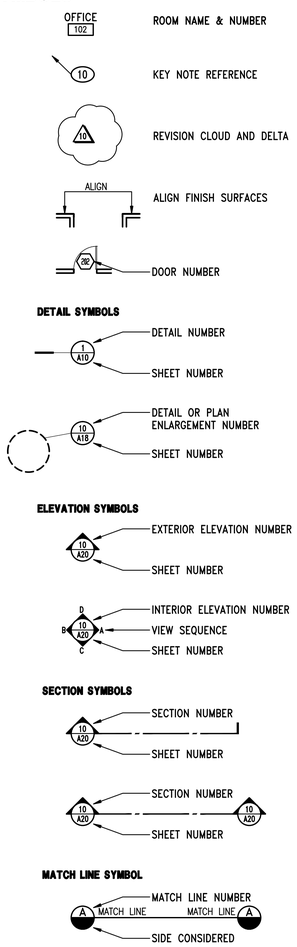
APPENDIX A

ABBREVIATIONS

– A –	
A.C.	AIR CONDITIONING
ACOUS.	ACOUSTICAL
ADJ.	ADJUSTABLE
ALUM.	ALUMINUM
ARCH.	ARCHITECTURAL
ASPH.	ASPHALT
A.B.	ANCHOR BOLT
– B –	
BLDG.	BUILDING
BLK.	BLOCK OR BLOCKING
BRKT.	BRACKET
BOT.	BOTTOM
BM.	BEAM
– C –	
CAB.	CABINET
C.B.	CATCH BASIN
CEM.	CEMENT
C.I.	CAST IRON
CK.BD.	CHALK BOARD
CER.	CERAMIC
CLG.	CEILING
CLOS.	CLOSET
COL.	COLUMN
COMP.	COMPOSITION
CONC.	CONCRETE
CONT.	CONTINUOUS
CORR.	CORRIDOR
CSK.	COUNTERSUNK
C.T.	CERAMIC TILE
℄	CENTER LINE
C.M.U.	CONCRETE MASONRY UNIT
– D –	
D.	PENNY
D.B.	DOOR BELL
D.D.	DOOR DIMENSION
DTL.	DETAIL
D.F.	DRINKING FOUNTAIN
DIAG.	DIAGONAL
DIM.	DIMENSION
DISP.	DISPOSAL
D.P.	DIMENSION POINT
DR.	DOOR
D.S.	DOWN SPOUT
DIA.	DIAMETER
DN.	DOWN
DWGS.	DRAWINGS
– E –	
EA.	EACH
E.F.	ELECTRIC FAN
E.G.	EXISTING GRADE
E.J.	EXPANSION JOINT
ELEC.	ELECTRIC
ELEV.	ELEVATION
EQ.	EQUAL
EXH.	EXHAUST
EXP.AGG.	EXPOSED AGGREGATE
EXIST.	EXISTING.
EXT.	EXTERIOR
& or ℰ	AND
EQUIP.	EQUIPMENT
– F –	
F.D.	FLOOR DRAIN
F.E.	FIRE EXTINGUISHER
F.H.W.S.	FLAT HEAD WOOD SCREW
FIN.	FINISH
FLR.	FLOOR
FIX.	FIXTURE
FLSG.	FLASHING
F.O.C.	FACE OF CONCRETE
F.O.S.	FACE OF STUD
F.O.SH.	FACE OF SHEATHING
F.O.W.	FACE OF WALL
FT.	FOOT OR FEET
FTG.	FOOTING
FURR.	FURRING
FRM.	FRAME
– G –	
GA.	GAUGE
GALV.	GALVANIZED
G.I.	GALVANIZED IRON
GL.	GLASS
G.S.D.	GLASS SLIDING DOOR
GYP.BD.	GYPSUM BOARD
– H –	
H.C.	HOLLOW CORE
HDWD.	HARDWOOD
HDWR.	HARDWARE
HGT.	HEIGHT
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
H.S.	HORIZONTAL SLIDING
HTR.	HEATER
– I –	
I.C.	INTERCOM
I.D.	INSIDE DIMENSION
IN.	INCHES
INSUL.	INSULATION
INT.	INTERIOR
– J –	
JAN.	JANITOR
JST.	JOIST
JUN.	JUNCTION
– K –	
KIT.	KITCHEN
– L –	
LAM.	LAMINATED
LAV.	LAVATORY
LBS.	POUNDS
LDR.	LEADER
LINO.	LINOLEUM
LOUV.	LOUVER
– M –	
M.C.	MEDICINE CABINET
M.D.F.	MEDIUM DENSITY FIBERBOARD
MDL.	MODEL
MECH.	MECHANICAL
MFG.	MANUFACTURED
MIN.	MINIMUM
M.T.	METAL THRESHOLD
MTL.	METAL
MUL.	MULLION
MAX.	MAXIMUM
M.S.	METAL STUD
– N –	
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
N.T.S.	NOT TO SCALE
– O –	
OBS.	OBSCURE
O.C.	ON CENTER
O.D.	OUTSIDE DIMENSION
O.H.W.S.	OVAL HEAD WOOD SCREW
OPN'G	OPENING
OPP.	OPPOSITE
OV/	OVER
O.F.C.	OUTSIDE FACE OF CONCRETE
O.F.S.	OUTSIDE FACE OF STUD
O.F.C.I.	OWNER FURNISHED, CONTRACTOR INSTALLED
– P –	
P.	PITCH
P.B.	PANIC BOLT
P. LAM.	PLASTIC LAMINATE
PERF.	PERFORATED
PKT.	POCKET
PL. or ℙ	PLATE
PLAS.	PLASTER
PLYWD.	PLYWOOD
P&S	POLE AND SHELF
PT.	POINT
PTN.	PARTITION
PR.	PAIR
– Q –	
QUAN.	QUANTITY
– R –	
R.	RADIUS
R.A.	RETURN AIR
R.D.	ROOF DRAIN
REF.	REFERENCE
REFR.	REFRIGERATOR
REG.	REGISTER
REINF.	REINFORCING
REQ'D.	REQUIRED
RES.	RESAWN
R.H.W.S.	ROUND HEAD WOOD SCREW
R.M.	ROOM
RND.	ROUND
ROS	ROUGH SAWN
RWD.	REDWOOD
– S –	
S.	SINK
S.A.	SUPPLY AIR
S.C.	SOLID CORE
SECT.	SECTION
SHTG.	SHEATHING
SHLV.	SHELVING
SHT.	SHEET
SHWR.	SHOWER
SIM.	SIMILAR
S.M.	SHEET METAL
S.M.S.	SHEET METAL SCREW
SQ.	SQUARE
S.S.	SERVICE SINK
S.STL.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SW.	SWITCH
– T –	
T.	TREAD
T.B.	TACK BOARD
T.C.	TOP OF CONCRETE OR CURB
T.J.	TOOL JOINT
TYP.	TYPICAL
T & G	TONGUE AND GROVE
– U –	
U.	URINAL
U.V.	UNIT VENTILATOR
– V –	
V.	VENT
V.C.T.	VINYL COMPOSITION TILE
VERT.	VERTICAL
VEST.	VESTIBULE
– W –	
W.C.	WATER CLOSET
WD.	WOOD
W.D.	WINDOW DIMENSION
W.H.	WATER HEATER
WIN.	WINDOW
WAINS.	WAINSCOT
W.P.	WEATHERPROOF
W/	WITH
– Y –	
YD.	YARD

SYMBOLS



LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD

SACRAMENTO, CALIFORNIA 95841

PROJECT DATA

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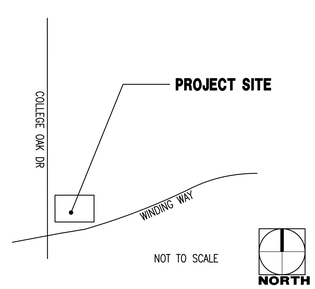
VICINITY MAP



SHEET INDEX

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LOS RIOS COMMUNITY COLLEGE DISTRICT
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SACRAMENTO, CALIFORNIA 95841
DESIGN DEVELOPMENT

TITLE SHEET, GENERAL NOTES, AND SYMBOLS

REVISIONS

DATE	OCTOBER 4, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

A0.0

CALIFORNIA GREEN BUILDING STANDARDS - MANDATORY REQUIREMENTS

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N/A	O	PLAN SHEET, SPEC, OR ATTACH REFERENCE
DIVISION 5.1 Planning and Design	Mandatory	Storm water pollution prevention projects that disturb less than 1 acre of land	5.106.1 through 5.106.1.2				
	Mandatory	Short term bicycle parking (with exception)	5.106.4.1.1				
	Mandatory	Long term bicycle parking	5.106.4.1.2 through 5.106.4.1.5				
	Mandatory	Designated parking for clean air vehicles	5.106.5.2				
	Mandatory	Parking stall marking	5.106.5.2.1				
	Mandatory	Single charging space requiremnts	5.106.5.3.1				
	Mandatory	Multiple charging space requirements [N]	5.106.5.3.2				
	Mandatory	EV charging space calculation [N] (with exceptions)	5.106.5.3.3				
	Mandatory	[N] identification	5.106.5.3.4				
	Mandatory	[N] Future charging spaces (with notes 1-3)	5.106.5.3.5				
	Mandatory	Light pollution reduction [N] (with exceptions and note)	5.106.8				
	Mandatory	Grading and paving (exception for additions and alterations not altering the drainage path)	5.106.10				
DIVISION 5.2 Energy Efficiency	Mandatory	Meet the minimum energy efficiency standard	5.201.1				
DIVISION 5.3 Water Efficiency and Conservation	Mandatory	Seperate meters (new buildings or additions > 50,000 square feet that consume more than 100 gal/day)	5.303.1.1				
	Mandatory	Seperate meters (for tenants in new buildings or additions that consume more than 1,000 gal/day)	5.303.1.2				
	Mandatory	Water closets shall not exceed 1.28 gallons per flush (gpf)	5.303.3.1				
	Mandatory	Wall-mounted urinals shall not exceed 0.125 gpf	5.303.3.2.1				
	Mandatory	Floor-mounted urinals shall not exceed 0.5 gpf	5.303.3.2.2				
	Mandatory	Single showerhead shall have maximum flow rate of 1.8 gpm at 80 psi	5.303.3.3.1				
	Mandatory	Multiple showerheads serving one shower shall have a combined flow rate of 1.8 gpm at 80 psi	5.303.3.3.2				
	Mandatory	Nonresidential lavatory faucets	5.303.3.4.1				
	Mandatory	Kitchen faucets	5.303.3.4.2				
	Mandatory	Wash fountains	5.303.3.4.3				
	Mandatory	Metering faucets	5.303.3.4.4				
	Mandatory	Metering faucets for wash fountains	5.303.3.4.5				
	Mandatory	Food waste disposers	5.303.4.1				
	Mandatory	Areas of additions or alterations	5.303.5				
	Mandatory	Standards for plumbing fixtures and fittings	5.303.6				
	Mandatory	Outdoor water use in landscape ares equal to or greater than 500 sf	5.304.2				
	Mandatory	Outdoor water use in rehabilitated landscape projects with areas equal to or greater than 2,500 sf	5.304.3				
	Mandatory	Outdoor water use in landscape areas of 2,500 sf or less	5.304.4				
	Mandatory	Graywater or rainwater use in landscape areas	5.304.5				
DIVISION 5.4 Material Conservation and Resource Efficiency (continued)	Mandatory	Weather protection	5.407.1				
	Mandatory	Moisture control sprinklers	5.407.2.1				
	Mandatory	Moisture control: exterior door protection	5.407.2.2.1				
	Mandatory	Moisture control: flashing	5.407.2.2.2				
	Mandatory	Construction waste management- comply with either: Sections 5.408.1.1, 5.408.1.2, 5.408.1.3 or more stringent local ordinance	5.408.1.1, 5.408.1.2, 5.408.1.3				
	Mandatory	Construction waste management: documentation	5.408.1.4				
	Mandatory	Universal waste [A]	5.408.2				
	Mandatory	Excavated soil and land clearing debris (100% reuse or recycle)	5.408.3				
	Mandatory	Recycling by occupants (with exception)	5.410.1				
	Mandatory	Recycling by occupants: additions (with exception)	5.410.1.1				
	Mandatory	Recycling by occupants: sample ordinance	5.410.1.2				

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CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N/A	O	PLAN SHEET, SPEC, OR ATTACH REFERENCE
(continued) DIVISION 5.4 Material Conservation and Resource Efficiency	Mandatory	Commissioning new buildings (greater than or equal to 10,000 sf) [N]	5.410.2				
	Mandatory	Owner's or owner representative's Project Requirements (OPR) [N]	5.410.2.1				
	Mandatory	Basis of design (BOD) [N]	5.410.2.2				
	Mandatory	Commissioning plan [N]	5.410.2.3				
	Mandatory	Functional performance testing [N]	5.410.2.4				
	Mandatory	Documentation and training [N]	5.410.2.5				
	Mandatory	Systems manual [N]	5.410.2.5.1				
	Mandatory	Systems operations training [N]	5.410.2.5.2				
	Mandatory	Commissioning report [N]	5.410.2.6				
	Mandatory	Testing and adjusting for new buildings < 10,000 sf or new systems that serve additions or alterations[A]	5.410.4				
	Mandatory	System testing plan for renewable energy, landscape irrigation and water reuse [A]	5.410.4.2				
	Mandatory	Procedures for testing and adjusting	5.410.4.3				
	Mandatory	Procedures for HVAC balancing	5.410.4.3.1				
	Mandatory	Report for testing and adjusting	5.410.4.4				
	Mandatory	Operations and maintenance (O&M) manual	5.410.4.5				
	Mandatory	Inspection and reports	5.410.4.5.1				
DIVISION 5.5 Environmental Quality	Mandatory	Fireplaces	5.503.1				
	Mandatory	Woodstoves	5.503.1.1				
	Mandatory	Temporary ventilation	5.504.1				
	Mandatory	Covering of duct openings and protection of mechanical equipment during construction	5.504.3				
	Mandatory	Adhesives, sealants and caulks	5.504.4.1				
	Mandatory	Paints and coatings	5.504.4.3				
	Mandatory	Aerosol paints and coatings	5.504.4.3.1				
	Mandatory	Aerosol paints and coatings: verification	5.504.4.3.2				
	Mandatory		5.504.4.4				
	Mandatory		5.504.4.4.1				
	Mandatory	Carpet adhesive per Table 5.504.4.4.1	5.504.4.4.2				
	Mandatory	Composite wood products	5.504.4.5				
	Mandatory	Composite wood products: Documentation	5.504.4.5.3				
	Mandatory	Resilient flooring systems	5.504.4.6				
	Mandatory	Resilient flooring: Verification of compliance	5.504.4.6.1				
	Mandatory	Filters (with exceptions)	5.504.5.3				
	Mandatory	Filters labeling	5.504.5.3.1				
	Mandatory	Environmental tobacco smoke (ETS) control	5.504.7				
	Mandatory	Indoor moisture control	5.505.1				
	Mandatory	Outside air delivery	5.506.1				
	Mandatory	Carbon dioxide (CO2) monitoring	5.506.2				
	Mandatory	Acoustical control (with exception)	5.507.4				
	Mandatory	Exterior noise transmission, prescriptive method (with exceptions)	5.507.4.1				
	Mandatory	Noise exposure where noise contours are not readily available	5.507.4.1.1				
	Mandatory	Performance method	5.507.4.2				
	Mandatory	Site features	5.507.4.2.1				
	Mandatory	Documentation of compliance	5.507.4.2.2				
	Mandatory	Interior sound transmission (with note)	5.507.4.3				
	Mandatory	Ozone depletion and greenhouse gas reductions	5.508.1				
	Mandatory	Chlorofluorocarbons (CFCs)	5.508.1.1				
	Mandatory	Halons	5.508.1.2				
	Mandatory	Supermarket refrigerant leak reduction for retail food stores 8,000 sf or more Sections 5.508.2 through 5.508.2.6.3	5.508.2 through 5.508.2.6.3				
		END OF MANDATORY PROVISIONS					

CONSTRUCTION WASTE MANAGEMENT PLAN

1. RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 50 PERCENT OF THE NON-HAZARDOUS CONSTRUCTION AND DEMOLITION WASTE.
2. CONTRACTOR TO SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN THAT;
   a. IDENTIFIES THE CONSTRUCTION AND DEMOLITION WASTE MATERIALS TO BE DIVERTED FROM DISPOSAL BY EFFICIENT USAGE, RECYCLING, REUSE ON THE PROJECT OR SALVAGE FOR FUTURE USE OR SALE.
   b. DETERMINES IF CONSTRUCTION AND DEMOLITION WASTE MATERIALS WILL BE SORTED ON-SITE (SOURCE-SEPARATED) OR BULK MIXED (SINGLE STREAM).
   c. IDENTIFIES DIVERSION FACILITIES WHERE CONSTRUCTION AND DEMOLITION WASTE MATERIAL COLLECTED WILL BE TAKEN.
   d. SPECIFIES THAT THE AMOUNT OF CONSTRUCTION AND DEMOLITION WASTE MATERIALS DIVERTED SHALL BE CALCULATED BY WEIGHT OR VOLUME, NOT BY BOTH.
3. UTILIZE A WASTE MANAGEMENT COMPANY THAT CAN PROVIDE VERIFIABLE DOCUMENTATION THAT THE PERCENTAGE OF CONSTRUCTION AND DEMOLITION WASTE MATERIAL DIVERTED FROM THE LANDFILL COMPLIES WITH THESE REQUIREMENTS.
4. THE COMBINED WEIGHT OF NEW CONSTRUCTION DISPOSAL THAT DOES NOT EXCEED TWO POUNDS PER SQUARE FOOT OF BUILDING AREA MAY BE DEEMED TO MEET THE 50 PERCENT MINIMUM REQUIREMENT AS APPROVED BY THE LOCAL AGENCY.
5. DOCUMENTATION SHALL BE PROVIDED TO THE ENFORCING AGENCY WHICH DEMONSTRATES COMPLIANCE WITH THE ABOVE REQUIREMENTS. THE WASTE MANAGEMENT PLAN SHALL BE UPDATED AS NECESSARY AND SHALL BE ACCESSIBLE DURING CONSTRUCTION FOR EXAMINATION BY THE ENFORCING AGENCY.
6. 100 PERCENT OF TREES, STUMPS, ROCKS AND ASSOCIATED VEGETATION AND SOILS RESULTING PRIMARILY FROM LAND CLEARING SHALL BE REUSED OR RECYCLED. FOR A PHASED PROJECT, SUCH MATERIAL MAY BE STOCKPILED ON SITE UNTIL THE STORAGE SITE IS DEVELOPED. EXCEPTION: REUSE, EITHER ON OR OFF SITE, OF VEGETATION OR SOIL CONTAMINATED BY DISEASE OR PEST INFESTATION. IF CONTAMINATION BY DISEASE OR PEST INFESTATION IS SUSPECTED, CONTACT THE COUNTY AGRICULTURAL COMMISSIONER AND FOLLOW ITS DIRECTION FOR RECYCLING OR DISPOSAL OF THE MATERIAL.

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LOW-EMITTING MATERIALS

ADHESIVES AND SEALANTS

ALL ADHESIVES AND SEALANTS USED ON THE INTERIOR OF THE BUILDING (DEFINED AS INSIDE OF THE WEATHERPROOFING SYSTEM AND APPLIED ON-SITE) SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING REFERENCE STANDARDS:

ADHESIVES, SEALANTS AND SEALANT PRIMERS: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) RULE #1168. VOC LIMITS ARE LISTED IN THE TABLE BELOW AND CORRESPOND TO AN EFFECTIVE DATE OF JULY 1, 2005 AND RULE AMENDMENT DATE OF JANUARY 7, 2005

TABLE 1: SCAQMD VOC LIMITS

ARCHITECTURAL APPLICATIONS	VOC LIMIT (g/L LESS WATER)	SPECIALTY APPLICATIONS	VOC LIMIT (g/L LESS WATER)
INDOOR CARPET ADHESIVES	50	PVC WELDING	510
CARPET PAD ADHESIVES	50	CPVC WELDING	490
WOOD FLOORING ADHESIVES	100	ABS WELDING	325
RUBBER FLOOR ADHESIVES	60	PLASTIC CEMENT WELDING	250
SUBFLOOR ADHESIVES	50	ADHESIVE PRIMER FOR PLASTIC	550
CERAMIC TILE ADHESIVES	65	CONTACT ADHESIVE	80
VCT & ASPHALT ADHESIVES	50	SPECIAL PURPOSE CONTACT ADHESIVE	250
DRYWALL & PANEL ADHESIVES	50	STRUCTURAL WOOD MEMBER ADHESIVE	140
COVE BASE ADHESIVES	50	SHEET APPLIED RUBBER LINING OPERATIONS	850
MULTIPURPOSE CONSTRUCTION ADHESIVES	70	TOP & TRIM ADHESIVE	250
STRUCTURAL GLAZING ADHESIVES	100		
SUBSTRATE SPECIFIC APPLICATIONS	**VOC LIMIT (g/L LESS WATER)**	**SEALANTS**	**VOC LIMIT (g/L LESS WATER)**
METAL TO METAL	30	ARCHITECTURAL	250
PLASTIC FOAMS	50	NONMEMBRANE ROOF	300
POROUS MATERIAL (EXCEPT WOOD)	50	ROADWAY	250
WOOD	30	SINGLE-PLY ROOF MEMBRANE	450
FIBERGLASS	80	OTHER	420
		SEALANT PRIMERS	**VOC LIMIT (g/L LESS WATER)**
		ARCHITECTURAL NON POROUS	250
		ARCHITECTURAL POROUS	775
		OTHER	750

AEROSOL ADHESIVES: GREEN SEAL STANDARD FOR COMMERCIAL ADHESIVES GS-36 REQUIREMENTS IN EFFECT ON OCTOBER 19, 2000

TABLE 2: GREENSEAL VOC LIMITS

AEROSOL ADHESIVES	VOC WEIGHT (g/L MINUS WATER)
GENERAL PURPOSE MIST SPRAY	65% VOCs BY WEIGHT
GENERAL PURPOSE WEB SPRAY	55% VOCs BY WEIGHT
SPECIAL PURPOSE AEROSOL ADHESIVES (ALL TYPES)	70% VOCs BY WEIGHT

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PAINTS AND COATINGS

PAINTS AND COATINGS USED ON THE INTERIOR OF THE BUILDING (DEFINED AS INSIDE OF THE WEATHERPROOFING SYSTEM AND APPLIED ON-SITE) SHALL COMPLY WITH THE FOLLOWING CRITERIA:

ARCHITECTURAL PAINTS, COATINGS AND PRIMERS APPLIED TO INTERIOR WALLS AND CEILINGS: DO NOT EXCEED THE VOC CONTENT LIMITS ESTABLISHED IN GREEN SEAL STANDARD GS-11, PAINTS, FIRST EDITION, MAY 20, 1993. PRIMERS MUST MEET THE VOC LIMIT FOR NON-FLAT PAINT.

- FLATS: ≤ 50 g/L
- NON-FLATS: ≤ 150 g/L

ANTI-CORROSIVE AND ANTI-RUST PAINTS APPLIED TO INTERIOR FERROUS METAL SUBSTRATES: DO NOT EXCEED THE VOC CONTENT LIMIT OF 250 g/L ESTABLISHED IN GREEN SEAL STANDARD GS-03, ANTI-CORROSIVE PAINTS, SECOND EDITION, JANUARY 7, 1997.

CLEAR WOOD FINISHES, FLOOR COATINGS, STAINS, SEALERS, AND SHELLACS APPLIED TO INTERIOR ELEMENTS: DO NOT EXCEED THE VOC CONTENT LIMITS ESTABLISHED IN SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) RULE #1113, ARCHITECTURAL COATINGS, IN EFFECT ON JANUARY 1, 2004. THE FOLLOWING LIST OF SCAQMD VOC LIMITS ARE EXAMPLES. REFER TO THE STANDARDS FOR COMPLETE DETAILS.

- CLEAR WOOD FINISHES: VARNISH 350 g/L; LACQUER 550 g/L
- FLOOR COATINGS: 100 g/L
- SEALERS: WATERPROOFING SEALERS 250g/L; SANDING SEALERS 275 g/L; ALL OTHER SEALERS 200 g/L
- SHELLAC: CLEAR 730 g/L; PIGMENTED 550g/L
- STAINS: 250 g/L

CARPET SYSTEMS

ALL CARPET INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE TESTING AND PRODUCT REQUIREMENTS OF THE CARPET AND RUG INSTITUTE'S GREEN LABEL PLUS PROGRAM.

ALL CARPET CUSHION INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE CARPET AND RUG INSTITUTE'S GREEN LABEL PROGRAM.

FOR ALL CARPET ADHESIVES, SEE ADHESIVES AND SEALANTS ABOVE.

COMPOSITE WOOD AND AGRIFIBER PRODUCTS

COMPOSITE WOOD AND AGRIFIBER PRODUCTS USED ON THE INTERIOR OF THE BUILDING (DEFINED AS INSIDE OF THE WEATHERPROOFING SYSTEM) SHALL CONTAIN NO ADDED UREA-FORMALDEHYDE RESINS. LAMINATING ADHESIVES USED TO FABRICATE ON-SITE AND SHOP-APPLIED COMPOSITE WOOD AND AGRIFIBER ASSEMBLIES SHALL CONTAIN NO ADDED UREA-FORMALDEHYDE RESINS.

COMPOSITE WOOD AND AGRIFIBER PRODUCTS ARE DEFINED AS: PARTICLEBOARD, MEDIUM DENSITY FIBERBOARD (MDF), PLYWOOD, WHEATBOARD, STRAWBOARD. PANEL SUBSTRATES AND DOOR CORES. FURNITURE AND EQUIPMENT ARE NOT CONSIDERED BASE BUILDING ELEMENTS AND ARE NOT INCLUDED.

RESILIENT FLOORING SYSTEMS

FOR 80 PERCENT OF FLOOR AREA RECEIVING RESILIENT FLOORING, INSTALL RESILIENT FLOORING COMPLYING WITH THE VOC EMISSION LIMITS DEFINED IN THE 2009 COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS (CHPS) CRITERIA AND LISTED ON ITS LOW-EMITTING MATERIALS LIST (OR PRODUCT REGISTRY) OR CERTIFIED UNDER THE RESILIENT FLOOR COVERING INSTITUTE (RFCI) FLOORSCORE PROGRAM.

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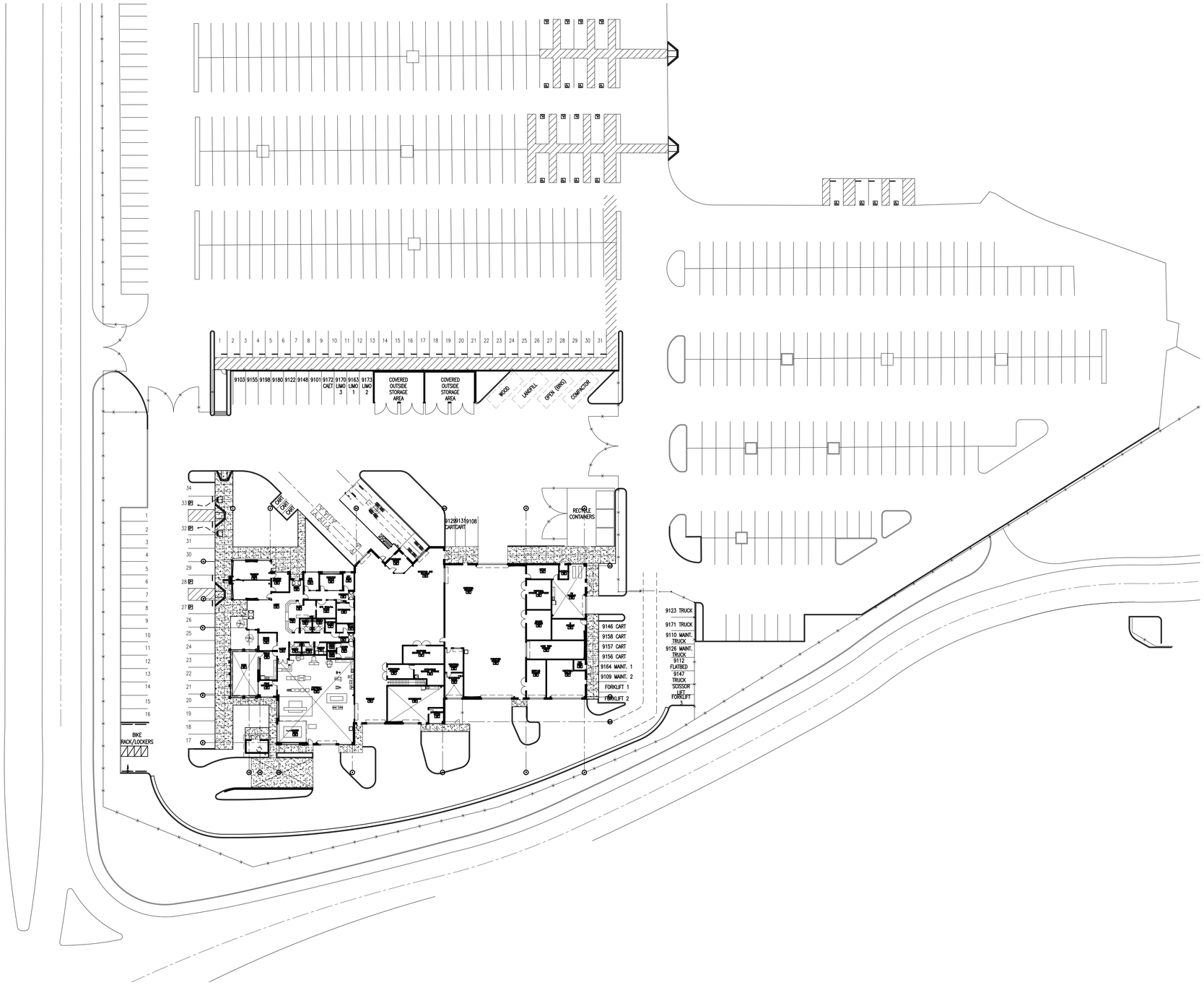
LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENTO, CALIFORNIA 95841
DESIGN DEVELOPMENT

GREEN BUILDING CODE

REVISIONS

DATE OCTOBER 4, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

A0.1



1 EXIT FLOOR PLAN

1"=30'-0"

NORTH

1"=30'

30' 0 15' 30' 60'

KEYNOTES

CODE INFORMATION

TYPE OF CONSTRUCTION: V-B – SPRINKLED

OCCUPANT TYPES: (506.2)

FIRST FLOOR	SQUARE ALLOWANCE	FEET ACTUAL	BLDG. HT. ALLOW	BLDG. HT. ACTUAL	NUMBER OF STORIES ALLOW	NUMBER OF STORIES ACTUAL
B (S1) OFFICE	36,000	5,186	60'	±35'	1	1
S1 (S1)	36,000	19,085	60'	±35'	2	1
TOTALS	72,000	24,271	60'	±35'		1

MIXED USE & OCCUPANCIES (TABLE 508.4)

B/S1 = NO SEPARATION REQUIREMENT

INCIDENTAL USES (TABLE 509)

PAINT SHOP = 1 HOUR
HAZARDOUS ROOM = 1 HOUR

OCCUPANT LOADS

B OCCUPANCY = 125 OCCUPANTS
S1 OCCUPANCY = 148 OCCUPANTS

TOTAL = 273 OCCUPANTS

PLUMBING REQUIREMTNS (TABLE 422-1 CPC)

FIRST FLOOR:
GROUP B = 200 OCCUPANT LOAD FACTOR
5,186 S.F. / 200 = 26 OR 13 EA

GROUP S1 = 300 OCCUPANT LOAD FACTOR
19,107 S.F. / 300 = 64 OR 32 EA.

	WATER CLOSETS	URINALS	LAVS	SHOWERS	DRINKING FOUNTAINS	SERVICE SINK
B						
MALE	1	–	1	–	1	1
FEMALE	1	–	1	–	–	–
S1						
MALE	1	–	1	–	1	1
FEMALE	1	–	1	–	–	–

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EXIT FLOOR PLAN AND CODE ANALYSIS

REVISIONS

DATE SEPT. 24, 2019
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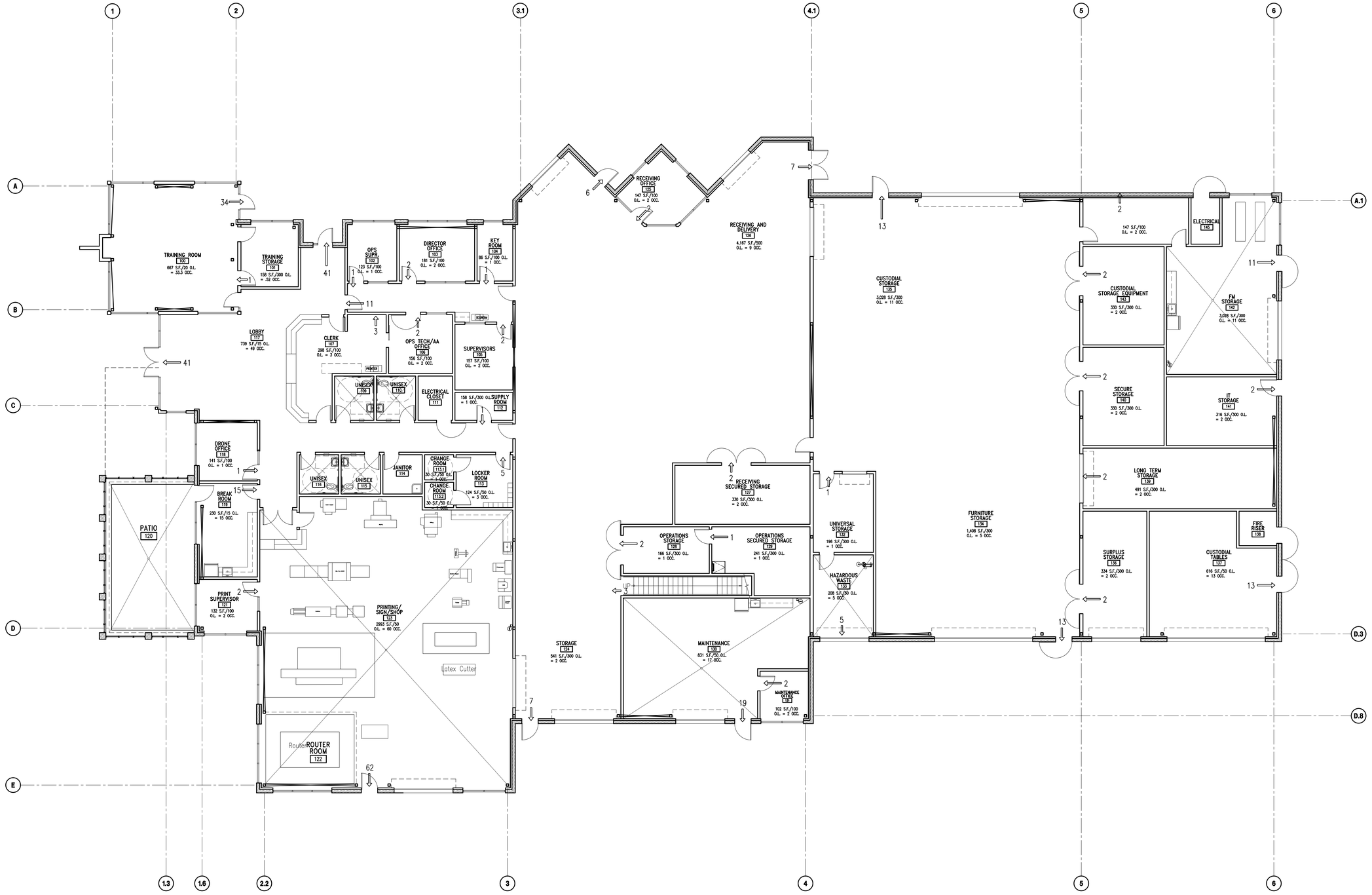
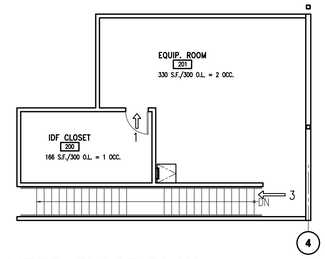
A0.2





1 **EXITING FLOOR PLAN**
1/8"=1'-0"

NORTH

1/8" = 1'-0"
0 2' 6' 12' 24'

1 **MEZZ. FLOOR PLAN**
1/8"=1'-0"

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DESIGN DEVELOPMENT

FLOOR PLAN CODE ANALYSIS AND EXITING

REVISIONS

DATE	SEPT. 24, 2019
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A0.3

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WALL TYPES

REVISIONS

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A0.4

LEGEND

AD	AREA DRAIN
CAB	CABINET
CO	CLEANOUT
DF	DRINKING FOUNTAIN
DI	DRAIN INLET
DMH	DRAIN MANHOLE
E	ELECTRIC
FA	FIRE ALARM
FF	FINISHED FLOOR
FH	FIRE HYDRANT
GV	GAS VALVE
HB	HOSE BIBB
HR	HANDRAIL
ICV	IRRIGATION CONTROL VALVE
PED	PEDESTAL
SCO	SEWER CLEANOUT
SIG	SIGNAL
TD	TRENCH DRAIN
TELE	TELEPHONE
TMH	TELEPHONE MANHOLE
W	WATER
WD	WOOD
WM	WATER METER
WV	WATER VALVE
XFRM	TRANSFORMER
× 120.00	EXISTING GRADE ELEVATION
	FIRE HYDRANT
	HOSE BIB
RP	REDUCED PRESSURE CHECK VALVE
	SIGN
	STREET LIGHT

GENERAL NOTES

UTILITY NOTE:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN DETERMINED FROM VARIOUS SOURCES. WOOD RODGERS, INC. MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED. WOOD RODGERS, INC. HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

SURVEY CONTROL:

THE HORIZONTAL CONTROL FOR THIS SURVEY IS REFERENCED TO THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCC83), ZONE 2, EPOCH 2007.00, AND IS BASED ON UPON THE FOUND NATIONAL GEODETIC SURVEY POINTS DESIGNATED "AC9237", "CH6483" & "DK2883".

BASIS OF ELEVATIONS:

ELEVATIONS SHOWN ARE BASED UPON THE COUNTY OF SACRAMENTO BENCHMARK DESIGNATED "13-8" AND IS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29). ELEVATION BEING TAKEN AS 77.26 FEET.

HORIZONTAL & VERTICAL COORDINATE CONTROL REFERENCE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	2000485.6970	6747147.3260	99.1090	Set 5/8 Rebar w/cap
101	2000551.3010	6748061.3180	97.6780	X in Walk
102	2000514.0460	6749373.2660	92.2700	Mag Nail w/washer
103	1998886.0360	6748063.0960	84.8830	X in Walk
104	1998560.5830	6747828.3710	84.5790	1""IP WITH CTL CAP
105	1998523.4870	6747197.4690	85.9830	MAG NAIL W/SHINER
106	1998853.6680	6749359.2520	81.7980	Set 5/8 Rebar w/cap
107	1997171.9530	6747208.9380	76.2640	Set 5/8 Rebar w/cap
108	1999327.7110	6748361.4710	86.6560	X in Walk
109	2000352.6810	6748465.3290	92.2090	X IN GUTTER
2000	2000253.4800	6748023.6550	97.6970	MINI MAG NAIL
2001	2000253.1680	6747883.4440	99.8470	CONC NAIL
4700	1998266.9185	6747550.8053	80.2000	TEMP SET + ON CONC
4971	1998615.4719	6748407.7508	83.4800	TEMP SET MAG WASHER

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LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD

SACRAMENTO, CALIFORNIA 95841

EXISTING TOPOGRAPHY

REVISIONS

DATE	OCTOBER 4, 2019
SCALE	AS NOTED
DRAWN BY	A. WONG
JOB NO.	19-06
SHEET	

C1.0

LEGEND

- SAWCUT LINE
- LIMIT OF PROJECT SURFACE IMPROVEMENTS
- APPROXIMATE AREA OF DEMOLITION (SEE ALSO GENERAL NOTES THIS SHEET.)
- TREE TO BE REMOVED (ALL TREES WITHIN AREA OF DEMOLITION NOT SHOWN WITH THIS SYMBOL ARE TO REMAIN.)
- LINEAL DEMOLITION ITEM AS SHOWN AND/OR NOTED IN PLAN.

GENERAL NOTES

1. ALL EXISTING IMPROVEMENTS SURROUNDING THE PROJECT SITE SHALL REMAIN UNDISTURBED UNLESS NOTED OTHERWISE.
2. SAWCUT SHALL BE PROVIDED WHERE SHOWN TO ENSURE A CLEAN EDGE TO PAVE TO. DO NOT OVERCUT AT ANGLE POINTS.
3. AREA OF SURFACE DEMOLITION:
   IMPROVEMENTS SHOWN WITHIN AREA (INCLUDING PAVEMENT, CONCRETE, SUBBASE, STRIPING, CURBING, MISC LANDSCAPING, ETC) ARE TO BE DEMOLISHED OR REMOVED UNLESS NOTED OTHERWISE. SEE LANDSCAPE PLANS FOR SPECIFICS REGARDING LANDSCAPING AND IRRIGATION, AND SEE PLUMBING & ELECTRICAL PLANS FOR SPECIFICS REGARDING ALL LIGHTING, DRY UTILITIES AND APPURTENANCES.
4. CONTRACTOR TO DISPOSE OF ANY TREES REMOVED DURING GRADING BY MEANS OTHER THAN LANDFILL.
5. TREES TO REMAIN SHALL BE PROTECTED.
6. OWNER SHALL BE GIVEN OPTION TO SALVAGE ANY MATERIAL SHOWN TO BE DEMOLISHED. SALVAGED MATERIALS SHALL BE STOCKPILED AT A LOCATION ON SITE.
7. SAWCUT AND REMOVE ASPHALT PAVEMENT, CONCRETE PAVEMENT, CURBS, GUTTERS, SIDEWALKS, BOLLARDS AND BASE MATERIAL AS INDICATED BY HATCHED AREA. AT CONTRACTOR'S OPTION, ASPHALT AND BASE MATERIAL MEETING SPECIFICATIONS MAY BE PROCESSED AND USED AS FILL MATERIAL IN HARDSCAPE AREAS IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.

DEMOLITION NOTES

(1) EXISTING FENCE TO REMAIN.
(2) EXISTING DRAIN INLET TO BE REMOVED.
(3) EXISTING DRAIN LINE TO BE REMOVED APPROX. AS SHOWN. SEE WET UTILITY PLANS FOR DETAILS.
(4) EXISTING STREET LIGHT TO BE REMOVED.
(5) EXISTING STREET LIGHT CONDUIT TO REMAIN.

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DEMOLITION PLAN

REVISIONS

DATE	OCTOBER 4, 2019
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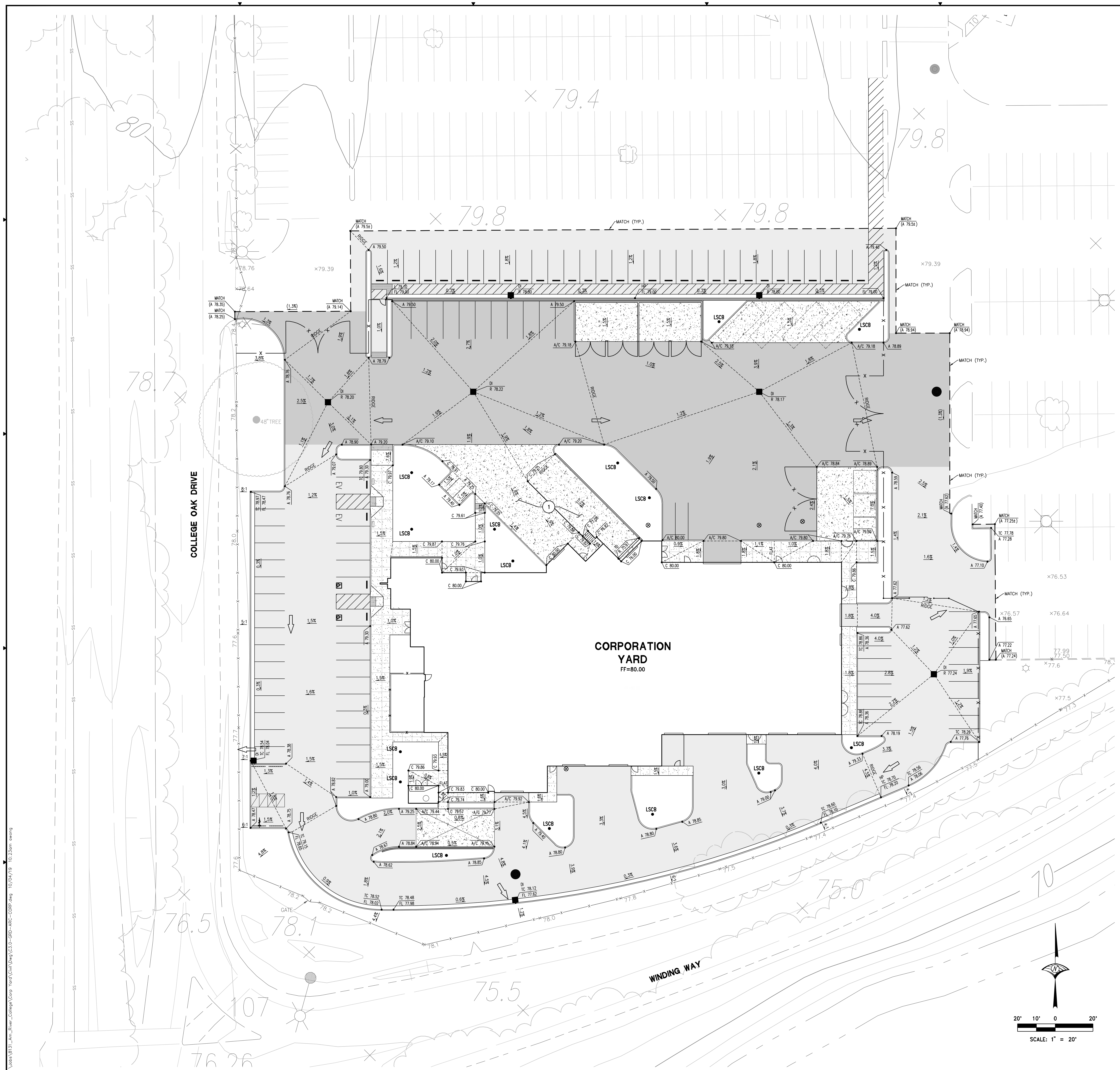

LEGEND

- 6" VERTICAL CURB
- CURB & GUTTER
- DROP INLET (SEE WET UTILITY PLAN, SHEET C4.0)
- × 91.23 EXISTING ELEVATION
- G 91.50 PROPOSED GROUND ELEVATION
- AC 91.50 PROPOSED ASPHALT ELEVATION
- C 91.50 PROPOSED CONCRETE ELEVATION
- TC 91.50 PROPOSED TOP-OF-CURB ELEVATION
- FL 91.50 PROPOSED FLOWLINE ELEVATION
- R 91.50 PROPOSED RIM ELEVATION
- 4.6% SLOPE AND DIRECTION OF FLOW
- RIDGE — RIDGE OR GRADE BREAK LINE
- SWALE
- EXISTING OVERLAND RELEASE DIRECTION
- PROPOSED OVERLAND RELEASE DIRECTION
- AREA OF ASPHALT CONCRETE
  - MEDIUM DUTY
  - HEAVY DUTY
- AREA OF CONCRETE
  - PEDESTRIAN AREAS
  - VEHICULAR AREAS

GENERAL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL LANDSCAPED AREAS ARE CONSTRUCTED AS SHOWN TO PROVIDE DRAINAGE AND OVERLAND RELEASE.
2. ACCENT PAVING OR HARDSCAPE PROVIDED SHALL BE ACCESSIBLE PER CBC REQUIREMENTS. (SEE ARCHITECTURAL PLANS FOR ALL DETAILS.)
3. AT ALL INTERFACES BETWEEN NEW CONCRETE AND EXISTING CONCRETE HARDSCAPE, PROVIDE #4 DOWELS AT 18" O/C IMBEDDED 12" DEEP INTO BOTH. EPOXY DOWELS INTO EXISTING CONCRETE. DO NOT INSTALL DOWELS INTO FOUNDATION OF EXISTING TECHNOLOGY BUILDING.

CONSTRUCTION NOTES

(1) LOADING DOCK AREA (SEE ARCH. PLANS FOR DETAILS).

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LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
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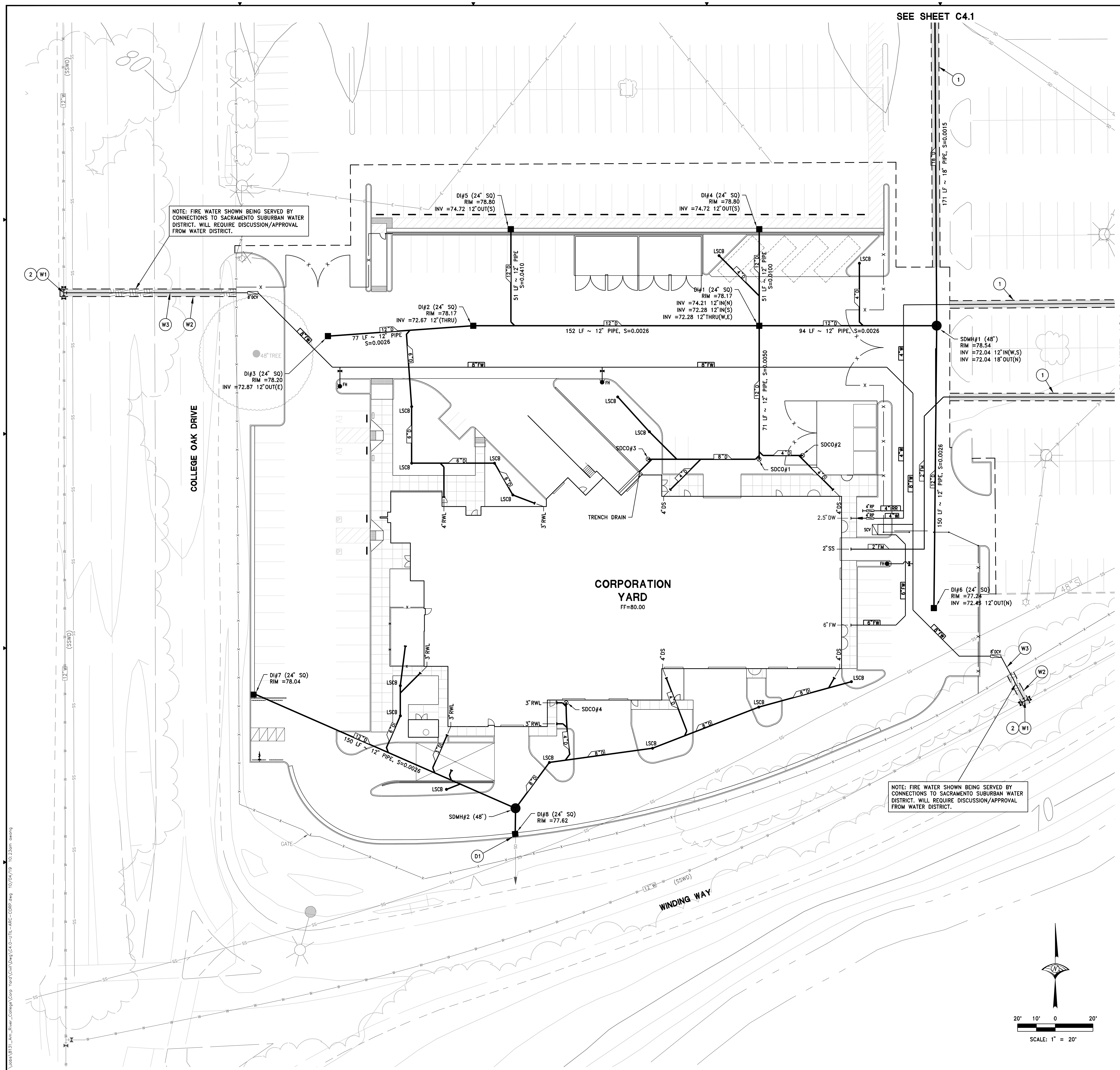
GRADING PLAN

REVISIONS

DATE	OCTOBER 4, 2019
SCALE	AS NOTED
DRAWN BY	A. WONG
JOB NO.	19-06
SHEET	C3.0



LEGEND

12"D	STORM DRAIN LINE
DI (XX"SQ.)	DROP INLET (SIZE)
	TRENCH DRAIN (6" WIDE) PRECAST, PRE-SLOPED H-20 RATED TRENCH DRAIN (NDS PVC DRAIN WITH DUCTILE IRON HEELPROOF GRATE (300 psi), OR EQUAL. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL).
• LSCB	LANDSCAPE CATCH BASIN (INSTALL 6" ABS DRAIN (UNLESS NOTED OTHERWISE) W/ DOMED GRATE FOR PLANTER DRAINAGE. INSTALL 6" DRAIN PIPE (UNLESS NOTED OTHERWISE), AT 2%, MIN.)
SDMH#1(XX")	STORM DRAIN MANHOLE (SIZE)
X" RWL	RAINWATER LEADER SERVICE PROVIDE DRAIN PIPE, SIZED AS NOTED, AT 2% MIN. TO RAINWATER LEADER POC SHOWN. (SEE PLUMBING PLANS FOR CONNECTION.)
6"S	SANITARY SEWER LINE
2"FM	SANITARY SEWER FORCE MAIN
SSMH	SANITARY SEWER MANHOLE
10"W	CAMPUS MAIN WATER LINE
8"DW	DOMESTIC WATER LINE
8"FW	FIRE WATER LINE
8"IRR	IRRIGATION WATER LINE
	PIPE REDUCER
	THRUST BLOCK
	GATE VALVE
FH 6"FW	FIRE HYDRANT (INCLUDING LEAD AND GATE VALVE)
4"RP	RED. PRESSURE BACKFLOW PREVENTOR (SIZED AS NOTED)
8"DCV	DOUBLE CHECK VALVE (SIZED AS NOTED)
FDC	FIRE DEPARTMENT CONNECTION

GENERAL NOTES

1. REFER TO PLUMBING PLANS FOR CONNECTIONS TO THE BUILDING.
2. ALL BUILDING SERVICES TO BE STUBBED TO 5' FROM BUILDING.
3. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF WORK AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONTINUING WORK.
4. ALL ON-SITE STORM DRAIN INLETS, EXISTING OR PROPOSED, SHALL HAVE A PERMANENT STORM DRAIN MESSAGE IN THE FORM OF A CONCRETE STAMP OR EXPOSED PLACARD INDICATING "NO DUMPING- FLOWS TO CREEK".
4. NO CROSS-CONNECTIONS BETWEEN DOMESTIC WATER, LANDSCAPE WATER, OR FIRE WATER SHALL BE ALLOWED.
5. ALL TEES SHALL HAVE THRUST BLOCKS. AT ALL OTHER FITTINGS (ELBOWS, ETC.), PROVIDE RESTRAINED JOINTS OR THRUST BLOCKS. THRUST BLOCKS SHALL BE INSTALLED PER DETAIL ON SHT XX.
6. UNLESS NOTED OTHERWISE, ALL PRIVATE FIRE WATER PIPES THAT CAN BE PRESSURIZED BY FIRE DEPARTMENT APPARATUS SHALL BE PVC C-900, DR-14 OR DUCTILE IRON PIPE.
7. ALL FIRE HYDRANTS, PIV'S AND FDC'S SHALL BE LOCATED SO AS NOT TO BE BLOCKED BY LANDSCAPING, PARKING STALLS, LOADING ZONES, ETC.
8. PROVIDE CONDUIT SLEEVING AS REQUIRED PER THE ELECTRICAL SITE PLAN AND THE LANDSCAPE IRRIGATION PLAN PRIOR TO CONSTRUCTION OF HARDSCAPE OR PARKING AREAS.

CONSTRUCTION NOTES

GENERAL

(1) TRENCH HATCH SHOWN IS SCHEMATIC ONLY. TRENCH, BACKFILL, AND REPAVE PER DETAIL ON SHEET XX. AT CONCRETE, SAWCUT AND REMOVE CONCRETE TO NEAREST CRACK CONTROL JOINT AT 90° ANGLES, DO NOT OVERCUT. REPLACE EXISTING HARDSCAPE (SECTION, COLOR, CRACK CONTROL PATTERN, ETC.) IN KIND.

(2) BEFORE BEGINNING ANY UNDERGROUND WORK, CONTRACTOR TO CONFIRM INVERT AT CONNECTION TO EXISTING PIPE AND VERIFY CONNECTIONS CAN BE MADE AS SHOWN. CONTRACTOR TO NOTIFY ENGINEER OF ANY ISSUES PRIOR TO PROCEEDING WITH CONSTRUCTION.

STORM DRAIN

(D1) LOCATE EXISTING 8" DRAIN LINE AND INTERCEPT WITH NEW DRAIN INLET.

