



QUATTROCCHI KWOK
ARCHITECTS

GATEWAY PORTABLES & SHADE STRUCTURES

Bid Clarification 01

September 21, 2026

DSA File Number: 7-H4

DSA Application Number: 01-122796

OWNER

Liberty Union High School District
929 Second Street
Brentwood, CA 94513

ARCHITECT

Quattrocchi Kwok Architects
Santa Rosa: 636 Fifth Street, Santa Rosa, CA 95404
Oakland: 55 Harrison Street, Suite 525, Oakland, CA 94607
Denver: 610 Jerry Street, Castle Rock, CO 80104

ARCHITECT'S PROJECT NO.: 2497.00

To: Prospective Bidders

The following changes, modifications and additions to Project Manual and Drawings described below are made a part thereof and are subject to all of the requirements thereof as if originally specified. The Bidder must acknowledge receipt of the Addendum in the space provided on the Bid Form; failure to do so may subject the Bidder to disqualification.

Table of Contents - Bid Clarification 01

This Addendum consists of 5 pages and the attachments as listed below dated September 18, 2026.

Deleted Text is shown in ~~strikeout type~~.

Added Text is shown in ***bold italicized type***.

ATTACHMENTS:

Bid Clarification Drawings (8.5 inch by 11 inch & 11 inch by 17 inch):

Drawings (24 inch by 36 inch):

G-0.2 Abbreviations and Notes
G-0.3 Site plan, Property Lines, Parking Calculations & Code Review
G-0.4 Access Site Plan
A-8.1 Door Schedule & Gate Details
C-1.1 Existing Conditions/Demolition
C-1.2 Existing Conditions/Demolition
C-4.1 Grading Plan
C-4.2 Grading Plan
C-5.1 Stormwater Control Plan
C-5.2 Stormwater Control Plan
C-6.1 Erosion Control Plan
C-6.2 Erosion Control Plan
L1.0 Materials & Detail Reference Plan
L1.1 Construction Details
L1.2 Construction Details
L1.3 Construction Details
L2.0 Layout Plan
L2.1 Layout Plan
L3.0 Irrigation Plan
L3.1 Irrigation Notes & Legend
L3.2 Irrigation Details
L3.3 Irrigation Details
L3.4 Irrigation Details
L3.5 Irrigation Calculations
L4.0 Planting Plan
L4.1 Planting Details
E-1.1 Site plan, Electrical
E-1.2 Site Plan Lighting

Project Manual:

00 0101 Cover
00 0107 Seals Page
00 0110 Table of Contents
12 9300 Site Furnishings
32 1800 Athletic & Recreational Surfacing
32 1814 Synthetic Turf System
32 3111 Gate Operators
32 3119 Ornamental Fencing
32 8400 Irrigation System
32 9000 Landscape Planting

Project Record:

None

End of Table of Contents

A. CHANGES TO PREVIOUS BID CLARIFICATIONS

None

B. CHANGES TO THE BIDDING AND CONTRACT REQUIREMENTS

None

C. CHANGES / ADDITIONS TO THE DRAWINGS

Item No. 1. 01 G-0.2 Abbreviations & Notes
Replace G-0.2 with the attached G-0.2.

Item No. 1. 02 G-0.4 Access Site Plan
Replace G-0.4 with the attached G-0.4.

Item No. 1. 03 Sheet A-8.1
Replace A-8.1 with the attached A-8.1

Item No. 1. 04 Civil Sheets
Replace all Civil sheets with the attached Civil sheets.

Item No. 1. 05 Landscape Sheets
Add the attached Landscape Sheets to the bid set.

D. CHANGES / ADDITIONS TO THE PROJECT MANUAL

Item No. 1. 06 Cover, Seals Page, and Table of Contents
Replace the Cover, Seals Page, and Table of Contents with the attached Cover, Seals Page, and Table of Contents.

Item No. 1. 07 Specification Additions
Add the attached Specification Sections to the Project Manual:
12 9300 Site Furnishings
32 1800 Athletic Recreational Surfacing
32 1814 Synthetic Turf System
32 3111 Gate Operators

32 3119 Ornamental Fencing
32 8400 Irrigation System
32 9000 Landscape Planting

E. BIDDERS QUESTIONS

None.

End of Bid Clarification

Date: September 10, 2026

GATEWAY PORTABLE AND SHADE STRUCTURE

Revision Outline

Below are the changes made in the revision.

Drawings

G-0.2

- Sheet index adding landscape sheets
- Project description edited to include site improvements added in revision.

G-0.3 Campus Site Plan

- Campus Site Plan revised in its entirety reflecting the new site improvements.

C-1.1 Existing Conditions/Demolition

- Existing Conditions/Demolition revised in its entirety reflecting the new site improvements.

C-1.2 Existing Conditions/Demolition

- New sheet. Existing Conditions/Demolition revised in its entirety reflecting the new site improvements.

C-2.1 Horizontal Control Plan

- Horizontal Control Plan revised in its entirety reflecting the new site improvements.
- Details for Resilient Surface sections and synthetic turf sections added.

C-2.2 Horizontal Control Plan

- New sheet. Horizontal Control Plan revised in its entirety reflecting the new site improvements.
- Seat wall detail added.

C-2.3 Details

- Details for Vehicular Concrete Pavement Section and removeable metal bollard added.

C-3.1 Utility Plan

- New sheet. Utility Plan revised in its entirety reflecting the new site improvements.
- Storm drain schedules updated.
- Location of irrigation controller added.

C-3.2 Utility Plan

- Utility Plan revised in its entirety reflecting the new site improvements.

C-4.1 Grading Plan

- Grading Plan revised in its entirety reflecting the new site improvements.
- Grading sections in the area of new site improvements added.

C-4.2 Grading Plan

- New sheet. Grading Plan revised in its entirety reflecting the new site improvements.
- Grading section in the area of new site improvements added.

C-5.1 Stormwater Control Plan

- Stormwater Control Plan revised in its entirety reflecting the new site improvements.
- Bioretention areas table updated.
- Bioretention area section added.

C-5.2 Stormwater Control Plan

- New sheet. Stormwater Control Plan revised in its entirety reflecting the new site improvements.
- Bioretention area section added.

C-6.1 Erosion Control Plan

- Erosion Control Plan revised in its entirety reflecting the new site improvements.

C-6.2 Erosion Control Plan

- New sheet. Erosion Control Plan revised in its entirety reflecting the new site improvements.

A-8.1

- Removed Chain Link Fence and Gate details
- Added Ornamental gate Details.
- Added concrete planter details.

L-1.0 through L-4.1

- New site improvements added to the project including fencing and gate changes, turf, rubberized surface, planting, irrigation, and seat walls.

E-1.1

- Revise Power to gate.

E-1.2

- Revise site lighting locations.

Project Manual

- Replaced seals page adding LA
- Revised table of contents adding Landscape Architect Sections and removing Chain Link Fence section.

DSA Forms

- Provided the DSA 1L

End of Revision Outline

	AND	F	FACE		
	ANGLE	FA	FIRE ALARM	PC	PORTLAND CEMENT
@	AT	FCO	FLOOR CLEAN OUT	P.C.F.	POUNDS PER CUBIC FOOT
Ç	CENTERLINE	FD	FLOOR DRAIN	PDA	POWER DRIVEN ANCHOR
	FEET	FDH	FOUNDATION	PERF	PERFORATED
*	INCHES	FE	FIRE EXTINGUISHER	PH	PLATE HEIGHT
	PENNY	FEC	FIRE EXTINGUISHER CABINET	PL	PLATE
#	POUND/ NUMBER	FF	FINISH FLOOR	PLI	PROPERTY LINE
		FG	FINISH GRADE	PLAM	PLASTIC LAMINATE
AB	ANCHOR BOLT	FGL	FIBERGLASS	PLAS	PLASTER/ PLASTIC
ABBREV	ABBREVIATION	FH	FIRE HYDRANT	PLF	POUNDS PER LINEAL FOOT
AC	ASPHALT CONCRETE	FHMS	FLAT HEAD MACHINE SCREW	PLYWOOD	PLYWOOD
A/C	AIR CONDITIONING	FHS	FIRE HOSE STATION	P.O.C	POINT OF CONTACT
ACC	ACCESSIBLE	FHWS	FLAT HEAD WOOD SCREW	PF	PAIR
ACOUS	ACOUSTICAL	FIN	FINISH	PROP	PROPERTY
AC.T	ACCOUSTICAL TILE	FIX	FIXTURE	PS	POUNDS PER SQUARE FOOT
AD	AREA DRAIN	FL	FLOOR LINE	PSI	POUNDS PER SQUARE INCH
ADJ	ADJUSTABLE	FLASH	FLASHING	PT	POINT
A.F.F.	ABOVE FINISH FLOOR	FLUOR	FLUORESCENT	PTDF	PRESSURE TREATED
AGG	AGGREGATE	FLR	FLOOR		DOUGLAS FIR
ALUM	ALUMINUM	FM / FOM	FACE OF MASONRY	PTN	PARTITION
ANOD	ANODIZED	FN	FACE NAIL	PTC	PAPER TOWEL RECEPACLE
APPROX	APPROXIMATE	FOF	FACE OF CONCRETE	PVC	POLYVINYL CHLORIDE
ARCH	ARCHITECTURAL	FOS	FACE OF FINISH	PVMT	PAVEMENT
ASPH	ASPHALT				
		FRMG	FRAMING	R	RISER
BD	BOARD	FR	FIRE-RESISTANT	R / RAD	RADIUS
BITUM	BITUMINOUS	FRP	FIBERGLASS REINFORCED	RD	ROOF DRAIN
BLDG	BUILDING		PANEL	REF	REFERENCE
BLK	BLOCK	FT	FEET	REFR	REFRIGERATOR
BLKG	BLOCKING	FTG	FOOTING	REG	REGULAR
BM	BEAM	FURR	FURRING	REQD	REQUIRED
BOT	BOTTOM			REINF	REINFORCED
BO	BY OWNER	GA	GAUGE	RH	ROOF HATCH
BRK	BREAK	GALV	GALVANIZED	RHMS	ROUND HEAD MACHINE SCREW
BRG	BEARING	GB	GRAB BAR	RHWS	ROUND HEAD WOOD SCREW
BTWN	BETWEEN	GC	GENERAL CONTRACTOR	RM	ROOM
BU	BUILT-UP	GI	GALVANIZED IRON	RO	ROUGH OPENING
BUR	BUILT-UP ROOFING	GL	GLASS/ GLAZING	RWL	RAIN WATER LEADER
		GLB	GLB LAMINATED BEAM	RWD	REDWOOD
		GND	GROUND		
CAB	CABINET	GR	GRADE	S	SOUTH
CB	CATCH BASIN	GYP BD	GYPSUM BOARD	S.A.D.	SEE ARCHITECTURAL DRAWING
CBC	CALIFORNIA BUILDING CODE			S.AV.D.	SEE AUDIO/VIDEO DRAWINGS
CEM	CEMENT	HB	HOSE BIBB	SC	SOLID CORE
CER	CERAMIC	HC	HOLLOW CORE	S.C.D.	SEE CIVIL DRAWINGS
CI	CAST IRON	HDR	HEADER	SCHED	SCHEDULE
CIR	CIRCLE	HDWD	HARDWOOD	SD	STORM DRAIN
CJ	CONTROL JOINT	HDWR	HARDWARE	SECT	SECTION
CORR	CORRIDOR	HM	HOLLOW METAL	S.E.D.	SEE ELECTRICAL DRAWINGS
CL	CLOSE/ CENTER LINE	HOR	HORIZONTAL	SEP	SEPARATION
CLG	CEILING	HP	HIGH POINT	S.F.P.D.	SEE FIRE PROTECTION DRAWING
CLR	CLEAR	HR	HOUR	SHGT	SHEATHING
CLS	CLOSURE	HSS	HOLLOW STEEL SECTION	SIM	SIMILAR
CMU	CONCRETE MASONRY UNIT	HTG	HEIGHT	SL	SLIDING
CO	CLEANOUT	HVAC	HEATING	S.L.D.	SEE LANDSCAPE DRAWINGS
COL	COLUMN		HEATING, VENTILATING, AIR-CONDITIONING	SM	SHEET METAL
COMB	COMBINATION			S.M.D.	SEE MECHANICAL DRAWING
COMP	COMPOSITION	ID	INSIDE DIAMETER	SOV	SHUT OFF VALVE
CONC	CONCRETE	INSUL	INSULATION	S.P.D.	SEE PLUMBING DRAWINGS
CONN	CONNECTION	INT	INTERIOR	SPEC	SPECIFICATION
CONST	CONSTRUCTION	INTEG	INTEGRAL	SPKR	SPEAKER
CONT	CONTINUOUS	INTERMED	INTERMEDIATE	SQ	SQUARE
CONTR	CONTRACTOR	INV	INVERT	SS	STAINLESS STEEL
CT	CERAMIC TILE			S.S.D.	SEE STRUCTURAL DRAWINGS
CTR	CENTER	JH	JOIST HANGER	S.T.H.D.	SEE THEATER DRAWINGS
CTSK	COUNTERSINK	JST	JOIST	STA	STATION
CUST	CUSTODIAN	JT	JOINT	STD	STANDARD
CW	COLD WATER			STL	STEEL
				STOR	STORAGE
DBL	DOUBLE	KIT	KITCHEN	STRUCT	STRUCTURAL
DEMO	DEMOLITION	KP	KICK PLATE	SUSP	SUSPENDED
DEPT	DEPARTMENT			SYM	SYMMETRICAL
DET	DETAIL				
DF	DRINKING FOUNTAIN	LAB	LABORATORY		
DG	DECOMPOSED GRANITE	LAM	LAMINATE	T	TREAD
DI	DRAIN INLET	LAV	LAVATORY	T&B	TOP & BOTTOM
DIA	DIAMETER	LL	LIVE LOAD	TC	TOP OF CURB
DIAG	DIAGONAL	LP	LOW POINT	TEL	TELEPHONE
DIM	DIMENSION	LT	LIGHT	TER	TERRAZZO
DISP	DISPOSAL			T&G	TONGUE & GROOVE
DIV	DIVISION	MAT	MATERIAL	TH	THICK
DN	DOWN	MAX	MAXIMUM	THRU	THROUGH
DO	DOOR OPENING	MB	MACHINE BOLT	TJ	TOOL JOINT
DIR	DIRECTLY	MC	MEDICINE CABINET	TN	TOE NAIL
DR	DOOR	MECH	MECHANICAL	T.O.D.	TOP OF DECK
DS	DOWN SPOUT	MED	MEDIUM	T.O.P.	TOP OF PLATE
DSA	DIVISION OF STATEARCHITECT	MEMB	MEMBRANE	T.O.R.	TOP OF ROOF
DSP	DRY STAND PIPE	MFR	MANUFACTURER		

ALL NOTES AND SYMBOLS ARE INTENDED TO APPLY AT ALL OTHER LOCATIONS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY. NO LIMITATION OF APPLICATION IS INTENDED EXCEPT AS SPECIFICALLY NOTED.

	COLUMN GRIDS A AND 1 IN BUILDING A
	DIMENSION TO FACE OF STUD OR MASONRY
	DIMENSION TO FACE OF FINISH
	DIMENSION TO CENTER LINE OR COLUMN LINE
	RELATIVE ELEVATION DIMENSION
	DOOR A IN ROOM NUMBER 101 IN BUILDING B ACCESSIBLE CLEARANCES SHOWN DASHED
	SEE WINDOW NUMBER 03
	DETAIL NUMBER 11 ON SHEET NUMBER A-9.12
	SECTION NUMBER 3 ON SHEET NUMBER A-B6.2
	ELEVATION NUMBER 2 ON SHEET NUMBER A-B5.3
	RELATIVE ORIGIN OR WORK POINT
	EQUIPMENT TAG REFER TO EQUIPMENT SCHEDULE

Statement of General Conformance

DSA Application No 01-122796 File No 7-H4

The drawings identified as follows:

- ☒ All drawing sheets included in this set not bearing my stamp and signature
- ☐ Drawings denoted in the sheet index as follows: _____
- ☐ Drawings included under the following PC approval(s): _____

I have been prepared by other design professionals or consultants who are licensed and/or authorized to prepare such drawings in this state. They have been examined by me for:

- Design intent and appear to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications prepared by me, and
- Coordination with my drawings (plans) and specifications and are acceptable for incorporation into the construction of this project.

The Statement of General Conformance "shall not be construed as relieving me of my rights, duties, and responsibilities under Sections 17302 and 81138 of the Education Code and Sections 4-336, 4-341, and 4-344" of Title 24, Part I, (Title 24, Part 1, Section 4-316 (b))

1. ALL WORK IS SHOWN, DESCRIBED OR SPECIFIED IN THE DRAWINGS INDEXED ON THIS PAGE OR IN THE SPECIFICATIONS.

ALL WORK NOT INDICATED AS EXISTING (E) IS NEW.

2. ALL FRAMING DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE.

• DO NOT SCALE DRAWINGS

• VERIFY ALL DIMENSIONS WHERE WORK INVOLVES FRAMING FOR WINDOWS, DOORS, OR CABINETS.

3. ONLY WORK SO NOTED IS NOT IN CONTRACT (N.I.C.) ALL N.I.C. ITEMS ARE NOT PART OF DSA APPROVAL

4. LIST OF APPLICABLE CODES: A COPY OF TITLE 24 PARTS 1-5 AND PART 9 SHALL BE KEPT ON THE JOB AT ALL TIMES.

2025 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR

2025 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR

2025 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR

2025 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR

2025 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR

2025 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR

2025 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR

2025 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR

2025 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR

2025 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR

TITLE 19 CCR, PUBLIC SAFETY CODE, STATE FIRE MARSHAL REGULATIONS

5. APPLICABLE STANDARDS:

FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

6. ALL WORK SHALL CONFORM TO 2025 TITLE 24, CALIFORNIA CODE OF REGULATIONS (C.C.R.) IN ACCORDANCE WITH TITLE 24 PART 1 CHAPTER 4: THE ADMINISTRATIVE REGULATIONS FOR THE DIVISION OF THE STATE ARCHITECT STRUCTURAL SAFETY (DSA/SS)

PROJECT INSPECTOR CERTIFICATION REQUIREMENT PER 4-333.1: CLASS 1

- 4-331 DSA SHALL BE NOTIFIED AT THE START OF CONSTRUCTION.
- 4-332 WHEN CONSTRUCTION IS SUSPENDED FOR MORE THAN ONE MONTH, THE PROJECT INSPECTOR SHALL INFORM DSA.
- 4-333(a) OBSERVATION OF THE WORK SHALL BE BY ARCHITECT OR REGISTERED ENGINEER.
- 4-333(b) A DSA CERTIFIED PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR.
- 4-344. SUPERVISION OF CONSTRUCTION BY DSA SHALL BE IN ACCORDANCE WITH THIS SECTION.
- 4-335 A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT IN ACCORDANCE WITH THIS SECTION. COSTS OF RE TEST MAY BE BACKCHARGED TO THE CONTRACTOR. ALL TESTS AND TESTING LAB SHALL CONFORM TO THE REQUIREMENTS OF SECTION 4-335 AND APPROVED T & I SHEET (DSA-103)
- 4-336 VERIFY REPORTS SHALL BE SUBMITTED BY CONTRACTORS (DSA 006-C), INSPECTORS (DSA 006-PI), ARCHITECTS AND ENGINEERS (DSA 006-AE) IN ACCORDANCE WITH SECTIONS 4-336 AND 4-343.
- 4-337 SEMI-MONTHLY REPORTS SHALL BE SUBMITTED BY INSPECTORS (DSA - 155), IN ACCORDANCE WITH SECTIONS 4-337.
- 4-338 WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE APPROVED PLANS, ADDENDA AND CONSTRUCTION DOCUMENTS.

CHANGES TO THE APPROVED PLANS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR. ADDENDA AND CHANGE DOCUMENTS SHALL BE STAMPED AND SIGNED BY THE ARCHITECT OR REGISTERED ENGINEER IN CHARGE

- 4-341(a) THE ARCHITECT AND THE REGISTERED ENGINEER SHALL PERFORM THEIR DUTIES IN ACCORDANCE WITH SECTIONS 4-333(a) AND 4-341.
- 4-343 THE CONTRACTOR SHALL PERFORM HIS DUTIES IN ACCORDANCE WITH THIS SECTION.

7. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF ALTERATION, REHABILITATION OR CONSTRUCTION SHALL BE IN ACCORDANCE WITH TITLE 24, C.C.R. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-CODE CRITERIA CONSTRUCTION BE DISCOVERED WHICH ARE NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24 C.C.R. A CONSTRUCTION CHANGE DOCUMENT (CCD), OR SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. (SECTION 4-317(C), PART 1, TITLE 24, CCR)

8. ALL CONSTRUCTION AND DEMOLITION SHALL BE IN ACCORDANCE WITH CHAPTER 33 OF THE CBC AND THE WRITTEN FIRE LIFE SAFETY PLAN.

9. EMERGENCY VEHICLE ACCESS ROADS AND ON-SITE FIRE HYDRANTS SHALL BE IN SERVICE AND OPERABLE PRIOR TO LOADING THE SITE WITH COMBUSTIBLE MATERIALS.

10. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS, AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH APPLICABLE LOCAL ORDINANCES.

11. SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS SHALL BE CONSIDERED AS A CONSTRUCTION CHANGE DOCUMENT OR ADDENDUM, AND SHALL BE APPROVED BY DSA PRIOR TO FABRICATION AND INSTALLATION PER DSA IR-6 AND SECTION 338(C) PART 1, TITLE 24 CCR.

12. THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACCEPTANCE TEST IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE:

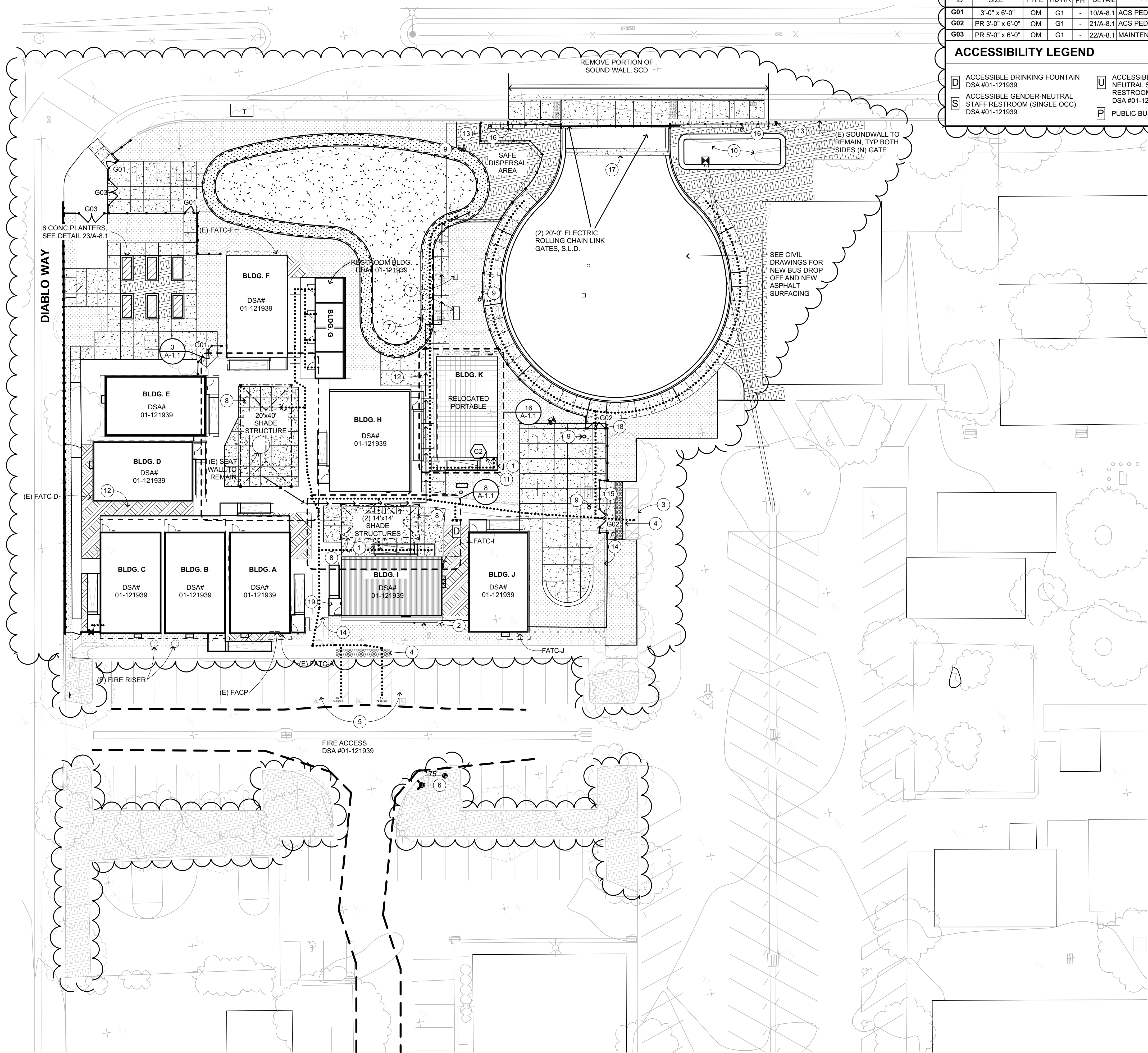
- ACCEPTANCE TESTING OF CERTIFIED ATT CAN BE FOUND AT <https://www.energy.ca.gov/programs-and-topics/programs/acceptance-test-technician-certification-provider-program/acceptance>
- MECHANICAL SYSTEM ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.
- ENVELOPE AND PROCESS EQUIPMENT ACCEPTANCE TESTS SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR, ENGINEER / ARCHITECT OF RECORD, OR OWNER'S AGENT.
- LISTING OF CERTIFIED ATT CAN BE FOUND AT <https://www.energy.ca.gov/programs-and-topics/programs/acceptance-test-technician-certification-provider-program/acceptance>
- THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION/INSTALLATION OF THE SPECIFIED SYSTEMS CONFORM AND PASS THE REQUIRED ACCEPTANCE CRITERIA.
- PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.

13. NEW BUILDINGS SHALL BE PROVIDED WITH EMERGENCY RESPONDER RADIO COVERAGE IN ACCORDANCE WITH CALIFORNIA FIRE CODE SECTION 510. THE PROJECT ARCHITECT (AOR) SHALL CONTACT THE LOCAL FIRE DEPARTMENT AND/OR EMERGENCY COMMUNICATIONS AUTHORITY TO OBTAIN DESIGN, EQUIPMENT SPECIFICATIONS, AND PLANS, AND REQUESTED DOCUMENTATION SHALL BE SUBMITTED TO THE LOCAL AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL. UPON COMPLETION, COPIES OF THE APPROVED PLANS, EQUIPMENT DATA SHEETS, TESTING, AND ACCEPTANCE DOCUMENTATION SHALL BE PROVIDED TO THE SCHOOL DISTRICT.

14. ONCE CONSTRUCTION BEGINS, THE CONTRACTOR SHALL VERIFY DESIGN, EQUIPMENT SPECIFICATIONS, TESTING, AND ACCEPTANCE CRITERIA FOR EMERGENCY RESPONDER RADIO COVERAGE WITH THE LOCAL FIRE DEPARTMENT AND/OR EMERGENCY COMMUNICATIONS AUTHORITY. THE CONTRACTOR SHALL FACILITATE ANY NECESSARY TESTING AND SYSTEM ENHANCEMENTS REQUIRED BY THE LOCAL AGENCY.

GENERAL	
G-0.1	COVER SHEET
G-0.2	APPRECIATIONS AND NOTES
G-0.3	CAMPUS SITE PLAN, PROPERTY LINES, PARKING CALCULATIONS, CODE REVIEW
G-0.4	ACCESS SITE PLAN
CIVIL PLANS	
C-1.1	EXISTING CONDITIONS/ DEMOLITION
C-1.2	EXISTING CONDITIONS/ DEMOLITION
C-2.1	HORIZONTAL CONTROL PLAN
C-2.2	HORIZONTAL CONTROL PLAN
C-2.3	DETAILS
C-3.1	UTILITY PLAN
C-3.2	UTILITY PLAN
C-4.1	GRADING PLAN
C-4.2	GRADING PLAN
C-5.1	STORMWATER CONTROL PLAN
C-5.2	STORMWATER CONTROL PLAN
C-6.1	EROSION CONTROL PLAN
C-6.2	EROSION CONTROL PLAN
LANDSCAPE PLANS	
L1.0	MATERIAL AND DETAIL REFERENCE PLAN
L1.1	CONSTRUCTION DETAILS
L1.2	CONSTRUCTION DETAILS
L2.0	LAYOUT PLAN
L2.1	LAYOUT PLAN
L3.0	IRRIGATION PLAN
L3.1	IRRIGATION NOTES AND LEGEND
L3.2	IRRIGATION DETAILS
L3.3	IRRIGATION DETAILS
L3.4	IRRIGATION DETAILS
L3.5	IRRIGATION CALCULATIONS
L4.0	PLANTING PLAN
L4.1	PLANTING DETAILS
ARCHITECTURAL SHEETS	
A-1.1	SITE DETAILS
A-2.1	BUILDING 1 - FLOOR PLAN, INTERIOR ELEVATIONS & DEMO PLAN
A-8.1	DOOR SCHEDULE
STRUCTURAL SHEETS	
S-0.1	GENERAL NOTES
S-1.1	TYPICAL CONCRETE DETAILS
S-2.1	BUILDING 1 FLOOR & ROOF PLAN
S-4.1	FOUNDATION PLAN
S-6.1	WOOD DETAILS
FIRE PROTECTION	
FP-1.0	FIRE PROTECTION SCHEDULES AND LEGENDS
FP-2.0	FIRE PROTECTION SITE PLAN
FP-2.1	FIRE PROTECTION OVERHEAD PIPING PLAN
FP-2.2	FIRE PROTECTION REFLECTED CEILING PLAN
FP-3.1	FIRE PROTECTION SECTIONS
FP-4.1	FIRE PROTECTION DETAILS
FP-4.2	FIRE PROTECTION DETAILS
ELECTRICAL	
E-0.1	SYMBOLS LIST, GENERAL NOTES
E-0.2	LUMINAIRE SCHEDULE
E-1.1	SITE PLAN - ELECTRICAL
E-1.2	SITE PLAN - LIGHTING
E-3.1	FLOOR PLANS - POWER & SIGNAL
E-5.1	SINGLE LINE DIAGRAM - POWER & TELECOM
E-7.1	DETAILS
E-8.1	TITLE 24 DOCUMENTATION
FIRE ALARM	
FE-0.1	FIRE ALARM EQUIPMENT LIST, NOTES & DETAILS
FE-1.1	SITE PLAN - FIRE ALARM
FE-3.1	FLOOR PLANS - FIRE ALARM
FE-5.1	FIRE ALARM SINGLE LINE DIAGRAM & CALCULATIONS
MODTECH TO BE RELOCATED DSA 57970	
A0	COVER SHEET
A1.0	FLOOR PLAN, ROOF PLAN
A2.0	EXT INT. ELEVATIONS
A3.0	ARCHITECTURAL DETAILS
A4.0	REFLECTED CEILING PLAN
A5.0	WALL FRAMING
A6.0	WALL FRAMING DETAILS
S1.0	FOUNDATION PLANS/DETAILS
S2.0	FLOOR/ROOF FRAMING PLANS
S3.0	FRAMING ELEVATIONS & DETAILS
S4.0	TYPICAL DETAILS
M1.0	HVAC PLAN
E1.0	POWER/SIGNAL/LIGHTING PLAN
TMP 2010 PC 04-112032	
1	COVER SHEET
2	ACCESSIBLE RAMP ELEVS & DETAILS
3	ACCESSIBLE RAMP DETAILS & NOTES
4	DETAILS AND NOTES
5	ACCESSIBLE RAMP SWITCHBACK DETS.
6	STAIRS - OPTIONAL
7	ACCESSIBLE RAMP OPT. ALUM DECK
8	ACCESSIBLE RAMP ELEV. & PLAN VIEWS
20' x 40' SHADE STRUCTURE PC# 02-120865	
S1	COVER SHEET AND NOTES
S2	ELEVATION DETAILS
S3	TYPICAL DETAILS
S4	REFERENCE DETAILS
S5	SPECIFICATION INFORMATION
S6	EXAMPLE FORM DSA 103 - TESTS & INSPECTIONS
14' x 14' SHADE STRUCTURE PC# 02-120866	
S1A	COVER SHEET AND NOTES
S2A	ELEVATION DETAILS
S3A	TYPICAL DETAILS
S4A	REFERENCE DETAILS
S5A	SPECIFICATION INFORMATION
S6A	EXAMPLE FORM DSA 103 - TESTS & INSPECTIONS
TMP 2022 PC 04-122262	
1A	COVER SHEET (A)
2A	ACCESSIBLE RAMP ELEVATIONS & DETAILS (A)
3A	ACCESSIBLE RAMP DETAILS & NOTES (A)
4A	DETAILS & NOTES (A)
5A	ACCESSIBLE RAMP SWITCHBACK DETAILS (A)
6A	STAIRS - OPTIONAL (A)
7A	ACCESSIBLE RAMP OPT. ALUM DECK (A)
8A	ACCESSIBLE RAMP ELEV. & PLAN VIEWS (A)

G-0.2



GATE SCHEDULE

ID	SIZE	TYPE	HDWR	PH	GATE DETAIL	COMMENTS
G01	3'-0" x 6'-0"	OM	G1	-	10/A-8.1	ACS PEDESTRIAN GATE
G02	PR 3'-0" x 6'-0"	OM	G1	-	21/A-8.1	ACS PEDESTRIAN GATE
G03	PR 5'-0" x 6'-0"	OM	G1	-	22/A-8.1	MAINTENANCE GATE

ACCESSIBILITY LEGEND

D	ACCESSIBLE DRINKING FOUNTAIN DSA #01-121939	U	ACCESSIBLE GENDER NEUTRAL STUDENT RESTROOM (SINGLE-OC)
S	ACCESSIBLE GENDER-NEUTRAL STAFF RESTROOM (SINGLE OCC) DSA #01-121939	P	PUBLIC BUS STOP

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT DSA PR 15-01

THE P.O.T.(ACCESSIBLE PATH OF TRAVEL) IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEETS THE REQUIREMENTS OF THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE P.O.T. WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE P.O.T. THAT WERE DETERMINED TO BE NONCOMPLIANT WITH THE CBC HAVE BEEN IDENTIFIED AND THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS, OR PORTIONS OF THE P.O.T. THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF P.O.T. ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CBC COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THE ITEMS SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

SITE PLAN GENERAL NOTES - ACCESS

THE ACCESSIBLE ROUTE (PATH OF TRAVEL) INDICATED HAS BEEN PROVIDED IN ACCORDANCE WITH IR 11B-10 AND SHALL COMPLY WITH THE FOLLOWING:

- 1:20 MAXIMUM SLOPE WITHOUT A RAMP HANDRAIL
- 1:48 MAXIMUM CROSS SLOPE
- NO ABRUPT VERTICAL CHANGES EXCEEDING 1/4". CHANGES BETWEEN 1/4" TO 1/2" VERTICAL CAN BE AT 1:2 MAX SLOPE. CHANGES LESS THAN 1/4" CAN BE VERTICAL
- 48" MIN. CLEAR IN WIDTH (60" MIN PASSING SPACE EVERY 200 LINEAL FEET)
- NON-SLIP SURFACE - HEAVY BROOM FINISH AT EXTERIOR CONCRETE PAVING WHERE SLOPED >6%, MEDIUM BROOM FINISH AT SLOPES <6%
- MAINTAIN FREE OF OVERHANGING OBSTRUCTIONS TO 80" MIN
- PROTRUDING OBJECTS NOT GREATER THAN 4" SHALL BE MOUNTED BETWEEN 27" AND 80" A.F.F.
- WHERE A DRAIN INLET IS IN THE PATH OF TRAVEL, THE GRATE SHALL BE ORIENTED SO THAT MAX OPENING IS 1/2" & LONG DIM IS PERPENDICULAR TO THE PREDOMINANT DIRECTION OF PEDESTRIAN TRAVEL
- CONTRACTOR TO VERIFY THAT NO BELOW-GRADE PULL BOXES OCCUR WITHIN THE AREA OF TRUNCATED DOMES

PARKING AND PEDESTRIAN SITE SIGNAGE SHALL COMPLY WITH CBC SECTIONS 11B-502.6 11B-502.8 & 11B-703.7.2.1
BUILDING SIGNAGE SHALL COMPLY WITH CBC 11B-703

PEDESTRIAN GATES SHALL COMPLY WITH CBC 1010.2 & 11B-206.5
ARCHITECT SHALL VERIFY THERE ARE NO BARRIERS IN THE PATH OF TRAVEL

PARKING ANALYSIS

SEE SHEET G-03 FOR PARKING RATIOS

KEY NOTES

- 1 TMP RAMP (SEE TMP PC 04-122262) & DETAIL: 10 A-1.1
- 2 FIRE SPRINKLER RISER
- 3 (E) STUDENT DROP OFF. DSA #01-121939
- 4 (E) TRUNCATED DOMES. DSA# 01-121939
- 5 ACCESSIBLE PARKING, DSA #01-121939
- 6 (E) FIRE HYDRANT ELEVATION 75'
- 7 ELECTRICAL ITEM, SED
- 8 SHADE STRUCTURES PC 02-120865 & 02-120866
- 9 EGRESS LIGHTS, TYP. S.E.D.
- 10 BIO RETENTION AREA SCD
- 11 ROOM ID SIGNAGE, SEE 5 A-1.1
- 12 (E) AC PAVING.
- 13 NOT USED
- 14 (E) ORNAMENTAL FENCE AND GATE DSA# 01-121939, CCD 5 & 7
- 15 ORNAMENTAL FENCE BEGINS HERE & CONTINUES AROUND LOOP
- 16 ROLLING GATE CONCRETE PAD, S.C.D.
- 17 VALLEY GUTTER, S.C.D.
- 18 6'-0" ORNAMENTAL GATE. SEE 10 A-8.1
- 19 (E) RELOCATED TMP RAMP (SEE TMP PC 04-112032) & DETAIL: 11 A-1.1

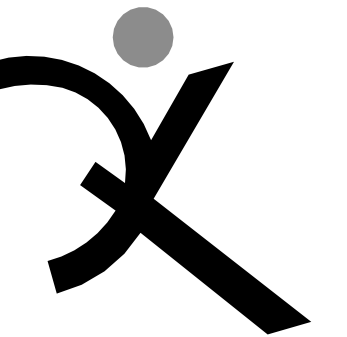
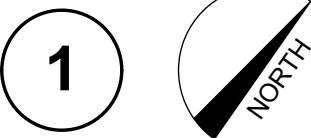
SITE PLAN LEGEND - ACCESS

	RELOCATED BUILDING
	(E) BUILDING TO REMAIN
	(N) CONCRETE
	(E) BUILDING TO REMAIN, ADD FIRE SPRINKLER AND EXTRA DOOR
	(N) TRUNCATED DOMES, SEE 17 A-1.1
	(N) MULCH COVERING, S.L.D.
	(N) ORNAMENTAL FENCE, SEE 9 A-8.1
	FIRE ACCESS - DSA #01-121939
	PATH OF EGRESS
	ACCESSIBLE PATH OF TRAVEL

FOR PROPERTY LINE, SEE G-0.3, PROPERTY LINE SITE PLAN

ENLARGED SITE PLAN

1" = 20'



QUATTROCCHI KWOK
ARCHITECTS

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55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829



SIGNED: AUGUST 31, 2026

GATEWAY PROGRAM

PORTABLE AND SHADE STRUCTURES

929 SECOND STREET
BRENTWOOD, CA 94513

LIBERTY UNION HIGH
SCHOOL DISTRICT

DSA APP NO. 01-122796

ARCH PROJECT NO: 2497.00

DRAWN BY: TR, ERF

DRAWING SCALE: 1/8" = 1'-0"

PTN: 61721-99 FILE NO: 7-H4

CONSTRUCTION DOCS

AUGUST 31, 2026

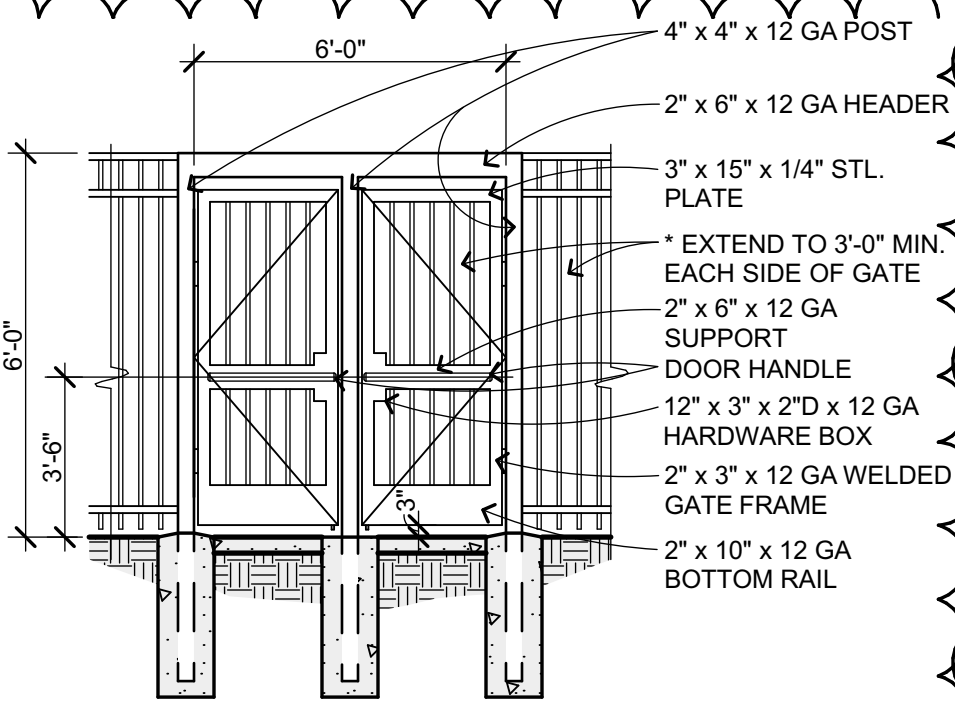
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ACCESS SITE PLAN

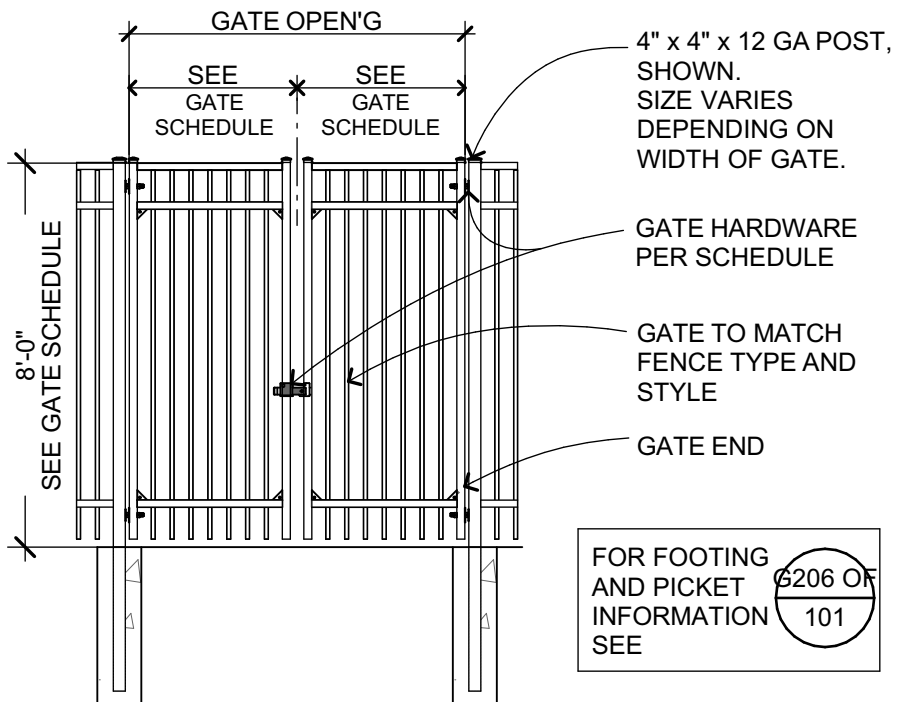
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G-0.4

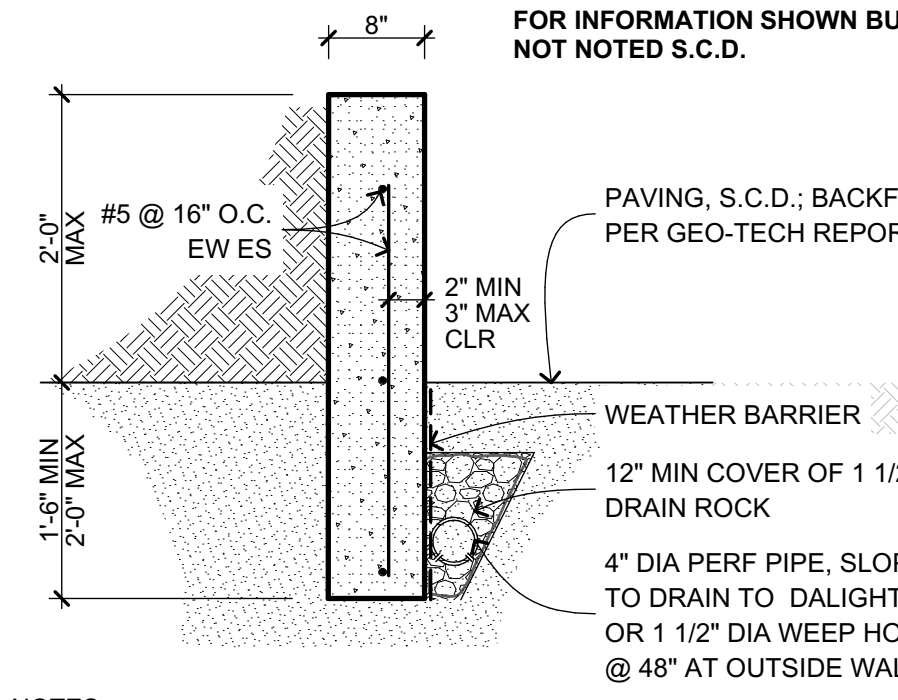
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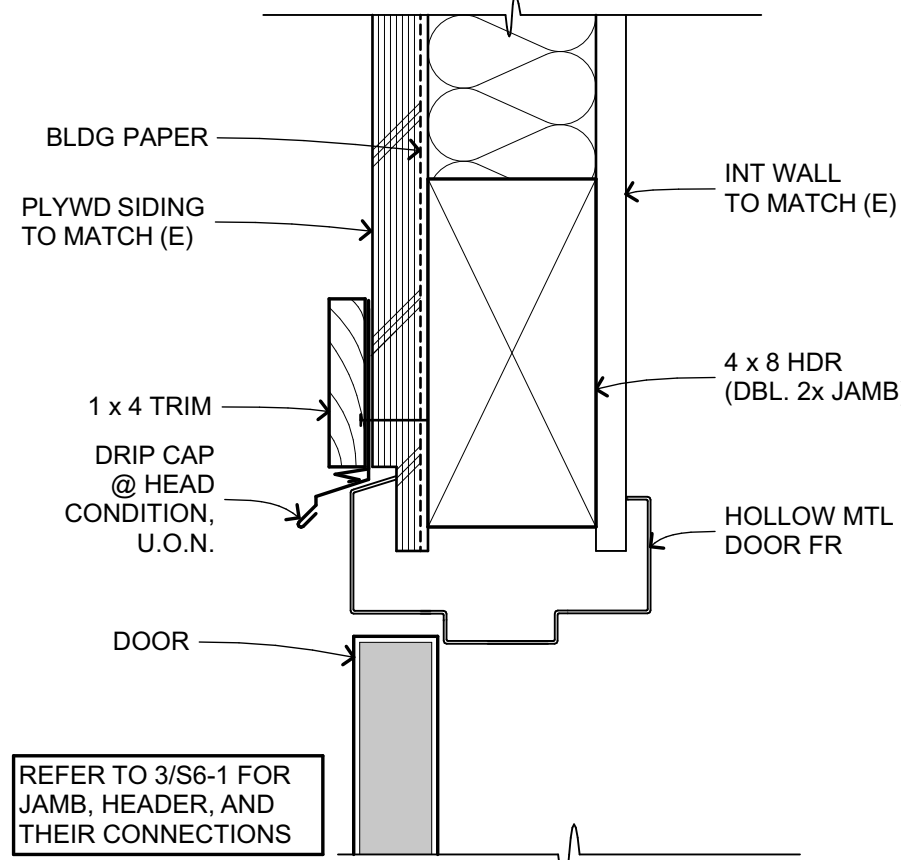
METAL FENCE DBL GATE
1/4" = 1'-0" G204103 **21**



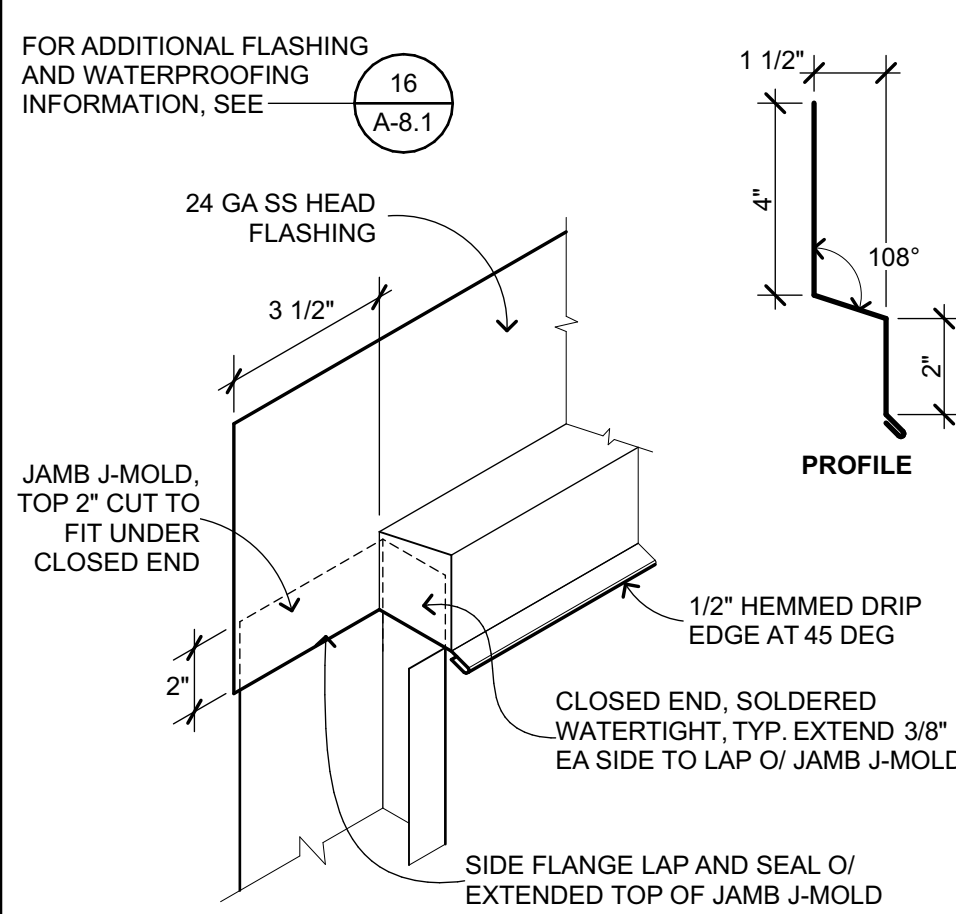
NON ACC MTL DBL GATE
1/4" = 1'-0" G206 OF 304 **22**



