THE LINE SHOWN ABOVE IS 1" WHEN PLOTTED ON ANSI D SHEETS ORIGINAL PAGE SIZE

LODI UNIFIED SCHOOL DISTRICT

LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - BID SET

945 SOUTH HAM LANE LODI, CA 95242

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

GENERAL NOTES

1. CONSTRUCTION DOCUMENTS DESCRIBE THE PRODUCTS, SYSTEMS, QUANTITIES, CONFIGURATION, AND PERFORMANCE SPECIFICATIONS THAT DRIVE THE OVERALL DESIGN INTENT OF THE PROJECT.
2. THE CONSTRUCTION DOCUMENT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY BOTH.
3. PERFORMANCE BY THE CONSTRUCTION TEAM SHALL BE CONSISTENT WITH THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS AS NECESSARY TO DELIVER THE INDICATED RESULTS OF THE DESIGN INTENT.
4. VERIFY ALL DIMENSIONS, LOCATIONS OF EXISTING UTILITIES, AND CONDITIONS ON THE JOB SITE PRIOR TO THE START OF WORK OR PORTIONS OF THE WORK. NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE ACTUAL FIELD CONDITIONS AND THE CONSTRUCTION DOCUMENTS. EXISTING CONDITIONS ARE INDICATED AS A RESULT OF FIELD OBSERVATIONS, INFORMATION SHOWN ON AVAILABLE DOCUMENTS AND FIELD CONDITIONS AT THE TIME OF PREPARATION.
5. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL GOVERNING CODES, ORDINANCES, REGULATIONS AND LAWS.
6. THE DESIGN ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS AND SCAFFOLDING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
7. WHERE ANY CONFLICT OCCURS BETWEEN THE REQUIREMENTS OF LAWS, CODES, ORDINANCES, RULES AND REGULATIONS, THE MOST STRINGENT SHALL GOVERN.
8. IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS OR DETAILS ON THE DRAWINGS.
9. DETAILS MARKED 'TYPICAL' SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY NOTED OTHERWISE.
10. ENACT ALL MEASURES TO PROTECT AND SAFEGUARD ALL EXISTING ELEMENTS TO REMAIN FROM BEING DAMAGED. REPLACE OR REPAIR EXISTING ELEMENTS DAMAGED BY THE EXECUTION OF THIS CONTRACT TO EQUAL OR BETTER CONDITION.
11. PRIOR TO THE START OF WORK THE CONTRACTOR SHALL COORDINATE BETWEEN THE REQUIREMENTS OF ALL DISCIPLINES HEREIN AND BETWEEN THE REQUIREMENTS OF ALL DRAWINGS AND SPECIFICATIONS IN ORDER THAT ALL ITEMS SATISFACTORILY RELATE TO ONE ANOTHER. NOTIFY ARCHITECT IMMEDIATELY REGARDING ANY ITEMS THAT CANNOT BE COORDINATED.
12. CONTRACTOR SHALL EXCERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING, CONDUIT, ETC. AND TO PREVENT HAZARD TO PERSONNEL AND/OR TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
13. CUTTING, BORING, SAWCUTTING OR DRILLING THROUGH THE EXISTING OR NEW STRUCTURAL ELEMENTS SHALL NOT TO BE STARTED UNTIL THE DETAILS HAVE BEEN REVIEWED AND APPROVED BY THE ARCHITECT, AND STRUCTURAL ENGINEER OF RECORD.
14. ALL WORK SHALL CONFORM TO 2022 EDITION TITLE 24, CALIFORNIA CODE OF REGULATION (CCR)
15. THE LIMIT OF WORK LINE SHOWS THESE DRAWINGS IS AN APPROXIMATE LIMIT OF WORK ONLY. REFER TO CONSULTANT DRAWINGS FOR ADDITIONAL WORK, INCLUDING BUT NOT LIMITED TO INSTALLATION OF CONDUIT, MANHOLES, PULLBOXES, ETC WHICH ARE TO BE PART OF THIS WORK, ALTHOUGH OCCURING OUTSIDE OF SHOWN LIMIT OF WORK LINES.
16. FABRICATION AND INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT BE STARTED UNTIL CONTRACTOR'S DRAWINGS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS FOR THE ACTUAL SYSTEMS TO BE INSTALLED HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY THE DSA. LIST DEFERRED SUBMITTAL ITEMS FOR THIS PROJECT.
17. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENDA OR CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY DSA, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24 CCR.
18. A "DSA CERTIFIED" PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR. INSPECTOR TO BE CLASS 2.
19. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT. THE REPORTS SHALL BE SUBMITTED TO ARCHITECT OF RECORD, STRUCTURAL ENGINEER OF RECORD, OWNER, INSPECTOR OR RECORD, AND THE DSA FIELD ENGINEER. THE REPORTS OF ANY FAILURES OF TESTS AND INSPECTIONS ARE TO BE SUBMITTED TO DSA DISTRICT STRUCTURAL ENGINEER.
20. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
21. SAFETY DURING CONSTRUCTION SHALL COMPLY WITH CFC CHAPTER 33.
22. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION, OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE DSA APPROVED CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A 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)
23. CONTRACTOR IS TO REVIEW AND COMPLY WITH ALL REQUIREMENTS AND MITIGATION MEASURES SET FORTH IN BOTH THE ENVIRONMENTAL IMPACT REPORT (ADDENDUM TO THE ENVIRONMENTAL IMPACT REPORT | SCH NO. 2002071120) INCLUDING ATTACHED BIOLOGICAL RESOURCES TECHNICAL REPORT.
24. NO DUMPING OR PLACING OF ANY DIRT OR DEBRIS SHALL BE ALLOWED OUTSIDE OF THE CONTRACTORS LIMIT OF WORK AREA.
25. THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPS, 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. LIGHTING CONTROLS ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (ATT).
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 THE OWNER'S AGENT.
A 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 RESULTS OF THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.

CODES

PARTIAL LIST OF APPLICABLE CODES

2022	CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
2022	CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R. (2021 INTERNATIONAL BUILDING CODE VOLUMES 1 & 2 AND 2022 CALIFORNIA AMENDMENTS)
2022	CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2020 NATIONAL ELECTRICAL CODE AND 2022 CALIFORNIA AMENDMENTS)
2022	CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24 C.C.R. (2021 UNIFORM MECHANICAL CODE AND 2022 CALIFORNIA AMENDMENTS)
2022	CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (2021 UNIFORM PLUMBING CODE AND 2022 CALIFORNIA AMENDMENTS)
2022	CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 C.C.R.
2022	CALIFORNIA HISTORICAL BUILDING CODE (CHBC), PART 8, TITLE 24 C.C.R.
2022	CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R. (2021 INTERNATIONAL FIRE CODE AND 2022 CALIFORNIA AMENDMENTS)
2022	CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 C.C.R. (2021 INTERNATIONAL EXISTING CODE AND 2022 CALIFORNIA AMENDMENTS)
2022	CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 C.C.R.
2022	CALIFORNIA REFERENCED STANDARDS, PART 12,TITLE 24 C.C.R.
TITLE 19	C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
2019	ASME A17.1/B44-19 SAFETY CODE FOR ELEVATORS AND ESCALATORS
2020	ASME 18.1 - SAFETY STANDARD FOR PLATFORM LIFTS AND STAIRWAY CHAIR LIFTS

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

SEE CALIFORNIA BUILDING CODE, CHAPTER 35 FOR STATE OF CALIFORNIA AMENDMENTS TO NFPA STANDARDS.

PARTIAL LIST OF APPLICABLE STANDARDS

NFPA 13	STANDARD FOR AUTOMATIC FIRE SPRINKLER SYSTEMS (CA AMENDED)	2022 ED.
NFPA 14	STANDARD FOR STANDPIPE AND HOSE SYSTEMS (CA AMENDED)	2019 ED.
NFPA 17	STANDARD FOR DRY CHEMICAL EXTINGUISHING SYSTEMS	2021 ED.
NFPA 17A	STANDARD FOR WET CHEMICAL EXTINGUISHING SYSTEMS	2021 ED.
NFPA 20	STANDARD FOR STATIONARY PUMPS FOR FIRE PROTECTION	2019 ED.
NFPA 22	STANDARD FOR WATER TANKS FOR PRIVATE FIRE PROTECTION	2018 ED.
NFPA 24	STANDARD FOR THE INSTALLATION OF PRIVATE FIRE MAINS AND THEIR APPURTENANCES (CA AMENDED)	2022 ED.
NFPA 72	NATIONAL FIRE ALARM & SIGNALING CODE (CA AMENDED)	2022 ED.
NFPA 80	STANDARD FOR FIRE DOORS AND OTHER OPENING PATECTIVES	2019 ED.
NFPA 2001	STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS (CA AMENDED)	2018 ED.
UL 300	STANDARD FOR FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS FOR PROTECTION OF COMMERCIAL COOKING EQUIPMENT	2005 (R2014)
UL 464	AUDIBLE SIGNAL APPLIANCES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES	2003 ED.
UL 521	STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS	1999 ED. (R2005)
UL 1971	STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED	2002 ED. (R2018)
ICC 300	STANDARD FOR BLEACHERS, FOLDING AND TELESCOPING SEATING AND GRANDSTANDS	2017 ED.

Work Exempt from DSA Requirements for Structural Tests / Special Inspections

SOILS:

1. Deep foundations acting as a cantilever footing with a design based on minimum allowable pressures per CBC Table 1806A.2 and without a geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.)

CONCRETE/MASONRY

2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.
4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.
5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.

WELDING

1. Solid-clad and open-mesh fences, gates with maximum leaf span of 10', and gates with a maximum rolling section of 10' all having an apex height Less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates/fences are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.

STATEMENT OF GENERAL CONFORMANCE

(X) THE DRAWINGS OR SHEETS LISTED ON THE INDEX SHEET WITH AN (*)
( ) THIS DRAWING PAGE OF SPECIFICATIONS/CALCULATIONS

HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR:

1) DESIGN INTENT AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME, AND
2) COORDINATION WITH MY PLANS AND SPECIFICATIONS AND IS 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 1. (TITLE 24, PART 1, SECTION 4-316 (B))

I CERTIFY THAT:

ALL DRAWINGS OR SHEETS LISTED ON THE SHEET INDEX WITH AN (*) IS/ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN AND HAS/HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS.

SIGNATURE — DATE 04/02/25
ARCHITECT OR ENGINEER DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE

Jennifer Huang
PRINT NAME

C 35691 — 05-31-25
LICENSE NUMBER — EXPIRATION DATE

PROJECT DESCRIPTION

INCREMENT 1: THIS PROJECT CONSISTS OF NEW BUS DROP-OFF, EXPANSION AND RECONFIGURATION OF EXISTING SOUTH PARKING LOT, DEVELOPMENT OF A SCIENCE YARD, RELOCATION OF BASKETBALL COURTS,NEW BASEBALL/SOFTBALL FIELDS, OUTDOOR LEARNING AND DINING SPACE ALONG WITH ASSOCIATED SITE WORK.

INCREMENT 2: PARTIAL MODERNIZATION OF BUILDINGS A AND B.

INCREMENT 3: CONSTRUCTION OF MODULAR CLASSROOMS BUILDINGS H1, H2, AND S.

INCREMENT 4: CONSTRUCTION OF MULTIPURPOSE BUILDING J.

SUBSTITUTION NOTE

SUBSTITUTIONS AFFECTING DSA-REGULATED ITEMS SHALL BE CONSIDERED AS CONSTRUCTION CHANGE DOCUMENTS (CCD'S) AND SHALL BE APPROVED PRIOR TO FABRICATION AND INSTALLATION PER DSA IR A-6 AND SECTION 338(C) PART 1, TITLE 24 CCR

DEFERRED SUBMITTAL

NONE

DESIGN CRITERIA

RISK CATEGORY III
WIND LOADS (ASCE 7-16-29.4)

BASIC WIND SPEED 100 MPH (77 MPH ASD)
EXPOSURE C

PRESSURE COEFFICIENTS
TOPOGRAPHIC FACTOR, K = 1.0
WIND DIRECTIONALITY FACTOR, K = 0.85

VELOCITY PRESSURES
q (0' - 15') = 18.5 PSF (LFRD)
q (15' 20') = 19.6 PSF (LFRD)

SEISMIC DEMANDS ON NONSTRUCTURAL COMPONENTS (ASCE 7-16-13.3)

SITE CLASS	D
SEISMIC DESIGN CATEGORY	D
IMPORTANCE FACTOR, Ip	1.0
RESPONSE FACTOR, Rp	2.5, 1.0
AMPLIFICATION FACTOR, ap	1.0, 2.5
HEIGHT OF ATTACHMENT, z	1.0
HEIGHT RELATIVE TO BASE, h	1.0

Ss = 0.628 S1 = 0.260
Fa = 1.297 Fv = 2.08
Sms = 0.81 Sm1 = 0.811
Sds = 0.543 Sd1 = 0.541

$$Fp = \frac{0.4 a_p S_{ds}}{(R_p / I_p)} (1+2(z/h))$$

= 0.27 Wp (Rp = 2.5, ap = 1.0)
= 1.63 Wp (Rp = 1.0, ap = 2.5)

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

LICENSED ARCHITECT JENNIFER PEARSON HUANG C-35691 REN. 05/31/25 STATE OF CALIFORNIA

PROJECT TEAM

OWNER
LODI UNIFIED SCHOOL DISTRICT
825 W LOCKEFORD ST, LODI, CA 95240
(209) 331-7000

ARCHITECTURAL
HMC ARCHITECTS
2101 CAPITOL #100, SACRAMENTO, CA 95816
(916) 368-7990

CIVIL
WARREN CONSULTING ENGINEERS
2707 K STREET SUITE 201 SACRAMENTO, CA 5816
(916) 369-3990

LANDSCAPE
MTW GROUP
2707 K STREET SUITE 201 SACRAMENTO, CA 95816
(916) 369-3990

ELECTRICAL
CAPITAL ENGINEERING CONSULTANTS, INC.
11020 SUN CENTER DR, RANCHO CORDOVA, CA 95670
(916) 851-3500

SYMBOL LEGEND

NORTH ARROW
TICK INDICATES PLAN NORTH
ARROW INDICATES TRUE NORTH

ELEVATION CALLOUT (TYPICAL FOR EXTERIOR)
LOCATION ON SHEET
SHEET WHERE ELEVATION IS DRAWN

ELEVATION CALLOUT (TYPICAL FOR INTERIOR)
LOCATION ON SHEET
SHEET WHERE ELEVATION IS DRAWN

ELEVATION CALLOUT - ALT. (FOR EXTERIOR AND INTERIOR)
LOCATION & SHEET WHERE ELEVATION IS DRAWN

SECTION CALLOUT
INDICATES A SIMILAR CONDITION
LOCATION ON SHEET
SHEET WHERE SECTION IS DRAWN

DETAIL CALLOUT
INDICATES A SIMILAR CONDITION
LOCATION ON SHEET
SHEET WHERE SECTION IS DRAWN

CONTROL OR DATUM POINT
NAME OF ELEVATION (IF APPLICABLE)
ELEVATION ABOVE FINISHED FLOOR

GRID BUBBLE
EXISTING BUILDING GRID SYMBOL
GRID NUMBER
NEW BUILDING GRID SYMBOL

DOOR CALLOUT
DOOR NUMBER

INTERIOR FINISH CALLOUT
MATERIAL FINISH TYPE (SEE FINISH SCHEDULE)

WINDOW CALLOUT
WINDOW NUMBER (SEE WINDOW SCHEDULE)

WALL TYPE CALLOUT
WALL TYPE MARK - SEE A10.11
WALL STC RATING
WALL FIRE RATING TYPE

MATCHLINE REFERENCE
LOCATION ON SHEET
SHEET WHERE PLAN IS DRAWN

KEYNOTE
KEYNOTE NUMBER (SEE LEGEND ON SHEET)

ROOM EXITING INFORMATION
AREA (SQ FT)
OCCUPANT LOAD (AREA DIVIDED BY LOAD FACTOR)
OCCUPANT LOAD FACTOR (REFER TO TABLE 1004.5)
OCCUPANCY TYPE
NUMBER OF EXITS REQUIRED (REFER TO TABLE 1006.2.1)

WIC CASEWORK TAG
MANUFACTURER REFERENCE AND MODEL NUMBER
LOCK
CABINET DEPTH
CABINET HEIGHT
CABINET WIDTH

DISCIPLINE

G	GENERAL
C	CIVIL
L	LANDSCAPE
A	ARCHITECTURE
I	INTERIORS
Q	EQUIPMENT
S	STRUCTURAL
P	PLUMBING
M	MECHANICAL
E	ELECTRICAL
FA	FIRE ALARM
T	TELECOM
AV	AV EQUIPMENT
K	KITCHEN
FP	FIRE PROTECTION

SHEET TYPE

0	CODE ANALYSIS, NOTES
1	SITE PLAN
2	FLOOR PLAN
3	CEILING PLAN
4	ROOF PLAN
5	EXTERIOR ELEVATIONS
6	SECTIONS
7	ENLARGED PLANS
8	INTERIOR ELEVATIONS
9	SCHEDULES
10	DETAILS

BUILDING LETTER, SEGMENT, (USER DEFINED)
USED ONLY IF REQUIRED. IF NOT, COLUMN IS OMITTED.

DISCIPLINE — SHEET TYPE — SERIES / ORDER — USER DEFINED (IF APPLICABLE)
A A 1 . 1 1 A . A
BUILDING LETTER (IF APPLICABLE) — FLOOR LEVEL OR SEQUENTIAL ORDER — SEGMENT (IF APPLICABLE)

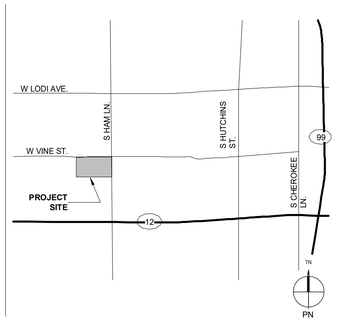
ABBREVIATIONS

(E)	EXISTING
AB	ANCHOR BOLT
AC PAVING	ASPHALTIC CONCRETE PAVING
ACC	ACCESS/ACCESSIBLE
ACP	ACOUSTICAL CEILING PANEL
ACT	ACOUSTICAL CEILING TILE
ADJ	ADJACENT/ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGG	AGGREGATE
AHU	AIR HANDLING UNIT
ARCH	ARCHITECTURAL
ATT	ATTENUATION
AUTO	AUTOMATIC
BD	BOARD
BLCG	BLOCKING
BUR	BUILT UP ROOFING
CABT	CABINET
CF	CUBIC FEET
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED
CG	CORNER GUARD
CJ	CONTROL JOINT
CL	CENTER LINE
CLF	CHAIN LINK FENCE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMP	COMPRESSION / COMPOSITE
CF	CUBIC FEET
COORD	COORDINATE
CORR	CORRUGATED
CT	CERAMIC TILE
CTSK	COUNTER SKUNK
CW	CURTAINWALL
DEPR	DEPRESSED / DEPRESSION
DF	DRINKING FOUNTAIN
DIM	DIMENSION
DISP	DISPENSER
DS	DOWNSPOUT
DTL	DETAIL
DW	DISHWASHER
E/W	EACH WAY
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATOR / ELEVATOR
ENCL	ENCLOSE / ENCLOSURE
EOS	EDGE OF SLAB
EP	ELECTRICAL PANEL
EQ	EQUAL
ESC	EXCUTCHEON
EWC	ELECTRIC WATER COOLER
EXP	EXPOSED
FA	FIRE ALARM
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER W/ CABINET
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FSH	FLAT HEAD SCREW
FIN	FINISH
FLR	FLOOR
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FP	FIREPROOFING
FR	FIRE RATED
FRG	FIRE RATED GLASS
FRP	FIBERGLASS REINFORCED PLASTIC
FRT	FIRE RETARDANT TREATED
FS	FINISH SURFACE
FTG	FOOTING
GB	GRAB BAR
GFRC	GLASS FIBER REINFORCED CONCRETE
GL	GLASS TYPE
GLB	GLUE LAMINATED BEAM
GYP BD	GYPSUM BOARD
GYP PLAS	GYPSUM PLASTIC
HB	HOSE BIBB
HD	HEAVY DUTY
HDR	HEADER
HDWR	HARDWARE
HGT	HEIGHT
HM	HOLLOW METAL
HP	HIGH POINT
HSS	HOLLOW STEEL SECTION
ID	INSIDE DIAMTER
INT	INTERIOR
INV	INVERT
LANDS	LANDSCAPE
LAV	LAVATORY
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LT WT	LIGHT WEIGHT
LVR	LOUVER
MACH	MACHINE
MB	MACHINE BOLT
MDF	MEDIUM DENSITY FIBERBOARD
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MFR	MANUFACTURER
MH	MANHOLE
MO	MASONRY OPENING
MTD	MOUNTED
MTL	METAL
NIC	NOT IN CONTRACT
NR	NON RATED
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
O/	OVER
O/A	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OFVI	OWNER FURNISHED, VENDOR INSTALLED
OH	OPPOSITE HAND
OPER	OPERABLE
OPNG	OPENING
ORD	OVERFLOW ROOF DRAIN
P/L	PROPERTY LINE
PA	PUBLIC ADDRESS
PAF	POWDER ACTUATED FASTENER
PCC	PAVING PORTLAND CEMENT CONCRETE PAVING
PED	PEDESTRIAN
PERF	PERFORATED
PERIM	PERIMETER
PERP	PERPENDICULAR
PH	PANIC HARDWARE
PIV	POST INDICATOR VALVE
PL	PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLUMB	PLUMBING
PNL	PANEL
PNT	PAINT / PAINTED
POC	POINT OF CONNECTION
POLY ISO	POLYISOCYANURATE
PREFIN	PREFINISHED
PREP	PREP / PREPARATION
PTC	POST TENSIONED CONCRETE
PTD	PAPER TOWEL DISPENSER
PTN	PARTITION
PTS	PNEUMATIC TUBE STATION / SYSTEM
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
QT	QUARRY TILE
R	RADIUS, RISER
RB	RESILIENT BASE
RD	ROOF DRAIN
RECEPT	ECEPTACLE
REF	REFERENCE
REFL	REFLECT(ED), (IVE)
REFL	REFLECT(ED), (IVE)
REFR	REFRIGERATOR
REINF	REINFORCE/REINFORCED/ REINFORCEMENT
REM	REMOVE
RH	ROUND HEAD
RHS	ROUND HEAD SCREW
RO	ROUGH OPENING
ROW	RIGHT OF WAY
SCH	SCHEDULE (FOR PIPE)
SCHED	SCHEDULE / SCHEDULING
SD	STORM DRAIN / SOAP DISPENSER
SECT	SECTION
SG	SAFETY GLASS
SHT	SHEET
SHTG	SHEATHING
SMS	SHEET METAL SCREW
SND	SANITARY NAPKIN DISPOSAL
SOV	SHUT OFF VALVE
SPEC	SPECIFICATIONS
SS	STAINLESS STEEL
STC	SOUND TRAMISSION CLASS
STL	STEEL
STSMS	SELF TAPPING SHEET METAL SCREW
SUSP	SUSPENDED
SV	SHEET VINYL
SYM	SYMMETRICAL
T	TREAD
T&B	TOP AND BOTTOM
TO	TOP OF
TOC	TOP OF CURB / CONCRETE
TOP	TOP OF PARAPET
TOS	TOP OF STEEL
TOW	TOP OF WALL
TPD	TOILET PAPER DISPENSER
TS	TACKABLE SURFACE
UIC	UNDER CABINET (OR COUNTER
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
VAC	VACUUM
VB	VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VIF	VERIFY IN FIELD
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING
W/	WITH
W/O	WITHOUT
WB	WOOD BASE
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WGT	WEIGHT
WH	WATER HEATER
WP	WATERPROOFING/WALL PROTECTION
WR	WATER RESISTANT
WRGB	WATER RESISTANT GYPSUM BOARD
WS	WOOD SCREW
WSCT	WAINSCOT
WWF	WELDED WIRE FABRIC

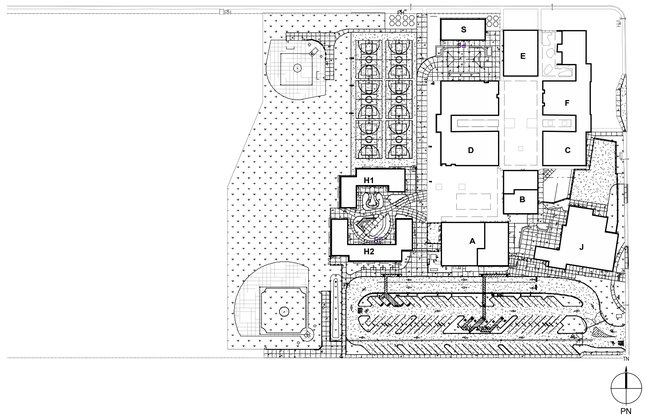
NOTE:
OTHER ABBREVIATIONS USED ON THESE DRAWINGS ARE CONSIDERED STANDARDS IN THE BUILDING INDUSTRY. CONTACT ARCHITECT FOR NECESSARY CLARIFICATION.

STATE MAP

VICINITY MAP



OVERALL SITE PLAN



FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
COVER SHEET/PROJECT DATA SHEET

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:

G0.10

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SHEET INDEX - INCREMENT 1

NUMBER	NAME	Increment
GENERAL SHEET		
G0.10	COVER SHEET/PROJECT DATA SHEET	1
G0.11	SHEET INDEX	1
2		
PROJECT ANALYSIS		
G1.11	CODE INFORMATION SITE PLAN	1
G1.12	LOCAL FIRE AUTHORITY SITE PLAN	1
2		
*CIVIL		
C0.1	CIVIL COVER SHEET	1
C0.2	TOPOGRAPHIC SURVEY	1
C1.1	PARTIAL CIVIL DEMOLITION PLAN	1
C1.2	PARTIAL CIVIL DEMOLITION PLAN	1
C1.3	PARTIAL CIVIL DEMOLITION PLAN	1
C1.4	PARTIAL CIVIL DEMOLITION PLAN	1
C2.1	PARTIAL GRADING PLAN	1
C2.2	PARTIAL GRADING PLAN	1
C2.3	PARTIAL GRADING PLAN	1
C2.4	PARTIAL GRADING PLAN	1
C3.1	PARTIAL DRAINAGE AND SEWER PLAN	1
C3.2	PARTIAL DRAINAGE AND SEWER PLAN	1
C3.3	PARTIAL DOMESTIC AND FIRE WATER PLAN	1
C3.4	PARTIAL DOMESTIC AND FIRE WATER PLAN	1
C4.1	PAVING PLAN	1
C5.1	DETAILS	1
C5.2	DETAILS	1
C6.1	EROSION CONTROL PLAN	1
C7.1	COVER SHEET	1
C7.2	GENERAL NOTES	1
C7.3	HAM LANE	1
C7.4	WEST VINE ST.	1
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*LANDSCAPE		
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L0.3	IRRIGATION DEMOLITION PLAN	1
L0.4	IRRIGATION DEMOLITION PLAN	1
L1.1	TREE PLANITING PLAN	1
L1.2	TREE PLANTING PLAN	1
L1.3	TREE PLANTING PLAN	1
L1.4	TREE PLANTING PLAN	1
L2.1	LANDSCAPE PLANTING PLAN	1
L2.2	LANDSCAPE PLANTING PLAN	1
L2.3	LANDSCAPE PLANTING PLAN	1
L2.4	LANDSCAPE PLANTING PLAN	1
L3.1	LANDSCAPE IRRIGATION PLAN	1
L3.2	LANDSCAPE IRRIGATION PLAN	1
L3.3	LANDSCAPE IRRIGATION PLAN	1
L3.4	LANDSCAPE IRRIGATION PLAN	1
L4.1	LANDSCAPE PLANTING DETAILS	1
L4.2	LANDSCAPE IRRIGATION DETAILS	1
L4.3	IRRIGATION DETAILS, LANDSCAPE AND IRRIGATION NOTES	1
L5.1	IRRIGATION CHARTS	1
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ARCHITECTURE		
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A1.02	ENLARGED SITE DEMOLITION PLAN	1
A1.03	SITE DEMOLITION PLAN	1
A1.21	OVERALL SITE PLAN	1
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A1.41	ENLARGED SITE PLAN - OUTDOOR GATHERING SPACES	1
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A1.43	ENLARGED SITE PLAN - PARKING	1
A1.45	ENLARGED SITE PLAN - FIELDS/STRIPING	1
A1.46	ENLARGED SITE PLAN - FIELDS/STRIPING	1
A1.47	FENCING AND GATE DETAILS	1
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A1.49	SITE/ GATE & FENCE DETAILS	1
A1.50	SITE/ GATE & FENCE DETAILS	1
16		
*ELECTRICAL		
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E0.3	ELECTRICAL DETAILS	1
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E0.5	TITLE 24 - LTO FORMS	1
E0.6	TITLE 24 - ELC FORMS	1
E1.0	LIGHTING SITE PLAN	1
E1.1	POWER SITE PLAN	1
E2.0	FIRE ALARM SITE PLAN	1
E2.0D	FIRE ALARM DEMO SITE PLAN	1
E3.0	SIGNAL SITE PLAN	1
E3.0D	SIGNAL DEMO SITE PLAN	1
12		
Grand total: 75		

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects

3431007000

2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

LICENSED ARCHITECT
JENNIFER PEARSON NUANG
C-35691
REN. 05/31/25
STATE OF CALIFORNIA

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
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BUILDING DATA

BUILDING NAME	OCC.TYPE	CONST. TYPE	SPRINKLER SYSTEM	ALLOWABLE SF	ACTUAL BUILDING SF	ACTUAL OVERHANG	ACTUAL TOTAL	ALLOWABLE BUILDING HEIGHT	ACTUAL BUILDING HEIGHT	NUMBER OF STORIES
(J) - MPR/KITCHEN	A-2, B (NON-SEPARATED)	V-B	YES	24,000 S.F.	10,793 S.F.	6,233 S.F.	17,026 S.F.	60'-0"	26'-0"	1
(H1) - CLASSROOM	E	V-B	NO	9,500 S.F.	5,276 S.F.	1,156 S.F.	6,432 S.F.	40'-0"	13'-0"	1
(H2) - CLASSROOM	E	V-B	NO	9,500 S.F.	7,198 S.F.	1,607 S.F.	8,805 S.F.	40'-0"	13'-0"	1
(A) - LOBBY, OFFICES	B	V-B	NO	9,000 S.F.	4,175 S.F.	1,167 S.F.	5,342 S.F.	40'-0"	21'-6"	1
(B) - LOBBY, OFFICES	B	V-B	NO	9,000 S.F.	2,847 S.F.	2,384 S.F.	5,231 S.F.	40'-0"	21'-6"	1
(S) - SCIENCE	E	V-B	YES	9,500 S.F.	3,466 S.F.	412 S.F.	3,878 S.F.	40'-0"	21'-6"	1
(S1) - SHADE STRUCTURE	A-3	V-B	NO	6,000 S.F.	1,920 S.F.	N/A	1,920 S.F.	40'-0"	16'-0"	1
(S2) - SHADE STRUCTURE	A-3	V-B	NO	6,000 S.F.	690 S.F.	N/A	510 S.F.	40'-0"	16'-0"	1

BUILDING DATA

UNIT	OCC.	APPLICATION	AREA	CERTIFIED
A	E, A-3	24025, 51591, 02-109532, 02-111649, THIS APPLICATION	10,240 S.F.	Y
B	B	24025, 02-109532, THIS APPLICATION	5,200 S.F.	Y
C	E	24025, 02-109532	5,200 S.F.	Y
D	E	24025, 02-109532, 02-111649	15,070 S.F.	Y
E	E	24025 AND 02-109532	5,525 S.F.	Y
F	E	29702, 02-102227, 02-103249, 02-109532	11,065 S.F.	Y
G	E	02-112412	1,920 S.F.	Y
H1	E	THIS APPLICATION (INCREMENT #3)	5,307 S.F.	
H2	E	THIS APPLICATION (INCREMENT #3)	7,314 S.F.	
J	E	THIS APPLICATION (INCREMENT #4)	10,921 S.F.	
S	E	THIS APPLICATION (INCREMENT #3)	3,466 S.F.	
S1	A2	THIS APPLICATION (INCREMENT #2)	1,920 S.F.	
S2	A2	THIS APPLICATION (INCREMENT #2)	690 S.F.	

EXISTING PATH OF TRAVEL (POT): ARCHITECT STATEMENT

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE IN CHARGE STATEMENT: THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR **PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS**. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NON-COMPLIANT

1) HAVE BEEN IDENTIFIED AND
2) 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 POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.

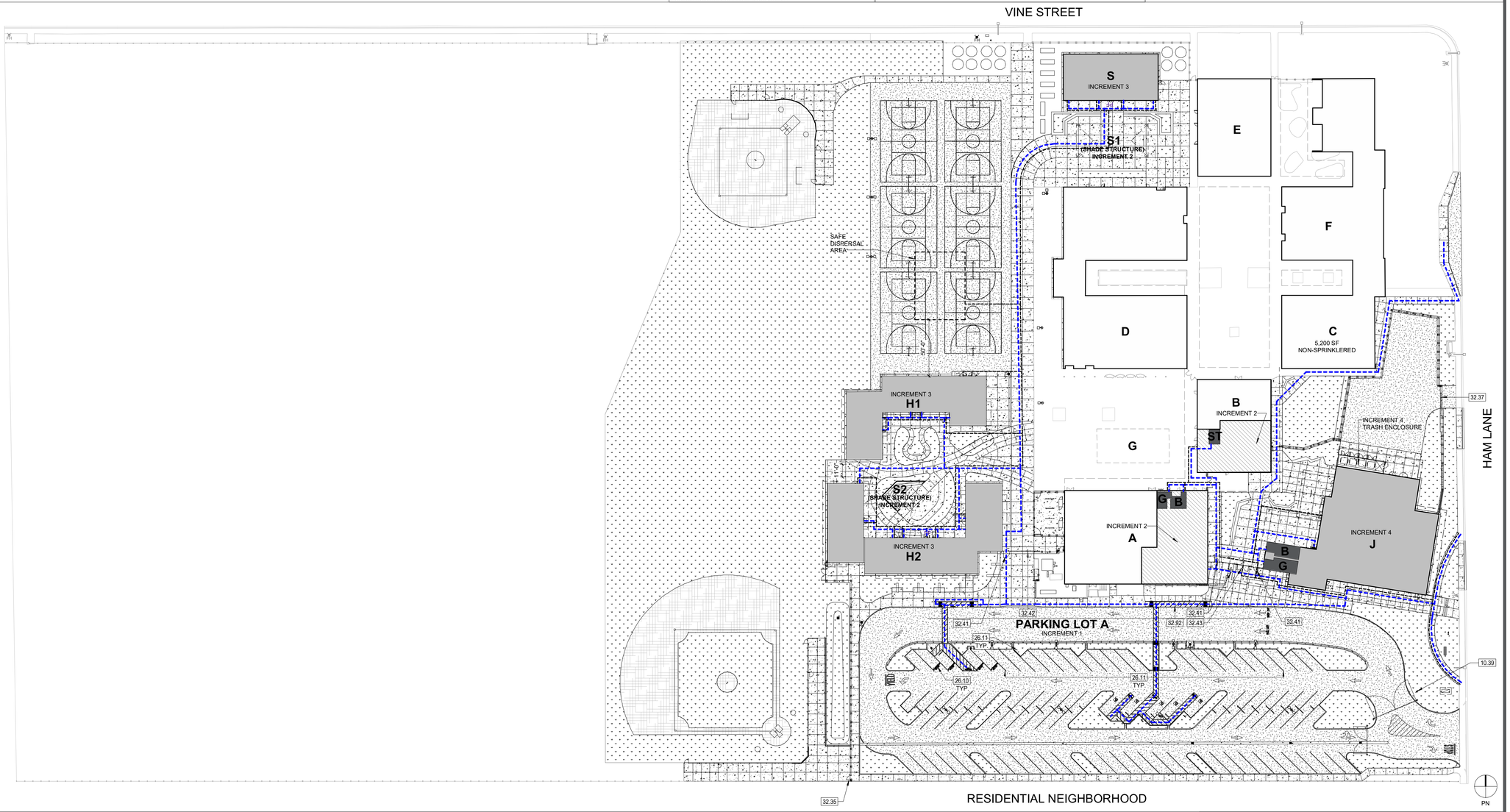
DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NON-CONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT TO COMPLIANCE WITH THE CBC AS PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

PARKING LOT 'A' ACCESSIBLE PARKING STALL CALCULATION

TOTAL PARKING STALL COUNT:	95 STALLS
ACCESSIBLE PARKING STALLS	(TABLE 11B-208.2)
REQUIRED ACCESSIBLE STALLS:	4 (76-100 TOTAL STALLS)
REQUIRED VAN ACCESSIBLE STALLS:	1 (1-6 ACCESSIBLE STALLS)
ACCESSIBLE STALLS PROVIDED:	4 STANDARD & 1 VAN
REQUIRED EVCS STALLS:	4 (76-100 TOTAL STALLS)
REQUIRED VAN ACCESSIBLE EVCS:	1 VAN REQUIRED
EVCS STALLS PROVIDED:	3 STANDARD & 1 VAN
REQUIRED EV CAPABLE STALLS:	17 (76-100 TOTAL STALLS)
EV CAPABLE STALLS PROVIDED:	17 PROVIDED

LEGEND

- PROPERTY LINE
- ASSUMED PROPERTY LINE
- ACCESSIBLE PATH OF TRAVEL
- PATH OF EXIT DISCHARGE TO PUBLIC WAY
- OVERHANG LINE ABOVE
- (E) CHAIN LINK FENCE; POSTS SHOWN ARE DIAGRAMMATIC.
- 8'-0" TALL CHAIN LINK FENCE; POSTS SHOWN ARE DIAGRAMMATIC.
- 4'-0" TALL ORNAMENTAL METAL FENCE; POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL ORNAMENTAL METAL FENCE; POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL CUSTOM PERFORATED METAL PLATE WALL PANEL FENCE; (SEE 16/A1.50 FOR PATTERN).POSTS SHOWN ON PLANS ARE DIAGRAMMATIC
- X — NEW BUILDING INCREMENT #3 BUILDINGS H1 & H2 AND BUILDING S INCREMENT #4 BUILDING J
- X — EXISTING BUILDING
- INCREMENT 2 AREA OF MODERNIZATION TO EXISTING BUILDING
- (X) — ACCESSIBLE TOILET ROOMS
- B = BOYS TOILET ROOM
- G = GIRLS TOILET ROOM
- ST = STAFF TOILET ROOM
- EXPANSION JOINT
- CONCRETE WALK
- CONTROL JOINT
- ASPHALT CONCRETE PAVING
- LANDSCAPE
- FIRE HYDRANT
- TRUNCATED DOMES



OVERALL SITE PLAN - CODE ANALYSIS

1
1" = 40'-0"

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
LICENSED ARCHITECT JENNIFER PEARSON HUANG C-35591 REN. 05/31/25 STATE OF CALIFORNIA
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

ACCESSIBLE PATH OF TRAVEL

1. ACCESSIBLE PATH OF TRAVEL (P.O.T.): SITE WALKWAYS SHALL PROVIDE A BARRIER-FREE P.O.T. ABRUPT CHANGES IN LEVEL ALONG ANY P.O.T. ARE ALLOWED UP TO 1/2". ONLY ABRUPT CHANGES IN ELEVATION UP TO 1/4" ARE ALLOWED TO HAVE A VERTICAL TRANSITION. ABRUPT CHANGES IN ELEVATION BETWEEN 1/4" AND 1/2" SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1-UNIT VERTICAL TO 2-UNITS HORIZONTAL. GATES IN THE P.O.T. SHALL HAVE A SIGN ADJACENT TO THE GATE, IN ALL CAPITALIZED LETTERS, WHICH READS: "THIS GATE TO REMAIN LOCKED IN OPEN POSITION DURING SCHOOL HOURS OR ANY PUBLIC EVENT".

2. THE CONTRACTOR SHALL PROVIDE A P.O.T. FROM THE DISABLED ACCESSIBLE PARKING STALLS TO ALL BUILDINGS AND SITE FUNCTIONS. CONTRACTOR SHALL VERIFY THAT THE P.O.T. IS BARRIER-FREE AS DESCRIBED IN THESE NOTES.

3. WALKWAYS SHALL BE FREE OF GRATINGS WHEREVER POSSIBLE. GRATING WHICH OCCUR WITHIN THE P.O.T. SHALL HAVE OPENINGS WHICH DO NOT EXCEED 1/2" IN THE DIRECTION OF TRAVEL PER CBC SECTION 1133B.7.2.

4. AN ABRUPT DROP-OFF CHANGE IN ELEVATION AT THE EDGE OF ANY WALK INTO AN ADJACENT PLANTER SHALL NOT EXCEED 4".

5. SLOPES IN THE DIRECTION OF THE P.O.T. GREATER THAN 1-UNIT VERTICAL TO 20-UNITS HORIZONTAL SHALL BE CONSIDERED A RAMP AND WILL REQUIRE HANDRAILS ON BOTH SIDES PER CBC SECTION 1133B.5.5.SLOPES IN THE DIRECTION OF THE P.O.T. ALONG WALKWAYS SHALL NOT EXCEED 5%. CROSS SLOPES IN THE P.O.T. ALONG WALKWAYS SHALL NOT EXCEED 2%.

6. ALL WALKWAYS WITHIN THE P.O.T. SHALL BE A MINIMUM OF 48" IN WIDTH. SURFACES WITH A SLOPE OF LESS THAN 6% SHALL BE AT LEAST AS SLIP-RESISTANT AS THAT PROVIDED BY A MEDIUM BROOM FINISH. SURFACES WITH A SLOPE OF MORE THAN 6% SHALL BE SLIP-RESISTANT.

7. OBJECTS PROTRUDING INTO THE P.O.T. SHALL NOT REDUCE THE CLEAR WIDTH OR MANEUVERING SPACE WITHIN THE P.O.T. PER CBC SECTION 1133B.8.6.

8. ARCHITECT HAS SURVEYED/ INSPECTED THE PATH OF TRAVEL (P.O.T.) AS INDICATED ON THE PLANS AND HAS FOUND IT TO BE, OR HAS INDICATED ON THE PLANS REMEDIAL WORK WHICH WOULD CAUSE IT TO BE, A BARRIER FREE ACCESSIBLE ROUTE:
   a. AT LEAST 48" IN. WIDTH; OR AS APPROVED BY CODE;
   b. WITHOUT ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BELVELED AT 1:2 MAXIMUM SLOPE, OR VERTICAL LEVEL CHANGES EXCEEDING 1/4";
   c. WITH A FIRM, STABLE, AND SLIP RESISTANT WALKING SURFACE;
   d. WITH A RUNNING SLOPE OF 1:20 OR LESS, UNLESS OTHERWISE INDICATED, AND A CROSS SLOPE OF 1:50 OR LESS;
   e. IS FREE OF OVERHEAD OBSTRUCTIONS WITHIN 80" ABOVE THE WALKING SURFACE; AND
   f. IS FREE OF OBJECTS WHICH PROTRUDE MORE THAN 4" BETWEEN THE HEIGHTS OF 27" AND 80" ABOVE THE WALKING SURFACE.

KEYNOTES

10.39	PARKING LOT ENTRANCE SIGN, SEE 10, 24/A1.43
26.10	EVCS PARKING STALL, PER THIS APPLICATION
26.11	EV CAPABLE PARKING STALL
32.35	4'-0" W X 7'-0" H DECORATIVE METAL GATE WITH KNOX LOCK. KNOX LOCK PER LOCAL FIRE AUTHORITY STANDARDS. PROVIDE EXIT HARDWARE
32.37	20' - 0" W X 7' - 0" H DECORATIVE METAL ROLLING GATE WITH KNOX LOCK. KNOX LOCK PER LOCAL FIRE AUTHORITY STANDARDS
32.41	4'-0" WIDTH X 7'-0" PERFORATED METAL PLATE WALL PANEL GATE EQUIPPED WITH EXIT HARDWARE
32.42	20'-0" WIDTH X 7'-0" TALL FORMED METAL ROLLING GATE, SEE 12/A1.48
32.43	PR OF 4'-0" WIDTH X 7'-0" TALL FORMED METAL GATE EQUIPPED WITH EXIT HARDWARE
32.92	ACCESSIBLE DROP-OFF AREA PER THIS APPLICATION

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
INCREMENT 1

SHEET NAME:
CODE INFORMATION SITE PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

G1.11

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CITY OF LODI
FIRE DEPARTMENT
210 WEST ELM STREET
LODI, CALIFORNIA 95240

Est. 1907

November 15, 2024

Please find the hydrant flow data you requested.

Hydrant #1
Dual 2.5" outlet dry barrel
Static 56 PSI
2.5" outlet at 1180 GPM
Residual 40 PSI

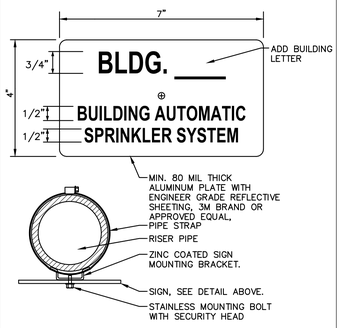
Hydrant #2
4 1/2" streamer with single 2.5" outlet
Static 56 PSI
2.5" outlet at 1180 GPM
Residual 50 PSI

Let me know if you need anything additional.

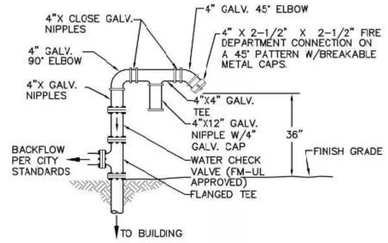
Brad Doell,
Fire Marshal City of Lodi Fire Department

FIRE ADMINISTRATION (209) 333-6735
FIRE PREVENTION (209) 333-6739
FAX (209) 333-6844

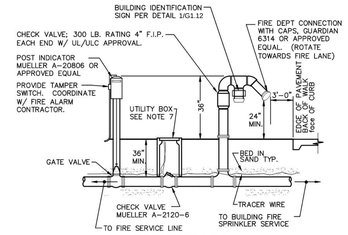
DETAIL 1 - BUILDING IDENTIFICATION SIGN



FIRE DEPARTMENT CONNECTION ASSEMBLY AT VINE STREET



FIRE DEPARTMENT CONNECTION ASSEMBLY AT HAM LANE



FIRE DEPARTMENT NOTES

1. THE INSTALLATION OF ALL ON-SITE FIRE PROTECTION SYSTEMS SHALL BE IN ACCORDANCE WITH N.F.P.A. 24 AND FIRE DEPARTMENT STANDARDS.
2. ALL ON-SITE FIRE PROTECTION SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF N.F.P.A. 24 AND SHALL BE WITNESSED BY THE FIRE DEPARTMENT. UNDERGROUND PIPING SHALL BE FLUSHED PER NFPA13 AND RISER STUB-UP IMMEDIATELY CAPPED.
3. THE INSTALLING CONTRACTOR, OR SUBCONTRACTOR, FOR ALL ON-SITE FIRE PROTECTION SYSTEMS SHALL NOTIFY THE FIRE DEPARTMENT AT LEAST 24 HOURS IN ADVANCE OF REQUESTING A DATE AND TIME FOR INSPECTIONS.
4. IF PLASTIC PIPE IS INSTALLED FOR FIRE PROTECTION SYSTEMS, THE PIPE SHALL BE C-900 CLASS 200.
5. AFTER INSTALLATION, RODS, NUTS, BOLTS, WASHERS, CLAMPS, AND OTHER RESTRAINING DEVICES, EXCEPT THRUST BLOCKS, USED ON ON-SITE FIRE PROTECTION SYSTEMS SHALL BE CLEANED AND THOROUGHLY COATED WITH A BITUMINOUS OR OTHER ACCEPTABLE CORROSION-RETARDING MATERIAL.
6. ALL PIPES AND FITTINGS SHALL BE WRAPPED PER N.F.P.A. 24 AND BEDDED IN SAND.
7. PROVIDE UTILITY BOX. FOR 4" - 8" VALVE CHRISTY N48, FOR 8"+ CHRISTY N52 OR APPROVED EQUAL. PROVIDE 12" MIN CHAIN WELDED TO LIDS AND BOLTED TO INSIDE OF BOX. LID SHALL BE TRAFFIC RATED IF WITHIN A TRAFFIC AREA.

DSA-810 FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

PROJECT INFORMATION

School District:	LODI UNIFIED SCHOOL DISTRICT
Project name / school:	LODI MIDDLE SCHOOL
Project address:	945 S HAM LN, LODI, CA 95242

FIRE & LIFE SAFTEY INFORMATION — ALTERNATE ACCEPTED

1.	Has a fire hydrant flow test been performed within the past 12 months? *(If yes, provide a copy of the test data)*	Yes [X]	No [ ]
2.	Was the fire hydrant water flow test performed as part of this LFA review?	Yes [X]	No [ ]
3.	Is the project located within a designated fire hazard serverity zone as established by Cal-Fire? *(If yes, indicate fire hazard zone classification below)*	Yes [ ]	No [X]

	Moderate	High	Very High
Refer to the following for fire hazard zone locations: *www. fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*	[ ]	[ ]	[ ]
Wildland Interface Area (WIFA) *(If any designations are checked, project design must meet the requirements of CBC Chapter 7A)*			WIFA [ ]

CONDITION MEANS AND METHODS RESOLUTION — ALTERNATE ACCEPTED

		Yes	No	N/A	N/R
4.	Emergency vehicle access roadways do not meet CFC requirements			X	
4a.	**Acceptable Alternative:** Emergency vehicle and personel access as proposed by the architect is acceptable for providing fire suppression and protection of life and property				
5.	**Fire Hydrants:** Number and spacing does not meet CFC requirements				
5a.	**Acceptable Alternative:** Number of fire hydrants and spacing as proposed by the architect is acceptable for fire suppression and protection of life and property.	X			
6.	**Fire Hydrants:** Water flow and pressure are less than CFC minimum.			X	
6a.	**Acceptable Alternative:** The available flow and pressure is acceptable for providing fire suppression and protection of life and property.				
7.	Location of fire department connection(s) serving fire sprinkler system or standpipe system does not meet CFC requirements.			X	
7a.	**Acceptable Alternative:** The location of fire department connection serving the fire sprinkler system and/or standpipe system is acceptable for providing fire suppression and protection of life and property.				

School District Acceptance of Acceptable Design Alternates
By signing this form, the school district acknowledges and accepts the proposed design as an alternative to California Building Code (CBC) and California Fire Code (CFC) minimum requirements as indicated by one of more of the conditions indicated at items 4a, 5a, 6a, or 7a, for providing fire and life safety protection of life and property.

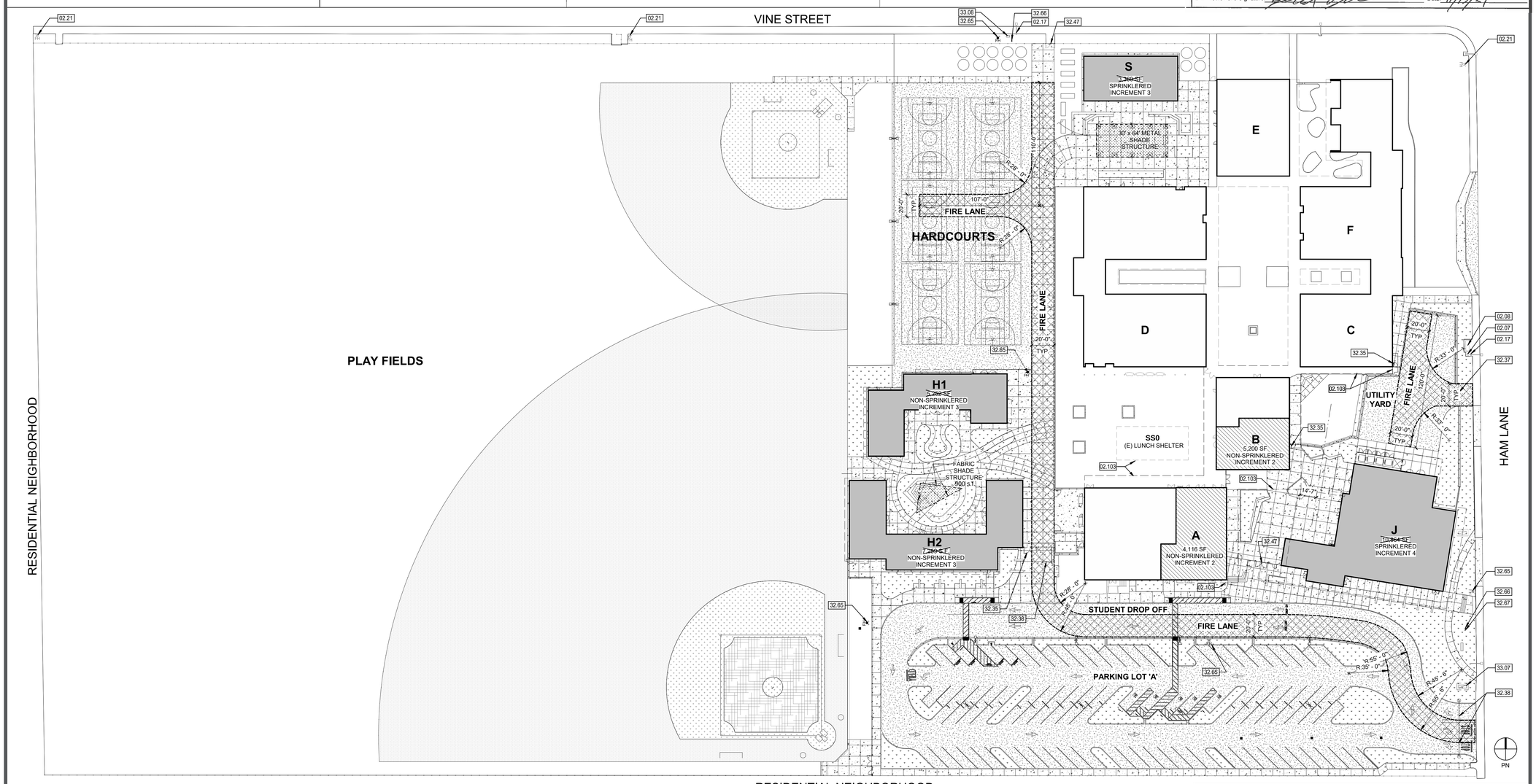
Accepted by: Edith Halbert — Title: Exec. Dir. of Operations
Signature: [signature] — Date: 3/28/25

LOCAL FIRE AUTHORITY (LFA) INFORMATION

LFA Agency Name: Lodi Fire
LFA Review Official: Brad Doell
Title: Fire Marshal — Work Phone: 209-333-6739
Work Email: bdoell@lodi.gov
LFA Reviewer's Signature: [signature] — Date: 11/13/24

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025



INFORMATION ONLY SHEET
THIS PLAN INCLUDES CODE INFORMATION ONLY. REFER TO THE SUBSEQUENT PLANS FOR SITE CONSTRUCTION DETAILS, INCLUDING ACCESSIBLE FEAURES ALONG ACCESSIBLE PATH OF TRAVEL

LOCAL FIRE AUTHORITY SITE PLAN 1 — 1" = 40'-0"

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

LICENSED ARCHITECT — JENNIFER PEARSON HUANG — C-35691 — REN. 05/31/25 — STATE OF CALIFORNIA

ISSUE

Δ	DESCRIPTION	DATE

LEGEND

- PROPERTY LINE
- ASSUMED PROPERTY LINE
- OVERHANG LINE ABOVE
- CHAIN LINK FENCE
- ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- NEW FIRE LANE
- NEW BUILDING
- EXISTING BUILDING
- MODERNIZED BUILDING
- EXPANSION JOINT / CONCRETE WALK / CONTROL JOINT
- ASPHALT CONCRETE PAVING
- LANDSCAPE, SEE LANDSCAPE DRAWINGS
- FIRE HYDRANT - SEE CIVIL DRAWINGS
- TRUNCATED DOMES

KEYNOTES

02.07	(E) TRASH ENCLOSURE TO REMAIN; PROTECT IN PLACE
02.08	(E) BENCHES TO REMAIN; PROTECT IN PLACE
02.17	(E) LIGHT POLE TO REMAIN, PROTECT IN PLACE | ELEC
02.21	(E) FIRE HYDRANT
02.103	LINE INDICATES ROOF OVERHANG ABOVE
32.35	4'-0" W X 7'-0" H DECORATIVE METAL GATE WITH KNOX LOCK. KNOX LOCK PER LOCAL FIRE AUTHORITY STANDARDS. PROVIDE EXIT HARDWARE
32.37	20' - 0" W X 7' - 0" H DECORATIVE ROLLING GATE WITH KNOX LOCK. KNOX LOCK PER LOCAL FIRE AUTHORITY STANDARDS
32.38	20' - 0' WIDTH X 7' - 0" TALL FORMED METAL ROLLING GATE, SEE 12/A1.48
32.47	GATE WITH KNOX LOCK, KNOX LOCK PER LOCAL FIRE AUTHORITY STANDARDS
32.65	FIRE HYDRANT - SEE CIVIL DWGS
32.66	FIRE DEPARTMENT CONNECTION - SEE CIVIL DWGS
32.67	POST INDICATOR VALVE - SEE CIVIL DWGS
33.07	8" FIRE SERVICE WITH DOMESTIC SERVICE PER CITY OF LODI STD. PLAN 407.
33.08	PROVIDE 3" DOMESTIC PER CITY OF LODI, STD. PLAN 406, 412, AND 413. | CIVIL

GENERAL NOTE

THE LOCATIONS OF PROPOSED FIRE HYDRANTS HAVE BEEN REVIEWED AND ACCEPTED BY THE LOCAL FIRE AUTHORITY.

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1
Author
SHEET NAME:
LOCAL FIRE AUTHORITY SITE PLAN

100% CONSTRUCTION DOCS

DATE: **03.12.2025** — CLIENT PROJ NO: **3431007000**
SHEET:

G1.12

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PLEASE RECYCLE

ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THESE PLANS.

AB	AGGREGATE BASE
AC	ASPHALTIC CONCRETE
AD	AREA DRAIN
APN	ASSESSOR'S PARCEL NUMBER
ARV	AIR RELEASE VALVE
ASB	AGGREGATE SUB-BASE
BO	BLOW-OFF VALVE
BV	BUTTERFLY VALVE
BW	BACK OF WALK
C/L	CENTERLINE
CB	CATCH BASIN
CJ	CONTROL JOINT
CL	CLASS
CMP	CORRUGATED METAL PIPE
CATV	CABLE TELEVISION
CO	CLEANOUT
COMM	COMMUNICATION
CONC.	CONCRETE
CONST.	CONSTRUCT
CR	CURB RETURN
CS	CONCRETE SURFACE
DC	DOUBLE CHECK VALVE
DDC	DOUBLE DETECTOR CHECK VALVE
DG	DECOMPOSED GRANITE
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DWG	DRAWING
DS	DOWNSPOUT
E	ELECTRIC
EJ	EXPANSION JOINT
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
EX	EXISTING
FS	FIRE SERVICE LINE
FDC	FIRE DEPARTMENT CONNECTION
FL	FLOWLINE
FM	SANITARY SEWER FORCE MAIN
FF	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
G	GAS
GB	GRADE BREAK
GR	GRATE ELEVATION
GRD	GRADE ELEVATION
GV	GATE VALVE
HB	HOSE BIBB
HBD	HEADER BOARD
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HIGH POINT
INV	PIPE INVERT ELEVATION
JP	JOINT UTILITY POLE
LF	LINEAL FEET
LIP	LIP OF GUTTER
LT	LEFT
MS	MOWSTRIP
NTS	NOT TO SCALE
OH	OVERHEAD
PAD	BUILDING PAD
PCC	PORTLAND CEMENT CONCRETE
PD	PLANTER DRAIN
PIV	POST INDICATOR VALVE
P/L	PROPERTY LINE
PP	POWER POLE
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
R	RADIUS
RIM	MANHOLE RIM ELEVATION (SOLID COVER)
RP	REDUCED PRESSURE BACKFLOW PREVENTER
RW	RIGHT OF WAY
SCH	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SG	SUBGRADE ELEVATION
SP	FIRE SPRINKLER SERVICE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STD	STANDARD
S/W	SIDEWALK
T	TELEPHONE
TC	TOP OF CURB
TD	TRENCH DRAIN
TDCB	TRENCH DRAIN CATCH BASIN
TP	TELEPHONE POLE
TRW	TOP OF RETAINING WALL
TSW	TOP OF SEAT WALL
TW	TOP OF WALK ELEVATION
U	UTILITY
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
VCP	VITRIFIED CLAY PIPE
W	WATER
W/	WITH
W/O	WITHOUT
WV	WATER VALVE

LEGEND

NOTE: NOT ALL SYMBOLS MAY BE USED ON THESE PLANS.

PROPOSED GRADING & DRAINAGE SYMBOLS:

8" SD	STORM DRAIN LINE (SIZE AND FLOW SHOWN)
	STORM DRAIN MANHOLE (SDMH)
	CATCH BASIN (CB)
	DROP INLET (DI)
	AREA DRAIN (AD)
	PLANTER DRAIN (PD) OR FLOOR DRAIN (FD)
CO	STORM DRAIN CLEANOUT
99.99	ELEVATION
FF=100.00	FINISHED FLOOR ELEVATION
PAD=99.33	BUILDING PAD ELEVATION
	CONCRETE SIDEWALK
	GRADED DIRECTION FOR DRAINAGE FLOW
	SWALE
	SLOPE
	TREE TO BE REMOVED
	RETAINING WALL

PROPOSED SANITARY SEWER SYMBOLS:

6" SS	SANITARY SEWER LINE (SIZE AND FLOW SHOWN)
	SANITARY SEWER MANHOLE (SSMH)
CO	SEWER CLEANOUT FLUSHER BRANCH

PROPOSED WATER SYMBOLS:

8" W	WATER LINE & SIZE
8" FS	FIRE LINE & SIZE
8" DW	DOMESTIC WATER LINE & SIZE
8" RW	RECLAIMED WATER LINE & SIZE
8" IRR	IRRIGATION SERVICE LINE & SIZE
8" NP	NON POTABLE WATER LINE & SIZE
8" SP	FIRE SPRINKLER SERVICE LINE & SIZE
	GATE VALVE
M	WATER METER
FH	FIRE HYDRANT ASSEMBLY
FDC	FIRE DEPARTMENT CONNECTION
DC	DETECTOR CHECK VALVE
DDC	DOUBLE DETECTOR CHECK VALVE
RP	REDUCED PRESSURE BACKFLOW PREVENTER
	BUTTERFLY VALVE
1"	AIR RELEASE VALVE + SIZE
1"	BLOW-OFF VALVE + SIZE
PIV	POST INDICATOR VALVE

SHEET INDEX

C0.1	CIVIL COVER SHEET
C0.2	TOPOGRAPHIC SURVEY
C1.1	PARTIAL CIVIL DEMOLITION PLAN
C1.2	PARTIAL CIVIL DEMOLITION PLAN
C1.3	PARTIAL CIVIL DEMOLITION PLAN
C1.4	PARTIAL CIVIL DEMOLITION PLAN
C2.1	PARTIAL GRADING PLAN
C2.2	PARTIAL GRADING PLAN
C2.3	PARTIAL GRADING PLAN
C2.4	PARTIAL GRADING PLAN
C3.1	PARTIAL DRAINAGE AND SEWER PLAN
C3.2	PARTIAL DRAINAGE AND SEWER PLAN
C3.3	PARTIAL DOMESTIC AND FIRE WATER PLAN
C3.4	PARTIAL DOMESTIC AND FIRE WATER PLAN
C4.1	PAVING PLAN
C5.1	DETAILS
C5.2	DETAILS
C6.1	EROSION CONTROL PLAN
C7.1	FRONTAGE IMPROVEMENTS, COVER SHEET
C7.2	FRONTAGE IMPROVEMENTS, GENERAL NOTES
C7.3	FRONTAGE IMPROVEMENTS HAM LANE
C7.4	FRONTAGE IMPROVEMENTS WEST VINE ST.

GENERAL NOTES

1. THE TYPES, LOCATIONS, SIZES, AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. HOWEVER, WARREN CONSULTING ENGINEERS CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES, NOR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH MAY BE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR OR ANY SUBCONTRACTOR FOR THIS CONTRACT SHALL NOTIFY MEMBERS OF UNDERGROUND SERVICE ALERT (USA) TWO (2) WORKING DAYS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK BY CALLING TOLL FREE 1-800-227-2600, OR 811.

811 Know what's below. Call before you dig.

2. WARREN CONSULTING ENGINEERS, INC. (WCE) ASSUMES NO RESPONSIBILITY FOR ERRORS IN PHYSICAL LOCATION OF IMPROVEMENTS, HORIZONTAL OR VERTICAL. IN ADDITION, ANY SUCH ERRORS IN PHYSICAL LOCATION MAY AFFECT THE INTENDED DESIGN OF SUCH IMPROVEMENTS AND WCE CANNOT BE HELD RESPONSIBLE FOR SUCH CONDITIONS WHICH ARE A RESULT OF ERRORS IN SURVEYING, OR IMPROPER CONSTRUCTION.

3. IF SUBSURFACE CULTURAL RESOURCES, REMAINS, AND/OR ARTIFACTS ARE UNCOVERED DURING PROJECT CONSTRUCTION, ALL WORK IN THE VICINITY SHALL BE STOPPED UNTIL SUCH ITEMS CAN BE ASSESSED BY AN APPROPRIATE MEMBER OF THE COUNTY ENVIRONMENTAL IMPACT SECTION STAFF.

4. CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

5. THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL SAFETY FOR ALL EXCAVATIONS OF 5 FEET OR MORE IN DEPTH.

6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE NECESSARY PRE-CONSTRUCTION SITE REVIEWS TO DETERMINE NECESSARY MEANS AND METHODS TO COMPLETE THE IMPROVEMENTS SHOWN ON THESE PLANS.

7. WHERE IMPROVEMENTS LIE WITHIN AN EXISTING DEVELOPED AREA, CONTRACTOR SHALL USE CAUTION WHEN ACCESSING THE SITE THROUGH THESE EXISTING IMPROVEMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO PROTECT ANY SUCH EXISTING IMPROVEMENTS OUTSIDE THE PROJECT BOUNDARY, OR EXISTING IMPROVEMENTS WITHIN THE BOUNDARY WHICH ARE TO REMAIN. PROPER PRECAUTIONS SHALL BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION. ANY DAMAGE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER.

8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO KEEP DETAILED RECORDS OF MINOR CHANGES OR ADJUSTMENTS MADE DURING CONSTRUCTION (WHICH WERE NOT FORMALLY ISSUED). UPON PROJECT COMPLETION, THESE RECORDS AND/OR INFORMATION SHALL BE PROVIDED TO THE OWNER AND WARREN CONSULTING ENGINEERS, INC. UNLESS AN OFFICIAL "AS-BUILT" SET OF PLANS IS A REQUIREMENT OF THE CONTRACT. IF AS-BUILT PLANS ARE A REQUIREMENT OF THE CONTRACT, REFER TO SPECIFICATIONS FOR AS-BUILT DELIVERABLE REQUIREMENTS.

9. IN VEHICULAR PATHWAYS, EXISTING ASPHALTIC AND/OR CONCRETE SURFACES SHALL BE CUT TO A NEAT AND STRAIGHT LINE, PARALLEL OR PERPENDICULAR TO THE VEHICULAR TRAVELED PATH. THIS IS TYPICALLY THE ROADWAY CENTERLINE, BUT MAY VARY. THAT SAWCUT EDGE SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION SO A CLEAN EDGE REMAINS FOR PATCH BACK.. IF EDGE IS DAMAGED, A NEW SAW CUT WILL BE REQUIRED. THE EXPOSED EDGE SHALL BE "TACKED" WITH EMULSION PRIOR TO PAVING.

10. NO BURNING OR BLASTING SHALL BE ALLOWED ONSITE UNLESS SPECIFICALLY ADDRESSED ON PLANS, OR SPECIFICALLY APPROVED AND COORDINATED WITH THE ARCHITECT, ENGINEER, AND LOCAL AGENCY OR OTHER ADMINISTRATIVE AUTHORITY.

11. SUBGRADE AND RESULTING FINISHED GRADE SHALL BE CONSTRUCTED SMOOTH AND UNIFORM BETWEEN SPOT ELEVATIONS, CONTOURS OR OTHER STRUCTURE ELEVATIONS SHOWN ON GRADING OR OTHER PLANS. NO MOUNDS, RUTS, DEPRESSIONS OR OTHER GRADING DEFICIENCIES WILL BE ALLOWED UNLESS SPECIFICALLY SHOWN ON PLANS.

12. ON NEW WATER SYSTEMS, SERVICE LATERALS SHALL BE MADE USING APPROPRIATE "TEE" AND "WYE" FITTINGS. SADDLE TAPS WILL ONLY BE ALLOWED WHEN MAKING CONNECTIONS TO EXISTING WATER MAINS.

13. CURING COMPOUND SHALL BE APPLIED IN A CONTINUOUS SOLID WET FLOWING COAT. ANY "SPOTTY" APPLICATIONS SHALL BE RECOATED IMMEDIATELY. APPLICATION SHALL BE INSPECTED BY PROJECT INSPECTOR DURING APPLICATION.

14. EMBEDMENT OF FEATURES IN CONCRETE PAVING, CURBS, OR WALLS, SUCH AS SQUARE OR ROUND TUBING, POSTS, OR COLUMNS, STEEL BOLTED PLATES, OR OTHER STRUCTURES, SHALL REQUIRE ADDITIONAL SCORE OR EXPANSION JOINTS TO PREVENT UNCONTROLLED CRACKING. THOSE ADDITIONAL JOINTS MAY OR MAY NOT BE SPECIFICALLY SHOWN ON PLANS BUT SHALL BE PROVIDED BY THE CONTRACTOR.

15. EMBEDMENT OF FEATURES IN CONCRETE PAVING, CURBS, OR WALLS, SUCH AS SQUARE OR ROUND TUBING, POSTS, OR COLUMNS, STEEL BOLTED PLATES, OR OTHER STRUCTURES, SHALL REQUIRE A MINOR ADJUSTMENT OF REBAR WITHIN CONCRETE TO ALLOW FOR SUCH STRUCTURE. THAT REBAR ADJUSTMENT MAY NOT BE SPECIFICALLY SHOWN ON PLANS.

16. NO MORE THAN 1 GALLON OF WATER PER YARD OF CONCRETE CAN BE ADDED TO THE TRUCK AFTER ARRIVAL TO PROJECT SITE. THE ADDITION OF WATER CAN ONLY BE ADDED UNDER THE SUPERVISION OF THE CONCRETE INSPECTOR OR LABORATORY TECHNICIAN.

17. WHEN PUMPING CONCRETE FOR PLACEMENT, ABSOLUTELY NO WATER IS TO BE ADDED TO PUMP HOPPER. ANY WATER ADDED TO HOPPER WILL BE REASON FOR CONCRETE REJECTION AT THE CONTRACTORS EXPENSE.

18. ALL CONTRACTION/CONSTRUCTION JOINTS "CJ" SHALL BE 1/4 THE SLAB THICKNESS DEEP, BUT NO LESS THAN 1" FOR CONTROLLING OF CRACKING. CONTRACTOR SHALL EXERCISE CAUTION WHEN FINAL TROWELING OF CONCRETE SO AS NOT TO FILL IN THESE JOINTS WITH CONCRETE CREAM. ANY CRACKS OUTSIDE OF JOINTS WHICH WERE CONSTRUCTED LESS THAN 1" DEEP, SHALL BE CAUSE FOR CONCRETE SLAB(S) TO BE REMOVED AND REPLACE AT CONTRACTORS EXPENSE.

19. ANY SCREED BOARDS SET WITHIN CONCRETE SLABS SHALL BE AN "OVERHEAD SCREED" SO THERE IS NO INTERFERENCE WITH THE PLACEMENT AND ALIGNMENT OF SLAB REINFORCING.

20. 3-1/2" FELT JOINTS WILL NOT BE ACCEPTED. PROVIDE A FULL 4" FELT JOINT FOR 4" SLAB CONSTRUCTION, AND A 6" FELT JOINT FOR A 6" SLAB SLAB CONSTRUCTION.

21. SHOULD ANY SHRINKAGE CRACKS OCCUR OUTSIDE OF EITHER THE EXPANSION JOINTS OR CRACK CONTROL JOINTS, THEN THE CONCRETE SLAB SHALL BE SAWCUT AT THE NEAREST JOINTS ON EACH SIDE OF THE CRACK AND THE CONCRETE SECTION SHALL BE, REMOVED AND REPLACED. NEW CONCRETE SHALL BE DOWELED INTO EXISTING CONCRETE PER DRAWING DETAIL.

22. ALL AREAS DISTURBED BY GRADING OPERATIONS WHETHER SHOWN ON THE DRAWINGS OR NOT SHALL BE HYDROSEEDED UNLESS OTHERWISE NOTED. HYDRO SEEDING SHALL CONFORM TO LOCAL CITY/COUNTY STANDARDS.

23. REPAIR OR PATCHING OF GALVANIZED METALS, SUCH AS AFTER WELDING GALVANIZED COMPONENTS, SHALL BE MADE USING A ZINC COMPOSITION "HOT STICK" APPLICATION PER ASTM A 780-01. GALVANIZING PAINTS WILL NOT BE ALLOWED.

24. AT LIMITS OF NEW PAVEMENT OR CURBS ADJACENT TO LANDSCAPING PROVIDE A 4:1 MINIMUM TRANSITION TO EXISTING GRADE WITH TOPSOIL. ADJUST EXISTING IRRIGATION HEADS TO FINISH GRADE AND PROVIDE SOD IN GRASS AREAS TO RESTORE TO EXISTING CONDITION.

37. TRANSITION BETWEEN PAVED SURFACES AND LANDSCAPE AREAS SHALL BE NO GREATER THAN 1", UNLESS NOTED OTHERWISE.

38. WITHIN LIMITS OF WORK THERE MAY BE EXISTING IRRIGATION LINES NOT SHOWN ON THIS PLAN. CONTRACTOR SHALL REMOVE LATERAL LINES AND HEADS ENCOUNTERED. MAIN LINES AND CONTROL WIRES MAY ONLY BE REMOVED PROVIDED THAT ROUTING IS KNOWN AND REMOVAL WILL NOT DEACTIVATE AN IRRIGATION SYSTEMS INTENDED TO REMAIN. IF CONFLICT IS FOUND, CONTACT THE ARCHITECT FOR DIRECTION.

39. GENERAL CONTRACTOR IS REQUIRED TO HIRE A LANDSCAPE SUBCONTRACTOR TO PERFORM ALL LANDSCAPE AND IRRIGATION REPAIRS.

40. WIDTH OF NEW SIDEWALKS SHALL MATCH WIDTH OF EXISTING, ADJACENT, SIDEWALKS.

41. SEE ARCHITECTURAL PLANS FOR EXPANSION AND CONTROL JOINT LAYOUT.

42. ADJUST TO FINISH GRADE ALL UTILITY BOXES, FRAMES, COVERS SLEEVES, POST HOLES GRATES, ETC. FOUND IN AREA OF WORK, WHETHER SHOWN OR NOT. CLEAN OR REPLACE AS NECESSARY TO ENSURE PROPER SEATING.

43. ALL NEW ASPHALT PAVING TO BE PROVIDED WITH 2 COATS OF SEALCOAT.

43. PRIOR TO NEW SEALCOAT ON EXISTING ASPHALT SURFACES, FILL ALL CRACKS 1/4" INCHES OR WIDER WITH AN APPROVED CRACK FILLER.

44. FOR ACCESSIBLE PATH OF TRAVEL REQUIREMENTS SEE ARCHITECTURAL SHEETS.

45. PERCENT OF SLOPE SHOWN ON ARROWS ARE MAXIMUM SLOPES AND NOT INTENDED TO SUPERCEDE SLOPES DEFINED BY SPOT ELEVATIONS. 0.0% MAX.

46. WITHIN THE LIMITS OF ACCESSIBLE PARKING AREA AND ACCESSIBLE DROP OFF ZONE THE SLOPE OF PAVEMENT SHALL NOT EXCEED 1.9% IN ANY DIRECTION.

47. SLOPE OF FINISHED PAVING TO BE 1% MINIMUM FOR ASPHALT, 0.5% MINIMUM FOR CONCRETE AND THE MAXIMUM SLOPE SHALL BE AS FOLLOWS;

    CROSS SLOPE PERPENDICULAR TO PATH OF TRAVEL - 1.9%
    DIRECTION OF TRAVEL - 4.9%
    RAMP IN DIRECTION OF TRAVEL - 8.0%
    PLAZA 1.9% - IN ANY DIRECTION

48. THE MINIMUM SLOPE AWAY FROM THE BUILDING ON PAVED SURFACES SHALL BE 1% MINIMUM AND 2% MAXIMUM.

49. TRANSITIONS BETWEEN CONCRETE AND OR ASPHALT SURFACES SHALL BE FLUSH, UNLESS NOTED OTHERWISE BY CURB OR STEP.

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER
ANTHONY J. TASSANO
NO. C74696
CIVIL
STATE OF CALIFORNIA
03/28/2025

WCE
WARREN CONSULTING ENGINEERS, INC.
1117 WINDFIELD WAY, SUITE 110
EL DORADO HILLS, CA 95762 | (916) 985-1870

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
CIVIL COVER SHEET

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
C0.1

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EXISTING TOPOGRAPHY

- PROPERTY LINE
- CENTERLINE
- EASEMENT
- PROPERTY CORNER FOUND AS NOTED
- PROPERTY CORNER NOTHING FOUND OR SET
- 123 TEMPORARY BENCHMARK (SEE TBM LIST FOR INFO)
- SWALE OR DRAINAGE FLOW
- DRAINAGE FLOW
- FENCE (TYPE NOTED)
- TREE (SIZE/TYPE INDICATED)
- SLOPE
- 100 CONTOUR
- CONCRETE SURFACE
- EDGE OF ASPHALT
- EDGE OF BUILDING
- SIGN
- POST OR BOLLARD
- 99.9 GROUND ELEVATION
- 99.99 HARD SURFACE ELEVATION

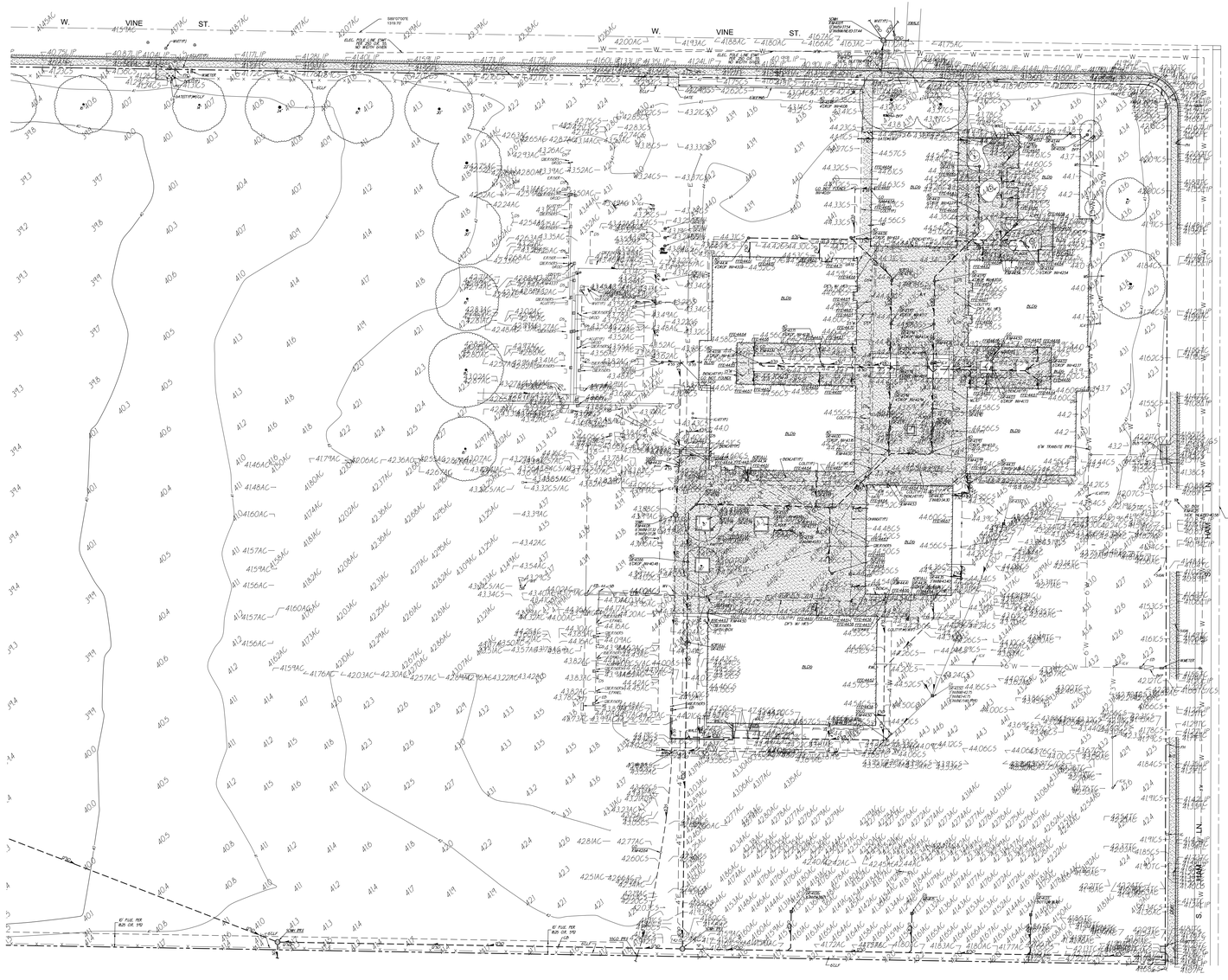
EXISTING UTILITIES

- 12"SD STORM DRAIN LINE (SIZE + DIRECTION OF FLOW)
- 12"SD STORM DRAIN LINE (RECORD INFORMATION)
- 12"SD STORM DRAIN LINE (UNDERGROUND LOCATING)
- SD STORM DRAIN MANHOLE
- STORM DRAIN CLEANOUT
- DROP INLET
- AREA DRAIN
- RWL RAIN WATER LEADER
- DS DOWNSPOUT
- 12"SS SANITARY SEWER LINE (SIZE + DIRECTION OF FLOW)
- 12"SS SANITARY SEWER LINE (RECORD INFORMATION)
- 12"SS SANITARY SEWER LINE (UNDERGROUND LOCATING)
- SS SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- W WATER LINE (SIZE INDICATED)
- W WATER LINE (RECORD INFORMATION)
- W WATER LINE (UNDERGROUND LOCATING)
- V WATER MANHOLE
- WATER VALVE
- WM WATER METER
- WB WATER BOX
- IRRIGATION CONTROL VALVE
- FIRE HYDRANT
- BACKFLOW PREVENTER
- SPRINKLER
- HOSE BIBB
- OH-E OVERHEAD ELECTRIC LINE
- E UNDERGROUND ELECTRIC LINE
- E UNDERGROUND ELECTRIC LINE (RECORD INFORMATION)
- E UNDERGROUND ELECTRIC LINE (UNDERGROUND LOCATING)
- E ELECTRIC MANHOLE
- UTILITY POLE (WITH GUY WIRE)
- EM ELECTRIC METER
- E ELECTRIC BOX
- SLB STREET LIGHTING BOX
- OR LIGHT STANDARD
- SIGNAL LIGHT
- FLOOD LIGHT
- ELECTRICAL OUTLET
- G GAS LINE (SIZE INDICATED)
- G GAS LINE (RECORD INFORMATION)
- G GAS LINE (UNDERGROUND LOCATING)
- G GAS MANHOLE
- GAS VALVE
- GM GAS METER
- T TELEPHONE LINE
- T TELEPHONE LINE (RECORD INFORMATION)
- T TELEPHONE LINE (UNDERGROUND LOCATING)
- SD STORM DRAIN BOX
- TS TRAFFIC SIGNAL BOX

ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THESE PLANS.

AC	ASPHALTIC CONCRETE
ACC	ACCESSIBLE
ACR	ASPHALTIC CONCRETE RAMP
ACU	AIR CONDITIONING UNIT
AD	AREA DRAIN
APN	ASSESSOR'S PARCEL NUMBER
APP	APPARATUS
ARV	AIR RELEASE VALVE
BBALL	BASKETBALL POLE
BCM	BRASS CAP MONUMENT
BFP	BACK FLOW PREVENTER
BL	BLOCK
BLDG	BUILDING
BOL	BOLLARD
BOV	BLOW-OFF VALVE
BR	BRICK
BWF	BARBED WIRE FENCE
C	COMMUNICATION
CATV	CABLE TELEVISION
CB	COMMUNICATIONS BOX
CIP	CAPPED IRON PIPE
C/L	CENTERLINE
CLF	CHAIN LINK FENCE
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
COND	CONDENSATE
CPF	CONTROL POINT FOUND
CPS	CONTROL POINT SET
CS	CONCRETE SURFACE
DF	DRINKING FOUNTAIN
DG	DECOMPOSED GRANITE
DI	DROP INLET
DRWY	DRIVEWAY
DS	DOWNSPOUT
DWG	DRAWING
E	ELECTRIC
EB	ELECTRICAL BOX
ESMT	EASEMENT
FA	FIRE ALARM
FB	FIRE BOX
FDC	FIRE DEPARTMENT CONNECTION
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FLOWLINE
FO	FIBER OPTIC
FP	FLAGPOLE
FS	FIRE SERVICE
G	GAS
GB	GRADE BREAK
GD	GARAGE DOOR
GR	GRATE
GRB	GROUND ROD BOX
GROD	GROUND ROD
GST	GATE STOP
GV	GAS VALVE
H	HYDRONICS
HB	HOSE BIBB
HBB	HOSE BIBB BOX
HBD	HEADER BOARD
HP	HIGH PRESSURE
HR	HANDRAIL
HVE	HIGH VOLTAGE ELECTRIC
HWF	HOG WIRE FENCE
IC	IN CONCRETE
ICP	IRRIGATION CONTROL PANEL
ICV	IRRIGATION CONTROL VALVE
INV	PIPE INVERT ELEVATION
IRR	IRRIGATION
JP	JOINT UTILITY POLE
JT	JOINT TRENCH
LNDG	LANDING
LVE	LOW VOLTAGE ELECTRIC
M	METAL
MH	MANHOLE
MR	METAL RAMP
MS	MOW STRIP
MSC	METAL STORAGE CONTAINER
NTS	NOT TO SCALE
OH	OVERHEAD
OHANG	OVERHANG
OIP	OPEN IRON PIPE
PA	PLANTER AREA
PB	PARKING BUMPER
PH	POSTHOLE
PIV	POST INDICATOR VALVE
P/L	PROPERTY LINE
PP	POWER POLE
PRI	PER RECORD INFORMATION
PUE	PUBLIC UTILITY EASEMENT
PV	PAVERS
PVC	POLYVINYL CHLORIDE
R	RUBBER
RG	ROLLING GATE
RIM	MANHOLE RIM ELEVATION
ROW	RIGHT OF WAY
RR	RUBBER RAMP
RW	RETAINING WALL
RWD	REDWOOD
RWL	RAIN WATER LEADER
SB	SIGNAL BOX
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SIG	SIGNAL
SL	STREET LIGHT
SLB	STREET LIGHT BOX
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
STL	STEEL
T	TELEPHONE
TBALL	TETHER BALL POLE
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TD	TRENCH DRAIN
TP	TELEPHONE POLE
TRW	TOP OF RETAINING WALL
UG	UNDERGROUND
UNK	UNKNOWN
V	VENT
VBALL	VOLLEYBALL
W	WATER
W/	WITH
WD	WOOD
WF	WOOD FENCE
WIF	WROUGHT IRON FENCE
WRF	WOOD RAIL FENCE
XF	TRANSFORMER
XWALK	CROSSWALK
YD	YARD DRAIN



GRAPHIC SCALE

40' 0 20' 40' 80'

(IN FEET) 1 inch = 40 feet

NORTH

THIS DRAWING MAY HAVE BEEN ENLARGED OR REDUCED.

TBM LIST

NUMBER	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	CP5 CHISELED "+"	5000.36	4999.64	44.05
2	CP5 CHISELED "+"	5335.54	4999.94	43.29
3	CP5 CHISELED "+"	5089.26	4953.04	43.75
4	CP5 CHISELED "+"@DF	4991.33	4884.03	43.37
5	CP5 CHISELED "+"	5081.09	5145.23	44.49
6	CP5 CHISELED "+"	4982.71	5235.60	44.26
7	CP5 CHISELED "+"	4769.49	4991.88	42.16
8	CP5 CHISELED "+"	4873.59	5189.80	44.11
9	CP5 CHISELED "+"	5218.49	5187.07	44.06
10	CP5 CHISELED "+"	5270.94	5227.14	44.30
11	CPF BM 1222	5365.52	5378.87	42.23
12	CP5 CHISELED "+"	4776.35	5373.09	41.67
13	CP5 CHISELED "+"	4870.65	5374.95	41.80
14	CP5 CHISELED "+"	5382.69	5138.72	41.38
15	CP5 PK+WASHER	5329.77	4865.65	42.62

BASIS OF BEARINGS:
13 P.M. 22

FEMA INFORMATION:
THE SUBJECT PROPERTY IS LOCATED IN "ZONE X (SHADED) - AREA OF 0.2% ANNUAL CHANCE FLOOD HAZARD" PER FLOOD INSURANCE RATE MAP 06077C0306F DATED OCTOBER 16, 2009.

NOTE:
EXISTING UTILITIES BASED ON VISIBLE SURFACE STRUCTURES AND RECORD INFORMATION.

A.P.N.	031-040-020
BENCHMARK NO. 1222	ELEV. 42.231

SOUTHWEST CORNER HAM LANE AND VINE STREET, 8.8 FEET N/ END OF CURB OF RETURN ON HAM LANE, 0.5 FEET BEHIND BOC.

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

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REGISTERED PROFESSIONAL ENGINEER
ANTHONY J TASSANO
NO. C74696
STATE OF CALIFORNIA
03/28/2025

WCE
WARREN CONSULTING ENGINEERS, INC.
1117 WINDFIELD WAY, SUITE 110
EL DORADO HILLS, CA 95762 | (916) 985-1870

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
TOPOGRAPHIC SURVEY

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:
C0.2

FILE SHOWN ABOVE IS EXTERNAL REFERENCE(S) SHEETS 0 ORIGINAL PAGE SIZE
Autodesk Docs://R22154SK00 Placer UHSD Foresthill HS Concessions/R22154SK00-A-Concessions.rvt
4/8/2025 8:17:17 AM
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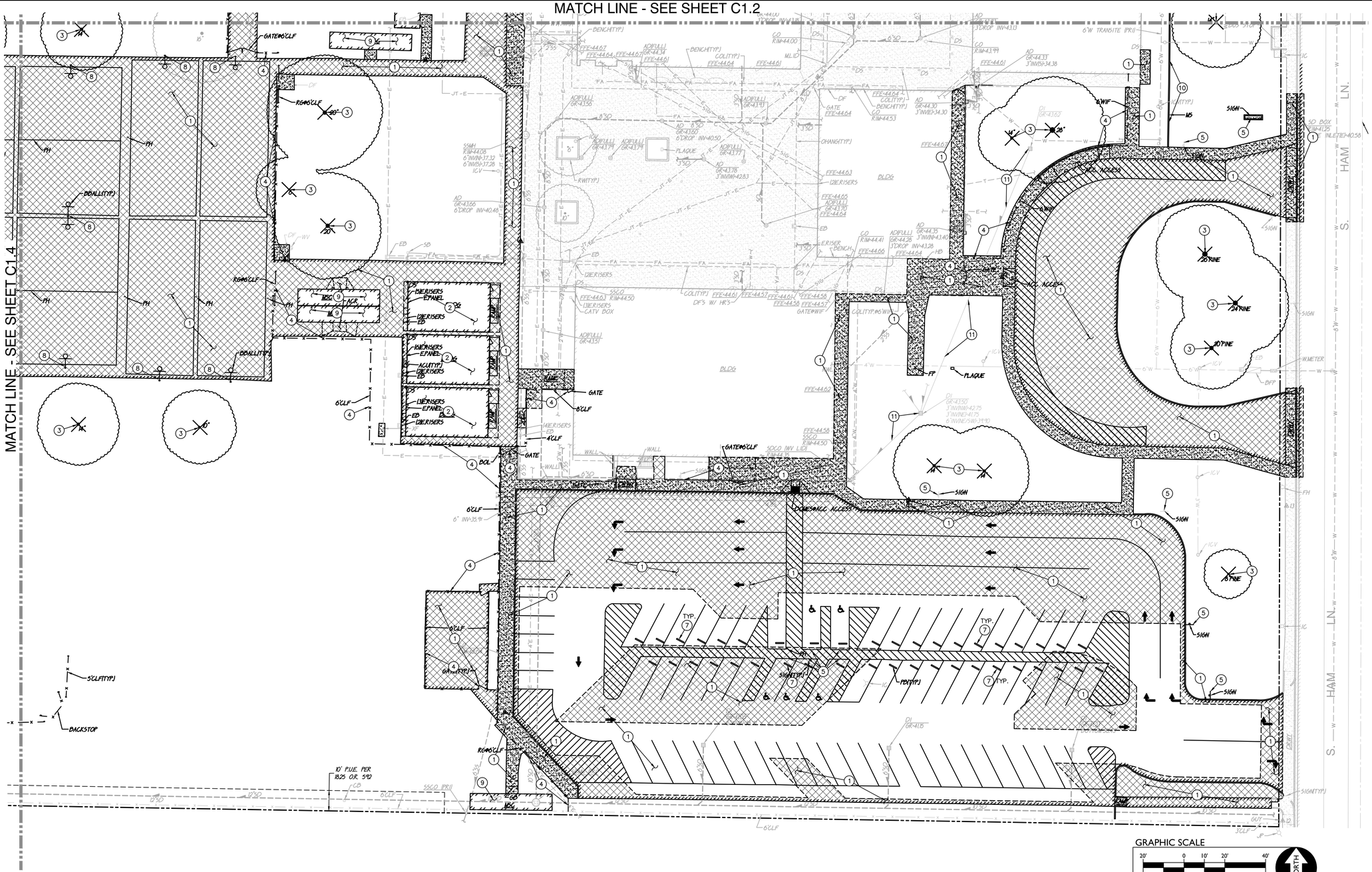

GRAPHIC SCALE

20' 0 10' 20' 40'

(IN FEET) 1 inch = 20 feet

NORTH

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DEMOLITION GENERAL NOTES

(THESE NOTES APPLY TO SHEETS C1.1–C1.4)

1. REFER TO ARCHITECTURAL, LANDSCAPE, ELECTRICAL AND PLUMBING PLANS FOR ADDITIONAL DEMOLITION ITEMS.
2. IN THE EVENT THAT ANY UNUSUAL CONDITIONS NOT COVERED BY THE GEOTECHNICAL INVESTIGATION REPORT OR ARE ENCOUNTERED DURING GRADING OPERATIONS THE GEOTECHNICAL ENGINEER AND THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTIONS.
3. ADDITIONAL DEMOLITION INFORMATION MAY BE SHOWN ON THE GRADING, DRAINAGE, AND UTILITY PLANS, AND THOSE PLANS PREPARED BY OTHER DISCIPLINES FOR THIS PROJECT.
4. ALL DEMOLISHED ITEMS SHALL BE DISPOSED OF OFFSITE AT A SUITABLE, LEGAL, DUMP SITE OR OTHER FACILITY.
5. ALL DISPOSED OF MATERIALS SHALL BE RECYCLED IF POSSIBLE.
6. THE SCHOOL DISTRICT SHALL HAVE SALVAGE RIGHTS TO ANY DEMOLISHED ITEMS SHOWN HEREON. THE CONTRACTOR SHALL GIVE THE DISTRICT NOTICE 7 DAYS PRIOR TO THE START OF DEMOLITION. THE DISTRICT SHALL MOVE ANY RETAINED ITEMS OUT OF THE CONTRACTORS WORK AREA, UNLESS ANOTHER ARRANGEMENT IS MADE WITH THE CONTRACTOR. ANY REMAINING ITEMS BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE. ANY ITEMS NOT SHOWN FOR REMOVAL SHALL REMAIN AND SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION TO A REASONABLE EXTENT.
7. EXISTING UTILITY STRUCTURES IN AREAS OF NEW PAVING SHALL BE REMOVED AND REPLACED WITH NEW BOX/COVER AT NEW GRADE UNLESS SPECIFICALLY NOTED OTHERWISE.
8. ITEMS OUTSIDE THE LIMITS OF DEMOLITION SHALL REMAIN AND BE PROTECTED FROM DAMAGE DURING CONSTRUCTION.
9. EXISTING UTILITY STRUCTURES AND PIPING NOT SHOWN ON DEMOLITION PLAN TO BE REMOVED SHALL REMAIN AND BE PROTECTED.
10. SAWCUTS AND SUBSEQUENT PATCH BACK OF CONCRETE WALKS, SHALL BE TO THE EXISTING CONCRETE JOINT BEYOND THE NEAREST LOCATION OF DEMOLITION AS SHOWN. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE, SHOW AND COORDINATE WITH EXISTING JOINTS, HOWEVER IF FIELD CONDITIONS ARE OTHERWISE, IT IS UNDERSTOOD TO REMOVE AND PATCH BACK TO THE NEAREST JOINTS BEYOND DEMOLITION.
11. PRIOR TO THE START OF CONSTRUCTION, VERIFY AND POTHOLE ALL UTILITY POINTS OF CONNECTION FOR LOCATION, DEPTH, AND SIZE. IF CONFLICT IS FOUND, CONTACT THE ENGINEER IMMEDIATELY FOR DIRECTION.
12. WITHIN LANDSCAPE AREAS TO BE DEMOLISHED THERE MAY BE EXISTING IRRIGATION LINES NOT SHOWN ON THIS PLAN. CONTRACTOR SHALL REMOVE LATERAL LINES AND HEADS ENCOUNTERED. MAIN LINES AND CONTROL WIRES MAY ONLY BE REMOVED PROVIDED THAT ROUTING IS KNOWN AND REMOVAL WILL NOT DEACTIVATE AN IRRIGATION SYSTEMS INTENDED TO REMAIN. IF CONFLICT IS FOUND, CONTACT THE ENGINEER FOR DIRECTION.
13. COORDINATE REMOVAL OF LANDSCAPE ITEMS WITH LANDSCAPE PLANS.

DEMOLITION NOTES

1. SAWCUT, REMOVE AND DISPOSE OF EXISTING PAVING, CURBS AND ASSOCIATED AGGREGATE BASE. SAWCUT SHALL BE A NEAT STRAIGHT LINE, MAINTAIN CLEAN, STRAIGHT CUT EDGE UNTIL NEW PAVING IS PLACED.
2. SEE ARCHITECTORAL PLANS FOR BUILDING REMOVAL.
3. REMOVE TREE, TRUNK AND ROOTS.
4. REMOVE FENCING, POST AND FOUNDATIONS.
5. REMOVE SIGN, POST AND FOUNDATIONS.
6. REMOVE PLANTER BOXES.
7. REMOVE PARKING BLOCK. BLOCKS NOT DAMAGED MAY BE REUSED.
8. REMOVE AND DISPOSE OF POLE AND FOUNDATION.
9. RELOCATE CONTAINER. COORDINATE RELOCATION WITH OWNER.
10. REMOVE MOWSTRIP.
11. REMOVE DRAIN INLET AND PIPING.
12. REMOVE SEWER PIPING. CAP END.

AGENCY APPROVAL:

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DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

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3431007000
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KEYNOTES

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WARREN CONSULTING ENGINEERS, INC.
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EL DORADO HILLS, CA 95762 | (916) 985-1870

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
PARTIAL CIVIL DEMOLITION PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

C1.1

Autodesk Docs://R221546X00 Placer USD Foresthill HS Concessions/R221546X00-A-Concessions.rvt
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GRAPHIC SCALE
20' 0 10' 20' 40'
(IN FEET) 1 inch = 20 feet
NORTH
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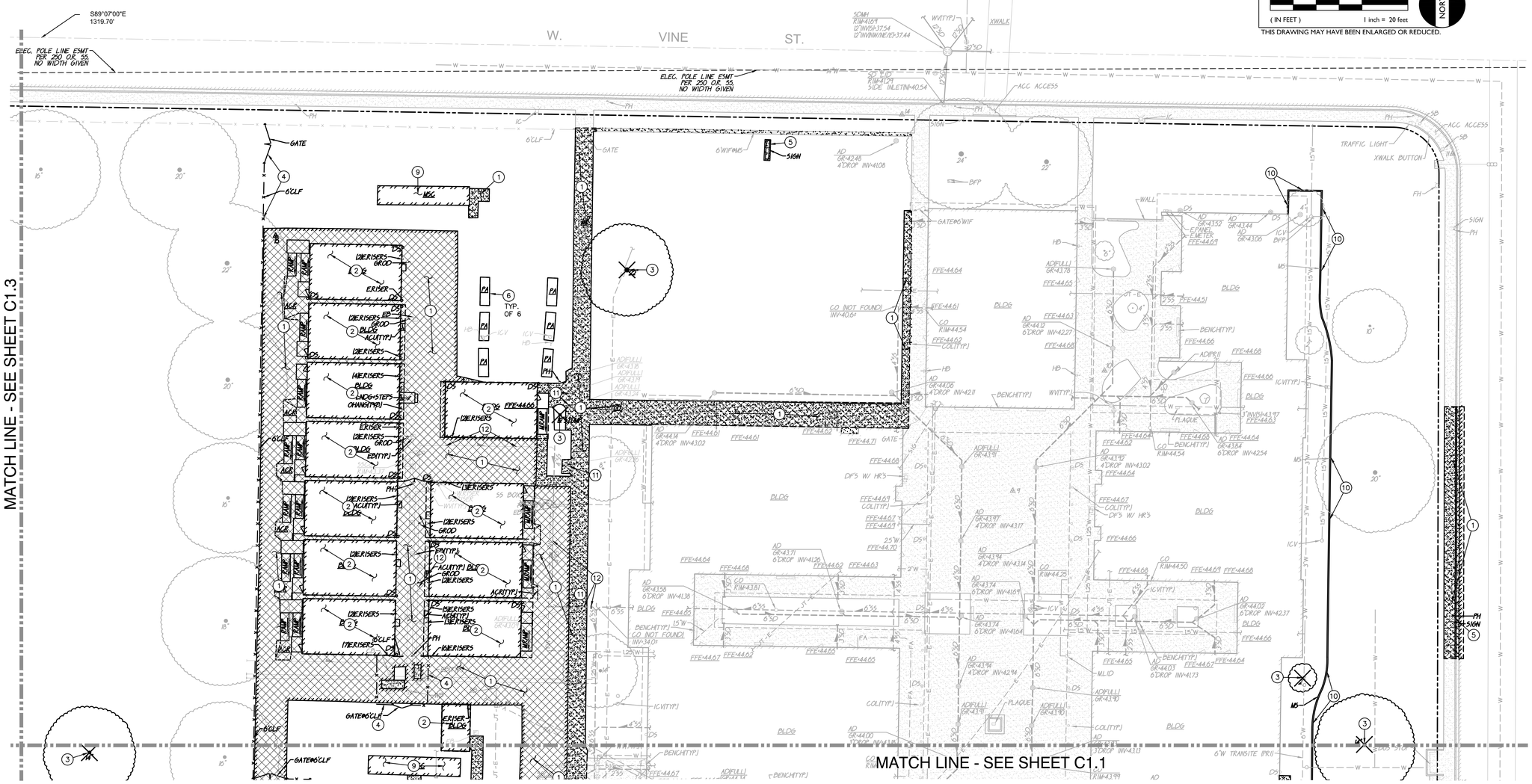

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12. REMOVE SEWER PIPING. CAP END.

REGISTERED PROFESSIONAL ENGINEER
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NO. C74696
STATE OF CALIFORNIA
03/31/2025

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FACILITY:
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945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
PARTIAL CIVIL DEMOLITION PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
C1.2

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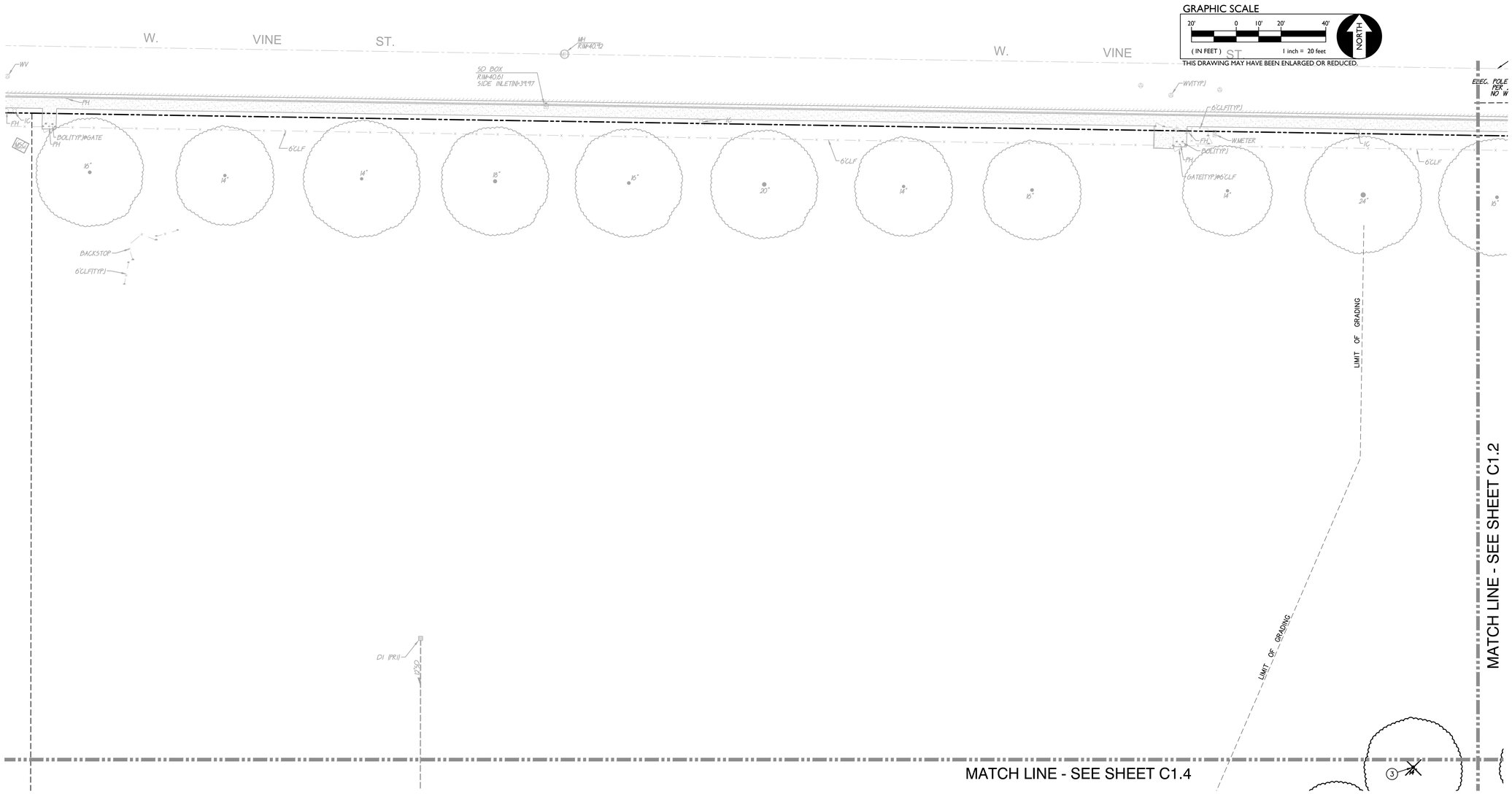

DEMOLITION NOTES

3. REMOVE TREE, TRUNK AND ROOTS.

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REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA
03/28/2025

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FACILITY:
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945 SOUTH HAM LANE LODI, CA 95242

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SHEET:
C1.3

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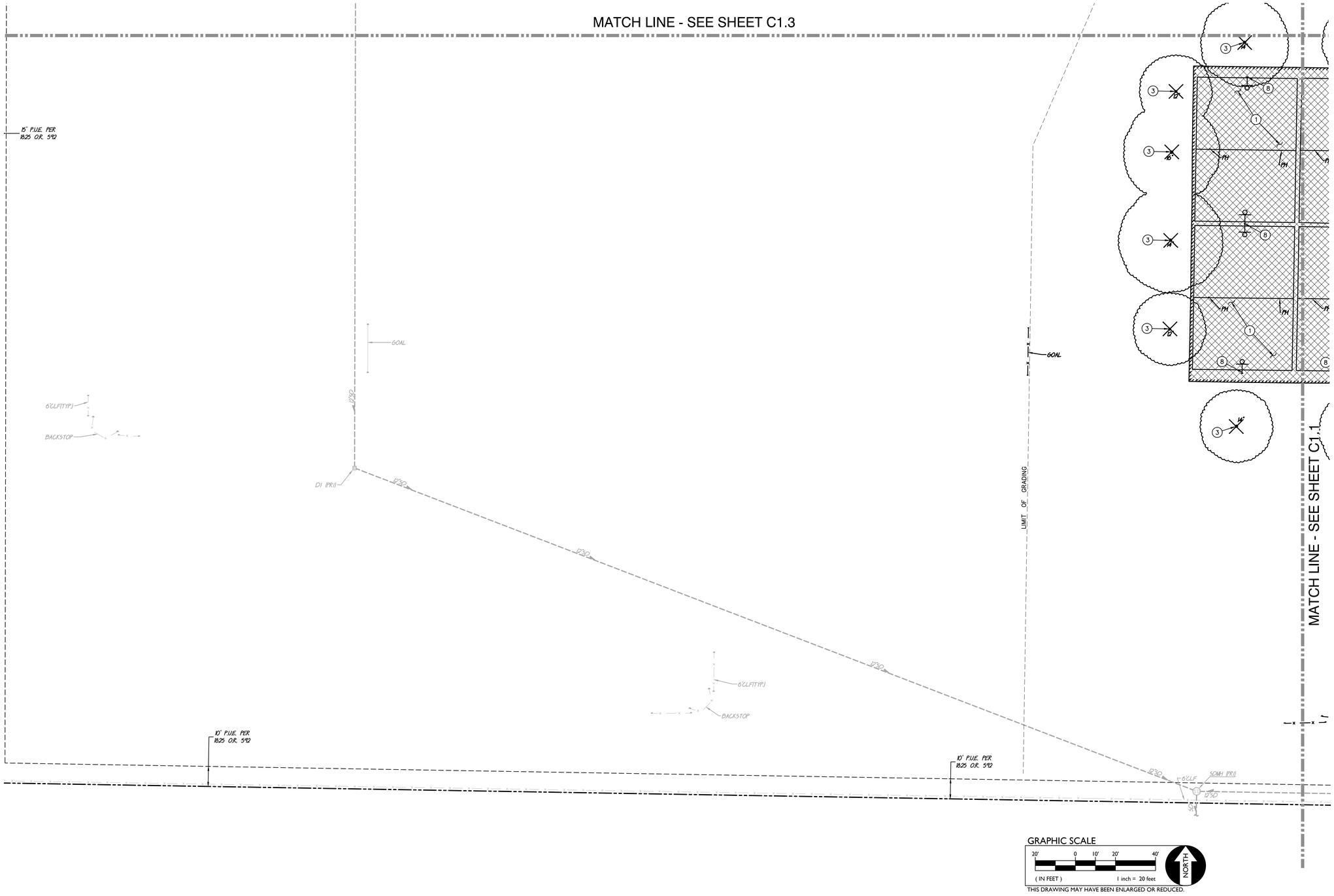

GRAPHIC SCALE

20' 0 10' 20' 40'

(IN FEET) 1 inch = 20 feet

NORTH

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DEMOLITION NOTES

1. SAWCUT, REMOVE AND DISPOSE OF EXISTING PAVING, CURBS AND ASSOCIATED AGGREGATE BASE. SAWCUT SHALL BE A NEAT STRAIGHT LINE, MAINTAIN CLEAN, STRAIGHT CUT EDGE UNTIL NEW PAVING IS PLACED.
3. REMOVE TREE, TRUNK AND ROOTS.

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SHEET NAME:
PARTIAL CIVIL DEMOLITION PLAN

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DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:

C1.4

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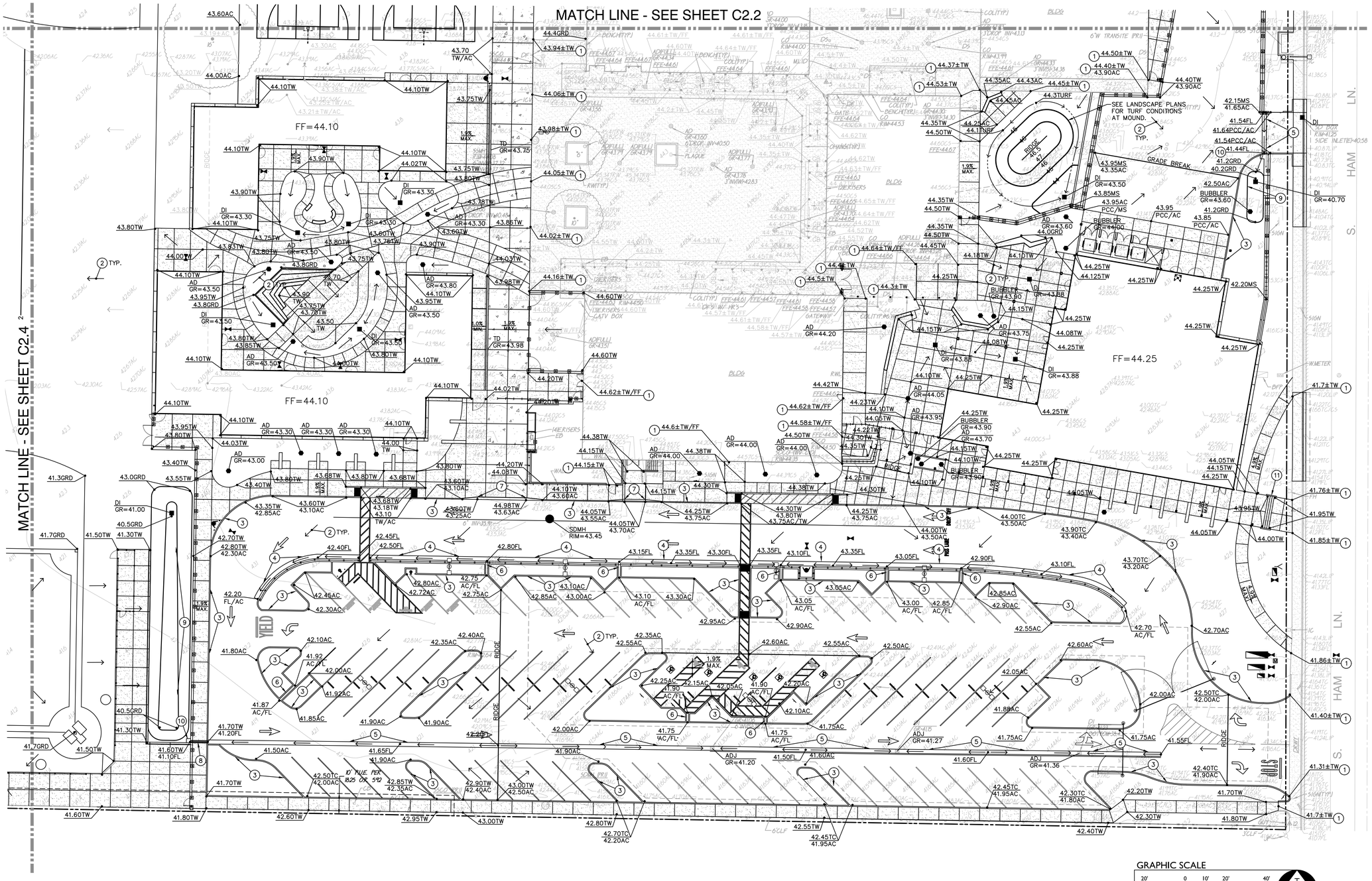

GRAPHIC SCALE

20' 0 10' 20' 40'

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GRADING NOTES

1. MATCH EXISTING GRADE/ELEVATION.
2. GRADE UNIFORMLY (6/C5.2)
3. CONSTRUCT CONCRETE CURB PER (3/C5.1)
4. CONSTRUCT CONCRETE CURB AND GUTTER PER (5/C5.1)
5. CONSTRUCT CONCRETE VALLEY GUTTER PER (4/C5.1)
6. CONSTRUCT GUTTER PER (7/C5.1)
7. CONSTRUCT ROLLED CURB PER (2/C5.1)
8. CONSTRUCT UNDER SIDEWALK DRAIN PER (6/C5.1)
9. CONSTRUCT BIOSWALE PER (3/C5.2)
10. CONSTRUCT CURB OUTFALL PER (10/C5.2)
11. CONSTRUCT STAIRS PER DETAIL 24/A1.50.

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945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
PARTIAL GRADING PLAN

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DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
C2.1

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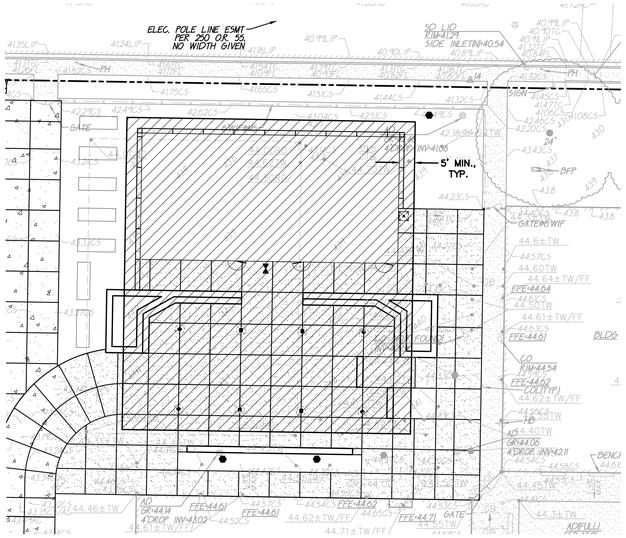

ENGINEERED FILL LEGEND

OVEREXCAVATE TO A MINIMUM DEPTH OF 2.5' BELOW BOTTOM OF BUILDING FOOTINGS. SCARIFY SUBGRDE TO A MINIMUM DEPTH OF 12" AND BACKFILL WITH ENGINEERED FILL MATERIAL COMPACT TO 95% MINIMUM. ENGINEERED FILL SHALL EXTEND A MINIMUM OF 5' FROM LIMITS OF BUILDING FOUNDATION. COORDINATE FOOTING DEPTH WITH STRUCTURAL PLANS.

GRADING NOTES

1. MATCH EXISTING GRADE/ELEVATION.
2. SLOPE UNIFORMLY (6 / C5.2)

GRAPHIC SCALE

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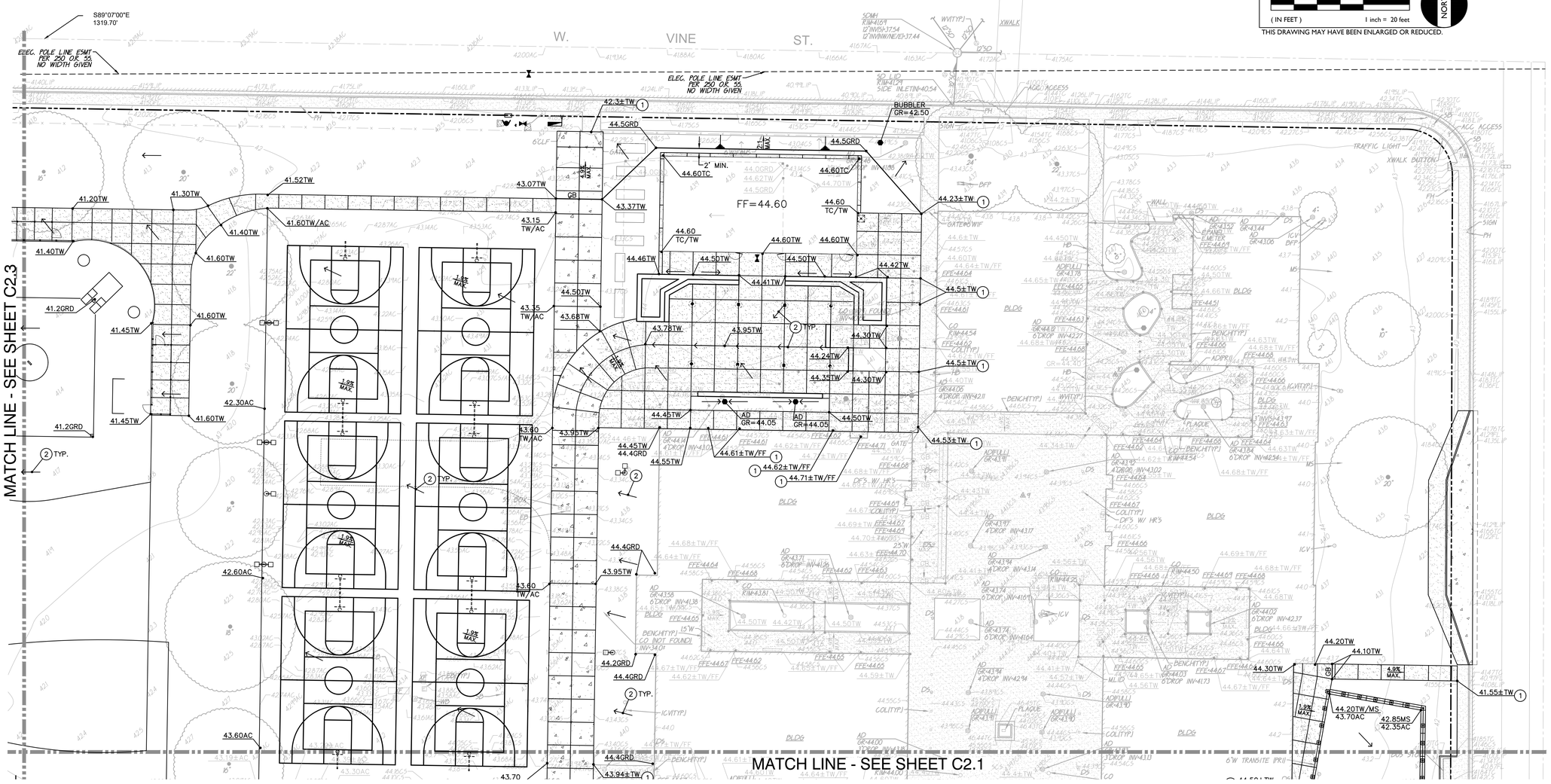

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FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
PARTIAL GRADING PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:

C2.2

Autodesk Docs://R22154SK00 Placer UHSD Foresthill HS Concessions/R22154SK00-A-Concessions.rvt
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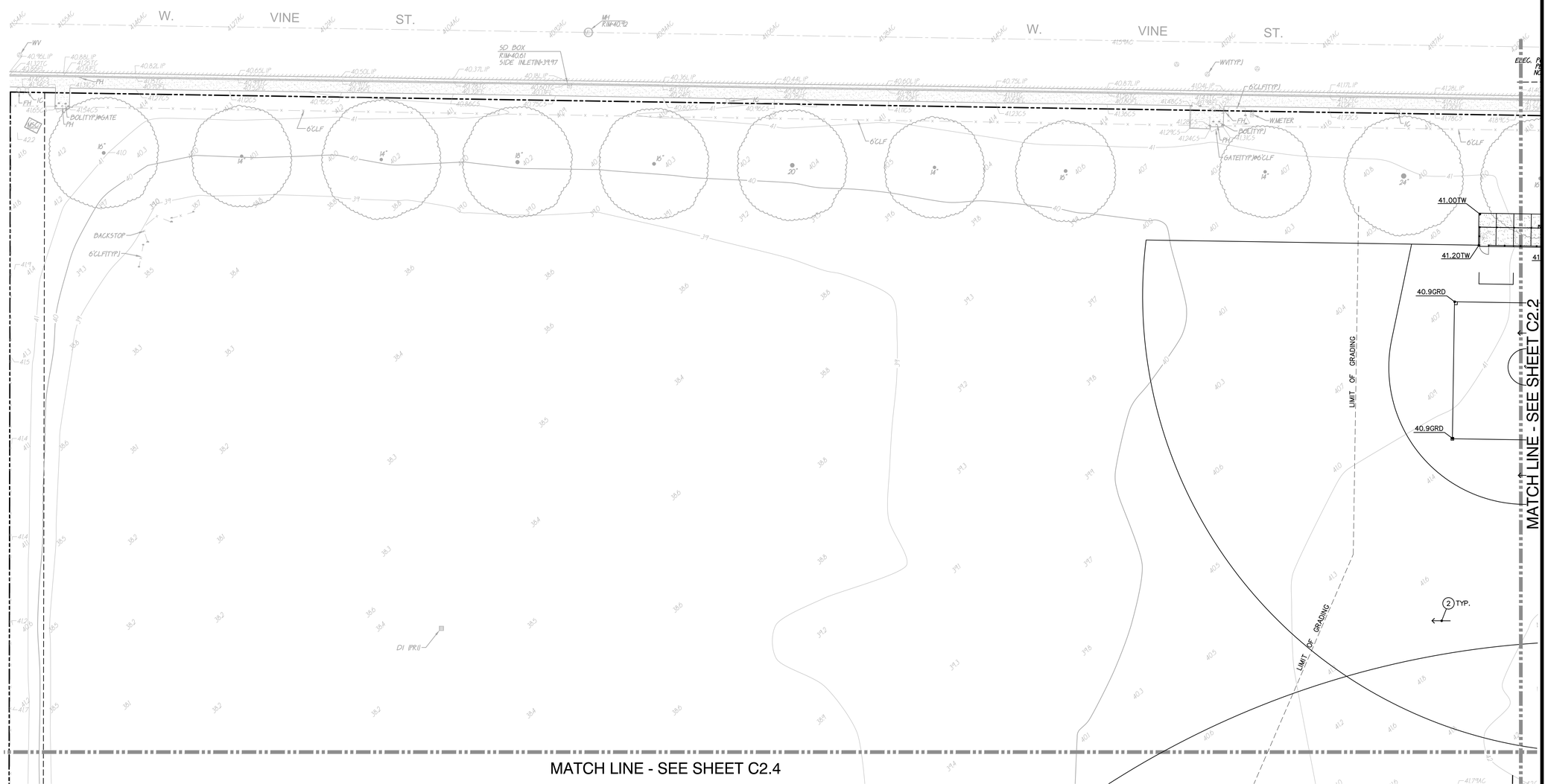

GRAPHIC SCALE

20' 0 10' 20' 40'

(IN FEET) 1 inch = 20 feet

NORTH

THIS DRAWING MAY HAVE BEEN ENLARGED OR REDUCED.

GRADING NOTES

1. MATCH EXISTING GRADE/ELEVATION.
2. SLOPE UNIFORMLY (6 / C5.2)

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER
ANTHONY J. TASSANO
NO. C74696
CIVIL
STATE OF CALIFORNIA
03/28/2025

WCE
WARREN CONSULTING ENGINEERS, INC.
1117 WINDFIELD WAY, SUITE 110
EL DORADO HILLS, CA 95762 | (916) 985-1870

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
PARTIAL GRADING PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

C2.3

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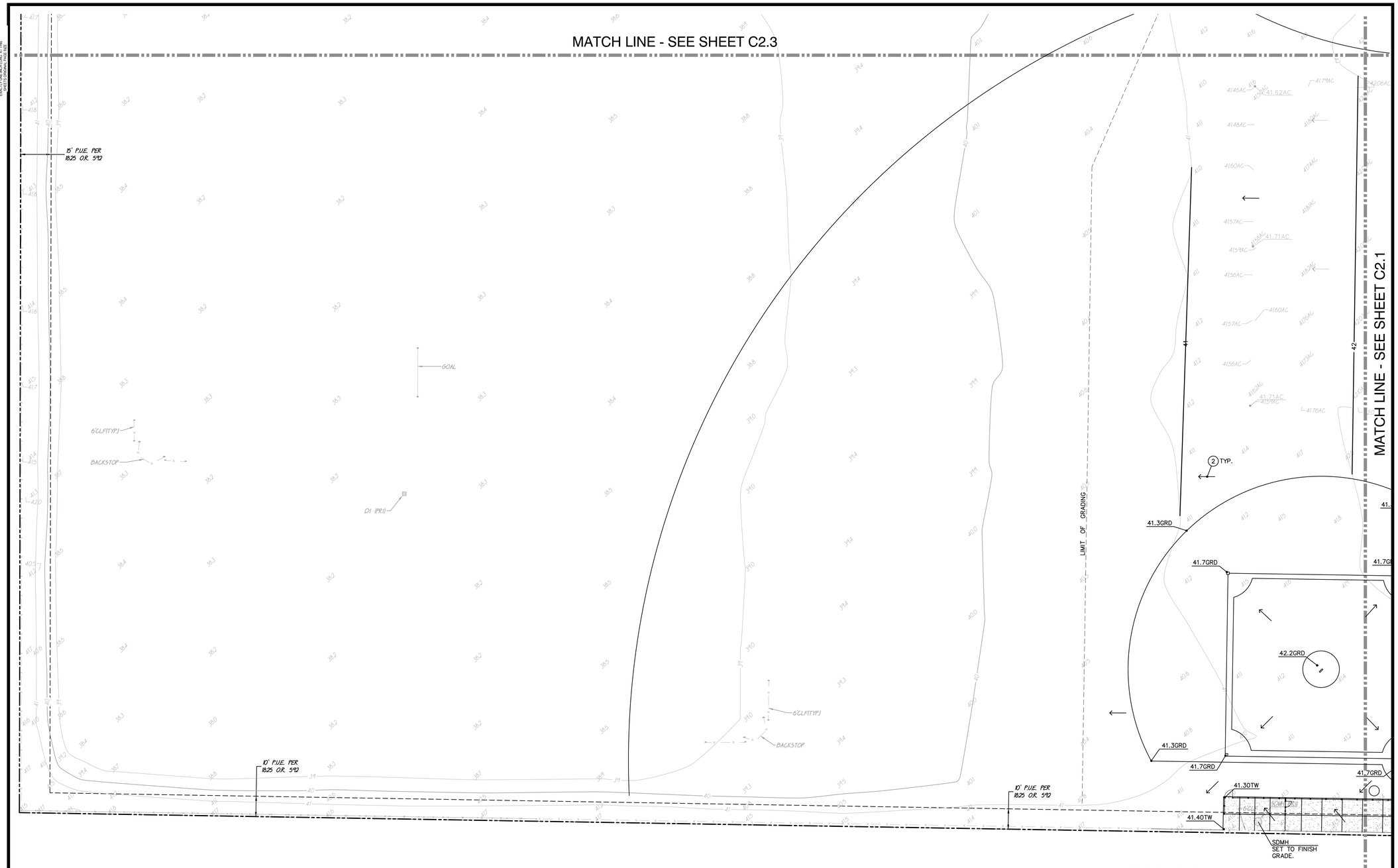

GRAPHIC SCALE

20' 0 10' 20' 40'

(IN FEET) 1 inch = 20 feet

NORTH

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GRADING NOTES

1. MATCH EXISTING GRADE/ELEVATION.
2. SLOPE UNIFORMLY (6 / C5.2)

AGENCY APPROVAL:

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LODI UNIFIED SCHOOL DISTRICT

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KEYNOTES

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ANTHONY J. TASSANO
NO. C74696
STATE OF CALIFORNIA
03/28/2025

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FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
PARTIAL GRADING PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:
C2.4

FILENAME: I:\24-071\CIVIL\DWG\24-071 C2.1-C2.4.DWG

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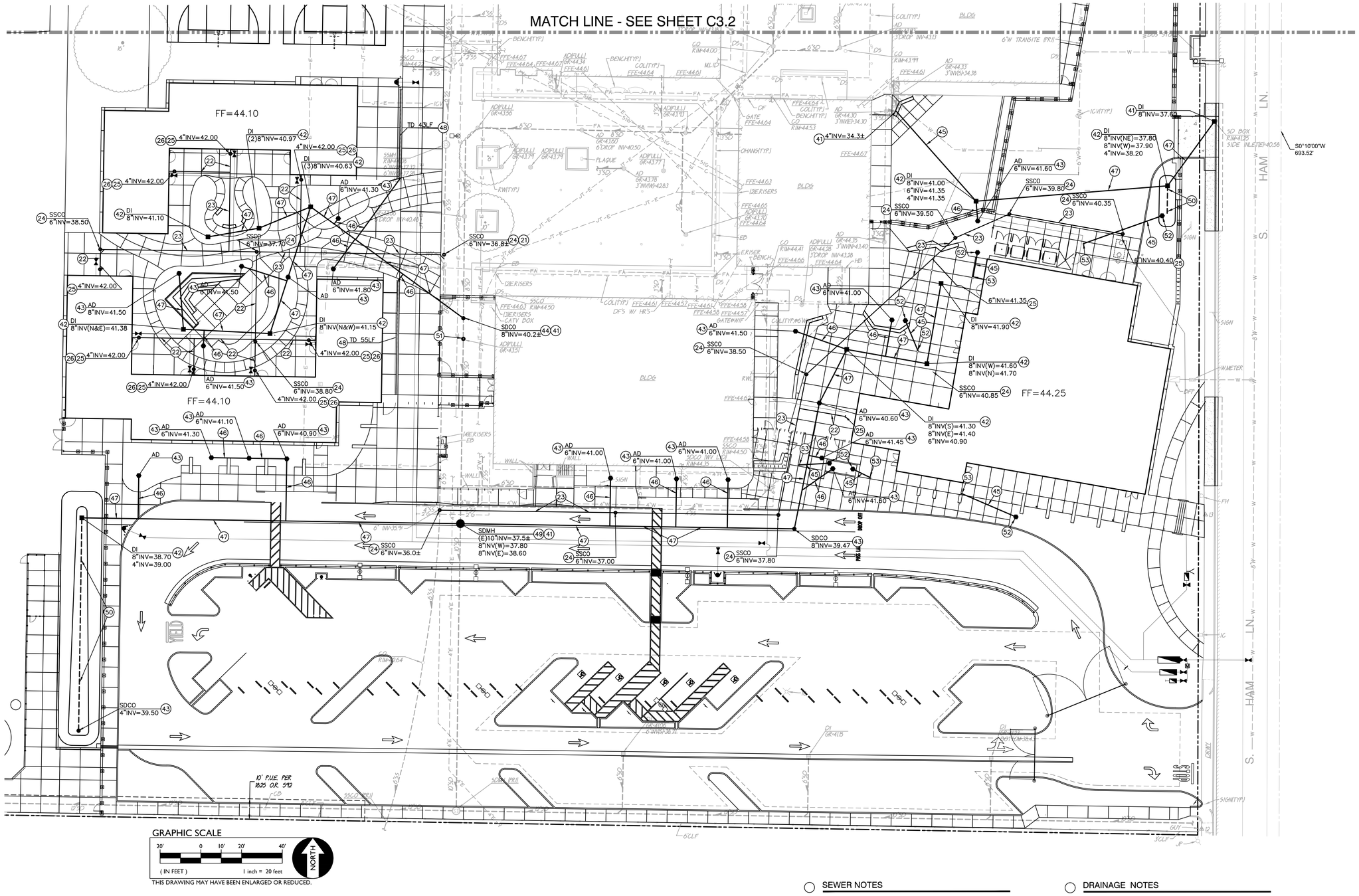

SEWER NOTES

21. CONNECT TO EXISTING SEWER. POTHOLE AND FIELD VERIFY DEPTH AND LOCATION PRIOR TO TRENCHING.
22. PLACE 4" SEWER PER (11/C5.1)
23. PLACE 6" SEWER PER (11/C5.1)
24. PROVIDE SEWER CLEANOUT PER (10/C5.1)
25. CONNECT TO BUILDING SERVICE. COORDINATE WITH PLUMBING PLANS.
26. PROVIDE 2-WAY CLEANOUT PER (9/C5.2)

DRAINAGE NOTES

41. CONNECT TO EXISTING STORM DRAIN. POTHOLE AND FIELD VERIFY DEPTH AND LOCATION PRIOR TO TRENCHING.
42. CONSTRUCT DROP INLET PER (8/C5.1)
43. PROVIDE AREA DRAIN PER (9/C5.1)
44. PROVIDE CLEANOUT PER (10/C5.1)
45. PLACE 4" STORM DRAIN PER
46. PLACE 6" STORM DRAIN PER (11/C5.1)
47. PLACE 8" STORM DRAIN PER
48. CONSTRUCT TRENCH DRAIN PER (2/C5.2)
49. CONSTRUCT STORM DRAIN MANHOLE PER (1/C5.2)
50. PLACE 4" SUBDRAIN PER (4/C5.2)
51. REMOVE DRAIN AND PROVIDE CLEANOUT PER 10/C5.1.
52. CONSTRUCT BUBBLER PER (7/C5.2)
53. PROVIDE DOWNSPOUT CONNECTION PER (6/C5.2)

AGENCY APPROVAL:

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DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

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REGISTERED PROFESSIONAL ENGINEER
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NO. C74696
STATE OF CALIFORNIA
03/28/2025

WCE
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FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
PARTIAL DRAINAGE AND SEWER PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
C3.1

Autodesk Docs://R221546X00 Placer UHSD Foresthill HS Concessions/R221546X00-A-Concessions.rvt
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LODI UNIFIED SCHOOL DISTRICT

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916 368 7990 / www.hmcarchitects.com

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GRAPHIC SCALE

20' 0 10' 20' 40'

(IN FEET) 1 inch = 20 feet

NORTH

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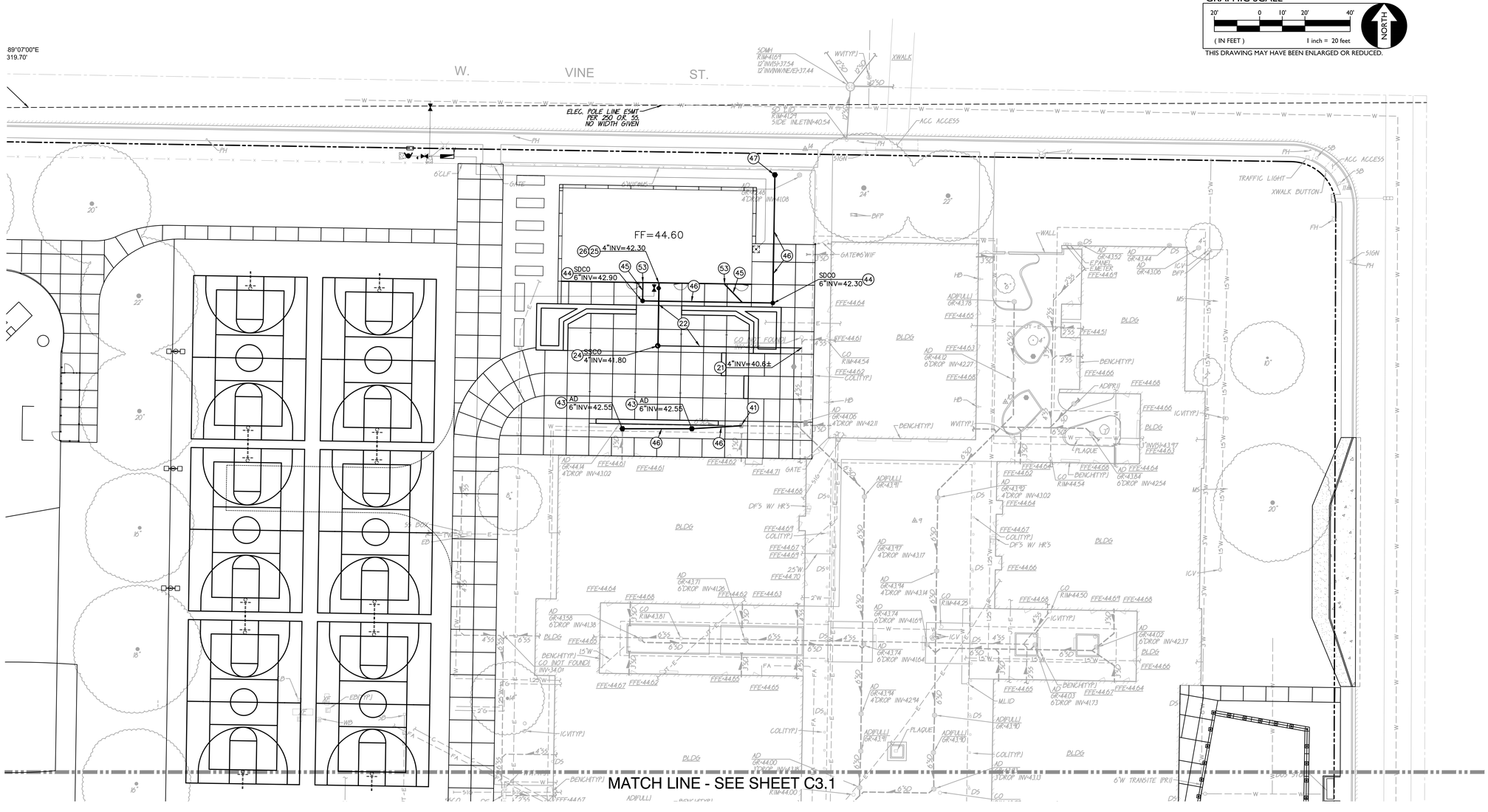

SEWER NOTES

21. CONNECT TO EXISTING SEWER. POTHOLE AND FIELD VERIFY DEPTH AND LOCATION PRIOR TO TRENCHING.
22. PLACE 4" SEWER PER (11 / C5.1)
23. PLACE 6" SEWER PER (11 / C5.1)
24. PROVIDE SEWER CLEANOUT PER (10 / C5.1)
25. CONNECT TO BUILDING SERVICE. COORDINATE WITH PLUMBING PLANS.
26. PROVIDE 2-WAY CLEANOUT PER (9 / C5.2)

DRAINAGE NOTES

41. CONNECT TO EXISTING STORM DRAIN. POTHOLE AND FIELD VERIFY DEPTH AND LOCATION PRIOR TO TRENCHING.
43. PROVIDE AREA DRAIN PER (9 / C5.1)
44. PROVIDE CLEANOUT PER (10 / C5.1)
46. PLACE 6" STORM DRAIN PER (11 / C5.1)
47. CONSTRUCT BUBBLER PER (7 / C5.2)
45. PLACE 4" STORM DRAIN PER (11 / C5.1)
53. PROVIDE DOWNSPOUT CONNECTION PER (8 / C5.2)

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER
ANTHONY J. TASSANO
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STATE OF CALIFORNIA
03/26/2025

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FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
PARTIAL DRAINAGE AND SEWER PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

C3.2

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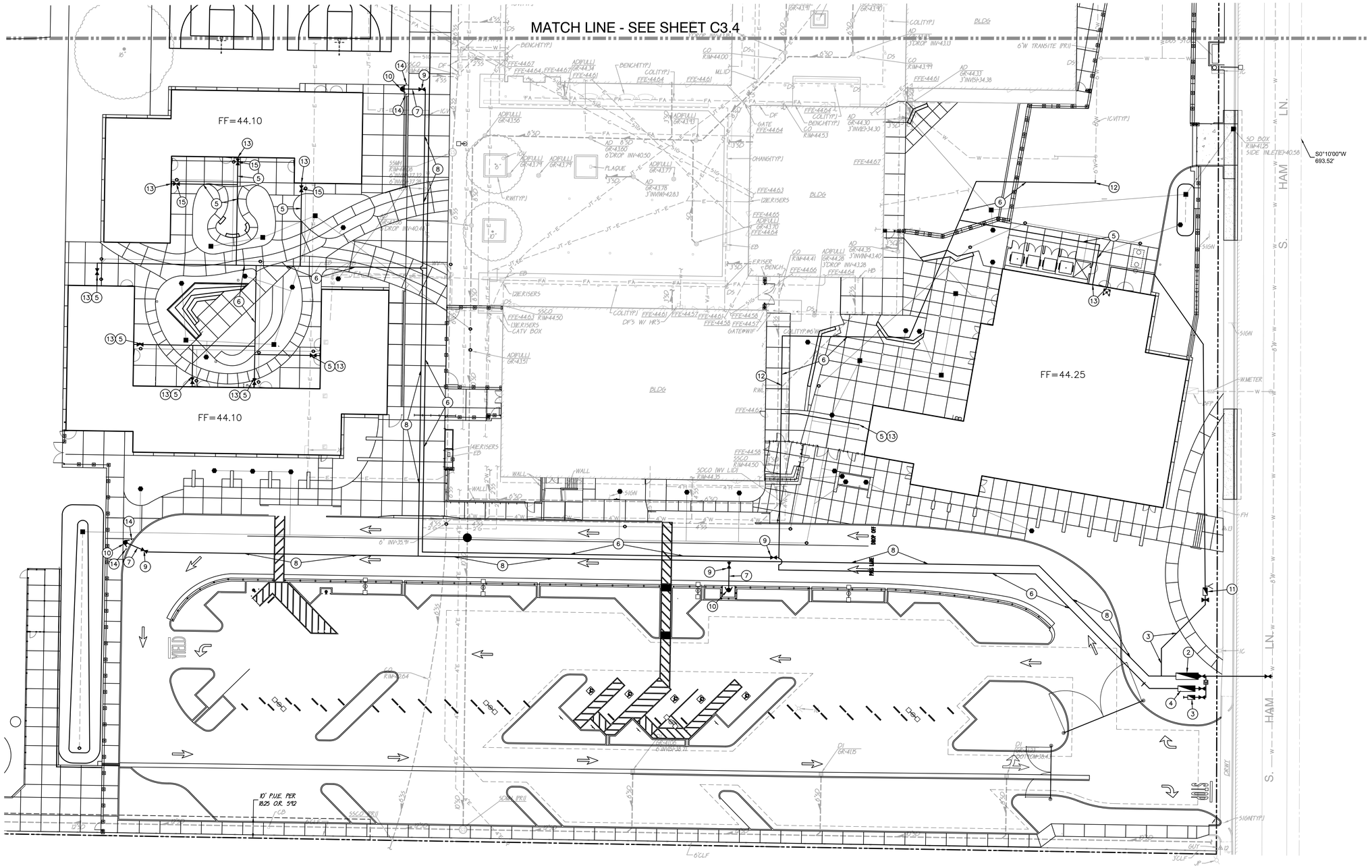
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FF=44.10
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BLDG
BLDG
BLDG
HAM LN.
S. HAM LN.
S0°10'00"W
693.52'
SD BOX
RIM=41.25
SIDE INLET=40.58
W METER
SIGN
FH
IC
DRIVE
GUT
SIGN(TYP)
10' PUE PER
1825 OR 592
CB
6CLF
3CLF
YIELD
DECO
DECO
DECO

GRAPHIC SCALE

20' 0 10' 20' 40'

(IN FEET) 1 inch = 20 feet

NORTH

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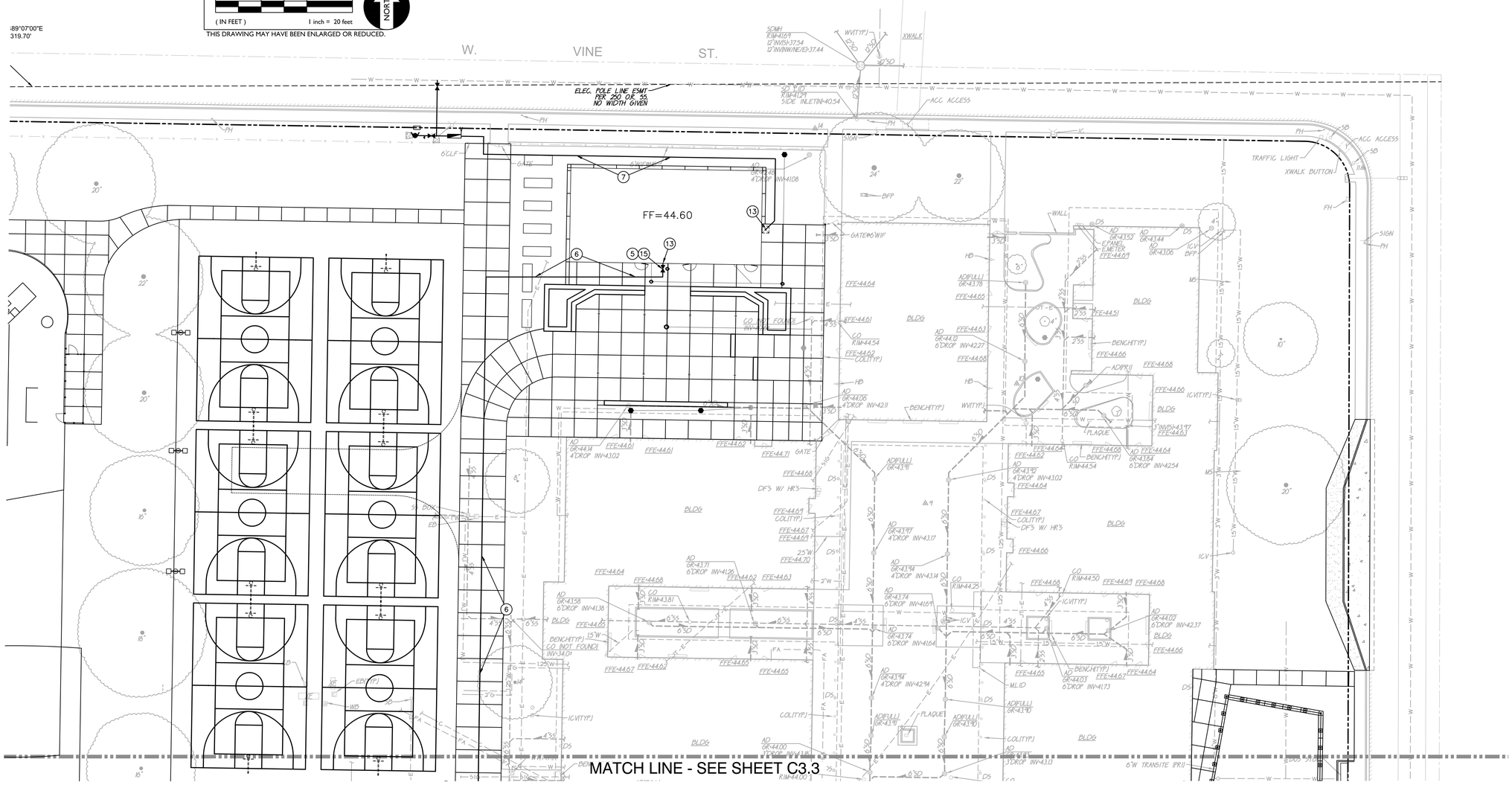

WATER NOTES

5. PLACE 2" WATER PIPE PER
6. PLACE 4" WATER PIPE PER — 12 / C5.1
7. PLACE 6" WATER PIPE PER
13. CONNECT TO BUILDING SERVICE. COORDINATE WITH PLUMBING PLANS AND FIRE SPRINKLER PLANS.
15. PROVIDE GATE VALVE AND BOX PER 17 / C5.1

AGENCY APPROVAL:

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DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects

3431007000

2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER
ANTHONY J. TASSANO
NO. C74690
STATE OF CALIFORNIA
03/28/2025

WCE
WARREN CONSULTING ENGINEERS, INC.
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EL DORADO HILLS, CA 95762 | (916) 985-1870

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
PARTIAL DOMESTIC AND FIRE WATER PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:

C3.4

FILENAME: I:\24-071\CIVIL\DWG\24-071 C3.3-C3.4.DWG

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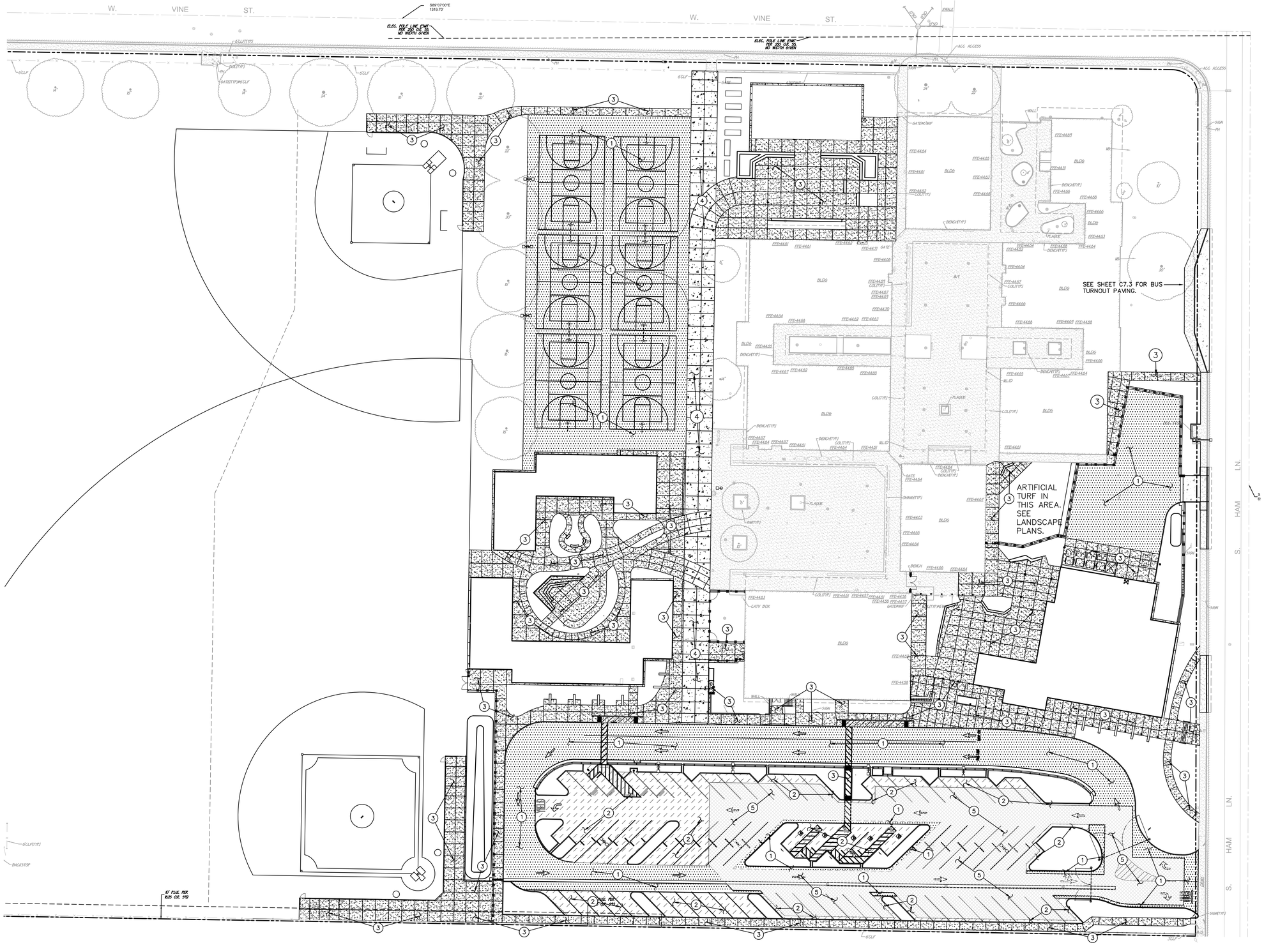

PAVING LEGEND

1. TYPE 1 PAVING
   PLACE 4" AC OVER 7" CLASS 2 AB COMPACTED TO 95% MIN. ON SUBGRADE PER SPECIFICATIONS.
2. TYPE 2 PAVING
   PLACE 3" AC OVER 4" CLASS 2 AB COMPACTED TO 95% MIN. ON SUBGRADE PER SPECIFICATIONS.
3. TYPE 3 PAVING
   PLACE 5" PCC WITH No. 4 BARS AT 18" O.C. EACH WAY OVER 4" CLASS 2 AB COMPACTED TO 95% ON SUBGRADE PER SPECIFICATIONS. (1 / C5.1)
4. TYPE 4 PAVING
   PLACE 6" PCC WITH No. 4 BARS AT 18" O.C. EACH WAY OVER 6" CLASS 2 AB COMPACTED TO 95% MIN, ON SUBGRADE PER SPECIFICATIONS. (1 / C5.1)
5. TYPE 5 PAVING
   PROVIDE 1.5" MIN. AC OVERLAY. GRIND AT LIMITS TO PROVIDE MINIMUM SECTION.

GRAPHIC SCALE
30' 0 15' 30' 60'
(IN FEET) 1 inch = 30 feet
NORTH
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DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

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3431007000
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NO. C74696
STATE OF CALIFORNIA
03/28/2025

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FACILITY:
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945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
PAVING PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:
C4.1

Autodesk Docs://R221546X00 Placer UHSD Foresthill HS Concessions/R221546X00-A-Concessions.rvt
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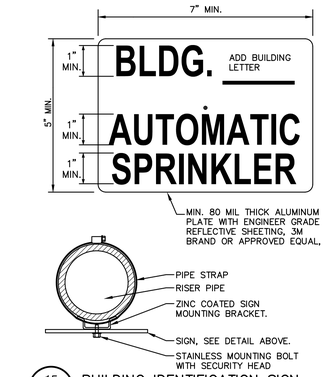
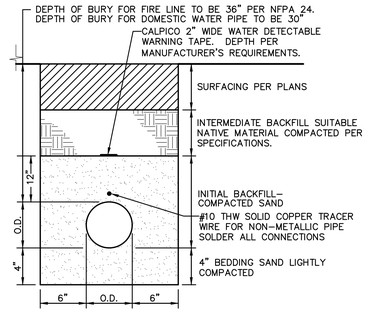
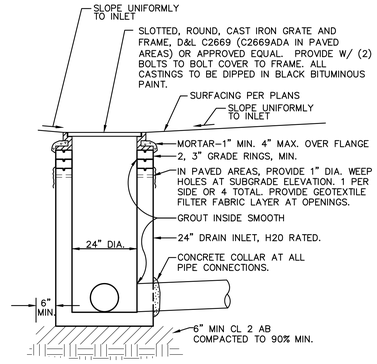


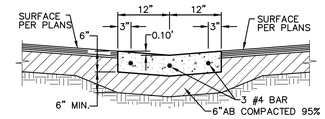
15 / C5.1 BUILDING IDENTIFICATION SIGN
NO SCALE



12 / C5.1 WATER TRENCH
NO SCALE

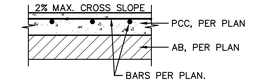


8 / C5.1 DROP INLET
NO SCALE

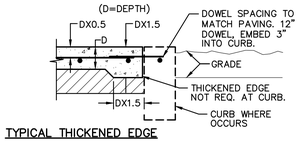


NOTES:
1. PROVIDE FELT EXPANSION JOINTS (E.J.) AT 60 FEET O.C. SEAL E.J. WITH APPROVED JOINT SEALANT. PROVIDE CONTROL JOINTS AT 10 FEET O.C.
2. AT E.J. USE 1/2"X24" SMOOTH DOWELS, ALIGN WITH REBAR, GREASE 1/2 THE LENGTH BEFORE CONCRETE PLACEMENT.

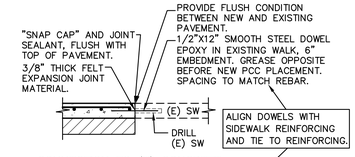
4 / C5.1 CONCRETE VALLEY GUTTER
NO SCALE



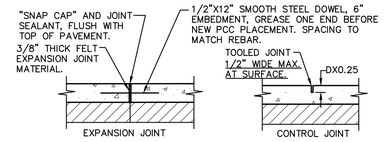
TYPICAL SECTION



TYPICAL THICKENED EDGE



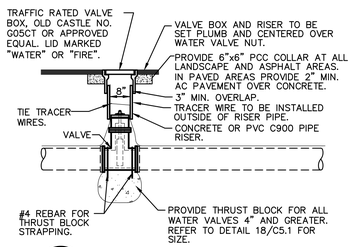
CONNECTION TO (E) CONCRETE



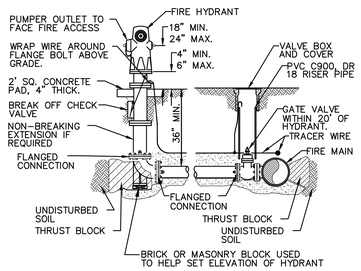
TYPICAL JOINTS

NOTES:
1. PROVIDE FELT EXPANSION JOINTS AT 20 FEET O.C. MAX. SEE PLAN FOR LAYOUT.
2. PROVIDE CONTROL JOINTS AT 10 FEET O.C. MAX. SEE PLAN FOR LAYOUT.
3. EXPANSION OR CONTROL JOINTS SHALL NOT EXCEED 1/2" IN SURFACE WIDTH.

1 / C5.1 CONCRETE SIDEWALK
NO SCALE

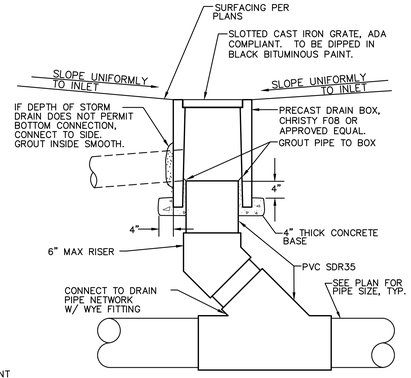


16 / C5.1 WATER VALVE
NO SCALE



NOTES:
1. AFTER INSTALLATION OF, RODS, NUTS, BOLTS, WASHERS, CLAMPS, AND OTHER RESTRAINING DEVICES, EXCEPT THRUST BLOCKS, CLEAN AND THOROUGHLY COAT ALL METAL SURFACES WITH A BITUMINOUS OR OTHER ACCEPTABLE CORROSION–RETARDING MATERIAL.
2. ALL PIPES AND FITTINGS SHALL BE WRAPPED AND BEDDED IN SAND.
3. IF HYDRANT IS LOCATED IN CONCRETE PAVING PROVIDE AN INDEPENDENT 4" MIN THICK, 3'X3' CONCRETE PAD SLOPED TO MATCH PAVEMENT GRADES.

13 / C5.1 FIRE HYDRANT DETAIL
NO SCALE



9 / C5.1 AREA DRAIN
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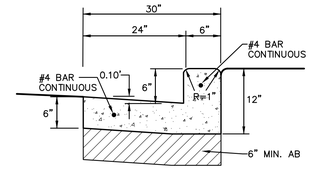
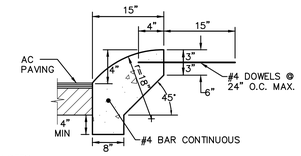


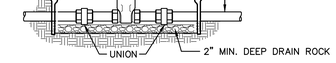
NOTES:
1. PROVIDE FELT EXPANSION JOINTS (E.J.) AT 60 FEET O.C. PROVIDE CONTROL JOINTS AT 10 FEET O.C., EXCEPT WHEN PLACING ADJACENT TO CONCRETE WALKS THE EXPANSION JOINTS SHALL ALIGN WITH THE EXPANSION JOINTS SHOWN FOR THE CONCRETE WALKS. SEAL E.J. WITH APPROVED JOINT SEALANT.
2. AT E.J. USE 1/2"X24" SMOOTH DOWELS, ALIGN WITH REBAR,GREASE 1/2 THE LENGTH BEFORE CONCRETE PLACEMENT.

5 / C5.1 CONCRETE CURB AND GUTTER
NO SCALE



NOTES:
1. PROVIDE FELT EXPANSION JOINTS (E.J.) AT 60 FEET O.C. PROVIDE CONTROL JOINTS AT 10 FEET O.C., EXCEPT WHEN PLACING ADJACENT TO CONCRETE WALKS THE EXPANSION JOINTS SHALL ALIGN WITH THE EXPANSION JOINTS SHOWN FOR THE CONCRETE WALKS.
2. AT E.J. USE 1/2"X24" SMOOTH DOWELS, ALIGN WITH REBAR,GREASE 1/2 THE LENGTH BEFORE CONCRETE PLACEMENT.

2 / C5.1 ROLLED CURB
NO SCALE



17 / C5.1 WATER VALVE 1/2" TO 3" PIPE
NO SCALE

REQUIRED BEARING AREAS IN SQ. FT.

INSTALLATION	FITTING TYPE	PIPE SIZES 4"	6"	8"	10"	12"
	90° ELL	3	6	10	14	20
	45° ELL	2	3	5	8	11
	22.5° ELL	1	2	3	4	5
	11.25° ELL	1	1	2	2	3
	TEE	2	4	7	10	14
	DEAD END	2	4	7	10	14
GATE VALVE 4" OR LARGER						
	#4 BARS TRENCH KEY 6" MIN.	2	4	7	10	14

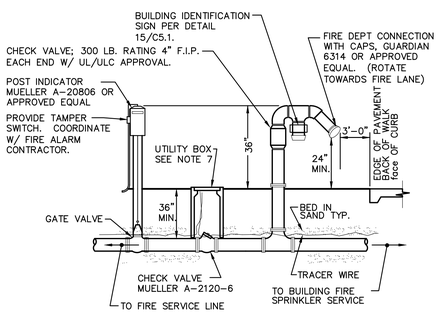
VERTICAL THRUST BLOCKS REQUIRED
CONCRETE VOLUME, IN CY.

INSTALLATION	FITTING TYPE	PIPE SIZES 4"	6"	8"	10"	12"
	90° ELBOW	1.3	2.6	4.5	6.8	9.6
	45° ELL	0.7	1.4	2.4	3.7	5.2
	22.5° ELL	0.3	0.7	1.2	1.9	2.6
	11.25° ELL	0.2	0.4	0.6	0.9	1.3
	REDUCER	0.7	0.7	1.2	1.8	2.6

W/ MIN. 2 #5 REBAR TIES, TYP.

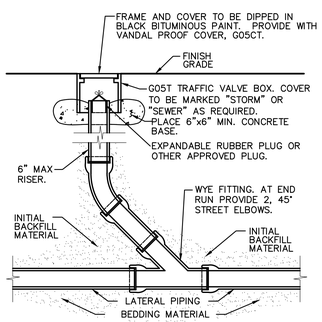
NOTES
1. THRUST BLOCKS ARE TO BE CONSTRUCTED OF 2500 PSI CONCRETE MIN.
2. AREAS IN TABLE HAVE BEEN DERIVED USING A WATER PRESSURE OF 200 POUNDS PER SQUARE INCH (13.8 BARS) AND SOIL RESISTANCE OF 2000 POUNDS PER SQUARE FOOT (137.9 BARS).
3. BLOCKING TO BE POURED AGAINST UNDISTURBED SOIL, 12 INCH THICK MINIMUM.
4. THRUST BLOCKS ARE TO BE FREE, SEPARATE AND INDEPENDENT OF ADJACENT OR NEARBY THRUST BLOCKS.
5. WRAP ALL FITTINGS BEFORE PLACING CONCRETE.

18 / C5.1 THRUST BLOCKS
NO SCALE

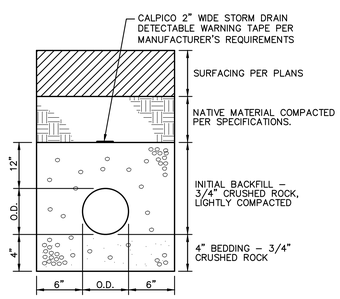


FIRE DEPARTMENT NOTES
1. THE INSTALLATION OF ALL ON–SITE FIRE PROTECTION SYSTEMS SHALL BE IN ACCORDANCE WITH N.F.P.A. 24 AND FIRE DEPARTMENT STANDARDS.
2. ALL ON–SITE FIRE PROTECTION SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF N.F.P.A. 24 AND SHALL BE WITNESSED BY THE FIRE DEPARTMENT. UNDERGROUND PIPING SHALL BE FLUSHED PER NFPA13 AND RISER STUB–UP IMMEDIATELY CAPPED.
3. THE INSTALLING CONTRACTOR, OR SUBCONTRACTOR, FOR ALL ON–SITE FIRE PROTECTION SYSTEMS SHALL NOTIFY THE FIRE DEPARTMENT AT LEAST 24 HOURS IN ADVANCE OF REQUESTING A DATE AND TIME FOR INSPECTIONS.
4. IF PLASTIC PIPE IS INSTALLED FOR FIRE PROTECTION SYSTEMS, THE PIPE SHALL BE C–900 CLASS 200.
5. AFTER INSTALLATION, RODS, NUTS, BOLTS, WASHERS, CLAMPS, AND OTHER RESTRAINING DEVICES, EXCEPT THRUST BLOCKS, USED ON ON–SITE FIRE PROTECTION SYSTEMS SHALL BE CLEANED AND THOROUGHLY COATED WITH A BITUMINOUS OR OTHER ACCEPTABLE CORROSION–RETARDING MATERIAL.
6. ALL PIPES AND FITTINGS SHALL BE WRAPPED PER N.F.P.A. 24 AND BEDDED IN SAND.
7. PROVIDE UTILITY BOX. FOR 4" – 6" VALVE CHRISTY N48, FOR 8"+ CHRISTY N52 OR APPROVED EQUAL. PROVIDE 12" MIN CHAIN WELDED TO LIDS AND BOLTED TO INSIDE OF BOX. LID SHALL BE TRAFFIC RATED IF WITHIN A TRAFFIC AREA.

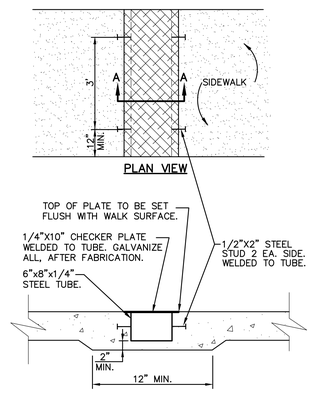
14 / C5.1 FIRE DEPARTMENT CONNECTION ASSEMBLY
NO SCALE



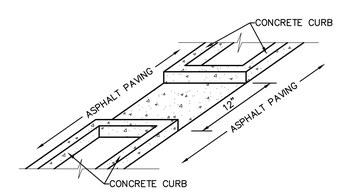
10 / C5.1 CLEANOUT
NO SCALE



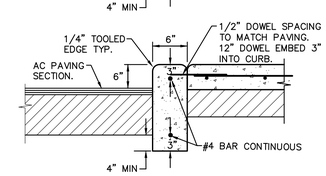
11 / C5.1 STORM DRAIN AND SEWER TRENCH
NO SCALE

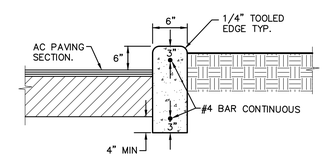


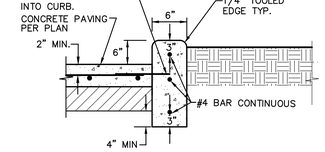
6 / C5.1 UNDER SIDEWALK DRAIN
NO SCALE



7 / C5.1 CONCRETE GUTTER
NO SCALE







NOTES:
1. PROVIDE FELT EXPANSION JOINTS (E.J.) AT 60 FEET O.C. MAXIMUM PROVIDE CONTROL JOINTS AT 10 FEET O.C. MAXIMUM, EXCEPT WHEN PLACING ADJACENT TO CONCRETE WALKS THE EXPANSION JOINTS SHALL ALIGN WITH THE EXPANSION JOINTS SHOWN FOR THE CONCRETE WALKS.
2. AT E.J. USE 1/2"X24" SMOOTH DOWELS, ALIGN WITH REBAR, GREASE 1/2 THE LENGTH BEFORE CONCRETE PLACEMENT.