WATER

(W1) MAKE CONNECTION TO EXISTING 12" WATER MAIN WITH 12"x8" TEE AS SHOWN.

(W2) REMOVE AND REPLACE EXISTING PAVEMENT, CURB, GUTTER, AND LANDSCAPING IN KIND AS NECESSARY TO CONSTRUCT NEW 8" WATER MAIN AS SHOWN.

(W3) ALL FIRE WATER SERVICE FROM TEE TO DCV SHALL BE IN ACCORDANCE WITH SACRMENTO SUBURBAN WATER DISTRICT STANDARDS.

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WET UTILITY PLAN

REVISIONS

DATE	OCTOBER 4, 2019
SCALE	AS NOTED
DRAWN BY	A. WONG
JOB NO.	19-06
SHEET	C4.0

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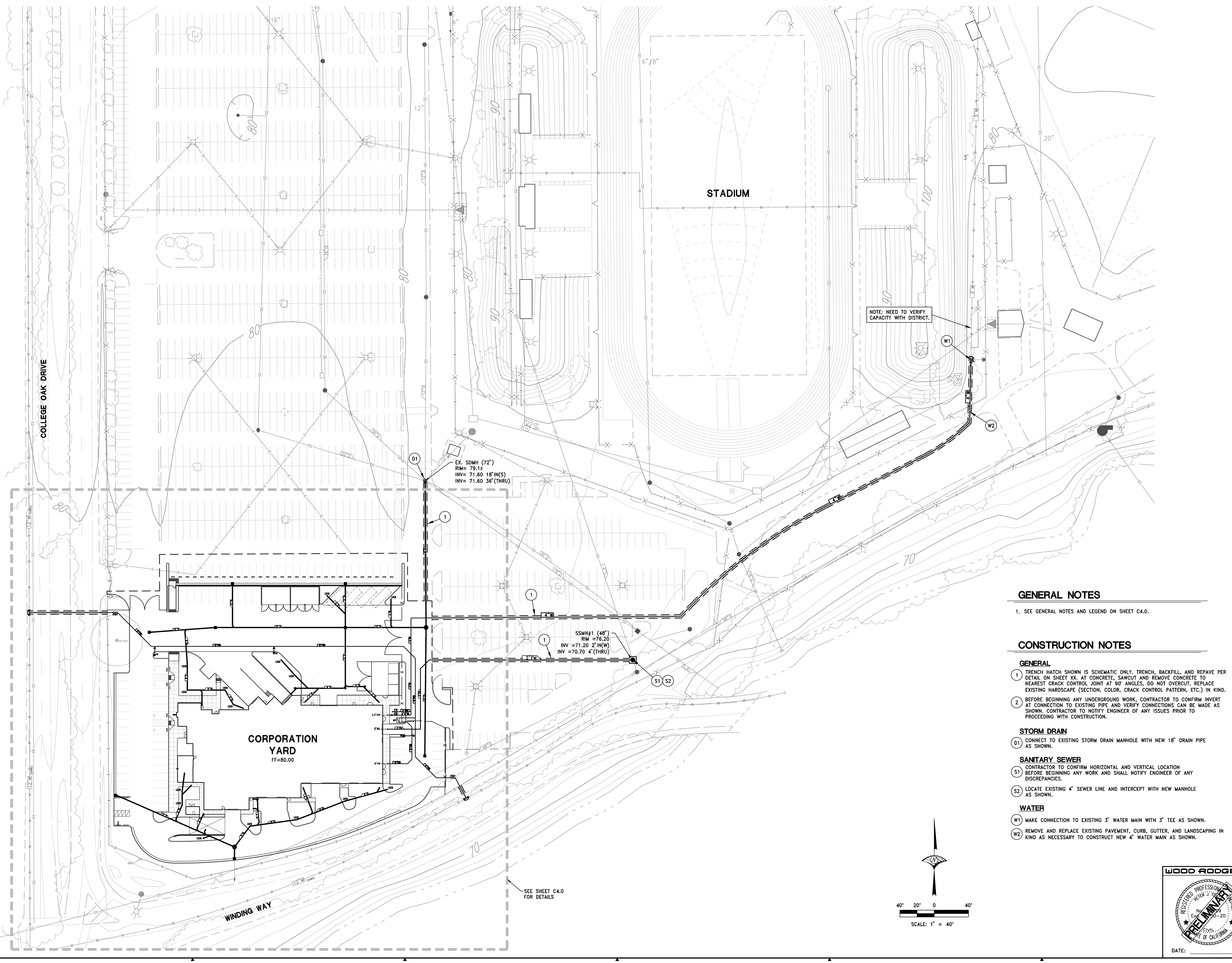

GENERAL NOTES

1. SEE GENERAL NOTES AND LEGEND ON SHEET C4.0.

CONSTRUCTION NOTES

GENERAL

(1) TRENCH HATCH SHOWN IS SCHEMATIC ONLY. TRENCH, BACKFILL, AND REPAVE PER DETAIL ON SHEET XX. AT CONCRETE, SAWCUT AND REMOVE CONCRETE TO NEAREST CRACK CONTROL JOINT AT 90° ANGLES, DO NOT OVERCUT. REPLACE EXISTING HARDSCAPE (SECTION, COLOR, CRACK CONTROL PATTERN, ETC.) IN KIND.

(2) BEFORE BEGINNING ANY UNDERGROUND WORK, CONTRACTOR TO CONFIRM INVERT AT CONNECTION TO EXISTING PIPE AND VERIFY CONNECTIONS CAN BE MADE AS SHOWN. CONTRACTOR TO NOTIFY ENGINEER OF ANY ISSUES PRIOR TO PROCEEDING WITH CONSTRUCTION.

STORM DRAIN

(D1) CONNECT TO EXISTING STORM DRAIN MANHOLE WITH NEW 18" DRAIN PIPE AS SHOWN.

SANITARY SEWER

(S1) CONTRACTOR TO CONFIRM HORIZONTAL AND VERTICAL LOCATION BEFORE BEGINNING ANY WORK AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES.

(S2) LOCATE EXISTING 4" SEWER LINE AND INTERCEPT WITH NEW MANHOLE AS SHOWN.

WATER

(W1) MAKE CONNECTION TO EXISTING 3" WATER MAIN WITH 3" TEE AS SHOWN.

(W2) REMOVE AND REPLACE EXISTING PAVEMENT, CURB, GUTTER, AND LANDSCAPING IN KIND AS NECESSARY TO CONSTRUCT NEW 4" WATER MAIN AS SHOWN.

WOOD RODGERS

DATE:

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WET UTILITY PLAN

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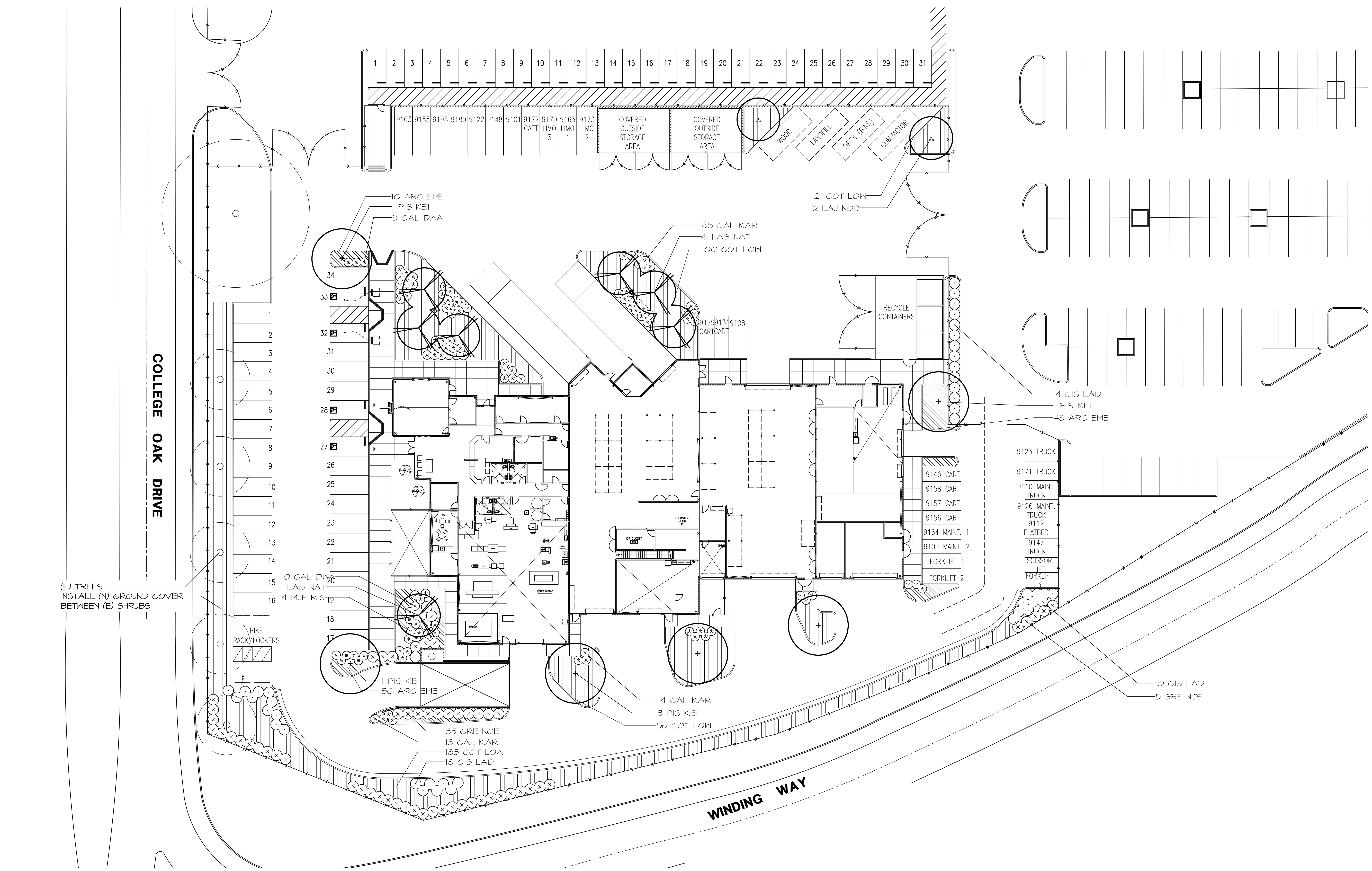

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE
	LAG NAT	7	Lagerstroemia x 'Natchez' / Crape Myrtle	15 gal
	LAU NOB	2	Laurus nobilis / Sweet Bay	15 gal
	PIS KEI	6	Pistacia chinensis 'Keith Davey' / Keith Davey Chinese Pistache	15 gal
SHRUBS	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**
	CAL DWA	13	Callistemon viminalis 'Little John' / Dwarf Weeping Bottlebrush	5 gal
	CIS LAD	42	Cistus ladanifer / Crimson Spot Rockrose	5 gal
	GRE NOE	60	Grevillea x 'Noellii' / Grevillea	5 gal
GRASSES	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**
	CAL KAR	92	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass	1 gal
	MUH RIG	4	Muhlenbergia rigens / Deer Grass	5 gal

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	SPACING
	ARC EME	108	Arctostaphylos uva-ursi 'Emerald Carpet' / Emerald Carpet Manzanita	1 gal	36" o.c.
	COT LOW	360	Cotoneaster dammeri 'Lowfast' / Lowfast Bearberry Cotoneaster	1 gal	60" o.c.

0' 20' 40' 80'
SCALE: 1"=20'
NORTH

YAMASAKI
LANDSCAPE ARCHITECTURE
1223 HIGH STREET, AUBURN, CA 95603
(530) 885-0040
FAX (530) 885-0042

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LICENSED LANDSCAPE ARCHITECT JEFFREY M. AMBROSIA 4057 Renewal 12/20 Signed Date 10/4/19 STATE OF CALIFORNIA

LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD

SACRAMENTO, CALIFORNIA 958413
DESIGN DEVELOPMENT

PLANTING PLAN

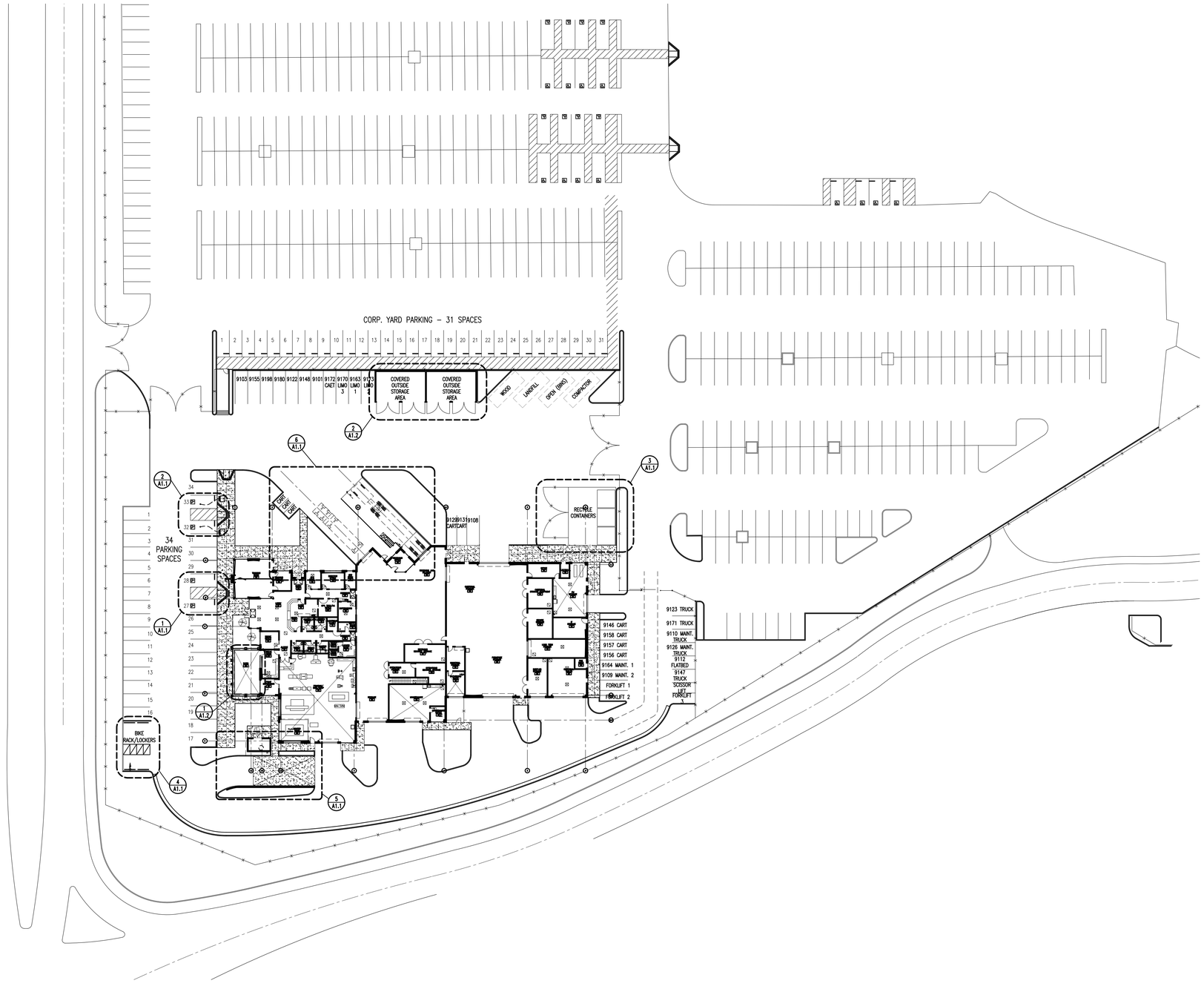
REVISIONS

DATE	OCTOBER 4, 2019
SCALE	1"=20'-0"
DRAWN BY	JMA
JOB NO.	ARC-PL.DWG
SHEET	

L1.1

KEYNOTES (#)

1.



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

NORTH

1"=30'
30' 0 15' 30' 60'

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LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
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DESIGN DEVELOPMENT

SITE PLAN

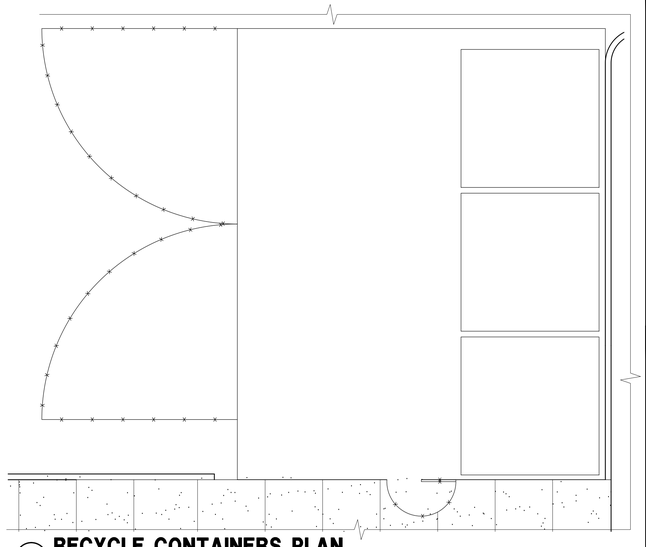
REVISIONS

DATE	SEPTEMBER 16, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

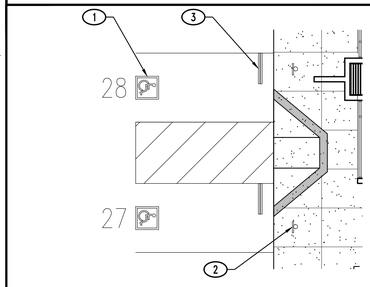
A1.0

KEYNOTES

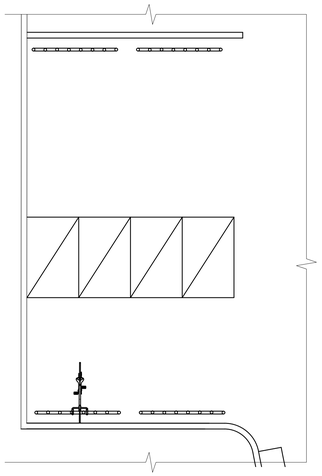
1. STRIPING AND SYMBOLS – PER 1/A1.2
2. VAN ACCESSIBLE PARKING STALL SIGN – PER 2/A1.2
3. CONCRETE WHEEL STOP – PER 7/A1.2
4. PLANTER
5. FLAT DOCK
6. RAMPED DOCK
7. GUARDRAIL
8. HANDRAIL
9. METAL ROOF STANDING SEAM OVER 3/4" PLYWD OVER 8" METAL ROOF RAFTERS
10. R19 BATT INSULATION
11. 8x8x16 CMU BLOCK WALL
12. GUTTER & DOWNSPOUT
13. METAL MESH
14. HOT AND COLD WATER BIBBS (SEE PLUMBING)
15. CAR WASH CONCRETE APRON



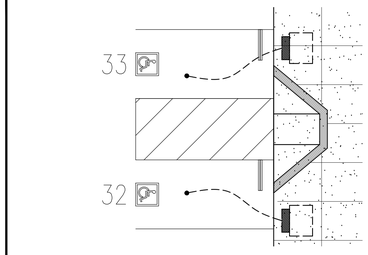
3 **RECYCLE CONTAINERS PLAN**
3/16"=1'-0"



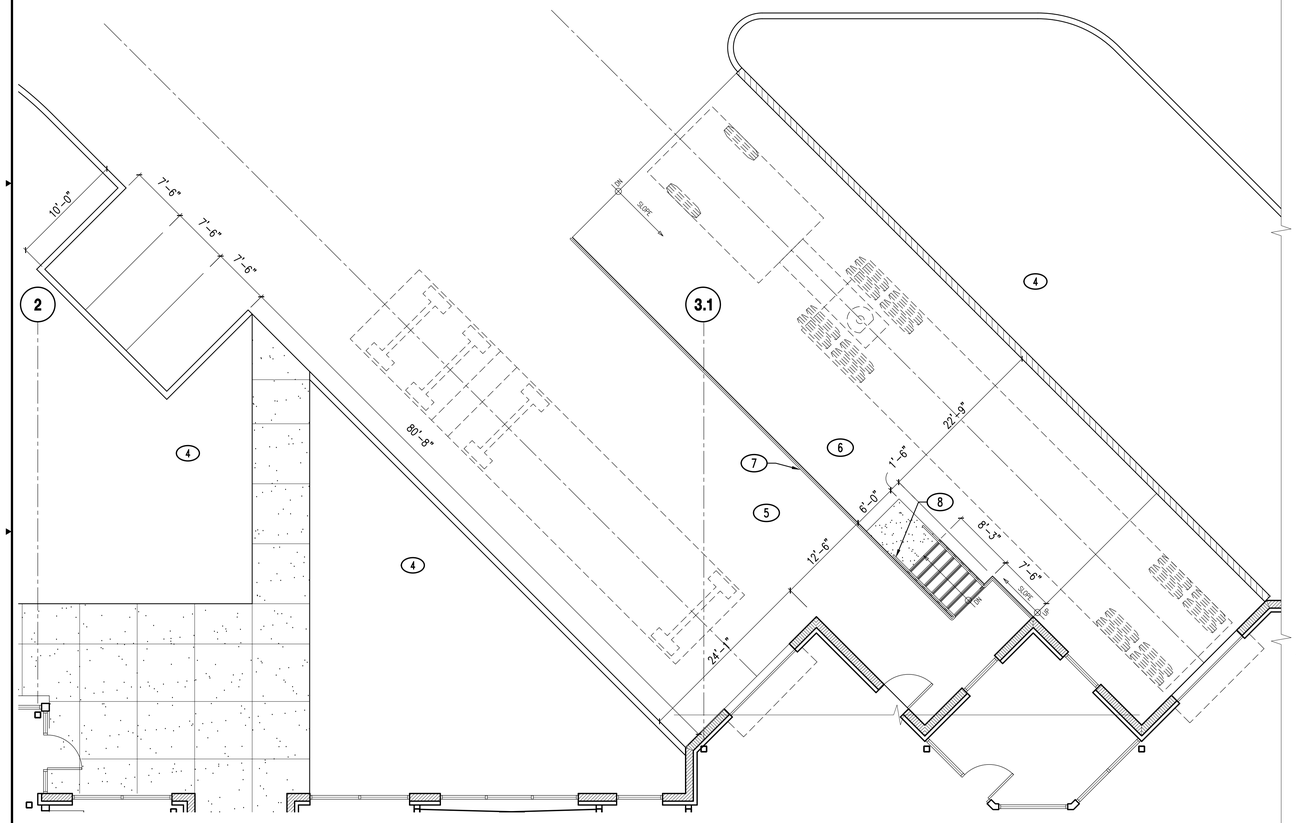
1 **ACCESSIBLE PARKING**
1/8"=1'-0"



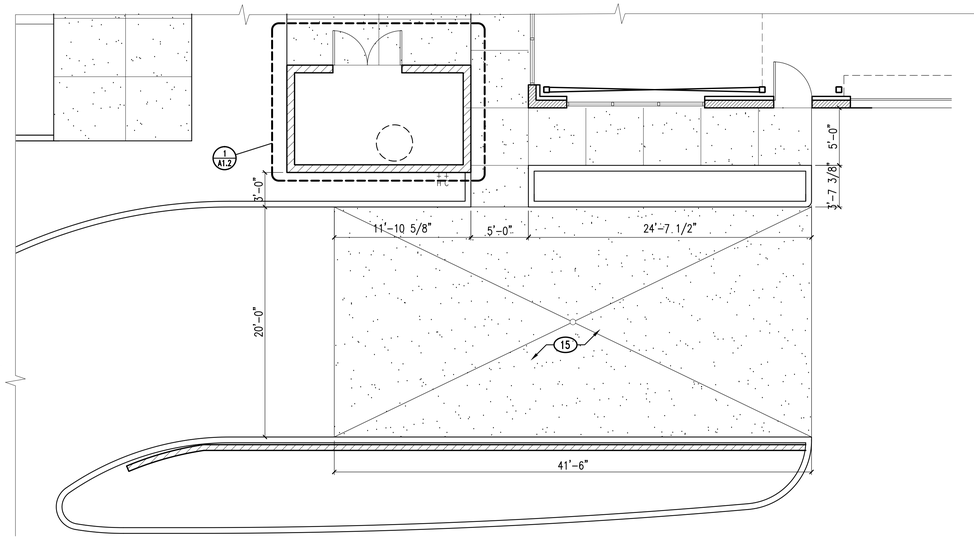
4 **BIKE RACK/LOCKERS PLAN**
3/16"=1'-0"



2 **EV CHARCHING STALL**
1/8"=1'-0"



6 **LOADING DOCK PLAN**
3/16"=1'-0"



5 **CAR WASH PLAN**
3/16"=1'-0"

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ENLARGED SITE PLANS

REVISIONS

DATE	OCTOBER 4, 2019
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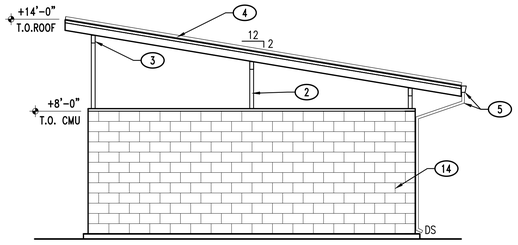
DRAWN BY	-
JOB NO.	19-06
SHEET	

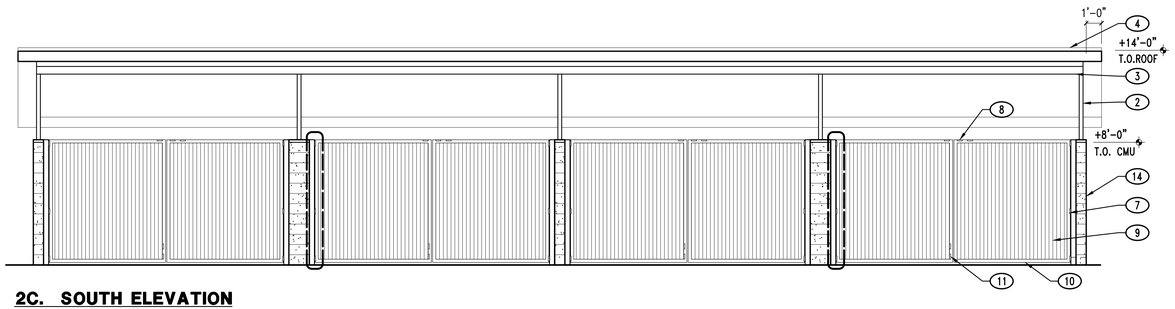
A1.1

KEYNOTES

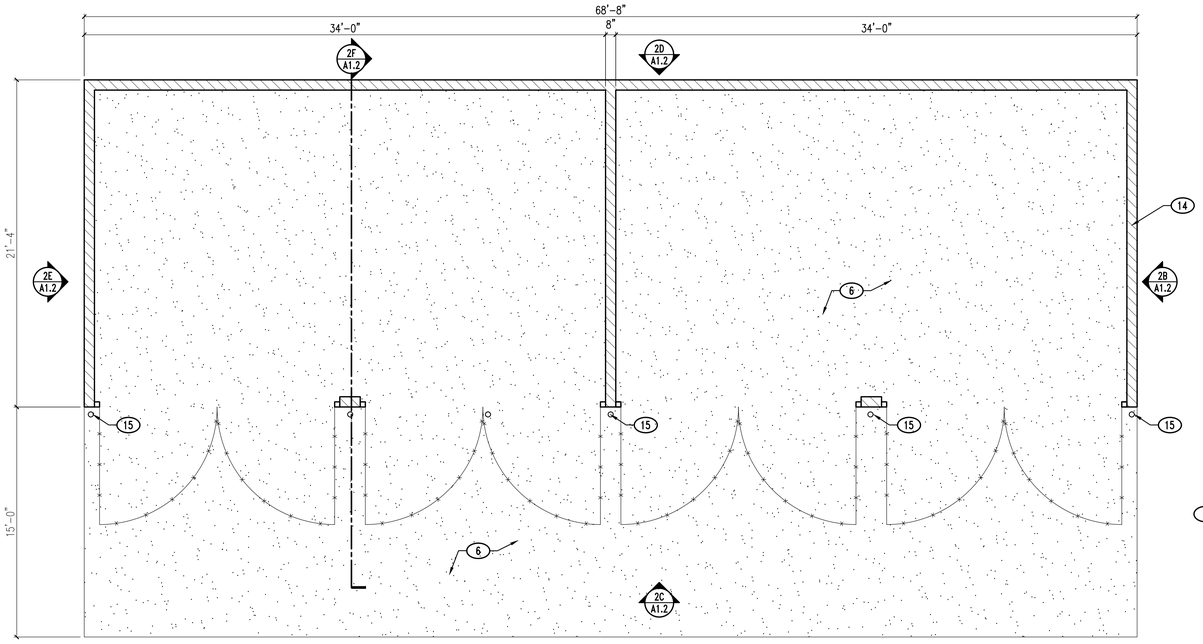
1. SPLIT CMU BLOCK COLUMN
2. HSS 3x3x3/16 POSTS EMBEDDED IN CMU WALL – PAINT TO MATCH WALL.
3. STRUCTURAL FRAMING – PAINT TO MATCH WALL
4. METAL ROOF STANDING SEAM OVER 3/4" PLYWOOD OVER 8" METAL ROOF RAFTERS
5. GUTTER AND DOWNSPOUT
6. 6" CONCRETE SLAB AND APRON WITH EXPANSION AND CONTROL JOINTS – SEE 4/A1.3 AND STRUCTURAL.
7. 4" LONG HEAVY DUTY GATE HINGE – 1 1/2 PAIR PER GATE– WELD TO GATE AND FRAME.
8. 1/2" ø BOLT WITH 6" THROW IN 4" LONG SLEEVES.
9. 18 GA. CORRUGATED STEEL DECKING IN 2 1/2"x2 1/2"x1/4" STEEL ANGLE FRAME – PAINT TO MATCH WALL.
10. 2" CLEAR.
11. 1/2" ø CANE BOLT IN 4" LONG SLEEVES, WITH METAL BARREL STRIKE IN CONCRETE.
12. FLOOR DRAIN – CONNECT TO SEWER SYSTEM– SEE PLUMBING
13. HOT AND COLD WATER BIBS – SEE PLUMBING.
14. CMU BLOCK STANDARD – PAINT. (COLOR TO MATCH BUILDING)
15. 4" BOLLARD
16. CONCRETE SEAT CAP
17. GROW WALL
18. 20" CONCRETE CAP
19. METAL MESH



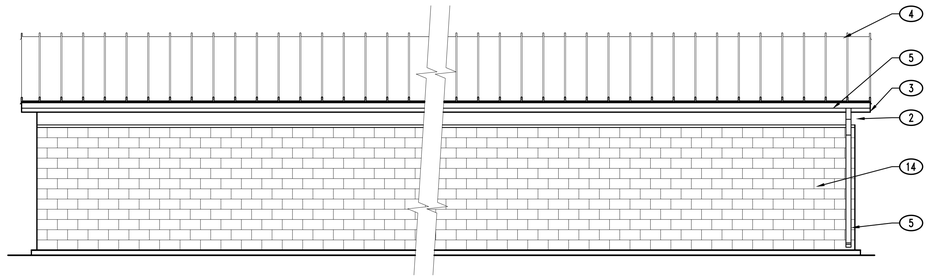
2B. EAST ELEVATION



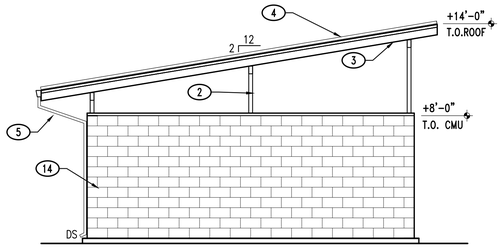
2C. SOUTH ELEVATION



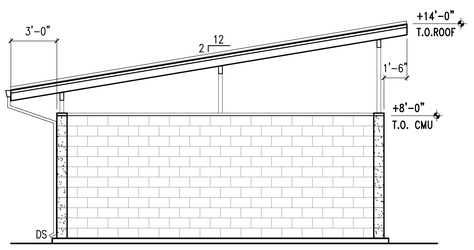
2A. FLOOR PLAN



2D. NORTH ELEVATION



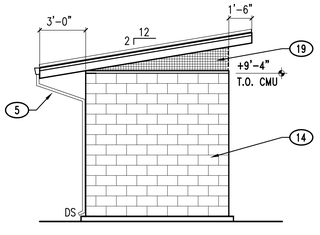
2E. WEST ELEVATION



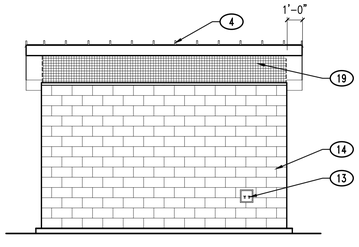
2F. SECTION

2 OUTSIDE STORAGE ENCLOSURE- PLAN, SECTION & ELEVATIONS

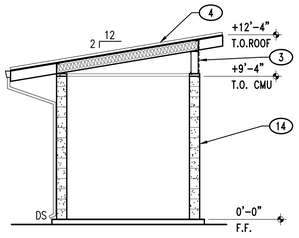
1/4" = 1'-0"



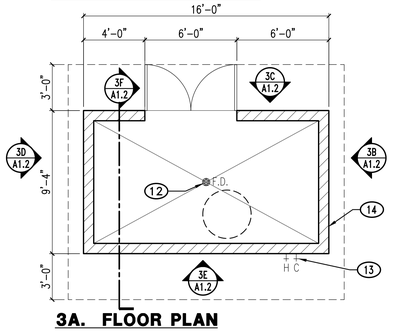
3D. WEST ELEVATION



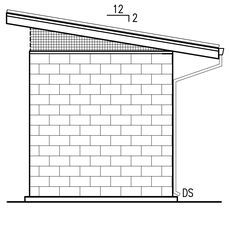
3E. SOUTH ELEVATION



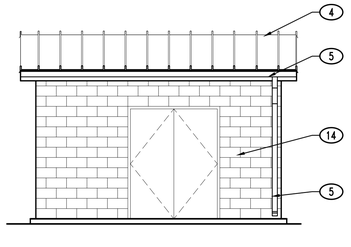
3F. SECTION



3A. FLOOR PLAN



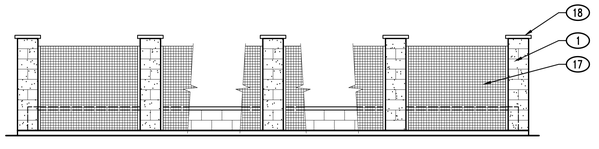
3B. EAST ELEVATION



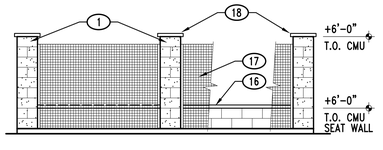
3C. NORTH ELEVATION

3 EQUIPMENT BLDG. FLOOR PLAN, SECTION & ELEVATIONS

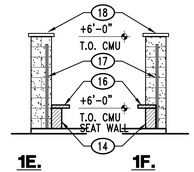
1/4" = 1'-0"



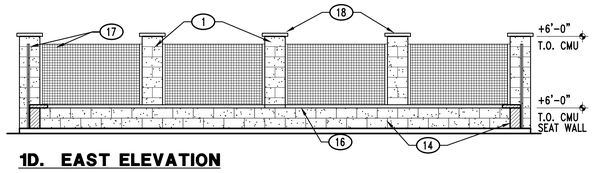
1B. WEST ELEVATION



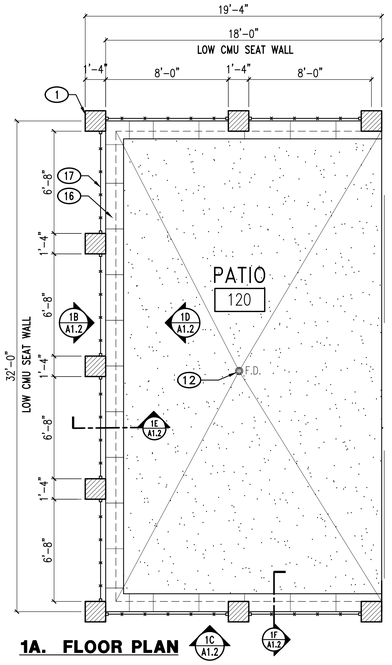
1C. NORTH/SOUTH ELEVATION



1E. SECTIONS 1F.



1D. EAST ELEVATION



1A. FLOOR PLAN

1 PATIO ENCLOSURE- PLAN, SECTIONS & ELEVATIONS

1/4" = 1'-0"

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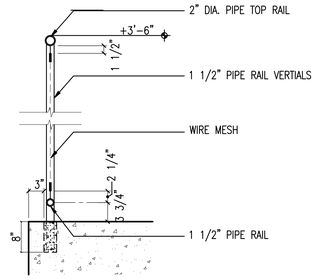
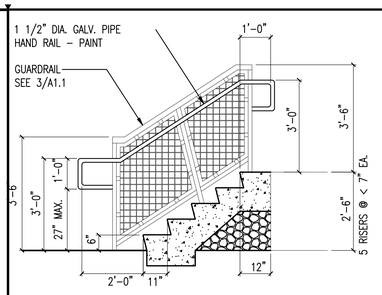
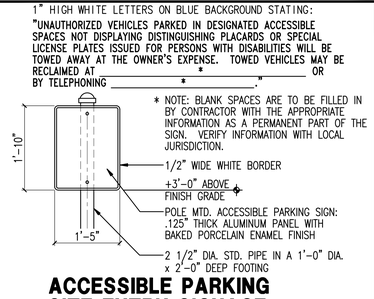


18 GUARD RAIL
1"=1'-0"

P:\16-02\DETAILS\GUARD-RAIL.DWG

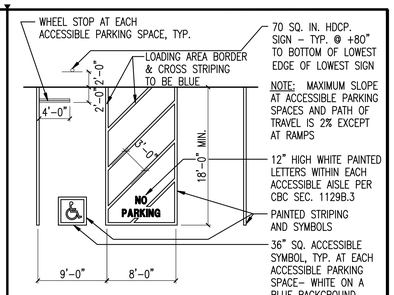


11 STAIR SECTION
1/2"= 1'-0"



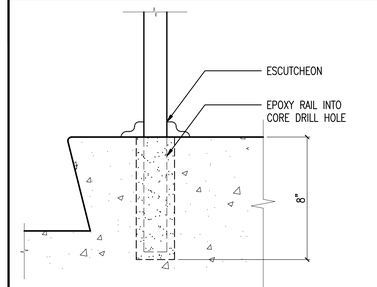
6 ACCESSIBLE PARKING SITE ENTRY SIGNAGE
3/4"=1'-0"

P:\DETAILS\ACCESS\ACCESS-SIGN-SITE_ENTRY-1.DWG



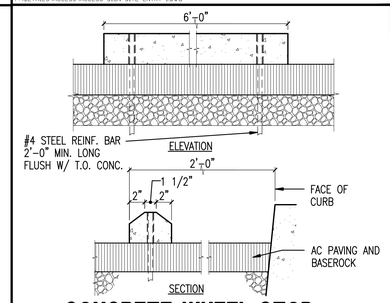
1 VAN ACCESSIBLE PARKING
1/8"=1'-0"

P:\DETAILS\SITE\PARKING_2.DWG



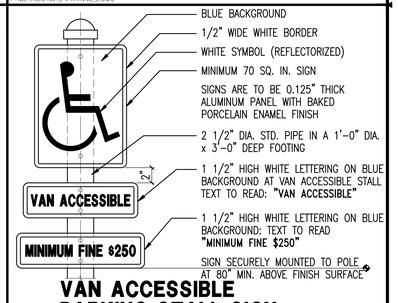
12 PIPE FOOTING
3"=1'-0"

P:\16-02\DETAILS\PIPE-FOOTING.DWG



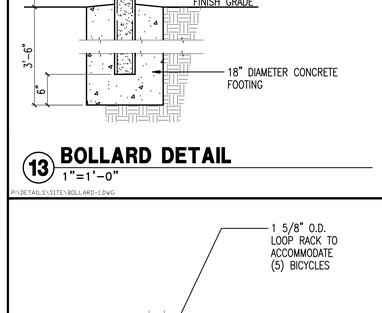
7 CONCRETE WHEEL STOP
1 1/2"=1'-0"

P:\DETAILS\SITE\S-WHEELSTOP.DWG



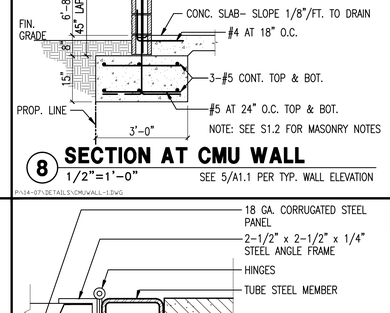
2 VAN ACCESSIBLE PARKING STALL SIGN
1 1/2"=1'-0"

P:\16-19\DETAILS\ACCESS-SIGN-PARKING-VAN-1.DWG



13 BOLLARD DETAIL
1"=1'-0"

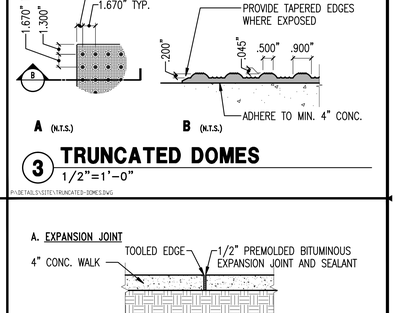
P:\DETAILS\SITE\BOLLARD-1.DWG



8 SECTION AT CMU WALL
1/2"=1'-0"

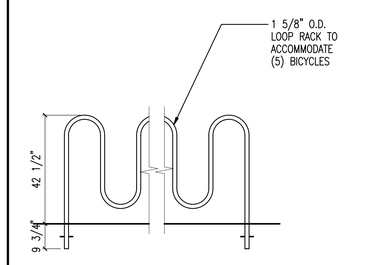
SEE 5/A1.1 PER TYP. WALL ELEVATION

P:\14-07\DETAILS\CMUWALL-1.DWG



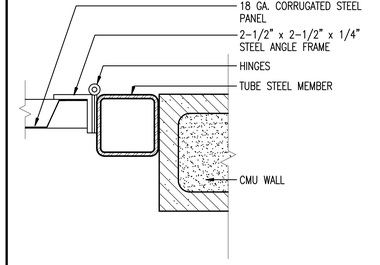
3 TRUNCATED DOMES
1/2"=1'-0"

P:\DETAILS\SITE\TRUNCATED-DOMES.DWG



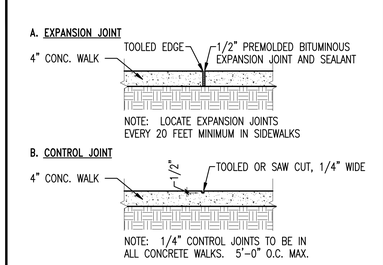
14 BIKE RACK
1/2"=1'-0"

P:\DETAILS\SITE\BIKE-RACK.DWG



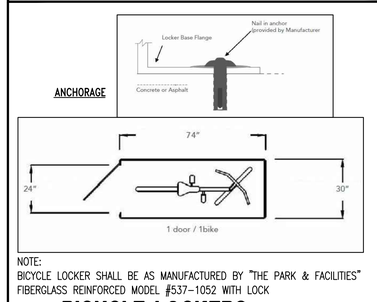
9 JAMB AT GATE
3"=1'-0"

P:\DETAILS\SITE\TRASH-ENCL-JAMB.DWG



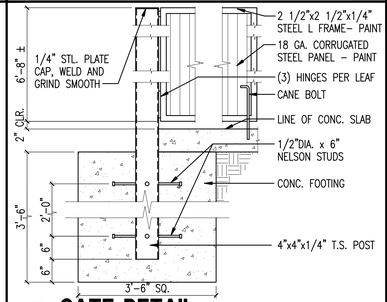
4 EXPANSION AND CONTROL JOINTS
3/4"=1'-0"

P:\DETAILS\SITE\S-EXP-CTRL-JT-1.DWG



NOTE:
BICYCLE LOCKER SHALL BE AS MANUFACTURED BY "THE PARK & FACILITIES" FIBERGLASS REINFORCED MODEL #537–1052 WITH LOCK

15 BICYCLE LOCKERS
N.T.S.



10 GATE DETAIL
3/4"=1'-0"

P:\14-07\DETAILS\DUMPSTER-1.DWG

ACCESSIBLE BUILDING ENTRANCE SIGN– BLUE BACKGROUND WITH WHITE IMAGE AND BORDER– MOUNT ON WALL ADJACENT TO LATCH OUTSIDE OF DOOR; OR IF THERE IS NO SPACE ON LATCH SIDE, MOUNT ON NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT

LETTERS SHALL HAVE WIDTH–TO–HEIGHT RATIO OF BETWEEN 3:5 AND 1:1 AND A STROKE WIDTH–TO–HEIGHT RATIO OF BETWEEN 1:5 AND 1:10

5 ACCESSIBLE BUILDING ENTRANCE SIGN
3"=1'-0"

P:\DETAILS\ADA\ACCESS-SIGN-BLDG-ENTRY-1.DWG

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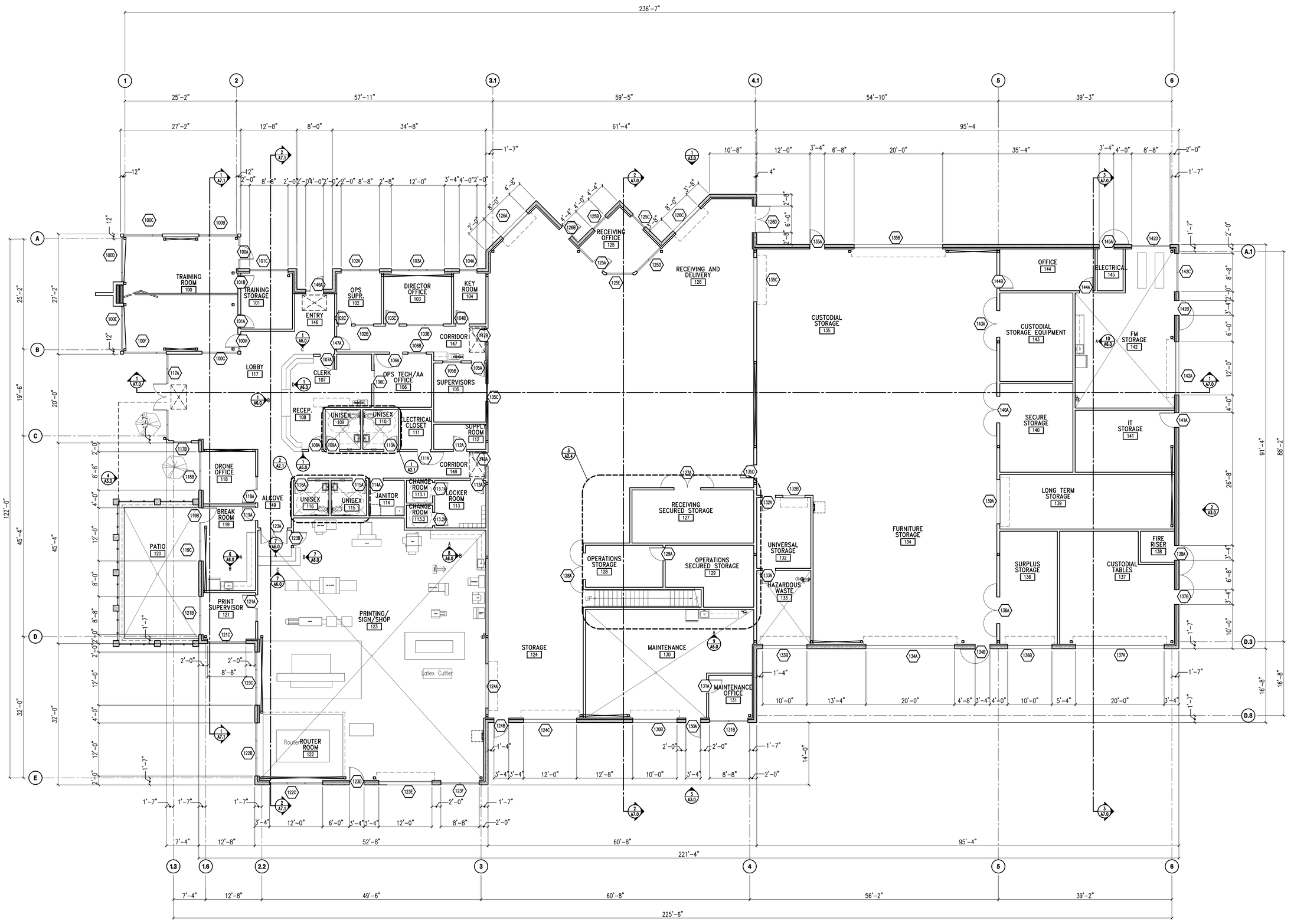

1 FLOOR PLAN

1/8"=1'-0"

NORTH

1/8" = 1'-0"

0 2' 6' 12' 24'

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DESIGN DEVELOPMENT

FLOOR PLAN

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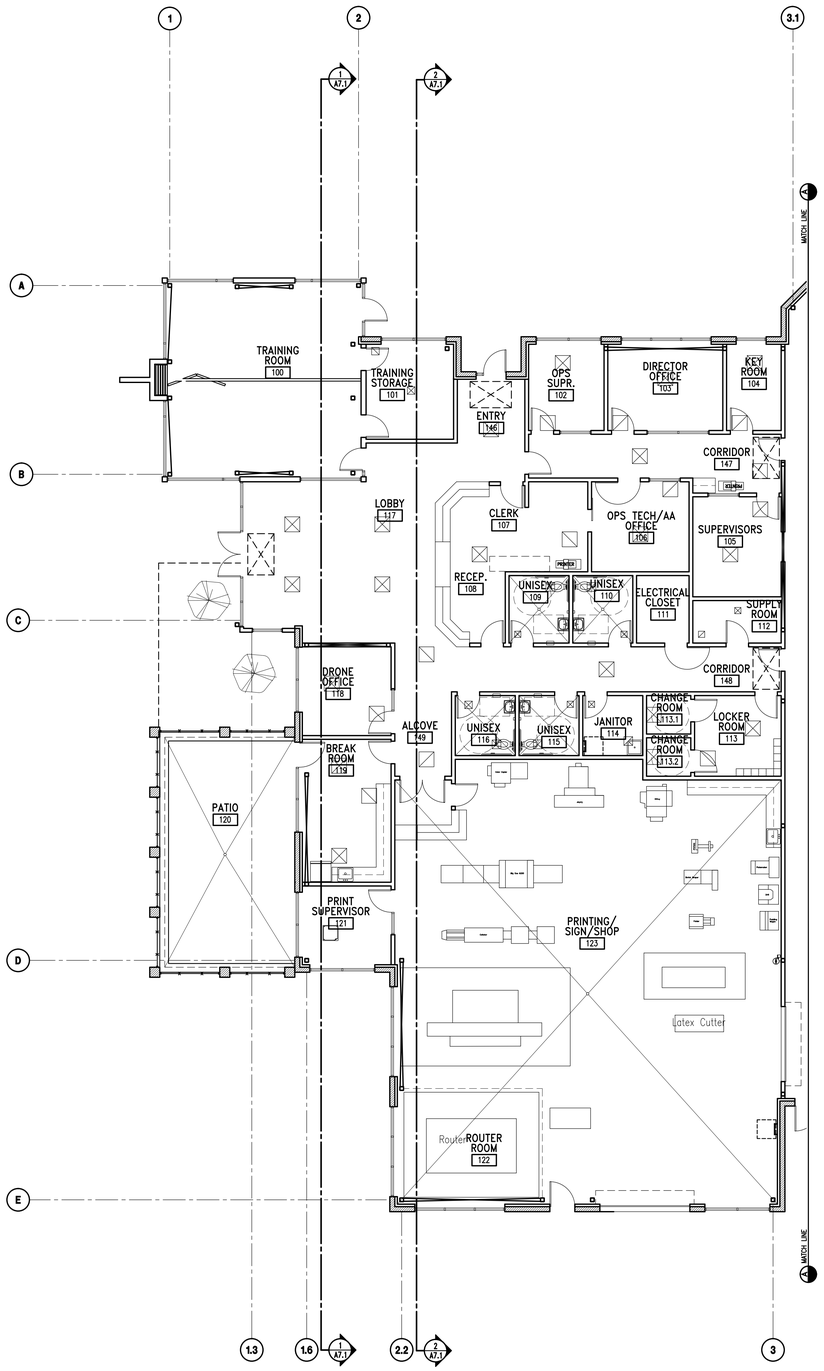
SHEET	A2.0



1 PARTIAL FLOOR PLAN

1/8"=1'-0"

NORTH

1/8" = 1'-0"

0 2' 6' 12' 24'

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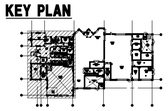
CORPORATION YARD

SACRAMENTO, CA 95841
DESIGN DEVELOPMENT

KEY PLAN



PARTIAL FLOOR PLAN

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DRAWN BY	-
JOB NO.	19-06
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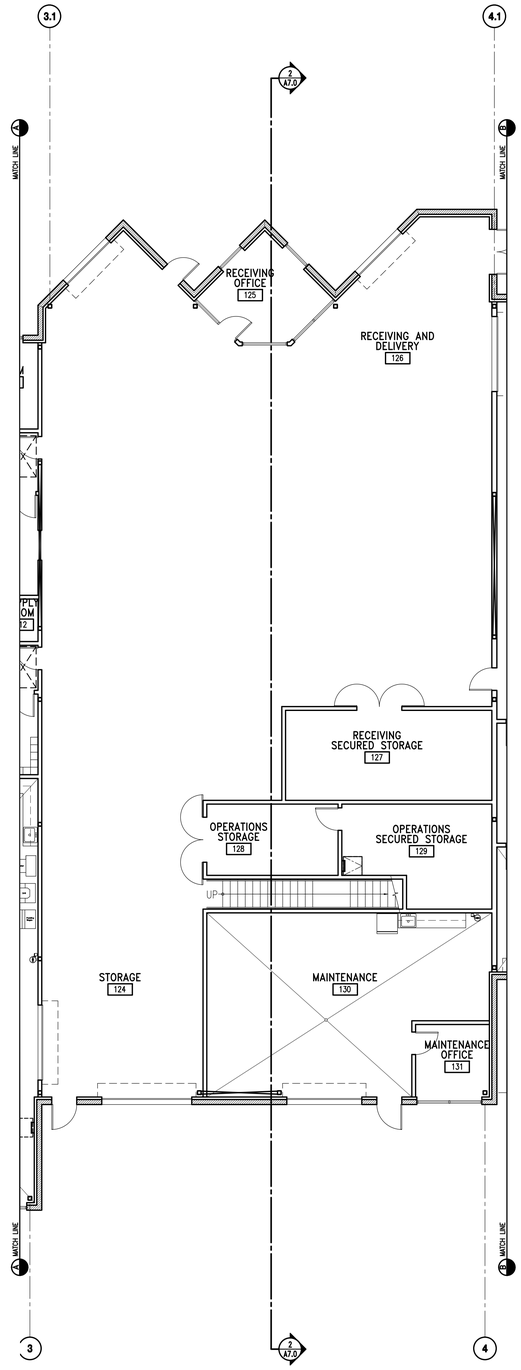
A2.1



1 PARTIAL FLOOR PLAN

1/8"=1'-0"

NORTH

1/8" = 1'-0"

0 2' 6' 12' 24'

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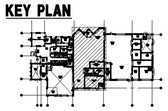
KEY PLAN

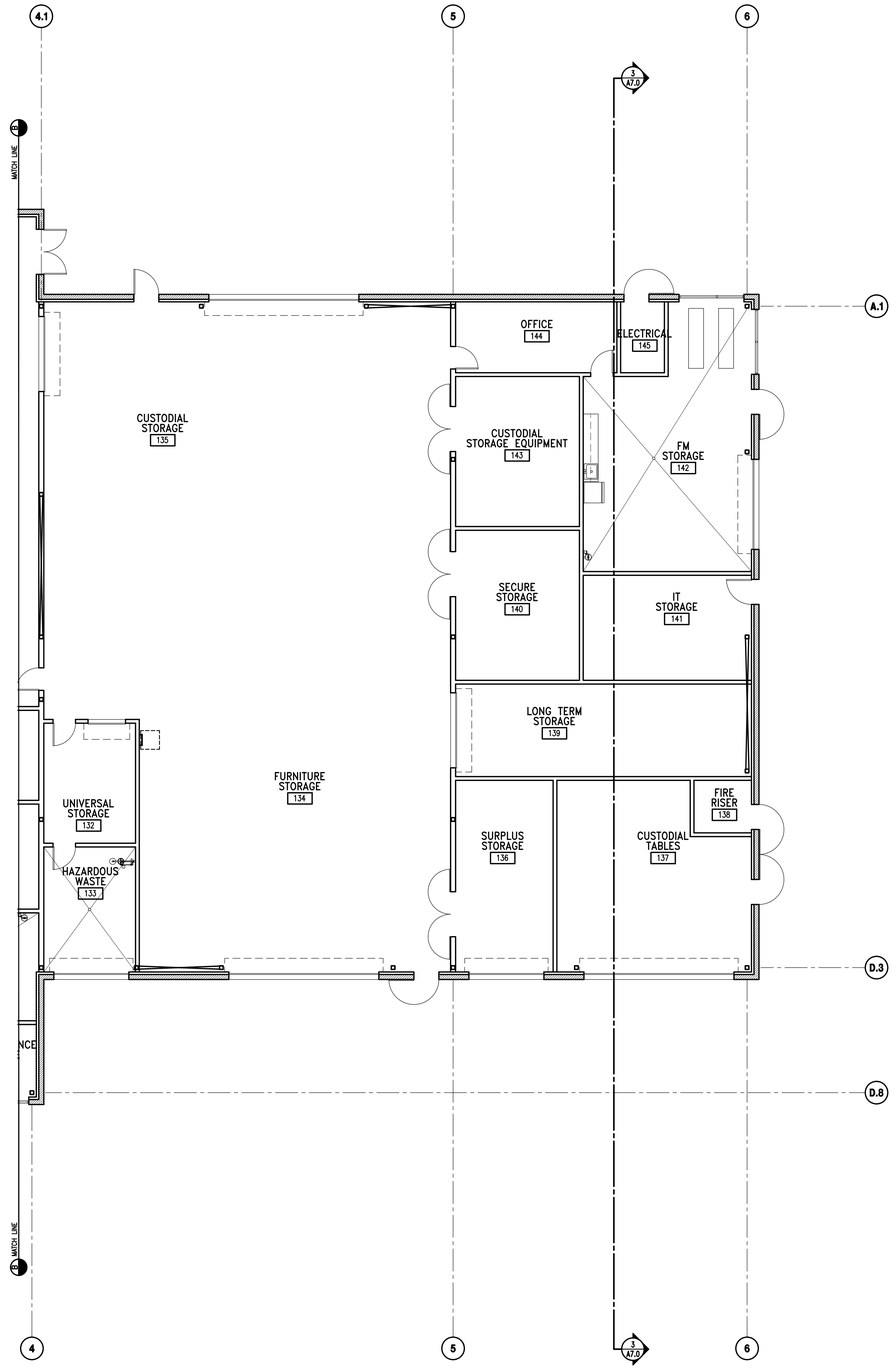


PARTIAL FLOOR PLAN

REVISIONS

DATE OCTOBER 4, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

A2.2



1 PARTIAL FLOOR PLAN

1/8"=1'-0"

NORTH

1/8" = 1'-0"

0 2' 6' 12' 24'

GRA architecture

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916 498-7900

LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
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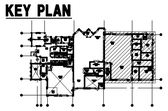
SACRAMENTO, CALIFORNIA 95841
DESIGN DEVELOPMENT

KEY PLAN

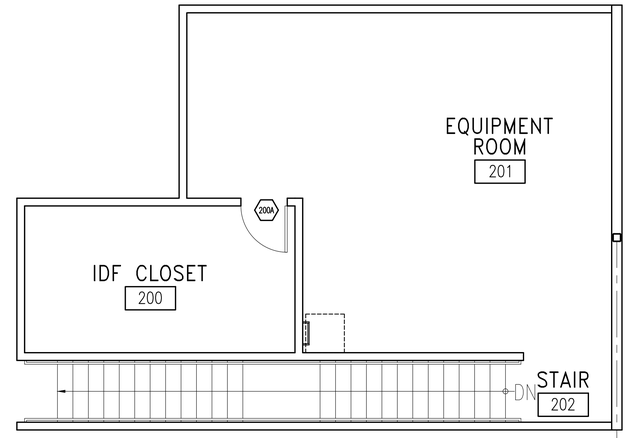


PARTIAL FLOOR PLAN

REVISIONS

DATE	OCTOBER 4, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

A2.3

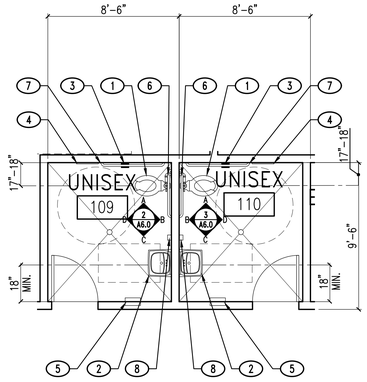


3 MEZZANINE FLOOR PLAN
1/4"=1'-0"

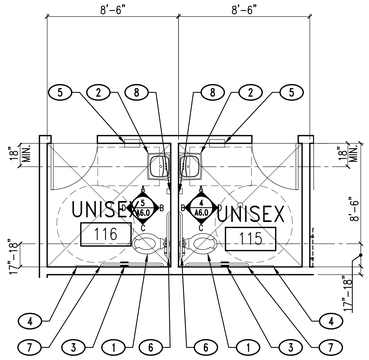
3 MEZZANINE REFLECTED CEILING PLAN
1/4"=1'-0"

KEYNOTES (#)

1. TOILET FIXTURE
2. SINK FIXTURE
3. TOILET PAPER DISPENSER
4. SEAT COVER DISPENSER
5. PAPER TOWEL DISPENSER AND WASTE RECEPTACLE
6. 36" GRAB BAR
7. 48" GRAB BAR
8. SOAP DISPENSER



1 ENLARGED TOILETS 109 & 110
1/4"=1'-0"



2 ENLARGED TOILETS 115 & 116
1/4"=1'-0"

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ENLARGED PLANS, MEZZANINE FLOOR PLAN AND REFLECTED CEILING PLAN

REVISIONS

DATE	OCTOBER 4, 2019
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A2.4

1 **REFLECTED CEILING PLAN**
1/8"=1'-0"

NORTH

1/8" = 1'-0"
0 2' 6' 12' 24'

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REFLECTED CEILING PLAN

REVISIONS

DATE	OCTOBER 4, 2019
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A2.5

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DESIGN DEVELOPMENT

CEILING DETAILS

REVISIONS

DATE	OCTOBER 4, 2019
SCALE	AS NOTED
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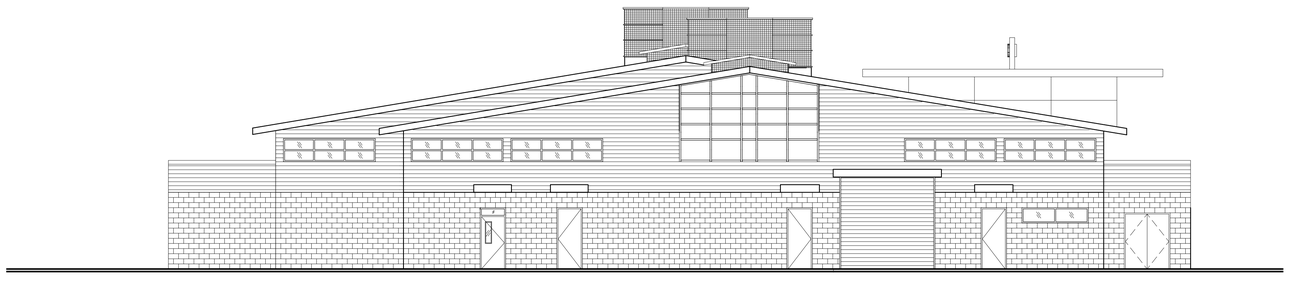
SHEET	

A2.6

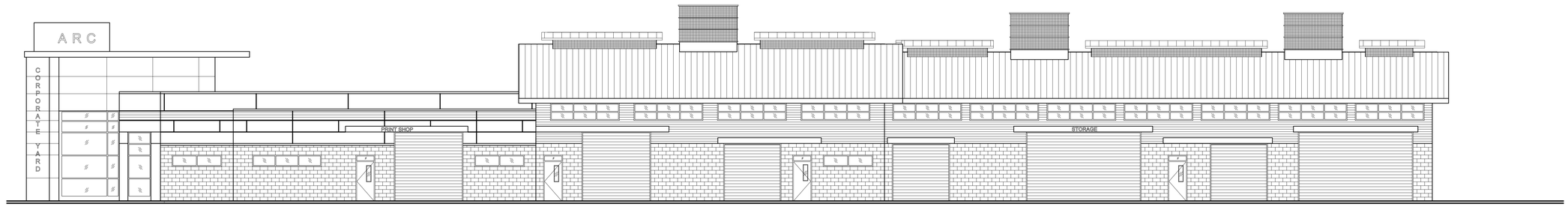
KEYNOTES ⓘ

1.

