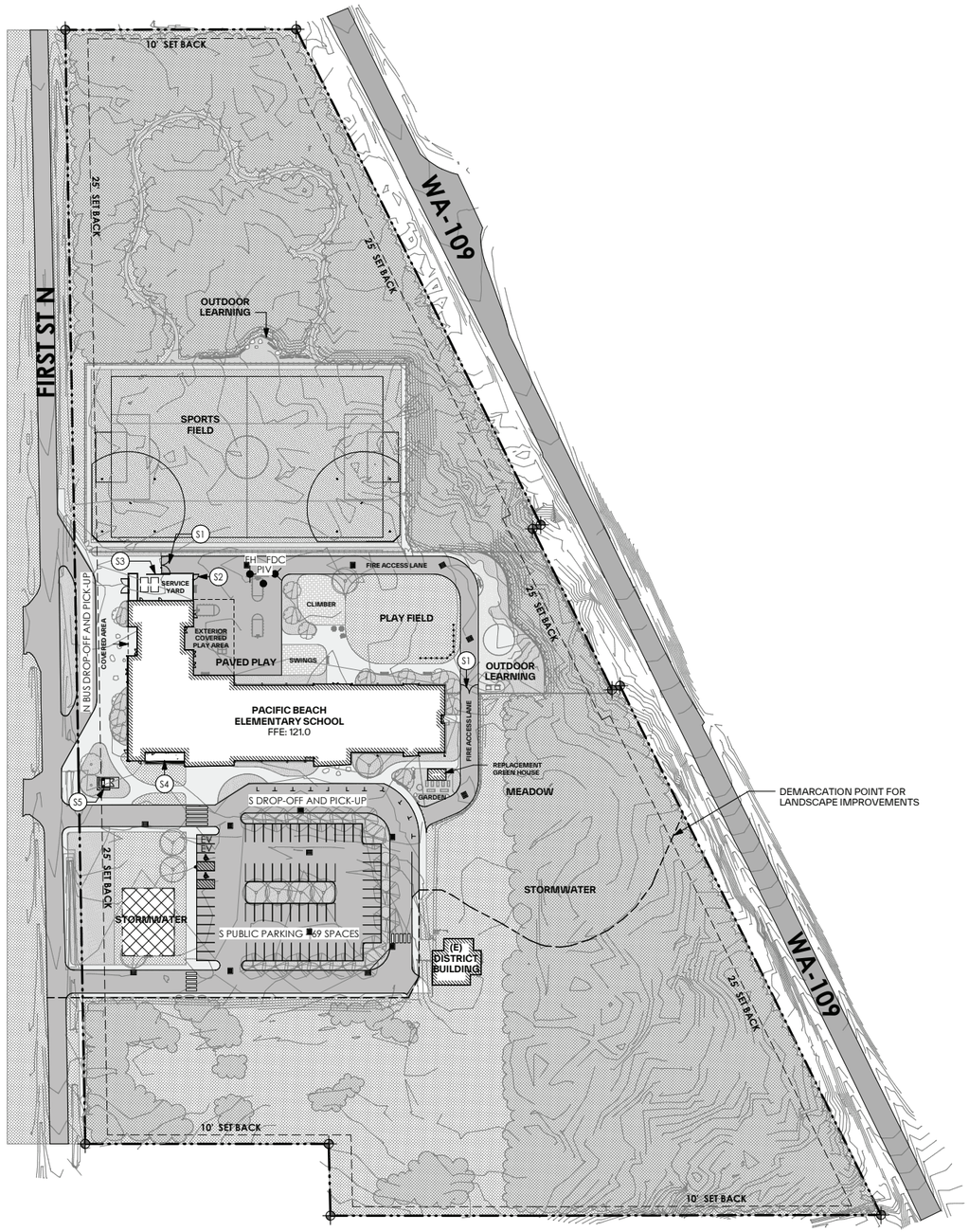
Drawings

I. Site Plan
II. Floor Plan

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I. Site Plan





GENERAL NOTES

1. SEE CIVIL DEMO PLANS AND SURFACING PLANS FOR CONTRACTOR'S SURFACING SCOPE OF WORK.

2. SURFACE PAVING SCOPE, SITE UTILITIES, SITE LIGHTING TYPE AND LOCATIONS, LANDSCAPE PLANTINGS SCHEMES ARE SHOWN ON THE ARCHITECTURAL SITE PLAN AND ENLARGED SITE PLANS FOR REFERENCE ONLY - SEE APPLICABLE DESIGN DISCIPLINE FOR EACH - CIVIL, ELECTRICAL AND LANDSCAPE SHEETS FOR THE ABOVE NAMED SCOPES OF WORK ON SITE.

SITE PLAN LEGEND

- PROPERTY LINE
- 'X' SET BACK — SET BACK
- ROOF OVERHANG
- BLACK VINYL COATED CHAINLINK FENCING, HEIGHT PER KEYNOTE
- BUILDING FOOTPRINT
- CONCRETE PAVING AND WALK WAYS, SEE CIVIL AND LANDSCAPE DRAWINGS
- ASPHALT PAVING - SEE CIVIL DWGS
- GRASS / FOREST / PROPOSED PLAY FIELD, SEE LANDSCAPE DRAWINGS
- GROUND COVER, SEE LANDSCAPE DRAWINGS
- GARDEN / OUTDOOR GATHERING, SEE LANDSCAPE DRAWINGS
- MOW STRIP / OUTDOOR CLASSROOM, SEE LANDSCAPE DRAWINGS
- PLAYGROUND, SEE LANDSCAPE DRAWINGS
- SPORTS FIELD, SEE LANDSCAPE DRAWINGS
- STORMWATER RETENTION POND

KEYNOTES

S1	PAIR OF 13' WIDE BY 6' HIGH BLACK VINYL COATED CHAIN LINK SWING GATES
S2	3' WIDE SWING GATE
S3	20' LONG BY 8' HIGH MANUAL HORIZONTAL SIDING GATE
S4	OUTDOOR STAGE
S5	SCHOOL MONUMENT SIGN AND DIGITAL READERBOARD

TCF
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P.253.572.3993

Client
NORTH BEACH SCHOOL DISTRICT

Project
2025-010
PACIFIC BEACH ELEMENTARY SCHOOL
58 FIRST ST N
PACIFIC BEACH, WA 98571

Issue & Revision Dates

23 JUNE 2026	65% SD
12 AUGUST 2026	95% SD
10 SEPTEMBER 2026	100% SD

100% SCHEMATIC DESIGN
Not for Construction

NOTE: DRAWING MAY BE REDUCED
0 40' 80' 160'

Drawn By AMS
Checked By SH

Sheet Title
SITE PLAN

A1.01

Sheet Number Of

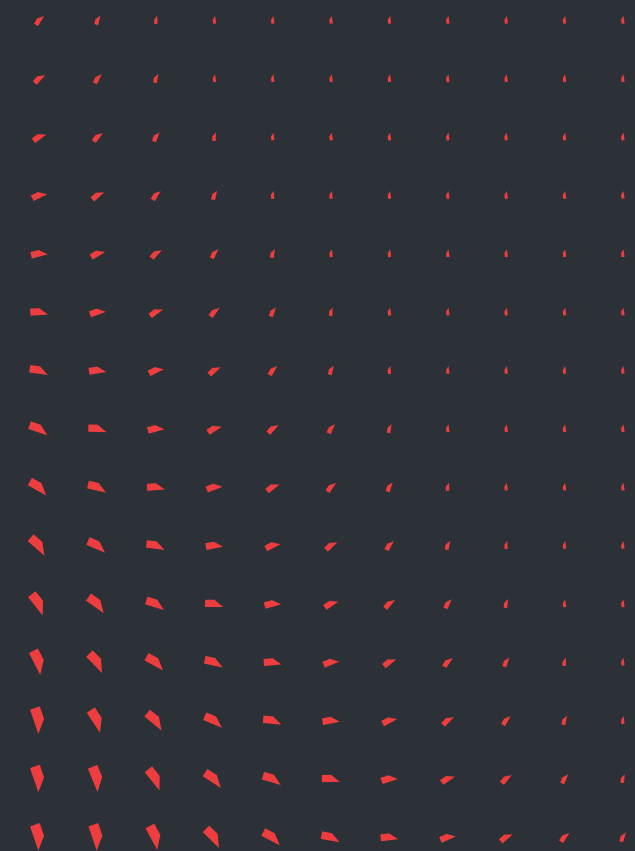
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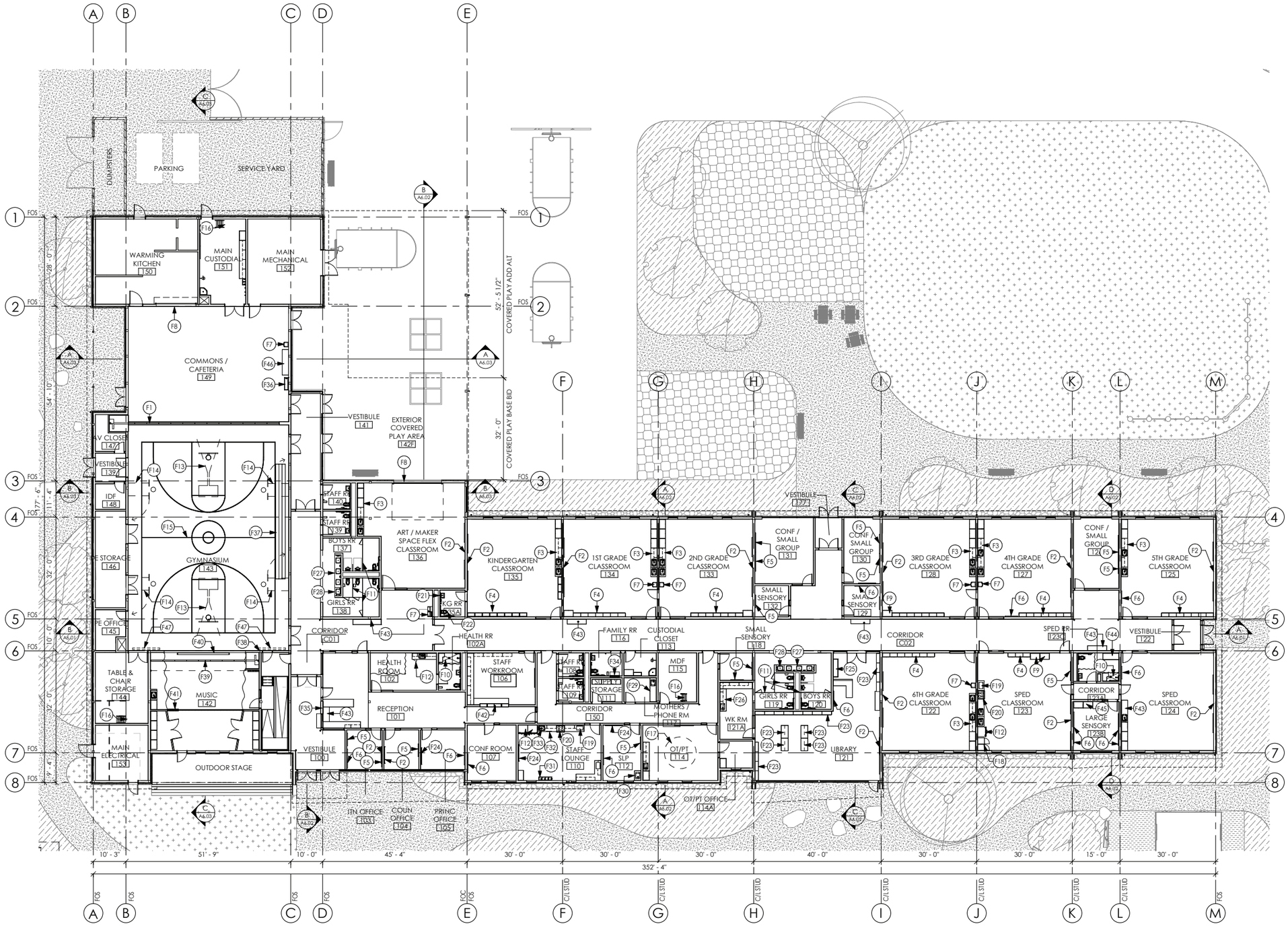
1 SITE PLAN
1" = 80'-0"

PLAN NORTH

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II. Floor Plan





1 FIRST FLOOR REFERENCE PLAN
1/16" = 1'-0"

SHEET NOTES:

A. SEE SHEET A2.01 FOR FLOOR PLAN GENERAL NOTES AND LEGEND
B. SEE A30 SERIES SHEETS FOR EXTERIOR WALL TYPE DESCRIPTIONS AND GENERAL NOTES
C. SEE A31 SERIES SHEETS FOR INTERIOR WALL TYPE DESCRIPTIONS AND GENERAL NOTES

KEYNOTES

F1	ELECTRICALLY OPERATED PANEL PARTITION
F2	TYP CLASSROOM TEACHING WALL, SEE SHEET A80.01 FOR TYPICAL LAYOUT
F3	TYP CLASSROOM CASEWORK: SEE A80.01 FOR CASEWORK LAYOUTS
F4	CASEWORK CUBBIES. SEE INTERIOR ELEVATIONS AND A80-SERIES DWGS
F5	MARKERBOARD
F6	TACKBOARD
F7	DRINKING FOUNTAIN W/ BOTTLE FILLER
F8	SECTIONAL OVERHEAD DOOR
F9	FULL HEIGHT STORAGE
F10	SHOWER W/ADA WAND & BENCH SEAT
F11	TOILET PARTITION
F12	REFRIGERATOR
F13	FRONT-FOLD BASKETBALL HOOP W/HEIGHT ADJUSTER & BREAKAWAY RIM, 10' H WALL PADS
F14	SIDE-FOLD BASKETBALL GOAL ABOVE
F15	BASKETBALL AND VOLLEYBALL GAME LINE STRIPING WITH CUSTOM CENTER-COURT LOGO
F16	ALUM SHIPS LADDER
F17	UNISTRUT TRACK FOR SWING ABOVE, SEE RCP
F18	WASHER AND DRYER
F19	MICROWAVE
F20	OVEN/RANGE W/RESIDENTIAL HOOD
F21	CHILD HEIGHT SINK
F22	CHILD HEIGHT TOILET W/GRAB BARS
F23	3' TALL BOOKSHELVES FOR DISPLAY
F24	MONITOR, OFCI
F25	WALL CABINET, DISPLAY CASE
F26	WORK ROOM COUNTERTOP - COUNTERTOP WITH DROP-IN SINK, LOWER 3' BASE CABINETS, WALL MOUNTED CABINETS OVERHEAD
F27	COUNTERTOP WITH DROP-IN SINKS, WALL MOUNTED FAUCETS, WALL MOUNTED MIRRORS WITH SOAP AND PAPER TOWEL DISPENSERS
F28	LOWERED 29" COUNTERTOP WITH DROP-IN SINK, WALL MOUNTED FAUCET, WALL MOUNTED MIRROR
F29	COUNTERTOP WITH DROP-IN SINK, UNDERCOUNTER REFRIGERATOR
F30	COUNTERTOP WITH DROP-IN SINK, LOWER 3' BASE CABINETS, FULL HEIGHT STORAGE
F31	METAL LOCKERS
F32	DISHWASHER
F33	SINK W/ BUBBLER
F34	WALL MOUNTED, RECESSED BABY CHANGING STATION
F35	TRANSACTION WINDOW
F36	CHILD HEIGHT TROUGH SINK
F37	POWERED RETRACTABLE BLEACHERS, 3 ROWS HIGH
F38	ADVANCE SCOREBOARD OPTION, ABOVE
F39	OPERABLE PARTITION W/ACOUSTIC PANELS FACING GYM, MARKERBOARD PANELS FACING MUSIC
F40	CEILING MOUNTED MOTORIZED PROJECTION SCREEN
F41	CYCLORAMA STAGE CURTAIN
F42	STAFF MAILBOXES
F43	BUILT-IN WOOD BENCH, 18"D X 6'L
F44	FREE STANDING CHANGING TABLE
F45	BUILT-IN BENCH WITH SEAT PAD
F46	BUILT-IN CASEWORK FOR TRASH/RECYCLE W/QUARTZ COUNTERTOP
F47	WALL-MOUNTED OVERHEAD MONITOR DISPLAY

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NOTE: DRAWING MAY BE REDUCED
0 8' 16' 32'

Drawn By AMS
Checked By SH

Sheet Title
FIRST FLOOR REFERENCE PLAN

A2.02a
Sheet Number Of

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PLAN NORTH

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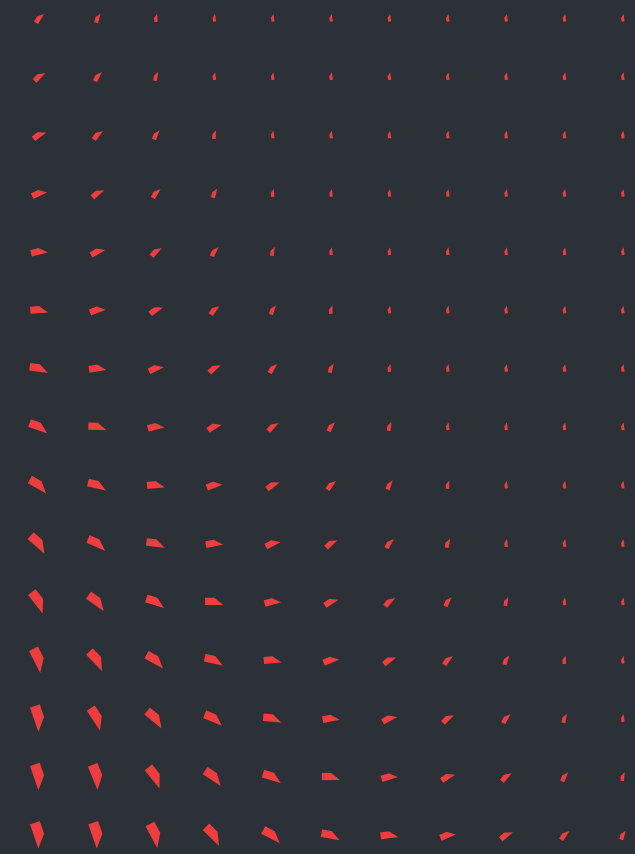


04 Budget Considerations

I. Cost Estimate
II. Value Engineering Options

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I. Cost Estimate



Cost Estimate

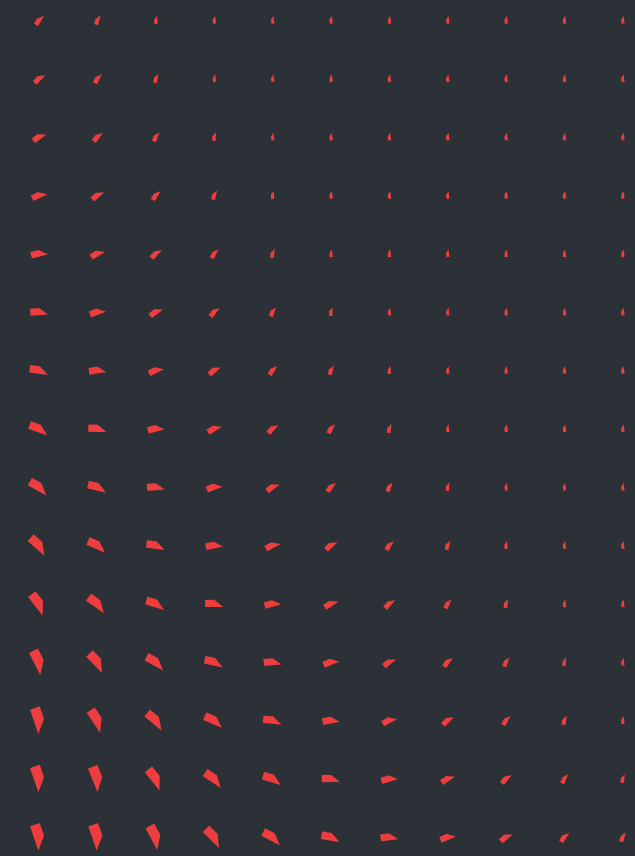
- This section introduces the Schematic Design (SD) cost estimate and the value engineering (VE) process for the Pacific Beach Elementary School. The SD estimate exceeds the MACC by $5.16M, necessitating acceptance of targeted VE items to close the gap. The following summarize the estimate results and the VE strategies currently in development, with the full cost estimate and cost control strategy documents attached in the appendix for reference.
- Source: RC Cost Group - Schematic Design Estimate (Rev. 1), August 28, 2026
- Lead Estimator: Mark Richardson (RC Cost Group) - participated in SD estimate development and coordination with design and engineering disciplines.
- Project: Pacific Beach Elementary School (34,730 GFA - $731/SF based on building cost only)

PROJECT: PACIFIC BEACH ELEMENTARY SCHOOL (34,730 GFA)

- Total SD Estimate: $33,673,659
- Building: $25,376,431
- Sitework: $8,297,227
- Target MACC: $28,509,971
- Variance: +$6,163,688 (exceeding MACC)
- Key Cost Characteristics:
- Sitework share: Approximately 30% of the total. The principal drivers of these costs are coordinating and locating utilities with Grays Harbor County as well as designing for deep soil bearing with excavation and stone columns.
- Mechanical Systems: The design team is exploring savings through identifying alternative acceptable mechanical systemts.

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II. Value Engineering Options



Value Engineering Options

VALUE ENGINEERING

Value Engineering (VE) is currently in process for Pacific Beach Elementary. Following our design team estimate with RC Cost Group, Sazan Group Inc is evaluating the project documentation and estimate and generating a report with proposed design solutions accompanied by assigned line-item savings to assist in reconciling the project budget. The VE process will continue into and resolving the project budget is top priority as the design team initiates the following design phase, Design Development.

Concurrently, the design team has assembled a list of cost saving strategies. The list with estimated savings of approximately up to $3.8M is provided in the appendix. The design team is confident that through these combined efforts Design Development can begin within budget.

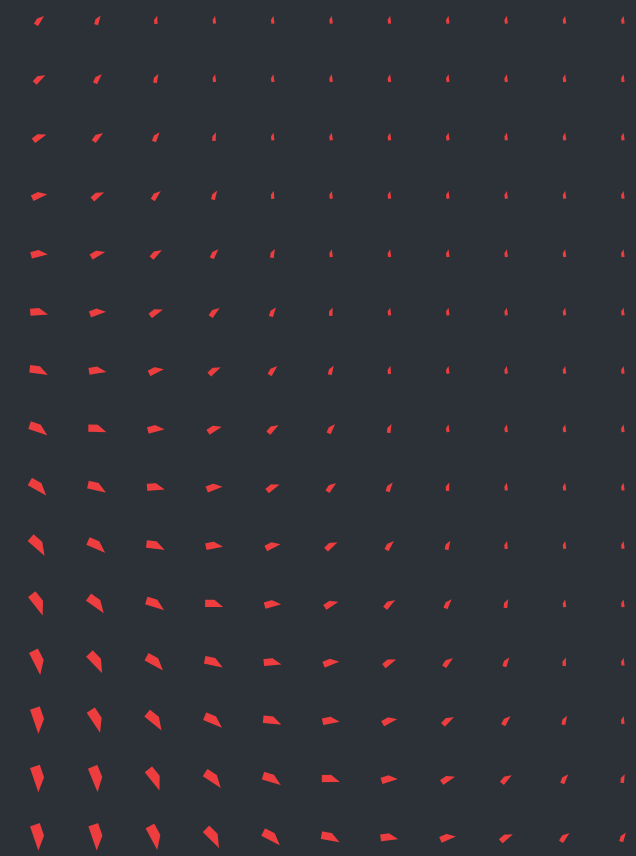
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Appendix

I. Project Schedule
II. Cost Estimate
III. Draft Value Engineering Report
IV. Cost Control Strategies
V. Systems Comparison
VI. Owner Project Requirements
VII. WSSP Strategy and Scorecard
VIII. Preliminary Reports
IX. Meeting Minutes

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I. Project Schedule



PBES Schedule

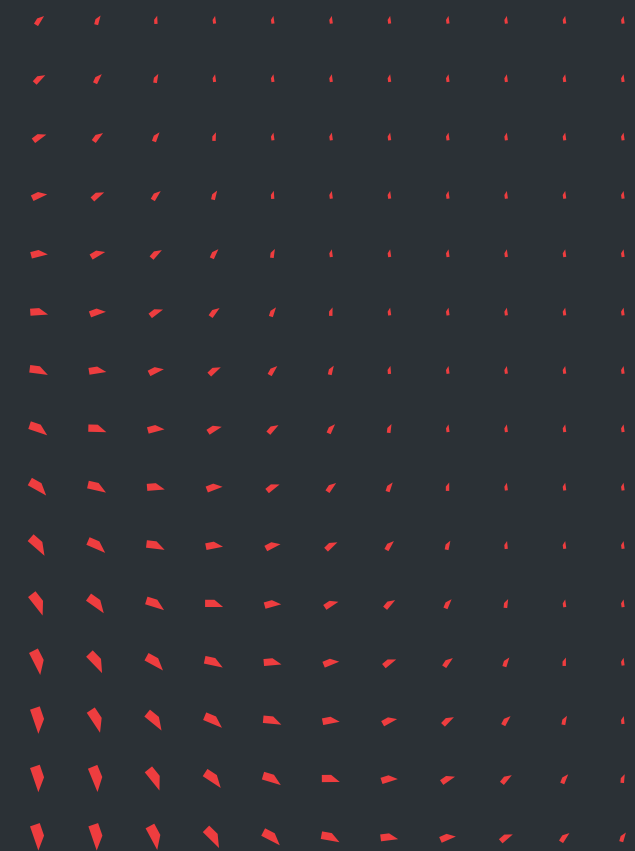
Task Name	Duration	Predecessors	Start Date	End Date	Comments	NBSD
Pacific Beach Elementary School Replacement	866d		09/26/25	01/19/29		
Schedule Overview	849d		10/21/25	01/19/29		
Ed Specs / Programming	147d		09/26/25	04/21/26		
SD	102d		04/22/26	09/10/26		
DD	89d		09/16/26	01/19/27		
Start of DD Documentation	0		09/16/26	09/16/26		
Design Team DD Kickoff Meeting	0	86FS +5d	09/23/26	09/23/26		
Design Team Meeting	0	87FS +5d	09/30/26	09/30/26		
Room Layout Workshop Meetings	3d	86FS +12d	10/02/26	10/06/26	3 Days	
Design Team Meeting	0	88FS +5d	10/07/26	10/07/26		
Design Team Meeting	0	90FS +5d	10/14/26	10/14/26		
M&O Systems Coordination	0	89FS +9d	10/19/26	10/19/26		
Site Coordination Meeting	0	92	10/19/26	10/19/26		
Security & Access Control Kick-Off Meeting	0	89FS +10d	10/20/26	10/20/26		
DAC Meeting #6 - Interior Design Kickoff	0	89FS +10d	10/20/26	10/20/26	Virtual Meeting	
Design Team Meeting	0	91FS +5d	10/21/26	10/21/26		
WSSP & C406 Coordination Follow Up	0	92FS +5d	10/26/26	10/26/26		
Hardware Kick-Off Coordination	0	94FS +5d	10/27/26	10/27/26		
CLT Meeting	0	#REF	09/23/26	09/23/26	1pm	
Design Team Meeting	0	96FS +5d	10/28/26	10/28/26		
DAC Meeting #7 - Interior Design Update Meeting	0	95FS +10d	11/03/26	11/03/26	Virtual Meeting	
Design Team Meeting	0	100FS +5d	11/04/26	11/04/26		
Consultant Backgrounds to TCF for Room Layout Book	0	105FS -2d	11/06/26	11/06/26	Coordinate Electrical Lighting	
CLT Meeting	0	99FS +10d	10/07/26	10/07/26		
Issue Room Layout Book to NBSD	0	89FS +25d	11/10/26	11/10/26		
Design Team Meeting	0	102FS +5d	11/11/26	11/11/26		
DAC Meeting #8 - Color and Material Board Review	0	101FS +15d	11/24/26	11/24/26	At HLC; 3pm - 4pm Request to move to next avalible day around thanksgiving break?	
Internal QC Milestone Set - Consultant Backgrounds & PDF Drawings Due to TCF	1d	105FS +10d	11/25/26	11/25/26		
Design Team Meeting	0	106FS +10d	11/25/26	11/25/26		
Envelope Review	5d	108FS +1d	11/27/26	12/03/26		
DD Quality Control Review	5d	108FS +1d	11/27/26	12/03/26		

Task Name	Duration	Predecessors	Start Date	End Date	Comments	NBSD
CLT Meeting	0	104FS +10d	10/21/26	10/21/26		
Design Team Meeting	0	109FS +10d	12/09/26	12/09/26		
CLT Meeting	0	112FS +10d	11/04/26	11/04/26		
Consultant 85% Cost Estimate Drawings & Estimates to TCF	0	111FS +4d	12/09/26	12/09/26		
Submit 85% DD Drawings to NBSD & Cost Estimator	0	115FS +2d	12/11/26	12/11/26		
Estimate Review Time	10d	116	12/14/26	12/25/26	Extra time for review due to holiday break season.	
Value Engineering Review	10d	116	12/14/26	12/25/26	Extra time for review due to holiday break season.	
Owner Review	5d	116	12/14/26	12/18/26	Extra time for review due to holiday break season.	
CLT Meeting	0		01/12/27	01/12/27		
Design Team Meeting	0	113FS +15d	12/30/26	12/30/26	Skipping for holiday break - 3 weeks	
Response to Cost Estimate & Owner Comments	6d	119	12/21/26	12/28/26		
Design Team Meeting	0	121FS +5d	01/06/27	01/06/27	Skipping Thanksgiving break	
Consultant Drawings & Report to TCF	0	122FS +10d	01/11/27	01/11/27		
100% DD Drawing & Report to NBSD	0	124FS +2d	01/13/27	01/13/27		
NBSD Board Approval of DD	0		01/19/27	01/19/27		
CD	122d	85	01/20/27	07/08/27		
Start of CD Documentation	0	126FS +1d	01/20/27	01/20/27		
CLT Meeting	0	120FS +10d	01/26/27	01/26/27		
Design Team CD Kickoff Meeting	1d	128FS +2d	01/22/27	01/22/27		
CLT Meeting	0	129FS +10d	02/09/27	02/09/27		
Permit Submittal	1d	128FS +55d	04/07/27	04/07/27		
Submit 85% Drawings to NBSD, Cost Estimator and Constructability Review Team.	1d	128FS +70d	04/28/27	04/28/27		
CR Review	11d	133	04/29/27	05/13/27		
Design Team CR Response	1d	134FS +4d	05/20/27	05/20/27		
Consultant 100% CD Drawings to TCF	1d	137FS -3d	06/08/27	06/08/27		
100% CD Drawing & Report to NBSD & OSPI	1d	133FS +30d	06/10/27	06/10/27		
OSPI Review	20d	137	06/11/27	07/08/27		
OSPI Phase 4/ D-7 Approval to advertise for Bid	0	138	07/08/27	07/08/27		
Bidding	26d		07/09/27	08/13/27		
Bid Advertising	11d	139	07/09/27	07/23/27		
Bid Period	21d	141FS -6d	07/16/27	08/13/27		
Bid Opening	0	142	08/13/27	08/13/27		

Task Name	Duration	Predecessors	Start Date	End Date	Comments	NBSD
Construction	375d		08/16/27	01/19/29		
Contracts	11d	142	08/16/27	08/30/27		
Construction	319d	145	08/31/27	11/17/28		
Substaincial Completion	0	146	11/17/28	11/17/28		
Owner Move-in	20d	147	11/20/28	12/15/28		
Closeout Period	45d	147	11/20/28	01/19/29		
Final Completion	0	149	01/19/29	01/19/29		
LEGEND						
Core Leadership Meeting (CLT) Meeting						
Design Advisory Committee (DAC) Meetings						
Special Meeting or Workshop						
Design Team Meeting						
TCF Document Delivery to owner						
Consultant Document Delivery to TCF						

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II. Cost Estimate



COST GROUP

NORTH BEACH SCHOOL DISTRICT
PACIFIC BEACH ELEMENTARY SCHOOL
PACIFIC BEACH, WA
SCHEMATIC DESIGN ESTIMATE

ESTIMATE ISSUE DATE: August 28, 2026
ESTIMATE REVISION: 1

Submitted To:

STEVE WACHTLER
TCF ARCHITECTURE
124 N I STREET
TACOMA, WA 98403

CLARIFICATIONS AND ASSUMPTIONS

RC Cost Group Estimating Team:

Lead Estimator: Mark Richardson
Architectural: Mark Richardson / Melia Blankenship
Structural: Mark Richardson
Plumbing: Metrix Engineers
HVAC: Metrix Engineers
Electrical: GFT Engineers
Civil: LDC
Landscape: Site Workshop
Food Service: Clevenger Associates
QA/QC: Andy Cluness

Exclusions from Construction Cost:

Design fees
Owners administration costs
Building and land acquisition fees
Legal and accounting fees
Removal of unforeseen underground obstructions
Owner's furniture, furnishings and equipment
Owners supplied materials
Moving owners equipment and furniture
Compression of schedule, premium or shift work
Assessments, finance, legal and development charges
Builder's risk, project wrap-up and other owner provided insurance program
Washington State Sales Tax
AV Equipment
Future proposed Portables

Assumption used in establishing the estimate:

The project will be procured utilizing the design, bid, build method
Construction Start Date: July 2027
Open and competitive bidding among all proportions of the work

Items that may affect the cost estimate:

Modifications to the scope of work included in this estimate.
Special phasing requirements other than mentioned above.
Restrictive technical specifications or excessive contract conditions.
Any non-competitive bid situations.
Bids delayed beyond the projected schedule.

OVERALL SUMMARY CONSTRUCTION COST

	GFA	$/SF	$
Building	34,730 SF	730.68	25,376,431
Sitework			8,297,227
TOTAL COST OF WORK			**33,673,659**

MACC	28,509,971
Variance	18.11%

ALTERNATES

1. Increase size of covered play	266,253
2. Concrete outdoor stage/platform	62,577
3a. CLT at covered play structure in-lieu of 3x car decking	73,851
3b. CLT at additional covered play structure in-lieu of 3x car decking	64,568
3. Residential appliances/equipment to be OFCI	-19,238
4. Concrete path in-lieu of Gravel at Sports Field	72,534
5. Artificial turf sports field in-lieu of grass field	934,543
6. Artificial turf playground surfacing in-lieu of engineered wood fiber	93,908
7. Additional 500 LF of fence	56,740
8. Wood Pavilion	133,506
9. Baseball Backstop	100,130
10. Reduce OSPI Area to funded maximum of 34,407 SF	-740,989

BUILDING DATA

Building Area:

Level 1	34,730 SF	
Level 2		
Total Gross Floor Area		**34,730 SF**
Mechanical Attic	5,438 SF	
Total Unoccupied Space (Excluded from GFA)		**5,438 SF**

NORTH BEACH SCHOOL DISTRICT
PACIFIC BEACH ELEMENTARY SCHOOL
PACIFIC BEACH, WA
SCHEMATIC DESIGN ESTIMATE
BUILDING

GROSS FLOOR AREA: 34,730 SF
DATE: August 28, 2026

RC COST GROUP

No.	ELEMENT DESCRIPTION	ELEMENT TOTAL	GROUP TOTAL	COST PER SF
A10	FOUNDATIONS		$ 1,545,481	$ 44.50
A1010	Standard Foundation	$ 514,526	$ 14.82	
A1020	Special Foundation	$ 460,000	$ 13.25	
A1030	Slab on Grade	$ 570,956	$ 16.44	
A20	BASEMENT WALL CONSTRUCTION		$ -	$ -
A2010	Basement Excavation	$ -	$ -	
A2020	Basement Wall Construction	$ -	$ -	
B10	SUPERSTRUCTURE		$ 1,641,403	$ 47.26
B1010	Floor & Roof Construction	$ 1,641,403	$ 47.26	
B20	EXTERIOR ENCLOSURE		$ 2,192,910	$ 63.14
B2010	Exterior Walls	$ 1,596,093	$ 45.96	
B2020	Exterior Windows	$ 397,206	$ 11.44	
B2030	Exterior Doors	$ 199,612	$ 5.75	
B30	ROOFING		$ 1,766,092	$ 50.85
B3010	Roofing	$ 1,766,092	$ 50.85	
C10	INTERIOR CONSTRUCTION		$ 2,079,387	$ 59.87
C1010	Partitions	$ 1,348,327	$ 38.82	
C1020	Interior Doors	$ 463,055	$ 13.33	
C1030	Fittings and Specialties	$ 268,005	$ 7.72	
C20	STAIRS		$ 61,043	$ 1.76
C2010	Stair Construction	$ 61,043	$ 1.76	
C30	INTERIOR FINISHES		$ 1,566,351	$ 45.10
C3010	Wall Finishes	$ 703,097	$ 20.24	
C3020	Floor Finishes	$ 402,786	$ 11.60	
C3030	Ceiling Finishes	$ 460,468	$ 13.26	
D10	CONVEYING		$ -	$ -
D1010	Elevators & Lifts	$ -	$ -	
D20	PLUMBING		$ 1,010,759	$ 29.10
D2010	Plumbing	$ 1,010,759	$ 29.10	
D30	HVAC		$ 2,861,309	$ 82.39
D3010	HVAC	$ 2,861,309	$ 82.39	
D40	FIRE PROTECTION		$ 311,543	$ 8.97
D4010	Sprinkler System	$ 311,543	$ 8.97	
D50	ELECTRICAL		$ 2,906,090	$ 83.68
D5000	Electrical	$ 2,906,090	$ 83.68	
E10	EQUIPMENT		$ 479,490	$ 13.81
E1010	Equipment	$ 479,490	$ 13.81	
E20	FIXED FURNISHINGS		$ 585,841	$ 16.87
E2010	Fixed Furnishings	$ 585,841	$ 16.87	
F10	SPECIAL CONSTRUCTION		$ -	$ -
F1010	Special Structure	$ -		
F1020	Special Construction	$ -		
F20	SELECTIVE BUILDING DEMOLITION		$ -	$ -
F2010	Building Elements Demolition	$ -		
	Sub-Total Direct Cost		**$ 19,007,698**	**$ 547.30**
	General Conditions/General Requirements 11.75%		$ 2,233,405	$ 64.31
	Sub-Total		**$ 21,241,102**	**$ 611.61**
	Estimating / Design Contingency 7.50%		$ 1,593,083	$ 45.87
	Sub-Total		**$ 22,834,185**	**$ 657.48**
	Insurance & Bonds 1.50%		$ 342,513	$ 9.86
	General Contractor's Overhead and Profit 5.50%		$ 1,255,880	$ 36.16
	Sub-Total		**$ 24,432,578**	**$ 703.50**
	Escalation: July 2027 3.86%		$ 943,853	$ 27.18
	TOTAL CONSTRUCTION COST		**$ 25,376,431**	**$ 730.68**

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
A10	**FOUNDATIONS**				
A1010	**Standard Foundation**				
	A1011 Foundations				
	Reinforced concrete grade beams				
	Excavate for continuous footings	1,037	CY	48.00	49,776
	Backfill, assume imported fill	820	CY	58.00	47,560
	Disposal of excavated material off-site within 8 miles, assumed a 33% swell factor	1,379	CY	31.35	43,238
	Fine grade bottom of footing	7,237	SF	1.30	9,408
	Formwork to foundations - sides	4,955	SF	13.45	66,645
	Reinforcing steel in foundations	32,484	LB	1.76	57,172
	Concrete, 4,000 psi	217	CY	329.60	71,523
	Finish to top of footing	7,237	SF	1.40	10,132
	A1012 Column foundations				
	Reinforced concrete spread footings				
	Excavate for spread footings	63	CY	48.00	3,024
	Backfill, assume imported fill	49	CY	58.00	2,842
	Disposal of excavated material off-site within 8 miles, assumed a 33% swell factor	84	CY	31.35	2,627
	Fine grade bottom of footing	180	SF	1.30	234
	Formwork to foundations - sides	240	SF	13.45	3,228
	Reinforcing steel in foundations	1,750	LB	1.76	3,080
	Concrete, 4,000 psi	14	CY	329.60	4,614
	Finish to top of footing	180	SF	1.40	252
	A1013 Perimeter drainage and insulation				
	Perimeter drain pipe and rock	1,145	LF	29.45	33,720
	Perimeter insulation, rigid	1,718	SF	5.05	8,673
	Miscellaneous				
	Concrete stem wall	573	SF	88.00	50,380
	Dampproofing	1,718	SF	6.33	10,872
	Set anchor bolts, baseplates & holddowns	1	LS	35,525.00	35,525
	Total For Standard Foundations				**514,526**
A1020	**Special Foundation**				
	A1020 Special Foundation				
	Stone aggregate piers	1	LS	460,000.00	460,000
	Total For Special Foundations				**460,000**
A1030	**Slab on Grade**				
	A1031 Standard slab on grade				
	Reinforced concrete slab on grade, 5" including base	34,730	SF	15.72	545,956
	A1034 Trenches, pits and bases				
	Pads & Thickening allowance	1	LS	25,000.00	25,000
	Total For Slab on Grade				**570,956**

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
A20	**BASEMENT CONSTRUCTION**				
A2010	**Basement Excavation**				
	No work anticipated				N/A
	Total For Basement Excavation				
A2010	**Basement Walls**				
	No work anticipated				N/A
	Total For Basement Walls				
B1010	**Floor & Roof Construction**				
	B1012 Upper floors construction				
	Floor Structure at mezzanine				
	10" Dp TJI @ 16" oc	426	SF	10.53	4,486
	14" Dp TJI @ 16" oc	2,269	SF	17.65	40,048
	18" Dp TJI @ 16" oc	667	SF	21.62	14,421
	20" Dp TJI @ 16" oc	2,076	SF	22.99	47,727
	Plywood sheathing, 3/4" thick	5,438	SF	4.30	23,383
	Misc headers, blocking and framing	1	LS	10,876.00	10,876
	Concrete topping	5,438	SF	5.38	29,256
	B1020 Roof construction				
	Roof Structure				
	Columns	105	EA	775.00	81,375
	Columns, 12x12	3	EA	1,150.00	3,450
	Columns, sloping	5	EA	1,500.00	7,500
	Glulam beams	38,680	BM	10.10	390,668
	12" Dp TJI @ 24" oc	5,726	SF	11.23	64,314
	14" Dp TJI @ 24" oc	2,086	SF	14.12	29,454
	16" Dp TJI @ 24" oc	3,367	SF	16.20	54,545
	18" Dp TJI @ 24" oc	20,443	SF	17.30	353,582
	3'-0" Deep Open Web Truss @ 8' oc	5,291	SF	9.80	51,852
	T&G decking	2,506	SF	26.90	67,411
	Overframing	1,363	SF	20.00	27,260
	Plywood sheathing, 1/2" thick	34,407	SF	3.90	134,187
	Plywood sheathing at interior walls	32,832	SF	3.95	129,686
	Misc headers, blocking and framing	1	LS	68,814.00	68,814
	Canopies				
	Structural steel	1,524	LBS	3.80	5,791
	Steel roof deck	127	SF	10.35	1,314
	Total For Floor & Roof Construction				**1,641,403**
B20	**EXTERIOR CLOSURE**				
B2010	**Exterior Walls**				
	B2011 Exterior wall construction				
	Exterior wall finish material				
	Brick masonry veneer including masonry anchors	5,469	SF	49.85	272,630
	Fiber reinforced cement panels	9,084	SF	42.40	385,162
	Metal panel	1,341	SF	48.36	64,851
	Custom Aluminum	1,022	SF	90.00	91,980

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	Exterior wall substrate				
	3" mineral wool insulation, 5/8" gypsum sheathing, WRB, wood stud framing, batt insulation, vapor barrier, (1) layer of 5/8" gypsum at interior face	16,916	SF	32.86	555,860
	Masonry sealing, graffiti coatings	5,469	SF	4.00	21,876
	Sheet metal flashings at exterior walls	34,730	SF	2.75	95,508
	Blocking and backing at exterior walls	14,553	SF	2.45	35,655
	Framing at openings	5,069	SF	5.00	25,345
	Lintels/exterior wall steel	6,836	LBS	3.80	25,978
	B2013 Exterior louvers, screens and fencing				
	Louvers	250	SF	85.00	21,250
	B2014 Exterior sun control devices				N/A
	B2016 Exterior soffits				
	Canopy soffit finish, allow		SF		N/A
	Total For Exterior Walls				**1,596,093**
B2020	**Exterior Windows**				
	B2021 Windows				
	Fiberglass windows	2,466	SF	86.00	212,076
	B2023 Storefronts				
	Aluminum storefront (excludes door openings, interior storefront included in estimate section C1017 Interior Windows and Storefronts)	2,057	SF	90.00	185,130
	Total For Exterior Windows				**397,206**
B2030	**Exterior Doors**				
	B2031 Glazed doors and entrances				
	Aluminum glazed door, double	8	EA	12,480.00	99,840
	Aluminum glazed door, single	2	EA	6,977.00	13,954
	B2032 Solid exterior doors				
	HM doors, double, flush	2	EA	8,740.00	17,480
	HM doors, single, flush	4	EA	4,950.00	19,800
	B2034 Overhead doors				
	Overhead door, 15'-0"x 9'-6"	1	EA	13,537.50	13,538
	Miscellaneous				
	Miscellaneous specialty hardware	1	LS	35,000.00	35,000
	Total For Exterior Doors				**199,612**
B30	**ROOFING**				
B3010	**Roof Covering**				
	B3011 Roof finishes				
	Metal roofing system	39,107	SF	36.50	1,427,406
	Metal roofing system, canopies	1,911	SF	32.50	62,108
	B3014 Flashings and trim				
	Sheet metal flashings and trim at roof	39,107	SFA	3.50	136,875

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	B3016 Gutters and downspouts				
	Downspouts	34	EA	550.00	18,700
	Gutters	812	LF	27.50	22,330
	B3022 Roof hatches				
	Roof access hatch, curb, roofing accessories	3	EA	10,850.00	32,550
	Roof access ladder	3	EA	2,250.00	6,750
	Miscellaneous				
	Rough carpentry	1	LS	22,574.50	22,575
	Fall restraint anchors	32	EA	1,150.00	36,800
	Total For Roofing				**1,766,092**
C10	**INTERIOR CONSTRUCTION**				
C1010	**Partitions**				
	C1011 Fixed Partitions				
	Wood stud				
	4"	954	SF	5.82	5,552
	6"	24,840	SF	7.31	181,580
	8"	19,512	SF	9.35	182,437
	GWB				
	5/8", type 'X', taped & finished	86,886	SF	4.60	399,676
	5/8", type 'X', unfinished	70,218	SF	3.35	235,230
	Batt Insulation	45,306	SF	1.35	61,163
	Fire rated plywood	160	SF	5.58	893
	C1013 Retractable partitions				
	Solid operable partition, gym	784	SF	165.00	129,360
	Solid operable partition, platform	408	SF	165.00	67,320
	C1017 Interior windows and storefronts				
	Interior glazing	334	SF	95.00	31,730
	Transaction window	1	EA	6,500.00	6,500
	Miscellaneous				
	Blocking and backing	34,730	GFA	0.25	8,683
	Caulking & sealants	34,730	GFA	1.10	38,203
	Total For Interior Partitions				**1,348,327**
C1020	**Interior Doors**				
	C1021 Interior doors				
	Interior doors, frames and hardware				
	Aluminum glazed door, double	4	EA	12,500.00	50,000
	Wood doors, double, flush	12	EA	8,150.00	97,800
	Wood doors, single, flush	53	EA	3,410.00	180,730
	Specialty hardware, rated doors, sound door premium	1	LS	60,000.00	60,000
	Specialty doors				
	Overhead coiling, 8'-0" x 12'-0" @ kitchen	96	SF	250.00	24,000

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	C1025 Interior door sidelights and transoms				
	Glazed HM sidelight at interior doors				
	Single pane				
	Full height, small	17	EA	1,325.00	22,525
	Full height, large	16	EA	1,750.00	28,000
	Total For Interior Doors				**463,055**
C1030	**Specialties**				
	C1032 Fabricated compartments and cubicles				
	ADA partitions	4	EA	2,680.00	10,720
	STD partitions	4	EA	2,440.00	9,760
	Urinal screen	2	EA	768.86	1,538
	C1033 Storage shelving and lockers				
	Janitors mop rack and shelf	2	EA	602.00	1,204
	Storage shelving	1	LS	20,000.00	20,000
	Lockers	6	EA	325.00	1,950
	C1035 Identifying devices				
	Interior signage	34,730	SF	1.39	48,275
	Exterior building signage	1	LS	27,000.00	27,000
	C1037 General fittings and misc. metals				
	Miscellaneous metals, allow 0.3#/SF	10,419	LB	4.00	41,676
	Fire extinguisher cabinets	9	EA	475.00	4,275
	Cornerguards	1	LS	12,155.50	12,156
	Restroom accessories, CFIC				
	Grab bars, per set @ restrooms	12	EA	340.00	4,080
	Soap dispenser (OFCI)	14	EA	52.03	728
	Toilet paper dispenser (OFCI)	16	EA	52.03	832
	Toilet seat cover dispenser	16	EA	204.92	3,279
	Sanitary napkin receptacle	14	EA	216.05	3,025
	Paper towel dispenser (OFCI)	12	EA	78.04	936
	Mirrors	12	EA	272.00	3,264
	Mirrors, OT/PT 3'-6"x 5'-0"	1	EA	375.00	375
	Coat hooks	16	EA	45.00	720
	Baby changing station	1	EA	4,750.00	4,750
	Large changing station	1	EA	7,500.00	7,500
	Shower accessories	2	EA	750.00	1,500
	Sink accessories at classrooms, offices and break room				
	Soap dispenser, classrooms (OFCI)	26	EA	52.03	1,353
	Paper towel dispenser, classrooms (OFCI)	26	EA	78.04	2,029
	Cubicle curtain and track at health room, allow	1	LS	4,000.00	4,000
	Overhead swing mount	1	EA	3,750.00	3,750
	Projector ceiling mounts, allow	1	LS	1,750.00	1,750
	Tackboard/markerboard display specialties				
	Tackboard, 4'-0" x 4'-0"	13	EA	410.00	5,330
	Markerboard, 4'-0" x 4'-0"	14	EA	425.00	5,950
	Markerboard, 6'-0" x 6'-0"	22	EA	650.00	14,300
	Display Cases	1	LS	20,000.00	20,000
	Total For Fittings and Specialty Items				**268,005**

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
C20	**STAIRS**				
C2010	**Stair Construction**				
	C 2010 Stair Construction including railings and finish				
	Mechanical access ships ladders	3	FLT	12,000.00	36,000
	Stage Steps				
	Stage steps, CIP concrete	35	LFR	175.50	6,143
	Railings at stage ramp	60	LF	315.00	18,900
	Total For Stair Construction				**61,043**
C30	**INTERIOR FINISHES**				
C3010	**Wall Finishes**				
	C3012 Wall finishes to interior walls				
	Interior painting at walls	34,730	GFA	4.00	138,920
	Ceramic tile	5,130	SF	28.30	145,179
	Ceramic tile , backsplash	76	SF	35.00	2,660
	Vinyl wall covering	1,157	SF	6.65	7,695
	Acoustical wall panels	2,636	SF	28.00	73,808
	P-lam Wainscot, wall paneling	5,424	SF	28.50	154,588
	MDF Wainscot, wall paneling	576	SF	35.00	20,160
	Plywood wall protection	500	SF	5.00	2,500
	Hardwood veneer wall paneling	1,598	SF	45.00	71,917
	FRP	1,370	SF	15.00	20,550
	Vinyl wall paneling	432	SF	35.00	15,120
	Miscellaneous wall finishes allowance	1	LS	50,000.00	50,000
	Total For Wall Finishes				**703,097**
C3020	**Floor Finishes**				
	C3024 Flooring				
	Floor preparation	26,950	SF	0.88	23,716
	Polished concrete	5,244	SF	8.50	44,574
	Sealed concrete	2,536	SF	2.28	5,782
	Porcelain floor tile	64	SF	25.00	1,600
	Carpet	1,937	SF	6.15	11,913
	Maple athletic flooring	3,599	SF	29.15	104,911
	Kitchen flooring, resilient sheet flooring	862	SF	12.25	10,560
	Rubber sheet flooring	413	SF	16.50	6,815
	Sheet vinyl flooring	242	SF	12.80	3,098
	Resilient tile flooring	18,907	SF	7.10	134,240
	Walk off mat	926	SF	16.50	15,279
	Gym striping and markings	1	LS	4,498.75	4,499
	C3026 Bases, curbs and trim				
	Rubber base	5,315	LF	4.14	22,004
	Vented rubber base	144	LF	6.75	972
	Ceramic Tile base	513	LF	25.00	12,825
	Total For Floor Finishes				**402,786**
C3030	**Ceiling Finishes**				
	C3031 Ceiling finishes				
	Suspended ACT and grid, 2'-0" x 4'-0"	16,506	SF	7.20	118,843
	Suspended ACT and grid, 2'-0" x 4'-0", black	690	SF	7.40	5,106
	Suspended ACT and grid, 2'-0" x 4'-0", vinyl faced	866	SF	8.75	7,578
	Gypsum board over metal stud framing 5/8"	3,553	SF	10.50	37,307

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
Linear wood ceiling	2,422	SF	45.00	108,990
Paint included in interior painting estimate				N/A
Suspended acoustical ceiling panels	4,034	SF	31.50	127,055
Library ceiling	834	SF	40.00	33,360
Bulkheads	234	LF	95.00	22,230
Total For Ceiling Finishes				**460,468**
D10 VERTICAL TRANSPORTATION				
D1010 Elevator & Lift				
D 1010 Elevators and Lifts				N/A
Total For Elevator & Lifts				
D20 PLUMBING				
D2010 Plumbing				
Plumbing estimate provided by Metrix Engineers, dated 08/21/26				
220719 PLUMBING INSULATION				
Plumbing Insulation	34,321	SF	1.84	63,065
221116 DOMESTIC WATER PIPING				
Domestic Water Piping	34,321	SF	7.96	273,281
221316 SANITARY WASTE AND VENT PIPING				
Sanitary Waste and Vent Piping	34,321	SF	6.98	239,646
Grease Interceptor, 1,500 Gallon, Below Grade Concrete Vault	1	LS	22,001.00	22,001
222000 EARTHWORK FOR UNDERGROUND MECHANICAL SYSTEMS				
Earthwork for Underground Mechanical Systems	34,321	SF	1.04	35,737
223300 ELECTRIC HEAT PUMP WATER HEATER SYSTEM				
Electric Heat Pump Water Heater and Storage Tank	1	LS	122,500.00	122,500
80 Gallon, 24 KW, 147 GPH	2	EA	15,190.00	30,380
224200 COMMERCIAL PLUMBING FIXTURES				
Water Closets, Bowl, Flush Valve, Seat, 1.6 gpf, Wall Hung, RI	16	EA	2,588.43	41,415
Urinal, Wall Hung, Vitreous China, Hanger, Valve, 0.5 gpf, Water Saving, RI	4	EA	2,111.90	8,448
Lavatory, Wall Hung, Vitreous China, 18x15, RI, Self Closing Faucet	16	EA	1,958.78	31,340
Service Sinks, Wall, 22x20, Faucet, RI	2	EA	4,109.88	8,220
Commercial Wash Ftns, Multistation, RI	1	EA	7,423.50	7,424
Drinking Fountain, Wall Mounted, Non-Recessed, SS, RI	7	EA	1,901.20	13,308
Drinking Fountain, Wall Mounted, Non-Recessed, SS, Dual Level, RI	1	EA	2,715.83	2,716
Classroom Sinks, Countertop, Stainless, Faucet, Bubbler, Strainer, ADA, RI, 25x17	26	EA	2,638.65	68,605
Double Compartment Sinks, Countertop, Stainless, Faucet, Strainer, ADA, RI	1	EA	3,960.43	3,960
Fiberglass Shower Stall, ADA, Grab Bar, Seat, Mixing Valve, RI	2	EA	3,392.03	6,784
Emergency Eyewash, SS, Wall Mounted	2	EA	2,666.53	5,333

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
Interior Hose Bibb, Hot and Cold, RI	2	EA	1,418.55	2,837
Exterior Hose Bibb, Cold, RI	7	EA	753.38	5,274
Exterior Hose Bibb, Hot and Cold, RI	1	EA	1,326.68	1,327
Misc Fixtures (CW Service Box, Instahots, Dishwasher Connections, etc.)	10	EA	1,010.63	10,106
Electronic Trap Primer Panel	6	EA	1,175.39	7,052
Total For Plumbing				**1,010,759**
D30 HVAC				
D3010 HVAC				
HVAC estimate provided by Metrix Engineers, dated 08/21/26				
230548 VIBRATION AND SEISMIC CONTROL FOR HVAC				
Vibration and Seismic Control for HVAC	34,321	SF	0.55	18,919
230593 TESTING ADJUSTING AND BALANCING				
Testing, Adjusting and Balancing	34,321	SF	1.10	37,839
230700 MECHANICAL INSULATION				
Mechanical Insulation	34,321	SF	4.59	157,662
230800 COMMISSIONING SUPPORT				
Commissioning	34,321	SF	0.67	23,124
230900 INSTRUMENTATION AND CONTROL FOR HVAC				
Instrumentation and Control For HVAC	34,321	SF	12.25	420,432
232113 HYDRONIC PIPING				
Hydronic Piping	34,321	SF	14.70	504,519
232116 HYDRONIC PIPING SPECIALTIES				
Hydronic Piping Specialties	34,321	SF	3.55	121,925
232123 HYDRONIC PUMPS				
In-Line Centrifugal Hydronic Pumps	1	LS	31,237.50	31,238
232500 HVAC CHEMICAL TREATMENT				
HVAC Chemical Treatment	34,321	SF	0.55	18,919
233113 METAL DUCTS				
Metal Ducts	34,321	SF	15.31	525,540
233300 AIR DUCT ACCESSORIES				
Air Duct Accessories	34,321	SF	0.67	23,124
233423 HVAC POWER VENTILATORS				
Exhaust Fans	34,321	SF	0.55	18,919
233600 AIR TERMINAL UNITS				
Air Terminal Units	1	LS	22,662.50	22,663
Fan Coils		EA		
233713 DIFFUSERS, REGISTERS, AND GRILLES				
Diffusers, Registers, and Grilles	34,321	SF	1.35	46,248

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	235000 CENTRAL HEATING EQUIPMENT				
	Electric Boiler	1	EA	67,007.50	67,008
	236000 CENTRAL COOLING EQUIPMENT				
	Air to Water Heat Pump	2	EA	208,250.00	416,500
	237000 CENTRAL HVAC EQUIPMENT				
	Indoor Central-Station DOAS and Air Handling Units	1	LS	218,050.00	218,050
	Fan Coil Units	1	LS	159,250.00	159,250
	238000 DECENTRALIZED HVAC EQUIPMENT				
	238100 Decentralized Unitary HVAC Equipment	34,321	SF	0.86	29,430
	Total For HVAC				**2,861,309**
D40	**FIRE PROTECTION**				
D4010	**Fire Protection**				
	Fire Protection estimate provided by Metrix Engineers, dated 08/21/26				
	D4010 Fire Protection				
	Fire Protection systems, building	41,331	GFA	6.37	263,278
	Fire Protection systems, dry sprinkler systems	1	LS	48,265.00	48,265
	Total For Fire Sprinkler System				**311,543**
D50	**ELECTRICAL**				
D5000	**Electrical**				
	Electrical estimate provided by GFT Engineers, dated 08/24/26				
	Mobilization, Submittals, Closeout (1)	34,321	SF	2.00	68,642
	Emergency Power Equipment and Distribution (Centralized Emergency Lighting (Only) Inverter)	34,321	SF	2.00	68,642
	Devices & Gear	34,321	SF	16.00	549,136
	Conduit, Wiring & Feeders (with MC Cable)	34,321	SF	18.00	617,778
	Interior Lighting Fixtures	34,321	SF	13.00	446,173
	Lighting and Receptacle Controls	34,321	SF	3.00	102,963
	Fire Alarm	34,321	SF	5.00	171,605
	Intrusion Alarm	34,321	SF	1.25	42,901
	Access Control System (including head end and programming)	14	EA	7,000.00	98,000
	CCTV System - Multi-lens (including head end)	7	EA	6,500.00	45,500
	CCTV System - Single/dual head (including head end)	15	EA	4,500.00	67,500
	Intercom/Clock System	34,321	SF	2.50	85,803
	Data	34,321	SF	5.00	171,605
	Misc Systems (small A/V, doorbell/video intercom) information display, etc)	34,321	SF	0.50	17,161
	DAS Conduit System	34,321	SF	1.50	51,482

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	Commons/Music Room A/V System (Gym Rough in only for future exp.)	1	LS	75,000.00	75,000
	Classroom A/V Systems (Typical Classrooms Incl. Library)	11	EA	7,000.00	77,000
	Photovoltaic System (Min. for NREC C406.2.5 and C411	37,300	W	4.00	149,200
	Total For Electrical				**2,906,090**
E10	**EQUIPMENT**				
E1010	**Equipment**				
	E1023 Theater and stage equipment				
	Stage drapery	1	EA	60,000.00	60,000
	E1025 Audio-visual equipment				
	Projection screen at gym / stage	1	EA	35,000.00	35,000
	Flat panel display, OFCI	14	EA	175.00	2,450
	Large flat panel display, gym, OFCI	2	EA	480.00	960
	E1029 Other institutional equipment				
	Wall mounted basketball backstops at gymnasium	4	EA	7,500.00	30,000
	Side folding basketball backstop at gymnasium	2	EA	9,500.00	19,000
	Volleyball standards and rack	1	EA	2,480.00	2,480
	Scoreboards, shotclocks	1	EA	30,000.00	30,000
	Telescopic gym seating, OFCI	1	EA	2,500.00	2,500
	Miscellaneous gym equipment	1	LS	8,000.00	8,000
	E1093 Food service equipment				
	Food service equipment, per Clevenger Associates, dated 8/19/26	1	LS	273,000.00	273,000
	E1094 Residential equipment				
	Refrigerator	4	EA	1,300.00	5,200
	Microwave	2	EA	625.00	1,250
	Dishwasher	1	EA	850.00	850
	Oven/Range/Hood	2	EA	2,500.00	5,000
	Washing Machine	2	EA	950.00	1,900
	Dryer	2	EA	950.00	1,900
	Total For Equipment				**479,490**
E20	**FIXED FURNISHINGS**				
E2010	**Fixed Furnishing**				
	E2012 Fixed casework				
	Art				
	Base cabinetry, sink cabinet only	9.0	LF	432.00	3,888
	Upper cabinet	9.0	LF	388.00	3,492
	Tall cabinetry, 7'-0" high	8.0	LF	880.00	7,040
	Countertop	9.0	LF	118.00	1,062
	Classrooms				
	Base cabinetry, sink cabinet only	62.0	LF	432.00	26,784
	Upper cabinet	44.0	LF	388.00	17,072
	Tall cabinetry, 7'-0" high	55.0	LF	880.00	48,400
	Countertop	62.0	LF	118.00	7,316
	Cubbies	98.0	LF	420.00	41,160

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
Commons				
Base cabinetry, sink cabinet only	8.0	LF	432.00	3,456
Countertop	8.0	LF	118.00	944
Hallways				
Built-in bench, 18"D	18.0	LF	225.00	4,050
Display cases	9.0	LF	950.00	8,550
Health Room				
Base Cabinetry	8.0	LF	432.00	3,456
Upper cabinet	7.0	LF	388.00	2,716
Countertop	8.0	LF	118.00	944
Kindergarden Classroom				
Base cabinetry, sink cabinet only	12.0	LF	432.00	5,184
Upper cabinet	9.0	LF	388.00	3,492
Tall cabinetry, 7'-0" high	6.0	LF	880.00	5,280
Countertop	12.0	LF	118.00	1,416
Cubbies	19.0	LF	420.00	7,980
Library				
Reception Counter	10.0	LF	1,200.00	12,000
Bookshelves	80.0	LF	765.00	61,200
Display cases	12.0	LF	950.00	11,400
Main Custodial				
Base cabinetry, sink cabinet only	12.0	LF	432.00	5,184
Upper cabinet	12.0	LF	388.00	4,656
Countertop	12.0	LF	118.00	1,416
Mothers Room				
Base cabinetry, sink cabinet only	8.0	LF	432.00	3,456
Countertop	8.0	LF	118.00	944
Music				
Base cabinetry, sink cabinet only	3.0	LF	432.00	1,296
Music storage cabinetry	27.0	LF	2,000.00	54,000
Countertop	3.0	LF	118.00	354
OT/PT				
Base cabinetry, sink cabinet only	9.0	LF	432.00	3,888
Upper cabinet	9.0	LF	388.00	3,492
Tall cabinetry, 7'-0" high	6.0	LF	880.00	5,280
Countertop	9.0	LF	118.00	1,062
Reception				
Reception Counter	27.0	LF	750.00	20,250
Upper cabinet	5.0	LF	388.00	1,940
Sensory				
Built-in seating	6.0	LF	550.00	3,300
SLP				
Base cabinetry, sink cabinet only	3.0	LF	432.00	1,296
Countertop	3.0	LF	118.00	354
SPED				
Base cabinetry, sink cabinet only	18.0	LF	432.00	7,776
Tall cabinetry, 7'-0" high	15.0	LF	880.00	13,200
Countertop	18.0	LF	118.00	2,124
Cubbies	13.0	LF	420.00	5,460
Staff Lounge				
Base cabinetry, sink cabinet only	27.0	LF	432.00	11,664
Upper cabinet	26.0	LF	388.00	10,088
Countertop	27.0	LF	118.00	3,186

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
Staff Workroom				
Base cabinetry, sink cabinet only	28.0	LF	432.00	12,096
Upper cabinet	29.0	LF	388.00	11,252
Countertop	28.0	LF	118.00	3,304
Mail slot cabinetry, 5 bays	9.0	LF	650.00	5,850
Workroom				
Base cabinetry, sink cabinet only	17.0	LF	432.00	7,344
Upper cabinet	18.0	LF	388.00	6,984
Countertop	17.0	LF	118.00	2,006
Miscellaneous casework	34,730	GFA	0.40	13,892
E2013 Blinds and other window treatments				
Window treatments, manual	3,495	SF	15.50	54,165
Premium for motorized window treatments	1	LS	15,000.00	15,000
Total For Fixed Furnishings				**585,841**
F10 SPECIAL STRUCTURES				
F1020 Special Construction				
No work anticipated				N/A
Total For Special Construction				

NORTH BEACH SCHOOL DISTRICT
PACIFIC BEACH ELEMENTARY SCHOOL
PACIFIC BEACH, WA
SCHEMATIC DESIGN ESTIMATE
SITEWORK **ELEMENTAL ESTIMATE SUMMARY** **DATE:** **August 28, 2026**

RC COST GROUP

No.	ELEMENT DESCRIPTION		ELEMENT TOTAL	GROUP TOTAL
G10	SITE PREPARATION			$ 2,146,875
G1010	Site Clearing		$ -	
G1020	Site Demolition and Relocations		$ 376,050	
G1030	Site Earthwork		$ 1,770,825	
G1040	Hazardous Waste Remediation		$ -	
G20	SITE IMPROVEMENTS			$ 2,570,211
G2010	Roadways		$ -	
G2020	Parking Lots		$ 709,865	
G2030	Pedestrian Paving		$ 542,656	
G2040	Site Development		$ 781,945	
G2050	Landscaping		$ 535,745	
G30	SITE MECHANICAL UTILITIES			$ 1,173,245
G3010	Water Supply		$ 722,500	
G3020	Sanitary Sewer		$ 170,300	
G3030	Storm Sewer		$ 280,445	
G3040	Heating Distribution		$ -	
G3050	Cooling Distribution		$ -	
G3060	Fuel Distribution		$ -	
G3090	Other Site Mechanical Utilities		$ -	
G40	SITE ELECTRICAL UTILITIES			$ 319,750
G4010	Electrical Distribution		$ 319,750	
G4020	Site Lighting		$ -	
G4030	Site Communications and Security		$ -	
G4090	Other Site Electrical Utilities		$ -	
	Sub-Total Direct Cost			**$ 6,210,081**
	General Conditions/General Requirements	11.75%		$ 729,684
	Sub-Total			**$ 6,939,765**
	Estimating / Design Contingency	7.50%		$ 520,482
	Sub-Total			**$ 7,460,248**
	Insurance & Bonds	1.50%		$ 111,904
	General Contractor's Overhead and Profit	5.50%		$ 416,468
	Sub-Total			**$ 7,988,620**
	Escalation: July 2027	3.86%		$ 308,608
	TOTAL CONSTRUCTION COST			**$ 8,297,227**

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
G10	**SITE PREPARATION**				
G1010	**Site Clearing**				
	Included in Site Demolition				N/A
	Total For Site Clearing				
G1020	**Site Demolition and Relocations**				
	Civil estimate provided by LDC, dated 08/28/26				
	C1020 Site Demolition				
	Clearing and Grubbing	12.00	AC	15,000.00	180,000
	Sawcut	500	LF	10.00	5,000
	Asphalt Removal (incl. haul off-site)	35	SY	60.00	2,100
	Concrete Paving Removal	2,585	SY	60.00	155,100
	Curb Removal	890	LF	10.00	8,900
	Gravel Removal	1,060	SY	10.00	10,600
	Gate Removal	3	ES	650.00	1,950
	Fire Hydrant Removal	1	EA	1,500.00	1,500
	Catch Basin Removal	4	EA	1,000.00	4,000
	Storm Drain Line Removal	310	LF	15.00	4,650
	Fire Line Removal	150	LF	15.00	2,250
	Total For Site Demolition and Relocations				**376,050**
G1030	**Site Earthwork**				
	Civil estimate provided by LDC, dated 08/28/26				
	G1030 Site Earthwork and Erosion Control				
	Site Grading & Earthwork				
	Mobilization (8% of total cost)	1	LS	325,000.00	325,000
	Site Earthwork Cut (incl. haul Off-Site)	1,525	CY	45.00	68,625
	Site Earthwork Fill (Net)	29,750	CY	45.00	1,338,750
	G1037 Erosion control				
	Stabilized Construction Entrance	1	EA	7,750.00	7,750
	Silt Fence	8	LF	2,725.00	21,800
	Tree Protection Fence	10	:LF	800.00	8,000
	Storm Drain Inlet Protection	12	EA	75.00	900
	Total For Site Earthwork				**1,770,825**
G1040	**Hazardous Waste Remediation**				
	No work anticipated				N/A
	Total For Hazardous Waste Remediation				
G20	**SITE IMPROVEMENTS**				
G2010	**Roadways**				
	G2012 Paving and surfacing				
	Included in G2020				N/A
	Total For Roadways				

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
G2020	**Parking Lots**				
	Civil estimate provided by LDC, dated 08/28/26				
	G 2020 Parking Lots				
	Asphalt Paving	1,775.00	TON	150.00	266,250
	Concrete Sidewalk	460.00	CY	300.00	138,000
	ADA Ramp	17.00	EA	2,500.00	42,500
	CSTC	3,610.00	TON	50.00	180,500
	Concrete Curb	785.00	LF	75.00	58,875
	Wheel Stop	20.00	EA	150.00	3,000
	Paint Striping	53,700	SF	0.20	10,740
	Signage	1	LS	10,000.00	10,000
	Total For Parking Lots				**709,865**
G2030	**Pedestrian Paving**				
	Landscape estimate provided by Site Workshop, dated 08/28/26				
	G2031 Paving and surfacing				
	Nature Trail Surfacing (clearing/grading by others)	2,100.00	LF	2.90	6,090
	Concrete at Play Areas	4,746.00	SF	15.00	71,190
	Crushed Rock Path at Sports Field	4,791.00	SF	3.66	17,535
	Concrete Path at Sports Field	1,800.00	SF	20.00	36,000
	18" Maintenance Strip @ Building Edge, 4" CR Base Course	804.00	SF	15.00	12,060
	Natural Turf Sports Field	70,000.00	SF	3.00	210,000
	Artificial Turf Sports Field Perf Pipe Drainage Trench & Backfill	3,150.00	LF	40.00	126,000
	Wood Chip Surfacing (3")	17.00	CY	55.00	935
	Crushed Rock/Wood Chip Surfacing	6,203.00	SF	2.90	17,989
	Engineered Wood Fiber Safety Surfacing (including base prep)	4,581.00	SF	7.50	34,358
	Perf Pipe Drainage Trenches & Backfill at Play Turf	225.00	LF	40.00	9,000
	Cleanout at Play Turf	6.00	EA	250.00	1,500
	Total For Pedestrian Paving				**542,656**
G2040	**Site Development**				
	Landscape estimate provided by Site Workshop, dated 08/28/26				
	G2041 Fences and gates				
	4' HT Garden Fence	200	LF	50.00	10,000
	6' HT Black Coated Chainlink Fence	1,977	LF	85.00	168,045
	6' HT Black Coated Chainlink Gate, 4' wide double swing	2	EA	2,000.00	4,000
	6' HT Black Coated Chainlink Gate, 18' wide double swing	2	EA	15,000.00	30,000
	G2045 Site furnishings				
	1/2 Ton Rounded Glacial Erratic Boulders	12	TON	200.00	2,400
	1 Ton Rounded Glacial Erratic Boulders	10	TON	400.00	4,000
	2 Ton Rounded Glacial Erratic Boulders	8	TON	800.00	6,400
	2.5 Ton Rounded Glacial Erratic Boulders	6	TON	1,000.00	6,000
	Raised Garden beds	10	EA	400.00	4,000
	Recycling and Trash Receptacle	6	EA	1,200.00	7,200

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	Benches				OFOI
	Seat Logs 6' - 10'	7	EA	1,100.00	7,700
	Logs	19	EA	800.00	15,200
	Picnic Table				OFOI
	Bicycle Parking	5	EA	550.00	2,750
	Asphalt Play Area Striping	1	EA	15,000.00	15,000
	Play Equipment (structure, spinners, swings)	1	ALLOW	250,000.00	250,000
	Bollards, Removable	4	EA	1,250.00	5,000
	Soccer Goals				OFOI
	6' HT Soccer ball fence	135	LF	85.00	11,475
	20' HT Soccer ball fence	50	LF	325.00	16,250
	Basketball Hoops	3	EA	3,500.00	10,500
	G2049 Miscellaneous structures				
	Service Yard				
	Service yard wall	904	SF	75.00	67,800
	Service yard wall cap	113	LF	225.00	25,425
	Service yard wall footings	19	CY	750.00	14,250
	Service yard wall vehicle gate	1	EA	5,000.00	5,000
	Service yard wall dumpster gate	1	EA	2,500.00	2,500
	Service yard wall pedestrian gate	1	EA	1,500.00	1,500
	Total For Site Development				**781,945**
G2050	**Landscaping**				
	Landscape estimate provided by Site Workshop, dated 08/28/26				
	G2055 Planting				
	Imported Topsoil Type A (6" at planting & lawn areas)	1,172	CY	60.00	70,344
	Imported Toipsoil Type B (12" at raised beds & bioretention)	299	CY	60.00	17,940
	Mulch (3" depth)	75	CY	55.00	4,125
	Detention Pond Planting	1,560	SF	0.25	390
	Restoration Planting / Erosion Control	9,000	SF	0.75	6,750
	Seed - Meadow	24,521	SF	0.50	12,261
	Hydroseed - Lawn	23,900	SF	0.25	5,975
	Perennial & Shrub Container Stock Planting	19,706	SF	7.00	137,942
	Trees	42	EA	550.00	23,100
	G2057 Irrigation system				
	Automatic Irrigation System - Shrubs+Perennial	19,706	SF	3.00	59,118
	Automatic Irrigation System - Lawn	93,900	SF	2.00	187,800
	Master valve, flow sensor, QCV, etc.	1	EA	5,000.00	5,000
	Controller	1	EA	5,000.00	5,000
	Total For Landscaping				**535,745**

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
G30	**SITE MECHANICAL UTILITIES**				
G3010	**Water Supply**				
	Civil estimate provided by LDC, dated 08/28/26				
	G3010 Water Utilities				
	8" Water Main	2,150	LF	260.00	559,000
	6" Fire Line	330	LF	250.00	82,500
	3" Water Service Line	80	LF	150.00	12,000
	3" Water Meter	1	EA	8,000.00	8,000
	1" Water Service Line	30	LF	100.00	3,000
	1" Water Meter	1	EA	2,000.00	2,000
	Potable Water Backflow Device	1	EA	5,000.00	5,000
	Fire Department Connection	1	EA	3,000.00	3,000
	Post Indicator Valve	1	EA	3,000.00	3,000
	Fire Hydrant	3	EA	10,000.00	30,000
	Connect to Existing Water Main	3	EA	5,000.00	15,000
	Total For Water Supply				**722,500**
G3020	**Sanitary Sewer**				
	Civil estimate provided by LDC, dated 08/28/26				
	G3020 Sanitary Sewer				
	6" Sanitary Sewer Pipe (incl. trench and backfill)	30	LF	60.00	1,800
	8" Sanitary Sewer Pipe (incl. trench and backfill)	1,400	LF	75.00	105,000
	Grease Interceptor			incl in mechanical detail	
	Sanitary Sewer Manhole	7	EA	7,500.00	52,500
	Sewer Cleanout	5	EA	1,200.00	6,000
	Connect to Existing Sewer Main	1	EA	5,000.00	5,000
	Total For Sanitary Sewer				**170,300**
G3030	**Storm Sewer**				
	Civil estimate provided by LDC, dated 08/28/26				
	G3030 Storm Sewer				
	12" PVC Storm Drain (incl. trench and backfill)	1,550	LF	85.00	131,750
	4" Footing Drain (incl. trench and backfill)			incl in building detail	
	6" Roof Drain (incl. trench and backfill)	985	LF	47.00	46,295
	Basic Treatment System	1	EA	30,000.00	30,000
	Type 1 Catch Basin	16	EA	3,850.00	61,600
	6" Storm Drain Cleanout	9	EA	1,200.00	10,800
	Total For Storm Sewer				**280,445**
G3040	**Heating Distribution**				
	No work anticipated				N/A
	Total For Heating Distribution				
G3050	**Cooling Distribution**				
	No work anticipated				N/A
	Total For Cooling Distribution				

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
G3060	**Fuel Distribution**				
	No work anticipated				N/A
	Total For Fuel Distribution				
G3090	**Other Site Mechanical Utilities**				
	No work anticipated				N/A
	Total For Other Site Mechanical Utilities				
G40	**SITE ELECTRICAL UTILITIES**				
G4010	**Electrical Distribution**				
	Site Electrical estimate provided by GFT Engineers, dated 08/24/26				
	Site Utilities- Conduits for Power and Communications	250	LF	65.00	16,250
	Site Lighting - Single Head Light Pole	13	EA	6,500.00	84,500
	Site Lighting - Double Head Light Pole	4	EA	8,000.00	32,000
	Utility Connection, Transformer Pad, Vault	1	LS	70,000.00	70,000
	Site comm conduits	1	LS	30,000.00	30,000
	Site Power and Lighting Vaults	3	EA	1,500.00	4,500
	Site Comm Vaults	3	EA	2,500.00	7,500
	Pole Mounted Site CCTV Cameras (With enclosure, Media Converter, Fiber, and Power Circuit)	4	EA	12,000.00	48,000
	EV Chargers (1)	1	EA	16,000.00	16,000
	EV Ready (1)	1	EA	5,500.00	5,500
	Readerboard: Power and Comm Connection (Trenching NOT included, combined with pathway lighting trench)	1	LS	5,500.00	5,500
	Total For Electrical Distribution				**319,750**
G4020	**Site Lighting**				
	Included above				
	Total For Site Lighting				
G4030	**Site Communications and Security**				
	Included above				
	Total For Site Communications and Security				
G4090	**Other Site Electrical Utilities**				
	G4092 Site emergency power generation				See Building Detail
	Total For Other Site Electrical Utilities				

NORTH BEACH SCHOOL DISTRICT
PACIFIC BEACH ELEMENTARY SCHOOL
PACIFIC BEACH, WA
SCHEMATIC DESIGN ESTIMATE
ALTERNATES

Date: **August 28, 2026**

RC COST GROUP

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
1. Increase size of covered play				
Glulam beams	6,860	BM	10.10	69,286
T&G decking	2,191	SF	26.90	58,938
Metal roofing system, canopies	2,191	SF	32.50	71,208
Sub-Total Direct Cost				**199,431**
Mark ups	33.51%			66,822
TOTAL CONSTRUCTION COST				**266,253**
2. Concrete outdoor stage/platform				
Stage Steps				
Stage, CIP concrete	396	SF	14.50	5,742
Stage steps, CIP concrete	220	LFR	175.50	38,610
Railings at stage ramp	8	LF	315.00	2,520
Sub-Total Direct Cost				**46,872**
Mark ups	33.51%			15,705
TOTAL CONSTRUCTION COST				**62,577**
3a. CLT at covered play structure in-lieu of 3x car decking				
T&G decking	(2,506)	SF	26.90	(67,411)
3-Ply CLT	2,506	SF	48.97	122,728
Sub-Total Direct Cost				**55,317**
Mark ups	33.51%			18,534
TOTAL CONSTRUCTION COST				**73,851**
3b. CLT at additional covered play structure in-lieu of 3x car decking				
T&G decking	(2,191)	SF	26.90	(58,938)
3-Ply CLT	2,191	SF	48.97	107,301
Sub-Total Direct Cost				**48,363**
Mark ups	33.51%			16,205
TOTAL CONSTRUCTION COST				**64,568**
3. Residential appliances/equipment to be OFCI				
E1094 Residential equipment				
Refrigerator	(4)	EA	1,300.00	(5,200)
Microwave	(2)	EA	625.00	(1,250)
Dishwasher	(1)	EA	850.00	(850)
Oven/Range/Hood	(2)	EA	2,500.00	(5,000)
Washing Machine	(2)	EA	950.00	(1,900)
Dryer	(2)	EA	950.00	(1,900)
Install Owner furnished equipment	1	LS	1,690.00	1,690
Sub-Total Direct Cost				**(14,410)**
Mark ups	33.51%			(4,828)
TOTAL CONSTRUCTION COST				**(19,238)**

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
4. Concrete path in-lieu of Gravel at Sports Field				
Gravel Path at Sports Field	(4,791.00)	SF	3.66	(17,535)
Concrete Path at Sports Field	4,791.00	SF	15.00	71,865
Sub-Total Direct Cost				**54,330**
Mark ups	33.51%			18,204
TOTAL CONSTRUCTION COST				**72,534**
5. Artificial turf sports field in-lieu of grass field				
Natural Turf Sports Field	(70,000)	SF	3.00	(210,000)
Automatic Irrigation System - Lawn	(70,000)	SF	2.00	(140,000)
Artificial Turf Sports Field w/ Striping	70,000.00	SF	15.00	1,050,000
Sub-Total Direct Cost				**700,000**
Mark ups	33.51%			234,543
TOTAL CONSTRUCTION COST				**934,543**
6. Artificial turf playground surfacing in-lieu of engineered				
Engineered Wood Fiber Safety Surfacing (including base prep)	(4,851)	SF	7.50	(36,383)
Artificial Turf playground Surfacing (including base prep)	4,851	SF	22.00	106,722
Sub-Total Direct Cost				**70,340**
Mark ups	33.51%			23,568
TOTAL CONSTRUCTION COST				**93,908**
7. Additional 500 LF of fence				
G2041 Fences and gates				
6' HT Black Coated Chainlink Fence	500	LF	85.00	42,500
Sub-Total Direct Cost				**42,500**
Mark ups	33.51%			14,240
TOTAL CONSTRUCTION COST				**56,740**
8. Wood Pavilion				
Semi-circular Wood Pavilion	1	ALLOW	100,000.00	100,000
Sub-Total Direct Cost				**100,000**
Mark ups	33.51%			33,506
TOTAL CONSTRUCTION COST				**133,506**
9. Baseball Backstop				
Chainlink baseball 30' backstop	3	EA	25,000.00	75,000
Sub-Total Direct Cost				**75,000**
Mark ups	33.51%			25,130
TOTAL CONSTRUCTION COST				**100,130**

NORTH BEACH SCHOOL DISTRICT
PACIFIC BEACH ELEMENTARY SCHOOL
PACIFIC BEACH, WA
SCHEMATIC DESIGN ESTIMATE
ALTERNATES

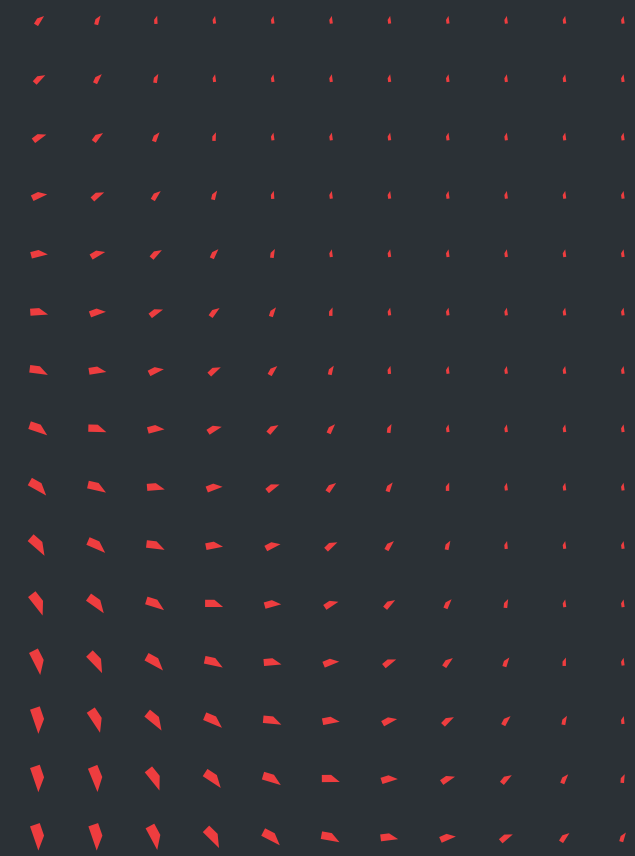
Date: **August 28, 2026**

COST GROUP

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
10. Reduce OSPI Area to funded maximum of 34,407 SF				
Reduce size of building	(1,266)	SF	438.41	(555,023)
Sub-Total Direct Cost				**(555,023)**
Mark ups	33.51%			(185,966)
TOTAL CONSTRUCTION COST				**(740,989)**

TCF

III. Draft Value Engineering Report



Value Engineering Study Report



Pacific Beach Elementary School

Pacific Beach, WA

Prepared for
CSG
North Beach School District

October 2026

Prepared by
Säzän Group

600 Stewart Street, Suite 1600
Seattle, WA 98101
(206) 267-1700
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SÄZÄN
GROUP

October 13, 2026

Robert Musial
Project Manager
Construction Services Group

Re: Pacific Beach Elementary School
Value Engineering Study Report

Dear Robert:

Transmitted herewith is an electronic copy of the final draft Value Engineering Study Report for the Pacific Beach Elementary School project for your use and records. Please distribute to the project team for their review and comments.

Thank you for your assistance in supporting the VE effort. Should you have any questions, please telephone me at 206.576.7233.

Sincerely,

Säzän

Steven Paget, CVS, LEED AP BD+C
Principal

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Acknowledgements

The Säzän VE Team would like to acknowledge the special participation during the formal value engineering process and contributions that supported the success of this VE study.

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Content

1.0 Introduction

Introduction 1
Study Timing 1
Value Methodology 1
Workshop Scope and Objectives 2
Evaluation Factors 3
Study Team 3

2.0 Study Results

Cost Summary 4
Implementation Summary 4
Key Findings 4
Key Recommendations 5

3.0 Background

Project Description 6
Project Goals 7
Constraints and Issues 8
Key Functions 8

4.0 Project Evaluation

Cost Analysis 9
Comparison of Building Cost Per Sq. Ft 10

5.0 Value Improvement Alternatives

Key Recommended Alternatives 11

Appendices

A. Owner Implementation 13
B. Value Improvement Alternatives 21
C. Function Analysis 188
D. Project Evaluation 193
E. Background Documents 209
F. Workshop Information 221

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1.0 Introduction

Introduction

A Value Engineering (VE) workshop was conducted to review the 95% schematic design (SD) documents for the Pacific Beach Elementary School (PBES) project August 31 to September 4, 2026. The client is North Beach School District (NBSD), with Construction Services Group serving as the Owner's Representative and TCF Architecture (TCF) as the prime architect/engineer (A/E) consultant. Säzän Group Inc (Säzän) is the lead consultant and facilitator of the VE study. Representatives from PBES, TCF, CSG and the Säzän VE team participated in the kick-off meeting for the workshop on August 31, 2026. The study was conducted in accordance with the SAVE International Value Methodology Eight-Step Job Plan and the Washington State WACs 392-343-080 and 392-344-065. A formal presentation of the workshop findings and recommendations was given to the NBSD, CSG and TCF project teams on September 15, 2026.

Study Timing

The VE study was held following release of the August 12, 2026 schematic design documents which show a total building area of 34,407 SF as well as an additional 1,886 SF of exterior covered play. The project documents used for the study were 95% SD documents with an accompanying estimate. The Schematic Design Estimate prepared by RC Cost Group dated August 28, 2026 was considered the baseline for the VE study. The project will be single phase with a budgeted construction duration of 15 months. The project is planning to bid in June 2027, with construction scheduled to commence in late August 2027 and be completed by December 2027.

Value Methodology

The formal Eight-Step VE process is an independent third-party review typically completed during the end of schematic design, or early design development in the project design process. The intent is to identify and document alternative solutions to project requirements which can improve performance relative to overall life cycle investment. The workshop follows the Value Methodology Eight-Step Job Plan beginning with pre-study preparations, followed by the information phase in a kick-off meeting with the client, design team, program manager and key stakeholders, progresses through function analysis, design and cost assessment, creative speculation, alternatives evaluation and development, and concludes with a presentation of study results to the project team and other key stakeholders, followed by an implementation phase including the incorporation of the VE ideas into the project design.

During ***1. Preparation***, the goal is to identify what is to be studied (the VM study subject) and when it is to be studied. The focus of the ***2. Information*** phase is to give the VE team an understanding of the program priorities, operations, budget, issues to be considered and goals for the study. The ***3. Function Analysis*** phase develops an understanding of the underlying functions the project must deliver to achieve the program objectives. The ***4. Creative Speculation*** phase identifies solutions to potential deficiencies and opportunities to enhance project value. ***5. Evaluation*** selects ideas with sufficient merit to warrant further analysis. In the ***6. Development*** phase, ideas selected for development into alternatives are analyzed and documented in workbooks for inclusion in the study report. Based on the analysis, the VE team makes a recommendation on the disposition of each alternative. At the conclusion of the workshop, the VE team makes a ***7. Presentation***

of findings and recommendations to the project team and other key stakeholders. During the final phase, ***8. Implementation***, sponsor and/or stakeholder acceptance of VM alternatives are incorporated into the subject under study.

Workshop Scope and Objectives

The purpose of the VE review is to achieve optimum project performance relative to the investment. The overarching VE assessment objectives include confirming that the program functions are being met, improving project quality, performance and sustainability, and reducing project initial and life-cycle costs. Outcomes typically are more cost-effective designs, early identification of deficiencies and omissions, and resolution of mismatches between performance, cost and available funding.

The primary workshop scope for the PBES project was identified as an evaluation of the 95% schematic design set, associated documents and supporting cost estimates. The primary study focus was to identify strategies to site the building, fields, and parking on a restricted site to maximize program and features for the community and future users. The RC Cost Group SD Design Estimate reflects a total cost of work of about $33.7 million, including design contingency, general conditions, escalation, sitework, and O&P. This estimate places the project about $5.2 million over the maximum allowable construction cost (MACC) budget of $28.5 million. This information focused the study on identifying strategies to reduce cost while maintaining the educational program and the goal to be a low maintenance, durable facility. The VE team was additionally requested to provide an independent review of the cost estimate.

Specific objectives identified for the workshop include:

- Analyze extent of site paving including the fire loop, walkways, plazas, parking, and access lanes.
- Reduce length of sewer and water connections.
- Study site layout; consider flipping the layout north/south.
- Minimize the extent of site development, fencing, landscaping.
- Analyze the size of the soccer field as well as the material type and drainage.
- Select mechanical equipment for cost, durability, ease of maintenance.
- Reduce the number of hardwire data outlets.
- Consider stormwater approach for detention, water quality, and discharge.
- Optimize the cut and fill balance; consider overex material for fill.
- Study approaches to soil stabilization.
- Choice of materials in roofing and throughout the building.
- Optimize materials for durability, ease of maintenance, and cost.
- Identify bid alternates.

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Evaluation Factors

The project team defined several criteria by which to evaluate the VE alternatives based on the project goals and study objectives. The following is a prioritized listing of these evaluation factors:

- Materials and system choices should be suitable for a marine environment.
- Systems should be durable and maintainable by staff and/or local workers.
- Cost reductions while maintaining performance and quality.
- With any increase in first cost, find operational cost savings.
- Space should be flexible, welcoming, and create a communal hub.
- School should receive all programs and elements any other elementary school will receive.
- Respect tribal culture and integrate ideas and needed spaces.

The criteria were considered when selecting potential VE alternatives to assess and in the evaluation of the alternatives.

Study Team

The VE team members were selected for technical expertise in their discipline, the ability to hold a broad perspective spanning the full project scope, knowledge of the project type and their creative ability to identify alternative solutions achieving the functional, performance and cost objectives of the project. The team members include:

Team lead and facilitator:	Steven Paget, CVS, LEED AP BD+C, Säzän
Study assistant:	Cassidy Davenport, LEED Green Associate, Säzän
Cost/Construction analysis:	Dan Junge, Rider Levett Bucknall
Architectural:	Ross Parker, AIA, ALEP, BCRA
Civil:	Riley O'Boyle, PE, Apex Companies
Structural:	Frank Unocic, PE, SE, Quantum Consulting Engineers
Mechanical:	Natalie Sherwood, PE, Säzän Group
Electrical:	Bruce Jessup, Säzän Group

Contact information for each team member is listed in the Workshop Attendee List in Appendix F Workshop Information.

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2.0 Study Results

Cost Summary

Total VE Team Recommended Cost Avoidance*		**-$2,014,605**
VE Proposals	-$1,355,605	
Cost Only Proposals	-$659,000	
Total VE Team Recommended Cost Addition		**$121,000**
VE Proposals	$53,000	
Cost Only Proposals	$68,000	
Total VE Team Recommended Value		**$2,135,605**

Total Owner Accepted Cost Avoidance	**-$1,538,577**	
Total Owner Accepted Cost Addition	**$0**	
Total Owner Accepted Value		**$1,538,577**
Total Owner Potential Acceptance Cost Avoidance *	**-$789,000**	
Total Owner Potential Acceptance Cost Addition	**$0**	
Total Owner Potential Acceptance Value *		**$2,327,577**

NOTE *: Above Recommended and/or Potential Acceptance costs may include mutually exclusive concepts. Potential Acceptance represents ideas that are still pending by the Design Team/Owner.

Implementation Summary

The current average return on investment (ROI) for Säzän VE Studies is 4,626%. In other words, for every dollar invested in Säzän's VE services, our client's benefit is $46.26 in value added (i.e., 1:46 ROI). NBSD's ROI for Pacific Beach Elementary School is 1,774% (this ROI only takes into account Accepted Value and does not include values/decision pending ideas included in the Potential Acceptance Value).

Key Findings

The VE team evaluated the design relative to: project goals achieved; functions served; technical considerations, constraints and issues; performance; risk factors; budget and estimated cost; and project delivery. The results of the VE team's evaluation of the design are summarized below.

Overall, the team found that the design team has done a good job of achieving the project goals and program requirements given the restrictions of the site contours and existing infrastructure/buildings. The VE team identified the following key findings we wish to highlight:

- School is well-sized and laid out for elementary aged students.
- Choice of construction type and framing materials is appropriate for the size and programming of the school.
- Site layout is well done relative to programming but has significant cost implications due to grading

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requirements.

- Site has two developed areas that appear to be naturally (relatively) level or been graded as pads in the past.
- Soil conditions at south end of site are less prone to liquefaction.
- Site plan includes a significant quantity of hardscape area.
- Design includes three waterline connections whereas only two are required with the additional connection having significant costs related to line extension and access.
- There is a potential risk that county jurisdiction may require a maintenance access road to service sanitary manholes along the steep alignment in the southeast corner of site.
- Utility water pressure and volume may not be sufficient to overcome pressure difference of 41 ft between building and connection at 4th St.
- Soccer field and gymnasium are sized for adult community use and oversized for a typical elementary school program.
- Interior corridor is long and could be opened up or modulated to improve wayfinding and create a more comfortable experience.
- Classrooms are larger than averages seen of other classrooms and appear to be oversized for projected enrollment.
- Gym and commons areas are not optimally designed for the mixed functions of PE, food service, and community events.
- Heating and cooling systems may be oversized for location weather conditions and functional requirements; weather data used not precisely located for Pacific Beach.
- Building type and design are economical, however estimate for the building (only) is approximately 13% higher than the average of 7 elementary buildings recently reviewed by the VE team.

Additional detail on the findings is provided in Section 4.0 Project Evaluation and Appendix D Cost Analysis.

Key Recommendations

The VE team recommends several key actions and alternatives that emerged in response to the workshop objectives, project goals, issues and shortcomings which were identified and opportunities to improve the project success.

- Adjust the site layout to shift program areas south to better soils and utilize existing level areas to extent feasible, with parking loop aligned with south edge of existing pad, primary parking area reduced, and overflow parking located north of a reduced-size soccer field.
- Reduce the size of the soccer field and the gymnasium to typical elementary program sizes.
- Enlarge the outdoor viewing and community gathering area by the outdoor music stage and integrate with larger lawn area.
- Establish with utility provider the connection and service maintenance requirements for water and sanitary sewer, and the available pressure/flow of water, early in Design Development and account for in engineering and budget. Eliminate one waterline connection if feasible.
- Revise the main entry layout and intersection of main hallways between reception, gym/commons, and classroom wing to enhance the entry experience, improve wayfinding, and facilitate circulation.

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- Revisit the commons/gym layout to help optimize flexible, multiple-function use.
- Reduce the size of the grade classrooms to an average of 850 SF.
- Add modulation to the classroom wing corridor to enhance wayfinding and class identities and reduce extent of high ceilings to a scale comfortable for younger students.
- Use a single-ply membrane roof with applied standing ribs for cost reduction and ability to repair in any weather condition by maintenance staff.
- Reassess the building heating and cooling load based on climatic data for Pacific Beach's location on the coastline. Consider eliminating mechanical cooling and employing operable windows and ceiling fans to enhance comfort.
- Use a two-pipe hydronic changeover system for building heating and cooling in lieu of the baseline four-pipe system.
- Reconcile estimate with design scope prior to advancing Design Development much farther.

Several of the key recommendations outlined above are discussed in Section 5.0 Value Improvement Alternatives. Section 5.0 presents several key alternatives the VE team recommends for acceptance or serious consideration.

3.0 Background

Project Description

The Pacific Beach Elementary School is a new replacement facility for the North Beach School District, located on a 17-acre site outside the Tsunami Inundation Zone in Pacific Beach, Washington. The new school will be funded through the OSPI Seismic Safety Grant Program and the Construction Assistance Program as the current elementary school is aging and no longer meets seismic and life-safety standards. The new facility will be designed to meet NBSD education specifications and serve approximately 221 students across grades K–6. It will include a special education space, a maker space, and a dedicated Native Education and Garden program that honors the community's Quinault tribal heritage. The project will be competitively bid in summer 2027, with students anticipated to occupy the building in January 2029.

The proposed school is a single-story facility of approximately 34,407 SF. It is organized in an L-shape that separates the classroom and administration areas from an activity wing housing the gymnasium, cafeteria, and music room. The design draws from Pacific Beach's coastal and forested character, prioritizing welcoming, light-filled spaces that support students of all backgrounds. Materials are selected for long-term durability and low maintenance in the demanding marine climate, with corrosion-resistant exterior finishes. The gymnasium and commons can be joined together with a moveable partition wall, making the building a resource for community gatherings and events.

The facility is designed as a single-story wood-frame structure with a concrete slab foundation, designed to meet enhanced seismic safety performance requirements consistent with the OSPI grant program. Given the coastal site's soil conditions, including potentially liquefiable layers, soil stabilization with aggregate piers/ground improvement beneath the foundations is planned to ensure long-term stability.

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Site access is consolidated to 1st Street N, with no access permitted from WA-109 to the east. Traffic circulation is organized in a counterclockwise pattern, with separate bus and parent drop-off loops and a fire access lane along the north and east sides of the building. The site stormwater is flow-control exempt as it discharges to a man-made ditch that outfalls above the ordinary high tide mark of the Pacific Ocean. However, a detention pond is provided to match existing discharge rates. Basic water quality treatment will be provided via a biofiltration swale or mechanical filter prior to discharge. Potable water, irrigation, and fire protection services will connect to the existing water main at 1st Street N with a new looped system. Sanitary sewer will extend as a gravity main to the southeast corner of the site per Grays Harbor County's request. Frontage improvements include a new sidewalk along 1st Street N, but as requested by the County to retain character there will be no parking, curbs, or gutters along the street.

The landscape design preserves the wooded site perimeter as a natural buffer and outdoor learning environment which was a priority requested by the tribal liaison. Site plans also include a hard-court play area, a full-size sports field for community use, a covered gathering area, and a student garden with greenhouse which will host an existing school program.

The mechanical systems are fully electric, built around two air-to-water heat pumps supplying a four-pipe hydronic loop for heating and cooling. Classrooms are served by a dedicated outdoor air system (DOAS) with energy recovery and VAV (Variable Air Volume) fan coil units. Staff offices, the gymnasium, and the commons areas are served by high-efficiency VAV air handling units with demand control ventilation. Domestic hot water is provided by air-to-water heat pumps with electric backup tank water heaters. The building is fully sprinklered, and all mechanical systems are monitored and controlled via a direct digital control building automation system. No natural gas service is provided.

The building power is served from a new 480v Grays Harbor PUD transformer. All lighting throughout the building and site is LED. EV charging infrastructure and solar PV are provided in compliance with the Washington State Energy Code. Building security includes cameras at all key interior and exterior locations, card access at primary entries, and an emergency lockdown.

Project Goals

Goals for the project outlined by the project team at the design presentation include:

- Build a new elementary school with everything other comparable schools have.
- Provide spaces for use by the community including a sports field and indoor court area.
- Remain respectful and welcoming of Quinault culture.
- Highlight connection with trails, gardens, outdoor play and the surrounding nature.
- Build an elementary school which will be safer for students during potential seismic and tsunami events.

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Constraints and Issues

At the introductory meeting for the study, the project team identified several constraints and issues that have defined and impacted the project. These include:

- Coastal marine environment dictates use of robust materials.
- Building must be maintained by 1-person staff with minimal need to contract outside expertise.
- Site grade changes.
- Desire to avoid an elevator due to maintenance costs.
- Idea to reserve part of the site for a future community activity center (to be developed separately).
- WSDOT is restricting site access off Highway 109.
- County will not allow parking along 1st Street, street edge must remain rural and not contain curb/gutter/sidewalk/lighting.
- High water table and wooded sections on site.

Key Functions

Following the study informational meeting and a review of the project documentation, the VE team identified programmatic and facility functions the project must deliver to meet the program and project requirements and goals. The team analyzed the functional requirements and relationships between functions to better understand the project requirements. Key functions identified by the VE team include:

- Condition Space
- Connect with Nature
- Distribute Technology
- Enclose Space
- Facilitate Wayfinding
- Finish Interior
- Grow Plants
- Illuminate Interior
- Maintain Facility
- Mitigate Hydromodification
- Organize Layout
- Organize Site
- Reduce Settling
- Route Vehicles

The functions listed above were used by the VE team to guide and organize the generation of creative ideas. A full list of identified functions is included in Appendix C Function Analysis. The VE team evaluated how well the project design is achieving the functional performance. The assessment informed development of several of the value improvement alternatives derived from the creative ideas generated by the VE team.

Additional background information on the project is included in Appendix E Background Documents.

4.0 Project Evaluation

The VE team reviewed the schematic design documents from the perspective of design professionals familiar with the design and construction of similar project types. The team utilized several analytical means to evaluate the project design and cost estimate. These included: peer review and site observation of project elements; function analysis of project requirements; design review; benchmarking of similar educational facilities; and construction estimate and project delivery evaluation.

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Cost Analysis

Cost is a core factor in the analysis for all value studies. The value team completed an analysis of the estimated cost of the project and budget in comparison to recently reviewed projects of similar type and scope. This comparative data is useful for relative benchmarking of costs and helps focus the team's efforts on opportunities to improve value. The cost of comparison projects has been adjusted for escalation and location relative to the study project.

When comparing project costs, it is important to recognize that each project is developed according to the unique programming and design requirements of each client. Some owners place a higher priority on minimizing the initial cost of construction while others are more interested in minimizing their total cost of ownership, i.e., paying higher first costs to lower the overall life cycle costs of operations and maintenance. The latter paradigm is typically reflected in the selection of higher quality and durability of materials and building systems with longer expected lifecycle performance. Additionally, each project site and context are highly variable, impacting the cost of the building. Therefore, in evaluating cost comparisons, it is important to recognize that cost estimates inherently reflect unique project constraints and client requirements.

A comparative analysis of the Uniformat building system cost categories was prepared evaluating the project cost estimate relative to the comparison average. Several cost categories stand out as differing from the average. Key areas of concern are:

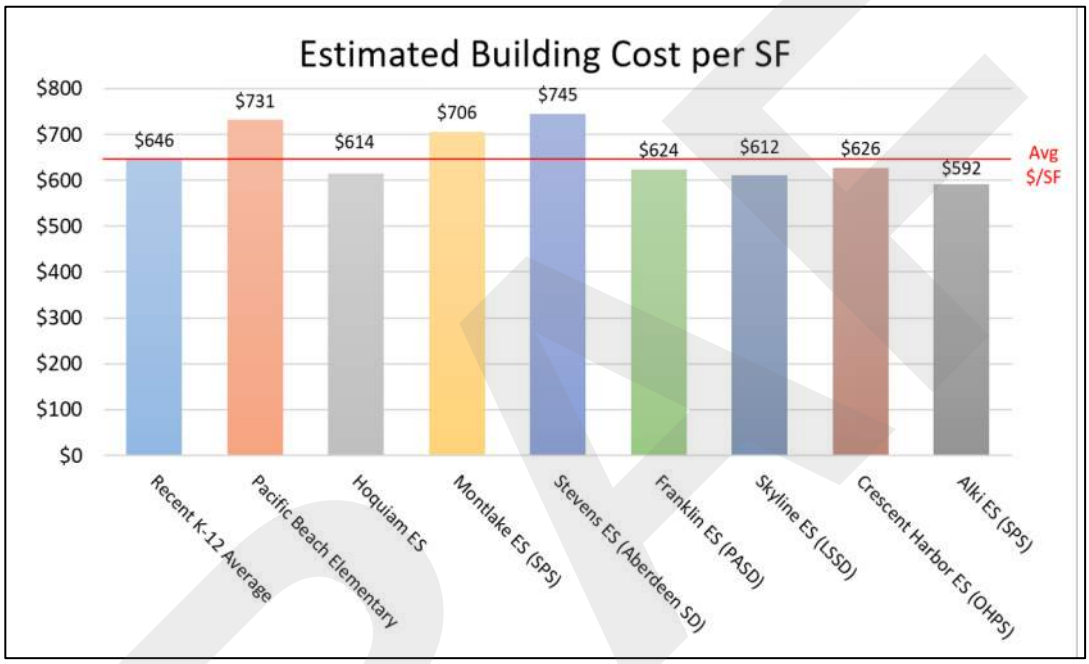
- The remote project site should be accounted for in the cost estimate by either unit rate increases or a remoteness factor contingency added to the estimate indirect costs.
- Design and estimating contingency at 7.5% may be on the low end for SD phase; 10% contingency at the SD phase is more common.
- General conditions and contractor fees may be high and should be evaluated.

Further evaluation of these cost categories is warranted. Additional details are provided in Appendix D.1. Cost Analysis.

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Comparison of Building Cost Per Sq. Ft.

The Pacific Beach Elementary School estimated cost (for the building only) stands out as being 13.28% above the average of comparable schools. Costs may be higher for a variety of reasons including the more remote location of the school as well as design decisions driven by the requirements for maintaining the school in the remote marine environment. Spreading the cost of necessary facilities and building systems across a smaller size building can increase the relative cost per square foot.



Of the major building system costs, the sq. ft. costs for several systems are well below the comparison average, and a couple above. Of these, the following stand out as differing significantly and warrant review.

Higher than average cost variances include:

- Roofing 97.5% or $25 per SF
- O&P 49.9% or $15 per SF
- Plumbing 48.1% or $9 per SF
- Interior Construction 39.8% or $17 per SF

Lower than average costs include:

- Superstructure -33.3% or $24 per SF
- Exterior Closure -7.9% or $5 per SF

Relative to the higher roofing cost, this is due to the cost of the standing seam metal roof being spread across only 1-story versus the more typical 1-2 stories. O&P may be higher due to the remote location factors. Unknown why plumbing is higher than the average and warrants further assessment. Interior Construction is likely due to the density of the interior walls and finishes spread across a 1-story facility. Lower than average

cost for superstructure is likely due to the standard footings and slab on grade and being a wood-framed structure. Exterior Closure being lower should be assessed further as the expected cost for the brick masonry, metal siding, aluminum storefront, and metal roofing systems is higher. The detailed cost analysis, estimate review, project delivery and risk analysis comments can be found in Appendix D Project Evaluation.

5.0 Value Improvement Alternatives

Following the VE team's review of background information, developing an understanding of the required functions and evaluation of the project design and cost, the team generated a list of 186 ideas addressing project issues and opportunities to improve project value. The team used the list of functions identified during function analysis to guide and organize the generation of ideas. This initial list of ideas was scored by the team using the project goals and study objectives as guidelines. Nineteen (19) ideas were identified as having sufficient merit to warrant further assessment and selected for analysis and documentation as project alternatives. Seventeen (17) self-explanatory ideas were priced but do not include full write-ups. The remaining ideas were either incorporated into the documented alternatives, presented as design considerations to be considered later by the project team, or deemed as not warranting further attention.

Key Recommended Alternatives

The VE team recommends the following alternatives which respond to the workshop objectives, project goals, issues and opportunities to improve the project success are accepted or given serious consideration.

Connect with Nature

CN-15 Reduce extent of hard surface plaza and expand landscaping.

Condition Space

CS-2 Eliminate cooling and maintain the heat pump hydronic system for heating only.

Enclose Space

ES-46 Use a single-ply membrane roof with applied standing ribs.

Facilitate Community Use

FC-54 Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.

Facilitate Wayfinding

FW-63 Enlarge intersection of main hallways between reception, gym, and classroom wing to create a hub, enhance wayfinding, and facilitate circulation.

Finish Interior

FI-71 Reduce quantity of casework and cabinetry in classrooms and staff areas by 20%.

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Grow Plants

GP-85 Reduce landscaping and irrigation budget by 25%.

Maintain Facility

MF-103 Use a fiberglass in lieu of aluminum storefront system for increased durability and reduced maintenance.

Mitigate Hydromodification

MF-110 Use sheet flow and swales for stormwater conveyance in lieu of catch basins and piping where feasible.

Organize Layout

OL-118 Optimize size of classrooms for number of students at approximately 850 SF each.

OL-119 Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.

Organize Site

OS-132 Lay out site following existing contours.

OS-133 Reduce the size of the soccer field to approximately 60,000 SF.

Support Load

SL-181 Frame outdoor covered play roof with open web trusses and cement fiber soffit to protect framing from environment.

All documented alternatives are listed on the Value Improvement Matrix, including the estimated cost and the VE team's recommended action for each alternative. The complete list of ideas generated by the VE team is included on the Creative Idea List. It is recommended that the project team review the full list of ideas generated to determine if other ideas warrant further investigation. Additionally, the VE team priced multiple alternatives that include the back-up estimates but do not include full write-ups. The lists, estimates, and detailed workbooks documenting each alternative are included in Appendix B Value Improvement Alternatives. The project team's formal response to the VE team findings and recommendations is included in Appendix A Owner Implementation.

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Appendix A
Owner Implementation

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Owner Implementation Matrix

October 2026

Function - Idea No.	Creative Idea	First-Cost Potential	VE Team Recommendation	Owner Implementation	Owner Accepted Amount	Comments
Condition Space						
CS-1	Use a two-pipe hydronic changeover system in lieu of a four-pipe system for heating and cooling.	-$416,000.00	Consider	Modify	-$175,000	Design Team recommends adding economizer for fan coil units. Additional consideration regarding more mech attic space needed for additional ductwork for this system. Metrix estimates 175K savings.
CS-2	Eliminate cooling and maintain the heat pump hydronic system for heating only.	-$661,000.00	Accept	Modify	-$200,000	The proposed savings does not meet code. Metrix has provided a ROM for expected savings and a recommendation to NBSD.
CS-3	Group classrooms by north and south exposure to consolidate heating and cooling zones.	-$36,000.00	Reject	Reject		Not recommended due to comfort implications.
CS-4	Use high volume low speed (HVLS) fans in gym and commons for enhanced air circulation.	$68,000.00	Accept	Reject		Design team does not recommend, the proposed would add project cost. Current design including drum louvers and low wall return is expected to suffice.
CS-5	Use duct socks at gym for ventilation distribution.	-$24,000.00	Accept	Reject		Design team does not recommend.
Connect with Nature						
CN-15	Reduce extent of hard surface plaza and expand landscaping.	-$74,000.00	Accept	Accept	-$74,000	Design Team recommends acceptance.
Distribute Technology						
DT-38	Use a Passive Optical Network (PON) for data distribution.	-$13,605.00	Accept	Reject		Design Team recommends Rejection. This option does not comply with the current district OPR and requires additional on-site IT services to maintain.
Enclose Space						
ES-40	Eliminate three accent pop-up dormer roofs at classroom wing.	-$64,000.00	Consider	Reject		
ES-41	Eliminate clerestory ridge at classroom wing and use pop-up dormers for ventilation louvers.	-$135,000.00	Consider	Reject		Design Team does not recommend.
ES-42	Reduce extent of masonry on exterior walls and increase use of metal panels.	-$13,000.00	Consider	Reject		Design Team does not recommend. Minimal savings and more material transitions.
ES-43	Reduce size of covered play to 3,500 SF.	-$122,000.00	Consider	Reject		Base bid covered play is approx. 1600 SF, Alt Bid to add difference in area.
ES-44	Use an asphalt shingle roof in lieu of standing seam metal roof.	-$612,000.00	Reject	Decision Pending		In consideration. Design Team is exploring options including Alternate Bid.
ES-45	Reduce height of glazing on classroom wing to 7 ft and raise sill heights to a minimum of 15" AFF.	-$2,000.00	Accept	Decision Pending		Design Team to study in DD. Minimal savings.
ES-46	Use a single ply membrane roof with applied standing ribs.	-$220,000.00	Accept	Reject		Design Team does not recommend.
ES-47	Reduce extent of glazing at the library and main entrance by 30%.	-$11,000.00	Reject	Reject		Design Team to study in DD. Minimal savings.

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Owner Implementation Matrix

October 2026

Function - Idea No.	Creative Idea	First-Cost Potential	VE Team Recommendation	Owner Implementation	Owner Accepted Amount	Comments
ES-48	Delete vestibule on east side of gym and cafeteria.	-$58,000.00	Consider	Reject		Does not align with use of space requested by DAC and staff.
Facilitate Community Use						
FC-54	Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.	-$91,000.00	Accept	Accept	-$153,577	Design Team is studying driveway, parking, and queuing and to enlarge the grass to the SW. The Outdoor Stage is also proposed as an Alternate for potential additional savings.
Facilitate Wayfinding						
FW-63	Enlarge intersection of main hallways between reception, gym, and classroom wing to create a hub, enhance wayfinding, and facilitate circulation.	-$8,000.00	Accept	Decision Pending		Design Team will study in DD once SF is on target, minimal savings.
Finish Interior						
FI-69	Use resilient athletic flooring in lieu of wood athletic flooring at gym for reduced maintenance.	-$50,000.00	Consider	Reject		The School District would like to keep the WAF.
FI-70	Reduce quantity of linear wood ceilings by 20%.	-$23,000.00	Consider	Accept	-$23,000	
FI-71	Reduce quantity of casework and cabinetry in classrooms and staff areas by 20%.	-$129,000.00	Accept	Accept	-$129,000	Make an Alternate.
FI-72	Use high density composite wood wainscot in lieu of P-lam wainscot in corridors.	-$12,000.00	Consider	Reject		Design Team and School District reject this line item.
FI-73	Use high density composite wood wainscot in lieu of P-lam wainscot at gym and commons.	-$4,000.00	Reject	Reject		Design Team and School District reject this line item.
Grow Plants						
GP-85	Reduce landscaping and irrigation budget by 25%.	-$167,000.00	Accept	Decision Pending		Design Team will coordinate required and native landscaping with municipal code standards and is exploring providing irrigation in key areas (i.e. front entry landscaping). Appears to conflict with CN-15.
Illuminate Interior						
II-94	Specify lighting controls with lighting level and color temperature adjustments to allow teacher control depending upon learning environment and time of day.	$53,000.00	Accept	Reject		Design Team recommends rejection as this line item adds cost and does not align with the OPR.
Maintain Facility						
MF-103	Use a fiberglass in lieu of aluminum storefront system for increased durability and reduced maintenance.	-$11,000.00	Accept	Reject		
Mitigate Hydromodification						
MH-110	Use sheet flow and swales for stormwater conveyance in lieu of catch basins and piping where feasible.	-$105,000.00	Consider	Modify	-$25,000	Design Team is coordinating with the county. A dispersion trench and below-grade storm drain appears to be the likely strategy moving into DD.

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Owner Implementation Matrix

October 2026

Function - Idea No.	Creative Idea	First-Cost Potential	VE Team Recommendation	Owner Implementation	Owner Accepted Amount	Comments
Organize Layout						
OL-117	Shift divider wall between gym and commons to increase flexibility in use of gym/commons for lunches, gym programing, and community events.	-$184,000.00	Consider	Reject		Design Team may explore this strategy in DD if necessary. Does not work with current layout and would make the gym awkward to play on.
OL-118	Optimize size of classrooms for number of students at approximately 850 SF each.	-$319,000.00	Accept	Modify	-$555,000	**DP-31**, Design Team is exploring and implementing SF reduction across the building to meet OSPI target.
OL-119	Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.	-$72,000.00	Accept	Reject		Conflicts with requests of school admin and district.
Organize Site						
OS-132	Lay out site following existing contours.	-$325,000.00	Consider	Reject		The existing District Office building is required to remain in its current location.
OS-133	Reduce the size of the soccer field to approximately 60,000 SF.	-$85,000.00	Accept	Accept	-$85,000	Base bid scope reduced to grass field at U-13/U-15 field size. Add Alternate to increase size.
Reduce Settling						
RS-151	Use geogrid shallow reinforcement at building pad to mitigate settling impact of liquefaction.	-$238,000.00	Consider	Reject		Geotech noted excavation would be required to go to 4-5 ft below bottom of footing vs 3 ft (from grade?) in VE report, reducing savings. Would need to be throughout building pad in order to manage slab differential to footings. As a result, this would realistically only be slightly less excavation vs mass overex option.
Route Vehicles						
RV-167	Delete section of fire lane from parking lot along east side of building and create hammerhead at play area north of gate.	-$19,000.00	Accept	Reject		This fire lane strategy does not align with recommendations from Grays Harbor County.
RV-168	Use thickened asphalt section in lieu of concrete paving at the bus loop.	-$21,000.00	Accept	Accept	-$21,000	
Support Load						
SL-181	Frame outdoor covered play roof with open web trusses and cement fiber soffit to protect framing from environment.	-$98,000.00	Accept	Accept	-$98,000	Also listed as MF-102.

Total VE Team Recommended Cost Avoidance	**-$2,014,605**
Total VE Team Recommended Cost Addition	**$121,000**
Total VE Team Recommended Value	**$2,135,605**

-$1,538,577	**Total Owner Accepted Cost Avoidance**
	Total Owner Accepted Cost Addition
-$789,000	**Total Owner Potentail Acceptance (Decision Pending Value)**
$2,327,577	**Total Owner Potential Accepted Value**

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Owner Implementation Matrix

October 2026

Function - Idea No.	Creative Idea	First-Cost Potential	VE Team Recommendation	Owner Implementation	Owner Accepted Amount	Comments

NOTES

Pricing Key

Score	Meaning
Cost Neutral	Difference between baseline and alternative costs is negligible.
Not Priced	Cost analysis not prepared.
Project Sugg.	Narrative prepared without a cost analysis.
Priced-Only	Estimate prepared without a full analysis and workbook documentation.
Design Idea	A creative idea added by the design team after the VE study took place.

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Owner Implementation Matrix - Design Team VE Ideas

October 2026

Function - Idea No.	Creative Idea	First-Cost Potential	VE Team Recommendation	Owner Implementation	Owner Accepted Amount	Comments
Connect with Nature						
DT-1	Reduce sidewalk by 11,500 SF.			Accept	-43,000	Design Team has committed to reducing sidewalk paving area across the site for additional savings.
Facilitate Community Use						
DT-2	Remove scoreboard and make an Alternate.			Accept	-$30,000	NBSD suggested infrastructure to be provided to scoreboard, school to crowd-fund, or possible Alternate.
Finish Interior						
DT-3						
FI-75	Reduce tile wainscot in restrooms from full height to 7'.			Accept	-$70,000	This was a VE team "C" ranked idea which means the VE team did not do a cost exercise but wanted the idea to be considered. Cost from Design Team.
DT-4	Reduce corridor wainscot height to 4'.			Accept	-$60,000	
Mitigate Hydromodification						
DT-5	Reduce water main piping by 400'.			Accept	-$75,000	The Design Team can omit the designed water main running E-W along the south of the building.
Organize Site						
DT-6	Remove logs.			Accept	-$15,000	Design Team committing to salvaging felled logs on-site and reusing as site furnishings.
Reduce Settling						
DT-7	Reduce clearing and grubbing area.			Accept	-$67,000	Design Team has committed to reducing area of clearing and grubbing.
DT-8	Reduce Fill to 2,100 CY.			Accept	-$950,000	Design Team has studied and NBSD has approved reducing fill at scope of work outside of the building to 2,100 CY.

NOTES

This matrix shows the result of additional Design Team consideration after the VE but is separated from the VE Team OI Matrix to keep consistency in reporting results. DT represents a Design Team idea while one listed item is a C idea from the VE Team which was priced and considered by the Design Team.

-$1,310,000	**Total Owner Accepted Cost Avoidance**
	Total Owner Accepted Cost Addition
$1,310,000	**Total Owner Accepted Value**

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Appendix B
Value Improvement Alternatives

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Creative Idea List September 2026

Function - Idea No.	Score	Resp.	Creative Idea
Condition Space			
CS-1	A	NS	Use a two-pipe hydronic changeover system in lieu of a four-pipe system for heating and cooling.
CS-2	A	NS	Eliminate cooling and maintain the heat pump hydronic system for heating only.
CS-3	A	NS	Group classrooms by north and south exposure to consolidate heating and cooling zones.
CS-4	B	BJ	Use high volume low speed (HVLS) fans in gym and commons for enhanced air circulation.
CS-5	B	NS	Use duct socks at gym for ventilation distribution.
CS-6	C		Limit cooling to the commons and gym.
CS-7	C		Add in-floor radiant heating at vestibules for floor drying.
CS-8	C		Use a ground-source heating and cooling loop for durability and ease of maintenance.
CS-9	D		Use ceiling fans ILO air conditioning in the classrooms.
CS-10	D		Use hydronic fin-tube wall cabinets for heating the classroom wing.
CS-11	E		Use propane fuel and high-efficiency boilers for heating.
CS-12	G		Avoid mechanical equipment in view of windows to maximize views of nature.
CS-13	G		Provide operable windows in office area.
CS-14	G		Zone offices for individual control of HVAC.
Connect with Nature			
CN-15	A	RO	Reduce extent of hard surface plaza and expand landscaping.
CN-16	C		Enlarge gathering area by outdoor music stage and incorporate more nature elements.
CN-17	C		Locate covered gathering ring and outdoor education area closer to building to encourage use.
CN-18	C		Eliminate downspouts and use scuppers with in-ground collection to celebrate water flow.
CN-19	C		Incorporate more natural elements into play areas.
CN-20	C		Add small covered outdoor areas/porches to facilitate outdoor learning.
CN-21	C		Protect trees around forested path.
CN-22	D		Reduce impervious areas and use more landscaping.

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Creative Idea List September 2026

Function - Idea No.	Score	Resp.	Creative Idea
CN-23	D		Reduce extent of hard surface play and increase area of nature play.
CN-24	D		Incorporate hard surface playcourt layouts onto fire lane.
Deliver Project			
DP-25	C		Specify casework and cabinetry to be procured and installed by FFE vendor in lieu of the general contractor.
DP-26	C		Phase the planting plan to defer select locations for future budget cycles.
DP-27	C		Pursue funding for an early site package to contract mass grading/ground improvement during the late-summer when groundwater is low.
DP-28	C		Carry owner-contingencies for impacts associated with discovery of cultural/historical artifacts and/or contaminated conditions.
DP-29	C		Include in front-end bid specifications contractor requirements to account for dewatering of the high water table impact and wet weather materials protection and schedule management.
DP-30	C		Include in wood framing bid specifications requirements to employ best-practices and wood moisture monitoring to manage mold risk.
DP-31	C		Reduce the overall building and covered play areas to match the OSPI SF target and budget match.
DP-32	C		Carry contingency in estimate for risk of tariff impacts.
DP-33	C		Ensure scope of utility and site design is limited to the Pacific Beach Elementary project and conforms to intent of the funding.
DP-34	C		Consider/coordinate water/sewer extension capacity for future activity center development.
DP-35	C		Negotiate with Jurisdiction to provide access road for maintenance of sanitary alignment.
DP-36	C		Use cross-laminated timbers (CLT) for roof panels to expedite building enclosure.
DP-37	E		Use post, beam, and truss structure to enable roof enclosure prior to stud in-fill framing and sheathing to mitigate mold risk.

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Creative Idea List September 2026

Function - Idea No.	Score	Resp.	Creative Idea
Distribute Technology			
DT-38	A	BJ	Use a Passive Optical Network (PON) for data distribution.
DT-39	D		Modify building layout and locate MDF Room to be able to eliminate the IDF.
Enclose Space			
ES-40	A	FU	Eliminate three accent pop-up dormer roofs at classroom wing.
ES-41	A	FU	Eliminate clerestory ridge at classroom wing and use pop-up dormers for ventilation louvers.
ES-42	A	RP	Reduce extent of masonry on exterior walls and increase use of metal panels.
ES-43	B	DJ	Reduce size of covered play to 3,500 SF.
ES-44	B	DJ	Use an asphalt shingle roof in lieu of standing seam metal roof.
ES-45	B	DJ	Reduce height of glazing on classroom wing to 7 ft and raise sill heights to a minimum of 15" AFF.
ES-46	B	DJ	Use a single ply membrane roof with applied standing ribs.
ES-47	B	DJ	Reduce extent of glazing at the library and main entrance by 30%.
ES-48	B	DJ	Delete vestibule on east side of gym and cafeteria.
ES-49	C		Use square pop-up dormers with shed roofs in lieu of baseline pop-up roofs.
ES-50	D		Raise vent windows to 15" AFF for a more accessible height in accordance with ADA criteria.
ES-51	D		Reconfigure covered play area to be maximum 18' ft from exterior wall to allow use of extended coverage sidewall sprinklers in lieu of a dry sprinkler system.
ES-52	D		Use graphic film-applied to exterior wall storefront glazing in lieu of suspended aluminum shading panels at pop-up roofs.
ES-53	E		Reduce slope of higher roof to 3/12 and the height of exterior walls; lower mechanical mezzanine height if needed.
Facilitate Community Use			
FC-54	A	RP	Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.
FC-55	C		Add lighting for the soccer pitch as a bid alternate.

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Creative Idea List September 2026

Function - Idea No.	Score	Resp.	Creative Idea
FC-56	C		Add a roll-up door at the music stage to increase connection between music room and outdoor stage.
FC-57	C		Add a single-occupant restroom to the library.
FC-58	C		Add bleachers with covered seating for sports events as a bid alternate.
FC-59	C		Add corridor doors at gridlines H and I to facilitate segregating library for after hours use.
FC-60	C		Increase size of relite glazing at makers space corridor wall for enhanced visibility into space.
FC-61	D		Eliminate drop-down curtain between gym courts and move partition wall to the curtain location.
FC-62	E		Flip gym and commons so gym has direct access to outdoor play and commons is adjacent to music stage.
Facilitate Wayfinding			
FW-63	A	RP	Enlarge intersection of main hallways between reception, gym, and classroom wing to create a hub, enhance wayfinding, and facilitate circulation.
FW-64	C		Use colored resilient floor tile patterns to communicate wayfinding.
FW-65	C		Use wall colors and graphics to communicate wayfinding.
FW-66	G		Define areas of public use versus student use for security delineation with signage, exterior site fencing, and interior corridor and room doors.
FW-67	D		Add entry vestibule at west side of commons facing bus loop and reduce vestibule at east side of commons and gym.
FW-68	D		Relocate west vestibule into gym to commons to accommodate students using buses and meet WSEC requirements for primary entries.
Finish Interior			
FI-69	B	DJ	Use resilient athletic flooring in lieu of wood athletic flooring at gym for reduced maintenance.
FI-70	B	DJ	Reduce quantity of linear wood ceilings by 20%.
FI-71	B	DJ	Reduce quantity of casework and cabinetry in classrooms and staff areas by 20%.
FI-72	B	DJ	Use high density composite wood wainscot in lieu of P-lam wainscot in corridors.

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Creative Idea List September 2026

Function - Idea No.	Score	Resp.	Creative Idea
FI-73	B	DJ	Use high density composite wood wainscot in lieu of P-lam wainscot at gym and commons.
FI-74	C		Use resilient flooring in corridors.
FI-75	C		Reduce quantity of ceramic wall tile.
FI-76	C		Use polished concrete in the makers space.
FI-77	C		Use lower cost P-lam wainscot.
FI-78	C		Reduce quantity of clerestory windows and high ceilings at classroom corridor.
FI-79	C		Reduce quantity of suspended acoustic ceiling clouds and replace with standard acoustic ceilings.
FI-80	C		Expose structure and infrastructure installation for educational purposes.
FI-81	E		Use acoustical metal decking in lieu of acoustical ceiling panels in gym, commons, and corridors.
Grade Site			
GS-82	C		Include foundation requirements, i.e., over excavation and trenching spoils, in determining the cut/fill balance.
GS-83	C		Reduce extent of silt fence.
GS-84	D		Lower finish floor elevation (FFE) to reduce import quantity.
Grow Plants			
GP-85	B	DJ	Reduce landscaping and irrigation budget by 25%.
GP-86	C		Add garden shed near greenhouse and garden to encourage and simplify student involvement in garden program.
GP-87	G		Incorporate student maintained garden and wild planting areas.
Honor Tribes			
HT-88	C		Grind grubbing for landscaping and community garden compost.
HT-89	C		Simplify roof form to reflect tribal long house/plank house style.
HT-90	C		Incorporate information regarding local tribes into the outdoor learning area.
HT-91	C		Use tribal names for building spaces and site features.
HT-92	C		Involve local tribes in community outreach and public input to the program and design.

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Creative Idea List September 2026

Function - Idea No.	Score	Resp.	Creative Idea
HT-93	G		Salvage building demolition materials and reuse where applicable.
Illuminate Interior			
II-94	A	BJ	Specify lighting controls with lighting level and color temperature adjustments to allow teacher control depending upon learning environment and time of day.
II-95	C		Increase the south roof overhang at the classroom wing to 4 ft. for improved shading and glare control.
II-96	C		Add exterior shading devices at south facing windows of the classroom wing.
II-97	D		Provide tunable, recessed linear light fixtures in the classrooms.
II-98	G		Add more windows at south elevation for natural light.
Inspire Users			
IU-99	C		Provide areas outside the classrooms for display of individual student and collaborative work.
IU-100	C		Design garden area and incorporate into program providing fresh produce to student breakfast/lunch program.
IU-101	C		Pursue a Department of Commerce clean-energy grant for battery storage for the onsite solar power generation as an educational opportunity.
Maintain Facility			
MF-102	C		Frame the building canopies with an enclosed fiber cement soffit for increased durability and reduced maintenance.
MF-103	B	DJ	Use a fiberglass in lieu of aluminum storefront system for increased durability and reduced maintenance.
MF-104	C		Use integral color fiber cement panels for increased durability and reduced maintenance.
MF-105	C		Use a non-metal/non-corrosive rain screen attachment system.
MF-106	C		Use metal wall panels with a coastal marine coating for increased durability.
MF-107	C		Maintain glazing heights within reach of cleaning without specialized equipment.
MF-108	D		Revise roofing to single ply membrane to increase ease of repair.

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Creative Idea List September 2026

Function - Idea No.	Score	Resp.	Creative Idea
MF-109	D		Use tri-metallic zinc/aluminum/magnesium (ZAM) standing seam metal roofing for increased corrosion resistance in the coastal condition.
Mitigate Hydromodification			
MH-110	A	RO	Use sheet flow and swales for stormwater conveyance in lieu of catch basins and piping where feasible.
MH-111	C		Redistribute pond to smaller detention facilities.
MH-112	D		Use shallow trench sheet flow stormwater dispersion through forest in southeast corner of site.
MH-113	D		Incorporate sheet flow dispersion to reduce treatment and detention.
MH-114	E		Confirm tidal influence on storm outfall.
MH-115	E		Closed chamber/vault with buoyancy protection ILO lined pond.
MH-116	F		Explore detention and treatment in the ROW.
Organize Layout			
OL-117	A	RP	Shift divider wall between gym and commons to increase flexibility in use of gym/commons for lunches, gym programing, and community events.
OL-118	A	RP	Optimize size of classrooms for number of students at approximately 850 SF each.
OL-119	A	RP	Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.
OL-120	C		Push indoor programming space to outdoors where feasible.
OL-121	C		Replace double doors with single doors where not required for access or exit width.
OL-122	C		Create more efficient layout/proportions of main electrical room.
OL-123	C		Verify/reduce number of staff restrooms needed by gym.
OL-124	C		Move Mech Attic above Music/Stage to above Admin (raises stage ceiling, improves acoustics, deletes access ladder).
OL-125	C		Rework the support spaces off the gym to a more useful layout.
OL-126	C		Move some/all active wet/work areas and sinks from classrooms to nearby common spaces.
OL-127	D		Reduce width of classrooms and shorten classroom wing.