3 / C5.1 CONCRETE CURB
NO SCALE

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
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916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER ANTHONY J. TASSANO NO. C74696 STATE OF CALIFORNIA 03/28/2025

WCE
WARREN CONSULTING ENGINEERS, INC.
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FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
DETAILS

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
C5.1

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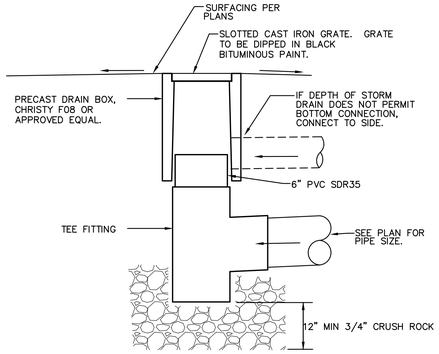
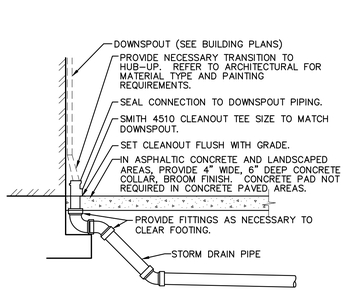
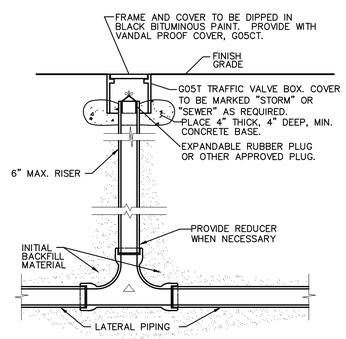


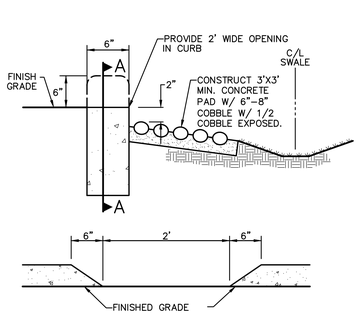
7 C5.2 BUBBLER
NO SCALE



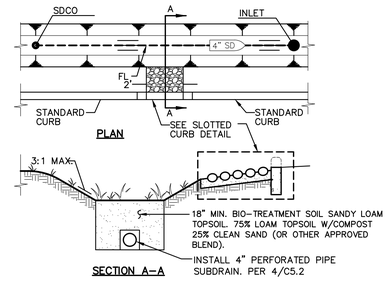
8 C5.2 DOWNSPOUT CONNECTION
NO SCALE



9 C5.2 2-WAY CLEANOUT
NO SCALE

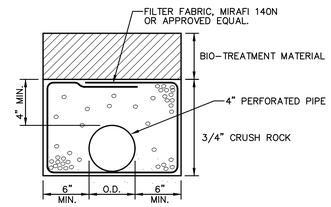


10 C5.2 CURB OUTFALL DETAIL
NO SCALE



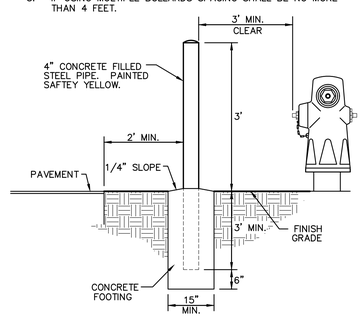
NOTES:
1. MAXIMUM ALLOWABLE SIDE-SLOPE 3:1.
2. GRASS TO BE PLANTED FULL WIDTH OF SWALE AND AT A MINIMUM, TO THE WIDTH OF THE TOP OF SLOPE.

3 C5.2 BIOSWALE W/SUBDRAIN
NO SCALE

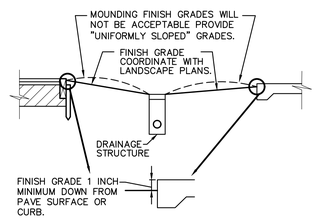


4 C5.2 SUBDRAIN TRENCH DETAIL
NO SCALE

NOTE:
1. PROVIDE 36" MIN. CLEARANCE TO FROM OBJECT BEING PROTECTED.
2. PLACE BOLLARDS IN A POSITION THAT DOES NOT INTERFERE WITH HOSE OUTLETS.
3. IF USING MULTIPLE BOLLARDS SPACING SHALL BE NO MORE THAN 4 FEET.

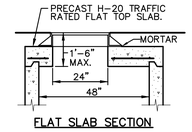


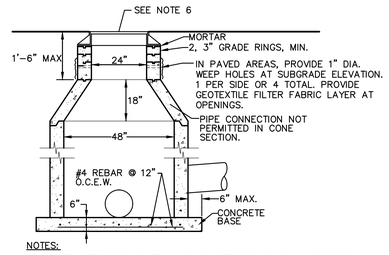
5 C5.2 PIPE BOLLARD
NO SCALE



1. FINSH GRADE IN LANDSCAPED AREAS IS DEFINED AS THE FINISHED GRADE ELEVATION WITH THE SOIL AMENDMENTS ROTOTILLED INTO THE SOIL.
2. THE FINISH DIRT GRADE ELEVATION IN AREAS THAT RECEIVE ROLLED TURF TO BE DOWN 2 INCHES FROM TOP OF PAVED SURFACE.
3. IN AREAS WHERE NO DRAINAGE IS SHOWN, GRADE 1 INCH BELOW AND UNIFORMLY BETWEEN FINISHED AND/OR EXISTING SURFACES, UNLESS NOTED OTHERWISE.

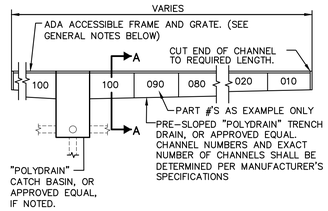
6 C5.2 UNIFORM GRADING
NO SCALE

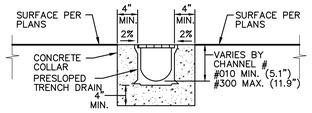




NOTES:
1. RISER SECTIONS, CONES, AND ADJUSTING RING SHALL CONFORM TO ASTM DESIGNATION C-478.
2. FRAME SHALL BE SECURED TO RISER OR FLAT SLAB TOP WITH CEMENT MORTAR.
3. THE CONTRACTOR MAY AT HIS OPTION, CAST THE LOWER PORTION OF MANHOLE IN PLACE. THE CAST-IN-PLACE PORTION SHALL NOT BE PLACED HIGHER THAN 6 INCHES ABOVE THE OUTSIDE TOPS OF THE MAIN INCOMING AND OUTGOING PIPES.
4. ALL JOINTS SHALL BE SEALED WITH GROUT AND INSIDE OF MANHOLE SHALL BE GROUTED SMOOTH.
5. FLAT SLAB SHALL BE USED WHEN DEPTH DOES NOT PERMIT USE OF TAPER UNIT. FLAT TOP SLAB TO BE TRAFFIC RATED.
6. SLOTTED CAST IRON GRATE AND FRAME SHALL BE D&L C2669 (C2669ADA IN PAVED AREAS) OR APPROVED EQUAL. PROVIDE WITH TWO (2) BOLTS TO BOLT COVER/GRATE TO FRAME. SOLID COVERS TO BE MARKED "STORM DRAIN". ALL CASTINGS TO BE DIPPED IN BLACK BITUMINOUS PAINT.

1 C5.2 STORM DRAIN MANHOLE
NO SCALE





SECTION A-A

GENERAL NOTES:
1. GRATE SHALL ADA ACCESSIBLE, POLYDRAIN MODEL 2410 OR APPROVED EQUAL. IF PLACED IN FIRE LANE OR AREA DESIGNATED FOR VEHICLE TRAFFIC PROVIDE POLYDRAIN MODEL 2506.
2. IF TRENCH DRAIN IS PLACED IN FIRE LANE OR AREA DESIGNATED FOR VEHICLE TRAFFIC PROVIDE GALVANIZED STEEL "OVERLAY RAILS" AS SUPPLIED BY POLYDRAIN, OR APPROVED EQUAL.
3. CONTRACTOR SHALL FURNISH AND INSTALL A MODEL 2811B LOCKING DEVICE, OR APPROVED EQUAL, FOR ALL TRENCH DRAIN GRATES.
4. CONTRACTOR SHALL FURNISH AND INSTALL A TRASH BUCKET, MODEL 2900, IN ALL TRENCH DRAIN CATCH BASINS.
5. CONTRACTOR SHALL PURCHASE AND FURNISH THE MAINTENANCE/OPERATIONS DEPARTMENT OF THE SCHOOL WITH 2 MODEL 2231 TRENCH DRAIN SHOVEL HEADS, WITH STANDARD WOOD, OR COMPOSITE HANDLES.
6. ALL MITERED JOINTS SHALL BE SEALED WITH POLYDRAIN "POLYSEAL" CAULKING OR APPROVED EQUAL.

2 C5.2 TRENCH DRAIN DETAIL
NO SCALE

AGENCY APPROVAL:

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DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
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SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
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916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER ANTHONY J TASSANO NO. C74695 STATE OF CALIFORNIA 03/28/2025

WCE
WARREN CONSULTING ENGINEERS, INC.
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FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
DETAILS

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
C5.2

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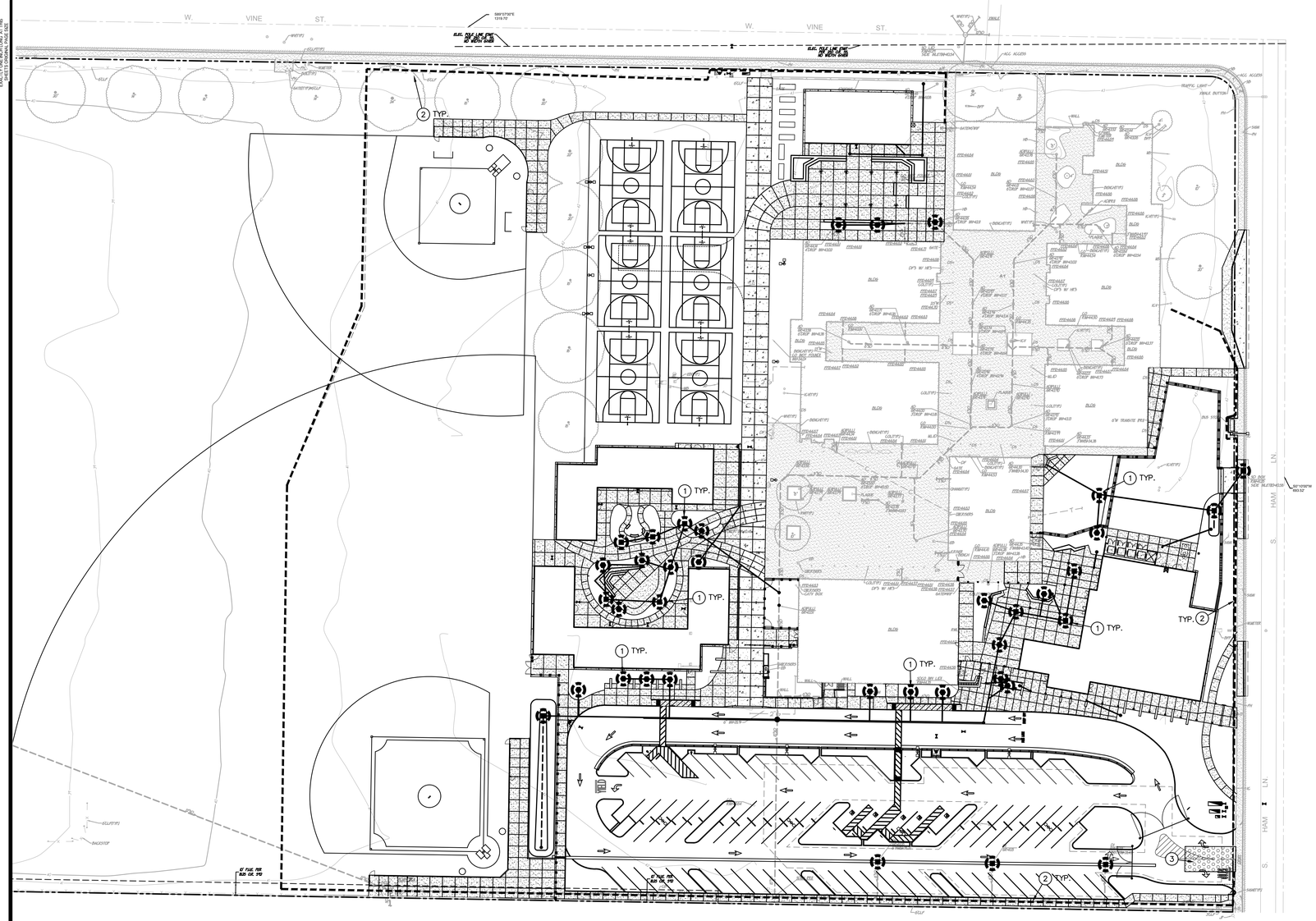


EROSION AND SEDIMENT CONTROL GENERAL NOTES

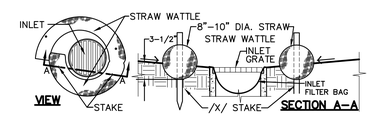
1. IF CERTAIN SOIL TYPES (E.G. COLLOIDAL SOILS) ARE DETECTED, THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL TREATMENT MEASURES PRIOR TO DISCHARGE.
2. CONTRACTOR IS RESPONSIBLE FOR THE DEWATERING AND REMOVAL OF ALL TEMPORARY EROSION CONTROL DEVICES JUST PRIOR TO THE COMMENCING OF THE FINAL GRADING AND PAVING OPERATIONS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THE SITE TO MINIMIZE DUST CREATED DURING CONSTRUCTION.
4. PRIOR TO PLACEMENT OF HYDRO SEEDING, REMOVE TEMPORARY EROSION CONTROL MEASURES (STRAW WATTLE FENCE AND TRACKED LOOSE STRAW).
5. CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR COMPLIANCE WITH STATE WATER RESOURCES CONTROL BOARD REQUIREMENTS.
6. ALL MATERIALS STORED ON-SITE SHALL HAVE PROPER ENCLOSURES AND/OR COVERINGS.
7. CONTRACTOR SHALL MAINTAIN ALL WATTLE OR SILT FENCES AND OTHER STORM WATER POLLUTION PREVENTION DEVICES THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL INSPECT ALL EROSION CONTROL DEVICES WEEKLY AS WELL AS BEFORE, DURING, AND AFTER A STORM EVENT. CONTRACTOR SHALL REMOVE ALL EROSION CONTROL AND POLLUTION PREVENTION DEVICES AT THE END OF CONSTRUCTION AS REQUIRED. REFER TO SPECIFICATIONS AND ADDITIONAL REQUIREMENTS.
8. CONTRACTOR SHALL PROVIDE AND MAINTAIN CONSTRUCTION FENCING THROUGHOUT THE PROJECT. THIS FENCING SHALL DETER PEDESTRIANS AND NON-CONSTRUCTION RELATED PERSONNEL FROM ENTERING THE CONSTRUCTION SITE AREA TO THE GREATEST POSSIBLE EXTEND, THE CONTRACTOR SHALL COORDINATE THIS FENCING LAYOUT WITH SCHOOL DISTRICT PERSONNEL PRIOR TO ANY FENCING PLACEMENT SO AS TO NOT SIGNIFICANTLY INTERFERE WITH SCHOOL OPERATION.
9. CONTRACTOR SHALL ADEQUATELY PREVENT EXCESSIVE AMOUNTS OF MUD, SAND, DIRT, AND OTHER DEBRIS FROM BEING TRACKED ONTO THE STREET FROM CONSTRUCTION VEHICLE MOVEMENT. PROVIDE WASHING FACILITIES AT CONSTRUCTION ENTRANCE IF NECESSARY.
10. CONTRACTOR SHALL ADEQUATELY PREVENT EXCESSIVE AMOUNTS OF MUD, SAND, DIRT, AND OTHER DEBRIS FROM BEING TRACKED ONTO THE STREET FROM CONSTRUCTION VEHICLE MOVEMENT. PROVIDE WASHING FACILITIES AT CONSTRUCTION ENTRANCE IF NECESSARY.

LEGEND

(#) EROSION CONTROL NOTES

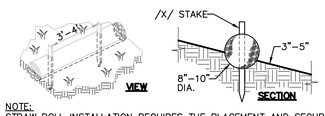
NOTE: EXACT LOCATION WILL BE COORDINATED BY CONTRACTOR AND PROJECT QSP.

1. CONTRACTOR SHALL PROVIDE STRAW WATTLE BARRIER AT ALL INLETS (NEW AND/OR EXIST.) IN AREAS OF ON-SITE WORK PER THE DETAIL PROVIDED. IN ADDITION TO WATTLE, PROVIDE FILTER BAG AT EACH INLET. STRAW WATTLES NOT REQUIRED AT INLETS IN PAVED AREAS, ONLY FILTER BAG. (1 / C6.1)
2. CONTRACTOR SHALL PROVIDE STRAW WATTLES AT PERIMETER OF SITE PER DETAIL (2 / C6.1)
3. CONTRACTOR SHALL PROVIDE STABILIZED CONSTRUCTION SITE ACCESS PER DETAIL (3 / C6.1)



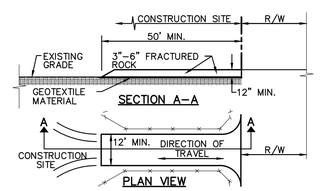
NOTE: STRAW WATTLE INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE WATTLE IN A TRENCH, 3-1/2" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.

1 / C6.1 STRAW WATTLE INLET FILTER
NO SCALE



NOTE:
STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"-5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.

2 / C6.1 STRAW ROLLS
NO SCALE



NOTES:

1. STABILIZED CONSTRUCTION SITE ACCESS SHALL BE CONSTRUCTED OF 3"-6" ANGULAR ROCK MATERIAL CONFORMING TO SECTION 26 OF STATE SPECIFICATIONS PLACED OVER GEOTEXTILE MATERIAL. ROCK SHALL BE PLACED TO A MINIMUM THICKNESS OF SIX INCHES. THE METHOD OF PLACING, SPREADING AND COMPACTING ROCK SHALL CONFORM TO SECTION 26 OF THE STATE SPECIFICATIONS.
2. LENGTH OF SITE ACCESS SHALL BE A MINIMUM LENGTH OF FIFTY FEET. WIDTH SHALL BE A MINIMUM WIDTH OF TWELVE FEET OR AS NECESSARY TO COVER ALL VEHICULAR INGRESS AND EGRESS.
3. THE SITE ACCESS SHALL BE KEPT IN GOOD CONDITION BY OCCASIONAL TOP DRESSING.

3 / C6.1 STABILIZED CONSTRUCTION SITE ACCESS
NO SCALE

GRAPHIC SCALE
40' 0 20' 40' 80'
(IN FEET) 1 inch = 40 feet
NORTH
THIS DRAWING MAY HAVE BEEN ENLARGED OR REDUCED.

PHASE OF CONSTRUCTION	EROSION AND SEDIMENT CONTROL MEASURES																	
	WET SEASON					WET & DRY SEASON												
	HYDRO-SEEDING	STRAW MULCHING TACTIFIER	SOIL BINDERS	PRESERVATION OF EXISTING VEGITATION	BLANKETS MATS & GEOTEXTILES	FIBER ROLLS	DUST CONTROL	OUTLET PROTECTION	SILT FENCING	SAND/GRAVEL BAG BARRIERS	STORM DRAIN INLET PROTECTION	SEDIMENT BASIN	SEDIMENT TRAP	DEWATERING	STABILIZED CONSTRUCTION ENTRANCE	MATERIAL & WASTE DISPOSAL LOCATION	CONCRETE WASHOUT
PRE-GRADING	X	X		X			X		N/A			N/A	N/A					
CUT-FILL ACTIVITIES	X	X	X	X	X	X	X			X	X		X	X	X	X	
UNDERGROUND WORK	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X
STORM IMPROVEMENTS	X		X	X	X	X	X	X		X	X		X	X	X	X	X
CURB AND GUTTER	N/A		X	X	X	X	X	X		X	X			X	X	X	X
STREET IMPROVEMENTS			X	X	X	X	X	X		X	X			X	X	X	X
PAVE OUT				X	X		X	X		X	X			X		X	X
POST CONSTRUCTION			X	X	X												
MAINTENANCE SCHEDULE																	
DAILY*																	
WEEKLY*		X	X		X	X		X		X	X				X	X	X
MONTHLY*																	
BEFORE RAIN		X	X		X	X		X		X	X						
DURING RAIN		X	X		X	X		X		X	X						
AFTER RAIN		X	X		X	X		X		X	X						
AS NEEDED				X			X							X			

* = WHEN RAIN EVENT INSPECTIONS OCCURS, THEY MAY QUALIFY AS A DAILY, WEEKLY, OR MONTHLY INSPECTION AS APPLIES.

ADD TO MAP AS LOCATED IN THE FIELD

- CONSTRUCTION TRAILER.
- VEHICLE/EQUIPMENT MAINTENANCE AND FUELING AREA.
- COVERED WASTE STORAGE (DUMPSTERS).
- STAGE — STAGING AREA
- MATERIAL STORAGE
- SP — SOIL STOCKPILES.
- CWO — CONCRETE WASHOUT.

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER
ANTHONY J. TASSANO
NO. C74696
STATE OF CALIFORNIA
03/28/2025

WCE
WARREN CONSULTING ENGINEERS, INC.
1117 WINDFIELD WAY, SUITE 110
EL DORADO HILLS, CA 95762 | (916) 985-1870

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
EROSION CONTROL PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:
C6.1

Autodesk Docs://R22154SX09 Placer UHSD Foresthill HS Concessions/R22154SX09-A-Concessions.rvt
4/8/2025 8:17:17 AM

FILENAME: I:\24-071\CIVIL\DWG\24-071 C6.1.DWG PLEASE RECYCLE

CIVIL ABBREVIATIONS AND LEGEND

ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THESE PLANS.

AB	AGGREGATE BASE
AC	ASPHALTIC CONCRETE
AD	AREA DRAIN
APN	ASSESSOR'S PARCEL NUMBER
ARV	AIR RELEASE VALVE
ASB	AGGREGATE SUB-BASE
BO	BLOW-OFF VALVE
BV	BUTTERFLY VALVE
BW	BACK OF WALK
C/L	CENTERLINE
CB	CATCH BASIN
CL	CLASS
CMP	CORRUGATED METAL PIPE
CATV	CABLE TELEVISION
CO	CLEANOUT
COMM	COMMUNICATION
CONC.	CONCRETE
CONST.	CONSTRUCT
CR	CURB RETURN
CS	CONCRETE SURFACE
DC	DOUBLE CHECK VALVE
DDC	DOUBLE DETECTOR CHECK VALVE
DG	DECOMPOSED GRANITE
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DWG	DRAWING
DS	DOWNSPOUT
E	ELECTRIC
EJ	EXPANSION JOINT
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
EX	EXISTING
FS	FIRE SERVICE LINE
FDC	FIRE DEPARTMENT CONNECTION
FL	FLOWLINE
FM	SANITARY SEWER FORCE MAIN
FF	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
G	GAS
GB	GRADE BREAK
GR	GRATE ELEVATION
GRD	GRADE ELEVATION
GV	GATE VALVE
HB	HOSE BIBB
HBD	HEADER BOARD
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HIGH POINT
INV	PIPE INVERT ELEVATION
JP	JOINT UTILITY POLE
LF	LINEAL FEET
LIP	LIP OF GUTTER
LT	LEFT
MS	MOWSTRIP
NTS	NOT TO SCALE
OH	OVERHEAD
PCC	PORTLAND CEMENT CONCRETE
PD	PLANTER DRAIN
PIV	POST INDICATOR VALVE
P/L	PROPERTY LINE
PP	POWER POLE
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
R	RADIUS
RIM	MANHOLE RIM ELEVATION (SOLID COVER)
RP	REDUCED PRESSURE BACKFLOW PREVENTER
RW	RIGHT OF WAY
SCH	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SG	SUBGRADE ELEVATION
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STD	STANDARD
S/W	SIDEWALK
T	TELEPHONE
TC	TOP OF CURB
TD	TRENCH DRAIN
TDCB	TRENCH DRAIN CATCH BASIN
TP	TELEPHONE POLE
TRW	TOP OF RETAINING WALL
TSW	TOP OF SEAT WALL
TW	TOP OF WALK ELEVATION
U	UTILITY
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
VCP	VITRIFIED CLAY PIPE
W	WATER
W/	WITH
W/O	WITHOUT
WV	WATER VALVE

LEGEND

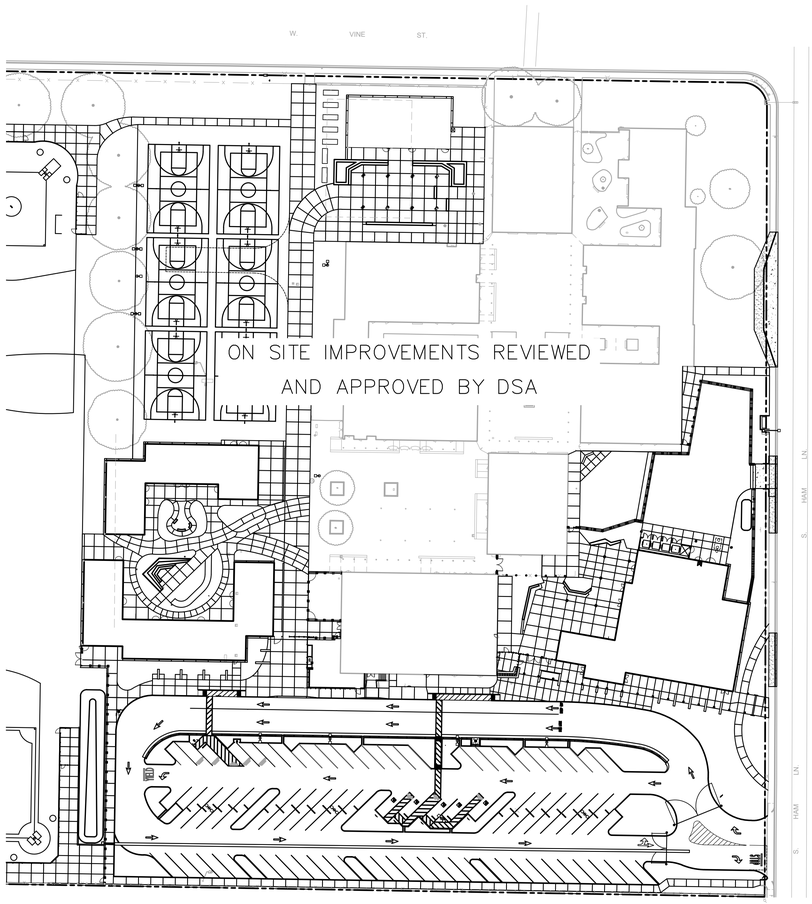
NOTE: NOT ALL SYMBOLS MAY BE USED ON THESE PLANS.

PROPOSED GRADING & DRAINAGE SYMBOLS:

8" SD	STORM DRAIN LINE (SIZE AND FLOW SHOWN)
	STORM DRAIN MANHOLE (SDMH)
	CATCH BASIN (CB)
	DROP INLET (DI)
	AREA DRAIN (AD)
	PLANTER DRAIN (PD) OR FLOOR DRAIN (FD)
CO	STORM DRAIN CLEANOUT
99.99	ELEVATION
FF=100.00	FINISHED FLOOR ELEVATION
PAD=99.33	BUILDING PAD ELEVATION
	CONCRETE SIDEWALK
	GRADED DIRECTION FOR DRAINAGE FLOW
	SWALE
	SLOPE
	TREE TO BE REMOVED

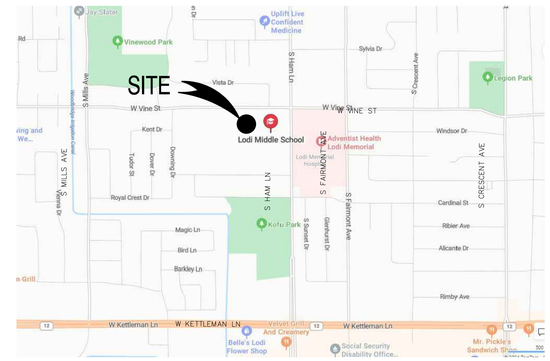
LODI MIDDLE SCHOOL FRONTAGE IMPROVEMENTS

945 S. HAM LN.
LODI, CA 95242



SITE PLAN

NORTH
0 50'
1 inch = 50 feet



VICINITY MAP
NO SCALE

NORTH

SHEET INDEX

1 COVER SHEET
2 GENERAL NOTES
3 HAM LANE IMPROVEMENT PLAN
4 WEST VINE ST. IMPROVEMENT PLAN

NOTE:

FIRE DEPARTMENT EMERGENCY ACCESS SHALL BE MAINTAINED DURING CONSTRUCTION.

A.P.N.	031-040-020
BENCHMARK NO. 1222	ELEV. 42.231

SOUTHWEST CORNER HAM LANE AND VINE STREET, 8.8 FEET N/ END OF CURB OF RETURN ON HAM LANE, 0.5 FEET BEHIND BOC.

REGISTERED PROFESSIONAL ENGINEER ANTHONY J. TASSANO NO. C74696 CIVIL STATE OF CALIFORNIA 3/3/2025

WARREN CONSULTING ENGINEERS, INC.
1117 WINDFIELD WAY, SUITE 110
EL DORADO HILLS, CA 95762 | (916) 985-1870

FILENAME: I:\24-071\CIVIL\DWG\24-071 C7.1.DWG

CAUTION 1/2 0 1
BY DATE REVISION NO.

DESIGN MG DRAWN MG 10-18-24
CHECKED MG APPROVED DATE
HORIZONTAL SCALE AS NOTED VERTICAL SCALE NA
DRAWN BY INSPECTOR BY PROJECT NUMBER
CITY ENGINEER SEAL AND DATE

CITY OF LODI
PUBLIC WORKS DEPARTMENT
221 WEST PINE STREET
LODI, CALIFORNIA 95240
PHONE (209) 333-6706
FAX (209) 333-6710
E-MAIL: pwdept@lodi.gov
WEB SITE: www.lodi.gov

COVER SHEET
FRONTAGE IMPROVEMENTS FOR LODI MIDDLE SCHOOL

PRINT DATE 11-1-24
PLAN SET -
SHEET NO. 1
DRAWING NO. -

FILENAME: I:\24-071\CIVIL\DWG\24-071 C7.1.DWG

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AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
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2101 CAPITOL AVENUE, SUITE 100,
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ISSUE
Δ DESCRIPTION DATE

KEYNOTES

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REGISTERED PROFESSIONAL ENGINEER ANTHONY J. TASSANO NO. C74696 CIVIL STATE OF CALIFORNIA 03/28/2025

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EL DORADO HILLS, CA 95762 | (916) 985-1870

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
COVER SHEET

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:
C7.1

Autodesk Docs://R221546X00 Placer UHSD Foresthill HS Concessions/R221546X00-A-Concessions.rvt
4/8/2025 8:17:17 AM

GENERAL NOTES:

1. WORK SHALL CONFORM TO CITY OF LODI PUBLIC IMPROVEMENT DESIGN STANDARDS, CONSTRUCTION SPECIFICATIONS AND STANDARD PLANS UNLESS SPECIFICALLY SHOWN OTHERWISE ON THESE PLANS.
2. STANDARD PLANS APPLICABLE TO THIS PROJECT INCLUDE 111, 112, 114, 117, 119, 141, 203, 401, 402, 405, 406, 408, 411, 413 AND 506.
3. CONSTRUCTION STAKING FOR CURB AND GUTTER, WASTE WATER LINES, STORM DRAINS, WATER LINES, STREET CENTERLINES, PAVING EDGES AND OTHER PUBLIC FACILITIES AS DIRECTED BY THE CITY SHALL BE DONE BY A REGISTERED CIVIL ENGINEER OR LICENSED LAND SURVEYOR.
4. CENTERLINE AND PROPERTY LINE DATA SHALL BE PROVIDED BY WARREN CONSULTING ENGINEERS FOR THIS PROJECT.
5. EXISTING UTILITIES SHALL BE PROTECTED . UTILITY AGENCIES SHALL BE NOTIFIED AND ALLOWED TO MARK THEIR UTILITIES IN THE FIELD AT LEAST 48 HOURS BEFORE EXCAVATION. COMPLETENESS AND ACCURACY OF EXISTING UTILITY LOCATIONS SHOWN IN THESE PLANS ARE NOT GUARANTEED. CALL "USA" (800) 227-2600.
6. STREET GRADING SHALL BE DONE BEFORE UNDERGROUND WORK.
7. UNDERGROUND UTILITIES IN THE STREET AND SIDEWALK AREA SHALL BE INSTALLED BEFORE CONSTRUCTION OF CURB, GUTTER OR SIDEWALK. THESE UTILITIES INCLUDE SERVICES, FIRE HYDRANT, LATERALS, STREET LIGHT CONDUIT, ELECTRIC, GAS, CABLE TV AND TELEPHONE LINES.
8. EXCAVATION SAFETY REQUIREMENTS INCLUDE SUBMITTING A CAL OSHA PERMIT OR LETTER OF NOTIFICATION TO THE CITY BEFORE COMMENCING EXCAVATIONS OVER FIVE FEET DEEP. REFER TO CITY CONSTRUCTION SPECIFICATION 6-19.04 "EXCAVATION SAFETY" FOR ADDITIONAL REQUIREMENTS.
9. ALL TESTING FOR LEAKAGE SHALL BE WITNESSED BY A CITY INSPECTOR.
10. BALLING AND CLEANING OF STORM DRAIN AND SANITARY SEWER SHALL BE DONE BEFORE INTERIOR VIDEO INSPECTION. UTILITIES SHALL BE KEPT CLEAN UNTIL CITY ACCEPTANCE.

ADDITIONAL CONSTRUCTION NOTES:

11. A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, CITY INSPECTOR AND ALL UTILITY AGENCIES AT LEAST ONE WEEK PRIOR TO THE DATE OF THE MEETING. THE CONTRACTOR'S JOB SUPERINTENDENT, AND ALL MAJOR SUBCONTRACTORS SHALL ATTEND.
12. BEDDING FOR ALL PIPE LINES SHALL CONFORM TO CITY OF LODI STANDARD PLAN 501, 501-A, 501-B AND 501-C UNLESS OTHERWISE SHOWN. REFER TO TRENCH DETAILS - THIS SHEET.
13. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY FOR ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
14. WATER USED IN ANY PHASE OF CONSTRUCTION, SUCH AS BACKFILL COMPACTION, DUST CONTROL, TESTING OR OTHER WORK HEREIN REQUIRED, SHALL BE INCLUDED IN THE UNIT PRICE OR LUMP SUM BID FOR THE RESPECTIVE ITEM OF CONSTRUCTION OR ITEMS OF WORK.
15. ENGINEER SHALL SET ALL SURVEY CONTROLS AND CONSTRUCTION STAKES AS NECESSARY FOR COMPLETION OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL SURVEY AND CONSTRUCTION STAKES. SURVEY AND CONSTRUCTION STAKES THAT ARE LOST OR DESTROYED DUE TO CONTRACTOR'S NEGLIGENCE WILL BE SET BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
16. CONTRACTOR SHALL GIVE ENGINEER A MINIMUM OF 48 HOURS NOTICE WHEN REQUESTING CONSTRUCTION STAKING.
17. TRAFFIC FLOW AND ACCESS ENTRYWAY SHALL BE MAINTAINED.
18. PUBLIC ROADWAYS SHALL REMAIN OPEN AT ALL TIMES. TRAFFIC CONTROL PER CALTRANS TRAFFIC CONTROL MANUAL 1995. NO OPEN TRENCHES EXCEPT AT THE TIME OF WORK. USE STEEL PLATES OR BACKFILL WITH A.C. CAP. ONE-WAY TRAFFIC REQUIRES FLAGGER PRESENT AT ALL TIMES. TRAFFIC CONTROL PLANS TO BE SUBMITTED TO THE CITY OF LODI PUBLIC WORKS DEPARTMENT.
19. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO KEEP DUST TO A MINIMUM COST TO BE INCLUDED IN OTHER ITEMS OF WORK. SEE SHEET 004D15-11 FOR EROSION AND DUST CONTROL NOTES.
20. THE CONTRACTOR IS TO VERIFY THE DEPTH AND/OR LOCATION IN THE FIELD OF ALL EXISTING UTILITIES BEFORE THE START OF CONSTRUCTION.
21. THE DEVELOPER IS RESPONSIBLE FOR REPLACEMENT OF MISSING AND DAMAGED FILTER SCREENS UNTIL PROJECT IS ACCEPTED. A ROUTINE MAINTENANCE SCHEDULE IS TO BE MAINTAINED. FILTER SCREENS SHALL BE SECURED TO THE CATCH BASINS DURING THIS PERIOD.
22. ABANDONED IRRIGATION PIPES SHALL BE REMOVED.
23. WASTE WATER GENERATED BY CONCRETE WORK TO BE CAPTURED AND VACUUMED PRIOR TO ENTERING CITY STORM DRAIN SYSTEM.
24. THE CONTRACTOR SHALL PERFORM AT HIS EXPENSE ALL TESTS SPECIFIED OR REQUIRED BY THE CITY OF LODI QUALITY ASSURANCE PROGRAM TO ASSURE THAT CONSTRUCTION PROJECTS ARE IN CONFORMANCE WITH THE CITY OF LODI CONSTRUCTION SPECIFICATIONS. THE CONTRACTOR SHALL FURNISH ALL FACILITIES, LABOR AND MATERIALS REASONABLY REQUIRED FOR PERFORMING SAFE AND CONVENIENT TESTS AS ARE REQUIRED BY THE QUALITY ASSURANCE PROGRAM AND CONSTRUCTION SPECIFICATIONS. RESULTS OF THE TESTING PROCEDURES WILL BE PRESENTED TO THE CITY OF LODI PUBLIC WORKS INSPECTOR IN A TIMELY FASHION SO AS NOT TO DELAY THE CONTINUATION OF WORK. ANY SUCH DELAY SHALL SOLELY BE THE RESPONSIBILITY OF THE CONTRACTOR. AT COMPLETION OF CONSTRUCTION, A FINAL REPORT CONTAINING ALL TEST RESULTS PRESENTED IN AN ORDERLY MANNER SHALL BE PROVIDED PRIOR TO FINAL ACCEPTANCE OF THE PROJECT. A COPY OF THE QUALITY ASSURANCE PROGRAM IS ON FILE IN THE CITY OF LODI PUBLIC WORKS DEPARTMENT.
25. STREETS ADJACENT TO THE PROJECT SITE SHOULD BE SWEPT AS NEEDED TO REMOVE SILT WHICH MAY HAVE ACCUMULATED FROM CONSTRUCTION ACTIVITIES. DAILY IF NEEDED.
26. UTILITY PIPE HORIZONTAL AND VERTICAL CLEARANCES SHALL COMPLY WITH STATE HEALTH STANDARDS.

CLEARING AND GRADING NOTES:

28. ALL SITE VEGETATION, EXISTING TREES, STUMPS AND ETC. SHALL BE STRIPPED FROM BUILDING AND PAVEMENT AREA.
29. A SOILS INVESTIGATION HAS BEEN PREPARED BY TERRACON, PROJECT NO. NA245056 DATED AUGUST 23, 2024. ALL SOILS WORK WILL STRICTLY ADHERE TO RECOMMENDATIONS AND REQUIREMENTS WITHIN THAT REPORT.
30. CONTRACTOR TO REMOVE ANY SEDIMENTATION DEPOSITED ON EXISTING PAVED ROADWAYS PRIOR TO LEAVING THE SITE, IF POSSIBLE, AND IN ALL CASES WITHIN 24 HOURS.

DUST CONTROL REQUIREMENTS:

31. ALL MATERIAL EXCAVATED OR GRADED SHOULD BE SUFFICIENTLY WATERED TO PREVENT EXCESSIVE AMOUNT OF DUST. WATERING SHOULD OCCUR AT LEAST TWICE A DAY WITH COMPLETE COVERAGE, PREFERABLY IN THE LATE MORNING AND AFTER WORK IS DONE FOR THE DAY.
32. ALL CLEARING, GRADING, EARTH MOVING OR EXCAVATION ACTIVITIES SHALL CEASE DURING PERIODS OF HIGH WINDS GREATER THAN 20 MPH AVERAGE OVER ONE HOUR.
33. ALL AREAS WITH VEHICLE TRAFFIC SHOULD BE WATERED PERIODICALLY FOR STABILIZATION OF DUST EMISSIONS.
34. STREETS ADJACENT TO THE PROJECT SITE SHOULD BE SWEPT AS NEEDED TO REMOVE SILT WHICH MAY HAVE ACCUMULATED FROM CONSTRUCTION ACTIVITIES.
35. THE AREA DISTURBED BY CLEARING, EARTH MOVING OR EXCAVATION ACTIVITIES SHOULD BE MINIMIZED AT ALL TIMES.
36. ALL MATERIAL TRANSPORTED ON OR OFF-SITE SHALL EITHER BE SUFFICIENTLY WATERED OR SECURELY COVERED TO PREVENT EXCESSIVE AMOUNT OF DUST.
37. ALL INTERNAL COMBUSTION ENGINE DRIVEN EQUIPMENT SHOULD BE PROPERLY MAINTAINED AND WELL TUNED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
38. DUST CONTROL IS THE CONTRACTORS SOLE RESPONSIBILITY WHEN WORKING ON-SITE. THE ABOVE WORK SHALL BE INCLUDED IN THE BID. THE CONTRACTOR SHALL ALSO WATER THE SITE, AS AN EXTRA, WHEN REQUESTED BY THE CITY OR THE OWNER. STOCKPILE AREA TO BE INCLUDED UNDER BID DUST CONTROL.
39. ON-SITE VEHICLE SPEEDS SHALL BE LIMITED TO 15 MPH.
40. ALL OPERATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT.
41. WHEN CONDITIONS ARE DRY, ALL MATERIAL EXCAVATED OR GRADED SHOULD BE SUFFICIENTLY WATERED TO PREVENT EXCESSIVE AMOUNT OF DUST. WATERING SHOULD OCCUR AT LEAST TWICE A DAY WITH COMPLETE COVERAGE, PREFERABLY IN THE LATE MORNING AND AFTER WORK IS DONE FOR THE DAY.

WINTERIZATION NOTES:

42. EROSION CONTROL. ALL CATCH BASINS SHALL BE SEALED UNTIL THE COMPLETION OF THE PROJECT. IF SITE WORK EXTENDS INTO THE RAINY SEASON, OTHER MEASURES MAY BE TAKEN AS REQUIRED BY THE CITY AND ARCHITECT AT NO ADDITIONAL COST TO THE OWNER. ALL STORM DRAINAGE TRAPS SHALL BE CLEANED PRIOR TO ACCEPTANCE.
43. COST OF EROSION CONTROL AND OTHER ITEMS OF WINTERIZATION SHALL BE INCLUDED IN THE ITEM ENTITLED "EROSION CONTROL AND WINTERIZATION".
44. CONTRACTOR WILL BE REQUIRED TO CLEAN EXISTING STORM DRAIN DOWNSTREAM OF THIS PROJECT AS NECESSARY. DETERMINE EXISTING CONDITION WITH CITY INSPECTOR PRIOR TO CONSTRUCTION.
45. CONTRACTOR SHALL REMOVE ANY IRRIGATION LINES ENCOUNTERED.
46. NO WELLS, SEPTIC TANKS OR OTHER UNDERGROUND TANKS ARE KNOWN TO EXIST ON THIS SITE.

EROSION AND SEDIMENT CONTROL NOTES:

47. NOTICE OF INTENT (NOI) FOR STATE GENERAL NPDES CONSTRUCTION PERMIT IS REQUIRED PRIOR TO SITE WORK.
48. REFERENCE WDID #_____
49. ALL CATCH BASINS SHALL BE SEALED UNTIL THE COMPLETION OF THE PROJECT. IF SITE WORK EXTENDS INTO THE RAINY SEASON, OTHER MEASURES MAY BE TAKEN AS REQUIRED BY THE CITY AND ARCHITECT AT NO ADDITIONAL COST TO THE OWNER. ALL STORM DRAINAGE TRAPS SHALL BE CLEANED PRIOR TO ACCEPTANCE.
50. COST OF EROSION CONTROL AND OTHER ITEMS OF WINTERIZATION SHALL BE INCLUDED IN THE ITEM ENTITLED "EROSION CONTROL AND WINTERIZATION"
51. CONTRACTOR WILL BE REQUIRED TO CLEAN EXISTING STORM DRAIN DOWNSTREAM OF THIS PROJECT AS NECESSARY. DETERMINE EXISTING CONDITION WITH ENGINEER AND CITY INSPECTOR PRIOR TO CONSTRUCTION. PUMPED WATER TO BE DISCHARGED TO THE SOUTH.

REQUIRED CITY SUBMITTALS

1. TRAFFIC CONTROL PLAN.
2. SUBMIT SURVEY MONUMENT PRESERVATION PAPERWORK PRIOR TO PUBLIC IMPROVEMENT PLAN ACCEPTANCE BY CITY COUNCIL.

REGISTERED PROFESSIONAL ENGINEER ANTHONY J. TASSANO NO. C74696 CIVIL STATE OF CALIFORNIA 3/3/2025

WARREN CONSULTING ENGINEERS, INC.
1117 WINDFIELD WAY, SUITE 110
EL DORADO HILLS, CA 95762 | (916) 985-1870

FILENAME: I:\24-071\CIVIL\DWG\24-071 C7.2.DWG

CAUTION 0 1/2 1 — Do not scale drawing if this notice is not present

NO.	REVISION	DATE	BY

DRAWN: MG DATE
DESIGN: MG
CHECKED: MG DATE: 10-18-24
APPROVED: DATE
CITY ENGINEER RCE NO. 74696
HORIZONTAL SCALE: AS NOTED
VERTICAL SCALE: NA
CONTRACT INSPECTOR
BY
PROJECT NUMBER

CITY OF LODI
PUBLIC WORKS DEPARTMENT
221 WEST PINE STREET
LODI, CALIFORNIA 95240
PHONE: (209) 333-6706
FAX: (209) 333-6710
E-MAIL: pwdept@lodi.gov
WEB SITE: www.lodi.gov

GENERAL NOTES
FRONTAGE IMPROVEMENTS
FOR
LODI MIDDLE SCHOOL

PRINT DATE: 11-1-24
PLAN SET: -
SHEET NO.: 2
DRAWING NO.: -

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
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ISSUE

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LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
GENERAL NOTES

CONSTRUCTION DOCUMENTS

DATE: 04.02.2025 | CLIENT PROJ NO: 3431007000

SHEET:
C7.2

FILENAME: I:\24-071\CIVIL\DWG\24-071 C7.2.DWG

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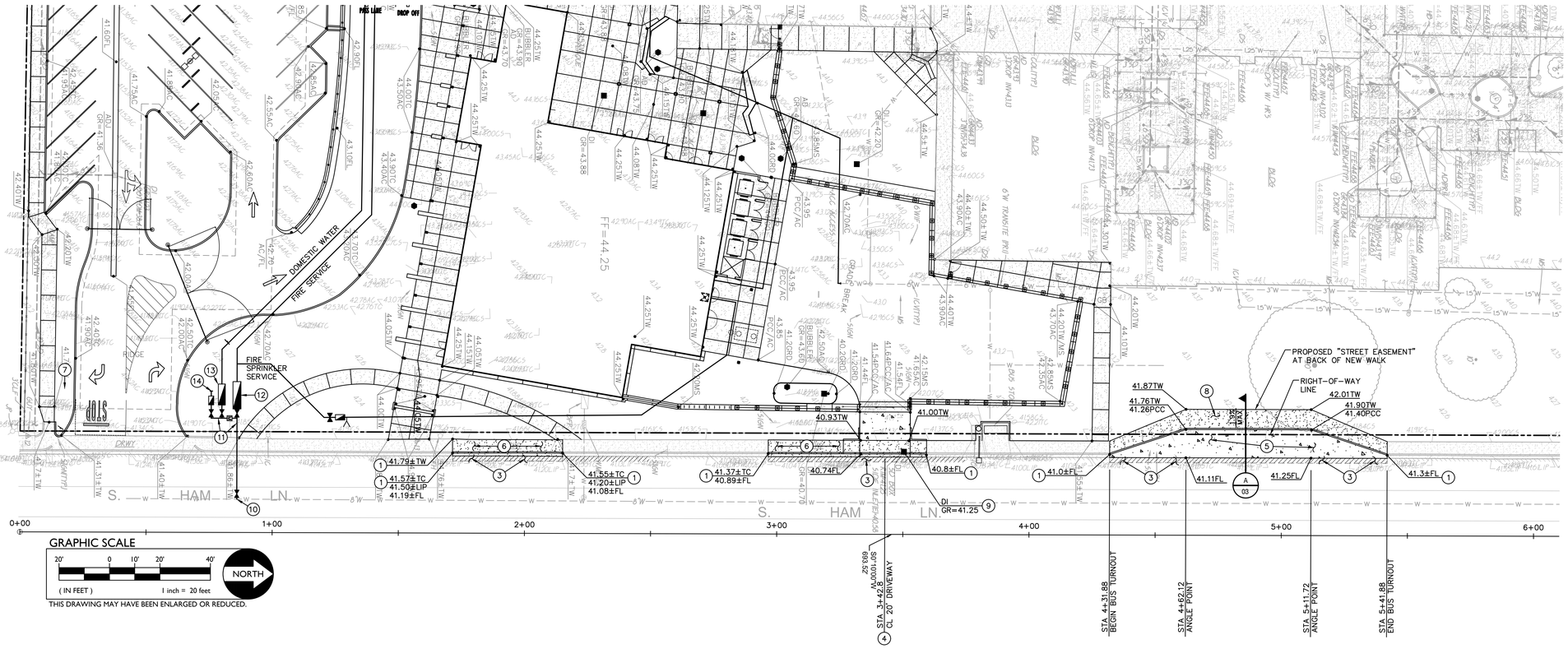


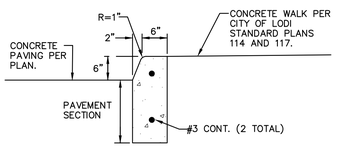
GRAPHIC SCALE

20' 0 10' 20' 40'

(IN FEET) 1 inch = 20 feet

NORTH

THIS DRAWING MAY HAVE BEEN ENLARGED OR REDUCED.

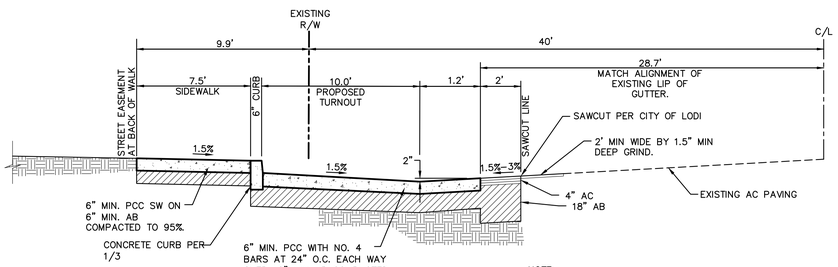


NOTES:

1. PROVIDE FELT EXPANSION JOINTS (E.J.) AT 60 FEET O.C. PROVIDE CONTROL JOINTS AT 10 FEET O.C., EXCEPT WHEN PLACING ADJACENT TO CONCRETE WALKS THE EXPANSION JOINTS SHALL ALIGN WITH THE EXPANSION JOINTS SHOWN FOR THE CONCRETE WALKS.
2. AT E.J. USE 1/2"X24" SMOOTH DOWELS, ALIGN WITH REBAR, GREASE 1/2 THE LENGTH BEFORE CONCRETE PLACEMENT.

1/03 CONCRETE CURB

NO SCALE



NOTE:
CONTRACTOR SHALL MAINTAIN A POSITIVE SLOPE FROM EXISTING ROADWAY TO GUTTER FLOW LINE. IF A DISCREPANCY IS DISCOVERED NOTIFY ENGINEER FOR DIRECTION.

A/03 SCHOOL BUS TURNOUT

VIRGINIA AVE. (22+20.8 TO 23+79.3)

NOT TO SCALE

CONSTRUCTION NOTES

1. MATCH EXISTING GRADE/ELEVATION.
2. CONSTRUCT CURB, GUTTER AND 5.0' MIN. SIDEWALK PER CITY OF LODI STANDARD PLAN 112 AND 117.
3. SAWCUT AND REMOVE 2' MIN. AC PAVING. REPLACE WITH 4.0" AC OVER 12.0" AB, OR MATCH EXISTING +1" AC, WHICHEVER IS GREATER. SEE STANDARD PLAN 506.
4. CONSTRUCT DRIVEWAY PER CITY OF LODI STANDARD PLAN 114.
5. PLACE 6" PCC WITH #4 BARS 24" ON CENTER EACH WAY OVER 12" AB COMPACTED TO 95% MIN.
6. REMOVE EXISTING DRIVEWAY AND CONSTRUCT CURB GUTTER AND SIDEWALK PER CITY OF LODI STANDARD PLAN 112 AND 117.
7. PROVIDE R1 "STOP" SIGN. BOTTOM OF SIGN SHALL BE A MINIMUM OF 7' ABOVE SIDEWALK ELEVATION.
8. CONSTRUCT SIDEWALK PER CITY OF LODI STANDARD PLANS 117 AND 135, AND CURB PER 1/3.
9. REMOVE TOP OF EXISTING SIDE INLET AND CONSTRUCT DROP INLET PER CITY OF LODI STANDARD PLAN 304.
10. CONNECT TO 8" WATER MAIN PER CITY OF LODI STD. PLAN 402.
11. CONSTRUCT 8" FIRE SERVICE WITH DOMESTIC AND IRRIGATIONS SERVICE PER CITY OF LODI STD. PLAN 407.
12. PROVIDE 8" BACKFLOW ASSEMBLY PER CITY OF LODI STD. PLAN 413.
13. PROVIDE 4" DOMESTIC SERVICE PER CITY OF LODI STD. PLAN 406, 412, AND 413.
14. PROVIDE 2" IRRIGATION SERVICE PER CITY OF LODI STD. PLAN 406, 412, AND 413.

REGISTERED PROFESSIONAL ENGINEER ANTHONY J. TASSANO NO. C74696 CIVIL STATE OF CALIFORNIA 3/3/2025

WCE WARREN CONSULTING ENGINEERS, INC. 1117 WINDFIELD WAY, SUITE 110 EL DORADO HILLS, CA 95762 | (916) 985-1870

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DESIGN MG | DRAWN MG | DATE 10-18-24

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CITY OF LODI, CALIFORNIA

CITY OF LODI
PUBLIC WORKS DEPARTMENT
221 WEST PINE STREET
LODI, CALIFORNIA 95240
PHONE: (209) 333-6706
FAX: (209) 333-6710
E-MAIL: publicwks@lodi.gov
WEB SITE: www.lodi.gov

HAM LANE
FRONTAGE IMPROVEMENTS
FOR
LODI MIDDLE SCHOOL

PRINT DATE 11-1-24
PLAN SET -
SHEET NO. 3
DRAWING NO. -

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

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Δ DESCRIPTION DATE

KEYNOTES

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REGISTERED PROFESSIONAL ENGINEER ANTHONY J. TASSANO NO. C74696 CIVIL STATE OF CALIFORNIA 03/28/2025

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FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
HAM LANE

CONSTRUCTION DOCUMENTS

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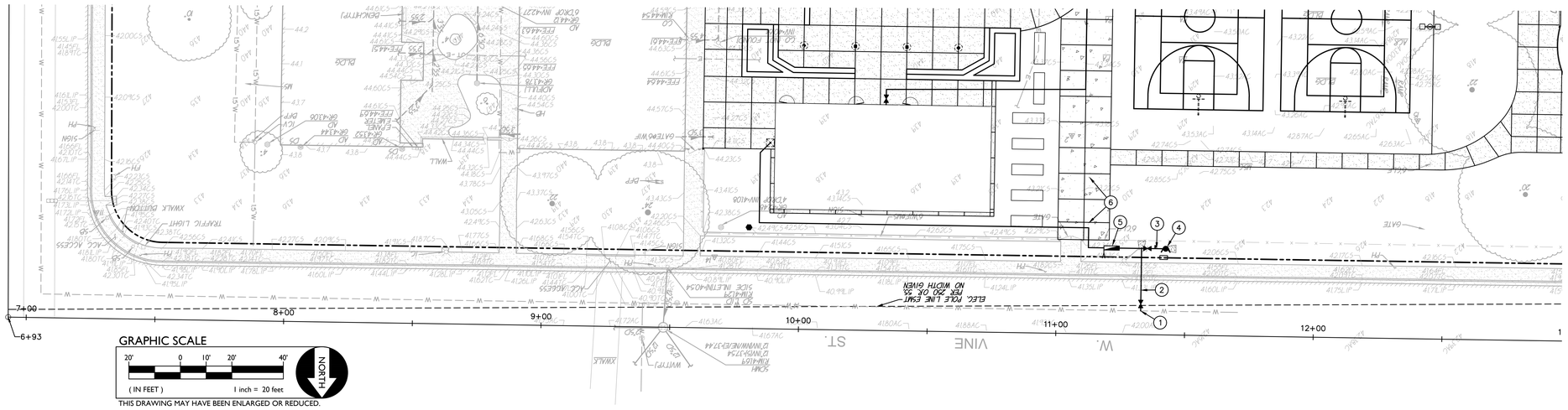

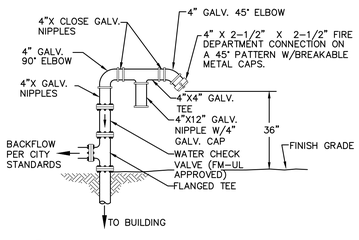

1/4 FIRE SPRINKLER CONNECTION
NO SCALE

CONSTRUCTION NOTES

1. CONNECT TO 8" WATER MAIN PER CITY OF LODI STD. PLAN 402.
2. CONSTRUCT 8" FIRE SERVICE WITH SERVICE PER CITY OF LODI STD. PLAN 407.
3. CONSTRUCT 8" LATERAL PER CITY OF LODI STD. PLAN 407.
4. PROVIDE FIRE HYDRANT PER CITY OF LODI STD. PLAN 401.
5. PROVIDE 6" BACKFLOW ASSEMBLY PER CITY OF LODI STANDARDS. PROVIDE WITH FIRE DEPARTMENT CONNECTION PER 1/4.
6. PLACE 6" WATER PIPE TO BUILDING SPRINKLER SERVICE. TRENCHING PER ON-SITE PLANS.

REGISTERED PROFESSIONAL ENGINEER ANTHONY J. TASSANO NO. C74696 CIVIL STATE OF CALIFORNIA 3/3/2025

WARREN CONSULTING ENGINEERS, INC.
1117 WINDFIELD WAY, SUITE 110
EL DORADO HILLS, CA 95762 | (916) 985-1870

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DESIGN MG CHECKED MG APPROVED
10-18-24 DATE
CITY ENGINEER
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DIRECT INSPECTOR
BY
PROJECT NUMBER

CITY OF LODI
PUBLIC WORKS DEPARTMENT
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LODI, CALIFORNIA 95240
PHONE (209) 333-6706
FAX (209) 333-6710
E-MAIL: pwdept@lodi.gov
WEB SITE: www.lodi.gov

WEST VINE ST.
FRONTAGE IMPROVEMENTS
FOR
LODI MIDDLE SCHOOL

PRINT DATE 11-1-24
PLAN SET -
SHEET NO. 4
DRAWING NO. -

AGENCY APPROVAL:

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DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
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EL DORADO HILLS, CA 95762 | (916) 985-1870

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

SHEET NAME:
WEST VINE ST.

CONSTRUCTION DOCUMENTS

DATE: 04.02.2025 CLIENT PROJ NO: 3431007000

SHEET:
C7.4

FILENAME: I:\24-071\CIVIL\DWG\24-071 C7.4.DWG

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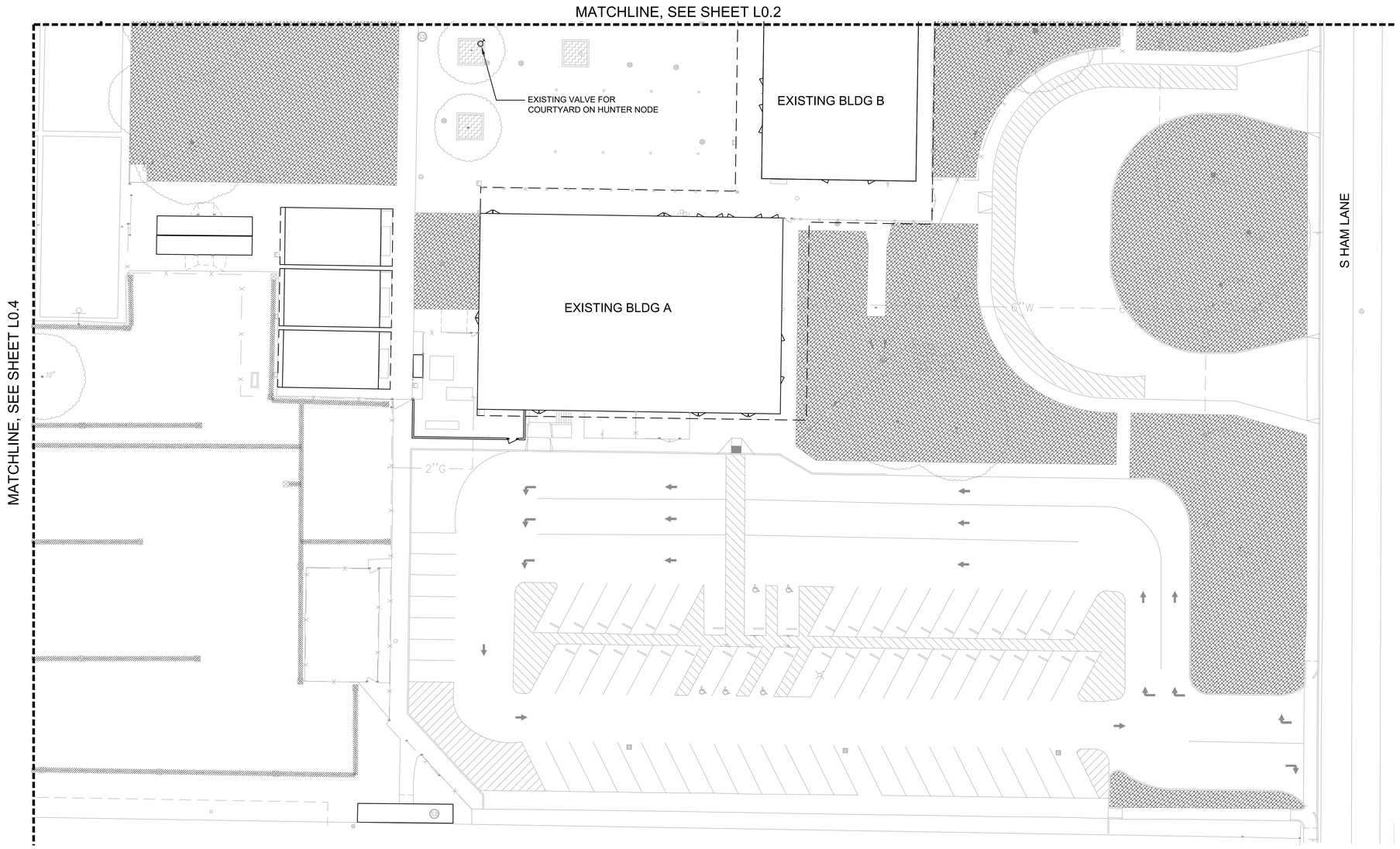

KEY | IRRIGATION DEMOLITION LEGEND

- EXISTING TREE TO REMAIN
- EXISTING SPRINKLER HEAD TO REMOVE
- EXISTING LANDSCAPE AND SPRINKLER AREAS TO REMAIN
- LIMITS OF 6' CONSTRUCTION FENCING
- EXISTING IRRIGATION CONTROLLER
  RAINBIRD SERIES:
  CONTROLLER "A" : ESP-LXME 36 STATION
  CONTROLLER "B" : ESP-LXME 24 STATION
- EXISTING BOOSTER PUMP TO REMAIN
- EXISTING BACKFLOW TO REMAIN
- EXISTING AUTOMATIC CONTROL VALVE TO REMAIN
- EXISTING AUTOMATIC CONTROL VALVE TO REMOVE
- EXISTING SPRINKLER HEAD TO REMAIN
- EXISTING SPRINKLER HEAD TO REMOVE
- EXISTING IRRIGATION MAINLINE TO REMAIN
- EXISTING LATERAL LINE TO REMAIN
- EXISTING LATERAL LINE TO REMOVE
- A1 / 1" / 0.0 — INDICATES CONTROL VALVE AND STATION NUMBER; INDICATES CONTROL VALVE SIZE
- A — IRRIGATION HEADS MUST BE CAPPED DURING CONSTRUCTION
- B — ADJUST IRRIGATION HEADS TO RUN HALF CIRCLE DURING CONSTRUCTION

PRE-CONSTRUCTION SPRINKLER IRRIGATION NOTES

1. PRIOR TO START OF CONSTRUCTION CONTRACTOR REQUIRED TO CONTACT:
   NAME, TITLE: PETER LARIMER, LANDSCAPE ARCHITECT
   PHONE NUMBER: 916-369-3990
   TO SET UP A MEETING ON SITE TO OPERATE THE EXISTING SPRINKLER IRRIGATION SYSTEM AND DISCUSS THE MODIFICATIONS THAT ARE TO BE MADE TO THE EXISTING SYSTEM TO ACCOMMODATE FOR THE NEW CONSTRUCTION.
2. CONTRACTOR TO OPERATE AND PROGRAM EXISTING SPRINKLER IRRIGATION SYSTEM THAT IS TO REMAIN IN ORDER TO PROVIDE WATER TO THE EXISTING LANDSCAPE TO REMAIN.
3. CONTRACTOR TO REMOVE ALL EXISTING PIPE AND SPRINKLER HEADS WHEN THEY ARE IN NEW PLANTING AREAS.
4. CONTRACTOR TO RESTORE AND REPAIR ANY EXISTING SPRINKLER IRRIGATION SYSTEM OR EXISTING LANDSCAPE WHICH IS IN AREAS TO REMAIN THAT IS DAMAGED BY NEW WORK.
5. ALL WORK TO EXISTING SPRINKLER IRRIGATION SYSTEM TO BE COMPLETED PRIOR TO SITE DEMOLITION.

20' 10' 0 20' 40'
SCALE: 1"= 20'-0"

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SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

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3431007000
2101 CAPITOL AVENUE, SUITE 100,
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KEYNOTES

NOTES

24-25

MTW group
LANDSCAPE ARCHITECTURE AND PLANNING
2707 K Street, Suite 201
Sacramento, CA 95816
916 369-3990

3/28/25 Renewal 6/30/26

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
IRRIGATION DEMOLITION PLAN

DSA SUBMITTAL

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
L0.1

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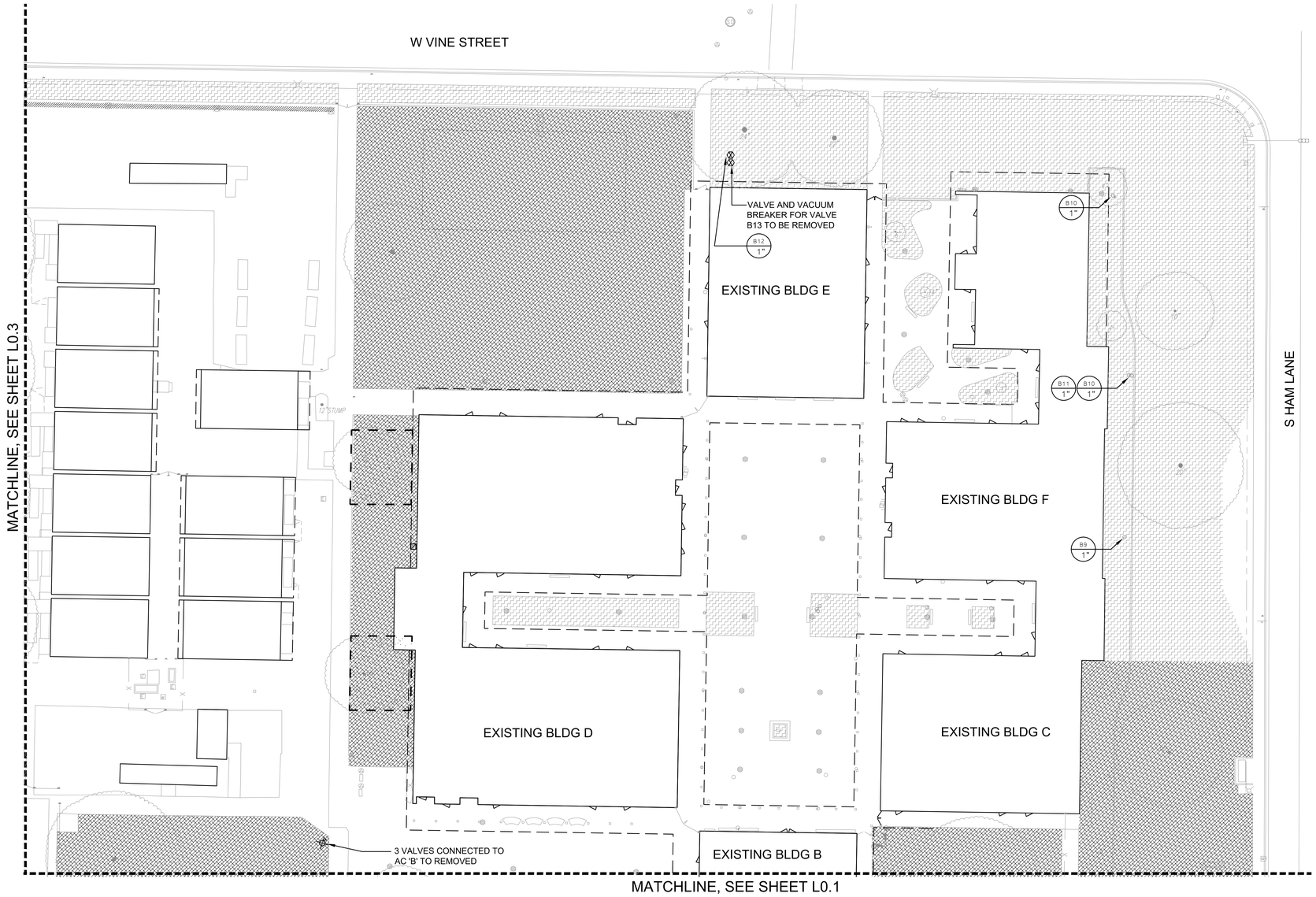

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  CONTROLLER "B" : ESP-LXME 24 STATION
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EXISTING TREE PROTECTION AREA:

THE PROTECTION AREA UNDER ANY EXISTING TREE THAT IS TO REMAIN IS DEFINED BY ITS DRIP LINE OR CANOPY COVER. WITHIN THIS AREA NO STORAGE OR PARKING WILL BE PERMITTED. ALL TRENCHING WILL BE PERFORMED BY HAND. DO NOT CUT ROOTS 1" IN DIAMETER OR LARGER. USE BORING PROCEDURES WHEN ENCOUNTERING ROOTS 1" SIZE AND LARGER. NO ROOTS ARE TO BE EXPOSED LONGER THAN 48 HOURS.

SEE SHEET L4.1 FOR DETAILS

20' 10' 0 20' 40'

SCALE: 1"= 20'-0"

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ DESCRIPTION DATE

KEYNOTES

NOTES

24-25

MTW group
LANDSCAPE ARCHITECTURE AND PLANNING
2707 K Street, Suite 201
Sacramento, CA 95816
916 369-3990

LICENSED LANDSCAPE ARCHITECT PETER D. LARIMER STATE OF CALIFORNIA 3/28/25 6/30/26

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
IRRIGATION DEMOLITION PLAN

DSA SUBMITTAL

DATE: 04.02.2025 | CLIENT PROJ NO: 3431007000

SHEET:
L0.2

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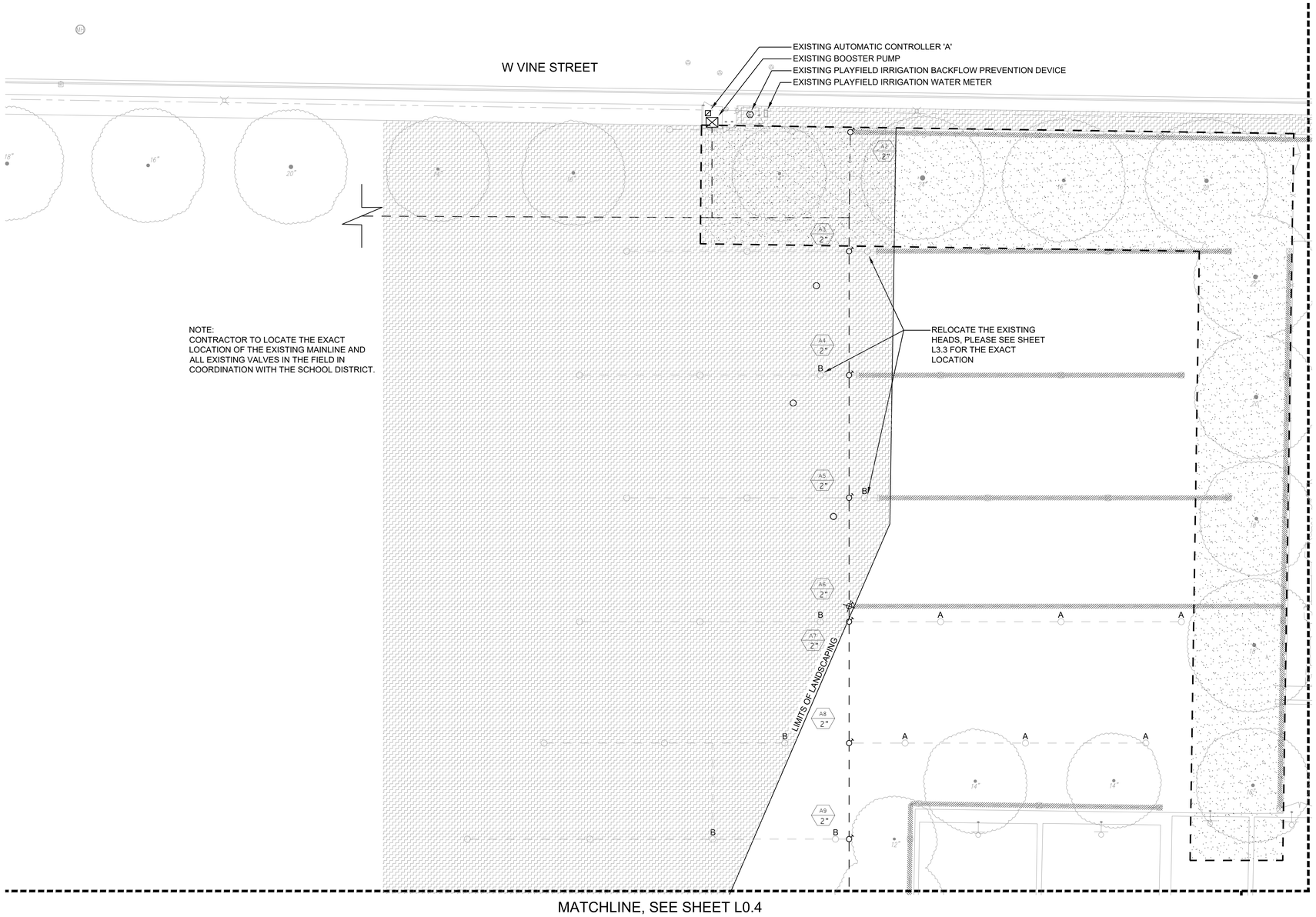

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KEYNOTES

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24-25

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916 369-3990

LICENSED LANDSCAPE ARCHITECT PETER D. LARIMER 2876 3/28/25 6/30/26 STATE OF CALIFORNIA

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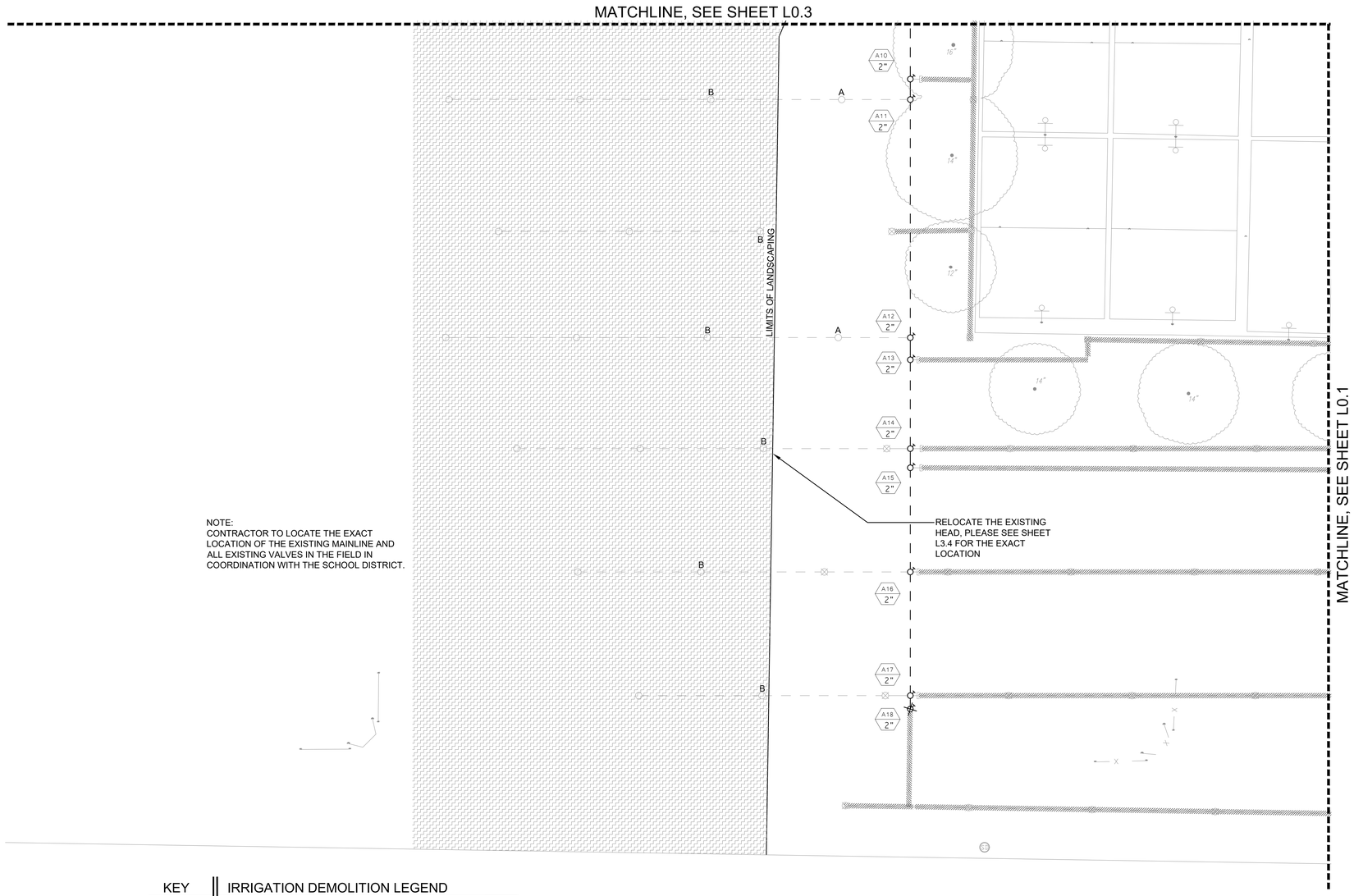

NOTE:
CONTRACTOR TO LOCATE THE EXACT LOCATION OF THE EXISTING MAINLINE AND ALL EXISTING VALVES IN THE FIELD IN COORDINATION WITH THE SCHOOL DISTRICT.

KEY	IRRIGATION DEMOLITION LEGEND
	EXISTING TREE TO REMAIN
	EXISTING SPRINKLER HEAD TO REMOVE
	EXISTING LANDSCAPE AND SPRINKLER AREAS TO REMAIN
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B	ADJUST IRRIGATION HEADS TO RUN HALF CIRCLE DURING CONSTRUCTION

PRE-CONSTRUCTION SPRINKLER IRRIGATION NOTES

1. PRIOR TO START OF CONSTRUCTION CONTRACTOR REQUIRED TO CONTACT:
   NAME, TITLE: PETER LARIMER, LANDSCAPE ARCHITECT
   PHONE NUMBER: 916-369-3990
   TO SET UP A MEETING ON SITE TO OPERATE THE EXISTING SPRINKLER IRRIGATION SYSTEM AND DISCUSS THE MODIFICATIONS THAT ARE TO BE MADE TO THE EXISTING SYSTEM TO ACCOMMODATE FOR THE NEW CONSTRUCTION.
2. CONTRACTOR TO OPERATE AND PROGRAM EXISTING SPRINKLER IRRIGATION SYSTEM THAT IS TO REMAIN IN ORDER TO PROVIDE WATER TO THE EXISTING LANDSCAPE TO REMAIN.
3. CONTRACTOR TO REMOVE ALL EXISTING PIPE AND SPRINKLER HEADS WHEN THEY ARE IN NEW PLANTING AREAS.
4. CONTRACTOR TO RESTORE AND REPAIR ANY EXISTING SPRINKLER IRRIGATION SYSTEM OR EXISTING LANDSCAPE WHICH IS IN AREAS TO REMAIN THAT IS DAMAGED BY NEW WORK.
5. ALL WORK TO EXISTING SPRINKLER IRRIGATION SYSTEM TO BE COMPLETED PRIOR TO SITE DEMOLITION.

20' 10' 0 20' 40'
SCALE: 1"= 20'-0"

PLEASE RECYCLE

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

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Δ DESCRIPTION DATE

KEYNOTES

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24-25

MTW group
LANDSCAPE ARCHITECTURE AND PLANNING
2707 K Street, Suite 201
Sacramento, CA 95816
916 369-3990

3/28/25
6/30/26

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
IRRIGATION DEMOLITION PLAN

DSA SUBMITTAL

DATE: 04.02.2025
CLIENT PROJ NO: 3431007000
SHEET:
L0.4

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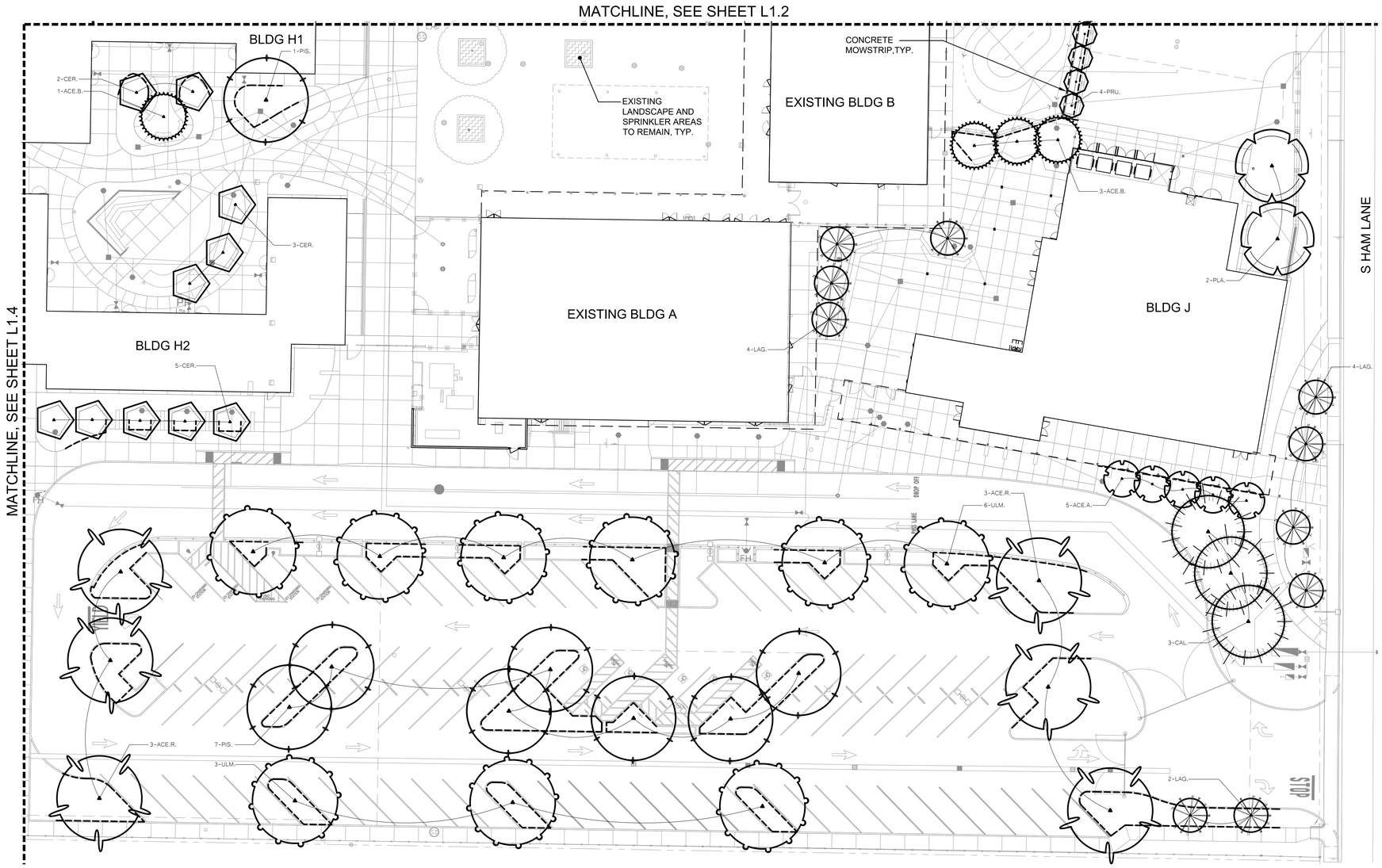

KEY	TREE SHADING LEGEND
	TREES - NOT ALL SYMBOLS SHOWN
	CONCRETE MOWSTRIP
	ROOT BARRIER, INSTALL WHERE SHOWN ON PLANS
7-AAA	PLANT QUANTITY
	PLANT KEY
	EXISTING TREES TO REMAIN
	EXISTING LANDSCAPE AND SPRINKLER AREAS TO REMAIN

TREE MATERIAL LIST

SIZE	QTY.	KEY	BOTANICAL NAME ... COMMON NAME	WATER USE
			TREES:	
24" BOX	5	ACE.A.	ACER RUBRUM 'ARMSTRONG' ... ARMSTRONG MAPLE	MEDIUM
24" BOX	4	ACE.B.	ACER BUERGERANIUM ... TRIDENT MAPLE	MEDIUM
24" BOX	6	ACE.R.	ACER RUBRUM 'RED SUNSET' ... RED MAPLE	MEDIUM
24" BOX	3	CAL.	CALOCEDRUS DECURRENS ... INCENSE CEDAR	MEDIUM
24" BOX	10	CER.	CERCIS CANADENSIS 'OKLAHOMA' ... OKLAHOMA REDBUD	MEDIUM
15" BOX	12	FRT.	15-GALLON FRUIT TREE(VARIETIES TO BE SELECTED BY DISTRICT DURING CONSTRUCTION)	MEDIUM
24" BOX	10	LAG.	LAGERSTROEMIA INDICA ... CRAPE MYRTLE	LOW
24" BOX	9	PIS.	PISTCIA CHINENSIS 'KEITH DAVEY' ... CHINESE PISTACHE	LOW
24" BOX	4	PLA.	PLATANUS ACERIFOLIA 'BLOODGOOD' ... LONDON PLANE TREE	MEDIUM
24" BOX	6	PRU.	PRUNUS CAROLINIANA ... CAROLINA LAUREL CHERRY	LOW
24" BOX	9	ULM.	ULMUS WILSONIANA 'PROSPECTOR' ... PROSPECTOR ELM	LOW
24" BOX	2	VIT.	VITEX AGNUS-CASTUS ... CHASTE TREE	LOW
24" BOX	1	ZEL.	ZELKOVA SERRATA ... SAWLEAF ZELKOVA	MEDIUM

SEE SHEET L4.3 FOR GENERAL LANDSCAPE NOTES.

20' 10' 0 20' 40'

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SHEET NAME:
TREE PLANTING PLAN

DSA SUBMITTAL

DATE: 04.02.2025 CLIENT PROJ NO: 3431007000

SHEET:
L1.1

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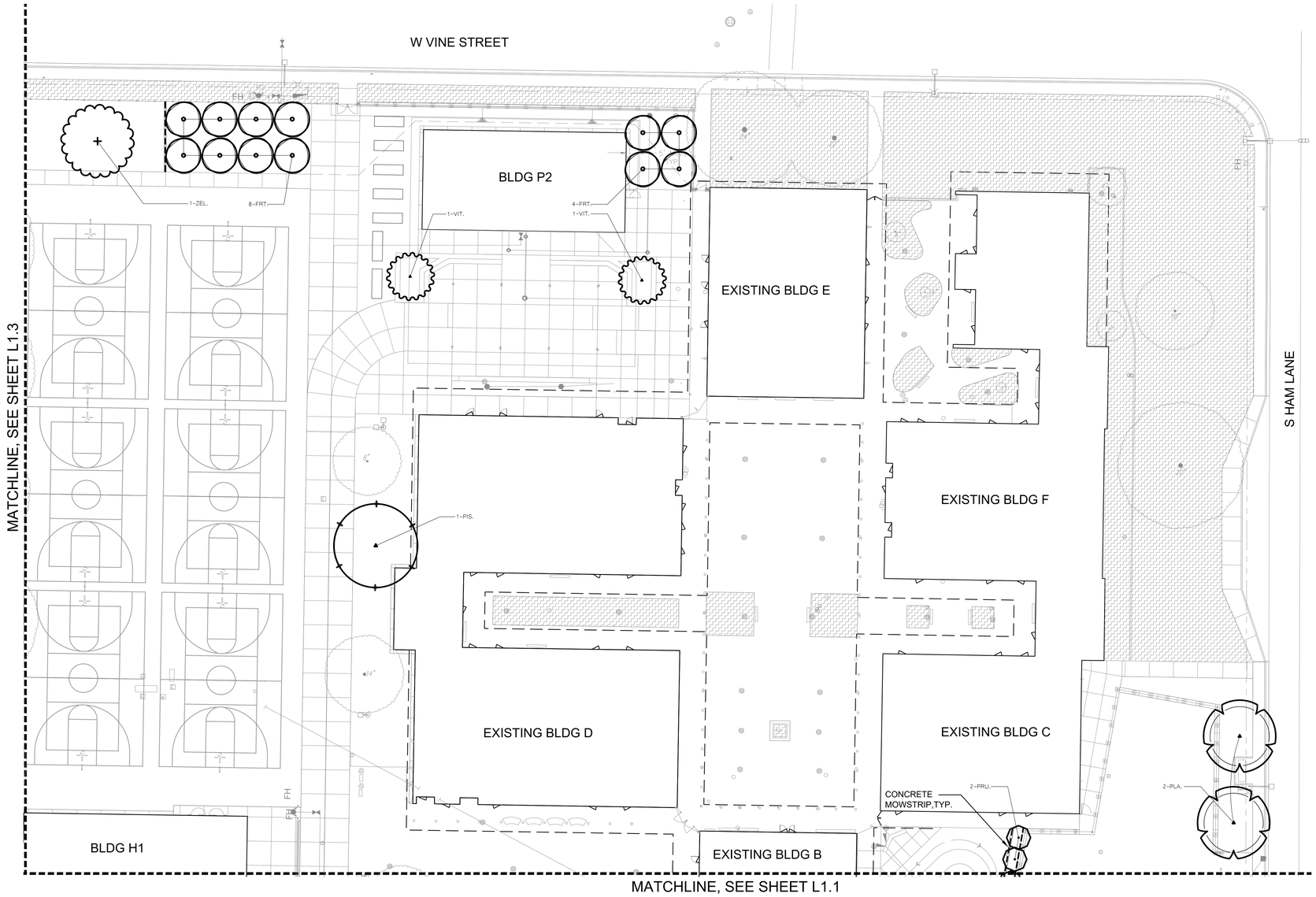

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LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
TREE PLANTING PLAN

DSA SUBMITTAL

DATE: 04.02.2025 | CLIENT PROJ NO: 3431007000

SHEET:
L1.2

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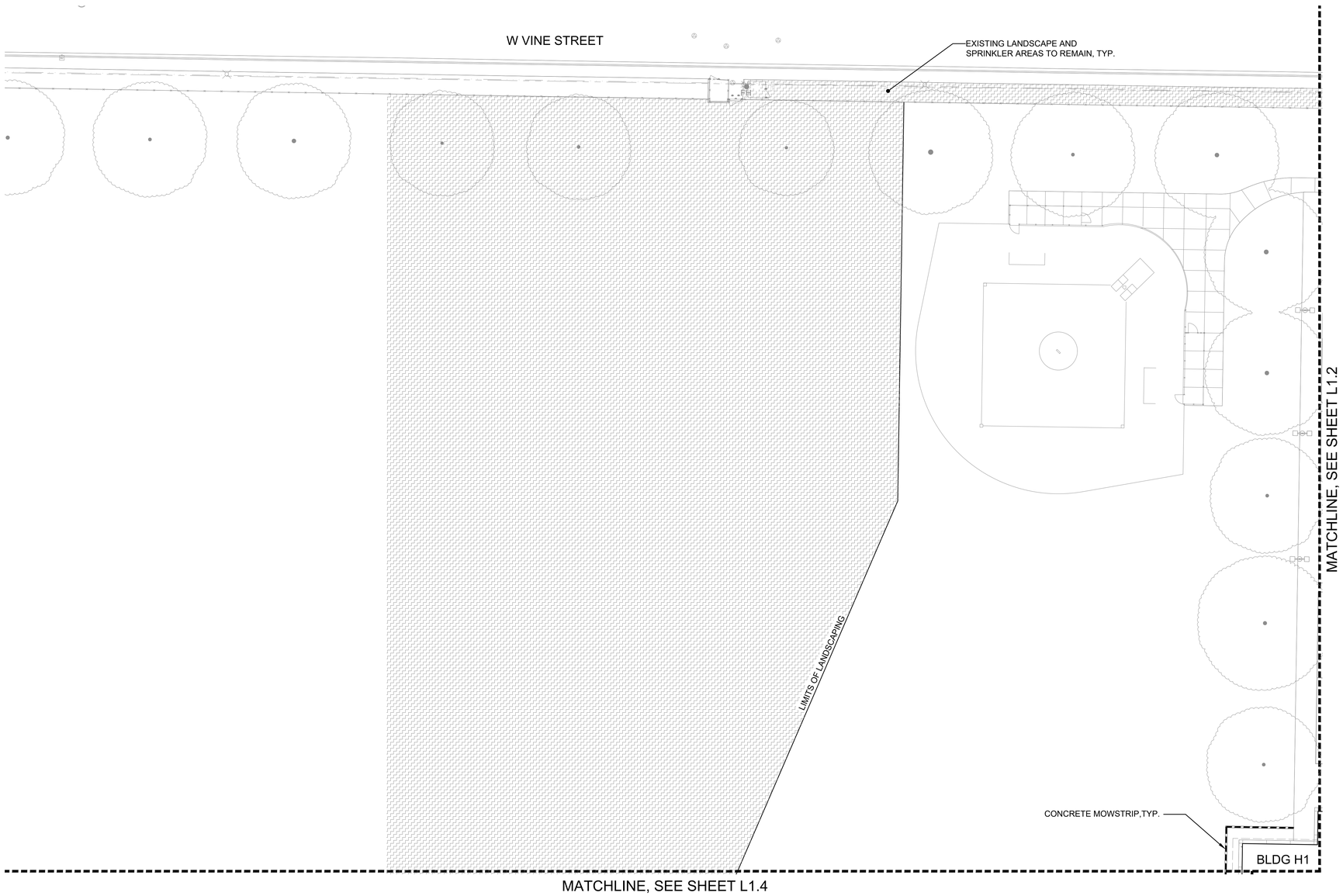

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STATE OF CALIFORNIA

FACILITY:
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945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
TREE PLANTING PLAN

DSA SUBMITTAL

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:

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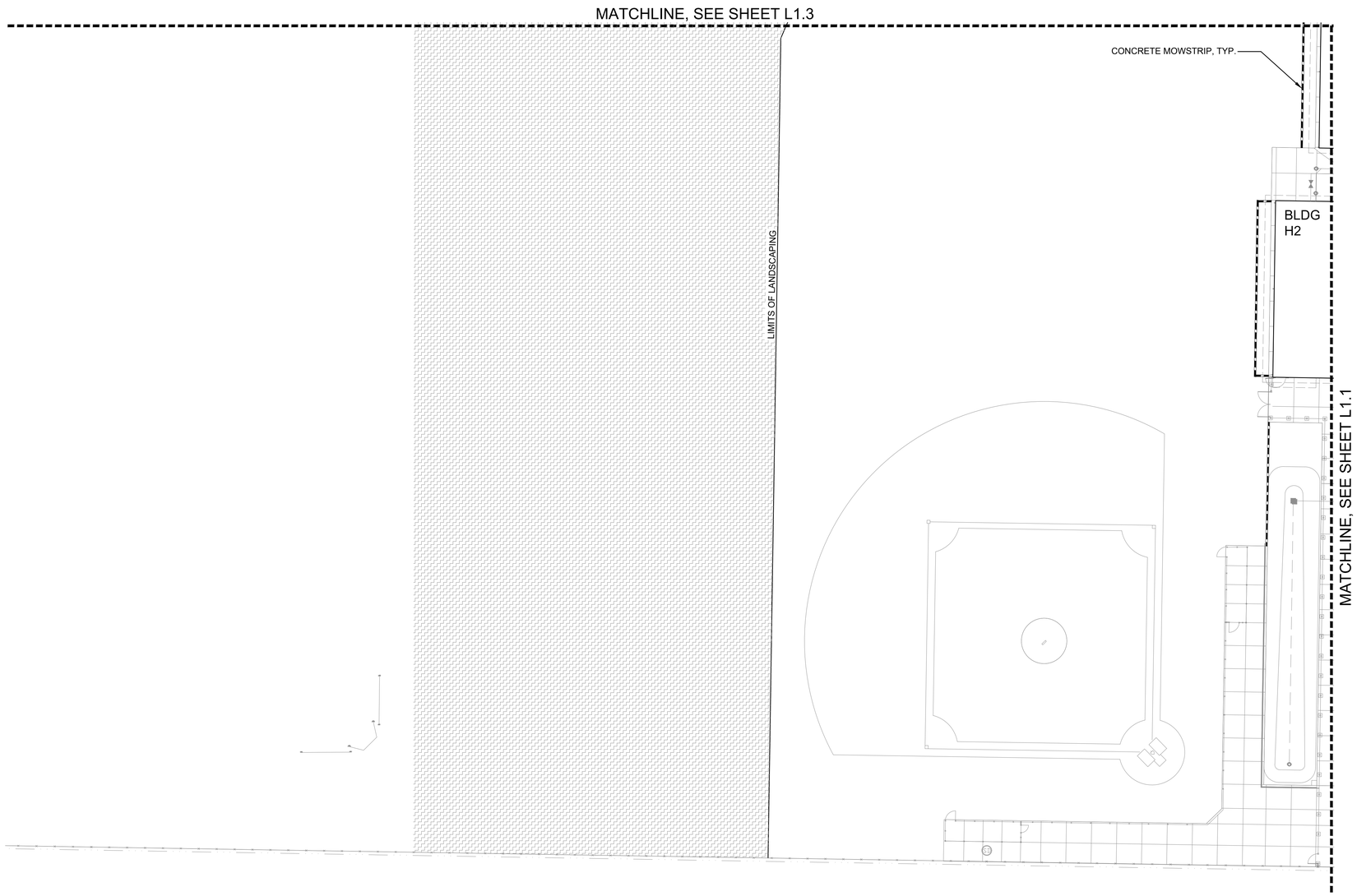

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SEE SHEET L4.3 FOR GENERAL LANDSCAPE NOTES.

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SHEET NAME:
TREE PLANTING PLAN

DSA SUBMITTAL

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

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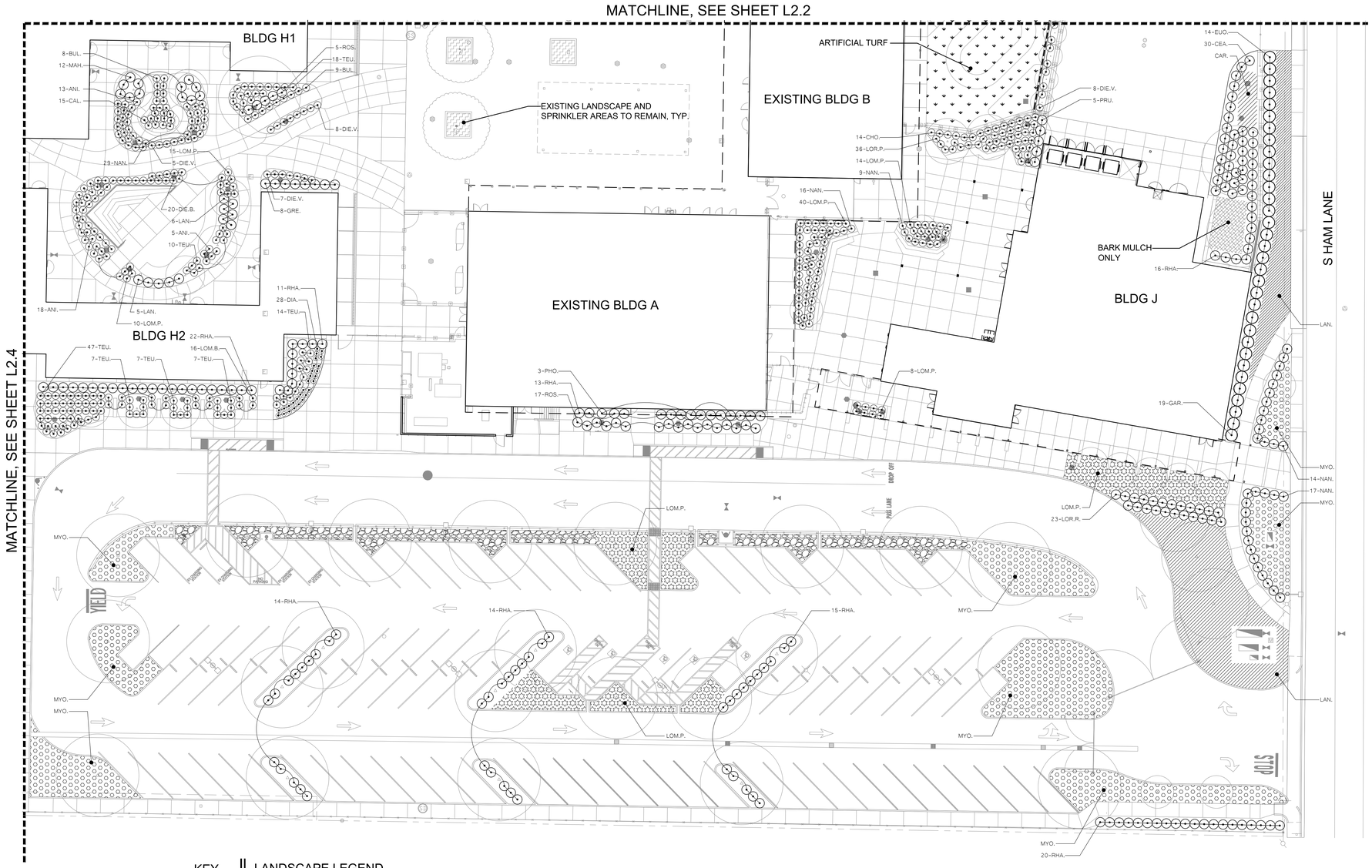

KEY | LANDSCAPE LEGEND

- TREE OUTLINE FOR REFERENCE
- SHRUBS
- LAWN (SOD) — SEE DETAIL 8/L4.1 FOR SOD ADJACENT TO EXISTING LAWN
- ARTIFICIAL TURF — SEE DETAIL 4/L4.3
- DECOMPOSED GRANITE — SEE DETAIL 5/L4.3
- BASEBALL INFIELD MIX — SEE DETAIL 6/L4.3
- GROUNDCOVER
- BIOSWALE PLANTS
- 3/8" SONOMA GOLD CRUSHED ROCK — 2" DEPTH WITH WEED FABRIC
- BARK MULCH ONLY
- EXISTING LANDSCAPE AND SPRINKLER AREAS TO REMAIN
- CONCRETE MOWSTRIP — SEE DETAIL 7/L4.1
- 7 - AAA — PLANT QUANTITY / PLANT KEY
- EXISTING TREES TO REMAIN

PLANT MATERIAL LIST

WATER USE	SIZE	QUANTITY	KEY	BOTANICAL NAME ... COMMON NAME
				SHRUBS:
LOW	5 G.C.	36	ANI.	ANIGOZANTHOS FLAVIDUS ... KANGAROO PAW
MEDIUM	5 G.C.	13	AZA.	AZALEA 'ROBLEU' PP15862 ... ENCORE AUTUMN CHIFFON AZALEA
LOW	5 G.C.	22	BUL.	BULBINE FRUTESCENS 'HALLMARK' ... HALLMARK BULBINE
LOW	5 G.C.	15	CAL.	CALLISTEMON VIMINALIS 'LITTLE JOHN' ... DWARF BOTTLE BRUSH
LOW	5 G.C.	41	CEA.	CEANOTHUS VALLEY VIOLET ... VALLEY VIOLET CEANOTHUS
LOW	3 G.C.	32	CHO.	CHONDROPETALUM TECTORUM ... CAPE RUSH
LOW	5 G.C.	28	DIA.	DIANELLA REVOLUTA 'CLARITY BLUE' ... CLARITY BLUE DIANELLA
LOW	5 G.C.	26	DIE.B.	DIETES BICOLAR ... AFRICAN IRIS
LOW	5 G.C.	32	DIE.V.	DIETES VEGETA ... FORTNIGHT LILY
LOW	15 G.C.	46	EUO.	EUONYMUS JAPONICUS 'AUREOVARIEGATUS' ... GOLD SPOT EUONYMUS
LOW	15 G.C.	8	GAR.	GARDENIA AUGUSTA 'MYSTERY' ... GARDENIA
LOW	5 G.C.	8	GRE.	GREVILLEA 'NOELLII' ... GREVILLEA
LOW	3 G.C.	16	LOM.B.	LOMANDRA LONGIFOLIA 'BREEZE' ... BREEZE MAT RUSH
MEDIUM	5 G.C.	36	LOR.P.	LOROPETALUM CHINENSE 'PURPLE DAYDREAM' ... DWARF LOROPETALUM
MEDIUM	5 G.C.	23	LOR.R.	LOROPETALUM CHINENSE 'RAZZLEBERRY' ... FRINGE FLOWER
LOW	5 G.C.	24	MAH.	MAHONIA 'SOFT CARESS' ... SOFT CARESS MAHONIA
LOW	5 G.C.	6	MUH.	MUHLENBERGIA RIGENS ... DEER GRASS
LOW	5 G.C.	83	NAN.	NANDINA DOMESTICA 'HARBOR DWARF' ... HARBOUR DWARF HEAVENLY BAMBOO
LOW	5 G.C.	3	PHO.	PHORMIUM TENAX 'RUBRUM' ... NEW ZEALAND FLAX
LOW	5 G.C.	5	PRU.	PRUNUS CAROLINIANA 'BRIGHT' N TIGHT' ... CAROLINA LAUREL CHERRY
LOW	5 G.C.	157	RHA.	RHAPHIOLEPIS UMBELLATA 'MINOR' ... YEDDA HAWTHORN
LOW	5 G.C.	22	ROS.	ROSA 'MEISENTMIL' ... LEMON DRIFT CARPET ROSE
LOW	1 G.C.	110	TEU.	TEUCRIUM CHAMAEDRYS ... WALL GERMANDER
				GROUNDCOVER:
LOW	5 G.C.	48" O.C.	LAN.	LANTANA 'GOLD RUSH' ... YELLOW
LOW	5 G.C.	36" O.C.	LOM.P.	LOMANDRA 'PLATINUM BEAUTY' ... PLATINUM BEAUTY LOMANDRA
LOW	5 G.C.	48" O.C.	MYO.	MYOPORUM PARVIFOLIUM ... MYOPORUM
				BIOSWALE PLANTS:
LOW	1 G.C.	30" O.C.	ELY.	ELYMUS CONDENSATUS 'CANYON PRINCE' ... WILD RYE
LOW	1 G.C.	18" O.C.	CAR.	CAREX TESTACEA 'PRAIRIE FIRE' ... PRAIRIE FIRE CAREX

SEE SHEET L4.3 FOR GENERAL LANDSCAPE NOTES.

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LICENSED LANDSCAPE ARCHITECT — JOHN D. LAIRD — 3/28/25 — 6/30/26 — STATE OF CALIFORNIA

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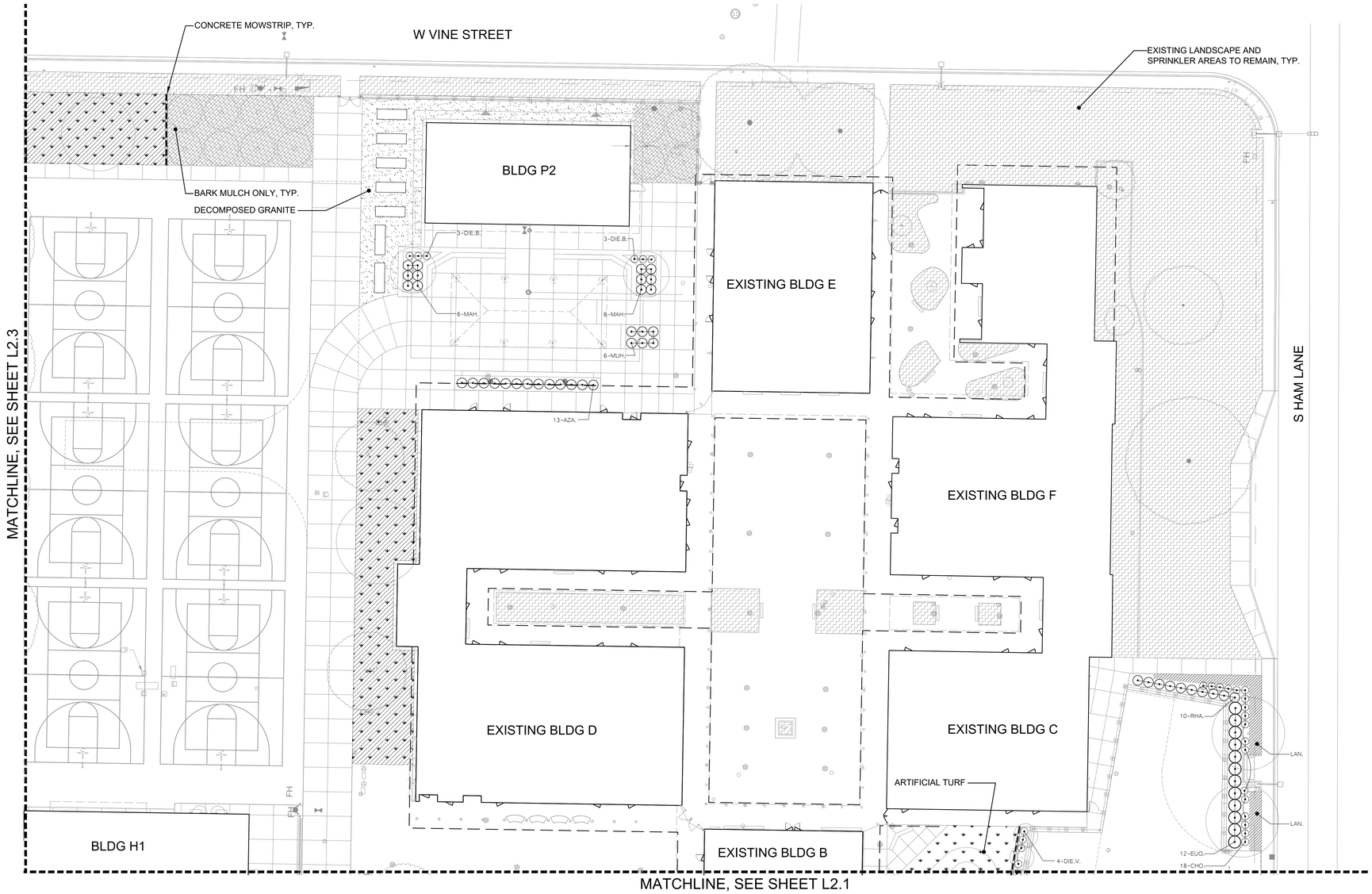

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LOW	5 G.C.	41	CEA.	CEANOTHUS VALLEY VIOLET ... VALLEY VIOLET CEANOTHUS
LOW	3 G.C.	32	CHO.	CHONDROPETALUM TECTORUM ... CAPE RUSH
LOW	5 G.C.	28	DIA.	DIANELLA REVOLUTA 'CLARITY BLUE' ... CLARITY BLUE DIANELLA
LOW	5 G.C.	26	DIE.B.	DIETES BICOLAR ... AFRICAN IRIS
LOW	5 G.C.	32	DIE.V.	DIETES VEGETA ... FORTNIGHT LILY
LOW	15 G.C.	46	EUO.	EUONYMUS JAPONICUS 'AUREOVARIEGATUS' ... GOLD SPOT EUONYMUS
LOW	15 G.C.	8	GAR.	GARDENIA AUGUSTA 'MYSTERY' ... GARDENIA
LOW	5 G.C.	8	GRE.	GREVILLEA NOELLII ... GREVILLEA
LOW	3 G.C.	16	LOM.B.	LOMANDRA LONGIFOLIA 'BREEZE' ... BREEZE MAT RUSH
MEDIUM	5 G.C.	36	LOR.P.	LOROPETALUM CHINENSE 'PURPLE DAYDREAM' ... DWARF LOROPETALUM
MEDIUM	5 G.C.	23	LOR.R.	LOROPETALUM CHINENSE 'RAZZLEBERRI' ... FRINGE FLOWER
LOW	5 G.C.	24	MAH.	MAHONIA 'SOFT CARESS' ... SOFT CARESS MAHONIA
LOW	5 G.C.	6	MUH.	MUHLENBERGIA RIGENS ... DEER GRASS
LOW	5 G.C.	83	NAN.	NANDINA DOMESTICA 'HARBOR DWARF' ... HARBOUR DWARF HEAVENLY BAMBOO
LOW	5 G.C.	3	PHO.	PHORMIUM TENAX 'RUBRUM' ... NEW ZEALAND FLAX
LOW	5 G.C.	5	PRU.	PRUNUS CAROLINIANA 'BRIGHT' N TIGHT' ... CAROLINA LAUREL CHERRY
LOW	5 G.C.	157	RHA.	RHAPHIOLEPIS UMBELLATA 'MINOR' ... YEDDA HAWTHORN
LOW	5 G.C.	22	ROS.	ROSA 'MEISENTMIL' ... LEMON DRIFT CARPET ROSE
LOW	1 G.C.	110	TEU.	TEUCRIUM CHAMAEDRYS ... WALL GERMANDER
				GROUNDCOVER:
LOW	5 G.C.	48" O.C.	LAN.	LANTANA 'GOLD RUSH' ... YELLOW
LOW	5 G.C.	36" O.C.	LOM.P.	LOMANDRA 'PLATINUM BEAUTY' ... PLATINUM BEAUTY LOMANDRA
LOW	5 G.C.	48" O.C.	MYO.	MYOPORUM PARVIFOLIUM ... MYOPORUM
				BIOSWALE PLANTS:
LOW	1 G.C.	30" O.C.	ELY.	ELYMUS CONDENSATUS 'CANYON PRINCE' ... WILD RYE
LOW	1 G.C.	18" O.C.	CAR.	CAREX TESTACEA 'PRAIRIE FIRE' ... PRAIRIE FIRE CAREX

SEE SHEET L4.3 FOR GENERAL LANDSCAPE NOTES.

20' 10' 0 20' 40'
SCALE: 1"= 20'-0"

PLEASE RECYCLE

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE
Δ DESCRIPTION DATE

KEYNOTES

NOTES

24-25

MTW group
LANDSCAPE ARCHITECTURE AND PLANNING
2707 K Street, Suite 201
Sacramento, CA 95816
916 369-3990

3/28/25
6/30/26

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
LANDSCAPE PLANTING PLAN

DSA SUBMITTAL

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
L2.2

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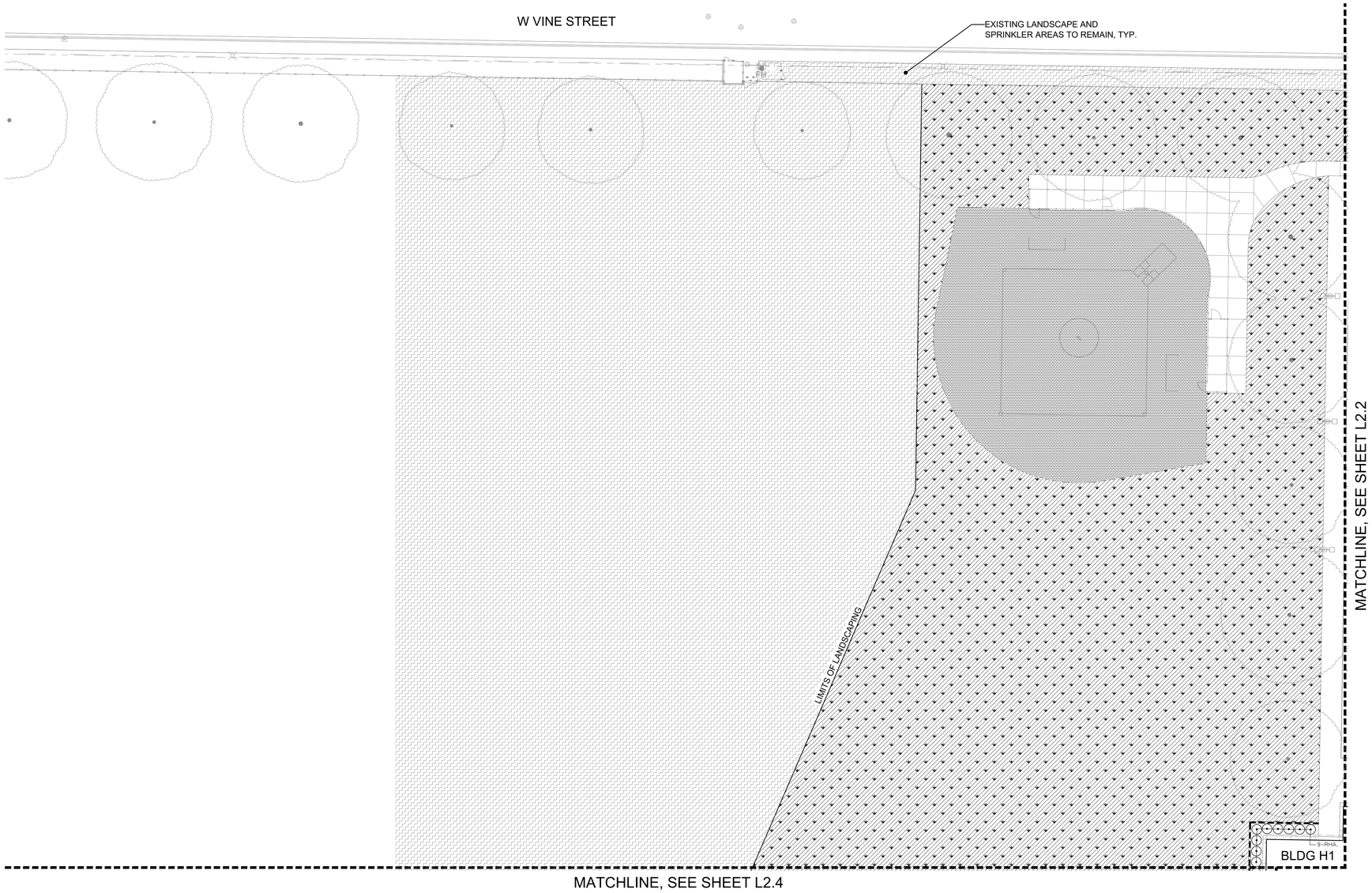

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- TREE OUTLINE FOR REFERENCE
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- CONCRETE MOWSTRIP — SEE DETAIL 7/L4.1
- 7 - AAA — PLANT QUANTITY
- PLANT KEY
- EXISTING TREES TO REMAIN

PLANT MATERIAL LIST

WATER USE	SIZE	QUANTITY	KEY	BOTANICAL NAME ... COMMON NAME
				SHRUBS:
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AGENCY APPROVAL:

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KEYNOTES

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24-25

MTW group
LANDSCAPE ARCHITECTURE AND PLANNING
2707 K Street, Suite 201
Sacramento, CA 95816
916 369-3990

LICENSED LANDSCAPE ARCHITECT
JAMES D. LARSEN
No. 5628
3/28/25
6/30/26
RENEWAL DATE
STATE OF CALIFORNIA

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
LANDSCAPE PLANTING PLAN

DSA SUBMITTAL

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:

L2.3

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SEE SHEET L4.3 FOR GENERAL LANDSCAPE NOTES.

20' 10' 0 20' 40'

SCALE: 1"= 20'-0"

AGENCY APPROVAL:

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DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

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Δ	DESCRIPTION	DATE

KEYNOTES

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24-25

MTW group
LANDSCAPE ARCHITECTURE AND PLANNING
2707 K Street, Suite 201
Sacramento, CA 95816
916 369-3990

LICENSED LANDSCAPE ARCHITECT — JOHN D. LARSEN — 3/28/25 — 6/30/26 — STATE OF CALIFORNIA

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
LANDSCAPE PLANTING PLAN

DSA SUBMITTAL

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

L2.4

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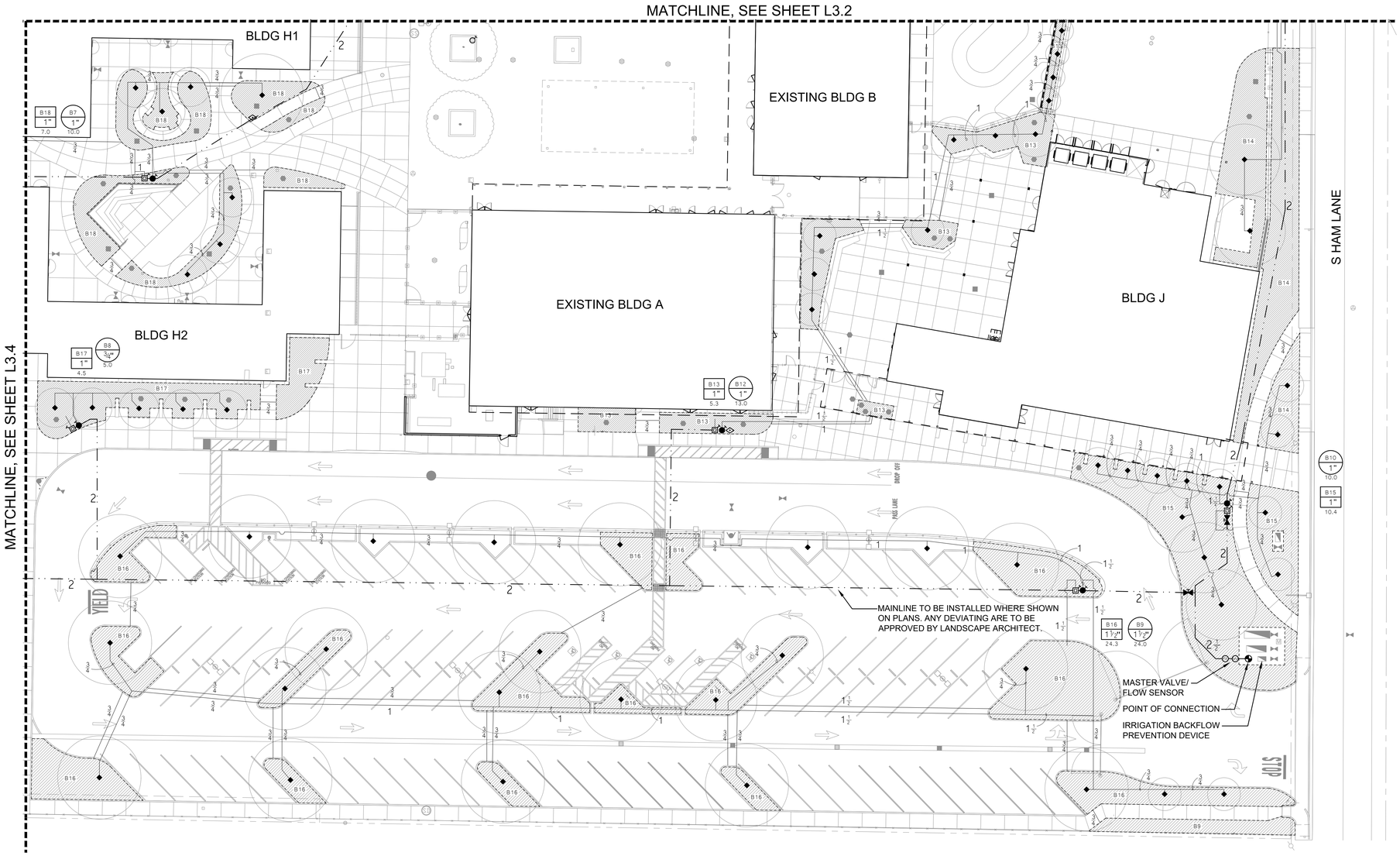

KEY — SPRINKLER IRRIGATION LEGEND

EXISTING AUTOMATIC CONTROLLER:
RAINBIRD ESP-LXME
CONTROLLER "A" - 36 STATIONS, ADD EXPANSION MODULE FOR ADDITIONAL VALVES
CONTROLLER "B" - 20 STATIONS, ADD EXPANSION MODULE FOR ADDITIONAL VALVES

POINT OF CONNECTION:
STATIC WATER PRESSURE PRIOR TO WATER METER: 56 PSI
DYNAMIC WATER PRESSURE AFTER IRRIGATION BACKFLOW DEVICE: 44 PSI
IRRIGATION SYSTEM OPERATING WATER PRESSURE: 40 PSI FOR CAMPUS
IRRIGATION SYSTEM OPERATION WATER PRESSURE: 60 PSI FOR PLAYFIELD
MAX FLOW 110 GPM
CONTRACTOR SHALL LOCATE AS SHOWN.
CONNECT AT THIS POINT AND EXTEND AS INDICATED ON DRAWINGS.

EXISTING BOOSTER PUMP:

MASTER VALVE/FLOW SENSOR ASSEMBLY:
MASTER VALVE = 2" NORMALLY CLOSED GRISWOLD #2000P
FLOW SENSOR = BADGER 200SS INSERT IN 3" SADDLE
FLOW SENSOR TO BE CONNECTED TO AUTOMATIC CONTROLLER WITH RAINBIRD PE-39 WIRE.
MASTER VALVE TO BE CONNECTED TO AUTOMATIC CONTROLLER WITH UF-14 CONTROL WIRES.

GATE VALVE:
TYPE:
3" SIZE AND SMALLER: LEEMCO LGT-XXSS THREADED WITH A NON-RISING STEM AND HANDWHEEL.
GATE VALVE INSTALLED IN A VALVE BOX WITH TOP OF BOX SET FLUSH TO FINISH GRADE.
GATE VALVE TO BE LINE SIZE.

PRESSURE MAIN LINE:
TYPE:
3" SIZE AND SMALLER: ASTM D1785, PVC SCHEDULE 40.
4" SIZE AND LARGER: ASTM D2241 SDR 21, 200 PSI, RUBBER GASKETED.
TRENCH DEPTH:
IN PLANTED AREAS: 24" MINIMUM COVER.
UNDER PAVED AREAS: 24" MINIMUM COVER.
PVC SCHEDULE 40 SLEEVES ARE REQUIRED FOR ALL PIPING UNDER PAVEMENT.

LATERAL LINE:
TYPE:
ASTM D1785, PVC SCHEDULE 40, SOLVENT WELD ALL UNSIZED PIPE SHALL BE 3/4" SIZE.
TRENCH DEPTH:
IN PLANTED AREAS:
POP-UP SPRAY HEADS - 12" MINIMUM COVER.
ROTOR HEADS: - 18" MINIMUM COVER.
BUBBLER HEADS: - 12" MINIMUM COVER.
UNDER PAVED AREAS: 24" MINIMUM COVER.
PVC SCHEDULE 40 SLEEVES ARE REQUIRED FOR ALL PIPING UNDER PAVEMENT.

AUTOMATIC CONTROL VALVE:
RAINBIRD PEB-PRS-D SERIES

EXISTING AUTOMATIC CONTROL VALVE TO REMAIN:

EXISTING SPRINKLER HEAD TO REMAIN:

EXISTING IRRIGATION MAINLINE TO REMAIN:

EXISTING LATERAL LINE TO REMAIN:

KEY — SPRINKLER IRRIGATION LEGEND

QUICK COUPLER VALVE:
RAINBIRD 44NP OR APPROVED EQUAL.
VALVES SHALL HAVE LOCKING RUBBER COVERS, INSTALLED IN VALVE BOXES. TOP OF VALVE BOX SHALL HAVE BOLT DOWN LID AND TOP SET LEVEL TO FINISH GRADE.

LAWN POP-UP ROTOR HEADS:
FULL CIRCLE
RAINBIRD: 6504-PC-SS-10 60 PSI

HALF CIRCLE
RAINBIRD: 6504-PC-SS-10 60 PSI

QUARTER CIRCLE
RAINBIRD: 6504-PC-SS-10 60 PSI

HALF CIRCLE
RAINBIRD: 5004-PC-SAM 35 PSI
NOZZLE SIZE AS SHOWN IN THE PLAN

QUARTER CIRCLE
RAINBIRD: 5004-PC-SAM 35 PSI
NOZZLE SIZE AS SHOWN IN THE PLAN

LAWN POP-UP ROTOR HEADS:
HALF CIRCLE
RAINBIRD: 3504-PC-SAM-2.0 35 PSI

QUARTER CIRCLE
RAINBIRD: 3504-PC-SAM-2.0 35 PSI

LAWN POP-UP SPRAY HEADS (35 PSI):
RAINBIRD: RD06-S-P45 BODY WITH RAINBIRD R-VAN 18 SERIES NOZZLES.
HALF AND QUARTER SPRAY PATTERNS.

TREE BUBBLER HEADS:
RAINBIRD: 1402 BUBBLER NOZZLE WITH INLINE CHECK VALVE.

SHRUB BUBBLER:
EMITTER TO BE RAINBIRD XBT-20 (2 GPH).
IH RISER TO BE BURIED A MINIMUM DEPTH OF 3" BELOW GRADE. HUNTER IH-RISER EXTENSION TO EACH BUBBLER NOT SHOWN. SEE DETAIL 7/L4.2 FOR INSTALLATION.
PVC SCHEDULE 40 LATERAL LINES SHOWN ON PLAN.
UNSIZED PIPE TO BE 3/4" SIZE. PVC SCHEDULE 40 SLEEVES ARE REQUIRED FOR ALL PIPING UNDER PAVEMENT.

B1
- LIMITS OF SHRUB BUBBLER PLACEMENT
- INDICATES HYDROZONE
- PVC SCH 40 LATERAL LINE

AUTOMATIC DRIP IRRIGATION VALVE/FILTER/PRESSURE REGULATOR:
RAINBIRD CONTROL ZONE KIT MODELS XCZ-100-PRB-COM AND XCZ-150-PRB-COM

A1 / 1" / 00 — INDICATES CONTROL VALVE AND STATION NUMBER
A1 / 1" / 0.00 — INDICATES CONTROL VALVE SIZE
INDICATES GALLONS PER MINUTE

EXISTING TREE PROTECTION AREA:
THE PROTECTION AREA UNDER ANY EXISTING TREE THAT IS TO REMAIN IS DEFINED BY ITS DRIP LINE OR CANOPY COVER. WITHIN THIS AREA NO STORAGE OR PARKING WILL BE PERMITTED. ALL TRENCHING WILL BE PERFORMED BY HAND. DO NOT CUT ROOTS 1" IN DIAMETER OR LARGER. USE BORING PROCEDURES WHEN ENCOUNTERING ROOTS 1" SIZE AND LARGER. NO ROOTS ARE TO BE EXPOSED LONGER THAN 48 HOURS.

SEE SHEET L4.3 FOR GENERAL IRRIGATION NOTES.

20' 10' 0 20' 40'
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945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
LANDSCAPE IRRIGATION PLAN

DSA SUBMITTAL

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:
L3.1

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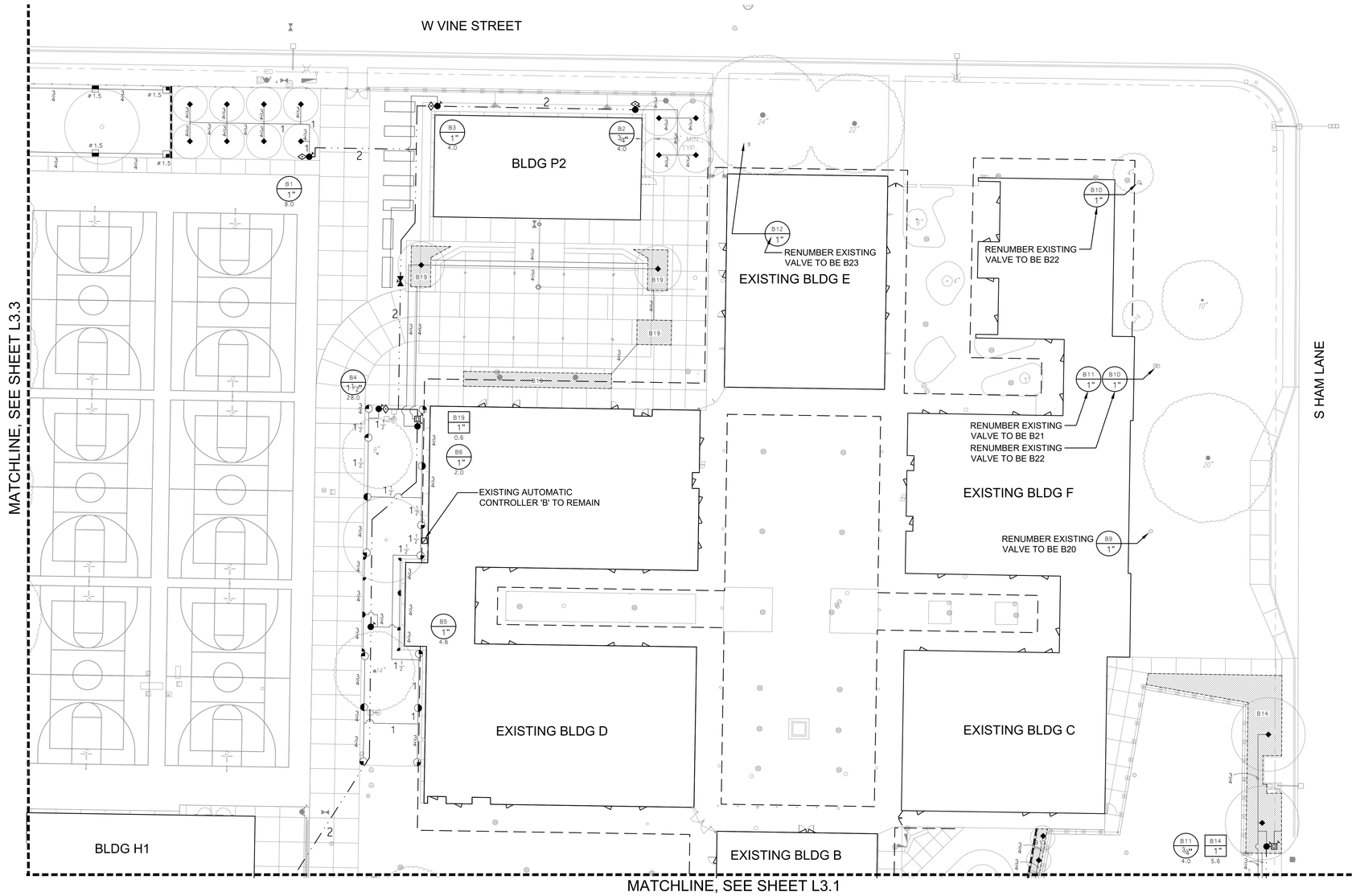

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MASTER VALVE TO BE CONNECTED TO AUTOMATIC CONTROLLER WITH UF-14 CONTROL WIRES.

GATE VALVE:
TYPE:
3" SIZE AND SMALLER: LEEMCO LGT-XXSS THREADED WITH A NON-RISING STEM AND HANDWHEEL.
GATE VALVE INSTALLED IN A VALVE BOX WITH TOP OF BOX SET FLUSH TO FINISH GRADE.
GATE VALVE TO BE LINE SIZE.

PRESSURE MAIN LINE:
TYPE:
3" SIZE AND SMALLER: ASTM D1785, PVC SCHEDULE 40.
4" SIZE AND LARGER: ASTM D2241 SDR 21, 200 PSI, RUBBER GASKETED.
TRENCH DEPTH:
IN PLANTED AREAS: 24" MINIMUM COVER.
UNDER PAVED AREAS: 24" MINIMUM COVER.
PVC SCHEDULE 40 SLEEVES ARE REQUIRED FOR ALL PIPING UNDER PAVEMENT.

LATERAL LINE:
TYPE:
ASTM D1785, PVC SCHEDULE 40, SOLVENT WELD ALL UNSIZED PIPE SHALL BE 3/4" SIZE.
TRENCH DEPTH:
IN PLANTED AREAS:
POP-UP SPRAY HEADS - 12" MINIMUM COVER.
ROTOR HEADS: - 18" MINIMUM COVER.
BUBBLER HEADS: - 12" MINIMUM COVER.
UNDER PAVED AREAS: 24" MINIMUM COVER.
PVC SCHEDULE 40 SLEEVES ARE REQUIRED FOR ALL PIPING UNDER PAVEMENT.

AUTOMATIC CONTROL VALVE:
RAINBIRD PEB-PRS-D SERIES

EXISTING AUTOMATIC CONTROL VALVE TO REMAIN:

EXISTING SPRINKLER HEAD TO REMAIN:

EXISTING IRRIGATION MAINLINE TO REMAIN:

EXISTING LATERAL LINE TO REMAIN:

KEY | SPRINKLER IRRIGATION LEGEND

QUICK COUPLER VALVE:
RAINBIRD 44NP OR APPROVED EQUAL.
VALVES SHALL HAVE LOCKING RUBBER COVERS, INSTALLED IN VALVE BOXES. TOP OF VALVE BOX SHALL HAVE BOLT DOWN LID AND TOP SET LEVEL TO FINISH GRADE.

LAWN POP-UP ROTOR HEADS:
FULL CIRCLE
RAINBIRD: 6504-FC-SS-10 60 PSI

HALF CIRCLE
RAINBIRD: 6504-PC-SS-10 60 PSI

QUARTER CIRCLE
RAINBIRD: 6504-PC-SS-10 60 PSI

HALF CIRCLE
RAINBIRD: 5004-PC-SAM 35 PSI
NOZZLE SIZE AS SHOWN IN THE PLAN

QUARTER CIRCLE
RAINBIRD: 5004-PC-SAM 35 PSI
NOZZLE SIZE AS SHOWN IN THE PLAN

LAWN POP-UP ROTOR HEADS:
HALF CIRCLE
RAINBIRD: 3504-PC-SAM-2.0 35 PSI

QUARTER CIRCLE
RAINBIRD: 3504-PC-SAM-2.0 35 PSI

LAWN POP-UP SPRAY HEADS (35 PSI):
RAINBIRD: RD06-S-P45 BODY WITH RAINBIRD R-VAN 18 SERIES NOZZLES.
HALF AND QUARTER SPRAY PATTERNS.

TREE BUBBLER HEADS:
RAINBIRD: 1402 BUBBLER NOZZLE WITH INLINE CHECK VALVE.

SHRUB BUBBLER:
EMITTER TO BE RAINBIRD XBT-20 (2 GPH).
IH RISER TO BE BURIED A MINIMUM DEPTH OF 3" BELOW GRADE. HUNTER IH-RISER EXTENSION TO EACH BUBBLER NOT SHOWN. SEE DETAIL 7/L4.2 FOR INSTALLATION.
PVC SCHEDULE 40 LATERAL LINES SHOWN ON PLAN.
UNSIZED PIPE TO BE 3/4" SIZE. PVC SCHEDULE 40 SLEEVES ARE REQUIRED FOR ALL PIPING UNDER PAVEMENT.

B1 — LIMITS OF SHRUB BUBBLER PLACEMENT
INDICATES HYDROZONE
PVC SCH 40 LATERAL LINE

AUTOMATIC DRIP IRRIGATION VALVE/FILTER/PRESSURE REGULATOR:
RAINBIRD CONTROL ZONE KIT MODELS XCZ-100-PRB-COM AND XCZ-150-PRB-COM

A1 / 1" / 60 — INDICATES CONTROL VALVE AND STATION NUMBER
A1 / 1" / 0.00 — INDICATES CONTROL VALVE SIZE
INDICATES GALLONS PER MINUTE

EXISTING TREE PROTECTION AREA:
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SEE SHEET L4.3 FOR GENERAL IRRIGATION NOTES.

20' 10' 0 20' 40'
SCALE: 1"= 20'-0"

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LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

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MTW group
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2707 K Street, Suite 201
Sacramento, CA 95816
916 369-3990

3/28/25 6/30/26

FACILITY:
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945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
LANDSCAPE IRRIGATION PLAN

DSA SUBMITTAL

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
L3.2

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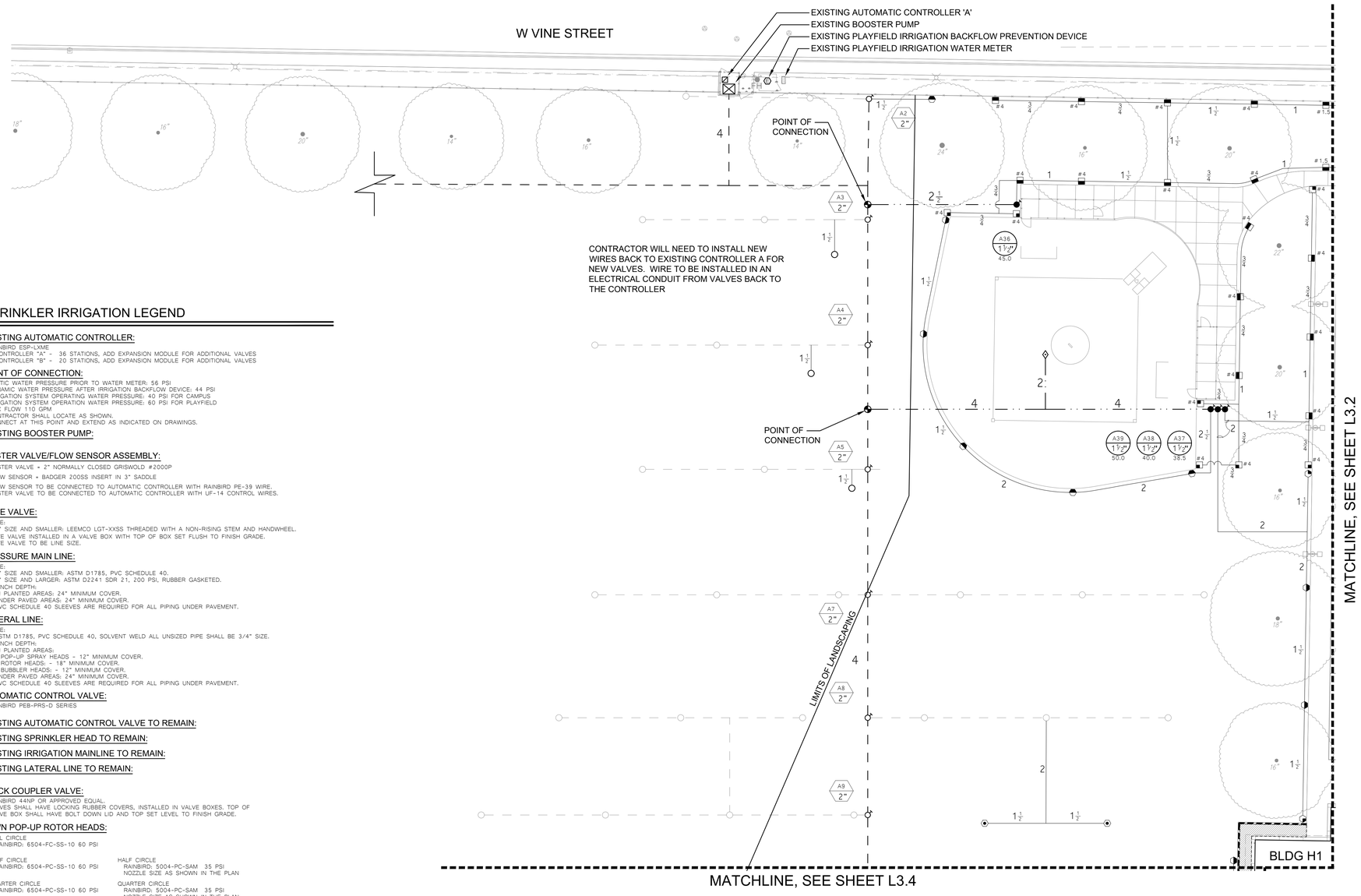

KEY | SPRINKLER IRRIGATION LEGEND

EXISTING AUTOMATIC CONTROLLER:
RAINBIRD ESP-LXME
CONTROLLER "A" - 36 STATIONS, ADD EXPANSION MODULE FOR ADDITIONAL VALVES
CONTROLLER "B" - 20 STATIONS, ADD EXPANSION MODULE FOR ADDITIONAL VALVES

POINT OF CONNECTION:
STATIC WATER PRESSURE PRIOR TO WATER METER: 56 PSI
DYNAMIC WATER PRESSURE AFTER IRRIGATION BACKFLOW DEVICE: 44 PSI
IRRIGATION SYSTEM OPERATING WATER PRESSURE: 40 PSI FOR CAMPUS
IRRIGATION SYSTEM OPERATION WATER PRESSURE: 60 PSI FOR PLAYFIELD
MAX FLOW 110 GPM
CONTRACTOR SHALL LOCATE AS SHOWN.
CONNECT AT THIS POINT AND EXTEND AS INDICATED ON DRAWINGS.

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MASTER VALVE/FLOW SENSOR ASSEMBLY:
MASTER VALVE = 2" NORMALLY CLOSED GRISWOLD #2000P
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TYPE:
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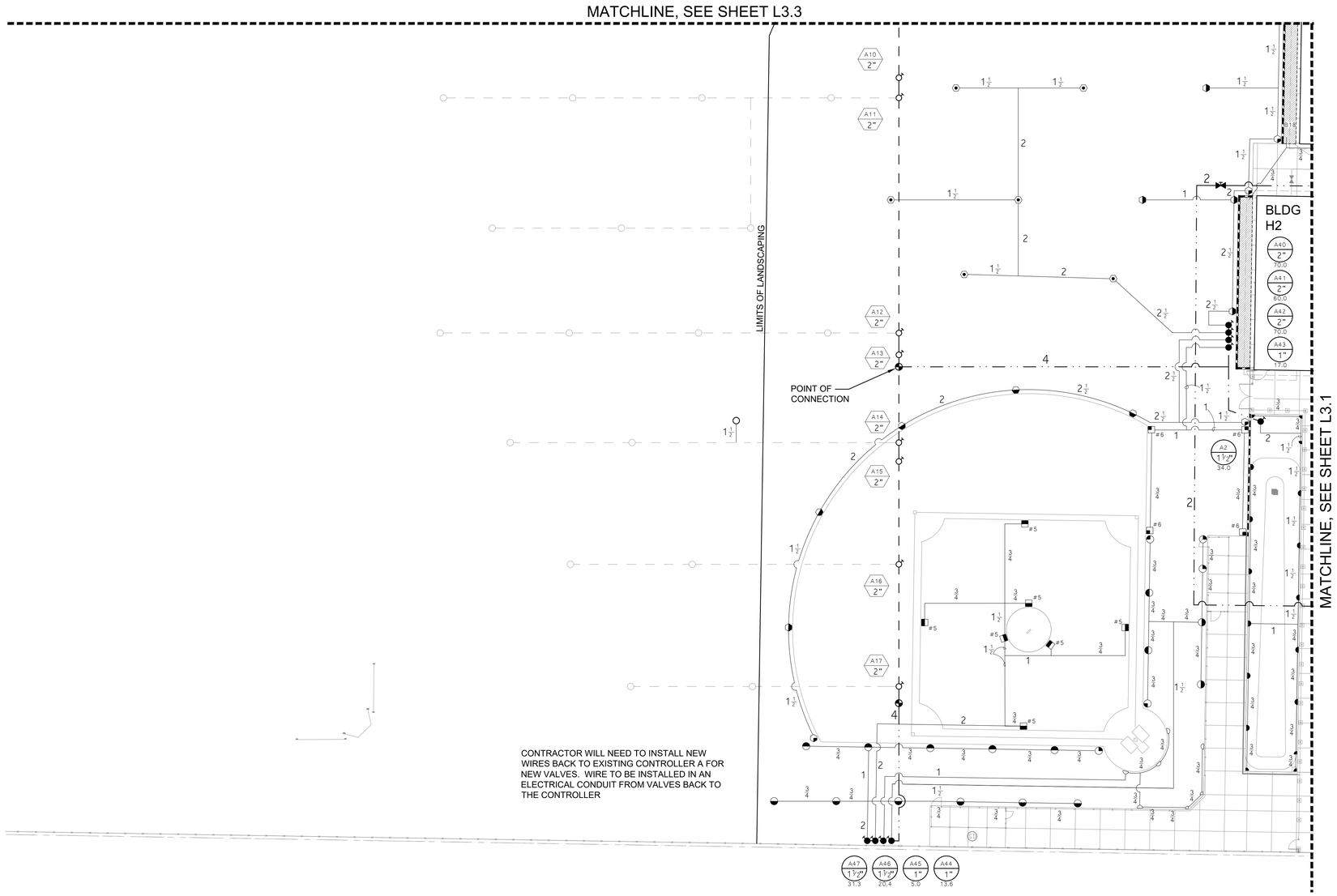

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RAINBIRD: 6504-PC-SS-10 60 PSI

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SHEET:
L3.4

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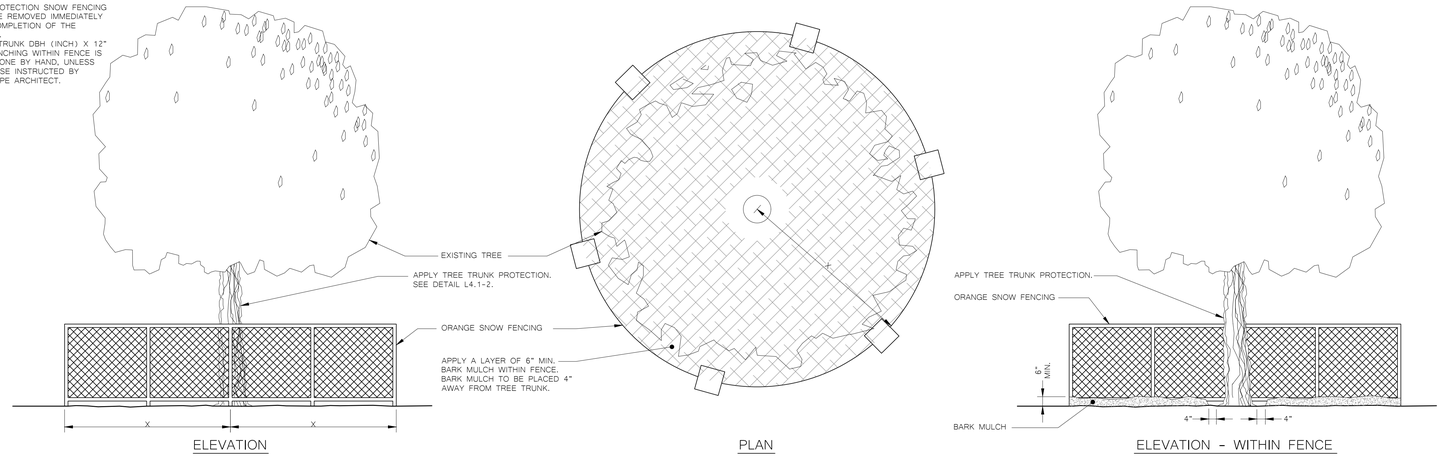
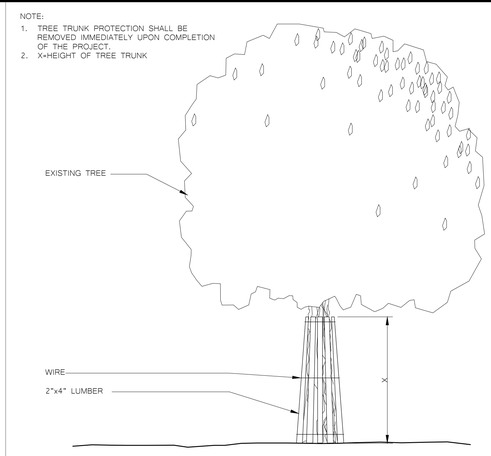
NOTE:
1. TREE PROTECTION SNOW FENCING SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF THE PROJECT.
2. X=TREE TRUNK DBH (INCH) X 12"
3. ALL TRENCHING WITHIN FENCE IS TO BE DONE BY HAND, UNLESS OTHERWISE INSTRUCTED BY LANDSCAPE ARCHITECT.



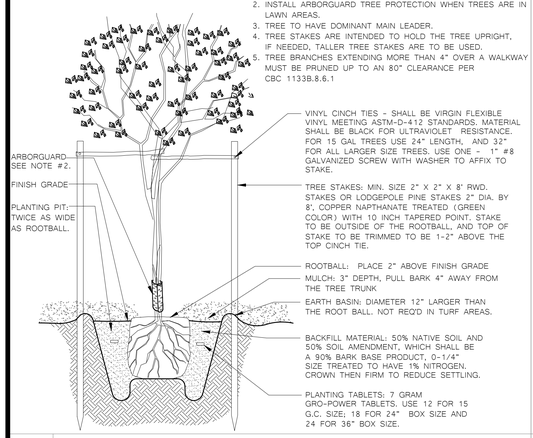
1 TREE PROTECTION FENCING DETAIL

NOTE:
1. TREE TRUNK PROTECTION SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF THE PROJECT.
2. X=HEIGHT OF TREE TRUNK



2 TREE TRUNK PROTECTION DETAIL

NOTES:
1. VITAMIN B-1: SUPERTHRIVE, LIQUINOX START OR EQUAL. APPLY AS PER MANUFACTURER'S INSTRUCTIONS WITH THE SECOND WATERING OF THE BASIN.
2. INSTALL ARBORGUARD TREE PROTECTION WHEN TREES ARE IN LAWN AREAS.
3. TREE TO HAVE DOMINANT MAIN LEADER.
4. TREE STAKES ARE INTENDED TO HOLD THE TREE UPRIGHT, IF NEEDED. TALLER TREE STAKES ARE TO BE USED.
5. TREE BRANCHES EXTENDING MORE THAN 4" OVER A WALKWAY MUST BE PRUNED UP TO AN 80" CLEARANCE PER CBC 1133B.8.6.1



3 TREE PLANTING AND STAKING DETAIL

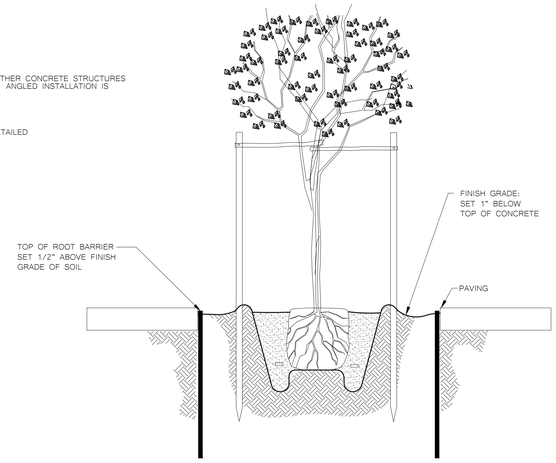
NOTE:
1. SEE TREE PLANTING DETAIL FOR ADDITIONAL INFORMATION.

TREE ROOT BARRIER PROTECTION

1. CONTRACTOR TO REMOVE ALL CONCRETE SPOILS FROM FLATWORK, CURBS OR OTHER CONCRETE STRUCTURES TO ENSURE THE ROOT BARRIER IS ADJACENT TO THE CONCRETE AND VERTICAL. ANGLED INSTALLATION IS NOT ACCEPTABLE.
2. TREE SHALL BE LOCATED IN CENTER OR MIDPOINT OF PLANTER.
3. TREE ROOT BARRIER IS TO BE INSTALLED IN LOCATIONS SHOWN ON THE PLANS.
4. TREE ROOT BARRIER SHALL BE INSTALLED ADJACENT TO EDGE OF PAVING AS DETAILED
5. PLACE ROOT BARRIER SO THAT VERTICAL RIBS FACE TOWARD THE TREE.

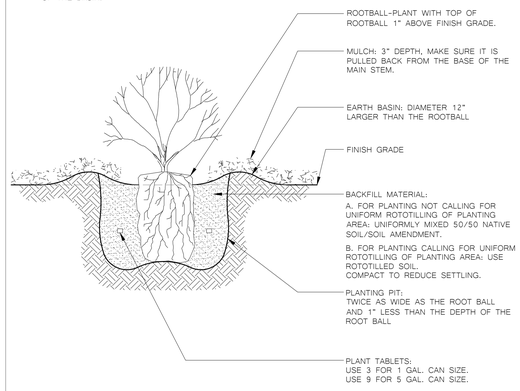
ROOT BARRIER
BY: DEEP ROOT PARTNERS OR NDS INC. OR APPROVED EQ.

15 GAL SIZE TREE OR LARGER:
24" MODULAR ROOT BARRIER PANEL



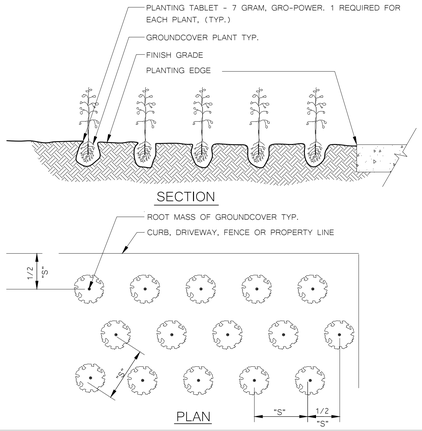
4 ROOT BARRIER CONTROL DETAIL

NOTE: VITAMIN B-1 SUPERTHRIVE LIQUINOX OR EQUAL. APPLY AS PER MANUFACTURE'S INSTRUCTIONS WITH SECOND WATERING OF THE BASIN.



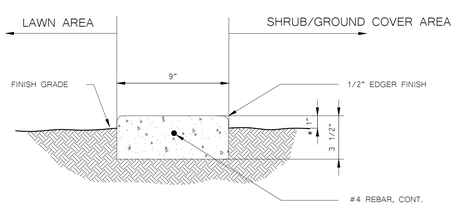
5 SHRUB PLANTING DETAIL

NOTE:
1. "S" INDICATES SPACING SHOWN ON PLAN
2. GROUNDCOVER AREA TO RECIEVE 3" DEPTH OF BARK MULCH



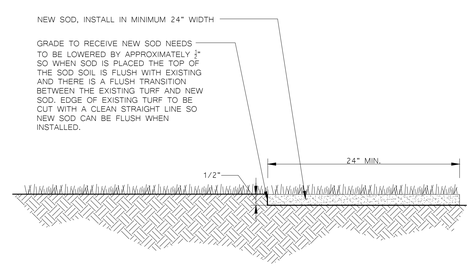
6 GROUNDCOVER/ANNUAL PLANTING DETAIL

NOTES:
1. USE 1/2" FELT EXPANSION JOINT MATERIAL AT ALL CHANGES OF DIRECTIONS AND AT 10' O.C.
*2. WHEN SURFACE DRAINAGE IS INTENDED TO FLOW TOWARD AND ACROSS MOWSTRIP, SOIL SURFACE SHALL BE FLUSH WITH TOP OF MOWSTRIP. UNLESS OTHERWISE NOTED SOIL SHALL BE 1" BELOW TOP OF MOWSTRIP.
3. ALL CONCRETE SHALL BE 5 SACK MIX, 2800 PSI AT 28 DAYS AFTER POUR.
4. FINISH SHALL BE FINE BROOM.



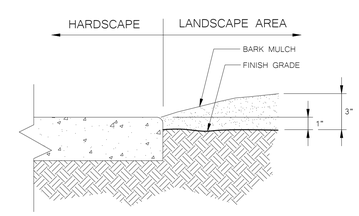
7 9" CONCRETE MOWSTRIP DETAIL

NOTE:
1. SEE SPECIFICATIONS FOR SOD BLEND.



8 TURF REPAIR WITH SOD DETAIL

NOTES:
1. FINISH GRADE OF SOIL TO BE 1" BELOW ADJACENT HARDSCAPE FOR BOTH LAWN AREAS AND PLANTER BED AREAS
2. BARK MULCH DEPTH DOES NOT DICTATE THE ELEVATION OF THE FINISH GRADE
3. BARK MULCH TO BE FEATHERED DOWN TO 1" DEPTH, 12" FROM EDGE OF HARDSCAPE



9 LANDSCAPE GRADE ADJACENT TO HARDSCAPE DETAIL

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PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
LANDSCAPE PLANTING DETAILS

DSA SUBMITTAL

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:

L4.1

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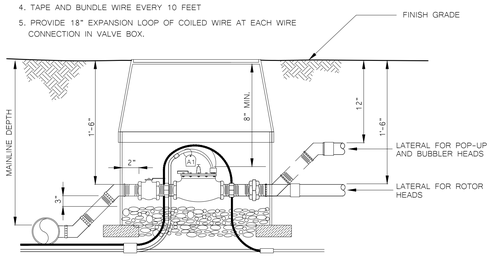
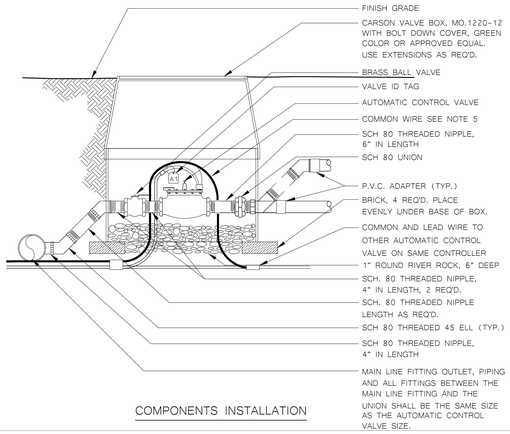
NOTES:
1. SET VALVE BOX LEVEL WITH FINISH GRADE.
2. INSTALL VALVE BOX EXTENSIONS AS REQUIRED.
3. CONNECT ALL WIRES WITH WEATHER TIGHT CONNECTORS. SPLICES IN WIRE SHALL BE PERMITTED ONLY AT VALVE LOCATIONS.
4. TAPE AND BUNDLE WIRE EVERY 10 FEET
5. PROVIDE 18" EXPANSION LOOP OF COILED WIRE AT EACH WIRE CONNECTION IN VALVE BOX.



6. FOR VALVES WITH PRESSURE REGULATION FEATURE, SET VALVE PRESSURE AS PER MANUFACTURERS RECOMMENDATIONS TO THE PRESSURE AS FOLLOWS:

POP-UP SPRAY HEADS:	30 PSI
INTERMEDIATE POP-UP ROTOR HEADS:	50 PSI
POP-UP ROTOR HEADS:	70 PSI
BUBBLER HEADS:	30 PSI

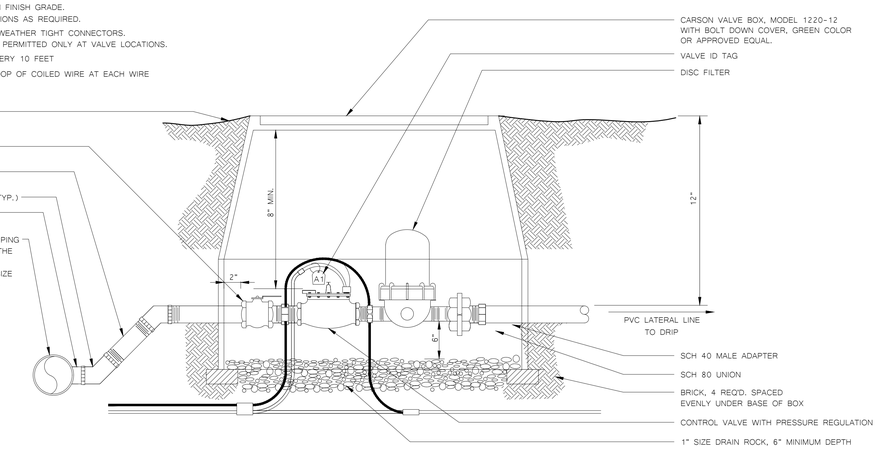
VALVE BOX, SETTINGS, AND CLEARANCES



COMPONENTS INSTALLATION

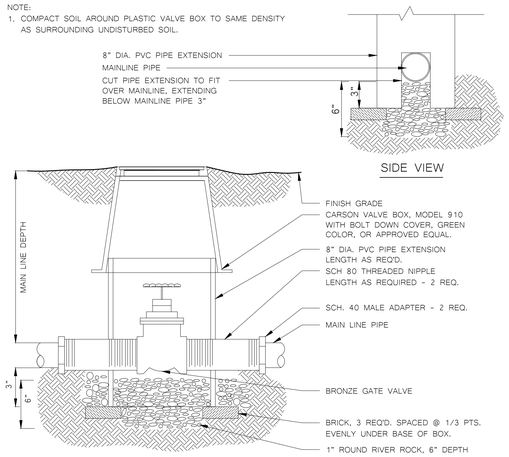
1 AUTOMATIC CONTROL VALVE/BALL VALVE DETAIL

NOTES:
1. SET VALVE BOX LEVEL WITH FINISH GRADE.
2. INSTALL VALVE BOX EXTENSIONS AS REQUIRED.
3. CONNECT ALL WIRES WITH WEATHER TIGHT CONNECTORS. SPLICES IN WIRE SHALL BE PERMITTED ONLY AT VALVE LOCATIONS.
4. TAPE AND BUNDLE WIRE EVERY 10 FEET
5. PROVIDE 18" EXPANSION LOOP OF COILED WIRE AT EACH WIRE CONNECTION IN VALVE BOX.



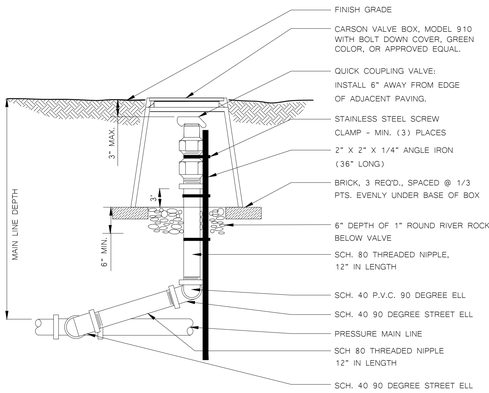
2 PRESSURE REGULATOR DRIP IRRIGATION VALVE DETAIL

NOTE:
1. COMPACT SOIL AROUND PLASTIC VALVE BOX TO SAME DENSITY AS SURROUNDING UNDISTURBED SOIL.



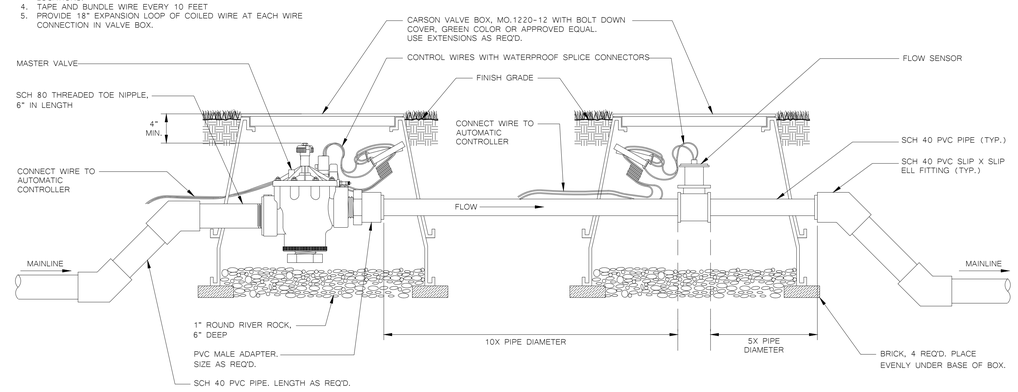
3 GATE VALVE DETAIL, 3" SIZE AND SMALLER

NOTES:
1. INSTALL VALVE BOXES SO THAT THE TOP OF THE BOX IS FLUSH WITH THE TOP OF ADJACENT SURFACE.
2. USE TEFLON TAPE ON ALL THREADED CONNECTIONS.

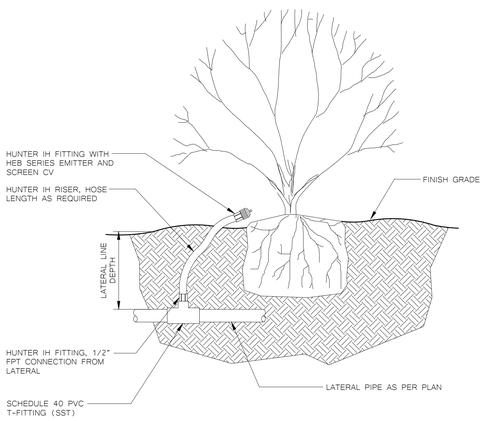


5 QUICK COUPLING VALVE DETAIL

NOTES:
1. SET VALVE BOX LEVEL WITH FINISH GRADE.
2. INSTALL VALVE BOX EXTENSIONS AS REQUIRED.
3. CONNECT ALL WIRES WITH WEATHER TIGHT CONNECTORS. SPLICES IN WIRE SHALL BE PERMITTED ONLY AT VALVE LOCATIONS.
4. TAPE AND BUNDLE WIRE EVERY 10 FEET
5. PROVIDE 18" EXPANSION LOOP OF COILED WIRE AT EACH WIRE CONNECTION IN VALVE BOX.

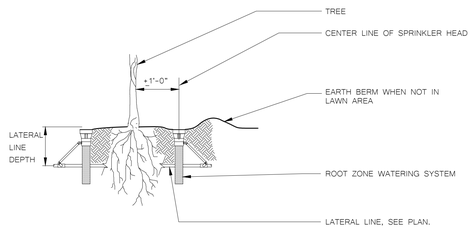


6 MASTER VALVE AND FLOW SENSOR DETAIL



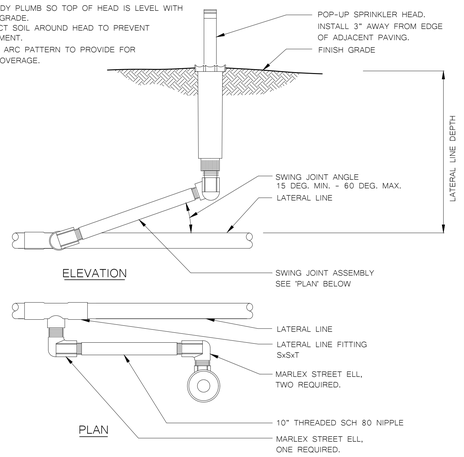
7 SHRUB BUBBLER DETAIL

NOTES:
1. SEE TREE PLANTING DETAIL FOR ADDITIONAL INFORMATION.
2. INSTALL RZWS SLEEVE OVER TUBE TO HELP PREVENT SOIL INTRUSION.



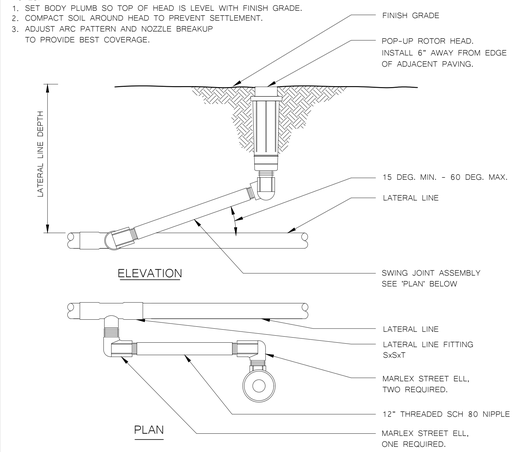
8 TREE BUBBLER HEAD DETAIL

NOTES:
1. SET BODY PLUMB SO TOP OF HEAD IS LEVEL WITH FINISH GRADE.
2. COMPACT SOIL AROUND HEAD TO PREVENT SETTLEMENT.
3. ADJUST ARC PATTERN TO PROVIDE FOR BEST COVERAGE.



9 POP-UP SPRINKLER HEAD DETAIL

NOTES:
1. SET BODY PLUMB SO TOP OF HEAD IS LEVEL WITH FINISH GRADE.
2. COMPACT SOIL AROUND HEAD TO PREVENT SETTLEMENT.
3. ADJUST ARC PATTERN AND NOZZLE BREAKUP TO PROVIDE BEST COVERAGE.



10 POP-UP ROTOR HEAD DETAIL

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SHEET NAME:
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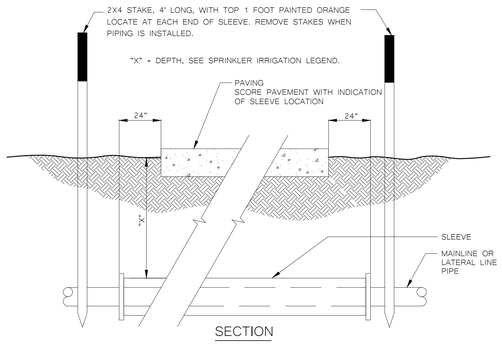
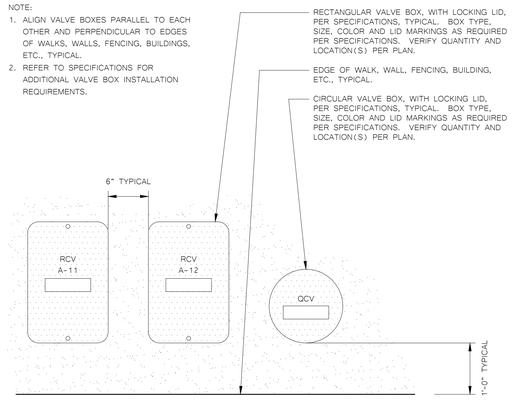
NOTES:
1. ALL PIPE AND FITTINGS TO BE SCHEDULE 40, P.V.C. SEE PLAN FOR LOCATION.
2. SLEEVES TO BE LARGE ENOUGH TO ACCEPT THE PIPE AND FITTINGS TO BE ENCASED.
3. PROVIDE A SEPARATE SLEEVE FOR EACH LATERAL OR MAIN CROSSING.
4. PROVIDE A SEPARATE SLEEVE FOR CONTROL WIRE
5. TAPE ALL ENDS WITH DUCT TAPE TO PREVENT ENTRY OF SOIL.