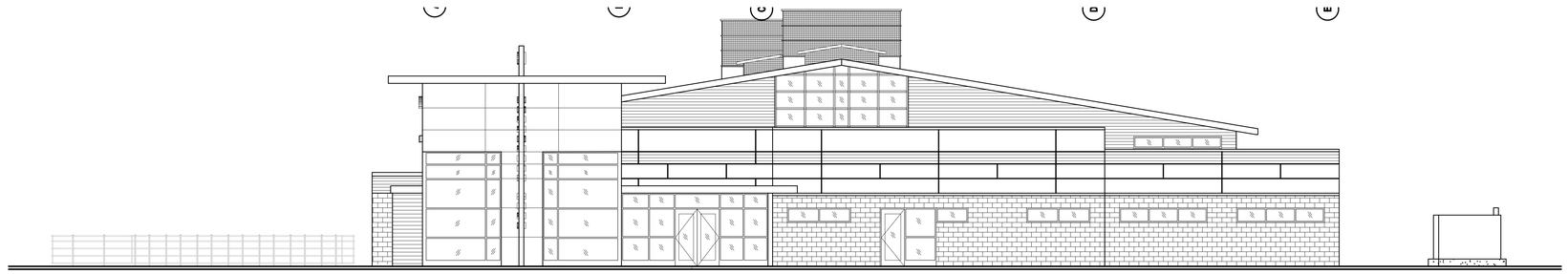
1 NORTH ELEVATION
1/8"=1'-0"



2 EAST ELEVATION
1/8"=1'-0"



3 SOUTH ELEVATION
1/8"=1'-0"



4 WEST ELEVATION
1/8"=1'-0"

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EXTERIOR ELEVATIONS

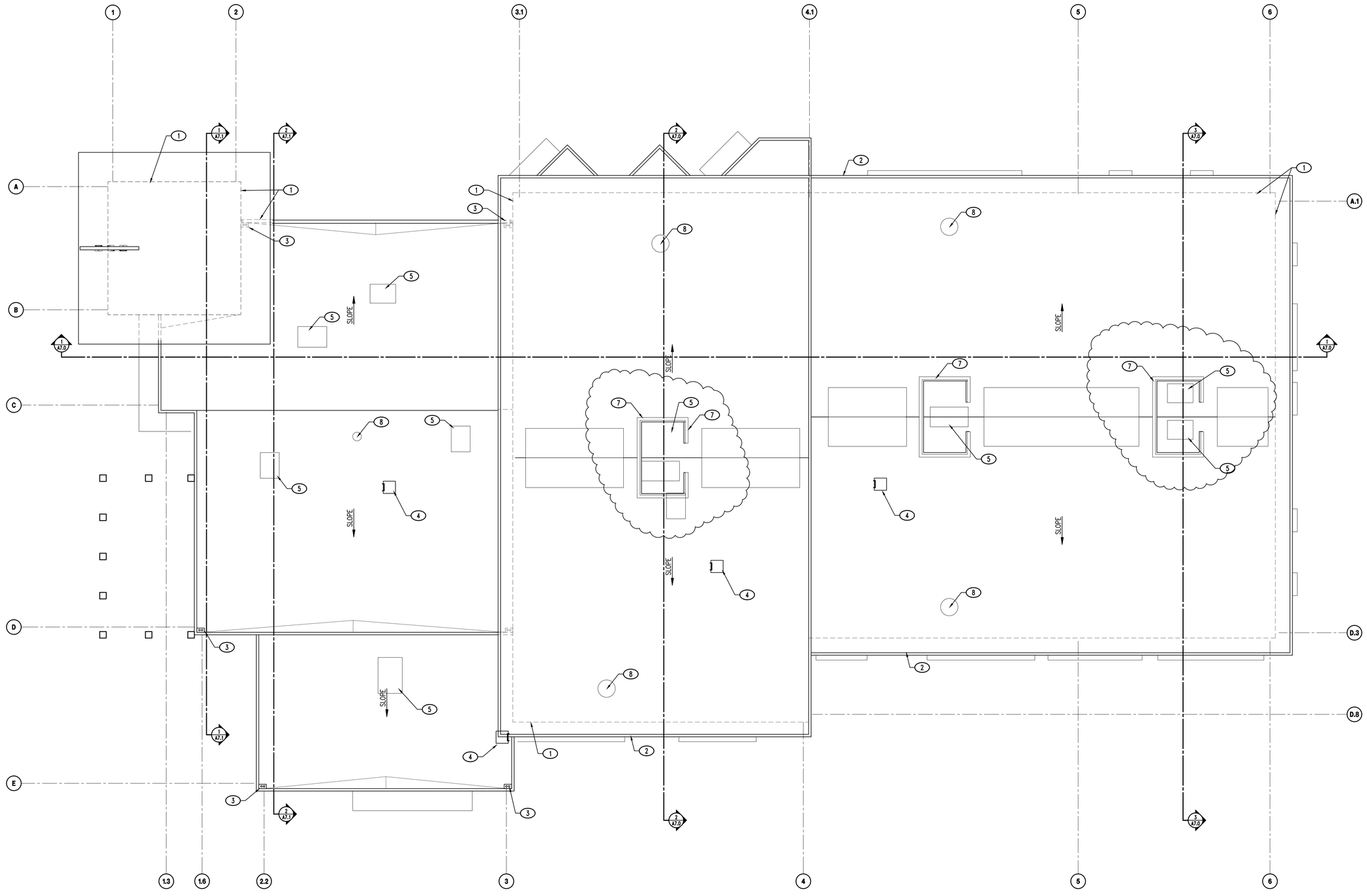
REVISIONS

DATE	OCTOBER 4, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

A3.0

KEYNOTES (#)

1. DASHED LINE OF BUILDING BELOW
2. ROOF GUTTER
3. ROOF DRAIN AND OVERFLOW DRAIN
4. ROOF HATCH
5. MECHANICAL UNIT, TYP. SEE MECHANICAL DRAWINGS
6. DOWNSPOUT
7. MECHANICAL SCREEN
8. ROOF MOUNTED EXHAUST FAN – SEE MECHANICAL DRAWINGS



1 **ROOF PLAN**
1/8"=1'-0"

NORTH

1/8" = 1'-0"
0 2' 6' 12' 24'

GRA architecture
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DESIGN DEVELOPMENT

ROOF PLAN

REVISIONS

DATE	OCTOBER 4, 2019
SCALE	AS NOTED
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SHEET	

A4.0

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DESIGN DEVELOPMENT

ROOF DETAILS AND EXTERIOR DETAILS

REVISIONS

DATE	OCTOBER 4, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

A4.1

FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS				WAINSCOT		CEILING		REMARKS
				NORTH	EAST	SOUTH	WEST	FINISH	HEIGHT	FINISH	HEIGHT	
100	TRAINING ROOM	02	12/D	32/B	32/B	32/B	32/B	24/D	38"	45	19'-0"	-
101	TRAINING STORAGE	02	11	31/C	31/C	31/C	31/C	-	-	41/C	9'-0"	-
102	OPS SUPERVISOR	02	11	32/B	32/B	32/B	32/B	24/D	38"	44	9'-0"	-
103	DIRECTOR OFFICE	02	11	32/B	32/B	32/B	32/B	24/D	38"	44	9'-0"	-
104	KEY ROOM	05	11	31/B	31/B	31/B	31/B	-	-	44	9'-0"	-
105	SUPERVISORS	02	11	32/B	32/B	32/B	32/B	24/D	38"	44	9'-0"	-
106	OPS TECH/AA OFFICE	02	11	32/B	32/B	32/B	32/B	24/D	38"	44	9'-0"	-
107	CLERK	02	12D	32/B	32/B	32/B	32/B	-	-	43	9'-0"	-
108	RECPETION	02	12	32/B	32/B	32/B	32/B	-	-	43	9'-0"	-
109	UNISEX	03	13	23	23	23	23	-	-	42/C	8'-0"	-
110	UNISEX	03	13	23	23	23	23	-	-	42/C	8'-0"	-
111	ELECTRICAL CLOSET	01	12	31/C	31/C	31/C	31/C	21/E	7'-0"	41/C	9'-0"	-
112	SUPPLY ROOM	04	11	31/C	31/C	31/C	31/C	?	?	41/C	9'-0"	--FRP?/SHEET VINYL
113	LOCKER ROOM	02?	11	31/C	31/C	31/C	31/C	-	-	44	9'-0"	-
113.1	CHANGE ROOM	02	11	31/C	31/C	31/C	31/C	-	-	44	9'-0"	-
113.2	CHANGE ROOM	02	11	31/C	31/C	31/C	31/C	-	-	44	9'-0"	-
114	JANITOR	01	11	31/C	31/C	31/C	31/C	22	5'-0"	41/C	9'-0"	-
115	UNISEX	03	13	23	23	23	23	-	-	42/C	8'-0"	-
116	UNISEX	03	13	23	23	23	23	-	-	42/C	8'-0"	-
117	LOBBY	08	12	32/B	32/B	32/B	32/B	-	-	43	12'-0"	1, -SEE SOFFITS
118	DRONE OFFICE	02	11	32/B	32/B	32/B	32/B	24/D	38"	44	9'-0"	-
119	BREAK ROOM	05	11	31/C	31/C	31/C	31/C	24/D	38"	44	9'-0"	-
120	PATIO	-	-	-	-	-	-	-	-	-	-	-
121	PRINT SUPERVISOR	02	11	31/C	31/C	31/C	31/C	-	-	41/C	9'-0"	-
122	ROUTER ROOM	01	11	34	34	31/C	31/C	21/D	8'-0"	46/C	VARIES	-
123	PRINTING/SIGN SHOP	01	11	31C	31C	31/C	31/C	*24/D	4'-0"	46/C	VARIES	*WEST WALL ONLY
124	STORAGE	01	11	-	31/C	31/D	31/D	21/D	8'-0"	46/C	VARIES	-
125	RECEIVING OFFICE	01	11	31/C	31/C	31/C	31/C	-	-	44	9'-0"	-
126	RECEIVING AND DELIVERY	01	11	31/C	31/C	31/C	31/C	21/D	8'-0"	46	VARIES	-
127	RECEIVING SECURED STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	8'-0"	46	VARIES	-
128	OPERATIONS STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	4'-0"	46	VARIES	-
129	OPERATIONS SECURED STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	4'-0"	46	VARIES	-
130	MAINTENANCE	01	11	31/C	31/C	31/C	31/C	21/D	8'-0"	46	VARIES	-
131	MAINTENANCE OFFICE	01	11	31/C	31/C	31/C	31/C	-	-	44	9'-0"	-
132	UNIVERSAL STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	4'-0"	41/C	9'-0"	-
133	HAZARDOUS WASTE	01	11	31/C	31/C	31/C	31/C	21/D	4'-0"	41/C	9'-0"	-
134	FURNITURE STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	8'-0"	46	VARIES	-
135	CUSTODIAL STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	8'-0"	46	VARIES	-
136	SURPLUS STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	4'-0"	46	VARIES	-
137	CUSTODIAL TABLES	01	11	31/C	31/C	31/C	31/C	21/D	8'-0"	46	VARIES	-
138	FIRE RISER	01	11	31/C	31/C	31/C	31/C	21/D	8'-0"	41/C	9'-0"	-
139	LONG TERM STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	4'-0"	46	VARIES	-
140	SECURE STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	8'-0"	46	VARIES	-
141	IT STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	4'-0"	46	VARIES	-
142	FM STORAGE	01	11	31/C	31/C	31/C	31/C	21/D	8'-0"	46	VARIES	-
143	CUSTODIAL STORAGE EQUIPMENT	01	11	31/C	31/C	31/C	31/C	21/D	8'-0"	46	VARIES	-
144	OFFICE	01	11	31/C	31/C	31/C	31/C	-	-	44	9'-0"	-
145	ELECTRICAL	01	11	31/C	31/C	31/C	31/C	-	-	42/C	9'-0"	-
146	ENTRY	08	12/D	32/B	32/B	32/B	32/B	-	-	44	10'-0"	1
147	CORRIDOR	08	12/D	32/B	32/B	32/B	32/B	-	-	44	10'-0"	1
148	CORRIDOR	08	12/D	32/B	32/B	32/B	32/B	-	-	44	10'-0"	1
149	ALCOVE	08	12/D	32/B	32/B	32/B	32/B	-	-	44	10'-0"	
SECOND FLOOR												
200	IDF ROOM	04	11	31/D	31/D	31/D	31/D	21	8'-0"	46	VARIES	-
201	EQUIPMENT ROOM	06	11	31/D	31/D	31/D	31/D	-	-	46	VARIES	-
202	STAIRS	07	11	31/C	31/C	31/C	31/C	-	-	46	VARIES	-

FINISH LEGEND

FLOOR

01 SEALED CONCRETE
02 CARPET TILE
03 TILE
04 VCT
05 SHEET VINYL
06 3/4" PLYWOOD
07 RUBBER
08 LVT

BASE

11 6" RUBBER BASE
12 6" WOOD BASE
13 COVED TILE BASE

WAINSCOT

21 3/4" PLYWOOD
22 FRP (FIBERGLASS REINFORCED PANELS)
23 TILE
24 CHAIR RAIL

WALL

31 GYP. BD. - TEXTURED
32 GYP. BD. - LEVEL 4
33 TILE
34 CURTAIN

CEILING

41 GYP. BD. - TEXTURED
42 GYP. BD. - LEVEL 4
43 2x2 SUSPENDED ACOUSTICAL CEILING SYSTEM- TYPE 1/COLOR
44 2x4 SUSPENDED (2x2/2ND LOOK) ACOUSTICAL CEILING SYSTEM - TYPE 2.
45 2x4 SUSPENDED WOOD CEILING SYSTEM - TYPE 3
46 STRUCTURAL METAL DECK/ OPEN TO STRUCTURE

FINISHES

A NO JOB FINISH
B LATEX EGG SHELL
C SEMI-GLOSS ENAMEL
D STAINED
E NO FINISH

REMARKS

1. ENTRY MATTS

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DESIGN DEVELOPMENT

FINISH SCHEDULE

REVISIONS

DATE OCTOBER 4, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

A5.0

HARDWARE GROUPS

ABBREVIATIONS

HM	= HOLLOW METAL
INSUL	= INSULATED GLASS
IN/TP	= INSULATED, TEMPERED GLASS
KD	= KNOCK DOWN STEEL FRAME WITH STANDARD SNAP-ON TRIM
PMF	= PRESSED METAL FRAME
SCWD	= SOLID CORE WOOD DOOR
SCWD/GL	= SOLID CORE WOOD AND GLASS DOOR
TEMP	= TEMPERED GLASS
TINT	= TINTED GLASS (OPAQUE)
ORB	= OIL RUBBED BRONZE
ALS	= ALUMINUM STOREFRONT
AL	= ALUMINUM
SF	= STOREFRONT
SS	= STAINLESS STEEL
STL	= STEEL
OP	= OPERABLE PARTITION

GLASS REMARKS

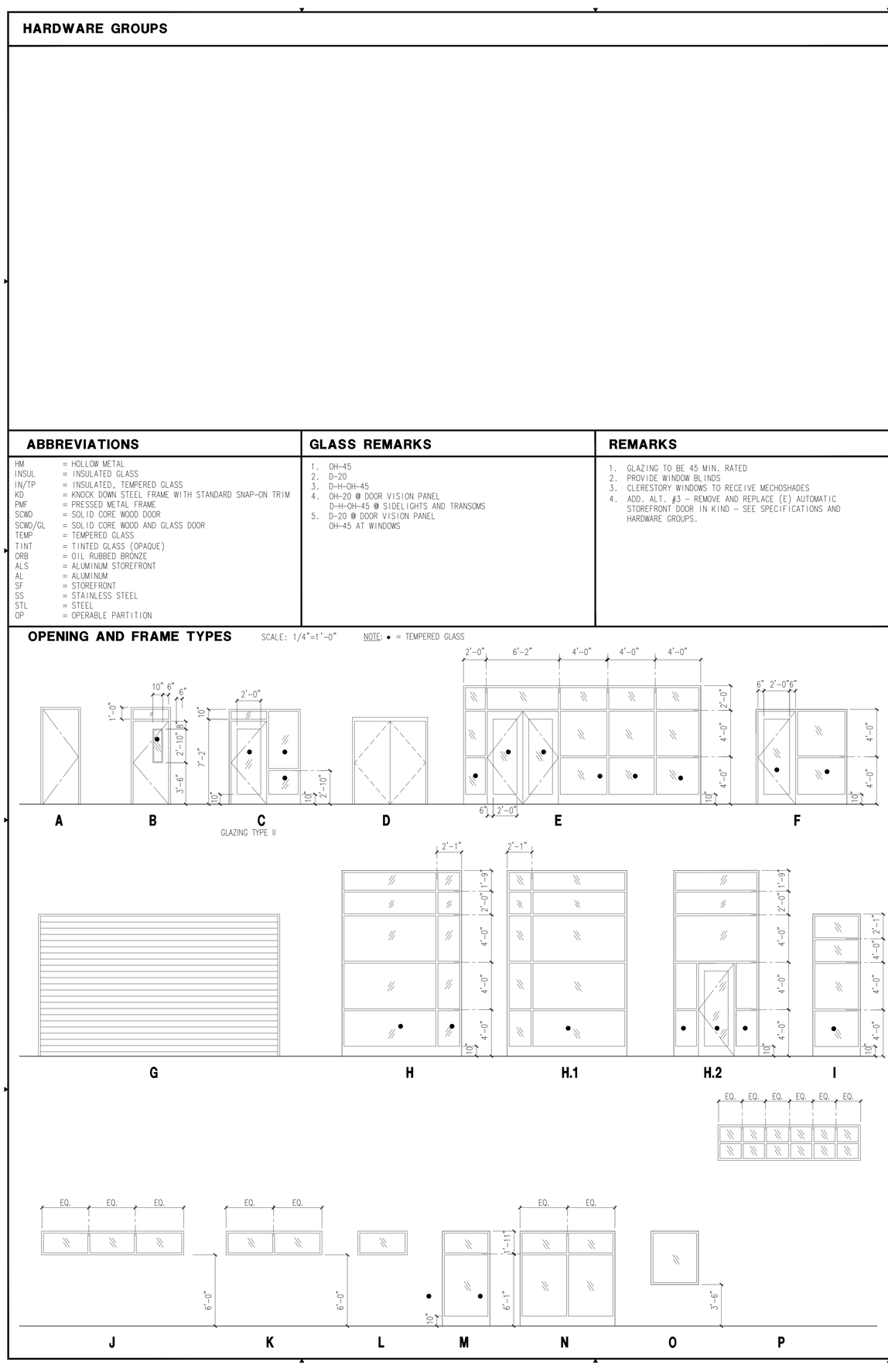
1. OH-45
2. D-20
3. D-H-OH-45
4. OH-20 @ DOOR VISION PANEL
   D-H-OH-45 @ SIDELIGHTS AND TRANSOMS
5. D-20 @ DOOR VISION PANEL
   OH-45 AT WINDOWS

REMARKS

1. GLAZING TO BE 45 MIN. RATED
2. PROVIDE WINDOW BLINDS
3. CLERESTORY WINDOWS TO RECEIVE MECHOSHADES
4. ADD. ALT. #3 – REMOVE AND REPLACE (E) AUTOMATIC STOREFRONT DOOR IN KIND – SEE SPECIFICATIONS AND HARDWARE GROUPS.

OPENING AND FRAME TYPES

SCALE: 1/4"=1'-0" NOTE: • = TEMPERED GLASS



OPENNING SCHEDULE

OPENING NUMBER	DOOR W	H	T	TYPE	CONST.	FRAME W	H	TYPE	MATL.	DETAILS HEAD	JAMB	SILL	HDWR GROUP	FIRE RATING	GLASS TYPE	REMARKS
FIRST FLOOR																
100A	3'-0"	7'-10"	1 3/4"	H1	SF	7'-2"	15'-8"	H.2	SF	–	–	–	–	–	–	–
100B	–	–	–	–	–	8'-10"	15'-8"	H	SF	–	–	–	–	–	–	–
100C	–	–	–	–	–	8'-10"	15'-8"	H.1	SF	–	–	–	–	–	–	–
100D	–	–	–	–	–	10'-2"	15'-8"	H	SF	–	–	–	–	–	–	–
100E	–	–	–	–	–	10'-2"	15'-8"	H.1	SF	–	–	–	–	–	–	–
100F	–	–	–	–	–	9'-8"	15'-8"	H	SF	–	–	–	–	–	–	–
100G	–	–	–	–	–	8'-0"	10'-0	I	SF	–	–	–	–	–	–	–
100H	3'-0"	7'-10	1 3/4"	C	SF	4'-6"	8'-0"	C	SF	–	–	–	–	–	–	–
101A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
101B	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
101C	–	–	–	–	–	8'-8"	2'-0"	K	SF	–	–	–	–	–	–	–
102A	–	–	–	–	–	8'-8"	2'-0"	K	SF	–	–	–	–	–	–	–
102B	–	–	–	–	–	4'-2"	8'-0"	M	SF	–	–	–	–	–	–	–
102C	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
103A	–	–	–	–	–	12'-0"	2'-0"	J	SF	–	–	–	–	–	–	–
103B	–	–	–	–	–	8'-0"	8'-0"	N	SF	–	–	–	–	–	–	–
103C	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
104A	–	–	–	–	–	4'-0"	2'-0"	L	SF	–	–	–	–	–	–	–
104B	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
105A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
105B	–	–	–	–	–	4'-0"	4'-6"	O	PMF	–	–	–	–	–	–	–
105C	–	–	–	–	–	4'-0"	4'-6"	O	PMF	–	–	–	–	–	–	–
106A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
106B	–	–	–	–	–	4'-2"	8'-0"	M	SF	–	–	–	–	–	–	–
106C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
107A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
108A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
109A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
110A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
111A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
112A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
113A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
113.1A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
113.2A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
114A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
115A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
116A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
117A	PR 3'-0"	7'-10"	1 3/4"	E	SF	19'-6"	10'-0"	E	SF	–	–	–	–	–	–	–
117B	–	–	–	–	–	4'-0"	10'-0"	I	SF	–	–	–	–	–	–	–
118A	3'-0"	7'-0"	1 3/4"	F	SCWD	6'-0"	7'-2"	F	SF	–	–	–	–	–	–	–
118B	–	–	–	–	–	8'-8"	2'-0"	K	SF	–	–	–	–	–	–	–
119A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
119B	3'-0"	7'-10"	1 3/4"	F	SF	7'-8"	8'-0"	F	SF	–	–	–	–	–	–	–
119C	–	–	–	–	–	4'-0"	2'-0"	L	SF	–	–	–	–	–	–	–
121A	3'-0"	7'-0"	1 3/4"	F	SCWD	6'-0"	7'-2"	F	SF	–	–	–	–	–	–	–
121B	–	–	–	–	–	8'-8"	2'-0"	K	SF	–	–	–	–	–	–	–
121C	–	–	–	–	–	8'-8"	2'-0"	K	SF	–	–	–	–	–	–	–
122A	–	–	–	–	–	12'-0"	2'-0"	J	SF	–	–	–	–	–	–	–
122B	–	–	–	–	–	12'-0"	2'-0"	J	SF	–	–	–	–	–	–	–
123A	PR 3'-0"	7'-0"	1 3/4"	D	HM	6'-4"	7'-2"	D	PMF	–	–	–	–	–	–	–
123B	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
123C	–	–	–	–	–	12'-0"	2'-0"	J	SF	–	–	–	–	–	–	–
123D	3'-0"	7'-0"	1 3/4"	B	SF	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
123E	12'-0"	12'-0"	–	G	STL	12'-0"	12'-0"	G	STL	–	–	–	–	–	–	–
123F	–	–	–	–	–	8'-8"	2'-0"	K	SF	–	–	–	–	–	–	–
124A	10'-0"	10'-0"	–	G	STL	10'-0"	10'-0"	G	STL	–	–	–	–	–	–	–
124B	3'-0"	7'-0"	1 3/4"	B	SF	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
124C	12'-0"	12'-0"	–	G	STL	12'-0"	12'-0"	G	STL	–	–	–	–	–	–	–
125A	3'-0"	7'-0"	1 3/4"	C	SF	8'-0"	8'-0"	C	SF	–	–	–	–	–	–	–
125B	–	–	–	–	–	4'-0"	2'-0"	L	SF	–	–	–	–	–	–	–
125C	–	–	–	–	–	4'-0"	2'-0"	L	SF	–	–	–	–	–	–	–
125D	–	–	–	–	–	8'-0"	8'-0"	N	SF	–	–	–	–	–	–	–
125E	–	–	–	–	–	6'-6"	8'-0"	M	SF	–	–	–	–	–	–	–
126A	8'-0"	10'-0"	–	G	STL	8'-0"	10'-0"	G	STL	–	–	–	–	–	–	–
126B	3'-0"	7'-10"	1 3/4"	A	HM	3'-4"	8'-0"	A	PMF	–	–	–	–	–	–	–
126C	8'-0"	10'-0"	–	G	STL	8'-0"	10'-0"	G	STL	–	–	–	–	–	–	–
126D	PR 3'-0"	7'-0"	1 3/4"	D	HM	6'-4"	7'-2"	D	PMF	–	–	–	–	–	–	–
127A	PR 3'-0"	7'-0"	1 3/4"	D	HM	6'-4"	7'-2"	D	PMF	–	–	–	–	–	–	–
128A	PR 3'-0"	7'-0"	1 3/4"	D	HM	6'-4"	7'-2"	D	PMF	–	–	–	–	–	–	–
129A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
130A	3'-0"	7'-0"	1 3/4"	B	SF	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
130B	10'-0"	10'-0"	–	G	STL	10'-0"	10'-0"	G	STL	–	–	–	–	–	–	–
131A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
131B	–	–	–	–	–	8'-8"	2'-0"	K	SF	–	–	–	–	–	–	–
132A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
132B	5'-0"	8'-0"	–	G	STL	5'-4"	8'-0"	G	STL	–	–	–	–	–	–	–
133A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
133B	10'-0"	10'-0"	–	G	STL	10'-0"	10'-0"	G	STL	–	–	–	–	–	–	–
134A	20'-0"	12'-0"	–	G	STL	20'-0"	12'-0"	G	STL	–	–	–	–	–	–	–
134B	3'-0"	7'-0"	1 3/4"	B	SF	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
135A	3'-0"	7'-0"	1 3/4"	B	SF	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
135B	20'-0"	12'-0"	–	G	STL	20'-0"	12'-0"	G	STL	–	–	–	–	–	–	–
135C	10'-0"	10'-0"	–	G	STL	10'-0"	10'-0"	G	STL	–	–	–	–	–	–	–
135D	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
136A	PR 3'-0"	7'-0"	1 3/4"	D	HM	6'-4"	7'-2"	D	PMF	–	–	–	–	–	–	–
136B	10'-0"	10'-0"	–	G	STL	10'-0"	10'-0"	G	STL	–	–	–	–	–	–	–
137A	20'-0"	12'-0"	–	G	STL	20'-0"	12'-0"	G	STL	–	–	–	–	–	–	–
137B	3'-0"	7'-0"	1 3/4"	B	SF	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
138A	3'-0"	7'-10"	1 3/4"	A	HM	3'-4"	8'-0"	A	PMF	–	–	–	–	–	–	–
139A	10'-0"	10'-0"	–	G	STL	10'-0"	10'-0"	G	STL	–	–	–	–	–	–	–
140A	PR 3'-0"	7'-0"	1 3/4"	D	HM	6'-4"	7'-2"	D	PMF	–	–	–	–	–	–	–
141A	3'-0"	7'-10"	1 3/4"	A	HM	3'-4"	8'-0"	A	PMF	–	–	–	–	–	–	–
142A	12'-0"	12'-0"	–	G	STL	12'-0"	12'-0"	G	STL	–	–	–	–	–	–	–
142B	3'-0"	7'-10"	1 3/4"	A	HM	3'-4"	8'-0"	A	PMF	–	–	–	–	–	–	–
142C	–	–	–	–	–	8'-8"	2'-0"	K	SF	–	–	–	–	–	–	–
142D	–	–	–	–	–	8'-8"	2'-0"	K	SF	–	–	–	–	–	–	–
143A	PR 3'-0"	7'-0"	1 3/4"	D	HM	6'-4"	7'-2"	D	PMF	–	–	–	–	–	–	–
144A	3'-0"	7'-0"	1 3/4"	B	SF	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
144B	3'-0"	7'-0"	1 3/4"	B	SF	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
145A	3'-0"	7'-10"	1 3/4"	A	HM	3'-4"	8'-0"	A	PMF	–	–	–	–	–	–	–
146A	3'-0"	7'-0"	1 3/4"	C	SF	4'-0"	8'-0"	C	SF	–	–	–	–	–	–	–
147A	3'-0"	7'-0"	1 3/4"	B	SCWD	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
147B	3'-0"	7'-0"	1 3/4"	B	SCWD	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
148A	3'-0"	7'-0"	1 3/4"	B	SCWD	3'-4"	8'-0"	B	SF	–	–	–	–	–	–	–
SECOND FLOOR																
200A	3'-0	7'-0"	1 3/4"	A	SCWD	3'-4"	7'-2"	A	PMF	–	–	–	–	–	–	–
HIGH WDW	–	–	–	–	–	12'-0"	3'-0"	P	SF	–	–	–	–	–	–	–

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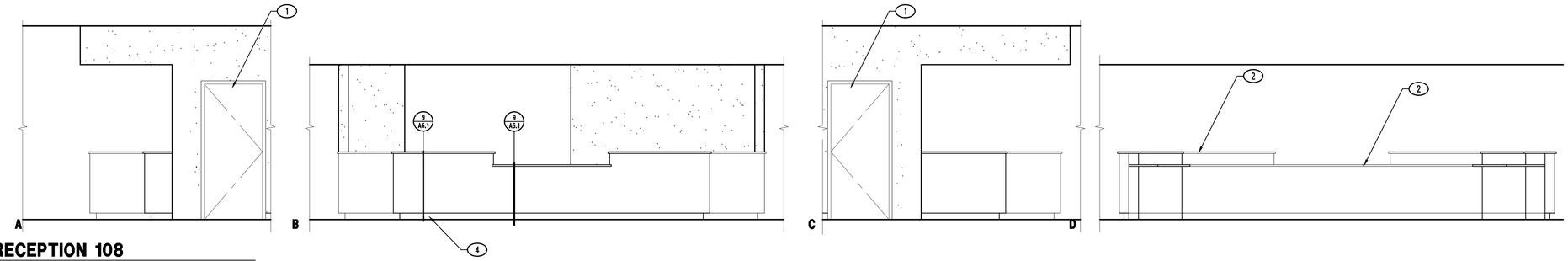
CORPORATION YARD
SACRAMENTO, CALIFORNIA 95841
DESIGN DEVELOPMENT

OPENING SCHEDULE

REVISIONS

DATE OCTOBER 4, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

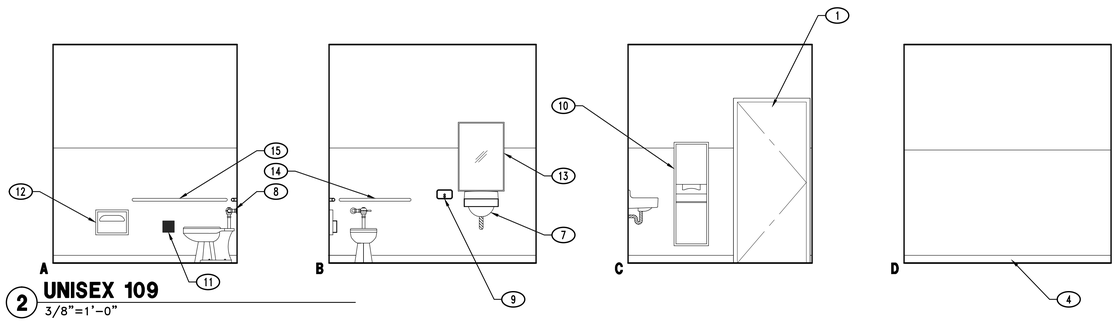
A5.1



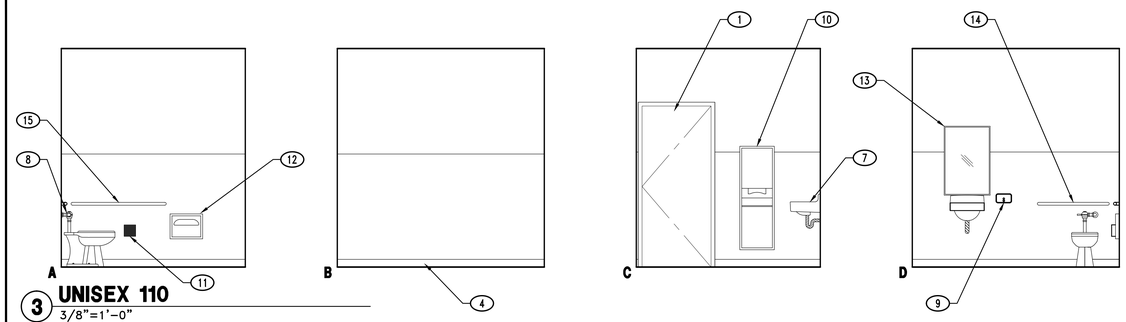
1 RECEPTION 108
3/8"=1'-0"

KEYNOTES

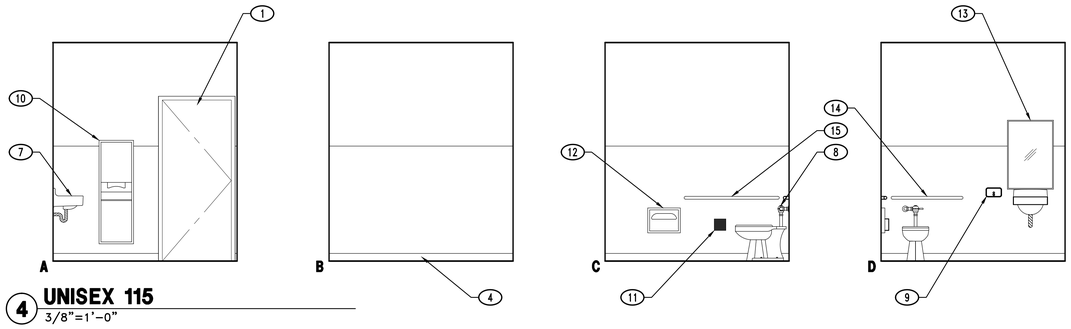
1. DOOR – SEE OPENING SCHEDULE
2. PLAM COUNTERTOP
3. 4" PLAM BACK SPLASH
4. BASE – SEE FINISH SCHEDULE
5. PLAM CABINET DOOR/DRAWER FACE TYP.
6. HEIGHT ADJUSTABLE SHELF
7. SINK – SEE PLUMBING
8. WATER CLOSET – SEE PLUMBING
9. WALL MOUNTED SOAP DISPENSER
10. SEMI-RECESSED PAPER TOWEL DISPENSER & TRASH
11. SEMI-RECESSED TOILET PAPER DISPENSER
12. TOILET SEAT COVER DISPENSER
13. 24"X36" MIRROR
14. 36" GRAB BAR
15. 42" GRAB BAR



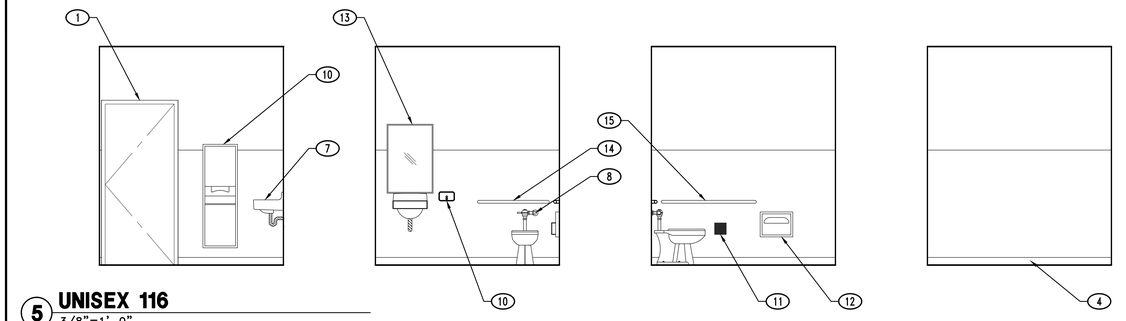
2 UNISEX 109
3/8"=1'-0"



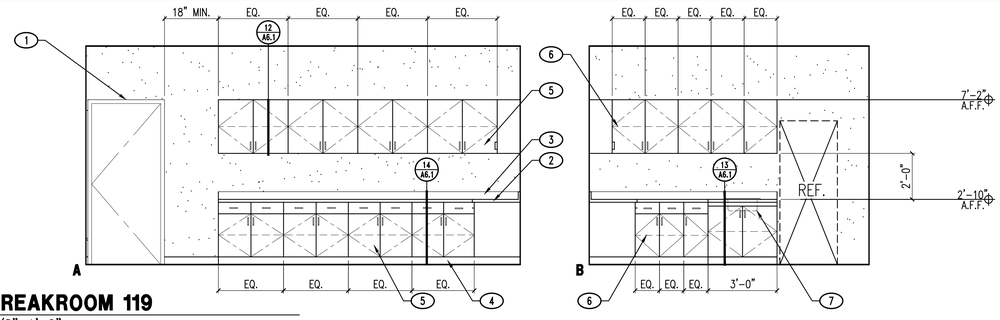
3 UNISEX 110
3/8"=1'-0"



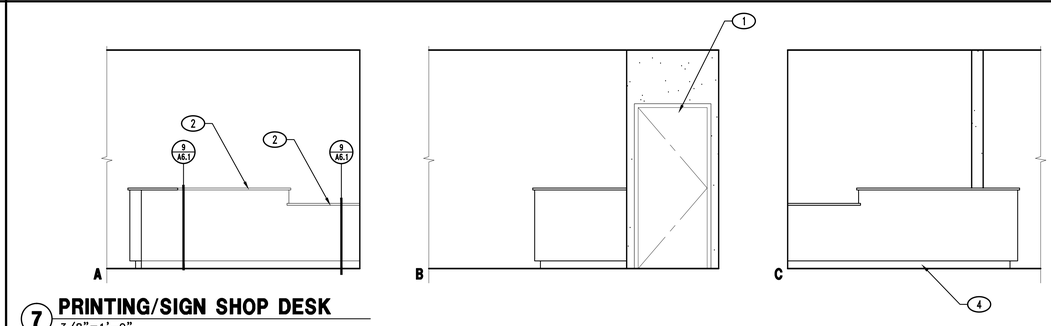
4 UNISEX 115
3/8"=1'-0"



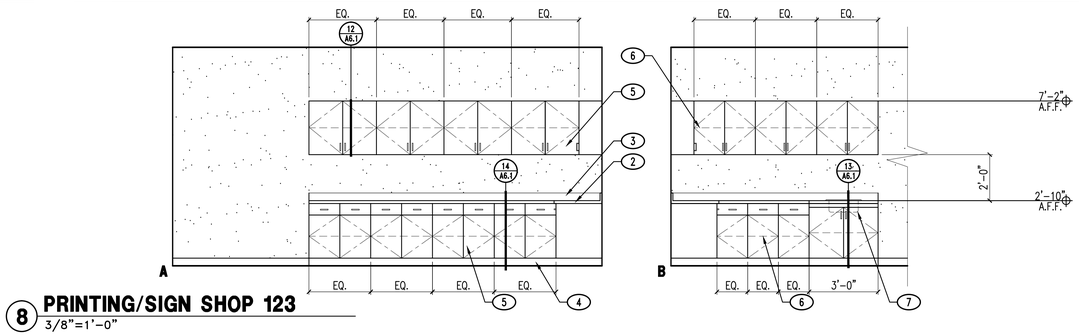
5 UNISEX 116
3/8"=1'-0"



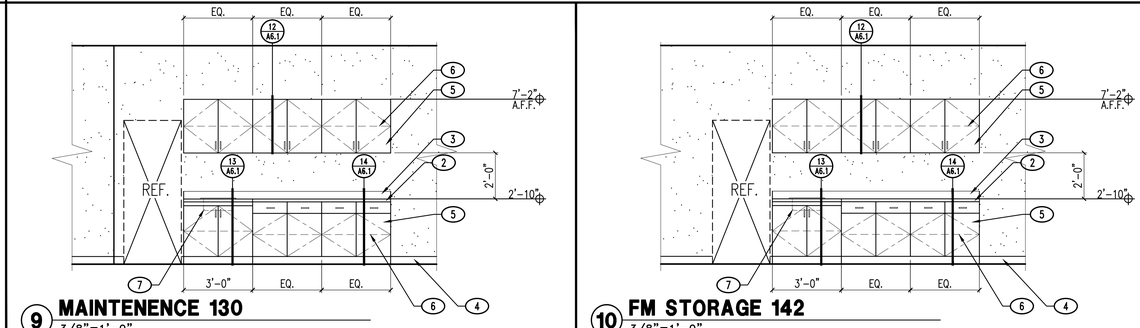
6 BREAKROOM 119
3/8"=1'-0"



7 PRINTING/SIGN SHOP DESK
3/8"=1'-0"



8 PRINTING/SIGN SHOP 123
3/8"=1'-0"



9 MAINTENENCE 130
3/8"=1'-0"

10 FM STORAGE 142
3/8"=1'-0"

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LOS RIOS COMMUNITY COLLEGE DISTRICT
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DESIGN DEVELOPMENT

INTERIOR ELEVATIONS

REVISIONS

DATE OCTOBER 4, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

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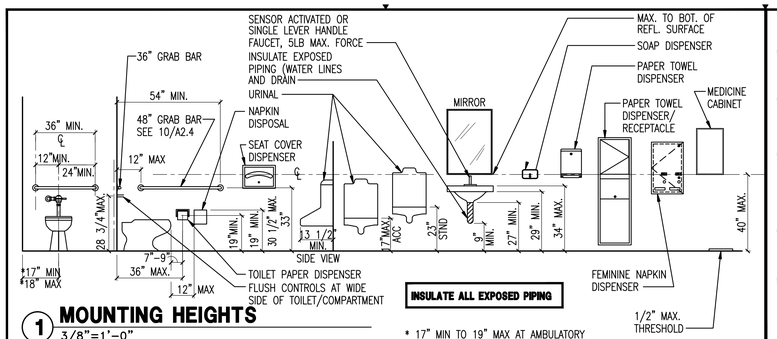
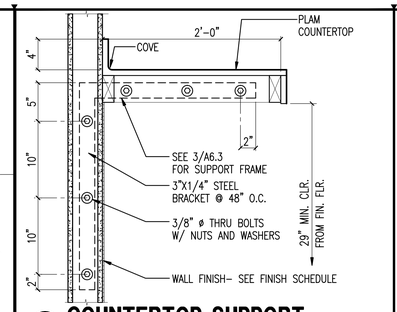


* 17" MIN TO 19" MAX AT AMBULATORY ACCESSIBLE WATER CLOSET

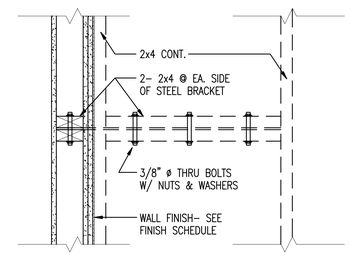
1 MOUNTING HEIGHTS
3/8"=1'-0"

P:\DETAILS\ADA\ACCESS-HEIGHTS-2DSA-NO SHOWER.DWG



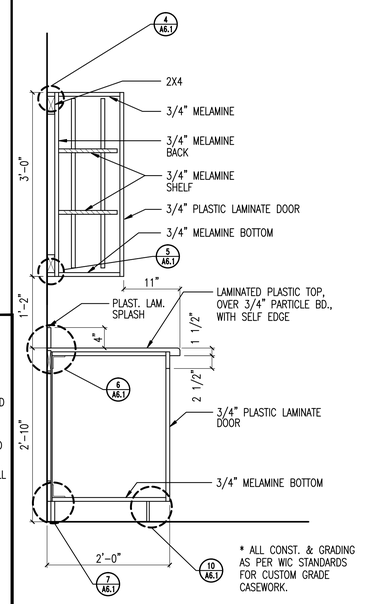
2 COUNTERTOP SUPPORT
1 1/2"=1'-0"

P:\DETAILS\CASEWORK\CAS-COUNTER-01.DWG



3 COUNTERTOP SUPPORT-PLAN
1 1/2"=1'-0"

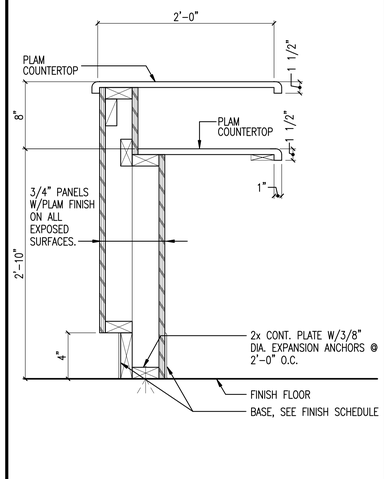
P:\DETAILS\CASEWORK\CAS-COUNTER-02.DWG



* ALL CONST. & GRADING AS PER WIC STANDARDS FOR CUSTOM GRADE CASEWORK.