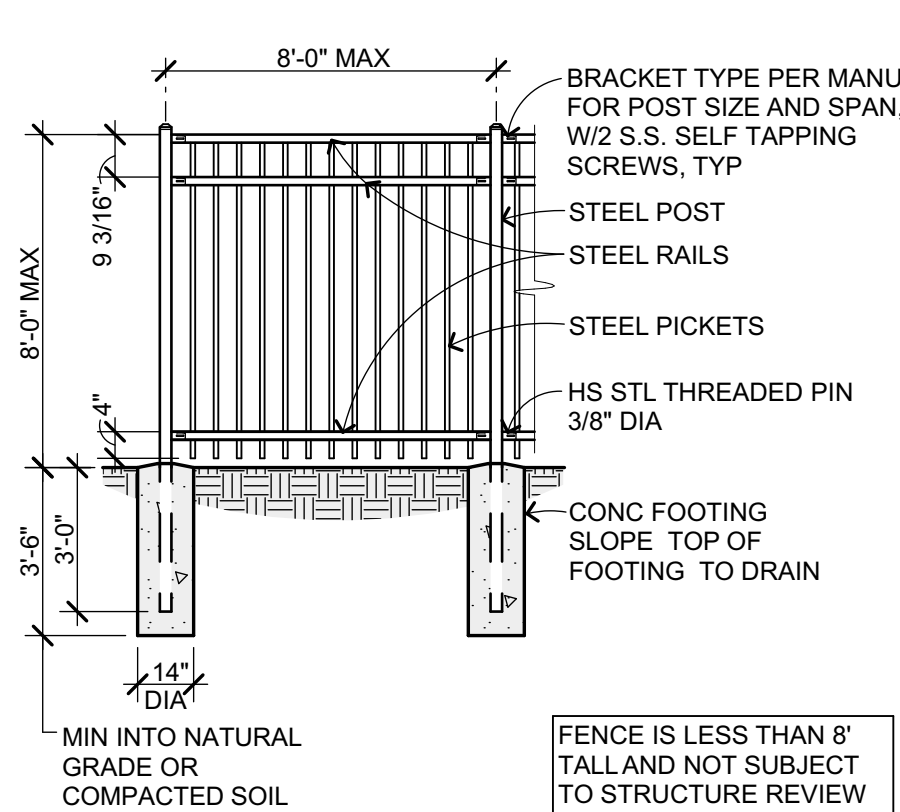
TYP PLANTER WALL
3/4" = 1'-0" 2339.00 **23**



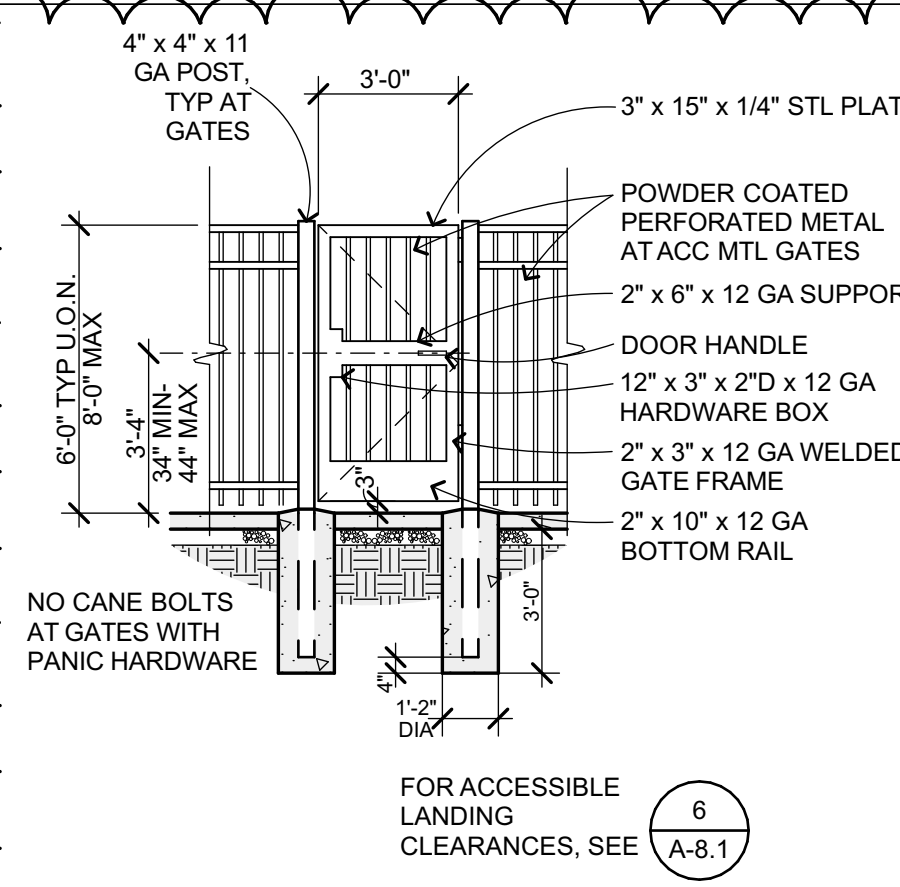
EXT HM DR HEAD/JAMB SIM.
3" = 1'-0" B203 WD 101 **18**



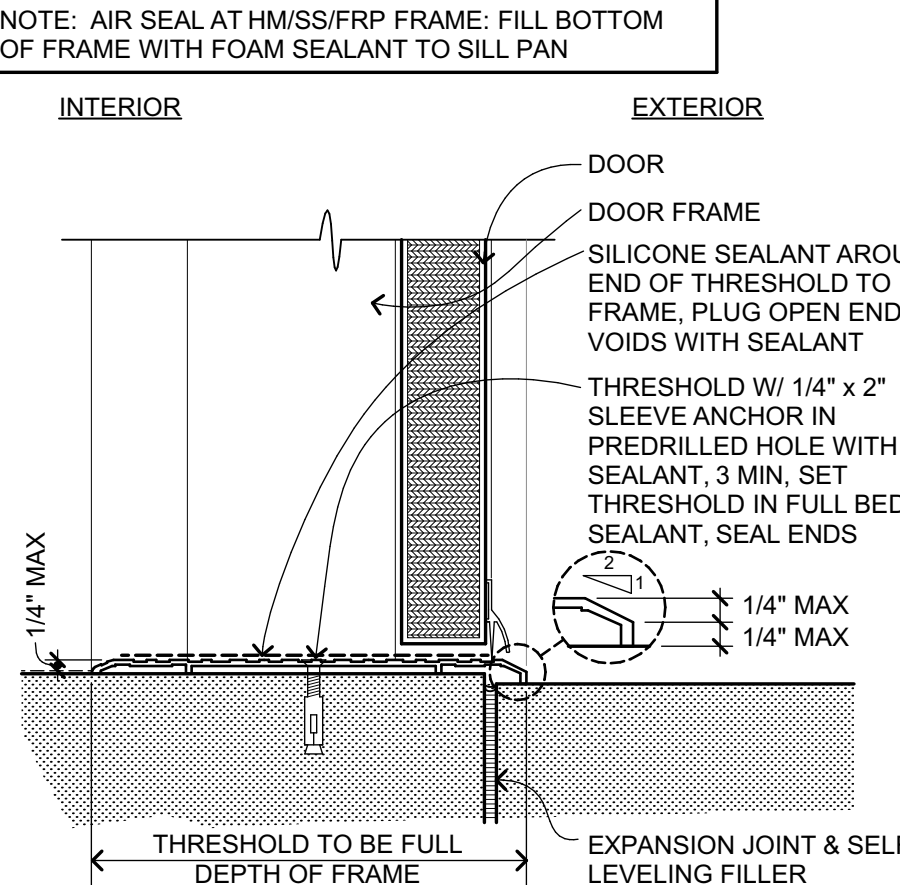
EXT HM DOOR FLASHING
3" = 1'-0" B203 109 **14**



METAL FENCE
1/4" = 1'-0" G204102 **9**



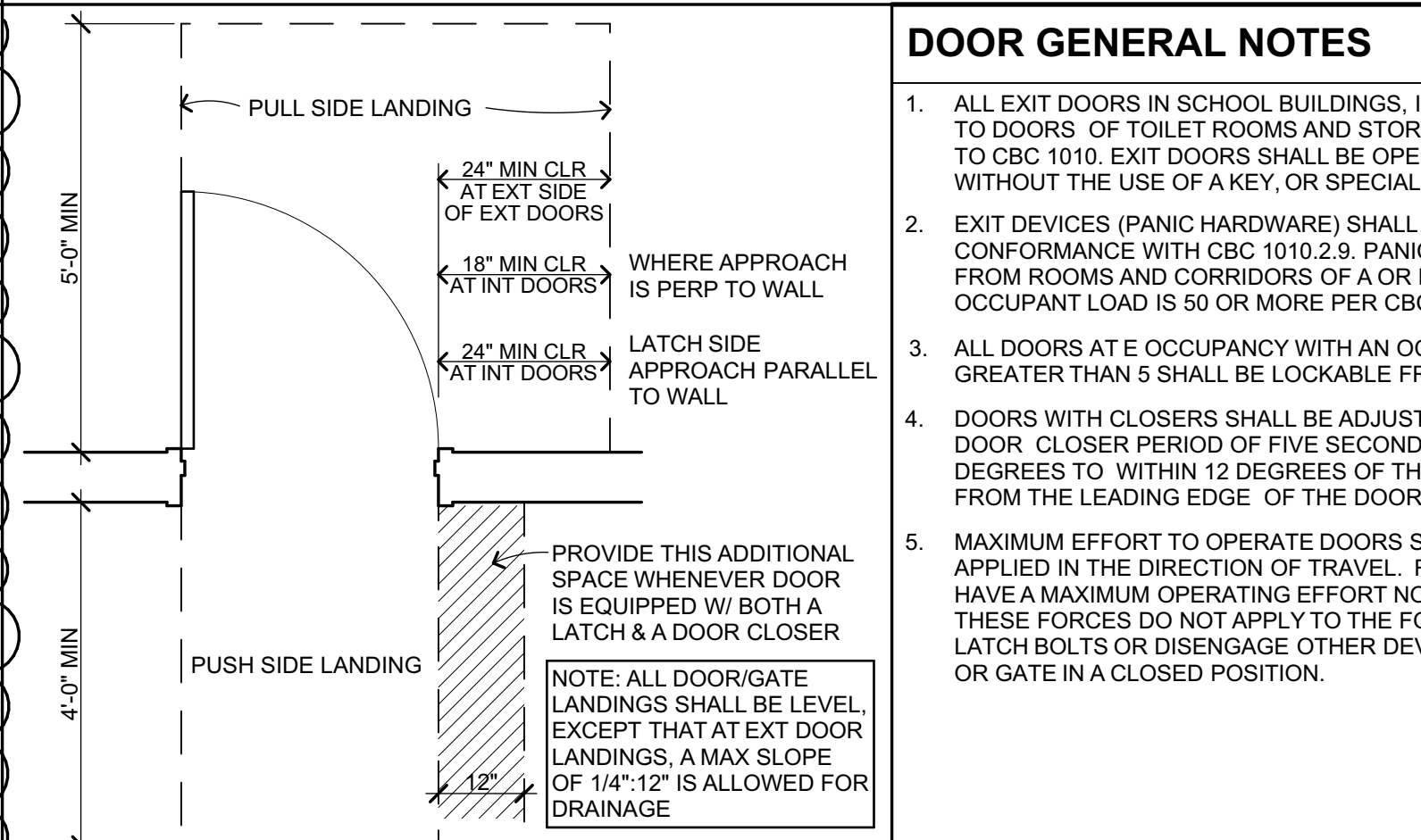
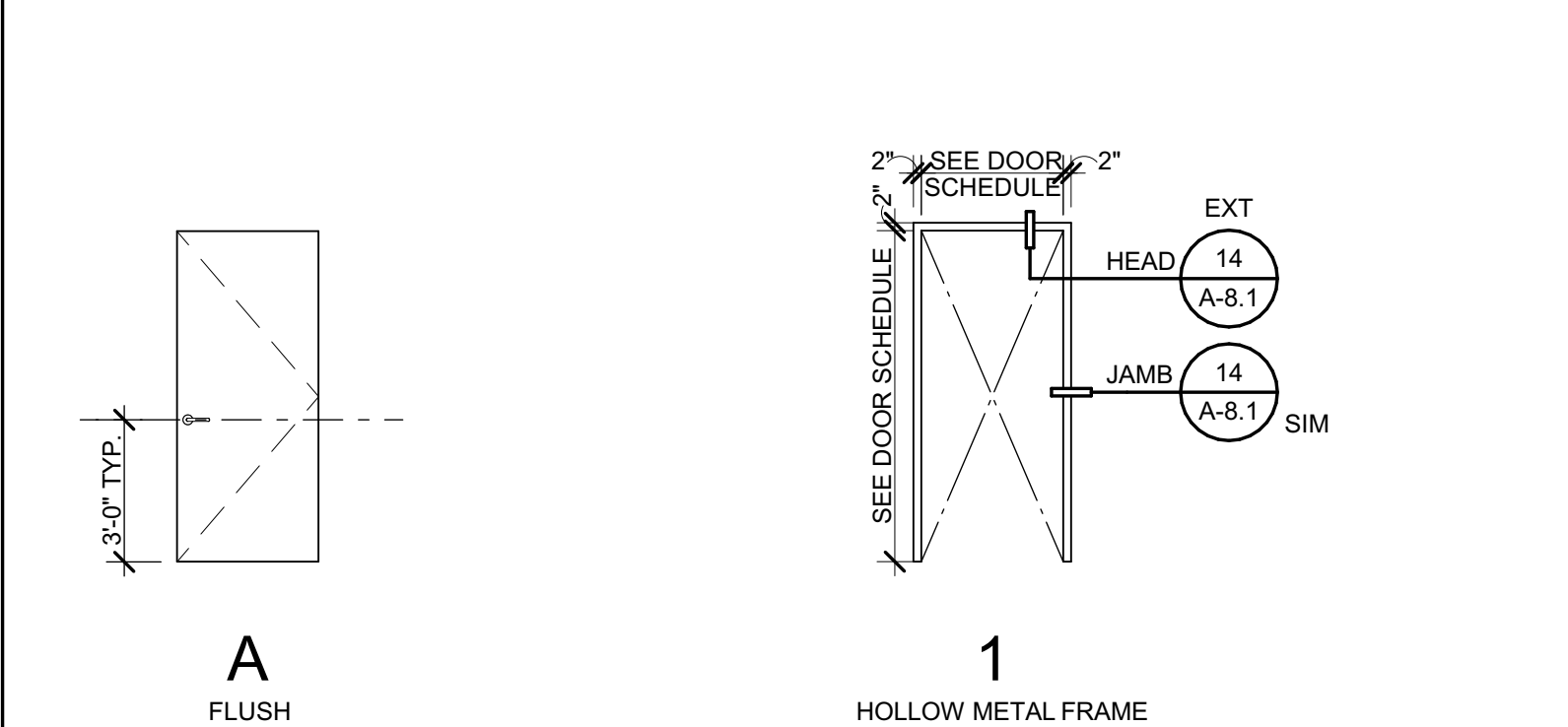
METAL FENCE SINGLE GATE
1/4" = 1'-0" G204 OF 201 **10**



THRESHOLD
3" = 1'-0" B203 103 **11**

DOOR PANEL TYPES

DOOR FRAME TYPES - HOLLOW METAL



ACCESSIBLE LANDINGS
1/2" = 1'-0" B203 301 **6**

DOOR GENERAL NOTES

- ALL EXIT DOORS IN SCHOOL BUILDINGS, INCLUDING BUT NOT LIMITED TO DOORS OF TOILET ROOMS AND STORAGE ROOMS SHALL CONFORM TO CBC 1010. EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, OR SPECIAL KNOWLEDGE OR EFFORT.
- EXIT DEVICES (PANIC HARDWARE) SHALL BE INSTALLED IN CONFORMANCE WITH CBC 1010.2.9. PANIC HARDWARE IS REQUIRED FROM ROOMS AND CORRIDORS OF A OR E OCCUPANCY WHERE OCCUPANT LOAD IS 50 OR MORE PER CBC 1010.2.9
- ALL DOORS AT E OCCUPANCY WITH AN OCCUPANT LOAD GREATER THAN 5 SHALL BE LOCKABLE FROM THE INSIDE.
- DOORS WITH CLOSERS SHALL BE ADJUSTED TO PROVIDE MINIMUM DOOR CLOSER PERIOD OF FIVE SECONDS FROM A POSITION OF 90 DEGREES TO WITHIN 12 DEGREES OF THE DOOR LATCH, MEASURED FROM THE LEADING EDGE OF THE DOOR.
- MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS APPLIED IN THE DIRECTION OF TRAVEL. REQUIRED FIRE DOORS SHALL HAVE A MAXIMUM OPERATING EFFORT NOT TO EXCEED 15 POUNDS. THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT HOLD THE DOOR OR GATE IN A CLOSED POSITION.

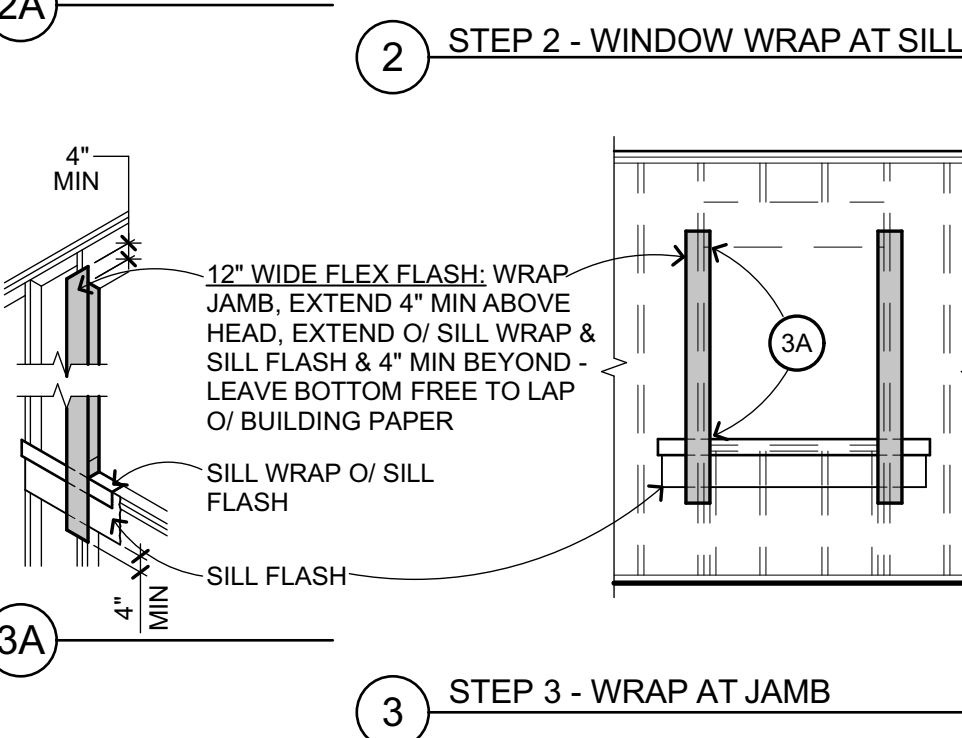
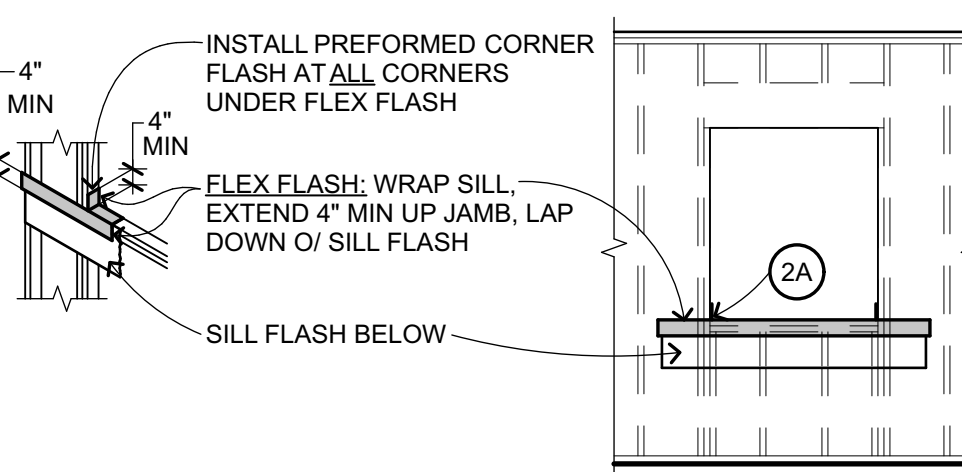
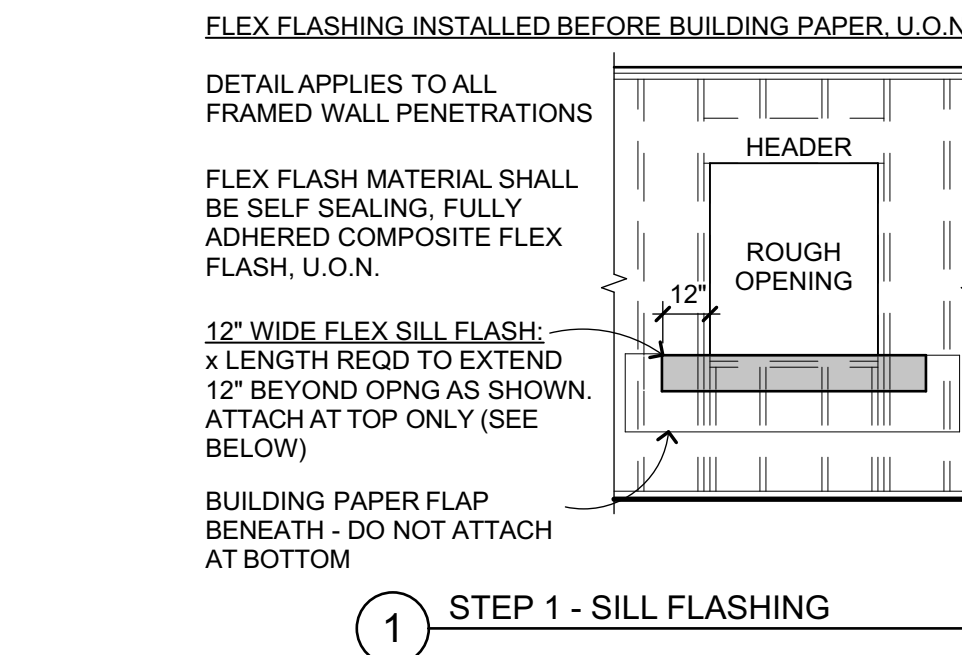
DOOR GENERAL NOTES

1/4" = 1'-0" Z101 005 **2**

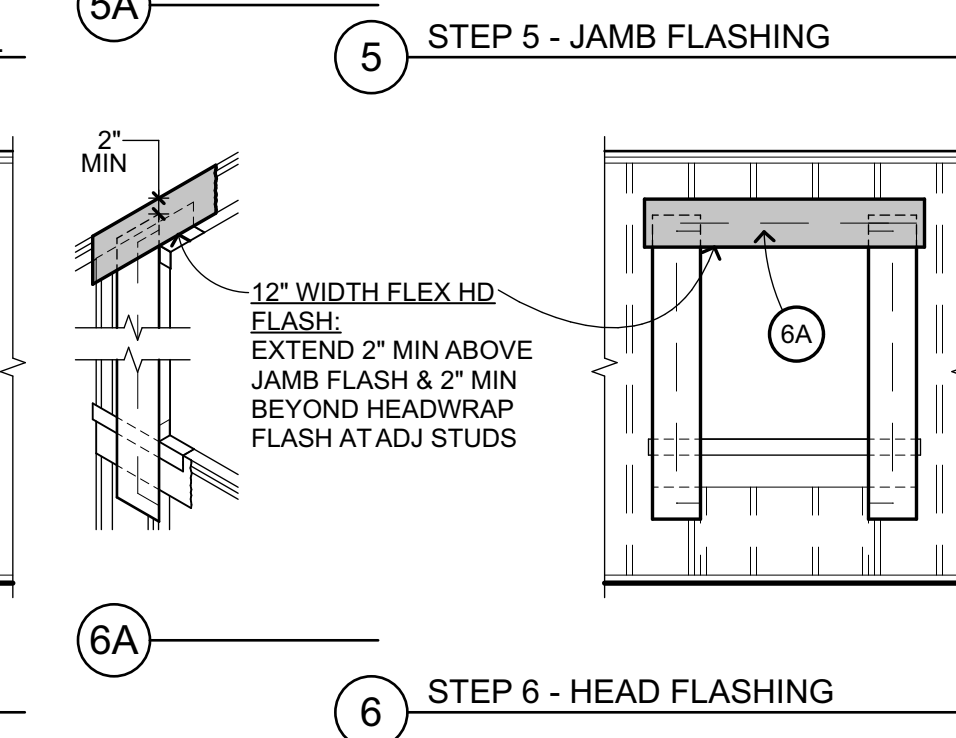
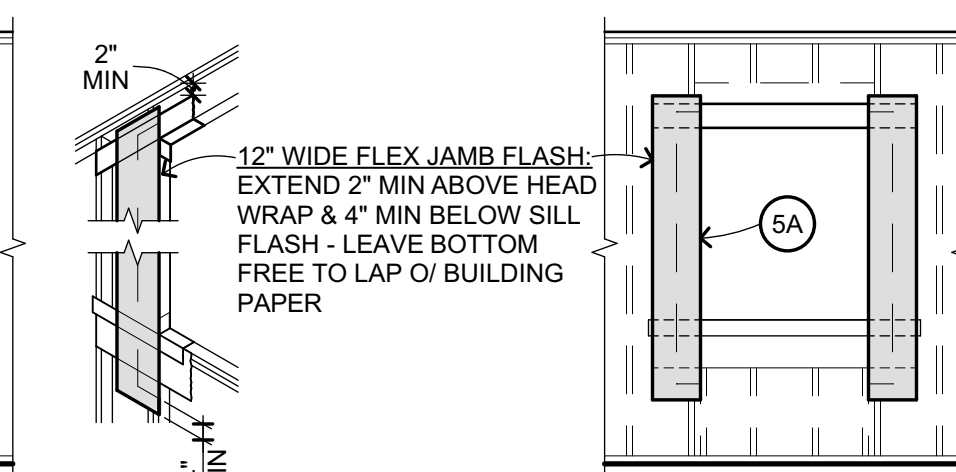
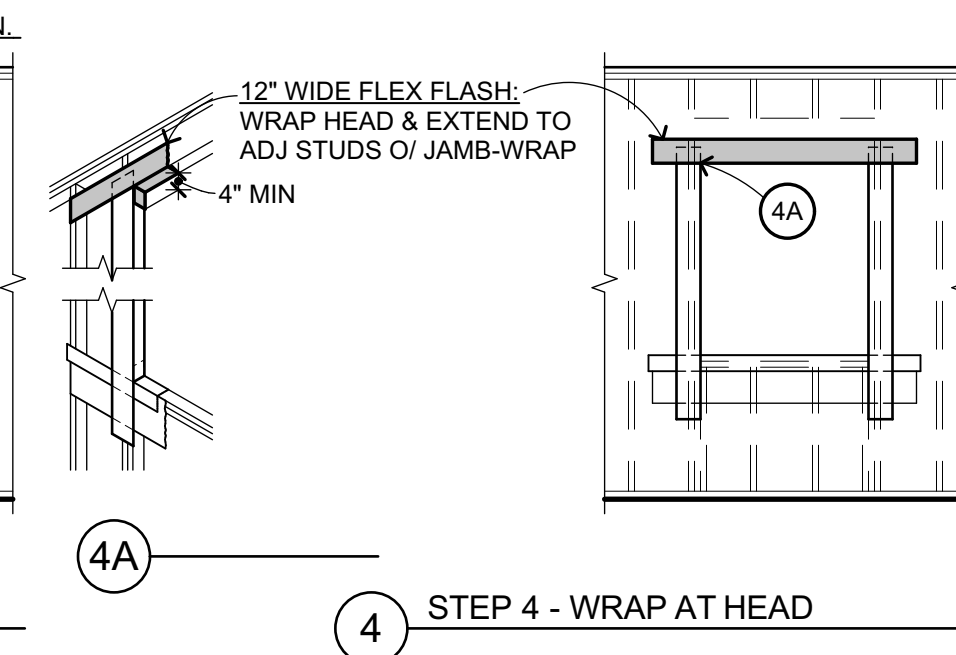
NOTES:

- PROVIDE DOOR FRAME ANCHORAGE AS FOLLOWS:
A. PROVIDE A MINIMUM OF (3) FRAME ANCHORS AT EA JAMB OF DOOR FRAMES AT 24" O.C. MAX WITHIN 18" OF TOP AND BOTTOM. JAMB ANCHORS TO BE SPACED EQUALLY.
B. PROVIDE BASE ANCHORS AT EA SIDE IN ADDITION TO JAMB ANCHORS SHOWN ON DIAGRAM A. SEE DIAGRAM B FOR CONDITIONS WHERE INSTALLATION OF BASE ANCHOR IS NOT FEASIBLE.
C. AT FRAMES WIDER THAN 60", PROVIDE HEAD ANCHOR IN CENTER OF FRAME PER MFR RECOMMENDATIONS.
- ATTACH JAMB / HEAD ANCHORS PER THE FOLLOWING, (2) FASTENERS PER ANCHOR:
WOOD FRAMING: #8 F.H.W.S. 1 1/2" MINIMUM PENETRATION. LIGHT GAUGE STEEL FRAMING: #8 SMS SCREWS, 1/2" MIN PENETRATION PAST EDGE OF METAL FRAME
CONC CURB OR WALL: 3/16" DIA X 1 1/4" MIN EMBED CONC / MASONRY SCREW
- ATTACH BASE ANCHORS TO CONC SLAB WITH 3/8" DIA x 2-1/2" NOMINAL EMBED, HILTI KWIKBOLT T22, ICC ESR 4266. ALTERNATE FASTENER: 3/8" DIA X 2-1/2" HILTI KB1, IAPMO-ER678 (2) PER ANCHOR, 3" MIN APART, 30 FT-LB INSTALLATION TORQUE
- IF PERMITTED BY MFR AND CONCEALED BY ACCESSIBILITY COMPLIANT THRESHOLD, BASE ANCHOR MAY BE INSTALLED W/ HORIZONTAL LEG EXTENDED INTO OPENING.
- ALL ANCHORS AND ASSOCIATED FASTENERS MUST BE CONCEALED.

HM FRAME ANCHORAGE
1/4" = 1'-0" B203 106 **3**



TYP FLASHING/PAPERING
1/4" = 1'-0"



TYP FLASHING/PAPERING
1/4" = 1'-0" B201 103 **16**

QUATTROCCHI KWOK ARCHITECTS
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(707) 576-0829

LICENSED ARCHITECT
KEVIN CHAPIN
LICENSE #C31640
EXP MAY 31, 2027
STATE OF CALIFORNIA
SIGNED: AUGUST 31, 2026

GATEWAY PROGRAM

PORTABLE AND SHADE STRUCTURES

929 SECOND STREET
BRENTWOOD, CA 94513

LIBERTY UNION HIGH
SCHOOL DISTRICT

DSA APP NO. 01-122796

ARCH PROJECT NO: 2497.00
DRAWN BY: TR, ERF
DRAWING SCALE: AS NOTED
PTN: 61721-99 FILE NO: 7-H4

CONSTRUCTION DOCS

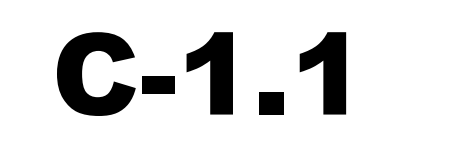
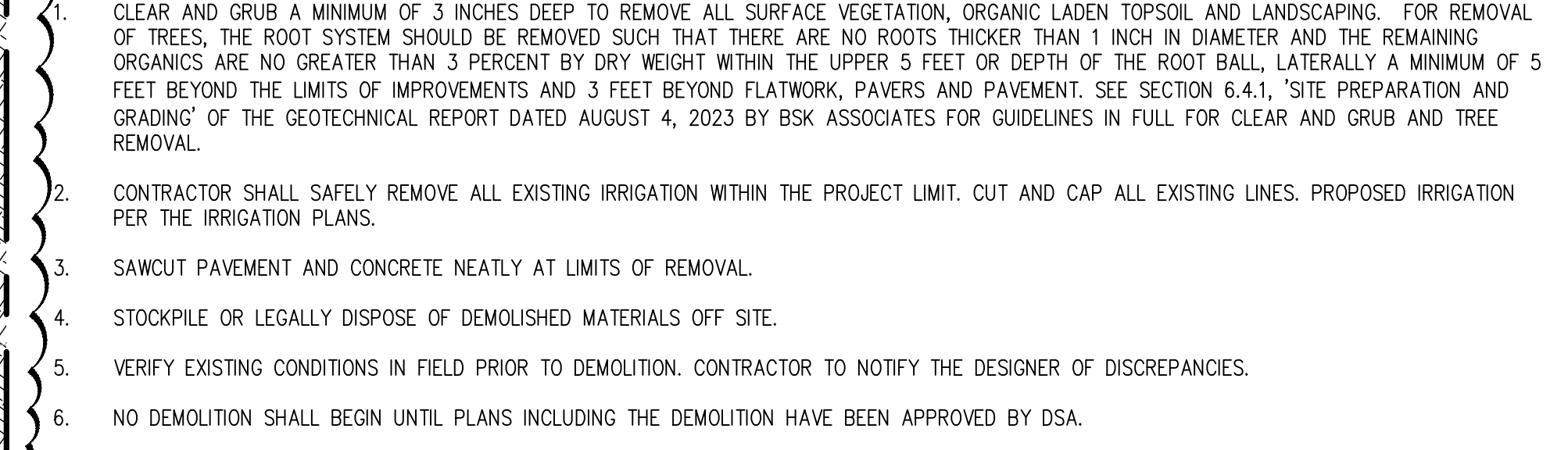
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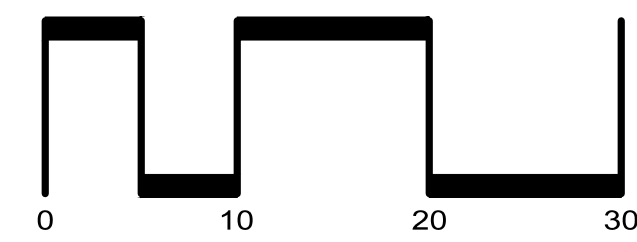
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DOOR SCHEDULE & GATE DETAILS

SHEET NUMBER

A-8.1

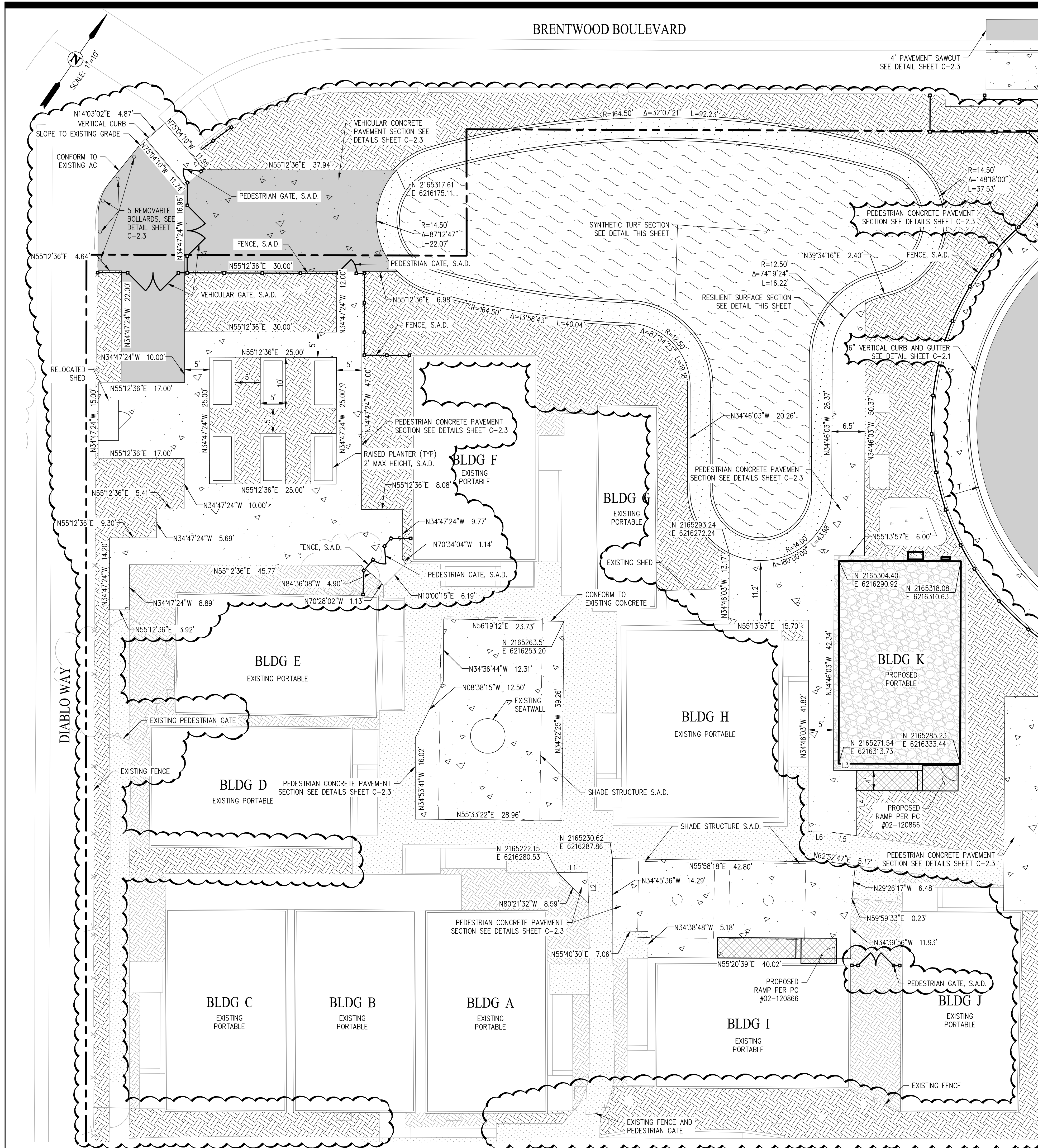




1. CLEAR AND GRUB A MINIMUM OF 3 INCHES DEEP TO REMOVE ALL SURFACE VEGETATION, ORGANIC LADEN TOPSOIL AND LANDSCAPING. FOR REMOVAL OF TREES, THE ROOT SYSTEM SHOULD BE REMOVED SUCH THAT THERE ARE NO ROOTS THICKER THAN 1 INCH IN DIAMETER AND THE REMAINING ORGANICS ARE NO GREATER THAN 3 PERCENT BY DRY WEIGHT WITHIN THE UPPER 5 FEET OR DEPTH OF THE ROOT BALL, LATEROALLY A MINIMUM OF 5 FEET BEYOND THE LIMITS OF IMPROVEMENTS AND 3 FEET BEYOND FLATWORK, PAVERS AND PAVEMENT. SEE SECTION 6.4.1, 'SITE PREPARATION AND GRADING' OF THE GEOTECHNICAL REPORT DATED AUGUST 4, 2023 BY BSK ASSOCIATES FOR GUIDELINES IN FULL FOR CLEAR AND GRUB AND TREE REMOVAL.
2. CONTRACTOR SHALL SAFELY REMOVE ALL EXISTING IRRIGATION WITHIN THE PROJECT LIMIT AND REINSTALL AS NECESSARY TO ENSURE SYSTEM FUNCTIONS AS IT DID PRIOR TO CONSTRUCTION.
3. REMOVE AND PROTECT ALL EXISTING IRRIGATION LINES AND HEADS AS REQUIRED; RELOCATE OR REPLACE AS NEEDED.
4. SAWCUT PAVEMENT AND CONCRETE NEATLY AT LIMITS OF REMOVAL.
5. STOCKPILE OR LEGALLY DISPOSE OF DEMOLISHED MATERIALS OFF SITE.
6. VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO DEMOLITION. CONTRACTOR TO NOTIFY THE DESIGNER OF DISCREPANCIES.
7. NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION HAVE BEEN APPROVED BY DSA.



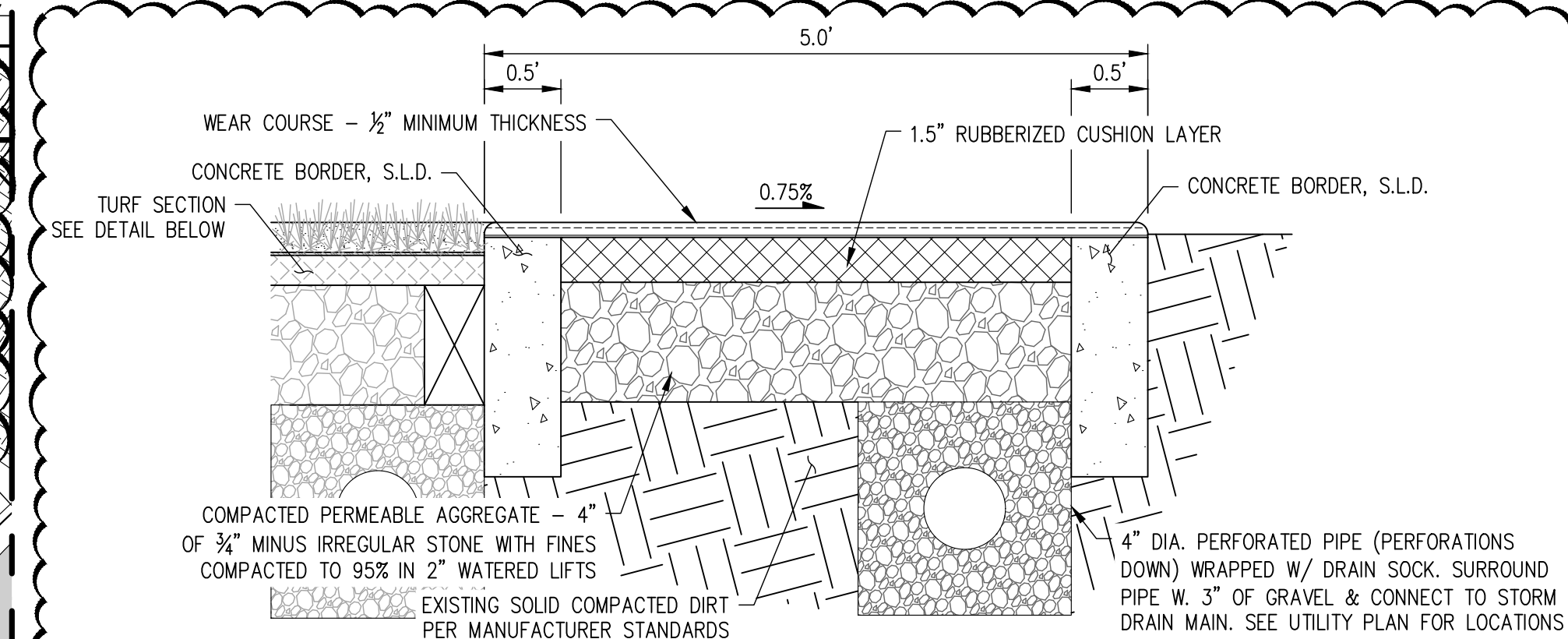
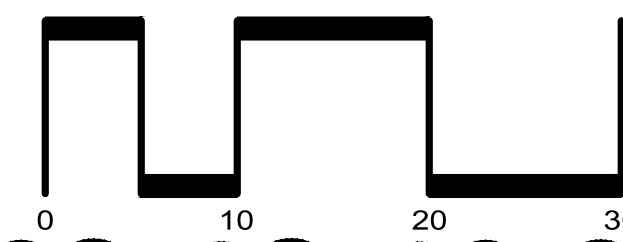
BRENTWOOD BOULEVARD



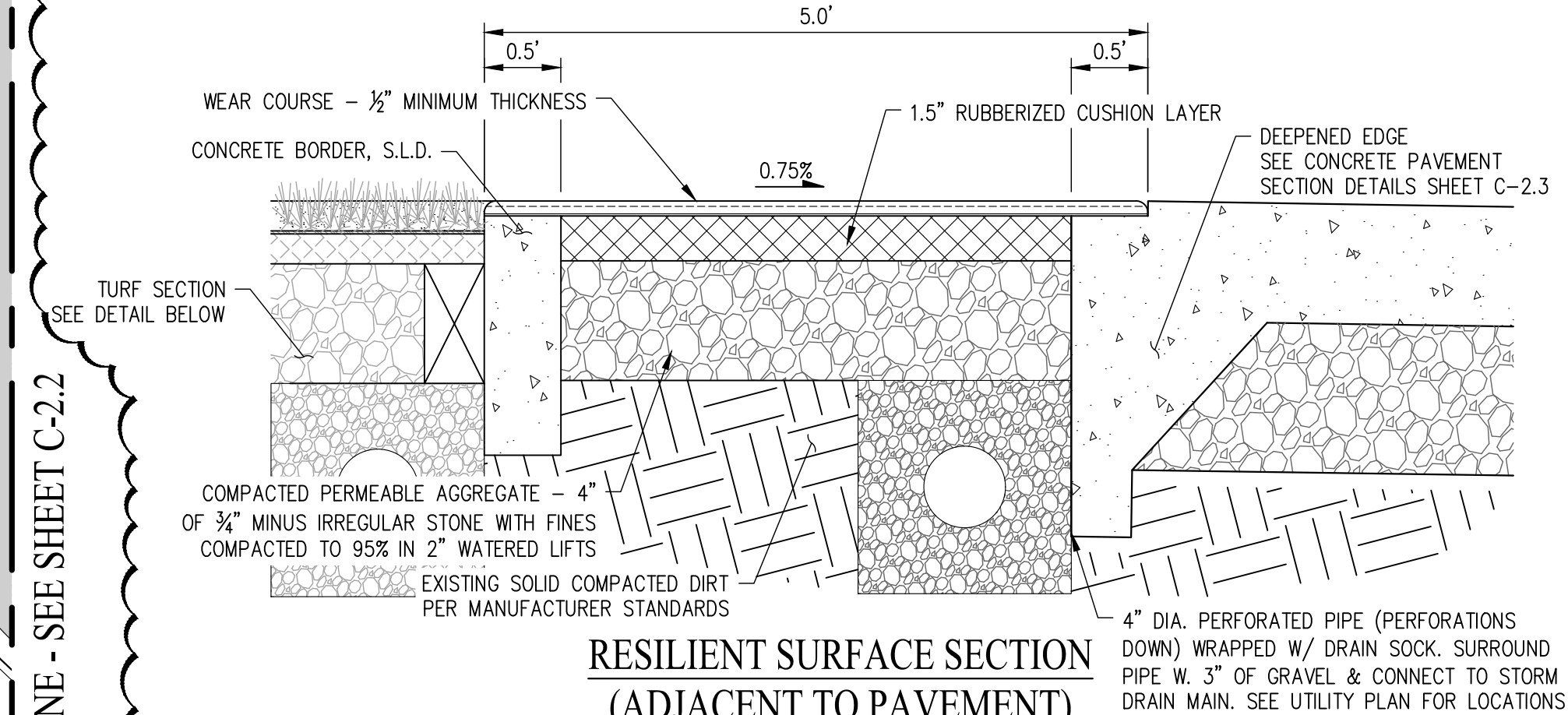
MATCHLINE - SEE SHEET C-2.2

LEGEND

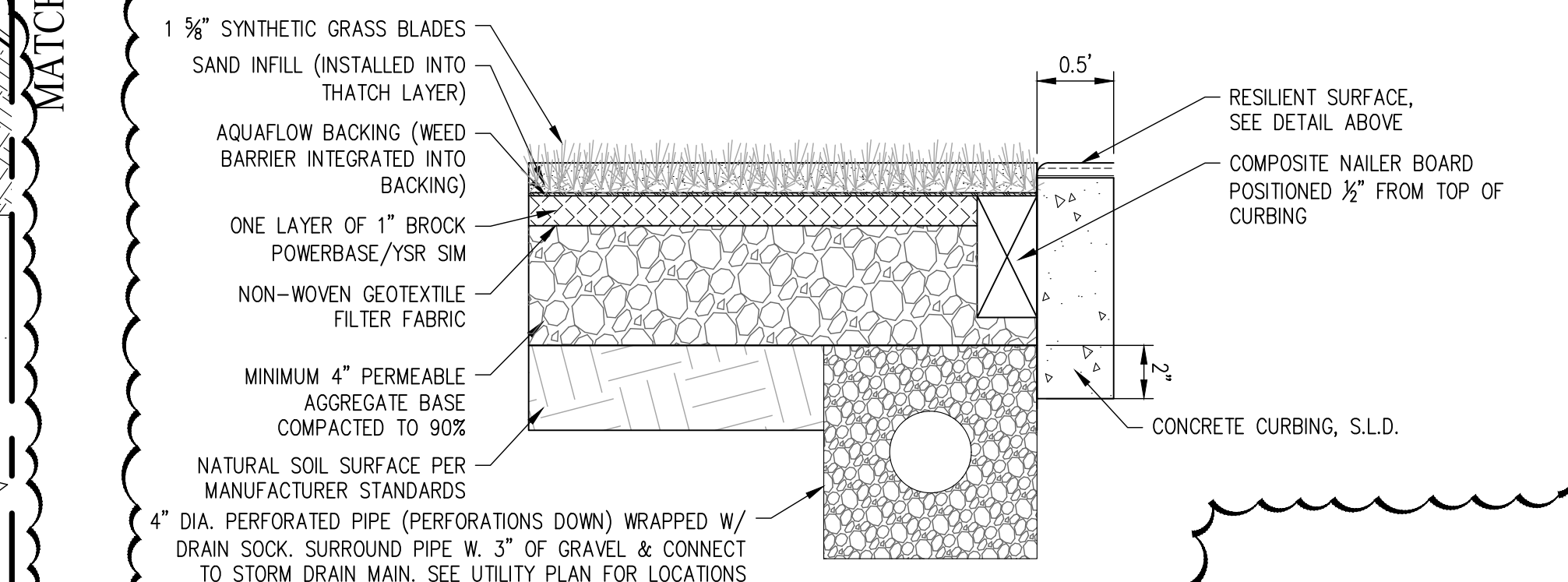
- | | | | |
|--|---|--|---|
| | PROPOSED RAMP PER PC #02-120866 | | PROPOSED RESILIENT SURFACE. SEE DETAIL SECTION THIS SHEET |
| | PROPOSED ASPHALT CONCRETE (2.5" AC/10.5" AB) | | PROPOSED SYNTHETIC TURF. SEE DETAIL SECTION THIS SHEET |
| | PROPOSED VEHICULAR CONCRETE (SEE VEHICULAR CONCRETE PAVEMENT SECTION SHEET C-2.3) | | EXISTING PAVEMENT TO REMAIN |
| | PROPOSED PEDESTRIAN CONCRETE (SEE PEDESTRIAN CONCRETE PAVEMENT SECTION SHEET C-2.3) | | EXISTING CONCRETE SIDEWALK/WALKWAY TO REMAIN |
| | PROPOSED BIO-RETENTION AREA PER DETAIL SHEET C-5.1 & C-5.2 | | EXISTING LANDSCAPING TO REMAIN |
| | PROPOSED 8" CLASS II AB COMPACTED TO 95% | | EXISTING PROJECT BOUNDARY |
| | PROPOSED LANDSCAPING, S.L.D. | | PROPOSED FENCING. SEE LANDSCAPE PLANS. |

RESILIENT SURFACE SECTION
(ADJACENT TO LANDSCAPE)

NOT TO SCALE

RESILIENT SURFACE SECTION
(ADJACENT TO PAVEMENT)

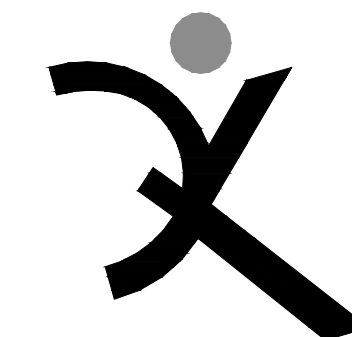
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SYNTHETIC TURF SECTION

NOT TO SCALE

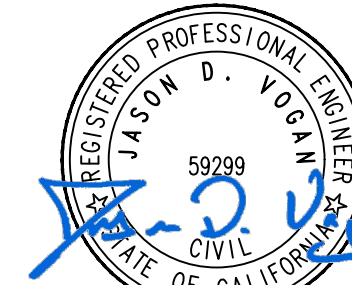
LINE TABLE		
NO	BEARING	LENGTH
L1	N55°19'34"E	6.00'
L2	S36°02'38"E	6.00'
L3	N55°13'57"E	4.59'
L4	N34°46'03"W	12.87'
L5	N62°55'59"E	5.14'
L6	N55°25'01"E	4.50'

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(707) 576-0829



SAN RAMON • (925) 866-0322
SACRAMENTO • (916) 375-1877
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GATEWAY
PROGRAMPORTABLE &
SHADE
STRUCTURES