SECTION

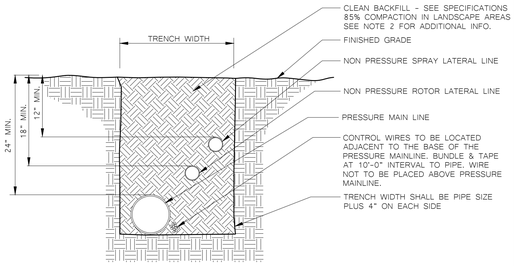
1 SLEEVE DETAIL

NOTE:
1. ALIGN VALVE BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGES OF WALKS, WALLS, FENCING, BUILDINGS, ETC., TYPICAL.
2. REFER TO SPECIFICATIONS FOR ADDITIONAL VALVE BOX INSTALLATION REQUIREMENTS.



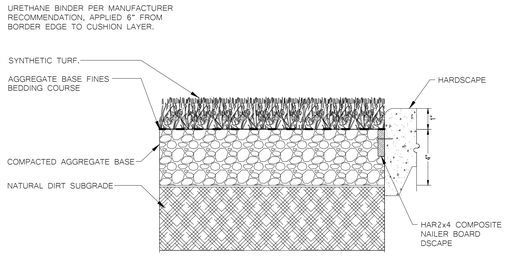
2 TYPICAL VALVE BOX LAYOUT

NOTES:
1. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.
2. WHEN TRENCHES ARE LOCATED UNDER PAVEMENT, COMPACTION RATE FOR THE BACKFILL SHALL COMPLY WITH THE COMPACTION RATES REQUIRED FOR THOSE PAVING SECTIONS.
3. PIPES TO HAVE A MINIMUM OF 6" HORIZONTAL SEPARATION WHEN PLACED IN THE SAME TRENCH ALONG WITH A MINIMUM OF 6" VERTICAL SEPARATION BETWEEN PIPES.



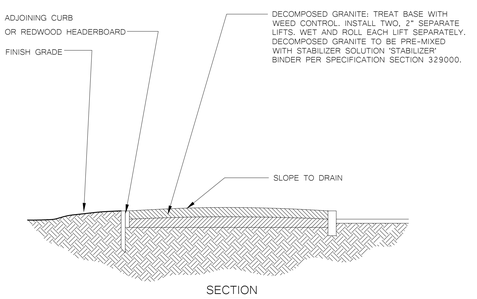
3 PIPE TRENCH DETAIL

NOTE:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH SPECIFICATIONS BY FACTORY AUTHORIZED INSTALLERS.
2. GRASS MUST BE INSTALLED AND SEAMED WITH ADJACENT PIECES RUNNING IN THE SAME DIRECTION.
3. INSTALL CLASS TWO AGGREGATE BASE FINES TO FILL IN VOID AND SMOOTH SURFACE OF AGGREGATE BASE.



4 ARTIFICIAL TURF DETAIL (WITHOUT ATTENUATION)

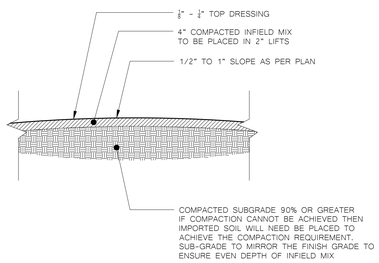
NOTES:
1. SUBMIT SAMPLE TO ARCHITECT FOR APPROVAL PRIOR TO ORDERING.
2. DECOMPOSED GRANITE SHALL HAVE A MIXTURE OF FINE TO 3/8" SIZE PARTICLES WITH NO CLODS.
3. THE MATERIAL SHALL BE FREE OF VEGETATION, OTHER SOILS, DEBRIS AND ROCKS.
4. THE MATERIAL SHALL BE REDDISH-TAN IN COLOR.
5. THE MATERIAL SHALL BE OF SUCH NATURE THAT IT CAN BE COMPACTED READILY UNDER WATERING AND ROLLING.



SECTION

5 DECOMPOSED GRANITE/BINDER DETAIL

NOTES:
1. SUBMIT SAMPLE TO ARCHITECT FOR APPROVAL PRIOR TO ORDERING.
2. ACHIEVE 85% TO 90% COMPACTION BASED ON ASTM D698-21
3. SCARIFY THE SURFACE BETWEEN LIFTS TO FACILITATE BONDING OF THE NEXT LIFT READILY UNDER WATERING AND ROLLING.



SECTION

6 INFIELD MIX DETAIL

GENERAL LANDSCAPE REQUIREMENTS/NOTES

1. NO PLANTING SHALL BE STARTED UNTIL SPRINKLER IRRIGATION SYSTEM HAS BEEN TESTED BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE AND NOTED DEFICIENCIES CORRECTED.
2. NO PLANTING SHALL BE STARTED UNTIL SOIL PREPARATION AND FINISH GRADING OPERATIONS HAVE BEEN COMPLETED AND APPROVED BY THE OWNER'S REPRESENTATIVE.
3. QUANTITIES SHOWN ON PLANT MATERIAL LIST ARE APPROXIMATE. PROVIDE QUANTITIES INDICATED ON LANDSCAPE PLAN.
4. PLANT MATERIAL IS SUBJECT TO APPROVAL OF OWNER'S REPRESENTATIVE.
5. SEE SHEET L4.1 FOR PLANTING INSTALLATION DETAILS.

ENVIRONMENTAL REQUIREMENTS:

GENERAL: PROCEED WITH WORK IN ORDERLY AND TIMELY MANNER TO COMPLETE INSTALLATION OF LANDSCAPING WITHIN CONTRACT LIMITS.

PROTECTION:

EXISTING CONSTRUCTION: EXECUTE WORK IN AN ORDERLY AND CAREFUL MANNER TO PROTECT NEW CONCRETE WALKS, WORK OF OTHER TRADES, AND OTHER IMPROVEMENTS.

EXISTING UTILITIES: DETERMINE LOCATION OF UNDERGROUND UTILITIES AND PERFORM WORK IN A MANNER WHICH WILL AVOID POSSIBLE DAMAGE. HAND EXCAVATE, AS REQUIRED, TO MINIMIZE POSSIBILITY OF DAMAGE TO UNDERGROUND UTILITIES. MAINTAIN GRADE STAKES SET BY OTHERS UNTIL REMOVAL IS MUTUALLY AGREED UPON BY ALL PARTIES CONCERNED. BE RESPONSIBLE FOR PROTECTION OF EXISTING UTILITIES WITHIN CONSTRUCTION AREA; REPAIR DAMAGE TO UTILITIES THAT OCCUR AS A RESULT OF OPERATIONS OF THIS WORK.

LANDSCAPING: PROTECT LANDSCAPE WORK AND MATERIALS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES AND TRESPASSERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR OR REPLACE DAMAGED LANDSCAPE WORK AS DIRECTED AT NO ADDITIONAL COST TO CONTRACT.

ADVERSE CONDITIONS: WHEN CONDITIONS DETRIMENTAL TO SOD OR PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS, NOTIFY OWNER'S REPRESENTATIVE BEFORE STARTING WORK.

PLANTING AND TURF INSTALLATION SEASONS AND CONDITIONS

NO WORK SHALL BE DONE WHEN GROUND IS FROZEN, SNOW COVERED, TOO WET OR IN AN OTHERWISE UNSUITABLE CONDITION FOR AMENDING SOIL, FINISH GRADING OR PLANTING.

SOIL TESTING/SOIL IMPROVEMENT:

SEE SPECIFICATIONS 32 90 00, SECTION 3.02 SOIL TESTING AND SECTION 3.03 PREPARATION.

SOIL PERCOLATION

EXCAVATE 10 PLANTING PITS IN RANDOM AREAS OF SITE. FILL EXCAVATED PLANTING PITS WITH WATER TO 1/2 DEPTH OF PIT. PITS SHOULD DRAIN WITHIN 4 HOURS. IF PLANTING PITS DO NOT DRAIN, NOTIFY INSPECTOR IMMEDIATELY. PLANTING SHALL NOT BE STARTED UNTIL OWNER'S REPRESENTATIVE HAS RESOLVED A METHOD TO REMEDY DRAINAGE ISSUE.

PLANT MATERIAL STANDARDS

PLANTS SHALL BE IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) ANSI Z60.1-AMERICAN STANDARD FOR NURSERY STOCK, EXCEPT AS OTHERWISE STATED IN SPECIFICATIONS OR SHOWN ON DRAWINGS. WHERE DRAWINGS OR SPECIFICATIONS ARE IN CONFLICT WITH ANSI Z60.1, DRAWINGS AND SPECIFICATIONS SHALL PREVAIL. PRUNE, THIN OUT AND SHAPE TREES IN ACCORDANCE WITH ANSI STANDARD HORTICULTURAL PRACTICE. PRUNE TREES TO RETAIN REQUIRED HEIGHT AND SPREAD, UNLESS OTHERWISE DIRECTED BY LANDSCAPE ARCHITECT. DO NOT CUT TREE LEADERS, AND REMOVE ONLY INJURED OR DEAD BRANCHES FROM FLOWERING TREES.

EXISTING LANDSCAPE AND SPRINKLER IRRIGATION SYSTEM

WORK LIMITS OF THIS PROJECT EXTEND INTO AREAS THAT WERE PREVIOUSLY DEVELOPED UNDER OTHER CONTRACTS. PRIOR TO START OF WORK, CONTRACTOR SHALL MEET WITH OWNER'S REPRESENTATIVE TO LOCATE ALL CONNECTIONS CALLED FOR ON DRAWINGS. WORK LIMITS/FENCING SHALL BE LAID OUT BY CONTRACTOR AND VERIFIED BY OWNER'S REPRESENTATIVE. FENCE TO BE INSTALLED AND IRRIGATION SYSTEM SHALL BE TESTED WITH CONTRACTOR, INSPECTOR, AND OWNER'S REPRESENTATIVE PRESENT. DEFICIENCIES SHALL BE NOTED AT THIS TIME AND ARE THE RESPONSIBILITY OF OWNER. AT COMPLETION OF WORK, SYSTEM WILL AGAIN BE TESTED, DEFICIENCIES NOTED AT THIS TIME THAT WERE NOT NOTED PREVIOUSLY WILL BE RESPONSIBILITY OF CONTRACTOR. EXISTING LANDSCAPE THAT HAS BEEN DAMAGED DUE TO CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION BY CONTRACTOR AT NO ADDITIONAL COST TO OWNER. PRIOR TO MAKING ANY CONNECTION TO MAIN LINE, CONTRACTOR SHALL NOTIFY OWNER 1 WEEK IN ADVANCE SO ADJUSTMENTS TO EXISTING WATERING PROGRAMS CAN BE MADE.

SPRINKLER IRRIGATION NOTES

1. COMPOSITE BASE SHEET: PROPOSED IMPROVEMENTS SHOWN ON DRAWINGS ARE SUPERIMPOSED ON A COMPOSITE BASE SHEET. THE COMPOSITE BASE SHEET IS A COMPILATION OF ARCHITECTURAL, ENGINEERING, AND OTHER DATA THAT IS PROVIDED. THE LANDSCAPE ARCHITECT SHALL NOT BE HELD LIABLE FOR CHANGES, INACCURACIES, OMISSIONS, OR ERRORS PERTAINING TO THE COMPOSITE BASE SHEET. CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THESE DOCUMENTS. ANY DISCREPANCIES NEED TO BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM AND RESOLVED PRIOR TO CONTINUATION OF WORK.
2. DESIGN PRESSURE SHOWN ON PLANS HAS BEEN FURNISHED BY WATER COMPANY OR WATER DISTRICT SERVING SITE. VERIFY PRESSURE ON-SITE PRIOR TO THE INSTALLATION OF ANY SPRINKLER IRRIGATION EQUIPMENT. IF THERE IS A DISCREPANCY, NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY IN WRITING SO ADJUSTMENTS CAN BE MADE BY LANDSCAPE ARCHITECT. FAILURE TO REPORT DISCREPANCIES AND CONTINUANCE OF WORK WILL RESULT IN ALL RE-DESIGN COSTS BEING CHARGED TO CONTRACTOR.
3. DETERMINE LOCATION OF UNDERGROUND UTILITIES. DAMAGE CAUSED BY INSTALLATION OF THIS WORK SHALL BE REPAIRED TO SATISFACTION OF GOVERNING AGENCY OR OWNER AT NO ADDITIONAL COST TO THE CONTRACT.
4. SPRINKLER OVER SPRAY SHALL NOT BE ALLOWED ON PUBLIC SIDEWALKS, BUILDING WALLS OR FENCES. MINIMUM OVERSPRAY MAY OCCUR IN PARKING AREAS. USE ADJUSTABLE NOZZLES WHENEVER POSSIBLE TO CONTROL SPRINKLER OVERSPRAY.
5. ALL LOCAL CODES AND ORDINANCES SHALL BE COMPLIED WITH. IF THERE IS A CONFLICT, NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY.
6. TESTING:
   A. PRESSURE TEST ALL UNDERGROUND PIPING AS FOLLOWS:
      SYSTEMS WITH BOOSTER PUMP:
         MAIN LINE - AT 100 PSI FOR 4 HOURS.
         LATERAL LINES - AT 100 PSI FOR 2 HOURS.
      SYSTEMS WITH OUT BOOSTER PUMP:
         MAIN LINE - AT STATIC PSI FOR 4 HOURS.
         LATERAL LINES - AT STATIC PSI FOR 2 HOURS.
   B. COVERAGE TEST: NOTE: PRIOR TO REQUESTING COVERAGE TEST, INSURE ALL HEADS ARE SET PLUMB, NOZZLES ARE ADJUSTED PROPERLY AND SYSTEM HAS BEEN CHECKED FOR AUTOMATION. REQUEST OWNER'S REPRESENTATIVES PRESENCE ON-SITE WHEN SPRINKLER SYSTEM IS COMPLETELY INSTALLED AND FULLY AUTOMATIC. PROVIDE ADEQUATE PERSONNEL AT THIS MEETING TO ADJUST AND FINE TUNE SYSTEM TO SATISFACTION OF OWNER'S REPRESENTATIVE.
7. LAYOUT ALL WORK PRIOR TO TRENCHING OPERATIONS TO DETERMINE IF MINOR MODIFICATIONS OR ADJUSTMENTS WILL BE REQUIRED.
8. INSTALL ALL SPRINKLER HEADS PERPENDICULAR TO SLOPES OR GRADE.
9. CONTROL WIRE SHALL BE UF-14, COLOR FOR LEAD AND WHITE FOR COMMON. SPLICES SHALL BE PERMITTED AT VALVE BOX LOCATIONS ONLY.
10. PROVIDE AND INSTALL AUTOMATIC CONTROLLER AND UF-14 CONTROL WIRE. ELECTRICAL SUBCONTRACTOR SHALL PROVIDE 110V SERVICE AND SERVICE HOOKUP FROM POWER SOURCE TO AUTOMATIC CONTROLLER.
11. COORDINATE ALL WORK WITH OTHER TRADES SO PROGRESS OF WORK IS NOT INTERRUPTED AND CAN BE COMPLETED IN A TIMELY MANNER.
12. NO PLANTING SHALL BE STARTED UNTIL ALL SPRINKLER WORK HAS BEEN TESTED AND APPROVED IN PRESENCE OF OWNER'S REPRESENTATIVE.
13. FOR SPRINKLER IRRIGATION INSTALLATION DETAILS, SEE SHEET NO. L4.2.

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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

24-25

MTW group
LANDSCAPE ARCHITECTURE AND PLANNING
2707 K Street, Suite 201
Sacramento, CA 95816
916 369-3990

3/28/25
6/30/26
STATE OF CALIFORNIA

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
IRRIGATION DETAILS, LANDSCAPE AND IRRIGATION NOTES

DSA SUBMITTAL

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

L4.3

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IRRIGATION SCHEDULE TABLE

STATION #/HYDROZONE	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION TYPE	FLOW (GPM)	PRECIP. RATE (PR) INCH/HR	IRRIGATION EFFICIENCY (IE)	SOIL TYPE	ROOT DEPTH	SLOPE	EXPOSURE	MAINTENANCE PERIOD (X/Y Z GAL)																													
											JANUARY			FEBUARY			MARCH			APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMEBER			DECEMBER		
1	LAWN - HIGH	0.8	ROTATOR NOZZLE	420.0	1.83	0.75	SANDY LOAM	6"	0-5%	FULL SUN	0	/1	0 GAL	0	/1	0 GAL	0	/1	0 GAL	15	/2	56,808 GAL	16	/3	90,893 GAL	13	/5	121,731 GAL	15	/5	136,339 GAL	10	/6	116,862 GAL	15	/3	84,400 GAL	24	/1	43,823 GAL	0	/1	0 GAL	0	/1	0 GAL
2	TREE- MED	0.5	BUBBLER	150.0	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN	0	/1	0 GAL	0	/1	0 GAL	0	/1	0 GAL	32	/2	42,972 GAL	35	/3	68,756 GAL	28	/5	92,083 GAL	31	/5	103,133 GAL	22	/6	88,400 GAL	32	/3	63,844 GAL	50	/1	33,150 GAL	0	/1	0 GAL	0	/1	0 GAL
3	SHRUB - LOW	0.2	SPRAY	110.0	0.50	0.75	SANDY LOAM	12-24"	0-5%	FULL SUN	0	/1	0 GAL	0	/1	0 GAL	0	/1	0 GAL	14	/2	13,614 GAL	15	/3	21,782 GAL	12	/5	29,172 GAL	13	/5	32,673 GAL	10	/6	28,005 GAL	14	/3	20,226 GAL	22	/1	10,502 GAL	0	/1	0 GAL	0	/1	0 GAL
MONTHLY RAINFALL (CITY)												4.2			3.8			3.1			1.2			0.6			0.2			0.1			0.1			0.4			1			2.6			2.8	
MONTHLY ET (CITY)												1.1	JAN		1.7	FEB		3.1	MAR		4.7	APR		6.2	MAY		7.7	JUN		8.5	JUL		7.3	AUG		5.6	SEP		3.7	OCT		1.7	NOV		1.0	DEC
MONTHLY TOTALS (GAL)													0 GAL			0 GAL			0 GAL			634 GAL			1,014 GAL			1,359 GAL			1,522 GAL			1,304 GAL			942 GAL			489 GAL			0 GAL			0 GAL

IRRIGATION HYDROZONE INFORMATION TABLE

STATION #/HYDROZONE	PLANT WATER USE TYPE	PLANT FACTOR (PF)	HYDROZONE AREA (HA) (SQ.FT.)	PF x HA (SQ.FT.)	IRRIGATION EFFICIENCY (IE)	ETWU (GALLONS)
1	LAWN - HIGH	0.8	105,922	84737.6	0.75	3,271,323
2	TREE- MED	0.5	1,440	720.0	0.81	25,737
3	SHRUB - LOW	0.2	38,462	7692.4	0.75	296,968
		TOTAL AREA	145,824		ETWU TOTAL	3,594,028
		TOTAL AREA (SLA)	105,922			
Eto (Sacramento)	46.7					
ESTIMATED TOTAL WATER USAGE (ETWU) = (ETo)(0.62)((PF)(HA)/IE+SLA) = GAL/YEAR						
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) = (ETo)(0.62)[(0.65 x LA)+(0.35 x SLA)] = GAL/YEAR						
					MAWA TOTAL	3,817,825

LANDSCAPE HYDROZONE INFORMATION TABLE

STATION #/HYDROZONE	PLANT WATER USE TYPE	IRRIGATION TYPE	HYDROZONE AREA (HA) (SQ.FT.)	% OF TOTAL LANDSCAPE AREA
1	LAWN - HIGH	ROTOR	105,922	74.6%
2	TREE- MED	BUBBLER	1,440	0.9%
3	SHRUB - LOW	SPRAY	38,462	24.5%
		TOTAL AREA	156,957	100.0%

Plant Water Use Type		Plant Factor
Very Low		0 - 0.1
Low		0.2 - 0.3
Medium		0.4 - 0.6
High		0.7 - 1.0
SLA		1.0
Irrigation Efficiency		**IE**
Overhead		0.75
Drip		0.81

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LODI UNIFIED SCHOOL DISTRICT

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SACRAMENTO, CA, 95816
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24-25

MTW group
LANDSCAPE ARCHITECTURE AND PLANNING
2707 K Street, Suite 201
Sacramento, CA 95816
916 369-3990

3/28/25 EXPIRATION DATE 6/30/26

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
IRRIGATION CHARTS

DSA SUBMITTAL

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:
L5.1

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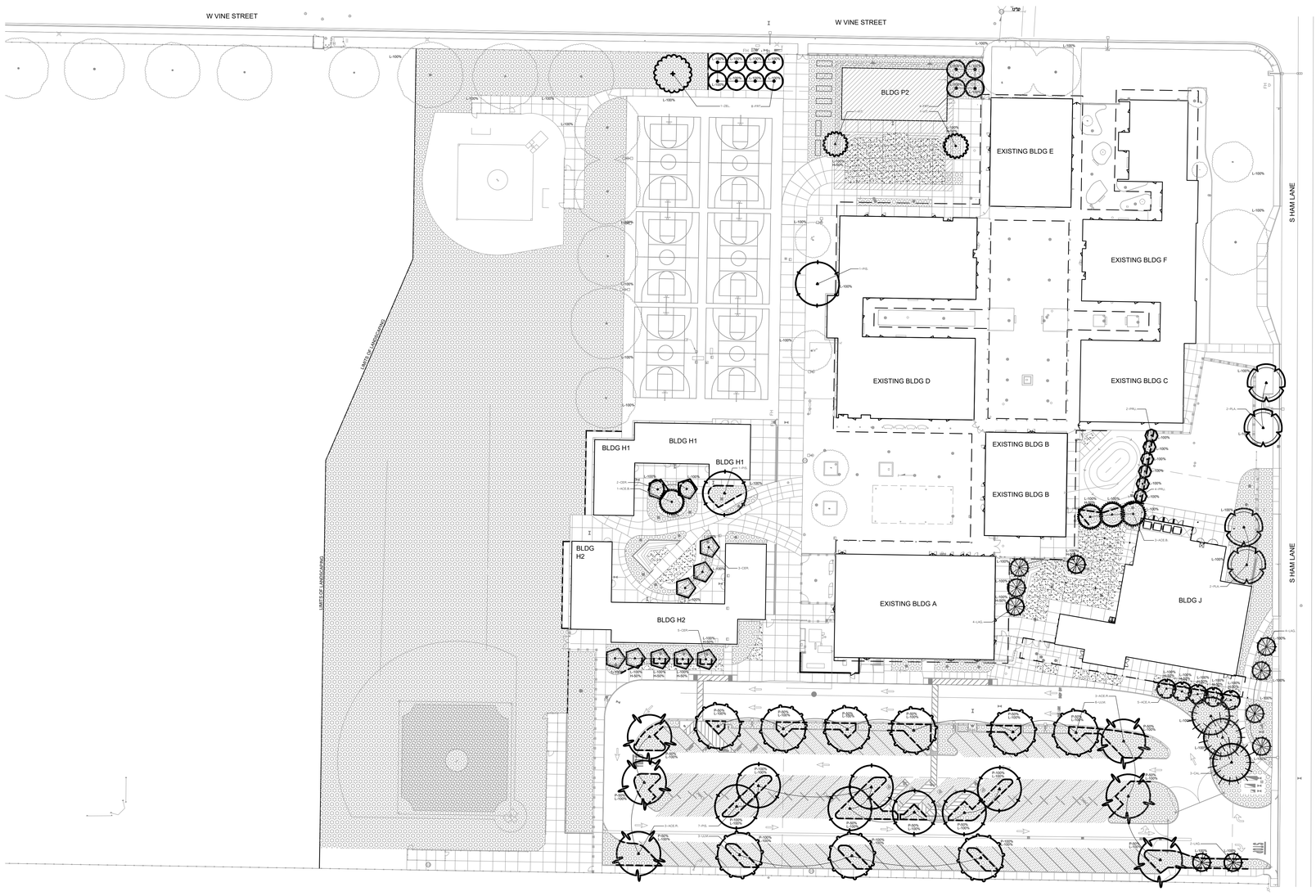

KEY | TREE SHADING LEGEND

- P-100% / H-100% / L-100% — TREES - NOT ALL SYMBOLS SHOWN
  WITH TREE SHADING CANOPY PERCENTAGE
  P: TOTAL 'PARKING' AREA
  H: TOTAL 'HARDSCAPE' AREA
  L: TOTAL 'LANDSCAPE' AREA
- SHADE PERCENTAGE
- 7-AAA — PLANT QUANTITY
- PLANT KEY
- AREA USED AS 'TOTAL PARKING AREA'
- AREA USED AS 'TOTAL HARDSCAPE AREA'
- AREA USED AS 'TOTAL LANDSCAPE AREA'
- EXISTING TREES TO REMAIN

HARDSCAPE SHADING - DOES NOT APPLY AS ALL NEW HARDSCAPE ARE PATHWAYS

SIZE	QTY.	KEY	BOTANICAL NAME ... COMMON NAME	WATER USE
			TREES:	
24" BOX	5	ACE.A.	ACER RUBRUM 'ARMSTRONG' ... ARMSTRONG MAPLE	MEDIUM
24" BOX	4	ACE.B.	ACER BUERGERANIUM ... TRIDENT MAPLE	MEDIUM
24" BOX	6	ACE.R.	ACER RUBRUM 'RED SUNSET' ... RED MAPLE	MEDIUM
24" BOX	3	CAL.	CALOCEDRUS DECURRENS ... INCENSE CEDAR	MEDIUM
24" BOX	10	CER.	CERCIS CANADENSIS 'OKLAHOMA' ... OKLAHOMA REDBUD	MEDIUM
15" BOX	12	FRT.	15-GALLON FRUIT TREE(VARIETIES TO BE SELECTED BY DISTRICT DURING CONSTRUCTION)	MEDIUM
24" BOX	10	LAG.	LAGERSTROEMIA INDICA ... CRAPE MYRTLE	LOW
24" BOX	9	PIS.	PISTCIA CHINENSIS 'KEITH DAVEY' ... CHINESE PISTACHE	LOW
24" BOX	4	PLA.	PLATANUS ACERIFOLIA 'BLOODGOOD' ... LONDON PLANE TREE	MEDIUM
24" BOX	6	PRU.	PRUNUS CAROLINIANA ... CAROLINA LAUREL CHERRY	LOW
24" BOX	9	ULM.	ULMUS WILSONIANA 'PROSPECTOR' ... PROSPECTOR ELM	LOW
24" BOX	2	VIT.	VITEX AGNUS-CASTUS ... CHASTE TREE	LOW
24" BOX	1	ZEL.	ZELKOVA SERRATA ... SAWLEAF ZELKOVA	MEDIUM

PARKING LOT SHADING (50% WITHIN 15 YEARS)

TREES	100%	50%
35'+	06 (962) = 5,772 S.F.	15 (481) = 7,215 S.F.
SUB-TOTALS	5,772 S.F.	7,215 S.F.

TOTAL PARKING AREA = 22,200 S.F.

TOTAL SHADED AREA = 12,987 S.F.

PERCENTAGE OF SHADE = 58.5%

HARDSCAPE SHADING (20% WITHIN 15 YEARS)

TREES	100%	50%
20'		15 (157) = 2,355 S.F.
SUB-TOTALS		2,355 S.F.

TOTAL HARDSCAPE AREA = 8,297 S.F.

TOTAL OVERHANG STRUCTURE AREA = 2,613 S.F.

TOTAL SHADED AREA = 3,850 S.F.

PERCENTAGE OF SHADE = 77.9%

LANDSCAPE SHADING (20% WITHIN 15 YEARS)

TREES	100%
EXISTING	14 (962) = 13,468 S.F.
35'+	28 (962) = 26,936 S.F.
30'	06 (707) = 4,242 S.F.
20'	51 (314) = 16,014 S.F.
SUB-TOTALS	60,660 S.F.

TOTAL LANDSCAPE AREA = 174,151 S.F.

TOTAL SHADED AREA = 60,660 S.F.

PERCENTAGE OF SHADE = 34.8%

40' 20' 0 40' 80'

SCALE: 1"= 40'-0"

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DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

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LODI MIDDLE SCHOOL
945 SOUTH HAM LANE
LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1

SHEET NAME:
TREE SHADING CALCULATIONS

DSA SUBMITTAL

DATE: 04.02.2025 | CLIENT PROJ NO: 3431007000

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L5.2

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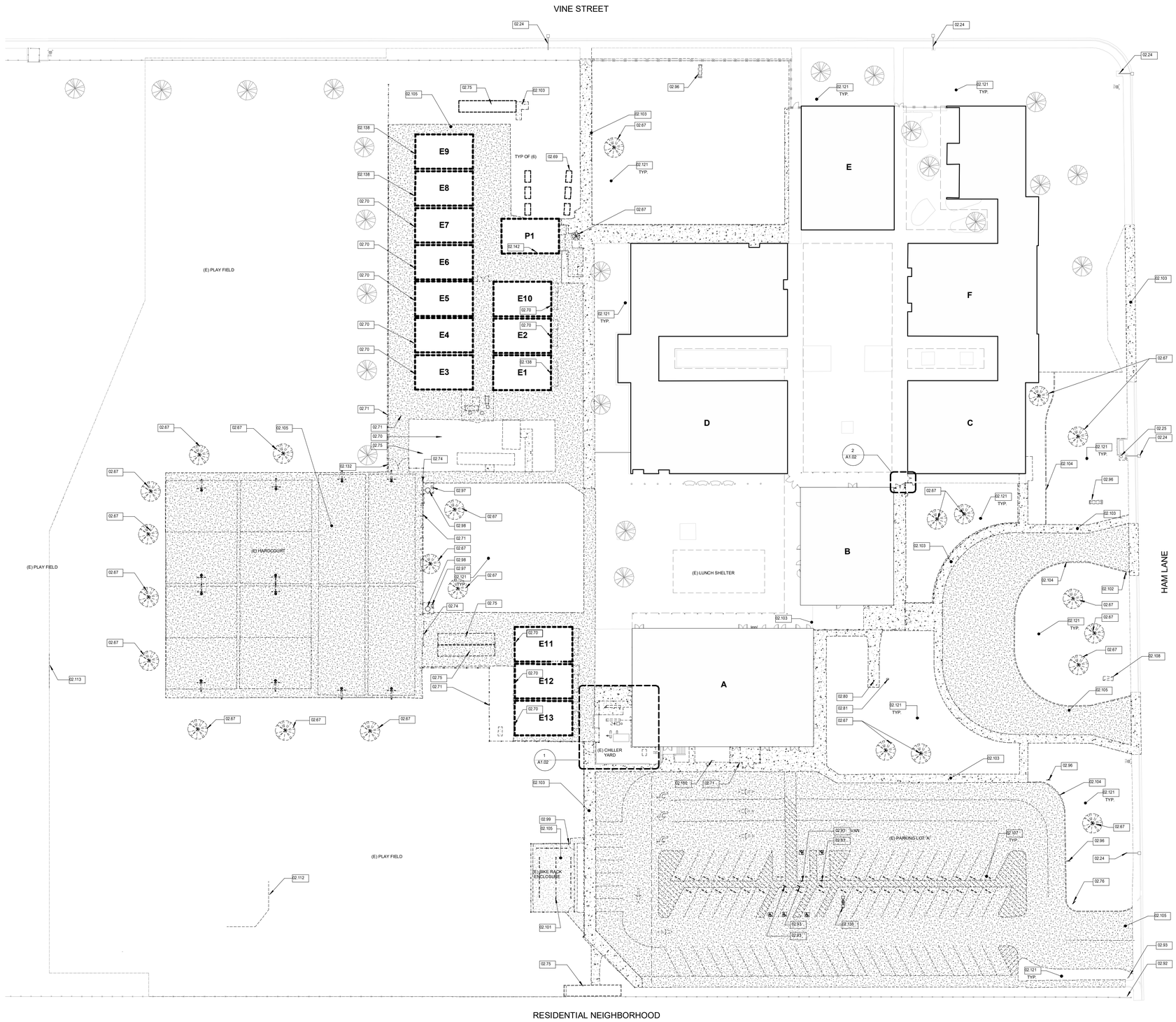

LEGEND

- PROPERTY LINE
- ASSUMED PROPERTY LINE
- ACCESSIBLE PATH OF TRAVEL / PATH OF TRAVEL TO PUBLIC WAY
- PATH OF EXIT DISCHARGE
- OVERHANG LINE ABOVE
- CHAIN LINK FENCE
- ORNAMENTAL FENCE
- X — EXISTING BUILDING
- EXPANSION JOINT
- CONCRETE WALK
- CONTROL JOINT
- ASPHALT CONCRETE PAVING
- LANDSCAPE
- PORTABLES TO BE RELOCATED
- FH — FIRE HYDRANT
- TRUNCATED DOME

DEMOLITION KEYNOTES

02.24	(E) STREET LIGHT TO REMAIN
02.25	(E) TRASH RECEPTACLE TO REMAIN
02.67	REMOVE (E) TREE, TRUNK AND ROOTS
02.69	REMOVE (E) PLANTER
02.70	REMOVE AND DISPOSE OF EXISTING PORTABLE BUILDING, RAMPS AND ASSOCIATED FOUNDATION
02.71	DEMOLISH AND REMOVE 6' CHAIN LINK FENCE AND FOUNDATION
02.74	REMOVE (E) 6' TALL ROLLING GATE
02.75	REMOVE AND RETURN EXISTING STORAGE BUILDINGS TO DISTRICT
02.76	EXISTING TOW-AWAY SIGN CONSTRUCTED UNDER DSA APPLICATION NO. 02-109532 REMOVE AND SALVAGE SIGNAGE AND SIGN POST. STORE IN SAFE LOCATION FOR RE-INSTALLATION.
02.80	REMOVE AND RELOCATE (E) FLAGPOLE
02.81	REMOVE AND RELOCATE (E) MONUMENT SIGN
02.92	TRIM BACK (E) LANDSCAPE PROTRUDING THOUGH FENCE ALONG THE PROPERTY LINE
02.93	REMOVE (E) SIGN, POST, AND FOUNDATION, AND SALVAGE SIGNAGE AND SIGN POST. STORE IN SAFE LOCATION FOR RE-INSTALLATION.
02.96	REMOVE AND DISPOSE OF EXISTING SIGN AND FOUNDATION SEE CIVIL
02.97	REMOVE AND DISPOSE OF CONCRETE HI-LO DRINKING FOUNTAIN
02.98	REMOVE AND STORE METAL TRASH RECEPTACLE FOR REUSE COORDINATE LOCATION WITH DISTRICT
02.99	REMOVE 8' CHAIN LINK FENCE ENCLOSURE GATES AND FOUNDATION
02.100	(E) DROP OF LANE NO PARKING SIGN TO REMAIN; PROTECT IN PLACE
02.101	REMOVE AND DISPOSE OF EXISTING BIKE LOCK RACKS
02.102	REMOVE (E) "BUSES ONLY" SIGN, POST, AND FOUNDATION. AND SALVAGE SIGNAGE AND SIGN POST. STORE IN SAFE LOCATION FOR RE-INSTALLATION.
02.103	REMOVE AND DISPOSE OF EXISTING CONCRETE PAVING
02.104	REMOVE AND DISPOSE OF EXISTING CONCRETE CURB, SEE CIVIL DWGS
02.105	REMOVE AND DISPOSE OF EXISTING AC PAVING, SEE CIVIL DWGS
02.107	REMOVE (E) CONCRETE WHEEL STOP AND SALVAGE | CIVIL
02.108	REMOVE (E) BACK FLOW PREVENTER AND SALVAGE FOR REINSTALLATION
02.112	REMOVE AND DISPOSE OF EXISTING BASEBALL BACKSTOPS
02.113	SALVAGE EXISTING SOCCER GOAL AND RETURN TO THE DISTRICT
02.121	REMOVE (E) SPRINKLER HEADS, SEE LANDSCAPE
02.132	REMOVE EXISTING 6'-0" CHAIN LINK GATE AND FOUNDATION
02.136	REMOVE (E) LIGHT FIXTURE, CONCRETE BASE, AND FOOTING | ELEC
02.138	DISTRICT TO REMOVE AND SALVAGE (E) PORTABLE BUILDINGS, RAMPS, AND ASSOCIATED FOUNDATION
02.142	DISCONNECT (E) LEASED PORTABLE BUILDING. DISTRICT TO HAVE RAMPS AND ASSOCIATED FOUNDATION REMOVED UNDER A SEPARATE CONTRACT

SITE DEMOLITION PLAN 1

1" = 30'-0"

AGENCY APPROVAL:

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DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

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LICENSED ARCHITECT JENNIFER PEARSON HUANG C-35691 REN. 05/31/25 STATE OF CALIFORNIA

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KEYNOTES

1. REFER TO SHEET G0.10 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. REFER TO LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION
3. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UTILITY INFORMATION
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ALL HARDSCAPE/PLANTING OUTSIDE OF LIMIT OF WORK LINE FOR CONNECTION OF UNDERGROUND UTILITIES

DEMOLITION GENERAL NOTES

1. PROTECT ALL ITEMS NOT NOTED TO BE REMOVED OR MODIFIED. REPAIR ALL DAMAGED ITEMS TO SAME CONDITION AS BEFORE DAMAGE OCCURRED.
2. REMOVE ALL ITEMS SCHEDULED FOR DEMOLITION INCLUDING MOUNTING HARDWARE, ABANDONED SWITCHES, WIRING AND SURFACE MOUNTED CONDUIT. SURFACES SHALL BE CLEANED AND PREPARED TO RECEIVE NEW WORK.
3. ALL ITEMS TO BE REMOVED AND NOT REINSTALLED SHALL BE DISPOSED OF OFF SITE.
4. REMOVE ALL ITEMS REQUIRED TO INSTALL NEW WORK WHETHER OR NOT SPECIFICALLY SHOWN TO BE REMOVED OR MODIFIED.
5. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.

FACILITY:

LODI MIDDLE SCHOOL

945 SOUTH HAM LANE LODI, CA 95242

PROJECT:

LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION

INCREMENT 1

SHEET NAME:

SITE DEMOLITION PLAN

CONSTRUCTION DOCUMENTS

DATE: **2025.03.11** CLIENT PROJ NO: **3431007000**

SHEET:

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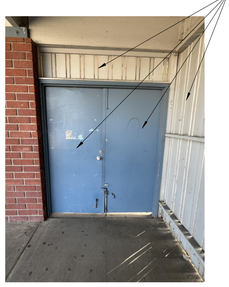

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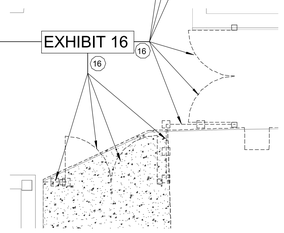


(#) INDICATES EQUIPMENT IDENTIFIED AS EXHIBIT IDENTIFIED IN PHOTOS TO BE REMOVED. COORDINATE SO ITEMS REMOVED WILL NOT AFFECT FUNCTIONALITY OF EQUIPMENT THAT EXISTING AND ARE TO REMAIN.

DEMOLITION SITE PLAN - ENLARGED 2 — **2**

NOTE: ALL STRUCTURAL COLUMNS AND BEAMS ARE TO REMAIN

1/4" = 1'-0"

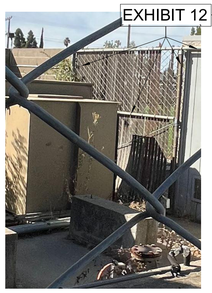


EXHIBIT 12

EXHIBIT 11

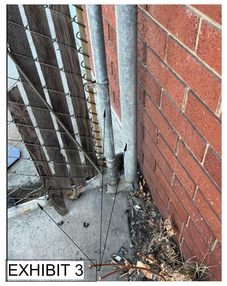
EXHIBIT 10

SHED (DO NOT DEMO)

EXHIBIT 4

EXHIBIT 5

EXHIBIT 10



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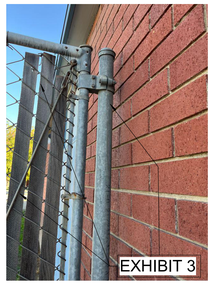

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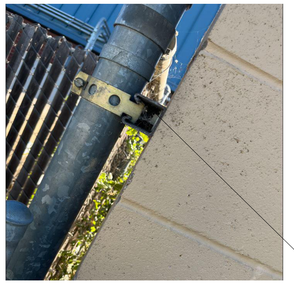


EXHIBIT 12

EXHIBIT 13

EXHIBIT 1

EXHIBIT 2

EXHIBIT 12

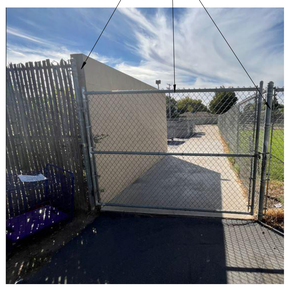
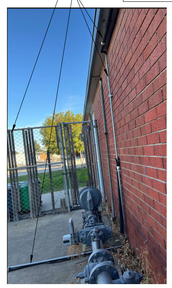
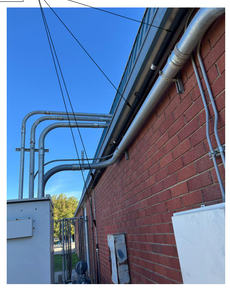


EXHIBIT 12

EXHIBIT 3

EXHIBIT 1

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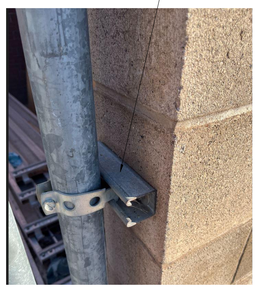

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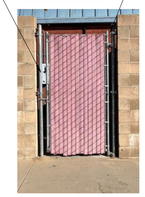


EXHIBIT 5

EXHIBIT 6

EXHIBIT 5

EXHIBIT 1

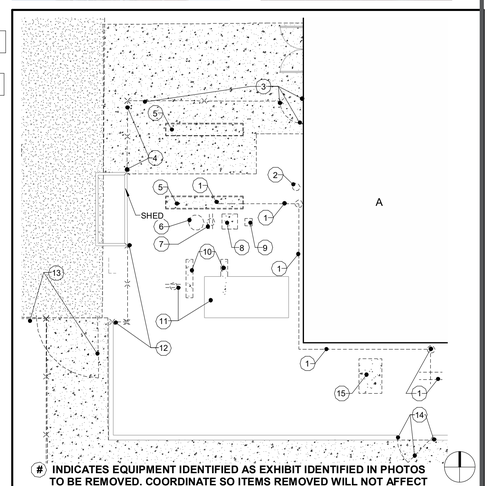
EXHIBIT 1

EXHIBIT 7

EXHIBIT 8

EXHIBIT 9

EXHIBIT 5



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DEMOLITION SITE PLAN - ENLARGED — **1**

1/8" = 1'-0"

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2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
INCREMENT 1

SHEET NAME:
ENLARGED SITE DEMOLITION PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

A1.02

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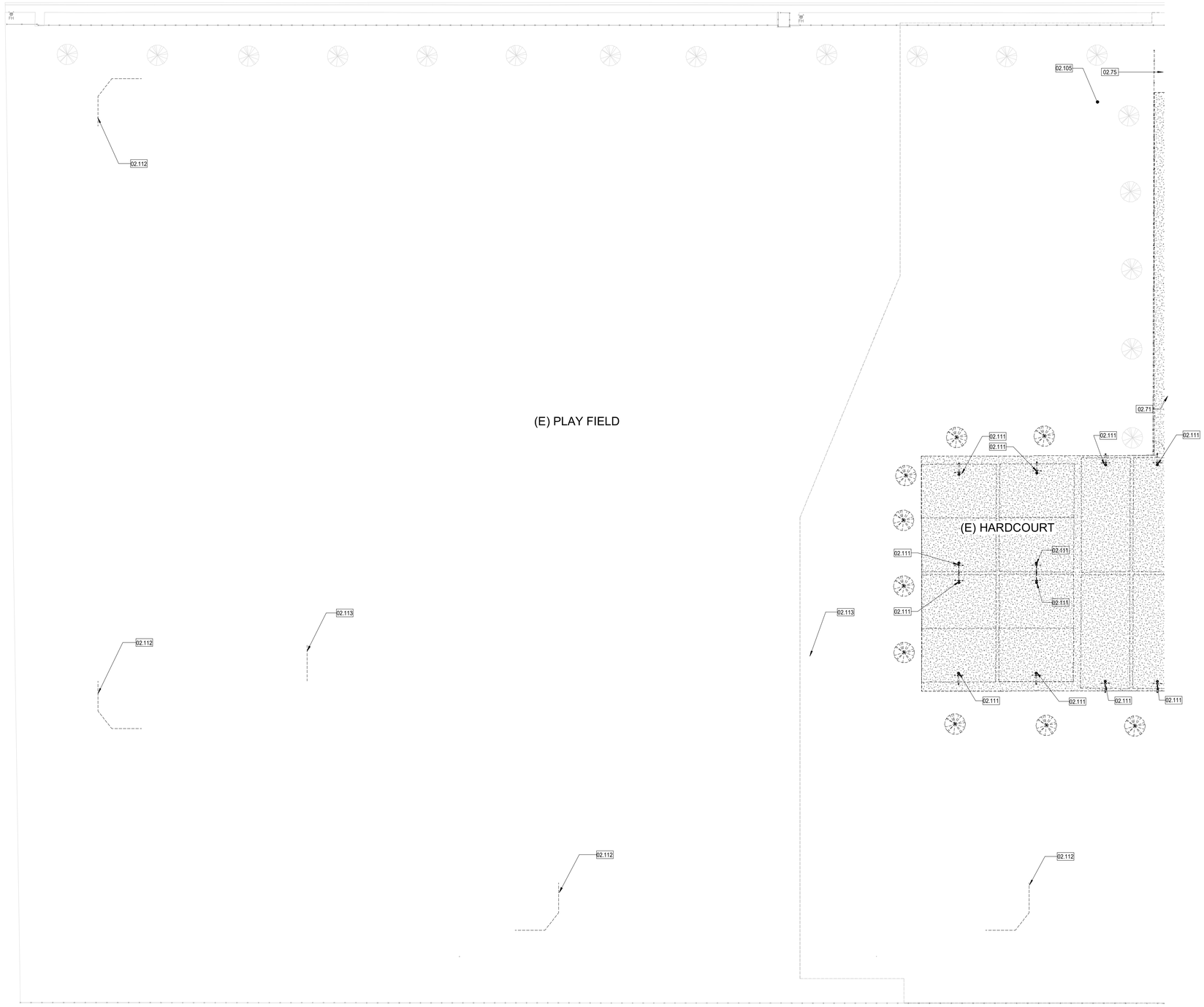

SITE DEMOLITION PLAN

1

1" = 30'-0"

LEGEND

- PROPERTY LINE
- ASSUMED PROPERTY LINE
- ACCESSIBLE PATH OF TRAVEL / PATH OF TRAVEL TO PUBLIC WAY
- PATH OF EXIT DISCHARGE
- OVERHANG LINE ABOVE
- CHAIN LINK FENCE
- ORNAMENTAL FENCE
- X — EXISTING BUILDING
- EXPANSION JOINT / CONCRETE WALK / CONTROL JOINT
- ASPHALT CONCRETE PAVING
- LANDSCAPE
- PORTABLES TO BE RELOCATED
- FH — FIRE HYDRANT
- TRUNCATED DOME

DEMOLITION KEYNOTES

02.70	REMOVE AND DISPOSE OF EXISTING PORTABLE BUILDING, RAMPS AND ASSOCIATED FOUNDATION
02.71	DEMOLISH AND REMOVE 6' CHAIN LINK FENCE AND FOUNDATION
02.75	REMOVE AND RETURN EXISTING STORAGE BUILDINGS TO DISTRICT
02.105	REMOVE AND DISPOSE OF EXISTING AC PAVING, SEE CIVIL DWGS
02.111	REMOVE AND DISPOSE OF EXISTING BASKETBALL BACKSTOPS
02.112	REMOVE AND DISPOSE OF EXISTING BASEBALL BACKSTOPS
02.113	SALVAGE EXISTING SOCCER GOAL AND RETURN TO THE DISTRICT

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
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DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects

3431007000

LICENSED ARCHITECT JENNIFER PEARSON WONG C-35691 REN. 05/31/25 STATE OF CALIFORNIA

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KEYNOTES

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2. REFER TO LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION
3. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UTILITY INFORMATION
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ALL HARDSCAPE/PLANTING OUTSIDE OF LIMIT OFWORK LINE FOR CONNECTION OF UNDERGROUND UTILITIES

DEMOLITION GENERAL NOTES

1. PROTECT ALL ITEMS NOT NOTED TO BE REMOVED OR MODIFIED. REPAIR ALL DAMAGED ITEMS TO SAME CONDITION AS BEFORE DAMAGE OCCURRED.
2. REMOVE ALL ITEMS SCHEDULED FOR DEMOLITION INCLUDING MOUNTING HARDWARE, ABANDONED SWITCHES, WIRING AND SURFACE MOUNTED CONDUIT. SURFACES SHALL BE CLEANED AND PREPARED TO RECEIVE NEW WORK.
3. ALL ITEMS TO BE REMOVED AND NOT REINSTALLED SHALL BE DISPOSED OF OFF SITE.
4. REMOVE ALL ITEMS REQUIRED TO INSTALL NEW WORK WHETHER OR NOT SPECIFICALLY SHOWN TO BE REMOVED OR MODIFIED.
5. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.

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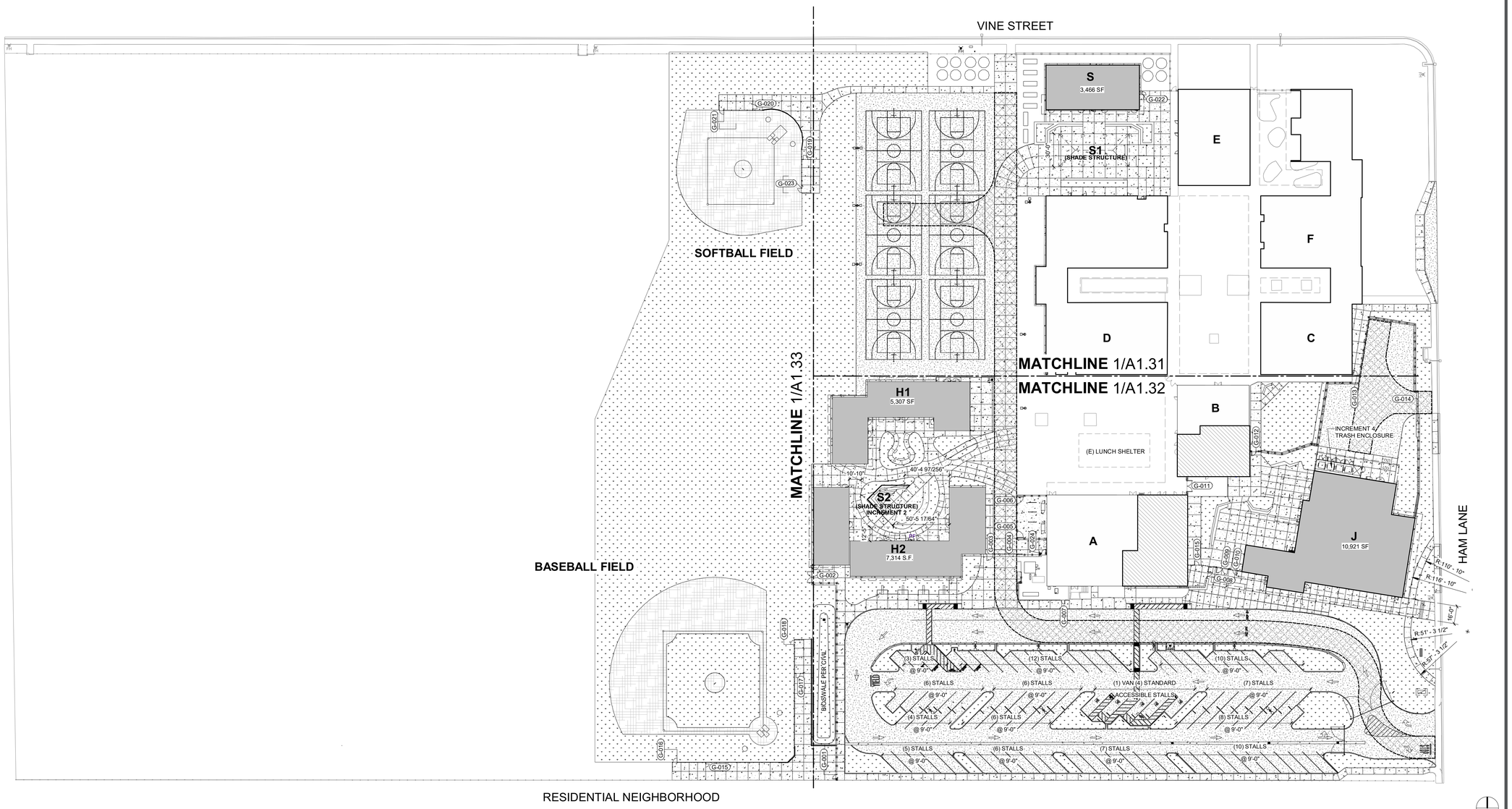
GATE SCHEDULE

NUMBER	PANEL 1	PANEL 2	HEIGHT	DOOR MATERIAL	DETAIL	HARDWARE GROUP	PANIC HARDWARE
G-001	4'-0"	-	7' - 0"	DECORATIVE METAL	15/A1.48	SEE 23/A1.47	NO
G-002	4'-0"	4'-0"	7' - 0"	DECORATIVE METAL	23/A1.48	SEE 23/A1.47	NO
G-003	4'-0"	-	7' - 0"	CUSTOM PERFORATED METAL PLATE WALL PANEL	3/A1.48	SEE 23/A1.47	NO
G-004	20'-0"		7' - 0"	CUSTOM PERFORATED METAL PLATE WALL PANEL	12/A1.48	SEE 23/A1.47	NO
G-005	6'-0"	-	7' - 0"	DECORATIVE METAL	15/A1.48	SEE 23/A1.47	NO
G-006	6'-0"	-	7' - 0"	DECORATIVE METAL	15/A1.48	SEE 23/A1.47	NO
G-007	3'-6"	-	7' - 10"	CUSTOM PERFORATED METAL PLATE WALL PANEL	3/A1.48	SEE 23/A1.47	NO
G-008	4'-0"	-	7' - 0"	CUSTOM PERFORATED METAL PLATE WALL PANEL	3/A1.48	SEE 23/A1.47	NO
G-009	4'-0"	4'-0"	7' - 0"	CUSTOM PERFORATED METAL PLATE WALL PANEL	1/A1.48	SEE 23/A1.47	YES
G-010	4'-0"	-	7' - 0"	CUSTOM PERFORATED METAL PLATE WALL PANEL	3/A1.48	SEE 23/A1.47	YES
G-011	4'-0"	4'-0"	7' - 0"	DECORATIVE METAL	11/A1.47	SEE 23/A1.47	YES
G-012	4'-0"	-	7' - 0"	DECORATIVE METAL	3/A1.47	SEE 23/A1.47	YES
G-013	4'-0"	-	7' - 0"	DECORATIVE METAL	3/A1.47	SEE 23/A1.47	YES
G-014	20-0"	-	7' - 0"	DECORATIVE METAL	10/A1.47	SEE 23/A1.47	NO
G-015	4'-0"	-	7' - 0"	CUSTOM PERFORATED METAL PLATE WALL PANEL	3/A1.48	SEE 23/A1.47	NO
G-015	4'-0"		8' - 0"	CHAIN LINK	4/A1.50	SEE 23/A1.47	NO
G-016	4'-0"		8' - 0"	CHAIN LINK	4/A1.50	SEE 23/A1.47	NO
G-017	4'-0"		8' - 0"	CHAIN LINK	4/A1.50	SEE 23/A1.47	NO
G-018	4'-0"		8' - 0"	CHAIN LINK	4/A1.50	SEE 23/A1.47	NO
G-019	4'-0"		8' - 0"	CHAIN LINK	4/A1.50	SEE 23/A1.47	NO
G-020	4'-0"		8' - 0"	CHAIN LINK	4/A1.50	SEE 23/A1.47	NO
G-021	4'-0"		8' - 0"	CHAIN LINK	4/A1.50	SEE 23/A1.47	NO
G-022	3'-0"		8' - 0"	CHAIN LINK	4/A1.50	SEE 23/A1.47	NO
G-023	4'-0"		8' - 0"	CHAIN LINK	4/A1.50	SEE 23/A1.47	NO
G-024	4'-0"		7' - 0"	DECORATIVE METAL	15/A1.48	SEE 23/A1.47	NO



OVERALL SITE PLAN 1
1" = 40'-0"

AGENCY APPROVAL:

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LODI UNIFIED SCHOOL DISTRICT

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LICENSED ARCHITECT
JENNIFER PEARSON-WONG
C-35691
REN. 05/31/25
STATE OF CALIFORNIA

ISSUE

Δ	DESCRIPTION	DATE

LEGEND

- PROPERTY LINE
- ASSUMED PROPERTY LINE
- OVERHANG LINE ABOVE
- (E) CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC.
- 8'-0" TALL CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC.
- 4'-0" TALL ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL CUSTOM PERFORATED METAL PLATE WALL PANEL (SEE 16/A1.50 FOR PATTERN), FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC
- NEW FIRE LANE
- X NEW BUILDING INCREMENT #3 BUILDINGS H1 & H2 AND BUILDING S INCREMENT #4 BUILDING J
- X EXISTING BUILDING
- X FUTURE INCREMENT
- INCREMENT 2 AREA OF MODERNIZATION TO EXISTING BUILDING
- EXPANSION JOINT
- CONCRETE WALK CONTROL JOINT
- ASPHALT CONCRETE PAVING
- LANDSCAPE SEE LANDSCAPE PLANTING PLANS
- FIRE HYDRANT
- TRUNCATED DOMES

NOTES

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2. REFER TO CIVIL AND LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION.
3. REFER TO ELECTRICAL DRAWINGS FOR UTILITY INFORMATION.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ALL HARDSCAPE/PLANTING OUTSIDE OF LIMIT OF WORK LINE FOR CONNECTION OF UNDERGROUND UTITLITIES.
5. REPAIR/REPLACE ACCESSIBLE PARKING SIGNAGE WHERE APPROPRIATE.
6. DURING DEMOLITION AND/OR CONSTRUCTION PHASES, THE CONTRACTOR SHALL PROVIDE FIRE SAFETY PRECAUTIONS AS DESCRIBED IN AND REQUIRED BY THE CALIFORNIA FIRE CODE, CURRENT EDITION, CHAPTER 14 FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION. SAFETY MEASURES INCLUDE BUT ARE NOT LIMITED TO MAINTAINING FIRE DEPARTMENT ACCESS BY MEANS OF TEMPORARY ROADS, CUTTING AND WELDING PRECAUTIONS AND MAINTAINING WATER SUPPLIES FOR FIREFIGHTING PURPOSES.

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LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
INCREMENT 1
SHEET NAME:
OVERALL SITE PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**
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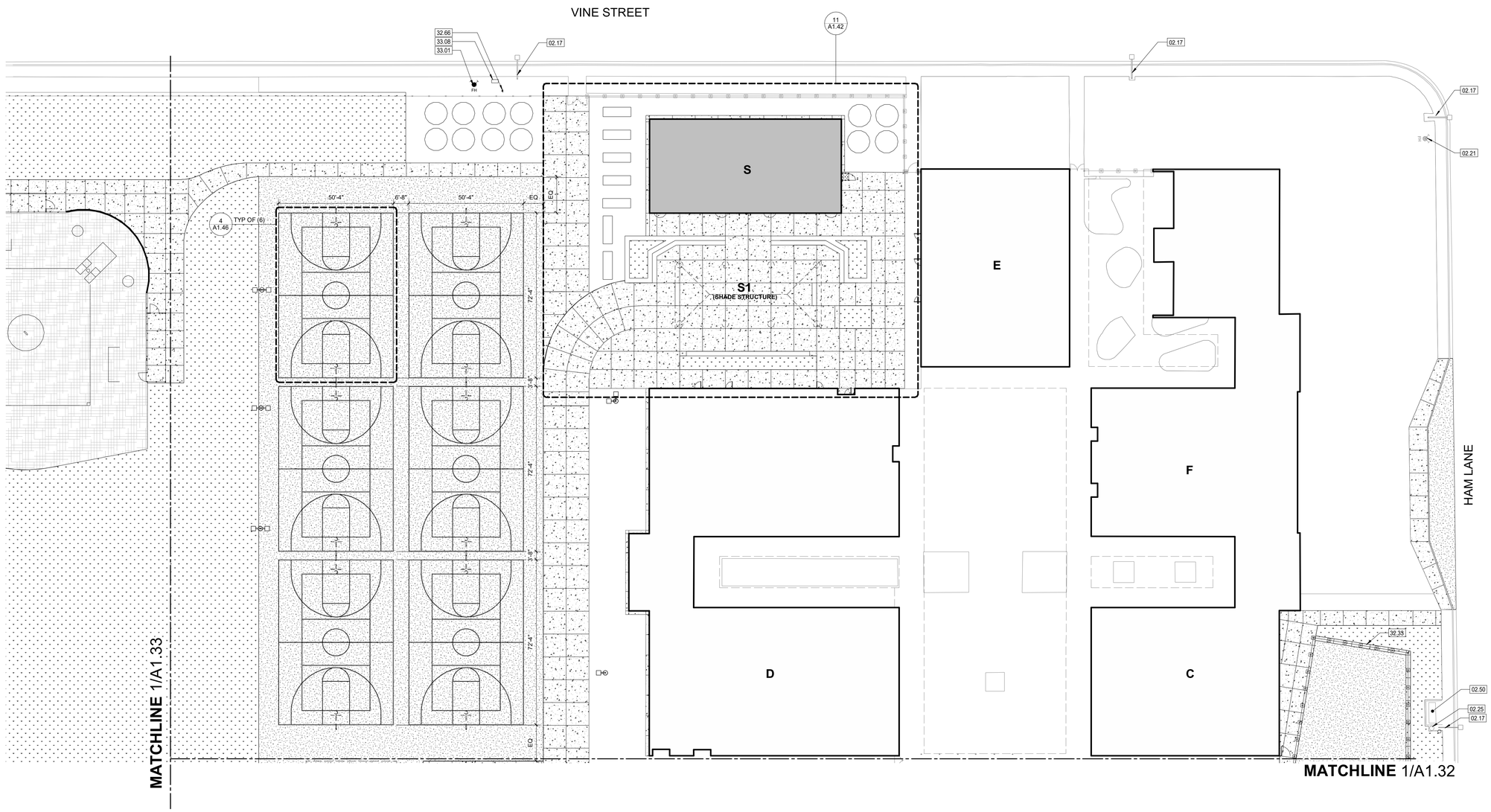

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PARTIAL SITE PLAN 1 1" = 20'-0"

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KEYNOTES

02.17	(E) LIGHT POLE TO REMAIN, PROTECT IN PLACE | ELEC
02.21	(E) FIRE HYDRANT
02.25	(E) TRASH RECEPTACLE TO REMAIN
02.50	(E) BUS STOP
32.33	7'-0" H DECORATIVE METAL FENCING, SEE 1/A1.47
32.66	FIRE DEPARTMENT CONNECTION - SEE CIVIL DWGS
33.01	FIRE HYDRANT | SEE CIVIL DWGS
33.08	PROVIDE 3" DOMESTIC PER CITY OF LODI, STD. PLAN 406, 412, AND 413. | CIVIL

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SHEET NAME:
PARTIAL SITE PLAN

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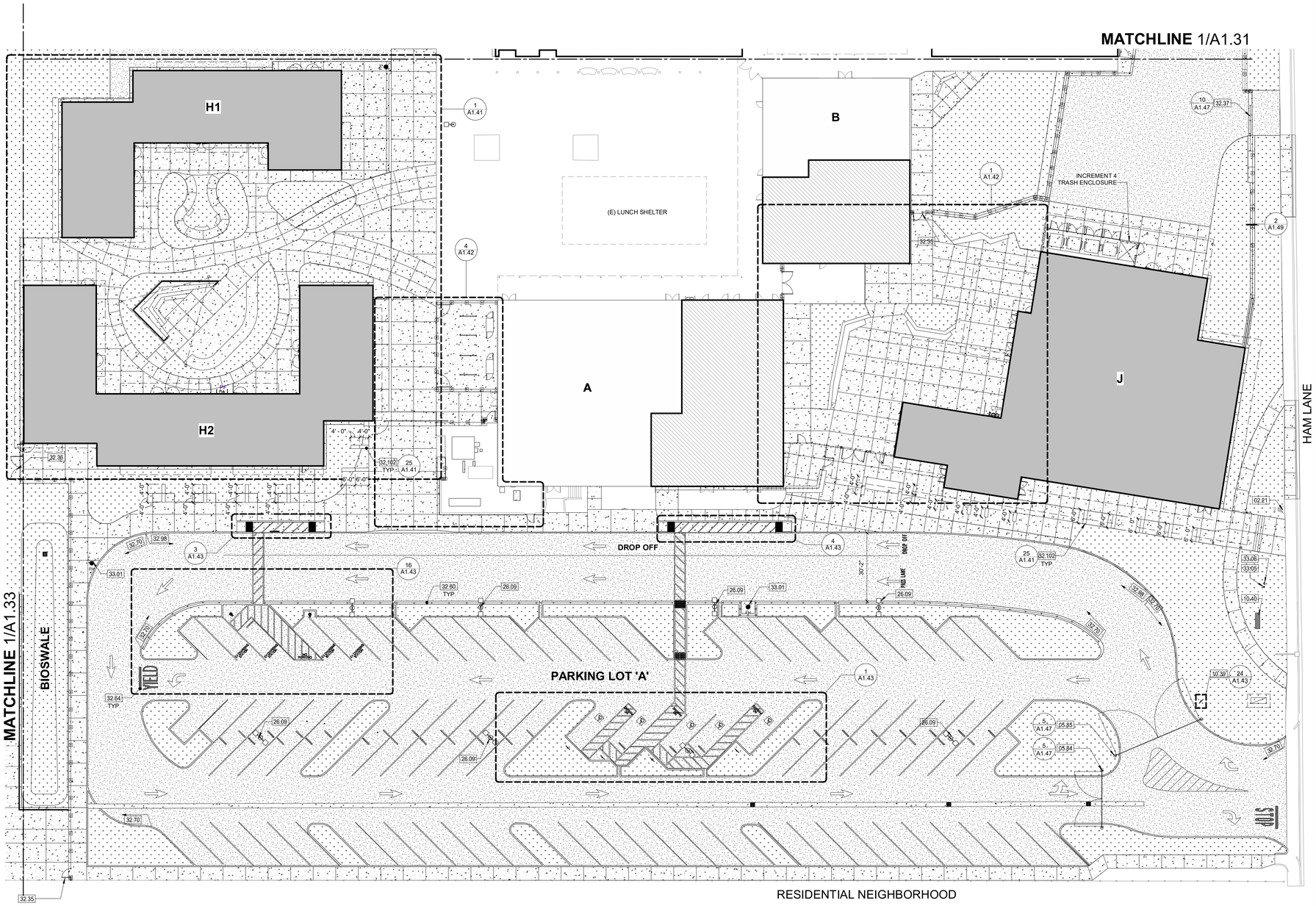

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- FIRE HYDRANT
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AGENCY APPROVAL:

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ISSUE

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KEYNOTES

02.21	(E) FIRE HYDRANT
05.84	12' - 0" SWING ARM BARRIER
05.85	20' - 0" SWING ARM BARRIER
10.39	PARKING LOT ENTRANCE SIGN, SEE 10, 24/A1.43
10.40	MARQUEE SIGN, SEE 7/A1.49
26.09	SITE LIGHTING | SEE ELECTRICAL DWGS
32.35	4'-0" W X 7'-0" H DECORATIVE METAL GATE WITH KNOX LOCK. KNOX LOCK PER LOCAL FIRE AUTHORITY STANDARDS. PROVIDE EXIT HARDWARE
32.36	PR 4'-0" W X 7'-0" H DECORATIVE METAL GATE WITH KNOX LOCK. KNOX LOCK PER LOCAL FIRE AUTHORITY STANDARDS
32.37	20' - 0" W X 7' - 0" H DECORATIVE METAL ROLLING GATE WITH KNOX LOCK. KNOX LOCK PER LOCAL FIRE AUTHORITY STANDARDS
32.60	4'-0" TALL ORNAMENTAL FENCE, SEE 1/A1.47
32.64	PAVEMENT MARKING - YIELD
32.70	PAINT CONTINUOUS 6" RED STRIPE WITH 3" TALL WHITE LETTERS TO READ "NO PARKING FIRE LANE" EVERY 25'-0" ON CENTER MAXIMUM AT FIRE LANE BORDER.
32.98	PAINT CONTINUOUS 6" GREEN STRIPE WITH 3" TALL WHITE LETTERS TO READ, "NO PARKING, DROP OFF ZONE ONLY" EVERY 25'-0" ON CENTER MAXIMUM.
32.102	PRECAST CONCRETE SEAT WALL
33.01	FIRE HYDRANT | SEE CIVIL DWGS
33.05	FIRE DEPT CONNECTION | SEE CIVIL DWGS
33.06	PRESSURE INDICATOR VALVE | SEE CIVIL DWGS

NOTES

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DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

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A1.32

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PARTIAL SITE PLAN **1** 1" = 20'-0"

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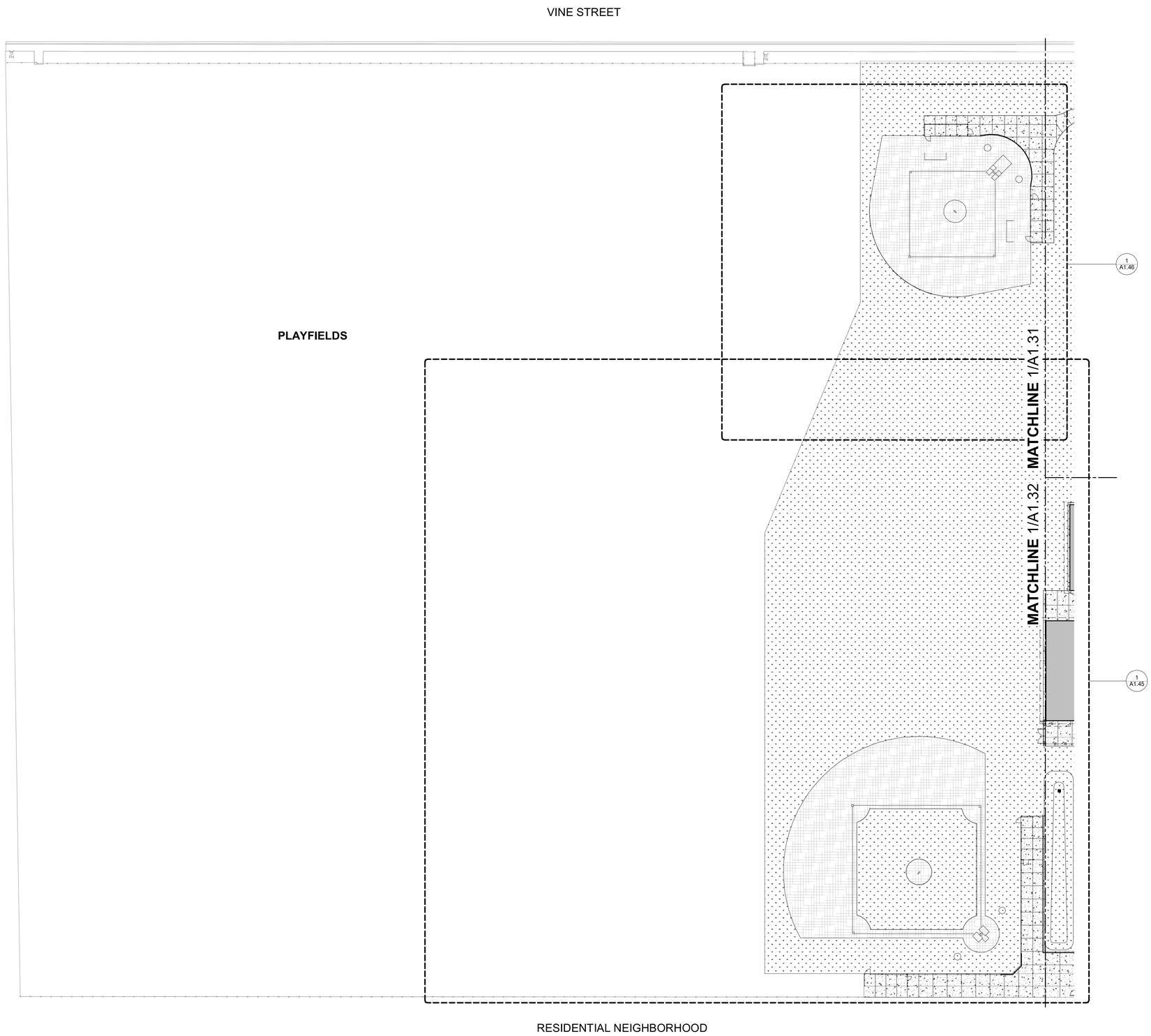

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PARTIAL SITE PLAN **1**
1" = 30'-0"

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- X — EXISTING BUILDING
- X — FUTURE INCREMENT
- INCREMENT 2 AREA OF MODERNIZATION TO EXISTING BUILDING
- (X) — ACCESSIBLE TOILET ROOMS
  - B = BOYS TOILET ROOM
  - G = GIRLS TOILET ROOM
  - ST = STAFF TOILET ROOM
- EXPANSION JOINT
- CONCRETE WALK
- CONTROL JOINT
- ASPHALT CONCRETE PAVING
- LANDSCAPE
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- TRUNCATED DOMES

NOTES

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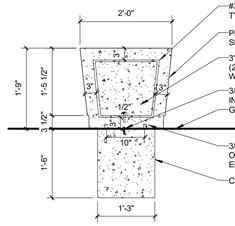
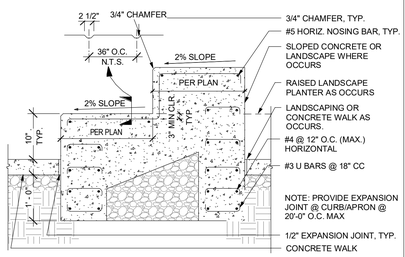
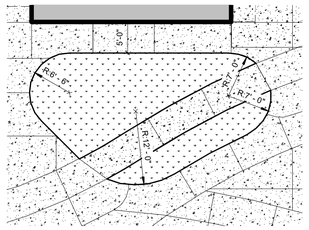


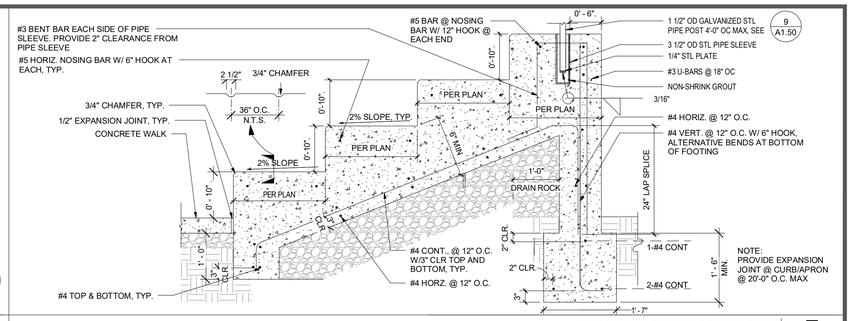
PRECAST CONCRETE SEAT WALL 25 — 3/4" = 1'-0"



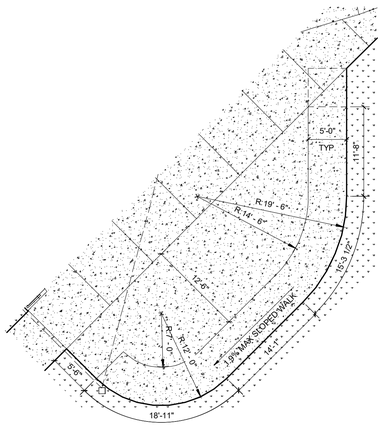
CONCRETE WALL BENCH - STEPPED 20 — 3/4" = 1'-0"



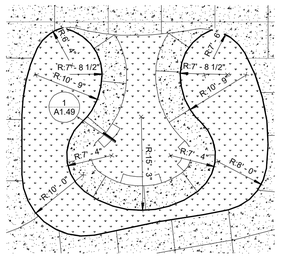
ENLARGED SITE PLAN - WALKWAY 15 — 1" = 10'-0"



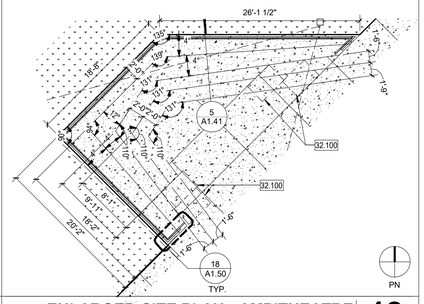
CONCRETE SEAT WALLS 5 — 3/4" = 1'-0"



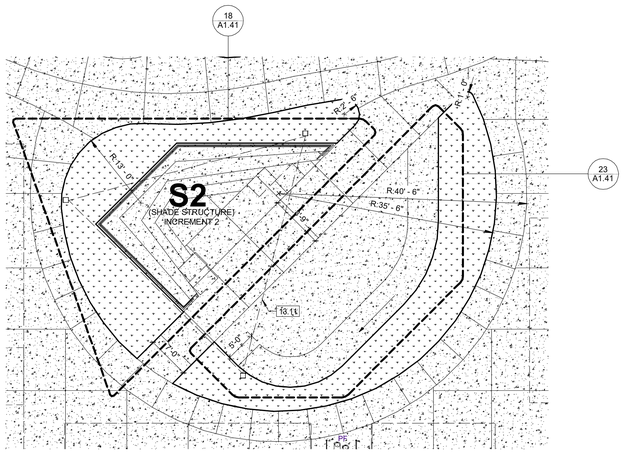
ENLARGED SITE PLAN - AMPITHEATRE 23 — 1/8" = 1'-0"



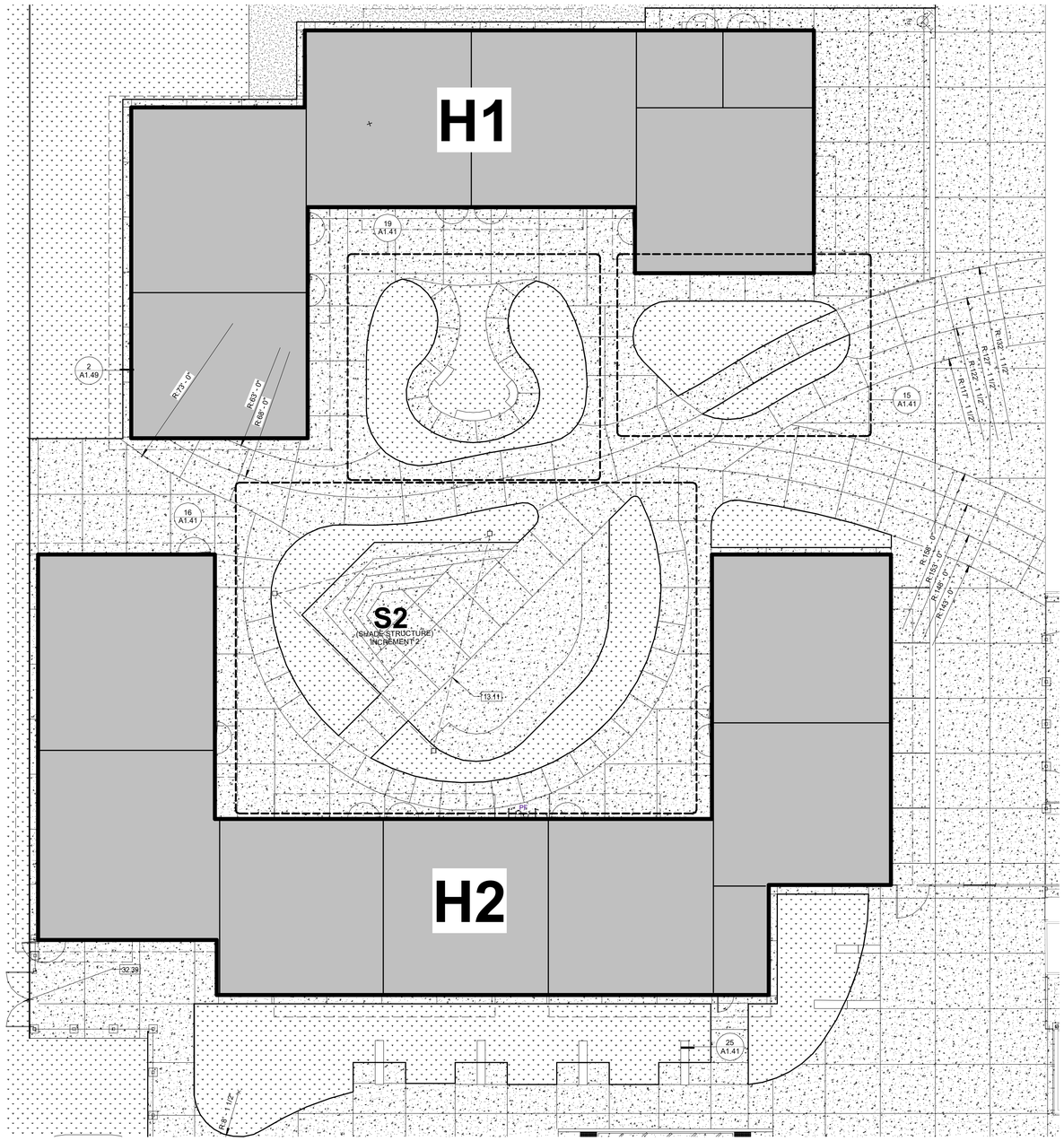
ENLARGED SITE PLAN - SENSORY GARDEN 19 — 1" = 10'-0"



ENLARGED SITE PLAN - AMPITHEATRE 18 — 1/8" = 1'-0"



ENLARGED SITE PLAN - AMPITHEATRE 16 — 1" = 10'-0"



OVERALL SITE PLAN 1 — 1" = 10'-0"

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HMC Architects
3431007000
LICENSED ARCHITECT JENNIFER PEARSON-WANG C-35691 REN. 05/31/25 STATE OF CALIFORNIA
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

LEGEND

- PROPERTY LINE
- ASSUMED PROPERTY LINE
- ACCESSIBLE PATH OF TRAVEL / PATH OF TRAVEL TO PUBLIC WAY
- PATH OF EXIT DISCHARGE
- OVERHANG LINE ABOVE
- (E) CHAIN LINK FENCE; POSTS SHOWN ARE DIAGRAMMATIC.
- 8'-0" TALL CHAIN LINK FENCE; POSTS SHOWN ARE DIAGRAMMATIC.
- 4'-0" TALL ORNAMENTAL METAL FENCE; POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL ORNAMENTAL METAL FENCE POSTS; SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL CUSTOM PERFORATED METAL PLATE WALL PANEL FENCE (SEE16/A1.50 FOR PATTERN), POSTS SHOWN ON PLANS ARE DIAGRAMMATIC
- NEW FIRE LANE
- X — NEW BUILDING INCREMENT #3 BUILDINGS H1 & H2 AND BUILDING S INCREMENT #4 BUILDING J
- X — EXISTING BUILDING
- X — FUTURE INCREMENT
- INCREMENT 2 AREA OF MODERNIZATION TO EXISTING BUILDING
- (X) — ACCESSIBLE TOILET ROOMS
- B = BOYS TOILET ROOM
- G = GIRLS TOILET ROOM
- ST = STAFF TOILET ROOM
- EXPANSION JOINT
- CONCRETE WALK
- CONTROL JOINT
- ASPHALT CONCRETE PAVING
- LANDSCAPE
- FIRE HYDRANT
- TRUNCATED DOMES

KEYNOTES

13.11	40'X40'X15' TRIANGLE SHADE STRUCTURE, PC 04-121917 - INCREMENT 2
32.39	PR OF 4'-0" WIDTH X 7'-0" TALL DECORATIVE METAL GATE EQUIPPED WITH EXIT HARDWARE
32.100	33" X 48" ACCESSIBLE WHEELCHAIR SPACE, (MAX OF 2% SLOPE IN ANY DIRECTION)

NOTES

1. REFER TO SHEET G0.10 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. REFER TO LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION
3. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UTILITY INFORMATION
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ALL HARDSCAPE/PLANTING OUTSIDE OF LIMIT OF WORK LINE FOR CONNECTION OF UNDERGROUND UTILITIES

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
INCREMENT 1

SHEET NAME:
ENLARGED SITE PLAN - OUTDOOR GATHERING SPACES

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
A1.41

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NOTES:

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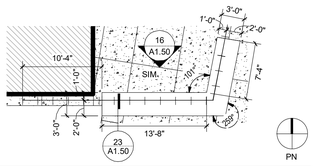
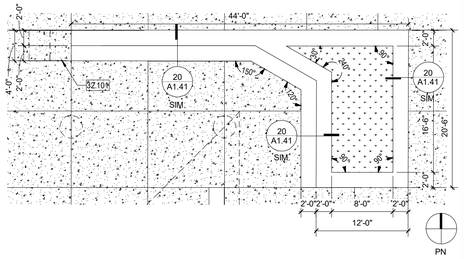
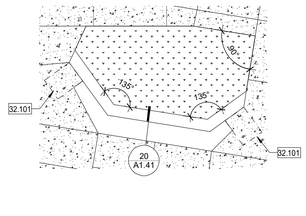


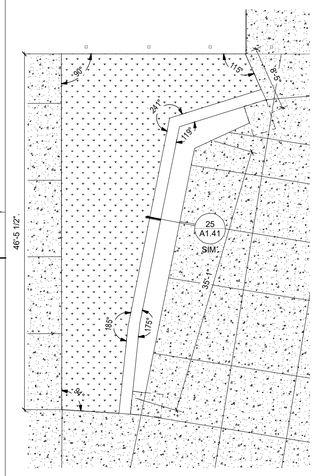
ENLARGED SITE PLAN - PLANTER F 25 NTS



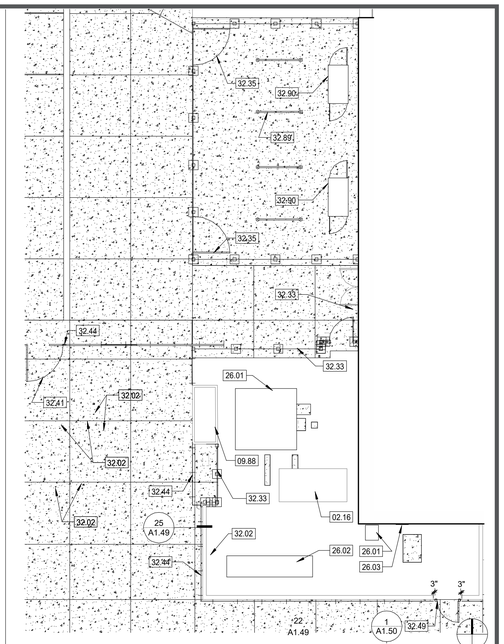
ENLARGED SITE PLAN - OUTDOOR GATHERING SPACE B 20 1/8" = 1'-0"



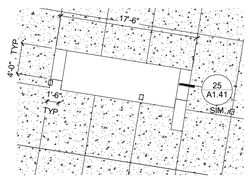
ENLARGED SITE PLAN - PLANTER B 15 1/8" = 1'-0"



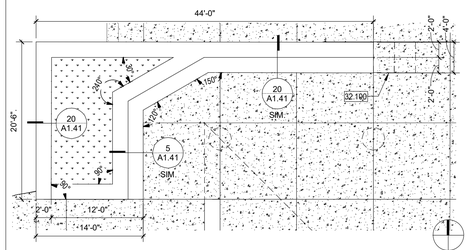
ENLARGED SITE PLAN - PLANTER A 9 1/8" = 1'-0"



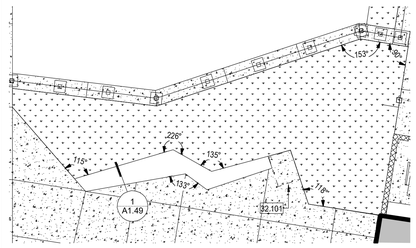
ENLARGED SITE PLAN - ELECTRICAL VEHICLE CHARGING STATIONS1 4 1" = 10'-0"



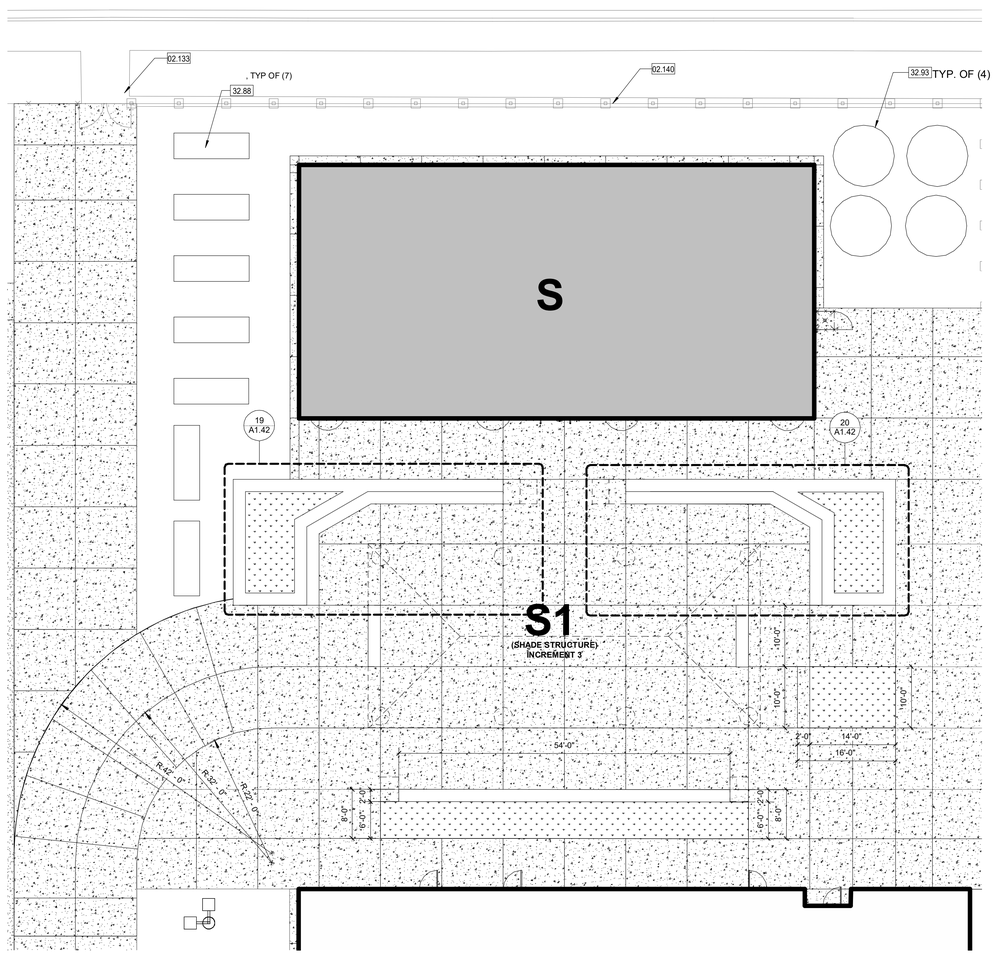
ENLARGED SITE PLAN - PLANTER D 24 1/8" = 1'-0"



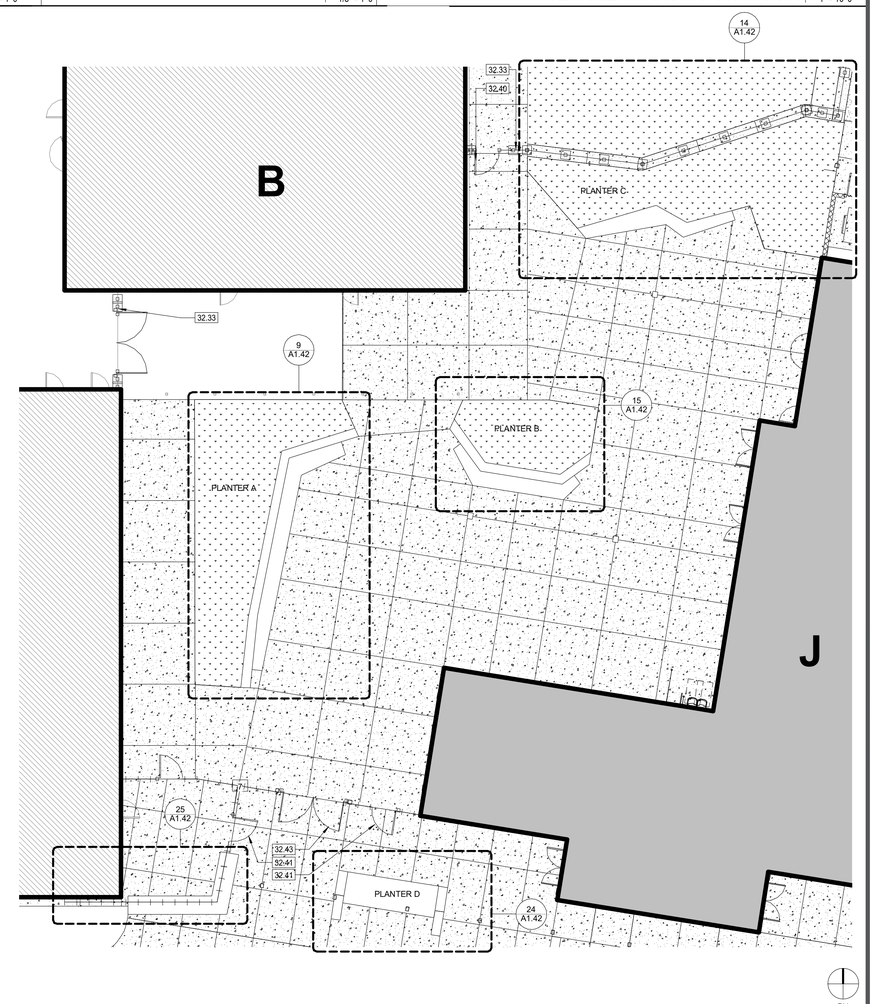
ENLARGED SITE PLAN - OUTDOOR GATHERING SPACE A 19 1/8" = 1'-0"



ENLARGED SITE PLAN - PLANTER C 14 1/8" = 1'-0"



ENLARGED SITE PLAN - OUTDOOR GATHERING SPACE 11 1" = 10'-0"



ENLARGED SITE PLAN - AMPITHEATRE 1 1" = 10'-0"

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ISSUE

Δ	DESCRIPTION	DATE

LEGEND

- PROPERTY LINE
- ASSUMED PROPERTY LINE
- OVERHANG LINE ABOVE
- 8'-0" TALL CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC.
- (E) CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC.
- 4'-0" TALL ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL CUSTOM PERFORATED METAL PLATE WALL PANEL (SEE 16/A1.50 FOR PATTERN) FENCE, FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC
- NEW FIRE LANE
- X — NEW BUILDING INCREMENT #3 BUILDINGS H1 & H2 AND BUILDING S; INCREMENT #4 BUILDING J; EXISTING BUILDING
- X — FUTURE INCREMENT
- INCREMENT 2 AREA OF MODERNIZATION TO EXISTING BUILDING
- EXPANSION JOINT; CONCRETE WALK CONTROL JOINT
- ASPHALT CONCRETE PAVING
- LANDSCAPE SEE LANDSCAPE PLANTING PLANS
- FIRE HYDRANT
- TRUNCATED DOMES

KEYNOTES

02.16	(E) ELECTRICAL TO REMAIN; PROTECT IN PLACE | ELEC
02.133	(E) CHAINLINK DOUBLE GATE
02.140	(E) DECORATIVE METAL FENCE
09.88	PAINT WOOD STORAGE SHED COLOR TO BE APPROVED BY OWNER
26.01	TRANSFORMER | ELEC
26.02	SWITCHBOARD | ELEC
26.03	ELEC PANEL | ELEC
32.02	CONCRETE PAVING | CIVIL
32.15	CONCRETE WALL BENCH
32.33	7'-0" H DECORATIVE METAL FENCING, SEE 1/A1.47
32.35	4'-0" W X 7'-0" H DECORATIVE METAL GATE WITH KNOX LOCK. KNOX LOCK PER LOCAL FIRE AUTHORITY STANDARDS. PROVIDE EXIT HARDWARE
32.40	4'-0" WIDTH X 7'-0" TALL DECORATIVE METAL GATE EQUIPPED WITH EXIT HARDWARE
32.41	4'-0" WIDTH X 7'-0" PERFORATED METAL PLATE WALL PANEL GATE EQUIPPED WITH EXIT HARDWARE
32.43	PR OF 4'-0" WIDTH X 7'-0" TALL FORMED METAL GATE EQUIPPED WITH EXIT HARDWARE
32.44	7'-0" CUSTOM PERFORATED METAL PLATE WALL PANEL FENCING
32.49	4'-0" WIDTH X 6'-0" TALL FORMED METAL GATE
32.88	4'-0" X 12'-0" PLANTER BOX
32.89	BIKE RACK, SEE 12/A1.49
32.90	BIKE LOCKER, "STANDARD CYCLOCKER 2176-2-C", ANCHOR WITH 1/2" DIA. BY 5" ANCHOR SPIKES PER MANUFACTURER. SPACING AND LAYOUT PER MANUFACTURER
32.93	FRUIT TREE
32.100	33" X 48" ACCESSIBLE WHEELCHAIR SPACE, (MAX OF 2% SLOPE IN ANY DIRECTION)
32.101	36" X 48" ACCESSIBLE WHEELCHAIR SPACE (MAX SLOPE OF 2% IN ANY DIRECTION)

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
INCREMENT 1

SHEET NAME:
ENLARGED SITE PLAN - OUTDOOR GATHERING SPACES

CONSTRUCTION DOCUMENTS

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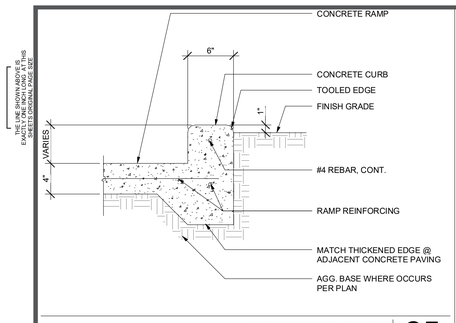
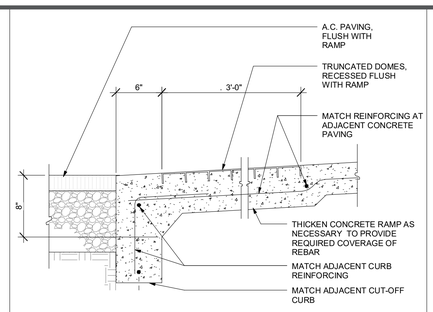
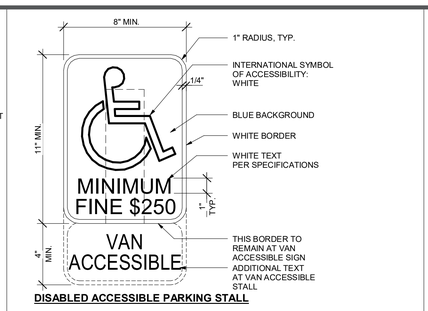


RETAINING CURB 25 — 1 1/2" = 1'-0"

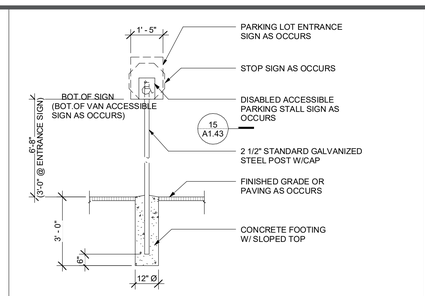


CURB RAMP 20 — 1 1/2" = 1'-0"

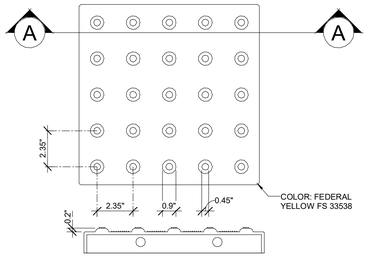


DISABLED ACCESSIBLE PARKING STALL

PARKING SIGNAGE 15 — 3" = 1'-0"

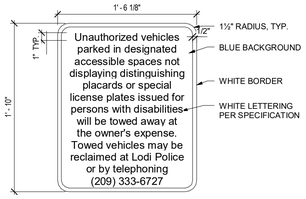


METAL SIGNS 10 — 3/8" = 1'-0"

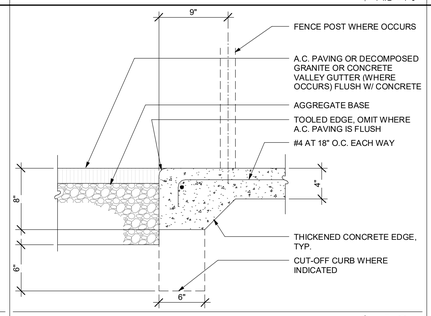


TYPICAL SECTION A-A

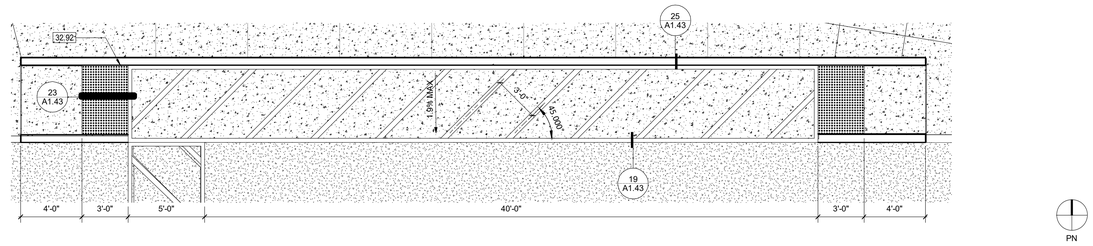
TRUNCATED DOMES 5 — 3" = 1'-0"



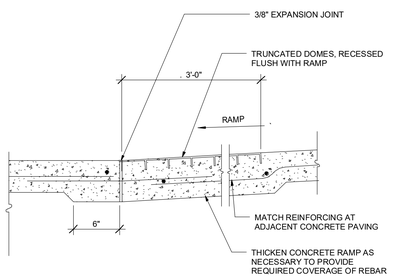
PARKING LOT ENTRANCE SIGN 24 — 1 1/2" = 1'-0"



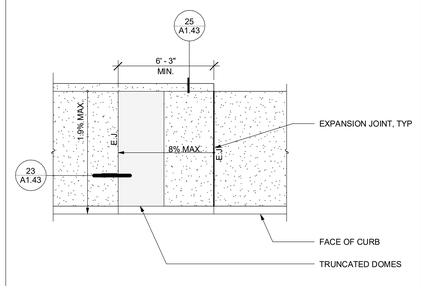
PAVING TRANSITION 19 — 1 1/2" = 1'-0"



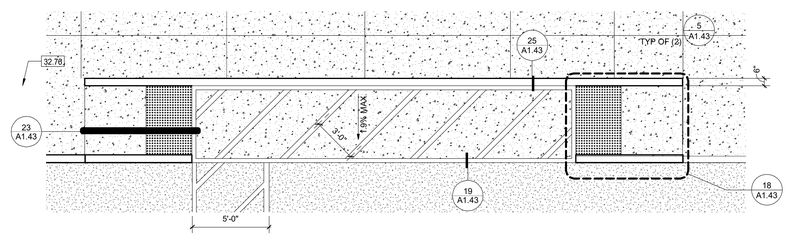
ENLARGED SITE PLAN - DROP OFF 1 4 — 1/4" = 1'-0"



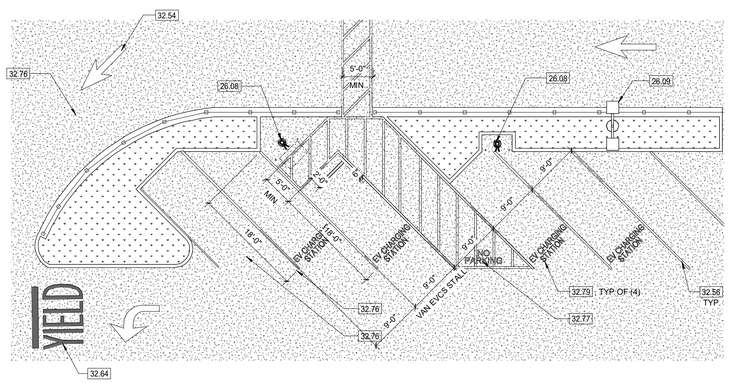
BLENDED TRANSITION 23 — 1 1/2" = 1'-0"



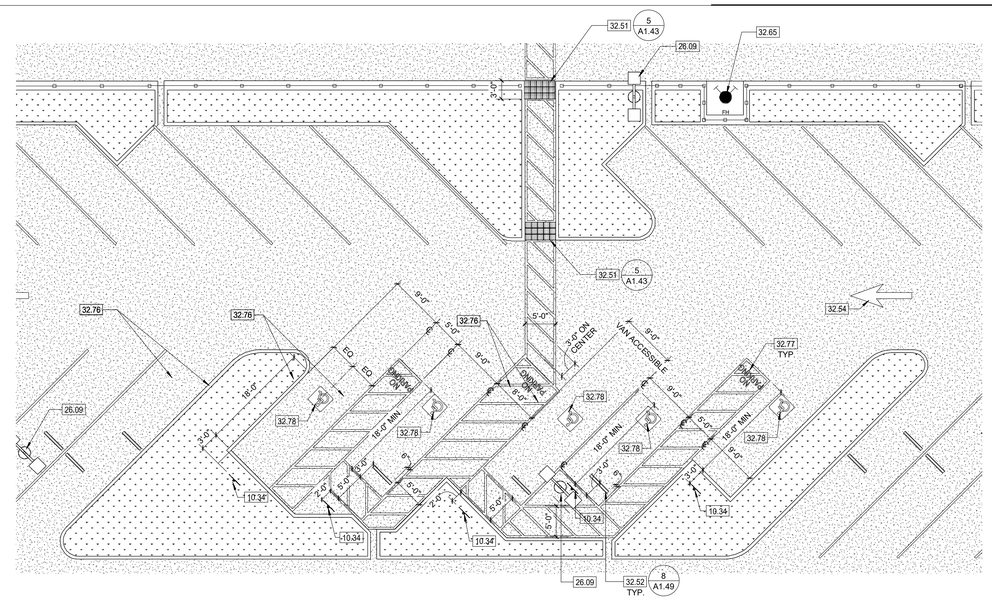
CURB RAMP 18 — 1/4" = 1'-0"



ENLARGED SITE PLAN - DROP OFF 3 — 1/4" = 1'-0"



ENLARGED SITE PLAN - ELECTRICAL VEHICLE CHARGING STATIONS 16 — 1" = 10'-0"



ENLARGED SITE PLAN - ACCESSIBLE PARKING 1 — 1" = 10'-0"

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LICENSED ARCHITECT JENNIFER PEARSON WONG C-35691 REN. 05/31/25 STATE OF CALIFORNIA

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

10.34	ACCESSIBLE PARKING STALL SIGN, SEE 15/A1.43
26.08	EV CHARGER | SEE ELECTRICAL DWGS
26.09	SITE LIGHTING | SEE ELECTRICAL DWGS
32.51	TRUNCATED DOMES / DETECTABLE WARNINGS, SEE 5/A1.43
32.52	CONC WHEEL STOP, ANCHORED TO PAVING | SEE 8/A1.49
32.54	PAVEMENT MARKING - DIRECTIONAL ARROW, SEE 11/A1.49
32.56	PAVEMENT MARKING - 4" WIDE WHITE PAINTED LINE
32.64	PAVEMENT MARKING - YIELD
32.65	FIRE HYDRANT - SEE CIVIL DWGS
32.76	BORDER AT ACCESS AISLE, BLUE PAINT
32.77	CENTERED WITHIN THE ACCESS AISLE PAINT THE WORDS, "NO PARKING" IN 12" HIGH WHITE LETTERS MIN.
32.78	TYPICAL PAINTED DISABLED ACCESSIBLE SYMBOL
32.79	CENTERED WITHIN THE STALL PAINT THE WORDS, "EV CHARGING STATION" IN 12" HIGH WHITE LETTERS MIN.
32.92	ACCESSIBLE DROP-OFF AREA PER THIS APPLICATION

NOTES

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945 SOUTH HAM LANE LODI, CA 95242

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LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION INCREMENT 1

SHEET NAME:
ENLARGED SITE PLAN - PARKING

CONSTRUCTION DOCUMENTS

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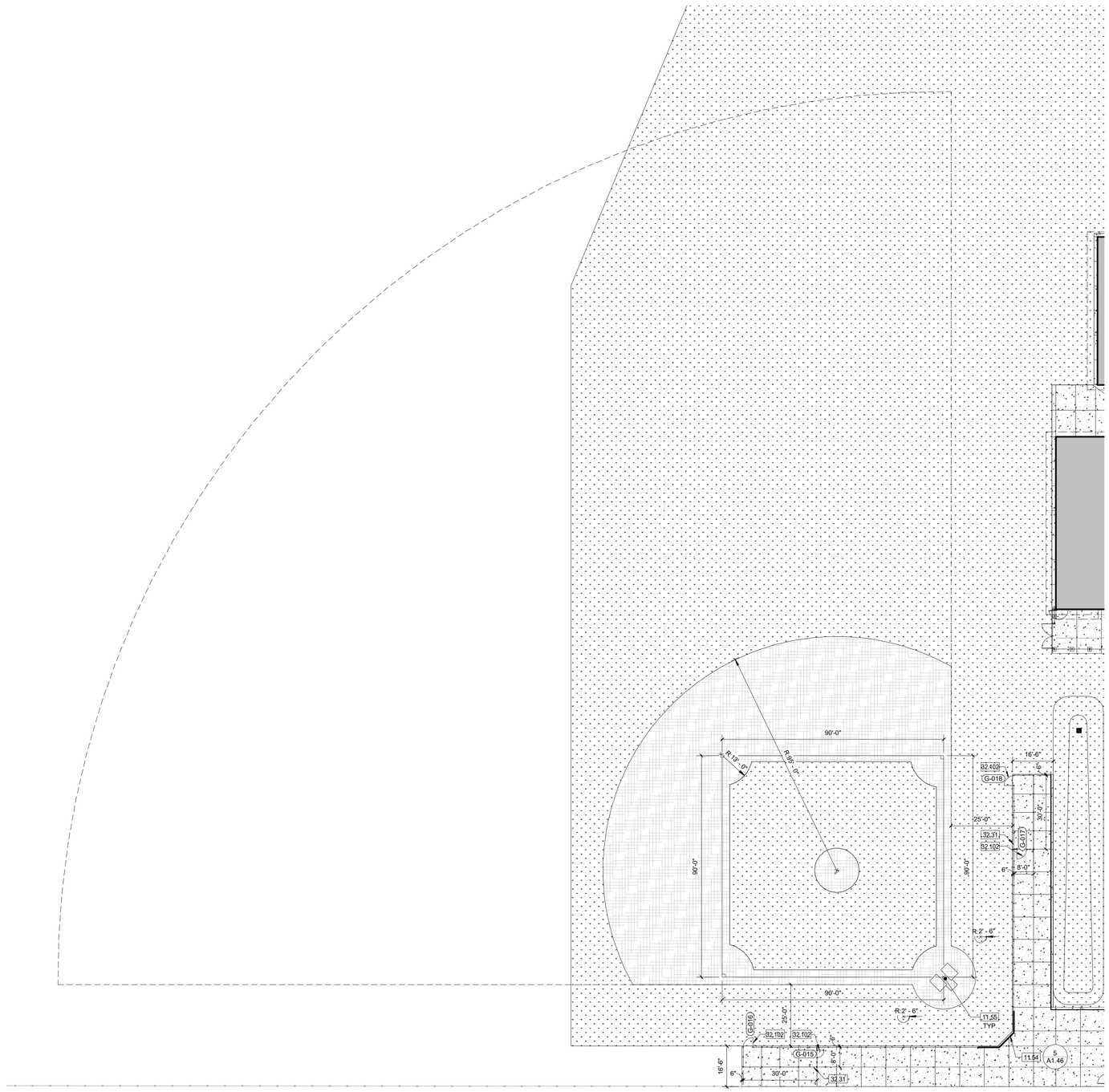

PN

ENLARGED SITE PLAN - BASEBALL FIELD

1
1" = 20'-0"

PLEASE RECYCLE

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects

3431007000

2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

LICENSED ARCHITECT
JENNIFER PEARSON WONG
C-35691
REN. 05/31/25
STATE OF CALIFORNIA

ISSUE

Δ	DESCRIPTION	DATE

LEGEND

- OVERHANG LINE ABOVE
- (E) CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC.
- 8'-0" TALL CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC.
- 4'-0" TALL ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL CUSTOM PERFORATED METAL PLATE WALL PANEL (SEE 16/A1.50 FOR PATTERN) FENCE, FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC
- X — NEW BUILDING
  INCREMENT #3 BUILDINGS H1 & H2
  INCREMENT #4 BUILDING J
- EXPANSION JOINT
- CONCRETE WALK
- CONTROL JOINT
- ASPHALT CONCRETE PAVING
- GRASS
- INFIELD MIX - SEE LANDSCAPE
- FIRE HYDRANT

KEYNOTES

11.54	13' - 2" HIGH, CHAIN LINK BASEBALL BACKSTOP
11.55	BASEBALL BASE
32.31	8' - 0" H CHAIN LINK FENCING
32.102	PRECAST CONCRETE SEAT WALL

NOTES

1. REFER TO SHEET G0.10 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. REFER TO LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION
3. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UTILITY INFORMATION
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ALL HARDSCAPE/PLANTING OUTSIDE OF LIMIT OFWORK LINE FOR CONNECTION OF UNDERGROUND UTILITIES

FACILITY:

LODI MIDDLE SCHOOL

945 SOUTH HAM LANE LODI, CA 95242

PROJECT:

LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
INCREMENT 1

SHEET NAME:

ENLARGED SITE PLAN - FIELDS/STRIPING

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

A1.45

Autodesk Docs://3431007000 Lodi MS Additions/3431007000-LODI-MS-ADDITIONS.rvt
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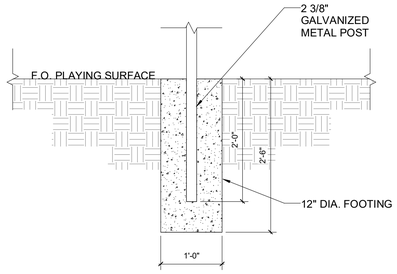
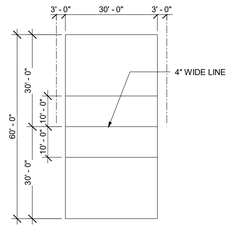


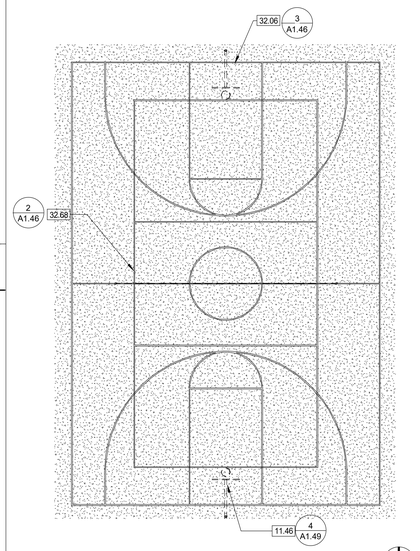
BASEBALL BACKSTOP FOOTING **5** 1" = 1'-0"



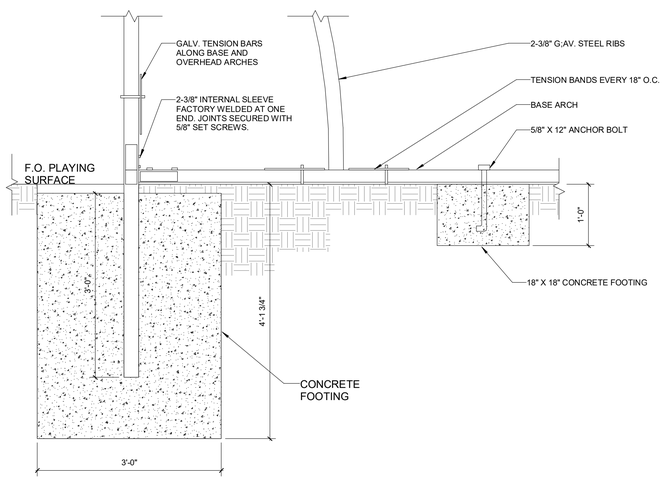
NOTE:

ALL LINES ARE WHITE PAINT, 2" WIDE UNLESS OTHERWISE NOTED. DIMENSIONS ARE TO THE OUTSIDE EDGE OF LINE U.O. N.

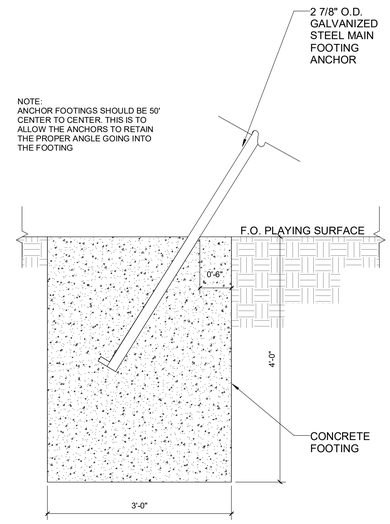
VOLLEYBALL COURT STRIPING **2** 1" = 20'-0"



ENLARGED SITE PLAN - BASKETBALL COURT **4** 1" = 10'-0"



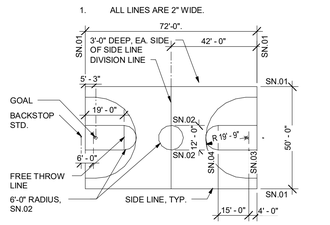
SOFTBALL BACKSTOP CONNECTION **7** 1" = 1'-0"



SOFTBALL BACKSTOP FOOTING **6** 1" = 1'-0"

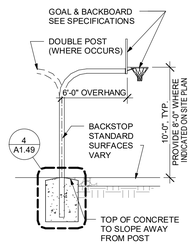
GENERAL NOTE:

1. ALL LINES ARE 2" WIDE.



SN.01	INSIDE EDGE OF LINE
SN.02	OUTSIDE EDGE OF LINE
SN.03	FACE OF BACKBOARD
SN.04	TO FAR EDGE OF LINE FROM BACKSTOP

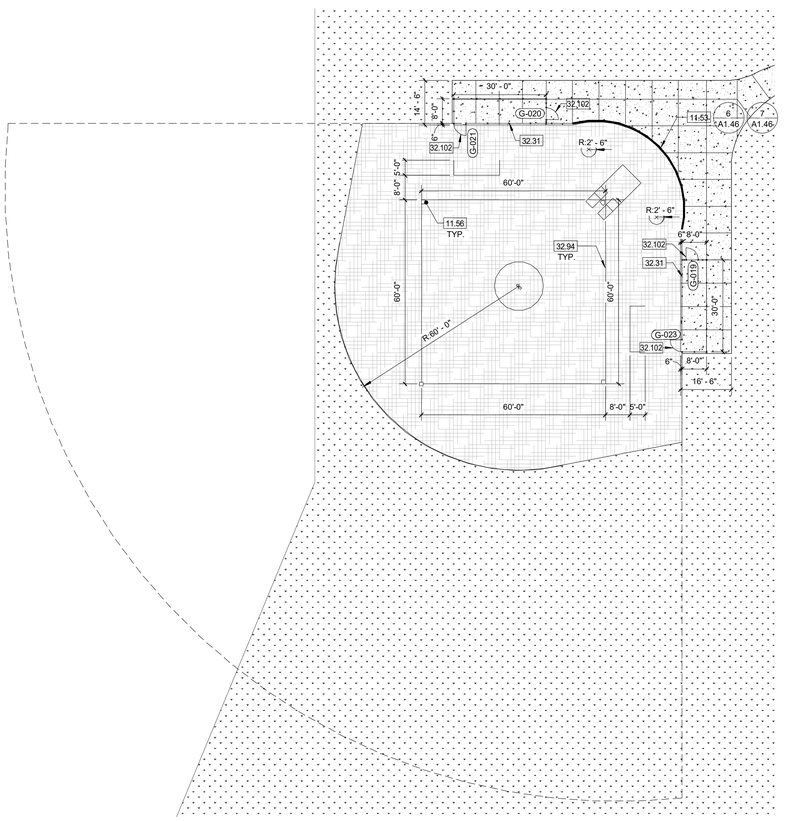
BASKETBALL COURT



GOAL

N.T.S.

BASKETBALL COURT & GOAL **3** 1" = 30'-0"



ENLARGED SITE PLAN - SOFTBALL FIELD **1** 1" = 20'-0"

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- CONCRETE WALK
- CONTROL JOINT
- ASPHALT CONCRETE PAVING
- GRASS
- INFIELD MIX - SEE LANDSCAPE
- FIRE HYDRANT

KEYNOTES

11.46	EXTERIOR BASKETBALL BACKSTOP, SEE 4/A1.49
11.53	14' - 6" HIGH, CHAIN LINK SOFTBALL BACKSTOP
11.56	SOFTBALL BASE
32.06	BASKETBALL GAME LINES
32.31	8' - 0" H CHAIN LINK FENCING
32.68	HARDCOURT STRIPING: VOLLEYBALL COURT
32.94	FIELD STRIPING
32.102	PRECAST CONCRETE SEAT WALL

NOTES

1. REFER TO SHEET G0.10 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. REFER TO LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION
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945 SOUTH HAM LANE LODI, CA 95242

PROJECT:

LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION INCREMENT 1

SHEET NAME:

ENLARGED SITE PLAN - FIELDS/STRIPING

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:

A1.46

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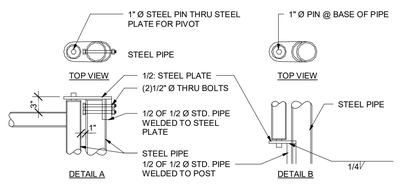
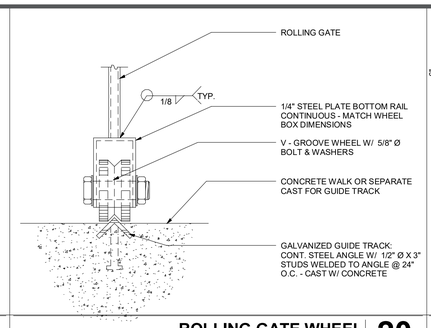
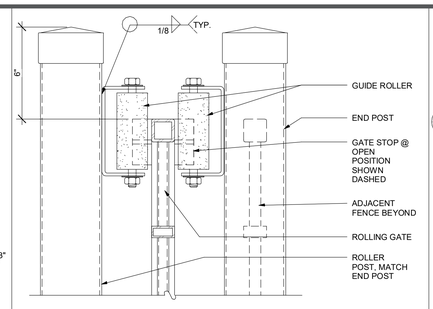


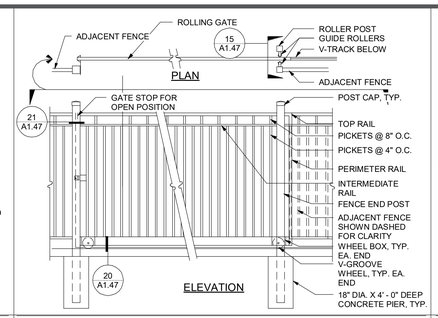
SWING ARM BARRIER CONNECTIONS 25
1" = 1'-0"



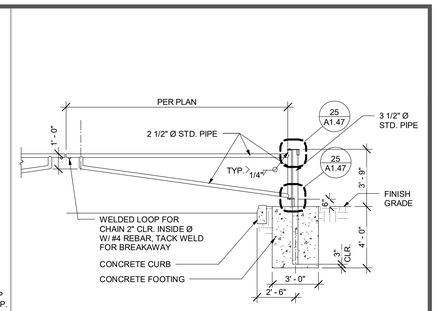
ROLLING GATE WHEEL 20
3" = 1'-0"



ROLLING GATE GUIDE ROLLER 15
3" = 1'-0"



ROLLING DECORATIVE METAL GATE 10
3/8" = 1'-0"



SWING ARM BARRIER 5
1/4" = 1'-0"

DECORATIVE METAL GATE HARDWARE

1. ALL HARDWARE SHALL MEET CBC AND ADA REQUIREMENTS FOR ACCESSIBILITY. WHEN IN CONFLICT, COMPLY WITH THE MOST STRINGENT.
   REFER TO HARDWARE GROUP FOR PEDESTRIAN GATES.
2. HINGES:
   A. GATE LEAFS 6'-0" WIDE OR LESS SHALL RECEIVE THREE NO. 1-3030 HEAVY DUTY BUTT HINGES BY KING ARCHITECTURAL METAL OR EQUAL, PER LEAF.
   B. GATE LEAFS 6'-0" WIDE AND LESS THAN 12'-0" WIDE SHALL RECEIVE THREE NO. 1-4040 EXTRA HEAVY DUTY BUTT HINGES BY KING ARCHITECTURAL METAL OR EQUAL, PER LEAF.
3. LOCKABLE CANE BOLT: NO. 30-6020 EXTRA HEAVY DUTY CANE BOLT BY KING ARCHITECTURAL METALS OR EQUAL PER LEAF.
   A. PROVIDE AT ALL GATES EXCEPT PEDESTRIAN GATES.
4. IN-GROUND CANE BOLT SLEEVE: 12" LONG STEEL PIPE SIZED TO MATCH CANE BOLT.
   A. PROVIDE FOR EACH LEAF AT BOTH THE OPEN AND CLOSED POSITIONS. WHERE INSTALLED IN LOCATIONS OTHER THAN CONCRETE, PROVIDE CENTERED IN A 12"X12" X6" CONCRETE PAD.
5. MISCELLANEOUS HARDWARE: ITEMS OF HARDWARE, INCLUDING PADLOCK HASPS AND EYES SHALL BE FABRICATED BY THE FENCE MANUFACTURER.
   A. KICK PLATES - 12 GAUGE GALV. STEEL SHEET, 10" HIGH X GATE WIDTH.
   B. EXIT DEVICE MOUNTING PLATE - 12 GAUGE GALV. STEEL SHEET X GATE WIDTH ASTRAGAL - 10 GAUGE GALV. STEEL SHEET.
6. PEDESTRIAN GATE HARDWARE - GROUP G01
   A. HINGES - THREE NO. 1-3030 HEAVY DUTY BUTT HINGES BY KING ARCHITECTURAL METALS.
   B. PANIC HARDWARE - VON DUPRIN CD-AX-PA-98-EO
   C. GATE PULL - IVES VR910 NL
   D. RIM CYLINDER - SCHLAGE 20-057 ICX
   E. MORTISE CYLINDER (DOGGING) - SCHLAGE 26-091 ICX XQ11-948
   F. FINAL CORES - SCHLAGE PRIMUS 20-740
   G. SURFACE CLOSER - LCN 4111 AVB EDA SRI
   H. GATE STOP/HOLDER - VON DUPRIN FS43 (MOUNTED TO 12"X12"X6" MIN. CONCRETE PAD)

SECURITY SCREEN: 16-GAUGE, GALVANIZED AND PERFORATED STEEL SHEET WITH 3/16-INCH HOLES STAGGERED AT 1/4-INCHES ON CENTER. WELDED TO THE FABRICATED GATE OR FENCE PANEL ASSEMBLY, HOT-DIP GALVANIZED. BASED ON MCNICHOLS ITEM #1431141648.
SECURITY FABRIC U-EDGING: 14 GA. GALVANIZED HDT ROLLED U SHAPED EDGING, 1" TALL FACE X 3/8" OPENING WIDTH. BASIS OF DESIGN IS MCNICHOLS QUALITY U-EDGING, ITEM NUMBER #4003801410 (WWW.MCNICHOLS.COM).

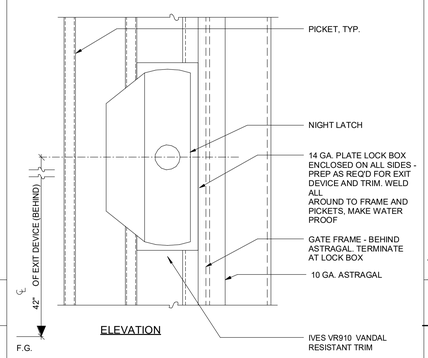
FABRICATION

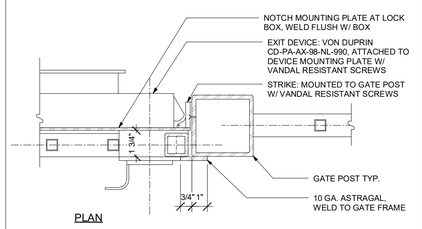
A. PICKETS, RAILS, AND POSTS SHALL BE PRECUT TO SPECIFIED LENGTHS. RAILS SHALL BE PRE-PUNCHED TO ACCEPT PICKETS.
B. PICKETS SHALL BE INSERTED INTO THE PRE-PUNCHED HOLES IN THE RAILS AND SHALL BE ALIGNED TO STANDARD SPACING USING A SPECIALLY CALIBRATED ALIGNMENT FIXTURE. EACH PICKET AND RAIL SHALL BE JOINED USING THE FUSION WELDING PROCESS THUS COMPLETING THE RIGID PANEL ASSEMBLY.
C. COMPLETED PANELS SHALL BE CAPABLE OF SUPPORTING A 600 POUND LOAD APPLIED AT MIDSPAN WITHOUT PERMANENT DEFORMATION. PANELS SHALL BE BIASABLE TO A 25 PERCENT SLOPE IN GRADE.

D. GATES:
1. FABRICATE USING MANUFACTURER'S STANDARD MATERIALS AND COMPONENTS EXCEPT UPRIGHTS SHALL BE 11 GAUGE, 2 INCH SQUARE TUBING.
2. RAIL AND UPRIGHT INTERSECTIONS SHALL BE JOINED BY WELDING.
3. PICKET AND RAIL INTERSECTIONS SHALL BE JOINED BY THE SAME WELDING PROCESS USED FOR PANEL ASSEMBLY.

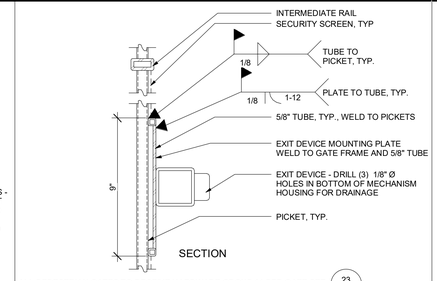
SELF-CLOSING GATES TO COMPLY WITH CBC AND ADA GUIDELINES FOR ACCESSIBLE DESIGN, SECTION 404.2.8.2.

GATE HARDWARE GROUP 01 23
12" = 1'-0"



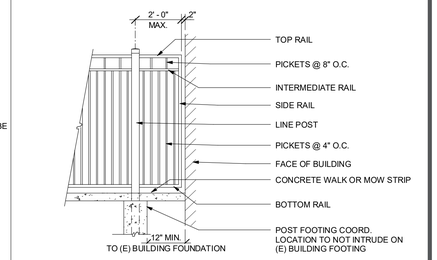


EXIT HARDWARE AT DECORATIVE METAL GATE 13
3" = 1'-0"

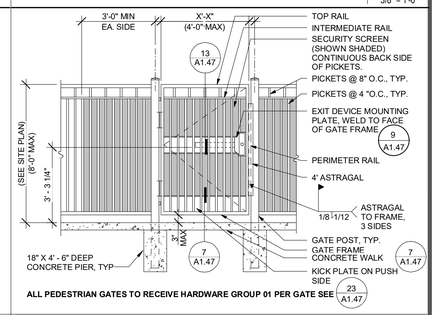


ALL PEDESTRIAN GATES TO RECEIVE HARDWARE GROUP 01 PER GATE SEE 23 A1.47

MOUNTING PLATE 9
3" = 1'-0"

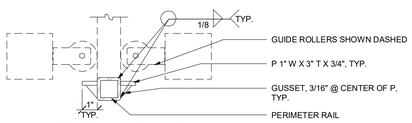


DECORATIVE METAL FENCE @ BUILDING 4
3/8" = 1'-0"

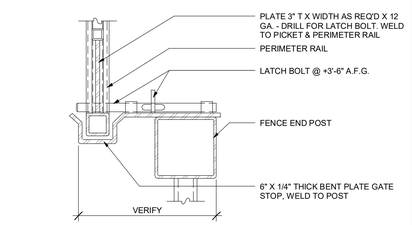


ALL PEDESTRIAN GATES TO RECEIVE HARDWARE GROUP 01 PER GATE SEE 23 A1.47

DECORATIVE METAL FENCE & GATE W/ PANIC HARDWARE 3
3/8" = 1'-0"

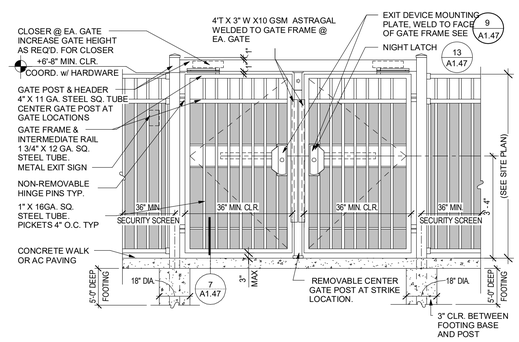


B. GATE STOP @ OPEN POSITION



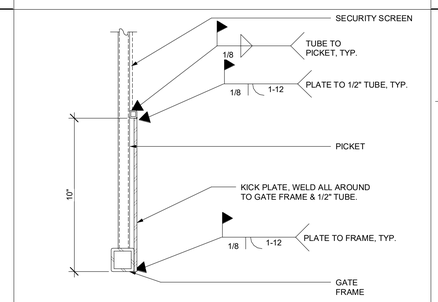
A. GATE STOP AND LATCH @ CLOSED POSITION

ROLLING GATE LOCK BRACKET 21
3" = 1'-0"

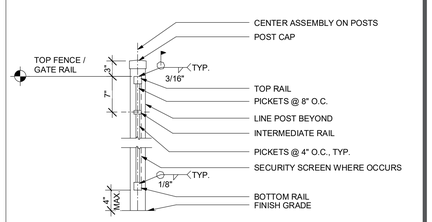


NOTES:
1. ALL CAVITIES BETWEEN KICK PLATE AND FENCING MATERIAL MUST BE CAPPED ON ALL SIDES
2. ALL MATERIALS ARE GALVANIZED TO BE POWDER COATED BLACK 2-3 MILS MIN.
3.SECURITY SCREEN (SHOWN SHADED) CONTINUOUS BACK SIDE OF PICKETS.
4.NO MANUALLY OPERATED CANE BOLTS ARE ALLOWED ON GATES WITH EXIT DEVICES.
5. **ALL PEDESTRIAN DECORATIVE METAL FENCE GATES TO RECEIVE HARDWARE GROUP 01 PER GATE SEE** 23 A1.47

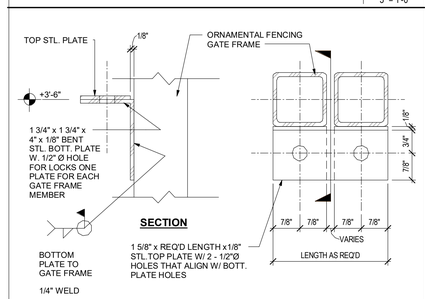
DECORATIVE METAL FENCE & DOUBLE GATES W/ PANIC HARDWARE 11
1/2" = 1'-0"



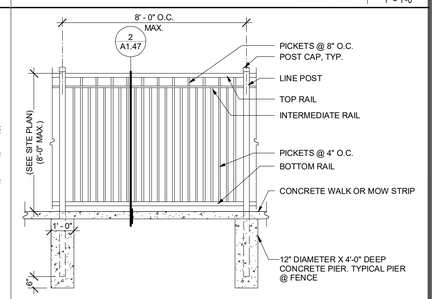
KICK PLATE 7
3" = 1'-0"



DECORATIVE METAL FENCE GATE SIM. SECTION 2
1" = 1'-0"



KNOX LOCK GATE DETAIL AT DECORATIVE FENCING 6
6" = 1'-0"



DECORATIVE METAL FENCE 1
3/8" = 1'-0"

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ISSUE

Δ	DESCRIPTION	DATE

LEGEND

- PROPERTY LINE
- ASSUMED PROPERTY LINE
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- PATH OF EXIT DISCHARGE
- OVERHANG LINE ABOVE
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- NEW FIRE LANE
- X — NEW BUILDING INCREMENT #3 BUILDINGS H1 & H2 AND BUILDING S INCREMENT #4 BUILDING J
- X — EXISTING BUILDING
- X — FUTURE INCREMENT
- INCREMENT 2 AREA OF MODERNIZATION TO EXISTING BUILDING
- (X) — ACCESSIBLE TOILET ROOMS
- B = BOYS TOILET ROOM
- G = GIRLS TOILET ROOM
- ST = STAFF TOILET ROOM
- EXPANSION JOINT
- CONCRETE WALK
- CONTROL JOINT
- ASPHALT CONCRETE PAVING
- LANDSCAPE
- FIRE HYDRANT
- TRUNCATED DOMES

NOTES

1. REFER TO SHEET G0.10 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. REFER TO LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION
3. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UTILITY INFORMATION
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ALL HARDSCAPE/PLANTING OUTSIDE OF LIMIT OFWORK LINE FOR CONNECTION OF UNDERGROUND UTILITIES

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION INCREMENT 1
SHEET NAME:
FENCING AND GATE DETAILS

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

A1.47

Autodesk Docs://3431007000 Lodi MS Additions/3431007000-LODI-MS-ADDITIONS.rvt
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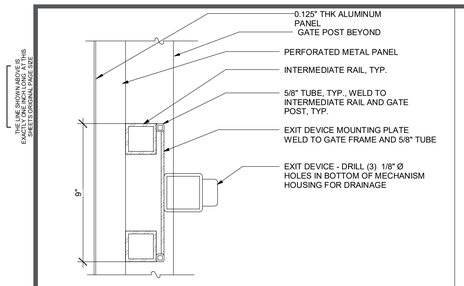
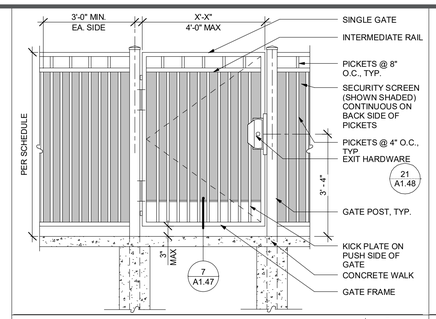
PLEASE RECYCLE

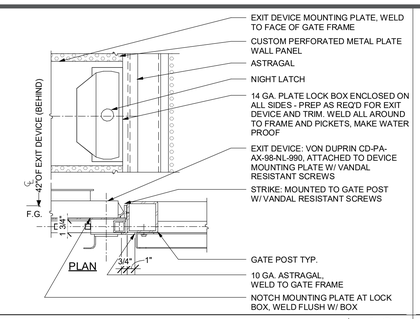


SECTION

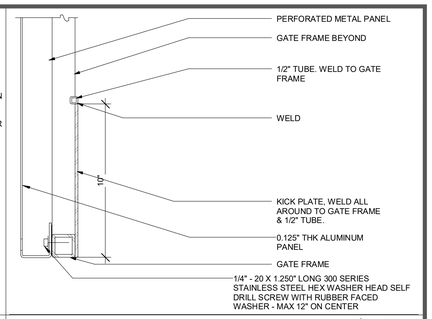
MOUNTING PLATE - PERFORATED METAL PLATE WALL PANEL 25
3" = 1'-0"



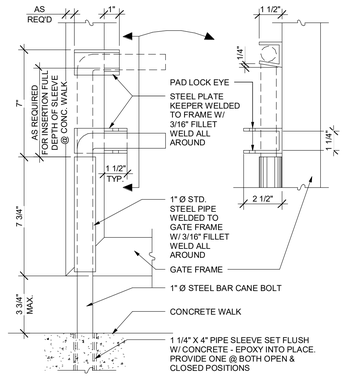
DECORATIVE METAL FENCE & GATE 15
1/2" = 1'-0"



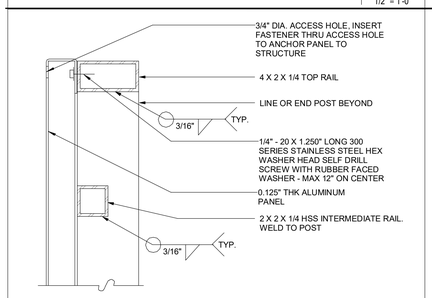
EXIT HARDWARE - PERFORATED METAL PLATE WALL PANEL 10
1 1/2" = 1'-0"



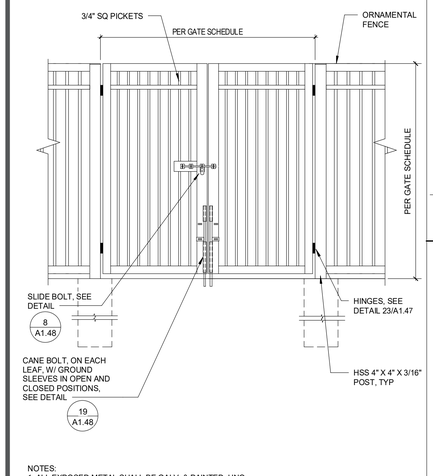
KICK PLATE - PERFORATED METAL PLATE WALL PANEL 5
3" = 1'-0"



CANE BOLT ASSEMBLY 19
3" = 1'-0"

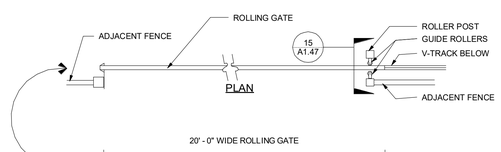


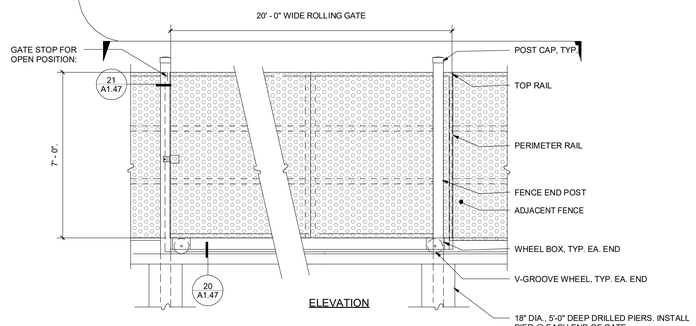
PERFORATED METAL PLATE WALL PANEL - TOP OF FENCE 14
3" = 1'-0"



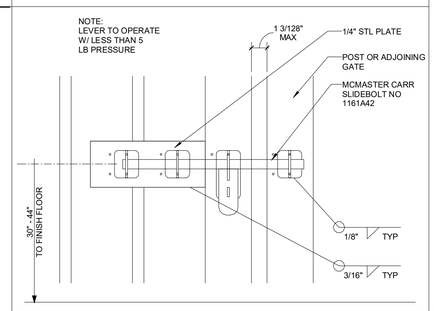
NOTES:
1. ALL EXPOSED METAL SHALL BE GALV. & PAINTED, UNO.
2. PAINT DOORS & TS AROUND DOOR
3. GRIND ALL EDGES AND WELDS SMOOTH, TYP.
4. PROVIDE WELDED PLATES AT ALL OPEN ENDS, TYP
5. PROVIDE SIGNAGE STATING, "GATES TO BE OPERATED BY AUTHORIZED DISTRICT PERSONNEL."

DECORATIVE METAL GATE 23
1/2" = 1'-0"

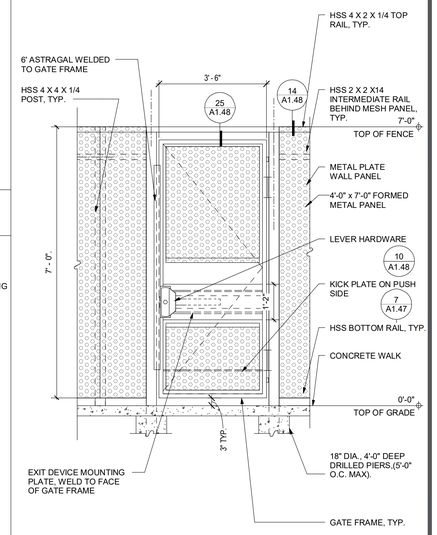




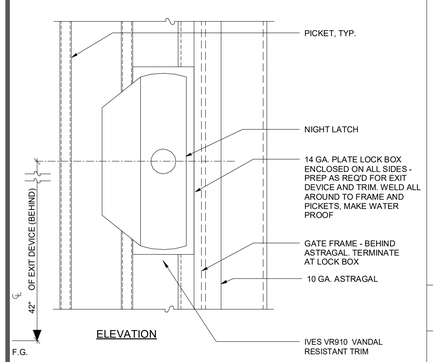
PERFORATED METAL PLATE WALL PANEL ROLLING GATE AND FENCE 12
1/2" = 1'-0"

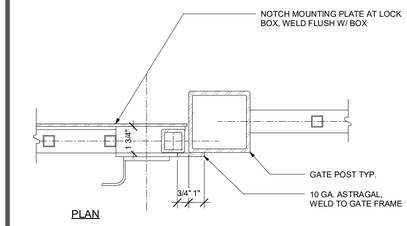


METAL GATE LATCH 8
3" = 1'-0"

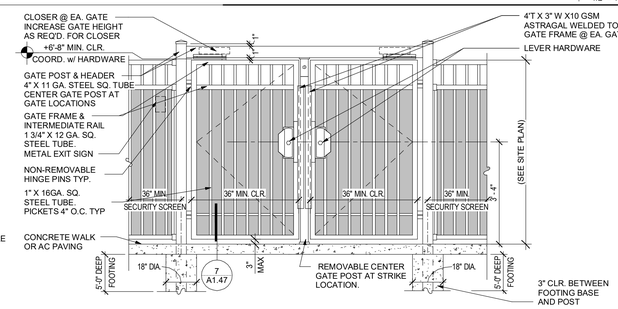


PERFORATED METAL PLATE WALL PANEL GATE AND FENCE 3
1/2" = 1'-0"



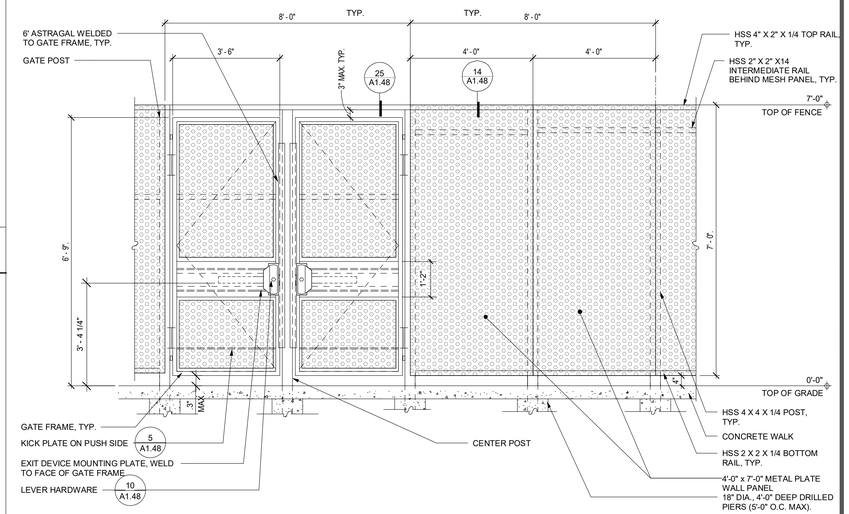


EXIT HARDWARE @ SINGLE DECORATIVE METAL GATE 21
3" = 1'-0"



NOTES:
1. ALL CAVITIES BETWEEN KICK PLATE AND FENCING MATERIAL MUST BE CAPPED ON ALL SIDES
2. ALL MATERIALS ARE GALVANIZED TO BE POWDER COATED BLACK 2-3 MILS MIN.
3. SECURITY SCREEN (SHOWN SHADED) CONTINUOUS BACK SIDE OF PICKETS.
4. NO MANUALLY OPERATED CANE BOLTS ARE ALLOWED ON GATES WITH EXIT DEVICES.
5. ALL PEDESTRIAN DECORATIVE METAL FENCE GATES TO RECEIVE HARDWARE GROUP 01 PER GATE SEE 23 A1.47

DECORATIVE METAL FENCE & DOUBLE GATES 11
1/2" = 1'-0"



PERFORATED METAL PLATE WALL PANEL DOUBLE GATE AND FENCE 1
1/2" = 1'-0"

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
LICENSED ARCHITECT JENNIFER PEARSON-WANG C-35691 REN. 05/31/25 STATE OF CALIFORNIA
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

LEGEND

- PROPERTY LINE
- ASSUMED PROPERTY LINE
- ACCESSIBLE PATH OF TRAVEL / PATH OF TRAVEL TO PUBLIC WAY
- PATH OF EXIT DISCHARGE
- OVERHANG LINE ABOVE
- (E) CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC
- 8'-0" TALL CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC.
- 4'-0" TALL ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL CUSTOM PERFORATED METAL PLATE WALL PANEL FENCE (SEE16/A1.50 FOR PATTERN), FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC
- NEW FIRE LANE
- X — NEW BUILDING INCREMENT #3 BUILDINGS H1 & H2 AND BUILDING S INCREMENT #4 BUILDING J
- X — EXISTING BUILDING
- X — FUTURE INCREMENT
- INCREMENT 2 AREA OF MODERNIZATION TO EXISTING BUILDING
- (X) — ACCESSIBLE TOILET ROOMS
- B = BOYS TOILET ROOM
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- EXPANSION JOINT
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FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION INCREMENT 1
SHEET NAME:
FENCING AND GATE DETAILS

CONSTRUCTION DOCUMENTS

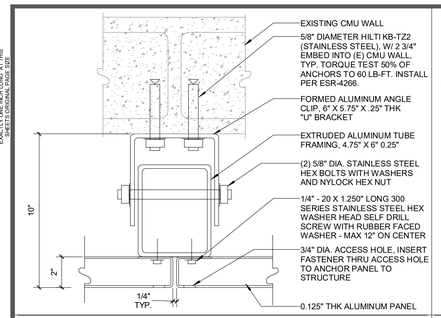
DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

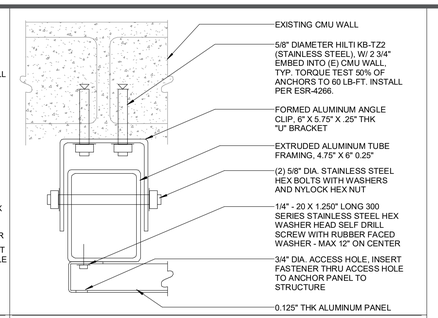
A1.48

Autodesk Docs://3431007000 Lodi MS Additions/3431007000-LODI-MS-ADDITIONS.rvt
3/31/2025 9:47:59 AM

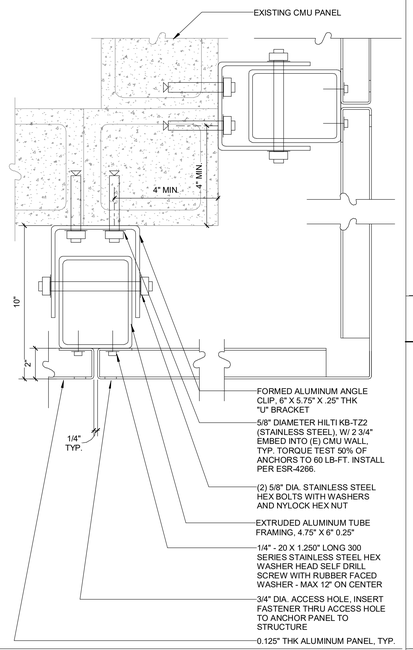
PLEASE RECYCLE



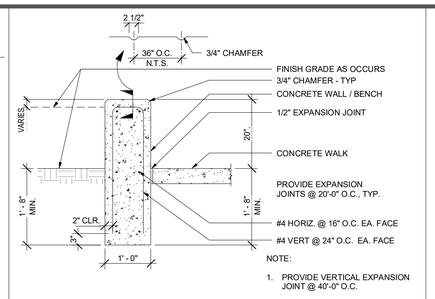
PERFORATED METAL PLATE WALL PANEL - JOINT 30
3" = 1'-0"



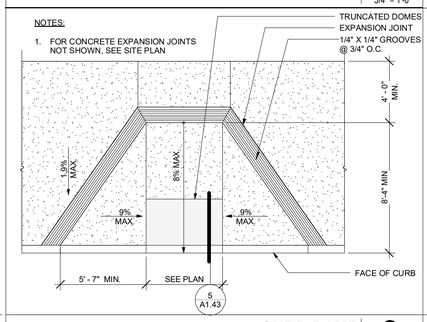
PERFORATED METAL PLATE WALL PANEL - END 24
3" = 1'-0"



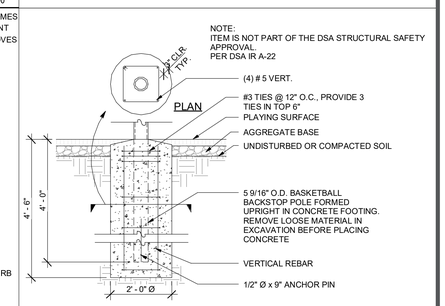
PERFORATED PANEL AT (E) BRICK CMU WALL - CORNER 13
3" = 1'-0"



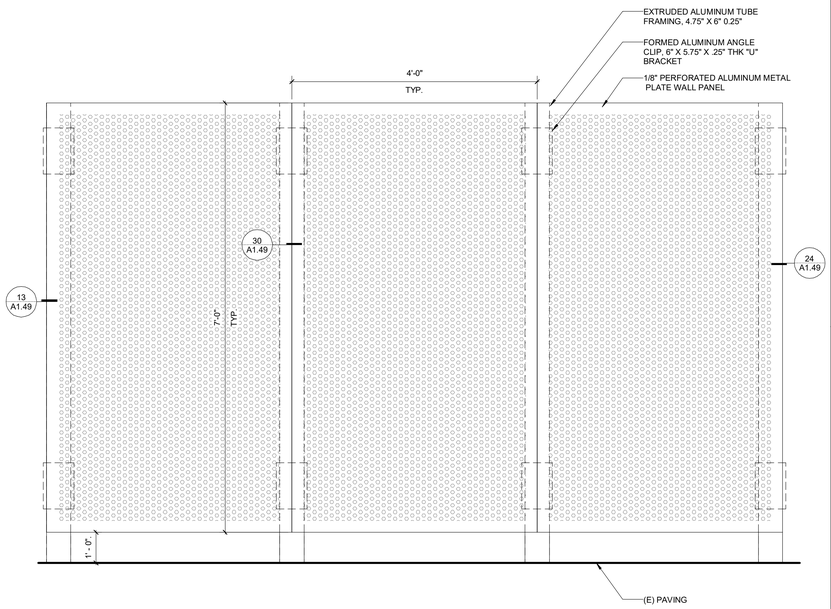
LOW CONCRETE WALL BENCH 10
3/4" = 1'-0"



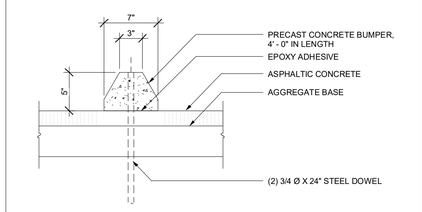
CURB RAMP 9
1/4" = 1'-0"



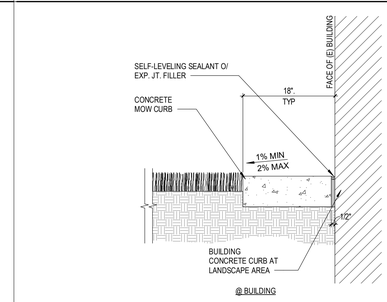
BASKETBALL BACKSTOP FOOTING 4
1/2" = 1'-0"



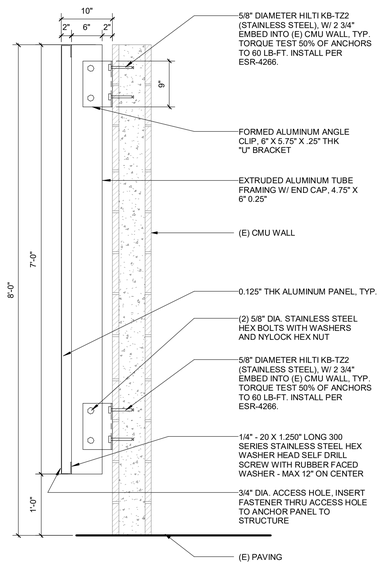
PERFORATED METAL PLATE WALL PANEL AT (E) BRICK CMU WALL 22
1" = 1'-0"



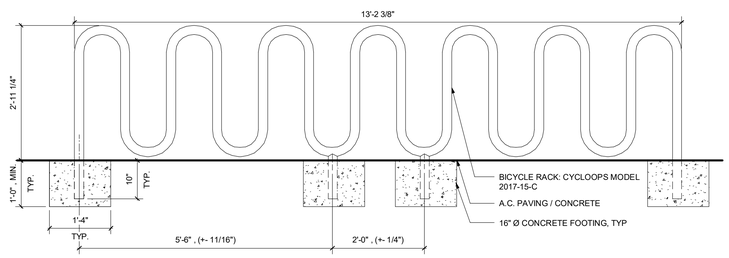
PRECAST CONCRETE BUMPER 8
1 1/2" = 1'-0"



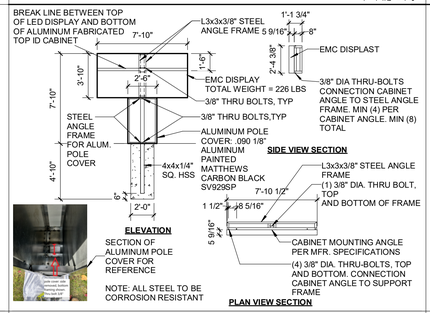
MOW STRIP @ BLDG 3
1 1/2" = 1'-0"



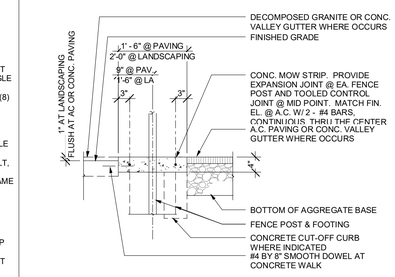
PERFORATED PANEL AT (E) BRICK CMU WALL 25
1" = 1'-0"



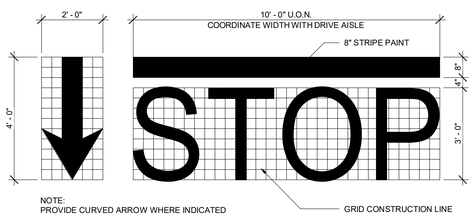
BIKE RACK ANCHORAGE 12
3/4" = 1'-0"



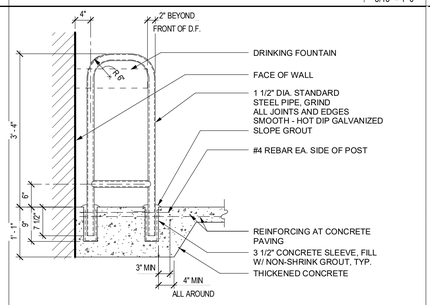
MARQUEE SIGN 7
3/16" = 1'-0"



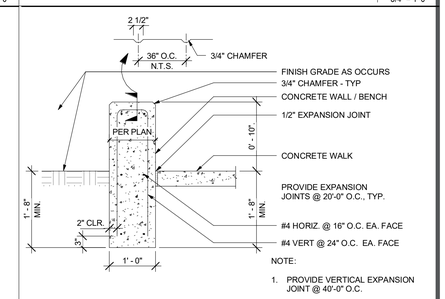
MOW STRIP @ FENCE 2
3/4" = 1'-0"



DIRECTIONAL ARROW 11
1/2" = 1'-0"



DRINKING FOUNTAIN PROTECTION RAIL 6
3/4" = 1'-0"



LOW CONCRETE WALL BENCH 1
3/4" = 1'-0"

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
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SS ☑ FLS ☑ ACS ☑
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LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

LICENSED ARCHITECT JENNIFER PEARSON HUANG C-35691 REN. 05/31/25 STATE OF CALIFORNIA

ISSUE

Δ	DESCRIPTION	DATE

LEGEND

- PROPERTY LINE
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- (E) CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC
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- X — NEW BUILDING INCREMENT #3 BUILDINGS H1 & H2 AND BUILDING S INCREMENT #4 BUILDING J
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  - B = BOYS TOILET ROOM
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945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
INCREMENT 1

SHEET NAME:
SITE/ GATE & FENCE DETAILS

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

A1.49

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY 1" WHEN PLOTTED ON THIS SHEET ORIGINAL PAGE SIZE
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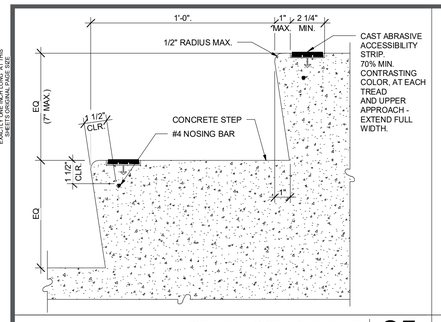
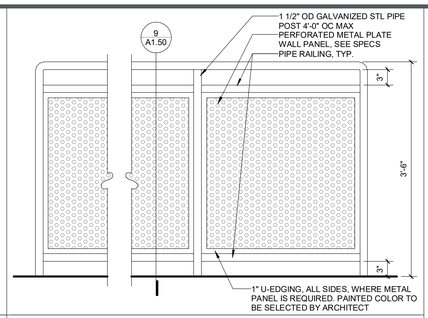
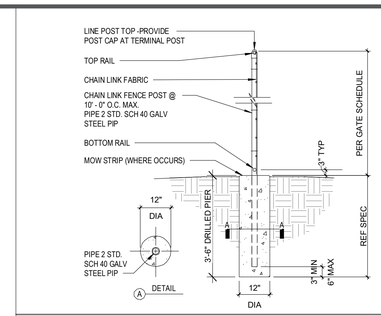


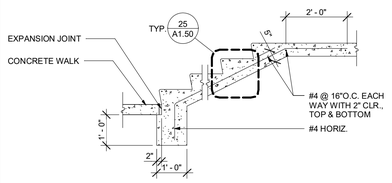
STAIR NOSING DETAIL 25
3" = 1'-0"



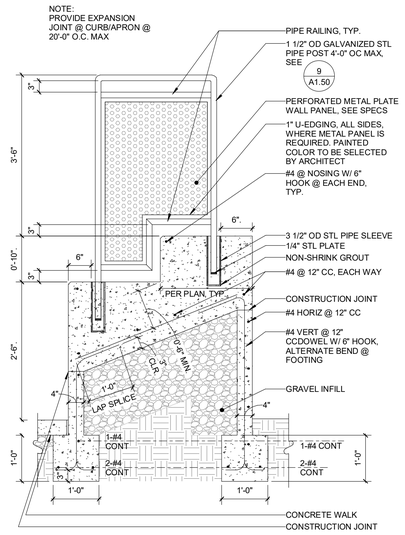
GUARDRAIL / HANDRAIL 15
1" = 1'-0"



Chain Link Fence Section 5
1/2" = 1'-0"



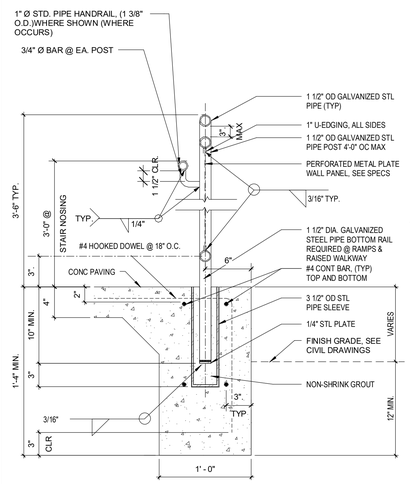
STAIR SECTION 24
1/2" = 1'-0"



CONCRETE SEAT WALLS W/ RAILING 18
3/4" = 1'-0"

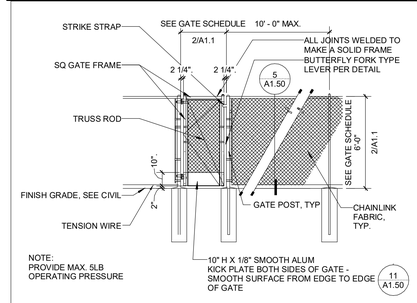
PATTERN IS TYPICAL FOR ALL CUSTOM PERFORATED METAL PLATE WALL PANEL GATES AND FENCES

CUSTOM PERFORATED METAL WALL PANEL PATTERN 14
1" = 1'-0"

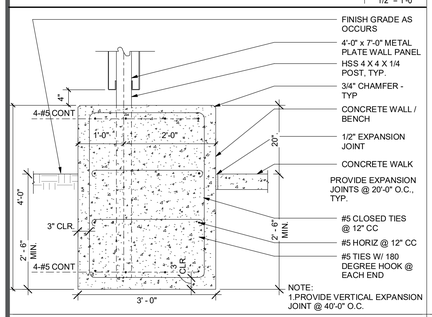


NOTE: ALL EXPOSED STEEL SHALL BE GALVANIZED

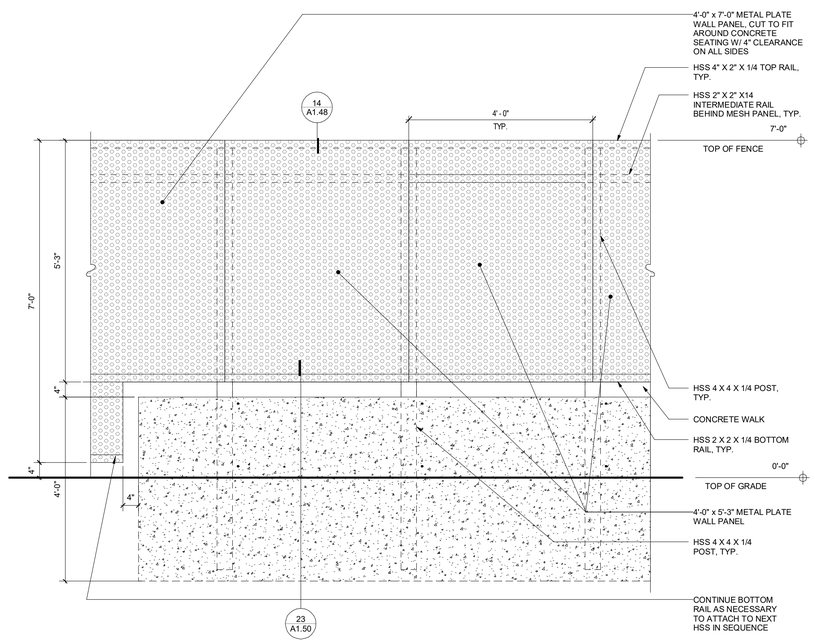
GUARDRAIL / HANDRAIL 9
1 1/2" = 1'-0"



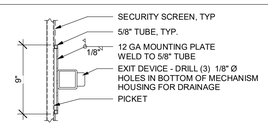
SINGLE C.L. GATE 4
1/4" = 1'-0"



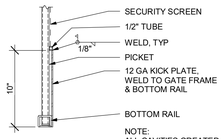
PERFORATED METAL PLATE WALL PANEL AT CONCRETE BENCH 23
3/4" = 1'-0"



PERFORATED METAL PLATE WALL PANEL AT CONCRETE BENCH 16
3/4" = 1'-0"



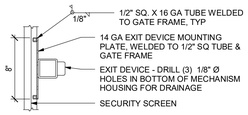
EXIT DEVICE MOUNTING



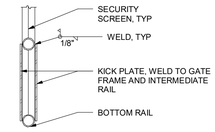
KICK PLATE

NOTE:
ALL CAVITIES CREATED BY MOUNTING PLATE AND KICKPLATE TO BE CAPPED

MOUNTING/KICK PLATE @ DECORATIVE METAL GATE 12
1 1/2" = 1'-0"

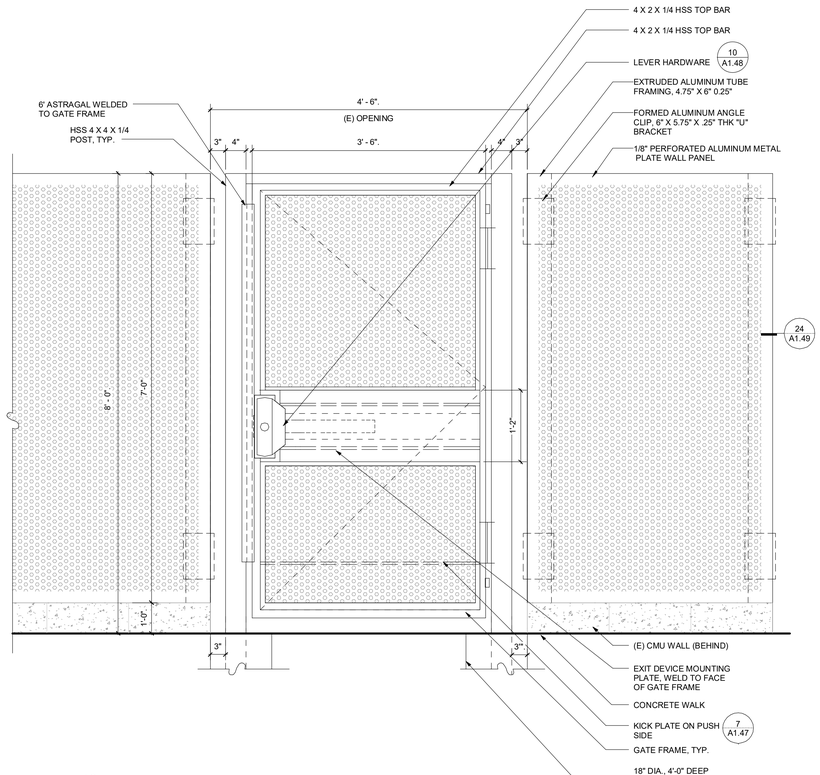


EXIT DEVICE MOUNTING



KICK PLATE

MOUNTING/KICK PLATE @ CHAIN LINK GATE 11
1 1/2" = 1'-0"



NOTE:

1. ALIGN FACE OF 4 X 4 X 1/4 HSS GATE POST WITH FACE OF PERFORATED METAL PLATE WALL PANEL
2. REMOVE (E) CMU FOOTING AS REQUIRED FOR POST FOOTING. REVIEW WITH ARCHITECT

PERFORATED METAL PLATE WALL PANEL AT (E) BRICK CMU WALL 1
1" = 1'-0"

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
LICENSED ARCHITECT JENNIFER PEARSON-WONG C-35691 REN. 05/31/25 STATE OF CALIFORNIA
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

LEGEND

- PROPERTY LINE
- ASSUMED PROPERTY LINE
- ACCESSIBLE PATH OF TRAVEL / PATH OF TRAVEL TO PUBLIC WAY
- PATH OF EXIT DISCHARGE
- OVERHANG LINE ABOVE
- (E) CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC.
- 8'-0" TALL CHAIN LINK FENCE POSTS SHOWN ARE DIAGRAMMATIC.
- 4'-0" TALL ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL ORNAMENTAL METAL FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC.
- 7'-0" TALL CUSTOM PERFORATED METAL PLATE WALL PANEL FENCE (SEE16/A1.50 FOR PATTERN), FENCE POSTS SHOWN ON PLANS ARE DIAGRAMMATIC
- NEW FIRE LANE
- X — NEW BUILDING INCREMENT #3 BUILDINGS H1 & H2 AND BUILDING S INCREMENT #4 BUILDING J
- X — EXISTING BUILDING
- X — FUTURE INCREMENT
- INCREMENT 2 AREA OF MODERNIZATION TO EXISTING BUILDING
- (X) — ACCESSIBLE TOILET ROOMS
- B = BOYS TOILET ROOM
- G = GIRLS TOILET ROOM
- ST = STAFF TOILET ROOM
- EXPANSION JOINT
- CONCRETE WALK
- CONTROL JOINT
- ASPHALT CONCRETE PAVING
- LANDSCAPE
- FIRE HYDRANT
- TRUNCATED DOMES

NOTES

1. REFER TO SHEET G0.10 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. REFER TO LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION
3. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UTILITY INFORMATION
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ALL HARDSCAPE/PLANTING OUTSIDE OF LIMIT OFWORK LINE FOR CONNECTION OF UNDERGROUND UTILITIES

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
INCREMENT 1
SHEET NAME:
SITE/ GATE & FENCE DETAILS

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

A1.50

PLEASE RECYCLE

Autodesk Docs://3431007000 Lodi MS Additions/3431007000-LODI-MS-ADDITIONS.rvt
3/31/2025 9:48:03 AM

THE LINE SHOWN ABOVE IS EQUAL TO 1" ON ORIGINAL DRAWINGS SHEET 0 ORIGINAL PAGE SIZE

ELECTRICAL ABBREVIATION

ABBREVIATION	DESCRIPTION
A	AMPERES, AMBER
AC	ALTERNATING CURRENT, AIR CONDITIONER
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AVAILABLE INTERRUPTING CAPACITY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT, CLOSE, CONTROL
CB	CIRCUIT BREAKER
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
CLG	CEILING
COM	COMMUNICATION
CT	CURRENT TRANSFORMER
CU	COPPER
(D)	DEMOLISH
DN	DOWN
(E)	EXISTING
EF	EXHAUST FAN
ECH	ELECTRIC CONVECTION HEATER
F	FUSE
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GRC	GALVANIZED RIGID STEEL CONDUIT
KVA	KILOVOLT AMPERES
KW	KILOWATT
LED	LIGHT EMITTING DIODE
MDB	MAIN DISTRIBUTION BOARD
MDP	MAIN DISTRIBUTION PANEL
MSB	MAIN SWITCHBOARD
MT, MTD	MOUNT, MOUNTED
MT	EMPTY CONDUIT WITH NYLON PULL CORD
N/A	NOT APPLICABLE
(N)	NEW
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OS	OCCUPANCY SENSOR
PH	PHASE
PHP	PACKAGED HEAT PUMP
PNL	PANEL
REF	REFERENCE
REQD	REQUIRED
S	SWITCH
SIM	SIMILAR
TELE	TELEPHONE
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
V	VOLTS, VOLTAGE
W/	WITH
W	WIRE, WHITE
WP	WEATHERPROOF
XFMR	TRANSFORMER

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	GENERAL
X / X	DETAIL NUMBER AND SHEET LOCATION
	NEW WORK
XX-X LOCATION	EQUIPMENT IDENTIFICATION
1	KEYED NOTE
	LIGHTING
	CEILING FAN
	EXIT SIGN CEILING MOUNTED, ARROW(S) INDICATES DIRECTION IF SHOWN
	EXIT SIGN WALL MOUNTED, ARROW(S) INDICATES DIRECTION IF SHOWN
	AREA LUMINAIRE ARM MOUNTED WITH POLE AND CONCRETE BASE
	SURFACE OR PENDANT MOUNTED LUMINAIRE
	SURFACE OR PENDANT MOUNTED LUMINAIRE CONNECTED TO EMERGENCY/LIFE SAFETY CIRCUIT OR WITH INTEGRAL EMERGENCY BATTERY CONNECTED TO UNSWITCHED CIRCUIT
	WALL MOUNTED LUMINAIRE
	BOLLARD
	MISCELLANEOUS
#10 B-27,29,31. B-27,29,31.	BRANCH CIRCUIT WIRING. ARROW INDICATES HOME RUN TO PANEL WITH CIRCUITS AS NOTED. WIRE SIZE IS #12 AWG MINIMUM UNLESS NOTED OTHERWISE. SHORT TICK MARKS INDICATE PHASE CONDUCTORS. LONG TICK MARKS INDICATE NEUTRAL CONDUCTORS. A SINGLE CURVED TICK MARK INDICATES INSULATED GREEN GROUND CONDUCTOR. SECOND CURVED TICK MARK INDICATES "ISOLATED GROUND" (GREEN INSULATION WITH YELLOW STRIPE) CONDUCTOR.
	BRANCH PANEL
	CIRCUIT BREAKER
	CURRENT TRANSFORMER
M	DIGITAL TYPE METER WITH VOLTMETER, AMMETER, KW METER, KVA METER, KVAR METER, AND %THD METER
	EQUIPMENT CONNECTION ITEM. REFER TO SCHEDULE
	FLUSH MOUNT EQUIPMENT ENCLOSURE AS NOTED
	FLUSH WALL MOUNTED BRANCH PANEL
	GROUND ROD
	GROUNDING POINT
	LANDING LUG
	MAIN DISTRIBUTION PANEL / SUB DISTRIBUTION PANEL
M	METER WITH CONNECTION
	SURFACE MOUNT EQUIPMENT ENCLOSURE AS NOTED

ELECTRICAL LEGEND

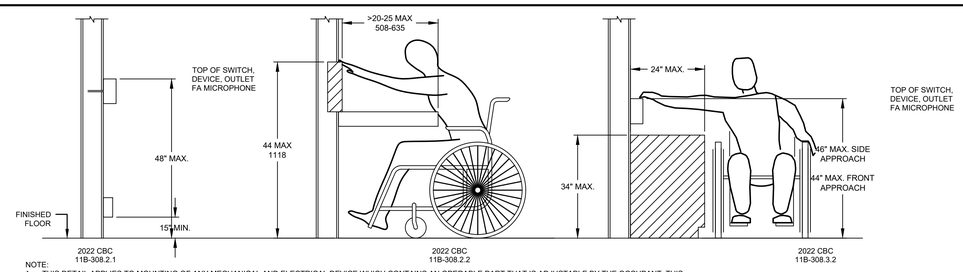
SYMBOL	DESCRIPTION
UT	UTILITY TRANSFORMER PAD/VAULT
	WALL MOUNTING BRACKET
	WATER PIPE GROUND CONNECTION
	CONNECTIONS / EQUIPMENT
	HEAVY DUTY FUSED DISCONNECT SWITCH
J OR J	JUNCTION BOX
J	JUNCTION BOX WITH FLEX CONNECTION TO EQUIPMENT
	WALL-MOUNTED JUNCTION BOX
	NON-FUSED DISCONNECT SWITCH
T	TRANSFORMER
M	DOORBELL - NUTONE #LA11WH +7'-6"
	DOORBELL PUSH BUTTON
	ENCLOSED CIRCUIT BREAKER
	RACEWAYS
	CONDUIT CONCEALED IN WALL OR CEILING SPACE
	CONDUIT ROUTED BELOW FLOOR / GRADE
C	CATV ROUTED BELOW FLOOR / GRADE
T	TEL/DATA ROUTED BELOW FLOOR / GRADE
	CONDUIT ELLED DOWN
	CONDUIT ELLED UP
	CONDUIT/WIRING CONTINUATION
	CONDUIT/WIRING STUBBED OUT WITH END CAP OR INSULATED PLASTIC BUSHING
	FLEXIBLE CONDUIT
	TELEPHONE BACKBOARD
	TELECOMMUNICATIONS
▽	RACEWAY ONLY DATA OUTLET. PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 1" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. SEE LETTER CODE LIST AT DATA/TELEPHONE OUTLET FOR OPTIONS.
▼	RACEWAY ONLY DATA/TELEPHONE OUTLET. PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 1" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. (MULTIPLE LETTERS INDICATE MULTIPLE OPTIONS) A = ABOVE COUNTER C = CEILING MOUNTED ABOVE ACCESSIBLE CEILING F = FLUSH CEILING MOUNTED R = SURFACE MOUNTED ON RACEWAY
▼	RACEWAY ONLY TELEPHONE OUTLET. PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 3/4" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. SEE LETTER CODE LIST AT DATA/TELEPHONE OUTLET FOR OPTIONS.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	SWITCHES AND RECEPTACLES
	DUPLEX RECEPTACLE (MULTIPLE LETTERS INDICATE MULTIPLE OPTIONS) A = ABOVE COUNTER B = CLOCK HANGER C = FLUSH CEILING MOUNTED E = EMERGENCY F = ARC FAULT PROTECTED BY BREAKER IN PANEL G = GROUND FAULT CIRCUIT INTERRUPTER H = HOSPITAL GRADE K = CHILD RESISTANT COVER L = ISOLATED GROUND P = PENDANT MOUNTED WITH CORD GRIPS. VERIFY PENDANT LENGTH S = SPLIT WIRED T = TAMPER RESISTANT SHUTTERED RECEPTACLE W = WEATHERPROOF CONTINUOUS USE COVER, GFCI PROTECTED, WITH WEATHER-RESISTANT RECEPTACLE ? = DESIGNER DEFINED
	SPLIT DUPLEX RECEPTACLE, TOP IS CONTROLLED
	DOUBLE DUPLEX RECEPTACLE. SEE LETTER CODE LIST AT DUPLEX RECEPTACLE FOR OPTIONS
	SINGLE RECEPTACLE. SEE LETTER CODE LIST AT DUPLEX RECEPTACLE FOR OPTIONS
	EQUIPMENT ELECTRICAL CONNECTION
	SPECIAL PURPOSE RECEPTACLE. LETTER CODE DENOTES RECEPTACLE CONFIGURATION LX-XXR = NEMA CONFIGURATION TWIST-LOCK RECEPTACLE X-XXR = NEMA CONFIGURATION STRAIGHT BLADE RECEPTACLE P = PENDANT MOUNT WITH CORD GRIPS. VERIFY PENDANT LENGTH X = COORDINATE RECEPTACLE CONFIGURATION WITH EQUIPMENT BEING SUPPLIED
$	SINGLE POLE SWITCH 2 = DOUBLE POLE SWITCH 3 = THREE-WAY SWITCH 4 = FOUR-WAY SWITCH a THRU z (LOWERCASE) = LUMINAIRE CONTROL DESIGNATION F = FAN SPEED CONTROL K = KEY OPERATED SWITCH L = LIGHTED HANDLE M = MANUAL MOTOR STARTER WITH THERMAL OVERLOAD P = SWITCH WITH PILOT LIGHT S = SENTRY SWITCH T = INTERVAL TIMER W = WEATHERPROOF SWITCH V = LOW VOLTAGE SWITCH ? = DESIGNER DEFINED SWITCH
D a,b,c	MANUAL DIMMER WITH ON/OFF OVERRIDE. PROVIDE SEPARATE DIMMER AND BOX FOR EACH ZONE INDICATED.
OS	WALL MOUNTED DUAL TECH OCCUPANCY SENSOR WITH DIMMER AND MANUAL ON/OFF OVERRIDE
	DUPLEX RECEPTACLE, FLUSH FLOOR
OS	CEILING MOUNTED OCCUPANCY SENSOR (SELF CONTAINED)
DS	CEILING MOUNTED DAYLIGHTING SENSOR
XX-1 (SEE SCHEDULE)	MOTOR / ELECTRICAL EQUIPMENT

DEVICE OUTLETS SHALL BE NO MORE THAN +48" AFF TO TOP OF BOX NOR LESS THAN +15"AFF TO BOTTOM OF BOX PER CBC 11B-308.1.2

MOUNTING OVER OBSTRUCTION DETAIL



NOTE:
1. THIS DETAIL APPLIES TO MOUNTING OF ANY MECHANICAL AND ELECTRICAL DEVICE WHICH CONTAINS AN OPERABLE PART THAT IS ADJUSTABLE BY THE OCCUPANT. THIS DOES NOT APPLY TO SENSORS OR CONTROLS THAT ARE ONLY ADJUSTABLE THROUGH THE BUILDING AUTOMATION SYSTEM (IE: TEMPERATURE AND HUMIDITY SENSORS).