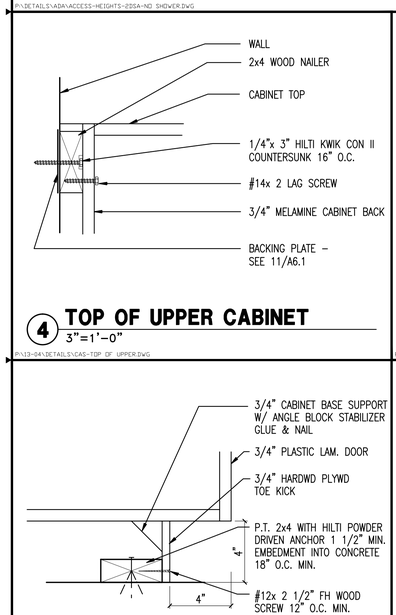
8 CASEWORK SECTION
1"=1'-0"

P:\06-44\DETAILS\CAS-SECT.DWG



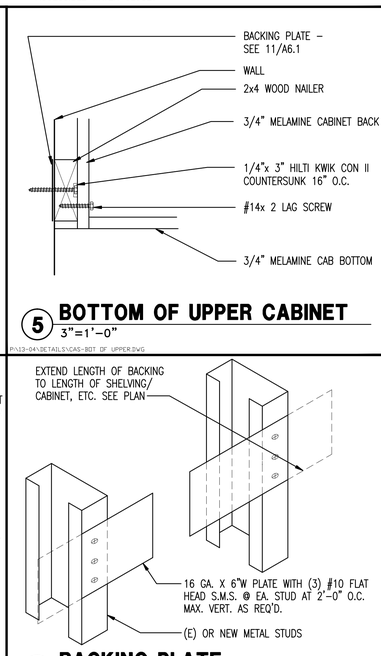
9 RECEPTION DESK
1 1/2"=1'-0"

P:\19-06\DETAILS\CASEWORK\CAS-COUNT_1.DWG



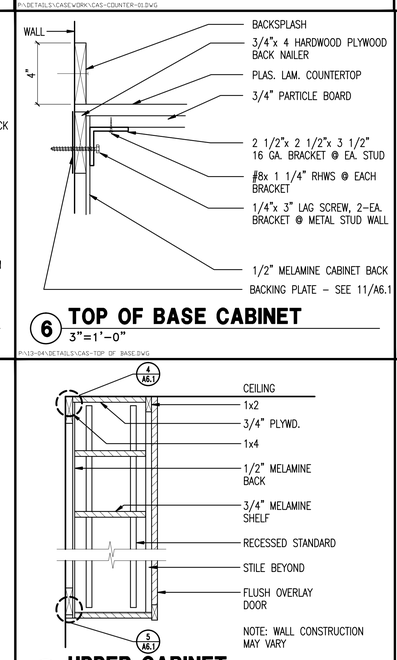
10 BASE CABINET @ FRONT TOE
3"=1'-0"

P:\13-04\DETAILS\CAS-BASE_TOE.DWG



11 BACKING PLATE
1"=1'-0"

P:\DETAILS\WALL\BPLATE-3.DWG



12 UPPER CABINET
1 1/2"=1'-0"

P:\10-10\DETAILS\CAS-UPPER-1.DWG

5 BOTTOM OF UPPER CABINET
3"=1'-0"

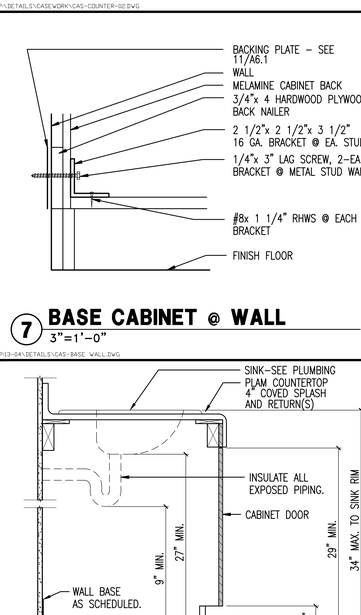
P:\13-04\DETAILS\CAS-BOT_OF_UPPER.DWG

4 TOP OF UPPER CABINET
3"=1'-0"

P:\13-04\DETAILS\CAS-TOP_OF_UPPER.DWG

6 TOP OF BASE CABINET
3"=1'-0"

P:\13-04\DETAILS\CAS-TOP_OF_BASE.DWG

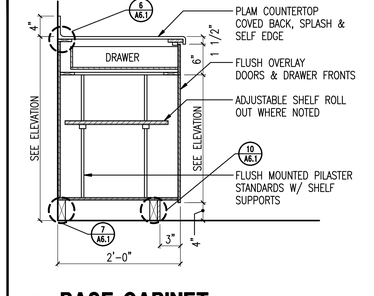


7 BASE CABINET @ WALL
3"=1'-0"

P:\13-04\DETAILS\CAS-BASE_WALL.DWG

13 COUNTERTOP AT SINK
1 1/2"=1'-0"

P:\16-13\DETAILS\CAS-COUNTER-2A.DWG



14 BASE CABINET
1"=1'-0"

P:\DETAILS\CASEWORK\CAS-BASE-1.DWG

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REVISIONS

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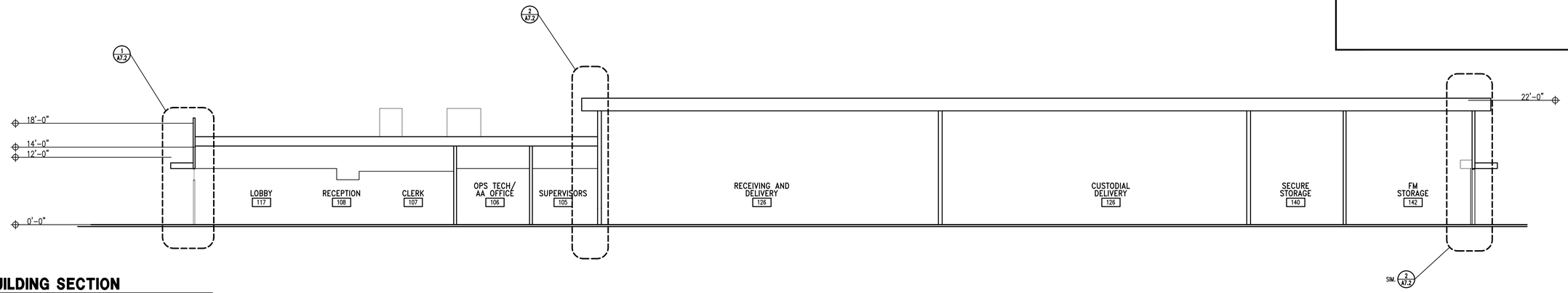
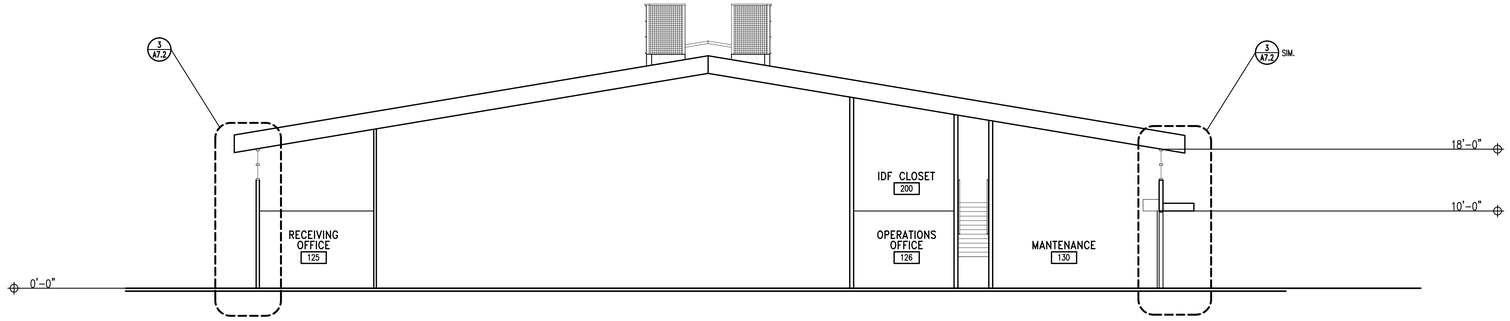
JOB NO.	19-06
SHEET	A6.1

KEYNOTES (#)

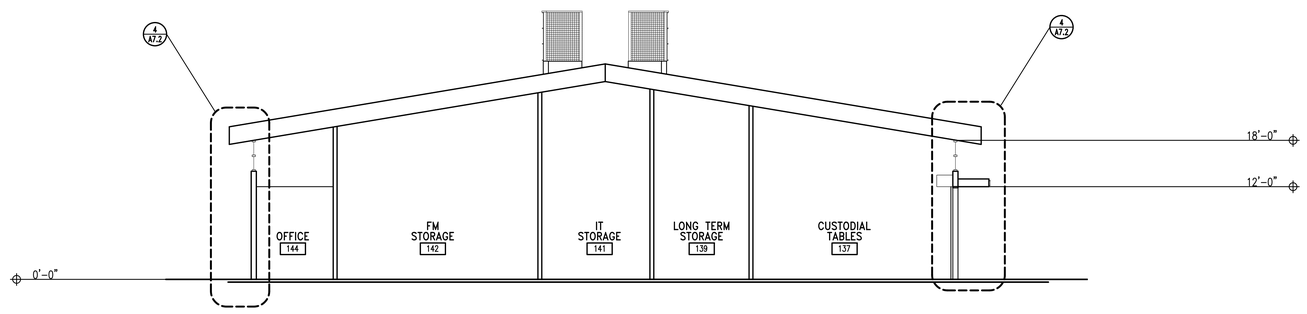
1.



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



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



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

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LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENTO, CALIFORNIA 95841
DESIGN DEVELOPMENT

BUILDING SECTIONS

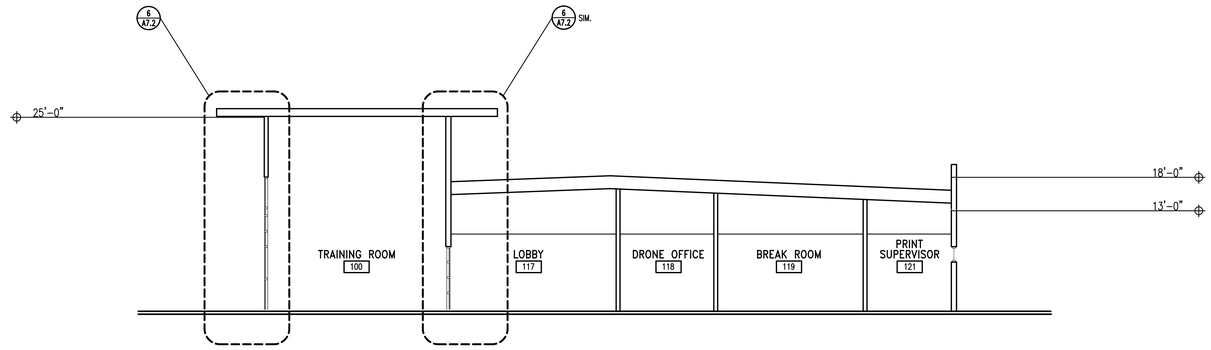
REVISIONS

DATE OCTOBER 4, 2019
SCALE AS NOTED
DRAWN BY
JOB NO. 19-06
SHEET

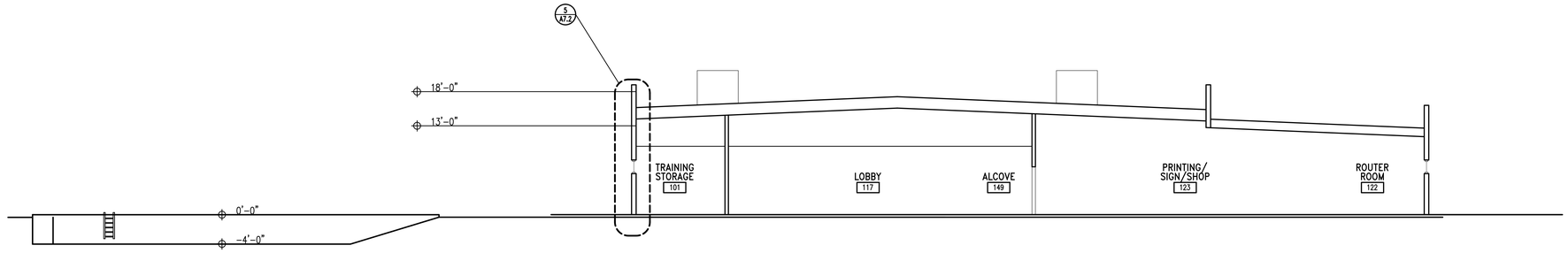
A7.0

KEYNOTES (#)

1.



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



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

GRA architecture
205 23rd Street, Suite 130
Sacramento, CA 95816
916 498-7900

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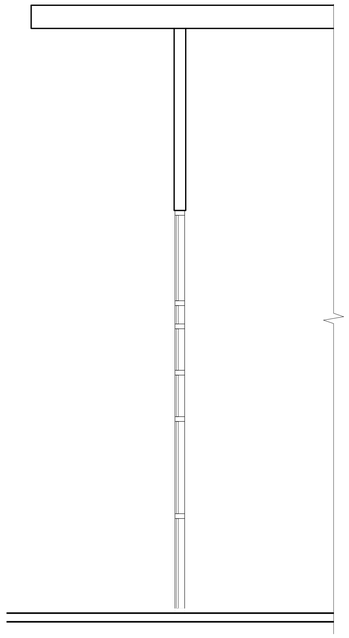
A7.1



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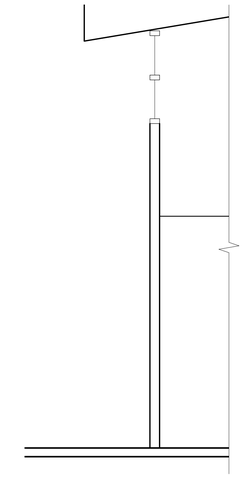
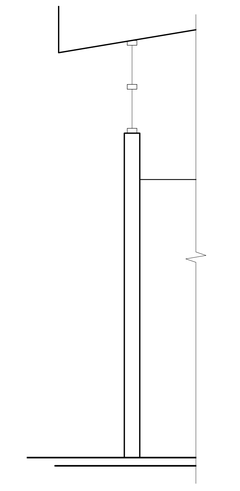
3/8"=1'-0"



3 **BUILDING SECTION**
3/8"=1'-0"

KEYNOTES (#)

1.



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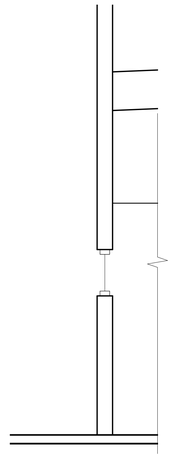
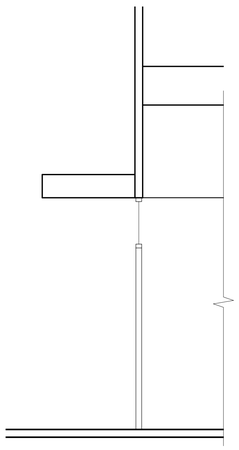
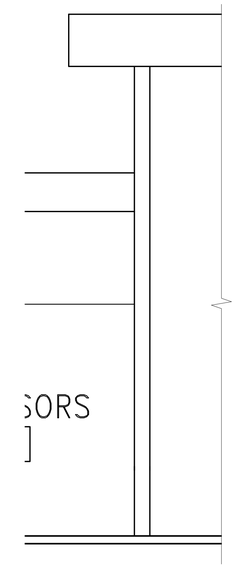
3/8"=1'-0"



5 **BUILDING SECTION**
3/8"=1'-0"



1 **BUILDING SECTION**
3/8"=1'-0"



2 **BUILDING SECTION**
3/8"=1'-0"

GRA architecture

205 23rd Street, Suite 130
Sacramento, CA 95816
916 498-7900

LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENTO, CALIFORNIA 95841
DESIGN DEVELOPMENT

BUILDING SECTIONS

REVISIONS

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JOB NO. 19-06
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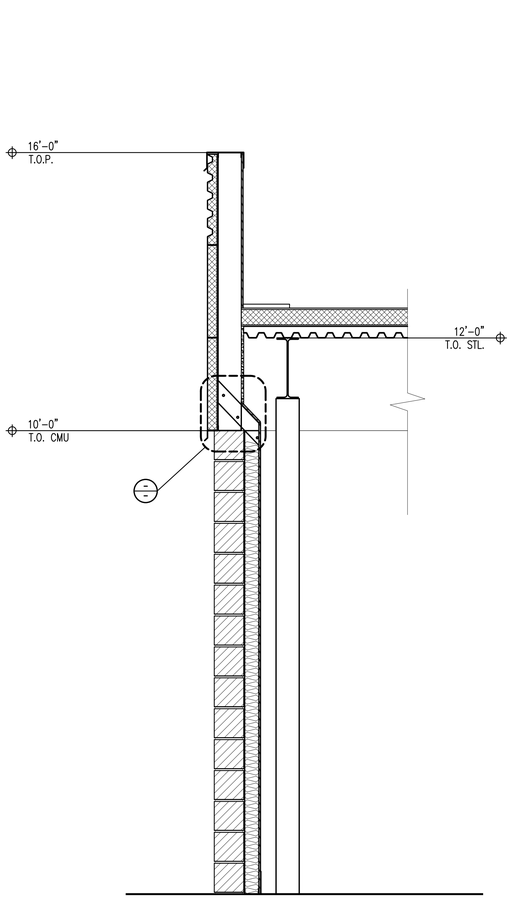
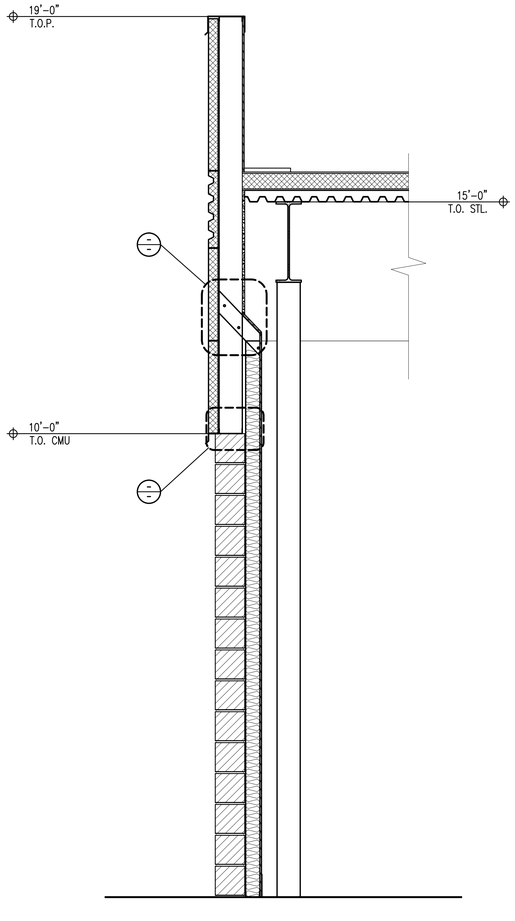
A7.2

KEYNOTES (#)

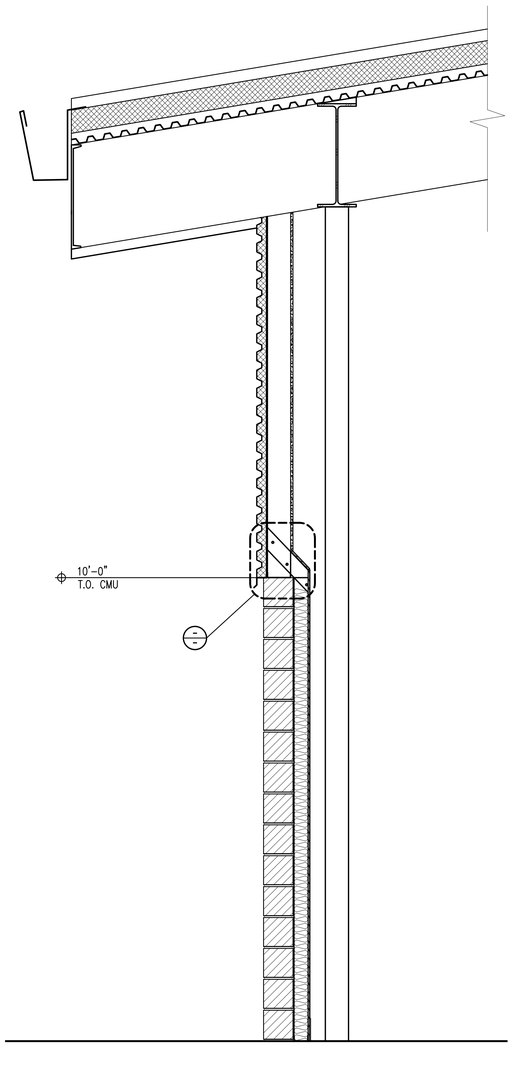
1.



3 **WALL SECTION**
3/4"=1'-0"



2 **WALL SECTION**
3/4"=1'-0"



1 **WALL SECTION**
3/4"=1'-0"

GRA architecture

205 23rd Street, Suite 130
Sacramento, CA 95816
916 498-7900

LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENTO, CALIFORNIA 95841
DESIGN DEVELOPMENT

WALL SECTIONS

REVISIONS

DATE OCTOBER 4, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

A7.3

1 FLOOR PLAN
1/8"=1'-0"

NORTH

1/8" = 1'-0"
0 2' 6' 12' 24'

GRA architecture
205 23rd Street, Suite 130
Sacramento, CA 95816
916 498-7900

LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENTO, CALIFORNIA 95841
DESIGN DEVELOPMENT

FURNITURE PLAN

REVISIONS

DATE	AUGUST 23, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

A9.0

General

1. Interpretation of drawings & specifications
   A) For convenience, specifications have been prepared for this project and are arranged in several sections, but such separation shall not be considered as the limits of the work required by any separate trade. The terms and conditions of such limitations are wholly between the contractor and his subcontractors.
   B) In general, the working details will indicate dimensions, positions and kind of construction, and the specifications will indicate qualities and methods. Any work indicated on the working details mentioned but not in the specifications, or vice versa, shall be furnished as though fully set forth in both. Work not particularly detailed, marked, or specified, shall be the same as similar parts that are detailed, marked, or specified. If conflicts occur between drawings and specifications, the most expensive materials or methods will prevail.
   C) <u>Should an error appear in the working details or specifications or in work done by others affecting this work, the contractor shall notify the architect at once and in writing.</u> If the Contractor proceeds with the work so affected without having given such written notice and without receiving the necessary approval, decision or instruction in writing from the owner, then he shall have no valid claim against the owner, for the cost of so proceeding and shall make good any resulting damage or defect. No verbal approval, decision, or instruction shall be valid or be the basis for any claim against the owner, its officers, employees or agents. The foregoing includes typical errors in the specifications or notational errors in the working details where the interpretation is doubtful or where the error is sufficiently apparent as to place a reasonably prudent contractor on notice that, should he elect to proceed, he is doing so at his own risk.
2. Construction shall conform to all applicable codes and regulations.
3. Shop Drawing Note:
   A) Shop drawings shall be submitted in the form of one reproducible and two copies of each sheet.
   B) The purpose of shop drawing submittals by the Contractor is to demonstrate to the Structural Engineer that he understands the design concept by indicating which materials he intends to furnish and install, and by detailing the fabrication and installation methods he intends to use.
   C) Prior to fabrication, shop drawings shall be submitted for review to the Structural Engineer. Shop drawing submittals shall include, but are not necessarily limited to structural steel, reinforcing steel, glued laminated beams, and pre-fabricated wood roof framing items such as I-joists and trusses.
   D) Prior to submission the Contractor shall review all submittals for conformance with the contract documents and shall stamp submittals as being "Reviewed for Conformance".
   E) Shop drawing submittals processed by the Structural Engineer are not change orders.
   F) Any detail on the shop drawing that deviates from the contract documents shall clearly be marked with the note "This is a Change".
   G) <u>Shop drawings or calculations submitted for review that require resubmittal for re-review shall be billed hourly for such time to the General Contractor.</u> Re-review will not proceed without written approval from the General Contractor for additional engineering review services.
4. Safety Note:
   A) It is the Contractors responsibility to comply with the pertinent sections, as they apply to this project, of the "Construction Safety Orders" issued by the State of California latest edition, and all OSHA requirements.
   B) The owner and the Structural Engineer do not accept any responsibility for the Contractor's failure to comply with these requirements.
   C) <u>The Contractor shall be responsible for adequate design and construction of all forms and shoring required.</u>
5. <u>The Contractor shall notify the Architect and Structural Engineer where a conflict or a discrepancy occurs between the structural drawings and any other portion of the contract documents or existing field conditions.</u> Such notification shall be given in due time so as not to affect the construction schedule. In case of a conflict between structural drawings and specifications, the more restrictive condition shall take precedence unless written approval has been given for the least restrictive. Contractor shall verify all dimensions with architectural and structural drawings prior to commencing any work.
6. Where no specific detail is shown, the construction shall be identical or similar to that indicated for like cases of construction on this project. Should there be any question, contact the Architect and Structural Engineer prior to proceeding.
7. When construction attaches to an existing building, a complete set of drawings of the existing building shall be kept on the job site. Contractor to obtain these drawings from the owner.
8. Contractor shall provide an allowance equal to 2% of the bid for structural steel, misc. iron, light gauge framing, and reinforcing steel to be used at the discretion of the structural engineer. Unused amount to revert to the owner upon completion of the job.
9. Any substitutions for structural members, hardware, or details shall be reviewed by the Architect and Structural Engineer. Such review will be billed on a time and materials basis to the General Contractor with no guarantee that the substitution will be allowed.
10. Do not scale drawings. Contact the Architect or Structural Engineer for any dimensions not shown.
11. These drawings are not complete until reviewed and accepted by the local building official and signed by the owner and the Structural Engineer.
12. All drawings and written material appearing herein constitutes the original and unpublished work of the Structural Engineer and the same may not be duplicated, used or disclosed without written consent of the Structural Engineer.
13. The structure shown on these drawings is structurally sound only in its completed form. The stability of this structure depends on the diaphragms and the bracing members shown. The Contractor is to provide for the design and construction of shoring for all earth, forms, concrete, steel, wood, and masonry to resist gravity, earth, wind, seismic, and construction loads. Shoring shall remain in place until all diaphragms and lateral resisting elements are in place in their entirety. Construction materials shall be spread out if placed on framed floors or roofs. Load shall not exceed the design live load per square foot.

Design Criteria

1. Code: 2016 California Building Code (CBC)
2. Design Live Loads:

Area	Live Load	Remarks
Roof		
A) Flat to < 4:12	L_r = 20 psf	Reducible per code
B) 4:12 to ≤ 12:12	L_r = 12-20 psf	Reducible per code
Floor	L = 0 psf	Reducible per code

3. Snow Design Parameters:
   - Ground Snow Load — P_g = N/A
   - Flat-Roof Snow Load — P_f = N/A
   - Snow Exposure Factor — C_e = N/A
   - Snow Load Importance Factor — I_s = N/A
   - Thermal Factor — C_t = N/A
4. Wind Design Parameters:
   - Ultimate Design Wind Speed (3-sec gust) — V_{ult} = 110 mph
   - Nominal Design Wind speed (3-sec gust) — V_{asd} = 85 mph
   - Risk Category — II
   - Exposure Category — C
   - Internal Pressure Coefficient — ±0.18
   - Analysis Method — Directional Procedure

   <u>Roof Pressures for Components & Cladding:</u>
   1. Wind Uplift loads (zones defined per ASCE 7-10 fig. 30.4-2 thru 30.4-6):
      - A) Zone 1: 12 psf
      - B) Zone 2: 34 psf
      - C) Zone 50 psf
   2. Discontinuity Distance: a = 7.2 ft

   <u>Wall Pressures for Components & Cladding:</u>

Heights:	10'-15'	15'-20'	20'-32.5'
Zone 4:	xx.xx psf	xx.xx psf	xx.xx psf
Zone 5:	xx.xx psf	xx.xx psf	xx.xx psf

5. Earthquake Design Parameters:
   - 5.1. Seismic Importance Factor — I_e = 1.0
   - 5.2. Risk Category — II
   - 5.3. Soil Site Classification — 'D'
   - 5.4. Seismic Design Category — 'D'
   - 5.5. Mapped Spectral Response Accel
     - A) Short period — S_s = x.xxxg
     - B) 1-sec period — S_1 = x.xxxg
   - 5.6 Design Spectral Response Accel
     - A) Short Period — S_{DS} = x.xxxg
     - B) 1-sec period — S_{D1} = x.xxxg
   - 5.7 Seismic Force Resisting System — Wood Shearwalls
   - 5.8 Seismic Base Shear — V = x.xx kips
   - 5.9 Seismic Response Coefficient — C_s = x.xxg
   - 5.10 Response Modification Factor — R = 6.5
   - 5.11 Component Amplification Factor
     - A) Condenser — a_p = 2.5
     - B) Generator — a_p = 1.0
   - 5.12 Component Response Modification Factor
     - A) Condenser — R_p = 6.0
     - B) Generator — R_p = 2.5 (1.5 @ concrete)
   - 5.13 Analysis Procedure — Equivalent Lateral Force

Concrete

1. Structural concrete shall attain 28-day compressive strength as required in note #30. Maximum slump shall not exceed 4".
2. Concrete mix designs shall be prepared by a registered Civil Engineer, reviewed by Owner's testing laboratory and submitted to the Structural Engineer for review. Selection of concrete mix proportions shall be per ACI 318-14 Section 26.4.3. & 26.4.4.
3. Cementitious materials:
   Cement shall conform to ASTM C-150 type I or II.
   Fly ash shall conform to ASTM C-618. Max quantity of fly ash shall be as given in specs (15% max u.n.o.)
4. Concrete aggregates shall conform to ASTM C-33 for normal weight concrete and ASTM C-330 for light weight concrete.
5. Water shall be clean and free from injurious amounts of oils, acids, alkalis, salts, organic materials or other substances deleterious to concrete or reinforcement.
6. Non-shrink grout or drypack shall consist of a premixed nonmetallic formula. See note #27 for additional information.
7. Reinforcing steel shall conform to ASTM A615-grade 60 for #4 and larger, and ASTM A615-grade 40 for #3 and smaller, except reinforcing steel to be welded shall conform to ASTM A706. Contractor shall submit rebar mill certificates.
8. Welded Wire fabric shall conform to ASTM A-1064.
9. All preheating and welding of reinforcing bars shall be done in accordance with AWS D1.4 latest edition and shall be continuously inspected by a qualified laboratory. Contractor shall furnish WPS for all rebar welding to the laboratory.
10. Reinforcing steel shall be fabricated according to "Manual of Standard Practice for Reinforced Concrete Construction".
11. Dimensions shown for location of reinforcing are to the face of bars listed and denote clear coverage. Non-prestressed, cast-in-place concrete coverage shall be as follows, u.n.o.:
    - Cast against earth (except slabs) — 3"
    - Cast in forms and exposed to earth or weather
      - #6 & larger — 2"
      - #5 & smaller — 1½"
    - Beams & columns (ties) — 1½"
    - Beams & columns (main reinf) — 2"
    - Cast-in-place walls (exterior face & soil side) — see above
    - Cast-in-place walls (interior face - #11 & smaller) — ¾"
    - Tilt-up walls — see details
    - Slabs (on forms) — ¾"
    - Slabs (on ground) — 2" clr from top u.n.o.
12. Splices in continuous reinforcement shall be lapped u.n.o., lap bars 48 bar diameters u.n.o. Splices in adjacent bars shall be greater than 5'-0" apart. Splice continuous bars in soil-bearing grade beams, structural slabs on grade and mat foundations as follows u.n.o.: top bars at centerline of support; bottom bars at mid-span. Splice continuous bars in elevated slabs and beams, etc. as follows u.n.o.: top bars at mid-span; bottom bars at centerline of support. All bars size #14 and larger shall be continuous for full length shown or spliced with mechanical couplers as noted in details. Splices in WWF shall overlap 2 squares minimum.
13. The minimum clear spacing between parallel bars in a layer shall not be less than the larger of bar diameter, 1", or 33% greater than the maximum aggregate size (nominal), whichever is greatest. This requirement also applies to the clear spacing between different layers of parallel bars and to the clear distance between a contact lap splice and adjacent splices or bars.
14. All hooks shall be standard hooks unless otherwise shown or noted. At walls, provide hooks at ends of all reinforcing ends, corners and intersections, u.n.o.
15. Provide construction/control joints @ all slabs on grade as noted on plan. Proposed joint plan shall be submitted to the Structural Engineering for approval prior to construction. Concrete surface at construction joints shall be thoroughly cleaned and laitance removed. Where indicated on drawings, roughen concrete surface to ¼" amplitude. Concrete may be roughened by chipping the entire surface, sand blasting, or raking the surface to provide ¼" deep deformations.
16. Remove all debris from forms before casting any concrete.
17. Reinforcing, dowels, bolts, anchors, sleeves, etc., to be embedded in concrete shall be securely positioned in forms before placing concrete.
18. Pipes and electrical conduits shall not be embedded in structural concrete or concrete fill over metal decking except where specifically approved by the Structural Engineer.
19. Anchor bolts (AB's) cast in concrete or masonry for wall sill and ledger/ applications shall be headed bolts with cut threads conforming to ASTM A307 or F1554 u.n.o. Refer to "Wood notes" for additional requirements for bolts in contact with pressure treated or fire retardant material. Refer to 'Structural steel' note for requirements for anchor rods cast in concrete for column base plate and steel embed applications.
20. Walls shall be cast in horizontal layers of 2'-0" maximum depth.
21. Concrete in walls, piers or columns shall set at least 2 hours before placing concrete in beams, spandrels, or slabs supported thereon.
22. Consolidate concrete placed in forms by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with the recommended practices of ACI 309 to suit the type of concrete and project conditions. Concrete shall not be dropped through reinforcing steel (as in walls) so as to cause segregation of aggregates. In such cases hoppers and chutes or trunks of variable lengths shall be used so that the free unconfined fall of concrete shall not exceed 6 feet.
23. Drill through steel columns, beams and plates to pass continuous reinforcing, u.n.o.
24. No wood spreaders allowed. No wood stakes allowed in areas to be concreted.
25. Additional reinforcing in precast or tilt-up panels required for lifting stresses shall be supplied by Contractor.
26. Provide #5x4'-0" diagonal reinforcing at mid-depth of slab at all re-entrant corners typical. This applies to slab on grade, concrete over metal deck, and elevated structural slab conditions.
27. Place non-shrink grout under base plates, sill plates, etc as indicated on the drawings. Non-shrink grout shall be Masterflow 928 Grout by Master Builders Technologies or approved equal with a minimum f'c of 7500 psi @ 28 days.
28. All saw cutting shall be done after initial set has occurred to avoid tearing or damage by the saw blade, but before initial shrinkage has occurred.
29. Notify Structural Engineer a minimum of 48 hours before placing any concrete.
30. Concrete strength: (max slump = 4")

Use	f'c @ 28 days	Max Aggregate Size	Density (lbs/ft³)	Max W/C Ratio
Foundations	3000 psi	1½"	145	0.58
Slab-on-grade	3500 psi	1"	145	0.45
Tilt-up walls	4000 psi	1"	145	0.50
Concrete fill o/ metal deck	3500 psi	⅜"	145	0.52
Exterior flatwork	2500 psi	1"	145	0.60
Conc topping @ elevated flr	2500 psi	⅜"	115	.60

31. Development lengths shall be provided per the table below unless noted otherwise.

Straight Bars			With Standard Hooks		
Bar	f'c 3000 psi	f'c 4000 psi	Bar	f'c 3000 psi	f'c 4000 psi
#3	15"	21"	#3	6"	6"
#4	29"	25"	#4	11"	10"
#5	36"	31"	#5	14"	12"
#6	43"	37"	#6	17"	15"
#7	63"	54"	#7	20"	17"
#8	72"	62"	#8	22"	19"
#9	80"	70"	#9	25"	22"
#10	89"	78"	#10	28"	24"
#11	98"	85"	#11	31"	26"

Window System Design Criteria

2016 CBC Wind Speed 110 mph, exposure C.

1. All mullions and their connections shall be designed to span between structural supports as shown on drawings. Verify ceiling heights with architectural drawings.
2. All mullions and their connections shall allow for a relative movement between stories of not less than ½" due to seismic loads.
3. Submit complete shop drawings and calculations signed by a Civil Engineer registered in the state in which the project is located, prior to fabrication.
4. Details provided in these drawings are for reference only. Window system manufacturer shall design and supply all connection materials (including embedded items, diagonal bracing angles, brackets, outriggers, etc.) as required for the support of the window system. Embedded items shall be installed by the Contractor.

Concrete Masonry

1. 28-day compressive strength of concrete masonry (f'm) shall be f'm = 2000psi for all uses. Full masonry stresses are used in design.
2. Concrete block units shall conform to ASTM C-90. Units shall be lightweight with a maximum unit weight of 105 pcf.
3. Mortar shall be Type S.
4. Grout shall comply with ASTM C476. All cells to fully-grouted unless specified otherwise on plan.
5. Compliance with the requirements for the specified compressive strength of masonry, f'm shall be in accordance with section S1.4B of the TMS602-13/ACI 530.1-13/ASCE6-13. For unit strength method see table below for required 28-day compressive strength of the concrete block units, grout, and mortar.

<u>required 28-day compressive strength</u>

specified f'm	conc block units (psi)	grout (psi)	mortar (psi)
2000	2000	2000 min	1800
2250	2600	2250 min	1800
2500	3250	2500 min	1800

   Unit strength method shall not be used for specified compressive strengths in excess of 2500 psi.
6. Reinforcing steel shall conform to ASTM A615-grade 60 for #4 and larger, grade 40 for #3 and smaller.
7. All reinforcement shall be continuous. Stagger splices where possible. Lap bars 48 diameters minimum, unless noted otherwise.
8. Vertical reinforcing shall be held in position at top and bottom and at intervals not to exceed 200 bar diameters.
9. Each vertical bar in walls shall lap 48 diameters with a dowel of the same size extending into the foundation. Carry each dowel to within 3" of the bottom of the foundation and terminate with 90° hook. Dowels shall be straight and plumb.
10. Place all horizontal bars in bond beam units. When 2 bars are used, stagger laps a minimum of 5'-0".
11. Provide 2-#5 bars (full height of wall at jamb and extending a minimum of 2'-6" past edges of openings at head and sill) each side of all openings and each end of all walls, unless noted otherwise on drawings.
12. Before block is placed on concrete, thoroughly clean concrete and remove all laitance and loose material. Roughen concrete surface to 1/16" amplitude.
13. Concrete block masonry shall be built to preserve the unobstructed vertical continuity of the cells. All head and bed joints shall be solidly filled with mortar for a distance in from the face of the unit not less than the thickness of the face shell. Bond shall be provided by lapping successive courses or by equivalent mechanical anchorage.
14. Vertical cells shall have vertical alignment sufficient to maintain a clear unobstructed continuous vertical cell measuring not less than 2"x3".
15. <u>Low Lift (lift height up to 5'-4")</u>
    All cells shall be filled solidly with grout. Grout shall be placed in a continuous pour in lifts not exceeding 5'-4" where cleanouts are not provided. All grouting shall be done under the continuous observation of the owner's testing laboratory.
16. <u>High Lift (lift height greater than 5'-4" and up to 12'-8")</u>
    Cleanout openings shall be provided in the bottom course of wall to be filled at each lift or pour of grout where such lift or pour of grout is in excess of 5'-4" in height. Maximum lift or pour height shall not exceed 12'-8". Cleanouts shall be provided at each cell. However, if the course at the bottom of the pour is constructed entirely of inverted open-end bond beam units, cleanout openings need only be provided at reinforced cells. Maximum cleanout spacing shall not exceed 32"cc. The cleanouts shall be sealed after inspection and before grouting.
17. Thoroughly clean all cells and bond beams of mortar projections, mortar droppings, or other foreign material before grouting.
18. All grout shall be thoroughly consolidated by mechanical vibration during placement in a manner to provide solidly grouted spaces.
19. When grouting is stopped for one hour or longer, horizontal construction joints shall be formed by stopping the pour of grout 1½" below the top of the uppermost unit.
20. All embedded items (bolts, etc.) shall be securely positioned prior to grouting. Provide a minimum of 1" grout around all bolts in masonry. See Typical Details Sheet.
21. Pipes and electrical conduits shall not be embedded in concrete masonry except where specifically approved by the structural engineer.
22. Use open end block for all stack bond construction.

Wood

1. All sawn lumber shall be Douglas Fir-Larch as graded by the West Coast Lumber Inspection Bureau (WCLIB) in accordance with Standard Grading Rules No. 17 typical unless noted otherwise. All members shall have a minimum grade of No. 1 except 2x4 and 2x6 wall studs, plates, and blocking may be No. 2.
2. All structural sheathing used for shearwalls and roof sheathing shall conform to the requirements for their type in DOC PS1, DOC PS2 or ANSI/APA PRP 210. Each panel or member shall be identified for grade, bond classification, and performance category by the trademarks of an approved testing and grading agency.
3. All foundation plates or sills on concrete slabs which are in direct contact with earth, and plates or sills on concrete or masonry foundations, shall be pressure treated.
4. All wood shall have a moisture content of not more than 19% when sheathing is applied.
5. 8" minimum clearance shall be maintained at all exterior walls between finish grade and bottom of wood walls.
6. Bearing and shearwalls shall have double top plates lapped at wall corners and intersections and plates shall be internailed with 3-16d at such locations. For plate splice details, see drawings.
7. Sill plate anchor bolts shall be installed with plate washers 3x3x0.229 between nut and plate.
8. Provide solid blocking between joists and rafters at all supports.
9. Provide blocking at all ceiling levels.
10. Joists under and parallel to partitions shall be doubled and nailed together.
11. Holes for bolts in wood shall be bored with a bit of the same nominal diameter as the bolt plus 1/16".
12. Holes for lag screws shall be bored as follows:
    a. The clearance hole for the shank shall have the same diameter as the shank, and the same depth of penetration as the length of unthreaded shank.
    b. The lead hole for the threaded portion shall have a diameter equal to 60% to 75% of the shank diameter and a length equal to at least the length of the threaded portion.
13. Lag screws and wood screws shall be screwed and not driven into place. Soap may be used to lubricate the screws.
14. All bolts and lag screws shall be provided with metal washers under heads and nuts which bear on wood. Applies also to inserted expanding fasteners, Red Head, etc.

Bolt Diameter	MI Washer	Steel Washer
⅝"Φ	2¾"Φx5/16"	3"x3"x¼"
¾"Φ	3"Φx7/16"	3"x3"x5/16"
⅞"Φ	3½"Φx7/16"	3½"x3½"x⅜"
1"Φ	4"Φx½"	3¾"x3¾"x⅜"

15. All bolts and lag screws shall be tightened at installation and retightened before closing in or at completion of job.
16. Lay all structural sheathing on roof and floors with face grain perpendicular to support typical unless noted otherwise. Use ply-clips at unsupported sheathing edges.
17. Connector hardware model number are those for Simpson Strong-Tie Company. All joist hangers shall be Simpson U series unless noted otherwise. Equivalent connectors with ICC acceptance may be submitted for review as an alternate.
18. Notify Structural Engineer after wall, floor, and roof sheathing nailing has been completed and a minimum of 48 hours prior to concealing sheathing.
19. Fasteners, nuts, and washers in contact with SBX/DOT and zinc borate treated wood in interior dry conditions may be carbon steel. Fasteners in other preservative-treated wood (Anchor bolts, nails, screws) shall be approved silicon bronze or copper, stainless steel or hot-dipped zinc-coated steel per CBC 2304.10.5.1 u.n.o.

Foundations

1. Foundation design is based on the geotechnical report by ________, dated_____.
2. All building pad preparation and foundation work shall be done in accordance with the requirements of the geotechnical report. Copies of the report may be obtained from the engineer upon request.
3. The Geotechnical Engineer shall observe all footing excavations prior to placement of reinforcing steel and concrete.
4. Foundation depths indicated on plans are for estimating purposes only. Actual depths are to be determined by the Geotechnical Engineer on the jobsite.
5. When structural observation is required, structural engineer shall observe footing reinforcing steel prior to concrete placement. Provide 48 hours notice to structural engineer prior to concrete placement.
6. The contractor shall be solely responsible for all excavation procedures including, but no limited to, lagging, shoring and protection of adjacent property, structures, streets, and utilities in accordance with the local building department.
7. Foundation type: <u>conventional spread footings</u>
   <u>Spread footing design values:</u>
   <u>Allowable Bearing Pressures</u>
   - DL — 2000 psf
   - DL + LL — 3000 psf
   - DL + LL + wind or seismic — 4000 psf

   <u>Lateral Resistance</u>
   - Passive Pressure — 350 pcf
   - Coefficient of friction — 0.35

   <u>Minimum footing dimensions</u>
   - depth = 18"
   - width = 12"

Structural Steel

1. Fabrication, erection and materials shall conform to the specifications and standards of the AISC, as contained in the "AISC 360-10 Specifications of Structural Steel Buildings" & the "AISC Manual of Steel Construction", 14th edition and California Building Code latest edition.
2. Structural steel shall conform to the following specifications, u.n.o.:

<u>Shapes</u>	
Wide Flanges (W, WT, S, M)	ASTM A992
Channels (C), Misc Channels (MC), Angles (L)	ASTM A36
Hollow Structural Steel (HSS)	ASTM A500, Gr. B
Steel Circular Pipes (P)	ASTM A53, Type E or S, Gr. B
<u>Plates & Bars</u>	
Column Base Plates	ASTM A36
Brace Gusset Plates	ASTM A36
Beam Shear Connection Plates	ASTM A36
Column Continuity Plates	ASTM A572, Gr. 50
Beam Stiffener Plates	ASTM A36
Deck Closure Plates	ASTM A36
Stainless Steel Plates & Bars	ASTM A276
Other	ASTM A36
<u>Nuts, Bolts, Rods, & Washers</u>	
General Bolts	ASTM A325-N
Slip Critical Bolts (see note #4 below)	ASTM A325-SC
High Strength Bolts	ASTM A325-N or A490
Machine Bolts (general use)	ASTM A307
Bent & Headed Anchor Bolts	ASTM F1554, Gr. 36, 55, or 105
Partial & Fully Threaded Anchor Rods	ASTM F1554, Gr. 36, 55, or 105
Fully Threaded Rod (general use)	ASTM A36 (A307 Gr. A for ⅜"Φ)
Welded Shear Connectors	ASTM A108, Gr. 1015 thru 1020
Welded Threaded Studs	ASTM A108, Gr. 1015 thru 1020
Nuts for Bolts & Machine Bolts	ASTM A563
Hardened Washers	ASTM F436
Unhardened Washers	ASTM F844
Plain Washers	ASTM B18.22.1
Beveled Washers	ASTM B18.23.1

3. Bolted connections shall consist of unfinished bolts per the table above unless noted otherwise. Anchor bolts cast in concrete or masonry shall be headed bolts with cut thread, full diameter body style conforming to ASTM F1554 u.n.o.. Unless noted otherwise, anchor bolts/rods shall be grade 36 except that welded anchor bolts shall be grade 55 per S1 Supplementary requirements. All bolted connections and base plates shall have standard cut washers unless noted otherwise. Washers at base plates shall be placed at top and bottom of plate.
4. "Slip-critical" bolted connections:
   A) "Slip-critical" connections (A325-SC design values with special inspection) are required at all braced frame connections, at all connections along chord lines and drag lines (as noted on plans), and u.n.o., at all bolts in oversized or slotted holes.
   B) The special inspector must be present during installation and tightening operation of "slip-critical" connections.
5. All structural steel shall receive minimum of one shop coat of red primer with a minimum dry film thickness of 2.0 mils. Do not shop prime or paint areas to be field welded, fireproofed, galvanized, to receive slip-critical high strength bolts, or to be embedded in concrete. Prior to priming or painting, clean structural steel in accordance with Steel Structures Painting Council (SSPC) recommendations & as required by the primer & paint manufacturer. Provide additional painting as noted in the specifications.
6. All structural steel shall be erected plumb and true to line. Temporary bracing shall be installed and shall be left in place until other means are provided to adequately brace the structure. Contractor responsible for reviewing all base plate and support conditions during erection and bracing as required. See AISC and OSHA requirements.
7. Place non-shrink grout under all base plates before adding vertical load. See Concrete Notes for non-shrink grout requirements.
8. Structural steel below grade shall have 3" minimum of concrete cover.
9. Provide ½"Φ stitch bolts and ring fills, space at not more than 24" cc for all double angle members.
10. At wood to steel parallel contact, attach with ½"Φ welded threaded studs at maximum 32"cc. & 6" from ends of wood member, typical unless noted otherwise.
11. Holes for unfinished bolts shall be of the same nominal diameter of the bolt plus 1/16". Use standard AISC gage and pitch for bolts except as noted otherwise. Holes for anchor bolts embedded in concrete shall be of the same nominal bolt diameter plus 3/16" unless noted otherwise.
12. Welding shall be done by the electric arc process in accordance with American Welding Society standards, using only certified welders. All groove welds shall have complete penetration unless noted otherwise. All exposed welds shall be ground smooth. All welding to be done using E70xx electrodes. In addition, welding of ASTM A572 grade 50 steel and ASTM A992 steel shall be done with electrodes capable of depositing weld metal with a maximum diffusible hydrogen content of 16ml/100g (H16). Weld lengths called for on plans are the net effective lengths required.
13. Minimum fillet welds:
    - 3/16" @ t < ½"
    - ¼" @ t < ¾"
    - 5/16" @ t > ¾"
14. Welding Procedure Specifications (WPS) for shop and field pre-qualified weld joints and weld joints qualified by test shall be prepared for review prior for fabrication. All welding procedures that meet there requirements of AWS D1.1 Sec. 5.1 shall be considered as pre-qualified. Qualification testing is required when the depth of a partial penetration or complete penetration weld is 2" or greater.
15. Structural steel & fasteners that are permanently exposed to weather shall be either primed and painted or hot dipped galvanized in accordance with ASTM A123 & A153. Repair galvanizing after welding in accordance with ASTM A780.
16. When structural steel & connections will be exposed to view in the completed building, they shall be fabricated, erected & finished in compliance with Architecturally Exposed Structural Steel (AESS) guidelines & Section 10 of the AISC 303-05 "Code of Standard Practice for Steel Buildings and Bridges".

Lightgauge Metal Framing

1. All metal framing shall be formed from corrosion resistant steel conforming to ASTM A653 or ASTM A1011 with minimum yield strength of 33 ksi for 18 ga and lighter and 50 ksi for 16 ga and heavier.
2. Metal framing shown on the structural drawings shall have channel type sections with stiffened flanges having the minimum properties as shown in the light gauge metal framing schedule.
3. Metal tracks shall be the same gauge as framing which it supports, unless noted otherwise, with minimum flange width of 1¼" and minimum properties as shown in the light gauge metal framing schedule.
4. Galvanized coating must meet the ASTM C955 specification.
5. Factory punch-outs to be located along the centerline of the webs of the members and have a minimum center-to-center spacing of 24". Punch-outs to have a maximum width=half the member depth (d/2) or 2½", whichever is less, and a maximum length=4½". Lightgauge framing members shall be cut such that the minimum distance between the end of the member and the near edge of the web punch-out=10".
6. All header members shall be un-punched.
7. Design properties of metal framing studs, channels & tracks shall conform to (or exceed) the Steel Stud Manufacturer's Association (SSMA) Product Technical Information catalog & ICC Report # ESR-3064P.

Metal Deck

1. ~~Provide metal decking manufactured by Verco or ASC of type and gauge as shown~~ on plans. Decking shall have the following minimum section properties u.n.o.:

Location	Type	Gauge	I (in⁴)	S+ (in³)	S- (in³)
Floor	2W	18	0.601	0.535	0.538
Roof	N	18	0.302	0.321	0.336

2. Metal floor deck shall be composite type, conforming to ASTM A-653 (Fy=38 ksi) ~~or equal and shall have a galvanized, G-60 grade coating. If contractor chooses~~ to substitute decking by alternative manufacturer, contractor shall submit complete supporting data showing comparison of structural properties, gravity & shear values to that of the specified deck.
3. Metal roof deck shall conform to ASTM A-653 (Fy=38 ksi) or ASTM A446, Grade A (Fy=38 ksi) or equal and shall have a galvanized, G-60 grade coating.
4. Prior to fabrication, the Contractor shall submit shop drawings to the Architect and Structural Engineer for review. Shop drawings should indicate deck gauge, size, and layout as well as closure conditions, welds to supports and side lap details.
5. Connection and welding of decking to structural supports and at deck side seams shall be as specified in the structural drawings.
6. No conduit or non-structural items may be placed in concrete fill over metal deck.
7. When placing concrete over metal deck, concrete should first be placed over beams and girders rather than at mid-span of the metal deck and concrete should not be piled beyond the finished depth of the slab.
8. All metal deck receiving concrete fill shall have factory-punched vent tabs to provide 1% ventilation typical.

Test and Inspections

1. Tests and Inspections shall be provided as required below and shall conform to the requirements of 2016 CBC, Chapter 17.
2. All Test and Inspections shall be performed by a certified special inspector from an established Testing & Inspection Company, unless noted otherwise. Jobsite visits by the Structural Engineer do not constitute inspections and are not a substitute for special inspection.
3. The special inspector shall observe the work indicated for conformance with the approved construction documents.
4. The special inspector shall furnish inspection reports to the building department, the engineer or architect of record, and other designated persons. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the proper design authority and to the building department.
5. The special inspector shall submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved construction documents and the applicable workmanship provisions of the 2016 CBC.
6. It is the contractor's sole responsibility to see that these tests and inspections are performed.
7. Required Tests and Inspections are indicated below with a solid filled rectangle " ■ ".
8. Continuous notation indicates the full-time observation of work requiring special inspection by an approved special inspector who is present at the work area. Periodic notation indicates the intermittent observation of work.

<u>Tests & Documentation/Certification Required</u>
Note: <u>Coordinate with building department Test & Inspection form.</u>

- ☐ A. Compact fill
- ☐ B. Concrete mix design, cement, aggregates & admixtures
- ☐ C. Concrete strength f'c test
- ☐ D. Reinforcing steel mill certification
- ☐ E. Structural steel mill certification
- ☐ F. Structural steel, cold formed steel, and anchor bolt sampling & testing (if not properly identified)
- ☐ G. Non-destructive weld test for all complete penetration groove welds by
- ☐ Ultrasonic testing or Radiography
- ☐ H. Masonry strength f'm
- ☐ I. Masonry mortar, grout proportion, aggregates, additives
- ☐ J. Post installed anchors: Expansion / Epoxy Anchors
- ☐ K. High strength bolts, nuts and washers
- ☐ L. End-welded studs
- ☐ M. Beam to column moment connection
- ☐ N. Prefabricated items

	Verification and Inspection	Continuous	Periodic
	A. STEEL		
☐	1. Material verification of high-strength bolts, nuts & washers	○	●
☐	2. Inspection of high-strength bolting, bearing & typical connections	○	●
	3. Inspection of Welding Structural Steel: (field/shop)		
☐	Complete & partial penetration groove welds	●	○
☐	Multi-pass fillet welds	●	○
☐	Single-pass fillet welds > 5/16"	●	○
☐	Single-pass fillet welds ≤ 5/16"	○	●
☐	Floor and roof deck welds	○	●
☐	4. Inspection of Steel Frame Joint Details for Compliance with Approved Construction Documents	○	●
☐	5. Automatic end-weld stud shear connectors	○	●
	B. CONCRETE		
☐	1. Concrete Placement	●	○
☐	2. Inspection of reinforcing steel & placement	○	●
☐	3. Inspection of anchors cast in concrete	○	●
☐	4. Precast concrete attachments & inserts	○	●
☐	5. Erection of precast concrete members	○	●
	C. WOOD		
☐	1. Verify grade and thickness of sheathing	○	●
☐	2. Verify nominal size of framing members at adjoining panel edges	○	●
☐	3. Verify nail diameter and length, number of fastener lines, spacing between fasteners in each line and at edge margins	○	●
☐	4. Verify positive connection of wood members supporting balcony or deck connections to exterior walls prior to concealment	○	●
	D. MASONRY PLACEMENT & GROUTING	○	●
	Note: refer to ACI 530-11 Table 1.19.2 & 1.19.3		
☐	1. Level B masonry inspection (Risk Categories I, II, III)		
☐	2. Level C masonry inspection (Category IV, DSA, OSHPD)		
	E. SOIL (by Geotechnical Engineer)		
☐	1. Footing excavation	○	●
☐	2. Pile/Pier foundation	●	○
☐	3. Material verification below footing	○	●
☐	4. Excavation verification to proper depth	○	●
☐	5. Placement and compaction of controlled fill	●	○
☐	6. Site preparation prior to placement of controlled fill	○	●
	F. POST INSTALLED ANCHORS		
☐	1. Expansion anchor installation	○	●
☐	2. Epoxy anchor installation	●	○

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GENERAL NOTES

REVISIONS

DATE October 4, 2019
SCALE
DRAWN BY
JOB NO.
SHEET

S1.0

Powder Actuated Fasteners (Shot Pins) - Hilti

1. These notes govern all conditions called out on the plans as "PAF" or "shot pins", unless noted otherwise.
2. Installation, testing & inspection of all PAF's shall be in accordance with the applicable evaluation report, these plans, and any project specifications.
3. PAF's specified in these notes shall be used for dry, interior applications only.
4. All PAF's shall be manufactured by Hilti, Inc. Tulsa, Oklahoma in accordance with the ICC evaluation report referenced below.

Connected Material	Base Material	Base Material Thickness, 't'	Minimum Penetration into Base Material (f)	Hilti Fastener	Evaluation Report (Issue Date)
Metal Decking	Steel (all grades)	1/8" ≤ 't' < 3/8"	Full	X-HSN24 (e)	ESR-2197 (12/2017)
		1/4" ≤ 't' < 1/2"	Full	X-ENP-19 L15	
		1/2" & thicker	1/2"		
Cold Formed Steel (Light Gauge) & Non-Preservative Treated Wood	Steel (all grades)	3/16" ≤ 't' < 1/2"	Full	X-U w/ P8 washer	ESR-2269 (02/2017)
		1/2" & thicker	1/2"		
	Normal Weight Concrete (including concrete fill over metal decking) (a)	3x penetration min	1"		
	CMU (grouted) (b) (c)				
2x Preservative Treated Wood	Concrete (d)	4 1/2" min	1 3/8"	X-CP 72	ESR-2379 (08/2016)

Table Footnotes:

(a) 3" minimum edge distance & 4" minimum spacing required. Installations in concrete over metal deck may be installed either from underneath through the metal deck or from above directly into the concrete. For fasteners into the bottom of metal deck, spacing parallel to the deck flutes shall be 5.1" minimum.
(b) 4" minimum edge distance, and no more than one fastener shall be located in any given cell.
(c) Fasteners installed in the face of CMU shall be installed 1" minimum away from vertical mortar joints. At bed joints, fasteners shall not be spaced closer than 8"cc and must be installed a minimum of 8" from the end of the wall.
(d) 1 3/4" minimum concrete edge distance required. Locate fastener 6" from ends of sill plates.
(e) Full penetration means the entire length of the tapered tip shall penetrate completely through the base material.

Expansion Anchors-Concrete: (Carbon Steel)

1. Use Hilti Kwik Bolt-TZ Expansion Anchors as manufactured by Hilti Inc., Tulsa Oklahoma. ICC-ES Report No. ESR-1917 reissued May 2017.
2. Installation of anchors shall be in accordance with the manufacturer's recommendations, ICC-ES Report, and these notes.
3. Special inspection is required in accordance with the 2016 CBC Sections 1705A.1.1.3 and 1910A.5. Special inspector must verify product, expiration date, concrete type and strength, anchor diameter and steel grade, compliance of drill bit, hole diameter and location, cleanliness of hole and anchor, and anchor embedment.
4. Each anchor type (loaded in either pullout or shear) shall be torque tested in accordance with CBC Section 1910A.5 to the appropriate test load shown in the table. If any anchor fails testing, all anchors of the same type not previously tested shall be tested until 20 consecutive anchors pass, then initial testing frequency may be resumed.
5. When installing anchors in existing concrete do not cut or damage existing reinforcing bars. Locate existing reinforcing bars with pachometer or x-ray if required.
6. The testing of the anchors shall be done by the Testing Laboratory and a report of the test results shall be submitted to the Building Dept. and Architect/Structural Engineer.
7. Anchors installed up into the bottom of metal deck with concrete fill shall be installed in the center of the low flute of the decking. The decking shall have a minimum thickness of 20 gauge. The minimum depth of embedment above the top of the deck shall be 1 1/2". The effective depth of embedment is considered to be one-third of the metal deck height plus the depth of embedment above the top of the deck. There shall be a minimum concrete cover of 1" between the top surface of the concrete and the end of the bolt.