929 SECOND ST.
BRENTWOOD, CA
94513

LIBERTY UNION
HIGH SCHOOL
DISTRICT

REVISIONS

NO	DESCRIPTION	DATE

DSA APP NO. 01-122796

ARCH PROJECT NO. 2497.00

DRAWN BY: MJV

DRAWING SCALE: AS SHOWN

PTN: 61721-99 FILE NO: 7-H4

DSA SUBMITTAL

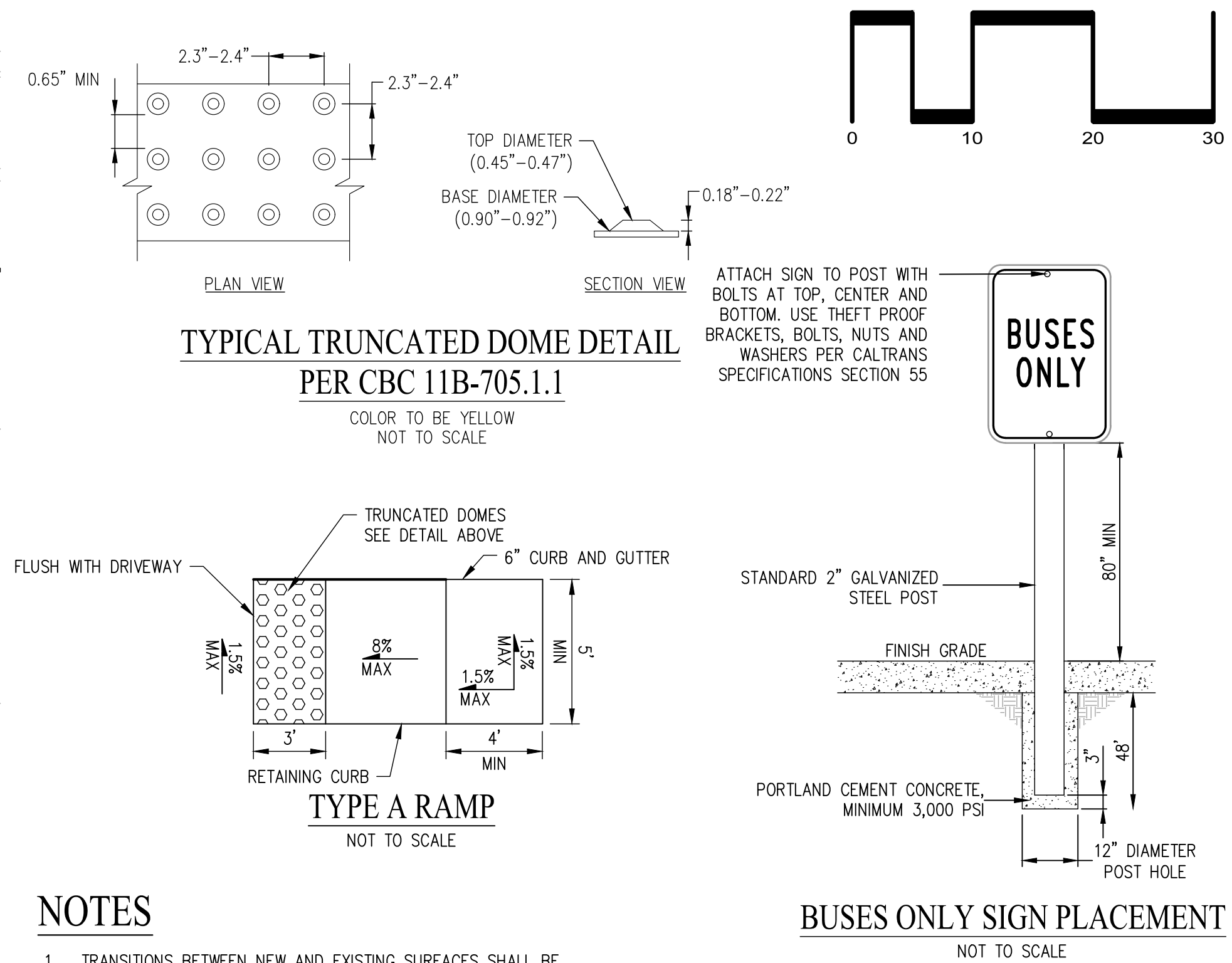
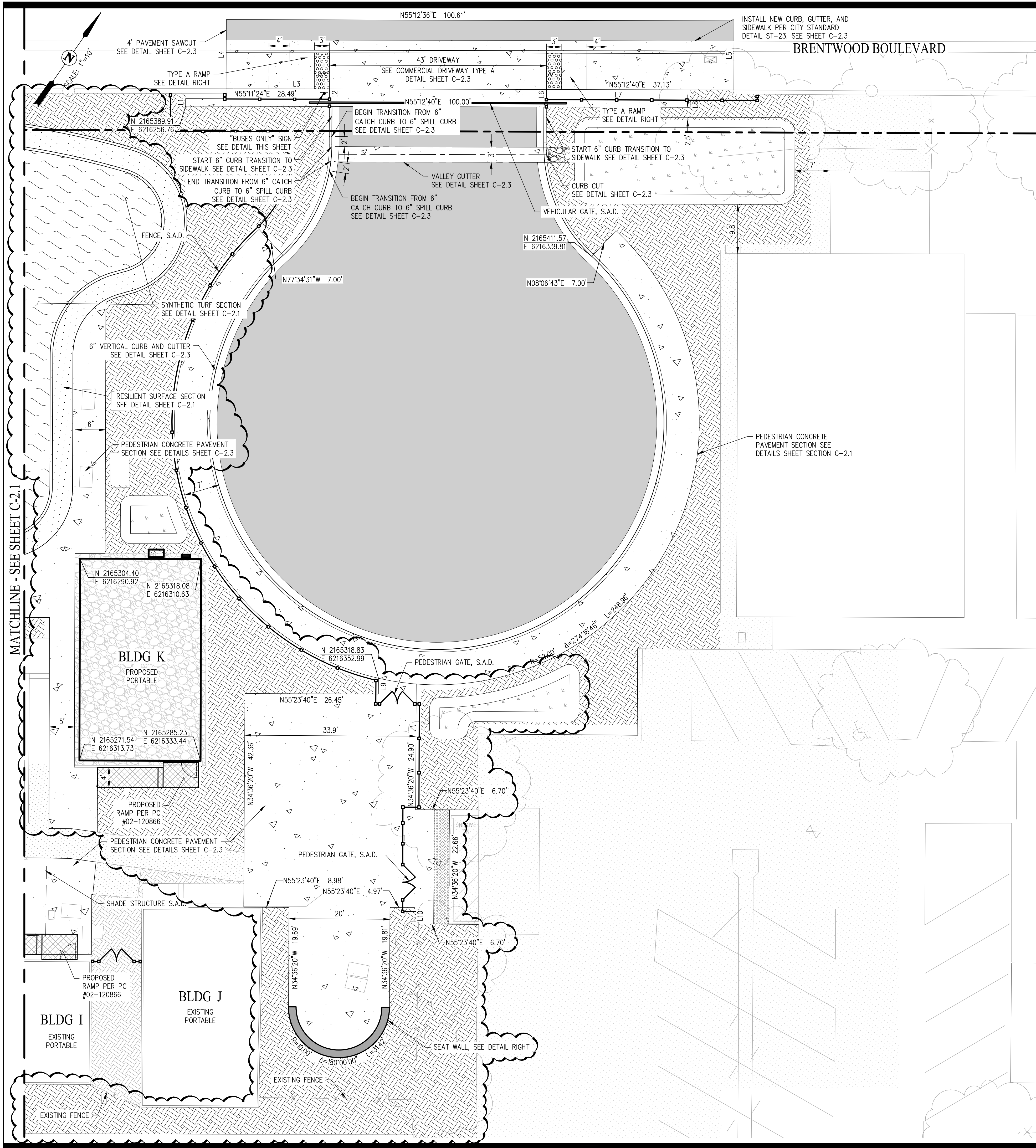
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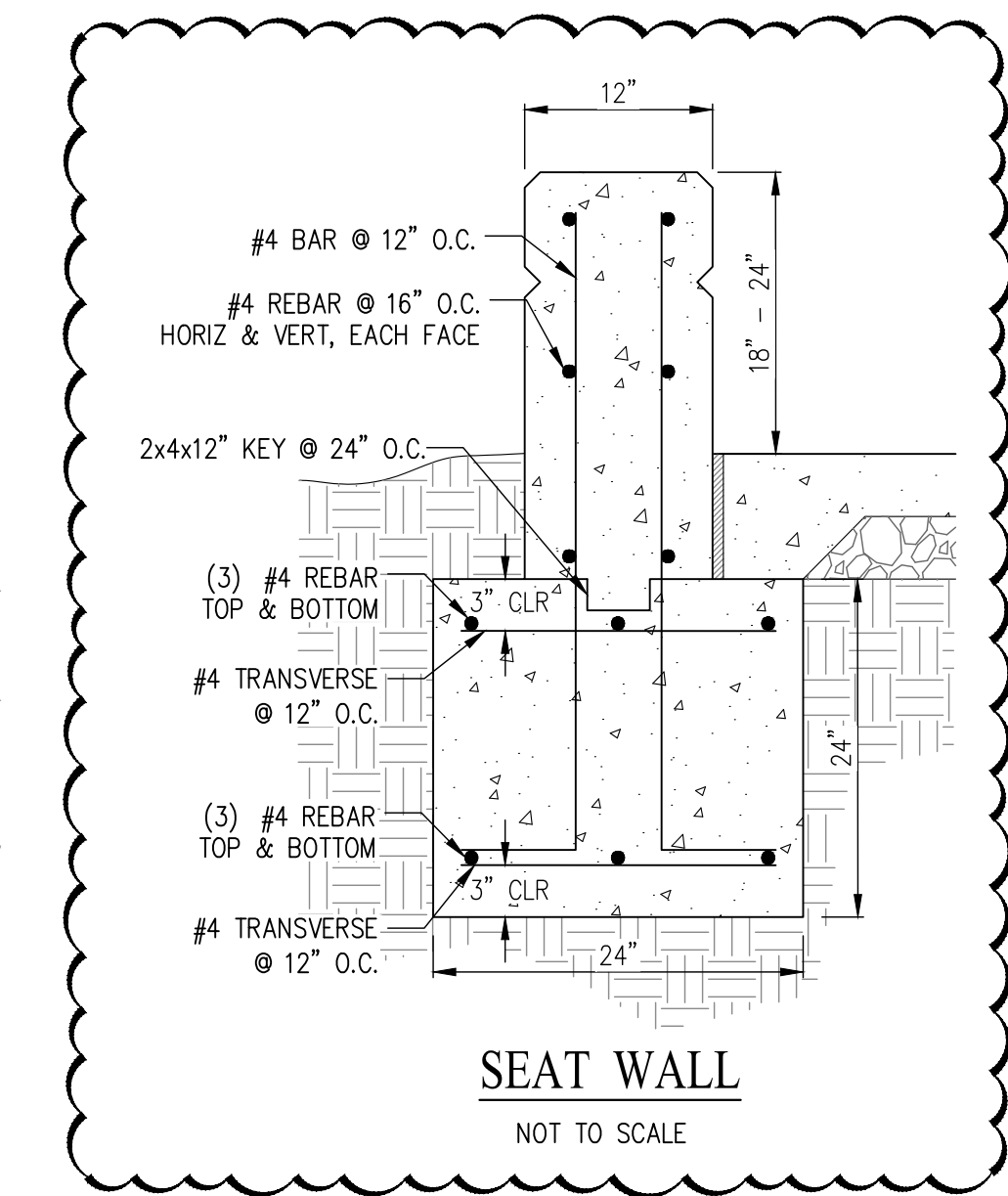
HORIZONTAL
CONTROL PLAN

SHEET NUMBER

C-2.1



- NOTES
- TRANSITIONS BETWEEN NEW AND EXISTING SURFACES SHALL BE FLUSH AND ACCESSIBLE.
 - PROTECT EXISTING FEATURES NOT SCHEDULED TO BE REMOVED.



LEGEND

- PROPOSED RAMP PER PC #02-120866
- PROPOSED ASPHALT CONCRETE (2.5" AC/10.5" AB)
- PROPOSED PEDESTRIAN CONCRETE (SEE PEDESTRIAN CONCRETE PAVEMENT SECTION SHEET C-2.3)
- PROPOSED BIO-RETENTION AREA PER DETAIL SHEET C-5.1 & C-5.2
- PROPOSED 8" CLASS II AB COMPACTED TO 95%
- PROPOSED LANDSCAPING
- PROPOSED RESILIENT SURFACE. SEE DETAIL SECTION THIS SHEET
- PROPOSED SYNTHETIC TURF. SEE DETAIL SECTION THIS SHEET
- EXISTING PAVEMENT TO REMAIN
- EXISTING CONCRETE SIDEWALK/WALKWAY TO REMAIN
- EXISTING LANDSCAPING TO REMAIN
- PROPOSED SIGN PER DETAIL THIS SHEET
- EXISTING PROJECT BOUNDARY
- PROPOSED FENCING. SEE LANDSCAPE PLANS.

LINE TABLE

NO	BEARING	LENGTH
L1	N34°47'20"W	1.50'
L2	N34°20'56"W	1.96'
L3	N55°14'39"E	20.49'
L4	N34°47'13"W	13.67'
L5	N34°47'13"W	13.69'
L6	N34°47'20"W	1.97'
L7	N55°12'40"E	28.50'
L8	N34°47'20"W	1.50'
L9	S34°36'20"E	3.16'
L10	N34°36'20"W	3.26'

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PORTABLE & SHADE STRUCTURES

929 SECOND ST.
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LIBERTY UNION
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DISTRICT

REVISIONS

NO	DESCRIPTION	DATE

DSA APP NO. 01-122796

ARCH PROJECT NO. 2497.00

DRAWN BY: MJV

DRAWING SCALE: AS SHOWN

PTN: 61721-99 FILE NO: 7-H4

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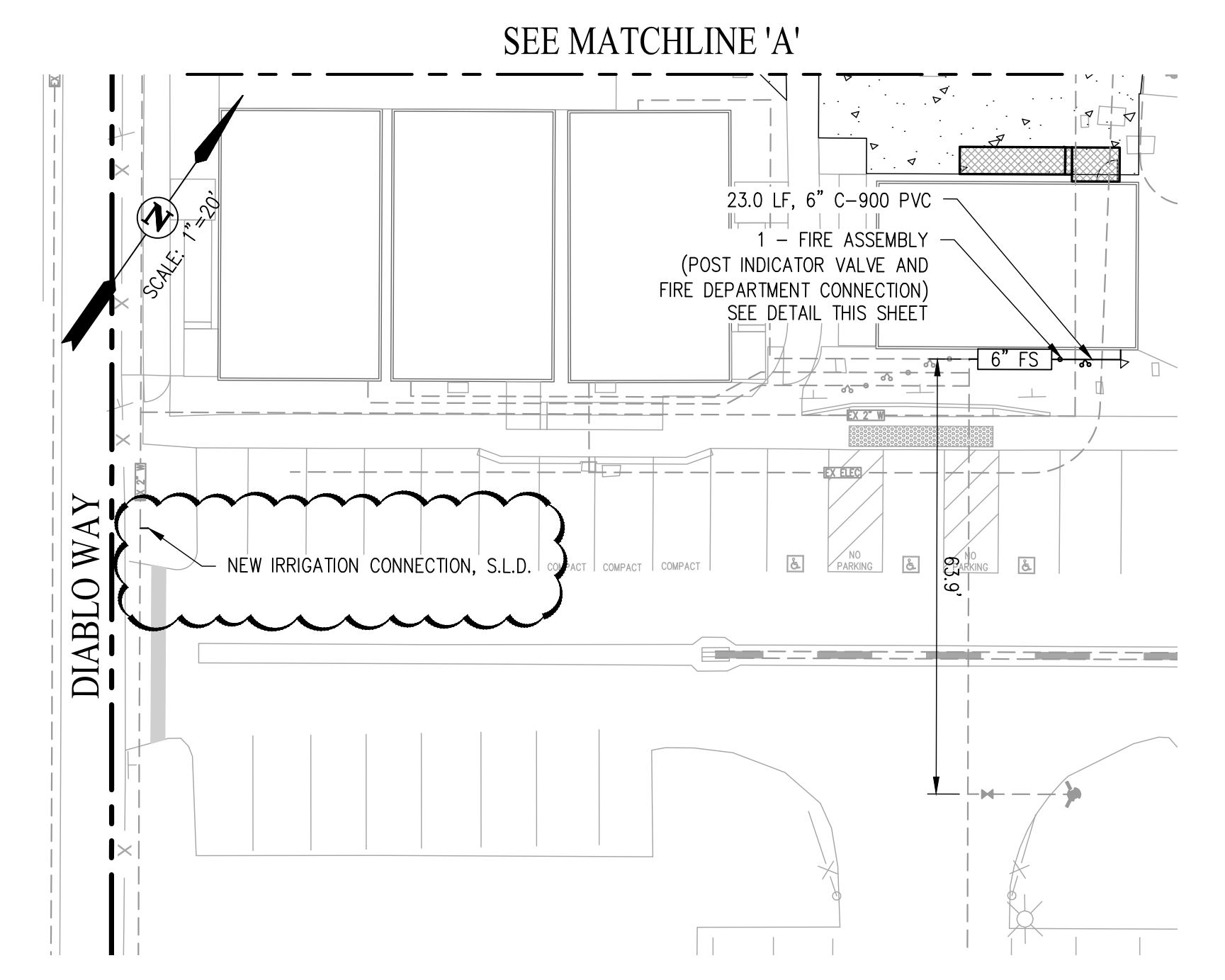
AUGUST 26, 2026

SHEET TITLE

HORIZONTAL CONTROL PLAN

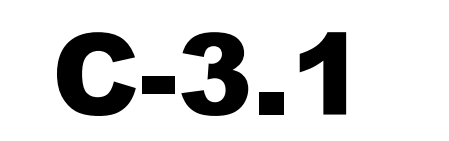
SHEET NUMBER

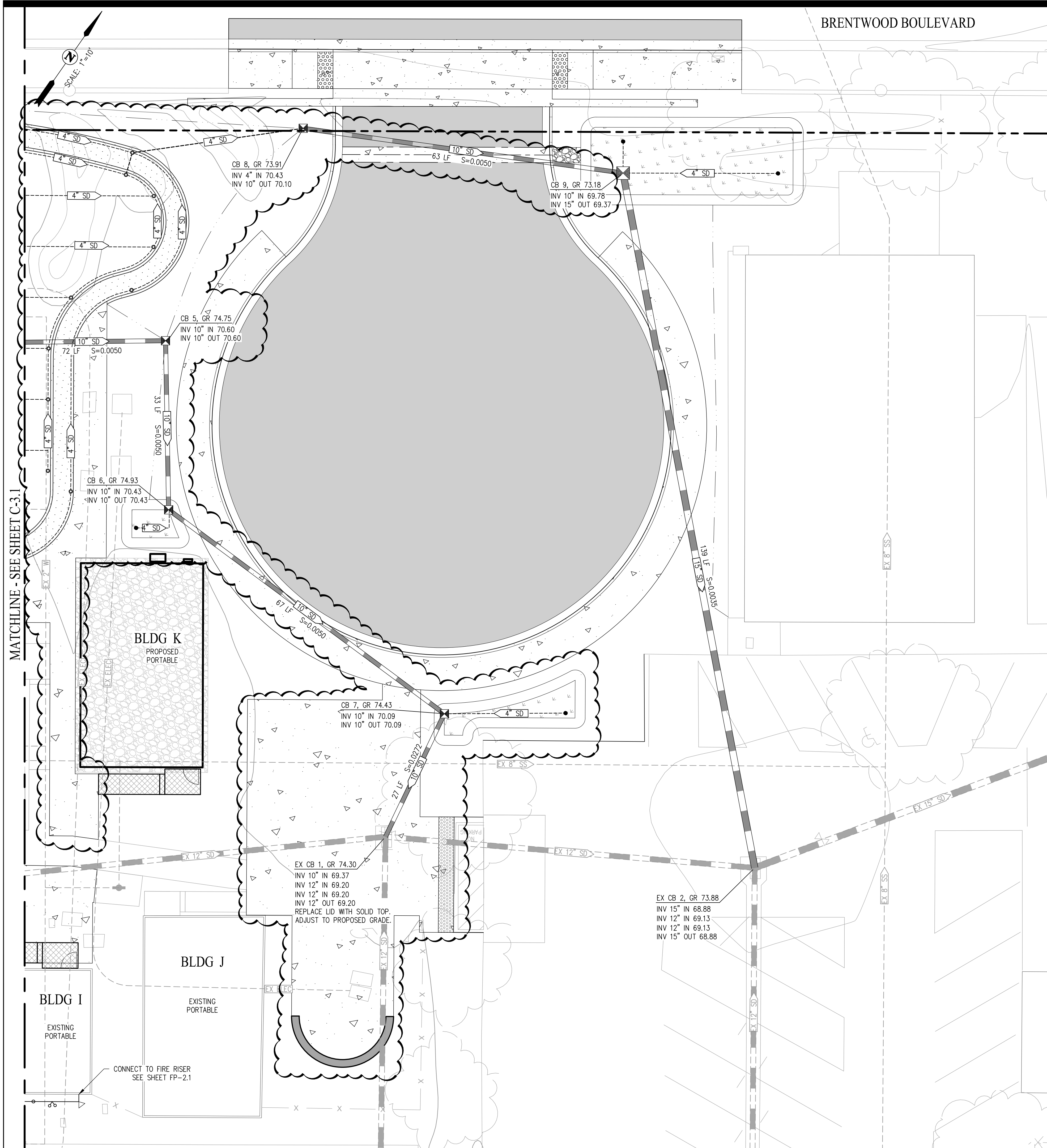
C-2.2



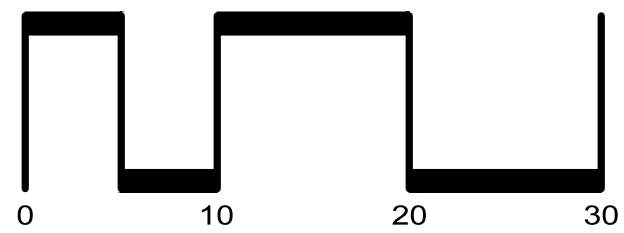
NOTES

1. TRENCH RESTORATION WITHIN THE CITY RIGHT-OF-WAY SHALL COMPLY WITH CITY OF BRENTWOOD STANDARD DETAIL ST-25a & ST-25b.





BRENTWOOD BOULEVARD



TYPICAL INSTALLATION		PIPE SIZE			
		6"	8"	10"	12"
REQUIRED BEARING AREA (SQUARE FEET)	90° BEND	4	7	12	16
	45° BEND	3	5	8	12
	22 1/2° BEND	2	3	5	6
	THRU BLOCK	4	7	12	16
	THRU BLOCK WITH PLUG	4	7	12	16
	THRU BLOCK WITH PLUG AND GROUT	4	7	12	16

NOTES:

- THRUST BLOCK SHALL BE CLASS "B" CONCRETE AND SHALL BE POURED AGAINST UNDISTURBED SOIL.
- THE BEARING AREAS GIVEN ARE FOR CLASS 200 PIPE AT TEST PRESSURE OF 150 P.S.I. IN SOIL WITH 1,000 P.S.F. BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PRESSURES, AND/OR SOIL TYPES SHALL BE APPROVED BY THE CITY ENGINEER.
- JOINTS AND FACE OF PLUGS SHALL BE KEPT CLEAR OF CONCRETE.

(Not To Scale)

PUBLIC WORKS DEPARTMENT
THRUST BLOCK BEARING AREA
DATE: APRIL 11, 2019
REVIEWED: DECEMBER 10, 2013
SHEET NO. **W-15**

MIN. OF 3/4" NON CASE HARDENED CHAIN WITH LOCK BETWEEN VALVES

O.S.C.Y. VALVE

FLANGE TO FLANGE FITTINGS AND/OR UNIFLANGE CONNECTION (TYPICAL)

TO STREET

TO AUXILIARY GATE VALVE

DOUBLE CHECK DETECTOR (SEE TABLE) BYPASS METER MUST READ IN GALLONS

O.S.C.Y. VALVE

MUELLER A-20801 OR APPROVED EQUAL

18" MIN./ 24" MAX. P.L.

GRADE LINE

3" MIN.

SEE W-9

DUCTILE IRON PIPE (TYPICAL)

SEE W-15

NOTES:

- ANY DEVIATION FROM DESIGN SHALL BE APPROVED IN WRITING PRIOR TO PROJECT APPROVAL BY THE CITY ENGINEER.
- THE FIRE DEPARTMENT CONNECTION SHOULD NOT BE MORE THAN 50' AWAY FROM A FIRE HYDRANT.
- THIS STANDARD PLAN HAS BEEN REVIEWED AND APPROVED BY THE FIRE DISTRICT.
- ALL FITTING SHALL BE DUCTILE IRON WITH STAINLESS STEEL BOLTS.
- INSTALL CATHODIC PROTECTION ON ALL METALLIC RISERS PER CP-9.
- FIRE DEPARTMENT CONNECTION (FDC) SHALL BE LOCATED ON THE ADDRESS SIDE OF BUILDINGS ADJACENT TO APPROVED FIRE DISTRICT ACCESS.

(Not To Scale)

MAKE*	MODEL*	SIZE
FEBCO	805-YD	ALL SIZES
	806-YD	
WATTS	709-DDC	
WILKINS	350-DA	950-DA
	950-DA	

* OR EQUIVALENT AS APPROVED BY CITY ENGINEER

ENGINEERING DEPARTMENT
FIRE PROTECTION ASSEMBLY
DATE: AUGUST 15, 2003
REVIEWED: JANUARY 10, 2013
SHEET NO. **W-4**

- LEGEND**
- PROPOSED RAMP
 - PROPOSED ASPHALT CONCRETE
 - PROPOSED CONCRETE (SEE PEDESTRIAN CONCRETE PAVEMENT SECTION SHEET C-2.3)
 - PROPOSED BIO-RETENTION AREA PER DETAIL SHEET C-5.1 & C-5.2
 - PROPOSED RESILIENT SURFACE PER DETAIL SHEET C-2.1
 - PROPOSED POST INDICATOR VALVE (PIV)
 - PROPOSED FIRE DEPARTMENT CONNECTION (FDC)
 - THRUST BLOCK
 - STORM DRAIN CLEANOUT
 - 4" PERFORATED PVC SUBDRAIN
 - PROPOSED STORM DRAIN (FOR TRENCHING SEE DETAIL SHEET C-2.3)
 - PROPOSED FIRE SERVICE (FOR TRENCHING SEE DETAIL SHEET C-2.3)
 - EXISTING SANITARY SEWER
 - EXISTING STORM DRAIN
 - EXISTING WATER
 - EXISTING ELECTRICAL LINE
 - EXISTING PROPERTY BOUNDARY

- NOTES**
- TRENCH RESTORATION WITHIN THE CITY RIGHT-OF-WAY SHALL COMPLY WITH CITY OF BRENTWOOD STANDARD DETAIL ST-25a & ST-25b.

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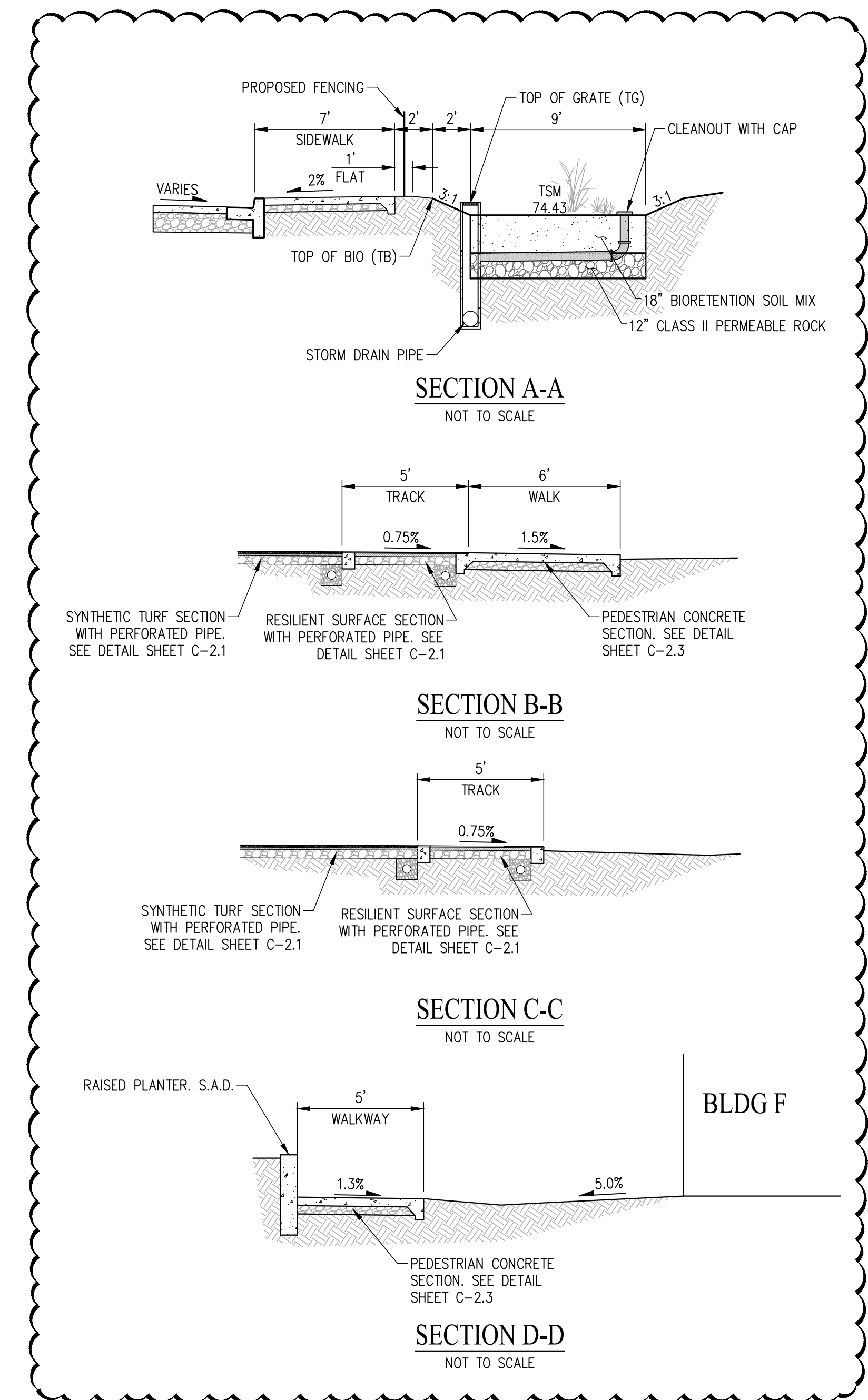
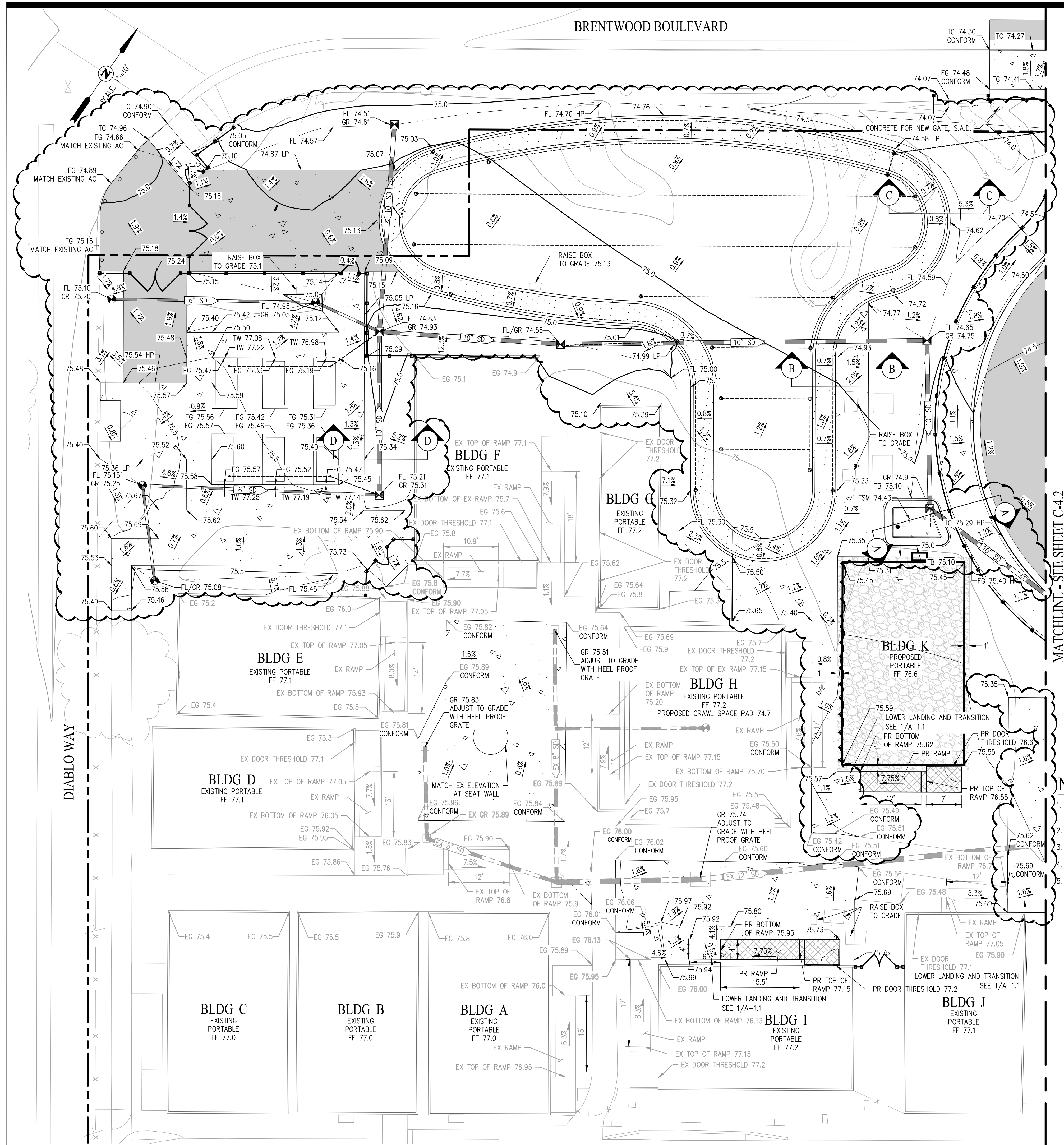
LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS	

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ARCH PROJECT NO. 2497.00
DRAWN BY: MJV
DRAWING SCALE: AS SHOWN
PTN: 61721-99 FILE NO: 7-H4
DSA SUBMITTAL
AUGUST 26, 2026
SHEET TITLE

UTILITY PLAN

SHEET NUMBER
C-3.2

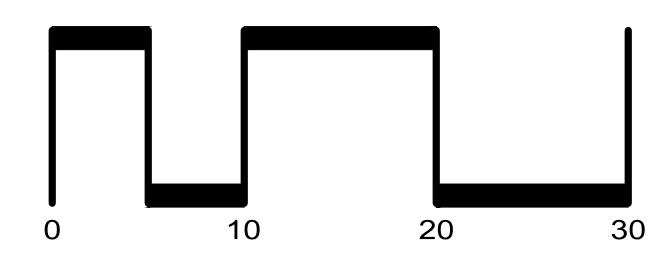


NOTES

1. PEDESTRIAN PATH RUNNING SLOPE SHALL NOT EXCEED 5% UNLESS COMPLIANT WITH RAMP REQUIREMENTS.
2. CROSS SLOPE OF PEDESTRIAN PATH SHALL NOT EXCEED 2%.
3. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL WALKWAYS AND STRUCTURES.
4. NO PONDING SHALL OCCUR ON ACCESSIBLE ROUTE SURFACES.
5. CONTRACTOR SHALL FIELD VERIFY EXISTING GRADES AND NOTIFY DESIGN PROFESSIONAL OF DISCREPANCIES PRIOR TO CONSTRUCTION.

LEGEND

- PROPOSED RAMP
- PROPOSED ASPHALT CONCRETE
- PROPOSED CONCRETE (SEE PEDESTRIAN CONCRETE PAVEMENT SECTION SHEET C-C-2.3)
- 8" CLASS II AB COMPACTED TO 95%
- PROPOSED BIO-RETENTION AREA
- PROPOSED RESILIENT SURFACE PER DETAIL SHEET C-2.1
- PROPOSED FIELD INLET
- PROPOSED STORM DRAIN
- GRADE BREAK
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING CONTOUR
- EXISTING STORM DRAIN
- EXISTING PROPERTY BOUNDARY



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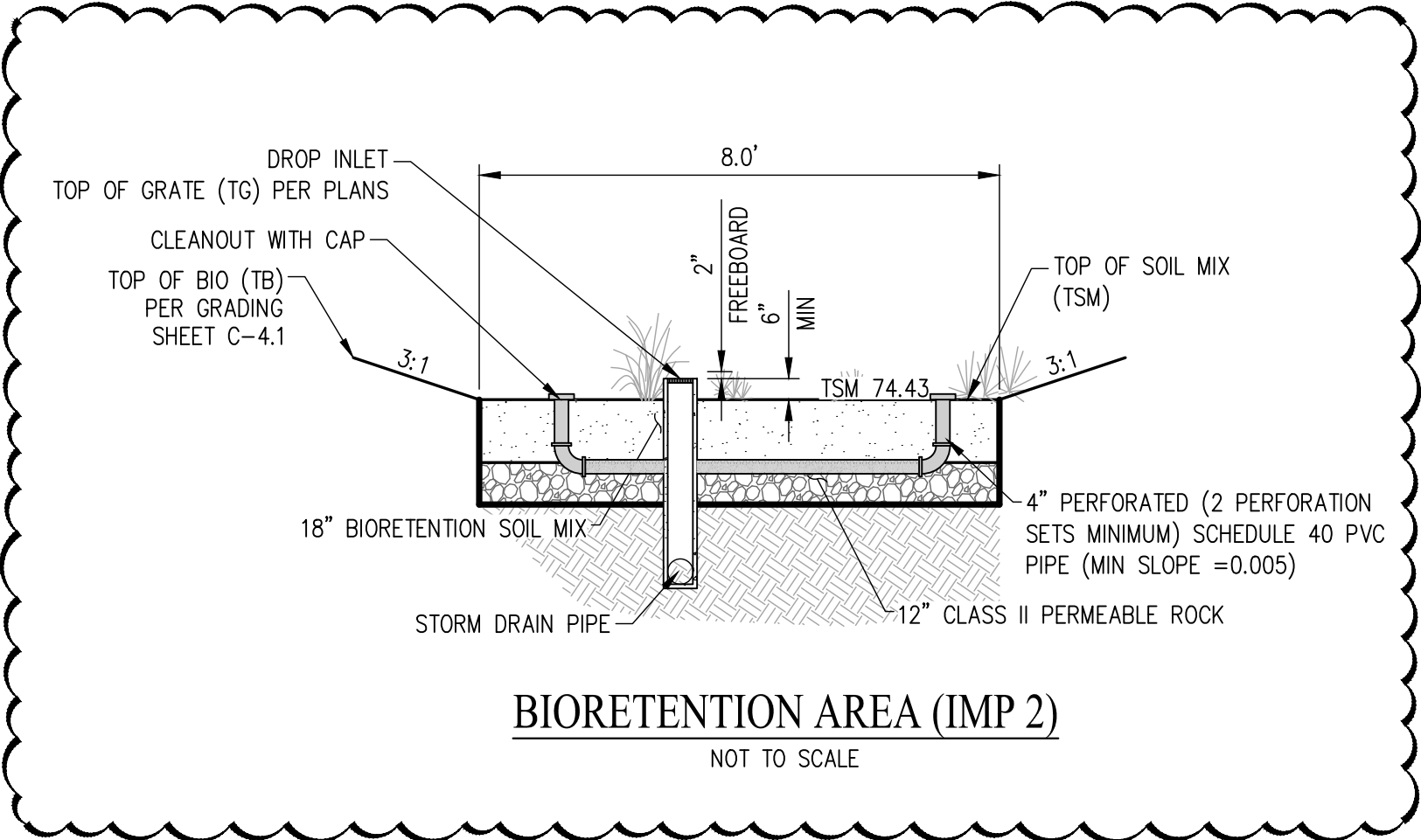
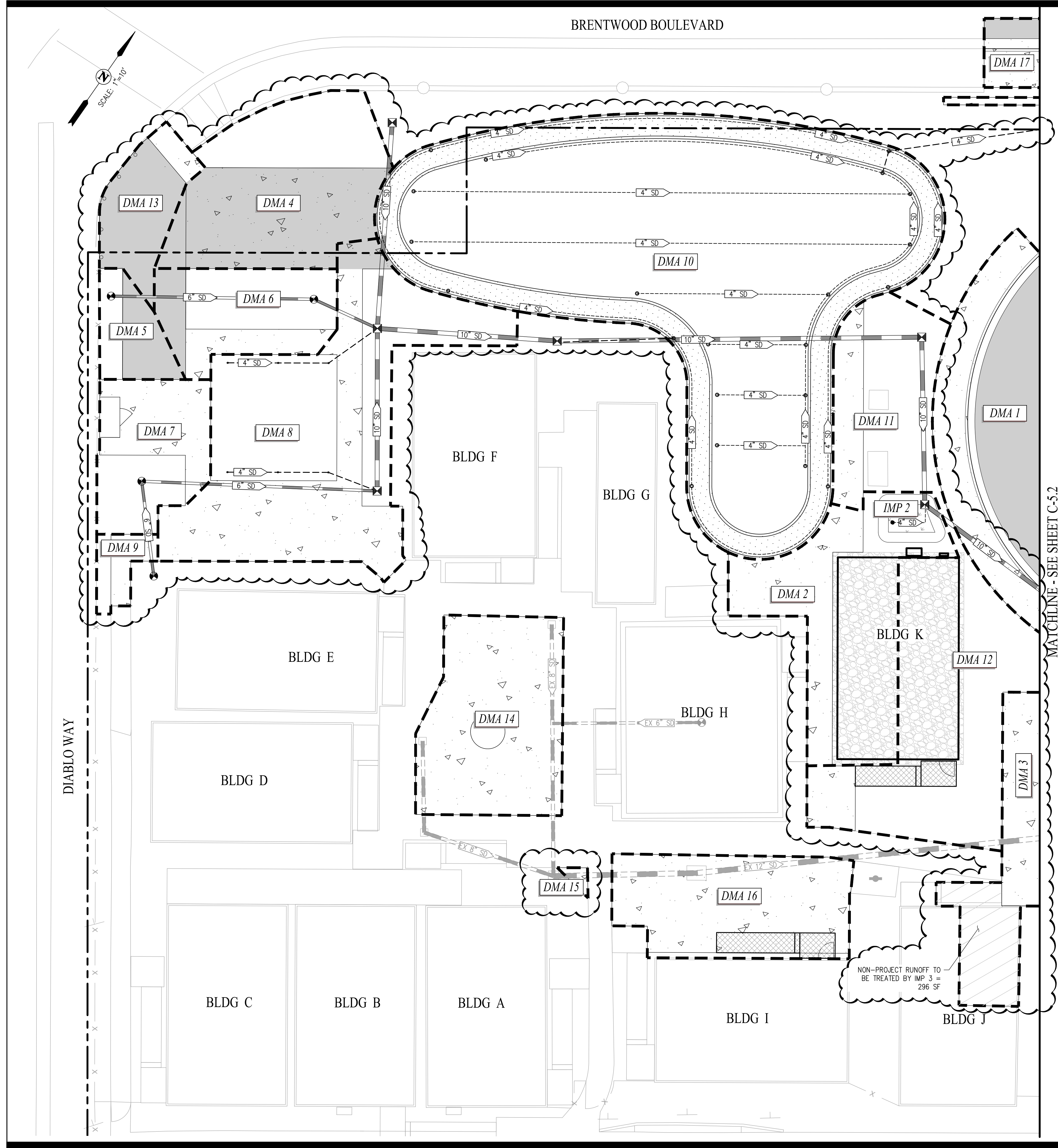
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PTN: 61721-99 FILE NO: 7-H4

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AUGUST 26, 2026
SHEET TITLE

GRADING PLAN

SHEET NUMBER
C-4.1



NOTES

- DMAS 4-12 DRAIN TO SELF RETAINING AREAS.
- IMP 1 AND 3 HAVE BEEN SIZED TO TREAT ADDITIONAL NON-PROJECT RUNOFF PROVIDING AN ADDITIONAL 148 SF OF TREATMENT CREDIT. THIS CREDIT WILL BE USED AS IN-LIEU COMPLIANCE TO OFFSET THE UNTREATED AREA OF DMA 13, 14, 15, 16 AND 17.
- ALL BIORETENTION TOP OF SOIL ELEVATION IS 8" BELOW ADJACENT GROUND ELEVATION.

BIORETENTION AREAS

DMA	REQUIRED TREATMENT AREA (SF)	PROVIDED TREATMENT AREA (SF)
1	513	523
2	41	45
3	84	91

LEGEND

EX 12" SD

12" SD

IMP 1

DMA 1

EXISTING STORM DRAIN

PROPOSED STORM DRAIN

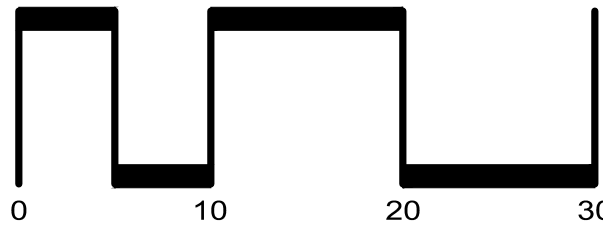
DRAINAGE MANAGEMENT AREA BOUNDARY

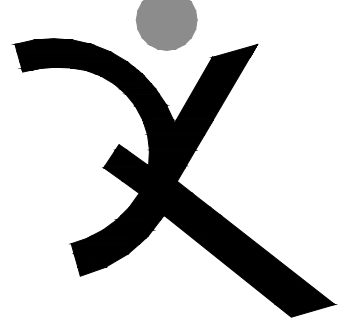
PERFORATED PIPE WITH CLEANOUT

INTEGRATED MANAGEMENT PRACTICE - BIORETENTION AREA

DRAINAGE MANAGEMENT AREA DRAINING TO SELF-RETAINING AREAS

EXISTING PROPERTY BOUNDARY




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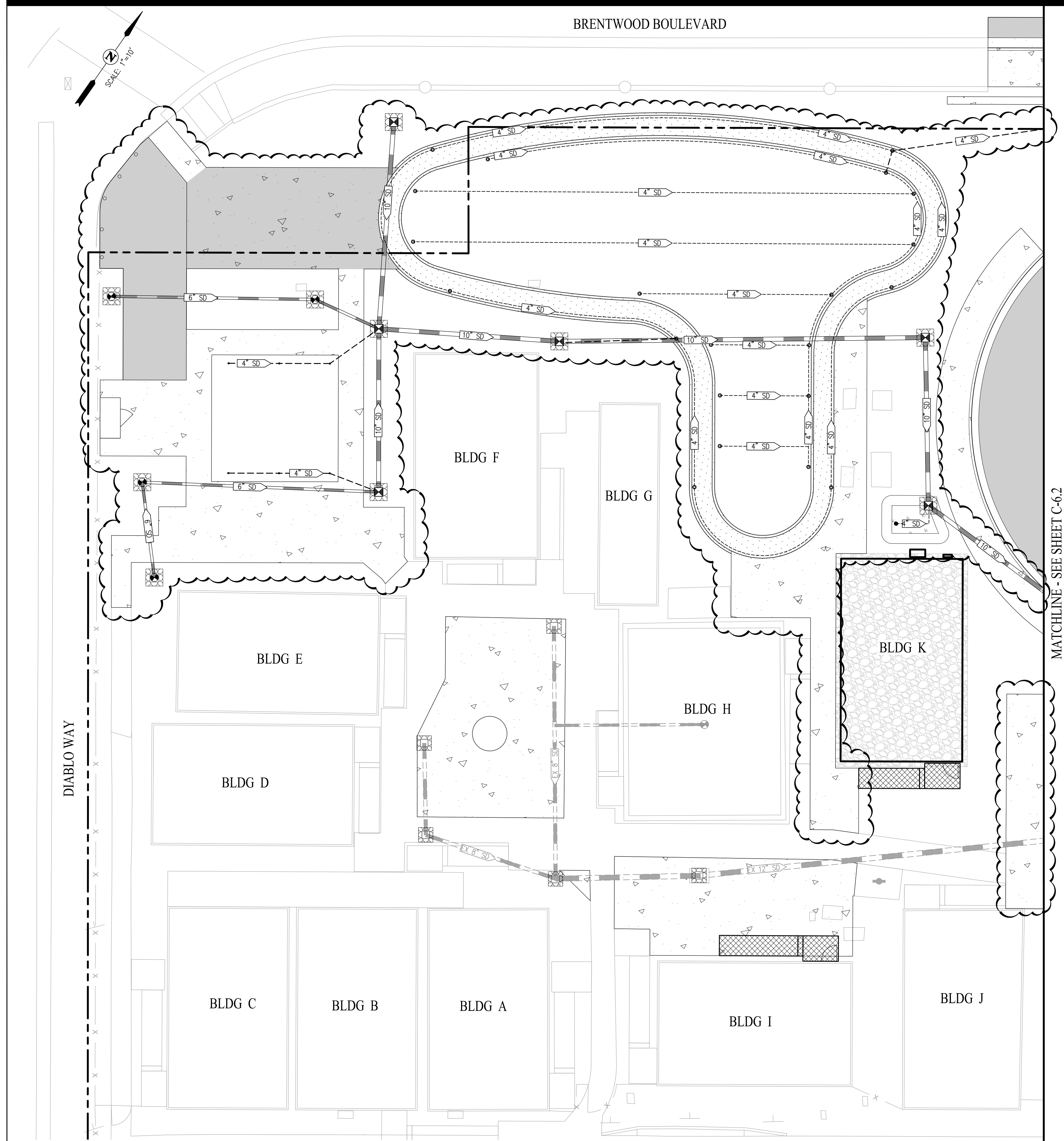
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SHEET TITLE

STORMWATER CONTROL PLAN

SHEET NUMBER
C-5.1



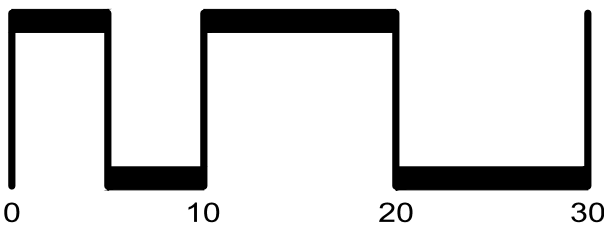
GENERAL NOTES:

1. LEGALLY RESPONSIBLE PARTY/PERSON (LRP) OWNER/SUBDIVIDER:

LIBERTY UNION HIGH SCHOOL DISTRICT
850 2ND STREET
BRENTWOOD, CA 94513
2. CIVIL ENGINEER:

CARLSON, BARBEE & GIBSON, INC.
2633 CAMINO RAMON, SUITE 350
SAN RAMON, CA 94583
(925) 866-0322
JASON VOGAN, RCE 59299
3. GEOTECHNICAL ENGINEER:

BSK ASSOCIATES
399 LINDERBERGH AVENUE
LIVERMORE, CA 94551
(925) 315-3151
CARRIE RODRIGUEZ



LEGEND

- FIELD INLET PROTECTION - (SE-10)
- FIELD INLET
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN

NOTES

1. STORMWATER DISCHARGE SAMPLING LOCATIONS ARE SUBJECT TO CHANGE AND WILL BE REMOVED, RELOCATED OR ADDED AT THE QSP'S DISCRETION.
2. ALL EROSION CONTROL SHOWN IS TEMPORARY FOR USE DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR PREVENTING SEDIMENT FROM LEAVING THE SITE AND ENTERING THE DOWNSTREAM DRAINAGE SYSTEM