ELECTRICAL GENERAL NOTES

A. ALL WORK SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND AUTHORITIES HAVING JURISDICTION.

B. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS AND ARRANGE ALL REQUIRED INSPECTIONS.

C. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS AND TRADES.

D. THESE DRAWINGS, AS PREPARED, ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS CONSTRUCTION OF THE PROJECT AND THE WORK OF THE TRADES WILL PERMIT. EQUIPMENT LOCATIONS INDICATED ARE APPROXIMATE. COORDINATE EXACT LOCATIONS AND REQUIRED CLEARANCES WITH EQUIPMENT SUPPLIER AND ALL TRADES PRIOR TO INSTALLATION.

E. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL THE EQUIPMENT INDICATED WITHIN THESE DRAWINGS UNLESS OTHERWISE NOTED. VERIFY LOCATION AND DIMENSIONS IN THE FIELD PRIOR TO FABRICATION AND / OR INSTALLATION.

F. ALL ROOF PENETRATIONS SHALL BE AT THE CONTRACTOR'S EXPENSE. COORDINATE WITH OWNER'S ROOFING CONTRACTOR SO AS NOT TO VOID ANY EXISTING ROOF WARRANTIES.

G. THE ENTIRE INSTALLATION SHALL BE GUARANTEED FREE OF DEFECTS AND CONTRACTOR SHALL REPAIR AND / OR REPLACE ANY DEFECTIVE MATERIALS OR EQUIPMENT AT NO COST TO THE OWNER FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY ARCHITECT OR ENGINEER.

H. ALL WORK SHALL BE SUBJECT TO THE ACCEPTANCE AND APPROVAL OF THE ARCHITECT AND OWNER. THE ARCHITECT SHALL BE NOTIFIED OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. FAILURE OF PROPER NOTIFICATION DOES NOT RELIEVE THE CONTRACTOR. THE CONTRACTOR SHALL CORRECT ANY AND ALL WORK ARISING FROM SUCH FAILURE TO COORDINATE DISCREPANCIES TO THE SATISFACTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.

I. ALL JUNCTION BOXES SHOWN ON THIS PLAN ARE TO BE INSTALLED ABOVE THE FINISHED CEILING.

ELECTRICAL DEMOLITION NOTES

A. THE ELECTRICAL DRAWING SET IS PREPARED BASE OF LIMITED FIELD OBSERVATION ONLY. ACTUAL CONDITIONS MAY VARY IN FIELD. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ELECTRICAL ENGINEER OF RECORD PRIOR TO BID.

B. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PHASES OF DEMOLITION AND CONSTRUCTION. COORDINATE WITH GENERAL CONSTRUCTION.

C. DISCONNECT AND MOVE ALL ELECTRICAL DEVICES AND LIGHTING FIXTURES IN DEMOLITION AREAS UNLESS NOTED OTHERWISE.

D. DISCONNECT AND REMOVE ALL ELECTRICAL DEVICES IN WALLS TO BE DEMOLISHED. WALLS TO BE DEMOLISHED ARE SHOWN DASHED. DISCONNECT AND REMOVE ASSOCIATED CONDUIT AND WIRE BACK TO LAST REMAINING DEVICE. FURNISH AND INSTALL CONDUIT AND WIRE AS NECESSARY TO CONTINUITY OF CIRCUIT(S) TO ANY EXISTING DEVICES TO REMAIN. COORDINATE AND VERIFY REQUIREMENTS WITH NEW WORK IN AREA.

E. FURNISH AND INSTALL CONDUIT AND WIRE AS NECESSARY FOR CONTINUITY OF ANY FEEDERS OR BRANCH CIRCUIT ORIGINATING OUTSIDE THE DEMOLITION AREA THAT SERVES ANY ELECTRICAL EQUIPMENT OR DEVICES TO REMAIN AFTER DEMOLITION. MODIFY OR REPLACE AS REQUIRED.

F. FURNISH AND INSTALL CONDUIT AND/OR COMMUNICATIONS/DATA WIRING AS NECESSARY FOR CONTINUITY OF ANY WIRING ORIGINATING OUTSIDE THE DEMOLITION AREA THAT SERVES ANY COMMUNICATION/DATA EQUIPMENT OR DEVICES TO REMAIN AFTER DEMOLITION. MODIFY OR REPLACE AS REQUIRED.

G. DISCONNECT AND REMOVE LIGHT SWITCHES IN DEMOLITION AREAS AS NECESSARY TO ACCOMMODATE NEW DOOR CONFIGURATIONS.

H. DISCONNECT AND REMOVE ANY EXISTING ELECTRICAL DEVICES AND BACK BOXES AS NECESSARY WHERE NEW WALL CONSTRUCTION WILL INTERSECT AN EXISTING WALL. FURNISH AND INSTALL CONDUIT AND WIRE AS REQUIRED FOR CONTINUITY OF CIRCUIT(S).

I. FURNISH AND INSTALL BLANK COVER PLATES OVER ALL EXISTING UNUSED OPENINGS.

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7 SECTION 13.3 AS DEFINED IN ASCE 7 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. THE MEP DESIGN PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING(MP), MECHANICAL DUCTS(MD), PLUMBING PIPING(PP), ELECTRICAL DISTRIBUTION SYSTEMS(E):

MP☐ MD☐ PP☐ E ☒ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP☐ MD☐ PP☐ E ☐ OPTION 2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL

MP☐ MD☐ PP☐ E ☐ OPTION 3: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL

SHEET INDEX

E0.1	ELECTRICAL COVER SHEET
E0.2	ELECTRICAL ONE-LINE DIAGRAM
E0.3	ELECTRICAL DETAILS
E0.4	ELECTRICAL DETAILS
E0.5	TITLE 24 - LTO FORMS
E0.6	TITLE 24 - ELC FORMS
E1.0	LIGHTING SITE PLAN
E1.1	POWER SITE PLAN
E2.0	FIRE ALARM SITE PLAN
E2.0D	FIRE ALARM DEMO SITE PLAN
E3.0	SIGNAL SITE PLAN
E3.0D	SIGNAL DEMO SITE PLAN

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUM JR. E 24187 EXPIRES 6/30/26 ELECTRICAL STATE OF CALIFORNIA

DATE SIGNED: 03-28-2025

capital engineering
RANCHO CORDOVA, CALIFORNIA

JG - JSG PM - DESIGN TEAM
240047.00 PROJECT NO.

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1
Author

SHEET NAME:
ELECTRICAL COVER SHEET

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**

SHEET:
E0.1

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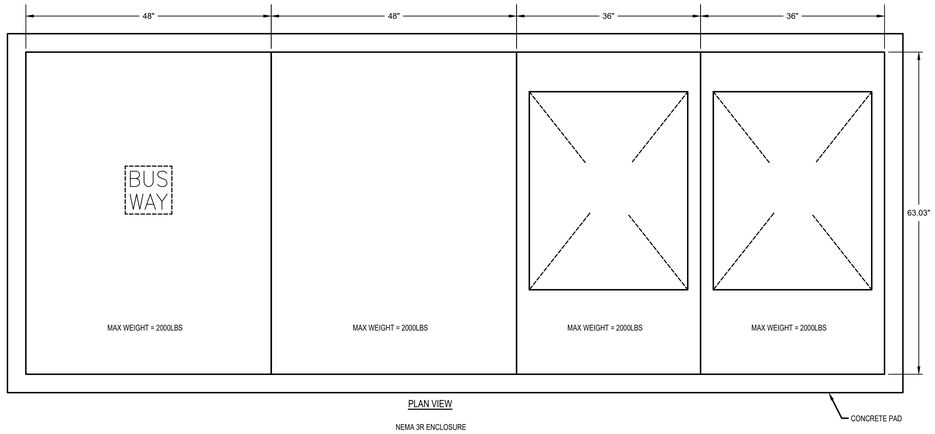
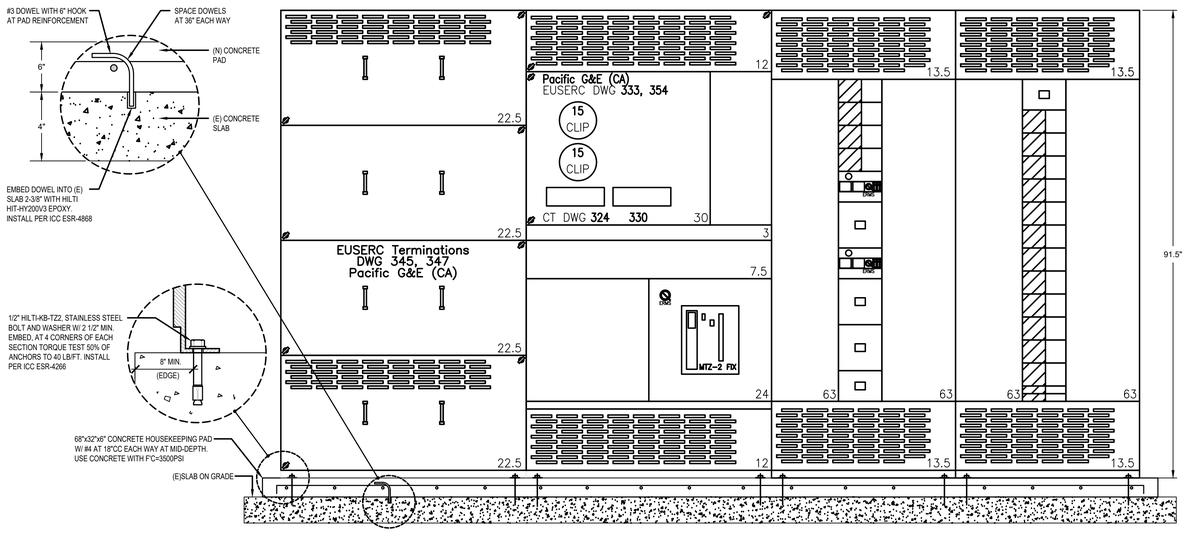


PLAN VIEW

NEMA 3R ENCLOSURE

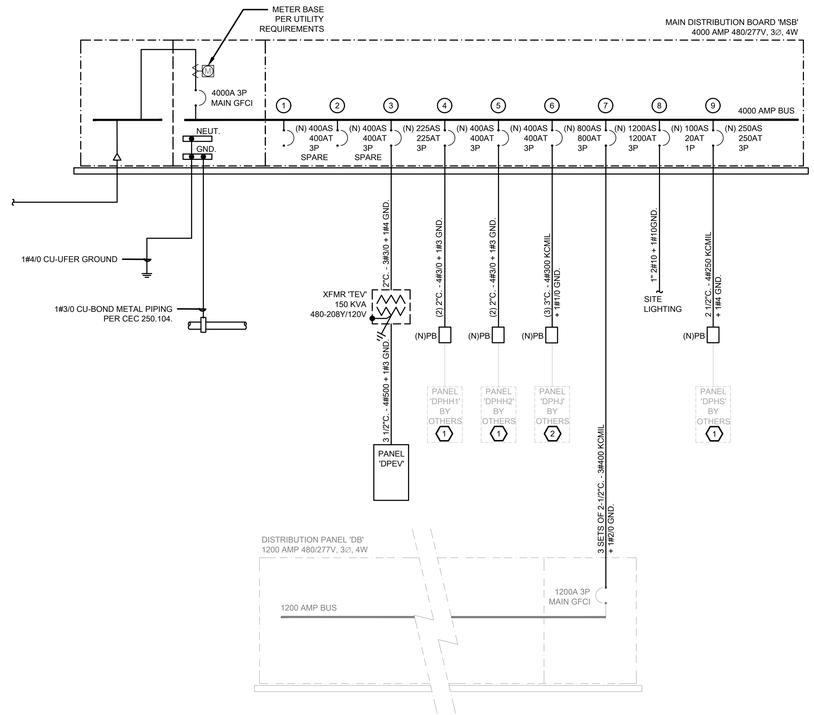


ELEVATION VIEW

MSB PLAN VIEW AND ELEVATION

SCALE : NO SCALE

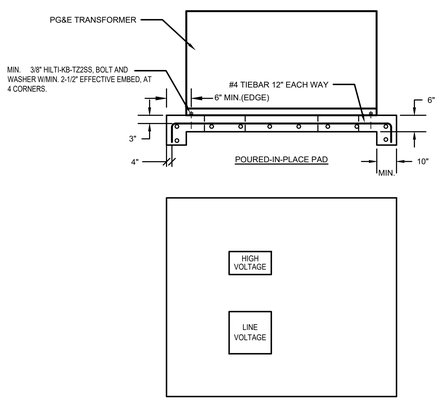
2 E0.2



ONE LINE DIAGRAM

SCALE : NO SCALE

1 E0.2



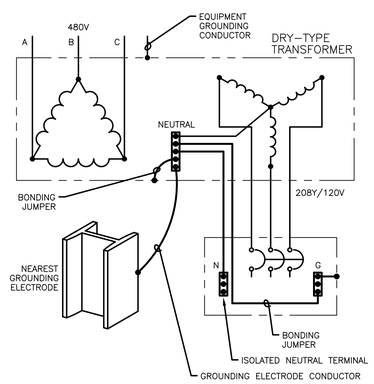
MINIMUM PAD SIZE: STYLE IIE-LB PAD 90" X 106"

PAD SHALL CONFORM TO ALL REQUIREMENTS OF UTILITY "PG&E". THE CONTRACTOR SHALL CONSTRUCT THE PAD PER THE CONSTRUCTION DETAILS FOR STYLE IIE PAD AS SPECIFIED IN THE PG&E GREEN BOOK'S "CONCRETE PAD FOR THREE PHASE, LOOP-STYLE PAD-MOUNTED TRANSFORMERS" SECTION. REFER TO PG&E CONTRACTOR DOCUMENTS FOR FINAL REQUIREMENTS.

PGE TRANSFORMER PAD DETAIL

SCALE : NO SCALE

4 E0.2



TRANSFORMER GROUNDING DETAIL

SCALE : NO SCALE

3 E0.2

PANELBOARD SCHEDULE - PANEL DPEV — Located at Site

DESIGNATION	FEEDER NO.	POLES & AMPS	LOAD, VA LTG.	LOAD, VA RECPT.	LOAD, VA OTHER	C K	P H	C K	LOAD, VA LTG.	LOAD, VA RECPT.	LOAD, VA OTHER	POLES & AMPS	FEEDER NO.	DESIGNATION
EVCS	3	2/60			4992	1	A	2			4992	2/60	3	EVCS
					4992	3	B	4			4992			
EVCS	3	2/60			4992	5	C	6				2/60	3	FUTURE EVCS
					4992	7	A	8						
FUTURE EVCS	3	2/60				9	B	10			4992	2/60	3	EVCS
						11	C	12			4992			
FUTURE EVCS	3	2/60				13	A	14				2/60	3	FUTURE EVCS
						15	B	16						
FUTURE EVCS	3	2/60				17	C	18				2/60	3	FUTURE EVCS
						19	A	20						
FUTURE EVCS	3	2/60				21	B	22				2/60	3	FUTURE EVCS
						23	C	24						
FUTURE EVCS	3	2/60				25	A	26				2/60	3	FUTURE EVCS
						27	B	28						
FUTURE EVCS	3	2/60				29	C	30				2/60	3	FUTURE EVCS
						31	A	32						
FUTURE EVCS	3	2/60				33	B	34				2/60	3	FUTURE EVCS
						35	C	36						
MARQUEE SIGN	2	1/20	1500			37	A	38		360		1/20	1	RECEPTACLE
SPARE	1	1/20				39	B	40				1/20	1	SPARE
SPARE	1	1/20				41	C	42				1/20	1	SPARE
SECTION SUB-TOTALS			1500	0	19968				0	360	19968			SECTION SUB-TOTALS

CATEGORY	CONN. LOAD KVA	CONN. LOAD AMPS	DESIGN LOAD DIV.	DESIGN LOAD KVA	DESIGN LOAD AMPS
LIGHTING:	1.5	4.2	1.25	1.9	5.2
RECEPTACLE:	0.4	1.0	1.00	0.4	1.0
MOTORS:	0.0	0.0	1.00	0.0	0.0
SPECIAL LOADS:	0.0	0.0	1.00	0.0	0.0
ELECTRIC HEATING:	0.0	0.0	1.00	0.0	0.0
WATER HEATING:	0.0	0.0	1.00	0.0	0.0
EV/SE/EVCS	39.9	111.0	1.25	49.9	138.7
TOTAL:	41.8	116.2		52.2	144.9

MOUNTING:		SURFACE
VOLTS:		120/208
PHASE/WIRE:		3/4
MAINS SIZE:		400 AMPS
MAINS TYPE:		MLO
BUSS TYPE:		COPPER
BRKR TYPE:		BOLT-IN
A.I.C. (RMS):		65,000
A Phase	16.8	Connected Kva
B Phase	15.0	Connected Kva
C Phase	10.0	Connected Kva

REMARKS:
[1] NEW LOAD WITH EXISTING BREAKER
[2] NEW LOAD WITH NEW BREAKER

FEEDER NO.:
1 = 2 #12, #12G - 1/2"C
2 = 2 #10, #10G - 3/4"C
3 = 2 #3, #6G - 1"C
4 = 1"C

VOLTAGE DROP CALCULATION

CEC 215.2(A)(3) FPN No. 2

3 PHASE FORMULA: $VD = \frac{\sqrt{3} * L * R * A}{1000}$ $\%VD = \frac{VD * 100\%}{V}$

1 PHASE FORMULA: $VD = \frac{2 * L * R * A}{1000}$ $\%VD = \frac{VD * 100\%}{V}$

PANEL - CKT		DISTANCE (FT)	AMPS	VOLTAGE	CONDUCTOR TYPE	PHASE	WIRE SIZE	CONDUIT	IMPEDANCE: OHMS/kFT	VD	%VD
	SITE LIGHTINGS	376	7.00	277	CU	1	#10	PVC	1.100	5.79	2.09%
	EV CHARGERS	230	48.00	208	CU	1	#3	PVC	0.230	5.08	2.44%
DPHH1		131	320.00	480	CU	3	2 #3/0	PVC	0.044	3.19	0.67%
DPHH2		336	320.00	480	CU	3	2 #3/0	PVC	0.044	8.19	1.71%
DPHJ		316	640.00	480	CU	3	3 #300	PVC	0.019	6.82	1.42%

1. CONDUCTOR IMPEDANCE VALUES BASED ON CEC CHAPTER 9 TABLE 9 - EFFECTIVE IMPEDANCE FOR UNCOATED COPPER WIRES IN PVC OR STEEL CONDUIT @ 0.85 PF (OHM/kFT)

2. PER CEC 210.19(A)(1)FPN NO. 4: BRANCH CIRCUITS ARE ALOWED 3% VOLTAGE DROP AND THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST OUTLET DOES NOT EXCEED 5%

LOAD CALCULATIONS

EXISTING SERVICE CAPACITY	1600A	480V 3PH
EXISTING LOADS		
FROM UTILITY BILL (7/23-7/24)		510,100.0 VA
25% OF EXISTING LOADS		127,525.0 VA
NEW LOAD		
(1) GYM BLDG J WITH KITCHEN 775KW @480V (3Ø)		775,000.0 VA
(1) CR BLDG H 400KW @480V (3Ø)		400,000.0 VA
(21) EV CHARGERS 9.984KW @480V (1Ø)		209,664.0 VA
(1) NEW HVAC UPGRADES 593KW @480V (3Ø)		593,000.0 VA
(1) NEW SCIENCE CR UPGRADE 73KW @480V (3Ø)		73,000.0 VA
TOTAL LOADS	=	2,688,289.0 VA
AMPS AT 480/277V 3PH	=	3,233.5 AMPS
+15% SPARE CAPACITY	=	485.0 AMPS
TOTAL	=	3,718.5 AMPS

THE EXISTING 1600A 480/277V SERVICE NEEDS TO BE UPGRADED TO 4000A 480/277V 3PH SERVICE

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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

1. PANEL EQUIPMENT IS PROVIDED BY BUILDING MANUFACTURER IN INCREMENT 3.
2. PANEL EQUIPMENT IS PROVIDED BY BUILDING MANUFACTURER IN INCREMENT 4.

NOTES

REGISTERED PROFESSIONAL ENGINEER — JOHN D. GUEVARA — E 24187 — EXP. 12/31/25 — ELECTRICAL — STATE OF CALIFORNIA

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED: 03-28-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1
Author

SHEET NAME:
ELECTRICAL ONE-LINE DIAGRAM

CONSTRUCTION DOCUMENTS

DATE: 04.02.2025 | CLIENT PROJ NO: 3431007000

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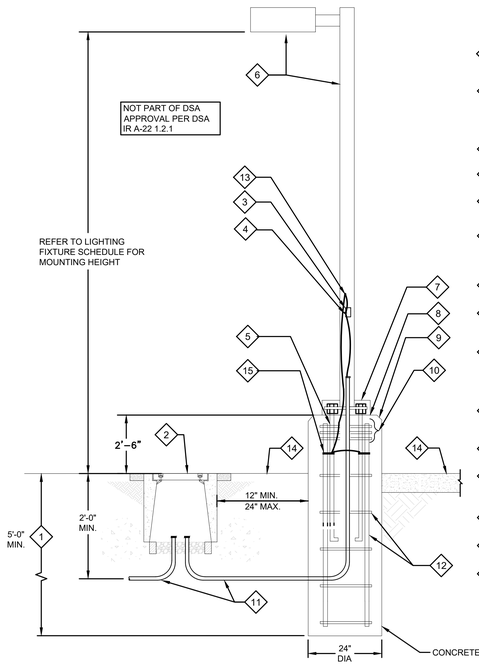
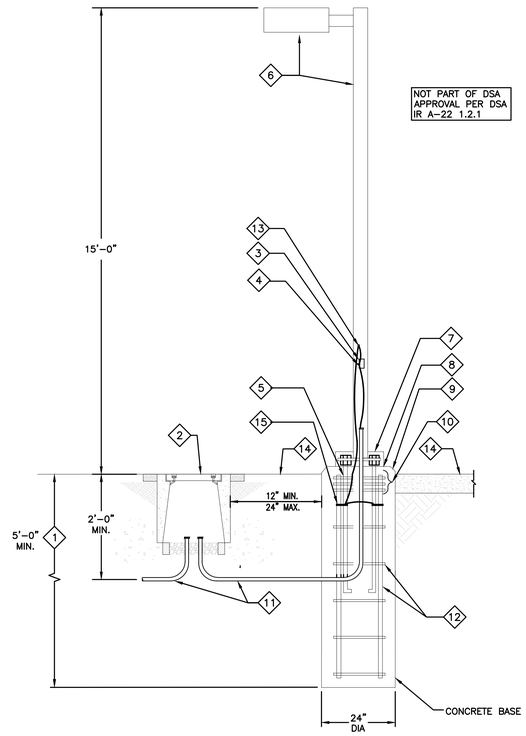


KEYED NOTES:

1. PROVIDE 60" MINIMUM FOR 15FT LIGHT POLE. COORDINATE CONCRETE BASE SIZE WITH STRUCTURAL ENGINEER.
2. UNDERGROUND PULL BOX REQUIRED ADJACENT TO POLE BASE WHERE INDICATED ON DRAWINGS. SEE DETAIL "6/E0.3". SET TOP OF PULLBOX FLUSH WITH FINISHED GRADE.
3. GASKETED HANDHOLE 3FT AFF.
4. CONNECT GROUND WIRE TO GROUNDING LUG OF POLE AT HANDHOLE.
5. 4 - 3/4" DIA. WITH MINIMUM 17" EMBEDMENT ANCHOR BOLTS WITH 4" HOOKS.
6. LIGHT FIXTURE AND/OR POLE PER PLAN AND SPECIFICATION. FIXTURE WIRE THROUGH POLE TO LUMINAIRE TO BE RATED FOR 90C.
7. BASECOVER, SECURE TO POLE AND/OR BASE.
8. PROVIDE 1 1/2" MINIMUM GROUT AROUND THE BASE AFTER PLUMB. SLOPE TO GRADE FOR DRAINAGE.
9. PROVIDE CONCRETE BASE WITH 1/2" CHAMFER. CONCRETE FILL AND SACK FINISH ALL CONCRETE SURFACE IMPERFECTIONS, CAVITIES AND VOIDS ABOVE FINISHED GRADE.
10. PROVIDE (3) #3 REBAR TIES, REINFORCE STEEL HOOPS 2" ON CENTERED WITHIN TOP 5"AREA.
11. CONDUIT PER PLAN.
12. PROVIDE (6) #4 REINFORCE STEEL RODS AND #3 REINFORCE STEEL HOOPS 12" ON CENTER. SIZE PER MANUFACTURER'S STANDARDS.
13. SPLICE GROUND WIRE AND EXTEND TO GROUND CLAMP AT ANCHOR BOLT.
14. FINISHED GRADE OR PAVING PER ARCHITECTURAL DRAWINGS.
15. UL LISTED GROUND CLAMP SUITABLE FOR CONCRETE ENCASEMENT OR DIRECT BURIAL. INSTALL CLAMPS ON ALL ANCHOR BOLTS, TYPICAL.

POLE MOUNTING DETAIL (VEHICULAR ACTIVITY) 8/E0.3

SCALE : NO SCALE



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4. CONNECT GROUND WIRE TO GROUNDING LUG OF POLE AT HANDHOLE.
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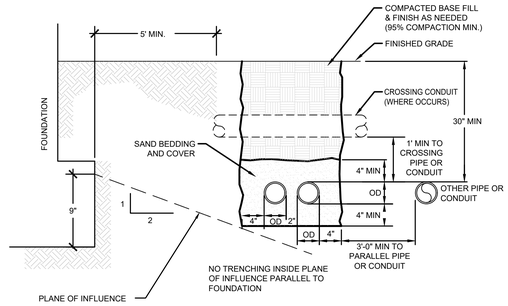
10. PROVIDE (3) #3 REBAR TIES, REINFORCE STEEL HOOPS 2" ON CENTERED WITHIN TOP 5"AREA.
11. CONDUIT PER PLAN.
12. PROVIDE (6) #4 REINFORCE STEEL RODS AND #3 REINFORCE STEEL HOOPS 12" ON CENTER. SIZE PER MANUFACTURER'S STANDARDS.
13. SPLICE GROUND WIRE AND EXTEND TO GROUND CLAMP AT ANCHOR BOLT.
14. FINISHED GRADE OR PAVING PER ARCHITECTURAL DRAWINGS.
15. UL LISTED GROUND CLAMP SUITABEL FOR CONCRETE ENCASEMENT OR DIRECT BURIAL. INSTALL CLAMPS ON ALL ANCHOR BOLTS, TYPICAL.

POLE MOUNTING DETAIL (NO VEHICULAR ACTIVITY) 5/E0.3

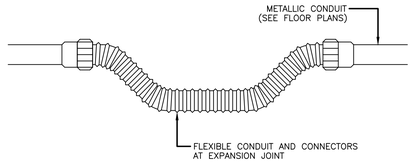
SCALE : NO SCALE



TYPICAL TRENCH DETAIL 1/E0.3

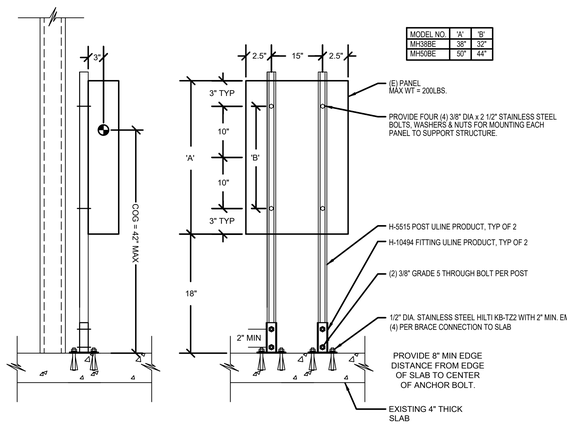
SCALE : NO SCALE

NOTE:
PROVIDE 6" MOVEMENT CAPACITY IN ANY HORIZONTAL DIRECTION.



SEISMIC JOINT CONDUIT DETAIL 2/E0.3

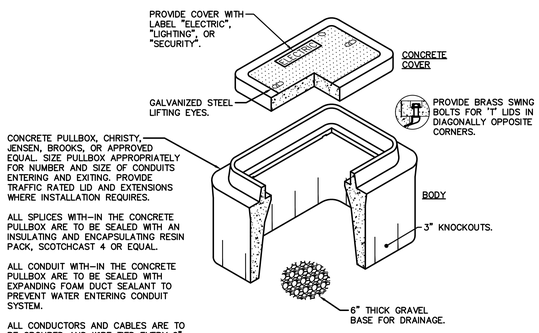
SCALE : NO SCALE



MODEL NO.	'A'	'B'
MH38BE	38"	32"
MH50BE	50"	44"

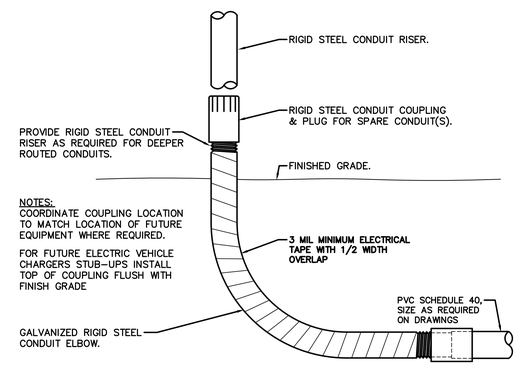
PANEL MOUNTED ON C CHANNEL MOUNTING DETAIL 9/E0.3

SCALE : NO SCALE



TYPICAL CONCRETE PULLBOX DETAIL 6/E0.3

SCALE : NO SCALE



NOTES:
COORDINATE COUPLING LOCATION TO MATCH LOCATION OF FUTURE EQUIPMENT WHERE REQUIRED.

FOR FUTURE ELECTRIC VEHICLE CHARGERS STUB–UPS INSTALL TOP OF COUPLING FLUSH WITH FINISH GRADE

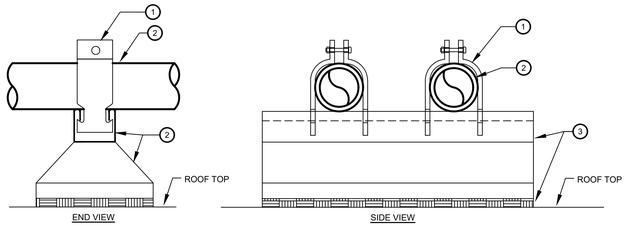
CONDUIT STUB-UP DETAIL 3/E0.3

SCALE : NO SCALE

KEY NOTES

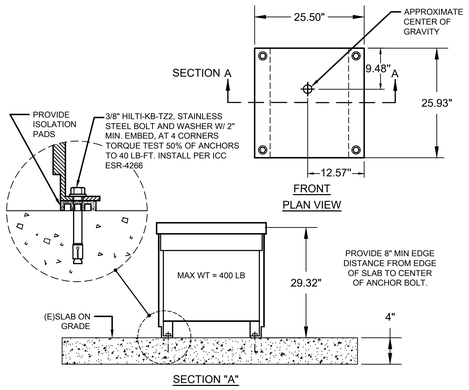
1. HOT-DIPPED GALVANIZED UNISTRUT CONDUIT CLAMP. SIZE AS REQUIRED.
2. RACEWAY AS NOTED ON DRAWINGS.
3. ROOFTOP SUPPORT BASE, B-LINE C6 SERIES WITH HOT-DIPPED GALVANIZED B12 CHANNEL. SECURE TO ROOF WITH A FULL BED OF NON-HARDENING ADHESIVE TYPE MASTIC.

NOTE:
INSTALL SUPPORT BLOCK 8'-0" O.C. MAX. WITHIN 36" OF A BOX CONNECTION, AND AT EACH CHANGE OF DIRECTION.



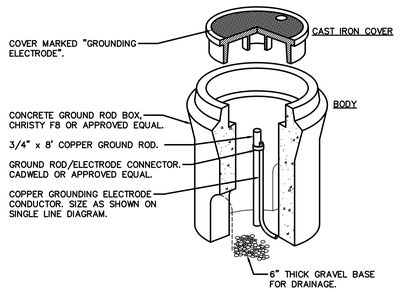
ROOF CONDUIT SUPPORT MOUNTING DETAIL 10/E0.3

SCALE : NO SCALE



TRANSFORMER MOUNTING DETAIL 7/E0.3

SCALE : NO SCALE



TYPICAL CONCRETE GROUND ROD DETAIL 4/E0.3

SCALE : NO SCALE

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SHEET:
E0.3

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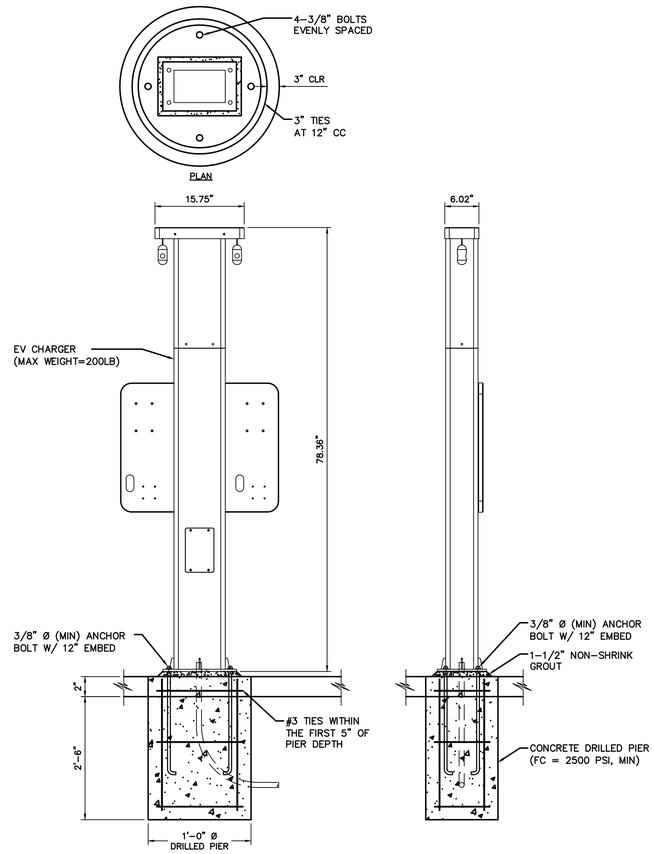

EV CHARGER MOUNTING DETAIL

1
E0.4

SCALE : NO SCALE

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STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: Lodi Middle School	Report Page:	(Page 3 of 8)
	Date Prepared:	3/4/2025

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)2L only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1, 2]	How is Wattage determined	Total Number Luminaires[2]	Luminaire Status[3]	Excluded per 140.7(a) / 170.2(e)6A	Design Watts	Cutoff Req. > 6,200 initial lumen output 130.2(b) / 160.5(c)1[4]	Field Inspector	
										Pass	Fail
1S1C	2S2C	☐ Linear	684	Mfr. Spec	1	New	☐	684	Provided	☐	☐
1S2C	1S2C	☐ Linear	342	Mfr. Spec	1	New	☐	342	Provided	☐	☐
2S1B	2S1B	☐ Linear	204	Mfr. Spec	1	New	☐	204	Provided	☐	☐
2S1C	2S1C	☐ Linear	204	Mfr. Spec	10	New	☐	2,040	Provided	☐	☐
2S2C	2S2C	☐ Linear	684	Mfr. Spec	1	New	☐	684	Provided	☐	☐
							Total Design Watts:	3954			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to 130.2(b)

[1]FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b)
[2] For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.
[3] Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.
[4] Compliance with mandatory shielding requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by 130.2(b)/ 160.5(c)

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: Lodi Middle School	Report Page:	(Page 2 of 8)
	Date Prepared:	3/4/2025

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through N. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv												Compliance Results		
01		02		03		04		05		06		07	08	09
General Hardscape Allowance 140.7(d)1 / 170.2(e)6 (See Table I)	+	Per Application 140.7(d)2 / 170.2(e)6 (See Table J)	+	Sales Frontage 140.7(d)2 (See Table K)	+	Ornamental 140.7(d)2 / 170.2(e)6 (See Table L)	+	Per Specific Area 140.7(d)2 / 170.2(e)6 (See Table M)	OR	Existing Power Allowance 141.0(b)2L / 180.2(b)4Bv (See Table N)	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 must be >= 08**
4,020	+	---	+	---	+	---	+	---	OR	---	=	4,020	≥	3,954	COMPLIES
												Shielding Compliance (See Table G for Details)			COMPLIES
												Controls Compliance (See Table H for Details)			COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
This document is used to demonstrate compliance with requirements in 110.9, 130.0, 130.2, 140.7, and 141.0(b)2L for outdoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e)6, 180.1(a) and 180.2(b)4Bv for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.		
Project Name: Lodi Middle School	Report Page:	(Page 1 of 8)
Project Address: 945 S Ham Ln.	Date Prepared:	3/4/2025

A. GENERAL INFORMATION

01	Project Location (city)	Lodi	04 Total Illuminated Hardscape Area (ft²)	179129
02	Climate Zone	12		
03	Outdoor Lighting Zone per Title 24 Part 1 10.114 or as designated by Authority Having Jurisdiction (AHJ):			
☐	LZ-0: Very Low - Undeveloped Parkland	☒ LZ-2: Moderate - Urban Clusters	☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval	
☐	LZ-1: Low - Rural Areas	☐ LZ-3: Moderately High - Urban Areas		
05	Occupancy Types within Project			
● All Other Occupancies				

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv for alterations.

My Project Consists of:

01	02		
☐ New Lighting System	Must Comply with Allowances from 140.7 / 170.2(e)6		
☒ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?	● Yes	○ No
03	04	05	
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method	
☐ < 10% ☐ >= 10% and < 50% ☐ >= 50%	0		

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

[1] FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: Lodi Middle School	Report Page:	(Page 6 of 8)
	Date Prepared:	3/4/2025

I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))

This table includes areas using allowance calculations per 140.7 / 170.2(e). General Hardscape Allowance is per Table 140.7-A/Table 170.2-R while "Use it or lose it" Allowances are per Table 140.7-B /Table 170.2-S. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.
Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

01				
	"Use it or lose it" Allowance (select all that apply) (select all that apply)			
☒ General Hardscape Allowance Table I (below)	☐ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☐ Per Specific Area Table M

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A for Nonresidential & Hotel/Motel

02	03	04	05	06	07	08	09
Area Description	Area Wattage Allowance (AWA)			Linear Wattage Allowance (LWA)			Total General AWA + LWA (Watts)
	Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	
PARKING LOT	179129	0.019	3403.5	2779	0.2	416.8	3820
						Initial Wattage Allowance for Entire Site (Watts):	200
						Instances of Initial Wattage Allowance (LZ 0 only)[1]	
						Total General Hardscape Allowance (Watts):	4020

J. LIGHTING ALLOWANCE: PER APPLICATION

This section does not apply to this project.

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

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CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: Lodi Middle School	Report Page:	(Page 5 of 8)
	Date Prepared:	3/4/2025

H. OUTDOOR LIGHTING CONTROLS

This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
Outdoor lighting for nonresidential buildings, parking garages and common service areas in multifamily buildings must be documented separately from outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit

Mandatory Controls for Nonresidential Occupancies, Parking Garages & Common Areas in Multifamily Buildings

01	02	03	04	05	
Area Description	Shut-Off 130.2(c)1 / 160.5(c)	Auto-Schedule 130.2(c)2 / 160.5(c)	Motion Sensor 130.2(c)3 / 160.5(c)	Field Inspector	
				Pass	Fail
PARKING LOT	Astronomical Timer	Provided	Provided	☐	☐

[1]FOOTNOTE: Text has been abbreviated, please refer to Table 160.5-A to confirm compliance with the specific light source technologies listed.
[2]Authority having jurisdiction may ask for cutsheets or other documentation to confirm compliance of light source.
[3]Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are excepted from ii and iii.

STATE OF CALIFORNIA
Outdoor Lighting
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	Date Prepared:	3/4/2025

G. SHIELDING REQUIREMENTS (BUG)

This table includes fixtures of >=6,200 initial lumens indicated on Table F as needing to comply with Shielding Requirements. Maximum lumens can be found in Title 24, Part 11, Section 5.106.8.

01	02	03	04	05	06	07	08	09	10	11	12	
Name or Item Tag	Complete Luminaire Description	Backlight Rating[2]			Uplight Rating[2]			Glare Rating (Lumens)[2]			Field Inspector	
		Mounting Height[1]	Max Allowable Backlight Rating[3]	Backlight Rating Per Design	Lighting type	Max Allowable Uplight Rating[3]	Uplight Rating Per Design	Mounting Height[1]	Max Allowable Glare Rating[3]	Glare Rating Per Design	Pass	Fail
1S1C	2S2C	2 MH from property line	No Limit	B2	All other outdoor lighting, including decorative	U2	U0	> 2 MH from property line	G2	G3	☐	☐
2S1C	2S1C	2 MH from property line	No Limit	B2	All other outdoor lighting, including decorative	U2	U0	> 2 MH from property line	G2	G3	☐	☐
2S1B	2S1B	2 MH from property line	No Limit	B2	All other outdoor lighting, including decorative	U2	U0	> 2 MH from property line	G2	G3	☐	☐
1S2C	1S2C	2 MH from property line	No Limit	B2	All other outdoor lighting, including decorative	U2	U0	> 2 MH from property line	G2	G3	☐	☐
2S2C	2S2C	2 MH from property line	No Limit	B2	All other outdoor lighting, including decorative	U2	U0	> 2 MH from property line	G2	G3	☐	☐

[1]FOOTNOTES: Mounting Height is labeled MH in this table.
[2] Authority Having Jurisdiction may ask for Luminaire cut sheets or other documentation to confirm luminaire type, uplight ratings and glare ratings used for compliance per 130.2(b)/ 160.5(c)
[3] BUG ratings with a lower number than the 'Max Allowable' are compliant. Ex. If Max Allowable is Bug Rating B4, then B0, B1, B2 and B3 are all compliant.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: Lodi Middle School	Report Page:	(Page 8 of 8)
Project Address: 945 S Ham Ln.	Date Prepared:	3/4/2025

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Rustem Kopbayev	Documentation Author Signature:
Company: Capital Engineering Consultants Inc.	Signature Date: 2025-03-04
Address: 11020 Sun Center Drive Suite 100	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Rancho Cordova CA 95670	Phone: 916-851-3575

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: John Gumawid	Responsible Designer Signature:
Company: Capital Engineering Consultants Inc.	Date Signed: 2025-03-04
Address: 11020 Sun Center Drive, Suite 100	License: E24187
City/State/Zip: Rancho Cordova CA 95670	Phone: 916.851.3583

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: Lodi Middle School	Report Page:	(Page 7 of 8)
	Date Prepared:	3/4/2025

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This section does not apply to this project.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This section does not apply to this project.

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection has been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-LTO-E - Must be submitted for all buildings

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selection has been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	PARKING LOT,

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUMAWID E 24187 EXPIRES 6/30/26 ELECTRICAL STATE OF CALIFORNIA

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED: 03-28-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1
Author
SHEET NAME:
TITLE 24 - LTO FORMS

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** CLIENT PROJ NO: **3431007000**
SHEET:
E0.5

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STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Lodi Middle School	**Report Page:**	**(Page 2 of 4)**
	Date Prepared:	11/11/2024

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through J. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

01		02		03		04	05	06
Service Electrical Metering 130.5(a)/ 160.6(a) (See Table F)	AND	Separation for Monitoring 130.5(b)/ 160.6(b) (See Table G)	AND	Voltage Drop 130.5(c)/ 160.6(c) (See Table H)	AND	Controlled Receptacles 130.5(d)/ 160.6(d) (See Table I)	Electric Ready 160.9 (See Table J)	**Compliance Results**
Yes	AND	Yes	AND	Yes	AND			COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. SERVICE ELECTRICAL METERING

This section does not apply to this project.

G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING

This section does not apply to this project.

H. VOLTAGE DROP

This table includes entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to demonstrate compliance with 130.5(c)/ 160.6(c). For alterations, only the altered circuits must demonstrate compliance per 141.0(b)2Piii/ 180.2(b)4Bvii c.

01	02	03	04	05	
Electrical Service Designation/Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method	Location of Voltage Drop Calculations[1]	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector	
				Pass	Fail

STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Lodi Middle School	**Report Page:**	**(Page 1 of 4)**
Project Address: 945 S Ham Ln.	**Date Prepared:**	11/11/2024

This document is used to demonstrate compliance with mandatory requirements in 130.5, for electrical systems in newly constructed nonresidential and hotel/motel occupancies and 160.6 and 160.9 for electrical systems in newly constructed multifamily occupancies. Additions and alterations to electrical service systems in nonresidential and hotel/motel occupancies will also use this document to demonstrate compliance per 141.0(a) or 141.0(b)2P for alterations. For multifamily addition or alterations compliance will be documented per 180.1(a) or 180.2 (b)4Bvii

A. GENERAL INFORMATION

01	Project Location (city)	Lodi	02	Climate Zone	12
			03	Occupancy Types Within Project:	

B. PROJECT SCOPE

This table includes electrical systems that are within the scope of the permit application.

01	02	03	04	05	06	07
Electrical Service Designation/ Description	Scope of Work[1]	Rating[2] (kVA)	Utility Provided Metering System Exception to 130.5(a)/ 160.6(a)[3]	System subject to CA Elec Code Article 517 Exception to 130.5(a)and (b)	Demand Response Controls	Provides power to dwelling units/common living areas only in multifamily occupancy
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION	Add/Alt to feeders and branch circuits only	2700	☐	☐	Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections 120.2/ 160.3, 130.1/ 160.5, and 130.3/ 160.5, and mechanical, indoor lighting, and sign lighting Certificate of Compliance documents will indicate when demand response controls are required.	☐

[1] FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c)/160.6(c), no other requirements from 130.5/160.6 are required.
[2] If common use areas in a multifamily are submetered, rating is for submeter size serving common use areas.
[3] Applicable if the utility company is providing a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.

STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Lodi Middle School	**Report Page:**	**(Page 4 of 4)**
Project Address: 945 S Ham Ln.	**Date Prepared:**	11/11/2024

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Ons Hassine	Documentation Author Signature:
Company: Capital Engineering Consultants Inc.	Signature Date:
Address: 11020 Sun Center Dr Ste 100	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Rancho Cordova CA 95670	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: John Gumawid	Responsible Designer Signature:
Company: Capital Engineering Consultants Inc.	Date Signed: 2024-11-11
Address: 11020 Sun Center Drive, Suite 100	License: E24187
City/State/Zip: Rancho Cordova CA 95670	Phone: 916.851.3583

STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Lodi Middle School	**Report Page:**	**(Page 3 of 4)**
	Date Prepared:	11/11/2024

H. VOLTAGE DROP

LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION	☒	Voltage drop less than 5%	☐	Permitted by CA Elec Code (Exception to 130.5(c))*	In construction documents	E0.2	☐ ☐

** NOTES: if "Permitted by CA Elec Code *" is selected under Compliance Method above, please indicate where the exception applies in the space provided below.*

[1] FOOTNOTES: Voltage drop calculations may be attached to the permit application outside the construction documents if allowed by the Authority Having Jurisdiction. Select "attached" if applicable. If calculations will be the responsibility of the installing contractor, select "Contractor Responsible".

J. ELECTRIC READY BUILDINGS

This section does not apply to this project.

K. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-ELC-E - Must be submitted for all buildings

AGENCY APPROVAL:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 1
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUMAWID E 24187 EXPIRES 9/30/25 ELECTRICAL STATE OF CALIFORNIA

capital engineering
RANCHO CORDOVA, CALIFORNIA

JG - JSG	240047.00
PM - DESIGN TEAM	PROJECT NO.

DATE SIGNED: 03-28-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1
Author

SHEET NAME:
TITLE 24 - ELC FORMS

CONSTRUCTION DOCUMENTS

DATE: **04.02.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
E0.6

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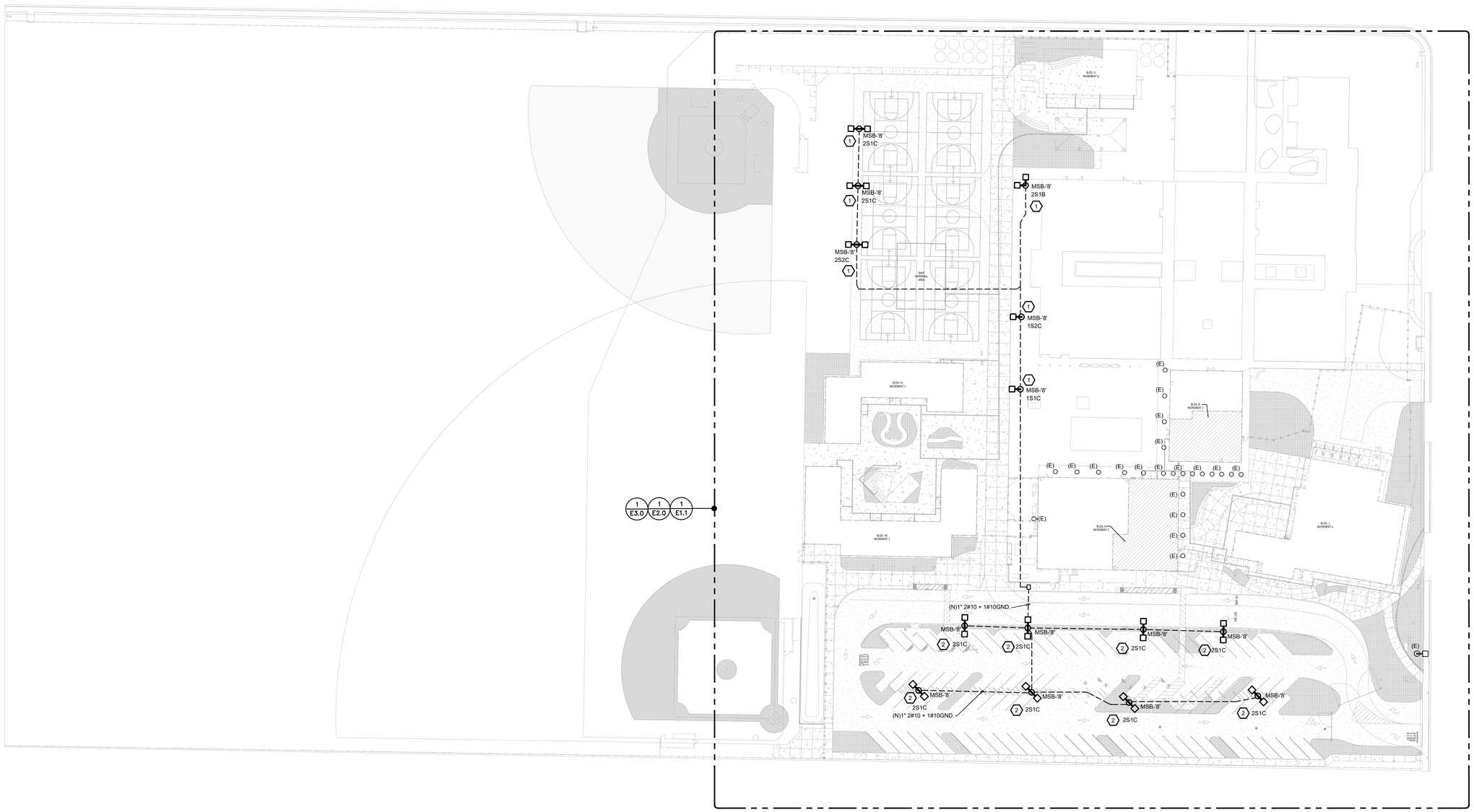

LIGHTING SITE PLAN

SCALE : 1"=40'-0"

1
E1.1

LIGHTING FIXTURE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	LAMPS	VOLTS	WATTS	COLOR	LUMENS	MOUNTING	NOTES
1S1C	SINGLE 15' POLE LIGHT	LITHONIA LIGHTING DSX1 LED P3 40K 80CRI T2M MVOLT SPA	LED	MVOLT	102	40K	13055	POLE	1
2S1C	180° DUAL 15' POLE LIGHT	LITHONIA LIGHTING DSX1 LED P3 40K 80CRI T2M MVOLT SPA	LED	MVOLT	204	40K	13055	POLE	1
2S1B	90° DUAL 15' POLE LIGHT	LITHONIA LIGHTING DSX1 LED P3 40K 80CRI T2M MVOLT SPA	LED	MVOLT	204	40K	13055	POLE	1
1S2C	SINGLE 15' POLE LIGHT	LITHONIA LIGHTING DSX2 LED P6 40K 80CRI T4M MVOLT SPA	LED	MVOLT	342	40K	45563	POLE	1
2S2C	90° DUAL 15' POLE LIGHT	LITHONIA LIGHTING DSX2 LED P6 40K 80CRI T4M MVOLT SPA	LED	MVOLT	684	40K	45563	POLE	1

NOTES:

1 COORDINATE FINAL MOUNTING HEIGHT IN FIELD WITH ARCHITECT.

GENERAL NOTES:

A. THIS LIGHTING SCHEDULE IS NOT COMPLETE WITHOUT A COPY OF THE PROJECT MANUAL CONTAINING ELECTRICAL SPECIFICATIONS.
SPECIFIED MANUFACTURERS ARE APPROVED TO SUBMIT BID. INCLUSION DOES NOT RELIEVE MANUFACTURER FROM SUPPLYING PRODUCT AS DESCRIBED.

B. PROVIDE SUBMITTALS THAT INCLUDE LIGHTING FIXTURE, LAMP, AND DRIVER INFORMATION FOR EACH FIXTURE, WITH APPLICABLE OPTIONS CLEARLY CHECKED OR HIGHLIGHTED. SUBMITTALS NOT INCLUDING THIS INFORMATION WILL BE RETURNED AS REJECTED BY THE ENGINEER OF RECORD.

C. PROVIDE COMMISSIONING OF THE LIGHTING AND LIGHTING CONTROLS IN ACCORDANCE WITH CALIFORNIA TITLE 24 COMMISSIONING REQUIREMENTS.

D. COORDINATE COLOR TEMPERATURE WITH ARCHITECT.

AGENCY APPROVAL:

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REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 4/2/2025

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
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916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

1. REFER TO DETAIL 5 SHEET E0.3.
2. REFER TO DETAIL 8 SHEET E0.3.

NOTES

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JOHN D. GUMA REY
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capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.
DATE SIGNED: 03-28-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION - INCREMENT 1
Author
SHEET NAME:
LIGHTING SITE PLAN

CONSTRUCTION DOCUMENTS

DATE: 04.02.2025 | CLIENT PROJ NO: 3431007000

SHEET:
E1.0

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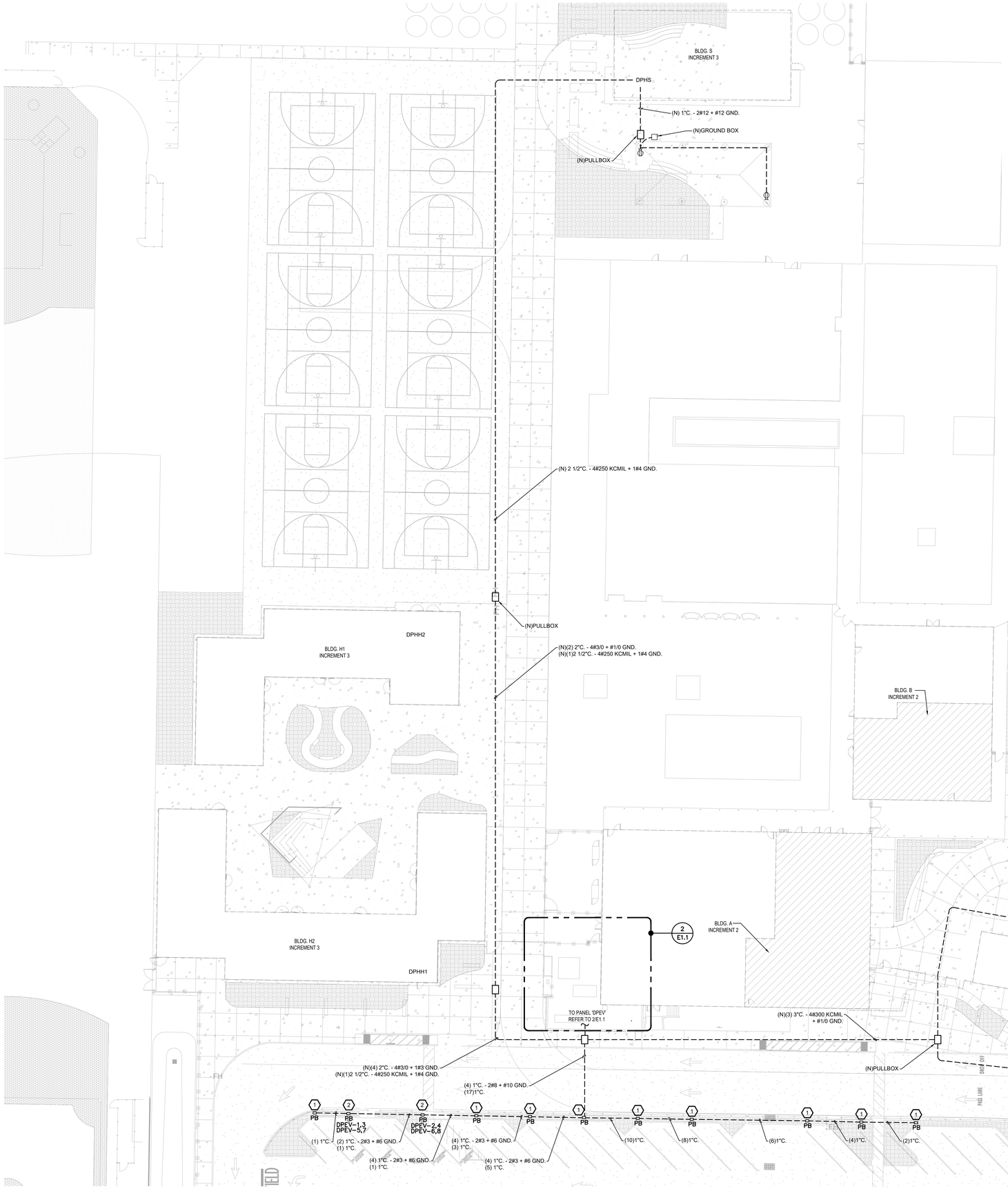
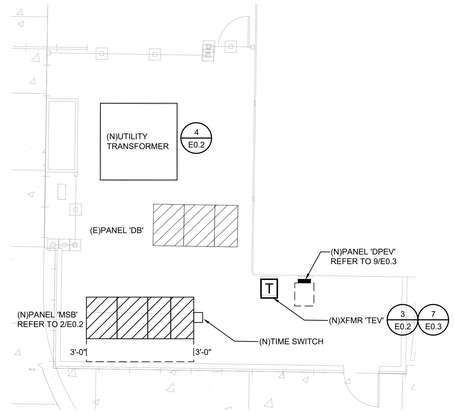


POWER SITE PLAN

SCALE : 1"=20'-0"

1
E1.1



ENLARGED ELECTRICAL YARD PLAN

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

2
E1.1

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KEYNOTES

1. PROVIDE CONDUITS AND PULL STRINGS.
2. PROVIDE CONDUITS AND WIRES. EACH (2) 1"C. - 2#8 + #10 GND.

NOTES

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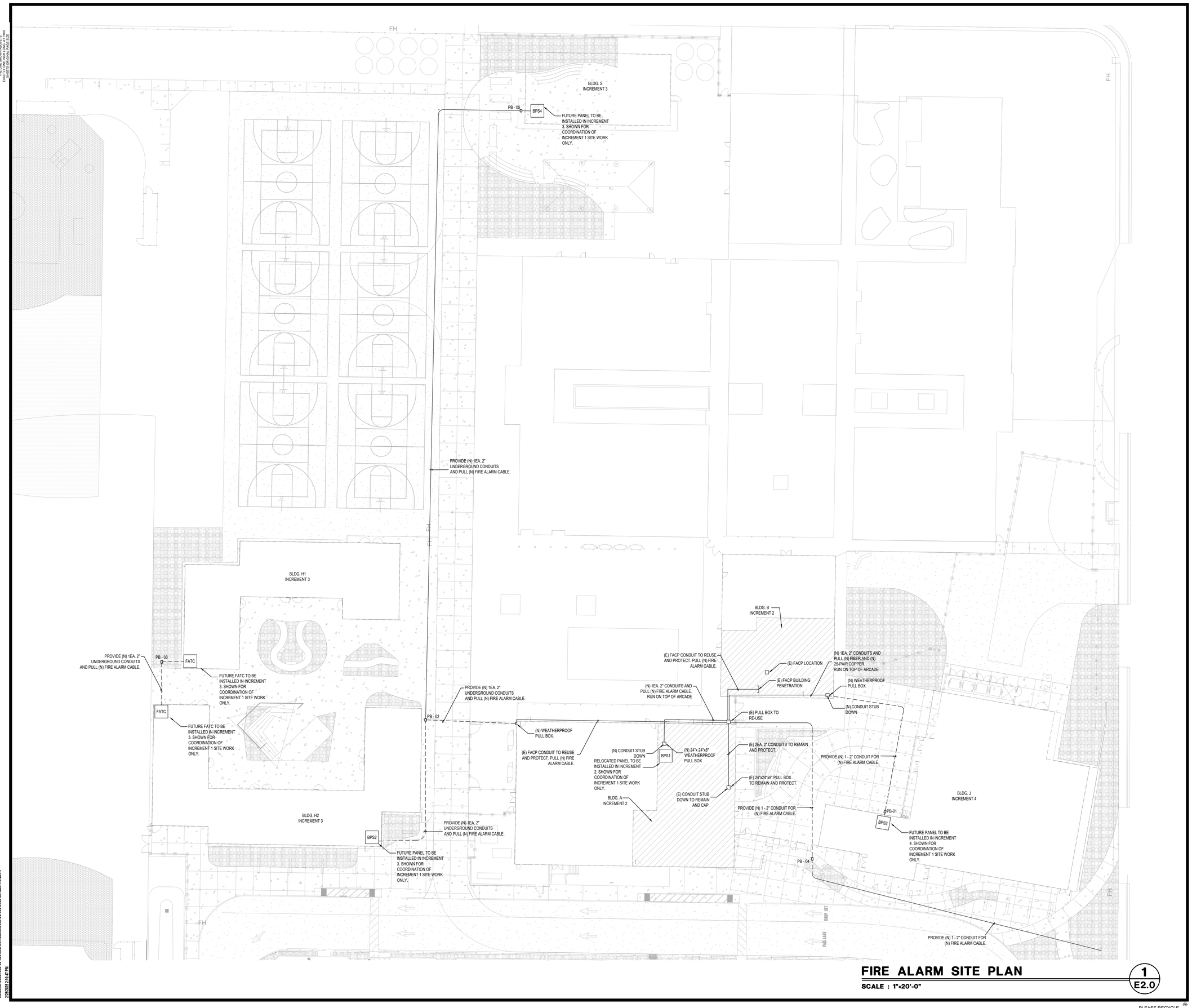

FIRE ALARM SITE PLAN

SCALE : 1"=20'-0"

1
E2.0

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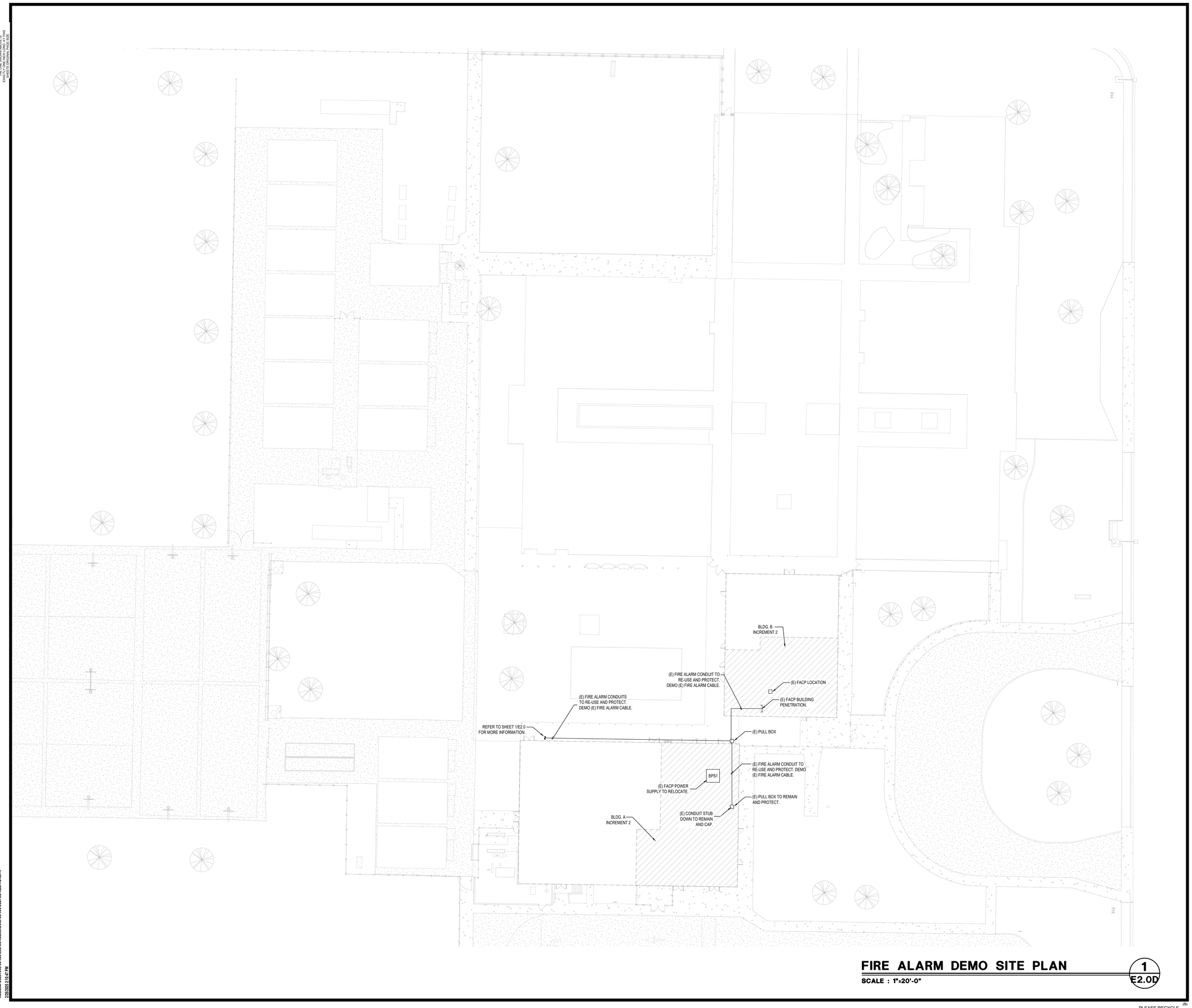

FIRE ALARM DEMO SITE PLAN

SCALE : 1"=20'-0"

1
E2.0D

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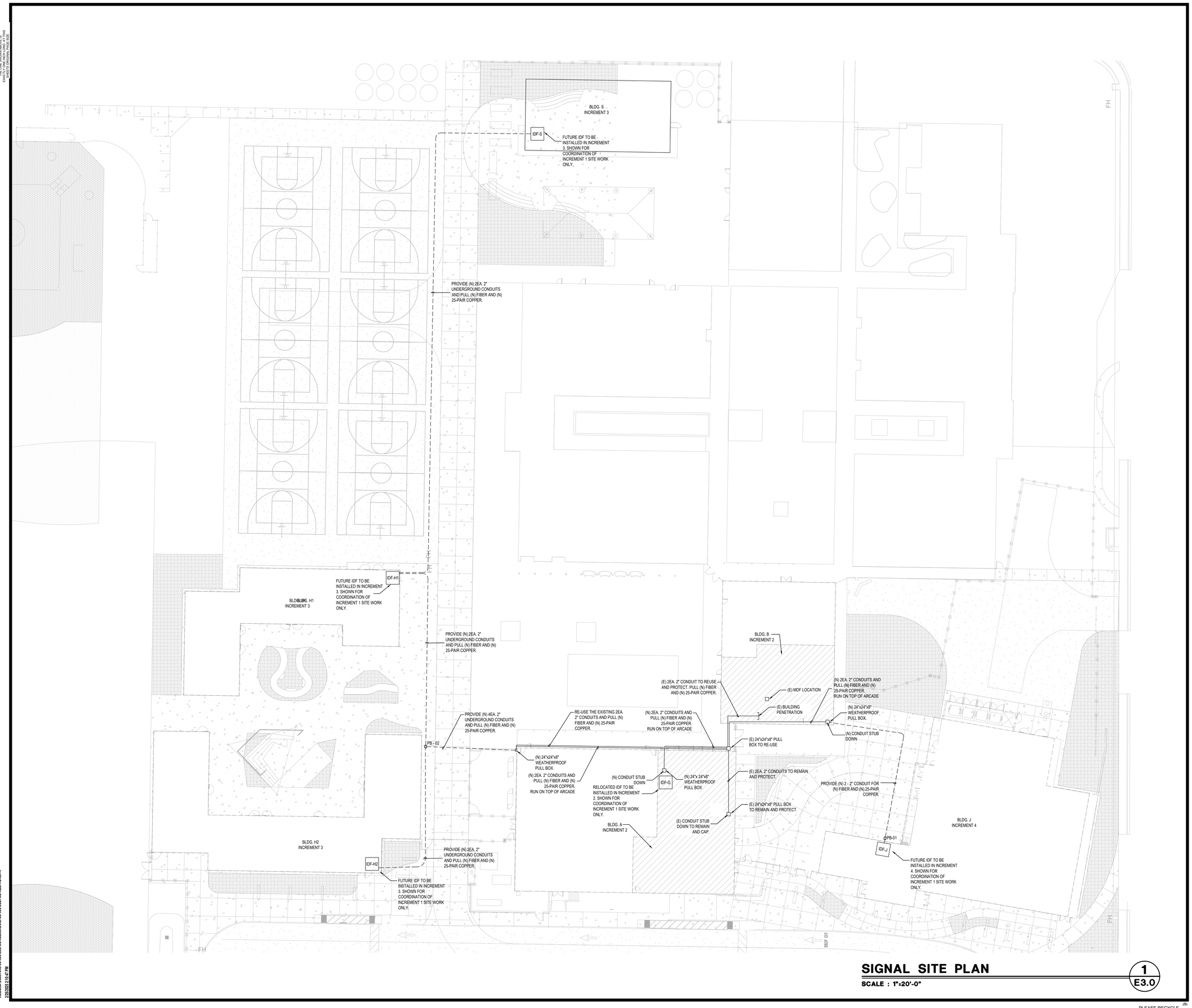

SIGNAL SITE PLAN

SCALE : 1"=20'-0"

1
E3.0

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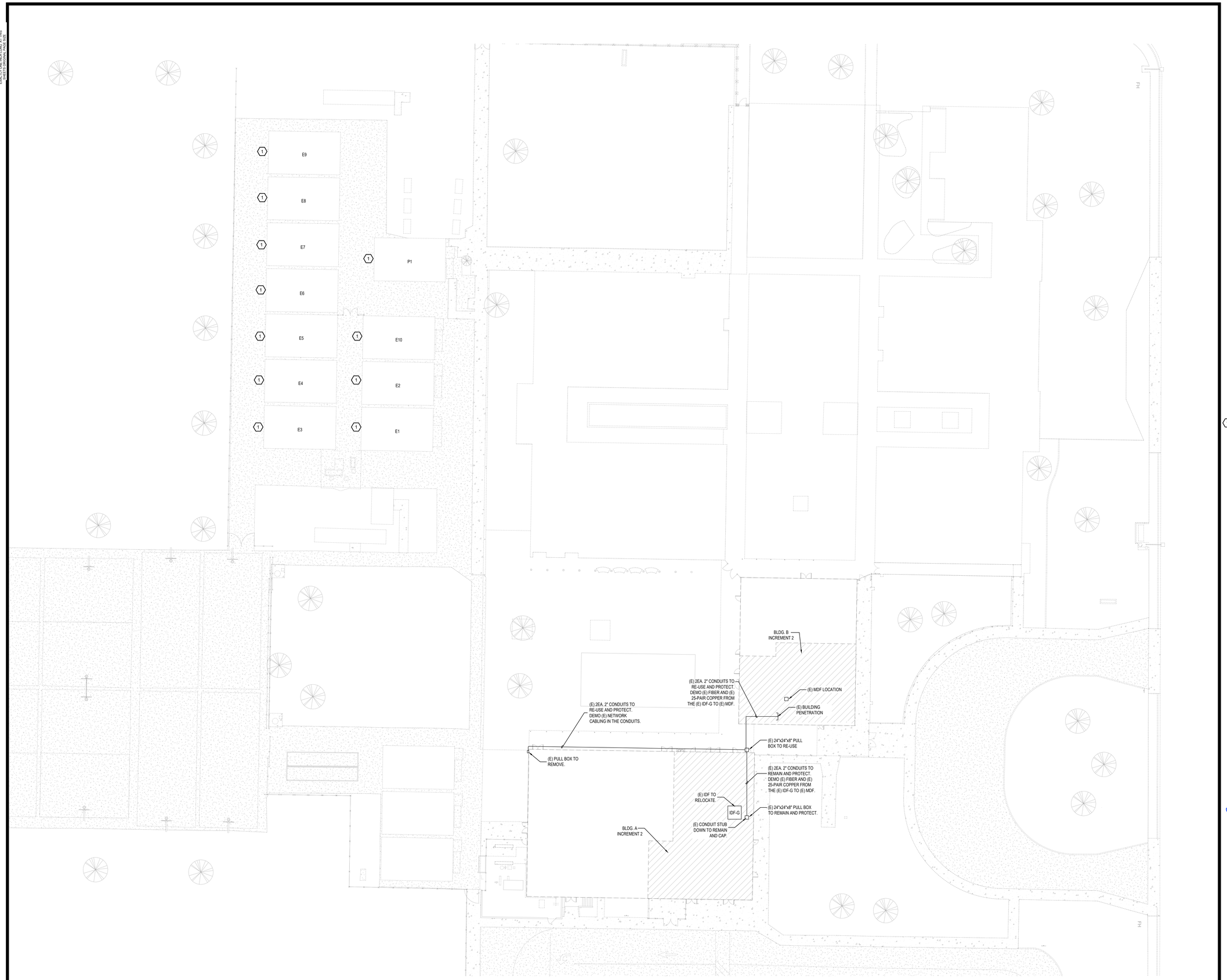

SIGNAL DEMO SITE PLAN

SCALE : 1"=20'-0"

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E3.0D

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KEYNOTES

1. REMOVE ALL (E) POWER AND SIGNAL FEEDERS TO BUILDING . REMOVE WIRES BACK TO SOURCE EQUIPMENT. REMOVE ALL UNUSED UNDERGROUND CONDUIT. FROM NEW BUILDING FOOTPRINT. ABANDON ALL UNDERGROUND CONDUIT OUTSIDE THIS AREA 24" BELOW GRADE. REMOVE ALL ELECTRICAL EQUIPMENT, DEVICES, CONDUIT, WIRES, ETC. FROM THE BUILDING.

NOTES

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Author
SHEET NAME:
SIGNAL DEMO SITE PLAN

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SHEET:
E3.0D

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CONTRACTOR(S) GUIDELINES

1. ALL TECHNOLOGY WORK SHALL COMPLY WITH DESIGN GUIDELINES AS WELL AS APPLICABLE FEDERAL, STATE, AND LOCAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE DOCUMENTS SHALL GOVERN BUT THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
2. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS OR WITH CODE REQUIREMENTS, THE NOTE, CODE OR SPECIFICATION WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR THE HIGHER STANDARD SHALL PREVAIL.
3. OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR THE MIS-DESCRIPTION OF DETAILS FROM WORK WHICH ARE CLEAR AND NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS, SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED OR MIS-DESCRIBED DETAILS OF THE WORK BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED, IMMEDIATELY UPON THEIR RECEIPT AND SHALL PROMPTLY NOTIFY THE OWNER OF ANY DISCREPANCIES.
5. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE CALIFORNIA STATE FIRE MARSHAL (CSFM), UNDERWRITERS LABEL (UL) AND SHALL BE INSTALLED IN THE MANNER FOR WHICH THEY ARE DESIGNED AND APPROVED.
6. THE CONTRACTOR SHALL NOT BORE, NOTCH OR IN ANY WAY CUT INTO ANY STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT OR STRUCTURAL ENGINEER.
7. ALL CHANGES TO STRUCTURES (BUILDING, DRILLING, CORING, ETC.) NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED IN WRITING BY STRUCTURAL ENGINEER.
8. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, THE TECHNOLOGY DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DATA INFORMATION AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE SCS AND LOW VOLTAGE WORK INTERFACES WITH OTHER TRADES.
9. THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS TO REFLECT ALL CHANGES MADE DURING CONSTRUCTION AND ANY DEVIATIONS FROM THE ELECTRICAL AND TECHNOLOGY DRAWINGS. THIS INCLUDES DEVIATIONS FROM OUTLET NUMBERS AND ANY ADDITION, DELETION OR RELOCATION OF OUTLETS SHOWN ON WORKING DRAWINGS, PATHWAY ADDITIONS, DELETIONS OR RELOCATIONS. THE CONTRACTOR SHALL AFTER COMPLETION OF JOB, PROVIDE THE OWNER AN ELECTRONIC AND HARD COPY OF AS-BUILT WORK.
10. ANY DEVIATIONS FROM PLANS OR SPECS MUST BE APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
11. ALL FOOTAGES ON DRAWINGS ARE ESTIMATED AND MUST BE VERIFIED BY CONTRACTOR PRIOR TO ORDERING MATERIAL.
12. ALL STATION CABLES SHALL BE NEATLY DRESSED AND SECURED EVERY FIVE FEET AT A MINIMUM.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING TILE INCLUDING REPLACEMENT OF BROKEN OR DAMAGED TILES.
14. ALL LOCATIONS PASSING THROUGH A FIRE OR A SMOKE BARRIER MUST BE FIRE STOPPED USING APPROVED (UL CLASSIFIED) FIRE STOP SYSTEM, INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AND PROPERLY LABELED.
15. CONDUIT SHALL BE FILLED TO MAXIMUM CAPACITY (PER CODE, STANDARDS, AND NORMS) BEFORE UTILIZING ANOTHER VACANT CONDUIT.
16. ALL TECHNOLOGY DEVICES SHALL BE PROPERLY IDENTIFIED USING THE OWNER'S STANDARD INTERNAL DISTRIBUTION NUMBERING SCHEME. ALL LABELS SHALL BE PREPRINTED OR TYPED.
17. EACH CABLE SHALL BE EQUIPPED WITH A PERMANENT LABEL INDICATING THE CIRCUIT IDENTIFICATION. BOTH ENDS OF EACH CABLE AND AT EVERY MAINTENANCE HOLE, HAND HOLE, AND PULL BOX, SHALL BE SO LABELED.
18. FIBER BACKBONE CABLE SHALL BE PLACED WITH 6 FOOT MAINTENANCE LOOP AT BOTH ENDS OF THE RUN. THE MAINTENANCE LOOP SHALL BE SECURED IN SUCH A MANNER TO PROVIDE PROTECTION DURING SUBSEQUENT CABLE PULLS.
19. FIBER CABLES SHALL BE SPLICED TOGETHER USING A FUSION SPLICE AND PLACED IN A FIBER SPLICE CASE THAT IS RE-ENTERABLE, FULLY DRESSED AND ENCLOSED TO FIT THE NUMBER AND TYPE OF CABLES TERMINATED.
20. ALL CABLES SHALL BE CLEARLY LABELED WITH CIRCUIT IDENTIFICATION.
21. PULL ROPES SHALL BE PLACED IN ALL VACANT CONDUITS.
22. ALL WORK MUST BE COMPLETED IN A NEAT AND PROFESSIONAL MANNER. THE WORK SITE SHALL BE KEPT CLEAN AND ALL DAMAGE TO OWNER'S PROPERTY REPAIRED.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A FINAL CLEANUP OF THE WORK SITE PRIOR TO FINAL SYSTEM ACCEPTANCE.
24. CONTRACTOR SHALL REMOVE ALL COPPER, FIBER AND COAXIAL CABLES ABANDONED IN CONDUIT, CEILINGS AND WALLS PER CEC. CABLE SHALL INCLUDE ALL INTRABUILDING, RISER SYSTEMS AND STATION CABLES FOR ALL LOW VOLTAGE/TECHNOLOGY/STRUCTURED CABLING SYSTEMS.
25. CONTRACTOR(S) SHALL VERIFY ALL SITE CONDITIONS PRIOR TO BID.
26. IN ACCESSIBLE CEILING SPACES:
    - 26.1. THE CONTRACTOR SHALL PROVIDE THE REQUIRED STUB UP(S) / OUT(S) AND BOXES WITH MUD-RINGS TO THE NEAREST ACCESSIBLE CEILING SPACE AND / OR NEAREST TECHNOLOGY PATHWAY INFRASTRUCTURE, REFERENCE PLANS AND SPECIFICATION FOR MORE INFORMATION.
    - 26.2. THE DESIGNATED SCS / TECHNOLOGY CONTRACTOR(S) SHALL PROVIDE A J-HOOK PATHWAY SYSTEM AND REQUIRED SLEEVES. DO NOT USE CEILING TILE WIRE HANGERS, WATER OR ELECTRICAL PIPES, OR LIGHT FIXTURES TO HANG CABLE. CABLE MUST BE A MINIMUM OF 6 INCHES ABOVE THE CEILING TILE AND MUST NOT COME WITHIN TWELVE INCHES OF A LIGHT FIXTURE. THE DESIGNATED ELECTRICAL CONTRACTOR(S) FOR EACH "SUB-SYSTEM WILL PROVIDE THE PATHWAY REQUIRED FOR THE SYSTEMS, OUTSIDE WHAT IS CONSIDERED THE STRUCTURED CABLING SYSTEM.
27. IN INACCESSIBLE AND HARDLID CEILING SPACES;
    - 27.1. THE CONTRACTOR SHALL PROVIDE ALL CONDUIT PATHWAYS, BOXES ETC. FOR A COMPLETE SYSTEM FROM THE MDF ROOM, IDF ROOM(S), IDF CABINET(S), AND ALL OTHER LOW VOLTAGE / TECHNOLOGY SYSTEMS HEADEND, CABINETS, TERMINAL CABINETS, ETC. TO THE POINT OF TERMINATION AT THE STATION END LOCATION PER PLANS AND SPECIFICATION.

EQUIPMENT ANCHORAGE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTED BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, AND DUCTWORK DISTR. SYSTEM BRACING

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. THE MEP PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING(MP), MECHANICAL DUCTS(MD), PLUMBING PIPING(PP), ELECTRICAL DISTRIBUTION SYSTEMS(E):

MP☐ MD☐ PP☐ E ☒	OPTION 1: PROJECT SEPCIFIC DESIGN.
MP☐ MD☐ PP☐ E ☐	OPTION 2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL.
MP☐ MD☐ PP☐ E ☐	OPTION 3: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL.

TECHNOLOGY CABLING NOTES

1. THE USE OF LUBRICANTS SUCH AS CLEAR GLIDE, TO FACILITATE THE INSTALLATION OF CABLES IN CONDUITS IS ENCOURAGED FOR FRICTION REDUCTION AND TO MAINTAIN THE REQUIRED PULL TENSION. YELLOW 77 AND POLYWATER "F" IS PERMISSIBLE FOR USE AS A LUBRICANT FOR ISP TECHNOLOGY CABLING. THE USE OF OSP, LOW TEMPERATURE CABLE LUBRICANTS SHALL NOT BE ACCEPTABLE IN AN INDOOR PLENUM ENVIRONMENT. UNDER NO CIRCUMSTANCES SHALL CABLE PULLING LUBRICANT BE ALLOWED TO ACCUMULATE ON WALLS, FLOORS, BACKBOARDS, OR OTHER SURFACES OUTSIDE THE CONDUIT.
2. ANY CABLE DAMAGED OR EXCEEDING RECOMMENDED INSTALLATION PARAMETERS DURING INSTALLATION SHALL BE REPLACED BY THE CONTRACTOR BEFORE FINAL ACCEPTANCE AT NO COST TO THE OWNER.
3. EACH RUN OF CABLE SHALL BE CONTINUOUS WITHOUT ANY JOINTS OR SPLICES.
4. ALL STATION CABLE SHALL BE PLACED IN THE INTERIOR OF WALLS UNLESS NOTED OTHERWISE OR OBSTRUCTED.
5. PROVIDE BUSHINGS, GROMMETS AND STRAIN-RELIEF FOR CABLES TERMINATING AT WALL-MOUNTED DEVICES TO ENSURE DURABLE AND ROBUST CONNECTIONS. THE BUSHINGS AND GROMMETS ARE INTENDED TO PROTECT THE CABLES FROM ANY SHARP EDGES THAT PRESENT A RISK TO THE CABLES. ENSURE THAT ALL SHARP EDGES ARE COVERED TO PROTECT THE CABLES FROM DAMAGE.
6. IN SUSPENDED CEILING AND RAISED FLOOR AREAS WHERE DUCT, CABLE BUNDLES SHALL BE SUPPORTED VIA "J" HOOKS ATTACHED TO THE BUILDING STRUCTURE AND FRAMEWORK AT A MAXIMUM OF FIVE (5) FOOT INTERVALS. MINIMUM 1 " WIDE J-HOOKS SHALL BE APPROPRIATELY SIZED TO ALLOW A MINIMUM OF 60% SPARE CAPACITY FOR FUTURE CABLE INSTALLATION. THE CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID FOR ANY ADDITIONAL SUPPORTS/SEISMIC BRACING REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
7. CABLES OR J-HOOKS SHALL NOT BE ATTACHED TO LIFT OUT CEILING GRID SUPPORTS OR LAID DIRECTLY ON THE CEILING GRID.
8. CABLES OR J-HOOKS SHALL NOT BE ATTACHED TO OR SUPPORTED BY FIRE SPRINKLER HEADS OR DELIVERY SYSTEMS OR ANY ENVIRONMENTAL SENSOR LOCATED IN THE CEILING AIR SPACE.
9. WHERE ADDITIONAL CONDUIT(S)/SLEEVE(S) ARE REQUIRED, BUT NOT PROVIDED BY THE CONTRACTOR, THE SCS AND/OR LV CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE SUCH CONDUIT(S)/SLEEVE(S). CONDUIT(S) AND SLEEVE(S) SHALL BE OF SUITABLE MATERIAL, SIZED, INSTALLED, FIRE-STOPPED, AND GROUNDED AS REQUIRED BY THE CEC, ANSI/TIA-569-D STANDARD AND ALL OTHER APPLICABLE CODES AND STANDARDS. SLEEVES SHALL CONSIST OF METALLIC CONDUIT DE-BURRED AND GROMMETTED ON BOTH ENDS WITH FLANGES OR OTHER MEANS TO PREVENT THE SLEEVE FROM SLIPPING OR FALLING OUT OF THE PARTITION. SLEEVES SHALL EXTEND A MINIMUM OF 6" ON BOTH SIDES OF THE PARTITION. OUTSIDE PERIMETER OF SLEEVES SHALL BE SEALED AGAINST SOUND, AIR, WATER, HEAT, OR AS REQUIRED BY PARTITION DESIGN. INSIDE OF SLEEVE SHALL BE SEALED SIMILARLY AFTER INSTALLATION OF ALL CABLING. CABLES SHALL BE INDEPENDENTLY SUPPORTED ON EITHER SIDE OF THE SLEEVE. SLEEVES SHALL NOT BE USED AS CABLE SUPPORTS. ANY CONDUIT(S) AND SLEEVE(S) ADDED BY THE SCS CONTRACTOR SHALL BE APPROVED BY THE OWNERS REPRESENTATIVE PRIOR TO ROUGH-IN.
10. IN THE EVENT CONTRACTOR IS REQUIRED TO REMOVE CEILING TILES, SUCH WORK SHALL NOT BREAK OR DISTURB GRID. REMOVAL OF THE CEILING GRID MUST BE COORDINATED WITH THE OWNERS REPRESENTATIVE. ALL INSULATION SHALL BE REPLACED IN ITS ORIGINAL LOCATION.
11. THE NUMBER OF CABLES IN EACH CONDUIT SHALL BE CONTROLLED TO ALLOW FOR FUTURE CABLE INSTALLATION AND TO STAY WITHIN THE MANUFACTURER'S MAXIMUM ALLOWABLE CABLE PULLING TENSION. CONDUIT FILL RATIOS SHALL NOT EXCEED THE CURRENT REQUIREMENTS OF THE CEC, ANSI/TIA-569-D, REFERENCE SECTION B.2, TABLES 1 AND 2 OF THIS DOCUMENT FOR ADDITIONAL REQUIREMENTS.
12. ALL BACKBONE CABLING WILL RUN THROUGH DEDICATED CONDUITS. ALL NEW CONDUITS WILL BE SUPPLIED WITH A PULL STRING BY THE CONTRACTOR. EXISTING CONDUITS SHALL BE PROVEN TO BE CLEAR BY THE SCS AND/OR LV CONTRACTOR PRIOR TO PULLING OF CABLES. SCS AND/OR LV CONTRACTOR SHALL SUPPLY PULL STRING AND PULL ROPE FOR THE INSTALLATION OF ALL CABLES IN EXISTING CONDUITS. FOR ALL CONDUITS LEFT WITH AVAILABLE CAPACITY, SCS AND/OR LV CONTRACTOR SHALL REPLACE PULL STRINGS DURING THE COURSE OF HIS WORK. SCS AND/OR LV CONTRACTOR MUST SEAL ALL CONDUITS WITH AN APPROVED SEALING COMPOUND.

TECHNOLOGY SYMBOL LEGEND:

ALL NOTES ARE TYPICAL UNLESS NOTED OTHERWISE ON PLANS AND DETAILS

MARK	SYMBOL	DESCRIPTION	BACK BOX	PLASTER RING	MOUNTING HEIGHT	CONDUIT	MANUFACTURER	CABLE	CABLE COLOR / JACK COLOR	MAX. LOAD	NOTES
1	MDF	MDF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	EXISTING
2	IDF	IDF	N/A	N/A	SEE PLANS	N/A	CHATSWORTH PRODUCTS	N/A	N/A	SEE SHEET T0.2-2	SEE EQUIPMENT SCHEDULE
					WORKSTATIONS						
3	#	DATA	5" SQ., 2-1/8" DEEP	2-DEVICE	+16" TO BOTT.	1 EA. 1"C	PANDUIT	CAT6A	DATA: PURPLE / BEIGE VOICE(VOIP): GRAY / BLUE VOICE(NON-VOIP): GRAY / 110 BLOCK	N/A	DISTRICT WILL IDENTIFY VOIP AND NON-VOIP PHONE.
4	#D / #V	DATA / TELEPHONE OUTLET	5" SQ., 2-1/8" DEEP	2-DEVICE	+16" TO BOTT.	1 EA. 1"C	PANDUIT	CAT6A	DATA: PURPLE / BEIGE VOICE(VOIP): GRAY / BLUE VOICE(NON-VOIP): GRAY / 110 BLOCK	N/A	DISTRICT WILL IDENTIFY VOIP AND NON-VOIP PHONE.
5	WAP	WAP DATA OUTLET	5" SQ., 2-1/8" DEEP	2-DEVICE	CEILING	1 EA. 1"C	PANDUIT	CAT6A	DATA: BLUE / WHITE	N/A	802.3BT TYPE 4 AND IN COMPLIANCE WITH ALL EIA / TIA STANDARDS.
6	2D WAP	WAP DATA OUTLET WEATHERPROOF	5" SQ., 2-1/8" DEEP	2-DEVICE	+108" TO BOTT.	1 EA. 1"C	PANDUIT	CAT6A	DATA: BLUE / WHITE	N/A	802.3BT TYPE 4 AND IN COMPLIANCE WITH ALL EIA / TIA STANDARDS.
					TEACHING WALL						
7	HDMI	HDMI FACEPLATE	5" SQ., 2-1/8" DEEP	2-DEVICE	+14" TO BOTT.	1 EA. 1.24"C	SEE ONE-LINE	HDMI	N/A	N/A	N/A
8	#	PROMETHEAN BOARD DATA	5" SQ., 2-1/8" DEEP	2-DEVICE	+29" BELOW CEILING.	1 EA. 1"C	PANDUIT	CAT6A	DATA: PURPLE / BEIGE	N/A	N/A
					CLOCK / INTERCOM PAGING SYSTEM						
9		CLOCK	PER MFR. GUIDELINES	PER MFR. GUIDELINES	+96" MIN. TO BOTT.	1 EA. 1"C	AMERICAN TIME	N/A	N/A	N/A	BATTERY OPERATED
10	CS	CLOCK / SPEAKER COMBO	PER MFR. GUIDELINES	PER MFR. GUIDELINES	+96" MIN. TO BOTT.	1 EA. 1"C	ATLAS SOUND IED	N/A	IP - SDMF	N/A	N/A
11	S	INTERCOM SPEAKER	PER MFR. GUIDELINES	PER MFR. GUIDELINES	+96" MIN. TO BOTT.	1 EA. 1"C	ALGO	CAT6A	INTERCOM: GREEN / GREEN	N/A	PROVIDE ONE(1) DATA DROP
12	S WP	WALL MOUNTED INTERCOM SPEAKER, WEATHERPROOF	PER MFR. GUIDELINES	PER MFR. GUIDELINES	+108" MIN. TO BOTT.	1 EA. 1"C	ALGO	CAT6A	INTERCOM: GREEN / GREEN	N/A	N/A
					INTRUSION SECURITY SYSTEM						
13	ICP	INTRUSION MAIN ALARM CONTROL PANEL	N/A	N/A	+60" TO BOTT.	N/A	ADEMCO	22 AWG	N/A	N/A	N/A
14		INTRUSION MOTION SENSOR	5" SQ., 2-1/8" DEEP	1-DEVICE	SEE PLANS	N/A	ADEMCO	22 AWG	N/A	N/A	N/A
15		DOOR CONTACT	N/A	N/A	DOOR FRAME	N/A	ADEMCO	22 AWG	N/A	N/A	COORDINATE WITH DIVISION 8 FOR DOOR HARDWARE
16		INTRUSION KEYPAD	5" SQ., 2-1/8" DEEP	1-DEVICE	+45" MIN. TO BOTT.	N/A	ADEMCO	22 AWG	N/A	N/A	N/A
					ACCESS CONTROL						
17	ACP	ACCESS CONTROL PANEL	N/A	N/A	SEE PLANS	N/A	N/A	22 AWG	N/A	N/A	COORDINATE WITH ALAMO ALARM COMPANY (DISTRICT INTRUSION AND ACCESS CONTROL CONTRACTOR)
18	CR	CARD READER	5" SQ., 2-1/8" DEEP	1-DEVICE	SEE PLANS	N/A	N/A	22 AWG	N/A	N/A	COORDINATE WITH DIVISION 8 FOR DOOR HARDWARE
					MISC. SYSTEM						
19	ES	ENTRY STATION	N/A	N/A	+60" TO BOTT.	N/A	N/A		N/A	N/A	EXISTING
20	2D	PROJECTOR	5" SQ., 2-1/8" DEEP	1-DEVICE	SEE PLANS	N/A	N/A		N/A	N/A	EXISTING
21		COAX OUTLET	5" SQ., 2-1/8" DEEP	1-DEVICE	+45" MIN. TO BOTT.	N/A	N/A		N/A	N/A	EXISTING TO DEMO CABLING, PATHWAY, AND ALL ASSOCIATED PATHWAY
22	TV	LED TV	N/A	N/A	+45" MIN. TO BOTT.	N/A	N/A		N/A	N/A	EXISTING

TECHNOLOGY ABBREVIATIONS

ACP	ACCESS CONTROL PROCESSOR	(N)	NEW
AFF	ABOVE FINISHED FLOOR	NC	NORMALLY CLOSED
AHJ	AUTHORITY HAVING JURISDICTION	NIC	NOT IN CONTRACT
AMP	AMPLIFIER	NO	NORMALLY OPEN
AOR	ARCHITECT OF RECORD	NTS	NOT TO SCALE
AUTO	AUTOMATIC	OC	ON CENTER
AUX	AUXILIARY	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
AWG	AMERICAN WIRE GAUGE	OFOI	OWNER FURNISHED, OWNER INSTALLED
BCT	BONDING CONDUCTOR FOR TELECOMMUNICATIONS CONDUIT	OSP	OUTSIDE PLANT
C	CONDUIT	PB	PULL BOX
CATV	COMMUNITY ANTENNA TELEVISION	POE	POWER OVER ETHERNET
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	PR	PAIR OF CONDUCTORS
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED	PVC	POLYVINYL CHLORIDE
CL	CENTERLINE	PWR	POWER
CSFM	CALIFORNIA STATE FIRE MARSHAL	(RR)	REMOVE AND REPLACE
DIV	DIVISION	(RL)	REMOVE AND RELOCATE
DC	DOOR CONTACT	RCP	REFLECTED CEILING PLAN
(E)	EXISTING	RFI	REQUEST FOR INFORMATION
EC	ELECTRICAL CONTRACTOR	RMC	RIGID METALLIC CONDUIT
ECS	EMERGENCY COMMUNICATION SYSTEM	SCS	STRUCTURED CABLING SYSTEM
EF	ENTRANCE FACILITY FOR TELECOMMUNICATION	SM	SINGLE MODE
EMT	ELECTRIC METALLIC TUBING	STR	STRANDS (OF FIBER)
ER	EQUIPMENT ROOM	STP	SHIELDED TWISTED PAIR
EXT	EXTERIOR	SEC	SECURITY
(F)	FUTURE	TBB	TELECOMMUNICATIONS BONDING BACKBONE
FACP	FIRE ALARM CONTROL PANEL	TELCO	TELEPHONE COMPANY
FATC	FIRE ALARM TERMINAL CABINET	TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
FABP	FIRE ALARM BOOSTER PANEL	TMGB	TELECOMMUNICATIOIN MAIN GROUNDING BUSBAR
FB	FLOORBOX	TYP	TYPICAL
FO	FIBER OPTIC	UNO	UNLESS NOTED OTHERWISE
GC	GENERAL CONTRACTOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
IDF	INTERMEDIATE DISTRIBUTION FRAME	UTP	UNSHIELDED TWISTED PAIR
INT	INTERIOR	V	VOICE
IP	INTERNET PROTOCOL	WB	WALL BOX
JB	JUNCTION BOX	WP	WEATHERPROOF
LV	LOW VOLTAGE		
MDF	MAIN DISTRIBUTION FRAME		
MIC	MICROPHONE		
MM	MULTIMODE		
MPOE	MINIMUM POINT OF ENTRY		

CODES AND STANDARDS

APPLICABLE PROJECT BUILDING CODES, EFFECTIVE AS OF DATE: JANUARY 1, 2023

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC)
2022 CALIFORNIA BUILDING CODE (CBC)
2022 CALIFORNIA ELECTRICAL CODE (CEC)
2022 CALIFORNIA FIRE CODE (CFC)
2022 CALIFORNIA ENERGY CODE
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
2022 CALIFORNIA REFERENCED STANDARDS CODE
2022 NFPA 72: NATIONAL TECHNOLOGY AND SIGNALING CODE
2022 NFPA 1221: STANDARD FOR THE INSTALLATION, MAINTENANCE, AND USE OF EMERGENCY SERVICES COMMUNICATIONS SYSTEMS

APPLICABLE INDUSTRY STANDARDS, CURRENT EDITION

TIA-568: GENERIC CABLE STANDARDS
TIA-568-1: COMMERCIAL CABLE STANDARDS
TIA-568-2: BALANCED TWISTED PAIR CABLING AND COMPONENTS TIA-568-3: OPTICAL CABLING FEEDER COMPONENTS
TIATIA-568-4: BROADBAND COAX CABLING AND COMPONENTS TIA-569: TELECOMMUNICATION PATHWAYS AND SPACES
TIA-570: RESIDENTIAL TELECOMMUNICATIONS
TIA-598: OPTICAL FIBER CABLE COLOR CODING
TIA-606: ADMINISTRATIVE LABELING STANDARDS
TIA-607: TELECOMMUNICATIONS BONDING AND GROUNDING TIA-758: TELECOMMUNICATIONS OUTSIDE PLANT
TIA-526-7: SINGLE-MODE FIBER STANDARDS
TIA-526-14: MULTI-MODE FIBER STANDARDS

SHEET INDEX

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T0.2-3	TECHNOLOGY RACK ELEVATION
T0.3-3	TECHNOLOGY ONE-LINE DIAGRAM
T1.10-3	TECHNOLOGY SITE PLAN
TH2.11-3	TECHNOLOGY BUILDING H
TS2.11-3	TECHNOLOGY BUILDING S
T3.1-3	TECHNOLOGY SPECIFICATIONS
T3.2-3	TECHNOLOGY SPECIFICATIONS

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RANCHO CORDOVA, CALIFORNIA

JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED: 04-25-2025

FACILITY:
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PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
TECHNOLOGY COVER SHEET

CONSTRUCTION DOCUMENTS

DATE: **04.30.2025** CLIENT PROJ NO: **3431007000**

SHEET:
T0.1-3

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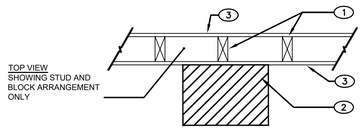
EQUIPMENT SCHEDULE				
TAG ID	DESCRIPTION	MANUFACTURER	PART NUMBER	MAX. LOAD
1	TECHNOLOGY 19RU WALL MOUNTED RACK	EXISTING	EXISTING	250 LBS.
2	1RU SINGLE - SIDED WIRE MANAGER	EXISTING	EXISTING	N/A
3	2RU PAN-PATCH PANEL	EXISTING	EXISTING	N/A
4	2RU DOUBLE - SIDED WIRE MANAGER	EXISTING	EXISTING	N/A
5	1RU CLOSET CONNECTOR HOUSING (CCH) W/ FIBER ADAPTERS	EXISTING	EXISTING	N/A
6	1RU SINGLE - SIDED WIRE MANAGER	EXISTING	EXISTING	N/A
7	1RU PATCH PANEL WITH WHITE JACKS	EXISTING	EXISTING	N/A
8	1RU SINGLE - SIDED WIRE MANAGER	EXISTING	EXISTING	N/A
9	OPEN FOR CORE SWITCH	EXISTING	EXISTING	N/A
10	1RU SINGLE - SIDED WIRE MANAGER	EXISTING	EXISTING	N/A
11	OPEN FOR CORE SWITCH	EXISTING	EXISTING	N/A
12	POWER DISTRIBUTION UNIT	EXISTING	EXISTING	N/A

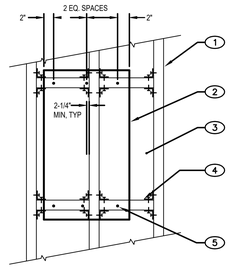


KEY NOTES

1. WOOD STUD
2. SURFACE MOUNTED IDF CABINET, SEE NOTE #1
3. SHEET ROCK OR OTHER WALL SURFACE MATERIAL (SEE ARCH. DRAWINGS)
4. BLOCKING (MATCH STUD DEPTH) ATTACH TO (E) VERTICAL STUDS WITH A34 CLIPS EACH END, TOP AND BOTTOM - AVOID CONFLICT OF NAILS EACH SIDE OF STUD
5. 5/16" X 2 1/2" LAG SCREWS WITH 1-1/2" MIN. EMBED TO BLOCK. (6) LAG SCREWS TOTAL. (BY ELECTRICAL CONTRACTOR)

NOTES:

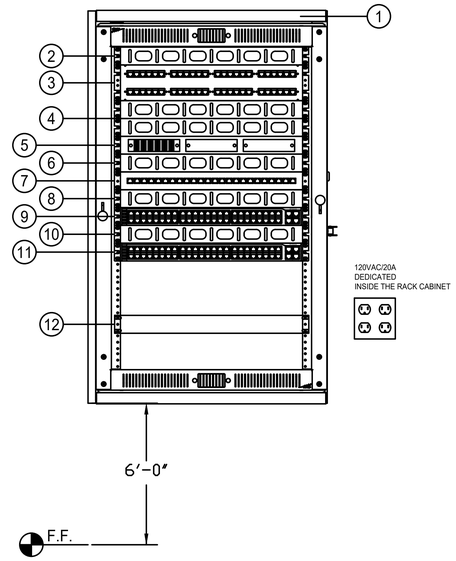
1. IDF CABINET ARE 250# MAX. (INCLUDING CONTENTS)
2. MOUNT TERMINAL CABINETS, J-BOXES, ETC., SIMILAR TO IDF CABINET.



TYPICAL IDF, ACP, UPS CABINET WOOD FRAMING MOUNTING DETAIL

SCALE : NTS

2 / T0.2-3



TYPICAL IDF

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PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
TECHNOLOGY RACK ELEVATION

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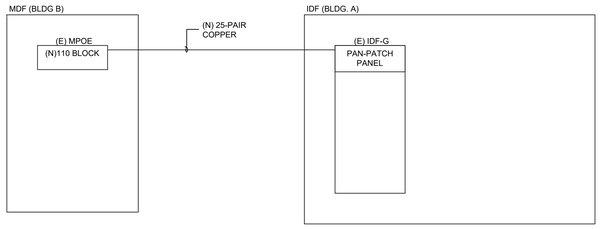

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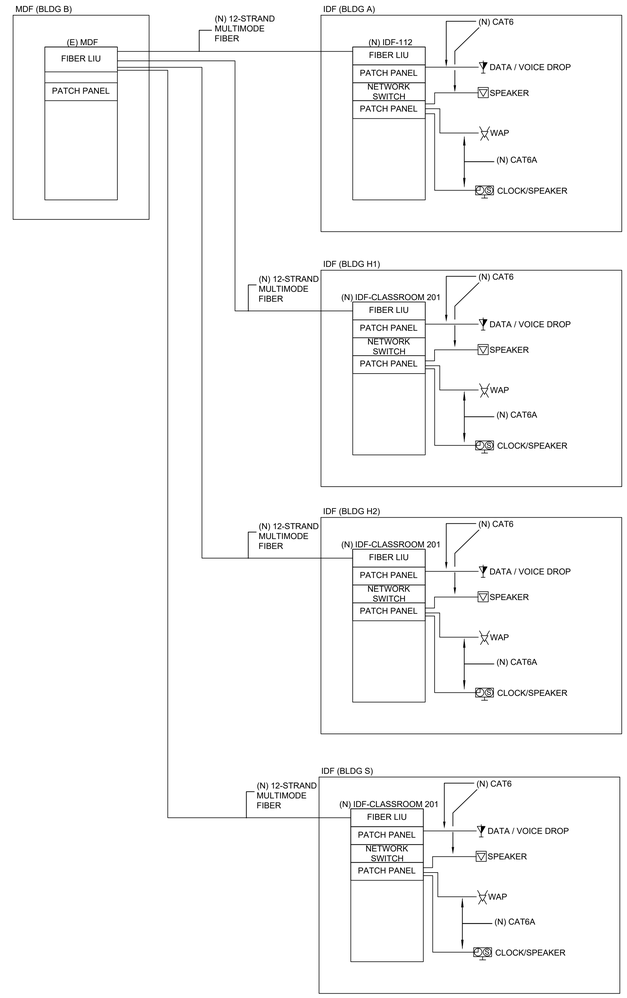

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KEY NOTES:

1. PROVIDED/INSTALLED IN PREVIOUS INCREMENTS.

TECHNOLOGY SITE PLAN

SCALE : 1"=20'-0"

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T1.10-3

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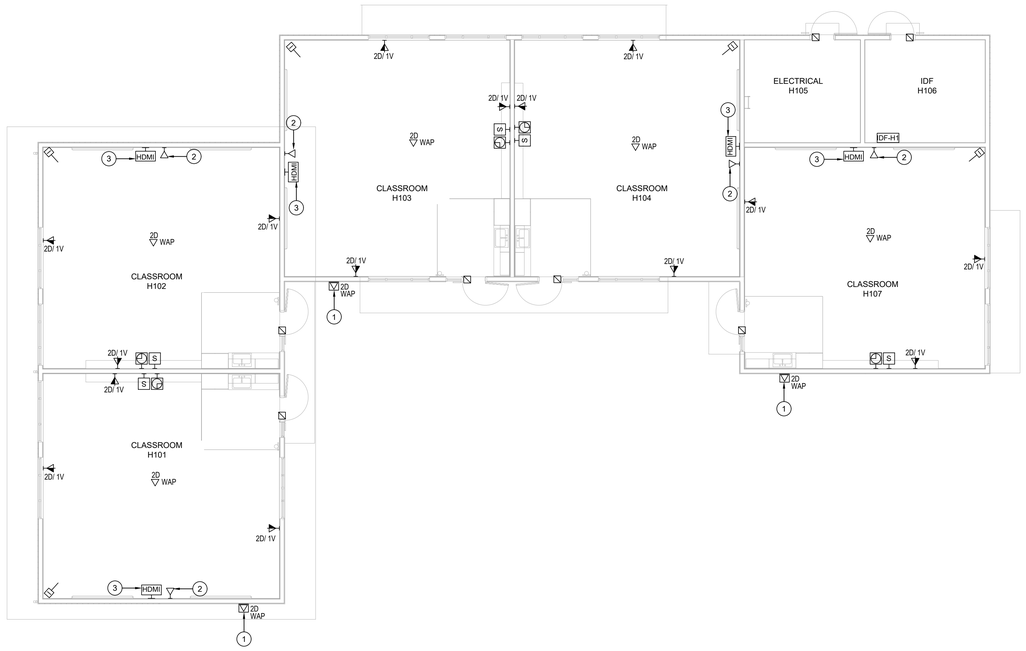
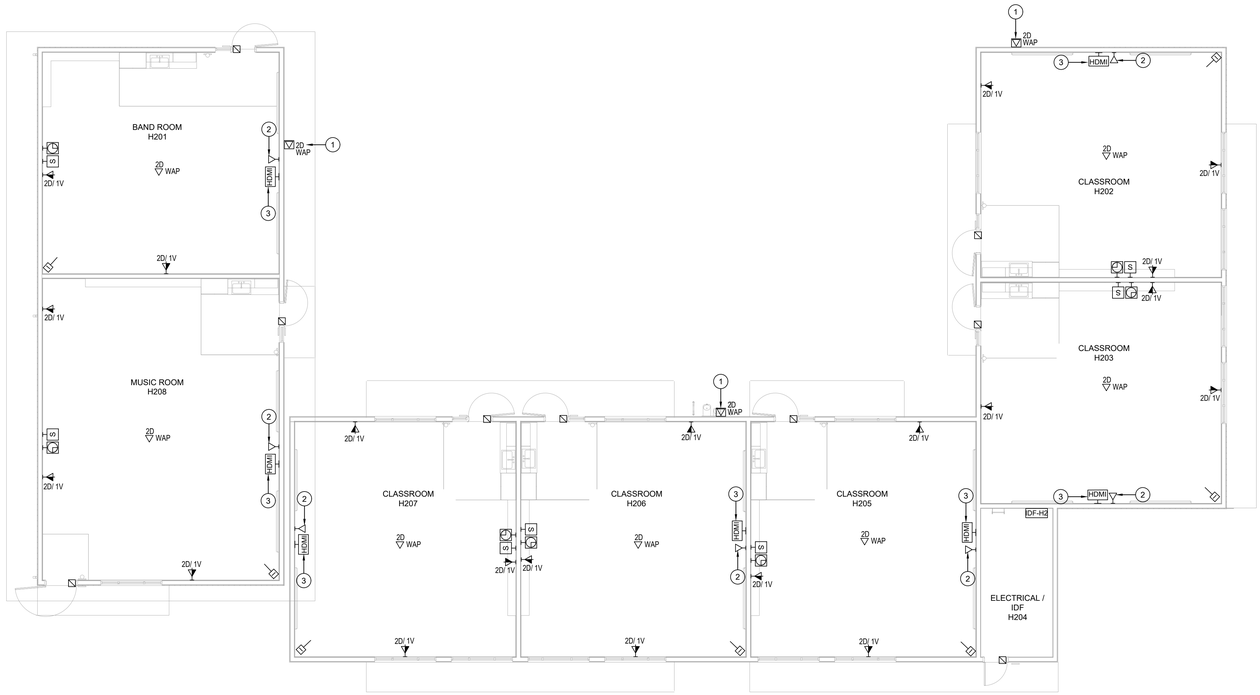
KEY NOTES:

1. PROVIDE WEATHERPROOF ENCLOSURE FOR WAP.
2. PROVIDE ONE (1) DATA DROP 29" BELOW FROM THE CEILING.
3. PROVIDE HDMI RECEPTACLE / FACEPLATE MOUNTED BELOW THE DISPLAY 14" ABOVE THE FLOOR.





TECHNOLOGY FLOOR PLAN - BLDG H

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

1 TH2.11-3

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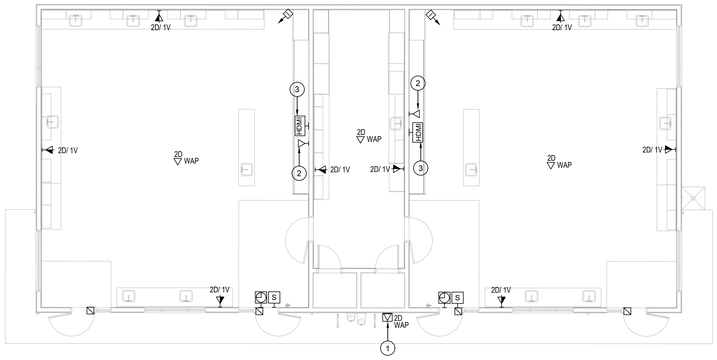
1. PROVIDE WEATHERPROOF ENCLOSURE FOR WAP.
2. PROVIDE ONE (1) DATA DROP 29" BELOW FROM THE CEILING.
3. PROVIDE HDMI RECEPTACLE / FACEPLATE MOUNTED BELOW THE DISPLAY 14" ABOVE THE FLOOR.



TECHNOLOGY FLOOR PLAN - BLDG S

1
TS2.11-3

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

AGENCY APPROVAL:

LODI UNIFIED SCHOOL DISTRICT

HMC Architects

3431007000

2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

capital engineering

RANCHO CORDOVA, CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
JOHN D. GUIZA III
E 24187
Expires 12/31/26
ELECTRICAL
STATE OF CALIFORNIA

JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED: 04-25-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
TECHNOLOGY FLOOR PLAN - BLDG S

CONSTRUCTION DOCUMENTS

DATE: 04.30.2025
CLIENT PROJ NO: 3431007000

SHEET:
TS2.11-3

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY 1 INCH ON ORIGINAL 22X34 SHEETS ORIGINAL PAGE SIZE

SECTION 27 05 50 - INSTALLATION AND IDENTIFICATION OF SIGNAL CABLES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. The installation and identification of Signal cables. Signal cables as referenced in this section shall include but not limited to cables for the following systems; intercom, paging, clock, telephone, speaker, fire alarm, intrusion, television/video, and sound/audio.

1.02 RELATED SECTIONS

A. Sections where signal cables are specified. Such systems are specified in the Divisions 27 and 28.

1.03 SUBMITTALS

A. Submit cables and method of labeling including tags, ties, labels, etc.

B. Submit per Section 26 00 00.

PART 2 - PRODUCTS

2.01 PRODUCTS

A. Refer to cables and wires specified under other sections.

B. All energy limited cables that are identified as opened wired (not in conduit) within buildings shall be rated for the environment it is installed. Exposed wiring shall not be used in hazardous locations and locations not allowed by the CEC.
1. General Purpose rating allows the cable to be used in areas allowed by the CEC but shall not be used as riser cable and in air plenums.
2. A Riser rating allows the cable to be used in general purpose applications and building riser applications. Riser cables shall not be used in air plenums.
3. A Plenum rating allows the cable to be used in general purpose, riser, and air plenum applications.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install all wiring in accordance with manufacturer's recommendations. All work shall be performed in a neat and workmanlike manner. All debris, trash, leftover materials etc., shall be cleaned out of pull boxes, terminal cabinets, terminal rooms and the general work areas.

B. Cables shall be labeled at each terminal location and at pull boxes.

C. Protection of Cables: Cables within terminal cabinets, equipment racks, etc., shall be grouped and bundled (harnessed) as to form a neat and laced with No. 12 cord waxed linen lacing twine or T & B "Ty_Rap" cable. Edge protection material ("cat_track") shall be installed on edges of holes, lips of ducts or any other point where cables or harnesses cross metallic edge.

D. Cable Identification:Individual conductors not in a multiconductor cable and multiconductor cables shall be color coded and/or individually identified. Each cable identification shall be a unique number located approximately 1_1/2" from cable connection at both ends of cable. Numbers shall be approximately 1/4" in height. A typewritten schedule shall be provided at each cabinet or terminal location indicating the destination of the cable from such location. Example, an intercom cable entering and terminating in Building-A from Building-B shall be labeled at Building-A as follows, "INTERCOM FROM BLDG-B". A schedule shall be provided for each system cables. The schedule shall be on an 8.5" x 11" plain paper identifying all cables of the system at the terminal location, and shall be typewritten, neatly handwritten are allowed only when approved. A copy of the schedule shall located at the terminal location and a copy shall be provided to the Owner. The schedule shall match the identification on the As_Built drawings.

E. At pull boxes, use engraved plastic tags minimum of 2"H X 4"W securely tied around cable. Tags shall be listed for such use and shall not corrode or be susceptible to such environments. All cables shall be labeled by system type and destination, to and from.

F. Shielding: Cable shielding shall be connected to common ground at point of lowest audio level and shall be free from ground at any other point. Shields shall be connected a one end only to prevent ground loops. Cable shields shall be terminated in same manner as conductors.

G. Nameplates: Terminal cabinets and junction boxes shall have plastic engraved nameplates to identify each with Drawings and Specifications. Refer to Section 26 00 00.Provide nameplates at backboard terminals for each system, sample "INTERCOM". Secure all labels with screws.

H. Outlet Box Identification: All outlet boxes mounted in attic space shall be individually identified with a black permanent waterproof marker. Identification shall be by system type and/or cable type.

I. All cables shall be run in continuous lengths between terminal locations and/or equipment, no splicing permitted.

J. The Contractor shall supply and install all modular mushroom rings, D-rings, etc., needed for the terminal boards. The blocks should allow for a minimum of 25% growth.

K. Cables on backboards shall be neatly trained following the lines of the room/backboard. Typically routes shall be vertical and horizontal with smooth turns. Do not route cables in odd angles.

L. Provide grounding electrode conductor, #6 AWG bare stranded copper. Locate at each terminal location and bond to building grounding electrode system. At backboards, provide a minimum 3"H X 6"W copper ground buss with stand-offs, secure to backboard. At each terminal cabinet, terminate ground wire in ground lug. One ground conductor may serve multiple backboards and terminal cabinets in the same area.

M. Terminations shall be consistent as to the color of conductors throughout the system at like stations.

N. The system shall be checked by the Contractor for opens, grounds, and shorts.

END OF SECTION

SECTION 27 05 53 - IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.02 SUMMARY

A. SECTION INCLUDES:
1. COLOR AND LEGEND REQUIREMENTS FOR LABELS AND SIGNS.
2. LABELS.
3. BANDS AND TUBES.
4. TAPES.
5. SIGNS.
6. CABLE TIES.
7. FASTENERS FOR LABELS AND SIGNS.

1.03 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
1. INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES FOR COMMUNICATIONS IDENTIFICATION PRODUCTS.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. COMPLY WITH NFPA 70 AND TIA 606-B.

B. COMPLY WITH ANSI Z535.4 FOR SAFETY SIGNS AND LABELS.

C. ADHESIVE-ATTACHED LABELING MATERIALS, INCLUDING LABEL STOCKS, LAMINATING ADHESIVES, AND INKS USED BY LABEL PRINTERS, SHALL COMPLY WITH UL 969.

2.02 COLOR AND LEGEND REQUIREMENTS

A. EQUIPMENT IDENTIFICATION LABELS:
1. BLACK LETTERS ON A WHITE FIELD.

2.03 LABELS

A. VINYL WRAPAROUND LABELS: PREPRINTED, FLEXIBLE LABELS LAMINATED WITH A CLEAR, WEATHER- AND CHEMICAL-RESISTANT COATING AND MATCHING WRAPAROUND CLEAR ADHESIVE TAPE FOR SECURING LABEL ENDS.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. BRADY CORPORATION.
b. CHAMPION AMERICA.
c. EMEDCO.

B. SNAP-AROUND LABELS: SUIT, PRETENSIONED, FLEXIBLE, PREPRINTED, COLOR-CODED ACRYLIC SLEEVES, WITH DIAMETERS SIZED TO SUIT DIAMETERS OF RACEWAY OR CABLE THEY IDENTIFY, THAT STAY IN PLACE BY GRIPPING ACTION.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. BRADY CORPORATION.
b. HELLERMANNTYTON.
c. MARKING SERVICES, INC.

C. SELF-ADHESIVE WRAPAROUND LABELS: PREPRINTED, 3-MIL-THICK, POLYESTER FLEXIBLE LABELS WITH ACRYLIC PRESSURE-SENSITIVE ADHESIVE.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. A'N D CABLE PRODUCTS.
b. BRADY CORPORATION.
c. BROTHER INTERNATIONAL CORPORATION.
2. SELF-LAMINATION: CLEAR; UV-, WEATHER- AND CHEMICAL-RESISTANT; SELF-LAMINATING PROTECTIVE SHIELDS OVER THE LEGEND. LABELS SIZED SUCH THAT THE CLEAR SHIELD OVERLAPS THE ENTIRE PRINTED LEGEND.
3. MARKER FOR LABELS: PERMANENT, WATERPROOF BLACK INK MARKER RECOMMENDED BY TAG MANUFACTURER.
4. MARKER FOR LABELS: MACHINE-PRINTED, PERMANENT, WATERPROOF BLACK INK RECOMMENDED BY PRINTER MANUFACTURER.

D. SELF-ADHESIVE LABELS: POLYESTER, THERMAL, TRANSFER-PRINTED, 3-MIL-THICK, MULTICOLOR, WEATHER- AND UV-RESISTANT, PRESSURE-SENSITIVE ADHESIVE LABELS, CONFIGURED FOR INTENDED USE AND LOCATION.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. A'N D CABLE PRODUCTS.
b. BRADY CORPORATION.
c. BROTHER INTERNATIONAL CORPORATION.
2. MINIMUM NOMINAL SIZE:
a. 1-1/2 BY 6 INCHES FOR RACEWAY AND CONDUCTORS.
b. 3-1/2 BY 5 INCHES FOR EQUIPMENT.
c. AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.

2.04 BANDS AND TUBES

A. SNAP-AROUND, COLOR-CODING BANDS: SUIT, PRETENSIONED, FLEXIBLE, SOLID-COLORED ACRYLIC SLEEVES, 2 INCHES LONG, WITH DIAMETERS SIZED TO SUIT DIAMETERS OF RACEWAY OR CABLE THEY IDENTIFY, THAT STAY IN PLACE BY GRIPPING ACTION.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. BRADY CORPORATION.
b. HELLERMANNTYTON.
c. MARKING SERVICES, INC.
d. PANDUIT CORP.

2.05 UNDERGROUND-LINE WARNING TAPE

A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
1. BRADY CORPORATION.
2. IDEAL INDUSTRIES, INC.
3. LEM PRODUCTS INC.

B. TAPE:
1. RECOMMENDED BY MANUFACTURER FOR THE METHOD OF INSTALLATION AND SUITABLE TO IDENTIFY AND LOCATE UNDERGROUND COMMUNICATIONS UTILITY LINES.
2. PRINTING ON TAPE SHALL BE PERMANENT AND SHALL NOT BE DAMAGED BY BURIAL OPERATIONS.
3. TAPE MATERIAL AND INK SHALL BE CHEMICALLY INERT AND NOT SUBJECT TO DEGRADATION WHEN EXPOSED TO ACIDS, ALKALIS, AND OTHER DESTRUCTIVE SUBSTANCES COMMONLY FOUND IN SOILS.

C. COLOR AND PRINTING:
1. COMPLY WITH ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, AND ANSI Z535.4.
2. INSCRIPTIONS FOR ORANGE-COLORED TAPES: "TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL-FIBER CABLE.

D. TAG: TYPE I:
1. PIGMENTED POLYOLEFIN, BRIGHT COLORED, CONTINUOUS-PRINTED ON ONE SIDE WITH THE INSCRIPTION OF THE UTILITY, COMPOUNDED FOR DIRECT-BURIAL SERVICE.
2. WIDTH: 3 INCHES.
3. THICKNESS: 4 MILS.
4. WEIGHT: 18.5 LB/1000 SQ. FT.
5. TENSILE ACCORDING TO ASTM D 882: 30 LBF AND 2500 PSI.

2.06 SIGNS

A. BAKED-ENAMEL SIGNS:
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. CARLTON INDUSTRIES, LP.
b. CHAMPION AMERICA.
c. EMEDCO.
2. PREPRINTED ALUMINUM SIGNS, HIGH-INTENSITY REFLECTIVE, PUNCHED OR DRILLED FOR FASTENERS, WITH COLORS, LEGEND, AND SIZE REQUIRED FOR APPLICATION.
3. 1/4-INCH GROMMETS IN CORNERS FOR MOUNTING.
4. NOMINAL SIZE: 7 BY 10 INCHES.

B. METAL-BACKED BUTYRATE SIGNS:
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. BRADY CORPORATION.
b. CHAMPION AMERICA.
c. EMEDCO.
d. MARKING SERVICES, INC.
2. WEATHER-RESISTANT, NONFADING, PREPRINTED, CELLULOSE-ACETATE BUTYRATE SIGNS, WITH 0.0396-INCH GALVANIZED-STEEL BACKING, PUNCHED AND DRILLED FOR FASTENERS, AND WITH COLORS, LEGEND, AND SIZE REQUIRED FOR APPLICATION.
3. 1/4-INCH GROMMETS IN CORNERS FOR MOUNTING.
4. NOMINAL SIZE: 10 BY 14 INCHES.

C. LAMINATED-ACRYLIC OR MELAMINE-PLASTIC SIGNS:
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. BRADY CORPORATION.
b. CARLTON INDUSTRIES, LP.
c. EMEDCO.
d. MARKING SERVICES, INC.
2. ENGRAVED LEGEND.
3. THICKNESS:
a. FOR SIGNS UP TO 20 SQ. IN., MINIMUM 1/16 INCH THICK.
b. FOR SIGNS LARGER THAN 20 SQ. IN., 1/8 INCH THICK.
c. ENGRAVED LEGEND WITH BLACK LETTERS ON WHITE FACE.
d. SELF-ADHESIVE.
e. FRAMED WITH MITERED ACRYLIC MOLDING AND ARRANGED FOR ATTACHMENT AT APPLICABLE EQUIPMENT.

2.07 CABLE TIES

A. PLENUM-RATED CABLE TIES: SELF-EXTINGUISHING, UV STABILIZED, ONE PIECE, AND SELF-LOCKING.
1. MINIMUM WIDTH: 3/16 INCH.
2. TENSILE STRENGTH AT 73 DEG F ACCORDING TO ASTM D 638: 7000 PSI.
3. UL 94 FLAME RATING: 94V-0.
4. TEMPERATURE RANGE: MINUS 50 TO PLUS 284 DEG F.
5. COLOR: BLACK.

2.08 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. PAINT: COMPLY WITH REQUIREMENTS IN PAINTING SECTIONS FOR PAINT MATERIALS AND APPLICATION REQUIREMENTS. RETAIN PAINT SYSTEM APPLICABLE FOR SURFACE MATERIAL AND LOCATION (EXTERIOR OR INTERIOR).

B. FASTENERS FOR LABELS AND SIGNS: SELF-TAPPING, STAINLESS-STEEL SCREWS OR STAINLESS-STEEL MACHINE SCREWS WITH NUTS AND FLAT AND LOCK WASHERS.

PART 3 - EXECUTION

3.01 PREPARATION

A. SELF-ADHESIVE IDENTIFICATION PRODUCTS: BEFORE APPLYING COMMUNICATIONS IDENTIFICATION PRODUCTS, CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND, USING MATERIALS AND METHODS RECOMMENDED BY MANUFACTURER OF IDENTIFICATION PRODUCT.

3.02 INSTALLATION

A. VERIFY AND COORDINATE IDENTIFICATION NAMES, ABBREVIATIONS, COLORS, AND OTHER FEATURES WITH REQUIREMENTS IN OTHER SECTIONS REQUIRING IDENTIFICATION APPLICATIONS, DRAWINGS, SHOP DRAWINGS, MANUFACTURER'S WIRING DIAGRAMS, AND OPERATION AND MAINTENANCE MANUAL. USE CONSISTENT DESIGNATIONS THROUGHOUT PROJECT.

B. INSTALL IDENTIFYING DEVICES BEFORE INSTALLING ACOUSTICAL CEILINGS AND SIMILAR CONCEALMENT.

C. VERIFY IDENTITY OF EACH ITEM BEFORE INSTALLING IDENTIFICATION PRODUCTS.

D. COORDINATE IDENTIFICATION WITH PROJECT DRAWINGS, MANUFACTURER'S WIRING DIAGRAMS, AND OPERATION AND MAINTENANCE MANUAL.

E. APPLY IDENTIFICATION DEVICES TO SURFACES THAT REQUIRE FINISH AFTER COMPLETING FINISH WORK.

F. INSTALL SIGNS WITH APPROVED LEGEND TO FACILITATE PROPER IDENTIFICATION, OPERATION, AND MAINTENANCE OF COMMUNICATIONS SYSTEMS AND CONNECTED ITEMS.

G. ELEVATED COMPONENTS: INCREASE SIZES OF LABELS, SIGNS, AND LETTERS TO THOSE APPROPRIATE FOR VIEWING FROM THE FLOOR.

H. VINYL WRAPAROUND LABELS:
1. SECURE TIGHT TO SURFACE OF RACEWAY OR CABLE AT A LOCATION WITH HIGH VISIBILITY AND ACCESSIBILITY.
2. ATTACH LABELS THAT ARE NOT SELF-ADHESIVE TYPE WITH CLEAR VINYL TAPE, WITH ADHESIVE APPROPRIATE TO THE LOCATION AND SUBSTRATE.
3. PROVIDE LABEL 6 INCHES FROM CABLE END.

I. SNAP-AROUND LABELS:
1. SECURE TIGHT TO SURFACE AT A LOCATION WITH HIGH VISIBILITY AND ACCESSIBILITY.
2. PROVIDE LABEL 6 INCHES FROM CABLE END.

J. SELF-ADHESIVE WRAPAROUND LABELS:
1. SECURE TIGHT TO SURFACE AT A LOCATION WITH HIGH VISIBILITY AND ACCESSIBILITY.
2. PROVIDE LABEL 6 INCHES FROM CABLE END.

K. SELF-ADHESIVE LABELS:
1. ON EACH ITEM, INSTALL UNIQUE DESIGNATION LABEL THAT IS CONSISTENT WITH WIRING DIAGRAMS, SCHEDULES, AND OPERATION AND MAINTENANCE MANUAL.
2. UNLESS OTHERWISE INDICATED, PROVIDE A SINGLE LINE OF TEXT WITH 1/2-INCH-HIGH LETTERS ON 1-1/2-INCH-HIGH LABEL; WHERE TWO LINES OF TEXT ARE REQUIRED, USE LABELS 2 INCHES HIGH.

L. SNAP-AROUND, COLOR-CODING BANDS: SECURE TIGHT TO SURFACE AT A LOCATION WITH HIGH VISIBILITY AND ACCESSIBILITY.

M. UNDERGROUND-LINE WARNING TAPE:
1. DURING BACKFILLING OF TRENCHES, INSTALL CONTINUOUS UNDERGROUND-LINE WARNING TAPE DIRECTLY ABOVE CABLE OR RACEWAY AT 6 TO 8 INCHES BELOW FINISHED GRADE. USE MULTIPLE TAPES WHERE WIDTH OF MULTIPLE LINES INSTALLED IN A COMMON TRENCH [OR CONCRETE ENVELOPE [EXCEEDS 16 INCHES OVERALL.
2. LIMIT USE OF UNDERGROUND-LINE WARNING TAPE TO DIRECT-BURIED CABLES.
3. INSTALL UNDERGROUND-LINE WARNING TAPE FOR DIRECT-BURIED CABLES AND CABLES IN RACEWAYS.

N. CABLE TIES: GENERAL PURPOSE, EXCEPT AS LISTED BELOW:
1. OUTDOORS: UV-STABILIZED NYLON.
2. IN SPACES HANDLING ENVIRONMENTAL AIR: PLENUM RATED.

3.03 IDENTIFICATION SCHEDULE

A. INSTALL IDENTIFICATION MATERIALS AND DEVICES AT LOCATIONS FOR MOST CONVENIENT VIEWING WITHOUT INTERFERENCE WITH OPERATION AND MAINTENANCE OF EQUIPMENT. INSTALL ACCESS DOORS OR PANELS TO PROVIDE VIEW OF IDENTIFYING DEVICES.

B. IDENTIFY CONDUCTORS, CABLES, AND TERMINALS IN ENCLOSURES AND AT JUNCTIONS, TERMINALS, PULL POINTS, AND LOCATIONS WITH HIGH VISIBILITY. IDENTIFY BY SYSTEM AND CIRCUIT DESIGNATION.

C. ACCESSIBLE FITTINGS FOR RACEWAYS AND CABLES WITHIN BUILDINGS: IDENTIFY COVERS OF EACH JUNCTION AND PULL BOX WITH SELF-ADHESIVE LABELS CONTAINING WIRING SYSTEM LEGEND.
1. SYSTEM LEGENDS SHALL BE AS FOLLOWS:
a. TELECOMMUNICATIONS.
b. <INSERT NAME>.

D. FACEPLATES: LABEL INDIVIDUAL FACEPLATES WITH SELF-ADHESIVE LABELS. PLACE LABEL AT TOP OF FACEPLATE. EACH FACEPLATE SHALL BE LABELED WITH ITS INDIVIDUAL, SEQUENTIAL DESIGNATION[, NUMBERED CLOCKWISE WHEN ENTERING ROOM FROM PRIMARY EGRESS], COMPOSED OF THE FOLLOWING, IN THE ORDER LISTED:
1. WIRING CLOSET DESIGNATION.
2. COLON.
3. FACEPLATE NUMBER.

E. EQUIPMENT ROOM LABELING:
1. RACKS, FRAMES, AND ENCLOSURES: IDENTIFY FRONT AND REAR OF EACH WITH SELF-ADHESIVE LABELS CONTAINING EQUIPMENT DESIGNATION.
2. PATCH PANELS: LABEL INDIVIDUAL ROWS AND OUTLETS, STARTING AT TO LEFT AND WORKING DOWN, WITH SELF-ADHESIVE LABELS.
3. DATA OUTLETS: LABEL EACH OUTLET WITH A SELF-ADHESIVE LABEL INDICATING THE FOLLOWING, IN THE ORDER LISTED:
a. ROOM NUMBER BEING SERVED.
b. COLON.
c. FACEPLATE NUMBER.

F. BACKBONE CABLES: LABEL EACH CABLE WITH A SELF-ADHESIVE WRAPAROUND LABEL INDICATING THE LOCATION OF THE FAR OR OTHER END OF THE BACKBONE CABLE. PATCH PANEL OR PUNCH DOWN BLOCK WHERE CABLE IS TERMINATED SHOULD BE LABELED IDENTICALLY.

G. HORIZONTAL CABLES: LABEL EACH CABLE WITH A SELF-ADHESIVE WRAPAROUND LABEL INDICATING THE FOLLOWING, IN THE ORDER LISTED:
1. ROOM NUMBER.
2. COLON.
3. FACEPLATE NUMBER.

H. LOCATIONS OF UNDERGROUND LINES: UNDERGROUND-LINE WARNING TAPE FOR COPPER, COAXIAL, HYBRID COPPER/FIBER, AND OPTICAL-FIBER CABLE.

I. INSTRUCTIONAL SIGNS: SELF-ADHESIVE LABELS.

J. WARNING LABELS FOR INDOOR CABINETS, BOXES, AND ENCLOSURES: BAKED-ENAMEL WARNING SIGNS.
1. APPLY TO EXTERIOR OF DOOR, COVER, OR OTHER ACCESS.

K. EQUIPMENT IDENTIFICATION LABELS:
1. INDOOR EQUIPMENT: LAMINATED-ACRYLIC OR MELAMINE-PLASTIC SIGN.
2. OUTDOOR EQUIPMENT: LAMINATED-ACRYLIC OR MELAMINE-PLASTIC SIGN.
3. EQUIPMENT TO BE LABELED:
a. COMMUNICATIONS CABINETS.
b. UNINTERRUPTIBLE POWER SUPPLIES.
c. COMPUTER ROOM AIR CONDITIONERS.
d. FIRE-ALARM AND SUPPRESSION EQUIPMENT.
e. EGRESS POINTS.
f. POWER DISTRIBUTION COMPONENTS.

END OF SECTION

SECTION 27 52 00 - ASSISTIVE LISTENING SYSTEM

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. PROVIDE AN INSTALLED FM ASSISTIVE LISTENING SYSTEM IN THE ASSEMBLY SPACES.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

A. DUE TO THE NATURE OF THE PROJECT, THIS SECTION MAY RELATE DIRECTLY TO, OR REQUIRES COORDINATION WITH ALL SECTIONS OF THE CONTRACT DOCUMENTS. SPECIAL ATTENTION SHOULD BE GIVEN TO:
1. SECTION-ELECTRICAL GENERAL REQUIREMENTS

1.03 QUALITY ASSURANCE:

A. ALL MATERIALS SHALL COMPLY WITH APPLICABLE STANDARDS OF THE UNDERWRITERS LABORATORIES INC.

1.04 CONTRACTOR SUBMITTALS:

A. SHOP DRAWINGS AND CATALOG DATA SUBMITTALS SHALL BE MADE IN ACCORDANCE WITH SECTION, "CONTRACTOR SUBMITTALS." SUBMIT SUFFICIENT INFORMATION TO INDICATE THE SCOPE AND QUALITY OF THE ASSISTIVE LISTENING SYSTEM.
1. BLOCK DIAGRAM SHOWING SYSTEM RELATIONSHIPS OF MAJOR COMPONENTS AND QUANTITIES AND INTERCONNECTING CABLE REQUIREMENTS.
2. PLANS SHOWING EQUIPMENT LOCATION AND CONDUCTOR REQUIREMENTS.
3. EQUIPMENT OUTLET DEVICES AND SPECIAL MOUNTING DETAILS.
4. WIRING DIAGRAMS SHOWING TERMINAL IDENTIFICATION FOR FIELD-INSTALLED WIRING.
5. CATALOG LITERATURE WITH COMPONENT SPECIFICATIONS.

1.05 DESCRIPTION:

A. WORK UNDER THIS SECTION INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO FURNISH AND INSTALL A COMPLETE ASSISTIVE LISTENING SYSTEM.

B. THE ASSISTIVE LISTENING SYSTEMS SHALL BE A FREQUENCY MODULATED RADIO TRANSMISSION SYSTEM.

C. THE PORTABLE SYSTEM SHALL UTILIZE A BELT PACK TRANSMITTER WITH HEADSET MICROPHONE.

D. THE ALS SYSTEMS SHALL BE CAPABLE OF OPERATING OVER 3 SEPARATE CHANNELS SIMULTANEOUSLY.

E. RECEIVERS SHALL BE PROVIDED AT A RATE OF 4% OF THE TOTAL SEATING CAPACITY OF EACH ROOM. REFER TO ARCHITECTURAL DRAWINGS FOR MAXIMUM ROOM CAPACITY. QUANTITY SHALL BE AS INDICATED ON DRAWINGS.

F. FEATURES:
1. MULTI PURPOSE-NO SEATING RESTRICTIONS, 1,500 FT SYSTEM RANGE
2. RECEIVERS ARE PRE-TUNED, USERS CONTROL THEIR OWN VOLUME
3. EASILY EXPANDED NO LIMIT TO NUMBER OF USERS.
4. EXCELLENT SOUND QUALITY, FREE FROM INTERFERENCE
5. AUTOMATIC GAIN CONTROL
6. FREQUENCY SYNTHESIZED, PHASE LOCKED LOOP TUNING
7. CAN ACCEPT EITHER BALANCED OR UNBALANCED INPUTS
8. INPUT ATTENUATION AND LOW FREQUENCY ATTENUATION SWITCHES
9. LED POWER AND AUDIO LEVEL INDICATORS

PART 2 - PRODUCTS

2.01 GENERAL:

A. ALL EQUIPMENT SHALL BE THE STANDARD CATALOGUED PRODUCTS OF A SINGLE MANUFACTURER. THE CATALOG NUMBERS OF THE FOLLOWING EQUIPMENT ARE LISTEN TECHNOLOGIES:

B. PORTABLE TRANSMITTER
1. THE PORTABLE FM TRANSMITTER SHALL BE CAPABLE OF BROADCASTING ON 17 CHANNELS AND BE FREQUENCY AGILE.
2. THE TRANSMITTER SHALL HAVE A SNR OF 80 DB OR GREATER.
3. THE TRANSMITTER SHALL OPERATE AT 072 MHZ
4. THE LISTEN LT-800-0072 IS SPECIFIED:
a. LA-278 BEHIND-THE-HEAD MICROPHONE
b. LA-362 NIMH RECHARGEABLE BATTERIES.
c. LA-122 UNIVERSAL ANTENNA KIT
d. LA-326 UNIVERSAL RACK MOUNTING KIT

C. PORTABLE RECEIVER
1. THE FM RECEIVER SHALL BE CAPABLE OF RECEIVING ON 17 WIDE BAND CHANNELS WITH A SNR OF 80DB OR GREATER.
a. THE DEVICE SHALL BE ABLE TO BE LOCKED ON A SINGLE CHANNEL.
b. THE RECEIVER SHALL BE CAPABLE OF SEEKING CHANNELS.
c. THE DEVICE SHALL HAVE AN ADJUSTABLE SQUELCH.
d. THE DEVICE SHALL HAVE AN AUDIO FREQUENCY RESPONSE OF 50 HZ TO 15 KHZ, ±3 DB.
e. THE DEVICE WILL INCORPORATE A STEREO HEADSET JACK THAT ALLOWS THE USER TO PLUG IN EITHER A MONO OR STEREO HEADSET.
f. THE DEVICE SHALL INCORPORATE AN LCD DISPLAY THAT INDICATES CHANNEL, BATTERY LEVEL, LOW BATTERY, BATTERY CHARGING, AND RF SIGNAL STRENGTH.
g. THE RECEIVER SHALL BE ABLE TO FUNCTION IN BOTH DX AND LOCAL MODE.
h. THE UNIT SHALL OPERATE OFF OF 2 AA BATTERIES. THE RECEIVER SHALL INCORPORATE AUTOMATIC BATTERY CHARGING CIRCUITRY FOR RECHARGING OF NIMH BATTERIES.
i. THE LISTEN LR-300-0072 IS SPECIFIED.
2. THE FM RECEIVERS SHALL BE RECHARGED USING A CHARGING CARRYING CASE FOR UP TO 8 UNITS.
a. UNIT CHARGING CASE - THE LISTEN LA-323, LA-324, LA-325, LA-317-01 IS SPECIFIED
1) QUANTITY AS REQUIRED FOR EACH UNIT.
3. THE FM RECEIVERS SHALL EACH BE EQUIPPED WITH EAR SPEAKERS.
a. LA-164 IS SPECIFIED.
b. LA-166 NECK LOOP
1) QUANTITY AS REQUIRED FOR EACH UNIT.
4. RECEIVERS SHALL BE EQUIPPED WITH NIMH RECHARGEABLE BATTERIES.
a. THE LISTEN LA-362 IS SPECIFIED.
b. QUANTITY AS REQUIRED FOR EACH UNIT.

D. PROVIDE SOUND REINFORCEMENT WALL PLAQUES PER ADA REQUIREMENTS TO INDICATE EQUIPMENT AVAILABLE FOR THE HEARING IMPAIRED.
1. VERIFY LOCATION WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION. USE THE "INTERNATIONAL SYMBOL OF ACCESS FOR THE HEARING IMPAIRED".
2. LISTEN TECHNOLOGIES LA-304 ADA ACCESS/COMPLIANCE SIGNAGE KIT.

PART 3 - EXECUTION

3.01 INSTALLATION

A. THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL ASSISTIVE LISTENING SYSTEM.

B. THE ASSISTED LISTENING SYSTEM SHALL BE AN INTEGRAL PART OF THE SOUND REINFORCEMENT SYSTEM FOR THE REQUIRED SPACES.

3.02 TESTS AND ADJUSTMENTS

A. UNDER COMPLETION OF THE INSTALLATION OF ALL EQUIPMENT AND WHEN SAME IS IN FULL OPERATING CONDITION, THE CONTRACTOR SHALL PERFORM THE INITIAL COMPLETION TESTS AND ADJUSTMENTS SPECIFIED HEREINAFTER. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL NECESSARY INSTRUMENTS, EQUIPMENT, MATERIAL, AND LABOR NECESSARY TO COMPLETE THE TESTS.

3.03 TRAINING:

A. PRIOR TO ESTABLISHING A TRAINING SCHEDULE, CONTRACTOR WILL VERIFY OPERATIONAL STATUS OF SYSTEM WITH OWNER'S REP.

B. OWNER PERSONNEL WILL BE TRAINED IN THE OPERATION OF THE ASSISTIVE LISTENING SYSTEM.

C. TRAINING WILL BE CONDUCTED NO LESS THAN TWO TIMES, FOUR HOURS EACH. AN INITIAL FAMILIARIZATION AND A FOLLOW UP FOR DETAILED QUESTIONS.

3.04 WARRANTY

A. THE MANUFACTURER SHALL GUARANTEE THE SYSTEM AND COMPONENTS TO BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF TWO YEARS FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER.

END OF SECTION

SECTION 27 13 20 - DATA COMMUNICATIONS SYSTEM

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. FURNISH AND INSTALL A COMPLETE DATA COMMUNICATIONS SYSTEM. THE SYSTEM SHALL CONSIST OF BUT NOT LIMITED TO CABLES (TWISTED-PAIR COPPER), INNERDUCT, PATCH PANELS, FIBER INTERCONNECT EQUIPMENT, CONNECTORS (FIBER AND COPPER), WIRING BLOCKS AND TELECOMMUNICATIONS OUTLETS AND ANY OTHER EQUIPMENT AND ACCESSORIES AS REQUIRED. THE WORK PERFORMED UNDER THIS SPECIFICATION SHALL BE OF GOOD QUALITY AND PERFORMED IN A WORKMANLIKE MANNER. IN THIS CONTEXT "GOOD QUALITY" MEANS THE WORK SHALL MEET INDUSTRY TECHNICAL STANDARDS AND QUALITY OF APPEARANCE. THE OWNER RESERVES THE RIGHT TO REJECT ALL OR A PORTION OF THE WORK PERFORMED, EITHER ON TECHNICAL OR AESTHETIC GROUNDS. ALL MATERIALS TO COMPLY WITH SCHOOL DISTRICT STANDARDS.

B. THE COPPER CABLING SYSTEM SHALL PERFORM TO CATEGORY-6E, 6A PERMANENT LINK PERFORMANCE REQUIREMENTS, FROM PATCH PANEL TO OUTLET JACK. THE SYSTEM SHALL BE CAPABLE FOR TRANSMISSION OF THE GIGABIT ETHERNET (1000BASE-T) PROTOCOL AND OTHER DESIGNED FOR CATEGORY-6E, 6A CABLING SYSTEMS.

1.02 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATIONS SECTIONS, APPLY TO WORK SPECIFIED IN THIS SECTION.

B. SECTIONS 26 00 00, 26 05 00, 27 05 50.

C. APPLICABLE STANDARDS:
1. ANSI/TIA/EIA-569-A, COMMERCIAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.
2. ANSI/TIA/EIA-568-B, COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD.
3. ANSI/TIA/EIA-568-B.2, TRAN

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b. TESTS: SIGNAL ATTENUATION, NOISE, NEAR END CROSS-TALK (NEXT), ELFEXT, POWER SUM NEXT, ACR, RETURN LOSS, CABLE LENGTH, PROPAGATION DELAY AND DELAY SKEW.

c. TEST CRITERIA: THE SYSTEM SHALL BE TESTED TO CATEGORY-6E, 6A COMPLIANCE. THE TEST PATH SHALL INCLUDE WORKSTATION JACKS, STATION CABLES, AND JACK PANELS (PERMANENT LINK CONFIGURATION). WHERE ADAPTER (PATCH) CABLES ARE SPECIFIED, THE TESTS SHALL INCLUDE THE PATCH CABLES ALSO (CHANNEL CONFIGURATION). THE OWNER RESERVES THE RIGHT TO HAVE CABLES REPLACED AND RETESTED IF PERFORMANCE PARAMETERS ARE NOT MET.

B. DOCUMENTATION: CONTRACTOR SHALL PROVIDE DOCUMENTATION TO INCLUDE TEST RESULTS AND AS-BUILT DRAWINGS.

1. WORK STATION CABLE: THE RESULTS OF THE WORK STATION CABLE TESTS SHALL BE PROVIDED IN THE FORM OF PRINT-OUTS FROM THE TEST EQUIPMENT.
2. AS-BUILT DRAWINGS: PROVIDE REPRODUCIBLE VELLUM AS-BUILTS, FULL SIZE INDICATING EACH OUTLET LOCATION AND DESIGNATION. SHOW IDF/MDF LOCATIONS AND CABLE DESIGNATIONS TERMINATED.

2.05 ACCEPTANCE

A. ACCEPTANCE OF THE DATA COMMUNICATIONS SYSTEM, BY OWNER, SHALL BE BASED ON THE RESULTS OF TESTING, FUNCTIONALITY, AND THE RECEIPT OF DOCUMENTATION. WITH REGARD TO TESTING, ALL FIBER SEGMENTS AND ALL WORKSTATION DATA CABLES MUST MEET THE CRITERIA ESTABLISHED. WITH REGARD TO FUNCTIONALITY, CONTRACTOR MUST DEMONSTRATE TO OWNER THAT SPECIFIED DATA SIGNALS CAN BE SUCCESSFULLY TRANSMITTED, BI-DIRECTIONALLY, FROM THE MDF/IDF TO AND FROM SOME NUMBER OF INDIVIDUAL DATA OUTLETS. THE NUMBER OF OUTLET LOCATIONS TO BE TESTED SHALL BE DETERMINED BY OWNER. WITH REGARD TO DOCUMENTATION, ALL REQUIRED DOCUMENTATION SHALL BE SUBMITTED TO OWNER.

PART 3 - EXECUTION

3.01 DIVISION OF WORK

A. CONTRACTOR SHALL INSTALL THE DATA COMMUNICATIONS SYSTEM AS DESCRIBED IN THE PRECEDING. INSTALLATION SHALL RESULT IN A FUNCTIONAL SYSTEM. THE SCOPE OF WORK INCLUDES:

1. ALL NECESSARY CONDUIT AND RACEWAY.
2. NECESSARY TRENCHING, BACKFILL, REPLACEMENT OF LANDSCAPE MATERIAL, REPAIR OF DAMAGE TO UTILITIES OR STRUCTURES, REPLACEMENT OF ASPHALT AND BASE, AND REPLACEMENT OR REPAIR TO CONCRETE FLAT WORK INCIDENTAL TO CONDUIT OR RACEWAY INSTALLATION.
3. PROVIDE AND INSTALL ALL EQUIPMENT.
4. SUPPLY AND INSTALL ALL MATERIAL DISCUSSED IN THIS SPECIFICATION.
5. TEST AND DOCUMENT SYSTEM, UPON COMPLETION.
6. SUPPLY AND INSTALL ALL MATERIAL NECESSARY, WHETHER OR NOT DISCUSSED IN THIS SPECIFICATION, TO RESULT IN A COMPLETE AND FUNCTIONAL SYSTEM.

END OF SECTION

CONSULTANTS, INC.TELEPHONE CABLING SYSTEM240047.0027 13 10 - 1

SECTION 27 13 10 - TELEPHONE CABLING SYSTEM

PART 1 - GENERAL

1.01 WORK INCLUDED

A. FURNISH AND INSTALL A COMPLETE TELEPHONE CABLING SYSTEM INCLUDING ALL WIRING, CONNECTORS, JACKS, TERMINAL BLOCKS, BACKBOARDS, CABINETS, HARNESSES, ETC. INCLUDING ANY INCIDENTAL EQUIPMENT FOR A COMPLETE SYSTEM.

1.02 RELATED DOCUMENTS AND SECTIONS

A. UNDERWRITERS LABORATORIES SPECIFICATIONS, UL13 AND UL444.

B. CALIFORNIA ELECTRICAL CODE (CEC) ARTICLES 725 AND 800.

C. ELECTRONIC INDUSTRIES ASSOCIATION/TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ETA/TIA) DOCUMENT #TSB-36 AND 40, AND EIA/TIA-568 AND 569.

D. SECTION 26 00 00, 26 05 00, 27 05 50.

E. DIVISION 01.

1.03 QUALITY ASSURANCE

A. MANUFACTURER'S QUALIFICATIONS: FIRMS REGULARLY ENGAGED IN MANUFACTURER OF TELEPHONE COMMUNICATIONS SYSTEM CABLES AND COMPONENTS AND WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN FIVE YEARS.

B. INSTALLER'S QUALIFICATIONS: FIRMS REGULARLY ENGAGED IN INSTALLATION OF TELEPHONE COMMUNICATIONS SYSTEM CABLES AND COMPONENTS.

1.04 SUBMITTALS

A. SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR EACH ITEM, INCLUDING THE FOLLOWING:

1. COMPLETE WIRING DIAGRAM INCLUDING WIRE SIZES, POINT-BY-POINTS, ETC.
2. SHOW OUTLET NUMBERING FOR ALL STATION CABLING.
3. ALL DRAWINGS SHALL BE NEAT AND LEGIBLE.
4. SUBMIT COMPLETE PRODUCT DATA INCLUDING CUT SHEET AND SPECIFICATION SHEET.

B. AS-BUILT DRAWINGS AND O&M MANUALS SHALL BE FURNISHED UPON COMPLETION OF THE PROJECT.

PART 2 - PRODUCTS

2.01 CABLING SYSTEM

A. CABLE, CONNECTORS, BLOCKS, WALL MOUNTED HARDWARE, ETC. SHALL BE MANUFACTURED BY LUCENT TECHNOLOGIES OR EQUAL.

1. ALL TELEPHONE SYSTEM CABLING SHALL BE UNSHIELDED TWISTED PAIR.
2. THE HORIZONTAL CABLE SHALL BE 4-PAIR CATEGORY 6E UTP AND SHALL MEET EIA/TIA COMMERCIAL BUILDING TELECOMMUNICATIONS WIRING STANDARDS FOR HORIZONTAL WIRE.
3. THE STATION CABLE WILL TERMINATE ON 110A WALL MOUNTED HARDWARE, WITH LEGS.
4. THE TWISTS AND THE OUTER JACKET OF ALL CABLES SHALL BE MAINTAINED WITHIN ONE INCH (1") OF THE TERMINATION POINT.
5. PROVIDE A RJ45 TYPE CATEGORY 6E EIGHT PIN MODULAR JACK (M18H) AT THE STATION END OF ALL 4 PAIR CABLES. ALL JACKS WILL USE THE EIA/TIA - 568B WIRING CONFIGURATION.
6. TWISTED PAIR ENTRANCE AND DISTRIBUTION CABLE: ALL TWISTED PAIR ENTRANCE CABLES SHALL BE CATEGORY-6E, 22 GAUGE, TWISTED PAIRS. THEY SHALL COMPLY WITH UL AND CEC ARTICLE 800 REQUIREMENTS. INDOOR CABLE SHALL BE RATED FOR THE ENVIRONMENT, CM FOR NON PLENUM/RISER AREAS AND CMP FOR RISER AND PLENUM AREAS. OUTDOOR CABLE SHALL BE SUITABLE FOR DIRECT BURIAL, OSP TYPE.
7. TERMINATE ENTRANCE AND DISTRIBUTION CABLES ON 110 BLOCKS WITH LEGS. PROVIDE CROSS CONNECT TO STATION CABLE BLOCKS.

PART 3 - EXECUTION

3.01 INSTALLATION REQUIREMENTS

A. TECHNICIANS AND WORKMAN EMPLOYED ON THIS PROJECT SHALL BE PARTICULARLY SKILLED IN THIS TYPE OF WORK. WORKMANSHIP ON INSTALLED SYSTEMS SHALL BE OF PROFESSIONAL QUALITY, BEST COMMERCIAL PRACTICE.

B. FURNISH AND INSTALL ALL REQUIRED INTERFACES, WIRING, AND COMPONENTS TO OTHER SYSTEMS AND OR DEVICES REQUIRING TELEPHONE SYSTEM INTERFACE OR SERVICE.

C. INSTALL ALL BACKBOARDS, RACKS, ETC. NECESSARY TO COMPLETE FULL INSTALLATION.

D. TEST AND LABEL ALL NEW COPPER WIRING. TESTING FOR COPPER CABLES MUST INCLUDE AT A MINIMUM, CONTINUITY, SHORTS, CROSSES, AND GROUNDS. LABELING SHALL BE IDENTIFIED BY LOCATION AND ROOM NUMBERS AS FURNISHED BY DISTRICT. PRIOR TO PERFORMING FINAL LABELING, LABELING INFORMATION SHALL BE COORDINATED WITH DISTRICT.

E. LABELING OF ALL TERMINATIONS MUST BE DONE PROFESSIONALLY, BASED ON A CLIENT APPROVED METHOD.

F. ALL JELLY FILLED CABLES SHALL BE PLUGGED TO PREVENT JELLY SEEPAGE.

G. PROVIDE TERMINAL BOARDS AND CROSS CONNECT BLOCKS AS REQUIRED.

H. PROVIDE PLYWOOD BACKBOARD AS SHOWN ON THE DRAWINGS.

I. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL MODULAR BACKBOARDS BLOCKS, MODULAR MUSHROOM BOARDS, D-RINGS ETC., NEEDED FOR THE TERMINAL BOARDS. THE BLOCKS SHOULD ALLOW FOR A MINIMUM OF 50% GROWTH.

J. STATION CABLES SHALL BE TERMINATED ON SEPARATE BLOCKS AND NEATLY MARKED WITH CABLE NUMBERS.

K. BLOCKS SHALL BE INSTALLED TOP TO BOTTOM AND LEFT TO RIGHT.

3.02 GROUNDING

A. PROVIDE EQUIPMENT GROUNDING CONDUCTOR, #6AWG BARE STRANDED COPPER IN 1/2" CONDUIT TO THE BUILDING'S MAIN GROUNDING ELECTRODE OR BUS. LOCATE AT EACH TERMINAL BOARD AND BOND TO BUILDING GROUNDING ELECTRODE SYSTEM. PROVIDE 10 FEET OF SLACK WIRE COILED AT TERMINAL BOARD.

3.03 CONDUIT SEPARATION

A. SEPARATE THE TELEPHONE CONDUITS FROM ELECTRIC LIGHT OR POWER CONDUIT BY NOT LESS THAN 6-INCHES.

3.04 CONSTRUCTION MEETINGS

A. AS A MINIMUM THE CONTRACTOR SHALL SCHEDULE CONSTRUCTION MEETINGS AT THE JOBSITE AS FOLLOWS:

1. PREWIRE MEETING SHALL OCCUR AFTER RACEWAYS ARE INSTALLED AND PRIOR TO PULLING OF ANY WIRE OR CABLE.
2. PRE-TERMINATION MEETING SHALL OCCUR AFTER WIRE AND CABLE HAS BEEN INSTALLED AND PRIOR TO TERMINATION.

B. MEETINGS SHALL INCLUDE THE PROJECT INSPECTOR, SCHOOLS REPRESENTATIVE, THE ELECTRICAL SUBCONTRACTOR, AND THE TELEPHONE SYSTEM CONTRACTOR AS A MINIMUM.

3.05 TESTS

A. AFTER ALL EQUIPMENT SPECIFIED HEREIN HAS BEEN INSTALLED AND IS IN OPERATING CONDITION, PERFORMANCE TESTS SHALL BE CONDUCTED TO DETERMINE THAT INSTALLATION AND COMPONENTS COMPLY WITH THESE SPECIFICATIONS. CONTRACTOR SHALL FURNISH COMPETENT PERSONNEL FOR THESE TESTS.