Normal Weight Concrete Anchors f'c = 3000 psi Hilti Kwik Bolt-TZ Expansion Anchors		Carbon Steel Anchors
Anchor Diameter	Embed	Installation Torque Torque Test Load (ft-lbs)
3/8"	2"	25
1/2"	3 1/4"	40
5/8"	4"	60
3/4"	4 3/4"	110

Expansion Anchors: Carbon Steel (CMU)

1. Use Hilti Kwik Bolt 3 Masonry Expansion Anchors as manufactured by Hilti Inc., Tulsa Oklahoma. ICC-ES Legacy Report No. ESR-1385 dated February 1, 2014.
2. Installation of anchors shall be in accordance with the manufacturer's recommendations, ICC-ES Legacy Report, and these notes.
3. Special inspection is required in accordance with the 2013 CBC Section 1704A. Special inspector must verify product, expiration date, concrete type and strength, anchor diameter and steel grade, compliance of drill bit, hole diameter and location, cleanliness of hole and anchor, adhesive application, and anchor embedment.
4. Each anchor type (loaded in either pullout or shear) shall have 50% of the anchors (alternate in each group arrangement) torque tested or tension tested to the appropriate test load shown in the table. If any anchor fails testing, all anchors of the same type not previously tested shall be tested until 20 consecutive anchors pass, then initial testing frequency may be resumed.
5. When installing anchors in existing concrete do not cut or damage existing reinforcing bars. Locate existing reinforcing bars with pachometer or x-ray if required.
6. The testing of the anchors shall be done by the Testing Laboratory and a report of the test results shall be submitted to OSHPD and Architect/Structural Engineer. Testing shall occur 24 hrs. minimum after the installation of the anchors.
7. Where the number of anchors of a specific size and type exceed 100, the following testing procedure may be used. The first 40 anchors shall be tested as specified in note 4 above. 10% of additional anchors shall be tested. Any failure shall be handled in the same manner as specified in note 4 above.
8. Anchors installed up into the bottom of metal deck with concrete fill shall be installed in the center of the low flute of the decking. The decking shall have a minimum thickness of 20 gauge. The minimum depth of embedment above the top of the deck shall be 1 1/2". The effective depth of embedment is considered to be one-third of the metal deck height plus the depth of embedment above the top of the deck. There shall be a minimum concrete cover of 1" between the top surface of the concrete and the end of the bolt.

Grout Filled Concrete Masonry Anchors f'm = 1500 psi Hilti Kwik Bolt 3 Masonry Expansion Anchors				Carbon Steel Anchors ICC-ES Legacy Report No. ESR-1385	
Anchor Diameter	Embed	Install. Torque Torque Test Load (ft-lbs)	ICC-ES Allowable Shear	ICC-ES Allowable Tension	Tension Test Load (lbs)
1/4"	1 1/8"	4	304	121	194
3/8"	1 5/8"	15	589	257	411
1/2"	2 1/4"	25	664	502	803
5/8"	2 3/4"	65	710	651	1042
3/4"	3 1/4"	120	627	829	1327

Note: Allowable loads listed above are the limiting loads based on the lesser of the grout-filled concrete masonry capacity or steel strength assuming all minimum edge distance & spacing requirements are met.

Adhesive Anchors-Concrete

1. Where "Hilti" or "Simpson" post-installed adhesive anchors in concrete are called out on plan, the following Hilti or Simpson adhesive products shall be used, respectively. Substitutions between or for other products shall be approved by the engineer prior to use:
   A. Hilti HIT-HY 200 Epoxy Adhesive as manufactured by Hilti, Inc. ICC Report No. ESR-3187 re-issued March 2018.
   B. Simpson "SET-XP" Adhesive Anchors as manufactured by Simpson Strong-Tie, Inc. ICC-ES Report No. ESR-2508 reissued July 2017.
2. Installation, inspection & testing of anchors shall be in accordance with the manufacturer's recommendations, ICC-ES report and these notes.
3. Threaded rod anchors shall be F1554, Grade 36 u.n.o.
4. Continuous special inspection is required in accordance with CBC Section 1701. Special inspector must verify product, expiration date, concrete type and strength, anchor diameter and steel grade, compliance of drill bit, hole diameter and location, cleanliness of hole and anchor, adhesive application, and anchor embedment. See "Test and Inspections" section of plans for additional information.
5. Where pull-test loads are designated on plan, each anchor type (loaded in either pullout or shear) shall have 50% of the anchors (alternate in each group arrangement) tested in tension to the tension load shown. If any anchor fails testing, all anchors of the same type not previously tested shall be tested until 20 consecutive anchors pass, then initial testing frequency may be resumed. Where pull-test loads are not shown, pull-testing is not required.
6. The testing of the anchors shall be done by the Testing Laboratory and a report of the test results shall be submitted to the Building Dept. and the Architect/Structural Engineer. Testing shall occur after full epoxy cure time has elapsed (24 hours min). Where the number of anchors of a specific size and type exceed 100, the following testing procedure may be used. The first 40 anchors shall be tested as specified in note 5 above, then 10% of the additional anchors shall be tested. Any failure shall be handled in the same manner as specified in note 5 above.
7. When installing anchors in existing concrete do not cut or damage existing reinforcing bars. Locate existing reinforcing bars with pachometer or x-ray if required.

Adhesive Anchors-Concrete Masonry

1. Use Hilti HIT-HY 270 adhesive as manufactured by Hilti, Inc., Tulsa, Oklahoma. ICC-ES Report No. ESR-4143 dated January, 2018, u.n.o.
2. Installation of anchors shall be in accordance with the manufacturer's recommendations, ESR report, and these notes.
3. Special inspection is required in accordance with 2013 CBC Section 1704 (DSA/OSPHD shall be per 1704A) & the ESR report. Special Inspector must verify:
   A. Anchor type, diameter & length, and adhesive product type & expiration.
   B. Installation description, including verification of masonry compressive strength, anchor installation & location (spacing & edge distance) in accordance with the manufacturer's published instructions and ESR Report.
4. Do not cut or damage existing reinforcing bars. Locate with pachometer or x-ray if necessary.
5. Base material temperature @ time of installation shall be between 23°-104° F.
6. Anchors shall be A36 threaded rod, u.n.o. Anchors exposed to exterior weathering conditions shall be Type 304 or 316 stainless steel or hot-dipped galvanized.
7. Each anchor type (loaded in either pullout or shear) shall have the following percentage of anchors pull-tested to the test load shown in the table below. If any anchor fails testing, all anchors of the same type not previously tested shall be tested until 20 consecutive anchors pass, then initial testing frequency may resume:
   A. Structural anchorage: 100% u.n.o.
   B. Anchorage of non-structural elements: 50%
   C. Sill PL bolts: 10%
8. Pull-testing shall be done by the Testing Laboratory in the presence of the Special Inspector and a report of the test results shall be submitted to the Building Dept. and the Architect/Structural Engineer. Testing shall occur 24 hrs. minimum after anchor installation.

Rod Diam.	Min Embed	Face of CMU Test Load (lbs)		Top of CMU Test Load (lbs)
		4" Edge Dist	20" Edge Dist	1 3/4" Edge Dist
3/8"	3 3/8"	2000	2500	n/a
1/2"	4 1/2"	3100	4100	2400
5/8"	5 5/8"	4100	5700	2400
3/4"	6 3/4"	5100	7600	n/a

Abbreviations

addl .... Additional
alt .... Alternate
AISC .... American Institute of Steel Construction
APA .... American Plywood Association
ASTM ...... American Society for Testing and Materials
AWS .... American Welding Society
AB .... Anchor bolt
& .... And
arch .... Architect/Architectural
@ .... At
b.o. .... Bottom of
bm .... Beam
brg .... Bearing
btr .... Better
btwn .... Between
blkg .... Blocking
B.S. .... Both sides
bott .... Bottom
BN .... Boundary nail
clg .... Ceiling
cc .... Center to center
CL .... Center line
clr .... Clear
col .... Column
CP .... Complete Penetration
conc .... Concrete
CMU .... Concrete masonry unit
conn .... Connection
CJ .... Construction Joint
cont .... Continuous
csk .... Countersink
CTJ .... Control Joint
DL .... Dead Load
det .... Detail
diag .... Diagonal
dia .... Diameter
do .... Ditto
D.F. .... Douglas Fir
dbl .... Double
dn .... Down
dwg .... Drawing
ea .... Each
E.F. .... Each Face
embed .... Embedment
EN .... Edge Nail
E.W. .... Each Way
elev, el .... Elevation
eq .... Equal
equip .... Equipment
(e) .... Existing
EJ .... Expansion Joint
FC .... Face of Concrete
FB .... Face of Block
FM .... Face of Masonry
FP .... Face of Plywood/Sheathing
FS .... Face of Stud
fin .... Finish
F.F. .... Finish floor
F.G. .... Finish grade
flr .... Floor
ftg .... Footing
fnd .... Foundation
f.o. .... Face of
frmg .... Framing
galv .... Galvanized
ga .... Gauge
glb .... Glued-laminated beam
g.l. .... Grid Line
hgr .... Hanger
hdr .... Header
ht .... Height
HSB .... High strength bolt
HSS .... Hollow Steel Section
hk .... Hook
horiz .... Horizontal
i.d. .... Inside diameter
int .... Interior
inv .... Inverted
jst .... Joist
jh .... Joist hanger
LS .... Lag screw
lt. wt. .... Light weight
LL .... Live Load
LLH .... Long leg horizontal
LLV .... Long leg vertical
LVL .... Laminated Veneer Lumber
MB .... Machine bolt
mfr .... Manufacturer
max .... Maximum
mech .... Mechanical
MI .... Malleable iron
min .... Minimum
misc .... Miscellaneous
mtl. .... Metal
N.I.C. .... Not in contract
(n) .... New
nts .... Not to scale
.... Number or pounds
o/ .... Over
oc .... On center
OWJ .... Open web joist
opng .... Opening
opp .... Opposite
O.H. .... Opposite Hand
o.d. .... Outside diameter
PP .... Partial penetration
pc .... piece
PL .... Plate
ply, plywd .... Plywood
pcf .... Pounds per cubic foot
psf .... Pounds per square foot
psi .... Pounds per square inch
PAF .... Powder Actuated Fasteners
PTDF .... Pressure Treated Douglas Fir
r, rad .... Radius
RDWD .... Redwood
reinf .... Reinforcing
req'd .... Required
rf .... Roof
R.O. .... Rough opening
Φ .... Round or diameter
sched .... Schedule
S.A.D. .... See architectural drawings
S.E.D. .... See electrical drawings
S.M.D. .... See mechanical drawings
SMS .... Sheet Metal Screws
SDS .... Simpson Strong-Drive Screw
SDSTS .... Self drilling self tapping screw
SC .... shear connector 3/4"Φ u.n.o.)
shtg .... Sheathing
sht .... Sheet
SMS .... Sheet metal screw
sim .... Similar
s.o.g. .... Slab on grade
.... square
stagg .... Staggered
std .... Standard
stl .... Steel
sstl .... Stainless Steel
stfnr .... Stiffener
struct .... Structural
SP .... structural plywood
SPEN .... structural plywood edge nailing
symm .... Symmetrical
TN .... Toe nail
t&b .... Top & bottom
t.o.c. .... Top of concrete
t.o.f. .... Top of framing
t.o.PL .... Top of plate
t.o.s. .... Top of Steel
t.o.w. .... Top of Wall
t&g .... Tongue & Groove
TS .... Tube Steel
typ .... Typical
u.n.o. .... Unless noted otherwise
vert .... Vertical
v.i.f. .... Verify in field
w/ .... With
w/in .... Within
w/o .... Without
WS .... Wood screw
W.P. .... Working point
WHS .... Welded headed studs
WWF .... Welded wire fabric
WCLIB .... West Coast Lumber Inspection Bureau

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GENERAL NOTES

REVISIONS

DATE October 4, 2019
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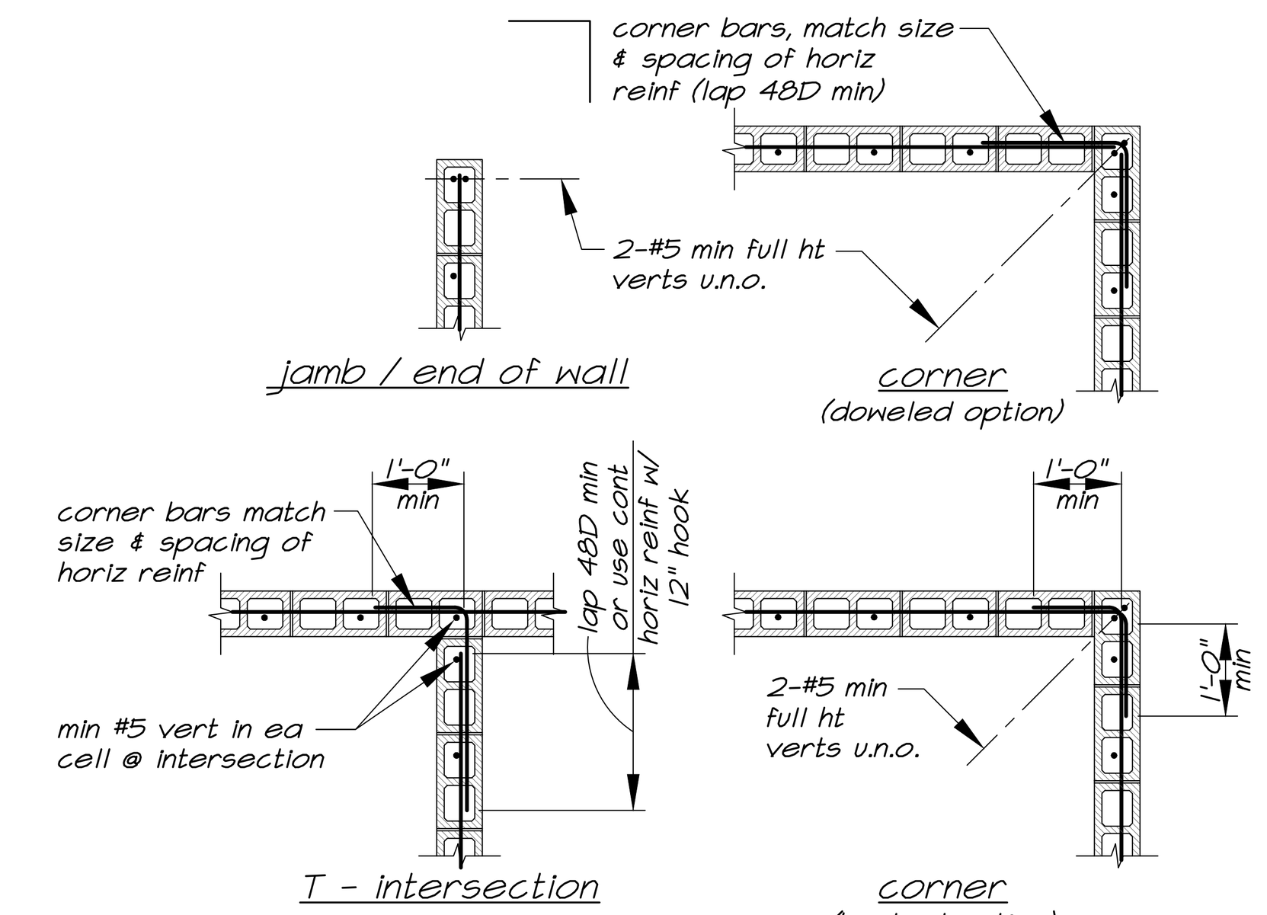
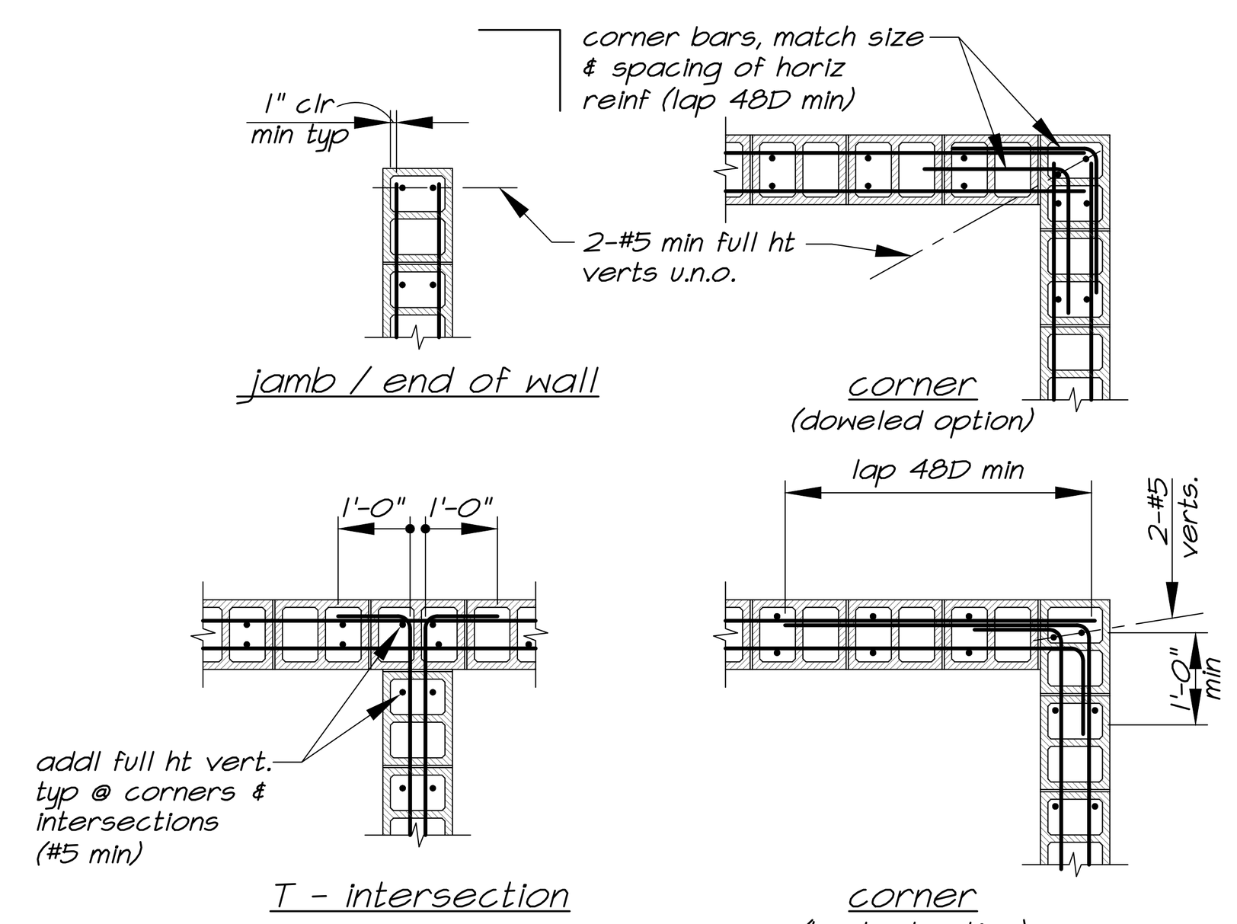
S1.1



Notes:
1. Concrete block shall be placed in running bond u.n.o.
2. Size and spacing of reinforcing is shown elsewhere on drawings.
3. 'D' equals diameter of horizontal reinforcing.
4. Provide dowels to foundation at all vertical bars.

16 / S1.2 — Typ Block Wall Corner & Intersection Reinforcing

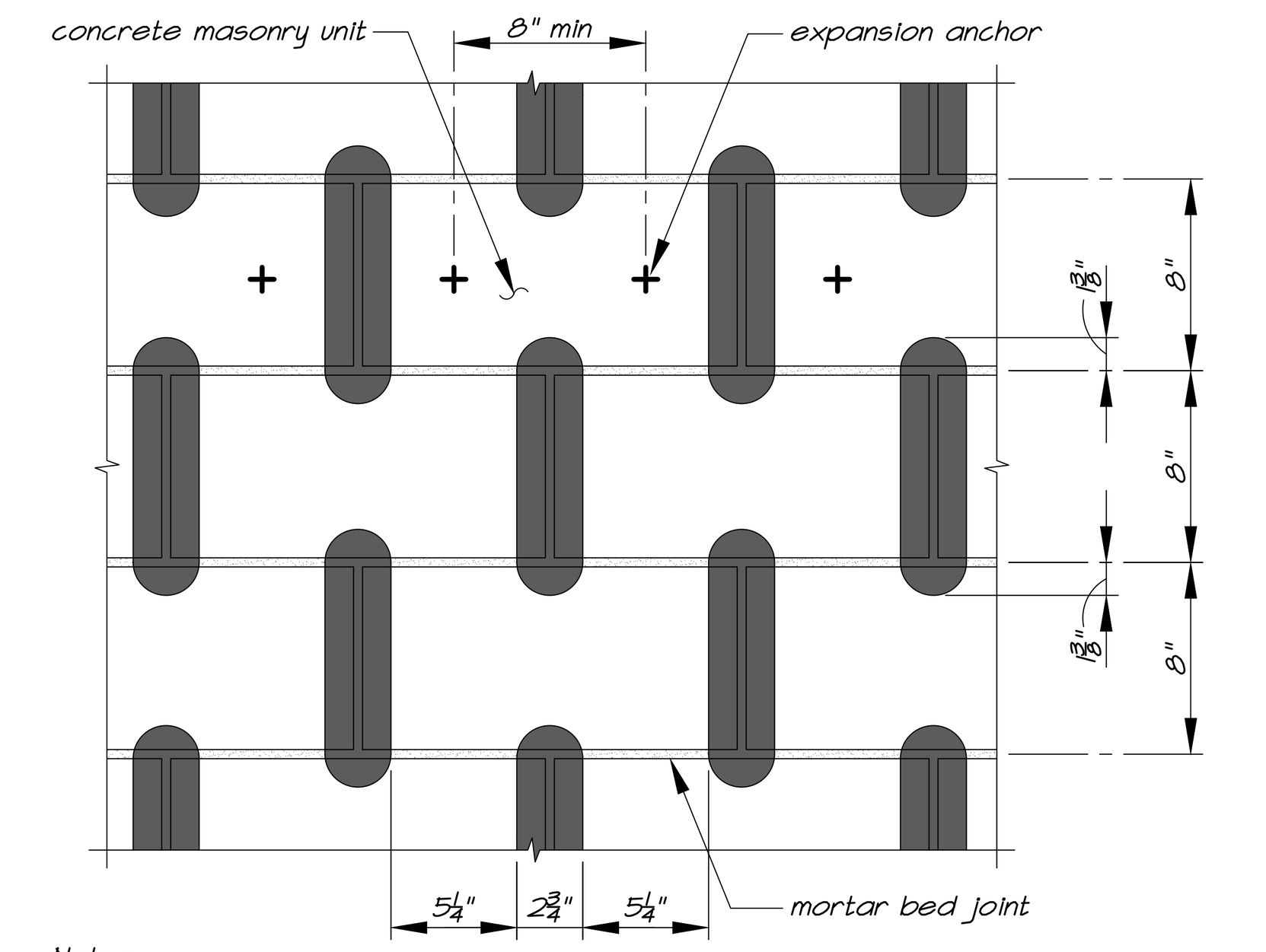
single curtain



Notes:
1. Concrete block shall be placed in running bond u.n.o.
2. Size and spacing of reinforcing is shown elsewhere on drawings.
3. 'D' equals diameter of horizontal reinforcing.
4. Provide dowels to foundation at all vertical bars.

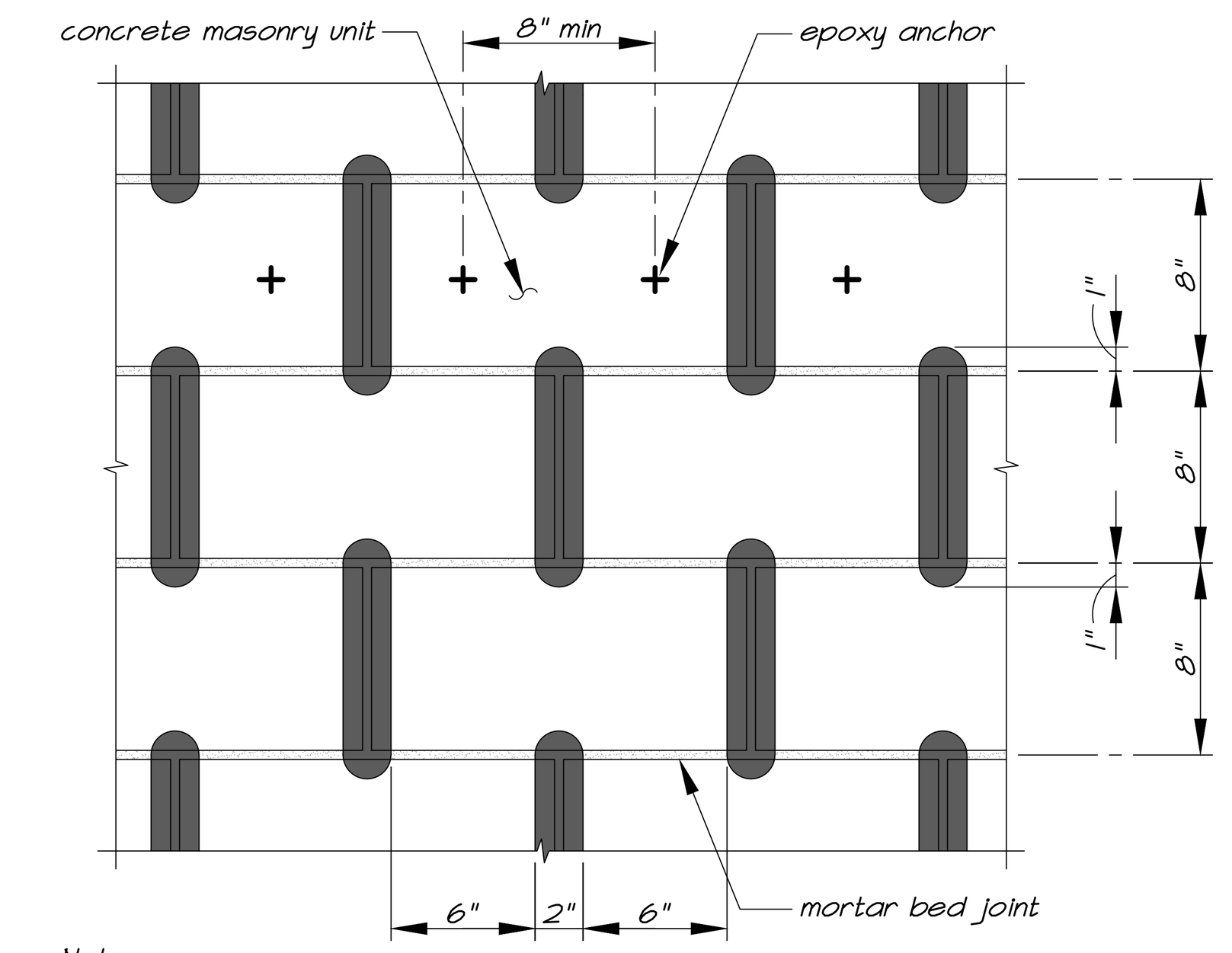
17 / S1.2 — Typ Block Wall Corner & Intersection Reinforcing

double curtain



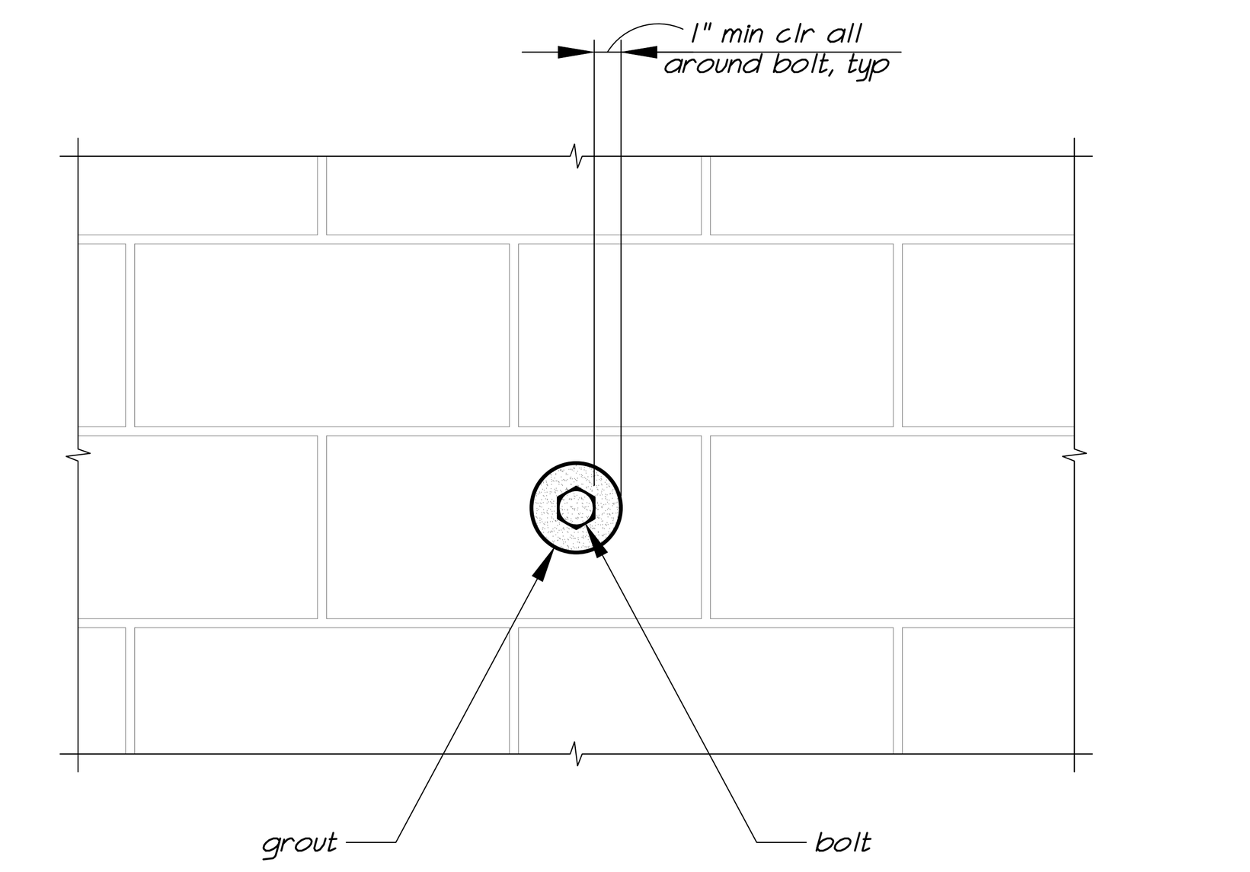
Notes:
1. Anchor installation is restricted to non-shaded area only.
2. Anchors are limited to one per masonry cell.
3. Anchors may be embedded no more than 2/3 the thickness of the concrete masonry units

18 / S1.2 — Typical CMU Expansion Anchor



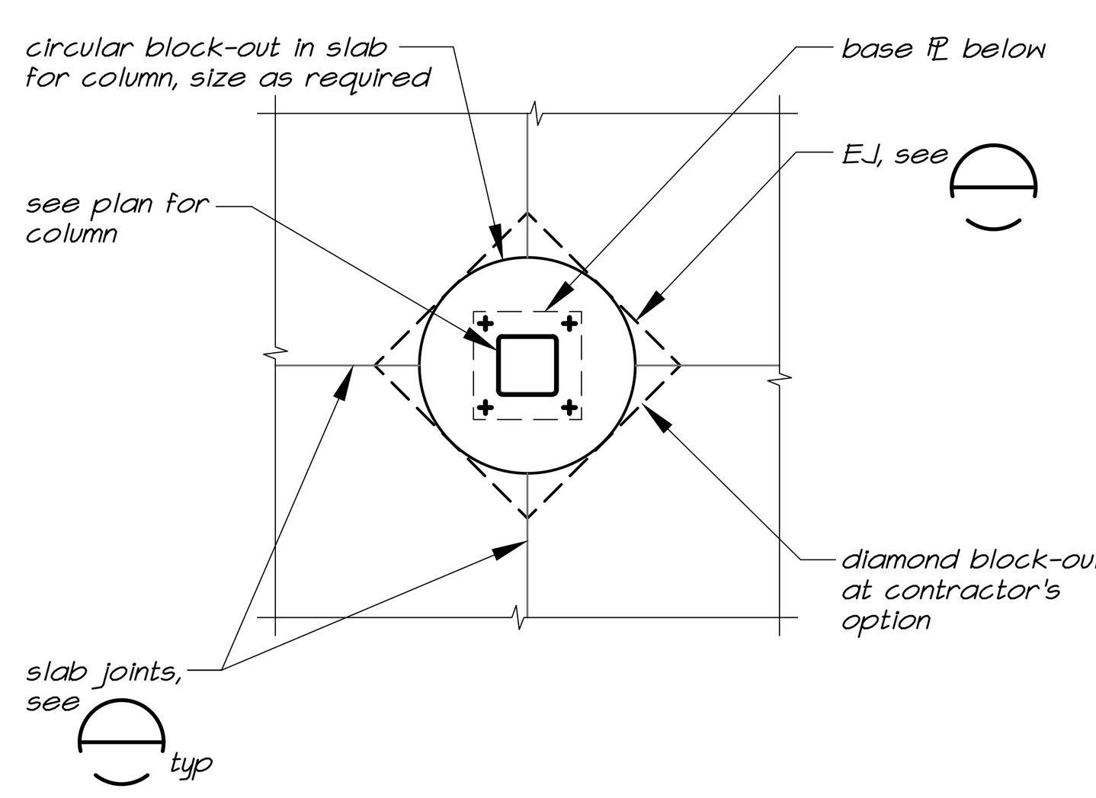
Notes:
1. Anchor installation is restricted to non-shaded area only.
2. Anchors are limited to one per masonry cell.
3. Anchors may be embedded no more than 2/3 the thickness of the concrete masonry units

19 / S1.2 — Typical CMU Epoxy Anchor



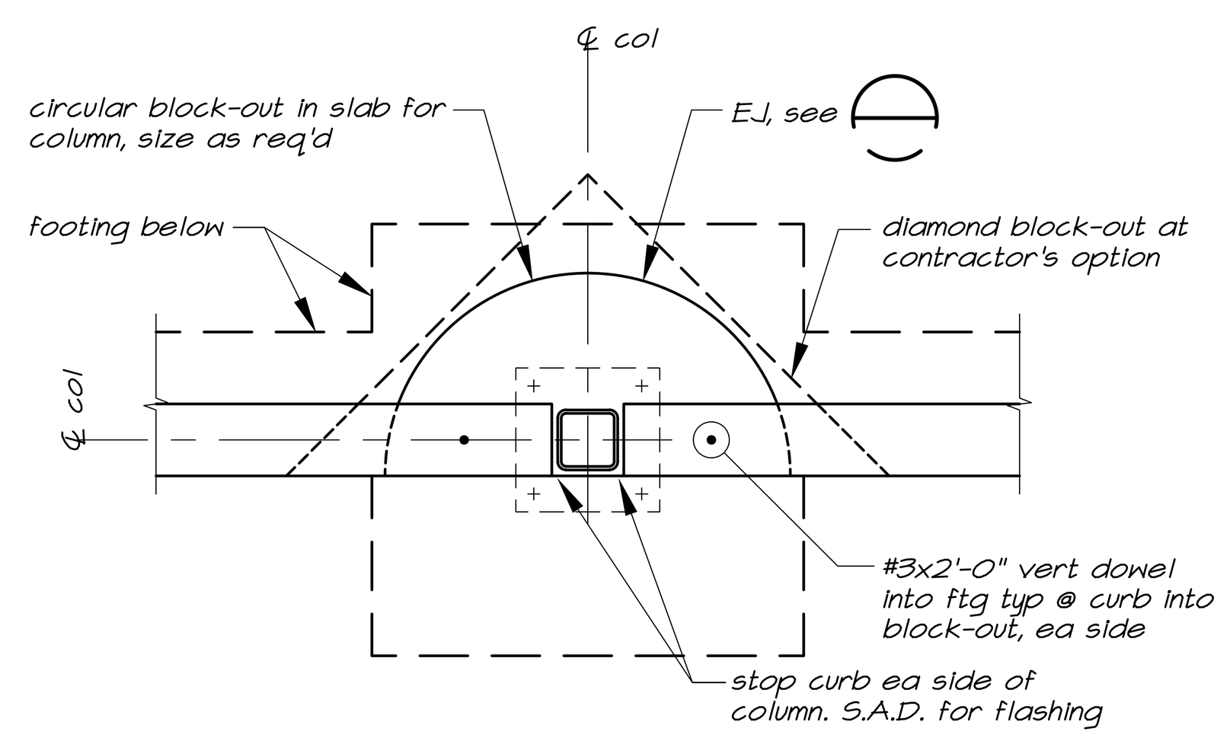
Notes:
1. Bolt cast in masonry shall be grouted in place with 1" minimum of grout between bolt and masonry.
2. Use temporary plywood stop to retain grout as required.

20 / S1.2 — Typical Bolt Cast in Masonry



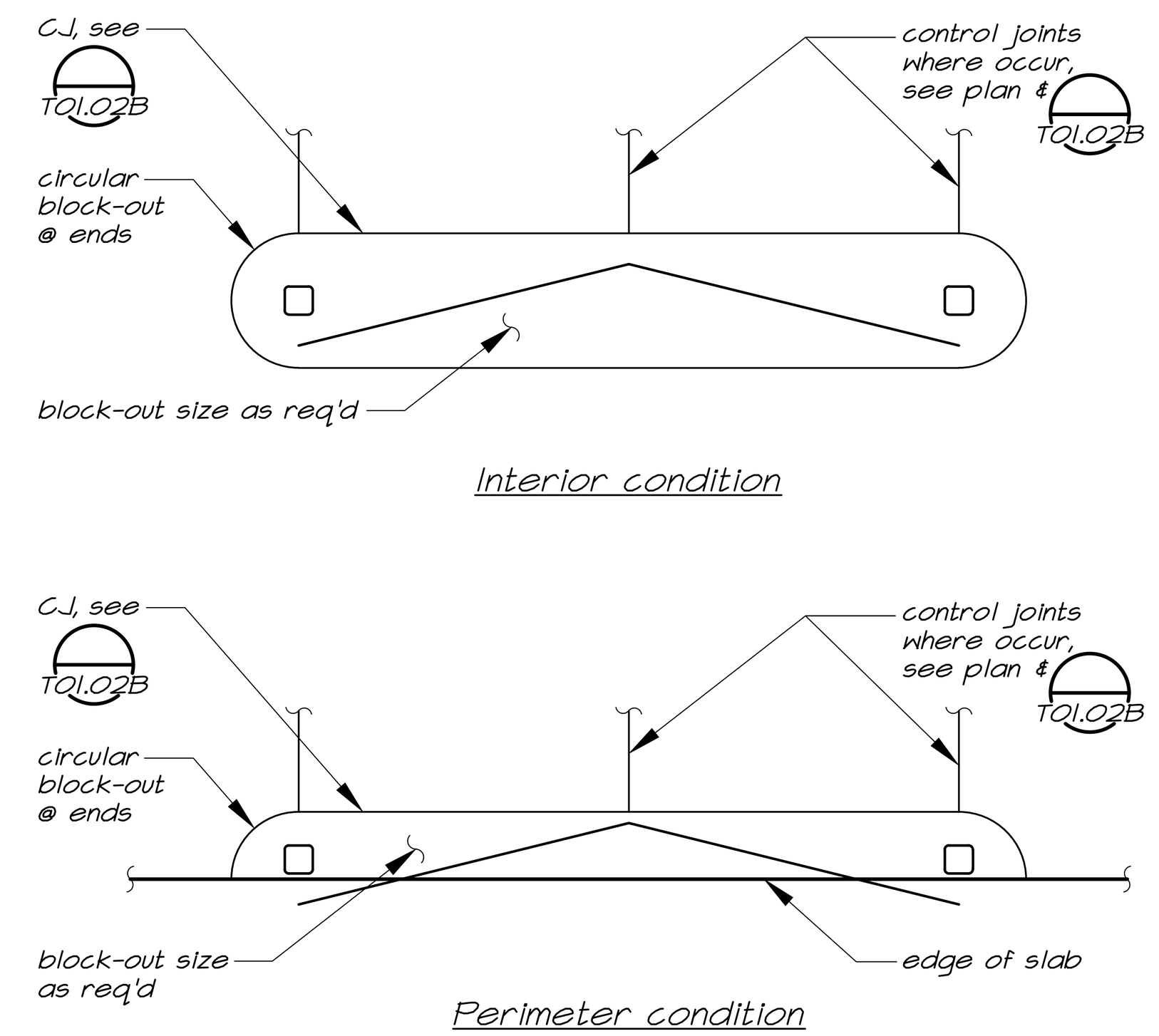
11 / S1.2 — Typical Slab Block-out

interior



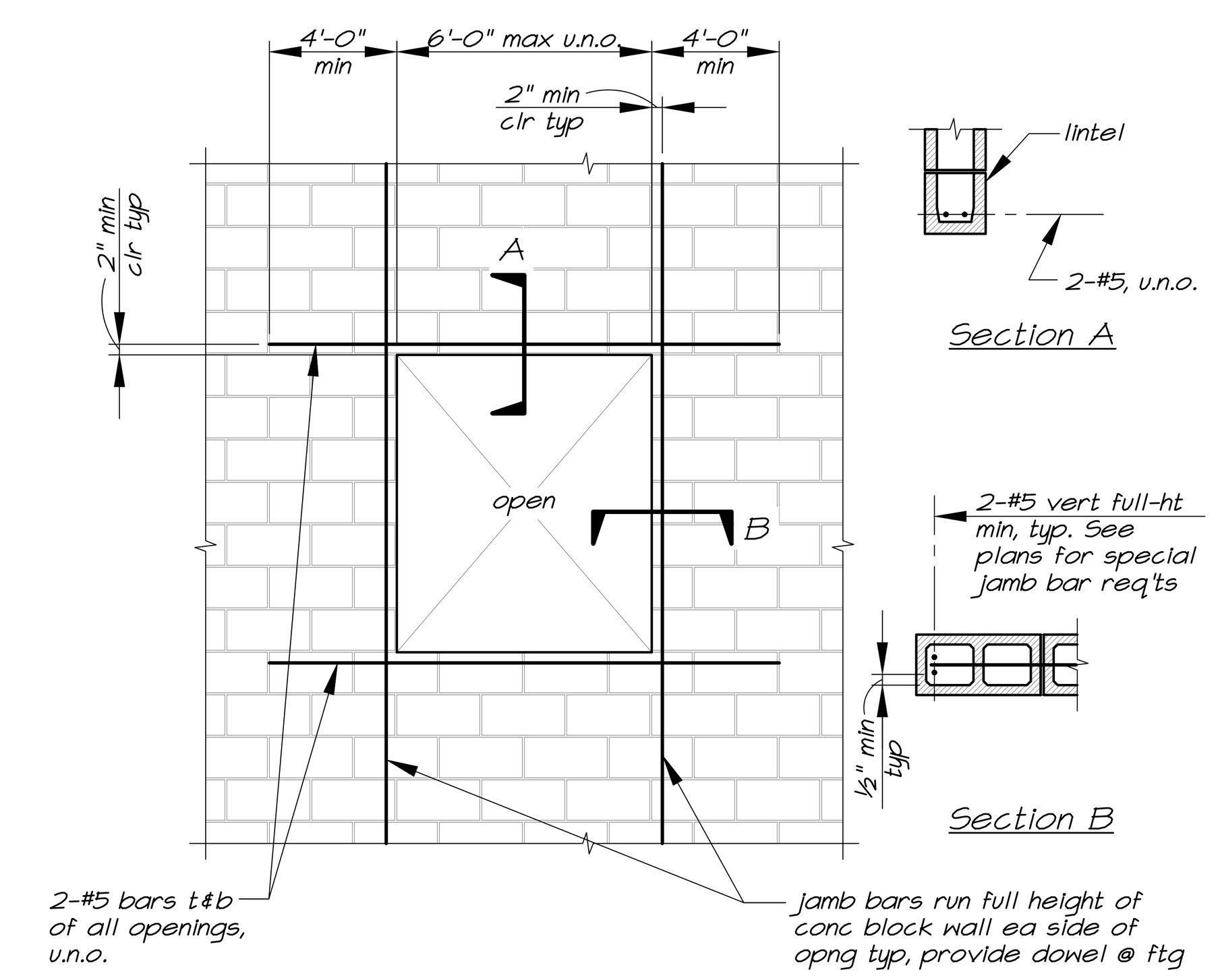
12 / S1.2 — Typical Slab Block-out

perimeter

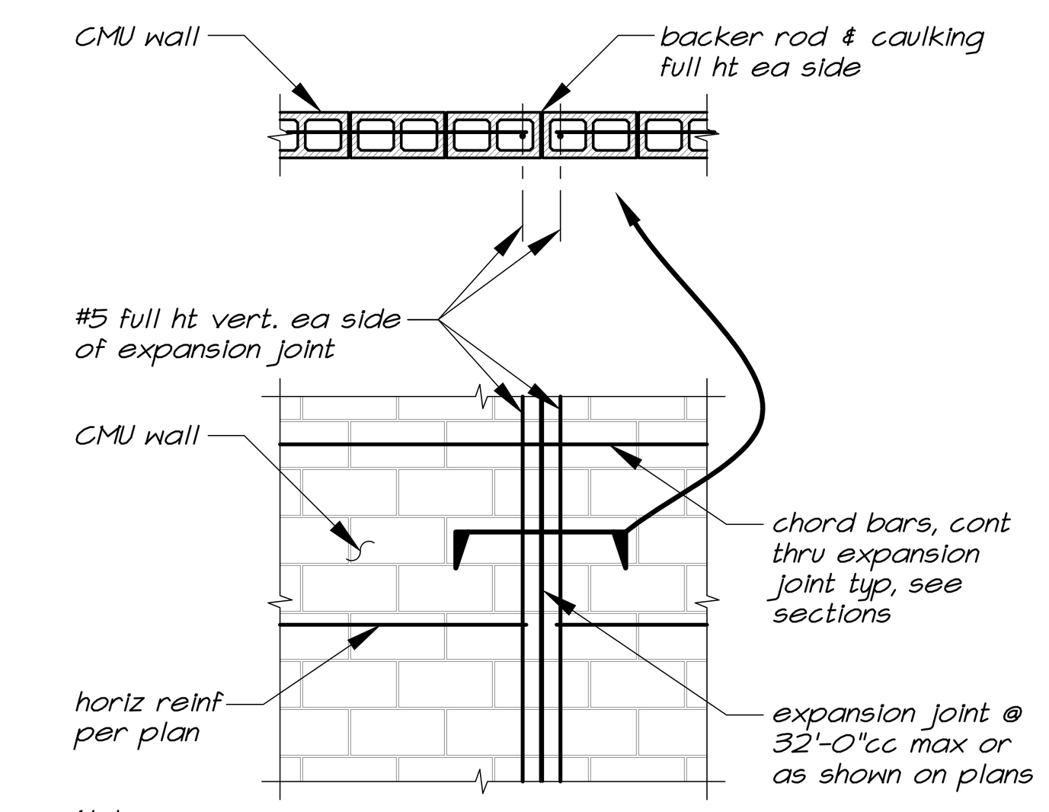


13 / S1.2 — Typical Block-out

@ braced frame

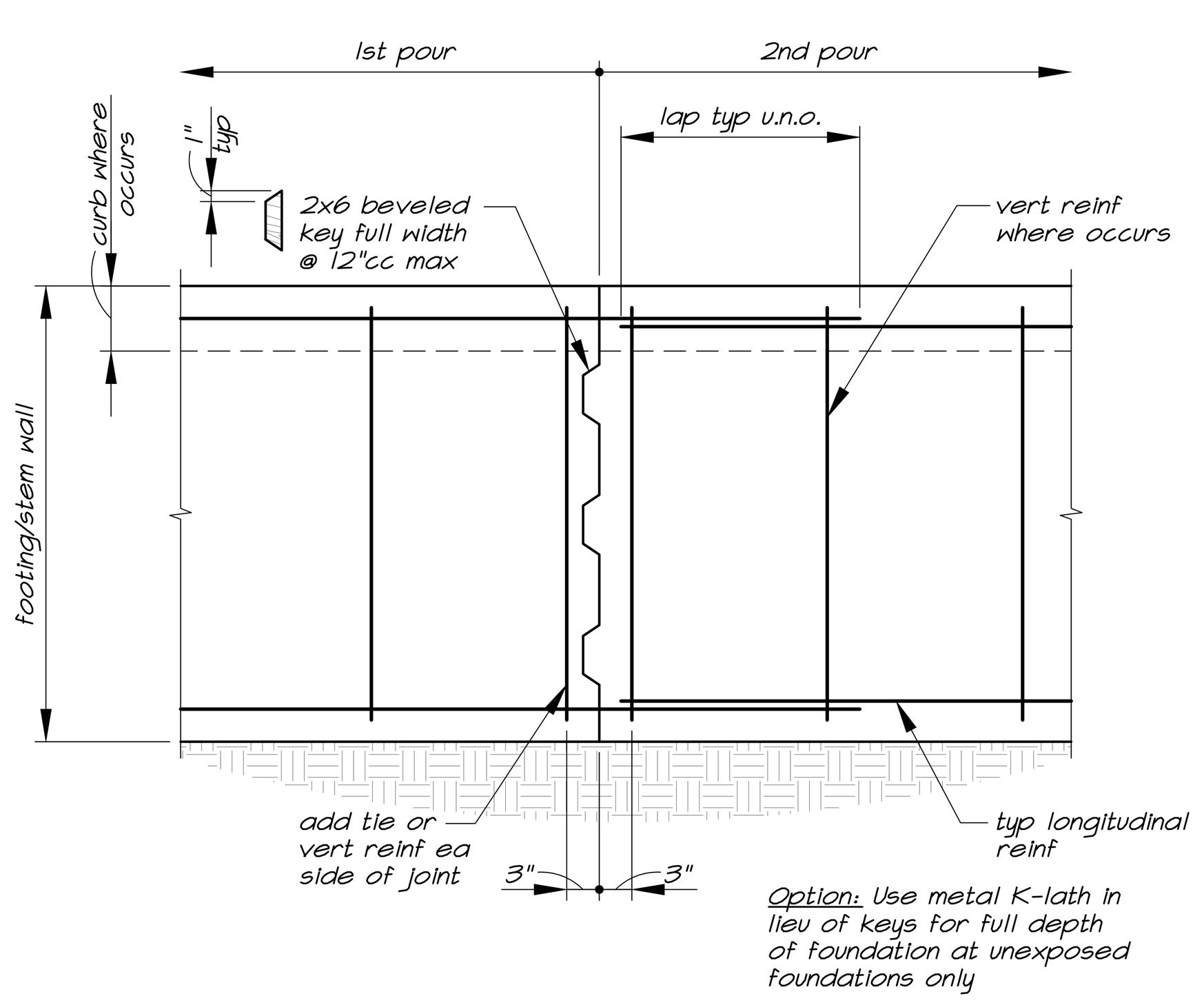


14 / S1.2 — Wall Opening Reinforcing



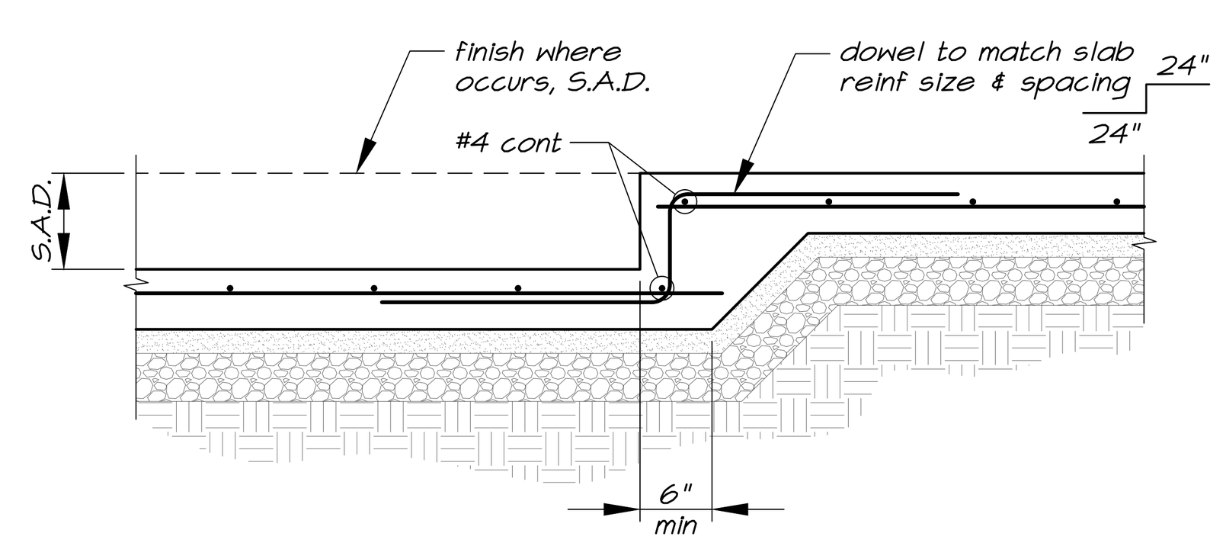
Notes:
1. Do not splice chord bars within 4'-0" of expansion joint.
2. Expansion joints shall not occur within 4'-0" of window or door openings

13 / S1.2 — Typical Block Wall Expansion Joint

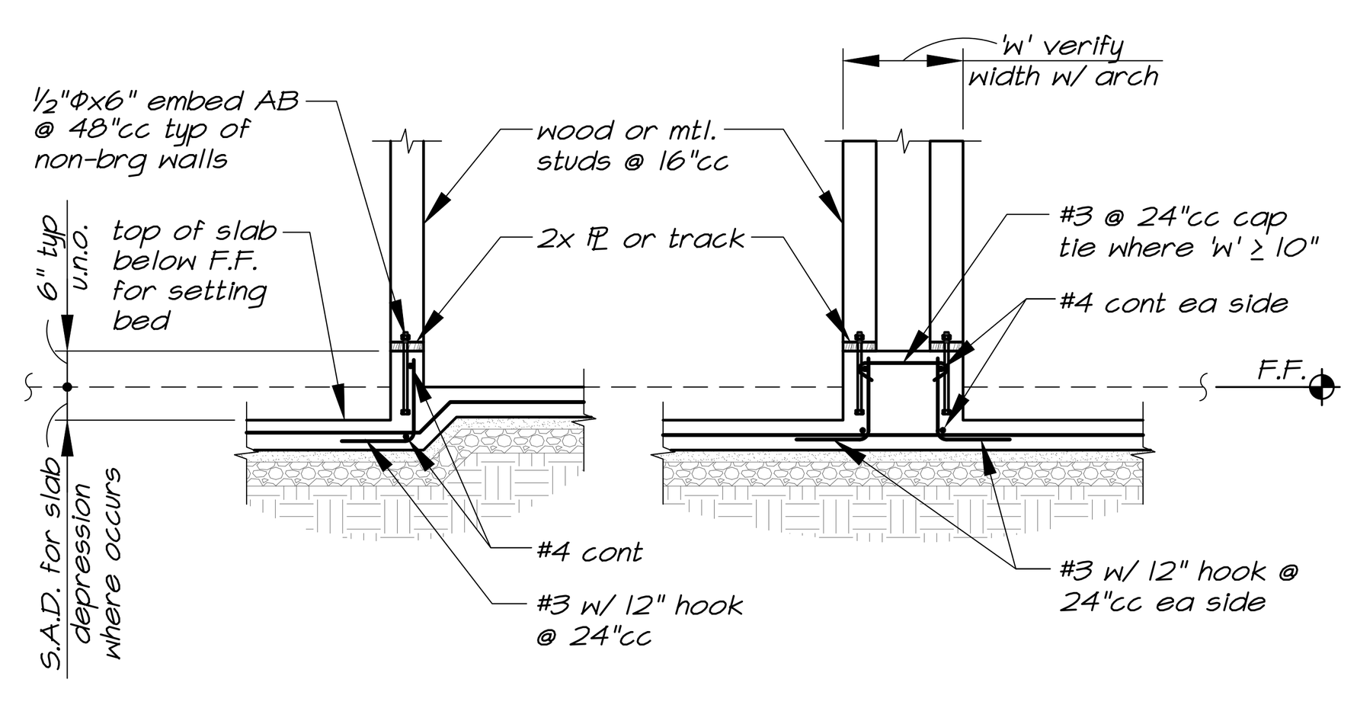


Option: Use metal K-lath in lieu of keys for full depth of foundation at unexposed foundations only