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Creative Idea List September 2026

Function - Idea No.	Score	Resp.	Creative Idea
OL-128	D		Revise multi-stall restrooms to provide more efficient and visible layout.
OL-129	D		Shift entry vestibule and three offices north and reduce large circulation/waiting area at reception.
OL-130	D		Reduce classroom area and use SF savings to create open shared-use areas.
OL-131	D		Bump out or decrease the size of the small group conference rooms.
Organize Site			
OS-132	A	RO	Lay out site following existing contours.
OS-133	B	DJ	Reduce the size of the soccer field to approximately 60,000 SF.
OS-134	C		Place parking adjacent to playfield for community use.
OS-135	C		Preserve pole barn to utilize for community use.
OS-136	D		Reduce clearing and grubbing limits and extent of site development.
OS-137	D		Shift the outdoor education area closer to the greenhouse and reduce fill at former location.
OS-138	D		Shift building closer to 1st Street and reduce the paved area in front of the west elevation.
OS-139	D		Separate school parking from event parking.
OS-140	E		Rotate soccer field north/south.
OS-141	E		Shift the school and rotate the soccer field.
OS-142	E		Flip field and school.
OS-143	E		Move the school to the south property line and flip the location of the parking lot.
OS-144	E		Reorient building, parallel to contours and farther from road.
Promote Socialization			
PS-145	C		Install large oversized step seating at perimeter of outdoor play for informal gathering.
PS-146	D		Reduce reception area and enlarge adjacent circulation spaces to facilitate gathering and circulation.
Promote Wellbeing			
PW-147	G		Highlight daylighting and views of nature.
PW-148	G		Integrate natural materials in playground.

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Creative Idea List September 2026

Idea No.	Function - Score	Resp.	Creative Idea
Protect Equipment			
PE-149	C		Provide lockable storage room in maker space to protect technology from theft.
PE-150	G		Specify outdoor heat pump equipment appropriate for a marine environment.
Reduce Settling			
RS-151	A	FU	Use geogrid shallow reinforcement at building pad to mitigate settling impact of liquefaction.
RS-152	C		Use pin piles instead of geopiers.
RS-153	C		Reuse ESU-2 material; selectively reuse suitable deeper granular soils instead of exporting and importing everything.
RS-154	E		Over excavation ILO aggregate piers and limit these to the foundation only and not the slab.
RS-155	E		Deep soil mixing ILO aggregate piers.
RS-156	E		Install perforated pipe to drain groundwater downslope.
Reflect Community			
RC-157	C		Conduct an inclusive engagement and design review process with the community as soon as possible.
Resist Lateral Load			
RL-158	C		Eliminate clerestory windows at classroom to simplify lateral load transfer.
RL-159	D		Reduce masonry to reduce seismic weight.
RL-160	G		Optimize building shape, placement and orientation for stability.
RL-161	G		Use double studs in lieu of 3x framing at highly loaded shear walls.
Route Utilities			
RU-162	C		Reduce size of storm water line.
RU-163	C		Use horizontal bore under 1st Street for electrical primary and telecom.
RU-164	C		Remove second water tap on First St. to reduce water pipe length.
RU-165	E		Install pressurized sanitary system to tie into city's pressure line in First.

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Creative Idea List September 2026

Function - Idea No.	Score	Resp.	Creative Idea
RU-166	F		Route water more directly south to loop water system.
Route Vehicles			
RV-167	A	RO	Delete section of fire lane from parking lot along east side of building and create hammerhead at play area north of gate.
RV-168	B	DJ	Use thickened asphalt section in lieu of concrete paving at the bus loop.
RV-169	C		Phase parking counts to reduce cost on this project.
RV-170	C		Reduce paved parking and increase shoulder width for event parking.
RV-171	C		Reduce number and size of trees in parking area.
RV-172	C		Decrease width of drive aisles in parking area and drop off loop.
RV-173	C		Increase length of center landscape median and add stalls in the parking area.
RV-174	C		Coordinate parking lot lighting with tree planting plan.
RV-175	D		Delete parent loop driveway by building and consolidate egress at southern driveway.
Stabilize Access			
SA-176	C		Compact gravel ILO paved concrete for pathways.
SA-177	C		Compact gravel ILO paved asphalt for drive aisles.
SA-178	C		Compact gravel ILO paved asphalt for parking.
SA-179	D		Use a gravel base for event parking in lieu of asphalt.
Support Load			
SL-180	C		Limit window opening sizes at exterior to utilize bearing wall framing.
SL-181	A	FU	Frame outdoor covered play roof with open web trusses and cement fiber soffit to protect framing from environment.
SL-182	C		Use a structural slab at floor at main level.
SL-183	E		Use structurally insulated panels (SIP) for roof structure.
Treat Runoff			
TR-184	C		Separate clean roof runoff from contaminated asphalt surfaces.
TR-185	D		Use bioretention and rain gardens for stormwater detention and water quality.
TR-186	D		Reduce pollution generating surfaces.

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Creative Idea List September 2026

Idea No.	Function - Score	Resp.	Creative Idea

NOTES

VE Team

Abbrev.	Meaning
BJ	Bruce Jessup
DJ	Daniel Junge
FU	Frank Unocic
NS	Natalie Sherwood
RO	Riley O'Boyle
RP	Ross Parker

Scoring

Score	Meaning
A	Selected for evaluation by VE team
B	Selected for pricing-only by VE team
C	Project suggestion for evaluation by design team
D	Incorporated into a developed alternative
E	Not recommended
F	Fatal flaw/highly unlikely to be accepted
G	In the baseline design

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Value Improvement Matrix

September 2026

Function - Idea No.	Creative Idea	Program	Aesthetics	Durability	TCO	Sustainability	Schedule	Constructability	Comfort, Safety, Performance	First-Cost Potential	VE Team Recommendation
Condition Space											
CS-1	Use a two-pipe hydronic changeover system in lieu of a four-pipe system for heating and cooling.	=	=	+	+	=	+	+	-	-$416,000	Consider
CS-2	Eliminate cooling and maintain the heat pump hydronic system for heating only.	=	=	+	+	+	+	+	-	-$661,000	Accept
CS-3	Group classrooms by north and south exposure to consolidate heating and cooling zones.	=	=	+	+	=	+	+	-	-$36,000	Reject
CS-4	Use high volume low speed (HVLS) fans in gym and commons for enhanced air circulation.	Priced-Only								$68,000	Accept
CS-5	Use duct socks at gym for ventilation distribution.	Priced-Only								-$24,000	Accept
Connect with Nature											
CN-15	Reduce extent of hard surface plaza and expand landscaping.	-	+	-	+	+	+	-	+	-$74,000	Accept
Distribute Technology											
DT-38	Use a Passive Optical Network (PON) for data distribution.	=	=	+	+	+	=	=	+	-$13,605	Accept
Enclose Space											
ES-40	Eliminate three accent pop-up dormer roofs at classroom wing.	=	-	+	+	=	=	+	=	-$64,000	Consider
ES-41	Eliminate clerestory ridge at classroom wing and use pop-up dormers for ventilation louvers.	=	-	+	+	=	+	+	=	-$135,000	Consider
ES-42	Reduce extent of masonry on exterior walls and increase use of metal panels.	=	=	+	+	=	+	+	=	-$13,000	Consider
ES-43	Reduce size of covered play to 3,500 SF.	Priced-Only								-$122,000	Consider
ES-44	Use an asphalt shingle roof in lieu of standing seam metal roof.	Priced-Only								-$612,000	Reject
ES-45	Reduce height of glazing on classroom wing to 7 ft and raise sill heights to a minimum of 15" AFF.	Priced-Only								-$2,000	Accept
ES-46	Use a single ply membrane roof with applied standing ribs.	Priced-Only								-$220,000	Accept
ES-47	Reduce extent of glazing at the library and main entrance by 30%.	Priced-Only								-$11,000	Reject
ES-48	Delete vestibule on east side of gym and cafeteria.	Priced-Only								-$58,000	Consider
Facilitate Community Use											
FC-54	Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.	+	+	=	+	+	+	=	+	-$91,000	Accept

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Value Improvement Matrix

September 2026

Function - Idea No.	Creative Idea	Program	Aesthetics	Durability	TCO	Sustainability	Schedule	Constructability	Comfort, Safety, Performance	First-Cost Potential	VE Team Recommendation
Facilitate Wayfinding											
FW-63	Enlarge intersection of main hallways between reception, gym, and classroom wing to create a hub, enhance wayfinding, and facilitate circulation.	+	+	+	+	=	=	=	+	-$8,000	Accept
Finish Interior											
FI-69	Use resilient athletic flooring in lieu of wood athletic flooring at gym for reduced maintenance.	Priced-Only								-$50,000	Consider
FI-70	Reduce quantity of linear wood ceilings by 20%.	Priced-Only								-$23,000	Consider
FI-71	Reduce quantity of casework and cabinetry in classrooms and staff areas by 20%.	Priced-Only								-$129,000	Accept
FI-72	Use high density composite wood wainscot in lieu of P-lam wainscot in corridors.	Priced-Only								-$12,000	Consider
FI-73	Use high density composite wood wainscot in lieu of P-lam wainscot at gym and commons.	Priced-Only								-$4,000	Reject
Grow Plants											
GP-85	Reduce landscaping and irrigation budget by 25%.	Priced-Only								-$167,000	Accept
Illuminate Interior											
II-94	Specify lighting controls with lighting level and color temperature adjustments to allow teacher control depending upon learning environment and time of day.	+	=	=	-	=	=	=	+	$53,000	Accept
Maintain Facility											
MF-103	Use a fiberglass in lieu of aluminum storefront system for increased durability and reduced maintenance.	Priced-Only								-$11,000	Accept
Mitigate Hydromodification											
MH-110	Use sheet flow and swales for stormwater conveyance in lieu of catch basins and piping where feasible.	=	+	+	+	+	+	+	+	-$105,000	Consider
Organize Layout											
OL-117	Shift divider wall between gym and commons to increase flexibility in use of gym/commons for lunches, gym programming, and community events.	+	+	=	+	=	=	=	+	-$184,000	Consider

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Value Improvement Matrix

September 2026

Function - Idea No.	Creative Idea	Program	Aesthetics	Durability	TCO	Sustainability	Schedule	Constructability	Comfort, Safety, Performance	First-Cost Potential	VE Team Recommendation
OL-118	Optimize size of classrooms for number of students at approximately 850 SF each.	-	=	=	+	+	=	=	=	-$319,000	Accept
OL-119	Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.	+	+	=	+	=	=	=	+	-$72,000	Accept
Organize Site											
OS-132	Lay out site following existing contours.	-	=	=	+	+	+	+	-	-$325,000	Consider
OS-133	Reduce the size of the soccer field to approximately 60,000 SF.	Priced-Only								-$85,000	Accept
Reduce Settling											
RS-151	Use geogrid shallow reinforcement at building pad to mitigate settling impact of liquefaction.	=	=	-	=	-	+	=	=	-$238,000	Consider
Route Vehicles											
RV-167	Delete section of fire lane from parking lot along east side of building and create hammerhead at play area north of gate.	+	+	=	+	+	=	+	-	-$19,000	Accept
RV-168	Use thickened asphalt section in lieu of concrete paving at the bus loop.	Priced-Only								-$21,000	Accept
Support Load											
SL-181	Frame outdoor covered play roof with open web trusses and cement fiber soffit to protect framing from environment.	=	-	+	+	=	=	=	=	-$98,000	Accept

Total Gross Cost Reduction	**-$4,422,605**
Total Gross Cost Addition	**$121,000**
Count of Avoidance	**34**
Count of Addition	**2**

Total VE Team Recommended Cost Avoidance	**-$2,014,605**
Total VE Team Recommended Cost Addition	**$121,000**

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Value Improvement Matrix

September 2026

Function - Idea No.	Creative Idea	Program	Aesthetics	Durability	TCO	Sustainability	Schedule	Constructability	Comfort, Safety, Performance	First-Cost Potential	VE Team Recommendation

NOTES

Pricing Key

Score	Meaning
Cost Neutral	Difference between baseline and alternative costs is negligible.
Not Priced	Cost analysis not prepared.
Project Sugg.	Narrative prepared without a cost analysis.
Priced-Only	Estimate prepared without a full analysis and workbook documentation.

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Workbook ID: CN-15	Reduce extent of hard surface plaza and expand landscaping.
Function(s): Connect with Nature	**Includes Idea(s)**: 22,23,24,185,186

Baseline Concept:

The baseline concept features 8-foot-wide hardscape paths designed to accommodate student and family movement and serve as waiting areas. An outdoor education area is located on the eastern portion of the site, set apart from other outdoor program zones with hardscape surfaces provided throughout to support ease of maintenance and accessibility.

Alternative Concept:

In the alternative concept, the outdoor education program is relocated to the center of the play area, plazas are reduced to walkways and walkways are reduced from 8’ wide to 6’ wide to encourage nature interaction, reduce impervious area, and more deeply integrate the outdoor education with the site program. Parking stalls and drive aisles are also reduced in width. This leads to approximately 20,000 SF of paving reduction.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	--	Environmental Sustainability	+
Aesthetics	+	Schedule	+
Durability & Reliability	--	Constructability	--
Total Cost of Ownership / Lifecycle Cost	+	Occupant Comfort, Safety, Performance	+

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 137,000	$ NA	$ NA
Alternative Concept	$ 63,000	$ NA	$ NA
Cost Difference	**$ -74,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: CN-15	Reduce extent of hard surface plaza and expand landscaping.
Function(s): Connect with Nature	**Includes Idea(s)**: 22,23,24,185,186

Recommendation:

Recommend accepting the alternative to move the outdoor learning area to be more integral with the playground and to utilize the fire access road as play space as well as reduce paved area and increase plantings.

Alternative Concept

Advantages	Disadvantages
• Increases integration between outdoor education and site program	• Reduces site maneuverability
• Reduces grading pad area positioned over steep slope at east side of site, reducing overall import	• Outdoor education is less insulated from playground (may increase noise)
• Reduces impervious area, paving cost, and hydromodification	• Requires additional formwork to reduce concrete
• Controls concrete cracking easier with walkways than plaza areas	•
•	•
•	•

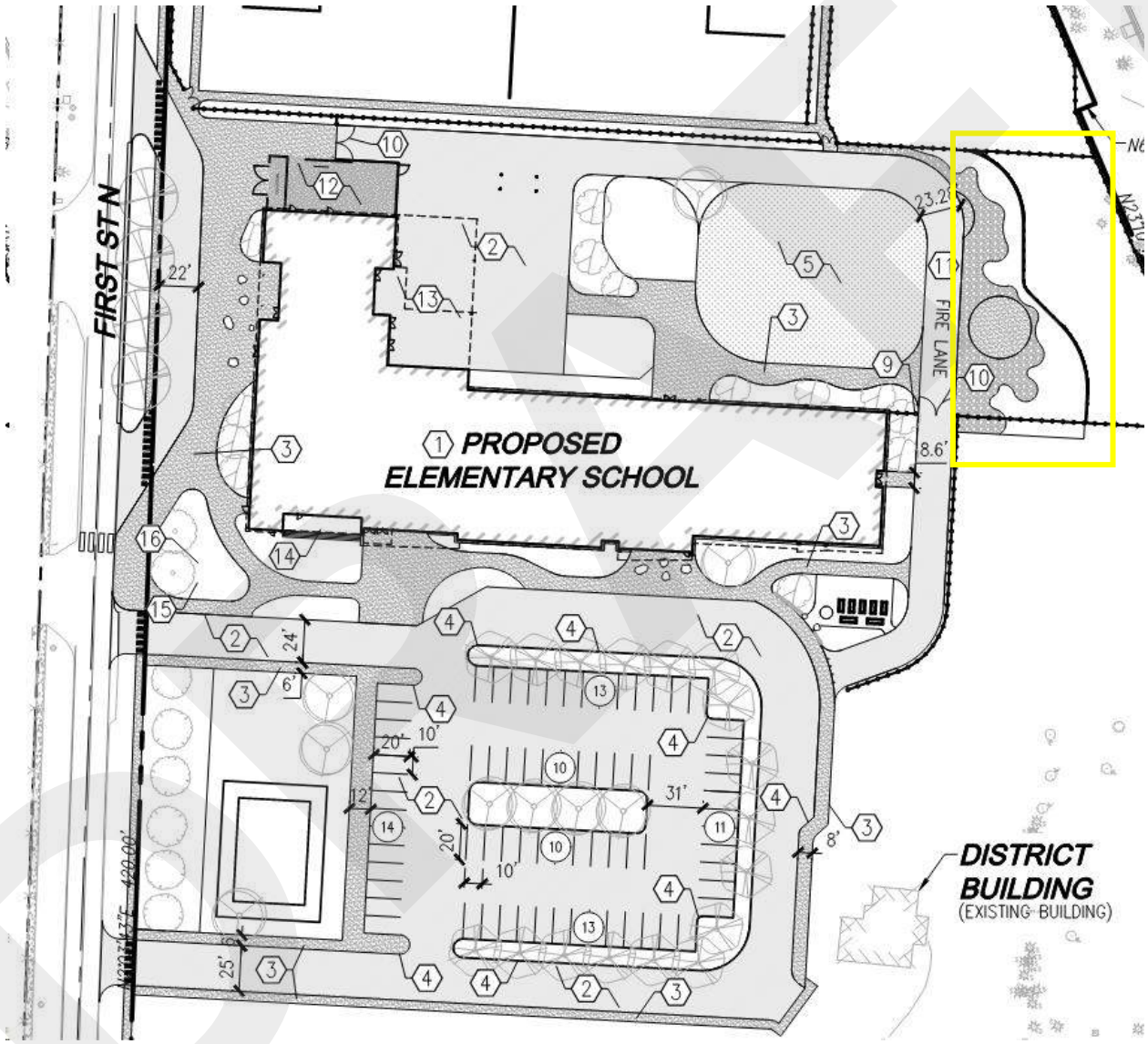
Analysis and Justification:

Hardscape reduction will reduce overall paving costs and stormwater treatment requirements. Reducing concrete will decrease long term capital expenditures on repair but may increase the cost of formwork. If the focus for hardscape reduction is on reducing plaza areas, the construction team may be able to eliminate or reduce cracking during the building process.

DRAFT

Workbook ID: CN-15	Reduce extent of hard surface plaza and expand landscaping.
Function(s): Connect with Nature	**Includes Idea(s)**: 22,23,24,185,186

Baseline Concept Illustration

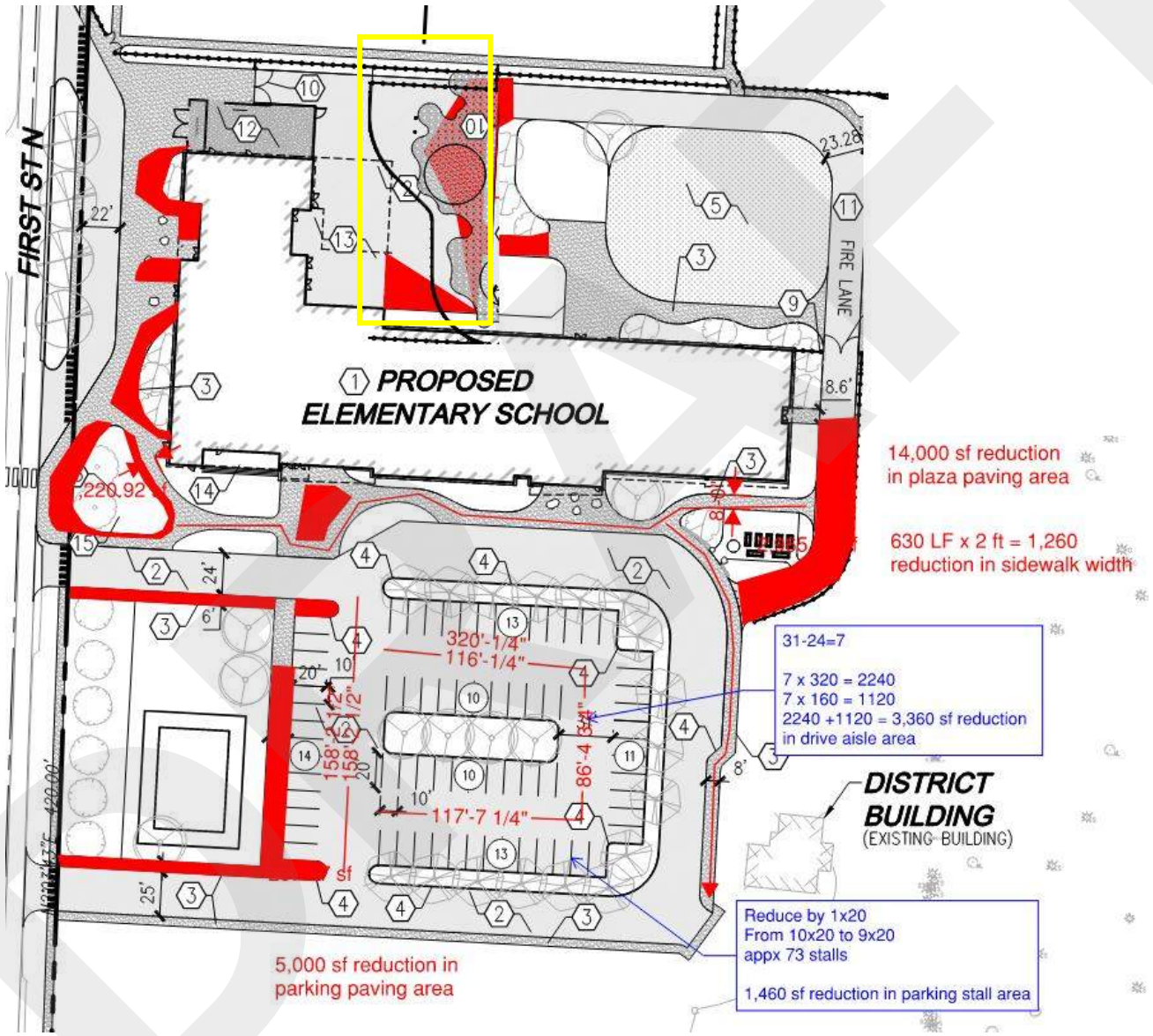


Baseline Site Plan (Outdoor Education in Yellow)

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Workbook ID: CN-15	Reduce extent of hard surface plaza and expand landscaping.
Function(s): Connect with Nature	**Includes Idea(s)**: 22,23,24,185,186

Alternative Concept Illustration



Alternative Displaying Reductions in Paving (Red Areas)

Workbook ID: CN-15	Reduce extent of hard surface plaza and expand landscaping.							
Function(s): Connect with Nature						**Includes Idea(s):**		22,23,24, 185,186
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Asphalt Pavement	25.10%	TON	245	150.00	45,974			
Concrete Cement	25.10%	CY	125	300.00	46,913			
CSTC	25.10%	TON	700	50.00	43,785			
Imported topsoil Type A	25.10%	CY				375	60.00	28,148
Seed - Meadow	25.10%	SF				10,000	0.50	6,255
Hydroseed - Lawn	25.10%	SF				10,000	0.25	3,128
Automatic irrigation systems - Lawn	25.10%	SF				10,000	2.00	25,020
TOTAL COSTS*					**137,000**			**63,000**
							TOTAL (PROPOSED less BASELINE)	**-74,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: CS-1	Use a two-pipe hydronic changeover system in lieu of a four-pipe system for heating and cooling.
Function(s): Condition Space	**Includes Idea(s)**:

Baseline Concept:

In the baseline concept, heating and cooling are provided through a four-pipe hydronic distribution system that allows both heating and cooling to be available simultaneously as dictated by building and zone loads.

Alternative Concept:

In the alternative concept, heating and cooling are provided through a two-pipe changeover hydronic distribution system. The system operates in either heating or cooling mode on a building-wide basis, with seasonal changeover occurring as thermal loads demand.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	=	Environmental Sustainability	=
Aesthetics	=	Schedule	+
Durability & Reliability	+	Constructability	+
Total Cost of Ownership / Lifecycle Cost	+	Occupant Comfort, Safety, Performance	--

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 832,000	$ NA	$ NA
Alternative Concept	$ 416,000	$ NA	$ NA
Cost Difference	**$ -416,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: CS-1	Use a two-pipe hydronic changeover system in lieu of a four-pipe system for heating and cooling.
Function(s): Condition Space	**Includes Idea(s)**:

Recommendation:

Consider accepting the alternative idea of the two-pipe changeover system. Among the alternatives evaluated, this option most closely aligns with the baseline HVAC concept by retaining hydronic heating and cooling throughout the building while reducing system complexity and cost.

Alternative Concept

Advantages	Disadvantages
• Reduces piping, valves, coils, controls infrastructure, and installation costs	• Loses ability to simultaneously heat and cool
• Simplifies hydronic distribution system and controls sequences	• Reduces flexibility to address localized heating and cooling needs
• Reduces balancing, commissioning, and maintenance requirements	• Seasonal changeover requires operational planning
• Reduces installation and commissioning duration	•
•	•
•	•

Analysis and Justification:

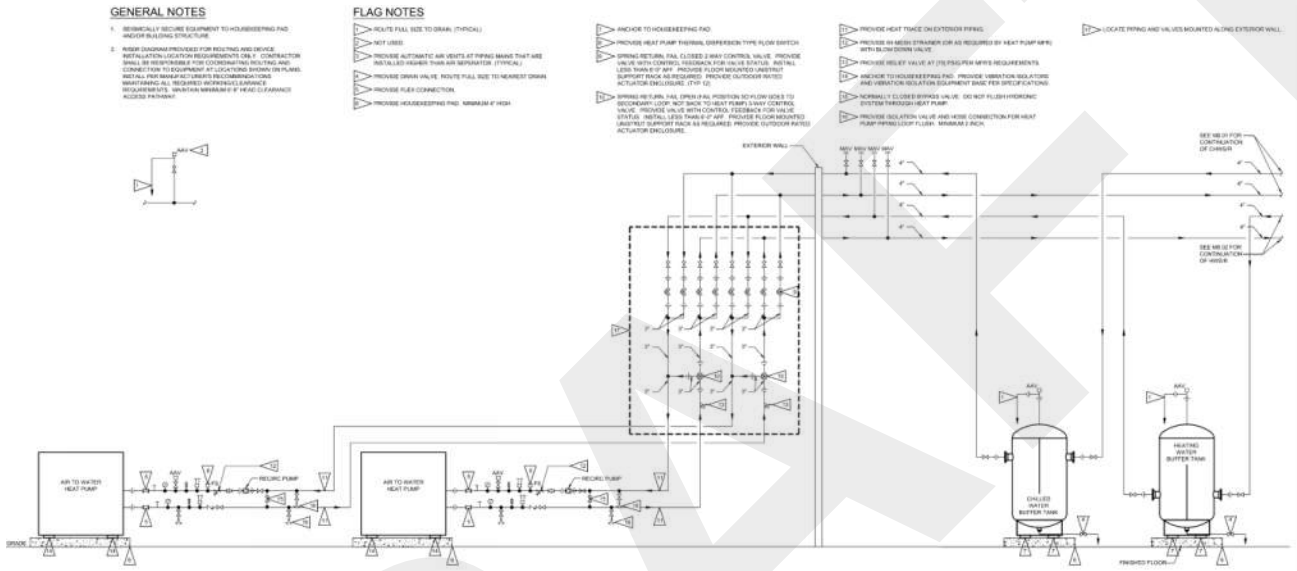
The baseline design utilizes a four-pipe hydronic system serving both the fan coil units and air handling units. This arrangement allows heating and cooling to be available simultaneously, enabling the HVAC system to respond to differing space loads and solar exposures throughout the building. The alternative concept converts the system to a two-pipe changeover arrangement, reducing piping distribution, control valves, coils, and associated controls infrastructure. The primary benefits of the alternative are reduced construction cost and system complexity, simplified installation, and lower long-term maintenance requirements. The relative simplicity of the two-pipe system makes it more feasible to be maintained at a lower cost by school facility staff, and local contractor resources if needed.

The primary disadvantage is the loss of simultaneous heating and cooling capability. This has a greater impact during the spring and fall shoulder seasons with cool mornings and warm afternoons. However, the north/south exposures of the classroom wing, without the need for simultaneous cooling for morning solar exposure of east-facing rooms and heating for night-chilled west-facing rooms, are better suited for the uniform heating of a change-over system. Because ventilation and space conditioning are decoupled, comfort impacts may be reduced relative to a conventional VAV system. Fan coil units can shut off when space loads are satisfied while ventilation requirements continue to be met separately, reducing the potential for overcooling or overheating associated with minimum airflow requirements.

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Workbook ID: CS-1	Use a two-pipe hydronic changeover system in lieu of a four-pipe system for heating and cooling.
Function(s): Condition Space	**Includes Idea(s)**:

Baseline Concept Illustration

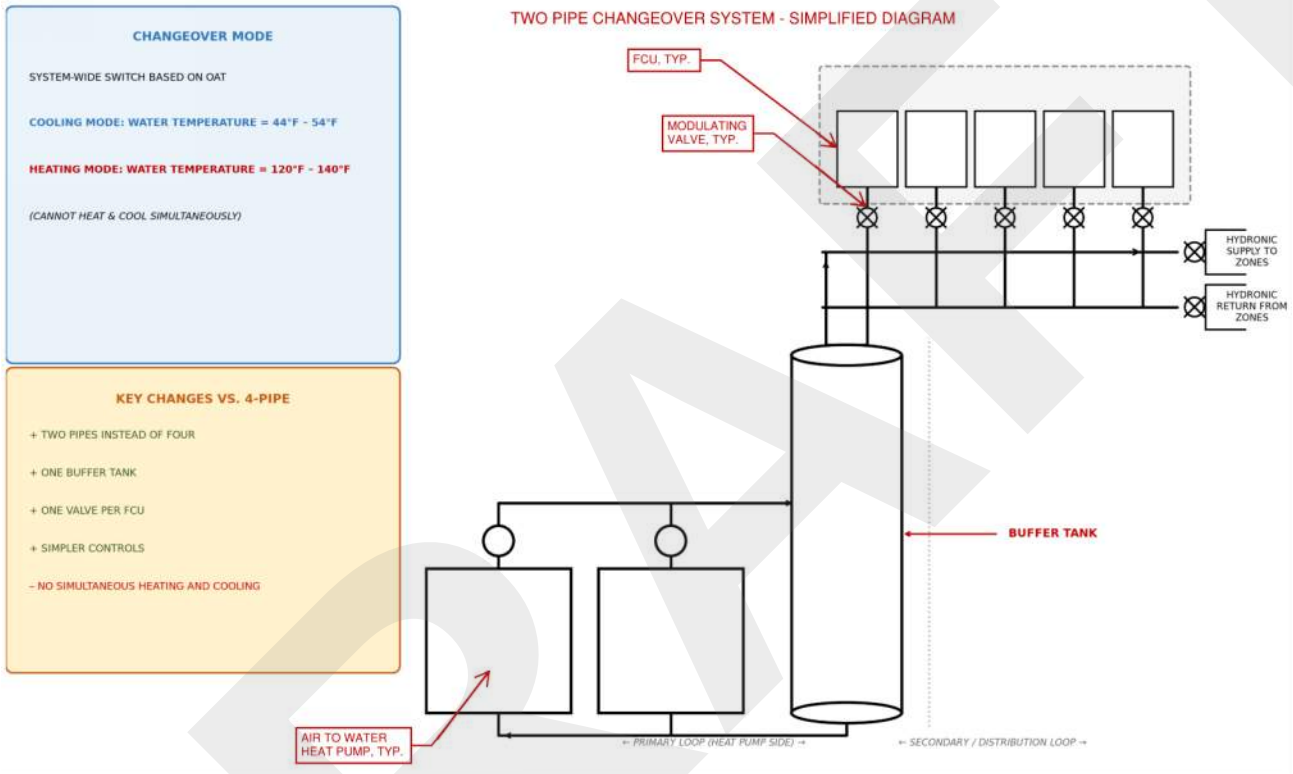


Four-Pipe Hydronic System Diagram

DRAFT

Workbook ID: CS-1	Use a two-pipe hydronic changeover system in lieu of a four-pipe system for heating and cooling.
Function(s): Condition Space	**Includes Idea(s)**:

Alternative Concept Illustration



Simplified Two-Pipe Changeover Diagram

DRAFT

Workbook ID: CS-1	Use a two-pipe hydronic changeover system in lieu of a four-pipe system for heating and cooling.							
Function(s): Condition Space						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Buffer tanks	25.10%	ea.	2	3,500.00	8,757	1	3,500.00	4,379
Hydronic pumps	25.10%	ea.	4	7,832.00	39,191	2	7,832.00	19,596
Heating/chilled water supply and return piping	25.10%	LS	1	504,519.00	631,153	1	252,259.50	315,577
Valve, actuators, and controls	25.10%	LS	1	121,925.00	152,528	1	60,962.50	76,264
TOTAL COSTS*					**832,000**			**416,000**
							TOTAL (PROPOSED less BASELINE)	**-416,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: CS-2	Eliminate cooling and maintain the heat pump hydronic system for heating only.
Function(s): Condition Space	**Includes Idea(s)**: 9, 10

Baseline Concept:

In the baseline concept, the school is mechanically heated and cooled using a four-pipe hydronic system. Heating hot water and chilled water are generated by air-to-water heat pumps. The classrooms are conditioned by four-pipe fan coil units (FCUs) and ventilated by a dedicated outdoor air system (DOAS) with VAV terminal units (TUs) for airflow modulation. The DOAS system has an airside economizer to provide additional outdoor air for when there is cooling demand and the outside air temperature is low enough for space cooling. The gym, commons, and admin areas are served by VAV air handling units with heating and cooling coils. The admin area has VAV TUs with hot water reheat serving each thermal zone. Admin areas and classrooms have operable windows.

Alternative Concept:

In the alternative concept, a heating-only hydronic system is used. Heating hot water is generated by heat pump boilers and distributed to air handling units, hydronic heaters, and VAV TUs serving the perimeter admin areas. Classrooms, vestibules, and other perimeter spaces not served by air handling units are heated by finned-tube radiators and/or cabinet unit heaters. Cooling in perimeter spaces, including classrooms, is provided through a combination of ceiling fans and operable windows. The chilled water system and four-pipe fan coil units (FCUs) are eliminated from the design scope. The DOAS system serving the classrooms is retained.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	=	Environmental Sustainability	+
Aesthetics	=	Schedule	+
Durability & Reliability	+	Constructability	+
Total Cost of Ownership / Lifecycle Cost	+	Occupant Comfort, Safety, Performance	--

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 1,511,000	$ NA	$ NA
Alternative Concept	$ 850,000	$ NA	$ NA
Cost Difference	**$ -661,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: CS-2	Eliminate cooling and maintain the heat pump hydronic system for heating only.
Function(s): Condition Space	**Includes Idea(s)**: 9, 10

Recommendation:

Recommend adopting this alternative concept for cost reduction while retaining a system that will provide comfort in all but extremely rare occasions of temperatures over 80°F.

Alternative Concept

Advantages	Disadvantages
• Reduces first cost significantly	• Occupant comfort is dependent on outside air conditions
• Reduces mechanical room footprint; removes chilled water buffer tank and pumps	• Eliminates humidity control
• Ceiling fans and perimeter heating units simplify maintenance versus fan coils	• Reliance on operable windows for cooling may be limited during wildfire smoke events
• Reduces energy consumption through passive cooling strategy	•
• Reduces installation duration	•
• Reduces controls integration, testing, adjusting, balancing (TAB), and commissioning effort	•

Analysis and Justification:

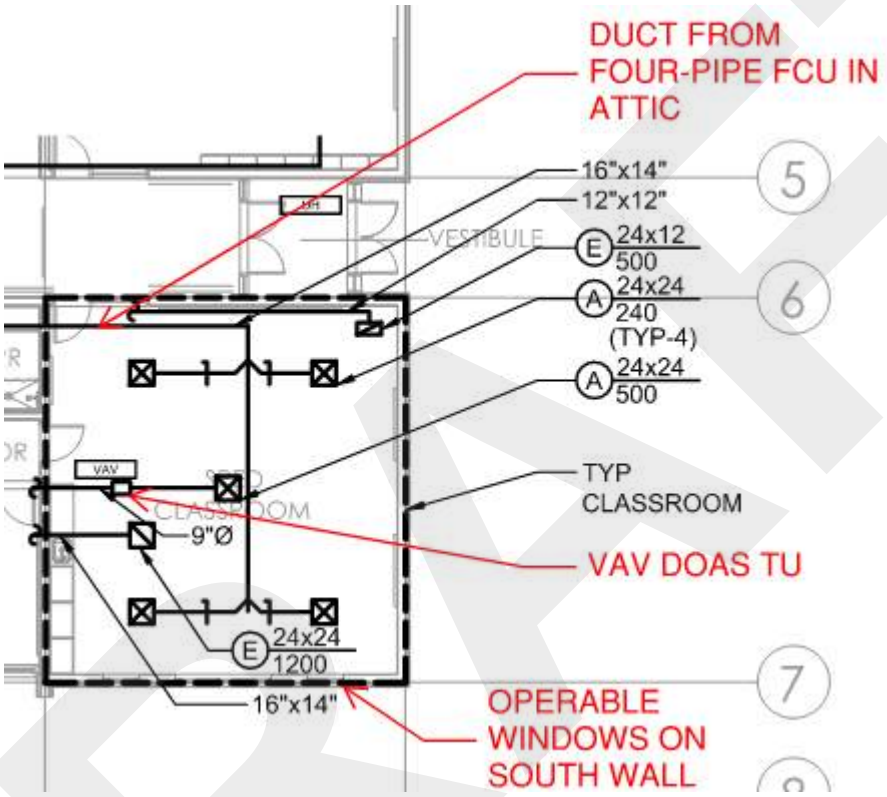
The baseline design provides building-wide active cooling through a chilled water plant and four-pipe fan coil system. The cooling loads appear to be based on ASHRAE climatic design data for Hoquiam, Washington, with a design cooling dry-bulb temperature of 79°F. Hoquiam is located farther inland and may not fully reflect the moderating influence of the Pacific Ocean at the project site. By comparison, the equidistant coastal community of Westport, Washington, has an ASHRAE cooling design temperature of 70°F, suggesting that the baseline design may overstate the frequency and magnitude of cooling loads.

This alternative eliminates the chilled water system and four-pipe fan coil units while retaining most of the hydronic heating design concept. Cooling in classrooms and other perimeter spaces is provided through a combination of ceiling fans and operable windows. The alternative concept reduces system complexity, construction cost, installation effort, and long-term maintenance requirements. The school's proximity to the moderating effect of the ocean and the relative constancy of a breeze insulate it from all but rare occasions of higher temperatures. The primary tradeoff is reduced capability to maintain consistent indoor temperatures during periods of abnormally warm weather or wildfire smoke events, when operable windows may not be practical.

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Workbook ID: CS-2	Eliminate cooling and maintain the heat pump hydronic system for heating only.
Function(s): Condition Space	**Includes Idea(s)**: 9, 10

Baseline Concept Illustration

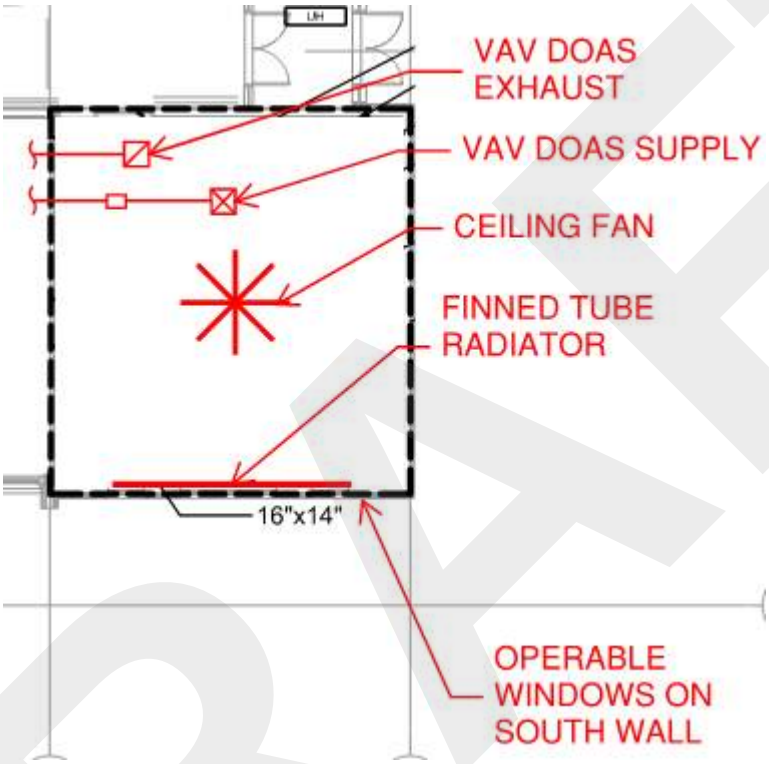


Baseline Concept Classroom Layout

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Workbook ID: CS-2	Eliminate cooling and maintain the heat pump hydronic system for heating only.
Function(s): Condition Space	**Includes Idea(s)**: 9, 10

Alternative Concept Illustration



Alternative Concept Classroom Layout

DRAFT

Workbook ID: CS-2	Eliminate cooling and maintain the heat pump hydronic system for heating only.							
Function(s): Condition Space						**Includes Idea(s):**	9, 10	
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Buffer tanks	25.10%	ea.	2	3,500.00	8,757	1	3,500.00	4,379
Hydronic pumps	25.10%	EA	4	7,832.00	39,191	2	7,832.00	19,596
Heating/chilled water supply and return piping	25.10%	LS	1	504,519.00	631,153	1	252,259.50	315,577
Valve, actuators, and controls	25.10%	LS	1	121,925.00	152,528	1	60,962.50	76,264
Four-pipe fan coils	25.10%	EA	20	3,250.00	81,315			
Dual-function air-to-water heat pumps	25.10%	EA	2	208,250.00	521,042			
Testing and balancing	25.10%	SF	34,730	1.10	47,792	34,730	0.65	28,241
Commissioning	25.10%	SF	34,730	0.67	29,110	34,730	0.50	21,724
Heat pump boilers (heating only)	25.10%	EA				2	67,008.00	167,654
Perimeter finned tube	25.10%	EA				20	5,800.00	145,116
Ceiling fans	25.10%	EA				20	2,850.00	71,307
TOTAL COSTS*					**1,511,000**			**850,000**
							TOTAL (PROPOSED less BASELINE)	**-661,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: CS-3	Group classrooms by north and south exposure to consolidate heating and cooling zones.
Function(s): Condition Space	**Includes Idea(s)**:

Baseline Concept:

In the baseline concept, each classroom is treated as an individual thermal control zone and is served by a dedicated four-pipe fan coil unit.

Alternative Concept:

In the alternative concept, some of the classrooms are grouped by façade orientation. Spaces with unique programmatic requirements, including the maker space and library, remain individually zoned, as do corner classrooms with multiple exterior exposures. Consolidating classrooms where thermal loads are sufficiently similar reduces the number of fan coil units, associated controls, piping, and commissioning requirements, resulting in lower construction costs and reduced system complexity.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**=**	Environmental Sustainability	**=**
Aesthetics	**=**	Schedule	**+**
Durability & Reliability	**+**	Constructability	**+**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**--**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 244,000	$ NA	$ NA
Alternative Concept	$ 208,000	$ NA	$ NA
Cost Difference	**$ -36,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: CS-3	Group classrooms by north and south exposure to consolidate heating and cooling zones.
Function(s): Condition Space	**Includes Idea(s)**:

Recommendation:

Recommend accepting CS-1 or CS-2 in lieu of this alternative.

Alternative Concept

Advantages	Disadvantages
• Reduces first costs for equipment, hydronic piping, and controls components	• Decreases independent control of room temperature of several classrooms
• Reduces risk of failure and reduces maintenance requirements	• Reduces operational flexibility and ability to accommodate differing occupant preferences
• Reduces installation and commissioning effort	• Decreases flexibility; future programmatic changes may require additional system modifications
•	•
•	•
•	•

Analysis and Justification:

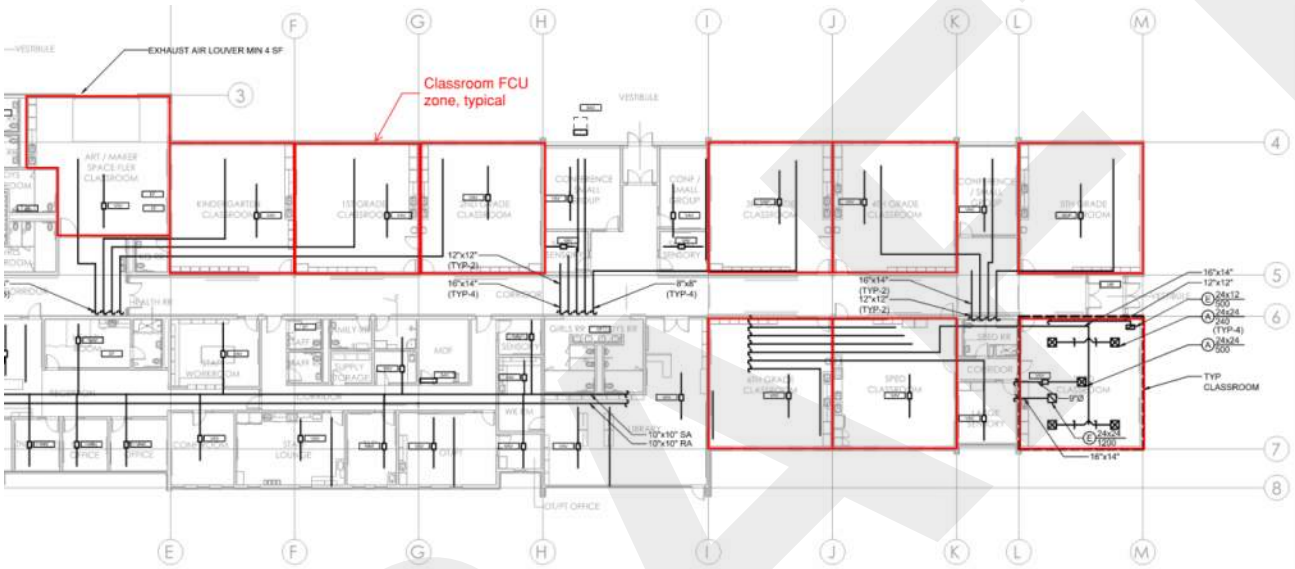
The baseline design provides each classroom with a dedicated four-pipe fan coil unit and independent temperature control. The alternative concept consolidates classrooms into shared thermal zones based on façade orientation while maintaining dedicated zoning for spaces with specialized programmatic requirements and corner classrooms with multiple exterior exposures. The proposed consolidation appears to reduce the fan coil unit count by approximately three units and correspondingly reduces associated controls infrastructure, installation effort, commissioning effort, and long-term maintenance requirements.

The primary tradeoff is reduced individual classroom temperature control and operational flexibility. However, classrooms grouped by orientation are expected to have similar solar exposure and thermal load characteristics, allowing a modest reduction in system complexity while maintaining acceptable thermal comfort. The design team should review the proposed zone groupings with the Owner to confirm that the limited equipment reduction justifies the reduction in zoning flexibility.

DRAFT

Workbook ID: CS-3	Group classrooms by north and south exposure to consolidate heating and cooling zones.
Function(s): Condition Space	**Includes Idea(s)**:

Baseline Concept Illustration

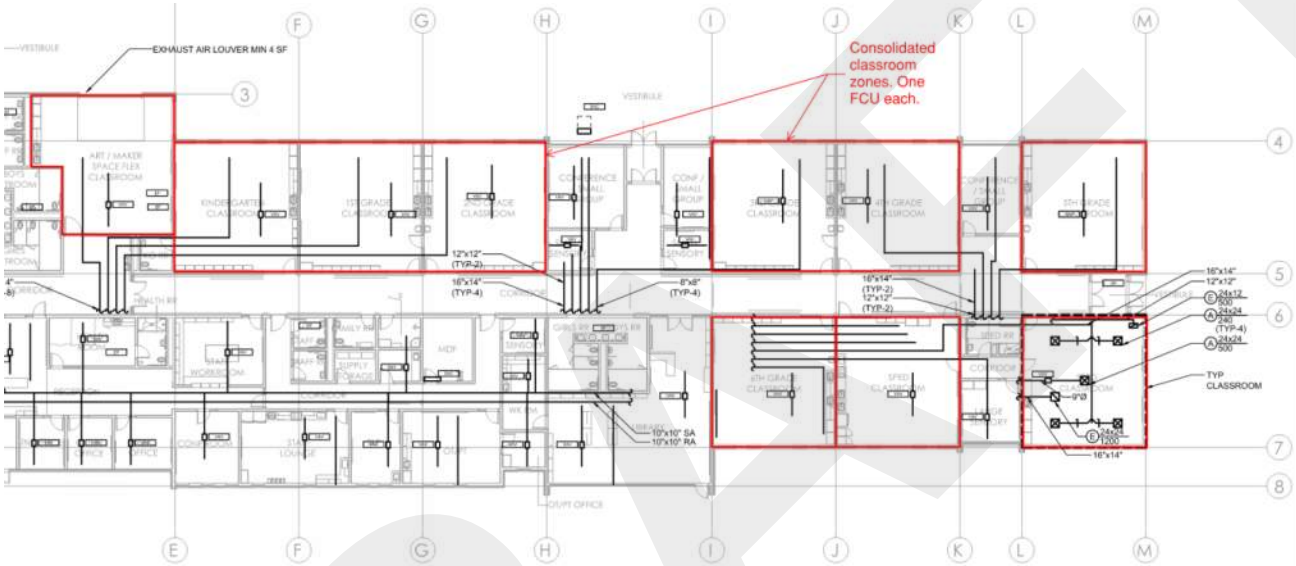


Baseline Classroom Zoning

DRAFT

Workbook ID: CS-3	Group classrooms by north and south exposure to consolidate heating and cooling zones.
Function(s): Condition Space	**Includes Idea(s)**:

Alternative Concept Illustration



Alternative Classroom Zoning

DRAFT

Workbook ID: CS-3	Group classrooms by north and south exposure to consolidate heating and cooling zones.
Function(s): Condition Space	**Includes Idea(s):**

CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Four pipe fan coil unit	25.10%	ea.	20	3,250.00	81,315	17	3,250.00	69,118
Fan coil unit controller	25.10%	ea.	20	325.00	8,132	17	325.00	6,912
Space temperature sensor	25.10%	ea.	20	490.00	12,260	17	490.00	10,421
Heating control valve and actuator	25.10%	ea.	20	900.00	22,518	17	900.00	19,140
Cooling control valve and actuator	25.10%	ea.	20	1,050.00	26,271	17	1,050.00	22,330
Control wiring	25.10%	ea.	20	400.00	10,008	17	400.00	8,507
BAS integration and programming	25.10%	ea.	20	1,200.00	30,024	17	1,200.00	25,520
Testing and balancing	25.10%	ea.	20	1,075.00	26,897	17	1,075.00	22,862
Controls commissioning	25.10%	ea.	20	1,075.00	26,897	17	1,075.00	22,862
TOTAL COSTS*					**244,000**			**208,000**
							TOTAL (PROPOSED less BASELINE)	**-36,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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DRAFT

Workbook ID: CS-4	Use high volume low speed (HVLS) fans in gym and commons for enhanced air circulation.							
Function(s): Condition Space						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
10' HVLS fan in Gym	25.10%	EA				2	9,250.00	23,144
8' HVLS fan in Commons	25.10%	EA				2	7,975.00	19,953
Controls for fans	25.10%	EA				4	4,900.00	24,520
TOTAL COSTS*								**68,000**
							TOTAL (PROPOSED less BASELINE)	**68,000**

Note: Total Costs are rounded to nearest thousand dollars COST

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DRAFT

Workbook ID: CS-5	Use duct socks at gym for ventilation distribution.							
Function(s): Condition Space						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Sheet Metal Duct	25.10%	SF	3,575	10.00	44,723			
Fabric Duct	25.10%	SF				3,575	8.50	38,015
Fittings	25.10%	ea.	21	600.00	15,763	3	600.00	2,252
Diffusers	25.10%	ea.	12	250.00	3,753			
*Hangers, supports, sealing included in rates above								
TOTAL COSTS*					**64,000**			**40,000**
							TOTAL (PROPOSED less BASELINE)	**-24,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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DRAFT

Workbook ID: DT-38	Use a Passive Optical Network (PON) for data distribution.
Function(s): Distribute Technology	**Includes Idea(s)**: 39

Baseline Concept:

In the baseline concept, the internet service providers will provide fiber feed to the MDF (Main Distribution Frame). Contractors will provide backbone single mode fiber from MDF to IDF (Intermediate Distribution Frame). All distribution cabling from either MDF or IDF will be CAT6A and managed from patch panels in racks. All network devices and network data ports will be CAT6A type. All cables will be routed horizontally through an end-to-end raceway system.

Alternative Concept:

In the alternative concept, a PON (Passive Optical Network) also known as an Optical Local Area Network (OLAN) is used for data distribution. The PON/OLAN solution uses a series of single mode fibers from a main switch in the MDF connected to a Layer 3 core switch. From the Layer 3 core switch, fiber runs to an optical line terminal (OLT) from which a series of strands of single mode fiber extends to multiple passive splitters that split the signal from one strand into 32 different signals. Each signal has its own single mode strand of fiber. Each strand then runs to multiple ONT's (Optical Network Terminal). Each ONT is locally powered which allows the ONT to be POE (Power over Ethernet) enabled. CAT6A cables will be routed from the ONT to WAP's, cameras, other network devices, and to data ports.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	=	Environmental Sustainability	+
Aesthetics	=	Schedule	=
Durability & Reliability	+	Constructability	=
Total Cost of Ownership / Lifecycle Cost	+	Occupant Comfort, Safety, Performance	+

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 182,000	$ NA	$ NA
Alternative Concept	$ 158,000	$ NA	$ NA
Cost Difference	**$** -24,000	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: DT-38	Use a Passive Optical Network (PON) for data distribution.
Function(s): Distribute Technology	**Includes Idea(s)**: 39

Recommendation:

Recommend accepting the alternative to use a PON OLAN system for data distribution for the school. This solution decreases installation and equipment costs while it reduces network physical infrastructure space, cabling, and connectivity costs.

Alternative Concept

Advantages	Disadvantages
• Maintains performance	• Requires local power or powered fiber
• Reduces total costs of ownership and energy use	• Eliminates Layer 2 switching
• Reduces network equipment costs and licenses	• Requires VOIP system for phone (Voice Over Internet Protocol)
• Increases resiliency and lifespan of network distribution	•
•	•
•	•

Analysis and Justification:

Technology is moving towards fiber optic cabling systems which are lowering costs and allowing expanded use for OLAN transport of voice, data, wireless, and video applications as well.

A PON system approach eliminates the need for an IDF which is necessary in the baseline concept due to cable lengths. It also helps reduce cabling technology changes over time, increases network security, reduces the need for additional IDF rooms. The alternative utilizes core switching, reduces edge switching devices, modular core devices allow for growth, improve monitoring of multiple systems (Network, BMS, security, etc.), and all systems can be monitored on a single screen.

Benefits are:

- Overall physical space requirements for telecommunications will be reduced as the IDF is no longer necessary with fiber. An IDF is necessary for the baseline concept due to CAT6A cable length limitations.
- Programmed space for IDF can be repurposed.

DRAFT

Workbook ID: DT-38	Use a Passive Optical Network (PON) for data distribution.
Function(s): Distribute Technology	**Includes Idea(s)**: 39

- Improves resilience and lifespan as fiber optic cables are immune to the moisture, humidity, and atmospheric corrosion.
- The lifespan of fiber optics is about 25 years versus about 5 to 7 years for copper CAT6A cable. Although copper cables can physically last much longer, increases in technology require the delivery of higher bandwidth resulting in copper network cables changing frequently (i.e. CAT2, through CAT6A, CAT7, CAT 8, etc.) resulting in a shorter lifecycle.
- Bandwidth will be increased for faster data throughput. Cabling and OLT/ONT equipment now support 10Gbps with current standards and will likely support 40Gbps-100Gbps in the future.
- The cabling infrastructure can be used to transport IP packets for any IP enabled applications (Internet/Normal LAN, Security Surveillance, Access Control, Intrusion Detection, Voice, Intercom, and television video).
- The installation does not require specialized high-cost installers since cable splicing is not required with the splitters.
- Fiber optic cables can support distances much further than traditional ethernet cabling. Fiber can route directly to ONTs throughout the building from a single MDF.
- Fiber optic cables support all the same QOS, VLAN, and other commonly available network security features found in Layer 3 switches.

Special Considerations:

- Voice Services would be limited to a Voice Over Internet Protocol (VOIP) solution.
- Television would be limited to an Internet Protocol Television (IPTV) solution. Both Comcast and Dish have supported solutions.
- In addition to the Optical Line Terminal (OLT) and ONT devices, a Layer 3 switch/firewall will also be required.

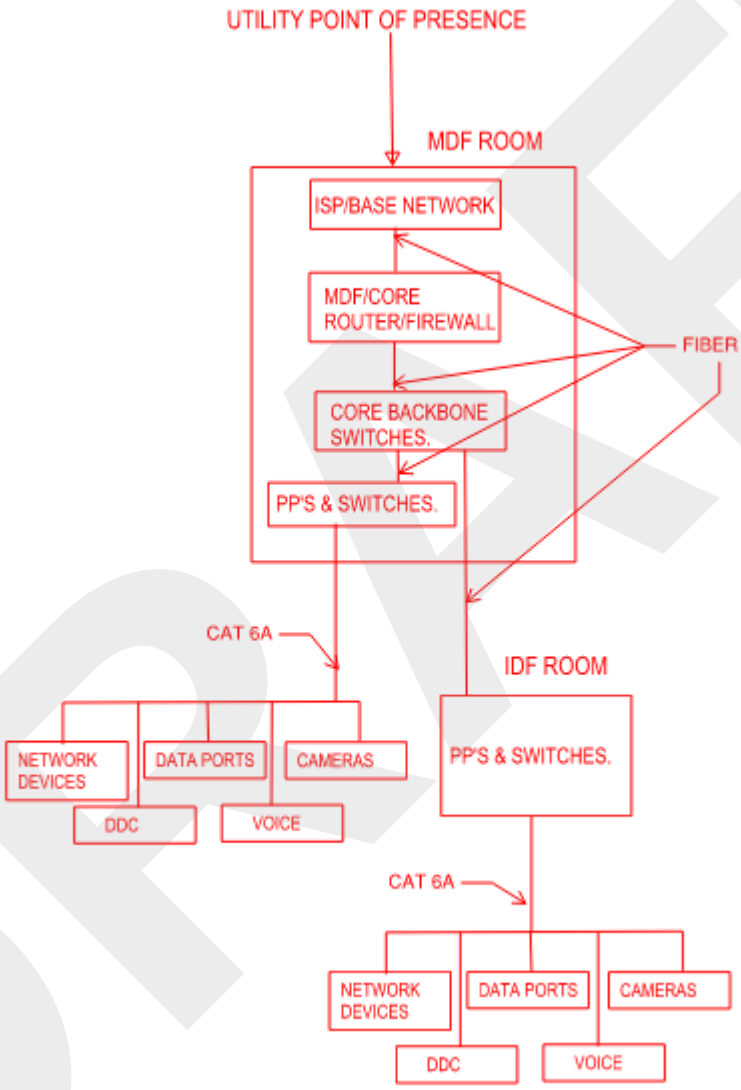
The decreasing costs and widespread use of fiber for data distribution networks suggests this system will soon make copper data cabling obsolete, just as LED lighting has replaced compact fluorescent, fluorescent, and incandescent lighting.

The potential exists to use the same fiber optic cables for the other low voltage (Non-Life Safety) systems, such as Audio-Visual, Access Control, Intrusion Detection, Video Security, and potentially Intercom/Clock.

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Workbook ID: DT-38	Use a Passive Optical Network (PON) for data distribution.
Function(s): Distribute Technology	**Includes Idea(s)**: 39

Baseline Concept Illustration

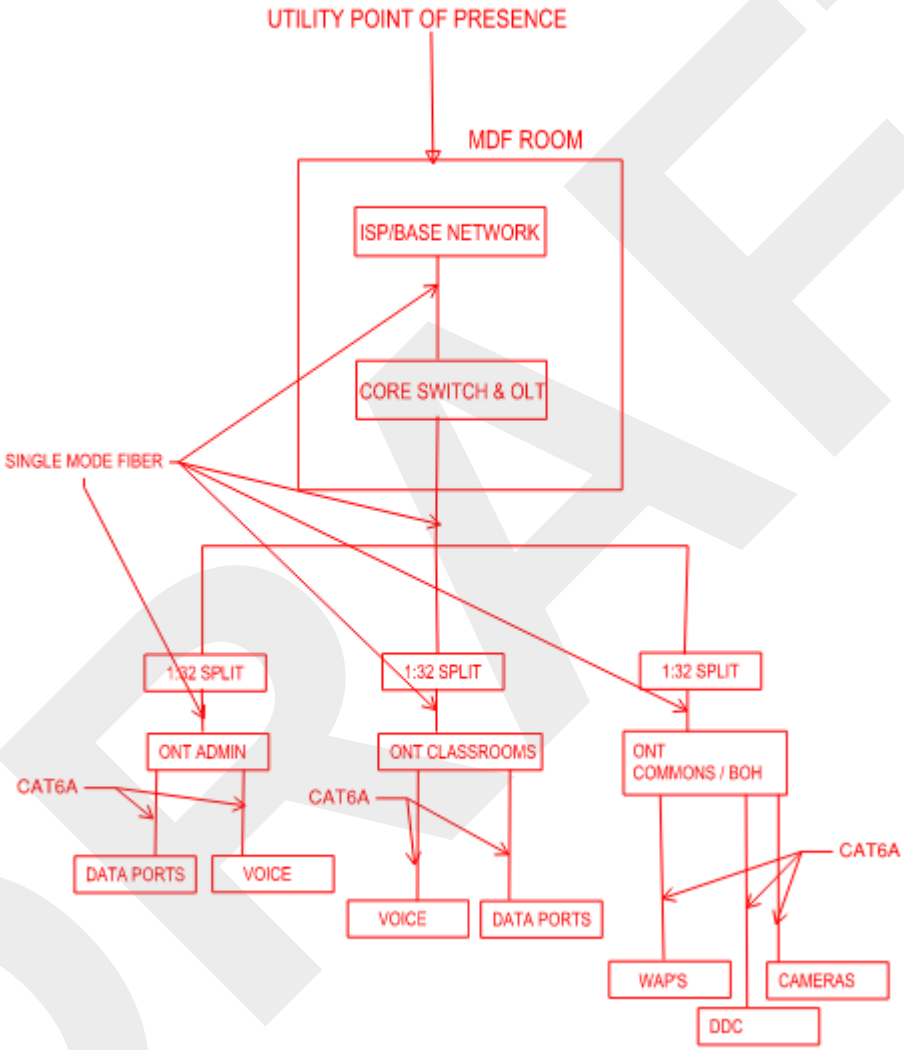


Baseline Fiber Feed to MDF and IDF

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Workbook ID: DT-38	Use a Passive Optical Network (PON) for data distribution.
Function(s): Distribute Technology	**Includes Idea(s)**: 39

Alternative Concept Illustration



PON Network

DRAFT

Workbook ID: DT-38	Use a Passive Optical Network (PON) for data distribution.							
Function(s): Distribute Technology						**Includes Idea(s):**	39	
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
2" EMT from MDF to IDF	25.10%	LF	230	55.00	15,825			
CAT6A UTP	25.10%	LF	25,000	3.25	81,250	5,000	3.25	16,250
Data receptacles	25.10%	EA	125	135.00	16,875	125	135.00	16,875
Single mode fiber cable	25.10%	LF	400	17.75	7,100	2,000	17.75	35,500
Cabling supports & hardware	25.10%	LS	1	10,605.00	10,605	1	4,200.00	4,200
MDF buildout with head end equipment	25.10%	EA	1	25,000.00	31,275	1	68,000.00	85,068
IDF buildout with head end equipment	25.10%	EA	1	15,000.00	18,765			
TOTAL COSTS*					**182,000**			**158,000**
							TOTAL (PROPOSED less BASELINE)	**-24,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

DRAFT

Workbook ID: ES-40	Eliminate three accent pop-up dormer roofs at classroom wing.
Function(s): Enclose Space	**Includes Idea(s)**:

Baseline Concept:

In the baseline concept, non-structural, over-framed roof pop-ups are used to accent the exterior elevation.

Alternative Concept:

In the alternative concept, the non-structural pop-ups are removed at the north elevation and over the south elevation large sensory room of the classroom wing.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**=**	Environmental Sustainability	**=**
Aesthetics	**--**	Schedule	**=**
Durability & Reliability	**+**	Constructability	**+**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**=**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 64,000	$ NA	$ NA
Alternative Concept	$ 0	$ NA	$ NA
Cost Difference	**$ -64,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: ES-40	Eliminate three accent pop-up dormer roofs at classroom wing.
Function(s): Enclose Space	**Includes Idea(s)**:

Recommendation:

Consider accepting this alternative to improve the building durability and reduce maintenance.

Alternative Concept

Advantages	Disadvantages
• Increases durability by eliminating possible leak points at pop-ups	• Loses building accents and modulations, particularly on the north side of the classroom wing
• Decreases maintenance at vertical surface of pop-ups that would need to be painted	•
•	•
•	•
•	•
•	•

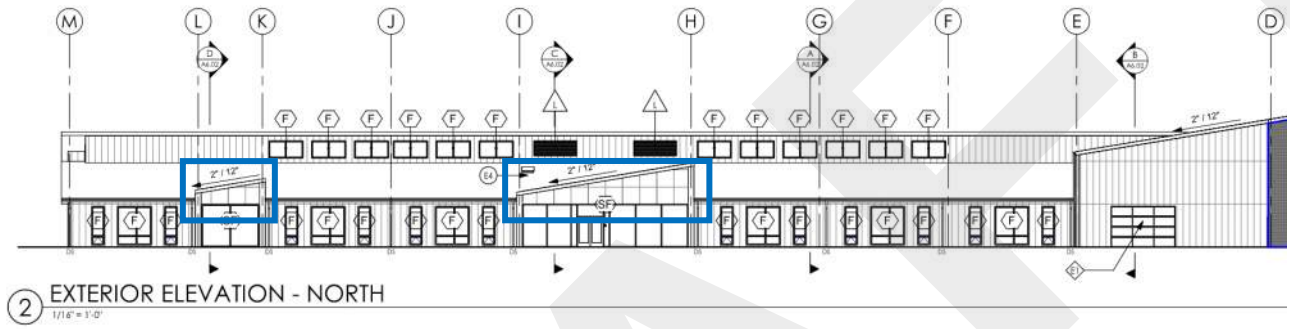
Analysis and Justification:

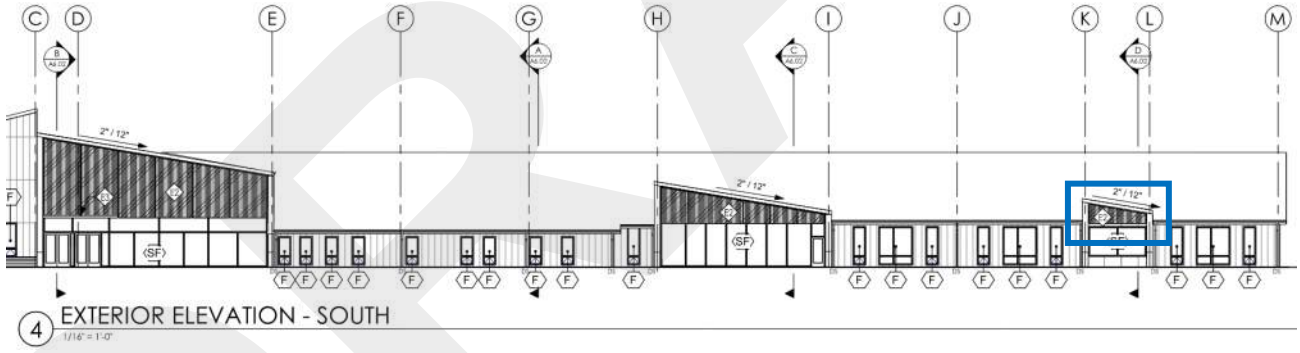
It was stated in the design team presentation that reduced maintenance was a desirable goal. This alternative concept improves durability and reduces maintenance by removing three pop-up accent dormers that are located at the classroom wing. Since these pop-ups are constructed with over-framing and do not articulate the ceiling framing below, they create another element that needs to be maintained without the benefit of enhancing the interior space. The framed pop-ups at the main entry and at the library would be retained since they provide the option of modulating the ceiling in the enclosed space and help create a sense of arrival for these areas that may be used for public events.

DRAFT

Workbook ID: ES-40	Eliminate three accent pop-up dormer roofs at classroom wing.
Function(s): Enclose Space	**Includes Idea(s)**:

Baseline Concept Illustration



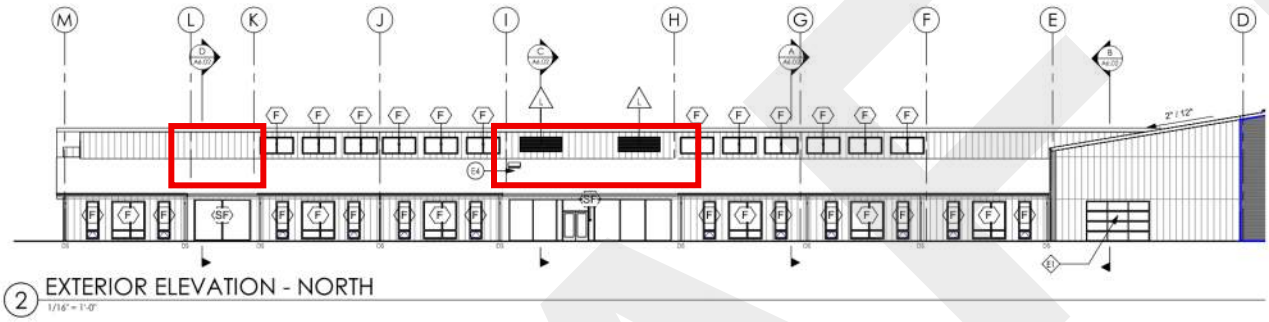


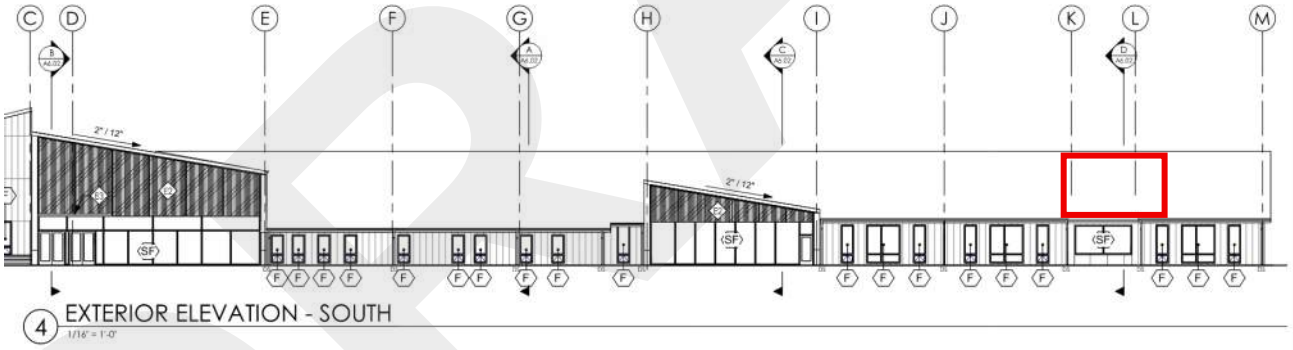
Baseline Accent Dormers at Classroom Wing

DRAFT

Workbook ID: ES-40	Eliminate three accent pop-up dormer roofs at classroom wing.
Function(s): Enclose Space	**Includes Idea(s)**:

Alternative Concept Illustration





Alternative Reduced Accent Pop-Ups

DRAFT

Workbook ID: ES-40	Eliminate three accent pop-up dormer roofs at classroom wing.							
Function(s): Enclose Space						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Over-framing for accent pop-ups	25.10%	SF	1,195	20.00	29,899			
Fiber cement panel at north side of classroom	25.10%	SF	261	42.40	13,844			
Custom aluminum panel at south side of classroom	25.10%	SF	59	90.00	6,643			
Exterior wall substrate	25.10%	SF	320	32.86	13,155			
TOTAL COSTS*					**64,000**			
							TOTAL (PROPOSED less BASELINE)	**-64,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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DRAFT

Workbook ID: ES-41	Eliminate clerestory ridge at classroom wing and use pop-up dormers for ventilation louvers.
Function(s): Enclose Space	**Includes Idea(s)**:

Baseline Concept:

In the baseline concept, a clerestory roof shape is used at the classroom wing.

Alternative Concept:

In the alternative concept, the clerestory windows are removed and the roof shape is revised to a gable roof shape.

Performance Summary	(relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)		
Program	**=**	Environmental Sustainability	**=**
Aesthetics	**--**	Schedule	**+**
Durability & Reliability	**+**	Constructability	**+**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**=**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 1,493,000	$ NA	$ NA
Alternative Concept	$ 1,358,000	$ NA	$ NA
Cost Difference	**$ -135,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: ES-41	Eliminate clerestory ridge at classroom wing and use pop-up dormers for ventilation louvers.
Function(s): Enclose Space	**Includes Idea(s)**:

Recommendation:

Consider accepting this alternative for improved durability, reduced maintenance, and a decrease in initial cost.

Alternative Concept

Advantages	Disadvantages
• Eliminates high clerestory windows that need to be cleaned and maintained	• Loses architectural modulation and interest at roof form
• Simplifies roof form which reduces potential locations at the base of the clerestory wall that could leak	•
• Decreases costs and eases maintenance of future repairs and re-roofing	•
• Removes glazing that may not bring in as much natural light as expected due to 22’ average height to clerestory window and narrow 10’ corridor width	•
• Simplifies roof diaphragm and load path to distribute lateral loads to shear walls	•
• Increases energy efficiency of building envelope	•

Analysis and Justification:

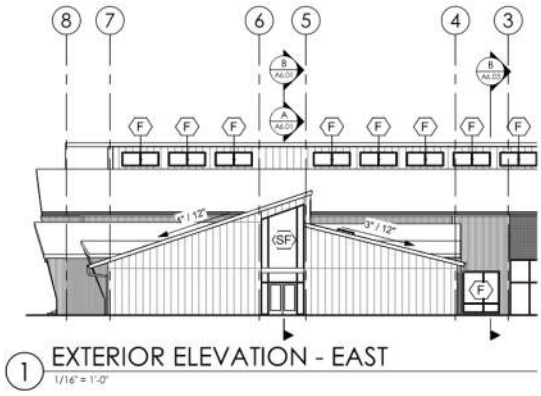
The largest advantage to this alternative is a reduction in maintenance over the life of the structure. By removing the clerestory windows and simplifying the roof form, there is a reduction in vertical surfaces and windows that need to be cleaned and maintained. Since the maintenance department has limited staff and resources this is beneficial because it reduces the amount of maintenance items that are out of easily accessible reach and replaces them with roofing surfaces that require less maintenance.

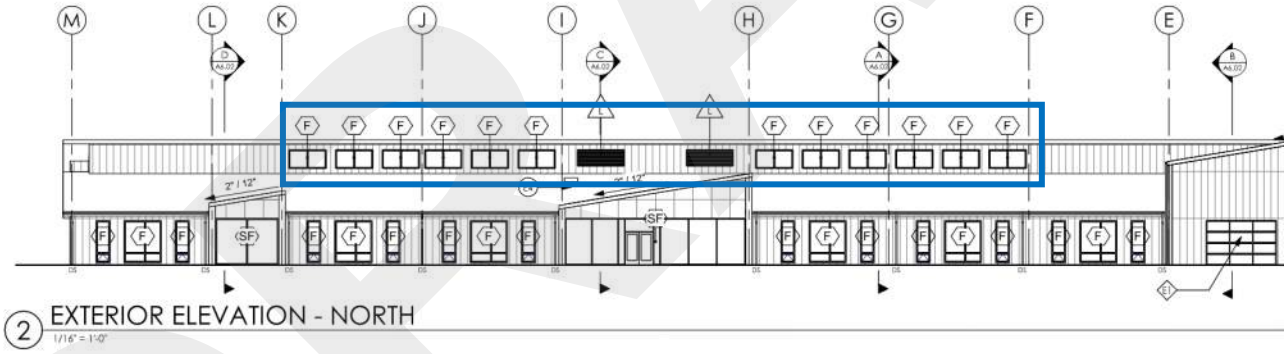
There is also a minor reduction in initial construction costs associated with this alternative and the lateral force resisting system for the roof diaphragm is simplified.

DRAFT

Workbook ID: ES-41	Eliminate clerestory ridge at classroom wing and use pop-up dormers for ventilation louvers.
Function(s): Enclose Space	**Includes Idea(s)**:

Baseline Concept Illustration





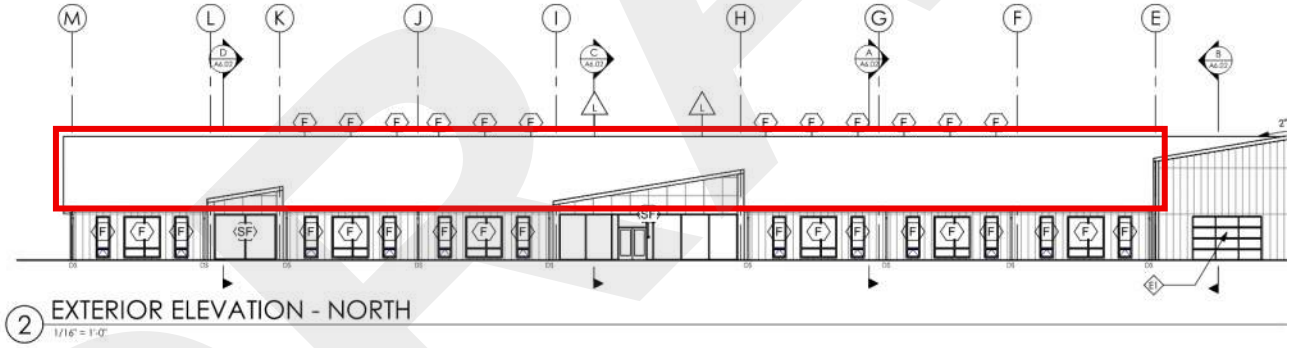
Baseline Clerestory Roof at Classroom Wing

DRAFT

Workbook ID: ES-41	Eliminate clerestory ridge at classroom wing and use pop-up dormers for ventilation louvers.
Function(s): Enclose Space	**Includes Idea(s)**:

Alternative Concept Illustration





Alternative Gable Roof at Classroom Wing

DRAFT

Workbook ID: ES-41	Eliminate clerestory ridge at classroom wing and use pop-up dormers for ventilation louvers.							
Function(s): Enclose Space						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Roofing on north side of roof	25.10%	SF	8,024	36.50	366,388	9,322	36.50	425,657
Roofing on south side of roof	25.10%	SF	10,974	36.50	501,089	9,322	36.50	425,657
1/2" plywood sheathing north side of roof	25.10%	SF	8,024	3.90	39,148	9,322	3.90	45,481
1/2" plywood sheathing on south side of roof	25.10%	SF	10,974	3.90	53,541	9,322	3.90	45,481
Roof framing on north side of roof	25.10%	SF	8,024	17.30	173,658	9,322	17.30	201,750
Roof framing on south side of roof	25.10%	SF	10,974	15.80	216,910	9,322	17.30	201,750
Clerestory walls	25.10%	SF	996	42.40	52,830			
Windows at clerestory	25.10%	SF	384	86.00	41,313			
Vents at clerestory	25.10%	SF	70	85.00	7,443			
Pop-Up Louvered Dormers for Ventilation	25.10%	EA				2	5,000.00	12,510
Exterior wall substrate	25.10%	SF	996	32.86	40,943			
TOTAL COSTS*					**1,493,000**			**1,358,000**
							TOTAL (PROPOSED less BASELINE)	**-135,000**
								SAVINGS

Note: Total Costs are rounded to nearest thousand dollars

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Workbook ID: ES-42	Reduce extent of masonry on exterior walls and increase use of metal panels.
Function(s): Enclose Space	**Includes Idea(s)**: 159

Baseline Concept:

In the baseline concept, brick veneer is used on multiple exterior walls.

Alternative Concept:

In the alternative concept, brick is removed at the northern end of the building, including the tall walls at the gymnasium and above the glazing at the cafeteria/commons. The brick is replaced with metal siding as noted on the attached sketches.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**=**	Environmental Sustainability	**=**
Aesthetics	**=**	Schedule	**+**
Durability & Reliability	**+**	Constructability	**+**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**=**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 226,000	$ NA	$ NA
Alternative Concept	$ 213,000	$ NA	$ NA
Cost Difference	**$ -13,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: ES-42	Reduce extent of masonry on exterior walls and increase use of metal panels.
Function(s): Enclose Space	**Includes Idea(s)**: 159

Recommendation:

Consider accepting this alternative if necessary for cost reduction.

Alternative Concept

Advantages	Disadvantages
• Uses lower cost materials	• Changes building aesthetics
• Reduces complexity of supporting brick above long expanses of glazing	•
• Simplifies and reduces framing due to reduced seismic and gravity loads on tall exterior walls	•
• Eases maintenance if proposed materials close to grade level are tagged with graffiti	•
• Simplifies and creates thinner foundations	•

Analysis and Justification:

This alternative concept reduces exterior cladding costs, reduces foundation and wall framing, and eliminates the need for headers supporting masonry above windows. A significant portion of the brick proposed to be reduced is inside the service yard where its aesthetic benefits are minimal.

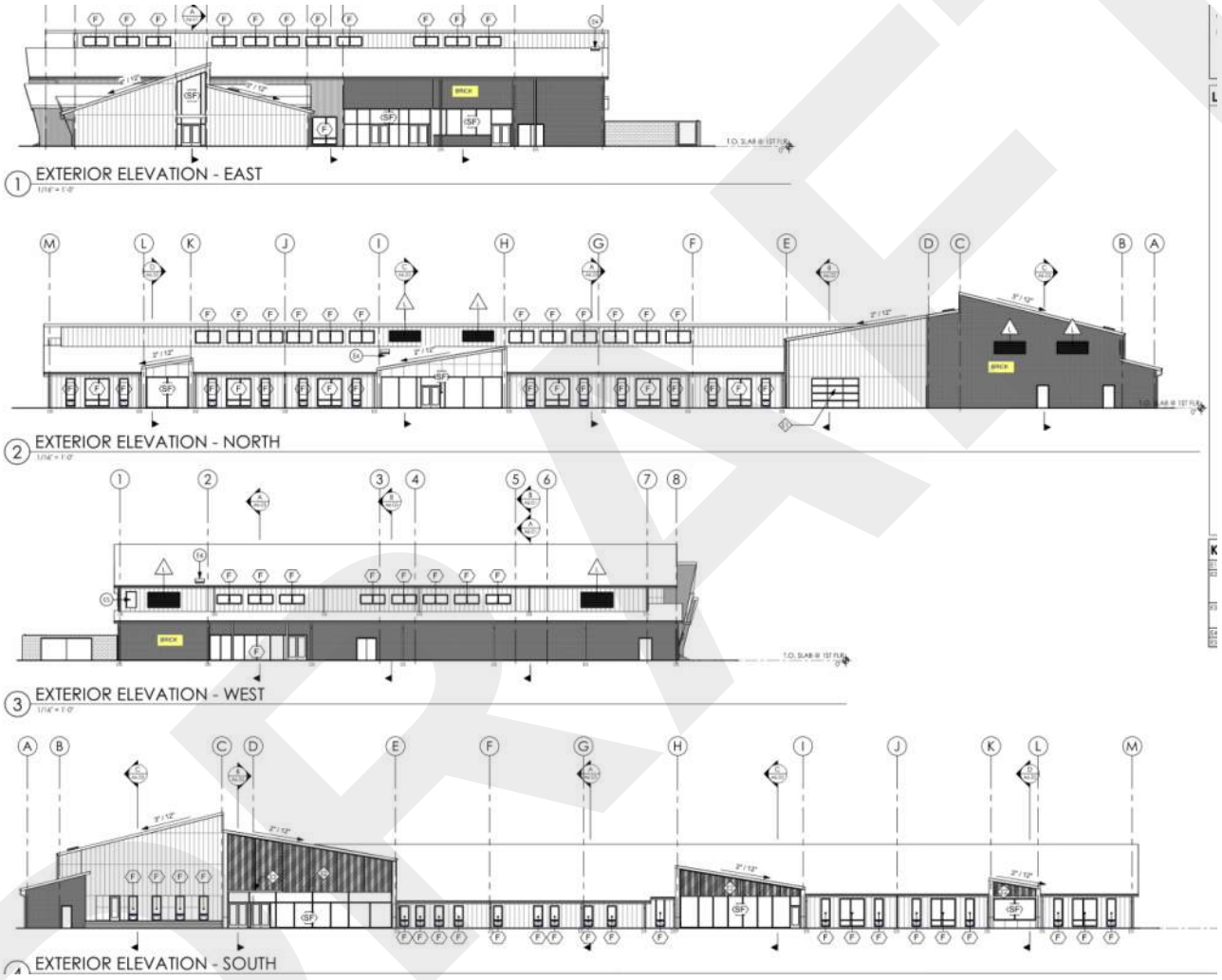
Replacing the brick with metal at ground level facilitates maintenance; graffiti is more easily repaired/painted over and metal siding does not require regular application of anti-graffiti coating needed to protect masonry. By incorporating the same cladding as used on adjacent surfaces, visually awkward and potentially technically challenging transitions at outside corners are avoided (e.g. NE corner at the clerestory). Reduction in transitions between material types can help reduce potential leak points for water intrusion, increasing building durability. However, metal paneling is more prone to impact damage.

This alternative recognizes an apparent desire to provide a material (brick) that might be more appealing to the community along the more prominent corner and street façade, and so does not propose removing it entirely. The desired aesthetic might also be addressed through creative use of different metal panel pattern and/or color. If additional budgetary savings are needed, replacing all of the brick would provide additional savings and potentially reduce construction complexity and time by removing one subcontractor entirely from the building envelope.

DRAFT

Workbook ID: ES-42	Reduce extent of masonry on exterior walls and increase use of metal panels.
Function(s): Enclose Space	**Includes Idea(s)**: 159

Baseline Concept Illustration

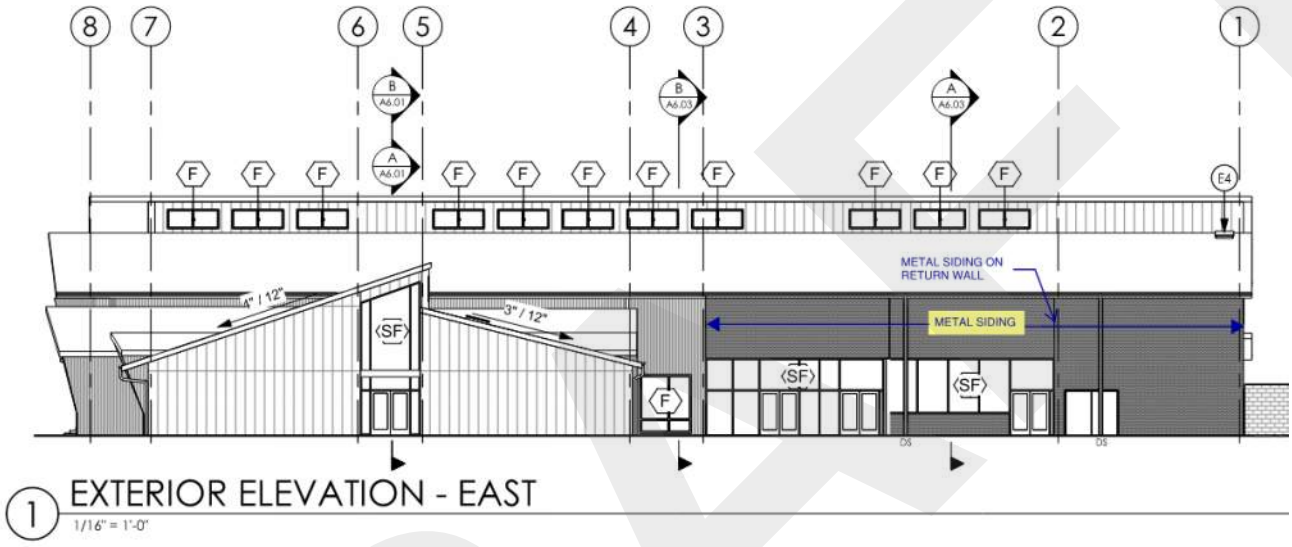


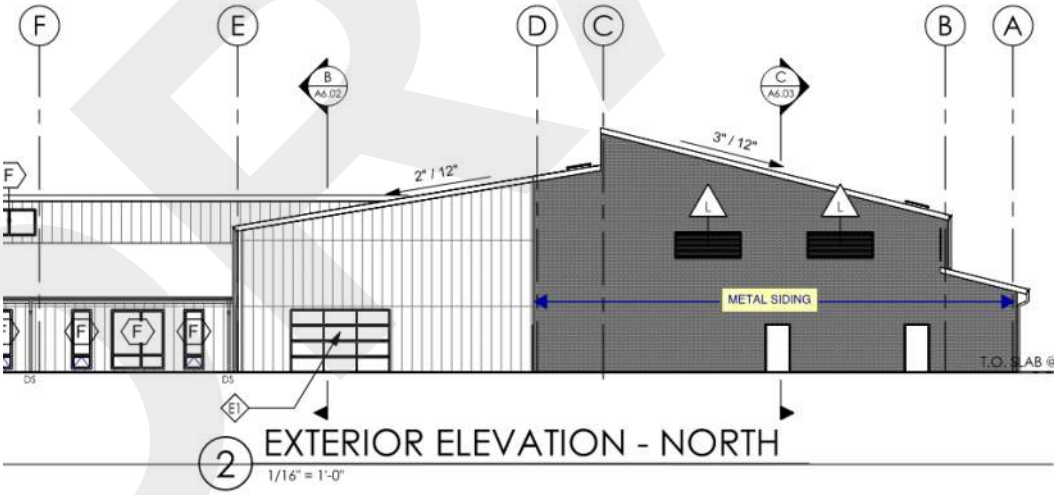
Exterior Elevations

DRAFT

Workbook ID: ES-42	Reduce extent of masonry on exterior walls and increase use of metal panels.
Function(s): Enclose Space	**Includes Idea(s)**: 159

Alternative Concept Illustration

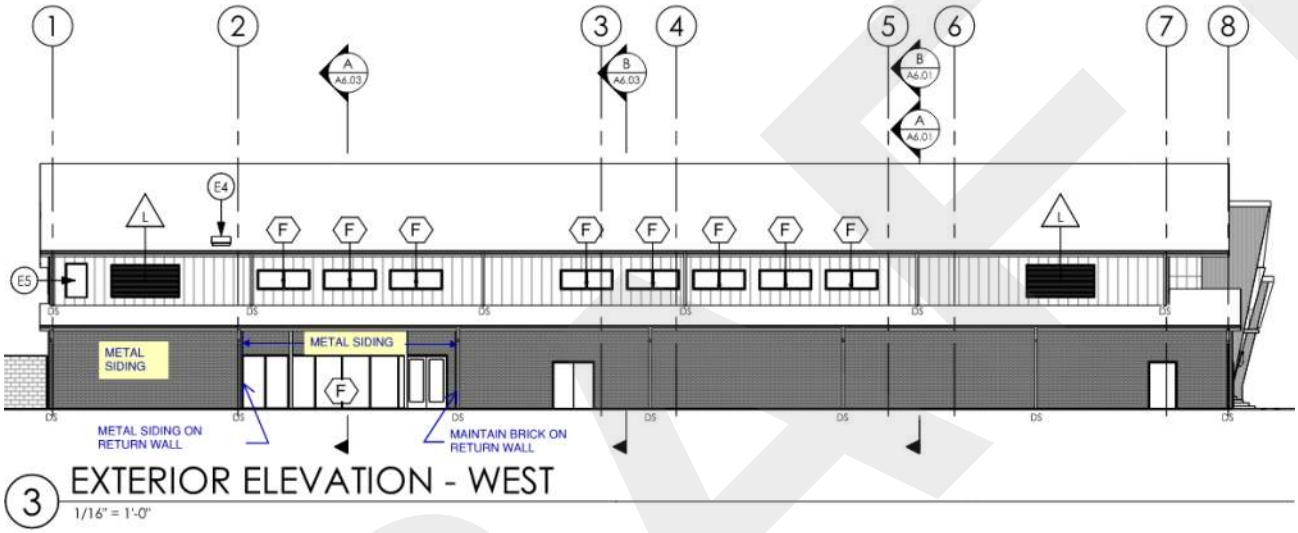




Exterior Elevations

DRAFT

Workbook ID: ES-42	Reduce extent of masonry on exterior walls and increase use of metal panels.
Function(s): Enclose Space	**Includes Idea(s)**: 159



Exterior Elevations

DRAFT

Workbook ID: ES-42	Reduce extent of masonry on exterior walls and increase use of metal panels.							
Function(s): Enclose Space						**Includes Idea(s):** 159		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Brick veneer	25.10%	SF	3,528	49.85	219,983			
Masonry sealing, graffiti coatings	25.10%	SF	1,190	4.00	5,955			
Metal panel	25.10%	SF				3,528	48.36	213,438
TOTAL COSTS*					**226,000**			**213,000**
							TOTAL (PROPOSED less BASELINE)	**-13,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: ES-43	Reduce size of covered play to 3,500 SF.							
Function(s): Enclose Space						**Includes Idea(s):** 51		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Glu-lam beams	25.10%	BM	8,250	10.10	104,240	7,013	10.10	88,604
T&G decking	25.10%	SF	4,058	26.90	136,559	3,500	26.90	117,782
Fire protection systems, dry sprinkler system	25.10%	LS	1	48,265.00	60,380			
Metal roofing system	25.10%	SF	4,058	36.50	185,294	3,500	36.50	159,815
Sheet metal flashings and trim at roof	25.10%	SF	4,058	3.50	17,768	3,500	3.50	15,325
TOTAL COSTS*					**504,000**			**382,000**
							TOTAL (PROPOSED less BASELINE)	**-122,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: ES-44	Use an asphalt shingle roof in lieu of standing seam metal roof.							
Function(s): Enclose Space						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Metal roofing system	25.10%	SF	39,107	36.50	1,785,684			
Asphalt shingle roof	25.10%	SF				39,107	24.00	1,174,149
TOTAL COSTS*					**1,786,000**			**1,174,000**
							TOTAL (PROPOSED less BASELINE)	**-612,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: ES-45	Reduce height of glazing on classroom wing to 7 ft and raise sill heights to a minimum of 15" AFF.							
Function(s): Enclose Space						**Includes Idea(s):** 50		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Fiberglass windows at classroom wing	25.10%	SF	900	86.00	96,827	756	86.00	81,335
Fiber reinforced cement panels	25.10%	SF				144	42.40	7,638
Exterior wall substrate	25.10%	SF				144	32.86	5,920
TOTAL COSTS*					**97,000**			**95,000**
							TOTAL (PROPOSED less BASELINE)	**-2,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: ES-46	Use a single ply membrane roof with applied standing ribs.							
Function(s): Enclose Space						**Includes Idea(s):** 108		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Metal roofing system	25.10%	SF	39,107	36.50	1,785,684			
Single ply membrane roof with applied standing ribs	25.10%	SF				39,107	32.00	1,565,531
TOTAL COSTS*					**1,786,000**			**1,566,000**
							TOTAL (PROPOSED less BASELINE)	**-220,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: ES-47	Reduce extent of glazing at the library and main entrance by 30%.							
Function(s): Enclose Space						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Aluminum storefront windows	25.10%	SF	1,955	90.00	220,113	1,369	90.00	154,079
Fiber reinforced cement panels	25.10%	SF				586	42.40	31,083
Exterior wall substrate	25.10%	SF				586	32.86	24,089
TOTAL COSTS*					**220,000**			**209,000**
							TOTAL (PROPOSED less BASELINE)	**-11,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: ES-48	Delete vestibule on east side of gym and cafeteria.							
Function(s): Enclose Space						**Includes Idea(s):** 67		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Aluminum storefront	25.10%	SF	442	90.00	49,724	327	90.00	36,849
Aluminum glazed door, double	25.10%	EA	2	12,480.00	31,225			
Brick masonry veneer including masonry anchors	25.10%	SF	89	49.85	5,576			
Exterior wall substrate	25.10%	SF	89	32.86	3,675	201	32.86	8,277
Metal ducts	25.10%	SF	267	15.31	5,114			
Diffusers, registers, and grilles	25.10%	SF	267	1.35	451			
Fire protection	25.10%	SF	267	6.37	2,128			
Conduit, wiring, feeders	25.10%	SF	267	18.00	6,012			
Interior lighting fixtures	25.10%	SF	267	13.00	4,342			
Lighting and receptacle controls	25.10%	SF	267	3.00	1,002			
Fire alarm	25.10%	SF	267	5.00	1,670			
Intercom and clock system	25.10%	SF	267	2.50	835			
Data	25.10%	SF	267	5.00	1,670			
DAS conduit system	25.10%	SF	267	1.50	501			
Fiber reinforced cement panel	25.10%	SF				201	42.40	10,680
Blocking and backing	25.10%	SF				201	2.45	616
TOTAL COSTS*					**114,000**			**56,000**
							TOTAL (PROPOSED less BASELINE)	**-58,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: FC-54	Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.
Function(s): Facilitate Community Use	**Includes Idea(s)**: 175

Baseline Concept:

In the baseline concept, the outdoor stage is limited in size and the grass area for audience seating and gathering is bisected by a sidewalk and the driveway exiting from the pick-up/drop-off area.

Alternative Concept:

In the alternative concept, the outdoor stage is enlarged, and the exit driveway is deleted, allowing the outdoor grass areas to be combined. Vehicle traffic to/from the pick-up/drop-off and parking is consolidated at the southern driveway.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**+**	Environmental Sustainability	**+**
Aesthetics	**+**	Schedule	**+**
Durability & Reliability	**=**	Constructability	**=**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**+**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 158,000	$ NA	$ NA
Alternative Concept	$ 67,000	$ NA	$ NA
Cost Difference	**$ -91,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: FC-54	Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.
Function(s): Facilitate Community Use	**Includes Idea(s)**: 175

Recommendation:

Recommend accepting this proposed alternative.

Alternative Concept

Advantages	Disadvantages
• Enlarges performance stage and audience gathering and seating area	• Potential for traffic congestion with reduced number of driveways
• Improves safety with grass gathering and seating areas consolidated and not bisected by a driveway	• Potential for reduction in safety by combining parent loop entry and exit at same driveway
• Improves safety at pickup/dropoff area by removing it from the exit driveway	•
• Increases gathering/waiting/arrival area in front of main entry	•
• Reduces impervious area/stormwater impacts	•

Analysis and Justification:

This alternative concept enhances the arrival sequence, provides space for school and community gathering on the school's most prominent corner, and enhances safety. The arrival/departure sequence for students is improved with a larger paved area in front of the main entry. Consolidation of the curbside paving and relocation of the landscaping away from the curb reduces damage to the landscaping and potential for students to traverse muddy ground as they enter the school.

Safety for vehicles turning from 1st Street is improved by removing one of the four driveways (the one nearest the bus drop-off). If this second driveway is deemed necessary, it is recommended it be located further south than its current location or if that is too close to the southern driveway (at right), it is recommended that the existing southern angled driveway (which serves the district office) be considered.

Safety for pedestrians using the western row of stalls (labelled Event and Accessible Parking on the alternative plan) is enhanced by providing direct sidewalk connection and eliminating a crosswalk. The accessible stalls are also located closer to the main entry.

The stage is expanded to the south (right) to provide a more usable stage area. Steps are extended to wrap around both sides, connecting to the main entry and bus entry pathways. This configuration supports student and community gathering and socialization on the south, west, and east-facing steps. Increased

DRAFT

Workbook ID: FC-54	Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.
Function(s): Facilitate Community Use	**Includes Idea(s)**: 175

transparency and/or access to interior music room/stage, such as with an overhead garage-type door, is recommended but not shown in this alternative.

Safety, access, and use of the outdoor seating and gathering areas are all enhanced by consolidating them into one uninterrupted space. Trees are indicated along the western edge to provide shelter from prevailing winds.

Costs and constructability are improved with less hard surface paving, and less paving will reduce stormwater provisions. Maintenance is improved by locating hard surface paving along all areas of heavy pedestrian use, at the curbs along the front of the school and in front of the stage, in lieu of landscaping, and moves the sidewalk to the base of the stairs at the stage to consolidate pedestrian traffic, facilitate year-round use, and lessen damage and maintenance at grassy areas.

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Workbook ID: FC-54	Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.
Function(s): Facilitate Community Use	**Includes Idea(s)**: 175

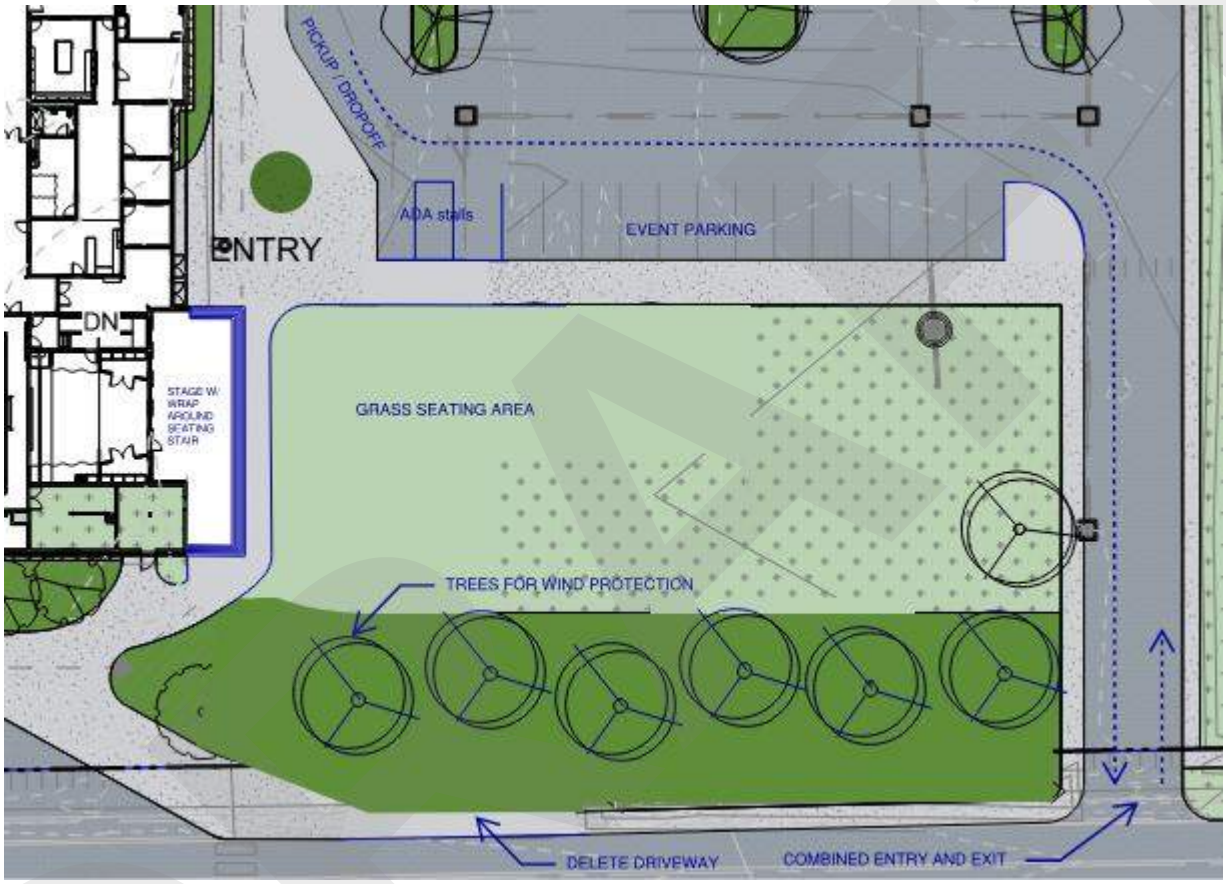
Baseline Concept Illustration



Baseline Plan Showing Current Driveway Interactions

Workbook ID: FC-54	Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.
Function(s): Facilitate Community Use	**Includes Idea(s)**: 175

Alternative Concept Illustration



Enlarged Outdoor Viewing and Gathering Area

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Workbook ID: FC-54	Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.							
Function(s): Facilitate Community Use						**Includes Idea(s):**		175
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Reduce paving at driveway (asphalt, sub-base, curbs, wheel stops, signage)	25.10%	SF	4,500	13.22	74,422			
Delete driveway cut and culvert at roadside ditch	25.10%	LF	60	170.76	12,817			
Reduce stormwater impacts - excavation, piping (assumes 10% reduction)	25.10%	LS	1	28,044.50	35,084			
Reduce concrete sidewalk	25.10%	SF	822	8.00	8,227			
Reduce concrete curb	25.10%	LF	294	75.00	27,585			
Increase planting area along streetfront	25.10%	SF				2,275	10.50	29,883
Increase lawn	25.10%	SF				2,550	2.50	7,975
Increase exterior stage	25.10%	SF				670	17.40	14,584
Increase steps at exterior stage	25.10%	LF				51	175.00	11,165
Add trees	25.10%	EA				5	550.00	3,440
TOTAL COSTS*					**158,000**			**67,000**
						TOTAL (PROPOSED less BASELINE)		**-91,000**

Note: Total Costs are rounded to nearest thousand dollars SAVINGS

DRAFT

Workbook ID: FI-69	Use resilient athletic flooring in lieu of wood athletic flooring at gym for reduced maintenance.							
Function(s): Finish Interior						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Maple athletic flooring	25.10%	SF	3,599	29.15	131,243			
Resilient athletic flooring	25.10%	SF				3,599	18.00	81,042
TOTAL COSTS*					**131,000**			**81,000**
							TOTAL (PROPOSED less BASELINE)	**-50,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: FI-70	Reduce quantity of linear wood ceilings by 20%.							
Function(s): Finish Interior						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Linear wood ceiling	25.10%	SF	2,422	45.00	136,346	1,938	45.00	109,077
Suspended ACT and grid, 2'-0" x 4'-0"	25.10%	SF				484	7.20	4,359
TOTAL COSTS*					**136,000**			**113,000**
							TOTAL (PROPOSED less BASELINE)	**-23,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: FI-71	Reduce quantity of casework and cabinetry in classrooms and staff areas by 20%.							
Function(s): Finish Interior						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Casework (items combined)	25.10%	LS	1	516,676.00	646,362	1	413,340.80	517,089
TOTAL COSTS*					**646,000**			**517,000**
							TOTAL (PROPOSED less BASELINE)	**-129,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: FI-72	Use high density composite wood wainscot in lieu of P-lam wainscot in corridors.

Function(s): Finish Interior						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
P-lam Wainscot, wall paneling	25.10%	SF	3,900	28.50	139,034			
High density composite wood wainscot	25.10%	SF				3,900	26.00	126,851
TOTAL COSTS*					**139,000**			**127,000**
							TOTAL (PROPOSED less BASELINE)	**-12,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: FI-73	Use high density composite wood wainscot in lieu of P-lam wainscot at gym and commons.							
Function(s): Finish Interior						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
P-lam Wainscot, wall paneling	25.10%	SF	1,524	28.50	54,351			
High density composite wood wainscot	25.10%	SF				1,524	26.00	49,570
TOTAL COSTS*					**54,000**			**50,000**
							TOTAL (PROPOSED less BASELINE)	**-4,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: FW-63	Enlarge intersection of main hallways between reception, gym, and classroom wing to create a hub, enhance wayfinding, and facilitate circulation.
Function(s): Facilitate Wayfinding	**Includes Idea(s)**: 129, 146

Baseline Concept:

In the baseline concept, the intersection of the main corridors adjacent to the main entry, gym, and commons is relatively narrow and has insufficient space for crowds or gathering.

Alternative Concept:

In the alternative concept, the intersection is widened and connected with adjacent spaces to create a true lobby that alleviates congestion, supports informal gathering, and creates a celebration of place at the main entry to the school and main areas within the school.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**+**	Environmental Sustainability	**=**
Aesthetics	**+**	Schedule	**=**
Durability & Reliability	**+**	Constructability	**=**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**+**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 17,000	$ NA	$ NA
Alternative Concept	$ 9,000	$ NA	$ NA
Cost Difference	**$ -8,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: FW-63	Enlarge intersection of main hallways between reception, gym, and classroom wing to create a hub, enhance wayfinding, and facilitate circulation.
Function(s): Facilitate Wayfinding	**Includes Idea(s)**: 129, 146

Recommendation:

Recommend accepting this proposed alternative to enhance the main arrival experience and reduce congestion.

Alternative Concept

Advantages	Disadvantages
• Alleviates congestion with wider intersection	• Reduces area in the reception area
• Creates a celebration of place at the main entry to the building and to main spaces within the school	• Reduces sink counter area at maker space
• Re-orients cross-corridor double doors to facilitate after-hours use of public spaces without opening the classroom wing	•
• Reconfigured restrooms provide additional space to the maker space room	•
• Relocates single occupant restroom out of northern vestibule into main lobby area	•
• Reduces circulation space within the reception area and vestibule, reducing building area	•

Analysis and Justification:

This alternative provides an enhanced entry, gathering, and wayfinding experience by creating a lobby.

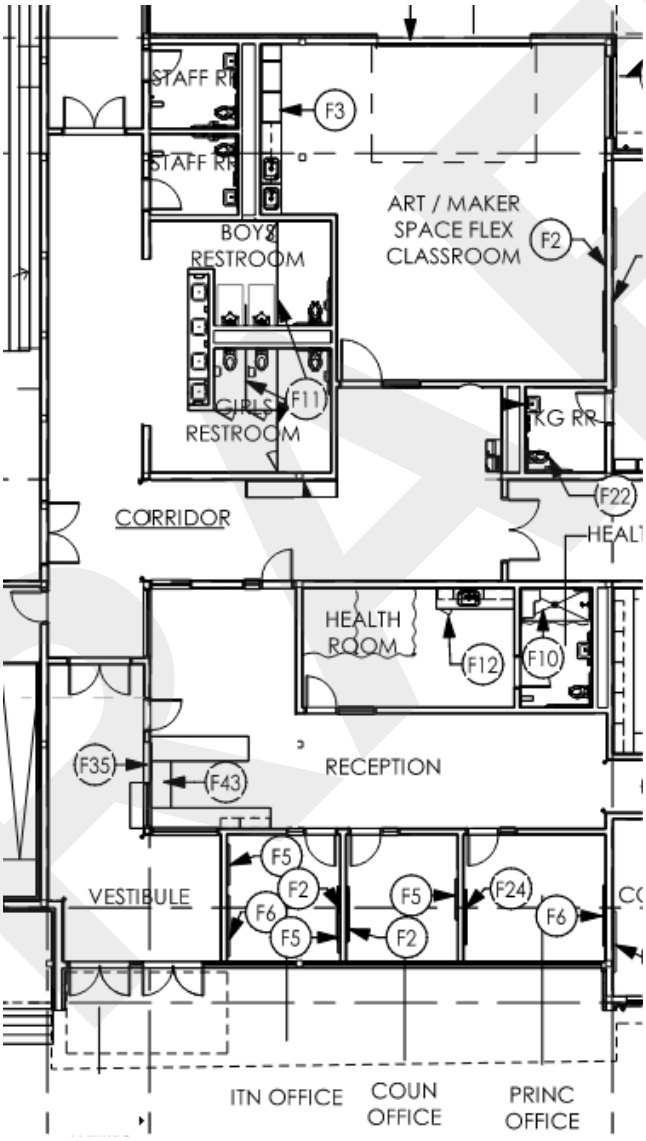
The main entry vestibule and reception area in the baseline concept appear to be excessively large. This alternative shifts that non-program space into the main corridor intersection between reception, the gym entry, and intersecting corridors to create a lobby space. The additional area in the lobby supports wayfinding, displays, gathering, socializing, and waiting, for both the school and for community events.

The high-volume space with clerestory windows is reduced to focus on the lobby area only, reducing costs, energy use, maintenance, and creating a focus on this space. While less than 800 SF, the space is sufficient to create a place that can serve as the heart of the school.

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Workbook ID: FW-63	Enlarge intersection of main hallways between reception, gym, and classroom wing to create a hub, enhance wayfinding, and facilitate circulation.
Function(s): Facilitate Wayfinding	**Includes Idea(s)**: 129, 146

Baseline Concept Illustration

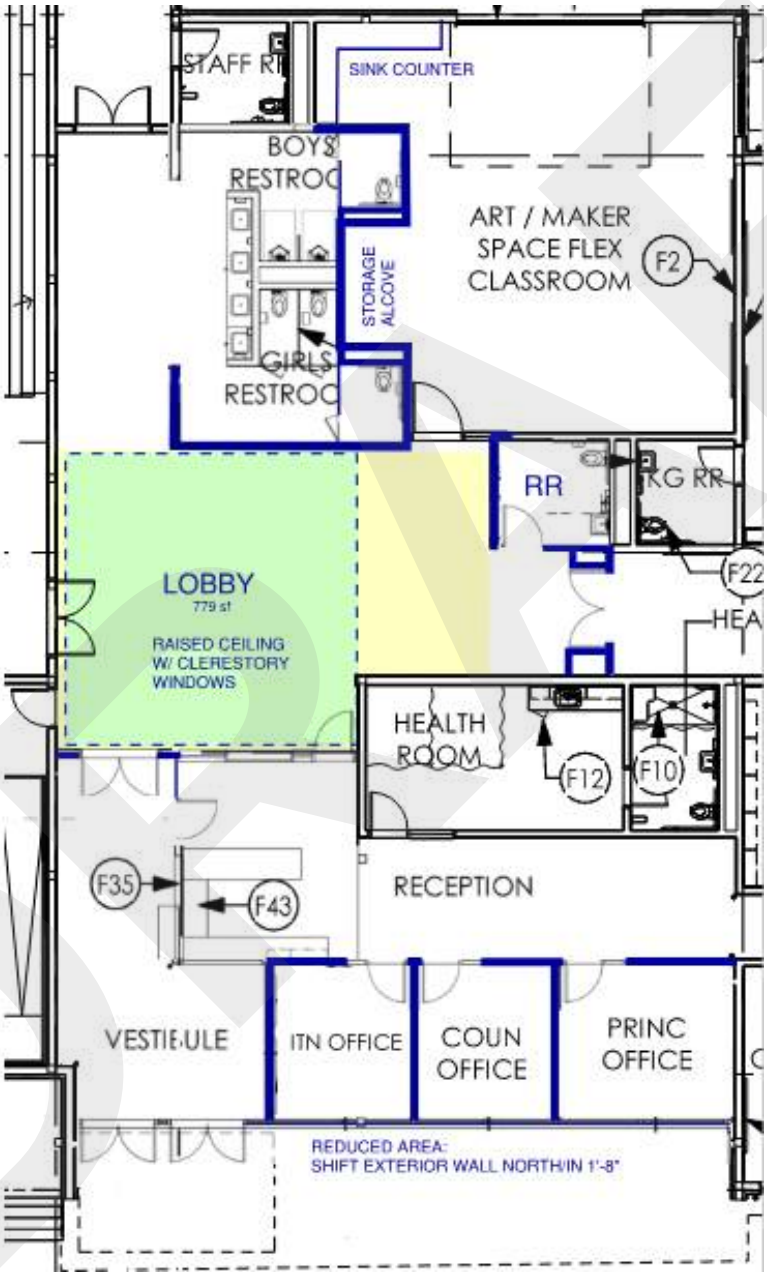


Baseline Floor Plan

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Workbook ID: FW-63	Enlarge intersection of main hallways between reception, gym, and classroom wing to create a hub, enhance wayfinding, and facilitate circulation.
Function(s): Facilitate Wayfinding	**Includes Idea(s)**: 129, 146

Alternative Concept Illustration



Enhanced Lobby Floor Plan

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Workbook ID: FW-63	Enlarge intersection of main hallways between reception, gym, and classroom wing to create a hub, enhance wayfinding, and facilitate circulation.							
Function(s): Facilitate Wayfinding						**Includes Idea(s):** 129, 146		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Increase interior wall length (GWB both sides of standard stud)	25.10%	SF				135.0	17.86	3,016
Increase interior chase wall (GWB one side of standard stud)	25.10%	SF				157.5	13.26	2,613
Reduce floor slab area	25.10%	SF	87	16.44	1,789			
Reduce roof area	25.10%	SF	87	82.55	8,984			
Revise interior partition wall to exterior wall at entry (increase)	25.10%	SF	32	17.86	704	32.0	82.71	3,311
Reduce floor finish at reception (carpet tile)	25.10%	SF	52	7.03	457			
Reduce floor finish at reception desk (resilient tile)	25.10%	SF	24	6.22	187			
Reduce floor finish at vestibule (WOM)	25.10%	SF	16	17.38	348			
Reduce ceiling area at reception, desk, and vestibule (Type 3, acoustical linear planks)	25.10%	SF	87	45.00	4,898			
TOTAL COSTS*					**17,000**			**9,000**
							TOTAL (PROPOSED less BASELINE)	**-8,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: GP-85	Reduce landscaping and irrigation budget by 25%.							
Function(s): Grow Plants						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Landscaping (all planting and irrigation items combined)	25.10%	LS	1	535,735.00	670,204	1	401,801.25	502,653
TOTAL COSTS*					**670,000**			**503,000**
							TOTAL (PROPOSED less BASELINE)	**-167,000**
Note: Total Costs are rounded to nearest thousand dollars								SAVINGS

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Workbook ID: II-94	Specify lighting controls with lighting level and color temperature adjustments to allow teacher control depending upon learning environment and time of day.
Function(s): Illuminate Interior	**Includes Idea(s)**: 97

Baseline Concept:

In the baseline concept, the proposed classroom lighting is comprised of eight recessed linear fixtures per classroom. The assumed controls approach for the classrooms are 0-10V fixtures with one photosensor and two vacancy sensors per classroom. It is also assumed for space control that there is one dimmer switch and that the proposed recessed linear fixture is either a selectable color temperature type or a fixed color temp fixture type, but not “tunable”.

Alternative Concept:

In the alternative concept, the proposed classroom lighting would be comprised of eight color “tunable” recessed linear fixtures per classroom. Controls would consist of 0-10V fixtures with one photosensor and two vacancy sensors per classroom. For space control, there would be one switch with preset levels for dimming and one switch for preset levels for color adjustment.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**+**	Environmental Sustainability	**=**
Aesthetics	**=**	Schedule	**=**
Durability & Reliability	**=**	Constructability	**=**
Total Cost of Ownership / Lifecycle Cost	**--**	Occupant Comfort, Safety, Performance	**+**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 217,000	$ NA	$ NA
Alternative Concept	$ 270,000	$ NA	$ NA
Cost Difference	**$ 53,000**	$ NA	$ NA
Cost Addition	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: II-94	Specify lighting controls with lighting level and color temperature adjustments to allow teacher control depending upon learning environment and time of day.
Function(s): Illuminate Interior	**Includes Idea(s)**: 97

Recommendation:

Recommend accepting the alternative to allow teachers to control dimming and color temperature in their classrooms. Although first costs are higher, the value returned from the positive impacts detailed below make it worth adoption as it will result in better educational outcomes for the students, teachers, and staff.

Alternative Concept

Advantages	Disadvantages
• Supports visual comfort when outdoor lighting conditions change rapidly	• First costs are approximately 30% higher on the "tunable" fixtures
• Improves classroom flexibility, comfort, and support for circadian rhythms	• Increases to two low voltage switches for each classroom instead of one
• Potentially beneficial for students with ADHD or autism spectrum disorders	•
• Compensates for the different sun exposures on opposite sides of school	•
• Allows teachers to adapt lighting to different activities throughout the day	•
•	•

Analysis and Justification:

Human centric lighting (HCL) is a lighting approach that adjusts color temperature and intensity to align with the human circadian rhythm, mimicking natural daylight patterns throughout the day. For elementary classrooms in particular, HCL supports student health, learning performance, and teacher well-being.

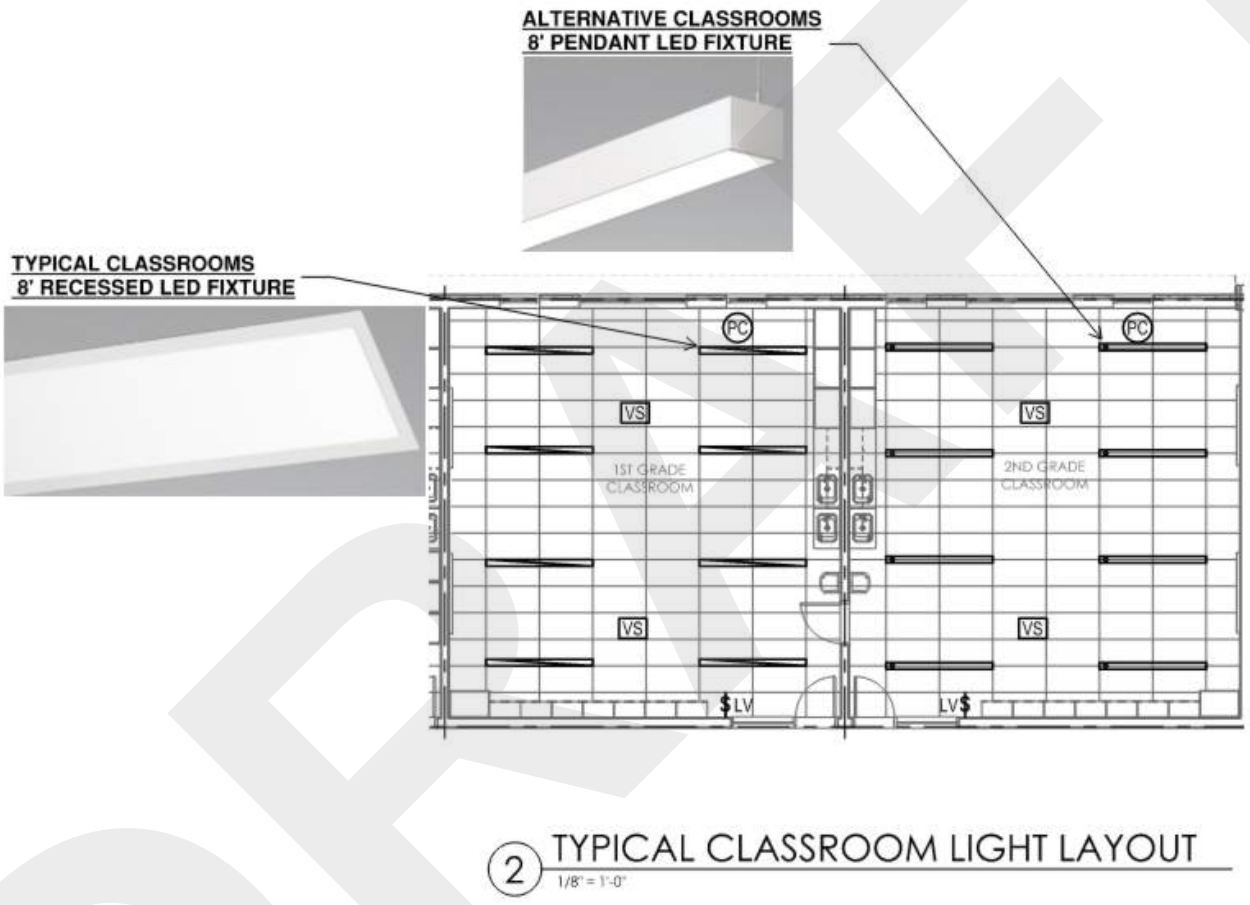
Elementary students spend over 1,100 hours per year in their classrooms. Lighting affects their performance, mood, alertness, and behavioral stability. Cooler, blue-enriched light in the morning boosts alertness and energy, while warmer light in the afternoon or during calm activities helps reduce fatigue and promote relaxation. The alignment with natural light patterns helps maintain healthy sleep cycles, which are critical for cognitive development.

Teachers will benefit from the flexibility to control their learning environment at different times of day and in varying daylight and seasonal conditions. The increased alertness and emotional stability of their students throughout each day will lead to better learning outcomes throughout the school year.

DRAFT

Workbook ID: II-94	Specify lighting controls with lighting level and color temperature adjustments to allow teacher control depending upon learning environment and time of day.
Function(s): Illuminate Interior	**Includes Idea(s)**: 97

Baseline Concept Illustration

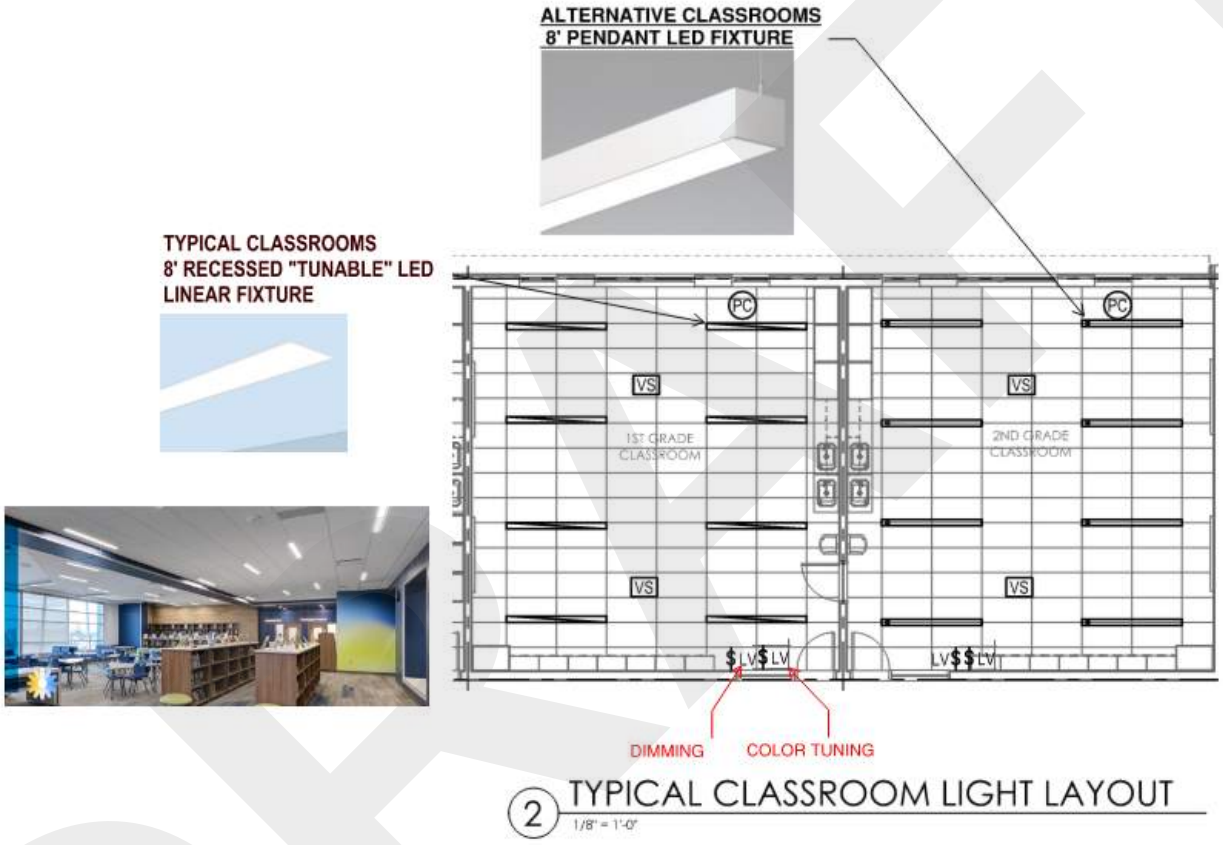


Baseline Light Layout for Classrooms

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Workbook ID: II-94	Specify lighting controls with lighting level and color temperature adjustments to allow teacher control depending upon learning environment and time of day.
Function(s): Illuminate Interior	**Includes Idea(s)**: 97

Alternative Concept Illustration



Alternative Light Suggestions for Classrooms

DRAFT

Workbook ID: II-94	Specify lighting controls with lighting level and color temperature adjustments to allow teacher control depending upon learning environment and time of day.							
Function(s): Illuminate Interior						**Includes Idea(s):** 97		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
8' recessed linear fixture	25.10%	EA	80	2,125.00	212,670	80	2,625.00	262,710
Low voltage switch	25.10%	EA	10	385.00	3,850	20	385.00	7,700
TOTAL COSTS*					**217,000**			**270,000**
							TOTAL (PROPOSED less BASELINE)	**53,000**

Note: Total Costs are rounded to nearest thousand dollars

COST

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Workbook ID: MF-103	Use fiberglass in lieu of aluminum storefront system for increased durability and reduced maintenance.							
Function(s): Maintain Facility						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Aluminum storefront	25.10%	SF	2,057	90.00	231,598			
Fiberglass windows	25.10%	SF				2,057	86.00	221,304
TOTAL COSTS*					**232,000**			**221,000**
							TOTAL (PROPOSED less BASELINE)	**-11,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: MH-110	Use sheet flow and swales for stormwater conveyance in lieu of catch basins and piping where feasible.
Function(s): Mitigate Hydromodification	**Includes Idea(s)**: 112, 113

Baseline Concept:

In the baseline concept, catch basins and pipes are the primary means of conveying water to a single mechanical treatment device and detention pond. All impervious areas are routed to treatment and detention.

Alternative Concept:

In the alternative concept, sheet flow dispersion is utilized along the entire east side while surface conveyance is used at the north and south sides. Non-pollution-generating surfaces are routed away from the treatment area, reducing the overall conveyance system significantly. If the north playground can be detained in a linear storage pond and the fire access road can be sheet flow dispersed, 1,000 LF of catch basins and pipes can be removed. Mechanical treatment will still serve the parking lot, which has the greatest need for treatment. The current detention facility will still receive roof water and parking lot runoff.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**=**	Environmental Sustainability	**+**
Aesthetics	**+**	Schedule	**+**
Durability & Reliability	**+**	Constructability	**+**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**+**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 154,000	$ NA	$ NA
Alternative Concept	$ 49,000	$ NA	$ NA
Cost Difference	**$ -105,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: MH-110	Use sheet flow and swales for stormwater conveyance in lieu of catch basins and piping where feasible.
Function(s): Mitigate Hydromodification	**Includes Idea(s)**: 112, 113

Recommendation:

Recommend considering the alternative idea and continuing to study the grading design to drain to surface conveyance facilities and assure minimum pipe slopes to the ditch. Consider adjusting soccer field location and size detention for playground to remove north to south routing; adjust outdoor education area.

Alternative Concept

Advantages	Disadvantages
• Eliminates 1000 LF of storm pipe, avoiding future TV line and specialty maintenance	• Creates a design challenge, may require additional fill to work
• Removes 10 catch basins	• Adds landscape maintenance
• Reduces mechanical treatment at design peak flow, reducing cartridge requirement	• Higher risk of backwater from the 1st St. N ditch if conveying to the north
• Reduces specialty maintenance requirements over the lifespan of system	• Sidewalk will need to be relocated to allow sheet flow dispersion on the east side of drive aisle
• Provides a teaching opportunity about stormwater and surface drainage	• Adds an additional crosswalk to access the district building
•	•

Analysis and Justification:

Per Volume I, I-3.4.6 MR6: Runoff Treatment, runoff from surfaces that are not pollution-generating do not need to be treated and may bypass the Runoff Treatment BMP(s), if it is not mingled with runoff from pollution-generating surfaces. Because of the low traffic load and high pedestrian activity in the playground, the VE Team believes this to be a non pollution-generating area and so the area would not need basic treatment. Sheet flow dispersion BMP T5.12 defines geometry to achieve sheet flow dispersion.