B. TESTING SHALL BE SCHEDULED WITH THE DISTRICT AND SHALL OCCUR BEFORE OCCUPANCY OCCURS.

3.06 WARRANTY

A. THE TELEPHONE SYSTEM SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR AFTER ACCEPTANCE OF THE INSTALLATION. DURING THE WARRANTY PERIOD, ANY MATERIAL SHOWING ANY MECHANICAL, OR ELECTRICAL DEFECTS SHALL BE REPLACED PROMPTLY BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

END OF SECTION

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AGENCY APPROVAL:

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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUM, JR. E 24197 EXPIRES 6/30/26 ELECTRICAL STATE OF CALIFORNIA

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.
DATE SIGNED: 04-25-2025

FACILITY:
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945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author
SHEET NAME:
TECHNOLOGY SPECIFICATIONS

CONSTRUCTION DOCUMENTS

DATE: 04.30.2025 | CLIENT PROJ NO: 3431007000

SHEET:
T3.2-3

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CONTRACTOR(S) GUIDELINES

1. ALL TECHNOLOGY WORK SHALL COMPLY WITH DESIGN GUIDELINES AS WELL AS APPLICABLE FEDERAL, STATE, AND LOCAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE DOCUMENTS SHALL GOVERN BUT THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
2. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS OR WITH CODE REQUIREMENTS, THE NOTE, CODE OR SPECIFICATION WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR THE HIGHER STANDARD SHALL PREVAIL.
3. OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR THE MIS-DESCRIPTION OF DETAILS FROM WORK WHICH ARE CLEAR AND NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS, SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED OR MIS-DESCRIBED DETAILS OF THE WORK BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED, IMMEDIATELY UPON THEIR RECEIPT AND SHALL PROMPTLY NOTIFY THE OWNER OF ANY DISCREPANCIES.
5. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE CALIFORNIA STATE FIRE MARSHAL (CSFM), UNDERWRITERS LABEL (UL) AND SHALL BE INSTALLED IN THE MANNER FOR WHICH THEY ARE DESIGNED AND APPROVED.
6. THE CONTRACTOR SHALL NOT BORE, NOTCH OR IN ANY WAY CUT INTO ANY STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT OR STRUCTURAL ENGINEER.
7. ALL CHANGES TO STRUCTURES (BUILDING, DRILLING, CORING, ETC.) NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED IN WRITING BY STRUCTURAL ENGINEER.
8. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, THE TECHNOLOGY DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DATA INFORMATION AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE SCS AND LOW VOLTAGE WORK INTERFACES WITH OTHER TRADES.
9. THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS TO REFLECT ALL CHANGES MADE DURING CONSTRUCTION AND ANY DEVIATIONS FROM THE ELECTRICAL AND TECHNOLOGY DRAWINGS. THIS INCLUDES DEVIATIONS FROM OUTLET NUMBERS AND ANY ADDITION, DELETION OR RELOCATION OF OUTLETS SHOWN ON WORKING DRAWINGS, PATHWAY ADDITIONS, DELETIONS OR RELOCATIONS. THE CONTRACTOR SHALL AFTER COMPLETION OF JOB, PROVIDE THE OWNER AN ELECTRONIC AND HARD COPY OF AS-BUILT WORK.
10. ANY DEVIATIONS FROM PLANS OR SPECS MUST BE APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
11. ALL FOOTAGES ON DRAWINGS ARE ESTIMATED AND MUST BE VERIFIED BY CONTRACTOR PRIOR TO ORDERING MATERIAL.
12. ALL STATION CABLES SHALL BE NEATLY DRESSED AND SECURED EVERY FIVE FEET AT A MINIMUM.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING TILE INCLUDING REPLACEMENT OF BROKEN OR DAMAGED TILES.
14. ALL LOCATIONS PASSING THROUGH A FIRE OR A SMOKE BARRIER MUST BE FIRE STOPPED USING APPROVED (UL CLASSIFIED) FIRE STOP SYSTEM, INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AND PROPERLY LABELED.
15. CONDUIT SHALL BE FILLED TO MAXIMUM CAPACITY (PER CODE, STANDARDS, AND NORMS) BEFORE UTILIZING ANOTHER VACANT CONDUIT.
16. ALL TECHNOLOGY DEVICES SHALL BE PROPERLY IDENTIFIED USING THE OWNER'S STANDARD INTERNAL DISTRIBUTION NUMBERING SCHEME. ALL LABELS SHALL BE PREPRINTED OR TYPED.
17. EACH CABLE SHALL BE EQUIPPED WITH A PERMANENT LABEL INDICATING THE CIRCUIT IDENTIFICATION. BOTH ENDS OF EACH CABLE AND AT EVERY MAINTENANCE HOLE, HAND HOLE, AND PULL BOX, SHALL BE SO LABELED.
18. FIBER BACKBONE CABLE SHALL BE PLACED WITH 6 FOOT MAINTENANCE LOOP AT BOTH ENDS OF THE RUN. THE MAINTENANCE LOOP SHALL BE SECURED IN SUCH A MANNER TO PROVIDE PROTECTION DURING SUBSEQUENT CABLE PULLS.
19. FIBER CABLES SHALL BE SPLICED TOGETHER USING A FUSION SPLICE AND PLACED IN A FIBER SPLICE CASE THAT IS RE-ENTERABLE, FULLY DRESSED AND ENCLOSED TO FIT THE NUMBER AND TYPE OF CABLES TERMINATED.
20. ALL CABLES SHALL BE CLEARLY LABELED WITH CIRCUIT IDENTIFICATION.
21. PULL ROPES SHALL BE PLACED IN ALL VACANT CONDUITS.
22. ALL WORK MUST BE COMPLETED IN A NEAT AND PROFESSIONAL MANNER. THE WORK SITE SHALL BE KEPT CLEAN AND ALL DAMAGE TO OWNER'S PROPERTY REPAIRED.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A FINAL CLEANUP OF THE WORK SITE PRIOR TO FINAL SYSTEM ACCEPTANCE.
24. CONTRACTOR SHALL REMOVE ALL COPPER, FIBER AND COAXIAL CABLES ABANDONED IN CONDUIT, CEILINGS AND WALLS PER CEC. CABLE SHALL INCLUDE ALL INTRABUILDING, RISER SYSTEMS AND STATION CABLES FOR ALL LOW VOLTAGE/TECHNOLOGY/STRUCTURED CABLING SYSTEMS.
25. CONTRACTOR(S) SHALL VERIFY ALL SITE CONDITIONS PRIOR TO BID.
26. IN ACCESSIBLE CEILING SPACES:
    - 26.1. THE CONTRACTOR SHALL PROVIDE THE REQUIRED STUB UP(S) / OUT(S) AND BOXES WITH MUD-RINGS TO THE NEAREST ACCESSIBLE CEILING SPACE AND / OR NEAREST TECHNOLOGY PATHWAY INFRASTRUCTURE, REFERENCE PLANS AND SPECIFICATION FOR MORE INFORMATION.
    - 26.2. THE DESIGNATED SCS / TECHNOLOGY CONTRACTOR(S) SHALL PROVIDE A J-HOOK PATHWAY SYSTEM AND REQUIRED SLEEVES. DO NOT USE CEILING TILE WIRE HANGERS, WATER OR ELECTRICAL PIPES, OR LIGHT FIXTURES TO HANG CABLE. CABLE MUST BE A MINIMUM OF 6 INCHES ABOVE THE CEILING TILE AND MUST NOT COME WITHIN TWELVE INCHES OF A LIGHT FIXTURE. THE DESIGNATED ELECTRICAL CONTRACTOR(S) FOR EACH "SUB-SYSTEM WILL PROVIDE THE PATHWAY REQUIRED FOR THE SYSTEMS, OUTSIDE WHAT IS CONSIDERED THE STRUCTURED CABLING SYSTEM.
27. IN INACCESSIBLE AND HARDLID CEILING SPACES;
    - 27.1. THE CONTRACTOR SHALL PROVIDE ALL CONDUIT PATHWAYS, BOXES ETC. FOR A COMPLETE SYSTEM FROM THE MDF ROOM, IDF ROOM(S), IDF CABINET(S), AND ALL OTHER LOW VOLTAGE / TECHNOLOGY SYSTEMS HEADEND, CABINETS, TERMINAL CABINETS, ETC. TO THE POINT OF TERMINATION AT THE STATION END LOCATION PER PLANS AND SPECIFICATION.

EQUIPMENT ANCHORAGE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTED BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, AND DUCTWORK DISTR. SYSTEM BRACING

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. THE MEP PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING(MP), MECHANICAL DUCTS(MD), PLUMBING PIPING(PP), ELECTRICAL DISTRIBUTION SYSTEMS(E):

MP☐ MD☐ PP☐ E ☒	OPTION 1: PROJECT SEPCIFIC DESIGN.
MP☐ MD☐ PP☐ E ☐	OPTION 2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL.
MP☐ MD☐ PP☐ E ☐	OPTION 3: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL.

TECHNOLOGY CABLING NOTES

1. THE USE OF LUBRICANTS SUCH AS CLEAR GLIDE, TO FACILITATE THE INSTALLATION OF CABLES IN CONDUITS IS ENCOURAGED FOR FRICTION REDUCTION AND TO MAINTAIN THE REQUIRED PULL TENSION. YELLOW 77 AND POLYWATER "F" IS PERMISSIBLE FOR USE AS A LUBRICANT FOR ISP TECHNOLOGY CABLING. THE USE OF OSP, LOW TEMPERATURE CABLE LUBRICANTS SHALL NOT BE ACCEPTABLE IN AN INDOOR PLENUM ENVIRONMENT. UNDER NO CIRCUMSTANCES SHALL CABLE PULLING LUBRICANT BE ALLOWED TO ACCUMULATE ON WALLS, FLOORS, BACKBOARDS, OR OTHER SURFACES OUTSIDE THE CONDUIT.
2. ANY CABLE DAMAGED OR EXCEEDING RECOMMENDED INSTALLATION PARAMETERS DURING INSTALLATION SHALL BE REPLACED BY THE CONTRACTOR BEFORE FINAL ACCEPTANCE AT NO COST TO THE OWNER.
3. EACH RUN OF CABLE SHALL BE CONTINUOUS WITHOUT ANY JOINTS OR SPLICES.
4. ALL STATION CABLE SHALL BE PLACED IN THE INTERIOR OF WALLS UNLESS NOTED OTHERWISE OR OBSTRUCTED.
5. PROVIDE BUSHINGS, GROMMETS AND STRAIN-RELIEF FOR CABLES TERMINATING AT WALL-MOUNTED DEVICES TO ENSURE DURABLE AND ROBUST CONNECTIONS. THE BUSHINGS AND GROMMETS ARE INTENDED TO PROTECT THE CABLES FROM ANY SHARP EDGES THAT PRESENT A RISK TO THE CABLES. ENSURE THAT ALL SHARP EDGES ARE COVERED TO PROTECT THE CABLES FROM DAMAGE.
6. IN SUSPENDED CEILING AND RAISED FLOOR AREAS WHERE DUCT, CABLE BUNDLES SHALL BE SUPPORTED VIA "J" HOOKS ATTACHED TO THE BUILDING STRUCTURE AND FRAMEWORK AT A MAXIMUM OF FIVE (5) FOOT INTERVALS. MINIMUM 1 " WIDE J-HOOKS SHALL BE APPROPRIATELY SIZED TO ALLOW A MINIMUM OF 60% SPARE CAPACITY FOR FUTURE CABLE INSTALLATION. THE CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID FOR ANY ADDITIONAL SUPPORTS/SEISMIC BRACING REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
7. CABLES OR J-HOOKS SHALL NOT BE ATTACHED TO LIFT OUT CEILING GRID SUPPORTS OR LAID DIRECTLY ON THE CEILING GRID.
8. CABLES OR J-HOOKS SHALL NOT BE ATTACHED TO OR SUPPORTED BY FIRE SPRINKLER HEADS OR DELIVERY SYSTEMS OR ANY ENVIRONMENTAL SENSOR LOCATED IN THE CEILING AIR SPACE.
9. WHERE ADDITIONAL CONDUIT(S)/SLEEVE(S) ARE REQUIRED, BUT NOT PROVIDED BY THE CONTRACTOR, THE SCS AND/OR LV CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE SUCH CONDUIT(S)/SLEEVE(S). CONDUIT(S) AND SLEEVE(S) SHALL BE OF SUITABLE MATERIAL, SIZED, INSTALLED, FIRE-STOPPED, AND GROUNDED AS REQUIRED BY THE CEC, ANSI/TIA-569-D STANDARD AND ALL OTHER APPLICABLE CODES AND STANDARDS. SLEEVES SHALL CONSIST OF METALLIC CONDUIT DE-BURRED AND GROMMETTED ON BOTH ENDS WITH FLANGES OR OTHER MEANS TO PREVENT THE SLEEVE FROM SLIPPING OR FALLING OUT OF THE PARTITION. SLEEVES SHALL EXTEND A MINIMUM OF 6" ON BOTH SIDES OF THE PARTITION. OUTSIDE PERIMETER OF SLEEVES SHALL BE SEALED AGAINST SOUND, AIR, WATER, HEAT, OR AS REQUIRED BY PARTITION DESIGN. INSIDE OF SLEEVE SHALL BE SEALED SIMILARLY AFTER INSTALLATION OF ALL CABLING. CABLES SHALL BE INDEPENDENTLY SUPPORTED ON EITHER SIDE OF THE SLEEVE. SLEEVES SHALL NOT BE USED AS CABLE SUPPORTS. ANY CONDUIT(S) AND SLEEVE(S) ADDED BY THE SCS CONTRACTOR SHALL BE APPROVED BY THE OWNERS REPRESENTATIVE PRIOR TO ROUGH-IN.
10. IN THE EVENT CONTRACTOR IS REQUIRED TO REMOVE CEILING TILES, SUCH WORK SHALL NOT BREAK OR DISTURB GRID. REMOVAL OF THE CEILING GRID MUST BE COORDINATED WITH THE OWNERS REPRESENTATIVE. ALL INSULATION SHALL BE REPLACED IN ITS ORIGINAL LOCATION.
11. THE NUMBER OF CABLES IN EACH CONDUIT SHALL BE CONTROLLED TO ALLOW FOR FUTURE CABLE INSTALLATION AND TO STAY WITHIN THE MANUFACTURER'S MAXIMUM ALLOWABLE CABLE PULLING TENSION. CONDUIT FILL RATIOS SHALL NOT EXCEED THE CURRENT REQUIREMENTS OF THE CEC, ANSI/TIA-569-D, REFERENCE SECTION B.2, TABLES 1 AND 2 OF THIS DOCUMENT FOR ADDITIONAL REQUIREMENTS.
12. ALL BACKBONE CABLING WILL RUN THROUGH DEDICATED CONDUITS. ALL NEW CONDUITS WILL BE SUPPLIED WITH A PULL STRING BY THE CONTRACTOR. EXISTING CONDUITS SHALL BE PROVEN TO BE CLEAR BY THE SCS AND/OR LV CONTRACTOR PRIOR TO PULLING OF CABLES. SCS AND/OR LV CONTRACTOR SHALL SUPPLY PULL STRING AND PULL ROPE FOR THE INSTALLATION OF ALL CABLES IN EXISTING CONDUITS. FOR ALL CONDUITS LEFT WITH AVAILABLE CAPACITY, SCS AND/OR LV CONTRACTOR SHALL REPLACE PULL STRINGS DURING THE COURSE OF HIS WORK. SCS AND/OR LV CONTRACTOR MUST SEAL ALL CONDUITS WITH AN APPROVED SEALING COMPOUND.

TECHNOLOGY SYMBOL LEGEND:

ALL NOTES ARE TYPICAL UNLESS NOTED OTHERWISE ON PLANS AND DETAILS

MARK	SYMBOL	DESCRIPTION	BACK BOX	PLASTER RING	MOUNTING HEIGHT	CONDUIT	MANUFACTURER	CABLE	CABLE COLOR / JACK COLOR	MAX. LOAD	NOTES
1	MDF	MDF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	EXISTING
2	IDF	IDF	N/A	N/A	SEE PLANS	N/A	CHATSWORTH PRODUCTS	N/A	N/A	SEE SHEET T0.2-2	SEE EQUIPMENT SCHEDULE
WORKSTATIONS											
3	#	DATA	5" SQ., 2-1/8" DEEP	2-DEVICE	+16" TO BOTT.	1 EA. 1"C	PANDUIT	CAT6A	DATA: PURPLE / BEIGE VOICE(VOIP): GRAY / BLUE VOICE(NON-VOIP): GRAY / 110 BLOCK	N/A	DISTRICT WILL IDENTIFY VOIP AND NON-VOIP PHONE.
4	#D / #V	DATA / TELEPHONE OUTLET	5" SQ., 2-1/8" DEEP	2-DEVICE	+16" TO BOTT.	1 EA. 1"C	PANDUIT	CAT6A	DATA: PURPLE / BEIGE VOICE(VOIP): GRAY / BLUE VOICE(NON-VOIP): GRAY / 110 BLOCK	N/A	DISTRICT WILL IDENTIFY VOIP AND NON-VOIP PHONE.
5	WAP	WAP DATA OUTLET	5" SQ., 2-1/8" DEEP	2-DEVICE	CEILING	1 EA. 1"C	PANDUIT	CAT6A	DATA: BLUE / WHITE	N/A	802.3BT TYPE 4 AND IN COMPLIANCE WITH ALL EIA / TIA STANDARDS.
6	2D WAP	WAP DATA OUTLET WEATHERPROOF	5" SQ., 2-1/8" DEEP	2-DEVICE	+108" TO BOTT.	1 EA. 1"C	PANDUIT	CAT6A	DATA: BLUE / WHITE	N/A	802.3BT TYPE 4 AND IN COMPLIANCE WITH ALL EIA / TIA STANDARDS.
TEACHING WALL											
7	HDMI	HDMI FACEPLATE	5" SQ., 2-1/8" DEEP	2-DEVICE	+14" TO BOTT.	1 EA. 1.24"C	SEE ONE-LINE	HDMI	N/A	N/A	N/A
8	#	PROMETHEAN BOARD DATA	5" SQ., 2-1/8" DEEP	2-DEVICE	+29" BELOW CEILING.	1 EA. 1"C	PANDUIT	CAT6A	DATA: PURPLE / BEIGE	N/A	N/A
CLOCK / INTERCOM PAGING SYSTEM											
9		CLOCK	PER MFR. GUIDELINES	PER MFR. GUIDELINES	+96" MIN. TO BOTT.	1 EA. 1"C	AMERICAN TIME	N/A	N/A	N/A	BATTERY OPERATED
10		CLOCK / SPEAKER COMBO	PER MFR. GUIDELINES	PER MFR. GUIDELINES	+96" MIN. TO BOTT.	1 EA. 1"C	ATLAS SOUND IED	N/A	IP - SDMF	N/A	N/A
11	S	INTERCOM SPEAKER	PER MFR. GUIDELINES	PER MFR. GUIDELINES	+96" MIN. TO BOTT.	1 EA. 1"C	ALGO	CAT6A	INTERCOM: GREEN / GREEN	N/A	PROVIDE ONE(1) DATA DROP
12	S WP	WALL MOUNTED INTERCOM SPEAKER, WEATHERPROOF	PER MFR. GUIDELINES	PER MFR. GUIDELINES	+108" MIN. TO BOTT.	1 EA. 1"C	ALGO	CAT6A	INTERCOM: GREEN / GREEN	N/A	N/A
INTRUSION SECURITY SYSTEM											
13	ICP	INTRUSION MAIN ALARM CONTROL PANEL	N/A	N/A	+60" TO BOTT.	N/A	ADEMCO	22 AWG	N/A	N/A	N/A
14		INTRUSION MOTION SENSOR	5" SQ., 2-1/8" DEEP	1-DEVICE	SEE PLANS	N/A	ADEMCO	22 AWG	N/A	N/A	N/A
15		DOOR CONTACT	N/A	N/A	DOOR FRAME	N/A	ADEMCO	22 AWG	N/A	N/A	COORDINATE WITH DIVISION 8 FOR DOOR HARDWARE
16		INTRUSION KEYPAD	5" SQ., 2-1/8" DEEP	1-DEVICE	+45" MIN. TO BOTT.	N/A	ADEMCO	22 AWG	N/A	N/A	N/A
ACCESS CONTROL											
17	ACP	ACCESS CONTROL PANEL	N/A	N/A	SEE PLANS	N/A	N/A	22 AWG	N/A	N/A	COORDINATE WITH ALAMO ALARM COMPANY (DISTRICT INTRUSION AND ACCESS CONTROL CONTRACTOR)
18	CR	CARD READER	5" SQ., 2-1/8" DEEP	1-DEVICE	SEE PLANS	N/A	N/A	22 AWG	N/A	N/A	COORDINATE WITH DIVISION 8 FOR DOOR HARDWARE
MISC. SYSTEM											
19	ES	ENTRY STATION	N/A	N/A	+60" TO BOTT.	N/A	N/A		N/A	N/A	EXISTING
20	2D	PROJECTOR	5" SQ., 2-1/8" DEEP	1-DEVICE	SEE PLANS	N/A	N/A		N/A	N/A	EXISTING
21		COAX OUTLET	5" SQ., 2-1/8" DEEP	1-DEVICE	+45" MIN. TO BOTT.	N/A	N/A		N/A	N/A	EXISTING TO DEMO CABLING, PATHWAY, AND ALL ASSOCIATED PATHWAY
22	TV	LED TV	N/A	N/A	+45" MIN. TO BOTT.	N/A	N/A		N/A	N/A	EXISTING

TECHNOLOGY ABBREVIATIONS

ACP	ACCESS CONTROL PROCESSOR	(N)	NEW
AFF	ABOVE FINISHED FLOOR	NC	NORMALLY CLOSED
AHJ	AUTHORITY HAVING JURISDICTION	NIC	NOT IN CONTRACT
AMP	AMPLIFIER	NO	NORMALLY OPEN
AOR	ARCHITECT OF RECORD	NTS	NOT TO SCALE
AUTO	AUTOMATIC	OC	ON CENTER
AUX	AUXILIARY	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
AWG	AMERICAN WIRE GAUGE	OFOI	OWNER FURNISHED, OWNER INSTALLED
BCT	BONDING CONDUCTOR FOR TELECOMMUNICATIONS CONDUIT	OSP	OUTSIDE PLANT
C	CONDUIT	PB	PULL BOX
CATV	COMMUNITY ANTENNA TELEVISION	POE	POWER OVER ETHERNET
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	PR	PAIR OF CONDUCTORS
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED	PVC	POLYVINYL CHLORIDE
CL	CENTERLINE	PWR	POWER
CSFM	CALIFORNIA STATE FIRE MARSHAL	(RR)	REMOVE AND REPLACE
DIV	DIVISION	(RL)	REMOVE AND RELOCATE
DC	DOOR CONTACT	RCP	REFLECTED CEILING PLAN
(E)	EXISTING	RFI	REQUEST FOR INFORMATION
EC	ELECTRICAL CONTRACTOR	RMC	RIGID METALLIC CONDUIT
ECS	EMERGENCY COMMUNICATION SYSTEM	SCS	STRUCTURED CABLING SYSTEM
EF	ENTRANCE FACILITY FOR TELECOMMUNICATION	SM	SINGLE MODE
EMT	ELECTRIC METALLIC TUBING	STR	STRANDS (OF FIBER)
ER	EQUIPMENT ROOM	STP	SHIELDED TWISTED PAIR
EXT	EXTERIOR	SEC	SECURITY
(F)	FUTURE	TBB	TELECOMMUNICATIONS BONDING BACKBONE
FACP	FIRE ALARM CONTROL PANEL	TELCO	TELEPHONE COMPANY
FATC	FIRE ALARM TERMINAL CABINET	TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
FABP	FIRE ALARM BOOSTER PANEL	TMGB	TELECOMMUNICATION MAIN GROUNDING BUSBAR
FB	FLOORBOX	TYP	TYPICAL
FO	FIBER OPTIC	UNO	UNLESS NOTED OTHERWISE
GC	GENERAL CONTRACTOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
IDF	INTERMEDIATE DISTRIBUTION FRAME	UTP	UNSHIELDED TWISTED PAIR
INT	INTERIOR	V	VOICE
IP	INTERNET PROTOCOL	WB	WALL BOX
JB	JUNCTION BOX	WP	WEATHERPROOF
LV	LOW VOLTAGE		
MDF	MAIN DISTRIBUTION FRAME		
MIC	MICROPHONE		
MM	MULTIMODE		
MPOE	MINIMUM POINT OF ENTRY		

CODES AND STANDARDS

APPLICABLE PROJECT BUILDING CODES, EFFECTIVE AS OF DATE: JANUARY 1, 2023

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC)
2022 CALIFORNIA BUILDING CODE (CBC)
2022 CALIFORNIA ELECTRICAL CODE (CEC)
2022 CALIFORNIA FIRE CODE (CFC)
2022 CALIFORNIA ENERGY CODE
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
2022 CALIFORNIA REFERENCED STANDARDS CODE
2022 NFPA 72: NATIONAL TECHNOLOGY AND SIGNALING CODE
2022 NFPA 1221: STANDARD FOR THE INSTALLATION, MAINTENANCE, AND USE OF EMERGENCY SERVICES COMMUNICATIONS SYSTEMS

APPLICABLE INDUSTRY STANDARDS, CURRENT EDITION

TIA-568: GENERIC CABLE STANDARDS
TIA-568-1: COMMERCIAL CABLE STANDARDS
TIA-568-2: BALANCED TWISTED PAIR CABLING AND COMPONENTS TIA-568-3: OPTICAL CABLING FEEDER COMPONENTS
TIATIA-568-4: BROADBAND COAX CABLING AND COMPONENTS TIA-569: TELECOMMUNICATION PATHWAYS AND SPACES
TIA-570: RESIDENTIAL TELECOMMUNICATIONS
TIA-598: OPTICAL FIBER CABLE COLOR CODING
TIA-606: ADMINISTRATIVE LABELING STANDARDS
TIA-607: TELECOMMUNICATIONS BONDING AND GROUNDING TIA-758: TELECOMMUNICATIONS OUTSIDE PLANT
TIA-526-7: SINGLE-MODE FIBER STANDARDS
TIA-526-14: MULTI-MODE FIBER STANDARDS

SHEET INDEX

T0.1-4	TECHNOLOGY COVER SHEET
T0.2-4	TECHNOLOGY RACK ELEVATION
T0.3-4	TECHNOLOGY ONE-LINE DIAGRAM
T1.10-4	TECHNOLOGY SITE PLAN
TJ2.11-4	TECHNOLOGY BUILDING J
T3.1-4	TECHNOLOGY SPECIFICATIONS
T3.2-4	TECHNOLOGY SPECIFICATIONS

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RANCHO CORDOVA, CALIFORNIA

JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
TECHNOLOGY COVER SHEET

CONSTRUCTION DOCUMENTS

DATE: 03/12/2025 | CLIENT PROJ NO: 3431007000

SHEET:
T0.1-4

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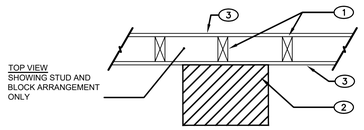
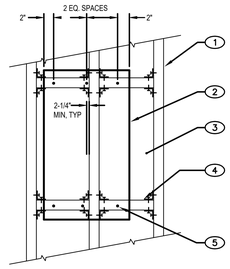
EQUIPMENT SCHEDULE

TAG ID	DESCRIPTION	MANUFACTURER	PART NUMBER	MAX. LOAD
1	TECHNOLOGY 19RU WALL MOUNTED RACK	EXISTING	EXISTING	250 LBS.
2	1RU SINGLE - SIDED WIRE MANAGER	EXISTING	EXISTING	N/A
3	2RU PAN-PATCH PANEL	EXISTING	EXISTING	N/A
4	2RU DOUBLE - SIDED WIRE MANAGER	EXISTING	EXISTING	N/A
5	1RU CLOSET CONNECTOR HOUSING (CCH) W/ FIBER ADAPTERS	EXISTING	EXISTING	N/A
6	1RU SINGLE - SIDED WIRE MANAGER	EXISTING	EXISTING	N/A
7	1RU PATCH PANEL WITH WHITE JACKS	EXISTING	EXISTING	N/A
8	1RU SINGLE - SIDED WIRE MANAGER	EXISTING	EXISTING	N/A
9	OPEN FOR CORE SWITCH	EXISTING	EXISTING	N/A
10	1RU SINGLE - SIDED WIRE MANAGER	EXISTING	EXISTING	N/A
11	OPEN FOR CORE SWITCH	EXISTING	EXISTING	N/A
12	POWER DISTRIBUTION UNIT	EXISTING	EXISTING	N/A



NOTES:

1. IDF CABINET ARE 250# MAX. (INCLUDING CONTENTS)
2. MOUNT TERMINAL CABINETS, J-BOXES, ETC., SIMILAR TO IDF CABINET.



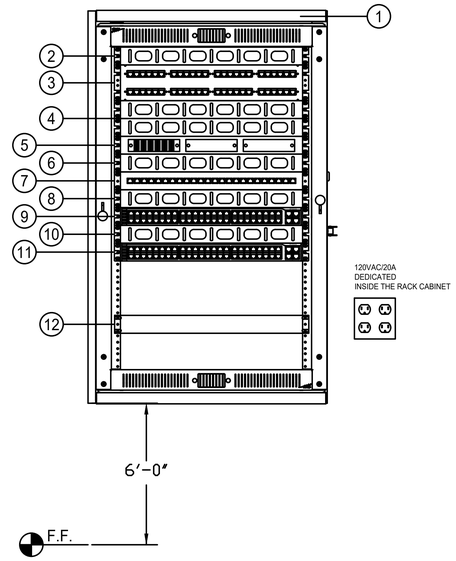
TYPICAL IDF, ACP, UPS CABINET WOOD FRAMING MOUNTING DETAIL

SCALE : NTS

2 / T0.2-4

KEY NOTES

1. WOOD STUD
2. SURFACE MOUNTED IDF CABINET, SEE NOTE #1
3. SHEET ROCK OR OTHER WALL SURFACE MATERIAL (SEE ARCH. DRAWINGS)
4. BLOCKING (MATCH STUD DEPTH) ATTACH TO (E) VERTICAL STUDS WITH A34 CLIPS EACH END, TOP AND BOTTOM - AVOID CONFLICT OF NAILS EACH SIDE OF STUD
5. 5/16" X 2 1/2" LAG SCREWS WITH 1-1/2" MIN. EMBED TO BLOCK. (6) LAG SCREWS TOTAL. (BY ELECTRICAL CONTRACTOR)



TYPICAL IDF

SCALE : NTS

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PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
TECHNOLOGY RACK ELEVATION

CONSTRUCTION DOCUMENTS

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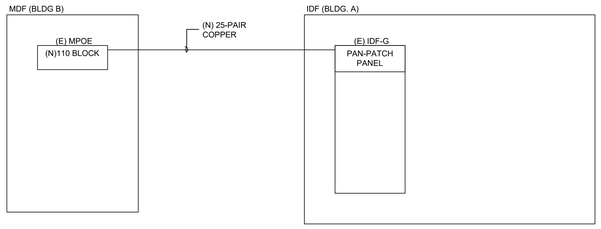

25-PAIR COPPER ONE-LINE DIAGRAM

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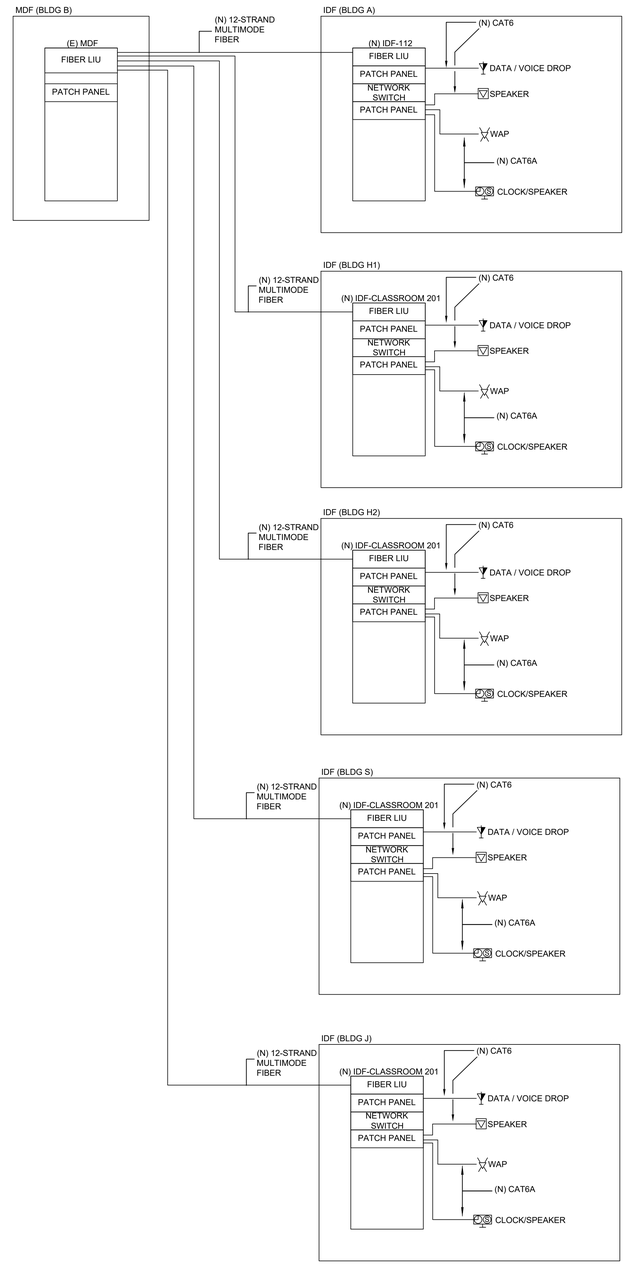

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KEY NOTES:

1. PROVIDED/INSTALLED IN PREVIOUS INCREMENTS.

TECHNOLOGY SITE PLAN

SCALE : 1"=20'-0"

1
T1.10-4

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TECHNOLOGY SITE PLAN

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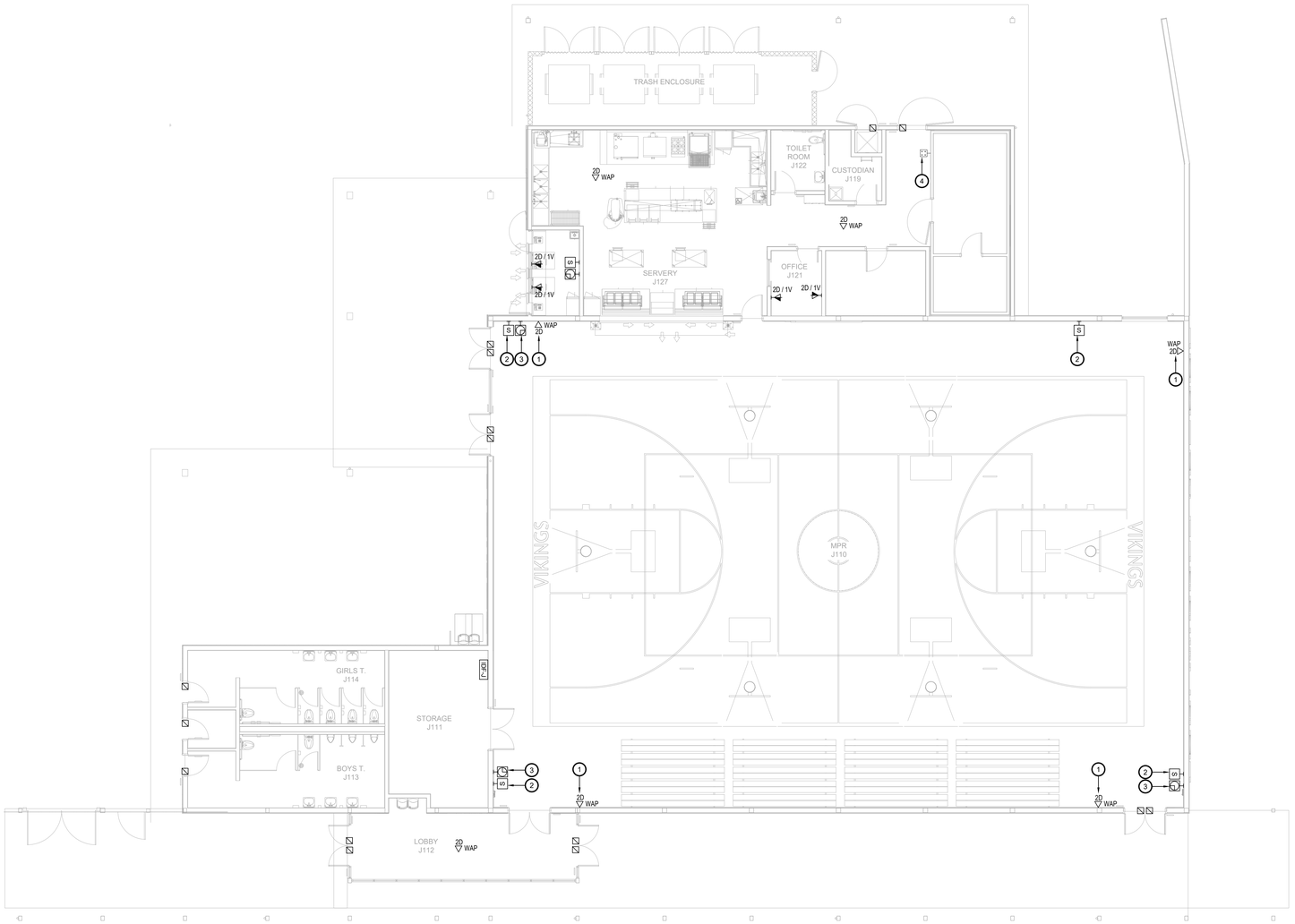
KEY NOTES:

1. PROVIDE TWO (2) DATA DROPS FOR WAP AT +108" A.F.F. AND PROTECTIVE CAGE.
2. PROVIDE ONE (1) DATA DROP FOR INTERCOM SPEAKER AT +108" A.F.F.
3. PROVIDE BATTERY OPERATED CLOCK 16" DIA. AT +108" A.F.F. WITH PROTECTIVE CAGE.
4. PROVIDE NEW INTRUSION KEYPAD, NEW CABLING, AND ALL NECESSARY ACCESSORIES AND HARDWARE FOR A FULLY FUNCTIONAL AND OPERATIONAL SYSTEM.



TECHNOLOGY - FLOOR PLAN - BLDG J 1

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

TJ2.11-4

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RANCHO CORDOVA, CALIFORNIA

JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED:

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
TECHNOLOGY - FLOOR PLAN - BLDG J

CONSTRUCTION DOCUMENTS

DATE: 03/12/2025 CLIENT PROJ NO: 3431007000

SHEET:
TJ2.11-4

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY 1 INCH ON ORIGINAL 22X34 SHEETS ORIGINAL PAGE SIZE

SECTION 27 05 50 - INSTALLATION AND IDENTIFICATION OF SIGNAL CABLES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. The installation and identification of Signal cables. Signal cables as referenced in this section shall include but not limited to cables for the following systems; intercom, paging, clock, telephone, speaker, fire alarm, intrusion, television/video, and sound/audio.

1.02 RELATED SECTIONS

A. Sections where signal cables are specified. Such systems are specified in the Divisions 27 and 28.

1.03 SUBMITTALS

A. Submit cables and method of labeling including tags, ties, labels, etc.

B. Submit per Section 26 00 00.

PART 2 - PRODUCTS

2.01 PRODUCTS

A. Refer to cables and wires specified under other sections.

B. All energy limited cables that are identified as opened wired (not in conduit) within buildings shall be rated for the environment it is installed. Exposed wiring shall not be used in hazardous locations and locations not allowed by the CEC.
1. General Purpose rating allows the cable to be used in areas allowed by the CEC but shall not be used as riser cable and in air plenums.
2. A Riser rating allows the cable to be used in general purpose applications and building riser applications. Riser cables shall not be used in air plenums.
3. A Plenum rating allows the cable to be used in general purpose, riser, and air plenum applications.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install all wiring in accordance with manufacturer's recommendations. All work shall be performed in a neat and workmanlike manner. All debris, trash, leftover materials etc., shall be cleaned out of pull boxes, terminal cabinets, terminal rooms and the general work areas.

B. Cables shall be labeled at each terminal location and at pull boxes.

C. Protection of Cables: Cables within terminal cabinets, equipment racks, etc., shall be grouped and bundled (harnessed) as to form a neat lacing bed with No. 12 cord waxed linen lacing twine or T & B "Ty_Rap" cable. Edge protection material ("cat_track") shall be installed on edges of holes, lips of ducts or any other point where cables or harnesses cross metallic edge.

D. Cable Identification:Individual conductors not in a multiconductor cable and multiconductor cables shall be color coded and/or individually identified. Each cable identification shall be a unique number located approximately 1_1/2" from cable connection at both ends of cable. Numbers shall be approximately 1/4" in height. A typewritten schedule shall be provided at each cabinet or terminal location indicating the destination of the cable from such location. Example, an intercom cable entering and terminating in Building-A from Building-B shall be labeled at Building-A as follows, "INTERCOM FROM BLDG-B". A schedule shall be provided for each system cables. The schedule shall be on an 8.5" x 11" plain paper identifying all cables of the system at the terminal location, and shall be typewritten, neatly handwritten are allowed only when approved. A copy of the schedule shall located at the terminal location and a copy shall be provided to the Owner. The schedule shall match the identification on the As_Built drawings.

E. At pull boxes, use engraved plastic tags minimum of 2"H X 4"W securely tied around cable. Tags shall be listed for such use and shall not corrode or be susceptible to such environments. All cables shall be labeled by system type and destination, to and from.

F. Shielding: Cable shielding shall be connected to common ground at point of lowest audio level and shall be free from ground at any other point. Shields shall be connected a one end only to prevent ground loops. Cable shields shall be terminated in same manner as conductors.

G. Nameplates: Terminal cabinets and junction boxes shall have plastic engraved nameplates to identify each with Drawings and Specifications. Refer to Section 26 00 00.Provide nameplates at backboard terminals for each system, sample "INTERCOM". Secure all labels with screws.

H. Outlet Box Identification: All outlet boxes mounted in attic space shall be individually identified with a black permanent waterproof marker. Identification shall be by system type and/or cable type.

I. All cables shall be run in continuous lengths between terminal locations and/or equipment, no splicing permitted.

J. The Contractor shall supply and install all modular mushroom rings, D-rings, etc., needed for the terminal boards. The blocks should allow for a minimum of 25% growth.

K. Cables on backboards shall be neatly trained following the lines of the room/backboard. Typically routes shall be vertical and horizontal with smooth turns. Do not route cables in odd angles.

L. Provide grounding electrode conductor, #6 AWG bare stranded copper. Locate at each terminal location and bond to building grounding electrode system. At backboards, provide a minimum 3"H X 6"W copper ground buss with stand-offs, secure to backboard. At each terminal cabinet, terminate ground wire in ground lug. One ground conductor may serve multiple backboards and terminal cabinets in the same area.

M. Terminations shall be consistent as to the color of conductors throughout the system at like stations.

N. The system shall be checked by the Contractor for opens, grounds, and shorts.

END OF SECTION

SECTION 27 05 53 - IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.02 SUMMARY

A. SECTION INCLUDES:
1. COLOR AND LEGEND REQUIREMENTS FOR LABELS AND SIGNS.
2. LABELS.
3. BANDS AND TUBES.
4. TAPES.
5. SIGNS.
6. CABLE TIES.
7. FASTENERS FOR LABELS AND SIGNS.

1.03 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
1. INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES FOR COMMUNICATIONS IDENTIFICATION PRODUCTS.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. COMPLY WITH NFPA 70 AND TIA 606-B.

B. COMPLY WITH ANSI Z535.4 FOR SAFETY SIGNS AND LABELS.

C. ADHESIVE-ATTACHED LABELING MATERIALS, INCLUDING LABEL STOCKS, LAMINATING ADHESIVES, AND INKS USED BY LABEL PRINTERS, SHALL COMPLY WITH UL 969.

2.02 COLOR AND LEGEND REQUIREMENTS

A. EQUIPMENT IDENTIFICATION LABELS:
1. BLACK LETTERS ON A WHITE FIELD.

2.03 LABELS

A. VINYL WRAPAROUND LABELS: PREPRINTED, FLEXIBLE LABELS LAMINATED WITH A CLEAR, WEATHER- AND CHEMICAL-RESISTANT COATING AND MATCHING WRAPAROUND CLEAR ADHESIVE TAPE FOR SECURING LABEL ENDS.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. BRADY CORPORATION.
b. CHAMPION AMERICA.
c. EMEDCO.

B. SNAP-AROUND LABELS: SUIT, PRETENSIONED, FLEXIBLE, PREPRINTED, COLOR-CODED ACRYLIC SLEEVES, WITH DIAMETERS SIZED TO SUIT DIAMETERS OF RACEWAY OR CABLE THEY IDENTIFY, THAT STAY IN PLACE BY GRIPPING ACTION.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. BRADY CORPORATION.
b. HELLERMANNTYTON.
c. MARKING SERVICES, INC.

C. SELF-ADHESIVE WRAPAROUND LABELS: PREPRINTED, 3-MIL-THICK, POLYESTER FLEXIBLE LABELS WITH ACRYLIC PRESSURE-SENSITIVE ADHESIVE.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. A'N D CABLE PRODUCTS.
b. BRADY CORPORATION.
c. BROTHER INTERNATIONAL CORPORATION.
2. SELF-LAMINATION: CLEAR; UV-, WEATHER- AND CHEMICAL-RESISTANT; SELF-LAMINATING PROTECTIVE SHIELDS OVER THE LEGEND. LABELS SIZED SUCH THAT THE CLEAR SHIELD OVERLAPS THE ENTIRE PRINTED LEGEND.
3. MARKER FOR LABELS: PERMANENT, WATERPROOF BLACK INK MARKER RECOMMENDED BY TAG MANUFACTURER.
4. MARKER FOR LABELS: MACHINE-PRINTED, PERMANENT, WATERPROOF BLACK INK RECOMMENDED BY PRINTER MANUFACTURER.

D. SELF-ADHESIVE LABELS: POLYESTER, THERMAL, TRANSFER-PRINTED, 3-MIL-THICK, MULTICOLOR, WEATHER- AND UV-RESISTANT, PRESSURE-SENSITIVE ADHESIVE LABELS, CONFIGURED FOR INTENDED USE AND LOCATION.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. A'N D CABLE PRODUCTS.
b. BRADY CORPORATION.
c. BROTHER INTERNATIONAL CORPORATION.
2. MINIMUM NOMINAL SIZE:
a. 1-1/2 BY 6 INCHES FOR RACEWAY AND CONDUCTORS.
b. 3-1/2 BY 5 INCHES FOR EQUIPMENT.
c. AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.

2.04 BANDS AND TUBES

A. SNAP-AROUND, COLOR-CODING BANDS: SUIT, PRETENSIONED, FLEXIBLE, SOLID-COLORED ACRYLIC SLEEVES, 2 INCHES LONG, WITH DIAMETERS SIZED TO SUIT DIAMETERS OF RACEWAY OR CABLE THEY IDENTIFY, THAT STAY IN PLACE BY GRIPPING ACTION.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. BRADY CORPORATION.
b. HELLERMANNTYTON.
c. MARKING SERVICES, INC.
d. PANDUIT CORP.

2.05 UNDERGROUND-LINE WARNING TAPE

A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
1. BRADY CORPORATION.
2. IDEAL INDUSTRIES, INC.
3. LEM PRODUCTS INC.

B. TAPE:
1. RECOMMENDED BY MANUFACTURER FOR THE METHOD OF INSTALLATION AND SUITABLE TO IDENTIFY AND LOCATE UNDERGROUND COMMUNICATIONS UTILITY LINES.
2. PRINTING ON TAPE SHALL BE PERMANENT AND SHALL NOT BE DAMAGED BY BURIAL OPERATIONS.
3. TAPE MATERIAL AND INK SHALL BE CHEMICALLY INERT AND NOT SUBJECT TO DEGRADATION WHEN EXPOSED TO ACIDS, ALKALIS, AND OTHER DESTRUCTIVE SUBSTANCES COMMONLY FOUND IN SOILS.

C. COLOR AND PRINTING:
1. COMPLY WITH ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, AND ANSI Z535.4.
2. INSCRIPTIONS FOR ORANGE-COLORED TAPES: "TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL-FIBER CABLE.

D. TAG: TYPE I:
1. PIGMENTED POLYOLEFIN, BRIGHT COLORED, CONTINUOUS-PRINTED ON ONE SIDE WITH THE INSCRIPTION OF THE UTILITY, COMPOUNDED FOR DIRECT-BURIAL SERVICE.
2. WIDTH: 3 INCHES.
3. THICKNESS: 4 MILS.
4. WEIGHT: 18.5 LB/1000 SQ. FT.
5. TENSILE ACCORDING TO ASTM D 882: 30 LBF AND 2500 PSI.

2.06 SIGNS

A. BAKED-ENAMEL SIGNS:
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. CARLTON INDUSTRIES, LP.
b. CHAMPION AMERICA.
c. EMEDCO.
2. PREPRINTED ALUMINUM SIGNS, HIGH-INTENSITY REFLECTIVE, PUNCHED OR DRILLED FOR FASTENERS, WITH COLORS, LEGEND, AND SIZE REQUIRED FOR APPLICATION.
3. 1/4-INCH GROMMETS IN CORNERS FOR MOUNTING.
4. NOMINAL SIZE: 7 BY 10 INCHES.

B. METAL-BACKED BUTYRATE SIGNS:
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. BRADY CORPORATION.
b. CHAMPION AMERICA.
c. EMEDCO.
d. MARKING SERVICES, INC.
2. WEATHER-RESISTANT, NONFADING, PREPRINTED, CELLULOSE-ACETATE BUTYRATE SIGNS, WITH 0.0396-INCH GALVANIZED-STEEL BACKING, PUNCHED AND DRILLED FOR FASTENERS, AND WITH COLORS, LEGEND, AND SIZE REQUIRED FOR APPLICATION.
3. 1/4-INCH GROMMETS IN CORNERS FOR MOUNTING.
4. NOMINAL SIZE: 10 BY 14 INCHES.

C. LAMINATED-ACRYLIC OR MELAMINE-PLASTIC SIGNS:
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
a. BRADY CORPORATION.
b. CARLTON INDUSTRIES, LP.
c. EMEDCO.
d. MARKING SERVICES, INC.
2. ENGRAVED LEGEND.
3. THICKNESS:
a. FOR SIGNS UP TO 20 SQ. IN., MINIMUM 1/16 INCH THICK.
b. FOR SIGNS LARGER THAN 20 SQ. IN., 1/8 INCH THICK.
c. ENGRAVED LEGEND WITH BLACK LETTERS ON WHITE FACE.
d. SELF-ADHESIVE.
e. FRAMED WITH MITERED ACRYLIC MOLDING AND ARRANGED FOR ATTACHMENT AT APPLICABLE EQUIPMENT.

2.07 CABLE TIES

A. PLENUM-RATED CABLE TIES: SELF-EXTINGUISHING, UV STABILIZED, ONE PIECE, AND SELF-LOCKING.
1. MINIMUM WIDTH: 3/16 INCH.
2. TENSILE STRENGTH AT 73 DEG F ACCORDING TO ASTM D 638: 7000 PSI.
3. UL 94 FLAME RATING: 94V-0.
4. TEMPERATURE RANGE: MINUS 50 TO PLUS 284 DEG F.
5. COLOR: BLACK.

2.08 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. PAINT: COMPLY WITH REQUIREMENTS IN PAINTING SECTIONS FOR PAINT MATERIALS AND APPLICATION REQUIREMENTS. RETAIN PAINT SYSTEM APPLICABLE FOR SURFACE MATERIAL AND LOCATION (EXTERIOR OR INTERIOR).

B. FASTENERS FOR LABELS AND SIGNS: SELF-TAPPING, STAINLESS-STEEL SCREWS OR STAINLESS-STEEL MACHINE SCREWS WITH NUTS AND FLAT AND LOCK WASHERS.

PART 3 - EXECUTION

3.01 PREPARATION

A. SELF-ADHESIVE IDENTIFICATION PRODUCTS: BEFORE APPLYING COMMUNICATIONS IDENTIFICATION PRODUCTS, CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND, USING MATERIALS AND METHODS RECOMMENDED BY MANUFACTURER OF IDENTIFICATION PRODUCT.

3.02 INSTALLATION

A. VERIFY AND COORDINATE IDENTIFICATION NAMES, ABBREVIATIONS, COLORS, AND OTHER FEATURES WITH REQUIREMENTS IN OTHER SECTIONS REQUIRING IDENTIFICATION APPLICATIONS, DRAWINGS, SHOP DRAWINGS, MANUFACTURER'S WIRING DIAGRAMS, AND OPERATION AND MAINTENANCE MANUAL. USE CONSISTENT DESIGNATIONS THROUGHOUT PROJECT.

B. INSTALL IDENTIFYING DEVICES BEFORE INSTALLING ACOUSTICAL CEILINGS AND SIMILAR CONCEALMENT.

C. VERIFY IDENTITY OF EACH ITEM BEFORE INSTALLING IDENTIFICATION PRODUCTS.

D. COORDINATE IDENTIFICATION WITH PROJECT DRAWINGS, MANUFACTURER'S WIRING DIAGRAMS, AND OPERATION AND MAINTENANCE MANUAL.

E. APPLY IDENTIFICATION DEVICES TO SURFACES THAT REQUIRE FINISH AFTER COMPLETING FINISH WORK.

F. INSTALL SIGNS WITH APPROVED LEGEND TO FACILITATE PROPER IDENTIFICATION, OPERATION, AND MAINTENANCE OF COMMUNICATIONS SYSTEMS AND CONNECTED ITEMS.

G. ELEVATED COMPONENTS: INCREASE SIZES OF LABELS, SIGNS, AND LETTERS TO THOSE APPROPRIATE FOR VIEWING FROM THE FLOOR.

H. VINYL WRAPAROUND LABELS:
1. SECURE TIGHT TO SURFACE OF RACEWAY OR CABLE AT A LOCATION WITH HIGH VISIBILITY AND ACCESSIBILITY.
2. ATTACH LABELS THAT ARE NOT SELF-ADHESIVE TYPE WITH CLEAR VINYL TAPE, WITH ADHESIVE APPROPRIATE TO THE LOCATION AND SUBSTRATE.
3. PROVIDE LABEL 6 INCHES FROM CABLE END.

I. SNAP-AROUND LABELS:
1. SECURE TIGHT TO SURFACE AT A LOCATION WITH HIGH VISIBILITY AND ACCESSIBILITY.
2. PROVIDE LABEL 6 INCHES FROM CABLE END.

J. SELF-ADHESIVE WRAPAROUND LABELS:
1. SECURE TIGHT TO SURFACE AT A LOCATION WITH HIGH VISIBILITY AND ACCESSIBILITY.
2. PROVIDE LABEL 6 INCHES FROM CABLE END.

K. SELF-ADHESIVE LABELS:
1. ON EACH ITEM, INSTALL UNIQUE DESIGNATION LABEL THAT IS CONSISTENT WITH WIRING DIAGRAMS, SCHEDULES, AND OPERATION AND MAINTENANCE MANUAL.
2. UNLESS OTHERWISE INDICATED, PROVIDE A SINGLE LINE OF TEXT WITH 1/2-INCH-HIGH LETTERS ON 1-1/2-INCH-HIGH LABEL; WHERE TWO LINES OF TEXT ARE REQUIRED, USE LABELS 2 INCHES HIGH.

L. SNAP-AROUND, COLOR-CODING BANDS: SECURE TIGHT TO SURFACE AT A LOCATION WITH HIGH VISIBILITY AND ACCESSIBILITY.

M. UNDERGROUND-LINE WARNING TAPE:
1. DURING BACKFILLING OF TRENCHES, INSTALL CONTINUOUS UNDERGROUND-LINE WARNING TAPE DIRECTLY ABOVE CABLE OR RACEWAY AT 6 TO 8 INCHES BELOW FINISHED GRADE. USE MULTIPLE TAPES WHERE WIDTH OF MULTIPLE LINES INSTALLED IN A COMMON TRENCH [OR CONCRETE ENVELOPE [EXCEEDS 16 INCHES OVERALL.
2. LIMIT USE OF UNDERGROUND-LINE WARNING TAPE TO DIRECT-BURIED CABLES.
3. INSTALL UNDERGROUND-LINE WARNING TAPE FOR DIRECT-BURIED CABLES AND CABLES IN RACEWAYS.

N. CABLE TIES: GENERAL PURPOSE, EXCEPT AS LISTED BELOW:
1. OUTDOORS: UV-STABILIZED NYLON.
2. IN SPACES HANDLING ENVIRONMENTAL AIR: PLENUM RATED.

3.03 IDENTIFICATION SCHEDULE

A. INSTALL IDENTIFICATION MATERIALS AND DEVICES AT LOCATIONS FOR MOST CONVENIENT VIEWING WITHOUT INTERFERENCE WITH OPERATION AND MAINTENANCE OF EQUIPMENT. INSTALL ACCESS DOORS OR PANELS TO PROVIDE VIEW OF IDENTIFYING DEVICES.

B. IDENTIFY CONDUCTORS, CABLES, AND TERMINALS IN ENCLOSURES AND AT JUNCTIONS, TERMINALS, PULL POINTS, AND LOCATIONS WITH HIGH VISIBILITY. IDENTIFY BY SYSTEM AND CIRCUIT DESIGNATION.

C. ACCESSIBLE FITTINGS FOR RACEWAYS AND CABLES WITHIN BUILDINGS: IDENTIFY COVERS OF EACH JUNCTION AND PULL BOX WITH SELF-ADHESIVE LABELS CONTAINING WIRING SYSTEM LEGEND.
1. SYSTEM LEGENDS SHALL BE AS FOLLOWS:
a. TELECOMMUNICATIONS.
b. <INSERT NAME>.

D. FACEPLATES: LABEL INDIVIDUAL FACEPLATES WITH SELF-ADHESIVE LABELS. PLACE LABEL AT TOP OF FACEPLATE. EACH FACEPLATE SHALL BE LABELED WITH ITS INDIVIDUAL, SEQUENTIAL DESIGNATION[, NUMBERED CLOCKWISE WHEN ENTERING ROOM FROM PRIMARY EGRESS], COMPOSED OF THE FOLLOWING, IN THE ORDER LISTED:
1. WIRING CLOSET DESIGNATION.
2. COLON.
3. FACEPLATE NUMBER.

E. EQUIPMENT ROOM LABELING:
1. RACKS, FRAMES, AND ENCLOSURES: IDENTIFY FRONT AND REAR OF EACH WITH SELF-ADHESIVE LABELS CONTAINING EQUIPMENT DESIGNATION.
2. PATCH PANELS: LABEL INDIVIDUAL ROWS AND OUTLETS, STARTING AT TO LEFT AND WORKING DOWN, WITH SELF-ADHESIVE LABELS.
3. DATA OUTLETS: LABEL EACH OUTLET WITH A SELF-ADHESIVE LABEL INDICATING THE FOLLOWING, IN THE ORDER LISTED:
a. ROOM NUMBER BEING SERVED.
b. COLON.
c. FACEPLATE NUMBER.

F. BACKBONE CABLES: LABEL EACH CABLE WITH A SELF-ADHESIVE WRAPAROUND LABEL INDICATING THE LOCATION OF THE FAR OR OTHER END OF THE BACKBONE CABLE. PATCH PANEL OR PUNCH DOWN BLOCK WHERE CABLE IS TERMINATED SHOULD BE LABELED IDENTICALLY.

G. HORIZONTAL CABLES: LABEL EACH CABLE WITH A SELF-ADHESIVE WRAPAROUND LABEL INDICATING THE FOLLOWING, IN THE ORDER LISTED:
1. ROOM NUMBER.
2. COLON.
3. FACEPLATE NUMBER.

H. LOCATIONS OF UNDERGROUND LINES: UNDERGROUND-LINE WARNING TAPE FOR COPPER, COAXIAL, HYBRID COPPER/FIBER, AND OPTICAL-FIBER CABLE.

I. INSTRUCTIONAL SIGNS: SELF-ADHESIVE LABELS.

J. WARNING LABELS FOR INDOOR CABINETS, BOXES, AND ENCLOSURES: BAKED-ENAMEL WARNING SIGNS.
1. APPLY TO EXTERIOR OF DOOR, COVER, OR OTHER ACCESS.

K. EQUIPMENT IDENTIFICATION LABELS:
1. INDOOR EQUIPMENT: LAMINATED-ACRYLIC OR MELAMINE-PLASTIC SIGN.
2. OUTDOOR EQUIPMENT: LAMINATED-ACRYLIC OR MELAMINE-PLASTIC SIGN.
3. EQUIPMENT TO BE LABELED:
a. COMMUNICATIONS CABINETS.
b. UNINTERRUPTIBLE POWER SUPPLIES.
c. COMPUTER ROOM AIR CONDITIONERS.
d. FIRE-ALARM AND SUPPRESSION EQUIPMENT.
e. EGRESS POINTS.
f. POWER DISTRIBUTION COMPONENTS.

END OF SECTION

SECTION 27 52 00 - ASSISTIVE LISTENING SYSTEM

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. PROVIDE AN INSTALLED FM ASSISTIVE LISTENING SYSTEM IN THE ASSEMBLY SPACES.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

A. DUE TO THE NATURE OF THE PROJECT, THIS SECTION MAY RELATE DIRECTLY TO, OR REQUIRES COORDINATION WITH ALL SECTIONS OF THE CONTRACT DOCUMENTS. SPECIAL ATTENTION SHOULD BE GIVEN TO:
1. SECTION-ELECTRICAL GENERAL REQUIREMENTS

1.03 QUALITY ASSURANCE:

A. ALL MATERIALS SHALL COMPLY WITH APPLICABLE STANDARDS OF THE UNDERWRITERS LABORATORIES INC.

1.04 CONTRACTOR SUBMITTALS:

A. SHOP DRAWINGS AND CATALOG DATA SUBMITTALS SHALL BE MADE IN ACCORDANCE WITH SECTION, "CONTRACTOR SUBMITTALS." SUBMIT SUFFICIENT INFORMATION TO INDICATE THE SCOPE AND QUALITY OF THE ASSISTIVE LISTENING SYSTEM.
1. BLOCK DIAGRAM SHOWING SYSTEM RELATIONSHIPS OF MAJOR COMPONENTS AND QUANTITIES AND INTERCONNECTING CABLE REQUIREMENTS.
2. PLANS SHOWING EQUIPMENT LOCATION AND CONDUCTOR REQUIREMENTS.
3. EQUIPMENT OUTLET DEVICES AND SPECIAL MOUNTING DETAILS.
4. WIRING DIAGRAMS SHOWING TERMINAL IDENTIFICATION FOR FIELD-INSTALLED WIRING.
5. CATALOG LITERATURE WITH COMPONENT SPECIFICATIONS.

1.05 DESCRIPTION:

A. WORK UNDER THIS SECTION INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO FURNISH AND INSTALL A COMPLETE ASSISTIVE LISTENING SYSTEM.

B. THE ASSISTIVE LISTENING SYSTEMS SHALL BE A FREQUENCY MODULATED RADIO TRANSMISSION SYSTEM.

C. THE PORTABLE SYSTEM SHALL UTILIZE A BELT PACK TRANSMITTER WITH HEADSET MICROPHONE.

D. THE ALS SYSTEMS SHALL BE CAPABLE OF OPERATING OVER 3 SEPARATE CHANNELS SIMULTANEOUSLY.

E. RECEIVERS SHALL BE PROVIDED AT A RATE OF 4% OF THE TOTAL SEATING CAPACITY OF EACH ROOM. REFER TO ARCHITECTURAL DRAWINGS FOR MAXIMUM ROOM CAPACITY. QUANTITY SHALL BE AS INDICATED ON DRAWINGS.

F. FEATURES:
1. MULTI PURPOSE-NO SEATING RESTRICTIONS, 1,500 FT SYSTEM RANGE
2. RECEIVERS ARE PRE-TUNED, USERS CONTROL THEIR OWN VOLUME
3. EASILY EXPANDED NO LIMIT TO NUMBER OF USERS.
4. EXCELLENT SOUND QUALITY, FREE FROM INTERFERENCE
5. AUTOMATIC GAIN CONTROL
6. FREQUENCY SYNTHESIZED, PHASE LOCKED LOOP TUNING
7. CAN ACCEPT EITHER BALANCED OR UNBALANCED INPUTS
8. INPUT ATTENUATION AND LOW FREQUENCY ATTENUATION SWITCHES
9. LED POWER AND AUDIO LEVEL INDICATORS

PART 2 - PRODUCTS

2.01 GENERAL:

A. ALL EQUIPMENT SHALL BE THE STANDARD CATALOGUED PRODUCTS OF A SINGLE MANUFACTURER. THE CATALOG NUMBERS OF THE FOLLOWING EQUIPMENT ARE LISTEN TECHNOLOGIES:

B. PORTABLE TRANSMITTER
1. THE PORTABLE FM TRANSMITTER SHALL BE CAPABLE OF BROADCASTING ON 17 CHANNELS AND BE FREQUENCY AGILE.
2. THE TRANSMITTER SHALL HAVE A SNR OF 80 DB OR GREATER.
3. THE TRANSMITTER SHALL OPERATE AT 072 MHZ
4. THE LISTEN LT-800-0072 IS SPECIFIED:
a. LA-278 BEHIND-THE-HEAD MICROPHONE
b. LA-362 NIMH RECHARGEABLE BATTERIES.
c. LA-122 UNIVERSAL ANTENNA KIT
d. LA-326 UNIVERSAL RACK MOUNTING KIT

C. PORTABLE RECEIVER
1. THE FM RECEIVER SHALL BE CAPABLE OF RECEIVING ON 17 WIDE BAND CHANNELS WITH A SNR OF 80DB OR GREATER.
a. THE DEVICE SHALL BE ABLE TO BE LOCKED ON A SINGLE CHANNEL.
b. THE RECEIVER SHALL BE CAPABLE OF SEEKING CHANNELS.
c. THE DEVICE SHALL HAVE AN ADJUSTABLE SQUELCH.
d. THE DEVICE SHALL HAVE AN AUDIO FREQUENCY RESPONSE OF 50 HZ TO 15 KHZ, ±3 DB.
e. THE DEVICE WILL INCORPORATE A STEREO HEADSET JACK THAT ALLOWS THE USER TO PLUG IN EITHER A MONO OR STEREO HEADSET.
f. THE DEVICE SHALL INCORPORATE AN LCD DISPLAY THAT INDICATES CHANNEL, BATTERY LEVEL, LOW BATTERY, BATTERY CHARGING, AND RF SIGNAL STRENGTH.
g. THE RECEIVER SHALL BE ABLE TO FUNCTION IN BOTH DX AND LOCAL MODE.
h. THE UNIT SHALL OPERATE OFF OF 2 AA BATTERIES. THE RECEIVER SHALL INCORPORATE AUTOMATIC BATTERY CHARGING CIRCUITRY FOR RECHARGING OF NIMH BATTERIES.
i. THE LISTEN LR-300-0072 IS SPECIFIED.
2. THE FM RECEIVERS SHALL BE RECHARGED USING A CHARGING CARRYING CASE FOR UP TO 8 UNITS.
a. UNIT CHARGING CASE - THE LISTEN LA-323, LA-324, LA-325, LA-317-01 IS SPECIFIED
1) QUANTITY AS REQUIRED FOR EACH UNIT.
3. THE FM RECEIVERS SHALL EACH BE EQUIPPED WITH EAR SPEAKERS.
a. LA-164 IS SPECIFIED.
b. LA-166 NECK LOOP
1) QUANTITY AS REQUIRED FOR EACH UNIT.
4. RECEIVERS SHALL BE EQUIPPED WITH NIMH RECHARGEABLE BATTERIES.
a. THE LISTEN LA-362 IS SPECIFIED.
b. QUANTITY AS REQUIRED FOR EACH UNIT.

D. PROVIDE SOUND REINFORCEMENT WALL PLAQUES PER ADA REQUIREMENTS TO INDICATE EQUIPMENT AVAILABLE FOR THE HEARING IMPAIRED.
1. VERIFY LOCATION WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION. USE THE "INTERNATIONAL SYMBOL OF ACCESS FOR THE HEARING IMPAIRED".
2. LISTEN TECHNOLOGIES LA-304 ADA ACCESS/COMPLIANCE SIGNAGE KIT.

PART 3 - EXECUTION

3.01 INSTALLATION

A. THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL ASSISTIVE LISTENING SYSTEM.

B. THE ASSISTED LISTENING SYSTEM SHALL BE AN INTEGRAL PART OF THE SOUND REINFORCEMENT SYSTEM FOR THE REQUIRED SPACES.

3.02 TESTS AND ADJUSTMENTS

A. UNDER COMPLETION OF THE INSTALLATION OF ALL EQUIPMENT AND WHEN SAME IS IN FULL OPERATING CONDITION, THE CONTRACTOR SHALL PERFORM THE INITIAL COMPLETION TESTS AND ADJUSTMENTS SPECIFIED HEREINAFTER. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL NECESSARY INSTRUMENTS, EQUIPMENT, MATERIAL, AND LABOR NECESSARY TO COMPLETE THE TESTS.

3.03 TRAINING:

A. PRIOR TO ESTABLISHING A TRAINING SCHEDULE, CONTRACTOR WILL VERIFY OPERATIONAL STATUS OF SYSTEM WITH OWNER'S REP.

B. OWNER PERSONNEL WILL BE TRAINED IN THE OPERATION OF THE ASSISTIVE LISTENING SYSTEM.

C. TRAINING WILL BE CONDUCTED NO LESS THAN TWO TIMES, FOUR HOURS EACH. AN INITIAL FAMILIARIZATION AND A FOLLOW UP FOR DETAILED QUESTIONS.

3.04 WARRANTY

A. THE MANUFACTURER SHALL GUARANTEE THE SYSTEM AND COMPONENTS TO BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF TWO YEARS FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER.

END OF SECTION

SECTION 27 13 20 - DATA COMMUNICATIONS SYSTEM

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. FURNISH AND INSTALL A COMPLETE DATA COMMUNICATIONS SYSTEM. THE SYSTEM SHALL CONSIST OF BUT NOT LIMITED TO CABLES (TWISTED-PAIR COPPER), INNERDUCT, PATCH PANELS, FIBER INTERCONNECT EQUIPMENT, CONNECTORS (FIBER AND COPPER), WIRING BLOCKS AND TELECOMMUNICATIONS OUTLETS AND ANY OTHER EQUIPMENT AND ACCESSORIES AS REQUIRED. THE WORK PERFORMED UNDER THIS SPECIFICATION SHALL BE OF GOOD QUALITY AND PERFORMED IN A WORKMANLIKE MANNER. IN THIS CONTEXT "GOOD QUALITY" MEANS THE WORK SHALL MEET INDUSTRY TECHNICAL STANDARDS AND QUALITY OF APPEARANCE. THE OWNER RESERVES THE RIGHT TO REJECT ALL OR A PORTION OF THE WORK PERFORMED, EITHER ON TECHNICAL OR AESTHETIC GROUNDS. ALL MATERIALS TO COMPLY WITH SCHOOL DISTRICT STANDARDS.

B. THE COPPER CABLING SYSTEM SHALL PERFORM TO CATEGORY-6E, 6A PERMANENT LINK PERFORMANCE REQUIREMENTS, FROM PATCH PANEL TO OUTLET JACK. THE SYSTEM SHALL BE CAPABLE FOR TRANSMISSION OF THE GIGABIT ETHERNET (1000BASE-T) PROTOCOL AND OTHER DESIGNED FOR CATEGORY-6E, 6A CABLING SYSTEMS.

1.02 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATIONS SECTIONS, APPLY TO WORK SPECIFIED IN THIS SECTION.

B. SECTIONS 26 00 00, 26 05 00, 27 05 50.

C. APPLICABLE STANDARDS:
1. ANSI/TIA/EIA-569-A, COMMERCIAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.
2. ANSI/TIA/EIA-568-B, COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD.
3. ANSI/TIA/EIA-568-B.2, T

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b. TESTS: SIGNAL ATTENUATION, NOISE, NEAR END CROSS-TALK (NEXT), ELFEXT, POWER SUM NEXT, ACR, RETURN LOSS, CABLE LENGTH, PROPAGATION DELAY AND DELAY SKEW.

c. TEST CRITERIA: THE SYSTEM SHALL BE TESTED TO CATEGORY-6E, 6A COMPLIANCE. THE TEST PATH SHALL INCLUDE WORKSTATION JACKS, STATION CABLES, AND JACK PANELS (PERMANENT LINK CONFIGURATION). WHERE ADAPTER (PATCH) CABLES ARE SPECIFIED, THE TESTS SHALL INCLUDE THE PATCH CABLES ALSO (CHANNEL CONFIGURATION). THE OWNER RESERVES THE RIGHT TO HAVE CABLES REPLACED AND RETESTED IF PERFORMANCE PARAMETERS ARE NOT MET.

B. DOCUMENTATION: CONTRACTOR SHALL PROVIDE DOCUMENTATION TO INCLUDE TEST RESULTS AND AS-BUILT DRAWINGS.

1. WORK STATION CABLE: THE RESULTS OF THE WORK STATION CABLE TESTS SHALL BE PROVIDED IN THE FORM OF PRINT-OUTS FROM THE TEST EQUIPMENT.
2. AS-BUILT DRAWINGS: PROVIDE REPRODUCIBLE VELLUM AS-BUILTS, FULL SIZE INDICATING EACH OUTLET LOCATION AND DESIGNATION. SHOW IDF/MDF LOCATIONS AND CABLE DESIGNATIONS TERMINATED.

2.05 ACCEPTANCE

A. ACCEPTANCE OF THE DATA COMMUNICATIONS SYSTEM, BY OWNER, SHALL BE BASED ON THE RESULTS OF TESTING, FUNCTIONALITY, AND THE RECEIPT OF DOCUMENTATION. WITH REGARD TO TESTING, ALL FIBER SEGMENTS AND ALL WORKSTATION DATA CABLES MUST MEET THE CRITERIA ESTABLISHED. WITH REGARD TO FUNCTIONALITY, CONTRACTOR MUST DEMONSTRATE TO OWNER THAT SPECIFIED DATA SIGNALS CAN BE SUCCESSFULLY TRANSMITTED, BI-DIRECTIONALLY, FROM THE MDF/IDF TO AND FROM SOME NUMBER OF INDIVIDUAL DATA OUTLETS. THE NUMBER OF OUTLET LOCATIONS TO BE TESTED SHALL BE DETERMINED BY OWNER. WITH REGARD TO DOCUMENTATION, ALL REQUIRED DOCUMENTATION SHALL BE SUBMITTED TO OWNER.

PART 3 - EXECUTION

3.01 DIVISION OF WORK

A. CONTRACTOR SHALL INSTALL THE DATA COMMUNICATIONS SYSTEM AS DESCRIBED IN THE PRECEDING. INSTALLATION SHALL RESULT IN A FUNCTIONAL SYSTEM. THE SCOPE OF WORK INCLUDES:

1. ALL NECESSARY CONDUIT AND RACEWAY.
2. NECESSARY TRENCHING, BACKFILL, REPLACEMENT OF LANDSCAPE MATERIAL, REPAIR OF DAMAGE TO UTILITIES OR STRUCTURES, REPLACEMENT OF ASPHALT AND BASE, AND REPLACEMENT OR REPAIR TO CONCRETE FLAT WORK INCIDENTAL TO CONDUIT OR RACEWAY INSTALLATION.
3. PROVIDE AND INSTALL ALL EQUIPMENT.
4. SUPPLY AND INSTALL ALL MATERIAL DISCUSSED IN THIS SPECIFICATION.
5. TEST AND DOCUMENT SYSTEM, UPON COMPLETION.
6. SUPPLY AND INSTALL ALL MATERIAL NECESSARY, WHETHER OR NOT DISCUSSED IN THIS SPECIFICATION, TO RESULT IN A COMPLETE AND FUNCTIONAL SYSTEM.

END OF SECTION

CONSULTANTS, INC.TELEPHONE CABLING SYSTEM240047.0027 13 10 - 1

SECTION 27 13 10 - TELEPHONE CABLING SYSTEM

PART 1 - GENERAL

1.01 WORK INCLUDED

A. FURNISH AND INSTALL A COMPLETE TELEPHONE CABLING SYSTEM INCLUDING ALL WIRING, CONNECTORS, JACKS, TERMINAL BLOCKS, BACKBOARDS, CABINETS, HARNESSES, ETC. INCLUDING ANY INCIDENTAL EQUIPMENT FOR A COMPLETE SYSTEM.

1.02 RELATED DOCUMENTS AND SECTIONS

A. UNDERWRITERS LABORATORIES SPECIFICATIONS, UL13 AND UL444.

B. CALIFORNIA ELECTRICAL CODE (CEC) ARTICLES 725 AND 800.

C. ELECTRONIC INDUSTRIES ASSOCIATION/TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ETA/TIA) DOCUMENT #TSB-36 AND 40, AND EIA/TIA-568 AND 569.

D. SECTION 26 00 00, 26 05 00, 27 05 50.

E. DIVISION 01.

1.03 QUALITY ASSURANCE

A. MANUFACTURER'S QUALIFICATIONS: FIRMS REGULARLY ENGAGED IN MANUFACTURER OF TELEPHONE COMMUNICATIONS SYSTEM CABLES AND COMPONENTS AND WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN FIVE YEARS.

B. INSTALLER'S QUALIFICATIONS: FIRMS REGULARLY ENGAGED IN INSTALLATION OF TELEPHONE COMMUNICATIONS SYSTEM CABLES AND COMPONENTS.

1.04 SUBMITTALS

A. SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR EACH ITEM, INCLUDING THE FOLLOWING:

1. COMPLETE WIRING DIAGRAM INCLUDING WIRE SIZES, POINT-BY-POINTS, ETC.
2. SHOW OUTLET NUMBERING FOR ALL STATION CABLING.
3. ALL DRAWINGS SHALL BE NEAT AND LEGIBLE.
4. SUBMIT COMPLETE PRODUCT DATA INCLUDING CUT SHEET AND SPECIFICATION SHEET.

B. AS-BUILT DRAWINGS AND O&M MANUALS SHALL BE FURNISHED UPON COMPLETION OF THE PROJECT.

PART 2 - PRODUCTS

2.01 CABLING SYSTEM

A. CABLE, CONNECTORS, BLOCKS, WALL MOUNTED HARDWARE, ETC. SHALL BE MANUFACTURED BY LUCENT TECHNOLOGIES OR EQUAL.

1. ALL TELEPHONE SYSTEM CABLING SHALL BE UNSHIELDED TWISTED PAIR.
2. THE HORIZONTAL CABLE SHALL BE 4-PAIR CATEGORY 6E UTP AND SHALL MEET EIA/TIA COMMERCIAL BUILDING TELECOMMUNICATIONS WIRING STANDARDS FOR HORIZONTAL WIRE.
3. THE STATION CABLE WILL TERMINATE ON 110A WALL MOUNTED HARDWARE, WITH LEGS.
4. THE TWISTS AND THE OUTER JACKET OF ALL CABLES SHALL BE MAINTAINED WITHIN ONE INCH (1") OF THE TERMINATION POINT.
5. PROVIDE A RJ45 TYPE CATEGORY 6E EIGHT PIN MODULAR JACK (M18H) AT THE STATION END OF ALL 4 PAIR CABLES. ALL JACKS WILL USE THE EIA/TIA - 568B WIRING CONFIGURATION.
6. TWISTED PAIR ENTRANCE AND DISTRIBUTION CABLE: ALL TWISTED PAIR ENTRANCE CABLES SHALL BE CATEGORY-6E, 22 GAUGE, TWISTED PAIRS. THEY SHALL COMPLY WITH UL AND CEC ARTICLE 800 REQUIREMENTS. INDOOR CABLE SHALL BE RATED FOR THE ENVIRONMENT, CM FOR NON PLENUM/RISER AREAS AND CMP FOR RISER AND PLENUM AREAS. OUTDOOR CABLE SHALL BE SUITABLE FOR DIRECT BURIAL, OSP TYPE.
7. TERMINATE ENTRANCE AND DISTRIBUTION CABLES ON 110 BLOCKS WITH LEGS. PROVIDE CROSS CONNECT TO STATION CABLE BLOCKS.

PART 3 - EXECUTION

3.01 INSTALLATION REQUIREMENTS

A. TECHNICIANS AND WORKMAN EMPLOYED ON THIS PROJECT SHALL BE PARTICULARLY SKILLED IN THIS TYPE OF WORK. WORKMANSHIP ON INSTALLED SYSTEMS SHALL BE OF PROFESSIONAL QUALITY, BEST COMMERCIAL PRACTICE.

B. FURNISH AND INSTALL ALL REQUIRED INTERFACES, WIRING, AND COMPONENTS TO OTHER SYSTEMS AND OR DEVICES REQUIRING TELEPHONE SYSTEM INTERFACE OR SERVICE.

C. INSTALL ALL BACKBOARDS, RACKS, ETC. NECESSARY TO COMPLETE FULL INSTALLATION.

D. TEST AND LABEL ALL NEW COPPER WIRING. TESTING FOR COPPER CABLES MUST INCLUDE AT A MINIMUM, CONTINUITY, SHORTS, CROSSES, AND GROUNDS. LABELING SHALL BE IDENTIFIED BY LOCATION AND ROOM NUMBERS AS FURNISHED BY DISTRICT. PRIOR TO PERFORMING FINAL LABELING, LABELING INFORMATION SHALL BE COORDINATED WITH DISTRICT.

E. LABELING OF ALL TERMINATIONS MUST BE DONE PROFESSIONALLY, BASED ON A CLIENT APPROVED METHOD.

F. ALL JELLY FILLED CABLES SHALL BE PLUGGED TO PREVENT JELLY SEEPAGE.

G. PROVIDE TERMINAL BOARDS AND CROSS CONNECT BLOCKS AS REQUIRED.

H. PROVIDE PLYWOOD BACKBOARD AS SHOWN ON THE DRAWINGS.

I. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL MODULAR BACKBOARDS BLOCKS, MODULAR MUSHROOM BOARDS, D-RINGS ETC., NEEDED FOR THE TERMINAL BOARDS. THE BLOCKS SHOULD ALLOW FOR A MINIMUM OF 50% GROWTH.

J. STATION CABLES SHALL BE TERMINATED ON SEPARATE BLOCKS AND NEATLY MARKED WITH CABLE NUMBERS.

K. BLOCKS SHALL BE INSTALLED TOP TO BOTTOM AND LEFT TO RIGHT.

3.02 GROUNDING

A. PROVIDE EQUIPMENT GROUNDING CONDUCTOR, #6AWG BARE STRANDED COPPER IN 1/2" CONDUIT TO THE BUILDING'S MAIN GROUNDING ELECTRODE OR BUS. LOCATE AT EACH TERMINAL BOARD AND BOND TO BUILDING GROUNDING ELECTRODE SYSTEM. PROVIDE 10 FEET OF SLACK WIRE COILED AT TERMINAL BOARD.

3.03 CONDUIT SEPARATION

A. SEPARATE THE TELEPHONE CONDUITS FROM ELECTRIC LIGHT OR POWER CONDUIT BY NOT LESS THAN 6-INCHES.

3.04 CONSTRUCTION MEETINGS

A. AS A MINIMUM THE CONTRACTOR SHALL SCHEDULE CONSTRUCTION MEETINGS AT THE JOBSITE AS FOLLOWS:

1. PREWIRE MEETING SHALL OCCUR AFTER RACEWAYS ARE INSTALLED AND PRIOR TO PULLING OF ANY WIRE OR CABLE.
2. PRE-TERMINATION MEETING SHALL OCCUR AFTER WIRE AND CABLE HAS BEEN INSTALLED AND PRIOR TO TERMINATION.

B. MEETINGS SHALL INCLUDE THE PROJECT INSPECTOR, SCHOOLS REPRESENTATIVE, THE ELECTRICAL SUBCONTRACTOR, AND THE TELEPHONE SYSTEM CONTRACTOR AS A MINIMUM.

3.05 TESTS

A. AFTER ALL EQUIPMENT SPECIFIED HEREIN HAS BEEN INSTALLED AND IS IN OPERATING CONDITION, PERFORMANCE TESTS SHALL BE CONDUCTED TO DETERMINE THAT INSTALLATION AND COMPONENTS COMPLY WITH THESE SPECIFICATIONS. CONTRACTOR SHALL FURNISH COMPETENT PERSONNEL FOR THESE TESTS.

B. TESTING SHALL BE SCHEDULED WITH THE DISTRICT AND SHALL OCCUR BEFORE OCCUPANCY OCCURS.

3.06 WARRANTY

A. THE TELEPHONE SYSTEM SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR AFTER ACCEPTANCE OF THE INSTALLATION. DURING THE WARRANTY PERIOD, ANY MATERIAL SHOWING ANY MECHANICAL, OR ELECTRICAL DEFECTS SHALL BE REPLACED PROMPTLY BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

END OF SECTION

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AGENCY APPROVAL:

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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

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JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED:

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
TECHNOLOGY SPECIFICATIONS

CONSTRUCTION DOCUMENTS

DATE: 03/11/2025 | CLIENT PROJ NO: 3431007000

SHEET:
T3.2-4

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ELECTRICAL ABBREVIATION

ABBREVIATION	DESCRIPTION
A	AMPERES, AMBER
AC	ALTERNATING CURRENT, AIR CONDITIONER
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AVAILABLE INTERRUPTING CAPACITY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT, CLOSE, CONTROL
CB	CIRCUIT BREAKER
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
CLG	CEILING
COM	COMMUNICATION
CT	CURRENT TRANSFORMER
CU	COPPER
(D)	DEMOLISH
(E)	EXISTING
(ER)	EXISTING TO BE RELOCATED
EF	EXHAUST FAN
ECH	ELECTRIC CONVECTION HEATER
F	FUSE
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GRC	GALVANIZED RIGID STEEL CONDUIT
KVA	KILOVOLT AMPERES
KW	KILOWATT
LED	LIGHT EMITTING DIODE
MDB	MAIN DISTRIBUTION BOARD
MDP	MAIN DISTRIBUTION PANEL
MSB	MAIN SWITCHBOARD
MT, MTD	MOUNT, MOUNTED
MT	EMPTY CONDUIT WITH NYLON PULL CORD
N/A	NOT APPLICABLE
(N)	NEW
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OS	OCCUPANCY SENSOR
PH	PHASE
PHP	PACKAGED HEAT PUMP
PNL	PANEL
REF	REFERENCE
REQD	REQUIRED
S	SWITCH
SIM	SIMILAR
TELE	TELEPHONE
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
V	VOLTS, VOLTAGE
W/	WITH
W	WIRE, WHITE
WP	WEATHERPROOF
XFMR	TRANSFORMER

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	GENERAL
X / X	DETAIL NUMBER AND SHEET LOCATION
	NEW WORK
XX·X LOCATION	EQUIPMENT IDENTIFICATION
1	KEYED NOTE
	LIGHTING
	CEILING FAN
	EXIT SIGN CEILING MOUNTED, ARROW(S) INDICATES DIRECTION IF SHOWN
	EXIT SIGN WALL MOUNTED, ARROW(S) INDICATES DIRECTION IF SHOWN
	AREA LUMINAIRE ARM MOUNTED WITH POLE AND CONCRETE BASE
	SURFACE OR PENDANT MOUNTED LUMINAIRE
	SURFACE OR PENDANT MOUNTED LUMINAIRE CONNECTED TO EMERGENCY/LIFE SAFETY CIRCUIT OR WITH INTEGRAL EMERGENCY BATTERY CONNECTED TO UNSWITCHED CIRCUIT
	WALL MOUNTED LUMINAIRE
	BOLLARD
	MISCELLANEOUS
#10 T B-27,29,31. B-27,29,31.	BRANCH CIRCUIT WIRING. ARROW INDICATES HOME RUN TO PANEL WITH CIRCUITS AS NOTED. WIRE SIZE IS #12 AWG MINIMUM UNLESS NOTED OTHERWISE. SHORT TICK MARKS INDICATE PHASE CONDUCTORS. LONG TICK MARKS INDICATE NEUTRAL CONDUCTORS. A SINGLE CURVED TICK MARK INDICATES INSULATED GREEN GROUND CONDUCTOR. SECOND CURVED TICK MARK INDICATES "ISOLATED GROUND" (GREEN INSULATION WITH YELLOW STRIPE) CONDUCTOR.
	BRANCH PANEL
	CIRCUIT BREAKER
	CURRENT TRANSFORMER
M	DIGITAL TYPE METER WITH VOLTMETER, AMMETER, KW METER, KVA METER, KVAR METER, AND %THD METER
	EQUIPMENT CONNECTION ITEM. REFER TO SCHEDULE
	FLUSH MOUNT EQUIPMENT ENCLOSURE AS NOTED
	FLUSH WALL MOUNTED BRANCH PANEL
	GROUND ROD
	GROUNDING POINT
	LANDING LUG
	MAIN DISTRIBUTION PANEL / SUB DISTRIBUTION PANEL
M	METER WITH CONNECTION
	SURFACE MOUNT EQUIPMENT ENCLOSURE AS NOTED

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
UT	UTILITY TRANSFORMER PAD/VAULT
	WALL MOUNTING BRACKET
	WATER PIPE GROUND CONNECTION
	CONNECTIONS / EQUIPMENT
	HEAVY DUTY FUSED DISCONNECT SWITCH
J OR J	JUNCTION BOX
J	JUNCTION BOX WITH FLEX CONNECTION TO EQUIPMENT
J	WALL-MOUNTED JUNCTION BOX
	NON-FUSED DISCONNECT SWITCH
T	TRANSFORMER
M	DOORBELL - NUTONE #LA11WH +7'-6"
	DOORBELL PUSH BUTTON
	ENCLOSED CIRCUIT BREAKER
	RACEWAYS
	CONDUIT CONCEALED IN WALL OR CEILING SPACE
	CONDUIT ROUTED BELOW FLOOR / GRADE
	CATV ROUTED BELOW FLOOR / GRADE
	TEL/DATA ROUTED BELOW FLOOR / GRADE
	CONDUIT ELLED DOWN
	CONDUIT ELLED UP
	CONDUIT/WIRING CONTINUATION
	CONDUIT/WIRING STUBBED OUT WITH END CAP OR INSULATED PLASTIC BUSHING
	FLEXIBLE CONDUIT
	TELEPHONE BACKBOARD
	TELECOMMUNICATIONS
	RACEWAY ONLY DATA OUTLET. PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 1" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. SEE LETTER CODE LIST AT DATA/TELEPHONE OUTLET FOR OPTIONS.
	RACEWAY ONLY DATA/TELEPHONE OUTLET. PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 1" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. (MULTIPLE LETTERS INDICATE MULTIPLE OPTIONS) A = ABOVE COUNTER C = CEILING MOUNTED ABOVE ACCESSIBLE CEILING F = FLUSH CEILING MOUNTED R = SURFACE MOUNTED ON RACEWAY
	RACEWAY ONLY TELEPHONE OUTLET. PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 3/4" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. SEE LETTER CODE LIST AT DATA/TELEPHONE OUTLET FOR OPTIONS.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	SWITCHES AND RECEPTACLES
	DUPLEX RECEPTACLE (MULTIPLE LETTERS INDICATE MULTIPLE OPTIONS) A = ABOVE COUNTER B = CLOCK HANGER C = FLUSH CEILING MOUNTED E = EMERGENCY F = ARC FAULT PROTECTED BY BREAKER IN PANEL G = GROUND FAULT CIRCUIT INTERRUPTER H = HOSPITAL GRADE K = CHILD RESISTANT COVER L = ISOLATED GROUND P = PENDANT MOUNTED WITH CORD GRIPS. VERIFY PENDANT LENGTH S = SPLIT WIRED T = TAMPER RESISTANT SHUTTERED RECEPTACLE W = WEATHERPROOF CONTINUOUS USE COVER, GFCI PROTECTED, WITH WEATHER-RESISTANT RECEPTACLE ? = DESIGNER DEFINED
	SPLIT DUPLEX RECEPTACLE, TOP IS CONTROLLED
	DOUBLE DUPLEX RECEPTACLE. SEE LETTER CODE LIST AT DUPLEX RECEPTACLE FOR OPTIONS
	SINGLE RECEPTACLE. SEE LETTER CODE LIST AT DUPLEX RECEPTACLE FOR OPTIONS
	EQUIPMENT ELECTRICAL CONNECTION
	SPECIAL PURPOSE RECEPTACLE. LETTER CODE DENOTES RECEPTACLE CONFIGURATION LX-XXR = NEMA CONFIGURATION TWIST-LOCK RECEPTACLE X-XXR = NEMA CONFIGURATION STRAIGHT BLADE RECEPTACLE P = PENDANT MOUNT WITH CORD GRIPS. VERIFY PENDANT LENGTH X = COORDINATE RECEPTACLE CONFIGURATION WITH EQUIPMENT BEING SUPPLIED
	DEVICE OUTLETS SHALL BE NO MORE THAN +48" AFF TO TOP OF BOX NOR LESS THAN +15"AFF TO BOTTOM OF BOX PER CBC 11B-308.1.2
$	SINGLE POLE SWITCH 2 = DOUBLE POLE SWITCH 3 = THREE-WAY SWITCH 4 = FOUR-WAY SWITCH a THRU z (LOWERCASE) = LUMINAIRE CONTROL DESIGNATION F = FAN SPEED CONTROL K = KEY OPERATED SWITCH L = LIGHTED HANDLE M = MANUAL MOTOR STARTER WITH THERMAL OVERLOAD P = SWITCH WITH PILOT LIGHT S = SENTRY SWITCH T = INTERVAL TIMER W = WEATHERPROOF SWITCH V = LOW VOLTAGE SWITCH ? = DESIGNER DEFINED SWITCH
D a,b,c	MANUAL DIMMER WITH ON/OFF OVERRIDE. PROVIDE SEPARATE DIMMER AND BOX FOR EACH ZONE INDICATED.
OS	WALL MOUNTED DUAL TECH OCCUPANCY SENSOR WITH DIMMER AND MANUAL ON/OFF OVERRIDE
	DUPLEX RECEPTACLE, FLUSH FLOOR
OS	CEILING MOUNTED OCCUPANCY SENSOR (SELF CONTAINED)
DS	CEILING MOUNTED DAYLIGHTING SENSOR
XX-1 (SEE SCHEDULE)	MOTOR / ELECTRICAL EQUIPMENT

ELECTRICAL GENERAL NOTES

A. ALL WORK SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND AUTHORITIES HAVING JURISDICTION.

B. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS AND ARRANGE ALL REQUIRED INSPECTIONS.

C. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS AND TRADES.

D. THESE DRAWINGS, AS PREPARED, ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS CONSTRUCTION OF THE PROJECT AND THE WORK OF THE TRADES WILL PERMIT. EQUIPMENT LOCATIONS INDICATED ARE APPROXIMATE. COORDINATE EXACT LOCATIONS AND REQUIRED CLEARANCES WITH EQUIPMENT SUPPLIER AND ALL TRADES PRIOR TO INSTALLATION.

E. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL THE EQUIPMENT INDICATED WITHIN THESE DRAWINGS UNLESS OTHERWISE NOTED. VERIFY LOCATION AND DIMENSIONS IN THE FIELD PRIOR TO FABRICATION AND / OR INSTALLATION.

F. ALL ROOF PENETRATIONS SHALL BE AT THE CONTRACTOR'S EXPENSE. COORDINATE WITH OWNER'S ROOFING CONTRACTOR SO AS NOT TO VOID ANY EXISTING ROOF WARRANTIES.

G. THE ENTIRE INSTALLATION SHALL BE GUARANTEED FREE OF DEFECTS AND CONTRACTOR SHALL REPAIR AND / OR REPLACE ANY DEFECTIVE MATERIALS OR EQUIPMENT AT NO COST TO THE OWNER FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY ARCHITECT OR ENGINEER.

H. ALL WORK SHALL BE SUBJECT TO THE ACCEPTANCE AND APPROVAL OF THE ARCHITECT AND OWNER. THE ARCHITECT SHALL BE NOTIFIED OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. FAILURE OF PROPER NOTIFICATION DOES NOT RELIEVE THE CONTRACTOR. THE CONTRACTOR SHALL CORRECT ANY AND ALL WORK ARISING FROM SUCH FAILURE TO COORDINATE DISCREPANCIES TO THE SATISFACTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.

I. ALL JUNCTION BOXES SHOWN ON THIS PLAN ARE TO BE INSTALLED ABOVE THE FINISHED CEILING.

ELECTRICAL DEMOLITION NOTES

A. THE ELECTRICAL DRAWING SET IS PREPARED BASE OF LIMITED FIELD OBSERVATION ONLY. ACTUAL CONDITIONS MAY VARY IN FIELD. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ELECTRICAL ENGINEER OF RECORD PRIOR TO BID.

B. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PHASES OF DEMOLITION AND CONSTRUCTION. COORDINATE WITH GENERAL CONSTRUCTION.

C. DISCONNECT AND MOVE ALL ELECTRICAL DEVICES AND LIGHTING FIXTURES IN DEMOLITION AREAS UNLESS NOTED OTHERWISE.

D. DISCONNECT AND REMOVE ALL ELECTRICAL DEVICES IN WALLS TO BE DEMOLISHED. WALLS TO BE DEMOLISHED ARE SHOWN DASHED. DISCONNECT AND REMOVE ASSOCIATED CONDUIT AND WIRE BACK TO LAST REMAINING DEVICE. FURNISH AND INSTALL CONDUIT AND WIRE AS NECESSARY TO CONTINUITY OF CIRCUIT(S) TO ANY EXISTING DEVICES TO REMAIN. COORDINATE AND VERIFY REQUIREMENTS WITH NEW WORK IN AREA.

E. FURNISH AND INSTALL CONDUIT AND WIRE AS NECESSARY FOR CONTINUITY OF ANY FEEDERS OR BRANCH CIRCUIT ORIGINATING OUTSIDE THE DEMOLITION AREA THAT SERVES ANY ELECTRICAL EQUIPMENT OR DEVICES TO REMAIN AFTER DEMOLITION. MODIFY OR REPLACE AS REQUIRED.

F. FURNISH AND INSTALL CONDUIT AND/OR COMMUNICATIONS/DATA WIRING AS NECESSARY FOR CONTINUITY OF ANY WIRING ORIGINATING OUTSIDE THE DEMOLITION AREA THAT SERVES ANY COMMUNICATION/DATA EQUIPMENT OR DEVICES TO REMAIN AFTER DEMOLITION. MODIFY OR REPLACE AS REQUIRED.

G. DISCONNECT AND REMOVE LIGHT SWITCHES IN DEMOLITION AREAS AS NECESSARY TO ACCOMMODATE NEW DOOR CONFIGURATIONS.

H. DISCONNECT AND REMOVE ANY EXISTING ELECTRICAL DEVICES AND BACK BOXES AS NECESSARY WHERE NEW WALL CONSTRUCTION WILL INTERSECT AN EXISTING WALL. FURNISH AND INSTALL CONDUIT AND WIRE AS REQUIRED FOR CONTINUITY OF CIRCUIT(S).

I. FURNISH AND INSTALL BLANK COVER PLATES OVER ALL EXISTING UNUSED OPENINGS.

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

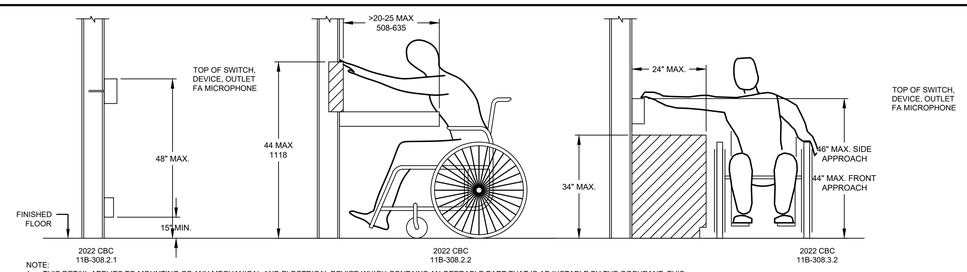
THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

MOUNTING OVER OBSTRUCTION DETAIL



NOTE:
1. THIS DETAIL APPLIES TO MOUNTING OF ANY MECHANICAL AND ELECTRICAL DEVICE WHICH CONTAINS AN OPERABLE PART THAT IS ADJUSTABLE BY THE OCCUPANT. THIS DOES NOT APPLY TO SENSORS OR CONTROLS THAT ARE ONLY ADJUSTABLE THROUGH THE BUILDING AUTOMATION SYSTEM (IE: TEMPERATURE AND HUMIDITY SENSORS).

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7 SECTION 13.3 AS DEFINED IN ASCE 7 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. THE MEP DESIGN PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING(MP), MECHANICAL DUCTS(MD), PLUMBING PIPING(PP), ELECTRICAL DISTRIBUTION SYSTEMS(E):

MP☐ MD☐ PP☐ E☒	OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
MP☐ MD☐ PP☐ E☐	OPTION 2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL
MP☐ MD☐ PP☐ E☐	OPTION 3: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL

SHEET INDEX

E0.1-3	ELECTRICAL COVER SHEET
E0.2-3	ONE-LINE DIAGRAM & SCHEDULES
E1.0-3	ELECTRICAL SITE PLAN
E2.0-3	TITLE 24 - LTO FORMS
E3.0-3	ELECTRICAL SPECIFICATIONS
E3.1-3	ELECTRICAL SPECIFICATIONS

AGENCY APPROVAL:

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LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUMA PEO E 24187 EXPIRES 6/30/26 ELECTRICAL STATE OF CALIFORNIA

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED: 04-25-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
ELECTRICAL COVER SHEET

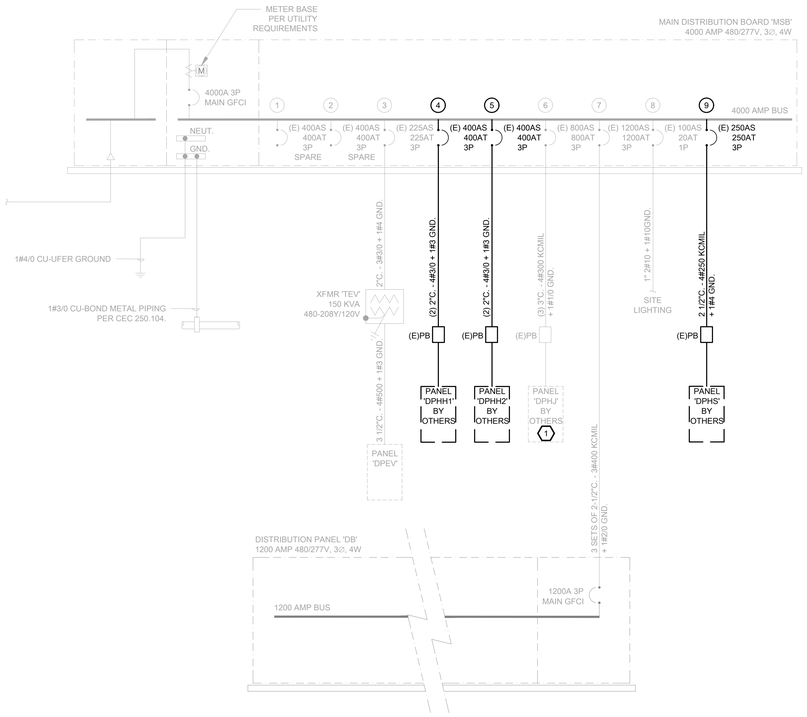
CONSTRUCTION DOCUMENTS

DATE: 04.30.2025 | CLIENT PROJ NO: 3431007000

SHEET:
E0.1-3

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY 1" WHEN PRINTED ON ANSI SHEETS ORIGINAL PAGE SIZE



ONE LINE DIAGRAM

SCALE : NONE

1 / E0.2-3

LIGHTING FIXTURE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	LAMPS	VOLTS	WATTS	COLOR	LUMENS	MOUNTING	NOTES
WP	ENDURANCE WALLPACK	WAC WP-LED119-30-aGH	LED	MVOLT	19	30	1390	WALL	1

NOTES:

1 COORDINATE FINAL MOUNTING HEIGHT IN FIELD WITH ARCHITECT.

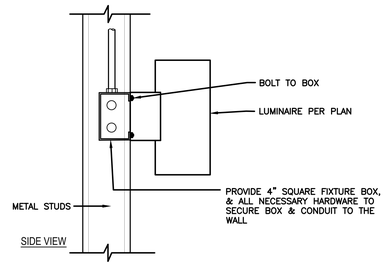
GENERAL NOTES:

A. THIS LIGHTING SCHEDULE IS NOT COMPLETE WITHOUT A COPY OF THE PROJECT MANUAL CONTAINING ELECTRICAL SPECIFICATIONS.
SPECIFIED MANUFACTURERS ARE APPROVED TO SUBMIT BID. INCLUSION DOES NOT RELIEVE MANUFACTURER FROM SUPPLYING PRODUCT AS DESCRIBED.

B. PROVIDE SUBMITTALS THAT INCLUDE LIGHTING FIXTURE, LAMP, AND DRIVER INFORMATION FOR EACH FIXTURE, WITH APPLICABLE OPTIONS CLEARLY CHECKED OR HIGHLIGHTED. SUBMITTALS NOT INCLUDING THIS INFORMATION WILL BE RETURNED AS REJECTED BY THE ENGINEER OF RECORD.

C. PROVIDE COMMISSIONING OF THE LIGHTING AND LIGHTING CONTROLS IN ACCORDANCE WITH CALIFORNIA TITLE 24 COMMISSIONING REQUIREMENTS.

D. COORDINATE COLOR TEMPERATURE WITH ARCHITECT.



EXTERIOR WALL FIXTURE MOUNTING DETAIL

SCALE : NONE

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Δ	DESCRIPTION	DATE

KEYNOTES

1. PANEL EQUIPMENT IS PROVIDED BY BUILDING MANUFACTURER IN INCREMENT 4.

NOTES

capital engineering
RANCHO CORDOVA, CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUIA KO E 24187 EXPIRES 6/30/26 ELECTRICAL STATE OF CALIFORNIA

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DATE SIGNED: 04-25-2025

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945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
ELECTRICAL ONE-LINE DIAGRAM & SCHEDULES

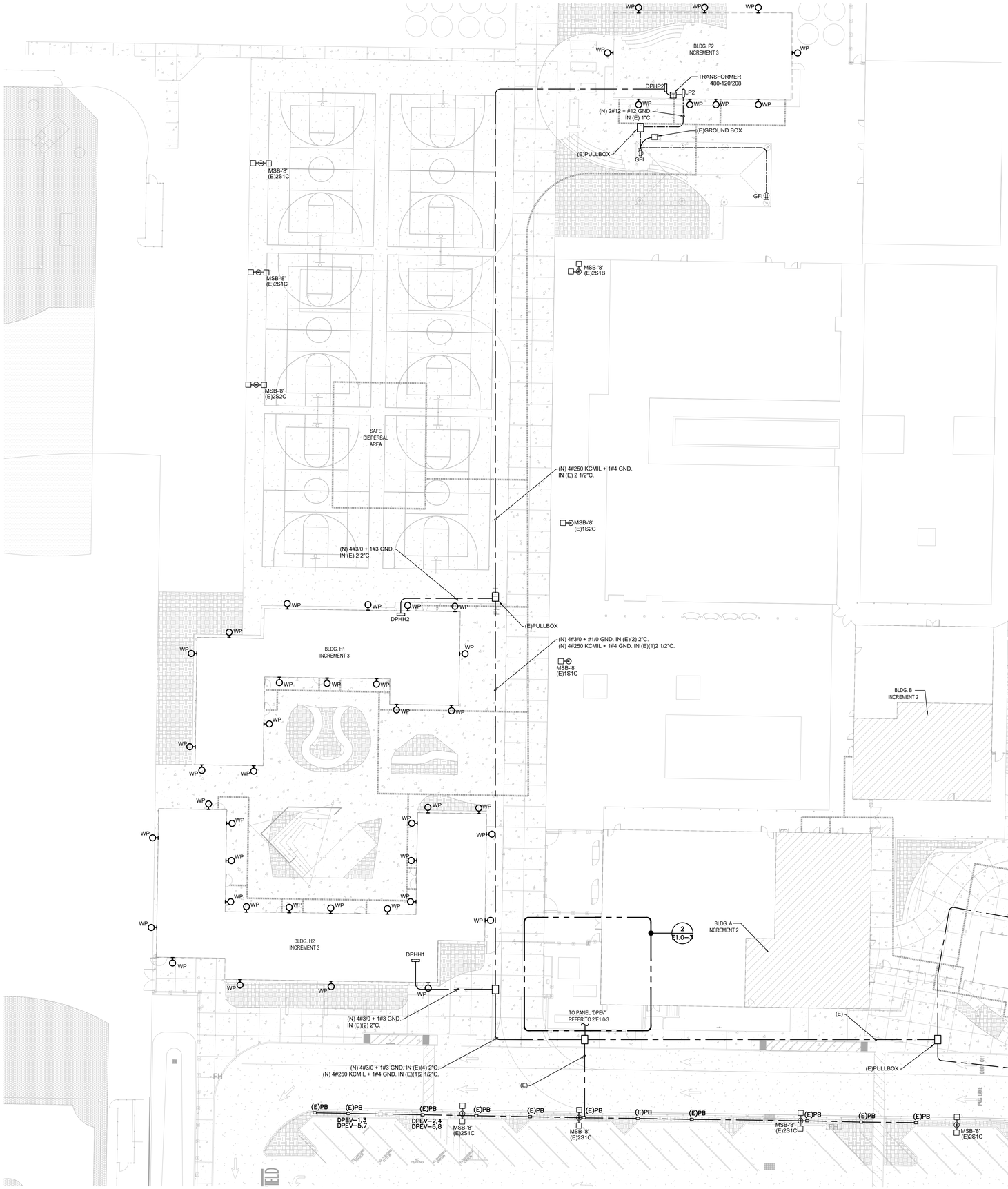
CONSTRUCTION DOCUMENTS

DATE: 04.30.2025
CLIENT PROJ NO: 3431007000

SHEET:
E0.2-3

PLEASE RECYCLE

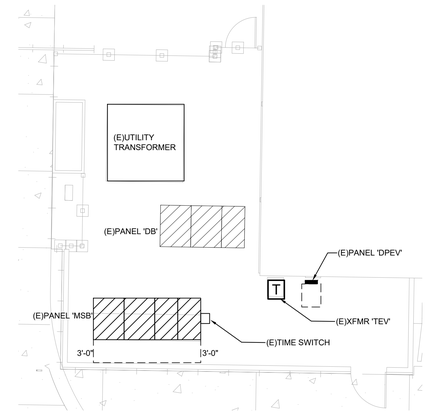
THE LINE SHOWN ABOVE IS EXACTLY 1" WHEN PLOTTED ON ANSI SHEETS ORIGINAL PAGE SIZE



POWER SITE PLAN

SCALE : 1"=20'-0"

1
E1.0-3



ENLARGED ELECTRICAL YARD PLAN

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

2
E1.0-3

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KEYNOTES

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E 24187
EXPIRES 6/30/26
ELECTRICAL
STATE OF CALIFORNIA

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Author

SHEET NAME:
POWER SITE PLAN

CONSTRUCTION DOCUMENTS

DATE: 04.30.2025
CLIENT PROJ NO: 3431007000

SHEET:
E1.0-3

PLEASE RECYCLE

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PART 1 - GENERAL ELECTRICAL SPECIFICATIONS

1.1 WORK INCLUDED:

A. THIS SPECIFICATION SHALL APPLY TO ALL PHASES OF WORK HEREINAFTER SPECIFIED, SHOWN ON DRAWINGS, OR AS REQUIRED TO PROVIDE A COMPLETE INSTALLATION OF ELECTRICAL SYSTEMS FOR THIS PROJECT. WORK REQUIRED UNDER THIS SPECIFICATION IS NOT LIMITED TO JUST THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL, STRUCTURAL, LANDSCAPE, AND MECHANICAL/PLUMBING DRAWINGS AS WELL AS ALL OTHER DRAWINGS APPLICABLE TO THIS PROJECT, WHICH DESIGNATE THE SCOPE OF WORK TO BE ACCOMPLISHED. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO PROVIDE A COMPLETE AND OPERABLE ELECTRICAL SYSTEM THAT INCLUDES ALL DOCUMENTS THAT ARE A PART OF THE CONTRACT.
   1. WORK INCLUDED: FURNISH LABOR, MATERIAL, SERVICES, AND SKILLED SUPERVISION NECESSARY FOR THE CONSTRUCTION, ERECTION, INSTALLATION, CONNECTIONS, TESTING, AND ADJUSTMENT OF ALL CIRCUITS AND ELECTRICAL EQUIPMENT SPECIFIED HEREIN, OR SHOWN OR NOTED ON DRAWINGS, AND ITS DELIVERY TO THE OWNER COMPLETE IN ALL RESPECTS READY FOR USE.
   2. THE ELECTRICAL WORK INCLUDES INSTALLATION OR CONNECTION OF CERTAIN MATERIALS AND EQUIPMENT FURNISHED BY OTHERS. VERIFY INSTALLATION DETAILS, INSTALLATION, AND ROUGH-IN LOCATIONS FROM THE ACTUAL EQUIPMENT OR FROM THE EQUIPMENT SHOP DRAWINGS.

B. ELECTRICAL DRAWINGS: ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, AND ARE INTENDED TO CONVEY THE SCOPE OF WORK, INDICATING INTENDED GENERAL ARRANGEMENT OF EQUIPMENT, CONDUIT, AND OUTLETS. FOLLOW DRAWINGS IN LAYING OUT WORK AND VERIFY SPACES FOR INSTALLATION OF MATERIALS AND EQUIPMENT BASED ON ACTUAL DIMENSIONS OF EQUIPMENT FURNISHED.

1.2QUALITY ASSURANCE

A. DESIGN, MANUFACTURE, TESTING, AND METHOD OF INSTALLATION OF ALL APPARATUS AND MATERIALS FURNISHED UNDER REQUIREMENTS OF THESE SPECIFICATIONS SHALL CONFORM TO LATEST PUBLICATIONS OR STANDARD RULES OF THE FOLLOWING:
   1. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS - IEEE
   2. NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION - NEMA
   3. UNDERWRITER'S LABORATORIES, INC. - UL
   4. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
   5. FEDERAL SPECIFICATIONS - FED. SPEC.
   6. AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM
   7. AMERICAN NATIONAL STANDARDS INSTITUTE - ANSI
   8. NATIONAL ELECTRICAL CODE - NEC
   9. NATIONAL ELECTRICAL SAFETY CODE - NESC
   10. INSULATED CABLE ENGINEERS ASSOCIATION - ICEA
   11. AMERICAN INSTITUTE OF STEEL CONSTRUCTION - AISC
   12. STATE AND MUNICIPAL CODES IN FORCE IN THE SPECIFIC PROJECT AREA
   13. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
   14. ELECTRONICS INDUSTRIES ASSOCIATION/TELECOMMUNICATIONS INDUSTRY ASSOCIATION (EIA/TIA) CALIFORNIA ELECTRICAL CODE (WHERE ADOPTED)
   15. LOCAL AUTHORITY HAVING JURISDICTION (AHJ)
   16. PUBLISHED ELECTRICAL STANDARDS AND CODES (AS APPLICABLE).

B. PERFORM WORK IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE, APPLICABLE BUILDING ORDINANCES, AND OTHER APPLICABLE CODES, HEREINAFTER REFERRED TO AS THE "CODE." THE CONTRACTOR SHALL COMPLY WITH THE CODE INCLUDING LOCAL AMENDMENTS AND INTERPRETATIONS WITHOUT ADDED COST TO THE OWNER. WHERE CONTRACT DOCUMENTS EXCEED MINIMUM REQUIREMENTS, THE CONTRACT DOCUMENTS TAKE PRECEDENCE. WHERE CODE CONFLICTS OCCUR, THE MOST STRINGENT SHALL APPLY UNLESS VARIANCE IS APPROVED.
   1. COMPLY WITH ALL REQUIREMENTS FOR PERMITS, LICENSES, FEES, AND CODES. THE CONTRACTOR, AT CONTRACTOR'S EXPENSE, SHALL OBTAIN ALL PERMITS, LICENSES, FEES, SPECIAL SERVICE COSTS, INSPECTIONS AND ARRANGEMENTS REQUIRED FOR WORK UNDER THIS CONTRACT, UNLESS OTHERWISE SPECIFIED.
   2. COMPLY WITH REQUIREMENTS OF THE APPLICABLE UTILITY COMPANIES SERVING THIS PROJECT. MAKE ALL ARRANGEMENTS WITH UTILITY COMPANIES FOR PROPER COORDINATION OF WORK.

1.3GENERAL REQUIREMENTS

A. GUARANTEE: FURNISH A WRITTEN GUARANTEE FOR A PERIOD OF ONE-YEAR FROM DATE OF ACCEPTANCE.

B. WHEREVER A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT, DEVICES, CIRCUIT BREAKERS, ETC., (ALL MATERIALS), ARISES ON THE DRAWINGS AND/OR IN THE SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITION NOTED ON DRAWINGS AND/OR IN SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE OWNER AND ENGINEER.

C. ALL CORE CUTTING, DRILLING, AND PATCHING:
   1. FOR THE INSTALLATION OF WORK UNDER THIS SECTION, THE AFOREMENTIONED SHALL BE PERFORMED UNDER THIS SECTION OF THE SPECIFICATIONS AND THE CONCRETE SECTION OF THE SPECIFICATIONS.
   2. NO HOLES WILL BE ALLOWED IN ANY STRUCTURAL MEMBERS WITHOUT THE WRITTEN APPROVAL OF THE PROJECT'S STRUCTURAL ENGINEER.
   3. FOR PENETRATIONS OF CONCRETE SLABS OR CONCRETE FOOTINGS, THE WORK SHALL BE AS DIRECTED IN THE CONCRETE SECTION OF SPECIFICATIONS.
   4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING SURFACES WHERE HE IS REQUIRED TO PENETRATE FOR WORK UNDER THIS CONTRACT.
   5. PENETRATIONS SHALL BE SEALED TO MEET THE RATED INTEGRITY OF THE SURFACE REQUIRED TO BE PATCHED AND REPAIRED. THE PATCHED SURFACE SHALL BE PAINTED OR FINISHED TO MATCH THE EXISTING SURFACE.

D. VERIFYING DRAWINGS AND JOB CONDITIONS:
   1. THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS IN A MANNER TO BE FULLY COGNIZANT OF ALL WORK REQUIRED UNDER THIS SECTION.
   2. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY EXISTING CONDITIONS. WHERE EXISTING CONDITIONS DIFFER FROM DRAWINGS, ADJUSTMENT(S) SHALL BE MADE AND ALLOWANCES INCLUDED FOR ALL NECESSARY EQUIPMENT TO COMPLETE ALL PARTS OF THE DRAWINGS AND SPECIFICATIONS.

E. SHOP DRAWINGS/SUBMITTALS:
   1. SHOP DRAWINGS/SUBMITTALS, UNLESS REQUIRED OTHERWISE BY GENERAL PROJECT SPECIFICATIONS OR INSTRUCTIONS TO BIDDERS, SHALL BE SUBMITTED IN ELECTRONIC FORMAT (PDF) TO INCLUDE A LETTER OF TRANSMITTAL (PDF), WHICH SHALL GIVE A LIST OF THE DRAWINGS SUBMITTED WITH DATES AND/OR SYTEM(S) COMPONENTS CONTAINED WITHIN THE SUBMITTAL. DRAWINGS AND MATERIAL CUT SHEETS SHALL BE COMPLETE IN EVERY RESPECT AND EDITED/MARKED TO INDICATE SPECIFIC ITEMS BEING PROVIDED. PRINTED/HARD COPIES ARE NOT ACCEPTABLE.
   2. THE SHOP DRAWINGS/SUBMITTALS SHALL BE MARKED WITH THE NAME OF THE PROJECT, NUMBERED CONSECUTIVELY, AND BEAR THE APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE CONTRACTOR HAS CHECKED THE DRAWINGS. ANY DRAWINGS SUBMITTED WITHOUT THIS APPROVAL WILL BE RETURNED TO THE CONTRACTOR FOR RESUBMITTAL.
   3. IF THE SHOP DRAWINGS SHOW VARIATIONS FROM THE REQUIREMENTS OF THE CONTRACT BECAUSE OF STANDARD SHOP PRACTICE OR OTHER REASONS, THE CONTRACTOR SHALL MAKE SPECIFIC MENTION OF SUCH VARIATIONS IN THE CONTRACTOR'S LETTER OF TRANSMITTAL. IF THE SUBSTITUTION IS ACCEPTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER ADJUSTMENT THAT MAY BE CAUSED BY THE SUBSTITUTION. SAMPLES SHALL BE SUBMITTED WHEN REQUESTED.
   4. ONLY PRODUCTS LISTED AS "EQUAL" WITHIN THE CONTRACT DOCUMENTS, ALONG WITH FORMALLY APPROVED "SUBSTITUTIONS" WILL BE REVIEWED. PRODUCTS NOT CONFORMING TO THESE ITEMS WILL NOT BE REVIEWED AND WILL BE RETURNED TO THE CONTRACTOR FOR RE-SUBMITTAL.
   5. SHOP DRAWINGS SHALL BE SUBMITTED ON THE FOLLOWING, BUT NOT LIMITED TO:
      a. LIGHTING FIXTURES, LAMPS AND BALLASTS.
      b. SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, PANELBOARDS, AND BUS DUCTS; COMPLETE WITH OVERCURRENT DEVICE INFORMATION.
      c. TRANSFORMERS.
      d. FIRE ALARM SYSTEM/CENTRAL MONITORING SYSTEM.
      e. WIRING DEVICES.
      f. LIGHTING CONTROL PRODUCTS/DIMMING SYSTEM PRODUCTS.
      g. PULL BOXES AND UNDERGROUND VAULTS.
      h. TERMINAL CABINETS.
      i. LIGHTING INVERTERS, UPSS, RDCS, PDUS, GENERATORS, TRANSFER SWITCHES, SPD SYSTEMS.
      j. CABLE TRAY, FLEXIBLE CABLE TRAY AND CABLE RUNWAY.
      k. POWER POLES AND FLOOR BOXES.
      l. ARC FLASH, SHORT-CIRCUIT, AND COORDINATION STUDIES.
      m. ALL OTHER PRODUCTS CALLED OUT ON DRAWINGS THAT CALL FOR SHOP DRAWING SUBMITTAL.

1.4WORK IN COOPERATION WITH OTHER TRADES

A. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND DETERMINE THE WORK TO BE PERFORMED BY THE ELECTRICAL, MECHANICAL, AND OTHER TRADES. PROVIDE THE TYPE AND AMOUNT OF ELECTRICAL MATERIALS AND EQUIPMENT NECESSARY TO PLACE THIS WORK IN PROPER OPERATION, COMPLETELY WIRED, TESTED AND READY FOR USE. THIS SHALL INCLUDE ALL CONDUIT, WIRE, DISCONNECTS, RELAYS, AND OTHER DEVICES FOR THE REQUIRED OPERATION SEQUENCE OF ALL ELECTRICAL, MECHANICAL, AND OTHER SYSTEMS OR EQUIPMENT.

B. PROVIDE A CONDUIT-ONLY SYSTEM FOR LOW VOLTAGE WIRING REQUIRED FOR CONTROL OF DESCRIBED IN THIS OR OTHER PARTS OF THE CONTRACT DOCUMENTS. INSTALL ALL CONTROL HOUSINGS, CONDUITS, AND BACKBOXES REQUIRED FOR INSTALLING CONDUIT TO THE CONTROLS.

C. INSTALL SEPARATE CONDUITS BETWEEN EACH HEATING, VENTILATING AND AIR CONDITIONING SENSING DEVICE AND ITS CONTROL PANEL AND/OR CONTROL MOTOR. BEFORE INSTALLING ANY CONDUIT FOR HEATING, VENTILATING, AND AIR CONDITIONING CONTROL WIRING, VERIFY THE EXACT REQUIREMENTS FROM THE CONTROL DIAGRAMS PROVIDED WITH THE EQUIPMENT MANUFACTURER'S SHOP DRAWINGS.

1.5TESTING AND ADJUSTMENT

A. UPON COMPLETION OF ALL ELECTRICAL WORK, THE CONTRACTOR SHALL TEST ALL CIRCUITS, SWITCHES, LIGHT FIXTURES, LIGHTING CONTROL AND DIMMING SYSTEMS INCLUDING DISTRIBUTED SYSTEMS, UPSS, GENERATORS, SPDS, LIGHTING INVERTERS, TRANSFER SWITCHES, MOTORS, CIRCUIT BREAKERS, MOTOR STARTER(S) AND THEIR AUXILIARY CIRCUITS AND ANY OTHER ELECTRICAL ITEMS TO ENSURE PERFECT OPERATION OF ALL ELECTRICAL EQUIPMENT.

B. EQUIPMENT AND PARTS IN NEED OF CORRECTION, AND DISCOVERED DURING SUCH TESTING, SHALL BE IMMEDIATELY REPAIRED OR REPLACED WITH ALL NEW EQUIPMENT AND THAT PART OF THE SYSTEM SHALL THEN BE RETESTED. ALL SUCH REPLACEMENT OR REPAIR SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

C. ALL CIRCUIT(S) SHALL BE TESTED FOR CONTINUITY AND CIRCUIT INTEGRITY. ADJUSTMENTS SHALL BE MADE FOR CIRCUITS NOT COMPLYING WITH TESTING CRITERIA.

D. ALL TEST REPORTS, INCLUDING COPIES OF ANY REQUIRED ENERGY CODE ACCEPTANCE FORMS (E.G. CA TITLE 24 ACCEPTANCE FOR CODE COMPLIANCE FORMS) SHOULD BE SUBMITTED TO THE ENGINEER AT COMPLETION OF PROJECT.

E. COMPONENT TESTS:
   1. GROUNDING SYSTEMS, FOR RESISTANCE TO EARTH. PROVIDE ADDITIONAL GROUNDING ELECTRODES, IF SEPARATELY DERIVED SYSTEM GROUND RESISTANCE EXCEEDS 5 OHMS.
   2. PRIOR TO ENERGIZING EQUIPMENT, CHECK THE INSULATION RESISTANCE OF FEEDERS SIZED LARGER THAN #2 AWG WITH A 1000 VOLT DC "MEGGER". MINIMUM INSULATION RESISTANCE VALUES SHALL NOT BE LESS THAN 50 MEGA OHMS.

F. FUNCTIONAL TESTS:
   1. PERFORM ALL TESTS SUGGESTED BY THE EQUIPMENT MANUFACTURERS.
   2. VERIFY THAT EVERYTHING INSTALLED AS PART OF THE SCOPE OF WORK FUNCTIONS PROPERLY. VERIFY THAT ANY WORK PERFORMED DID NOT ADVERSELY AFFECT EXISTING SYSTEMS OR EQUIPMENT (E.G., THAT AFTER REMOVING A DEVICE FROM A BRANCH CIRCUIT THAT THE REMAINING EXISTING BRANCH CIRCUIT CONTINUITY WAS MAINTAINED).

1.6IDENTIFICATION

A. INSTALL NAMEPLATES ON ELECTRICAL EQUIPMENT INCLUDING:
   1. CIRCUIT BREAKERS, DISCONNECT SWITCHES AND STARTERS WHETHER PROVIDED UNDER THIS DIVISION OR SOME OTHER.
   2. PANELBOARDS AND TRANSFORMERS.
   3. TERMINAL CABINETS AND LIGHTING CONTROL PANELS.
   4. LIGHT SWITCHES FOR WHICH THE CONTROL FUNCTIONS ARE NOT EVIDENT.
   5. WHERE IT IS NOT OBVIOUS WHICH PIECE OF EQUIPMENT IS POWERED FROM A PARTICULAR DISCONNECT SWITCH, PROVIDE NAMEPLATES FOR BOTH DISCONNECT SWITCH AND THE POWERED EQUIPMENT.

B. DESCRIBE ITEM, CONTROL FUNCTION, OR SEQUENCE OF OPERATION ON EACH NAMEPLATE.

C. FABRICATE NAMEPLATES OF LAMINATED PHENOLIC PLASTIC, BLACK FRONT AND BACK WITH WHITE CORE FOR NORMAL POWER EQUIPMENT AND SIGNAL. PROVIDE RED FRONT AND BACK WITH WHITE CORE FOR EMERGENCY POWER EQUIPMENT AND FIRE ALARM. BEVEL EDGES. ENGRAVE THROUGH OUTER LAYER TO PRODUCE WHITE LETTERS AND NUMERALS. FOR CONTROL PILOT DEVICES, ENGRAVED METALLIC PLATES, FILLED WITH ENAMEL, ARE ACCEPTABLE. FASTEN NAMEPLATES TO EQUIPMENT WITH NO. 4 PHILLIPS, ROUND HEAD, CADMIUM STEEL, SELF-TAPPING SCREWS. USE 1/8-INCH LETTERS ON CIRCUIT BREAKERS, SWITCHES AND OTHER CONTROL DEVICES, AND 1/4-INCH LETTERS ON PANELBOARDS, SWITCHBOARDS AND OTHER MAJOR ELECTRICAL EQUIPMENT. SUBMIT LABEL DESIGNATIONS AS PART OF CORRESPONDING EQUIPMENT SUBMITTAL.

D. EQUIPMENT IDENTIFICATION IS TO INDICATE THE FOLLOWING:
   1. EQUIPMENT ID ABBREVIATION.
   2. VOLTAGE, PHASE AND WIRES.
   3. NOMINAL, EMERGENCY (INDICATE BRANCH) OR OTHER SYSTEM.
   4. POWER SOURCE.

1.7FINAL INSPECTION AND ACCEPTANCE

A. AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND/OR THE DRAWINGS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNER WILL INSPECT THE WORK. CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF EACH REPRESENTATIVE.

B. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.

1.8RECORD DRAWINGS

A. DRAWINGS OF RECORD: THE CONTRACTOR SHALL PROVIDE AND KEEP UP-TO-DATE, A COMPLETE RECORD SET OF DRAWINGS. THESE SHALL BE CORRECTED DAILY AND SHOW EVERY CHANGE FROM THE ORIGINAL DRAWINGS. THIS SET OF PRINTS SHALL BE KEPT ON THE JOB SITE AND SHALL BE USED ONLY AS A RECORD SET. THIS SHALL NOT BE CONSTRUED AS AUTHORIZATION FOR THE CONTRACTOR TO MAKE CHANGES IN THE LAYOUT WITHOUT DEFINITE INSTRUCTION IN EACH CASE. UPON COMPLETION OF THE WORK, A SET OF REPRODUCIBLE CONTRACT DRAWINGS SHALL BE OBTAINED FROM THE GENERAL CONTRACTOR AND ALL CHANGES AS NOTED ON THE RECORD SET OF PRINTS SHALL BE INCORPORATED THEREON WITH BLACK INK IN A NEAT, LEGIBLE, UNDERSTANDABLE, AND PROFESSIONAL MANNER. REFER TO THE SUPPLEMENTARY GENERAL CONDITIONS FOR COMPLETE REQUIREMENTS.

1.9ARC FLASH

A. PERFORM AN INCIDENT ENERGY STUDY IN ACCORDANCE WITH THE IEEE 1584-2004A, "IEEE GUIDE FOR PERFORMING ARC FLASH HAZARD CALCULATIONS" AS REFERENCED IN NFPA 70E, "STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE", 2009 REVISION, IN ORDER TO QUANTIFY THE HAZARD FOR SELECTION OF PERSONAL PROTECTIVE EQUIPMENT (PPE). TABLES THAT ASSUME FAULT CURRENT LEVELS AND CLEARING TIME FOR PROPER PPE SELECTION ARE NOT ACCEPTABLE. ASSIST THE OWNER IN SELECTING APPROPRIATE COMBINATIONS OF PPE PRIOR TO THE FINAL ANALYSIS AND PREPARATION OF EQUIPMENT LABELS.

B. LABELS
   1. BASED ON THE RESULTS OF THE INCIDENT ENERGY STUDY, PROVIDE AND INSTALL A WARNING LABEL (ORANGE <40 CAL/CM2) OR DANGER LABEL (RED > 40 CAL/CM2) FOR EACH PIECE OF EQUIPMENT IN ACCORDANCE WITH ANSI Z535.4-2002. THE LABEL MUST BE READABLE IN BOTH INDOOR AND OUTDOOR ENVIRONMENTS FOR AT LEAST 3 YEARS AND CONTAIN THE FOLLOWING INFORMATION:
      a. ARC HAZARD BOUNDARY (INCHES)
      b. WORKING DISTANCE (INCHES)
      c. ARC FLASH INCIDENT ENERGY AT THE WORKING DISTANCE (CALORIES/ CM2), PPE CATEGORY AND DESCRIPTION INCLUDING THE GLOVE RATING
      d. VOLTAGE RATING OF THE EQUIPMENT
      e. LIMITED APPROACH DISTANCE (INCHES)
      f. RESTRICTED APPROACH DISTANCE (INCHES)
      g. PROHIBITED APPROACH DISTANCE (INCHES)
      h. EQUIPMENT/BUS NAME
      i. DATE PREPARED
      j. SUPPLIER NAME AND ADDRESS

1.10 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRING DIAGRAMS

A. PRIOR TO FINAL ACCEPTANCE OF THE JOB, THE ELECTRICAL CONTRACTOR SHALL FURNISH TO THE OWNER AT LEAST FOUR (4) COPIES OF OPERATING AND MAINTENANCE AND SERVICING INSTRUCTIONS, AS WELL AS FOUR (4) COMPLETE WIRING DIAGRAMS FOR THE FOLLOWING ITEMS OR EQUIPMENT:
   1. LIGHTING CONTROL SYSTEMS/DIMMING SYSTEMS.
   2. FIRE ALARM SYSTEM.
   3. TRANSFORMERS.
   4. SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, PANEL BOARDS, AND BUS DUCTS; COMPLETE WITH OVERCURRENT DEVICE INFORMATION.
   5. LIGHTING INVERTERS, UPSS, PDUS, GENERATORS, TRANSFER SWITCHES, SPD SYSTEMS.

B. ALL WIRING DIAGRAMS SHALL SPECIFICALLY COVER THE SYSTEM SUPPLIED. TYPICAL DRAWINGS WILL NOT BE ACCEPTED. FOUR (4) COPIES SHALL BE PRESENTED TO THE OWNER.

1.11 INTERRUPTION OF SERVICES/SERVICE SHUTDOWN

A. ANY INTERRUPTION OF ELECTRICAL SERVICES, ELECTRICAL CIRCUITS, ELECTRICAL FEEDERS, SIGNAL SYSTEMS, COMMUNICATION SYSTEMS, FIRE ALARM SYSTEMS, ETC., REQUIRED TO PERFORM WORK SHALL MEET THE SPECIFIC PRIOR-APPROVAL REQUIREMENTS OF THE OWNER. SUCH WORK SHALL BE SCHEDULED WITH THE OWNER TO BE PERFORMED AT THE OWNER'S CONVENIENCE.

B. INTERRUPTIONS/OUTAGES OF ANY OF THE OWNER'S SYSTEMS AND SERVICES MENTIONED ABOVE SHALL BE SCHEDULED TO OCCUR DURING OTHER THAN THE OWNER'S NORMAL BUSINESS HOURS. ANY OVERTIME COSTS SHALL BE BORNE BY THE CONTRACTOR.

C. SEE DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS REGARDING OUTAGES, INTERRUPTION AND ANY TEMPORARY SERVICES REQUIRED.

PART 2 - PRODUCTS

2.1 MATERIALS

A. MATERIALS AND EQUIPMENT: ALL ELECTRICAL MATERIALS AND EQUIPMENT, INCLUDING CUSTOM-MADE EQUIPMENT, SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL OR BE LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LAB (NRTL) THAT IS ALSO RECOGNIZED BY THE LOCAL AUTHORITY-HAVING-JURISDICTION (AHJ).

2.2 RACEWAYS

A. GALVANIZED RIGID CONDUIT (GRC) SHALL BE FULL WEIGHT THREADED TYPE STEEL. STEEL CONDUIT SHALL BE PROTECTED BY OVERALL ZINC COATING TO INSIDE AND OUTSIDE SURFACES, APPLIED BY THE HOT DIP, METALLIZING, OR SHERARDIZING PROCESS.

B. INTERMEDIATE METAL CONDUIT (IMC) SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH UL 1242, AND MEET FEDERAL SPECIFICATION WWC-581 (LATEST REVISION).

C. ELECTRICAL METALLIC TUBING (EMT) SHALL BE ZINC-COATED STEEL WITH BAKED ENAMEL OR PLASTIC FINISH ON INSIDE SURFACES EXCEPT AS NOTED BELOW. EMT SHALL BE DIPPED IN A CHROMIC ACID BATH TO CHEMICALLY FORM A CORROSION-RESISTANT PROTECTIVE COATING OF ZINC CHROMATE OVER GALVANIZED SURFACE.

D. FLEXIBLE METAL CONDUIT SHALL BE CONSTRUCTED OF ALUMINUM OR HOT-DIPPED GALVANIZED STEEL STRIPS WOUND SPIRALLY WITH INTERLOCKING EDGES TO PROVIDE GREATEST FLEXIBILITY WITH MAXIMUM STRENGTH. INTERIOR SURFACE SHALL BE SMOOTH AND OFFER MINIMUM DRAG TO PULLING IN CONDUCTORS. USED ONLY AS DIRECTED IN WRITING BY THE ENGINEER.

E. LIQUID-TIGHT CONDUIT (SEAL-TITE) SHALL BE GALVANIZED STEEL FLEXIBLE CONDUIT AS ABOVE EXCEPT WITH MOISTURE AND OIL-PROOF JACKET, PRE-CUT LENGTHS AND FACTORY-INSTALLED FITTINGS. FOR OUTDOOR INSTALLATIONS AND MOTOR CONNECTIONS ONLY UNLESS OTHERWISE NOTED ON DRAWINGS.

F. NON-METALLIC CONDUIT:
   1. POLYVINYL CHLORIDE (PVC) RIGID CONDUIT, SCHEDULE 40, TYPE II FOR UNDERGROUND INSTALLATION ONLY WITH SOLVENT WELDED JOINTS, CONFORMING TO UL REQUIREMENTS, LISTED FOR EXPOSED AND DIRECT BURIAL APPLICATION.
   2. CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER.

G. FIRE-RATED MC CABLE:
   1. 2-HOUR FIRE-RATED, POLYMER INSULATED 600V MC CABLE LISTED AND CONFORMING TO UL 2196 AND UL 1569 REQUIREMENTS FOR INSTALLATION AS AN ELECTRICAL CIRCUIT PROTECTIVE SYSTEM FOR USE IN COMPLYING WITH NEC, OR CEC WHERE ADOPTED, ARTICLES 695 AND 700. WHERE ADOPTED, CABLE SHEATH SHALL BE SUITABLE FOR USE AS A NEC OR CEC EQUIPMENT GROUNDING CONDUCTOR, AND SHALL BE LISTED FOR USE IN WET LOCATIONS TO 90 DEGREES C (RAYCHEM OR EQUAL).
   2. CABLE CONNECTORS SHALL BE BRASS MC CONNECTORS.

2.3 FITTINGS

A. CONDULET TYPE FITTINGS SHALL BE SMOOTH INSIDE AND OUT, TAPER THREADED WITH INTEGRAL INSULATING BUSHING AND OF THE SHAPES, SIZES AND TYPES REQUIRED TO FACILITATE INSTALLATION OR REMOVAL OF WIRES AND CABLES FROM THE CONDUIT AND TUBING SYSTEM. THESE FITTINGS SHALL BE OF METAL, SMOOTH INSIDE AND OUT, THOROUGHLY GALVANIZED, AND SHERARDIZED CADMIUM PLATED.

B. METALLIC CONDULET COVERS SHALL HAVE THE SAME FINISH AS THE FITTING AND SHALL BE PROVIDED FOR THE OPENING OF EACH FITTING WHERE CONDUCTORS DO NOT PASS THROUGH THE COVER.

C. CONNECTOR, COUPLING, LOCKNUT, BUSHINGS, AND CAPS USED WITH RIGID CONDUIT SHALL BE STEEL, THREADED AND THOROUGHLY GALVANIZED. BUSHINGS SHALL BE INSULATED.

D. UNLESS OTHERWISE NOTED, ALL INTERIOR EMT FITTINGS, CONNECTORS AND COUPLINGS INSTALLED IN CONCEALED LOCATIONS, AREAS NOT CONSIDERED TO BE WET OR DAMP LOCATIONS BY THE AHJ, OR AREAS NOT SUBJECT TO PHYSICAL DAMAGE, SHALL BE STEEL, ZINC OR CADMIUM PLATED, THREADLESS, COMPRESSION, STEEL LOCKING RING TYPE WITH INSULATED THROAT. WHERE SUITABLE FOR USE, STEEL SET SCREW FITTINGS ARE ALLOWED FOR TRADE SIZES OF 2" AND SMALLER. INSULATED THROAT IS NOT REQUIRED FOR FITTINGS, CONNECTORS, AND COUPLINGS 1" AND SMALLER.

E. ALL INTERIOR AND EXTERIOR EMT FITTINGS, CONNECTORS, AND COUPLINGS, 2" AND SMALLER, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS THAT ARE CONSIDERED BY THE AHJ TO BE WET OR DAMP LOCATIONS, SHALL BE RAINTIGHT-LISTED, STEEL, ZINC OR CADMIUM PLATED, THREADLESS, COMPRESSION, STEEL LOCKING RING TYPE WITH INSULATED THROAT. IF RAINTIGHT-LISTED, EMT FITTINGS, CONNECTORS AND COUPLINGS ARE UNAVAILABLE FOR A GIVEN TRADE SIZE OR IF CONDUIT IS INSTALLED IN AN AREA SUBJECT TO DAMAGE - PROVIDE RIGID METALLIC OR INTERMEDIATE METALLIC CONDUITS, FITTINGS, CONNECTORS, AND COUPLINGS AS REQUIRED.

F. FLEXIBLE STEEL CONDUIT CONNECTORS SHALL BE A MALLEABLE IRON CLAMP OR SQUEEZE TYPE OR STEEL TWIST-IN TYPE WITH INSULATED THROAT. THE FINISH SHALL BE ZINC OR CADMIUM PLATING.

2.4 OUTLET, PULL, AND JUNCTION BOXES

A. CONSTRUCTION: DEEP DRAWN OR FABRICATED INTERLOCKED FLAT PIECES WITH WELDED TABS, ELECTROGALVANIZED SHEET STEEL WITH ELECTROGALVANIZED HARDWARE. DO NOT USE SECTIONAL OR GANGABLE BOXES.

B. SIZE: ACCOMMODATE THE REQUIRED NUMBER AND SIZES OF CONDUITS, WIRES, SPLICES ,AND DEVICES, BUT NOT SMALLER THAN THE SIZE INDICATED OR SPECIFIED.

C. PLASTER RING: PROVIDE FLUSH WITH WALL OR CEILING FINISH, EXCEPT WHERE OTHERWISE INDICATED OR SPECIFIED.

D. DEVICE BOXES: FOR SINGLE SWITCHES AND RECEPTACLES, PROVIDE BOXES NOT LESS THAN 4 INCHES SQUARE BY 1-1/2 INCHES DEEP. FOR 2 DEVICES, PROVIDE BOXES NOT LESS THAN 4-11/16 INCHES SQUARE BY 1-1/2 INCHES DEEP.

E. TELECOMMUNICATIONS BOXES: NO LESS THAN 4-11/16 INCHES SQUARE BY 2-1/8 INCHES DEEP.

F. SPECIAL MOUNTING: IN CABINETS, TILE, CONCRETE BLOCK, BRICK, STONE, WOOD OR SIMILAR MATERIAL, PROVIDE RECTANGULAR BOXES WITH SQUARE CORNERS AND STRAIGHT SIDES. FOR SINGLE DEVICES, PROVIDE BOXES 4 INCHES HIGH BY 2-1/2 INCHES WIDE BY 3-3/8 INCHES DEEP. FOR 2 OR MORE DEVICES, PROVIDE MULTI-GANG, NON-SECTIONAL BOX WITH TILE OR MASONRY RING.

G. LIGHTING FIXTURES: 4 INCHES OCTAGON BY 2-1/8 INCHES DEEP, MINIMUM. FIT BOXES FOR SURFACE OR PENDANT MOUNTED FIXTURES WITH 3/8 INCH MALLEABLE IRON FIXTURE STUD.

H. WET OR DAMP LOCATIONS, CAST METAL:
   1. BOX: MALLEABLE IRON.
   2. COVER: GASKETED, WEATHERPROOF, MALLEABLE IRON, WITH STAINLESS STEEL SCREWS.
   3. HUBS: THREADED.
   4. LUGS (CAST MOUNTING) MANUFACTURERS:
      a. CROUSE-HINDS: TYPE FD OR FD, OR EQUAL
      b. APPLETON: TYPE FS OR FD, OR EQUAL

2.5 PULL AND JUNCTION BOXES OVER 300 CUBIC INCHES

A. GENERAL: FOR ALL PULL AND JUNCTION BOXES OVER 300 CUBIC INCHES, PROVIDE CODE GAUGE, SHEET STEEL BOXES WHICH MEET NEMA 1 STANDARDS FOR PANELBOARD AND TERMINAL CABINET BOX CONSTRUCTION, WITH SCREW TYPE COVERS.

B. GROUND LUG: WELD, BEFORE FINISH IS APPLIED, A GROUNDING PAD DRILLED FOR TWO BOLTED GROUNDING LUGS OR TWO GROUND STUDS ON THE BOX INTERIOR.

C. FINISH: APPLY RUST INHIBITING PRIME COAT AND 2 COATS OF BAKED ENAMEL, STANDARD FACTORY GRAY.

D. HARDWARE: CADMIUM PLATED STEEL SCREWS.

2.6 SUPPORTING DEVICES

A. CONDUIT SUPPORTS:
   1. WET LOCATIONS:
      a. ONE HOLE GALVANIZED MALLEABLE IRON STRAP WITH GALVANIZED MALLEABLE OR CAST IRON CLAMP BACK, OZ/GEDNEY TYPE 14-G.
   2. DRY LOCATIONS:
      a. GALVANIZED STEEL STRAPS, OZ/GEDNEY TYPE 5-S AND 14-S, T & B, APPLETON OR EQUAL.
   3. PLUMBERS PERFORATED STRAP IS NOT ACCEPTABLE.
   4. HANGER ROD, 3/8 INCH, MINIMUM GALVANIZED ALL THREAD ROD OR AS DETAILED FOR SPECIFIC USE.

B. CONDUIT RACKS:
   1. FRAMING CHANNEL, STEEL, KINDORF, UN

THE LINE SHOWN ABOVE IS 2" WHEN PRINTED ON ANSI D SHEETS ORIGINAL PAGE SIZE

K. THE CONTRACTOR SHALL PROVIDE DUPLEX RECEPTACLE OUTLETS IN THE APPROPRIATE CONFIGURATIONS NECESSARY TO COMPLY WITH APPLICABLE ENERGY CODE REQUIREMENTS FOR CONTROLLED RECEPTACLES AND AS SHOWN ON PLANS. ALL WIRING DEVICES INDICATED TO BE CONTROLLED RECEPTACLES SHALL BE NEMA-APPROVED, ELECTRICAL CODE-COMPLIANT WITH FACTORY MARKINGS ON THE FACE OF THE RECEPTACLE(S) WITH THE WORD "CONTROLLED" OR UTILIZE FURTHER MARKINGS AND SYMBOLS TO INDICATE WHICH RECEPTACLES ON EACH OUTLET IS/ARE CONTROLLED. STICKERS, FIELD-APPLIED MARKINGS OR OTHER NON-PERMANENT MARKINGS ARE NOT ACCEPTABLE. WHERE A GFCI RECEPTACLE OUTLET IS REQUIRED TO BE CONTROLLED, PROVIDE AN ADJACENT CONTROLLED DUPLEX RECEPTACLE OUTLET CONNECTED ON THE LOAD SIDE OF THE GFCI OUTLET. GENERALLY, ONE RECEPTACLE IN A DUPLEX RECEPTACLE OUTLET IS REQUIRED TO BE CONTROLLED. IT MAY BE THE LOWER RECEPTACLE OR UPPER RECEPTACLE BASED ON MANUFACTURER OFFERING. HOWEVER, THE CONTROLLED RECEPTACLE LOCATION WITHIN A CONTROLLED RECEPTACLE OUTLET SHALL REMAIN CONSISTENT THROUGHOUT THE PROJECT. WHERE AN EXISTING DUPLEX RECEPTACLE OUTLET IS REQUIRED TO BE CONTROLLED, PROVIDE A NEW WIRING DEVICE WITH THE APPROPRIATE CONTROL CONFIGURATION NECESSARY TO COMPLY WITH PLANS. ALL CONTROLLED RECEPTACLES SHALL BE CONNECTED TO A BRANCH CIRCUIT CONTROLLED BY AN OCCUPANCY SENSOR-BASED OR RELAY PANEL LIGHTING CONTROL SYSTEM. ACCEPTABLE MANUFACTURERS ARE LEVITON, PASS AND SEYMOUR & HUBBELL.

2.12 DISCONNECT SWITCHES

A. NON-FUSIBLE OR FUSIBLE, HEAVY-DUTY, EXTERNALLY OPERATED HORSEPOWER-RATED, 600V A.C. PROVIDE NEMA 3R, LOCKABLE ENCLOSURES FOR ALL SWITCHES LOCATED ON ROOF TOPS, IN WET OR DAMP AREAS AND IN ANY AREA EXPOSED TO THE ELEMENTS.

B. FUSIBLE SWITCHES SHALL BE CLASS "R" WHEN 600A OR LESS, AND CLASS "L" WHEN GREATER THAN 600A.

C. AMPERAGE, HORSEPOWER, VOLTAGE, AND NUMBER OF POLES PER DRAWINGS: ALL SHALL BE CLEARLY MARKED ON THE SWITCH NAMEPLATE.

D. PROVIDE THE OWNER'S PROJECT MANAGER WITH ONE (1) SPARE SET OF FUSES AND TWO (2) SETS OF FUSE CLIPS/FUSES FOR EVERY SET OF FUSES ON THE PROJECT.

2.13 PANELBOARDS

A. PROVIDE PRODUCTS LISTED AND LABELED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE INDICATED.

B. UNLESS OTHERWISE INDICATED, PROVIDE PRODUCTS SUITABLE FOR CONTINUOUS OPERATION UNDER THE FOLLOWING SERVICE CONDITIONS:
1. ALTITUDE: LESS THAN 6,600 FEET.
2. AMBIENT TEMPERATURE.

C. SHORT CIRCUIT CURRENT RATING:
1. PROVIDE PANELBOARDS WITH LISTED SHORT CIRCUIT CURRENT RATING NOT LESS THAN THE AVAILABLE FAULT CURRENT AT THE INSTALLED LOCATION AS INDICATED ON THE DRAWINGS.

D. MAINS: CONFIGURE FOR TOP OR BOTTOM INCOMING FEED AS INDICATED OR AS REQUIRED FOR THE INSTALLATION.

E. BRANCH OVERCURRENT PROTECTIVE DEVICES: REPLACEABLE WITHOUT DISTURBING ADJACENT DEVICES.

F. BUSSING: SIZED IN ACCORDANCE WITH UL 67 TEMPERATURE RISE REQUIREMENTS.
1. PROVIDE SOLIDLY BONDED EQUIPMENT GROUND BUS IN EACH PANELBOARD WITH A SUITABLE LUG FOR EACH FEEDER AND BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR.

G. CONDUCTOR TERMINATIONS: SUITABLE FOR USE WITH THE CONDUCTORS TO BE INSTALLED.

H. ENCLOSURES: COMPLY WITH NEMA 250, AND LIST AND LABEL AS COMPLYING WITH UL 50 AND UL 50E.
1. ENVIRONMENT TYPE PER NEMA 250 UNLESS OTHERWISE INDICATED.
2. BOXES: GALVANIZED STEEL UNLESS OTHERWISE INDICATED.
3. PROVIDE WIRING GUTTERS SIZED TO ACCOMMODATE THE CONDUCTORS TO BE INSTALLED.
4. LOCKABLE DOORS: ALL LOCKS KEYED ALIKE UNLESS OTHERWISE INDICATED.

I. FUTURE PROVISIONS: PREPARE ALL UNUSED SPACES FOR FUTURE INSTALLATION OF DEVICES INCLUDING BUSSING, CONNECTORS, MOUNTING HARDWARE AND ALL OTHER REQUIRED PROVISIONS.

2.14 BRANCH CIRCUIT PANELBOARDS

A. GENERAL: PROVIDE BUSSED, CIRCUIT BREAKER OR FUSIBLE SWITCH TYPE PANELBOARDS WITH MAIN LUGS OR CIRCUIT BREAKER IN FLUSH OR SURFACE MOUNTED ENCLOSURES AS INDICATED.

B. CONSTRUCTION:
1. CABINETS: CODE GAUGE STEEL CABINETS, DEAD FRONT PANELS, AND DOORS. FASTEN DEAD FRONT PANELS TO CABINETS WITH CONCEALED TRIM FASTENERS. CONCEAL FRONT DOOR HINGES.
2. DIMENSIONS: 20 INCHES WIDE BY 6 INCHES DEEP.
3. LOCKS: FLUSH DOOR LOCKS, KEYED ALIKE FOR ALL PANELBOARDS.
4. ACCESS: HINGED DOOR-IN-DOOR WITH DOUBLE LOCKS. PIANO HINGES PREFERRED.
5. STANDARDS: PROVIDE UL LABEL WHERE APPLICABLE AND CONFORM TO NO. 67 AND 50 UNDERWRITERS LABORATORIES, INC., AND NEMA PB 1.

C. BUSSING:
1. PHASE BUS: SILVER-PLATED COPPER, RATED 1000 AMPERES PER SQUARE INCH CROSS SECTIONAL AREA MAXIMUM, BRACED FOR 100,000 RMS AMPERES MINIMUM.
2. NEUTRAL BUS: COPPER WITH LUGS FOR CONNECTION OF NEUTRAL CONDUCTORS.
3. GROUND BUS: COPPER WITH TERMINALS FOR EQUIPMENT GROUNDING CONDUCTORS.
4. TERMINALS: AS SPECIFIED IN WIRE AND CABLE SECTION.

D. FINISH: DEGREASE, CLEAN, PHOSPHATIZE, PRIME, AND FINISH CABINETS, DEAD FRONT PANELS, AND DOORS WITH BAKED ENAMEL, COLOR ASA-61, OR STANDARD FACTORY GRAY. GALVANIZED CABINETS ARE ACCEPTABLE FOR FLUSH CABINETS.

E. NAMEPLATES:
1. PROVIDE A NAMEPLATE IDENTIFYING PANELBOARD IN ACCORDANCE WITH IDENTIFICATION SECTION. PROVIDE A MANUFACTURER'S NAMEPLATE ON THE DEAD FRONT INTERIOR PANEL INDICATING PANELBOARD TYPE, VOLTAGE RATING, CURRENT RATING AND MANUFACTURER'S NAME.
2. DIRECTORY: PROVIDE A DIRECTORY CARD WHICH FITS INTO SLOTS IN THE BACK OF THE PANELBOARD. PROTECT DIRECTORY WITH NON-YELLOWING CLEAR PLASTIC.

F. MANUFACTURER: EATON, ABB, SQUARE D.

H. MANUFACTURER: EATON, ABB, SQUARE D.

2.15 CIRCUIT BREAKERS

A. PROVIDE BOLTED-TYPE THERMAL MAGNETIC, MOLDED CASE, WITH INVERSE TIME CURRENT OVERLOAD, AND INSTANTANEOUS MAGNETIC TRIPS, TRIP-FREE AND TRIP-INDICATING. ALL POLES OF MULTI-POLE DEVICE SHALL OPERATE SIMULTANEOUSLY DURING OPEN, CLOSE AND TRIP OPERATIONS. PROVIDE CIRCUIT BREAKERS INDICATED WITH VOLTAGE AND INTERRUPTING CAPACITY NOT LESS THAN EXISTING.

B. ARC FAULT INTERRUPTING BREAKERS: PROVIDE WITH MOLDED PLASTIC CASE, AIR CIRCUIT BREAKERS, SIMILAR TO ABOVE WITH ARC FAULT CIRCUIT INTERRUPT CAPABILITY, CONFORMING TO UL 1699. PROVIDE ON ALL DWELLING-UNIT CIRCUITS SUPPLYING BEDROOMS, SLEEPING QUARTERS, ETC., AS REQUIRED TO COMPLY WITH NEC, OR CEC WHERE ADOPTED, ARTICLE 210.12.

C. TANDEM OR HALF-SIZED CIRCUIT BREAKERS ARE NOT PERMITTED.

D. CIRCUIT BREAKERS TO BE FULLY RATED FOR AIC. SERIES RATED CIRCUIT BREAKERS ARE NOT ALLOWED.

E. CIRCUIT BREAKER HANDLE ACCESSORIES SHALL PROVIDE PROVISIONS FOR LOCKING HANDLE IN THE ON OR OFF POSITION.

F. TEMPERATURE COMPENSATING CIRCUIT BREAKER(S) SHALL BE PROVIDED WHEN LOCATED IN OUTDOOR ENCLOSURE(S) OR WHEN LOCATED IN AN ENCLOSURE SUBJECT TO HIGH AMBIENT HEAT DUE TO NEARBY INDUSTRIAL PROCESSES, ETC.

G. PROVIDE 90 DEGREE CELSIUS-RATED CONDUCTOR LUGS/LUG KITS AS REQUIRED ON ALL CIRCUIT BREAKERS TO ACCEPT CONDUCTOR QUANTITIES AND SIZES SHOWN ON DRAWINGS.

H. ALL CIRCUIT BREAKER TERMINATIONS SHALL BE SUITABLE FOR USE WITH 75 DEGREE CELSIUS AMPACITY CONDUCTORS. LISTED, DUAL-RATED PIN TERMINALS, STRAIGHT OR OFFSET, ARE ACCEPTABLE FOR USE TO IN ACCOMMODATING OVERSIZED OR PARALLEL CONDUCTOR INSTALLATIONS.

I. CIRCUIT BREAKERS SERVING FIRE ALARM OR CENTRAL MONITORING PANELS AND POWER SUPPLIES SHALL BE RED IN COLOR AND LOCKABLE IN THE "ON" POSITION.

2.16 TRANSFORMERS

A. DESCRIPTION: PROVIDE FACTORY-ASSEMBLED, DRY TYPE TRANSFORMERS FOR 60 HZ OPERATION DESIGNED AND MANUFACTURED IN ACCORDANCE WITH NEMA ST 20 AND LISTED AND LABELED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE SPECIFIED AND INDICATED.

B. TRANSFORMERS SHALL BE DESIGNED FOR CONTINUOUS OPERATION AT RATED KVA, FOR 24 HOURS A DAY, YEARLY OPERATION, WITH NORMAL LIFE EXPECTANCY AS DEFINED IN AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) C57.96.

C. CORE: HIGH GRADE, NON-AGING SILICON STEEL WITH HIGH MAGNETIC PERMEABILITY AND LOW HYSTERESIS AND EDDY CURRENT LOSSES. KEEP MAGNETIC FLUX DENSITIES SUBSTANTIALLY BELOW SATURATION POINT (INCLUDING AT 10 PERCENT PRIMARY OVERVOLTAGE). TIGHTLY CLAMP CORE LAMINATIONS TO PREVENT PLATE MOVEMENT AND MAINTAIN CONSISTENT PRESSURE THROUGHOUT CORE LENGTH.

D. IMPREGNATE CORE AND COIL ASSEMBLY WITH NON-HYDROSCOPIC THERMO-SETTING VARNISH TO EFFECTIVELY SEAL OUT MOISTURE AND OTHER CONTAMINANTS.

E. GROUND CORE AND COIL ASSEMBLY TO ENCLOSURE BY MEANS OF A VISIBLE FLEXIBLE COPPER GROUNDING STRAP.

F. ISOLATE CORE AND COIL FROM ENCLOSURE USING VIBRATION-ABSORBING MOUNTS.

G. NAMEPLATE: INCLUDE TRANSFORMER CONNECTION DATA, RATINGS, WIRING DIAGRAMS, AND OVERLOAD CAPACITY BASED ON RATED WINDING TEMPERATURE RISE.

H. SHIPPING: PROVIDE LIFTING HOLES, ACCESSIBLE WITHOUT REMOVAL OF ANY OF THE ENCLOSURE COMPONENTS.

I. INSULATION:
1. SMALLER THAN 30 KVA: 180 DEGREES C MINIMUM, UL INSULATION SYSTEM WITH MAXIMUM 115 DEGREES C RISE ABOVE 40 DEGREES C AMBIENT TEMPERATURE.
2. 30 KVA AND LARGER: 220 DEGREES C, UL INSULATION SYSTEM WITH MAXIMUM 150 DEGREES C RISE ABOVE 40 DEGREES C AMBIENT TEMPERATURE.

J. BASE TEMPERATURE RATING AND HOT SPOT ALLOWANCES IN THE ABOVE TABLE ON A 40 DEGREES C MAXIMUM AMBIENT TEMPERATURE AND 30 DEGREES C AVERAGE AMBIENT TEMPERATURE.

K. OVERLOAD CAPACITY: 10 PERCENT ABOVE FULL LOAD RATING CONTINUOUSLY IN AN AMBIENT NOT EXCEEDING 40 DEGREES C.

L. CASE TEMPERATURE: MAINTAIN NO MORE THAN A 35 DEGREES C RISE ABOVE A 40 DEGREES C AMBIENT.

M. TAPS:
1. 3 KVA AND SMALLER: NONE.
2. 7.5 KVA TO 24KVA: ONE 5% TAP ABOVE ONE 5% TAP BELOW NORMAL CAPACITY.
3. 25 KVA AND LARGER: TWO 2.5% TAPS ABOVE AND TWO 2.5% TAPS BELOW NORMAL CAPACITY.

N. PROVIDE CONDUIT KNOCKOUTS FOR LINE AND LOAD CONDUIT ENTRANCE.

O. ENCLOSURE:
1. UNITS RATED 30 KVA AND BELOW, THE ENCAPSULATED ENCLOSURE CONSTRUCTION SHALL BE TOTALLY ENCLOSED, NON-VENTILATED, NEMA 3R, WITH LIFTING EYES.
2. UNITS RATED 15 KVA AND ABOVE, THE ENCLOSURE CONSTRUCTION SHALL BE VENTILATED, NEMA 2, DRIP-PROOF, WITH LIFTING HOLES. ALL VENTILATION OPENINGS SHALL BE PROTECTED AGAINST FALLING DIRT.
3. OUTDOOR UNITS RATED 15 KVA OR ABOVE, PROVIDE SUITABLE WEATHER-SHIELDS OVER VENTILATION OPENINGS.

P. FINISH: DEGREASE, CLEAN, PHOSPHATIZE, PRIME, AND FINISH ALL INTERIOR AND EXTERIOR SURFACES WITH BAKED ENAMEL, COLOR ANSI 61 OR STANDARD FACTORY GRAY.

Q. CONNECT A GROUNDING STRAP FROM THE SECONDARY NEUTRAL TO A GROUNDING LUG ON THE ENCLOSURE.

R. TERMINALS: SOLDERLESS LUG TYPE CONNECTORS, WITH HEX-HEAD OR ALLEN TYPE COMPRESSION SET SCREWS WITH CONFIGURATION TO SUIT APPLICATION T & B "LOCKTITE", BURNDY "GA", OZ TYPE "XL" OR "XLH" OR EQUAL.

S. MANUFACTURER: EATON, ABB, SQUARE D.

PART 3 - EXECUTION

3.1 RACEWAY SYSTEMS

A. INSTALL ALL WIRING IN RACEWAYS. INSTALL RACEWAY SYSTEMS, INCLUDING CONDUITS, HANGERS, HOOKS, AND SUPPORT CHANNELS PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS. COORDINATE LOCATION OF RACEWAY SYSTEMS WITH OTHER DIVISIONS PRIOR TO COMMENCING INSTALLATION.

B. RIGID STEEL CONDUIT: SUITABLE FOR USE IN ALL LOCATIONS. FOR UNDERGROUND INSTALLATIONS TAPE WRAP CONDUIT COMPLETELY WITH TAPE SUITABLE FOR UNDERGROUND INSTALLATIONS, DOUBLE LAP OF CALPICO 10 MIL OR EQUAL.

C. ELECTRICAL METALLIC TUBING: SUITABLE FOR USE IN CONCEALED DRY LOCATIONS, NOT IN CONCRETE, MASONRY, OR UNDERGROUND, OR SUITABLE EXPOSED, MINIMUM 8 FEET ABOVE FINISHED FLOOR. USE 4 INCH CONDUIT SLEEVES TO PENETRATE TECHNOLOGY EQUIPMENT ROOM FLOORS PROJECTING 6 INCHES ABOVE FINISHED FLOOR WITHOUT A BEND. PROVIDE BUSHINGS AT BOTH END OF CONDUIT.

D. FLEXIBLE METAL CONDUIT: SUITABLE FOR CONNECTION OF RECESSED LIGHTING FIXTURES OR OTHER DEVICES REQUIRING FLEXIBLE CONNECTIONS IN DRY LOCATIONS. FLEXIBLE METAL CONDUIT MAY BE FISHED INTO EXISTING WALLS AS ALLOWED BY THE CEC. LENGTH SHALL NOT EXCEED 6'-0".

E. LIQUID TIGHT FLEXIBLE METAL CONDUIT: SUITABLE FOR CONNECTION OF EQUIPMENT IN DAMP OR WET LOCATIONS.

F. PVC CONDUIT: SUITABLE FOR USE UNDERGROUND, WITH A MINIMUM OF 18 INCHES OF COVER. FABRICATE FIELD BENDS WITH AN APPROVED THERMAL BENDER AND JIG. MAINTAIN SEPARATION BETWEEN CONDUITS USING PLASTIC SPACERS SPECIFICALLY DESIGNED FOR THE PURPOSE.

G. CLEAN AND MANDREL ALL UNDER FLOOR/GROUND RACEWAYS BEFORE WIRE IS INSTALLED.

H. CONDUIT SUPPORTS:
1. SUPPORT ALL CONDUITS AT INTERVALS NOT TO EXCEED 10 FEET.
2. SUPPORT INDIVIDUAL CONDUITS WITH CONDUIT HANGERS OR CLAMP BACK AND NEST BACK, IF REQUIRED FOR ENTRANCE INTO THE EQUIPMENT.
3. SUPPORT MULTIPLE CONDUITS, 2 OR MORE IN PARALLEL, WITH FRAMING CHANNEL AND PIPE CLAMPS.
4. SUPPORT ALL ELECTRICAL EQUIPMENT LOCATED IN THE CEILING SPACE IN ACCORDANCE WITH CBC SECTIONS 1613A AND 1614A. FIRMLY ATTACH ITEMS WEIGHING LESS THAN 20 POUNDS TO MAIN CROSS RUNNERS. TWO 12 GAUGE SUPPORT WIRES TO THE CEILING SYSTEM HANGERS OR STRUCTURE SHALL BE INCLUDED FOR ITEMS FROM 20 TO 56 POUNDS. DIRECTLY SUPPORT ITEMS OVER 56 POUNDS FROM THE STRUCTURE ABOVE WITH APPROVED HANGERS.
5. FIRE STOP PENETRATIONS OF CONDUITS, SLEEVES AND CABLE TRAYS IN WALLS REQUIRING PROTECTED OPENINGS. PROVIDE FIRE STOP MATERIAL WHICH IS A TESTED ASSEMBLY APPROVED BY THE CALIFORNIA STATE FIRE MARSHAL.
6. CUT ENDS OF FRAMING CHANNEL INSTALLED OUTDOORS OR IN WET LOCATIONS SHALL BE PAINTED WITH ZINC RICH PAINT.

I. CONDUIT BENDS:
1. ELECTRICAL CONDUITS: PROVIDE NO MORE THAN (3) 90 DEGREE CONDUIT BENDS OR THE EQUIVALENT NUMBER OF SMALLER RADIUS BENDS IN ANY CONDUIT RUN BETWEEN BOXES OR EQUIPMENT.
2. TELECOMMUNICATIONS CONDUITS: PROVIDE NO MORE THAN (2) 90 DEGREE BENDS OR THE EQUIVALENT NUMBER OF SMALLER RADIUS BEND IN ANY CONDUIT RUN BETWEEN BOXES OR STUB, WITH RADIUS 10 TIMES THE DIAMETER OF THE CONDUIT.
3. LENGTH OF RUN: 400 FEET MAXIMUM, LESS 100 FEET FOR EACH EQUIVALENT 90 DEGREE BEND.
4. FABRICATE BENDS AND OFFSETS WITH A HICKEY OR CONDUIT BENDER DESIGNED SPECIFICALLY FOR USE WITH THE TYPE OF CONDUIT TO BE BENT, OR USE FACTORY MADE BEND.
5. RADIUS OF UNDERGROUND BENDS: MINIMUM 10 TIMES CONDUIT RADIUS.

3.2 BOXES AND CABINETS

A. PLACE OUTLET BOXES IN A LOCATION AS CLOSE TO THAT SHOWN ON THE PLANS AS POSSIBLE. COORDINATE LOCATION OF BOXES WITH OTHER DIVISIONS.

B. INSTALL WALL MOUNTED OUTLET BOXES SO THAT THE DISTANCE FROM THE CENTERLINE OF THE BOX TO FINISHED FLOOR IS AS LISTED OR INDICATED ON PLAN:
1. RECEPTACLES, + 18 INCHES
2. SWITCHES, + 45 INCHES

C. INSTALL JUNCTION BOXES WITH COVERS ACCESSIBLE AFTER INSTALLATION. DO NOT INSTALL JUNCTION BOXES FLUSH WITH FINISH WALLS OR CEILINGS UNLESS SPECIFICALLY APPROVED BY THE ENGINEER.

D. ATTACH SURFACE BOXES WITH:
1. STEEL OR MALLEABLE IRON EXPANSION ANCHORS IN CONCRETE OR SOLID MASONRY.
2. WOOD SCREWS IN WOOD.
3. TOGGLE BOLTS IN HOLLOW WALLS OR MASONRY.
4. MACHINE SCREWS, BOLTS, OR WELDED STUDS IN STEEL.

E. ATTACH FLUSH BOXES WITH ADJUSTABLE BAR TYPE HANGERS SCREW FASTENED TO TWO STUDS AND ON BOTH SIDES OF THE BOX.

F. FOR ALL SURFACE MOUNTED BOXES OR CABINETS MOUNTED IN WET OR DAMP LOCATIONS PROVIDE WEATHERPROOF ENCLOSURES AND AT LEAST 1/4 INCH AIR SPACE BETWEEN BOX AND MOUNTING SURFACE, PER CEC 312.2.

3.3 INSULATED CONDUCTORS AND CABLES

A. EXERCISE EXTREME CARE WHEN PULLING CONDUCTORS AND CABLE INTO CONDUITS TO AVOID KINKING, TWISTING, NICKING, OR SCRATCHING OF THE INSULATION OR THE PLACEMENT OF EXTREME STRESS ON THE CONDUCTORS OR CABLE. WHEN REQUIRED, UTILIZE UL APPROVED PULLING COMPOUNDS TO ASSIST IN PULLING CONDUCTORS.

B. COLOR CODE CONDUCTORS BY PHASE SEQUENCE A-B-C WHEN LOOKING INTO THE FRONT OF THE EQUIPMENT FROM LEFT-TO-RIGHT, TOP TO BOTTOM OR FRONT-TO-BACK. PROVIDE CONDUCTORS WITH THE APPROPRIATE PHASE COLOR OR MARK CONDUCTORS WITH A MINIMUM OF 6 INCHES OF PHASE TAPE ON ENDS CONNECTED TO TERMINALS. PHASE CODE CONDUCTORS AS LISTED:

VOLTAGE	PHASE A	PHASE B	PHASE C	NEUTRAL
120/208 GROUND	BLACK	RED	BLUE	WHITE
120/240 GREEN	BLACK	RED	ORANGE	WHITE
277/480 GREEN	BROWN	ORANGE	YELLOW	GRAY

C. IDENTIFY EACH CONDUCTOR WITH ITS RESPECTIVE CIRCUIT NUMBER AT EACH BOX OR TERMINAL.

D. CONNECTIONS:
1. UTILIZE TWIST-ON SOLDERLESS CONNECTORS FOR SPLICING RECEPTACLE AND LIGHTING CIRCUITS #10 AWG WIRE SIZE AND SMALLER.
2. SPLICES AND TAPS WILL NOT BE PERMITTED FOR OTHER THAN RECEPTACLE AND LIGHTING CIRCUITS, OR FOR WIRE LARGER THAN #10.
3. TERMINATE CONDUCTORS AT MOTORS WITH BOLTED CONNECTIONS, INSULATED WITH PLASTIC TAPE.

3.4 DRY TYPE POWER TRANSFORMER

A. MOUNT TRANSFORMER ON FLOOR OR WALL AS INDICATED OR DETAILED.

B. PROVIDE ONE (1) VIBRATION ISOLATING MOUNT, MINIMUM 1 INCH THICK WITH 1 INCH STATIC DEFLECTION, FOR EACH MOUNTING POINT ON THE TRANSFORMER.

C. CONNECT TRANSFORMER WITH FLEXIBLE METAL CONDUIT. PROVIDE AN INSULATED GROUNDING BUSHING ON CONDUIT AND BOND TO TRANSFORMER CASE.

3.5 BRANCH CIRCUIT PANELBOARDS

A. MOUNT PANELBOARD SO THAT THE TOP IS 6 FEET-6 INCHES ABOVE THE FINISHED FLOOR.

B. NEATLY TERMINATE CONDUCTORS ONTO BREAKER, GROUND BUS, AND NEUTRAL BUS. GROUP CONDUCTORS IN AN ORGANIZED MANNER WITH CONDUCTORS FANNING OUT AT THE CIRCUIT TERMINALS, BUNDLED IN THE WIREWAYS AND LACED WITH PLASTIC TIES.

C. IDENTIFY ALL CONDUCTORS WITH A CIRCUIT NUMBER AND PHASE COLOR.

D. TYPE ALL PANELBOARD DIRECTORIES.

E. PROVIDE A MINIMUM OF THREE (3) 3/4 INCH EMPTY CONDUITS INTO ACCESSIBLE CEILING SPACE.

F. PROVIDE INSULATED GROUNDING BUSHINGS ON ALL CONDUITS WHICH ENTER THE CABINET AND BOND TO GROUND BUS.

G. INSTALL CONDUITS IN A VERTICAL LINE, PERPENDICULAR TO THE CABINET.

3.6 WIRING DEVICES

A. CONNECT WIRING DEVICES TO CIRCUITS INDICATED USING SIDE OR BACK WIRING TERMINALS.

B. CONNECT GREEN GROUNDING PIGTAIL FROM RECEPTACLES TO OUTLET BOX WITH SCREW.

C. INSTALL WIRING DEVICES FLUSH WITH THE DEVICE PLATE FRONTS.

D. ALIGN PLATES PLUMB WITH WALL, AND COVER OPENING, WITHOUT USE OF "JUMBO" PLATES.

E. INSTALL RECEPTACLES WITH GROUNDING TERMINAL UP.

3.7 DISCONNECT SWITCHES

A. INSTALL DISCONNECT SWITCHES WHERE INDICATED. PROVIDE ALL MOUNTING HARDWARE AND ACCESSORIES.

B. PROVIDE A FLEXIBLE CONNECTION FROM THE DISCONNECT SWITCH TO THE MOTOR UNLESS OTHERWISE INDICATED.

C. ATTACH DISCONNECT SWITCHES WITH SPECIFIED ANCHORS.

D. PHASE TAPE AND IDENTIFY CIRCUIT NUMBERS AS SPECIFIED.

E. INSTALL FUSES WHERE INDICATED.

3.8 GROUNDING

A. PERMANENTLY AND EFFECTIVELY GROUND ALL RACEWAY SYSTEMS, SUPPORTS, CABINETS, SWITCHBOARDS, CONTROL EQUIPMENT, MOTOR FRAMES, LIGHTING FIXTURES AND OTHER UTILIZATION APPARATUS.