6 / S1.2 — Typical Foundation Construction Joint

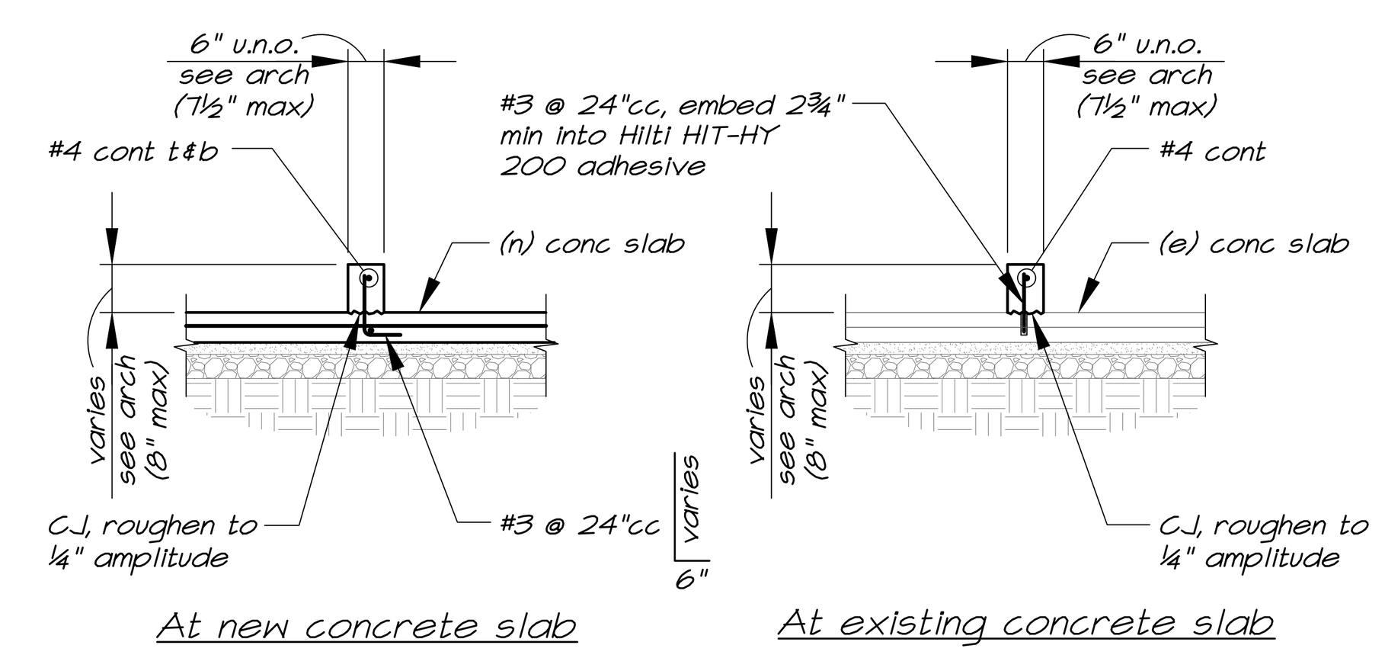


7 / S1.2 — Typical Slab Depression

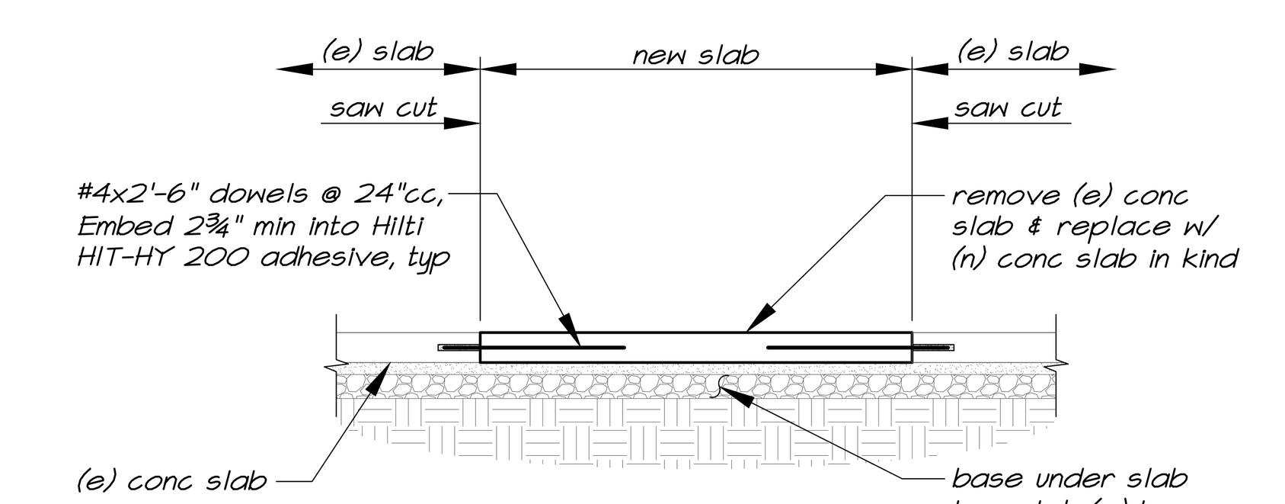


8 / S1.2 — Typical Concrete Curb

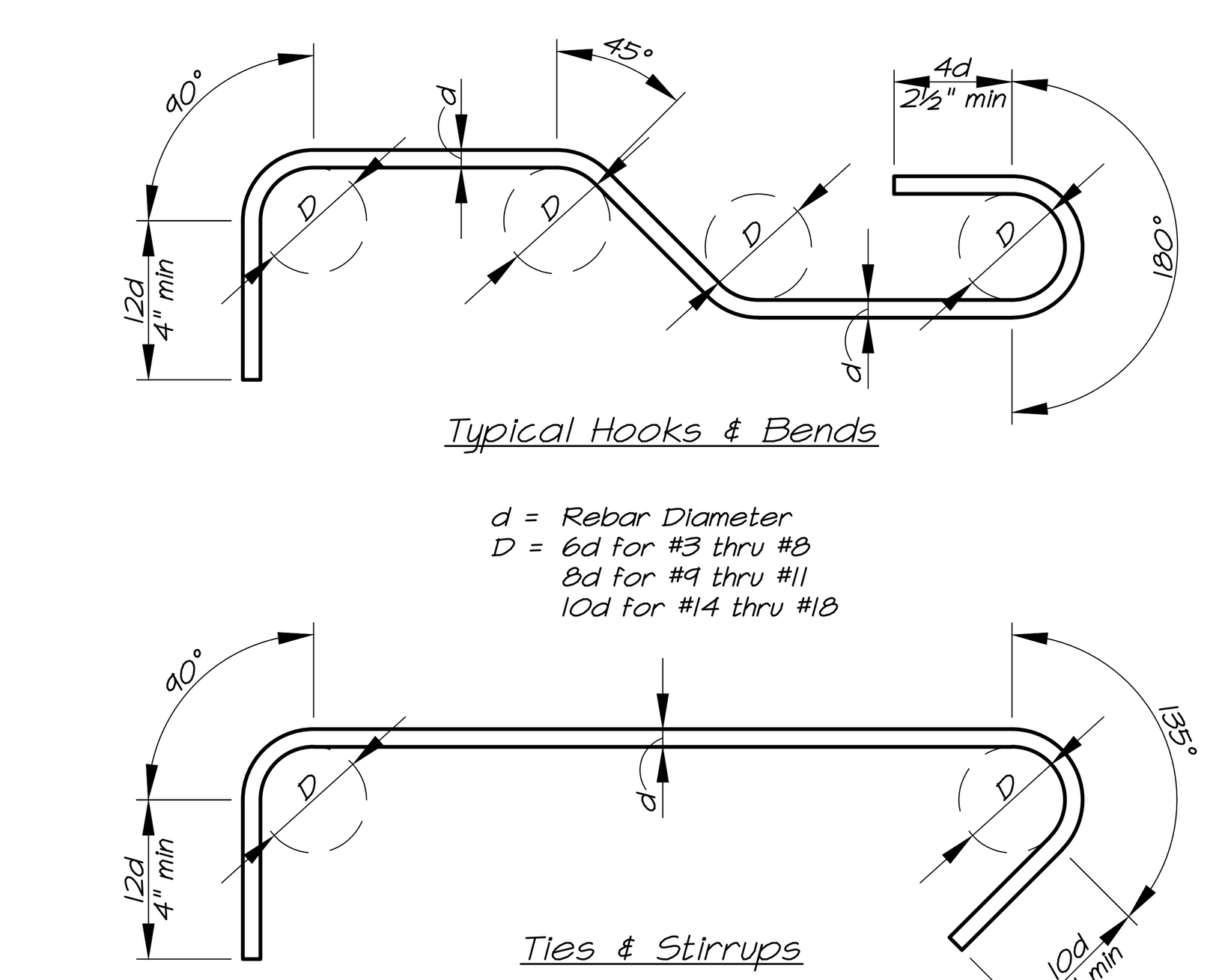
(at slab depression & double wall)



9 / S1.2 — Typical Concrete Curb

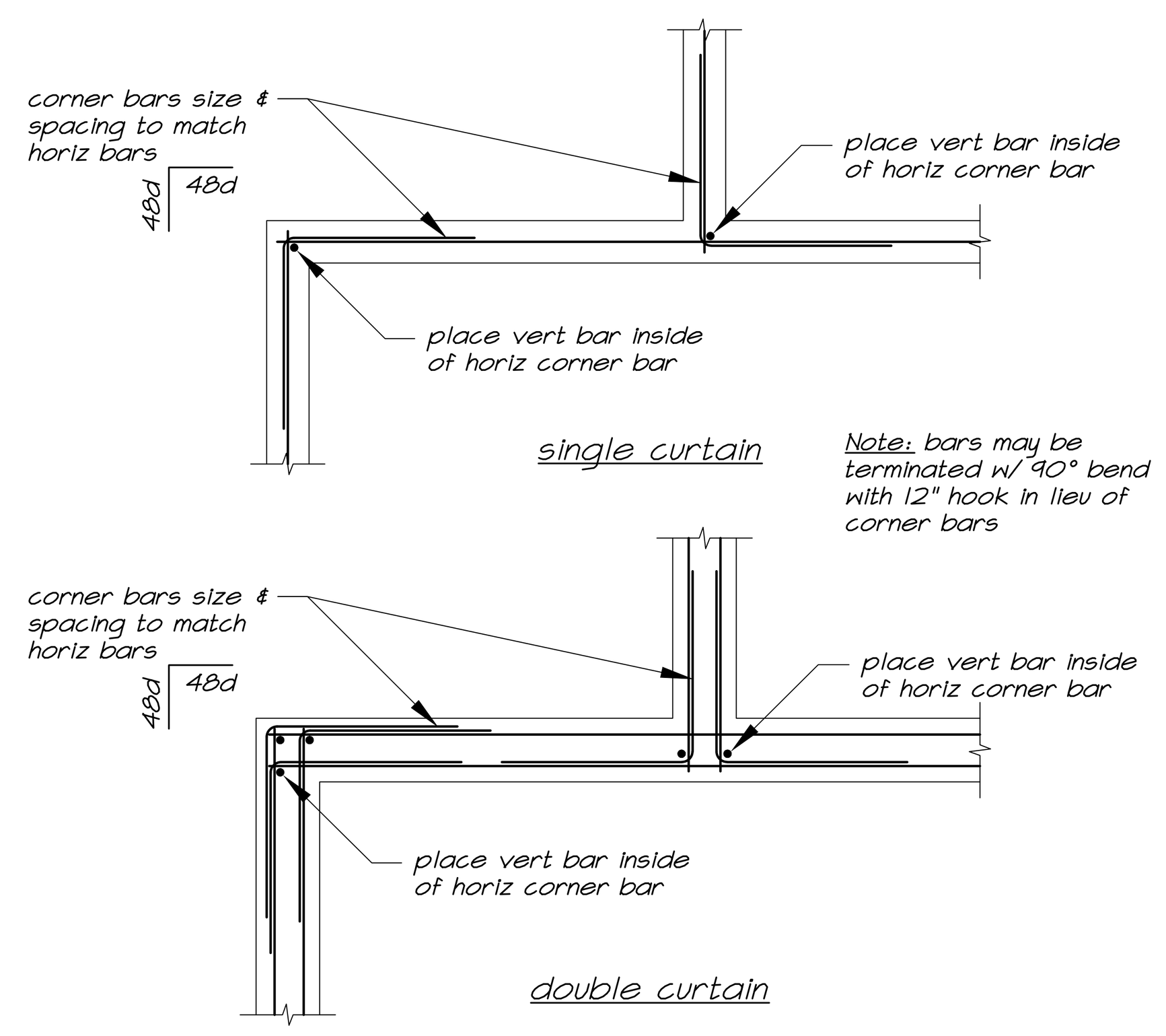


10 / S1.2 — Typical Slab Infill



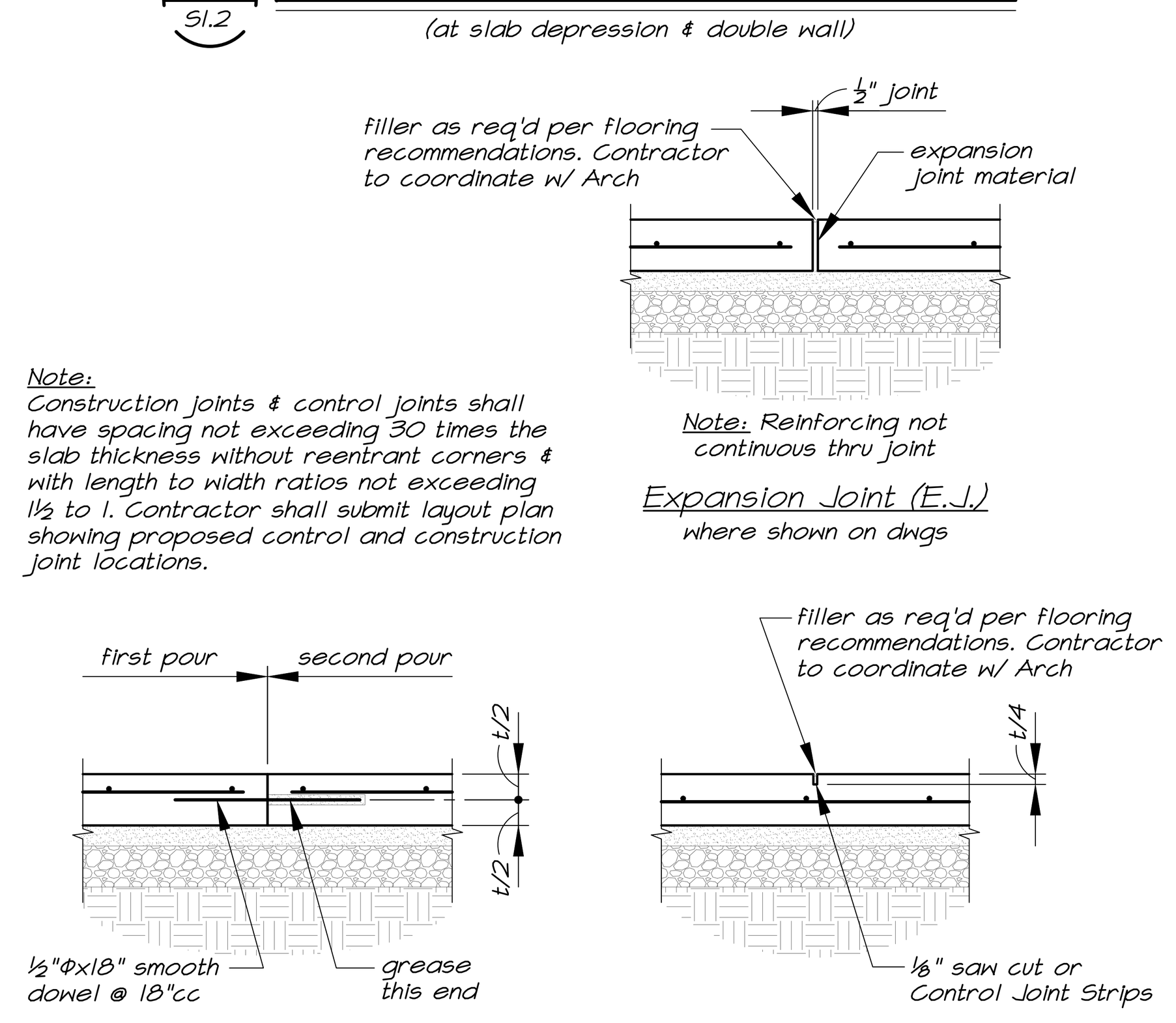
d = Rebar Diameter
D = 6d for #3 thru #8
8d for #9 thru #11
10d for #14 thru #18

1 / S1.2 — Rebar Hooks & Bends



Note: bars may be terminated w/ 90° bend with 12" hook in lieu of corner bars

2 / S1.2 — Typical Corner Reinforcing

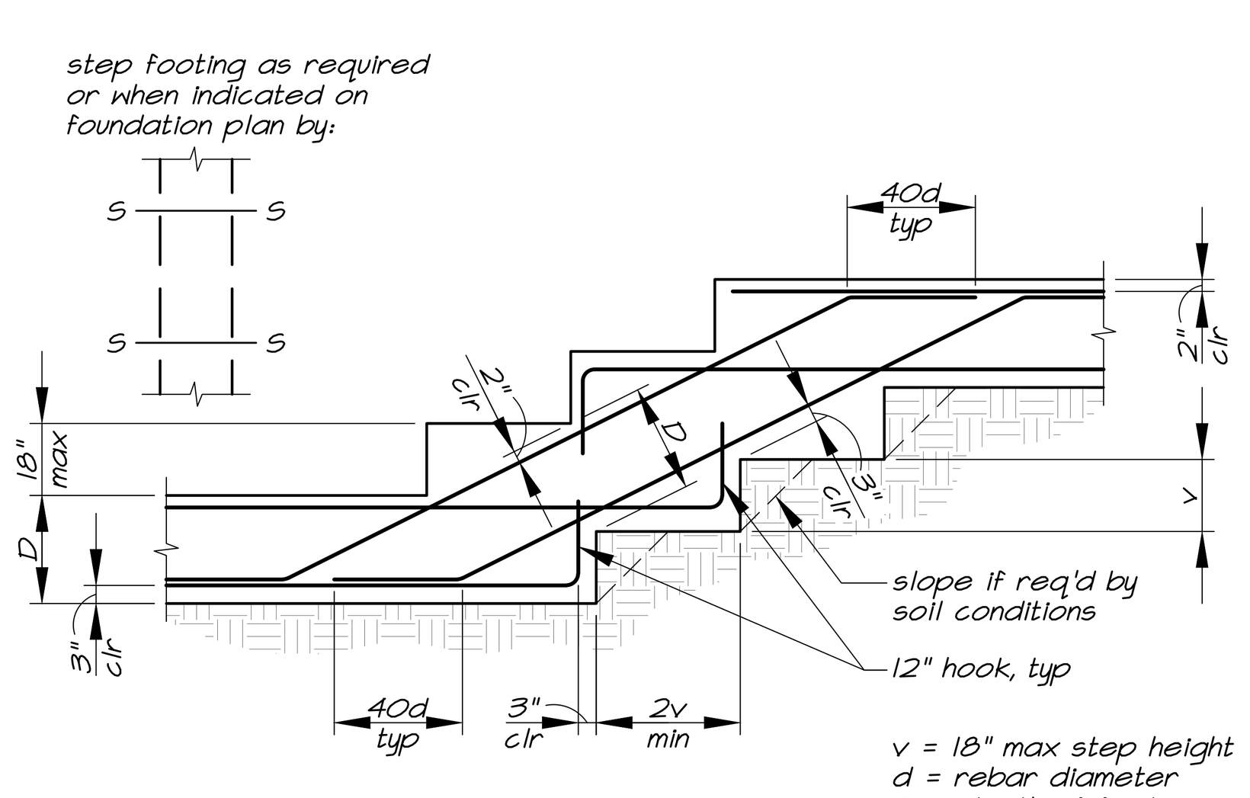


Note: Construction joints & control joints shall have spacing not exceeding 30 times the slab thickness without reentrant corners & with length to width ratios not exceeding 1.5 to 1. Contractor shall submit layout plan showing proposed control and construction joint locations.

Note: Reinforcing not continuous thru joint

Expansion Joint (E.J.) where shown on dwgs

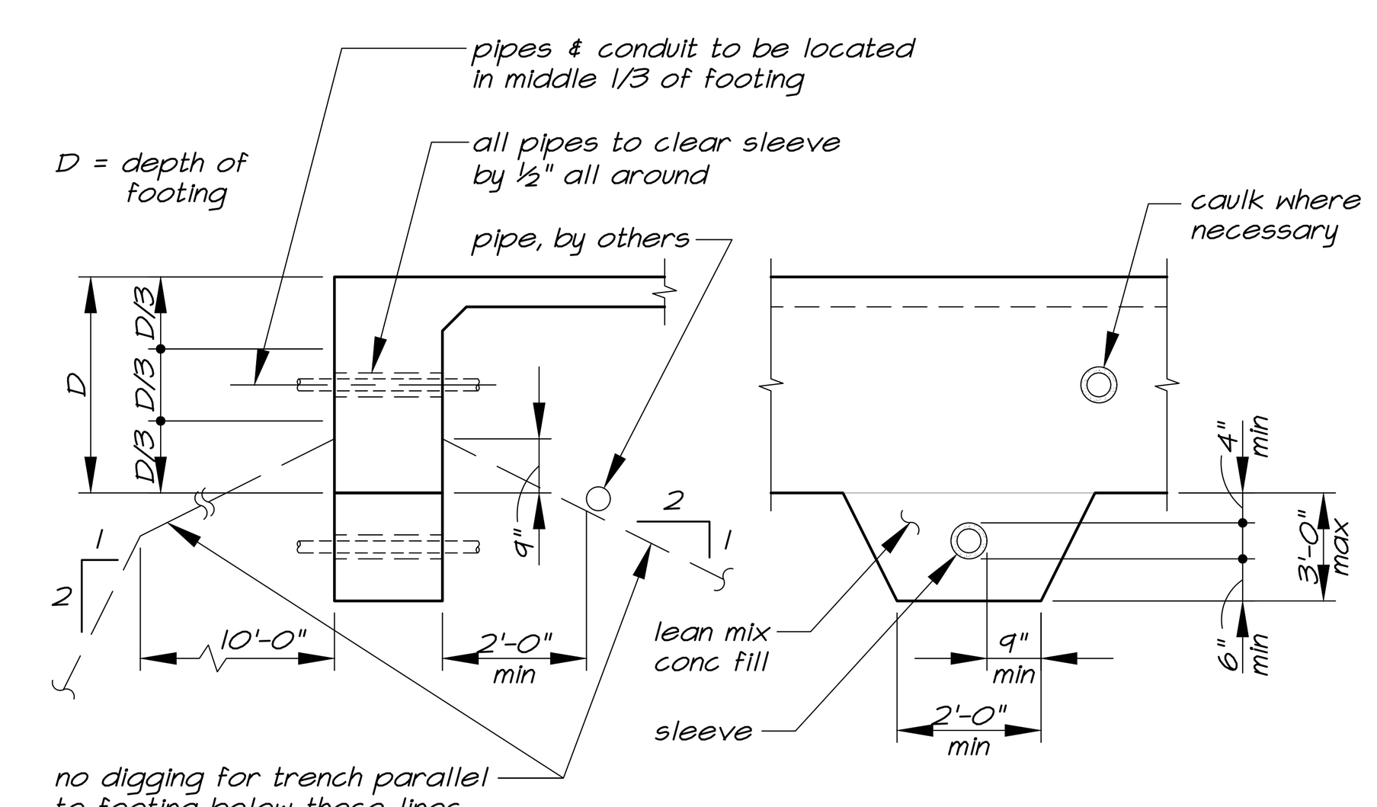
3 / S1.2 — Slab-on-Grade Joints



v = 18" max step height
d = rebar diameter
D = depth of footing

4 / S1.2 — Typical Footing Step

(where occurs)



no digging for trench parallel to footing below these lines

Notes:
1. Lean mix conc fill to be placed before footing is cast. Make same width as footing and full width of pipe trench. Step footing if pipe is more than 2'-6" below bottom of footing.
2. No pipes shall be placed below spread footing, typ.
3. If pipe is in place prior to casting concrete, wrap pipe w/ glass wool insulation (1" min all around) in lieu of sleeve.
4. Conduits to be placed so as not to cross other conduits when turned up.

5 / S1.2 — Concrete Footing @ Pipes & Conduits

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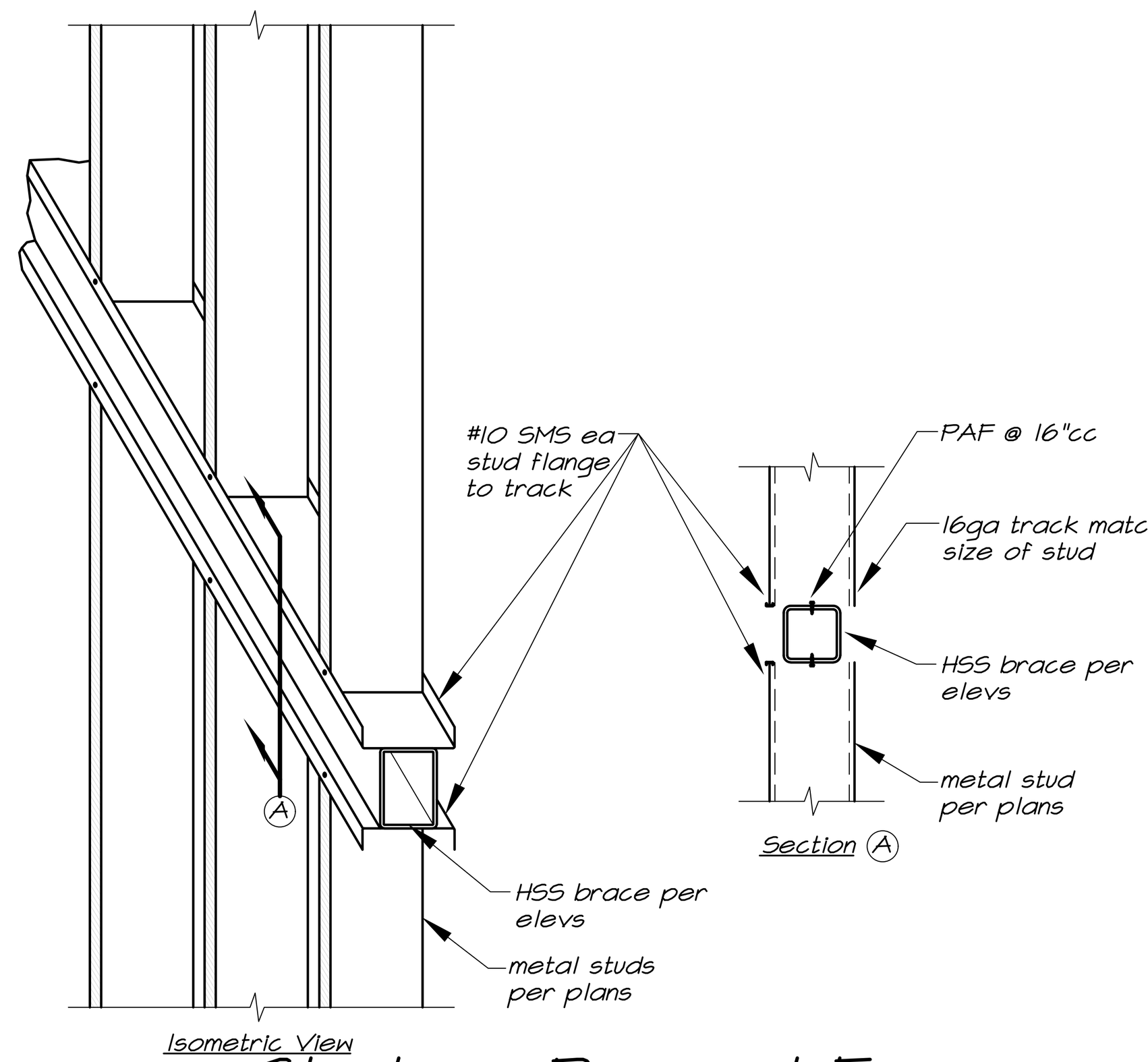
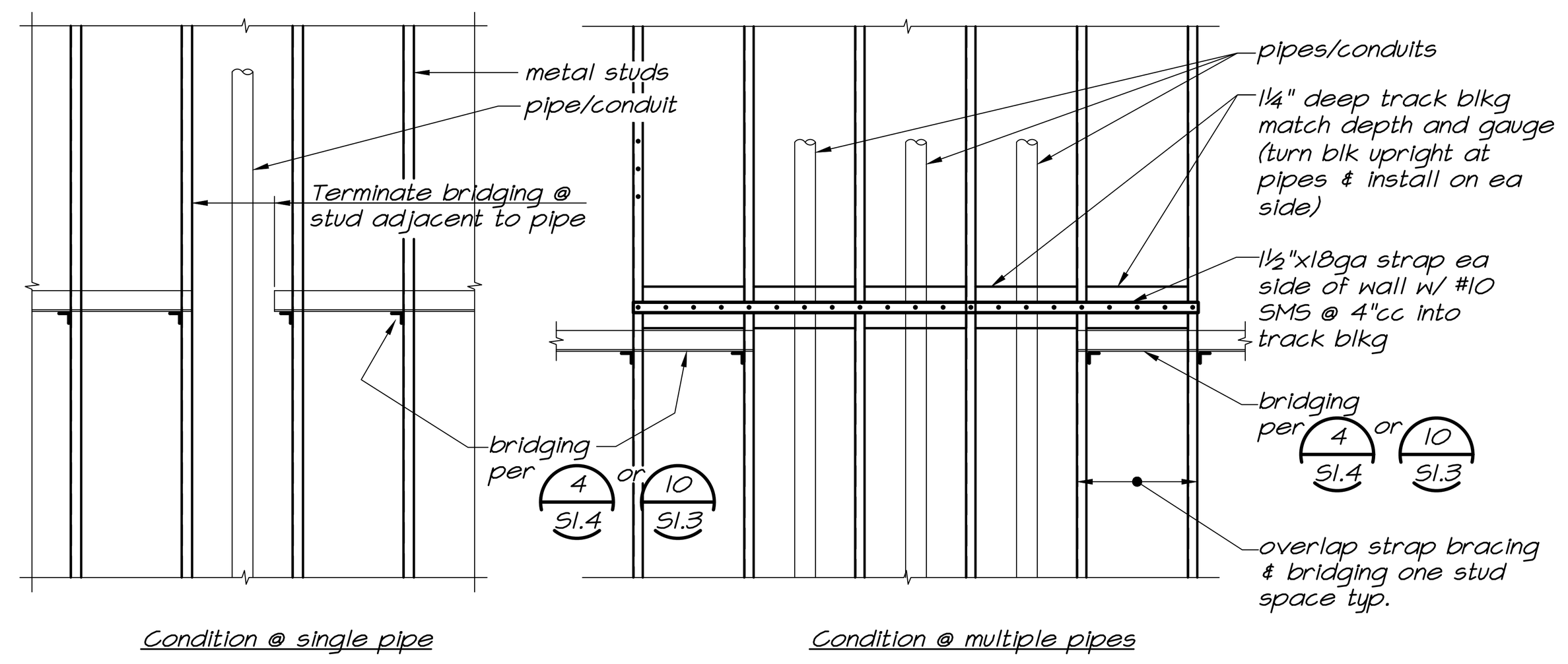
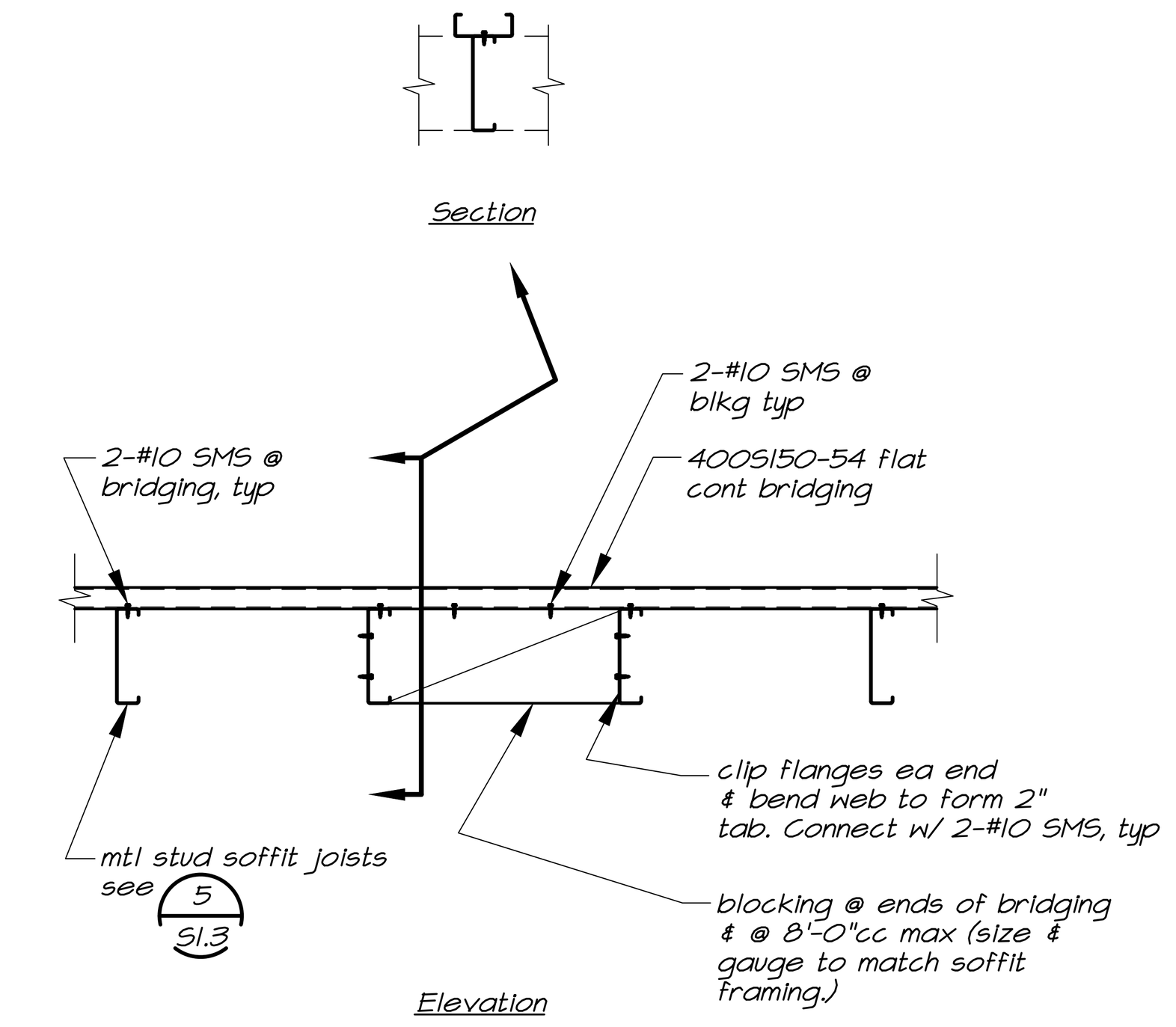
S1.2



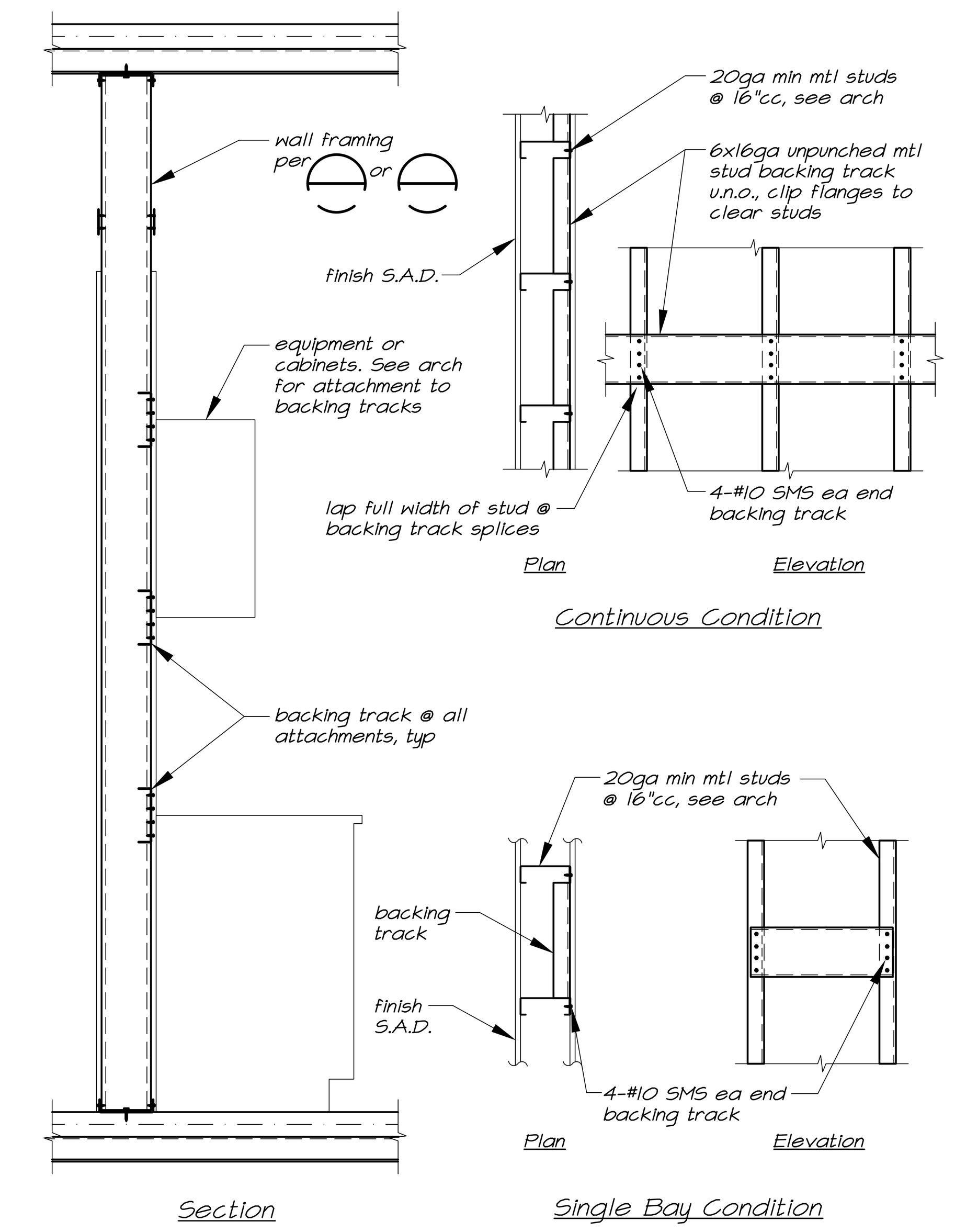
14 / S1.3 **Studs @ Braced Frame** 1"=1'-0"



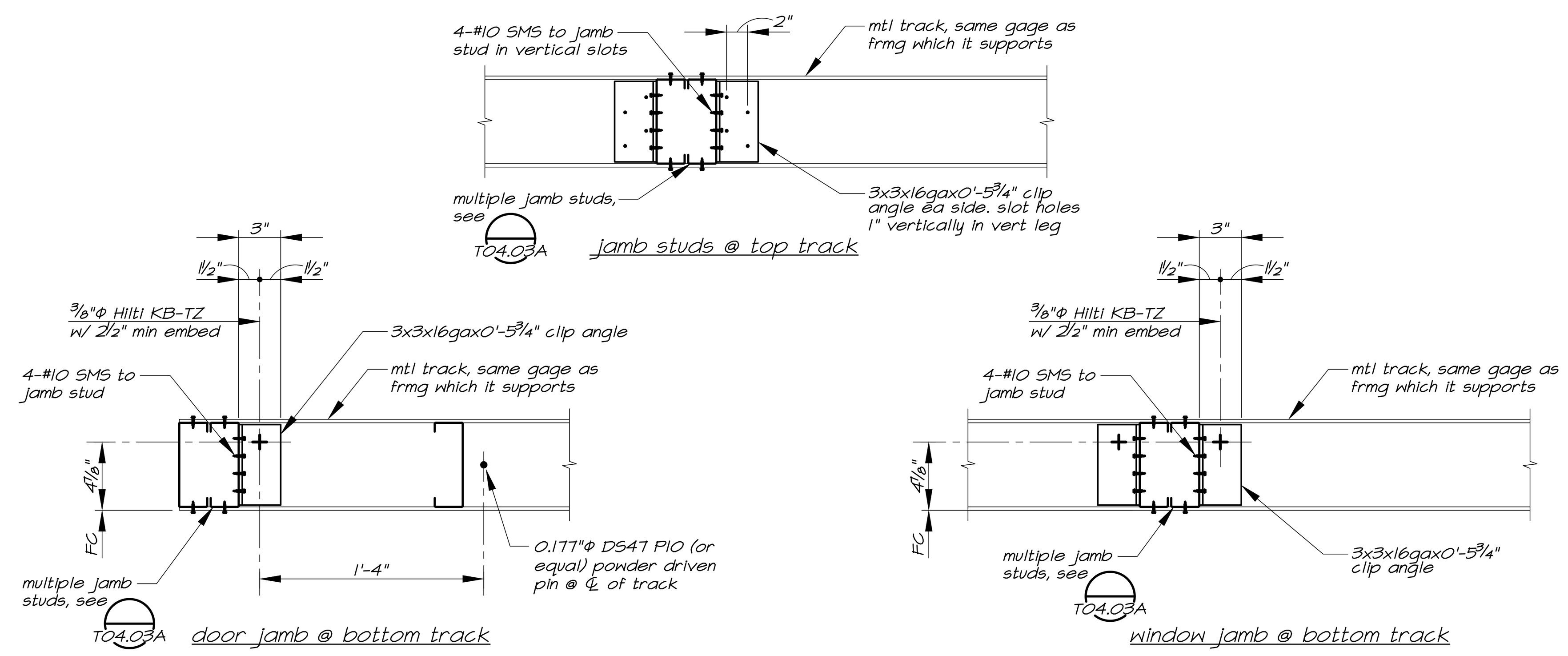
15 / S1.3 **Bridging @ Pipes/Conduit** ½"=1'-0"



16 / S1.3 **Typ. Soffit Joist Bridging** 1"=1'-0"

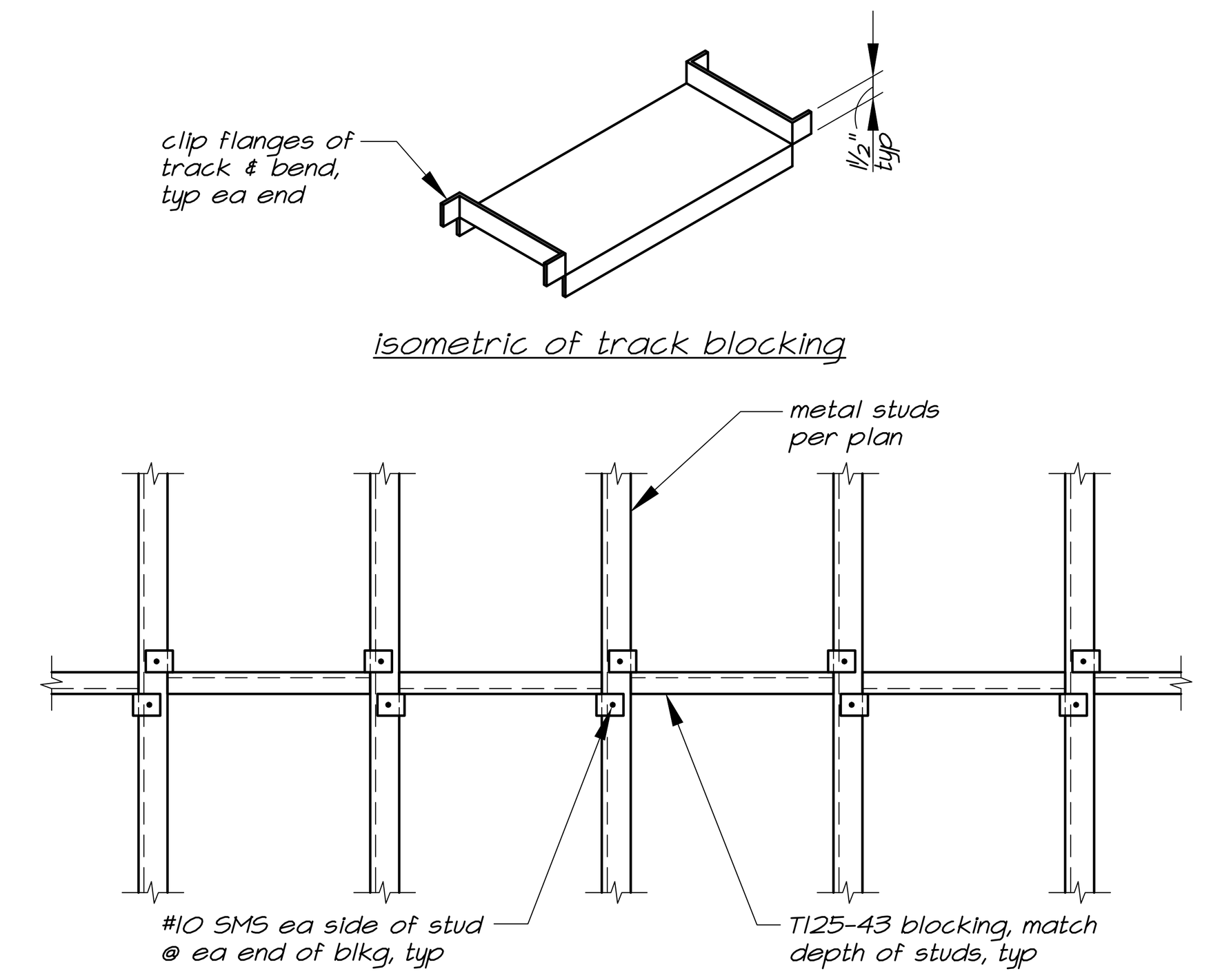


13 / S1.3 **Typical Backing**

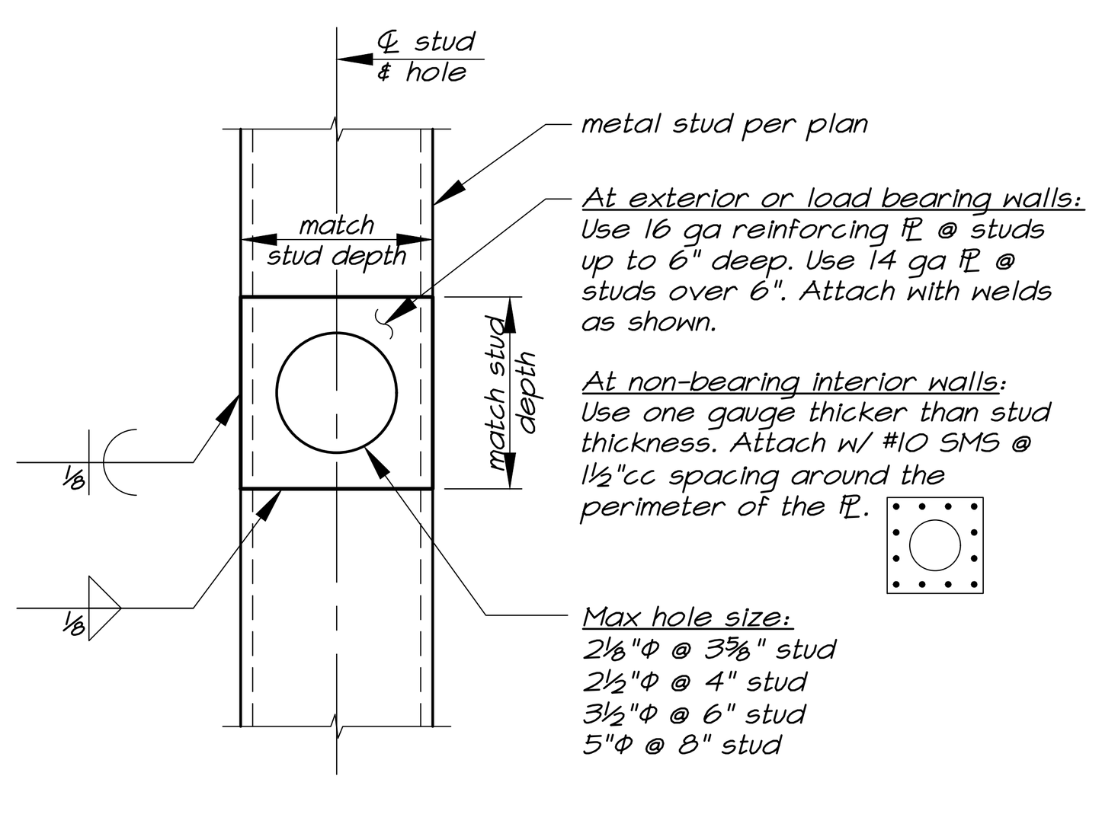


10 / S1.3 **Typical Plan Details**

jamb studs @ top & bottom tracks



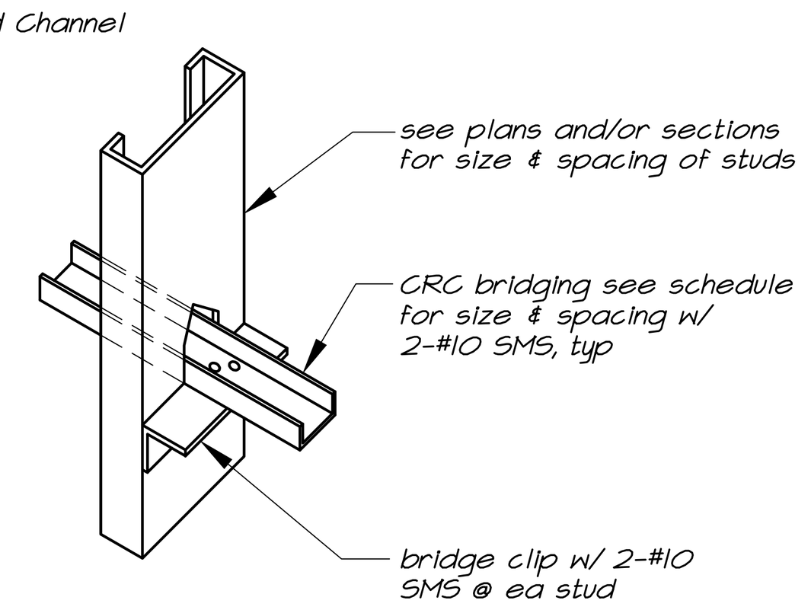
11 / S1.3 **Typical Blocking Elevation**



12 / S1.3 **Typical Penetration Through Metal Stud**

Bridging in Punch-Outs		
Stud Size	Bridging Member	Bridge Clip
6"	CRC-1½"x16ga @ 4'-0"cc max	1½"x2"x16ga x length to be ¼" less than stud width LLH typ
8"		

Note:
1. CRC = Cold Rolled Channel

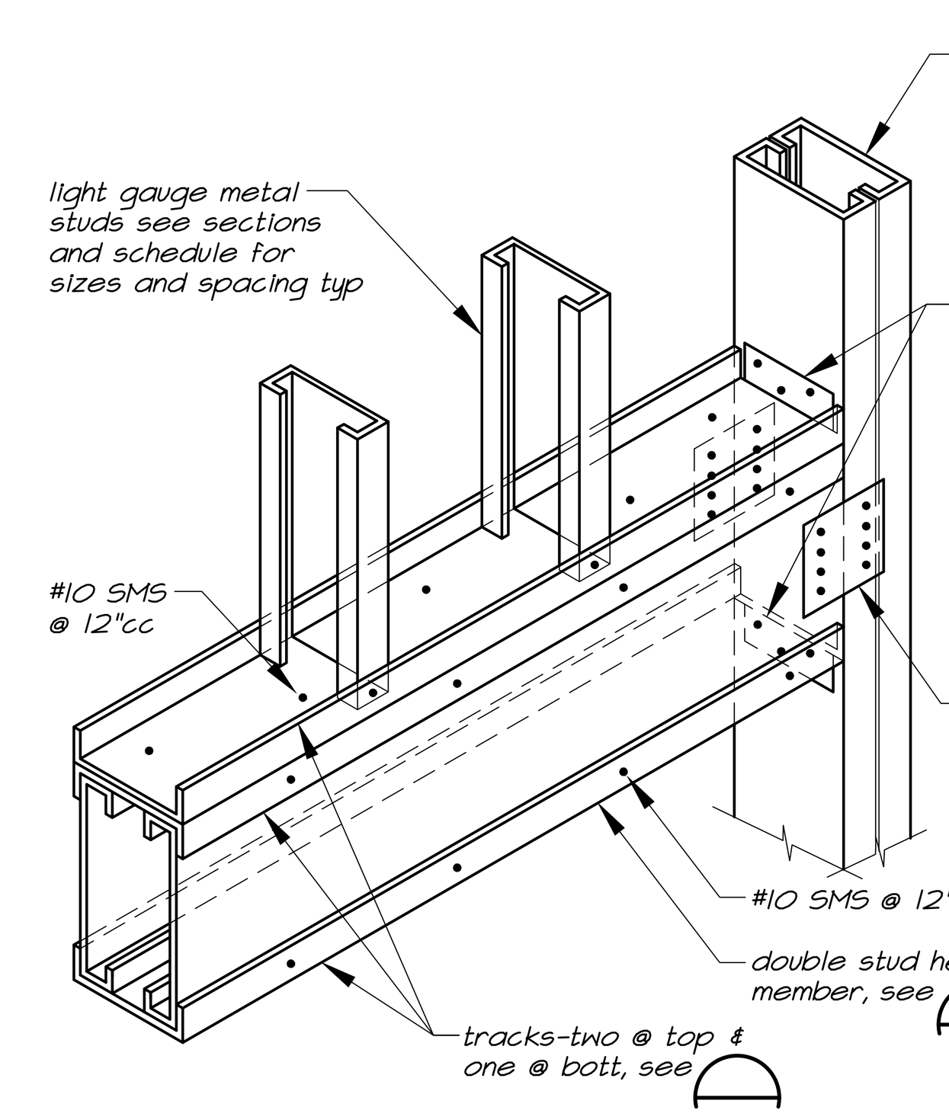


5 / S1.3 **Typical Stud Bridging**

'W' width max	Jambs (see note 1)	Header (see note 1)	Sill (see note 1)
4'-0"	dbl stud	track & stud	track
8'-0"	dbl stud	2 tracks & stud	track & stud
12'-0"	triple stud	3 tracks & 2 studs (6")	2 tracks & stud
22'-0"	triple stud	3 tracks & 2 studs (8")	2 tracks & 2 studs
26'-0"	triple stud	3 tracks & 2 studs (10")	2 tracks & 3 studs (16ga)