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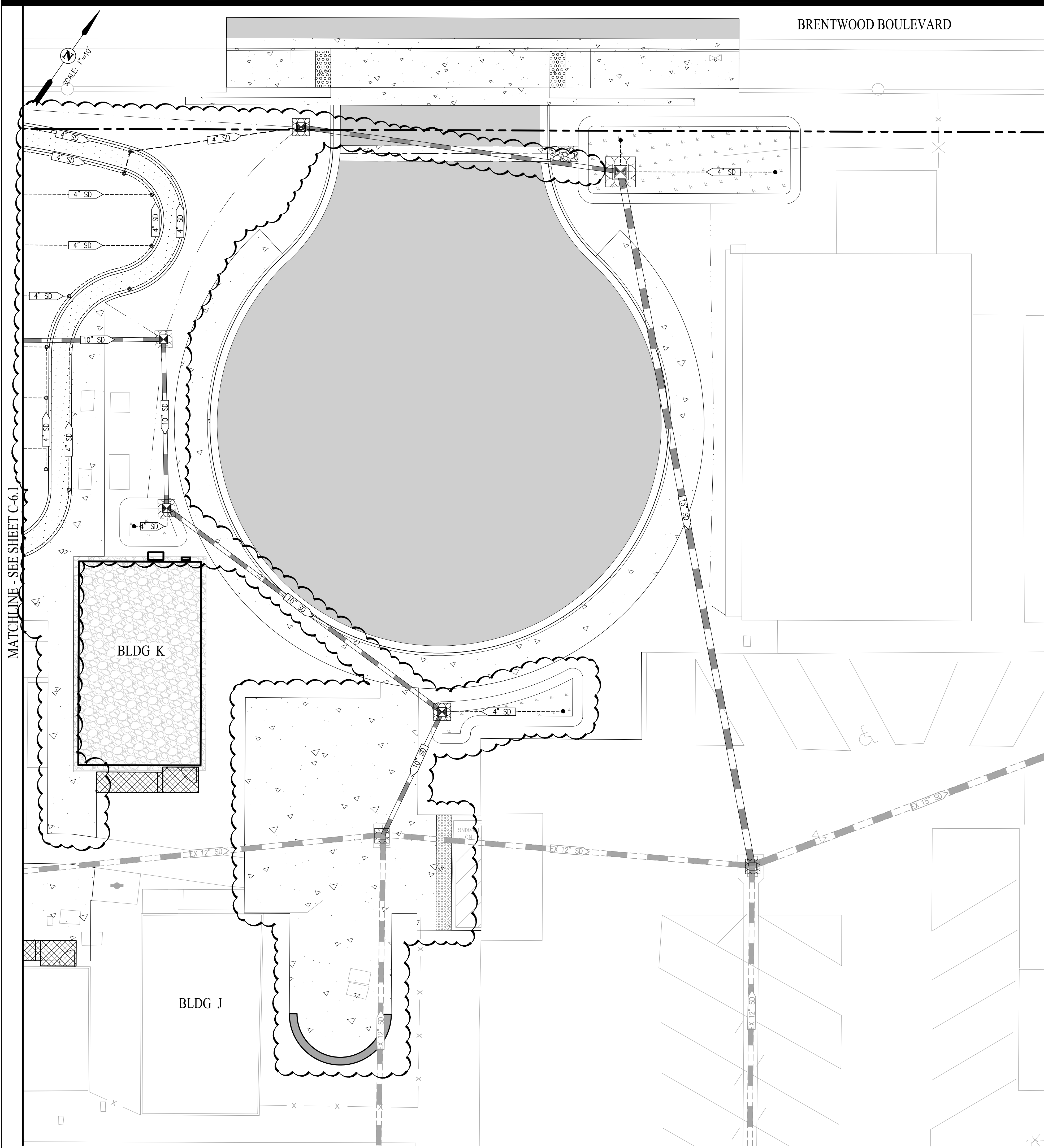
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SHEET TITLE

EROSION
CONTROL PLAN

SHEET NUMBER

C-6.1



BRENTWOOD BOULEVARD

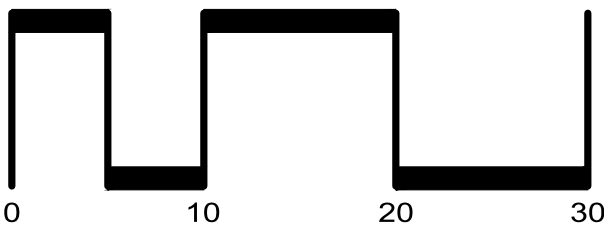
GENERAL NOTES:

1. LEGALLY RESPONSIBLE PARTY/PERSON (LRP) OWNER/SUBDIVIDER:

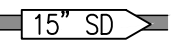
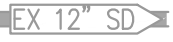
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850 2ND STREET
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2. CIVIL ENGINEER:

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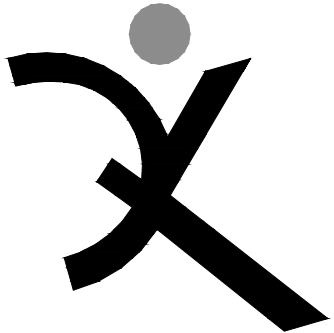


LEGEND

-  FIELD INLET PROTECTION - (SE-10)
-  FIELD INLET
-  PROPOSED STORM DRAIN
-  EXISTING STORM DRAIN

NOTES

1. STORMWATER DISCHARGE SAMPLING LOCATIONS ARE SUBJECT TO CHANGE AND WILL BE REMOVED, RELOCATED OR ADDED AT THE QSP'S DISCRETION.
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PTN: 61721-99	FILE NO: 7-H4

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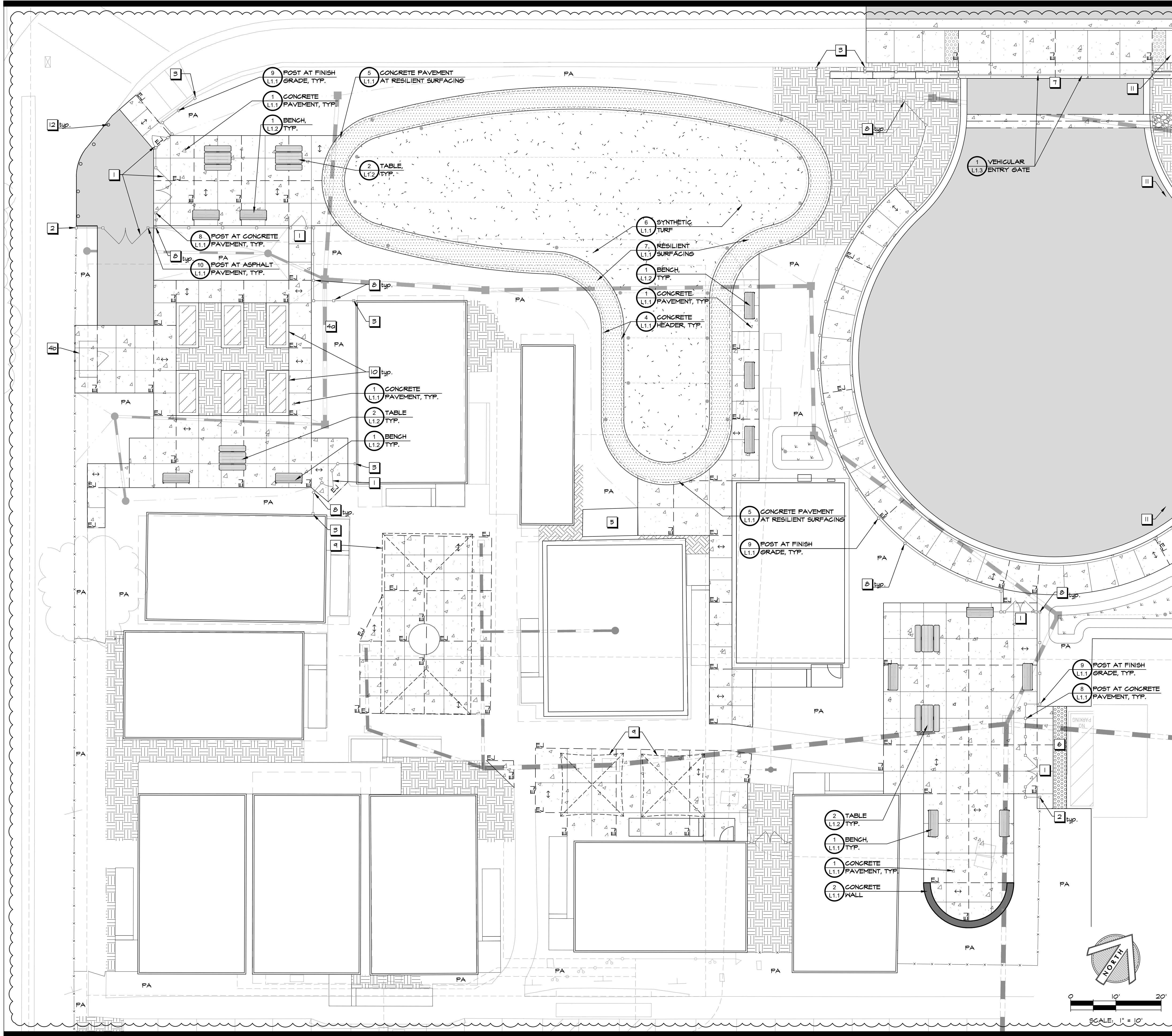
AUGUST 26, 2026

SHEET TITLE

EROSION CONTROL PLAN

SHEET NUMBER

C-6.2



MATERIAL LEGEND

- Concrete Pavement
- Asphalt Pavement. See Civil Drawings
- Synthetic Turf
- Resilient Rubber Surfacing
- Bioretention Area. See Civil Drawings
- Mulch
- Expansion Joint. See Civil Drawings
- Tooled Control Joint. See Civil Drawings
- Direction of broom finish
- PA
- Existing Fence
- Ornamental Steel Fence. See Architectural Drawings
- Double Gate. See Architectural Drawings
- Single Gate. See Architectural Drawings
- Hip Shade Structure. See Architectural Drawings
- Cantilever Shade Structure. See Architectural Drawings
- Relocated Storage Shed
- Raised Concrete Planter
- Bench
- Table

SHEET NOTES

- Gate. See Architectural Drawings
- Connect fence, typ.
- 3' clear max. between fence and adjacent vertical surface, typ.
- Relocate garden shed
- New location for garden shed
- Existing shed to remain
- Truncated domes. See Civil Drawings
- Vehicular automatic entry gate.
- Ornamental steel fence. See Architectural Drawings
- Shade structure. See Architectural Drawings
- Concrete planter wall. See Architectural Drawings
- See Layout Plans for score and expansion joints
- Removable bollard. See Civil Drawings

CONCRETE NOTES

- Subgrade preparation shall be done in accordance with Geotechnical recommendations.
- Tooled control joints shall run continuously and extend through integral curbs and thickened edges. Tooled control joint layout shall be as shown on the Layout Plan, and coincide with the corners of objects, structures and the beginning and ends of curves. Joints should have a minimum depth of 25% of the slab thickness, unless otherwise noted on plans.
- Expansion joints shall be laid out as shown on the Layout Plan.
- Contractor shall place 3/8" asphalt impregnated fiber board where new concrete meets buildings, walls, curbs and planters.
- The base rock layer, prior to placement of concrete, shall be sprinkled with clean water several times to restore any moisture that may have been lost after completion of compaction.
- Cure concrete with curing compound or keep continuously moist for a minimum of 7 days.
- Contractor shall prepare a 4'x4' sample of all flatwork and 4' length of all walls and curb in the field prior to construction, for review and approval by the District.
- Concrete pavement with slopes less than 6% shall receive a medium broom finish and slopes greater than 6% shall receive a heavy broom finish. Finish shall be in the direction shown on this sheet.



GATEWAY PROGRAM

PORTABLE & SHADE STRUCTURES

929 SECOND ST.
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LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

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ARCH PROJECT NO. 2497.00

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DRAWING SCALE:

PTN: 61721-99 FILE NO. 7-H4

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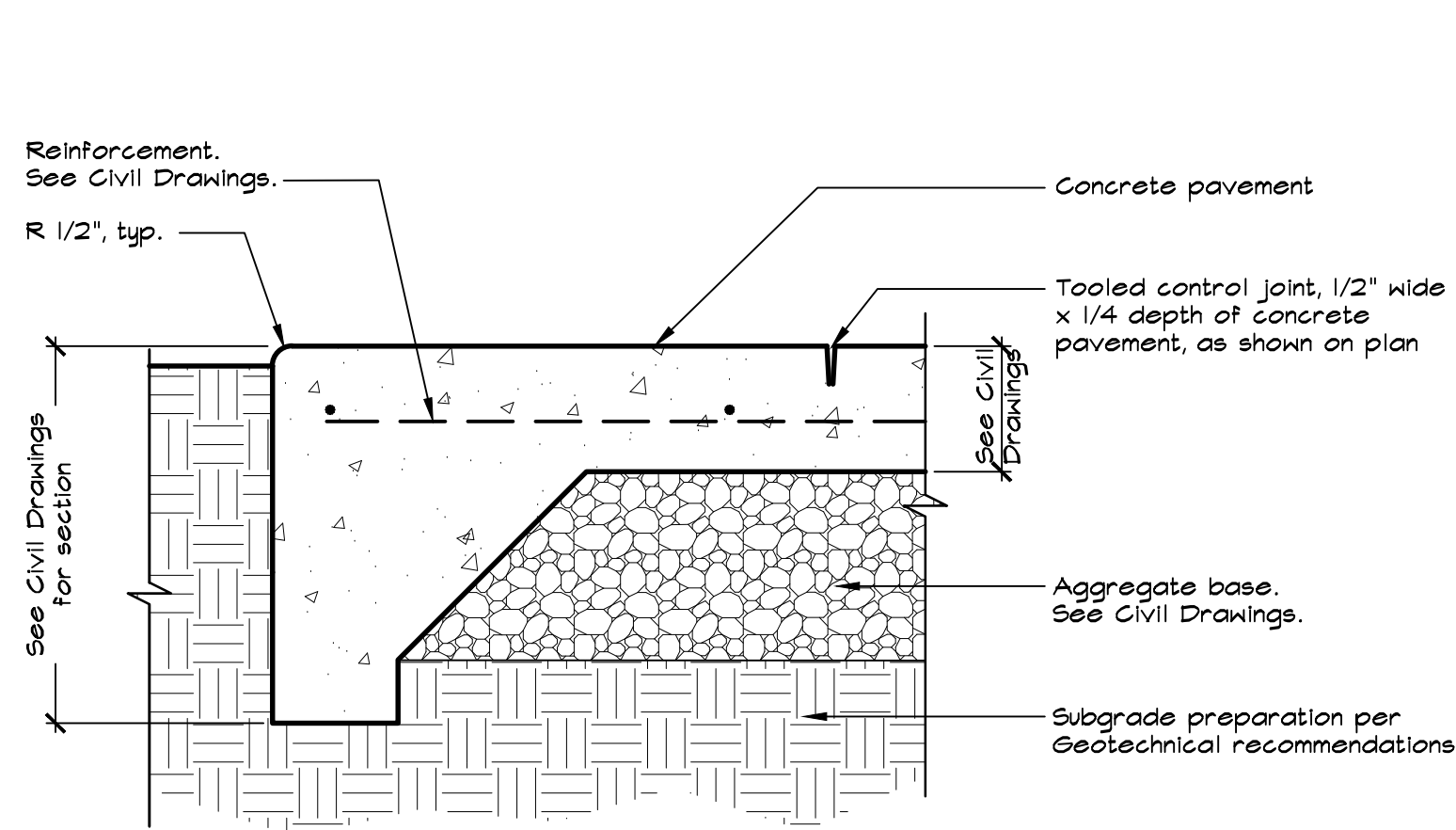
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SHEET TITLE

MATERIAL AND DETAIL REFERENCE PLAN

SHEET NUMBER

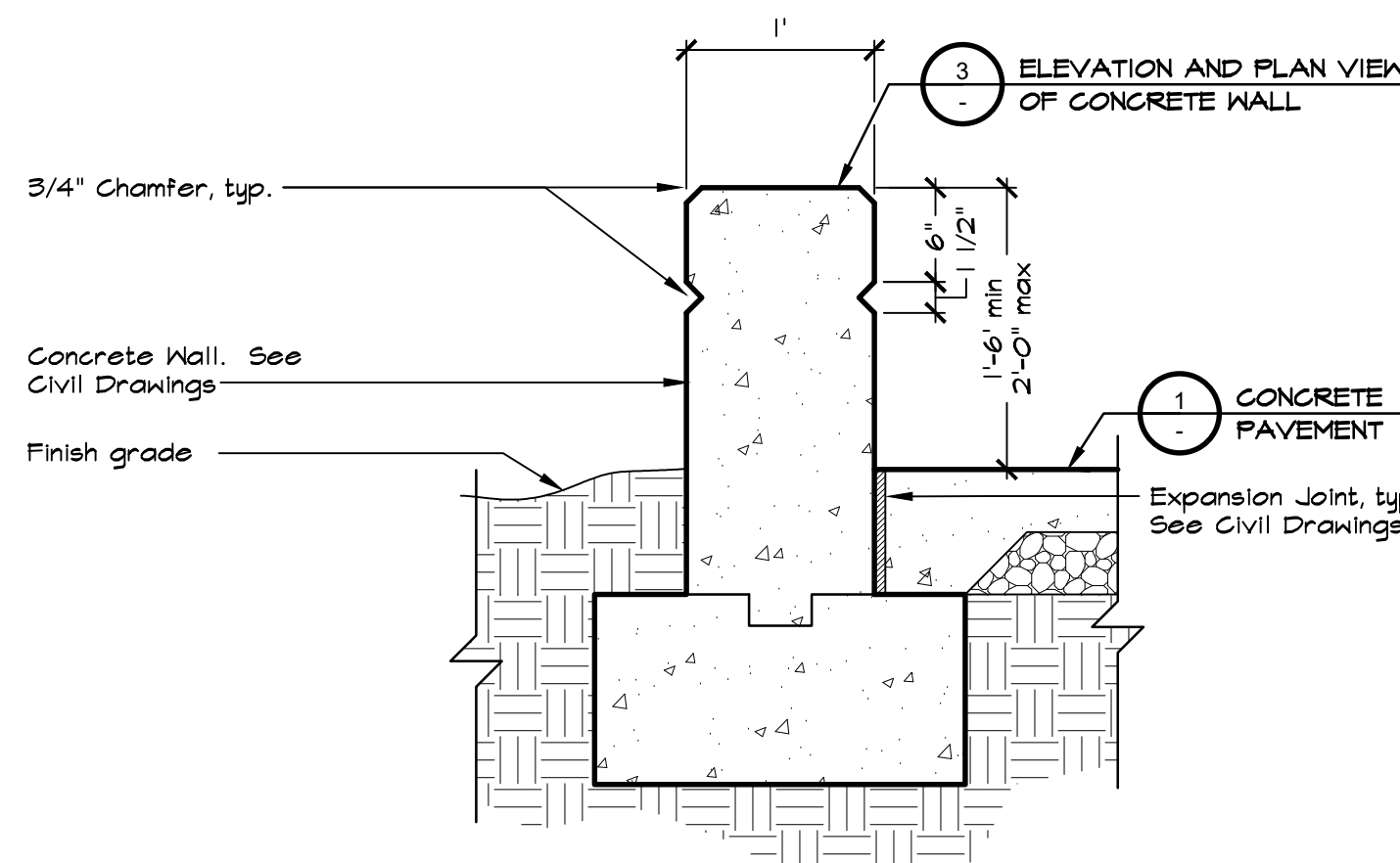
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NOTES:

1. See Concrete Notes on the Material and Detail Reference Plan.
2. See Material and Detail Reference Plan for tooled control joint and expansion joint locations.
3. See Civil Drawings for grading and drainage design and information.

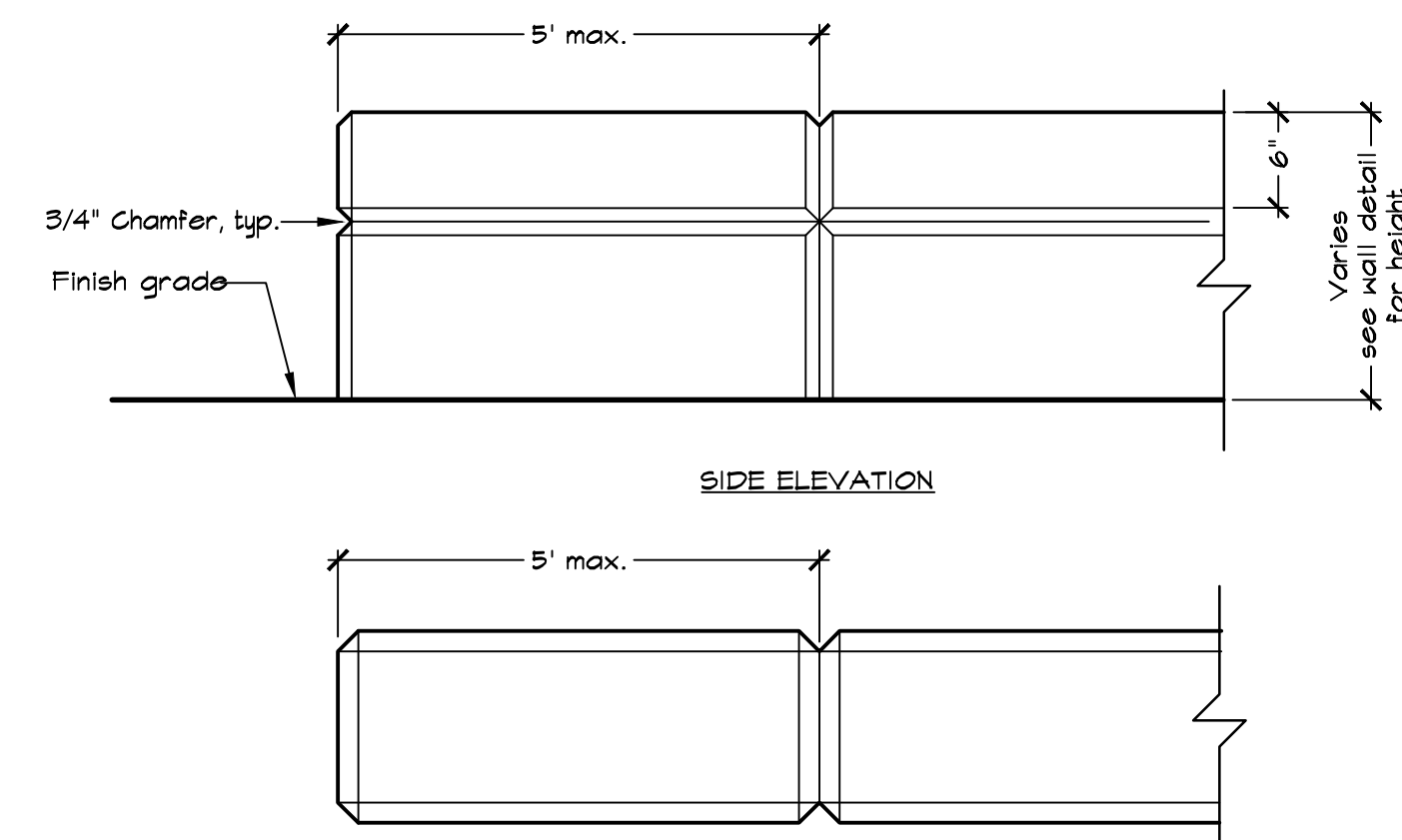
1 CONCRETE PAVEMENT
NOT TO SCALE



NOTES:

1. See Concrete Notes on the Material and Detail Reference Plan.
2. Hold top of wall level unless otherwise noted on Civil Drawings.
3. Wall finish shall be smooth sack finish on all surfaces and edges.
4. See Civil Drawings for detailed wall, reinforcement and wall drainage design.

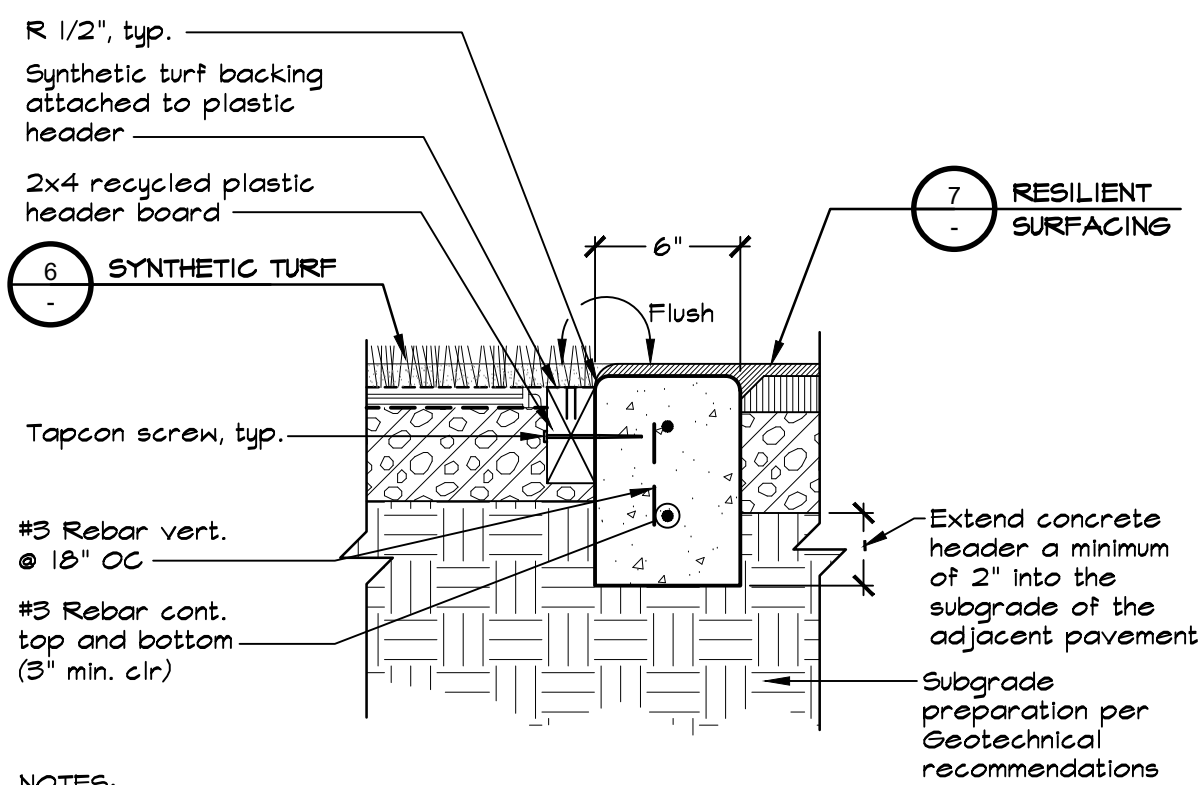
2 CONCRETE WALL
NOT TO SCALE



NOTES:

1. See Civil Drawings for wall reinforcement, expansion joints and drainage design.

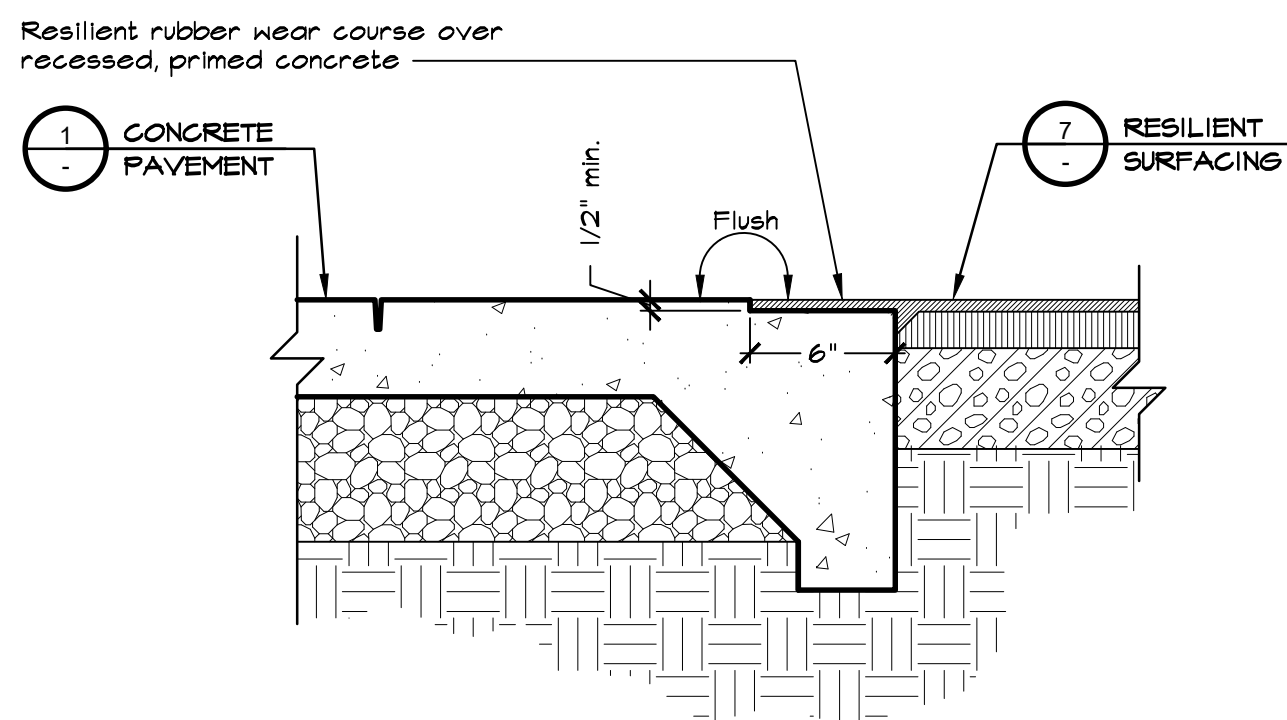
3 ELEVATION AND PLAN VIEW OF CONCRETE WALL
NOT TO SCALE



NOTES:

1. See Concrete Notes on the Material and Detail Reference Plan.
2. Finish on top of header shall be broom finish, parallel with header.
3. Contractor shall install score joints at 6' OC maximum with expansion joints at 18' OC maximum. Align joints with posts and/or adjacent concrete pavement.
4. Plastic header board shall be Epic Plastics, or approved equal.
5. Secure plastic header board with 4" long Tapcon screw at 18" OC. Leave 1/2" gap between ends of boards to allow for expansion.

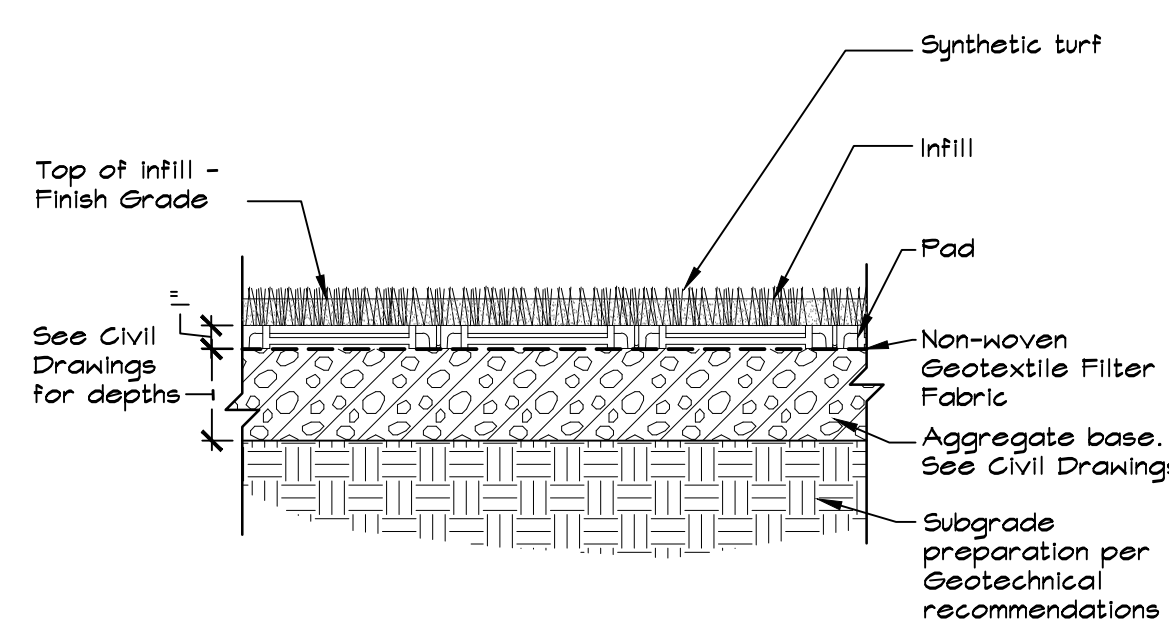
4 CONCRETE HEADER
NOT TO SCALE



NOTES:

1. Installation shall be completed in accordance with resilient rubber Manufacturer's specifications.

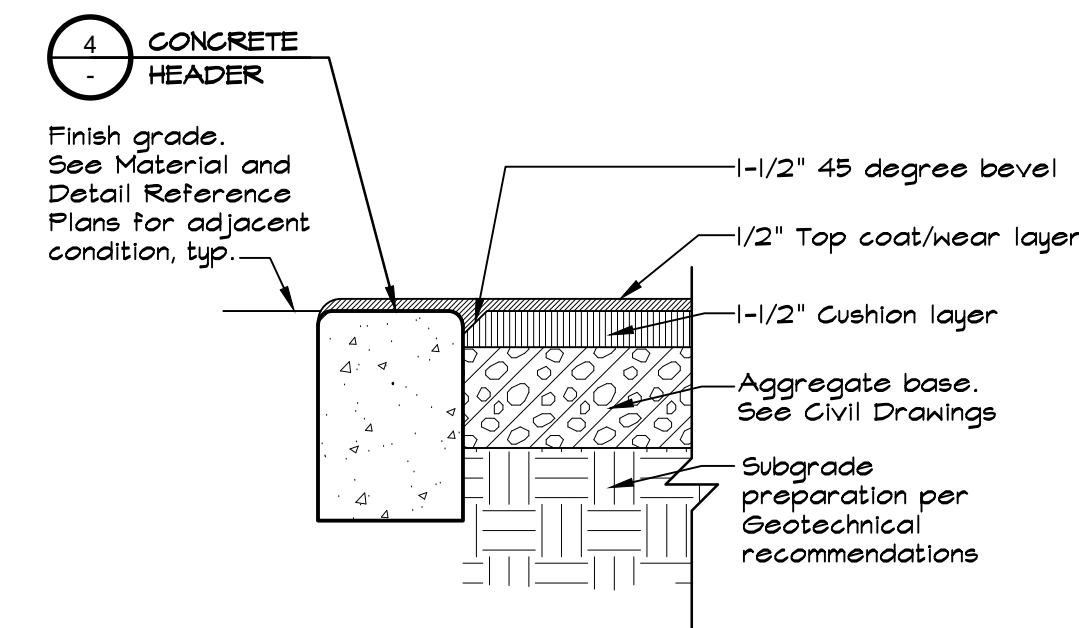
5 CONCRETE PAVEMENT AT RESILIENT SURFACING
NOT TO SCALE



NOTES:

1. Synthetic Turf shall be Field Turf Command Core, or approved equal.
2. Pad shall be Brock Powerbase/YSR, or approved equal.
3. Install per Manufacturer's specifications.

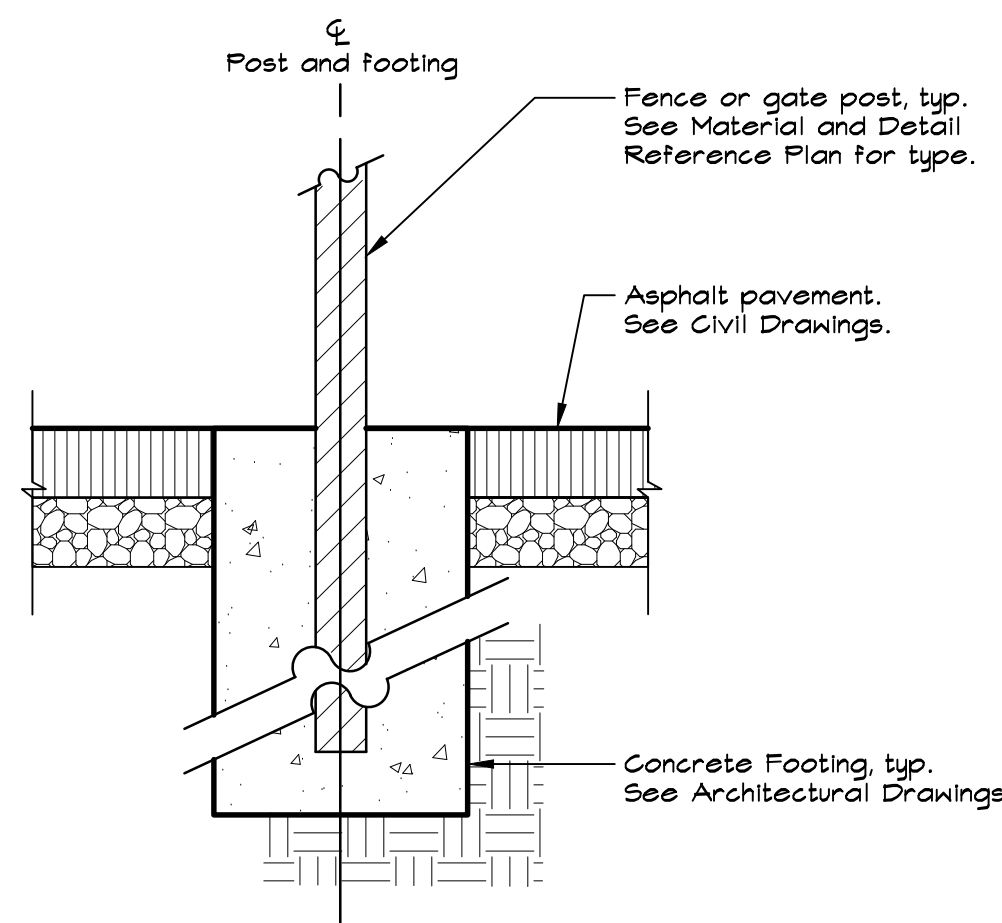
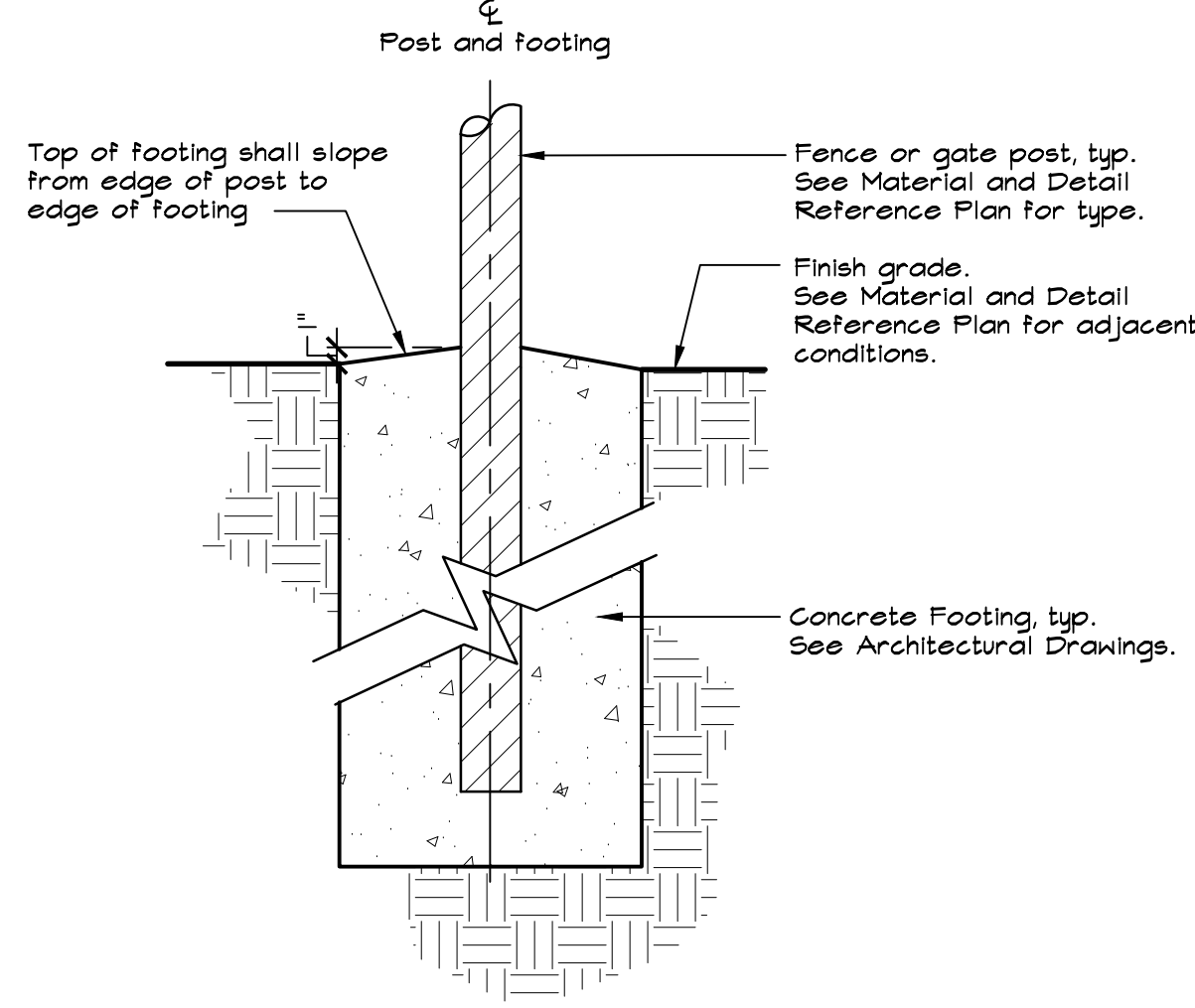
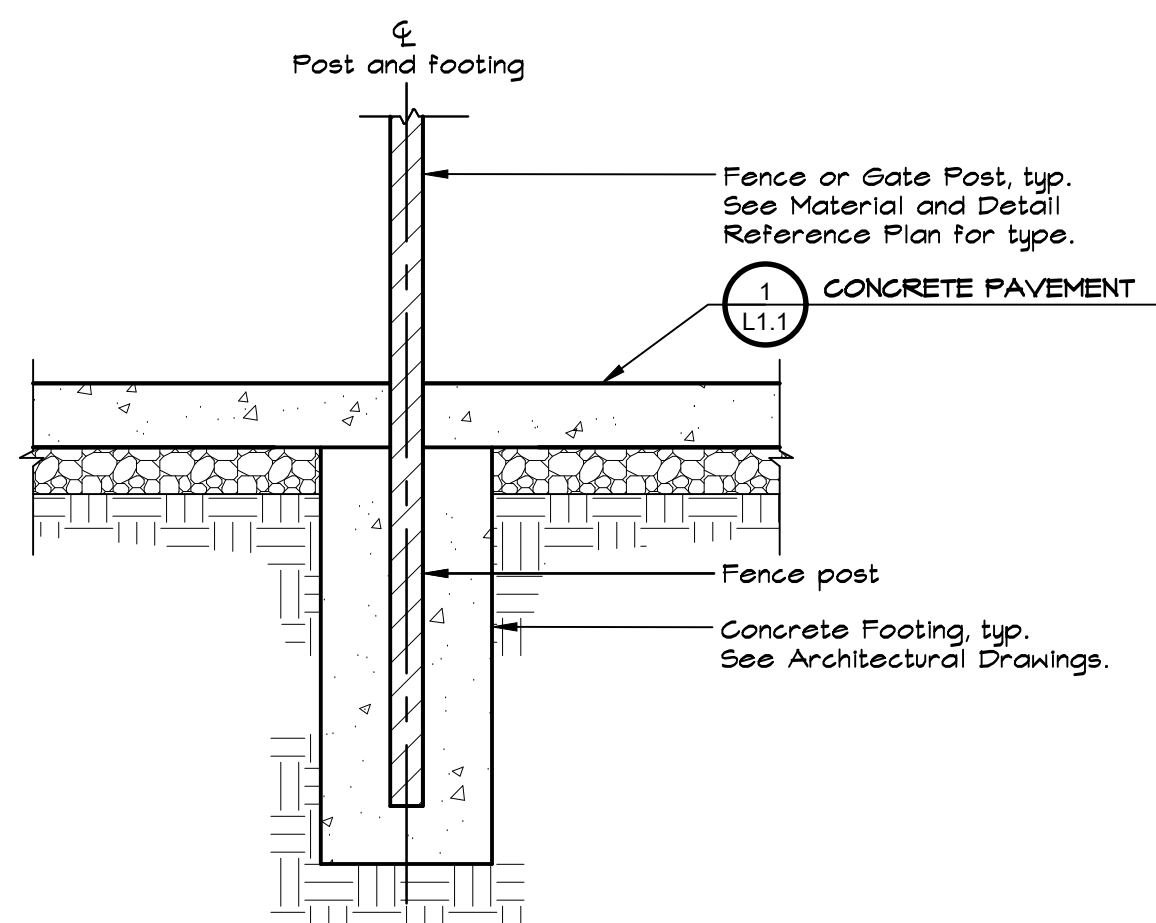
6 SYNTHETIC TURF
NOT TO SCALE



NOTES:

1. Resilient surfacing shall be TotTurf Supreme, Poured in Place TPV, or approved equal.
2. Concrete headers shall be primed prior to installation of resilient surfacing.
3. Submit colors to Architect for review and approval prior to ordering.

7 RESILIENT SURFACING
NOT TO SCALE



8 POST AT CONCRETE PAVEMENT
NOT TO SCALE

9 POST AT FINISH GRADE
NOT TO SCALE

10 POST AT ASPHALT PAVEMENT
NOT TO SCALE



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GATEWAY
PROGRAM

PORTABLE &
SHADE
STRUCTURES

929 SECOND ST.
BRENTWOOD, CA
94513

LIBERTY UNION
HIGH SCHOOL
DISTRICT

REVISIONS

DSA APP NO. 01-122796

ARCH PROJECT NO. 2497.00

DRAWN BY: BTI/EC

DRAWING SCALE:

PTN: 61721-99 FILE NO. 7-H4

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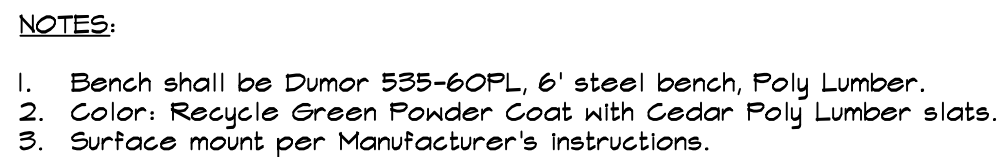
AUGUST 26, 2026

SHEET TITLE

CONSTRUCTION
DETAILS

SHEET NUMBER

L1.1



NOTES:

1. Table shall be Dumor 537-60PL, 6' ADA Picnic Table, Poly Lumber.
2. Color: Recycle Green Powder Coat with Cedar Poly Lumber slats.
3. Surface mount per Manufacturer's instructions.