B. PROVIDE A GROUND WIRE IN EACH CONDUIT CARRYING CIRCUITS OPERATING AT 100 VOLTS OR HIGHER BONDED AT EACH END TO EQUIPMENT. SIZE AS SHOWN ON THE DRAWINGS OR PER CEC.

3.9 ELECTRICAL WORK FOR EQUIPMENT

A. PROVIDE ALL CONNECTIONS TO EQUIPMENT REQUIRING ELECTRICAL SUPPLY.

B. REVIEW DIVISION 23 MECHANICAL SCOPE REQUIREMENTS FOR ADDITIONAL WORK REQUIRED.

3.10 EQUIPMENT MOUNTING CRITERIA

A. SUPPORT ALL ELECTRICAL EQUIPMENT LOCATED IN THE CEILING SPACE IN ACCORDANCE WITH LATEST EDITION OF CBC. FIRMLY ATTACH ITEMS WEIGHING LESS THAN 20 POUNDS TO MAIN CROSS RUNNERS. TWO 12 GAUGE SUPPORT WIRES TO THE CEILING SYSTEM HANGERS OR STRUCTURE SHALL BE INCLUDED FOR ITEMS FROM 20 AND 56 POUNDS. DIRECTLY SUPPORT ITEMS OVER 56 POUNDS FROM THE STRUCTURE ABOVE WITH APPROVED HANGERS.

B. ANCHORAGE OF ALL EQUIPMENT TO BE INSTALLED, AS A PART OF THIS PROJECT SHALL BE DETAILED ON THE APPROPRIATE PLANS, EXCEPT FOR THE FOLLOWING:
1. EQUIPMENT WEIGHING LESS THAN 400 POUNDS SUPPORTED DIRECTLY ON THE FLOOR OR ROOF.
2. FURNITURE (NON-FIXED AND MOVABLE AS EXEMPTED BY THE CBC).
3. TEMPORARY AND MOVABLE EQUIPMENT (NON-FIXED AND MOVABLE AS EXEMPTED BY THE CBC).
4. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUPPORTED BY VIBRATION ISOLATORS.
5. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

C. PERMANENT EQUIPMENT IN ITEMS 1, 4 AND 5 MUST BE SUPPORTED AND ANCHORED TO RESIST THE FORCES PRESCRIBED BY CHAPTER 13 OF ASCE 7 AS MODIFIED BY THE CBC AND THE ANCHORAGE SHALL BE APPROVED BY THE APPROPRIATE DESIGN PROFESSIONAL OF RECORD AS A PART OF FIELD REVIEWS/OBSERVATIONS. THE INSPECTOR OF RECORD SHALL ASSURE THAT THE ABOVE REQUIREMENTS ARE ENFORCED.

D. ANCHORAGE PRE-APPROVAL: WHERE CONTRACT DRAWINGS REFERENCE ANCHORAGE PRE -APPROVAL NUMBERS (OPM) FOR SPECIFIC PIECES OF EQUIPMENT THE ENGINEER SHALL VERIFY THAT THE PRE-APPROVAL IS APPROPRIATE. IF THE INSTALLATION VARIES IN ANY WAY FROM THE SHOWN IN THE ANCHORAGE PRE-APPROVAL DOCUMENT, THE ENGINEER SHALL PROVIDE COMPLETE CALCULATIONS FOR ANCHORAGE AND BRACING OF THE COMPONENT AND SYSTEM.

E. PRE-APPROVALS FOR THE SEISMIC BRACING OF RACEWAYS, DUCTS, AND CONDUITS: ALL OF THE PRE-APPROVED SYSTEMS REQUIRE THAT THE SEISMIC LATERAL FORCE, FP INCLUDING CONSIDERATION OF AP AND RP BE DETERMINED AT EACH LEVEL OF THE BUILDING SO THAT BRACE SPACING CAN BE CALCULATED. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE ALL PARAMETERS REQUIRED TO COMPUTE FP (SUCH AS SEISMIC ZONE, IP AND HR PROVIDE HX FOR EACH FLOOR WHERE PRE-APPROVED IS USED) ON THE CONTRACT DRAWINGS.

F. THE CONTRACTOR SHALL PROVIDE AND THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF ANY SUPPLEMENTARY FRAMING THAT IS NEEDED TO RESIST THE LOADS, MAINTAIN STABILITY AND/OR IS REQUIRED FOR THE INSTALLATION OF THE PRE -APPROVED SYSTEM.

G. A COPY OF THE CHOSEN BRACING SYSTEM(S) INSTALLATION GUIDE/MANUAL SHALL BE ON THE JOBSITE PRIOR TO STARTING THE INSTALLATION OF HANGERS AND/OR BRACES.

H. DO NOT MIX COMPONENTS OF TWO OR MORE PRE -APPROVED BRACING SYSTEMS. ONLY ONE PRE-APPROVED BRACING SYSTEM MAY BE USED FOR A RUN OF PIPE, DUCT OR CONDUIT.

AGENCY APPROVAL:

Draft copy pending DSA approval
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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

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capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.
DATE SIGNED: 04-25-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author
SHEET NAME:
ELECTRICAL SPECIFICATIONS

CONSTRUCTION DOCUMENTS

DATE: **04.30.2025** CLIENT PROJ NO: **3431007000**
SHEET:
E3.1-3

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" WHEN PRINTED ON ANSI D SHEETS ORIGINAL PAGE SIZE

ELECTRICAL ABBREVIATION

ABBREVIATION	DESCRIPTION
A	AMPERES, AMBER
AC	ALTERNATING CURRENT, AIR CONDITIONER
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AVAILABLE INTERRUPTING CAPACITY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT, CLOSE, CONTROL
CB	CIRCUIT BREAKER
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
CLG	CEILING
COM	COMMUNICATION
CT	CURRENT TRANSFORMER
CU	COPPER
(D)	DEMOLISH
(E)	EXISTING
(ER)	EXISTING TO BE RELOCATED
EF	EXHAUST FAN
ECH	ELECTRIC CONVECTION HEATER
F	FUSE
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GRC	GALVANIZED RIGID STEEL CONDUIT
KVA	KILOVOLT AMPERES
KW	KILOWATT
LED	LIGHT EMITTING DIODE
MDB	MAIN DISTRIBUTION BOARD
MDP	MAIN DISTRIBUTION PANEL
MSB	MAIN SWITCHBOARD
MT, MTD	MOUNT, MOUNTED
MT	EMPTY CONDUIT WITH NYLON PULL CORD
N/A	NOT APPLICABLE
(N)	NEW
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OS	OCCUPANCY SENSOR
PH	PHASE
PHP	PACKAGED HEAT PUMP
PNL	PANEL
REF	REFERENCE
REQD	REQUIRED
S	SWITCH
SIM	SIMILAR
TELE	TELEPHONE
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
V	VOLTS, VOLTAGE
W/	WITH
W	WIRE, WHITE
WP	WEATHERPROOF
XFMR	TRANSFORMER

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	GENERAL
X / X	DETAIL NUMBER AND SHEET LOCATION
	NEW WORK
XX-X LOCATION	EQUIPMENT IDENTIFICATION
1	KEYED NOTE
	LIGHTING
	CEILING FAN
	EXIT SIGN CEILING MOUNTED, ARROW(S) INDICATES DIRECTION IF SHOWN
	EXIT SIGN WALL MOUNTED, ARROW(S) INDICATES DIRECTION IF SHOWN
	AREA LUMINAIRE ARM MOUNTED WITH POLE AND CONCRETE BASE
	SURFACE OR PENDANT MOUNTED LUMINAIRE
	SURFACE OR PENDANT MOUNTED LUMINAIRE CONNECTED TO EMERGENCY/LIFE SAFETY CIRCUIT OR WITH INTEGRAL EMERGENCY BATTERY CONNECTED TO UNSWITCHED CIRCUIT
	WALL MOUNTED LUMINAIRE
	BOLLARD
	MISCELLANEOUS
#10 B-27,29,31, B-27,29,31.	BRANCH CIRCUIT WIRING. ARROW INDICATES HOME RUN TO PANEL WITH CIRCUITS AS NOTED. WIRE SIZE IS #12 AWG MINIMUM UNLESS NOTED OTHERWISE. SHORT TICK MARKS INDICATE PHASE CONDUCTORS. LONG TICK MARKS INDICATE NEUTRAL CONDUCTORS. A SINGLE CURVED TICK MARK INDICATES INSULATED GREEN GROUND CONDUCTOR. SECOND CURVED TICK MARK INDICATES "ISOLATED GROUND" (GREEN INSULATION WITH YELLOW STRIPE) CONDUCTOR.
	BRANCH PANEL
	CIRCUIT BREAKER
	CURRENT TRANSFORMER
M	DIGITAL TYPE METER WITH VOLTMETER, AMMETER, KW METER, KVA METER, KVAR METER, AND %THD METER
	EQUIPMENT CONNECTION ITEM, REFER TO SCHEDULE
	FLUSH MOUNT EQUIPMENT ENCLOSURE AS NOTED
	FLUSH WALL MOUNTED BRANCH PANEL
	GROUND ROD
	GROUNDING POINT
	LANDING LUG
	MAIN DISTRIBUTION PANEL / SUB DISTRIBUTION PANEL
M	METER WITH CONNECTION
	SURFACE MOUNT EQUIPMENT ENCLOSURE AS NOTED

ELECTRICAL LEGEND

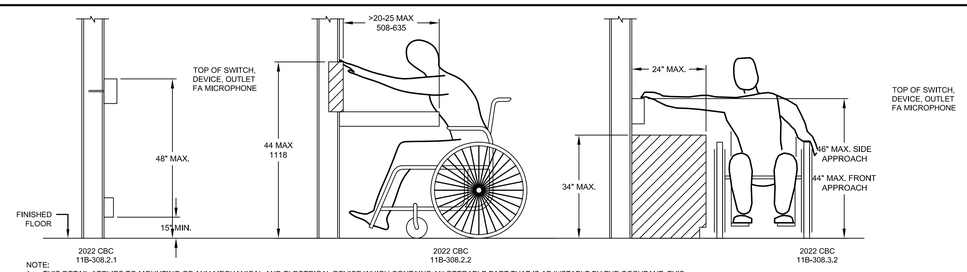
SYMBOL	DESCRIPTION
UT	UTILITY TRANSFORMER PAD/VAULT
	WALL MOUNTING BRACKET
	WATER PIPE GROUND CONNECTION
	CONNECTIONS / EQUIPMENT
	HEAVY DUTY FUSED DISCONNECT SWITCH
J OR J	JUNCTION BOX
J	JUNCTION BOX WITH FLEX CONNECTION TO EQUIPMENT
J	WALL-MOUNTED JUNCTION BOX
	NON-FUSED DISCONNECT SWITCH
T	TRANSFORMER
M	DOORBELL - NUTONE #LA11WH +7'-6"
	DOORBELL PUSH BUTTON
	ENCLOSED CIRCUIT BREAKER
	RACEWAYS
	CONDUIT CONCEALED IN WALL OR CEILING SPACE
	CONDUIT ROUTED BELOW FLOOR / GRADE
	CATV ROUTED BELOW FLOOR / GRADE
	TEL/DATA ROUTED BELOW FLOOR / GRADE
	CONDUIT ELLED DOWN
	CONDUIT ELLED UP
	CONDUIT/WIRING CONTINUATION
	CONDUIT/WIRING STUBBED OUT WITH END CAP OR INSULATED PLASTIC BUSHING
	FLEXIBLE CONDUIT
	TELEPHONE BACKBOARD
	TELECOMMUNICATIONS
	RACEWAY ONLY DATA OUTLET. PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 1" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. SEE LETTER CODE LIST AT DATA/TELEPHONE OUTLET FOR OPTIONS.
	RACEWAY ONLY DATA/TELEPHONE OUTLET, PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 1" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. (MULTIPLE LETTERS INDICATE MULTIPLE OPTIONS) A = ABOVE COUNTER C = CEILING MOUNTED ABOVE ACCESSIBLE CEILING F = FLUSH CEILING MOUNTED R = SURFACE MOUNTED ON RACEWAY
	RACEWAY ONLY TELEPHONE OUTLET, PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 3/4" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. SEE LETTER CODE LIST AT DATA/TELEPHONE OUTLET FOR OPTIONS.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	SWITCHES AND RECEPTACLES
	DUPLEX RECEPTACLE (MULTIPLE LETTERS INDICATE MULTIPLE OPTIONS) A = ABOVE COUNTER B = CLOCK HANGER C = FLUSH CEILING MOUNTED E = EMERGENCY F = ARC FAULT PROTECTED BY BREAKER IN PANEL G = GROUND FAULT CIRCUIT INTERRUPTER H = HOSPITAL GRADE K = CHILD RESISTANT COVER L = ISOLATED GROUND P = PENDANT MOUNTED WITH CORD GRIPS. VERIFY PENDANT LENGTH S = SPLIT WIRED T = TAMPER RESISTANT SHUTTERED RECEPTACLE W = WEATHERPROOF CONTINUOUS USE COVER. GFCI PROTECTED, WITH WEATHER-RESISTANT RECEPTACLE ? = DESIGNER DEFINED
	SPLIT DUPLEX RECEPTACLE, TOP IS CONTROLLED
	DOUBLE DUPLEX RECEPTACLE. SEE LETTER CODE LIST AT DUPLEX RECEPTACLE FOR OPTIONS
	SINGLE RECEPTACLE. SEE LETTER CODE LIST AT DUPLEX RECEPTACLE FOR OPTIONS
	EQUIPMENT ELECTRICAL CONNECTION
	SPECIAL PURPOSE RECEPTACLE. LETTER CODE DENOTES RECEPTACLE CONFIGURATION LX-XXR = NEMA CONFIGURATION TWIST-LOCK RECEPTACLE X-XXR = NEMA CONFIGURATION STRAIGHT BLADE RECEPTACLE P = PENDANT MOUNT WITH CORD GRIPS, VERIFY PENDANT LENGTH X = COORDINATE RECEPTACLE CONFIGURATION WITH EQUIPMENT BEING SUPPLIED
$	SINGLE POLE SWITCH 2 = DOUBLE POLE SWITCH 3 = THREE-WAY SWITCH 4 = FOUR-WAY SWITCH a THRU z (LOWERCASE) = LUMINAIRE CONTROL DESIGNATION F = FAN SPEED CONTROL K = KEY OPERATED SWITCH L = LIGHTED HANDLE M = MANUAL MOTOR STARTER WITH THERMAL OVERLOAD P = SWITCH WITH PILOT LIGHT S = SENTRY SWITCH T = INTERVAL TIMER W = WEATHERPROOF SWITCH V = LOW VOLTAGE SWITCH ? = DESIGNER DEFINED SWITCH
D a,b,c	MANUAL DIMMER WITH ON/OFF OVERRIDE, PROVIDE SEPARATE DIMMER AND BOX FOR EACH ZONE INDICATED.
OS	WALL MOUNTED DUAL TECH OCCUPANCY SENSOR WITH DIMMER AND MANUAL ON/OFF OVERRIDE
	DUPLEX RECEPTACLE, FLUSH FLOOR
OS	CEILING MOUNTED OCCUPANCY SENSOR (SELF CONTAINED)
DS	CEILING MOUNTED DAYLIGHTING SENSOR
XX-1 (SEE SCHEDULE)	MOTOR / ELECTRICAL EQUIPMENT

DEVICE OUTLETS SHALL BE NO MORE THAN +48" AFF TO TOP OF BOX NOR LESS THAN +15"AFF TO BOTTOM OF BOX PER CBC 11B-308.1,2

MOUNTING OVER OBSTRUCTION DETAIL



NOTE:
1. THIS DETAIL APPLIES TO MOUNTING OF ANY MECHANICAL AND ELECTRICAL DEVICE WHICH CONTAINS AN OPERABLE PART THAT IS ADJUSTABLE BY THE OCCUPANT. THIS DOES NOT APPLY TO SENSORS OR CONTROLS THAT ARE ONLY ADJUSTABLE THROUGH THE BUILDING AUTOMATION SYSTEM (IE: TEMPERATURE AND HUMIDITY SENSORS).

ELECTRICAL GENERAL NOTES

A. ALL WORK SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND AUTHORITIES HAVING JURISDICTION.

B. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS AND ARRANGE ALL REQUIRED INSPECTIONS.

C. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS AND TRADES.

D. THESE DRAWINGS, AS PREPARED, ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS CONSTRUCTION OF THE PROJECT AND THE WORK OF THE TRADES WILL PERMIT. EQUIPMENT LOCATIONS INDICATED ARE APPROXIMATE. COORDINATE EXACT LOCATIONS AND REQUIRED CLEARANCES WITH EQUIPMENT SUPPLIER AND ALL TRADES PRIOR TO INSTALLATION.

E. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL THE EQUIPMENT INDICATED WITHIN THESE DRAWINGS UNLESS OTHERWISE NOTED. VERIFY LOCATION AND DIMENSIONS IN THE FIELD PRIOR TO FABRICATION AND / OR INSTALLATION.

F. ALL ROOF PENETRATIONS SHALL BE AT THE CONTRACTOR'S EXPENSE. COORDINATE WITH OWNER'S ROOFING CONTRACTOR SO AS NOT TO VOID ANY EXISTING ROOF WARRANTIES.

G. THE ENTIRE INSTALLATION SHALL BE GUARANTEED FREE OF DEFECTS AND CONTRACTOR SHALL REPAIR AND / OR REPLACE ANY DEFECTIVE MATERIALS OR EQUIPMENT AT NO COST TO THE OWNER FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY ARCHITECT OR ENGINEER.

H. ALL WORK SHALL BE SUBJECT TO THE ACCEPTANCE AND APPROVAL OF THE ARCHITECT AND OWNER. THE ARCHITECT SHALL BE NOTIFIED OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. FAILURE OF PROPER NOTIFICATION DOES NOT RELIEVE THE CONTRACTOR. THE CONTRACTOR SHALL CORRECT ANY AND ALL WORK ARISING FROM SUCH FAILURE TO COORDINATE DISCREPANCIES TO THE SATISFACTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.

I. ALL JUNCTION BOXES SHOWN ON THIS PLAN ARE TO BE INSTALLED ABOVE THE FINISHED CEILING.

ELECTRICAL DEMOLITION NOTES

A. THE ELECTRICAL DRAWING SET IS PREPARED BASE OF LIMITED FIELD OBSERVATION ONLY. ACTUAL CONDITIONS MAY VARY IN FIELD. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ELECTRICAL ENGINEER OF RECORD PRIOR TO BID.

B. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PHASES OF DEMOLITION AND CONSTRUCTION. COORDINATE WITH GENERAL CONSTRUCTION.

C. DISCONNECT AND MOVE ALL ELECTRICAL DEVICES AND LIGHTING FIXTURES IN DEMOLITION AREAS UNLESS NOTED OTHERWISE.

D. DISCONNECT AND REMOVE ALL ELECTRICAL DEVICES IN WALLS TO BE DEMOLISHED. WALLS TO BE DEMOLISHED ARE SHOWN DASHED. DISCONNECT AND REMOVE ASSOCIATED CONDUIT AND WIRE BACK TO LAST REMAINING DEVICE. FURNISH AND INSTALL CONDUIT AND WIRE AS NECESSARY TO CONTINUITY OF CIRCUIT(S) TO ANY EXISTING DEVICES TO REMAIN. COORDINATE AND VERIFY REQUIREMENTS WITH NEW WORK IN AREA.

E. FURNISH AND INSTALL CONDUIT AND WIRE AS NECESSARY FOR CONTINUITY OF ANY FEEDERS OR BRANCH CIRCUIT ORIGINATING OUTSIDE THE DEMOLITION AREA THAT SERVES ANY ELECTRICAL EQUIPMENT OR DEVICES TO REMAIN AFTER DEMOLITION. MODIFY OR REPLACE AS REQUIRED.

F. FURNISH AND INSTALL CONDUIT AND/OR COMMUNICATIONS/DATA WIRING AS NECESSARY FOR CONTINUITY OF ANY WIRING ORIGINATING OUTSIDE THE DEMOLITION AREA THAT SERVES ANY COMMUNICATIONDATA EQUIPMENT OR DEVICES TO REMAIN AFTER DEMOLITION. MODIFY OR REPLACE AS REQUIRED.

G. DISCONNECT AND REMOVE LIGHT SWITCHES IN DEMOLITION AREAS AS NECESSARY TO ACCOMMODATE NEW DOOR CONFIGURATIONS.

H. DISCONNECT AND REMOVE ANY EXISTING ELECTRICAL DEVICES AND BACK BOXES AS NECESSARY WHERE NEW WALL CONSTRUCTION WILL INTERSECT AN EXISTING WALL. FURNISH AND INSTALL CONDUIT AND WIRE AS REQUIRED FOR CONTINUITY OF CIRCUIT(S).

I. FURNISH AND INSTALL BLANK COVER PLATES OVER ALL EXISTING UNUSED OPENINGS.

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7 SECTION 13.3 AS DEFINED IN ASCE 7 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. THE MEP DESIGN PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING(MP), MECHANICAL DUCTS(MD), PLUMBING PIPING(PP), ELECTRICAL DISTRIBUTION SYSTEMS(E):

MP☐ MD☐ PP☐ E☒	OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
MP☐ MD☐ PP☐ E☐	OPTION 2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL
MP☐ MD☐ PP☐ E☐	OPTION 3: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL

SHEET INDEX

E0.1-4	ELECTRICAL COVER SHEET
E0.2-4	ONE-LINE DIAGRAM & SCHEDULES
E1.0-4	ELECTRICAL SITE PLAN
E2.0-4	TITLE 24 - LTO FORMS
E3.0-4	ELECTRICAL SPECIFICATIONS
E3.1-4	ELECTRICAL SPECIFICATIONS

AGENCY APPROVAL:

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LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUMAPAO E 24767 EXPIRES 1/30/26 ELECTRICAL STATE OF CALIFORNIA

DATE SIGNED:

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
ELECTRICAL COVER SHEET

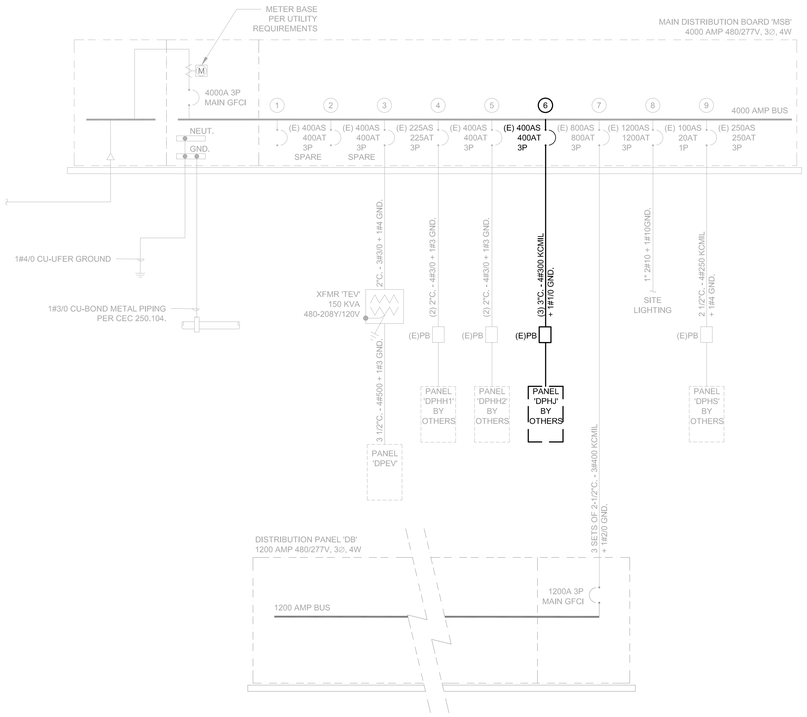
CONSTRUCTION DOCUMENTS

DATE: 03/12/2025 | CLIENT PROJ NO: 3431007000

SHEET:
E0.1-4

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" WHEN PRINTED ON ANSI FULL SHEETS ORIGINAL PAGE SIZE



ONE LINE DIAGRAM

SCALE : NONE

1
E0.2-4

LIGHTING FIXTURE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	LAMPS	VOLTS	WATTS	COLOR	LUMENS	MOUNTING	NOTES
WP	ENDURANCE WALLPACK	WAC WP-LED119-30-aGH	LED	MVOLT	19	30	1390	WALL	1

NOTES:

1 COORDINATE FINAL MOUNTING HEIGHT IN FIELD WITH ARCHITECT.

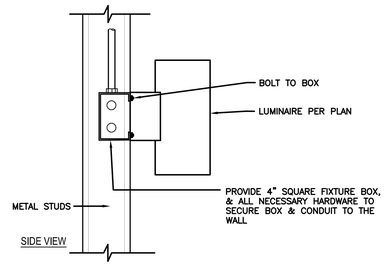
GENERAL NOTES:

A. THIS LIGHTING SCHEDULE IS NOT COMPLETE WITHOUT A COPY OF THE PROJECT MANUAL CONTAINING ELECTRICAL SPECIFICATIONS.

B. SPECIFIED MANUFACTURERS ARE APPROVED TO SUBMIT BID. INCLUSION DOES NOT RELIEVE MANUFACTURER FROM SUPPLYING PRODUCT AS DESCRIBED.
PROVIDE SUBMITTALS THAT INCLUDE LIGHTING FIXTURE, LAMP, AND DRIVER INFORMATION FOR EACH FIXTURE, WITH APPLICABLE OPTIONS CLEARLY CHECKED OR HIGHLIGHTED. SUBMITTALS NOT INCLUDING THIS INFORMATION WILL BE RETURNED AS REJECTED BY THE ENGINEER OF RECORD.

C. PROVIDE COMMISSIONING OF THE LIGHTING AND LIGHTING CONTROLS IN ACCORDANCE WITH CALIFORNIA TITLE 24 COMMISSIONING REQUIREMENTS.

D. COORDINATE COLOR TEMPERATURE WITH ARCHITECT.



EXTERIOR WALL FIXTURE MOUNTING DETAIL

SCALE : NONE

1
E0.2-4

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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER
JOHN D. GUMAYO
E 24757
EXPIRES 12/31/26
ELECTRICAL
STATE OF CALIFORNIA

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED: _____

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author
SHEET NAME:
ELECTRICAL ONE-LINE DIAGRAM & SCHEDULES

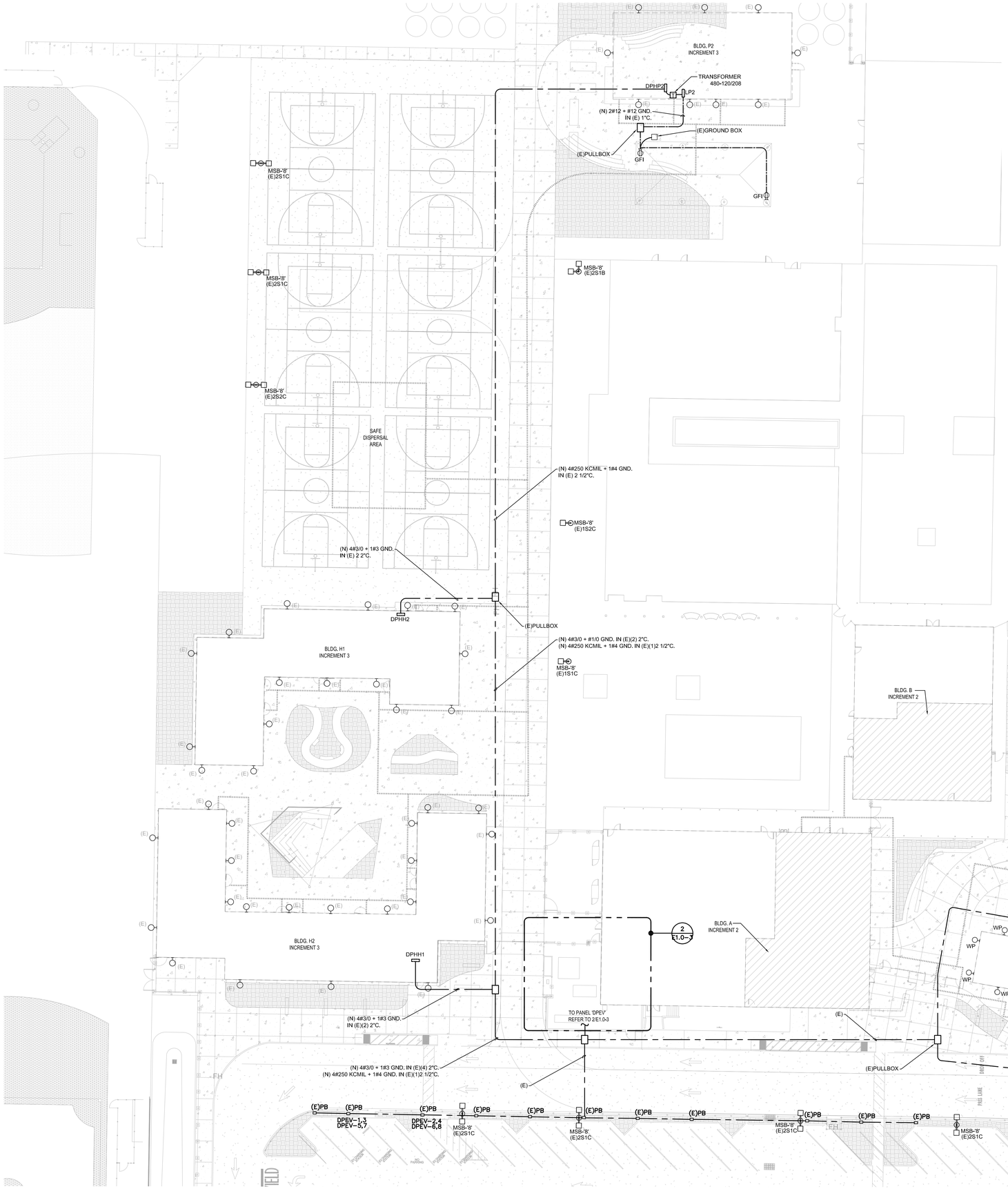
CONSTRUCTION DOCUMENTS

DATE: **03/12/2025** | CLIENT PROJ NO: **3431007000**

SHEET:
E0.2-4

PLEASE RECYCLE

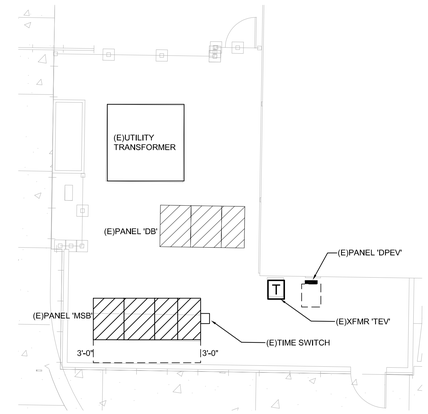
THE LINE SHOWN ABOVE IS 1" ON ORIGINAL 24x36 DRAWINGS SHEETS ORIGINAL PAGE SIZE



POWER SITE PLAN

SCALE : 1"=20'-0"

1 / E1.0-4



ENLARGED ELECTRICAL YARD PLAN

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

2 / E1.0-4

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LODI UNIFIED SCHOOL DISTRICT

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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUMAPAS E 24397 EXPIRES 12/31/26 ELECTRICAL STATE OF CALIFORNIA

DATE SIGNED:

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author
SHEET NAME:
POWER SITE PLAN

CONSTRUCTION DOCUMENTS

DATE: 03/11/2025 | CLIENT PROJ NO: 3431007000

SHEET: E1.0-4

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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 6" LONG ON ORIGINAL PAPER SIZE 36X48 SHEETS

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: Lodi Middle School Additions and Modernization	Report Page:	(Page 3 of 7)
	Date Prepared:	4/25/2025

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)2L only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1, 2]	How is Wattage determined	Total Number Luminaires[2]	Luminaire Status[3]	Excluded per 140.7(a) / 170.2(e)6A	Design Watts	Cutoff Req. > 6,200 initial lumen output 130.2(b) / 160.5(c)[4]	Field Inspector	
										Pass	Fail
WP	WP	☐ Linear	19	Mfr. Spec	38	New	☐	722	NA: < 6200 lumens	☐	☐
							Total Design Watts:	722			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to 130.2(b)

[1] FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b)
[2] For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.
[3] Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.
[4] Compliance with mandatory shielding requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by 130.2(b)/ 160.5(c)

G. SHIELDING REQUIREMENTS (BUG)

This section does not apply to this project.

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C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through N. Note: if any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv											Compliance Results		
01		02		03		04		05	06		07	08	09
General Hardscape Allowance 140.7(d)1 / 170.2(e)6 (See Table I)	+	Per Application 140.7(d)2 / 170.2(e)6 (See Table J)	+	Sales Frontage 140.7(d)2 (See Table K)	+	Ornamental 140.7(d)2 / 170.2(e)6 (See Table L)	+	Per Specific Area 140.7(d)2 / 170.2(e)6 (See Table M)	OR	Existing Power Allowance 141.0(b)2L / 180.2(b)4Bv (See Table N)	=	Total Allowed (Watts)	≥	Total Actual (Watts)	07 must be >= 08
0	+	---	+	---	+	---	+	722	OR	---	=	722	≥	722	COMPLIES
Shielding Compliance (See Table G for Details)												N/A			
Controls Compliance (See Table H for Details)												COMPLIES			

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
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Project Address: 945 South Ham Lane	Date Prepared:	4/25/2025

This document is used to demonstrate compliance with requirements in 110.9, 130.0, 130.2, 140.7, and 141.0(b)2L for outdoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e)6, 180.1(a) and 180.2(b)4Bv for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.

A. GENERAL INFORMATION

01	Project Location (city)	Lodi	04 Total Illuminated Hardscape Area (ft²)	0
02	Climate Zone	12		
03	Outdoor Lighting Zone per Title 24 Part 1 10.114 or as designated by Authority Having Jurisdiction (AHJ):			
☐ LZ-0: Very Low - Undeveloped Parkland	☒ LZ-2: Moderate - Urban Clusters	☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval		
☐ LZ-1: Low - Rural Areas	☐ LZ-3: Moderately High - Urban Areas			
05	Occupancy Types within Project			

• All Other Occupancies

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv for alterations.

My Project Consists of:

01	02	
☒ New Lighting System	Must Comply with Allowances from 140.7 / 170.2(e)6	
☐ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?	○ Yes ○ No
03	04	05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method
☐ < 10% ☐ >= 10% and < 50% ☐ >= 50%		

Please proceed to the Outdoor Lighting Fixture Schedule to define the project's luminaires.

[1] FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

STATE OF CALIFORNIA
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CALIFORNIA ENERGY COMMISSION

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	Date Prepared:	4/25/2025

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This section does not apply to this project.

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection has been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-LTO-E - Must be submitted for all buildings

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selection has been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	Unit S Walkway; Unit H1 Walkway; Unit H2 Walkway;

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: Lodi Middle School Additions and Modernization	Report Page:	(Page 5 of [illegible])
	Date Prepared:	4/25/2025

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This table includes areas using the wattage allowance per specific area from Table 140.7-B / Table 170.2-S. If more than one specific area allowance may be taken in a single project, if applicable. However, multiple specific area allowances may not be taken for the exact same area on a project.

01	02	03	04	05	06	07	08	09	10
Area Description	Specific Area Type per Table 140.7-B	CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				Additional Allowance (Watts)
		Specific Area Size (ft²)	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	
Unit H1 Walkway	BuildingFacade	5415	0.1	541.5	WP	19	9	171	171
							Total Design Watts for this Area:	171	
Unit H2 Walkway	BuildingFacade	7255	0.1	725.5	WP	19	20	380	380
							Total Design Watts for this Area:	380	
Unit S Walkway	BuildingFacade	3394	0.1	339.4	WP	19	9	171	171
							Total Design Watts for this Area:	171	
								Total Allowance (Watts) All Areas:	722

[1] FOOTNOTES: See Table 140.7-B / Table 170.2-S for rules for calculating the specific area allowances for these additional lighting allowances.
[2] For luminaires indicated in Table F as linear, the value in column 07 is W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 08 instead of number of luminaires.

STATE OF CALIFORNIA
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CALIFORNIA ENERGY COMMISSION

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	Date Prepared:	4/25/2025

H. OUTDOOR LIGHTING CONTROLS

This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
Outdoor lighting for nonresidential buildings, parking garages and common service areas in multifamily buildings must be documented separately from outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit

Mandatory Controls for Nonresidential Occupancies, Parking Garages & Common Areas in Multifamily Buildings

01	02	03	04	05	
Area Description	Shut-Off 130.2(c)1 / 160.5(c)	Auto-Schedule 130.2(c)2 / 160.5(c)	Motion Sensor 130.2(c)3 / 160.5(c)	Field Inspector	
				Pass	Fail
Unit S Walkway	Astronomical Timer	Provided	Provided	☐	☐
Unit H1 Walkway	Astronomical Timer	Provided	Provided	☐	☐
Unit H2 Walkway	Astronomical Timer	Provided	Provided	☐	☐

[1] FOOTNOTE: Text has been abbreviated, please refer to Table 160.5-A to confirm compliance with the specific light source technologies listed.
[2] Authority having jurisdiction may ask for cutsheets or other documentation to confirm compliance of light source.
[3] Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are excepted from II and III.

I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))

This table includes areas using allowance calculations per 140.7 / 170.2(e). General Hardscape Allowance is per Table 140.7-A/Table 170.2-R while "Use it or lose it" Allowances are per Table 140.7-B /Table 170.2-S. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance. Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

	01			
	"Use it or lose it" Allowance (select all that apply) (select all that apply)			
☐ General Hardscape Allowance Table I (below)	☐ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☒ Per Specific Area Table M

J. LIGHTING ALLOWANCE: PER APPLICATION

This section does not apply to this project.

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: Lodi Middle School Additions and Modernization	Report Page:	(Page 7 of 7)
Project Address: 945 South Ham Lane	Date Prepared:	4/25/2025

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Ons Hassine	Documentation Author Signature:
Company: Capital Engineering Consultants Inc.	Signature Date: 2025-04-25
Address: 11020 Sun Center Dr Ste 100	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Rancho Cordova CA 95670	Phone: 9168513543

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: John Gumawid	Responsible Designer Signature:
Company: Capital Engineering Consultants Inc.	Date Signed: 2025-04-25
Address: 11020 Sun Center Drive,Suite100	License: E24187
City/State/Zip: Rancho Cordova CA 95670	Phone: 9168513583

PLACE HOLDER FOR TITLE24 - LTO FORMS

AGENCY APPROVAL:

Draft copy pending DSA approval
05/19/2025 1:16:33 PM

LODI UNIFIED SCHOOL DISTRICT

HMC Architects
3431007000
2101 CAPITOL AVENUE, SUITE 100,
SACRAMENTO, CA, 95816
916 368 7990 / www.hmcarchitects.com

ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN C. GUMAWID E 24187 EXPIRES 9/30/26 ELECTRICAL STATE OF CALIFORNIA

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED:

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author
SHEET NAME:
TITLE 24 - LTO FORMS - UNIT S

CONSTRUCTION DOCUMENTS

DATE: 03/12/2025
CLIENT PROJ NO: 3431007000
SHEET:
E2.0-4

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 2" WHEN PRINTED ON ANSI E2 PLOTS ORIGINAL SHEET SIZE

PART 1 - GENERAL ELECTRICAL SPECIFICATIONS

1.1 WORK INCLUDED:

A. THIS SPECIFICATION SHALL APPLY TO ALL PHASES OF WORK HEREINAFTER SPECIFIED, SHOWN ON DRAWINGS, OR AS REQUIRED TO PROVIDE A COMPLETE INSTALLATION OF ELECTRICAL SYSTEMS FOR THIS PROJECT. WORK REQUIRED UNDER THIS SPECIFICATION IS NOT LIMITED TO JUST THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL, STRUCTURAL, LANDSCAPE, AND MECHANICAL/PLUMBING DRAWINGS AS WELL AS ALL OTHER DRAWINGS APPLICABLE TO THIS PROJECT, WHICH DESIGNATE THE SCOPE OF WORK TO BE ACCOMPLISHED. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO PROVIDE A COMPLETE AND OPERABLE ELECTRICAL SYSTEM THAT INCLUDES ALL DOCUMENTS THAT ARE A PART OF THE CONTRACT.
   1. WORK INCLUDED: FURNISH LABOR, MATERIAL, SERVICES, AND SKILLED SUPERVISION NECESSARY FOR THE CONSTRUCTION, ERECTION, INSTALLATION, CONNECTIONS, TESTING, AND ADJUSTMENT OF ALL CIRCUITS AND ELECTRICAL EQUIPMENT SPECIFIED HEREIN, OR SHOWN OR NOTED ON DRAWINGS, AND ITS DELIVERY TO THE OWNER COMPLETE IN ALL RESPECTS READY FOR USE.
   2. THE ELECTRICAL WORK INCLUDES INSTALLATION OR CONNECTION OF CERTAIN MATERIALS AND EQUIPMENT FURNISHED BY OTHERS. VERIFY INSTALLATION DETAILS, INSTALLATION, AND ROUGH-IN LOCATIONS FROM THE ACTUAL EQUIPMENT OR FROM THE EQUIPMENT SHOP DRAWINGS.

B. ELECTRICAL DRAWINGS: ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, AND ARE INTENDED TO CONVEY THE SCOPE OF WORK, INDICATING INTENDED GENERAL ARRANGEMENT OF EQUIPMENT, CONDUIT, AND OUTLETS. FOLLOW DRAWINGS IN LAYING OUT WORK AND VERIFY SPACES FOR INSTALLATION OF MATERIALS AND EQUIPMENT BASED ON ACTUAL DIMENSIONS OF EQUIPMENT FURNISHED.

1.2QUALITY ASSURANCE

A. DESIGN, MANUFACTURE, TESTING, AND METHOD OF INSTALLATION OF ALL APPARATUS AND MATERIALS FURNISHED UNDER REQUIREMENTS OF THESE SPECIFICATIONS SHALL CONFORM TO LATEST PUBLICATIONS OR STANDARD RULES OF THE FOLLOWING:
   1. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS - IEEE
   2. NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION - NEMA
   3. UNDERWRITER'S LABORATORIES, INC. - UL
   4. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
   5. FEDERAL SPECIFICATIONS - FED. SPEC.
   6. AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM
   7. AMERICAN NATIONAL STANDARDS INSTITUTE - ANSI
   8. NATIONAL ELECTRICAL CODE - NEC
   9. NATIONAL ELECTRICAL SAFETY CODE - NESC
   10. INSULATED CABLE ENGINEERS ASSOCIATION - ICEA
   11. AMERICAN INSTITUTE OF STEEL CONSTRUCTION - AISC
   12. STATE AND MUNICIPAL CODES IN FORCE IN THE SPECIFIC PROJECT AREA
   13. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
   14. ELECTRONICS INDUSTRIES ASSOCIATION/TELECOMMUNICATIONS INDUSTRY ASSOCIATION (EIA/TIA) CALIFORNIA ELECTRICAL CODE (WHERE ADOPTED)
   15. LOCAL AUTHORITY HAVING JURISDICTION (AHJ)
   16. PUBLISHED ELECTRICAL STANDARDS AND CODES (AS APPLICABLE).

B. PERFORM WORK IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE, APPLICABLE BUILDING ORDINANCES, AND OTHER APPLICABLE CODES, HEREINAFTER REFERRED TO AS THE "CODE." THE CONTRACTOR SHALL COMPLY WITH THE CODE INCLUDING LOCAL AMENDMENTS AND INTERPRETATIONS WITHOUT ADDED COST TO THE OWNER. WHERE CONTRACT DOCUMENTS EXCEED MINIMUM REQUIREMENTS, THE CONTRACT DOCUMENTS TAKE PRECEDENCE. WHERE CODE CONFLICTS OCCUR, THE MOST STRINGENT SHALL APPLY UNLESS VARIANCE IS APPROVED.
   1. COMPLY WITH ALL REQUIREMENTS FOR PERMITS, LICENSES, FEES, AND CODES. THE CONTRACTOR, AT CONTRACTOR'S EXPENSE, SHALL OBTAIN ALL PERMITS, LICENSES, FEES, SPECIAL SERVICE COSTS, INSPECTIONS AND ARRANGEMENTS REQUIRED FOR WORK UNDER THIS CONTRACT, UNLESS OTHERWISE SPECIFIED.
   2. COMPLY WITH REQUIREMENTS OF THE APPLICABLE UTILITY COMPANIES SERVING THIS PROJECT. MAKE ALL ARRANGEMENTS WITH UTILITY COMPANIES FOR PROPER COORDINATION OF WORK.

1.3GENERAL REQUIREMENTS

A. GUARANTEE: FURNISH A WRITTEN GUARANTEE FOR A PERIOD OF ONE-YEAR FROM DATE OF ACCEPTANCE.

B. WHEREVER A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT, DEVICES, CIRCUIT BREAKERS, ETC., (ALL MATERIALS), ARISES ON THE DRAWINGS AND/OR IN THE SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITION NOTED ON DRAWINGS AND/OR IN SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE OWNER AND ENGINEER.

C. ALL CORE CUTTING, DRILLING, AND PATCHING:
   1. FOR THE INSTALLATION OF WORK UNDER THIS SECTION, THE AFOREMENTIONED SHALL BE PERFORMED UNDER THIS SECTION OF THE SPECIFICATIONS AND THE CONCRETE SECTION OF THE SPECIFICATIONS.
   2. NO HOLES WILL BE ALLOWED IN ANY STRUCTURAL MEMBERS WITHOUT THE WRITTEN APPROVAL OF THE PROJECT'S STRUCTURAL ENGINEER.
   3. FOR PENETRATIONS OF CONCRETE SLABS OR CONCRETE FOOTINGS, THE WORK SHALL BE AS DIRECTED IN THE CONCRETE SECTION OF SPECIFICATIONS.
   4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING SURFACES WHERE HE IS REQUIRED TO PENETRATE FOR WORK UNDER THIS CONTRACT.
   5. PENETRATIONS SHALL BE SEALED TO MEET THE RATED INTEGRITY OF THE SURFACE REQUIRED TO BE PATCHED AND REPAIRED. THE PATCHED SURFACE SHALL BE PAINTED OR FINISHED TO MATCH THE EXISTING SURFACE.

D. VERIFYING DRAWINGS AND JOB CONDITIONS:
   1. THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS IN A MANNER TO BE FULLY COGNIZANT OF ALL WORK REQUIRED UNDER THIS SECTION.
   2. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY EXISTING CONDITIONS. WHERE EXISTING CONDITIONS DIFFER FROM DRAWINGS, ADJUSTMENT(S) SHALL BE MADE AND ALLOWANCES INCLUDED FOR ALL NECESSARY EQUIPMENT TO COMPLETE ALL PARTS OF THE DRAWINGS AND SPECIFICATIONS.

E. SHOP DRAWINGS/SUBMITTALS:
   1. SHOP DRAWINGS/SUBMITTALS, UNLESS REQUIRED OTHERWISE BY GENERAL PROJECT SPECIFICATIONS OR INSTRUCTIONS TO BIDDERS, SHALL BE SUBMITTED IN ELECTRONIC FORMAT (PDF) TO INCLUDE A LETTER OF TRANSMITTAL (PDF), WHICH SHALL GIVE A LIST OF THE DRAWINGS SUBMITTED WITH DATES AND/OR SYTEM(S) COMPONENTS CONTAINED WITHIN THE SUBMITTAL. DRAWINGS AND MATERIAL CUT SHEETS SHALL BE COMPLETE IN EVERY RESPECT AND EDITED/MARKED TO INDICATE SPECIFIC ITEMS BEING PROVIDED. PRINTED/HARD COPIES ARE NOT ACCEPTABLE.
   2. THE SHOP DRAWINGS/SUBMITTALS SHALL BE MARKED WITH THE NAME OF THE PROJECT, NUMBERED CONSECUTIVELY, AND BEAR THE APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE CONTRACTOR HAS CHECKED THE DRAWINGS. ANY DRAWINGS SUBMITTED WITHOUT THIS APPROVAL WILL BE RETURNED TO THE CONTRACTOR FOR RESUBMITTAL.
   3. IF THE SHOP DRAWINGS SHOW VARIATIONS FROM THE REQUIREMENTS OF THE CONTRACT BECAUSE OF STANDARD SHOP PRACTICE OR OTHER REASONS, THE CONTRACTOR SHALL MAKE SPECIFIC MENTION OF SUCH VARIATIONS IN THE CONTRACTOR'S LETTER OF TRANSMITTAL. IF THE SUBSTITUTION IS ACCEPTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER ADJUSTMENT THAT MAY BE CAUSED BY THE SUBSTITUTION. SAMPLES SHALL BE SUBMITTED WHEN REQUESTED.
   4. ONLY PRODUCTS LISTED AS "EQUAL" WITHIN THE CONTRACT DOCUMENTS, ALONG WITH FORMALLY APPROVED "SUBSTITUTIONS" WILL BE REVIEWED. PRODUCTS NOT CONFORMING TO THESE ITEMS WILL NOT BE REVIEWED AND WILL BE RETURNED TO THE CONTRACTOR FOR RE-SUBMITTAL.
   5. SHOP DRAWINGS SHALL BE SUBMITTED ON THE FOLLOWING, BUT NOT LIMITED TO:
      a. LIGHTING FIXTURES, LAMPS AND BALLASTS.
      b. SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, PANELBOARDS, AND BUS DUCTS; COMPLETE WITH OVERCURRENT DEVICE INFORMATION.
      c. TRANSFORMERS.
      d. FIRE ALARM SYSTEM/CENTRAL MONITORING SYSTEM.
      e. WIRING DEVICES.
      f. LIGHTING CONTROL PRODUCTS/DIMMING SYSTEM PRODUCTS.
      g. PULL BOXES AND UNDERGROUND VAULTS.
      h. TERMINAL CABINETS.
      i. LIGHTING INVERTERS, UPSS, RDCS, PDUS, GENERATORS, TRANSFER SWITCHES, SPD SYSTEMS.
      j. CABLE TRAY, FLEXIBLE CABLE TRAY AND CABLE RUNWAY.
      k. POWER POLES AND FLOOR BOXES.
      l. ARC FLASH, SHORT-CIRCUIT, AND COORDINATION STUDIES.
      m. ALL OTHER PRODUCTS CALLED OUT ON DRAWINGS THAT CALL FOR SHOP DRAWING SUBMITTAL.

1.4WORK IN COOPERATION WITH OTHER TRADES

A. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND DETERMINE THE WORK TO BE PERFORMED BY THE ELECTRICAL, MECHANICAL, AND OTHER TRADES. PROVIDE THE TYPE AND AMOUNT OF ELECTRICAL MATERIALS AND EQUIPMENT NECESSARY TO PLACE THIS WORK IN PROPER OPERATION, COMPLETELY WIRED, TESTED AND READY FOR USE. THIS SHALL INCLUDE ALL CONDUIT, WIRE, DISCONNECTS, RELAYS, AND OTHER DEVICES FOR THE REQUIRED OPERATION SEQUENCE OF ALL ELECTRICAL, MECHANICAL, AND OTHER SYSTEMS OR EQUIPMENT.

B. PROVIDE A CONDUIT-ONLY SYSTEM FOR LOW VOLTAGE WIRING REQUIRED FOR CONTROL OF DESCRIBED IN THIS OR OTHER PARTS OF THE CONTRACT DOCUMENTS. INSTALL ALL CONTROL HOUSINGS, CONDUITS, AND BACKBOXES REQUIRED FOR INSTALLING CONDUIT TO THE CONTROLS.

C. INSTALL SEPARATE CONDUITS BETWEEN EACH HEATING, VENTILATING AND AIR CONDITIONING SENSING DEVICE AND ITS CONTROL PANEL AND/OR CONTROL MOTOR. BEFORE INSTALLING ANY CONDUIT FOR HEATING, VENTILATING, AND AIR CONDITIONING CONTROL WIRING, VERIFY THE EXACT REQUIREMENTS FROM THE CONTROL DIAGRAMS PROVIDED WITH THE EQUIPMENT MANUFACTURER'S SHOP DRAWINGS.

1.5TESTING AND ADJUSTMENT

A. UPON COMPLETION OF ALL ELECTRICAL WORK, THE CONTRACTOR SHALL TEST ALL CIRCUITS, SWITCHES, LIGHT FIXTURES, LIGHTING CONTROL AND DIMMING SYSTEMS INCLUDING DISTRIBUTED SYSTEMS, UPSS, GENERATORS, SPDS, LIGHTING INVERTERS, TRANSFER SWITCHES, MOTORS, CIRCUIT BREAKERS, MOTOR STARTER(S) AND THEIR AUXILIARY CIRCUITS AND ANY OTHER ELECTRICAL ITEMS TO ENSURE PERFECT OPERATION OF ALL ELECTRICAL EQUIPMENT.

B. EQUIPMENT AND PARTS IN NEED OF CORRECTION, AND DISCOVERED DURING SUCH TESTING, SHALL BE IMMEDIATELY REPAIRED OR REPLACED WITH ALL NEW EQUIPMENT AND THAT PART OF THE SYSTEM SHALL THEN BE RETESTED. ALL SUCH REPLACEMENT OR REPAIR SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

C. ALL CIRCUIT(S) SHALL BE TESTED FOR CONTINUITY AND CIRCUIT INTEGRITY. ADJUSTMENTS SHALL BE MADE FOR CIRCUITS NOT COMPLYING WITH TESTING CRITERIA.

D. ALL TEST REPORTS, INCLUDING COPIES OF ANY REQUIRED ENERGY CODE ACCEPTANCE FORMS (E.G. CA TITLE 24 ACCEPTANCE FOR CODE COMPLIANCE FORMS) SHOULD BE SUBMITTED TO THE ENGINEER AT COMPLETION OF PROJECT.

E. COMPONENT TESTS:
   1. GROUNDING SYSTEMS, FOR RESISTANCE TO EARTH. PROVIDE ADDITIONAL GROUNDING ELECTRODES, IF SEPARATELY DERIVED SYSTEM GROUND RESISTANCE EXCEEDS 5 OHMS.
   2. PRIOR TO ENERGIZING EQUIPMENT, CHECK THE INSULATION RESISTANCE OF FEEDERS SIZED LARGER THAN #2 AWG WITH A 1000 VOLT DC "MEGGER". MINIMUM INSULATION RESISTANCE VALUES SHALL NOT BE LESS THAN 50 MEGA OHMS.

F. FUNCTIONAL TESTS:
   1. PERFORM ALL TESTS SUGGESTED BY THE EQUIPMENT MANUFACTURERS.
   2. VERIFY THAT EVERYTHING INSTALLED AS PART OF THE SCOPE OF WORK FUNCTIONS PROPERLY. VERIFY THAT ANY WORK PERFORMED DID NOT ADVERSELY AFFECT EXISTING SYSTEMS OR EQUIPMENT (E.G., THAT AFTER REMOVING A DEVICE FROM A BRANCH CIRCUIT THAT THE REMAINING EXISTING BRANCH CIRCUIT CONTINUITY WAS MAINTAINED).

1.6IDENTIFICATION

A. INSTALL NAMEPLATES ON ELECTRICAL EQUIPMENT INCLUDING:
   1. CIRCUIT BREAKERS, DISCONNECT SWITCHES AND STARTERS WHETHER PROVIDED UNDER THIS DIVISION OR SOME OTHER.
   2. PANELBOARDS AND TRANSFORMERS.
   3. TERMINAL CABINETS AND LIGHTING CONTROL PANELS.
   4. LIGHT SWITCHES FOR WHICH THE CONTROL FUNCTIONS ARE NOT EVIDENT.
   5. WHERE IT IS NOT OBVIOUS WHICH PIECE OF EQUIPMENT IS POWERED FROM A PARTICULAR DISCONNECT SWITCH, PROVIDE NAMEPLATES FOR BOTH DISCONNECT SWITCH AND THE POWERED EQUIPMENT.

B. DESCRIBE ITEM, CONTROL FUNCTION, OR SEQUENCE OF OPERATION ON EACH NAMEPLATE.

C. FABRICATE NAMEPLATES OF LAMINATED PHENOLIC PLASTIC, BLACK FRONT AND BACK WITH WHITE CORE FOR NORMAL POWER EQUIPMENT AND SIGNAL. PROVIDE RED FRONT AND BACK WITH WHITE CORE FOR EMERGENCY POWER EQUIPMENT AND FIRE ALARM. BEVEL EDGES. ENGRAVE THROUGH OUTER LAYER TO PRODUCE WHITE LETTERS AND NUMERALS. FOR CONTROL PILOT DEVICES, ENGRAVED METALLIC PLATES, FILLED WITH ENAMEL, ARE ACCEPTABLE. FASTEN NAMEPLATES TO EQUIPMENT WITH NO. 4 PHILLIPS, ROUND HEAD, CADMIUM STEEL, SELF-TAPPING SCREWS. USE 1/8-INCH LETTERS ON CIRCUIT BREAKERS, SWITCHES AND OTHER CONTROL DEVICES, AND 1/4-INCH LETTERS ON PANELBOARDS, SWITCHBOARDS AND OTHER MAJOR ELECTRICAL EQUIPMENT. SUBMIT LABEL DESIGNATIONS AS PART OF CORRESPONDING EQUIPMENT SUBMITTAL.

D. EQUIPMENT IDENTIFICATION IS TO INDICATE THE FOLLOWING:
   1. EQUIPMENT ID ABBREVIATION.
   2. VOLTAGE, PHASE AND WIRES.
   3. NORMAL, EMERGENCY (INDICATE BRANCH) OR OTHER SYSTEM.
   4. POWER SOURCE.

1.7FINAL INSPECTION AND ACCEPTANCE

A. AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND/OR THE DRAWINGS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNER WILL INSPECT THE WORK. CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF EACH REPRESENTATIVE.

B. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.

1.8RECORD DRAWINGS

A. DRAWINGS OF RECORD: THE CONTRACTOR SHALL PROVIDE AND KEEP UP-TO-DATE, A COMPLETE RECORD SET OF DRAWINGS. THESE SHALL BE CORRECTED DAILY AND SHOW EVERY CHANGE FROM THE ORIGINAL DRAWINGS. THIS SET OF PRINTS SHALL BE KEPT ON THE JOB SITE AND SHALL BE USED ONLY AS A RECORD SET. THIS SHALL NOT BE CONSTRUED AS AUTHORIZATION FOR THE CONTRACTOR TO MAKE CHANGES IN THE LAYOUT WITHOUT DEFINITE INSTRUCTION IN EACH CASE. UPON COMPLETION OF THE WORK, A SET OF REPRODUCIBLE CONTRACT DRAWINGS SHALL BE OBTAINED FROM THE GENERAL CONTRACTOR AND ALL CHANGES AS NOTED ON THE RECORD SET OF PRINTS SHALL BE INCORPORATED THEREON WITH BLACK INK IN A NEAT, LEGIBLE, UNDERSTANDABLE, AND PROFESSIONAL MANNER. REFER TO THE SUPPLEMENTARY GENERAL CONDITIONS FOR COMPLETE REQUIREMENTS.

1.9ARC FLASH

A. PERFORM AN INCIDENT ENERGY STUDY IN ACCORDANCE WITH THE IEEE 1584-2004A, "IEEE GUIDE FOR PERFORMING ARC FLASH HAZARD CALCULATIONS" AS REFERENCED IN NFPA 70E, "STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE", 2009 REVISION, IN ORDER TO QUANTIFY THE HAZARD FOR SELECTION OF PERSONAL PROTECTIVE EQUIPMENT (PPE). TABLES THAT ASSUME FAULT CURRENT LEVELS AND CLEARING TIME FOR PROPER PPE SELECTION ARE NOT ACCEPTABLE. ASSIST THE OWNER IN SELECTING APPROPRIATE COMBINATIONS OF PPE PRIOR TO THE FINAL ANALYSIS AND PREPARATION OF EQUIPMENT LABELS.

B. LABELS
   1. BASED ON THE RESULTS OF THE INCIDENT ENERGY STUDY, PROVIDE AND INSTALL A WARNING LABEL (ORANGE <40 CAL/CM2) OR DANGER LABEL (RED > 40 CAL/CM2) FOR EACH PIECE OF EQUIPMENT IN ACCORDANCE WITH ANSI Z535.4-2002. THE LABEL MUST BE READABLE IN BOTH INDOOR AND OUTDOOR ENVIRONMENTS FOR AT LEAST 3 YEARS AND CONTAIN THE FOLLOWING INFORMATION:
      a. ARC HAZARD BOUNDARY (INCHES)
      b. WORKING DISTANCE (INCHES)
      c. ARC FLASH INCIDENT ENERGY AT THE WORKING DISTANCE (CALORIES/ CM2), PPE CATEGORY AND DESCRIPTION INCLUDING THE GLOVE RATING
      d. VOLTAGE RATING OF THE EQUIPMENT
      e. LIMITED APPROACH DISTANCE (INCHES)
      f. RESTRICTED APPROACH DISTANCE (INCHES)
      g. PROHIBITED APPROACH DISTANCE (INCHES)
      h. EQUIPMENT/BUS NAME
      i. DATE PREPARED
      j. SUPPLIER NAME AND ADDRESS

1.10 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRING DIAGRAMS

A. PRIOR TO FINAL ACCEPTANCE OF THE JOB, THE ELECTRICAL CONTRACTOR SHALL FURNISH TO THE OWNER AT LEAST FOUR (4) COPIES OF OPERATING AND MAINTENANCE AND SERVICING INSTRUCTIONS, AS WELL AS FOUR (4) COMPLETE WIRING DIAGRAMS FOR THE FOLLOWING ITEMS OR EQUIPMENT:
   1. LIGHTING CONTROL SYSTEMS/DIMMING SYSTEMS.
   2. FIRE ALARM SYSTEM.
   3. TRANSFORMERS.
   4. SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, PANEL BOARDS, AND BUS DUCTS; COMPLETE WITH OVERCURRENT DEVICE INFORMATION.
   5. LIGHTING INVERTERS, UPSS, PDUS, GENERATORS, TRANSFER SWITCHES, SPD SYSTEMS.

B. ALL WIRING DIAGRAMS SHALL SPECIFICALLY COVER THE SYSTEM SUPPLIED. TYPICAL DRAWINGS WILL NOT BE ACCEPTED. FOUR (4) COPIES SHALL BE PRESENTED TO THE OWNER.

1.11 INTERRUPTION OF SERVICES/SERVICE SHUTDOWN

A. ANY INTERRUPTION OF ELECTRICAL SERVICES, ELECTRICAL CIRCUITS, ELECTRICAL FEEDERS, SIGNAL SYSTEMS, COMMUNICATION SYSTEMS, FIRE ALARM SYSTEMS, ETC., REQUIRED TO PERFORM WORK SHALL MEET THE SPECIFIC PRIOR-APPROVAL REQUIREMENTS OF THE OWNER. SUCH WORK SHALL BE SCHEDULED WITH THE OWNER TO BE PERFORMED AT THE OWNER'S CONVENIENCE.

B. INTERRUPTIONS/OUTAGES OF ANY OF THE OWNER'S SYSTEMS AND SERVICES MENTIONED ABOVE SHALL BE SCHEDULED TO OCCUR DURING OTHER THAN THE OWNER'S NORMAL BUSINESS HOURS. ANY OVERTIME COSTS SHALL BE BORNE BY THE CONTRACTOR.

C. SEE DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS REGARDING OUTAGES, INTERRUPTION AND ANY TEMPORARY SERVICES REQUIRED.

PART 2 - PRODUCTS

2.1 MATERIALS

A. MATERIALS AND EQUIPMENT: ALL ELECTRICAL MATERIALS AND EQUIPMENT, INCLUDING CUSTOM-MADE EQUIPMENT, SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL OR BE LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LAB (NRTL) THAT IS ALSO RECOGNIZED BY THE LOCAL AUTHORITY-HAVING-JURISDICTION (AHJ).

2.2 RACEWAYS

A. GALVANIZED RIGID CONDUIT (GRC) SHALL BE FULL WEIGHT THREADED TYPE STEEL. STEEL CONDUIT SHALL BE PROTECTED BY OVERALL ZINC COATING TO INSIDE AND OUTSIDE SURFACES, APPLIED BY THE HOT DIP, METALLIZING, OR SHERARDIZING PROCESS.

B. INTERMEDIATE METAL CONDUIT (IMC) SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH UL 1242, AND MEET FEDERAL SPECIFICATION WWC-581 (LATEST REVISION).

C. ELECTRICAL METALLIC TUBING (EMT) SHALL BE ZINC-COATED STEEL WITH BAKED ENAMEL OR PLASTIC FINISH ON INSIDE SURFACES EXCEPT AS NOTED BELOW. EMT SHALL BE DIPPED IN A CHROMIC ACID BATH TO CHEMICALLY FORM A CORROSION-RESISTANT PROTECTIVE COATING OF ZINC CHROMATE OVER GALVANIZED SURFACE.

D. FLEXIBLE METAL CONDUIT SHALL BE CONSTRUCTED OF ALUMINUM OR HOT-DIPPED GALVANIZED STEEL STRIPS WOUND SPIRALLY WITH INTERLOCKING EDGES TO PROVIDE GREATEST FLEXIBILITY WITH MAXIMUM STRENGTH. INTERIOR SURFACES SHALL BE SMOOTH AND OFFER MINIMUM DRAG TO PULLING IN CONDUCTORS. USED ONLY AS DIRECTED IN WRITING BY THE ENGINEER.

E. LIQUID-TIGHT CONDUIT (SEAL-TITE) SHALL BE GALVANIZED STEEL FLEXIBLE CONDUIT AS ABOVE EXCEPT WITH MOISTURE AND OIL-PROOF JACKET, PRE-CUT LENGTHS AND FACTORY-INSTALLED FITTINGS. FOR OUTDOOR INSTALLATIONS AND MOTOR CONNECTIONS ONLY UNLESS OTHERWISE NOTED ON DRAWINGS.

F. NON-METALLIC CONDUIT:
   1. POLYVINYL CHLORIDE (PVC) RIGID CONDUIT, SCHEDULE 40, TYPE II FOR UNDERGROUND INSTALLATION ONLY WITH SOLVENT WELDED JOINTS, CONFORMING TO UL REQUIREMENTS, LISTED FOR EXPOSED AND DIRECT BURIAL APPLICATION.
   2. CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER.

G. FIRE-RATED MC CABLE:
   1. 2-HOUR FIRE-RATED, POLYMER INSULATED 600V MC CABLE LISTED AND CONFORMING TO UL 2196 AND UL 1569 REQUIREMENTS FOR INSTALLATION AS AN ELECTRICAL CIRCUIT PROTECTIVE SYSTEM FOR USE IN COMPLYING WITH NEC, OR CEC WHERE ADOPTED, ARTICLES 695 AND 700. WHERE ADOPTED, CABLE SHEATH SHALL BE SUITABLE FOR USE AS A NEC OR CEC EQUIPMENT GROUNDING CONDUCTOR, AND SHALL BE LISTED FOR USE IN WET LOCATIONS TO 90 DEGREES C (RAYCHEM OR EQUAL).
   2. CABLE CONNECTORS SHALL BE BRASS MC CONNECTORS.

2.3 FITTINGS

A. CONDULET TYPE FITTINGS SHALL BE SMOOTH INSIDE AND OUT, TAPER THREADED WITH INTEGRAL INSULATING BUSHING AND OF THE SHAPES, SIZES AND TYPES REQUIRED TO FACILITATE INSTALLATION OR REMOVAL OF WIRES AND CABLES FROM THE CONDUIT AND TUBING SYSTEM. THESE FITTINGS SHALL BE OF METAL, SMOOTH INSIDE AND OUT, THOROUGHLY GALVANIZED, AND SHERARDIZED CADMIUM PLATED.

B. METALLIC CONDULET COVERS SHALL HAVE THE SAME FINISH AS THE FITTING AND SHALL BE PROVIDED FOR THE OPENING OF EACH FITTING WHERE CONDUCTORS DO NOT PASS THROUGH THE COVER.

C. CONNECTOR, COUPLING, LOCKNUT, BUSHINGS, AND CAPS USED WITH RIGID CONDUIT SHALL BE STEEL, THREADED AND THOROUGHLY GALVANIZED. BUSHINGS SHALL BE INSULATED.

D. UNLESS OTHERWISE NOTED, ALL INTERIOR EMT FITTINGS, CONNECTORS AND COUPLINGS INSTALLED IN CONCEALED LOCATIONS, AREAS NOT CONSIDERED TO BE WET OR DAMP LOCATIONS BY THE AHJ, OR AREAS NOT SUBJECT TO PHYSICAL DAMAGE, SHALL BE STEEL, ZINC OR CADMIUM PLATED, THREADLESS, COMPRESSION. STEEL LOCKING RING TYPE WITH INSULATED THROAT. WHERE SUITABLE FOR USE, STEEL SET SCREW FITTINGS ARE ALLOWED FOR TRADE SIZES OF 2" AND SMALLER. INSULATED THROAT IS NOT REQUIRED FOR FITTINGS, CONNECTORS, AND COUPLINGS 1" AND SMALLER.

E. ALL INTERIOR AND EXTERIOR EMT FITTINGS, CONNECTORS, AND COUPLINGS, 2" AND SMALLER, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS THAT ARE CONSIDERED BY THE AHJ TO BE WET OR DAMP LOCATIONS, SHALL BE RAINTIGHT-LISTED, STEEL, ZINC OR CADMIUM PLATED, THREADLESS, COMPRESSION, STEEL LOCKING RING TYPE WITH INSULATED THROAT. IF RAINTIGHT-LISTED, EMT FITTINGS, CONNECTORS AND COUPLINGS ARE UNAVAILABLE FOR A GIVEN TRADE SIZE OR IF CONDUIT IS INSTALLED IN AN AREA SUBJECT TO DAMAGE - PROVIDE RIGID METALLIC OR INTERMEDIATE METALLIC CONDUITS, FITTINGS, CONNECTORS, AND COUPLINGS AS REQUIRED.

F. FLEXIBLE STEEL CONDUIT CONNECTORS SHALL BE A MALLEABLE IRON CLAMP OR SQUEEZE TYPE OR STEEL TWIST-IN TYPE WITH INSULATED THROAT. THE FINISH SHALL BE ZINC OR CADMIUM PLATING.

2.4 OUTLET, PULL, AND JUNCTION BOXES

A. CONSTRUCTION: DEEP DRAWN OR FABRICATED INTERLOCKED FLAT PIECES WITH WELDED TABS, ELECTROGALVANIZED SHEET STEEL WITH ELECTROGALVANIZED HARDWARE. DO NOT USE SECTIONAL OR GANGABLE BOXES.

B. SIZE: ACCOMMODATE THE REQUIRED NUMBER AND SIZES OF CONDUITS, WIRES, SPLICES ,AND DEVICES, BUT NOT SMALLER THAN THE SIZE INDICATED OR SPECIFIED.

C. PLASTER RING: PROVIDE FLUSH WITH WALL OR CEILING FINISH, EXCEPT WHERE OTHERWISE INDICATED OR SPECIFIED.

D. DEVICE BOXES: FOR SINGLE SWITCHES AND RECEPTACLES, PROVIDE BOXES NOT LESS THAN 4 INCHES SQUARE BY 1-1/2 INCHES DEEP. FOR 2 DEVICES, PROVIDE BOXES NOT LESS THAN 4-11/16 INCHES SQUARE BY 1-1/2 INCHES DEEP.

E. TELECOMMUNICATIONS BOXES: NO LESS THAN 4-11/16 INCHES SQUARE BY 2-1/8 INCHES DEEP.

F. SPECIAL MOUNTING: IN CABINETS, TILE, CONCRETE BLOCK, BRICK, STONE, WOOD OR SIMILAR MATERIAL, PROVIDE RECTANGULAR BOXES WITH SQUARE CORNERS AND STRAIGHT SIDES. FOR SINGLE DEVICES, PROVIDE BOXES 4 INCHES HIGH BY 2-1/2 INCHES WIDE BY 3-3/8 INCHES DEEP. FOR 2 OR MORE DEVICES, PROVIDE MULTI-GANG, NON-SECTIONAL BOX WITH TILE OR MASONRY RING.

G. LIGHTING FIXTURES: 4 INCHES OCTAGON BY 2-1/8 INCHES DEEP, MINIMUM. FIT BOXES FOR SURFACE OR PENDANT MOUNTED FIXTURES WITH 3/8 INCH MALLEABLE IRON FIXTURE STUD.

H. WET OR DAMP LOCATIONS, CAST METAL:
   1. BOX: MALLEABLE IRON.
   2. COVER: GASKETED, WEATHERPROOF, MALLEABLE IRON, WITH STAINLESS STEEL SCREWS.
   3. HUBS: THREADED.
   4. LUGS (CAST MOUNTING) MANUFACTURERS:
      a. CROUSE-HINDS: TYPE FD OR FD, OR EQUAL
      b. APPLETON: TYPE FS OR FD, OR EQUAL

2.5 PULL AND JUNCTION BOXES OVER 300 CUBIC INCHES

A. GENERAL: FOR ALL PULL AND JUNCTION BOXES OVER 300 CUBIC INCHES, PROVIDE CODE GAUGE, SHEET STEEL BOXES WHICH MEET NEMA 1 STANDARDS FOR PANELBOARD AND TERMINAL CABINET BOX CONSTRUCTION, WITH SCREW TYPE COVERS.

B. GROUND LUG: WELD, BEFORE FINISH IS APPLIED, A GROUNDING PAD DRILLED FOR TWO BOLTED GROUNDING LUGS OR TWO GROUND STUDS ON THE BOX INTERIOR.

C. FINISH: APPLY RUST INHIBITING PRIME COAT AND 2 COATS OF BAKED ENAMEL, STANDARD FACTORY GRAY.

D. HARDWARE: CADMIUM PLATED STEEL SCREWS.

2.6 SUPPORTING DEVICES

A. CONDUIT SUPPORTS:
   1. WET LOCATIONS:
      a. ONE HOLE GALVANIZED MALLEABLE IRON STRAP WITH GALVANIZED MALLEABLE OR CAST IRON CLAMP BACK, OZ/GEDNEY TYPE 14-G.
   2. DRY LOCATIONS:
      a. GALVANIZED STEEL STRAPS, OZ/GEDNEY TYPE 5-S AND 14-S, T & B, APPLETON OR EQUAL.
   3. PLUMBERS PERFORATED STRAP IS NOT ACCEPTABLE.
   4. HANGER ROD, 3/8 INCH, MINIMUM GALVANIZED ALL THREAD ROD OR AS DETAILED FOR SPECIFIC USE.

B. CONDUIT RACKS:
   1. FRAMING CHANNEL, STEEL, KINDORF, UNISTRUT

THE LINE SHOWN ABOVE IS 2" WHEN PRINTED ON ORIGINAL 24x36 SHEETS ORIGINAL PAGE SIZE

K. THE CONTRACTOR SHALL PROVIDE DUPLEX RECEPTACLE OUTLETS IN THE APPROPRIATE CONFIGURATIONS NECESSARY TO COMPLY WITH APPLICABLE ENERGY CODE REQUIREMENTS FOR CONTROLLED RECEPTACLES AND AS SHOWN ON PLANS. ALL WIRING DEVICES INDICATED TO BE CONTROLLED RECEPTACLES SHALL BE NEMA-APPROVED, ELECTRICAL CODE-COMPLIANT WITH FACTORY MARKINGS ON THE FACE OF THE RECEPTACLE(S) WITH THE WORD "CONTROLLED" OR UTILIZE FURTHER MARKINGS AND SYMBOLS TO INDICATE WHICH RECEPTACLES ON EACH OUTLET IS/ARE CONTROLLED. STICKERS, FIELD-APPLIED MARKINGS OR OTHER NON-PERMANENT MARKINGS ARE NOT ACCEPTABLE. WHERE A GFCI RECEPTACLE OUTLET IS REQUIRED TO BE CONTROLLED, PROVIDE AN ADJACENT CONTROLLED DUPLEX RECEPTACLE OUTLET CONNECTED ON THE LOAD SIDE OF THE GFCI OUTLET. GENERALLY, ONE RECEPTACLE IN A DUPLEX RECEPTACLE OUTLET IS REQUIRED TO BE CONTROLLED. IT MAY BE THE LOWER RECEPTACLE OR UPPER RECEPTACLE BASED ON MANUFACTURER OFFERING. HOWEVER, THE CONTROLLED RECEPTACLE LOCATION WITHIN A CONTROLLED RECEPTACLE OUTLET SHALL REMAIN CONSISTENT THROUGHOUT THE PROJECT. WHERE AN EXISTING DUPLEX RECEPTACLE OUTLET IS REQUIRED TO BE CONTROLLED, PROVIDE A NEW WIRING DEVICE WITH THE APPROPRIATE CONTROL CONFIGURATION NECESSARY TO COMPLY WITH PLANS. ALL CONTROLLED RECEPTACLES SHALL BE CONNECTED TO A BRANCH CIRCUIT CONTROLLED BY AN OCCUPANCY SENSOR-BASED OR RELAY PANEL LIGHTING CONTROL SYSTEM. ACCEPTABLE MANUFACTURERS ARE LEVITON, PASS AND SEYMOUR & HUBBELL.

2.12 DISCONNECT SWITCHES

A. NON-FUSIBLE OR FUSIBLE, HEAVY-DUTY, EXTERNALLY OPERATED HORSEPOWER-RATED, 600V A.C: PROVIDE NEMA 3R, LOCKABLE ENCLOSURES FOR ALL SWITCHES LOCATED ON ROOF TOPS, IN WET OR DAMP AREAS AND IN ANY AREA EXPOSED TO THE ELEMENTS.

B. FUSIBLE SWITCHES SHALL BE CLASS "R" WHEN 600A OR LESS, AND CLASS "L" WHEN GREATER THAN 600A.

C. AMPERAGE, HORSEPOWER, VOLTAGE, AND NUMBER OF POLES PER DRAWINGS: ALL SHALL BE CLEARLY MARKED ON THE SWITCH NAMEPLATE.

D. PROVIDE THE OWNER'S PROJECT MANAGER WITH ONE (1) SPARE SET OF FUSES AND TWO (2) SETS OF FUSE CLIPS/FUSES FOR EVERY SET OF FUSES ON THE PROJECT.

2.13 PANELBOARDS

A. PROVIDE PRODUCTS LISTED AND LABELED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE INDICATED.

B. UNLESS OTHERWISE INDICATED, PROVIDE PRODUCTS SUITABLE FOR CONTINUOUS OPERATION UNDER THE FOLLOWING SERVICE CONDITIONS:
1. ALTITUDE: LESS THAN 6,600 FEET.
2. AMBIENT TEMPERATURE.

C. SHORT CIRCUIT CURRENT RATING:
1. PROVIDE PANELBOARDS WITH LISTED SHORT CIRCUIT CURRENT RATING NOT LESS THAN THE AVAILABLE FAULT CURRENT AT THE INSTALLED LOCATION AS INDICATED ON THE DRAWINGS.

D. MAINS: CONFIGURE FOR TOP OR BOTTOM INCOMING FEED AS INDICATED OR AS REQUIRED FOR THE INSTALLATION.

E. BRANCH OVERCURRENT PROTECTIVE DEVICES: REPLACEABLE WITHOUT DISTURBING ADJACENT DEVICES.

F. BUSSING: SIZED IN ACCORDANCE WITH UL 67 TEMPERATURE RISE REQUIREMENTS.
1. PROVIDE SOLIDLY BONDED EQUIPMENT GROUND BUS IN EACH PANELBOARD WITH A SUITABLE LUG FOR EACH FEEDER AND BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR.

G. CONDUCTOR TERMINATIONS: SUITABLE FOR USE WITH THE CONDUCTORS TO BE INSTALLED.

H. ENCLOSURES: COMPLY WITH NEMA 250, AND LIST AND LABEL AS COMPLYING WITH UL 50 AND UL 50E.
1. ENVIRONMENT TYPE PER NEMA 250 UNLESS OTHERWISE INDICATED.
2. BOXES: GALVANIZED STEEL UNLESS OTHERWISE INDICATED.
3. PROVIDE WIRING GUTTERS SIZED TO ACCOMMODATE THE CONDUCTORS TO BE INSTALLED.
4. LOCKABLE DOORS: ALL LOCKS KEYED ALIKE UNLESS OTHERWISE INDICATED.

I. FUTURE PROVISIONS: PREPARE ALL UNUSED SPACES FOR FUTURE INSTALLATION OF DEVICES INCLUDING BUSSING, CONNECTORS, MOUNTING HARDWARE AND ALL OTHER REQUIRED PROVISIONS.

2.14 BRANCH CIRCUIT PANELBOARDS

A. GENERAL: PROVIDE BUSSED, CIRCUIT BREAKER OR FUSIBLE SWITCH TYPE PANELBOARDS WITH MAIN LUGS OR CIRCUIT BREAKER IN FLUSH OR SURFACE MOUNTED ENCLOSURES AS INDICATED.

B. CONSTRUCTION:
1. CABINETS: CODE GAUGE STEEL CABINETS, DEAD FRONT PANELS, AND DOORS. FASTEN DEAD FRONT PANELS TO CABINETS WITH CONCEALED TRIM FASTENERS. CONCEAL FRONT DOOR HINGES.
2. DIMENSIONS: 20 INCHES WIDE BY 6 INCHES DEEP.
3. LOCKS: FLUSH DOOR LOCKS, KEYED ALIKE FOR ALL PANELBOARDS.
4. ACCESS: HINGED DOOR-IN-DOOR WITH DOUBLE LOCKS. PIANO HINGES PREFERRED.
5. STANDARDS: PROVIDE UL LABEL WHERE APPLICABLE AND CONFORM TO NO. 67 AND 50 UNDERWRITERS LABORATORIES, INC., AND NEMA PB 1.

C. BUSSING:
1. PHASE BUS: SILVER-PLATED COPPER, RATED 1000 AMPERES PER SQUARE INCH CROSS SECTIONAL AREA MAXIMUM, BRACED FOR 100,000 RMS AMPERES MINIMUM.
2. NEUTRAL BUS: COPPER WITH LUGS FOR CONNECTION OF NEUTRAL CONDUCTORS.
3. GROUND BUS: COPPER WITH TERMINALS FOR EQUIPMENT GROUNDING CONDUCTORS.
4. TERMINALS: AS SPECIFIED IN WIRE AND CABLE SECTION.

D. FINISH: DEGREASE, CLEAN, PHOSPHATIZE, PRIME, AND FINISH CABINETS, DEAD FRONT PANELS, AND DOORS WITH BAKED ENAMEL, COLOR ASA-61, OR STANDARD FACTORY GRAY. GALVANIZED CABINETS ARE ACCEPTABLE FOR FLUSH CABINETS.

E. NAMEPLATES:
1. PROVIDE A NAMEPLATE IDENTIFYING PANELBOARD IN ACCORDANCE WITH IDENTIFICATION SECTION. PROVIDE A MANUFACTURER'S NAMEPLATE ON THE DEAD FRONT INTERIOR PANEL INDICATING PANELBOARD TYPE, VOLTAGE RATING, CURRENT RATING AND MANUFACTURER'S NAME.
2. DIRECTORY: PROVIDE A DIRECTORY CARD WHICH FITS INTO SLOTS IN THE BACK OF THE PANELBOARD. PROTECT DIRECTORY WITH NON-YELLOWING CLEAR PLASTIC.

F. MANUFACTURER: EATON, ABB, SQUARE D.

H. MANUFACTURER: EATON, ABB, SQUARE D.

2.15 CIRCUIT BREAKERS

A. PROVIDE BOLTED-TYPE THERMAL MAGNETIC, MOLDED CASE, WITH INVERSE TIME CURRENT OVERLOAD, AND INSTANTANEOUS MAGNETIC TRIPS, TRIP-FREE AND TRIP-INDICATING. ALL POLES OF MULTI-POLE DEVICE SHALL OPERATE SIMULTANEOUSLY DURING OPEN, CLOSE AND TRIP OPERATIONS. PROVIDE CIRCUIT BREAKERS INDICATED WITH VOLTAGE AND INTERRUPTING CAPACITY NOT LESS THAN EXISTING.

B. ARC FAULT INTERRUPTING BREAKERS: PROVIDE WITH MOLDED PLASTIC CASE, AIR CIRCUIT BREAKERS, SIMILAR TO ABOVE WITH ARC FAULT CIRCUIT INTERRUPT CAPABILITY, CONFORMING TO UL 1699. PROVIDE ON ALL DWELLING-UNIT CIRCUITS SUPPLYING BEDROOMS, SLEEPING QUARTERS, ETC., AS REQUIRED TO COMPLY WITH NEC, OR CEC WHERE ADOPTED, ARTICLE 210.12.

C. TANDEM OR HALF-SIZED CIRCUIT BREAKERS ARE NOT PERMITTED.

D. CIRCUIT BREAKERS TO BE FULLY RATED FOR AIC. SERIES RATED CIRCUIT BREAKERS ARE NOT ALLOWED.

E. CIRCUIT BREAKER HANDLE ACCESSORIES SHALL PROVIDE PROVISIONS FOR LOCKING HANDLE IN THE ON OR OFF POSITION.

F. TEMPERATURE COMPENSATING CIRCUIT BREAKER(S) SHALL BE PROVIDED WHEN LOCATED IN OUTDOOR ENCLOSURE(S) OR WHEN LOCATED IN AN ENCLOSURE SUBJECT TO HIGH AMBIENT HEAT DUE TO NEARBY INDUSTRIAL PROCESSES, ETC.

G. PROVIDE 90 DEGREE CELSIUS-RATED CONDUCTOR LUGS/LUG KITS AS REQUIRED ON ALL CIRCUIT BREAKERS TO ACCEPT CONDUCTOR QUANTITIES AND SIZES SHOWN ON DRAWINGS.

H. ALL CIRCUIT BREAKER TERMINATIONS SHALL BE SUITABLE FOR USE WITH 75 DEGREE CELSIUS AMPACITY CONDUCTORS. LISTED, DUAL-RATED PIN TERMINALS, STRAIGHT OR OFFSET, ARE ACCEPTABLE FOR USE TO IN ACCOMMODATING OVERSIZED OR PARALLEL CONDUCTOR INSTALLATIONS.

I. CIRCUIT BREAKERS SERVING FIRE ALARM OR CENTRAL MONITORING PANELS AND POWER SUPPLIES SHALL BE RED IN COLOR AND LOCKABLE IN THE "ON" POSITION.

2.16 TRANSFORMERS

A. DESCRIPTION: PROVIDE FACTORY-ASSEMBLED, DRY TYPE TRANSFORMERS FOR 60 HZ OPERATION DESIGNED AND MANUFACTURED IN ACCORDANCE WITH NEMA ST 20 AND LISTED AND LABELED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE SPECIFIED AND INDICATED.

B. TRANSFORMERS SHALL BE DESIGNED FOR CONTINUOUS OPERATION AT RATED KVA, FOR 24 HOURS A DAY, YEARLY OPERATION, WITH NORMAL LIFE EXPECTANCY AS DEFINED IN AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) C57.96.

C. CORE: HIGH GRADE, NON-AGING SILICON STEEL WITH HIGH MAGNETIC PERMEABILITY AND LOW HYSTERESIS AND EDDY CURRENT LOSSES. KEEP MAGNETIC FLUX DENSITIES SUBSTANTIALLY BELOW SATURATION POINT (INCLUDING AT 10 PERCENT PRIMARY OVERVOLTAGE). TIGHTLY CLAMP CORE LAMINATIONS TO PREVENT PLATE MOVEMENT AND MAINTAIN CONSISTENT PRESSURE THROUGHOUT CORE LENGTH.

D. IMPREGNATE CORE AND COIL ASSEMBLY WITH NON-HYDROSCOPIC THERMO-SETTING VARNISH TO EFFECTIVELY SEAL OUT MOISTURE AND OTHER CONTAMINANTS.

E. GROUND CORE AND COIL ASSEMBLY TO ENCLOSURE BY MEANS OF A VISIBLE FLEXIBLE COPPER GROUNDING STRAP.

F. ISOLATE CORE AND COIL FROM ENCLOSURE USING VIBRATION-ABSORBING MOUNTS.

G. NAMEPLATE: INCLUDE TRANSFORMER CONNECTION DATA, RATINGS, WIRING DIAGRAMS, AND OVERLOAD CAPACITY BASED ON RATED WINDING TEMPERATURE RISE.

H. SHIPPING: PROVIDE LIFTING HOLES, ACCESSIBLE WITHOUT REMOVAL OF ANY OF THE ENCLOSURE COMPONENTS.

I. INSULATION:
1. SMALLER THAN 30 KVA: 180 DEGREES C MINIMUM, UL INSULATION SYSTEM WITH MAXIMUM 115 DEGREES C RISE ABOVE 40 DEGREES C AMBIENT TEMPERATURE.
2. 30 KVA AND LARGER: 220 DEGREES C, UL INSULATION SYSTEM WITH MAXIMUM 150 DEGREES C RISE ABOVE 40 DEGREES C AMBIENT TEMPERATURE.

J. BASE TEMPERATURE RATING AND HOT SPOT ALLOWANCES IN THE ABOVE TABLE ON A 40 DEGREES C MAXIMUM AMBIENT TEMPERATURE AND 30 DEGREES C AVERAGE AMBIENT TEMPERATURE.

K. OVERLOAD CAPACITY: 10 PERCENT ABOVE FULL LOAD RATING CONTINUOUSLY IN AN AMBIENT NOT EXCEEDING 40 DEGREES C.

L. CASE TEMPERATURE: MAINTAIN NO MORE THAN A 35 DEGREES C RISE ABOVE A 40 DEGREES C AMBIENT.

M. TAPS:
1. 3 KVA AND SMALLER: NONE.
2. 7.5 KVA TO 24KVA: ONE 5% TAP ABOVE ONE 5% TAP BELOW NORMAL CAPACITY.
3. 25 KVA AND LARGER: TWO 2.5% TAPS ABOVE AND TWO 2.5% TAPS BELOW NORMAL CAPACITY.

N. PROVIDE CONDUIT KNOCKOUTS FOR LINE AND LOAD CONDUIT ENTRANCE.

O. ENCLOSURE:
1. UNITS RATED 30 KVA AND BELOW, THE ENCAPSULATED ENCLOSURE CONSTRUCTION SHALL BE TOTALLY ENCLOSED, NON-VENTILATED, NEMA 3R, WITH LIFTING EYES.
2. UNITS RATED 15 KVA AND ABOVE, THE ENCLOSURE CONSTRUCTION SHALL BE VENTILATED, NEMA 2, DRIP-PROOF, WITH LIFTING HOLES. ALL VENTILATION OPENINGS SHALL BE PROTECTED AGAINST FALLING DIRT.
3. OUTDOOR UNITS RATED 15 KVA OR ABOVE, PROVIDE SUITABLE WEATHER-SHIELDS OVER VENTILATION OPENINGS.

P. FINISH: DEGREASE, CLEAN, PHOSPHATIZE, PRIME, AND FINISH ALL INTERIOR AND EXTERIOR SURFACES WITH BAKED ENAMEL, COLOR ANSI 61 OR STANDARD FACTORY GRAY.

Q. CONNECT A GROUNDING STRAP FROM THE SECONDARY NEUTRAL TO A GROUNDING LUG ON THE ENCLOSURE.

R. TERMINALS: SOLDERLESS LUG TYPE CONNECTORS, WITH HEX-HEAD OR ALLEN TYPE COMPRESSION SET SCREWS WITH CONFIGURATION TO SUIT APPLICATION T & B "LOCKTITE", BURNDY "GA", OZ TYPE "XL" OR "XLH" OR EQUAL.

S. MANUFACTURER: EATON, ABB, SQUARE D.

PART 3 - EXECUTION

3.1 RACEWAY SYSTEMS

A. INSTALL ALL WIRING IN RACEWAYS. INSTALL RACEWAY SYSTEMS, INCLUDING CONDUITS, HANGERS, HOOKS, AND SUPPORT CHANNELS PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS. COORDINATE LOCATION OF RACEWAY SYSTEMS WITH OTHER DIVISIONS PRIOR TO COMMENCING INSTALLATION.

B. RIGID STEEL CONDUIT: SUITABLE FOR USE IN ALL LOCATIONS. FOR UNDERGROUND INSTALLATIONS TAPE WRAP CONDUIT COMPLETELY WITH TAPE SUITABLE FOR UNDERGROUND INSTALLATIONS, DOUBLE LAP OF CALPICO 10 MIL OR EQUAL.

C. ELECTRICAL METALLIC TUBING: SUITABLE FOR USE IN CONCEALED DRY LOCATIONS, NOT IN CONCRETE, MASONRY, OR UNDERGROUND, OR SUITABLE EXPOSED, MINIMUM 8 FEET ABOVE FINISHED FLOOR. USE 4 INCH CONDUIT SLEEVES TO PENETRATE TECHNOLOGY EQUIPMENT ROOM FLOORS PROJECTING 6 INCHES ABOVE FINISHED FLOOR WITHOUT A BEND. PROVIDE BUSHINGS AT BOTH END OF CONDUIT.

D. FLEXIBLE METAL CONDUIT: SUITABLE FOR CONNECTION OF RECESSED LIGHTING FIXTURES OR OTHER DEVICES REQUIRING FLEXIBLE CONNECTIONS IN DRY LOCATIONS. FLEXIBLE METAL CONDUIT MAY BE FISHED INTO EXISTING WALLS AS ALLOWED BY THE CEC. LENGTH SHALL NOT EXCEED 6'-0".

E. LIQUID TIGHT FLEXIBLE METAL CONDUIT: SUITABLE FOR CONNECTION OF EQUIPMENT IN DAMP OR WET LOCATIONS.

F. PVC CONDUIT: SUITABLE FOR USE UNDERGROUND, WITH A MINIMUM OF 18 INCHES OF COVER. FABRICATE FIELD BENDS WITH AN APPROVED THERMAL BENDER AND JIG. MAINTAIN SEPARATION BETWEEN CONDUITS USING PLASTIC SPACERS SPECIFICALLY DESIGNED FOR THE PURPOSE.

G. CLEAN AND MANDREL ALL UNDER FLOOR/GROUND RACEWAYS BEFORE WIRE IS INSTALLED.

H. CONDUIT SUPPORTS:
1. SUPPORT ALL CONDUITS AT INTERVALS NOT TO EXCEED 10 FEET.
2. SUPPORT INDIVIDUAL CONDUITS WITH CONDUIT HANGERS OR CLAMP BACK AND NEST BACK, IF REQUIRED FOR ENTRANCE INTO THE EQUIPMENT.
3. SUPPORT MULTIPLE CONDUITS, 2 OR MORE IN PARALLEL, WITH FRAMING CHANNEL AND PIPE CLAMPS.
4. SUPPORT ALL ELECTRICAL EQUIPMENT LOCATED IN THE CEILING SPACE IN ACCORDANCE WITH CBC SECTIONS 1613A AND 1614A. FIRMLY ATTACH ITEMS WEIGHING LESS THAN 20 POUNDS TO MAIN CROSS RUNNERS. TWO 12 GAUGE SUPPORT WIRES TO THE CEILING SYSTEM HANGERS OR STRUCTURE SHALL BE INCLUDED FOR ITEMS FROM 20 TO 56 POUNDS. DIRECTLY SUPPORT ITEMS OVER 56 POUNDS FROM THE STRUCTURE ABOVE WITH APPROVED HANGERS.
5. FIRE STOP PENETRATIONS OF CONDUITS, SLEEVES AND CABLE TRAYS IN WALLS REQUIRING PROTECTED OPENINGS. PROVIDE FIRE STOP MATERIAL WHICH IS A TESTED ASSEMBLY APPROVED BY THE CALIFORNIA STATE FIRE MARSHAL.
6. CUT ENDS OF FRAMING CHANNEL INSTALLED OUTDOORS OR IN WET LOCATIONS SHALL BE PAINTED WITH ZINC RICH PAINT.

I. CONDUIT BENDS:
1. ELECTRICAL CONDUITS: PROVIDE NO MORE THAN (3) 90 DEGREE CONDUIT BENDS OR THE EQUIVALENT NUMBER OF SMALLER RADIUS BENDS IN ANY CONDUIT RUN BETWEEN BOXES OR EQUIPMENT.
2. TELECOMMUNICATIONS CONDUITS: PROVIDE NO MORE THAN (2) 90 DEGREE BENDS OR THE EQUIVALENT NUMBER OF SMALLER RADIUS BEND IN ANY CONDUIT RUN BETWEEN BOXES OR STUB, WITH RADIUS 10 TIMES THE DIAMETER OF THE CONDUIT.
3. LENGTH OF RUN: 400 FEET MAXIMUM, LESS 100 FEET FOR EACH EQUIVALENT 90 DEGREE BEND.
4. FABRICATE BENDS AND OFFSETS WITH A HICKEY OR CONDUIT BENDER DESIGNED SPECIFICALLY FOR USE WITH THE TYPE OF CONDUIT TO BE BENT, OR USE FACTORY MADE BEND.
5. RADIUS OF UNDERGROUND BENDS: MINIMUM 10 TIMES CONDUIT RADIUS.

3.2 BOXES AND CABINETS

A. PLACE OUTLET BOXES IN A LOCATION AS CLOSE TO THAT SHOWN ON THE PLANS AS POSSIBLE. COORDINATE LOCATION OF BOXES WITH OTHER DIVISIONS.

B. INSTALL WALL MOUNTED OUTLET BOXES SO THAT THE DISTANCE FROM THE CENTERLINE OF THE BOX TO FINISHED FLOOR IS AS LISTED OR INDICATED ON PLAN:
1. RECEPTACLES, + 18 INCHES
2. SWITCHES, + 45 INCHES

C. INSTALL JUNCTION BOXES WITH COVERS ACCESSIBLE AFTER INSTALLATION. DO NOT INSTALL JUNCTION BOXES FLUSH WITH FINISH WALLS OR CEILINGS UNLESS SPECIFICALLY APPROVED BY THE ENGINEER.

D. ATTACH SURFACE BOXES WITH:
1. STEEL OR MALLEABLE IRON EXPANSION ANCHORS IN CONCRETE OR SOLID MASONRY.
2. WOOD SCREWS IN WOOD.
3. TOGGLE BOLTS IN HOLLOW WALLS OR MASONRY.
4. MACHINE SCREWS, BOLTS, OR WELDED STUDS IN STEEL.

E. ATTACH FLUSH BOXES WITH ADJUSTABLE BAR TYPE HANGERS SCREW FASTENED TO TWO STUDS AND ON BOTH SIDES OF THE BOX.

F. FOR ALL SURFACE MOUNTED BOXES OR CABINETS MOUNTED IN WET OR DAMP LOCATIONS PROVIDE WEATHERPROOF ENCLOSURES AND AT LEAST 1/4 INCH AIR SPACE BETWEEN BOX AND MOUNTING SURFACE, PER CEC 312.2.

3.3 INSULATED CONDUCTORS AND CABLES

A. EXERCISE EXTREME CARE WHEN PULLING CONDUCTORS AND CABLE INTO CONDUITS TO AVOID KINKING, TWISTING, NICKING, OR SCRATCHING OF THE INSULATION OR THE PLACEMENT OF EXTREME STRESS ON THE CONDUCTORS OR CABLE. WHEN REQUIRED, UTILIZE UL APPROVED PULLING COMPOUNDS TO ASSIST IN PULLING CONDUCTORS.

B. COLOR CODE CONDUCTORS BY PHASE SEQUENCE A-B-C WHEN LOOKING INTO THE FRONT OF THE EQUIPMENT FROM LEFT-TO-RIGHT, TOP TO BOTTOM OR FRONT-TO-BACK. PROVIDE CONDUCTORS WITH THE APPROPRIATE PHASE COLOR OR MARK CONDUCTORS WITH A MINIMUM OF 6 INCHES OF PHASE TAPE ON ENDS CONNECTED TO TERMINALS. PHASE CODE CONDUCTORS AS LISTED:

VOLTAGE	PHASE A	PHASE B	PHASE C	NEUTRAL	GROUND
120/208	BLACK	RED	BLUE	WHITE	GREEN
120/240	BLACK	RED	ORANGE	WHITE	GREEN
277/480	BROWN	ORANGE	YELLOW	GRAY	GREEN

C. IDENTIFY EACH CONDUCTOR WITH ITS RESPECTIVE CIRCUIT NUMBER AT EACH BOX OR TERMINAL.

D. CONNECTIONS:
1. UTILIZE TWIST-ON SOLDERLESS CONNECTORS FOR SPLICING RECEPTACLE AND LIGHTING CIRCUITS #10 AWG WIRE SIZE AND SMALLER.
2. SPLICES AND TAPS WILL NOT BE PERMITTED FOR OTHER THAN RECEPTACLE AND LIGHTING CIRCUITS, OR FOR WIRE LARGER THAN #10.
3. TERMINATE CONDUCTORS AT MOTORS WITH BOLTED CONNECTIONS, INSULATED WITH PLASTIC TAPE.

3.4 DRY TYPE POWER TRANSFORMER

A. MOUNT TRANSFORMER ON FLOOR OR WALL AS INDICATED OR DETAILED.

B. PROVIDE ONE (1) VIBRATION ISOLATING MOUNT, MINIMUM 1 INCH THICK WITH 1 INCH STATIC DEFLECTION, FOR EACH MOUNTING POINT ON THE TRANSFORMER.

C. CONNECT TRANSFORMER WITH FLEXIBLE METAL CONDUIT. PROVIDE AN INSULATED GROUNDING BUSHING ON CONDUIT AND BOND TO TRANSFORMER CASE.

3.5 BRANCH CIRCUIT PANELBOARDS

A. MOUNT PANELBOARD SO THAT THE TOP IS 6 FEET-6 INCHES ABOVE THE FINISHED FLOOR.

B. NEATLY TERMINATE CONDUCTORS ONTO BREAKER, GROUND BUS, AND NEUTRAL BUS. GROUP CONDUCTORS IN AN ORGANIZED MANNER WITH CONDUCTORS FANNING OUT AT THE CIRCUIT TERMINALS, BUNDLED IN THE WIREWAYS AND LACED WITH PLASTIC TIES.

C. IDENTIFY ALL CONDUCTORS WITH A CIRCUIT NUMBER AND PHASE COLOR.

D. TYPE ALL PANELBOARD DIRECTORIES.

E. PROVIDE A MINIMUM OF THREE (3) 3/4 INCH EMPTY CONDUITS INTO ACCESSIBLE CEILING SPACE.

F. PROVIDE INSULATED GROUNDING BUSHINGS ON ALL CONDUITS WHICH ENTER THE CABINET AND BOND TO GROUND BUS.

G. INSTALL CONDUITS IN A VERTICAL LINE, PERPENDICULAR TO THE CABINET.

3.6 WIRING DEVICES

A. CONNECT WIRING DEVICES TO CIRCUITS INDICATED USING SIDE OR BACK WIRING TERMINALS.

B. CONNECT GREEN GROUNDING PIGTAIL FROM RECEPTACLES TO OUTLET BOX WITH SCREW.

C. INSTALL WIRING DEVICES FLUSH WITH THE DEVICE PLATE FRONTS.

D. ALIGN PLATES PLUMB WITH WALL, AND COVER OPENING, WITHOUT USE OF "JUMBO" PLATES.

E. INSTALL RECEPTACLES WITH GROUNDING TERMINAL UP.

3.7 DISCONNECT SWITCHES

A. INSTALL DISCONNECT SWITCHES WHERE INDICATED. PROVIDE ALL MOUNTING HARDWARE AND ACCESSORIES.

B. PROVIDE A FLEXIBLE CONNECTION FROM THE DISCONNECT SWITCH TO THE MOTOR UNLESS OTHERWISE INDICATED.

C. ATTACH DISCONNECT SWITCHES WITH SPECIFIED ANCHORS.

D. PHASE TAPE AND IDENTIFY CIRCUIT NUMBERS AS SPECIFIED.

E. INSTALL FUSES WHERE INDICATED.

3.8 GROUNDING

A. PERMANENTLY AND EFFECTIVELY GROUND ALL RACEWAY SYSTEMS, SUPPORTS, CABINETS, SWITCHBOARDS, CONTROL EQUIPMENT, MOTOR FRAMES, LIGHTING FIXTURES AND OTHER UTILIZATION APPARATUS.

B. PROVIDE A GROUND WIRE IN EACH CONDUIT CARRYING CIRCUITS OPERATING AT 100 VOLTS OR HIGHER BONDED AT EACH END TO EQUIPMENT. SIZE AS SHOWN ON THE DRAWINGS OR PER CEC.

3.9 ELECTRICAL WORK FOR EQUIPMENT

A. PROVIDE ALL CONNECTIONS TO EQUIPMENT REQUIRING ELECTRICAL SUPPLY.

B. REVIEW DIVISION 23 MECHANICAL SCOPE REQUIREMENTS FOR ADDITIONAL WORK REQUIRED.

3.10 EQUIPMENT MOUNTING CRITERIA

A. SUPPORT ALL ELECTRICAL EQUIPMENT LOCATED IN THE CEILING SPACE IN ACCORDANCE WITH LATEST EDITION OF CBC. FIRMLY ATTACH ITEMS WEIGHING LESS THAN 20 POUNDS TO MAIN CROSS RUNNERS. TWO 12 GAUGE SUPPORT WIRES TO THE CEILING SYSTEM HANGERS OR STRUCTURE SHALL BE INCLUDED FOR ITEMS FROM 20 AND 56 POUNDS. DIRECTLY SUPPORT ITEMS OVER 56 POUNDS FROM THE STRUCTURE ABOVE WITH APPROVED HANGERS.

B. ANCHORAGE OF ALL EQUIPMENT TO BE INSTALLED, AS A PART OF THIS PROJECT SHALL BE DETAILED ON THE APPROPRIATE PLANS, EXCEPT FOR THE FOLLOWING:
1. EQUIPMENT WEIGHING LESS THAN 400 POUNDS SUPPORTED DIRECTLY ON THE FLOOR OR ROOF.
2. FURNITURE (NON-FIXED AND MOVABLE AS EXEMPTED BY THE CBC).
3. TEMPORARY AND MOVABLE EQUIPMENT (NON-FIXED AND MOVABLE AS EXEMPTED BY THE CBC).
4. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUPPORTED BY VIBRATION ISOLATORS.
5. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

C. PERMANENT EQUIPMENT IN ITEMS 1, 4 AND 5 MUST BE SUPPORTED AND ANCHORED TO RESIST THE FORCES PRESCRIBED BY CHAPTER 13 OF ASCE 7 AS MODIFIED BY THE CBC AND THE ANCHORAGE SHALL BE APPROVED BY THE APPROPRIATE DESIGN PROFESSIONAL OF RECORD AS A PART OF FIELD REVIEWS/OBSERVATIONS. THE INSPECTOR OF RECORD SHALL ASSURE THAT THE ABOVE REQUIREMENTS ARE ENFORCED.

D. ANCHORAGE PRE-APPROVAL: WHERE CONTRACT DRAWINGS REFERENCE ANCHORAGE PRE -APPROVAL NUMBERS (OPM) FOR SPECIFIC PIECES OF EQUIPMENT THE ENGINEER SHALL VERIFY THAT THE PRE-APPROVAL IS APPROPRIATE. IF THE INSTALLATION VARIES IN ANY WAY FROM THE SHOWN IN THE ANCHORAGE PRE-APPROVAL DOCUMENT, THE ENGINEER SHALL PROVIDE COMPLETE CALCULATIONS FOR ANCHORAGE AND BRACING OF THE COMPONENT AND SYSTEM.

E. PRE-APPROVALS FOR THE SEISMIC BRACING OF RACEWAYS, DUCTS, AND CONDUITS: ALL OF THE PRE-APPROVED SYSTEMS REQUIRE THAT THE SEISMIC LATERAL FORCE, FP INCLUDING CONSIDERATION OF AP AND RP BE DETERMINED AT EACH LEVEL OF THE BUILDING SO THAT BRACE SPACING CAN BE CALCULATED. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE ALL PARAMETERS REQUIRED TO COMPUTE FP (SUCH AS SEISMIC ZONE, IP AND HR PROVIDE HX FOR EACH FLOOR WHERE PRE-APPROVED IS USED) ON THE CONTRACT DRAWINGS.

F. THE CONTRACTOR SHALL PROVIDE AND THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF ANY SUPPLEMENTARY FRAMING THAT IS NEEDED TO RESIST THE LOADS, MAINTAIN STABILITY AND/OR IS REQUIRED FOR THE INSTALLATION OF THE PRE -APPROVED SYSTEM.

G. A COPY OF THE CHOSEN BRACING SYSTEM(S) INSTALLATION GUIDE/MANUAL SHALL BE ON THE JOBSITE PRIOR TO STARTING THE INSTALLATION OF HANGERS AND/OR BRACES.

H. DO NOT MIX COMPONENTS OF TWO OR MORE PRE -APPROVED BRACING SYSTEMS. ONLY ONE PRE-APPROVED BRACING SYSTEM MAY BE USED FOR A RUN OF PIPE, DUCT OR CONDUIT.

AGENCY APPROVAL:

Draft copy pending
DSA approval
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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUMAPAS E 24757 EXPIRES 6/30/26 ELECTRICAL STATE OF CALIFORNIA

DATE SIGNED:

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
ELECTRICAL SPECIFICATIONS

CONSTRUCTION DOCUMENTS

DATE: 03/12/2025 CLIENT PROJ NO: 3431007000

SHEET:
E3.1-4

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY 1" WHEN PLOTTED ON ANSI SIZE E SHEETS ORIGINAL PAGE SIZE

GENERAL NOTES

1. THE FIRE ALARM SYSTEM SHALL COMPLY WITH A TOTAL COVERAGE FULLY AUTOMATIC SYSTEM. DETECTORS SHALL BE INSTALLED IN ALL AREAS WHERE REQUIRED BY THE APPROPRIATE NFPA STANDARD OR THE AUTHORITY HAVING JURISDICTION. EACH INSTALLED DETECTOR SHALL BE ACCESSIBLE FOR PERIODIC MAINTENANCE AND TESTING. PROVIDE ACCESS DOORS AS REQUIRED. TOTAL COVERAGE SHALL INCLUDE ALL ROOMS, STORAGE AREAS, ATTICS, SPACES ABOVE SUSPENDED CEILINGS, AND OTHER SUBDIVISIONS AND ACCESSIBLE SPACES. INACCESSIBLE AREA SHALL NOT BE REQUIRED TO BE PROTECTED BY DETECTORS UNLESS THEY CONTAIN COMBUSTIBLE MATERIAL, IN WHICH CASE THEY SHALL BE MADE ACCESSIBLE AND BE PROTECTED BY DETECTOR(S).
2. THE FIRE ALARM SYSTEM IS AN ADDRESSABLE SYSTEM.
3. THE AUTOMATIC FIRE ALARM SYSTEM SHALL COMPLY WITH SENATE VOTE BILL NO. 575 (SB575) & CBC 907.2 FOR NEW CONSTRUCTION PROJECTS.
4. THE FIRE ALARM SYSTEM IS A COMPLETE SUBMITTAL.
5. THE FIRE ALARM SYSTEM SHALL CONFORM TO THE CALIFORNIA BUILDING CODE (CBC) SECTION 907; THE CALIFORNIA ELECTRICAL CODE (CEC) ARTICLE 760 AND THE CALIFORNIA FIRE CODE (CFC) SECTION 907. UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE DIVISION OF THE STATE ARCHITECT (DSA) INSPECTOR OF RECORD.
6. PROVIDE COMPLETE SYSTEM WIRING. ALL WIRING SHALL BE IN MINIMUM 3/4" CONDUIT. NO OTHER SYSTEMS WIRING SHALL BE ROUTED IN THE FIRE ALARM CIRCUITS. HARDWIRED INITIATION CIRCUITS SHALL BE MINIMUM #14 THHN/THWN. SYSTEMS WIRING SHALL BE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND THEIR REQUIREMENTS. ALL CONDUIT SHALL BE INSTALLED WITH COMPRESSION FITTINGS FOR COUPLIERS AND BOX CONNECTORS.
7. WIRING AND MATERIALS PER CEC 760.
8. THE LOCATION OF AUTOMATIC DETECTORS, MANUAL STATIONS AND OTHER FIRE ALARM EQUIPMENT AND DEVICES, AS SHOWN ON PLAN, ARE FOR REFERENCE ONLY AND DO NOT CONSTITUTE SHOP DRAWINGS WHICH ARE REQUIRED FOR REVIEW AND APPROVAL.
9. BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION, THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE PROJECT INSPECTOR TO THE EFFECT THAT THE SYSTEM HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH THE NFPA 72 SECTION 14.4
10. A FIRE ALARM ACCEPTANCE TEST OF ALL DEVICES AND APPLIANCES, INCLUDING THE BACKUP BATTERY(IES), SHALL BE PERFORMED. ALL MANUFACTURER OPERATING RANGED SHALL BE MET, TESTING OF THE SUPERVISING STATION SIGNALS, AS WELL AS RELAY TO THE APPROPRIATE RESPONDING AGENCY, SHALL BE INCLUDED IN THE ACCEPTANCE TESTING. THE PROJECT INSPECTOR SHALL WITNESS THE ACCEPTANCE INSPECTION AND SHALL SIGN AS THE AUTHORITY HAVING JURISDICTION REPRESENTATIVE ON THE "SYSTEM RECORD OF COMPLETION" (NFPA 72, SECTION 7.5.6). AND THE " SYSTEM RECORD OF INSPECTION AND TESTING" (NFPA 7.6.6). SEE NFPA 72, FIGURE 7.8.2(a) & (g). ALL SUPPLEMENTARY RECORDS SHALL BE ATTACHED AS APPLICABLE. THE PROJECT INSPECTOR SHALL VERIFY THAT THE FIRE ALARM SYSTEM IN SERVICE PRIOR TO COMPLETION OF THE "SYSTEM RECORD OF COMPLETION" FORM. ALL ORIGINAL DOCUMENTATION SHALL BE RETAINED IN THE REQUIRED DOCUMENTATION CABINET.
11. AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AND CBC 907.6.5.3 THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUIS BY UL OR SHALL MEET THE REQUIREMENTS OF FM STANDARD 8013.
12. HEAT DETECTORS SHALL BE INSTALLED IN COMBUSTIBLE SPACES WHERE SPRINKLER OR SMOKE DETECTOR ARE NOT INSTALLED PER CFC 907.2.3.6.2.

EQUIPMENT ANCHORAGE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, AND DUCTWORK DISTR. SYSTEM BRACING

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. THE MEP PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING(MP), MECHANICAL DUCTS(MD), PLUMBING PIPING(PP), ELECTRICAL DISTRIBUTION SYSTEMS(E):

MP☐ MD☐ PP☐ E☒ OPTION 1: PROJECT SPECIFIC DESIGN.

MP☐ MD☐ PP☐ E☐ OPTION 2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL.

MP☐ MD☐ PP☐ E☐ OPTION 3: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL.

FIRE ALARM NOTES

1. ALL FIRE ALARM WORK SHALL COMPLY WITH DESIGN GUIDELINES AS WELL AS APPLICABLE FEDERAL, STATE, AND LOCAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE DOCUMENTS SHALL GOVERN BUT THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
2. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS OR WITH CODE REQUIREMENTS, THE NOTE, CODE OR SPECIFICATION WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR THE HIGHER STANDARD SHALL PREVAIL.
3. OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR THE MIS-DESCRIPTION OF DETAILS FROM WORK WHICH ARE CLEAR AND NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS, SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED OR MIS-DESCRIBED DETAILS OF THE WORK BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED, IMMEDIATELY UPON THEIR RECEIPT AND SHALL PROMPTLY NOTIFY THE OWNER OF ANY DISCREPANCIES.
5. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE CALIFORNIA STATE FIRE MARSHAL (CSFM), UNDERWRITERS LABEL (UL) AND SHALL BE INSTALLED IN THE MANNER FOR WHICH THEY ARE DESIGNED AND APPROVED.
6. THE CONTRACTOR SHALL NOT BORE, NOTCH OR IN ANY WAY CUT INTO ANY STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT OR STRUCTURAL ENGINEER.
7. ALL CHANGES TO STRUCTURES (BUILDING, DRILLING, CORING, ETC.) NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED IN WRITING BY STRUCTURAL ENGINEER.
8. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, THE FIRE ALARM DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DATA INFORMATION AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE SCS AND LOW VOLTAGE WORK INTERFACES WITH OTHER TRADES.
9. THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS TO REFLECT ALL CHANGES MADE DURING CONSTRUCTION AND ANY DEVIATIONS FROM THE ELECTRICAL AND FIRE ALARM DRAWINGS. THIS INCLUDES DEVIATIONS FROM OUTLET NUMBERS AND ANY ADDITION, DELETION OR RELOCATION OF OUTLETS SHOWN ON WORKING DRAWINGS, PATHWAY ADDITIONS, DELETIONS OR RELOCATIONS. THE CONTRACTOR SHALL AFTER COMPLETION OF JOB, PROVIDE THE OWNER AN ELECTRONIC AND HARD COPY OF AS-BUILT WORK.
10. ANY DEVIATIONS FROM PLANS OR SPECS MUST BE APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
11. ALL FOOTAGES ON DRAWINGS ARE ESTIMATED AND MUST BE VERIFIED BY CONTRACTOR PRIOR TO ORDERING MATERIAL.
12. ALL STATION CABLES SHALL BE NEATLY DRESSED AND SECURED EVERY FIVE FEET AT A MINIMUM.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING TILE INCLUDING REPLACEMENT OF BROKEN OR DAMAGED TILES.
14. ALL LOCATIONS PASSING THROUGH A FIRE OR A SMOKE BARRIER MUST BE FIRE STOPPED USING APPROVED (UL CLASSIFIED) FIRE STOP SYSTEM, INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AND PROPERLY LABELED.
15. CONDUIT SHALL BE FILLED TO MAXIMUM CAPACITY (PER CODE, STANDARDS, AND NORMS) BEFORE UTILIZING ANOTHER VACANT CONDUIT.
16. ALL FIRE ALARM DEVICES SHALL BE PROPERLY IDENTIFIED USING THE OWNER'S STANDARD INTERNAL DISTRIBUTION NUMBERING SCHEME. ALL LABELS SHALL BE PREPRINTED OR TYPED.
17. EACH CABLE SHALL BE EQUIPPED WITH A PERMANENT LABEL INDICATING THE CIRCUIT IDENTIFICATION. BOTH ENDS OF EACH CABLE AND AT EVERY MAINTENANCE HOLE, HAND HOLE, AND PULL BOX, SHALL BE SO LABELED.
18. ALL CABLES SHALL BE CLEARLY LABELED WITH CIRCUIT IDENTIFICATION.
19. PULL ROPES SHALL BE PLACED IN ALL VACANT CONDUITS.
20. ALL WORK MUST BE COMPLETED IN A NEAT AND PROFESSIONAL MANNER. THE WORK SITE SHALL BE KEPT CLEAN AND ALL DAMAGE TO OWNER'S PROPERTY REPAIRED.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A FINAL CLEANUP OF THE WORK SITE PRIOR TO FINAL SYSTEM ACCEPTANCE.
22. CONTRACTOR SHALL REMOVE ALL COPPER, FIBER AND COAXIAL CABLES ABANDONED IN CONDUIT, CEILINGS AND WALLS PER CEC. CABLE SHALL INCLUDE ALL INTRABUILDING, RISER SYSTEMS AND STATION CABLES FOR ALL LOW VOLTAGE/FIRE ALARM/STRUCTURED CABLING SYSTEMS.
23. CONTRACTOR(S) SHALL VERIFY ALL SITE CONDITIONS PRIOR TO BID.
24. IN ACESSIBLE CEILING SPACES:
    - 24.1. THE CONTRACTOR SHALL PROVIDE THE REQUIRED STUB UP(S) / OUT(S) AND BOXES WITH MUD-RINGS TO THE NEAREST ACCESSIBLE CEILING SPACE AND / OR NEAREST FIRE ALARM PATHWAY INFRASTRUCTURE, REFERENCE PLANS AND SPECIFICATION FOR MORE INFORMATION.
    - 24.2. THE DESIGNATED SCS / FIRE ALARM CONTRACTOR(S) SHALL PROVIDE A J-HOOK PATHWAY SYSTEM AND REQUIRED SLEEVES. DO NOT USE CEILING TILE WIRE HANGERS, WATER OR ELECTRICAL PIPES, OR LIGHT FIXTURES TO HANG CABLE. CABLE MUST BE A MINIMUM OF 6 INCHES ABOVE THE CEILING TILE AND MUST NOT COME WITHIN TWELVE INCHES OF A LIGHT FIXTURE. THE DESIGNATED ELECTRICAL CONTRACTOR(S) FOR EACH "SUB-SYSTEM WILL PROVIDE THE PATHWAY REQUIRED FOR THE SYSTEMS, OUTSIDE WHAT IS CONSIDERED THE STRUCTURED CABLING SYSTEM.
25. IN INACCESSIBLE AND HARD-LID CEILING SPACES;
    - 25.1. THE CONTRACTOR SHALL PROVIDE ALL CONDUIT PATHWAYS, BOXES ETC. FOR A COMPLETE SYSTEM FROM THE MDF ROOM, IDF ROOM(S), IDF CABINET(S), AND ALL OTHER LOW VOLTAGE / FIRE ALARM SYSTEMS HEADEND, CABINETS, TERMINAL CABINETS, ETC. TO THE POINT OF TERMINATION AT THE STATION END LOCATION PER PLANS AND SPECIFICATION.

FIRE ALARM SCOPE OF WORK

UPGRADE THE EXISTING CAMPUS FIRE ALARM SYSTEM FROM EST-3 TO EST-4 IN A LIKE FASHION. CERTAIN CARDS WILL BE REPLACED DUE TO THE COMPATIBILITY AND MOST OF THE CARDS WILL REMAIN. NEW DEVICES AND NOTIFICATION APPLIANCES WILL BE PROVIDED IN BUILDING A AND B REMODEL. ADDITIONAL FIRE ALARM DEVICES AND NOTIFICATION APPLIANCES WILL BE PROVIDED TO THE NEW BUILDINGS IN COMPLIANCE WITH THE CURRENT CODE AND STANDARDS.

CODES AND STANDARDS

APPLICABLE PROJECT BUILDING CODES, EFFECTIVE AS OF DATE: JANUARY 1, 2023

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC)
2022 CALIFORNIA BUILDING CODE (CBC)
2022 CALIFORNIA ELECTRICAL CODE (CEC)
2022 CALIFORNIA FIRE CODE (CFC)
2022 CALIFORNIA ENERGY CODE
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
2022 CALIFORNIA REFERENCED STANDARDS CODE
2022 NFPA 72: NATIONAL FIRE ALARM AND SIGNALING CODE
2022 NFPA 1221: STANDARD FOR THE INSTALLATION, MAINTENANCE, AND USE OF EMERGENCY SERVICES COMMUNICATIONS SYSTEMS

DSA GENERAL NOTES

1. APPLICABLE STANDARD NFPA 72, as adopted and amended in CBC Chapter 35
2. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM, HAS BEEN APPROVED BY DSA.
3. UPON COMPLETION OF SYSTEM INSTALLATION, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.
4. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.
6. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND /OR TESTING.
7. ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER APPROVED LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS WITHIN THE FIRE ALARM SECTION.
8. WALL MOUNTED VISIBLE NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 96" MAXIMUM FROM FINISHED FLOOR.
9. WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THEN 6" TO A HORIZONTAL STRUCTURE.
10. AUDIBLE DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (dBA) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR FIVE dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING.
11. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.
12. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
13. VISIBLE DEVICES SHOULD NOT EXCEED TWO FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN ONE FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELLA. VISIBLE DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
14. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATER TIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
15. ALL FIRE ALARM WIRING SHALL BE FPLOR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE TYPE THHN OR THWN.
16. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. ALL BOXES TO BE SIZED PER CEC.
17. SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
19. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
20. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL." CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.
21. THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED "SYSTEM RECORD OF COMPLETION" PER NFPA 72, FIGURE 17.8.2.
22. FIRE ALARM CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.
23. MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVAC) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-308.
24. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
25. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
26. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.

ADDRESS NOMENCLATURE

P1•L1 / Z#•XXX — DEVICE OR MODULE NUMBER
- LOOP / ZONE NUMBER
- FACP PANEL NUMBER

BP1•1N•XXX — DEVICE OR MODULE NUMBER
- NOTIFICATION CIRCUIT NUMBER
- POWER SUPPLY PANEL NUMBER

P1•1•A1•XXX — DEVICE NUMBER
- AMPLIFIER NUMBER
- SPEAKER CIRCUIT NUMBER
- FACP PANEL NUMBER

CABLE LEGEND

LABEL	AWG	DESCRIPTION
A	16	16/2 FPLP CABLE (SLC)
V	14	14/2 FPLP CABLE (NAC)
S	14	14/2 FPLP SHIELDED CABLE (SPEAKER)
D	16	16/2 FPLP CABLE (24VDC / AUX)
Z	18	18/2 FPLP CABLE (IDC)
485	16	16/2 FPLP CABLE (485 DATA)

DEVICE LEGEND

SYMBOL	QTY	EXISTING	MANUFACTURER	PART NO	DESCRIPTION	CSFM
	1		EDWARDS	EST4 ASSEMBLY	EST4 MAIN FACP - CONFIGURATION 230209	7170-1657:0508
	1		EDWARDS	SIGA-UIO6R	6 POSITION, RISER SELECTION UIO MODULE MOTHERBOARD	7300-1657:0121
	1		EDWARDS	3-BPS/M	BOOSTER POWER SUPPLY 120V	7170-1657:0508
	1		EDWARDS	3-MODCOM	MODEM COMMUNICATOR AND DIALER	7170-1657:0508
	3		EDWARDS	SIGA-IM2	ISOLATOR MODULE	7300-1657:0121
	5		EDWARDS	SIGA-MCC1	SIGNAL MODULE /W 1 RISER IN, 1 OUTPUT CKT, CL 'B' - UIO MOUNT	7300-1657:0121
	1		EDWARDS	3-SSDC1	SIGNATURE SINGLE DRIVER CONTROLLER (LRM)	7170-1657:0508
	4		EDWARDS	3-ZA40B	40 WATT ZONED AMPLIFIER, CLASS B, 25 OR 70VRMS	7170-1657:0508
FACP	1		EDWARDS	4-24L24S	24 INDICATOR 24 CONTROL DISPLAY MODULE	7170-1657:0508
	1		EDWARDS	4-PPS/M	PRIMARY POWER SUPPLY 120V	7300-1657:0519
	1		EDWARDS	SIGA-MP1	FULL FOOTPRINT MOUNTING PLATE FOR 4 DOUBLE OR 8 SINGLE MODULES	7300-1657:0121
	2		EDWARDS	SIGA-CT2	DUAL INPUT MODULE	7300-1657:0121
	1		EDWARDS	3-SDDC1	DUAL SIGNATURE DRIVER CONTROLLER. COMES WITH TWO 3-SDC1S. MOUNTS TO LOCAL RAIL.	7170-1657:0508
	1		EDWARDS	4-CPU	MAIN CPU	7170-1657:0508
	1		EDWARDS	4-MIC	PAGING MICROPHONE	7170-1657:0508
	1		EDWARDS	4-LCDLE	DISPLAY,MAIN LCD MODULE	7170-1657:0508
	1		EDWARDS	3-ASU/4	AUDIO SOURCE UNIT /W 4 RAIL SPACES	7165-1657:0186
	4		EDWARDS	BPS10A	REMOTE BOOSTER POWER SUPPLY, 10A, 120VAC, RED	7300-1657:0229
NAC	4		EDWARDS	SIGA-CC1S	SYNCHRONIZATION OUTPUT MODULE (STANDARD MOUNT) - UL/ULC LISTED	7300-1657:0121
	4		EDWARDS	BPS10A MAINBOARD	MAINBOARD FOR BPS10A ASSEMBLY	7300-1657:0229
FAA	1		EDWARDS	4-6ANN (PAGING)	ANNUNCIATOR WITH 4-ANN CPU, 4-MIC	7170-1657:0508
F 278	1	X	EDWARDS	SIGA-278	DOUBLE ACTION FIRE ALARM STATION	7150-1657:0129
F 278	3		EDWARDS	SIGA-278	DOUBLE ACTION FIRE ALARM STATION	7150-1657:0129
AM	6		EDWARDS	SIGA-CT1	SINGLE INPUT MODULE	7300-1657:0121
AM	3	X	EDWARDS	SIGA-CT1	SINGLE INPUT MODULE	7300-1657:0121
AM	4		EDWARDS	SIGA-CT1HT	SINGLE INPUT MODULE HIGH TEMPERATURE OPERATION	7300-1657:0121
AM	1	X	EDWARDS	SIGA-CT1HT	SINGLE INPUT MODULE HIGH TEMPERATURE OPERATION	7300-1657:0121
AM DM	1	X	EDWARDS	SIGA-CT2	DUAL INPUT MODULE	7300-1657:0121
CM	2	X	EDWARDS	SIGA-CR	CONTROL RELAY MODULE	7300-1657:0121
H 194°	16		SYSTEM SENSOR	5602	194 °F (90° C) FIXED AND RATE-OF-RISE.	7270 -1653 - 0167
H 194°	10	X	SYSTEM SENSOR	5602	194 °F (90° C) FIXED AND RATE-OF-RISE.	7270 -1653 - 0167
H AC	24	X	SYSTEM SENSOR	5602	194 °F (90° C) FIXED AND RATE-OF-RISE.	7270 -1653 - 0167
H 135°	15		EDWARDS	SIGA-HRD W/SIGA-SB BASE	INTELLIGENT FIXED TEMPERATURE/RATE-OF-RISE HEAT DETECTOR, STANDARD DETECTOR BASE	7270-1657:0333
H 135°	1	X	EDWARDS	SIGA-HRD W/SIGA-SB BASE	INTELLIGENT FIXED TEMPERATURE/RATE-OF-RISE HEAT DETECTOR, STANDARD DETECTOR BASE	7270-1657:0333
S	107		EDWARDS	SIGA-OSD W/SIGA-SB BASE	PHOTOELECTRIC SMOKE DETECTOR	7272-1657:0511
S	29	X	EDWARDS	SIGA-PD W/SIGA-SB BASE	PHOTOELECTRIC SMOKE DETECTOR	7272-1657:0331
	43		EDWARDS	G4SVRF	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	7320-1657:0516
	3	X	EDWARDS	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	7320-1657:0323
C	11	X	EDWARDS	GCHFRF-S7VMC	70V CEILING SPEAKER/STROBE,RED, 15, 30, 75, 95 CD,FIRE	7320-1657:0324
S WP	6		EDWARDS	WG4RF-S	25/70V SPEAKER, RED, FIRE	7320-1657:0289
	5	X	EDWARDS	G4VRF	WALL STROBE, SWITCH SELECT 15, 30, 75, 110 CD, RED, /W FIRE	7125-1657:0505

NOTE: DEVICE COUNTS AND CALCULATIONS SHALL INCLUDE BLDG A, B, H AND J FOR THIS INC SUBMITTAL. PLEASE REFER TO THE FLOOR PLAN AND RISER DIAGRAM FOR BLDG H AND S.

SHEET INDEX

FA0.1-3	FIRE ALARM COVER SHEET
FA0.2-3	FIRE ALARM SEQUENCE OF OPERATION
FA0.3.0-3	FIRE ALARM SYSTEM CALCS.
FA0.3.1-3	FIRE ALARM SYSTEM CALCS.
FA0.4-3	FIRE ALARM RISER DIAGRAM
FA1.10-3	FIRE ALARM SITE PLAN
FAH2.11-3	FIRE ALARM BUILDING H
FAS2.11-3	FIRE ALARM BUILDING S
FA3.1-3	FIRE ALARM SPECIFICATIONS

AGENCY APPROVAL:

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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER — JOHN D. GUZA III — E 24187 — Expires 6/30/26 — ELECTRICAL — STATE OF CALIFORNIA

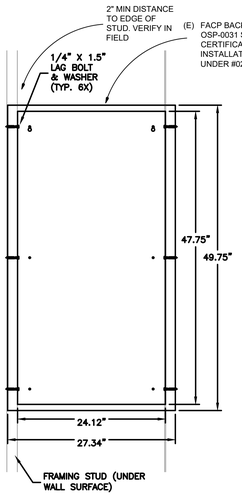
capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED: 04-25-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERN

THE LINE SHOWN ABOVE IS EXACTLY 1 INCH WHEN PLOTTED ON ANSI B SHEETS ORIGINAL PAGE SIZE



(E) FACP BACKBOX ANCHORAGE DETAIL

SCALE : NONE

6 FA0.2-3

GENERAL NOTES

1. THE FIRE ALARM SYSTEM SHALL COMPLY WITH A TOTAL COVERAGE FULLY AUTOMATIC SYSTEM. DETECTORS SHALL BE INSTALLED IN ALL AREAS WHERE REQUIRED BY THE APPROPRIATE NFPA STANDARD OR THE AUTHORITY HAVING JURISDICTION. EACH INSTALLED DETECTOR SHALL BE ACCESSIBLE FOR PERIODIC MAINTENANCE AND TESTING. PROVIDE ACCESS DOORS AS REQUIRED. TOTAL COVERAGE SHALL INCLUDE ALL ROOMS, STORAGE AREAS, ATTICS, SPACES ABOVE SUSPENDED CEILINGS, AND OTHER SUBDIVISIONS AND ACCESSIBLE SPACES. INACCESSIBLE AREA SHALL NOT BE REQUIRED TO BE PROTECTED BY DETECTORS UNLESS THEY CONTAIN COMBUSTIBLE MATERIAL IN WHICH CASE THEY SHALL BE MADE ACCESSIBLE AND BE PROTECTED BY DETECTOR(S).
2. THE FIRE ALARM SYSTEM IS AN ADDRESSABLE SYSTEM.
3. THE AUTOMATIC FIRE ALARM SYSTEM SHALL COMPLY WITH SENATE VOTE BILL NO. 575 (SB575) & CBC 907.2 FOR NEW CONSTRUCTION PROJECTS.
4. THE FIRE ALARM SYSTEM IS A COMPLETE SUBMITTAL.
5. THE FIRE ALARM SYSTEM SHALL CONFORM TO THE CALIFORNIA BUILDING CODE (CBC) SECTION 907; THE CALIFORNIA ELECTRICAL CODE (CEC) ARTICLE 760 AND THE CALIFORNIA FIRE CODE (CFC) SECTION 907. UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE DIVISION OF THE STATE ARCHITECT (DSA) INSPECTOR OF RECORD.
6. PROVIDE COMPLETE SYSTEM WIRING. ALL WIRING SHALL BE IN MINIMUM 3/4" CONDUIT. NO OTHER SYSTEMS WIRING SHALL BE ROUTED IN THE FIRE ALARM CIRCUITS. HARDWIRED INITIATION CIRCUITS SHALL BE MINIMUM #14 THHN/THWN. SYSTEMS WIRING SHALL BE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND THEIR REQUIREMENTS. ALL CONDUIT SHALL BE INSTALLED WITH COMPRESSION FITTINGS FOR COUPLERS AND BOX CONNECTORS.
7. WIRING AND MATERIALS PER CEC 760.
8. THE LOCATION OF AUTOMATIC DETECTORS, MANUAL STATIONS AND OTHER FIRE ALARM EQUIPMENT AND DEVICES, AS SHOWN ON PLAN, ARE FOR REFERENCE ONLY AND DO NOT CONSTITUTE SHOP DRAWINGS WHICH ARE REQUIRED FOR REVIEW AND APPROVAL.
9. BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION, THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE PROJECT INSPECTOR TO THE EFFECT THAT THE SYSTEM HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH THE NFPA 72 SECTION 14.4
10. A FIRE ALARM ACCEPTANCE TEST OF ALL DEVICES AND APPLIANCES, INCLUDING THE BACKUP BATTERY(IES), SHALL BE PERFORMED. ALL MANUFACTURER OPERATING RANGED SHALL BE MET, TESTING OF THE SUPERVISING STATION SIGNALS, AS WELL AS RELAY TO THE APPROPRIATE RESPONDING AGENCY, SHALL BE INCLUDED IN THE ACCEPTANCE TESTING. THE PROJECT INSPECTOR SHALL WITNESS THE ACCEPTANCE INSPECTION AND SHALL SIGN AS THE AUTHORITY HAVING JURISDICTION REPRESENTATIVE ON THE "SYSTEM RECORD OF COMPLETION" (NFPA 72, SECTION 7.5.6). AND THE " SYSTEM RECORD OF INSPECTION AND TESTING" (NFPA 7.6.6). SEE NFPA 72, FIGURE 7.8.2(a) & (g). ALL SUPPLEMENTARY RECORDS SHALL BE ATTACHED AS APPLICABLE. THE PROJECT INSPECTOR SHALL VERIFY THAT THE FIRE ALARM SYSTEM IN SERVICE PRIOR TO COMPLETION OF THE "SYSTEM RECORD OF COMPLETION" FORM. ALL ORIGINAL DOCUMENTATION SHALL BE RETAINED IN THE REQUIRED DOCUMENTATION CABINET.
11. AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AND CBC 907.6.5.3 THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUIS BY UL OR SHALL MEET THE REQUIREMENTS OF FM STANDARD 8013.
12. HEAT DETECTORS SHALL BE INSTALLED IN COMBUSTIBLE SPACES WHERE SPRINKLER OR SMOKE DETECTOR ARE NOT INSTALLED PER CFC 907.2.3.6.2.

ABBREVIATIONS

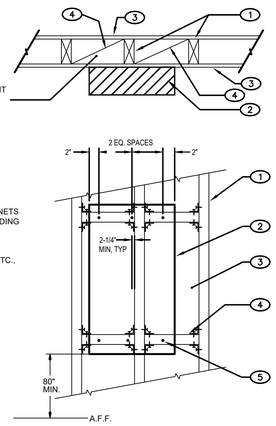
ACP	ACCESS CONTROL PROCESSOR	(N)	NEW
AFF	ABOVE FINISHED FLOOR	NC	NORMALLY CLOSED
AHJ	AUTHORITY HAVING JURISDICTION	NIC	NOT IN CONTRACT
AMP	AMPLIFIER	NO	NORMALLY OPEN
AOR	ARCHITECT OF RECORD	NTS	NOT TO SCALE
AUTO	AUTOMATIC	OC	ON CENTER
AUX	AUXILIARY	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
AWG	AMERICAN WIRE GAUGE	OFOI	OWNER FURNISHED, OWNER INSTALLED
BCT	BONDING CONDUCTOR FOR TELECOMMUNICATIONS	OSP	OUTSIDE PLANT
C	CONDUIT	PB	PULL BOX
CATV	COMMUNITY ANTENNA TELEVISION	POE	POWER OVER ETHERNET
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	PR	PAIR OF CONDUCTORS
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED	PVC	POLYVINYL CHLORIDE
CL	CENTERLINE	PWR	POWER
CSFM	CALIFORNIA STATE FIRE MARSHAL	(RR)	REMOVE AND REPLACE
DIV	DIVISION	(RL)	REMOVE AND RELOCATE
DC	DOOR CONTACT	RCP	REFLECTED CEILING PLAN
(EX)	EXISTING	RFI	REQUEST FOR INFORMATION
EC	ELECTRICAL CONTRACTOR	RMC	RIGID METALLIC CONDUIT
ECS	EMERGENCY COMMUNICATION SYSTEM	SCS	STRUCTURED CABLING SYSTEM
EF	ENTRANCE FACILITY FOR TELECOMMUNICATION	SM	SINGLE MODE
EMT	ELECTRIC METALLIC TUBING	STR	STRANDS (OF FIBER)
ER	EQUIPMENT ROOM	STP	SHIELDED TWISTED PAIR
EXT	EXTERIOR	SEC	SECURITY
(F)	FUTURE	TBB	TELECOMMUNICATIONS BONDING BACKBONE
FACP	FIRE ALARM CONTROL PANEL	TELCO	TELEPHONE COMPANY
FATC	FIRE ALARM TERMINAL CABINET	TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
FABP	FIRE ALARM BOOSTER PANEL	TMGB	TELECOMMUNICATION MAIN GROUNDING BUSBAR
FB	FLOORBOX	TYP	TYPICAL
FO	FIBER OPTIC	UNO	UNLESS NOTED OTHERWISE
GC	GENERAL CONTRACTOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
IDF	INTERMEDIATE DISTRIBUTION FRAME	UTP	UNSHIELDED TWISTED PAIR
INT	INTERIOR	V	VOICE
IP	INTERNET PROTOCOL	WB	WALL BOX
JB	JUNCTION BOX	WP	WEATHERPROOF
LV	LOW VOLTAGE		
MDF	MAIN DISTRIBUTION FRAME		
MIC	MICROPHONE		
MM	MULTIMODE		
MPOE	MINIMUM POINT OF ENTRY		

SEQUENCE OF OPERATIONS

	SYSTEM INPUTS	ACTUATE GENERAL ALARM AUDIBLE NOTIFICATION	ACTUATE GENERAL ALARM VISUAL NOTIFICATION	ACTUATE SUPERVISORY ALARM SOUNDER IN PANEL	ACTUATE SUPERVISORY ALARM VISUAL INDICATOR IN PANEL	ACTUATE TROUBLE ALARM SOUNDER IN PANEL	ACTUATE TROUBLE ALARM VISUAL INDICATOR IN PANEL	ACTUATE PANEL'S LCD DISPLAY	ACTUATE AUDIBLE & VISUAL NOTIFICATION DEVICES	TRANSMIT GENERAL FIRE ALARM SIGNAL TO REMOTE STATION	TRANSMIT SUPERVISORY SIGNAL TO REMOTE STATION	TRANSMIT TROUBLE SIGNAL TO REMOTE STATION	REMARKS
		SYSTEM OUTPUTS											
		PANEL ANNUNCIATION						NOTIFICATION			SAFETY CONTROL		
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	ADDRESSABLE MANUAL PULL STATION(S)	●	●					●	●	●								1
2	ADDRESSABLE SMOKE DETECTOR(S)	●	●					●	●	●								2
3	ADDRESSABLE HEAT DETECTOR(S)	●	●					●	●	●								3
4																		4
5																		5
6																		6
7	GROUND FAULT					●	●	●				●						7
8	OPEN CIRCUIT					●	●	●				●						8
9	NOTIFICATION CIRCUIT TROUBLE					●	●	●				●						9
10	FIRE ALARM PANEL LOW BATTERY					●	●	●				●						10
11	FIRE ALARM PANEL AC POWER FAILURE					●	●	●				●						11
12	FIRE ALARM PANEL COMMUNICATION LINE FAULT					●	●	●				●						12
13																		13
14																		14
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	

KEY NOTES

1. WOOD STUD
2. SURFACE MOUNTED FACU CABINET, SEE NOTE #1
3. SHEET ROCK OR OTHER WALL SURFACE MATERIAL (SEE ARCH. DRAWINGS)
4. BLOCKING (MATCH STUD DEPTH) ATTACH TO (E) VERTICAL STUDS WITH A34 CLIPS EACH END, TOP AND BOTTOM - AVOID CONFLICT OF NAILS EACH SIDE OF STUD
5. 5/16" X 2 1/2" LAG SCREWS WITH 1-1/2" MIN. EMBED TO BLOCK. (6) LAG SCREWS TOTAL. (BY ELECTRICAL CONTRACTOR)



NOTES:

1. ALL FIRE ALARM CABINETS ARE 250# MAX. (INCLUDING CONTENTS)
2. MOUNT TERMINAL CABINETS, J-BOXES, ETC., IN SIMILAR FASHION.

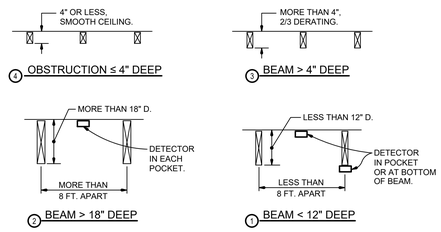
PANEL ON WOOD FRAME UNIT ELEVATION DETAIL

SCALE : NONE

3 FA0.2-3

NOTES:

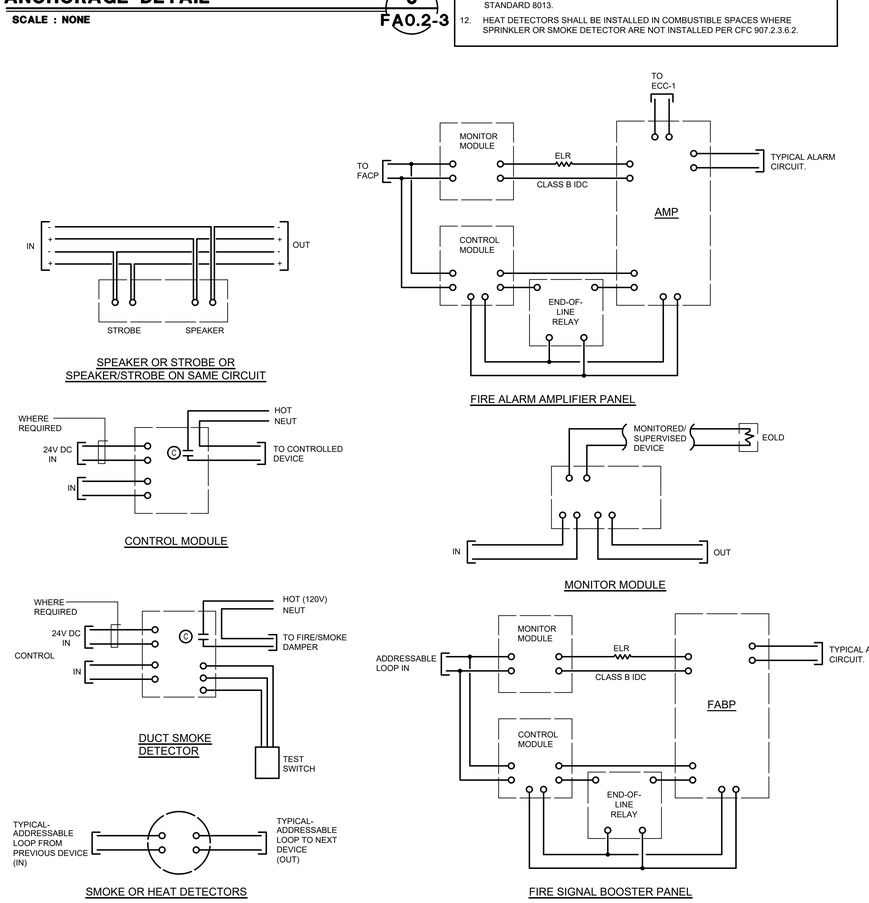
1. SOLID JOIST CONSTRUCTION.
   SPACING: THE DESIGN SPACING OF HEAT DETECTORS, WHERE MEASURED AT RIGHT ANGLES TO THE SOLID JOISTS, SHALL NOT EXCEED 50 PERCENT OF THE LISTED SPACING.
   B. LOCATION: DETECTORS SHALL BE MOUNTED AT THE BOTTOM OF THE JOISTS.
2. BEAM CONSTRUCTION.
   A. SPACING:
      1. A CEILING SHALL BE TREATED AS A SMOOTH CEILING IF THE BEAMS PROJECT NO MORE THAN 4 IN. BELOW THE CEILING.
      2. WHERE THE BEAMS PROJECT MORE THAN 4 IN. BELOW THE CEILING, THE SPACING OF SPOT-TYPE HEAT DETECTORS AT RIGHT ANGLES TO THE DIRECTION OF BEAM TRAVEL SHALL BE NOT MORE THAN TWO-THIRDS OF THE LISTED SPACING.
      3. WHERE THE BEAMS PROJECT MORE THAN 18 IN. BELOW THE CEILING AND ARE MORE THAN 8 FT. ON CENTER, EACH BAY FORMED BY THE BEAMS SHALL BE TREATED AS A SEPARATE AREA.
   B. LOCATION: WHERE BEAMS ARE LESS THAN 12 IN. IN DEPTH AND LESS THAN 8 FT. ON CENTER, DETECTORS SHALL BE PERMITTED TO BE INSTALLED ON THE BOTTOM OF BEAMS.
3. BEAM CONSTRUCTION CONSISTS OF SOLID MEMBERS PROJECTING DOWN FROM THE CEILING SURFACE MORE THAN 4" AND SPACED MORE THAN 36" O.C.
4. JOIST CONSTRUCTION CONSISTS OF SOLID MEMBERS PROJECTING DOWN FROM THE CEILING SURFACE MORE THAN 4" AND SPACED AT 36" OR LESS O.C.



DETECTOR JOIST MOUNTING DETAIL

SCALE : NO SCALE

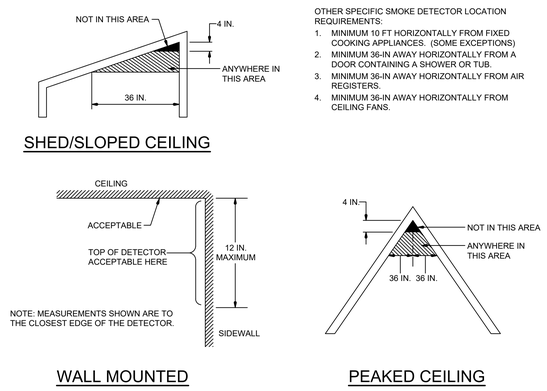
1 FA0.2-3



TYPICAL - FIRE ALARM DEVICES WIRING DIAGRAMS

SCALE : NONE

5 FA0.2-3



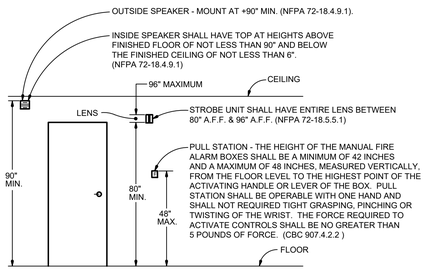
OTHER SPECIFIC SMOKE DETECTOR LOCATION REQUIREMENTS:

1. MINIMUM 10 FT HORIZONTALLY FROM FIXED COOKING APPLIANCES. (SOME EXCEPTIONS)
2. MINIMUM 36-IN AWAY HORIZONTALLY FROM A DOOR CONTAINING A SHOWER OR TUB.
3. MINIMUM 36-IN AWAY HORIZONTALLY FROM AIR REGISTERS.
4. MINIMUM 36-IN AWAY HORIZONTALLY FROM CEILING FANS.

SMOKE DETECTOR LOCATION REQ'S

SCALE : NONE

4 FA0.2-3



DEVICE MOUNTING DETAIL

SCALE : NO SCALE

2 FA0.2-3

AGENCY APPROVAL:

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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

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capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED: 04-25-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
FIRE ALARM SEQUENCE OF OPERATIONS AND DETAILS

CONSTRUCTION DOCUMENTS

DATE: 04.30.2025 | CLIENT PROJ NO: 3431007000

SHEET:
FA0.2-3

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1 INCH LONG ON ORIGINAL 22X34 SHEETS ORIGINAL PAGE SIZE

NOTE: DEVICE COUNTS AND CALCULATIONS SHALL INCLUDE BLDG A, B, H AND J FOR THIS INC SUBMITTAL. PLEASE REFER TO THE FLOOR PLAN AND RISER DIAGRAM FOR BLDG H AND S.

P1 2 A1 SPEAKER SCHEDULE

WATTAGE SUMMARY			POWER SUMMARY			
MAX. CIRCUIT WATTS:	40	TOTAL CIRCUIT WATTS:	22	STARTING CALC. VOLTAGE:	70.70	MAX. VOLTAGE DROP: 2.41
		SPARE CIRCUIT WATTS:	18			VOLTAGE DROP %: **3.41 %**
		SPARE CIRCUIT WATTS %:	**45.00 %**	MIN. OPERATIONAL VOLTAGE:	63	END OF LINE VOLTAGE: 68.29
MAX. CARD WATTS:	n/a	TOTAL CARD WATTS:	22			MAX. DB LOSS: -0.301
		SPARE CARD WATTS:		WIRE RESISTANCE (Ω/KFT):	4.89	TOTAL CIRCUIT LENGTH (FT): 1229
		SPARE CARD WATTS %:				TOTAL CIRCUIT RESISTANCE (Ω): 12.02

CIRCUIT WIRING PROPERTIES: 'S' 16/2 FPLP/R SPEAKER 16 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG SPEAKER

DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED

DEVICE LABEL	PART NO	DESCRIPTION	WATTS	WATTS TO AMPS CONVERSION	REMAINING WATTS	DISTANCE FROM PREVIOUS	RESISTANCE FROM PREVIOUS (Ω)	VOLTAGE DROP FROM PREVIOUS	VOLTAGE AT DEVICE	TOTAL VOLTAGE DROP	DB LOSS FROM PREVIOUS	TOTAL DB LOSS
P1-2•A1-01	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	22	328	3.20	1	69.70	1	-0.123	-0.123
P1-2•A1-02	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	21	32	0.316071	0.09	69.61	1.09	-0.012	-0.135050
P1-2•A1-03	WG4RF-S	25/70V SPEAKER, RED, FIRE	2	0.028289	20	39	0.384212	0.11	69.50	1.20	-0.014	-0.148620
P1-2•A1-04	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	18	115	1.13	0.29	69.21	1.49	-0.036	-0.185
P1-2•A1-05	WG4RF-S	25/70V SPEAKER, RED, FIRE	2	0.028289	17	57	0.553	0.13	69.08	1.62	-0.017	-0.201
P1-2•A1-06	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	15	46	0.44879	0.1	68.98	1.72	-0.012	-0.21330
P1-2•A1-07	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	14	33	0.320163	0.06	68.92	1.78	-0.008	-0.221
P1-2•A1-08	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	13	86	0.846	0.16	68.77	1.93	-0.020	-0.241
P1-2•A1-09	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	12	35	0.344403	0.06	68.71	1.99	-0.007	-0.248
P1-2•A1-10	WG4RF-S	25/70V SPEAKER, RED, FIRE	2	0.028289	11	91	0.887	0.14	68.57	2.13	-0.017	-0.266
P1-2•A1-11	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	9	49	0.480367	0.06	68.51	2.19	-0.008	-0.274
P1-2•A1-12	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	8	31	0.299247	0.03	68.47	2.23	-0.004	-0.278
P1-2•A1-13	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	7	83	0.812	0.08	68.39	2.31	-0.010	-0.288
P1-2•A1-14	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	6	33	0.324964	0.03	68.37	2.33	-0.003510	-0.292
P1-2•A1-15	WG4RF-S	25/70V SPEAKER, RED, FIRE	2	0.028289	5	50	0.488468	0.03	68.33	2.37	-0.004	-0.29590
P1-2•A1-16	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	1	0.014144	3	71	0.698160	0.03	68.30	2.40	-0.003770	-0.300
P1-2•A1-17 EOL 15K	WG4RF-S	25/70V SPEAKER, RED, FIRE	2	0.028289	2	49	0.480791	0.01	68.29	2.41	-0.002	-0.301

CALCULATION METHODS:
WATTS TO AMPS CONVERSION = DEVICE WATTS / VOLTAGE
RESISTANCE FROM PREVIOUS (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X DIST. FROM PREVIOUS (FT)
VOLTAGE DROP FROM PREVIOUS = RESISTANCE FROM PREVIOUS (Ω) X REMAINING CURRENT (A)
DB LOSS FROM PREVIOUS = 20 • LOG (VOLTAGE AT PREVIOUS DEVICE / VOLTAGE AT DEVICE)
MAX. DB LOSS = 20 • LOG (VOLTAGE AT LAST DEVICE / START VOLTAGE)

P1 2 A2 SPEAKER SCHEDULE

WATTAGE SUMMARY			POWER SUMMARY			
MAX. CIRCUIT WATTS:	35	TOTAL CIRCUIT WATTS:	5	STARTING CALC. VOLTAGE:	70.70	MAX. VOLTAGE DROP: 0.44
		SPARE CIRCUIT WATTS:	30			VOLTAGE DROP %: **0.62 %**
		SPARE CIRCUIT WATTS %:	**85.71 %**	MIN. OPERATIONAL VOLTAGE:	63	END OF LINE VOLTAGE: 70.26
MAX. CARD WATTS:	n/a	TOTAL CARD WATTS:	5			MAX. DB LOSS: -0.054
		SPARE CARD WATTS:		WIRE RESISTANCE (Ω/KFT):	4.89	TOTAL CIRCUIT LENGTH (FT): 708
		SPARE CARD WATTS %:				TOTAL CIRCUIT RESISTANCE (Ω): 6.92

CIRCUIT WIRING PROPERTIES: 'S' 16/2 FPLP/R SPEAKER 16 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG SPEAKER

DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED

DEVICE LABEL	PART NO	DESCRIPTION	WATTS	WATTS TO AMPS CONVERSION	REMAINING WATTS	DISTANCE FROM PREVIOUS	RESISTANCE FROM PREVIOUS (Ω)	VOLTAGE DROP FROM PREVIOUS	VOLTAGE AT DEVICE	TOTAL VOLTAGE DROP	DB LOSS FROM PREVIOUS	TOTAL DB LOSS
P1-2•A2-01	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	1	0.014144	5	600	5.87	0.41	70.29	0.41	-0.051	-0.051
P1-2•A2-02	WG4RF-S	25/70V SPEAKER, RED, FIRE	2	0.028289	4	17	0.161481	0.01	70.28	0.42	-0.001	-0.052
P1-2•A2-03	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	1	0.014144	2	28	0.269519	0.01	70.27	0.43	-0.001	-0.053
P1-2•A2-04 EOL 47K	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	1	0.014144	1	64	0.622	0.01	70.26	0.44	-0.001	-0.05430

CALCULATION METHODS:
WATTS TO AMPS CONVERSION = DEVICE WATTS / VOLTAGE
RESISTANCE FROM PREVIOUS (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X DIST. FROM PREVIOUS (FT)
VOLTAGE DROP FROM PREVIOUS = RESISTANCE FROM PREVIOUS (Ω) X REMAINING CURRENT (A)
DB LOSS FROM PREVIOUS = 20 • LOG (VOLTAGE AT PREVIOUS DEVICE / VOLTAGE AT DEVICE)
MAX. DB LOSS = 20 • LOG (VOLTAGE AT LAST DEVICE / START VOLTAGE)

P1 3 A1 SPEAKER SCHEDULE

WATTAGE SUMMARY			POWER SUMMARY			
MAX. CIRCUIT WATTS:	40	TOTAL CIRCUIT WATTS:	12	STARTING CALC. VOLTAGE:	70.70	MAX. VOLTAGE DROP: 0.37
		SPARE CIRCUIT WATTS:	28			VOLTAGE DROP %: **0.52 %**
		SPARE CIRCUIT WATTS %:	**70.00 %**	MIN. OPERATIONAL VOLTAGE:	63	END OF LINE VOLTAGE: 70.33
MAX. CARD WATTS:	n/a	TOTAL CARD WATTS:	12			MAX. DB LOSS: -0.045
		SPARE CARD WATTS:		WIRE RESISTANCE (Ω/KFT):	4.89	TOTAL CIRCUIT LENGTH (FT): 400
		SPARE CARD WATTS %:				TOTAL CIRCUIT RESISTANCE (Ω): 3.91

CIRCUIT WIRING PROPERTIES: 'S' 16/2 FPLP/R SPEAKER 16 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG SPEAKER

DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED

DEVICE LABEL	PART NO	DESCRIPTION	WATTS	WATTS TO AMPS CONVERSION	REMAINING WATTS	DISTANCE FROM PREVIOUS	RESISTANCE FROM PREVIOUS (Ω)	VOLTAGE DROP FROM PREVIOUS	VOLTAGE AT DEVICE	TOTAL VOLTAGE DROP	DB LOSS FROM PREVIOUS	TOTAL DB LOSS
P1-3•A1-01	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	12	44	0.431144	0.07	70.63	0.07	-0.009	-0.009
P1-3•A1-02	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	11.75	15	0.149789	0.02	70.60	0.1	-0.003	-0.012
P1-3•A1-03	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	11.50	23	0.221396	0.04	70.57	0.13	-0.004440	-0.016
P1-3•A1-04	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	2	0.028289	11.25	24	0.234415	0.04	70.53	0.17	-0.005	-0.021
P1-3•A1-05	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	2	0.028289	9.25	31	0.299783	0.04	70.49	0.21	-0.005	-0.026
P1-3•A1-01	WG4RF-S	25/70V SPEAKER, RED, FIRE	2	0.028289	7.25	2	0.020669	0	70.49	0.21	0.000	-0.026
P1-3•A1-06	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	5.25	52	0.506	0.04	70.45	0.25	-0.004640	-0.031
P1-3•A1-07	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	5	31	0.306768	0.02	70.43	0.27	-0.003	-0.033
P1-3•A1-08	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	4.75	14	0.133569	0.01	70.42	0.28	-0.001	-0.035
P1-3•A1-09	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	4.50	16	0.15682	0.01	70.41	0.29	-0.001	-0.036
P1-3•A1-10	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	4.25	25	0.247234	0.01	70.39	0.31	-0.002	-0.038
P1-3•A1-11	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	2	0.028289	4	92	0.904	0.05	70.34	0.36	-0.006	-0.044
P1-3•A1-12 EOL 15K	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	2	0.028289	2	31	0.29909	0.01	70.33	0.37	-0.001	-0.045

CALCULATION METHODS:
WATTS TO AMPS CONVERSION = DEVICE WATTS / VOLTAGE
RESISTANCE FROM PREVIOUS (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X DIST. FROM PREVIOUS (FT)
VOLTAGE DROP FROM PREVIOUS = RESISTANCE FROM PREVIOUS (Ω) X REMAINING CURRENT (A)
DB LOSS FROM PREVIOUS = 20 • LOG (VOLTAGE AT PREVIOUS DEVICE / VOLTAGE AT DEVICE)
MAX. DB LOSS = 20 • LOG (VOLTAGE AT LAST DEVICE / START VOLTAGE)

P1 4 A1 SPEAKER SCHEDULE

WATTAGE SUMMARY			POWER SUMMARY			
MAX. CIRCUIT WATTS:	40	TOTAL CIRCUIT WATTS:	4.25	STARTING CALC. VOLTAGE:	70.70	MAX. VOLTAGE DROP: 0.11
		SPARE CIRCUIT WATTS:	35.75			VOLTAGE DROP %: **0.16 %**
		SPARE CIRCUIT WATTS %:	**89.38 %**	MIN. OPERATIONAL VOLTAGE:	63	END OF LINE VOLTAGE: 70.59
MAX. CARD WATTS:	n/a	TOTAL CARD WATTS:	4.25			MAX. DB LOSS: -0.014
		SPARE CARD WATTS:		WIRE RESISTANCE (Ω/KFT):	4.89	TOTAL CIRCUIT LENGTH (FT): 428
		SPARE CARD WATTS %:				TOTAL CIRCUIT RESISTANCE (Ω): 4.19

CIRCUIT WIRING PROPERTIES: 'S' 16/2 FPLP/R SPEAKER 16 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG SPEAKER

DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED

DEVICE LABEL	PART NO	DESCRIPTION	WATTS	WATTS TO AMPS CONVERSION	REMAINING WATTS	DISTANCE FROM PREVIOUS	RESISTANCE FROM PREVIOUS (Ω)	VOLTAGE DROP FROM PREVIOUS	VOLTAGE AT DEVICE	TOTAL VOLTAGE DROP	DB LOSS FROM PREVIOUS	TOTAL DB LOSS
P1-4•A1-01	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	4.25	16	0.152714	0.01	70.69	0.01	-0.001	-0.001
P1-4•A1-02	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	4	19	0.188365	0.01	70.68	0.02	-0.001	-0.002
P1-4•A1-03	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	3.75	11	0.107082	0.01	70.67	0.03	-0.001	-0.003
P1-4•A1-04	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	3.50	14	0.140869	0.01	70.67	0.03	-0.000860	-0.004
P1-4•A1-05	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.5	0.007072	3.25	3	0.028879	0	70.67	0.03	0.000	-0.004
P1-4•A1-06	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	2.75	37	0.357561	0.01	70.65	0.05	-0.002	-0.006
P1-4•A1-07	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	2.50	7	0.071307	0	70.65	0.05	0.000	-0.006
P1-4•A1-08	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	2.25	88	0.856	0.03	70.62	0.08	-0.003	-0.010
P1-4•A1-09	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	2	16	0.160453	0	70.62	0.08	-0.001	-0.010090
P1-4•A1-10	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	1.75	37	0.358741	0.01	70.61	0.09	-0.001	-0.011
P1-4•A1-11	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	1.50	32	0.314287	0.01	70.60	0.1	-0.001	-0.012
P1-4•A1-12	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	1.25	24	0.235792	0	70.60	0.1	-0.001	-0.013
P1-4•A1-13	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	1	40	0.387036	0.01	70.59	0.11	-0.001	-0.013
P1-4•A1-14	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	0.750	46	0.448478	0	70.59	0.11	-0.001	-0.014
P1-4•A1-15	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	0.5	22	0.211067	0	70.59	0.11	0.000	-0.014
P1-4•A1-16 EOL 15K	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE	0.25	0.003536	0.25	17	0.16712	0	70.59	0.11	0.000	-0.014030

CALCULATION METHODS:
WATTS TO AMPS CONVERSION = DEVICE WATTS / VOLTAGE
RESISTANCE FROM PREVIOUS (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X DIST. FROM PREVIOUS (FT)
VOLTAGE DROP FROM PREVIOUS = RESISTANCE FROM PREVIOUS (Ω) X REMAINING CURRENT (A)
DB LOSS FROM PREVIOUS = 20 • LOG (VOLTAGE AT PREVIOUS DEVICE / VOLTAGE AT DEVICE)
MAX. DB LOSS = 20 • LOG (VOLTAGE AT LAST DEVICE / START VOLTAGE)

BP3 N1 POINT-TO-POINT REPORT

CIRCUIT SETTINGS		TOTALS	
Starting Calculation Voltage:	19.7	Max. Voltage Drop:	**1.54**
Min. Operational Voltage:	16	End Of Line Voltage:	**18.16**
Max. Circuit Current (A):	3	Voltage Drop Percent:	**7.82 %**
Wire Resistance (Ω/KFt):	3.07	Total Circuit Current (A):	**1.113**
Total Circuit Length (Ft):	390	Spare Current (A):	**1.887**
Total Circuit Resistance (Ω):	2.395701	Spare Current (A) Percent:	**62.90 %**

Circuit Wiring Properties: 'V' 14/2 FPLP/R (NAC) 14 AWG, 2 Cond. Solid Copper FPLP/R Analog Unshielded

Distance measured using drawn segment lengths with 10.00 % additional length calculated

Device Label	Part No.	Description	Device Current (A)	Remaining Current (A)	Dist. From Previous (Ft)	Resistance From Previous (Ω)	Voltage Drop From Previous	Voltage At Device	Total Voltage Drop	Voltage Drop Percent
BP3-N1•01	G4HFRF-S7VMC	70V Speaker/Strobe, Red, FIRE 15, 30, 75, 110 cd, Clear 75cd	0.159	**1.113**	48	**0.292145**	**0.33**	**19.37**	**0.33**	**1.65 %**
BP3-N1•02	G4HFRF-S7VMC	70V Speaker/Strobe, Red, FIRE 15, 30, 75, 110 cd, Clear 75cd	0.159	**0.954**	32	**0.198433**	**0.19**	**19.19**	**0.51**	**2.61 %**
BP3-N1•03	G4HFRF-S7VMC	70V Speaker/Strobe, Red, FIRE 15, 30, 75, 110 cd, Clear 75cd	0.159	**0.795**	122	**0.750459**	**0.6**	**18.59**	**1.11**	**5.64 %**
BP3-N1•04	G4HFRF-S7VMC	70V Speaker/Strobe, Red, FIRE 15, 30, 75, 110 cd, Clear 75cd	0.159	**0.636**	34	**0.206401**	**0.13**	**18.46**	**1.24**	**6.31 %**
BP3-N1•05	G4HFRF-S7VMC	70V Speaker/Strobe, Red, FIRE 15, 30, 75, 110 cd, Clear 75cd	0.159	**0.477**	33	**0.201002**	**0.1**	**18.36**	**1.34**	**6.79 %**
BP3-N1•06	G4HFRF-S7VMC	70V Speaker/Strobe, Red, FIRE 15, 30, 75, 110 cd, Clear 75cd	0.159	**0.318**	86	**0.531041**	**0.17**	**18.19**	**1.51**	**7.65 %**
BP3-N1•07 EOL 15k	G4HFRF-S7VMC	70V Speaker/Strobe, Red, FIRE 15, 30, 75, 110 cd, Clear 75cd	0.159	**0.159**	35	**0.21622**	**0.03**	**18.16**	**1.54**	**7.82 %**

Calculation Methods:
Resistance From Previous (Ω) = Wire Resistance (Ω/Ft) x 2 x Dist. From Previous (Ft)
Voltage Drop From Previous = Resistance From Previous (Ω) x Remaining Current (A)

BP3 N2 POINT-TO-POINT REPORT

CURRENT SUMMARY				POWER SUMMARY			
MAX. CIRCUIT CURRENT (A):	3	TOTAL CIRCUIT CURRENT (A):	0.7950	STARTING CALC. VOLTAGE:	19.70	MAX. VOLTAGE DROP: 1.65	
		SPARE CIRCUIT CURRENT (A):	2.21			VOLTAGE DROP %: **8.36 %**	
		SPARE CIRCUIT CURRENT %:	**73.50 %**	MIN. OPERATIONAL VOLTAGE:	16	END OF LINE VOLTAGE: 18.05	
MAX. CARD CURRENT (A):	n/a	TOTAL CARD CURRENT (A):	1.91	WIRE RESISTANCE (Ω/KFT):	3.07	TOTAL CIRCUIT LENGTH (FT): 462	
		SPARE CARD CURRENT (A):				TOTAL CIRCUIT RESISTANCE (Ω): 2.84	
		SPARE CARD CURRENT %:					

CIRCUIT WIRING PROPERTIES: 'V' 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED

DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED

DEVICE LABEL	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	REMAINING ALARM CURRENT (A)	DISTANCE FROM PREVIOUS	RESISTANCE FROM PREVIOUS (Ω)	VOLTAGE DROP FROM PREVIOUS	VOLTAGE AT DEVICE	TOTAL VOLTAGE DROP	VOLTAGE DROP PERCENT
BP3-N2-01	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	75CD	0.159	0.7950	234	1.44	1.14	18.56	1.14	5.79 %
BP3-N2-02	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	75CD	0.159	0.6360	31	0.187871	0.12	18.44	1.26	6.40 %
BP3-N2-03	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	75CD	0.159	0.477	83	0.510	0.24	18.20	1.50	7.63 %
BP3-N2-04	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	75CD	0.159	0.318	33	0.204016	0.06	18.13	1.57	7.96 %
BP3-N2-05 EOL 15K	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	75CD	0.159	0.159	81	0.498445	0.08	18.05	1.65	8.36 %

CALCULATION METHODS:
RESISTANCE FROM PREVIOUS (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X DIST. FROM PREVIOUS (FT)
VOLTAGE DROP FROM PREVIOUS = RESISTANCE FROM PREVIOUS (Ω) X REMAINING CURRENT (A)

BP2 N1 POINT-TO-POINT REPORT

CIRCUIT SETTINGS		TOTALS	
Starting Calculation Voltage:	19.7	Max. Voltage Drop:	**0.37**
Min. Operational Voltage:	16	End Of Line Voltage:	**19.33**
Max. Circuit Current (A):	3	Voltage Drop Percent:	**1.90 %**
Wire Resistance (Ω/KFt):	3.07	Total Circuit Current (A):	**0.36**
Total Circuit Length (Ft):	366	Spare Current (A):	**2.64**
Total Circuit Resistance (Ω):	2.247011	Spare Current (A) Percent:	**88.00 %**

Circuit Wiring Properties: 'V' 14/2 FPLP/R (NAC) 14 AWG, 2 Cond. Solid Copper FPLP/R Analog Unshielded

Distance measured using drawn segment lengths with 10.00 % additional length calculated

Device Label	Part No.	Description	Device Current (A)	Remaining Current (A)	Dist. From Previous (Ft)	Resistance From Previous (Ω)	Voltage Drop From Previous	Voltage At Device	Total Voltage Drop	Voltage Drop Percent
BP2-N1•01	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 30cd	0.028	**0.36**	14	**0.088018**	**0.03**	**19.67**	**0.03**	**0.16 %**
BP2-N1•02	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 30cd	0.028	**0.332**	15	**0.094039**	**0.03**	**19.64**	**0.06**	**0.32 %**
BP2-N1•03	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.304**	23	**0.138995**	**0.04**	**19.59**	**0.11**	**0.53 %**
BP2-N1•04	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 110cd	0.028	**0.276**	24	**0.147168**	**0.04**	**19.55**	**0.15**	**0.74 %**
BP2-N1•05	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 110cd	0.028	**0.248**	31	**0.188207**	**0.05**	**19.51**	**0.19**	**0.98 %**
BP2-N1•06	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.22**	50	**0.304888**	**0.07**	**19.44**	**0.26**	**1.32 %**
BP2-N1•07	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 75cd	0.028	**0.192**	31	**0.192592**	**0.04**	**19.4**	**0.3**	**1.51 %**
BP2-N1•08	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.036	**0.164**	14	**0.083856**	**0.01**	**19.39**	**0.31**	**1.57 %**
BP2-N1•09	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.036	**0.128**	16	**0.098453**	**0.01**	**19.38**	**0.32**	**1.64 %**
BP2-N1•10	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.036	**0.092**	25	**0.155216**	**0.01**	**19.36**	**0.34**	**1.71 %**
BP2-N1•11	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 110cd	0.028	**0.056**	92	**0.567807**	**0.03**	**19.33**	**0.37**	**1.87 %**
BP2-N1•12 EOL 15k	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 110cd	0.028	**0.028**	31	**0.187772**	**0.01**	**19.33**	**0.37**	**1.90 %**

Calculation Methods:
Resistance From Previous (Ω) = Wire Resistance (Ω/Ft) x 2 x Dist. From Previous (Ft)
Voltage Drop From Previous = Resistance From Previous (Ω) x Remaining Current (A)

BP1 4N POINT-TO-POINT REPORT

CIRCUIT SETTINGS		TOTALS	
Starting Calculation Voltage:	19.7	Max. Voltage Drop:	**0.21**
Min. Operational Voltage:	16	End Of Line Voltage:	**19.49**
Max. Circuit Current (A):	3	Voltage Drop Percent:	**1.06 %**
Wire Resistance (Ω/KFt):	3.07	Total Circuit Current (A):	**0.252**
Total Circuit Length (Ft):	244	Spare Current (A):	**2.748**
Total Circuit Resistance (Ω):	1.498042	Spare Current (A) Percent:	**91.60 %**

Circuit Wiring Properties: 'V' 14/2 FPLP/R (NAC) 14 AWG, 2 Cond. Solid Copper FPLP/R Analog Unshielded

Distance measured using drawn segment lengths with 10.00 % additional length calculated

Device Label	Part No.	Description	Device Current (A)	Remaining Current (A)	Dist. From Previous (Ft)	Resistance From Previous (Ω)	Voltage Drop From Previous	Voltage At Device	Total Voltage Drop	Voltage Drop Percent
BP1•4N•01	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.252**	25	**0.155873**	**0.04**	**19.66**	**0.04**	**0.20 %**
BP1•4N•02	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.224**	17	**0.105063**	**0.02**	**19.64**	**0.06**	**0.32 %**
BP1•4N•03	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.196**	37	**0.226092**	**0.04**	**19.59**	**0.11**	**0.54 %**
BP1•4N•04	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.168**	22	**0.137894**	**0.02**	**19.57**	**0.13**	**0.66 %**
BP1•4N•05	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.14**	28	**0.169042**	**0.02**	**19.55**	**0.15**	**0.78 %**
BP1•4N•06	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.112**	34	**0.206103**	**0.02**	**19.52**	**0.18**	**0.90 %**
BP1•4N•07	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.084**	38	**0.232397**	**0.02**	**19.5**	**0.2**	**1.00 %**
BP1•4N•08	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.056**	25	**0.152215**	**0.01**	**19.49**	**0.21**	**1.04 %**
BP1•4N•09 EOL 15k	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0.028	**0.028**	18	**0.113363**	**0**	**19.49**	**0.21**	**1.06 %**

**

THE LINE SHOWN ABOVE IS EQUAL TO 1 INCH ON ORIGINAL ANSI SIZE E SHEETS ORIGINAL PAGE SIZE

PANEL BP1 (BPS10A) BATTERY CALCULATION
(SECONDARY POWER SOURCE REQUIREMENTS)

PANEL COMPONENTS		QTY	PART NO.	DESCRIPTION	STANDBY CURRENT (AMPS) CURRENT DRAW (A)	STANDBY CURRENT (AMPS) TOTAL (A)	SECONDARY ALARM CURRENT (AMPS) CURRENT DRAW (A)	SECONDARY ALARM CURRENT (AMPS) TOTAL
		1	BPS10A Mainboard	Mainboard for BPS10A assembly	0.07	**0.07**	0.27	**0.27**
CIRCUIT	**SYMBOL**	**QTY**	**PART NO**	**DESCRIPTION**	**CURRENT DRAW (A)**	**TOTAL (A)**	**CURRENT DRAW (A)**	**TOTAL (A)**
BP1•4N		9	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0	**0**	0.028	**0.252**
EXISTING BP1•3N		6		EXISTING SPEAKER/ STROBE	0	0	0.08	0.506
EXISTING BP1•5N		4		EXISTING SPEAKER/ STROBE	0	0	0.203	0.812
EXISTING BP1•6N		3		EXISTING SPEAKER/ STROBE	0	0	0.133	0.399
					TOTAL STANDBY (A)	**0.07**	TOTAL ALARM (A)	2.239

REQUIRED STANDBY TIME = 24 HOURS			
REQUIRED ALARM TIME = 15 MINUTES			
SECONDARY STANDBY LOAD (A)	**0.07**	24	**1.68**
SECONDARY ALARM LOAD (A)	2.239	0.25	0.55975
STANDBY AND ALARM SUBTOTAL (AMP HOURS)		2.23975	
DERATING FACTOR		1.25	
SECONDARY LOAD REQUIREMENTS (AMP HOURS)		2.7996875	
PROVIDE (2) 12V 7AH BATTERIES			
*BATTERY BOX SIZE CAPACITY NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.			