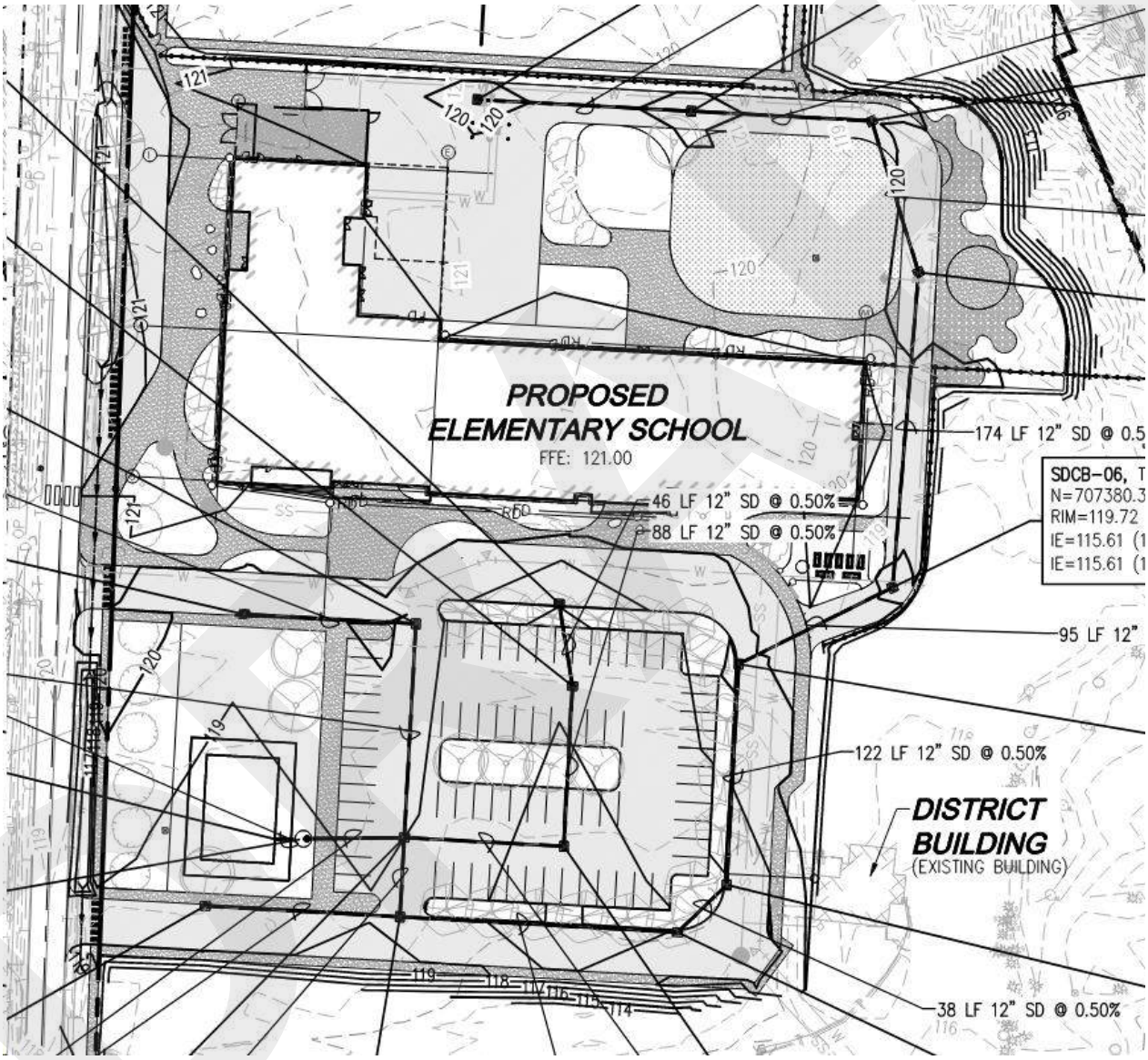
With surface conveyance, cover has less influence on the design. Although tying detention into the higher side of the roadway ditch introduces backwater risk, the reduced cover depth combined with a wider detention area, is expected to compensate. Further analysis is needed to confirm.

The sidewalk may require relocation to the west side of the drive aisle; however, the parking lot stalls and access aisles appear to be oversized and should accommodate this adjustment.

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Workbook ID: MH-110	Use sheet flow and swales for stormwater conveyance in lieu of catch basins and piping where feasible.
Function(s): Mitigate Hydromodification	**Includes Idea(s)**: 112, 113

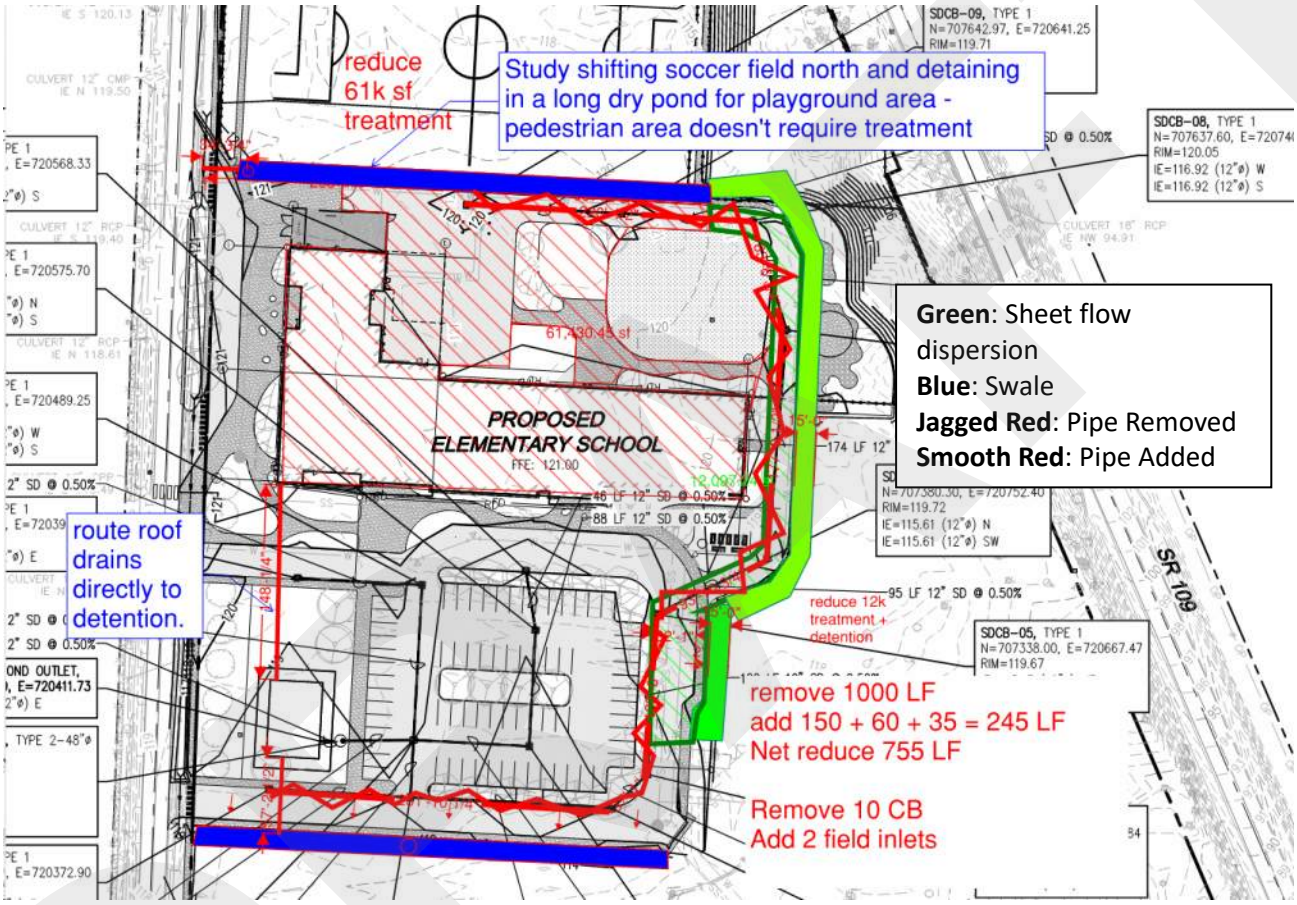
Baseline Concept Illustration



Baseline Building and Parking Layout

Workbook ID: MH-110	Use sheet flow and swales for stormwater conveyance in lieu of catch basins and piping where feasible.
Function(s): Mitigate Hydromodification	**Includes Idea(s)**: 112, 113

Alternative Concept Illustration



Surface Conveyance and Sheet Flow Dispersion Opportunities

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Workbook ID: MH-110	Use sheet flow and swales for stormwater conveyance in lieu of catch basins and piping where feasible.							
Function(s): Mitigate Hydromodification						**Includes Idea(s):**		112, 113
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Storm pipe including trenching	25.10%	LF	1,000	85.00	106,335	245	85.00	26,052
Catch basin	25.10%	EA	10	3,850.00	48,164			
Type 2 CB or manhole outlet structure	25.10%	EA				1	4,500.00	5,630
Type 1 Field inlet	25.10%	EA				1	1,600.00	2,002
Grassed swale	25.10%	LF				350	10.00	4,379
Detention swale (width per analysis)	25.10%	LF				350	10.00	4,379
Riprap outlet (or other tie-in to First St Ditch/culvert)	25.10%	EA				1	500.00	626
Stainless steel orifice plate	25.10%	EA				1	2,000.00	2,502
Overflow weir/grate overflow	25.10%	EA				1	3,000.00	3,753
TOTAL COSTS*					**154,000**			**49,000**
							TOTAL (PROPOSED less BASELINE)	**-105,000**

Note: Total Costs are rounded to nearest thousand dollars SAVINGS

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Workbook ID: OL-117	Shift divider wall between gym and commons to increase flexibility in use of gym/commons for lunches, gym programming, and community events.
Function(s): Organize Layout	**Includes Idea(s)**: 67, 68

Baseline Concept:

In the baseline concept, the gym is sized to accommodate a full-court basketball court and the adjoining commons/cafeteria is sized to accommodate half of the students; a side-folding divider wall separates the two spaces, allowing them to be combined for community events.

Alternative Concept:

In the alternative concept, the divider wall is shifted north to provide two roughly equal sizes for the gym and commons/cafeteria, with the main basketball court and bleachers centered in this combined space. With the divider wall closed, the revised gym can accommodate a standard PE class and the commons/ cafeteria can accommodate all students in a single lunch setting. To accommodate the dual use, the flooring in both spaces is revised to athletic resilient flooring on standard slab on grade.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**+**	Environmental Sustainability	**=**
Aesthetics	**+**	Schedule	**=**
Durability & Reliability	**=**	Constructability	**=**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**+**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 278,000	$ NA	$ NA
Alternative Concept	$ 94,000	$ NA	$ NA
Cost Difference	**$ -184,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: OL-117	Shift divider wall between gym and commons to increase flexibility in use of gym/commons for lunches, gym programming, and community events.
Function(s): Organize Layout	**Includes Idea(s)**: 67, 68

Recommendation:

Recommend accepting this proposed alternative.

Alternative Concept

Advantages	Disadvantages
• Improves community use of cafeteria/commons while maintaining simultaneous use of gym for PE classes	• Requires a change in flooring to accommodate the combined use as cafeteria and gym
• Provides a full elementary school-sized basketball court	•
• Increases bleacher seating capacity for community and athletic events	•
• Increases size of community gathering space	•
• Supports all students in one lunch seating	•
• Simplifies structure by locating the folding divider wall on the main structural grid	•

Analysis and Justification:

This alternative concept improves program functionality of large athletic events, lunchtime capacity, and community use. It also reduces building area and costs.

The shifting of the main basketball court allows for a full-sized elementary school court and more bleachers for athletic and community events. Relocating the folding divider wall increases the size of the cafeteria to a size that can accommodate the anticipated 221 students in a single lunchtime seating, providing an option for reduced staffing and class scheduling complications.

The reduced size of the gym with the divider wall closed would still support the four side wall practice backstops and cross-court game lines in a room sufficient to support a standard PE class of up to 30 students. This size and overall configuration has been successfully implemented at other elementary schools in Washington state. Layout for the full court improves safety with deeper end zones at either end of the basketball court which also provides additional space for scoring tables and player seating at deeper end zones and along the side (if bleachers are lengthened).

The reconfiguration depicts a reduced vestibule or exit passageway from the gym. It does not appear that

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Workbook ID: OL-117	Shift divider wall between gym and commons to increase flexibility in use of gym/commons for lunches, gym programming, and community events.
Function(s): Organize Layout	**Includes Idea(s)**: 67, 68

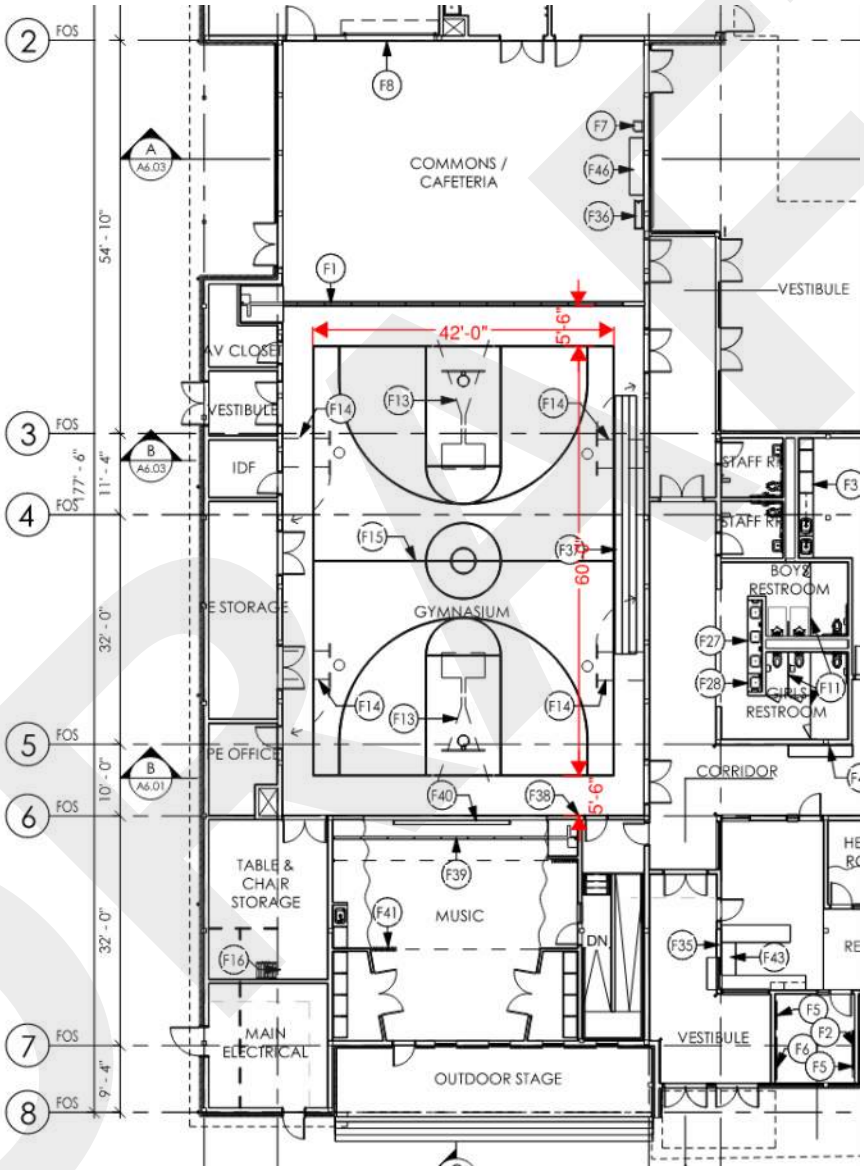
this would be used as a main entry to the building. Doors are reduced to single width. Building area is reduced through reduction in north/south width of the east vestibule to accommodate added bleachers along length of the basketball court and reduce non-program/non-essential circulation area. The reduction in area of the east vestibule more than offsets the area increase to add a west entry vestibule serving students using the buses. This west entry to the commons will likely be considered a main entry and require a vestibule to meet the Washington State Energy Code (WSEC) requirements for a main entry.

This alternative would require a single flooring type with game striping throughout; this would likely require resilient sheet flooring designed for athletic uses. It is assumed that wood is not acceptable for a cafeteria space.

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Workbook ID: OL-117	Shift divider wall between gym and commons to increase flexibility in use of gym/commons for lunches, gym programming, and community events.
Function(s): Organize Layout	**Includes Idea(s)**: 67, 68

Baseline Concept Illustration

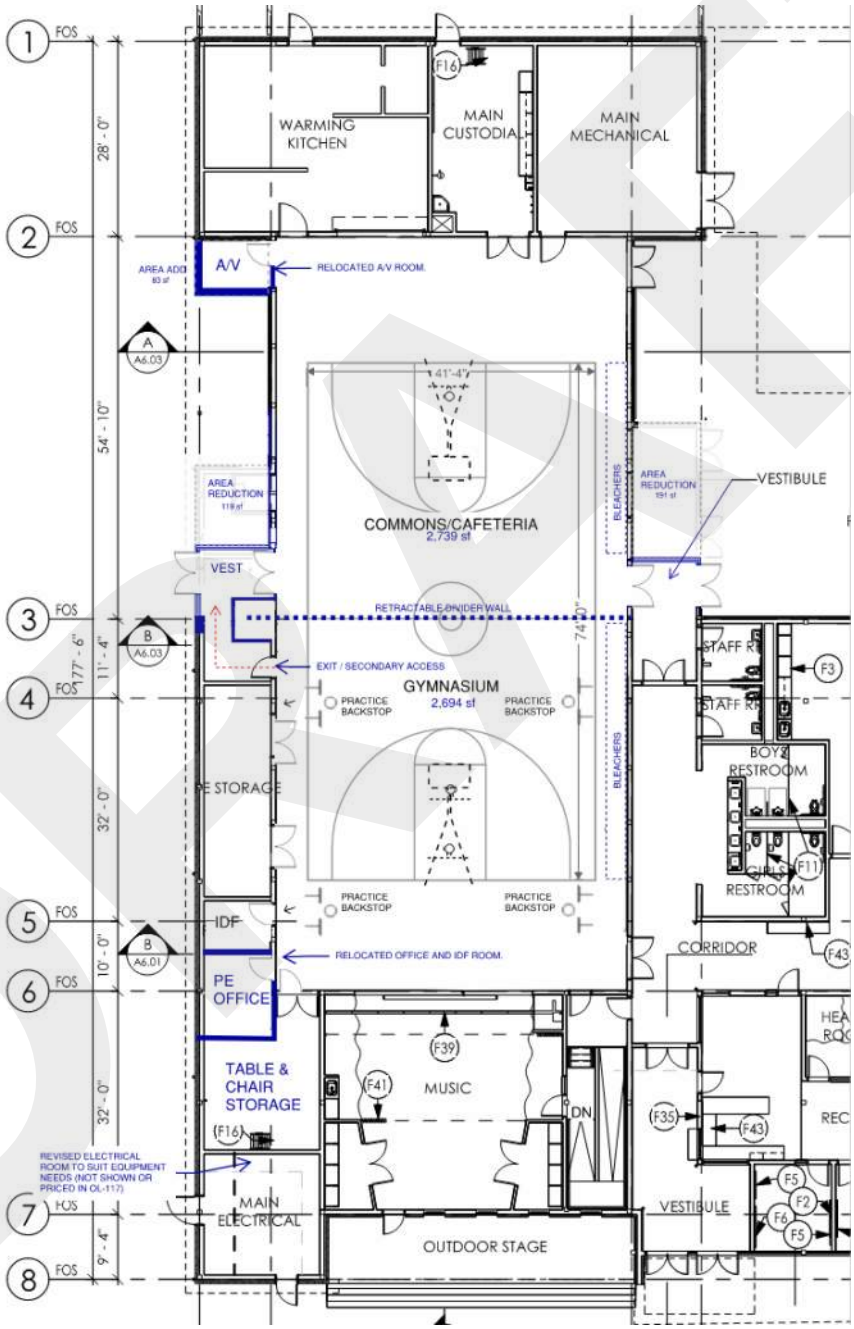


Floor Plan

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Workbook ID: OL-117	Shift divider wall between gym and commons to increase flexibility in use of gym/commons for lunches, gym programming, and community events.
Function(s): Organize Layout	**Includes Idea(s)**: 67, 68

Alternative Concept Illustration



Floor Plan

Workbook ID: OL-117	Shift divider wall between gym and commons to increase flexibility in use of gym/commons for lunches, gym programming, and community events.							
Function(s): Organize Layout						**Includes Idea(s):** 67, 68		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Revise Gym flooring from wood with recessed slab and vented based to athletic sheet flooring on standard slab with standard base *(see also FI-69)*	25.10%	SF	3,578	29.15	130,478	3,578	18.00	80,569
Reduce east vestibule slab (replace w/ asphalt)	25.10%	SF	168	16.44	3,455	168	8.31	1,746
Reduce east vestibule ceiling finish (GWB)	25.10%	SF	168	10.50	2,207			
Reduce east vestibule interior glazing	25.10%	SF	163	95.00	19,372			
Reduce east vestibule lighting	25.10%	SF	168	34.00	7,146			
Reduce wall type 8W/BV1 at east vestibule	25.10%	SF	352	82.71	36,422			
Revise west vestibule doors from double to single	25.10%	EA	1	12,480.00	15,612	1	6,977.00	8,728
Delete two pair double doors at east vestibule	25.10%	EA	2	12,480.00	31,225			
Reduce west vestibule slab (replace w/ exterior concrete sidewalk)	25.10%	EA	119	16.44	2,447	195	3.70	903
Increase slab for relocated AV Room (reduce exterior concrete sidewalk)	25.10%	SF		16.44		83	16.44	1,707
Reduce west vestibule interior glazing	25.10%	SF	88	95.00	10,458			
Reduce interior partition walls at west vestibule	25.10%	SF	285	26.60	9,484			
Reduce wall type 8W/BV1 at west vestibule	25.10%	SF	98	82.71	10,140			
TOTAL COSTS*					**278,000**			**94,000**
							TOTAL (PROPOSED less BASELINE)	**-184,000**

Note: Total Costs are rounded to nearest thousand dollars SAVINGS

DRAFT

Workbook ID: OL-118	Optimize size of classrooms for number of students at approximately 850 SF each.
Function(s): Organize Layout	**Includes Idea(s)**: 127, 130

Baseline Concept:

In the baseline concept, classrooms are approximately 890 SF.

Alternative Concept:

In the alternative concept, the non-Kindergarten classroom widths are reduced to provide 850 SF in each room, including corresponding adjustments to the corridor and office area for a reduction in gross building area of 622 SF.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	--	Environmental Sustainability	+
Aesthetics	=	Schedule	=
Durability & Reliability	=	Constructability	=
Total Cost of Ownership / Lifecycle Cost	+	Occupant Comfort, Safety, Performance	=

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 319,000	$ NA	$ NA
Alternative Concept	$ 0	$ NA	$ NA
Cost Difference	**$ -319,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: OL-118	Optimize size of classrooms for number of students at approximately 850 SF each.
Function(s): Organize Layout	**Includes Idea(s)**: 127, 130

Recommendation:

Recommend accepting this proposed alternative.

Alternative Concept

Advantages	Disadvantages
• Reduces building area and corridor length	• Reduces classroom size
• Provides equity with many other new schools with similar number of students per classroom	• Revised restroom configuration makes handwash sinks more integrated into the corridor, which may be less desirable
• Decreases construction costs if area reductions are implemented	• Support and administration spaces between Grids E and H will be reduced in width
• Increases daylight penetration from relative increase in ratio of window-room area	
•	

Analysis and Justification:

This alternative provides reduced area of 1st-6th Grade and SPED classrooms to a more standard 850 SF. Given both the current enrollment and projected future enrollment, this would be well within the norm for new schools.

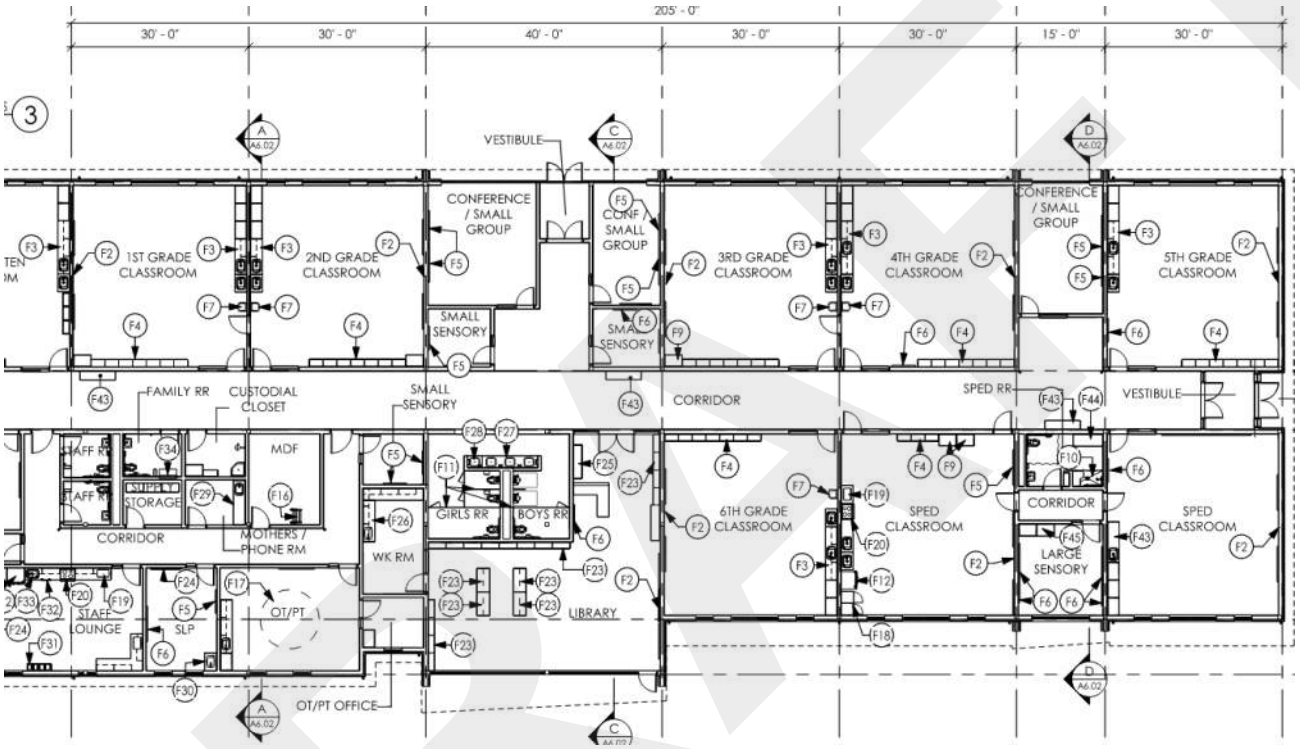
The reduced area is achieved through reduction in classroom width from 30’-0” to 28’-4” (all to centerline of walls). No reduction in window area is proposed. Additional reductions include length of the adjacent main corridor and reduced areas of the building, exterior walls, and roof. The overall length of the classroom wing is reduced from 205’-0” to 196’-8”. The net width of the office area is reduced approximately 3’-4” distributed across the outer rooms and internal corridor. Another possibility would be to reduce the classroom sizes and repurpose the space for other programs, instructional uses or support spaces although this idea is not captured in the cost analysis or this workbook.

The increase in the wall-floor area ratio improves capital costs and energy efficiency. It is not anticipated that the revised room proportions will have a negative impact on occupants and may not be perceived as being deeper than wide. Several support and administration spaces south of the corridor between grids E and H will need to be reduced in width. If this reduction in area cannot be accommodated, the south wall may need to be moved out/south.

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Workbook ID: OL-118	Optimize size of classrooms for number of students at approximately 850 SF each.
Function(s): Organize Layout	**Includes Idea(s)**: 127, 130

Baseline Concept Illustration

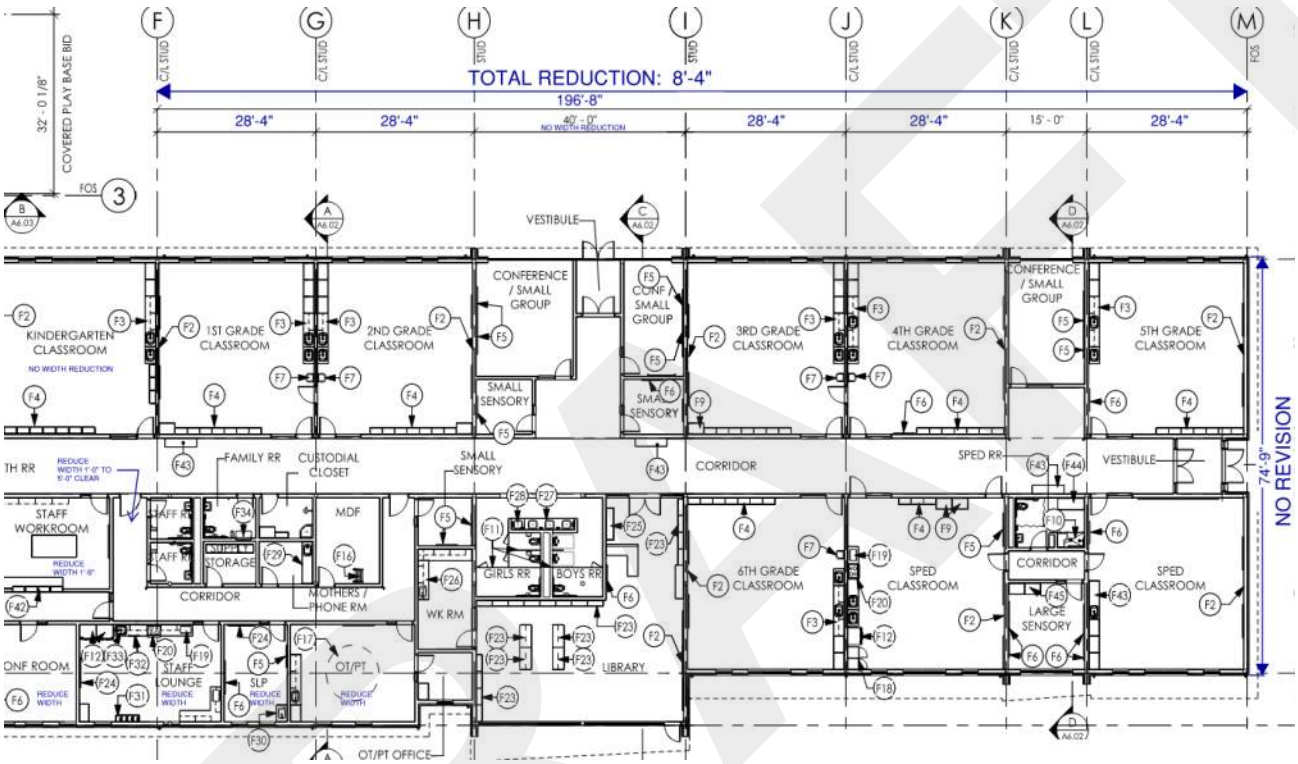


Classroom Wing Floor Plan

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Workbook ID: OL-118	Optimize size of classrooms for number of students at approximately 850 SF each.
Function(s): Organize Layout	**Includes Idea(s)**: 127, 130

Alternative Concept Illustration



(CLASSROOMS ARE DRAWN TO SHOW REDUCTIONS IN WIDTH)

Reduced Width Floor Plan

DRAFT

Workbook ID: OL-118	Optimize size of classrooms for number of students at approximately 850 SF each.							
Function(s): Organize Layout						**Includes Idea(s):**	127,130	
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Building cost/SF reduction at 75% value/SF	25.10%	SF	622	410.48	319,400			
TOTAL COSTS*					**319,000**			
							TOTAL (PROPOSED less BASELINE)	**-319,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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Workbook ID: OL-119	Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.
Function(s): Organize Layout	**Includes Idea(s)**: 128, 131

Baseline Concept:

In the baseline concept, the main corridor is approximately 240 feet long, 10 feet wide, and up to 24 feet high. The walls are mostly straight with no modulation between the two intersections.

Alternative Concept:

In the alternative concept, the corridor walls are modulated by recessing the classroom doors into an entry alcove and the main intersection at the library and restrooms is widened. The taller volumes with clerestory windows are reduced to highlight only the intersections.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**+**	Environmental Sustainability	**=**
Aesthetics	**+**	Schedule	**=**
Durability & Reliability	**=**	Constructability	**=**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**+**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 125,000	$ NA	$ NA
Alternative Concept	$ 53,000	$ NA	$ NA
Cost Difference	**$ -72,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: OL-119	Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.
Function(s): Organize Layout	**Includes Idea(s)**: 128, 131

Recommendation:

Recommend accepting this proposed alternative.

Alternative Concept

Advantages	Disadvantages
• Provides a visual break with the entry alcoves from the long and largely unbroken corridor	• Revises restroom configuration makes handwash sinks and grooming area more integrated into the corridor
• Widens intersections and classroom entries to create a sense of place, provide transition zones, and reduces congestion	•
• Reduces costs and maintenance due to a reduction in height of tall ceilings	•
• Enhances safety with outward swinging entry doors	•

Analysis and Justification:

With the baseline design classroom wing main corridor being approximately 240 feet long, 10 feet wide, and up to 24 feet high at the clerestories, the alternative provides a space with a vertical and horizontal scale more suited to young students. It enhances wayfinding, safety, socialization and learning, while reducing capital and energy costs. The modulation of the walls and ceilings will help reduce scale and potentially reduce anxiety amongst young students. The entry alcoves allow the classroom doors to swing outwards, a more standard configuration. There are no anticipated net impacts to structural foundations, load bearing walls, or shear walls.

The alcoves enhance wayfinding while providing the opportunity for personalization of each classroom entry. This could be color or graphic differentiation, classroom-scale displays focusing on teacher messages, educational information and inspiration, and student work. They also provide opportunities for small break-out activities for individuals or pairs of students to work outside of the classroom while remaining in direct line of sight with the teacher. The modification slightly reduces classroom area with little to no impact to usable area.

The library is shifted into the building along with the reconfigured restrooms which move closer to the corridor. The north wall is shifted outward the same amount to maintain program area. The reconfigured restroom block captures residual circulation space for use by the library. The alternative illustration shows this space as a storage room, but it could be used as general area in the library or as a restroom to facilitate after-hours use of the library without accessing the remaining interior of the school.

DRAFT

Workbook ID: OL-119	Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.
Function(s): Organize Layout	**Includes Idea(s)**: 128, 131

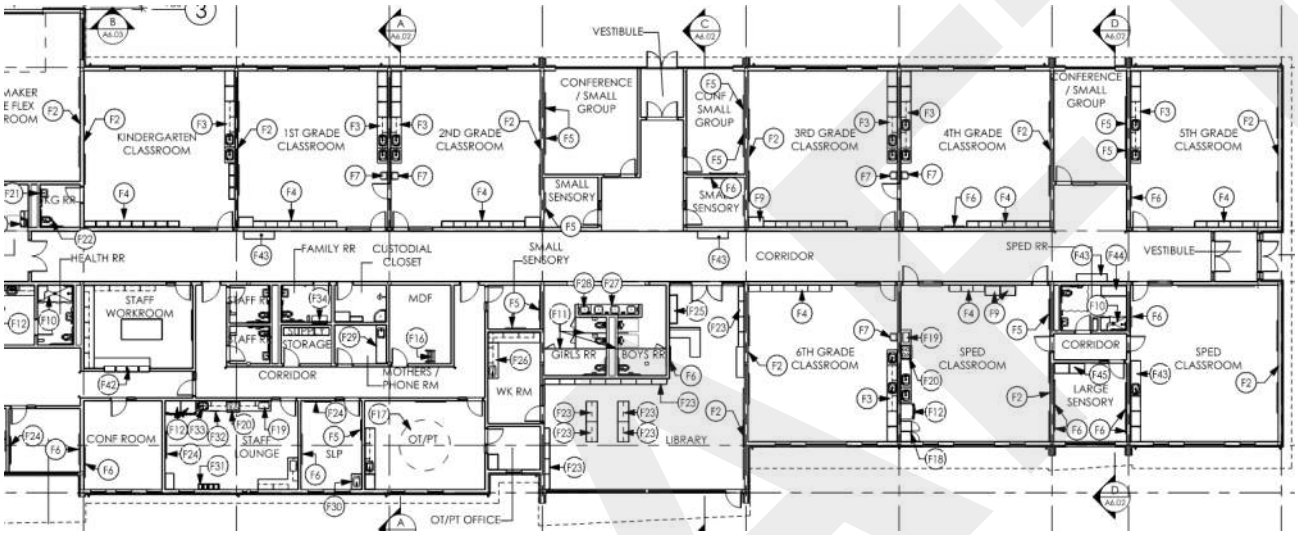
Safety and security are enhanced in three ways. The cross corridor accessing the playground to the north is relocated to be directly opposite the library, allowing easier supervision by staff. Additionally, shifting the restrooms closer to the corridor reduces concealed spaces and enhances visibility of the sink areas. Finally, recessed classroom doors provide a larger area in each classroom that is concealed from view through the door sidelight, without the use of lockdown blinds.

Costs are reduced due to the significant reduction in the number of tall ceiling volumes, the reduction in clerestory windows, and the addition of more standard lighting that is at a more accessible standard height. Maintenance is enhanced with more accessible ceilings, lights, and fewer areas needing ladder access. Energy costs are reduced through less interior volume and fewer clerestory windows.

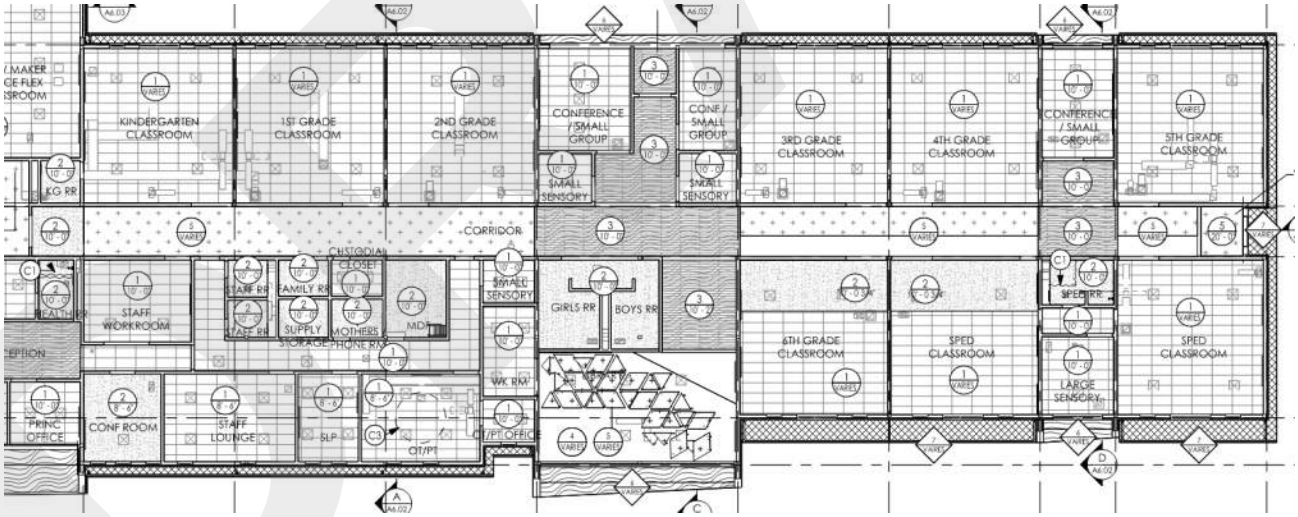
DRAFT

Workbook ID: OL-119	Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.
Function(s): Organize Layout	**Includes Idea(s)**: 128, 131

Baseline Concept Illustration



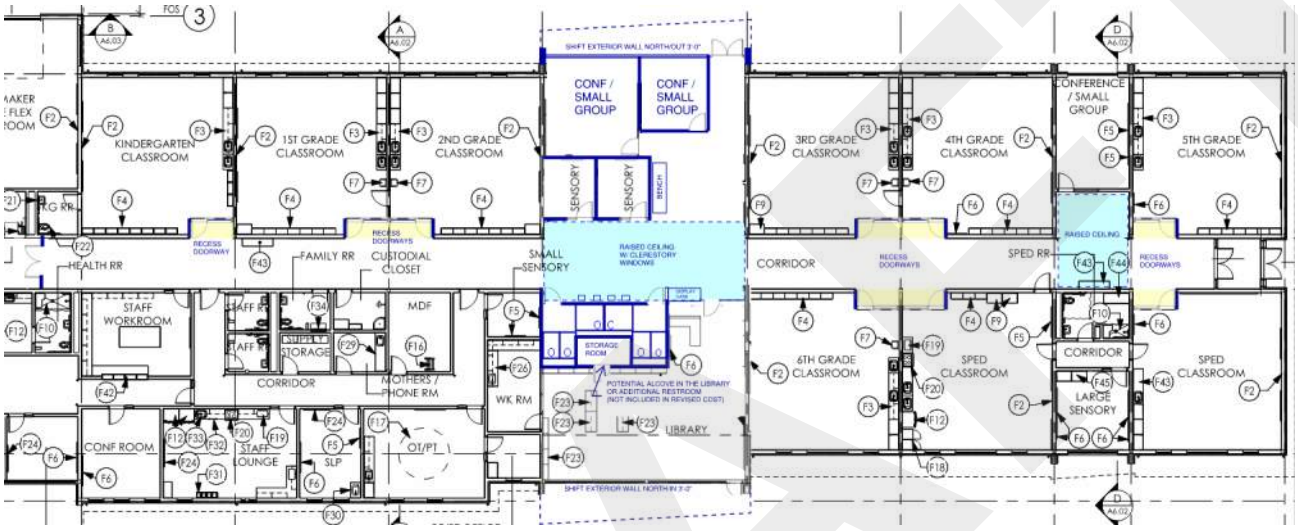
Floor Plan



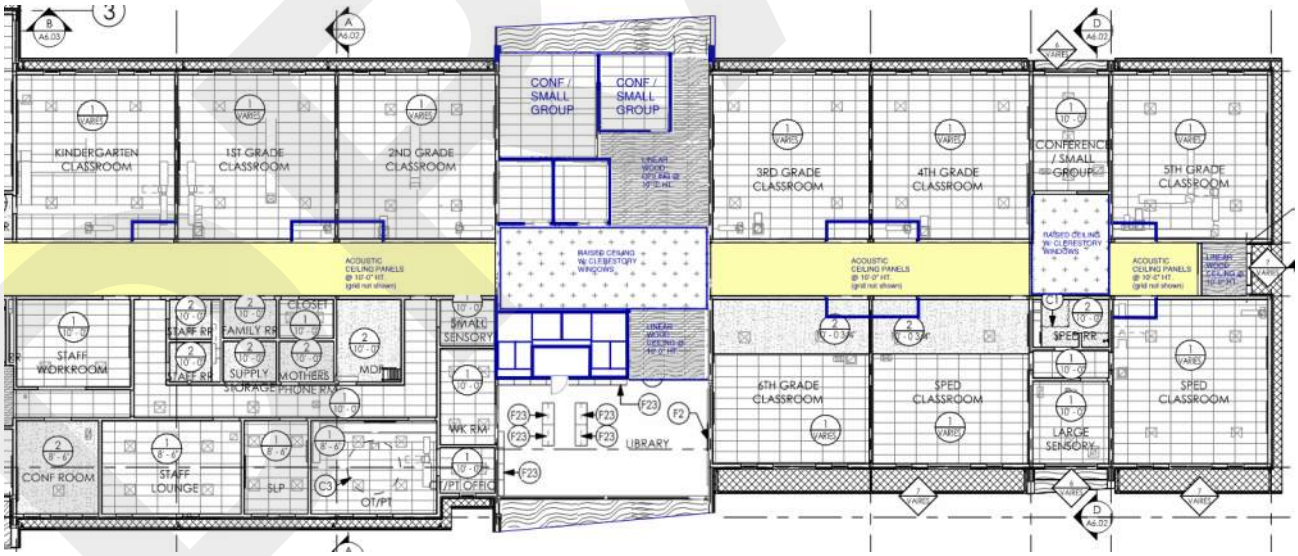
Reflected Ceiling Plan

Workbook ID: OL-119	Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.
Function(s): Organize Layout	**Includes Idea(s)**: 128, 131

Alternative Concept Illustration



Floor Plan



Reflected Ceiling Plan

Workbook ID: OL-119	Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.

Function(s): Organize Layout — **Includes Idea(s):** 128, 131

CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Increase length of interior partition walls at entry alcoves at classrooms	25.10%	SF				30	17.86	670
Revise floor finishes in entry alcoves from carpet tile to polished concrete	25.10%	SF	243	6.15	1,870	243	8.50	2,584
Add door into new library storage room	25.10%	EA				1	3,410.00	4,266
Reduce clerestory windows at corridor; provide additional FCP-1 exterior finish	25.10%	SF	216	86.00	23,239	216	75.26	20,336
Reduce tall wall finishes at clerestory wells at corridor	25.10%	SF	8,712	2.00	21,797			
Use Type 1 2x4 acoustical ceiling panels (ILO Type 5) where clerestories deleted at corridor	25.10%	SF	1,744	31.50	68,725	1,744	7.20	15,709
Revise floor finishes at library storage room from restroom quality	25.10%	SF	51	8.50	542	51	2.28	145
Revise ceiling at library storage from GWB (in restrooms) to Type 1 acoustic ceiling	25.10%	SF	51	10.50	670	51	7.20	459
Wall finishes at library storage from restroom quality to painted GWB	25.10%	SF	133	28.30	4,709	133	2.00	333
Increase length of plumbing waste lines in wall cavity behind toilets and revise to 3 segments from 1	25.10%	LF				12	30.00	450
Add two doors at restrooms	25.10%	EA				2	3,410.00	8,532
Delete fin walls at restrooms	25.10%	SF	160	17.86	3,575			
TOTAL COSTS*					**125,000**			**53,000**
							TOTAL (PROPOSED less BASELINE)	**-72,000**

Note: Total Costs are rounded to nearest thousand dollars — SAVINGS

DRAFT

Workbook ID: OS-132	Lay out site following existing contours.
Function(s): Organize Site	**Includes Idea(s)**: 136, 138, 139, 141, 179

Baseline Concept:

In the baseline concept, the parking lot is to the south of the site, the proposed building is located towards the middle, the soccer field is located to the north of the school, and the forest trail to the north of the field.

Alternative Concept:

In the alternative concept, the building is moved south on the site with a reduced-size staff parking lot and drop-off loop south of the building. North of that is a reduced soccer field and north of the field is a gravel overflow parking lot for community events at the school and use of the soccer field.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**--**	Environmental Sustainability	**+**
Aesthetics	**=**	Schedule	**+**
Durability & Reliability	**=**	Constructability	**+**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**--**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 430,000	$ NA	$ NA
Alternative Concept	$ 105,000	$ NA	$ NA
Cost Difference	**$ -325,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: OS-132	Lay out site following existing contours.
Function(s): Organize Site	**Includes Idea(s)**: 136, 138, 139, 141, 179

Recommendation:

Consider accepting the alternative to move the building farther south and lower FFE and reduce site area to the east.

Alternative Concept

Advantages	Disadvantages
• Reduces earthwork import volume	• Requires reassessment of site program
• Reduces asphalt and soccer field area	• Reduces parking for events and opportunity to share parking with future community activity center
• Maintains sufficient space for future community activity center north of the overflow parking	• Separates grading pads and requires transition stairs and ADA ramps between the building and the playground and soccer field
•	• Increases maintenance due to use of gravel for the overflow parking lot
•	•
•	•

Analysis and Justification:

There are currently two relatively developed pads on the site. One pad contains a barn, portable home, and other dilapidated buildings, averaging around elevation 120. The second pad is wrapped by a horseshoe road with driveway entrances along 1st St. N and gently slopes from elevations 117 to 119. This pad includes the district office building at elevation 118.3 along the east end of the horseshoe road. Both pads have a fairly significant grade break to the east where the site transitions to the SR 109 right-of-way. Aligning the site layout to better follow these pads will reduce grading. The alternative also separates storm into two systems with two outfalls, thus relieving the farthest catch basin driving grades.

The alternative idea shifts the site layout south to reduce program over steep slopes and targets better cut/balance on the site. The soccer field is reduced in size to that more typical for an elementary program and shifted west and south which reduces a significant amount of fill to the east. The outdoor learning area can also be shifted to the south either centered on the play area pad or incorporated into the grade change between pads at the eastern end.

DRAFT

Workbook ID: OS-132	Lay out site following existing contours.
Function(s): Organize Site	**Includes Idea(s)**: 136, 138, 139, 141, 179

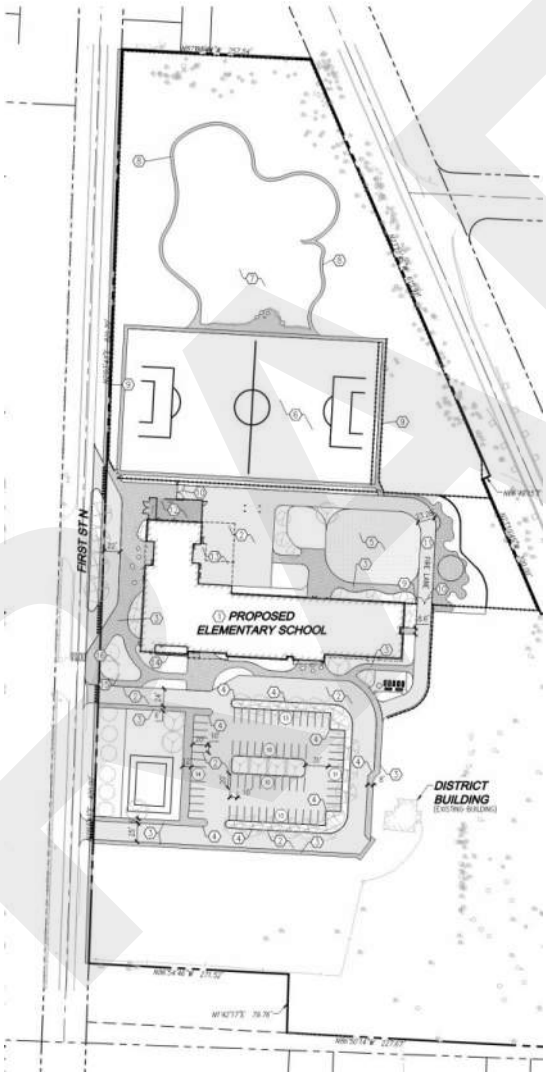
The southernmost pad includes a portion of the school building, the parking and parent loop, and the existing district building. The school building is located at the transition between the two pads and will require the most cut and fill and transition grading. The finish floor elevation would be at approximately elevation 117 or elevation 118, with the parking at approximately elevations 114-115. The grades at the north side of the building would transition with stairs and ADA ramp(s) to the playground area at approximate elevations 119-120, with the soccer field at elevation 120.

The parent loop and parking are reduced in size with the parking being sized to accommodate staff, ADA and EV charging requirements, as well as some parents or visitors. A gravel overflow parking lot is located north of the soccer field along 1st St. N for event and soccer field parking. The proposed layout reserves sufficient area at the north end of the event parking for a future community activity center along 1st St. N. The potential exists to expand and pave the event parking with the activity center project.

DRAFT

Workbook ID: OS-132	Lay out site following existing contours.
Function(s): Organize Site	**Includes Idea(s)**: 136, 138, 139, 141, 179

Baseline Concept Illustration

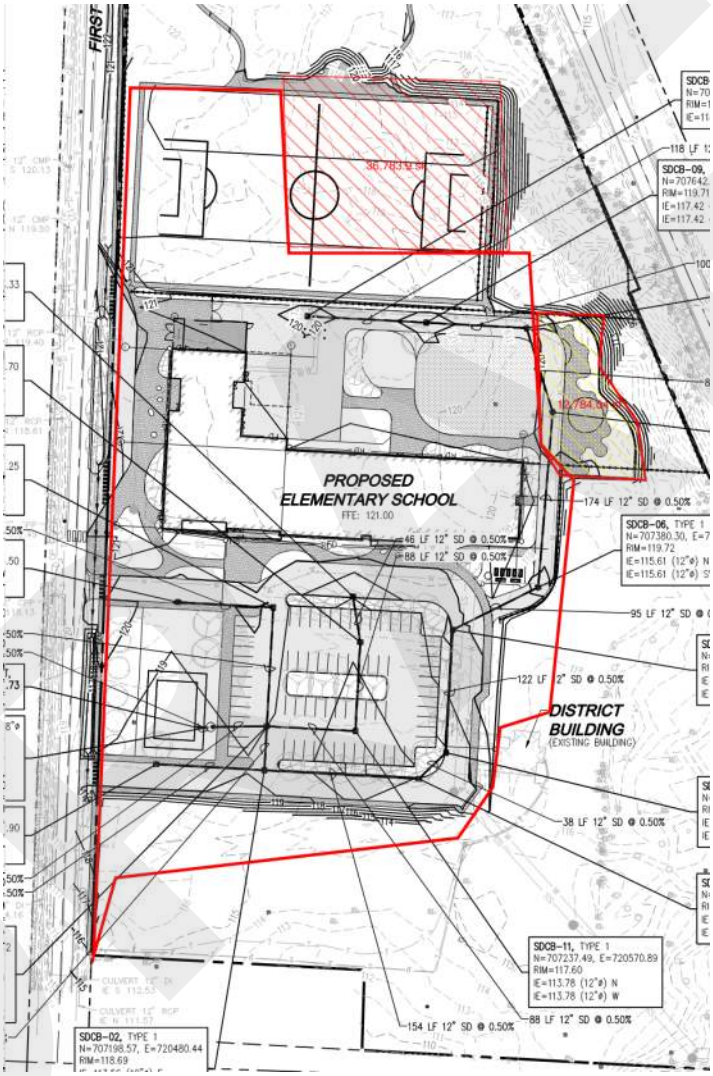


Baseline Site Plan

DRAFT

Workbook ID: OS-132	Lay out site following existing contours.
Function(s): Organize Site	**Includes Idea(s)**: 136, 138, 139, 141, 179

Alternative Concept Illustration



New Footprint (Red) Relative to Baseline Footprint, Highlighted Areas of Significant Fill Reduction

Workbook ID: OS-132	Lay out site following existing contours.
Function(s): Organize Site	**Includes Idea(s)**: 136, 138, 139, 141, 179

Alternative Concept Illustration



Alternative Footprint Relative to Grade Break

DRAFT

Workbook ID: OS-132	Lay out site following existing contours.							
Function(s): Organize Site						**Includes Idea(s):**		136, 138, 139, 141, 179
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Earthwork Fill Import	25.10%	CY	5,000	45.00	281,475			
Asphalt removed	25.10%	SF	24,000	4.96	148,919			
Gravel added	25.10%	SF				24,000	3.50	105,084
TOTAL COSTS*					**430,000**			**105,000**
							TOTAL (PROPOSED less BASELINE)	**-325,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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DRAFT

Workbook ID: OS-133	Reduce the size of the soccer field to approximately 60,000 SF.							
Function(s): Organize Site						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Natural turf sports field	25.10%	SF	70,000	3.00	262,710			
Artificial turf sports field perf pipe drainage trench and backfill	25.10%	LF	3,150	40.00	157,626	2,700	40.00	135,108
Automatic irrigation system - Lawn	25.10%	SF	70,000	2.00	175,140	60,000	2.00	150,120
Natural turf sports field	25.10%	SF				60,000	3.00	225,180
TOTAL COSTS*					**595,000**			**510,000**
							TOTAL (PROPOSED less BASELINE)	**-85,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

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DRAFT

Workbook ID: RS-151	Use geogrid shallow reinforcement at building pad to mitigate settling impact of liquefaction.
Function(s): Reduce Settling	**Includes Idea(s)**:

Baseline Concept:

In the baseline concept, rammed aggregate piers are used to increase soil bearing capacity and reduce liquefaction induced settling. A structural slab bears on the aggregate piers.

Alternative Concept:

In the alternative concept, a 3' deep volume is excavated at the building pad and backfilled with compacted structural fill reinforced with geogrid to create a mechanically stabilized gravel raft to reduce differential settling associated with liquefaction. A standard slab-on-grade is used versus the baseline structural slab.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	=	Environmental Sustainability	--
Aesthetics	=	Schedule	+
Durability & Reliability	--	Constructability	=
Total Cost of Ownership / Lifecycle Cost	=	Occupant Comfort, Safety, Performance	=

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 1,662,000	$ NA	$ NA
Alternative Concept	$ 1,424,000	$ NA	$ NA
Cost Difference	**$ -238,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: RS-151	Use geogrid shallow reinforcement at building pad to mitigate settling impact of liquefaction.
Function(s): Reduce Settling	**Includes Idea(s)**:

Recommendation:

Recommend further evaluation of this alternative concept, consulting with the Geotechnical engineer.

Alternative Concept

Advantages	Disadvantages
• Uses a lower cost slab-on-grade with a mechanically stabilized raft versus baseline structural slab	• Does not extend through the soil layer that includes soils subject to liquefaction, but floats on susceptible soils
• Reduces foundation construction cost	•
• Reduces potential for scheduling delays since a specialized sub-contractor is not required	•
•	•

Analysis and Justification:

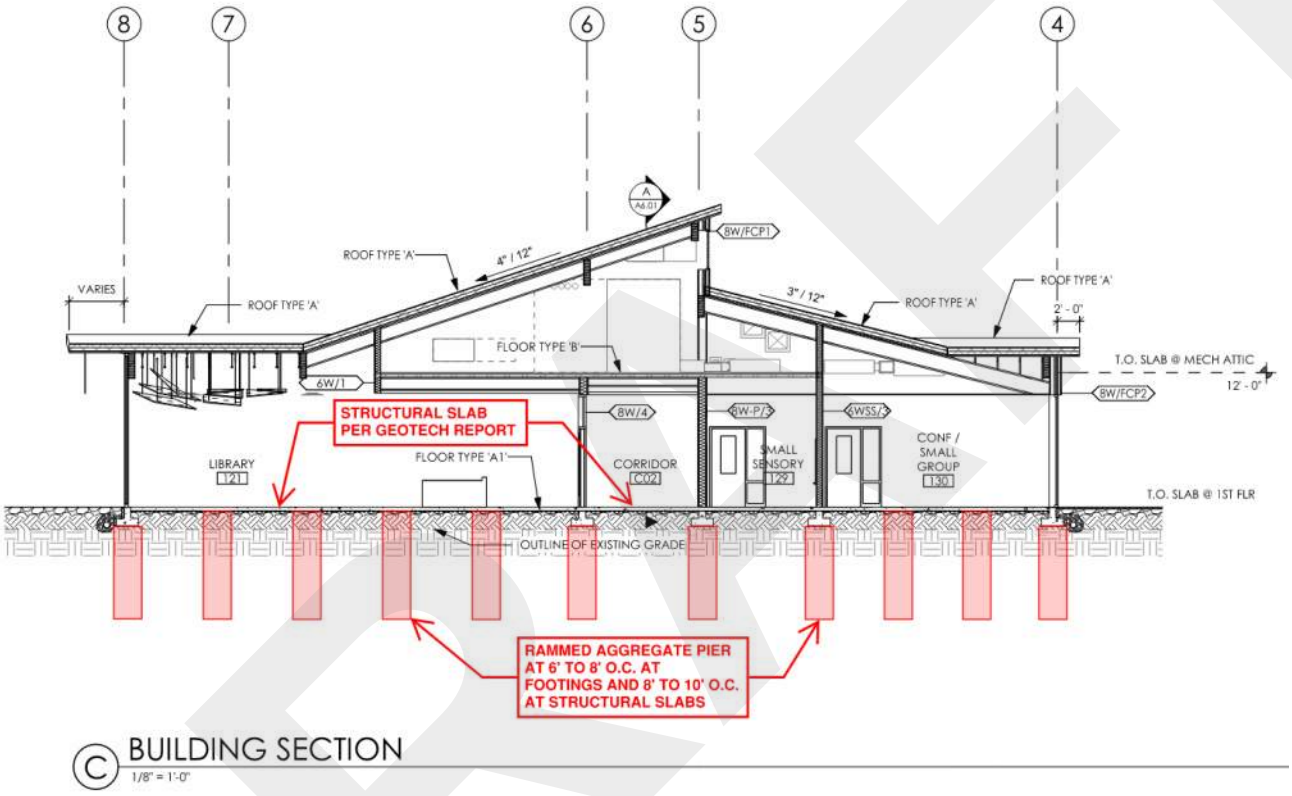
The baseline aggregate piers and structural slab may provide a higher bearing capacity, however this may not be needed due to the relatively low foundation loads for this low-rise structure. The alternative concept addresses the primary concern raised in the geotechnical engineering report concerning liquefaction-induced settlement. The mechanically stabilized gravel mat helps to mitigate differential settlement across the rigid mat. This approach is viable for a low-rise structure because foundation loads are relatively low and the risk of settlement-related overturning is limited.

Additionally, if a rigid mat is created, a conventional slab-on-grade can be utilized compared to the structural slab that the Geotechnical engineering report notes for the baseline option. There is also a cost benefit associated with the alternate approach as it does not require specialty equipment to install, which means this work would be open to more bidders, and less dependent on a single specialty sub-contractor, as is required for rammed aggregate piers. Excavation, installation of geogrid, and installation of compacted fill is within the abilities of more contractors, which could lead to more competitive bids.

DRAFT

Workbook ID: RS-151	Use geogrid shallow reinforcement at building pad to mitigate settling impact of liquefaction.
Function(s): Reduce Settling	**Includes Idea(s)**:

Baseline Concept Illustration

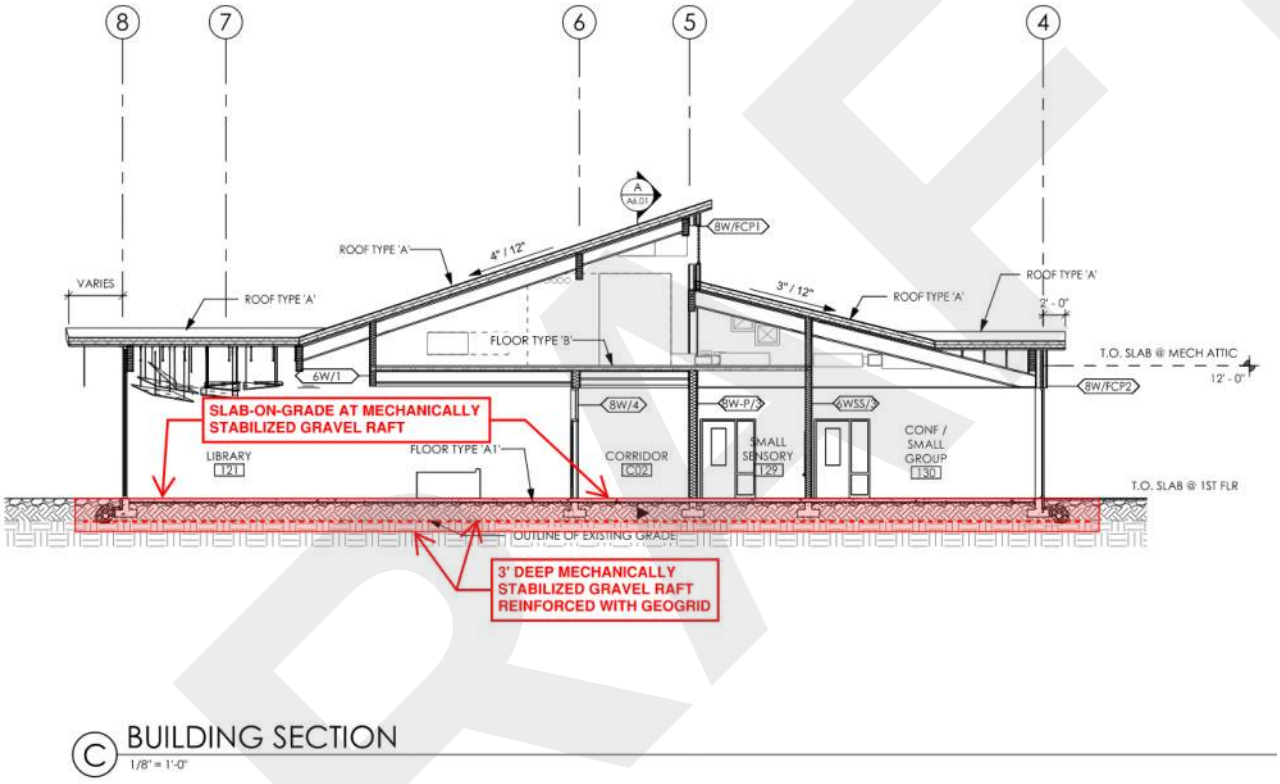


Baseline Soil Improvement for Foundation

DRAFT

Workbook ID: RS-151	Use geogrid shallow reinforcement at building pad to mitigate settling impact of liquefaction.
Function(s): Reduce Settling	**Includes Idea(s)**:

Alternative Concept Illustration



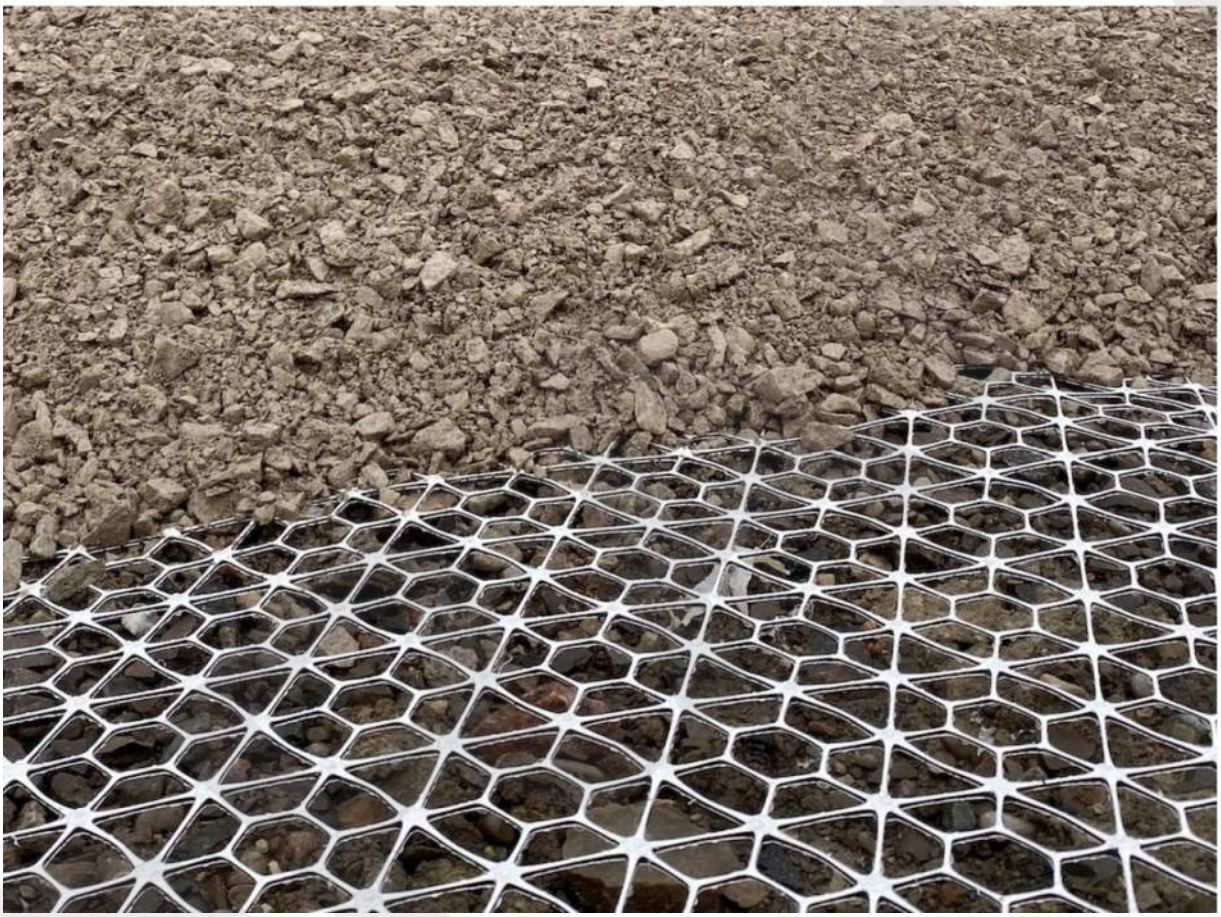
BUILDING SECTION
1/8" = 1'-0"

Alternative Soil Improvement for Foundation

DRAFT

Workbook ID: RS-151	Use geogrid shallow reinforcement at building pad to mitigate settling impact of liquefaction.
Function(s): Reduce Settling	**Includes Idea(s)**:

Alternative Concept Illustration



Example of a Geogrid and Gravel Raft

DRAFT

Workbook ID: RS-151	Use geogrid shallow reinforcement at building pad to mitigate settling impact of liquefaction.							
Function(s): Reduce Settling						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Rammed aggregate piers	25.10%	LS	1	460,000	575,460			
Structural Slab	25.10%	SF	34,730	25.00	1,086,181			
Excavation	25.10%	CY				5,150	48.00	309,247
Structural Fill	25.10%	CY				5,150	58.00	373,674
Geogrid	25.10%	SF				46,237	1.00	57,842
5" Slab on Grade	25.10%	SF				34,730	15.72	682,990
TOTAL COSTS*					**1,662,000**			**1,424,000**
							TOTAL (PROPOSED less BASELINE)	**-238,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

DRAFT

Workbook ID: RV-167	Delete section of fire lane from parking lot along east side of building and create hammerhead at play area north of gate.
Function(s): Route Vehicles	**Includes Idea(s)**: 137

Baseline Concept:

In the baseline concept, a fire lane wraps the building and playground site on all sides, forming a loop.

Alternative Concept:

In the alternative concept, the existing playground is used to fit the geometry of a hammerhead for fire truck use, and the loop is truncated, reducing the impervious area.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	**+**	Environmental Sustainability	**+**
Aesthetics	**+**	Schedule	**=**
Durability & Reliability	**=**	Constructability	**+**
Total Cost of Ownership / Lifecycle Cost	**+**	Occupant Comfort, Safety, Performance	**--**

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 25,000	$ NA	$ NA
Alternative Concept	$ 6,000	$ NA	$ NA
Cost Difference	**$ -19,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: RV-167	Delete section of fire lane from parking lot along east side of building and create hammerhead at play area north of gate.
Function(s): Route Vehicles	**Includes Idea(s)**: 137

Recommendation:

Recommend accepting the alternative to remove additional asphalt unless it serves a multi-use purpose.

Alternative Concept

Advantages	Disadvantages
• Reduces asphalt paving	• Reduces fire access points
• Provides open space for programmable areas with relatively low grading requirements	• Reduces convenience access for other purposes
•	•
•	•
•	•
•	•

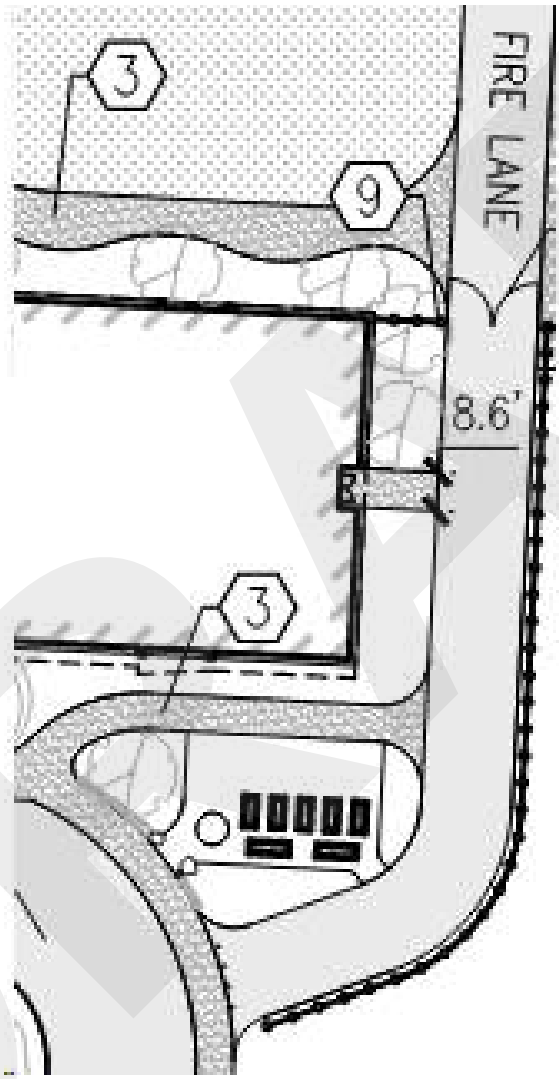
Analysis and Justification:

The complete fire access road around the building is not required for building coverage. While it may provide some convenience and marginally improve safety, it could be removed. At this time, it is not clear to the VE team whether the full loop of this road will be used for other programming purposes, so it is assumed to be unnecessary. Though not included in this alternative scope, consider repurposing area of the fire lane by shifting the outdoor education area south and west to avoid the slope to the east.

DRAFT

Workbook ID: RV-167	Delete section of fire lane from parking lot along east side of building and create hammerhead at play area north of gate.
Function(s): Route Vehicles	**Includes Idea(s)**: 137

Baseline Concept Illustration

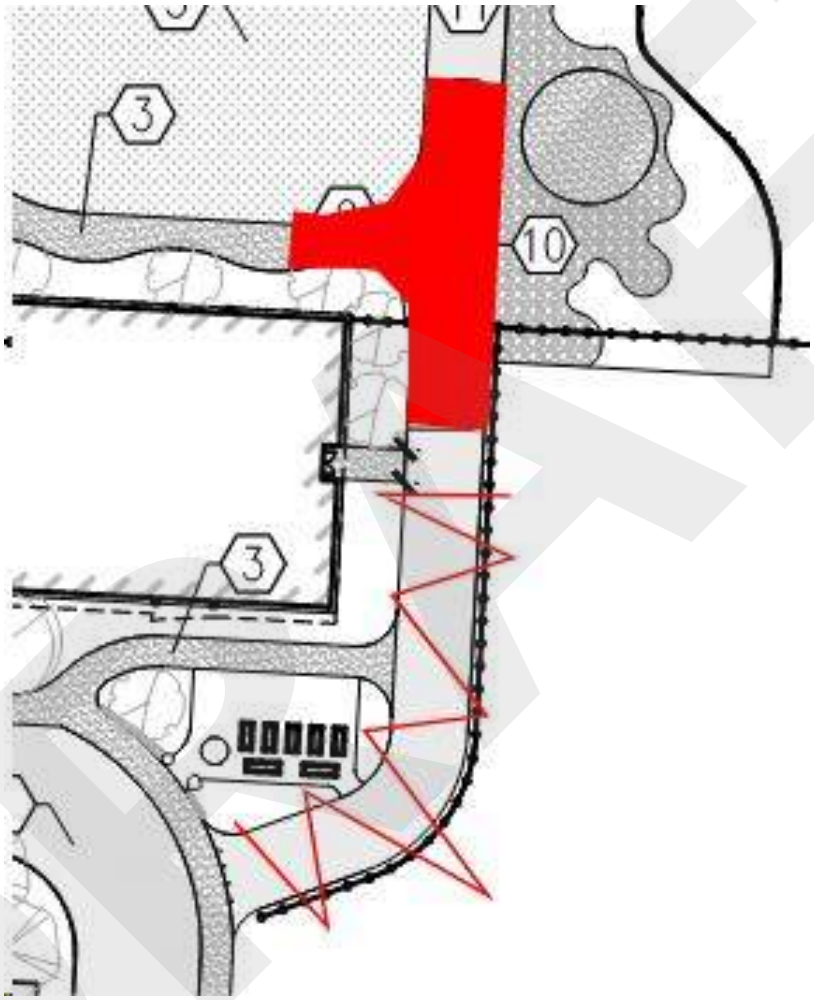


Full Fire Lane Connection

DRAFT

Workbook ID: RV-167	Delete section of fire lane from parking lot along east side of building and create hammerhead at play area north of gate.
Function(s): Route Vehicles	**Includes Idea(s)**: 137

Alternative Concept Illustration



Remove Portion of Fire Access Pavement

DRAFT

Workbook ID: RV-167	Delete section of fire lane from parking lot along east side of building and create hammerhead at play area north of gate.							
Function(s): Route Vehicles						**Includes Idea(s):** 137		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Asphalt	25.10%	SF	3,000	4.96	18,615			
CTSC	25.10%	TONS	105	50.00	6,568			
Imported topsoil Type A	25.10%	CY				60	60.00	4,504
Seed - Meadow	25.10%	SF				3,000	0.50	1,877
TOTAL COSTS*					**25,000**			**6,000**
							TOTAL (PROPOSED less BASELINE)	**-19,000**

Note: Total Costs are rounded to nearest thousand dollars

SAVINGS

DRAFT

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DRAFT

Workbook ID: RV-168	Use thickened asphalt section in lieu of concrete paving at the bus loop.							
Function(s): Route Vehicles						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
Concrete sidewalk (at bus drop off), assumes 8'' thick	25.10%	SF	5,805	7.41	53,812			
Asphalt paving, assumes 5'' thick	25.10%	SF				5,805	4.52	32,824
TOTAL COSTS*					**54,000**			**33,000**
							TOTAL (PROPOSED less BASELINE)	**-21,000**
Note: Total Costs are rounded to nearest thousand dollars								SAVINGS

DRAFT

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DRAFT

Workbook ID: SL-181	Frame outdoor covered play roof with open web trusses and cement fiber soffit to protect framing from environment.
Function(s): Support Load	**Includes Idea(s)**:

Baseline Concept:

In the baseline concept, the canopy at the covered play area is framed with 1/2" plywood sheathing above 3x6 car decking on glulam beams spaced at 8'-0' on center. The framing would be open to view from below.

Alternative Concept:

In the alternative concept, the covered play canopy would be framed with 1/2" plywood sheathing above 30" open web trusses spaced at 24" on center. A fiber cement soffit would be applied to the underside of trusses to protect framing from the marine environment.

Performance Summary (relative to Baseline Concept: **+** improvement; **--** detriment; **=** equal)

Program	=	Environmental Sustainability	=
Aesthetics	--	Schedule	=
Durability & Reliability	+	Constructability	=
Total Cost of Ownership / Lifecycle Cost	+	Occupant Comfort, Safety, Performance	=

Cost Summary	Initial Cost	Future Cost	Life Cycle Cost
Baseline Concept	$ 278,000	$ NA	$ NA
Alternative Concept	$ 180,000	$ NA	$ NA
Cost Difference	**$ -98,000**	$ NA	$ NA
Cost Avoidance	Life cycle cost analysis uses a NA% discount rate and NA-year economic life.		

DRAFT

Workbook ID: SL-181	Frame outdoor covered play roof with open web trusses and cement fiber soffit to protect framing from environment.
Function(s): Support Load	**Includes Idea(s)**:

Recommendation:

Consider accepting this alternative to reduce maintenance over the life of the structure.

Alternative Concept

Advantages	Disadvantages
• Lowers maintenance on exposed wood framing in a marine environment	• Loses the feeling of warmth that is expressed with exposed wood framing
• Simplifies framing by utilizing methods used elsewhere on the project versus introducing another framing type (car decking)	•
• Reduces maintenance budget since a fiber cement soffit would need to be painted at larger intervals compared to re-coating/re-finishing exposed wood framing	•
•	•
•	•
•	•

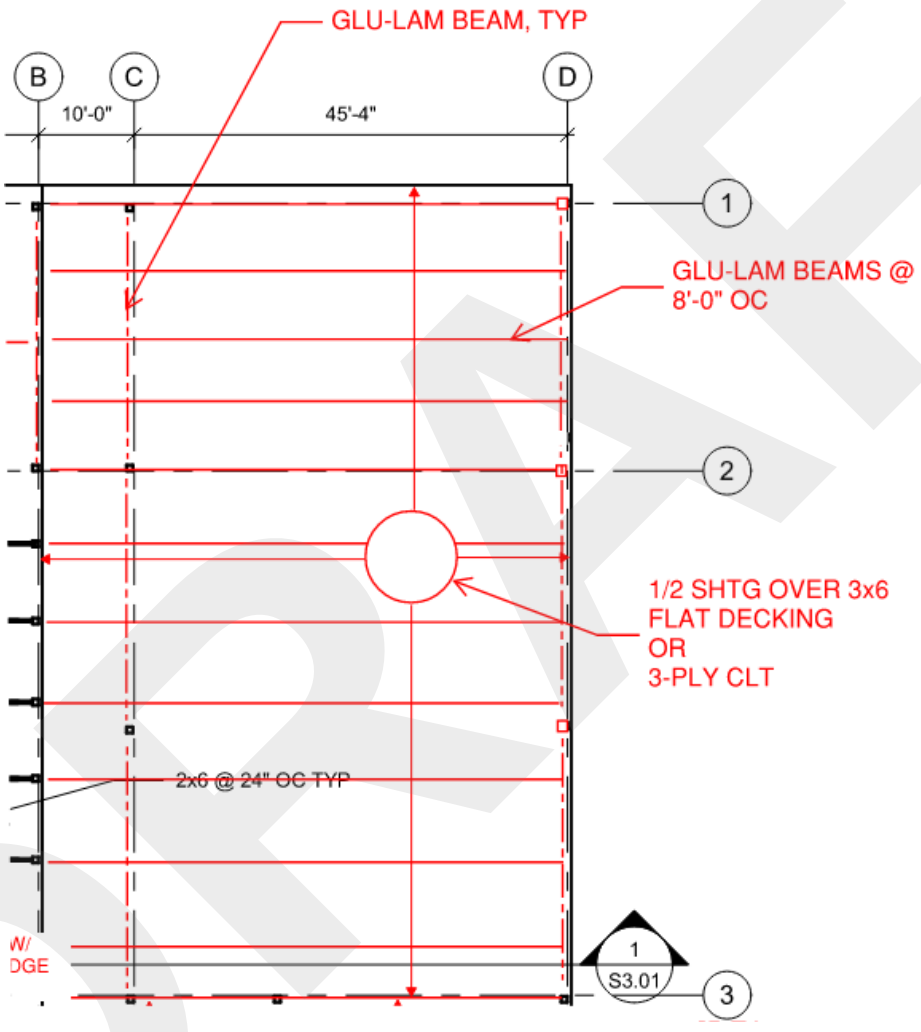
Analysis and Justification:

The primary benefit associated with this alternative concept is that it reduces the ongoing maintenance requirement of re-coating or re-finishing the exposed wood beams and underside of the car decking at the covered play area. More conventional roof framing with a fiber cement soffit increases the intervals that maintenance is required to re-paint the soffit, and the soffit protects the underside of the framing from the marine environment. Extending the maintenance cycle is important since maintenance required to coat the underside of the covered play canopy would likely require scaffolding and may be beyond the desired level of effort that the school's maintenance team would like to perform.

DRAFT

Workbook ID: SL-181	Frame outdoor covered play roof with open web trusses and cement fiber soffit to protect framing from environment.
Function(s): Support Load	**Includes Idea(s)**:

Baseline Concept Illustration

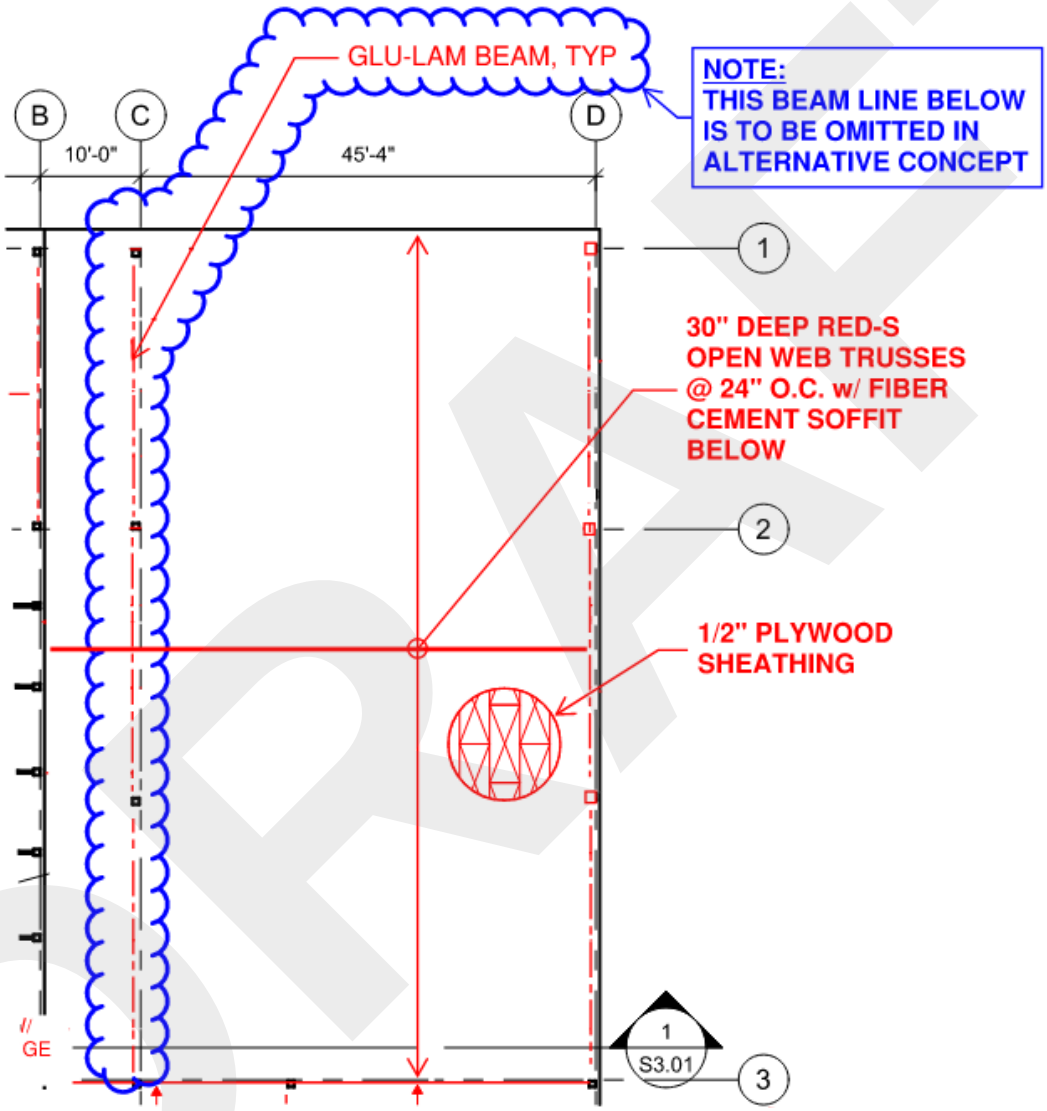


Baseline Canopy at Covered Play

DRAFT

Workbook ID: SL-181	Frame outdoor covered play roof with open web trusses and cement fiber soffit to protect framing from environment.
Function(s): Support Load	**Includes Idea(s)**:

Alternative Concept Illustration



Alternative Canopy Framing

DRAFT

Workbook ID: SL-181	Frame outdoor covered play roof with open web trusses and cement fiber soffit to protect framing from environment.							
Function(s): Support Load						**Includes Idea(s):**		
CONSTRUCTION ELEMENT	**Markup**	**BASELINE DESIGN ASSUMPTION**				**PROPOSED ALTERNATIVE**		
Description	%	Unit	Qty	Unit Cost $	TOTAL $	Qty	Unit Cost $	TOTAL $
1/2" Plywood Sheathing	25.10%	SF	4,700	3.90	22,931	4,700	3.90	22,931
3x6 Car Decking	25.10%	SF	4,700	26.90	158,164			
Glulam Beams (Assume 6-3/4 x 27)	25.10%	EA	12	5,500.00	82,566			
Glulam Beam Line at Grid 3 (Assume 6-3/4 x 24)	25.10%	EA	3	2,700.00	10,133			
Columns at Grid 3	25.10%	EA	4	775.00	3,878			
30" Open Web Trusses @ 2' o.c.	25.10%	SF				4,700	14.70	86,432
Fiber Cement Soffit	25.10%	SF				4,700	12.00	70,556
TOTAL COSTS*					**278,000**			**180,000**
							TOTAL (PROPOSED less BASELINE)	**-98,000**
								SAVINGS

Note: Total Costs are rounded to nearest thousand dollars

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Appendix C
Function Analysis

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C.1 Functions

Random Function Determination

The VE team identified project functions required for the project to deliver the services required and accomplish the project goals. Identification and analysis of the underlying functions helped the VE team form a deeper understanding of the project alternatives and consider alternatives to improve the design. The function or functions categorized as Basic are defined as the principal reasons for the project. Higher Order functions are why the Basic functions are being implemented. Required Secondary and Secondary functions are the means by which the Basic function is carried out and supported. Additionally, several functions fall into the category of All-the-Time functions or define performance criteria for the project.

Function	Function Type
Enhance Civic Pride	Higher Order
Inspire Community	Higher Order
Promote Socialization	Higher Order
Promote Wellbeing	Higher Order
Reflect Community	Higher Order
Educate Students	Basic
Access Site	Required Secondary
Comfort Occupants	Required Secondary
Condition Space	Required Secondary
Consolidate Soil	Required Secondary
Deliver Project	Required Secondary
Dispose Waste	Required Secondary
Distribute Power	Required Secondary
Distribute Technology	Required Secondary
Distribute Water	Required Secondary
Enclose Space	Required Secondary
Ensure Safety	Required Secondary
Facilitate Community Use	Required Secondary
Facilitate Expansion	Required Secondary
Feed Students	Required Secondary
Finish Interior	Required Secondary
Generate Solar Power	Required Secondary
Grade Site	Required Secondary
Illuminate Interior	Required Secondary
Maintain Facility	Required Secondary
Mitigate Fire Damage	Required Secondary
Mitigate Hydromodification	Required Secondary
Mitigate Liquefaction	Required Secondary

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Organize Layout	Required Secondary
Organize Site	Required Secondary
Prevent Flood Damage	Required Secondary
Protect Equipment	Required Secondary
Protect Occupants	Required Secondary
Provide Shelter	Required Secondary
Recreate Students	Required Secondary
Reduce Noise	Required Secondary
Reduce Settling	Required Secondary
Resist Damage	Required Secondary
Resist Earthquake	Required Secondary
Resist Lateral Load	Required Secondary
Retain Heat	Required Secondary
Route Utilities	Required Secondary
Route Vehicles	Required Secondary
Serve Food	Required Secondary
Support Administration	Required Secondary
Support Load	Required Secondary
Treat Runoff	Required Secondary
Utilize Natural Light	Required Secondary
Welcome Community	Required Secondary
Circulate Site Users	Secondary
Connect Cultures	Secondary
Connect with Nature	Secondary
Control Energy Use	Secondary
Encourage Play	Secondary
Enhance Indoor Air Quality	Secondary
Enhance Learning	Secondary
Facilitate Movement	Secondary
Facilitate Visibility	Secondary
Facilitate Wayfinding	Secondary
Grow Plants	Secondary
Honor Past	Secondary
Honor Tribes	Secondary
Hydrate Inhabitants	Secondary
Inspire Users	Secondary
Isolate Noise	Secondary
Promote Cleanliness	Secondary
Queue Students	Secondary

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Receive Transit	Secondary
Retain Staff	Secondary
Shield Wind	Secondary
Stabilize Access	Secondary
Store Cars	Secondary
Store Food	Secondary
Support Arts	Secondary
Support Vehicles	Secondary

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Appendix D
Project Evaluation

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D.1 Cost Analysis

Cost Analysis

The value team completed an analysis of the estimated cost of the project in comparison to recently reviewed projects of similar type and scope. Cost information for these comparison projects was drawn from project estimates prepared by cost consultants, engineers and general contractors providing preconstruction estimating services. It is important to note that the cost information is not actual bid prices. While consultant estimates generally reflect market bid prices, they will vary depending on how closely each tracks the market place. These comparable projects are relatively similar in purpose, population served, size, building type, new or renovation/modernization, and overall scope. The estimate summaries from the comparison projects are escalated to the time period of the current project. The historical escalation is based on the Turner Building Cost Index and the escalation looking forward is based on that used in the project estimate. A geographic location adjustment based on RS Means' location factors has also been applied. The comparison projects provide a general benchmark when reviewed in aggregate to help identify differences of the subject project in overall cost, building cost per sq. ft., Uniformat cost divisions, and individual unit cost pricing, from the average. With this information, the value and project teams can assess the differences and either validate the difference or identify the need for any changes.

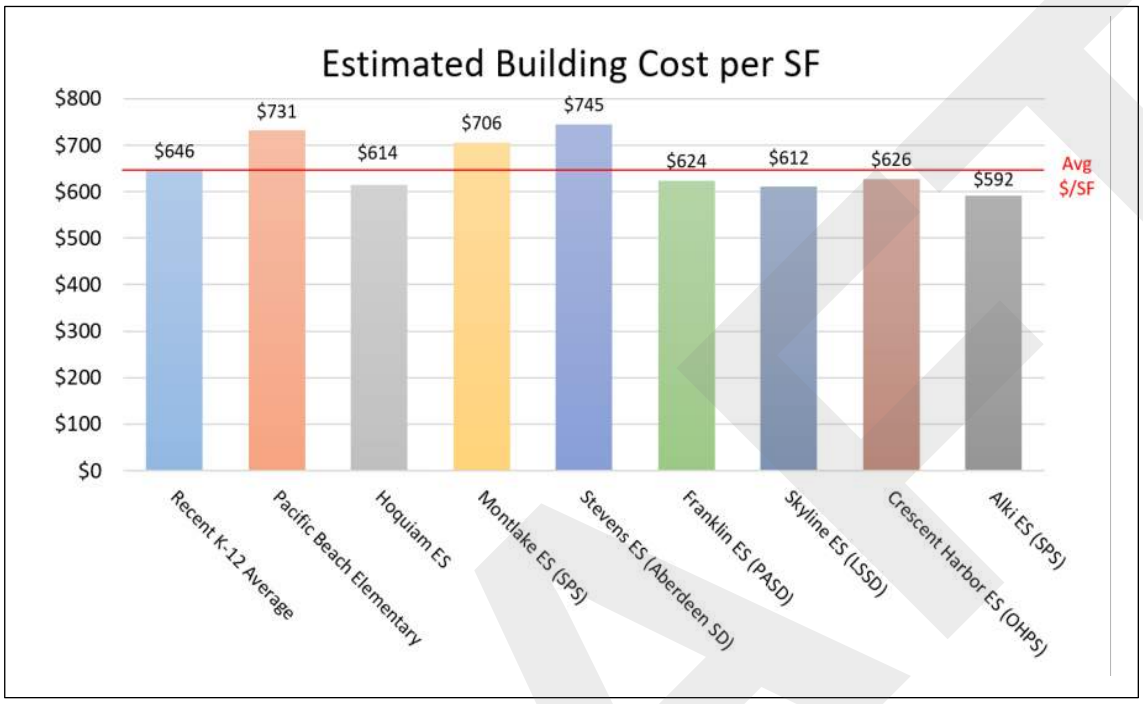
Comparison of Building Cost Per Sq. Ft.

The value team compared the overall cost per sq. ft. of the project relative to recently reviewed comparables and the average of these projects. This comparative data is useful for relative benchmarking of costs and helps focus the team's efforts on opportunities to improve value. When comparing project costs, it is important to recognize that each project is developed according to the unique programming and design requirements of each client. Some owners place a higher priority on minimizing the initial cost of construction while others are more interested in minimizing their total cost of ownership, i.e., paying higher first costs to lower the overall life cycle costs of operations and maintenance. The latter paradigm is typically reflected in the selection of higher quality and durability of materials and building systems with longer expected lifecycle performance. Additionally, each project site and context are highly variable, impacting the cost of the building. Therefore, in evaluating cost comparisons, it is important to recognize that cost estimates inherently reflect unique project constraints and client requirements.

Our comparison of similar K-12 estimates for seven projects representing six school districts from the Pacific Northwest, shows an average estimated cost per sq. ft. of $646 (for the building only, not including site development cost). This average is for estimated costs escalated to the same period of time as the subject project.

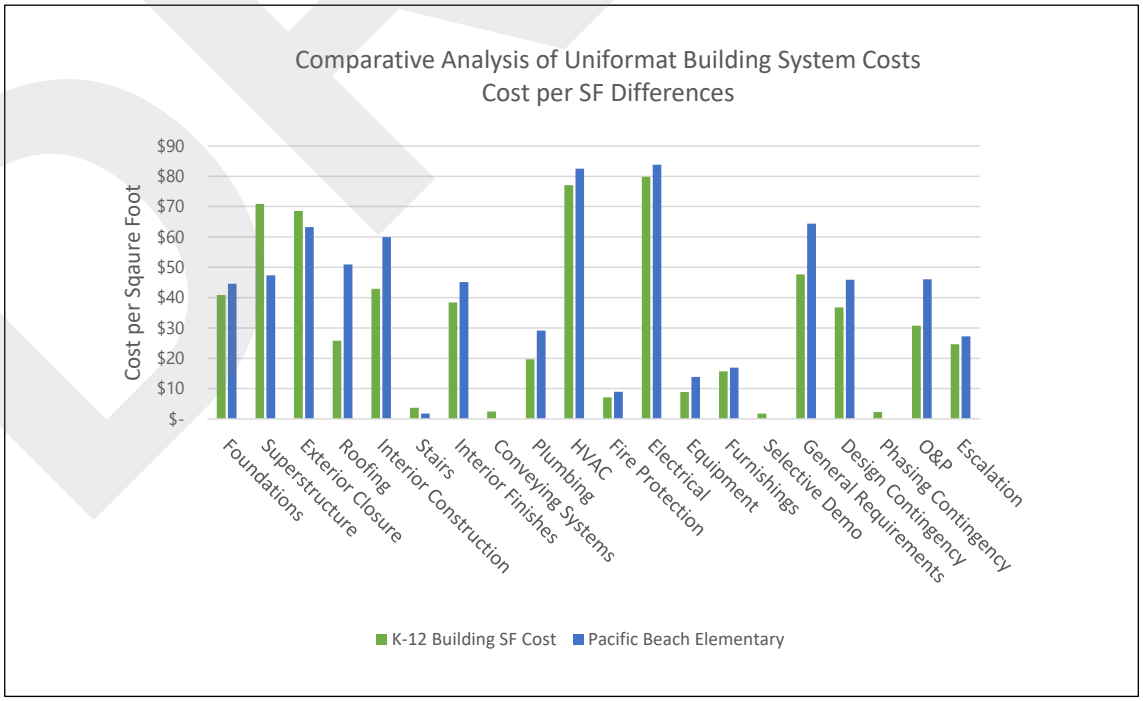
The Pacific Beach Elementary School's project estimate is based on a 34,730 SF (SD plans note 34,407 SF) replacement school with related demolition and site work; no renovations are included in the program. The project's estimated cost at $731 per sq. ft. is 13.28% above the comparison average.

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Comparative Analysis of Uniformat System Costs

A comparative analysis of the Uniformat building system cost categories was prepared evaluating the project cost estimate relative to the comparison average. The cost differences between the project and the comparison average were analyzed on a cost per sq. ft. basis and as a percentage of the overall building costs. The building cost per sq. ft. comparison is represented below.



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The patterns reflected in the comparison of Uniformat costs for the project reveal variations from the averages of recently reviewed projects. The more significant cost variances per sq. ft. are outlined below.

Higher than average cost variances include:

- Roofing 97.5% or $25 per SF
- O&P 49.9% or $15 per SF
- Plumbing 48.1% or $9 per SF
- Interior Construction 39.8% or $17 per SF

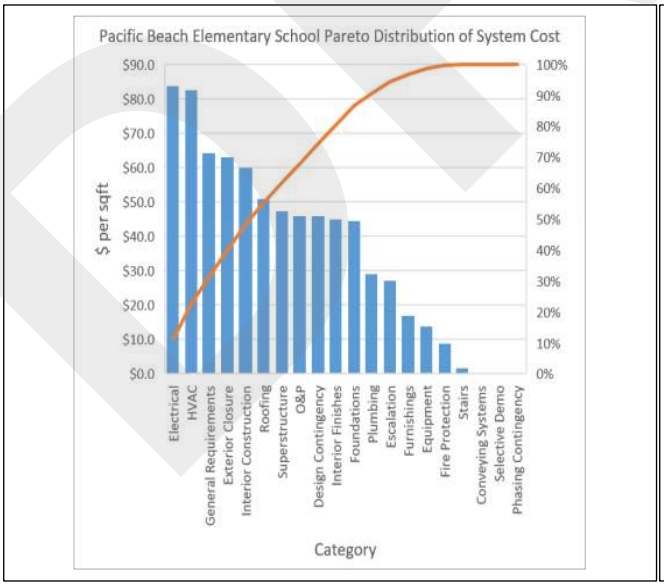
Lower than average costs include:

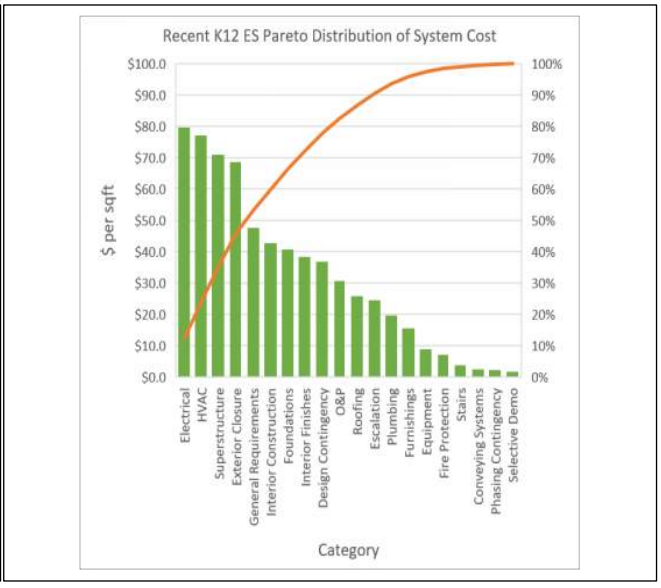
- Superstructure -33.3% or $24 per SF
- Exterior Closure -7.9% or $5 per SF

The degree of variation for these cost categories may reflect program differences, special conditions and design features, or possibly misunderstanding of the scope by the estimator. The degree of differences and potential impacts to the project cost warrant validation of the scope and estimated cost by the design team and estimator. Detailed comments about the Uniformat costs are provided in the D.2 Estimate Review.

Pareto Cost Distribution

The value team prepared a Pareto, or 80/20 ratio analysis comparing Uniformat construction cost categories, i.e., the superstructure, exterior enclosure, interior finishes, etc., of the project relative to the Pareto distribution average of the comparison projects. The Pareto distribution of Uniformat cost categories represents 80% of cost below and 20% of cost above the distribution curve. The Pareto analysis is founded on the Pareto Principle (or observation) that roughly 80% of the effects of a system are generated by about 20% of the system variables. The analysis is useful for quickly understanding which building systems are driving project cost and risk, and potentially offer the greatest opportunities for managing these two factors.





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The project Pareto 80/20 distribution curve reveals the project varies from the average. The Pareto for Pacific Beach Elementary has five items to the above the curve, where typically projects only have four. The PBES Pareto differs from average in that it contains General Requirements and Interior Construction above the curve. Otherwise, the typical categories of Mechanical and Electrical systems, and Exterior Closure are falling within the top cost categories while Superstructure is not included in the top costs and usually is. The K-12 Average Pareto Distribution is composed of comparison elementary schools from the Pacific Northwest.

The cost categories which fall above the curve offer the greatest opportunity for design alternatives to influence the overall building cost.

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D.2 Estimate Review

Estimate
The value team reviewed cost estimates developed for the Pacific Beach Elementary School (PBES) project which form the basis of the following comments. Estimates were prepared by the following consultants:

- 95% Schematic Design Estimate prepared by RC Cost Group dated August 28th, 2026
- Landscape: Site Workshop (included in RC Cost Group estimate)
- Civil: LDC (included in RC Cost Group estimate)
- Food Service: Clevenger Associates (included in RC Cost Group estimate)
- Mechanical: Metrix Engineers (included in RC Cost Group estimate)
- Electrical: GFT Engineers (included in RC Cost Group estimate)

This review is formatted in the same sequence as the cost estimate. Discrete quantities were spot checked with the focus of the review on the unit prices. In developing recommended costs for unit prices in question, the VE team compared them with cost estimates on file from previous similar projects within the Pacific Northwest region prepared by a variety of cost consultants, engineers and general contractors.

The PBES project estimate is based on a new 34,730 SF (SD plans state school as 34,407 SF) school on a new site with related demolition and site work. No renovations are included in the program. The new facility is designed as a single story, wood-framed structure. Soil stabilization with stone aggregate piers is included in the estimate due to underlying soils subject to liquefaction and differential settlement in a seismic event, but this strategy is subject to further refinement pending additional geotechnical investigation. The site area is adequate for a building this size, and there should be unobstructed construction access available to all sides of the building.

Areas of Observation and Concern
Overall Estimate – The cost estimate appears to be inclusive of the anticipated scope for the project. However, some of the unit pricing is not in line with other project estimates of similar scope. Specific observations are outlined below. Quantities were spot checked and any significant exceptions found are noted below.

Estimate Exclusions – Qualifications and exclusions are generally consistent with a project at this level of design. However, in the “Items that may affect the cost estimate” section the estimator has listed “Any non-competitive bid situations.” This project site is in a sparsely populated, somewhat remote area (78 miles west of Olympia, WA) of the Washington coast. A lack of qualified subcontractors to competitively bid certain trades is a known risk to the project and should be accounted for either in unit rate increases or in a Remoteness factor contingency added to the estimate indirect costs.

Schedule Duration – The anticipated construction duration of 15 months is reasonable for a project of this size and complexity.

General Conditions – General Conditions/General Requirements are calculated at 11.75% of project direct construction costs for a total of $2,963,089, which equates to $185,193 per month of construction. That is on the higher end of the range we would expect to see for a project of this size and construction type, though

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possibly warranted by the remote location and anticipated crew support requirements. If the project can attract sufficient interest from general contractors such that there are reasonably competitive bids, we would expect to see this GC/GR amount reduced at bid time.

Design and Estimating Contingency – The 7.5% used for the contingency is on the low end of the typical range for a schematic design estimate. It is more common to see a 10% contingency at the SD phase and carrying low contingencies early in the design phase increases the risk of budget overrun.

Escalation Adjustment – The estimate is carrying 3.86% escalation for 11 months to start of construction. This value is reasonable, as it is close to the values reported in Rider Levett Bucknall's Quarterly Cost Report, which tracks construction cost escalation in 30 different markets across North America.

Market Conditions – Escalation is defined as rising costs of materials, rentals, wages, etc. and does not account for more immediate market conditions. Market conditions are defined as contractor, subcontractor, and worker availability at time of bid and how desirable a project is based on constructability, location and risk factors. Factors affecting these perceived conditions are location, client, worker availability, simplicity of the project, competition for this project, and timing of the project. This project may be a desirable project for bidders based on the design scope and client. However, the relatively remote location may constrain the pool of bidders and qualified sub-contractors, particularly for MEP trades. Additional costs associated with worker mileage reimbursements and increased shipping and handling costs may be incurred by the project.

The impact of tariffs, existing and future, pose project cost and schedule risks that warrant mitigation. This is particularly applicable to products from Canada and China, but other sources as well. With the wood frame structure and use of cross-laminated timber roof panels, and other materials subject to tariffs, it would be prudent for the owner to carry a 1% contingency for tariff impacts.

The General Contractor's Fee at 5.50% is high for a project of this size. RLB would expect fee amounts to come in lower if competitively bid by general contractors. For overhead and profit, 3-4% would be more appropriate for a project of this size.

Uniformat Cost Review

A10 Substructure:
PBES cost at $44.54/SF is comparable to the historical average of the comparison projects at $40.83/SF. This value includes a $460,000 allowance for stone aggregate piers due to the potential for liquefaction of sub-grade during a seismic event. Piers are only one of several possible solutions, which will be refined during design.

B10 Superstructure:
PBES cost at $47.30/SF is lower than the historical average of the comparison projects at $70.88/SF. The wood framing system proposed for this project is an economical solution and likely due to the lower SF cost.

B20 Exterior Closure:
PBES cost at $63.20/SF is comparable to the historical average of the comparison projects at $68.61/SF.

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However, the unit rates for exterior glazing appear to be lower than current market rates which may create a risk of cost uplift in this element at bidding.

B30 Roofing:
PBES cost at $50.90/SF is higher than the historical average of the comparison projects at $25.77/SF. Standing seam metal is a higher cost roofing system and the building has a high roof to floor ratio given it is a one-story building with a sloping roof with overhangs.

C10 Interior Construction:
PBES cost at $59.92/SF is higher than the historical average of the comparison projects at $45/SF. Interior partition costs are higher due to most interior partitions (types W4, WSS3, and WSS4 on A31.01) being called out as acoustical, with three and four layers of gyp board per SF of framing.

C20 Stairways:
PBES cost at $1.77/SF is lower than the historical average of the comparison projects at $3.68/SF. Project is currently proposed as single story.

C30 Interior Finishes:
PBES cost at $45.10/sf is higher than the historical average of the comparison projects at $ 40/sf. There are several higher cost finishes in the estimate (P-lam wainscot at $28.50/SF, linear wood ceiling at $45/SF, and suspended acoustical panels at $31.50/SF) that are driving cost up and may be opportunities for savings with quantity reductions or material substitutions.

D10 Conveying:
PBES cost at $0/SF is lower than the historical average of the comparison projects at $2.46/SF. Project does not have an elevator or lift.

D20 Plumbing:
PBES cost at $29.13/SF is higher than the historical average of the comparison projects at $19.66/SF. Sanitary waste and vent piping costs in the estimate are slightly higher than average and warrant review, validation, and potentially reduction.

D30 HVAC:
PBES cost at $82.46/SF is higher than the historical average of the comparison projects at $77.10/SF. The slightly higher cost is likely due to the smaller building SF quantity over which to spread the investment in the primary equipment that is required.

D40 Fire Protection:
PBES cost at $8.98/SF is higher than the historical average of the comparison projects at $ 7.15/SF. Cost is higher than average due to the large quantity of overhangs and dry sprinkler systems.

D50 Electrical:

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PBES cost at $83.75/SF is comparable to the historical average of the comparison projects at $79.80/SF.

E10 Equipment:
PBES cost at $13.82/SF is higher than the historical average of the comparison projects at $8.87/SF.

E20 Furnishings:
PBES cost at $16.87/SF is comparable to the historical average of the comparison projects at $15.66/SF.

G20 Site Work:
PBES cost at $11.80/SF is comparable to the historical average of the comparison projects at $15/SF. Site costs for this project are driven by a high volume of imported fill to grade and a long 8" water main run requested by the Owner.

Constructability and Project Delivery:
PBES is an uncomplicated project located on a site with adequate access for deliveries and equipment. Access to the site will be off 1st St. N. The site is bordered by Highway 109 to the east. The site slopes from west to east and will require substantial fill. The wood-framing system proposed is simple to construct and is a good choice to attract a wider pool of qualified bidders. The most significant area of risk to the project is the presence of unstable subsurface conditions that will require a solution such as stone aggregate piers, piles, over-excavation and backfill, or deep soil mixing. This is accounted for with an allowance in the current estimate, but the system has yet to be designed. Given the site's proximity to the ocean, wet climate, and high water table, care should be taken to schedule earthwork activities in drier periods to avoid unsuitable weather conditions and issues with saturated soils.

Use of Design/Bid/Build project delivery is common for a project of this size. The compact size of the building and relative simplicity of the program and the design does not warrant significant preconstruction work by a general contractor as you would have in a GC/CM delivery. The greatest project delivery risk is the relatively remote location and limited general contractor and subcontractor pool. This could result in non-competitive bids, limited skilled labor pool, unqualified subcontractors, and materials sourcing challenges impacting project cost and schedule.

Comments and observations contained within this report represent the value team's observations and are intended for verification by the project team.

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D.3 VE Team Observations and Comments

The following initial observations and comments were noted by the VE team following the design presentation and site visit.

Cost Estimator

- Unit rates are competitive but possibly low for the location.
- There are no large scope gaps in the estimate observed at this time.
- The geotechnical report may not be considered enough in estimate.
- Possible low cost from preliminary estimates for site development.
- The playground structures cost $250k.
- High-cost areas include water/sewer extension, concrete sidewalks, earthwork, and fire paving.
- The 8" water extension costs $559k.
- There are significant costs associated with clearing the site.
- The gym scoreboard equipment cost is more than many other elementary schools.
- There is a lot of classroom casework in the main contract.
- The lawn irrigation costs appx $187k.
- The shrub and container plants cost $140k.

Architectural

- The owner and design team prefer a single-story building to avoid the installation of an elevator.
- The design team uses aluminum storefront even though they noted that aluminum doesn't hold up in the region's weather.
- Good quality finishes, functional and durable materials utilized with some good design elements.
- The community and school uses could be better integrated with each other.
- The overall design may not speak to the local community, culture, location, etc. as much as it could.
- The design provides an efficient and practical layout.
- The layout supports future expansion.
- The current enrollment is 90 students but the school is planned for 221 students. The classrooms are 900 SF which is a normal size for around 30 students per grade 1st and above.
- There are a large number of sinks allocated for the classrooms.
- Dissimilar metals contacts are used. Stainless steel fasteners and galvanized elements are specified which are not compatible, especially in exterior environments.
- Metal roofing may not be best for maintenance/ease of repair, replacing could be an opportunity for significant savings.
- There are four different exterior wall finishes specified.
- The gym wood athletic flooring might be a maintenance/durability issue in a wet and rural climate.
- The exterior aluminum screens offer great shelter for birds.
- There are exposed glulams at the covered play.
- Cement board siding could replace brick finish to reduce seismic weight.

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- The mechanical attic in the classroom area and the narrow corridor may impede the clerestory windows bringing in sufficient natural light.
- The location of transom windows along the corridor at the classrooms provides the opportunity to use bearing wall framing.
- The floor-to-floor height is 12'.

Civil

- The access to the site needs to come off 1st St. N.
- The desire to minimize site clearing contradicts with some plans to clear site.
- It is preferred to separate the bus and parent drop-off/pick-up loops.
- Putting drainage on the high side of the site will create challenges.
- The parking lot is not adjacent to the community soccer field.
- Building is perpendicular to natural slope and close to the road.
- Fire water is currently shown as a looped system, a reduction was discussed on the call.
- The site has shallow groundwater and does not provide infiltration.
- There is a possible discrepancy of pavement areas on site plan and Geotech.
- The provided parking is above required per code.
- The clearing limits are in SR-109 Right-Of-Way.
- Treatment system is mechanical.
- The building finish floor is at contour 121, a high point on the site.
- Rainwater from the property empties into the first street ditch and then the Pacific Ocean.
- The storm pond is on contour 119, invert is 113.
- Three hydrants were provided for project coverage.
- A sewer gravity main extension is requested to serve the project.
- A new sidewalk is proposed on the frontage of the project site.
- There are trees and existing infrastructure on site today.
- The sanitary extension to the SE has approximately 7 manholes.
- The site is exempt from full flow control, required only to match "today's" flows.
- The stormwater is sized for Right-Of-Way impact.
- Curbs, gutters and parallel parking are not allowed.
- Grades for potential expansion are considered.
- Site has challenging grades to the SE along water and sewer alignment.
- Site consists of four driveways, each is approximately 20'-24' wide.
- The fire lane loop exceeds minimum code requirement for firefighting access.

Landscape

- The outdoor stage gathering area at the front of the building is a great feature, but could be better integrated with the school.
- The field size and subdrainage are adjustable.
- There is no landscape concept for the storm pond.

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- The outdoor stage and gathering areas are tight; a driveway bisects the lawn areas.

Structural

- The design team would like to avoid the need for a seismic joint.
- The shallow liquefaction of the site needs to be considered.
- There are multiple geotech reports issued with conflicting recommendations regarding ground improvements and foundations (aggregate piers, shallow foundations on re-compacted fill versus overex, etc.).
- The structural system is very efficient for this size of building.
- The wind may be a factor for structural stress.
- May be worth exploring the use of bearing walls at the exterior instead of post and beam to cut framing costs.
- The preliminary lateral design is over engineered for structure proposed.

Mechanical

- A four-pipe system is one of the most expensive options for this application.
- It is preferred to avoid outside equipment.
- The heat pumps for domestic hot water are located outside.
- The average high temp in Pacific Beach is 71F in August.
- The wind could be a factor for cooling/comfort and heating/cooling needs.
- The facilities manager would like the systems to be easily maintained with local resources or by staff.
- The site does not have natural gas service, and a fossil fuel based system would need to be propane.
- The electric heat pump is a ground mounted HVAC system.
- A heat pump hot water heater with redundant electric back-up is specified.
- The preferred vendor for Alerton DDC controls is ATS.
- A pump may be required for fire system.
- A grease interceptor is required for the warming kitchen.

Electrical

- The design uses inverter-based emergency pathway illumination.
- The intercom standard is Rauland/Telecenter U.
- The CCTV is Exacqvision with Axis cameras.
- There appears to be minimal solar planned which is tied to utilities.
- The main electrical room has a lot of extra circulation space.

Construction Management

- Limited community and faculty/staff participation prior to the design.
- Demo calls for haul off-site.

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D.4 Risk Analysis

	PROB	COST IMPACT	SCHEDULE IMPACT
HIGH (5)	90-100%	>1M	>2 mo
MEDIUM-HIGH (4)	66-89%	500k-1M	1.5-2 mo
MEDIUM (3)	45-65%	2-500k	1-1.5mo
MEDIUM-LOW (2)	30-44%	1-200k	.5-1mo
LOW (1)	<29%	<100k	<.5mo

Table 1: Risk Scoring Legend

RISK FACTORS	PROB	COST IMPACT	SCHEDULE IMPACT	SCORE
Discovering tribal or other artifacts during excavation which pauses construction.	M	L	M	6
Potential equipment or contaminated soils from prior occupant or neighboring activity.	M	L	ML	4.5
Some elements in the estimate are too low and might not capture the cost of a remote location.	MH	MH	L	10
High ground water and wet weather could impact grading, ground improvements, and foundation work.	H	ML	M	12.5
Softwood lumber now has 50% tariffs from Canada, potential for increased tariffs for wood, aluminum, steel, fuel, etc.	H	MH	M	17.5
Availability of qualified contractors and vendors in the area.	MH	M	M	12
Mold issues from wood framing in wet weather.	MH	ML	ML	8
Construction delays due to construction during wet seasons.	M	ML	ML	6
Longer lead times on HVAC equipment (specifically for marine environments).	MH	ML	M	10
Risk of jurisdiction requiring maintenance access road to sanitary manholes to SE. This may require another road, additional clearing area, grading costs, and drainage that can't be routed to First St.	M	MH	L	7.5

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RISK FACTORS	PROB	COST IMPACT	SCHEDULE IMPACT	SCORE
Jurisdiction may require a larger pump or water storage tank depending on impact of pressure difference overcoming 41' between building FFE of 121 and apparent connection to 4th at elevation 80.	ML	MH	ML	6

Table 2: Risk Factors and Scores

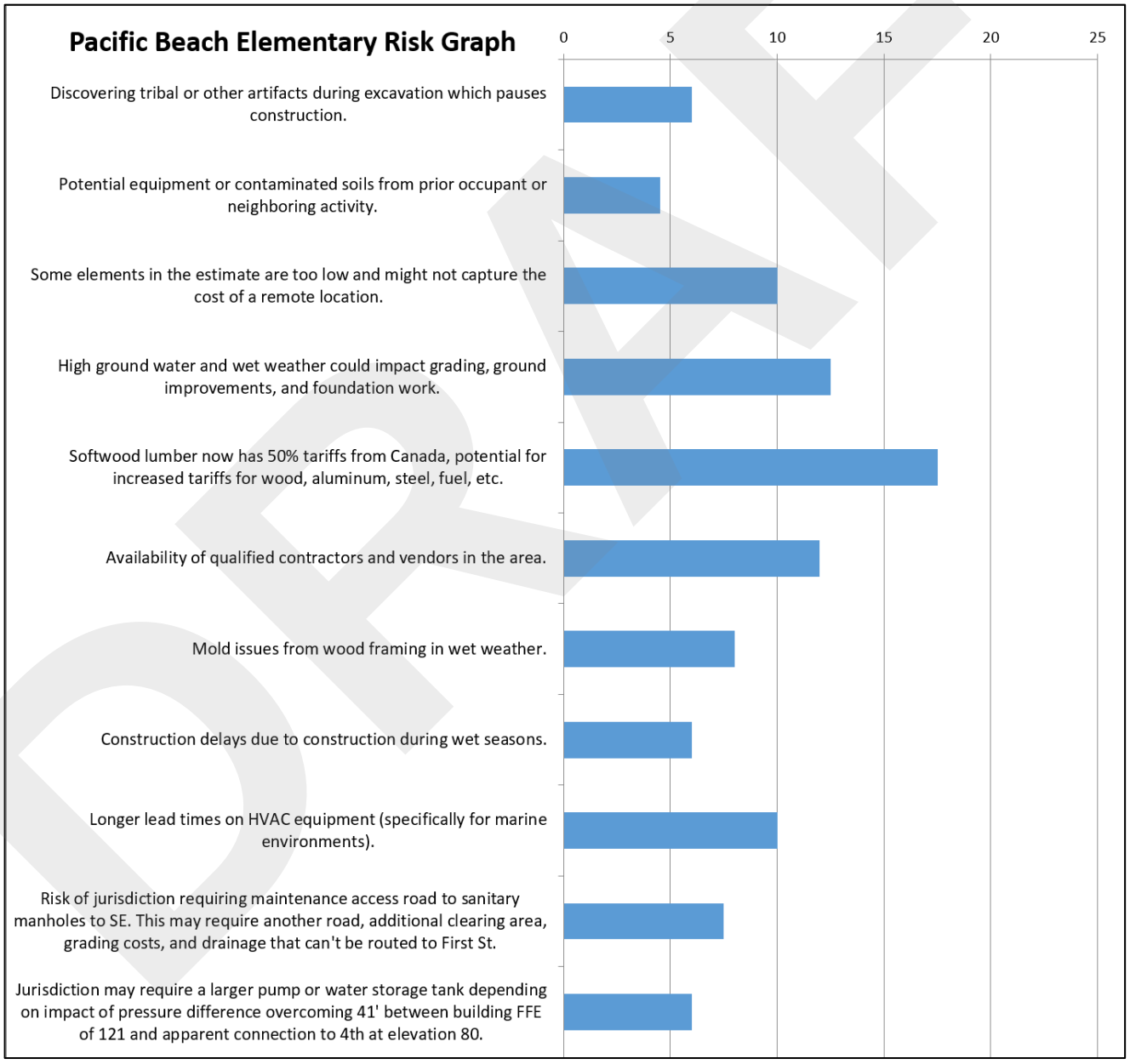


Figure 1: Risk Factors Graph Ranked by Criticality

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Appendix E
Background Documents

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E.1 Background Documents

The documents listed below were provided to the Value Engineering Team for reference in reviewing and analyzing the project design.

- PBES – 2023 WSSP Scorecard by TCF, August 25, 2026.
- Pacific Beach Elementary School – Basis of Design by TCF Architecture, August 12, 2026.
- Pacific Beach Elementary School – Value Engineering Set (95% SD) by TCF Architecture, August 12, 2026.
- Pacific Beach Elementary School – Owner's Project Requirements by NBSD, August 28, 2026.
- Pacific Beach Elementary School – Education Specifications by TCF Architecture, March 11, 2026.
- Pacific Beach Elementary School – Design-Level Geotechnical Engineering Report on Pacific Beach Elementary School Relocation by Haley Aldrich, August 2026.
- Pacific Beach Elementary School – Preliminary Geotechnical Engineering Report on Pacific Beach Elementary School Relocation by Haley Aldrich, August 2024.
- Pacific Beach Elementary School – Topographic Survey by MTN 2 Coast LLC., June 16, 2026.
- Pacific Beach Elementary School – Schematic Design Estimate by RC Cost Group, August 28, 2026.
- North Beach School District – Design Approach for Pacific Beach Elementary School by NBSD, August 28, 2026.
- North Beach School District – Owner Project Requirements by TCF Architecture, June 23, 2026.

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E.2 Design Drawings

Pacific Beach Elementary School Conceptual Renderings

Front





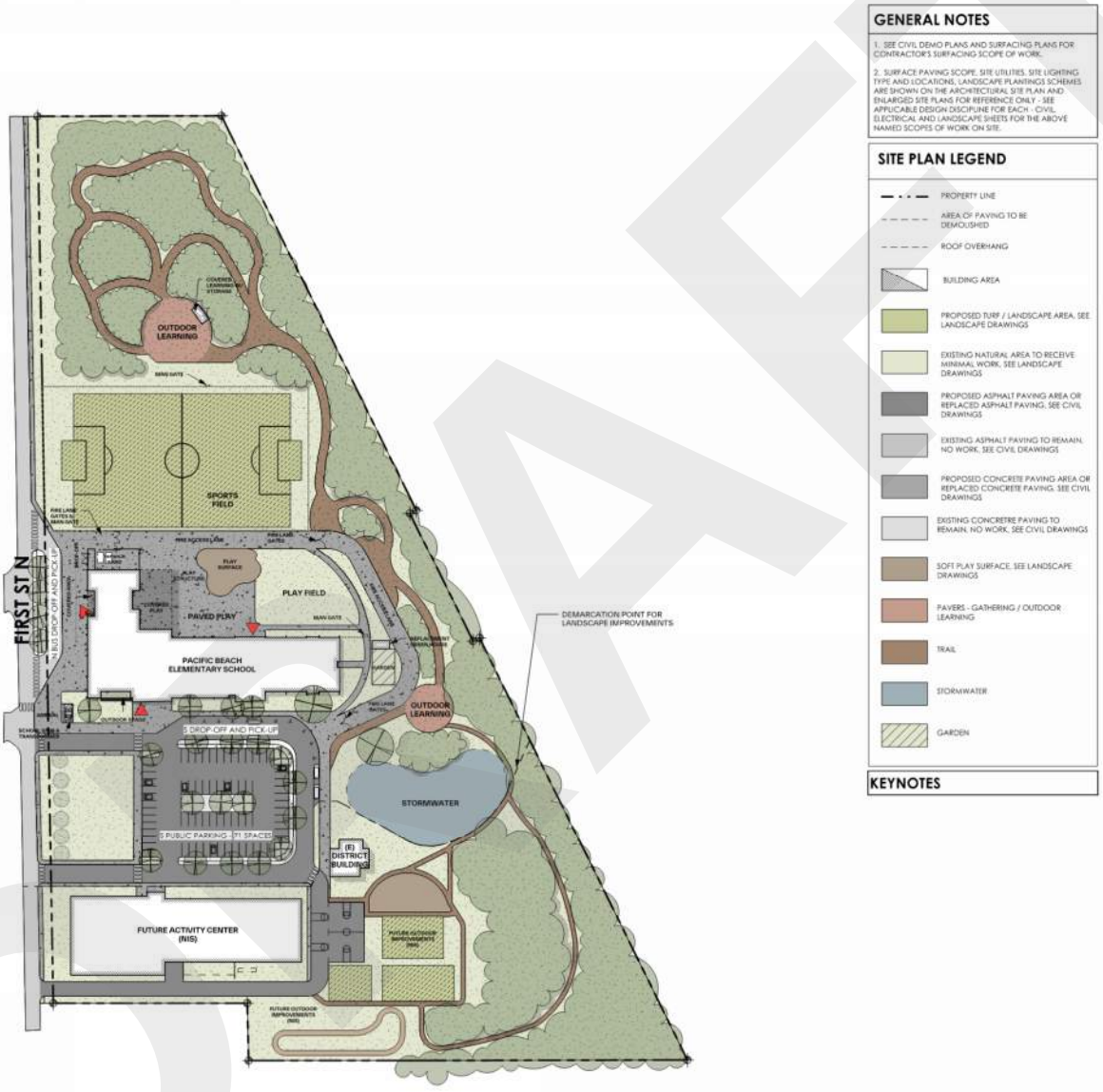
Back





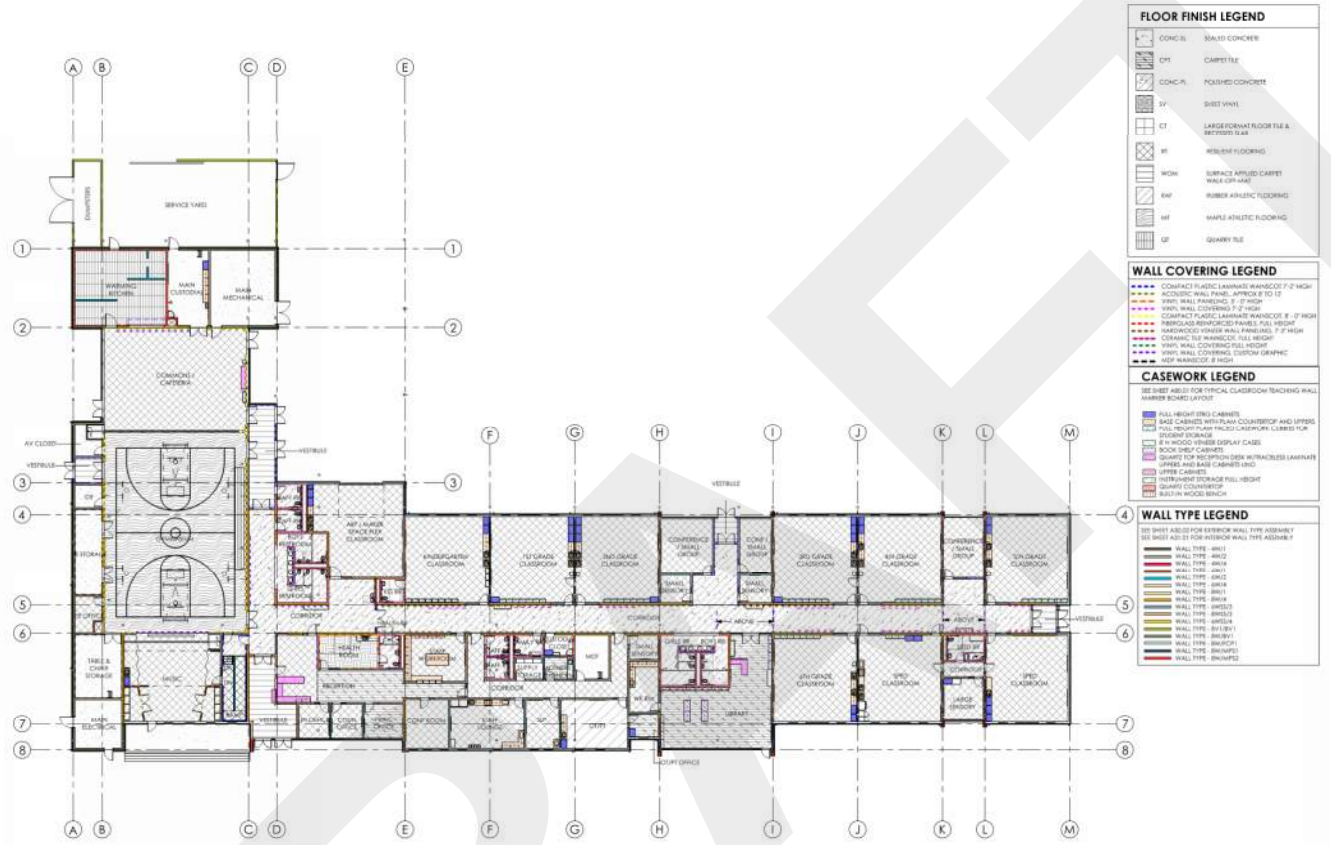
Pacific Beach Elementary School Plans

Site Plan



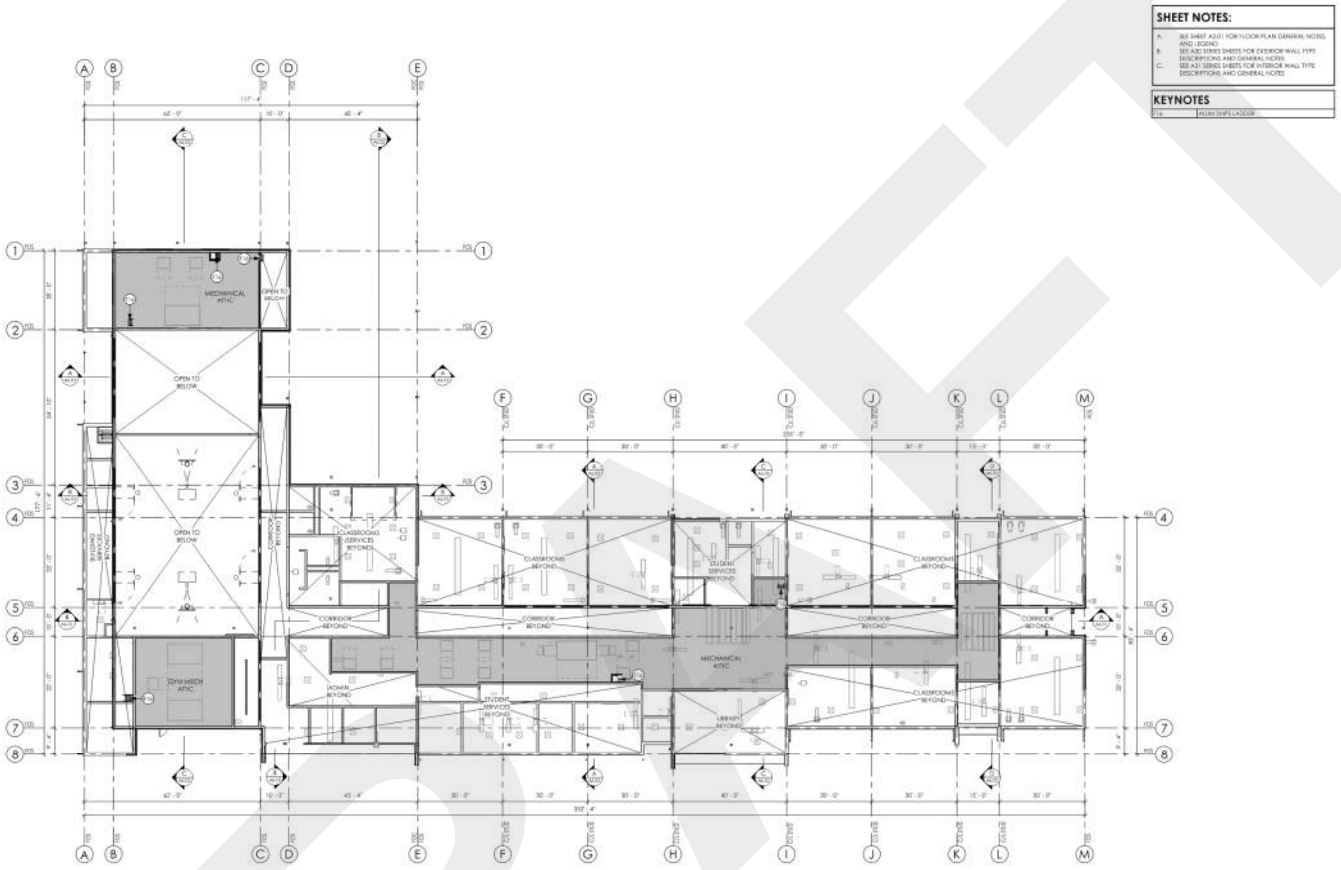
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Ground Floor Plan



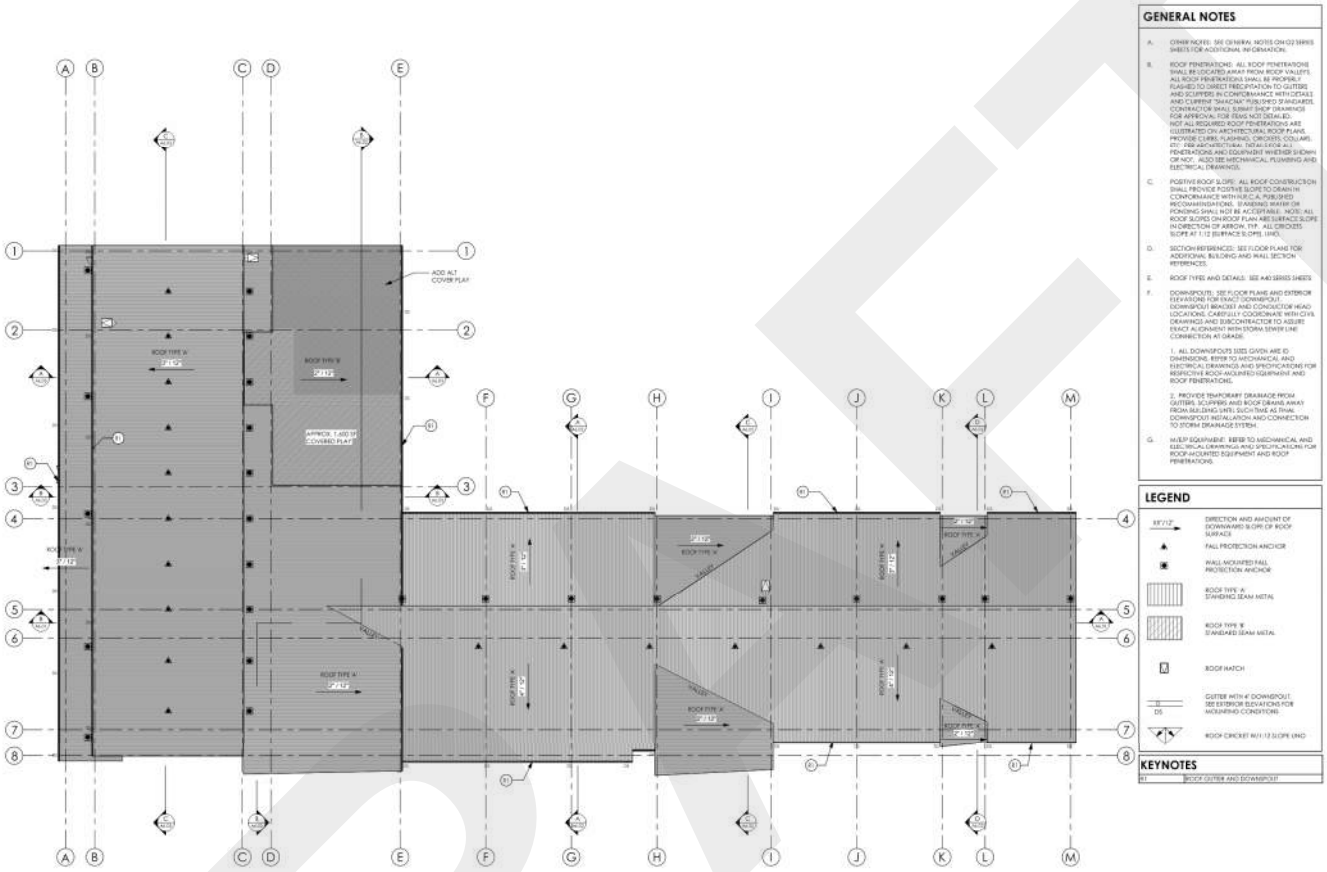
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Mechanical Roof Plan



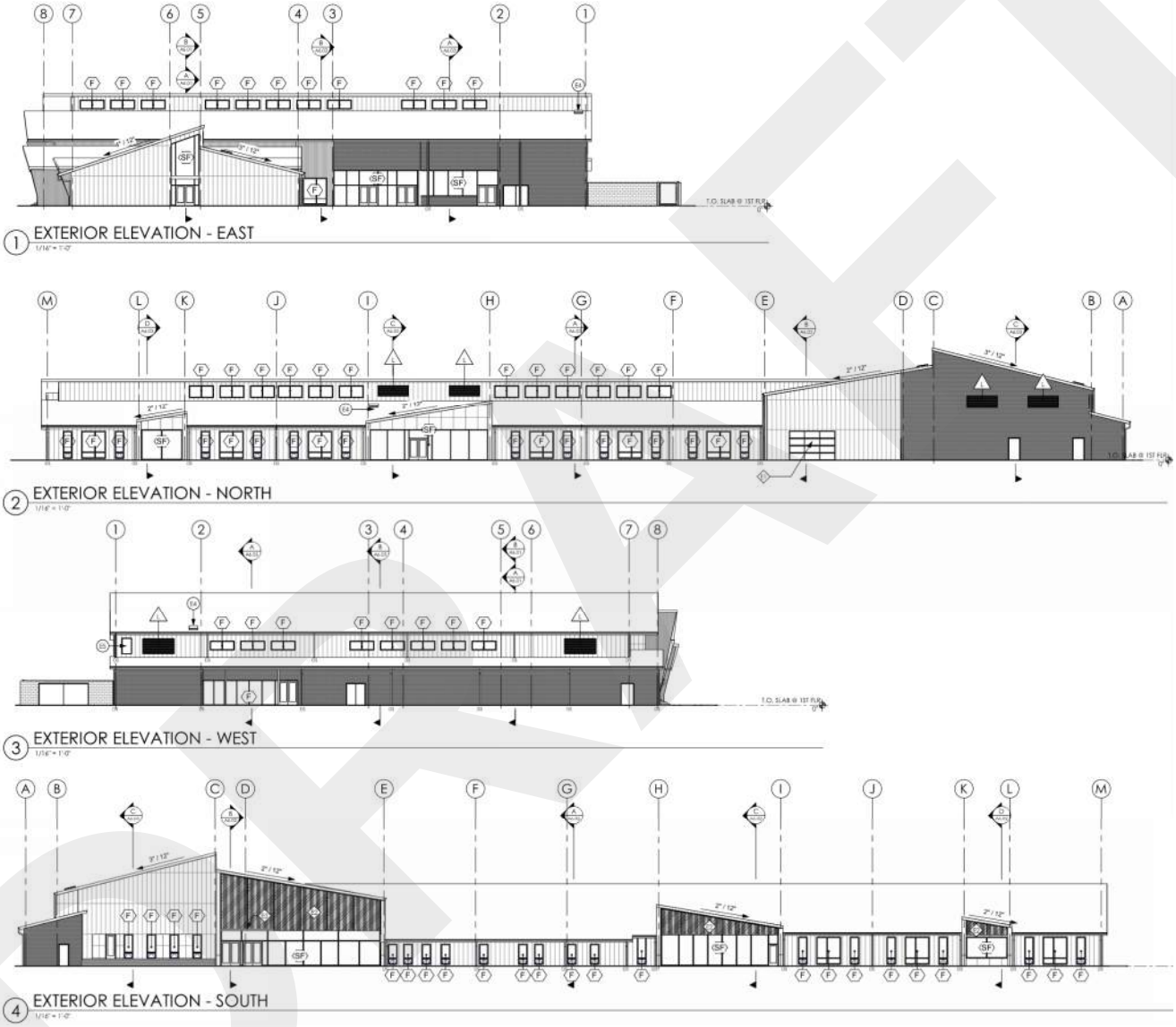
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Roof Plan



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Exterior Elevations



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Appendix F
Workshop Information

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VE Study Agenda

Monday, August 31st, 2026 – hosted via Teams.