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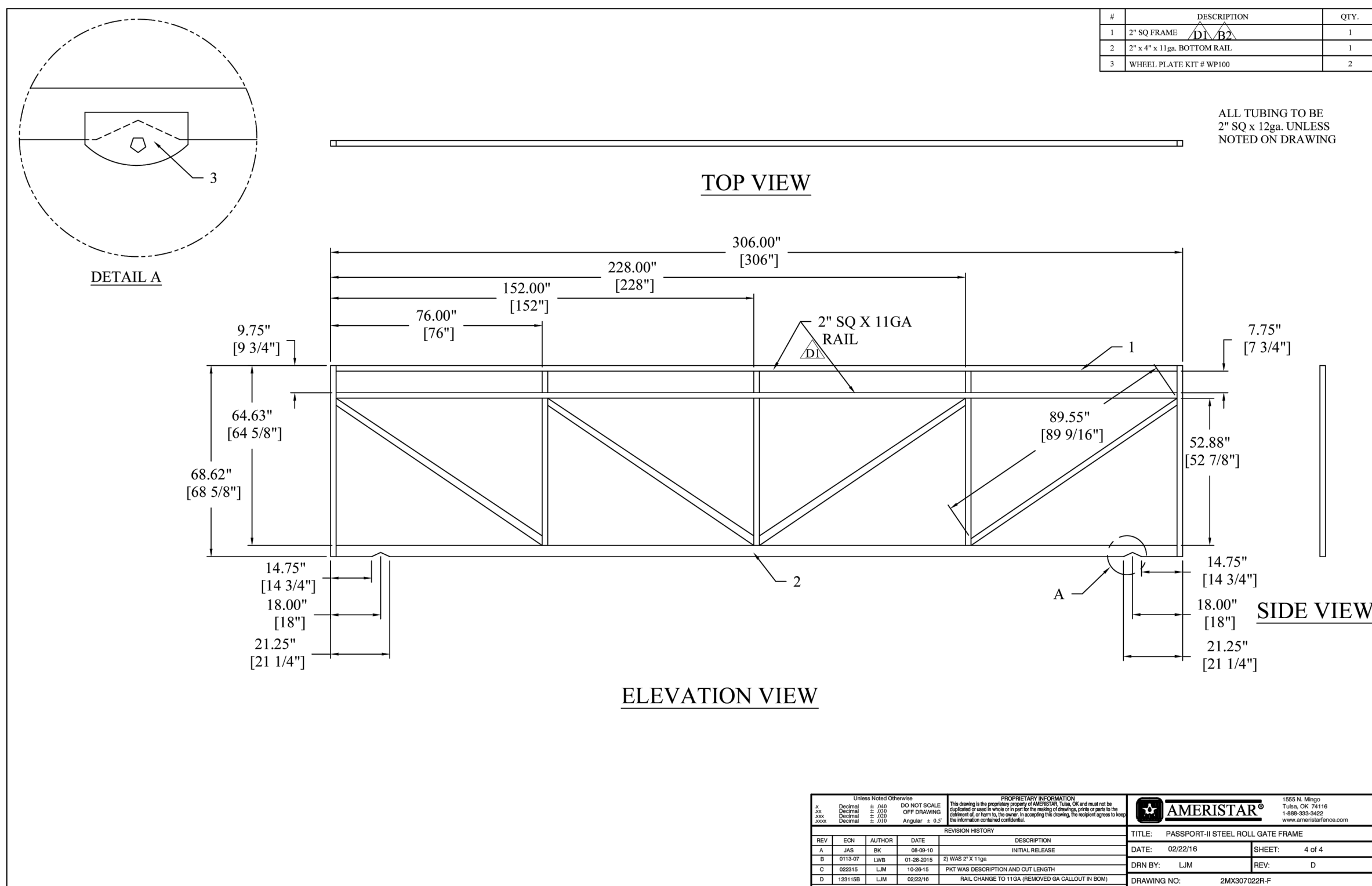
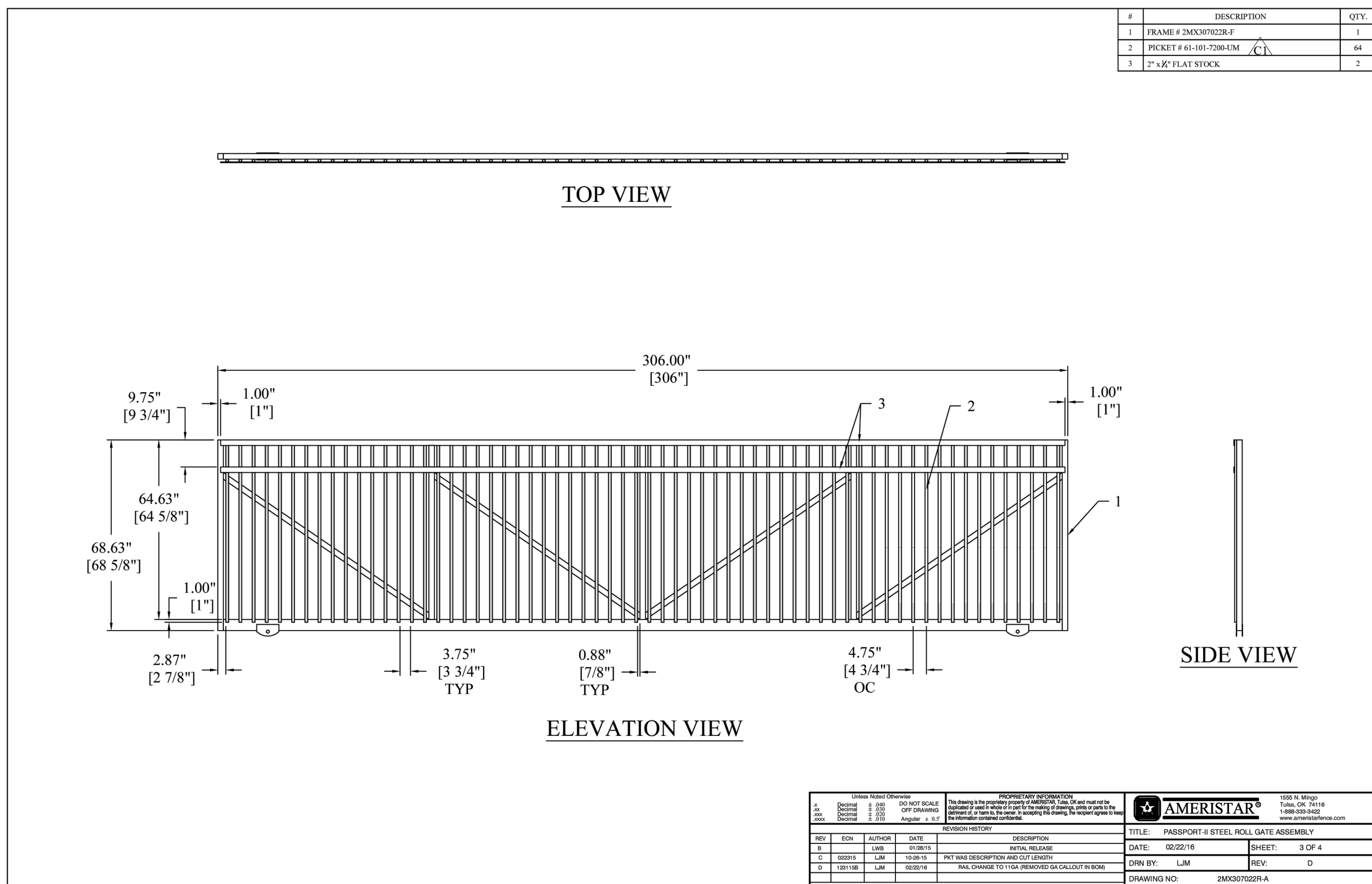
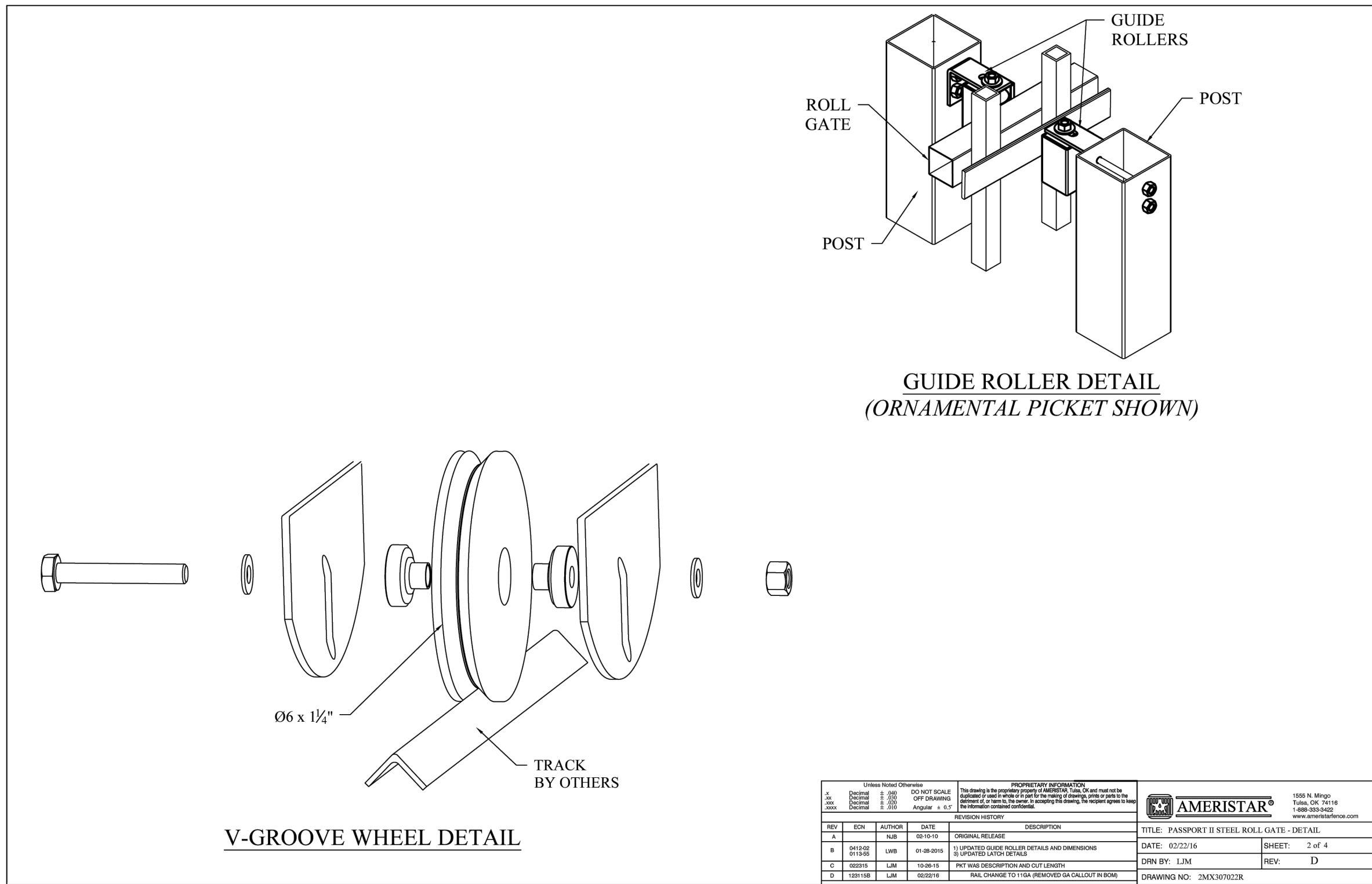
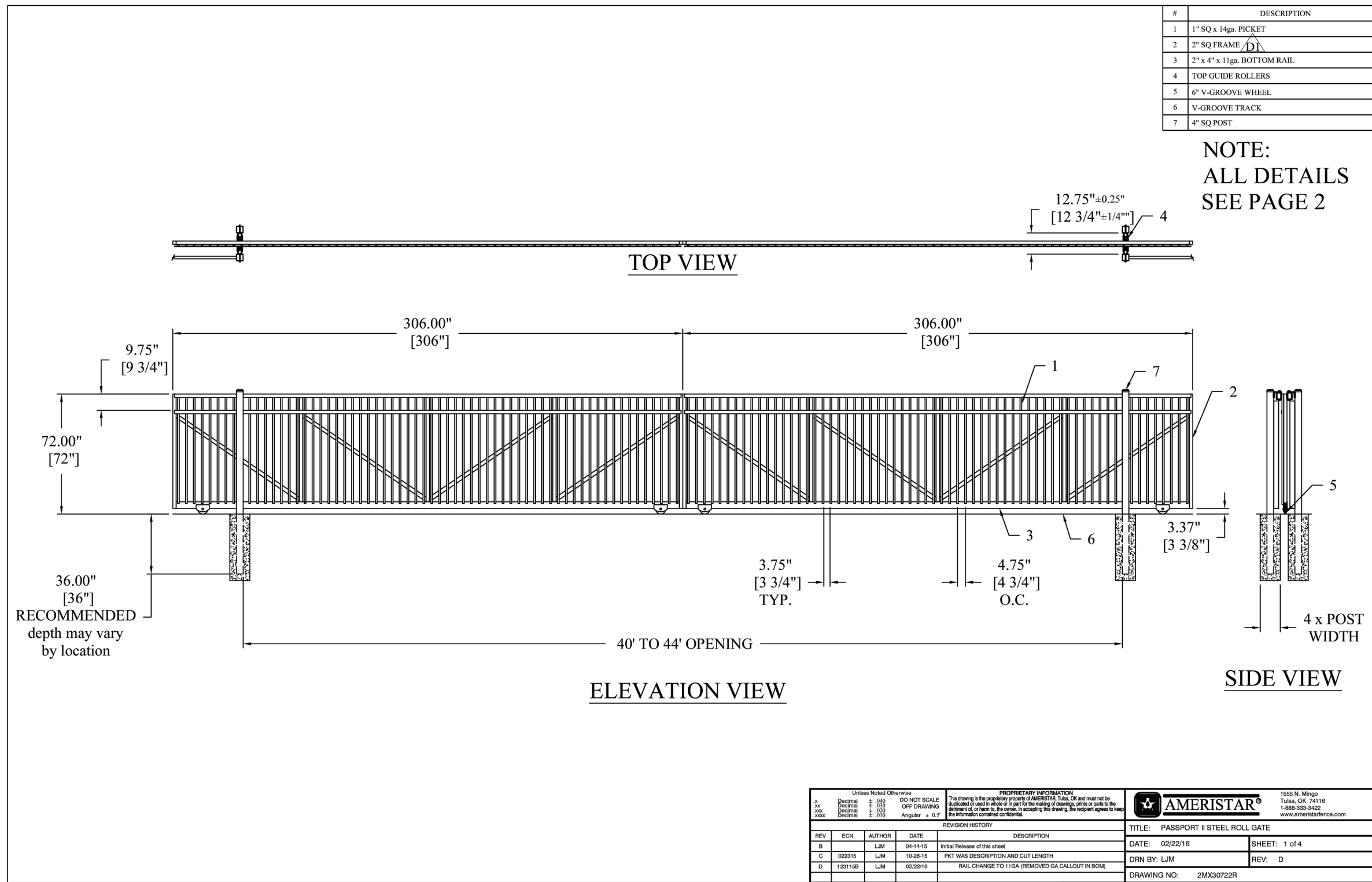
AUGUST 26, 2026

SHEET TITLE

CONSTRUCTION DETAILS

SHEET NUMBER

L1.2



VEHICULAR GATE AUTOMATION SCHEDULE

Manufacturer	Product	Model No.	Notes
DKS DoorKing	Slide Gate Operator	9024-380	Quantity: 2. See Electrical Drawings
DKS DoorKing	#40 Roller Chain, Nickel Plated	2600-442	Quantity as required
DKS DoorKing	PC Programmable Access Control System	1838-081 Multi-Door Access Controller	Locate in IDF. See Electrical Drawings
DKS DoorKing	Network Adapter	1830-185	Quantity: 1

Manufacturer	Product	Model No.	Notes
DKS DoorKing	MicroPLUS RF Receiver	8040-080	Quantity: 1. See Electrical Drawings
DKS DoorKing	MicroPLUS Transmitter	8069-080 1 Button	Quantity: 4
DKS DoorKing	Long Range Reader	1815-350	Quantity: 2. See Electrical Drawings
DKS DoorKing	UHF DK Prox Cord and Window Holder	1508-190 and 1815-318	Quantity: 6 each

Manufacturer	Product	Model No.	Notes
DKS DoorKing	Coax Antenna Kit	1514-073	Quantity as required
DKS DoorKing	Monitored Photobeam Sensor Systems	8080-052 (EMX 1RB-MON)	Quantity as required
DKS DoorKing	Vehicle Detection Loop Systems	Single Channel 9410-010/ Two Channel 9409-010	Outside shadow/ Interior reversing/ open/exit. Min. (9) 6'x6' prefab. loops
DKS DoorKing /Knox	Fire Dept. Lock Box and Access Key Switch	1401-080 and Knox 3501	Quantity: 1 each

Manufacturer	Product	Model No.	Notes
DKS DoorKing	Multiple Input Module (MIM 62)	8080-079	Quantity as required
DKS DoorKing	Contact Sensor Kit	8080-008 (RB-G-KIO)	Quantity as required
DKS DoorKing	Contact Sensor Transmitter	8080-006 Monitored Transmitter (RB-TX-10)	Quantity as required
DKS DoorKing	Contact Sensor	8080-066	Quantity as required

NOTES

- Vehicular Entry Gate shall be Ameristar Passport II Bi-Parting Steel Roll Gate, or approved equal. Gate and all components shall have a black powder coated finish. Provide and install Ameristar perforated metal on vehicular gate and fence for the full length between the ends of sound wall.
- Vehicular Gate Automation Equipment shall be DKS DoorKing, or approved equal. Install per manufacturer's instructions.
- DoorKing contact: Lamar Jackson, (916) 240-1201; L.Jackson@doorking.com.
- See Structural Drawings for gate post footings.
- See Electrical Drawings for electrical pads for components as required.
- Provide and install reinforced concrete pads for components as required.
- Automated Vehicular Gate System shall comply with ASTM F2200 and UL 325. Contractor shall prepare shop drawings for review and approval.
- Contractor shall provide and install all components required for a complete and compliant system.



GATEWAY PROGRAM

PORTABLE & SHADE STRUCTURES

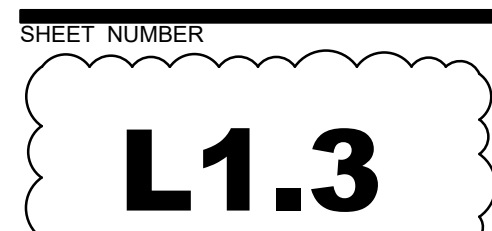
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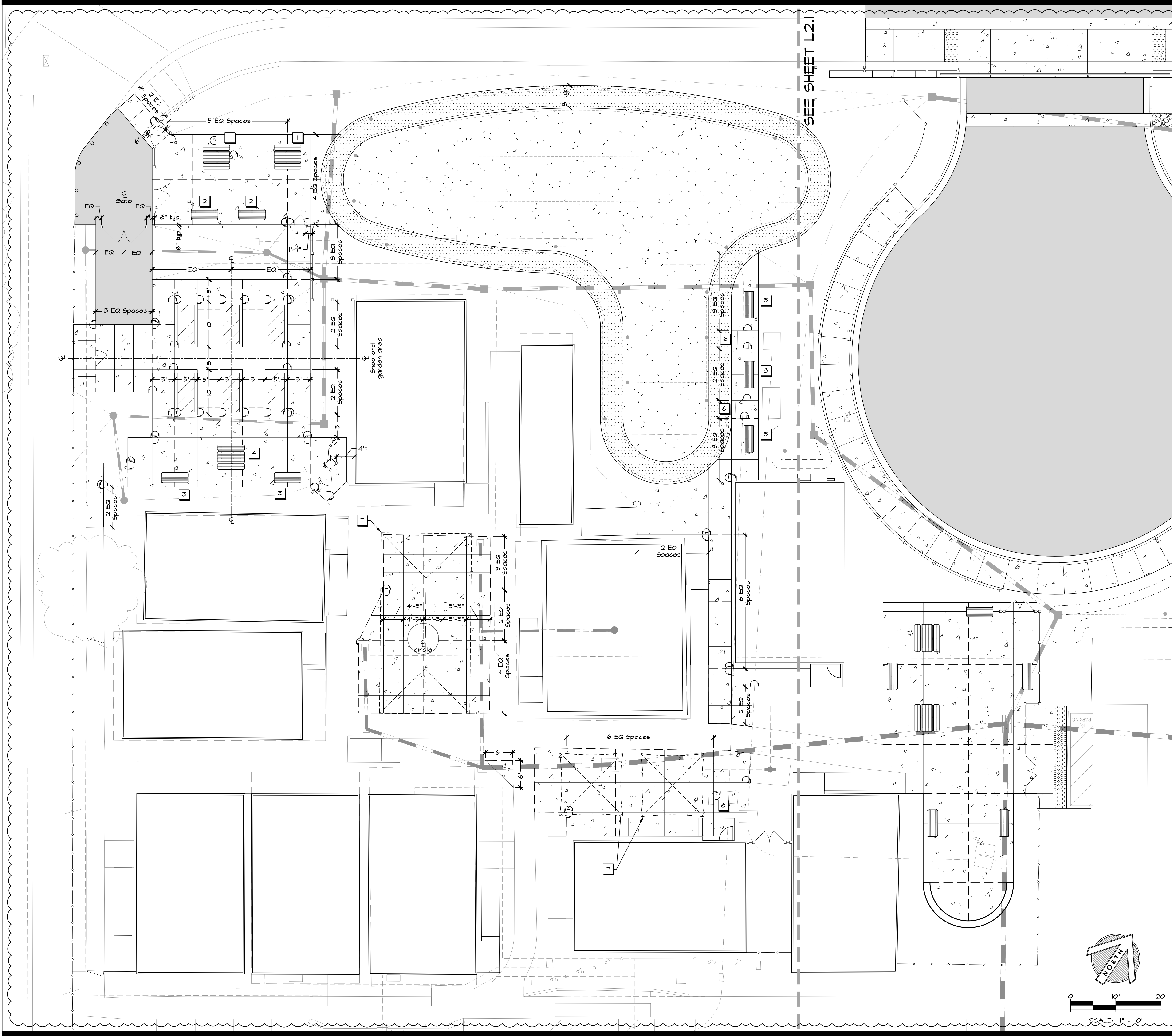
LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS		

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DRAWN BY:	BTI/EC
DRAWING SCALE:	
PTN:	61721-99
FILE NO.	7-H4
DSA SUBMITTAL	
AUGUST 26, 2026	
SHEET TITLE	

CONSTRUCTION DETAILS





LAYOUT LEGEND

- RX'-Y"- Radial Dimension
- X' Arc Dimension
- X'-Y' Linear Dimension
- x x Flush connection
- Align
- Guideline to show alignment
- Centerline
- EQ Equal

SHEET NOTES

NOT ALL MAY APPEAR ON THIS SHEET

- Center table on score joints. Provide 3" minimum clearance between anchor bolts and control joints.
- Center bench between score joints and offset from back of pavement 1 foot to back of bench. Provide 3" minimum clearance between anchor bolts and control joints.
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- Provide 3" minimum clearance between anchor bolts and control joints.
- Center bench on score joints and offset from back of pavement 1 foot to back of bench. Shift bench to north as needed to provide 3" minimum clearance between anchor bolts and control joints.
- Reset and align utility box covers to be parallel with score joints.
- Shade Structure. See Architectural Drawings.

LAYOUT NOTES

- Contractor shall notify all public or private utility companies two (2) working days prior to commencement of work on this project to verify the locations of existing utility lines. Call Underground Service Alert (U.S.A.) toll free at 811, 7:00am to 5:00pm, Monday through Friday.
- All coordinates and dimensions shown are in a horizontal plane.
- Written dimensions always take precedence over scaled dimensions. If there is a conflict, notify the District and Landscape Architect and obtain a clarification. No deviation or substitution shall be allowed without obtaining written approval from the District and Landscape Architect.
- See Civil Drawings for additional layout information.
- This Plan does not represent a Property Line Survey. Property lines shown hereon may not represent the true position of the line.
- The Contractor shall coordinate all construction elements including utility locations and required sleeving prior to installation of any underground utilities.
- The Contractor shall verify critical dimensions, reference and control point locations and construction conditions prior to construction.
- All dimensions shall be verified in the field, chalked pointed, and/or string lined. Any adjustments, major or minor, required to achieve overall design layout shall be reviewed and approved by the District and Landscape Architect prior to construction.
- All materials shall be furnished and installed by the Contractor per Manufacturer's specifications, unless otherwise noted in these Plans or Specifications.
- Existing features and topographic information have been taken from survey performed by CBS provided by Quattrocchi Kwok Architects. GSI landscape architects, Inc. assumes no liability, real or alleged, regarding the accuracy of the existing features or topographic information shown.

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GATEWAY PROGRAM

PORTABLE & SHADE STRUCTURES

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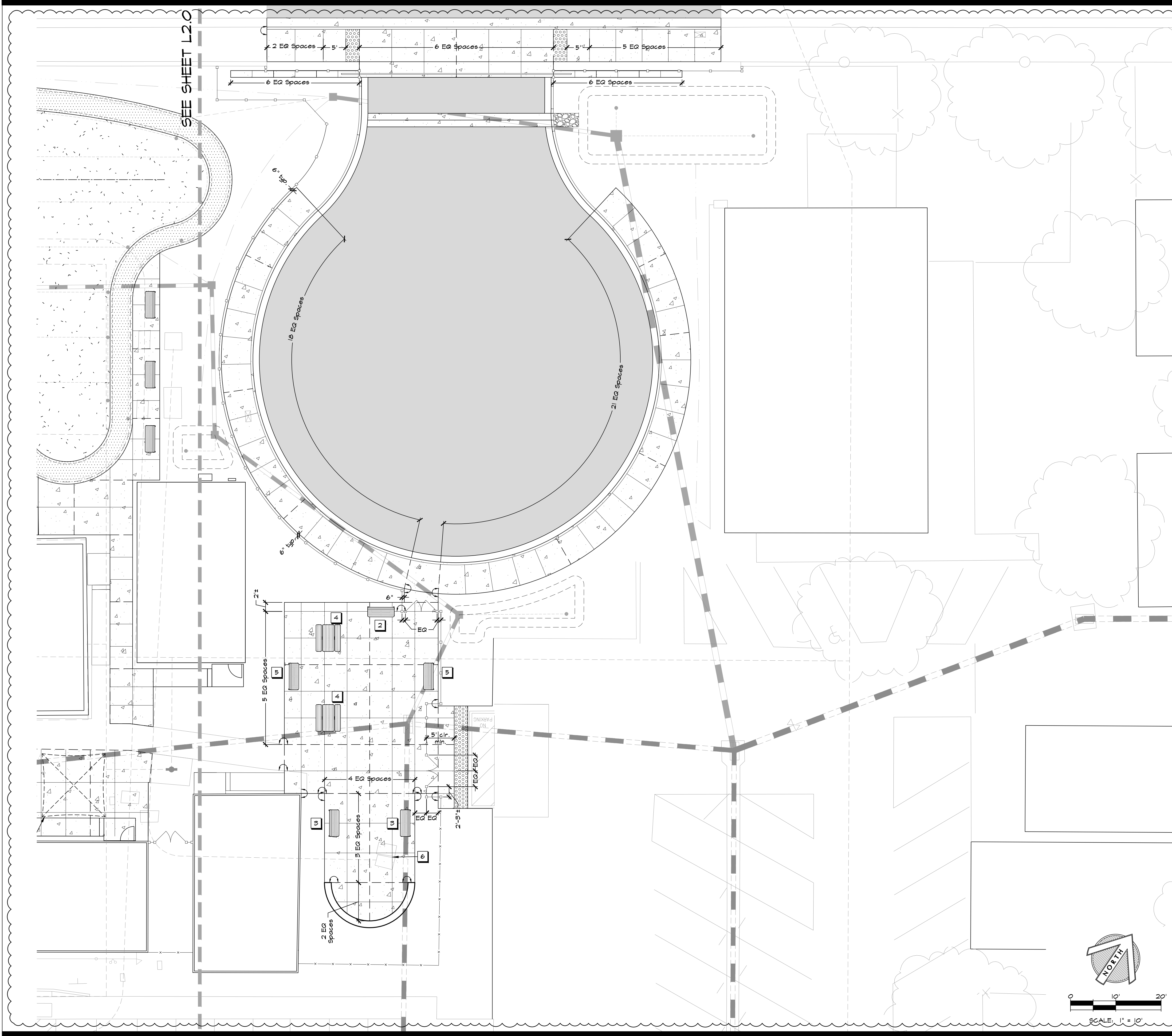
LIBERTY UNION HIGH SCHOOL DISTRICT

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DSA SUBMITTAL		
AUGUST 26, 2026		
SHEET TITLE		

LAYOUT PLAN

SHEET NUMBER

L2.0



LAYOUT LEGEND

- RX—Y— Radial Dimension
- X' X" Arc Dimension
- X' X" Linear Dimension
- x x Flush connection
- Align
- Guideline to show alignment
- Centerline
- EQ Equal

SHEET NOTES

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LAYOUT NOTES

See Sheet L2.0


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LANDSCAPE ARCHITECT
No. 2790
Exp. 10-31-28
STATE OF CALIFORNIA

GATEWAY PROGRAM

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LIBERTY UNION HIGH SCHOOL DISTRICT

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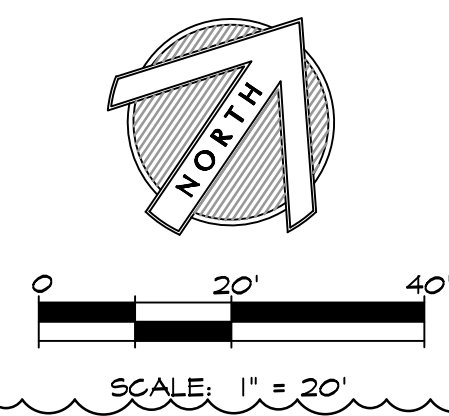
AUGUST 26, 2026

SHEET TITLE

LAYOUT PLAN

SHEET NUMBER

L2.1



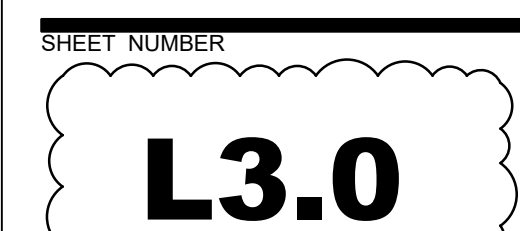
1. *ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. IRRIGATION EQUIPMENT MAY BE SHOWN WITHIN HARDSCAPE FOR GRAPHIC CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT WITHIN PLANTED AREAS. IRRIGATION PIPE AND WIRE CROSSING BENEATH HARDSCAPE SURFACES SHALL BE CONTAINED WITHIN SLEEVING OR SCHEDULE 40 PVC CONDUIT. SLEEVING SIZE SHALL BE A MINIMUM OF TWO TIMES THE AGGREGATE DIAMETER OF ALL PIPES CONTAINED WITH SLEEVE. PROVIDE VERTICAL SWEEP FOR ALL ELECTRICAL CONDUIT ON EACH SIDE OF HARDSCAPE AND TERMINATE ENDS AT 12" MINIMUM DEPTH AND 12" FROM HARDSCAPE SURFACE.
3. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 1.0 GPH OR LESS EMITTERS) SHALL BE AS FOLLOW:

0.75"

0-1100 FT
4. SIZING OF LATERAL PIPE FOR BUBBLERS SHALL BE AS FOLLOW:

BUBBLERS	PIPE SIZE	GPM	NO. OF BUBBLERS*
<u>SHRUB BUBBLERS</u> 0.25 GPM	0.75" 1" 1.25" 1.5"	1-6 7-12 12-20 21-32	1-24 25-48 49-80 81-128
<u>TREE BUBBLERS</u> 0.25 GPM	0.75" 1"	1-6 7-12	1-24 25-48

DATE: 8-18-2026

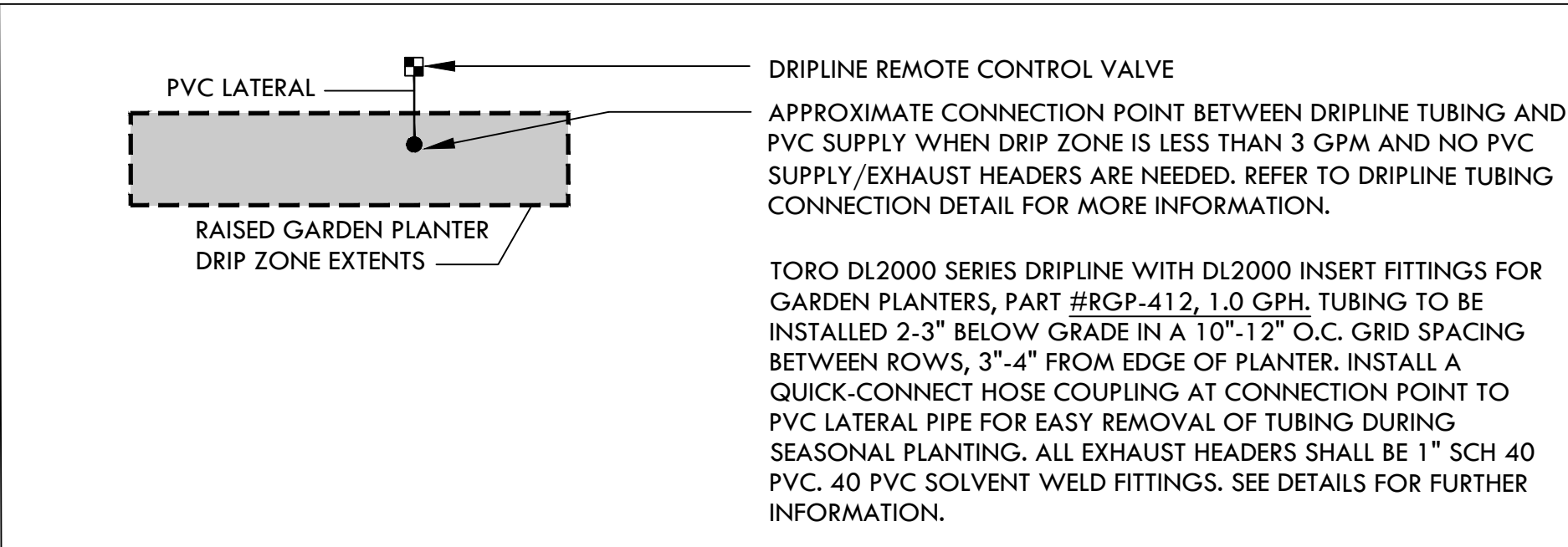


IRRIGATION NOTES

1. THESE IRRIGATION DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. ALL PIPING, VALVES, AND OTHER IRRIGATION COMPONENTS MAY BE SHOWN WITHIN PAVED AREAS FOR GRAPHIC CLARITY ONLY AND ARE TO BE INSTALLED WITHIN PLANTING AREAS. DUE TO THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, CONDUIT, AND OTHER ITEMS WHICH MAY BE REQUIRED. INVESTIGATE THE STRUCTURAL AND FINISHED CONDITION AFFECTING THE CONTRACT WORK INCLUDING OBSTRUCTIONS, GRADE DIFFERENCES OR AREA DIMENSIONAL DIFFERENCES. IN THE EVENT OF FIELD DISCREPANCY WITH CONTRACT DOCUMENTS, PLAN THE INSTALLATION WORK ACCORDINGLY BY NOTIFICATION AND APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND ACCORDING TO THE CONTRACT SPECIFICATIONS. NOTIFY AND COORDINATE IRRIGATION CONTRACT WORK WITH APPLICABLE CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE, CONDUIT OR SLEEVES THROUGH OR UNDER WALLS, ROADWAYS, PAVING AND STRUCTURES BEFORE CONSTRUCTION. IN THE EVENT THESE NOTIFICATIONS ARE NOT PERFORMED, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR REQUIRED REVISIONS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE, THE UNIFORM PLUMBING CODE, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER STATE OR LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR REGULATIONS. THE CONTRACTOR SHALL FURNISH WITHOUT ANY EXTRA CHARGE, ANY ADDITIONAL MATERIAL AND LABOR WHEN REQUIRED BY THE COMPLIANCE WITH THESE CODES AND REGULATIONS.
3. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH LAYOUT AND INSTALLATION OF THE PLANT MATERIALS TO INSURE THAT THERE WILL BE COMPLETE AND UNIFORM IRRIGATION COVERAGE OF PLANTING IN ACCORDANCE WITH THESE DRAWINGS, AND CONTRACT DOCUMENTS. THE IRRIGATION LAYOUT SHALL BE CHECKED BY THE CONTRACTOR AND OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO CONSTRUCTION TO DETERMINE IF ANY CHANGES, DELETIONS, OR ADDITIONS ARE REQUIRED. IRRIGATION SYSTEM SHALL BE INSTALLED AND TESTED PRIOR TO INSTALLATION OF PLANT MATERIAL.
4. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH.
5. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR AND/OR OWNER TO PROGRAM THE IRRIGATION CONTROLLER(S) TO PROVIDE THE MINIMUM AMOUNT OF WATER NEEDED TO SUSTAIN GOOD PLANT HEALTH. THIS INCLUDES MAKING ADJUSTMENTS TO THE PROGRAM FOR SEASONAL WEATHER CHANGES, PLANT MATERIAL, WATER REQUIREMENTS, MOUNDS, SLOPES, SUN, SHADE AND WIND EXPOSURE.
6. IT IS THE RESPONSIBILITY OF A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120 VOLT A.C. (2.5 AMP DEMAND PER CONTROLLER) ELECTRICAL SERVICE TO THE CONTROLLER LOCATION(S). IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE THE ELECTRICAL SERVICE STUB-OUT TO THE CONTROLLER(S). PROVIDE PROPER GROUNDING PER CONTROLLER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL CODES.
7. INSTALL 3" DETECTABLE TAPE ABOVE ALL PRESSURIZED MAIN LINES AS DETAILED. USE CHRISTY MODEL #TA-DT-3-BIRR FOR PORTABLE IRRIGATION SYSTEMS IRRIGATION WATER SYSTEMS.
8. PROVIDE EACH IRRIGATION CONTROLLER WITH ITS OWN INDEPENDENT LOW VOLTAGE COMMON GROUND WIRE.
9. IRRIGATION CONTROL WIRES: SOLID COPPER WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. COMMON GROUND WIRE: SIZE #12-1 WIRE WITH A WHITE INSULATING JACKET. CONTROL WIRE SERVICING REMOTE CONTROL VALVES: SIZE #14-1 WIRE WITH INSULATING JACKET OF COLOR OTHER THAN WHITE. SPLICES SHALL BE MADE WITH 3M-DBY SEAL PACKS OR APPROVED EQUAL.
10. INSTALL TWO SPARE CONTROL WIRES OF A DIFFERENT COLOR ALONG THE ENTIRE MAIN LINE. LOOP 36" EXCESS WIRE INTO EACH SINGLE VALVE BOX AND INTO ONE VALVE BOX IN EACH GROUP OF VALVES.
11. SPLICING OF LOW VOLTAGE WIRES IS PERMITTED IN VALVE BOXES ONLY. LEAVE A 36" LONG, 1" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRES TOGETHER EVERY TEN FEET. DO NOT TAPE WIRES TOGETHER WHERE CONTAINED WITHIN SLEEVING OR CONDUIT.
12. INSTALL BLACK PLASTIC VALVE BOXES WITH BOLT DOWN, NON HINGED COVER MARKED "IRRIGATION CONTROL VALVE". BOX BODY SHALL HAVE KNOCK OUTS. ACCEPTABLE VALVE BOX MANUFACTURER'S INCLUDE NDS, CARSON OR APPROVED EQUAL.

13. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, BUILDING OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, INSTALL EACH BOX AN EQUAL DISTANCE FROM THE WALK, CURB, BUILDING OR LANDSCAPE FEATURE AND PROVIDE 12" BETWEEN BOX TOPS. ALIGN THE SHORT SIDE OF RECTANGULAR VALVE BOXES PARALLEL TO WALK, CURB, BUILDING OR LANDSCAPE FEATURE.
14. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, HEADER BOARD, BUILDING, OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, INSTALL EACH BOX 12" FROM THE WALK, CURB, HEADER BOARD, BUILDING, OR LANDSCAPE FEATURE AND INSTALL EACH BOX 12" APART.
15. VALVE LOCATIONS SHOWN ARE DIAGRAMMATIC. INSTALL IN GROUND COVER/ SHRUB AREAS (AVOID LAWN AREAS WHERE POSSIBLE).
16. THE CONTRACTOR SHALL LABEL CONTROL LINE WIRE AT EACH REMOTE CONTROL VALVE WITH A 2 1/4" X 2 3/4" POLYURETHANE I.D. TAG, INDICATING IDENTIFICATION NUMBER OF VALVE (CONTROLLER AND STATION NUMBER). ATTACH LABEL TO CONTROL WIRE. THE CONTRACTOR SHALL PERMANENTLY STAMP ALL VALVE BOX LIDS WITH APPROPRIATE IDENTIFICATION AS NOTED IN CONSTRUCTION DETAILS.
17. LOCATE BUBBLERS ON UPHILL SIDE OF PLANT OR TREE.
18. INSTALL A HUNTER HCV SERIES, KBI CV SERIES, OR APPROVED EQUAL SPRING LOADED CHECK VALVE IN SPRINKLER RISER ASSEMBLIES WHERE LOW OUTLET DRAINAGE WILL CAUSE EROSION AND/OR EXCESS WATER.
19. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, USE CAUTION TO AVOID INJURY TO TREES AND TREE ROOTS. EXCAVATE BY HAND IN AREAS WHERE TWO (2) INCH AND LARGER ROOTS OCCUR. BACK FILL TRENCHES ADJACENT TO TREE WITHIN TWENTY-FOUR (24) HOURS. WHERE THIS IS NOT POSSIBLE, SHADE THE SIDE OF THE TRENCH ADJACENT TO THE TREE WITH WET BURLAP OR CANVAS.
20. NOTIFY LOCAL JURISDICTIONS FOR INSPECTION AND TESTING OF INSTALLED BACKFLOW PREVENTION DEVICE.
21. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN ON THE IRRIGATION DRAWINGS. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE.
22. IRRIGATION DEMAND: REFER TO PLANS.
23. THE EXISTING MAIN LINE SHOWN ON THE DRAWINGS IS DIAGRAMMATIC. VERIFY AND LOCATE EXISTING MAIN LINE IN FIELD. REPORT TO ARCHITECT IN WRITING ANY DEVIATION OF EXISTING MAIN LINE LOCATION FROM THAT SHOWN ON THE DRAWINGS.
24. AT POINTS OF CONNECTION BETWEEN EXISTING SOLVENT WELD MAIN LINE AND A NEW MAIN LINE BRANCH, USE THE FOLLOWING PROCEDURE:

A. REMOVE A PORTION OF EXISTING MAINLINE.
B. FABRICATE A TEE WITH TWO 12" SECTIONS OF PIPE ON EACH SIDE OF A SCH 80 TEE. USE A SCH 80 COUPLING ON ONE SIDE OF PIPE TO CONNECT NEW SECTION TO OLD. USE A ROMAC, HYMAX OR SMITH BLAIR REPAIR COUPLING WITHOUT A CENTER STOP ON OTHER SIDE OF TEE TO CONNECT EXISTING MAINLINE. NO SLIP FIXES ARE ALLOWED.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE IRRIGATION SYSTEM DESIGN IF THE PLANTING DESIGN CHANGES FROM THE ORIGINAL PLAN AND NEEDS TO ADAPT TO THE NEW PLANTING DESIGN. THE LANDSCAPE CONTRACTOR NEEDS TO NOTIFY THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT OF PROPOSED CHANGES PRIOR TO INSTALLATION FOR APPROVAL.
26. WHEN WORK OF THIS SECTION HAS BEEN COMPLETED AND SUCH OTHER TIMES AS MAY BE DIRECTED, REMOVE ALL TRASH, DEBRIS, SURPLUS MATERIALS AND EQUIPMENT FROM SITE.
27. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL HAND WATERING OF ALL PLANT MATERIAL WITHIN DRIPLINE AREAS UNTIL THE PLANTS ARE SUFFICIENTLY ESTABLISHED.
28. VERIFY LOCATIONS OF ALL IRRIGATION COMPONENTS INSTALLED WITHIN A VALVE BOX WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. DO NOT INSTALL UNTIL LANDSCAPE ARCHITECT PROVIDES ACCEPTABLE LOCATIONS.
29. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR CHANGES IN THE IRRIGATION LAYOUT DUE TO OBSTRUCTIONS NOT SHOWN ON THE IRRIGATION DRAWINGS SUCH AS LIGHTS, FIRE HYDRANTS, SIGNS, ELECTRICAL ENCLOSURES, ETC.



IRRIGATION LEGEND

SYMBOL	MODEL NUMBER	DESCRIPTION	NOZZLE GPM	OPERATING PSI	OPERATING RADIUS (FEET)
	1401	RAINBIRD BUBBLER, 1 PER SHRUB	0.25	30	TRICKLE
	RWS-B-C-1402	RAIN BIRD DEEP WATERING SYSTEM (TREE) MIN. 2 PER TREE. REFER TO BUBBLER DETAIL FOR QUANTITY OF BUBBLERS PER TREE SIZE.	0.50	30	TRICKLE
	T-YD-500-34	TORO DRIPLINE AIR RELIEF VALVE (NOT SHOWN - REFER TO INSTALLATION DETAILS)			
	WLT-0500-T	NDS SCH 40 BALL VALVE OR APPROVED EQUAL (NOT SHOWN - REFER TO INSTALLATION DETAILS)			
	570-DRIP-IND	TORO POP-UP DRIPLINE INDICATOR WITH SIDE INLET (NOT SHOWN - REFER TO INSTALLATION DETAILS)			
	2000 SERIES	GRISWOLD REMOTE CONTROL VALVE			
	2000-1" PRB-QKCHK-100	GRISWOLD REMOTE CONTROL VALVE WITH RAINBIRD PRESSURE REGULATING BASKET FILTER (40 PSI)			
	44-LRC	RAIN BIRD 1" TWO-PIECE QUICK COUPLING VALVE (YELLOW LOCKING RUBBER COVER)			
	T113-K SERIES	NIBCO BRASS GATE VALVE			
	975XL2-1.5" / VIT SBBC-30AL /PBB-30	WILKINS REDUCED PRESSURE BACKFLOW ASSEMBLY WITH VIT STRONGBOX ALUMINUM ENCLOSURE AND FREEZE BLANKET.			
	M120-100LNSX-HL	BADGER RECORDALL 1.5" NPT WATER METER INSIDE VALVE BOX			
	QS200-1.5	FLOMEC 1.5" PVC FLOW SENSOR			
	3300-1.5"	SUPERIOR MASTER VALVE-1.5" (NORMALLY OPEN)			
	EGP8-S/ EGP8-OPB(2) EGP-I-CENTRAL	RAIN MASTER EAGLE PLUS 24 STA CONVENTIONAL WIRE CONTROLLER IN A STAINLESS STEEL WALL MOUNT ENCLOSURE; INCLUDES I-CARD, CELL COMMUNICATION KIT AND TWO YEARS RAIN MASTER I-CENTRAL SERVICE.			
	RS-1000	IRRITROL WIRELESS RAIN SENSOR MOUNTED TO BUILDING ROOF EDGE PER MANUFACTURER INSTRUCTIONS			
		CONTROLLER AND STATION NUMBER			
		FLOW (GPM)			
		REMOTE CONTROL VALVE SIZE (IN INCHES)			
		ASSOCIATED REMOTE CONTROL VALVE			
		CONTROLLER AND STATION NUMBER			
		AREA (SQ. FT.)			
		FLOW (GPM)			
		REMOTE CONTROL VALVE SIZE (IN INCHES)			
		ASSOCIATED REMOTE CONTROL VALVE			
		DOMESTIC SERVICE LINE (EXISTING)			
		MAIN LINE:	2" AND SMALLER: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 18" COVER.		
		LATERAL LINE:	3/4" AND LARGER: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.		
		DRIPLINE LATERAL LINE:	3/4": 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.		
		SLEEVING:	SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. COVER TO BE AS INDICATED IN SPECIFICATIONS OR AS INDICATED ABOVE FOR PIPE DEPTH OF COVER.		
		ELECTRICAL CONDUIT:	SCHEDULE 40 PVC PLASTIC CONDUIT. REFER TO CONTROLLER DETAIL FOR MORE INFORMATION. 18" COVER.		
		FLOW SENSOR/ MASTER CABLE:	APPROXIMATE ROUTING OF FLOW SENSOR AND MASTER VALVE WIRES IN SEPARATE 1" CONDUITS. REFER TO DETAILS FOR MORE INFORMATION. 18" COVER.		

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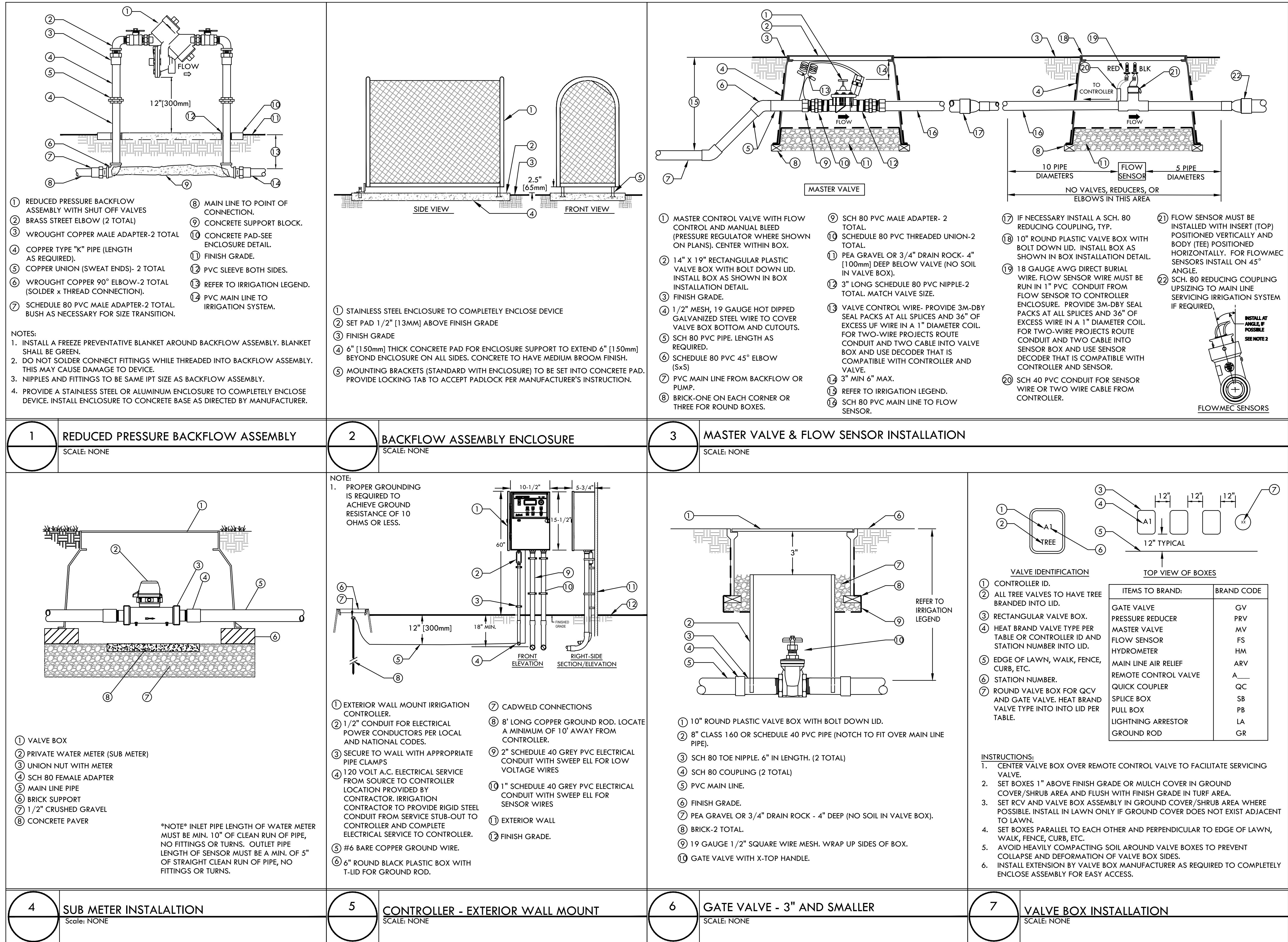
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IRRIGATION NOTES AND LEGEND

SHEET NUMBER

L3.1





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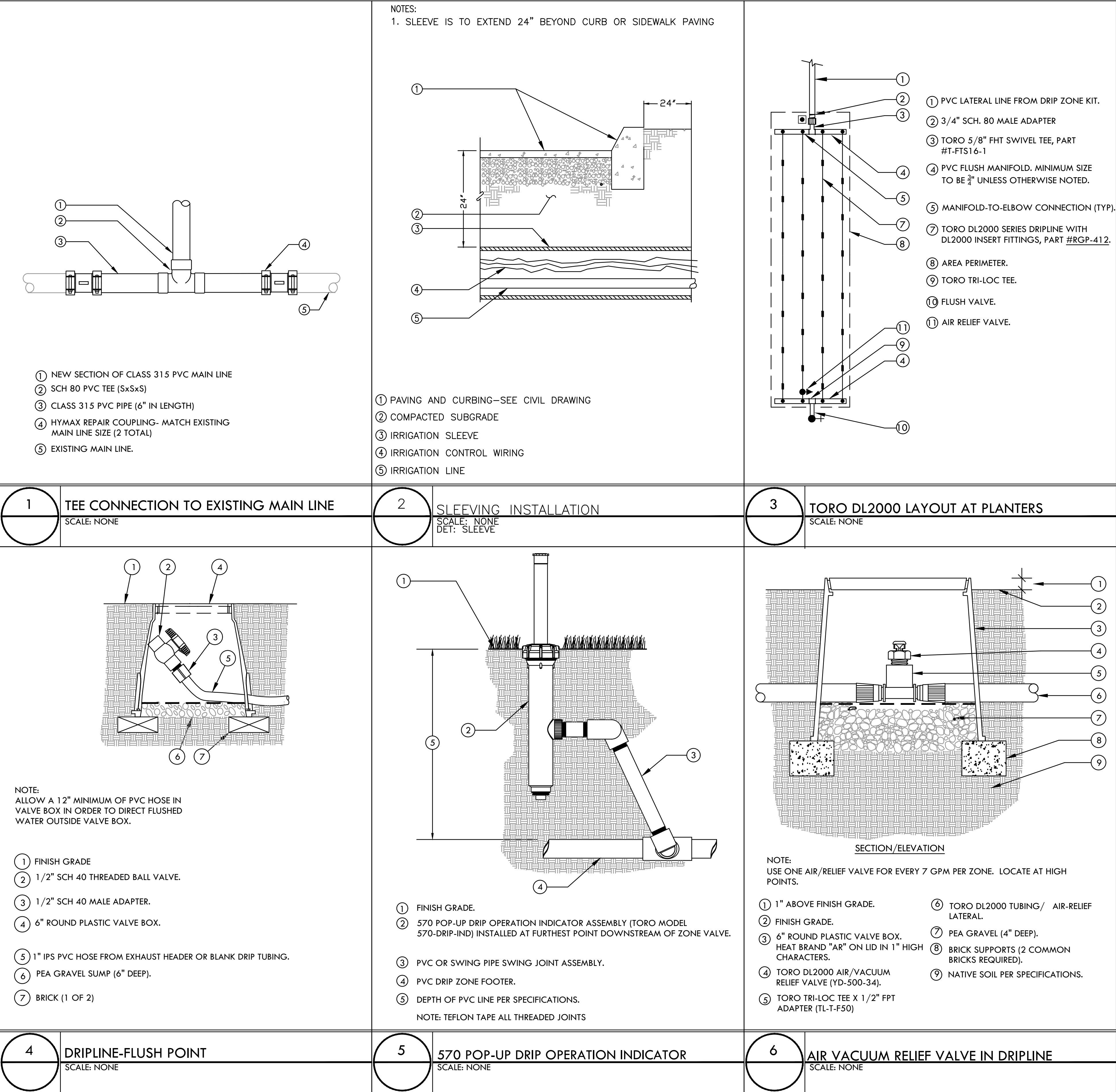
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IRRIGATION DETAILS

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L3.3




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**IRRIGATION
DETAILS**

SHEET NUMBER
L3.4

JOB NAME:	LUHSD Gateway
DATE:	7/13/26
METER # OR LOCATION	See Plan
ELEVATION AT METER (FT)	75
STATIC PRESSURE AT METER (PSI)	62

Item	Type	Size (in.)	Length (ft.)	x	Loss/100'	PSI Loss
SERVICE LINE	COPPER	2	20	x	0.18	= 0.04
WATER METER	DISC	1.5				= 0.40
BACKFLOW (X2)	BRASS	2				= 24
INLET PRESSURE INTO PUMP/MV					37.6	
MASTER VALVE	C.I./BRASS	1.5				= 0.5
FLOW SENSOR	PVC	1.5				= 0.1
SUB METER	BRASS	1.5				= 0.5
MAIN LINE:	SCH 40	2	460	x	0.12	= 0.6
ELEV. FITTING LOSS	PVC				10%	= 0.2
ELEVATION CHANGE FROM POC TO RCV:	Feet +/-					
	0	x .433 PSI				= 0.0
					TOTAL LOSS TO RCV	= 26.2
STATIC PRESSURE AT POC (PSI):	62.0	-LOSS:	26.2	=DYNAMIC PSI @ RCV:		35.8

DAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ETWU (GALLONS PER YEAR)	PERCENTAGE OF LANDSCAPE
MONTHLY ETO									
6.1	7.1	7.9	6.7	5.2	3.2	1.4	0.7		

WATER TYPE	POTABLE			
CITY	Brentwood	*Nearest City to project with published ET data		
ETO	48.2			
DATE	7/9/2026			