PANEL BP2 (BPS10A) BATTERY CALCULATION
(SECONDARY POWER SOURCE REQUIREMENTS)

PANEL COMPONENTS		QTY	PART NO.	DESCRIPTION	STANDBY CURRENT (AMPS) CURRENT DRAW (A)	STANDBY CURRENT (AMPS) TOTAL (A)	SECONDARY ALARM CURRENT (AMPS) CURRENT DRAW (A)	SECONDARY ALARM CURRENT (AMPS) TOTAL
		1	BPS10A Mainboard	Mainboard for BPS10A assembly	0.07	**0.07**	0.27	**0.27**
CIRCUIT	**SYMBOL**	**QTY**	**PART NO**	**DESCRIPTION**	**CURRENT DRAW (A)**	**TOTAL (A)**	**CURRENT DRAW (A)**	**TOTAL (A)**
BP2•N1		4	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 110cd	0	**0**	0.028	**0.112**
		2	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0	**0**	0.028	**0.056**
		2	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 30cd	0	**0**	0.028	**0.056**
		1	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 75cd	0	**0**	0.028	**0.028**
		3	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 15cd	0	**0**	0.036	**0.108**
					TOTAL STANDBY (A)	**0.07**	TOTAL ALARM (A)	**0.63**

REQUIRED STANDBY TIME = 24 HOURS			
REQUIRED ALARM TIME = 15 MINUTES			
SECONDARY STANDBY LOAD (A)	**0.07**	24	**1.68**
SECONDARY ALARM LOAD (A)	**0.63**	0.25	**0.16**
STANDBY AND ALARM SUBTOTAL (AMP HOURS)		**1.84**	
DERATING FACTOR		1.25	
SECONDARY LOAD REQUIREMENTS (AMP HOURS)		**2.3**	
PROVIDE (2) 12V 7AH BATTERIES			
*BATTERY BOX SIZE CAPACITY NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.			

PANEL BP3 (BPS10A) BATTERY CALCULATION
(SECONDARY POWER SOURCE REQUIREMENTS)

PANEL COMPONENTS		QTY	PART NO.	DESCRIPTION	STANDBY CURRENT (AMPS) CURRENT DRAW (A)	STANDBY CURRENT (AMPS) TOTAL (A)	SECONDARY ALARM CURRENT (AMPS) CURRENT DRAW (A)	SECONDARY ALARM CURRENT (AMPS) TOTAL
		1	BPS10A Mainboard	Mainboard for BPS10A assembly	0.07	**0.07**	0.27	**0.27**
CIRCUIT	**SYMBOL**	**QTY**	**PART NO**	**DESCRIPTION**	**CURRENT DRAW (A)**	**TOTAL (A)**	**CURRENT DRAW (A)**	**TOTAL (A)**
BP3•N1		7	G4HFRF-S7VMC	70V Speaker/Strobe, Red, FIRE 15, 30, 75, 110 cd, Clear 75cd	0	**0**	0.159	**1.113**
BP3•N2		5	G4HFRF-S7VMC	70V Speaker/Strobe, Red, FIRE 15, 30, 75, 110 cd, Clear 75cd	0	**0**	0.159	**0.795**
					TOTAL STANDBY (A)	**0.07**	TOTAL ALARM (A)	**2.178**

REQUIRED STANDBY TIME = 24 HOURS			
REQUIRED ALARM TIME = 15 MINUTES			
SECONDARY STANDBY LOAD (A)	**0.07**	24	**1.68**
SECONDARY ALARM LOAD (A)	**2.178**	0.25	**0.54**
STANDBY AND ALARM SUBTOTAL (AMP HOURS)		**2.22**	
DERATING FACTOR		1.25	
SECONDARY LOAD REQUIREMENTS (AMP HOURS)		**2.78**	
PROVIDE (2) 12V 7AH BATTERIES			
*BATTERY BOX SIZE CAPACITY NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.			

PANEL P1•L3•M134
BP4 (BPS10A) BATTERY CALCULATION
(SECONDARY POWER SOURCE REQUIREMENTS)

PANEL COMPONENTS			QTY	PART NO.	DESCRIPTION	STANDBY CURRENT CURRENT DRAW (A)	STANDBY CURRENT TOTAL (A)	SECONDARY ALARM CURRENT CURRENT DRAW (A)	SECONDARY ALARM CURRENT TOTAL (A)
			1	BPS10A	REMOTE BOOSTER POWER SUPPLY, 10A, 120VAC, RED	0	0	0	0
			1	BPS10A MAINBOARD	MAINBOARD FOR BPS10A ASSEMBLY	0.07	0.07	0.27	0.27
			1	SIGA-CC1S	SYNCHRONIZATION OUTPUT MODULE (STANDARD MOUNT) - UL/ULC LISTED	0.000223	0.000223	0.0001	0.0001
CIRCUIT	**USED CARD AMPS**	**SYMBOL**	**QTY**	**PART NO**	**DESCRIPTION**	**CURRENT DRAW (A)**	**TOTAL (A)**	**CURRENT DRAW (A)**	**TOTAL (A)**
BP4•N1	0.084000		3	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE 75CD	0	0	0.028	0.084
						TOTAL STANDBY (A)	0.070223	TOTAL ALARM (A)	0.3541

REQUIRED STANDBY TIME (HOURS)		24	
REQUIRED ALARM TIME (MINUTES)		15	
SECONDARY STANDBY LOAD (A)	0.070223	24	1.69
SECONDARY ALARM LOAD (A)	0.3541	0.25	0.088525
STANDBY AND ALARM SUBTOTAL (AMP HOURS)		1.77	
DERATING FACTOR		1.25	
SECONDARY LOAD REQUIREMENTS (AMP HOURS)		2.22	
PROVIDE (2) 12V 7AH BATTERIES			
*BATTERY BOX SIZE CAPACITY NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.			

NOTE: DEVICE COUNTS AND CALCULATIONS SHALL INCLUDE BLDG A, B, H AND J FOR THIS INC SUBMITTAL. PLEASE REFER TO THE FLOOR PLAN AND RISER DIAGRAM FOR BLDG H AND S.

PANEL P1 (EST4 ASSEMBLY) BATTERY CALCULATION
(SECONDARY POWER SOURCE REQUIREMENTS)

PANEL COMPONENTS			QTY	PART NO.	DESCRIPTION	STANDBY CURRENT CURRENT DRAW (A)	STANDBY CURRENT TOTAL (A)	SECONDARY ALARM CURRENT CURRENT DRAW (A)	SECONDARY ALARM CURRENT TOTAL (A)
			1	EST4 ASSEMBLY	EST4 MAIN FACP - CONFIGURATION 230209	0	0	0	0
			1	3-ASUI4	AUDIO SOURCE UNIT /W 4 RAIL SPACES	0.08	0.08	0.08	0.08
			1	3-BPS/M	BOOSTER POWER SUPPLY 120V	0.05	0.05	0.05	0.05
			1	3-MODCOM	MODEM COMMUNICATOR AND DIALER	0.06	0.06	0.095	0.095
			1	3-SDDC1	DUAL SIGNATURE DRIVER CONTROLLER. COMES WITH TWO 3-SDC1S. MOUNTS TO LOCAL RAIL	0.264	0.264	0.336	0.336
			1	3-SSDC1	SIGNATURE SINGLE DRIVER CONTROLLER (LRM)	0.144	0.144	0.204	0.204
			4	3-2A40B	40 WATT ZONED AMPLIFIER, CLASS B, 25 OR 70VRMS	0.062	0.248	2.48	9.92
			1	4-24L24S	24 INDICATOR 24 CONTROL DISPLAY MODULE	0.00852	0.00852	0.00852	0.00852
			1	4-CPU	MAIN CPU	0.211	0.211	0.211	0.211
			1	4-LCDLE	DISPLAY,MAIN LCD MODULE	0.04	0.04	0.093	0.093
			1	4-MIC	PAGING MICROPHONE	0.008	0.008	0.038	0.038
			1	4-PPS/M	PRIMARY POWER SUPPLY 120V	0	0	0	0
			2	SIGA-CT2	DUAL INPUT MODULE	0.000396	0.000792	0.00068	0.00136
			3	SIGA-IM2	ISOLATOR MODULE	0.000045	0.000135	0.000045	0.000135
			5	SIGA-MCC1	SIGNAL MODULE /W 1 RISER IN, 1 OUTPUT CKT, CL 'B' - U/O MOUNT	0.000223	0.001115	0.0001	0.0005
			1	SIGA-MP1	FULL FOOTPRINT MOUNTING PLATE FOR 4 DOUBLE OR 8 SINGLE MODULES	0	0	0	0
			1	SIGA-UIO6R	6 POSITION, RISER SELECTION U/O MODULE MOTHERBOARD	0	0	0	0
CIRCUIT	**USED CARD AMPS**	**SYMBOL**	**QTY**	**PART NO**	**DESCRIPTION**	**CURRENT DRAW (A)**	**TOTAL (A)**	**CURRENT DRAW (A)**	**TOTAL (A)**
P1•AUX1	0.392000	FAA	1	4-6ANN (PAGING)	METALLIC BRONZE ANNUNCIATOR W/4-ANNCPU, MIC	0.355	0.355	0.392	0.392
P1•L1	0.011938	M 135°	2	SIGA-HRD W/SIGA-SB BASE	INTELLIGENT FIXED TEMPERATURE/RATE-OF-RISE HEAT DETECTOR, STANDARD DETECTOR BASE	0.000051	0.000102	0.000068	0.000136
		S	13	SIGA-OSD W/SIGA-SB BASE	INTELLIGENT OPTICAL SMOKE DETECTOR	0.000032	0.000416	0.000045	0.000585
			78		Existing Detector	0.000032	0.0025	0.000032	0.0025
			8		Existing Module	0.00025	0.0020	0.0004	0.0032
P1•L2		NAC	1	BPS10A	REMOTE BOOSTER POWER SUPPLY, 10A, 120VAC, RED	0	0	0	0
		F 278	4	SIGA-278	DOUBLE ACTION FIRE ALARM STATION	0.00025	0.001	0.0004	0.0016
		AM	3	SIGA-CT1	SINGLE INPUT MODULE	0.00025	0.00075	0.0004	0.0012
		AM	1	SIGA-CT1HT	SINGLE INPUT MODULE HIGH TEMPERATURE OPERATION	0.00025	0.00025	0.0004	0.0004
		M 135°	7	SIGA-HRD W/SIGA-SB BASE	INTELLIGENT FIXED TEMPERATURE/RATE-OF-RISE HEAT DETECTOR, STANDARD DETECTOR BASE	0.000051	0.000357	0.000068	0.000476
		S	41	SIGA-OSD W/SIGA-SB BASE	INTELLIGENT OPTICAL SMOKE DETECTOR	0.000032	0.001312	0.000045	0.001845
			76		Existing Detector	0.000032	0.0024	0.000032	0.0024
			21		Existing Module	0.00025	0.0053	0.0004	0.0084
P1•L3	0.005057	NAC	3	BPS10A	REMOTE BOOSTER POWER SUPPLY, 10A, 120VAC, RED	0	0	0	0
		AM	3	SIGA-CT1	SINGLE INPUT MODULE	0.00025	0.00075	0.0004	0.0012
		AM	3	SIGA-CT1HT	SINGLE INPUT MODULE HIGH TEMPERATURE OPERATION	0.00025	0.00075	0.0004	0.0012
		M 135°	4	SIGA-HRD W/SIGA-SB BASE	INTELLIGENT FIXED TEMPERATURE/RATE-OF-RISE HEAT DETECTOR, STANDARD DETECTOR BASE	0.000051	0.000204	0.000068	0.000272
		S	53	SIGA-OSD W/SIGA-SB BASE	INTELLIGENT OPTICAL SMOKE DETECTOR	0.000032	0.001696	0.000045	0.00239
			41		Existing Detector	0.000032	0.0013	0.000032	0.0013
			11		Existing Module	0.00025	0.0028	0.0004	0.0044
P1•ANN	0.000000	FAA	1	4-6ANN (PAGING)	METALLIC BRONZE ANNUNCIATOR W/4-ANNCPU, MIC	0	0	0	0
P1•2•1N	0.196000		6	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE 15CD	0	0	0.028	0.168
			1	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE 75CD	0	0	0.028	0.028
P1•2•A2			3	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE 1W	0	0	0	0
		S WP	1	WG4RF-S	25/70V SPEAKER, RED, FIRE 2W	0	0	0	0
P1•2•A1	0.000000		12	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR 1W	0	0	0	0
		S WP	5	WG4RF-S	25/70V SPEAKER, RED, FIRE 2W	0	0	0	0
P1•3•A1	0.000000		4	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 0.25w	0	**0**	0	**0**
			1	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 0.5w	0	**0**	0	**0**
			3	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 1w	0	**0**	0	**0**
			4	G4SVRF	Speaker/Strobe, Wall, Red, FIRE 2w	0	**0**	0	**0**
		S WP	1	WG4RF-S	25/70V SPEAKER, RED, FIRE 2W	0	0	0	0
P1•4•A1	0.000000		15	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE 0.25W	0	0	0	0
			1	G4SVRF	SPEAKER/STROBE, WALL, RED, FIRE 0.5W	0	0	0	0
						TOTAL STANDBY (A)	1.49	TOTAL ALARM (A)	11.66

REQUIRED STANDBY TIME (HOURS)		24	
REQUIRED ALARM TIME (MINUTES)		15	
SECONDARY STANDBY LOAD (A)	1.49	24	35.87
SECONDARY ALARM LOAD (A)	11.66	0.25	2.91
STANDBY AND ALARM SUBTOTAL (AMP HOURS)		38.78	
DERATING FACTOR		1.25	
SECONDARY LOAD REQUIREMENTS (AMP HOURS)		48.48	
PROVIDE (2) 12V 55AH BATTERIES			
*BATTERY BOX SIZE CAPACITY NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.			

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Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUM, JR. E 24187 EXPIRES 6-30-26 ELECTRICAL STATE OF CALIFORNIA

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

DATE SIGNED: 04-25-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author
SHEET NAME:
FIRE ALARM SYSTEM CALCULATIONS

CONSTRUCTION DOCUMENTS

DATE: **04.30.2025** CLIENT PROJ NO: **3431007000**
SHEET:
FA0.3.1-3

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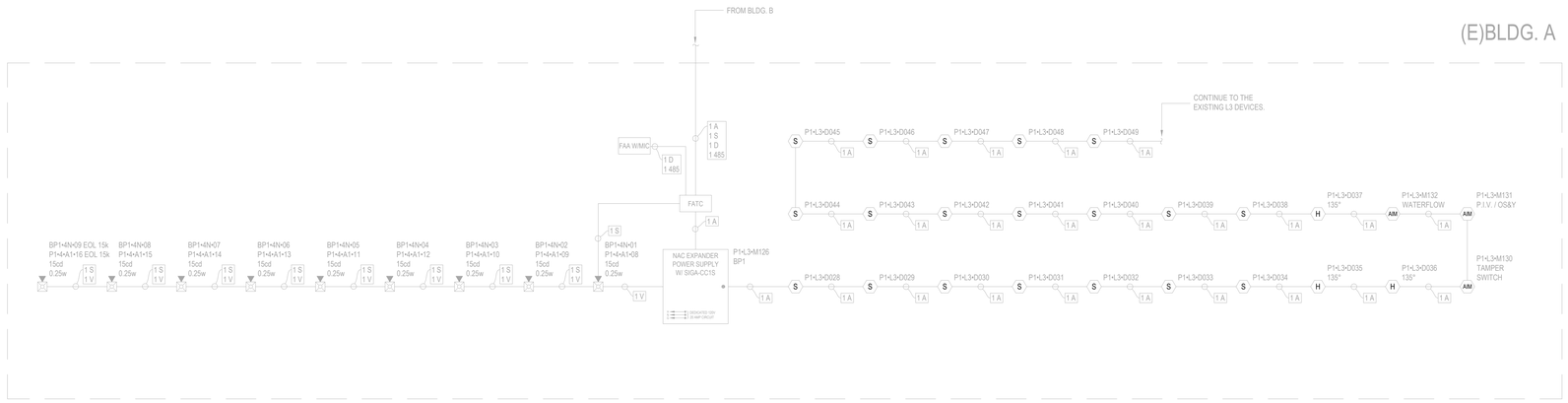

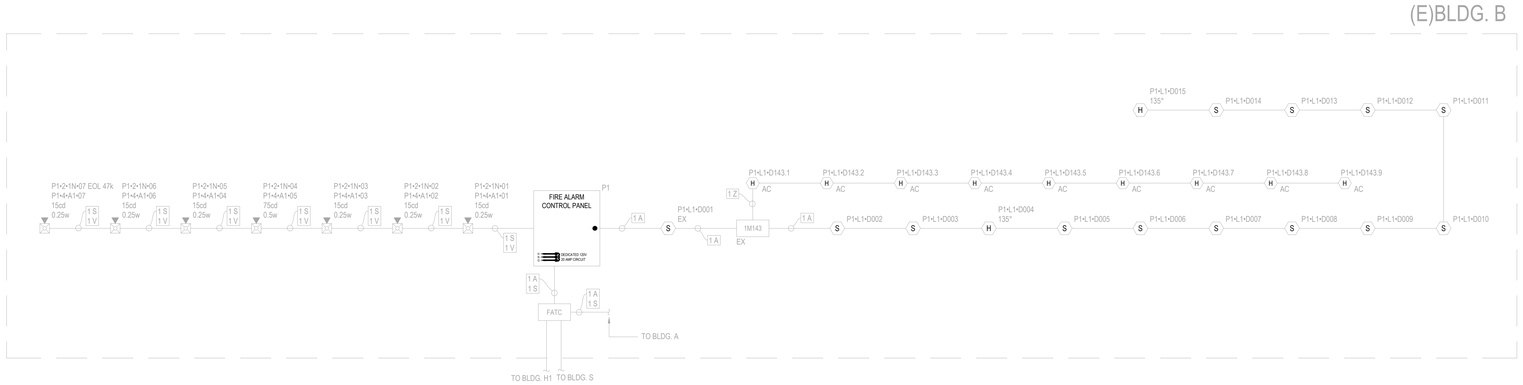

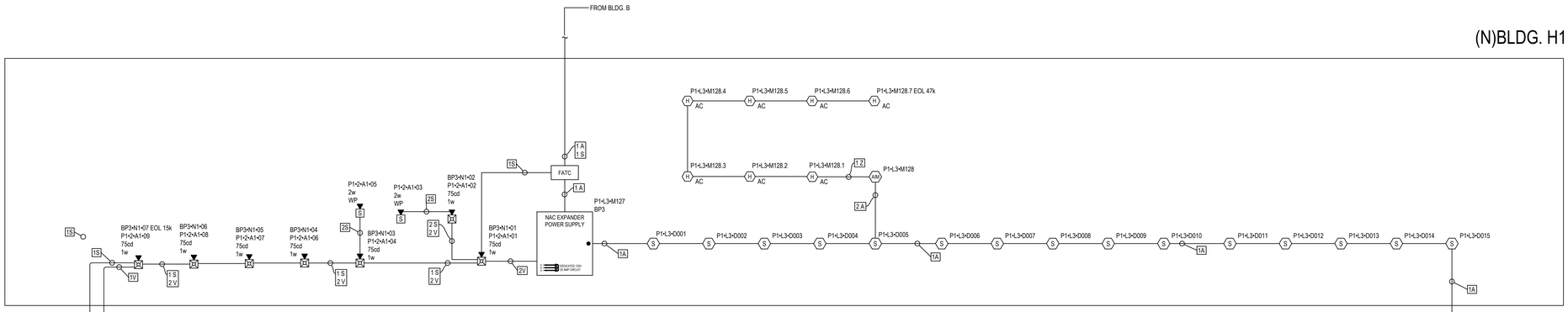

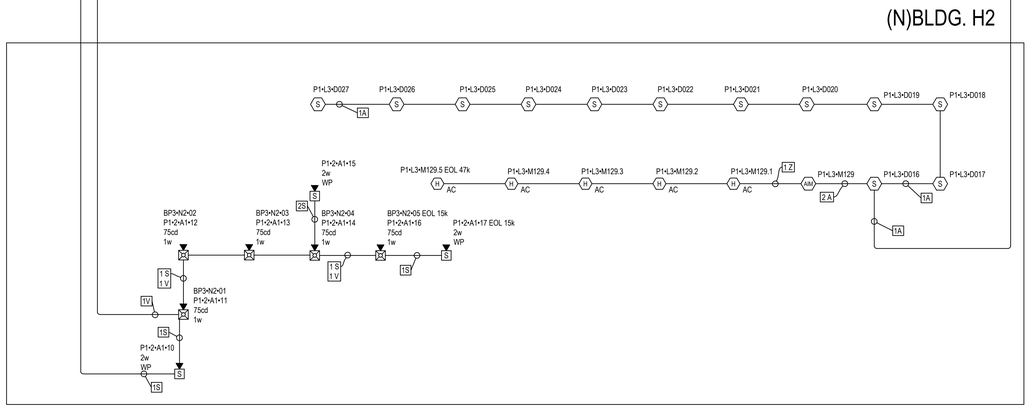

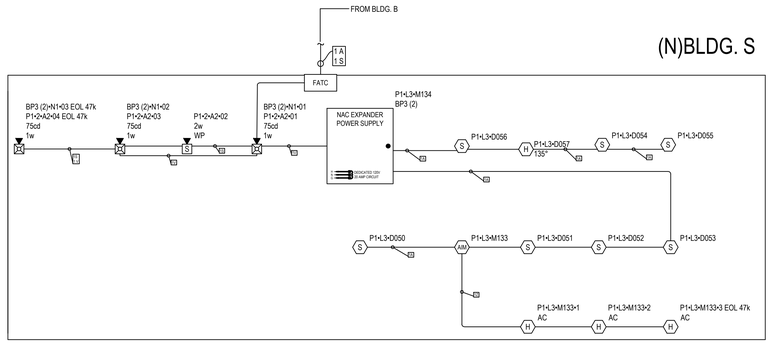

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PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
FIRE ALARM RISER DIAGRAM

CONSTRUCTION DOCUMENTS

DATE: **04.30.2025** | CLIENT PROJ NO: **3431007000**

SHEET:

FA0.4-3

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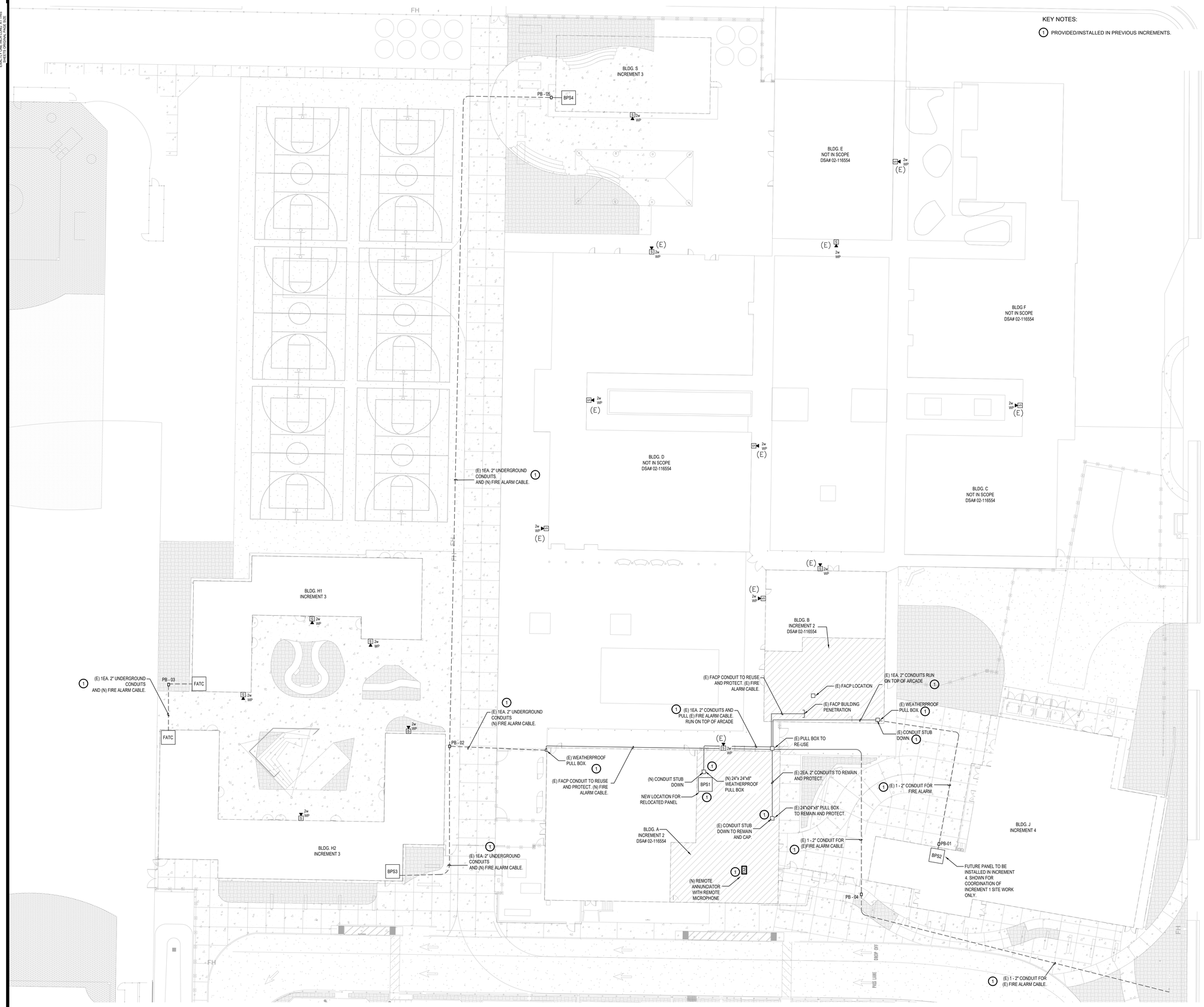
KEY NOTES:

1. PROVIDED/INSTALLED IN PREVIOUS INCREMENTS.



FIRE ALARM SITE PLAN

SCALE : 1"=20'-0"

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REGISTERED PROFESSIONAL ENGINEER JOHN D. GUIAN NG E 24187 EXPIRES 12/31/26 ELECTRICAL STATE OF CALIFORNIA

DATE SIGNED: 04-25-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author
SHEET NAME:
FIRE ALARM SITE PLAN

CONSTRUCTION DOCUMENTS

DATE: **04.30.2025** | CLIENT PROJ NO: **3431007000**

SHEET:
FA1.10-3

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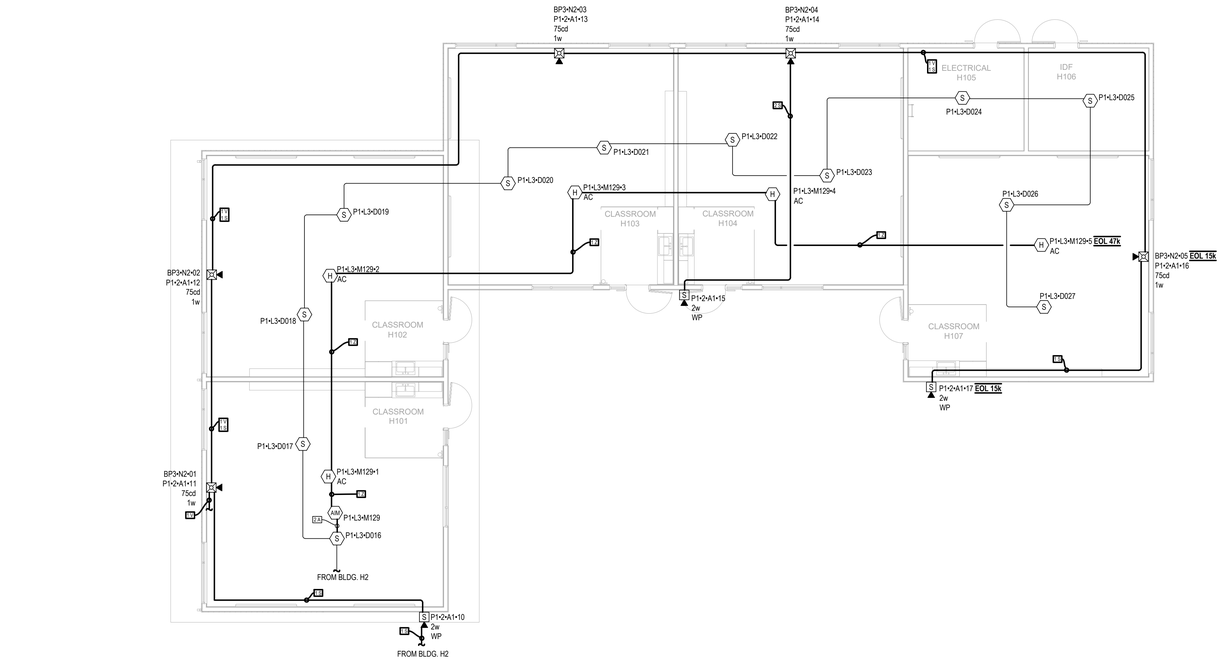

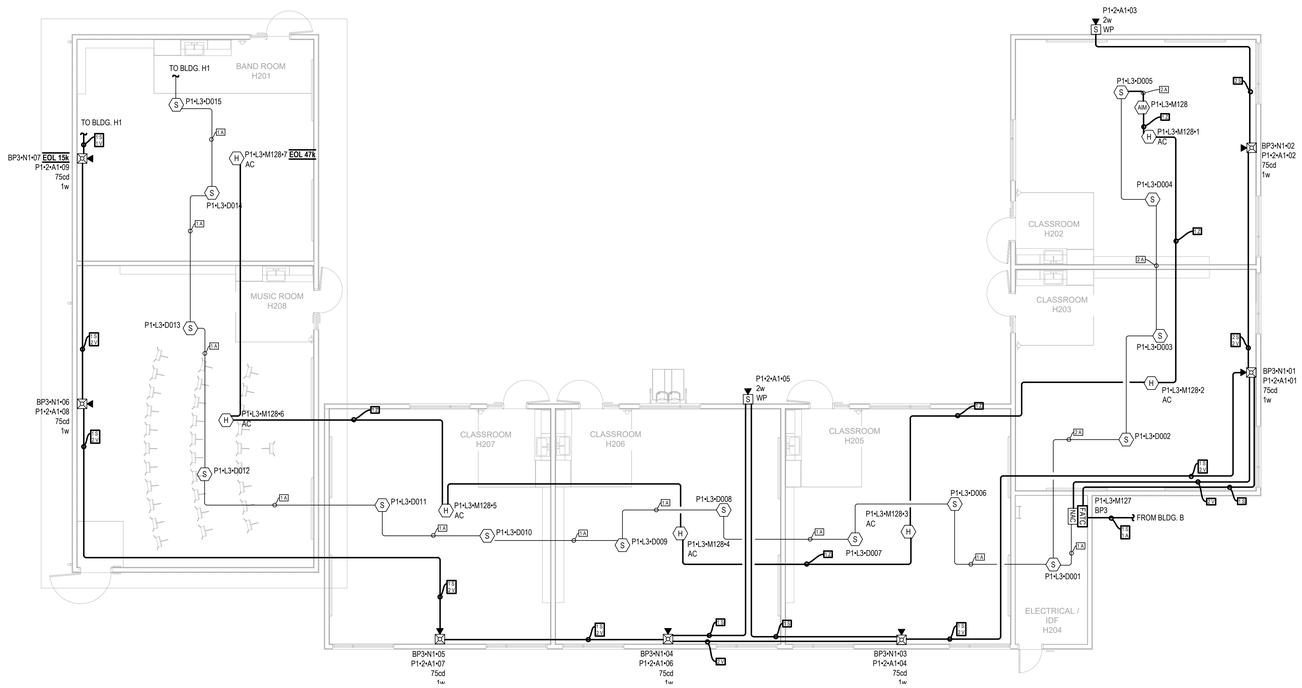

FIRE ALARM - FLOOR PLAN BLDG H

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

AGENCY APPROVAL:

LODI UNIFIED SCHOOL DISTRICT

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KEYNOTES

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capital engineering
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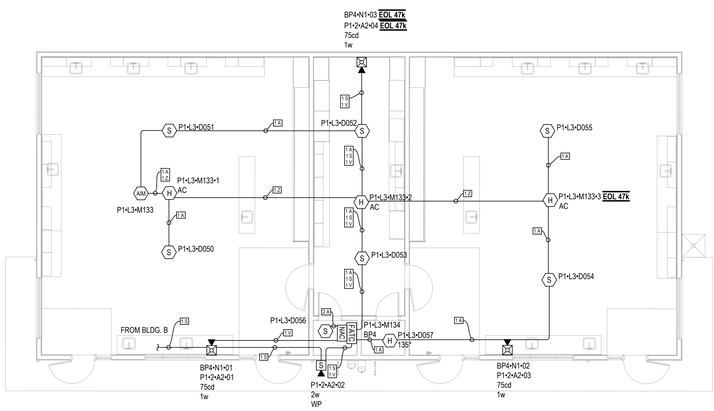

FIRE ALARM - FLOOR PLAN BLDG S

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SECTION 28 31 00 - FIRE ALARM DETECTION SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION

A. THIS SECTION OF THE SPECIFICATION INCLUDES THE FURNISHING, INSTALLATION, CONNECTION AND TESTING OF THE MICROPROCESSOR CONTROLLED, INTELLIGENT REPORTING FIRE ALARM EQUIPMENT REQUIRED TO FORM A COMPLETE, OPERATIVE, COORDINATED SYSTEM. IT SHALL INCLUDE, BUT NOT BE LIMITED TO, ALARM INITIATING DEVICES, ALARM NOTIFICATION APPLIANCES, AUXILIARY CONTROL DEVICES AND WIRING AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.

B. THE FIRE ALARM SYSTEM SHALL COMPLY WITH REQUIREMENTS OF NFPA STANDARD NO. 72 FOR LOCAL PROTECTED PREMISES SIGNALING SYSTEMS EXCEPT AS MODIFIED AND SUPPLEMENTED BY THIS SPECIFICATION. THE SYSTEM FIELD WIRING SHALL BE SUPERVISED EITHER ELECTRICALLY OR BY SOFTWARE-DIRECTED POLLING OF FIELD DEVICES.
1. THE SECONDARY POWER SOURCE OF THE FIRE ALARM CONTROL PANEL WILL BE CAPABLE OF PROVIDING AT LEAST 24 HOURS OF BACKUP POWER WITH THE ABILITY TO SUSTAIN 15 MINUTES IN ALARM AND EVACUATION AT THE END OF THE BACKUP PERIOD.

C. THE FIRE ALARM SYSTEM SHALL BE MANUFACTURED BY AN ISO 9001 CERTIFIED COMPANY AND MEET THE REQUIREMENTS OF BS EN9001: ANSI/ASQC Q9001-1994.

D. THE FACP AND PERIPHERAL DEVICES SHALL BE MANUFACTURED OR SUPPLIED 100% BY A SINGLE U.S. MANUFACTURER (OR DIVISION THEREOF).

E. UNDERWRITERS LABORATORIES INC. (UL) - USA:
1. NO. 38 MANUALLY ACTUATED SIGNALING BOXES
2. NO. 50 CABINETS AND BOXES
3. NO. 864 CONTROL UNITS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
4. NO. 268 SMOKE DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
5. NO. 268A SMOKE DETECTORS FOR DUCT APPLICATIONS
6. NO. 346 WATERFLOW INDICATORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
7. NO. 464 AUDIBLE SIGNALING APPLIANCES
8. NO. 521 HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
9. NO. 1971 VISUAL NOTIFICATION APPLIANCES

F. THE INSTALLING COMPANY SHALL EMPLOY NICET (MINIMUM LEVEL II FIRE ALARM TECHNOLOGY) TECHNICIANS ON SITE TO GUIDE THE FINAL CHECK-OUT AND TO ENSURE THE SYSTEMS INTEGRITY.

1.02 SCOPE

A. A FIRE ALARM DETECTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE TO THE PROJECT SPECIFICATIONS AND DRAWINGS.

B. BASIC PERFORMANCE:
1. INITIATION DEVICE CIRCUITS (IDC) SHALL BE WIRED CLASS B (NFPA STYLE B) AS PART OF AN ADDRESSABLE DEVICE CONNECTED BY THE SLC CIRCUIT.
2. NOTIFICATION APPLIANCE CIRCUITS (NAC) SHALL BE WIRED CLASS B (NFPA STYLE Y) AS PART OF AN ADDRESSABLE DEVICE CONNECTED BY THE SLC CIRCUIT.
3. ALL CIRCUITS SHALL BE POWER-LIMITED, PER UL864 REQUIREMENTS.
4. A SINGLE GROUND FAULT OR OPEN CIRCUIT ON THE SYSTEM SIGNALING LINE CIRCUIT SHALL NOT CAUSE SYSTEM MALFUNCTION, LOSS OF OPERATING POWER OR THE ABILITY TO REPORT AN ALARM.
5. ALARM SIGNALS ARRIVING AT THE MAIN FACP SHALL NOT BE LOST FOLLOWING A PRIMARY POWER FAILURE OR OUTAGE OF ANY KIND UNTIL THE ALARM SIGNAL IS PROCESSED AND RECORDED.

C. BASIC SYSTEM FUNCTIONAL OPERATION: WHEN A FIRE ALARM CONDITION IS DETECTED AND REPORTED BY ONE OF THE SYSTEM INITIATING DEVICES, THE FOLLOWING FUNCTIONS SHALL IMMEDIATELY OCCUR:
1. THE SYSTEM ALARM LED ON THE FACP SHALL FLASH.
2. A LOCAL SOUNDER WITH THE CONTROL PANEL SHALL SOUND.
3. A BACKLIT 80-CHARACTER LCD DISPLAY ON THE FACP SHALL INDICATE ALL INFORMATION ASSOCIATED WITH THE FIRE ALARM CONDITION, INCLUDING THE TYPE OF ALARM POINT AND ITS LOCATION WITHIN THE PROTECTED PREMISES.
4. IN RESPONSE TO A FIRE ALARM CONDITION, THE SYSTEM WILL PROCESS ALL CONTROL PROGRAMMING AND ACTIVATE ALL SYSTEM OUTPUTS (ALARM NOTIFICATION APPLIANCES AND/OR RELAYS) ASSOCIATED WITH THE POINT(S) IN ALARM. ADDITIONALLY, THE SYSTEM SHALL SEND EVENTS TO A CENTRAL ALARM SUPERVISING STATION VIA EITHER DIAL-UP OVER PSTN OR INTERNET OR INTRANET VIA PSDN OR VIRTUAL PRIVATE NETWORK.

1.03 SUBMITTALS

A. GENERAL:
1. TWO COPIES OF ALL SUBMITTALS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW.
2. ALL REFERENCES TO MANUFACTURER'S MODEL NUMBERS AND OTHER PERTINENT INFORMATION HEREIN IS INTENDED TO ESTABLISH MINIMUM STANDARDS OF PERFORMANCE, FUNCTION AND QUALITY. EQUIVALENT COMPATIBLE UL-LISTED EQUIPMENT FROM OTHER MANUFACTURERS MAY BE SUBSTITUTED FOR THE SPECIFIED EQUIPMENT AS LONG AS THE MINIMUM STANDARDS ARE MET.
3. FOR EQUIPMENT OTHER THAN THAT SPECIFIED, THE CONTRACTOR SHALL SUPPLY PROOF THAT SUCH SUBSTITUTE EQUIPMENT EQUALS OR EXCEEDS THE FEATURES, FUNCTIONS, PERFORMANCE, AND QUALITY OF THE SPECIFIED EQUIPMENT.

B. SHOP DRAWINGS:
1. SUFFICIENT INFORMATION, CLEARLY PRESENTED, SHALL BE INCLUDED TO DETERMINE COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS.
2. INCLUDE MANUFACTURER'S NAME(S), MODEL NUMBERS, RATINGS, POWER REQUIREMENTS, EQUIPMENT LAYOUT, DEVICE ARRANGEMENT, COMPLETE WIRING POINT-TO-POINT DIAGRAMS, AND CONDUIT LAYOUTS.
3. SHOW ANNUNCIATOR LAYOUT, CONFIGURATIONS, AND TERMINATIONS.

C. MANUALS:
1. SUBMIT SIMULTANEOUSLY WITH THE SHOP DRAWINGS, COMPLETE OPERATING AND MAINTENANCE MANUALS LISTING THE MANUFACTURER'S NAME(S), INCLUDING TECHNICAL DATA SHEETS.
2. WIRING DIAGRAMS SHALL INDICATE INTERNAL WIRING FOR EACH DEVICE AND THE INTERCONNECTIONS BETWEEN THE ITEMS OF EQUIPMENT.
3. PROVIDE A CLEAR AND CONCISE DESCRIPTION OF OPERATION THAT GIVES, IN DETAIL, THE INFORMATION REQUIRED TO PROPERLY OPERATE THE EQUIPMENT AND SYSTEM.

D. SOFTWARE MODIFICATIONS:
1. PROVIDE THE SERVICES OF A QUALIFIED TECHNICIAN TO PERFORM ALL SYSTEM SOFTWARE MODIFICATIONS, UPGRADES OR CHANGES. RESPONSE TIME OF THE TECHNICIAN TO THE SITE SHALL NOT EXCEED 4 HOURS.
2. PROVIDE ALL HARDWARE, SOFTWARE, PROGRAMMING TOOLS AND DOCUMENTATION NECESSARY TO MODIFY THE FIRE ALARM SYSTEM ON SITE. MODIFICATION INCLUDES ADDITION AND DELETION OF DEVICES, CIRCUITS, ZONES AND CHANGES TO SYSTEM OPERATION AND CUSTOM LABEL CHANGES FOR DEVICES OR ZONES. THE SYSTEM STRUCTURE AND SOFTWARE SHALL PLACE NO LIMIT ON THE TYPE OR EXTENT OF SOFTWARE MODIFICATIONS ON-SITE. MODIFICATION OF SOFTWARE SHALL NOT REQUIRE POWER-DOWN OF THE SYSTEM OR LOSS OF SYSTEM FIRE PROTECTION WHILE MODIFICATIONS ARE BEING MADE.

1.04 GUARANTEE

A. ALL WORK PERFORMED AND ALL MATERIAL AND EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE FREE FROM DEFECTS AND SHALL REMAIN SO FOR A PERIOD OF AT LEAST ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. THE FULL COST OF MAINTENANCE, LABOR AND MATERIALS REQUIRED TO CORRECT ANY DEFECT DURING THIS ONE YEAR PERIOD SHALL BE INCLUDED IN THE SUBMITTAL BID.

1.05 MAINTENANCE

A. MAINTENANCE AND TESTING SHALL BE ON A SEMI-ANNUAL SCHEDULE OR AS REQUIRED BY THE LOCAL AHJ. A PREVENTIVE MAINTENANCE SCHEDULE SHALL BE PROVIDED BY THE CONTRACTOR DESCRIBING THE PROTOCOL FOR PREVENTIVE MAINTENANCE. THE SCHEDULE SHALL INCLUDE:
1. SYSTEMATIC EXAMINATION, ADJUSTMENT AND CLEANING OF ALL DETECTORS, MANUAL FIRE ALARM STATIONS, CONTROL PANELS, POWER SUPPLIES, RELAYS, WATERFLOW SWITCHES AND ALL ACCESSORIES OF THE FIRE ALARM SYSTEM.
2. EACH CIRCUIT IN THE FIRE ALARM SYSTEM SHALL BE TESTED SEMIANNUALLY.
3. EACH SMOKE DETECTOR SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 72 CHAPTER 10.

B. AS PART OF THE BID/PROPOSAL, INCLUDE A QUOTE FOR A MAINTENANCE CONTRACT TO PROVIDE ALL MAINTENANCE, TESTS, AND REPAIRS DESCRIBED BELOW. INCLUDE ALSO A QUOTE FOR UNSCHEDULED MAINTENANCE/REPAIRS, INCLUDING HOURLY RATES FOR TECHNICIANS TRAINED ON THIS EQUIPMENT AND RESPONSE TRAVEL COSTS FOR EACH YEAR OF THE MAINTENANCE PERIOD. SUBMITTALS THAT DO NOT IDENTIFY ALL POST CONTRACT MAINTENANCE COSTS WILL NOT BE ACCEPTED. RATES AND COSTS SHALL BE VALID FOR THE PERIOD OF FIVE (5) YEARS AFTER EXPIRATION OF THE GUARANTY.

1.06 POST CONTRACT EXPANSIONS

A. THE CONTRACTOR SHALL HAVE THE ABILITY TO PROVIDE PARTS AND LABOR TO EXPAND THE SYSTEM SPECIFIED, IF SO REQUESTED, FOR A PERIOD OF FIVE (5) YEARS FROM THE DATE OF ACCEPTANCE.

B. AS PART OF THE SUBMITTAL, INCLUDE A QUOTATION FOR ALL PARTS AND MATERIAL, AND ALL INSTALLATION AND TEST LABOR AS NEEDED TO INCREASE THE NUMBER OF INTELLIGENT OR ADDRESSABLE DEVICES BY TEN PERCENT (10%). THIS QUOTATION SHALL INCLUDE INTELLIGENT SMOKE DETECTORS, INTELLIGENT HEAT DETECTORS, ADDRESSABLE MANUAL STATIONS, ADDRESSABLE BEAM DETECTORS, ADDRESSABLE MONITOR MODULES AND ADDRESSABLE CONTROL MODULES EQUAL IN NUMBER TO ONE TENTH OF THE NUMBER REQUIRED TO MEET THIS SPECIFICATION (LIST ACTUAL QUANTITY OF EACH TYPE).

C. THE QUOTATION SHALL INCLUDE INSTALLATION, TEST LABOR, AND LABOR TO REPROGRAM THE SYSTEM FOR THIS 10% EXPANSION. IF ADDITIONAL FACP HARDWARE IS REQUIRED, INCLUDE THE MATERIAL AND LABOR NECESSARY TO INSTALL THIS HARDWARE.

1.07 APPLICABLE STANDARDS AND SPECIFICATIONS

A. THE SPECIFICATIONS AND STANDARDS LISTED BELOW FORM A PART OF THIS SPECIFICATION. THE SYSTEM SHALL FULLY COMPLY WITH THE LATEST ISSUE OF THESE STANDARDS, IF APPLICABLE.
1. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - USA:
   a. NO. 13 SPRINKLER SYSTEMS
   b. NO. 70 NATIONAL ELECTRIC CODE (NEC)
   c. NO. 72 NATIONAL FIRE ALARM CODE
   d. NO. 101 LIFE SAFETY CODE
   e. NO. 38 MANUALLY ACTUATED SIGNALING BOXES
   f. NO. 217 SMOKE DETECTORS, SINGLE AND MULTIPLE STATIONS
   g. NO. 228 DOOR CLOSERS-HOLDERS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   h. NO. 268 SMOKE DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   i. NO. 268A SMOKE DETECTORS FOR DUCT APPLICATIONS
   j. NO. 346 WATERFLOW INDICATORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   k. NO. 464 AUDIBLE SIGNALING APPLIANCES
   l. NO. 521 HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   m. NO. 864 CONTROL UNITS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   n. NO. 1481 POWER SUPPLIES FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   o. NO. 1610 CENTRAL STATION BURGLAR ALARM UNITS
   p. NO. 1638 VISUAL SIGNALING APPLIANCES
   q. NO. 1971 VISUAL SIGNALING APPLIANCES
   r. NO. 2017 GENERAL-PURPOSE SIGNALING DEVICES AND SYSTEMS
   s. CAN/ULC S524-01 STANDARD FOR INSTALLATION OF FIRE ALARM SYSTEMS
   t. THE FACP SHALL BE ANSI 864, 9TH EDITION LISTED. SYSTEMS LISTED TO ANSI 864, 8TH EDITION (OR PREVIOUS REVISIONS) SHALL NOT BE ACCEPTED.
2. THE SYSTEM AND ITS COMPONENTS SHALL BE UNDERWRITERS LABORATORIES, INC. LISTED UNDER THE APPROPRIATE UL TESTING STANDARD AS LISTED HEREIN FOR FIRE ALARM APPLICATIONS AND THE INSTALLATION SHALL BE IN COMPLIANCE WITH THE UL LISTING.
3. LOCAL AND STATE BUILDING CODES.
4. ALL REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ).

1.08 APPROVALS

A. THE SYSTEM SHALL HAVE PROPER LISTING AND/OR APPROVAL FROM THE FOLLOWING NATIONALLY RECOGNIZED AGENCIES:
1. FM FACTORY MUTUAL
2. MEA MATERIAL EQUIPMENT ACCEPTANCE (NYC)
3. CSFM CALIFORNIA STATE FIRE MARSHAL

PART 2 - PRODUCTS

2.01 EQUIPMENT AND MATERIAL, GENERAL

A. ALL EQUIPMENT AND COMPONENTS SHALL BE NEW, AND THE MANUFACTURER'S CURRENT MODEL. THE MATERIALS, APPLIANCES, EQUIPMENT AND DEVICES SHALL BE TESTED AND LISTED BY A NATIONALLY RECOGNIZED APPROVALS AGENCY FOR USE AS PART OF A FIRE PROTECTIVE SIGNALING SYSTEM, MEETING THE NATIONAL FIRE ALARM CODE.

B. ALL EQUIPMENT AND COMPONENTS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURERS' RECOMMENDATIONS. CONSULT THE MANUFACTURER'S INSTALLATION MANUALS FOR ALL WIRING DIAGRAMS, SCHEMATICS, PHYSICAL EQUIPMENT SIZES, ETC., BEFORE BEGINNING SYSTEM INSTALLATION.

C. ALL EQUIPMENT SHALL BE ATTACHED TO WALLS AND CEILING/FLOOR ASSEMBLIES AND SHALL BE HELD FIRMLY IN PLACE (E.G., DETECTORS SHALL NOT BE SUPPORTED SOLELY BY SUSPENDED CEILINGS). FASTENERS AND SUPPORTS SHALL BE ADEQUATE TO SUPPORT THE REQUIRED LOAD.

D. ALL EQUIPMENT MUST BE AVAILABLE "OVER THE COUNTER" THROUGH THE SECURITY EQUIPMENT DISTRIBUTOR (SED) MARKET AND CAN BE INSTALLED BY DEALERSHIPS INDEPENDENT OF THE MANUFACTURER.

2.02 CONDUIT AND WIRE

A. CONDUIT:
1. CONDUIT SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), LOCAL AND STATE REQUIREMENTS.
2. WHERE REQUIRED, ALL WIRING SHALL BE INSTALLED IN CONDUIT OR RACEWAY. CONDUIT FILL SHALL NOT EXCEED 40 PERCENT OF INTERIOR CROSS SECTIONAL AREA WHERE THREE OR MORE CABLES ARE CONTAINED WITHIN A SINGLE CONDUIT.
3. CABLE MUST BE SEPARATED FROM ANY OPEN CONDUCTORS OF POWER, OR CLASS 1 CIRCUITS, AND SHALL NOT BE PLACED IN ANY CONDUIT, JUNCTION BOX OR RACEWAY CONTAINING THESE CONDUCTORS, PER NEC ARTICLE 760-29.
4. WIRING FOR 24 VOLT DC CONTROL, ALARM NOTIFICATION, EMERGENCY COMMUNICATION AND SIMILAR POWER-LIMITED AUXILIARY FUNCTIONS MAY BE RUN IN THE SAME CONDUIT AS INITIATING AND SIGNALING LINE CIRCUITS. ALL CIRCUITS SHALL BE PROVIDED WITH TRANSIENT SUPPRESSION DEVICES AND THE SYSTEM SHALL BE DESIGNED TO PERMIT SIMULTANEOUS OPERATION OF ALL CIRCUITS WITHOUT INTERFERENCE OR LOSS OF SIGNALS.
5. CONDUIT SHALL NOT ENTER THE FIRE ALARM CONTROL PANEL, OR ANY OTHER REMOTELY MOUNTED CONTROL PANEL EQUIPMENT OR BACKBOXES, EXCEPT WHERE CONDUIT ENTRY IS SPECIFIED BY THE FACP MANUFACTURER.
6. CONDUIT SHALL BE 3/4 INCH (19.1 MM) MINIMUM.

B. WIRE:
1. ALL FIRE ALARM SYSTEM WIRING SHALL BE NEW.
2. WIRING SHALL BE IN ACCORDANCE WITH LOCAL, STATE AND NATIONAL CODES (E.G., NEC ARTICLE 760) AND AS RECOMMENDED BY THE MANUFACTURER OF THE FIRE ALARM SYSTEM. NUMBER AND SIZE OF CONDUCTORS SHALL BE AS RECOMMENDED BY THE FIRE ALARM SYSTEM MANUFACTURER, BUT NOT LESS THAN 18 AWG (1.02 MM) FOR INITIATING DEVICE CIRCUITS AND SIGNALING LINE CIRCUITS, AND 14 AWG (1.63 MM) FOR NOTIFICATION APPLIANCE CIRCUITS.
3. ALL WIRE AND CABLE SHALL BE LISTED AND/OR APPROVED BY A RECOGNIZED TESTING AGENCY FOR USE WITH A PROTECTIVE SIGNALING SYSTEM.
4. WIRE AND CABLE NOT INSTALLED IN CONDUIT SHALL HAVE A FIRE RESISTANCE RATING SUITABLE FOR THE INSTALLATION AS INDICATED IN NEC 760 (E.G., FPLR).
5. WIRING USED FOR THE MULTIPLEX COMMUNICATION CIRCUIT (SLC) SHALL BE TWISTED AND SUPPORT A MINIMUM WIRING DISTANCE OF 10,000 FEET WHEN SIZED AT 12 AWG. THE DESIGN OF THE SYSTEM SHALL PERMIT USE OF IDC AND NAC WIRING IN THE SAME CONDUIT WITH THE SLC COMMUNICATION CIRCUIT. SHIELDED WIRE SHALL NOT BE REQUIRED.
6. ALL FIELD WIRING (WITH EXCEPTION OF EXTERNAL COMMUNICATIONS ETHERNET) SHALL BE ELECTRICALLY SUPERVISED FOR OPEN CIRCUIT AND GROUND FAULT.
7. THE FIRE ALARM CONTROL PANEL SHALL BE CAPABLE OF T-TAPPING NFPA STYLE 4 (CLASS B) SIGNALING LINE CIRCUITS (SLCS). SYSTEMS WHICH DO NOT ALLOW OR HAVE RESTRICTIONS IN, FOR EXAMPLE, THE AMOUNT OF T-TAPS, LENGTH OF T-TAPS ETC., IS NOT ACCEPTABLE.

C. TERMINAL BOXES, JUNCTION BOXES AND CABINETS: ALL BOXES AND CABINETS SHALL BE UL LISTED FOR THEIR USE AND PURPOSE.

D. THE FIRE ALARM CONTROL PANEL SHALL BE CONNECTED TO A SEPARATE DEDICATED BRANCH CIRCUIT, MAXIMUM 20 AMPERES. THIS CIRCUIT SHALL BE LABELED AT THE MAIN POWER DISTRIBUTION PANEL AS FIRE ALARM. FIRE ALARM CONTROL PANEL PRIMARY POWER WIRING SHALL BE 12 AWG. THE CONTROL PANEL CABINET SHALL BE GROUNDED SECURELY TO EITHER A COLD WATER PIPE OR GROUNDING ROD. THE CONTROL PANEL ENCLOSURE SHALL FEATURE A QUICK REMOVAL CHASSIS TO FACILITATE RAPID REPLACEMENT OF THE FACP ELECTRONICS.

2.03 MAIN FIRE ALARM CONTROL PANEL

A. EXISTING GAMEWELL / FCI E3

2.04 SYSTEM COMPONENTS

A. SEE FIRE ALARM EQUIPMENT SCHEDULE ON DRAWINGS.

2.05 BATTERIES

A. UPON LOSS OF PRIMARY (AC) POWER TO THE CONTROL PANEL, THE BATTERIES SHALL HAVE SUFFICIENT CAPACITY TO POWER THE FIRE ALARM SYSTEM FOR REQUIRED STANDBY TIME (24 OR 60 HOURS) FOLLOWED BY 15 MINUTES OF ALARM AND EVACUATION.

B. THE BATTERIES ARE TO BE COMPLETELY MAINTENANCE FREE. NO LIQUIDS ARE REQUIRED. FLUID LEVEL CHECKS FOR REFILLING, SPILLS, AND LEAKAGE SHALL NOT BE REQUIRED.

C. IF NECESSARY TO MEET STANDBY REQUIREMENTS, EXTERNAL BATTERY/CHARGER SYSTEMS MAY BE USED.

PART 3 - EXECUTION

3.01 INSTALLATION

A. INSTALLATION SHALL BE IN ACCORDANCE WITH THE NEC, NFPA 72, LOCAL AND STATE CODES, AS SHOWN ON THE DRAWINGS, AND AS RECOMMENDED BY THE MAJOR EQUIPMENT MANUFACTURER.

B. ALL CONDUIT, JUNCTION BOXES, CONDUIT SUPPORTS AND HANGERS SHALL BE CONCEALED IN FINISHED AREAS AND MAY BE EXPOSED IN UNFINISHED AREAS. SMOKE DETECTORS SHALL NOT BE INSTALLED PRIOR TO THE SYSTEM PROGRAMMING AND TEST PERIOD. IF CONSTRUCTION IS ONGOING DURING THIS PERIOD, MEASURES SHALL BE TAKEN TO PROTECT SMOKE DETECTORS FROM CONTAMINATION AND PHYSICAL DAMAGE.

C. ALL FIRE DETECTION AND ALARM SYSTEM DEVICES, CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE FLUSH MOUNTED WHEN LOCATED IN FINISHED AREAS AND MAY BE SURFACE MOUNTED WHEN LOCATED IN UNFINISHED AREAS.

D. MANUAL PULL STATIONS SHALL BE SUITABLE FOR SURFACE MOUNTING OR SEMI FLUSH MOUNTING AS SHOWN ON THE PLANS, AND SHALL BE INSTALLED NOT LESS THAN 42 INCHES (1067 MM), NOR MORE THAN 48 INCHES (122 MM) ABOVE THE FINISHED FLOOR.

3.02 TEST

A. THE SERVICE OF A COMPETENT, NICET LEVEL II TECHNICIAN SHALL BE PROVIDED TO TECHNICALLY SUPERVISE AND PARTICIPATE DURING ALL OF THE ADJUSTMENTS AND TESTS FOR THE SYSTEM. ALL TESTING SHALL BE IN ACCORDANCE WITH NFPA 72, CHAPTER 10.
1. BEFORE ENERGIZING THE CABLES AND WIRES, CHECK FOR CORRECT CONNECTIONS AND TEST FOR SHORT CIRCUITS, GROUND FAULTS, CONTINUITY, AND INSULATION.
2. CLOSE EACH SPRINKLER SYSTEM FLOW VALVE AND VERIFY PROPER SUPERVISORY ALARM AT THE FACP.
3. VERIFY ACTIVATION OF ALL WATERFLOW SWITCHES.
4. OPEN INITIATING DEVICE CIRCUITS AND VERIFY THAT THE TROUBLE SIGNAL ACTUATES.
5. OPEN AND SHORT SIGNALING LINE CIRCUITS AND VERIFY THAT THE TROUBLE SIGNAL ACTUATES.
6. OPEN AND SHORT NOTIFICATION APPLIANCE CIRCUITS AND VERIFY THAT TROUBLE SIGNAL ACTUATES.
7. GROUND ALL CIRCUITS AND VERIFY RESPONSE OF TROUBLE SIGNALS.
8. CHECK PRESENCE AND AUDIBILITY OF TONE AT ALL ALARM NOTIFICATION DEVICES.
9. CHECK INSTALLATION, SUPERVISION, AND OPERATION OF ALL INTELLIGENT SMOKE DETECTORS USING THE WALK TEST.
10. EACH OF THE ALARM CONDITIONS THAT THE SYSTEM IS REQUIRED TO DETECT SHOULD BE INTRODUCED ON THE SYSTEM. VERIFY THE PROPER RECEIPT AND THE PROPER PROCESSING OF THE SIGNAL AT THE FACP AND THE CORRECT ACTIVATION OF THE CONTROL POINTS.
11. WHEN THE SYSTEM IS EQUIPPED WITH OPTIONAL FEATURES, THE MANUFACTURER'S MANUAL SHALL BE CONSULTED TO DETERMINE THE PROPER TESTING PROCEDURES. THIS IS INTENDED TO ADDRESS SUCH ITEMS AS VERIFYING CONTROLS PERFORMED BY INDIVIDUALLY ADDRESSED OR GROUPED DEVICES, SENSITIVITY MONITORING, VERIFICATION FUNCTIONALITY AND SIMILAR.

3.03 FINAL INSPECTION

A. AT THE FINAL INSPECTION, A MINIMUM NICET LEVEL II TECHNICIAN SHALL DEMONSTRATE THAT THE SYSTEM FUNCTIONS PROPERLY IN EVERY RESPECT.

3.04 INSTRUCTION

A. INSTRUCTION SHALL BE PROVIDED AS REQUIRED FOR OPERATING THE SYSTEM. HANDS-ON DEMONSTRATIONS OF THE OPERATION OF ALL SYSTEM COMPONENTS AND THE ENTIRE SYSTEM INCLUDING PROGRAM CHANGES AND FUNCTIONS SHALL BE PROVIDED.

B. THE CONTRACTOR OR INSTALLING DEALER SHALL PROVIDE A USER MANUAL INDICATING "SEQUENCE OF OPERATION."

END OF SECTION

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KEYNOTES

NOTES

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capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG PM - DESIGN TEAM
240047.00 PROJECT NO.
DATE SIGNED: 04-25-2025

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author
SHEET NAME:
FIRE ALARM SPECIFICATIONS

CONSTRUCTION DOCUMENTS

DATE: **04.30.2025** CLIENT PROJ NO: **3431007000**

SHEET:
FA3.1-3

THE LINE SHOWN ABOVE IS EXACTLY 1" WHEN PLOTTED ON ANSI SIZE E SHEETS ORIGINAL PAGE SIZE

GENERAL NOTES

1. THE FIRE ALARM SYSTEM SHALL COMPLY WITH A TOTAL COVERAGE FULLY AUTOMATIC SYSTEM. DETECTORS SHALL BE INSTALLED IN ALL AREAS WHERE REQUIRED BY THE APPROPRIATE NFPA STANDARD OR THE AUTHORITY HAVING JURISDICTION. EACH INSTALLED DETECTOR SHALL BE ACCESSIBLE FOR PERIODIC MAINTENANCE AND TESTING. PROVIDE ACCESS DOORS AS REQUIRED. TOTAL COVERAGE SHALL INCLUDE ALL ROOMS, STORAGE AREAS, ATTICS, SPACES ABOVE SUSPENDED CEILINGS, AND OTHER SUBDIVISIONS AND ACCESSIBLE SPACES. INACCESSIBLE AREA SHALL NOT BE REQUIRED TO BE PROTECTED BY DETECTORS UNLESS THEY CONTAIN COMBUSTIBLE MATERIAL, IN WHICH CASE THEY SHALL BE MADE ACCESSIBLE AND BE PROTECTED BY DETECTOR(S).
2. THE FIRE ALARM SYSTEM IS AN ADDRESSABLE SYSTEM.
3. THE AUTOMATIC FIRE ALARM SYSTEM SHALL COMPLY WITH SENATE VOTE BILL NO. 575 (SB575) & CBC 907.2 FOR NEW CONSTRUCTION PROJECTS.
4. THE FIRE ALARM SYSTEM IS A COMPLETE SUBMITTAL.
5. THE FIRE ALARM SYSTEM SHALL CONFORM TO THE CALIFORNIA BUILDING CODE (CBC) SECTION 907; THE CALIFORNIA ELECTRICAL CODE (CEC) ARTICLE 760 AND THE CALIFORNIA FIRE CODE (CFC) SECTION 907. UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE DIVISION OF THE STATE ARCHITECT (DSA) INSPECTOR OF RECORD.
6. PROVIDE COMPLETE SYSTEM WIRING. ALL WIRING SHALL BE IN MINIMUM 3/4" CONDUIT. NO OTHER SYSTEMS WIRING SHALL BE ROUTED IN THE FIRE ALARM CIRCUITS. HARDWIRED INITIATION CIRCUITS SHALL BE MINIMUM #14 THHN/THWN. SYSTEMS WIRING SHALL BE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND THEIR REQUIREMENTS. ALL CONDUIT SHALL BE INSTALLED WITH COMPRESSION FITTINGS FOR COUPLIERS AND BOX CONNECTORS.
7. WIRING AND MATERIALS PER CEC 760.
8. THE LOCATION OF AUTOMATIC DETECTORS, MANUAL STATIONS AND OTHER FIRE ALARM EQUIPMENT AND DEVICES, AS SHOWN ON PLAN, ARE FOR REFERENCE ONLY AND DO NOT CONSTITUTE SHOP DRAWINGS WHICH ARE REQUIRED FOR REVIEW AND APPROVAL.
9. BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION, THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE PROJECT INSPECTOR TO THE EFFECT THAT THE SYSTEM HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH THE NFPA 72 SECTION 14.4
10. A FIRE ALARM ACCEPTANCE TEST OF ALL DEVICES AND APPLIANCES, INCLUDING THE BACKUP BATTERY(IES), SHALL BE PERFORMED. ALL MANUFACTURER OPERATING RANGED SHALL BE MET, TESTING OF THE SUPERVISING STATION SIGNALS, AS WELL AS RELAY TO THE APPROPRIATE RESPONDING AGENCY, SHALL BE INCLUDED IN THE ACCEPTANCE TESTING. THE PROJECT INSPECTOR SHALL WITNESS THE ACCEPTANCE INSPECTION AND SHALL SIGN AS THE AUTHORITY HAVING JURISDICTION REPRESENTATIVE ON THE "SYSTEM RECORD OF COMPLETION" (NFPA 72, SECTION 7.5.6). AND THE " SYSTEM RECORD OF INSPECTION AND TESTING" (NFPA 7.6.6). SEE NFPA 72, FIGURE 7.8.2(a) & (g). ALL SUPPLEMENTARY RECORDS SHALL BE ATTACHED AS APPLICABLE. THE PROJECT INSPECTOR SHALL VERIFY THAT THE FIRE ALARM SYSTEM IN SERVICE PRIOR TO COMPLETION OF THE "SYSTEM RECORD OF COMPLETION" FORM. ALL ORIGINAL DOCUMENTATION SHALL BE RETAINED IN THE REQUIRED DOCUMENTATION CABINET.
11. AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AND CBC 907.6.5.3 THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUIS BY UL OR SHALL MEET THE REQUIREMENTS OF FM STANDARD 8013.
12. HEAT DETECTORS SHALL BE INSTALLED IN COMBUSTIBLE SPACES WHERE SPRINKLER OR SMOKE DETECTOR ARE NOT INSTALLED PER CFC 907.2.3.6.2.

EQUIPMENT ANCHORAGE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, AND DUCTWORK DISTR. SYSTEM BRACING

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. THE MEP PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING(MP), MECHANICAL DUCTS(MD), PLUMBING PIPING(PP), ELECTRICAL DISTRIBUTION SYSTEMS(E):

MP☐ MD☐ PP☐ E☒ OPTION 1: PROJECT SPECIFIC DESIGN.

MP☐ MD☐ PP☐ E☐ OPTION 2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL.

MP☐ MD☐ PP☐ E☐ OPTION 3: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL.

FIRE ALARM NOTES

1. ALL FIRE ALARM WORK SHALL COMPLY WITH DESIGN GUIDELINES AS WELL AS APPLICABLE FEDERAL, STATE, AND LOCAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE DOCUMENTS SHALL GOVERN BUT THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
2. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS OR WITH CODE REQUIREMENTS, THE NOTE, CODE OR SPECIFICATION WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR THE HIGHER STANDARD SHALL PREVAIL.
3. OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR THE MIS-DESCRIPTION OF DETAILS FROM WORK WHICH ARE CLEAR AND NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS, SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED OR MIS-DESCRIBED DETAILS OF THE WORK BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED, IMMEDIATELY UPON THEIR RECEIPT AND SHALL PROMPTLY NOTIFY THE OWNER OF ANY DISCREPANCIES.
5. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE CALIFORNIA STATE FIRE MARSHAL (CSFM), UNDERWRITERS LABEL (UL) AND SHALL BE INSTALLED IN THE MANNER FOR WHICH THEY ARE DESIGNED AND APPROVED.
6. THE CONTRACTOR SHALL NOT BORE, NOTCH OR IN ANY WAY CUT INTO ANY STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT OR STRUCTURAL ENGINEER.
7. ALL CHANGES TO STRUCTURES (BUILDING, DRILLING, CORING, ETC.) NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED IN WRITING BY STRUCTURAL ENGINEER.
8. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, THE FIRE ALARM DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DATA INFORMATION AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE SCS AND LOW VOLTAGE WORK INTERFACES WITH OTHER TRADES.
9. THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS TO REFLECT ALL CHANGES MADE DURING CONSTRUCTION AND ANY DEVIATIONS FROM THE ELECTRICAL AND FIRE ALARM DRAWINGS. THIS INCLUDES DEVIATIONS FROM OUTLET NUMBERS AND ANY ADDITION, DELETION OR RELOCATION OF OUTLETS SHOWN ON WORKING DRAWINGS, PATHWAY ADDITIONS, DELETIONS OR RELOCATIONS. THE CONTRACTOR SHALL AFTER COMPLETION OF JOB, PROVIDE THE OWNER AN ELECTRONIC AND HARD COPY OF AS-BUILT WORK.
10. ANY DEVIATIONS FROM PLANS OR SPECS MUST BE APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
11. ALL FOOTAGES ON DRAWINGS ARE ESTIMATED AND MUST BE VERIFIED BY CONTRACTOR PRIOR TO ORDERING MATERIAL.
12. ALL STATION CABLES SHALL BE NEATLY DRESSED AND SECURED EVERY FIVE FEET AT A MINIMUM.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING TILE INCLUDING REPLACEMENT OF BROKEN OR DAMAGED TILES.
14. ALL LOCATIONS PASSING THROUGH A FIRE OR A SMOKE BARRIER MUST BE FIRE STOPPED USING APPROVED (UL CLASSIFIED) FIRE STOP SYSTEM, INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AND PROPERLY LABELED.
15. CONDUIT SHALL BE FILLED TO MAXIMUM CAPACITY (PER CODE, STANDARDS, AND NORMS) BEFORE UTILIZING ANOTHER VACANT CONDUIT.
16. ALL FIRE ALARM DEVICES SHALL BE PROPERLY IDENTIFIED USING THE OWNER'S STANDARD INTERNAL DISTRIBUTION NUMBERING SCHEME. ALL LABELS SHALL BE PREPRINTED OR TYPED.
17. EACH CABLE SHALL BE EQUIPPED WITH A PERMANENT LABEL INDICATING THE CIRCUIT IDENTIFICATION. BOTH ENDS OF EACH CABLE AND AT EVERY MAINTENANCE HOLE, HAND HOLE, AND PULL BOX, SHALL BE SO LABELED.
18. ALL CABLES SHALL BE CLEARLY LABELED WITH CIRCUIT IDENTIFICATION.
19. PULL ROPES SHALL BE PLACED IN ALL VACANT CONDUITS.
20. ALL WORK MUST BE COMPLETED IN A NEAT AND PROFESSIONAL MANNER. THE WORK SITE SHALL BE KEPT CLEAN AND ALL DAMAGE TO OWNER'S PROPERTY REPAIRED.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A FINAL CLEANUP OF THE WORK SITE PRIOR TO FINAL SYSTEM ACCEPTANCE.
22. CONTRACTOR SHALL REMOVE ALL COPPER, FIBER AND COAXIAL CABLES ABANDONED IN CONDUIT, CEILINGS AND WALLS PER CEC. CABLE SHALL INCLUDE ALL INTRABUILDING, RISER SYSTEMS AND STATION CABLES FOR ALL LOW VOLTAGE/FIRE ALARM/STRUCTURED CABLING SYSTEMS.
23. CONTRACTOR(S) SHALL VERIFY ALL SITE CONDITIONS PRIOR TO BID.
24. IN ACESSIBLE CEILING SPACES:
    - 24.1. THE CONTRACTOR SHALL PROVIDE THE REQUIRED STUB UP(S) / OUT(S) AND BOXES WITH MUD-RINGS TO THE NEAREST ACCESSIBLE CEILING SPACE AND / OR NEAREST FIRE ALARM PATHWAY INFRASTRUCTURE, REFERENCE PLANS AND SPECIFICATION FOR MORE INFORMATION.
    - 24.2. THE DESIGNATED SCS / FIRE ALARM CONTRACTOR(S) SHALL PROVIDE A J-HOOK PATHWAY SYSTEM AND REQUIRED SLEEVES. DO NOT USE CEILING TILE WIRE HANGERS, WATER OR ELECTRICAL PIPES, OR LIGHT FIXTURES TO HANG CABLE. CABLE MUST BE A MINIMUM OF 6 INCHES ABOVE THE CEILING TILE AND MUST NOT COME WITHIN TWELVE INCHES OF A LIGHT FIXTURE. THE DESIGNATED ELECTRICAL CONTRACTOR(S) FOR EACH "SUB-SYSTEM WILL PROVIDE THE PATHWAY REQUIRED FOR THE SYSTEMS, OUTSIDE WHAT IS CONSIDERED THE STRUCTURED CABLING SYSTEM.
25. IN INACCESSIBLE AND HARD-LID CEILING SPACES;
    - 25.1. THE CONTRACTOR SHALL PROVIDE ALL CONDUIT PATHWAYS, BOXES ETC. FOR A COMPLETE SYSTEM FROM THE MDF ROOM, IDF ROOM(S), IDF CABINET(S), AND ALL OTHER LOW VOLTAGE / FIRE ALARM SYSTEMS HEADEND, CABINETS, TERMINAL CABINETS, ETC. TO THE POINT OF TERMINATION AT THE STATION END LOCATION PER PLANS AND SPECIFICATION.

FIRE ALARM SCOPE OF WORK

UPGRADE THE EXISTING CAMPUS FIRE ALARM SYSTEM FROM EST-3 TO EST-4 IN A LIKE FASHION. CERTAIN CARDS WILL BE REPLACED DUE TO THE COMPATIBILITY AND MOST OF THE CARDS WILL REMAIN. NEW DEVICES AND NOTIFICATION APPLIANCES WILL BE PROVIDED IN BUILDING A AND B REMODEL. ADDITIONAL FIRE ALARM DEVICES AND NOTIFICATION APPLIANCES WILL BE PROVIDED TO THE NEW BUILDINGS IN COMPLIANCE WITH THE CURRENT CODE AND STANDARDS.

CODES AND STANDARDS

APPLICABLE PROJECT BUILDING CODES, EFFECTIVE AS OF DATE: JANUARY 1, 2023

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC)
2022 CALIFORNIA BUILDING CODE (CBC)
2022 CALIFORNIA ELECTRICAL CODE (CEC)
2022 CALIFORNIA FIRE CODE (CFC)
2022 CALIFORNIA ENERGY CODE
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
2022 CALIFORNIA REFERENCED STANDARDS CODE
2022 NFPA 72: NATIONAL FIRE ALARM AND SIGNALING CODE
2022 NFPA 1221: STANDARD FOR THE INSTALLATION, MAINTENANCE, AND USE OF EMERGENCY SERVICES COMMUNICATIONS SYSTEMS

DSA GENERAL NOTES

1. APPLICABLE STANDARD NFPA 72, as adopted and amended in CBC Chapter 35
2. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM, HAS BEEN APPROVED BY DSA.
3. UPON COMPLETION OF SYSTEM INSTALLATION, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.
4. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.
6. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND /OR TESTING.
7. ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER APPROVED LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS WITHIN THE FIRE ALARM SECTION.
8. WALL MOUNTED VISIBLE NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 96" MAXIMUM FROM FINISHED FLOOR.
9. WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THEN 6" TO A HORIZONTAL STRUCTURE.
10. AUDIBLE DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (dBA) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR FIVE dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING.
11. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.
12. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
13. VISIBLE DEVICES SHOULD NOT EXCEED TWO FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN ONE FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELLA. VISIBLE DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
14. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATER TIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
15. ALL FIRE ALARM WIRING SHALL BE FPLOR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE TYPE THHN OR THWN.
16. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. ALL BOXES TO BE SIZED PER CEC.
17. SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
19. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
20. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL." CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.
21. THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED "SYSTEM RECORD OF COMPLETION" PER NFPA 72, FIGURE 17.8.2.
22. FIRE ALARM CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.
23. MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVAC) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-308.
24. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
25. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
26. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.

ADDRESS NOMENCLATURE

P1•L1 / Z#•XXX — DEVICE OR MODULE NUMBER
- LOOP / ZONE NUMBER
- FACP PANEL NUMBER

BP1•1N•XXX — DEVICE OR MODULE NUMBER
- NOTIFICATION CIRCUIT NUMBER
- POWER SUPPLY PANEL NUMBER

P1•1•A1•XXX — DEVICE NUMBER
- AMPLIFIER NUMBER
- SPEAKER CIRCUIT NUMBER
- FACP PANEL NUMBER

CABLE LEGEND

LABEL	AWG	DESCRIPTION
A	16	16/2 FPLP CABLE (SLC)
V	14	14/2 FPLP CABLE (NAC)
S	14	14/2 FPLP SHIELDED CABLE (SPEAKER)
D	16	16/2 FPLP CABLE (24VDC / AUX)
Z	18	18/2 FPLP CABLE (IDC)
485	16	16/2 FPLP CABLE (485 DATA)

DEVICE LEGEND

SYMBOL	QTY	EXISTING	MANUFACTURER	PART NO	DESCRIPTION	CSFM
	1		EDWARDS	EST4 ASSEMBLY	EST4 MAIN FACP - CONFIGURATION 230209	7170-1657:0508
	1		EDWARDS	SIGA-UIO6R	6 POSITION, RISER SELECTION UIO MODULE MOTHERBOARD	7300-1657:0121
	1		EDWARDS	3-BPS/M	BOOSTER POWER SUPPLY 120V	7170-1657:0508
	1		EDWARDS	3-MODCOM	MODEM COMMUNICATOR AND DIALER	7170-1657:0508
	3		EDWARDS	SIGA-IM2	ISOLATOR MODULE	7300-1657:0121
	5		EDWARDS	SIGA-MCC1	SIGNAL MODULE /W 1 RISER IN, 1 OUTPUT CKT, CL 'B' - UIO MOUNT	7300-1657:0121
	1		EDWARDS	3-SSDC1	SIGNATURE SINGLE DRIVER CONTROLLER (LRM)	7170-1657:0508
	4		EDWARDS	3-ZA40B	40 WATT ZONED AMPLIFIER, CLASS B, 25 OR 70VRMS	7170-1657:0508
FACP	1		EDWARDS	4-24L24S	24 INDICATOR 24 CONTROL DISPLAY MODULE	7170-1657:0508
	1		EDWARDS	4-PPS/M	PRIMARY POWER SUPPLY 120V	7300-1657:0519
	1		EDWARDS	SIGA-MP1	FULL FOOTPRINT MOUNTING PLATE FOR 4 DOUBLE OR 8 SINGLE MODULES	7300-1657:0121
	2		EDWARDS	SIGA-CT2	DUAL INPUT MODULE	7300-1657:0121
	1		EDWARDS	3-SDDC1	DUAL SIGNATURE DRIVER CONTROLLER. COMES WITH TWO 3-SDC1S. MOUNTS TO LOCAL RAIL.	7170-1657:0508
	1		EDWARDS	4-CPU	MAIN CPU	7170-1657:0508
	1		EDWARDS	4-MIC	PAGING MICROPHONE	7170-1657:0508
	1		EDWARDS	4-LCDLE	DISPLAY,MAIN LCD MODULE	7170-1657:0508
	1		EDWARDS	3-ASU/4	AUDIO SOURCE UNIT /W 4 RAIL SPACES	7165-1657:0186
	4		EDWARDS	BPS10A	REMOTE BOOSTER POWER SUPPLY, 10A, 120VAC, RED	7300-1657:0229
NAC	4		EDWARDS	SIGA-CC1S	SYNCHRONIZATION OUTPUT MODULE (STANDARD MOUNT) - UL/ULC LISTED	7300-1657:0121
	4		EDWARDS	BPS10A MAINBOARD	MAINBOARD FOR BPS10A ASSEMBLY	7300-1657:0229
FAA	1		EDWARDS	4-6ANN (PAGING)	ANNUNCIATOR WITH 4-ANN CPU, 4-MIC	7170-1657:0508
F 278	1	X	EDWARDS	SIGA-278	DOUBLE ACTION FIRE ALARM STATION	7150-1657:0129
F 278	3		EDWARDS	SIGA-278	DOUBLE ACTION FIRE ALARM STATION	7150-1657:0129
AM	6		EDWARDS	SIGA-CT1	SINGLE INPUT MODULE	7300-1657:0121
AM	3	X	EDWARDS	SIGA-CT1	SINGLE INPUT MODULE	7300-1657:0121
AM	4		EDWARDS	SIGA-CT1HT	SINGLE INPUT MODULE HIGH TEMPERATURE OPERATION	7300-1657:0121
AM	1	X	EDWARDS	SIGA-CT1HT	SINGLE INPUT MODULE HIGH TEMPERATURE OPERATION	7300-1657:0121
AM DM	1	X	EDWARDS	SIGA-CT2	DUAL INPUT MODULE	7300-1657:0121
CM	2	X	EDWARDS	SIGA-CR	CONTROL RELAY MODULE	7300-1657:0121
H 194°	16		SYSTEM SENSOR	5602	194 °F (90° C) FIXED AND RATE-OF-RISE.	7270 -1653 - 0167
H 194°	10	X	SYSTEM SENSOR	5602	194 °F (90° C) FIXED AND RATE-OF-RISE.	7270 -1653 - 0167
H AC	24	X	SYSTEM SENSOR	5602	194 °F (90° C) FIXED AND RATE-OF-RISE.	7270 -1653 - 0167
H 135°	15		EDWARDS	SIGA-HRD W/SIGA-SB BASE	INTELLIGENT FIXED TEMPERATURE/RATE-OF-RISE HEAT DETECTOR, STANDARD DETECTOR BASE	7270-1657:0333
H 135°	1	X	EDWARDS	SIGA-HRD W/SIGA-SB BASE	INTELLIGENT FIXED TEMPERATURE/RATE-OF-RISE HEAT DETECTOR, STANDARD DETECTOR BASE	7270-1657:0333
S	107		EDWARDS	SIGA-OSD W/SIGA-SB BASE	PHOTOELECTRIC SMOKE DETECTOR	7272-1657:0511
S	29	X	EDWARDS	SIGA-PD W/SIGA-SB BASE	PHOTOELECTRIC SMOKE DETECTOR	7272-1657:0331
	43		EDWARDS	G4SVRF	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	7320-1657:0516
	3	X	EDWARDS	G4HFRF-S7VMC	70V SPEAKER/STROBE, RED, FIRE 15, 30, 75, 110 CD, CLEAR	7320-1657:0323
C	11	X	EDWARDS	GCHFRF-S7VMC	70V CEILING SPEAKER/STROBE,RED, 15, 30, 75, 95 CD,FIRE	7320-1657:0324
S WP	6		EDWARDS	WG4RF-S	25/70V SPEAKER, RED, FIRE	7320-1657:0289
	5	X	EDWARDS	G4VRF	WALL STROBE, SWITCH SELECT 15, 30, 75, 110 CD, RED, /W FIRE	7125-1657:0505

NOTE: DEVICE COUNTS AND CALCULATIONS SHALL INCLUDE BLDG A, B, H AND J FOR THIS INC SUBMITTAL. PLEASE REFER TO THE FLOOR PLAN AND RISER DIAGRAM FOR BLDG H AND S.

SHEET INDEX

FA0.1-4	FIRE ALARM COVER SHEET
FA0.2-4	FIRE ALARM SEQUENCE OF OPERATION
FA0.3.0-4	FIRE ALARM SYSTEM CALCS.
FA0.3.1-4	FIRE ALARM SYSTEM CALCS.
FA0.4-4	FIRE ALARM RISER DIAGRAM
FA1.10-4	FIRE ALARM SITE PLAN
FAJ2.11-4	FIRE ALARM BUILDING J
FA3.1-4	FIRE ALARM SPECIFICATIONS

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KEYNOTES

NOTES

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capital engineering
RANCHO CORDOVA, CALIFORNIA

JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

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PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
FIRE ALARM COVER SH

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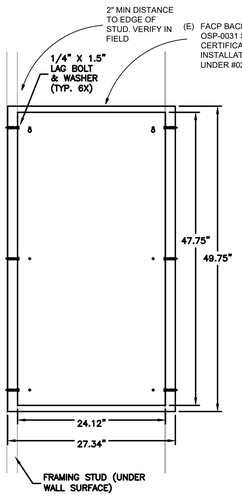


(E) FACP BACKBOX ANCHORAGE DETAIL

SCALE : NONE

6 FA0.2-4

GENERAL NOTES

1. THE FIRE ALARM SYSTEM SHALL COMPLY WITH A TOTAL COVERAGE FULLY AUTOMATIC SYSTEM. DETECTORS SHALL BE INSTALLED IN ALL AREAS WHERE REQUIRED BY THE APPROPRIATE NFPA STANDARD OR THE AUTHORITY HAVING JURISDICTION. EACH INSTALLED DETECTOR SHALL BE ACCESSIBLE FOR PERIODIC MAINTENANCE AND TESTING. PROVIDE ACCESS DOORS AS REQUIRED. TOTAL COVERAGE SHALL INCLUDE ALL ROOMS, STORAGE AREAS, ATTICS, SPACES ABOVE SUSPENDED CEILINGS, AND OTHER SUBDIVISIONS AND ACCESSIBLE SPACES. INACCESSIBLE AREA SHALL NOT BE REQUIRED TO BE PROTECTED BY DETECTORS UNLESS THEY CONTAIN COMBUSTIBLE MATERIAL IN WHICH CASE THEY SHALL BE MADE ACCESSIBLE AND BE PROTECTED BY DETECTOR(S).
2. THE FIRE ALARM SYSTEM IS AN ADDRESSABLE SYSTEM.
3. THE AUTOMATIC FIRE ALARM SYSTEM SHALL COMPLY WITH SENATE VOTE BILL NO. 575 (SB575) & CBC 907.2 FOR NEW CONSTRUCTION PROJECTS.
4. THE FIRE ALARM SYSTEM IS A COMPLETE SUBMITTAL.
5. THE FIRE ALARM SYSTEM SHALL CONFORM TO THE CALIFORNIA BUILDING CODE (CBC) SECTION 907; THE CALIFORNIA ELECTRICAL CODE (CEC) ARTICLE 760 AND THE CALIFORNIA FIRE CODE (CFC) SECTION 907. UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE DIVISION OF THE STATE ARCHITECT (DSA) INSPECTOR OF RECORD.
6. PROVIDE COMPLETE SYSTEM WIRING. ALL WIRING SHALL BE IN MINIMUM 3/4" CONDUIT. NO OTHER SYSTEMS WIRING SHALL BE ROUTED IN THE FIRE ALARM CIRCUITS. HARDWIRED INITIATION CIRCUITS SHALL BE MINIMUM #14 THHN/THWN. SYSTEMS WIRING SHALL BE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND THEIR REQUIREMENTS. ALL CONDUIT SHALL BE INSTALLED WITH COMPRESSION FITTINGS FOR COUPLIERS AND BOX CONNECTORS.
7. WIRING AND MATERIALS PER CEC 760.
8. THE LOCATION OF AUTOMATIC DETECTORS, MANUAL STATIONS AND OTHER FIRE ALARM EQUIPMENT AND DEVICES, AS SHOWN ON PLAN, ARE FOR REFERENCE ONLY AND DO NOT CONSTITUTE SHOP DRAWINGS WHICH ARE REQUIRED FOR REVIEW AND APPROVAL.
9. BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION, THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE PROJECT INSPECTOR TO THE EFFECT THAT THE SYSTEM HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH THE NFPA 72 SECTION 14.4
10. A FIRE ALARM ACCEPTANCE TEST OF ALL DEVICES AND APPLIANCES, INCLUDING THE BACKUP BATTERY(IES), SHALL BE PERFORMED. ALL MANUFACTURER OPERATING RANGED SHALL BE MET, TESTING OF THE SUPERVISING STATION SIGNALS, AS WELL AS RELAY TO THE APPROPRIATE RESPONDING AGENCY, SHALL BE INCLUDED IN THE ACCEPTANCE TESTING. THE PROJECT INSPECTOR SHALL WITNESS THE ACCEPTANCE INSPECTION AND SHALL SIGN AS THE AUTHORITY HAVING JURISDICTION REPRESENTATIVE ON THE "SYSTEM RECORD OF COMPLETION" (NFPA 72, SECTION 7.5.6). AND THE " SYSTEM RECORD OF INSPECTION AND TESTING" (NFPA 7.6.6). SEE NFPA 72, FIGURE 7.8.2(a) & (g). ALL SUPPLEMENTARY RECORDS SHALL BE ATTACHED AS APPLICABLE. THE PROJECT INSPECTOR SHALL VERIFY THAT THE FIRE ALARM SYSTEM IN SERVICE PRIOR TO COMPLETION OF THE "SYSTEM RECORD OF COMPLETION" FORM. ALL ORIGINAL DOCUMENTATION SHALL BE RETAINED IN THE REQUIRED DOCUMENTATION CABINET.
11. AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AND CBC 907.6.5.3 THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUIS BY UL OR SHALL MEET THE REQUIREMENTS OF FM STANDARD 8013.
12. HEAT DETECTORS SHALL BE INSTALLED IN COMBUSTIBLE SPACES WHERE SPRINKLER OR SMOKE DETECTOR ARE NOT INSTALLED PER CFC 907.2.3.6.2.

ABBREVIATIONS

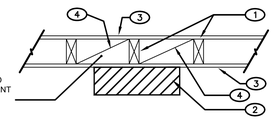
ACP	ACCESS CONTROL PROCESSOR	(N)	NEW
AFF	ABOVE FINISHED FLOOR	NC	NORMALLY CLOSED
AHJ	AUTHORITY HAVING JURISDICTION	NIC	NOT IN CONTRACT
AMP	AMPLIFIER	NO	NORMALLY OPEN
AOR	ARCHITECT OF RECORD	NTS	NOT TO SCALE
AUTO	AUTOMATIC	OC	ON CENTER
AUX	AUXILIARY	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
AWG	AMERICAN WIRE GAUGE	OFOI	OWNER FURNISHED, OWNER INSTALLED
BCT	BONDING CONDUCTOR FOR TELECOMMUNICATIONS	OSP	OUTSIDE PLANT
C	CONDUIT	PB	PULL BOX
CATV	COMMUNITY ANTENNA TELEVISION	POE	POWER OVER ETHERNET
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	PR	PAIR OF CONDUCTORS
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED	PVC	POLYVINYL CHLORIDE
CL	CENTERLINE	PWR	POWER
CSFM	CALIFORNIA STATE FIRE MARSHAL	(RR)	REMOVE AND REPLACE
DIV	DIVISION	(RL)	REMOVE AND RELOCATE
DC	DOOR CONTACT	RCP	REFLECTED CEILING PLAN
(EX)	EXISTING	RFI	REQUEST FOR INFORMATION
EC	ELECTRICAL CONTRACTOR	RMC	RIGID METALLIC CONDUIT
ECS	EMERGENCY COMMUNICATION SYSTEM	SCS	STRUCTURED CABLING SYSTEM
EF	ENTRANCE FACILITY FOR TELECOMMUNICATION	SM	SINGLE MODE
EMT	ELECTRIC METALLIC TUBING	STR	STRANDS (OF FIBER)
ER	EQUIPMENT ROOM	STP	SHIELDED TWISTED PAIR
EXT	EXTERIOR	SEC	SECURITY
(F)	FUTURE	TBB	TELECOMMUNICATIONS BONDING BACKBONE
FACP	FIRE ALARM CONTROL PANEL	TELCO	TELEPHONE COMPANY
FATC	FIRE ALARM TERMINAL CABINET	TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
FABP	FIRE ALARM BOOSTER PANEL	TMGB	TELECOMMUNICATION MAIN GROUNDING BUSBAR
FB	FLOORBOX	TYP	TYPICAL
FO	FIBER OPTIC	UNO	UNLESS NOTED OTHERWISE
GC	GENERAL CONTRACTOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
IDF	INTERMEDIATE DISTRIBUTION FRAME	UTP	UNSHIELDED TWISTED PAIR
INT	INTERIOR	V	VOICE
IP	INTERNET PROTOCOL	WB	WALL BOX
JB	JUNCTION BOX	WP	WEATHERPROOF
LV	LOW VOLTAGE		
MDF	MAIN DISTRIBUTION FRAME		
MIC	MICROPHONE		
MM	MULTIMODE		
MPOE	MINIMUM POINT OF ENTRY		

SEQUENCE OF OPERATIONS

	SYSTEM INPUTS	ACTUATE GENERAL ALARM AUDIBLE NOTIFICATION	ACTUATE GENERAL ALARM VISUAL NOTIFICATION	ACTUATE SUPERVISORY ALARM SOUNDER IN PANEL	ACTUATE SUPERVISORY ALARM VISUAL INDICATOR IN PANEL	ACTUATE TROUBLE ALARM SOUNDER IN PANEL	ACTUATE TROUBLE ALARM VISUAL INDICATOR IN PANEL	ACTUATE PANEL'S LCD DISPLAY	ACTUATE AUDIBLE & VISUAL NOTIFICATION DEVICES	TRANSMIT GENERAL FIRE ALARM SIGNAL TO REMOTE STATION	TRANSMIT SUPERVISORY SIGNAL TO REMOTE STATION	TRANSMIT TROUBLE SIGNAL TO REMOTE STATION	REMARKS
		SYSTEM OUTPUTS											
		PANEL ANNUNCIATION				NOTIFICATION				SAFETY CONTROL			
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	ADDRESSABLE MANUAL PULL STATION(S)	●	●					●	●	●								1
2	ADDRESSABLE SMOKE DETECTOR(S)	●	●					●	●	●								2
3	ADDRESSABLE HEAT DETECTOR(S)	●	●					●	●	●								3
4																		4
5																		5
6																		6
7	GROUND FAULT					●	●	●				●						7
8	OPEN CIRCUIT					●	●	●				●						8
9	NOTIFICATION CIRCUIT TROUBLE					●	●	●				●						9
10	FIRE ALARM PANEL LOW BATTERY					●	●	●				●						10
11	FIRE ALARM PANEL AC POWER FAILURE					●	●	●				●						11
12	FIRE ALARM PANEL COMMUNICATION LINE FAULT					●	●	●				●						12
13																		13
14																		14
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	

KEY NOTES

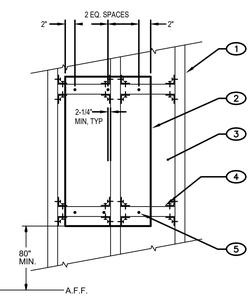
1. WOOD STUD
2. SURFACE MOUNTED FACU CABINET, SEE NOTE #1
3. SHEET ROCK OR OTHER WALL SURFACE MATERIAL (SEE ARCH. DRAWINGS)
4. BLOCKING (MATCH STUD DEPTH) ATTACH TO (E) VERTICAL STUDS WITH A34 CLIPS EACH END, TOP AND BOTTOM - AVOID CONFLICT OF NAILS EACH SIDE OF STUD
5. 5/16" X 2 1/2" LAG SCREWS WITH 1-1/2" MIN. EMBED TO BLOCK. (6) LAG SCREWS TOTAL. (BY ELECTRICAL CONTRACTOR)



TOP VIEW SHOWING STUD AND BLOCK ARRANGEMENT ONLY

NOTES:

1. ALL FIRE ALARM CABINETS ARE 250# MAX. (INCLUDING CONTENTS)
2. MOUNT TERMINAL CABINETS, J-BOXES, ETC., IN SIMILAR FASHION.



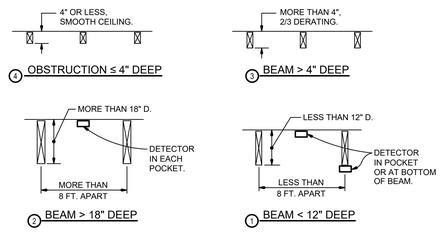
PANEL ON WOOD FRAME UNIT ELEVATION DETAIL

SCALE : NONE

3 FA0.2-4

NOTES:

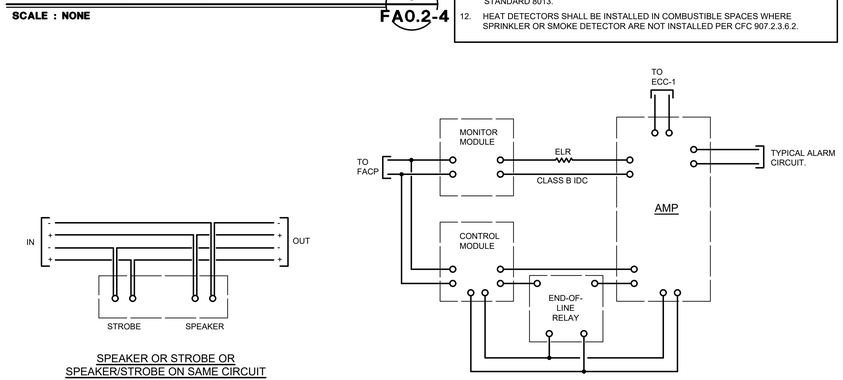
1. SOLID JOIST CONSTRUCTION.
   SPACING: THE DESIGN SPACING OF HEAT DETECTORS, WHERE MEASURED AT RIGHT ANGLES TO THE SOLID JOISTS, SHALL NOT EXCEED 50 PERCENT OF THE LISTED SPACING.
   B. LOCATION: DETECTORS SHALL BE MOUNTED AT THE BOTTOM OF THE JOISTS.
2. BEAM CONSTRUCTION.
   A. SPACING:
      1. A CEILING SHALL BE TREATED AS A SMOOTH CEILING IF THE BEAMS PROJECT NO MORE THAN 4 IN. BELOW THE CEILING.
      2. WHERE THE BEAMS PROJECT MORE THAN 4 IN. BELOW THE CEILING, THE SPACING OF SPOT-TYPE HEAT DETECTORS AT RIGHT ANGLES TO THE DIRECTION OF BEAM TRAVEL SHALL BE NOT MORE THAN TWO-THIRDS OF THE LISTED SPACING.
      3. WHERE THE BEAMS PROJECT MORE THAN 18 IN. BELOW THE CEILING AND ARE MORE THAN 8 FT. ON CENTER, EACH BAY FORMED BY THE BEAMS SHALL BE TREATED AS A SEPARATE AREA.
   B. LOCATION: WHERE BEAMS ARE LESS THAN 12 IN. IN DEPTH AND LESS THAN 8 FT. ON CENTER, DETECTORS SHALL BE PERMITTED TO BE INSTALLED ON THE BOTTOM OF BEAMS.
3. BEAM CONSTRUCTION CONSISTS OF SOLID MEMBERS PROJECTING DOWN FROM THE CEILING SURFACE MORE THAN 4" AND SPACED MORE THAN 36" O.C.
4. JOIST CONSTRUCTION CONSISTS OF SOLID MEMBERS PROJECTING DOWN FROM THE CEILING SURFACE MORE THAN 4" AND SPACED AT 36" OR LESS O.C.

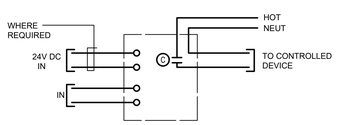


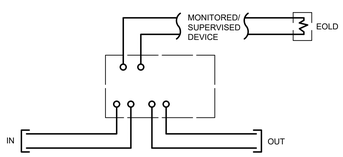
DETECTOR JOIST MOUNTING DETAIL

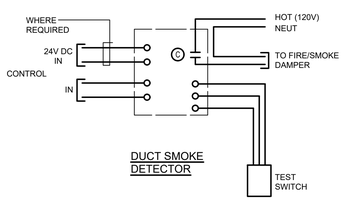
SCALE : NO SCALE

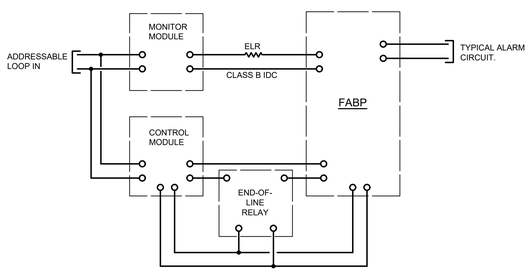
1 FA0.2-4

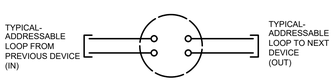








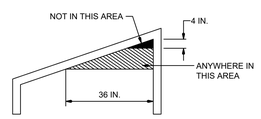




TYPICAL - FIRE ALARM DEVICES WIRING DIAGRAMS

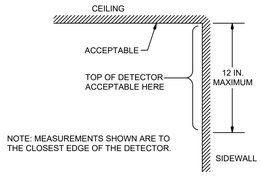
SCALE : NONE

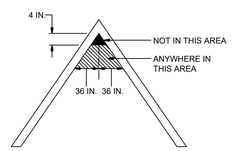
5 FA0.2-4



OTHER SPECIFIC SMOKE DETECTOR LOCATION REQUIREMENTS:

1. MINIMUM 10 FT HORIZONTALLY FROM FIXED COOKING APPLIANCES. (SOME EXCEPTIONS)
2. MINIMUM 36-IN AWAY HORIZONTALLY FROM A DOOR CONTAINING A SHOWER OR TUB.
3. MINIMUM 36-IN AWAY HORIZONTALLY FROM AIR REGISTERS.
4. MINIMUM 36-IN AWAY HORIZONTALLY FROM CEILING FANS.

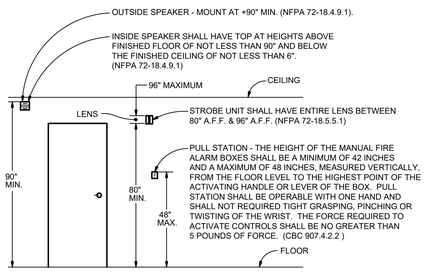




SMOKE DETECTOR LOCATION REQ'S

SCALE : NONE

4 FA0.2-4



DEVICE MOUNTING DETAIL

SCALE : NO SCALE

2 FA0.2-4

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PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
FIRE ALARM SEQUENCE OF OPERATIONS AND DETAILS

CONSTRUCTION DOCUMENTS

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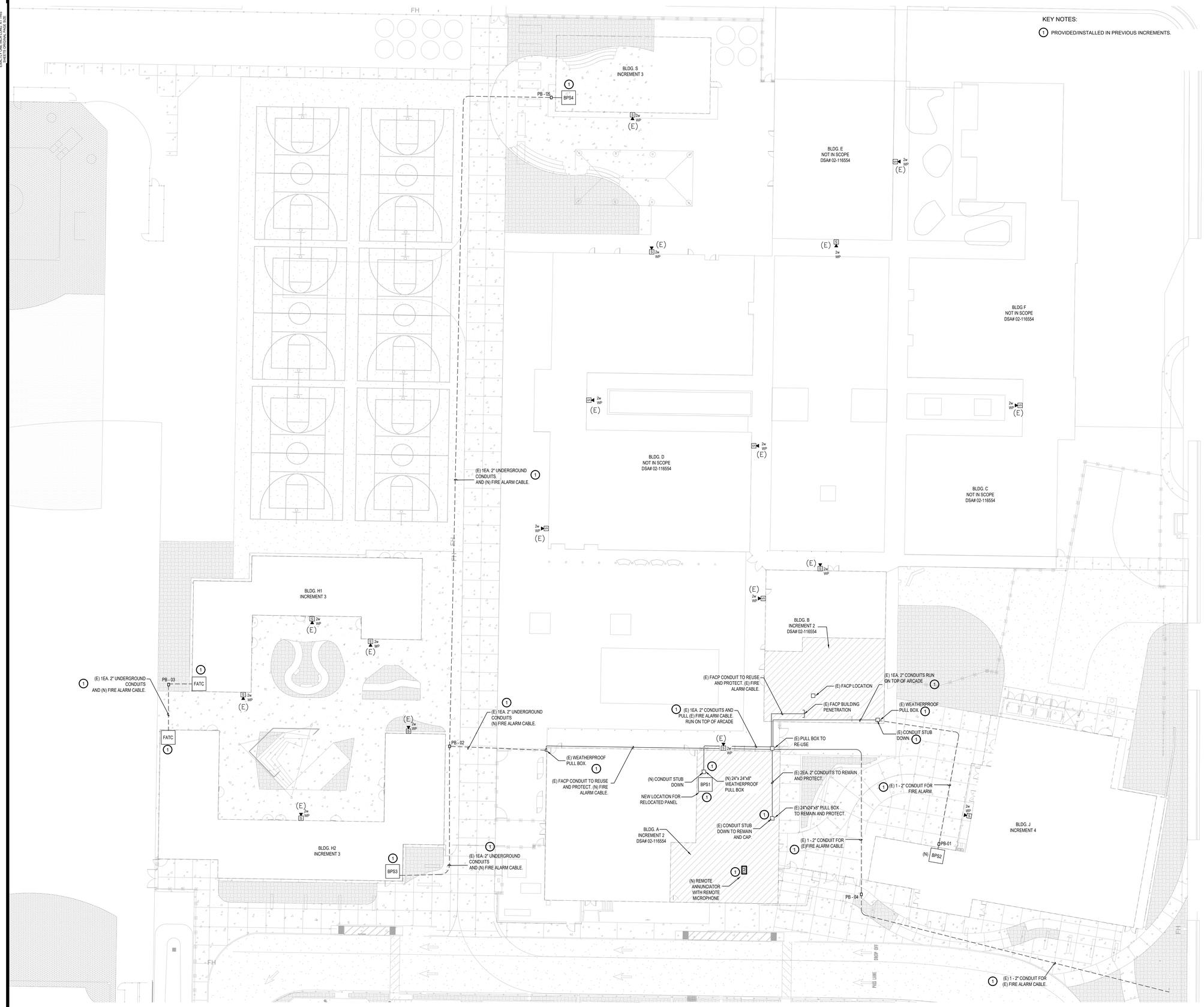

FIRE ALARM SITE PLAN

SCALE : 1"=20'-0"

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FA1.10-4

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FIRE ALARM SITE PLAN

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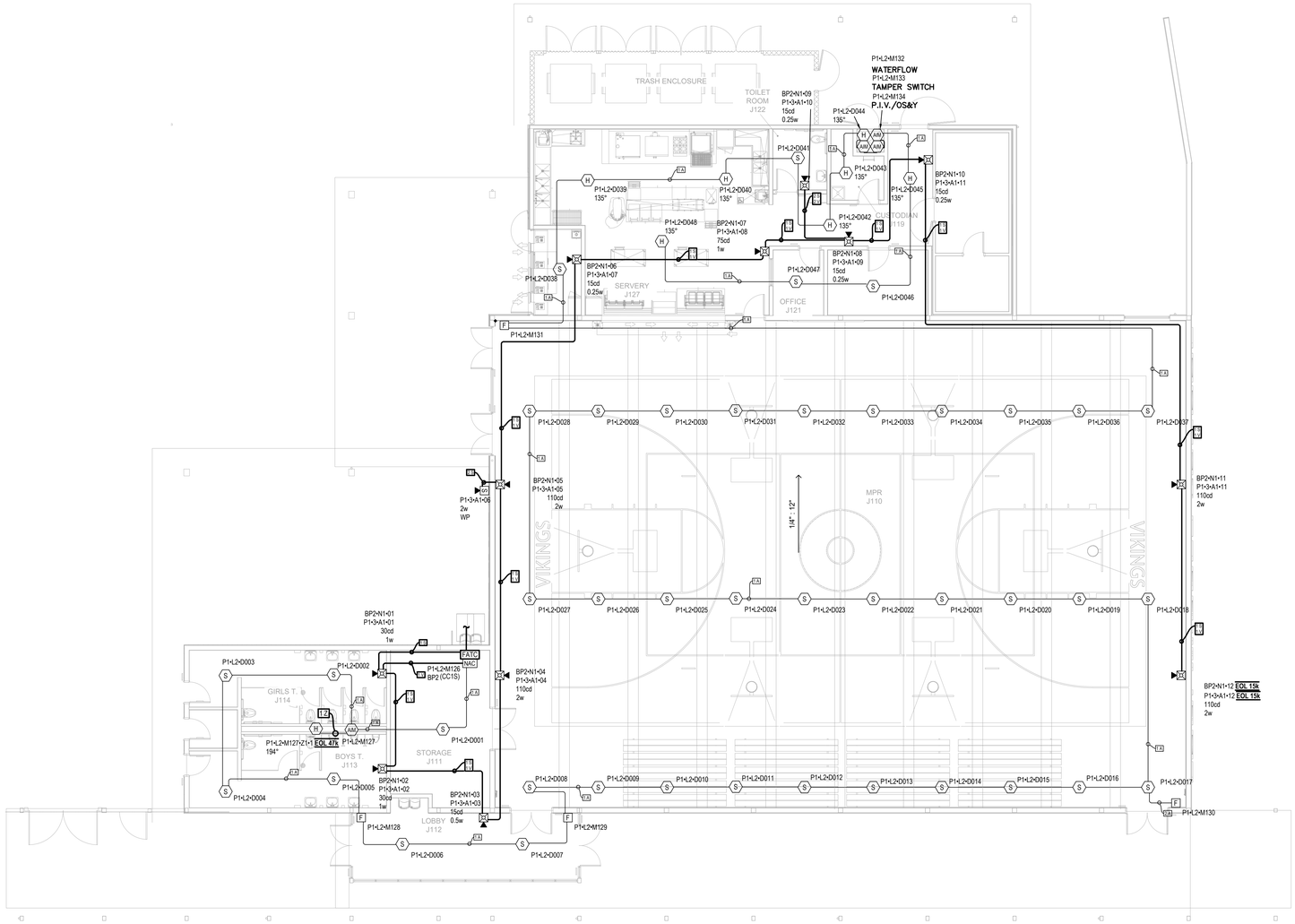

FIRE ALARM - FLOOR PLAN BLDG J

1
FAJ2.11-4

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

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FIRE ALARM FLOOR PLAN BLDG J

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FAJ2.11-4

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SECTION 28 31 00 - FIRE ALARM DETECTION SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION

A. THIS SECTION OF THE SPECIFICATION INCLUDES THE FURNISHING, INSTALLATION, CONNECTION AND TESTING OF THE MICROPROCESSOR CONTROLLED, INTELLIGENT REPORTING FIRE ALARM EQUIPMENT REQUIRED TO FORM A COMPLETE, OPERATIVE, COORDINATED SYSTEM. IT SHALL INCLUDE, BUT NOT BE LIMITED TO, ALARM INITIATING DEVICES, ALARM NOTIFICATION APPLIANCES, AUXILIARY CONTROL DEVICES AND WIRING AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.

B. THE FIRE ALARM SYSTEM SHALL COMPLY WITH REQUIREMENTS OF NFPA STANDARD NO. 72 FOR LOCAL PROTECTED PREMISES SIGNALING SYSTEMS EXCEPT AS MODIFIED AND SUPPLEMENTED BY THIS SPECIFICATION. THE SYSTEM FIELD WIRING SHALL BE SUPERVISED EITHER ELECTRICALLY OR BY SOFTWARE-DIRECTED POLLING OF FIELD DEVICES.
1. THE SECONDARY POWER SOURCE OF THE FIRE ALARM CONTROL PANEL WILL BE CAPABLE OF PROVIDING AT LEAST 24 HOURS OF BACKUP POWER WITH THE ABILITY TO SUSTAIN 15 MINUTES IN ALARM AND EVACUATION AT THE END OF THE BACKUP PERIOD.

C. THE FIRE ALARM SYSTEM SHALL BE MANUFACTURED BY AN ISO 9001 CERTIFIED COMPANY AND MEET THE REQUIREMENTS OF BS EN9001: ANSI/ASQC Q9001-1994.

D. THE FACP AND PERIPHERAL DEVICES SHALL BE MANUFACTURED OR SUPPLIED 100% BY A SINGLE U.S. MANUFACTURER (OR DIVISION THEREOF).

E. UNDERWRITERS LABORATORIES INC. (UL) - USA:
1. NO. 38 MANUALLY ACTUATED SIGNALING BOXES
2. NO. 50 CABINETS AND BOXES
3. NO. 864 CONTROL UNITS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
4. NO. 268 SMOKE DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
5. NO. 268A SMOKE DETECTORS FOR DUCT APPLICATIONS
6. NO. 346 WATERFLOW INDICATORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
7. NO. 464 AUDIBLE SIGNALING APPLIANCES
8. NO. 521 HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
9. NO. 1971 VISUAL NOTIFICATION APPLIANCES

F. THE INSTALLING COMPANY SHALL EMPLOY NICET (MINIMUM LEVEL II FIRE ALARM TECHNOLOGY) TECHNICIANS ON SITE TO GUIDE THE FINAL CHECK-OUT AND TO ENSURE THE SYSTEMS INTEGRITY.

1.02 SCOPE

A. A FIRE ALARM DETECTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE TO THE PROJECT SPECIFICATIONS AND DRAWINGS.

B. BASIC PERFORMANCE:
1. INITIATION DEVICE CIRCUITS (IDC) SHALL BE WIRED CLASS B (NFPA STYLE B) AS PART OF AN ADDRESSABLE DEVICE CONNECTED BY THE SLC CIRCUIT.
2. NOTIFICATION APPLIANCE CIRCUITS (NAC) SHALL BE WIRED CLASS B (NFPA STYLE Y) AS PART OF AN ADDRESSABLE DEVICE CONNECTED BY THE SLC CIRCUIT.
3. ALL CIRCUITS SHALL BE POWER-LIMITED, PER UL864 REQUIREMENTS.
4. A SINGLE GROUND FAULT OR OPEN CIRCUIT ON THE SYSTEM SIGNALING LINE CIRCUIT SHALL NOT CAUSE SYSTEM MALFUNCTION, LOSS OF OPERATING POWER OR THE ABILITY TO REPORT AN ALARM.
5. ALARM SIGNALS ARRIVING AT THE MAIN FACP SHALL NOT BE LOST FOLLOWING A PRIMARY POWER FAILURE OR OUTAGE OF ANY KIND UNTIL THE ALARM SIGNAL IS PROCESSED AND RECORDED.

C. BASIC SYSTEM FUNCTIONAL OPERATION: WHEN A FIRE ALARM CONDITION IS DETECTED AND REPORTED BY ONE OF THE SYSTEM INITIATING DEVICES, THE FOLLOWING FUNCTIONS SHALL IMMEDIATELY OCCUR:
1. THE SYSTEM ALARM LED ON THE FACP SHALL FLASH.
2. A LOCAL SOUNDER WITH THE CONTROL PANEL SHALL SOUND.
3. A BACKLIT 80-CHARACTER LCD DISPLAY ON THE FACP SHALL INDICATE ALL INFORMATION ASSOCIATED WITH THE FIRE ALARM CONDITION, INCLUDING THE TYPE OF ALARM POINT AND ITS LOCATION WITHIN THE PROTECTED PREMISES.
4. IN RESPONSE TO A FIRE ALARM CONDITION, THE SYSTEM WILL PROCESS ALL CONTROL PROGRAMMING AND ACTIVATE ALL SYSTEM OUTPUTS (ALARM NOTIFICATION APPLIANCES AND/OR RELAYS) ASSOCIATED WITH THE POINT(S) IN ALARM. ADDITIONALLY, THE SYSTEM SHALL SEND EVENTS TO A CENTRAL ALARM SUPERVISING STATION VIA EITHER DIAL-UP OVER PSTN OR INTERNET OR INTRANET VIA PSDN OR VIRTUAL PRIVATE NETWORK.

1.03 SUBMITTALS

A. GENERAL:
1. TWO COPIES OF ALL SUBMITTALS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW.
2. ALL REFERENCES TO MANUFACTURER'S MODEL NUMBERS AND OTHER PERTINENT INFORMATION HEREIN IS INTENDED TO ESTABLISH MINIMUM STANDARDS OF PERFORMANCE, FUNCTION AND QUALITY. EQUIVALENT COMPATIBLE UL-LISTED EQUIPMENT FROM OTHER MANUFACTURERS MAY BE SUBSTITUTED FOR THE SPECIFIED EQUIPMENT AS LONG AS THE MINIMUM STANDARDS ARE MET.
3. FOR EQUIPMENT OTHER THAN THAT SPECIFIED, THE CONTRACTOR SHALL SUPPLY PROOF THAT SUCH SUBSTITUTE EQUIPMENT EQUALS OR EXCEEDS THE FEATURES, FUNCTIONS, PERFORMANCE, AND QUALITY OF THE SPECIFIED EQUIPMENT.

B. SHOP DRAWINGS:
1. SUFFICIENT INFORMATION, CLEARLY PRESENTED, SHALL BE INCLUDED TO DETERMINE COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS.
2. INCLUDE MANUFACTURER'S NAME(S), MODEL NUMBERS, RATINGS, POWER REQUIREMENTS, EQUIPMENT LAYOUT, DEVICE ARRANGEMENT, COMPLETE WIRING POINT-TO-POINT DIAGRAMS, AND CONDUIT LAYOUTS.
3. SHOW ANNUNCIATOR LAYOUT, CONFIGURATIONS, AND TERMINATIONS.

C. MANUALS:
1. SUBMIT SIMULTANEOUSLY WITH THE SHOP DRAWINGS, COMPLETE OPERATING AND MAINTENANCE MANUALS LISTING THE MANUFACTURER'S NAME(S), INCLUDING TECHNICAL DATA SHEETS.
2. WIRING DIAGRAMS SHALL INDICATE INTERNAL WIRING FOR EACH DEVICE AND THE INTERCONNECTIONS BETWEEN THE ITEMS OF EQUIPMENT.
3. PROVIDE A CLEAR AND CONCISE DESCRIPTION OF OPERATION THAT GIVES, IN DETAIL, THE INFORMATION REQUIRED TO PROPERLY OPERATE THE EQUIPMENT AND SYSTEM.

D. SOFTWARE MODIFICATIONS:
1. PROVIDE THE SERVICES OF A QUALIFIED TECHNICIAN TO PERFORM ALL SYSTEM SOFTWARE MODIFICATIONS, UPGRADES OR CHANGES. RESPONSE TIME OF THE TECHNICIAN TO THE SITE SHALL NOT EXCEED 4 HOURS.
2. PROVIDE ALL HARDWARE, SOFTWARE, PROGRAMMING TOOLS AND DOCUMENTATION NECESSARY TO MODIFY THE FIRE ALARM SYSTEM ON SITE. MODIFICATION INCLUDES ADDITION AND DELETION OF DEVICES, CIRCUITS, ZONES AND CHANGES TO SYSTEM OPERATION AND CUSTOM LABEL CHANGES FOR DEVICES OR ZONES. THE SYSTEM STRUCTURE AND SOFTWARE SHALL PLACE NO LIMIT ON THE TYPE OR EXTENT OF SOFTWARE MODIFICATIONS ON-SITE. MODIFICATION OF SOFTWARE SHALL NOT REQUIRE POWER-DOWN OF THE SYSTEM OR LOSS OF SYSTEM FIRE PROTECTION WHILE MODIFICATIONS ARE BEING MADE.

1.04 GUARANTEE

A. ALL WORK PERFORMED AND ALL MATERIAL AND EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE FREE FROM DEFECTS AND SHALL REMAIN SO FOR A PERIOD OF AT LEAST ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. THE FULL COST OF MAINTENANCE, LABOR AND MATERIALS REQUIRED TO CORRECT ANY DEFECT DURING THIS ONE YEAR PERIOD SHALL BE INCLUDED IN THE SUBMITTAL BID.

1.05 MAINTENANCE

A. MAINTENANCE AND TESTING SHALL BE ON A SEMI-ANNUAL SCHEDULE OR AS REQUIRED BY THE LOCAL AHJ. A PREVENTIVE MAINTENANCE SCHEDULE SHALL BE PROVIDED BY THE CONTRACTOR DESCRIBING THE PROTOCOL FOR PREVENTIVE MAINTENANCE. THE SCHEDULE SHALL INCLUDE:
1. SYSTEMATIC EXAMINATION, ADJUSTMENT AND CLEANING OF ALL DETECTORS, MANUAL FIRE ALARM STATIONS, CONTROL PANELS, POWER SUPPLIES, RELAYS, WATERFLOW SWITCHES AND ALL ACCESSORIES OF THE FIRE ALARM SYSTEM.
2. EACH CIRCUIT IN THE FIRE ALARM SYSTEM SHALL BE TESTED SEMIANNUALLY.
3. EACH SMOKE DETECTOR SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 72 CHAPTER 10.

B. AS PART OF THE BID/PROPOSAL, INCLUDE A QUOTE FOR A MAINTENANCE CONTRACT TO PROVIDE ALL MAINTENANCE, TESTS, AND REPAIRS DESCRIBED BELOW. INCLUDE ALSO A QUOTE FOR UNSCHEDULED MAINTENANCE/REPAIRS, INCLUDING HOURLY RATES FOR TECHNICIANS TRAINED ON THIS EQUIPMENT AND RESPONSE TRAVEL COSTS FOR EACH YEAR OF THE MAINTENANCE PERIOD. SUBMITTALS THAT DO NOT IDENTIFY ALL POST CONTRACT MAINTENANCE COSTS WILL NOT BE ACCEPTED. RATES AND COSTS SHALL BE VALID FOR THE PERIOD OF FIVE (5) YEARS AFTER EXPIRATION OF THE GUARANTY.

1.06 POST CONTRACT EXPANSIONS

A. THE CONTRACTOR SHALL HAVE THE ABILITY TO PROVIDE PARTS AND LABOR TO EXPAND THE SYSTEM SPECIFIED, IF SO REQUESTED, FOR A PERIOD OF FIVE (5) YEARS FROM THE DATE OF ACCEPTANCE.

B. AS PART OF THE SUBMITTAL, INCLUDE A QUOTATION FOR ALL PARTS AND MATERIAL, AND ALL INSTALLATION AND TEST LABOR AS NEEDED TO INCREASE THE NUMBER OF INTELLIGENT OR ADDRESSABLE DEVICES BY TEN PERCENT (10%). THIS QUOTATION SHALL INCLUDE INTELLIGENT SMOKE DETECTORS, INTELLIGENT HEAT DETECTORS, ADDRESSABLE MANUAL STATIONS, ADDRESSABLE BEAM DETECTORS, ADDRESSABLE MONITOR MODULES AND ADDRESSABLE CONTROL MODULES EQUAL IN NUMBER TO ONE TENTH OF THE NUMBER REQUIRED TO MEET THIS SPECIFICATION (LIST ACTUAL QUANTITY OF EACH TYPE).

C. THE QUOTATION SHALL INCLUDE INSTALLATION, TEST LABOR, AND LABOR TO REPROGRAM THE SYSTEM FOR THIS 10% EXPANSION. IF ADDITIONAL FACP HARDWARE IS REQUIRED, INCLUDE THE MATERIAL AND LABOR NECESSARY TO INSTALL THIS HARDWARE.

1.07 APPLICABLE STANDARDS AND SPECIFICATIONS

A. THE SPECIFICATIONS AND STANDARDS LISTED BELOW FORM A PART OF THIS SPECIFICATION. THE SYSTEM SHALL FULLY COMPLY WITH THE LATEST ISSUE OF THESE STANDARDS, IF APPLICABLE.
1. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - USA:
   a. NO. 13 SPRINKLER SYSTEMS
   b. NO. 70 NATIONAL ELECTRIC CODE (NEC)
   c. NO. 72 NATIONAL FIRE ALARM CODE
   d. NO. 101 LIFE SAFETY CODE
   e. NO. 38 MANUALLY ACTUATED SIGNALING BOXES
   f. NO. 217 SMOKE DETECTORS, SINGLE AND MULTIPLE STATIONS
   g. NO. 228 DOOR CLOSERS-HOLDERS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   h. NO. 268 SMOKE DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   i. NO. 268A SMOKE DETECTORS FOR DUCT APPLICATIONS
   j. NO. 346 WATERFLOW INDICATORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   k. NO. 464 AUDIBLE SIGNALING APPLIANCES
   l. NO. 521 HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   m. NO. 864 CONTROL UNITS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   n. NO. 1481 POWER SUPPLIES FOR FIRE PROTECTIVE SIGNALING SYSTEMS
   o. NO. 1610 CENTRAL STATION BURGLAR ALARM UNITS
   p. NO. 1638 VISUAL SIGNALING APPLIANCES
   q. NO. 1971 VISUAL SIGNALING APPLIANCES
   r. NO. 2017 GENERAL-PURPOSE SIGNALING DEVICES AND SYSTEMS
   s. CAN/ULC S524-01 STANDARD FOR INSTALLATION OF FIRE ALARM SYSTEMS
   t. THE FACP SHALL BE ANSI 864, 9TH EDITION LISTED. SYSTEMS LISTED TO ANSI 864, 8TH EDITION (OR PREVIOUS REVISIONS) SHALL NOT BE ACCEPTED.
2. THE SYSTEM AND ITS COMPONENTS SHALL BE UNDERWRITERS LABORATORIES, INC. LISTED UNDER THE APPROPRIATE UL TESTING STANDARD AS LISTED HEREIN FOR FIRE ALARM APPLICATIONS AND THE INSTALLATION SHALL BE IN COMPLIANCE WITH THE UL LISTING.
3. LOCAL AND STATE BUILDING CODES.
4. ALL REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ).

1.08 APPROVALS

A. THE SYSTEM SHALL HAVE PROPER LISTING AND/OR APPROVAL FROM THE FOLLOWING NATIONALLY RECOGNIZED AGENCIES:
1. FM FACTORY MUTUAL
2. MEA MATERIAL EQUIPMENT ACCEPTANCE (NYC)
3. CSFM CALIFORNIA STATE FIRE MARSHAL

PART 2 - PRODUCTS

2.01 EQUIPMENT AND MATERIAL, GENERAL

A. ALL EQUIPMENT AND COMPONENTS SHALL BE NEW, AND THE MANUFACTURER'S CURRENT MODEL. THE MATERIALS, APPLIANCES, EQUIPMENT AND DEVICES SHALL BE TESTED AND LISTED BY A NATIONALLY RECOGNIZED APPROVALS AGENCY FOR USE AS PART OF A FIRE PROTECTIVE SIGNALING SYSTEM, MEETING THE NATIONAL FIRE ALARM CODE.

B. ALL EQUIPMENT AND COMPONENTS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURERS' RECOMMENDATIONS. CONSULT THE MANUFACTURER'S INSTALLATION MANUALS FOR ALL WIRING DIAGRAMS, SCHEMATICS, PHYSICAL EQUIPMENT SIZES, ETC., BEFORE BEGINNING SYSTEM INSTALLATION.

C. ALL EQUIPMENT SHALL BE ATTACHED TO WALLS AND CEILING/FLOOR ASSEMBLIES AND SHALL BE HELD FIRMLY IN PLACE (E.G., DETECTORS SHALL NOT BE SUPPORTED SOLELY BY SUSPENDED CEILINGS). FASTENERS AND SUPPORTS SHALL BE ADEQUATE TO SUPPORT THE REQUIRED LOAD.

D. ALL EQUIPMENT MUST BE AVAILABLE "OVER THE COUNTER" THROUGH THE SECURITY EQUIPMENT DISTRIBUTOR (SED) MARKET AND CAN BE INSTALLED BY DEALERSHIPS INDEPENDENT OF THE MANUFACTURER.

2.02 CONDUIT AND WIRE

A. CONDUIT:
1. CONDUIT SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), LOCAL AND STATE REQUIREMENTS.
2. WHERE REQUIRED, ALL WIRING SHALL BE INSTALLED IN CONDUIT OR RACEWAY. CONDUIT FILL SHALL NOT EXCEED 40 PERCENT OF INTERIOR CROSS SECTIONAL AREA WHERE THREE OR MORE CABLES ARE CONTAINED WITHIN A SINGLE CONDUIT.
3. CABLE MUST BE SEPARATED FROM ANY OPEN CONDUCTORS OF POWER, OR CLASS 1 CIRCUITS, AND SHALL NOT BE PLACED IN ANY CONDUIT, JUNCTION BOX OR RACEWAY CONTAINING THESE CONDUCTORS, PER NEC ARTICLE 760-29.
4. WIRING FOR 24 VOLT DC CONTROL, ALARM NOTIFICATION, EMERGENCY COMMUNICATION AND SIMILAR POWER-LIMITED AUXILIARY FUNCTIONS MAY BE RUN IN THE SAME CONDUIT AS INITIATING AND SIGNALING LINE CIRCUITS. ALL CIRCUITS SHALL BE PROVIDED WITH TRANSIENT SUPPRESSION DEVICES AND THE SYSTEM SHALL BE DESIGNED TO PERMIT SIMULTANEOUS OPERATION OF ALL CIRCUITS WITHOUT INTERFERENCE OR LOSS OF SIGNALS.
5. CONDUIT SHALL NOT ENTER THE FIRE ALARM CONTROL PANEL, OR ANY OTHER REMOTELY MOUNTED CONTROL PANEL EQUIPMENT OR BACKBOXES, EXCEPT WHERE CONDUIT ENTRY IS SPECIFIED BY THE FACP MANUFACTURER.
6. CONDUIT SHALL BE 3/4 INCH (19.1 MM) MINIMUM.

B. WIRE:
1. ALL FIRE ALARM SYSTEM WIRING SHALL BE NEW.
2. WIRING SHALL BE IN ACCORDANCE WITH LOCAL, STATE AND NATIONAL CODES (E.G., NEC ARTICLE 760) AND AS RECOMMENDED BY THE MANUFACTURER OF THE FIRE ALARM SYSTEM. NUMBER AND SIZE OF CONDUCTORS SHALL BE AS RECOMMENDED BY THE FIRE ALARM SYSTEM MANUFACTURER, BUT NOT LESS THAN 18 AWG (1.02 MM) FOR INITIATING DEVICE CIRCUITS AND SIGNALING LINE CIRCUITS, AND 14 AWG (1.63 MM) FOR NOTIFICATION APPLIANCE CIRCUITS.
3. ALL WIRE AND CABLE SHALL BE LISTED AND/OR APPROVED BY A RECOGNIZED TESTING AGENCY FOR USE WITH A PROTECTIVE SIGNALING SYSTEM.
4. WIRE AND CABLE NOT INSTALLED IN CONDUIT SHALL HAVE A FIRE RESISTANCE RATING SUITABLE FOR THE INSTALLATION AS INDICATED IN NEC 760 (E.G., FPLR).
5. WIRING USED FOR THE MULTIPLEX COMMUNICATION CIRCUIT (SLC) SHALL BE TWISTED AND SUPPORT A MINIMUM WIRING DISTANCE OF 10,000 FEET WHEN SIZED AT 12 AWG. THE DESIGN OF THE SYSTEM SHALL PERMIT USE OF IDC AND NAC WIRING IN THE SAME CONDUIT WITH THE SLC COMMUNICATION CIRCUIT. SHIELDED WIRE SHALL NOT BE REQUIRED.
6. ALL FIELD WIRING (WITH EXCEPTION OF EXTERNAL COMMUNICATIONS ETHERNET) SHALL BE ELECTRICALLY SUPERVISED FOR OPEN CIRCUIT AND GROUND FAULT.
7. THE FIRE ALARM CONTROL PANEL SHALL BE CAPABLE OF T-TAPPING NFPA STYLE 4 (CLASS B) SIGNALING LINE CIRCUITS (SLCS). SYSTEMS WHICH DO NOT ALLOW OR HAVE RESTRICTIONS IN, FOR EXAMPLE, THE AMOUNT OF T-TAPS, LENGTH OF T-TAPS ETC., IS NOT ACCEPTABLE.

C. TERMINAL BOXES, JUNCTION BOXES AND CABINETS: ALL BOXES AND CABINETS SHALL BE UL LISTED FOR THEIR USE AND PURPOSE.

D. THE FIRE ALARM CONTROL PANEL SHALL BE CONNECTED TO A SEPARATE DEDICATED BRANCH CIRCUIT, MAXIMUM 20 AMPERES. THIS CIRCUIT SHALL BE LABELED AT THE MAIN POWER DISTRIBUTION PANEL AS FIRE ALARM. FIRE ALARM CONTROL PANEL PRIMARY POWER WIRING SHALL BE 12 AWG. THE CONTROL PANEL CABINET SHALL BE GROUNDED SECURELY TO EITHER A COLD WATER PIPE OR GROUNDING ROD. THE CONTROL PANEL ENCLOSURE SHALL FEATURE A QUICK REMOVAL CHASSIS TO FACILITATE RAPID REPLACEMENT OF THE FACP ELECTRONICS.

2.03 MAIN FIRE ALARM CONTROL PANEL

A. EXISTING GAMEWELL / FCI E3

2.04 SYSTEM COMPONENTS

A. SEE FIRE ALARM EQUIPMENT SCHEDULE ON DRAWINGS.

2.05 BATTERIES

A. UPON LOSS OF PRIMARY (AC) POWER TO THE CONTROL PANEL, THE BATTERIES SHALL HAVE SUFFICIENT CAPACITY TO POWER THE FIRE ALARM SYSTEM FOR REQUIRED STANDBY TIME (24 OR 60 HOURS) FOLLOWED BY 15 MINUTES OF ALARM AND EVACUATION.

B. THE BATTERIES ARE TO BE COMPLETELY MAINTENANCE FREE. NO LIQUIDS ARE REQUIRED. FLUID LEVEL CHECKS FOR REFILLING, SPILLS, AND LEAKAGE SHALL NOT BE REQUIRED.

C. IF NECESSARY TO MEET STANDBY REQUIREMENTS, EXTERNAL BATTERY/CHARGER SYSTEMS MAY BE USED.

PART 3 - EXECUTION

3.01 INSTALLATION

A. INSTALLATION SHALL BE IN ACCORDANCE WITH THE NEC, NFPA 72, LOCAL AND STATE CODES, AS SHOWN ON THE DRAWINGS, AND AS RECOMMENDED BY THE MAJOR EQUIPMENT MANUFACTURER.

B. ALL CONDUIT, JUNCTION BOXES, CONDUIT SUPPORTS AND HANGERS SHALL BE CONCEALED IN FINISHED AREAS AND MAY BE EXPOSED IN UNFINISHED AREAS. SMOKE DETECTORS SHALL NOT BE INSTALLED PRIOR TO THE SYSTEM PROGRAMMING AND TEST PERIOD. IF CONSTRUCTION IS ONGOING DURING THIS PERIOD, MEASURES SHALL BE TAKEN TO PROTECT SMOKE DETECTORS FROM CONTAMINATION AND PHYSICAL DAMAGE.

C. ALL FIRE DETECTION AND ALARM SYSTEM DEVICES, CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE FLUSH MOUNTED WHEN LOCATED IN FINISHED AREAS AND MAY BE SURFACE MOUNTED WHEN LOCATED IN UNFINISHED AREAS.

D. MANUAL PULL STATIONS SHALL BE SUITABLE FOR SURFACE MOUNTING OR SEMI FLUSH MOUNTING AS SHOWN ON THE PLANS, AND SHALL BE INSTALLED NOT LESS THAN 42 INCHES (1067 MM), NOR MORE THAN 48 INCHES (122 MM) ABOVE THE FINISHED FLOOR.

3.02 TEST

A. THE SERVICE OF A COMPETENT, NICET LEVEL II TECHNICIAN SHALL BE PROVIDED TO TECHNICALLY SUPERVISE AND PARTICIPATE DURING ALL OF THE ADJUSTMENTS AND TESTS FOR THE SYSTEM. ALL TESTING SHALL BE IN ACCORDANCE WITH NFPA 72, CHAPTER 10.
1. BEFORE ENERGIZING THE CABLES AND WIRES, CHECK FOR CORRECT CONNECTIONS AND TEST FOR SHORT CIRCUITS, GROUND FAULTS, CONTINUITY, AND INSULATION.
2. CLOSE EACH SPRINKLER SYSTEM FLOW VALVE AND VERIFY PROPER SUPERVISORY ALARM AT THE FACP.
3. VERIFY ACTIVATION OF ALL WATERFLOW SWITCHES.
4. OPEN INITIATING DEVICE CIRCUITS AND VERIFY THAT THE TROUBLE SIGNAL ACTUATES.
5. OPEN AND SHORT SIGNALING LINE CIRCUITS AND VERIFY THAT THE TROUBLE SIGNAL ACTUATES.
6. OPEN AND SHORT NOTIFICATION APPLIANCE CIRCUITS AND VERIFY THAT TROUBLE SIGNAL ACTUATES.
7. GROUND ALL CIRCUITS AND VERIFY RESPONSE OF TROUBLE SIGNALS.
8. CHECK PRESENCE AND AUDIBILITY OF TONE AT ALL ALARM NOTIFICATION DEVICES.
9. CHECK INSTALLATION, SUPERVISION, AND OPERATION OF ALL INTELLIGENT SMOKE DETECTORS USING THE WALK TEST.
10. EACH OF THE ALARM CONDITIONS THAT THE SYSTEM IS REQUIRED TO DETECT SHOULD BE INTRODUCED ON THE SYSTEM. VERIFY THE PROPER RECEIPT AND THE PROPER PROCESSING OF THE SIGNAL AT THE FACP AND THE CORRECT ACTIVATION OF THE CONTROL POINTS.
11. WHEN THE SYSTEM IS EQUIPPED WITH OPTIONAL FEATURES, THE MANUFACTURER'S MANUAL SHALL BE CONSULTED TO DETERMINE THE PROPER TESTING PROCEDURES. THIS IS INTENDED TO ADDRESS SUCH ITEMS AS VERIFYING CONTROLS PERFORMED BY INDIVIDUALLY ADDRESSED OR GROUPED DEVICES, SENSITIVITY MONITORING, VERIFICATION FUNCTIONALITY AND SIMILAR.

3.03 FINAL INSPECTION

A. AT THE FINAL INSPECTION, A MINIMUM NICET LEVEL II TECHNICIAN SHALL DEMONSTRATE THAT THE SYSTEM FUNCTIONS PROPERLY IN EVERY RESPECT.

3.04 INSTRUCTION

A. INSTRUCTION SHALL BE PROVIDED AS REQUIRED FOR OPERATING THE SYSTEM. HANDS-ON DEMONSTRATIONS OF THE OPERATION OF ALL SYSTEM COMPONENTS AND THE ENTIRE SYSTEM INCLUDING PROGRAM CHANGES AND FUNCTIONS SHALL BE PROVIDED.

B. THE CONTRACTOR OR INSTALLING DEALER SHALL PROVIDE A USER MANUAL INDICATING "SEQUENCE OF OPERATION."

END OF SECTION

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PLEASE RECYCLE

AGENCY APPROVAL:

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ISSUE

Δ	DESCRIPTION	DATE

KEYNOTES

NOTES

REGISTERED PROFESSIONAL ENGINEER JOHN D. GUMP III E 24187 EXPIRES 9/30/26 ELECTRICAL STATE OF CALIFORNIA

DATE SIGNED:

capital engineering
RANCHO CORDOVA, CALIFORNIA
JG - JSG 240047.00
PM - DESIGN TEAM PROJECT NO.

FACILITY:
LODI MIDDLE SCHOOL
945 SOUTH HAM LANE LODI, CA 95242

PROJECT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION
Author

SHEET NAME:
FIRE ALARM SPECIFICATIONS

CONSTRUCTION DOCUMENTS

DATE: 03/11/2025 | CLIENT PROJ NO: 3431007000

SHEET:
FA3.1-4

DESIGN CRITERIA	
BASE LOCATION LOCATED AT BOTTOM OF BASEPLATE/TOP OF FOOTING	
DESCRIPTION	DESIGN VALUES
DEAD AND LIVE LOADS	
ROOF LIVE LOAD	20 PSF
ROOF DEAD LOAD (SUPERIMPOSED ON FRAME)	5 PSF MAX
ROOF PANEL DEAD LOAD	M=1.1 PSF, G = 1.2 PSF, S = 1.3 PSF
COLLATERAL DEAD LOAD	M = 3.9 PSF, G = 3.8 PSF, S = 3.7 PSF
ROOF LIVE LOAD	
ROOF LIVE LOAD, L_r	20 PSF
ROOF SNOW LOAD	
GROUND SNOW LOAD, P_g	20 PSF
RISK CATEGORY	II
ROOF SNOW LOAD: SLOPED, P_s	20 PSF
FOR SNOW LOAD CONDITIONS ONLY - SITE APPLICATION REVIEWER SHALL VERIFY THE STTRUCTURE SHALL BE LOCATED AT LEAST 20 FEET	
FROM ANY ADJACENT STRUCTURE FOR SNOW DRIFT.	
SNOW LOAD SLOPE FACTOR, C_s	1.0
SNOW LOAD EXPOSURE FACTOR, C_e	1.0
SNOW LOAD IMPORTANCE FACTOR, I_s	1.0
THERMAL FACTOR, C_t	1.2
LOWEST ANTICIPATED SERVICE TEMPERATURE	30'
WIND DESIGN	
BASIC WIND SPEED (3 SECOND GUST), V_{ult}, V_{asd}	100 MPH, 78 MPH
RISK CATEGORY	II
EXPOSURE CATEGORY	C
FACTORS: K_z, K_{zt}, K_d	0.85, 1.0, 0.85
$q_h = 0.00256\ K_z\ K_{zt}\ K_d\ V^2$	18.50 PSF
C_{NW} PER ASCE FIGURE 27.3-5 ROOF ANGLE 18.43 - CLEAR / OBSTRUCTED	CASE A (1.1 / -1.2) CASE B (0.01 / -0.69)
C_{NL} PER ASCE FIGURE 27.3-5 ROOF ANGLE 18.43 - CLEAR / OBSTRUCTED	CASE A (-0.17 / -1.09) CASE B (-0.96 / -1.65)
C_N PER ASCE FIGURE 27.3-7 PARALLEL TO RIDGE - CLEAR / OBSTRUCTED (< h)	CASE A (-0.8 / -1.2) CASE B (0.8 / 0.5)
C_N PER ASCE FIGURE 27.3-7 PARALLEL TO RIDGE - CLEAR / OBSTRUCTED (> h, < 2h)	CASE A (-0.6 / -0.9) CASE B (0.5 / 0.5)
C_N PER ASCE FIGURE 27.3-7 PARALLEL TO RIDGE - CLEAR / OBSTRUCTED (>2h)	CASE A (-0.3 / -0.6) CASE B (0.3 / 0.3)
COMPONENTS & CLADDING - C_N (PRESSURE/SUCTION) CLEAR / OBSTRUCTED	ZONE 3 - (2.29 / -2.11) / (1.0 / -3.0)
	ZONE 2 - (1.77 / -1.63) / (0.8 / -2.3)
	ZONE 1 - (1.15 / -1.05) / (0.5 / -1.5)
SEISMIC DESIGN	
LATERAL FORCE RESISTING SYSTEM	STEEL - ORDINARY CANTILEVER COLUMN
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE
SESIMIC IMORTANCE FACTOR, I_e	1.0
SEISMIC SITE CLASS	D
MCE_R SPECTRAL RESPONSE ACCELERATION @ 0.2 s, S_S	2.60
MCE_R SPECTRAL RESPONSE ACCELERATION @ 0.2 s, S_1	0.90
SHORT PERIOD SITE COEFFICIENT, F_a	1.20
LONG PERIOD COEFFICIENT, F_v	1.70
FUNDAMENTAL PERIOD OF THE STRUCTURE. T (WORST CASE FOR ALL STRUCTURES)	0.152 s
DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIOD, S_{DS}	2.08 ☒
DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIOD, S_{DS} - USED TO DETERMINE Cs (WITH CAP PER ASCE 7 12.8.1.3) SOIL PROPERTIES MAY NOT BE CLASSIFIED AS SITE CLASS E.	2.08 * 0.70 = 1.456 ☐
DESIGN SPECTRAL RESPONSE ACCELERATION AT 1-s PERIODS, S_{D1}	1.02
SEISMIC DESIGN CATEGORY	E
SITE SPECIFIC RESPONSE ANALYSIS NOT REQUIRED PER ASCE 7 11.4.8 EXCEPTION 2	T_s = 0.49 s T < 1.5 * T_s
RESPONSE MODIFICATION FACTOR, R	1.25
OVERSTRENGTH FACTOR, Ω	1.25
REDUNDANCY FACTOR, ρ	1.3
HORIZONTAL OR VERTICAL IRREGULARITIES	NONE
SEISMIC RESPONSE COEFFICIENT, C_s (20' WIDE, 30' WIDE, 40' WIDE)	1.16 1.00 1.00
DESIGN BASE SHEAR, V (20' WIDE, 30' WIDE, 40' WIDE)	12.73 PSF [ ] 13.41 PSF [X] 14.65 PSF [ ]
ALLOWABLE SOIL BEARING FOR FOUNDATIONS	VARIES - SEE FOUNDATION CHARTS
FLOOD DESIGN - DESIGN IS ASSUMED TO NOT BE IN FLOOD HAZARD AREA	
IF PROJECT IS LOCATED IN A FLOOD ZONE OTHERTHAN ZONE X, A LETTER STAMPED & SIGNED FROM A SOILS ENGINEER IS REQUIRED TO VALIDATE THE ALLOWABLE SOIL VALUES SPECIFIED.	

STRUCTURAL SEPARATION

ALL DEFLECTIONS SHOWN ALSO INCLUDE THE P-DELTA ROTATION PER IR PC-7

DEFLECTIONS ARE FOR (1) STRUCTURE

SOIL CLASSES PER CBC TABLE 1806A.2

MAXIMUM DRIFT δ_{max} SIDE COLUMNS		Soil Class 5	Soil Class 4	Soil Class 3
20' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 2.40	[ ] 2.55	[ ] 2.65
30' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 2.15	[ ] 2.30	[X] 2.40
40' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 2.20	[ ] 2.20	[ ] 2.30
MINIMUM SEPARATION ($\delta_m = C_d\ \delta_{max}$) C_d = 1.25				
20' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 3.00	[ ] 3.19	[ ] 3.31
30' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 2.69	[ ] 2.88	[X] 3.00
40' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 2.75	[ ] 2.75	[ ] 2.88

MAXIMUM DRIFT δ_{max} END COLUMNS		Soil Class 5	Soil Class 4	Soil Class 3
20' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 2.40	[ ] 2.55	[ ] 2.65
30' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 2.15	[ ] 2.30	[X] 2.40
40' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 2.20	[ ] 2.20	[ ] 2.30
MINIMUM SEPARATION ($\delta_m = C_d\ \delta_{max}$) C_d = 1.25				
20' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 3.00	[ ] 3.19	[ ] 3.31
30' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 2.69	[ ] 2.88	[X] 3.00
40' WIDE (8' EAVE HT, 10' EAVE HEIGHT, 12' EAVE HT)	(INCHES)	[ ] 2.75	[ ] 2.75	[ ] 2.88

INSTRUCTIONS FOR ARCHITECTS SUBMITTING THESE PRE-CHECKED DRAWINGS TO DSA:

BEFORE SUBMITTING THESE PRE-CHECKED DRAWINGS FOR YOUR PROJECT, FOLLOW THE STEPS BELOW TO PROPERLY DEFINE THE APPROVED OPTIONS:

STEP 1: SELECT FRAME DIMENSIONS FOR YOUR PROJECT
- HIP STRUCTURES UP TO 20' WIDE USE THE "RH 20" BASE FRAME
- HIP STRUCTURES UP TO 30' WIDE USE THE "RH 30" BASE FRAME
- HIP STRUCTURES UP TO 40' WIDE USE THE "RH 40" BASE FRAME
- MAXIMUM WIDTH IS 40' (SEE "ARCHITECTURAL VIEWS" SHEET FOR REFERENCE)
- THE 24', 44', 64', 84' AND 104' LENGTHS ARE SUGGESTED BECAUSE THEY ARE THE MOST COMMON (20' BAYS ARE THE MOST ECONOMICAL)
- FRAME LENGTHS ASSUME 2' OVERHANGS (UNO BY ARCHITECT = 2' MAX DIMENSION)

STEP 1	FRAME DIMENSIONS				
		SUGGESTED			OTHER
FRAME WIDTH	[ ] 20'	[X] 30'	[ ] 40'		[ ] (40' MAX)
FRAME LENGTH	[ ] 44'	[X] 64'	[ ] 84'	[ ] 104'	[ ] (NO MAX)

STEP 2: SELECT ROOF DECK FOR YOUR PROJECT
- "M" REPRESENTS McELROY METAL "MULTI-RIB" ROOF PANEL
- "G" REPRESENTS McELROY METAL "MEGA-RIB" ROOF PANEL
- "S" REPRESENTS McELROY METAL "MEDALLION-LOK" 16" STANDING SEAM ROOF PANEL

STEP 2	ROOF PANEL			
ROOF PANEL TYPE	[ ] M	[ ] G	[X] S	

STEP 3: IDENTIFY THE Ss ACCELERATION (g) FOR YOUR PROJECT
- Ss VALUE DETERMINES THE REQUIRED SEISMIC DESIGN FORCES
- Ss VAULE DEPENDS ON THE PROJECTS GEOGRAPHICAL LOCATION (VALUES RANGE FROM 0.00 TO 3.73)
  - FIND Ss VALUES FOR YOUR PROJECT ON THE USGS WEBSITE (SEARCH INTERNET FOR "USGS SEISMIC DESIGN MAPS")

STEP 3	PROJECT SITE – Ss ACCELERATION (g)
	0.628

STEP 4: IDENTIFY THE Ss REGION FOR YOUR PROJECT
- THE REGIONS ARE DEPENDANT ON THE Ss VALUE DETERMINED IN STEP 3
- THE Ss REGION DICTATES THE MAXIMUM DEAD LOAD PERMITTED ON THE FRAME

STEP 4	Ss REGION		
		Ss REGIONS	MAX DEAD LOAD
DESCRIPTION	0.628	0 < Ss <= 2.14	5 PSF
		2.14 < Ss <= 2.50	5 PSF
		2.50 < Ss <= 2.60	5 PSF

STEP 5: IDENTIFY THE ROOF DEAD LOAD FOR YOUR PROJECT
- THE ROOF DECK DEAD LOAD WILL ALWAYS BE INCLUDED
- THE COLLATERAL LOAD REPRESENTS ADDITIONAL LOAD THAT CAN BE SUPPORTED BY THE FRAME
- BE SURE THE TOTAL ROOF DEAD LOAD FOR YOUR PROJECT IS LESS THAN OR EQUAL TO THE MAX DEAD LOAD SHOWN IN STEP 4 FOR YOUR Ss VALUE
- Sds VALUE USED IN CALCULATION IS THE CAPPED Sds (SEE DESIGN CRITERIA)

STEP 5	TOTAL ROOF DEAD LOAD	
	DEAD LOAD	EXAMPLES
ROOF DECK	1.3 PSF	M=1.1PSF; G=1.2PSF ;S=1.3PSF (SEE STEP 2)
COLLATERAL	_____ PSF	LIGHTNING,FIRE SUPPRESSION,SOLAR PANELS,ETC
TOTAL	1.3 PSF	ADD ROOF DECK AND COLLATERAL LOADS (MAX 5 PSF)

STEP 6: IDENTIFY THE FOUNDATION REQUIREMENTS FOR YOUR PROJECT
- IDENTIFY SOIL CLASS FOR PROJECT SITE PER SITE SPECIFIC SOIL CONDITIONS
- USE THIS TO SELECT CORRECT FOUNDATION SIZE ON FOUNDATION SHEET

STEP 6	FOUNDATION REQUIREMENTS		
	[ ] GEOTECHNICAL REPORT NOT REQUIRED	[X] GEOTECHNICAL REPORT REQUIRED	
	SOIL CLASS 5 (BEARING) 1500 PSF [ ]	SOIL CLASS 4 (BEARING) 2000 PSF [ ]	SOIL CLASS 3 (BEARING) 3000 PSF [X]
	SOIL CLASS 5 (LATERAL BEARING) 200 PSF/FT	SOIL CLASS 5 (LATERAL BEARING) 300 PSF/FT	SOIL CLASS 5 (LATERAL BEARING) 400 PSF/FT
	COHESION 130 PSF	FRICTION COEFFICIENT 0.25	FRICTION COEFFICIENT 0.30

- SELECT AND VERIFY MINIMUM SEPARATION DISTANCE BETWEEN STRUCTURES

STEP 7: SELECT MISCELLANEOUS OPTIONS FOR YOUR PROJECT
- MAXIMUM CLEAR HEIGHT IS 12'-0"; (SEE "ARCHITECTURAL VIEWS" SHEET FOR REFERENCE)
- MARK UP PC DRAWINGS WITH SIZE AND LOCATION OF CUTOUTS BEFORE SUBMITTING TO DSA

STEP 7	MISCELLANEOUS	
	DESIGN OPTIONS	
CLEAR HEIGHT	[ ] 8' [X] 10' [ ] 12' MAX	
ELECTRICAL CUTOUTS	[X] YES	[ ] NO
GUTTERS	[X] YES	[ ] NO

STEP 8: SELECT APPLICABLE SHEET INDEX FOR YOUR PROJECT
- REFERENCE THE BASE FRAME (STEP 1) AND THE ROOF PANEL TYPE (STEP 2)
- IDENTIFY THE APPLICABLE SHEET INDEX

STEP 8	SHEET INDEX											
BASE FRAME	RH 20			RH 30			RH 40					
ROOF PANEL TYPE	M	G	S	M	G	S	M	G	S			
SELECT ONE	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[ ]	[ ]	[ ]			
GENERAL NOTES	LS1.0 LS1.1	LS1.0 LS1.1	LS1.0 LS1.1	LS1.0 LS1.1	LS1.0 LS1.1	LS1.0 LS1.1	LS1.0	LS1.0	LS1.0			
FOUNDATION PLAN	LS2.0	LS2.0	LS2.0	LS3.0	LS3.0	LS3.0	LS4.0	LS4.0	LS4.0			
FRAMING PLAN	LS2.1	LS2.1	LS2.1	LS3.1	LS3.1	LS3.1	LS4.1	LS4.1	LS4.1			
FRAME CONNECTION DETAILS	LS2.1	LS2.1	LS2.1	LS3.1	LS3.1	LS3.1	LS4.2	LS4.2	LS4.2			
ROOFING LAYOUT & DETAILS	LS2.2	LS2.2	LS2.4	LS3.2	LS3.3	LS3.4	LS4.3	LS4.3	LS4.5			
DSA 103 EXAMPLE	LS1.2 LS1.3	LS1.2 LS1.3	LS1.2 LS1.3	LS1.2 LS1.3	LS1.2 LS1.3	LS1.2 LS1.3	LS1.2 LS1.3	LS1.2 LS1.3	LS1.2 LS1.3			
MISC DESIGN OPTIONS	LS5.0	LS5.0	LS5.0	LS5.0	LS5.0	LS5.0	LS5.0	LS5.0	LS5.0			
-												
-												

STEP 9: INCLUDE APPLICABLE SHEETS WITH YOUR DSA SUBMITTAL
- INCLUDE 'MISC DESIGN OPTIONS' SHEET FOR PROJECTS WITHOUT ELECTRICAL CUTOUTS OR GUTTERS

STEP 10: IDENTIFY PROJECT NAME AND LOCATION

PROJECT NAME:	SCHOOL DISTRICT:
LODI MIDDLE SCHOOL ADDITIONS AND MODERNIZATION INCREMENT 2	Lodi Unified School District

STEP 11: CROSS OUT EXAMPLE 103 FORMS & INCORPORATE REQUIRED SPECIAL INSPECTIONS 103 FORMS THAT ARE PROJECT SPECIFIC

SITE SPECIFIC PARAMETERS

INSTRUCTIONS: DESIGN PROFESSIONAL SHALL CHECK THE APPROPRIATE SELECTION BOXES BELOW AND ENTER THE DESIGN PARAMETERS APPLICABLE TO THE SPECIFIC PROJECT SITE

SNOW
pg = NA psf
Pf = NA psf
Ce = NA psf

WIND 100 MPH (77 MPH (ASD))
V = ____ mph < XX mph
kzt = 0.85 ≤ 1
EXPOSURE: C☒ D☐

SELECT ONE

SIESMIC
☐ DESIGN BASED ON SITE CLASS D
NO GEOTECHNICAL INVESTIGATION REQUIRED
Ss = _____ Fa = 1.2

☒ DESIGN BASED ON SITE CLASS DETERMINED PER CHAPTER 20 OF ASCE 7-16
GEOTECHNICAL INVESTIGATION PROVIDED
SITE CLASS: C ☐ D☒ E☐
Ss = 0.628 Fa = 1.297 PER ASCE 7-16 SUPPL 3, TABLE 11.4-1

☐ DESIGN BASED ON SITE SPECIFIC GROUND MOTION HAZARD ANALYSIS PER CHAPTER 21 OF ASCE 7-16
SHORT-PERIOD DESIGN SPECTRAL RESPONSE PARAMETER, Sds, SHALL BE AS SPECIFIED IN GEOTECHNICAL INVESTIGATION
CGS APPROVAL REQUIRED
NOT ELEGIBLE FOR OTC REVIEW
SITE CLASS: C☐ D☐ E☐

Sds = Fa Ss = 0.543
☐ SITE CLASS:C or D: 0.7 x Sds* = 0.7 x 0.543 = 0.3801 ≤ X.XX
☐ SITE CLASS E: Sds = _____ ≤ X.XX
Cs= X.XXX USED IN DESIGN
SIESMIC DESIGN CATEGORY D ☒ E ☐
*SITE SPECIFIC Sds VALUE BEFORE APPLYING REDUCTION ALLOWED BY ASCE 7 SECTION 12.8.1.3

ABBREVIATIONS:

ACI	AMERICAN CONCRETE INSTITUTE	MPH	MILES PER HOUR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	M	MULTI-RIB ROOF PANEL (MCELROY)
ASM	ASSEMBLY (INTERNAL REFERENCE)	NTS	NOT TO SCALE
ASTM	AMERICAN SOCIETY FOR TESTING AND MAT'LS	NO	NUMBER
AWS	AMERICAN WELDING SOCIETY	OC	ON CENTER
CBC	CALIFORNIA BUILDING CODE	OSHA	OCCUPATIONAL HEALTH AND SAFETY ADMIN
CJP	COMPLETE JOINT PENETRATION	PCF	POUNDS PER CUBIC FOOT
CLR	CLEAR	PJ	PRETENSIONED JOINT
DEG	DEGREE	PLCS	PLACES
DIA	DIAMETER	PLT	PLATE
DIM	DIMENSION	PSF	POUNDS PER SQUARE FOOT
DSA	DIVISION OF THE STATE ARCHITECT	PSI	POUNDS PER SQUARE INCH
EQ	EQUAL	QTY	QUANTITY
FT	FEET	REF	REFERENCE
GA	GAGE	SQ	SQUARE
IN	INCHES	SS	STANDING SEAM ROOF PANEL (MCELROY)
KSI	KIPS PER SQUARE INCH	TYP	TYPICAL
MAX	MAXIMUM	UNO	UNLESS NOTED OTHERWISE
MIN	MINIMUM	USGS	U.S. GEOLOGICAL SURVEY
MISC	MISCELLANEOUS	W/	WITH

ARCHITECTURAL REQUIREMENTS	
DESCRIPTION	DESIGN VAULES
TYPE OF CONSTRUCTION	II-B
OCCUPANCY CLASSIFICATION	A-3
NUMBER OF STORIES	1
FIRE SPRINKLER SYSTEM	NOT BY ICON/WEIGHT NOT INCLUDED IN DESIGN
MOST COMMON RH20 MIN/MAX SQ.FT (SEE STEP 1)	480/2,080
MOST COMMON RH30 MIN/MAX SQ.FT (SEE STEP 1)	720/3,120
MOST COMMON RH40 MIN/MAX SQ.FT (SEE STEP 1)	960/4,160

AREA OVER 4000 SQ.FT REQUIRES GEOHAZARD REPORT
ALLOWABLE ARE FOR II-B / A-3 IS 9500 SQ.FT

RELATED BUILDING CODES AND STANDARDS

TITLE 24 CODES:

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC).....(PART 1, TITLE 24, CCR)
2022 CALIFORNIA BUILDING CODE (CBC),PART 2, TITLE 24 CCR
2022 CALIFORNIA ELECTRICAL CODE.....(PART 3, TITLE 24, CCR)
2022 CALIFORNIA MECHANICAL CODE (CMC).....(PART 4, TITLE 24, CCR)
2022 CALIFORNIA PLUMBING CODE (CPC).....(PART 5, TITLE 24, CCR)
2022 CALIFORNIA ENERGY CODE.....(PART 6, TITLE 24, CCR)
2022 CALIFORNIA FIRE CODE (CFC) .....(PART 9, TITLE 24, CCR)
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE.....(PART 11, TITLE 24, CCR)
2022 CALIFORNIA REFERENCE STANDARDS CODE.....(PART 12, TITLE 24, CCR)
TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

REFERENCE CODE SECTIONS FOR APPLICABLE STANDARDS:
2022 CBC, CHAPTER 35
2022 CFC, CHAPTER 80

SCOPE OF WORK NARRATIVE

THESE DRAWINGS ILLUSTRATE THE FABRICATION AND INSTALLATION REQUIREMENTS FOR A FREE-STANDING PREFABRICATED STEEL SHADE STRUCTURE. THE ENTIRE STRUCTURAL SYSTEM IS COMPRISED OF HOLLOW STRUCTURAL STEEL MEMBERS SUPPORTED BY CONCRETE FOUNDATIONS. THE FLEXIBILITY INCLUDED HEREIN ALLOWS THE STRUCTURE TO COMPLY WITH A WIDE VARIETY OF PROJECT SITES AND LOADING REQUIREMENTS.

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 02
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 04/11/2025

ICON STD	RH/DSA-PC
DRAWN BY	JD
DATE	7/25/2023
REV	
REV DATE	

JRMA
ARCHITECTS ENGINEERS
2700 SATURN STREET, CA 92821
T. 714.524.1870 F. 714.524.1875
WWW.JRMA.COM

REGISTERED PROFESSIONAL ENGINEER
Oct 04, 2023

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-122375 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 10/10/2023

GENERAL INFO

ICON Shelter Systems Inc
DISTINCTIVE STEEL SHELTERS
WWW.ICONSHELTERS.COM

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1455 LINCOLN AVE
HOLLAND MI, 49423
616.396.0919
800.748.0985
616.396.0944 FX

LS1.0

PRINTED ON :

GENERAL:

1. GENERAL NOTES AND TYPICAL DETAILS SHALL APPLY TO ALL PARTS OF THE JOB EXCEPT WHERE THEY MAY CONFLICT WITH DETAILS AND NOTES ON OTHER SHEETS. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED SUBJECT TO REVIEW BY THE STRUCTURAL ENGINEER FOR THIS PROJECT.
2. WORK SHALL CONFORM TO THE REQUIREMENTS, AS AMENDED TO DATE, OF THE LATEST ADOPTED EDITION OF THE CBC, C.A.C. TITLE 24, AND ALL STATE AND FEDERAL REGULATIONS.
3. OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER FOR THIS PROJECT PRIOR TO PROCEEDING WITH ANY WORK INVOLVED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS, ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE STRUCTURAL ENGINEER FOR THIS PROJECT AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
5. THESE CONSTRUCTION DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES, INCLUDING, BUT NOT LIMITED TO, BRACING, TEMPORARY SUPPORTS, AND SHORING. OBSERVATION VISIT TO THE SITE BY FIELD REPRESENTATIVES OF THE ARCHITECT/ENGINEER SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES. ANY SUPPORT SERVICES PERFORMED BY THE ARCHITECT/ENGINEER DURING THE CONSTRUCTION SHALL BE DISTINGUISHED FROM CONSTRUCTION AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ARCHITECT/ENGINEER, WHETHER OF MATERIAL OR WORK, ARE FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DOCUMENTS, BUT DO NOT GUARANTEE CONSTRUCTION.
6. ASTM DESIGNATIONS AND ALL STANDARDS REFER TO THE LATEST AMENDMENTS, EXCEPT AS AMENDED BY CBC CHAPTER 35.
7. CONFORM TO APPLICABLE CAL/OSHA CONSTRUCTION SAFETY REGULATIONS FOR ALL WORK PERFORMED DURING CONSTRUCTION. JOB SITE SAFETY IS STRICTLY THE RESPONSIBILITY OF THE CONTRACTOR AND NOT THE ARCHITECT/ENGINEER OR OWNER.
8. THE ENGINEER AND THEIR CONSULTANTS SHALL HAVE NO RESPONSIBILITY FOR THE DISCOVERY, HANDLING, REMOVAL OR DISPOSAL OF HAZARDOUS MATERIALS AT THE PROJECT SITE, INCLUDING BUT NOT LIMITED TO ASBESTOS, ASBESTOS PRODUCTS, POLYCHLORINATED BIPHENYL (PCB) OR OTHER TOXIC SUBSTANCES.
9. SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS, OR IF A CHANGE IN THE SCOPE OF WORK IS PROPOSED, A CONSTRUCTION CHANGE DOCUMENT DETAILING AND SPECIFYING THE REQUIRED CHANGE(S) SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK.
10. THE SCHOOL DISTRICT INSPECTOR ON RECORD SHALL INSPECT AND APPROVE THE ERECTED FRAME PRIOR TO ROOF INSTALLATION.
11. SEE REQUIREMENTS FOR LOCATION IN ANY FIRE HAZARD SEVERITY ZONE FOR WILDLAND URBAN INTERFACE AREAS (WUI) AS SPECIFIED IN THE APPLICABLE VERSION OF THE CALIFORNIA BUILDING CODE. PROVIDE PROTECTION AND DETAILS OF ALL AREAS COMPLYING WITH THE WUI REQUIREMENTS.
12. LOCATING THIS STRUCTURE CLOSER THAN 20 FEET TO OTHER STRUCTURES MAY AFFECT THE ALLOWABLE AREA FOR THE EXISTING CONSTRUCTION PER THE APPLICABLE VERSION OF THE CALIFORNIA BUILDING CODE.
13. VIEWS AND DETAILS ARE NOT DRAWN TO SCALE (UNLESS NOTED OTHERWISE). DO NOT SCALE THESE DRAWINGS.

STRUCTURAL AND MISCELLANEOUS STEEL:

1. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AMERICAN INSTITUE OF STEEL CONSTRUCTION (AISC) SPECIFICATION MANUAL REFERENCED BY THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE.
2. PIPE SECTIONS SHALL CONFORM TO ASTM A53, Fy = 35 KSI, GRADE B OR A501 UNLESS NOTED OTHERWISE.
3. STRUCTURAL TUBING (HSS SHAPES) SHALL CONFORM TO ASTM A-500, GRADE B (OR C), Fy = 46 KSI. MIN.
4. IF MATERIAL AVAILABILITY IS LIMITED, MEMBER THICKNESS CAN BE INCREASED BEYOND WHAT IS SHOWN IN THESE DRAWINGS (MAXIMUM INCREASE OF 1/8").
5. ALL CHANNELS, ANGLES, AND MISC. STEEL SHALL CONFORM TO ASTM A-36, Fy = 36 KSI.
6. ALL PLATE STEEL SHALL CONFORM TO ASTM A-572, Fy= 50 KSI.
7. ALL COLD FORM STEEL SHALL CONFORM TO ASTM A-653, CS = TYPE B, Fy = 50 KSI Fu = 65 KSI
8. STRUCTURAL STEEL AND DECK SHALL BE IDENTIFIED FOR CONFORMITY PER CBC 2202A.1.
9. ALL ROOF DECKS SHALL HAVE KYNAR 500 METAL COATING.
10. ALL ROOF DECKS SHALL CONFORM TO ASTM A-792, Fy = 50 KSI.
11. ALL BASE CONNECTIONS ARE A PART OF THE LATERAL FORCE RESISTING SYSTEM

NOTICE OF DISCLAIMER FOR STRUCTURAL ENGINEERING RESPONSIBILITY

1. PER TITLE 24, PART 1, SECTION 4-316(e) OF THE CALIFORNIA CODE OF REGULATIONS, THIS NOTICE SHALL BE GIVEN TO DSA PRIOR TO THE APPROVAL OF PLANS AND SPECIFICATIONS.
2. FOR THE SITE SPECIFIC PROJECT, J. R. MILLER & ASSOCIATES IS NOT THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE.
3. FOR THE SITE SPECIFIC PROJECT, J.R. MILLER & ASSOCIATES' RESPONSIBILITY IS LIMITED TO THE PREPARATION OF THE PLANS AND SPECIFICATIONS FOR THE SHELTERS OF THIS PC ONLY.
4. STRUCTURAL OBSERVATION OF CONSTRUCTION IS SPECIFICALLY EXCLUDED FROM J.R. MILLER & ASSOCIATES' RESPONSIBILITY FOR THE SITE SPECIFIC PROJECT.
5. ALL CONSTRUCTION ACTIVITIES RELATED TO STRUCTURAL ENGINEERING SHALL BE DELEGATED TO A QUALIFIED ENGINEER BY THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE. THESE ACTIVITIES INCLUDE, BUT ARE NOT LIMITED TO, STRUCTURAL OBSERVATION OF CONSTRUCTION, REVIEW OF INSPECTION REPORTS, AND SIGNING OFF OF THE VERIFIED REPORT FOR COMPLETED WORK.
6. J.R. MILLER & ASSOCIATES WILL BE RESPONSIBLE FOR RESPONDING TO QUESTIONS PERTAINING TO THE PLANS AND SPECIFICATIONS FOR THE SHELTERS OF THIS PC WHICH ARISE DURING PLAN REVIEW AND CONSTRUCTION.