		Participants
8:45	**Set Up** Join the teleconference to enable a prompt meeting kickoff at 9:00	NBSD Reps CSG Team TCF Team VE Team
9:00	**Introduction and Background** Introductions Review VE agenda and methodology - Säzän	
9:15	**Information** Project overview, program and goals – CSG, TCF Virtual site presentation – CSG Design presentation – TCF Review of project issues and constraints – TCF Overview of project budget and current working estimate – TCF, CSG	
11:15	**Study Goals and Objectives** Review workshop goals and objectives – Säzän Review alternatives evaluation criteria – Säzän	
12:00	**Break for Lunch**	

Workshop resumes via Teams.

1:00	**Observations** Document observations on concerns, issues and how well baseline design achieves program and project goals	VE Team
2:00	**Risk Review** Develop risk register and rate project risks	
3:00	**Function Analysis** Examine major systems, elements and functions Identify unique or specialized functions required to meet project objectives and performance requirements	
4:00	**Creative Speculation** Identify functions for consideration Speculate on alternative solutions	
5:00	**Adjourn** Review agenda for next day	

Tuesday, September 1st, 2026 – hosted via Teams.

8:30	**Continue Creative Speculation**	VE Team
10:30	**Break**	
10:45	**Continue Creative Speculation**	
12:00	**Break for Lunch**	

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1:00 **Evaluation**
Review alternatives evaluation criteria
Score ideas and select alternatives for development
Assign person responsible for follow-up; distribute workbooks

3:30 **Break**

3:45 **Development**
Follow up on issues and questions
Prepare analysis of alternatives
Document technical, risk and cost analysis with supporting calculations, sketches, research and estimates

4:30 **Adjourn**
Review agenda for next day

Wednesday, September 2nd, 2026 – hosted via Teams.

8:30 **Development** VE Team
Continue development

12:00 **Break for Lunch**

1:00 **Development**
Continue development

4:30 **Adjourn**
Review agenda for next day

Thursday, September 3rd, 2026 – hosted via Teams.

8:30 **Development** VE Team
Continue development

12:00 **Break for Lunch**

1:00 **Presentation Prep**
Identify key findings and recommendations
Prep for presentation

2:30 **Adjourn**
Review agenda for next day

Friday, September 4th, 2026 – hosted via Teams.

8:30 **Development** VE Team
Continue development

12:00 **Break for Lunch**

1:00 ***FINAL DEADLINE FOR WORKBOOKS***

2:30 **All Workbook Estimates Due EOD**

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POST WORKSHOP

Tuesday, September 15th, 2026 – hosted via Teams.

1:30-	**Results Presentation**	NBSD Reps
3:30	Presentation of study key findings and recommendations	CSG Team
	Presentation of study results	TCF Team
	Next step actions	VE Team

***Draft Report delivery by EOD Wednesday, September 30th**

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F.2 Attendance Sheet

August			September								
Pre-Study Kickoff: 27th	Kickoff: 31st	Workshop Day 1: 31st	Workshop Day 2: 1st	Workshop Day 3: 2nd	Workshop Day 4: 3rd	Workshop Day 5: 4th	Results Presentation: 15th	**NAME**	**DISCIPLINE/ REPRESENTING**	**PHONE**	**EMAIL**
X	X	X	X	X	X	X	X	Steven Paget	Facilitator, Säzän	206-267-1700	spaget@sazan.com
X	X	X	X	X	X	X	X	Cassidy Davenport	Study Assistant, Säzän	760-707-8336	cdavenport@sazan.com
	X	X	X	X	X	X	X	Ross Parker	VE Architectural, BCRA	206-856-0158	rparker@bcradesign.com
	X	X	X	X	X	X	X	Riley O'Boyle	VE Civil, Apex	503-741-1871	riley.oboyle@apexcos.com
	X	X	X	X	X	X		Frank Unocic	VE Structural, Quantum Consulting Engineers	206-234-7336	funocic@quantumce.com
	X	X	X	X	X	X	X	Natalie Sherwood	VE Mechanical, Säzän	503 416 2074	nsherwood@sazan.com
	X	X	X	X	X	X		Bruce Jessup	VE Electrical, Säzän	541-229-2839	bjessup@sazan.com
	X	X	X	X	X	X	X	Dan Junge	VE Cost Estimator, RLB	503-226-2730	daniel.junge@us.rlb.com
							X	Richard Zimmerman	Owner, North Beach School District		rzimmerman@northbeachschools.org
	X						X	Stan Sturgeon	Owner, North Beach School District	360-581-6386	ssturgeon@northbeachschools.org
X	X							Andrew Twyman	Owner's Rep, CSG		andrew.twyman@esd112.org
	X	X						Dan Purefoy	Owner's Rep, CSG		dan.purefoy@esd112.org
	X							Drew Pearson	Owner's Rep, CSG		drew.pearson@esd112.org
	X							Manuel Saldivar-Aguirre	Owner's Rep, CSG		manuel.saldivar-aguirre@esd112.org

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August			September								
Pre-Study Kickoff: 27th	Kickoff: 31st	Workshop Day 1: 31st	Workshop Day 2: 1st	Workshop Day 3: 2nd	Workshop Day 4: 3rd	Workshop Day 5: 4th	Results Presentation: 15th	**NAME**	**DISCIPLINE/ REPRESENTING**	**PHONE**	**EMAIL**
							X	Robert Musial	Owner's Rep, CSG		robert.musial@esd112.org
	X							Ally Beardemphl	Architectural, TCF	253-572-3993	ally@tcfarchitecture.com
	X						X	Amanda Stanton	Architectural, TCF	253-572-3993	amandas@tcfarchitecture.com
	X						X	Andrew Hickman	Architectural, TCF	253-572-3993	andrew@tcfarchitecture.com
	X						X	Glenn Myles	Architectural, TCF	253-572-3993	glennm@tcfarchitecture.com
X	X						X	Sheena Hewett	Architectural, TCF	253-572-3993	sheena@tcfarchitecture.com
	X						X	Steve Wachtler	Architectural, TCF	253-572-3993	stevew@tcfarchitecture.com
	X							Maggie Howsden	Civil, LDC CORP		mhowsden@ldccorp.com
	X						X	Ross Jarvis	Civil, LDC CORP	360-634-2065	rjarvis@ldccorp.com
	X							Clayton Beaudoin	Landscape, Site Workshop	206-285-3026	claytonb@siteworkshop.net
							X	Jack Hyland	Landscape, Site Workshop		jackh@siteworkshop.net
							X	Clare Cummins	Structural, Degenkolb		ccummins@degenkolb.com
	X						X	Kyle Steuck	Structural, Degenkolb		ksteuck@degenkolb.com
							X	Andrey Streltsov	Mechanical, CMTA		Andrey.Streltsov@cmta.com

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August			September								
Pre-Study Kickoff: 27th	Kickoff: 31st	Workshop Day 1: 31st	Workshop Day 2: 1st	Workshop Day 3: 2nd	Workshop Day 4: 3rd	Workshop Day 5: 4th	Results Presentation: 15th	**NAME**	**DISCIPLINE/ REPRESENTING**	**PHONE**	**EMAIL**
	X						X	Alec Bitterling	Electrical, GFT		acbitterling@gftinc.com
	X						X	Brian Mugane	Electrical, GFT		bcmugane@gftinc.com
	X						X	Henry Santos	Electrical, GFT		hmsantos@gftinc.com
	X							Josh Rood	Electrical, GFT		jmrood@gftinc.com

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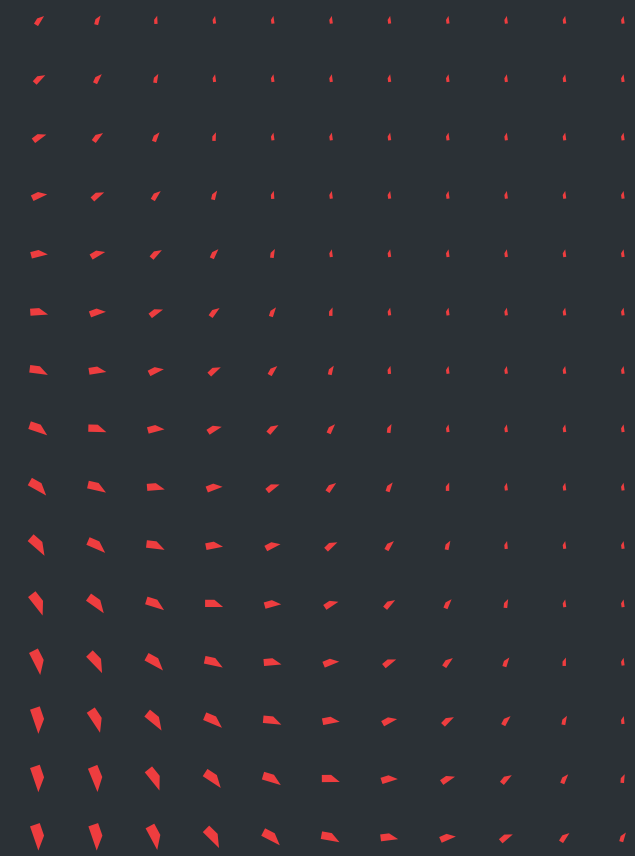


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TCF

IV. Cost Control Strategies



PBES Cost Control Strategies

TCF

Design Team VE Item	Design Team Recommendation	SAZAN Item Number	VE Team Recommendation	Description	Priority	Design Team Cost Alternative	Cost w/ Markup	Rejected Cost	Recommended Cost Revisions	Accepted Cost	Add Alt Bid	Notes/Remarks	Responsibility	Owner Accepted or Rejected	Alt Bid / Allowance	Photo
				All Sazan costs are loaded at 25.1%		Markup =	1.3361									
SITE							$2,204,975	$374,560	$1,718,278	$1,702,245						
C1 Site Layout							$1,366,009	-$83,606	$1,416,213	$1,416,213						
C1a	Accept			Reduce Fill to 2,100 CY		$950,000	$1,269,248		$1,269,248	$1,269,248		oLower soccer field 4' and push north a little. oSlope parking lot to the south at a steeper slope.		**ACCEPTED**		
C1b	Accept			Reduce sidewalk by 11,500 SF		$43,000	$57,450		$57,450	$57,450						
C1c	Accept			Reduce Clearing and grubbing area		$67,000	$89,515		$89,515	$89,515						
C1d	Reject			Convert fire lane to pavers.		$25,000	$33,401					Impacts item RV-167. SH - Product BOD proposed? Are there ADA concerns going to pavers?				
C1e	Consider			Add music outdoor stage (Alternate)		-$62,577	-$83,606	-$83,606				Removed double up from landscape budget		**ACCEPTED / ALTERNATE**		
C1f				Reduce main parking area by approx 50%, create Alternate for the delta												
		GS-82		Include foundation requirements, i.e., overexcavation and trenching spoils, in determining the cut/fill balance.												
		GS-83		Reduce extent of silt fence.												
		GS-84		Lower finish floor elevation (FFE) to reduce import quantity.												
	Reject	OS-132	Reject	Layout site following existing contours.		$325,000	$347,095	$347,095				Wipes out District Office & Parking & Community Center Area AH - do not recommend				
	Accept	OS-133	Accept	Reduce the size of the soccer field to approximately 60,000 SF.		$85,000	$90,779	$90,779				See L1a below				
		OS-134		Place parking adjacent to playfield for community use.												
		OS-136		Reduce clearing and grubbing limits and extent of site development.												
		OS-137		Shift the outdoor education area closer to the greenhouse and reduce fill at former location.												
		OS-138		Shift building closer to 1st Street and reduce the paved area in front of the west elevation.												
		OS-139		Separate school parking from event parking.												
		OS-140		Rotate soccer field north/south.												
		OS-141		Shift the school and rotate the soccer field.												
		OS-142		Flip field and school.												
		OS-143		Move the school to the south property line and flip the location of the parking lot.												
		OS-144		Reorient building, parallel to contours and farther from road.												
		PS-145		Install large oversized step seating at perimeter of outdoor play for informal gathering.												
		RS-156		Install perforated pipe to drain groundwater downslope.												
	Reject	RV-167	Accept	Delete section of fire lane from parking lot along east side of building and create hammerhead at play area north of gate.		$19,000	$20,292	$20,292				Fire Marshal said he is more willing to decrease required radii at fire access roads if there are not hammerheads / turnarounds AH - do not recommend				
	Accept	RV-168	Accept	Use thickened asphalt section in lieu of concrete paving at the bus loop.		$21,000	$22,428		$22,428	$22,428		AH - I thought the bus loop was asphalt. Recommend.				
		RV-169		Phase parking counts to reduce cost on this project.												
		RV-170		Reduce paved parking and increase shoulder width for event parking.												
		RV-172		Decrease width of drive aisles in parking area and drop off loop.												
		RV-175		Delete parent loop driveway by building and consolidate egress at southern driveway.												
	Consider	SA-176		Compact gravel ILO paved concrete for pathways.								SW - only consider in small select areas				
		SA-177		Compact gravel ILO paved asphalt for drive aisles.												
		SA-178		Compact gravel ILO paved asphalt for parking.												
		SA-179		Use a gravel base for event parking in lieu of asphalt.												
C2 Utilities							$100,204	$0	$100,204	$100,204						
C2a				Reduce water main Piping by 400'		$75,000	$100,204		$100,204	$100,204		SH - "Yellow main" may be omitted (9/29/26) DAC requests that the Design team also evaluates revising ductile iron to ABS.				
		DP-33		Ensure scope of utility and site design is limited to the Pacific Beach Elementary project and conforms to intent of the funding.												
		DP-34		Consider/coordinate water/sewer extension capacity for future activity center development.												
		DP-35		Negotiate with Jurisdiction to provide access road for maintenance of sanitary alignment.												
		RU-163		Use horizontal bore under 1st Street for electrical primary and telecom.												
		RU-164		Remove second water tap on First St. to reduce water pipe length.												
		RU-165		Install pressurized sanitary system to tie into city's pressure line in First.												
		RU-166		Route water more directly south to loop water system.												
C3 Stormwater Detention Options							$0	$0	$0	$0						
		CN-18		Eliminate downspouts and use scuppers with in-ground collection to celebrate water flow.												
	Accept	MH-110	Consider	Use sheet flow and swales for stormwater conveyance in lieu of catch basins and piping where feasible.		$105,000	$112,139		$33,403	$33,403		RJ - Coordination with GHC - A dispersion trench and below-grade storm drain appears to be the likely strategy moving into DD. Less savings than VE Team proposes at $25,000, ROM				
		MH-111		Redistribute pond to smaller detention facilities.												
		MH-112		Use shallow trench sheet flow stormwater dispersion through forest in southeast corner of site.												
		MH-113		Incorporate sheet flow dispersion to reduce treatment and detention.												
		MH-114		Confirm tidal influence on storm outfall.												
		MH-115		Closed chamber/vault with buoyancy protection ILO lined pond.												
		MH-116		Explore detention and treatment in the ROW.												
		RU-162		Reduce size of storm water line.												
		TR-184		Separate clean roof runoff from contaminated asphalt surfaces.												
		TR-185		Use bioretention and rain gardens for stormwater detention and water quality.												

	Design Team VE Item	Design Team Recommendation	SAZAN Item Number	VE Team Recommendation	Description	Priority	Design Team Cost Alternative	Cost w/ Markup	Rejected Cost	Recommended Cost Revisions	Accepted Cost	Add Alt Bid	Notes/Remarks	Responsibility	Owner Accepted or Rejected	Alt Bid / Allowance	Photo
58			TR-186		Reduce pollution generating surfaces.												
59	**L1 Landscape**							$146,030	$0	$146,030	$129,998						
60	L1a	Accept			Revise from U18+ soccer field to U13-U15 (285'x180') 18,700 SF reduction		$82,100	$109,690		$109,690	$109,690	$109,690	Includes Underdrainage Savings DAC comments: would like to keep if possible and take other reductions first, then make a high-priority alternate if neccessary. Base Bid grass U-13-U15 field, add alt to increase size		**ACCEPTED / ALTERNATE**		
61	L1b	Accept			Reduce 20' soccer fence to 6'		$12,000	$16,033		$16,033			AH - Defeats purpose of a backstop for errant balls.				
62	L1c	Consider			Remove Logs		$15,200	$20,308		$20,308	$20,308		SW - Recommend salvaging felled logs on-site and reusing as site furnishings. Cost estimate and construction strategy to be revised.				
63		Accept	CN-15	Accept	Reduce extent of hard surface plaza and expand landscaping.		$74,000	$79,031	$79,031				Cost savings accepted above under C1b		**ACCEPTED**		
64		Accept	CN-16		Enlarge gathering area by outdoor music stage and incorporate more nature elements.								SW - Accept, need coordination w Civil drive aisles and parking area.				
65			CN-17		Locate covered gathering ring and outdoor education area closer to building to encourage use.								SW - Covered shelter as bid alternate?				
66			CN-19		Incorporate more natural elements into play areas.												
67			CN-20		Add small covered outdoor areas/porches to facilitate outdoor learning.												
68			CN-21		Protect trees around forested path.								As planned.				
69		Accept	CN-22		Reduce impervious areas and use more landscaping.								SW - sim. CN-15				
70		Consider	CN-23		Reduce extent of hard surface play and increase area of nature play.								SW - We will want to still accommodate some areas with fall surfacing for fixed play equipment.				
71			CN-24		Incorporate hard surface playcourt layouts onto fire lane.								As planned.				
72			DP-26		Phase the planting plan to defer select locations for future budget cycles.												
73		Accept	FC-54	Accept	Enlarge outdoor viewing and community gathering area by outdoor music stage and integrate with larger lawn area.		$91,000	$97,187		$97,187	$97,187		SW - Also see C1e for potential duplicate costs				
74		Accept	FC-55		Add lighting for the soccer pitch as a bid alternate.								SW - Bid Alt				
75			FC-58		Add bleachers with covered seating for sports events as a bid alternate.								Is this in line with District's goals?				
76		Consider	GP-85	Accept	Reduce landscaping and irrigation budget by 25%.		$167,000	$178,354		$90,000	$90,000		Under Review by TCF and Landscape DAC comments: Remove or drastically reduce irrigation (provide only at front façade?). Design team will continue to explore planting and irrigation strategy into design development.				
77			GP-86		Add garden shed near greenhouse and garden to encourage and simplify student involvement in garden program.								As planned				
78			GP-87		Incorporate student maintained garden and wild planting areas.								As planned.				
79		Consider	HT-88		Grind grubbing for landscaping and community garden compost.								SW - Could incorporate on-site composting near student garden.				
80			HT-90		Incorporate information regarding local tribes into the outdoor learning area.												
81			IU-99		Provide areas outside the classrooms for display of individual student and collaborative work.												
82			IU-100		Design garden area and incorporate into program providing fresh produce to student breakfast/lunch program.												
83			PW-148		Integrate natural materials in playground.								SW - Sim. CN-19				
84		Consider	RV-171		Reduce number and size of trees in parking area.												
85			RV-173		Increase length of center landscape median and add stalls in the parking area.								SW - Coord with Civil team on parking layout re: CN-16				
86	**BUILDING**							$6,161,719	$1,908,198	$3,291,312	$1,723,341						
87	**ARCHITECTURAL**							$1,725,449	$115,658	$1,608,723	$1,117,641						
88	**A1 Building Exterior**							$470,240	$0	$470,240	$0						
89	A1d				Asphalt Shingle ILO Metal Roofing		$351,963	$470,240		$470,240			Revise 75% of roofing to Asphalt Shingles. Also see ES-44 for overlap.				
90		Reject	ES-42	Consider	Reduce extent of masonry on exterior walls and increase use of fiber cement and metal panels.		$13,000	$13,884					AH - Glen to review. Not a lot of savings and creates more transition conditions		**REJECTED**		
91		Reject	II-95		Increase the south roof overhang at the classroom wing to 4 ft. for improved shading and glare control.								SH - Will require adding sprinklers in eaves				
92		Reject	II-96		Add exterior shading devices at south facing windows of the classroom wing.								SH - Design team is studying strategies including height of glazing, length of eave, glazing coatings, roller shades, light shelves, and landscaping				
93			MF-104		Use integral color fiber cement panels for increased durability and reduced maintenance.												
94		Consider	MF-105		Use a non-metal/non-corrosive rain screen attachment system.												
95			MF-106		Use metal wall panels with a coastal marine coating for increased durability.								SH - High Density fiber cement wall panels proposed in BOD are well-suited to a marine environment per Design Team Envelope Consultant				
96		Reject	MF-108		Revise roofing to single ply membrane to increase ease of repair.												
97			MF-109		Use tri-metallic zinc/aluminum/magnesium (ZAM) standing seam metal roofing for increased corrosion resistance in the coastal condition.												
98		Reject	RL-159		Reduce masonry to reduce seismic weight.								SH - Design team recommends providing masonry as-designed to minimize transition conditions where system failures are more likely to occur				
99	**A2 Flooring**							$60,122	$60,122	$0	$0						
100	A2a	Consider	FI-69	Consider	Make wood flooring in Gym an Alternate		$45,000	$60,122	$60,122				Sazan estimated at $50,000 AH - does not match owner requirements / Ed Specs. The district wants to make school equitable with Ocean Shores ES.		**REJECTED**		
101		Consider	FW-64		Use colored resilient floor tile patterns to communicate wayfinding.								SH - Design team will explore as design develops				
102		Reject	FI-74		Use resilient flooring in corridors.								SH - does not match owner requirements / Ed Specs. Polished Conc selected for ease of maintenance				
103			FI-76		Use polished concrete in the makers space.								SH - does not match owner requirements / Ed Specs. Polished Conc selected for ease of maintenance				
104	**A3 Walls**							$190,774	$17,088	$173,687	$173,687						
105	A3a	Consider	FI-75		Reduce tile wainscot in restrooms from full height to 7'		$70,000	$93,524		$93,524	$93,524		AH - Recommend or even to 5'		**ACCEPTED**		
106	A3b	Consider			Reduce corridor wainscot height to 4'		$60,000	$80,163		$80,163	$80,163		AH - Recommend		**ACCEPTED**		
107			FW-65		Use wall colors and graphics to communicate wayfinding.												
108		Reject	FI-72	Consider	Use high density composite wood wainscot in lieu of P-lam wainscot in corridors.		$12,000	$12,816	$12,816				Potentially increased maintenance		**REJECTED**		
109		Reject	FI-73	Reject	Use high density composite wood wainscot in lieu of P-lam wainscot at gym and commons.		$4,000	$4,272	$4,272						**REJECTED**		
110			FI-77		Use lower cost P-lam wainscot.												
111	**A4 Ceilings**							$85,488	$24,564	$85,488	$24,564						
112	A4a				Reduce wood ceilings by half (1,200 SF)		$45,600	$60,924		$60,924							
113		Consider	FI-70	Consider	Reduce quantity of linear wood ceilings by 20%.		$23,000	$24,564	$24,564	24564	$24,564		Accepted in A4a		**ACCEPTED**		
114			FI-79		Reduce quantity of suspended acoustic ceiling clouds and replace with standard acoustic ceilings.												
115			FI-80		Expose structure and infrastructure installation for educational purposes.												

	Design Team VE Item	Design Team Recommendation	SAZAN Item Number	VE Team Recommendation	Description	Priority	Design Team Cost Alternative	Cost w/ Markup	Rejected Cost	Recommended Cost Revisions	Accepted Cost	Add Alt Bid	Notes/Remarks	Responsibility	Owner Accepted or Rejected	Alt Bid / Allowance	Photo
116			FI-81		Use acoustical metal decking in lieu of acoustical ceiling panels in gym, commons, and corridors.												
117	**A5 Openings**							$0	$0	$0	$0						
118			CS-13		Provide operable windows in office area.												
119		Reject	ES-45	Accept	Reduce height of glazing on classroom wing to 7 ft and raise sill heights to a minimum of 15" AFF.		$2,000	$2,136	$2,136				DAC Comment: Design team to explore and follow up in DD. SH - Negligible savings				
120			ES-47	Reject	Reduce extent of glazing at the library and main entrance by 30%.		$11,000	$11,748							**REJECTED**		
121			FC-58		Add corridor doors at gridlines H and I to facilitate segregating library for after hours use.												
122			FC-59		Increase size of relite glazing at makers space corridor wall for enhanced visibility into space.												
123			FC-60		Increase size of relite glazing at makers space corridor wall for enhanced visibility into space.												
124			FW-68		Relocate west vestibule into gym to commons to accommodate students using buses.												
125			FI-78		Reduce quantity of clerestory windows and high ceilings at classroom corridor.												
126			II-98		Add more windows at south elevation for natural light.												
127		Consider	MF-103	Accept	Use a fiberglass in lieu of aluminum storefront system for increased durability and reduced maintenance.		$11,000	$11,748	$11,748				AH - This changes the character of the entry / vestibule. Glenn to review		**REJECTED**		
128			MF-107		Maintain glazing heights within reach of cleaning without specialized equipment.												
129			OL-121		Replace double doors with single doors where not required for access or exit width.												
130			RL-158		Eliminate clerestory windows at classroom to simplify lateral load transfer.												
131			SL-180		Limit window opening sizes at exterior to utilize bearing wall framing.												
132	**A7 Casework**							$137,770	$0	$137,770	$137,770						
133			DP-25		Specify casework and cabinetry to be procured and installed by FFE vendor in lieu of the general contractor.												
134			FI-71	Accept	Reduce quantity of casework and cabinetry in classrooms and staff areas by 20%.		$129,000	$137,770		137770	$137,770		RM - Make an alternate, but CSG will also account for casework in FFE 10/9/26 DAC Comment: Make an Alternate or shift to FFE AH - May be able to reduce by some amount, but casework is already light compared to other schools.		**ACCEPTED / ALTERNATE**		
135	**A8 Signage**							$0	$0	$0	$0						
136			HT-91		Use tribal names for building spaces and site features.												
137	**A9 Equipment & Misc**							$0	$0	$0	$40,082						
138	A9a				Residential appliances/equipment to be OFCI		$19,238	$25,703		$25,703			DAC Comment: further discussion in DD		**POSSIBLE**		
139	A9b				Remove scoreboard and make alterante		$30,000	$40,082		$40,082	$40,082		DAC Comment: Infrastructure to be provided to Scoreboard, school to crowd-fund, or possible Alternate		**ACCEPTED / ALTERNATE**		
140	**A10 Planning & Design**							$741,539	$0	$741,539	$741,539						
141	A10a	Accept	DP-31		Reduce Square Footage to 34,370		$555,023	$741,539		$741,539	$741,539		This is OSPI square footage to outside face of sheathing at exterior walls + covered play calculated at 1/2		**ACCEPTED**		
142			DT-39		Modify building layout and locate MDF Room to be able to eliminate the IDF.												
143		Reject	ES-40	Consider	Eliminate accent pop-up roofs at north side of classroom wing.		$64,000	$68,351	$68,351				AH - Glenn to review		**REJECTED**		
144		Reject	ES-41	Consider	Eliminate clerestory ridge at classroom wing and provide pop-up dormer for ventilation louvers.		$135,000	$144,178	$144,178				AH - Does not add value and diminishes daylight				
145			ES-43	Consider	Reduce size of covered play to 3,500 SF.		$122,000	$130,294	$130,294				AH - Covered Play is already under this SF				
146			ES-44	Reject	Use an asphalt shingle roof in lieu of standing seam metal roof.		$612,000	$653,607	$653,607				Also see A1d for overlap. District doesn't like the idea of this option.				
147			ES-46	Accept	Use a single ply membrane roof with applied standing ribs.		$220,000	$234,957	$234,957				AH - Do not recommend				
148			ES-48	Consider	Delete vestibule on east side of gym and cafeteria.		$58,000	$61,943	$61,943				AH - Does not align with flow outlined by Principal where students enter / exit through covered play.				
149			ES-49		Use square pop-up dormers with shed roofs in lieu of baseline pop-up roofs.												
150			ES-50		Raise vent windows to 15" AFF for a more accessible height in accordance with ADA criteria.												
151			ES-51		Reconfigure covered play area to be maximum 18' ft from exterior wall to allow use of extended coverage sidewall sprinklers in lieu of a dry sprinkler system.												
152			ES-52		Use graphic film-applied to exterior wall storefront glazing in lieu of suspended aluminum shading panels at pop-up roofs.												
153			ES-53		Reduce slope of higher roof to 3/12 and the height of exterior walls; lower mechical mezzanine height if needed.												
154			FC-56		Add a roll-up door at the music stage to increase connection between music room and outdoor stage.												
155			FC-57		Add a single-occupant restroom to the library.												
156			FC-60		Increase size of relite glazing at makers space corridor wall for enhanced visibility into space.												
157			FC-61		Eliminate drop-down curtain between gym courts and move partition wall to the curtain location.												
158			FC-62		Flip gym and commons so gym has direct access to outdoor play and commons is adjacent to music stage.												
159			FW-63	Accept	Enlarge intersection of main hallways between reception, gym, and classroom wing to create a hub, enhance wayfinding, and facilitate circulation.		$8,000	$8,544					Need further review				
160			FW-66		Define areas of public use versus student use for security delineation with signage, exterior site fencing, and interior corridor and room doors.												
161			HT-89		Simplify roof form to reflect tribal long house/plank house style.												
162			MF-102		Frame the building canopies with an enclosed fiber cement soffit for increased durability and reduced maintenance.										**ACCEPTED**		
163			OL-117	Consider	Shift divider wall between gym and commons to increase flexibility in use of gym|commons for lunches, gym programing, and community events.		$184,000	$196,509	$196,509				Eliminates wood floor, gym is divided by 12' high operable wall at centerline. AH - Does not work with current layout				
164		Consider	OL-118	Accept	Optimize size of classrooms for number of students at approximately 850 SF each.		$319,000	$340,687					SW - You could consider but the Area would need to be captured in the covered play to comply with OSPI requirements: DP-31, A10a				
165		Reject	OL-119	Accept	Modulate the corridor walls, finishes, and ceilings to alleviate long corridor effect.		$72,000	$76,895					SH - Conflicts with requests of school Admin and District. This may also eliminate the high ceilings at the corridors except at mechanical attics where they requested clerestories.				
166			OL-120		Push indoor programming space to outdoors where feasible.												
167			OL-122		Create more efficient layout/proportions of main electrical room.												
168			OL-123		Verify/reduce number of staff restrooms needed by gym.												
169			OL-124		Move Mech Attic above Music/Stage to above Admin (raises stage ceiling, improves acoustics, deletes access ladder).												
170			OL-125		Rework the support spaces off the gym to a more useful layout.												

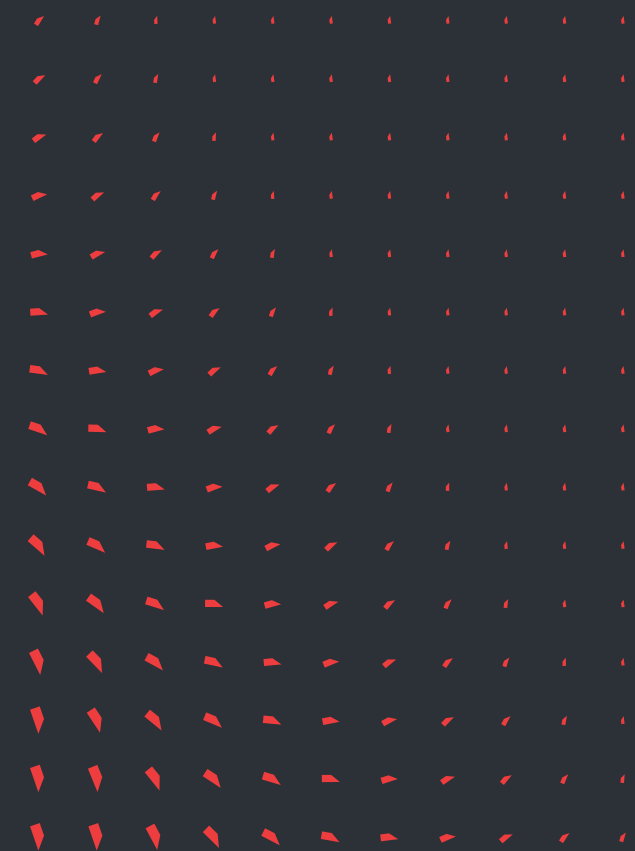
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171			OL-126		Move some/all active wet/work areas and sinks from classrooms to nearby common spaces.												
172			OL-127		Reduce width of classrooms and shorten classroom wing.												
173			OL-128		Revise multi-stall restrooms to provide more efficient and visible layout.												
174			OL-129		Shift entry vestibule and three offices north and reduce large circulation/waiting area at reception.												
175			OL-130		Reduce classroom area and use SF savings to create open shared-use areas.												
176			OL-131		Bump out or decrease the size of the small group conference rooms.												
177			PS-146		Reduce reception area and enlarge adjacent circulation spaces to facilitate gathering and circulation.												
178			PW-147		Highlight daylighting and views of nature.												
179			PE-149		Provide lockable storage room in maker space to protect technology from theft.												
180			RL-160		Optimize building shape, placement and orientation for stability.												
181	**STRUCTURAL**							-$335,687	-$355,727	$20,041	$0						
182	**S1 Structural**							-$335,687	-$355,727	$20,041	$0						
183	S1a	Accept	RL-161		Alternative to 3x studs throughout								Revision from 3x to double 2x is made in 100%SD set and estimate captures savings				
184	S1b	Accept			Revise from Post and Beam to Bearing Wall Construction		$15,000	$20,041		$20,041			Deg note: relatively low value, do we revise (compare DP-37)				
185	S1c				Increase covered play SF		-$266,253	-$355,727	-$355,727			-$355,727	added cost (# not provided by VE team) not accept				
186		Accept	DP-30		Include in wood framing bid specifications requirements to employ best-practices and wood moisture monitoring to manage mold risk.												
187		Reject	DP-36		Use cross-laminated timbers (CLT) for roof panels to expedite building enclosure.												
188		Reject	DP-37		Use post, beam, and truss structure to enable roof enclosure prior to stud in-fill framing and sheathing to mitigate mold risk.								Deg note: this was initial SD approach (full post and beam system). May increase construction speed but also increases construction material vs bearing wall system (item S1b above)				
189		Reject	RS-151	Consider	Use geogrid shallow reinforcement at building pad to mitigate settling impact of liquefaction.		$238,000	$254,181					AH - Get input from H&A & Degenkolb on what this actually entails H&A noted excavation would need to go to 4-5 ft below bottom of footing vs 3 ft (from grade?) in VE report, reducing savings. Would need to be throughout building pad in order to manage slab differential to footings (sticking doors as life safety issue). Would only be slightly less excavation vs mass overex option.				
190		Reject	RS-152		Use pin piles instead of geopiers.								Expect this to be more expensive than overex or geopiers based on geotech input.				
191		Consider	RS-153		Reuse ESU-2 material; selectively reuse suitable deeper granular soils instead of exporting and importing everything.								H&A - viable, though the upper 5-7' not usable unless ammended. Sand below is reusable but would be dried (per Geotech report)				
192		Reject	RS-154		Over excavation ILO aggregate piers and limit these to the foundation only and not the slab.								H&A - Over-excavation is in the Geotech report. Recommendation is to provide ground improvemnents not only under foundations, but also at slabs due to possible settlement and potential life safety issues.				
193		Reject	RS-155		Deep soil mixing ILO aggregate piers.								Expect this to be more expensive than overex or geopiers based on geotech input.				
194		Accept	SL-181	Accept	Frame outdoor play roof with open web trusses and cement fiber soffit to protect framing from environment.		$98,000	$104,663		104663	$104,663		AH - Verify that this does not impact fire sprinklering (dry system) in a way that increases costs. Deg note: Redbuilt trusses here				
195		Reject	SL-182		Use a structural slab at floor at main level.								Deg note: Increases rebar (and perhaps slab thickness) versus ground-supported slab				
196		Reject	SL-183		Use structurally insulated panels (SIP) for roof structure.												
197	**MECHANICAL**							$2,228,925	$697,395	$1,265,226	$501,038						
198	**M1 Mechanical**							$2,192,852	$697,395	$1,229,153	$501,038						
199	M1a	Consider			Provide water source heat pumps.		$630,000	$841,712		$841,712			• Higher maintenance requirements due to compressors and refrigerant circuits. • Additional training would be required to maintain for more sophisticated equipment. • Watersource heat pumps typically have a service life of 15–20 years, while fan coil unit typically 20–25 years. • Metrix: estimated ROM savings, $200K				
200	M1b	Consider	CS-1	Consider	2-Pipe Changeover		$480,000	$641,304		$175,000	$233,818		Sazan: -$416,000 Metrix: • Building must operate in either heating mode or cooling mode. Changeover decisions can create comfort complaints during swing seasons • Would require adding economizer for fan coil units. Currently, there is not enough space in the attic for this additional ductwork • Metrix: cost estimate from Sazan does not include economizer cooling. With economizer, the estimated ROM savings is $175K.				
201	M1c	Consider			Reduce drinking fountains to code minimum		$9,312	$12,441		$12,441			Metrix: No comment mechanically.				
202		Consider	CS-2	Accept	Eliminate Cooling; keep heat pump hydronic system for heating only		$661,000	$705,939	$705,939	$200,000	$267,220		Metrix: Sazan's estimate is high due to using cost associated with electric strip-heat boilers for the heating only heat pumps. Although there are cost savings associated with providing heating only heat pumps, we are not seeing the cost savings this high. Estimated cost without markup is $200K.				
203		Reject	CS-3	Reject	Group classrooms by north and south exposure to consolidate heating and cooling zones.		$36,000	$38,447	$38,447				Metrix: Not worth the comfort implications.				
204		Reject	CS-4	Accept	Use high volume low speed (HVLS) fans in gym and commons for enhanced air circulation.		-$68,000	-$72,623	-$72,623				Metrix: This adds cost. Current design with drum louvers and low wall return will be sufficient.				
205		Reject	CS-5	Accept	Use duct socks at gym for ventilation distribution.		$24,000	$25,632	$25,632				AH - Do not recommend. Metrix: No concerns with this from a mechanical perspective. This is more of an aesthetic consideration.				
206		Consider	CS-6		Limit cooling to the commons and gym.								Metrix: This would be applicable if a heating-only heat pump system was selected.				
207		Reject	CS-7		Add in-floor radiant heating at vestibules for floor drying.								Metrix: This would add cost.				
208		Reject	CS-8		Use a ground-source heating and cooling loop for durability and ease of maintenance.								Metrix: This would add significant cost.				
209		Consider	CS-9		Use ceiling fans ILO air conditioning in the classrooms.								Metrix: Would recommend adding ceiling fans in the classrooms if a heating only system is selected.				
210		Consider	CS-10		Use hydronic fin-tube wall cabinets for heating the classroom wing.								Metrix: This would be applicable if a heating-only system was selected.				
211		Consider	CS-11		Use propane fuel and high-efficiency boilers for heating.								Metrix: • Additional C406 efficiency credits ill be required. A significant portion of the credits can come from the high efficiency donesnsing boiler, with the remainder made up through reduced lighting power and additional PV. • Would provide economizer cooling by bringing in additional outdoor air when temperatures are below the indoor setpoint. This is not true cooling, but it can help take the edge off during the shoulder seasons. • Would require a larger propane tank or more frequent propane deliveries. • Would require a larger propane tank or more frequent propane deliveries. • Estimated ROM cost savings of $350k for mechanical system.				
212		Reject	CS-12		Avoid mechanical equipment in view of windows to maximize views of nature.								Metrix: Not aware of mechanical equipment which blocks the view of a window.				
213		Accept	CS-14		Zone offices for individual control of HVAC.								Metrix: This is already incorporated in the current design.				
214		Accept	PE-150		Specify outdoor heat pump equipment appropriate for a marine environment.								Metrix: This is already incorporated in the current design.				
215	**M2 Plumbing**							$36,073	$0	$36,073	$0						
216	M2a	Consider			PEX Piping for 2-1/2" Pipes and Smaller		$11,000	$14,697		$14,697							

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217	M2b	Consider			PVC waste piping in lieu of cast iron (boiler room and kitchen waste piping to remain cast iron)		$16,000	$21,377		$21,377							
218	**M3 Fire Protection**							$0	$0	$0	$0						
219	M3a	Consider			Schedule 10 i.l.o. Schedule 40 piping								AH - Is this possible? already incorporated? Metrix: This is allowed by code. Curret BOD is schedule 40 piping for increased durability.				
220	**ELECTRICAL**							$253,692	-$38,967	$292,659	$0						
221	**E1 Distribution**							$88,243	$0	$88,243	$0						
222	E1a				Code Minimum PV		$66,048	$88,243		$88,243			AH - Need to comply with C411 & C406 points				
223	**E2 Lighting**							$91,119	$17,636	$73,483	$0						
224	E2.a	Accept			Reduce Site Lighting Fixtures at fire lane and parts of paved play. 6 fixture total reduction. Supplement lighting along walkways with bollard lighting		$55,000	$73,483		$73,483			HS - The light poles have been reduced and provided additional building mounted wall fixtures to provide lighting to cover the adjacent walkways and mechanical yard.				
225	E2.c	Consider			Use direct-indirect 2x2 troffer fixtures in classrooms in lieu of linear light fixtures.		$13,200	$17,636	$17,636				Slightly more glare due to being placed in angled ceiling				
226		Reject	II-94	Accept	Specify lighting controls with lighting level and color temperature adjustments to allow teacher control depending upon learning environment and time of day.		-$53,000	-$56,603	-$56,603				Added cost AH - Does not align with OPR				
227		Reject	II-97		Provide tunable, recessed linear light fixtures in the classrooms.	★★★★★							HS - This option is not part of the district OPR standards and will add project cost and future maintenance for the school district.				
228		Accept	RV-174		Coordinate parking lot lighting with tree planting plan.	★★★★★							HS - Concur, light pole locations will be further coordinated with the landscape drawings.				
229	**E3 Low Voltage**							$130,933	$0	$130,933	$0						
230	E3a	Consider			Eliminate Intrusion Alarm		$98,000	$130,933		$130,933			SH - Make an Alternate? HS - Concur, GFT will provide this as an alternate option. GFT will confirm this with the district OPR meeting for the high school project.				
231		Reject	DT-38	Accept	Use a Passive Optical Network (PON) for data distribution.		$13,605	$14,530					HS - This option does not comply with the current district OPR.				
232	**FOOD SERVICE**							$0	$0	$0	$0						
233	**F1 Food Service**							$0	$0	$0	$0						
234	**MISCELLANEOUS**							$0	$0	$0	$0						
235			DP-27		Pursue funding for an early site package to contract mass grading/ground improvement during the late-summer when groundwater is low.	★★★★★											
236			DP-28		Pursue funding for an early site package to contract mass grading/ground improvement during the late-summer when groundwater is low.	★★★★★											
237			DP-29		Include in front-end bid specifications contractor requirements to account for dewatering of the high water table impact and wet weather materials protection and schedule management.	★★★★★											
238			DP-32		Carry contingency in estimate for risk of tariff impacts.	★★★★★											
239			HT-92		Involve local tribes in community outreach and public input to the program and design.	★★★★★											
240			HT-93		Salvage building demolition materials and reuse where applicable.	★★★★★											
241			IU-101		Pursue a Department of Commerce clean-energy grant for battery storage for the onsite solar power generation as an educational opportunity.	★★★★★											
242			OS-135		Preserve pole barn to utilize for community use.	★★★★★											
243			RC-157		Conduct an inclusive engagement and design review process with the community as soon as possible.	★★★★★											
244	**PROJECT SCOPE**							$0	$0	$0	$0						
245	**TOTALS**						$7,346,459	**$8,386,694**	**$2,282,758**	**$5,009,590**	**$3,425,586**						
246																	
247	MACC									$28,509,971	$28,509,971						
248																	
249	SD Phase Estimate Building									$25,376,431	$25,376,431		State allowance for SCAP funding for Building Costs baseline is $813/SF for projects starting construction in 2027				
250	SD Phase Estimate Sitework									$8,297,227	$8,297,227		State allowance for SCAP funding for Site Costs is 12% of Building MACC Costs (w/o Sales Tax)				
251	SD Phase Estimate Off-Site Improvements									$0	$0		All site costs are calculated above since minimal cost is not on-site				
252	**SD Phase Estimate Total**									**$33,673,658**	**$33,673,658**						
253					**SD Phase Estimate Amount over budget (MACC)**					**$5,163,687**	**$5,163,687**						
254																	
255	**Post VE Process Total**									**$28,864,068**	**$30,248,072**						
256	Difference									$154,097	$1,738,101						
257					**Variance between Post VE Total (with Recommended Cost Revisions) and MACC**					**0.54%**	**6.10%**						
258	Savings amount									$5,009,590	$3,425,586						
259																	
260					**Site Costs & Percentages in SD Phase Estimate (Before Cost Revisions)**												
261	Site Cost									$8,297,227	$8,297,227						
262	Off Site Cost									$0	$0		All site costs are calculated above since minimal cost is not on-site				
263	Total Site Costs									$8,297,227	$8,297,227						
264	Percent On Site to Building Cost									33%	33%						
265																	
266					**Site Costs & Percentages After Recommended Cost Revisions**												
267	Site Cost									$6,578,949	$6,594,982						
268	Off Site Cost									$0	$0		All site costs are calculated above since minimal cost is not on-site				
269	Total Site Costs									$6,578,949	$6,594,982						
270	Percent On Site to Building Cost									23%	22%						
271																	
272	SD Phase Markups																
273	**Markup Calculation**		**1.33605**		**1.0000**												
274	GC's		11.75%		0.1175												
275					1.1175												
276	Design Contingency		7.50%		0.08381												
277					1.2013												
278	Insurance & Bonds		1.50%		0.01802												
279					1.2193												
280	GC Profit		5.50%		0.06706												
281					1.2864												
282	Escalation *		3.86%		0.04965												
283					1.3361												

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284			* Assumes construction in July 2027														
285																	
286	Sazan Markup		1.251														
287	Markup Delta:		1.06799														
288																	
289																	

TCF

V. Systems Comparison



TCF

South Site Elementary School
5.5 Mechanical System Type Comparison

Introduction:
This comparison outlines key differences between **2 pipe changeover system and Watersource HP system** for South Site Elementary School. It evaluates how each System type performs relative to first cost, longevity, maintenance, and Value considerations for Aberdeen School District and their Maintenance Capacity. The goal is to support informed early-phase design decisions by clearly presenting the trade-offs between these two viable structural systems.

Category	Watersource HP	2 Pipe Changeover	4pipe
First Cost	Similar to 2 pipe, lower than 4 pipe.	Lower first cost.	Higher first cost.
Expected life	Heat pumps typically have a service life of 15–20 years. Central loop infrastructure may last considerably longer.	Fan coil units typically have a service life of 20–25 years. Central piping infrastructure may last considerably longer.	Same as 2-pipe.
Frequency and Cost of repair	Higher maintenance requirements due to compressors, refrigerant circuits, condensate systems, and distributed equipment.	Lower maintenance requirements. Fan coils contain fewer moving parts and no refrigeration system within each unit.	Same as 2-pipe.
Parts Availability	Readily available through multiple manufacturers. Some specialized components may have longer lead times.	Readily available through multiple manufacturers and suppliers.	Same as 2-pipe.
Training	Additional training would be required to maintain for more sophisticated equipment.	Minimal additional training is typically required given the district's familiarity with the equipment.	Same as 2-pipe.
A/C Capable	Simultaneous heating and cooling can occur throughout the building.	Building must operate in either heating mode or cooling mode. Changeover decisions can create comfort complaints during	Full A/C provided.

		spring and fall weather conditions.	
Other considerations	Additional cost savings available by locating heat pumps in closets and reducing/removing mechanical attics.	Would require adding economizer to Fan Coil Units. Additional cost savings available by locating fan coil unit above ceilings and reducing/removing mechanical attics.	Additional cost savings available by locating fan coil unit above ceilings and reducing/removing mechanical attics.

Summary:

2-Pipe Changeover Fan Coil Systems offers a lower first cost, and is a system District maintenance is familiar with. The system has fewer components requiring specialized service and typically operates more quietly than water source heat pumps. However, because the building must operate in either heating or cooling mode, occupant comfort will be reduced during spring and fall shoulder seasons when different areas of the building require different conditioning modes, or zones require heating early in the am and cooling in the mid-day or afternoon. Changeover can occur automatically via controls system, but Metrix recommends the District makes the change via seasonal changeover to not waste energy going back and forth between heating and cooling.

Water Source Heat Pump Systems provides superior zone-level comfort and operational flexibility compared to a 2-pipe FCU system. Individual spaces can heat or cool independently, allowing the building to respond to varying occupancy patterns, solar exposures, and seasonal conditions. These systems can also improve energy performance through heat recovery between zones. However, they require additional maintenance requirements due to the distributed compressors, refrigerant circuits, and controls located throughout the building.

TCF

Pacific Beach Elementary School
5.6 Domestic Piping System Type Comparison

Introduction:
This comparison outlines key differences between **PEX domestic water piping and Copper domestic water piping** for Pacific Beach Elementary School. It evaluates how each System type performs relative to first cost, longevity, maintenance, and Value considerations for North Beach School District and their Maintenance Capacity. The goal is to support informed early-phase design decisions by clearly presenting the trade-offs between these two viable structural systems.

Category	PEX	Copper	
First Cost	Lower first cost.	Higher first cost due to material pricing.	
Expected life	Expected service life of 40–50+ years.	Expected service life of 50–70+ years.	
Maintenance and Repair	Repairs can typically be completed quickly with mechanical fittings. Maintenance would need PEX tooling.	Repairs require cutting, cleaning, and soldering/brazing, often resulting in longer repair times and greater labor effort.	
Parts Availability	Readily available through multiple manufacturers and suppliers.	Readily available through multiple manufacturers and suppliers.	
Damage	More susceptible to damage from physical puncture.	Highly resistant to physical damage.	
Leaching of toxins/ Microplastics	Regarding your question about PEX piping and microplastics, the PEX piping we specify is NSF certified for use in domestic water applications: https://www.nsf.org/knowledge-library/what-is-nsf-certification NSF has some information regarding studies on PEX pipe leeching: https://www.nsf.org/knowledge-library/water-plumbing-systems-study-results https://www.nsf.org/knowledge-library/nsf-reviews-2021-study-pex		

	That said, if ASD is concerned about leeching we can stick with copper, but based on the current available data, we don't have a reason to recommend against using PEX. Let me know if there are any follow up questions or concerns.		

Summary:

PEX domestic water piping offers a significantly lower upfront cost and can reduce overall installation labor costs. It is a widely used and accepted piping material in K-12 with a proven track record of reliable performance. PEX also has minimal theft risk during construction and can provide substantial project cost savings compared to copper. However, because PEX is a flexible plastic material, it is more susceptible to puncture or physical damage than copper. Care must be taken during construction activities, particularly during the installation of drywall, cabinetry, backing, and other wall-mounted components where screws or fasteners could inadvertently penetrate concealed piping.

Copper domestic water piping provides a longer-established track record in institutional facilities and is often viewed as the premium piping option. It offers excellent physical durability, UV resistance, and high recyclability. However, it comes with a significantly higher initial cost and may be more susceptible to theft during construction.

TCF

Pacific Beach Elementary School
5.7 Domestic Piping System Type Comparison

Introduction:
This comparison outlines key differences between **Cast Iron waste piping and ABS or PVC waste piping** for Pacific Beach Elementary School. It evaluates how each System type performs relative to first cost, longevity, maintenance, and Value considerations for Aberdeen School District and their Maintenance Capacity. The goal is to support informed early-phase design decisions by clearly presenting the trade-offs between these two viable plumbing waste piping systems.

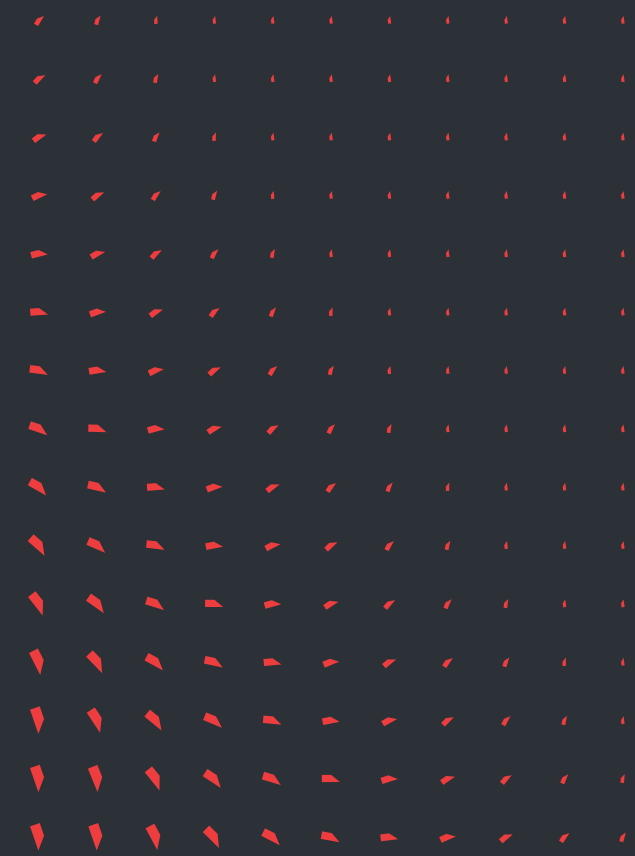
Category	ABS/PVC	Cast Iron	
First Cost	Lower first cost.	Higher first cost due to material pricing and labor.	
Expected life	Longevity expected to be 50+ years.	Longevity expected to be 70-100+ years.	
Maintenance and Repair	Repairs are generally straightforward and can be completed quickly using solvent-welded fittings.	Repairs typically require more labor and specialized tools, resulting in longer repair times.	
Parts Availability	Readily available through multiple manufacturers and suppliers.	Readily available through multiple manufacturers and suppliers.	
Damage	More susceptible to physical damage.	Highly resistant to physical damage.	
Acoustics	May require enhanced acoustics	Superior acoustic performance.	
Other considerations	An approach we typically see is allowing ABS on above waste piping, but requiring cast iron on below grade piping. We could also require cast iron on main waste risers		

	serving stacked toilets. There are multiple middle ground approaches that can be considered, if desired.		

Summary:
ABS/PVC wasting piping offers a lower initial cost and reduced installation labor compared to cast iron. It is a widely used and accepted piping material in K-12 construction and provides reliable long-term performance when properly installed. ABS is lightweight, corrosion-resistant, and allows for faster construction schedules. However, it provides less sound attenuation than cast iron and may require additional acoustic treatments in noise-sensitive areas. It is also more susceptible to physical damage during construction and future renovation activities.
Cast iron waste piping provides superior acoustic performance and exceptional durability, making it a common choice in K-12 construction. Cast iron is highly resistant to physical damage and offers a long service life, but it comes with a significantly higher initial cost and more labor-intensive installation requirements.

TCF

VI. Owner Project Requirements



Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
Division 2 – Existing Conditions				
General	00000	N/A		• Confirm temporary utilities and coordination of utility switchovers. • Confirm documents clearly state that contractor is to perform all tasks necessary to disconnect existing utilities and connect new utilities. • May allow use during construction – Depends on cost.
Structure & Utility Demolition	024116	N/A	REVIEWED	• When possible, review demolition scope with GC's and Subcontractor's prior to submitting bid documents. • Removal of existing utilities is **preferred** versus abandoning them in place. Confirm approach on a project-by-project basis. • Hazardous material removal is **preferred** over encapsulation.
Division 3 - Concrete				
Cast-in-Place Concrete	033000	Read-Mix	REVIEWED	• **Fly Ash prohibited**. • Exposed concrete at stair landings and stair treads may be **allowed upon approval**. • *Clear sealed floors are* **preferred** at mechanical, electrical, MDF & IDF, storage and similar interior rooms. Exact locations to be finalized. • Use of lightweight concrete or gypcrete on second floor slabs is **discouraged**. • ***Prefer*** concrete flooring – ***Not Broom*** – Smooth Finish.
Ramps	033000	Read-Mix	REVIEWED	• Ramps shall be designed with a tolerance greater than ADA requirement: **Minimum slope to be 1" per every 12.5" in length**.
Concrete Elevator Pits	033000	Read-Mix	TO BE FURTHER REVIEWED	• All elevator pits including walls, slab, and sump shall be **waterproofed with bentonite waterproofing**. See DIV 07 standards. • Coordinate sump pump and discharge requirements with district and local jurisdictions. Review with state L & I sump pump is typically required and is required to outlet to a grease separator.
Stair Nosing	033000	Read-Mix	REVIEWED	• *Stair nosing* as ***required*** by code. Further discussion will be ***required*** on a project by project basis. • Exposed concrete stairs at nonpublic areas. ***Precast – okay***.
Skateboard Deterrents	033000	Read-Mix	REVIEWED	• **Cast-in-place** notches as a skateboard deterrent are ***preferred*** versus use other types of deterrents at concrete site walls.
Vapor Retarder	033000	Steggo Systems / Steggo wrap	REVIEWED	• **Class A** vapor retarder ***required***. • **15 Mil** minimum thickness. • Tape seal at all vapor barrier edges and penetrations ***required***. • **Prefer** seal at top of concrete.
Polished Concrete Floors	033543	PROHIBITED	REVIEWED	• *Polished concrete floors are* ***preferred – Location by Location***.
Architectural Precast Concrete	034500	Northwest Precast	REVIEWED	• Precast concrete is **allowed upon approval**. Generally, project budget will drive approval.
Division 4 – Masonry				
General - Masonry	040000	N/A	REVIEWED	• See **071900** water repellants for masonry protection and coatings. • *A* ***masonry wainscot*** *around building perimeter at a minimum height of the windowsill height is* ***preferred*** *for durability and ease of maintenance.* ○ *Provide adequate vertical and horizontal control joints as required by code and review with structural engineer.*

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				○ *Provide mortar net and weep at base of wall and at window headers.* ○ Stainless steel flashing is **preferred** in lieu of flexible through-wall flashings. Hem all exposed edges. ○ Through wall flashings will be 4”-6” above grade. ○ The base course of veneer is **preferred** to be one course below finish floor minimum. Smooth face block is **preferred** in these locations.
Reinforced Unit Masonry (CMU)	042200	Mutual Materials / Basalite	REVIEWED	• *The use of* CMU is ***allowed upon approval*** *at service yard walls and Gym/Multipurpose structure – Areas that are not a focus.*
Brick Veneer	042113	Mutual Materials / Interstate Brick	REVIEWED	• Brick Veneer: ○ The use of brick veneer is ***preferred.*** ○ Also see general above.
CMU Veneer	042213	Mutual Materials / Basalite	REVIEWED	• *CMU Veneer:* ○ *The use of CMU veneer at the building façade is* ***allowed****.* ○ The use of use split face block is generally ***discouraged*** but is ***prohibited*** at openings due to conflicts with opening flashing. ○ Also see general above.
Division 5 – Steel				
General – Steel	050000	As Specified	REVIEWED	• *See* ***Division 9*** for Paints and Coatings. • Size floor joists and beams to minimize deflection. • Architectural exposed steel (AESS) ***allowed upon approval*** • Avoid exterior conditions or features that allow bird roosting. • For large projects steel from AISC or approved certified mill is ***required.***
Metal Fabrications	055000		REVIEWED	• Lintels: Lintels (and related steel supports) shall be galvanized steel – ***Epoxy or powder coated.*** • Steel Downspouts: The use of steel downspouts is ***discouraged*** except stainless steel. PVC downspouts are **preferred**. • Bollards: Bollards ***preferred*** to be fabricated from galvanized pipe and painted – ***Ok square or round***. • Access Ladders: ○ Full stairs to mechanical attics ***preferred***. (Also see 055113 Metal Pan Stairs below) ○ Ships ladders ***allowed upon approval***. ○ Pull-down attic access ladders ***discouraged***. ○ Roof access ladders ***allowed***. Roof mounted access ladders to be **aluminum** or stainless steel only – ***By design if needed***. ○ Alternating tread devices ***prohibited***.
Steel Decking	053100		REVIEWED	• *The use of* ***perforated metal deck*** *where exposed in occupied spaces is* ***allowed****.* • *Dovetail metal decking* **allowed upon approval** *for acoustical quality* • *Easiest to maintain* ***preferred.***
Cold Formed Metal Framing	054000		REVIEWED	• ***Review blocking and backing strategy*** with owner, e.g., wood versus steel strapping. Magnetic markerboards are heavy. Both are **allowed** based on use.

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				• ***Provide deflection track at top of non-bearing walls*** where roof or floor deflection may occur. • Cold formed metal framing and treated wood shall not be in contact.
Structural Steel Framing	051200		REVIEWED	• All structural steel shall be primed per division 9. • Immediately after fabrication, steel to be protected with *galvanizing or epoxy primer.*
Metal Pan Stairs	055113		REVIEWED	• *Metal pan stair treads **preferred** for general stair construction. Perforated risers **prohibited** for privacy reasons. Use of precast stair treads at feature stairs **preferred.*** • Mechanical attic and access stairs: *Wood framed attic stairs **preferred** to be wood framed to economize on cost if building type allows*
Pipe and Tube Railings	055213		REVIEWED	• Interior & Exterior Handrails: Stainless steel handrails ***preferred***. Handrails to mechanical attics can be paint primed steel. Galvanized steel ***allowed upon approval*** at exterior where budget doesn't permit for stainless steel. Painted rails are ***discouraged.*** • *Guardrails:* Steel guardrails with high performance coating ***preferred***. *Stainless steel **at exterior**. Powder coated or epoxy **preferred**. Galvanized steel handrails **allowed upon approval**. Horizontal rod or cable infills **prohibited** that can be used for climbing.* Guardrails to be **42"** Min height, aesthetically pleasing, discourage climbing. No screen.
Division 6 – Wood, Plastics, & Composites				
General – Wood, Plastics, & Composites	060000		REVIEWED	• *Use of salvaged wood **allowed** on project-by-project basis.* Verify salvaged items with owner.
Rough Carpentry	061000		REVIEWED	• Provide continuous backing for whiteboards, projection screens, dispensers, custodial shelves, etc. 12" steel strapping 18 gauge minimum is acceptable centered at +3'-0" & +7'-0". Also see 055400 Section regarding backing. Wood as appropriate. • Either 18 ga metal strapping or wood backing is **allowed**
Wood Roof Decking	061516		REVIEWED	• *Conventional wood decking **allowed upon approval**. Exposed exterior wood should be finished with a semi-translucent stain - **Prohibited.*** • *Use of CLT **allowed upon approval.** CLT can be used at entry. Requires protection from weather.*
Sheathing	061600		REVIEWED	• *Orientated Strand Board (OSB) **prohibited** at roof, floors, exterior walls, and sills. Interior use shall be weather protected during construction - **Prohibited.***
Glued-Laminated Construction	061800		REVIEWED	• Architectural grade **preferred** where exposed to view. ***Prohibited*** at exterior locations. Architectural concealed brackets at attachment points where glu-lam is exposed
Exterior Finish Carpentry	062013	PROHIBITED FOR SIDING	REVIEWED	• *The use of exterior wood stripping for wall cladding is **PROHIBITED.***
Interior Finish Carpentry	062023	Compact Plastic Laminate Wainscot: Wilsonart, Compact Laminate, Classic Grade	REVIEWED	Wainscots: mechanical attachment only. Need corner guards. Apple ply veneer is an ***allowed upon approval***. • Corner Guards: **Required** at outside corner locations at corridors, classrooms, and common areas. Stainless steel corner guards **required** at kitchen areas. Stainless steel or plastic corner guards – **Approved.** Stainless steel corner guards – **Public Spaces**. Plastic corner guards – **Classrooms.** • Wainscot Fasteners: Architect to provide fastener types to Owner for review during design. ***Hold off of floor.*** • *Height: Minimum 4'-0" high wainscot **preferred** at all hallways, corridors, and stairs.* • *Compact plastic laminate (CPL): Compact plastic laminate wainscot is **preferred.** Panels to be minimum 1/8" thick.* • *Stainless Steel: SS wainscot **preferred** at mop sinks. Verify if required at combustible areas (range top, cook top, oven etc.).* • *Fiberglass Reinforced Wainscot (FRP): Smooth FRP wainscot **preferred** at kitchens.* School store, eyewash, shower and restrooms. • *MDF: MDF wainscot **allowed upon approval**. Clear sealed is **discouraged**, painted is **preferred**.* • *Fiber Reinforced Laminate (FRL): **Allowed upon approval.*** Example: Specialty CTE areas.

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Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				• *Hardwood Veneer Paneling:* ***Allowed upon approval*** *for select areas (Library and Reception).* • *Use of wood* ***Encouraged*** *– Aesthetics and accents.* • ***Like*** *vinyl wall covering/wainscot at corridors.* ***Tackable.*** • *Rubber base* ***not*** *recessed. Or* ***no*** *rubber base.*
Division 7 – Thermal & Moisture Protection				
General – Thermal & Moisture Protection	070000		REVIEWED	• All products in this section shall be reviewed with the Design Team's envelope consultant. • The use of sloped roofs is ***preferred.*** The use of low slope roofs are **allowed upon approval**. • Low slopped roofs are used for transitions between steep areas. Low pitch in right circumstances. • Designs that permit easy access to roof from fences and walls **discouraged.** • Use of internal roof drains **discouraged.** • **20-Year minimum** ***required*** warranty on Low Slope Roofs and **50-Year minimum** ***required*** material warranty on Sloped Roofs. **5-year installer warranty** ***required***. • Roof and envelope specific system warranties to be discussed with and approved by owner. • Provide snow guards above entries at metal roofs – ***No.*** • Fall protection supported by the roof structure **required** • 2'-0" Overhangs ***preferred.*** 2'-0" overhangs were used at the high school. 3'-11" overhang is thought as **excessive.** • Roof types – Slopes greater then 4:12 are ***preferred***. • Full coverage of self-adhered "ice and water shield" is ***required*** at sloped roofs. • Interim roof/vapor retarder ***required*** at all low-slope roofs. • Walkway pads ***required*** at all low-slope roofs at equipment requiring maintenance. • Roof top equipment ***preferred*** to have all maintenance access to be 10' or greater from roof edge. Provide guard rails where distance is less then 10'. • ½" cover board is ***preferred*** under roofing membrane and above insulation at low-slope roofs. • Pavers ***preferred*** at tsunami tower. • Tsunami tower could provide access to the roof. • ***Preferred*** – No roof mounted equipment (except for the kitchen fan).
Bituminous Dampproofing	071113	BASF; MasterSeal	REVIEWED	• Use on exterior face of footings and stem walls and as directed by envelope consultant. • Damp-proofing ***required*** at the back concealed side of retaining walls.
Bentonite Waterproofing	071700	Carlisle; MiraCLAY	REVIEWED	• All elevator pits including walls, slab, and sump ***required*** to be *waterproofed with bentonite waterproofing*. Consult with envelope consultant involving use under slab and other locations when driven by high water table. • Waterproofing ***required*** at below grade walls to occupied spaces.
Water Repellents	071900	Prosoco / Evonik	REVIEWED	• Masonry veneer ***preferred*** to be water repellent. • Provide Anti-graffiti coating to approximate 10 feet above grade and at other locations subject to graffiti. Review product options with Owner. Non-water-based coating ***preferred***. Confirm existing coatings at wall for compatibility at remodel or renovations.

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
Thermal Insulation	072100	Atlas / Carlisle	REVIEWED	• *Rigid insulation over deck is **preferred** over batt insulation between joists at roofs - **Polyiso.** Premanufactured sandwich panels for plywood and rigid insulation assembly are **preferred.*** • *Continuous insulation: Semi-rigid mineral wool.* • *Cavity insulation: fiberglass or mineral wool insulation(mineral slag) unfaced.* • *Below grade insulation: Polystyrene (XPS).* • *Foamed-in place insulation – Closed cell spray foam.*
Foamed-In-Place insulation	072119		REVIEWED	• Use of closed-cell spray foam at wall to roof transitions in air barrier is ***allowed.*** • Use of closed-cell spray foam wall cavities is ***allowed upon approval.***
Weather Barriers	072500	VaproShield Inc., WrapShield SA (self-adhered) VaproShield Inc., Liqui-Flash	REVIEWED	• *Weather-Resistive / Air Barrier: A self-adhered WRB is **preferred**. All envelope details should reflect manufacturers recommendations for installation of WRB membrane and components.* • Liquid Applied Weather Barrier as WRB ***allowed upon approval*** from Owner and Envelope consultant. Typically, it is only used as field WRB at CMU applications. • Fluid Applied Waterproofing (FAWP) over the WRB pre-strip at openings is ***preferred.***
Asphalt Shingle Roofing	073113	Malarkey Roofing; Laminated Shingle	REVIEWED	• *Laminated asphalt shingle roofing is **preferred.*** • *50-year laminated shingles – **preferred.*** • *(add minimum warrantee (see Alaskan product from Malarkey 30-50 year laminate).*
Standing Seam Metal Panels	074113	AEP Span and Metal Sales	REVIEWED	• *Metal roofs are **allowed / by design.*** • Metal roof finishes and fastening shall be rated for marine environment. *(aluminum or 3-coat steel)*
Metal siding	074213	AEP Span and Metal Sales	REVIEWED	• *The use of metal panel siding is **preferred**.* • *22-gauge minimum thickness.* • *Exposed fasteners are **prohibited.*** • Metal wall finishes and fastening shall be rated for marine environment. *(aluminum or 3-coat steel).* • *Provide neoprene closure gasket formed to sliding profile.* • *Provide insect screens and pest resistant strategies at corners and edges.*
Polyvinyl-Chloride (PVC) Roofing	074419	Carlisle / Sika	REVIEWED	• PVC roofing ***allowed**;* 60 mil thickness minimum • *Fully adhered membrane.*
Fiber-Cement Siding	074646	James Hardie / Others with approval	REVIEWED	• *Fiber Cement Siding: James Hardie Fiber Cement panel and lap siding is **allowed.** 5/16" panels are **allowed**. The use of 7/16" panels is **preferred** if budget allows or areas exposed to high traffic or abuse. Fasteners marine-grade **preferred**.* • *High Density Fiber Cement Siding: If budget allows high density fiber cement siding products like Nichiha and Cereclad are **allowed upon approval.*** • *Backer plates **preferred** at butt joints*
Styrene-Butadiene-Styrene (SBS) modified bituminous roofing	075216		REVIEWED	• 3-ply min SBS modified bituminous roofing ***allowed*** for low slope roofing system. • SBS Modified bitumen systems ***allowed*** with torch or cold applied adhesive system. • Fluid applied flashing ***allowed*** at select roof penetrations.

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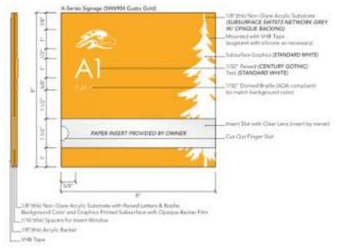
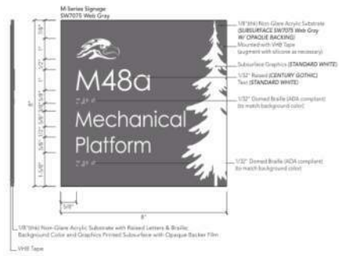
Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
Thermoplastic-Polyolefin (TPO) Roofing	075419		REVIEWED	• Thermoplastic-Polyolefin (TPO) roofing is ***discouraged.***
EPDM Roofing	075323		REVIEWED	• EPDM roofing ***allowed****;* 80 mil thickness minimum • Low Slope • *Fully adhered membrane.* • Color: Black ***allowed upon approval.***
Roof Accessories	077200	Access Ladders – O'Keeffe	REVIEWED; Pedestal/Pavers System – TO BE FURTHER REVIEWED	• Fall Protection: Single point system over cable system is ***preferred.*** • D-ring fall restraints are ***allowed*** at asphalt shingle roofs. • See metal fabrications for access ladders. Manufactured – O'Keeffe. • Roof access hatch ***preferred*** to be thermally sealing and have safety post and integral guardrail with gate. • Pedestals/pavers system for occupiable roofs is ***allowed upon approval.***
Division 8 – Openings				
General - Openings	080000		REVIEWED	• Standard door leaf size to be 3'-0" x 7'-0"; Provide greater size at special use spaces or where more access is needed. Provide ***3'-6"*** door to kitchen. • Provide ***7'-10"*** doors to gym (Allows for lift to enter the space). • Provide double leaf doors where movement of equipment, furniture and other large items - ***required***. • Allow for 180-degree door swing ***encouraged.*** • Encroachment of door swings into major circulation areas through recessed doors ***discouraged*** • Louvers away from sources of fumes and smell ***preferred*** • Removable keyed mullions at double leaf doors ***preferred*** • Hold-open cush arm ***preferred***. • Also see 122113 Horizontal Louver Blinds and 122413 Roller Window shades. • Change opener for exterior doors.
Hollow Metal Door Frames	081113	Curries, Republic, Gel-coat, Chem Pruf Door Company, and Steelcraft	REVIEWED	• Knock down frames - ***prohibited.*** • Frames to be fully welded. • Exterior frames to meet energy code. • Exterior frames to be galvanized and painted. • Insulate exterior frames and acoustically sensitive interior frames with mineral wool. • Interior frames to be 16 gauge, exterior 14 gauge. • If horizontal mullion is provided, size to allow for roller shades to continue to sill or provide translucent glazing in lower pane.
Hollow Metal Doors	081113	Curries, Republic, Gel-coat, Chem Pruf Door	REVIEWED	• Fiberglass doors and frames **preferred** at exterior locations. • Provide HM doors at exterior secondary access locations • HM doors in the interior are ***allowed upon approval***, except as noted below

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
		Company, and Steelcraft		• Provide at mechanical rooms, kitchen, electrical rooms, high traffic areas, etc. • Insulated per energy code. • Face metal to be 16 gauge. • Preferred manufacturers are the same as Metal Door Frames. • Knocked down frames are ***prohibited.***
Aluminum Doors	084113	EFCO and Kawneer	REVIEWED	• ***Allowed upon approval*** at main entry and other entries where integrated with storefront frame.
Wood Doors	081416	VT Industries / Vancouver Door	REVIEWED	• Stained wood veneer solid core doors are ***preferred*** at all interior locations except for mechanical rooms, electrical rooms, etc. where HM doors are ***preferred***. • Painted wood doors are ***discouraged.*** • Finger-jointed solid wood door – ***preferred***.
Access Doors & Frames	083113	KARP	REVIEWED	• All access doors mounted 8' or lower shall have keyed entry. • Doors shall be factory primed to be field painted, except stainless steel when located in wainscot ***preferred***
Coiling Doors	083323	Overhead Door Company	REVIEWED	• Provide coiling doors at kitchen and student store, open grille ***allowed upon approval*** if required for ventilation. • Stainless steel finish or Powder coated steel finishes are ***allowed***. *Kitchen – Power coated is* ***preferred.*** • Power-operated coiling doors are ***preferred.*** Review with Owner.
Overhead Sectional Doors	083613	Clopay, Lift Master	REVIEWED	• Sectional doors to connect program spaces or to exterior ***allowed upon approval.*** • Insulated and weatherproofed at exterior to comply with energy code. • Direct drive DC Unit.
Entrance & Storefronts	084113	EFCO and Kawneer	REVIEWED	• Aluminum storefront is ***allowed upon approval.*** • Provide at security vestibule and special areas. • ***Prohibit*** anodized aluminum due to coastal environment. • System thermally broken and internal draining ***required*** • Factory-applied fluoropolymer finish or anodized are ***allowed.***
Curtain Wall Systems	084413		REVIEWED	• Curtain walls are ***allowed upon approval.*** Limit use of curtain wall systems to where storefront height limits are exceeded.
Windows	085113 085413 085313	EFCO, Kawneer, Cascadia, Kolbe, Anderson	REVIEWED; BLINDS/ROLLER SHADES TO BE FURTHER REVIEWED	• Fiberglass Windows*:* ***Allowed upon approval.*** • Aluminum Windows: ***Prohibited*** • Vinyl Windows: ***Allowed*** • Operable windows: The use of operable windows is ***preferred*** in classrooms and other occupied spaces. Awning operable windows are ***preferred.*** • Blinds/Roller Shades – ***Discuss further.***
Skylights	086200	Kingspan	REVIEWED	• Skylights are ***discouraged*** and only allowed upon approval or where required by code.
Louvers	089119	Ruskin	REVIEWED	• Louvers with drainable blades and resistance to wind-driven rain are ***required.*** • Ruskin is ***good.***

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
Glazing	088000		REVIEWED	• Front office visibility to main entry is ***preferred.*** • Individual panes of glass shall not exceed 4 feet x 8 feet. • Exterior glazing shall be insulated. • Provide Low-E coating where ***required*** to comply with code. • Provide translucent ¼ lite glazing at all classroom doors. • Provide ½ lite clear glass at offices with roller shades. • Wire glass ***prohibited*** • Fire-rated ceramic glazing ***allowed*** where required by code for fire rating • Glass at entry vestibule ***required*** to be laminated. Glazing for any windows adjacent to main entry ***preferred*** to be laminated. • Tempered or laminated glass ***required*** for glazing at gymnasium, cafeteria, and where high impact likely to occur.
Hardware	087100			• *Review specific requirements on this section with hardware consultant and District Locksmith.* • *A door hardware consultant shall be engaged to coordinate selection of operational features of hardware.* • Exit devices where required by code. • *Continuous hinges **required** at main entry doors* • Corridor and building zoning doors ***required*** to be on hold opens and able to be placed in lock-down mode. • *Provide ADA push buttons and automatic door operators at major building entries where required by code but a minimum at:* ○ Main entry ○ Access from parent drop-off (if different location than main entry) - ***Optional*** ○ *Access from bus drop-off - **Optional*** ○ *Access from playground - **Optional*** • *Temporary construction cores/cylinders to be keyed to the district's standard construction keying* • Final cores/cylinders to be provided by supplier directly to Owner • Final keying requirements by hardware consultant. • *Final installation by contractor.*
Division 9 – Finishes				
Gypsum Wallboard	092900		REVIEWED	• *Provide abuse resistant in gypsum wallboard in ~~corridors~~ and areas subject to abuse e.g., gyms.* • *Provide gypsum wallboard behind all wainscot locations.* • *Provide moisture resistant gypsum wallboard in areas subject to moisture.* • *Wall board on exterior walls shall be **resistant to moisture – Moisture resistance.*** • *Provide cementitious or special gypsum backer board behind wall tile.* • *Gypsum wallboard finish:* ○ *Level 5 **prohibited**, unless approved in high light areas.*

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				○ *Level 4* ***preferred*** *unless noted otherwise –* ***Level 4 Smooth Finish.*** ○ *Level 3 Not used.* ○ *Level 2 Fire resistive construction* ***above ceiling****, Finish behind cabinets and other items shall match adjacent finish. Fire Tape + Finish at Mechanical Room, Electrical Room, and Custodial Room.*
Perforated Gypsum Ceiling & Walls System	092900		REVIEWED	• *Perforated gypsum board is* ***allowed upon approval*** *on ceilings.* • *Perforated gypsum board is* ***prohibited*** *on walls.*
Suspended Ceiling Systems	095113		REVIEWED	• *2 x 4 suspended ceilings is* ***preferred.*** • *2 x 2 suspended ceiling* ***allowed upon approval.*** • *A Tegular ceiling tile profile is* ***preferred****.* • *Scrubbable tile* ***required*** *at kitchen* • *Raised ceiling height in MDF and IDF rooms for ease of cable routing.* • *Provide* ***extra materials and parts*** *when maintenance happens.*
Wood Ceiling Systems	095426		REVIEWED	• *Wood ceiling systems are* ***allowed upon approval*** *at key focal areas.*
Flooring		Preferred Carpet Manufacturers? Tandus, Shaw, Millikan, Nora Rubber Tile, Forbo Linoleum Tile, others	REVIEWED	• Locate floor types as follows: ○ *Classroom, library, administration:* ***Carpet or resilient per Ed Specs*** ○ *Classroom "Wet Areas":* ***resilient*** ○ *Commons:* ***Linoleum or Rubber*** ○ *Corridors (at Ground Floor):* ***Polished Concrete*** ○ *Corridors (at 2nd Floor):* ***Linoleum or Rubber*** ○ *Entry Vestibules:* ***Walk-off Mats required****, three-component walk-off system* **allowed upon approval** *to comply with enhanced WSSP* ○ *Gym:* ***Hardwood Flooring at Middle and High Schools (Maple).*** *3/4" Maple tongue and grove –* ***preferred.*** ***Wood flooring*** *at Elementary and Specialty School.* ○ *Auxiliary Gym:* ***Rubber*** ○ *Stairs:* Pre-cast concrete ***preferred*** at main stair & cast-in-place concrete ***preferred at secondary stairs.*** ***Rubber stair treads & risers*** ○ *Kitchen:* Quarry tile ***preferred.*** Fluid-applied ***allowed upon approval*** ○ *Student restrooms:* ***Polished Concrete*** ○ *Staff restrooms:* ***Polished Concrete*** ○ *Health room:* ***Sheet Vinyl*** ○ *OTPT Room:* ***Rubber Tile*** ○ *Storage rooms: sealed concrete* **preferred** ○ *Boiler & Electrical Rooms:* Sealed Concrete • *Carpet tile* **preferred** *over sheet products.* • *Coved base is* **required** *in restrooms, health room, and kitchen.* • *4" Rubber floor base* **preferred.**

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				• *Instances of wood base – **Allowed.*** • *VCT and LVT – **Prohibited.*** • *Linoleum and Rubber – **Acceptable.*** • *Linoleum in wood finishes, patterns – **Preferred.***
Ceramic Tile	090130	Ceramic Tile		• *Large format ceramic floor tiles is* **preferred.** • *Large format ceramic wall tiles is* **preferred.** • *Epoxy grout* **required** *at all tile.* • *Waterproof membrane below tile* **required** • Floor slope at restrooms: At restrooms provide a **localized 3'x3' +/- sump to floor drain at -3/4"**. **Preferred.** • Thin set tile over waterproofing/uncoupling membrane ***preferred***
Paint	099000			Paint Sheen: • *Walls – Satin Finish **required*** • *Ceilings – Satin Finish **required*** • *Corridors (Walls and Ceilings) – Satin Finish **required*** • *Fiberglass & HM Doors and Frames – Semi Gloss **required*** • *Exposed steel – Semi Gloss **required*** • *Exposed Wood -* • *Exposed ductwork and equipment to match adjacent walls/ceilings* • *Fire rated paint for MDF & IDF*
Division 10 – Specialties				
Door and Wall Protection	102600	InPro Corporation (IPC); Model G2-160R		Corner Guards: *4' High +/- corner guards are **required** at all outside corners in hallways, corridors and other select locations.* • *Surface-Mounted, Plastic-Cover Corner Guards or Stainless Steel are **preferred.** At classroom entries* classrooms. • *Stainless Steel Corner guards full height **required** at kitchen and **allowed** in special locations. Stainless Steel Corner guards wanted in community spaces – Public Areas.* • *Plastic corner guards – Classrooms.* • *Drywall corners – Metal L – Mud it into the wall.* • *Fiber reinforced panels (FRP) or Vinyl Wall Panels **preferred** at restrooms without tile – preferred over tile at urinals.* • *Fiber reinforced panels (FRP)– 3/8" – at selected restrooms.*
Classroom Marker Boards	101100			• *Dray Eraser Type, low sheen, magnetic* • *(2) 8 linear feet by 6 feet tall (At Elementary Schools) – see ed specs* • *(2) 8 linear feet by 4 feet tall (At Middle and High Schools) – ed specs* • *Aluminum trim, cork tack strip and clips along top, and eraser trays.*

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				• Magnetic boards ***preferred***
Other Markerboards	101100			• *Reviewed on a project-by-project basis.* • *Eraser trays shall be omitted from MB's in gyms. Could be on top of board.*
Tackboards / Tack Strips	101100			• *(2) 8 linear feet by 4 feet tall (At typical classrooms where not VWC – see Ed Specs)* • *16 linear feet tack strip as alternative at CR perimeter* • *Tackable surface with vinyl wall covering.* • *Exterior walls – Tack strips.* • *10' W x 7' H tackable surface outside each classroom.*
Signage	101400			• *Building Address Signage: Address numbers highly visible for fire department.* ***Required*** • *Classroom signage: Classroom Signage shall have raised characters for the room number with matching Braille underneath. A slot shall be provided for a removable paper insert for the grade and teacher's name. Provide a thumb recess for removal of the paper insert. See example at right from Tumwater Hill Elementary School. Could add Quinalt language to primary spaces* • *Support spaces, where no insert for a teacher's name is required should have raised characters with the room number, name (where appropriate) and matching Braille.* • *All door frames shall have the architectural room number at the top of the door frame.* • *CR number at exterior window.* • *Add standard label at all exterior doors with 'gun free zone, etc.'*  
Toilet Compartments	102113.17	Scranton Products; Hiny Hiders		• *Solid-Plastic (HDPE) Toilet Compartments are* ***preferred.*** *Sim to HS.* • *Floor support and headrail braced with tamper-proof fasteners.* • *Hardware and support devices shall be stainless steel or aluminum if necessary.* • *Provide continuous pivot hinges and continuous wall brackets.*
Toilet Accessories	102800	Bobrick		*The following toilet Accessories are* ***preferred*** *to be OFCI: Blue Pacific PTD, TPD, Purell Hand Washing. Mechanical versus powered*

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				• *Toilet Paper Dispensers* • *Hand Soap Dispensers* • *Toilet Seat Cover Dispensers – check code requirements on whether needed* • *Paper Towel Dispensers* • *Sanitary Napkin Disposal Unit (SND)* • *Sanitary Napkin/Tampon Dispenser* *The following toilet Accessories are **preferred** to be CFCI:* • *Grab Bars* • *Purse Shelfs – not too close to faucets.* • *Mirrors* • *Robe Hooks* • *Diaper Changing Stations* *In Elementary Schools: Sanitary napkin dispensers, receptacles, and toilet seat cover dispensers in adult and health restrooms only.*
Cubical Curtains	102123	C/S, InPro		• Track 6062 • Washable
Defibrillators	104313			• *Confirm if OFOI at both Main Office and Gym. Match existing type.*
Fire Extinguishers & Cabinets	104416			• *Semi-recessed **preferred*** • *Fully recessed **allowed*** • *Stainless steel* • *Fire Extinguishers CFCI in new projects.* • Provide Type K in Kitchen • *Certify for use with tags* • *Use plexiglass in lieu of glass on doors* • *Mount on brackets in mechanical & back-of-house spaces*
Flag Poles	107516			• *One flagpole is **preferred** over multiple flag poles. USA flag &WA flag. Also add one pole at district office. Have flag for Pacific Beach already.* • *Review lighting approach to flag poles with owner. Powered building mounted light **preferred*** • *Flagpole with internal workings **preferred**.*
Storage Cabinets	109900	109900		• ***Provide** 1 large flammable storage cabinet in custodial area and/or Service Yard. Also at lawn mower storage area for small 54" deck mower. Large mower at JSHS.* • ***Provide** 1 flammable and 1 corrosive cabinet in Science Prep room at secondary school (unvented)* • *Storage by generator – propane powered?*
Operable Walls	102239	Advanced Equipment		• *Motorized operation at Gymnasium/Commons and stage **preferred*** • *STC 54 or greater*

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				• *Durable laminate finish* **required.** Integral markerboards.
Accordion Walls	102233			• *Use of accordion walls is* ***prohibited.***
Electric Hand Dryers				• *Use of Electric Hand Dryers is* ***prohibited.***
Safe	109900			• *Locate safe in Main Office area inside of base cabinet. Ask Liz & Wendy.*
Knox Box	109900			• CFCI flush mount at wall locations is ***preferred.***
Division 11– Equipment				
Residential Appliances	113013			*Staff Lounge: (Also see Ed Specs for requirements at each school) – commercial rated for insurance* • *2 microwaves minimum (CFCI)* • *2 refrigerators (CFCI)* • *1 dishwasher (CFCI)* • *1 Range (CFCI) – with venting to exterior* • *1 Vending Machine (OFOI)* *Health Room:* • *1 Ice Maker (CFCI)* • *Lockable Undercounter Refrigerator (CFCI)* *Life skill:* • *Per Ed Specs* *Student Store/Business & Marketing:* • *Per Ed Specs* *Custodial Room:* • *1 washer and 1 dryer (side by side* ***preferred****)* *JSHS* • *2 lockable vending machines* • *Have commercial grade WD for football uniforms (propane – 2 x 1000 gallons currently, but also used for heat).*
Gymnasium Equipment	116623	Porter	Start Here for next meeting w/ Brent	*(6) basketball hoops:* • *(2) at main court and (2) at each side court* • *Main court hoops motorized forward fold or side fold where in front of proscenium. Maintain 23'-9" clear above volleyball court* • *Side court hoops to be side-fold or up-fold. Blocking spectator view in up position* ***prohibited.*** *Glass* ***allowed upon approval*** • *Electric height adjusters of main court hoops are* ***preferred.*** • *Manual height adjusters on side hoops* ***preferred.***

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				Wall Pads: • *Entire Assembly ASTM E-84 tested for Class "A" Fire Rating.* • *Wall pads glued and screwed into place **preferred*** • *'Z' Clip (French Cleat) Approach **prohibited.*** • *Provide minimum 16' behind each basketball goal.* *Volleyball:* • *Recess volleyball inserts/sleeves are preferred. Quantity to be determined project-by-project.* *Gym Striping:* • *Gym striping to be on a project-by-project basis.*
Scoreboard				• *Provide at Middle School and above. No scoreboards at Elementary School.*
Emergency Evacuation Chairs				• *Locate one on each floor. OFCI*
Food Service Equipment	114000			• *Review with District Food Service Supervisor for NBSD standard installations. Tailored for each school.*
Division 12 – Furnishings				
Window Treatments	122413			• *Roller shades at all interior relites* **required** • *Mini Blinds allowed at exterior openings, but roller shades **preferred.*** • *Provide motorized rollers hades at high windows.*
Platform Curtain				• *No Preferences*
Walk-Off Mats	124813			• *7' minimum length in direction of travel.* • *Three-component walk-off system* **allowed upon approval** *to comply with enhanced WSSP*
Manufactured Plastic-Laminate Faced Casework	123216			• *All casework shall comply with the latest version of the AWI Standards or WI's North American Woodwork Standards.* • *Plastic laminate countertops **preferred.** Use of other countertop material **allowed upon approval** by Owner.* • *Post Formed or PVC Edging **allowed**. PLAM Edging **prohibited**.* • *Backsplash at location with sinks should extend to casework above otherwise 4" high backsplash shall be provided.* • *Standard base cabinets to top of countertop to be 33-1/2" tall, except at under cabinet refrigerators* • *Recessed stainless steel Drawer and Door Pulls **preferred.*** • *Lock teacher wardrobe cabinet and base cabinet below sink. Verify other locking locations with Owner. All front office cabinets and Health Room cabinets to be locked. Coordinate Special Ed cabinet locking at each school* • ***Provide** cabinet manufacturers standard locks and keyed the same, except Health Room key separately* • ***Provide** vents in the wardrobe cabinet.* • *The use of mobile book storage in central area of Library is **preferred**. Verify if they are furniture or custom casework on a project basis upon approval.* • *Casework material **depends on application – allowed upon approval.***

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				• *Traceless – **Preferred.***
Quartz Countertops or other Solid Surfacing Countertops	12366.19		REVIEWED	• *Quartz and solid surface countertops are **allowed upon approval** at main entry and library reception desks. They are also **allowed upon approval** at gang restroom counters.* • *Solid surface countertops **allowed upon approval** in classrooms.* • *Epoxy countertops (black) **approved** in Science Classrooms and Storage spaces.*
Division 14 – Conveying Equipment				
Elevator	142400		REVIEWED	• *Holeless Hydraulic Elevators are **preferred.*** • *Size elevator per local jurisdictional requirements. 3000-pound capacity **preferred** to accommodate gurney* • *Card Access control is **required**.*
Division 21 – Fire Protection – See separate Mechanical OPR document				
Division 22 – Plumbing – See separate Mechanical OPR document				
Division 23 – HVAC – See separate Mechanical OPR document				
Division 26 – Electrical, Lighting, and Fire Alarm Systems – See separate Electrical OPR document				
Division 27 – Performance Audio Visual, Sound, Intercom Clock, Telephone & I. S. System Guidelines — See separate Electrical OPR document				
Division 31 – Earthwork				
Site Clearing	311000		REVIEWED	• *Bid documents shall clearly state which sub-contractor shall perform landscaping demolition and soil removal.*
Selective Tree Removal	311313		REVIEWED	• *Remove stumps to a minimum of 3-feet blow rough grade.* • *Backfill material to be specified.*
Soil Stripping and Stockpiling	311400		REVIEWED	• *Specifications shall state that track out is **prohibited**. If track out occurs, the contractor shall clean immediately.* • *Specification shall state that the contractor will be the NPDES permitting and shall cover costs associated with reporting.* • *Provide geotechnical engineering report and Stormwater Pollution Prevention Plan as a supplemental document. Contractor shall acknowledge understanding of the report.*
Earth Moving	312000		REVIEWED	• *Specifications shall include dewatering plan. Language shall indicate that de-watering shall be provided at the contractor's expense. A project specific de-watering plan shall be provided by the contractor, reviewed and approved by the owner prior to mobilization.* • *Recycled glass is **prohibited** to be specified in fill under any circumstances.*
Grading	312200		REVIEWED	• *Verify finish grades do not expose the foundation. If so, adjust grades accordingly or provide curbing or retaining wall(s).* • *Verify all grades do not exceed maximum ADA allow slopes.*

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				• *Slope grade away from perimeter of building.*
Excavation & Fill	312300		REVIEWED	• *Excavated materials for use as fill: Onsite soils may be acceptable for reuse as structural fill in landscaped areas and if approved by the geotechnical engineer. Native soils shall not be used for backfill in structural areas such as under the building, in paved areas and under sidewalks. The suitability of excavated site soils for compacted backfill will depend on gradation and moisture content of soil when placed.* • *Coordinate fill requirements at crawl spaces or basements that need to be filled following demolition.*
Division 32 – Exterior Improvements				
Concrete Paving	321313			• ***Provide*** *a 1'-0" wide concrete mow strip or sidewalk next to building to keep landscape and pests away unless prohibited by County requirements.* • *Concrete sidewalks of 6' minimum wide* ***preferred*** *at primary pathways. Secondary pathways less than 6' width are* ***allowed upon approval****.* • *At select plaza and main entry areas a higher level of finish such as top cast concrete is* ***preferred****.*
Aggregate Surfacing	321500			• *Pervious paving is* ***discouraged****. Pervious concrete or asphalt may be allowed on a case-by-case basis depending on location and use.*
Curbs and Gutters	321600			• *Cast-in-place concrete curbs are* ***preferred*** *compared to extruded curbs.* • *6" curb face* ***preferred.***
Athletic & Recreational Surfacing	321800			• *At turf play fields grass seeded fields are* ***preferred****, also see Topsoil Placement & Grading* • *At "Natural" or "Low-Intensity" play areas, wood fiber chips are* ***preferred****.* • *At "High-Intensity" play areas, field turf at accessible areas, and wood fiber chips are* ***preferred****.* • *At play areas provide a cast-in-place concrete curb or enclosure wall at all sides of play area.* • *At general paved play areas asphalt paving is* ***preferred****.* • *At competition level exterior paved play surfaces concrete is* ***preferred****.*
Chain Link Fences and Gates	323100			• *A low fence along the curb side of the sidewalks, along bus driveways and parent pick-up & drop-off areas* ***preferred****. 4' wide gaps* ***preferred*** • *Passage gates with a 48" minimum clear width* ***required****. Nothing narrower is allowed.* • ***Provide*** *galvanized 6- high standard fences unless approved otherwise by owner. Black vinyl coated fencing is* ***preferred****.* • ***Provide*** *3" O.D. corner and end posts with a specified weight of 5.790 lbs. Per lineal foot. Provide 4" O.D. Gate Posts with a specified weight of 9.11 lbs. Per lineal foot.* • *Folded top* ***required*** *if lower than 6'* • *Concrete mow strips under fencing are* ***preferred*** *if budget allows.* • *Decorative fencing and gates* ***preferred*** *versus chain link at locations requiring access control.*
Decorative Metal Fences and Gates	323119	Ameristar Fence Products		• *Ameristar, Montage II, Majestic fencing is* ***preferred*** *BOD.* • *Decorative gates designed with panic hardware and closures shall be a minimum of 7' high.* • *Provide 1/8" steel plate for mounting panic hardware. Gate plate kits* ***prohibited.*** • *Gates shall have perforated metal panels installed above and below panic hardware full height on fencing adjacent to gate.* • *Kickplates to be provided on all gates with panic hardware.* • *Gate hinges to be reviewed by hardware consultant, gate hinges shall be self closing at access controled areas.*

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
Retaining Walls	323200			• *Rockeries (2 to 3 man rock) are **discouraged.*** • *If exposed, trowel finished concrete **preferred***
Site Furnishings	323300	Per project.		• *Site furnishings to be selected on a project by project basis. Consider the following options with site furnishings: Bench seating, picnic table seating, group seating areas, exterior classroom areas, and accessible access and options at all conditions.* • *Skateboard deterrent shall be provided where appropriate. Deterrents type to be approved by owner.*
Irrigation	328400			• ***Provide** irrigation at play fields and code required areas. The contractor shall maintain it for the first year and document the start/end date. 2-wire irrigation with weather sensing capabilities and spray heads for uniform and efficient coverage is preferred.* • *Drip irrigation is **discouraged**. Irrigation at other locations **allowed upon approval*** • *Bioretention soil is **preferred** for all planting areas.* • *Coarse sand **preferred** at lawn areas.* • *Trees to be on separate irrigation zones.* • *NBSD to provide guidance on irrigation standards and preferences.*
Topsoil Placement & Grading	329119			• *Topsoil from approved list of suppliers **required*** • Some minimal sloping at playfields to allow for longevity is ***preferred***. • *Avoid loam soils for maintenance and weed propagation. 6" cap is **preferred**.* • *Existing soils to be decompacted to 18" below finish grade.* • *A sand based infield at elementary schools is **preferred.***
Turf and Grasses	329200			• *NBSD to provide seed mix to include in these standards.* • *Playfields shall use sand base (where applicable)* • *The use of playfield underdrainage systems is **discouraged.***
Exterior Plants	329300			• *Landscaping **allowed upon approval*** • *Keep trees away from the building.* • *NBSD to provide guidance of landscaping standards*
Misc.				• *Monument & Reader Board Signs: Buildings shall have both a reader board and monument sign. They can be combined pending permitting jurisdiction. Reader boards preferred on street, but allowed on building on case by case basis.* • *Baseball Backstops: backstop and basic benches at baseball fields **preferred*** • *Drainage Galleries: Drainage galleries under play fields **discouraged**. If done, rock **discouraged**.* • *Mailboxes: Designer to coordination location and mailbox type with District and postmaster on project-by-project basis.* • *Vehicle Gates: Vehicle gates shall be constructed from 2" diameter steel tubing or smallest dia. required for gate span similar to a cattle gate for ease of user operation. All gate foundations need to be designed by a structural engineer. Gates shall be designed with a vertical return at end to prevent a dangerous hazard. Gates shall be HPC painted black to match fencing with applicable reflective safety reflectors.* • *Play Equipment (Big Toy): CFCI **preferred**. Playground surfacing on case-by-case basis. Review required depth with current health department requirements.* • *Walking Path Around Play Fields: Walking paths shall be designed around playfields. Where accessibility is required paved walking paths are **preferred**, where **approved** ¼" minus crushed rock contained with concrete curbs is **allowed**.* • *Future Bldg. Expansion: All schools shall be designed with a layout and configuration that is conducive to adding a future building addition off a classroom wing or other planned out location.*

Product / System	Spec Section	Preferred Product / Mfr	Owner Reviewed	System Notes
				• *Future Portables: New school design shall plan for locations for (4) double portables at elementary schools and (3) double portables and Middle Schools. Utilities shall be roughed into future portable location.* • *Outdoor Covered Areas: Design Teams to study on a project-by-project basis, covered outdoor areas adjacent to cafeteria / MP Rooms for outdoor dining.* • *Site Circulation: Parent and bus pick-up and drop-off shall have separate access points to the site.*
Division 33 – Utilities				
General				• *Review with the Owner the need for sleeving (power, low voltage, and irrigation) for future use underneath paved surfaces.* • *Coordinate isolation valve locations with Owner.* • ***Provide** ladder up assembly on all vaults (water meter, irrigation, power, etc.)*
Water Utility Distribution	331100			• *Coordinate isolation valve quantity and location with owner.* • ***Provide** drains at all vaults, tight-lined to the storm sewer system.*
Water Supply Backflow Preventer	332313			• *At new schools, should a backflow prevention device be above the finish grade and exposed to the elements inside a Hot Box. Electrical power is required for heat trace or other electrical heating devices to keep the backflow device from freezing. Located inside building **preferred*** • *Stainless steel enclosures are **preferred**.* • *Contractor shall coordinate water shutdown with the school district three days prior to shutdown.*
Sanitary Utility Sewerage Piping	333100			• *6" minimum size of all lines and fittings **preferred*** • *Verify that lengthy sewer lines are equipped with access covers every 100' minimum.* • ***Provide** cleanouts at all bends greater than 45 degrees.* • *All cleanouts to be equipped with concrete collars.*
Sanitary Utility Sewerage Structures	333900			• *Locate grease interceptors outside building (no grease traps inside building).* • *Plastic or fiberglass grease interceptors are **preferred**.* • *Gravity drain or sump pump to eliminate water within all vaults **allowed upon approval***
Utility Septic Tank	333600			• *Connect to generator to operate sewage pumps in times of power outage. Coordinate with Section 26 30 00 Emergency Generator.*
Sanitary Utility Sewerage Manholes, Frames and Covers	333900			• ***Provide** locking lids on all utility lids.* • *Label manhole and clean-out covers "Sanitary Sewer".* • *Verify the top of vaults are above the surrounding finish grade.*
Storm Drainage Structures	334900			• *Installation of storm drainage structure under playfields is **discouraged.***
Gas Metering	335133			• ***NA***

Owner's Project Requirements

Pacific Beach Elementary School

Pacific Beach, WA

Date of this version: _____

This version approved by: _____

North Beach School District

Table of Contents

1. Overview and Scope 1
2. General Requirements 5
4. Design Process 5
5. Heating, Ventilating and Air Conditioning 5
7. Commissioning ..... Error! Bookmark not defined.
8. Sustainability 11
10. Plumbing Systems 12

1. Overview and Scope

Overview and Definition

The Owner's Project Requirements (OPR) provide an explanation of the ideas, concepts and criteria that are considered to be very important to the owner, coming out of the programming and conceptual design phases and which are desired to be tracked throughout design and construction. The OPR is developed by the owner, not the design team. The OPR provides the direction for the design team. The OPR document sets the functional goals that the design is judged against and establishes the basis of the criteria used during construction to verify actual performance. The OPR does not list items that are already required by code. The OPR is generally not a description of what specifically will be included in the project design, but is the more general feature and categorical performance criteria to be met by the design. Where practical and known, the OPR includes measurable indicators used to verify that the performance requirements were met.

The OPR will be followed by the basis of design or design narrative written by the design team and included with design package submissions. The basis of design documents the primary thought processes and assumptions behind the design decisions and describes the design elements being incorporated to meet the OPR.

1.1 Scope

This document includes requirements for the systems that are more likely to be included under the formal commissioning umbrella or be impacted by their interactions. For reference, systems not included in this project and OPR that are typically commissioned and should have an OPR developed for them include: process mechanical and plumbing, paging, automatic doors and gates, presentation screens, and other moving mechanical devices.

This document is not a comprehensive project OPR, and does not include all project requirements and directives to the design team which could include: other disciplines such as fire protection, structural, landscaping, civil, geotechnical and other earth work, utilities, specification division 1 requirements, demolition, all the materials, furnishings and special construction disciplines, drawing, specification and calculation requirements, codes and references, etc.

This document focuses on the mechanical, energy and comfort related systems and on the sustainability requirements of the project. Other areas impacted by commissioning or commissioned systems are covered more broadly. The design areas included in this document are:

Covered More Thoroughly

- Heating, ventilating & air conditioning (HVAC)
- Sustainability
- Commissioning

Covered Peripherally

- General requirements
- Design process
- Plumbing

1.2 Format

Under each area or building system is a list of pertinent questions and data needed to be answered. Blue, indented italicized text indicates the answers to the questions and specific information about the project requirements for this project.

2. General Requirements

Describe this project, including the general overall objectives:

2.1.1 What is the proposed facility's life expectancy?

40-50 years

2.1.2 What future flexibility in function/activities must this facility accommodate?

TBD.

2.1.3 Are spaces anticipated to be converted from one use or occupancy type to another?

TBD.

2.1.4 Will the Owner operate and maintain the building?

Yes.

2.1.5 What are the overall energy efficiency goals and objectives? (ASHRAE 90.1, State Code, Energy Star, other indices, this building's past performance, etc.)

Want the building to be efficient but not looking for anything specific over code minimum.

2.1.6 What other environmental goals and requirements are there?

None.

2.1.7 What are the objectives relative to the local neighborhood?

TBD.

2.1.8 What are the challenges relative to the local neighborhood and adjacent buildings?

TBD.

3. Design Process

3.1 Design Reviews

3.1.1 Describe the expected design reviews and the expectations of the design team regarding responding to comments.

There will be owner reviews at major milestones as well as third party commissioning review for commissioned systems for each design submission. The design team will respond to comments and will consult with the Owner on issues as required.

4. Heating, Ventilating and Air Conditioning

4.1 Occupancy, Climatic, Temperature and Sizing Requirements

4.1.1 **Time of day schedules.** List tenant types with their time of day and days of week they occupy.

TBD.

4.1.2 List and describe any spaces that will require night time operation. Indicate how often and how long this after hours occupancy is likely to be.

Gym and Commons.

4.1.3 **Temperatures.** List the interior temperature conditions that must be maintained for each tenant or occupancy type. List any special conditions or spaces.

68F heating, 75F cooling.

4.1.4 **Tolerances.** List the space temperature and humidity tolerances that each space type must stay within during occupied hours.

The HVAC system shall control the temperature in all spaces to within +/-3F of the given heating and cooling set points.

4.1.5 **Air Drafts.** How tolerant are the occupants expected to be of noticeable HVAC air movement—none, little, some, moderate.

Little.

4.1.6 **Diversity.** Is it OK to plan for reasonable diversity—typically around 85%—that is, the assumption and likelihood that not all spaces will experience worst case load conditions at the same time?

TBD.

4.1.7 **Redundancy.** What redundancies are desired for specific HVAC services (chilled water, hot water, space air temperature, humidity, air quality) and why?

TBD.

4.2 Air Quality and Ventilation

4.2.1 What are the goals and requirements for indoor air quality--standard, above average, exceptional? List any special requirements.

Average indoor air quality.

4.2.2 Will there be rooms that store bulk quantities of flammable, combustible, radioactive, or biological materials?

No.

4.2.3 Where are operable windows acceptable? Where are operable windows desired?

Acceptable in offices. Desired in classrooms.

4.3 General HVAC Systems Data

4.3.1 Is full air conditioning/comfort cooling a requirement?

Would be nice to have but budget dependent. Could be parts of the building- Admin, maybe Commons/Gym.

4.3.2 What system types and brands are not desired or are not acceptable? (2 or 4-pipe fan coil unit, central high-efficiency VAV, water source heat pump)

Hydronic central system would be acceptable. Would prefer a four-pipe system over a two-pipe. Concerned about heat pump so close to the ocean. Might be better to go with electric strip heat to keep expensive equipment from being installed outside and requiring replacement. Not interested in VRF.

4.3.3 What system types or brands are mandatory?

Would prefer electric system over propane.

4.3.4 Is larger central equipment desired over smaller more numerous distributed equipment? (Central equipment typically is easier to maintain, but requires vendor support, lasts longer, is more energy efficient, but may cost more.)

Would prefer smaller individual units.

4.3.5 Can central air-to-water heat pumps be considered?

Can be considered but needs to stand up to salty environment.

4.3.6 Is it acceptable to locate any equipment above ceilings of zones served or corridors? And if so, what types of equipment? (VAV boxes, Fan Coil Units, Exhaust Fans)

Prefer equipment in attics.

4.3.7 Is it acceptable to locate any equipment above ceilings of zones served or corridors? And if so, what types of equipment? (VAV boxes, Fan Coil Units, Exhaust Fans)

Would prefer units in mezzanines vs on roof.

4.4 Energy Efficiency and Demand Reduction

4.4.1 The goals and targets of *overall building* energy efficiency are given in the Sustainability section under Energy Efficiency.

TBD.

4.4.2 List any specific HVAC energy efficiency features or equipment desired or required for this project.

None specifically.

4.4.3 What level of HVAC *equipment* energy efficiency are desired (standard, above standard, exceptional)?

Standard.

4.4.4 Are power demand reduction features important? These include, listed from moderate to rigorous: staggering of equipment startup, active automatic load limiting, thermal energy storage, etc. List those required or of interest.

TBD.

4.5 Renewable Energy

4.5.1 Describe any renewable energy goals.

TBD.

4.6 New Concepts and Systems

4.6.1 Would incorporating new or relatively untried systems and equipment be seriously considered (no, possibly, likely)?

No.

4.7 HVAC Flexibility

4.7.1 What are the requirements for flexibility in the HVAC systems to accommodate changing floor layouts and occupancy needs (normal, above average flexibility, very flexible. List the areas that apply or any special needs)?

Average flexibility.

4.8 Maintainability

4.8.1 What are the maintainability objectives for the HVAC equipment (standard level, above standard, exceptionally easy to maintain)?

Require all pumps, motors, terminal units and associated equipment to be easily accessible to maintenance staff. Goal is to be above standard. Any equipment located outdoors will be subject to harsh marine environment.

4.8.2 Is it expected that there will be normal, above normal or exceptional accommodation for replacement of chillers, cooling towers, boilers and air handlers?

Normal.

4.8.3 How much desire is there for top of the line equipment features that simplify and make maintenance easier? (e.g., hinged access doors, filter pressure monitoring, direct expansion equipment with refrigerant hose access plugs and taps, hose bibs on roof, lights in cabinets, service outlets in units or nearby, etc.). Little, some, significant.

Some but need to stay within budget.

4.9 Reliability and Durability

4.9.1 What are the reliability and durability objectives for the HVAC equipment (standard level, above standard, exceptionally reliable)? Would this include smaller components like dampers, actuators, valves, sensors, etc. and not just the larger equipment?

Provide equipment with at least 1 year warranty.

Standard reliability and durability of major and smaller components are desired.

4.10 Operations and Maintenance Documentation

4.10.1 Are electronic O&M manuals desired?

Yes.

4.11 Training

4.11.1 Who will be operating the building HVAC and electrical systems? (in-house staff, outsourced staff)

In-house staff.

4.11.2 How much equipment will be maintained by equipment vendors vs. in-house staff?

TBD.

4.11.3 What level of training is desired for the in-house staff for operating and maintaining the systems and assemblies of the building?

All staff will be new to this building. A comprehensive level of training is desired.

4.11.4 How much of the training is desired to be video recorded? (All, most, some.)

TBD.

4.12 Building Automation System (BAS) and Controls

4.12.1 Are there special owner control system standards that need to be followed?

TBD.

4.12.2 What sophistication is desired in the control system (standard, above standard, exceptional)?

Standard

4.12.3 What control systems are not acceptable?

None specific.

4.12.4 What control systems are mandatory or highly desirable?

ATS, and would like one other. Wants consistency across the new buildings.

4.12.5 List any control element type or brand that is not to be used.

TBD.

4.12.6 Is a web-based accessible system desired?

Yes.

4.12.7 Will the control system need to tie into another existing building automation control system from another building? Explain.

ATS is installed a District head end that they would like to tie the building into.

4.12.8 Describe interlocks to the HVAC system from the Fire Alarm System.

Fire alarm system is separate, except general alarms are passed to the BAS.

4.12.9 Describe interlocks to the HVAC system from the Lighting Control System.

TBD.

4.12.10 How much interoperability communication between the central control system and the mechanical equipment is desired? (none, little, some, significant) Add details in the next article.

Some.

4.12.11 For the chiller, boiler and pumps are there any of these that will not require automatic changeover to the backup / lag piece without operator action should one piece of equipment fail?

No.

4.12.12 How fast should the refresh rate be on the operator's work station? (standard, above average, exceptional)

Standard.

4.12.13 What fraction of the BAS set points should be able to be adjusted from the OWS graphics screens? (none, few, some, most, all)

Most.

4.12.14 For non-measurement and verification (M&V) purposes, like energy optimization and troubleshooting, how many system monitoring points are desired, above that required to execute the sequences of control (none, some, many)?

TBD.

4.12.15 Is there going to be a measurement and verification (M&V)--rigorous energy tracking, or significant ongoing commissioning program after occupancy, requiring numerous additional power and HVAC monitoring points? Mention it's part of LEED, if applicable.

Most likely no.

4.12.16 How much expansion capacity is desired for adding control point inputs and outputs in each field control panel and primary controller? (none, 5%, 10%, 20%, etc.)

~10%

4.12.17 Are there areas of the building that require essentially uninterrupted delivery of the HVAC (which would affect how the controls were designed)? List.

None.

4.12.18 Are there any critical areas that need their controllers to have redundancy in their power supplies?

No.

4.12.19 Upon a control system network failure should all equipment not being controlled by local controllers control to the last known value?

Yes.

4.12.20 Upon restoration of power after an outage, which equipment is allowed to require an operator to go to the equipment and reset it before it will start? Or require operator action at the workstation?

None to either.

4.12.21 Upon a general alarm that shuts down the equipment, upon the condition correcting itself, what equipment is allowed to or should require an operator to reset the unit at the equipment? Or require action at the workstation?

None to either.

4.12.22 What other desires for the control system are there?

TBD

4.13 Occupant HVAC Control

4.13.1 What level of control is desired for the occupants to have over the temperature and ventilation in their space—list for each occupancy type (temperature adjustable by occupants at a zone thermostat, ventilation control adjustable by occupants for their specific area, temperature control adjustable only by facility staff, ventilation control adjustable only by facility staff)? Describe what areas will have after-hours override capabilities accessible to the tenants or occupants.

Office and Classrooms: Occupant accessible thermostats should all have timed override buttons in the office and classroom areas for HVAC. The thermostat temperature should be adjustable by the occupant about +/-2F. No ventilation control by occupants, except if there are operable windows.

4.14 HVAC Acoustics --See Acoustics in the Sustainability section.

5. Sustainability

What are the general sustainability goals for this project?

The project is required to comply with the Washington Sustainable Schools Protocol. TBD.

5.1 Certifications

5.1.1 Describe any LEED or other certification goals and objectives.

None other than WSSP.

5.2 Water Efficiency and Conservation

5.2.1 Describe the water efficiency goals of the project.

TBD.

5.2.2 Is grey water recovery a consideration for this project?

No.

5.2.3 Is rainwater harvesting and use a consideration for this project?

No.

5.2.4 What level of low-water use landscaping is desired or would be considered?

TBD.

5.2.5 To what level of sophistication will the irrigation controls be, beyond simple typical time clock functions and above ground sprinklers, to reduce water consumption?

TBD.

5.3 Energy Efficiency

5.3.1 What level of *overall building* energy efficiency is required above code? (none, 10%, 20%, 30%, etc.).

TBD.

5.3.2 Specifics of HVAC energy efficiency are found in the HVAC section and water heating under Plumbing.

5.4 Indoor Environmental Quality

5.4.1 HVAC related IEQ goals and requirements are listed in the HVAC section.

5.4.2 Interaction with building operations personnel. Describe the interface that occupants will have with operations and maintenance personnel to voice concerns over IEQ and related issues (e.g., direct to facility manager's office, front receptionist, internal company supervisor, etc).

TBD.

6. Plumbing Systems

Water Efficiency

6.1.1 Refer to the Water Efficiency section under Sustainability for details of the water efficiency objectives of this project.

6.2 Fixture Controls

6.2.1 Are auto-flushing and on/off controls desired on urinals, lavatories, toilets?

TBD.

6.2.2 Are waterless urinals a consideration? Where?

No.

6.3 Energy Efficiency

6.3.1 The water heating system energy design is desired to be: standard code, somewhat more efficient that code, much more efficient than code? Note standard code now requires heat pump water heaters.

Standard code.

6.3.2 Are there specific system types that shall be incorporated or that are not to be considered (e.g., point of use heaters, electric heaters, etc.)?

Note heat pump water heaters are code minimum.

---END of OPR---

NORTH BEACH SCHOOL DISTRICT
DESIGN APPROACH FOR PACIFIC BEACH ELEMENTARY SCHOOL
Division 26, 27 and 28 – Electrical and Low Voltage Systems
CREATED: 8.28.2026

Standards list below are suggestions for district comment and to begin the discussion. Any further input is appreciated and will be incorporated.

General	260000		
Wires and Cables	260519		•Aluminum feeders acceptable for distribution feeder 100Amps or larger as VE item in future. Copper only to start. •Solid copper conductors for #10 and smaller
Metal Clad (MC) Cable	260534		•Concealed, 20A lighting and power branch circuits only •Not allowed for HVAC equipment
Cable Tray	260536	•Basket Type	•MDF and IDF rooms •Hallways for current and future distribution etc.
Lighting Control	260923	•nLight •Wattstopper Plus •Cooper Wavelinx •Lutron	•Wireless control with NO batteries •Code minimum control, daylight harvesting, occupancy/vacancy based controls •Lighting control system to control the Washington State Energy Code required controlled receptacle outlets. •All lighting control switch (“off” function) located in corridors and other core areas are disabled during school hours. •Corridors are timeclock based controlled via the networked lighting controls.
Electrical Gear (Switchboards Panelboards)	262413 262416	•SquareD •Cutler-Hammer •Siemens	•Sized for current calculated load and capacity for future expansion •Provide (5) minimum spare (i.e. empty) conduit from any recessed panelboard to accessible ceiling •Provide conduit sleeves where appropriate
Switches and Receptacles	262726	•Hubbell •Leviton •Cooper •Pass & Seymour	•Devices shall be white •Stainless Steel coverplates •Switched receptacles shall be green and controlled by timeclock, not occupancy sensor.
Lighting	265000		•All LED •Interior color temperature: 4000K •Exterior color temperature: 3000K •Exterior parking lot and site lighting to be 30’ AFG or less

Standards list below are suggestions for district comment and to begin the discussion. Any further input is appreciated and will be incorporated.

			•Provide site lighting for parking, major vehicular and pedestrian access pathways •Lighting of athletic field TBD. Underground conduit and handholes for future to be installed under base bid. •All LED fixture driver shall be accessible from the bottom lens.
Emergency Lighting	263213 265600	•Emergency Generator (Preferred) •Central Lighting Inverter (Alternate option for Elementary School Building)	•Generator with on-site fuel storage (propane backup) •8-to-12 hours of propane backup (verify runtimes) •Central Lighting Inverter shall have a minimum of 90-minute runtime to comply UL924 requirements. •Provide extended life battery with fifteen (15) years prorated with full replacement in the first year.
Telecom	270000		•Single brand end-to-end solution with multiple certified installers with at least 25 year manufacturer warranty on installation. o No manufacturer preference from district. •Typical outlet density o Typical CAT6 cabling for station outlets. Locations and quantity determined through design coordination. o Typical CAT6A cabling for wireless access points. Full wireless coverage throughout building. •Utility Service o Coaxial service from Coast Communications o Minimum (1) 4” conduit pathway with vaults to service pole location. o Potential future fiber service, site pathway to be provided to support future installation. •Fiber/copper backbone requirements o 6-strand singlemode OS2 fiber with LC-LC UPS terminations between MDF and each IDF. •Owner provided equipment o Typically network switches, WAPs, IP phones, workstation PCs, UPS (OFOI).

Standards list below are suggestions for district comment and to begin the discussion. Any further input is appreciated and will be incorporated.

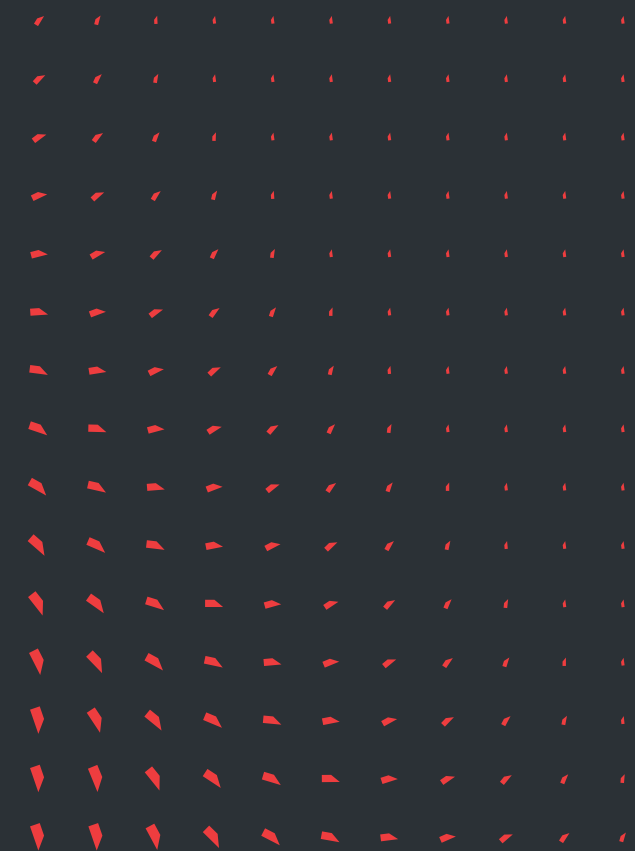
			○ Grandstream VOIP Phones. •Conduit sleeves for all LV systems ○ Provide conduit sleeves where appropriate. • Typical Rack Info ○ 2-Post racks for data with 4-6" vertical wire managers. ○ 4-post square hole enclosure with mesh doors in MDF only. • Typical Pathway Info ○ 12" Ladder cable tray (minimum) in telecom rooms, based on cable density. ○ J-hooks and conduit pathway for horizontal distribution throughout building.
Classroom AV	274113	•Manufacturer preference to be coordinated with district	•Wall mounted TV ○ OFCI – non-interactive style •Typical classroom layout ○ Classrooms: 70V ceiling speakers, amplifier, and audio transceiver with wireless microphones. Including a wireless audio in/out module. ○ HDMI connection from typical teacher's desk location. Wireless cast solution for video to TV OFOI. ○ Audio content will be transmitted wirelessly within the room (no wall plates). ○ AV locations (not classrooms) TBD. ALL infrastructure and backing CFCI.
Intercom/Clock	275153	•Rauland Telecenter or Singlewire Informacast	•IP based Digital clock speakers in all occupied spaces. •70V general paging speakers through corridors, restrooms, exterior, and miscellaneous spaces. •SIP trunk for tie in with VoIP system.
Access Control	281300	•Manufacturer preference to be coordinated with district	•No current district wide standard for access control system. •Lockdown triggers and reset controls. Tied into the intercom system for notification. •Security entrance vestibule with controls of individual doors from admin desk door release buttons or computer application. •Front entry door camera/intercom with control from reception for visitor entry management. •Card reader locations throughout building

Standards list below are suggestions for district comment and to begin the discussion. Any further input is appreciated and will be incorporated.