STATION/HYDROZONE	GPM	AREA (sq.ft) (HA)	WATER USE TYPE (LW=LOW, MW=MOD, HW=HIGH)	PLANT TYPE	IRRIGATION TYPE	PLANT FACTOR (PF)	IRRIGATION EFFICIENCY (IE)	PRECIP. RATE/ APPLICATION RATE (IN/HR)	ETAF (Pf/IE)	CYCLES PER DAY	DAYS PER WEEK	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ETWU (GALLONS PER YEAR)	PERCENTAGE OF LANDSCAPE
												MONTHLY ETO													
												1.0	1.5	2.9	4.5	6.1	7.9	6.7	5.2	3.2	1.4	0.7			
												TOTAL RUN TIME IN MINUTES PER DAY													
C-1	12	810	LW	SHRUB GC LW	BUBBLER (SHRUB)	0.3	0.81	1.91	0.4	2	3	0.0	0.0	3.0	4.0	6.0	7.0	6.0	5.0	3.0	2.0	0.0	8,965	7%	
C-2	6	880	LW	TREE LW	BUBBLER (TREE) 0.5 GPM	0.3	0.85	0.85	0.4	2	2	0.0	0.0	9.0	14.0	19.0	21.0	24.0	20.0	16.0	10.0	5.0	0.0	9,740	8%
C-3	4	292	HW	VEGETABLE HW	DRIP LINE 12"	0.8	0.81	0.9	1.0	2	4	0.0	0.0	11.0	17.0	23.0	27.0	30.0	25.0	20.0	12.0	6.0	0.0	8,618	3%
C-4	12	810	MW	SHRUB GC MW	BUBBLER (SHRUB)	0.5	0.81	1.91	0.6	2	3	0.0	0.0	5.0	7.0	9.0	11.0	12.0	10.0	8.0	5.0	3.0	0.0	14,942	7%
C-5	12	828	LW	SHRUB GC LW	BUBBLER (SHRUB)	0.3	0.81	1.91	0.4	2	3	0.0	0.0	3.0	4.0	6.0	7.0	7.0	6.0	5.0	3.0	2.0	0.0	9,164	7%
C-6	5	324	LW	SHRUB GC LW	BUBBLER (SHRUB)	0.3	0.81	1.91	0.4	2	3	0.0	0.0	3.0	4.0	6.0	7.0	6.0	5.0	3.0	2.0	0.0	3,586	3%	
C-7	6	414	LW	SHRUB GC LW	BUBBLER (SHRUB)	0.3	0.81	1.91	0.4	2	3	0.0	0.0	3.0	4.0	6.0	7.0	7.0	6.0	5.0	3.0	2.0	0.0	4,582	4%
C-8	4	480	LW	TREE LW	BUBBLER (TREE) 0.5 GPM	0.3	0.81	0.85	0.4	2	2	0.0	0.0	9.0	14.0	19.0	21.0	24.0	20.0	16.0	10.0	5.0	0.0	5,313	4%
C-9	17	1170	LW	SHRUB GC LW	BUBBLER (SHRUB)	0.3	0.81	1.91	0.4	2	3	0.0	0.0	3.0	4.0	6.0	7.0	7.0	6.0	5.0	3.0	2.0	0.0	12,950	10%
C-10	12	846	MW	SHRUB GC MW	BUBBLER (SHRUB)	0.5	0.81	1.91	0.6	2	3	0.0	0.0	5.0	7.0	9.0	11.0	12.0	10.0	8.0	5.0	3.0	0.0	15,606	7%
C-11	4	480	LW	TREE LW	BUBBLER (TREE) 0.5 GPM	0.3	0.81	0.85	0.4	2	2	0.0	0.0	9.0	14.0	19.0	21.0	24.0	20.0	16.0	10.0	5.0	0.0	5,313	4%
C-12	9	612	LW	BIOSWALE LW	BUBBLER (SHRUB)	0.3	0.81	1.91	0.4	2	3	0.0	0.0	3.0	4.0	6.0	7.0	7.0	6.0	5.0	3.0	2.0	0.0	6,774	5%
C-13	3	612	LW	TREE LW	BUBBLER (TREE) 0.5 GPM	0.3	0.81	0.85	0.4	2	2	0.0	0.0	9.0	14.0	19.0	21.0	24.0	20.0	16.0	10.0	5.0	0.0	6,774	5%
C-14	13	1008	LW	SHRUB GC LW	BUBBLER (SHRUB)	0.3	0.81	1.91	0.4	2	3	0.0	0.0	3.0	4.0	6.0	7.0	7.0	6.0	5.0	3.0	2.0	0.0	11,157	9%
C-15	7	522	LW	SHRUB GC LW	BUBBLER (SHRUB)	0.3	0.81	1.91	0.4	2	3	0.0	0.0	3.0	4.0	6.0	7.0	7.0	6.0	5.0	3.0	2.0	0.0	5,778	5%
C-16	10	720	LW	BIOSWALE LW	BUBBLER (SHRUB)	0.3	0.81	1.91	0.4	2	3	0.0	0.0	3.0	4.0	6.0	7.0	7.0	6.0	5.0	3.0	2.0	0.0	7,969	6%
C-17	1	160	LW	TREE LW	BUBBLER (TREE) 0.5 GPM	0.3	0.81	0.85	0.4	2	2	0.0	0.0	9.0	14.0	19.0	21.0	24.0	20.0	16.0	10.0	5.0	0.0	1,771	1%
C-18	5																								

HYDROZONE #	HYDROZONE NAME	AREA (sq.ft) (HA)	Percentage of Landscape
A	Garden	292	3%
			0%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR
$\text{MAWA} = (\text{ETo}) \times (0.62) [(L \times 0.45) + (0.55 \times \text{SLA})]$

ET₀ = REFERENCE EVAPOTRANSPIRATION

0.45 = ET ADJUSTMENT FACTOR

LA = LANDSCAPED AREA (SQUARE FEET)

0.62 = CONVERSION FACTOR (GALLONS/SQ. FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR
$ETWU = ((ETO) (62) (ETAF \times LA))$

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

HA = HYDROZONE AREA (SQ.FT)		
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)		



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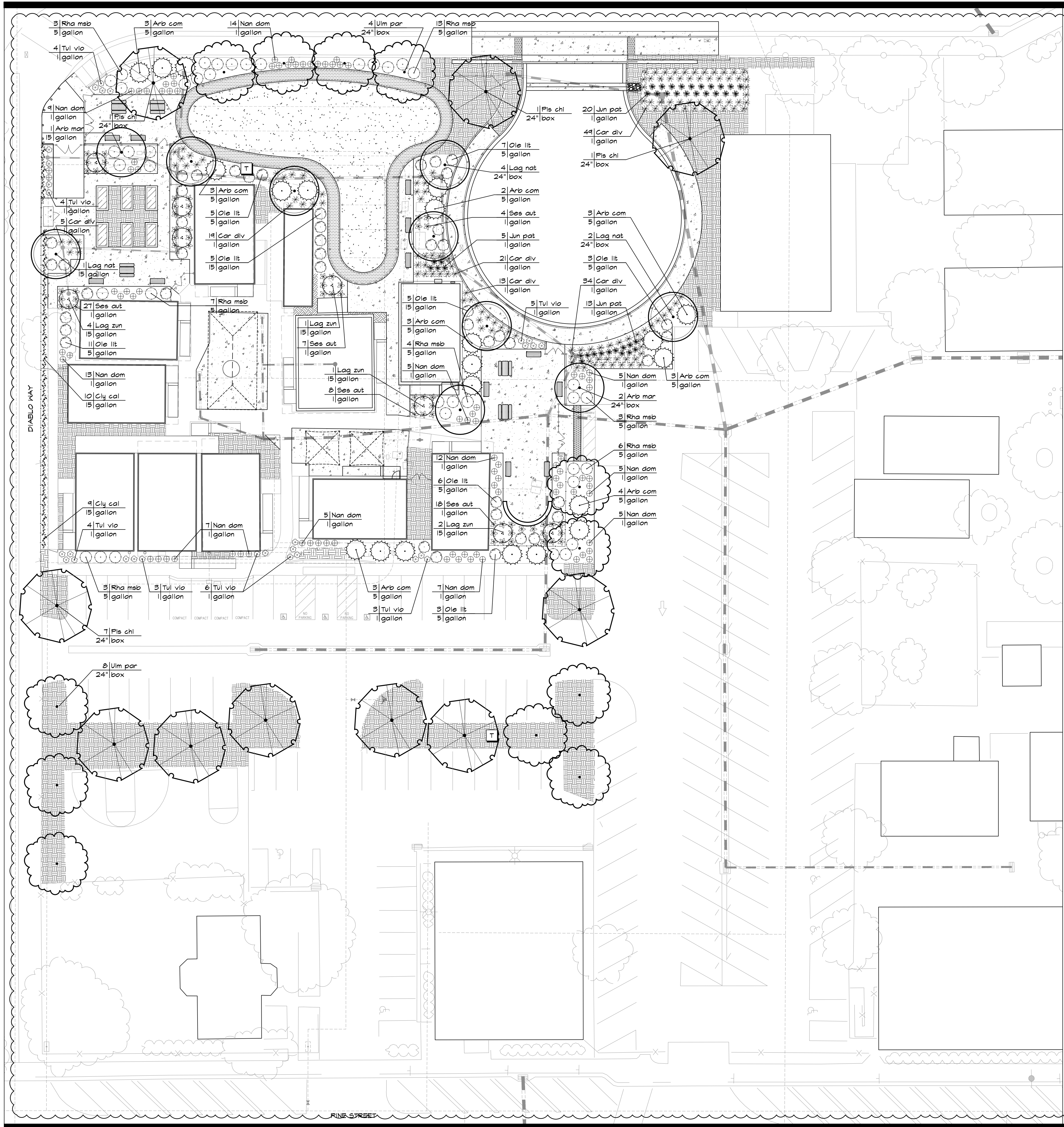
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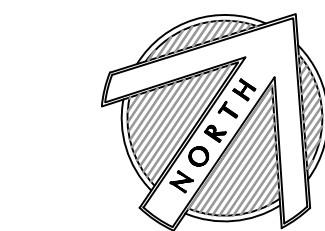
SHEET NUMBER

L3.5



PLANT LEGEND

SYMBOL	CODE	BOTANICAL NAME COMMON NAME	SIZE	WATER USE	QUANTITY
TREES					
	Arb mar	Arbutus Marina' Marina Madrone	24" box	L	3
	Lag nat	Lagerstroemia 'Natchez' Natchez Grape Myrtle	24" box	VL	7
	Pis chi	Pistacia chinensis 'Red Push' Red Push Chinese Pistache	24" box	L	10
	Ulm par	Ulmus parvifolia 'True Green' True Green Chinese Elm	24" box	L	12
SHRUBS, GROUNDCOVER, GRASSES					
	Arb com	Arbutus unedo 'Compacta' Compact Strawberry Tree	5 gallon	L	21
	Car div	Carex divisa Grey Sedge	1 gallon	L	141
	Jun pat	Juncus patens California Gray Rush	1 gallon	L	38
	Lag zun	Lagerstroemia indica x fauriei 'Zuni' Zuni Grape Myrtle - Multitrunk	15 gallon	L	8
	Nan dom	Nandina domestica 'Gulf Stream' Gulf Stream Heavenly Bamboo	1 gallon	L	87
	Ole lit	Olea europaea 'Little Ollie' Fruitless Dwarf Olive	5 gallon	L	45
	Rha msb	Rhamnus californica 'Mound San Bruno' Mound San Bruno Coffeeberry	5 gallon	L	39
	Ses aut	Sesleria autumnalis Autumn Moor Grass	1 gallon	M	64
	Thu vio	Tulbaghia violacea Society Garlic	1 gallon	L	29
VINE					
	Cly cal	Clytostoma callistegioides Lavender Trumpet Vine	15 gallon	M	19
	Planters: Provide and install 1/2" Mesh T316 welded stainless steel 0.041" wire diameter, inside of planters at surrounding finish grade elevation and extend up all interior sides 6" minimum. Provide and install Planter Mix, filled from surrounding finish grade to top of planters, available from Zanker Landscape Materials with Lab Recommended Amendments, or approved equal. See Planting Notes on L4.1 for mulch type.				
	Landscape Mulch (shown graphically for areas not planted). Remove weeds, mulch, and debris, and fine grade. Provide and install weed fabric and mulch. See Planting Notes on L4.1 for mulch type.				
	Soil test location. See Soil Management Notes on Sheet L4.1 for more information.				



SCALE: 1" = 20'

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LANDSCAPE ARCHITECT
No. 2790
Exp. 10-31-28
STATE OF CALIFORNIA

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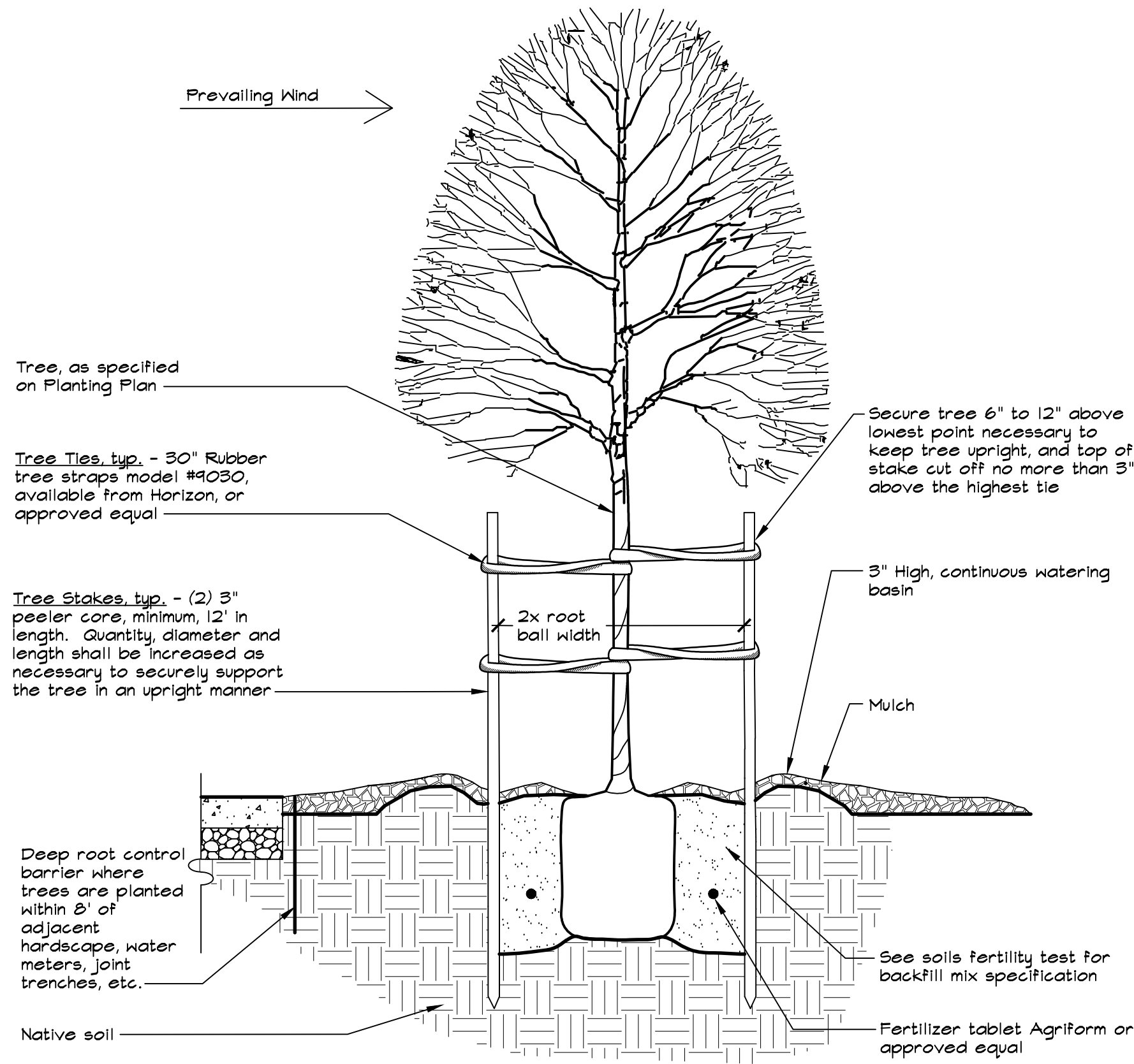
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PLANTING PLAN

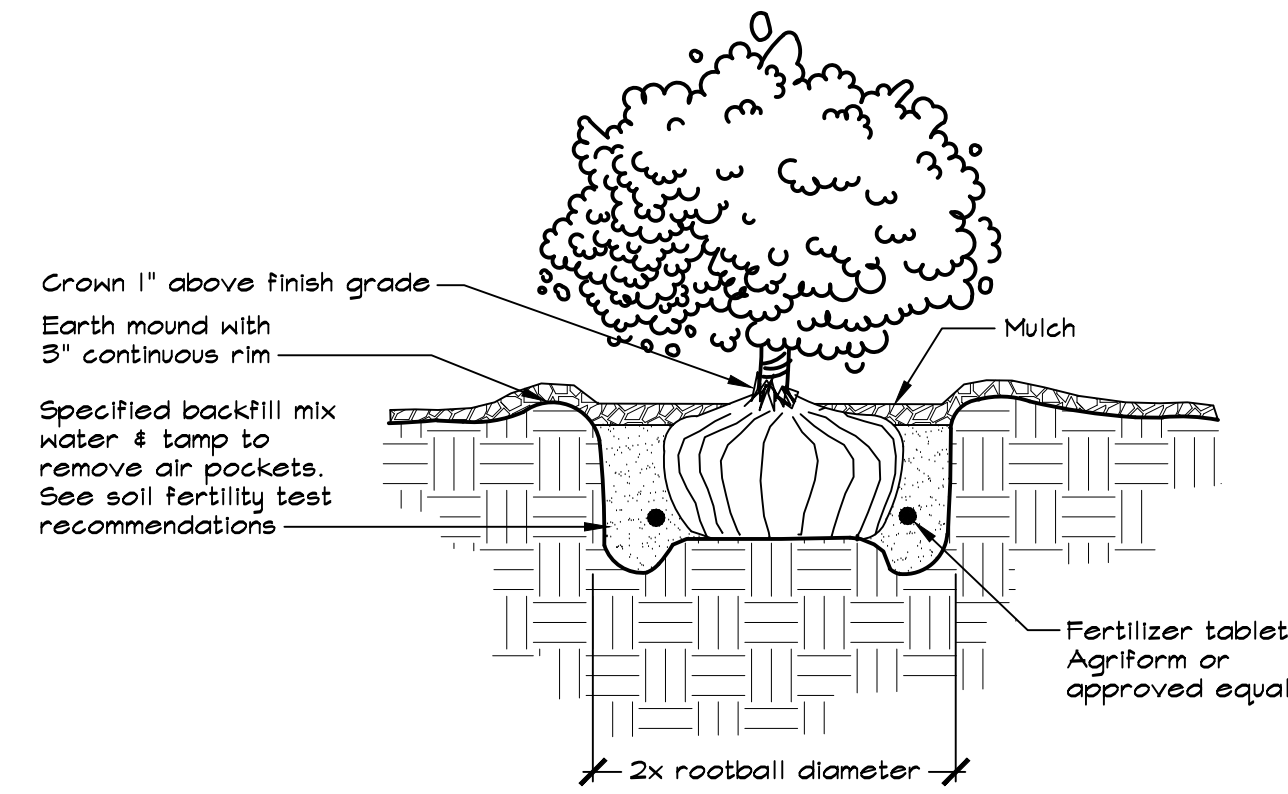
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L4.0



- NOTES:
1. Root ball shall rest on undisturbed soil.
 2. Plant tablets shall be equally spaced around root ball. The number of tablets shall be 4 for 15 gallon and 6 for 24", 36" box, or as specified in the soils fertility test recommendations.
 3. Contractor shall water planting pit thoroughly following planting.
 4. Trees shall be staked parallel with the direction of the prevailing wind.
 5. Tree stakes shall have equal degree of separation between stakes.
 6. Contractor shall use Deep Root Barrier where trees are planted within 8' of adjacent hardscape, water meters, joint trenches, etc. See Planting Notes on Planting Plan for more information.
 7. See Planting Notes on this Sheet for mulch specification.

1 TREE PLANTING AND STAKING

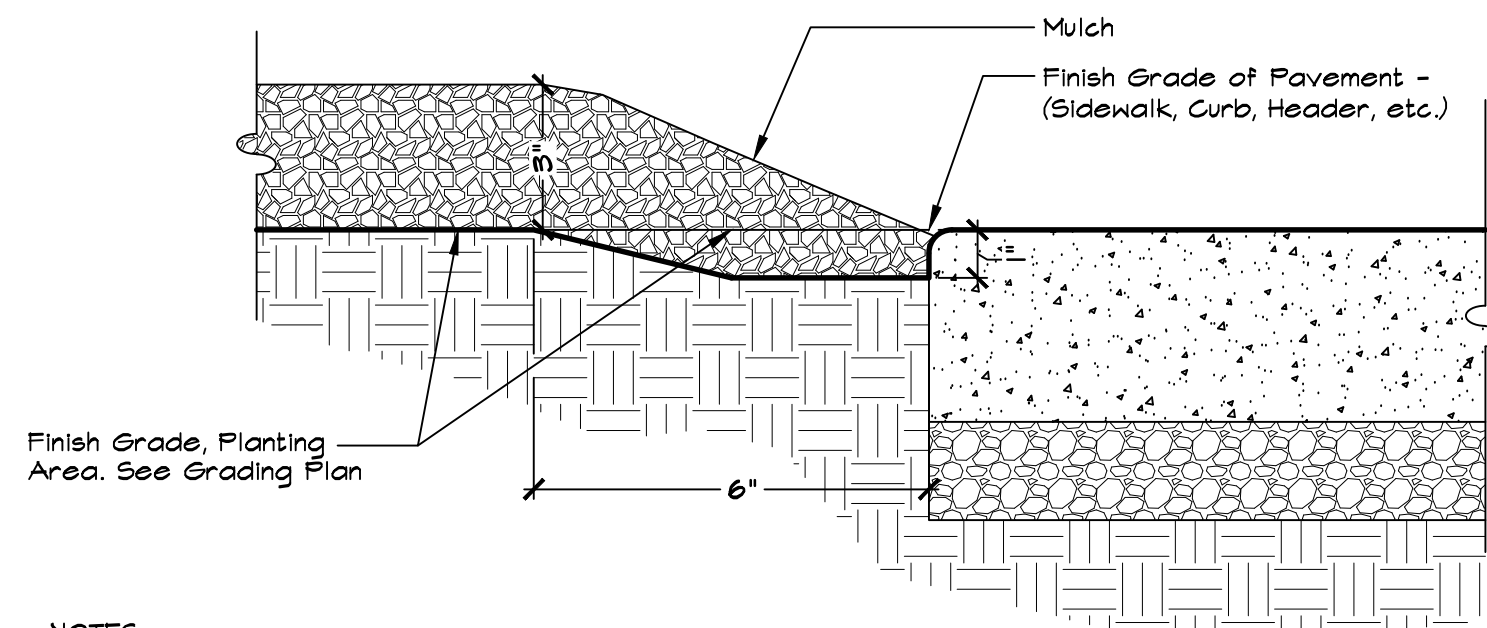
NOT TO SCALE



- NOTES:
1. Root ball shall rest on undisturbed soil.
 2. Plant tablets shall be equally spaced around root ball. The number of tablets shall be 1 for 4" pot or liner, 2 for 1 gallon, 3 for 5 gallon, and 4 for 15 gallon, or as specified in the soils fertility test recommendations.
 3. Contractor shall water planting pit thoroughly following planting.
 4. See Planting Notes on this Sheet for mulch specification.

2 SHRUB/GROUNDCOVER PLANTING

NOT TO SCALE



- NOTES:
1. Grading shall provide for natural runoff of water without low spots or pockets.
 2. See Planting Notes on this Sheet for mulch specification.

3 MULCH

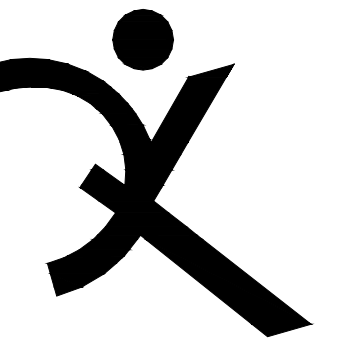
NOT TO SCALE

PLANTING NOTES

1. Prior to commencement of planting, the Contractor shall verify locations of all underground utilities.
2. Contractor shall adjust all plant material around electrical utilities, valve boxes, etc., as required in the field.
3. All landscape grades shall be smooth and feathered in appearance.
4. Irrigation system shall be fully operational prior to planting. Contractor shall thoroughly water all plants immediately after planting.
5. All trees shall be staked and installed per planting details. All trees shall be of adequate trunk caliper to stand without support.
6. Installing Contractor shall verify existing grade in the field prior to planting. Finished surfaces shall be uniform and smooth. Finished grade of planting and bark mulch areas shall be flush with top of edging, pavement and walks.
7. Soil for all exposed soil and planting areas except sod and bioretention areas shall receive weed fabric and a 3" minimum depth of bark mulch. Bark mulch shall be Eco-Mini Natural Mulch, as available through EcoMulch, 5010 Pacheco Blvd., Martinez, (425) 228-1673. Bioretention areas shall receive 3" minimum depth of the compost used in the bioretention soil mix.
8. All trees planted within 8' of adjacent paving, curbing, hardscape, water meters, joint trenches, etc. shall receive Deep Root Barrier UB 24-2 (24" depth x 10' min. length) as manufactured by Deep Root Partners (800) 458-1668, or approved equal.
9. No plant material shall be substituted without prior written consent from the Landscape Architect.
10. Contractor shall be responsible for the pre-ordering of all plant material after the Notice to Proceed. Photographs for all plants shall be submitted to the Landscape Architect prior to placing order.
11. All plant material shall be certified by the Agricultural Commissioner inspection program for freedom from the glassy winged sharpshooter or other pests identified by the Agricultural Commissioner. The Agricultural Commissioner's office shall be notified of all impending deliveries of live plants with points of origin outside of the County so that inspection can be arranged.
12. All plants of the same type and container size shall be matched in height and width.
13. The Plant Legend is provided for convenience only, not accurate bidding purposes. Graphic depiction of plant material shall take precedence over stated quantities. Contractor shall notify the Landscape Architect to obtain clarification if there are discrepancies.

SOILS MANAGEMENT NOTES

- A. The following organic amendments, soil amendments and fertilizer rates and quantities shall be used for bid basis only. Contractor shall arrange and pay for soil fertility testing by an accredited soils laboratory of existing site soil after rough grading operations are complete, and shall amend the soils, according to said laboratory's recommendations. The soils recommendations shall be considered a part of these contract documents. The soils report must provide the following information:
 1. Soil permeability rate in inches per hour.
 2. Soil texture test.
 3. Cation exchange capacity.
 4. Soil fertility, including test for nitrogen, potassium, phosphorous, pH, organic matter and specific conductance (electrical conductivity).
 5. Recommendation for amendments to the planting area soil.
- B. Topsoil: All landscape areas shall have a minimum 8" depth of topsoil with greater depths as required for planting work. Contractor shall provide topsoil which is fertile and friable, possessing characteristics of representative productive soils on the site. It shall not contain toxic substances which may be harmful to plant growth. When herbicide contamination is suspected then a radish/rye grass growth trial must be performed. Consult with the District prior to decision to test. It shall be uniformly textured and free of all objectionable foreign materials, oil or chemicals which may be injurious to plant growth. Natural topsoil shall possess a pH factor between 5.5 and 7.5, a sodium absorption ratio (SAR) of less than 8, a boron concentration of the saturation extract of less than 1 ppm, and salinity of the saturation extract at 25 degrees C. of less than 4.0 millimhos per centimeter. If required to import topsoil, Contractor shall obtain topsoil from naturally well-drained sites where topsoil occurs in a depth of not less than four inches (4"); do not obtain from bogs or marshes.
- C. Organic Amendment: Nitrified fir bark having a minimum organic content of 94% and a nitrogen content of 0.8% minimum to 1.2% maximum on a dry weight basis. Fir bark shall be shredded to pass a one quarter inch (1/4") mesh screen. Incorporate organic amendment and fertilizer into the soil to a minimum depth of six inches (6") at a minimum rate of six cubic yards (6 cu yd) per one thousand square feet (1,000 sf) or per specific amendment recommendations from the soils report.
- D. Fertilizer:
 1. Fertilizer shall be a commercial inorganic fertilizer in the granular or pelleted form. Fertilizer shall be delivered to the site in containers labeled in accordance with the applicable State of California regulations, bearing the warranty of the producer or the grade furnished, and shall be uniform in composition, dry and free-flowing.
 2. Turf, Shrubs, Groundcover, Grasses, and Vines:
 - a. 6N-20P-20K, and 16-6-8, pelleted type.
 - b. Sulphate - sulphur
 - c. Lime for pH adjustment of moderately acid soil
 - d. Starting one (1) month after planting, on a monthly basis, 21N-0P-0K Ammonium sulfate. 5 lbs. per 1,000 square feet.
 3. Trees:
 - a. 21 gram 20N-10P-5K slow release fertilizer tablets as manufactured by Agriform. Apply according to manufacturer's instructions.
 - b. After planting: 21N-0P-0K Ammonium sulfate 5lbs. per 1,000 square feet.



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AUGUST 26, 2026		
SHEET TITLE		

PLANTING DETAILS

SHEET NUMBER
L4.1

SCALE: 1" = 20'-0"



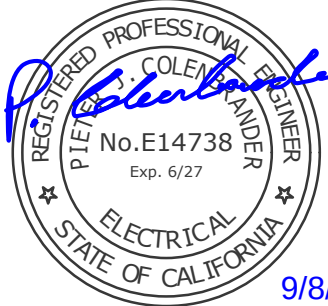
- 1 (E) PORTABLE BUILDING POWER PANEL WITH (E) POWER FEEDER CONNECTION TO REMAIN. PROTECT IN PLACE.
- 2 PORTABLE BUILDING POWER PANEL, PROVIDED WITH PORTABLE BUILDING. PROVIDE (N) POWER FEEDER, PER E-5.1, AND CONNECT COMPLETE AS SHOWN, WITH GROUNDING, PER 1/E-7.1.
- 3 (E) PORTABLE BUILDING LOW VOLTAGE AND FIRE ALARM SYSTEM CONNECTIONS TO REMAIN. PROTECT IN PLACE.
- 4 PORTABLE BUILDING LOW VOLTAGE SYSTEM CONNECTION LOCATION, PROVIDED WITH PORTABLE BUILDING. PROVIDE (N) LOW VOLTAGE SYSTEM CONNECTIONS AND CONNECT COMPLETE AS SHOWN ON E-3.1 AND 2/E-5.1.
- 5 (E) POWER FEEDER TO (E) PORTABLES, TO REMAIN. FIELD SURVEY / LOCATE AND PROTECT IN PLACE.
- 6 (E) LOW VOLTAGE SYSTEM FEEDERS TO (E) PORTABLES, TO REMAIN. FIELD SURVEY / LOCATE AND PROTECT IN PLACE. PROVIDE AND INSTALL (N) FIBER IN (E) RACEWAY, FROM 'MDF' TO (E) 'TTC' AND (N) 2" C. FROM (E) 'TTC' TO (N) IDF-K.
- 7 PROVIDE AND INSTALL (N) UNDERGROUND POWER FEEDER, PER E-5.1 AND 8/E-7.1.
- 8 PROVIDE AND INSTALL (N) 2" UNDERGROUND LOW VOLTAGE CONDUIT AND FIBER, BETWEEN PORTABLE AND (E) 'TTC'. SEE 8/E-7.1.
- 9 STUB-UP AT BACK OF (E) 'DP' AND TRANSITION ABOVE GROUND INTO 'DP' WITH CONDULET ELBOWS. SEAL WEATHER-TIGHT.
- 10 (E) MDF TO REMAIN. PROTECT IN PLACE, INCLUDING ALL (E) INCOMING AND OUTGOING CABLING. PROVIDE (N) 24-PORT PATCH PANEL FOR (N) PORTABLE STATION CABLING, PER 2/E-5.1.
- 11 (E) SITE PULL BOX(ES) FOR POWER AND/OR LOW VOLTAGE TO REMAIN. PROTECT IN PLACE.
- 12 (E) LOW VOLTAGE SYSTEM FEEDERS TO (E) PORTABLES TO REMAIN. PROTECT IN PLACE.
- 13 VERIFY EXACT GATE OPERATOR LOCATION PRIOR TO ROUGH-IN.



Main:
636 Fifth Street, Santa Rosa, CA 95404
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9/8/26

PORTABLE & SHADE STRUCTURES

929 SECOND ST.
BRENTWOOD, CA 94513

LIBERTY UNION HIGH
SCHOOL DISTRICT

REVISIONS

DSA APP NO. 01-122796

ARCH PROJECT NO: 2497.00

DRAWN BY: LN/JW/TV

DRAWING SCALE: AS NOTED

PTN: 61721-99 FILE NO: 7-H4

CONSTRUCTION DOCS

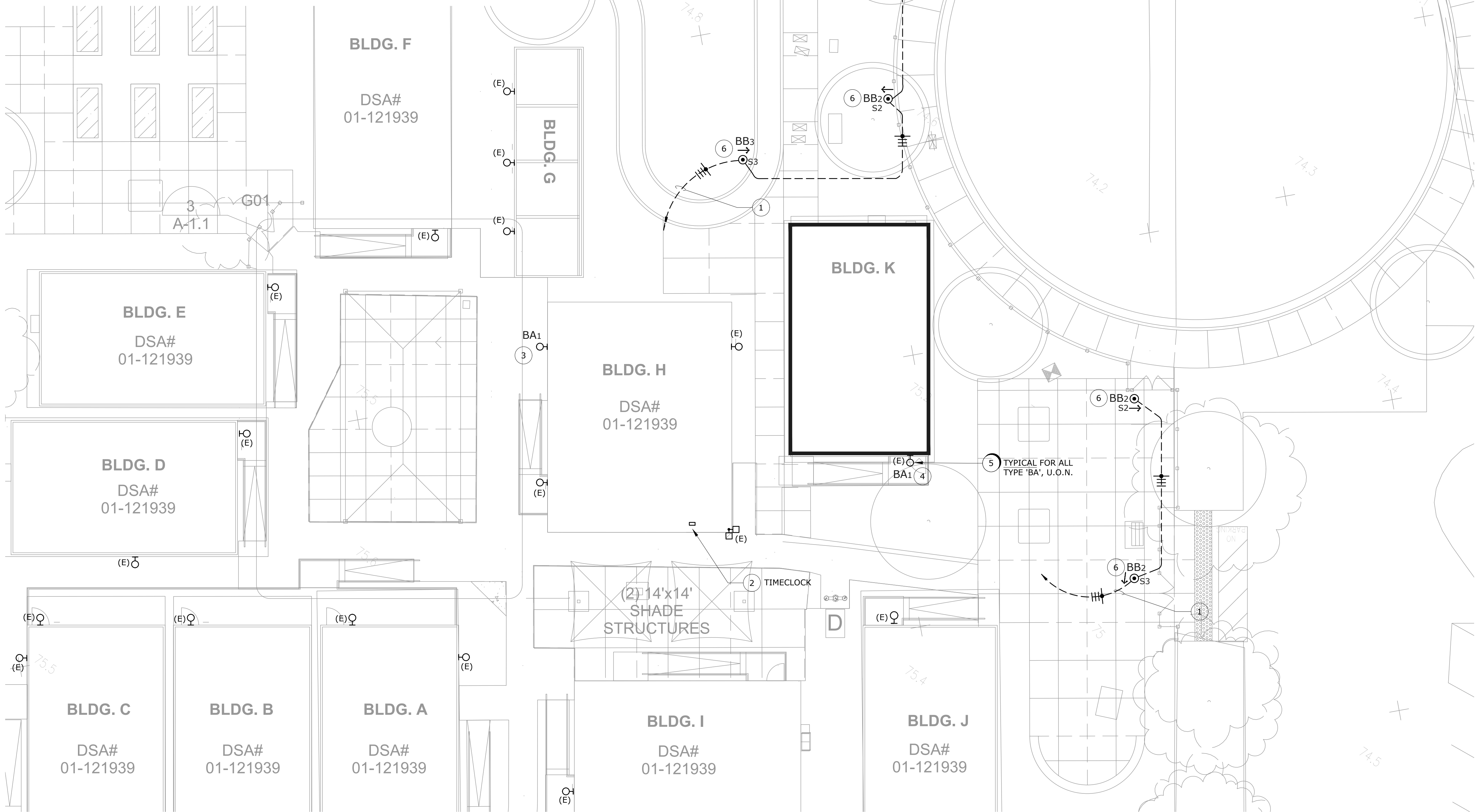
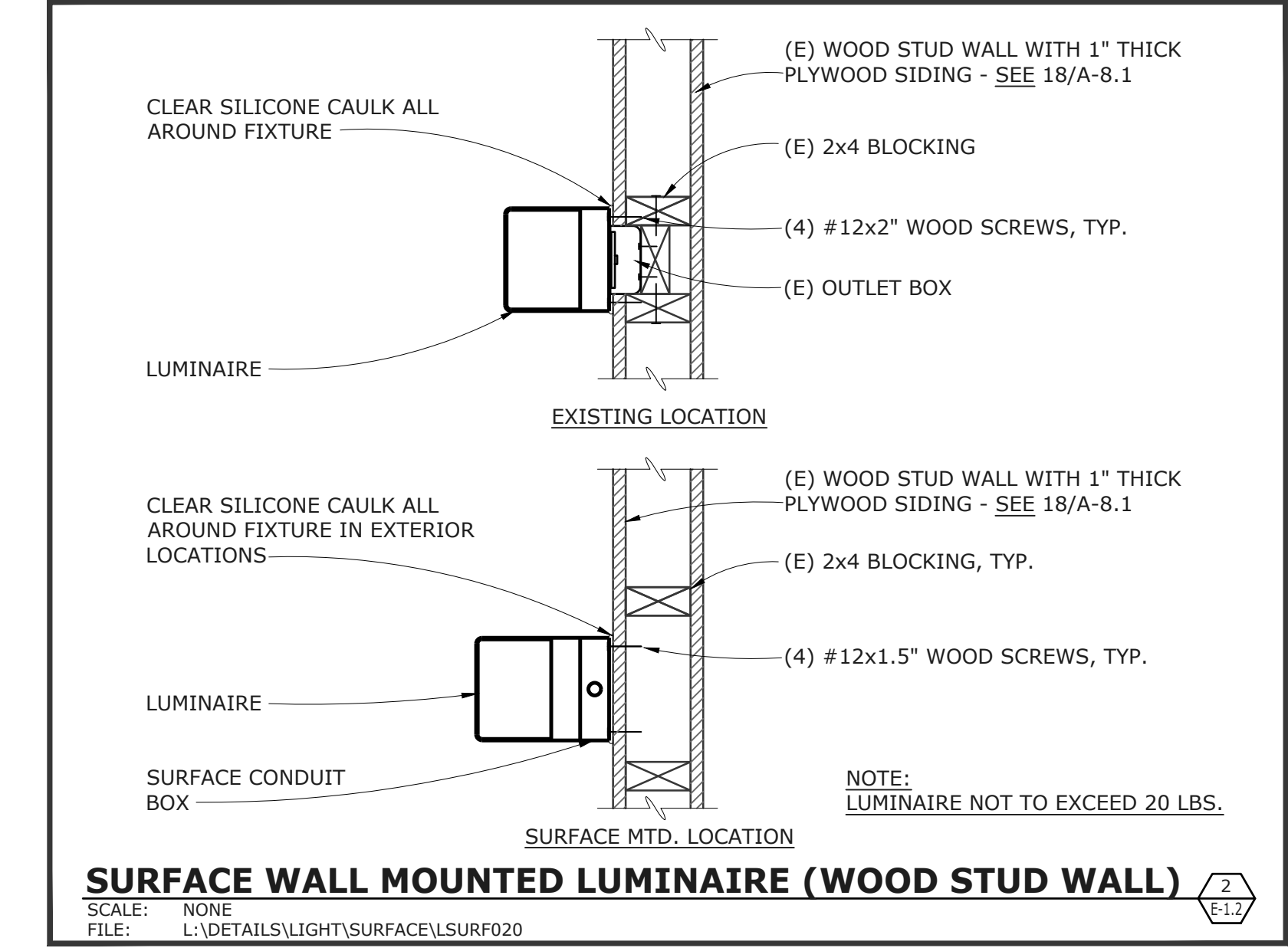
AUGUST 31, 2026

SHEET TITLE

SITE PLAN - ELECTRICAL

SHEET NUMBER

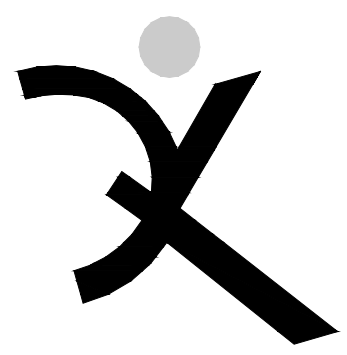
E-1.1



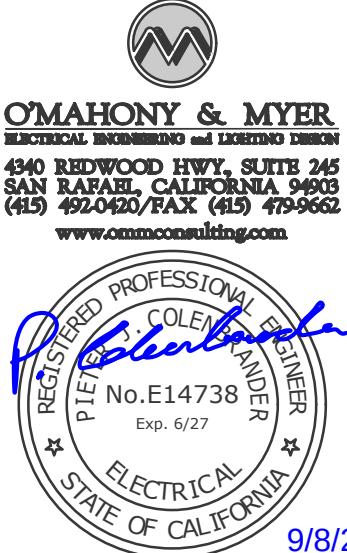
SITEPLAN - LIGHTING
SCALE: 1" = 10'-0"

NUMBERED SHEET NOTES

- 1 ROUTE CIRCUIT HOME TO EXISTING PANEL IN BUILDING H VIA TIMECLOCK. ROUTE CONDUIT UNDER NEW SIDEWALK. PROVIDE AND INSTALL (1) CIRCUIT BREAKER IN EXISTING SPACE IN EXISTING CIRCUIT BREAKER PANEL FOR POLE LIGHTS. NEW CIRCUIT BREAKER TO MATCH EXISTING BREAKERS. EXTEND CONDUIT AND WIRE FROM NEW CIRCUIT BREAKER TO TIMECLOCK AND THEN TO EXTERIOR POLE LIGHTS AS SHOWN.
- 2 (E) TIMECLOCK FOR CONTROL OF EXTERIOR POLE LIGHTS (INSTALLED IN PREVIOUS PHASE). VERIFY THAT TIMECLOCK IS SET SO LIGHTS TAGGED 'S1' ARE ON WHENEVER BUILDINGS ARE OCCUPIED AT NIGHT LIGHTS TAGGED 'S2' FROM DUSK TO LATE EVENING. OBTAIN SCHEDULE FROM DISTRICT, IF NOT YET SET.
- 3 NEW LIGHT WITH MANUFACTURER-SUPPLIED WALL-MOUNTED BOX FOR SURFACE CONDUIT WIRING. SUPPLY FROM EXISTING CIRCUIT AND CONTROLS SUPPLYING EXISTING LIGHTING. CONCEAL NEW RACEWAY WHEREVER POSSIBLE. WHERE NEW RACEWAY IS EXPOSED, PRIME AND PAINT ALL RACEWAYS, FITTINGS, J-BOXES, AND FASTENERS TO MATCH MOUNTING SURFACE. SEE DETAIL 2/E-1.2.
- 4 REMOVE EXISTING LIGHT AT THIS LOCATION AND TURN OVER TO THE DISTRICT FOR FUTURE USE. MOUNT NEW LIGHT IN PLACE OF EXISTING LIGHT. CONNECT COMPLETE TO EXISTING CIRCUIT AND LIGHTING CONTROLS. SEE DETAIL 2/E-1.2.
- 5 WALL MOUNTED AT 9'-0" A.F.F. TO THE BOTTOM OF THE LUMINAIRE.
- 6 SEE DETAIL 4/E-7.1.
- 7 SEE DETAIL 9/E-7.1.



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GATEWAY PROGRAM
PORTABLE & SHADE STRUCTURES
929 SECOND ST.
BRENTWOOD, CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS	

DSA APP NO.	01-122796
ARCH PROJECT NO.	2497.00
DRAWN BY:	LN/JW/TV
DRAWING SCALE:	AS NOTED
PTN: 61721-99	FILE NO: 7-H4

CONSTRUCTION DOCS
AUGUST 31, 2026
SHEET TITLE

SITE PLAN - LIGHTING

SHEET NUMBER
E-1.2



Project Manual

for the

GATEWAY PROGRAM PORTABLE AND SHADE STRUCTURES

June 3, 2026

Revision: September 10, 2026

DSA File Number: 7-H4

DSA Application Number: 01-122796

PTN: 61721-99

OWNER

Liberty Union High School District
20 Oak Street
Brentwood, CA 94513

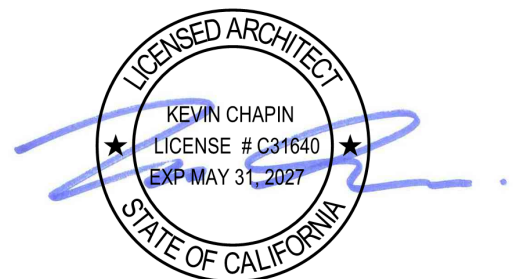
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Date: 09/10/2026

DOCUMENT 00 0107

PROFESSIONAL SEALS AND DSA IDENTIFICATION STAMP

DIVISION OF THE STATE ARCHITECT IDENTIFICATION STAMP



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END OF SECTION

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SECTION 12 9300

SITE FURNISHINGS

PART 1 GENERAL

1.01 SUMMARY

- A. The General Conditions and all other Contract Documents for this project are complementary and applicable to this Section of the Specifications.
- B. Work Included: furnish all labor, materials, equipment and services necessary to provide and construct, repair, or install the site elements, complete in place, as shown and specified, including, but not limited to:
 - 1. Benches
 - 2. Tables
- C. Related Work
 - 1. Section 32 1313: Concrete Paving

1.02 SUBMITTALS

- A. Submit shop drawings to the District for approval before installing any manufactured items. Plans shall include dimensions, color, finish, structural design (custom items) and connection details.
- B. Submit shop drawings of other materials listed in this section to the District for approval before installation.
 - 1. Provide material samples, color samples, brushouts or charts for all items.

PART 2 PRODUCTS

2.01 MANUFACTURED ITEMS

- A. Benches
 - 1. Benches shall be as specified on the Drawings or approved equal.
- B. Tables
 - 1. Tables shall be as specified on the Drawings or approved equal.

2.03 MISCELLANEOUS MATERIALS

- A. All other materials for site elements shall be as specified on the Drawings and these specifications.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Examination: Verify that conditions are satisfactory for installation of each item of site elements. When unsatisfactory conditions exist, do not begin installation until such conditions have been corrected.
- B. Installation: Install products in conformance with the manufacturer's recommendations, Drawings, and approved shop drawings, and as indicated.
 - 1. Install products square, plumb, level, accurately aligned and securely anchored.

2. Repair abraded areas of shop-applied coating and areas of welds where shop-applied coating has been damaged, using a primer or galvanized repair compound compatible with the shop coating. Repair paint surface per manufacturer's specifications and District direction to match undamaged finish.
3. Completion: Completed installation shall be securely anchored and free from defects and damage in material and finish.

3.02 GUARANTEE

- A. At completion of project, Contractor shall provide District with written guarantee from each manufacturer identifying the nature of warranty for each product component.
- B. Contractor shall provide District with two (2) bound maintenance manuals identifying each piece of equipment on manufacturer's recommended maintenance program including, but not limited to, daily, weekly, and monthly check lists.
- C. Contractor shall provide District with minimum of one (1) gallon each type and color of paint used on items with recommended surface preparation and application guidelines.

END OF SECTION

SECTION 32 1800

ATHLETIC AND RECREATIONAL SURFACING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Athletic and Recreational Surfacing of the following types:
 - 1. Poured-in-Place Resilient Rubber Surfacing

1.02 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including Division 01 Specification Sections, apply to this Section.
- B. Section 32 1313: Concrete Paving
- C. Section 32 1814: Synthetic Turf System

1.03 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension.
 - 2. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
 - 3. ASTM D1171 - Standard Test Method for Rubber Deterioration, Surface Ozone Cracking Outdoors, Triangular Specimens.
 - 4. ASTM D1242 - Standard Test Methods for Resistance of Plastic Materials to Abrasion.
 - 5. ASTM D1418 - Standard Practice for Rubber and Rubber Latices Nomenclature.
 - 6. ASTM D4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
 - 7. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 8. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
 - 9. ASTM E303 - Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
 - 10. ASTM F1292 - Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
 - 11. ASTM F1951 - Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.
 - 12. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

1.04 DEFINITIONS

- A. Critical Fall Height: A critical fall height, CFH, is the maximum height of fall from play equipment to the ground. It is important to note that safety surfaces do not prevent injury but aim to lessen the severity of any injury that may occur on falls from height.
- B. Fall Height: Fall height is a measurement defined as the vertical distance between a designated play surface and the protective surfacing beneath it.
- C. TPV: Thermoplastic vulcanized elastomer, developed using resin and synthetic rubber with higher UV stabilization.

- D. SBR: Styrene-butadiene or styrene-butadiene rubber describes families of synthetic rubbers derived from styrene and butadiene.

1.05 SUBMITTALS

- A. Submit under provisions of Section 01 3300 Submittals.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Typical installation methods.
- C. Verification Samples: Two representative units of each type, size, pattern, and color.
- D. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
- B. Poured in place surfaces shall be manufactured and installed by trained, experienced company employees or certified installers who have successfully completed the "Certified Installers Training Program" required by the Manufacturer.
- C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
- D. Critical Fall Height Four feet through 10 feet have been tested in accordance with Section 15 Critical Fall Height Test Procedure of ASTM F1292.

1.07 PRE-INSTALLATION CONFERENCE

- A. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- B. Protect from damage due to weather, excessive temperature, and construction operations.

1.09 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.10 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard limited warranty.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Acceptable Manufacturer: Robertson Recreational Surfaces, or approved equal.

2.02 RUBBERIZED, POURED-IN-PLACE SURFACING

- A. Performance Requirements:
- Standards Compliance: ASTM D624, ASTM D2859, ASTM E303, ASTM F1292, ASTM F1951, ASTM C1028, and ASTM D412.
- B. Basis of Design: TotTurf Supreme Poured in Place TPV; as manufactured and supplied by Robertson Recreational Surfaces.
- Poured in Place Surface: The poured in place surface shall consist of recycled rubber mixed with a polyurethane binder, then capped with .5-1.5mm TPV granules mixed with an aliphatic binder.
 - It shall consist of a uniform material manufactured in such a way that the top portion meets the requirements specified herein for wear surface.
- C. Attenuation Cushion Layer Section
- Impact attenuation cushion layer consists of these materials; recycled styrene butadiene rubber (SBR) and/or cryogenic crumb rubber and/or pre consumer postindustrial reclaimed scrap rubber adhered with a 100% solids polyurethane binder to form a resilient porous material.
 - Strands of SBR may vary from 0.5 mm – 2.0 mm in thickness by 3.0 mm – 20 mm in length.
 - Chunk Premium Black Rubber Granules are 5/8” granules: This rubber is pre-consumer, post-industrial, reclaimed rubber, granulated through a 5/8” screen and contains less than 2% dust.
 - SBR Crumb Rubber (5-9 Mesh) using sieve analysis ASTM D5644 with a fiber content of .1% or less mixed in.
 - SBR homogeneous rubber pellets derived from rubber powder reclaimed from end of use tires. Genan Pellets 3.8/35.
 - Binder shall be between 4-12% of the total weight of the material and shall provide 100% coating of the particles.
 - The attenuation cushion layer shall be compatible with the wear course and must meet requirements herein for impact attenuation.
- D. Wear Layer Section
- Wear course shall consist of .5-1.5mm Rosehill TPV® proprietary formula, or approved equal, consisting of a vulcanized (fully cross-linked) premium colored rubber granule with polyurethane binder formulated to produce an even, uniform, seamless surface. Installation of surfacing shall be seamless.
 - ASTM D2240 (Shore A) hardness $\pm 5\%$ of 60.
 - Size of TPV granules .5-1.5mm across. Binder shall be not less than 22% of total weight of rubber used in the wear surface and shall provide 100% coating of the particles.
 - Thickness of wear course shall be a minimum .5” (12.7 mm).
 - The wear course shall be porous.
- E. Binder
- Aliphatic Urethane Premium – Non-Ambering.
 - No Toluene Diphenyl Isocyanate (TDI) shall be used.
 - No filler materials shall be used in urethane such as plasticizers and the catalyzing agent shall contain no heavy metals.
 - Weight of polyurethane shall be no less than 8.5 lbs. /gal (1.02 Kg/1) and no more than 9.5 lbs. /gal (1.14 Kg/1).
 - Manufacturer is permitted to modify the type of urethane required to match extreme weather conditions. Substitutions must be equal to or exceed original quality.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly constructed and prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Finished Grade/Slope: Verify that finished elevations or adjacent areas are as indicated on the architectural or site plans, that the appropriate sub-grade elevation has been established for the safety surface to be installed, and that the subsurface has been installed per architectural, site or equipment plans while meeting accessibility and use zones requirements.
- D. Base: Tolerance of aggregate sub-base shall be within .5" in depth. Verify that aggregate sub-base has been fully compacted. Concrete base: Tolerance of concrete or bituminous base shall be with .125" (3.0 mm) in 10' (3050 mm). Concrete must cure for 7 days prior to application of attenuation cushion layer. Concrete must cure 21 days if wear course is to be applied directly to concrete surface. If poured in place surfacing is installed, verify that the concrete base has cured (all areas appear white in color usually at 7 days). Remove all concrete curing compounds and other deleterious substances that might adversely affect adhesion. Surface shall be clean and dry.
- E. The Contractor shall be responsible for flooding the base to ensure proper slope and tolerance. Any areas holding enough water to cover a flat nickel shall be patched prior to installation.
- F. Drainage: Verify that sub-surface drainage, if required, has been installed to provide positive drainage.