CONSTRUCTION NOTES

1. A DSA-CERTIFIED CLASS 3 (MINIMUM) PROJECT INSPECTOR IS REQUIRED FOR THIS PROJECT.
2. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENDA OR CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY DSA, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.
3. A "DSA CERTIFIED" PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF WORK, THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR.
4. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.
5. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS ARE THAT ALL THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A 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)
6. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES

WELDING:

1. ALL WELDING SHALL COMPLY WITH AWS D1.1 SPECIFICATIONS AND SHALL BE DONE BY AWS QUALIFIED WELDERS CERTIFIED FOR THE TYPE OF WELDING TO BE PERFORMED AS REQUIRED BY DSA.
2. ALL WELDING SHALL BE DONE BY GAS METAL ARC PROCESS WITH E70XX ELECTRODES. FLUX CORE ARC WELD SHALL CONFORM TO CHARPY NOTCH TOUGHNESS RATING OF 20 ft-lb @ (0° F).
3. ALL WELDING SHALL BE DONE IN THE SHOP WITH REQUIRED INSPECTION, PRE-APPROVED BY DSA, TO ENSURE PROPER MATERIAL ID AND WELDING.
4. WELD FILLER METAL MANUFACTURER SHALL PROVIDE WRITTEN CERTIFICATION OF COMPLIANCE WITH CODE AND SPECIFICATIONS.

BOLTING:

1. ALL BOLTS SHOWN ON THESE DRAWINGS ARE HOT DIPPED GALVANIZED ASTM F3125 GRADE A325 HIGH STRENGTH BOLTS (UNO), WITH THE NUTS CONFORMING TO HOT DIPPED GALVANIZED ASTM A-563 GRADE DH.
2. HIGH STRENGTH BOLTS SHALL BE VERIFIED AND INSPECTED PER CBC 1705A2.1.
3. BEFORE ERECTING THE FRAME, VERIFY ALL BOLTS AND NUTS ARE CLEAN OF DEBRIS AND BURRS – INCLUDING THE HARDWARE ALREADY FASTENED INSIDE THE MEMBERS. CHASING SOME OF THE BOLTS AND NUTS MAY BE REQUIRED.
4. HARDENED STEEL WASHERS SHALL CONFORM TO ASTM F-436.
5. THE BOLTING INSTALLATION REQUIREMENTS OUTLINED BELOW ARE CRITICAL TO THE STRUCTURE'S DESIGN AND PERFORMANCE. THE INSTALLER IS REQUIRED TO COORDINATE THIS PHASE OF CONSTRUCTION WITH THE SPECIAL BOLTING INSPECTOR AND THE INSPECTOR OF RECORD PRIOR TO THE ERECTION OF THE FRAME BE INSTALLED AND INSPECTED PER THE APPLICABLE VERSION OF AISC'S USING HIGH-STRENGTH BOLTS", CBC 1705A.2.1; AISC 341-16 J7; AISC 360-16 N5.6.

   A) PRETENSIONED JOINTS MUST BE INSTALLED AND INSPECTED TO MEET ONE OF THE FOLLOWING REQUIREMENTS:
      1. TURN-OF-NUT PRETENSIONING: PER SECTION 8.2.1 OF THE *SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS* , WASHERS ARE NOT REQUIRED FOR THIS METHOD, THE NUT OR HEAD SHALL BE ROTATED AS SPECIFIED IN TABLE 8.2. THE PART NOT TURNED SHALL BE PREVENTED FROM ROTATING.
      2. CALIBRATED WRENCH: PER THE *SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS*, WASHERS ARE REQUIRED (NOT SUPPLIED BY ICON) THESE SHALL BE INSTALLED PER THE INSTALLATION TORQUE DETERMINED IN THE PRE-INSTALLATION VERIFICATION OF THE FASTENER ASSEMBLY PER SECTION 7. THE PART NOT TURNED SHALL BE PREVENTED FROM ROTATING.
      3. IDENTIFIED ON THE FRAME CONNECTION DETAILS WITH "PT REQUIRED"

   B) ALL OTHER JOINTS MUST BE INSTALLED AND INSPECTED TO MEET THE REQUIREMENTS OF THE SNUG-TIGHTENED JOINTS. SNUG TIGHT CONDITION EXISTS WHEN ALL PLIES IN A CONNECTION HAVE BEEN PULLED INTO FIRM CONTACT BY THE BOLTS IN THE JOINT AND ALL OF THE BOLTS IN THE JOINT HAVE BEEN TIGHTENED SUFFICIENTLY TO PREVENT REMOVAL OF THE NUTS WITHOUT THE USE OF A WRENCH.

FOUNDATIONS:

1. ALLOWABLE SOIL PRESSURES ASSUME CLASS 5 SOIL CLASSIFICATION PER CBC TABLE 1806A, UNLESS NOTED OTHERWISE. PASSIVE PRESSURE IS ASSUMED TO START 12" BELOW TOP OF FOOTING.
2. PER CBC SECTION 1803A.2, GEOTECHNICAL REPORTS ARE NOT REQUIRED FOR ONE-STORY LIGHT-STEEL FRAME BUILDINGS OF TYPE II CONSTRUCTION AND 4,000 SQUARE FOOT OR LESS IN FLOOR AREA AND NOT LOCATED WITHIN EARTHQUAKE FAULT ZONESOR SIESMIC HAZARD ZONES AS SHOWN ON THE MOST RECENT MAPS PUBLISHED BY THE CGS. ALLOWABLE FOUNDATION AND LATERAL SOIL PRESSURE VALUES MAY BE DETERMINED FROM TABLE 1806A.2.
3. FILL AND BACKFILL SHALL BE COMPACTED TO 95% OF MAX. DENSITY IN ACCORDANCE WITH ASTM TEST METHOD D-1557 OR AS RECOMMENDED BY THE GEO-TECH ENGINEER. FLOODING NOT PERMITTED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHORING, ETC. NECESSARY TO SUPPORT CUT AND/OR FILL BANKS DURING EXCAVATION, AND FORMING AND PLACEMENT OF CONCRETE.
5. MINIMUM SETBACK FROM TOE OF SLOPE ON AN ASCENDING SLOPE SHALL BE 15 FEET AND MINIMUM SETBACK FROM TOE OF SLOPE ON A DESCENDING SLOPE SHALL BE 40 FEET
6. PER CBC SECTION 1803A.6, GEOHAZARD REPORTS ARE NOT REQUIRED FOR ONE-STORY LIGHT-STEEL FRAME BUILDINGS OF TYPE II CONSTRUCTION AND 4,000 SQUARE FOOT OR LESS IN FLOOR AREA AND NOT LOCATED WITHIN EARTHQUAKE FAULT ZONESOR SIESMIC HAZARD ZONES AS SHOWN ON THE MOST RECENT MAPS PUBLISHED BY THE CGS.
7. GEOHAZRD REPORTS ARE TO COMPLY WITH DSA IR A-4 PER IR-7 SECTION 1.8
8. SITE SPECIFIC GEOTECHNICAL REPORT IS REQUIRED AT THE TIME OF SITE APPLICATION IF USING OTHER THAN CLASS 5 SOIL, PER DSA IR PC-7
9. LATERAL BEARING HAS BEEN INCREASED PER CBC 1806A.3.4 FOR THE 1/2" DEFLECTION & HAS BEEN DESIGNED FOR P-DELTA EFFECTS. NO 1/3 INCREASE HAS BEEN APPLIED.
10. MINIMUM CLEARANCE BETWEEN PIERS SHALL BE 8'-0".

CONCRETE:

1. MIX DESIGN REQUIREMENTS: (NORMAL WEIGHT CONCRETE)

STRENGTH Pc (28 DAYS)	W/C RATIO (NON-AIR ENTRAINED)	W/C RATIO (AIR ENTRAINED)	SLUMP (±1")	UNIT WEIGHT (NORMAL WEIGHT)
5000 PSI	0.44	0.35	3"	150 PCF

2. CONCRETE MIX DESIGN PARAMETERS ARE GOOD FOR EXPOSURE CATEGORIES F0, F1 & F2. THE AIR ENTRAINMENT FOR THESE CATEGORIES SHALL BE AS FOLLOWS: F0-0, F1-4.5, F2-6
3. CHANGES TO THE MIX DESIGN MUST BE APPROVED BY THE ENGINEER OR ARCHITECT OF RECORD AND DSA.
4. AGGREGATES SHALL CONFORM TO THE ASTM C-33 WITH PROVEN SHRINKAGE CHARACTERISTICS OF LESS THAN 0.005. MAX AGGREGATE SIZE = 1".
5. CEMENT SHALL CONFORM TO ASTM C-150 (TYPE V) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
6. CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A MINIMUM OF FIVE DAYS AFTER PLACEMENT. ALTERNATE METHODS WILL BE APPROVED IF SATISFACTORY PERFORMANCE CAN BE ASSURED.
7. CONCRETE SHALL NOT FREE FALL MORE THAN FIVE FEET.
8. CONCRETE DURABILITY SHALL BE PER CBC 1904A.1 ACI 318-19, CHAPTER 19.
9. CONCRETE SHALL BE TESTED PER CBC 1903A, TABLE 1705A.3. AND ACI 318-19, SECTION 26.12.
10. NO ADMIXTURE SHALL CONTAIN CALCIUM CHLORIDE.

REINFORCING STEEL:

1. REINFORCING STEEL SHALL BE DEFORMED STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A-615, AS FOLLOWS:
   GR 60: (#4 BARS AND LARGER)
   GR 40: (#3 BARS)
2. DETAILING, FABRICATION, AND ERECTION OF REINFORCING BARS SHALL CONFORM TO THE ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCING CONCRETE STRUCTURES."
3. MIN. COVER FOR CAST-IN-PLACE CONCRETE SHALL BE AS FOLLOWS:
   A. CAST AGAINST EARTH .....3"
   B. CAST AGAINST FORM BELOW GRADE .....2"
   C. FORMED SLABS (#11 BAR & SMALLER).....3/4"
   D. SLABS ON GRADE (FROM TOP OF SLAB).....1"
4. BARS SHALL BE CLEAN OF RUST, GREASE OR OTHER MATERIAL LIKELY TO IMPAIR BOND. BENDS SHALL BE MADE COLD.
5. REINFORCING SHALL BE LAP SPLICED PER ACI 318-19, SECTION 25.5.
6. PRIOR TO PLACING OF CONCRETE, REINFORCING STEEL AND EMBEDDED ITEMS SHALL BE WELL SECURED IN POSITION.
7. WELDING OF REINFORCING IS NOT ALLOWED.
8. REINFORCING STEEL SHALL BE INSPECTED PER CBC 1705A.3.

POWDER-COAT FINISH SYSTEM:

ALL BUILDINGS THAT HAVE A POWDER-COATED FINISH SHALL MEET THE FOLLOWING SPECIFICATIONS:

1. THE STEEL FRAME (HSS SECTIONS, COLD FORMED & PLATE STEEL) SHALL BE SHOT-BLASTED TO A NEAR WHITE CONDITION PER SSPC-10 SPECIFICATIONS.
2. THE STEEL SHALL BE WASHED IN A ZINC PHOSPHATE IN AN MINIMUM THREE STAGE ELECTRO DEPOSITION PRE-TREATEMENT PROCESS.
3. IMMEDIATELY FOLLOWING PRE-TREATMENT THE STEEL SHALL BE TOTALLY COATED IN AN EPOXY PRIMER TO A UNIFORM THICKNESS OF A MINIMUM OF 0.7 TO 0.9 MILS. THE E-COATING SHALL PROVIDE A MINIMUM OF 1000 HOURS OF SALT SPRAY CORROSION PROTECTION TO THE STEEL.
4. THE STEEL SHALL THEN HAVE A TGIC POLYESTER COLOR COAT APPLIED OVER THE E-COATED SURFACE.
5. THE FINISH THICKNESS OF THESE APPLICATIONS SHALL BE A MINIMUM OF 8 TO 12 MILS.
6. ALL CARBON STEEL MEMBERS (COLUMNS, BEAMS, PLATES, & COLD FORMED STEEL ETC.) NOT POWDER-COATED SHALL BE PAINTED WITH PRIME COAT PER THE "AISC CODE OF STANDARD PRACTICE" AND THE "AISC SPECIFICATION SECTION M3"(UNLESS NOTED OTHERWISE).

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DATE	7/25/2023
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APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-122375 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 10/10/2023

GENERAL INFO

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PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required.

LS1.1

PRINTED ON :

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS, 2022 CBC

Application Number: 04-122188
School Name: PC Update
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2022 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2022 CBC).

**NOTE: Undefined section and table references found in this document are from the CBC, or California Building Code.

KEY TO COLUMNS

1. TYPE	2. PERFORMED BY
Continuous – Indicates that a continuous special inspection is required	GE (Geotechnical Engineer) – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.
Periodic – Indicates that a periodic special inspection is required	LOR (Laboratory of Record) – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.
Test – Indicates that a test is required	PI (Project Inspector) – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.
	SI (Special Inspection) – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS), 2022 CBC

Table 1705A.6, Table 1705A.7, Table 1705A.8

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Geotechnical Reports: Project has a geotechnical report, or CDs indicate soils special inspection is required by GE

	S1. GENERAL:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☑	a. Verify that: • Site has been prepared properly prior to placement of controlled fill and/or excavations for foundations. • Foundation excavations are extended to proper depth and have reached proper material. • Materials below footings are adequate to achieve the design bearing capacity.	Periodic	GE*	* By geotechnical engineer or his or her qualified representative. (See Appendix (end of this form) form for exemptions.)

	S2. SOIL COMPACTION AND FILL:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Perform classification and testing of fill materials.	Test	LOR*	* Under the supervision of the geotechnical engineer.
☑	b. Verify use of proper materials, densities and inspect lift thicknesses, placement and compaction during placement of fill.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative. (Refer to specific items identified in the Appendix (end of this form) form for exemptions where soils SI and testing may be conducted under the supervision of a geotechnical engineer or LOR's engineering manager. In such cases, the LOR's form DSA 291 shall satisfy the soil SI and test reporting requirements for the exempt items.)
☑	c. Compaction testing.	Test	LOR*	* Under the supervision of the geotechnical engineer. (Refer to specific items identified in the Appendix (end of this form) for exemptions where soils testing may be conducted under the supervision of a geotechnical engineer or LOR's engineering manager. In such cases, the LOR's form DSA 291 shall satisfy the soil test reporting requirements for the exempt items.)

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS), 2022 CBC

Table 1705A.6, Table 1705A.7, Table 1705A.8

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	S3. DRIVEN DEEP FOUNDATIONS (PILES):			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Verify pile materials, sizes and lengths comply with the requirements.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
☐	b. Determine capacities of test piles and conduct additional load tests as required.	Test	LOR*	* Under the supervision of the geotechnical engineer.
☐	c. Inspect driving operations and maintain complete and accurate records for each pile.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
☐	d. Verify locations of piles and their plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and record any pile damage.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
☐	e. Steel piles.	Provide tests and inspections per STEEL section below.		
☐	f. Concrete piles and concrete filled piles.	Provide tests and inspections per CONCRETE section below.		
☐	g. For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	*	*	* As defined on drawings or specifications.

	S4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):			
	Test or Special Inspection	Type	Performed By	Code References and Note
☐	a. Inspect drilling operations and maintain complete and accurate records for each pier.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative. (See Appendix (end of this form) for exemptions.)

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS), 2022 CBC

Table 1705A.6, Table 1705A.7, Table 1705A.8

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	Test or Special Inspection	Type	Performed By	Code References and Note
☐	b. Verify pier locations, diameters, plumbness, bell diameters (if applicable), lengths and embedment into bedrock (if applicable); record concrete or grout volumes.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative. (See Appendix (end of this form) for exemptions.)
☐	c. Confirm adequate end strata bearing capacity.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative. (See Appendix (end of this form) for exemptions.)
☐	d. Concrete piers.	Provide tests and inspections per CONCRETE section below.		

	S5. RETAINING WALLS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Placement, compaction and inspection of backfill.	Continuous	GE*	1705A.6.1. * By geotechnical engineer or his or her qualified representative. (See section S2 above).
☐	b. Placement of soil reinforcement and/or drainage devices.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
☐	c. Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative. See DSA IR 18-2.
☐	d. Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.		
☐	e. Masonry retaining walls.	Provide tests and inspections per MASONRY section below.		

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS), 2022 CBC

Table 1705A.6, Table 1705A.7, Table 1705A.8

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	S6. OTHER SOILS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Soil Improvements	Test	GE*	Submit a comprehensive report documenting final soil improvements constructed, construction observation and the results of the confirmation testing and analysis to CGS (California Geological Survey) for final acceptance. * By geotechnical engineer or his or her qualified representative.
☐	b. Inspection of Soil Improvements	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
☐	c.			

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (CONCRETE), 2022 CBC

Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

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	C1. CAST-IN-PLACE CONCRETE			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☑	a. Verify use of required design mix.	Periodic	SI	Table 1705A.3 Item 5, 1910A.1.
☑	b. Identify, sample, and test reinforcing steel.	Test	LOR	1910A.2; ACI 318-19 Ch.20 and Section 26.6.1.2; DSA IR 17-10. (See Appendix (end of this form) for exemptions.)
☑	c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Test	LOR	Table 1705A.3 Item 6; ACI 318-19 Sections 26.5 & 26.12.
☑	d. Test concrete (f'_c).	Test	LOR	1905A.1.17; ACI 318-19 Section 26.12.
☐	e. Batch plant inspection:	See Notes	SI	Default of 'Continuous' per 1705A.3.3. If approved by DSA, batch plant inspection may be reduced to 'Periodic' subject to requirements in Section 1705A.3.3.1, or eliminated per 1705A.3.3.2. See IR 17-13. (See Appendix (end of this form) for exemptions.)
☐	f. Welding of reinforcing steel.	Provide special inspection per STEEL, Category S/A4(d) & (e) and/or S/A5(g) & (h) below.		

	C2. PRESTRESSED / POST-TENSIONED CONCRETE (IN ADDITION TO SECTION C1):			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Sample and test prestressing tendons and anchorages.	Test	LOR	1705A.3.4, 1910A.3
☐	b. Inspect placement of prestressing tendons.	Periodic	SI	1705A.3.4, Table 1705A.3 Items 1 & 9.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (CONCRETE), 2022 CBC

Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

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	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	c. Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	Periodic	SI	Table 1705A.3 Item 13. Special inspector to verify specified concrete strength test prior to stressing.
☐	d. Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons.	Continuous	SI	1705A.3.4, Table 1705A.3 Item 9; ACI 318-14 Section 26.13

	C3. PRECAST CONCRETE (IN ADDITION TO SECTION C1):			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Inspect fabrication of precast concrete members.	Continuous	SI	ACI 318-19 Section 26.13.
☐	b. Inspect erection of precast concrete members.	Periodic	SI*	Table 1705A.3 Item 10. * May be performed by PI when specifically approved by DSA.
☐	c. For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category D, E or F, inspect such connections and reinforcement in the field for: 1. Installation of the embedded parts 2. Completion of the continuity of reinforcement across joints. 3. Completion of connections in the field.	Continuous	SI	Table 1705A.3; ACI 318-19 Section 26.13.1.3; ACI 550.5
☐	d. Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5.	Periodic	SI	Table 1705A.3; ACI 318-19 Section 26.13.1.3; ACI 550.5

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (CONCRETE), 2022 CBC

Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

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	C4. SHOTCRETE (IN ADDITION TO SECTION C1):			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Inspect shotcrete placement for proper application techniques.	Continuous	SI	1705A.3.9, Table 1705A.3 Item 7, 1908A.1, 1908A.2, 1908A.3. See ACI 506.2-13 Section 3.4, ACI 506R-16.
☐	b. Sample and test shotcrete (f'_c).	Test	LOR	1908A.2, 1705A.3.9

	C5. POST-INSTALLED ANCHORS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Inspect installation of post-installed anchors	See Notes	SI*	1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8 (See Appendix (end of this form) for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA.
☐	b. Test post-installed anchors.	Test	LOR	1910A.5. (See Appendix (end of this form) for exemptions.)

	C6. OTHER CONCRETE:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a.			

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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	S/A1. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☑	a. Verify identification of all materials and: • Mill certificates indicate material properties that comply with requirements. • Material sizes, types and grades comply with requirements.	Periodic	*	Table 1705A.2.1 Item 3a–3c. 2202A.1; AISI S100-20 Section A3.1 & A3.2, AISI S240-20 Section A3 & A5, AISI S220-20 Sections A4 & A6. * By special inspector or qualified technician when performed off-site.
☑	b. Test unidentified materials	Test	LOR	2202A.1.
☑	c. Examine seam welds of HSS shapes	Periodic	SI	DSA IR 17-3.
☑	d. Verify and document steel fabrication per DSA-approved construction documents.	Periodic	SI	Not applicable to cold-formed steel light-frame construction, except for trusses (1705A.2.4).
☐	e. Buckling restrained braces.	Test	LOR	Testing and special inspections in accordance with IR 22-4.

	S/A2. HIGH-STRENGTH BOLTS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☑	a. Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA-approved documents.	Periodic	SI	Table 1705A.2.1 Items 1a & 1b; 2202A.1; AISC 360-16 Section A3.3, J3.1, and N3.2; RCSC 2014 Section 1.5 & 2.1; DSA IR 17-8 & DSA IR 17-9.
☑	b. Test high-strength bolts, nuts and washers.	Test	LOR	Table 1705A.2.1 Item 1c, 2213A.1; RCSC 2014 Section 7.2; DSA IR 17-8.
☑	c. Bearing-type ("snug tight") connections.	Periodic	SI	Table 1705A.2.1 Item 2a, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Section 9.1; DSA IR 17-9.
☑	d. Pretensioned and slip-critical connections.	*	SI	Table 1705A.2.1 Items 2b & 2c, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Sections 9.2 & 9.3; DSA IR 17-9. "Continuous" or "Periodic" depends on the tightening method used.

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HOLLAND MI, 49423
616.396.0919
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LS1.2

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required.

PRINTED ON :

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

Application Number: 04-122188
School Name: PC Update
School District: PC Update
DSA File Number:
Increment Number:
Date Created: 2023-04-19 08:36:32

	S/A3. WELDING:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☑	a. Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	Periodic	SI	1705A.2.5, Table 1705A.2.1 Items 4 & 5; AWS D1.1 and AWS D1.8 for structural steel; AWS D1.2 for Aluminum; AWS D1.3 for cold-formed steel; AWS D1.4 for reinforcing steel; DSA IR 17-3.
☑	b. Verify weld filler material manufacturer's certificate of compliance.	Periodic	SI	DSA IR 17-3.
☑	c. Verify WPS, welder qualifications and equipment.	Periodic	SI	DSA IR 17-3.

	S/A4. SHOP WELDING (IN ADDITION TO SECTION S/A3):			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☑	a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	Continuous	SI	Table 1705A.2.1 Items 5a.1–4; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
☑	b. Inspect single-pass fillet welds ≤ 5/16", floor and roof deck welds.	Periodic	SI	1705A.2.2, Table 1705A.2.1 Items 5a.5 & 5a.6; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
☐	c. Inspect welding of stairs and railing systems.	Periodic	SI	1705A.2.1; AISC 360-16 (and AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3.
☐	d. Verification of reinforcing steel weldability other than ASTM A706.	Periodic	SI	1705A.3.1; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
☐	e. Inspect welding of reinforcing steel.	Continuous	SI	Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8; AWS D1.4; DSA IR 17-3.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

Application Number: 04-122188
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	Test or Special Inspection	Type	Performed By	Code References and Notes
	S/A5. FIELD WELDING (IN ADDITION TO SECTION S/A3):			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	Continuous	SI	Table 1705A.2.1 Items 5a.1–4; AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
☐	b. Inspect single-pass fillet welds ≤ 5/16".	Periodic	SI	Table 1705A.2.1 Item 5a.5; AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
☐	c. Inspect end-welded studs (ASTM A-108) installation (including bend test).	Periodic	SI	2213A.2; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1; DSA IR 17-3.
☐	d. Inspect floor and roof deck welds.	Periodic	SI	1705A.2.2, Table 1705A.2.1 Item 5a.6; AISC 360-16 (AISC 341-16 as applicable); AWS D1.3; DSA IR 17-3.
☐	e. Inspect welding of structural cold-formed steel.	Periodic	SI*	1705A.2.5; AWS D1.3; DSA IR 17-3. The quality control provisions of AISI S240-20 Chapter D shall also apply. * May be performed by the project inspector when specifically approved by DSA.
☐	f. Inspect welding of stairs and railing systems.	Periodic	SI*	1705A.2.1; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3. * May be performed by the project inspector when specifically approved by DSA.
☐	g. Verification of reinforcing steel weldability.	Periodic	SI	1705A.3.1; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
☐	h. Inspect welding of reinforcing steel.	Continuous	SI	Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8; AWS D1.4; DSA IR 17-3.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

Application Number: 04-122188
School Name: PC Update
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	Test or Special Inspection	Type	Performed By	Code References and Notes
	S/A6. NONDESTRUCTIVE TESTING:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Ultrasonic	Test	LOR	1705A.2.1, 1705A.2.5; AISC 341-16 J6.2, AISC 360-16 N5.5; AWS D1.1, AWS D1.8; DSA IR 17-2.
☐	b. Magnetic Particle	Test	LOR	1705A.2.1, 1705A.2.5; AISC 341-16 J6.2, AISC 360-16 N5.5; AWS D1.1, AWS D1.8; DSA IR 17-2.
☐	c.	Test	LOR	

	S/A7. STEEL JOISTS AND TRUSSES:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Verify size, type and grade for all chord and web members as well as connectors and weld filler material; verify joist profile, dimensions and camber (if applicable); verify all weld locations, lengths and profiles; mark or tag each joist.	Continuous	SI	1705A.2.3, Table 1705A.2.3; AWS D1.1; DSA IR 22-3 for steel joists only. 1705A.2.4; AWS D1.3 for cold-formed steel trusses.

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DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 02
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 04/11/2025

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DATE	7/25/2023
REV	
REV DATE	

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REGISTERED PROFESSIONAL ENGINEER
WILLIAM D. ROSE
No. S3600
STRUCTURAL
STATE OF CALIFORNIA
Oct 04, 2023

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

Application Number: 04-122188
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	Test or Special Inspection	Type	Performed By	Code References and Notes
	S/A8. SPRAYED FIRE-RESISTANT MATERIALS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Examine structural steel surface conditions, inspect application, take samples, measure thickness and verify compliance of all aspects of application with DSA-approved documents.	Periodic	SI	1705A.15, 1705A.1, 1705A.2, 1705A.3, 1705A.4.
☐	b. Test density.	Test	LOR	1705A.15.1, 1705A.15.5, ASTM E736
☐	c. Bond strength adhesion/cohesion.	Test	LOR	1705A.15.1, 1705A.15.4, ASTM E605

	S/A9. ANCHOR BOLTS AND ANCHOR RODS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☑	a. Anchor Bolts and Anchor Rods	Test	LOR	Sample and test anchor bolts and anchor rods not readily identifiable per procedures noted in DSA IR 17-11.
☐	b. Threaded rod not used for foundation anchorage.	Test	LOR	Sample and test threaded rods not readily identifiable per procedures noted in DSA IR 17-11.

	S/A10. STORAGE RACK SYSTEMS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Materials used, to verify compliance with one or more of the material test reports in accordance with the approved construction documents.	Periodic	SI	Table 1705A.13.7
☐	b. Fabricated storage rack elements.	Periodic	SI	1704A.2.5; Table 1705A.13.7

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	c. Storage rack anchorage installation.	Periodic	SI	ANSI/MH16.1 Section 7.3.2; Table 1705A.13.7
☐	d. Completed storage rack system to indicate compliance with the approved construction documents.	Periodic	SI*	Table 1705A.13.7; * May be preformed by the project inspector when specifically approved by DSA.

	S/A11. Other Steel			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a.			

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (OTHER), 2022 CBC

Application Number: 04-122188
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Date Created: 2023-04-19 08:36:32

	X1. OTHER:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	a. Load test for identified product(s):	Test	LOR	1709A.2, 1709A.3. Testing is not required for: 1) a product with a valid evaluation service report per DSA IR A-5, or 2) a product that can be justified by structural calculation.
☐	b. Installation torque for non-HS bolts	Continuous	SI*	Applicable to communication towers identified as Essential Service Facility Projects (ESFP). Calibrated wrench use required, verified by SI during installation. DSA Policy PL 18-01: Communication Towers, Poles and Buildings Utilized by State Agencies for Essential Services Communications.*EXCEPTION: Non-ESFP may use PI without need for notification to DSA.
☐	c.			

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APP: 04-122375 PC
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DATE: 10/10/2023

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 04-122188
School Name: PC Update
School District: PC Update
DSA File Number:
Increment Number:
Date Created: 2023-04-19 08:36:32

Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. Items marked as exempt shall be identified on the approved construction documents. The project inspector shall verify all construction complies with the approved construction documents.

	SOILS:
☐	1. Deep foundations acting as a cantilever footing with a design based on minimum allowable pressures per CBC Table 1806A.2 and without a geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.
☐	2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/compaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill.

	CONCRETE/MASONRY:
☐	1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding" in the Appendix below) given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding" in the Appendix below
☐	2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.
☐	3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.
☐	4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 04-122188
School Name: PC Update
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	CONCRETE/MASONRY:
☐	5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.

	WELDING:
☐	1. Solid-clad and open-mesh fences, gates with maximum leaf span of 10', and gates with a maximum rolling section of 10' all having an apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates/fences are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
☐	2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush.
☐	3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud.
☐	4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections S/A3, S/A4 and/or S/A5 of listing above).
☐	5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections S/A3, S/A4 and/or S/A5 of listing above).
☐	6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for sections S/A3, S/A4 and/or S/A5 located in the Steel/Aluminum category of listing above).
☐	7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) ≤4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS(SIGNATURE), 2022 CBC

Application Number: 04-122188
School Name: PC Update
School District: PC Update
DSA File Number:
Increment Number:
Date Created: 2023-04-19 08:36:32

Name of Architect or Engineer in general responsible charge:

Name of Structural Engineer (When structural design has been delegated):

Signature of Architect or Structural Engineer: Date:

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

DSA STAMP

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required.

DSA 103

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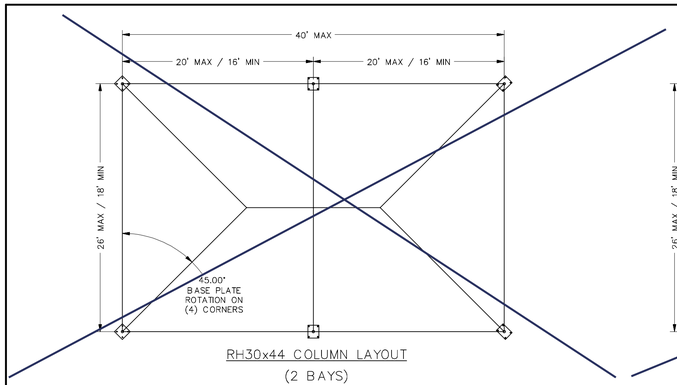
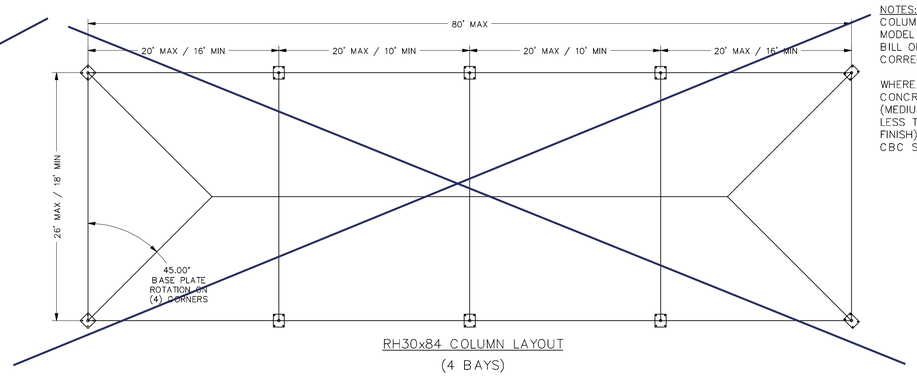


RH30x44 COLUMN LAYOUT

(2 BAYS)



RH30x84 COLUMN LAYOUT

(4 BAYS)

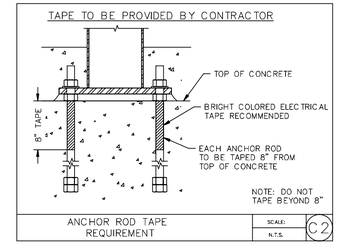
NOTES:

COLUMN SIZE AND LOCATION WILL VARY DEPENDING ON MODEL TYPE ORDERED, PLEASE REFER TO JOB SPECIFIC BILL OF MATERIALS AND INSTALLATION MANUAL FOR CORRECT PLACEMENT AND SIZE.

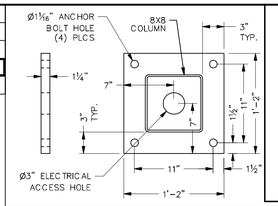
WHERE CONCRETE SLAB SPECIFIED PORTLAND CEMENT CONCRETE PAVING SHALL HAVE A MEDIUM SALTED (MEDIUM BROOM) FINISH ON ALL SURFACES SLOPED LESS THAN 6% AND SLIP RESISTANT (HEAVY BROOM FINISH) ON ALL SURFACES SLOPED GREATER THAN 6% CBC SECTION 1133B.7.1

BASE PLATE LOCATION

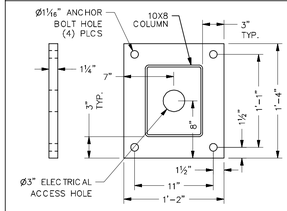
	DETAIL A	DETAIL B
8'	BP1	BP2
10'	BP1	BP2
12'	BP2	BP3



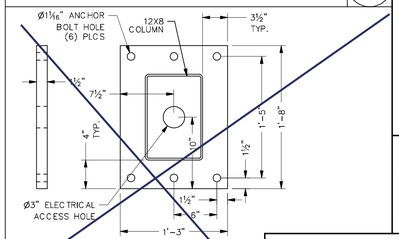
ANCHOR ROD TAPE REQUIREMENT — SCALE: N.T.S. — C2



8X8 COLUMN BASE PLATE DETAIL — BP1



10X8 COLUMN BASE PLATE DETAIL — BP2



12X8 COLUMN BASE PLATE DETAIL — BP3

ALL ANCHORS RODS SHALL BE 1" X 26" U.N.O.

IDENTIFICATION STAMP
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DATE: 04/11/2025

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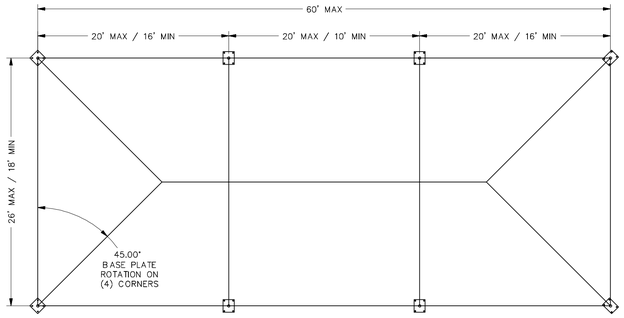
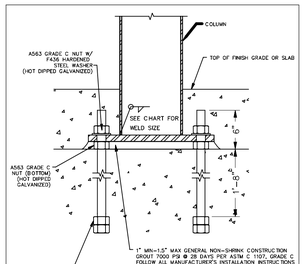
Oct 04, 2023



RH30x64 COLUMN LAYOUT

(3 BAYS)



NOTES:

COLUMN BASE PLATES ARE TO HAVE DOUBLE NUTS. PLACE ONE NUT UNDER THE PLATE AND ONE NUT ON TOP WITH A WASHER UNDER THE NUT.

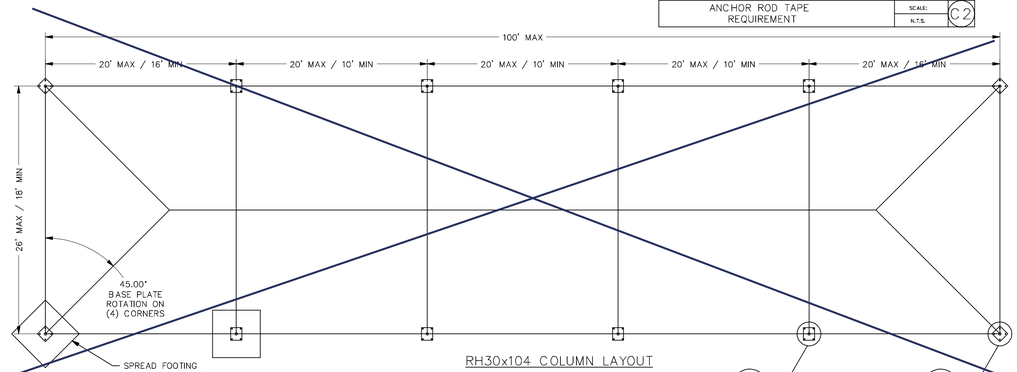
THE BOTTOM NUT CAN BE USED AS A LEVELING NUT.

AFTER COLUMN IS SET AND LEVELED AND THE NUTS HAVE BEEN TIGHTENED THE COLUMN MUST HAVE NON-SHRINK GROUT PLACED UNDER THE BASE PLATE BEFORE COVERING THE BASE WITH CONCRETE.

REFER TO FOOTING DETAIL FOR ROD/NUT LOCATIONS AND SIZE.

FOUNDATION ANCHORS ARE TO BE UNTORQUED.

COLUMN BASE CONNECTION DETAIL — SCALE: N.T.S. — C1



ANCHOR ROD DETAIL

1.HEAT TREATED

2.MAX CARBON CONTENT–27%

3.MAX MANGANESE CONTENT

0.6 TO 0.9%

RH30x104 COLUMN LAYOUT

(5 BAYS)

SIDE COLUMNS

CORNER COLUMNS

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-122375 PC
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SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 10/10/2023

30' WIDE RECTANGULAR HIP

RH30 - PIER

8' height - Corner Columns				8' height - Corner Columns				8' height - Corner Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size
30	114	8	6	30	98	8	6	30	88	8	6
8' height - Side Columns				8' height - Side Columns				8' height - Side Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size
36	144	12	6	30	132	8	6	30	118	8	6
8' Eave - 1500 psf [ ]				**8' Eave - 2000 psf [ ]**				**8' Eave - 3000 psf [ ]**			

10' height - Corner Columns				10' height - Corner Columns				10' height - Corner Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size
30	120	8	6	30	102	8	6	30	92	8	6
10' height - Side Columns				10' height - Side Columns				10' height - Side Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size
36	136	12	6	36	116	12	6	36	104	12	6
10' Eave - 1500 psf [ ]				**10' Eave - 2000 psf [ ]**				**10' Eave - 3000 psf [ ]**			

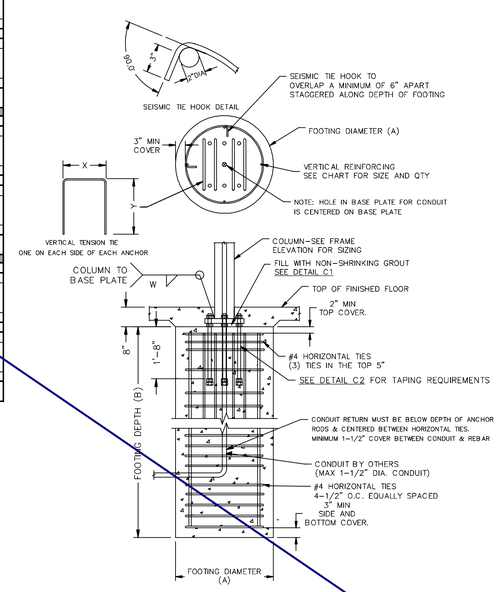
12' height - Corner Columns				12' height - Corner Columns				12' height - Corner Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size
30	132	8	6	30	112	8	6	30	102	8	6
12' height - Side Columns				12' height - Side Columns				12' height - Side Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size	Dia (A) (in)	Depth (B) (in)	Vertical Rebar Qty	Rebar Size
36	140	12	6	36	120	12	6	36	108	12	6
10' Eave - 1500 psf [ ]				**10' Eave - 2000 psf [ ]**				**10' Eave - 3000 psf [ ]**			

8' height - Corner Columns			
Rebar Dimensions			Weld
X (in)	Y (in)	Rebar Size	Fillet Weld "W"
12	47	6	1/4
8' height - Side Columns			
Rebar Dimensions			Weld
X (in)	Y (in)	Rebar Size	Fillet Weld "W"
16	59	7	1/4
8' Eave - Rebar & Weld			

10' height - Corner Columns			
Rebar Dimensions			Weld
X (in)	Y (in)	Rebar Size	Fillet Weld "W"
12	47	6	1/4
10' height - Side Columns			
Rebar Dimensions			Weld
X (in)	Y (in)	Rebar Size	Fillet Weld "W"
16	59	7	1/4
10' Eave - Rebar & Weld			

12' height - Corner Columns			
Rebar Dimensions			Weld
X (in)	Y (in)	Rebar Size	Fillet Weld "W"
16	59	7	5/16
12' height - Side Columns			
Rebar Dimensions			Weld
X (in)	Y (in)	Rebar Size	Fillet Weld "W"
20	59	7	1/4
12' Eave - Rebar & Weld			

SEE DETAILS BP1, BP2 OR BP3 FOR ANCHOR BOLT PATTERNS
BP1 & BP2 ARE (4) BOLT PATTERN WHILE B3 IS A (6) BOLT



RH30 - SPREAD

8' height - Corner Columns				8' height - Corner Columns				8' height - Corner Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size
60	30	8	6	57	30	7	6	57	30	7	6
8' height - Side Columns				8' height - Side Columns				8' height - Side Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size
84	30	11	6	81	30	10	6	75	30	10	6
8' Eave - 1500 psf [ ]				**8' Eave - 2000 psf [ ]**				**8' Eave - 3000 psf [ ]**			

10' height - Corner Columns				10' height - Corner Columns				10' height - Corner Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size
66	30	9	6	63	30	8	6	63	30	8	6
10' height - Side Columns				10' height - Side Columns				10' height - Side Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size
81	30	10	6	75	30	10	6	75	30	10	6
10' Eave - 1500 psf [ ]				**10' Eave - 2000 psf [ ]**				**10' Eave - 3000 psf [X]**			

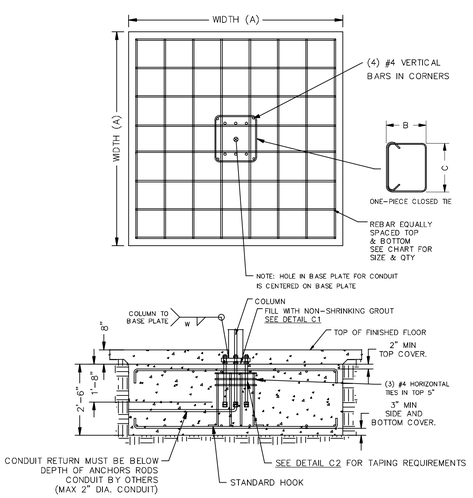
12' height - Corner Columns				12' height - Corner Columns				12' height - Corner Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size
78	30	10	6	78	30	10	6	72	30	9	6
12' height - Side Columns				12' height - Side Columns				12' height - Side Columns			
Soil Class 5 - 1500 psf Bearing				Soil Class 4 - 2000 psf Bearing				Soil Class 3 - 3000 psf Bearing			
Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size	Size (A) (in)	Depth (in)	T&B Rebar Qty	Rebar Size
84	30	11	6	78	30	10	6	78	30	10	6
12' Eave - 1500 psf [ ]				**12' Eave - 2000 psf [ ]**				**12' Eave - 3000 psf [ ]**			

8' - Corner Columns			
Tie Dimensions			Weld
B (in)	C (in)	Rebar Size	Fillet Weld "W"
16	17.5	5	1/4
8' - Side Columns			
Tie Dimensions			Weld
B (in)	C (in)	Rebar Size	Fillet Weld "W"
16	19.5	5	1/4
8' Eave - Rebar & Weld			

10' - Corner Columns			
Tie Dimensions			Weld
B (in)	C (in)	Rebar Size	Fillet Weld "W"
16	17.5	5	1/4
10' - Side Columns			
Tie Dimensions			Weld
B (in)	C (in)	Rebar Size	Fillet Weld "W"
16	19.5	5	1/4
10' Eave - Rebar & Weld			

12' - Corner Columns			
Tie Dimensions			Weld
B (in)	C (in)	Rebar Size	Fillet Weld "W"
16	19.5	5	5/16
12' - Side Columns			
Tie Dimensions			Weld
B (in)	C (in)	Rebar Size	Fillet Weld "W"
17	21.5	5	1/4
12' Eave - Rebar & Weld			

SEE DETAILS BP1, BP2 OR BP3 FOR ANCHOR BOLT PATTERNS
BP1 & BP2 ARE (4) BOLT PATTERN WHILE B3 IS A (6) BOLT



30' WIDE RECTANGULAR HIP FOUNDATION PLAN

ICON Shelter Systems Inc
DISTINCTIVE STEEL SHELTERS
WWW.ICONSHELTERS.COM

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1455 LINCOLN AVE
HOLLAND MI, 49423

616.396.0919
800.748.0985
616.396.0944 FX

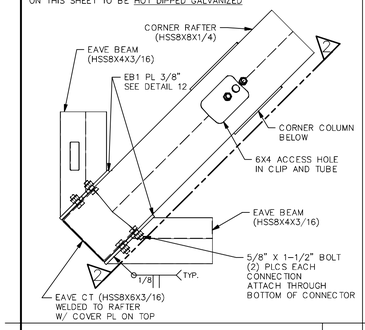
PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required.

LS3.0

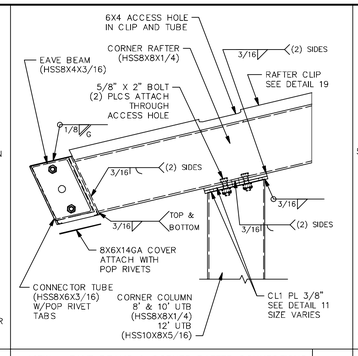
S:\Engineering\Inventor\DSA 2022\PC 2022 RH DSA\30 FOOT\30 WIDE BASE PLATE 1 - DSA 2022 HIP.ipt

PRINTED ON :

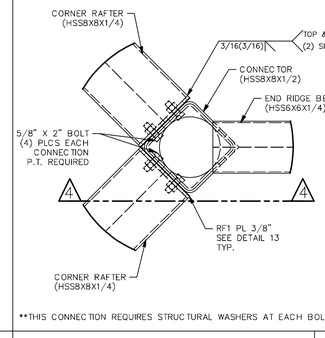
ALL STRUCTURAL FASTENERS (NUTS, BOLTS, & WASHERS) ON THIS SHEET TO BE HOT DIPPED GALVANIZED



PLAN – EAVE BEAMS & CORNER RAFTER CONNECTIONS @ CORNER COLUMN | 1

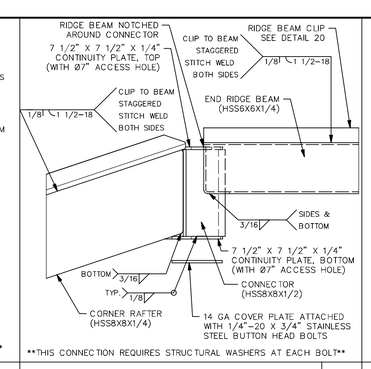


VIEW – EAVE BEAMS & CORNER RAFTER CONNECTIONS @ CORNER COLUMN | 2



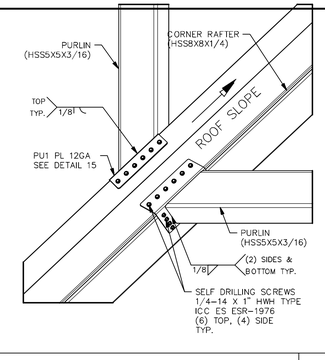
THIS CONNECTION REQUIRES STRUCTURAL WASHERS AT EACH BOLT

PLAN – CORNER RAFTERS CONNECTIONS @ END RIDGE BEAM | 3

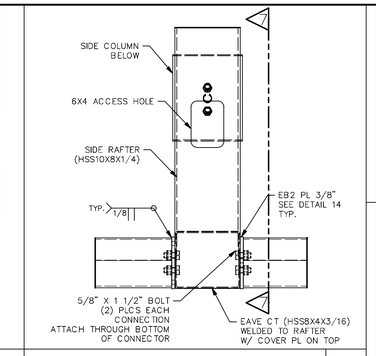


THIS CONNECTION REQUIRES STRUCTURAL WASHERS AT EACH BOLT

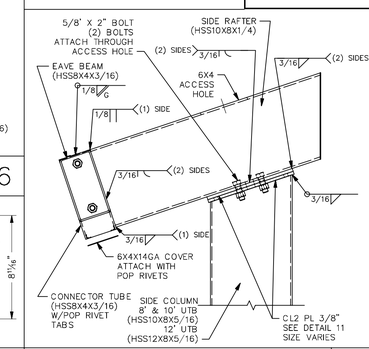
VIEW – CORNER RAFTERS CONNECTIONS @ END RIDGE BEAM | 4



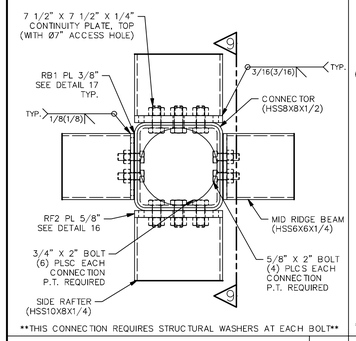
ISOMETRIC – PURLIN CONNECTIONS @ CORNER RAFTER | 5



PLAN – EAVE BEAM & SIDE RAFTER CONNECTION @ SIDE COLUMN | 6

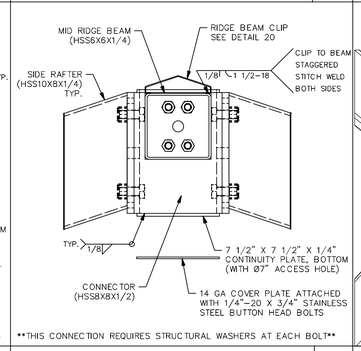


VIEW – EAVE BEAM & SIDE RAFTER CONNECTION @ SIDE COLUMN | 7



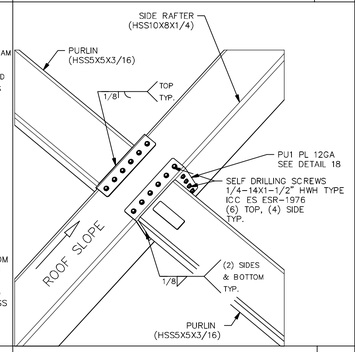
THIS CONNECTION REQUIRES STRUCTURAL WASHERS AT EACH BOLT

PLAN – SIDE RAFTERS & RIDGE BEAM CONNECTIONS @ CONNECTOR | 8

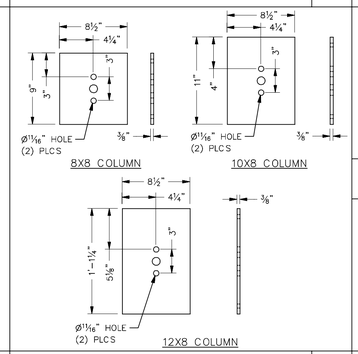


THIS CONNECTION REQUIRES STRUCTURAL WASHERS AT EACH BOLT

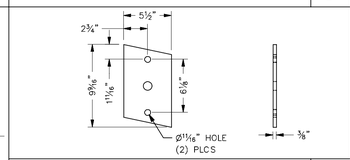
VIEW – SIDE RAFTERS & RIDGE BEAM CONNECTIONS @ CONNECTOR | 9



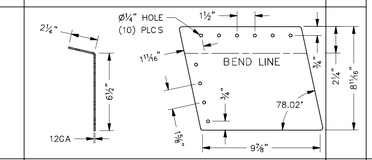
ISOMETRIC – PURLIN CONNECTIONS @ SIDE RAFTER | 10



COLUMN TO RAFTER PLATE DETAIL | 11

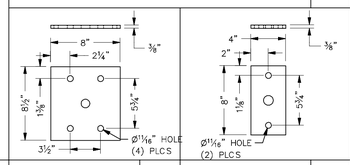


CORNER EAVE BEAM PLATE DETAIL | 12



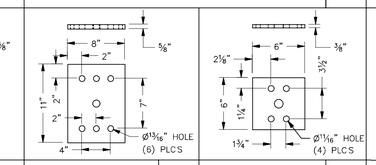
CORNER PURLIN PLATE DETAIL | 15

VIEW – EAVE BEAM & SIDE RAFTER CONNECTION @ SIDE COLUMN | 7



CORNER RAFTER PLATE DETAIL | 13

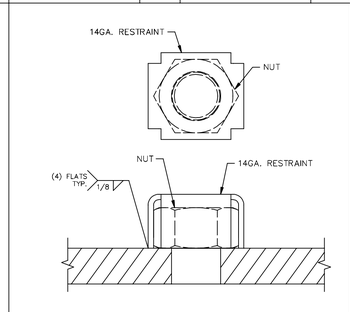
SIDE EAVE BEAM PLATE DETAIL | 14



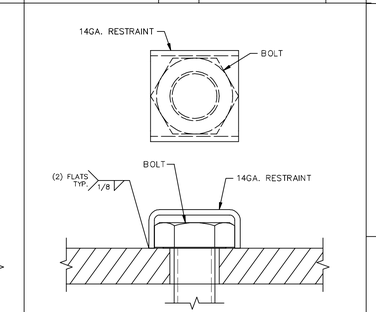
SIDE RAFTER PLATE DETAIL | 16

RIDGE BEAM PLATE DETAIL | 17

SIDE PURLIN PLATE DETAIL | 18

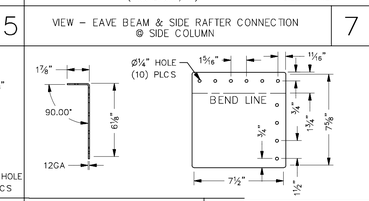


TYPICAL NUT RESTRAINING SYSTEM | NR

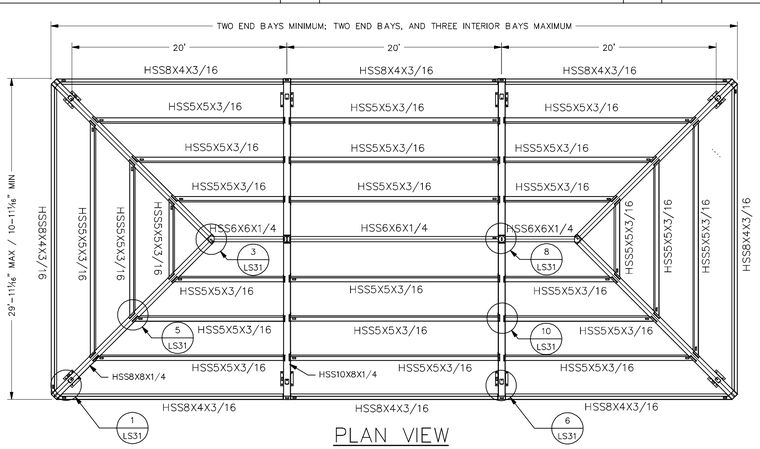


ALL BOLTS ARE ASTM F3125 GR A325 HIGH STRENGTH BOLTS PER SHEET LS1.0

TYPICAL BOLT RESTRAINING SYSTEM | BR



SIDE PURLIN PLATE DETAIL | 18



PLAN VIEW

MODEL DESIGNATION	
RH30X44	2 BAY
RH30X64	3 BAY
RH30X84	4 BAY
RH30X104	5 BAY

*NOTE:
QUANTITIES WILL VARY DEPENDING ON SHELTER SIZE ORDERED, PLEASE REFER TO JOB SPECIFIC BILL OF MATERIALS AND INSTALLATION MANUAL.

ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	LENGTH	UNIT WEIGHT
1	4		CORNER COLUMN	**SEE NOTE BELOW		353 lbmass
2	*		SIDE COLUMN	**SEE NOTE BELOW		473 lbmass
3	2		LH SIDE EAVE BEAM	HSS8X4X3/16		311 lbmass
4	2		RH SIDE EAVE BEAM	HSS8X4X3/16		311 lbmass
5	2		END EAVE BEAM	HSS8X4X3/16		422 lbmass
6	*		SIDE EAVE BEAM	HSS8X4X3/16		287 lbmass
7	4		CORNER RAFTER	HSS8X8X1/4		607 lbmass
8	4		SIDE RAFTER	HSS10X8X1/4		473 lbmass
9	2		END RIDGE BEAM	HSS6X6X3/16		149 lbmass
10	*		MID RIDGE BEAM	HSS6X6X3/16		329 lbmass
11	*		CONNECTOR	HSS8X8X1/2		48 lbmass
12	*		LH SIDE PURLIN 1	HSS5X5X3/16		210 lbmass
13	*		RH SIDE PURLIN 1	HSS5X5X3/16		210 lbmass
14	*		END PURLIN 1	HSS5X5X3/16		257 lbmass
15	*		LH SIDE PURLIN 2	HSS5X5X3/16		166 lbmass
16	*		RH SIDE PURLIN 2	HSS5X5X3/16		166 lbmass
17	*		END PURLIN 2	HSS5X5X3/16		169 lbmass
18	*		LH SIDE PURLIN 3	HSS5X5X3/16		122 lbmass
19	*		RH SIDE PURLIN 3	HSS5X5X3/16		122 lbmass
20	*		END PURLIN 3	HSS5X5X3/16		81 lbmass
21	*		MID PURLIN	HSS5X5X3/16		235 lbmass

**NOTE:
MATERIAL WILL VARY DEPENDING ON SHELTER SIZE ORDERED.

☐ CORNER COLUMN 8' UTB – (HSS8X8X1/4)
☐ SIDE COLUMN 8' UTB – (HSS10X8X5/16)

☐ CORNER COLUMN 10' UTB – (HSS8X8X1/4)
☐ SIDE COLUMN 10' UTB – (HSS10X8X5/16)

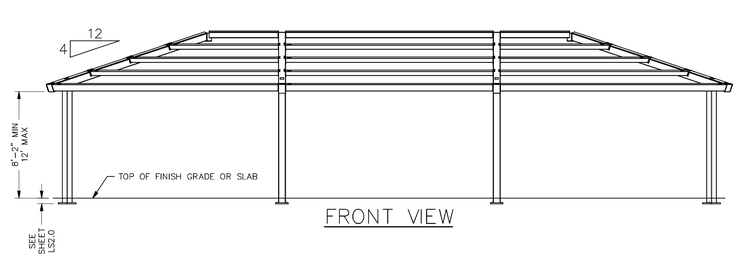
☐ CORNER COLUMN 12' UTB – (HSS10X8X5/16)
☐ SIDE COLUMN 12' UTB – (HSS12X8X5/16)

**IF MULTI RIB ROOFING IS SELECTED ONLY (4) PURLINS ARE REQUIRED PER BAY (2) PER END

**IF MEGA RIB ROOFING IS SELECTED ONLY (4) PURLINS ARE REQUIRED PER BAY (2) PER END

**IF STANDING SEAM ROOFING IS SELECTED ADDITIONAL PURLINS ARE REQUIRED (6) PURLINS REQUIRED PER BAY (3) PER END

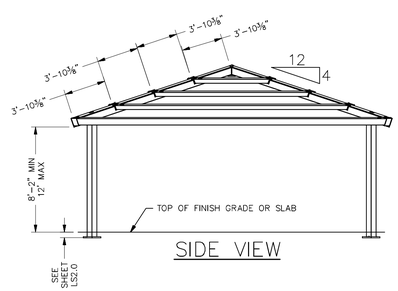
STANDING SEAM FRAMING OPTION SHOWN



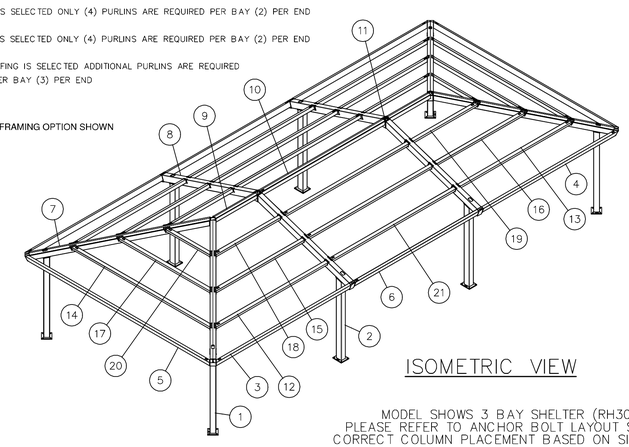
FRONT VIEW

98" MIN IF USED OVER ACCESSIBLE PARKING OR ACCESS AISLES

114" MIN IF LOCATED OVER ACCESSIBLE PASSENGER LOADING ZONES

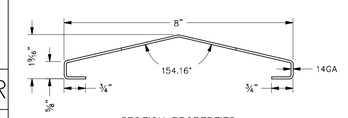


SIDE VIEW



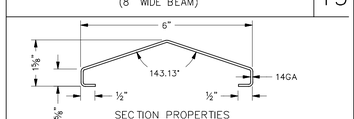
ISOMETRIC VIEW

MODEL SHOWS 3 BAY SHELTER (RH30X64)
PLEASE REFER TO ANCHOR BOLT LAYOUT SHEET FOR CORRECT COLUMN PLACEMENT BASED ON SIZE ORDERED



SECTION PROPERTIES
A=0.863 in^2 Fy=36 ksi
Ix=0.197 in^4 Sx=0.286 in^3
Iy=6.579 in^4 Sy=1.645 in^3

CORNER RAFTER CLIP (8" WIDE BEAM) | 19



SECTION PROPERTIES
A=0.657 in^2 Fy=36 ksi
Ix=0.087 in^4 Sx=0.03 in^3
Iy=2.92 in^4 Sy=0.97 in^3

RIDGE BEAM CLIP (6" WIDE BEAM) | 20

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APP: 02-122910 INC: 02
REVIEWED FOR
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DATE: 04/11/2025

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DATE	7/25/2023
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2700 SATURN ST BREA, CA 92821
T. 714.524.1870 F. 714.524.1875
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REGISTERED PROFESSIONAL ENGINEER Jeffrey Dale Roth STRUCTURAL STATE OF CALIFORNIA
Oct 04, 2023

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DIV. OF THE STATE ARCHITECT
APP: 04-122375 PC
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DATE: 10/10/2023

30' WIDE RECTANGULAR HIP FRAMING & CONNECTION DETAILS

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DISTINCTIVE STEEL SHELTERS
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HOLLAND MI, 49423
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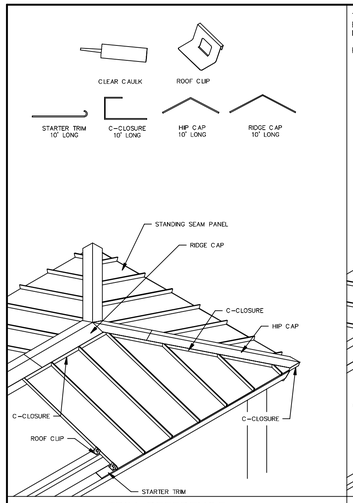
30' WIDE RECTANGULAR HIP

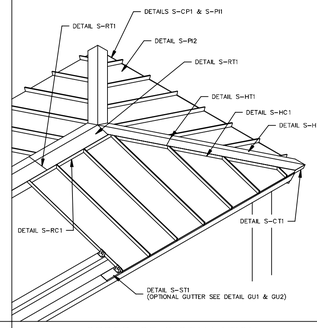


TRIM REFERENCE

THESE DETAILS ASSUME THAT ALL COMPONENTS OF THIS ROOF SYSTEM WILL BE INSTALLED PLUMB AND SQUARE. CAULK AND TRIM SHOULD ALSO BE INSTALLED TO INSURE WATER TIGHTNESS

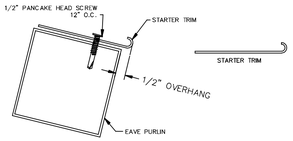
READ ALL DETAILS IN THIS INSTALLATION MANUAL BEFORE STARTING

S-ST1 STARTER TRIM
S-CP1 ROOF PANEL PREPARATION
S-PI1 FIRST ROOF PANEL
S-PI2 SECOND ROOF PANEL
S-HC1 C-CLOSURE @ HIP
S-RC1 C-CLOSURE @ RIDGE
S-CT1 CORNER TRIM
S-HT1 HIP CAP
S-RT1 RIDGE CAP



ORDER OF INSTALLATION

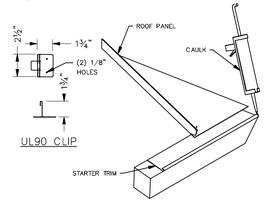
INSTALL STARTER TRIM OVERHANGING THE EDGE OF THE EAVE PURLIN 1/2". ATTACH STARTER TRIM WITH 1 1/2" PANCAKE HEAD SCREWS 12" O.C.



NOTE: SEE DETAILS GU1 AND GU2 IF INSTALLING OPTIONAL GUTTER SYSTEM

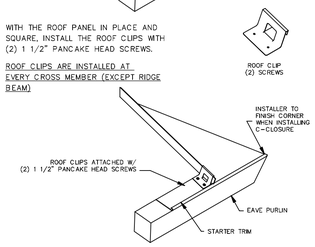
STARTER INSTALLATION S-ST1

AFTER THE ROOF PANEL HAS BEEN CUT TO SIZE (IF NECESSARY) AND NOTCHED, TEST FIT THE PANEL. THEN APPLY A BEAD OF CAULK THE APPROXIMATE LENGTH OF THE PANEL. SLIDE THE PANEL INTO PLACE, AND SQUARE IT UP TO THE ROOF.



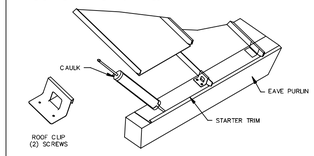
WITH THE ROOF PANEL IN PLACE AND SQUARE, INSTALL THE ROOF CLIPS WITH (2) 1 1/2" PANCAKE HEAD SCREWS.

ROOF CLIPS ARE INSTALLED AT EVERY CROSS MEMBER (EXCEPT RIDGE BEAM)



INSTALLATION OF FIRST ROOF PANEL S-PI1

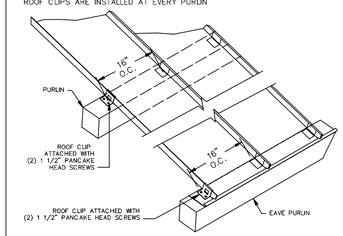
AFTER THE SECOND ROOF PANEL HAS BEEN CUT TO LENGTH (IF NECESSARY) AND NOTCHED, TEST FIT PANEL. THEN APPLY A BEAD OF CAULK INSIDE THE STARTER TRIM. SLIDE THE SECOND ROOF PANEL IN PLACE AND SNAP IT OVER THE BATTEN OF THE FIRST PANEL



WITH THE SECOND ROOF PANEL IN PLACE AND SQUARE, INSTALL THE ROOF CLIPS WITH (2) 1 1/2" PANCAKE HEAD SCREWS.

REPEAT THIS STEP UNTIL ALL ROOF PANELS ARE INSTALLED

ROOF CLIPS ARE INSTALLED AT EVERY PURLIN

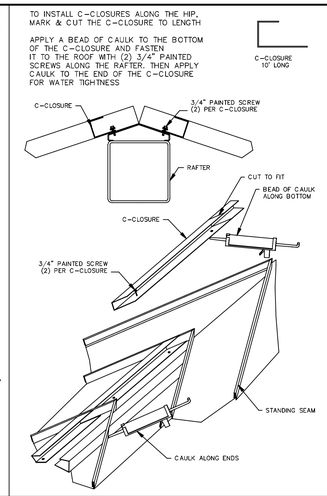


ROOF CLIPS ARE INSTALLED AT EVERY PURLIN

INSTALLATION OF SECOND ROOF PANEL S-PI2

TO INSTALL C-CLOSURES ALONG THE HIP, MARK & CUT THE C-CLOSURE TO LENGTH

APPLY A BEAD OF CAULK TO THE BOTTOM OF THE C-CLOSURE AND FASTEN IT TO THE ROOF WITH (2) 3/4" PAINTED SCREWS ALONG THE RAFTER. THEN APPLY CAULK TO THE END OF THE C-CLOSURE FOR WATER TIGHTNESS



INSTALLATION OF HIP C-CLOSURE S-HC1

ROOF NOTES

ATTENTION INSTALLERS:
METAL SHAVINGS LEFT ON ROOF WILL QUICKLY RUST AND STAIN THE ROOF FINISH!

DRILLING OR INSTALLING ROOF FASTENERS WILL CAUSE METAL SHAVINGS. THESE SHAVINGS MUST BE CAREFULLY REMOVED AT THE END OF EACH DAY BY EITHER SWEEPING OR BRUSHING THE INSTALLED ROOF.

INSTALLED CORRECTLY	INSTALLED TOO TIGHT	INSTALLED TOO LOOSE
THE SEALING MATERIAL SLIGHTLY VISIBLE AROUND THE METAL WASHER	THE SEALING MATERIAL IS DEFORMED BEYOND THE EDGE OF THE METAL WASHER	THE SEALING MATERIAL IS NOT VISIBLE AROUND THE EDGE OF THE METAL WASHER

THE ERECTOR SHOULD THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL INSTALLATION INSTRUCTION MATERIAL BEFORE STARTING WORK.

THE PANELS SHOULD BE INSTALLED PLUMB, STRAIGHT, AND ACCURATELY TO THE ADJACENT WORK.

ERECTORS SHALL BE RESPONSIBLE TO ENSURE THAT THE DETAILS MEET PARTICULAR BUILDING REQUIREMENTS AND TO ASSURE ADEQUATE WATER TIGHTNESS.

FOR THE BEST APPEARANCE ALL TRIM AND FLASHING SHALL BE INSTALLED TRUE, AND IN PROPER ALIGNMENT, WITH ALL EXPOSED FASTENERS EQUALLY SPACED.

SOME FIELD CUTTING AND/OR FITTING OF PANELS, TRIM AND FLASHING IS TO BE EXPECTED BY THE ERECTOR. MINOR FIELD CORRECTIONS ARE PART OF NORMAL ERECTION WORK.

THE INSTALLATION SHALL BE PERFORMED BY EXPERIENCED METAL CRAFTSPERSON AND WORKMANSHIP SHALL MEET THE BEST INDUSTRY STANDARDS.

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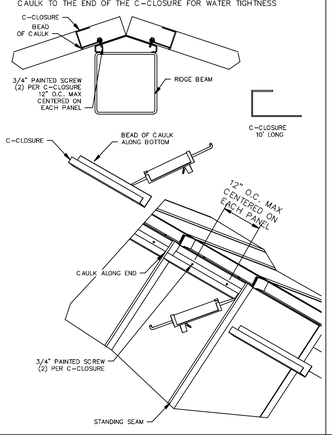
REGISTERED PROFESSIONAL ENGINEER
Oct 04, 2023

TO INSTALL C-CLOSURES ALONG THE RIDGE MEASURE, MARK & CUT THE C-CLOSURE TO LENGTH.

APPLY A 1/4" BEAD OF CAULK TO THE BOTTOM OF THE C-CLOSURE AND FASTEN IT TO THE ROOF WITH (2) 3/4" PAINTED SCREWS (12" O.C. MAX CENTERED ON EACH PANEL) ALONG THE RIDGE BEAM. THEN APPLY CAULK TO THE END OF THE C-CLOSURE FOR WATER TIGHTNESS

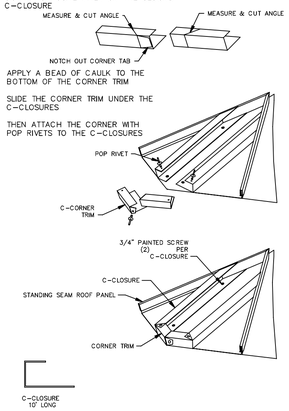


INSTALLATION OF C-CLOSURE @ RIDGE S-RC1

TO FINISH OFF THE END OF THE HIP, MAKE A CORNER CAP BY CUTTING TWO PIECES OF C-CLOSURE TO LENGTH

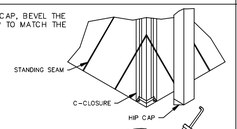
MEASURE AND CUT A MITER AND CORNER TAB ON (1) PIECE OF C-CLOSURE

CUT AN OPPOSITE MITER ON THE SECOND C-CLOSURE

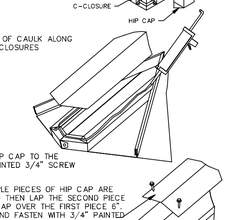


INSTALLATION OF CORNER TRIM S-CT1

TO INSTALL THE HIP CAP, BEVEL THE END OF THE HIP CAP TO MATCH THE ANGLE OF THE ROOF

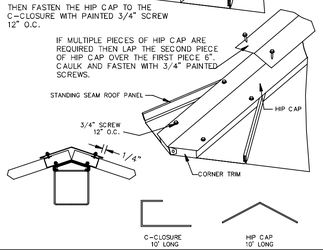


NEXT APPLY A BEAD OF CAULK ALONG THE TOP OF THE C-CLOSURES



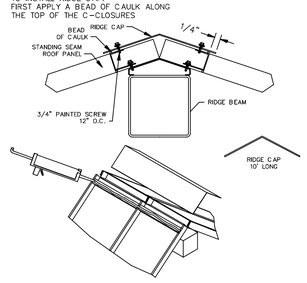
THEN FASTEN THE HIP CAP TO THE C-CLOSURE WITH PAINTED 3/4" SCREW 12" O.C.

IF MULTIPLE PIECES OF HIP CAP ARE REQUIRED THEN LAP THE SECOND PIECE OF HIP CAP OVER THE FIRST PIECE 6". CAULK AND FASTEN WITH 3/4" PAINTED SCREWS.



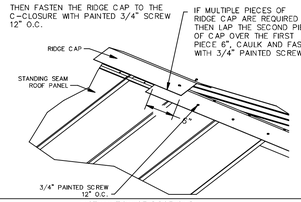
INSTALLATION OF HIP CAP S-HT1

TO INSTALL RIDGE CAP:
FIRST APPLY A BEAD OF CAULK ALONG THE TOP OF THE C-CLOSURES

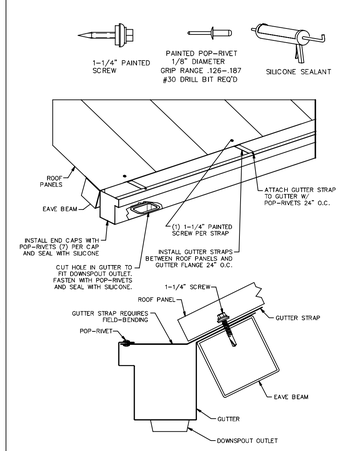


THEN FASTEN THE RIDGE CAP TO THE C-CLOSURE WITH PAINTED 3/4" SCREW 12" O.C.

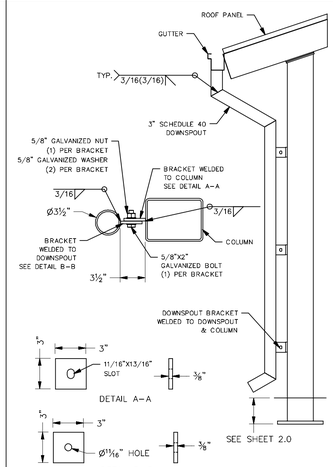
IF MULTIPLE PIECES OF RIDGE CAP ARE REQUIRED THEN LAP THE SECOND PIECE OF CAP OVER THE FIRST PIECE 6", CAULK AND FASTEN WITH 3/4" PAINTED SCREWS.



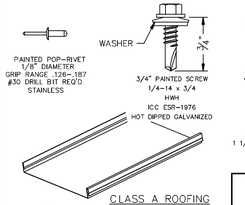
INSTALLATION OF RIDGE CAP S-RT1



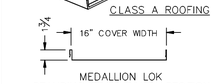
OPTIONAL GUTTER INSTALLATION
STANDING SEAM ROOF GU1



OPTIONAL GUTTER SECTION
STANDING SEAM ROOF GU2



CLASS A ROOFING



MEDALLION LOK
STANDING SEAM PANEL SECTION
24 ga. Fy = 50 ksi Fu = 65 ksi
ICC ESL-1082

SECTION PROPERTIES
(PER FT. OF WIDTH)

TOP IN COMPRESSION
Ix=0.0898 in^4
Se=0.0565 in^3
Ma=1.4115 in-kips

BOTTOM IN COMPRESSION
Ix=0.039 in^4
Se=0.0476 in^3
Ma=1.0305 in-kips

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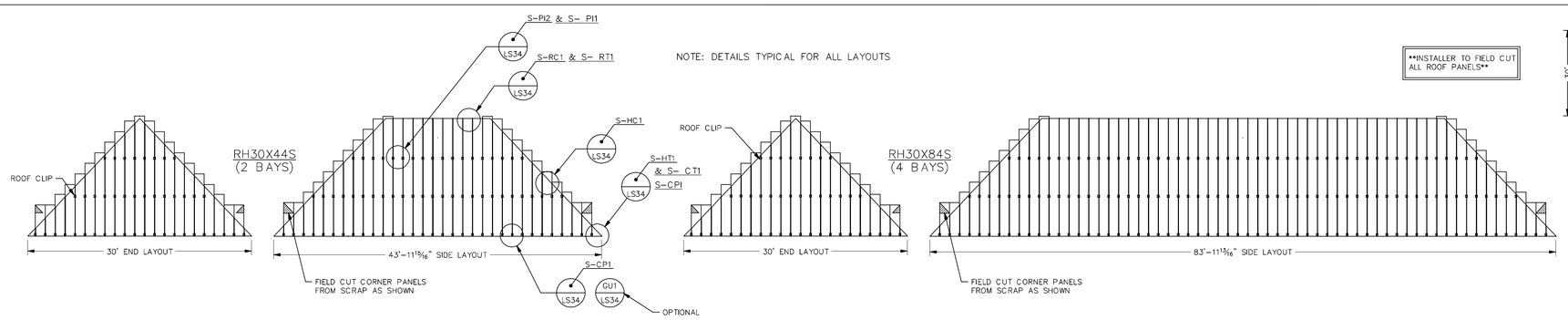
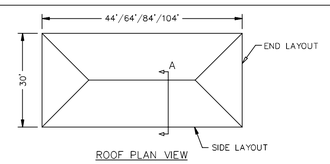
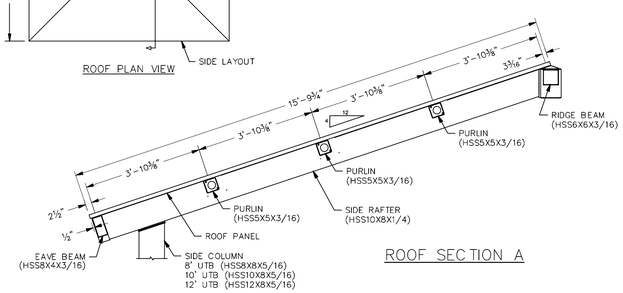
30' WIDE RECTANGULAR HIP STANDING SEAM ROOFING



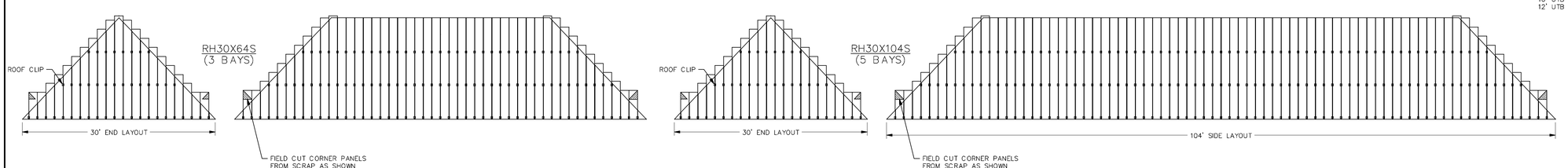
INSTALLER TO FIELD CUT ALL ROOF PANELS



ROOF PLAN VIEW



ROOF SECTION A



PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required.

30' WIDE RECTANGULAR HIP STANDING SEAM ROOFING PLAN

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ELECTRICAL INFORMATION - RECTANGULAR HIP

ICON'S STANDARD ELECTRICAL IS DESIGNED TO ACCOMMODATE Ø1/2" CONDUIT WITH A Ø3" INLET HOLE ON THE BOTTOM OF EACH COLUMN. THE CONDUIT PATHWAY RUNS THROUGH THE COLUMN, RAFTER, AND RIDGE BEAM THROUGH ALL BOLTED CONNECTIONS AS SHOWN. IF YOU HAVE SPECIAL ELECTRICAL REQUIREMENTS, PLEASE OUTLINE ANY CHANGES BELOW AS DESCRIBED.

PLEASE NOTE: DESIGN LIMITATIONS ON HOLE/CUTOUT SIZES MAY APPLY. ICON WILL REACH OUT TO DISCUSS ANY SUCH LIMITATIONS AS NEEDED.

NOTE: ICON SHELTER FRAME IS NOT UL LISTED TO ACT AS A CONDUIT FOR ELECTRICAL WIRING. CONSULT LOCAL BUILDING CODES WHEN PLANNING YOUR ELECTRICAL SYSTEM.

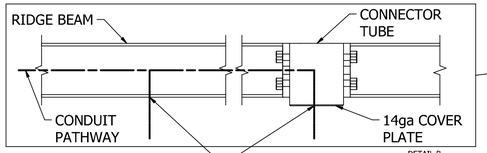
STEPS:

1. **CONDUIT HOLE SIZE (DETAIL A)**
2. **ELECTRICAL EXIT HOLES (DETAIL B)**
3. **ELECTRICAL ACCESS & COVER PLATES (DETAIL C)**
4. **ELECTRICAL CONDUIT PATHWAY (DETAIL D)**

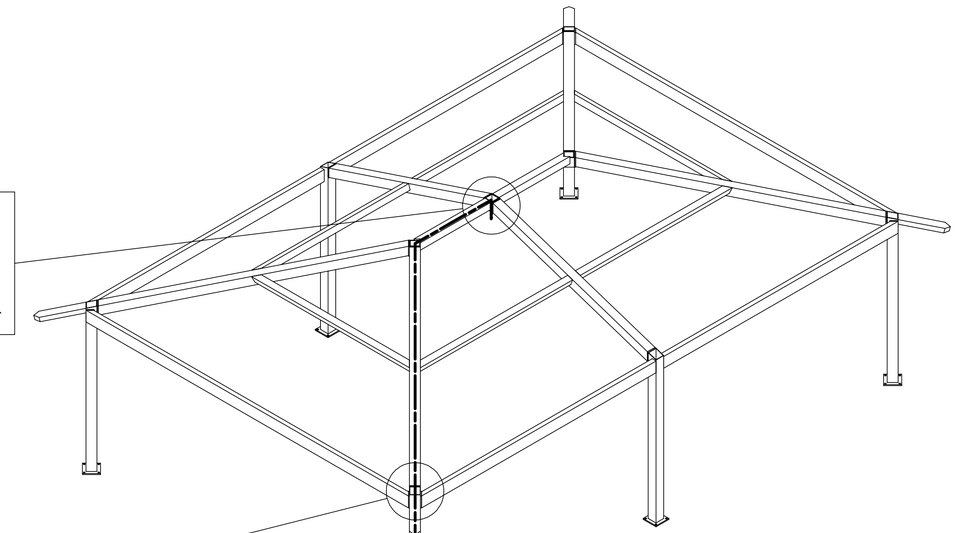
OPTIONAL EXIT HOLES

IF REQUIRED, EXIT HOLES FOR LIGHTING, ETC. CAN BE PLACED IN THE RIDGE BEAM AND/OR CONNECTOR TUBE WITH 14ga COVER PLATE AS SHOWN (CHARGES APPLY) USE FRAME SHEET OF THIS PRELIMINARY TO SPECIFY REQUIRED EXIT HOLE LOCATIONS AND SIZE.

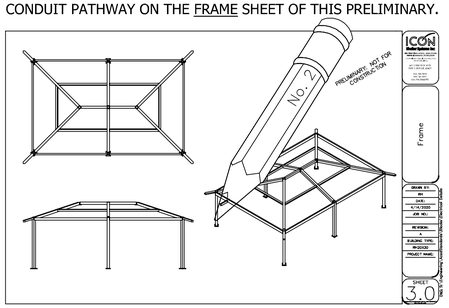
(1) EXIT HOLE PER CONNECTOR
(2) EXIT HOLES PER RIDGE BEAM



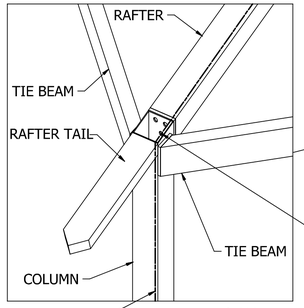
DETAIL B



IF REQUIRED, PLEASE DRAW THE NECESSARY ELECTRICAL CONDUIT PATHWAY ON THE FRAME SHEET OF THIS PRELIMINARY.



DETAIL D

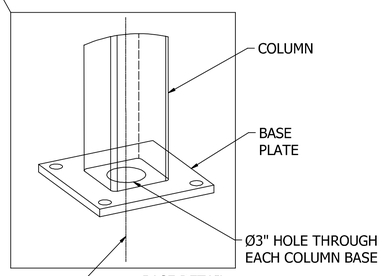


DETAIL A

ICON PROVIDES A MINIMUM OF (1) 3/4" HOLE AT EACH CONNECTION FOR 1/2" CONDUIT. IF APPLICABLE, PLEASE SPECIFY REQUIRED CONDUIT SIZE: (CHARGES APPLY)

- ☐ 3/4" CONDUIT (1" HOLES)
- ☒ 1" CONDUIT (1 1/4" HOLES)

CONDUIT PATHWAY PROVIDED FOR EACH COLUMN.

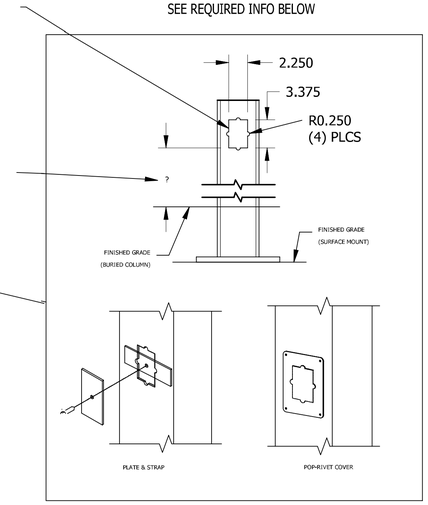


BASE DETAIL

PROVIDE GROUNDING PER CEC ARTICLE 250

OPTIONAL CUTOUTS

USE FRAME SHEET OF THIS PRELIMINARY TO SPECIFY REQUIRED CUTOUT LOCATIONS (CHARGES APPLY)
SEE REQUIRED INFO BELOW



DETAIL C

(4) COVER PLATES PROVIDED UPON REQUEST (CHARGES APPLY)
PLEASE SPECIFY TYPE AND QUANTITY REQUIRED:

- ☐ PLATE & STRAP
- ☒ POP-RIVET COVER PLATE (STAINLESS POP RIVET)

HOW MANY REQUIRED? 2

REFER TO 1/E1.1 INCREMENT 1 FOR RECEPTACLE LOCATIONS.

NOTE: BUILDING DEPICTED ON THIS SHEET FOR ILLUSTRATION PURPOSES ONLY. ACTUAL LAYOUT AND FRAME MEMBER QUANTITIES VARY BY DESIGN. PLEASE REFER TO ELEVATION AND FRAME SHEETS IN THIS PRELIMINARY FOR ORDER-SPECIFIC CONFIGURATION.

1-6 Electrical Cut outs Included to accomodate Elextrical Needs

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ELECTRICAL ACCESS

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DSA P.C. 04-123501

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE 2022 EDITION OF THE TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
2. ALL WORK SHALL BE IN COMPLIANCE WITH CFC CHAPTER 33 - FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION.
3. SEE INDIVIDUAL STRUCTURAL DRAWINGS FOR SPECIFIC DESIGN NOTES AND LOADING.
4. PRIOR TO SUBMITTAL ARCHITECT OF RECORD SHALL IDENTIFY PC MODEL(S) SELECTED BY END USER ON SHEETS T-1.0 AND T-2.0 BY CHECKING THE APPROPRIATE BOX ASSOCIATED WITH SELECTED PC MODEL(S). EXCLUDE SHEETS FOR MODELS NOT SELECTED.

PLANS FOR SPECIFIC APPLICATION SHALL INCLUDE THE FOLLOWING:

1. COMPLETE SCOPE OF WORK INCLUDING THE SHADE STRUCTURE MODEL NUMBER, P.C. NUMBER, AND SPECIFIC SIZE OF THE SHADE STRUCTURE(S).
2. PROVIDE A CODE ANALYSIS, INCLUDING ACTUAL SHADE STRUCTURE AREA (SQ. FT.), OCCUPANCY TYPE (A-3), AND TYPE OF CONSTRUCTIONS (V-B). INDICATE OCCUPANT LOAD FACTOR (2022 CBC, SECTION 1004).
3. ACTUAL DIMENSIONS OF SHADE STRUCTURES.
4. DIMENSIONS FROM ADJACENT STRUCTURES AND PROXIMITY OF ASSUMED OR ACTUAL PROPERTY LINES.
5. INDICATE LOCATIONS OF FIRE EXTINGUISHERS WITHIN 75 FEET.
6. SHOW LOCATION OF AUDIBLE FIRE ALARM.
7. ALL SADDLES, CLAMPS AND FITTINGS SHALL CONFORM TO THE GUIDELINES AS SPECIFIED IN APPENDICES "A, B, & C", RESPECTIVELY, IN ASCE/SEI 19-16, "STRUCTURAL APPLICATIONS OF STEEL CABLES FOR BUILDINGS."
8. ARCHITECTS OF RECORD TO DETERMINE IF SPECIFIC SITE IS LOCATED IN A MAPPED GEOLOGIC HAZARD ZONE. GEOHAZARD REPORTS REQUIREMENTS SHALL COMPLY WITH DSA IR A-4.
9. ARCHITECTS OF RECORD TO DETERMINE IF SPECIFIC SITE IS LOCATED IN A MAPPED FIRE HAZARD SEVERITY ZONE OR WILDLAND INTERFACE AREA.

FOR SNOW LOAD MODELS ONLY:

10. INDICATE DIMENSIONS FROM THE ROOF TO THE HIGHER STRUCTURE OR TERRAIN FEATURE. MINIMUM DIMENSION OF 20'-0" FOR SNOW LOAD MODEL (ASCE 7-16).
11. ACTUAL SITE ELEVATION (FEET) TO DETERMINE IF THE SITE OCCURS AT OR BELOW THE UPPER ELEVATION LIMIT FOR THE GROUND SNOW LOAD SHOWN IN ASCE 7-16.

P.C. NOTES

PLANS FOR SPECIFIC APPLICATION SHALL INCLUDE THE FOLLOWING:

LIST OF APPLICABLE CODES:

- 2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 C.C.R.
- 2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R.
- 2022 CALIFORNIA ELECTRICAL CODE (CEC) , PART 3, TITLE 24 C.C.R.
- 2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R.
- 2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R.
- 2022 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 C.C.R.
- 2022 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R.
- 2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 C.C.R.
- 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 C.C.R.
- 2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 C.C.R.
- TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

APPLICABLE STANDARDS:

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

APPLICABLE CODES

SITE SPECIFIC PARAMETERS

INSTRUCTIONS: DESIGN PROFFESIONAL SHALL CHECK THE APPROPRIATE SELECTION BOXES BELOW AND ENTER THE DESIGN PARAMETERS APPLICABLE TO THE SPECIFIC PROJECT SITE

SEISMIC

SELECT ONE

☐ DESIGN BASED ON SITE CLASS $D_{default}$
NO GEOTECHNICAL INVESTIGATION REQUIRED
Ss = 0.628 Fa = 1.2

☐ DESIGN BASED ON SITE CLASS DETERMINED PER CHAPTER 20 OF ASCE 7-16
GEOTECHNICAL INVESTIGATION PROVIDED
SITE CLASS: ☐ C ☐ D
Ss = _____ Fa = _____ PER ASCE 7-16 SUPPL 3, TABLE 11.4-1

☐ DESIGN BASED ON SITE CLASS SPECIFIC GROUND MOTION HAZARD ANALYSIS
PER CHAPTER 21 OF ASCE 7-16
SHORT-PERIOD DESIGN SPECTRAL RESPONSE PARAMETER, S_{DS}, SHALL BE AS SPECIFIED IN GEOTECHNICAL INVESTIGATION
CGS APPROVAL REQUIRED
NOT ELIGIBLE FOR OTC REVIEW
SITE CLASS: ☐ C ☐ D

S_{DS} = 2/3 Fa Ss = 0.543 ≤ 2.0
Cs = 1.6 USED IN DESIGN
SEISMIC DESIGN CATEGORY: ☐ D ☐ E

CODE ANALYSIS

OCCUPANCY GROUP	OCCUPANT LOAD FACTOR	TOTAL OCCUPANT LOAD	SHADE STRUCTURE AREA (ft^2)
A-3	15	46	690

SITE SPECIFIC PARAMETERS

MANUFACTURER:

USA SHADE & FABRIC STRUCTURES
2580 ESTERS BOUVLEVARD, SUITE 100
DFW AIRPORT, TEXAS 75261
PH. 800-966-5005
W. www.usa-shade.com

ARCHITECT:

HIGGINSON ARCHITECTS, INC.
DAVID HIGGINSON, AIA, PRINCIPAL ARCHITECT
34247 YUCAIPA BOULEVARD, SUITE D
YUCAIPA, CALIFORNIA 92399
PH. 909-499-0058
E. dhigginson@higgInsonarchitects.com
W. www.higgInsonarchitects.com

LICENSED ARCHITECT
DAVID HIGGINSON
C19168
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA
8/19/24

STRUCTURAL ENGINEER:

MARK LOWE, S.E.
c/o USA SHADE AND FABRIC STRUCTURES

REGISTERED PROFESSIONAL ENGINEER
MARK ALBERT LOWE
No. 3693
STRUCTURAL
STATE OF CALIFORNIA
8/23/2024

ARCHITECT / ENGINEER

✓	SHEET NO.	SHEET DESCRIPTION	UNIT STRUCTURE TYPE	MAX. UNIT SIZE	UNIT MODEL NUMBER
X	T-1.0	TITLE SHEET			
X	T-2.0	UNIT SELECTION			
X	T-3.0	T&I FORMS			
	1.1-1000	PRODUCT INFORMATION	HIP	20' x 30' x 15'	DSA4012030-22
	1.2-2000	REACTIONS	HIP	20' x 30' x 15'	DSA4012030-22
	2.1-1000	PRODUCT INFORMATION	HIP	30' x 30' x 15'	DSA4013030-22
	2.2-2000	REACTIONS	HIP	30' x 30' x 15'	DSA4013030-22
	3.1-1000	PRODUCT INFORMATION	HIP	30' x 40' x 15'	DSA4013040-22
	3.2-2000	REACTIONS	HIP	30' x 40' x 15'	DSA4013040-22
	4.1-1000	PRODUCT INFORMATION	HIP	40' x 40' x 15'	DSA4014040-22
	4.2-2000	REACTIONS	HIP	40' x 40' x 15'	DSA4014040-22
	5.1-1000	PRODUCT INFORMATION	HIP	20' x 30' x 12'	DSA401203012-22
	5.2-2000	REACTIONS	HIP	20' x 30' x 12'	DSA401203012-22
	6.1-1000	PRODUCT INFORMATION	HIP	30' x 30' x 12'	DSA401303012-22
	6.2-2000	REACTIONS	HIP	30' x 30' x 12'	DSA401303012-22
	7.1-1000	PRODUCT INFORMATION	HIP	30' x 40' x 12'	DSA401304012-22
	7.2-2000	REACTIONS	HIP	30' x 40' x 12'	DSA401304012-22
	8.1-1000	PRODUCT INFORMATION	HIP (20 psf SNOW LOAD)	20' x 30' x 15'	DSA401S2030-22
	8.2-2000	REACTIONS	HIP (20 psf SNOW LOAD)	20' x 30' x 15'	DSA401S2030-22
	9.1-1000	PRODUCT INFORMATION	JOINED HIPS	VARIES	DSA401J-22
	9.2-1001	DETAILS	JOINED HIPS	VARIES	DSA401J-22
	9.3-2000	REACTIONS	JOINED HIPS	VARIES	DSA401J-22
	10.1-1000	PRODUCT INFORMATION	QUAD JOINED HIPS	VARIES	DSA401Q-22
	10.2-1001	DETAILS	QUAD JOINED HIPS	VARIES	DSA401Q-22
	10.3-2000	REACTIONS	QUAD JOINED HIPS	VARIES	DSA401Q-22
	11.1-1000	PRODUCT INFORMATION	FULL CANTILEVER HIP SINGLE	20' x 30' x 15'	DSA2022030-22
	11.2-2000	REACTIONS	FULL CANTILEVER HIP SINGLE	20' x 30' x 15'	DSA2022030-22
	12.1-1000	PRODUCT INFORMATION	FULL CANTILEVER HIP JOINED	20' x 200' x 15'	DSA3022060-22
	12.2-2000	REACTIONS	FULL CANTILEVER HIP JOINED	20' x 200' x 15'	DSA3022060-22
	13.1-1000	PRODUCT INFORMATION	SINGLE POST PYRAMID	14' x 14' x 12'	DSA1031414-22
	13.2-2000	REACTIONS	SINGLE POST PYRAMID	14' x 14' x 12'	DSA1031414-22
	14.1-1000	PRODUCT INFORMATION	SINGLE POST PYRAMID	20' x 20' x 12'	DSA1032020-22
	14.2-2000	REACTIONS	SINGLE POST PYRAMID	20' x 20' x 12'	DSA1032020-22
	15.1-1000	PRODUCT INFORMATION	SINGLE POST PYRAMID CANTILEVER	14' x 14' x 12'	DSA1241414-22
	15.2-2000	REACTIONS	SINGLE POST PYRAMID CANTILEVER	14' x 14' x 12'	DSA1241414-22
	16.1-1000	PRODUCT INFORMATION	SINGLE POST PYRAMID CANTILEVER	20' x 20' x 12'	DSA1242020-22
	16.2-2000	REACTIONS	SINGLE POST PYRAMID CANTILEVER	20' x 20' x 12'	DSA1242020-22
	17.1-1000	PRODUCT INFORMATION	MARINER PEAK	30' x 30' x 15'	DSA4073030-22
	17.2-2000	REACTIONS	MARINER PEAK	30' x 30' x 15'	DSA4073030-22
	18.1-1000	PRODUCT INFORMATION	MARINER PEAK	30' x 40' x 18'	DSA4073040-22
	18.2-2000	REACTIONS	MARINER PEAK	30' x 40' x 18'	DSA4073040-22
	19.1-1000	PRODUCT INFORMATION	MARINER PEAK JOINED	30' x 133' x 15'	DSA407J3060-22
	19.2-2000	REACTIONS	MARINER PEAK JOINED	30' x 133' x 15'	DSA407J3060-22
	20.1-1000	PRODUCT INFORMATION	MARINER PEAK QUAD	60' x 60' x 15'	DSA407Q6060-22
	20.2-2000	REACTIONS	MARINER PEAK QUAD	60' x 60' x 15'	DSA407Q6060-22
	21.1-1000	PRODUCT INFORMATION	TRI TRUSS HIP SINGLE WIDE	20' x 30' x 15'	DSA2062030-22
	21.2-2000	REACTIONS	TRI TRUSS HIP SINGLE WIDE	20' x 30' x 15'	DSA2062030-22
	22.1-1000	PRODUCT INFORMATION	TRI TRUSS HIP JOINED	20' x 200' x 15'	DSA3052060-22
	22.2-2000	REACTIONS	TRI TRUSS HIP JOINED	20' x 200' x 15'	DSA3052060-22
	23.1-1000	PRODUCT INFORMATION	TENSION SAILS THREE POINT	30' x 133' x 15'	DSA30730-22
	23.2-2000	REACTIONS	TENSION SAILS THREE POINT	30' x 133' x 15'	DSA30730-22
	24.1-1000	PRODUCT INFORMATION	TENSIONS SAILS FOUR POINT	20' x 200' x 15'	DSA4182020-22
	24.2-2000	REACTIONS	TENSIONS SAILS FOUR POINT	20' x 200' x 15'	DSA4182020-22
	25.1-1000	PRODUCT INFORMATION	TENSIONS SAILS FOUR POINT	30' x 133' x 15'	DSA4183030-22
	25.2-2000	REACTIONS	TENSIONS SAILS FOUR POINT	30' x 133' x 15'	DSA4183030-22
	26.1-1000	PRODUCT INFORMATION	TRIANGLE	25' x 25' x 15'	DSA30125-22
	26.2-2000	REACTIONS	TRIANGLE	25' x 25' x 15'	DSA30125-22
X	27.1-1000	PRODUCT INFORMATION	TRIANGLE	40' x 40' x 15'	DSA30140-22
X	27.2-2000	REACTIONS	TRIANGLE	40' x 40' x 15'	DSA30140-22
	28.1-1000	PRODUCT INFORMATION	HEXAGON	Ø40' X 15'	DSA60340-22
	28.2-2000	REACTIONS	HEXAGON	Ø40' X 15'	DSA60340-22
	29.1-1000	PRODUCT INFORMATION	HEXAGON	Ø60' X 15'	DSA60360-22
	29.2-2000	REACTIONS	HEXAGON	Ø60' X 15'	DSA60360-22

TOTAL SHEET COUNT: 63 SHEETS

SHEET INDEX

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 02
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 04/11/2025

THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF USA SHADE AND FABRIC STRUCTURES AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN

USASHADE & Fabric Structures®

CORPORATE HEADQUARTERS
2580 ESTERS BLVD. SUITE 100
DFW AIRPORT, TX, 75261
800-966-5005

CERTIFICATIONS:
IAS CERTIFICATION No: FA-428
CLARK COUNTY MANUFACTURER CERTIFICATION NUMBER (NEVADA): 355

CUSTOMER:
Lodi Unified S.D.

PROJECT NAME:
Lodi Middle School

LOCATION:
945 S. Ham Lane
Lodi, CA 95242

MODEL NUMBER:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123501 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 12/11/2024

STRUCTURE TYPE:

SCALE : VARIES

DRAWING SIZE:
D

PRE-CHECK (PC) DOCUMENT
Code : 2022 CBC
A separate project application for construction is required.

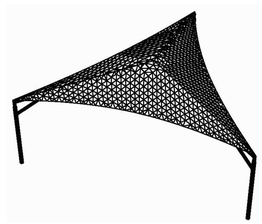
Eng. By :	DWH	8/19/23
Design By :	DWH	8/19/23
Approved By :	DWH	8/19/23

DRAWING DESCRIPTION:

DWG. TITLE SHEET

SHEET T-1.0

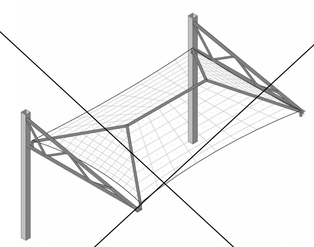
REV.



	STRUCTURE MODEL:	DSA30125-22	SEE SHEET 26.1-1000
	MAX. SIZE:	25' x 25' x 15'	
	MAX. AREA:	271 SQ. FT.	
	MAX. OCCUPANCY:	18 PERSONS	
X	STRUCTURE MODEL:	DSA30140-22	SEE SHEET 27.1-1000
	MAX. SIZE:	40' x 40' x 15'	
	MAX. AREA:	692 SQ. FT.	
	MAX. OCCUPANCY:	46 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

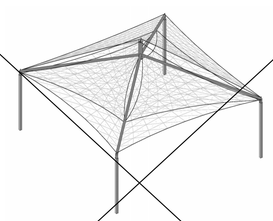
TRIANGLE



STRUCTURE MODEL:	DSA2062030-22	SEE SHEET 21.1-1000
MAX. SIZE:	20' x 30' x 15'	
MAX. AREA:	600 SQ. FT.	
MAX. OCCUPANCY:	40 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

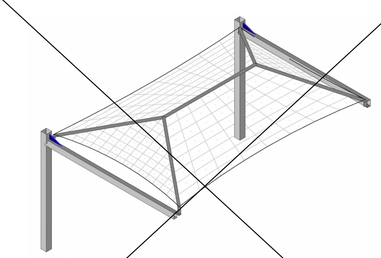
TRI-TRUSS HIP SINGLE WIDE



STRUCTURE MODEL:	DSA4073030-22	SEE SHEET 17.1-1000
MAX. SIZE:	30' x 30' x 15'	
MAX. AREA:	900 SQ. FT.	
MAX. OCCUPANCY:	60 PERSONS	
STRUCTURE MODEL:	DSA4073040-22	SEE SHEET 18.1-1000
MAX. SIZE:	30' x 40' x 15'	
MAX. AREA:	1,200 SQ. FT.	
MAX. OCCUPANCY:	80 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

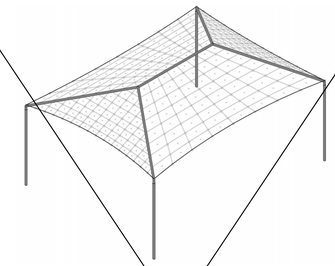
MARINER PEAK



STRUCTURE MODEL:	DSA2022030-22	SEE SHEET 11.1-1000
MAX. SIZE:	20' x 30' x 15'	
MAX. AREA:	600 SQ. FT.	
MAX. OCCUPANCY:	40 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

FULL CANTILEVER HIP SINGLE



STRUCTURE MODEL:	DSA4012030-22	SEE SHEET 1.1-1000
MAX. SIZE:	20' x 30' x 15'	
MAX. AREA:	600 SQ. FT.	
MAX. OCCUPANCY:	40 PERSONS	
STRUCTURE MODEL:	DSA4013030-22	SEE SHEET 2.1-1000
MAX. SIZE:	30' x 30' x 15'	
MAX. AREA:	900 SQ. FT.	
MAX. OCCUPANCY:	60 PERSONS	
STRUCTURE MODEL:	DSA4013040-22	SEE SHEET 3.1-1000
MAX. SIZE:	30' x 40' x 15'	
MAX. AREA:	1,200 SQ. FT.	
MAX. OCCUPANCY:	80 PERSONS	
STRUCTURE MODEL:	DSA4014040-22	SEE SHEET 4.1-1000
MAX. SIZE:	40' x 40' x 15'	
MAX. AREA:	1,600 SQ. FT.	
MAX. OCCUPANCY:	106 PERSONS	
STRUCTURE MODEL:	DSA401203012-22	SEE SHEET 5.1-1000
MAX. SIZE:	20' x 30' x 12'	
MAX. AREA:	600 SQ. FT.	
MAX. OCCUPANCY:	40 PERSONS	
STRUCTURE MODEL:	DSA401303012-22	SEE SHEET 6.1-1000
MAX. SIZE:	30' x 30' x 12'	
MAX. AREA:	900 SQ. FT.	
MAX. OCCUPANCY:	60 PERSONS	
STRUCTURE MODEL:	DSA401304012-22	SEE SHEET 7.1-1000
MAX. SIZE:	30' x 40' x 12'	
MAX. AREA:	1,200 SQ. FT.	
MAX. OCCUPANCY:	80 PERSONS	
STRUCTURE MODEL:	DSA401S2030-22 (20 psf SNOW LOAD)	SEE SHEET 8.1-1000
MAX. SIZE:	20' x 30' x 15'	
MAX. AREA:	600 SQ. FT.	
MAX. OCCUPANCY:	40 PERSONS	

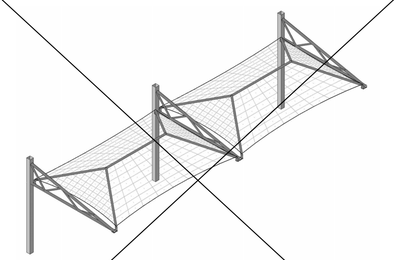
FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

HIP

STRUCTURE MODEL:	DSA60340-22	SEE SHEET 28.1-1000
MAX. SIZE:	Ø40' x 15'	
MAX. AREA:	1,040 SQ. FT.	
MAX. OCCUPANCY:	69 PERSONS	
STRUCTURE MODEL:	DSA60360-22	SEE SHEET 29.1-1000
MAX. SIZE:	Ø60' x 15'	
MAX. AREA:	2,338 SQ. FT.	
MAX. OCCUPANCY:	156 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

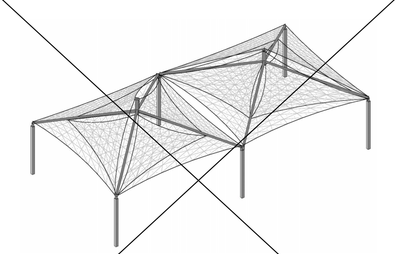
HEXAGON



STRUCTURE MODEL:	DSA3052060-22	SEE SHEET 22.1-1000
MAX. SIZE:	20' x 200' x 15'	
MAX. AREA:	4,000 SQ. FT.	
MAX. OCCUPANCY:	266 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

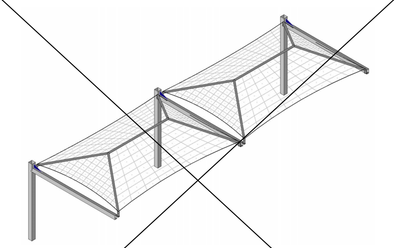
TRI-TRUSS HIP JOINED



STRUCTURE MODEL:	DSA407J3060-22	SEE SHEET 19.1-1000
MAX. SIZE:	30' x 133' x 15'	
MAX. AREA:	3,990 SQ. FT.	
MAX. OCCUPANCY:	266 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

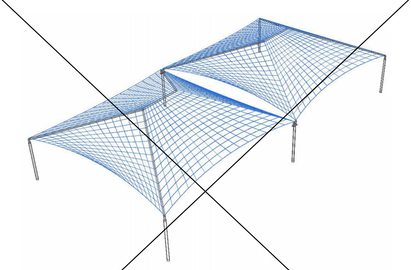
MARINER PEAK JOINED



STRUCTURE MODEL:	DSA3022060-22	SEE SHEET 12.1-1000
MAX. SIZE:	20' x 200' x 15'	
MAX. AREA:	4,000 SQ. FT.	
MAX. OCCUPANCY:	266 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

FULL CANTILEVER HIP JOINED

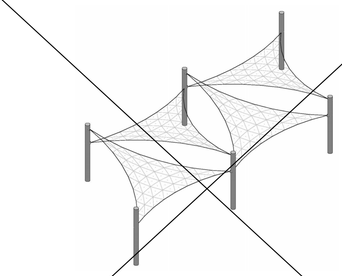


STRUCTURE MODEL:	DSA401J-22	SEE SHEET 9.1-1000
MAX. SIZE:	VARIES, SEE JOINED HIP UNIT SHEET	
MAX. AREA:	VARIES	
MAX. OCCUPANCY:	VARIES	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

JOINED HIP

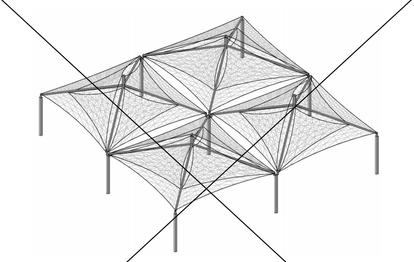
NOT USED



STRUCTURE MODEL:	DSA30730-22	SEE SHEET 23.1-1000
MAX. SIZE:	30' x 133' x 15'	
MAX. AREA:	3,990 SQ. FT.	
MAX. OCCUPANCY:	266 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

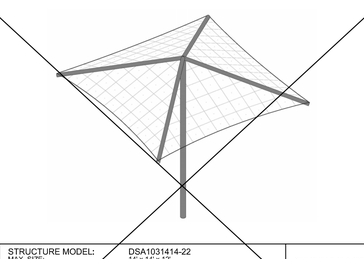
TENSIONS SAILS THREE-POINT



STRUCTURE MODEL:	DSA407Q6060-22	SEE SHEET 20.1-1000
MAX. SIZE:	60' x 60' x 15'	
MAX. AREA:	3,600 SQ. FT.	
MAX. OCCUPANCY:	240 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

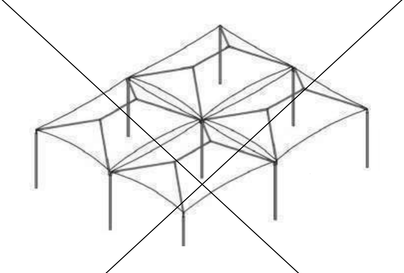
MARINER PEAK QUAD



STRUCTURE MODEL:	DSA1031414-22	SEE SHEET 13.1-1000
MAX. SIZE:	14' x 14' x 12'	
MAX. AREA:	196 SQ. FT.	
MAX. OCCUPANCY:	13 PERSONS	
STRUCTURE MODEL:	DSA1032020-22	SEE SHEET 14.1-1000
MAX. SIZE:	20' x 20' x 12'	
MAX. AREA:	400 SQ. FT.	
MAX. OCCUPANCY:	26 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

SINGLE POST PYRAMID

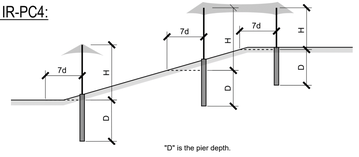


STRUCTURE MODEL:	DSA401Q-22	SEE SHEET 10.1-1000
MAX. SIZE:	VARIES, SEE QUAD HIP UNIT SHEET	
MAX. AREA:	VARIES	
MAX. OCCUPANCY:	VARIES	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

QUAD HIP

PER IR-PC4:



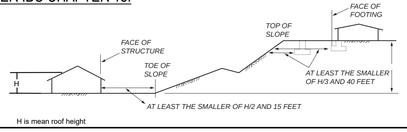
"D" is the pier depth.

"d" is the pier diameter.

"7d" is the horizontal plane projected from 7 times d.

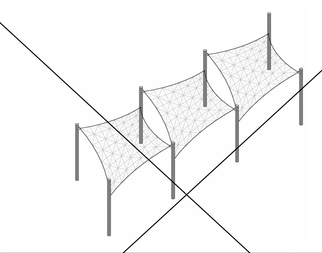
"H" is the theoretical column height (column height plus part of projected height)

PER IBC CHAPTER 18:



H is mean roof height

PC SLOPE DESIGN PARAMETERS

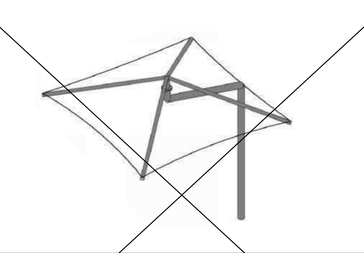


STRUCTURE MODEL:	DSA4182020-22	SEE SHEET 24.1-1000
MAX. SIZE:	20' x 200' x 15'	
MAX. AREA:	4,000 SQ. FT.	
MAX. OCCUPANCY:	266 PERSONS	
STRUCTURE MODEL:	DSA4183030-22	SEE SHEET 25.1-1000
MAX. SIZE:	30' x 133' x 15'	
MAX. AREA:	3,990 SQ. FT.	
MAX. OCCUPANCY:	266 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

TENSIONS SAILS FOUR-POINT

NOT USED



STRUCTURE MODEL:	DSA1241414-22	SEE SHEET 15.1-1000
MAX. SIZE:	14' x 14' x 12'	
MAX. AREA:	196 SQ. FT.	
MAX. OCCUPANCY:	13 PERSONS	
STRUCTURE MODEL:	DSA1242020-22	SEE SHEET 16.1-1000
MAX. SIZE:	20' x 20' x 12'	
MAX. AREA:	400 SQ. FT.	
MAX. OCCUPANCY:	26 PERSONS	

FOR DSA 103 TESTING & INSPECTIONS SAMPLE, SEE PC T-3.0

SINGLE POST PYRAMID CANTILEVER

LICENSED ARCHITECT DAVID HIGGINSON C19168 10-31-25 RENEWAL DATE STATE OF CALIFORNIA

8/19/24

REGISTERED PROFESSIONAL ENGINEER MARK ALBERT LOWE No. 3693 STRUCTURAL STATE OF CALIFORNIA

8/23/2024

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 02
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 04/11/2025

THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF USA SHADE AND FABRIC STRUCTURES AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN

USASHADE & Fabric Structures®

CORPORATE HEADQUARTERS
2580 ESTERS BLVD. SUITE 100
DFW AIRPORT, TX, 75261
800-966-5005

CERTIFICATIONS:

IAS CERTIFICATION No: FA-428

CLARK COUNTY MANUFACTURER CERTIFICATION NUMBER (NEVADA): 355

CUSTOMER:

Lodi Unified S.D.

PROJECT NAME:

Lodi Middle School

LOCATION:

945 S. Ham Lane
Lodi, CA 95242

MODEL NUMBER:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123501 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 12/11/2024

STRUCTURE TYPE:

SCALE : VARIES

DRAWING SIZE: D

PRE-CHECK (PC) DOCUMENT
Code : 2022 CBC
A separate project application for construction is required.

Eng. By :	DWH	8/19/23
Design By :	DWH	8/19/23
Approved By :	DWH	8/19/23

DRAWING DESCRIPTION:

DWG. UNIT SELECTION

SHEET T-2.0

REV.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS, 2022 CBC

General

Application Number: 04-123501
School Name: PCC FABRIC SHADE STRUCTURES
School District: USA SHADE AND FABRIC STRUCTURES
DSA File Number: PC-140
Increment Number:
Date Created: 2024-08-06 15:16:59

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2022 CBC).

****NOTE:** Undefined section and table references found in this document are from the CBC, or California Building Code.

KEY TO COLUMNS

1. TYPE	2. PERFORMED BY
Continuous – Indicates that a continuous special inspection is required **Periodic –** Indicates that a periodic special inspection is required **Test –** Indicates that a test is required	**GE (Geotechnical Engineer) –** Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative. **LOR (Laboratory of Record) –** Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335. **PI (Project Inspector) –** Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA. **SI (Special Inspection) –** Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS), 2022 CBC

Table 1705A.6, Table 1705A.7, Table 1705A.8

Application Number: 04-123501
School Name: PCC FABRIC SHADE STRUCTURES
School District: USA SHADE AND FABRIC STRUCTURES
DSA File Number: PC-140
Increment Number:
Date Created: 2024-08-06 15:16:59

Geotechnical Reports: Project does NOT have and does NOT require a geotechnical report

	S1. GENERAL:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify that: • Site has been prepared properly prior to placement of controlled fill and/or excavations for foundations. • Foundation excavations are extended to proper depth and have reached proper material. • Materials below footings must not contain loose material, mud, organic silt, organic clays, or peat.	**See Notes**	**PI**	Refer to specific items identified in the Appendix listing exemptions for limitations. Placement of controlled fill exceeding 12" depth under foundations and/or within the building envelope is not permitted without a geotechnical report.

	S2. SOIL COMPACTION AND FILL:	see T&I Note #7 for additional information		
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Perform classification and testing of fill materials.	**Test**	**LOR***	* Under the supervision of the geotechnical engineer.
☐	**b.** Verify use of proper materials, densities and inspect lift thicknesses, placement and compaction during placement of fill.	**Continuous**	**LOR***	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.
☐	**c.** Compaction testing.	**Test**	**LOR***	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.

	S3. DRIVEN DEEP FOUNDATIONS (PILES):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Verify pile materials, sizes and lengths comply with the requirements.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS), 2022 CBC

Table 1705A.6, Table 1705A.7, Table 1705A.8

Application Number: 04-123501
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School District: USA SHADE AND FABRIC STRUCTURES
DSA File Number: PC-140
Increment Number:
Date Created: 2024-08-06 15:16:59

	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**b.** Determine capacities of test piles and conduct additional load tests as required.	**Test**	**LOR***	* Under the supervision of the geotechnical engineer.
☐	**c.** Inspect driving operations and maintain complete and accurate records for each pile.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative.
☐	**d.** Verify locations of piles and their plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and record any pile damage.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative.
☐	**e.** Steel piles.	Provide tests and inspections per STEEL section below.		
☐	**f.** Concrete piles and concrete filled piles.	Provide tests and inspections per CONCRETE section below.		
☐	**g.** For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	*	*	* As defined on drawings or specifications.

	S4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):	see T&I Note #8 for additional information		
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Note**
☑	**a.** Inspect drilling operations and maintain complete and accurate records for each pier.	**Continuous**	**PI**	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
☑	**b.** Verify pier locations, diameters, plumbness and lengths.Record concrete or grout volumes.	**Continuous**	**PI**	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
☑	**c.** Concrete piers.	Provide tests and inspections per CONCRETE section below.		

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS), 2022 CBC

Table 1705A.6, Table 1705A.7, Table 1705A.8

Application Number: 04-123501
School Name: PCC FABRIC SHADE STRUCTURES
School District: USA SHADE AND FABRIC STRUCTURES
DSA File Number: PC-140
Increment Number:
Date Created: 2024-08-06 15:16:59

	S5. RETAINING WALLS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Placement, compaction and inspection of backfill.	**Continuous**	**GE***	**1705A.6.1.** * By geotechnical engineer or his or her qualified representative. (See section S2 above).
☐	**b.** Placement of soil reinforcement and/or drainage devices.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative.
☐	**c.** Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative. See DSA IR 18-2.
☐	**d.** Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.		
☐	**e.** Masonry retaining walls.	Provide tests and inspections per MASONRY section below.		

	S6. OTHER SOILS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Soil Improvements	**Test**	**GE***	Submit a comprehensive report documenting final soil improvements constructed, construction observation and the results of the confirmation testing and analysis to CGS (California Geological Survey) for final acceptance. * By geotechnical engineer or his or her qualified representative.
☐	**b.** Inspection of Soil Improvements	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative.
☐	**c.**			

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (CONCRETE), 2022 CBC

Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

Application Number: 04-123501
School Name: PCC FABRIC SHADE STRUCTURES
School District: USA SHADE AND FABRIC STRUCTURES
DSA File Number: PC-140
Increment Number:
Date Created: 2024-08-06 15:16:59

	C1. CAST-IN-PLACE CONCRETE			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify use of required design mix.	**Continuous**	**SI**	**Table 1705A.3 Item 5, 1910A.1.**
☑	**b.** Identify, sample, and test reinforcing steel.	**Test**	**LOR**	**1910A.2;** ACI 318-19 Ch.20 and Section 26.6.1.2; DSA IR 17-10. (See Appendix (end of this form) for exemptions.)
☑	**c.** During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	**Test**	**LOR**	**Table 1705A.3 Item 6**; ACI 318-19 Sections 26.5 & 26.12.
☑	**d.** Test concrete (F.).	**Test**	**LOR**	**1905A.1.17**; ACI 318-19 Section 26.12.
☑	**e.** Batch plant inspection: **Not Required**	**See Notes**	**SI**	Default of '**Continuous**' per **1705A.3.3**. If approved by DSA, batch plant inspection may be reduced to '**Periodic**' subject to requirements in Section **1705A.3.3.1.**, or not required per **1705A.3.3.2.** See IR 17-13. (See Appendix (end of this form) for exemptions.)
☐	**f.** Welding of reinforcing steel.	Provide special inspection per STEEL, Category S/A4(d) & (e) and/or S/A5(g) & (h) below.		

	C2. PRESTRESSED / POST-TENSIONED CONCRETE (IN ADDITION TO SECTION C1):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Sample and test prestressing tendons and anchorages.	**Test**	**LOR**	**1705A.3.4, 1910A.3**
☐	**b.** Inspect placement of prestressing tendons.	**Periodic**	**SI**	**1705A.3.4, Table 1705A.3 Items 1 & 9.**

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (CONCRETE), 2022 CBC

Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

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	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**c.** Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	**Periodic**	**SI**	**Table 1705A.3 Item 13.** Special inspector to verify specified concrete strength test prior to stressing.
☐	**d.** Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons.	**Continuous**	**SI**	**1705A.3.4, Table 1705A.3 Item 9**; ACI 318-19 Section 26.13

	C3. PRECAST CONCRETE (IN ADDITION TO SECTION C1):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Inspect fabrication of precast concrete members.	**Continuous**	**SI**	ACI 318-19 Section 26.13, and PCI MNL-128 and -130.
☐	**b.** Inspect erection of precast concrete members.	**Periodic**	**SI***	**Table 1705A.3 Item 10.** * May be performed by PI when specifically approved by DSA.
☐	**c.** For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category D, E or F, inspect such connections and reinforcement in the field for: 1. Installation of the embedded parts 2. Completion of the continuity of reinforcement across joints. 3. Completion of connections in the field.	**Continuous**	**SI**	Table 1705A.3; ACI 318-19 Section 26.13.1.3; ACI 550.5
☐	**d.** Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5.	**Periodic**	**SI**	Table 1705A.3; ACI 318-19 Section 26.13.1.3; ACI 550.5

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (CONCRETE), 2022 CBC

Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

Application Number: 04-123501
School Name: PCC FABRIC SHADE STRUCTURES
School District: USA SHADE AND FABRIC STRUCTURES
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Increment Number:
Date Created: 2024-08-06 15:16:59

	C4. SHOTCRETE (IN ADDITION TO SECTION C1):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Inspect shotcrete placement for proper application techniques.	**Continuous**	**SI**	**1705A.5.9, Table 1705A.3 Item 7, 1908A.1, 1908A.2, 1908A.3.** See ACI 506.2-13 Section 3.4; ACI 506R-16.
☐	**b.** Sample and test shotcrete (F.).	**Test**	**LOR**	**1908A.2, 1705A.3.9**

	C5. POST-INSTALLED ANCHORS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Inspect installation of post-installed anchors	**See Notes**	**SI***	**1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8** (See Appendix (end of this form) for exemptions). ACI 318-19 Section 26.13. * May be performed by the project inspector when specifically approved by DSA.
☐	**b.** Test post-installed anchors.	**Test**	**LOR**	**1910A.5.** (See Appendix (end of this form) for exemptions.)

	C6. OTHER CONCRETE:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.**			

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

Application Number: 04-123501
School Name: PCC FABRIC SHADE STRUCTURES
School District: USA SHADE AND FABRIC STRUCTURES
DSA File Number: PC-140
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	S1A. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify identification of all materials and: • Mill certificates indicate material properties that comply with requirements. •Material sizes, types and grades comply with requirements.	**Periodic**	*	**Table 1705A.2.1 Item 3a–3c**, 2202A.1; AISI S100-20 Section A3.1 & A3.2, AISI S240-20 Section A3 & A5, AISI S220-20 Sections A4 & A6. * By special inspector or qualified technician when performed off-site.
☑	**b.** Test unidentified materials	**Test**	**LOR**	**2202A.1.**
☑	**c.** Examine seam welds of HSS shapes	**Periodic**	**SI**	DSA IR 17-3.
☑	**d.** Verify and document steel fabrication per DSA-approved construction documents.	**Periodic**	**SI**	Not applicable to cold-formed steel light-frame construction, except for trusses (**1705A.2.4**).
☐	**e.** Buckling restrained braces.	**Test**	**LOR**	Testing and special inspections in accordance with IR 22-4.

	S1A2. HIGH-STRENGTH BOLTS:	see Testing Matrix table for additional information		
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA-approved documents.	**Periodic**	**SI**	**Table 1705A.2.1 Items 1a & 1b, 2202A.1;** AISC 360-16 Section A3.3, J3.1, and N3.2; RCSC 2014 Section 1.5 & 2.1; DSA IR 17-8 & DSA IR 17-9.
☑	**b.** Test high-strength bolts, nuts and washers.	**Test**	**LOR**	**Table 1705A.2.1 Item 1c, 2213A.1**; RCSC 2014 Section 7.2; DSA IR 17-8.
☑	**c.** Bearing-type ("snug tight") connections.	**Periodic**	**SI**	**Table 1705A.2.1 Item 2a, 1705A.2.6, 2204A.2**; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Section 9.1; DSA IR 17-9.
☑	**d.** Pretensioned and slip-critical connections.	*	**SI**	**Table 1705A.2.1 Items 2b & 2c, 1705A.2.6, 2204A.2;** AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Sections 9.2 & 9.3; DSA IR 17-9 *"Continuous" or "Periodic" depends on the tightening method used.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

Application Number: 04-123501
School Name: PCC FABRIC SHADE STRUCTURES
School District: USA SHADE AND FABRIC STRUCTURES
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Increment Number:
Date Created: 2024-08-06 15:16:59

	S/A3. WELDING:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	**Periodic**	**SI**	**1705A.2.5, Table 1705A.2.1 Items 4 & 5**; AWS D1.1 and AWS D1.8 for structural steel; AWS D1.2 for Aluminum; AWS D1.3 for cold-formed steel; AWS D1.4 for reinforcing steel; DSA IR 17-3.
☑	b. Verify weld filler material manufacturer's certificate of compliance.	**Periodic**	**SI**	DSA IR 17-3.
☑	c. Verify WPS, welder qualifications and equipment.	**Periodic**	**SI**	DSA IR 17-3.

	S/A4. SHOP WELDING (IN ADDITION TO SECTION S/A3):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	**Continuous**	**SI**	**Table 1705A.2.1 Items 5a.1–4**; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
☑	b. Inspect single-pass fillet welds ≤ 5/16", floor and roof deck welds.	**Periodic**	**SI**	**1705A.2.2, Table 1705A.2.1 Items 5a.5 & 5a.6;** AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
☐	c. Inspect welding of stairs and railing systems.	**Periodic**	**SI**	**1705A.2.1**; AISC 360-16 (and AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3.
☐	**d.** Verification of reinforcing steel weldability other than ASTM A706.	**Periodic**	**SI**	**1705A.3.1**; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
☐	**e.** Inspect welding of reinforcing steel.	**Continuous**	**SI**	**Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8;** AWS D1.4; DSA IR 17-3.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

Application Number: 04-123501
School Name: PCC FABRIC SHADE STRUCTURES
School District: USA SHADE AND FABRIC STRUCTURES
DSA File Number: PC-140
Increment Number:
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	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
	S/A5. FIELD WELDING (IN ADDITION TO SECTION S/A3):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	**Continuous**	**SI**	**Table 1705A.2.1 Items 5a.1–4**; AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
☐	b. Inspect single-pass fillet welds ≤ 5/16".	**Periodic**	**SI**	**Table 1705A.2.1 Item 5a.5;** AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
☐	**c.** Inspect end-welded studs (ASTM A-108) installation (including bend test).	**Periodic**	**SI**	**2213A.2**; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1; DSA IR 17-3.
☐	**d.** Inspect floor and roof deck welds.	**Periodic**	**SI**	**1705A.2.2, Table 1705A.2.1 Item 5a.6;** AISC 360-16 (AISC 341-16 as applicable); AWS D1.3; DSA IR 17-3.
☐	**e.** Inspect welding of structural cold-formed steel.	**Periodic**	**SI***	**1705A.2.5; AWS D1.3; DSA IR 17-3.** The quality control provisions of AISI S240-20 Chapter D shall also apply. * May be performed by the project inspector when specifically approved by DSA.
☐	**f.** Inspect welding of stairs and railing systems.	**Periodic**	**SI***	**1705A.2.1**; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3. * May be performed by the project inspector when specifically approved by DSA.
☐	**g.** Verification of reinforcing steel weldability.	**Periodic**	**SI**	**1705A.3.1**; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
☐	**h.** Inspect welding of reinforcing steel.	**Continuous**	**SI**	**Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8;** AWS D1.4; DSA IR 17-3.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
	S/A6. NONDESTRUCTIVE TESTING:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Ultrasonic	**Test**	**LOR**	**1705A.2.1, 1705A.2.5;** AISC 341-16 J6.2, AISC 360-16 N5.5; AWS D1.1, AWS D1.8; DSA IR 17-2.
☐	**b.** Magnetic Particle	**Test**	**LOR**	**1705A.2.1, 1705A.2.5;** AISC 341-16 J6.2, AISC 360-16 N5.5; AWS D1.1, AWS D1.8; DSA IR 17-2.
☐	**c.**	**Test**	**LOR**	

	S/A7. STEEL JOISTS AND TRUSSES:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Verify size, type and grade for all chord and web members as well as connectors and weld filler material; verify joist profile, dimensions and camber (if applicable); verify all weld locations, lengths and profiles; mark or tag each joist.	**Continuous**	**SI**	**1705A.2.3, Table 1705A.2.3**; AWS D1.1; DSA IR 22-3 for new joists only. **1705A.2.4;** AWS D1.3 for cold-formed steel trusses.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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	S/A8. SPRAYED FIRE-RESISTANT MATERIALS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Examine structural steel surface conditions, inspect application, take samples, measure thickness and verify compliance of all aspects of application with DSA-approved documents.	**Periodic**	**SI**	**1705A.15, 1705A.15.1, 1705A.15.2, 1705A.15.3, 1705A.15.4, 1705A.15.5, 1705A.15.6.**
☐	**b.** Test density.	**Test**	**LOR**	**1705A.15.1, 1705A.15.5, ASTM E605**
☐	**c.** Bond strength adhesion/cohesion.	**Test**	**LOR**	**1705A.15.1, 1705A.15.6, ASTM E736**

	S/A9. ANCHOR BOLTS AND ANCHOR RODS:	see T&I Note #9 for additional information		
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Anchor Bolts and Anchor Rods	**Test**	**LOR**	Identify, sample and test anchor bolts and anchor rods **not** meeting exemptions identified in Section 1 of IR 17-11.
☑	**b.** Threaded rod not used for foundation anchorage.	**Test**	**LOR**	Identify, sample and test threaded rods **not** meeting exemptions identified in Section 1 of IR 17-11.

	S/A10. STORAGE RACK SYSTEMS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Materials used, to verify compliance with one or more of the material test reports in accordance with the approved construction documents.	**Periodic**	**SI**	Table 1705A.13.7
☐	**b.** Fabricated storage rack elements.	**Periodic**	**SI**	1704A.2.5; Table 1705A.13.7

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMNINUM), 2022 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

Application Number: 04-123501
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	S/A11. Other Steel			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Storage rack anchorage installation.	**Periodic**	**SI**	ANSI/MH16.1 Section 7.3.2; Table 1705A.13.7
☐	**d.** Completed storage rack system to indicate compliance with the approved construction documents.	**Periodic**	**SI***	Table 1705A.13.7; * May be preformed by the project inspector when specifically approved by DSA.

GENERAL DSA-103 NOTES:

1. THE SAMPLE DSA-103 FORM PROVIDED ON THIS SHEET IS FOR ILLUSTRATIVE PURPOSES ONLY TO ASSIST IN THE COMPLETION OF SPECIFIC DSA-103 FORMS FOR FUTURE PROJECTS.
2. A CURRENT DSA-103 FORM IS TO BE COMPLETED FOR EACH APPLICATION THAT THIS P.C. DOCUMENT IS BEING INCORPORATED INTO AND ALL SAMPLE DSA-103 SHEETS ARE TO BE CROSSED OUT ON THIS SHEET

TESTING AND INSPECTION NOTES:

1. THE PROJECT INSPECTOR AND TESTING AGENCY SHALL BE SELECTED BY THE SCHOOL DISTRICT AND APPROVED BY DSA AND THE ARCHITECT OF RECORD.
2. THE SITE PROJECT INSPECTOR SHALL BE CLASS 2. IF THE TOTAL AREA OF THE SHADE STRUCTURE(S) IS LESS THAN 2,000 SQ. FT. WITH NO FIELD WELDING OR HIGH-STRENGTH FASTENERS THEN THE SITE PROJECT INSPECTOR MAY BE A CLASS 3.
3. THE COSTS OF THE PROJECT INSPECTOR AND TESTING AGENCY SHALL BE BORN BY THE SCHOOL DISTRICT.
4. COPIES OF THE VERIFIED REPORTS SHALL BE SENT TO DSA, THE ARCHITECT, THE SCHOOL DISTRICT, THE CONTRACTOR, AND THE PROJECT INSPECTOR.
5. THE IN-PLANT INSPECTOR SHALL BE A WELDING SPECIAL INSPECTOR FOR MATERIAL VERIFICATION AND WELDING.
6. PER 2022 CBC, SECTION 1705A.3.3, BATCH PLANT INSPECTION MAY BE WAIVED WHEN THE FOLLOWING REQUIREMENTS ARE MET:
   - 6.1. A LICENSED WEIGHMASTER SHALL POSITIVELY IDENTIFY QUANTITY OF MATERIALS AND CERTIFY EACH LOAD BY A BATCH TICKET.
   - 6.2. BATCH TICKETS, INCLUDING MATERIAL QUANTITIES AND WEIGHTS SHALL ACCOMPANY THE LOAD, SHALL BE TRANSMITTED TO THE INSPECTOR OF RECORD BY THE TRUCK DRIVER WITH LOAD IDENTIFIED THEREON. THE LOAD SHALL NOT BE PLACED WITHOUT A BATCH TICKET IDENTIFYING THE MIX. THE INSPECTOR OF RECORD SHALL KEEP A DAILY RECORD OF PLACEMENTS, IDENTIFYING EACH TRUCK, IT'S LOAD, TIME OF RECEIPT AT THE JOBSITE, AND APPROXIMATE LOCATION OF DEPOSIT IN THE STRUCTURE AND SHALL MAINTAIN A COPY OF THE DAILY RECORD AS REQUIRED BY THE ENFORCING AGENCY.
7. INCLUDE SECTION S2 - SOIL COMPACTION AND FILL WHEN OVER-EX AND RE-COMPACTING OCCURS.
8. S4 - CAST-IN-PLACE DEEP FOUNDATIONS (PIERS): NOT REQUIRED IF SPREAD FOOTING OPTION IS CHOSEN.
9. S/A9 - ANCHOR BOLT AND ANCHOR ROD: NOT REQUIRED IF EMBEDDED BASE PLATE OPTION IS CHOSEN.

HIGH-STRENGTH BOLTS (S/A2) SPECIAL INSPECTIONS TESTING MATRIX FOR SPECIFIC MODELS

✓	MODEL	SHEET	HIGH STRENGTH BOLTS	PRETENSIONED / SLIP-CRITICAL CONNECTIONS
	DSA

GENERAL NOTES

1.- SPECIAL INSPECTION REQUIREMENTS SHALL FOLLOW THE ATTACHED SAMPLE TEST AND INSPECTION LIST (T & I LIST) APPROVED BY DSA. THE SHOP WELDING INSPECTION SHALL INCLUDE WELDING OF ALL STEEL MEMBERS AND IDENTIFICATION OF STEEL THROUGH MILL CERTIFICATE OR MATERIAL TESTING, UNCERTIFIED STEEL SHALL BE TESTED TO THE REQUIREMENTS OF CBC 2022 CHAPTER 17A. THE FIELD SPECIAL INSPECTION SHALL INCLUDE COMPRESSION CYLINDER TESTS FOR THE CONCRETE FOUNDATION.

2.- STRUCTURE SHALL BE IN THE LOCATION SHOWN ON THE SITE SPECIFIC DSA APPLICATION DRAWING.

3.- FOUNDATION DESIGN BASED ON CBC 2022, TABLE 1806A.2, SOIL CLASS 5 (ALLOWABLE FOUNDATION PRESSURE 1500 PSF)

4.- DESIGN PER FOLLOWING CODES: CBC 2022 (CHAPTER 35), ASCE 7-16, AISC 360-16, AISC 341-16, ACI 318-19, ASCE 55-16 & ASCE 19-16

STRUCTURAL STEEL
1.- FABRICATION OF THE STEEL STRUCTURES SHALL BE PERFORMED BY SHADE STRUCTURES OR AN AUTHORIZED LICENSEE. MATERIAL TESTING (OR MILL CERTIFICATES) AND INSPECTION OF WELDING SHALL BE CONDUCTED PER CBC 2022 SECTIONS 1704A, 1705A, 1705A.2, AND TABLE 1705A.2.1.

2.- ONLY CALIFORNIA LICENSED CONTRACTORS AUTHORIZED BY SHADE STRUCTURES SHALL INSTALL THE SHADE STRUCTURES.

3.- ALL WORK SHALL CONFORM TO CBC 2022 EDITION, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)

4.- ALL GALVANIZED STEEL TUBE PRODUCTS MANUFACTURED BY ALLIED TUBE & CONDUIT FOR THIS STRUCTURE SHALL BE, AND CONFORM TO ASTM A500 GRADE C, IN ITS' ENTIRETY.
TYPICAL MECHANICAL PROPERTIES ARE:
ROUND TUBE GRADE C 50,000 PSI YIELD STRESS MINIMUM / 62,000 PSI TENSILE STRESS MINIMUM

5.- ALL STRUCTURAL SHAPES SHALL BE COLD FORMED HSS ASTM A500 GRADE C, UNLESS OTHERWISE NOTED. TYPICAL MECHANICAL PROPERTIES ACHIEVED FOR HSS PRODUCTS:
SQUARE AND RECTANGULAR 50,000 PSI YIELD STRESS / 62,000 PSI TENSILE STRESS
ROUND PIPE 50,000 PSI YIELD STRESS / 62,000 PSI TENSILE STRESS

6.- ALL PLATES PRODUCTS SHALL COMPLY WITH ASTM A572 GRADE 50.

7.- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH A.I.S.C. SPECIFICATIONS.

8.- ALL WELDING TO CONFORM WITH AMERICAN WELDING SOCIETY STANDARDS AND SHALL BE INSPECTED BY AN AWS/CWI INSPECTOR. AWS D1.1 FOR HOT ROLLED. AWS D1.3 FOR SHEET/COLD FORMED. AWS D1.8 SEISMIC SUPPLEMENT.

9.- ALL FULL PENETRATION WELD SHALL BE CONTINUOUSLY INSPECTED PER AWS D1.1 & D1.8.

10.- SHOP CONNECTIONS SHALL BE WELDED UNLESS NOTED OTHERWISE. ALL FILLET WELDS SHALL BE A MINIMUM OF 3/16" ER70SX ELECTRODES UNLESS OTHERWISE NOTED. GMAW IS ACCEPTABLE.

11.- ALL STAINLESS STEEL BOLTS SHALL COMPLY WITH ASTM F-593, YIELD STRENGTH= 45 KSI, TENSILE STRENGTH= 85 KSI MINIMUM, ALLOY GROUP 2, CONDITION CW2. ALL NUTS SHALL COMPLY WITH ASTM F-594 ALLOY GROUP 2, CONDITION CW2. REFERRING TO RCSC, ASTM F-593 IS NOT CONSIDERED AS HIGH STRENGTH BOLTS. BOLTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION (ST).

12.- ALL STRUCTURAL STEEL (ITEMS FROM NOTE 5) SHALL BE POWDER COATED WITH ONE SHOP COAT (2.5 MILS MIN.) OF ZINC-RICH PRIMER, UNDERCOAT, AND FINISH COAT, OR EQUIVALENT PAINT SYSTEM. THIS COAT IS A WEATHER RESISTANT POWDER COATING BASED ON POLYESTER TGIC (MANUFACTURED BY SHERWIN WILLIAMS, ASKO NOBEL, PPG OR TIGER DRYLAC). TO ACHIEVE OPTIMUM ADHESION, IT IS RECOMMENDED THAT THE PROPER TREATMENT AND DRYING TAKE PLACE BEFORE COATING. POLYESTER POWDER (TGIC) SPECIFICATIONS SHALL BE AS FOLLOWS:
- PENCIL HARDNESS (ASTM D-3363). - HUMIDITY (ASTM D-2247).
- SOLVENT RESISTANCE (PCI METHOD) - 50 DBL RUBS SL. SOFTNESS.

13.- ALL STEEL ROUND TUBING (ITEMS FROM NOTE 4) SHALL BE TRIPLE COATED FOR RUST PROTECTION USING THE IN-LINE ELECTROPLATING COAT PROCESS. TUBING SHALL BE INTERNALLY COATED WITH ZINC AND ORGANIC COATINGS TO PREVENT CORROSION AS MANUFACTURED BY ALLIED TUBE & CONDUIT.

14.- ALL EXPOSED STEEL FASTENERS SHALL BE STAINLESS STEEL (TYPE 304 MINIMUM), HOT DIP GALVANIZED (ASTM A153, CLASS D MINIMUM OR ASTM F2329) AS APPLICABLE, OR PROTECTED WITH CORROSION PREVENTIVE COATING THAT DEMONSTRATED NO MORE THAN 2% OF RED RUST IN MINIMUM 1,000 HOURS OF EXPOSURE IN SALT SPRAY TEST PER ASTM B117. ZINC-PLATED FASTENERS DO NOT COMPLY WITH THIS REQUIREMENT.

CONCRETE SPECIFICATION
1.- CONCRETE SHALL BE SAMPLED AND TESTED PER CBC 2022 SECTION 1903A & SHALL BE INSPECTED PER SECTION 1903A.

2.- CONCRETE TO BE F'c= 4500 PSI, TYPE V CEMENT PLUS POZZOLAN OR SLAG CEMENT, MAXIMUM WATER/CEMENT RATIO OF 0.45, PER ACI 318-19 CHAPTER 19. (NO ADMIXTURES CONTAINING CALCIUM CHLORIDE WILL BE USED.) REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60 AND TO BE Fy= 60000 PSI , MIN. GR. 60.

3.- ALL ANCHOR BOLTS SET IN NEW CONCRETE (WHEN APPLICABLE) SHALL COMPLY WITH ASTM F-1554 GRADE 36 (GALVANIZED PER ASTM A153, CLASS D MINIMUM OR ASTM F2329).
ANCHOR BOLT'S DIAMETER NEEDS TO BE AS FOLLOW:
A) ANCHOR BOLT Ø1 1/4"

4.- CERTIFIED MILL TEST REPORTS ARE TO BE PROVIDED FOR EACH SHIPMENT OF REINFORCEMENT.

5.- ALL NON-SHRINK GROUT SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 5000 PSI, AND SHALL COMPLY THE REQUIREMENTS OF ASTM C109, ASTM C939, ASTM C1090, ASTM C1107, WHEN APPLICABLE.

6.- CONCRETE EXPOSED TO FREEZING-AND-THAWING CYCLES SHALL BE AIR ENTRAINED PER ACI 318 SECTION 19.3.

FABRIC SPECIFICATION
1.- FABRIC SHALL BE MANUFACTURED BY MULTIKNIT LTD., WHICH MEETS THE SPECIFICATIONS LISTED ON PAGE 2000, AND SHALL BE FABRICATED FROM POLYETHYLENE MATERIALS. MINIMUM SEAM LENGTH 3/4".

2.- THE FABRIC SHALL RETAIN 80% OF ITS TENSILE AND TEARING STRENGTH AFTER ULTRAVIOLET EXPOSURE PER ASTM G53 USING A 313 NM LIGHT SOURCE FOR 500 HOURS WHILE MOISTENED FOR 1 HOUR EVERY 12 HOURS.

3.- PROVIDE CERTIFICATION BY MANUFACTURER AND STATE FIRE MARSHAL TO SCHOOL'S DISTRICT INSPECTOR OF RECORD AT SITE SPECIFIC INSTALLATION. COPY OF FIRE CERTIFICATION SHALL BE SENT TO DSA.

4.- FABRIC SHALL REQUIRE ANNUAL INSPECTION AND MAINTENANCE BY THE DISTRICT. FIRE TEST ON FABRIC: NFPA 701 TEST 2 AND ASTM E 84 EXTENDED 30 MINUTES TEST. FLAME SPREAD INDEX (FSI): 10. SMOKE DEVELOPED INDEX (SDI): 50. FABRIC IS ACCEPTABLE FOR USE IN WILDLIFE URBAN INTERFACE AREA.

5.- FABRIC TOP NEEDS TO BE REMOVED IF SNOW EXCEEDING 5 PSF ARE ANTICIPATED, FABRIC TOP NEEDS TO BE REMOVED IF WINDS EXCEEDING 115 MPH ARE ANTICIPATED.

6.- A VISUAL INSPECTION LOOKING FOR TEAR AND ABNORMAL WEAR IN FABRIC MATERIAL AND THREAD IS REQUIRED PRIOR TO RE-INSTALLATION. USA SHADE & FABRIC STRUCTURES SHALL BE NOTIFIED IF SIGNIFICANT DAMAGE IS PRESENT BEFORE RE-INSTALLATION.

AIRCRAFT CABLE
1.- FOR FABRIC ATTACHMENT USE 3/8" 7x19 GALV. CABLE PER ASTM A1023/A1023M, WITH A BREAKING STRENGTH VALUE OF 14,400 LBS. CABLE SHALL BE TENSIONED TO 300 LBS MINIMUM AND 500 LBS MAXIMUM. THE MAXIMUM CALCULATED CABLE ALLOWABLE CAPACITY IS Sa=4909 LB.

2.- CABLES SHALL BE FED THROUGH THE FABRIC SLEEVES AROUND THE PERIMETER OF THE CANOPY AND TENSIONED UNTIL THE FABRIC PANELS (DESIGNED PURPOSELY UNDERSIZED) REACH A TAUT APPEARANCE. ANY LONG TERM CABLE SAG SHALL BE MINIMIZED DURING THE MAINTENANCE RE-TIGHTING VISITS AS REQUIRED.

MAXIMUM OCCUPANT LOAD (PER CBC 2022 TABLE 1604A.5)
-K-12: 250 PERSONS
-PUBLIC ASSEMBLY: 300 PERSONS
-EDUCATIONAL OCCUPANCIES
ABOVE 12TH GRADE: 500 PERSONS

CBC PC DESIGN NOTES

BUILDING CODE CBC 2022 (BASED ON IBC 2021)
FLOOR LIVE LOAD N/A
ROOF LIVE LOAD RLL 5 PSF

ALLOWABLE SOIL PRESSURE:
DL + LL (CONC FTG) 1500 PSF
DL + LL + SEISMIC (CONC FTG) 1500 PSF
LATERAL BEARING DESIGN VALUE 100 PSF/FT BELOW NATURAL GRADE, PER TABLE 1806A.2

TWO TIMES THE TABULAR VALUE IS USED (200 PSF/FT) PER CBC SECTION 1806A.3.4.
ALLOWABLE PIER FRICTIONAL RESISTANCE 250 PSF MAXIMUM BASED ON SECTION 1810A.3.3.1.4 (ONE-SIXTH OF THE BEARING VALUE).
UPLIFT FRICTIONAL RESISTANCE HAVE A SAFETY FACTOR OF 3.

ROOF SNOW LOAD 5 PSF
ICE LOAD ZERO PSF
FLOOD HAZARD AREA ZONE X
WHEN A SITE SPECIFIC PROJECT IS LOCATED IN A FLOOD ZONE OTHER THAN ZONE X, A LETTER STAMPED AND SIGNED FROM A SOILS ENGINEER IS NEEDED TO VALIDATE THE ALLOWABLE SOIL VALUES SPECIFIED IN THE PC ARE STILL APPLICABLE.

WIND DESIGN DIRECTIONAL PROCEDURE: ASCE 7-16, SECTION 27.3.2
NOTE: WIND DESIGN IS LIMITED TO UNOBSTRUCTED CLEAR FLOW CONDITION
-BASIC DESIGN WIND SPEED (3 SEC GUST) V 115 MPH
-ASD WIND LOAD (CBC 2022 SEC. 1603A.1.4) V_{ASD} 90 MPH
-WIND EXPOSURE FACTOR C
-TOPOGRAPHIC FACTOR Kzt 1
-RISK CATEGORY II
-VELOCITY PRESSURE EXPOSURE COEFFICIENT Kz 0.89
-VELOCITY PRESSURE qz 25.61 PSF

SEISMIC DESIGN:
-SITE CLASS D
NOTE: UNLESS A SITE-SPECIFIC GROUND MOTION HAZARD ANALYSIS IS PERFORMED, THE SM1 VALUE INCREASED BY 50% SHALL BE LESS THAN THE DESIGN CRITERIA STATED HEREIN.

-SPECTRAL RESPONSE COEFFICIENTS
SS 3.00g
S1 1.389g
SDS 2.00
SD1 1.39

-LATERAL FORCE RESISTING SYSTEM G.2 ORDINARY CANTILEVERED COLUMN SYSTEM.

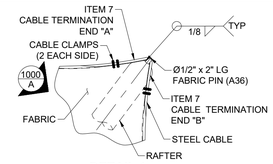
-SEISMIC IMPORTANCE FACTOR Ie 1.0
-DESIGN BASE SHEAR AT BASE V 3874 LB
-SEISMIC RESPONSE COEFFICIENTS Cs 1.6
-RESPONSE MODIFICATION FACTOR R 1.25
-ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE
-RISK CATEGORY II
-SEISMIC DESIGN CATEGORY E
-SITE COEFFICIENT CATEGORY Fa 1.2
Fv 1.5
-REDUNDANCY FACTOR ρ 1.3

GEOHAZARD REPORT IS NOT REQUIRED FOR OPEN FABRIC STRUCTURES 1,600 SQF OR LESS COMPLYING WITH THE REQUIREMENTS OF IR A-4 SECTION 3.1.1. OPEN FABRIC SHADE STRUCTURES GREATER THAN 1,600 SQUARE FEET UP TO A MAXIMUM OF 4,000 SQUARE FEET AND COMPLYING WITH THE REQUIREMENTS NOTED IN IR A-4 SECTION 3.1.1 DO NOT REQUIRE A GEOHAZARD REPORT PROVIDED A GEOTECHNICAL REPORT INDICATES THAT NO LIQUEFACTION POTENTIAL EXISTS.

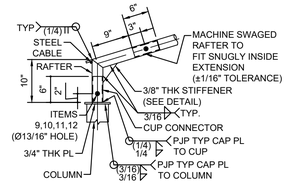
ARCHITECT OF RECORD TO DETERMINE IF SPECIFIC SITE IS IN GEOLOGIC HAZARD ZONE. GEOHAZARD REPORT REQUIREMENTS PER DSA IR A-4.

PC OPTIONS SHALL NOT INCLUDE LIQUEFIABLE SOIL (EXCEPTION: OPEN FABRIC SHADE STRUCTURES 1,600 SQUARE FEET OR LESS COMPLYING WITH REQUIREMENTS OF IR A-4 SECTION 3.1.1). IF STRUCTURE IS LOCATED IN AN AREA WITH LIQUEFIABLE SOIL OR SITE CLASS F, OVER-THE-COUNTER SUBMITTAL IS NOT ALLOWED AND REGULAR PROJECT SUBMITTAL IS REQUIRED. IF SITE IS NOT IN A MAPPED LIQUEFACTION HAZARD ZONE, IT MAY BE PRESUMED THAT NO LIQUEFACTION HAZARD EXISTS ON THAT SITE UNLESS A SITE-SPECIFIC GEOTECHNICAL REPORT IDENTIFIES SUCH HAZARD.

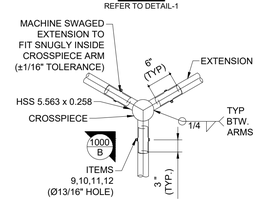
MINIMUM FOUNDATION SETBACK LIMIT IN ADJACENT SLOPE: THE DEPTH OF REQUIRED PIER EMBEDMENT SHALL START FROM AN ELEVATION THAT CORRESPONDS WITH A HORIZONTAL CLEAR DISTANCE OF 17'-6" FEET THAT INTERSECT WITH THE SLOPE (DAYLIGHTING). IF SETBACK LIMITS ARE SMALLER THAN CBC REQUIRES, A SITE-SPECIFIC SOILS REPORT IS REQUIRED.



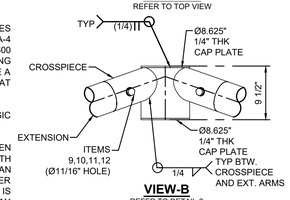
DETAIL 1
REFER TO TOP VIEW



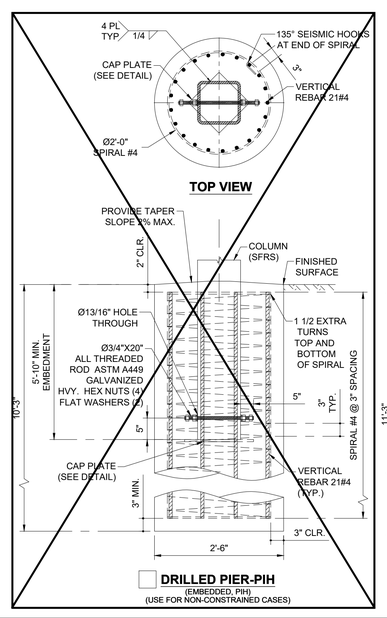
VIEW-A
REFER TO DETAIL-1



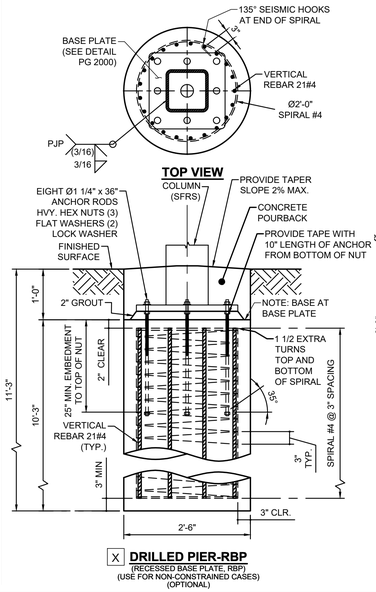
DETAIL-2
REFER TO TOP VIEW



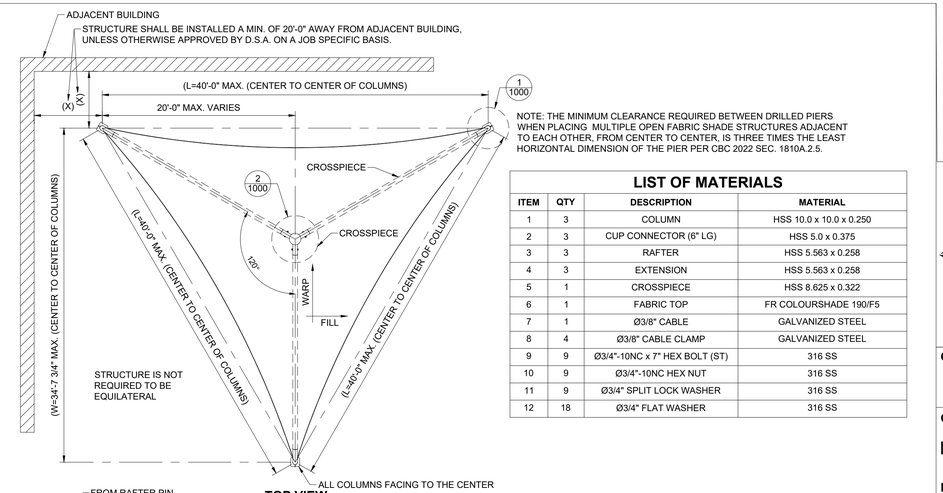
VIEW-B
REFER TO DETAIL-2



DRILLED PIER-PIH
(EMBEDDED, PIH)
(USE FOR NON-CONSTRAINED CASES)



DRILLED PIER-RBP
(RECESSED BASE PLATE, RBP)
(USE FOR NON-CONSTRAINED CASES)
(OPTIONAL)

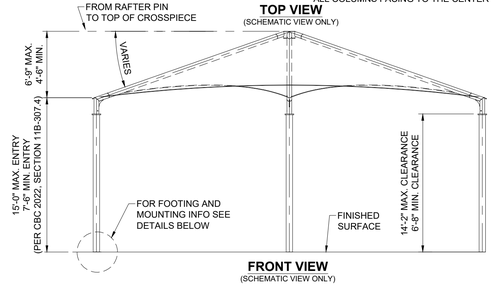


TOP VIEW
(SCHEMATIC VIEW ONLY)

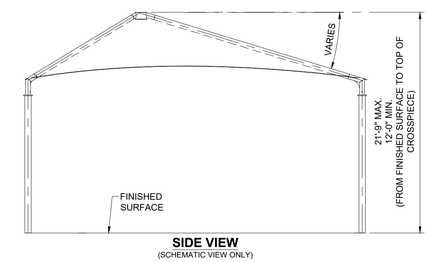
NOTE: THE MINIMUM CLEARANCE REQUIRED BETWEEN DRILLED PIERS WHEN PLACING MULTIPLE OPEN FABRIC SHADE STRUCTURES ADJACENT TO EACH OTHER, FROM CENTER TO CENTER, IS THREE TIMES THE LEAST HORIZONTAL DIMENSION OF THE PIER PER CBC 2022 SEC. 1810A.2.5.

LIST OF MATERIALS

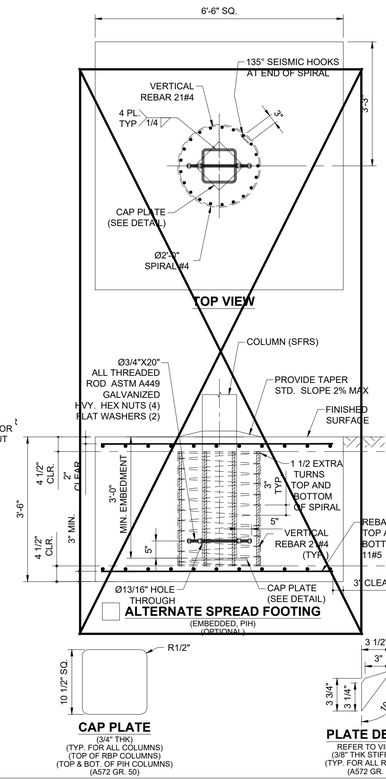
ITEM	QTY	DESCRIPTION	MATERIAL
1	3	COLUMN	HSS 10.0 x 10.0 x 0.250
2	3	CUP CONNECTOR (6" LG)	HSS 5.0 x 0.375
3	3	RAFTER	HSS 5.563 x 0.258
4	3	EXTENSION	HSS 5.563 x 0.258
5	1	CROSSPIECE	HSS 8.625 x 0.322
6	1	FABRIC TOP	FR COLOURSHADE 190/F5
7	1	Ø3/8" CABLE	GALVANIZED STEEL
8	4	Ø3/8" CABLE CLAMP	GALVANIZED STEEL
9	9	Ø3/4"-10NC x 7" HEX BOLT (ST)	316 SS
10	9	Ø3/4"-10NC HEX NUT	316 SS
11	9	Ø3/4" SPLIT LOCK WASHER	316 SS
12	18	Ø3/4" FLAT WASHER	316 SS



FRONT VIEW
(SCHEMATIC VIEW ONLY)



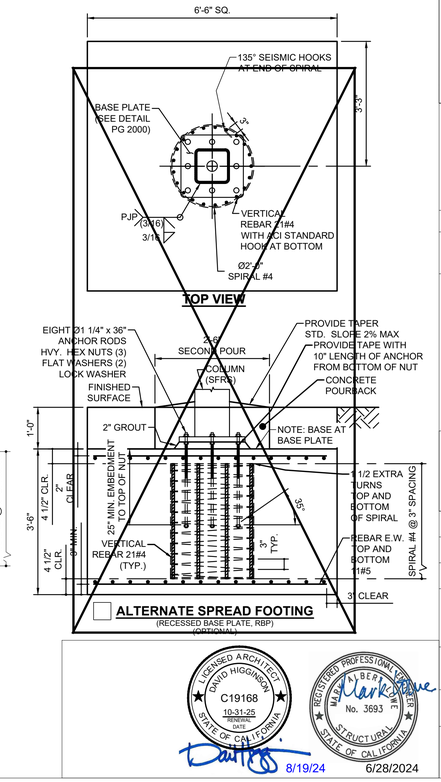
SIDE VIEW
(SCHEMATIC VIEW ONLY)



ALTERNATE SPREAD FOOTING
(EMBEDDED, PIH)
(OPTIONAL)

CAP PLATE
(3/4" THK)
(TYP. FOR ALL COLUMNS)
(TOP OF RBP COLUMNS)
(TOP & BOT. OF PIH COLUMNS)
(A572 GR. 50)

PLATE DETAIL
REFER TO VIEW A
(3/8" THK STIFFENER)
(TYP. FOR ALL RAFTERS)
(A572 GR. 50)



ALTERNATE SPREAD FOOTING
(RECESSED BASE PLATE, RBP)
(OPTIONAL)

LICENSED ARCHITECT DAVID HIGGINSON C19168 10-31-25 STATE OF CALIFORNIA 8/19/24

REGISTERED PROFESSIONAL ENGINEER MARK BERTHOLUE No. 3693 STRUCTURAL STATE OF CALIFORNIA 6/28/2024

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-122910 INC: 02
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 04/11/2025

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USASHADE & Fabric Structures
CORPORATE HEADQUARTERS
2580 ESTERS BLVD. SUITE 100
DFW AIRPORT, TX, 75261
800-966-5005

CERTIFICATIONS:
IAS CERTIFICATION No: FA-428
CLARK COUNTY MANUFACTURER CERTIFICATION NUMBER (NEVADA): 355

CUSTOMER:
Lodi Unified S.D.

PROJECT NAME:
Lodi Middle School

LOCATION:
945 S. Ham Lane
Lodi, CA 95242

MODEL NUMBER:
DSA30140-22

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123501 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 12/11/2024

STRUCTURE TYPE:
TRIANGLE
DSA

SIZE: **MAXIMUM**
40' x 40' x 40' x 15'e MAX.

SCALE : NONE

DRAWING SIZE: **D**

PRE-CHECK (PC) DOCUMENT
Code : 2022 CBC
A separate project application for construction is required.

Eng. By :	HH	12/01/22
Design By :	OS	12/01/22
Approved By :	MB	12/01/22

DRAWING DESCRIPTION:
PRODUCT INFORMATION

DWG. **DSA30140-22**

SHEET **27.1-1000**

REV. **NC**

Multiknit INTERNATIONAL

190/F5 Fire rated specifications

Standard range

Revision 0 28-Oct-12

Colour	Shade %	UV Block %	Average GSM	Average Warp break strength kgs	Average Elongation %	Average Weft break strength kgs	Average Elongation %	Average Burst Kpa	Average Burst to Mass ratio
Desert Sand	80	92	185	50	40	72	73	156	0.84
Blue	80	85	185	50	40	72	73	156	0.84
Brown	85		185	50	40	72	73	156	0.84
Green	80	85	185	50	40	72	73	156	0.84
Red	80	86	185	50	40	72	73	156	0.84
Silver	80	81	185	50	40	72	73	156	0.84
Terracotta	75	82	185	50	40	72	73	156	0.84
Yellow	80	89	185	50	40	72	73	156	0.84
				110 LB		159 LB		3258 PSF	

CONVERSION TO IMPERIAL UNITS:
185 GSM = .0378 psf
50 KGS = 110 Lb
72 KGS = 159 Lb
156 Kpa = 3258 psf

Notes:
- 190/F5 conforms to The California State Fire Marshal Title 19 Test for Small scale Fabrics
- Tear tests are done using a 50mm wide strip and a cross head speed of 500mm/min
- This report has been compiled using the mean results from all tests conducted on the given sample by our Quality Control Laboratory. the information provided is considered to be a good reflection of the relevant properties of the fabric tested. These results must only be used as an indication of the quality and characteristics of the fabric tested.
Company cannot be held responsible or liable in any way whatsoever should this information differ to that of a registered testing institution.

pp
Deon Joubert
General Manager - Multiknit (Pty) Ltd

Tommy Rogers
Managing Director - Multiknit (Pty) Ltd

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION — CAL FIRE — SINCE 1885

FLAME RETARDANT

Fabric Registration

LICENSE NUMBER: F-094501

EXTRA BLOCK SHADECLOTH

Product Marketed by:

ALNET PTY (LTD)
MOORSOM AVENUE, EPPING, INDUSTRY II
CAPE TOWN, S. AFRICA, ,

Issue Date : 03/25/2024
Expiration Date : 06/30/2025

This product meets the minimum requirements of flame resistance established by the California State Fire Marshal for products identified in Section 13115, California Health and Safety Code. The scope of the approved use of this product is provided in the current edition of the CALIFORNIA APPROVED LIST OF FLAME RETARDANT CHEMICALS AND FABRICS, GENERAL AND LIMITED APPLICATIONS CONCERNS published by the California State Fire Marshal.

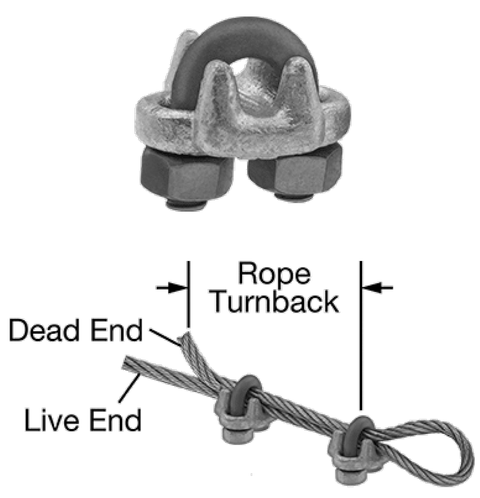
CWalker
Issued By Cortney Walker
Fire Engineering License Manager
Fire Engineering & Investigations Division

Reviewed and Approved By Patricia Setter
Deputy State Fire Marshal III
Fire Engineering & Investigations Division

OFFICE OF THE STATE FIRE MARSHAL

Please visit calfire.govmotus.org for more information on Licensing and Permitting with CAL FIRE

Page 1 of 1



FORGED WIRE ROPE CLAMP

FITTING TYPE ROPE CLAMP
FABRICATION: FORGED
MATERIAL: GALVANIZED STEEL
FOR WIRE ROPE DIAMETER 3/8"
NUMBER OF CLAMPS REQUIRED: 2
ROPE TURNBACK: 6 1/2"
FOR WIRE ROPE CONSTRUCTION 7 × 19
ATTACHMENT TYPE: LOOP
CLAMP:WIDTH 2", HEIGHT 1 15/16", THICKNESS 1 11/16"
REQUIRED INSTALLATION TOOL TORQUE WRENCH
REQUIRED TORQUE 45 FT.-LBS.
CAPACITY 80% OF THE ROPE'S CAPACITY
SPECIFICATIONS MET ASME B30.26, FED. SPEC. FF-C-450

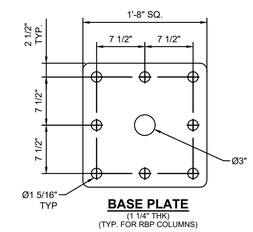
Aircraft Cable

Preformed, made in accordance with commercial specifications military and federal specification rope available.

Carbon Steel (Aircraft Cable) - Galvanized cable has the highest strength and greatest fatigue life of the materials offered. It has good to fair corrosion resistance in rural to industrial atmosphere environments. This material is most widely used for small diameter cables. Tin over galvanized cable offers greater corrosion resistance and reduced friction over pulleys.

7 x 19

7 x 19		Galvanized Min. Breaking Strengths (lbs)
Dia. (In)	Approx. Wt 1000 Ft/lbs	
3/32	17.	1,000
1/8	29.	2,000
5/32	45.	2,800
3/16	65.	4,200
7/32	86.	5,600
1/4	110.	7,000
9/32	139.	8,000
5/16	173.	9,800
3/8	243.	14,400



BASE PLATE
(1 1/4" THK)
(TYP. FOR RBP COLUMNS)

LICENSED ARCHITECT — DAVID HIGGINSON — C19168 — 10-31-25 — STATE OF CALIFORNIA
8/19/24

REGISTERED PROFESSIONAL ENGINEER — MARK ALBERT BERGER — No. 3693 — STRUCTURAL — STATE OF CALIFORNIA
6/28/2024

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CUSTOMER:
Lodi Unified S.D.

PROJECT NAME:
Lodi Middle School

LOCATION:
945 S. Ham Lane
Lodi, CA 95242

MODEL NUMBER:
DSA30140-22

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123501 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 12/11/2024

STRUCTURE TYPE:
TRIANGLE
DSA

SIZE: **MAXIMUM**
40' x 40' x 40' x 15'e MAX.

SCALE : NONE

DRAWING SIZE: **D**

PRE-CHECK (PC) DOCUMENT
Code : 2022 CBC
A separate project application for construction is required.

Eng. By :	HH	12/01/22
Design By :	OS	12/01/22
Approved By :	MB	12/01/22

DRAWING DESCRIPTION:
SPECIFICATIONS

DWG. **DSA30140-22**

SHEET **27.2-2000**

REV. **NC**