			○ Locations to be coordinated with district
Intrusion Detection	281600	•Bosch	•A non-proprietary Intrusion alarm system with network/VOIP monitoring •Bosch B9512G with zone expanders in each MDF/IDF as the basis of design •System arm/disarm keypads at main entrance vestibule and service entrance
CCTV	282300	•Exacqvision video management system •Axis Cameras	•District wide CCTV system with on site NVR •IP based cameras ○ Coverage and locations to be coordinated throughout design •Owner furnished on site NVR/server ○ Minimum 30 day retention ○ Utilize 11 existing camera licenses. Additional camera licenses provided as necessary.
Fire Alarm	283176	•Silent Knight (Preferred) •Potter (Alternate)	•Digital, Addressable Fire Alarm Emergency Communication System (Voice Evacuation) •Verify system manufacturer •Verify monitoring agency

TCF

VII. WSSP Strategy and Scorecard



PBES 2023 WSSP-Scorecard

TCF

	Category	Credit Number	Credit Name	Available Points	Highest Possible Points	Yes	No	Maybe	Credit Summary	Responsible Party	Contractor Action	Action Verification	Notes
1			Pacific Beach Elementary School 2025-010						**HLC: YELLOW ; SSES: PURPLE; BOTH: RED**				
2	**Category**	**Credit Number**	**Credit Name**	**Available Points**	**Possible Points**	**Yes**	**No**	**Maybe**					
3	2023 WSSP COMPILED LISTING OF REQUIRED CREDITS - SEE ATTACHED		2023 WSSP COMPILED LISTING OF REQUIRED CREDITS - SEE ATTACHED						2023 WSSP COMPILED LISTING OF REQUIRED CREDITS - SEE ATTACHED				
4	**Site**												
5	1) Selection & Use												
6		S1.0	Code Compliance	R	0	**REQUIRED**			Comply with all siting and environmental impact study requirements of the most current edition of the School Facilities Manual, issued by the Washington State Office of the Superintendent of Public Instruction.	ALL	No submittals or action required of the Contractor for this credit.		
7		S1.1	Sensitive Areas	1	1				Avoid environmentally sensitive or important areas. See criteria in 2023 WSSP - Credit attached for team review	x	No submittals or action required of the Contractor for this credit.		
8		S1.2	Greenfields	1	1				Do not build on greenfield	x	No submittals or action required of the Contractor for this credit.		
9		S1.3	Central Location	1	1				Locate sites where at least 50% of students live within the following distances from the school: ES - 1 mile MS/JrH - 2 miles HS - 4 miles To earn this point, calculations must be based on the planned number of students indicated on the D5 submittal.	x	No submittals or action required of the Contractor for this credit.		
10		S1.4	Joint Use of On-Site Facilities	1-2	2	**2**			Joint Use On-Site: Make portion(s) of the school building or grounds available for either shared or dedicated use by community and other appropriate organizations. One point if the space is "shared" use. An additional point (total of two points) if the space is dedicated for use by the community and other appropriate organizations.	OWNER	No submittals or action required of the Contractor for this credit.		Confirm with owner whether there is any dedicated space. District has to have a contract in place with someone out in the community - dedicating a certain part of their facility. Site related or building related. Documentation to OSPI at the end.
11		S1.5	Joint Use of Off Site Facilities	1	1				Share park or recreation space with local park boards or other organizations (off-site).	OWNER	No submittals or action required of the Contractor for this credit.		
12		S1.6	Protect Open Space	2	2				Design a building footprint that does not exceed 60% of the total building square footage, a Floor Area Ratio (FAR) equal to or greater than 1:4.	ARCHITECT	No submittals or action required of the Contractor for this credit.		Does not apply - Cutting down.
13		S1.7	Tree Canopy	1	1			likely no	Increase tree canopy by 10% over existing tree cover.	LANDSCAPE	No submittal or action required of the Contractor for this credit.		Have to confirm with Clayton on if trees will be planted.
14		S1.8	School Carbon Sequestration Data	1	1	**1**			Use the I-Tree Planting Calculator to assess the amount of CO2 sequestered (in lbs/sq.ft. or kg/sq.m.) by vegetation such as all trees and shrubs on the baseline site compared to the proposed site.	LANDSCAPE	No submittal or action required of the Contractor for this credit.		Confirmed by Jack with Site Works that they can do this.
15	2) Transportation												
16		S2.1	Public Transportation	1	1	**1**			In urban areas, locate the school within ½ mile of a commuter rail or light rail station or within ¼ mile of one or more bus lines. In rural and suburban areas, with limited or non-existent rail/bus service, provide busing to the school.	ARCHITECT - TCF	No submittals or action required of the Contractor for this credit.		
17		S2.2	Bike & Walk to School	1	1		1	likely no	Provide bike lanes or sidewalks that extend to the end of the property. And provide suitable means for securing bicycles for at least 5% of students above grade 3 and staff (at peak periods) in an elementary or middle school, and 3% of building staff and students (at peak periods) in a high school. And either Integrate the Engineering and infrastructure component of the Washington Safe Routes to School in the planning and design process. The education and enforcement components can be implemented for credit under PEO3.3 Transportation Options OR complete a School Walk Route Map or Plan in accordance with WAC 392-151-025 and/or WAC 392-141-340.	ARCHITECT	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents		Need to check on the requirements to achieve this. Most students are from the tribe.
18		S2.3	Electric Buses or District Vehicles	1-2	2		2		1 point - Develop and implement a plan for acquiring at least 1 electric bus. 2 points - Develop and implement a plan for 50% of all other (non-bus) vehicles owned or leased to serve the school to be electric vehicles.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents		Follow up with Stan to check on if North Beach School District is getting electric buses. North Beach school district has one, but it does not come up Pacific Beach.
19		S2.4	Minimize Parking	1	1		1		Provide preferred parking totaling 5% of staff and student spaces for carpools or vanpools and alternative fuel vehicles, AND Size parking capacity not to exceed 2.25 spaces per classroom plus parking for 20% of students at High Schools, or three spaces per classroom for Elementary and Junior/Middle Schools. OR Provide preferred parking totaling 5% of staff and student spaces for carpools, vanpools, and alternative fuel vehicles, and size parking capacity not to exceed local codes. OR Add no new parking for modernization projects and provide preferred parking totaling 5% of staff and student spaces for carpools, vanpools, and alternative fuel vehicles.	ARCHITECT	No submittals or action required of the Contractor for this credit.		Maybe right now. Need to check on requirements at design continues. Want to exceed for the community center parking.
20	3) Stormwater Management												
21		S3.0	Construction Stormwater Pollution Prevention	R		**REQUIRED**			Implement a site stormwater pollution prevention plan (SWPPP) that follows the best management practices outlined by the Washington State Department of Ecology's Stormwater Management Manuals (for Western Washington: Volume II, Construction Stormwater Pollution Prevention, and for Eastern Washington, Chapter 7: Construction Stormwater Pollution Prevention), and the local ordinance requirements.	CIVIL	implement and maintain site sediment and erosion control plan, and provide photographic documentation of the implememntation of the plan.		
22		**S3.1**	**On-site Stormwater Management and Flow Control**	**R-1**	**1**	**R**	**1**	**Likely no**	**Required: Meet state and local requirements for on-site management and flow control of stormwater on the developed site. Projects exempted by state or local jurisdictions are exempt from this requirement.** **1 point - Apply Low Impact Development (LID) performance standards for either Eastern or Western Washington to enhance stormwater management and flow control.**	**CONTRACTOR**	**Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents**		**Ross is waiting on Geotech information on if the point is a Yes or No. Landscape and Civil involved in this point. LID is difficult to include. Flow controlled system.**
23		S3.2	Stormwater Treatment	R-1	1	**R**	1	Likely no	Install treatment systems designed to meet site-specific requirements outlined in Washington State Department of Ecology's Stormwater Management Manual for either Western or Eastern Washington and the local jurisdiction requirements. Projects exempted by state or local jurisdictions are exempt from this requirement. Apply Low Impact Development (LID) performance standards for either Eastern or Western Washington to enhance stormwater treatment.	CIVIL	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents		Ross is waiting on Geotech information on if the point is a Yes or No. LID will be tough to achieve.
24		S3.3	Soil Management	1	1	**1**			Implement the Department of Ecology's BMP T5.13 "Post-Construction Soil Quality and Depth" that provides guidelines for amending soils with compost post-construction, or local government guidelines and procedures similar to those recommended in Guidelines and Resources for Implementing Soil Quality and Depth BMP T5.13.	CIVIL	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents		Ross said yes.
25	4) Outdoor Surfaces												
26		S4.1	Outdoor Learning Spaces	2	2	**2**			Provide an outdoor classroom or lab for students to experience their learning beyond the walls of a school building.	ARCHITECT - TCF	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents		
27		S4.2	School Gardens	1-2	2	**2**			1 point - Provide dedicated space and infrastructure for a future school garden - Note that this point still requires that we meet the 4 requirements that are included in the credit (1-see garden required sized by school population; 2-permnament source of irrigation; 3-signage; & 4-maintenance plan.) 2 points - Provide a complete installation of a school garden	LANDSCAPE	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents		

	Category	Credit Number	Credit Name	Available Points	Highest Possible Points	Yes	No	Maybe	Credit Summary	Responsible Party	Contractor Action	Action Verification	Notes
28		S4.3	Reduce Heat Island - Site	1-2	2		2		1 POINT: Provide shade (at plant maturity) on at least 30% of non-roof, impervious surfaces on the site, including parking lots, walkways, plazas, etc., OR Use light-colored materials with a solar reflectance of at least 0.30 for 50% of the site's non-roof, impervious surfaces, OR Use an open-grid pavement system (net impervious area of less than 50%) for a minimum of 30% of the parking lot area. A combination of shading and high solar reflectance may be used to meet the credit. 2 POINTS: Use an open-grid pavement system (net impervious area of less than 50%) for a minimum of 50% of the parking lot area.		No submittals or action required of the Contractor for this credit.	☐	Maybe yes.
29		S4.4	Reduce Heat Island - Roof Design	1	1		1		Install an ENERGY STAR® labeled Cool Roof for a minimum of 75% of the roof surface, with a minimum initial solar reflectance of 0.65, and after 3 years 0.50 on low-sloped roofs 2:12 or lower and an initial 0.25, and >= 0.15 after 3 years, on steep-sloped roof > 2:12, OR install a vegetated roof for at least 50% of roof area, OR install high-albedo & vegetated roof surface that in combination, meet the following criteria: Area Roof Meeting Minimum SRI + Area of Vegetated Roof ≥ Total Roof Area		No submittals or action required of the Contractor for this credit.	☐	Maybe yes.
30	⊟ 5) Outdoor Lighting											☐	
31		S5.1	Light Pollution Reduction	1	1	1			Do not exceed Illuminating Engineering Society of North America (IESNA) foot-candle level requirements as stated in the IESNA RP-33 Recommended Practice for Exterior Environmental Lighting or applicable sections of the IESNA Lighting Handbook, Current Edition; AND Design interior and exterior lighting (excluding sports fields) such that zero direct-beam illumination leaves the building site.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	Design standard - yes.
32	**Site**		**Total possible**		**26**	**10**	**9**	**0**				☐	
33													
34	⊟ **Water - 6 Points**											☐	
35	⊟ 1) Outdoor Systems											☐	
36		W1.0	Landscape Water Use Budget	R		**REQUIRED**			Develop a landscape water budget that conforms to the requirements set forth in the Irrigation Association Best Management Practices, Appendix B. Develop a landscape plan and Estimated Water Use for the site specific landscaping.	LANDSCAPE	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
37		W1.1	Irrigation Water Reduction (50%, 100%)	1-2	2	**1**		1	1 point - Reduce water consumption of water supplied for irrigation by a water district or utility, after plant establishment period, by 50% of Maximum Applied Water Allowance as determined in credit W1.0. 2 points - For an additional point, eliminate water consumption for irrigation use of water supplied by water district or utility, after plant establishment period.		Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	Usually in the specifications/contract document. 1-2 years. If with 1 pt due to turf field. Do learning gardens count towards this credit - Ask to OSPI.
38		W1.2	Control Irrigation Water Use	R-1	1	**1**			REQUIRED: Develop an irrigation schedule, by zone, based on historic rates of evapotranspiration, plant water requirements, soil type, and system efficiency. AND input into controller after plant establishment, OR Any irrigation systems used for playfields must have weather-based irrigation controllers (WBIC) that meet or exceed Smart Water Application Technology (SWAT) protocols to manage operation of irrigation systems when there is adequate ambient moisture. 1 POINT: Irrigation systems used for campus landscape, gardens, and recreational areas must have weather-based irrigation controllers (WBIC) that meet or exceed SWAT protocols.		Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
39		W1.3	Irrigation System Testing and Training	1-2	2	**2**			1 POINT: Create an irrigation commissioning plan to verify the irrigation system and controls are operating as intended and that effective training for system upkeep and maintenance has been provided. 1 POINT: The Landscape Architect will provide a baseline irrigation run time schedule for post establishment irrigation for all zones, including sports fields, that shall be input by the contractor into the irrigation controller prior to final hand-off of the irrigation system to the owner. The irrigation audit shall include coverage test and confirmation that the entire system has been installed per design.		Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
40		W1.4	Flow Switches & Irrigation Water Meters	R-1	1	**1**			REQUIRED: Install a flow switch or flow sensor to monitor the flow rate and pressure of water. 1 POINT: Install an irrigation water meter, deduct meter, or submeter for measuring irrigation used in outdoor activities. District-owned meters must be connected to the building automation system.			☐	NEW CREDIT; 1 Point is considered a cost saving measure.
41	⊟ 2) Indoor Systems											☐	
42	⊞	**W2.0**	**Lead-Free Potable Water System** **NOTE: W2.1 & W2.2 FROM THE 2018 MANUAL ARE NO LONGER AVAILABLE IN THIS 2023 MANUAI**	**R**		**R**			**All products that are part of the potable water system (pipes, pipe fittings, plumbing fittings and plumbing fixtures) are certified as meeting the lead free requirement of the 2014 Safe Drinking Water Act (SDWA).**	**Mechanical during design / Contractor during CA**	**Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents**	☐	**NEWLY REQUIRED CREDIT**
45	**Water**		**Total possible**		**6**	**5**	**0**	**1**				☐	
46													
47	⊟ **Materials and Waste - 29 Points**											☐	
48	⊟ 1) Efficient Material Use & Waste Management											☐	
49		MW1.0	Storage and Collection of Recyclables and Compostables	R-2	2	**REQUIRED**			REQUIRED: Space shall be provided for the storage of recycled materials, compost and solid waste for all new buildings. AND Provide dedicated, easily accessible areas, within the building/facility, for the separation, collection, and storage of materials for recycling and composting. Also provide at least one centralized collection point for all materials to be staged for removal from the site (e.g. loading dock), or for transport to composting location. The staging area shall be designed to meet the needs of the occupancy, efficiency for pickup, and shall be available to haulers. AND Regularly inform all building occupants about what materials can and cannot be recycled and composted, and educate building occupants about the environmental and economic benefits. AND Provide means for recycling in each teaching and learning space. Administration areas must have one central recycling station set up per 20 employees, if not one at each desk. AND When local waste service providers have ability to divert food waste, provide means for collection of organic waste in food preparation and dining areas. 1 POINT: Provide means for recycling and composting at sports fields. 1 POINT: Provide means for collection of compostable paper products in dining areas and restrooms.	ARCHITECT - TCF	No submittals or action required of the Contractor for this credit.	☐	Locate recycling throughout building and provide space for collection in/near service yard

	Category	Credit Number	Credit Name	Available Points	Highest Possible Points	Yes	No	Maybe	Credit Summary	Responsible Party	Contractor Action	Action Verification	Notes
50		**MW1.1**	**Construction Site Waste Management (50%, 75%)**	**R-3**	**3**	**2**		**1**	**REQUIRED:** **Develop and implement a construction site waste management plan and provide documentation of waste disposal at the conclusion of the project.** **1-3 POINTS:** **Document the percent (by weight) of construction and demolition waste diverted from the landfill, excluding hazardous or dangerous materials and land clearing debris.** **50%=1 POINT** **75%=2 POINTS** **90%=3 POINTS**	**CONTRACTOR**	**Comply with all requirements of Waste Management Specification. Submit monthly waste management reports and final report for inclusion in WSSP final documentation.**	☐	**NEWLY REQUIRED CREDIT. Have achieved 90% on previous projects. Easy to get if we write the SPECs to monitor it.**
51		MW1.2	Building Reuse - Structure/Shell (50%, 75%, 95%)	1-3	3				Maintain a minimum of 50%, (or 75% or 95%) of existing building structure and shell (exterior skin and framing, excluding window assemblies). Hazardous and unsound materials or systems that are remediated as part of the project scope are to be excluded from the calculation of the percent maintained (ex. asbestos removal).	ARCHITECT - TCF	Maintain and Re-use materials as directed in the contract documents	☐	
52		MW1.3	Building Reuse - Interior Non-Structural Elements (50%)	1	1				Maintain and reuse at least 50% of interior non-structural (walls, interior partitions, doors, relites, floor coverings, and ceiling systems) materials.	ARCHITECT - TCF	No submittals or action required of the Contractor for this credit.	☐	
53		MW1.4	Materials Reuse (5%, 10%)	1-2	2		2		1 POINT: Install salvaged or refurbished materials using either a percentage approach or prescriptive approach for one or two points. Calculate using material costs. (PERFORMANCE OR PRESCRIPTIVE AS NOTED BELOW) Performance Approach (#1): Install salvaged or refurbished materials for 5%, based on cost, of the total value of building materials. OR Prescriptive Approach (#1): Specify salvaged or refurbished materials for 25% of one of the following major interior finish materials: [Flooring;; Casework; Acoustical Ceiling Tile; Wall Coverings; Tile.] 2 POINTS: Above requirements doubled.		No submittals or action required of the Contractor for this credit.	☐	Could reuse for site materials and Quinault tribal materials. $2.5 million worth of stuff that would be reused.
54		MW1.5	PCB/T12 Lighting Removal	R-1	1				REQUIRED: Remove and replace all T-12 lighting fixtures and ballasts manufactured in or before 1979. 1 POINT: Replace removed fixtures with Energy Star certified LED lighting.			☐	NEW CREDIT
55	⊟ 2) Sustainable Materials											☐	
56		**MW2.1**	**Recycled Content (10%/4 mtls, 20%/8 mtls)**	**1-2**	**2**	**2**			**Performance Approach: Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer recycled content constitutes at least 10% (or 20%) of the total cost of the materials in the project.** **See manual for Prescriptive approach** **Note: if attempting MW2.5, the product(s) used for that credit must still be listed on the product matrix for this credit, but their recycled content may not be used and should be listed as 0%.**	**Architect during Design / Contractor during CA**	**No submittals or action required of the Contractor for this credit.**	☐	**Teta - Recommended Yes.**
57		MW2.2	Rapidly Renewable Materials	1	1				Install rapidly renewable building materials for 2.5% of the total value of all building materials, excluding mechanical and electrical. OR Prescriptive Approach: Specify rapidly renewable materials for 50% of one of the following major interior finish or structural materials: Flooring, casework, acoustical ceiling tile, wall covering, tile, exterior walls, and roof. A product must contain 25% rapidly renewable raw materials based on weight to qualify under the prescriptive approach.		No submittals or action required of the Contractor for this credit.	☐	Difficult to achieve 5% of building materials. Teta mentioned that we do not go into the water.
58		**MW2.3**	**Certified Wood (50%, Chain of Custody)**	**1-2**	**2**				**At least 50% of the cost of wood and wood-based materials and products are from a sustainable forest certified by a third party. This includes, but is not limited to, framing, flooring, finishes, and built-in cabinetry.** **One additional point is available if all of the certified wood also has chain-of-custody tracking.**	**Architect during Design / Contractor during CA**	**No submittals or action required of the Contractor for this credit.**	☐	
59		MW2.4	Regional/Local Materials	1-2	2			2	For one point: 20% of the building materials are manufactured, extracted, harvested, or recovered from within a 500-mile radius of the site. 2 points - 20% of the building materials are manufactured, extracted, harvested, or recovered from within Washington State	ARCHITECT	Architect has specified regional materials. Contractor shall submit completed WSSP submittal cover sheet with submittals for each product containing regional materials. WSSP Product Matrix shall include all Project products and their costs (except MEP, Irrigation & Elevator) and regional materials shall also be included in the regional materials column of the matrix.	☐	Need to look at the metal/steel sourcing. By dollar amount. During construction - Have submittals fill out project matrix - Might turn into a yes by end of the project. Steel vs wood would also be affected by this.
60		MW2.5	Environmentally Preferrable Products - Multiple Attribute	1-2	2		1	1	Earn one point for each major building product that meets the Environmentally Preferable Products (EPP) established criteria, and is certified for at least 2 of the attributes under a nationally recognized certification program. If claiming points under this credit you may not claim points for the same materials under M1.4, M2.1 or M2.2.		No submittals or action required of the Contractor for this credit.	☐	Discuss with Kristin. Have to list the products on the products matrix - listed for sustainability attributes EPPs.
61		MW2.6	Environmental Product Declaration	2-7	7		7		2 POINTS: Select 10 products or materials (that are each at least 2% of the total value of all building materials and products based on costs) that contain a third-party certified Environmental Product Declaration (EPD) (cradle to cradle) conforming to the requirements of ISO 14025 on Type III environmental declarations and/or ISO 21930 on environmental declarations of building products. 1-5 POINTS: An additional 1 point for each product declaration that demonstrates a 10% or higher reduction (in comparison to the industry baseline) in one half of the impact categories (global warming potential category is required).		No submittals or action required of the Contractor for this credit.	☐	Discuss with Kristin. Hard to get.
62		MW2.7	Building Materials Health Product Disclosure		1			1	Provide a published Health Product Declaration (HPD) with a disclosure level of 1000ppm for at least 20 permanently installed products from at least five different manufacturers in accordance with the Health Product Declaration Standard Version 1.0, 2.0, or 2.1.		No submittals or action required of the Contractor for this credit.	☐	Discuss with Kristin.
63	**Material and Waste**		**Total possible**		**29**	**4**	**10**	**5**				☐	
64													
65	⊟ **Energy - 108 Points**											☐	
66	⊟ 1) Efficiency											☐	
67		E1.0	Minimum Energy Performance								Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
68		E1.0.1	Energy Code Minimum	R		**REQUIRED**			The school design and construction must be Washington State Energy Code (WSEC) Commercial Provisions compliant.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
69		E1.0.2	Energy Star Certified Equipment	R		**REQUIRED**			All major appliances, commercial food service equipment, electronics and office equipment must be ENERGY STAR Certified if certification is available for the product type, and required features and functionality are not sacrificed.	MEP & ARCHITECT	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
70		E1.1	Superior Energy Performance - Prescriptive Component Design	1-14	14				Comply with more than the minimum required credits in WSEC Section C406 to achieve points.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	

	Category	Credit Number	Credit Name	Available Points	Highest Possible Points	Yes	No	Maybe	Credit Summary	Responsible Party	Contractor Action	Action Verification	Notes
71		E1.2	Superior Energy Performance - Whole Buidling Design	1-20	20	**7**		5	Reduce the predicted energy use intensity (pEUI) of the proposed design to be better than the energy use intensity target (EUIt) as defined by the Clean Buildings Performance Standard (CBPS). The EUIt shall be adjusted by both the operating shift normalization and new construction factors as defined in the tables below. Select either Table 1 or 2 based on the average weekly operating hours that the majority of the building is open to serve the public. The pEUI shall be gross EUI before the application of any onsite or offsite renewables.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	Waiting on Harbor Learning Center results. 7 is conservative estimate. Will know more around DD.
72		E1.3	Zero Net Energy	35	35				Design and construct the building to be zero net energy	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
73	~~2) Building Automation~~		E2 HAS BEEN DELETED FROM THE MANUAL									☐	
82	3) Alternative Energy											☐	
83		E3.1	**On-Site Renewable Energy**						SEE ATTACHED 3.1.1 THROUGH 3.1.3			☐	
84		E3.1.1	On-Site Renewable Energy	2-12	12	**4**	2	6	Use on-site renewable energy for a portion of a school's energy use. Point levels correspond to the percentage of energy use supplied by this method. See WSSP manual for point breakdown		No submittals or action required of the Contractor for this credit.	☐	Yes - Need to check how many points. most recent projects are typically able to achieve 4 +/- points
85		E3.1.2	Solar Ready	3	3	3			Design a structurally-sound building to allow for a solar array that maximizes the available roof area.		Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	Yes - Need to check how many points. Energy code requirement.
86		E3.1.3	Service Water Heating	2-8	8				Use site-solar or site-recovered energy for at least 25% of the annual service water-heating energy used. Energy production used to earn this credit may not be used to earn points for percentage of energy supplied by renewables (E3.1.1).		Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
87	DELETED FROM 2023 MANUAL	~~E3.1.4~~	~~Zero Net Energy Capable~~						~~Design and construct the building to be zero net energy capable.~~		~~Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents~~	☐	
88	DELETED FROM 2023 MANUAL	~~E3.2~~	~~Combined Heat & Power~~						~~Provide power and heating to the facility through the use of technology needed for a Combined Heat and Power (CHP) plant that concurrently produces electrical or mechanical power and thermal energy from a single fuel.~~		~~Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents~~	☐	
89	4) Commissioning											☐	
90		E4.0	Fundamental Commissioning	R		**R**			Comply with requirements outlined in WSEC and WAC 392-343-080 regarding: • Cx Plan • Commissioned Systems • Supporting Documents (system documentation, record documents, and training) • Cx Report • Systems Balancing (TAB) • Functional Testing (FT) • Systems Operation Training WAC 392-343-080 requires on-site physical inspection remote monitoring-based Cx is not sufficient. The CxP must be an independent third party regardless of project delivery method (design-build or GC/CM). AND The Owner will develop the Owner's Project Requirements (OPR) and the Design Team will develop the Basis of Design (BOD) documents. AND Conduct a controls summit to clarify sequences of operation for networked control systems, when applicable (see Building Automation System). The controls summit must occur prior to final shop drawing. AND Review test, adjust, and balance (TAB) report, including duct pressure testing when applicable. AND Verify functional and maintenance training of O&M Staff, and document training is completed in the Final Commissioning Report. AND Assure, through contractual arrangements, involvement by the CxP in reviewing building operation after one academic year of building use with O&M staff and occupants. AND Verify warranty documentation from equipment suppliers and sub-contractors; including extended warranty requirements, if any.	CxA	no submittals or action required of the Contractor for this credit.	☐	
91		E4.1	**Enhanced Commissioning**									☐	
92			Commissioning Review; Verification and Assurances	3	3	**2**		1	Independent CxA required by E4.0 and State regulations as referenced in E4.0 will: • Conduct a commissioning design review of the Owner's Project Requirements (OPR), Basis of Design (BOD), and design documents prior to mid-construction documents phase. • Review contractor submittals applicable to systems being commissioned for compliance with OPR and BOD. • Ensure commissioning milestones are included in the project schedule. CxA will: * participate in OPR development * Witness air barrier leakage testing * Review building IAQ flushout if applicable * Verify training for optimal operation of commissioned systems they interface with has been completed. * Conduct O&M staff training to optimize building performance over time, such as through trend-log analysis. * Conduct seasonal testing and review performance quarterly during the first year of operation		No submittals or action required of the Contractor for this credit.	☐	**Maybes - CSG has been doing this. Similar to Harbor Learning. Noted by CSG - E4.1 has 3 possible points. I can guarantee our Cx plan will help achieve 2 points. The 3rd is based on whether an OPR and BOD have been completed. Provide OPR and BOD during SD for early review. Metrix has these docs nearly completed.**
93		E4.1.1	Energy Measurement & Verification	1	1		0	1	commissioning provider will assist the building owner in setting up first-year Energy Star Portfolio Manager reporting and compare actual energy use with modeled energy use and resolve differences.		No submittals or action required of the Contractor for this credit.	☐	**Noted by CSG: E4.1.1 is one expensive point for the owner to achieve along with having requirements that are a bit more difficult. For this one, it is suggested that Cx develop the OPR, before design begins, but no later than SD and via a workshop. Project timelines rarely allow this to happen. The designers can do it, but I would have had to participate in it.**
94	DELETED FROM 2023 WSSP MANUAL	~~E4.1.3~~	~~Systems Manual~~						~~Develop a Systems Manual to provide operations personnel with a tool that describes how the systems were developed, installed, and tested. The manual will be prepared in accordance with ASHRAE Standard 202 Appendix L. The intent of the manual is to allow operations personnel to maintain the peak performance of the commissioned system.~~ ~~* The manual will be focused and arranged according to commissioned systems.~~ ~~* The manual will contain the necessary calibration data and forms to allow operations personnel to verify and test the systems at peak performance.~~		~~No submittals or action required of the Contractor for this credit.~~	☐	
95	5) Metering & Management											☐	
96		E5.0	Minimum Energy Metering	R		**R**			Install an energy use metering system to measure, monitor, record and display each energy source and end-use per WSEC. Required for new buildings and additions with more than 50,000 sq. ft. gross conditioned floor area, for all energy sources (with exceptions), and sub-metered for HVAC and domestic hot water. Additionally, a data acquisition and display system is required. See WSEC for provisions that apply to existing building upgrades (modernizations and additions).	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
97		E5.1	**Energy Metering - Other**									☐	
98		E5.1.1	Energy Metering System - Not Code Required	4	4		4		Install an energy use metering system that meets the code required (above) on a project that does not meet the square foot threshold.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	Cannot qualify for it.

	Category	Credit Number	Credit Name	Available Points	Highest Possible Points	Yes	No	Maybe	Credit Summary	Responsible Party	Contractor Action	Action Verification	Notes
99		E5.1.2	Energy Use Metering Display	4	4	4			For each building subject to Section C409.2 and C409.3, either a single visible display in a location with ready access, or a single web page or other electronic document available for access to building operation and management personnel or to a third-party energy data analysis service shall be provided in the building; for metering data acquisition systems and energy displays monitored by a third-party energy data analysis service, building operation and management personnel shall retain access to the metering data acquisition system and energy dis-play. See WSSP 2023 for added information.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	VAS access to the building - Web-based.
100		E5.2	Energy Storage	2	2				Implement a new technology, strategy, or technique that produces actual and measurable results for on-site electric power storage that: * Reduces peak demand from grid * Provides a reliable source of electric power * Provides storage for renewable energy generated (beyond what is used on the site)	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
101	⊟	~~E5.3~~	~~**Automated Demand Response**~~									☐	
102		~~E5.3.1~~	~~Manage Peak Demand~~						~~Manage peak demand use to shed unnecessary loads at peak use times by establishing a link of communication between the facility and the utility provider.~~ ~~OR:5.3.2~~	~~MEP~~	~~Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents~~	☐	
103		~~E5.3.2~~	~~Future Demand Response~~						~~Provide infrastructure for future demand response programs~~	~~MEP~~	~~Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents~~	☐	
104		E6.0	Building Enclosure Commissioning	2	2	**2**			Employ the services of a professional consultant to commission the Building Enclosure including: * Weather barrier *Air barrier *Thermal * Roof Assembly and its vapor retarder/barrier * BECx activities must include and be overseen by a qualified BEX envelope consultant * Define enclosure performance requirements in the OPR. * Review design details for constructability and performance * Prepare building enclosure details, specifications, and test plans * Review product test data. * Observe construction beginning with mock-ups and testing of mock-ups * Witness testing of enclosure barriers and envelope * Prepare BECx review, site-visit, field reports * Review enclosure O&M Manual * Ensure Owner O&M staff are trained on enclosure maintenance. See 2023 WSSP manual for added requirements	BECx		☐	NEWLY REQUIRED CREDIT. Got the scope in the consultant proposal.
105	**Energy**		**Total possible**		**108**	**20**	**6**	**13**				☐	
106													
107	⊟ **Indoor Environmental Quality - 24 Points**											☐	
108	⊟ 1) Daylighting											☐	
109		IEQ1.0	Permanent Shading	R-1	1	**R**	1		Comply with the minimum exterior sun control requirements in WAC 246-366-050 (9), if applicable. OR FOR 1 POINT, Eliminate direct sun from day lit spaces (other than instructional areas, assembly rooms and meeting rooms covered by the WAC) from March 21st until September 21st through the use of permanent or automated shading devices.	ARCHITECT - TCF	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
110		IEQ1.1	Outdoor View Windows	R-1	1	**R**		1*	Comply with the minimum outdoor view window requirements in WAC 246-366-050 (8). For 1 point, Provide a direct line of sight to vision glazing from 90% of critical task areas and office spaces, not including copy rooms, storage areas, mechanical, laundry and other low occupancy support areas. To qualify, a space will have view glazing equal to or greater than 7% of the floor area. View glazing will be transparent, but not translucent, and only include window area above 2.5 ft. or below 7.5 ft. from the floor.	ARCHITECT - TCF		☐	
111		IEQ1.2	Daylighting Classrooms	1-4	4	**2**		2	1 Point 25% all classroom area day lit 2 Point 50% all classroom area day lit 3 Point 75% all classroom area day lit 4 Point 90% all classroom area day lit	ARCHITECT - TCF		☐	Confirm if a daylight study will be done on the building.
112	⊟ 2) Electric Lighting Quality											☐	
113	⊟	IEQ2.0	**Electric Lighting Quality**									☐	
114		IEQ2.0.1	Electric Lighting Quality	R		**R**			Comply with all requirements in WAC 246-366-120. School spaces will be designed so end of lamp life conditions meet the minimum average illumination levels as identified in WAC 246-366-120. See WSSP Manual for additional info	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
115		IEQ2.0.2	Electric Lighting Dimming	1	1	1			After meeting all requirements for IEQ2.0.1 above, dim all luminaires in the classrooms, excluding whiteboard luminaires. Provide switches that allow for manual dimming below the levels set by the photocells based on natural lighting entering the space.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
116		IEQ2.0.3	Electric Lighting Luminaire Color	1	1		1		After meeting all requirements above, provide a lighting system designed to change the color of the luminaires (approximately 3,000 K – 5,000 K) based on the respective color of sunlight throughout the day. System may have the ability to have a temporary override (up to 60 minutes) for "calm" (3,000 K) and/ or "test" (5,000 K) settings. We sometimes use this type of luminaire for calming rooms, but this credit requires that the "lighting system" is able to change colors. This can be an expensive credit as each it requires an overall system carry the color adjusting luminaires - ~$300 per	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	Most districts opt out of this category. 1--20% more cost + more matienance and lighting control.
117	⊟ 3) Indoor Air Quality											☐	
118	⊟	IEQ3.0	**Min Requirements Ventilation, Filtration, & Moisture Control**									☐	
119		IEQ3.0.1	Permanent Ventilation	R		**R**			Comply with ventilation requirements for primary and secondary schools in WAC 246-366-080. Meet International Mech Code with WA amendments for performance reqs. AND: * Filtration during construction: Temporary filters: If permanent air handlers must be used during construction, install filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 at each return air grille as determined by ASHRAE 52.2. Replace all filtration media immediately prior to occupancy. AND: *Moisture Control: All surface grades, drainage systems, and HVAC condensate must be designed to prevent the accumulation of water under, in, or near buildings, including portables. Irrigation systems must not spray on buildings. Building materials, especially wood, porous insulation, paper, fabric, and other porous materials must be kept dry before, during, and after installation to prevent the growth of mold and bacteria. Before installation, store all materials in a manner that assures they stay dry. If stored outside, cover building materials with plastic to protect from the rain and other sources of moisture, and keep off of the ground. Immediately discard all water-damaged materials and replace with new, undamaged materials. If building envelope components (foundation, framing and/or sheathing) are significantly impacted by moisture during the framing process, mitigation measures to reduce the moisture content to acceptable levels must be implemented prior to installation of insulation, wall cover, and other interior finishes.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
120		IEQ3.0.2	Increased Ventilation	1	1		1		In all general classrooms set the ventilation to be 21 cfm/person or greater. Ventilation rate must be maintained during all occupied hours. Increase HVAC heat recovery system efficiency beyond code to assure this approach is energy natural. Do not take additional energy efficiency credit for this modification.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	

	Category	Credit Number	Credit Name	Available Points	Highest Possible Points	Yes	No	Maybe	Credit Summary	Responsible Party	Contractor Action	Action Verification	Notes
121		IEQ3.1	Outdoor Moisture Management	R		R			Design surface grades to slope away from the building and the building foundation to drain away rainwater, snowmelt, and HVAC condensate to prevent ponding, pooling, or otherwise saturating the building envelope or foundation. Rain leaders, or downspouts, must be directed to infiltration structures, on site storage, rain gardens or daylight provided that surface drainage moves water well away from the building and does not result in unintended ponding or pooling. Lawn irrigation systems are also required to be designed to prevent spray on building walls. And HVAC systems that use evaporation drip pans for condensate removal are prohibited.	ARCHITECT - TCF		☐	NEWLY REVISED & REQUIRED CREDIT.
122		IEQ3.2	Low-Emitting Interior Finishes	R-1	1	1			Use products that have been independently tested and certified for VOC emissions by a qualified third party. Testing for VOC emissions will be in accordance with the following: * Interior carpet, hard surface flooring, building insulation, acoustical ceilings, wall panels, adhesives and sealants shall be tested and determined compliant for emissions of VOCs in accordance with California Department of Public Health (CDPH) Standard Method v1.2, using the applicable exposure scenario (school classroom). * For wet-applied products, the VOC material content must be disclosed in the third-party certificate or in the manufacturer's product documentation, and must meet the applicable VOC content standard rule listed below; • Interior adhesives and sealants must meet South Coast Air Quality Management District Rule 1168; • Interior Paints and Coatings must meet South Coast Air Quality Management District Rule 1113 or CARB 2019 Suggested Control Measure for Architectural Coatings; • Concrete sealers must meet South Coast Air Quality Management District Rule 1113. For 1 Point: All interior composite wood products must contain no added urea formaldehyde. Formaldehyde content must be disclosed in a third-party certification or the manufacturer's product documentation.	Architect during Design / Contractor during CA	Contractor shall maintain a list of all products in the 6 chosen options. Submit documentation under WSSP cover sheet showing that each product within each option is compliant with the requirements as noted to the left and further expanded in the WSSP manual.	☐	NEWLY REVISED & REQUIRED CREDIT. Maybe for the extra point 1 - TCF usually tries for this one.
123		IEQ3.3	Low-Emitting Furniture	1	1	1			100% of the new or newly refurbished/remanufactured student and administrative workstations (desk/table and chair or a desk/chair combination, and individual pieces) are low-VOC-emitting.	OWNER		☐	District / Stan noted to comply. Clarify more and check on this credit.
124		IEQ3.4	Source Control	3	3	3			Design to minimize and control sources of indoor air pollutants per WSSP Manual 2023	Architect during Design / Contractor during CA	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	See attached EPA IEQ document for entry mat system. Design and contstruction.
125		IEQ3.5	Ducted HVAC Returns	1	1	1			Install all ducted HVAC returns.	Mechanical during design / Contractor during CA	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	NEWLY REVISED CREDIT.
126	REMOVED FROM THE 2023 WSSP MANUAL	~~IEQ3.6~~	~~Particle Arrestance Filtration~~						~~1 point - Filtration media in dedicated ventilation air HVAC equipment, serving all occupied areas, is a Minimum Efficiency Reporting Value (MERV) of 13 as determined by ASHRAE 52.2 (Method for Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size).~~ . ~~1 point - Provide MERV13 Pleated Filters with minimum 2-inch pleat depth.~~	~~Mechanical during design / Contractor during CA~~	~~Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents~~	☐	
127	⊟	IEQ3.6	Construction IAQ Management									☐	
128		IEQ3.6.1	During Construction	1	1	1			Temporary construction ventilation: Continuously ventilate with temporary equipment (not the permanent HVAC system) affected spaces during installation of materials that emit volatile organic compounds (VOC) and for at least 72 hours after installation. Ventilate longer than 72 hours if necessary to remove odors. Exhaust the air directly to the outside; do not re-circulate to other enclosed spaces. AND Duct protection: Turn the permanent mechanical system off and protect HVAC supply and return openings from debris generated during dust-producing activities such as drywall installation and finishing. Provide temporary ventilation as needed. Additionally, specify that ductwork be sealed when transported to the construction site and store ductwork in clean, dry conditions and keep sealed during storage. Wipe down internal surfaces of ductwork immediately prior to installation to remove dust. AND Preconditioning: Allow products with odors and significant VOC content to off-gas, off-site in a dry, well-ventilated area for at least two weeks prior to delivery to the construction site. Remove products from their containers and packaging to maximize off-gassing of VOCs. AND Sequencing: Install any necessary odorous and/or VOC-emitting products and allow to off-gas prior to installation of porous and fibrous materials. AND HEPA vacuuming (carpets and upholstery): After installation, vacuum carpeted and soft surfaces with a high-efficiency particulate arrestor (HEPA) vacuum as needed and just prior to occupancy. AND HEPA duct cleaning: Prior to installation, inspect ducts for dust and debris. Remove any dust, dirt, and residual oil. Prior to substantial completion and prior to using the permanent mechanical system, inspect the ducts again for dust and other debris that may have collected during construction. Immediately remove any dust using a HEPA vacuum. Bid specifications must require that new ducts be pre-cleaned and sealed prior to shipping to the job site.	CONTRACTOR	See WSSP manual "Construction IAQ Management" credit and comply with all requirements therein.	☐	Cost of labor - Will require discussion.
129		IEQ3.6.2	After Construction	1	1	1			After construction either use Option 1 Building Flush out before Occupancy or Option 2 Building Flush out after occupancy. All interior finishes, such as millwork, doors, paint, carpet, acoustic tiles, and furniture must be installed, and major VOC punch list items must be finished prior to either flushout. NOTE THE TESTING REQUIREMENTS THAT MUST BE ACCOMPLISHED PRIOR TO OPTION #2 - SEE PAGE 2 OF ATTACHED	CONTRACTOR	Perform flush-out per WSSP 2023 manual.	☐	
130	REMOVED FROM THE 2023 WSSP MANUAL	~~IEQ3.7~~	~~Indoor Air Monitoring~~						~~Using the building management system monitor, measure and report indoor air pollutant levels in all assignable square feet areas within the building. Make ventilation adjustments to decrease pollutants below acceptable levels when necessary.~~	~~CONTRACTOR~~	~~At intervals no longer than once an hour (measured at 4 - 6 feet above the floor) monitor, measure and report on a minimum of 2 of the following: * Particle count (1,000 counts per ft3) * Carbon Dioxide (resolution 25ppm or finer) * Ozone (resolution 10 ppb or finer)~~	☐	
131	⊟ 4) Acoustics											☐	
132		IEQ4.0	Acoustic Performance	R		R			Comply with sound control requirements in WAC 246-366-110.	ACOUSTICS	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents. Compliance with this prerequisite must be determined with the classroom ventilation system and noise generating components, such as compressors and fans, in normal operation during conditions representing reasonable worst-case equipment loads. Contractor shall coordinate with Acoustical Testing Agency to schedule these tests.	☐	
133		IEQ4.1	Improved Acoustical Performance	1	1			1	See the tables in IEQ4.0 attached above. The requirements in Credit IEQ 4.1 column of each of the following tables must be achieved to attain this one credit: *NC/dBA - Table 1 - Background Noise *STC - Table 2 - Sound Transmission & Impact Insulation Criteria *IIC [included in Table 2] *RT Table 3 - Room Reverberation Criteria		Contractor shall coordinate testing/inspections	☐	Could be achieved. - Jack

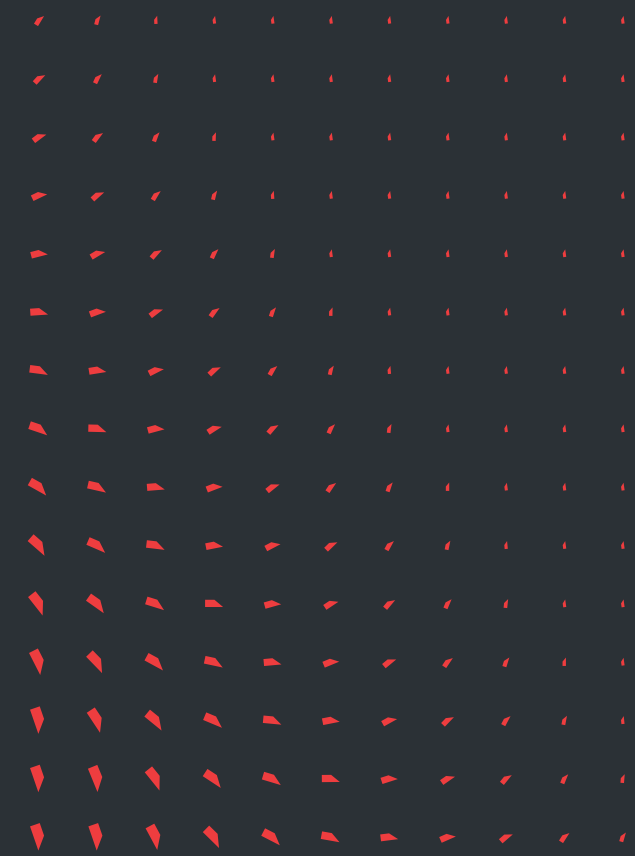
	Category	Credit Number	Credit Name	Available Points	Highest Possible Points	Yes	No	Maybe	Credit Summary	Responsible Party	Contractor Action	Action Verification	Notes
134		IEQ4.2	Sound Amplification	1	1	1			Provide accommodations for a sound amplification system and an assistive listening system in all classroom spaces. * A sound amplification system to amplify the teacher's voice, via wired or wireless microphones, and to amplify audio visual presentations. * A dedicated or portable assistive listening device (system) to amplify the teacher's voice, via wired or wireless microphones, and to amplify audio visual presentations.	ACOUSTICS/TELECOM	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	NEWLY REVISED CREDIT.
135		IEQ4.3	Acoustical Consultant	1	1	1			Retain the services of an experienced acoustical consultant (with a minimum of ten years experience in Educational Facilities). Prior to the conclusion of Schematic Design, the consultant must be involved in the design process and provide integrated team review, outline specifications and acoustic performance requirements, code sheet requirements, and general acoustic performance input. By Design Development, provide review and recommendations of architectural and mechanical systems, specifications, and basic system details or edits. By the Bid Period, have provided Contract document coordination, review, and input. During construction and prior to occupancy, provide submittal review for acoustic related items, and site observations of installed acoustic components and systems.			☐	NEW CREDIT.
136	⊟ 5) Thermal Comfort											☐	
137		IEQ5.0	Thermal Code Compliance	R		R			Comply with ASHRAE Standard 55 - Thermal Comfort Conditions for Human Occupancy, for thermal comfort standards within established ranges per climate zone. For buildings designed with occupant-controlled naturally conditioned spaces ensure an adaptive comfort standard has been established.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
138		IEQ5.1	Radiant Heated Floors - K–5	2	2		2		Provide radiant heated floors in all general classrooms that serve elementary students grade K through 5	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
139	⊟ 6) User Controls											☐	
140		IEQ6.1	User Control - Windows	1	1	1			Provide a minimum of two operable window in each standard classroom.	ARCHITECT - TCF	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
141		IEQ6.2	User Control - Temperature	1	1	1			Provide a temperature control, adjustable by the occupants during occupied hours, in each classroom.	MEP	Contractor shall provide all product and material submittals as required and install all systems as required in the Contract Documents	☐	
142	**Indoor Environmental Quality**		**Total possible**		**24**	**15**	**5**	**3**				☐	
143													
144	⊟ **Integration, Education and Operations - 45 points**											☐	
145	⊟ 1) Integration											☐	
146		IEO1.1	Integrated Design Workshop	1	1	1			Conduct a workshop no later than mid-schematic design phase. Include project stakeholders to collaboratively develop a range of sustainable building strategies for all five categories of the WSSP, document the project's sustainable building goals, and incorporate them as an ongoing part of programming and design decision-making.	ARCHITECT - TCF	No submittals or action required of the Contractor for this credit.	☐	
147		IEO1.2	Enhanced Integrated Design	1-2	2			2	1 POINT: Advanced Design Modeling - Utilize an advanced BIM decision-making tool for integrated sustainable design; whole building life cycle assessment (WBLCA); or environmental impact modeling tool such as Tally, Athena, One Click, or Skanska's Embodied Carbon in Construction Calculator (EC3); or others that facilitate calculation of embodied and/or operating carbon emissions. 1 POINT: Cross-Category Workshops - During the integrated design workshop, set aside time to specifically discuss design opportunities to improve multiple high performance outcomes by identifying criteria across categories (Site, Water, Materials and Waste, Energy, Indoor Environmental Quality) that contribute to the achievement of other category credits and/or design strategies that also promote human health, nutrition, or wellness.			☐	NEWLY REVISED CREDIT. Structure has their own tools to help. Could talk to Jeremy about running some of these tools. Work on some research for this and get back to the Team.
148		IEO 1.3	Durability	1	1	1	0	0	Implementation of Durability, Efficiency and Maintainability Features Provide Architect's certification that major components of the facility are designed to exceed the 50 year useful service life envisioned by the state of Washington. A criterion for this certification is the design professional's evaluation of the building systems design life. The architect's certification should outline the specific features and indicate how they will improve service life, given reasonable use and maintenance.		No submittals or action required of the Contractor for this credit.	☐	NEWLY REVISED CREDIT.
149		IEO1.4	Faculty and Staff Changing and Shower Facilities	1	1		1		Provide a minimum of one onsite changing room and shower facility for faculty and staff, separate from any facility designated for students (toilet rooms, locker rooms). If only one is provided design for unisex use. If 2, then one for each gender, or as determined best suitable to serve the non-student population.			☐	NEWLY REVISED CREDIT.
150	Note that strategies or technologies not tried in school buildings and/or masterplans that incorporate high-performance elements may also be considered for innovation points.	IEO1.5	Innovation	1-2	2			2	Implement a new technology, strategy, or technique that produces actual and measurable results, is not used to comply with a point in another WSSP credit, and that strives for at least one of the following goals: * Improves the health and performance of students and staff. * Improves the performance and efficiency of the school facility, or operation of the facility. * Restores the natural environment. * Achieves Living Building status as defined by the Living Future Institute. * Demonstrate exceptional performance in an existing criterion area through submission of a narrative explaining how the intent was exceeded by a significant amount.			☐	NEWLY REVISED CREDIT. Could write some options that support these points.
151		IEO1.6	Biophilic Design	1-3	3	2		1	1 POINT: BIOPHILIC DESIGN - Document and implement a holistic Biophilic Plan to strengthen connections between building users and natural ecosystems. The plan must incorporate a minimum of six biophilic features, with at least two elements in each of the three categories: Nature in the Space (physically experiencing nature), Nature of the Space (spatial configurations), and Natural Analogues (nature-inspired elements). Biophilic Plan will likely include multiple strategies working together to create an overall experience for all users that is grounded in place and nature. 1 POINT: RESPONSIVE DESIGN - Provide a minimum of two interior or exterior features that create safe and calming spaces, provide sensory input, or contribute to a sense of community. Features may include the sites' cultural, spiritual, archeological, or architectural history. 1 POINT: EDUCATIONAL MATERIALS - Provide educational materials for students and teachers that document the successful biophilic design strategies.			☐	NEWLY REVISED CREDIT. Can write some options that support these points.
152		IEO1.7	Pursue Additional Funding Sources	2	2			2*	Pursue private and public funding in support of initiatives/features that provide long-term environmental benefits to the building and site.			☐	NEWLY REVISED CREDIT. Seabrook community center is considered a separate project.
153	**note that the 2nd paragraph in the credit summary adds a new requirement to attain these two points. The requirement for a CPTED professional may make this difficult to achieve. Teh 2-points for this credit do not appear to be separable - both portions of the credit must be achieved.**	IEO1.8	Safer Schools by Design	2	2			2	Design safer schools by including at least 4 of the elements of safe school design in new building, addition and modernization projects. Conduct a Crime Prevention Through Environmental Design (CPTED) workshop with key project stakeholders and a CPTED professional at the outset of, or before, schematic design to identify site, building, and interior issues, and define strategies aligned with CPTED principles. The design team must incorporate these strategies in the project design. To earn the NICP's CPTED Professional Designation credential, a participant must successfully complete sixty-four hours of instruction offered through the NICP within two consecutive years. Course curriculum includes forty-hours of training in Basic CPTED and twenty-four hours of training in Advanced CPTED training. CPTED training from another training provider cannot be used as credit for the NICP's CPTED Professional Designation.			☐	NEWLY REVISED CREDIT. Discuss with JR on how HLC is achieving these.

	Category	Credit Number	Credit Name	Available Points	Highest Possible Points	Yes	No	Maybe	Credit Summary	Responsible Party	Contractor Action	Action Verification	Notes
154	2) Education												
155		IEO2.1	Green Building Learning	1-2	2	1		1	1 point - Develop student-learning opportunities by using the building structure and site, through demonstration areas, exposed systems, lesson plans, teaching aids, interpretive graphics and signage. 1 point - Provide students, teachers, and staff with knowledge of each aspect of the high-performance design and their responsibility for use and preservation.	ARCHITECT - TCF & Owner if the 2nd point is attempted. Contractor during CA	Provide signage as required in the Contract Documents		
156	3) Operations												
157		IEO 3.0	Operational Performance Monitoring	R		R			The project energy and water use will be tracked in EPA's ENERGY STAR Portfolio Manager for a period of 5 years following either building occupancy or board acceptance.	OWNER			
158		IEO 3.1	Post Occupancy Evaluation (POE)										
159		IEO3.1.1	POE Occupant Survey	R		R			Conduct a Post Occupancy Evaluation (POE) at least one year after the building is occupied, but no longer than two years after. A written plan for a POE must be in place at the time of the final (D11) high-performance submittal. The POE evaluation will include at a minimum: Surveys of occupants regarding comfort, including thermal comfort, air quality, lighting, building furnishings, spatial layout and acoustical comfort. *	OWNER			A written plan for a POE must be in place at the time of the final (D11) high-performance submittal. The POE evaluation will include at a minimum: • Surveys of occupants regarding comfort, including thermal comfort, air quality, lighting, building furnishings, spatial layout and acoustical comfort. • ARCHITECT'S STANDARD 1-YEAR WARRANTY REVIEW DOES NOT COVER REQUIREMENTS OF THIS PREREQUISITE
160		IEO3.1.2	Comprehensive POE	2	2			2	In addition to the required elements listed above the POE includes additional topics such as security, accessibility, transportation, and green building features, as well as an analysis of the actual resource use (energy and water). & The POE investigates connections between the facility and health, user satisfaction, academic achievement, and other fundamental goals of facility construction.		No submittals or action required of the Contractor for this credit.		Discuss further with the POE group. TCF has been doing these.
161		IEO3.2	**ELCCA/LCCA**										
162		IEO3.2.1	ELCCA Required Facilities	R		R			As part of the early design process, perform an Energy Life Cycle Cost Analysis (ELCCA) to meet chapter 39.35 RCW – Energy Conservation in Design of Public Facilities requirements. For major facilities that are (1) new buildings having twenty-five thousand gross square feet or more of usable floor space, (2) renovation, modernization, addition, alteration or repair of a facility having greater than twenty-five thousand square feet, work completed within a 12-month period, the project cost is more than 50 percent of the assessed value of the existing facility and the project affects energy-using systems.	MEP	No submittals or action required of the Contractor for this credit.		
163		IEO3.2.2	ELCCA Other Facilities	1	1		1		Perform an ELCCA for all other facilities (1) new building projects larger than five thousand gross square feet, but less than twenty-five thousand gross square feet of usable floor space, (2) renovation, modernization, addition, alteration, or repair of a facility where the cost is less than 50 percent of the assessed value of the existing facility.		No submittals or action required of the Contractor for this credit.		
164		IEO3.2.3	ELCCA Update	1	1		1		Update the ELCCA energy model based on final construction drawings. This is a valuable tool that can be used to compare designed performance with actual performance.		No submittals or action required of the Contractor for this credit.		
165		IEO3.2.4	LCCA	1	1		1		Perform a Life Cycle Cost Analysis (LCCA) showing 50-year net present value.		No submittals or action required of the Contractor for this credit.		No. Maybe if we need it.
166		IEO3.3	Monitoring-Based Commissioning	4	4		4		Develop an ongoing commissioning program.				
167		IEO3.4	**Project or District Long Term Operations**						**Choose all of the operations activities below that apply to this school. Plans and programs may be developed for the individual school or for the entire district. This section includes 21 possible points for operations and maintenance activities that often generate strong returns on the investment.**				
168		IEO3.4.0	Asset Preservation Program (APP)-New Buildings	R		R			Newly constructed state-assisted school buildings, board accepted after December 31, 1993, must participate in the Asset Preservation Program (APP) in order to be eligible for future state assistance. A district Asset Preservation System (maintenance plan) is required as part of the APP. The building maintenance plan must include maintenance and operational issues related to high-performance features.	OWNER			
169		IEO3.4.1	Operations and Maintenance Staff Involvement	R		R			Involve at least 3 key Operations & Maintenance staff, including resource conservation managers, custodians, electricians, mechanical and control system staff, grounds and building services staff in every phase of the project, from pre-planning through close-out. Staff selection to participate is at the discretion of the school district or project team.	OWNER			
170		IEO3.4.2	Asset Preservation System (APS) on Modernizations	1	1		2		A state-assisted school building modernization project is not required to participate in the Asset Preservation Program (APP), therefore no asset preservation system (maintenance plan) for OSPI purposes is required. To earn the point, the district will provide an asset preservation plan that meets the requirements in the APP program, and include maintenance and operational issues related to high-performance features.	OWNER			
171		IEO3.4.3	Green Power and Carbon Offsets	1-2	2		2		Enter into a contract for a minimum of five years to provide at least 50% (1 point) or 100% (2 points) of the project's energy from green power, carbon offsets or renewable energy certificates (RECs). Any combination of the three.	OWNER			
172		IEO3.4.4	Resouce Conservation and GHG Reduction Plan	1	1			1	Develop and implement a Resource Conservation Plan including energy, water, and materials conservation. & Develop a Greenhouse Gas Reduction plan. Include plans for reduction of water, energy, and vehicle miles traveled. Include goals with target dates.	OWNER			
173		IEO3.4.5	IAQ Management Plan	2	2				Use EPA's Design Tools for Schools as a design reference and resource. Implement the EPA's Tools for Schools Program or an alternative, equivalent in scope and effectiveness. A school-specific IAQ management plan must be implemented.	OWNER			
174		IEO3.4.6	Integrated Pest Management Program	1-2	2	2			1 POINT: Develop and implement a formal IPM Program that follows the model IPM program for schools in Washington State developed by Urban Pesticide Education Strategy Team (UPEST). To get this point, an IPM plan must be developed and implemented at the school. A district-wide IPM that includes the new school can be used to satisfy this credit. 1 POINT: DESIGN FOR IPM - incorporate pest prevention through design principles that will prevent pest entry or harborage. This includes: * Using ¼" hardware cloth on all ventilation openings * Caulk all cracks * Keep landscape plantings at least two feet from all buildings * Facades should be designed to discourage birds from roosting or excavating * Select pest-proof dumpsters that seal tightly and are easy for people to open and close. Garbage areas need to be easily cleanable and not located where fresh air intakes will entrain odors * Use door sweeps on all exterior doors * Make all kitchen surfaces easy to degrease	OWNER			**District's Response is - "NO not currently". Clarify further with Stan.**
175		IEO3.4.7	Transportation Options Program	1	1			1	Develop and implement a Transportation Options Program, with input from the local community and other stakeholders. The goal of the plan is to improve the school's connection to the community by offering students and staff more transportation choices such as public buses, rail, biking, and walking. Implement the education and enforcement components of the Safe Routes to School program.	OWNER			**Note from the district: We did partner with the city of Ocean Shores 9-10 years ago on Safe Routes to Schools and have a trailer with bicycles. The city added asphalt paths and some street lights and radar infront of the school. Clarify with Stan.**
176		IEO3.4.8	Operations and Maintenance Personnel Training	1-2	2	1	1		Facilities and maintenance staff will receive operations and maintenance training on all systems included in the commissioning scope of work, as well as systems related to high-performance – lighting, shading controls, all floor and wall finishes, audio systems, etc. depending on the scope of the project. Training will be a combination of Operations & Maintenance document review and field observations. For 1 point: BOC Level 1, maintained for 2 years, for at least 2 staff that have responsibility to maintain the new building systems included in the commissioning. For 2 points: BOC Level 2, maintained for 2 years, for at least 2 staff that have responsibility to maintain the new building systems included in the commissioning or BOC Level 1 for all O & M staff that have primary responsibility for maintaining the new facility, including electrical, mechanical, custodial, building services, grounds, controls, resource conservation managers.	OWNER			**Note from the district: I have BOC Certification. I kept it current until this year as we - the district do not benefit from me staying current and it cost's money. It is level 1 and I did pass the exam, 8-9 years ago. Clarify with Stan.**
177		IEO3.4.9	Food Related Waste Management	1-2	2	2			1 point - Develop and implement a plan for food waste management at this school 1 point - Food Services at this school uses only re-usable trays	OWNER			**Do not have a plan for food waste management at this time. The district does use reuseable trays.**

	Category	Credit Number	Credit Name	Available Points	Highest Possible Points	Yes	No	Maybe	Credit Summary	Responsible Party	Contractor Action	Action Verification	Notes
178		IEO3.4.10	Wasted Food Reduction Program	1, 2-3	3	1		2	1 POINT: Initiate a reducing wasted food awareness campaign 2 POINTS: 15% LESSS EDIBLE FOOD WASTE GOES TO COMPOST OR LANDFILL. Implement a Wasted Food Reduction Program to reduce the amount of food fit for consumption that is being wasted 3 POINTS: 25% LESS EDIBLE FOOD WASTE GOES TO COMPOST OR LANDFILL. Reference the EPA's Food Recovery Hierarchy for preferred reduction strategies.	OWNER		☐	**Refer to Mike Klemetson or Culinary Arts for this question. Clarify further.**
179		IEO3.4.11	Fuel Efficient Buses and Maintenance Vehicles		1	**1**			At least 20% of the district-owned buses and 20% of the district-owned maintenance vehicles that are diesel (only those that travel on the roads and highways) serving this school are built in or after 2007 when the latest standards we updated. If district bus service is provided under contract from a third party, then 20% of the buses used to service this school must meet the requirement. The same is true if the school is served by public bus service.	OWNER		☐	***Verify type & age of school district vehicle fleet. Stan clarified that the district meets this standard.**
180		IEO3.4.12	Environmentally Preferrable Supplies Purchasing		1				Develop and implement an environmentally preferable purchasing policy at the school or district level. The plan must include the environmental performance indicators that are to be used to judge purchasing decisions. The plan should include typical products and materials and weighting of the indicators. Typical products and materials generally include office supplies and classroom supplies. The plan should ensure the protection of the students, staff, and workers.	OWNER		☐	
181		IEO3.4.13	Green Cleaning Policy and Program		1			1	Develop and implement a Green Cleaning Policy and Program at the school or district level. See WSSP 2023 manual for requirements	OWNER		☐	***Verify whether the district has in place or is interested in implementing a Green Cleaning Program/Policy. District Note: There is possibility that the district qualifies. Stan is checking. Currently the district uses Betco products. Some of the products are labelled green.**
182		IEO3.4.14	Green School Program		1			1	Register and participate in one or more Green School Programs that meet the requirements include Washington Green Schools, King County Green Schools, EPA's Cool Schools Challenges, plus others.	OWNER		☐	**Would need more information on this. Clarify to the school district.**
183	**Integration, Education and Operations**		**Total Possible**		**45**	**12**	**13**	**16**				☐	
184													
185			GRAND TOTAL Possible Points (Most points possible, not a total of all points listed above)		**238**	**66**	**43**	**38**				☐	
186			Minimum required for Washington Sustainable School Two-tier system:									☐	
187			**New Facility and new Building on Exdsting Facility**		**58 or 66**							☐	
188			For Class I Districts: Minimum 66 points									☐	
189			For Class II Districts: Minimum 58 points									☐	
190			**Modernization**		**43 or 49**							☐	
191			For Class I Districts: Minimum 66 points									☐	
192	*Published June 2018*		For Class II Districts: Minimum 58 points									☐	
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TCF

VIII. Preliminary Reports



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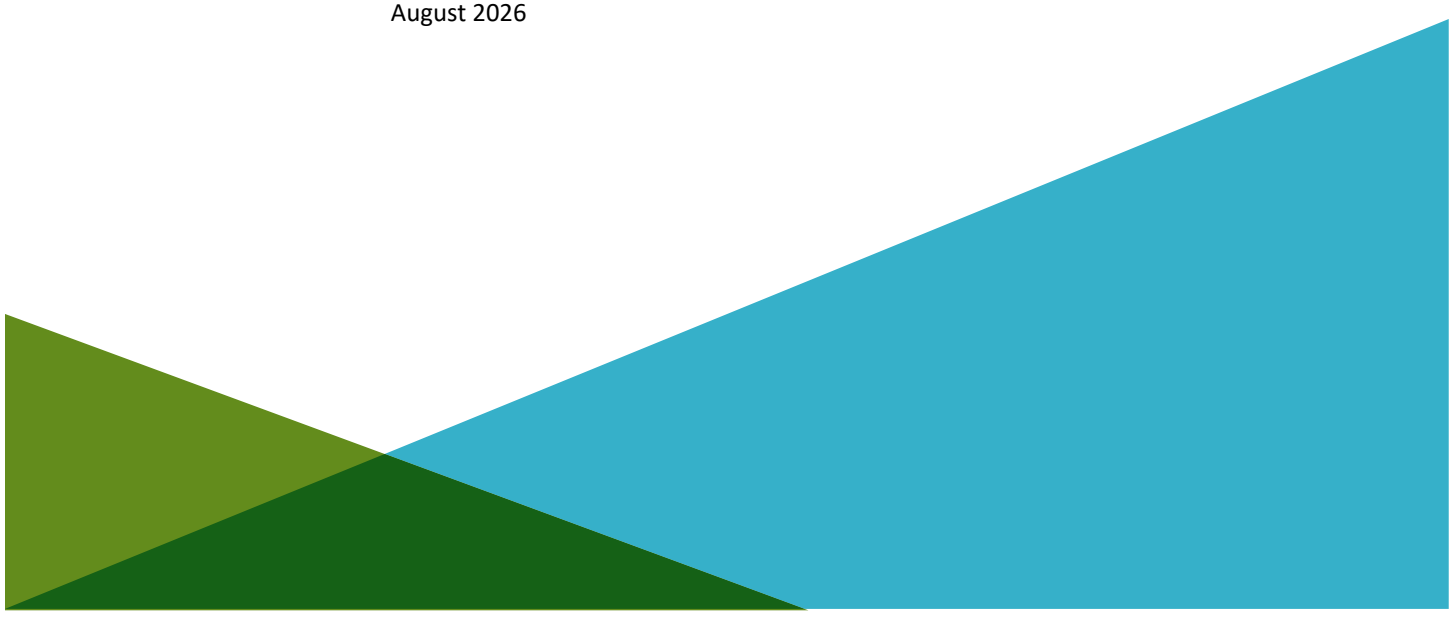
DESIGN-LEVEL GEOTECHNICAL ENGINEERING REPORT
PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
PACIFIC BEACH, WASHINGTON

DRAFT

by
Haley & Aldrich, Inc.
Vancouver, Washington

for
North Beach School District No. 64
Ocean Shores, Washington

File No. 0210245-002
August 2026



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August 28, 2026
File No. 0210245-002

North Beach School District No. 64
P.O. Box 159/336 State Route 115
Ocean Shores, Washington 98569

Attention: Richard Zimmerman, Superintendent

Subject: Design-Level Geotechnical Engineering Report
Pacific Beach Elementary School Relocation
Pacific Beach, Washington

Dear Richard Zimmerman:

Haley & Aldrich, Inc. (Haley & Aldrich) is pleased to submit this report to North Beach School District No. 64 (District) summarizing our design-level geotechnical engineering services for a new elementary school campus in Pacific Beach, Washington. Our services were completed in general accordance with our agreement dated April 21, 2026.

We understand the District intends to relocate the existing Pacific Beach Elementary School from its current campus on 4th Street S to a new site located approximately 2,000 feet to the north, between First Street N and State Route 109.

The primary geotechnical issues affecting the design and construction of the planned improvements include the potential for very strong seismic shaking, seismic hazards including liquefaction, near-surface compressible fill, slope instability, shallow groundwater, and corrosive soils. An intermediate foundation system (e.g., aggregate piers) or a spread footing foundation system combined with overexcavation and re-compaction of potentially liquefiable soils will be required to support proposed structures. The site sits at an average elevation of about 115 feet, which is well above the mapped limits of the State of Washington tsunami inundation zone in which the existing campus is situated. Our recommendations regarding foundations, ground improvement, grading, and other geotechnical aspects of this project are presented in this report.

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We appreciate the opportunity to provide our services to you on this project. If you have any questions, please contact the undersigned.

Sincerely yours,
HALEY & ALDRICH, INC.

Kayla Ahrens, P.E.
Senior Engineer

Luke Kevan, P.E.
Senior Project Manager

Daniel J. Trisler, P.E.
Principal Geotechnical Engineer

Enclosures

https://haleyaldrich.sharepoint.com/sites/NorthBeachSchoolDistrictNo.64/Shared Documents/0210245.Pacific Beach Elementary Resite/Deliverables/Geotech Design Report/Draft/2026_0828_HAI_PacificBeachElemRelocation_GeotechRpt_D.docx

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SIGNATURE PAGE FOR

DESIGN-LEVEL GEOTECHNICAL ENGINEERING REPORT PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION PACIFIC BEACH, WASHINGTON

PREPARED FOR
NORTH BEACH SCHOOL DISTRICT NO. 64
OCEAN SHORES, WASHINGTON

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DRAFT

Table of Contents

Page

List of In-Text Tables vii
List of Figures vii
List of Appendices vii

1. Introduction 1

2. Purpose, Scope, and Use of this Report 3

2.1 PURPOSE 3
2.2 SCOPE OF SERVICES 3

3. Site Conditions 5

3.1 GEOLOGY 5
3.1.1 Geologic Setting 5
3.1.2 Geology and Soils Mapping 5
3.2 SURFACE CONDITIONS 6
3.3 SITE HISTORY 6
3.4 SUBSURFACE CONDITIONS 6
3.4.1 General 6
3.4.2 Soil Conditions 7
3.4.3 Groundwater 9
3.4.4 Soil Corrosivity 10
3.5 INFILTRATION TESTING 10
3.6 SHEAR WAVE VELOCITY CONDITIONS 12

4. Geologic and Seismic Hazards 13

4.1 SEISMICITY 13
4.2 SEISMIC HAZARD LEVEL AND MAGNITUDE OF SHAKING 13
4.3 SEISMIC SITE CLASS 14
4.4 SEISMIC DESIGN VALUES 14
4.5 LIQUEFACTION 15
4.5.1 General 15
4.5.2 Analysis 16
4.5.3 Settlement 16
4.5.4 Surface Effects 16
4.5.5 Lateral Spreading 17
4.6 GLOBAL STABILITY 17
4.7 FAULT SURFACE RUPTURE 18
4.8 TSUNAMI HAZARD 18

5. Conclusions 20

DRAFT

Table of Contents

Page

6. Geotechnical Design Recommendations 22

6.1 SHALLOW FOUNDATIONS 22
6.1.1 General 22
6.1.2 Bearing Resistance and Dimensions 22
6.1.3 Lateral Resistance 22
6.1.4 Foundation Subgrade Preparation 23
6.2 GROUND IMPROVEMENT 23
6.2.1 General 23
6.2.2 Aggregate Piers 24
6.3 FLOOR SLABS 26
6.4 CORROSIVITY 26
6.5 DRAINAGE DESIGN RECOMMENDATIONS 26
6.5.1 Temporary Drainage 26
6.5.2 Surface Drainage 26
6.5.3 Infiltration Systems 27
6.5.4 Detention Systems 27
6.5.5 Subsurface Drainage 28

7. Pavement Design Recommendations 31

7.1 GENERAL 31
7.2 PAVEMENT SECTIONS 31
7.3 PAVEMENT MATERIALS 32
7.3.1 Flexible AC 32
7.3.2 Rigid PCC 32
7.3.3 Aggregate Base 32
7.3.4 Soil Subgrade 32
7.3.5 Geotextile Fabric 33

8. Earthwork Recommendations 34

8.1 GENERAL 34
8.2 SITE PREPARATION 34
8.2.1 Clearing and Grubbing 34
8.2.2 Demolition 34
8.2.3 Existing Fill 35
8.2.4 Subgrade Preparation and Evaluation 35
8.2.5 Subsurface Drainage 35
8.3 WET SOIL CONSTRUCTION AND SEEPAGE CONTROL 36
8.3.1 Removal and Replacement 36
8.3.2 Soil Amendment with Cement 37
8.3.3 Haul Roads and Stabilized Work Areas 37
8.4 EXCAVATION 37
8.4.1 Mass Excavations 37
8.4.2 Temporary Excavation Stability 37

DRAFT

Table of Contents

		Page
8.4.3	Dewatering	39
8.4.4	Utility Trench Dams	39
8.5	PERMANENT SLOPES	39
8.6	STRUCTURAL FILL AND BACKFILL	40
8.6.1	On-Site Soils	40
8.6.2	Imported Select Structural Fill	40
8.6.3	Aggregate Base	41
8.6.4	Trench Backfill	41
8.6.5	Stabilization Material	41
8.6.6	Drain Rock	42
8.6.7	Soil Amendment with Cement	42
8.7	FILL PLACEMENT AND COMPACTION	43
9.	**Construction Observations**	**45**
10.	**Limitations**	**46**
References		**47**

DRAFT

List of In-Text Tables

Table No.	Title
1	Infiltration Testing Results
2	Estimated Hydraulic Conductivity from Grain Size
3	Seismic Design Parameters
4	Design Response Spectrum
5	AC and PCC Pavement Sections
6	Guidelines for Uncompacted Lift Thickness
7	Fill Compaction Criteria

List of Figures

Figure No.	Title
1	Vicinity Map
2	Existing Site Plan
3	Proposed Site Plan
4	Cross Section A-A’
5	Cross Section B-B’
6	Groundwater Elevation and Precipitation Plot: GW-1

List of Appendices

Appendix	Title
A	Exploration Logs
B	Laboratory Test Results
C	Geophysics Report
D	Historical Data
E	Slope Stability

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1. Introduction

Haley & Aldrich, Inc. (Haley & Aldrich) is pleased to submit this report to North Beach School District No. 64 (District) summarizing our geotechnical engineering services for the Pacific Beach Elementary School Relocation (Project) at 50 and 58 First Street N in Pacific Beach, Washington (site).

The Project site is a roughly trapezoidal-shaped property bounded by State Route 109 (SR 109) to the east, First Street N to the west, and residential properties to the north and south. The site is currently occupied by a three-story residence, as well as several other structures in a state of disrepair including two large barns and at least three abandoned buildings. The abandoned buildings appear to have served residential or agricultural purposes in the past. The southern portion of the site was previously developed with several small structures (since demolished), which were likely used for residential or agricultural purposes.

Haley & Aldrich previously investigated subsurface conditions at the existing Pacific Beach Elementary School campus (located about 2,000 feet south of the site) and prepared a geotechnical engineering report for seismic safety retrofit improvements at that campus in 2021 (Haley & Aldrich, 2021). Due to the presence of liquefiable soils, significant foundation upgrades were required to seismically retrofit the existing school. Additionally, the existing school site is within the expected tsunami inundation zone. Therefore, the District decided to forego retrofitting of the existing school and to relocate the school to a new site. As part of the due diligence for selecting a new site, Haley & Aldrich completed a preliminary evaluation of the Project site as outlined in our Preliminary Geotechnical Report dated August 29, 2024 (Haley & Aldrich, 2024). In the Preliminary Geotechnical Report, we concluded that site soils subjected to seismic loading will be vulnerable to liquefaction-induced settlement, loss of soil strength and bearing capacity, and global slope instability; however, the site was developable. Supplemental geotechnical studies were recommended to further characterize site conditions and to develop design-level recommendations if the site was chosen for the new school campus.

Once the site was selected as the preferred new school location, the District engaged Haley & Aldrich to complete the supplemental investigation and develop this design-level geotechnical report. Our understanding of the new school and campus layout is primarily based on our review of TCFs *North Beach School District Pacific Beach ES* project summary drawing. The proposed single-story school structure will occupy the central western side of the site and will house classrooms, a gymnasium, and administrative spaces. A sports field is planned to the north of the school structure, and parking lots are planned to the south. The area south of the parking lots is planned for future community center development. (We note that this community center is not included in the current project scope.) A stormwater detention basin is planned to the east of the school. The main site entrance will be from First Street N to the west of the planned school structure.

We understand the project will be designed according to the provisions of the Washington State Building Code 2024 and the associated technical guidance of the American Society of Civil Engineering (ASCE) 7-22.

This report contains the findings and results from our prior and supplemental geotechnical explorations and analyses and provides recommendations for design and construction of the proposed school campus. This report supersedes all discussions and recommendations in the Preliminary Geotechnical Report. The report is divided into several sections. The first section provides an overview of the project

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information discussed in the text and the main body of the report presents our geotechnical engineering findings and recommendations in detail. The report is organized as follows:

- Introduction;
- Purpose, Scope, and Use of this Report;
- site Conditions;
- Geologic and Seismic Hazards;
- Conclusions;
- Geotechnical Design Recommendations;
- Pavement Design Recommendations;
- Earthwork Recommendations;
- Limitations; and
- References.

Following the main text are six figures and five appendices. The location of the site is shown on Figure 1 - Vicinity Map. Figures 2 and 3 show the general site topography and features with the locations of explorations, with Figure 2 showing existing conditions and Figure 3 showing an overlay of proposed improvements. Our interpretation of subsurface conditions is shown on Figures 4 and 5. Groundwater monitoring data is shown on Figure 6. Supporting information is provided in the appendices. Appendix A contains site subsurface exploration logs, and Appendix B contains the laboratory testing results completed for our analyses. Appendix C presents the report of geophysical testing. Appendix D includes historical geotechnical data for the site. Appendix E includes the results of our slope stability analyses.

All elevations shown on the figures and in this report text are in North American Vertical Datum of 1988 (NAVD 88) unless otherwise noted.

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2. Purpose, Scope, and Use of this Report

2.1 PURPOSE

The purpose of our services was to evaluate the subsurface conditions for the proposed new school and provide geotechnical engineering services that fulfill the geotechnical requirements of ASCE 7-22, including geologic research, subsurface explorations, laboratory testing, and engineering analyses.

2.2 SCOPE OF SERVICES

We completed the following tasks in general accordance with our proposal for Design-Level Geotechnical Engineering Services dated April 10, 2026, and authorized on April 21, 2026. We provided the following basic scope of services.

- Coordinated a supplemental subsurface investigation program that included:
  - completing limited clearing of site vegetation to allow exploratory equipment to access the site;
  - drilling two mud rotary borings to depths of approximately 32 feet below ground surface (bgs). (We note that Haley & Aldrich had previously drilled five borings at the site as part of the investigation for the Preliminary Geotechnical Report.);
  - excavating eight test pits to depths of 10 to 12 feet bgs;
  - maintaining detailed logs of soil and groundwater conditions encountered in the borings and test pits, collecting representative disturbed soil samples, and transporting soil samples back to our laboratory for further visual examination;
  - conducting three falling-head infiltration tests at depths ranging from approximately 2.5 to 7 feet bgs;
  - conducting dynamic cone penetrometer (DCP) testing at seven locations to support design of pavements for new roadways, driveways, and parking areas; and
  - performing geophysical surface wave testing using the multi-channel analysis of surface waves (MASW) and microtremor array measurement (MAM) to develop a deep shear wave velocity profile.
- Conducted a laboratory testing program on select soil samples collected to evaluate engineering properties of materials including moisture content, grain size distribution, and Atterberg limit tests for soil classification.
- Reviewed data from a historical geotechnical report prepared for the site.
- Conducted geotechnical and seismic engineering analyses and evaluations to refine previous findings regarding seismic design parameters, seismic settlement, seismic strength loss, liquefaction potential, lateral spread, and other potential geologic and seismic hazards.
- Performed geotechnical engineering analyses to develop a recommended foundation system, and estimates of bearing capacity, settlement, lateral earth pressures, ground improvement alternatives, infiltration capacity, and pavement design.
- Prepared this design-level geotechnical engineering report summarizing our findings and recommendations.

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- Provided project management and support services, including coordinating subcontractors and staff and conducting telephone consultations, email communications, and meetings with the District and the design team.

This report incorporates the initial geotechnical explorations completed as part of the Preliminary Geotechnical Report, including five drilled borings. The logs and associated laboratory testing results for those explorations are included in the appropriate appendices of this report for ease of reference. The findings, conclusions, and recommendations in this report supersede those provided in the Preliminary Geotechnical Report.

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3. Site Conditions

3.1 GEOLOGY

3.1.1 Geologic Setting

The site is located along the tectonically active Pacific Coast of Washington State, approximately 90 miles west of Seattle and 25 miles northwest of Aberdeen. Regionally, the dominant tectonic regime is the Cascadia Subduction Zone (CSZ), a convergent plate boundary where the oceanic Juan de Fuca Plate is being subducted underneath the continental North American Plate. The CSZ manifests as a 700-mile-long "megathrust" fault that runs from northern California up to British Columbia and is on the seafloor approximately 70 to 100 miles offshore of the Pacific Coast. The tectonic forces generated during the subduction of the Juan de Fuca Plate over the previous 35 million years created the Olympic Mountain Range east of the site, a relatively small mountain range made up of the deformed and uplifted sediments "scraped" off of the subducting Juan de Fuca Plate (Brandon et al., 1998).

During the Quaternary glacial period beginning 2.58 million years ago, alpine glaciers advanced and retreated multiple times within the Olympic Mountains. Rivers and streams emanating from these glaciers flowed westward toward the Pacific Ocean and filled river valleys with glacial deposits, burying older sediments and creating the modern coastal plain (Logan, 2003). Recent deposits in the area generally consist of flood plain and channel deposits (alluvium) associated with local streams, beach and back-beach estuarine deposits, and overlying artificial fill.

3.1.2 Geology and Soils Mapping

Geology near the site is mapped in the *Geologic Map of the Copalis Beach, 1:100,000 Quadrangle, Washington* (Logan, 2003). The geology of the site has been mapped as Pleistocene alpine glacial outwash. The glacial deposits are described as stratified sand, gravel, and cobbles including some peat, silt, clay, and weathered loess.

The site's near-surface native soils are mapped in the U.S. Department of Agriculture (USDA) web soil survey (USDA, 2026). The survey indicates that the site's surficial soils consist primarily of Halbert muck (0 to 10 percent slopes). Halbert soils consist of shallow, poorly drained soils that formed in silty glaciolacustrine sediments over glacial outwash. These soils were deposited in depressions on glacial outwash terraces and till plains during the last glacial period. The Halbert muck soils are described as organic soils (muck) in the top 11 inches followed by silty clay and gravelly sandy loam with an estimated hydraulic conductivity in the most restrictive layer of very low to moderately low (approximately 0.00 to 0.06 inches per hour) and are described as poorly drained. The web soil survey indicates that groundwater is essentially at the ground surface.

Materials observed in our explorations were generally consistent with the geologic and soil mapping.

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3.2 SURFACE CONDITIONS

The site is occupied by a three-story residence and several other structures in disrepair, including two large barns and at least three abandoned buildings that appear to have served residential or agricultural purposes in the past. The ground surface at the site is generally uneven and largely covered in grass or tree cover, and the northern and southeastern portions of the site are densely wooded.

A paved driveway loops within the property connecting First Street N to the existing residence in the southern portion of the site. Historical photos from as recent as 1981 show that this driveway was formerly lined with nine rectangular structures which had been demolished by 1990. Evidence of remnant foundations for these structures was not apparent during our visit, though may be present and buried. A second unpaved road, aligned east-west, enters the property from First Street N in the central portion of the site, and provides access to abandoned barns and structures in the central and northern areas.

Site topography is generally level to gently sloping to the southeast, except along the eastern and southeastern limits of the site, where terrain slopes downward toward SR 109. These slopes range from relatively gradual inclinations of 10 horizontal to 1 vertical (10H:1V) or flatter in the southeastern portion of the site, to steeper slopes of approximately 3H:1V in the eastern-central portion of the site. Site elevations range from about 85 feet in the southeast to 125 feet in the north.

3.3 SITE HISTORY

We reviewed historical aerial photographs covering the Project vicinity. The photographs depict a mostly wooded site in 1953, though the southern portion of the site was partially developed with a looping driveway lined with eight or nine single-story structures that appear to have been used for residential purposes. SR 109 was not present at the time of this photograph. By 1980, a larger area north of the residential structures had been cleared of trees and SR 109 had been constructed. By 1990, the residential structures around the looping driveway had been demolished. The existing three-story residence and agricultural and residential structures in the northern half of the site had been constructed by the time of the 2006 photograph. Structures and site improvements do not appear to have changed significantly between 2006 and present day.

3.4 SUBSURFACE CONDITIONS

3.4.1 General

Subsurface conditions interpreted from the explorations advanced at the site as part of this current study, our Preliminary Geotechnical Report, and Geo Engineers Inc.'s (GeoEngineers') historical report, in conjunction with soil properties inferred from field and laboratory tests, formed the basis for the conclusions and recommendations in this report. The locations and depths of our explorations were selected considering the site features, under the constraints of surface access, time, and budget.

3.4.1.1 Previous Studies

As part of the site investigation for our Preliminary Geotechnical Report, we explored subsurface soil and groundwater conditions by performing five borings. From March 18 through 19, 2024, these borings were performed and consisted of drilling mud rotary borings (designated B-1 through B-5) to depths of approximately 16 to 51 feet bgs. A groundwater monitoring well (designated GW-1) was installed with a

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transducer and datalogger at boring B-1 to monitor groundwater levels over time. Logs of our explorations from 2024 are included in Appendix A, and a plot of groundwater monitoring levels are presented in Figure 6.

In 2021, GeoEngineers excavated 13 exploratory test pits (designated TP-2.01 through TP-2.13) across the site to depths of approximately 6 to 10 feet bgs. GeoEngineers exploration logs and relevant associated laboratory testing results are presented in Appendix D.

3.4.1.2 2026 Geotechnical Explorations

As part of this study, we conducted a design-level exploration program to gather additional subsurface data within and surrounding the proposed school building footprint, in areas planned for pavement, and stormwater basins. From June 23 through 24, 2026, Haley & Aldrich explored subsurface soil and groundwater conditions by drilling two borings (designated B-6 and B-7) using mud rotary methods to 31.5 feet bgs and excavating eight exploratory test pits (designated TP-1 through TP-8) to depths ranging from approximately 10 to 12 ft bgs. Additionally, three falling head infiltration tests (designated IT-1 through IT-3) were performed adjacent to three test pits and seven DCP tests (designated DCP-1 through DCP-7) were performed to depths of approximately 3.7 to 4 feet bgs in unpaved areas within the limits of the proposed pavement improvements.

Global Geophysics performed non-invasive geophysical explorations near the proposed school building footprint. These included two-dimensional MASW geophysical transects (designated MASW-1 and MASW-2) as well as one-dimensional MAM soundings (designated S-1 and S-2) performed to develop shear wave velocity profiles for seismic design.

3.4.1.3 Summary

The current and historical exploration locations are shown in Figures 2 and 3. Our interpretations of subsurface conditions are shown on Figures 4 and 5. Our field exploration procedures and exploration logs from the current study and the Preliminary Geotechnical Report are in Appendix A. Laboratory soil testing procedures and results are in Appendix B. The geophysical survey results are included in Appendix C. Excerpts from the historical GeoEngineers report are presented in Appendix D.

3.4.2 Soil Conditions

The materials encountered in the explorations indicate site surficial soils consist of topsoil or organic material and forest duff. This surficial material is directly underlain by glacial outwash throughout large portions of the site, though in the previously developed areas, a layer of typically fine-grained alluvium and artificial fill derived from native alluvium up to 7.5 feet in thickness is present above the outwash. The outwash materials identified at the site correspond to the Alpine Glacial Outwash (Qapo) mapped on the Geologic Map of Copalis Beach, as described in *Section 3.1 - Geology*.

For our engineering analyses, we grouped subsurface materials into three Engineering Soil Units (ESUs), mantled by a thin layer of duff and topsoil. Soil and rock reportedly encountered in the explorations by others were categorized based on consistency, soil classification, standard penetration test (SPT) $N_{1(60)}$ blow counts, and interpreted friction angles. The breakdown of the ESUs is described below:

- Forest Duff and Topsoil;
- ESU 1: Alluvium and Native-Derived Fill;

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- ESU 2: Glacial Outwash (Coarse-Grained Material); and
- ESU 3: Glacial Outwash (Fine-Grained Material).

These ESUs are discussed in detail in the following sections.

3.4.2.1 Forest Duff and Topsoil

Much of the site is mantled by a thin layer of forest duff and topsoil. GeoEngineers identified 4 to 12 inches of this material at each test pit, interchangeably describing the material as either sod or forest duff. This material was identified in all but two of our most recent explorations and ranged from 6 to 12 inches thick. This material is soft and compressible and contains significant organic content.

3.4.2.2 ESU 1: Alluvium and Native-Derived Fill

Explorations B-2, B-3, B-5, TP-3, TP-4, TP-7, and TP-8 encountered deposits of fine-grained soils within the upper 4 to 7 feet bgs that appear to be consistent with USDA descriptions of Halbert Muck. These soils consist of soft to stiff silt (ML), lean clay (CL), sandy silty clay (CL-ML), and silty clay (CL-ML) occasionally containing trace gravel. Organics were noted in the upper 2 to 3 feet of several of our explorations and within the historical explorations.

Our observations and the findings presented in GeoEngineers' 2021 report indicate this unit has been disturbed by historical grading activities in some areas, with about 1 to 2.5 feet of fill identified at TP-2.05, TP-2.07, TP-2.08, TP-2.09, and TP-2.10. At least 6 feet of fill was logged at TP-2.13, which included plastic, concrete, and steel pipe debris as well as remnant reinforced concrete footings or sidewalls (see log for TP-2.13 in Appendix D). We anticipate that this represents an old basement that was backfilled. Although the explorations encountered only occasional buried organic material, such as tree limbs, and debris, larger pockets or more widespread deposits may be present throughout this ESU.

Laboratory testing performed on select samples indicated in situ moisture contents within this ESU generally ranged between 17 and 47 percent. Grain size analyses were performed on select samples, resulting in fines contents generally ranging between approximately 16 and 82 percent and gravel contents generally 2 percent or less. Atterberg limits testing from this ESU indicated plasticity indices ranging from 5 to 7 and liquid limits ranging between 26 and 48. Two constant rate of strain consolidation tests performed on sandy silty clay and silty clay samples from explorations B-2 and B-3 indicate that this unit is moderately to highly overconsolidated (overconsolidation ratios (OCR) from 6 to over 10) and slightly compressible. We note that these OCRs may reflect the low existing effective overburden stress at these shallow depths and near-surface effects, such as desiccation or past surface loading, rather than substantial historical unloading.

This ESU is generally considered to be somewhat weak and compressible. Analyses indicate that this layer has variable composition and behavior under cyclic loading. This layer is generally not susceptible to liquefaction with the exception of isolated pockets of material identified within 2 feet of the ground surface in B-2 and B-3.

3.4.2.3 ESU 2: Glacial Outwash (Coarse-Grained Material)

Our explorations encountered coarse-grained glacial outwash (Alpine Outwash) beginning at the ground surface in explorations B-1 and B-4 and underneath ESU 1 materials in explorations B-2, B-3, and B-5 and

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all test pits, except TP-1 and TP-5. This unit typically consists of medium dense to very dense sand and gravel with varying amounts of silt. The materials specifically included silty sand to silty sand with gravel (SM), silty gravel to poorly graded gravel with varying amounts of sand and silt (GM/GP-GM/GP), poorly graded sand with gravel (SP), poorly graded sand with silt and gravel (SP-SM), and well-graded sand with silt (SW-SM). Localized layers of very loose to loose material were encountered in boring B-4 at a depth of 6.5 feet bgs and in boring B-5 at a depth of 13 feet bgs. Below a depth of approximately 10 to 30 feet, the soils were typically dense to very dense.

Laboratory testing performed on select samples indicated in situ moisture contents within this ESU generally ranged between 10 and 39 percent. Grain size analyses were performed on select samples, resulting in fines contents generally ranging between approximately 0.2 and 45 percent and gravel contents generally ranging between approximately 9 and 64 percent.

This ESU is generally considered to be moderately strong and only slightly compressible. However, analyses indicate that the saturated portions of the ESU above approximately 10 feet below grade are susceptible to liquefaction; though below that depth the remainder of the ESU is not anticipated to liquefy.

3.4.2.4 ESU 3: Glacial Outwash (Fine-Grained Material)

Explorations B-1, B-4, B-5, and TP-8 intermittently encountered stiff to hard silt (ML) to depths of up to 33 feet bgs, typically interbedded within ESU 2. In the deepest boring, B-5, ESU 3 was identified underlying the very loose to medium dense coarse-grained poorly graded sand with gravel (SP) and poorly graded sand with silt and gravel (SP-SM) at 19 feet bgs, and overlying very dense poorly graded sand with gravel (SP) at 33 feet bgs. In the test pit explorations, this ESU was at times identified just below ESU 1 (e.g., TP-2.11, TP-2.12, and TP-1).

Laboratory testing performed on select samples indicated in situ moisture contents within this ESU generally ranged between 18 and 36 percent. Atterberg limits testing from this ESU indicated plasticity indices ranging from 2 to 8 and liquid limits ranging between 28 and 35.

This ESU is generally considered to be moderately strong and only slightly compressible. Analyses indicate that isolated layers of this ESU may experience cyclic strength loss during earthquake loading.

3.4.3 Groundwater

Our understanding of site groundwater conditions is based on depths to groundwater measured within our 2024 and current explorations, measurements in our instrumented monitoring well from the 2024 program, and data GeoEngineers reported from its 2021 test pit explorations.

From their April 21 through 22, 2021 explorations, GeoEngineers reported a depth to groundwater seepage ranging from 2 to 9.5 feet bgs. They also noted mottled soils and oxidation, which are signs of seasonal inundation, typically at depths of 2 to 5 feet bgs. GeoEngineers concluded the seepage was related to localized perched groundwater conditions and did not signify the presence of a regional groundwater table.
We observed groundwater seepage at depths of 5 to 7 feet bgs in borings B-1 through B-4 performed on March 18 and 19, 2024. Groundwater seepage or wet soils were identified in most of our test pits at approximately 8 to 10 feet bgs.

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A transducer with an integrated datalogger was installed in well GW-1 to measure site water level fluctuations during the 2024 exploration program. Groundwater readings were collected from March 19 through November 24, 2024, as presented on Figure 6. The water-level data show there was a significant seasonal variation of 10 feet between the seasonal high and low water levels. Groundwater elevations near GW-1 were highest during March and April and again in late November, reaching approximately elevation 115 to 116 feet or 0.2 to 1.2 feet bgs. Groundwater levels near GW-1 generally declined from late spring through summer and reached seasonal lows between late August and mid-October at approximately elevation 105 to 106.5 feet or 9.1 to 10.5 feet bgs.

Based on groundwater levels observed during field explorations by Haley & Aldrich and others, we assume an average depth of approximately 5 feet bgs in our geotechnical analyses. However, based on groundwater level readings recorded from well GW-1, seasonally perching of groundwater can result in water levels nearly reaching the ground surface across the site. (This matches the expected groundwater levels, as indicated by the USDA soil survey.)

3.4.4 Soil Corrosivity

Two suites of tests were completed to evaluate the corrosivity potential of on-site soils. Chloride ion concentrations were 17 and 19 milligrams per kilogram (mg/kg). Reported sulfate ion concentrations were less than the reporting limit of 15 mg/kg, and the pH of the samples ranged from 5.60 to 5.38. The samples were classified as “mildly corrosive” to steel and “negligibly corrosive” to concrete. Corrosivity test results are included in Appendix B - Laboratory Test Results.

3.5 INFILTRATION TESTING

We performed three falling head infiltration tests in the eastern portion of the site during our June 2026 field mobilization, which generally represents dry season and low groundwater table, at the testing locations shown on Figures 2 and 3. One infiltration test (IT-1) was performed adjacent to TP-7 at a depth of approximately 2.5 feet bgs. Two infiltration tests (IT-2 and IT-3) were performed adjacent to TP-8 at depths of approximately 5.7 and 6.8 feet bgs. The results of our field testing and laboratory fines content determinations are shown in Table 1. The drawdown values presented in Table 1 are not to be used for design but are provided to show the direct results of the field measurements.

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Table 1. Infiltration Testing Results				
Location	**Test Depth (feet)**	**USCS Classification**	**Fines Content (percent)**	**Field Drawdown (inches per hour)**
IT-1	2.4	Silty Sand (SM)	16.3	7.2
IT-2	5.7	Poorly Graded Gravel with Silt and Sand (GP-GM)	7.2	2.4
IT-3	6.8	Poorly Graded Gravel with Silt and Sand (GP-GM)	7.2	0.0
Note: *USCS = Unified Soil Classification System*				

In addition to the field testing, we conducted laboratory testing on representative soil samples collected from the borings that included grain size distribution determinations (see Appendix B). We calculated the estimated hydraulic conductivity of the soils based on grain size distribution using relationships developed by Massmann (2008) and presented in the Washington State Department of Ecology (Ecology) Stormwater Management Manual (Ecology, 2024). The estimated values are provided in Table 2.

Table 2. Estimated Hydraulic Conductivity from Grain Size				
Location/ Sample	**Test Depth (feet)**	**USCS Classification**	**Fines Content (percent)**	**Estimated Hydraulic Conductivity[a] (inches per hour)**
B-1/S-2	7.5	Poorly Graded Sand with Gravel (SP)	0.8	117.8
B-1/S-3	10	Poorly Graded Sand with Silt and Gravel (SP-SM)	11.7	72.4
B-1/S-4a	15	Silty Sand (SM)	13.8	68.0
B-2/P-1	1.0	Sandy Silty Clay (CL-ML)	59.5	2.3
B-2/S-2	7.5	Poorly Graded Sand with Gravel (SP)	0.7	121.2
B-3/P-1	2.5	Silty Clay (CL-ML)	81.6	2.5
B-3/S-2	7.5	Poorly Graded Sand with Gravel (SP)	0.8	128.2
B-4/S-2	10	Poorly Graded Sand with Gravel (SP)	0.3	134.3
B-5/S-1	5	Poorly Graded Sand with Gravel (SP)	0.2	106.6
B-5/S-4	15	Poorly Graded Sand with Silt and Gravel (SP-SM)	10.5	76.1
B-5/S-9	40	Poorly Graded Sand with Gravel (SP)	0.4	107.4
B-6/S-7	10	Poorly Graded Gravel with Silt and Sand (GP-GM)	11.0	72.2
B-7/S-7	10	Poorly Graded Sand with Silt and Gravel (SP-SM)	11.2	72.1
B-7/S-9	20	Silty Gravel with Sand (GM)	19.7	11.6
TP-1/G-3	4	Silty Sand with Gravel (SM)	16.6	13.5
TP-2/G-3	3	Poorly Graded Sand with Silt and Gravel (SP-SM)	8.6	79.8
TP-5/G-3	4	Poorly Graded Gravel with Sand (GP)	5.0	94.0
TP-6/G-2	2	Silty Sand with Gravel (SM)	7.7	82.5
TP-7/G-2	2	Silty Sand (SM)	16.3	61.3
TP-7/G-3	3	Silt (ML)	68.9	2.5

DRAFT

Table 2. Estimated Hydraulic Conductivity from Grain Size				
Location/ Sample	**Test Depth (feet)**	**USCS Classification**	**Fines Content (percent)**	**Estimated Hydraulic Conductivity[a] (inches per hour)**
TP-7/G-5	5	Poorly Graded Sand with Silt and Gravel (SP-SM)	14.2	63.5
TP-8/G-3	3	Silty Sand (SM)	44.8	3.9
TP-8/IT-2	6	Poorly Graded Gravel with Silt and Sand (GP-GM)	7.2	100.1
Note: *a. Massmann 2008 equation*				

The field drawdown and hydraulic conductivity values presented in Tables 1 and 2 are uncorrected and should not be used for design. We note that groundwater was observed to be present at relatively shallow depths across the site as discussed in the previous section. The presence of shallow groundwater conditions is likely to preclude the use of on-site infiltration of stormwater. Refer to *Section 6.5.3 - Infiltration Considerations* for a discussion of our findings and recommendations regarding the design of infiltration systems.

3.6 SHEAR WAVE VELOCITY CONDITIONS

Shear wave velocity profiles of subsurface soils were determined by MASW geophysical testing. MASW testing performed along two test transects produced shear wave velocity measurements in the upper 100 feet bgs ranging from 454 to 1,157 feet per second (ft/s). Analysis of these readings results in weighted-average shear wave velocities over the upper 100 feet (V_{s100}) ranging from 983 to 1,004 ft/s. The locations of the MASW test lines are presented on Figures 2 and 3. The geophysical report is included as Appendix C.

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4. Geologic and Seismic Hazards

The site is in a seismically active area. In this section, we describe the site's seismic setting, identify the seismic basis of design, provide a code-based design response spectra, and discuss site-specific seismic hazards. Geologic hazards mapped near the site include very strong earthquake shaking and liquefaction hazard.

4.1 SEISMICITY

The seismicity of the Washington coast is controlled by the CSZ. Plate tectonics cause the oceanic Juan de Fuca Plate to subduct beneath the continental North American Plate. Three types of earthquakes are associated with subduction zones: intraslab, interface, and crustal earthquakes. Contributions from each of these sources to the total site seismic hazard were evaluated using the U.S. Geological Survey (USGS) Unified Hazard Tool available online at: https://earthquake.usgs.gov/hazards/interactive/.

Intraslab Sources. Intraslab earthquakes originate from a deeper zone of seismicity that is associated with bending and breaking of the subducting Juan de Fuca Plate. Intraslab earthquakes (such as the 2001 magnitude (M) 7.0 Nisqually earthquake in west central Washington) occur at depths of 40 to 70 kilometers (km) and can produce earthquakes with magnitudes up to and greater than M7.0.

Interface Sources. As the oceanic plate subducts beneath the continental plate, the two plates lock together. As the plates move together, stresses similar to a spring build in the overlying continental plate. When the accumulated stress exceeds the fault resistance, the plates will suddenly rupture, causing an interface earthquake. Interface earthquakes (such as the 2011 M9.0 Tohoku earthquake in northern Japan) are some of the largest magnitude earthquakes on record.

Our review of the interactive deaggregation indicates that interface and intraslab earthquakes contribute nearly 100 percent of the total seismic hazard to the site. The deaggregation indicates a mean magnitude of 8.79 for this event, occurring at a distance of about 26.4 km from the site and a modal magnitude of 9.06 for this event occurring at a distance of 24.6 km.

Crustal Sources. Shallow crustal faults are caused by cracking of the continental crust from the stress that builds as the subduction zone plates remain locked together. Many small crustal faults are mapped near the site that are a part of the greater Cascadia Fold and Thrust Belt (Personius, 2019). However, due to the size of these faults, their contribution to the site seismic hazard is relatively small compared with the subduction zone sources. Crustal sources contribute less than 1 percent of the total seismic hazard to the site.

4.2 SEISMIC HAZARD LEVEL AND MAGNITUDE OF SHAKING

We evaluated potential seismic shaking in accordance with the 2024 International Building Code (IBC; International Code Council, Inc., 2023) combined with ASCE 7-22 Minimum Design Loads for Buildings and Other Structures (ASCE/SEI, 2022). The adoption of ASCE 7-22 introduces significant changes to seismic design values relative to the prior ASCE 7-16, typically resulting in higher seismic accelerations in coastal areas near the CSZ. The seismic hazard considers the maximum considered earthquake (MCE) to be seismic shaking having a 2 percent probability of exceedance in 50 years (approximately 2,475-year return period).

DRAFT

Refer to *Section 4.3 - Seismic Site Class* for a discussion of ground motion amplification. Based on the disaggregation of the site seismic hazard, the mean magnitude and distance at the 2,475-year hazard level are M8.79 and 26.4 km (hypocentral distance), respectively. The modal magnitude and distance at the 2,475-year hazard level are M9.06 and 24.6 km, respectively.

4.3 SEISMIC SITE CLASS

Thick sequences of unconsolidated, soft sediments typically amplify the shaking of long-period ground motions, such as those associated with subduction zone earthquakes; whereas areas underlain by shallow soil profiles are not likely to amplify seismic waves.

The "Site Class" is a designation used by ASCE 7-22 to quantify ground motion amplification. The classification is based on the stiffness in the upper 100 feet of soil and bedrock at a site. The upper 100 feet of subsurface stratigraphy at the Project site predominantly consists of silt and glacial outwash deposits.

As discussed in *Section 3.6 - Shear Wave Velocity Conditions*, the MASW testing resulted in Vs100 values of 983 and 1,004 ft/s, which indicates Site Class D, as defined in ASCE 7-22. However, because portions of ESUs 1 through 3 may experience liquefaction under design-level seismic shaking, the site should be considered Site Class F. Per ASCE 7-22, a Site Class F designation requires a site-specific analysis including a seismic hazard analysis and a site response analysis; however, buildings with structural periods of less than 0.5 seconds (as proposed for this project) may be designed using seismic design parameters developed considering Site Class D conditions.

4.4 SEISMIC DESIGN VALUES

Recommended code-based seismic design parameters and acceleration response spectrum values for the design of the proposed structures in conformance with ASCE 7-22 are presented in Tables 3 and 4, respectively. If the building period is greater than 0.5 seconds, then a site response analysis and updating of these values will be required.

Table 3. Seismic Design Parameters

Parameter	Value
Site Class	D
MCE_R[1] Ground Motion (Period = 0.2 seconds), S_s	2.00
MCE_R Ground Motion (Period = 1.0 second), S_1	0.79
Site-modified Peak Ground Acceleration, PGA_M	1.14
Site-modified Spectral Acceleration Value at 0.2 seconds, S_{MS}	2.38
Site-modified Spectral Acceleration Value at 1.0 second, S_{M1}	1.61
Design Spectral Acceleration at 0.2 seconds, S_{DS}	1.59
Design Spectral Acceleration at 1.0 seconds, S_{D1}	1.07

Notes:

1. *MCE_R = Risk-targeted maximum considered earthquake*
2. *g = acceleration of gravity*
3. *Design values presented above are based on a site located at Latitude / Longitude = 47.21431/ -124.202715.*

DRAFT

Table 4. Design Response Spectrum	
Period, T (seconds)	**Spectral Acceleration, S_a (g)**
0.00	0.79
0.01	0.79
0.02	0.82
0.03	0.86
0.05	0.94
0.075	1.10
0.10	1.30
0.15	1.48
0.20	1.59
0.25	1.64
0.30	1.74
0.40	1.76
0.50	1.63
0.75	1.32
1.00	1.06
1.50	0.79
2.00	0.60
3.00	0.37
4.00	0.26
5.00	0.19
7.50	0.11
10.00	0.088

4.5 LIQUEFACTION

4.5.1 General

When cyclic loading occurs during an earthquake, the shaking can increase the pore pressure in loose to medium dense saturated sand and cause liquefaction. The rapid increase in pore water pressure reduces the effective normal stress between soil particles, resulting in the sudden loss of shear strength in the soil. Granular soils, which rely on interparticle friction for strength, are susceptible to liquefaction until the excess pore pressures can dissipate. Sand boils and flows observed at the ground surface after an earthquake are the result of excess pore pressures dissipating upward, carrying soil particles with the draining water. In general, loose, saturated sand soils with low silt and clay contents are the most susceptible to liquefaction. Silty soils with low plasticity are moderately susceptible to liquefaction under relatively higher levels of ground shaking. For any soil type, the soil must be saturated for liquefaction to occur.

We note that the term liquefaction is defined very specifically by the simplified method that we used to evaluate this hazard. Liquefaction is defined as when a soil under repeated cyclic loading exhibits the generation of increasing excess pore pressures until the pore pressure equals the total overburden stress. When this condition is reached, the normal stress acting between adjacent soil particles is effectively lost, and the soil, which derives its shear strength from interparticle friction, can lose much of its available shear strength. However, it is well documented that not all soils exhibit the same behavior after the initiation of liquefaction.

DRAFT

Loose sandy soils that achieve the condition of liquefaction during earthquake shaking can subsequently collapse and exhibit large shear strains under continued cyclic or static loading. Conversely, medium dense to dense sandy soils that achieve the condition of liquefaction will typically not collapse and can exhibit strain hardening behavior due to dilation effects. Therefore, despite the soil achieving the condition of liquefaction, there is little to no shear strength loss and only moderate shear strains under continued cyclic and static loading. This condition is termed “cyclic mobility”.

4.5.2 Analysis

We evaluated the liquefaction potential of materials encountered during our explorations using the simplified procedure presented by Boulanger and Idriss (2014). The procedure compares the earthquake-induced cyclic stress ratio with the cyclic resistance ratio derived from in situ test data. The method incorporates updated stress-reduction factors, magnitude scaling factors, and overburden and static shear stress corrections to estimate a factor of safety (FS) against liquefaction triggering at each depth in the soil profile.

We used a PGA_M of 1.14g and associated earthquake magnitude of 9.06 in our analysis. We assumed groundwater to be present 5 feet bgs.

We also evaluated the liquefaction susceptibility of fine-grained soils across the site using methods outlined by Bray and Sancio (2006). Based on Bray and Sancio, fine-grained soil deposits are generally vulnerable to liquefaction if the ratio of the in situ moisture content (MC) and liquid limit (LL) (i.e., MC/LL) is greater than 85 percent and if the plasticity index (PI) is less than 12 percent. They note that fine-grained soils are only moderately susceptible to liquefaction if MC/LL is greater than 80 percent and the PI ranges between 12 and 18 percent. Further, soils having a PI greater than 18 percent are generally not considered susceptible to liquefaction because of their relatively high clay content.

Our analyses indicate that loose to medium dense, saturated sand within ESU 2 may liquefy. These materials occur within the upper 7 to 10 feet bgs beneath the proposed school footprint and extend to approximately 15 feet bgs south of the planned parking area. Isolated pockets of potentially liquefiable fine-grained material within ESUs 1 and 3 were also identified in Borings B-2, B-3, and B-5 and Test Pit TP-4.

4.5.3 Settlement

Post-liquefaction settlement results from densification of liquefiable sandy soils following an earthquake. As discussed above, anticipated liquefaction is generally limited to saturated depths of ESU 2 to 15 feet bgs. In this zone, free field liquefaction-induced settlement is typically expected to be up to approximately 3 inches. However, this prediction does not account for the presence of sand boils or other surface effects, which also have potential to occur and may result in significant ground disruption.

4.5.4 Surface Effects

We evaluated the potential for liquefaction-related surface manifestations, such as sand boils, to occur using the procedures presented by Ishihara (1985). The Ishihara procedure compares the thickness of a given liquefiable soil layer to the thickness of the overlying non-liquefiable soil mantle, to determine if surface manifestations are possible at a given peak ground acceleration (PGA). This approach has several

DRAFT

limitations and may overestimate the potential for surface manifestations to occur in silty sands and sandy silts, as the relatively low permeability of these materials has potential to prevent pore water from flowing quickly enough to produce sand boils (Kramer, 1996). Also, the Ishihara procedure was designed for analysis of liquefiable soils with SPT N-values of 10 or less, and application to liquefiable layers with higher N-values may produce conservative results.

Our analyses using the Ishihara method indicates the potential for surface manifestations of liquefaction is variable (low to high) across the site. However, due to the very strong ground shaking and the shallow nature of the liquefiable soils, we considered the site to generally have a moderate to high potential for surface effects.

4.5.5 Lateral Spreading

Lateral spreading occurs when large blocks of ground are displaced down gentle slopes or toward the free face of river channels as a result of earthquake-induced inertial forces acting on the soil mass. Initiation of lateral spreading is often made worse when the soils within and beneath the soil mass liquefy or soften as a result of the shaking. Lateral spreading deformations can be experienced relatively far from a free face. Similar to lateral spread, flow failures result when large volumes of soil near the free face of river channels or lake bottoms displace vertically and laterally during or after earthquakes. As the ground begins to shake and the shearing resistance of liquefied soils decreases, ground displacement occurs in response to mainly static shear forces present within the soil mass and to a lesser extent earthquake-induced inertial forces. Flow failures typically manifest larger deformations than lateral spreading; however, the extent of the deformations is typically localized to the area behind the free face of the channel. Both lateral spreading and flow failures occurring within zones of deep or shallow foundations are destructive and pose a significant risk to the structures the foundations support.

To estimate the order of magnitude of the ground movements associated with flow failure/lateral spread, we conducted seismic displacement analyses following the procedures of Macedo et al. (2023) for subduction zone events. This procedure requires that the critical seismic yield coefficient (ky) for a slope be calculated using limit-equilibrium software, and that earthquake characteristics (magnitude and spectral acceleration at a given period), slope geometry (height and shape), and shear wave velocity profile be determined and input into the calculations. Based on our analyses, we estimate that the design earthquake may induce less than 6 inches of lateral ground displacement at or near the proposed school building. As described in *Section 6 - Geotechnical Design Recommendations*, we recommend liquefaction be mitigated beneath the proposed school building. As such, most lateral displacements should be reduced further; however, we recommend that footings be laterally tied together to resist even limited lateral deformations.

4.6 GLOBAL STABILITY

Stability analyses were performed using limit equilibrium computer software SLIDE2 (ver. 9.044) by RocScience utilizing Spencer's Method of Slices to define a critical shear surface through a cross section in terms of the FS. The FS is defined as the ratio of the average available shear strength to the average shear stress along the shear surface. The program uses an initial set of search limits, determines the FS in an initial shear surface, and then iteratively changes the location of the shear surface until the minimum FS is calculated. Various failure surfaces were analyzed for each section and loading condition including circular and noncircular surfaces for drained and pseudo-static loading conditions. These

DRAFT

analyses evaluated stability at Cross Section A-A', which transects a cut slope along the eastern portion of the site, as shown on Figure 2.

For static stability, our analyses show minimum FS values in excess of 1.5 for potential failure surfaces at Cross Section A-A', as shown on Figure E1.

For modeling of seismic conditions, we coupled earthquake shaking with residual strengths in liquefiable soils due to extreme and long-duration ground shaking anticipated at the site due to a CSZ earthquake. For initial coupled, pseudo-static analyses, a horizontal seismic coefficient equal to one-half of the design PGA, or approximately 0.57g, was applied as shown on Figure E2. This analysis indicates that numerous potential failure surfaces with a FS of less than the required minimum FS of 1.1 are present under this condition, many of which extend nearly 260 feet back into the site reaching the school footprint. This indicates a high likelihood of seismic instability during the design seismic event. Subsequently, we performed a pseudo-static analysis to determine the seismic yield coefficient corresponding to the critical failure surface, which produced a ky of 0.37, as shown on Figure E3.

To estimate the order of magnitude of the ground movements associated with seismic instability, we conducted seismic displacement analyses following the procedures of Macedo et al. (2023) for subduction zone events as discussed in the previous section. Based on our analyses, we estimate that the design earthquake may induce approximately 6 inches of displacement on average for the critical failure surface, which extends approximately 100 feet into the site from the crest of the slope at Cross Section A-A'. Non-critical seismic failure surfaces (those with FSs of less than 1.0) may extend laterally farther into the site but are expected to generate lower mean displacements. For example, seismic failure surfaces extending as deep as 160 feet laterally into the site (as measured from the crest of the slope) having FS of approximately 0.9 are expected to experience approximately 2 inches of mean seismic-induced displacement. An example of a seismic yield acceleration calculation for one of these failure surfaces is presented as Figure E4.

In summary, the potential for seismic slope instability throughout much of the site is low. However, areas in and around slopes at the southeastern and central-eastern portions of the site have a potential for experiencing seismic slope instability and associated displacements estimated to be less than 6 inches. The amount of estimated seismic displacement diminishes with distance from the slope crests.

4.7 FAULT SURFACE RUPTURE

According to the Washington State Department of Natural Resources (DNR) Interactive Natural Hazards Map, the nearest mapped active fault is the Saddle Hill fault zone (Class B), with a mapped segment located approximately 1.6 miles southeast of the site (USGS, 2025a). Additionally, there are two unnamed, east-west oriented fault zones with inferred fault traces, with no surface expressions, mapped approximately 1.2 miles west and southwest from the Project site. Because the site is not underlain by a mapped fault, ground rupture or surface faulting is unlikely.

4.8 TSUNAMI HAZARD

The tsunami hazard at the site is mapped in the *Tsunami Hazard Maps of Southwest Washington - Model Results from a ~2,500-Year Cascadia Subduction Zone Earthquake Scenario* by the DNR (Eungard et al., 2018). Based on this reference, the site is not within a tsunami-inundation zone.

DRAFT

The ASCE Tsunami Hazard Tool (https://asce7tsunami.online/) maps probabilistic inundation hazards for all potential tsunami sources, not just a CSZ-related event. The site is not within a tsunami-inundation zone according to this source (ASCE, 2022).

Based on mapping by DNR and ASCE, we consider the potential for tsunami inundation to affect proposed structures, driveways, and parking lots at the site to be very low.

DRAFT

5. Conclusions

Based on our explorations, testing, and analyses, we have developed recommendations for use in the design and construction of the school building and appurtenant improvements. We offer the following general summary.

- The site is generally underlain by a surficial topsoil or organic material and forest duff directly underlain by glacial outwash, though in portions of the site there is a layer of typically fine-grained alluvium and/or fill derived from native alluvium above the outwash.
  - The surficial layer mantles much of the site and generally consists of 4 to 12 inches of duff and soft, compressible soil with substantial organic content. This material will need to be removed from all development areas. A layer of subsoil with rootlets may also be present below the organic layer that will need to be removed from beneath building, pavement, and flatwork areas.
  - The alluvium and alluvium-derived fill generally consist of soft to stiff silt and clay within the upper 4 to 7 feet. This soil layer is generally somewhat weak and compressible, and easily disturbed by construction activities. Where present beneath building, pavement, or flatwork subgrades, this material will need to be scarified, moisture conditioned, and recompacted.
  - Medium dense to very dense sand and gravel, with localized very loose to loose layers are present beneath the alluvium and alluvium-derived. To a depth of approximately 10 feet bgs, this material is generally considered to be liquefiable. Below that depth, this unit is generally moderately strong, mostly incompressible, and not susceptible to liquefaction.
  - Stiff to hard silt was encountered intermittently to approximately 33 feet bgs and typically interbedded with the sand and gravel layers discussed above. This unit is generally moderately strong and slightly compressible; isolated layers may experience cyclic strength loss during earthquake loading.
- Groundwater varies seasonally and across the site. Groundwater monitoring and field observations indicate groundwater or perched seepage may range from approximately 0.2 to 10.5 feet bgs. We recommend that designers assume a seasonal high water level that reaches within 1 foot of existing site grades.
- Infiltration characteristics of the site soils are variable; however, due to the potential for shallow perched groundwater, we recommend against the use of infiltration as a method for disposal of stormwater. The use of detention system should be considered. The systems shall be lined or designed to resist buoyancy due to the shallow groundwater.
- The potential for site tsunami inundation is expected to be very low.
- The potential for seismic hazards, including liquefaction and seismic-induced lateral slope displacement, is high within the sand and gravel outwash layer (ESU 2) and pockets of the fine grained outwash (ESU 3) units.
  - Under current conditions, design-level seismic shaking may induce liquefaction within portions of ESUs 2 and 3 layers, primarily within 2 to 10 feet bgs.

DRAFT

  - To reduce the potential for and magnitude of seismically induced ground deformation, stabilization measures will need to be implemented. We recommend the use of aggregate piers for an intermediate foundation system, or removal and replacement of the liquefiable soils via mass excavation.
  - The preferred method for ground improvement may be highly dependent on seasonal groundwater conditions. Aggregate piers may be more practical during the wet season when groundwater is shallow, while overexcavation and replacement may be more economical during the dry season when groundwater levels are lower.
  - Once the soil subgrade is stabilized by one of the above measures, the proposed structure may be supported by shallow spread footings.
  - Regardless of the ground improvement approach selected, the following requirements will apply to spread footings used at the site:
    - footings should be designed to bear on an engineered fill, or aggregate piers;
    - footings should be designed to withstand up to 6 inches of lateral movement; and
    - footings should be tied together per ASCE 7-22 Section 12.13.9.
- Site soils are considered moderately corrosive to steel. A corrosion engineer should be consulted to provide recommendations for protecting buried site improvements against corrosion.

The following sections present our recommendations for geotechnical design elements of the project.

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6. Geotechnical Design Recommendations

6.1 SHALLOW FOUNDATIONS

6.1.1 General

We recommend new structures be supported on an interconnected spread footing foundation system that is supported by ground improvement measures. The foundation system shall be designed following the criteria outlined in Section 12.13.9 Requirements for Foundations Subject to Seismically Induced Soil Displacement or Strength Loss of ASCE 7-22.

Recommendations in this section are based on the assumption that maximum structural loads will be up to 100 kips for column footings and 5 kips per linear foot for continuous wall footings. If structural loads are greater, then we should be contacted to verify that our recommendations are appropriate.

6.1.2 Bearing Resistance and Dimensions

The foundation system should consist of a series of interconnected perimeter and interior strip footings; no isolated footings should be used. Enlarged footings tied to nearby footings with grade beams are allowed. Continuous strip footings and enlarged footings supporting isolated loads should be at least 18 and 24 inches wide, respectively. The bottoms of exterior footings should be at least 24 inches below the adjacent finished exterior grade. Interior footings should be embedded at least 12 inches below the adjacent interior grade (e.g., base of slab). Where footings are on or near sloping grades, the footings should be embedded to provide at least 15 feet of "horizontal coverage" from the toe of the footing to the face of the slope.

Footings should be designed to bear on the re-worked in situ soils or aggregate piers as described in *Section 6.1.4 - Foundation Subgrade Preparation*. Footings bearing on re-worked in situ soils may be designed for a maximum allowable bearing capacity of 3,500 pounds per square foot (psf), while foundations bearing on aggregate piers may be designed for a maximum allowable bearing capacity of 4,000 psf. These bearing capacities contain an FS of at least 2 and may be increased by one-third for total loads, including wind or seismic forces. Refer to *Section 6.2 - Ground Improvement* for additional information regarding the aggregate piers.

We estimate new structural foundations may experience total static settlements up to approximately 1 inch using these design values, with static differential settlements amounting to approximately 1/2 inch over a lateral span of 50 feet.

As noted above, foundations should be designed in accordance with Section 12.13.9 of ASCE 7-22. For the design analysis or design models, the structural engineer should assume that seismic deformations consisting of up to 1 inch of settlement and up to 6 inches of lateral deformation may occur.

6.1.3 Lateral Resistance

Lateral loads on footings can be resisted by passive earth pressures on the sides of footings and by friction on the bearing surface. We recommend that passive earth pressures be calculated using an equivalent fluid density of 350 pounds per cubic foot (pcf). We recommend using an allowable friction

DRAFT

coefficient of 0.45 for foundations placed on stone columns or reworked in situ soils. The passive earth pressure and friction components may be combined provided that the passive component does not exceed two-thirds of the total. The lateral resistance values include a reduction factor of 1.5.

6.1.4 Foundation Subgrade Preparation

We recommend that new shallow foundations be underlain by improved subgrade constructed by means of one of the following approaches. The preferred approach will depend partly on seasonal groundwater conditions. Aggregate piers may be more practical when groundwater is shallow, while overexcavation and replacement may be more practical when groundwater levels are lower. Excavation below groundwater would require temporary dewatering and may require measures to maintain excavation stability and prevent disturbance of the subgrade.

- **Overexcavation and Replacement with Engineered Fill:** Excavate the area beneath the entire school footprint to an average depth of 10 feet to remove potentially liquefiable soils. This excavation should extend 10 feet laterally beyond the building envelope. Line the base of the excavation with a geosynthetic filter fabric and then backfill with engineered fill consisting of structural backfill or reworked in situ soil. The engineered fill shall consist of granular (sand or gravel) material. In general, native ESU 2 should be usable, but some portions of ESU 2 contain significant fines content which may make the soil difficult to compact without significant moisture conditioning (e.g., drying). Refer to Section 8.6 for a discussion of usable soils.
- **Aggregate Piers:** Install discrete aggregate pier elements beneath all footings and slabs, as designed by a specialty contractor for increased bearing capacity. For planning purposes, we anticipate 24- to 36-inch-diameter, 10-foot-deep piers to be installed at approximately 6 to 8 feet on-center at strip footings and 8 to 10 feet on-center at slabs, and in groups of two or more for enlarged footings. An in-depth discussion of this alternative is presented in *Section 6.2.2 - Aggregate Piers*.

Any on-site soils that are reused for engineered fill shall be processed to remove deleterious materials, such as organics, construction debris, and other materials identified by Haley & Aldrich. Imported or processed on-site engineered fill should be placed and compacted as discussed in *Section 8 - Earthwork Recommendations*.

Prior to the placement of fill or reinforcing steel in the footing excavations, all loose or disturbed soils should be removed. If water infiltrates and pools in the excavation, the water, along with any disturbed soil, should be removed before placing the reinforcing steel.

6.2 GROUND IMPROVEMENT

6.2.1 General

Ground improvement measures are required to improve the bearing capacity of foundation subgrade and to reduce effects from liquefaction surface effects, as outlined in *Section 6.1.4 - Foundation Subgrade Preparation.* One option involves earthwork measures, while the second includes the use of aggregate piers. This option is described in more detail in *Section 6.2.2 - Aggregate Piers*.

DRAFT

6.2.2 Aggregate Piers

Ground improvement using rammed aggregate piers or similar systems may be considered to provide increased bearing capacities beneath structure foundations, especially if construction is executed when groundwater is shallow.

6.2.2.1 General Criteria

The design of ground improvement systems is typically completed by a specialty design-build contractor that installs them. We have provided some performance guidelines and general recommendations for use by the contractor in their design.

Rammed aggregate piers can be constructed by augering an open hole or pushing a displacement mandrel into the ground. The resulting hole is backfilled with crushed aggregate that is placed and compacted in 2- to 3-foot-thick lifts. For augered systems, the pier hole is drilled, then rock is dumped in the hole from the top, and then the rock is compacted with a tamper or similar measure. For displacement systems, the pier hole is created by vibrating a large mandrel into the ground to the bottom of the improvement zone, and free-draining rock is passed through the mandrel and into the column cavity. The mandrel is withdrawn and reinserted in intervals (typically 2 feet) to provide vibratory or pneumatic compactive effort. These processes create columns of compacted aggregate that are typically 2 to 3 feet in diameter.

The goal of installing aggregate piers is typically to strengthen the soft/loose soils via: 1) bulk soil mass strength increases due to replacement; 2) densification; 3) stress redistribution; and/or to a lesser degree 4) drainage effects. Because we expect primarily sand and gravel at the planned footing elevations, aggregate pier installation should densify the surrounding soils more effectively than it would in fine-grained soils. However, the fines content of site soils is variable, and thus, the level of densification will be variable. Loose or saturated granular soils with fines may become temporarily unstable during construction, and vibrations may induce settlement of nearby structures, utilities, or ground surfaces. The contractor should consider groundwater conditions, potential soil instability, and vibration effects when selecting aggregate pier installation equipment and methods.

Aggregate piers will be concentrated along footing lines and beneath structural columns. Aggregate piers should also be installed beneath floor slabs to help reduce seismically induced settlement and to accommodate possible future building reconfigurations.

If using aggregate piers, we anticipate piers will be on the order of 10 feet deep and spaced approximately 6 to 8 feet on-center along strip footings and 8 to 10 feet on-center under slabs, and placed in groups of two or more piers for enlarged footings at isolated loads. A target allowable bearing capacity up to 4,000 psf is expected to be feasible with the installation of aggregate piers. However, the layout of piers can be refined to meet the actual load-carrying requirements of individual footings. The actual number, configuration, and capacity of aggregate piers will be determined by the specialty contractor's design.

The general contractor should coordinate earthwork and subgrade stabilization with the ground improvement subcontractor to provide a stable working base for their equipment, while also protecting the site subgrade. See *Section 8.3 - Wet Soil Construction and Dewatering* for further recommendations on the topic of construction traffic subgrade preparation.

DRAFT

6.2.2.2 Performance Criteria

We recommend the ground improvement system be designed to target the following performance criteria.

- Minimum allowable foundation bearing capacity of 4,000 psf for static and seismic conditions, or as required by the structural loads.
- Bottom of pier elevation within ESU 2 is approximately 10 feet below the school footprint.
- Minimum frictional coefficient of 0.35 for sliding resistance along the bases of footings in contact with a mixture of native soil and aggregate pier elements. However, if a minimum 12-inch layer of crushed rock is placed between the base of the footing and the underlying soil and aggregate piers, then a frictional coefficient of 0.45 may be used.
- Minimum allowable slab loading of 175 psf, where slabs are underlain by aggregate piers.
- Static foundation and slab settlement:
  - less than 1 inch of total settlement and less than 1/2 inch of differential settlement over a 50-foot span or between adjacent columns, whichever distance is greater.
- Seismic foundation settlement:
  - less than 1.5 inches of total settlement and less than 1 inch of differential settlement over a 50-foot span or between adjacent columns, whichever is a greater distance.

6.2.2.3 Design Considerations and Quality Control

Based on the design criteria described above and the site soil conditions, we recommend the following considerations for the design of the aggregate piers.

- The design and construction techniques should address the potential presence of shallow, perched groundwater (estimated to be within the upper 2 feet below finish grade during the wet season) and the potential for the nearby sandy soils to be temporarily unstable and induce settlement of nearby structures or utilities due to installation-induced vibrations.
- The ground improvement contractor should submit plans and calculations (stamped by a professional engineer licensed in the State of Washington) with the final aggregate pier layout and depths (i.e., pier depths, diameter, spacing, and pattern).
- If ground improvement via densification and stress redistribution is proposed, the pier design should incorporate the methodologies of Barksdale and Bachus (1983) to evaluate the stress redistribution and densification effects, respectively, for piers constructed at the site.
- We recommend that Haley & Aldrich be retained to review the final aggregate pier design.

DRAFT

6.3 FLOOR SLABS

The slab system should reflect the selected ground-improvement approach. If aggregate piers are selected, the building floor should consist of a structural slab designed to span between, and transfer loads to, the aggregate piers. The structural engineer and aggregate pier specialty contractor should coordinate the slab design, pier layout, and load-transfer requirements. If overexcavation and replacement with structural fill are selected, a conventional concrete slab-on-grade may be supported on structural fill prepared in accordance with *Section 8 - Earthwork Recommendations*. Regardless of ground improvement method, we recommend the use of a subslab drainage system to account for seasonally shallow groundwater. Refer to *Section 6.5.5 - Subsurface Drainage* for a discussion about sub-slab drain systems.

Place at least 6 inches of aggregate base beneath either slab system to provide a capillary break, unless the structural slab design requires a different section. Aggregate base placed directly beneath the slab should have a maximum particle size of 0.75 to 1 inches. Flooring manufacturers often require vapor barriers to protect flooring and adhesives and may warrant their products only when the vapor barrier is installed according to their requirements. The design team should select and design the vapor barrier based on the proposed flooring, slab system, and anticipated moisture conditions.

The structural engineer should design slab thickness, reinforcement, joints, and connections for the selected foundation system and proposed use.

6.4 CORROSIVITY

Based on corrosivity test results obtained from two samples of silty clay within the upper 5 feet bgs, site soils are classified as corrosive to buried iron and steel. We recommend that the design team consult with a corrosivity engineer to evaluate results presented in Appendix B and develop recommendations for corrosion protection for proposed improvements.

6.5 DRAINAGE DESIGN RECOMMENDATIONS

6.5.1 Temporary Drainage

During site mass grading, the contractor should be made responsible for temporary drainage of surface water as necessary to prevent standing water or erosion at the working surface. During rough and finished grading of the building site, the contractor should keep all footing excavations and building pads free of water. Excavations for removal of pre-existing fill and debris and for installation of new underground structures and utilities may encounter groundwater seepage that will need to be collected and removed from temporary excavations prior to backfilling.

We note that groundwater seepage may be encountered even in shallow mass excavations, especially during the wet season from the months of November to June.

6.5.2 Surface Drainage

The finished ground surface around buildings should be sloped away from their foundations at a minimum 2 percent gradient for a distance of at least 5 feet. Downspouts or roof scuppers should discharge into a storm drain system that conveys the collected water to an appropriate stormwater system. These elements should not be attached to wall or footing drains. Trapped planter areas should

DRAFT

not be created adjacent to buildings without providing means for positive drainage (i.e., swales or catch basins).

6.5.3 Infiltration Systems

In general, we find that the fine-grained ESU 1 soils, identified within the upper 4 to 7 feet bgs in some portions of the site, have poor infiltration properties. Conversely, the granular ESU 2 soils present near the ground surface in many portions of the site and underlying the ESU 1 soils are expected to have favorable infiltration properties. However, the seasonal high groundwater table is shallow across the site. Therefore, due to the presence of a shallow groundwater table, we recommend against the use of on-site stormwater infiltration systems.

6.5.4 Detention Systems

Current site plans include a large stormwater facility southeast of the planned school structure. Due to the likely presence of shallow groundwater, the detention systems should consist of closed or lined systems. The facility should function as an impervious detention system and should not rely on infiltration. The liner and associated drainage system should limit leakage and infiltration that could raise groundwater levels or saturate adjacent soils, which could adversely affect slope stability. The design should also account for shallow groundwater, including hydrostatic uplift and potential reductions in storage volume when groundwater levels are high.

For chamber-type systems, open-bottom chambers may be placed over an impervious liner to prevent infiltration into the underlying soils. The weight of ballast, such as drain rock placed directly above the liner, may resist buoyancy on the liner. For closed detention systems, the weight of ballast, base rock, pavement, and soil above the system may resist buoyancy. Anchors may also be used to resist uplift on closed systems. The system designer should evaluate the selected chamber system, liner, cover materials, and anchorage together to confirm that the completed facility provides adequate resistance to buoyancy.

A lined detention pond may provide an alternative to a chamber-type system. Typically, when using lined ponds, the maximum inclination of side slopes is typically 3H:1V or flatter depending on the type of liner and ballast system utilized. The pond liner should extend across the pond bottom and side slopes and should be anchored around the perimeter. The design should protect the liner against puncture, displacement, erosion, and exposure during construction and operation. Depending on the selected liner, protective soil, geotextile, ballast, or another cover system may be required. The design should also evaluate hydrostatic uplift beneath the pond liner when the pond is empty or partially full. Ballast or a sub-liner drainage system may be needed to prevent the liner from floating, wrinkling, or becoming displaced during periods of high groundwater.

As an alternative or supplement to designing the systems and liners to resist the full buoyancy force, underdrains may be installed below the liner or closed system to reduce groundwater pressure. The underdrains could consist of gravel and perforated-pipe systems, as described in *Section 6.5.5.3.2 - Blanket Drain*, that discharge by gravity to an approved outlet. The design should confirm that the outlet will remain functional under anticipated groundwater and downstream water level conditions. If gravity discharge is unavailable, the design may require another means of pressure relief and associated provisions for operation and maintenance.

DRAFT

For evaluation of buoyancy on stormwater detention systems, the groundwater level should be assumed as shallow as 1 foot below existing grade.

6.5.5 Subsurface Drainage

Groundwater may seasonally rise to within approximately 1 foot or less of the ground surface across portions of the site. Accordingly, groundwater may affect building foundations, floor slabs, utility trenches, pavements, landscaping, and temporary excavations. Site grading and drainage design should account for the seasonally high groundwater level and avoid relying on infiltration.

Subsurface drainage may be needed around the building perimeter and beneath the floor slab, depending on final grades, foundation elevations, and the selected ground-improvement system. The design team should evaluate groundwater separation after establishing the grading and foundation plans. Where the finished floor or foundation elements are near or below the seasonally high groundwater level, the structural engineer should evaluate hydrostatic uplift and lateral groundwater pressures. The design should not rely on permanent groundwater lowering unless the project team confirms a reliable discharge location and evaluates potential effects on nearby structures, utilities, slopes, wetlands, and other sensitive features.

Cuts planned to establish finished grades may intercept groundwater and expose seepage at cut slopes and subgrades. Seepage could soften exposed subgrades, reduce pavement support, saturate landscaped areas, or affect slope stability. Subsurface drainage systems should be considered to collect and convey seepage from affected areas. The required drainage types and limits will depend on final grades and groundwater conditions observed during construction.

Because the groundwater table may be near the ground surface, gravity discharge from some drains may not be feasible. The civil engineer should identify suitable discharge locations and evaluate outlet elevations, backwater conditions, and applicable discharge requirements. Drain outlets should include accessible cleanouts and provisions to reduce sediment accumulation. Pumps may be needed where gravity drainage is unavailable; however, permanent pumping would require provisions for power, redundancy, maintenance, and emergency operation.