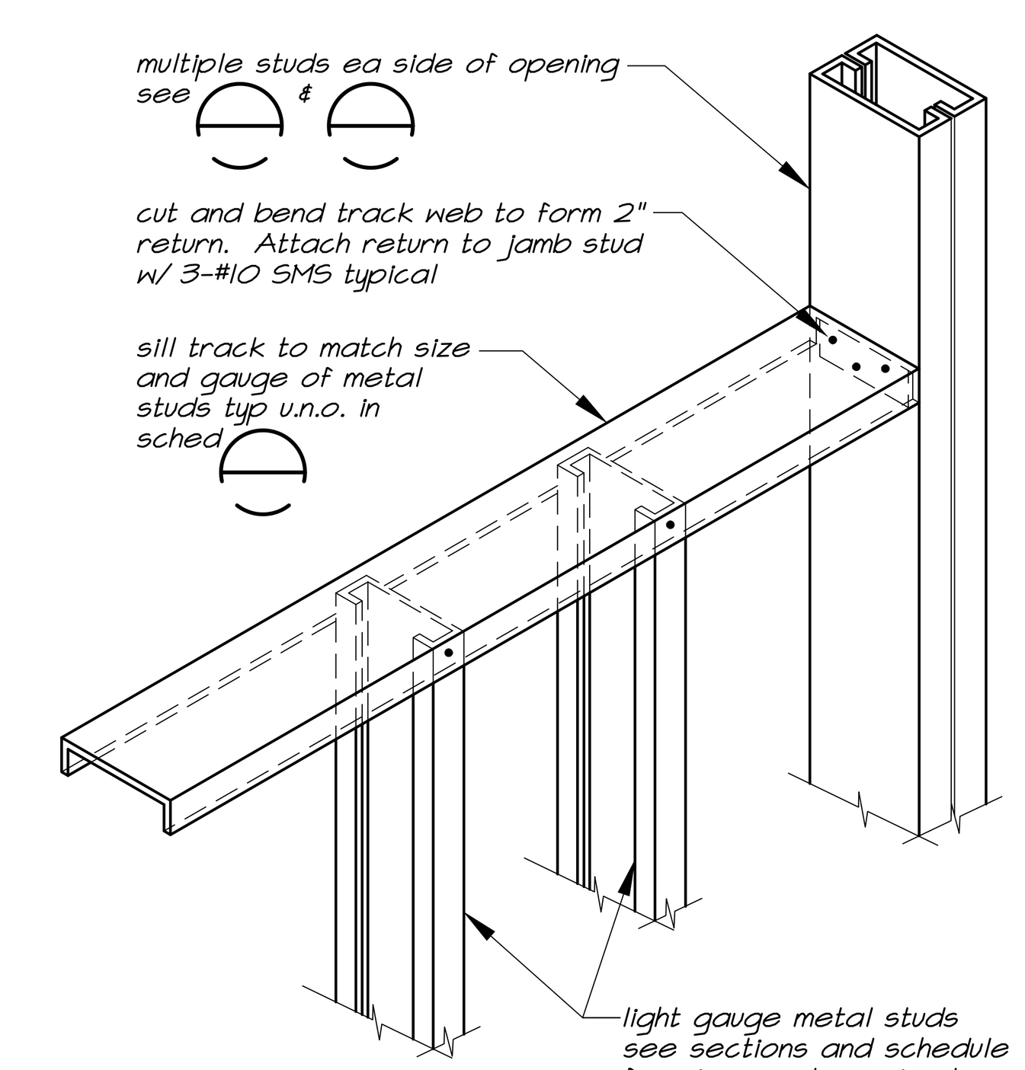
Note:
1. Member configuration shall be as shown in schedule above, typical member sizes to be as shown below (u.n.o.):
jambs 600S162-43
headers
6" studs = 600S162-43; tracks = 600T150-43
8" studs = 800S162-43; tracks = 600T150-43
10" studs = 1000S162-54; tracks = 600T150-54
sills studs = 600S162-43; tracks = 600T150-43

6 / S1.3 **Exterior Wall Opening Framing Schedule**

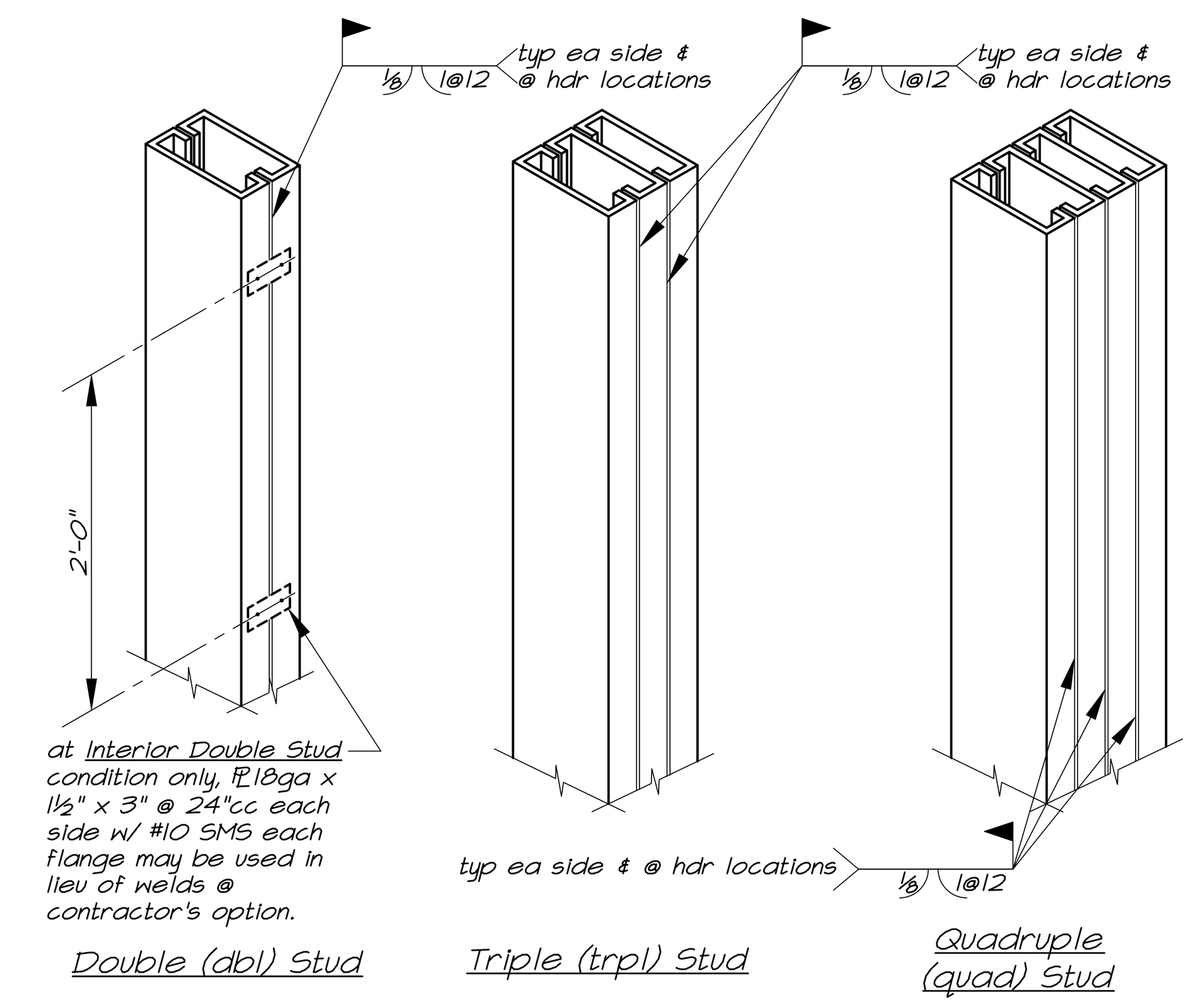


@ 10" hdr	use 3"x7"x18ga ℞ w/ 12-#10 SMS ea side of wall
@ 8" hdr	use 3"x5"x18ga ℞ w/ 10-#10 SMS ea side of wall
@ 6" hdr	use 3"x3"x18ga ℞ w/ 8-#10 SMS ea side of wall

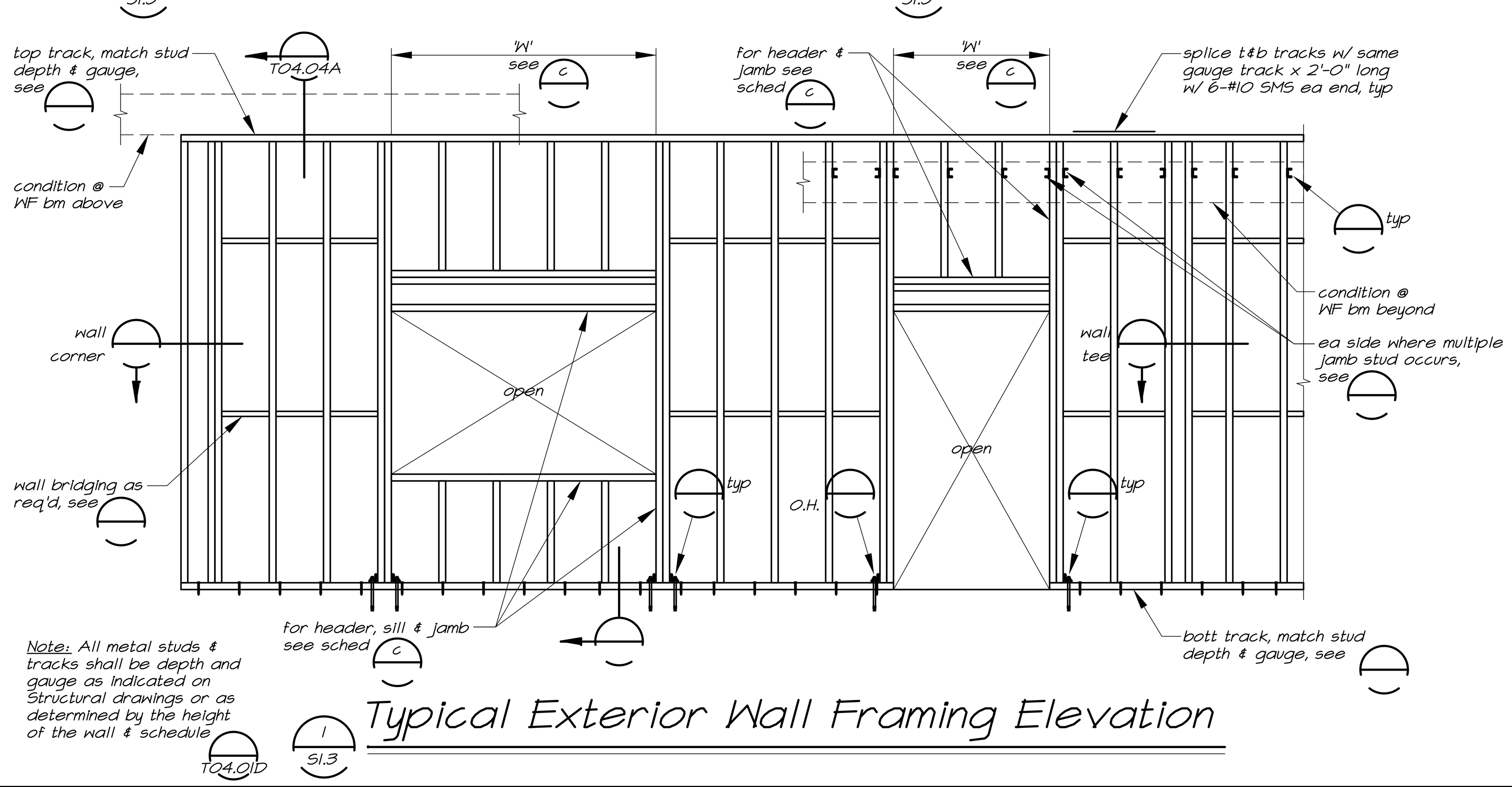
7 / S1.3 **Typical Header Framing**



8 / S1.3 **Typical Sill Framing**

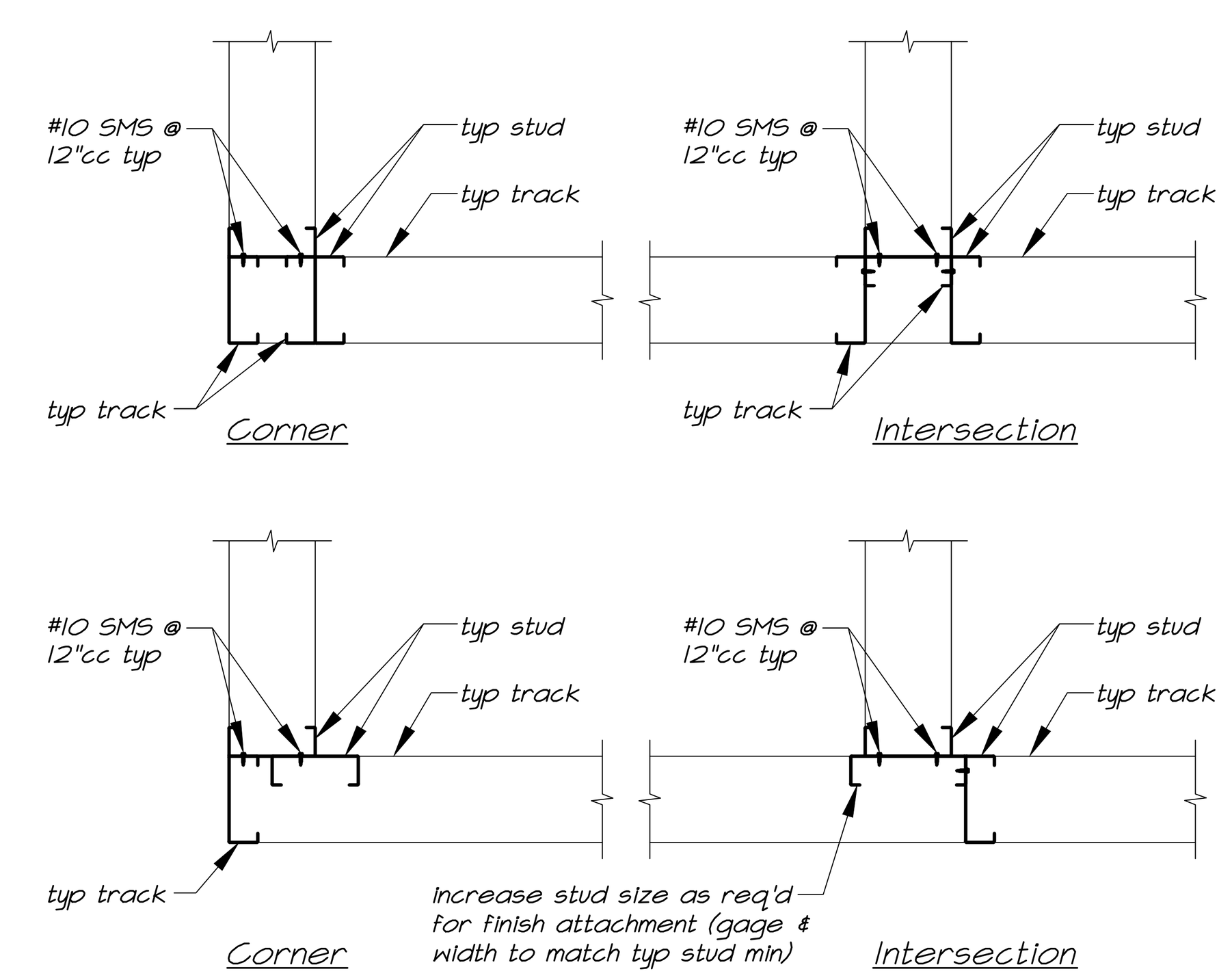


9 / S1.3 **Typ Multiple Stud Connection**

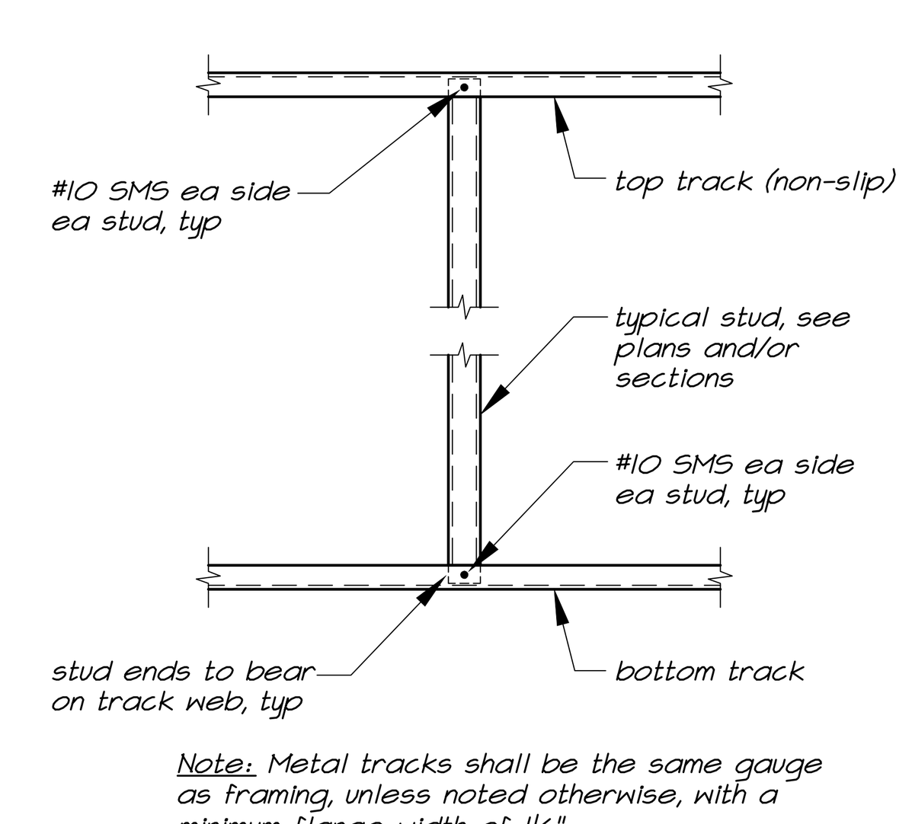


Note: All metal studs & tracks shall be depth and gauge as indicated on Structural drawings or as determined by the height of the wall & schedule T04.01D

1 / S1.3 **Typical Exterior Wall Framing Elevation**

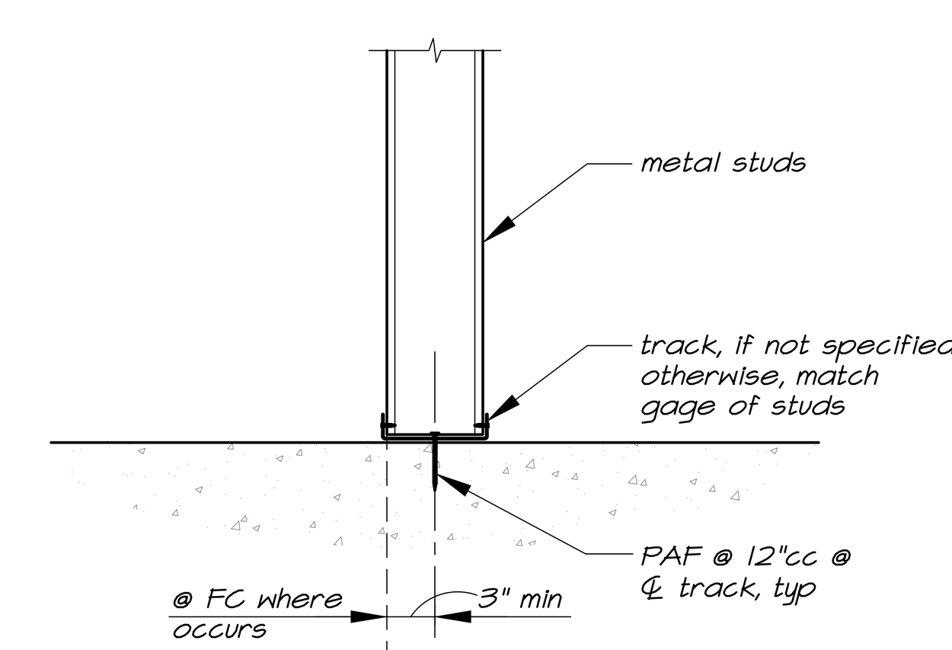


2 / S1.3 **Typical Wall Framing Plans**



Note: Metal tracks shall be the same gauge as framing, unless noted otherwise, with a minimum flange width of 1¼".

3 / S1.3 **Typical Stud to Track Connection**



4 / S1.3 **Typ Anchorage to Concrete**

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TYPICAL DETAILS

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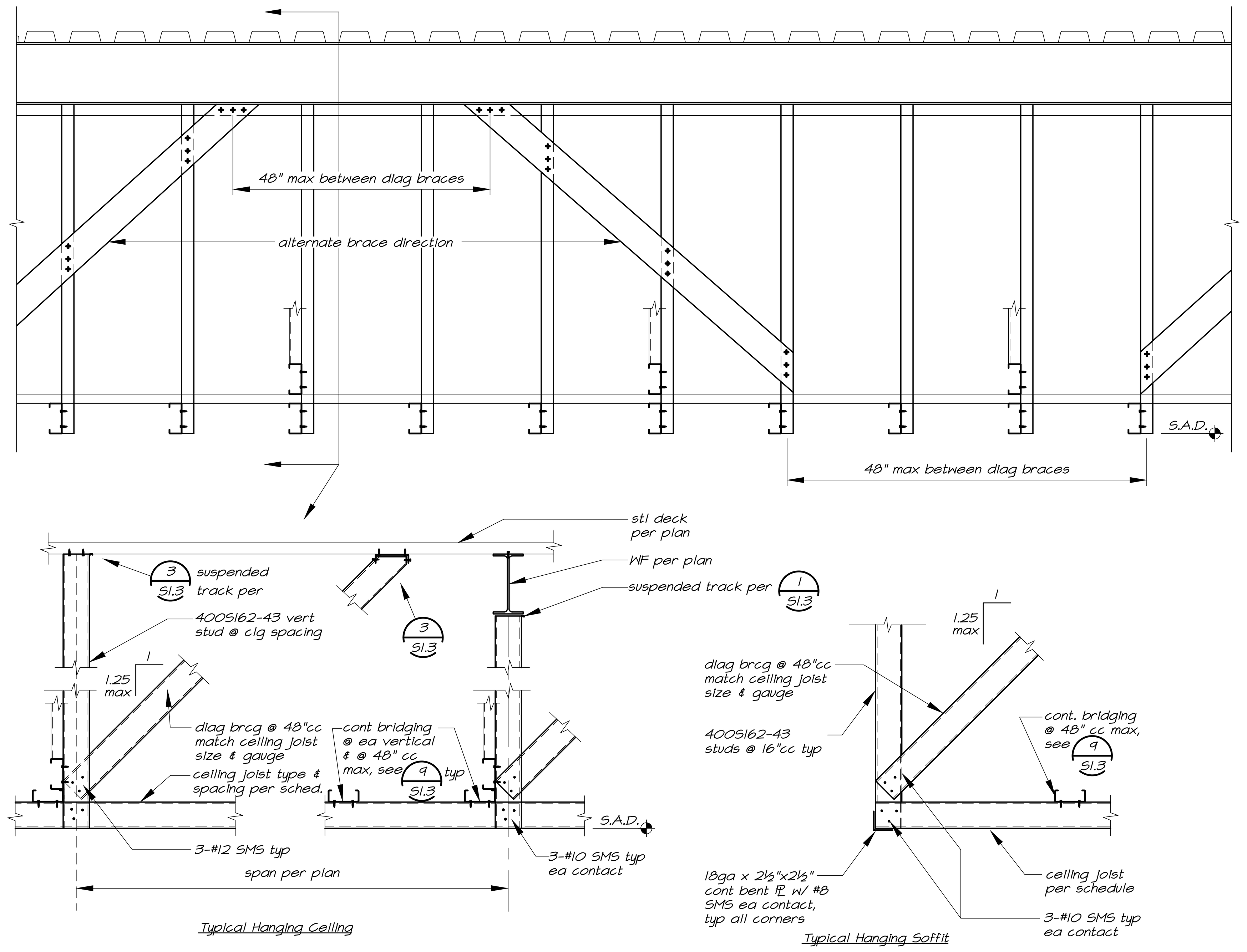
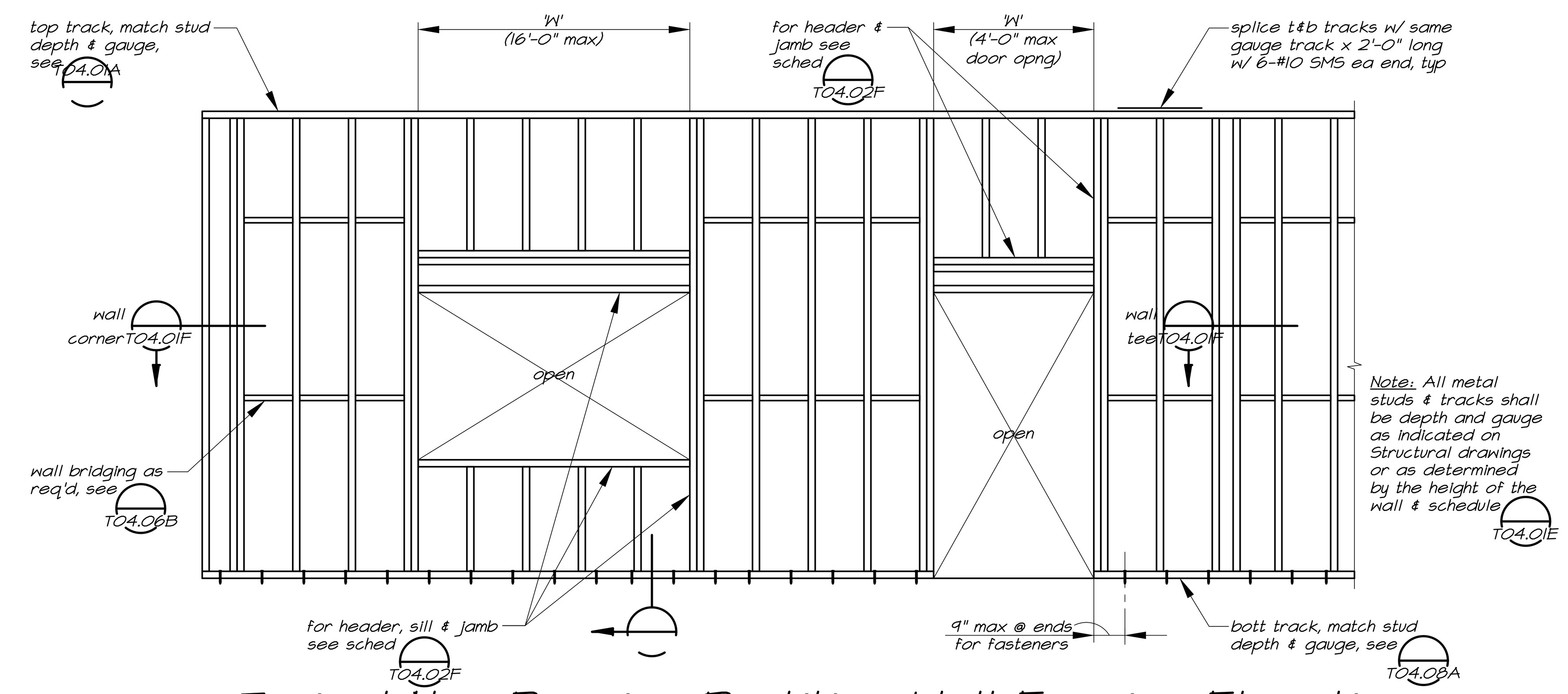


Typ. Framed Ceiling

9 / S1.4 — 1"=1'-0" Note: S.A.D. for rated ceiling details



Typical Non-Bearing Partition Wall Framing Elevation

13 / S1.4

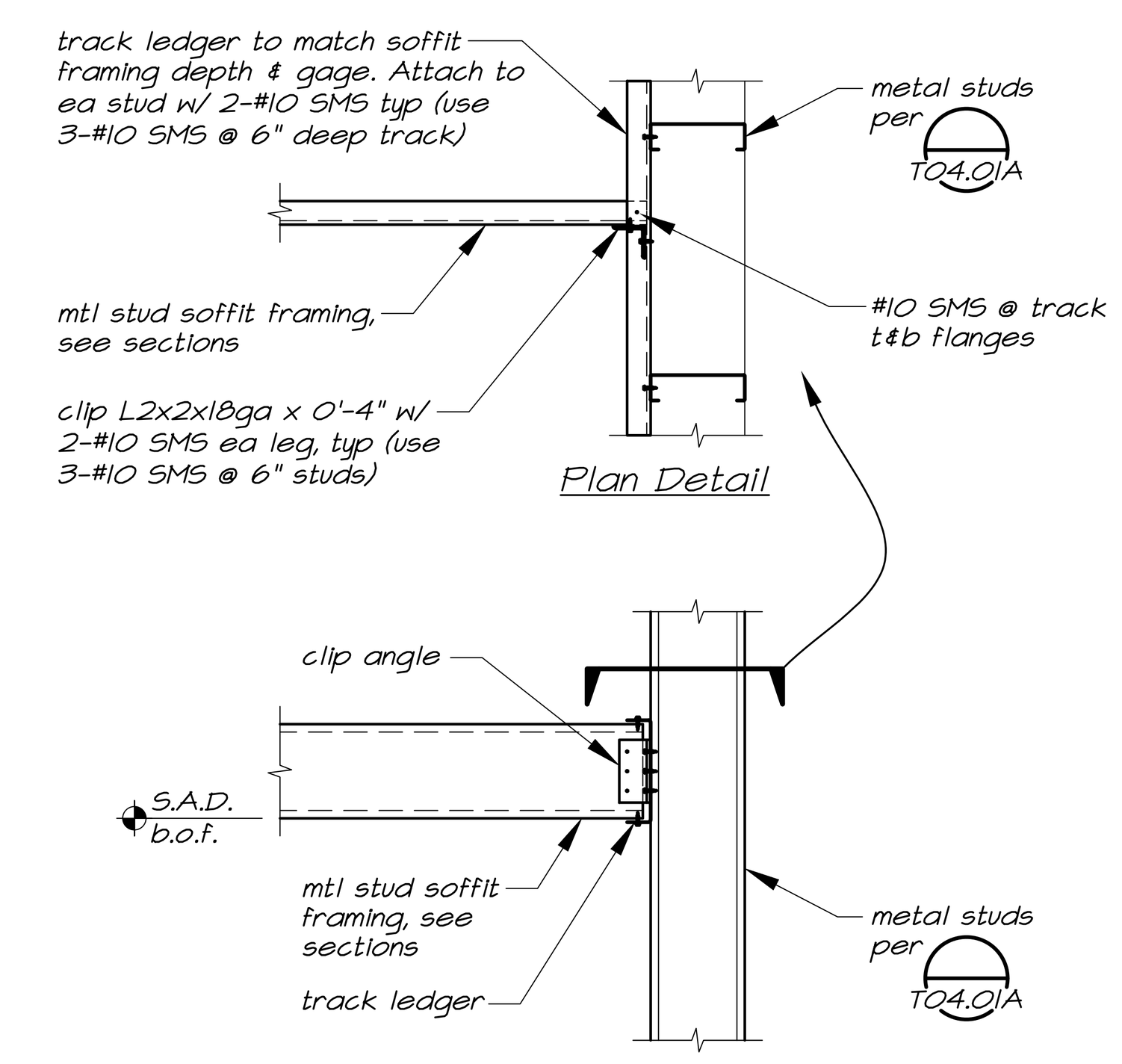
Depth	Gage	Designation[3]	Height @ 16"cc	Height @ 24"cc
3⅝"	20	362S162-33	17'-1"	14'-11"
3⅝"	18	362S162-43	18'-7"	16'-3"
3⅝"	16	362S162-54	19'-11"	17'-5"
3⅝"	14	362S162-68	21'-4"	18'-7"
4"	20	400S162-33	18'-11"	16'-6"
4"	18	400S162-43	20'-7"	18'-0"
4"	16	400S162-54	22'-1"	19'-3"
4"	14	400S162-68	23'-8"	20'-8"
6"	20	600S162-33	26'-0"	22'-8"
6"	18	600S162-43	28'-4"	24'-9"
6"	16	600S162-54	30'-4"	26'-6"
6"	14	600S162-68	32'-7"	28'-5"
8"	18	800S162-43	35'-8"	31'-1"
8"	16	800S162-54	38'-4"	33'-6"
8"	14	800S162-68	41'-1"	35'-11"

Notes:
1. Studs shall be depth as indicated on Arch drawings and gauge as determined by height of wall and the schedule above.
2. For typical wall framing conditions, see elevation T04.01C
3. Designation conforms to Steel Stud Manufacturers Association standards.

Interior Metal Stud Partitions

14 / S1.4

Maximum Height for Metal Studs with Deflection Limit L/240 - Non Bearing

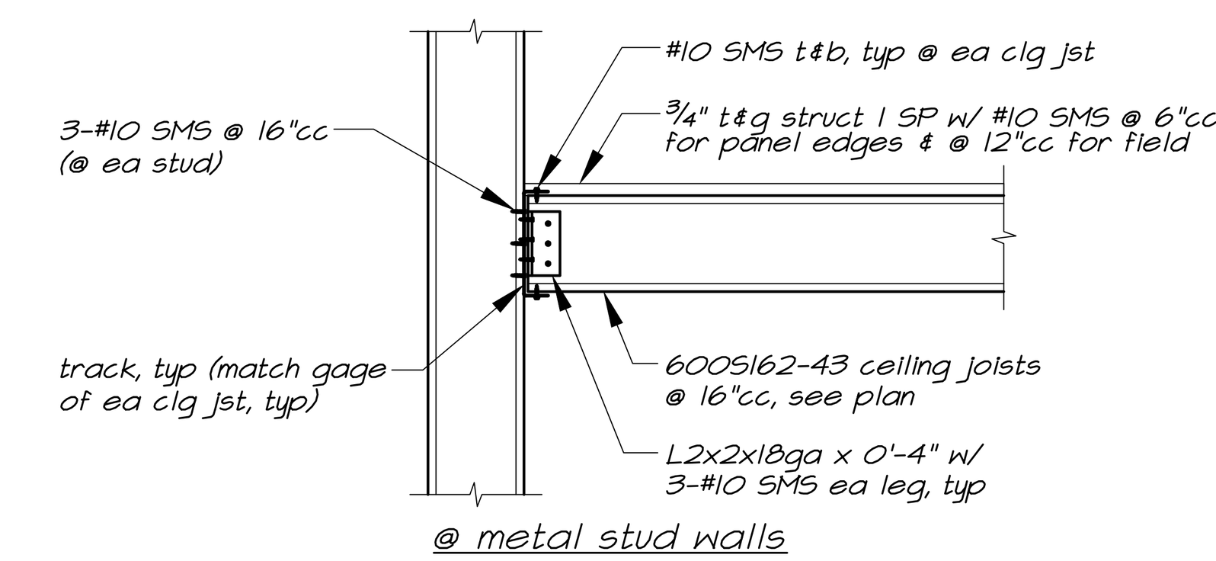


Typical Soffit Joist Support

10 / S1.4

Ceiling Joist Schedule	
Span	Ceiling Joist
5'-0" max	400S125-33 @ 16"cc
8'-0" max	400S137-33 @ 16"cc
10'-0" max	400S137-43 @ 16"cc
12'-0" max	600S137-43 @ 24"cc
14'-0" max	600S137-43 @ 16"cc

NOTE:
1. Ceiling joists assumed to be laterally braced by gypsum board or plaster below the joists.
2. Provide bridging @ 48" cc, see X / S1.4
3. Maximum load on ceiling joists shall be 15 psf DL + 10 psf LL



Typ Ceiling Joist Conn to Wall

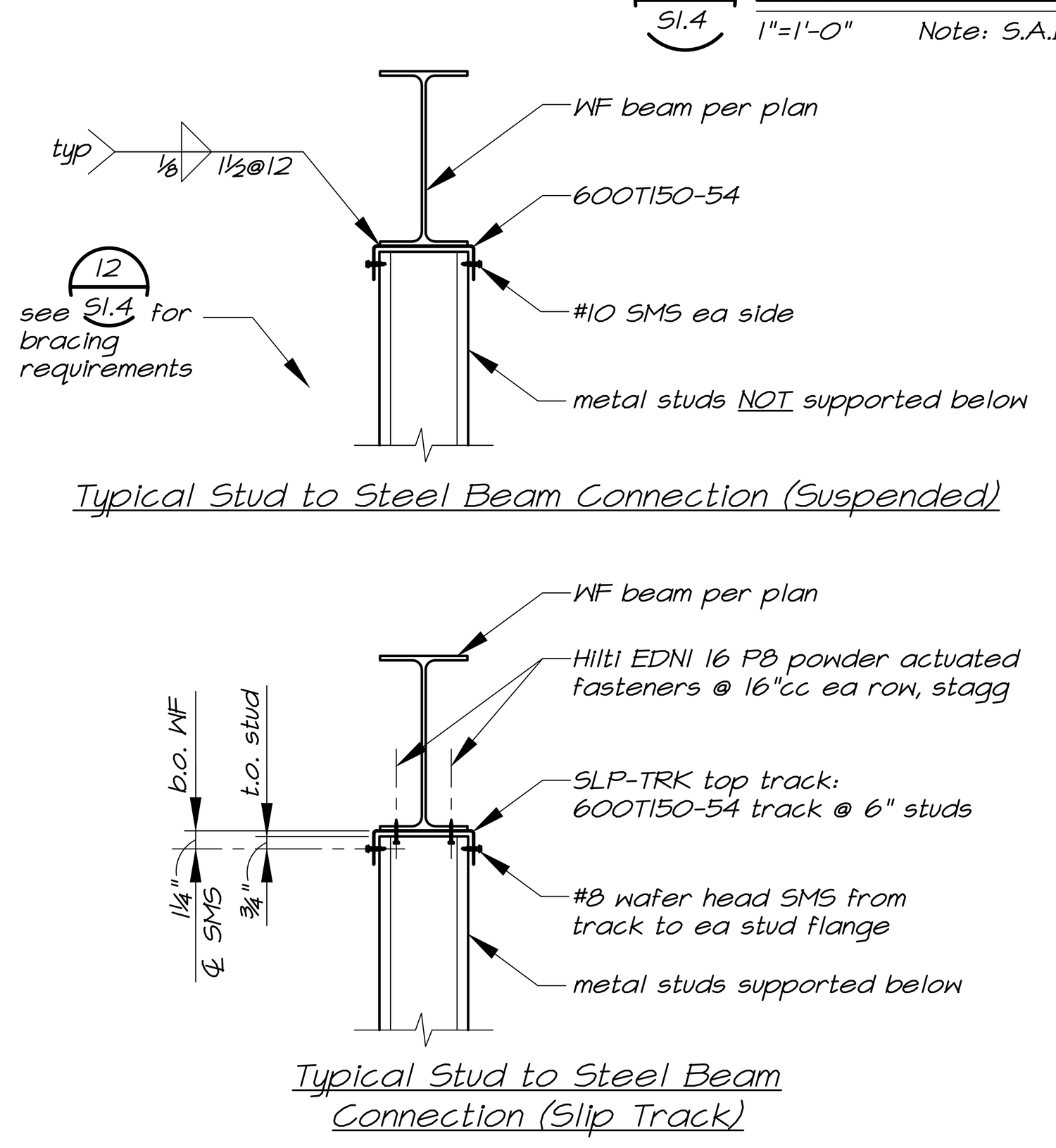
11 / S1.4

'W' Opening width max (or max width btwn diag braces)	9 / S1.3 Required jamb stud	7 / S1.3 Required hdr section	8 / S1.3 Required sill section
6'-0" max	dbl 800S137-43	dbl 800S137-43 w/ 800T125-43 t&b	800T150-43
9'-0" max	dbl 800S137-43	dbl 800S162-43 w/ 800T125-43 t&b	n/a
12'-0" max	dbl 800S162-43 (alt HSS4x4x¼)	dbl 800S162-43 w/ 800T125-68 t&b	n/a
over 12'-0" (see note #5)	dbl 800S137-43	dbl 800S137-43 w/ 800T125-43 t&b	800T150-43

Schedule Notes:
1. The requirements of this schedule shall govern unless specifically detailed or noted otherwise.
2. Metal stud section properties shall conform to the Steel Stud Manufacturer's Association Product Catalog (SSMA) as specified in the Lightgauge Steel notes.
3. All header members shall be un-punched.
4. At interior non-bearing conditions, track width @ headers and sills shall match depth of studs as specified in the architectural drawings. Flange length & ga shall match this table.
5. At spans over 19'-0", provide diagonal bracing of headers/sills to structural framing @ 4'-0"cc max per sections. ("W" = 4'-0" max @ these locations)
6. Maximum width shown in table is either the width between the jamb studs or between diagonal bracing as shown in note #5 above (where diag bracing occurs.)

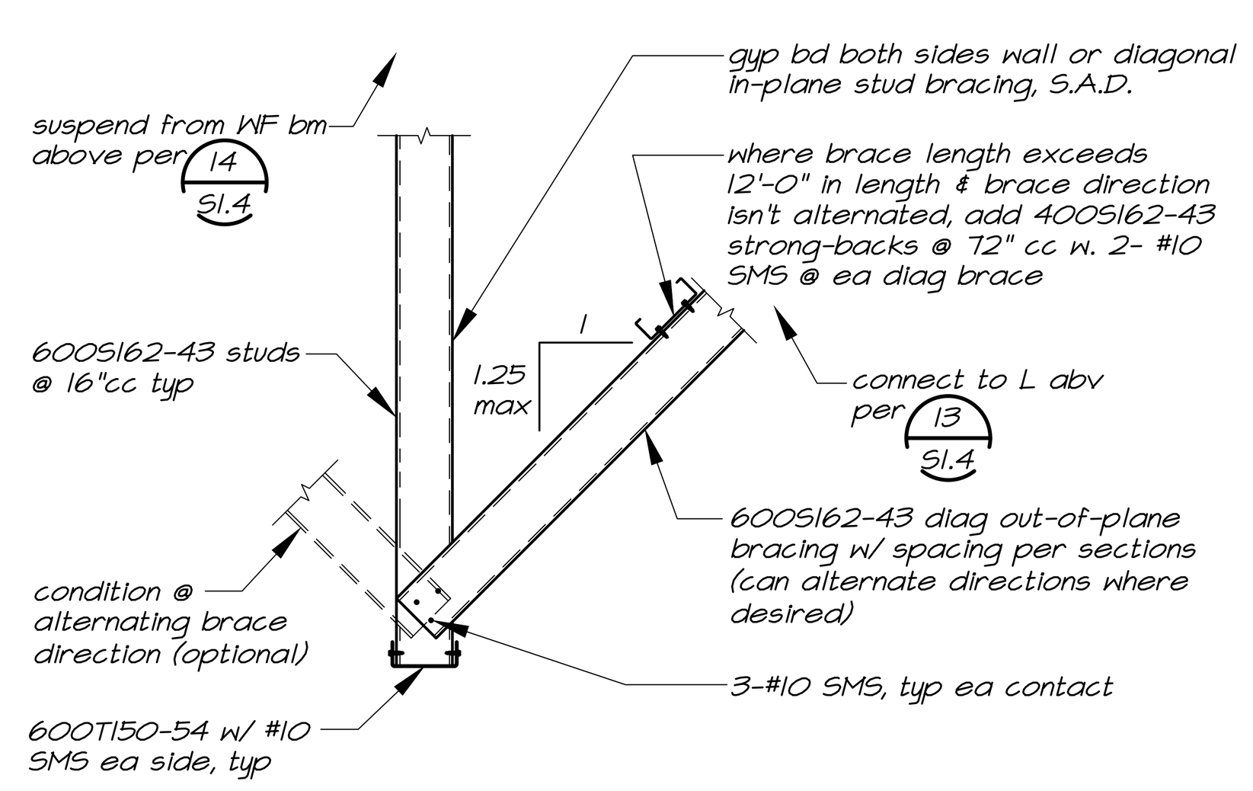
Non-Bearing Wall Header Schedule

12 / S1.3



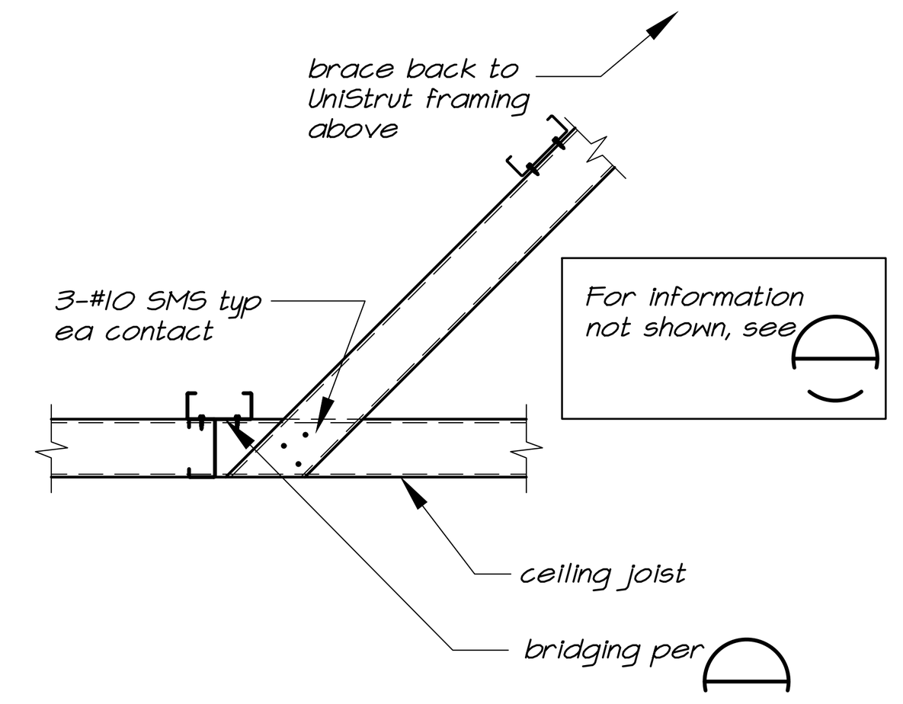
Detail

4 / S1.4 — stud to beam



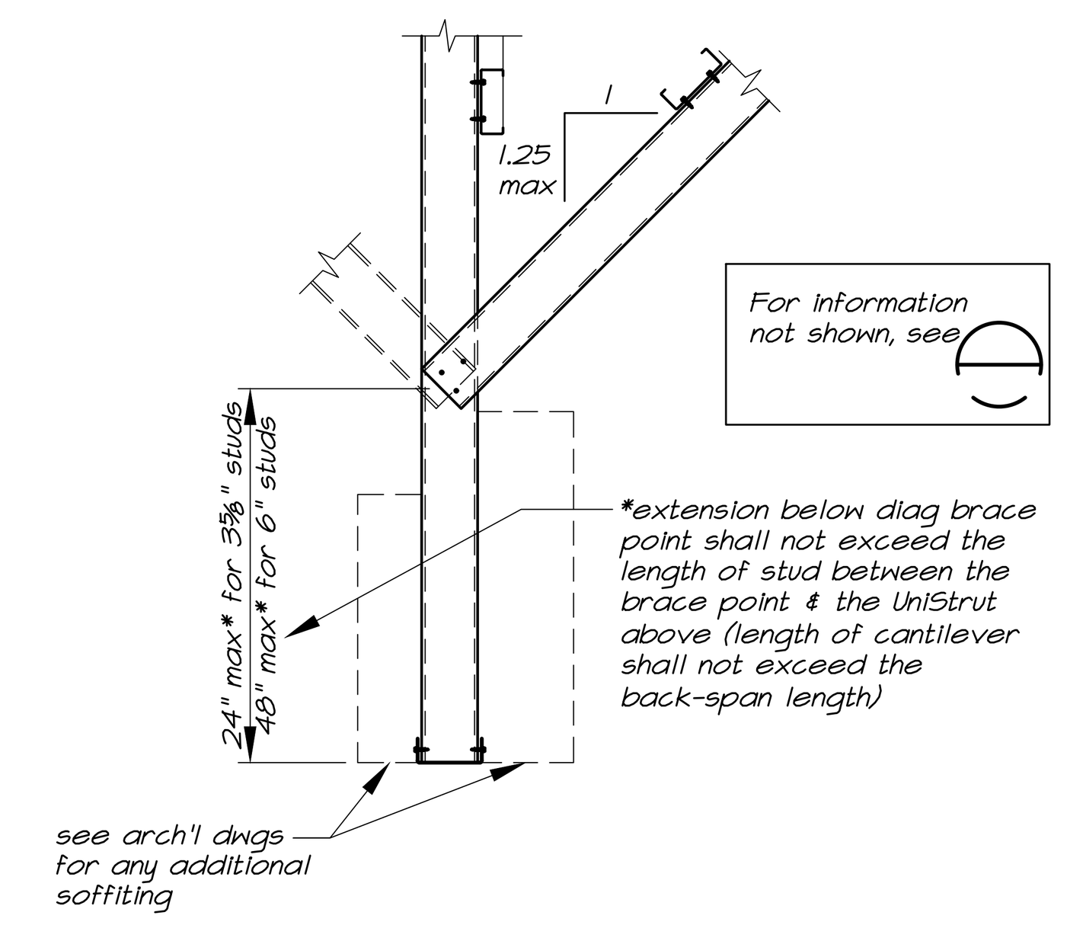
Typ. Suspended Studs

5 / S1.4



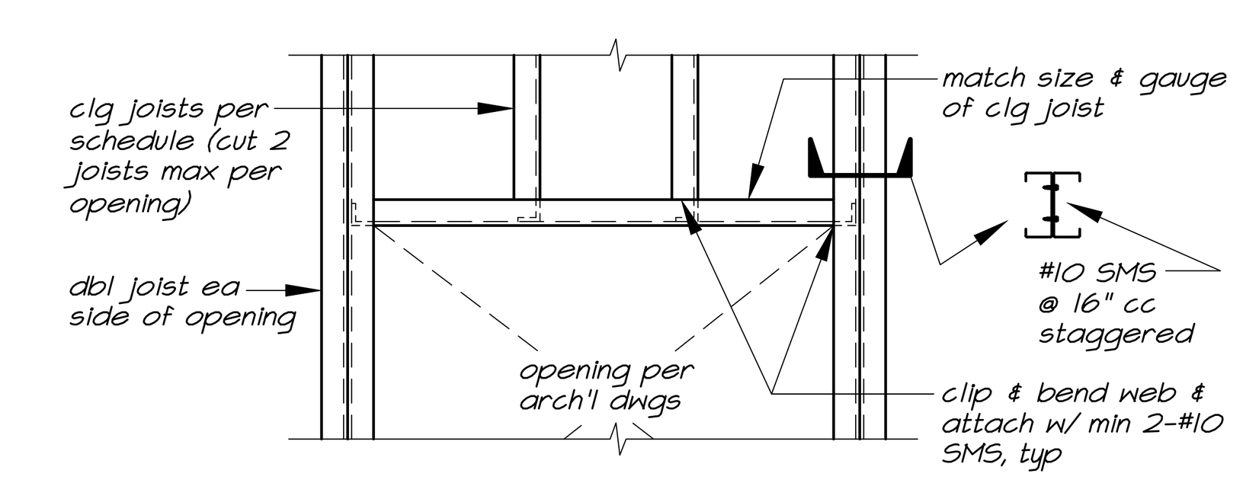
Typical Hanging Soffit

6 / S1.4



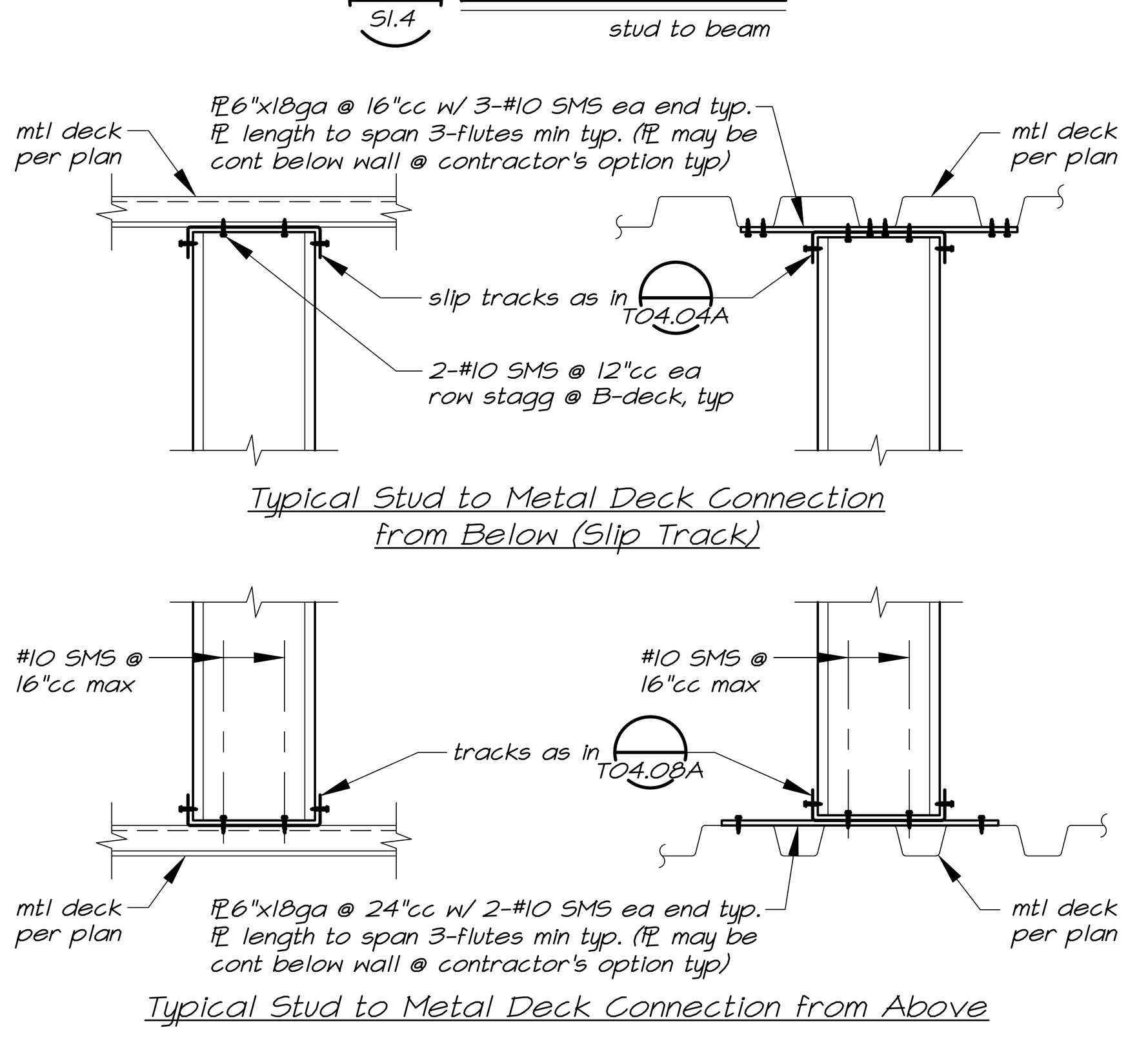
Typical Hanging Soffit

7 / S1.4



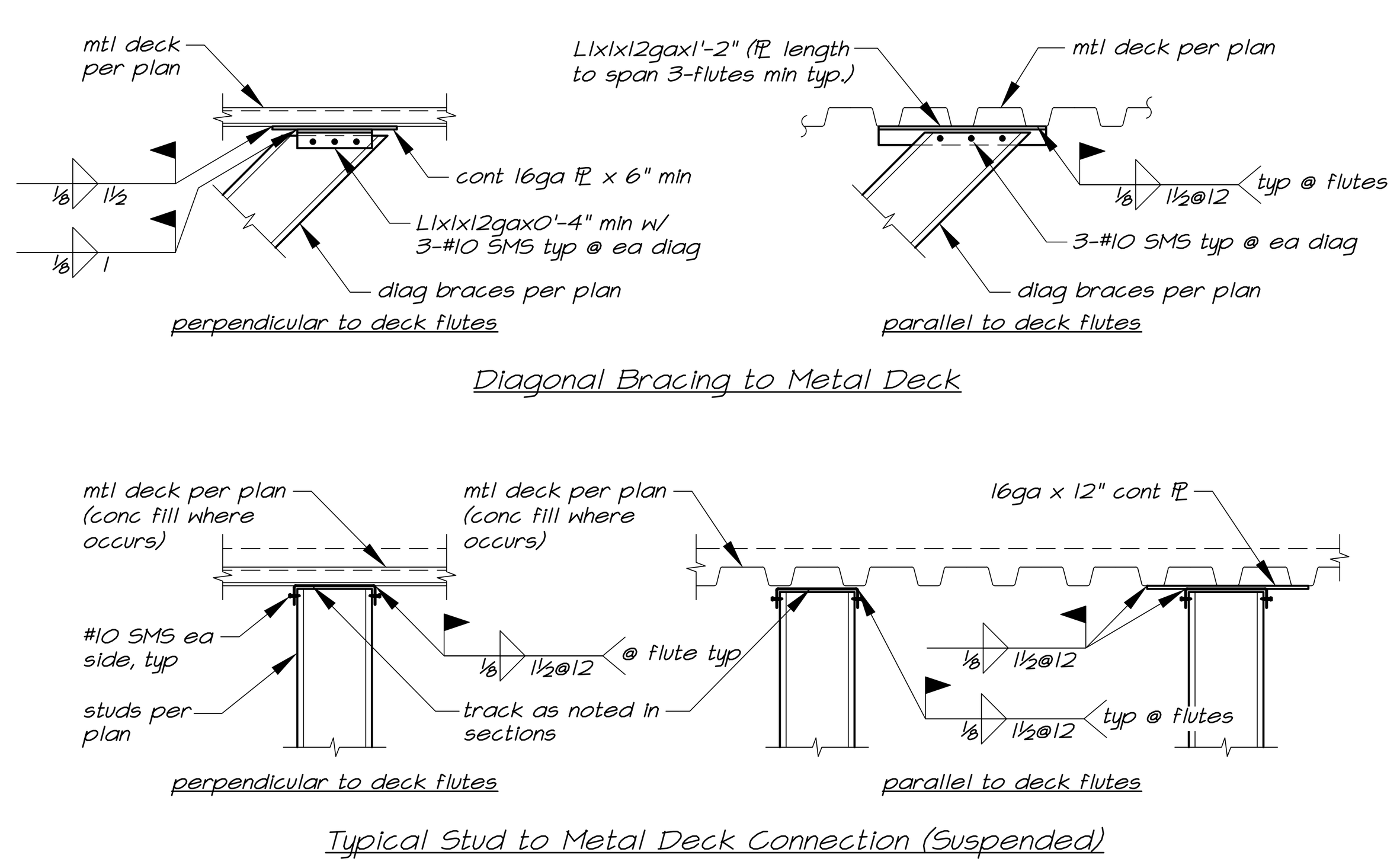
Typical Opening in Ceiling

8 / S1.4



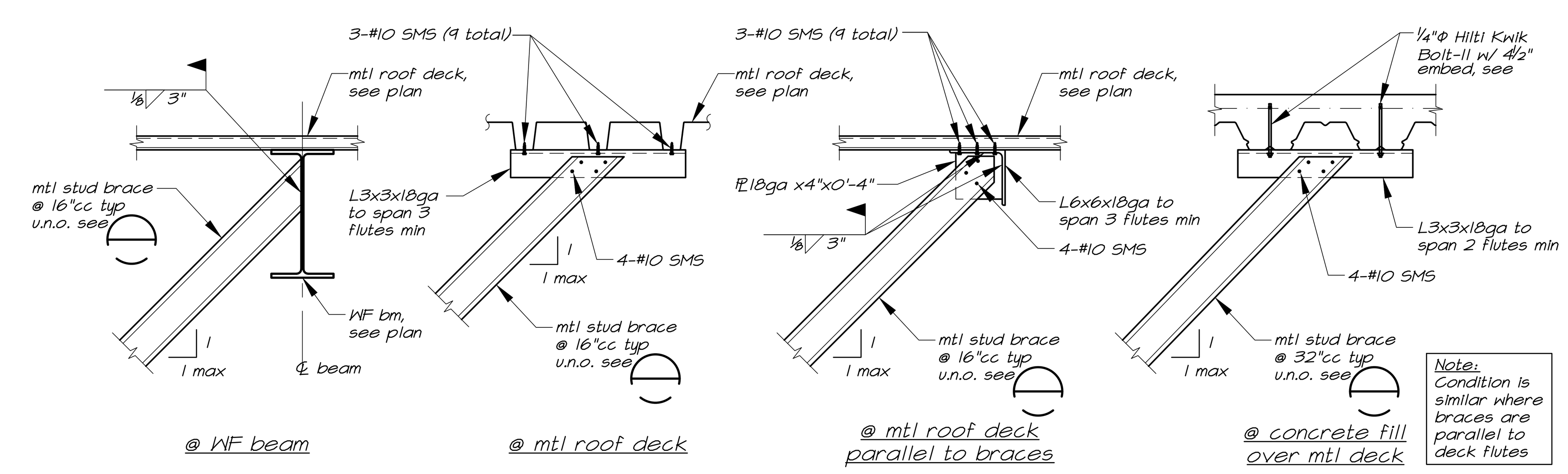
Detail

1 / S1.4 — stud to metal deck



Detail

2 / S1.4 — stud to metal deck



Typical Metal Stud Brace Connections

3 / S1.4

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TYPICAL DETAILS

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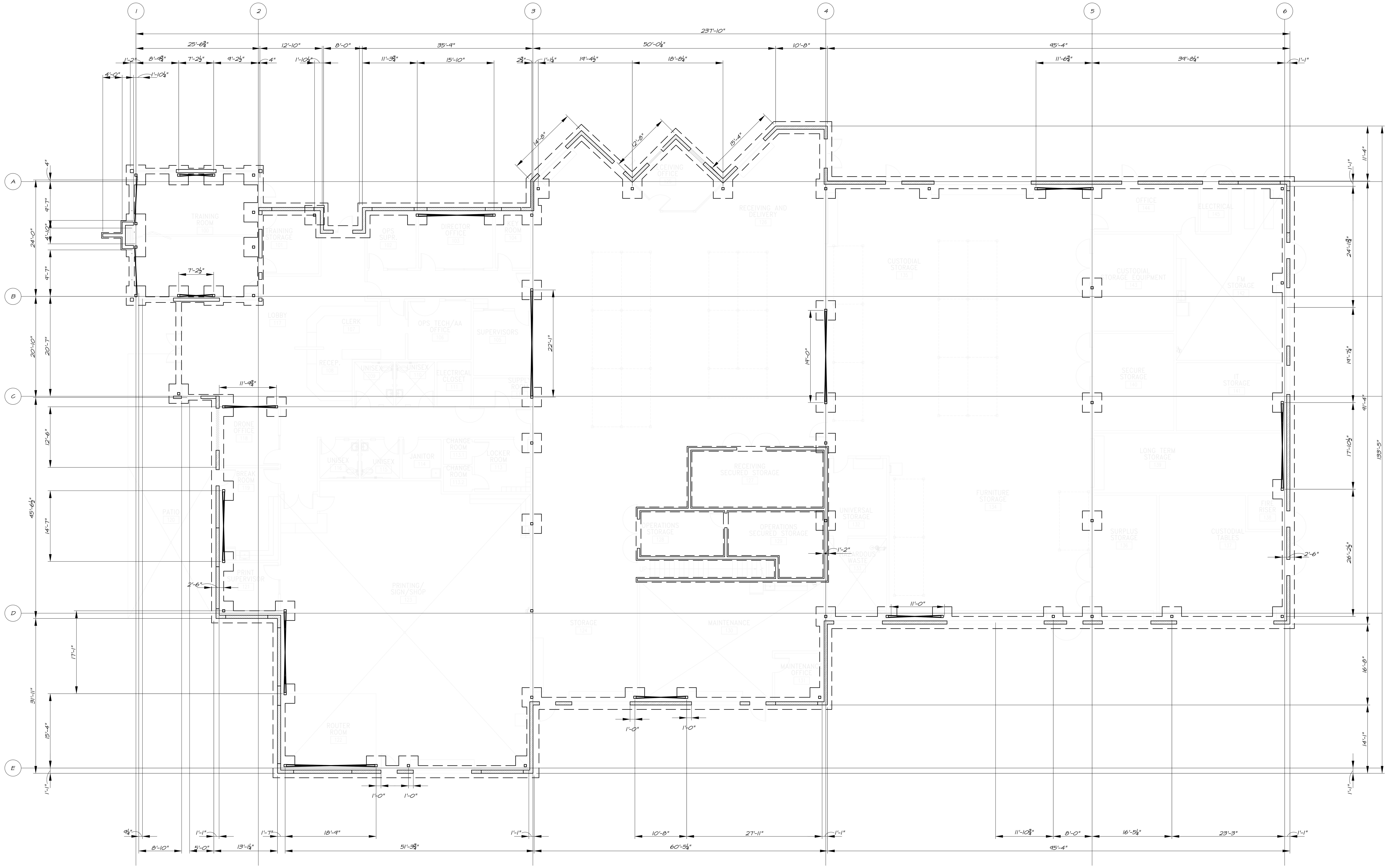
S1.4