3.03 INSTALLATION

- A. Poured in Place Surfacing: Components of the poured in place surfacing shall be mixed on site in a rotating tumbler to ensure components are thoroughly mixed and are in accordance with manufactures recommendations. Installation of surfacing shall be seamless up to 2,000 square feet per day. Material shall cover all foundations and fill around all elements penetrating the surface.
- B. Attenuation Cushion Layer: Whenever practical, attenuation cushion layer of surfacing material shall be installed in one continuous pour on the same day of up to 2,000 square feet. When a second pour is required, step the seam (see Manufacturer's detail) and fully coat the step of the previous work with polyurethane binder to ensure 100% bond with new work. Apply adhesive in small quantities so that new attenuation cushion layer can be placed before the adhesive dries.
- C. Wear Course: Wear course must be quality peroxide cured TPV granules. wear surface shall be bonded to attenuation cushion layer. If necessary, additional primer will be used between the attenuation cushion layer and wear course. Apply adhesive to attenuation cushion layer in small quantities allowing the wear course to be applied before adhesive dries. Surface shall be hand troweled to a smooth, even finish. Expect continuous and seamless up to 2,000 square feet per day (contact sales representative for seamless in excess of 2,000 square feet). Where seams are required due to color change, size or adverse weather, a step configuration will be constructed to maintain wear course integrity. The edge of initial pour shall be coated with adhesive and wearing surface mixture shall be immediately applied. Pads with multiple seams are encouraged to include a top coat of urethane before being placed into use. Butt joint seams are not acceptable except for repairs.
- D. Perimeter: For installations over existing concrete, the perimeter shall be saw cut to provide a keyway

1" deep x 1" wide, or formed during the pour, with surfacing rolled down into the void. Primer adhesive must be applied to all sides of the void. When connecting to a concrete curb or border, the inside vertical edge shall be primed with adhesive and the final 2" of the attenuation cushion layer shall be tapered to allow the wear surface material to be 1.5"– 2" thick where it joins the concrete.

- E. Asphalt: When installing over new asphalt, a curb or other type of border is recommended around the entire pad to separate the new surface from other ground materials. Primer adhesive must be applied to the inside vertical edge of the border before poured in place surface installation.
- F. Asphalt: When installing over existing asphalt, a key way cut of 1" deep by 1" side for the poured in place to taper into and terminate with required ADA slope.
- G. Thickness: Construction methods such as the use of measured screeds or guides shall be employed to ensure that the full depth of specified surfacing material is installed. Surfacing system thickness throughout the playground equipment use zone shall be as required to meet the impact attenuation requirements specified herein.
- H. Clean Up: Manufacturer installers shall work to minimize excessive adhesive on adjacent surfaces or play equipment. Spills of excess adhesive shall be promptly cleaned.
- I. Protection: The safety surface shall be allowed to fully cure in accordance with Manufacturer's instructions. The surface shall be protected by the Contractor from all traffic during the curing period of at a minimum of 72 hours or as instructed by the Manufacturer.
- J. Manufacturer Services: For poured in place safety surfacing, a Manufacturer's representative who is experienced in the installation of playground safety surfacing shall be provided. The representative shall supervise the installation to ensure that the system meets the impact attenuation requirements.

3.04 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

3.05 CLEANING AND PROTECTION

- A. The site shall be kept clean and free of tools, trash, and debris and installation materials daily.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 32 1814

SYNTHETIC TURF SYSTEM

PART 1 GENERAL

1.01 SUMMARY

- A. Furnish all labor, materials, tools and equipment necessary to install synthetic turf system as indicated on the Drawings and as specified herein; including components and accessories required for a complete installation. including but not limited to
 - 1. Acceptance of prepared aggregate base.
 - 2. Coordination with related trades to ensure a complete, integrated, and timely installation: permeable base (tested for permeability), grading and compacting, piping and drain components; as provided under its respective trade section.
 - 3. Synthetic turf and infill material on prepared aggregate base.
- B. Related Work:
 - 1. Drawings and general provisions of the Contract, including Division 01 Specification Sections, apply to this Section.
 - 2. Section 32 1313: Concrete Paving
 - 3. Section 32 1800: Athletic and Recreational Surfacing

1.02 REFERENCE STANDARDS

- A. ASTM – American Society for Testing and Materials.
 - 1. D1577 - Standard Test Method for Linear Density of Textile Fiber.
 - 2. D5848 - Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Covering.
 - 3. D1338 - Standard Test Method for Tuft Bind of Pile Yarn Floor Covering.
 - 4. D1682 - Standard Method of Test for Breaking Load and Elongation of Textile Fabrics.
 - 5. D5034 - Standard Test Method of Breaking Strength and Elongation of Textile Fabrics (Grab Test).
 - 6. D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - 7. F1292-09 - Standard Test Method for Impact Attenuation or Critical Fall Height of Surfacing Materials Under and Around Playground Equipment.
 - 8. D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials.
- B. IPEMA – International Play Equipment Manufacturers Association
 - 1. Public Play Surfacing Certified to ASTM F1292-09 - Standard Test Method for Impact Attenuation or Critical Fall Height of Surfacing Materials Under and Around Playground Equipment.
- C. Ground surfaces shall comply with CBC 11B-1008.2.6 and ASTM Standards F1292 & F1951.

1.03 PERFORMANCE REQUIREMENTS

- A. Completed synthetic turf system shall be capable of meeting the following performance requirements:
 - 1. IPEMA Public Play Surfacing Certified.
 - 2. ASTM F1292-09: Impact attenuation. Playground protective surface shall meet performance requirements for the impact attenuation of playground surfacing materials installed within the use zone of playground equipment, as specified by Architect.
 - 3. ASTM D4491: Water permeability test. Synthetic grass surface shall drain at a rate of 300 inches or more, of water per hour.
 - 4. ASTM D1338: Tuft bind. Synthetic grass surfacing shall have a tuft bind, without infill material of 8 pounds or more.

1.04 SUBMITTALS

- A. Substitutions: Other products are acceptable if in compliance with all requirements of these specifications. Submit alternate products to Architect for approval prior to bidding.
 - 1. Provide substantiation that proposed system does not violate any other manufacturer's patents, patents allowed or patents pending.
 - 2. Provide a sample copy of insured, non-prorated warranty and insurance policy information.
- B. Product Data:
 - 1. Submit manufacturer's catalog cuts, material safety data sheets (MSDS), brochures, specifications; preparation and installation instructions and recommendations.
 - 2. Submit fiber manufacturer's name, type of fiber and composition of fiber.
 - 3. Submit shock absorbing pad manufacturer's name.
 - 4. Submit data in sufficient detail to indicate compliance with the contract documents.
 - 5. Submit manufacturer's instructions for installation.
 - 6. Submit manufacturer's IPEMA Certificate to indicate compliance with certified public play surfacing.
- C. Samples: Submit samples, illustrating details of finished product in amounts as required by General Requirements, or as requested by Architect.
- D. List of existing installations: Submit list including respective Owner's representative and telephone number.
- E. Warranties: Submit warranty and ensure that forms have been completed in Owner's name and registered with approved manufacturer.
- F. Testing Certification: Submit certified copies of independent (third-party) laboratory reports on ASTM testing:
 - 1. Pile Height, Face Weight & Total Fabric Weight, ASTM D5848.
 - 2. Primary & Secondary Backing Weights, ASTM D5848.
 - 3. Tuft Bind, ASTM D1335.
 - 4. Grab Tear Strength, ASTM D1682 or D5034.
 - 5. Water Permeability, ASTM D4491
 - 6. Artificial turf fiber proposed for the field(s) must have successfully undergone a minimum of 200,000 cycles on the Lisport wear test. This fiber must be exactly the same fiber that is being proposed for the field(s). Official report must be provided.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Engaged in manufacturing synthetic turf surfacing products for a minimum of fifteen (15) years.
 - 1. The Manufacturer shall be experienced in the manufacturing and installation of specified type of synthetic turf surfacing system. This includes use of a ridged monofilament fiber, a texturized monofilament fiber, backing, the backing coating, and the installation method.
 - 2. The Manufacturer shall own and operate its own manufacturing plant. Manufacturing the fiber, tufting of the fibers into the backing materials and coating of the synthetic turf system must be done in-house by manufacturer.
 - 3. The Manufacturer must hold ISO 9001, ISO 14001 and OHSAS 18001 certifications demonstrating its manufacturing efficiency with regards to quality, environment and safety management systems.
 - 4. The Manufacturer must hold IPEMA certification for specified synthetic grass product.
- B. Installer/Contractor Qualifications: Company shall specialize in performing the work of this section.
 - 1. The Company shall provide competent workers skilled in this specified type of playground protective synthetic grass system installation.

2. The designated Supervisory Personnel on the project shall be certified, in writing by the manufacturer, as competent in the installation of specified type of synthetic grass system, including gluing seams and proper installation of the shock absorbing playground pad and infill material.
 3. The Company shall be certified by the manufacturer and licensed (if required).
- C. Pre-Installation Conference: Conduct conference at project site at time to be determined by Architect. Review methods and procedures related to installation including, but not limited to, the following:
1. Inspect and discuss existing conditions and preparatory work performed under other contracts.
 2. In addition to the Contractor and the installer, arrange for the attendance of installers affected by the Work, District, Inspector of Record and the Architect.
- D. The Installer/Contractor shall verify special conditions required for the installation of the synthetic turf system if required.
- E. The Installer/Contractor shall notify the Architect of any discrepancies.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store components with labels intact and legible.
- B. Store materials/components in a safe place, under cover, and elevated above grade.
- C. Protect from damage during delivery, storage, handling and installation. Protect from damage by other trades.
- D. Inspect all delivered materials and products to ensure they are undamaged and in good condition.

1.07 SEQUENCING AND SCHEDULING

- A. Coordinate the Work with installation of work of related trades as the Work proceeds.
- B. Sequence the Work in order to prevent deterioration of installed system.

1.08 WARRANTY

- A. The Installer/Contractor shall provide a warranty to the District that covers defects in materials and workmanship of the synthetic turf product for a period of ten (10) years from the date of substantial completion. The synthetic turf manufacturer must verify that their representative has inspected the installation and that the work conforms to the manufacturer's requirements. The manufacturer's warranty shall include general wear and damage caused from UV degradation. The warranty shall specifically exclude vandalism, and acts of God beyond the control of the District or the manufacturer. The warranty shall be fully third party insured; pre-paid for the entire 8 year term and be non-prorated. The Installer/Contractor shall provide a warranty to the District that covers defects in the installation workmanship, and further warrant that the installation was done in accordance with both the manufacturer's recommendations and any written directives of the manufacturer's representative. The insurance policy must be underwritten by an "AM Best" A rated carrier and must reflect the following values:
- B. The warranty shall have the following characteristics:
 1. Pre-Paid 10-year insured warranty.
 2. Maximum per claim coverage amount of thirty-three million dollar (\$33,000,000).
 3. Minimum of thirty-three million dollar (\$33,000,000) annual aggregate.
 4. Must cover full 100% replacement value of total square footage installed.
 5. Policies that include self-insurance or self-retention clauses shall not be considered.
 6. Policy cannot include any form of deductible amount.

PART 2 MATERIALS AND PRODUCTS

2.01 SYNTHETIC TURF SYSTEM

- A. Acceptable Manufacturer: FieldTurf USA, Inc. 175 N. Industrial Boulevard, Calhoun, GA 30701
Contact: Charles Colletti 858-208-8449 charles.colletti@fieldturf.com
1. Synthetic Turf: Command Core, or approved equal.
 2. Pad: Brock Powerbase/YSR, or approved equal.
- B. Synthetic turf system shall consist of the following:
1. Synthetic grass surfacing made with a combination of dual polymer monofilament fibers, slit-film fibers and texturized monofilament fibers, tufted into a fibrous, perforated and porous backing.
 2. Shock absorbing expanded polypropylene playground pad to meet project CFH.
 3. Anchoring device to secure perimeter edge of synthetic grass.
 4. Infill: Graded dust-free silica sand that partially covers the synthetic grass. Graded dust-free acrylic coated silica sand may be substituted for silica sand as requested by Architect.
 5. Glue, thread, seaming fabric and other materials used to install and mark the synthetic grass.
- C. Synthetic grass surfacing system shall have the following properties:
- | Standard | Property | Specification |
|------------|----------------------------|--------------------|
| ASTM D1577 | Fiber Denier A | 14000 |
| ASTM D1577 | Fiber Denier B | 10000+ |
| ASTM D1577 | Fiber Denier C | 5000+ |
| ASTM D5823 | Pile Height | 1.625" |
| ASTM D5793 | Stitch Gauge | 3/8" |
| ASTM D5848 | Pile Weight | 65 oz/square yard |
| ASTM D5848 | Primary Backing | >9oz/square yard |
| ASTM D5848 | Secondary Backing | >21 oz/square yard |
| ASTM D5848 | Total Weight | >94 oz/square yard |
| ASTM D1338 | Tuft Bind (Without Infill) | 8 lbs. |
| ASTM D4491 | Turf Permeability | 300 inches/hour |
| N/A | Infill Component | 4 lbs./square foot |
- Variation of +/- 5% on above listed property values is within normal manufacturing tolerances
- D. Synthetic grass surfacing product shall consist of dual polymer monofilament fibers, slit-film fibers and texturized monofilament fibers tufted into a primary backing with a secondary backing.
- E. Backing:
1. Primary backing shall be a triple-layered polypropylene fabric.
 2. Secondary backing shall consist of an application of porous urethane to permanently lock the fiber tufts in place.
 3. Perforated (with punched holes), backed turf is acceptable.
 4. Turf with attached scrim in lieu of porous urethane is unacceptable.
- F. Primary fiber shall be 14,000 denier, low friction, and UV-resistant fiber measuring not less than 1.625 inches high. Secondary fiber shall be +10,000 denier. Third fiber shall be +5,000 denier.
- G. Shock absorbing expanded polypropylene playground pad shall drain vertically and laterally without absorbing water or other liquids. Shock absorbing expanded polypropylene pad to meet specified critical fall height requirements as requested by Architect.
- H. Infill materials shall be approved by the manufacturer.
1. Infill shall consist of graded dust-free sand. Graded dust-free acrylic coated silica sand may be substituted for silica sand as requested by Architect.

- I. Glue and seaming fabric, for seaming of synthetic grass shall be as recommended by the synthetic grass manufacturer.

2.02 QUALITY CONTROL IN MANUFACTURING

- A. The manufacturer shall own and operate its own manufacturing plant in North America. Both tufting of the fibers into the backing materials and coating of the turf system must be done in-house by the synthetic turf manufacturer. Outsourcing of either is unacceptable.
- B. The manufacturer shall have full-time certified in-house inspectors at their manufacturing plant that are experts with industry standards.
- C. The manufacturer's full-time in-house certified inspectors shall perform pre-tufting fiber testing on tensile strength, elongation, tenacity, and denier, upon receipt of fiber spools from fiber manufacturer.
- D. Primary backing shall be inspected by the manufacturer's full-time certified in-house inspectors before tufting begins.
- E. The manufacturer's full-time in-house certified inspectors shall verify "pick count", yarn density in relation to the backing, to ensure the accurate amount of face yarn per square inch.
- F. The manufacturer's full-time, in-house, certified inspectors shall perform product inspections at all levels of production including during the tufting process and at the final stages before the synthetic turf is loaded onto the truck for delivery.
- G. The manufacturer shall have its own, in-house laboratory where samples of synthetic turf are retained and analyzed, based on standard industry tests, performed by full-time, in-house, certified inspectors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that all sub-base leveling is complete prior to installation.
- B. Finish surface planarity of base shall be verified by the synthetic turf contractor. A mason's line, held taught between two (2) workmen shall be placed directly on the finished surface, parallel to the direction of greatest slope. A third workman shall check for separations between the mason's line and the finished surface that are equal to or greater than the specified tolerances. Areas of separation shall be outlined with marking paint and the depth of separation indicated.
- C. Installer/Contractor shall examine the surface to receive the synthetic grass, the shock absorbing playground pad, and accept the sub-base planarity in writing prior to the beginning of installation.
- D. Correct conditions detrimental to timely and proper completion of Work.
- E. Do not proceed until unsatisfactory conditions are corrected.
- F. Beginning of installation by the synthetic turf contractor means acceptance of existing conditions.

3.02 PREPARATION

- A. Prior to the beginning of installation, inspect the sub-base for tolerance to grade.
- B. Sub-base acceptance shall be subject to receipt of test results (by others) for compaction and planarity that sub-base is in compliance with manufacturer's specifications and recommendations.
- C. Installed sub-base shall be tested for porosity prior to the installation of the synthetic grass system. A sub base that drains poorly is an unacceptable substrate.

3.03 INSTALLATION

- A. The finished surface shall appear as mowed grass with no irregularities and shall be required to meet applicable ASTM, CPSC and ADA standards for the maximum fall height, as requested by the Architect.
- B. The installation shall be performed in full compliance with approved Shop Drawings.
- C. Only trained technicians, skilled in the installation of synthetic grass systems working under the direct supervision of the approved installer supervisors, shall undertake any cutting, sewing, gluing, shearing, top-dressing or brushing operations.
- D. The designated Supervisory personnel on the project must be certified, in writing by the manufacturer, as competent in the installation of this material, including gluing seams and proper installation of the Infill material.
- E. Install at location(s) indicated, to comply with final shop drawings, manufacturers'/installer's instructions.
- F. The Installer/Contractor shall strictly adhere to specified procedures. Any variance from these requirements shall be provided in writing, by the manufacturer's on-site representative, and submitted to the Architect and/or Owner, verifying that the changes do not in any way affect the Warranty. Infill materials shall be approved by the manufacturer and installed in accordance with the manufacturer's standard procedures.
- G. Shock absorbing playground pad shall be installed directly over the properly prepared aggregate base. Extreme care shall be taken to avoid disturbing the aggregate base, both in regard to compaction and planarity.
 - 1. Repair and properly compact any disturbed areas of the aggregate base as recommended by manufacturer.
 - 2. Seams shall be flat, tight, and permanent with no separation or fraying
- H. Playground protective synthetic grass system shall be installed directly over the shock absorbing playground pad.
 - 1. Seams shall be flat, tight, and permanent with no separation or fraying.
- I. Infill Materials:
 - 1. Infill materials shall be applied in thin lifts. The turf shall be brushed as the material is applied. The infill material shall be installed to a depth determined by the manufacturer.
 - 2. Infill material shall be installed in a systematic order.
 - 3. Infill materials shall be installed to fill the voids between the fibers and allow the fibers to remain vertical and non-directional. The Infill installation consists of graded dust-free silica sand. Graded dust-free acrylic coated silica sand may be substituted for silica sand as requested by Architect.
 - 4. The Installer/Contractor shall keep area clean throughout the project and clear of debris. Upon completion of installation, the finished project shall be inspected by the installation crew and an installation supervisor.

3.04 CLEANUP AND PROTECTION

- A. Do not permit traffic over unprotected surface.
- B. Contractor shall provide the labor, supplies, and equipment as necessary for final cleaning of surfaces and installed items.
- C. All usable remnants of new material shall become the property of the District.
- D. The Contractor shall keep the area clean throughout the project and clear of debris.
- E. Surfaces, recesses, enclosures, and related spaces shall be cleaned as necessary to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the District.

- F. Protect completed playground protective synthetic grass surfacing system throughout construction process until the project is accepted by the District.

END OF SECTION

SECTION 32 3111

GATE OPERATORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electric gate operators.
 - 1. DoorKing Model 9024, or approved equal.
- B. Sensors and controls.

1.02 RELATED SECTIONS

- A. Section 03 3000: Cast-in-Place Concrete
- B. Section 32 1216: Asphalt Concrete Paving
- C. Section 32 1313: Concrete Paving
- D. Section 32 3119: Ornamental Fences and Gates

1.03 REFERENCES

- A. Underwriters Laboratories (UL): UL 325 – Standard for Safety for Door, Drapery, Gate, Louver, and Window Operators and Systems.
- B. Underwriters Laboratories (UL): UL 991 – Standard for Tests for Safety Related Controls Employing Solid-State Devices.
- C. American Society Testing Materials (ASTM): ASTM F2200 – Standard Specification for Automated Vehicular Gate Construction.
- D. National Electrical Manufacturers Association (NEMA): NEMA ICS 6 – Industrial Control Systems: Enclosures.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01 3300 – Submittals.
- B. Product Data: Manufacturers data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements.
 - 3. Installation methods.
- C. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, edge connections, and accessories.
 - 1. Operation, installation, and maintenance manuals including wire diagrams.
 - 2. Risers, layouts, and wiring diagrams.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials and products in strict compliance with manufacturer's instructions and industry standards.

- B. Store products indoors in manufacturer's original containers and packaging with labels clearly identifying product name and manufacturer. Protect from damage.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: Installation performed by factory authorized dealer contractor specifically trained in gate operator systems of the type found within this section.
 - 1. Provide documentation of maintenance and repair service availability for emergency conditions.
 - 2. Provide quarterly maintenance for one year following Substantial Completion of the Project.

1.07 WARRANTY

- A. Manufacturers standard five (5) year warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. DoorKing, Inc., or approved equal; 120 S. Glasgow Ave; Inglewood, CA 90301; Toll-Free Tel: 800-826-7493; Tel: 310-645-0023; Fax: 310-641-1586; Email: ljackson@doorking.com; Web: doorking.com.
- B. Approved equal.
- C. Substitutions: See Section 01 6000 – Product Requirements.

2.02 SLIDING GATE OPERATORS

- A. Microprocessor based solid-state control board interacting with card readers, RF transmitters, access control systems, ticket machines, other activating devices as required, external devices (photo-eyes, contact edges) for entrapment protection and vehicle (loop) sensing systems. Control board shall include built-in close timer (1-25 seconds), built-in ports for two (2) plug-in loop detectors, partial open input, programming switches to set various operating modes, inherent current sensing reverse system.
 - 1. Compliance: Compliant to UL 325, UL 991 and CSA C22.2 No. 247 and listed by Intertek Testing Laboratories NA, Inc. (ETL), a Nationally Recognized Testing Laboratory.
 - a. This model is intended for use in Class I, II, III and IV vehicular slide gate applications.
 - 2. Warranty: Five (5) year manufacturer's standard warranty.
 - 3. Maximum Gate Length:
 - a. 40-feet
 - 4. Maximum Gate Weight:
 - a. 1000 Lbs
 - 5. Operator speed: approximately 10-inches per second.
 - 6. Enclosure: polypropylene, 0.125 inch (3.175 mm) 390 texture gray.
 - 7. Configuration: Left or right hand mount; front, center or rear mounting configurations.
 - 8. Mounting: Pad or post mount.
 - 9. Electrical Power Requirements: 115/230 VAC or 24 VDC.
 - 10. Motor: 24 VDC Continuous Duty Motor.
 - 11. Manual Operation: Upon loss of primary (AC) power, a T-handle release is engaged allowing the gate to be manually pushed open.
 - 12. Primary Reduction: 30:1 gear reduction, single cog belt drive train.
 - 13. Pulling Medium: #40 roller chain

14. Mechanically set Limit Switches.
15. Operating Switches: Built-in AC and DC power (on-off), reset and operating switches.
16. Convenience Outlets: Two (2) 115 VAC for accessory transformers (115/230 VAC models only).
17. Entrapment Protection
 - a. Photo-electric eye (non-contact sensor). EMX DoorKing 8080-052 (EMX MON)
 - i. 115 ft. (35m) maximum sensing distance
 - ii. 12-24VAC/6-35 VDC
 - iii. Includes hood
 - b. Sensing edge (contact sensor). Miller Edge DoorKing 8080-066 5 Ft. (1.5 m) MGS20-T2; 2-wire contact edge with 10K termination.
 - c. Monitoring: DoorKing 8080-008 Wireless Monitored Link (RB-G-K10))
 - i. Receiver: 12-24 VDC /6-35 VDC
 - ii. Transmitter: 3.6 VDC / 2 AA Lithium
 - iii. Receiver can monitor up to six (6) edges. Kit includes (1) receiver and one (1) RB-TX-10 monitored transmitters. Install same additionally, as required.
 - d. Multiple Inputs Module; DoorKing 8080-079 (MIM62)
Monitors up to six (6) external entrapment devices.
18. Plug-in loop detectors/loops
 - a. Single-Channel Plug-in Loop Detector, for the three (3) Open/Exit Loops; DoorKing 9410-010
 - b. Two-channel Plug-in Loop Detector, DoorKing 9409-010; One channel for the three (3) 'interior' Reversing Loops; One channel for the three (3) 'exterior' Shadow Loops.
 - c. Pre-fabricated loops to each be shaped in 6' x 6' configuration, and each function to be matching colors of the following:
 - i. Red, DoorKing 9401-062
 - ii. Yellow, DoorKing 9401-061
 - iii. Blue, DoorKing 9401-060
19. Accessories: Provide the accessories listed below as required.
 - a. Base Plate for post mount application, as required. DoorKing 2600-495 Steel Base Plate
 - b. Chain tray kit to support roller chain on long gates, as required. DoorKing 2601-270

2.03 ACCESS CONTROL DEVICES

- A. REQUIRED Access Control devices.
 1. Access Controller
 - a. DoorKing Model 1838-081 with TCP/IP Network Adapter: DoorKing 1830-185 (PC programmable manual setup) or DoorKing 1830-186 (Plug & Play with Cloud monthly fee). Submit network adapter options to Architect for District selection.
 - b. Long Range Tags
 - i. DoorKing 1815-350 Long Range Tag/Card Reader, Qty. 2
 - ii. DoorKing Long Range DK Prox Card; 1508-190; Qty. 6
 - iii. DoorKing Windshield Car Holder; 1815-318; Qty. 6
 - c. RF Receiver & Transmitters
 - iv. DoorKing MicroPLUS RF Receiver, with Wiegand output; 8040-080, Qty.1
 - v. DoorKing MicroPLUS RF Transmitter, 8069-080; Single Button, Qty 4
 - vi. DoorKing Coaxial Antenna, 1514-073, Qty 1

2. Fire Department Access Device; as mandated by Local Authority Having Jurisdiction.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Gate operator and components shall be mounted, firmly secured, plumb and level, as required.
- B. Wiring shall be uniform and in accordance with National Electric Codes and Manufacturer's instructions.
- C. All splices shall be in easily accessible junction boxes or on terminal boards.
- D. All cable runs in all junction boxes shall be tagged and identified.
- E. Coordinate all work with other affected trades and contractors.

3.02 SYSTEM INITIALIZING AND PROGRAMMING

- A. Contractor shall turn on, program, and adjust to meet requirements of Drawings and Specifications and on-site conditions.

3.03 SYSTEM TEST PROCEDURES

- A. Contractor shall test the system to assure that all components and accessories are hooked-up and in working order.
- B. Contractor shall pre-test and certify to function in accordance with the Drawings and Specifications.
- C. System shall be tested in presence of the Architect.

3.04 DISTRICT INSTRUCTIONS

- A. Contractor shall conduct up to (1) hour of instruction in use and operation of the system to the District, within (30) days of acceptance.
- B. Contractor shall conduct up to (1) hour of technical training, in troubleshooting and service of the system, to the District within (90) days of system acceptance.

3.05 MANUALS AND DRAWINGS

- A. Contractor shall provide (2) copies of standard factory prepared operation, installation and maintenance manuals. Manuals shall include typical wiring diagrams.
- B. Contractor shall provide (2) copies of any risers, layouts, and special wiring diagrams showing any changes to standard drawings, as required.

END OF SECTION

**SECTION 32 3119
ORNAMENTAL FENCES AND GATES**

PART 1 GENERAL

1.01 SUMMARY

- A. Ornamental metal fence, gates, accessories, anchorage, labor and materials necessary for complete installation.

1.02 RELATED SECTIONS

- A. Pertinent Sections specifying Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 01 8113 - Sustainable Design Requirements.
- C. Divisions 31 and 32: Pertinent sections specifying grading, paving, site concrete, landscaping and underground utilities.
- D. Section 32 3113 - Chain Link Fencing and Gates.

1.03 REFERENCES

- A. ASTM A526-Steel Sheet Zinc-Coated (Galvanized by the Hot Dip Process)
- B. ASTM B117-Salt Spray Testing
- C. California Code of Regulations, Title 24, Part 11 California Green Building Standards Code, "CAL-Green."
- D. California Code of Regulations, Title 24, Part 2, California Building Code (CBC), International Building Code, with California Amendments.
- E. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; updated 2010.

1.04 SUBMITTALS

- A. See Section 01 3300 - Submittals, for submittal procedures.
- B. Product Data: Provide data for materials, coatings finish and assembly.
- C. CAL-GREEN Submittals:
 - 1. Product Data - VOC Limits: For adhesives, sealants, fillers, coatings and primers, documentation including printed statement of VOC contents, comply with limits specified in related section.
- D. Shop Drawings: Indicate fencing and gate layout specific to site conditions including field measurements. Indicate all support and attachment conditions. Indicate all interface conditions with other work.
- E. Samples: Submit two pickets, 12 inches in length, illustrating selected finish. Submit 2 pieces of perforated metal security panels, 6" square minimum.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum three years of experience.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Check all materials for transit damage upon delivery to site. Do not accept damaged materials.
- B. Store materials to ensure proper ventilation and drainage, and prevent damage from weather, vandalism, and theft.

1.07 PROJECT CONDITIONS

- A. Coordinate fence installation with size, location and installation of service utilities. Avoid conflict of fence footings with underground work.

1.08 WARRANTY

- A. See Section 01 7000 - Contract Closeout, for additional warranty submittal requirements.
- B. Provide ten year manufacturer warranty for components and finish. Provide 5 year comprehensive labor warranty for replacement or restoration of warranted materials.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. VOC limits for adhesives, sealants, fillers, primers, and coatings. Comply with limits specified in related section.
- B. ADA Standards: Design and construct gates and hardware to comply with requirements of Americans with Disabilities Act (ADA) Standards for Accessible Design; updated 2010, and CBC 11B-404.
- C. Gate closures shall be adjusted so that from an open position of 90-degrees, the time required to move the gate to position of 12-degrees from the latch is 5 seconds minimum.
- D. Adjust and maintain gate spring hinges per CBC 11B-404.2.8.2, so that from the open position of 70-degrees, the gate shall move to the closed position in 1.5 seconds minimum.
- E. 5 lbs. max to open gate (11B-404.2.9).
- F. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate the operable parts shall be 5-lbs Max. (11B-309.4)

2.02 MANUFACTURERS

- A. Ameristar Fence Inc., Tulsa, Oklahoma, www.ameristarfence.com.
- B. Approved equal.
- C. Substitutions: See Section 01 6000 - Product Requirements.

2.03 ORNAMENTAL METAL FENCE

- A. Fence Product: Montage, Industrial Welded, "Majestic" Design with 3 rails, flush bottom rail treatment.
- B. Fence Framework. Pickets, Posts, and Rails: Fabricate all components from coil steel, 45,000 psi minimum yield strength, G-60 hot-dipped galvanized per ASTM A526;
 - 1. Fence Pickets: 1 inch square x 16 gauge steel tubing. Seal all picket-to-rail intersections with rubber grommets.
 - 2. Post Size/Spacing:
 - a. Posts: As indicated on drawings, except if post size is not shown, provide 2-1/2 inch square x 12 gauge tubing, minimum, otherwise.
 - b. Post Spacing: As indicated on drawings, except if spacing is not shown, provide 71-1/4 inches maximum for 6 feet on center nominal or 96 inches for 8 feet on center nominal, minimum otherwise.
 - 3. Rails: Manufacturer's Forerunner™ cross-section design with outside dimensions of 1.75 inches square, 12 gauge minimum thickness with picket holes at 4.75 inches (approx.) on center.
 - 4. Fence Panel design must reject a 4 inch diameter sphere.
 - 5. Height: As shown on Drawings, if no fence height is shown, provide 6'-0" height fence.

2.04 SWING GATES

- A. Gate Product: Montage II, Welded, "Majestic" Design with 3 rails, flush bottom rail treatment.
- B. Swing Gate Panels. Pickets, Posts, and Rails: Fabricate all components from coil steel, 45,000 psi minimum yield strength, G-60 hot-dipped galvanized per ASTM A526;
 - 1. Fence Pickets: 1 inch square x 14 gauge steel tubing. Seal all picket-to-rail intersections with rubber grommets.
 - 2. Post Size/Spacing:
 - a. Posts: As indicated on drawings, except if post size is not shown, provide 2-1/2 inch square x 12 gauge tubing, and 3 inch square x 12 gauge at gates wider than 36 inches, minimum, otherwise.
 - b. Post Spacing: As indicated on drawings, to suit size of gate.
 - 3. Rails: Manufacturer's Forerunner™ cross-section design with outside dimensions of 1.75 inches square, 12 gauge minimum thickness with picket holes at 4.75 inches (approx.) on center.
 - 4. Panel design must reject a 4 inch diameter sphere.
 - 5. Height: As shown on Drawings, if no gate height is shown, match height of fence.

- C. Swinging Gate: Fabricate Swing Gates from fence panels specified above in sizes as shown on Drawings.
1. Gates in the path of travel shall meet the door requirements of CBC 11B-404 with required clearances and reference details. Provide lever hardware and 10 inch minimum smooth bottom or kick plate. Provide Panic Hardware (Exit Device) and exit signs as required by Fire and Life Safety.
 2. Swinging Gate Hardware: Provide all hardware necessary for a complete, operational gate assembly, sizes and types recommended by manufacturer to suit conditions indicated, galvanized and shop finished to match adjacent gate components.
 - a. Hinges: Brass washer leaf hinges: 7 inch ball bearing hinges for medium and heavy gates. Provide two hinges for each leaf up to 6 foot nominal height, and one additional hinge for each additional 24 inches in height, or fraction thereof.
 - b. Hasps and Cane Bolts at Gates without exit devices.
 - c. Gates with Exit Devices:
 - 1) Schlage Classroom Security Locksets, ND95LD series, with Rhodes style lock levers.
 - 2) ASSA Maximum Plus cylinders; coordinate keying with District.
 - ~~3) Von Duprin 98/99 exit devices with cylinder dogging.~~
 - 4) Provide 10 inch smooth bottom or kick plate.
 3. Security Panels at Exit Gates: 16 gauge perforated metal, finished to match fencing. 1/8" holes at 3/16" staggered spacing. McNichols or equal.

2.05 ACCESSORIES

- A. Accessory Materials: Fasteners and other materials not specifically indicated but required to achieve the results specified; commercial quality. Types recommended by manufacturer to suit conditions.

2.06 FABRICATION

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible, to ensure proper fitting of the work. Allow for trimming and fitting where field conditions preclude accurate measurements or where final dimensions cannot be established prior to fabrication.
- B. Fit and shop assemble items in largest practical sections, for delivery to site.
1. Minimize field splicing and site assembly. Disassemble only to the extent necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
 2. Complete assembly, including welding, before start of finishing operations. Provide finish surfaces of members exposed in the final structure free of markings, burrs, and other defects.
 3. Use materials and items necessary to complete the work, using the best materials and methods ordinarily used for this type of work whether explicitly specified, indicated and detailed or not.

- C. Fabricate items with joints tightly fitted and secured.
- D. Machine-roll components or elements required to be curved or radiused. Do not field bend or "walk-down". Provide curves true to indicated dimensions, minimizing joints; segmented fabrication not allowed unless specifically noted.
- E. Continuously seal joined members by continuous welds.
 - 1. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
 - 2. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
 - 3. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
- F. Use only materials smooth and free of blemishes including pitting, seam marks, roller marks, trade names and roughness.
- G. Fabricate steel members in accordance with drawings and as recommended by A.I.S.C. Verify all dimensions with field conditions prior to fabrication.
 - 1. Clean, prepare and shop-prime steel members. Do not prime surfaces to be field welded or in direct contact with concrete.
 - 2. Cutting and drilling: Provide holes for fabrication and for attachment of work specified elsewhere. Countersink holes for bolts and screws.
 - 3. Form changes in direction of railing members by radius bends, maintaining cross-section of tube throughout bend without buckling, twisting, cracking or otherwise deforming exposed surface of tube.
- H. Field Welding: Design fence components to avoid field welds to extent possible.
- I. Pre-cut Pickets, Rails, and Posts to specified lengths. Pre-punch Forerunner rails to accept pickets.
 - 1. Insert pickets through grommets inserted into pre-punched holes in rails so that pre-drilled picket holes align precisely with the internal upper raceway of Forerunner rails, utilizing an alignment jig.
 - 2. Insert retaining rods into each Forerunner rail to pass through the predrilled holes in each picket.
- J. Completed fence panel sections shall be capable of supporting a 600 lb. load applied at midspan without permanent deformation and conformable to a 25% change in grade.
- K. Swing Gates: Fabricate using Montage II /Majestic panel material and gate ends having the same outside cross-section dimensions as the Forerunner rail.
 - 1. Weld all connections, including:
 - a. Upright and Rail intersections.

- b. Picket and Rail intersections.
- c. Hinge and Hardware brackets.
- d. Security panels to frame and pickets.

2.07 FACTORY FINISHING

- A. All Fence Panels, Gates and components: Galvanize and pre-treat with six stage zinc phosphate pretreatment/wash followed by "PERMACOAT™", an electrostatic spray application of a two coat powder system with salt spray resistance of 3,500 hours without loss of adhesion per ASTM B117.
 - 1. Base Coat: Thermosetting epoxy powder coating (gray color) 2-4 mils minimum thickness.
 - 2. Top Coat: TGIC polyester "No-mar" powder coat, 2-4 mils minimum thickness.
 - 3. Color: Black.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that conditions are appropriate to begin work.
 - 1. Verify underground utility locations are as indicated.
 - 2. Verify that site paving conditions are as indicated.
- B. Confirm varying conditions are corrected before start. Start of work indicates acceptance of substrates.
- C. Field measurements to include determination of required "equal spacing" of posts at each run of fencing.

3.02 PREPARATION

- A. Lay out work as indicated. Identify and resolve potential conflicts before proceeding with installation.
- B. Protect adjacent completed work from damage. Repair or replace all damaged work.

3.03 INSTALLATION

- A. Fences: Plumb posts in each direction.
- B. Anchor posts in concrete by means of galvanized steel pipe sleeves, not less than 6 inches long, with an outside diameter not less than 1/2 inch greater than the outside diameter of the inserted pipe post.
Provide steel plate closure secured to bottom of sleeve of width and length not less than 1 inch greater than outside diameter of sleeve. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with non-shrink, non-ferrous grout.
- C. Fence posts shall be set at equal spacings as indicated on drawings and as confirmed by field measurement.
- D. Gate posts shall be spaced according to the gate openings specified in the construction plans.

- E. Related sections specifying concrete and earthwork govern post base placement and accessory material requirements. Attach Panels to posts using panel brackets supplied by the bolt-on hardware supplied by manufacturer.
- F. Gates: Install gates plumb, level, and secure for full opening without interference. Anchor ground-set items in concrete. Adjust hardware and power operators for smooth operation and lubricate where necessary.

3.04 ERECTION TOLERANCES

- A. Maximum Variation From True Position: 1/4 inch.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Variation from Plumb: 1/8 inch in 10 feet.

3.05 ADJUSTING

- A. Adjust gate hardware for smooth operation.

3.06 CLEANING AND PROTECTION

- A. Excavation Spoils:
 - 1. Post-hole excavation prior to finish grading and planting: Suitable materials conforming to requirements of other sections may be used in other locations on the site. Remove excess materials as specified in related sections.
 - 2. Post-hole excavation following finish grading and planting: Remove all materials from site.
- B. Clean fence and gates from concrete overspray and other soiling of finish.
- C. Protect installed work from subsequent construction operations.
- D. Dispose of all excess materials.
- E. Repair paving and landscape to conform to fencing installation, with material matching original conditions.

- END OF SECTION -

SECTION 32 8400
IRRIGATION SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

- A. The CONTRACTOR shall provide all labor, materials, supplies, tools, and transportation and perform all operations in connection with and reasonably incidental to complete the installation of the automatic sprinkler irrigation systems as shown on the drawings. Items hereinafter are included as an aid to take off, and are not necessarily a complete list of work items.
 - 1. Trenching, stockpiling, excavation, materials, and refilling trenches.
 - 2. Furnishing materials and installation for complete system including piping, valves, fittings, sprinkler heads, dripline and fittings, automatic controls, and final adjustment of heads to insure complete coverage.
 - 3. Line voltage connections to the irrigation controllers and low voltage control wiring from controllers to remote control valves.
 - 4. Replacement of unsatisfactory materials.
 - 5. Clean-up, inspection and approval.
 - 6. All work of every description mentioned in the specification and/or addenda thereto, all other labor, and materials reasonably incidental to the satisfactory completion of the work, including clean-up of the site, as directed by the Architect.
 - 7. Tests.
 - 8. As-built record drawings.
- B. Work Specified Elsewhere:
 - 1. 120 volt A.C. electrical stub-out to controller location.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer catalog information on all material to be used on the project as specified on the legend, notes, details and plans. Redline or highlight exact items on page to be submitted. Complete material list shall be submitted prior to performing any work.
- B. Substitutions: No substitution will be permitted without prior written approval by the Architect. If the product is approved and, in the opinion of the Architect, the substituted product does not perform as well as the specified product, the Contractor shall replace it with the specified product at no additional cost to the District.
- C. All equipment or materials installed or furnished without prior approval of the Architect may be rejected and the Contractor may be required to remove the equipment or material at their own expense.

1.03 CLOSEOUT SUBMITTALS

- A. Project As-built Record Documents:
 - 1. The Contractor shall maintain in good order in the field office, one complete set of black line prints of all sprinkler drawings which form a part of the contract, showing all water

lines, electrical, sprinklers, valves, stub-outs. In the event any work is not installed as indicated on the drawings, such work shall be corrected and documented accurately on the working drawings.

2. Dimension from two permanent points of reference, such as building corners, sidewalks, road intersections or monuments, the following items:
 - a. Connection to water source
 - b. Backflow preventor
 - c. Gate valves
 - d. Routing of pressurized mainlines and lateral lines
 - e. Remote control valves
 - f. Quick coupling valves
 - g. Flow sensor, master valve, and irrigation controller
3. Deliverables shall be one full size colored hard copy of the contract drawings with redlines and dimensions or a full sized colored scanned PDF version.

B. Controller Chart:

1. Provide one laminated (hermetically sealed between two pieces of 10 mil. plastic) controller chart showing the area covered by controller for each automatic controller supplied at the maximum size controller door will allow. Chart shall be a reduced drawing of the actual "as-built" system. If controller sequence is not legible when the drawing is reduced to door size, the drawing shall be enlarged to a size that is readable and placed folded, in a sealed plastic container, inside the controller door.
2. Controller chart shall be a blackline print with a different color used to show area of coverage for each station. Charts must be completed and approved by the Architect prior to final inspection of the irrigation system.
3. Locate all dripline flush valves and dripline indicators on colored plans if the locations differ from design plans.

C. Controller Cloud Based Communication and Flow Sensor installation confirmation:

1. Provide written confirmation that the cloud-based communications are set up and operational between controller(s) and cloud-based server.
2. If controller is a two-wire type controller. Provide confirmation that the controller is communicating with each decoder valve on system and there are no error messages logged on the cloud-based communication system. Provide a printout of information to Landscape Architect or Irrigation Consultant.
3. Provide written confirmation from the distributor/manufacturer's representative that the controller is communicating with flow sensors and that the correct "k" and "offsets" are setup and utilized properly. The "k" and "offsets" are pre-set numbers you plug into the controller software based on the flow sensor size and type when calibrating the flow sensor. Confirm that flow values have been "learned" and recorded for each valve on the controller, and the correct gpm per valve is shown and verified on a printout and provided to Landscape Architect or Irrigation Consultant. Flow alarms and automatic shut offs should be set up after plant establishment.

D. Maintenance and Operating Instructions and Manuals:

1. Contractor shall prepare an Operation and Maintenance Manual, organized in a 3-ring binder, containing the following information.

- a. Contractor's name, address, and telephone number. Duration of guarantee, periods as specified herein, list of equipment with names and addresses of local manufacturer's representatives with duration of written warranties. Complete operating and maintenance instructions on all equipment spare parts lists and related manufacturer's information.
2. Submit the Operation and Maintenance Manual to the Architect within 10 Calendar Days of completion of work of this Section and as a condition of project acceptance.
- E. Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis:
 1. All landscape irrigation audits shall be conducted by a local agency landscape irrigation auditor or a third party certified landscape irrigation auditor. Landscape audits shall not be conducted by the person who design the landscape or installed landscape.
 2. In large projects or projects with multiple landscape installations (i.e. production home developments) an audit rate of 1 to 7 lots or approximately 15% will satisfy this requirement.
 3. For new construction and rehabilitated landscape projects installed after December 1,2015, as described in Section 490.1:
 - a. The project applicant shall submit an irrigation audit report with the Certificate of Completion to the local agency that may include, but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule, including configuring irrigation controllers with application rate, soil types, plant factor, slop, exposure and any other factors necessary for accurate programming.

1.04 QUALITY ASSURANCE & GENERAL REQUIREMENTS

- A. Qualifications: The Contractor, personally or through an authorized and competent representative, shall supervise the work constantly, and shall as far as possible keep the same foreman and workmen on the job from commencement to completion. The workmanship of the entire job must in every way be first class, and only experienced and competent workmen will be allowed on the job. A minimum of five years' experience of installing irrigation systems of similar scope, size and complexity as the system being installed under this scope of work is required for all on-site job superintendents.
- B. Manufacturer's installation instructions and best practices: Manufacturer's installation instructions shall be followed in all cases when not shown in the Drawings or Specifications.
- C. O.S.H.A. Compliance: All articles and services covered by this specification shall meet or exceed the safety standards established under the Federal Occupational Safety and Health Act of 1970, together with all amendments in effect as of the date of this specification.
- D. All irrigation systems shall be installed to meet or exceed the requirements set forth in the California Department of Water Resources Model Water Efficient Landscape Ordinance.
- E. All materials supplied for this Project shall be new and free from any defects. All defective materials shall be replaced immediately at no additional cost to City.
- F. Codes and Standards: Comply with all applicable codes and standards.
 1. All work and materials shall be in full accordance with the latest rules and regulations of the National Electric Code; published by the Western Plumbing Officials Association; California Code of Regulations, Title 23, Division 2. Department of Water Resources, Chapter 2.7. Model Water Efficient Landscape Ordinance; and other State or local laws regulations. Nothing in these drawings or specifications is to be construed as to permit work not conforming to these codes.

2. When the specifications call for materials or construction of a better quality or larger size than required by the above mentioned rules and regulations, the provision of the specifications shall take precedence over the requirements of said rules and regulations.
3. Contractor shall furnish, without extra charge, any additional material and labor when required by the compliance with these rules and regulations, though the work be not mentioned in these particular specifications or shown on the drawings.
4. The Contractor shall erect and maintain barricades, guards, warning signs, and lights as necessary or required by O.S.H.A. regulations for the protection of the public or workmen.
5. Any existing buildings, equipment, piping, pipe covering sewers, etc., damaged by the Contractor during the course of his work shall be replaced or repaired by the Contractor in a manner satisfactory to the Architect and at Contractor's own expense, before final payment is made. The Contractor shall be responsible for damage caused by leaks in the piping systems being installed or having been installed under this contract. He/she shall repair, at his/her own expense, all damage so caused, in a manner satisfactory to the Architect.
6. The Contractor shall secure the required licenses and permits including payments of charges and fees, give required notices to public authorities, verify permits secured or arrangements made by others affecting the Work of this section.

1.05 EXISTING CONDITIONS

- A. Protection of Existing Structures and Utilities
 1. The Drawings show, if applicable, existing above and below grade structures and utilities that are known to the Architect. Locate known existing installations before proceeding with construction operations that may cause damage to such installations. Existing installations shall be kept in service where possible and damage to them shall be repaired with no adjustment of Contract Sum. Verify with Architect if As Built drawings are available.
 2. If other structures or utilities are encountered, request Architect to provide direction on how to proceed with the Work. If a structure or utility is damaged, take appropriate action to ensure the safety of persons and property.
- B. Trench Interference with Existing Tree Root Systems: Prior to trenching, layout main and lateral line locations within drip Line of trees and review locations with Architect. Relocate any lines that may interfere with existing root systems to avoid or reduce damage to root systems as accepted by Architect.
- C. Provide barricades, coverings, warning signs, lights and other protection required by local code or OSHA to prevent damage to existing improvements to remain and to protect the public.

1.06 DELIVERY, STORAGE AND HANDLING:

- A. Protection: Use all means necessary to protect irrigation system materials before, during and after installation and the installed work and materials of all other trades.
- B. Replacement: In the event of damage, immediately make all repairs and replacements necessary to the satisfaction of the Architect and at no additional cost to the project.
 1. Exercise care in handling, loading, unloading and storing plastic pipe and fittings under cover until ready to install; transport plastic pipe only on a vehicle with a bed long enough to allow the pipe to lay flat to avoid undue bending and concentrated external load. Protect pipe from sunlight.

2. Repair all dented and damaged pipe by cutting out the dented or damaged section and rejoining with a coupling.

1.07 LAYOUT OF WORK

- A. The Contractor shall stake out the irrigation system as shown on the drawings. These areas shall be checked by the Contractor and Architect before construction is started. Any changes, deletions or additions shall be determined at this check.
- B. Due to the scale of the Drawings, it is not possible to indicate all piping offsets, fittings, sleeves, etc., which may be required. Carefully investigate the conditions affected all of the work and plan accordingly, and furnish all required fittings. Install system in such a manner to avoid conflicts with planting, utilities and architectural features.
- C. Do not install the irrigation system as shown on the Drawings when it is obvious in the field that obstructions, grade differences or discrepancies in arc dimensions exist that might not have been considered. Bring such obstruction or differences to the attention of the Architect. Notify and coordinate irrigation Work with applicable contractors for location and installation of piping and sleeves through or under walls, pavement and structures. In the event this notification is not given, the Contractor shall assume full responsibility for any revision necessary.

1.08 SEQUENCING AND SCHEDULING

- A. Acceptance: Do not install main line trenching prior to acceptance by Architect of rough grades completed under another Section.
- B. Coordination: Coordinate with the all other trades the sleeving, power requirements of the project, prior to the start of construction.

1.09 INSTRUCTION

- A. After the system has been installed and approved, the Contractor shall instruct the District and or Maintenance Contractor, in complete operation and maintenance of the irrigation system.

PART 2 - MATERIALS

2.01 PIPE AND FITTINGS

- A. PVC Pressure Mainline pipe and fittings.
 1. Pressure mainline piping:
 - a. **2" AND SMALLER:** Shall be PVC 1120-Schedule 40 plastic pipe. Pipe shall be made from NSF approved Type 1, Grade 1 PVC compound conforming to ASTM D1785.
 2. Schedule 40 pipe shall be manufactured in strict compliance to ASTM D1785 and D2665 (where applicable), consistently meeting and/or exceeding the Quality Assurance test requirements of these standards with regard to material, workmanship, burst pressure, flattening, and extrusion quality.
 3. All PVC pipe shall bear the following markings:
 - a. Manufacturer's name
 - b. Nominal pipe size
 - c. Class or Schedule
 - d. Pressure rating in PSI

- e. NSF
- f. Date of extrusion
- 4. Use solvent weld pipe for mainline pipe with a nominal diameter less than 3-inches or where a pipe connection occurs in a sleeve. Use Schedule 40, Type 1, PVC solvent weld fittings conforming to ASTM Standards D2466 and D1784 at changes in direction or branch mains. Use primer approved by the pipe manufacturer. Solvent cement to conform to ASTM Standard D2564.
- 5. Connections between main lines and RCV's shall be of Schedule 80 PVC (threaded both ends) nipples and fittings.
- 6. All fittings shall bear the manufacturer's name or trademark, material designation, size, applicable I.P.D. schedule and NSF Seal of approval.
- 7. Inside diameter of pipe shall be the same size as iron pipe.
- 8. Caution shall be utilized in handling Type I pipe due to the possibility of cracking or splitting.
- 9. When connection is plastic to metal, male adapters shall be used unless otherwise noted or detailed. The Male adapter shall be hand tightened, plus one turn with a strap wrench. Joint compound shall be non-lead base (Teflon paste or equal).
- 10. Threaded Nipples – ASTM D2464, Schedule 80 with molded threads.
- B. PVC Non-pressure lateral line and fittings
 - 1. Lateral lines (non-pressure): 3/4" and larger shall be Schedule 40 PVC plastic pipe.
 - 2. Manufactured from virgin polyvinyl chloride (PVC) compound in accordance with ASTM D2241 and ASTM D1784; cell classification 12245-B, Type 1, Grade 1.
 - 3. Fittings – All lateral lines shall be connected with Schedule 40, Type I, Grade I, PVC solvent weld fittings.
 - 4. Threads – Injection molded type (where required).
 - 5. Tees and ells – Side gated.
 - 6. Threaded Nipples – ASTM D2464, Schedule 80 with molded threads.
 - 7. Refer to "trenching and backfilling" elsewhere in these specifications for minimum depths.
- C. Solvent for all PVC pipe shall be #711 Gray, along with #P-70 primer, NSF approved as manufactured by Industrial Polychemical Service, Gardena, California, or approved equal.
- D. Pipe joint compound shall be non-hardening, non-toxic materials designed specifically for use on threaded connections in water carrying pipe. Performance shall be same as RectorSeal #5.
- E. PVC Flexible Pipe: Extruded from flexible vinyl chloride compound.
 - 1. ½ inch pipe: 0.50 inch inside diameter, 0.090 inch wall thickness
 - 2. Material shall conform to ASTM designation D-2287.
- F. Swing joints shall be as shown on construction details.