6.5.5.1 Building Sub-Slab Drainage

All structures whose subgrade is founded less than 1 foot above existing site grades should have a sub-slab drainage system to collect potential upwelling groundwater seepage. The building design should include a sub-slab drainage system unless the design team demonstrates adequate separation between the slab and seasonally high groundwater. If aggregate piers and a structural slab are selected, the structural engineer and aggregate pier specialty contractor should coordinate the drainage layout with the slab, foundations, and pier locations. If overexcavation and replacement are selected, the drainage system may be incorporated beneath a conventional slab-on-grade.

The sub-slab drainage system should generally include the following:

- Place at least 12 inches of drain rock over the prepared slab subgrade to provide both a capillary break and drainage layer. The final thickness should account for the seasonally high groundwater level and anticipated groundwater flow. The soil subgrade below the drain rock should be lined with a drainage geotextile.

DRAFT

- Perforated collector pipes within the lower 6 inches of the drain rock. Pipes may be spaced approximately 20 to 30 feet apart, subject to hydraulic design and coordination with foundations, grade beams, aggregate piers, and utilities. Orient pipe perforations downward unless the project drainage design specifies otherwise.
- Positive discharge to an approved outlet or sump system. The design should account for the possibility that the drainage system may operate seasonally or for extended periods.
- A vapor barrier above the drainage layer. The architect, structural engineer, and flooring manufacturer should coordinate the vapor barrier type, thickness, location, and installation requirements.
- Evaluate the slab and below-grade elements for hydrostatic uplift using the design groundwater level. The sub-slab drainage system should not serve as the sole means of resisting uplift unless the design provides reliable, maintainable, and redundant drainage.

6.5.5.2 Building Footing Drainage Systems

If slab subgrades are founded 1 or more feet above existing grade, then we recommend a perimeter footing drain system be installed. However, if a sub-slab drainage system is installed, then a perimeter footing drain is not required.

Where used, perimeter footing drain systems should consist of a minimum 2-foot-deep by 1-foot-wide trench line with drainage geotextile and filled with drain rock. A perforated collection pipe should be placed at the base of the trench. The top of the drain rock should extend to within 6 inches of finished grade in areas where it is covered by topsoil or directly to the base of the subgrade for flatwork. The base of the drain should extend at least 12 inches, preferably 18 inches, below the base of the interior subgrade.

6.5.5.3 Site Subdrainage

Install site subdrainage in pavement and landscaped areas where cuts intercept groundwater, where subgrades are near or below the seasonally high groundwater level, and where seepage appears during construction. Subdrainage may also be needed along transitions between cut and fill areas.

Because groundwater may occur within 1 foot or less of the ground surface, the final drainage design should not use a fixed cut-depth criterion alone. The civil and geotechnical engineers should evaluate subdrain locations based on proposed subgrade elevations, groundwater monitoring data, observed seepage, and available outlet elevations. Field conditions may require adjusting or expanding the drainage system during construction.

We recommend that site subdrainage systems be constructed after the installation of site utilities so that the drainage systems are not disrupted by trenching activities. However, as noted above, the use of stormwater trenches as collection and discharge conduits for groundwater flow can be considered.

6.5.5.3.1 Subdrain

Subdrains are trenches installed to collect seepage in a localized area, such as near a toe of a slope. Subdrain trenches should consist of minimum 2 feet wide by 3 feet deep, drain rock-filled trenches installed in and at least 5 feet beyond an area of seepage. The drain rock should be completely wrapped

DRAFT

with a geotextile drainage fabric. A perforated pipe should be installed at the base of the gravel to collect water seepage.

6.5.5.3.2 Blanket Drain

A blanket drain is similar to a subdrain, but instead of a trench, it consists of a 12- to 18-inch-thick "blanket" of drain rock covering a wide area of subgrade, such as a parking lot. The blanket of drain rock should be fully enveloped by a drainage geotextile.

A series of perforated pipes should be placed in the lower 6 inches of the drain rock layer to collect seepage. In general, the pipes would be spaced roughly 25 to 35 feet apart with their perforations facing downward, although actual spacing and configuration can be determined in conjunction with the design team to reduce conflicts with site improvements. Sometimes, a subdrain trench with a perforated pipe will be used as a collector trench within the base of a blanket drain.

6.5.5.4 Subdrainage Systems Materials

Drain rock used in subdrainage systems should be clean and angular. The drain rock should be completely enveloped by a drainage geotextile to reduce the potential for migration of fines into the drainage system. The drain rock and geotextile should meet the specifications in *Section 8.6 - Structural Fill and Backfill.*

The perforated collector and solid discharge pipes should have a minimum diameter of 3 inches. If multiple collector pipes are tied to a single solid discharge pipe, then the discharge pipe should have a minimum diameter of 4 inches. The solid discharge pipes should not be tied directly into stormwater drain systems, unless measures are taken to prevent backflow into the subdrainage systems.

DRAFT

7. Pavement Design Recommendations

7.1 GENERAL

Planned site pavement is assumed to consist of conventional flexible asphalt concrete (AC) for parking areas and driveways. Some rigid Portland cement concrete (PCC) pavements may be required at bus drop off zones, crosswalks, trash enclosures, and other localized areas.

Conceptual traffic loading data for this site are not available. For current design purposes, we conservatively assume that the heaviest traffic at the site (e.g., in main drive aisles and bus lanes) will include daily round-trip traffic from up to approximately 500 passenger vehicles, five buses, five delivery or box trucks, several weekly visits by both recycling and garbage trucks, and a monthly visit for a fire engine or equivalently loaded vehicle. For areas receiving lighter traffic loading (e.g., interior drive aisles, parking stalls), we assumed daily traffic loading from primarily passenger vehicles and infrequent loading from bus or box truck traffic.

Based on these assumptions, we calculate a design traffic loading of 150,000 equivalent single axle loads (ESALs) for new AC pavements for on-site bus lanes and main drive aisles (i.e., those receiving high through-traffic from site entrance to exit). For other drive aisles and parking stalls that will not be used by heavy trucks, a 20,000-ESAL value was used. These ESAL values are based on an assumed 20-year design life, and no traffic growth is expected over time. If these estimated traffic counts or assumptions are inaccurate, please contact us to develop updated recommendations.

Due to soft native surficial soils, special care will be required for preparation of pavement subgrades as discussed in *Section 8 - Earthwork Recommendations.*

7.2 PAVEMENT SECTIONS

Recommendations for pavement sections consisting of AC and PCC over a section of aggregate base are provided in Table 5. The recommended AC and PCC pavement sections in Table 5 are valid, assuming the subgrade has been prepared in accordance with *Section 8 - Earthwork Recommendations*.

Table 5. AC and PCC Pavement Sections

Pavement Type	Pavement Usage	Pavement (inches)	Aggregate Base[1] (inches)
AC	Heavy Loading: Bus Lanes and Main Drive Aisles	4.0	11.0
	Light Loading: Parking Aisles and Stalls	2.5	8.5
PCC	Bus Traffic Areas: Bus drop off or parking areas	8.0	8.0
	Non-bus Traffic Areas: Driveway Aprons	5.0	6.0

Note:

1. *The aggregate base should be underlain by a subgrade separation geotextile.*

DRAFT

If staging areas or haul roads are proposed that coincide with the areas receiving new pavements, the design thickness of the pavement sections in Table 5 should not be relied upon, and additional thicknesses of base rock should be placed.

We recommend that bus drop off areas utilize PCC pavements, as AC pavements will tend to rut and "shove" due to consistent braking loads from buses.

7.3 PAVEMENT MATERIALS

7.3.1 Flexible AC

Flexible AC should be 1/2-inch hot mix asphalt in conformance with the specifications provided in WSS 5 04 - Hot Mix Asphalt and WSS 9 03.8 - Aggregates for Hot Mix Asphalt. The asphalt cement binder should be PG 64-22 Performance Graded Asphalt Cement according to WSS 9 02.1(4) - Performance Graded Asphalt Binder. If AC is used at bus stop pads, then we recommend a higher viscosity binder be considered for the pavement to improve resistance to rutting.

The AC should be placed with a minimum lift thickness of 1.5 inches and maximum thickness of 3 inches and be compacted to at least 91 percent of Rice Density of the mix, as determined in accordance with ASTM D2041.

7.3.2 Rigid PCC

Rigid PCC pavement should meet the specifications provided in WSS 5 05 - Cement Concrete Pavement. The PCC should have a minimum compressive strength of 4,000 pounds per square inch (psi) and nominal maximum aggregate size of 1.5 inches.

The PCC should be constructed with a maximum joint spacing of 15 feet. The slabs should be interlocked at contraction joints (e.g., continuous slab with no dowels). However, dowels should be used at construction and expansion joints. Where used, dowels should be smooth, round, 1-inch-diameter bars that are greased on one end. The dowels should be placed at 12-inches on-center and should be at least 18 inches long.

7.3.3 Aggregate Base

Imported granular material used as base aggregate (base rock) for conventional pavements should meet the criteria specified in *Section 8.6 - Structural Fill and Backfill* of this report. The base aggregate should be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557, and should be well drained. The aggregate base should be underlain by a subgrade separation geotextile unless the aggregate is directly supported by new granular fill.

7.3.4 Soil Subgrade

The pavement design assumes the soil subgrade consists of either cement-treated subgrade or compacted native soil subgrade that has been prepared as discussed in *Section 8 - Earthwork Recommendations*.

DRAFT

7.3.5 Geotextile Fabric

Subgrade separation geotextile used for pavement sections should, at minimum, meet the specifications provided in WSS 9-33.2(1) Table 3 - Geotextile for Separation or Soil Stabilization. The geotextile should be installed in conformance with the specifications provided in WSS 2-12 - Construction Geosynthetic.

DRAFT

8. Earthwork Recommendations

8.1 GENERAL

Site earthwork should be completed in conformance with the Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction (WSS) (WSDOT, 2026) and the project specifications. Based on available information, the scope of mass grading is unknown at this time. However, based on site topography, we anticipate that earthwork will generally consist of mass grading with cuts and fills up to about 5 feet thick, excavation and backfilling up to 10 feet deep for utilities, shallower excavations for foundations, and subgrade stabilization measures. Mass excavations up to 10 feet deep may be required if the overexcavation approach for foundation subgrade stabilization is selected.

Existing site surficial soils include a thick zone of organic-rich topsoil and forest duff which should be removed from all areas to be developed. Additionally, the underlying near-surface soils often consist of fine-grained alluvium that is moist and be sensitive to construction-related disturbance. As such, there is a high probability that typical construction activities will cause localized pumping, rutting, and general degradation of the soil subgrade. Special care should be taken by the contractor to protect the exposed site soils from disturbance at all times of the year, particularly during wet weather.

8.2 SITE PREPARATION

8.2.1 Clearing and Grubbing

Initial site preparation and earthwork operations generally include clearing and grubbing, stripping, and grading to establish subgrade elevation for improvements.

We recommend removing soils containing more than 5 percent of organics. This includes a 4- to 12-inch layer of forest duff and highly organic topsoil found across most of the site, which should be removed from all areas to be developed. Additionally, a more typical topsoil/subsoil with rootlets is likely to be present and need to be removed from beneath areas to receive new structures, pavements, or flatwork. Stripping depths should be based on field observations at the time of construction. Stripped material should be transported for off-site disposal or stockpiled for use in landscaped areas.

Should tree removal be required for construction of the proposed improvements, trees and their root balls should be grubbed out to the depth of significant roots, which could exceed 3 to 5 feet bgs for tall trees. Depending on the methods used to remove the root balls, considerable disturbance and loosening of the subgrade could occur during site grubbing.

We recommend that soil disturbed during clearing and grubbing operations be removed to expose firm, undisturbed subgrade. The resulting excavations should be backfilled with compacted structural fill.

8.2.2 Demolition

Demolition should include complete removal of existing site improvements within areas to receive new pavements, structures, or engineered fill. Underground utility lines or vaults encountered in areas of new improvements should be completely removed or grouted full if left in place. We note that in the

DRAFT

vicinity of TP-2.13, an apparent buried basement slab was encountered. This will require excavation of at least 6 feet of fill and debris to reach and remove the slab and associated walls and foundations. Numerous structures have previously been present on the site and it is expected that other buried foundations, slabs, and utilities may be present.

Materials generated during demolition of existing improvements should be transported for off-site disposal or stockpiled in areas designated by the owner.

8.2.3 Existing Fill

Following demolition and stripping, if any undocumented fill is encountered in locations of proposed structural improvements (e.g., buildings, slabs, foundations) or pavements, this material should be re-worked and/or removed and replaced. Scarification and compaction of this fill is an option for granular fill; otherwise, removal and replacement with granular structural fill or cement-treated fill is generally a viable option throughout the site.

8.2.4 Subgrade Preparation and Evaluation

Subgrade soils are expected to be vulnerable to disturbance due to construction equipment loading regardless of season. The contractor shall employ wet soil construction techniques, as described in the next section, regardless of the time of year that earthwork is taking place.

Following stripping, demolition, site preparation, and rough grading, the suitability of the subgrade should be evaluated by Haley & Aldrich to identify any soft, loose, or unsuitable areas.

A typical method for evaluating subgrade preparation is via proof rolling with a fully loaded dump truck or similar heavy rubber-tired construction equipment. However, proof rolling may not be feasible if the subgrade has not already been stabilized. Therefore, initial subgrade evaluations may need to be by observing earthwork activity and probing with a steel foundation probe. Observations and probing should be performed by Haley & Aldrich.

If soft or loose zones are identified during proof rolling or probing, these areas should be excavated to the extent indicated by Haley & Aldrich and replaced with structural fill.

Where site preparation activities cause excessive subgrade disturbance, replacement with imported structural fill or stabilization via cement amendment may be necessary.

8.2.5 Subsurface Drainage

As discussed previously, shallow groundwater is present at the site. Depending upon the time of construction, active groundwater seepage may be encountered in mass excavation areas. *Section 6.5.5.3 - Site Subdrainage* provides a discussion of the need for permanent subdrainage systems to collect site seepage. General recommendations for areas to install site subdrainage systems have been provided. However, excavated subgrades should be evaluated by Haley & Aldrich to determine if seepage or signs of seepage are present that may warrant changing the layout recommended site subdrainage systems.

DRAFT

8.3 WET SOIL CONSTRUCTION AND SEEPAGE CONTROL

The near-surface soils include fine-grained materials that are likely to be susceptible to disturbance throughout most of the year. Additionally, depending upon the time of year that earthwork is completed, shallow groundwater may be present across the site. These conditions will require that wet soil construction practices be implemented throughout the site for construction. Wet soil construction practices include using equipment, such as smooth excavator buckets and tracked equipment, to limit subgrade disturbance; controlling groundwater seepage; and stabilizing work areas.

Typical excavations for mass grading are expected to be on the order of 5 feet deep; however, if overexcavation and replacement at the building is selected, mass excavations may extend up to 10 feet deep. Any of these mass excavations may encounter perched groundwater. Excavation or hauling equipment should not track below the groundwater table without dewatering systems in place. Also, fills or topsoil should not be placed in ponded water. Therefore, temporary dewatering points or trenches may be required to prevent water from ponding in excavations during construction. The contractor should be made responsible for temporary drainage of surface water and groundwater as necessary to prevent standing water or erosion at the working surface or in excavations.

Where groundwater seepage or wet soils are present during earthwork activities, a layer of stabilization rock may be required. Stabilization rock should meet the specifications of *Section 8.6 - Structural Fill and Backfill*. The stabilization layer is placed by overexcavating below subgrade elevation 1 to 2 feet and backfilling with the stabilization rock. The rock is compacted by tamping with an excavator bucket until well keyed. We recommend a minimum 3-inch layer of compacted aggregate base backfill, conforming to the specifications of *Section 8.6 - Structural Fill and Backfill* be placed over the stabilization layer to act as a leveling pad. Prior to placement of the stabilization rock, a geotextile layer should be placed on the exposed subgrade as described in *Section 8.6.5 - Stabilization Material*.

If earthwork is completed during rainy weather or during periods of high moisture content in the soil, the subgrade may be too wet to dry by conventional aeration. In that case, the subgrade may need to be stabilized by removal and replacement with geotextile stabilization fabric and granular fill, or cement amendment of the soil.

The following sections describe subgrade stabilization methods which will likely be required to be employed during site development activities.

8.3.1 Removal and Replacement

Soft or wet soils can be removed and replaced with imported granular fill. Stabilization rock and possibly select granular fill can be used as the initial lift of structural fill over a softer subgrade. The native soil subgrade would be covered by a stabilization geotextile fabric and then covered with 12 to 18 inches of stabilization rock/select granular fill, depending upon the subgrade condition, finished grades, and the contractor's means and methods. This may require partial removal and replacement to meet design grades.

DRAFT

8.3.2 Soil Amendment with Cement

As an alternative to the use of imported granular material for structural fill, the on-site soils can be amended with Portland cement to obtain suitable support properties. Portland cement-amended soils are hard and have low permeability. They should not be used if runoff during construction cannot be properly controlled.

Treatment depths for subgrades, haul roads, and staging areas are typically on the order of 12, 16, and 12 inches, respectively. To protect the cement-treated surfaces from abrasion or damage, the finished surface is typically covered with 4 to 6 inches of imported granular material.

The actual thickness of the amended material, percentage of added cement, and thickness of imported granular material will depend on the anticipated subgrade usage, as well as the contractor's means and methods, and accordingly, should be the contractor's responsibility.

If the subgrade is amended with cement, refer to *Section 8.6.7 - Soil Amendment with Cement* for additional discussion.

8.3.3 Haul Roads and Stabilized Work Areas

One method for minimizing subgrade disturbance during construction is using temporary haul roads and stabilized work areas. Based on our experience, between 12 and 18 inches of imported granular material is generally required to construct work areas and haul roads that will support typical construction traffic. However, the actual thickness will depend on the contractor's means and methods, and accordingly, should be the contractor's responsibility. Additionally, a geotextile fabric may be placed as a barrier between the subgrade and imported granular material in areas of repeated construction traffic to provide separation between the imported rock and native soils. The imported granular material and geotextile fabric should meet the specifications in *Section 8.6 - Structural Fill and Backfill* of this report.

8.4 EXCAVATION

8.4.1 Mass Excavations

Site soils within expected excavation depths largely consist of a surficial layer of topsoil and forest duff overlying fine-grained to granular glacial outwash materials with a localized silty fill. It is our opinion that conventional earthmoving equipment in proper working condition should be capable of making necessary general excavations. However, caving and/or sloughing conditions are likely to be present in loose to medium dense sands and soft silts.

The earthwork contractor should be responsible for providing equipment and following procedures as needed to excavate the site soils, as described in this report, while protecting the subgrade.

8.4.2 Temporary Excavation Stability

While the near-surface soils are mostly composed of silt and clay (Occupational Safety and Health Administration [OSHA] Soil Type B) there is still the potential for sloughing, raveling, or caving, even for shallow excavations, particularly for excavations that extend below perched groundwater zones or below the groundwater table. Therefore, we recommend considering these materials to be OSHA Soil Type C for planning purposes.

DRAFT

Open-excavation techniques may be used for temporary excavations above the groundwater table. For planning purposes only, we expect that temporary cut slopes may be excavated at an angle of 1.5H:1V or flatter. However, because of the variables involved, actual slope angles required for stability in temporary cut areas can only be estimated before construction. We recommend that stability of the temporary slopes used for construction be the responsibility of the contractor, since the contractor is in control of the construction operation and is continuously at the site to observe the nature and condition of the subsurface.

All temporary soil cuts associated with site excavations greater than 4 feet in depth should be adequately sloped back to prevent sloughing and collapse in accordance with OSHA guidelines.

The stability and safety of cut slopes depend on a number of factors, including:

- type and density of the soil;
- presence and amount of any seepage;
- depth of the cut;
- proximity and magnitude of surcharge loads, such as stockpiled material, traffic loads, or structures;
- duration of the open excavation; and
- care and methods used by the contractor.

It is the responsibility of the contractor to ensure that the excavation is properly sloped or braced for worker protection, in accordance with OSHA guidelines. To assist with this effort, for planning purposes only, we make the following recommendations regarding temporary excavation slopes.

- Protect the slope from erosion with plastic sheeting for the duration of the excavation to minimize surface erosion and raveling.
- Limit the maximum duration of open excavation to the shortest time period practicable.
- Place no surcharge loads (equipment and materials) within 10 feet of the top of any excavation or slope.

More restrictive requirements may apply, depending on specific site conditions, which should be continuously assessed by the contractor.

If temporary sloping is not feasible due to site spatial constraints, excavations could be supported by internally braced shoring systems, such as a trench box or other temporary shoring. There are a variety of options available. We recommend that the contractor be responsible for selecting the type of shoring system to use. Box shoring is a safety feature used to protect workers and does not prevent caving. If the excavations are left open for extended periods of time, then caving of the sidewalls may occur. The presence of caved material will limit the ability to properly backfill and compact the trenches. The voids between the box shoring and the sidewalls of the trenches should be properly filled with sand or gravel before caving occurs.

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8.4.3 Dewatering

As noted previously, shallow perched groundwater is present across the Project site. Therefore, the contractor should assume dewatering of the excavations will be required. We recommend the water table be lowered at least 2 feet below the excavation subgrade elevation to maintain stable working conditions in the excavations.

Soil encountered in the proposed excavations will generally consist of fine-grained soils to approximately 5 to 6 feet bgs underlain by sands and gravels with variable fines content below that depth. However, zones of sandy soils may be encountered at shallower depths. External dewatering systems, such as well points, should be installed prior to excavation where sandy soils are present. In the shallower excavations (less than about 5 feet bgs), the use of internal dewatering systems, such as sump pumps, may be feasible; however, the potential for excavation wall caving and running is greater with this method. Also, the presence of sandy and gravelly soils at shallower than typical depths may result in greater inflow than anticipated.

If sump pumps are used for internal dewatering, then positive pressure shoring that prevents running and sluffing of the pit sidewalls will be necessary. Additionally, with internal dewatering, the use of a thicker-than-normal stabilization material will be required to reduce “boiling” of the excavation base.

The contractor should also consider seasonal water level fluctuations, as reflected by the groundwater data presented in Figure 6.

The contractor should be prepared for the presence of soils with variable hydraulic conductivities and flow rates. Additionally, the actual dewatering rates will depend on the soil conditions encountered, season when construction occurs, dewatering methods, and schedule adopted by the contractor.

8.4.4 Utility Trench Dams

Due to silty soils near the surface and seasonally shallow groundwater conditions, granular soils used as utility trench backfill may act as a conduit to carry water towards buildings. As such, we recommend that seepage cut offs be installed in utility trenches penetrating the building and in other areas where trenches may direct unwanted seepage towards buildings. This can be achieved by trench plugging techniques such as using low strength concrete, controlled density fill, or a low permeability clay in the trench backfill. The cut offs should extend at least 18 inches beyond the sides and bases of the trenches and extend to within 1 foot of finished grade. At buildings, we recommend trenches be plugged from the face of the building and extend outward at least 3 feet.

8.5 PERMANENT SLOPES

Permanent slopes should be completed in accordance with the specifications provided in WSS 2-03 – Roadway Excavation and Embankment. The extent of permanent cut slopes, if any, required for the project are unknown, though we expect any such slopes to be less than approximately 5 feet tall.

Permanent cut and fill slopes should not exceed a gradient of 2H:1V. Where soft surficial soils are encountered in the exposed face of cut slopes, they may need to be excavated and replaced with structural fill. Also, where seepage is encountered at the face of cut slopes, it will be necessary to install a subdrain to collect the water, as discussed in *Section 6.5 - Drainage Design Recommendations*.

DRAFT

Hardscape improvements (e.g., curbs) should be located at least 3 feet from the crest of slopes. The setback for the toe of building and wall foundations should be no less than 15 feet from the crest of slopes, unless the foundation design and construction takes into consideration soil creep and slope stability. Depending upon the slope gradient and structure setback from the crest of the slope, this requirement will affect the foundation embedment.

Slopes should be planted with appropriate vegetation to provide protection against erosion as soon as possible after grading. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope.

8.6 STRUCTURAL FILL AND BACKFILL

Structural fill should be considered to include subgrade soils beneath buildings, foundations, slabs, and pavements and in other areas intended to support structures or within the influence zone of structures.

Fill should only be placed over a subgrade that has been prepared in conformance with the prior sections of this report. A variety of materials may be used as site structural fill. However, all materials used as structural fill should be free of organic matter or other unsuitable materials and should meet specifications provided in the WSS for structural fill (WSDOT, 2026). A brief characterization of some of the acceptable materials and our recommendations for their use as structural fill are provided below. All materials should be placed and compacted in lifts with maximum uncompacted thicknesses and relative densities as recommended in the tables that follow.

8.6.1 On-Site Soils

Near-surface site soils that might be used for fill generally consist of silt. ***In general, we expect these excavated fine-grained soils to be near saturation and will be very difficult to moisture-condition (i.e., dry out) to a state suitable for placement as structural fill. Therefore, cement-treatment of these materials is likely to be required before they can be re-used as fill*** (see *Section 8.6.7 - Cement-Amended Subgrade*) or imported granular material.

Deeper soils excavated at the site (e.g., the granular soils of ESU 2) may be reused if they are free of organic matter and debris, meet the required gradation requirements, and can be moisture-conditioned and compacted to the project specifications.

On-site soils used as structural fill should be free of particles over 6 inches in diameter and meet the specifications provided in WSS 9 03.14(3) - Common Borrow. Topsoil materials are not suitable for structural fill.

8.6.2 Imported Select Structural Fill

Imported granular material used as structural fill should be pit or quarry run rock, crushed rock, or crushed gravel and sand and should meet the specifications provided in WSS 9 03.9(1) - Ballast, WSS 9 03.14(1) - Gravel Borrow, or WSS 9 03.14(2) - Select Borrow. However, the imported granular material should also have a maximum size of 2 inches, be angular and fairly well-graded between coarse and fine material, have less than 5 percent by dry weight passing the U.S. Standard No. 200 mesh sieve, and have at least two mechanically fractured faces.

DRAFT

If the imported granular fill is placed atop the native silt and clay, a separation fabric should be placed atop the subgrade prior to the placement of the imported granular material. The geotextile should meet the specifications in WSS 9-33.2(1) Table 3 - Geotextile for Separation or Soil Stabilization. The geotextile should be installed in conformance with the specifications provided in WSS 2-12 - Construction Geosynthetic.

8.6.3 Aggregate Base

Imported granular material used as aggregate base (base rock) beneath pavements, the building, or footings should be clean, crushed rock or crushed gravel and sand that is fairly well-graded between coarse and fine. The base aggregate should meet the specifications provided in WSS 9 03.9 - Aggregates for Ballast and Crushed Surfacing, depending upon application. For use beneath general building slabs, the base rock should also meet the gradation of WSS 9 03.9(3) - Crushed Surfacing for "Base Course," though should have less than 5 percent by dry weight passing a U.S. Standard No. 200 mesh sieve. This material should also have at least two mechanically fractured faces.

For use beneath pavements or footings, the aggregate base should have a maximum particle size of 1 or 1.5 inches, while for use beneath the building or sidewalk slabs should have a maximum particle size of 0.75 or 1 inch.

If the aggregate base is placed atop the native silt, a separation fabric should be considered based on construction conditions observed by Haley & Aldrich. If implemented, it should be placed atop the subgrade prior to the placement of the imported granular material. The geotextile should meet the specifications in WSS 9-33.2(1) Table 3 - Geotextile for Separation or Soil Stabilization. The geotextile should be installed in conformance with the specifications provided in WSS 2-12 - Construction Geosynthetic.

8.6.4 Trench Backfill

Trench backfill placed beneath, adjacent to, and for at least 12 inches above utility lines (i.e., the pipe zone) should consist of well-graded granular material with a maximum particle size of 1 inch and should meet the specifications provided in WSS 9 03.12(3) - Gravel Backfill for Pipe Zone Bedding and the pipe manufacturer.

Within pavement and slab subgrades, the remainder of the trench backfill up to the subgrade elevation can consist of the above 1-inch material or of granular material with a maximum particle size of 2.5 inches, less than 10 percent by dry weight passing the U.S. Standard No. 200 mesh sieve, and meeting the specifications provided in WSS 9 03.19 - Bank Run Gravel for Trench Backfill.

As noted in *Section 8.3.3 - Haul Roads and Stabilized Work Areas*, seepage cut offs should be installed in utility trenches to reduce the potential for the trench backfill to act as a conduit for water flow towards undesirable locations.

8.6.5 Stabilization Material

Imported material that is placed as a stabilization layer for haul roads, staging areas, or the bases of trenches that are soft should consist of a clean, angular, crushed rock, such as ballast or quarry spalls. The material should have a maximum particle size of 4 inches, a nominal size between 2 and 4 inches,

DRAFT

less than 5 percent by dry weight passing the U.S. Standard No. 4 mesh sieve, and at least two mechanically fractured faces.

Material meeting the gradations of WSS 9-03.9(1) - Ballast, WSS 9-13.1(3) - Light Loose Riprap, WSS 9-03.12(5) - Gravel Backfill for Drywells, or WSS 9-13.1(5) - Quarry Spalls is generally acceptable for this use. Stabilization material should be placed in lifts between 12 and 18 inches thick and be compacted to a well keyed condition with a smooth drum roller without using vibratory action.

Stabilization material should be separated from the base of soft or fine-grained subgrades with a layer of subgrade geotextile that meets the specifications provided in WSS 9-33.2(1) Table 3 - Geotextile for Separation or Soil Stabilization. The geotextile should be installed in conformance with the specifications provided in WSS 2-12 - Construction Geosynthetic.

8.6.6 Drain Rock

Drain rock used for subsurface drains should meet the specifications provided in WSS 9 03.12(4) - Gravel Backfill for Drains. The drain rock should be wrapped in a geotextile fabric that meets the specifications provided in WSS 9 33.2 for drainage geotextiles. The geotextile should be installed in conformance with the specifications provided in WSS 2 12 - Construction Geosynthetic.

8.6.7 Soil Amendment with Cement

As an alternative to the use of imported granular material for structural fill or stabilization of the in situ site subgrade soils, an experienced contractor may be able to amend the on-site soils with PCC to obtain suitable support properties. Successful use of soil amendment depends on the use of correct mixing techniques, soil moisture content, and amendment quantities. Specific recommendations for soil amending, based on exposed site conditions, can be provided if necessary.

Cement-amended soils are hard and have low permeability. These soils do not drain well and are not suitable for planting. Future planted areas should not be cement amended, if practical, or accommodations should be made for drainage and planting. Moreover, cement amending soil within building areas must be done carefully to avoid trapping water under floor slabs. We should be contacted if this approach is considered. Cement amendment should not be used if runoff during construction cannot be directed away from off-site drainage facilities.

Treatment depths for subgrades, haul roads, and staging areas are typically on the order of 12 to 18 inches. We recommended a seven-day unconfined compressive strength of at least 80 psi. To protect the cement-treated surfaces from abrasion or damage, the finished surface should be covered with 4 to 6 inches of imported granular material. The crushed rock typically becomes contaminated with soil during construction. Contaminated base rock should be removed and replaced with clean rock in pavement areas.

A site-specific study for determining the actual percent cement to be used was not performed. We recommend that this study be performed prior to construction to determine the optimum percent cement to be used. For preliminary planning purposes, we estimate that 5-percent cement (by dry weight) will be required for amending of on-site soils for use as general structural fill. However, where amended soils will be used in the upper 12 to 18 inches of roadway subgrades, haul roads, or staging areas, we estimate the cement may need to be increased to 6 percent. Actual percentages of cement

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will need to be based on in situ soil moisture contents and other field conditions at the time of amendment. The contractor should assume an in situ soil unit weight of 110 pcf when estimating cement volumes.

The actual thickness of the amended material and imported granular material will depend on the anticipated traffic, as well as the contractor's means and methods and should be the contractor's responsibility.

It is not possible to amend soils during heavy or continuous rainfall. Work should be completed during suitable conditions. To prevent strength loss during curing, cement-amended soil should be allowed to cure for a minimum of four days prior to access by construction traffic.

To use wet on-site soils that would not otherwise be suitable for structural fill, they may be amended and placed as fill over a stabilized subgrade. Consecutive lifts of fill may be treated immediately after the previous lift has been amended and compacted (e.g., the four-day wait period does not apply). However, where the final lift of fill is a building or roadway subgrade, then the four-day wait period is in effect.

Where excavations for utility lines penetrate the cement-treated layer, the utility should be located below the cement-treated soil and the resulting excavation should be backfilled to the top of the adjacent cement-treated soil with compacted Class 2 Aggregate Base, lean concrete, or controlled density fill. The remainder of the excavation above the top of the cement treatment, such as the capillary break or aggregate base section, should be placed as discussed in the applicable sections of these recommendations.

8.7 FILL PLACEMENT AND COMPACTION

Structural fill should be placed and compacted in accordance with the following guidelines.

- Place fill and backfill on a prepared subgrade that consists of firm, inorganic native soils or approved structural fill.
- Place fill or backfill in uniform horizontal lifts with a thickness appropriate for the material type and compaction equipment. Table 6 provides general guidance for lift thicknesses.

Table 6. Guidelines for Uncompacted Lift Thickness

Compaction Equipment	Guidelines for Uncompacted Lift Thickness (inches)		
	On-site Soil	Granular and Crushed Rock Maximum Particle Size ≤ 1½ inch	Crushed Rock Maximum Particle Size > 1½ inch
Plate Compactors and Jumping Jacks	4 – 6	4 – 8	Not Recommended
Rubber-Tire Equipment	6 – 8	10 – 12	6 – 8
Light Roller	8 – 10	10 – 12	8 – 10
Heavy Roller	10 – 12	12 – 18	12 – 16
Hoe Pack Equipment	12 – 16	18 – 24	12 – 16

Note:
The above table is based on our experience and is intended to serve as a guideline. The information provided in this table should not be included in the project specifications.

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- Use appropriate operating procedures to attain uniform coverage of the area being compacted.
- Place fill at a moisture content within approximately 3 percent of optimum as determined in accordance with ASTM D1557. Moisture condition fill soil to achieve uniform moisture content within the specified range before compacting. Compact fill to the percent of maximum dry densities as noted in Table 7.
- Do not place, spread, or compact fill soils during freezing or unfavorable weather conditions. Frozen or disturbed lifts should be removed or properly recompacted prior to placement of subsequent lifts of fill soils.

Table 7. Fill Compaction Criteria

Fill Type	Percent of Maximum Dry Density Determined in Accordance with ASTM D1557		
	0 – 2 Feet Below Subgrade	>2 Feet Below Subgrade	Pipe Bedding and Pipe Zone
Mass Fill: fine-grained soils	92	92	-----
Mass Fill: granular materials	95	95	-----
Aggregate Base	95	95	-----
Trench Backfill	95	95	90
Nonstructural Trench Backfill	90	88	-----
Nonstructural Zones	90	88	90

Note:
"Nonstructural" areas are only located in landscaping zones, where the potential for localized trench settlement is acceptable to the owner.

During structural fill placement and compaction, a number sufficient to demonstrate compliance of in-place density tests should be completed by Haley & Aldrich to verify that the specified degree of compaction is being achieved. For structural fill with more than 30 percent retained on the 3/4-inch sieve, Haley & Aldrich should visually verify proper compaction with a proof roll or other methods.

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9. Construction Observations

Satisfactory foundation, pavement, drainage system, and earthwork performance depends to a large degree on quality of construction. Sufficient monitoring of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during subsurface explorations. Recognition of changed conditions often requires experience; therefore, Haley & Aldrich or their representative should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated.

We recommend that Haley & Aldrich be retained to monitor construction at the site to confirm that subsurface conditions are consistent with the site explorations and to confirm that the intent of project plans and specifications relating to earthwork and foundation construction are being met. In particular, we recommend that Haley & Aldrich observe or test:

- the foundation and building subgrades;
- subdrainage system placement and subgrade preparation;
- subgrade beneath pavements;
- cement amending of soils;
- drainage system installation;
- backfill placement and compaction; and
- compaction of structural fills and aggregate bases.

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10. Limitations

We have prepared this report for the exclusive use of North Beach School District No. 64 and its authorized agents for the Pacific Beach Elementary School Relocation in Pacific Beach, Washington, in accordance with our agreement (dated April 10, 2026). Our report is intended to provide our opinion of geotechnical parameters for design of the proposed project, based on explorations that are believed to be representative of site conditions. However, conditions can vary significantly between exploration locations, and our conclusions should not be construed as a warranty or guarantee of subsurface conditions or future site performance.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty, express or implied, should be understood.

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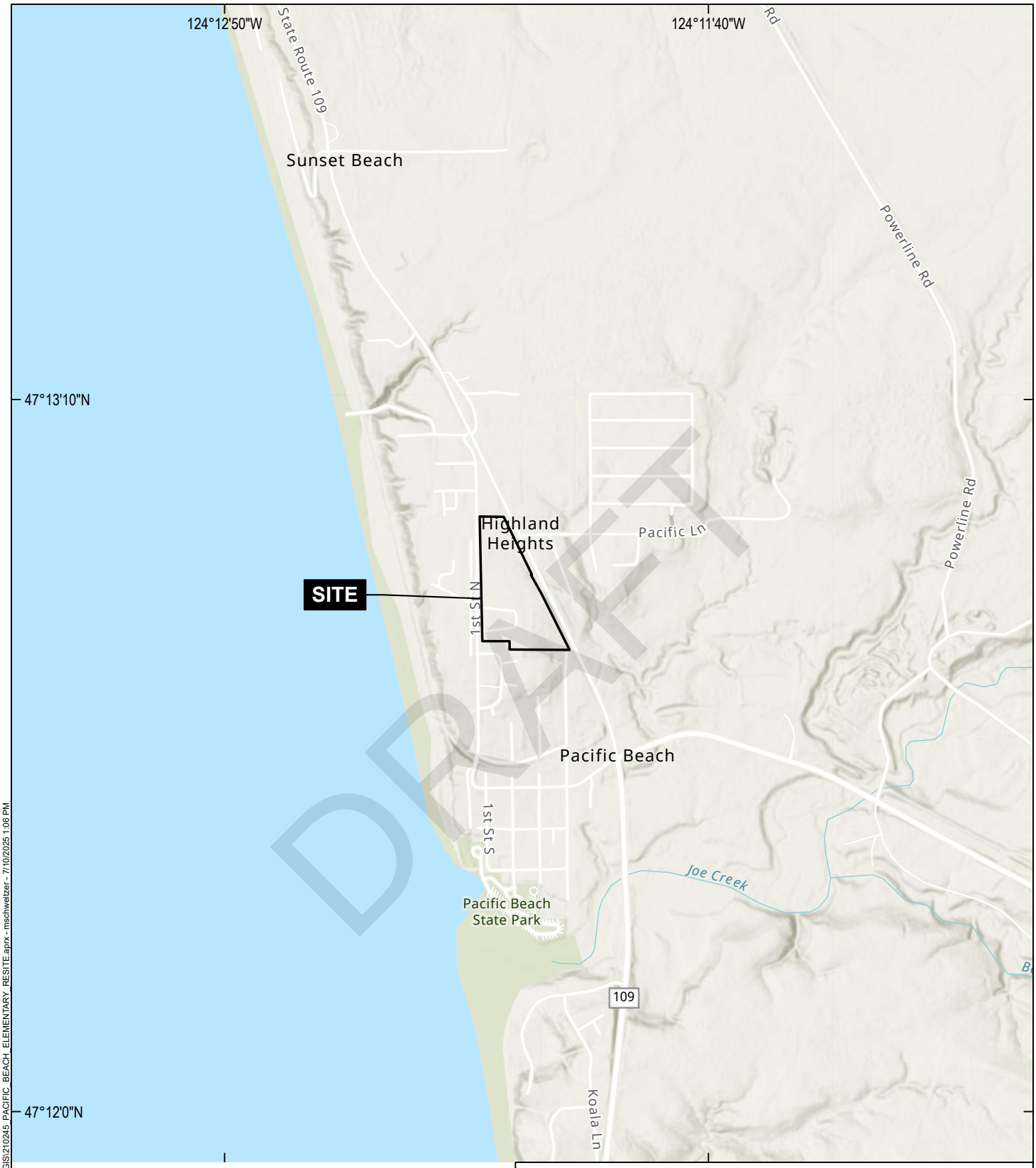
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FIGURES

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MAP SOURCE: ESRI
SITE COORDINATES: 47°12'51"N, 124°12'08"W

HALEY ALDRICH

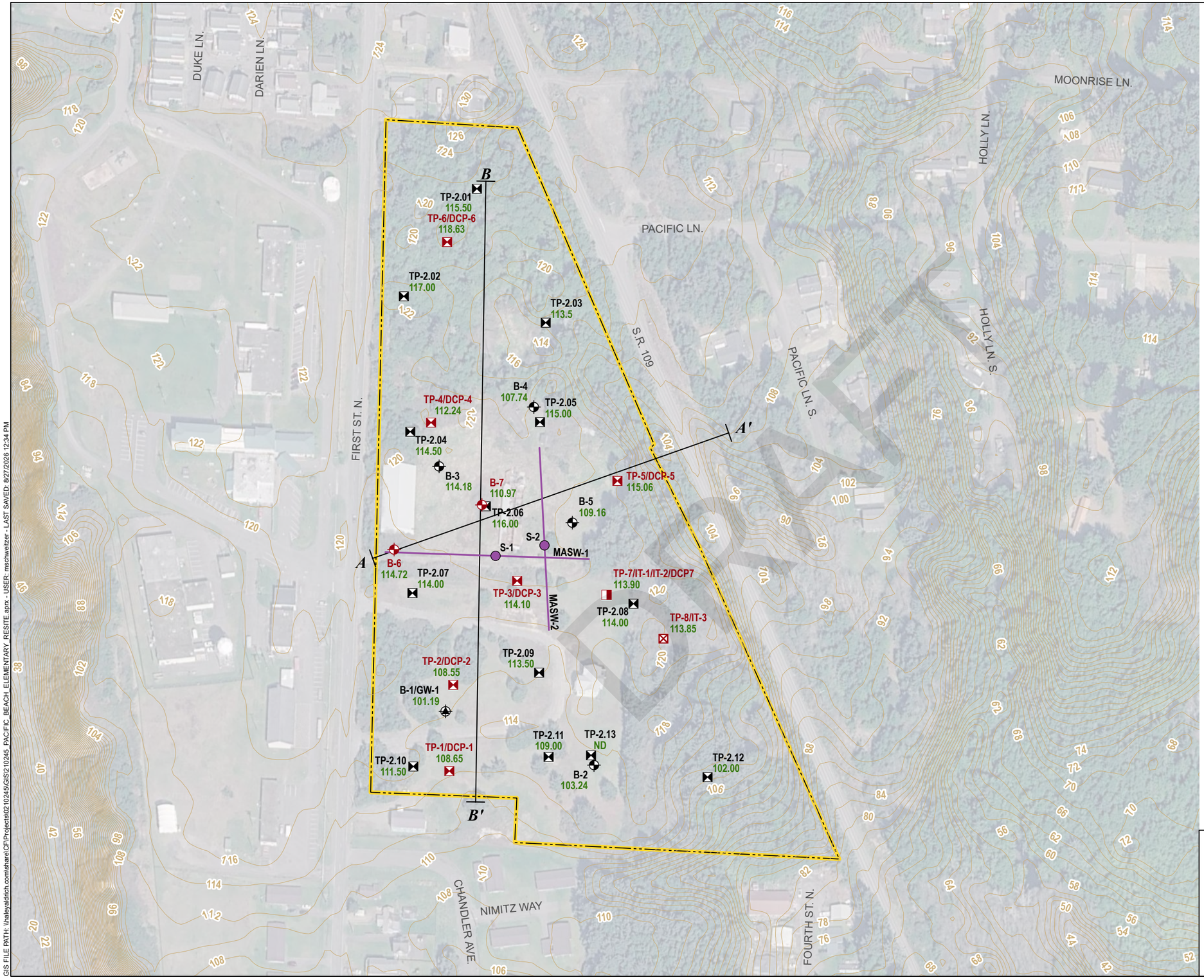
PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
FIRST STREET N
PACIFIC BEACH, WASHINGTON

VICINITY MAP

APPROXIMATE SCALE: 1 IN = 2000 FT
AUGUST 2026

FIGURE 1

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LEGEND

- BORING, HALEY & ALDRICH (2026)
- BORING, HALEY & ALDRICH (2024)
- BORING WITH MONITORING WELL, HALEY & ALDRICH (2024)
- TEST PIT WITH DYNAMIC CONE PENETROMETER (DCP), HALEY & ALDRICH (2026)
- TEST PIT WITH INFILTRATION TEST, HALEY & ALDRICH (2026)
- TEST PIT WITH INFILTRATION TEST AND DCP, HALEY & ALDRICH (2026)
- TEST PIT, GEOENGINEERS, INC. (2021)
- MICROTREMOR ARRAY (MAM), GLOBAL GEOPHYSICS (2026)
- MULTICHANNEL ANALYSIS OF SURFACE WAVE (MASW)
- CROSS SECTION
- TOPOGRAPHIC ELEVATION CONTOUR, 2-FT INTERVAL
- SITE BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. BEARING ELEVATIONS ARE SHOWN IN **GREEN**.
3. ND = NOT DETECTED
4. VERTICAL DATUM: NAVD 88
5. ELEVATION CONTOUR DATA SOURCE: NOAA OFFICE FOR COASTAL MANAGEMENT COASTAL INUNDATION DIGITAL ELEVATION MODEL, 2022
6. AERIAL IMAGERY SOURCE: GOOGLE EARTH

N

0 180 360
SCALE IN FEET

HALEY ALDRICH

PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
FIRST STREET N
PACIFIC BEACH, WASHINGTON

EXISTING SITE PLAN

AUGUST 2026

FIGURE 2

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LEGEND

- BORING, Haley & Aldrich (2026)
- BORING, Haley & Aldrich (2024)
- BORING WITH MONITORING WELL, Haley & Aldrich (2024)
- TEST PIT WITH DYNAMIC CONE PENETROMETER (DCP), Haley & Aldrich (2026)
- TEST PIT WITH INFILTRATION TEST, Haley & Aldrich (2026)
- TEST PIT WITH INFILTRATION TEST AND DCP, Haley & Aldrich (2026)
- TEST PIT, GeoEngineers, Inc. (2021)
- MICROTREMOR ARRAY (MAM), Global Geophysics (2026)
- MULTICHANNEL ANALYSIS OF SURFACE WAVE (MASW)
- CROSS SECTION
- TOPOGRAPHIC ELEVATION CONTOUR, 5-FT INTERVAL
- SITE BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. BEARING ELEVATIONS ARE SHOWN IN **GREEN**.
3. ND = NOT DETECTED
4. VERTICAL DATUM: NAVD 88
5. PROPOSED PLAN SOURCE: TCF, NORTH BEACH SCHOOL DISTRICT PACIFIC BEACHES PROJECT SUMMARY
6. ELEVATION CONTOUR DATA SOURCE: NOAA OFFICE FOR COASTAL MANAGEMENT COASTAL INUNDATION DIGITAL ELEVATION MODEL, 2022
7. AERIAL IMAGERY SOURCE: GOOGLE EARTH

N

0 180 360

SCALE IN FEET

HALEY ALDRICH

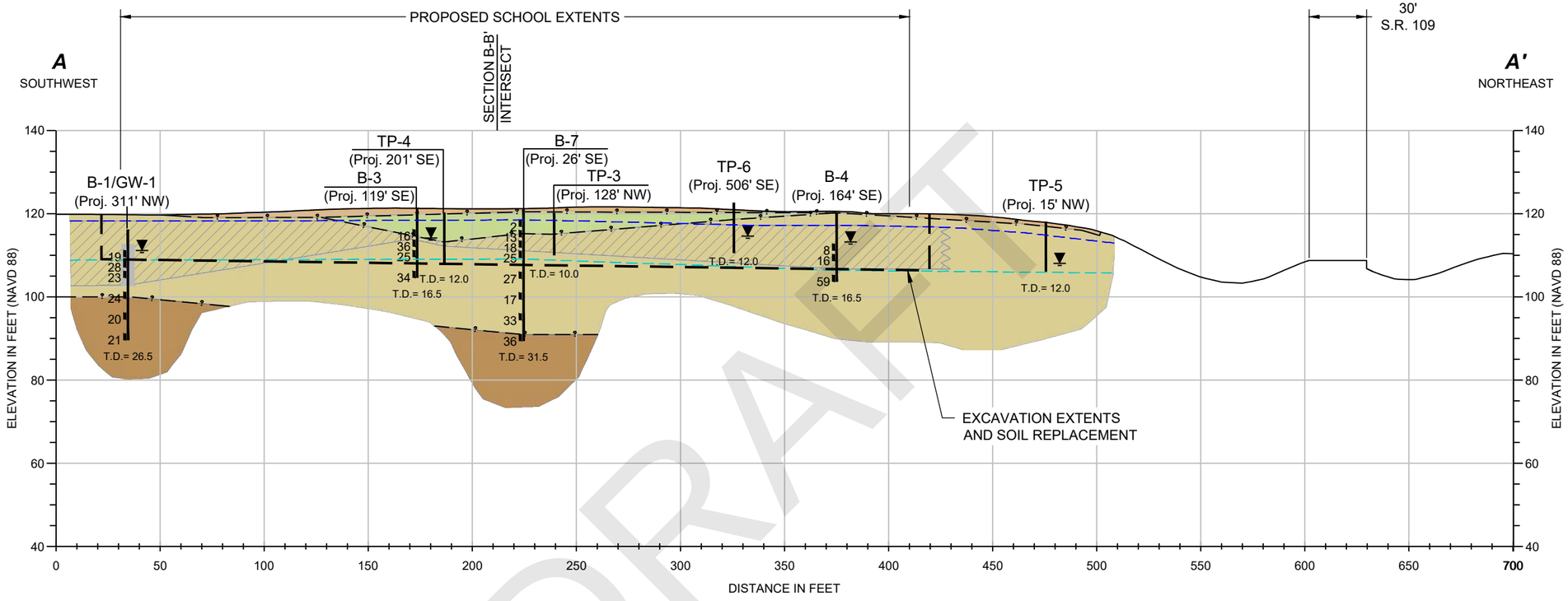
PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
FIRST STREET N
PACIFIC BEACH, WASHINGTON

PROPOSED SITE PLAN

AUGUST 2026

FIGURE 3

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BORING NAME WITH OFFSET — B-1 (Proj. 92' S)

BORING LOCATION

N-VALUE — 22 — WATER LEVEL AT TIME OF EXPLORATION

SCREEN INTERVAL

LEGEND

- FOREST DUFF AND TOPSOIL
- ESU 1 - ALLUVIUM AND NATIVE-DERIVED FILL
- ESU 2 - ALPINE OUTWASH (COARSE-GRAINED MATERIAL)
- ESU 3 - ALPINE OUTWASH (FINE-GRAINED MATERIAL)
- LIQUEFACTION SUSCEPTIBLE LAYER
- ESTIMATED SEASONAL HIGH GROUNDWATER TABLE
- ESTIMATED SEASONAL LOW GROUNDWATER TABLE

NOTE

1. FEATURE LOCATIONS ARE APPROXIMATE.
2. THIS SUBSURFACE PROFILE IS GENERALIZED FROM MATERIALS OBSERVED IN SOIL BORINGS. VARIATIONS MAY EXIST BETWEEN PROFILE AND ACTUAL CONDITIONS.

HORIZ. 0 60 120
VERT. 0 30 60
SCALE IN FEET

HALEY ALDRICH

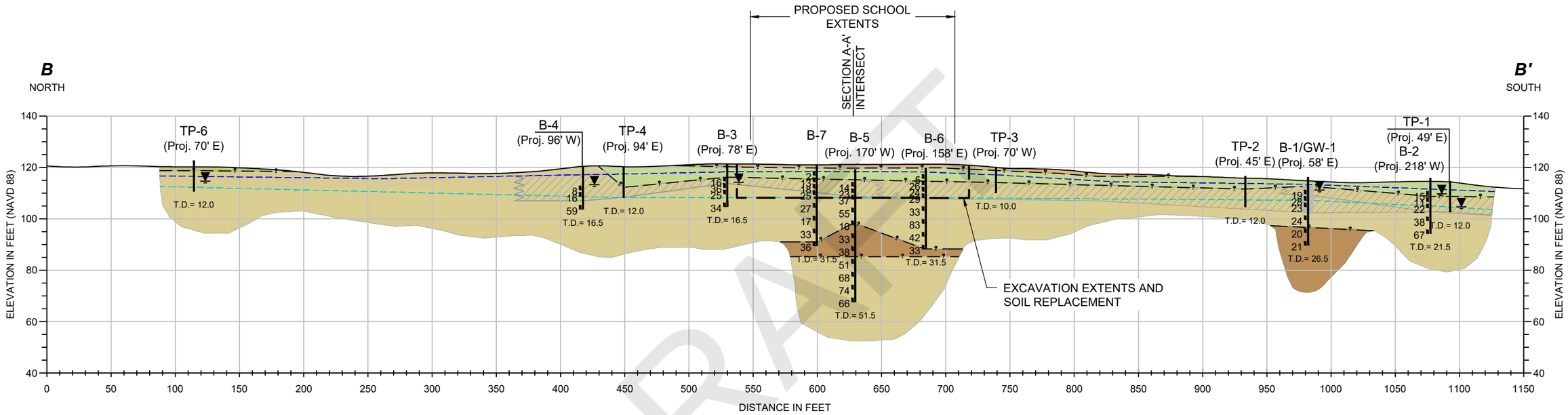
PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
FIRST STREET N
PACIFIC BEACH, WASHINGTON

CROSS SECTION A-A'

AUGUST 2026

FIGURE 4

\\HALEYALDRICH.COM\SHARE\CP\PROJECTS\210245\CAD\FIGURES\210245_000_CROSS_SECTIONS.DWG Sheet: A-A'
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DRAFT

BORING NAME WITH OFFSET — B-1 (Proj. 92' S)

BORING LOCATION

N-VALUE — 22 — WATER LEVEL AT TIME OF EXPLORATION

SCREEN INTERVAL

LEGEND

- FOREST DUFF AND TOPSOIL
- ESU 1 - ALLUVIUM AND NATIVE-DERIVED FILL
- ESU 2 - ALPINE OUTWASH (COARSE-GRAINED MATERIAL)
- ESU 3 - ALPINE OUTWASH (FINE-GRAINED MATERIAL)
- LIQUEFACTION SUSCEPTIBLE LAYER
- ESTIMATED SEASONAL HIGH GROUNDWATER TABLE
- ESTIMATED SEASONAL LOW GROUNDWATER TABLE

NOTE

1. FEATURE LOCATIONS ARE APPROXIMATE.
2. THIS SUBSURFACE PROFILE IS GENERALIZED FROM MATERIALS OBSERVED IN SOIL BORINGS. VARIATIONS MAY EXIST BETWEEN PROFILE AND ACTUAL CONDITIONS.

HORIZ. 0 80 160
VERT. 0 40 80
SCALE IN FEET

HALEY ALDRICH

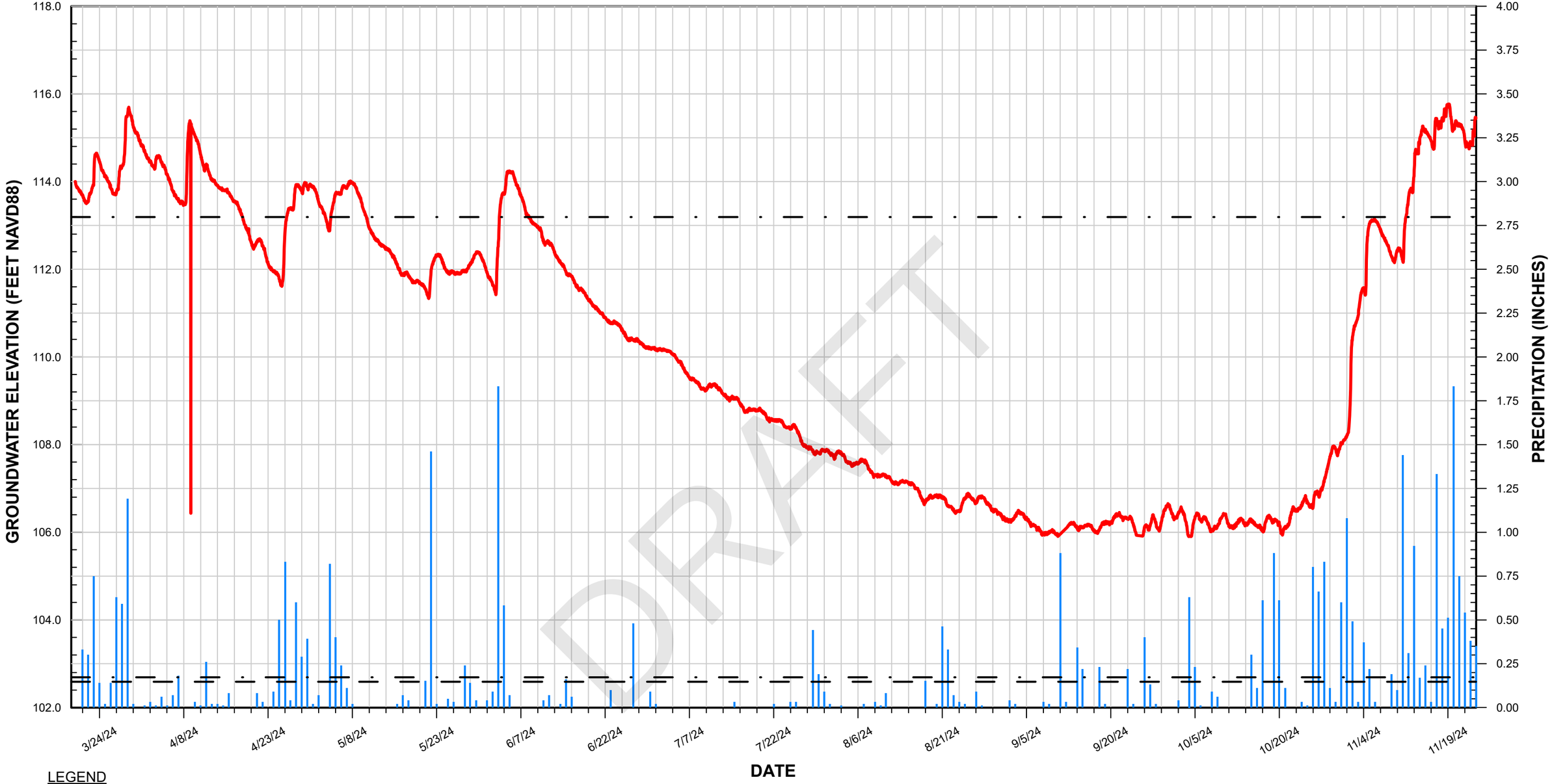
PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
FIRST STREET N
PACIFIC BEACH, WASHINGTON

CROSS SECTION B-B'

AUGUST 2026

FIGURE 5

\\HALEYALDRICH.COM\SHARE\CP\PROJECTS\0210245\CAD\FIGURES\210245_000_CROSS_SECTIONS.DWG Sheet: B-B' Printed: 8/27/2026 4:45 PM CBAZAN,OEB



DRAFT

LEGEND

TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
BOTTOM OF WELL
DEPTH OF WATER
PRECIPITATION

NOTES:
1) GROUND SURFACE ELEVATION = 116.19 FEET (NAVD 88).
2) RAINFALL REPORTED AT US1WAGH0033 OCEAN SHORES, WASHINGTON LOCATED APPROXIMATELY 18 MILES SOUTH OF PROJECT SITE.

HALEY ALDRICH

PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
FIRST STREET N
PACIFIC BEACH, WASHINGTON

GROUNDWATER ELEVATION AND PRECIPITATION PLOT: GW-1

AUGUST 2026

FIGURE 6

C:\Users\kahrens\OneDrive - haleyaldrich.com\North Beach School District No. 64 - 0210245.Pacific Beach Elementary Resite\Analysis\09_Groundwater\GW-1 GW Data.gpj

DRAFT

APPENDIX A
Exploration Logs

APPENDIX A

Field Explorations

GENERAL

Haley & Aldrich, Inc. (Haley & Aldrich) evaluated subsurface soil and groundwater conditions at the project site in two phases of explorations in 2024 and in 2026. The explorations are summarized below.

- From March 18 through 19, 2024, Holt Services, Inc. of Milton, Washington, mechanically drilled five borings to depths ranging from 16.5 to 51.5 feet below ground surface (bgs).
- On June 24, 2026, Holt Services, Inc. of Milton, Washington, mechanically drilled two borings to depths of approximately 31.5 feet bgs.
- From June 23 through 24, 2026, Dan J. Fischer Excavating, Inc. of Forest Grove, Oregon, excavated eight test pits to depths of approximately 8 to 10 feet bgs.

The explorations were coordinated and overseen by geotechnical staff from Haley & Aldrich. Logs of the borings are included in this appendix. These explorations were augmented by explorations completed previously by GeoEngineers in 2021, as outlined in *Section 3 - Site Conditions* of the report. Explorations completed previously by GeoEngineers are included in Appendix D.

Materials encountered in the explorations were classified in the field in general accordance with ASTM International (ASTM) Standard Practice D2488 "Standard Practice for the Classification of Soils (Visual-Manual Procedure)". Disturbed splitspoon samples and relatively undisturbed Shelby tube samples were collected from the geotechnical borings and grab samples from hand excavating the upper few feet of each exploration. Sampling intervals are shown on the exploration logs included in this appendix.

The exploration logs in this appendix show our interpretation of the exploration, sampling, and testing data. The boring logs reflect different project names and project numbers, which are reflective of the different phases of explorations described above. The logs indicate the depth where the soils change. Note that the change may be gradual. In the field, we classified the samples taken from the explorations according to the methods presented on the *Figure A-1 - Key to Exploration Logs*. This figure also provides a legend explaining the symbols and abbreviations used in the logs.

The approximate locations of the explorations are shown on Figure 2. Explorations were located in the field using a hand-held Garmin Global Positioning System (GPS) unit. The latitude and longitude coordinate for each exploration was interpreted from Google Earth and downloaded to the GPS unit.

BORINGS

From March 18 through 19, 2024, Holt Services, Inc. of Milton, Washington, advanced five borings, designated B-1 through B-5, using the hollow stem auger (HSA) and mud-rotary methods with a Mobile B-57 track-mounted drill rig. The HSA borings created approximately 8-inch-diameter holes and the mud-rotary borings created approximately 5-inch-diameter holes. Regardless of method, the borings were backfilled with grout upon completion.

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On June 24, 2026, Holt Services, Inc, of Milton, Washington, advanced two borings, designated B-6 and B-7, using mud rotary methods with a Mobile B-57 track-mounted drill rig. The HSA borings created approximately 5-inch-diameter holes that were backfilled with grout upon completion.

TEST PITS

From June 23 through 24, 2026, Dan J. Fischer Excavating, Inc. of Forest Grove, Oregon, excavated eight test pits, designated TP-1 through TP-8, using a Hitachi 26U mini-excavator. Additionally, three infiltration test holes were excavated immediately adjacent to two of the seven test pit locations. The infiltration testing is described below. The logs of the test pits are presented in this appendix.

Infiltration Testing

We conducted three infiltration tests at depths of 2.4, 5.7, and 6.8 feet bgs at the site, adjacent to test pits TP-7 and TP-8. One test in TP-7 consisted of a single-ring falling head test. The other test in TP-7 and the test in TP-8 consisted of a falling head test in the bottom of an approximately 2- by 2-foot open pit. These tests are briefly described below.

Single-Ring Falling Head

- The infiltration test hole was excavated adjacent to test pit TP-7, and spoils generated from infiltration holes were observed to verify that subsurface conditions were relatively consistent with the adjacent test pit excavation.
- Once the desired infiltration test depth was reached, a 6-inch-diameter PVC pipe was placed in the bottom of the hole. The tip of the pipe was pushed into the soil at least 6 inches to form a seal around the base of the pipe. Approximately 6 inches of pea gravel was added to the bottom of the standpipe to limit scour when adding water for the test.
- The pipe was filled with approximately 2 feet of water in the afternoon and allowed to soak for approximately one hour.
- To conduct the infiltration tests after the saturation period, the pipes were refilled with at least 2 feet of water above the bottom of the hole, and the infiltration rate was monitored throughout the entire test duration, which was approximately one and a half hours for each test.

Open Pit Falling Head

- The infiltration test holes were excavated adjacent test pit TP-7 and TP-8, and spoils generated from infiltration holes were observed to verify that subsurface conditions were relatively consistent with the adjacent test pit excavation.
- The pit was filled with approximately 6 inches of water and allowed to soak for approximately one hour.
- Once the desired infiltration test depth was reached, the bottom of the pit was filled with approximately 6 inches of water. The infiltration rate was monitored throughout the entire test duration, which was approximately one and a half hours for each test.

Refer to *Section 3.5 - Infiltration Testing* of the report text for a discussion of our findings and recommendations regarding the design of infiltration systems.

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DYNAMIC CONE PENETROMETER TESTING PROCEDURE

Haley & Aldrich advanced seven Dynamic Cone Penetrometer (DCP) probes adjacent to test pits TP-1 through TP-7. The DCP consists of a steel extension shaft assembly with a 60-degree hardened steel cone tip attached to one end, which is driven into the subgrade by means of a sliding dual mass hammer. Testing was conducted in accordance with ASTM D6951/D6951M-09. Testing provides an evaluation of in-place California Bearing Ratio and Resilient Modulus values for the subgrade.

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Sample Description

Identification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. ASTM D 2488 visual-manual identification methods were used as a guide. Where laboratory testing confirmed visual-manual identifications, then ASTM D 2487 was used to classify the soils.

Relative Density/Consistency

Soil density/consistency in borings is related primarily to the standard penetration resistance (N). Soil density/consistency in test pits and probes is estimated based on visual observation and is presented parenthetically on the logs.

SAND or GRAVEL Relative Density	N (Blows/Foot)	SILT or CLAY Consistency	N (Blows/Foot)
Very loose	0 to 4	Very soft	0 to 1
Loose	5 to 10	Soft	2 to 4
Medium dense	11 to 30	Medium stiff	5 to 8
Dense	31 to 50	Stiff	9 to 15
Very dense	>50	Very stiff	16 to 30
		Hard	>30

Moisture

Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

USCS Soil Classification Chart (ASTM D 2487)

Major Divisions			Symbols: Graph	Symbols: USCS	Typical Descriptions
Coarse Grained Soils — More than 50% of Material Retained on No. 200 Sieve	Gravel and Gravelly Soils — More than 50% of Coarse Fraction Retained on No. 4 Sieve	Clean Gravels (<5% fines)		GW	Well-Graded Gravel; Well-Graded Gravel with Sand
				GP	Poorly Graded Gravel; Poorly Graded Gravel with Sand
		Gravels (5-12% fines)		GW-GM	Well-Graded Gravel with Silt; Well-Graded Gravel with Silt and Sand
				GW-GC	Well-Graded Gravel with Clay; Well-Graded Gravel with Clay and Sand
				GP-GM	Poorly Graded Gravel with Silt; Poorly Graded Gravel with Silt and Sand
				GP-GC	Poorly Graded Gravel with Clay; Poorly Graded Gravel with Clay and Sand
		Gravels with Fines (>12% fines)		GM	Silty Gravel; Silty Gravel with Sand
				GC	Clayey Gravel; Clayey Gravel with Sand
	Sand and Sandy Soils — More than 50% of Coarse Fraction Passing No. 4 Sieve	Sands with few Fines (<5% fines)		SW	Well-Graded Sand; Well-Graded Sand with Gravel
				SP	Poorly Graded Sand; Poorly Graded Sand with Gravel
		Sands (5-12% fines)		SW-SM	Well-Graded Sand with Silt Well-Graded Sand with Silt and Gravel
				SW-SC	Well-Graded Sand with Clay; Well-Graded Sand with Clay and Gravel
				SP-SM	Poorly Graded Sand with Silt; Poorly Graded Sand with Silt and Gravel
				SP-SC	Poorly Graded Sand with Clay; Poorly Graded Sand with Clay and Gravel
		Sands with Fines (>12% fines)		SM	Silty Sand; Silty Sand with Gravel
				SC	Clayey Sand; Clayey Sand with Gravel
Fine Grained Soils — More than 50% of Material Passing No. 200 Sieve	Silts			ML	Silt; Silt with Sand or Gravel; Sandy or Gravelly Silt
				MH	Elastic Silt; Elastic Silt with Sand or Gravel; Sandy or Gravelly Elastic Silt
	Silty Clay (based on Atterberg Limits)			CL-ML	Silty Clay; Silty Clay with Sand or Gravel; Gravelly or Sandy Silty Clay
	Clays			CL	Lean Clay; Lean Clay with Sand or Gravel; Sandy or Gravelly Lean Clay
				CH	Fat Clay; Fat Clay with Sand or Gravel; Sandy or Gravelly Fat Clay
	Organics			OL/OH	Organic Soil; Organic Soil with Sand or Gravel; Sandy or Gravelly Organic Soil
Highly Organic (>50% organic material)				PT	Peat - Decomposing Vegetation - Fibrous to Amorphous Texture

Minor Constituents

	Estimated Percentage
Sand, Gravel	
Trace	<5
Few	5 - 15
Cobbles, Boulders	
Trace	<5
Few	5 - 10
Little	15 - 25
Some	30 - 45

Soil Test Symbols

%F	Percent Passing No. 200 Sieve
AL	Atterberg Limits (%)
	Liquid Limit (LL)
	Water Content (WC)
	Plastic Limit (PL)
CA	Chemical Analysis
CAUC	Consolidated Anisotropic Undrained Compression
CAUE	Consolidated Anisotropic Undrained Extension
CBR	California Bearing Ratio
CIDC	Consolidated Drained Isotropic Triaxial Compression
CIUC	Consolidated Isotropic Undrained Compression
CK0DC	Consolidated Drained k0 Triaxial Compression
CK0DSS	Consolidated k0 Undrained Direct Simple Shear
CK0UC	Consolidated k0 Undrained Compression
CK0UE	Consolidated k0 Undrained Extension
CRSCN	Constant Rate of Strain Consolidation
DS	Direct Shear
DSS	Direct Simple Shear
DT	In Situ Density
GS	Grain Size Classification
HYD	Hydrometer
ILCN	Incremental Load Consolidation
K0CN	k0 Consolidation
kc	Constant Head Permeability
kf	Falling Head Permeability
MD	Moisture Density Relationship
OC	Organic Content
OT	Tests by Others
P	Pressuremeter
PID	Photoionization Detector Reading
PP	Pocket Penetrometer
SG	Specific Gravity
TRS	Torsional Ring Shear
TV	Torvane
UC	Unconfined Compression
UUC	Unconsolidated Undrained Triaxial Compression
VS	Vane Shear
WC	Water Content (%)

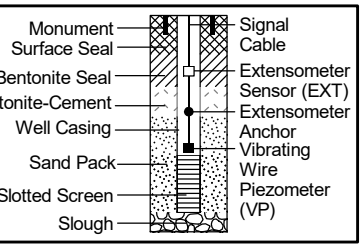
Groundwater Indicators

- Groundwater Level on Date or At Time of Drilling (ATD)
- Groundwater Level on Date Measured in Piezometer
- Groundwater Seepage (Test Pits)

Sample Symbols

- 1.5" I.D. Split Spoon
- 3.0" I.D. Split Spoon
- Modified California Sampler
- Rock Core Run
- Sonic Core
- Thin-walled Sampler
- Grab
- Cuttings
- Push Probe

Well Symbols



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HALEY TO EXP LOGS (SOIL ONLY) - \\HALEYALDRICH.COM\SHARES\EA_DATA\GINT\HC_LIBRARY\GLB - 6/2/24 12:34 - \\HALEYALDRICH.COM\SHARES\CP\PROJECTS\02\10245\PERM GINT FILE\02\10245-000_PACIFIC BEACH ELEMENTARY_GINT.GPJ - kbutler

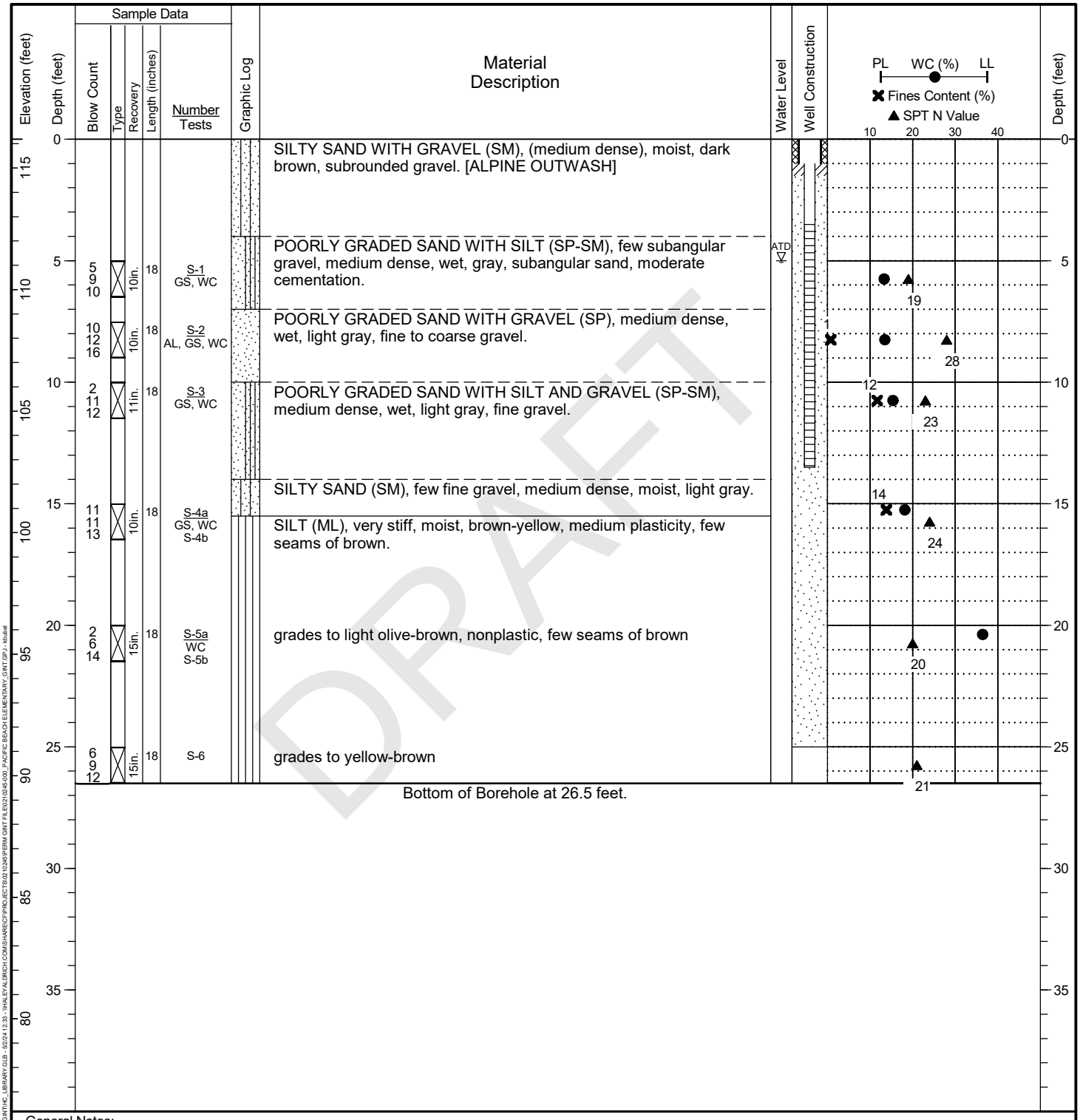
HALEY ALDRICH

Project: Pacific Beach Elementary School Relocation
Location: Pacific Beach, Washington
Project No.: 0210245-000

Key to Exploration Logs

Figure **A-1**
Sheet **1 of 1**

Date Started: 03/18/2024	Date Completed: 03/18/2024	Drilling Contractor/Crew: Holt Services, Inc. / Kaleo	
Logged by: T. Slothower	Checked by: M. Hintz	Drilling Method: Hollow Stem Auger	
Location: Lat: 47.213270 Long: -124.202996 (WGS 84)		Rig Model/Type: Mobile B-57 / Track-mounted drill rig	
Ground Surface Elevation: 116.19 feet (NAVD88)		Hammer Type: Auto-hammer	
Comments: Well Tag ID: BN788		Hammer Weight (pounds): 140	Hammer Drop Height (inches): 30
		Measured Hammer Efficiency (%): 87.5	
		Hole Diameter: 8 inches	Well Casing Diameter: ID: 2 inches
		Total Depth: 26.5 feet	Depth to Groundwater: 5 feet



DRAFT

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH	Project: Pacific Beach Elementary School Relocation Location: Pacific Beach, Washington Project No.: 0210245-000	Boring and Monitoring Well Log **B-1/GW-1**	Figure **A-2** Sheet **1 of 1**

HA BORING LOG - \\HALEYALDRICH.COM\SHARESEA_DATA\GINTHC_LIBRARY.GLB - 6/2/24 12:33 - \\HALEYALDRICH.COM\SHARESEA_DATA\GINTHC_LIBRARY.GLB - 6/2/24 12:33 - \\HALEYALDRICH.COM\SHARESEA\PROJECTS\0210245\PBEM GINT FILE\0210245-000_PACIFIC BEACH ELEMENTARY.GINT.GPJ - kbutler

Date Started: 03/18/2024	Date Completed: 03/18/2024	Drilling Contractor/Crew: Holt Services, Inc. / Kaleo	
Logged by: T. Slothower	Checked by: M. Hintz	Drilling Method: Hollow Stem Auger	
Location: Lat: 47.213032 Long: -124.201875 (WGS 84)		Rig Model/Type: Mobile B-57 / Track-mounted drill rig	
Ground Surface Elevation: 115.74 feet (NAVD88)		Hammer Type: Auto-hammer	
Comments:		Hammer Weight (pounds): 140	Hammer Drop Height (inches): 30
		Measured Hammer Efficiency (%): 87.5	
		Hole Diameter: 8 inches	Well Casing Diameter: NA
		Total Depth: 21.5 feet	Depth to Groundwater: 6 feet

Elevation (feet)	Depth (feet)	Sample Data: Blow Count	Type	Recovery	Length (inches)	Number / Tests	Graphic Log	Material Description	Water Level
115	0								
				20in.	20	P-1 AL, GS, WC		SANDY SILTY CLAY (CL-ML), trace gravel, medium stiff, yellow-brown. [FILL]	
								SILT (ML), trace gravel, stiff, moist, brown, medium plasticity. [ALLUVIUM]	
110	5	5 7 8		11in.	18	S-1 WC			ATD
		6 6 5		12in.	18	S-2 GS, WC		POORLY GRADED SAND WITH GRAVEL (SP), medium dense, wet, light gray, subrounded sand, fine to coarse subrounded gravel, weak cementation, iron oxide staining. [ALPINE OUTWASH]	
105	10	5 9 13		12in.	18	S-3		grades to very dark gray	
100	15	10 20 18		18in.	18	S-4		grades to dense, dark yellow-brown	
95	20	2 24 43		13in.	18	S-5		grades to very dense, brown	
								Bottom of Borehole at 21.5 feet.	
90	25								
85	30								
80	35								

PL WC (%) LL
✖ Fines Content (%)
▲ SPT N Value
10 20 30 40

60 15 1 11 22 38 67

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General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH

Project: Pacific Beach Elementary School Relocation
Location: Pacific Beach, Washington
Project No.: 0210245-000

Boring Log
B-2

Figure **A-3**
Sheet **1 of 1**

HA BORING LOG - \\HALEYALDRICH.COM\SHARES\EA_DATA\GINTHC_LIBRARY.GLB - 6/24/24 12:33 - \\HALEYALDRICH.COM\SHARES\CP\PROJECTS\02\10245\PERM GINT FILE\0210245-000_PACIFIC BEACH ELEMENTARY.GINT.GPJ - kbutler

Date Started: 03/18/2024	Date Completed: 03/18/2024	Drilling Contractor/Crew: Holt Services, Inc. / Kaleo	
Logged by: T. Slothower	Checked by: M. Hintz	Drilling Method: Hollow Stem Auger	
Location: Lat: 47.214507 Long: -124.203130 (WGS 84)		Rig Model/Type: Mobile B-57 / Track-mounted drill rig	
Ground Surface Elevation: 121.18 feet (NAVD88)		Hammer Type: Auto-hammer	
Comments:		Hammer Weight (pounds): 140	Hammer Drop Height (inches): 30
		Measured Hammer Efficiency (%): 87.5	
		Hole Diameter: 8 inches	Well Casing Diameter: NA
		Total Depth: 16.5 feet	Depth to Groundwater: 7 feet

Elevation (feet)	Depth (feet)	Blow Count	Type	Recovery	Length (inches)	Number / Tests	Graphic Log	Material Description	Water Level
120	0								
				24in.	24	P-1 AL, GS, WC		SILTY CLAY (CL-ML), trace gravel, stiff, moist, light brown, medium plasticity. [FILL]	
115	5	5 8 8		13in.	18	S-1 WC		POORLY GRADED SAND WITH GRAVEL (SP), medium dense, moist, yellow-brown, subrounded sand, fine to coarse subrounded gravel, weak cementation, iron oxide staining. [ALPINE OUTWASH]	ATD ▽
		7 13 23		12in.	18	S-2 GS, WC		grades to dense	
110	10	8 12 13		13in.	18	S-3 WC		grades to medium dense, gray	
105	15	7 16 18		11in.	18	S-4		grades to dense, very dark gray-brown	
								Bottom of Borehole at 16.5 feet.	

PL WC (%) LL
✖ Fines Content (%)
▲ SPT N Value
10 20 30 40

82
16
1
36
25
34

Depth (feet): 0 5 10 15 20 25 30 35

Elevation (feet): 120 115 110 105 100 95 90 85

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General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH

Project: Pacific Beach Elementary School Relocation
Location: Pacific Beach, Washington
Project No.: 0210245-000

Boring Log
B-3

Figure **A-4**
Sheet **1 of 1**

HA BORING LOG - \\HALEYALDRICH.COM\SHARESEA_DATA\GINTHC_LIBRARY.GLB - 6/2/24 12:34 - \\HALEYALDRICH.COM\SHARESEA_DATA\GINTHC_LIBRARY.GLB - 6/2/24 12:34 - \\HALEYALDRICH.COM\SHARESEA\PROJECTS\0210245\000_PACIFIC BEACH ELEMENTARY\GINT FILES\0210245-000_PACIFIC BEACH ELEMENTARY.GINT (ZP) 1 - kbutler

Date Started: 03/18/2024	Date Completed: 03/18/2024	Drilling Contractor/Crew: Holt Services, Inc. / Kaleo/Jacob	
Logged by: T. Slothower	Checked by: M. Hintz	Drilling Method: Hollow Stem Auger	
Location: Lat: 47.214830 Long: -124.202447 (WGS 84)		Rig Model/Type: Mobile B-57 / Track-mounted drill rig	
Ground Surface Elevation: 120.24 feet (NAVD88)		Hammer Type: Auto-hammer	
Comments:		Hammer Weight (pounds): 140	Hammer Drop Height (inches): 30
		Measured Hammer Efficiency (%): 87.5	
		Hole Diameter: 8 inches	Well Casing Diameter: NA
		Total Depth: 16.5 feet	Depth to Groundwater: 7 feet

Elevation (feet)	Depth (feet)	Blow Count	Type	Recovery	Length (inches)	Number / Tests	Graphic Log	Material Description	Water Level
120	0							SILTY SAND WITH GRAVEL (SM), (medium dense), moist, dark brown, subrounded gravel. [ALPINE OUTWASH]	
115	5			20in.	20	P-1		SILT (ML), trace gravel, stiff, moist, light brown, medium plasticity.	
		4 5 3		12in.	18	S-1 WC		POORLY GRADED SAND WITH GRAVEL (SP), loose, wet, gray-brown, subrounded sand, subrounded gravel, weak cementation, iron oxide staining.	ATD
110	10	4 6 10		13in.	18	S-2 GS, WC		grades to medium dense	
105	15	14 18 41		11in.	18	S-3		grades to very dense, brown	
								Bottom of Borehole at 16.5 feet.	

WC (%) ●
✖ Fines Content (%)
▲ SPT N Value

10 20 30 40

8 · 0 ✖ · 16 · 59

100 20 | 95 25 | 90 30 | 85 35

DRAFT

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH	Project: Pacific Beach Elementary School Relocation Location: Pacific Beach, Washington Project No.: 0210245-000	Boring Log **B-4**	Figure **A-5** Sheet **1 of 1**

HA BORING LOG - \\HALEYALDRICH.COM\SHARE\SEA_DATA\GINTWC_LIBRARY.GLB - 6/24/24 12:34 - \\HALEY ALDRICH.COM\SHARE\SEA\PROJECTS\0210245-000_PACIFIC BEACH ELEMENTARY_GINT.GPJ - kbutler

Date Started: 03/19/2024	Date Completed: 03/19/2024	Drilling Contractor/Crew: Holt Services, Inc. / Kaleo/Jacob	
Logged by: T. Slothower	Checked by: M. Hintz	Drilling Method: Mud Rotary	
Location: Lat: 47.214255 Long: -124.202120 (WGS 84)		Rig Model/Type: Mobile B-57 / Track-mounted drill rig	
Ground Surface Elevation: 119.16 feet (NAVD88)		Hammer Type: Auto-hammer	
Comments:		Hammer Weight (pounds): 140	Hammer Drop Height (inches): 30
		Measured Hammer Efficiency (%): 87.5	
		Hole Diameter: 4.875 inches	Well Casing Diameter: NA
		Total Depth: 51.5 feet	Depth to Groundwater: Not Identified

Elevation (feet)	Depth (feet)	Sample Data: Blow Count	Type	Recovery	Length (inches)	Number / Tests	Graphic Log	Material Description
115	0							SILT (ML), trace gravel, (stiff), moist, light brown, medium plasticity. [FILL]
	5	7 7 7		11in.	18	S-1 GS, WC		POORLY GRADED SAND WITH GRAVEL (SP), medium dense, wet, light gray, subrounded sand, fine to course subrounded gravel. [ALPINE OUTWASH]
110		10 11 12		10in.	18	S-2 WC		
	10	15 16 21		11in.	18	S-3 WC		grades to dense
105								POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), very dense, wet, light gray, fine gravel.
	15	22 27 28		12in.	18	S-4 GS, WC		
100								SANDY SILT (ML), stiff, moist, yellow-brown, low plasticity.
	20	6 3 7		13in.	18	S-5 AL, WC		
95	25	11 13 20		11in.	18	S-6		grades to hard, yellow-brown
90	30	11 15 23		16in.	18	S-7 WC		trace gravel, iron oxide staining
85								POORLY GRADED SAND WITH GRAVEL (SP), very dense, moist, dark yellow-brown, subrounded sand, subrounded gravel, moderate cementation, iron oxide staining.
	35	19 22 29		16in.	18	S-8		
80								

PL WC (%) LL
✖ Fines Content (%)
▲ SPT N Value
10 20 30 40
Depth (feet)

DRAFT

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH	Project: Pacific Beach Elementary School Relocation Location: Pacific Beach, Washington Project No.: 0210245-000	Boring Log **B-5**	Figure **A-6** Sheet **1 of 2**

HA BORING LOG - \\HALEYALDRICH.COM\SHARESEA_DATA\GINTHC_LIBRARY.GLB - 6/2/24 12:34 - \\HALEYALDRICH.COM\SHARESEA_DATA\PROJECTS\0210245\PERM GINT FILES\0210245-000_PACIFIC BEACH ELEMENTARY.GINT.GPJ - kbutler

Date Started: 03/19/2024	Date Completed: 03/19/2024	Drilling Contractor/Crew: Holt Services, Inc. / Kaleo/Jacob	
Logged by: T. Slothower	Checked by: M. Hintz	Drilling Method: Mud Rotary	
Location: Lat: 47.214255 Long: -124.202120 (WGS 84)		Rig Model/Type: Mobile B-57 / Track-mounted drill rig	
Ground Surface Elevation: 119.16 feet (NAVD88)		Hammer Type: Auto-hammer	
Comments:		Hammer Weight (pounds): 140	Hammer Drop Height (inches): 30
		Measured Hammer Efficiency (%): 87.5	
		Hole Diameter: 4.875 inches	Well Casing Diameter: NA
		Total Depth: 51.5 feet	Depth to Groundwater: Not Identified

Elevation (feet)	Depth (feet)	Sample Data: Blow Count	Type	Recovery	Length (inches)	Number / Tests	Graphic Log	Material Description	PL WC (%) LL; Fines Content (%); SPT N Value	Depth (feet)
75	40	23 31 37		14in.	18	S-9 GS, WC		POORLY GRADED SAND WITH GRAVEL (SP), very dense, moist, dark yellow-brown, subrounded sand, subrounded gravel, moderate cementation, iron oxide staining. *(continued)* heavy iron oxide staining	0 10 20 30 40 68	40
70	45	28 39 35		15in.	18	S-10		grades to olive-brown, iron oxide staining	74	45
65	50	17 34 32		11in.	18	S-11 WC		grades to dark yellow-brown	66	50
60	55							Bottom of Borehole at 51.5 feet.		55
55	60									60
50	65									65
45	70									70
40	75									75

DRAFT

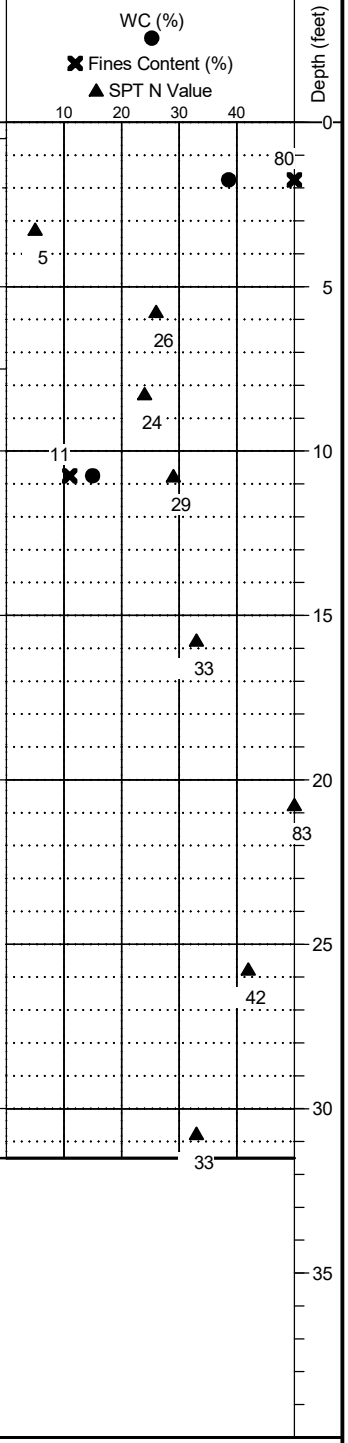
General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH	Project: Pacific Beach Elementary School Relocation Location: Pacific Beach, Washington Project No.: 0210245-000	Boring Log **B-5**	Figure **A-6** Sheet **2 of 2**

HA BORING LOG - \\HALEYALDRICH.COM\SHARE\SEA_DATA\GINT\HC_LIBRARY.GLB - 6/2/24 12:34 - \\HALEYALDRICH.COM\SHARE\SEA_DATA\GINT\PROJECTS\0210245\PERM GINT FILE\0210245-000_PACIFIC BEACH ELEMENTARY .GINT.GPJ - kbutler

Date Started: 06/24/2026	Date Completed: 06/24/2026	Drilling Contractor/Crew: Holt Services, Inc. / A. Causland	
Logged by: S. Sirmans	Checked by: K. Ahrens	Drilling Method: Mud Rotary	
Location: Lat: 47.214077 Long: -124.203435 (WGS 84)		Rig Model/Type: Mobile B-57 / Track-mounted drill rig	
Ground Surface Elevation: 119.72 feet (NAVD 88)		Hammer Type: Auto-hammer	
Comments:		Hammer Weight (pounds): 140	Hammer Drop Height (inches): 30
		Measured Hammer Efficiency (%): Not Available	
		Hole Diameter: 8 inches	Well Casing Diameter: NA
		Total Depth: 31.5 feet	Depth to Groundwater: Not Identified

Elevation (feet)	Depth (feet)	Blow Count	Type	Recovery	Length (inches)	Number / Tests	Graphic Log	Material Description
	0							Hand augered to 5 ft, 2 ft south of B-6.
						G-1		Grass/root zone (6-inches thick).
						G-2 GS, WC		SANDY SILT (ML), loose, dry, dark brown, scattered organics (roots). [FILL]
						G-3		SILT WITH SAND (ML), stiff, dry, light brown, orange staining.
115		0 0 5		9in.	18	S-4		SANDY SILT (ML), trace gravel, medium stiff, dry, light brown, fine rounded sand, stratified.
	5	7 12 14		12in.	18	S-5		POORLY GRADED SAND (SP), trace gravel, medium dense, wet, gray, fine rounded sand, homogeneous. [ALPINE OUTWASH]
		12 11 13		13in.	18	S-6		POORLY GRADED SAND WITH GRAVEL (SP), trace gravel, medium dense, wet, gray, fine rounded sand.
110	10	9 18 11		15in.	18	S-7 GS, WC		POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM), medium dense, wet, light brown mottled, laminated poorly graded fine rounded to subrounded sand.
	15	13 16 17		12in.	18	S-8		POORLY GRADED SAND (SP), few gravel, dense, wet, gray, fine rounded sand, homogeneous.
105	20	22 40 43		18in.	18	S-9		SILTY SAND WITH GRAVEL (SM), very dense, wet, gray to light brown, fine sand, fine to coarse subrounded to subangular gravel, stratified, stained.
	25	16 17 25		15in.	18	S-10		decreased gravel content
100	30	7 15 18		13in.	18	S-11		SILTY SAND (SM), trace fine gravel, medium dense, moist, red-brown, fine sand.
								Bottom of Borehole at 31.5 feet.
95	35							
90								
85								
80								



DRAFT

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH	Project: PACIFIC BEACH ELEMENTARY RELOCATION Location: 50 FIRST ST, PACIFIC BEACH, WASHINGTON Project No.: 0210245-002	Boring Log **B-6**	Figure **A-7** Sheet **1 of 1**

HA BORING LOG - C:\USERS\KBUBEL\ONEDRIVE - HALEY\ALDRICH.COM\SHARED\PROJECTS\0210245\PERM GINT FILE\0210245-002 PACIFIC BEACH ELEMENTARY RELOCATION .GINT.GPJ kbubel

Date Started: 06/24/2026	Date Completed: 06/24/2026	Drilling Contractor/Crew: Holt Services, Inc. / A. Causland	
Logged by: S. Sirmans	Checked by: K. Ahrens	Drilling Method: Mud Rotary	
Location: Lat: 47.214323 Long: -124.202798 (WGS 84)		Rig Model/Type: Mobile B-57 / Track-mounted drill rig	
Ground Surface Elevation: 120.97 feet (NAVD 88)		Hammer Type: Auto-hammer	
Comments:		Hammer Weight (pounds): 140	Hammer Drop Height (inches): 30
		Measured Hammer Efficiency (%): Not Available	
		Hole Diameter: 8 inches	Well Casing Diameter: NA
		Total Depth: 31.5 feet	Depth to Groundwater: Not Identified

Elevation (feet)	Depth (feet)	Blow Count	Type	Recovery	Length (inches)	Number / Tests	Graphic Log	Material Description
	0					G-1 G-2		Hand auger to 5 ft, 2 ft south of B7. Grass/root zone (6-inches thick). SILT WITH SAND (ML), medium dense, dry, brown, roots. [FILL]
						G-3		grades to trace organics
120		0 0 2		18in.	18	S-4		ELASTIC SILT WITH SAND (MH), soft, moist, light brown, orange staining, trace organics (roots).
	5	2 5 8		18in.	18	S-5		SILTY SAND WITH GRAVEL (SM), medium dense, wet, gray, fine rounded sand, staining. [ALPINE OUTWASH] fines content decreases at 6.3 ft
115		11 10 8		18in.	18	S-6		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), medium dense, wet, brown mottled, fine rounded to subrounded sand, staining. fines content increases at 9 ft
	10	9 13 12		18in.	18	S-7 GS, WC		grades to wet, gray
110								
	15	22 16 11		15in.	18	S-8		SILTY SAND (SM), trace coarse rounded gravel, medium dense, wet, gray.
105								
	20	6 8 9		18in.	18	S-9 AL, GS, WC		SILTY GRAVEL WITH SAND (GM), medium dense, light brown mottled, fine sand, fine gravel, stratified. layer of sandy elastic silt with fine rounded to subrounded gravel from 20.3 to 20.6 ft fines content decrease from 21.2 to 21.5 ft
100								
	25	13 17 16		17in.	18	S-10		SILTY SAND WITH GRAVEL (SM), dense, wet, brown, fine rounded sand, staining.
95								
	30	13 17 19		15in.	18	S-11		SANDY SILT WITH GRAVEL (ML), dense, moist, orange mottled, fine sand.
90								Bottom of Borehole at 31.5 feet.
	35							
85								

PL WC (%) LL
✖ Fines Content (%)
▲ SPT N Value
10 20 30 40

2 13 18 11 25 27 20 17 33 36

DRAFT

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST, PACIFIC BEACH, WASHINGTON
Project No.: 0210245-002

Boring Log
B-7

Figure **A-8**
Sheet **1 of 1**

HA BORING LOG - C:\USERS\KBUBEL\ONEDRIVE - HALEYALDRICH.COM\SHARED\PROJECTS\0210245\PERM GINT FILE\0210245-002 PACIFIC BEACH ELEMENTARY RELOCATION .GINT (GPJ - kbubel
8/27/26 10:06 - J:\HALEYALDRICH.COM\SHARED\PROJECTS\0210245\PERM GINT FILE\0210245-002 PACIFIC BEACH ELEMENTARY RELOCATION .GINT (GPJ - kbubel

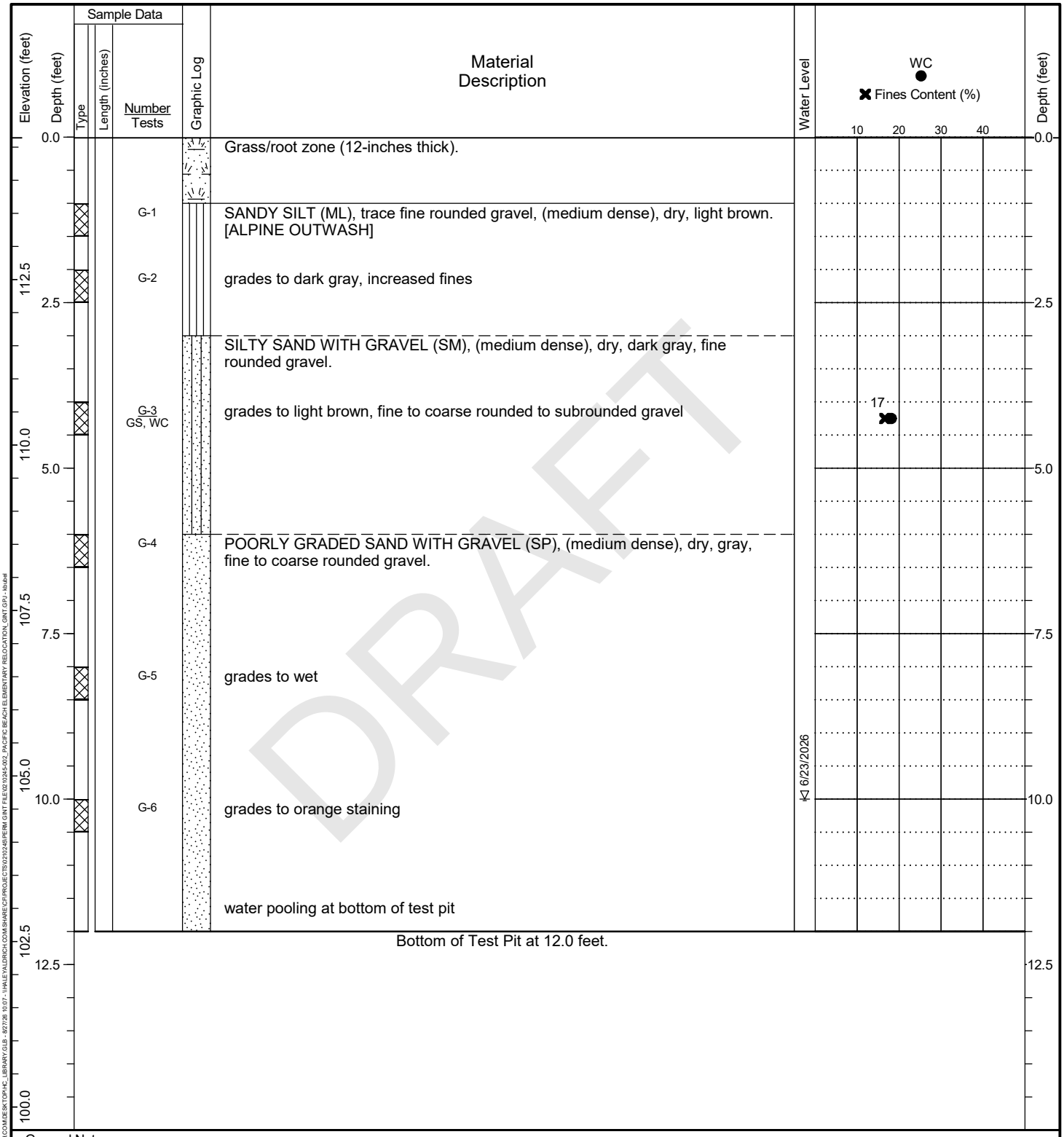
Date Started: 06/23/2026 Date Completed: 06/23/2026 Contractor/Crew: Dan J. Fischer Excavating, Inc.

Logged by: S. Sirmans Checked by: K. Ahrens Rig Model/Type: Hitachi 26U / Mini excavator

Location: Lat: 47.212967 Long: -124.202947 (WGS 84) Total Depth: 12.0 feet Depth to Seepage: 10 feet

Ground Surface Elevation: 114.65 feet (NAVD 88)

Comments: Dynamic cone penetration test performed adjacent to test pit.



DRAFT

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH	Project: PACIFIC BEACH ELEMENTARY RELOCATION Location: 50 FIRST ST, PACIFIC BEACH, WASHINGTON Project No.: 0210245-002	Test Pit Log **TP-1**	Figure **A-9** Sheet **1 of 1**

HA TEST PIT - C:\USERS\KGUIBE\ONEDRIVE - HALEYALDRICH.COM\DESKTOP\HC_LIBRARY.GLB - 8/27/26 10:07 - J:\HALEYALDRICH.COM\SHARE\CR\PROJECTS\0210245\002-PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kbutler

Date Started: 06/23/2026 Date Completed: 06/23/2026 Contractor/Crew: Dan J. Fischer Excavating, Inc.

Logged by: S. Sirmans Checked by: K. Ahrens Rig Model/Type: Hitachi 26U / Mini excavator

Location: Lat: 47.213405 Long: -124.202948 (WGS 84) Total Depth: 12.0 feet Depth to Seepage: Not Encountered

Ground Surface Elevation: 116.55 feet (NAVD 88)

Comments: Dynamic cone penetration test performed adjacent to test pit.

Elevation (feet)	Depth (feet)	Sample Data: Type	Length (inches)	Number / Tests	Graphic Log	Material Description
116.5	0.0			G-1		Grass/root zone (12-inches thick).
				G-2		SANDY SILT (ML), (soft to medium stiff), dry, light brown, numerous organics (roots).
115.0	2.5			G-3 GS, WC		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), (medium dense), dry, light brown, fine to coarse rounded gravel. [ALPINE OUTWASH]
						mottling and staining at 3.5 ft
112.5				G-4		
	5.0					POORLY GRADED SAND (SP), trace fine gravel, (medium dense), dry, gray, fine sand.
110.0				G-5		
	7.5					POORLY GRADED SAND WITH GRAVEL (SP), trace cobble, (medium dense), dry, gray, fine to medium sand, fine to coarse gravel.
107.5						
	10.0			G-6		grades to moist to wet
105.0						
102.5	12.5					Bottom of Test Pit at 12.0 feet.

WC ● Fines Content (%) ✖ — 10 20 30 40

9 ✖ ●

DRAFT

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST, PACIFIC BEACH, WASHINGTON
Project No.: 0210245-002

Test Pit Log
TP-2

Figure **A-10**
Sheet **1 of 1**

HA TEST PIT - C:\USERS\KGUIBE\ONEDRIVE - HALEYALDRICH.COM\DESKTOP\HC_LIBRARY.GLB - #27736 10.07 - \\HALEYALDRICH.COM\SHARE\CR\PROJECTS\210245\002-PACIFIC BEACH ELEMENTARY RELOCATION\RENM GINT FILE\210245-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kbutler

Date Started: 06/23/2026 Date Completed: 06/23/2026 Contractor/Crew: Dan J. Fischer Excavating, Inc.

Logged by: S. Sirmans Checked by: K. Ahrens Rig Model/Type: Hitachi 26U / Mini excavator

Location: Lat: 47.213946 Long: -124.202510 (WGS 84) Total Depth: 10.0 feet Depth to Seepage: Not Encountered

Ground Surface Elevation: 120.10 feet (NAVD 88)

Comments: Dynamic cone penetration test performed adjacent to test pit.

120.0 Elevation (feet)	Depth (feet)	Sample Data: Type	Sample Data: Length (inches)	Sample Data: Number / Tests	Graphic Log	Material Description	PL / LL (10 20 30 40)	Depth (feet)
	0.0					Grass/root zone (6-inches thick).		0.0
				G-1		SANDY SILT (ML), (medium dense), dry, dark brown, moderate cementation, scattered organics (roots). [ALLUVIUM]		
				G-2				
117.5	2.5			G-3 / AL		SILT (ML), (medium dense), dry, dark brown, moderate cementation, scattered organics (roots).		2.5
				G-4		SILTY CLAY (CL-ML), (soft to medium stiff), moist, light brown, nonplastic, iron oxide staining.		
115.0	5.0					SANDY SILT (ML), trace fine founded gravel, (medium dense), dry, light brown, weak cementation.		5.0
				G-5		POORLY GRADED SAND WITH GRAVEL (SP), (medium dense), moist, brown, fine rounded sand. [ALPINE OUTWASH]		
112.5	7.5			G-6		grades to decreased gravel		7.5
110.0	10.0					Bottom of Test Pit at 10.0 feet.		10.0
107.5	12.5							12.5

DRAFT

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST, PACIFIC BEACH, WASHINGTON
Project No.: 0210245-002

Test Pit Log
TP-3

Figure **A-11**
Sheet **1 of 1**

HA TEST PIT - C:\USERS\BGUIBE\ONEDRIVE - HALEYALDRICH.COM\DESKTOP\HC_LIBRARY.GLB - #27736 10.07 - J:\HALEYALDRICH.COM\SHARE\CR\PROJECTS\0210245\RENU GINT FILE\0210245-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kbutler

Date Started: 06/23/2026 Date Completed: 06/23/2026 Contractor/Crew: Dan J. Fischer Excavating, Inc.

Logged by: S. Sirmans Checked by: K. Ahrens Rig Model/Type: Hitachi 26U / Mini excavator

Location: Lat: 47.214727 Long: -124.203205 (WGS 84) Total Depth: 12.0 feet Depth to Seepage: Not Encountered

Ground Surface Elevation: 120.24 feet (NAVD 88)

Comments: Dynamic cone penetration test performed adjacent to test pit.

Elevation (feet)	Depth (feet)	Sample Data: Type	Sample Data: Length (inches)	Sample Data: Number / Tests	Graphic Log	Material Description	PL / LL (10 20 30 40)	Depth (feet)
120.0	0.0			G-1		SANDY SILT (ML), (soft to medium stiff), dry, dark brown, organics (roots). [FILL]		0.0
				G-2 / AL				
117.5	2.5					SILTY CLAY (CL-ML), (soft to medium stiff), moist, light brown, nonplastic. [ALLUVIUM]		2.5
				G-3				
115.0	5.0					SILT (ML), (soft to medium stiff), dry, light brown, weak to moderate cementation, orange staining.		5.0
				G-4				
112.5	7.5					POORLY GRADED SAND WITH SILT (SP-SM), trace fine rounded to subrounded gravel, (medium dense), dry, red-brown. [ALPINE OUTWASH]		7.5
				G-5		POORLY GRADED SAND WITH GRAVEL (SP), (medium dense), moist, brown, fine to coarse sand, red staining.		
110.0	10.0			G-6		grades to wet, gray		10.0
107.5	12.5					Bottom of Test Pit at 12.0 feet.		12.5

DRAFT

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST, PACIFIC BEACH, WASHINGTON
Project No.: 0210245-002

Test Pit Log
TP-4

Figure **A-12**
Sheet **1 of 1**

HA TEST PIT - C:\USERS\BGUBEL\ONEDRIVE - HALEYALDRICH.COM\DESKTOP\HC_LIBRARY.GLB - 8/27/26 10:07 - \\HALEYALDRICH.COM\SHARE\CR\PROJECTS\0210245\RERM.GINT FILE\0210245-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kbutler

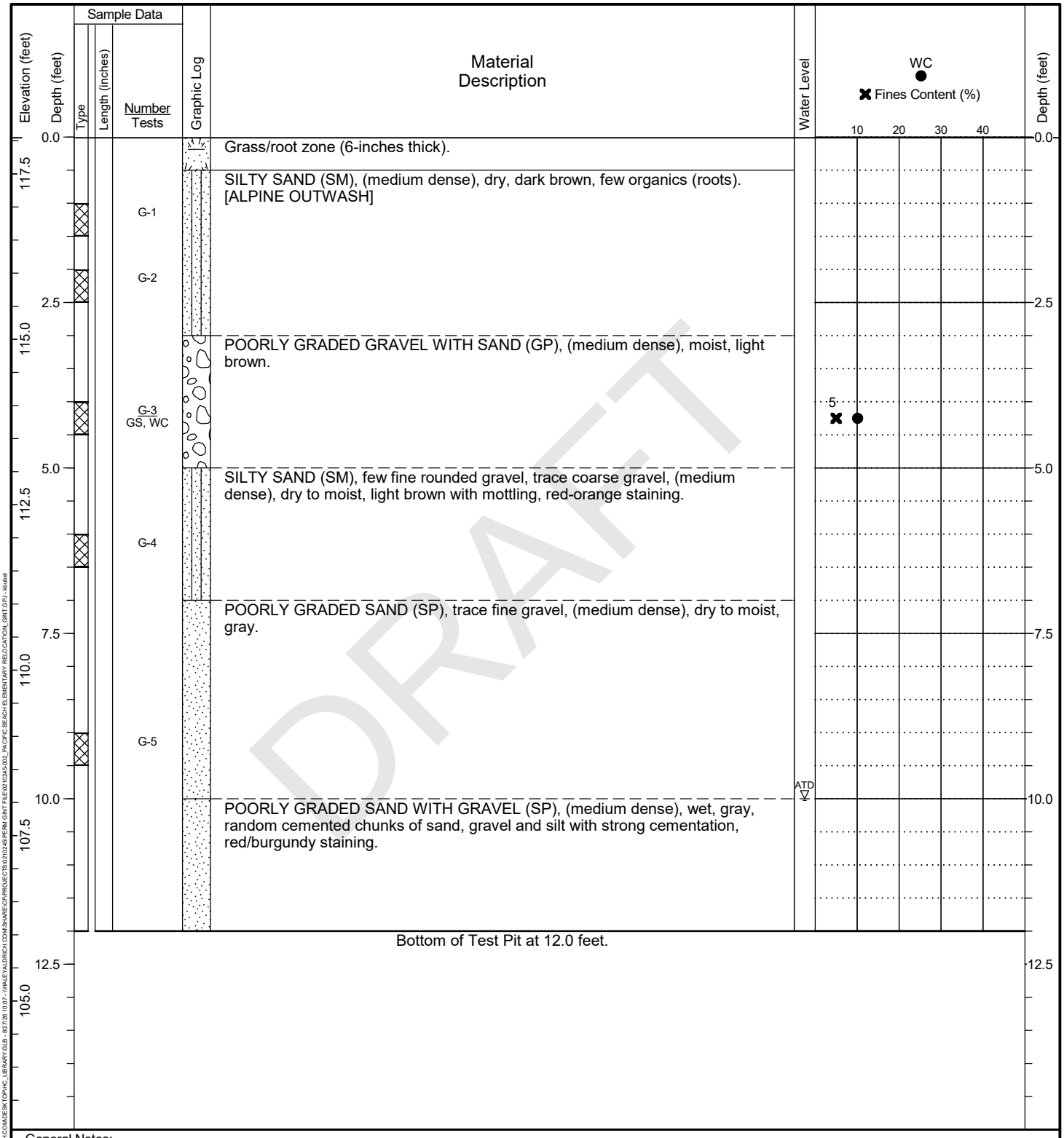
Date Started: 06/23/2026 Date Completed: 06/23/2026 Contractor/Crew: Dan J. Fischer Excavating, Inc.

Logged by: S. Sirmans Checked by: K. Ahrens Rig Model/Type: Hitachi 26U / Mini excavator

Location: Lat: 47.214477 Long: -124.201800 (WGS 84) Total Depth: 12.0 feet Depth to Seepage: 10 feet

Ground Surface Elevation: 118.06 feet (NAVD 88)

Comments: Dynamic cone penetration test performed adjacent to test pit.



General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST, PACIFIC BEACH, WASHINGTON
Project No.: 0210245-002

Test Pit Log
TP-5

Figure **A-13**
Sheet **1 of 1**

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HA TEST PIT - C:\USERS\KBUIBE\ONEDRIVE - HALEYALDRICH.COM\DESKTOP\HC_LIBRARY\GLB - 827736 10-07 - I:\HALEYALDRICH.COM\SHARES\CR\PROJECTS\0210245\002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT FILE\0210245-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kbuibe

Date Started: 06/24/2026 Date Completed: 06/24/2026 Contractor/Crew: Dan J. Fischer Excavating, Inc.

Logged by: S. Sirmans Checked by: K. Ahrens Rig Model/Type: Hitachi 26U / Mini excavator

Location: Lat: 47.215646 Long: -124.203148 (WGS 84) Total Depth: 12.0 feet Depth to Seepage: 8 feet

Ground Surface Elevation: 122.63 feet (NAVD 88)

Comments: Dynamic cone penetration test performed adjacent to test pit.

Elevation (feet)	Depth (feet)	Sample Data: Type	Length (inches)	Number / Tests	Graphic Log	Material Description	Water Level
122.5	0.0					Grass/root zone (12-inches thick).	
				G-1		SANDY SILT (ML), (soft to medium stiff), dry, dark brown, organics (roots). [FILL]	
120.0	2.5			G-2 GS, WC		SILTY SAND WITH GRAVEL (SM), (medium dense), dry, orange, fine to coarse rounded gravel. [ALPINE OUTWASH]	
				G-3		POORLY GRADED SAND WITH GRAVEL (SP), (medium dense), moist, gray, fine rounded gravel.	
117.5	5.0					grades to wet, red, fine to coarse rounded gravel, few cobbles	
				G-4			
115.0	7.5			G-5		grades to gray, fine gravel	ATD
				G-6			
112.5	10.0					water at bottom of excavation (~6-in.) after ~20 minutes	
110.0	12.5					Bottom of Test Pit at 12.0 feet.	

WC ● Fines Content (%) ✖ — 10 20 30 40 — Depth (feet)

8

DRAFT

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST, PACIFIC BEACH, WASHINGTON
Project No.: 0210245-002

Test Pit Log
TP-6

Figure **A-14**
Sheet **1 of 1**

HA TEST PIT - C:\USERS\BGUIBE\ONEDRIVE - HALEYALDRICH.COM\DESKTOP\HC_LIBRARY.GLB - 8/27/26 10:07 - J:\HALEYALDRICH.COM\SHARE\CR\PROJECTS\0210245\RENM GINT FILE\0210245-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kbutler

Date Started: 06/23/2026 Date Completed: 06/23/2026 Contractor/Crew: Dan J. Fischer Excavating, Inc.

Logged by: S. Sirmans Checked by: K. Ahrens Rig Model/Type: Hitachi 26U / Mini excavator

Location: Lat: 47.213897 Long: -124.201841 (WGS 84) Total Depth: 12.0 feet Depth to Seepage: Not Encountered

Ground Surface Elevation: 118.90 feet (NAVD 88)

Comments: Falling head infiltration test performed at 2.4 ft bgs.

Elevation (feet)	Depth (feet)	Sample Data: Type	Length (inches)	Number / Tests	Graphic Log	Material Description	WC / Fines Content (%)	Depth (feet)
	0.0					Grass/root zone (6-inches thick).		0.0
117.5				G-1		SILTY SAND (SM), (medium dense), dry, brown, scattered organics (roots). [FILL]		
	2.5			G-2 GS, WC		grades to trace organics	16	2.5
				G-3 GS, WC		SANDY SILT (ML), (soft to medium stiff), dry, brown, trace organics. [ALLUVIUM]	69	
115.0				G-4		SILT (ML), (soft to medium stiff), dry to moist, light brown.		
	5.0			G-5 GS, WC		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), few fine rounded gravel, (medium dense), dry, brown, fine rounded gravel. [ALPINE OUTWASH]	14	5.0
112.5				G-6				
	7.5					POORLY GRADED SAND WITH GRAVEL (SP), (medium dense), dry, gray, fine rounded gravel.		7.5
110.0				G-7				
	10.0					POORLY GRADED SAND (SP), (medium dense), dry, gray, fine sand, homogeneous.		10.0
107.5								
	12.5					Bottom of Test Pit at 12.0 feet.		12.5
105.0								

WC ● Fines Content (%) ✖ — 10 20 30 40

DRAFT

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST, PACIFIC BEACH, WASHINGTON
Project No.: 0210245-002

Test Pit Log
TP-7

Figure **A-15**
Sheet **1 of 1**

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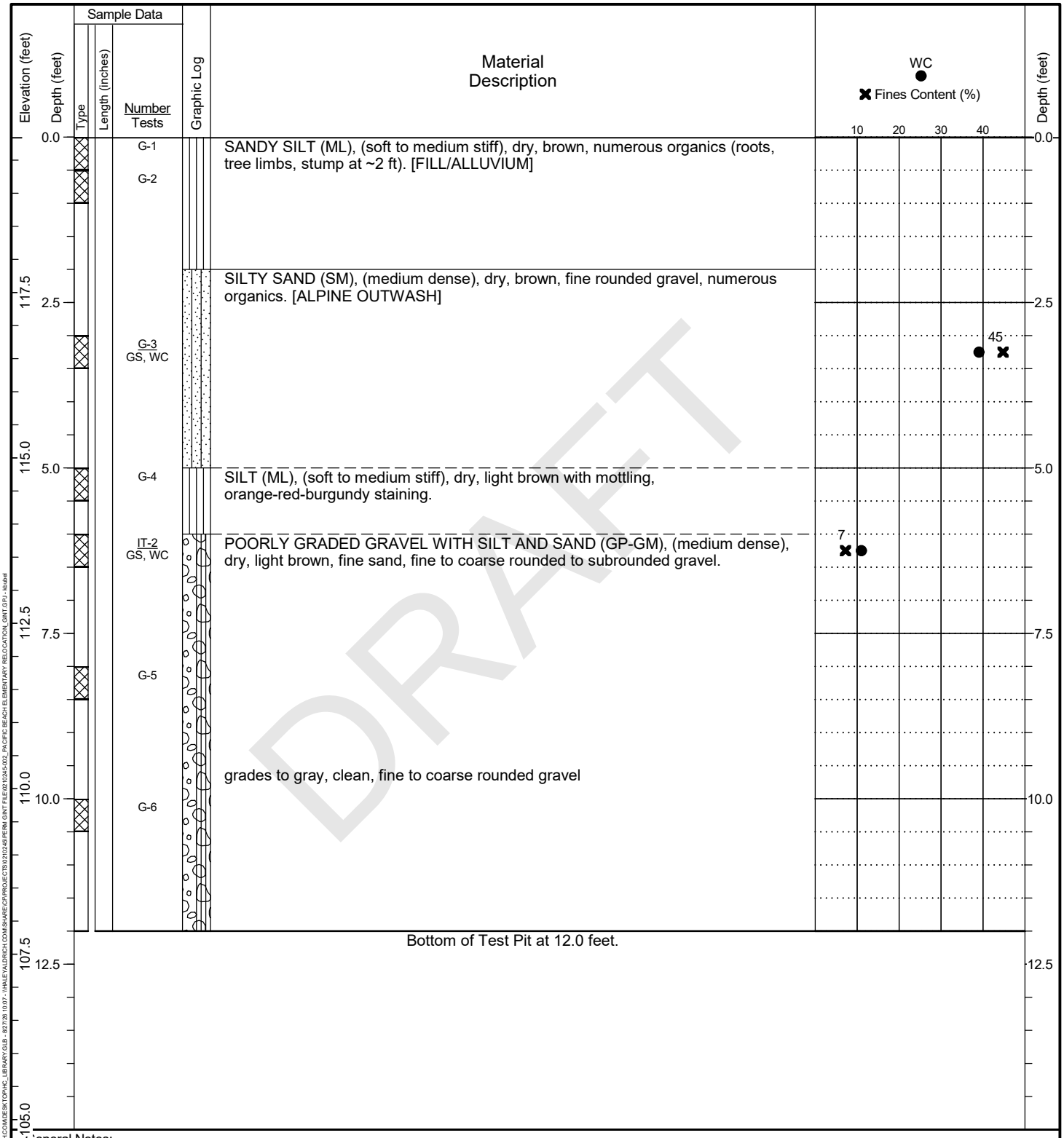
Date Started: 06/23/2026 Date Completed: 06/23/2026 Contractor/Crew: Dan J. Fischer Excavating, Inc.

Logged by: S. Sirmans Checked by: K. Ahrens Rig Model/Type: Hitachi 26U / Mini excavator

Location: Lat: 47.213689 Long: -124.201403 (WGS 84) Total Depth: 12.0 feet Depth to Seepage: Not Encountered

Ground Surface Elevation: 119.85 feet (NAVD 88)

Comments: Falling head infiltration tests performed at 5.7 and 6.8 ft bgs.



DRAFT

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

HALEY ALDRICH	Project: PACIFIC BEACH ELEMENTARY RELOCATION Location: 50 FIRST ST, PACIFIC BEACH, WASHINGTON Project No.: 0210245-002	Test Pit Log **TP-8**	Figure **A-16** Sheet **1 of 1**

HA TEST PIT - C:\USERS\BGUIBE\ONEDRIVE - HALEYALDRICH.COM\DESKTOP\HC_LIBRARY.GLB - 8/27/26 10:07 - \\HALEYALDRICH.COM\SHARE\CR\PROJECTS\0210245\RENU GINT FILE\0210245-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - bbutler

APPENDIX B
Laboratory Test Results

APPENDIX B

Laboratory Testing

GENERAL

A geotechnical laboratory testing program was performed for this study to evaluate the index and geotechnical engineering properties of the site soils. Representative disturbed and relatively undisturbed samples were selected for testing. The tests performed and the procedures followed are outlined below.

LABORATORIES

We transported soil samples from the explorations to our in-house laboratories in Portland, Oregon, and Seattle, Washington, and sent other samples to CERCO Analytical Inc. (CERCO Analytical) in Concord, California. Laboratory testing confirmed or refined the field classifications and evaluated the soils' engineering properties. Representative samples were selected for laboratory testing. Laboratory testing was conducted for each phase of field explorations. The specific tests conducted are outlined below and summarized in Figure B-1. The test results are included in this appendix, and, where noted, on the exploration logs in Appendix A.

VISUAL CLASSIFICATIONS

Soil samples from the explorations were visually classified in the field and then taken to our laboratory where the classifications were verified in a relatively controlled laboratory environment. The classifications of selected samples were checked by laboratory tests, such as water content, grain size distribution determination, fines content determinations, and Atterberg limits determinations. Classifications were made in general accordance with ASTM International (ASTM) D2487 "Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)".

HALEY & ALDRICH LABORATORY TESTING

Water Content

Moisture contents of samples were obtained in general accordance with ASTM Test Method D2216. The results of the moisture content tests completed on samples from the explorations are presented on the exploration logs included in Appendix A and in Figure B-1 of this appendix.

Atterberg Limits

Atterberg limits (liquid limit, plastic limit, and plasticity index) for selected fine-grained soil samples were determined in general accordance with ASTM Test Method D4318. The plastic limit is defined as the moisture content where the soil becomes brittle. The liquid limit is defined as the moisture content where the soil begins to act similar to a liquid. The plasticity index is the difference between the liquid and plastic limits. The results of the Atterberg limits analysis and the plasticity characteristics are plotted in Figure B-2, summarized in Figure B-1, and shown graphically on the appropriate exploration logs in Appendix A.

Grain Size Distribution

Sieve analysis were performed on selected samples to determine the quantitative distribution of particle sizes in the original sample. The tests were performed in general accordance with ASTM D6913 for the sieve analysis, and D421 and D422 for the hydrometer analysis. The test results are indicated on the exploration logs included in Appendix A and in Figure B-3 of this appendix.

Fines Content Analysis

Fines content analyses were performed to determine the percentage of soils finer than the U.S. Standard No. 200 mesh sieve—the boundary between sand and silt size particles. The tests were performed in general accordance with ASTM Test Method D1140. The test results are indicated on the exploration logs included in Appendix A and in Figure B-1 of this appendix.

Consolidation Analyses

One-dimensional consolidation tests were conducted to determine load reduction curves of a selected intact sample obtained from boring B-4. The test was performed in general accordance with ASTM D2435 (Incremental Consolidation). The relatively intact, fine-grained samples were carefully trimmed and fit into a rigid ring with porous stones placed on the top and bottom of the sample to allow drainage. Vertical loads were then applied to the samples such that the sample could consolidate under a given load condition. Measurements were recorded of the compression of the sample (with time) under a given load. Rebound was measured during unloading sequences. In general, the tests were performed until approximately 100 percent of primary consolidation was achieved. The test results are included in this appendix.

CERCO ANALYTICAL TESTING

CERCO Analytical performed a suite of tests to evaluate the corrosivity of the site soils. The tests are described below, and the results summarized in Table B-1. The CERCO Analytical lab report is included at the end of this appendix.

- Redox – The oxidation-reduction potential of the soil in water was obtained in general accordance with ASTM D1498.
- pH – The pH value of the samples was obtained in general accordance with ASTM D4972.
- Soil Resistivity – The resistivity of the samples was obtained in general accordance with ASTM G57.
- Sulfate – The concentration of sulfide in the samples was obtained in general accordance with ASTM D4327.
- Chloride – The concentration of chloride in the samples was obtained in general accordance with ASTM D4327.

Table B-1. Corrosion Potential Test Results			
Sample ID (Depth)	**Parameter**	**Test Result**	**Corrosion Potential Identified by CERCO Analytical**
B-2, P-1 (1 foot)	pH[a]	5.60	Mildly corrosive
	Resistivity (Ohm-cm[b])	46,000	
	Redox (mV[c])	260	
	Chloride (mg/kg[d])	19	
	Sulfate (mg/kg)	N.D.	
B-3, P-1 (2.5 feet)	pH	5.38	Negligibly corrosive
	Resistivity (Ohm-cm)	14,000	
	Redox (mV)	240	
	Chloride (mg/kg)	17	
	Sulfate (mg/kg)	N.D.	

Notes:

a. pH = hydrogen ion activity
b. Ohm-cm = ohms per centimeter
c. mV = millivolts
d. mg/kg = milligrams per kilogram
e. N.D. = not detected

Exploration	Sample ID	Depth	Gravel (%)	Sand (%)	Fines (%)	Liquid Limit	Plastic Limit	Water Content (%)	USCS Group Symbol	Soil Description
B-1/GW-1	S-1	5.0						13		
B-1/GW-1	S-2	7.5	43.8	55.4	0.8			13	SP	POORLY GRADED SAND WITH GRAVEL
B-1/GW-1	S-3	10.0	28.7	59.6	11.7			15	SP-SM	POORLY GRADED SAND WITH SILT AND GRAVEL
B-1/GW-1	S-4a	15.0	14.4	71.8	13.8			18	SM	SILTY SAND
B-1/GW-1	S-4b	15.5								
B-1/GW-1	S-5a	20.0						36		
B-1/GW-1	S-5b	20.8								
B-1/GW-1	S-6	25.0								
B-2	P-1	1.0	0.4	40.1	59.5	26	21	24	CL-ML	SANDY SILTY CLAY
B-2	S-1	5.0						17		
B-2	S-2	7.5	31.8	67.6	0.7			16	SP	POORLY GRADED SAND WITH GRAVEL
B-2	S-3	10.0								
B-2	S-4	15.0								
B-2	S-5	20.0								
B-3	P-1	2.5	0.1	18.3	81.6	30	23	28	CL-ML	SILTY CLAY WITH SAND
B-3	S-1	5.0						17		
B-3	S-2	7.5	44.7	54.5	0.8			13	SP	POORLY GRADED SAND WITH GRAVEL
B-3	S-3	10.0						15		
B-3	S-4	15.0								
B-4	P-1	5.0								
B-4	S-1	7.5						17		
B-4	S-2	10.0	45.5	54.1	0.3			17	SP	POORLY GRADED SAND WITH GRAVEL
B-4	S-3	15.0								
B-5	S-1	5.0	33.4	66.4	0.2			21	SP	POORLY GRADED SAND WITH GRAVEL
B-5	S-2	7.5						15		
B-5	S-3	10.0						14		
B-5	S-4	15.0	30.2	59.3	10.5			15	SP-SM	POORLY GRADED SAND WITH SILT AND GRAVEL
B-5	S-5	20.0				35	33	32	ML	SANDY SILT
B-5	S-6	25.0								
B-5	S-7	30.0						27		
B-5	S-8	35.0								
B-5	S-9	40.0	33.3	66.3	0.4			17	SP	POORLY GRADED SAND WITH GRAVEL
B-5	S-10	45.0								
B-5	S-11	50.0						19		

HALEY ALDRICH

Project: Pacific Beach Elementary School Relocation
Location: Pacific Beach, Washington
Project No.: 0210245-000

Summary of Laboratory Results

Figure **B-1**
Sheet **1 of 1**

SEATTLE - HALAB SUMMARY (FOR REPORTS) - \\HALEYALDRICH.COM\SHARES\PDX_DATA\GEO\MATCS\GINT\HC_LIBRARY.GLB - 5/12/17 10 - \\HALEYALDRICH.COM\SHARES\PROJECTS\0210245\PBEM GINT FILE\0210245-000_PACIFIC BEACH ELEMENTARY_GINT.GPJ - dlnapp

Exploration	Sample ID	Depth	Gravel (%)	Sand (%)	Fines (%)	Liquid Limit	Plastic Limit	Water Content (%)	USCS Group Symbol	Soil Description
B-6	G-1	0.5								
B-6	G-2	1.5	0.0	20.2	79.8			39	ML	SILT WITH SAND
B-6	G-3	2.0								
B-6	S-4	2.5								
B-6	S-5	5.0								
B-6	S-6	7.5								
B-6	S-7	10.0	46.2	42.8	11.0			15	GP-GM	POORLY GRADED GRAVEL WITH SILT AND SAND
B-6	S-8	15.0								
B-6	S-9	20.0								
B-6	S-10	25.0								
B-6	S-11	30.0								
B-7	G-1	0.5								
B-7	G-2	1.0								
B-7	G-3	2.0								
B-7	S-4	2.5								
B-7	S-5	5.0								
B-7	S-6	7.5								
B-7	S-7	10.0	43.0	45.9	11.1			17	SP-SM	POORLY GRADED SAND WITH SILT AND GRAVEL
B-7	S-8	15.0								
B-7	S-9	20.0	45.0	35.3	19.7	50	35	22	GM	SILTY GRAVEL WITH SAND
B-7	S-10	25.0								
B-7	S-11	30.0								
TP-1	G-1	1.0								
TP-1	G-2	2.0								
TP-1	G-3	4.0	41.0	42.4	16.6			18	SM	SILTY SAND WITH GRAVEL
TP-1	G-4	6.0								
TP-1	G-5	8.0								
TP-1	G-6	10.0								
TP-2	G-1	0.0								
TP-2	G-2	1.0								
TP-2	G-3	3.0	40.5	50.9	8.6			18	SP-SM	POORLY GRADED SAND WITH SILT AND GRAVEL
TP-2	G-4	4.0								
TP-2	G-5	7.0								
TP-2	G-6	10.0								
TP-3	G-1	1.0								
TP-3	G-2	1.5								
TP-3	G-3	2.0				48	43		ML	SILT
TP-3	G-4	4.0								
TP-3	G-5	6.0								
TP-3	G-6	8.0								
TP-4	G-1	0.0								
TP-4	G-2	2.0				34	27		ML	SANDY SILT
TP-4	G-3	4.0								
TP-4	G-4	6.0								
TP-4	G-5	8.0								
TP-4	G-6	10.0								
TP-5	G-1	1.0								

HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST
Project No.: 0210245-002

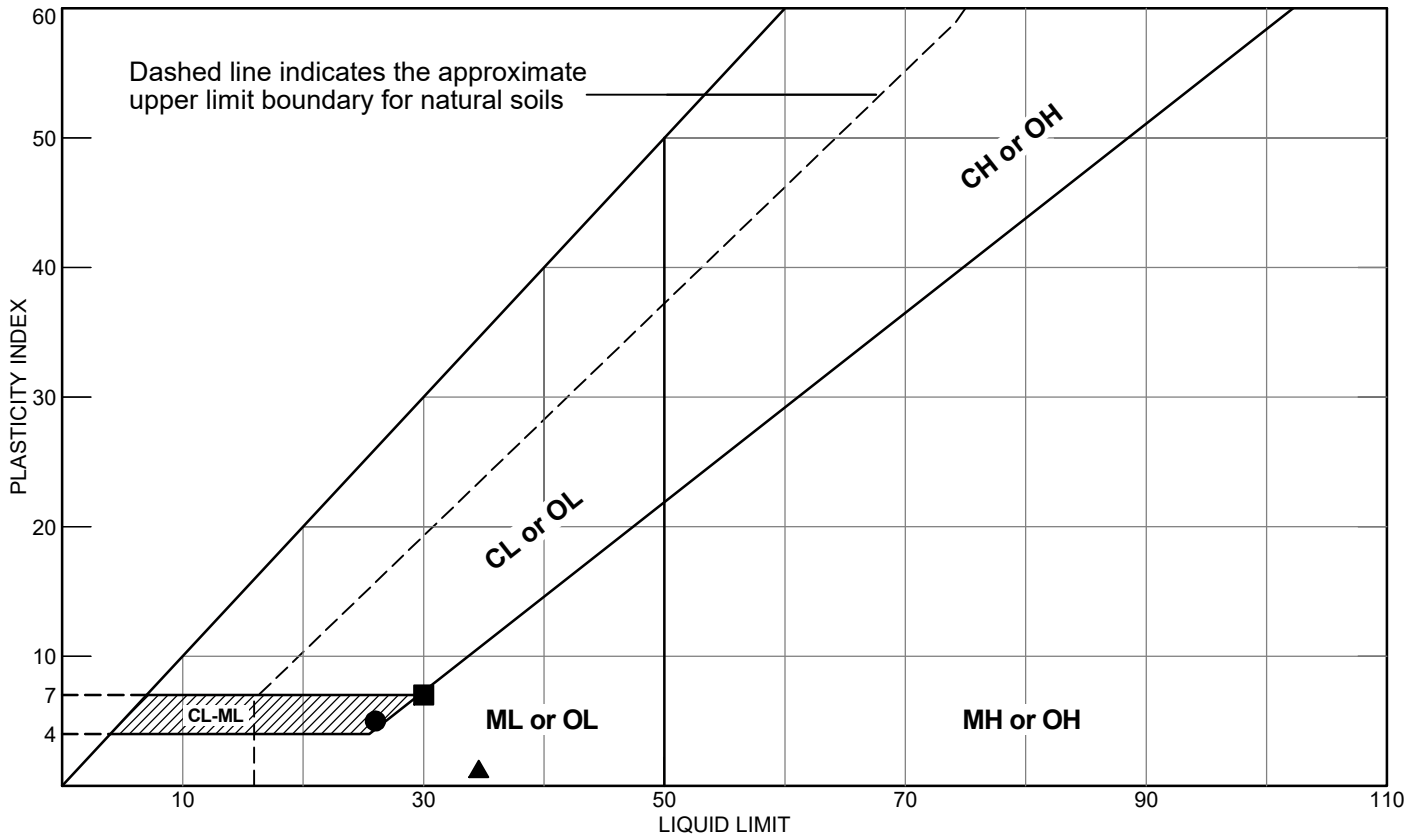
Summary of Laboratory Results

Figure **B-1**
Sheet **1 of 2**

SEATTLE - HA_LAB SUMMARY (FOR REPORTS) - \\HALEYALDRICH.COM\SHAREPOX_DATA\GEOMATICS\GINTHC_LIBRARY.GLB - 8/5/26 09:17 - C:\USERS\KAHRENS\ONEDRIVE - HALEYALDRICH.COM\DATA MANAGEMENT & VISUALIZATION_ GINT PROJECTS\02 1024502 1024502_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kahrens

Exploration	Sample ID	Depth	Gravel (%)	Sand (%)	Fines (%)	Liquid Limit	Plastic Limit	Water Content (%)	USCS Group Symbol	Soil Description
TP-5	G-2	2.0								
TP-5	G-3	4.0	58.0	37.0	5.0			10	GP	POORLY GRADED GRAVEL WITH SAND
TP-5	G-4	6.0								
TP-5	G-5	9.0								
TP-6	G-1	1.0								
TP-6	G-2	2.0	48.0	44.3	7.7			16	GP-GM	POORLY GRADED GRAVEL WITH SILT AND SAND
TP-6	G-3	4.0								
TP-6	G-4	7.0								
TP-6	G-5	8.0								
TP-6	G-6	9.0								
TP-7	G-1	1.0								
TP-7	G-2	2.0	2.1	81.6	16.3			46	SM	SILTY SAND
TP-7	G-3	3.0	0.8	30.3	68.9			47	ML	SANDY SILT
TP-7	G-4	4.0								
TP-7	G-5	5.0	38.3	47.5	14.2			17	SP-SM	POORLY GRADED SAND WITH SILT AND GRAVEL
TP-7	G-6	6.0								
TP-7	G-7	9.0								
TP-8	G-1	0.0								
TP-8	G-2	0.5								
TP-8	G-3	3.0	8.9	46.3	44.8			39	SM	SILTY SAND
TP-8	G-4	5.0								
TP-8	IT-2	6.0	64.3	28.5	7.2			11	GP-GM	POORLY GRADED GRAVEL WITH SILT AND SAND
TP-8	G-5	8.0								
TP-8	G-6	10.0								

SEATTLE - HA LAB SUMMARY (FOR REPORTS) - \\HALEYALDRICH.COM\SHAREPOX_DATA\GEOMATICS\GINTHC_LIBRARY.GLB - 8/5/26 09:17 - C:\USERS\KAHRENS\ONEDRIVE - HALEYALDRICH.COM\DATA MANAGEMENT & VISUALIZATION - GINT PROJECTS\02 1024\02 1024\5-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kahrens



Location and Description	LL	PL	PI	-#200	MC%	USCS
● **Source:** B-2 **Sample No.:** P-1 **Depth:** 1.0 to 2.7 SANDY SILTY CLAY	26	21	5	60	24	CL-ML
■ **Source:** B-3 **Sample No.:** P-1 **Depth:** 2.5 to 4.5 SILTY CLAY WITH SAND	30	23	7	82	28	CL-ML
▲ **Source:** B-5 **Sample No.:** S-5 **Depth:** 20.0 to 21.5 SANDY SILT	35	33	2	NT	32	ML

Remarks:

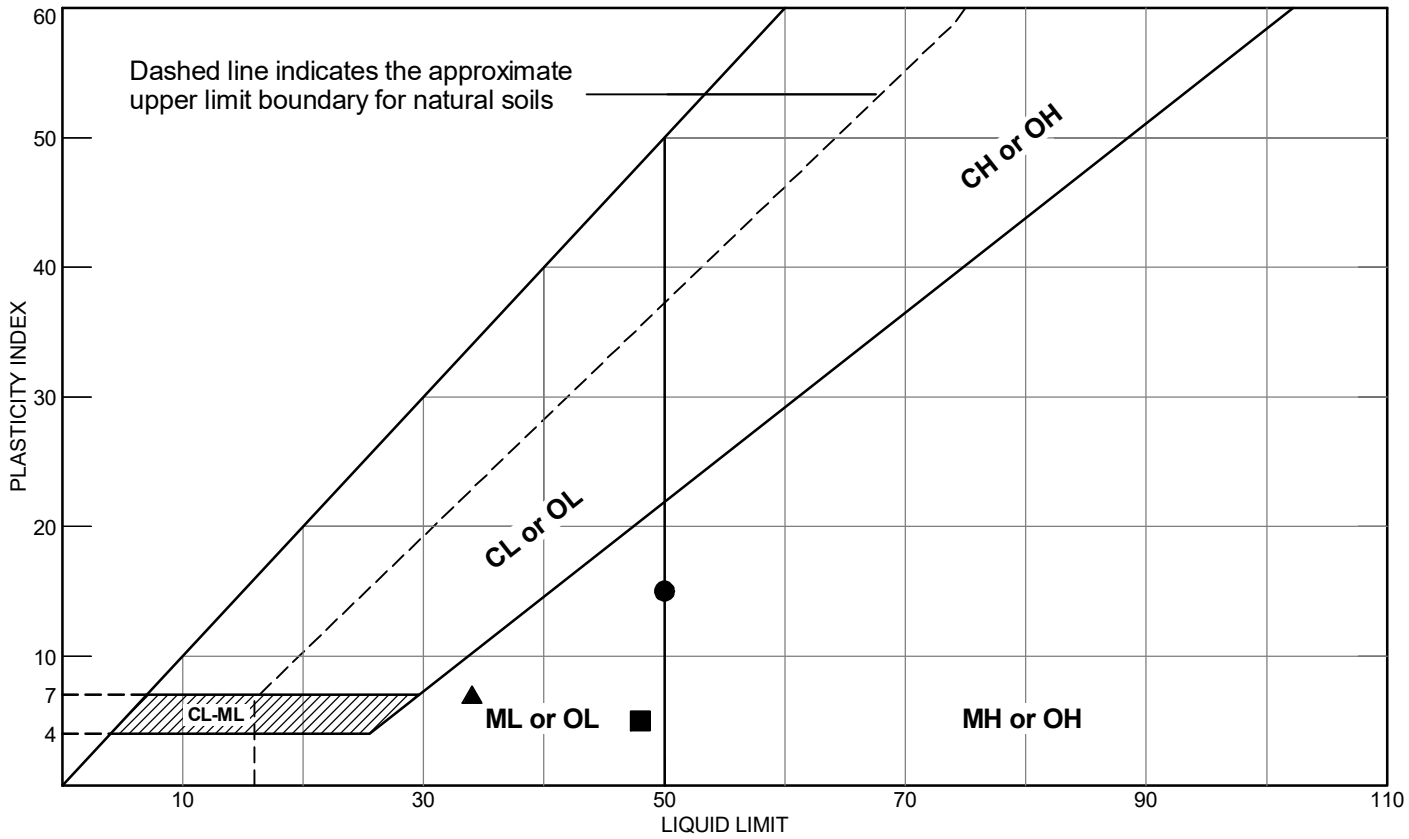
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HALEY ALDRICH	Project: Pacific Beach Elementary School Relocation Location: Pacific Beach, Washington Project No.: 0210245-000	**Liquid Limit, Plastic Limit, and Plasticity Index**	Figure **B-2** Sheet **1 of 1**

ATTERBERG LIMITS STD - \\HALEYALDRICH.COM\SHARE\PDX_DATA\GEOMATICS\GINT\HC_LIBRARY.GLB - 5/12/4 17:19 - \\HALEYALDRICH.COM\SHARE\GPS\PROJECTS\02 10245\PERM GINT FILE\02 10245-000_PACIFIC BEACH ELEMENTARY_GINT.GPJ - dlnewp



Location and Description	LL	PL	PI	-#200	MC%	USCS
● **Source:** B-7 **Sample No.:** S-9 **Depth:** 20.0 to 21.5 SILTY GRAVEL WITH SAND	50	35	15	20	22	GM
■ **Source:** TP-3 **Sample No.:** G-3 **Depth:** 2.0 to 2.5 SILT	48	43	5	NT	NT	ML
▲ **Source:** TP-4 **Sample No.:** G-2 **Depth:** 2.0 to 2.5 SANDY SILT	34	27	7	NT	NT	ML

Remarks:

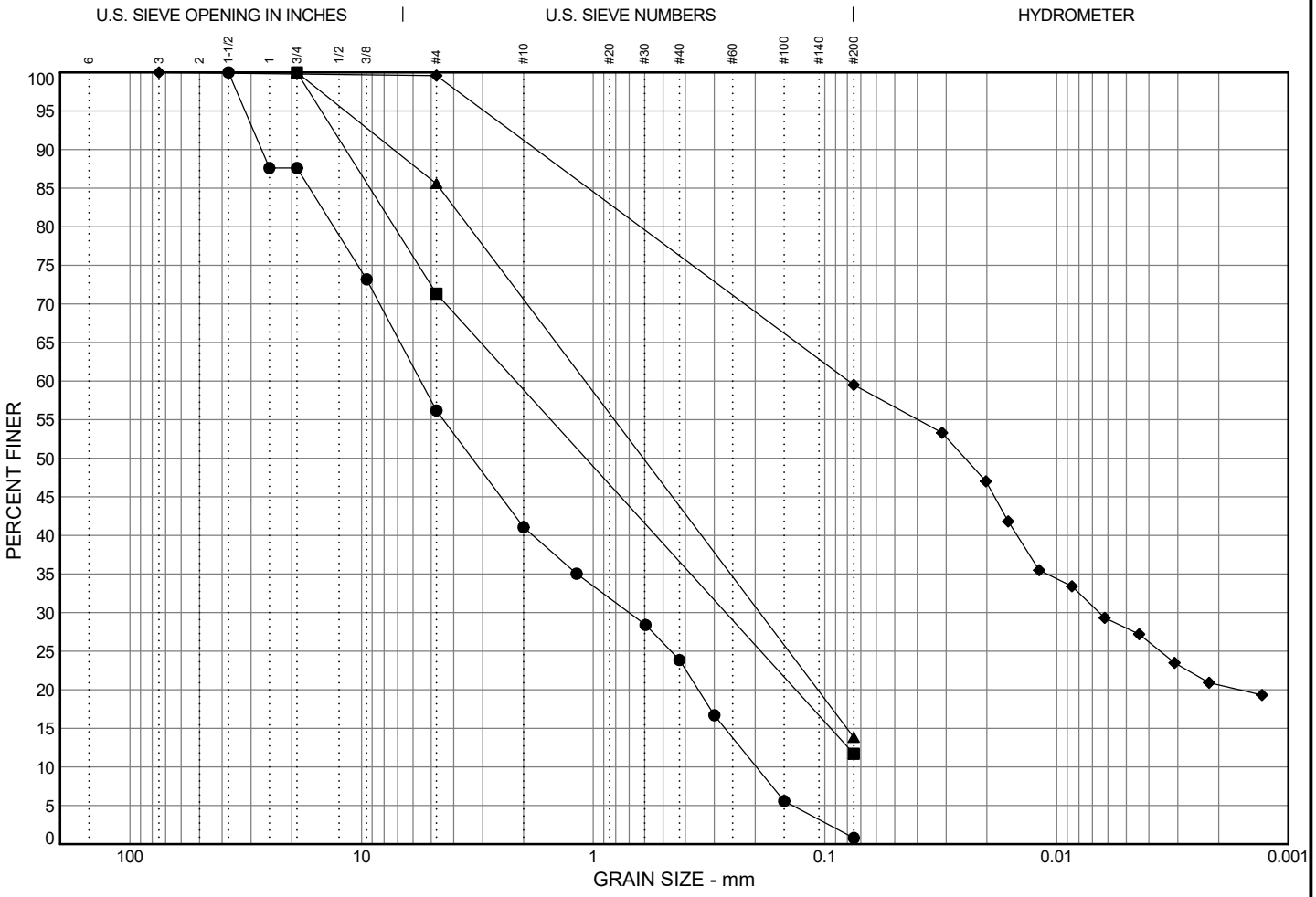
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HALEY ALDRICH	Project: PACIFIC BEACH ELEMENTARY RELOCATION Location: 50 FIRST ST Project No.: 0210245-002	**Liquid Limit, Plastic Limit, and Plasticity Index**	Figure **B-2** Sheet **1 of 1**

HA ATTERBERG LIMITS STD - \\HALEYALDRICH.COM\SHARE\PDX_DATA\GEOMATICS\GINT\HC_LIBRARY.GLB - 8/9/26 09:16 - C:\USERS\KAHRENS\ONEDRIVE - HALEYALDRICH.COM\DATA MANAGEMENT & VISUALIZATION - GINT PROJECTS\0210245\0210245-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kahrens



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Location and Description	% Cobbles	% Gravel	% Sand	% Silt	% Clay	MC%	USCS
● **Source:** B-1/GW-1 **Sample No.:** S-2 **Depth:** 7.5 to 9.0 POORLY GRADED SAND WITH GRAVEL	0.0	43.8	55.4	0.8		13	SP
■ **Source:** B-1/GW-1 **Sample No.:** S-3 **Depth:** 10.0 to 11.5 POORLY GRADED SAND WITH SILT AND GRAVEL	0.0	28.7	59.6	11.7		15	SP-SM
▲ **Source:** B-1/GW-1 **Sample No.:** S-4a **Depth:** 15.0 to 15.5 SILTY SAND	0.0	14.4	71.8	13.8		18	SM
◆ **Source:** B-2 **Sample No.:** P-1 **Depth:** 1.0 to 2.7 SANDY SILTY CLAY	0.0	0.4	40.1	31.5	28.0	24	CL-ML

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			16.760	5.550	3.335	0.702	0.270	0.198	0.45	28.08
■			9.198	2.159	1.077	0.268	0.094		0.50	32.38
▲			4.592	1.082	0.607	0.191	0.080			
◆	26	5	1.049	0.079	0.025	0.007				

Remarks:

●

■

▲

◆

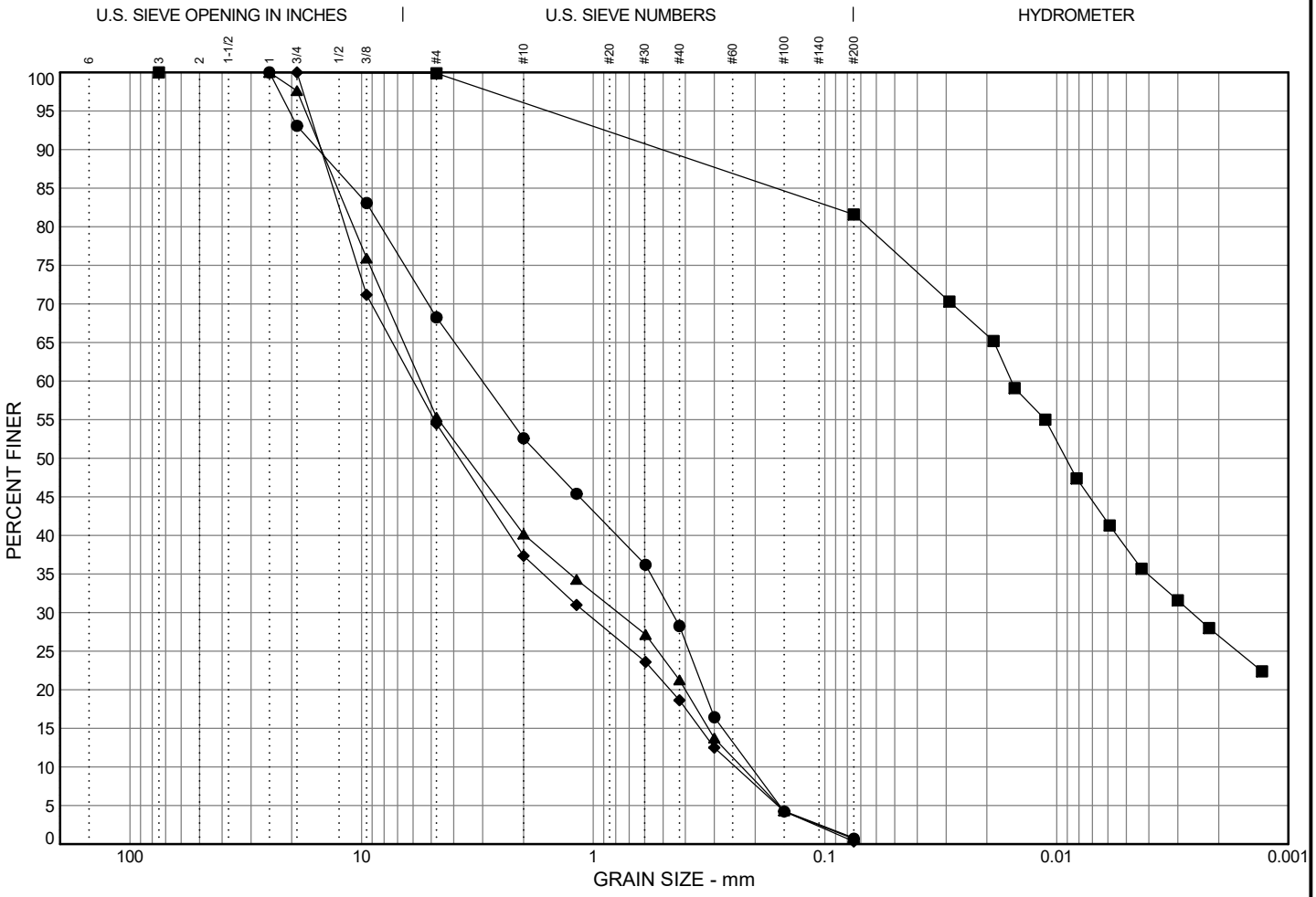
HALEY ALDRICH

Project: Pacific Beach Elementary School Relocation
Location: Pacific Beach, Washington
Project No.: 0210245-000

Particle-Size Analysis

Figure **B-3**
Sheet **1 of 3**

HA GRAIN SIZE - I:\HALEYALDRICH.COM\SHARE\PDX_DATA\GEOMATICS\GINT\HC_LIBRARY (GLB - 5/1/24 17:19 - I:\HALEYALDRICH.COM\SHARE\CPR\PROJECTS\0210245\PERM\GINT FILE\0210245-000_PACIFIC BEACH ELEMENTARY_GINT.GPJ - dlm/wp



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Location and Description	% Cobbles	% Gravel	% Sand	% Silt	% Clay	MC%	USCS
● **Source:** B-2 **Sample No.:** S-2 **Depth:** 7.5 to 9.0 POORLY GRADED SAND WITH GRAVEL	0.0	31.8	67.6	0.7		16	SP
■ **Source:** B-3 **Sample No.:** P-1 **Depth:** 2.5 to 4.5 SILTY CLAY WITH SAND	0.0	0.1	18.3	43.2	38.4	28	CL-ML
▲ **Source:** B-3 **Sample No.:** S-2 **Depth:** 7.5 to 9.0 POORLY GRADED SAND WITH GRAVEL	0.0	44.7	54.5	0.8		13	SP
◆ **Source:** B-4 **Sample No.:** S-2 **Depth:** 10.0 to 11.5 POORLY GRADED SAND WITH GRAVEL	0.0	45.5	54.1	0.3		17	SP

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			10.854	3.012	1.654	0.458	0.277	0.208	0.33	14.47
■	30	7	0.162	0.016	0.009	0.003				
▲			12.692	5.559	3.506	0.782	0.318	0.228	0.48	24.36
◆			13.246	5.972	3.787	1.078	0.346	0.243	0.80	24.58

Remarks:

● ■ ▲ ◆

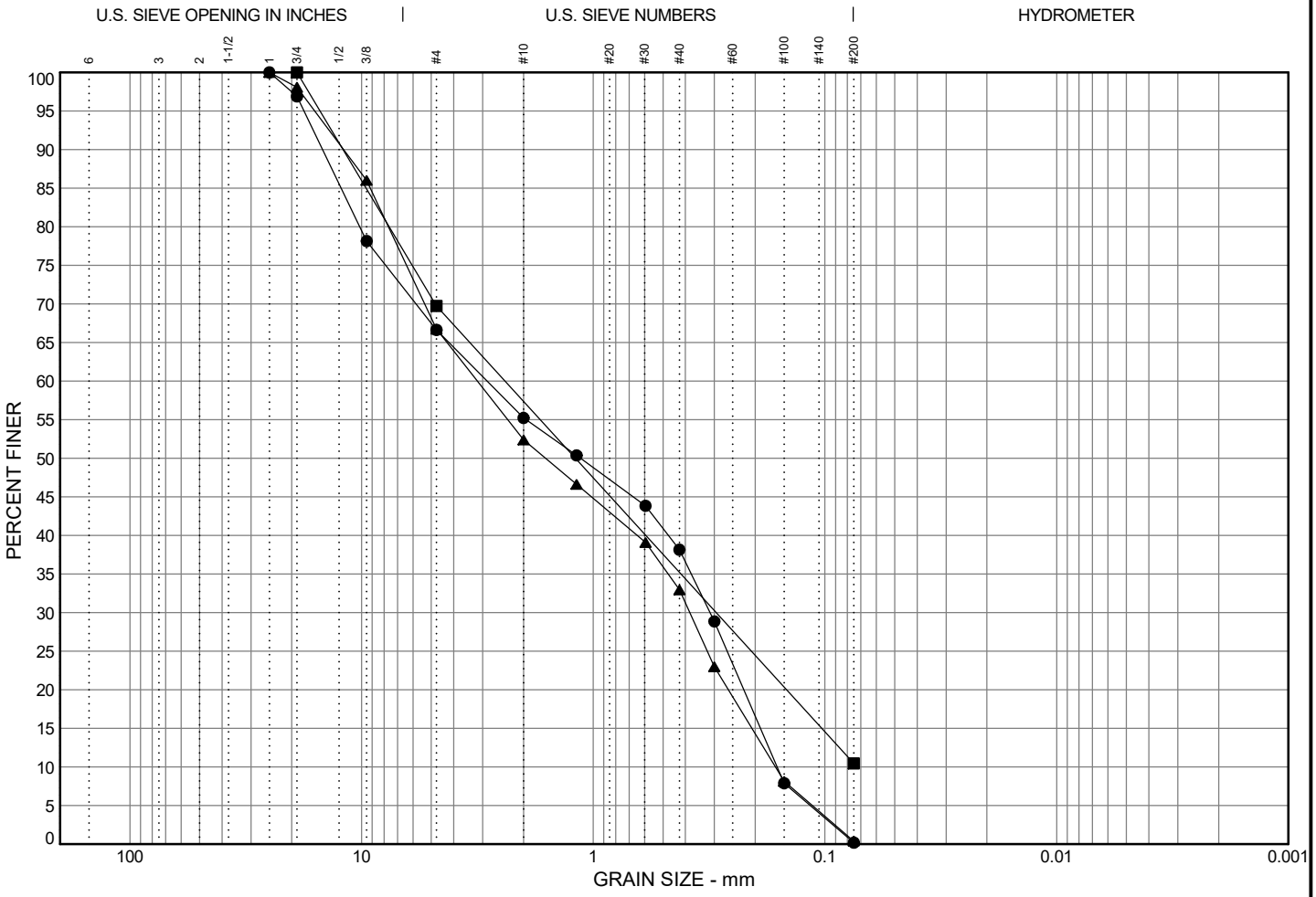
HALEY ALDRICH

Project: Pacific Beach Elementary School Relocation
Location: Pacific Beach, Washington
Project No.: 0210245-000

Particle-Size Analysis

Figure **B-3**
Sheet **2 of 3**

HA GRAIN SIZE - \\HALEYALDRICH.COM\SHARE\PDX_DATA\GEOMATICS\GINTHC_LIBRARY (GLB - 5/1/24 17:19 - \\HALEYALDRICH.COM\SHARE\CORPROJECTS\02\10245-000_PACIFIC BEACH ELEMENTARY_GINT.GPJ - dlm/wp



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Location and Description	% Cobbles	% Gravel	% Sand	% Silt	% Clay	MC%	USCS
● **Source:** B-5 **Sample No.:** S-1 **Depth:** 5.0 to 6.5 POORLY GRADED SAND WITH GRAVEL	0.0	33.4	66.4	0.2		21	SP
■ **Source:** B-5 **Sample No.:** S-4 **Depth:** 15.0 to 16.5 POORLY GRADED SAND WITH SILT AND GRAVEL	0.0	30.2	59.3	10.5		15	SP-SM
▲ **Source:** B-5 **Sample No.:** S-9 **Depth:** 40.0 to 41.5 POORLY GRADED SAND WITH GRAVEL	0.0	33.3	66.3	0.4		17	SP

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			12.240	2.873	1.136	0.313	0.190	0.161	0.21	17.86
■			9.555	2.401	1.193	0.294	0.103		0.50	33.04
▲			9.160	3.167	1.608	0.383	0.207	0.164	0.28	19.35

Remarks:

● ■ ▲

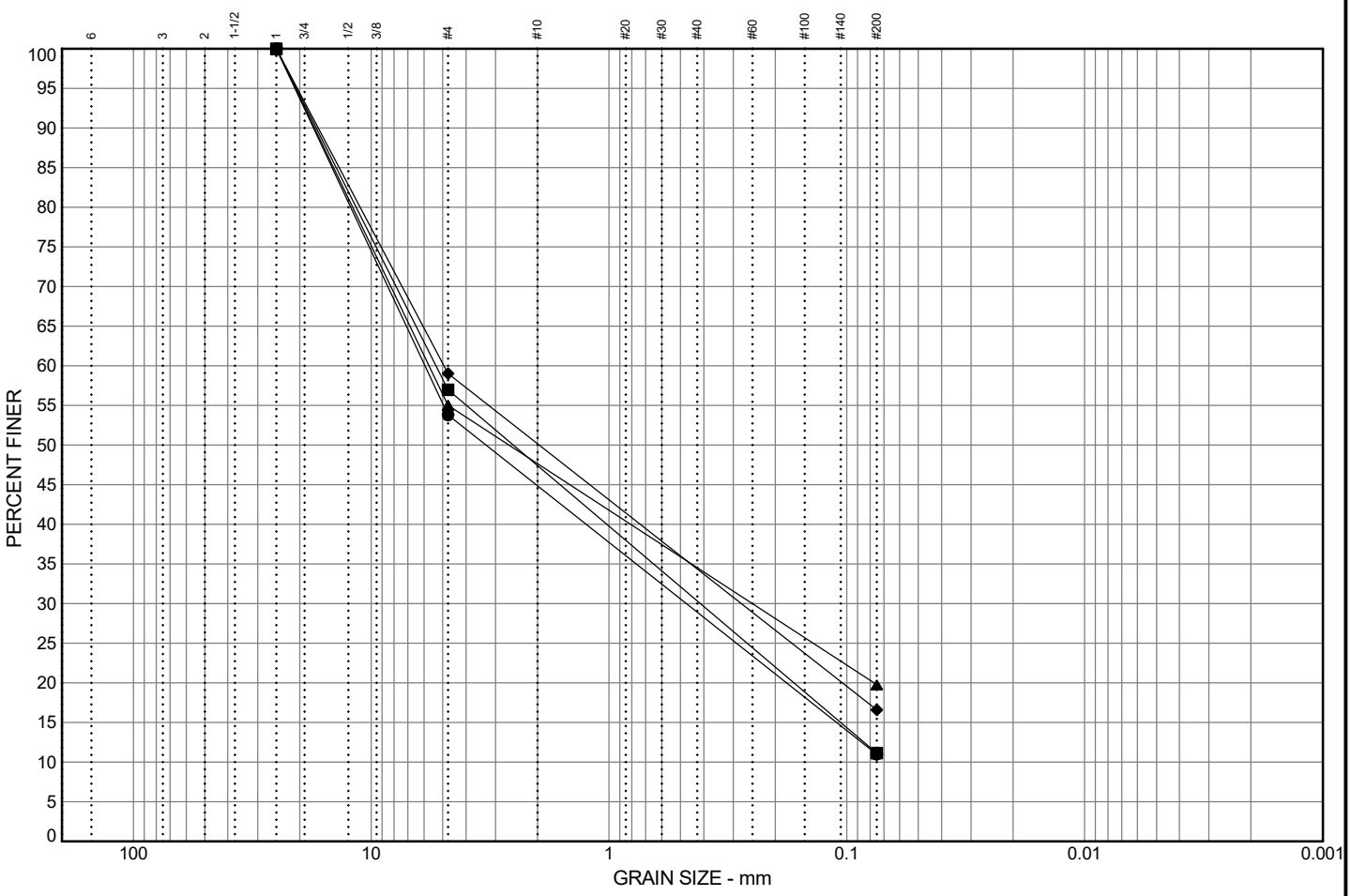
HALEY ALDRICH

Project: Pacific Beach Elementary School Relocation
Location: Pacific Beach, Washington
Project No.: 0210245-000

Particle-Size Analysis

Figure **B-3**
Sheet **3 of 3**

HA GRAIN SIZE - I:\HALEYALDRICH.COM\SHARE\PDX_DATA\GEOMATICS\GINT\HC_LIBRARY (GLB - 6/1/24 17:19 - I:\HALEYALDRICH.COM\SHARE\CORPROJECTS\02\10245-000_PACIFIC BEACH ELEMENTARY_GINT FILE\02\10245\REPM GINT FILE\02\10245-000_PACIFIC BEACH ELEMENTARY_GINT.GPJ - dlm.tmp



Location and Description	% Cobbles	% Gravel	% Sand	% Silt	% Clay	MC%	USCS
● **Source:** B-6 **Sample No.:** S-7 **Depth:** 10.0 to 11.5 POORLY GRADED GRAVEL WITH SILT AND SAND	0.0	46.2	42.8	11.0		15	GP-GM
■ **Source:** B-7 **Sample No.:** S-7 **Depth:** 10.0 to 11.5 POORLY GRADED SAND WITH SILT AND GRAVEL	0.0	43.0	45.9	11.2		17	SP-SM
▲ **Source:** B-7 **Sample No.:** S-9 **Depth:** 20.0 to 21.5 SILTY GRAVEL WITH SAND	0.0	45.0	35.3	19.7		22	GM
◆ **Source:** TP-1 **Sample No.:** G-3 **Depth:** 4.0 to 4.5 SILTY SAND WITH GRAVEL	0.0	41.0	42.4	16.6		18	SM

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			14.580	5.936	3.287	0.473	0.111		0.55	87.11
■			14.007	5.334	2.521	0.413	0.106		0.47	78.91
▲	50	15	14.372	5.713	2.638	0.251				
◆			13.617	4.946	1.969	0.278				

Remarks:

● ■ ▲ ◆

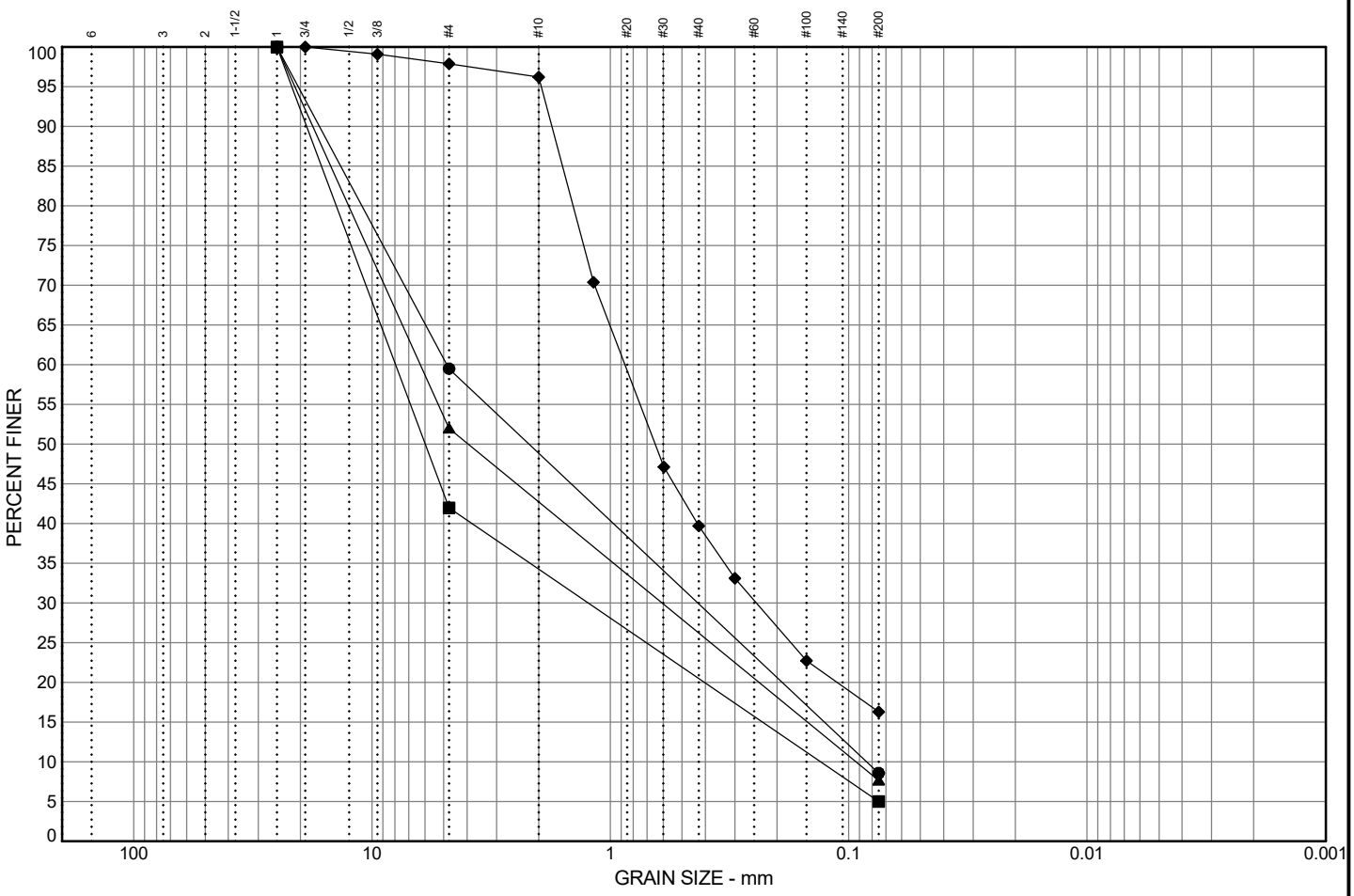
HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST
Project No.: 0210245-002

Particle-Size Analysis

Figure **B-3**
Sheet **1 of 3**

HA GRAIN SIZE - \\HALEYALDRICH.COM\SHARE\PDX_DATA\GEOMATICS\GINT\HC_LIBRARY.GLB - 8/6/26 09:16 - C:\USERS\KAWRENSON\ONEDRIVE - HALEYALDRICH.COM\DATA MANAGEMENT & VISUALIZATION - GINT PRO_SCT\SG\210245\0210245-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kawrens



Location and Description	% Cobbles	% Gravel	% Sand	% Silt	% Clay	MC%	USCS
● **Source:** TP-2 **Sample No.:** G-3 **Depth:** 3.0 to 3.5 POORLY GRADED SAND WITH SILT AND GRAVEL	0.0	40.5	50.9	8.6		18	SP-SM
■ **Source:** TP-5 **Sample No.:** G-3 **Depth:** 4.0 to 4.5 POORLY GRADED GRAVEL WITH SAND	0.0	58.0	37.0	5.0		10	GP
▲ **Source:** TP-6 **Sample No.:** G-2 **Depth:** 2.0 to 2.5 POORLY GRADED GRAVEL WITH SILT AND SAND	0.0	48.0	44.3	7.7		16	GP-GM
◆ **Source:** TP-7 **Sample No.:** G-2 **Depth:** 2.0 to 2.5 SILTY SAND	0.0	2.1	81.6	16.3		46	SM

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			13.515	4.848	2.191	0.429	0.127	0.084	0.45	57.58
■			16.271	7.953	5.973	1.237	0.230	0.131	1.46	60.59
▲			14.878	6.265	3.939	0.606	0.149	0.093	0.63	67.22
◆			1.591	0.869	0.648	0.244				

Remarks:

● ■ ▲ ◆

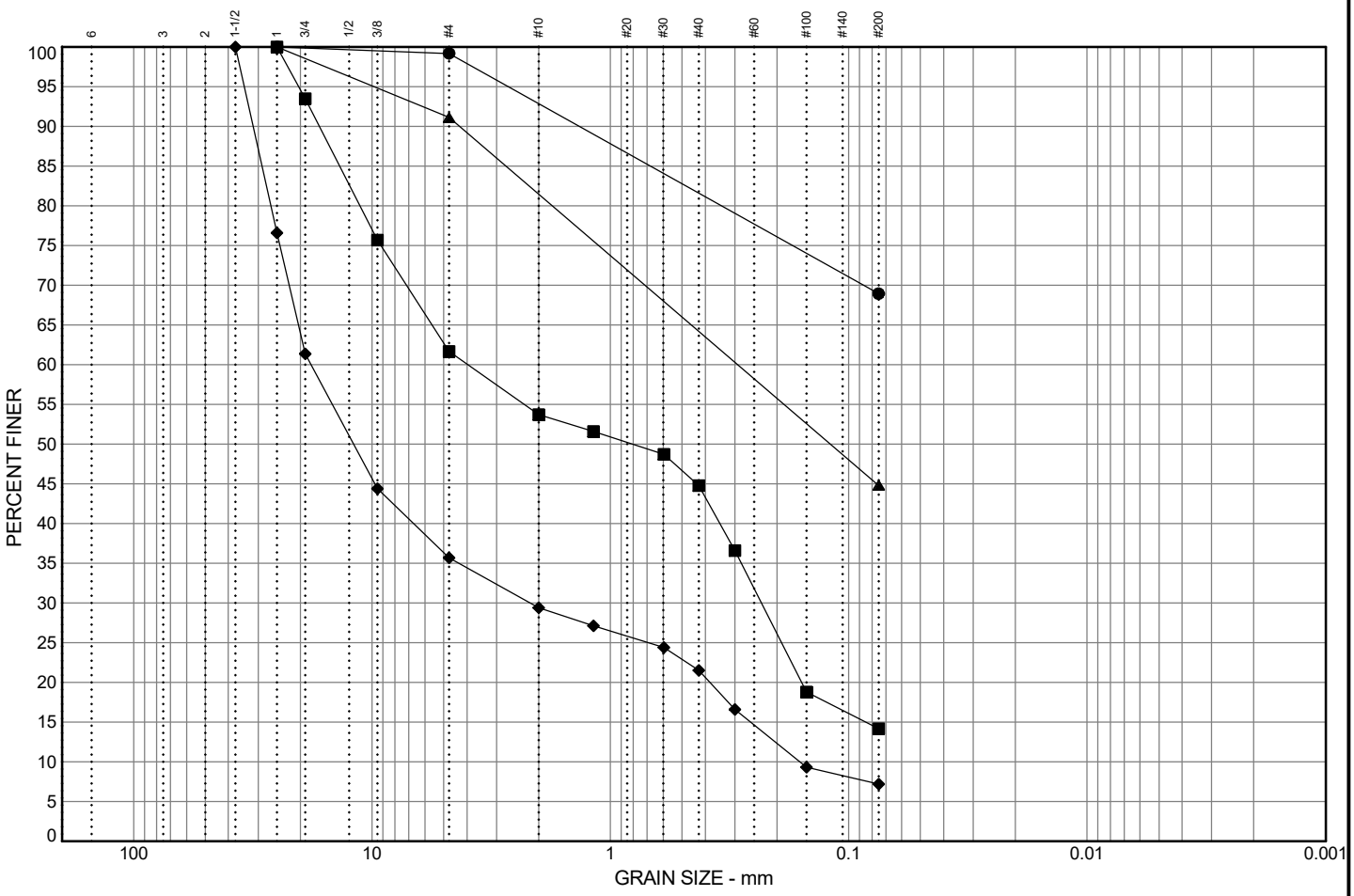
HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST
Project No.: 0210245-002

Particle-Size Analysis

Figure **B-3**
Sheet **2 of 3**

HA_GRAIN SIZE - \\HALEYALDRICH.COM\SHARE\PDX_DATA\GEOMATICS\GINT\HC_LIBRARY.GLB - 8/9/26 09:16 - C:\USERS\KAWRENSON\DESKTOP\HALEYALDRICH.COM\DATA MANAGEMENT & VISUALIZATION - GINT PROJECTS\0210245\0210245-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kawrens



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Location and Description	% Cobbles	% Gravel	% Sand	% Silt	% Clay	MC%	USCS
● **Source:** TP-7 **Sample No.:** G-3 **Depth:** 3.0 to 3.5 SANDY SILT	0.0	0.8	30.3	68.9		47	ML
■ **Source:** TP-7 **Sample No.:** G-5 **Depth:** 5.0 to 5.5 POORLY GRADED SAND WITH SILT AND GRAVEL	0.0	38.3	47.5	14.2		17	SP-SM
▲ **Source:** TP-8 **Sample No.:** G-3 **Depth:** 3.0 to 3.5 SILTY SAND	0.0	8.9	46.3	44.8		39	SM
◆ **Source:** TP-8 **Sample No.:** IT-2 **Depth:** 6.0 to 6.5 POORLY GRADED GRAVEL WITH SILT AND SAND	0.0	64.3	28.5	7.2		11	GP-GM

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.678							
■			13.646	3.952	0.809	0.232	0.085			
▲			2.750	0.293	0.120					
◆			28.917	17.946	11.937	2.172	0.258	0.160	1.64	111.95

Remarks:

● ■ ▲ ◆

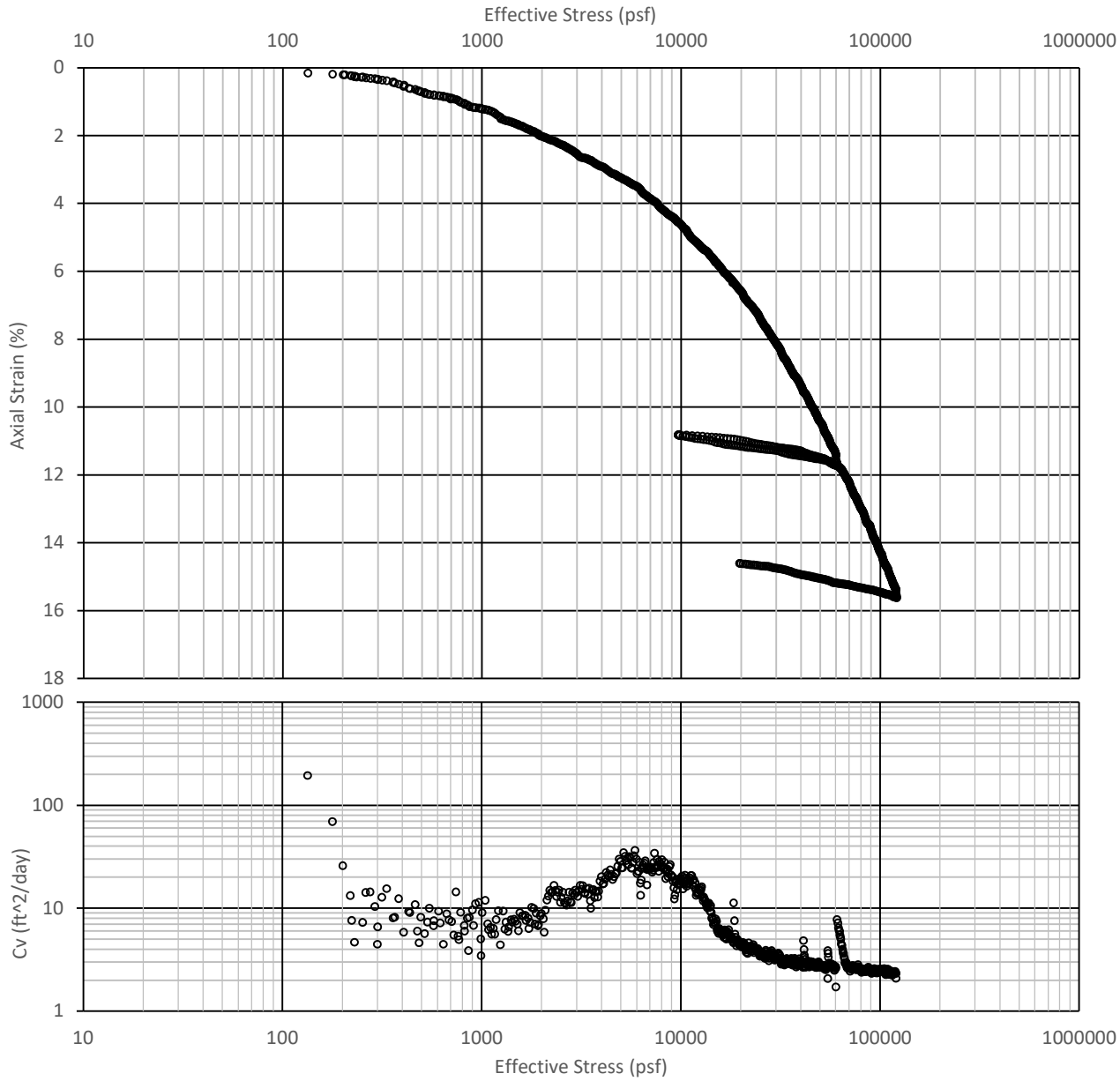
HALEY ALDRICH

Project: PACIFIC BEACH ELEMENTARY RELOCATION
Location: 50 FIRST ST
Project No.: 0210245-002

Particle-Size Analysis

Figure **B-3**
Sheet **3 of 3**

HA_GRAIN SIZE - \\HALEYALDRICH.COM\SHARE\PDX_DATA\GEOMATICS\GINT\HC_LIBRARY.GLB - 8/9/26 09:16 - C:\USERS\KAWRENSON\DESKTOP\HALEY ALDRICH.COM\DATA MANAGEMENT & VISUALIZATION - GINT PROJECTS\0210245\0210245-002_PACIFIC BEACH ELEMENTARY RELOCATION_GINT.GPJ - kawrens



Depth	W.C. (%)		Atterberg Limits			Description	USCS
(ft)	Before	After	LL	PL	PI		
1.5	27	21	26	21	5	SILTY CLAY	CL-ML

$\sigma'v_o$	Preconsolidation Pressure (psf)	
(psf)	Strain Energy	Casagrande
300	27500	20000
Sample Quality Designation		
Terzaghi et al. (1996)	Lunne et al. (1997)	
A	Good to fair	

Initial Specimen Properties	
Height (inches)	1.00
Diameter (inches)	2.50
Weight (ounces)	5.47
Total Unit Weight (pcf)	120.28
Degree of Saturation (%)	95.97
Void Ratio (e0)	0.746

Sample Preparation and Comments:
The specimen test was an intact soil sample which was extracted from the sampling tube by cutting and delaminating a section of the sample tube. The test was run with a room temperature between 71 and 73 degrees Farenheit.

Pacific Beach Elementary School Relocation
Pacific Beach, Washington

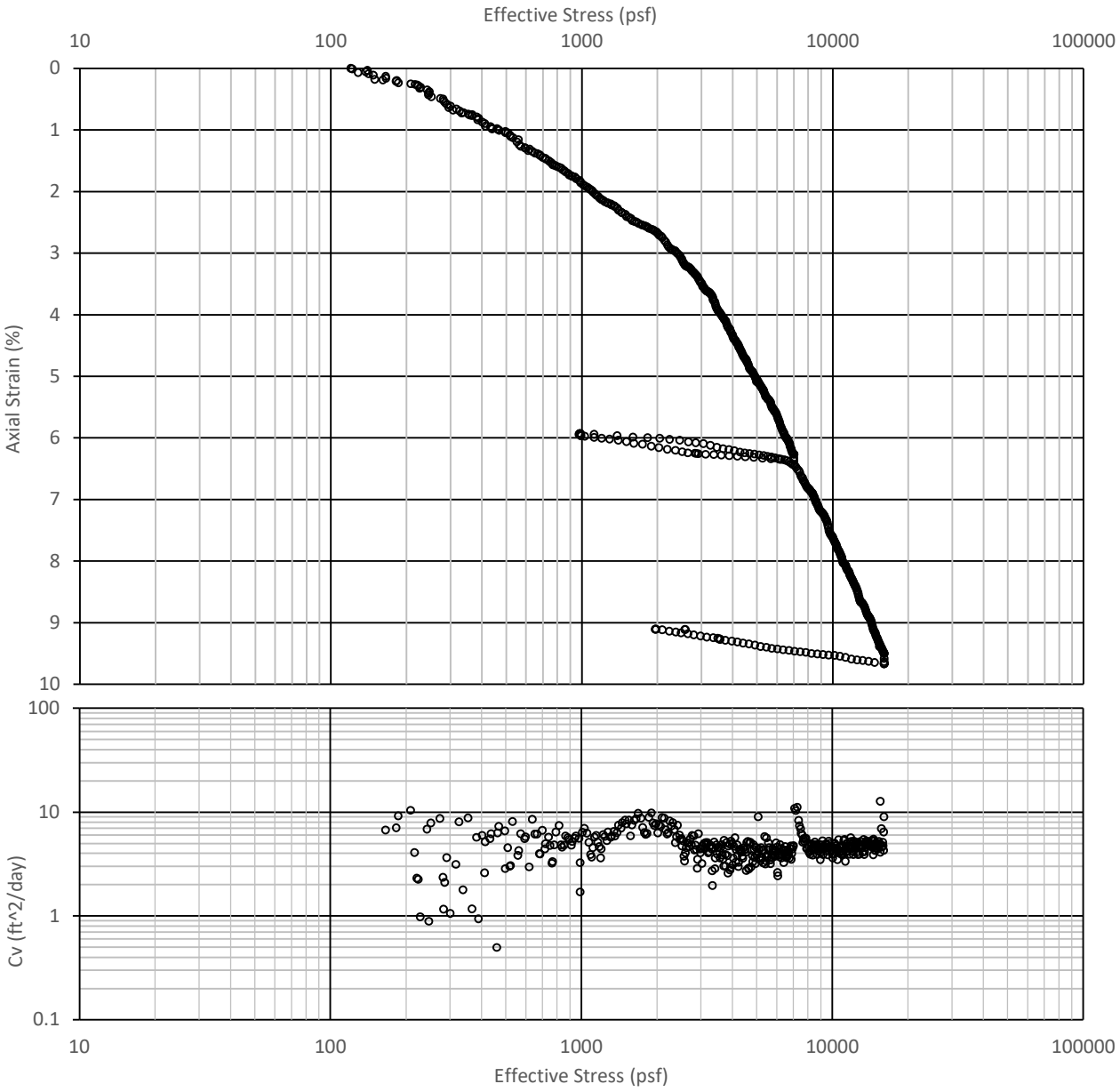
Axial strain and coefficient of consolidation versus logarithm of vertical effective stress for B-2 P-1 CRS Consolidation

Job Number: 0210245-000

MAY 2024

HALEY ALDRICH

Figure
B4-1



Depth	W.C. (%)		Atterberg Limits			Description	USCS
(ft)	Before	After	LL	PL	PI		
2.9	30	25	30	23	7	SILTY CLAY	CL-ML

σ'_{v_o}	Preconsolidation Pressure (psf)	
(psf)	Strain Energy	Casagrande
500	3250	3000
Sample Quality Designation		
Terzaghi et al. (1996)	Lunne et al. (1997)	
B	Poor	

Initial Specimen Properties	
Height (inches)	1.00
Diameter (inches)	2.50
Weight (ounces)	5.39
Total Unit Weight (pcf)	118.55
Degree of Saturation (%)	97.01
Void Ratio (e0)	0.807

Sample Preparation and Comments:
The specimen test was an intact soil sample which was extracted from the sampling tube by cutting and delaminating a section of the sample tube. The test was run with a room temperature between 71 and 73 degrees Farenheit.

Pacific Beach Elementary School Relocation
Pacific Beach, Washington

Axial strain and coefficient of consolidation versus logarithm of vertical effective stress for B-3 P-1 CRS Consolidation

Job Number: 0210245-000

MAY 2024

HALEY ALDRICH

Figure
B4-2

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

26 April, 2024

Job No. 2404058
Cust. No. 13349

Mr. Micah Hintz
Haley & Aldrich
6420 S. Macadam Avenue, Suite 100
Portland, OR 97239

Subject: Project No.: 0210245-000
Project Name: not indicated
Corrosivity Analysis –ASTM Test Methods

Dear Mr. Hintz:

Pursuant to your request, CERCO Analytical has analyzed the soil samples submitted on April 22, 2024. Based on the analytical results, this brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurement, Sample No.002 is classified as "mildly corrosive" and Sample No.001 is classified as "negligibly corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentrations are 17 mg/kg and 19 mg/kg and are determined to be insufficient to attack steel embedded in a concrete mortar coating.

The sulfate ion concentrations reflect none detected with a reporting limit of 15 mg/kg.

The pH of the soils are 5.60 and 5.38, and are considered to be corrosive to buried iron, steel, mortar-coated steel and reinforced concrete structures. Therefore, corrosion prevention measures need to be considered for structures to be placed in this acidic soil.

The redox potentials are 240-mV to 260-mV and are indicative of potentially "slightly corrosive" soils resulting from anaerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

for
J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client: Haley & Aldrich, Inc.
Client's Project No.: 0210245-000
Client's Project Name: not indicated
Date Sampled: 18-Mar-24
Date Received: 22-Apr-24
Matrix: Soil
Authorization: Signed Chain of Custody

Date of Report: 25-Apr-2024

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
2404058-001	B-2 P-1	260	5.60	-	46,000	-	17	N.D.
2404058-002	B-3 P-1	240	5.38	-	14,000	-	19	N.D.

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	10	-	50	15	15
Date Analyzed:	23-Apr-2024	23-Apr-2024		23-Apr-2024		23-Apr-2024	23-Apr-2024

* Results Reported on "As Received" Basis

N.D. - None Detected

Julia Clauson
Chemist

Quality Control Summary - All laboratory quality control parameters were found to be within established limits

APPENDIX C
Geophysics Report

APPENDIX C

Geophysics Report

This appendix contains the geophysical report from Global Geophysics of Redmond, Washington. From June 24 through 25, 2026, Global Geophysics performed Multichannel Analysis of Surface Waves surveys at two locations and microtremor array measurement, providing shear wave velocity data to a depth of approximately 100 feet below ground surface.

Global Geophysics

P. O. Box 2229
Redmond, WA, 98073-2229
Tel: 425-890-4321

June 26, 2026 Our Ref.: 116-0624.000

Haley & Aldrich, Inc.
6420 South Macadam Avenue | Suite 100
Portland, OR 97239

Attention: Mr. Luke I Kevan, PE

RE: REPORT ON THE GEOPHYSICAL SURVEY AT 50 FIRST ST N, MOCLIPS, WA 98562

Dear Mr. Kevan:

Global Geophysics conducted multichannel analysis of surface wave (MASW) survey and one local ReMi sounding on June 24th and 25th at 50 First St N, Moclips, WA 98562. The proposed objective of the geophysical investigation was to determine the s-wave velocity of the top 100 ft below the ground surface along two transects and to determine the shear wave velocities of the subsurface.

METHODOLOGY AND INSTRUMENTATION

Multichannel Analysis of Surface Waves (MASW) Method

The Multichannel Analysis of Surface Waves (MASW) method determines variations in surface wave velocities with increasing distances and wavelengths. The data from these measurements are used to model the shear wave velocities of the subsurface. This information can then be used to infer rock/soil types, stratigraphy and soil conditions.

The MASW survey requires a seismic source, to generate surface-waves, and at least 24 geophones, to measure the ground response at increasing distances from the source. Surface waves are a special type of seismic wave whose propagation is confined to the near surface medium. The depth of subsurface penetration of a surface-wave is directly proportional to its wavelength. In a non-homogeneous medium, surface-waves are dispersive, i.e. each wavelength has a characteristic velocity stemming from subsurface heterogeneities. The relationship between surface-wave velocity and wavelength is used to calculate the shear-wave velocity of the medium with increasing depth.

The seismic source can be either active or passive, depending on the application and location of the survey. Examples of active sources include explosives, weight-drops, and vibrating pads. Examples of passive sources are drill rigs, road traffic, micro-tremors, and water-wave

action (in near-shore environments). Geophone measures the arrival time of the various components of the surface wave-train traveling from the seismic source.
The surface-wave velocity with respect to frequency (called the 'dispersion curve') is determined by measuring the delay time in wave propagation between the geophones. The dispersion curve is then matched to a theoretical dispersion curve using an iterative forward-modeling procedure. The result is a profile of shear-wave velocity versus depth. This shear wave profile can be with used other parameters such as density, to estimate the dynamic shear modulus of the medium as a function of depth.

The MASW survey was conducted using one Geometrics Geode 24-channel digital seismograph. The 24 geophones were placed at 10 ft spacing and the seismic energy source was ambient vibrations.

The survey procedures include laying out the cables and geophones, collecting data every 20 ft along the line.

RESULTS

The locations of the 2S MASW transects and 1D soundings are shown in Figure 1. Figure 2 shows the s-wave profile for Line 1. Figure 3 shows the s-wave profile for Line 2.

The dispersion curves, coherencies, and models for the ReMi soundings are presented below:

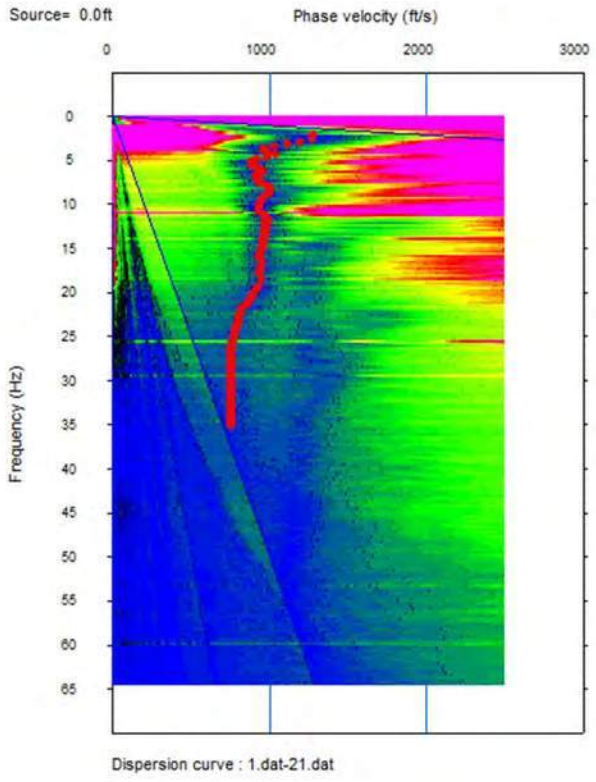


Figure 4. S-1 Sounding Dispersion Curve

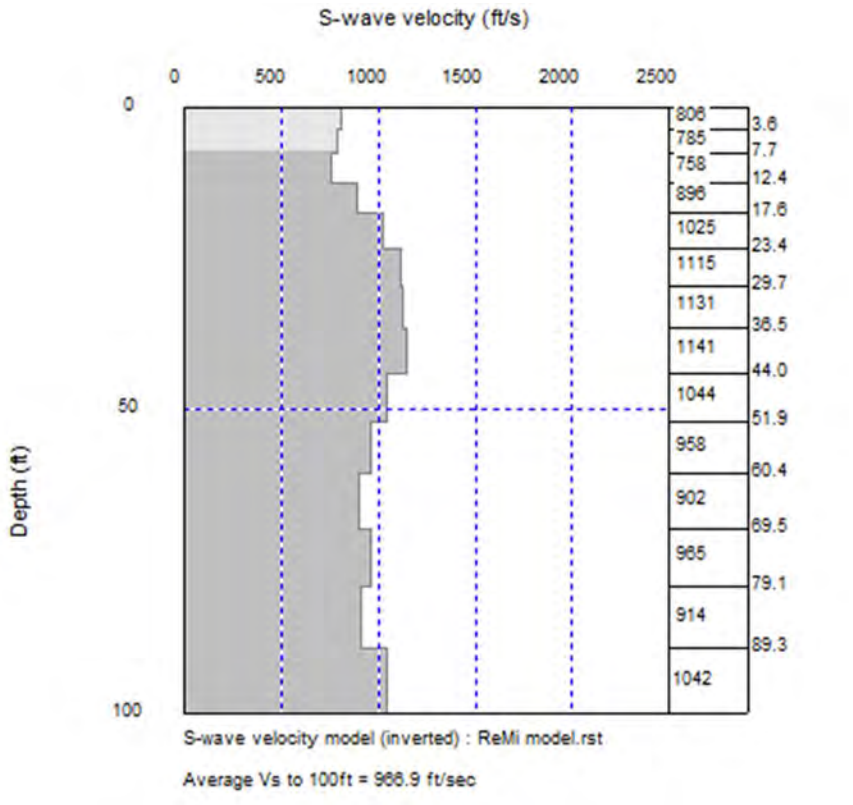


Figure 5. S-1 Sounding Model

Depth(ft)	S-Wave Velocity(ft/sec)
0	806
4	785
8	758
12	896
18	1025
23	1116
30	1131
37	1141
44	1044
52	958
60	903
70	966
79	914
89	1043
100	1042

Table 1. S-1 S-Wave Velocities by Depth for 1D MAM Sounding

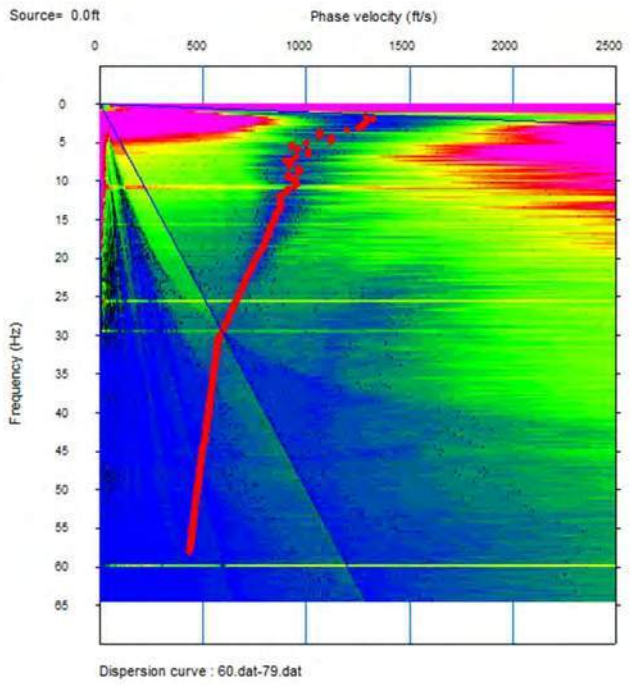


Figure 6. S-2 Sounding Dispersion Curve

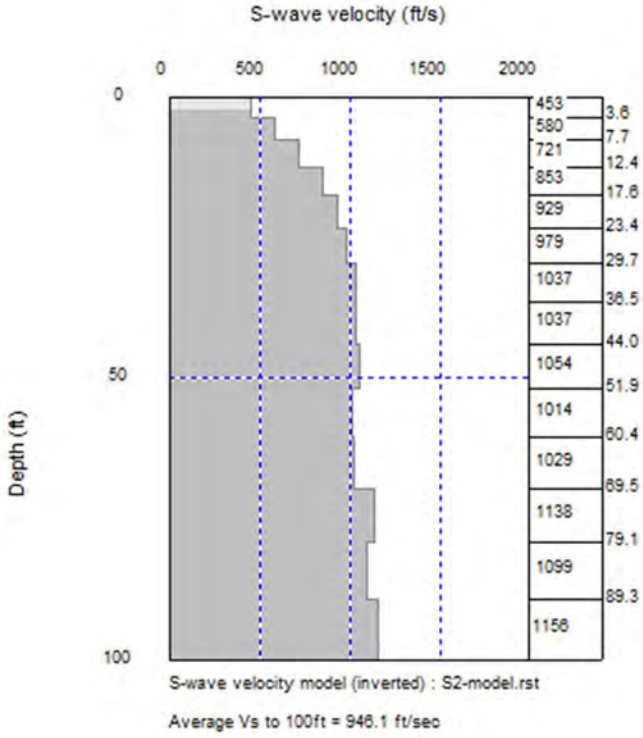


Figure 7. S-2 Sounding Model

Depth(ft)	S-wave velocity(ft/s)
0	454
4	580
8	721
12	854
18	930
23	979
30	1037
37	1038
44	1055
52	1015
60	1030
70	1138
79	1099
89	1157
100	1157

Table 2. S-2 S-Wave Velocities by Depth for 1D MAM Sounding

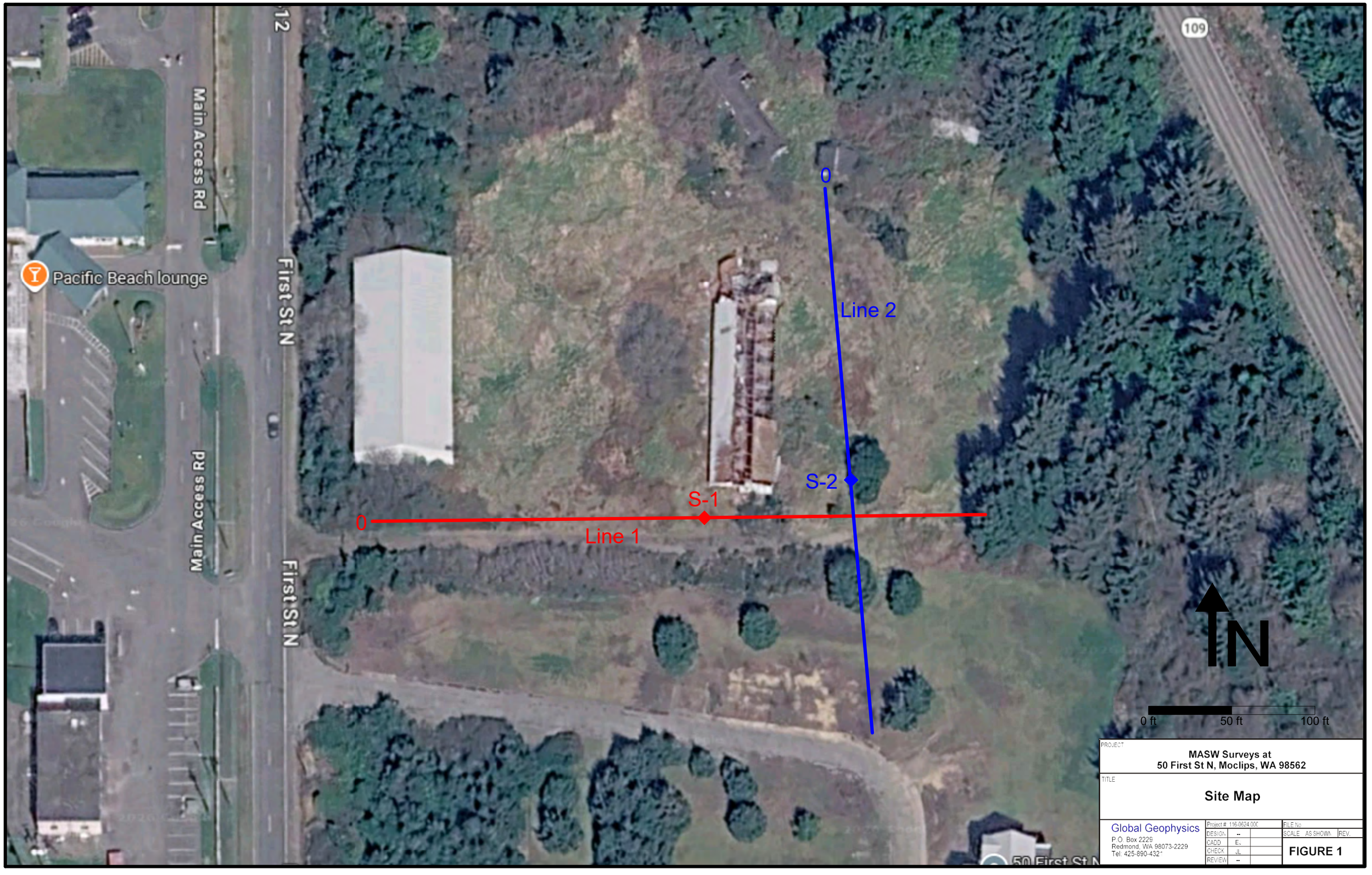
LIMITATIONS OF THE GEOPHYSICAL METHOD

Global geophysics services are conducted in a manner consistent with the level of care and skill ordinarily exercised by other members of the geophysical community currently practicing under similar conditions subject to the time limits and financial and physical constraints applicable to the services. MASW is a remote sensing geophysical method that may not detect all subsurface conditions due to the limitations of the methods, soil conditions, size of the features and their depths.

Sincerely,

Global Geophysics, LLC.

John Liu, Ph.D., R.G.
Principal Geophysicist



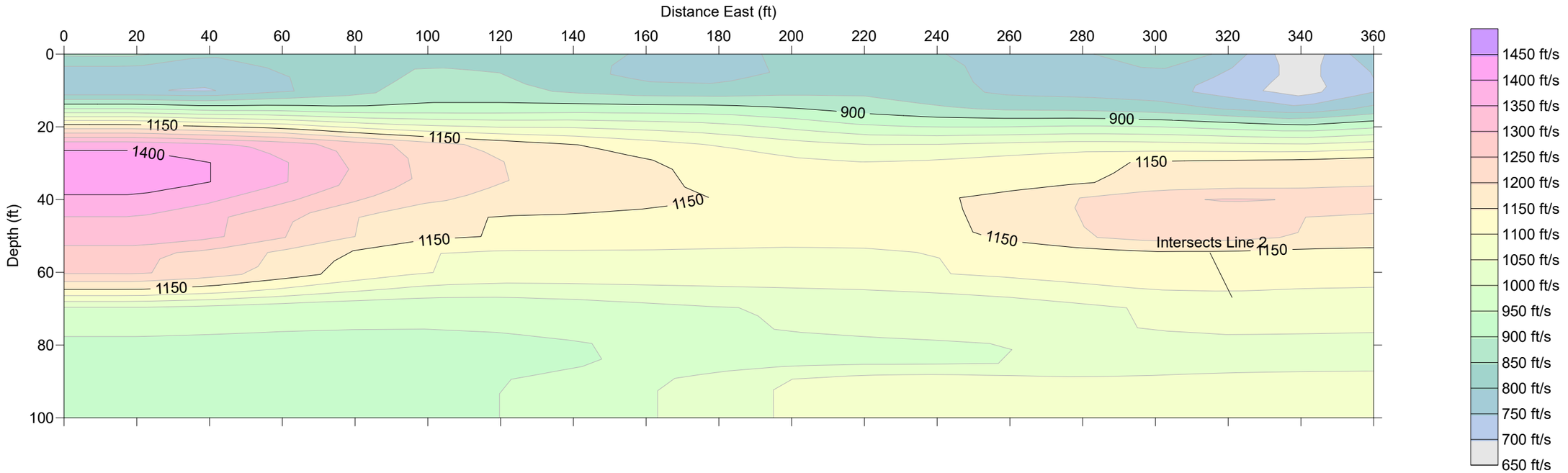
PROJECT
MASW Surveys at
50 First St N, Moclips, WA 98562

TITLE
Site Map

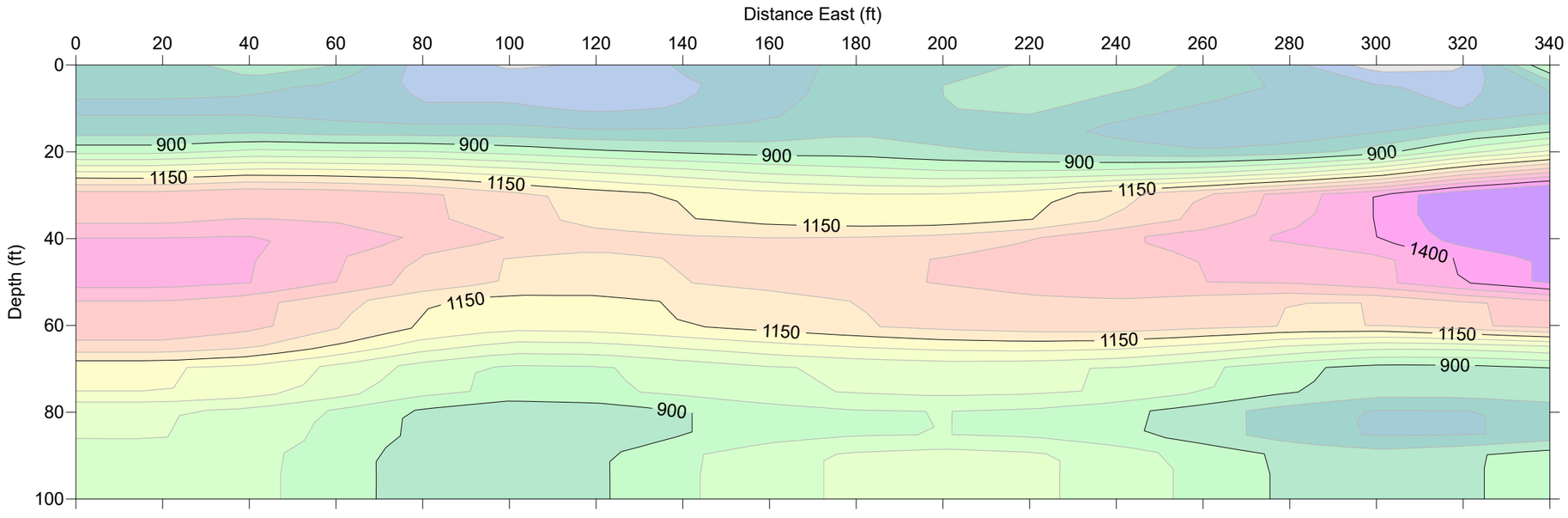
Global Geophysics
P.O. Box 2229
Redmond, WA 98073-2229
Tel: 425-890-4327

Project # 116-0624.000			FILE No.
DESIGN	--		SCALE AS SHOWN REV.
CADD	E.		**FIGURE 1**
CHECK	JL		
REVIEW	--		

Line 1



Line 2



0 ft 30 ft 60 ft

PROJECT

MASW Surveys at
50 First St N, Moclips, WA 98562

TITLE

S-wave Velocity Profiles

Global Geophysics
P.O. Box 2229
Redmond, WA 98073-2229
Tel: 425-890-4327

Project # 116-0624.000			FILE No.
DESIGN	--		SCALE AS SHOWN REV.
CADD	E.		
CHECK	JL		**FIGURE 2**
REVIEW	--		

APPENDIX D
Historical Data

APPENDIX D

Historical Data

This appendix contains an excerpt from GeoEngineers' 2021 historical report.

EXCERPTS FROM GEOENGINEERS (2021) REPORT

Geotechnical Engineering Services Report

Seabrook Pacific Beach Development
Pacific Beach, Washington

for
Seabrook Land Company

June 3, 2021

GeoEngineers

1101 South Fawcett Avenue, Suite 200
Tacoma, Washington 98402
253.383.4940



Legend

- Site Boundary
- TP-1.01 Test Pit by GeoEngineers, Inc., 2021

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Aerial from Google Earth dated 07/21/2018.

Projection: Washington State Plane, South Zone, NAD83, US Foot

N W E S

250 0 250
Feet

Site Plan

Seabrook Pacific Beach Development
Pacific Beach, Washington

GeoEngineers

Figure 2

P:\24\24718003\CAD\00\Geotech Report\24718003300_F02_Site Plan.dwg TAB:F02 - Site Plan Date Exported: 06/03/21 - 9:29 by gregister

APPENDIX A
Subsurface Explorations and Laboratory Testing

APPENDIX A
SUBSURFACE EXPLORATIONS AND LABORATORY TESTING

Subsurface Explorations

Soil and groundwater conditions at the subject properties were explored by advancing 21 test pit excavations (TP-1.01 through TP-1.08 and TP-2.01 through TP-2.13) between April 21 and 22, 2021. Locations of the test pits were determined via an electronic tablet with global positioning system (GPS) software and are shown on the Site Plan, Figure 2. Locations were selected to cover the proposed development areas at relatively uniform spacing but were constrained to some degree by existing site grading, vegetation and underground utilities. The locations and elevations of the explorations should be considered approximate.

Test pit excavations were completed using a Takeuchi TB138 track-mounted mini excavator with toothed bucket provided and operated by Kelly's Excavating, Inc. under subcontract to GeoEngineers. Test pits extended to depths between approximately 6 and 10 feet below surrounding grade. After each test pit was completed, the excavation was backfilled using the generated material and compacted using the bucket of the excavator.

During the exploration program our field representative obtained soil samples, classified the soils, maintained a detailed log of each exploration and observed groundwater conditions. The soils were classified visually in general accordance with ASTM International (ASTM) D 2488. Figure A-1 includes a Key to Exploration Logs. Summary logs of the explorations are included as Figures A-2 through A-22. The densities noted on the test pit exploration logs are based on the difficulty of excavation, observations of caving and our experience and judgment. Samples were retained in sealed plastic bags to prevent moisture loss.

Laboratory Test Results

Soil samples obtained from the explorations were transported to GeoEngineers laboratory. Representative soil samples were selected for laboratory tests to evaluate pertinent geotechnical engineering characteristics of the soils and refine our field classification, as necessary. The following paragraphs provide a description of the tests performed.

Moisture Content (MC)

The moisture content of selected samples was determined in general accordance with ASTM Test Method D 2216. The test results are used to aid in soil classification and correlation with other pertinent engineering soil properties. Test results are presented on the exploration logs corresponding to the sample tested.

Percent Fines (%F)

Selected samples were "washed" through the U.S. No. 200 sieve to estimate the relative percentages of coarse- and fine-grained particles in the soil. The percent passing value represents the percentage by weight of the sample finer than the U.S. No. 200 sieve (fines). Tests were conducted in general accordance with ASTM D 1140. Test results are presented on the exploration logs at the respective sample depths.

Particle Size Gradation - Sieve Analysis (SA)

Sieve analyses were performed on selected samples in general accordance with ASTM Test Method D 6913. This test method covers the quantitative determination of the distribution of particle sizes in soils. Typically, the distribution of particle sizes larger than 75 micrometers (μm) is determined by sieving. The results of the tests were used to verify field soil classifications. Figures A-23 and A-24 present the results of our sieve analyses.

Particle Size Gradation - Hydrometer Analysis (HA)

Hydrometer analyses were performed on selected samples in general accordance with ASTM Test Method D 7928. This test method covers the quantitative determination of the distribution of particle sizes in soils. Typically, the distribution of particle sizes smaller than 75 μm is determined by a sedimentation process using a hydrometer. The hydrometer analysis alone determines the distribution of particle sizes smaller than 2 millimeters (mm). The results of the tests were used to verify field soil classifications and determine pertinent engineering characteristics. Figures A-23 and A-24 include the results of our hydrometer analyses.

Atterberg Limits (AL)

Atterberg Limit tests were performed on selected samples in general accordance with ASTM Test Method D 4318. This test method determines the liquid limit, plastic limit and plasticity index of soil particles passing the No. 40 sieve. Results for plastic soils are presented in Figure A-25. The liquid limit and plasticity index are also presented on the exploration logs at the respective sample depths.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata

Approximate contact between soil strata

Material Description Contact

Contact between geologic units

Contact between soil of the same geologic unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PL	Point load test
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

Key to Exploration Logs

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Figure A-1

Date Excavated	4/21/2021	Total Depth (ft)	9.5	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	See "Remarks" section for groundwater observed Caving not observed
Surface Elevation (ft) Vertical Datum	120 NAVD88	Easting (X) Northing (Y)	720538 708122	Coordinate System Horizontal Datum	WA State Plane South NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
119	1				DUFF	12 inches forest duff			
					ML	Dark brown silt with fine sand with occasional fine roots (very soft, moist) (glacial outwash)			
118	2		1 MC		CL	Orange with iron-oxide staining lean clay (soft, moist)	32		
117	3				SP-SM	Gray with iron-oxide staining fine to medium sand with silt and occasional gravel (medium dense, moist)			
116	4					Grades to no iron-oxide staining, dense with gravel			
115	5		2						Cemented soils observed below about 5 feet bgs
114	6					Grades to very dense			
113	7				GP-GM	Gray with iron-oxide staining fine to coarse gravel with silt and sand (dense, wet)			Slow groundwater seepage observed at 7 feet bgs
112	8								
111	9		3						

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.01

GeoEngineers

Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-10
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated	4/21/2021	Total Depth (ft)	10	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	See "Remarks" section for groundwater observed Caving not observed
Surface Elevation (ft) Vertical Datum	122 NAVD88	Easting (X) Northing (Y)	720403 707926	Coordinate System Horizontal Datum	WA State Plane South NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
121	1				DUFF	12 inches forest duff			
					ML	Brown silt with fine sand and occasional organic matter (soft, moist) (glacial outwash)			
120	2				CL	Gray with iron-oxide staining lean clay (soft, moist)			
119	3	✓	1 %F, AL				27	87	AL(LL=28, PI=8)
						Grades to orange, medium stiff			
118	4					Grades to stiff			
117	5				SP-SM	Gray with iron-oxide staining fine sand with silt and occasional gravel (dense, moist)			Cemented soils observed between about 5 and 7½ feet bgs
116	6								
115	7	✓	2 SA				20	7	
114	8				GP-GM	Brown-gray fine to coarse gravel with silt and sand (dense, moist)			
113	9								
112	10	✓	3		SM	Gray silty fine to medium sand with occasional gravel (dense, wet)			Slow groundwater seepage observed at 9½ feet bgs

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.02

GeoEngineers

Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-11
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated	4/21/2021	Total Depth (ft)	9	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	See "Remarks" section for groundwater observed See "Remarks" section for caving observed
Surface Elevation (ft) Vertical Datum	116 NAVD88	Easting (X) Northing (Y)	720666 707875	Coordinate System Horizontal Datum	WA State Plane South NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
115	0				DUFF	10 inches forest duff			Near wet
	1				ML	Dark brown silt with occasional sand, gravel and fine roots (soft, moist) (glacial outwash)			
114	2				GP-GM	Brown fine to coarse gravel with silt and sand (medium dense, wet)			Slow groundwater seepage observed at 2 feet bgs
113	3				SP-SM	Gray with iron-oxide staining fine to coarse sand with silt and gravel (dense, moist)			
112	4		1 %F			Grades to very dense	13	7	Cemented soils observed between about 3½ and 5½ feet bgs
	4.5				SP-SM	Bluish-gray fine to medium sand with silt and trace gravel (very dense, moist)			
111	5		2						
110	5.5				GP-GM	Gray with iron-oxide staining fine to coarse gravel with silt and sand (dense, moist)			
109	7								Moderate groundwater seepage observed at 7½ feet bgs
108	8					Grades to wet			
107	9								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.03

GeoEngineers

Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-12
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated	4/21/2021	Total Depth (ft)	9.5	Logged By / Checked By	CJL / SST
Excavator / Equipment	Kelly's Excavating / Takeuchi TB138	See "Remarks" section for groundwater observed / Caving not observed			
Surface Elevation (ft) / Vertical Datum	120 / NAVD88	Easting (X) / Northing (Y)	720416 / 707674	Coordinate System / Horizontal Datum	WA State Plane South / NAD83 (feet)

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
119	0				DUFF	10 inches forest duff			
119	1				CL	Gray with iron-oxide staining lean clay (soft, moist) (glacial outwash)			
118	2								
117	3		1 MC			Grades to orange, stiff with fine sand	37		Cemented soils observed between about 3 and 5½ feet bgs
116	4								
115	5				SP-SM	Gray with iron-oxide staining fine to medium sand with silt and occasional gravel (medium dense, moist)			
114	6				GP-GM	Brown-gray fine to coarse gravel with silt and sand (dense, moist)			
113	7					Grades to gray, dense			
112	8					Grades to wet			Moderate groundwater seepage at 8 feet bgs
111	9								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.04

GeoEngineers

Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-13
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated	4/21/2021	Total Depth (ft)	8.5	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	121 NAVD88	Easting (X) Northing (Y)	720655 707692	Coordinate System Horizontal Datum	WA State Plane South NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
120	0				SOD	8 inches sod			
	1				ML	Brown silt with fine sand and trace organic matter (fine roots) (soft, moist) (fill)			
119	2				GW	Brown coarse gravel (medium dense, moist)			1½-inch clean crushed rock, 1-inch PVC pipe at 2 feet bgs, possible abandoned septic drainfield?
118	3				SP-SM	Dark gray fine to medium sand with silt and debris (wood) (loose, moist)			Log at 3 feet bgs
117	4				ML	Brown silt with occasional sand (soft, moist) (glacial outwash)			
116	5		1 MC			Grades to orange-brown with occasional gravel, medium stiff	28		
115	6				GP-GM	Brown-gray fine to coarse gravel with silt and sand (dense, moist)			
114	7								
113	8					Grades to gray, very dense			

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.05

GeoEngineers

Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-14
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated	4/21/2021	Total Depth (ft)	9	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	See "Remarks" section for groundwater observed Caving not observed
Surface Elevation (ft) Vertical Datum	121 NAVD88	Easting (X) Northing (Y)	720555 707538	Coordinate System Horizontal Datum	WA State Plane South NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
120	0				SOD	8 inches sod			
	1				ML	Brown silt with fine sand and occasional fine roots (soft, moist) (glacial outwash)			
119	2		1 MC			Grades to medium stiff	25		
118	3					Grades to gray			
117	4					Grades with iron-oxide staining			
116	5				SM	Gray with iron-oxide staining silty fine sand with trace gravel (dense, moist)			Cemented soils observed between about 5 and 6 feet bgs
115	6		2 SA		SP-SM	Gray fine to medium sand with silt and gravel (dense, moist)	35	17	
114	7				GP-GM	Gray fine to coarse gravel with silt and sand (dense, moist)			
113	8					Grades to orange, wet			Slow groundwater seepage observed at 8 feet bgs
112	9								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.06

GeoEngineers

Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-15
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated	4/21/2021	Total Depth (ft)	8.25	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	119 NAVD88	Easting (X) Northing (Y)	720420 707377	Coordinate System Horizontal Datum	WA State Plane South NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
118	0				SOD	4 inches sod			
	1				ML	Brown sandy silt with fine roots and occasional gravel (soft, moist) (fill)			1½-inch plastic pipe in sidewall at 1 foot bgs
117	2								
116	3				ML	Brown with iron-oxide staining silt with fine sand (medium stiff, moist) (glacial outwash)			
115	4		1 MC			Grades to stiff	42		Cemented soils observed between about 4 and 5 feet bgs
114	5				SP-SM	Gray fine sand with silt (medium dense, moist)			
113	6				GP-GM	Gray fine to coarse gravel with silt and sand (dense, moist)			
112	7		2						
111	8								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.07

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Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-16
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated	4/21/2021	Total Depth (ft)	9.5	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	119 NAVD88	Easting (X) Northing (Y)	720827 707356	Coordinate System Horizontal Datum	WA State Plane South NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
					SOD	6 inches sod			
118	1				ML	Dark brown silt with fine sand and occasional fine roots and debris (plastic waste, glass) (soft, moist) (fill)			
117	2								
116	3	■	1 MC		ML	Light brown silt with fine sand (soft, moist) (glacial outwash)	42		
115	4					Grades to medium stiff			
114	5				GP-GM	Gray with iron-oxide staining fine to coarse gravel with silt and sand (dense, moist)			
113	6	■	2						
112	7					Grades to no iron-oxide staining, very dense with occasional cobbles			
111	8								
110	9								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.08

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Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-17
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated	4/21/2021	Total Depth (ft)	9	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	115 NAVD88	Easting (X) Northing (Y)	720654 707231	Coordinate System Horizontal Datum	WA State Plane South NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
114	0				SOD	6 inches sod			
	1				ML	Brown silt with fine sand and debris (glass) (soft, moist) (fill)			
					ML	Light brown silt with fine sand (medium stiff, moist) (glacial outwash)			
113	2		1 SA		SM	Brown-gray silty fine to coarse sand with gravel (dense, moist)	15	19	
112	3					Grades to with iron-oxide staining			Somewhat coarser
111	4								Intermittent "clean" sand lenses
110	5				SP-SM	Grades to without iron-oxide staining Brown-gray fine to coarse sand with silt and gravel (dense, moist)			
109	6		2 SA				18	7	
108	7					Grades to orange, very dense			Cemented soils observed below about 7 feet bgs
107	8					Grades to brown-gray			
106	9		3						

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.09

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Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-18
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated 4/21/2021	Total Depth (ft) 9.5	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	Groundwater not observed Caving not observed
Surface Elevation (ft) 115 Vertical Datum NAVD88		Easting (X) 720421 Northing (Y) 707055		Coordinate System WA State Plane South Horizontal Datum NAD83 (feet)

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
114	0				SOD	5 inches sod			
	1				ML	Dark brown silt with fine sand, occasional gravel and debris (concrete rubble, clay pot, plastic) (soft, moist) (fill)			
113	2				ML	Brown with iron-oxide staining sandy silt with gravel (stiff, moist) (glacial outwash)			
112	3								
111	4				GP-GM	Brown-gray fine to coarse gravel with silt and sand (dense, moist) Grades to gray			
110	5	■	1						
109	6								6-inch thick sand lens at 6 feet bgs
108	7								
107	8								
106	9								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.10

GeoEngineers

Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-19
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated 4/21/2021	Total Depth (ft) 9.5	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	See "Remarks" section for groundwater observed See "Remarks" section for caving observed	
Surface Elevation (ft) 115 Vertical Datum NAVD88		Easting (X) 720670 Northing (Y) 707072		Coordinate System WA State Plane South Horizontal Datum NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
114	0				SOD	6 inches sod			
	1				ML	Brown sandy silt with gravel and occasional debris (plastic) (stiff, moist) (fill)			
					ML	Brown with iron-oxide staining sandy silt with trace gravel and organic matter (fine roots) (stiff, moist) (glacial outwash)			
113	2								Cemented soils observed between about 2 and 4½ feet bgs
112	3	■	1 %F				16	56	
111	4					Grades to orange			
					GP-GM	Brown-gray fine to coarse gravel with silt and sand (medium dense, moist)			
110	5								
109	6					Grades to orange, dense			
108	7					Grades to gray			Somewhat finer gradation than above, occasional 2- to 4-inch thick discontinuous sand lenses
107	8								
106	9					Grades to wet			Slow groundwater seepage observed at 9 feet bgs; minor caving observed at 9 feet bgs

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.11

GeoEngineers

Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-20
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated	4/21/2021	Total Depth (ft)	9.5	Logged By / Checked By	CJL / SST
Excavator / Equipment	Kelly's Excavating / Takeuchi TB138	Groundwater not observed	Caving not observed		
Surface Elevation (ft) / Vertical Datum	107 / NAVD88	Easting (X) / Northing (Y)	720964 / 707037	Coordinate System / Horizontal Datum	WA State Plane South / NAD83 (feet)

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
106	0				DUFF	12 inches forest duff			
	1				ML	Brown silt with occasional sand and gravel (soft, moist) (glacial outwash)			
105	2		1 MC				43		
104	3					Grades to brown-gray, medium stiff			
103	4				SM	Brown-gray silty fine to coarse sand with gravel (medium dense, moist)			
102	5		2		GP-GM	Grades to dense Gray fine to coarse gravel with silt and sand (dense, moist)			
101	6								
100	7								Finer gradation
99	8								
98	9								Cemented soils observed below about 9 feet bgs

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

Log of Test Pit 2.12

GeoEngineers

Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-21
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F

Date Excavated 4/22/2021	Total Depth (ft) 6	Logged By CJL Checked By SST	Excavator Kelly's Excavating Equipment Takeuchi TB138	Groundwater not observed Caving not observed
Surface Elevation (ft) 116 Vertical Datum NAVD88		Easting (X) 720747 Northing (Y) 707076		Coordinate System WA State Plane South Horizontal Datum NAD83 (feet)

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
115	0				SOD	8 inches sod			
	1				ML	Brown sandy silt with gravel and debris (plastic, concrete and steel pipe) (very soft, moist) (fill)			Reinforced concrete observed in north excavation sidewall between approximately 1½ to 6 feet bgs
114	2								
113	3								
112	4								
111	5								2-inch diameter steel pipe observed at approximately 5 feet bgs
110	6								Excavation refusal at 6 feet bgs on top of concrete

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on USGS Topo. Vertical approximated based on USGS Topo.

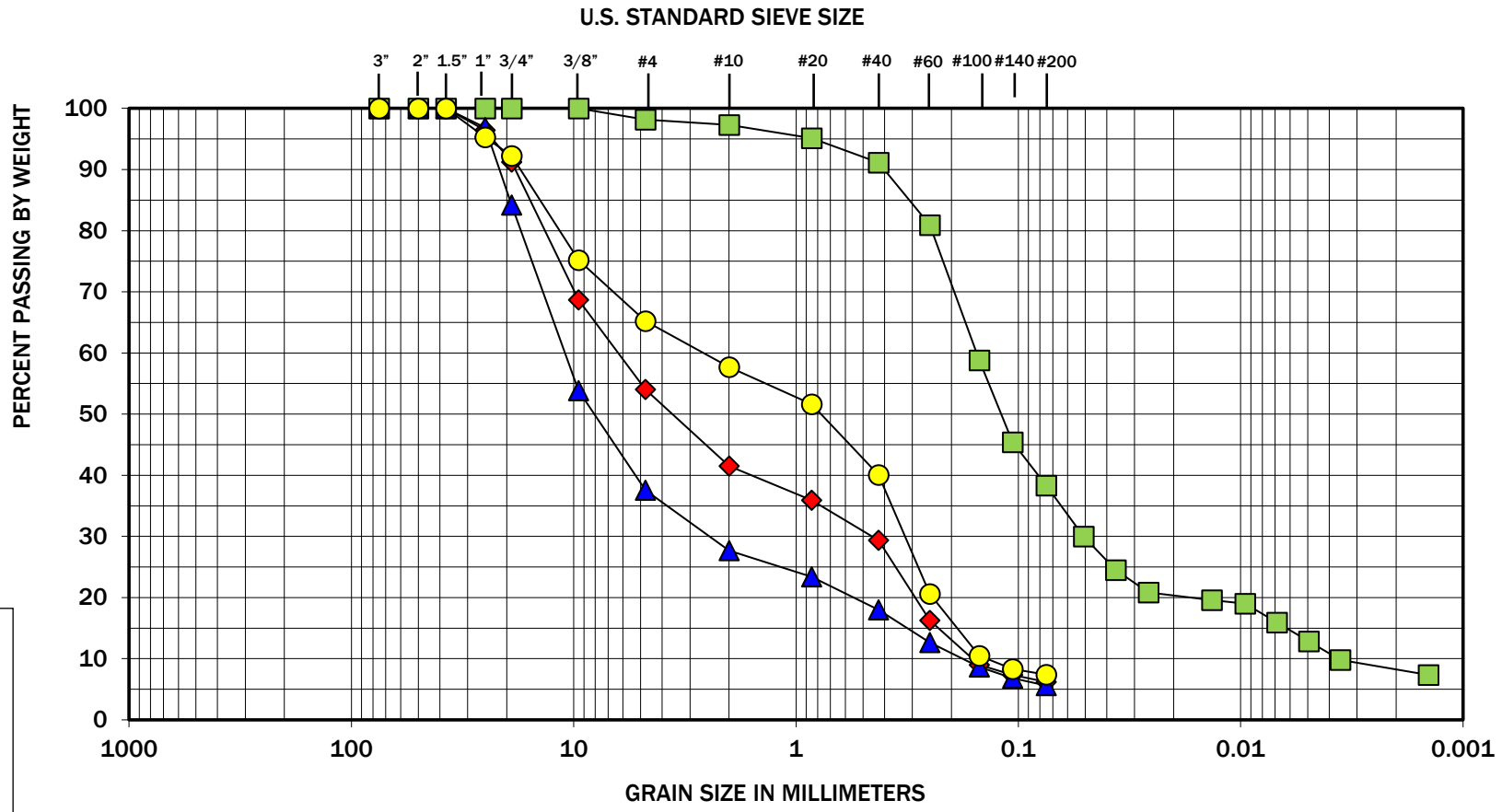
Log of Test Pit 2.13

GeoEngineers

Project: Seabrook Pacific Beach Development
Project Location: Pacific Beach, Washington
Project Number: 24718-003-00

Figure A-22
Sheet 1 of 1

Date:6/3/21 Path:P:\24\24718003\GINT\24718003000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_TESTPIT_1P_GEOTEC_%F



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Test Pit Number	Depth (feet)	Moisture (%)	Soil Description
◆	TP-1.03	4	17	Poorly graded sand with silt and gravel (SP-SM)
■	TP-1.05	4.25	36	Silty sand with trace gravel (SM)
▲	TP-1.08	6	10	Poorly graded gravel with silt and sand (GP-GM)
●	TP-2.02	6.5	20	Poorly graded sand with silt and gravel (SP-SM)

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Figure A-23

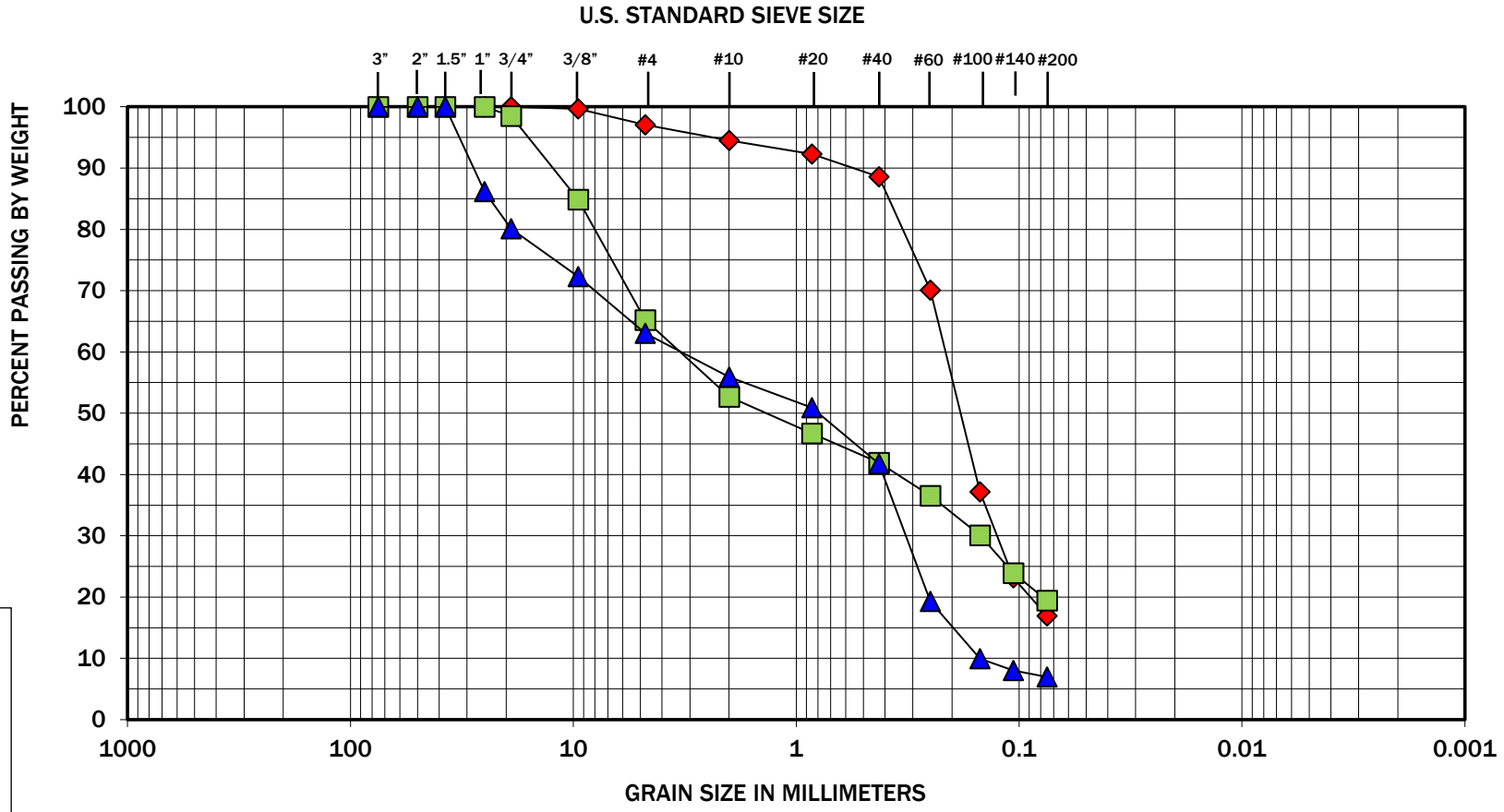
Seabrook Pacific Beach Development
Pacific Beach, Washington

Sieve and Hydrometer Analysis Results

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The grain size analysis results were obtained in general accordance with ASTM C 136. GeoEngineers 17425 NE Union Hill Road Ste 250, Redmond, WA 98052



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Test Pit Number	Depth (feet)	Moisture (%)	Soil Description
◆	TP-2.06	5.5	35	Silty sand (SM)
■	TP-2.09	2	15	Silty sand with gravel (SM)
▲	TP-2.09	5.5	18	Poorly graded sand with silt and gravel (SP-SM)

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The grain size analysis results were obtained in general accordance with ASTM C 136. GeoEngineers 17425 NE Union Hill Road Ste 250, Redmond, WA 98052

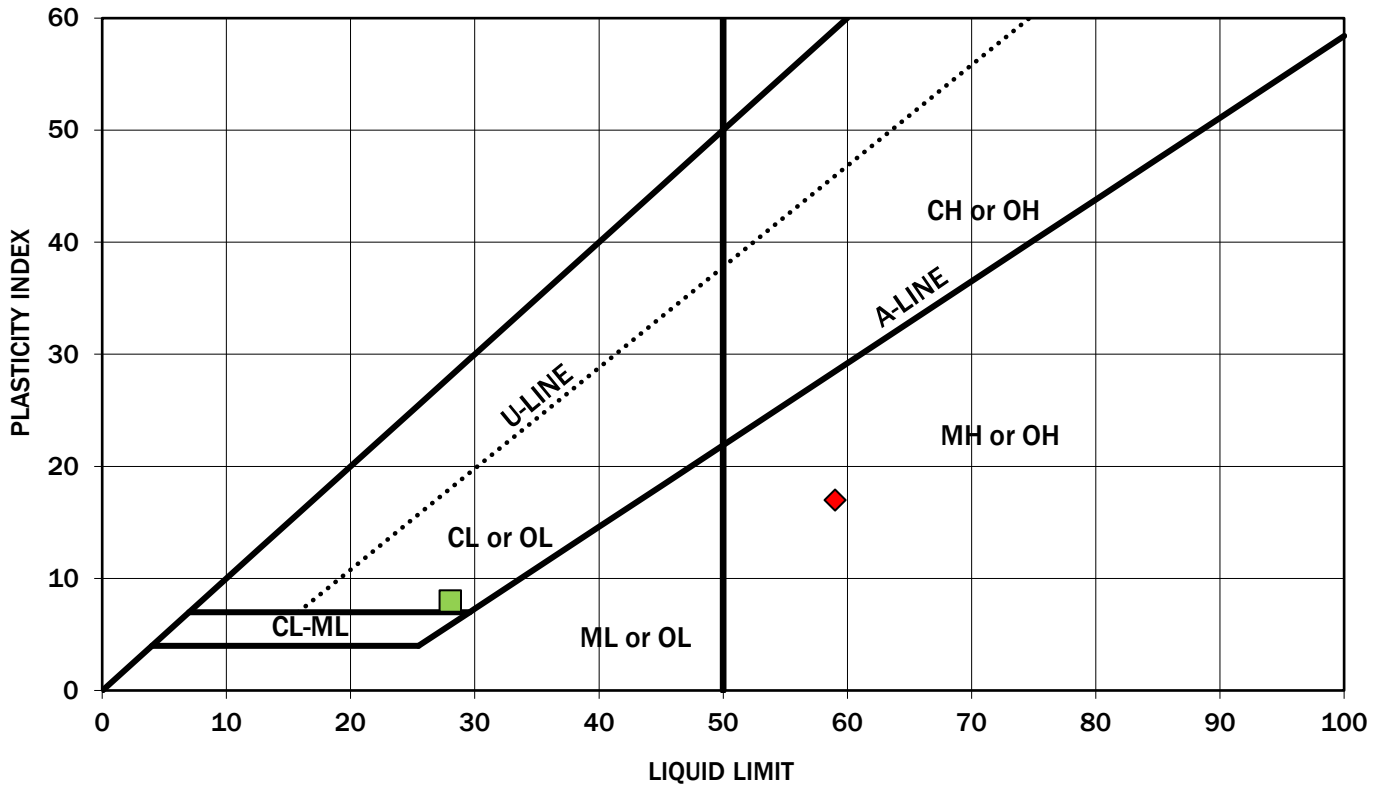
GeoEngineers

Figure A-24

Seabrook Pacific Beach Development
Pacific Beach, Washington

Sieve and Hydrometer Analysis Results

PLASTICITY CHART



Symbol	Test Pit Number	Depth (feet)	Moisture Content (%)	Liquid Limit (%)	Plasticity Index (%)	Soil Description
◆	TP-1.02	4	47	59	17	Silty Sand (SM)
■	TP-2.02	2.5	27	28	8	Lean Clay (CL)

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Seabrook Pacific Beach Development
Pacific Beach, Washington

Atterberg Limits Test Results

Figure A-25

DRAFT

APPENDIX E
Slope Stability

APPENDIX E

Slope Stability

This appendix contains the results of our stability analyses completed using the two-dimensional commercial code Slide2 (Slide) by Rocscience. Slide performs two-dimensional limit equilibrium analysis to analyze slope stability by determining a factor of safety (FS) against global failure.

The FS against global failure is simplistically defined as the ratio of forces resisting wall/slope movement (i.e., soil strength, soil mass) to the forces driving wall/slope movement (e.g., gravity and earth pressure, earthquake shaking). The program predicts the location and geometry of "critical failure planes". Critical failure planes are the zones with the lowest FS value. An FS less than 1 infers that the model is not in equilibrium and movement is likely to occur.

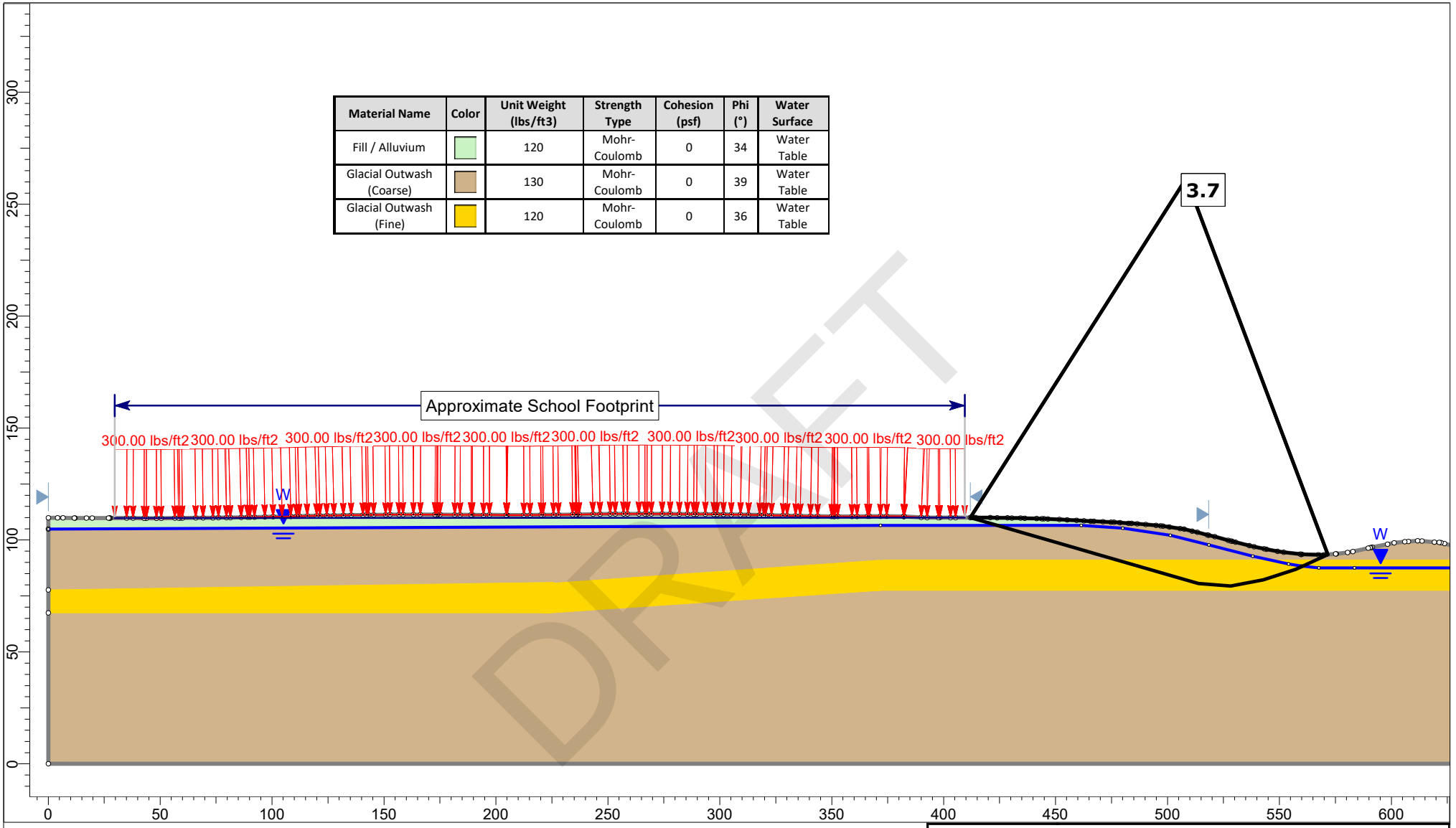
We conducted stability analyses at Cross Section A-A' as shown on Figure 2. Plots for our analyses results from Slide2 are included as Figures E1 to E4.

Refer to *Section 4.6 - Global Stability* for more details regarding the analyses.

DRAFT

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Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (°)	Water Surface
Fill / Alluvium		120	Mohr-Coulomb	0	34	Water Table
Glacial Outwash (Coarse)		130	Mohr-Coulomb	0	39	Water Table
Glacial Outwash (Fine)		120	Mohr-Coulomb	0	36	Water Table



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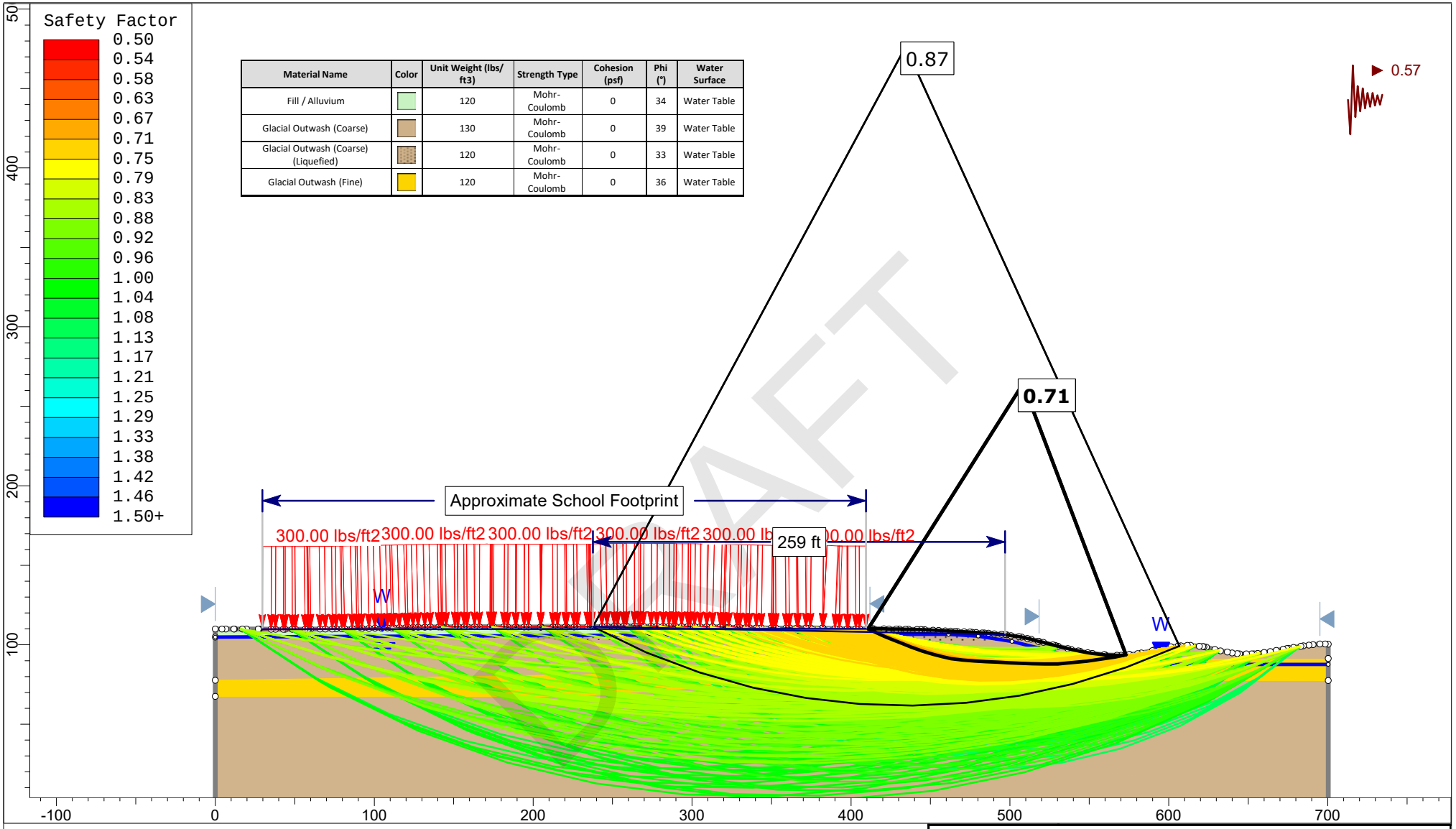
PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
FIRST STREET N
PACIFIC BEACH, WASHINGTON

CROSS SECTION A-A'
SLOPE STABILITY ANALYSIS
STATIC CASE

SCALE: AS SHOWN
AUGUST 2026

FIGURE E1

C:\Users\kahrens\OneDrive - haleyaldrich.com\North Beach School District No. 64 - 0210245.Pacific Beach Elementary Resite\Analysis\05_Slope Stability\Cross Section A-A'.slmd



Material Name	Color	Unit Weight (lbs/ ft3)	Strength Type	Cohesion (psf)	Phi (°)	Water Surface
Fill / Alluvium		120	Mohr-Coulomb	0	34	Water Table
Glacial Outwash (Coarse)		130	Mohr-Coulomb	0	39	Water Table
Glacial Outwash (Coarse) (Liquefied)		120	Mohr-Coulomb	0	33	Water Table
Glacial Outwash (Fine)		120	Mohr-Coulomb	0	36	Water Table

DRAFT

HALEY ALDRICH

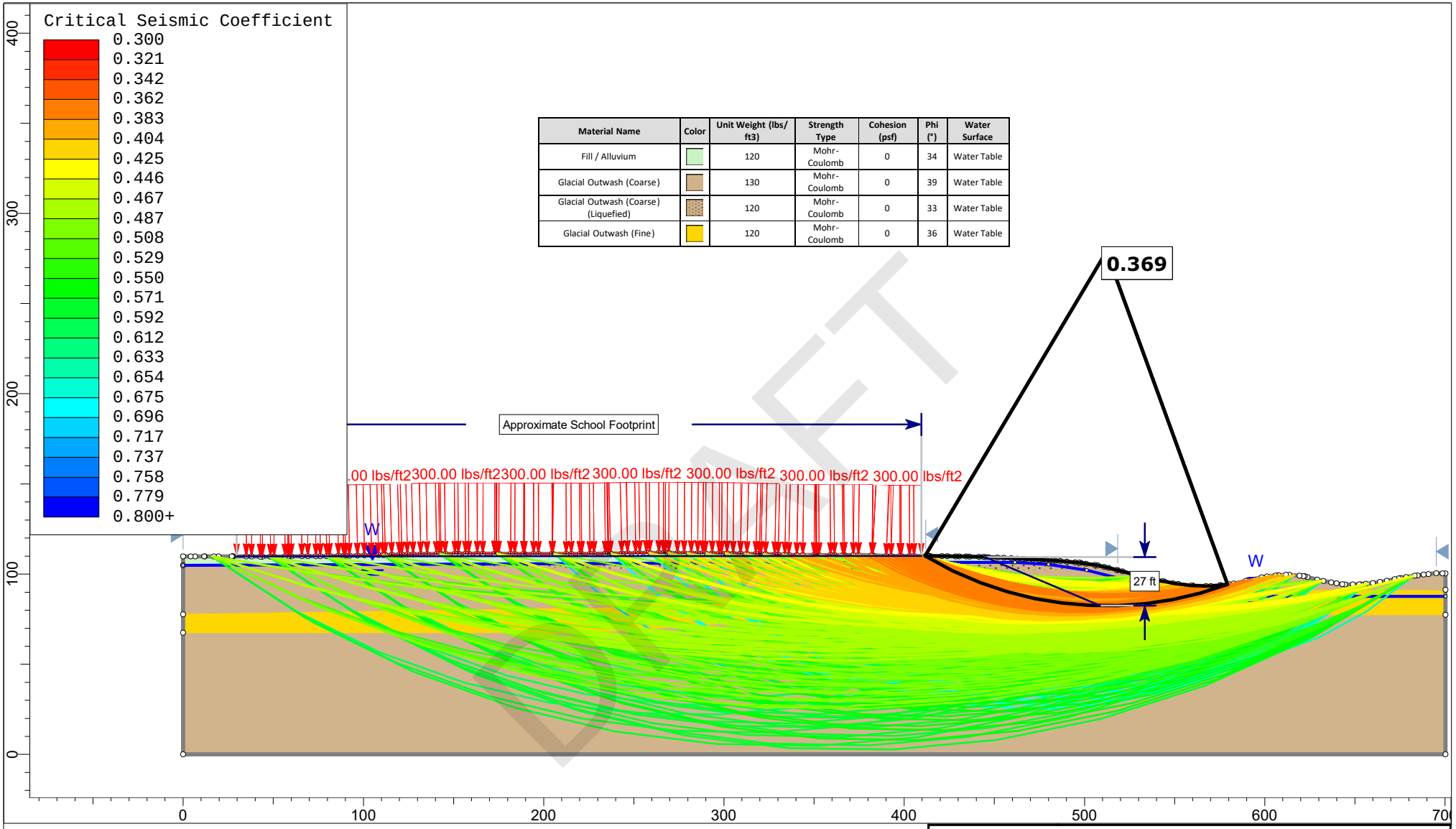
PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
FIRST STREET N
PACIFIC BEACH, WASHINGTON

CROSS SECTION A-A'
SLOPE STABILITY ANALYSIS
SEISMIC CASE

SCALE: AS SHOWN
AUGUST 2026

FIGURE E2

C:\Users\kahrens\OneDrive - haleyaldrich.com\North Beach School District No. 64 - 0210245.Pacific Beach Elementary Resite\Analysis\05_Slope Stability\Cross Section A-A'.slmd



Material Name	Color	Unit Weight (lbs/ ft3)	Strength Type	Cohesion (psf)	Phi (°)	Water Surface
Fill / Alluvium		120	Mohr-Coulomb	0	34	Water Table
Glacial Outwash (Coarse)		130	Mohr-Coulomb	0	39	Water Table
Glacial Outwash (Coarse) (Liquefied)		120	Mohr-Coulomb	0	33	Water Table
Glacial Outwash (Fine)		120	Mohr-Coulomb	0	36	Water Table

DRAFT

HALEY ALDRICH

PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
FIRST STREET N
PACIFIC BEACH, WASHINGTON

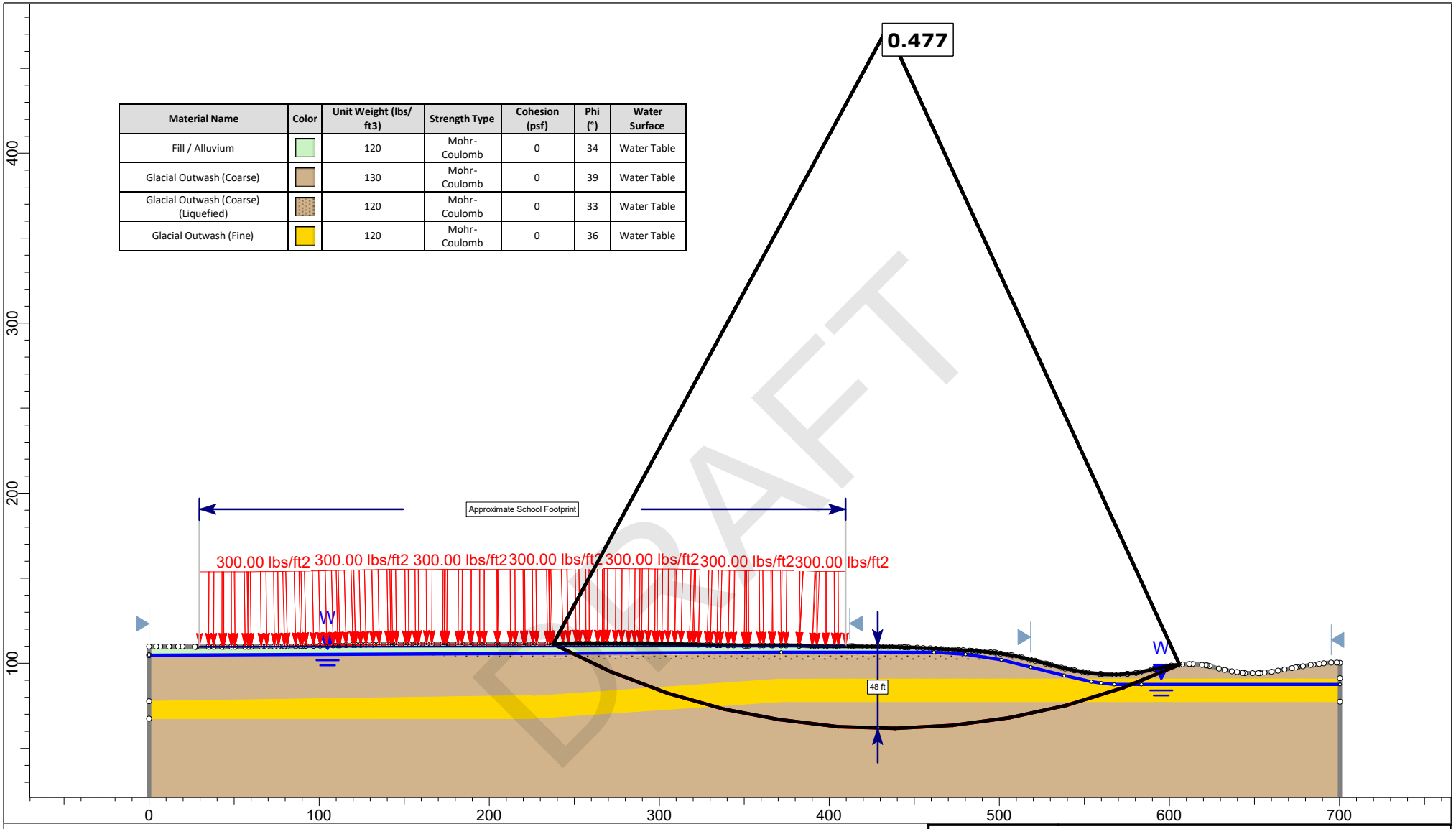
CROSS SECTION A-A'
SLOPE STABILITY ANALYSIS
SEISMIC YIELD (CRITICAL)

SCALE: AS SHOWN
AUGUST 2026

FIGURE E3

C:\Users\kahrens\OneDrive - haleyaldrich.com\North Beach School District No. 64 - 0210245.Pacific Beach Elementary Resite\Analysis\05_Slope Stability\Cross Section A-A'.slmd

Material Name	Color	Unit Weight (lbs/ ft3)	Strength Type	Cohesion (psf)	Phi (°)	Water Surface
Fill / Alluvium		120	Mohr-Coulomb	0	34	Water Table
Glacial Outwash (Coarse)		130	Mohr-Coulomb	0	39	Water Table
Glacial Outwash (Coarse) (Liquefied)		120	Mohr-Coulomb	0	33	Water Table
Glacial Outwash (Fine)		120	Mohr-Coulomb	0	36	Water Table



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HALEY ALDRICH

PACIFIC BEACH ELEMENTARY SCHOOL RELOCATION
FIRST STREET N
PACIFIC BEACH, WASHINGTON

CROSS SECTION A-A'
SLOPE STABILITY ANALYSIS
SEISMIC YIELD (NON-CRITICAL)

SCALE: AS SHOWN
AUGUST 2026

FIGURE E4

Elevating acoustical design.

PACIFIC BEACH ELEMENTARY SCHOOL

Preliminary Acoustical Design Plan

65% Schematic Design

Submitted to:
TCF Architecture
124 North 'I' St.
Tacoma, WA 98403

Prepared by:
Tenor Engineering Group
811 1st Ave, Suite 466
Seattle, WA 98104

July 20, 2026

TABLE OF CONTENTS

1 Executive Summary 1
2 Acoustical Design Plan 1
2.1 Site Assessment and Exterior Façade 1
2.2 Partitions 1
2.2.1 Partition Types: Options for Metal Framing and Studs 2
2.2.2 Partition Types: Options for Wood Framing and Studs 5
2.3 Operable Partitions 9
2.4 Door Seals 10
2.5 Room Finishes/Sound Absorption 11
2.5.1 Classrooms under 10,000 ft^3 (Typical Classrooms) 11
2.5.2 Offices 11
2.5.3 Conference / Small Group Rooms 126 and 133 (~4,300 ft^3) 12
2.5.4 Conference / Small Group Room 155 (~2,500 ft^3) 12
2.5.5 Conference Room 110 (~3,900 ft^3) 13
2.5.6 Art / Maker Space and Flex Classroom 116 (~12,250 ft^3) 14
2.5.7 Reception Room 102 14
2.5.8 Staff Lounge Room 109 (~4,400 ft^3) 14
2.5.9 OT/PT Room 106 (~4,000 ft^3) 15
2.5.10 Health Room 104 (~2,600 ft^3) 15
2.5.11 Small Sensory Rooms 134, 151, and 165 15
2.5.12 Large Sensory Room 130 (~1,800 ft^3) 16
2.5.13 Phone Room 150 (~725 ft^3) 16
2.5.14 Mothers Room (~725 ft^3) 16
2.5.15 Gymnasium Room 145 (~89,000 ft^3) 17
2.5.16 Commons/Cafeteria Room 143 (~45,000 ft^3) 18
2.5.17 Music Room 144 (~25,000 ft^3) 19
2.5.18 Library Room 115 (~18,000 ft^3) 20
3 Mechanical System Noise & Vibration Control 20
4 Performance Criteria 21
4.1 WAC 246-366-110 Sound Control. 21
4.2 2017 ICC A117.1, Chapter 8: Special Rooms and Spaces 21

4.2.1 Section 808: Enhanced Acoustics for Classrooms 21
4.3 WSSP 2023 23
4.3.1 IEQ4.0 & 4.1: Acoustic Performance 23
4.3.2 IEQ4.2: Sound Amplification 24
4.3.3 IEQ4.3: Acoustical Consultant 25
4.4 ANSI 12.60-2010 26
5 Conclusion 28

1 Executive Summary

This report is a summary of our preliminary acoustical design plan for the proposed Pacific Beach Elementary School in Pacific Beach, WA. The following report is based on the 65% Schematic Design drawings dated June 23, 2026.

2 Acoustical Design Plan

The following section notes acoustical performance options based on the code requirements (ICC A117.1, WSSP, WAC), ANSI S12.60, and internal research and testing.

2.1 Site Assessment and Exterior Façade

An environmental noise study was conducted at the proposed building site to assess the existing ambient sound levels and WAC New School Facility Site Approval compliance. A link to the environmental noise study report is available here.

Based on our study, exterior building glazing can be standard commercial exterior glass (1/4" glass – ½" air space – ¼" glass) and meet WAC interior noise criteria for students.

2.2 Partitions

The partitions are color-coded on the marked-up schematic design drawings for reference; click on this link to access the partition mark-up.

Partition recommendations satisfy the minimum requirements as detailed in WSSP IEQ4.0, as well as enhanced recommendations detailed in WSSP IEQ4.1. The partitions in section 2.2.1 below are assumed to be metal framed based on preliminary "S" wall types shown on sheet A31.01 and the composite metal deck floor-ceiling assembly shown in floor and roof type details. However, since wood framing and studs are still being considered, additional options for that configuration are given in section 2.2.2.

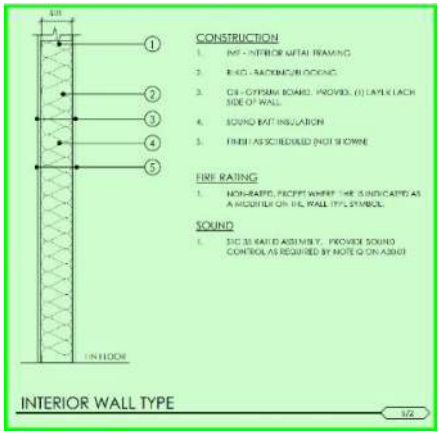
2.2.1 Partition Types: Options for Metal Framing and Studs

Recommended partition assembly details for the metal frame/stud configuration are noted in this section. For partitions with multiple layers of gypsum wall board, backerboard and drywall can replace one layer.

2.2.1.1 IEQ 4.0

Requirement / IEQ4.0 (Minimum)

STC 40: Core Learning to Hallway, Partitions with Doors



Interior Wall Type S/2: Single Metal Stud Partition with (1) layer of GWB on each side of 33 mil (20 ga) metal stud (16" o.c.) with insulation in wall cavity.

Extend Gypsum Board:

- Partitions with doors and ACT on both sides (CAC 32 or greater): Extend both layers a minimum of 6" above ACT. No layers need to extend to structure. Doors will limit performance of partition system.
- ACT ceiling (CAC 32 or greater) on one side: At least 1 layer of 5/8" gypsum board to hard-lid or to structure, other layer at least 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides.

Glass: 3/8" or thicker monolithic glass for relites and windows satisfies the acoustical performance for the areas noted with green.

STC 45: Core Learning to Core Learning, Sensitive Conditions

The **Interior Wall Type S/2 (STC 45)**: Single Metal Stud Partition with (1) layer of GWB on each side of 33 mil (20 ga) metal stud (16" o.c.) with insulation in wall cavity, meets the minimum performance and is an option when cabinets or other finishes are planned for classrooms.