2.02 SLEEVES

- A. Sleeve below all hardscape elements with SCH 40 or Class 200 PVC twice the diameter of the pipe or wire bundle within, or as delineated on the plans.
- B. Under Hardscape Crossings: Sleeves shall extend a minimum of 24 inches beyond all sidewalks, or shall be extend 24" beyond the back edge of the curb, where noted on the plans.

2.03 BACKFLOW PREVENTION DEVICE

- A. Backflow prevention device shall be the reduced pressure type with gate valves, check valves, test cocks, reduced pressure chamber and air vent.
- B. Provide a freeze preventative blanket around backflow assembly. Blanket shall be green.
- C. All metallic pipe and fittings installed below grade shall be wrapped with an approved asphaltic tape.
- D. Backflow prevention device model and size shall be as shown on the drawings.

2.04 BACKFLOW PREVENTION DEVICE ENCLOSURE

- A. Enclosure shall be sized to completely enclose backflow device.
- B. Install enclosure device as detailed.

2.05 MASTER CONTROL VALVE

- A. Master control valve shall be a normally open 24 VAC solenoid actuated globe pattern valve.
- B. Valves shall be made of brass with a minimum pressure rating of 150 PSI
- C. Valve shall have external and internal bleed for manual operation.
- D. Valve model and size shall be as shown on drawings.

2.06 FLOW SENSORS

- A. Inline flow sensors shall be installed in accordance with the manufacturer's installation instructions. Contractor is responsible for the installation, all required materials and connections of the flow sensors for complete operation with the irrigation controller.
- B. Flow sensor size and model shall be listed on the drawings.

2.07 FLOW SENSOR CABLE AND CONDUIT

- A. Flow sensor wire shall be shielded cable Paige model 7171D or approved equal.
- B. Maximum cable distance from controller to flow sensor shall be 2000 ft.
- C. Install flow sensor cable in a 1" grey SCH 40 PVC conduit with long sweep elbows.
- D. Conduit and flow sensor cable shall be routed with mainline wherever possible. Provide a minimum 6" separation between conduit and pressure main line.
- E. Provide 10" round gray electrical pull boxes a minimum of every 200 ft, at each change in direction and adjacent to each controller. Heat brand lid of pull box "FSB".

2.08 GATE VALVES

- A. Gate valves 3" and smaller shall meet the following requirements:
 - 1. Valves shall be of stainless steel (304 or higher) or bronze/brass construction with non-rising stem, cross handle and threaded connections.
 - 2. Valves shall be Leemco Model #LGT-SS, Nibco T-113-K or approved equal. Size as shown on the drawings
 - 3. Install in 10" diameter plastic valve box as detailed.

2.09 QUICK COUPLING VALVES

- A. Quick coupling valves shall be as shown on the drawings.
- B. Install in 10" diameter plastic valve box as detailed.

2.10 CONTROLLERS

- A. Controller's size and model shall be as listed on the drawings.
- B. Final location(s) of controller shall be approved by the Architect.
- C. Controller requires 120v power. Maximum power output of controller is 2.5 amps.
- D. Install Controller and accessories as detailed and per Manufacturer's details.

2.11 CONTROL WIRE

- A. Irrigation Low Voltage Control Wire: All wiring to be used for connecting the automatic controller to the electric solenoid actuated remote control valve shall be Type UF-600V, solid copper, PVC insulation, single conductor, UL approved underground feeder cable, approved for direct burial.
- B. Control wire: Size #14-1 wire with an insulating jacket of color other than white or yellow. Runs over 2,000 lineal feet shall be size #12-1.
- C. Common ground wire: Size #12-1 wire with a white insulating jacket.
- D. Spare wires: Size #14-1 wire with a yellow insulating jacket. Provide a minimum of two spare control wires into each RCV box for future.
- E. Provide different color (not yellow) control wires for each controller and a separate ground wire for each controller.
- F. Splices shall be made with 3M-DBY seal packs.

2.12 ELECTRIC REMOTE CONTROL VALVES

- A. Electric remote control valves sizes shall be shown on drawings.
- B. Electric remote control valve shall be a normally closed 24 VAC solenoid actuated globe pattern valve.
- C. Valves shall be made of durable glass-filled nylon with a minimum pressure rating of 150 PSI
- D. Valve shall have external and internal bleed for manual operation.
- E. All valves that service dripline or drip systems shall include a plastic wye filter and pressure regulator on the valve or a solid set 40 PSI plastic regulator downstream of the valve. Filters shall be rated to 120 psi, includes a 150 mesh disk or stainless steel screen.

2.13 IDENTIFICATION TAG

- A. Identification tags for all electric control valves shall be manufactured by Christy. Tag numbers shall match stationing in controller and as shown on as-built drawings. Provide one yellow station number tag for each electric control valve as follows:
 - 1. Potable water systems: Christy ID.STD.Y1

2.14 VALVES BOXES

A. ELECTRIC REMOTE CONTROL VALVE BOXES:

1. All electric remote control valve boxes that service non-drip systems shall be installed within a Carson model 1419 (14"x19") or 1220 (13" x 20") plastic valve box with bolt down plastic lid or approved equal. Size of box is dependent on the size of valve. Lid shall be marked: "Irrigation Control Valve."
2. All electric remote control valve boxes that service dripline or drip systems shall be installed within a Carson model 1220 plastic valve box with bolt down plastic lid or approved equal. Lid shall be marked: "Irrigation Control Valve."
3. Use black colored boxes in shrub and groundcover areas and green in turf areas.
4. Heat brand controller letter and numbers into lid. Minimum text height to be 2".

B. GATE VALVE AND QUICK COUPLING VALVE BOXES:

1. All gate valve and quick coupling valve shall be installed within a Carson Model 910-18" depth plastic valve box with plastic lid or approved equal. Use 8" or 10" sleeve to encase gate valve.
2. Use black colored boxes in shrub and groundcover areas and green in turf areas.
3. Heat brand the letters "GV" into lid. Minimum text height to be 2".

C. DRIP COMPONENT BOXES:

1. All drip components shall be installed within a 6" round black plastic valve box with plastic lid. Carson Model 708 plastic valve box with plastic lid or approved

2.15 SPRINKLER HEADS

- A. All sprinkler heads shall be as listed on the drawings.
- B. Pop-up spray sprinklers shall include a built in check valve in the body to hold up to 14 feet of head.
- C. Pop-up spray sprinklers shall include built in pressure regulation in the body.
- D. Use 30 psi regulators for all spray nozzles and 45 psi regulators for all rotating nozzles. Use 12" pop-ups in shrub and ground cover areas and 6" pop-ups in turf areas.
- E. Riser units and nipples shall be the same size as the inlet to the sprinkler body.

2.16 BUBBLERS

- A. Bubblers shall be as listed on the drawings.
- B. Bubblers shall be pressure compensating from 20 psi to 60 psi.
- C. The bubbler body shall be manufactured with UV Stabilizers and have 1/2" FIPT threads for connection to 1/2" MNPT male adaptor or nipple.
- D. Flow rate molded onto the bubbler for easy identification
- E. Where low head drainage occurs, each bubbler shall have a check valve installed. Hunter HC-50F-50M or approved equal.

2.17 DRIPLINE & DRIPLINE COMPONENTS

- A. Dripline shall be as listed on the drawings.

- B. Tubing shall be low density, UV resistant, polyethylene tubing with internal pressure-compensating, drip emitters impregnated into the tubing spaced at 12 inches
- C. All dripline systems shall have a manual flush valve at each isolated zone within the systems. Multiple flush valves may be required per drip zone.
- D. All dripline systems shall have air relief valve(s) at the highest elevation point(s) within each isolated zone. Install one air relief valve for every 500 linear feet of dripline.

2.18 CHECK VALVE

- A. Spring check valve shall be Schedule 40 PVC with ½ lb spring and stem rated at 150 PSI.
- B. Check valves shall be NDS. Use KSC series swing check valve for all uphill flow direction valves and KC series spring check for all downhill flow direction valves. Size per line size of lateral line.

2.19 MISCELLANEOUS INSTALLATION MATERIALS

- A. Solvent cement and primer for solvent weld joints shall be of make and type approved by manufacturer(s) of pipe and fittings. Cement shall be maintained at proper consistency throughout use.
- B. Pipe joint compound shall be non-hardening, non-toxic materials designed specifically for use on threaded connections in water carrying pipe. Performance shall be same as RectorSeal #5.

2.20 MISCELLANEOUS EQUIPMENT

- A. Provide all equipment called for by the drawings.
- B. Provide to the Architect at completion of the maintenance period, three (3) each of all operating and servicing keys and wrenches required for complete maintenance and operation of all heads and valve. Include all wrenches necessary for complete disassembly of all heads and valves.

PART 3 - INSTALLATION

3.01 PREPARATION

- A. Schedule and coordinate placement of materials and equipment in a manner to effect the earliest completion of work in conformance with construction and progress schedule.

3.02 HANDLING AND STORAGE

- A. Protect work and materials from damage during construction and storage as directed by the Architect.
- B. Handle plastic pipe carefully; especially protect it from prolonged exposure to sunlight. Any section of pipe that has been damaged will be discarded and removed and replaced if installed.

3.03 LAYOUT

- A. Lay out work as accurately as possible in accordance with diagrammatic drawings.
- B. Where site conditions do not permit location of piping, valves and heads where shown, notify Architect immediately and determine relocation in joint conference.
- C. Prior to installation, the Contractor shall stake out the routing of all pressurized main lines and sprinkler heads for approval by Architect.

- D. Run pipelines and automatic control wiring in common trenches wherever practical.

3.04 EXCAVATING AND TRENCHING

- A. Work shall be performed when soils are reasonably dry and not saturated.

B. Trenching

1. Excavations shall be open vertical construction sufficiently wide to provide free working space around the work installed and to provide ample space for backfilling and compacting.
2. In existing turf areas remove sod with sod cutter. Roll and set aside. Replace immediately after installing conduit (three days maximum), backfilling and compacting.
3. Depth of trenches shall be pipelines deep enough to provide minimum cover from finish grade as follows.
 - a. 18" minimum cover over main lines to control valves and quick coupling valves. Refer to legend for depth requirements.
 - b. 18" minimum cover over control wires from controller to valves. Refer to legend for depth requirements.
 - c. 12" minimum cover over RCV controlled lateral lines to sprinkler heads. 18" depth will be required at all 12" pop-up sprinklers. Refer to legend for depth requirements.
4. Trenches shall be excavated to such depths as will permit the pipe to be laid at the elevations, slopes, or depths of cover indicated on the drawings, and at uniform slopes between indicated elevations.
5. Whenever cobbles larger than 2 inches in size are present in earthen subgrade, the trench section shall be excavated to the lines required. Every effort shall be made to keep the sides of the trenches firm and undisturbed until backfilling has been completed and consolidated. Trenches shall be excavated with approximately vertical sides between the elevation of the bottom of the pipe and an elevation one foot above the top of the pipe.
6. When two pipes are to be placed in the same trench, maintain a 4" space between pipes as minimum.
7. Where other utilities interfere with irrigation trenching and pipe work, adjust the trench depth as instructed by the Architect.
8. Restore surfaces, existing underground installations, etc., damaged or cut as a result of excavations, to original conditions in a manner approved by the Architect.

C. Backfilling:

1. Backfill materials shall be approved native soil in all landscaped areas. Unsuitable material, including clods and rocks over 2 inches in size shall be removed from the premises by Contractor and disposed of legally at no cost to the District.
2. Backfill only after piping has been tested, inspected and approved.
3. Place backfill materials in 6" layers and compact by jetting or tamping to a minimum compaction of 90 percent of original soil density.
4. Dress off areas to finish grades and remove excess soil, rocks or debris remaining after backfill is completed.
5. All backfilling shall be properly compacted so as to avoid future settlement.
6. If settlement occurs along trenches, and adjustments in pipes, valves and sprinkler heads, soil, sod or paving are necessary to bring the system, soil, sod or paving to the proper

level or the permanent grade, the Contractor, as part of the work under this contract, shall make all adjustments without extra cost to the project.

3.05 INSTALLATION OF SLEEVING UNDER ASPHALT OR CONCRETE

- A. General: Layout of the piping system shall be per the drawings and to the depth specified above.
- B. Under Existing Pavement:
 - 1. Piping under existing pavement may be installed by jacking, boring or hydraulic driving, except that no hydraulic driving will be permitted under asphaltic concrete pavement.
 - 2. Where cutting of existing pavement is necessary, provide alternate routes for vehicular traffic. After placement of pipes, backfill trench and compact to 95%. Replace entire section of base rock and hardscape to match existing conditions.
- C. Inspection of Pipe and Fittings: Carefully inspect all pipe fittings before installation, removing all dirt, scale and burrs; ream as required. Install all pipe with all markings up for visual inspection and verification.
- D. Installation of Sleeving:
 - 1. Sleeving shall be installed a minimum of 24 inches below grade.
 - 2. Sleeving shall extend 24 inches beyond the edge of finished concrete surface.
 - 3. Trenches containing sleeves shall be backfilled with native soil or imported topsoil. It must be free from roots, vegetable matter or other deleterious substance and shall be of such nature and so graded that it will bind readily when watered and compacted. Backfill with such material to the bottom of the concrete or hardscape section and compacted to a minimum of 90%. Where the sleeve extends beyond the edge of the hardscape or concrete, the sleeve shall be backfilled with native soil or imported topsoil, whichever is specified. If nothing is specified, use previously excavated native soil.
 - 4. Prior to placement of concrete, the ends of the sleeves shall be marked with a stake that shall be exposed approximately 2"-3" above rough, or finished grade to identify sleeve locations. On all street crossing, the location shall be marked at the edge of concrete or hardscape with a chiseled line or "x", and the stake removed.

3.06 ASSEMBLING PIPELINES

- A. PVC pipe shall be installed in a manner which will provide for expansion and contraction as recommended by the pipe manufacturer. Pipe routing is diagrammatic and shall be installed in such a manner as to conform with the details.
- B. In joining, use only the specified solvent and make all joints in strict accordance with the manufacturer's recommended methods. Give solvent welds at least 16 minutes set-up time before moving or handling and 24 hours curing time before filling with water.
- C. All pipe shall be assembled free from dirt and pipe scale. Field cut ends shall be reamed only to full pipe diameter with rough edges and burrs removed.
- D. Install 3" wide detectable warning tape above all pressurized main lines as shown in the details. Use Christy model #TA-DT-3-BIRR for potable irrigation systems
- E. Solvent Weld Joint:
 - 1. Prepare joint by first making sure the pipe end is square. Then, de-burring the pipe end, and clean pipe and fitting of dirt, dust and moisture.
 - 2. Dry insert pipe into fitting to check for proper sizing. Pipe should enter fitting 1/3 to 2/3 depth of socket.

3. Coat the inside socket surface of the fitting and the male end of the pipe with P-70 primer (manufactured by Weld-On). Then without delay, apply Weld-On 711 cement liberally to the male end of the pipe and also apply 711 cement lightly to the inside of the socket. At this time, apply a second coat of cement to the pipe end.
 4. Insert pipe immediately into fitting and turn 1/4 turn to distribute cement and remove air bubbles. The pipe must seat to the bottom of the socket and fitting. Check alignment of the fitting. Pipe and fitting shall be aligned properly without strain to either.
 5. Hold joint still for approximately thirty (30) seconds and then wipe the excess cement from the pipe and fitting.
 6. Cure joint a minimum of thirty (30) minutes before handling, at least six (6) hours before allowing water in the pipe.
- F. Threaded Joint:
1. Field threading of plastic pipe or fittings is not permitted. Only factory formed threads will be permitted.
 2. Factory made nipples shall be used wherever possible. Field cut threads in metallic pipe will be permitted only where absolutely necessary. When field threading, cut threads accurately on axis with sharp dies.
 3. All threaded joints shall be made up with pipe joint compound. Apply compound to male threads only.
 4. Where assembling metallic pipe to metallic fitting or valve, not more than three (3) full threads shall show when joint is made up.
 5. Where assembling to threaded plastic fitting, take up joint no more than one full turn beyond hand tight.
 6. Where assembling plastic pipe, use strap type friction wrench only; do not use metal-jawed wrench.
 7. Cap or plug openings as pipeline is assembled to prevent entrance of dirt or obstructions. Remove caps or plugs only when necessary to continue assembly.
 8. Where pipes or control wires pass through sleeves, provide removable non-decaying plug at ends of sleeve to prevent entrance of earth.
 9. For plastic-to-steel connections, work the steel connections first; use a non-hardening non-lead base pipe dope on all threaded plastic-to-steel connections and use only light wrench pressure. All plastic-to-steel connections shall be made with SCH 80 PVC nipple or plastic male adapters.

3.07 REMOTE CONTROL VALVES

- A. Install where shown on drawings and group together where practical. Limit one remote control valve per box.
- B. Locate valve boxes 12" from and perpendicular to walk edges, buildings and walls. Provide 12" between valve boxes where valves are grouped together.
- C. Thoroughly flush main line before installing valves.
- D. Install in shrub or groundcover areas where possible.
- E. Label control line wire at each valve with an I.D. tag, indicating identification number of valve (controller and station number). Attach label to control wire.
- F. Flow control stems shall be adjusted or tuned per manufacturer recommendations.

- G. Install 18GA ½" x ½" square hot dipped galvanized wire mesh under all valve boxes and wrap up the sides of the valves. Adhere wire mesh to sides of box with stainless-steel screws and washers as required. Refer to details for more information.

3.08 AUTOMATIC CONTROL WIRE

- A. Run lines along mains wherever practical. Tie wires in bundles with pipe wrapping tape at 10' intervals and allow slack for contraction between strappings.
- B. Loop a minimum of three (3) feet of extra wire in each valve box; both control wire and ground wire.
- C. Connections shall be made by crimping bare wires with brass connectors and sealing with watertight resin sealer packs.
- D. Splicing will be permitted only on runs exceeding 2500'. Locate all splices at valve locations within valve boxes.
- E. Where control lines pass under paving, they shall pass through Schedule 40 electrical PVC conduit. Do not tape wire in bundles inside conduit.

3.09 AUTOMATIC CONTROLLER

- A. Provide and install automatic irrigation controller in approximate locations shown on drawings. The exact location will be determined on the site by the Architect. Provide conduit and wire and connect to 120 volt switch accessible to controller for ease of maintenance.
- B. Connect control lines to controller in sequential arrangement according to assigned identification number on valve. Each control line wire shall be labeled at controller with a permanent non-fading label indicating station number of valve controlled. Attach label to control wire.
- C. Provide each irrigation controller with its own independent low voltage common ground wire.

3.10 SPRINKLER HEADS AND BUBBLERS

- A. All sprinkler heads shall be set perpendicular to finish grade of the area to be irrigated unless otherwise designated on the plans.
- B. In lawn areas, all sprinkler heads shall be offset a minimum of 3 inches and a maximum of 6 inches from the edge of adjacent hardscape.
- C. Flush and adjust irrigation outlets, bubblers and nozzles for optimum performance and to prevent overspray onto field, walks, roadways, and/or buildings as much as possible. This shall include selecting the best degree of arc and radius to fit the existing site conditions and throttle the flow control at each valve to obtain the optimum operating pressure for each control zone.

3.11 QUICK COUPLING VALVES

- A. Thoroughly flush lines before installing quick coupling valves.
- B. Locate quick coupling valves as shown in the drawings and details.
- C. Locate valve boxes 12" from and perpendicular to walk edges, buildings and walls. Provide 12" between other valve boxes where valves are grouped together.

3.12 DRIPLINE AND DRIPLINE COMPONENTS

- A. Thoroughly flush all driplines.

- B. Install dripline a minimum of 12" away from all buildings and 6" off hardscapes for shrubs and groundcover. 2" of paving for all no-mow or sod type grasses.
- C. Space driplines equally throughout the planting area as detailed. Refer to legend for emitter and row spacing of dripline. Adjust alternate rows so emitters are spaced in a triangular pattern.
- D. All dripline tubing shall be buried 4" below finish grade and stapled down every 4' and at each change in direction with a 6" tubing stake.
- E. For slopes greater than 10:1, modify dripline row spacing on the bottom 1/3 of the slope to be 25% greater at the bottom of the slope.
- F. Install flush valves at the low end of each drip zone minimum of 2 valves are required for each valve. Refer to manufacturer details for installation instructions.
- G. Install air vacuum relief valve(s) at high point(s) of each planting area. Refer to drawings for approximate locations. Revise locations in field based on actual grades of the site. Locate 1 valve per every 500' of dripline. Refer to manufacturer details for installation instructions.
- H. Thoroughly saturate soil prior to planting. Provide additional surface watering as required to keep plant root systems moist during planting establishment period.

3.13 FIELD QUALITY CONTROL

- A. Coverage Tests:
 - 1. Perform coverage tests in the presence of Architect, after sprinkler or drip system is completed. Test system to assure that all areas are irrigated completely and uniformly.
 - 2. Do not spray onto pavement or structures. Adjust arc nozzles as needed to provide full coverage without over spray.
- B. Adjusting and Cleaning:
 - 1. System adjustment:
 - a. Valves: Adjust flow for proper operation.
 - b. Heads: Adjust for alignment and coverage.
 - c. If it is determined that coverage could be improved by adding additional driplines or a nozzle change, make such changes as required to provide adequate coverage to all plant material.
 - d. Perform final cleaning of all risers, dripline, heads, and equipment for proper operation. Demonstrate operation and uniform coverage in the presence of the Architect prior before final acceptance.

3.14 TESTING

- A. General
 - 1. Notify the Architect at least three (3) days in advance of testing.
 - 2. Furnish all necessary testing equipment and personnel.
 - 3. Perform testing at his/hers own expense.
 - 4. Correct all leaks and retest until acceptance by the Architect.
 - 5. Center load piping with small amount of backfill to prevent arching or slipping under pressure. No fitting shall be covered

- B. Closing uninspected work: Do not allow or cause any of the work of this section to be covered up or enclosed until it has been inspected, tested and approved by the Architect and other authorized agencies.
- C. Flushing: Before backfilling the main line, and with all control valves in place but before lateral pipes are connected, completely flush and test the main line and repair all leaks. Flush out each section of lateral pipe before sprinkler heads are attached.
- D. Perform test as specified below. Remake any faulty joints with all new materials. Use of cement or caulking to seal leaks is absolutely prohibited.
- E. Pressure Testing Procedure:
 - 1. Apply the following tests after welded plastic pipe joints have cured at least twenty-four (24) hours.
 - a. Solvent Weld Mainline: Remove all the air from the piping system then test live (constant pressure) and QCV lines hydrostatically at 125 PSI minimum. Lines will be approved if test pressure is maintained for six (6) hours. The lines shall be restored to the original test pressure. The Contractor shall make tests and repairs as necessary until test conditions are met.
 - b. Test RCV controlled lateral lines with water at line pressure and visually inspect for leaks. Retest after correcting defects.
- F. Final Inspection
 - 1. Thoroughly clean, adjust and balance all systems.
 - 2. Demonstrate the entire system to the Irrigation Consultant and/or, if required, authorized agent and other governing agencies providing that all remote control valves are properly balanced, that all heads are properly adjusted for radius and arc of coverage, and that the installed system is workable, clean and sufficient.

3.15 GUARANTEE

- A. It shall be the responsibility of the Contractor to fill and repair all depressions and replace all necessary lawn and planting due to the settlement of irrigation trenches for one year following completion and acceptance of the job.
- B. The Contractor shall also guarantee all materials, equipment and workmanship furnished by him to be free of all defects of workmanship and materials, and shall agree to replace at his expense, at any time within one year after installation is accepted, any and all defective parts that may be found.

3.16 MAINTENANCE

- A. Continuously maintain irrigation system in areas indicated in the Contract during the progress of work and for a period of 90 days after substantial completion.
- B. It is Contractor's responsibility to turn over the irrigation in a first-class condition at the end of the maintenance period.
- C. Maintenance Schedule: Contractor shall submit schedule of maintenance tasks to be performed for Architect review and approval. At a minimum, maintenance staff shall be on-site two times per month. It is not the intention of these Specifications to allow a "quick cleanup" at the end of the maintenance period, but rather that the work be continuous and ongoing.
- D. Proper irrigation system maintenance includes the overall supervision of the system, controller scheduling, routine adjustments and necessary repairs.

- E. Maintain irrigation system for optimum performance, as per manufacturer's specifications, by inspecting the entire system on an on-going basis. This includes cleaning and adjusting all bubbler heads, dripline and valves for proper coverage.

3.17 CLEAN-UP

- A. Preservation and Cleaning: The Contractor shall clean up the work as it progresses. At frequent intervals, and at all times when directed by the Architect, the Contractor shall remove and dispose of accumulations of rubbish and debris of all kinds. At the time of completion, the entire site shall be cleared of tools, equipment, rubbish, etc., all of which shall be removed from the site; and the entire project, including surrounding premises, shall be left in proper, clean condition ready for acceptance.

END OF SECTION

SECTION 32 9000

LANDSCAPE PLANTING

PART 1 GENERAL

1.01 SUMMARY

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.
- B. Work Included:
 - 1. Furnish all plant materials.
 - 2. Furnish all labor, equipment, and materials necessary for landscape planting installation and maintenance according to these Specifications.
- C. Related Work:
 - 1. Section 32 8400: Irrigation System
 - 2. Irrigation system shall be installed and operative before beginning planting operation. Contractor shall fully acquaint themselves with the existing conditions, particularly in reference to underground piping. Any damage caused by the Contractor to work of other trades shall be repaired by them at no cost to the District.

1.02 COORDINATION

- A. Coordinate work fully with all other trades involved. Coordinate with items of other trades to be furnished and set in place. Such portions of their work as is all or in part embedded, built-in, attached to, or supported by the work shall be executed by them in ample time that progress of the work is not delayed. Contractor shall be responsible for the proper installation of all items related to this section.
- B. Contractor shall coordinate with the Architect and fully acquaint themselves with the existing conditions particularly in reference to any existing underground piping. Any damage caused by the Contractor to work of other trades shall be repaired by them at no cost to the District.

1.03 REFERENCE

- A. Perform work in accordance with all applicable laws, codes and regulations, as required by the Architect.
- B. Reference to "Standard Specifications" shall mean the current Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, CALTRANS.

1.04 QUALITY ASSURANCE

- A. Personnel:
 - All planting shall be performed by personnel familiar with planting procedures under the supervision of a qualified supervisor.
- B. Codes and Standards:
 - Nursery stock shall meet the standards of the current edition of the "Agricultural Code of California" and the "Regulations of the Director of Agriculture Pertaining to Nursery Stock" as to grading and quality. They shall be true to type and name in accordance with "Standardized Plant Names, Second Edition."
- C. Substitutions:
 - No substitutions shall be permitted without approval of the Architect. The District reserves the right to require the Contractor to replace at the Contractor's cost any plants which the Contractor has installed without the Architect's approval.
- D. Plants shall be subject to inspection and approval of the Architect at place of growth or upon delivery for conformity to specifications. Such approval shall not impair the right of inspection and rejection during

progress of the work.

1.05 SUBMITTALS

A. Plant Certification:

All plants must meet specifications of Federal, State and County laws requiring inspection for plant disease and insect infestations. Inspection certifications required by law shall accompany each shipment, invoice, and order for stock.

B. Plant Material:

Contractor shall submit nursery sources for all plant material, clearly stating Botanical Name and container size. Additionally, Contractor shall submit photos from the sources and size specification including container size, height, diameter, and trunk caliper.

C. Topsoil, Amendment and Fertilizer:

Provide current, accurate analysis from an approved testing laboratory.

D. Mycorrhizae planting backfill.

E. Soils Fertility Laboratory Test Results for each planting area:

1. Two (2) separate planting areas. Submit proposed locations to the Architect for approval prior to testing.

F. Mulch as indicated on the Drawings.

G. Miscellaneous materials as indicated on the Drawings.

1.06 JOB CONDITIONS

A. Delivery:

1. Deliver fertilizer and amendments to site in original, unopened containers bearing manufacturer's guaranteed chemical analysis, name, trademark, and conformance to state law.
2. Deliver plants with identification labels.
 - a. Labels shall state correct name and size.
 - b. Use durable, water-proof labels with water resistant ink that will remain legible for at least 60 days.
3. Protect plant materials during transport to prevent damage to rootball or desiccation of leaves.
4. Remove unacceptable plant materials immediately from job site.

B. Storage:

1. Contractor shall maintain the plant material properly between delivery and planting. This includes protection from animals and vandals; proper watering and feeding when necessary.
2. Shade plants shall be stored in the shade, and sun plants shall be stored in the sun.

C. Timing:

1. Under no circumstances shall any work be performed when the temperature exceeds 90 degrees or is below 40 degrees. No planting shall be done with the soil saturated with water.

PART 2 PRODUCTS

2.01 SOIL AMENDMENTS

- A. The following Topsoil, organic amendments, and fertilizer rates and quantities are to be used for bid basis only. Contractor shall arrange and pay for testing by an accredited soils laboratory of existing site soil after rough grading operations are complete, and shall amend the soils according to said laboratory's recommendations. The soils recommendations shall be considered a part of this specification.

B. Topsoil: Provide topsoil as required to complete landscape work.

1. Topsoil may include clean on-site material that has been previously stripped from the top 6 inches of original grade or acceptable import material (as applicable). Acceptable topsoil shall be free from

“rocks” (rock, stones, rubble, clay clods, etc. over 1” in diameter), roots, toxins, and any other deleterious material per the discretion of the Architect. All import topsoil proposed for use shall be submitted to the Architect for review and acceptance prior to use. Submit samples and current soil fertility and structure analyses for approval by the Architect.

2. Topsoil to be furnished shall be fertile and friable, possessing characteristics of representative productive soils on the site. It shall not contain toxic substances which may be harmful to plant growth. When herbicide contamination is suspected then a radish/rye grass growth trial must be performed. Consult with the Architect prior to decision to test. It shall be uniformly textured and free of all objectionable foreign materials, oil or chemicals which may be injurious to plant growth. Natural topsoil shall possess a pH factor between 5.5 and 7.5, a sodium absorption ratio (SAR) of less than 8, a boron concentration of the saturation extract of less than 1 ppm, and salinity of the saturation extract at 25 degrees C. of less than 4.0 millimhos per centimeter. Obtain topsoil from naturally well-drained sites where topsoil occurs in a depth of not less than four inches (4”); do not obtain from bogs or marshes.

C. Organic Amendment:

1. Physical Properties: A minimum of 90% of the material by weight shall pass a ½” screen. Material passing the ½” screen shall meet the following criteria:

% Passing	Sieve Designation	
85-100	9.51 mm	3/8”
50-80	2.38 mm	No. 8
0-40	500 micron	No. 35
2. Source material: Fully composted organic green waste.
3. Carbon and Nitrogen ratio: Maximum 35:1 if material is claimed to be nitrogen stabilized.
4. Organic matter: Minimum 50% based on dry weight and determined by ash method. Minimum 270 lbs. organic matter per cubic yard of compost.
5. Iron content: Minimum 0.08% dilute acid soluble iron based on dry weight; iron treated.
6. Salinity (ECe): 4.5 dS/m maximum @ 25 degrees C. as determined in a saturation extract.
7. Reaction (pH): Minimum: 5.5, Maximum: 8.0 as determined in saturated paste.
8. Moisture content 35% - 60%.
9. Contaminants: the compost shall be free of contaminants such as glass, metal, and plastic.
10. Maturity: Shall exhibit visible characteristics of maturity, including: dark brown to black color. Acceptable odor: moldy/musty, soil like, or none. Unacceptable odor: sour, ammonia or putrid.
11. Appearance: Identifiable wood pieces are acceptable, but the balance of the material should be soil like, without recognizable leaves.

D. Fertilizer:

1. Fertilizer shall be a commercial inorganic fertilizer in the granular or pelleted form. Fertilizer shall be delivered to the site in containers labeled in accordance with the applicable State of California regulations, bearing the warranty of the producer or the grade furnished, and shall be uniform in composition, dry and free-flowing.
2. Planting Areas:
 - a. 6N-20P-20K, and 16-6-8, pelleted type.
 - b. Sulphate – sulphur
 - c. Lime for pH adjustment of moderately acid soil
 - d. Starting one (1) month after planting, on a monthly basis, 21N-0P-0K Ammonium sulfate. 5 lbs. per 1,000 square feet.

E. Mycorrhizae Planting Backfill:

1. MycoApply Endo/Ecto, available from Mycorrhizal Applications, Inc., www.mycorrhizae.com.

2.02 CONTAINER PLANTS

- A. All plant materials shall be nursery grown in accordance with the best known horticultural practices and under climatic conditions similar to those in the locality of the project.
- B. Plants shall be vigorous and shall have a normal habit of growth. Plants shall be free of damage by insects, pests, diseases or wind; burns from insecticides or fertilizer; and stunted growth due to lack of water, lack

of food, diseases or other causes. Plants shall be in conformity with the sizes shown on the Drawings.

C. Trees:

1. Unless otherwise specified, tree trunks shall be straight with leader intact, undamaged, and uncut. All old abrasions and cuts are acceptable only when completely callused over.

D. Quantities:

1. Quantities necessary to complete the work as shown on the Drawings shall be furnished.

E. Root Systems:

1. All trees shall have a normal root system. No plants with roots that have encircled themselves will be accepted. In case of any unsatisfactory root system, a total group of plants may be rejected.

PART 3 INSTALLATION

3.01 SURFACE CONDITIONS

A. Inspections by the Contractor:

1. Prior to all work in this section, verify grades and carefully inspect the installed work of all other trades. Verify that all such work is complete to the point where the installation may properly commence.
2. All planting areas shall contain a minimum of eight (8) inches of acceptable topsoil. As applicable and where needed, only previously acceptable topsoil shall be installed.
3. Inspect plant materials for injury, insect infestations and proper pruning.
4. Landscape Contractor shall receive site graded to plus or minus one-tenth of a foot (0.10') of finish grades shown on the Drawings. Allow for depth of soil amendments and mulch in determining the difference between finished subgrade in groundcover and shrub beds. Verify that subgrades are not compacted.
5. Landscape Contractor shall over excavate planting beds along the perimeter of lime treated areas to remove excess lime that was added for construction. Refer to geotechnical report for required overbuild and depth of lime to determine extent of removal. Provide new topsoil in these planting areas.
6. Contaminated Soil:
 - a. Do not perform any soil preparation work in areas where soil is contaminated with cement, plaster, paint or other construction debris. Bring such areas to the attention of the Architect and do not proceed until the contaminated soil is removed and replaced.
 - b. Contaminated soil shall be removed to full depth of contaminants with a minimum depth of 12 inches and replaced with acceptable topsoil.
7. Moisture Content: Soil shall not be worked when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in the air or that clods will not break readily. Water shall be applied, if necessary, to bring soil to an optimum moisture content for tilling and planting.
8. Soil Loosening: Soil in all planting areas (only) shall be ripped or cultivated to the depths specified below. Water shall be added and ripping or cultivating shall be continued until the entire specified depth is loose and friable. All debris, pavement, concrete, and rocks over 1 inch in diameter shall be removed to the specified depth and shall be removed from the site and disposed of properly.
 - a. Slopes 2½ horizontal to 1 vertical and steeper: No loosening required.
 - b. All other areas to be planted: 12 inches deep.
9. Weed Control and removal:
 - a. Remove all weeds and other debris prior to any soil preparation or grading work. Weeds and debris shall be disposed of off the site properly.
 - b. Grow and Kill: After grading finish is complete, apply water in sufficient quantity over a minimum period of 14 days to germinate weed seeds. When weeds have germinated, kill them and remove them in a manner acceptable to the District and that will not have a detrimental residual effect on the growth and vigor of the landscape planting work. Provide temporary irrigation as required to apply the water.

10. In the event of discrepancy, immediately notify the Architect. Do not proceed with this installation in areas of discrepancies until all such discrepancies have been fully resolved.

3.02 SOIL PREPARATION

- A. In the areas designated for landscaping on the Drawings except for bioretention areas and within tree protection zones, Contractor shall, prior to placing imported material, replacing existing topsoil before doing any planting, verify that the areas are clear and free of weeds, roots, debris, rocks and underground obstructions, and construction debris to a depth acceptable for planting. Scarify the subgrade to a four inch (4") minimum depth prior to spreading topsoil. Finished grades shall be approved by the Architect prior to commencing soil preparation and planting operations.
- B. Cultivation and Placement of Amendment:
 1. In turf areas within tree protection zones, mow existing turf to one inch (1") in height, use a steel rake to remove clippings and scarify soil, and topdress with a minimum of one inch (1") of amended topsoil to provide a smooth substrate for over-seeding within the area of exposed surface roots. Place amended topsoil as required to conform to finish grade elevations shown on the Grading Plan. All work in the proximity of existing trees to remain shall follow the Tree Protection Specifications on the Drawings. Apply fertilizer in accordance with soils test results.
 2. In planting areas except for bioretention areas and within tree protection zones, cultivate soil to a depth of eight inches (8"). Prior to planting, incorporate six (6) cubic yards per 1,000 square feet of nitrified fir bark, and the following fertilizers, per 1,000 square feet: 30lbs. 6N-20P-20K to a depth of six inches (6").
- C. Finish Preparation:
 1. After approval of amendment and fertilizer applications by the Architect, incorporate into the top six inches (6") of soil by repeated rotary-hoe cultivation except within tree protection zones.
 2. When rough grading and soil conditioning has been completed, all planting areas shall be smooth graded, ready for placement of plant materials and for seeding/sod. Grading shall be done when soil is at optimum moisture content for working.
 3. Finished grades shown on the Civil Drawings are given in feet and decimals of feet. Slope uniformly between given spot elevations. Planting areas shall be true to grade within one inch when tested in any direction with a 10 foot straightedge.
 4. Grades not otherwise indicated shall be uniform levels or slopes between points where elevations are given or between points established by walks, paving, curbs or catch basins. Finished grades shall be smooth even and on a uniform plane with no abrupt change of surface. Minor adjustments of finish grades shall be made at the direction of the Architect if required.
 5. All grades shall provide for natural runoff of water without low spots or pockets. Flow line grades shall be accurately set and shall not be less than 2 percent gradient wherever possible unless otherwise indicated on the Drawings.
 6. Tops and toes of all slopes shall be rounded to produce a gradual and natural-appearing transition between relatively level areas and slopes.
 7. Roll to compact amended soil to not more than 85% compaction.
 8. Finish out to a smooth, even surface conforming to established grades after settlement. Rake immediately prior to planting.
 9. If rain is likely between completion of soil preparation and planting, precaution shall be taken to prevent erosion of the soil.

3.03 CONTAINER PLANTS

- A. Preparation:
 1. Place plants in containers in the locations indicated on the Drawings and obtain the approval of the Architect before digging. Maintain plants as required for optimal condition until approved for installation.
 2. The Contractor shall protect all utilities, vegetation, and structures during work.

B. Excavation:

1. All plant pits shall be dug circular in outline and with vertical walls. The sides and bottoms of all planting pits shall be thoroughly scarified.
2. Holes for fifteen (15) gallon size plants or larger: twenty-four inches (24") wider than the can or rootball.
3. After pits are dug, break sides to open wall of pit for root penetration and loosen bottom of pit to a depth of three inches (3"). Construct a foot tamped mound in bottom of pit to support plant at proper level.
4. Following excavation of planting holes and prior to placing backfill, fill planting hole with water to a depth of 6", and allow water to percolate into existing soil for 24 hours. Any planting holes not drained within 24 hours shall have drainage holes drilled to a depth that allows planting hole to drain or install subdrain from planting pit to storm drain system as directed by the Architect. After drilling drainage hole or installing subdrain, refill with water and repeat process above as directed by the Architect.

C. Plants in Containers:

1. Plants shall be removed carefully from their containers after the containers have been cut on two (2) sides minimum; fifteen (15) gallon containers shall be opened in three (3) places.
2. After removing plant material from its container, stimulate root growth by making four (4) or five (5) vertical cuts, one inch (1") deep around the circumference of the rootball.
3. Do not lift or handle plants by the top, stems or trunk at any time. All plants shall be lifted in such a manner that the rootball is supported from the underside.
4. The Contractor shall check all plants for adequate root systems. When the root system is defective, he shall remove deficient plants from the site and replace them with new ones with adequate root system.

D. Planting:

1. Center plant in pit or trench over tamped mound.
2. Face for best effect.
3. Set plant plumb and hold rigidly in position.
4. All plants shall be set in the ground so that the rootball will be flush with the finish grade. All plants that settle below the finish grade within thirty (30) days of acceptance of the work shall be replanted in the proper position. In case a total section of planting area settles, the Contractor shall lift the plants, import additional soil mix, regrade, and replant, at no additional cost to the District.
5. Use amended soil mix only for backfill. Backfill pit with soil mix in nine inch (9") layers and water each layer thoroughly to settle soil. The filled pit shall be flush with surrounding grade when complete.
 - a. In the top 1" of the plant hole, mix Mycorrhizae planting backfill with the plant backfill. Evenly distribute the Mycorrhizae and place as close to rootball as possible at the following rates.
4" pot or Liner: 1 teaspoon
1 gallon: 1 tablespoon
5 gallon: 4 tablespoons
15 gallon: 6 tablespoons
24" box: 8 tablespoons
6. When the plant pit has been approximately one-half (1/2) filled, place planting tablets according to the manufacturer's schedule.
 - a. Planting areas shall be hand raked to remove all clods, weeds, roots, debris, and rocks 1-inch in diameter and larger.
7. Dispose of excess excavated soil (if any) on the site at no additional cost to the District.

3.04 PRUNING

- A. Pruning shall be performed as required to maintain a natural appearance, promote healthy and vigorous growth and eliminate diseased or damaged growth.

- B. Trees shall be pruned to thin crown and avoid wind damage, eliminate narrow V-shaped branch forks that lack strength, eliminate sucker growth and maintain a radial branching pattern to avoid crossing branches.
- C. Under no circumstances will stripping of lower branches (“raising-up”) of young trees be permitted. Lower branches shall be retained in a “tipped back” or pinched condition with as much foliage as possible to promote caliper trunk growth (tapered trunk).
- D. Major pruning of trees to compensate for root loss or for aesthetic reasons shall be done only with approval of the Architect.
- E. All pruning shall be made flush to lateral branches, buds or trunk. “Stubbing” will not be permitted.
- F. Damage: All cuts over one inch (1”) resulting from pruning or wind breakage shall be inspected periodically for insect infestation or disease.

3.05 PROTECTION

- A. Protect all planted areas and plants against trespassing and damage at all times. If any plants are damaged, replace as directed by the Architect with no additional cost to the District.

3.10 CLEAN UP

- A. Upon completion of planting, all cans, boxes, and other debris that is a part of the planting operation shall be removed from the site.
- B. All pavements shall be washed off, and site shall be left in an absolutely clean condition. All planting areas shall be cultivated and weed free before final inspection. Clean-up operations shall take place throughout the course of work so that walks and drives are clean at all times.

3.11 SITE OBSERVATIONS

- A. Notification: The Contractor shall notify the Architect a minimum of 72 hours before requiring a visit by the Architect.
- B. Check Points: The following shall be considered check points and the Contractor shall only proceed with the work after the Architect has visited the site and determined that the work is proceeding satisfactorily.
 - 1. Completion of rough grading in planting areas.
 - 2. After placement of topsoil, soil amendment and fine grading before planting, seeding or sodding.
 - 3. Layout of plant material. All plant material in the planting area shall be placed in the configuration shown on the Drawings prior to plant pit excavation.
 - 4. Maintenance period shall not start until all construction for the entire project is complete.
 - 5. A check visit shall be made to begin the maintenance period. At this time, the Contractor shall have completed all phases of the Drawings and Specifications. Any discrepancies shall be noted at that time and the Contractor shall make appropriate corrections before beginning the maintenance period.

3.12 MAINTENANCE

- A. Contractor shall furnish all labor, material, equipment, and services required to maintain the landscape in a healthy and attractive condition for a period of ninety (90) calendar days.
- B. Maintenance shall include fertilization, watering, insect and disease control, weed control (hand or spray), mowing, pruning, restaking, continual checking, adjusting, programming and making all necessary repairs to the automatic irrigation system, cleaning of pavement, replenishment of bark mulch, and weekly trash removal from all project site areas. All chemical use shall conform to District’s standards for application and notification.
- C. No later than two (2) calendar weeks prior to the end of the maintenance period, the Contractor shall request in writing a review of the work by the Architect. When, upon review, the Architect finds all project work to be complete, the plant material to be in a healthy condition and all landscape areas to be weed-free and in a neat, orderly condition, then written acceptance of work shall be given by the Architect. When approval and acceptance of the work is not given, the Architect shall prepare a list of items to be completed before acceptance of the work is given. Acceptance shall only then be given upon verification by the

Architect that the punch list items have been completed. Maintenance period shall only commence after items have been completed and approved. Items shall be completed within the specified time to avoid liquidated damages and extension of maintenance period.

1. All plant material shall be live, healthy, undamaged, vigorous, and free from infestations.
2. Planting areas shall be free of all weeds.
3. Nursery stakes shall be removed from trees.

D. The Contractor's maintenance period will be extended when the provisions required within the plans and specifications are not full complete and accepted by the Architect.

E. Watering:

1. All plants shall be kept watered as often as it is necessary to keep them in optimum, vigorous growth. Watering shall be done preferably during the early morning hours.
2. Water shall be controlled so that there will be no excessive run-off, ponding, or overwatering.
3. Root Growth: Periodically the Contractor shall check the progress of the root growth within the back fill area. As the root growth increases beyond the root ball, the frequency of watering shall be reduced so that the roots are encouraged to grow to a lower soil depth. Watering then shall be less frequent, but applications shall be very slow and the Contractor shall assure that water does penetrate to the depth of the former plant pit.

F. Spraying:

1. Trees shall be inspected at least two (2) times a month during the growing period to determine the need for spraying to control insect damage, fungus development or any other disease that might be attacking the plants. Plants shall be sprayed with a broad spectrum material that will control the specific pest and any other pests that might normally be anticipated during that part of the season. Preventative spraying shall be done only with the approval of the District.
2. Operators of spray equipment shall take all reasonable precautions to protect themselves, other people and buildings from spray. The Contractor shall publicly notice the use of herbicides and have all permits and licenses required for such an operation. Where applicable, dormant spray shall be applied to shrubs and trees during the winter period.
3. All equipment shall be properly washed before and after use. No spraying shall take place without proper public noticing procedures or during windy or gusty days.

G. Staking and Guying: Stakes and guys shall be inspected a minimum of two (2) times a month to assure that the wires and ties are tight and no damage has occurred to the tree trunk or branches. Contractor shall restake and guy trees as directed by the Architect.

H. Weed Control:

1. Weeds shall be kept under control by hand removal. Herbicides shall only be used when approved by the Architect. Weed all areas at an interval of not more than ten (10) days.
2. Pre-emergent herbicide shall be applied to all tree and turf areas including plant basins. Chemicals used are to be in written chemical control program prepared by a licensed pest control advisor and approved by the Architect. Apply prior to any mulching.
3. All equipment used for herbicides shall be properly cleaned before it is used on this project. Herbicides shall be applied at temperatures recommended by the manufacturers. Herbicides shall not be used during windy or gusty days. All precautions shall be taken to protect vegetation which is susceptible to damage from the particular herbicides to be used.
4. The bases of all plants shall be kept completely free of weeds. Periodically, the base of the trees and shrubs shall be cultivated in order to allow better penetration of water, but such cultivation shall be carefully done in order not to destroy surface roots.

I. Fertilization: Topdress all areas at one (1) month intervals from time of planting with fertilizer of same composition and at same rate as at time of planting.

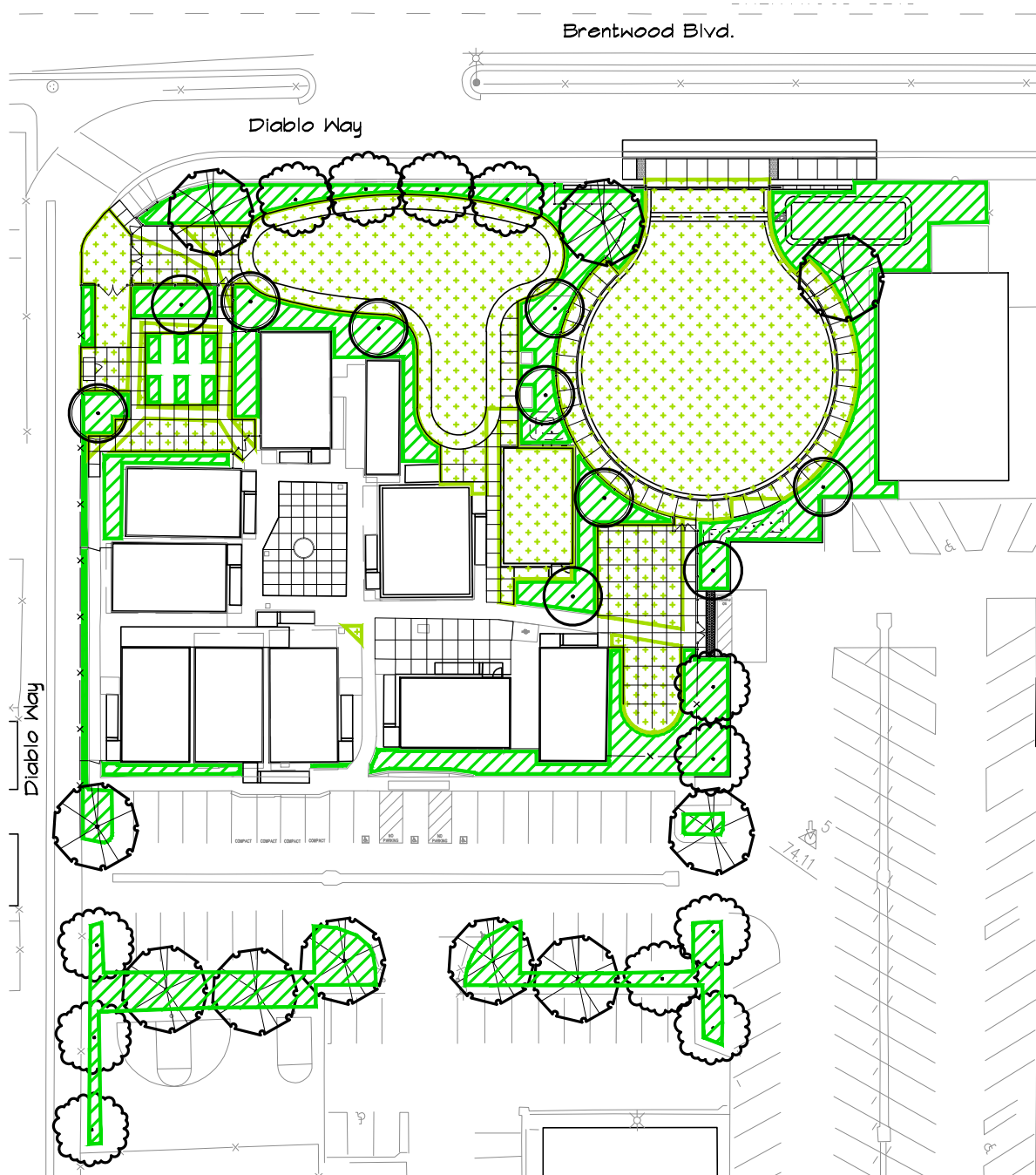
J. Litter: The Contractor shall remove promptly after pruning, trimming, and weeding or other work required under the contract, all debris generated by his performance of the work. Walkways, driveways, and paved areas shall be vacuumed clean with suitable equipment immediately after working in these areas. All areas covered by this contract shall be kept free of debris and litter.

K. Pruning: Prune as necessary to remove injured twigs, branches, dead wood and suckers.

3.13 GUARANTEE AND REPLACEMENT

- A. Guarantee period shall be extended for a period of one (1) year from the date of written acceptance.
- B. All plants shall be guaranteed to be alive and healthy as determined by the Architect at the end of the guarantee period.
- C. The Contractor shall replace within two (2) weeks of notice and in accordance with the Drawings and Specifications throughout the guarantee period, any plants that die, or in opinion of the Architect, are in an unhealthy or unsightly condition, and or have lost their natural shape due to dead branches, excessive pruning, inadequate or improper maintenance, or any other causes due to the Contractor's negligence. Any plant that shows 25% defoliation shall be considered unhealthy.

END OF SECTION



	New Building Footprint	0 sf
	New/Rehabilitated Landscape Area	10,224 sf
	Removed Landscape Area	19,578 sf

DSA Application No:01-122796

DSA Landscape Application No:

Existing Facility:
Gateway Program
929 Second Street
Brentwood, CA 94513

Liberty Union High School District