Extend Gypsum Board:

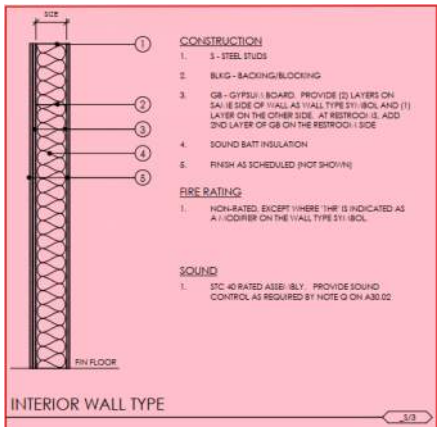
- ACT ceiling (CAC 32 or greater) on both sides: At least 1 layer extended to structure, other layer can stop 6" above ACT.
- ACT ceiling on one side (minimum CAC 32) or open-to-structure (minimum CAC 32): Extend all layers to structure.

Glass: 1/2" acoustically laminated glass for relites and windows satisfies the acoustical performance for the areas noted with orange.

STC 50: Core Learning to Core Learning, Sensitive Conditions

Interior Wall Type S/3 (STC 50): Single Metal Stud Partition*:* (2) layers of GWB on one side and (1) layer of GWB on other side of 33 mil (20 ga or thinner) metal stud (16" o.c.) with insulation in wall cavity.

- One layer of gypsum board can be replaced with plywood to simplify monitor/screen mounting.



Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on both sides: At least 1 layer extended to structure, other layers can stop 6" above ACT.
- ACT ceiling on one side (minimum CAC 32): Extend at least two layers to structure; on ACT side extend partial height layer a minimum of 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides.

Glass: 1/2" acoustically laminated glass for relites and windows satisfies the acoustical performance for the areas noted with orange.

2.2.1.2 IEQ 4.1

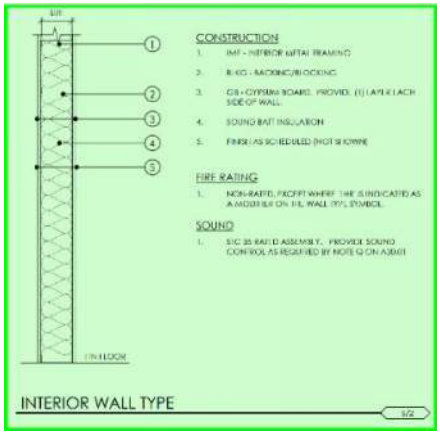
Suggested / IEQ 4.1 (1 Point)

STC 45: Core Learning to Hallway, Partitions with Doors

Interior Wall Type S/2 (STC 45): Single Metal Stud Partition with (1) layer of GWB on each side of 33 mil (20 ga) metal stud (16" o.c.) with insulation in wall cavity.

Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on one or both sides: At least 1 layer of 5/8" gypsum board to hard-lid or to structure, other layer at least 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides.

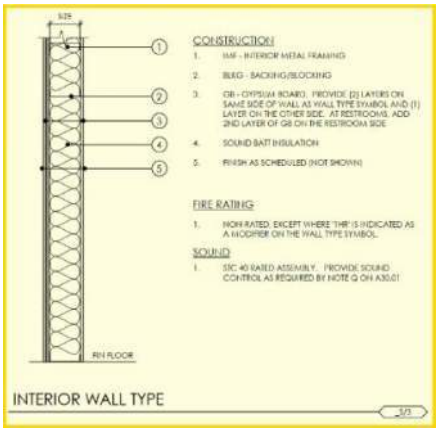


Glass: 3/8" or thicker monolithic glass for relites and windows satisfies the acoustical performance for the areas noted with green.

STC 50: Core Learning to Core Learning, Sensitive Conditions

Interior Wall Type S/3 (STC 50): Single Metal Stud Partition*:* (2) layers of GWB on one side and (1) layer of GWB on other side of 33 mil (20 ga or thinner) metal stud (16" o.c.) with insulation in wall cavity.

- One layer of gypsum board can be replaced with plywood to simplify monitor/screen mounting.



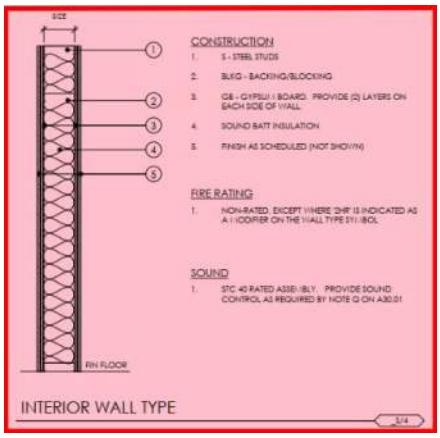
Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on both sides: At least 1 layer extended to structure, other layers can stop 6" above ACT.
- ACT ceiling on one side (minimum CAC 32): Extend at least two layers to structure; on ACT side extend partial height layer a minimum of 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides.

Glass: 1/2" acoustically laminated glass for relites and windows satisfies the acoustical performance for the areas noted with orange.

STC 55: Highly Sensitive Conditions

Interior Wall Type S/4 (STC 55): Single Metal Stud Partition*:* (2) layers of GWB on both sides of 33 mil (20 ga or thinner) metal stud (16" o.c.) with insulation in wall cavity.



Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on both sides: At least 2 layers extended to structure, other layers can stop 6" above ACT.
- ACT ceiling on one side (minimum CAC 32): Extend at least three layers to structure; on ACT side extend partial height layer a minimum of 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides.

Glass is not recommended for partitions noted in red.

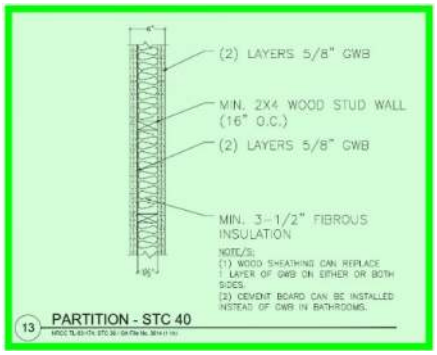
2.2.2 Partition Types: Options for Wood Framing and Studs

Recommended partition assembly details for the wood frame/stud configuration are noted in this section. For partitions with multiple layers of gypsum wall board, backerboard and drywall can replace one layer.

2.2.2.1 IEQ 4.0

Requirement / IEQ4.0 (Minimum)

STC 40: Core Learning to Hallway, Partitions with Doors

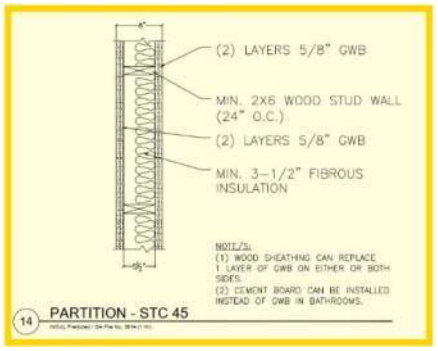


2+2 Wood Partition: Single Stud Wood Partition with (2) layers of GWB on both sides (1 layer on each or either side can be replaced with plywood sheathing and retain the acoustical performance), and insulation in cavity; 2"x4" studs at 24-inch o.c.

Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on both sides: Extend layers a minimum of 6" above ACT.
- ACT ceiling on one side (minimum CAC 32): Extend at least one layer to structure on the open-to-structure side; extend partial height layers a minimum of 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides

STC 45: Core Learning to Core Learning, Sensitive Conditions



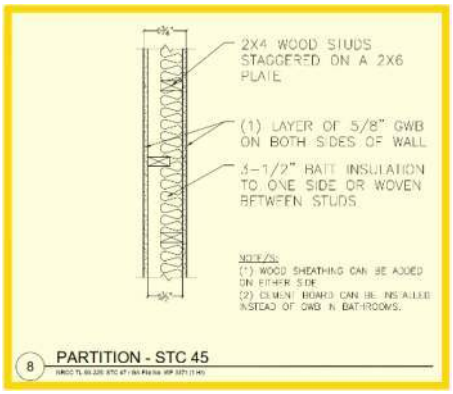
2+2 Wood Partition: Single Stud Wood Partition with (2) layers of GWB on both sides (1 layer on each or either side can be replaced with plywood sheathing and retain the acoustical performance), and insulation in cavity; 2"x6" studs at 24-inch o.c.

Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on both sides: At least 1 layer extended to structure, other layers can stop 6" above ACT.
- ACT ceiling on one side (minimum CAC 32): Extend at least one layer to structure on each side; on ACT side extend partial height layer a minimum of 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides

OR

1+1 Stagger Wood Partition: Stagger wood stud with (1) layer of 5/8" GWB on each side with insulation in each stud bay; adding one layer of sheathing on one or both sides will improve the acoustical performance; 2"x4" studs staggered on a 2"x6" wood plate.

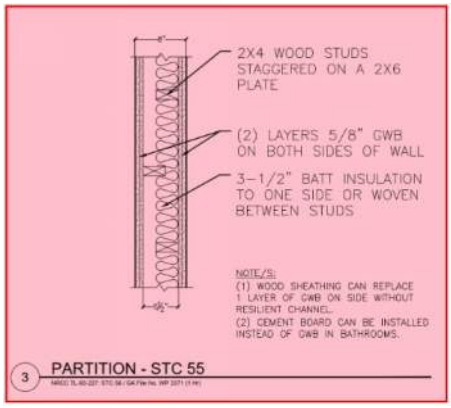


Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on one or both sides: At least 1 layer extended to structure, other layer can stop 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides

STC 55: Conference Rooms, High-Performance Conditions

2+2 Stagger Stud Wood Partition: Stagger wood stud with (2) layers of 5/8" GWB on each side with insulation in each stud bay (1 layer on each or either side can be replaced with plywood sheathing and retain the acoustical performance), 2"x4" studs staggered on a 2"x6" plate.



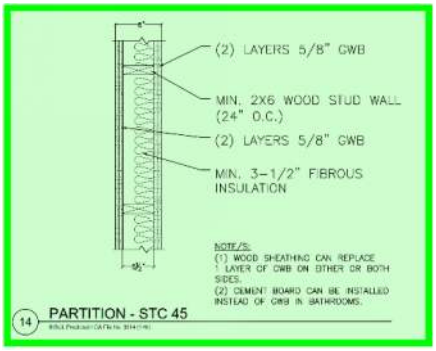
Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on both sides: At least 2 layers extended to structure, other layers can stop 6" above ACT.
- ACT ceiling on one side (minimum CAC 32): Extend at least three layers to structure; on ACT side extend partial height layer a minimum of 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides.

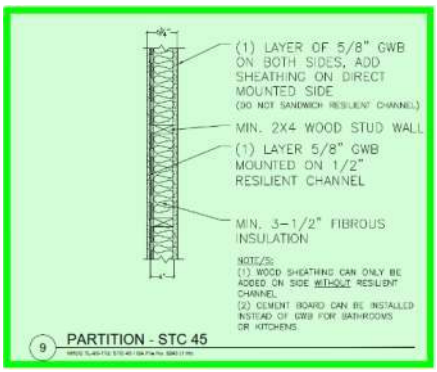
2.2.2.2 IEQ 4.1

Suggested / IEQ 4.1 (1 Point)

STC 45: Core Learning to Hallway, Partitions with Doors



2+2 Wood Partition: Single Stud Wood Partition with (2) layers of GWB on both sides (1 layer on each or either side can be replaced with plywood sheathing and retain the acoustical performance), and insulation in cavity; 2"x6" at 24-inch o.c.
OR
1+1 Stagger Wood Partition: Stagger wood stud with (1) layer of 5/8" GWB on each side with insulation in each stud bay; adding one layer of sheathing on one or both sides will improve the acoustical performance. 2"x4" studs staggered on a 2"x6" plate.
OR
1+1 Wood Partition with Resilient Channel: Single Stud Wood Partition with (1) layer of GWB on each side, with resilient channel on one side and insulation in cavity*.



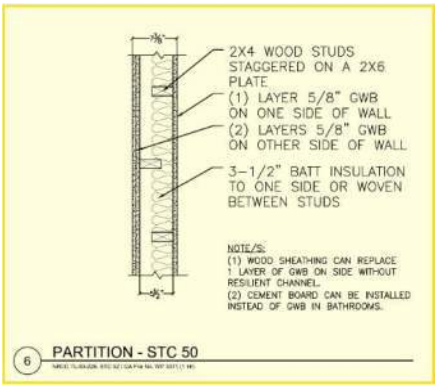
*Note the following acoustical challenges with resilient channel:

1. Wall-mounted shelving and/or devices will significantly reduce the acoustical performance of the wall
2. This adds ½" to the wall and only provides acoustical improvement when perfectly installed
3. This cannot be sandwiched with sheathing

Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on one or both sides: At least 1 layer extended to structure, other layers can stop 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides

STC 50: Core Learning to Core Learning, Office to Office, Sensitive Conditions

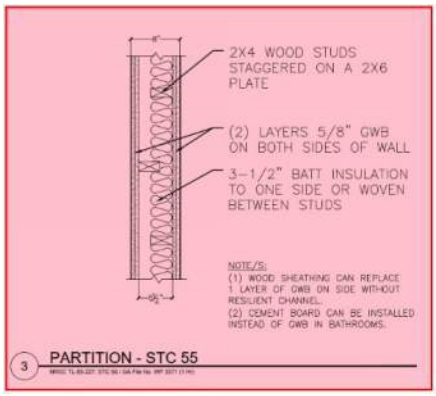


2+1 Stagger Wood Partition: Stagger wood stud with (1) layer of 5/8" GWB on one side and (2) layers of 5/8" GWB on other side with insulation in each stud bay. 2"x4" studs staggered on a 2"x6" plate.

Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on both sides: At least 1 layer extended to structure, other layers can stop 6" above ACT.
- ACT ceiling on one side (minimum CAC 32): Extend at least two layers to structure; on ACT side extend partial height layer a minimum of 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides.

STC 55: Conference Rooms, High-Performance Conditions



2+2 Stagger Wood Partition: Stagger wood stud with (2) layers of 5/8" GWB on each side with insulation in each stud bay. 2"x4" studs staggered on a 2"x6" plate.

Extend Gypsum Board:

- ACT ceiling (CAC 32 or greater) on both sides: At least 2 layers extended to structure, other layers can stop 6" above ACT.
- ACT ceiling on one side (minimum CAC 32): Extend at least three layers to structure; on ACT side extend partial height layer a minimum of 6" above ACT.
- Open-to-Structure: Extend all layers to structure when exposed ceiling is installed on both sides

2.3 Operable Partitions

Operable Partition: Separating Music Room and Gymnasium

If this is assumed to be a classroom to gym partition, the WSSP requirement is STC 55, though WSSP and ANSI S12.60 do not call out performance requirements for operable partitions. To meet the project goals and expectations, the realized field-test performance is critical. The specifications should note a performance requirement of a field-tested Noise Isolation Class (NIC) of **45** or greater when tested in accordance with ASTM E336. The laboratory-tested performance is less critical but will likely exceed STC 55. The manufacturer should bid with the product that can consistently meet the performance specification.

Suggested Manufacturers: Skyfold, Advanced Equipment, or approved equal

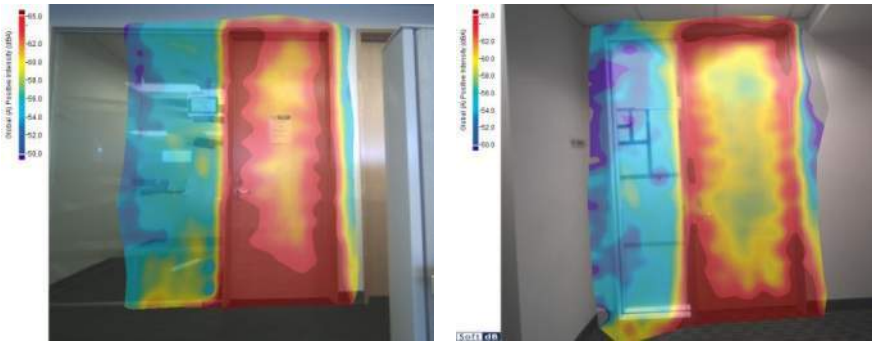
Operable Partition: Separating Gymnasium and Commons/Cafeteria

This adjacency is less sensitive as both spaces are active spaces. The minimum suggested performance is an operable partition with a field-tested performance of Noise Isolation Class (NIC) **35**, when tested in accordance with ASTM E336; this would likely translate to a laboratory performance STC 45 or greater. Though the specification should clearly note the performance requirement.

Suggested Manufacturers: Advanced Equipment, Modernfold, or approved equal.

2.4 Door Seals

Doors for enclosed rooms need good seals to provide effective sound isolation. Door seals are suggested for all sensitive rooms with doors to busy or potentially noisy areas, noted in the section below. The acoustical performance of the door is less about the core and relite, but the seals that tightly compress around the frame and threshold of the door, the images below show examples of doors with glass relites that demonstrate this performance effect. Seals can be especially challenging for frameless glass and sliding doors.



Requirement / IEQ4.0 (Minimum): No requirement for door seals

Door Seals *shown with Blue clouds in partition mark-up*
For doors to rooms that desire speech privacy, implement the following; strongly recommended for private offices with sensitive conversations.

Minimum:

1. Install a door with a core weight of at least 4.0 psf
2. Install at least one row of adhesive jamb gasketing, such as Pemko S88 or S773.
3. Install door shoe (e.g. Pemko 2113) or sweep (e.g. Pemko 3151) with ¼" raised smooth saddle threshold.
    a. Automatic door bottom seals such as Pemko STC411 or STC4131 are an acceptable alternative but require regular maintenance to continually provide effective sound isolation performance.

Suggested:

1. Install a door with a core weight of at least 6.0 psf
2. Install at least two rows of adhesive jamb gasketing, such as Pemko S88 or S773, AND perimeter gasketing for the jambs (e.g. Pemko 316, Pemko 303, Pemko 296)
3. Install door shoe (e.g. Pemko 2212) and door sweep (e.g. Pemko 315) with ¼" raised smooth saddle threshold.
    a. Automatic door bottom seals such as Pemko STC411 or STC4131 are an acceptable alternative but require regular maintenance to continually provide effective sound isolation performance.

2.5 Room Finishes/Sound Absorption

The overall acoustical comfort of a space is directly correlated to the reverberation time within that room. The unit for absorption, Sabins, is a function of the quantity and acoustical efficiency of room finish materials. More acoustically efficient materials have an NRC rating closer to 1.0, which means less surface area is required to provide the same amount of Sabins compared to a lower NRC material (e.g., NRC 0.50).

$$Sabins = Surface\ Area\ (ft^2) * Sound\ Absorption\ Rating\ (NRC)$$

2.5.1 Classrooms under 10,000 ft^3 (Typical Classrooms)

The following recommendations assume 100% ceiling coverage with acoustical ceiling tiles at 10'-0" height with hard flooring.

Requirement / IEQ4.0 (Min.) & IEQ4.1 (1 Point): 0.6 seconds:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

Enhanced / Bilingual & Hybrid Classroom Use:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.80 and CAC 32)
    - Armstrong Ultima High NRC (NRC 0.80 / CAC 35)

OR

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32, AND
- Install 150 sq ft of felt or PET acoustical wall panels with a minimum thickness of 1" (FSorb, PolySorb, or comparable).

2.5.2 Offices

Principal 111, Counselor 112, Itinerant 113, Library 114, SLP 103, PE 160

There are no WSSP code requirements for these spaces. The following recommendations are based on the International Green Construction Code (IgCC) and best practices. Recommendations assume acoustical ceiling tile at 10'-0" elevation.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

Enhanced / Hybrid Meeting Functionality:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35), AND
- Install 1" thick felt or PET acoustical wall panels across (2) perpendicular walls between 3'-0" and 7'-0" elevation to mitigate the risk of flutter echo (e.g. FSorb, PolySorb, or comparable).

2.5.3 Conference / Small Group Rooms 126 and 133 (~4,300 ft^3)

No code requirement for this space. Recommendations are based on IgCC and expectations for hybrid work environments.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

Suggested / Hybrid Meeting Functionality:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35), AND
- Install a minimum of 50 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation.

Enhanced:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.80 and CAC 32.
    - Armstrong Ultima High NRC (NRC 0.80 / CAC 35), AND
- Install a minimum of 175 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation.

2.5.4 Conference / Small Group Room 155 (~2,500 ft^3)

No code requirement for this space. Recommendations are based on IgCC and expectations for hybrid work environments.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

Suggested / Hybrid Meeting Functionality:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35), AND
- Install a minimum of 20 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation.

Enhanced:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.80 and CAC 32.
    - Armstrong Ultima High NRC (NRC 0.80 / CAC 35), AND
- Install a minimum of 100 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation.

2.5.5 Conference Room 110 (~3,900 ft^3)

No code requirement for this space. Recommendations are based on IgCC and expectations for hybrid work environments. Recommendations assume 5/8" GWB applied to metal ceiling framing at 10'-0" elevation per RCP.

Minimum / IgCC:

- Install a minimum of 325 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across the walls or ceiling, OR
- Install a minimum of 250 sq. ft. of 2" thick felt or PET acoustical wall panels distributed across the walls and ceiling (e.g. FSorb, PolySorb, or comparable), OR
- Replace GWB ceiling with acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32 (e.g. Armstrong School Zone Fine Fissured NRC 0.70 / CAC 35)

Suggested / Hybrid Meeting Functionality:

- Replace GWB ceiling with acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32, AND
- Install a minimum of 40 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation (e.g. FSorb, PolySorb, or comparable).

OR

- Replace GWB ceiling with Acoustical Plaster or Perforated Gypsum Board to maintain the architectural aesthetic minimum performance NRC 0.70 and CAC 32
    - Gypsorb, BASWAPhon Acoustical Plaster, Armstrong ACOUSTIBUILT, AND
- Install a minimum of 40 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation (e.g. FSorb, PolySorb, or comparable).

Enhanced:

- Replace GWB ceiling with acoustical ceiling tile (ACT) with minimum performance NRC 0.80 and CAC 32.
    - Armstrong Ultima High NRC (NRC 0.80 / CAC 35), AND
- Install a minimum of 110 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation.

2.5.6 Art / Maker Space and Flex Classroom 116 (~12,250 ft^3)

The following recommendations assume 100% ceiling coverage with acoustical ceiling tiles at 10'-0" height with hard flooring.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

Enhanced / Bilingual & Hybrid Classroom Use:
Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32, AND

- Install 125 sq ft of felt or PET acoustical wall panels with a minimum thickness of 1" (FSorb, PolySorb, or comparable).

2.5.7 Reception Room 102

There is not a specific WSSP requirement for reception spaces. The following recommendations are based on criteria for multipurpose/commons spaces. The reception RCP drawings show an acoustical linear plank wood ceiling system, microperforated with acoustical backing with metal grid system. Calculations assume 10'-0" ceiling height.

Minimum / IEQ4.1 for multipurpose/commons (1.2s):

- Select an acoustically rated wood ceiling system with absorptive core, minimum NRC of 0.4
    - Armstrong WOODWORKS Linear Veneered; select acoustical backing with minimum NRC of 0.5 (e.g., Cortega Square Lay-in Panel – NRC 0.55)

Enhanced:

- Select an acoustically rated wood ceiling system with minimum NRC of 0.55
    - Armstrong WOODWORKS Linear Veneered; select acoustical backing with minimum NRC of 0.7 (e.g. Armstrong School Zone Fine Fissured Infill – NRC 0.7, or 1" fiberglass/polyester infill)

2.5.8 Staff Lounge Room 109 (~4,400 ft^3)

The following recommendations assume 100% ceiling coverage with acoustical ceiling tiles at 10'-0" height with hard flooring.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

No additional measures are needed to achieve enhanced performance.

2.5.9 OT/PT Room 106 (~4,000 ft^3)

The following recommendations are based on criteria for multipurpose/commons spaces, assuming 100% ceiling coverage with acoustical ceiling tiles at 10'-0" height with hard flooring.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

No additional measures are needed to achieve enhanced performance.

2.5.10 Health Room 104 (~2,600 ft^3)

The following recommendations are based on criteria for multipurpose/commons spaces, assuming 100% ceiling coverage with acoustical ceiling tiles at 10'-0" height with hard flooring.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

No additional measures are needed to achieve enhanced performance.

2.5.11 Small Sensory Rooms 134, 151, and 165

This is assumed to be a private, single-occupancy room. Recommendations assume this is a quiet space not intended for phone call use.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

Enhanced:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35), AND
- Install a minimum of 25 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation.

2.5.12 Large Sensory Room 130 (~1,800 ft^3)

This is assumed to be a private, single-occupancy room. Recommendations assume this is a quiet space not intended for phone call use.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
  - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

Enhanced:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
  - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35), AND
- Install a minimum of 50 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation.

2.5.13 Phone Room 150 (~725 ft^3)

This is assumed to be a private, single-occupancy room. Recommendations assume this is a quiet space that is also intended for phone call use.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
  - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

Suggested:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
  - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35), AND
- Install a minimum of 25 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation (e.g. FSorb).

Enhanced:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.80 and CAC 32.
  - Armstrong Ultima High NRC (NRC 0.80 / CAC 35) AND
- Install a minimum of 25 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across (2) perpendicular walls between 3'-0" and 7'-0" elevation (e.g. FSorb).

2.5.14 Mothers Room (~725 ft^3)

This is assumed to be a private, single-occupancy room.

Minimum / IgCC:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
  - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

No additional measures are needed to achieve enhanced performance.

2.5.15 Gymnasium Room 145 (~89,000 ft^3)

The following assumes an average OTS height of 25'-0".

Space Type	Volume	Acoustic Criteria for Reverberation Time (RT) - seconds	
		IEQ4.0 (Minimum Req.)	IEQ4.1 (1 point)
Gymnasiums	V ≤ 150,000 ft^3	RT ≤ 1.7	RT ≤ 1.3
	150,000 ft^3 < V	RT ≤ 2.0	RT ≤ 1.5

Requirement / IEQ4.0 (Min.)

This space needs **2,080 Sabins** to meet the WSSP requirement of 1.7 seconds in speech frequencies.

Material Options:

- Fully perforated acoustical metal roof deck with minimum NRC of **0.7**
  - *Verco Next Generation – 2" Acoustical Dovetail Roof Deck* with ½" plywood or roof board backing.
  - ASC Cellular Acustadeck – DGN-32AW with Poly-Iso cover board, OR
- 1,900 sq ft of vertically suspended baffles with minimum NRC of **1.1**
  - Armstrong SOUNDSCAPES Blades, MBI Lapendary Panels (2"-4" Perf. PVC), 2" FSorb, or comparable

Suggested / IEQ4.1 (1 Point)

This space needs **2,870 Sabins** to meet the WSSP IEQ4.1 requirement of 1.3 seconds in speech frequencies.

Material Options:

- Fully perforated acoustical metal roof deck with minimum NRC of **0.9**
  - *Verco Next Generation – 2" Acoustical Dovetail Roof Deck* with 2" Poly-Iso coverboard with plain deck insulation.
  - ASC Cellular Acustadeck – DGN-32AW with Fiberglass cover board, OR
- 2,400 sq ft of vertically suspended baffles with minimum NRC of **1.1**
  - Armstrong SOUNDSCAPES Blades, MBI Lapendary Panels (2"-4" Perf. PVC), 2" FSorb, or comparable

Enhanced Noise Control

This space needs **3,870 Sabins** to meet the noise control goals with up to 30 children actively playing based on noise control research associated with room volume and Sound Strength (G).

Material Options:

Option 1:

- Fully perforated acoustical metal roof deck with minimum NRC of **1.0**
  - *Verco Next Generation – 2" Acoustical Dovetail Roof Deck* with 2" Fiberglass cover board with plain deck insulation, AND

- Install an additional **300 Sabins** with one of the following:
  - 335 sq ft of 2" thick felt or PET acoustical wall panels with minimum NRC 0.9, OR
  - 430 sq ft of 1" thick felt or PET acoustical wall panels with minimum NRC 0.7

Option 2:

- 3,520 sq ft of vertically suspended baffles with minimum NRC of 1.1
  - Armstrong SOUNDSCAPES Blades, MBI Lapendary Panels (2"-4" Perf. PVC), 2" FSorb, or comparable
  - Square footage represents one face of purchased material.

2.5.16 Commons/Cafeteria Room 143 (~45,000 ft3)

This space has planned suspended acoustical ceiling panels with a metal grid system. Recommendations assume an average 25'-0" ceiling height. Recommendations assume suspended ceiling panels cover the entire ceiling area.

Space Type	Volume	Acoustic Criteria for Reverberation Time (RT) - seconds	
		IEQ4.0 (Minimum Req.)	IEQ4.1 (1 point)
Multi-Purpose, Commons, Cafeterias	V ≤ 100,000 ft^3	RT ≤ 1.5	RT ≤ 1.2
	100,000 ft^3 < V	RT ≤ 1.7	RT ≤ 1.4

Requirement / IEQ4.0 (Min.)

This space needs **1,170 Sabins** to meet the WSSP 4.0 requirement of 1.5 seconds in speech frequencies.

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
  - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35)

Suggested / IEQ4.1 (1 Point)

This space needs **1,500 Sabins** to meet the WSSP 4.1 requirement of 1.2 seconds in speech frequencies.

- Install acoustical ceiling tile (ACT) with minimum performance NRC 0.80 and CAC 32 (e.g., Armstrong Ultima High NRC – NRC 0.80 / CAC 35)

OR

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
  - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35), AND
  - Install an additional 300 Sabins with one of the following
    - 335 sq ft of 2" thick felt or PET acoustical wall panels with minimum NRC 0.9,
    - 430 sq ft of 1" thick felt or PET acoustical wall panels with minimum NRC 0.7

Enhanced Noise Control

This space needs **1,900 Sabins** to meet the noise control goals for up to 15 simultaneous group conversations based on noise control research Sound Strength (G).

- Install a tiered baffle system with a minimum of 2,100 sq. ft. of acoustical ceiling clouds/baffles with minimum NRC of 0.9
    - Arktura SoundStar 24", MBI Lapendary Panels (2"-4" Perf. PVC), 2" FSorb, or comparable

2.5.17 Music Room 144 (~25,000 ft3)

This space has planned suspended acoustical ceiling panels with a metal grid system. Recommendations assume an average 20'-0" ceiling height. Drums and amplified music will require thicker materials (>2") to effectively absorb sound in the bass frequency range.

Requirement (classification as classroom) / IEQ4.0 (Min.) & IEQ4.1 (1 Point): 0.7 seconds

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
    - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35), AND
- Install a minimum of 500 sq. ft. of 1" to 2" to thick acoustical wall panels across a minimum of (2) walls (e.g. FSorb)

Suggested / Increased absorption for group ensembles, group performance:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.80 and CAC 32.
    - Armstrong Ultima High NRC – NRC 0.80 / CAC 35, AND
- Install a minimum of 650 sq. ft. of 1" to 2" to thick acoustical wall panels across a minimum of (2) walls (e.g. FSorb)

Enhanced/ Full-spectrum absorption for use with Drums, Amplified Instruments:

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.80 and CAC 35 (e.g., Armstrong Ultima High NRC – NRC 0.80 / CAC 35), AND
- Install a minimum of 800 sq. ft. of 2" to 4" thick acoustical wall panels across a minimum of (2) walls.
    - 2" FSorb, 4" MBI Colorsonix, Kinetics Hardside 4"

2.5.18 Library Room 115 (~18,000 ft^3)

The following recommendations assume 100% ceiling coverage with acoustical ceiling tiles at an average 15'-0" height with carpet flooring.

Requirement (classification as classroom) / IEQ4.0 (Min.) & IEQ4.1 (1 Point): 0.7 seconds

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.80 and CAC 35
  - Armstrong Ultima High NRC (NRC 0.80 / CAC 35)

OR

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.70 and CAC 32.
  - Armstrong School Zone Fine Fissured (NRC 0.70 / CAC 35), AND
- Install a minimum of 150 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across walls.

Enhanced

- Select acoustical ceiling tile (ACT) with minimum performance NRC 0.80 and CAC 35
  - Armstrong Ultima High NRC (NRC 0.80 / CAC 35), AND
- Install a minimum of 350 sq. ft. of 1" thick felt or PET acoustical wall panels distributed across the walls.

3 Mechanical System Noise & Vibration Control

A full mechanical systems noise and vibration review will be completed upon receiving final equipment selections with sound data and mechanical plans with completed duct paths.

4 Performance Criteria

4.1 WAC 246-366-110 Sound Control.

(1) In new construction, plans submitted under WAC 246-366-040 shall specify ventilation equipment and other mechanical noise sources in classrooms are designed to provide background sound which conforms to a noise criterion curve or equivalent not to exceed NC-35. The owner shall certify equipment and features are installed according to the approved plans.

(2) In new construction, the actual background noise at any student location within the classroom shall not exceed 45 dBA (Leqx) and 70 dB (Leqx) (unweighted scale) where x is thirty seconds or more. The health officer shall determine compliance with this section when the ventilation system and the ventilation system's noise generating components, e.g., condenser, heat pump, etc., are in operation.

4.2 2017 ICC A117.1, Chapter 8: Special Rooms and Spaces

4.2.1 Section 808: Enhanced Acoustics for Classrooms

808.1 General. Classrooms not exceeding 20,000 cubic feet (565 m^3) and required to provide enhanced acoustics shall comply with Section 808.

808.2 Reverberation Time. Classroom reverberation times shall comply with either Section 808.1.1 or Section 808.2, depending on the size of the room.

808.2.1 Performance Method. For each of the octave frequency bands with center frequencies of 500, 1000, and 2000 Hz, the reverberation time (T60) shall not exceed the times specified below.

1. 0.6 seconds in classrooms with volumes up to and including 10,000 cubic feet (285 m^3)
2. 0.7 seconds in classrooms with volumes of more than 10,000 cubic feet (285 m^3), but less than 20,000 cubic feet (566 m^3)

Reverberation times shall apply to fully-furnished, unoccupied classrooms. Reverberation times shall be field verified via measurements over a minimum 20 dB decay in each octave frequency band in accordance with ASTM E2235lised in Section 106.2.13.

808.2.2 Prescriptive Method. The Noise Reduction Coefficient (NRC) ratings for floor, wall and ceiling surface finishes shall conform to the following equations:

For a classroom with a volume less than or equal to 10,000 cubic feet (285 m^3):

(NRC-floor x S-floor) + (NRC-ceiling x S-ceiling) + (NRC-wall x S-wall) > or = Volume / 12

For a classroom with a volume between 10,000 cubic feet (285 m^3) and 20,000 cubic feet (565 m^3):

(NRC-floor x S-floor) + (NRC-ceiling x S-ceiling) + (NRC-wall x S-wall) > or = Volume / 14

Where:
NRC-floor = NRC rating of floor finish material
NRC-ceiling = NRC rating of ceiling finish material
NRC-wall = NRC rating of wall acoustical treatment (acoustic wall panel - AWP)
S-xxx = Surface Area in sq ft

Where a floor, ceiling or wall has multiple surface finishes, the NRC x S product for each surface finish shall be added to the left side of the equation.

808.3 Ambient Sound Level. Classroom ambient sound levels shall comply with Sections 808.3.1 and 808.3.2. Ambient sound levels from sound sources outside and inside the classroom shall be evaluated individually. The greatest one-hour averaged sound levels shall be evaluated at the loudest usable location I the room at a height of 36-inches (915 mm) to 42-inches (1065 mm) above the floor and no closer than 36-inches (915 mm) from any wall, window or object. The ambient sound levels limits shall apply to fully-furnished, unoccupied classrooms, and with only permanent HVAC, electrical and plumbing systems functioning. Classroom equipment, including, but not limited to, computers, printers and fish tank pumps shall be turned off during these measurements.

808.3.1 Sound sources outside of the classroom. Classroom ambient sound levels shall not exceed 35 dBA and 55 dBC due to intruding noise from sound sources outside of the classroom, whether from the exterior or from other interior spaces.

808.3.2 Sound sources inside the classroom. Classroom ambient sound levels shall not exceed 35 dBA and 55 dBC from noise from sound sources inside the classroom.

4.3 WSSP 2023

4.3.1 IEQ4.0 & 4.1: Acoustic Performance

Purpose: Provide the acoustical qualities necessary for good speech communication between students and teachers in classrooms and other learning spaces.

Background Noise

Table 1 provides the maximum unoccupied background noise levels generated from HVAC system noise, which is quantified (during design) as the Noise Criteria (NC). The overall noise levels from all sources: environmental noise intrusion, interior building systems, and HVAC systems, shall not exceed 45 dBA to meet the minimum requirements and 40 dBA for 1 point within core learning spaces.

Table 1: Background Noise Level Criteria

Space Type	Acoustic Criteria for NC / dBA	
	IEQ4.0 (Minimum Req.)	IEQ4.1 (1 point)
Classrooms, Core Learning Spaces, and Libraries	NC 35 / 45 dBA	NC 30 / 40 dBA
Corridors, Common Areas, and Gymnasiums	NC 45 / 50 dBA	NC 40 / 45 dBA

Sound Transmission and Impact Insulation

Table 2 provides the minimum airborne sound isolation, defined by Sound Transmission Class (STC), and footfall insulation, defined by Impact Insulation Class (IIC), for Classrooms and Core Learning Spaces. The field-tested sound transmission performance, defined by Noise Isolation Class (NIC) when tested in accordance with ASTM E336, has a five (5) point tolerance from the stated values.

Table 2: Sound Transmission and Impact Insulation Criteria

Space Type	Adjacent Space Type	Acoustic Criteria for Airborne Sound Isolation (STC)	
		IEQ4.0 (Minimum Req.)	IEQ4.1 (1 point)
Classrooms and Core Learning Space	Classrooms and Core Learning Space	STC 45	STC 50
	Corridor, Hallway, or Common Area*	STC 40	STC 45
	Gymnasium, Band/Music Room, Cafeteria, or Mechanical Room	STC 55	STC 60
	Bathroom	STC 50	STC 55
	Space type (Above)	Acoustic Criteria for IIC	
	Classroom and Core Learning Space	IIC 45	IIC 50

* The current WSSP IEQ4 section on interior airborne sound isolation does not make note of considerations for doors. Whereas the cited standard ANSI S12.60 notes that following in 5.4.2.4:

> *5.4.2.4* Interior door assemblies and up to 1 m^2 (10 ft^2) of window glazing area immediately adjacent to the door opening into core learning spaces from corridors, stairways, offices, or conference rooms shall achieve an STC rating of 30 or greater in their operable condition. The STC rating for interior entry doors into music rooms from corridors or staircase areas shall be at least 40 if such

doors are within 9 m (30 ft) of a door to a core learning space. A vestibule entry composed of two sets of doors with STC ratings of 30 or greater shall be considered to conform to the STC 40 requirement.

Room Reverberation

Table 3 outlines the maximum average (unoccupied) reverberation times (RT) within speech frequencies, between 500 Hz to 2000 Hz, based on the room use and room volume.

Table 3: Room Reverberation Criteria

Space Type	Volume	Acoustic Criteria for Reverberation Time (RT) - seconds	
		IEQ4.0 (Minimum Req.)	IEQ4.1 (1 point)
Classrooms and Core Learning Spaces	$V \leq 10{,}000\ ft^3$	RT ≤ 0.6	RT ≤ 0.6
	$10{,}000\ ft^3 < V$	RT ≤ 0.7	RT ≤ 0.7
Gymnasiums	$V \leq 150{,}000\ ft^3$	RT ≤ 1.7	RT ≤ 1.3
	$150{,}000\ ft^3 < V$	RT ≤ 2.0	RT ≤ 1.5
Multi-Purpose, Commons, Cafeterias	$V \leq 100{,}000\ ft^3$	RT ≤ 1.5	RT ≤ 1.2
	$100{,}000\ ft^3 < V$	RT ≤ 1.7	RT ≤ 1.4

Research on speech clarity and speech intelligibility has found that the performance thresholds for core learning spaces are maximum levels and should be reduced by 15% to 25% for special needs and English as second language populations. Research into noise control within large volume spaces, such as gymnasiums, commons, and cafeterias, has found a direct correlation with ceiling height and sound absorption that on average is 30% less than the IEQ4.1 values noted in Table 3; based on ANSI S12.60.

4.3.2 IEQ4.2: Sound Amplification

For one (1) point:

Provide accommodations for a sound amplification system and an assistive listening system in all classroom spaces.

- A sound amplification system to amplify the teacher's voice, via wired or wireless microphones, and to amplify audio-visual presentations.
- A dedicated or portable assistive listening device (system) to amplify the teacher's voice, via wired or wireless microphones, and to amplify audio-visual presentations.

A properly designed sound system is an effective method for increasing the speech level in a classroom, thereby increasing the signal-to-noise ratio (SNR), signal being the voice you want to hear above all the other background noise. In addition to improved speech intelligibility, the use of a sound system can significantly reduce voice fatigue for the teacher or presenter, and improve speech perception. It is important to note that amplified speech does not reduce the requirement

for background noise control, because communication between students, and between student and teacher, must continue to be facilitated by a low background noise level.

For compliance with this credit, the sound system must:

- Provide uniform sound distribution at all student seating areas within a classroom. Uniformity is confirmed if measurements across all student seating areas are within +/- 2 dB in the 1/1-octave band centered on 2,000 Hertz.
- Provide distribution to all student seating areas within a classroom utilizing either dedicated or portable assistive listening systems.
- Provide a minimum signal-to-noise ratio of 15 dB across all student seating areas. Uniformity is confirmed if A-weighted amplified speech sound level measurements are 15 dB above background sound levels across all student seating areas.
- In addition, designers are encouraged to meet the maximum unoccupied background noise levels of 40 dBA, as set in IEQ4.1. Relying solely on amplification is not considered best practice.

4.3.3 IEQ4.3: Acoustical Consultant

For one (1) point:

Retain the services of an experienced acoustical consultant (with a minimum of ten years experience in Educational Facilities). Prior to the conclusion of Schematic Design, the consultant must be involved in the design process and provide integrated team review, outline specifications and acoustic performance requirements, code sheet requirements, and general acoustic performance input.

By Design Development, provide review and recommendations of architectural and mechanical systems, specifications, and basic system details or edits.

By the Bid Period, have provided Contract document coordination, review, and input.

During construction and prior to occupancy, provide submittal review for acoustic related items, and site observations of installed acoustic components and systems.

4.4 ANSI 12.60-2010

Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools, Part 1: Permanent Schools

5.4.2: Indoor-to-indoor attenuation of airborne sound

- 5.4.2.1: Wall and floor-ceiling assemblies that separate enclosed or open-plan core learning spaces from adjacent spaces shall be designed to achieve the minimum STC ratings specified in Table 4. The STC rating requirements of Table 4 also shall apply to the design of temporary partitions that subdivide a learning space.

Table 4: Minimum STC ratings required for single or composite wall and floor-ceiling assemblies that separate a core learning space from an adjacent space

Space Adjacent to Classroom or Core Learning Space	Acoustic Criteria for Airborne Sound Isolation (STC)
Other enclosed or open plan core learning space, therapy room, health care room and space requiring a high degree of acoustical privacy [a), b)]	STC 50
Common-use and public-use toilet room and bathing room [a)]	STC 53
Corridor, staircase, office, or conference room [c), d)]	STC 45
Music room, music performance space, auditorium, mechanical equipment room, [e)] cafeteria, gymnasium, or indoor swimming pool.	STC 60

a) These requirements do not apply to toilets opening only into the core learning space and used only by occupants of the core learning space.
b) A 20 cm (8") concrete masonry unit wall having a surface weight density of at least 180 kg/m2 painted and sealed on both sides, acoustically sealed at the entire perimeter and extending from the floor slab to the structural deck above, is an acceptable alternate assembly that conforms to the intent of 5.4.2.1.
c) For corridor, office, or conference room walls containing doors, the basic wall, exclusive of the door, shall have an STC rating as shown in the appropriate column in this table. The entrance door shall conform to the requirements of 5.4.2.4.
d) When acoustical privacy is required, the minimum composite STC rating, including the effects of doors, of the partitions around an office or conference room, shall be increased to 50.
e) The isolation between core learning spaces and mechanical equipment rooms shall have a STC rating of 60 or greater unless it is shown that the sound level in the mechanical equipment room combined with a lower STC rating can achieve the required sound level in the core learning space. In no case shall the design STC between such spaces be less than 45.

Commentary-5.4.2.1: Sound isolation of ancillary spaces

- Recommendations are given in Table 5 for STC ratings for isolation of ancillary spaces from one another or from other spaces.

Table 5: Minimum STC ratings recommended between an ancillary space and adjacent spaces

Receiving Ancillary Learning Space	Adjacent Space			
	Corridor or Staircase[a], Common-Use, and Public-Use Toilet and Bathing Room[b]	Music Room	Office or Conference Room[a]	Mechanical Equipment Room[f], Cafeteria, Gymnasium, or Indoor Swimming Pool
Corridor Used as Ancillary Learning Space	STC 45	STC 60[c]	STC 45[d]	STC 55[c]
Music Room	STC 40	STC 60	STC 60[e]	STC 60
Office or Conference Room	STC 45	STC 60[g]	STC 45[d]	STC 60

a) For corridor, staircase, office or conference room walls containing entrance doors to the ancillary learning space, the STC rating of the basic wall, exclusive of the door, should be 45. The entrance door should conform to the requirements of 5.4.2.4.
b) The STC rating for an ancillary space/toilet partition does not apply when the toilet is private and connected to a private office. An STC rating greater than 45 may be required for separating a quiet office or conference room from a common-use or public-use toilet or bathing room.
c) When the corridor will not be used as an ancillary learning space, the minimum STC rating may be reduced to not less than 45. Use of corridors as ancillary learning spaces should be avoided when they are located next to the noisy spaces indicated in the table by the high STC ratings.
d) When acoustical privacy is needed for conversations in an office or conference room, the minimum rating should be a composite STC of 50 instead of 45 that includes the effects of any doors or windows etc.
e) An STC rating of 60 is justified to prevent the music space from interfering with hearing in the office or conference room.
f) Isolation between ancillary learning spaces and mechanical equipment rooms is dependent on the noise level in the mechanical equipment room and can be less than STC 60 in some cases but should never be less than STC 45. g) The STC rating of 60 does not apply when the office is for the music teacher and opens to the music room.

5 Conclusion

This report is a summary of our preliminary design review based on 65% SD Drawing set of the Pacific Beach Elementary School in Pacific Beach, Washington. A complete review of mechanical HVAC systems will be completed during the Design Development phase.

Please contact us with any questions and additional coordination.

All the best,

JACKSON CHRISTIAN
STAFF CONSULTANT

GRANT SCHEFFNER
STAFF CONSULTANT

ERIK MILLER-KLEIN, PE, INCE BOARD CERTIFIED
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TCF

IX. Meeting Minutes

Meeting Minutes

TCF Architecture

Pacific Beach Elementary School
DAC Meeting #3

Meeting Date: 5/12/2026
Meeting Time: 3:45 PM – 5:00 PM
Meeting Location: Pacific Beach Elementary School and Zoom
TCF Architecture Project Number: 2025-010

Attendance:

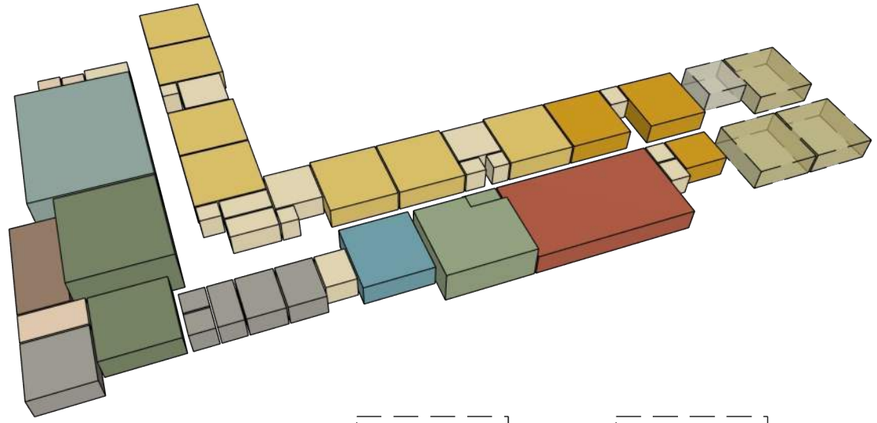
Present	Name	Representing	Email
✓	Steve Wachtler	TCF Architecture	stevew@tcfarchitecture.com
✓	Andrew Hickman	TCF Architecture	andrew@tcfarchitecture.com
✓	Glenn Myles	TCF Architecture	glennm@tcfarchitecture.com
✓	Sheena Hewett	TCF Architecture (Zoom)	sheena@tcfarchitecture.com
✓	Amanda Stanton	TCF Architecture	amandas@tcfarchitecture.com
✓	Richard Zimmerman	North Beach School District	rzimmerman@northbeachschools.org
✓	Stan Sturgeon	North Beach School District	ssturgeon@northbeachschools.org
✓	Robert Musial	CSG | ESD 112	robert.musial@esd112.org
✓	Andrew Twyman	CSG | ESD 112	andrew.twyman@esd112.org
✓	Manuel Saldivar-Aguirre	CSG | ESD 112	manuel.saldivar-aguirre@esd112.org
✓	Liz Cronin	Pacific Beach Elementary Principal	lcronin@northbeachschools.org

Meeting Minute Items:

Item #	Discussion Topic	Notes/Coordination
1. General		
1.1	**Introductions**	Introduction to the Pacific Beach Design Team: Steve W., Andrew H., Sheena H., Glenn M., and Amanda S. Introduction to three design options for the Elementary School.
1.2	**Design Schemes**	**Option 1:** - *Prefers an attached covered play area or walkway to the covered play.* - *Liz asked if the covered play area has a covered walkway if located away from the building.* - *There is a collective preference for a covered walkway to the covered play.* - *Concerned about the Southwest prevailing winds and the outdoor areas of the building.* - *The East Entrance request is likely regarding responses to prevailing winds rather than cultural/native tradition.* **Option 2:** - *400 occupants seated in Gymnasium is acceptable.* - *Discussed swapping the Music Classroom and Library. Currently the Library is located next to the Gym along the exterior wall for natural daylighting.* - *Courtyards can be used for outdoor learning.* - *Concerned that the courtyards with be dark and/or cold in middle of school year (Winter).* - *Assume space will need to be removed for the Middle School expansion.* - *Rerouting of the bus loop is an expensive future phase issue with the Middle School expansion shown in the diagram.* - *Liz asked about paths to recess and fields. She is concerned with disruption with the surrounding classrooms. Future lunches may have to be staggered with the growth of the school. Lunch pathway is not ideal for school administration.*

		Option 3: PREFERRED - *Students, when they arrive, have recess outside. They then line up for Breakfast. Option 3 is the best design with buses in Stan's opinion.* - *Outdoor area is protected with the L-shape design.* - *Separate entrance to the Gym for after-school events.* - *Majority of kids ride the bus.* - *Corridors added next to small conference spaces out to the playgrounds for recess and outdoor play.* - *Richard requested to have at least one bathroom that operates as a Gender-Neutral restroom. Requested something like what Astoria Middle School has from the North Beach Junior / Senior High School Tours. Liz wants more of a restroom that mimics a Family Restroom. Principal does not like the idea of only gender-neutral restroom options due to some students hiding.* - *Discussed flipping the Administration group with the library. Library would be located more to the East and the Administration area more to the West.* - *Art flex is located near the classes.* - *Administration is closer to the Gym.* - *What will the Sensory Spaces be used for? > A person from the office can come to the sensory space to monitor. Would be used for a student to cool down with fidgets and materials. An Admin or Para may accompany a student to one of these Sensory Rooms.* - *Richard requested that a Dean's Office be added based on the need for it when the school grows.* - *The Large Sensory Space between the SPED Classrooms should be accessed from the classrooms.* - *Discussion that indent of the façade by the East wing + bathrooms could be filled with a Staff Restroom and Custodial Room.* - *The Native Space needs a room – minimum size of a typical SLP Office.* - *Chelsea needs a storage room for the Native Program – Currently using a shed outside.* - *Need an additional staff/family restroom near or in the Administration space.* - *SLP is not on site consistently and can share the OT/PT Room.* - *Proximity in Scheme 3 of the OT/PT to the SPED Classrooms is good.* - *More corridors to the exterior are needed for access to the fields and recess.* *Option 3 Site Plan* - *Separate buses drop off is preferred.* - *Most kids ride the bus vs. parents dropping off/picking up.* - *Consider SPED Classrooms locations to the buses.* - *Make sure paved play does not create a dark courtyard.* - *Question of if the covered play could be longer.*
2. Next Meeting		
2.1	**What's Next?**	**DATE:** May 26th, 2026: DAC Meeting 4 - *Review of site ideas and updates to Option 3 discussed during DAC Meeting 3.* - *Discussion that there needs to be a Quinault follow up on what will be at the school/needed with Liz, Richard and Chelsea.*

- Classrooms
- SPED Classrooms
- Classroom Support
- Administration
- Library
- Gymnasium
- Multi Purpose/Commons
- Kitchen





Gross Internal Floor Area = 33,200sf

TCF

Option 3 - Proposed Floor Plan Sketch

Pacific Beach Elementary School
North Beach School District



TCF

Option 3- Proposed Site Plan Sketch

Pacific Beach Elementary School
North Beach School District

Meeting Minutes

Pacific Beach Elementary School
DAC Meeting #4

Meeting Date: 5/26/2026
Meeting Time: 3:45 PM – 5:00 PM
Meeting Location: Pacific Beach Elementary School and Zoom
TCF Architecture Project Number: 2025-010

Attendance:

Present	Name	Representing	Email
✓	Steve Wachtler	TCF Architecture (Zoom)	stevew@tcfarchitecture.com
✓	Andrew Hickman	TCF Architecture	andrew@tcfarchitecture.com
✓	Glenn Myles	TCF Architecture (Zoom)	glennm@tcfarchitecture.com
✓	Sheena Hewett	TCF Architecture	sheena@tcfarchitecture.com
	Amanda Stanton	TCF Architecture	amandas@tcfarchitecture.com
✓	Allison Ono	Site Workshop (Zoom)	allisono@siteworkshop.net
✓	Richard Zimmerman	North Beach School District (Zoom)	rzimmerman@northbeachschools.org
✓	Stan Sturgeon	North Beach School District	ssturgeon@northbeachschools.org
✓	Robert Musial	CSG | ESD 112	robert.musial@esd112.org
✓	Andrew Twyman	CSG | ESD 112	andrew.twyman@esd112.org
	Manuel Saldivar-Aguirre	CSG | ESD 112	manuel.saldivar-aguirre@esd112.org
✓	Liz Cronin	Pacific Beach Elementary Principal	lcronin@northbeachschools.org
	Jasmine Dickoff	Seabrook Community Foundation	jasmine@seabrookcf.org

Meeting Minute Items:

Item #	Discussion Topic	Notes/Coordination
1. General		
1.1	**Introductions**	Introduction to the Pacific Beach Design Team: Allison Ono with Site Workshop Landscape Architecture. Introduction to initial site design concepts and questions regarding various types of outdoor learning, play, and activity spaces as well as three additional floor plan options for the Pacific Beach Elementary School.

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Tacoma, WA 98403
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tcfarchitecture.com

1.2	**Landscape Design**	**Entry & Arrival Experience:** - *Currently 8:30a arrival & playground or gym transition* - *8:45a breakfast (there is flexibility for breakfast and playground/gym transition to switch)* - *PBES prefers students do not go through the building from arrival/drop off area at main entry to the gym or playground. Drop-off location may shift for easier navigation with less required supervision of students. See floor plan notes.* - *Waiting/gathering area for parent pick-up is not necessary. Most students travel via bus.* **Play (Equipment, Inclusive Play, Covered Play, Nature Play):** - *Four Square (x2 min)* - *Basketball hoops (1 under cover min)* - *Painted pavement i.e. traffic garden* - *Wall Ball* - *Gaga Ball* - *Wood play structure is preferred over metal* **Gathering & Social Areas:** - *Include picnic tables w/ solid surface, not for meals, but outdoor learning* - *Amphitheater style seating with easy maintenance* **Field Size & Use Outdoor:** - *Turf field in regulation-size soccer pitch, fenced off from typical outdoor play area* - *Play fields (not including turf field) can be condensed into one green space* **Forested Buffer:** - *Perimeter fencing to restrict eloping and restrict access onto campus during school hours. Provide mow strip for maintenance* - *For trails, consider access i.e. paved pathways near school and field, compacted aggregate at secondary trails, and tertiary trails may be soil or possibly seashell aggregate (which can easily be tracked and is messy)* - *Plant deer & bear-resistant native species as much as possible*
1.3	**Design Schemes**	**Option A: PREFERRED** - *Prefers a sheltered covered play* - *Prefers the sightlines of the classroom wing oriented in east-west direction* - *Ship ladder access from Custodial or in Admin area to a mechanical attic is acceptable* ***TCF to explore:*** - *shifting corridor from classroom wing to playground* - *moving drop-off area toward east, terminating at main entry* - *revising the energy code required vestibule at the gym/commons to the covered play* **Option B:** - *Covered play is less sheltered/protected in Option B & C. The Option A layout is preferred overall.* - *The procession from main entry straight through to the playground could work well for students at am drop-off, but it was decided that it would be preferable for students to navigate around the east wing and back to the playground before school breakfast. See notes on site plan for Option A.* **Option C:** - *See covered play note from Option B, also applicable here.*

2. Next Meeting		
2.1	**What's Next?**	**DATE:** June 9th, 2026: DAC Meeting 5 - *Review of building mass ideas and updates to floor plan Option A discussed during DAC Meeting 4.* - *Discussion that there needs to be a Quinault follow up on what will be at the school/needed with Liz, Richard and Chelsea.*

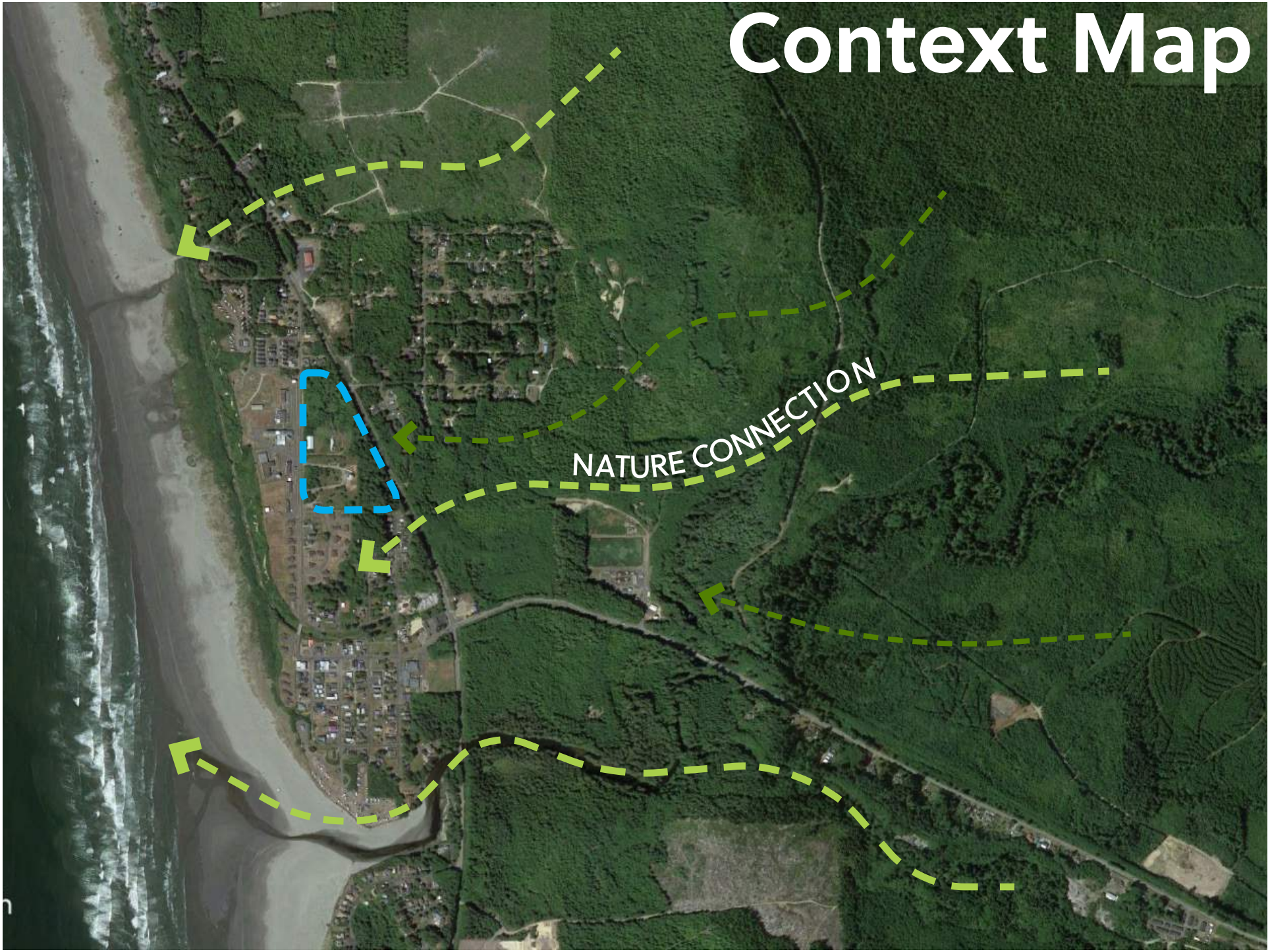
Pacific Beach Elementary

site design ideation

MAY 26, 2026

SiteWorkshop
LANDSCAPE ARCHITECTURE

Context Map



Existing Conditions



From 1st st



On the site

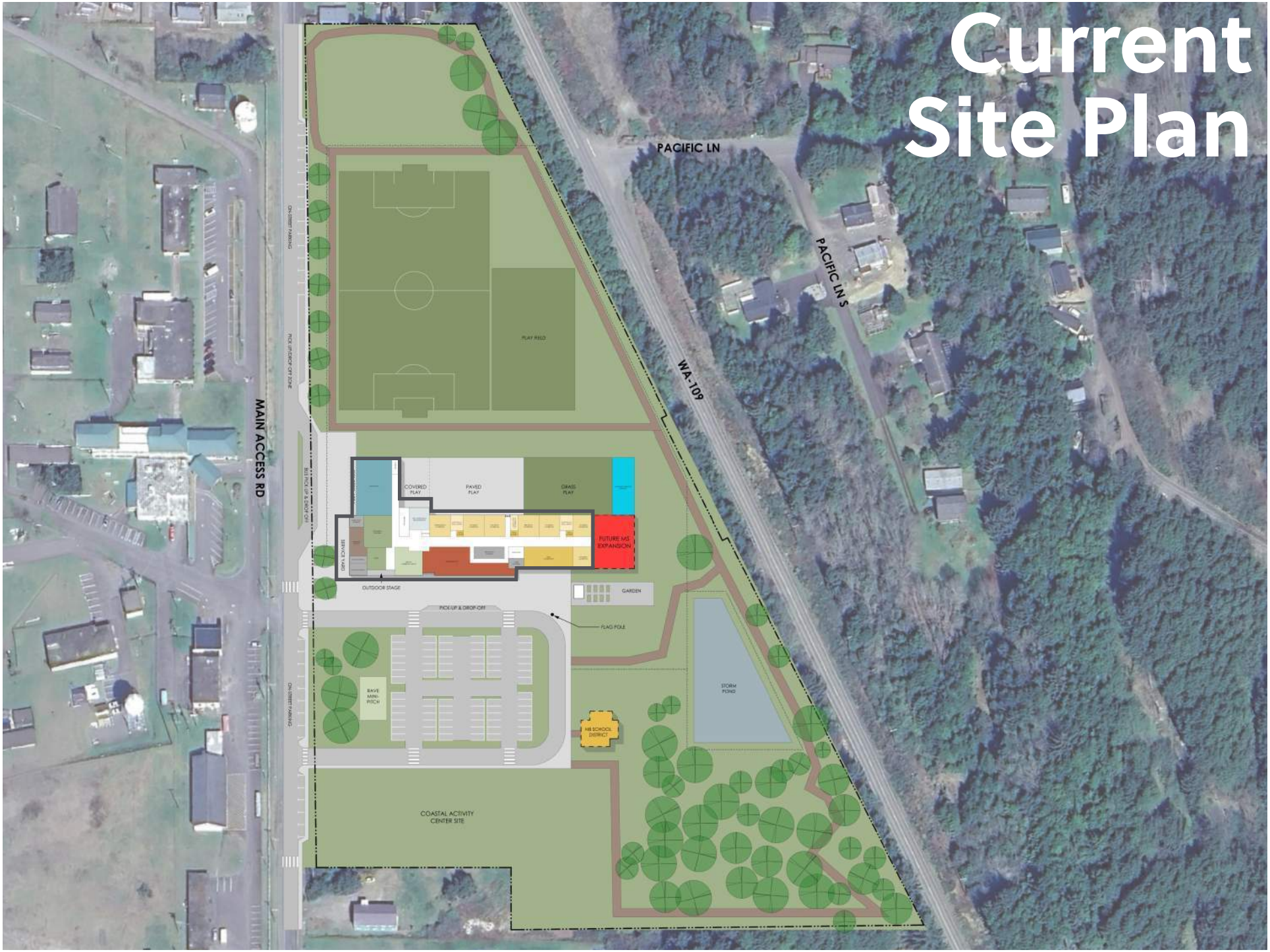


From 109

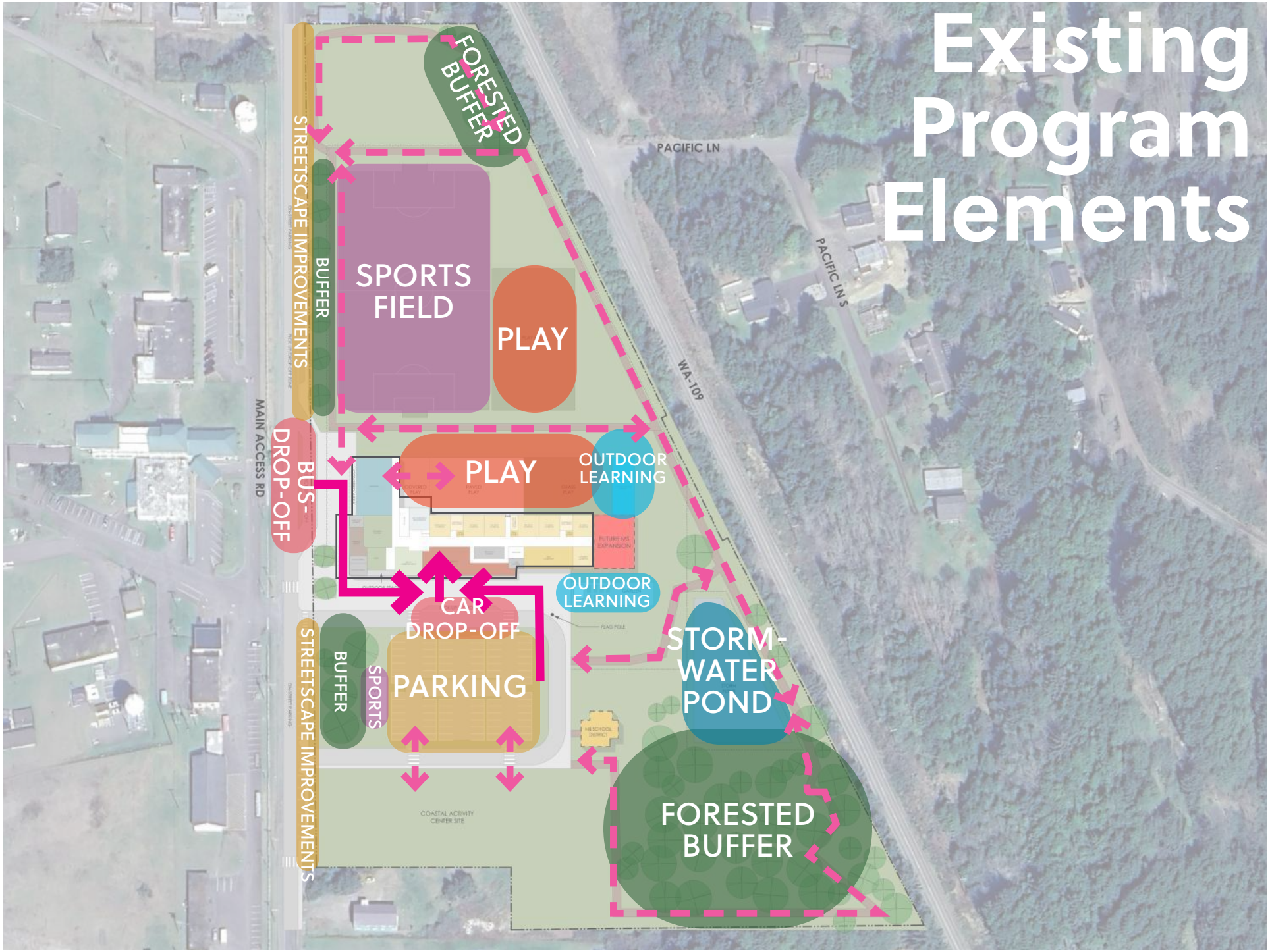


On the site

Current Site Plan



Existing Program Elements



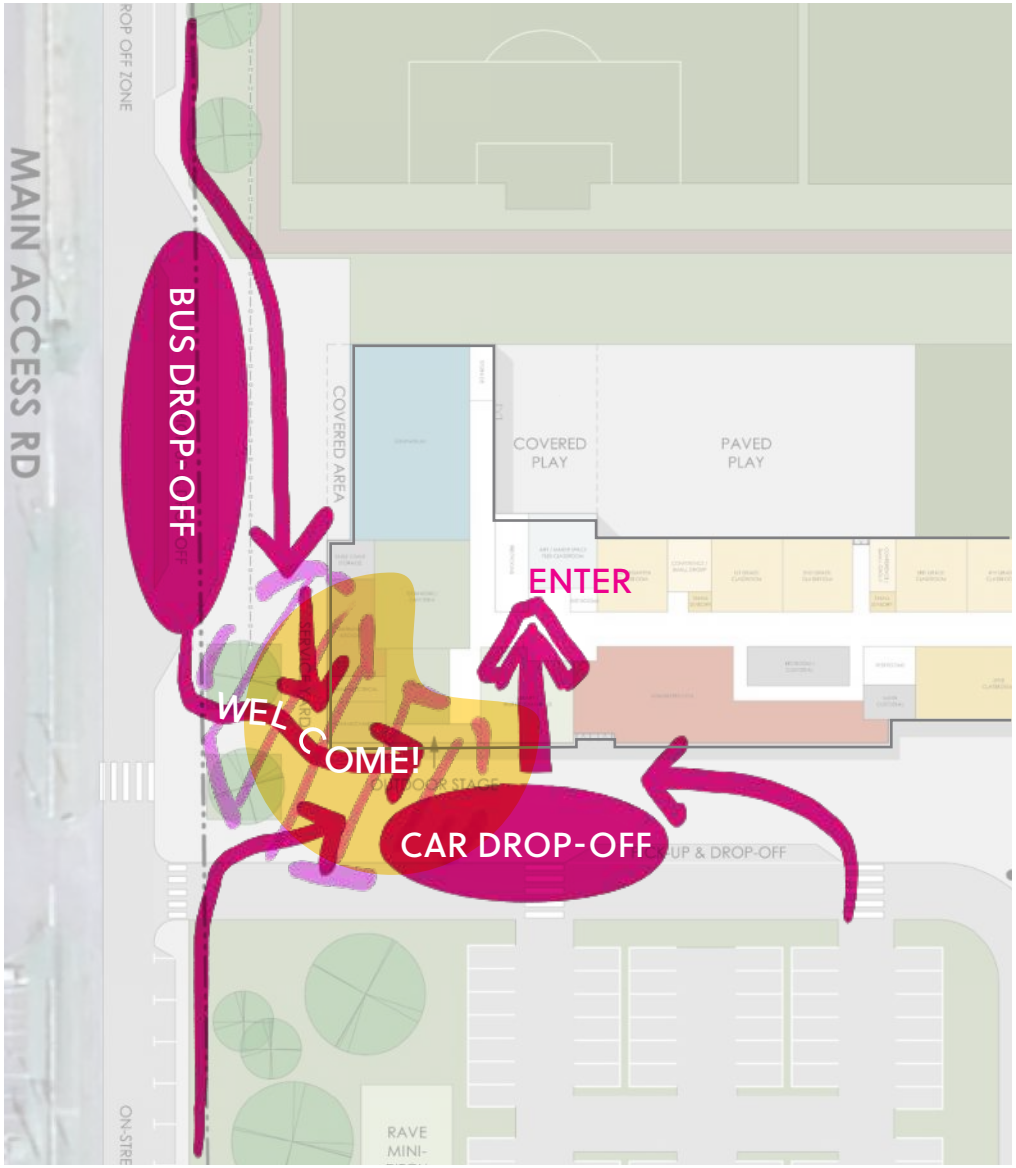
Site Questions

1) Entry & Arrival Experience
2) Play (Play Equipment, Inclusive Play, Covered Area, Nature Play)
3) Gathering & Social Areas
4) Field Size & Use Outdoor
5) Forested Buffer

Entry & Arrival Experience

Entry, Access, and Circulation Questions

Is the intent that Bus drop-off and Car Drop-off converge and enter the building through the South entrance?
Will students need a place to wait and gather at the drop-off areas?
Can the building entrance shift west to align with the hallway to the covered play area?
Could students arrive early for play?
How is the stage expected to be used?



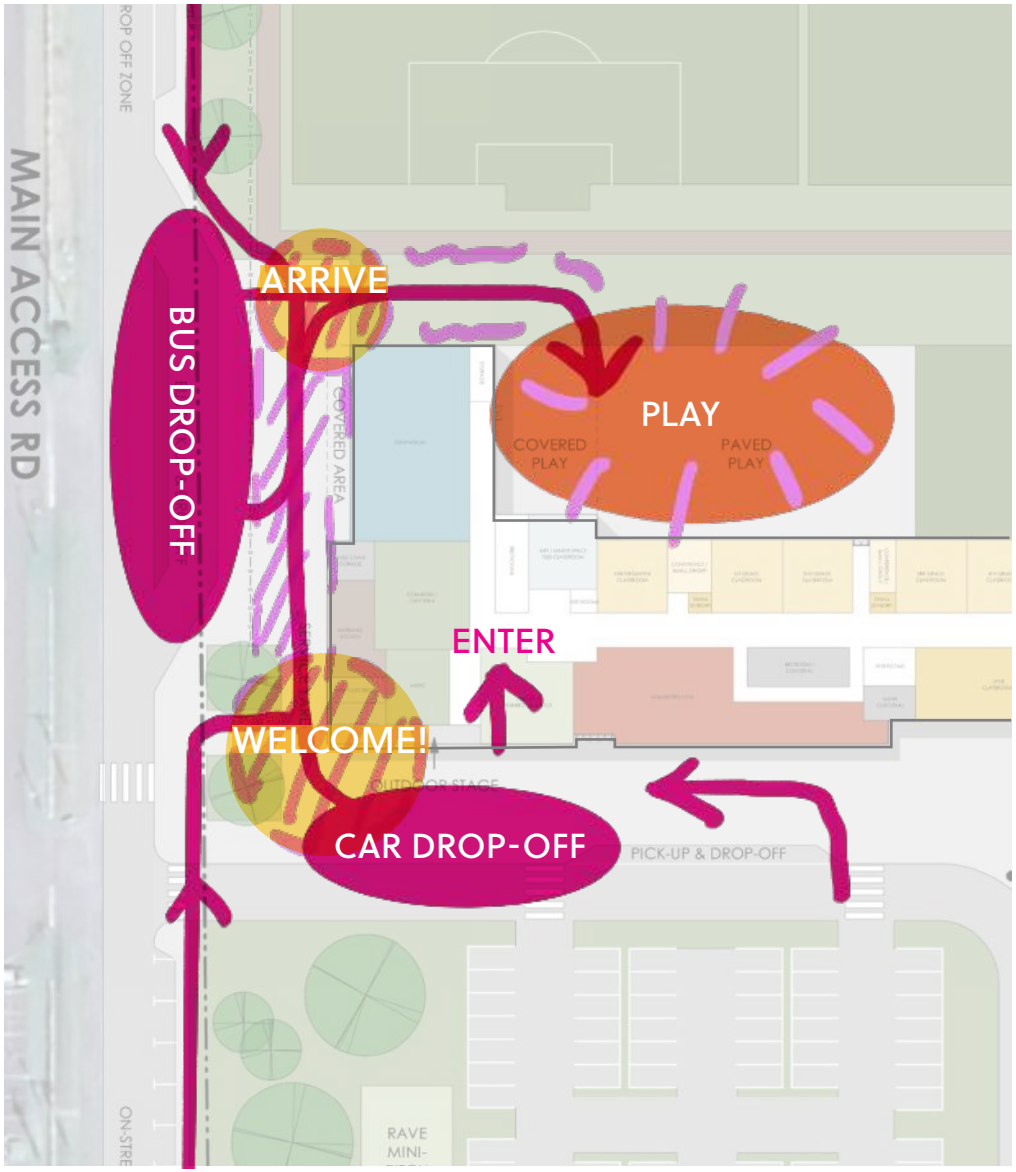

Generous paved entry w/ site elements that provide character, play, seating


Generous paved entry, with room to merge bus & car arrivals

Entry & Arrival Experience

Entry, Access, and Circulation Questions

Is the intent that Bus drop-off and Car Drop-off converge and enter the building through the South entrance?
Will students need a place to wait and gather at the drop-off areas?
Can the building entrance shift west to align with the hallway to the covered play area?
Could students arrive early for play?
How is the stage expected to be used?





Animated Corridor, transitioning students from vehicles to play



Natural elements that can serve as play & seating

Inclusive Play Principals



MANY PEOPLE NEED BETTER ACCESS TO NATURE

Major benefits of nature on health and happiness, yet accessing that nature is a barrier for lots of people.





It is not our differences that divide us. It is our inability to recognize, accept and celebrate those differences.

-Audre Lorde

ART & WELCOMING MESSAGES

Signage makes explicit that all are welcome AND all are uniquely different. Art infuses materiality, storytelling, imagination, and culture.





ENGAGE ALL 8 PHYSICAL SENSES

Sensory play includes vestibular, proprioception and interception through dynamic motion, use of force/ pressure to do activities, fine motor activity and emotional connection.





MAKE THE COOLEST STUFF ACCESSIBLE

All or most of the features have accessibility built in. Challenge and risk for everyone.



OPTIONS & MULTIFUNCTIONALITY

Find commonalities, use variety, design features for multiple use simultaneously, provide choice and challenge.





PRE-VIEWING SPACE & REFUGE

Ability to preview spaces before joining. A sense of enclosure allows for self regulation. Cozy hangouts at the edges of active play create simultaneous sense of safety and connection. Safe edges and strong sight lines for safety and caregiver comfort.

Play Area Questions

What types of elements are must-haves?
What elements are NOs?
Is there interest in inclusive play elements?
What about play mounds? lawn games, imaginative pavement color?

Layers of Play
Structured Play



Spinners/Carousels

Climbers

Swings

Platform Tower w/ Slide

Play Area Questions

What is the desired under the covered play? If Basketball, how large (one hoop? two?)
The Ed Spec describes some of the play equipment coming under the covered area. Is this still of interest?
What surface play elements are desired: 4 square, gaga ball, traffic garden, wall ball?

Layers of Play
Covered & Surface Play



Traffic Garden

Basketball

4 Square

Labyrinth

Play Area Questions

Will there be opportunities for students to eat lunch outdoors?
What elements from the Quinalt Tribe Survey is there interest in (hammock camp, fire pit, drying racks, processing areas, fish pit)?

Layers of Play
Nature Play & Gathering



Stumps

Picnic Tables

Boulders

Logs

Hammock 'Camp'

Play Area Questions

How will outdoor learning spaces be used? (experiments? outdoor classrooms? P.E.?)
Is there interest in multiple gardens (STEM learning, food forests, indigenous gardens)

Layers of Play
Outdoor Learning



Circle w/ Fire Pit

Outdoor Gathering

Garden Beds

Naturalistic Garden, Edible Garden

Ampitheater Seating

Sports Field

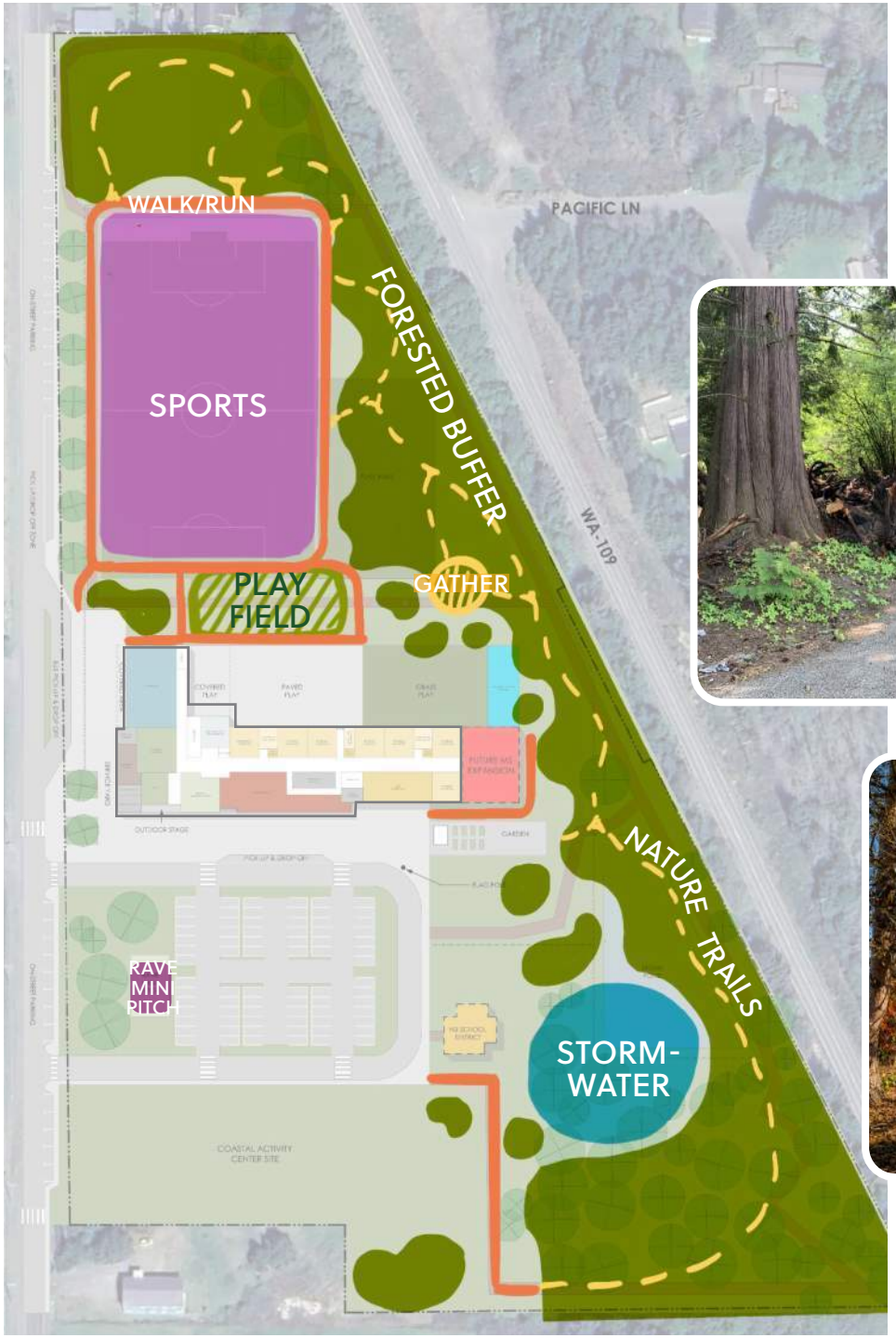
Sports Field Questions

How large of a field is neccessary? For what sports?
What kind of equipment will be required (goal posts, backstop, striping, etc.)?
What distinguishes the Sports field from the Play field from the RAVE mini pitch?
Is there interest in a less formal field, oval shaped, or with edges that blend into the forest?
Can this configuration be rearranged to maintain more of a forested buffer?





Forested Buffer +Nature Trails





Nature Trail w/ logs



Nature Trail Within School Circulation



Nature Trail



Outdoor Gathering



Overview

1) Entry & Arrival Experience

- How should students arriving from Bus drop-off and Car Drop-off converge and enter the building?
- Will students need a place to wait and gather at the drop-off areas?
- Can the building entrance shift west to align with the hallway to the covered play area?
- Could students arrive early for play?

2) Play (Play Equipment, Inclusive Play, Covered Area, Nature Play)

- What elements are must-haves and what are 'no's?
- What should be in the covered play area?
- What elements of inclusive play are important?

3) Gathering & Social Areas

- How will students gather outdoors?
- Can the outdoor learning component hold space for future tribal uses?

4) Field Size & Use Outdoor

- How formal does the sports field need to be?
- What distinguishes the Sports field from the Play field, from Grass play, from the Rave Mini Pitch?

5) Forested Buffer

- Can the fields be reconfigured to maintain a 20' buffer from 109?
- Can some of the language of nature trails come into the main school areas?

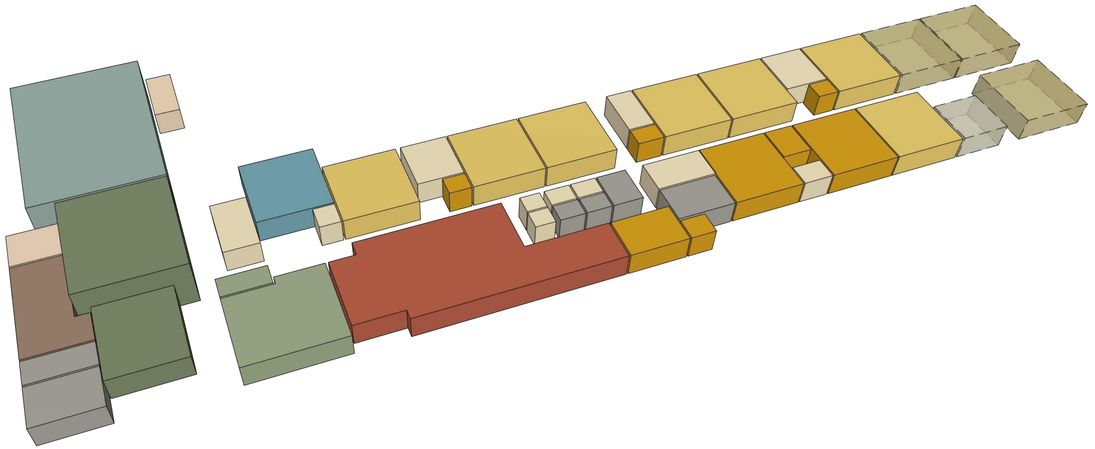
Bus Loop
Bus Canopy
Covered Play
Paved Play
Grass Play
Lawn Based Outdoor Learning
Future MS
Service Yard
Pick Up / Drop Off
DROP OFF
Drop Off area may shift east to shorten student navigation/ access to playground
0 25' 50' 100'

TCF

Option A - Proposed Site Layout

Pacific Beach Elementary School
North Beach School District

NORTH BEACH SCHOOL DISTRICT





0 10' 25' 50' 100'

Option A - Proposed Floor Plan

Pacific Beach Elementary School
North Beach School District

GIFA - 34,100sf

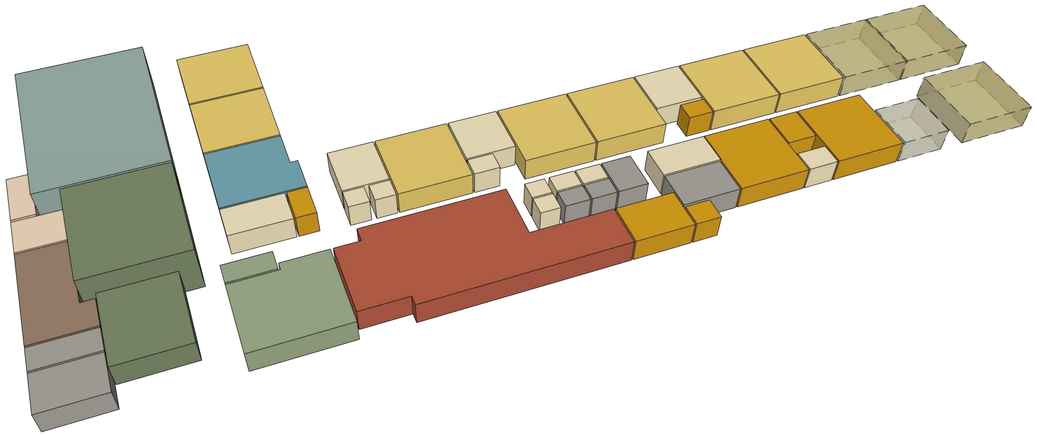


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Options B+C - Proposed Site Layout

Pacific Beach Elementary School
North Beach School District

NORTH BEACH SCHOOL DISTRICT



This procession/ access is good *if* students enter this way first thing in the morning

Further discussion lead to preference for students to access playground from drop-off around the east side of the building. See Option A site plan.

Covered Play
Bus Canopy
Gymnasium
Gym Storage
Table Chair Storage
Commons/ Cafeteria
Warming Kitchen
Main Electrical
Main Mechanical
Music
Workroom /Office
Library
6th Grade Classroom
5th Grade Classroom
Art/Maker Space Flex Classroom
Storage
Girls WC
Boys WC
Small Sensory
Vestibule
Conference/ Small Group
Staff RR
Staff RR
Kindergarten Classroom
Conference/ Small Group
RR
1st Grade Classroom
2nd Grade Classroom
Conference/ Small Group
Small Sensory
3rd Grade Classroom
4th Grade Classroom
Health Room
Health RR
Staff Workroom
Reception
Staff RR
Family RR
Mother's /Phone Room
Staff RR
Supply Storage
Custodial Closet
MDF
Itinerant Office
Counsel Office
Principal Office
Conference Room
Staff Lounge
SLP Office
OT/PT
Girls WC
Boys WC
Main Custodial
OT/PT Office
SPED Classroom
Large Sensory
RR
SPED Classroom

Future MS

0 10' 25' 50' 100'

AM DROP-OFF

Option B - Proposed Floor Plan

Pacific Beach Elementary School
North Beach School District

GIFA - 33,700sf



Option C - Proposed Floor Plan

Pacific Beach Elementary School
North Beach School District

GIFA - 33,700sf

Meeting Minutes

Pacific Beach Elementary School
DAC Meeting #5

Meeting Date: 6/9/2026
Meeting Time: 5:00 PM – 6:30 PM
Meeting Location: Pacific Beach Elementary School and Zoom
TCF Architecture Project Number: 2025-010

Attendance:

Present	Name	Representing	Email
✓	Steve Wachtler	TCF Architecture	stevew@tcfarchitecture.com
✓	Andrew Hickman	TCF Architecture	andrew@tcfarchitecture.com
✓	Glenn Myles	TCF Architecture	glennm@tcfarchitecture.com
✓	Sheena Hewett	TCF Architecture (Zoom)	sheena@tcfarchitecture.com
✓	Amanda Stanton	TCF Architecture	amandas@tcfarchitecture.com
✓	Richard Zimmerman	North Beach School District	rzimmerman@northbeachschools.org
✓	Stan Sturgeon	North Beach School District	ssturgeon@northbeachschools.org
✓	Robert Musial	CSG | ESD 112	robert.musial@esd112.org
✓	Andrew Twyman	CSG | ESD 112	andrew.twyman@esd112.org
✓	Manuel Saldivar-Aguirre	CSG | ESD 112	manuel.saldivar-aguirre@esd112.org
✓	Liz Cronin	Pacific Beach Elementary Principal	lcronin@northbeachschools.org
✓	Jasmine Dickhoff	Seabrook Community Foundation	jasmine@seabrookcf.org

Meeting Minute Items:

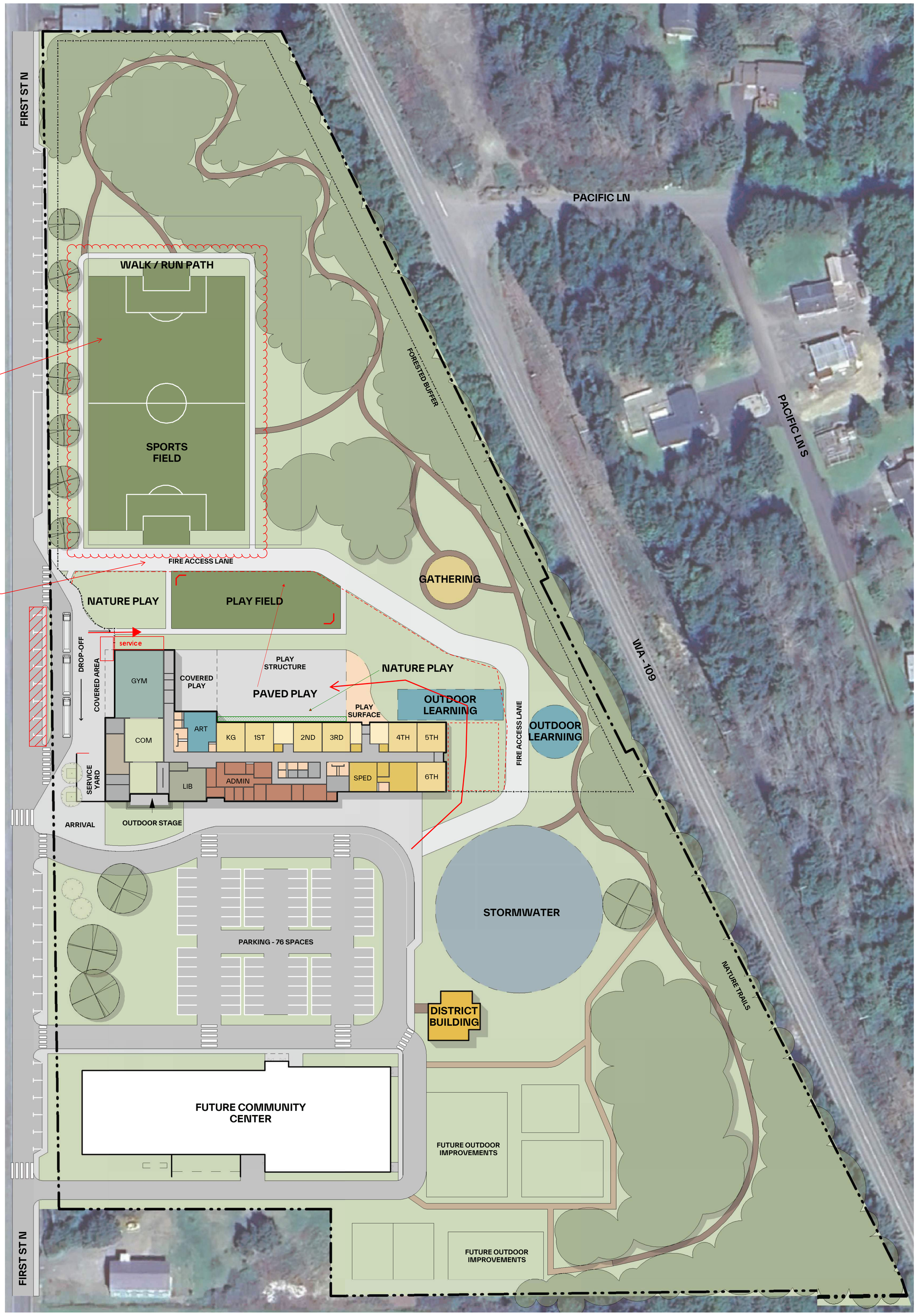
Item #	Discussion Topic	Notes/Coordination
1. General		
1.1	**Introductions**	
1.2	**Design Schemes**	**Site Plan:** - *Revise drop off to allow for students to go to paved play from both the East and West. Fire access lane could be used as foot pathway.* - *Fence around Sports Field for security during school hours.* - *Fence around play areas including: Paved and Nature Play as well as the Play Fields.* - *Bring fire access lane closer to the building and incorporate into paved play to minimize site paving.* - *Add fences and gates to the site plan.* - *Incorporate sidewalk to fire lane.* - *Add backstops to Play Field.* - *Eliminate street parking by Bus Drop Off and create a wide planting strip instead to simplify parking and for safety at bus drop off/pick up area.* - *Requested a larger Sports Field. Wants to have a field for older students/children.* - *Concern about the Service Yard on the West Elevation. Option 2 that was presented moved the Service Yard to the North.* **Floorplan General:** - *Concern was voiced about the sound between the Music Classroom and the Gymnasium. – A highly rated partition wall would be used for acoustical separation.* - *Small Sensory rooms can have access from corridors vs. directly from classrooms.*

		Option 2: PREFERRED - *Requested to bring any natural materials on the exterior main entry into the vestibule.* - *There is concern with Option 2's covered bus area regarding the exposure to the West with the wind and salt water.* - *The Warming Kitchen to the North is favored with Option 2.* - *Views of the exterior with the Administration/Reception Area were requested for supervision. It was requested that the Administration/Reception area have a direct view through glazing at exterior wall.* - *There was concern with the clerestories and maintenance both inside and outside of the building regarding salt water/salt in the air and its effect on the accessibility, maintenance and cleaning of the clerestories.* - *Liz expressed that the clerestories would be helpful when the power goes out. The windows would allow for light into darker areas of the school.* - *Frosted glass and insulated polycarbonate was mentioned to reduce the amount of cleaning/maintenance of the clerestories with the salt water/salt air.* - *The second sidelites at the classrooms were asked to be removed. Sidelites at the interior classroom doors can be narrow or wide. Would like to see what these would look like wide.* - *Service yard is favored to the North.* - *The Custodial spaces need to have more distance. The Design Team will explore relocation near the Gym and Warming Kitchen.* - *Discussed that the blank (West-facing) wall could have coastal artwork.* - *Concerned with the exterior windows at the classrooms facing the Paved Play. Concerned about balls and play equipment breaking the windows or distractions during class. The Design Team will explore a landscape buffer between the building and playgrounds.* - *Mechanical attic with louvers may be preferred at the North. Could have artwork at the Northern wall.* - *West wall is an opportunity to show Indigenous Artwork or other art installations.* - *Overhang is approx. 24" in the NBSD Building Standards noted. (2'-0" is preferred)* - *Daylighting Studies will be conducted of the design in phases.* - *Stan requested to provide at least 9' ceilings at Mop sink area.*
2. Next Meeting		
2.1	**What's Next?**	**DATE:** June 23rd, 2026: DAC Meeting 7 - *DAC 7; Updated site design and layout will be prepared.*

Pacific Beach Elementary School

Schematic Design Proposals

NORTH BEACH SCHOOL DISTRICT
PACIFIC BEACH ES



LEGEND

- Classrooms
- SPED Classrooms
- Classroom Support
- Administration
- Art/Maker Space/Flex
- Library
- Gymnasium
- Multi Purpose/Commons
- Kitchen

Gymnasium
Bus Canopy
Gym Storage
AV Closet
PE Office
Vestibule
Covered Play
Table Chair Storage
Commons/ Cafeteria
Warming Kitchen
Main Electrical
Main Mechanical
Music
Workroom /Office
Library
Staff RR
Staff RR
Storage
Girls WC
Boys WC
Art/Maker Space Flex Classroom
Restroom
Kindergarten Classroom
1st Grade Classroom
Conference/ Small Group
Small Sensory
2nd Grade Classroom
3rd Grade Classroom
Conference/ Small Group
Small Sensory
Conference/ Small Group
Small Sensory
4th Grade Classroom
5th Grade Classroom
Future MS
Health Room
Health RR
Staff Workroom
Reception
Staff RR
Staff RR
Family RR
Mother's /Phone
Supply Storage
Custodial Closet
MDF
Vestibule
Itinerant Office
Counsel Office
Principal Office
Conference Room
Staff Lounge
SLP Office
OT/PT
OT/PT Office
Girls WC
Boys WC
Main Custodial
SPED Classroom
Large Sensory
Restroom
SPED Classroom
6th Grade Classroom
Service Yard

0 10' 25' 50' 100'

Proposed Floor Plan

Pacific Beach Elementary School
North Beach School District

GIFA - 34,100sf

LEGEND

- Classrooms
- SPED Classrooms
- Classroom Support
- Administration
- Art/Maker Space/Flex
- Library
- Gymnasium
- Multi Purpose/Commons
- Kitchen

Service Yard
Warming Kitchen
Table Chair Storage
Commons/ Cafeteria
Bus Canopy
Covered Play
Vestibule
Gymnasium
AV Closet
Gym Storage
PE Office
Main Electrical
Main Mechanical
Music
Workroom /Office
Library
Staff RR
Staff RR
Storage
Girls WC
Boys WC
Art/Maker Space Flex Classroom
Restroom
Kindergarten Classroom
1st Grade Classroom
Conference/ Small Group
Small Sensory
2nd Grade Classroom
3rd Grade Classroom
Conference/ Small Group
Small Sensory
Conference/ Small Group
4th Grade Classroom
5th Grade Classroom
Future MS
Small Sensory
Health Room
Health RR
Staff Workroom
Reception
Staff RR
Family RR
Staff RR
Supply Storage
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Staff Lounge
SLP Office
OT/PT
OT/PT Office
Girls WC
Boys WC
Main Custodial
SPED Classroom
Large Sensory
Restroom
SPED Classroom
6th Grade Classroom

0 10' 25' 50' 100'

TCF

Proposed Floor Plan-alternate Music/Gym/Commons

Pacific Beach Elementary School
North Beach School District

GIFA - 34,250sf

Meeting Minutes

Pacific Beach Elementary School
DAC Meeting #6

Meeting Date: 6/24/2026
Meeting Time: 3:15 PM – 4:30 PM
Meeting Location: Pacific Beach Elementary School and Zoom
TCF Architecture Project Number: 2025-010

Attendance:

Present	Name	Representing	Email
✓	Steve Wachtler	TCF Architecture	stevew@tcfarchitecture.com
✓	Andrew Hickman	TCF Architecture	andrew@tcfarchitecture.com
✓	Glenn Myles	TCF Architecture	glennm@tcfarchitecture.com
✓	Sheena Hewett	TCF Architecture (Zoom)	sheena@tcfarchitecture.com
✓	Amanda Stanton	TCF Architecture	amandas@tcfarchitecture.com
	Richard Zimmerman	North Beach School District	rzimmerman@northbeachschools.org
✓	Stan Sturgeon	North Beach School District	ssturgeon@northbeachschools.org
✓	Robert Musial	CSG | ESD 112	robert.musial@esd112.org
✓	Andrew Twyman	CSG | ESD 112	andrew.twyman@esd112.org
	Manuel Saldivar-Aguirre	CSG | ESD 112	manuel.saldivar-aguirre@esd112.org
✓	Liz Cronin	Pacific Beach Elementary Principal	lcronin@northbeachschools.org
✓	Jasmine Dickhoff	Seabrook Community Foundation	jasmine@seabrookcf.org

Meeting Minute Items:

Item #	Discussion Topic	Notes/Coordination
1. General		
1.1	**Introductions**	
1.2	**Design Schemes**	**Floor Plan:** - *The Service Yard was moved to the North closer to the Mechanical Room to help save money.* - *Tables & Chairs Storage was moved off the Gym.* - *Offices were moved to allow the reception area to have visibility to the exterior.* - *A door was discussed to be added in the Hallway at Grid D. The door could zone off the activity area of the school.* - *The 1st Grade teacher requested to be close to the restrooms. Is concern with younger students having to travel far to use the restroom. Discussed placing 1st Grade where the 3rd Grade classroom is at. Sinks should be the same in the lower grade classrooms: 1st-3rd.* **Site Plan Options:** - *Print Site Plan Options were switched: Option A was Option C in presentation. Option C was Option A in presentation.* *Option A in Presentation; Option C on Sheet:* - *Lime Green = Lawn* - *Orange = Playground Equipment* - *Blue Lines with Xs = Fencing* - *Circles = Moments* - *Orange dots around the site, edges of the playground and formal play are additional options to play, climb and jump.*

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Tacoma, WA 98403
253.572.3993

tcfarchitecture.com

		- *New iteration of the parking lot is looking to eliminate the interior islands and create wider areas of asphalt for farmers markets, bazaars, etc.* - *Forested area to the West of the Sports Field acts as a buffer along the property line.* - *Option A uses most of the forest for the Sports Field.* - *Design needs about 10 ft more North of the building for the Service Yard.* *Option B:* - *Sports field is rotated to retain more of the forest to the North.* - *Learning pavilions could be outside of the school fenced area.* - *Operation question around what the program with the field is? Push and pull with the forest edge.* - *The forest could act as a buffer – No fencing around the field.* - *Fence the smaller play field area.* - *One of the outdoor classrooms/learning pavilion areas could be towards the stormwater pod to have community use with the Community Center.* - *Question was asked as to what is accessible and where fences are going to be?* - *The trail network is more robust with Option B.* *Option C in Presentation; Option A on Sheet:* - *Field is smaller and the fence is shrunk around the field.* - *More of a defensible design.* - *The playground is sub-grouped/divided with different areas to play.* - *Swings require larger space usage.* - *Lot of asphalt play/all-weather play, with natural play around the border.* - *Curved area around outdoor stage is kept with the curved driveway.* - *Path around the field for the kids can allow a class to go on a walk or learn about the forest boundaries. Requested that the edge of the path be animated.* *Images:* - *Trail Network: The forest is an experience for the students. The edges of the forest are treated as transition zones with logs and stumps.* - *Logs along the field can act as sitting areas and nature play.* - *Outdoor Learning: Circular seating.* - *Playground Equipment: Accessibility is an option to consider allowing students with mobility challenges to play.* - *Asphalt Play: Could have imagery, playgrounds painted on top.* - *Community Garden: What is the level of management?* - *Nature Play: Can have durable and degrading materials. Durable and long lasting with natural real materials. Others could degrade over time with bugs, etc.* - *Formal Gardens – Hang out areas.* - *Hang out spaces – Benches, different seating types.* *Feedback of Options:* ***Option B is Preferred.*** - *Stan likes Option B. Likes the green space West of the parking lot to expand seating for the outdoor stage. Likes the rotated field. Likes the path around the East edge of the building.* - *Stan is worried about Option C's land locked areas of greenery and student trampling.* - *Two entry points for the kids to get to the back recess area.* - *Locking the gates is more about keeping the site secure during school hours.* - *Liz likes the path around the Sports Field.* - *Liz likes the larger playground.* - *Liz likes the outdoor learning circles/outdoor classrooms close to the playground.* - *Liz requested that there be nature walks/mindfulness walks. Described a nature walk that had signs that were self-reflective: "Breathing," "Take a moment to stand still," "Release Tension – Body Scan," Etc.* - *Jasmine likes Option B for the Field.*

		- *Jasmine likes Option C on the screen – Option A on sheet for the playground.* - *Manny mentioned to make sure the landscaping is ok in the case of future additions for a Middle School wing.* - *The West green space next to the parking lot can be used as a community green space for the Navy, Community Center, etc.* - *Liz likes Option B the best. The playground field is next to the playground structures.* *The district preferred the layout of the green space/playground field adjacent to the playground equipment and paved play for ease of supervision and monitoring.* *Athletic Field:* - *The East-West oriented field of layout option 'B' is preferred to open visibility to First Ave to the West as well as maximizing the trails to the North end of the site.* - *This East-West layout does allow for future growth potential or phasing.* - *Provide larger 11v11 turf playfield size.* - *Provide a walking track around the turf field. More of an athletic track.* - *Option A in the presentation loses supervision with the planted buffer along the field. Benefit of Option B is that eyes from the street can see the field.* - *Need to get input from Richard for the site fencing.* *Outdoor Music Platform:* - *Further discussion and no resolution on whether the Outdoor Music Platform is needed by the school or would be better suited for community use given the variable weather during the school year.* - *If the Platform remains, the design team explores a canopy cover.* - *Explore an outdoor pavilion/stage/small amphitheater at SE corner of athletic field and at the transition to the forested trail network.* - *Explore whether the funds would be better suited to another program or feature in the site or building.* - *Outdoor stage area needs more discussion. Concern about it holding water over time, degrading, etc. How important is this? How often are exterior performances going to happen? Can it be designed in a way that could be a community resource?* *School Garden:* *The school has a Farm-to-Table grant which requires:* - *Partnership with a local farm in Seabrook. The grant is $350,000.* - *Provide garden beds.* - *Provide greenhouse – new site greenhouse should also include power/water.* - *Location is flexible.* - *Regarding discussion on where to locate – possibly East side of the school between the building and fire lane/walking path, Site Workshop will perform sun analysis to optimally locate for exposure.* - *5th-6th grade classes are the ones who steward the greenhouse. The school does not want it out in the forest.* *Playgrounds:* - *District to verify whether swings are an option with insurance.* - *Prefer a larger hardscape for play, including the fire lane with painted sidewalk games and activities.* - *Utilize the fire lane as a walking path to consolidate paved area.* - *Maintain the buffer of landscaping between playground and classroom wing to keep students focused during class time.* - *Most thing Liz cares about is that the playground is fenced. The school has had issues with Domestic Disputes. Concerned about these domestic disputes with WA-109 and First Ave.*

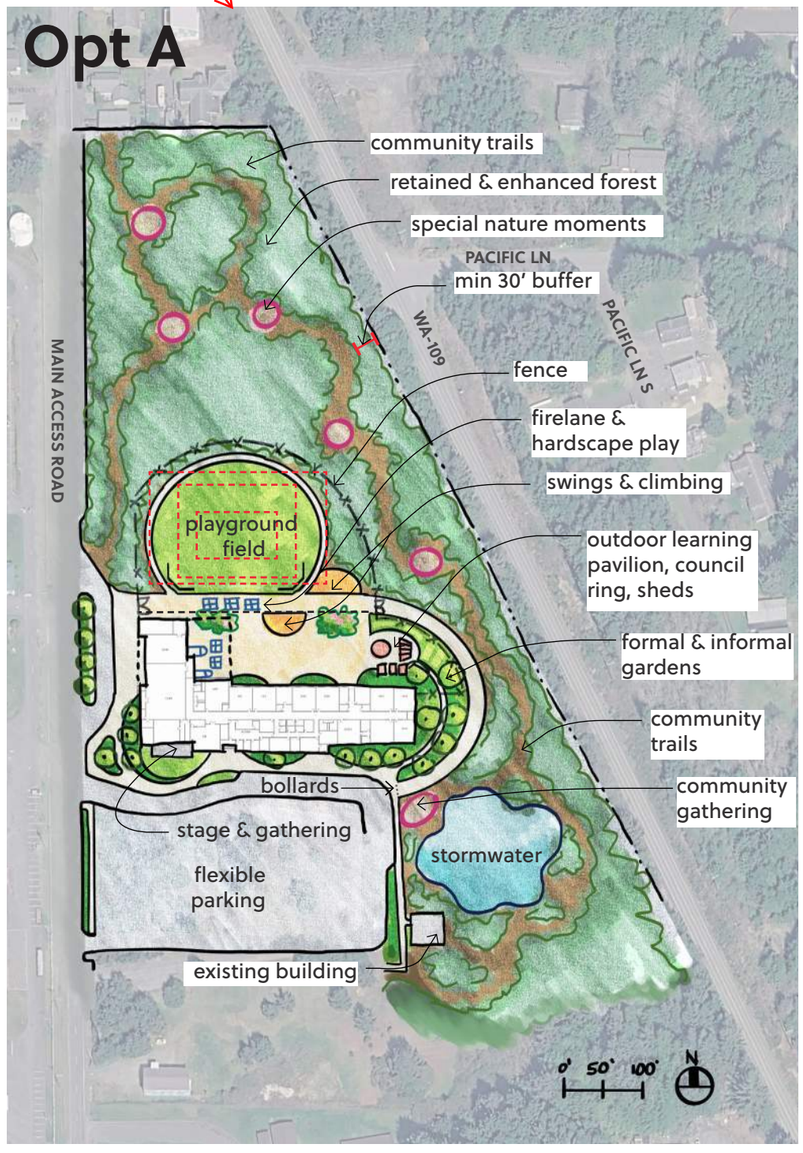
		- *From a recess supervision standpoint – Option B is the better option. Can monitor the site and playground the best.* *Trails & Natural Site:* - *Extent of fencing will be verified by Richard Zimmerman.* - *The idea was discussed of providing "Mindfulness signage" throughout the site, both in natural playground areas and in trails.* - *Explore integration of STEM/STEAM activities and Quinault Tribal language or imagery in signage.*
2. Next Meeting		
2.1	**What's Next?**	**DATE:** July 7th, 2026: DAC Meeting 8; Scheduled before 1 PM. - *Massing, Character, and Landscape Exploration*

Site Plan Options

Opt C in the meeting - AMS

Opt A in the meeting - AMS

Opt A



Opt B



Opt C



U8 (4v4)
100' x 60'

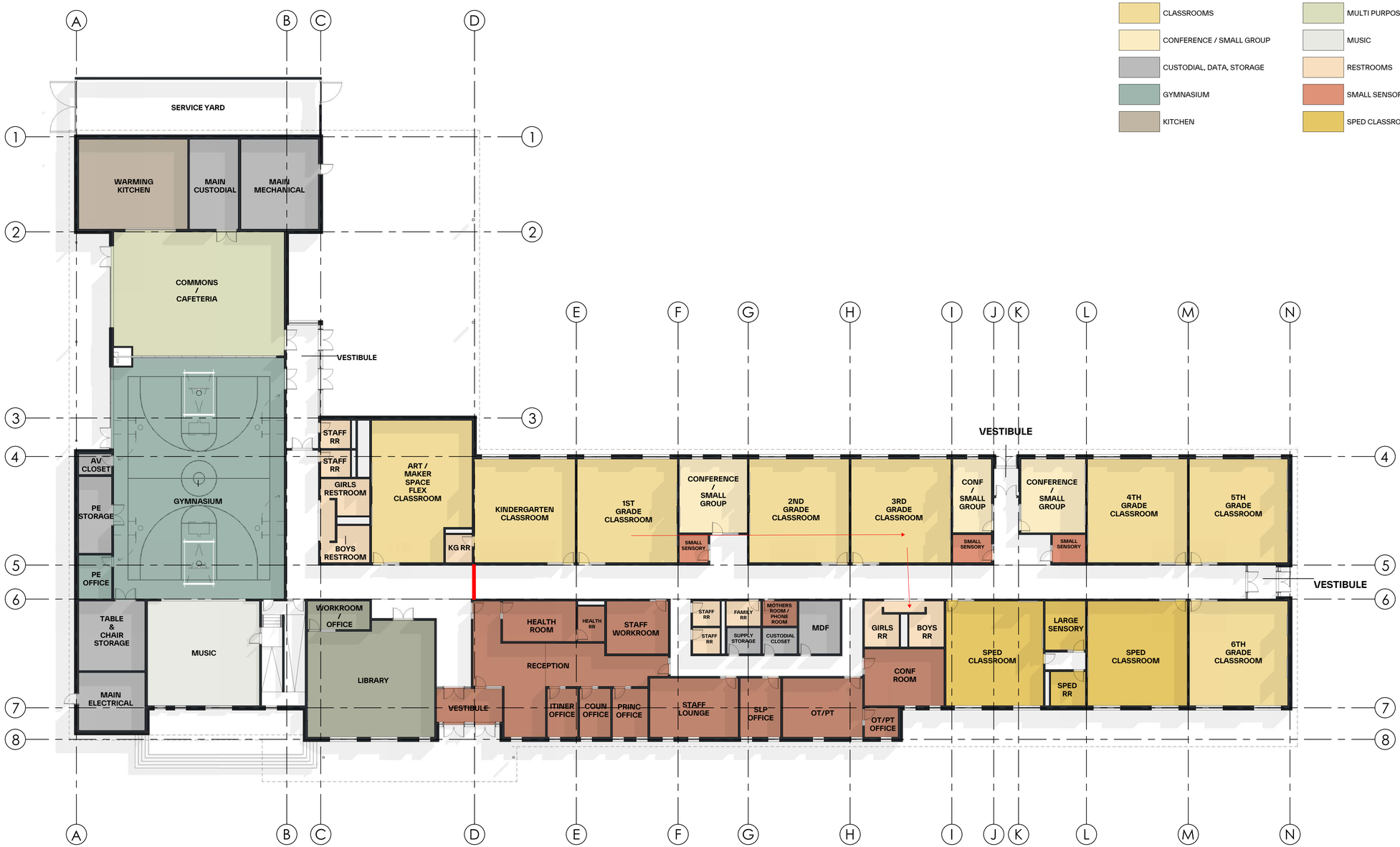
U10 (7v7)
150' x 120'

U12 (9v9)
225' x 145'

Older (11v11)
330' x 225'

LEGEND

- ADMINISTRATION
- CLASSROOMS
- CONFERENCE / SMALL GROUP
- CUSTODIAL, DATA, STORAGE
- GYMNASIUM
- KITCHEN
- LIBRARY
- MULTI PURPOSE / COMMONS
- MUSIC
- RESTROOMS
- SMALL SENSORY
- SPED CLASSROOMS



NOTE: DRAWING MAY BE REDUCED

0 8' 16' 32'

N

06/23/26

TCF

FIRST FLOOR REFERENCE PLAN

PACIFIC BEACH / NORTH BEACH
ELEMENTARY SCHOOL DISTRICT

Meeting Minutes

TCF Architecture

Pacific Beach Elementary School
DAC Meeting #7

Meeting Date: 7/07/2026
Meeting Time: 11:00 AM – 12:00 PM
Meeting Location: Pacific Beach Elementary School and Zoom
TCF Architecture Project Number: 2025-010

Attendance:

Present	Name	Representing	Email
✓	Steve Wachtler	TCF Architecture	stevew@tcfarchitecture.com
✓	Andrew Hickman	TCF Architecture	andrew@tcfarchitecture.com
✓	Glenn Myles	TCF Architecture	glennm@tcfarchitecture.com
✓	Sheena Hewett	TCF Architecture	sheena@tcfarchitecture.com
✓	Amanda Stanton	TCF Architecture (Zoom)	amandas@tcfarchitecture.com
✓	Richard Zimmerman	North Beach School District	rzimmerman@northbeachschools.org
✓	Stan Sturgeon	North Beach School District	ssturgeon@northbeachschools.org
✓	Robert Musial	CSG | ESD 112	robert.musial@esd112.org
	Andrew Twyman	CSG | ESD 112	andrew.twyman@esd112.org
✓	Manuel Saldivar-Aguirre	CSG | ESD 112	manuel.saldivar-aguirre@esd112.org
✓	Liz Cronin	Pacific Beach Elementary Principal	lcronin@northbeachschools.org
✓	Jasmine Dickhoff	Seabrook Community Foundation	jasmine@seabrookcf.org

Meeting Minute Items:

Item #	Discussion Topic	Notes/Coordination
1. General		
1.1	**Introductions**	**Schedule Review:** - *Reminder that we are still in Schematic Design.* - *More design time will continue with Design Development.*
1.2	**Design Schemes**	**Floor Plan:** - *Floor plan (library revision to east/central classroom wing) is preferred and not a concern for after-hours/community use. School board meetings can be better accommodated in the Art/Maker Space or Commons.* - *Library relocated will alleviate corridor traffic jams and allow it to be more of a quiet space away from the activity wing.* - *Conf room moving to the west toward offices is preferred by school admin.* **Floor Plan Feedback:** - *Concerned with the classroom wing being expansive – long.* - *Current Library is used in the evenings for school board events – Only 2x a year. There is not a large turnout.* - *Stan is concerned with the reception and views of the exterior and entrance presence. Referred to high school. – Revit model is updated with space near the offices with views out.* **Massing:** - *Massing 03 "pop-out" roof transitions are preferred for less maintenance due to material and detailing. Massing "pop-outs" physically indicate where programmatic grouping is occurring: Library + Support Space, SPED Classrooms + support, and Classrooms.*

		- *"Tent" elements are abstract forms – These continue through the building to the North side and carry through the massing.* - *All massing options continue the clerestories on the North side.* **Massing Feedback:** - *Stan is concerned if the mechanical floor may be affected and limited by the massing roof forms.* **Floor Plan Development:** - *Liz is concerned about where Jennifer and Chelsea should be located. Jennifer is early childhood. Both teachers need to have their own spaces.* - *Early Education 0-3yr kids can use itinerant office. Small Group/Conference room have the ability to be utilized by the Tribal Liaison for office/storage (space needed is roughly 2/3 existing classroom space as well as an approx. 10x10 storage shed.* - *Explore zoning off the admin loop to keep students out. Concerned with the U-shape hallway being an area that students can hide in.* - *Liz requested that we account for the outbuildings that Chelsea and Stan are using.* **Exterior:** - *Darker palate is **preferred** due to moss accumulation, but UV stability will be considered by the design team.* - *Ceraclad siding or similar prefinished fiber-cement panel can work for various wood grains and different shades and colors.* - *Amount of color in 03 or less is ideal but design team will explore color (yellow) options and present options in the future. Explore school colors including tones and shades.* - *If incorporating school colors, Blue and Gold, it is much easier to brand a school inside.* - *Interior color palate should be refined – the current school primary blue and yellow corridor is too intense and uncomfortable.* - *AEP span or similar is the metal product we typically use for standing seam roofs. Current renderings are using their standard colors.* - *Entry is easy to locate, look at developing/expanding canopy coverage.* - *Dune grass motif is an elegant screen.* - *School mascot is the Falcons.* - *Requested that under the covered play to be painted a light color to keep the space feeling light.* **Conclusion:** - ***Option 3 – Dark was chosen.***
2. Next Meeting		
2.1	**What's Next?**	**DATE:** DAC #9 - *Date TBD. Will be sending dates for confirmation.*


LEGEND
Classrooms
SPED Classrooms
Classroom Support
Administration
Art/Maker Space/Flex
Library
Gymnasium
Multi Purpose/Commons
Kitchen
Service Yard
Warming Kitchen
Table Chair Storage
Main Custodial
Commons/ Cafeteria
Bus Canopy
Covered Play
Vestibule
Gymnasium
AV Closet
Gym Storage
PE Office
Main Electrical
Main Mechanical
Music
Staff RR
Storage
Art/Maker Space Flex Classroom
Girls WC
Boys WC
Restroom
Kindergarten Classroom
1st Grade Classroom
2nd Grade Classroom
Conference/ Small Group
Small Sensory
Conference/ Small Group
3rd Grade Classroom
4th Grade Classroom
Conference/ Small Group
5th Grade Classroom
Future MS
Health Room
Health RR
Staff Workroom
Reception
Vestibule
Itinerant Office
Counsel Office
Principal Office
Conference Room
Staff Lounge
SLP Office
OT/PT
Staff RR
Family RR
Mother's /Phone
Supply Storage
Custodial Closet
MDF
Small Sensory
Workroom /Office
OT/PT Office
Girls WC
Boys WC
Library
6th Grade Classroom
SPED Classroom
Large Sensory
Restroom
SPED Classroom


Pacific Beach
elementary









North Beach School District

Pacific Beach Elementary School



SEPTEMBER 2026

Schematic Design Report

TCF Architecture
124 N. "I" Street Tacoma, WA 98403
tcfarchitecture.com

TCF Architecture

October 5, 2026

Robert Musial
Project Manager
Educational Service District 112 | Construction Services Group
2500 NE 65th Avenue
Vancouver, WA 98661

Re: North Beach School District
Pacific Beach Elementary School (PBES)
TCF Project No. 2025-010
Additional Services Request - Fire Flow Testing ASR 01

Dear Robert:

The following additional services request is for fire hydrant flow testing at the Pacific Beach Elementary School replacement project in Moclips, performed by Sprinx Fire Protection and coordinated by Land Development Consultants, our civil engineer.

The fire flow and pressure figures available for the site are drawn from water purveyor records rather than measured data. Testing hydrants at the site lets us size the fire service and the sprinkler system on real numbers, and confirms early whether a fire pump or other measures will be required. Carrying that question into design development on record data risks a late and expensive change.

- **Fire Hydrant Testing Coordination (LDC, Phase 12):** LDC will coordinate the testing with Sprinx Fire Protection and the local water purveyor, and perform a site visit to observe the testing.
- **Hydrant Flow Testing (Sprinx Fire Protection, Phase 13):** Sprinx will flow one to two hydrants or hydrant outlets per test and measure pressures and flows, write the results up in a report for review, and forward the results to the local water department. Sprinx's proposal is attached behind LDC's.

Sprinx has priced two hydrant flow tests at this site. LDC's change order and Sprinx's proposal are attached. LDC has applied their standard ten percent markup to Sprinx's fee, and TCF's standard consultant markup has been applied to LDC's total.

124 N. "I" Street
Tacoma, WA 98403
253.572.3993

Civil and Fire Flow Testing (see LDC change order)		$	5,153
TCF Markup on Consultants	10%	$	515
Total Additional Services Proposed Fee			**$5,668**

Sprinx excludes permit and inspection fees, protection of landscape areas and site cleanup, screening or capping of catch basins if the water department requires it, notification of nearby residences, and repairs if a hydrant fails to open or close. At this stage there is no contractor under contract, so we have assumed the District and the water purveyor will cover those items. Each test may discharge 6,000 gallons or more.

Testing should be completed before we advance the fire protection design so the results can inform the service sizing. Grays Harbor County has left approval to the county water division and Ocean Shores water, and LDC has confirmed with them that the testing can move forward. The County has asked to witness the testing once it is scheduled. LDC requires signed approval of their change order before they proceed, and Sprinx schedules the testing with the water department after approval.

Please let me know if you have any questions.

Respectfully,
TCF Architecture pllc



Steve Wachtler, AIA
Managing Principal

Attachments:

LDC Change Order for Additional Engineering Services, September 30, 2026, 1 page

Sprinx Fire Protection Hydrant Flow Test proposal, September 21, 2026, 2 pages

LDC Surveying Engineering Planning

September 30, 2026

TCF Architecture
Attn: Steve Wachtler, AIA
902 North Second Street
Tacoma, WA 98403

RE: Change Order for Additional Engineering Services
North Beach School District – Pacific Beach Elementary School

Dear Steve:

Land Development Consultants, Inc. (LDC) is currently under contract to perform design for the Pacific Beach Elementary School. Additional fire hydrant testing services are requested to verify water pressure and flow information. The following scope of services will be provided.

Phase 12 – Fire Hydrant Testing Coordination
LDC will coordinate with Sprinx Fire Protection and perform a site visit to observe fire hydrant testing.

Phase 12 Fixed Fee: $1,200

Phase 13 – Sprinx Fire Hydrant Flow Testing
Please see Attachment A for detailed scope from Sprinx Fire Protection.

Additional Phase 13 Estimated T&M Fee: $3,593.70 + 10% markup **= $3,953.07**

Prior to commencement, LDC requires signed approval on this Change Order. Please do not hesitate to contact me if you have any questions regarding the enclosed. LDC would like to thank you for your continued business and consideration.

Regards,

LDC, Inc.

Ross Jarvis

Ross Jarvis, PE, Assoc. DBIA
Principal Engineer

Approved:

_____

Signature:

_____

By:

_____

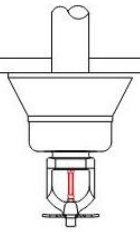
Date:

321 Cleveland Avenue SE, Suite 209 • Tumwater, WA 98501 • ph: 425.806.1869 • fx: 425.482.2893 • www.LDCcorp.com

SPRINX

Fire Protection

A Fire Sprinkler Corporation



TRANSMITTAL

Date:	**September 21, 2026**	Attn:	**Ross Jarvis**
To:	**LDC, Inc.**	Re:	**Hydrant Flow Test Proposal**
Email:	**rjarvis@LDCcorp.com**	From:	**Brian Walder**

We are transmitting ___2___ page (s), including cover sheet. If you have any questions or did not receive a page, call us at 253-853-7780.

MEMO:

Hello,

Here is our proposal for performing the (2) Hydrant Flow Tests at or near Pacific Beach Elementary 50 First Street N. Moclips, WA.

Please review and call if you have any questions.

Thank you for requesting this proposal,

Brian Walder

Brian Walder,
President

SPRINX
Fire Protection
A Fire Sprinkler Corporation

Service Proposal
Hydrant Flow Test

Bill To:	LDC, Inc.
Address:	321 Cleveland Ave SE Suite 209
City/State:	Tumwater , WA 98501
Email/Phone:	rjarvis@LDCcorp**.com**

Job Name:	Hydrant Flow Test	**Date:**	September 21, 2026
Address:	50 First Street N**.**		
City/State:	Moclips, WA 98562		
Contact Person:	Ross Jarvis	**Cell:**	(206) 778-1636

We hereby agree to perform the following service(s) specified below:

Perform (2) Hydrant Flows Test at or near 50 First Street N. Moclips, WA,.

We will be flowing (1 to 2) hydrants / hydrant outlets (per test) and measuring pressures and flows. All testing results will be written up in a report and submitted to you the owner for review. We will forward the test results to the local water department.

After approval, tests will be scheduled with the local water department.

First Hydrant Flow Test and Report $1,850.00

Second Hydrant Flow Test and Report $1150.00

Dechlorinator Tablets $150.00 x 2

Exclusions:

- Permit and Inspection Fees not included in price below.
- All landscape areas must be protected by contractor. No clean-up included in this proposal.
- Not responsible for water damage. We will need to flow the hydrant up to 2 minutes long which could result in a gallon discharge of 6000 gallons or more. If required by water department catch basins will need to be screened off or capped off prior to test.
- All notifications to local residences must be performed by contractor or water department.
- Not responsible for hydrant failure. If hydrant fails to open or close properly, the contractor will be responsible for having repairs completed.

WE hereby agree to perform the services at the above specified price**.**			**$ 3,300.00**
Date:	**September 21, 2026**		**$ 293.70**
Authorized Signature: (**Sprinx Fire Protection, Inc**)	*Brian Walder*		**$ 3,593.70**

Accepted – The above prices and specifications of this Service Proposal is satisfactory and hereby accepted. Proceed with Service Work.

Payment to be paid in full at time of test.
Overdue invoices are subject to interest at 1.5% per month.

Date of Acceptance:

Signature:
(Owner/Representative)

Print Name:

360-289-2447
360-289-2492
50 First Street North, Pacific Beach, WA 98571
P.O. Box 159, Ocean Shores, WA 98569

RESOLUTION 27-02

A Resolution of the Board of Directors certifying the approval of the Schematic Design for the Pacific Beach Elementary School (N/L) project.

WHEREAS, the North Beach District is replacing (N/L) the existing Pacific Beach Elementary School Building.

WHEREAS, the North Beach School District has contracted with TCF Architecture, PLLC. to develop the Educational Specification with assistance from the Pacific Beach Elementary School Core Leadership Team, was used as the basis for Schematic Design and Design Development for the new Pacific Beach Elementary School.

WHEREAS, the North Beach School District has contracted with TCF Architecture, PLLC. to create and develop the Schematic Design using the Educational Specifications with assistance from the Pacific Beach Elementary School Design Advisory Committee for the new Pacific Beach Elementary School.

THEREFORE, BE IT RESOLVED that the North Beach School District Board of Directors does hereby accept the use of the Schematic Design for the new Pacific Beach Elementary School.

ADOPTED, by the Board of Directors of North Beach School District on the 20th day of October, 2026 of which due notice was given in the manner provided by law and with the following director(s) being present and voting

_____
John Millan, Director District 1

_____
Joshua "Josh" Cooper, Director District 2

_____
Rebekah "Beckie" Fruh, Director District 3

_____
Halvar Olstead, Director District 4

_____
Donald "Don" Dowie, President/Director District 5

Attested to:

_____
Secretary to the Board/Superintendent

DRAFT

360-289-2447
360-289-2492
50 First Street North, Pacific Beach, WA 98571
P.O. Box 159, Ocean Shores, WA 98569

RESOLUTION 27-03
Sale of Property
Moclips Property - Parcel No. 788500301501

THIS RESOLUTION of the North Beach School District No. 64 is in accordance with Board Policy 6882 and RCW 28A.335.090(1) which provides that "[t]he board of directors of each school district shall have exclusive control of all school property, real or personal, belonging to the district; said board shall have power, subject to RCW 28A.335.120, in the name of the district, to convey by deed all the interest of their district in or to any real property of the district which is no longer required for school purposes."

WHEREAS, the District owns undeveloped real property containing approximately 0.08 acres, having Tax Parcel Identification No. 788500301501 with a street address of 47720 State Route 109, Ocean Shores, Washington (the "Property"); and

WHEREAS, on October 14, 2024, the Board of Directors declared the Property surplus via Resolution 25-02 following the rules and regulations set forth in RCW 28A.335.120; and

WHEREAS, in March 2025, the District obtained an appraisal of the Property performed by Derek R. Jolliff, MAI, of Anderson Appraisal, Inc. (the "Anderson Appraisal"); and

WHEREAS, notice of the Board of Director's consideration of a sale of the Property was first published on July 1, 2025 in the Daily World, a newspaper of general circulation within the District (the "July 2025 Notice"); and

WHEREAS, the July 2025 Notice also sought bids from the public for the purchase of the Property; and

WHEREAS, the appraised value of the Property, based upon the Anderson Appraisal, is less than $70,000.00, therefore not reaching the statutory requirement that the District publish and hold a hearing regarding the sale of the property;

WHEREAS, Patrick Velotta and Jennifer Velotta, a married couple, submitted the sole bid in response to the July 2025 Notice; and

WHEREAS, the District has come to an agreement with Patrick Velotta and Jennifer Velotta regarding the sale of the Property; and

WHEREAS, the agreed purchase price for the Property is $32,000.00.

NOW, THEREFORE, be it resolved by the Board of Directors that the Superintendent of the North

DRAFT

Beach School District or their designee is authorized to execute a Purchase and Sale Agreement with Patrick Velotta and Jennifer Velotta for the sale of the Property, and to take any and all actions necessary to consummate and close the transaction set forth in the Purchase and Sale Agreement, and to convey the Property from the District to Patrick Velotta and Jennifer Velotta pursuant to such agreement.

Approved by the Board of Directors of North Beach School District No. 64, Grays Harbor County, Washington, at a regular meeting thereof held this 20th day of October, 2026.

John Millan, Director District 1

Joshua "Josh" Cooper, Director District 2

Rebekah "Beckie" Fruh, Director District 3

Halvar Olstead, Director District 4

Donald "Don" Dowie, President/Director District 5

Attested to:

Secretary to the Board/Superintendent