A
S2.1

Foundation Plan

1/8"=1'-0"

North

Footing Schedule

Mark	Size	min depth (thickness)	Reinforcing
A	2'-0" sq	18"	2-#5 ea way @ bott
B	3'-0" sq	18"	3-#5 ea way @ bott
C	4'-0" sq	18"	4-#6 ea way @ bott
D	5'-0" sq	18"	5-#6 ea way @ bott
E	6'-0" sq	24"	6-#6 ea way @ t&b

NOTES:

1. Depths shown are the minimum required. The Geotechnical Engineer may require deeper footings upon excavation.

Foundation Notes

1. Site preparation and building pad construction shall be done in accordance with the recommendations in the soils report by "geotechnical engineer" (proj #0000.00), dated xxx XX, 20XX.
2. Verify all dimensions with architectural drawings. Notify Architect immediately of any discrepancies for resolution prior to proceeding.
3. Dimensions are to face of concrete (FC) or column centerlines, typical u.n.o.
4. Spread Footings are centered on columns and braced frames, typical u.n.o.
5. Top of concrete slab = reference elevation +0'-0".
6. Top of footing elevation = -0'-10" below reference elevation +0'-0" typical u.n.o.
7. Slab block-outs shown at columns are diagrammatic. Actual size and configuration is to be determined by the contractor for constructability.
8. Provide 3" concrete cover minimum @ base PL, anchor bolts, and columns typical.
9. For Typical Framing details at exterior metal stud walls, see sheet S1.3.
10. For typical reinforcing bends and corner reinforcing, see

1. For pipe penetrations through continuous footings, see
2. Contractor to submit slab control joint layout for approval, see
3. +x'-x" t.o. ftg — Indicates top of footing elevation below reference elevation +0'-0"
4. (X) — Indicates footing type, see schedule
5. Indicates WF column, size indicated on plan.
6. Indicates HSS column, size indicated on plan.
7. Indicates braced frame location. See elevations and details referenced.
8. s——s Indicates footing step location. Contractors to field verify exact step locations, see

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FOUNDATION PLAN

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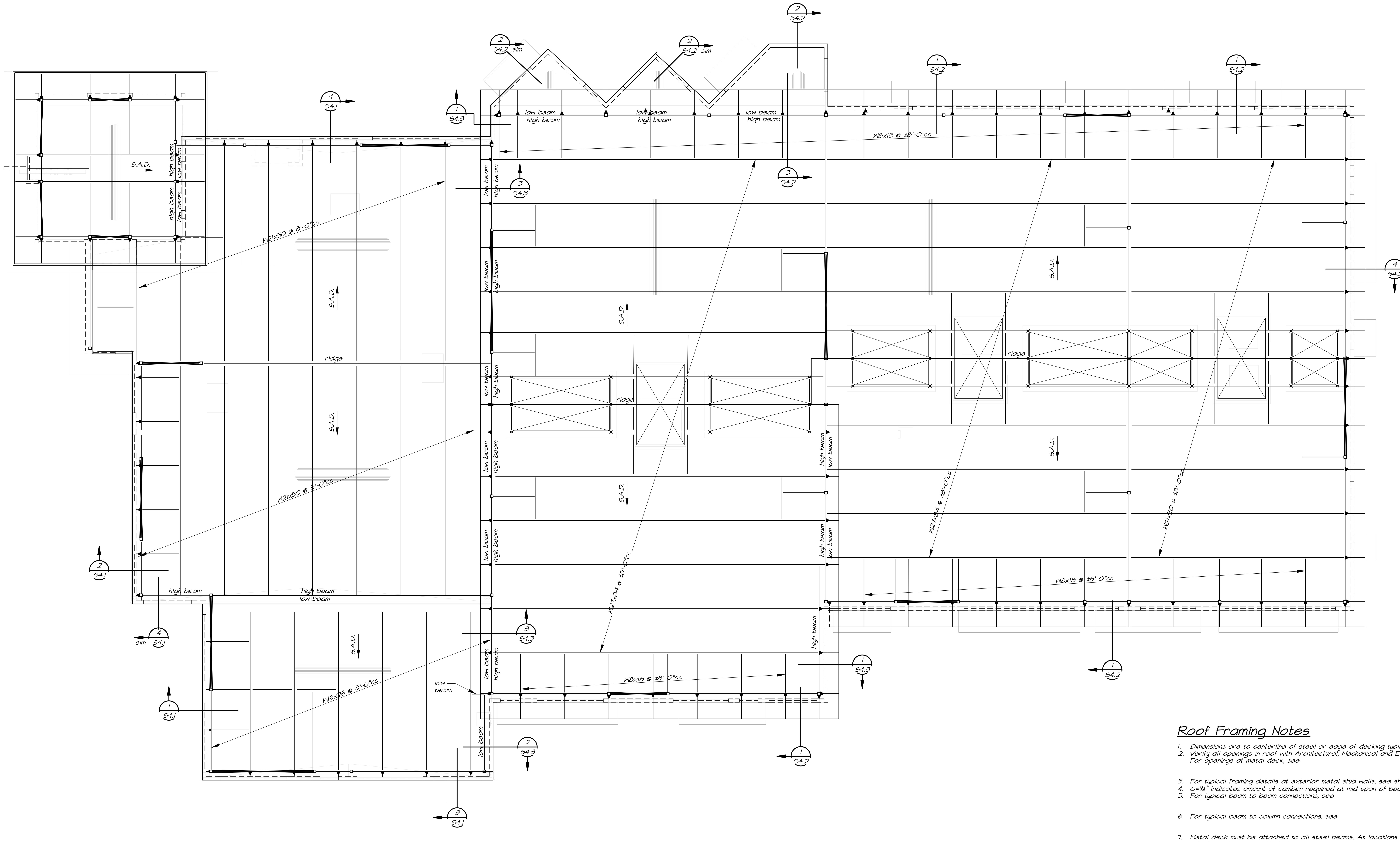
S2.1



A S2.2 Roof Framing Plan
1/8"=1'-0"

North

Roof Framing Notes

1. Dimensions are to centerline of steel or edge of decking typical u.n.o.
2. Verify all openings in roof with Architectural, Mechanical and Electrical drawings. For openings at metal deck, see
3. For typical framing details at exterior metal stud walls, see sheet S1.3.
4. C=3/4" Indicates amount of camber required at mid-span of beam or girder.
5. For typical beam to beam connections, see
6. For typical beam to column connections, see
7. Metal deck must be attached to all steel beams. At locations where low flutes do not align with beam, split deck as in
8. Indicates WF column. See Foundation Plan for size.
11. Indicates HSS column. See Foundation Plan for size.
12. +X'-X" t.o.s. Indicates top of steel elevation above reference elevation +0'-0"
13. Indicates braced frame location. See braced frame elevations and details referenced.
14. Indicates span direction of metal deck. For metal deck types and typical details, see
15. Indicates moment connection at end of beam, see
16. X Indicates beam connection requiring A325 SC Class A bolts, Total number of bolts required is shown inside box, see
17. XXX# Indicates approximate location & weight of mechanical unit. Coordinate location of unit and of beams supporting unit with mechanical drawings.
18. Indicates mechanical screenwall above roof, see details referenced.

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ROOF FRMG PLAN

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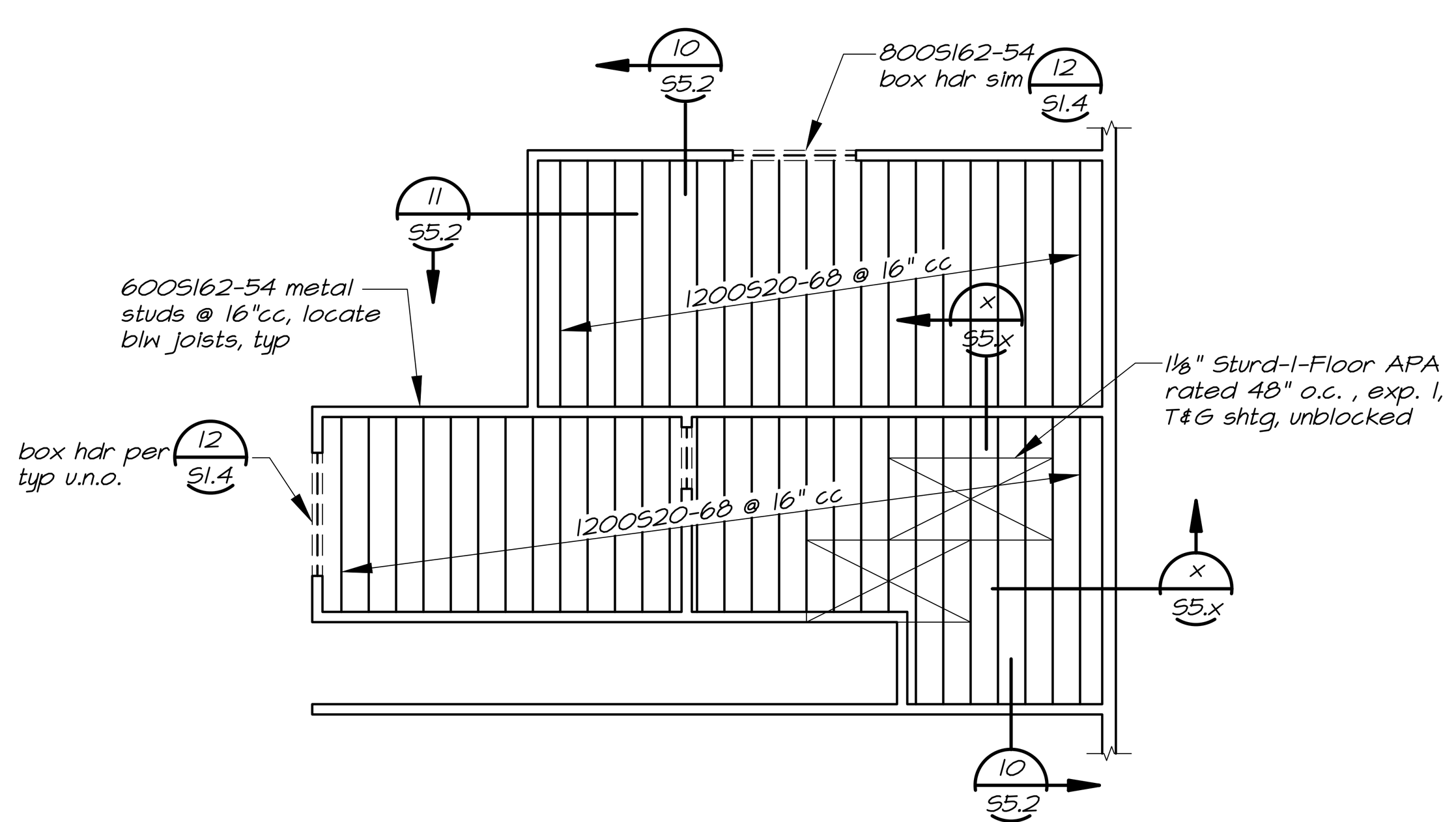
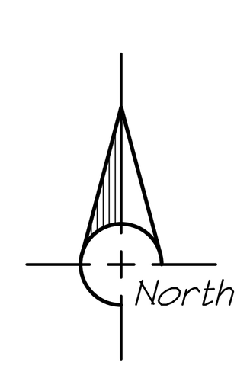
S2.2



A / S2.3 Mezzanine Framing Plan

1/8"=1'-0"



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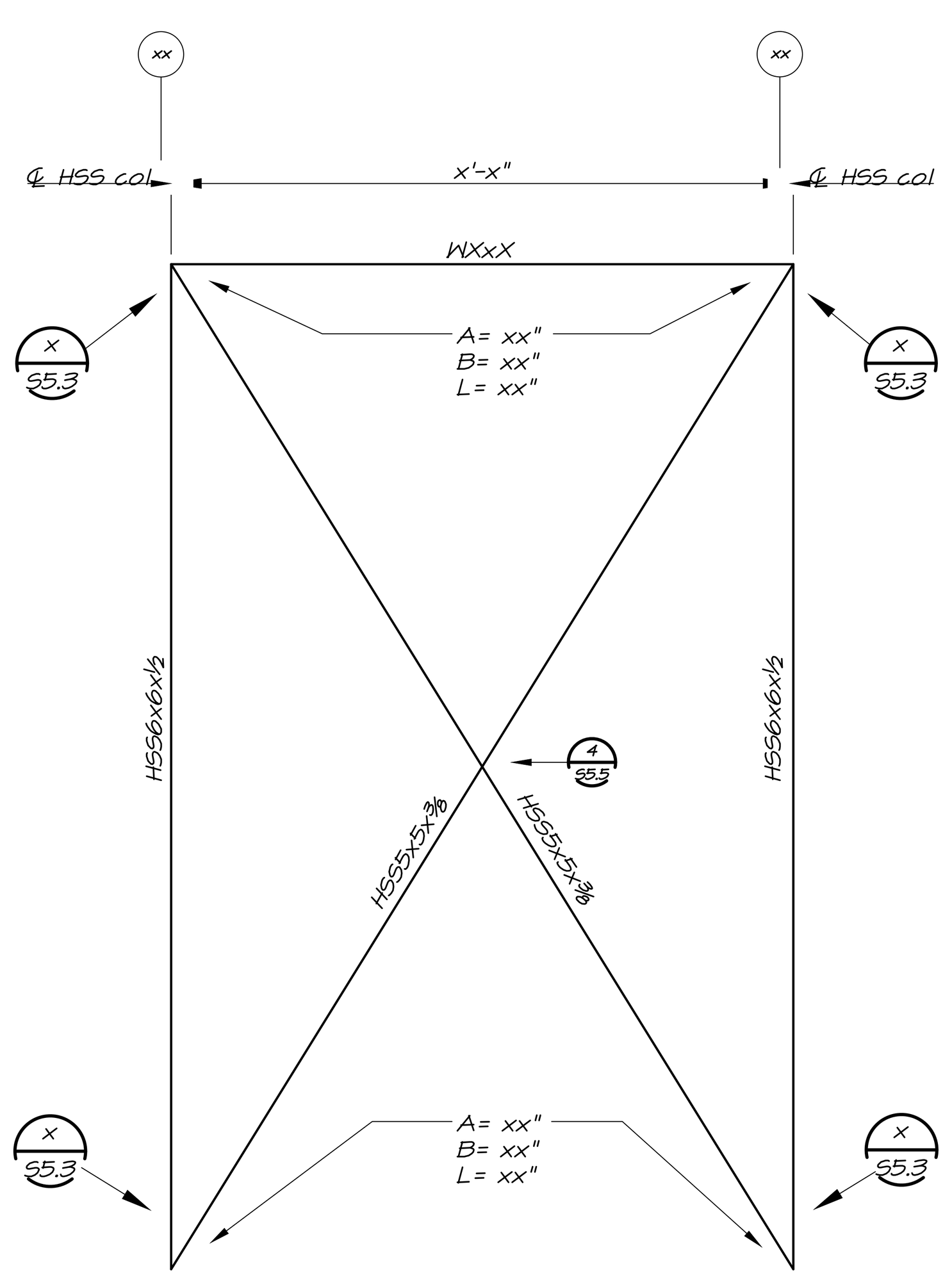

A
S3.1
Brace Frame Elevation
¼" = 1'-0" (Grid line xxx)

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ELEVATIONS

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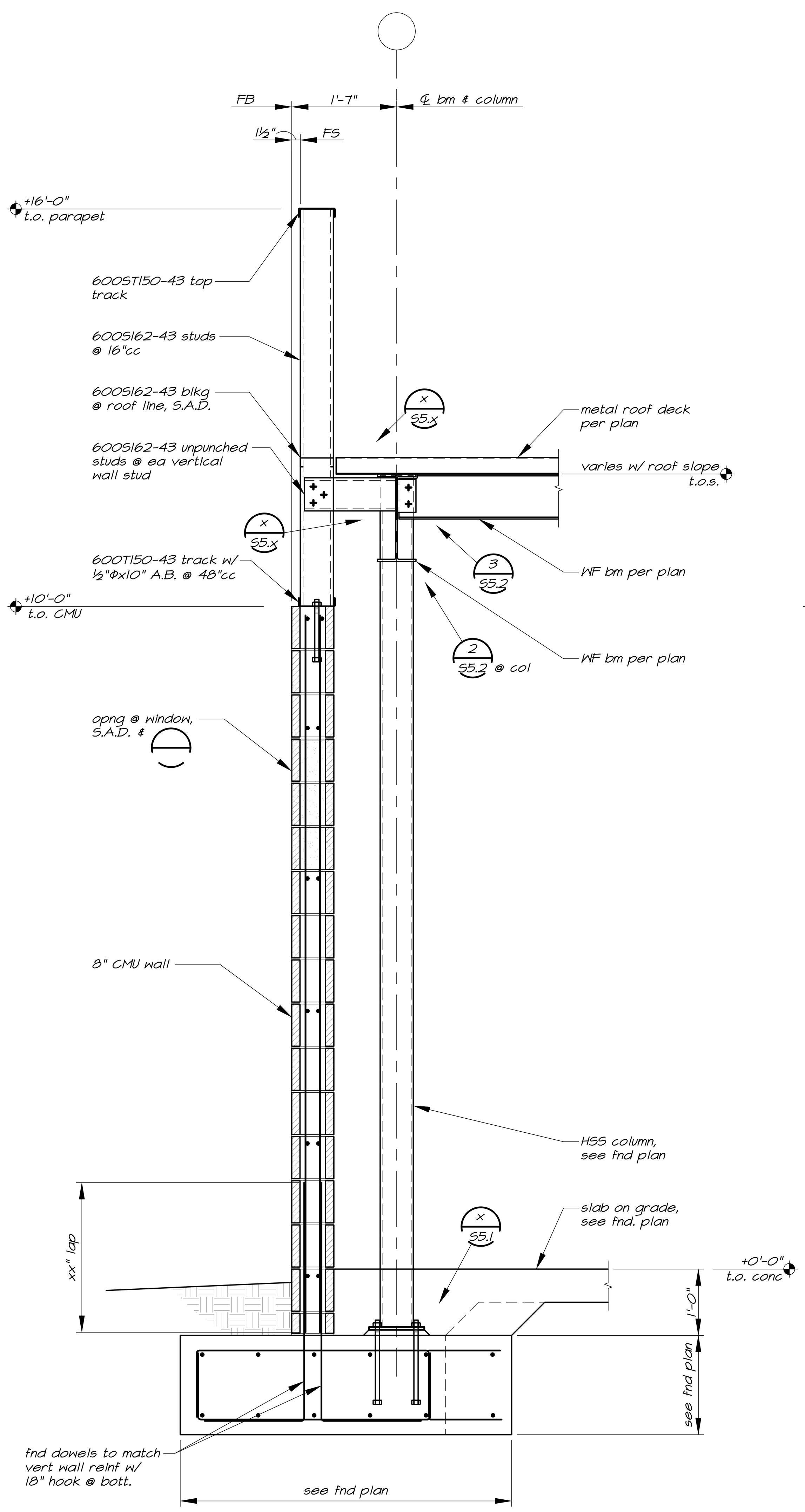
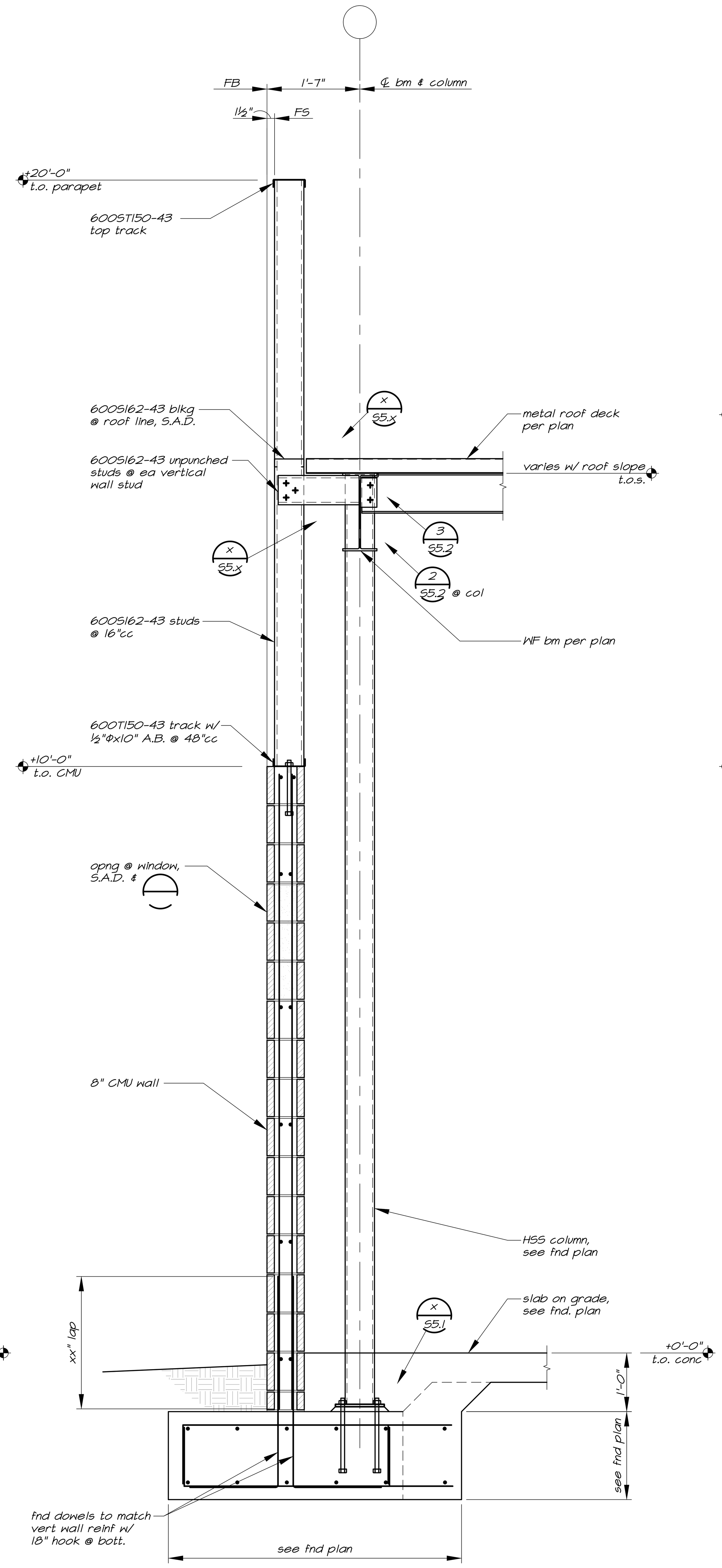
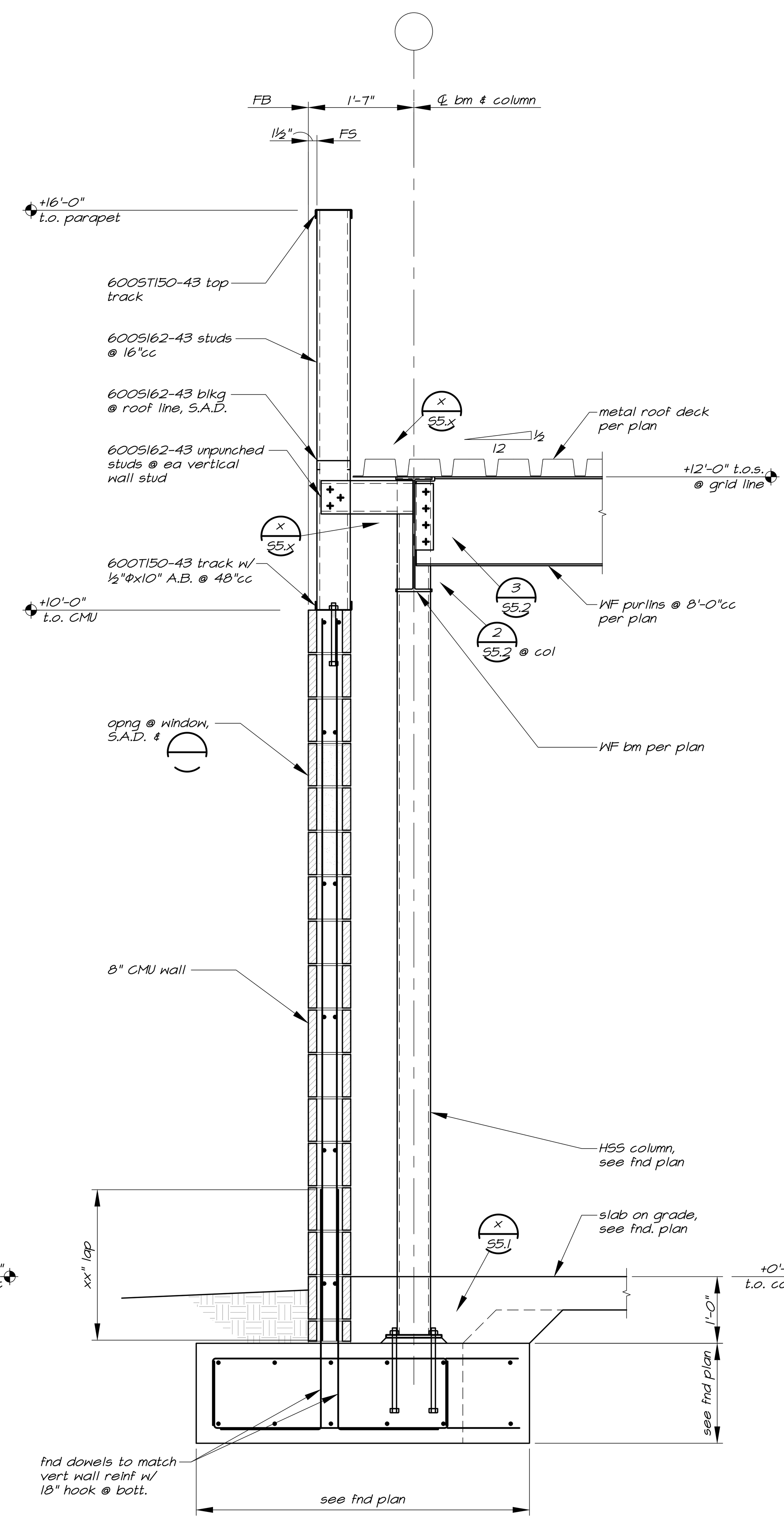
S3.1



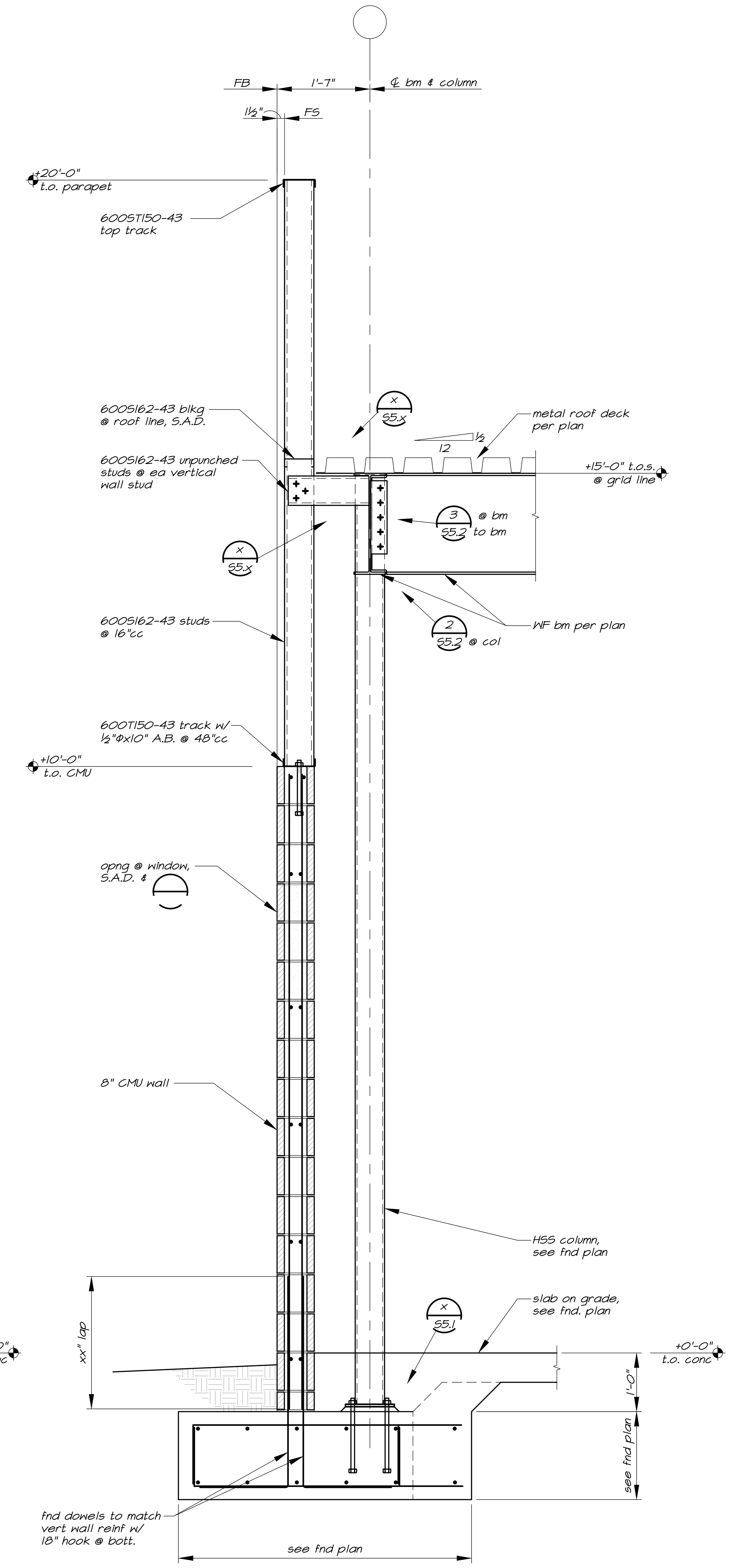
Section 1 S4.1 ¾"=1'-0"



Section 2 S4.1 ¾"=1'-0"



Section 3 S4.1 ¾"=1'-0"



Section 4 S4.1 ¾"=1'-0"

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SECTIONS

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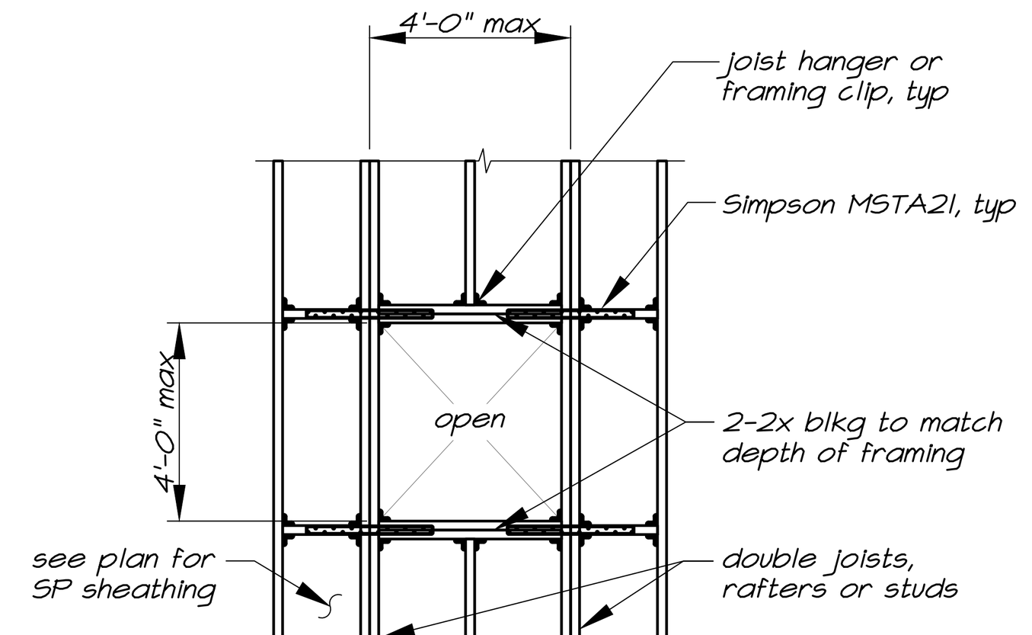
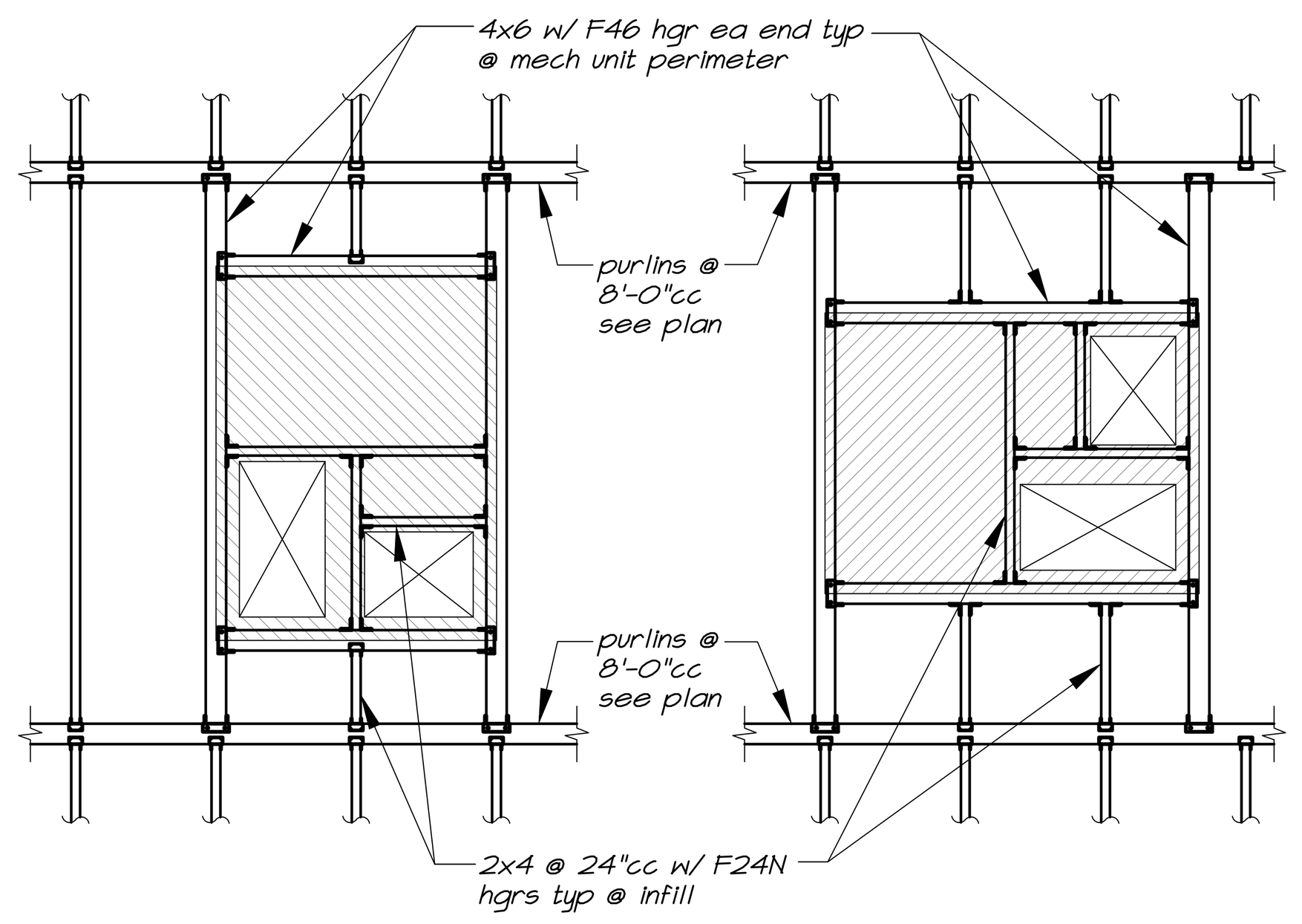
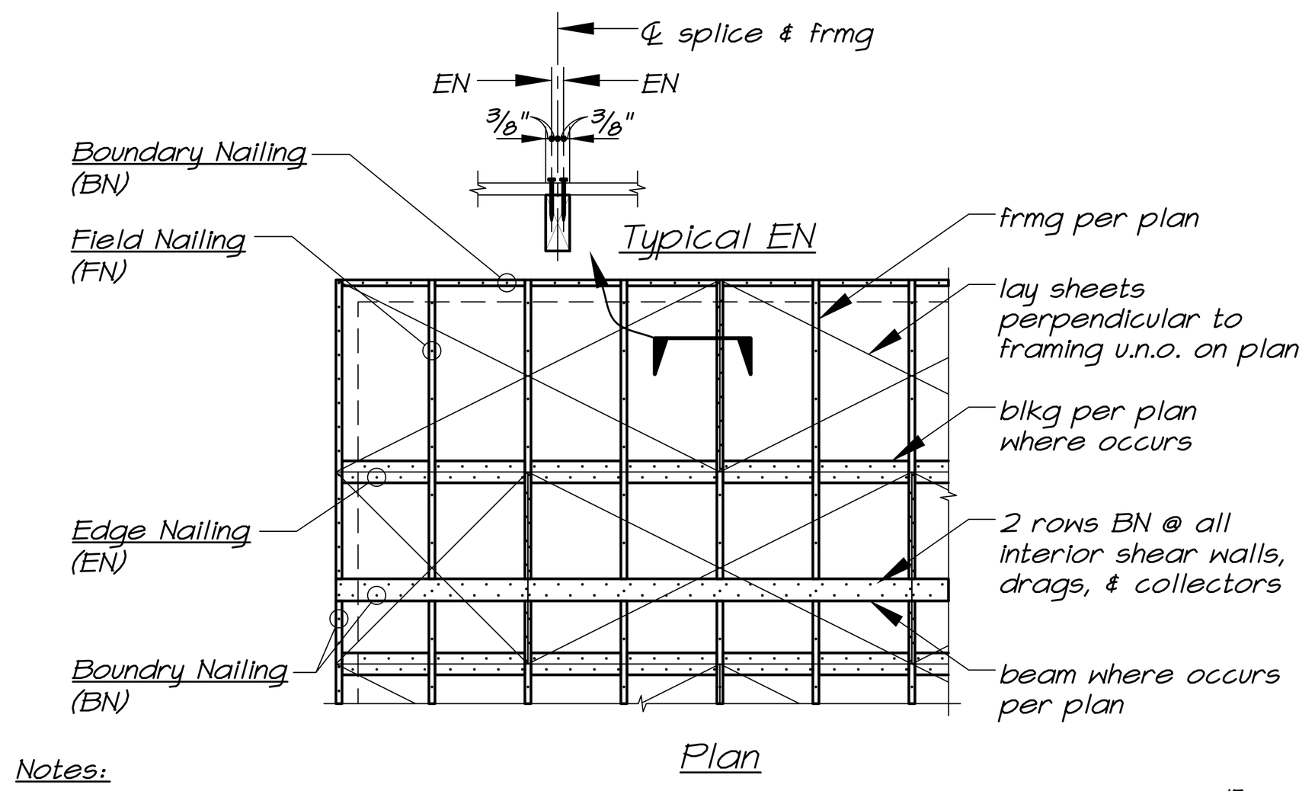
S4.1



16 / S5.1 Typ Opening in Plywood Diaphragm (Roof or Wall)



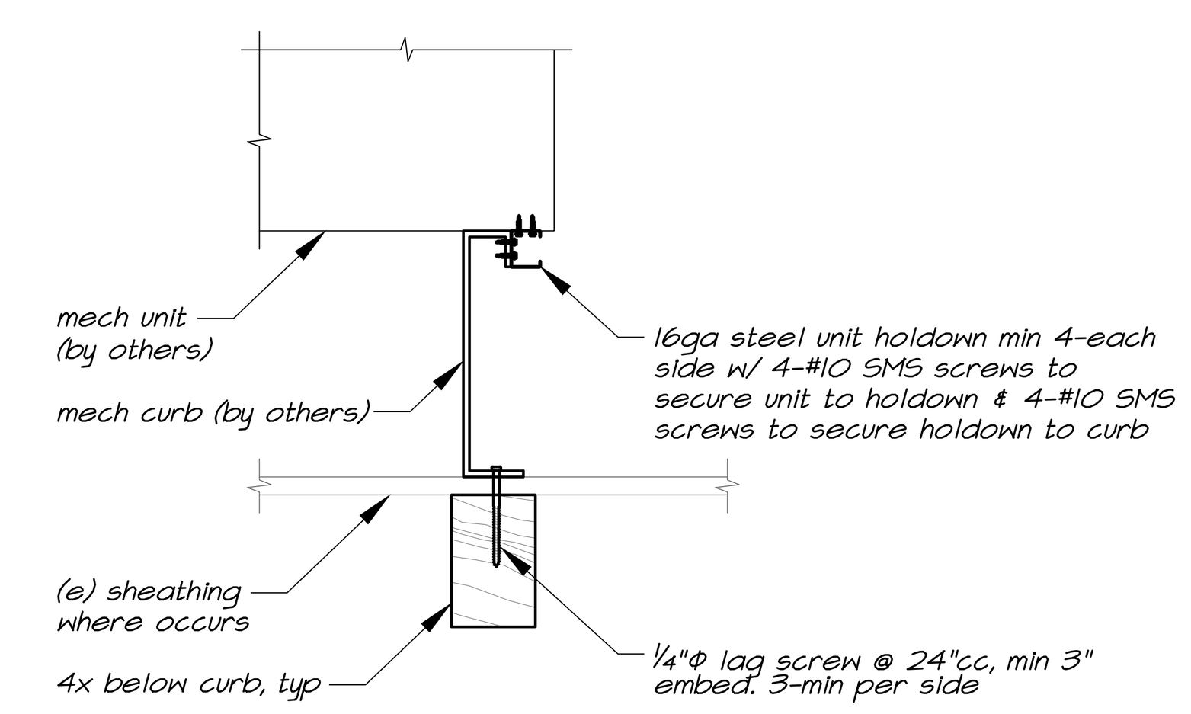
17 / S5.1 Typical Framing Plan @ Mechanical Units



Notes:

1. See plan for sheathing type, nail size and spacing. Unless noted otherwise, use 15/32" APA rated Struct I plywood, grade C-D with exterior glue, minimum panel index 32/16.
2. Provide EN at all sheathing edges, beams, blocking and mechanical units, u.n.o. Provide BN at all diaphragm edges, drags/collectors & shear walls, u.n.o.
3. EN & BN shall be 10d @ 6"cc min u.n.o. on plan. FN shall be @ 12"cc. Nail size to match EN, u.n.o.
4. Provide 3x4 flat blocking and EN at all unsupported edges where blocking and nailing are indicated on plan.
5. Stagger SP joints as shown. Minimum panel width is 24".
6. 10d nails spaced 3"cc shall be 'shorts'. See typical Framing Notes.
7. Framing at panel edges, including blocking, shall be 3x where nails are spaced 2½" or less.
8. 6/6/12 shown on plan indicates required nail spacing at Boundry/Edge/Field.

18 / S5.1 Typical Floor/Roof Nailing



19 / S5.1 Mech Anchorage

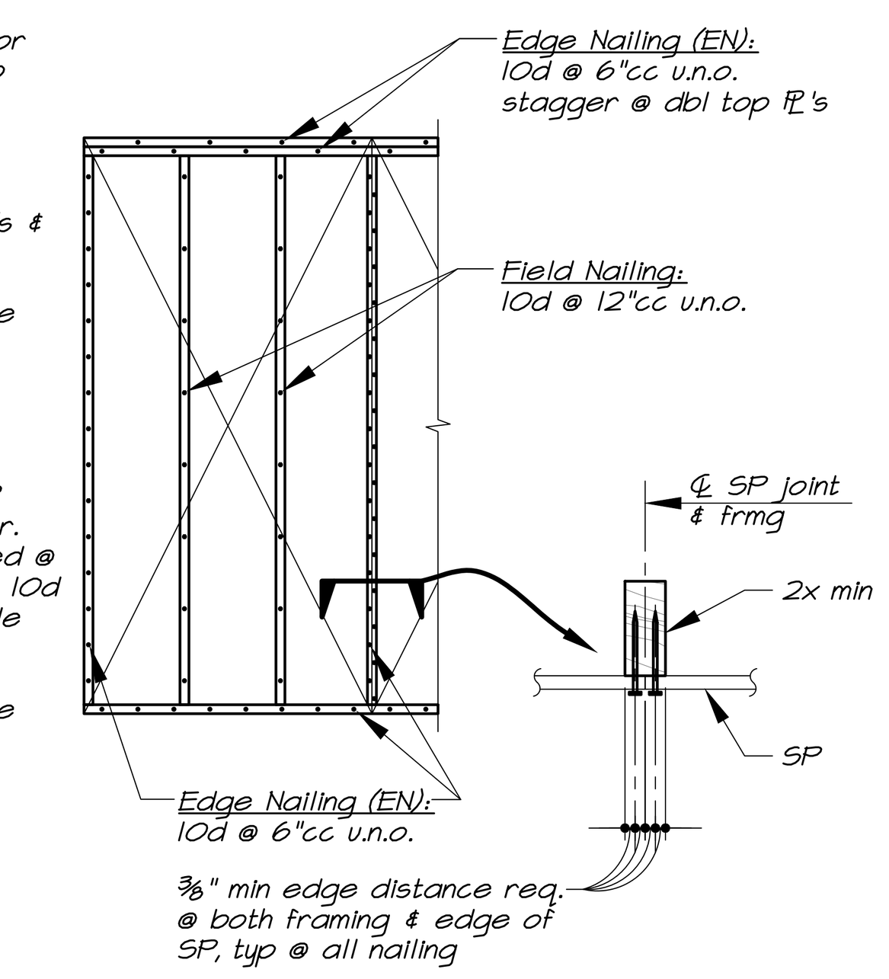
Edge Nailing (EN) as called for on plan & sections applies to edges of all SP sheets as follows:

At shearwalls:

1. Where SP contacts wall ℙ's & solid blkg over wall construction
2. At holdown studs/posts see detail on this sheet.

Notes:

1. Where nails are spaced @ 4"cc or less, nails shall be staggered & framing @ SP joints shall be 3x or larger.
2. Where 10d nails are spaced @ 3"cc or less, nails shall be 10d shorts. See Nailing Schedule on General Notes sheet.
3. Stagger SP joints where shear wall is more than one vertical panel in height.

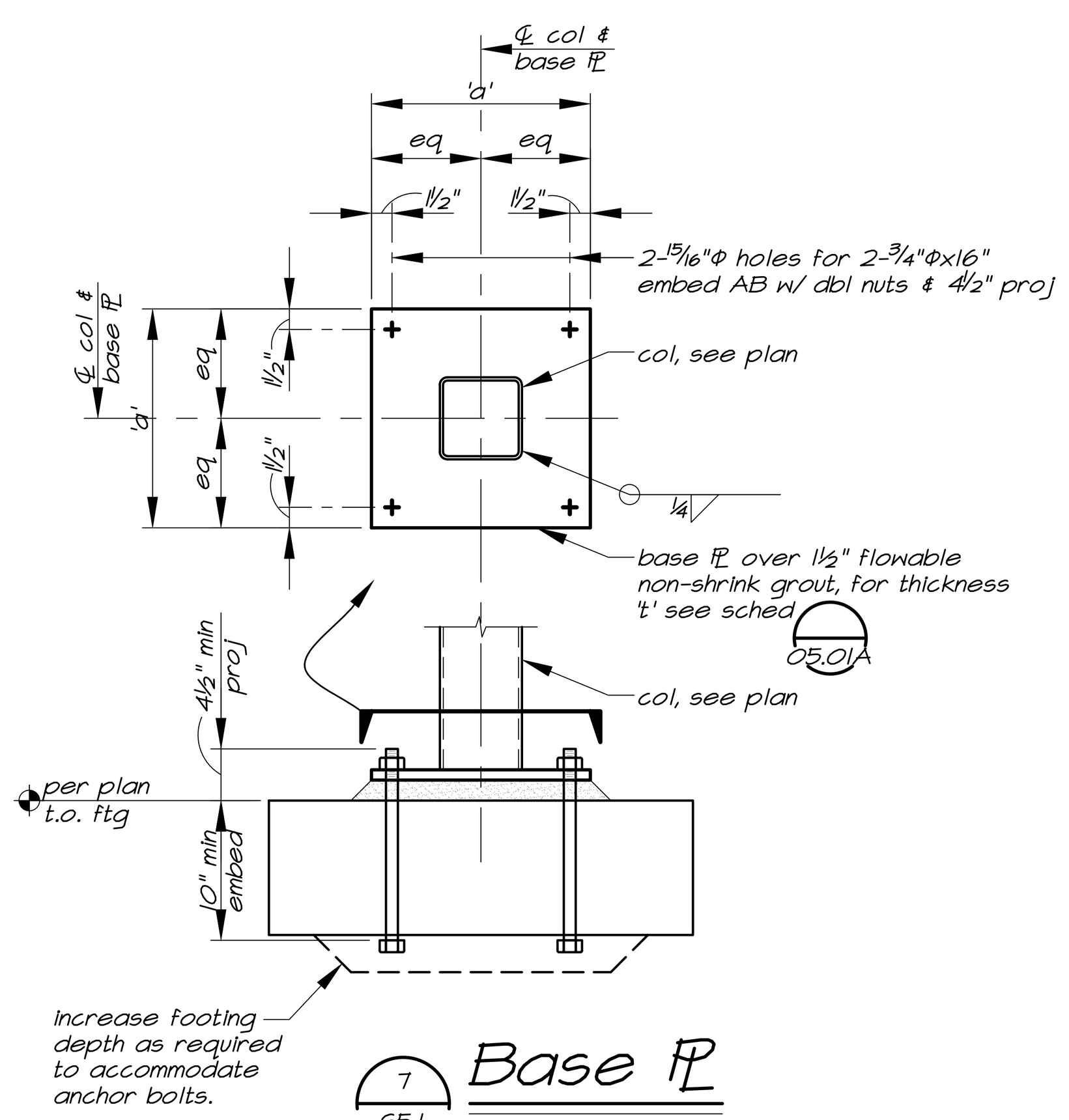


20 / S5.1 Typical Shearwall Nailing

column size			base ℙ size		
WF	HSS	pipe	't'	'a'	'b'
	3x3	3"Φ	__"	10"	
	4x4	4"Φ	__"	10"	
	5x5	5"Φ	__"	12"	
	6x6	6"Φ	__"	12"	
	7x7	-	__"	14"	
	8x8	8"Φ	__"	14"	
	10x10	10"Φ	__"	16"	

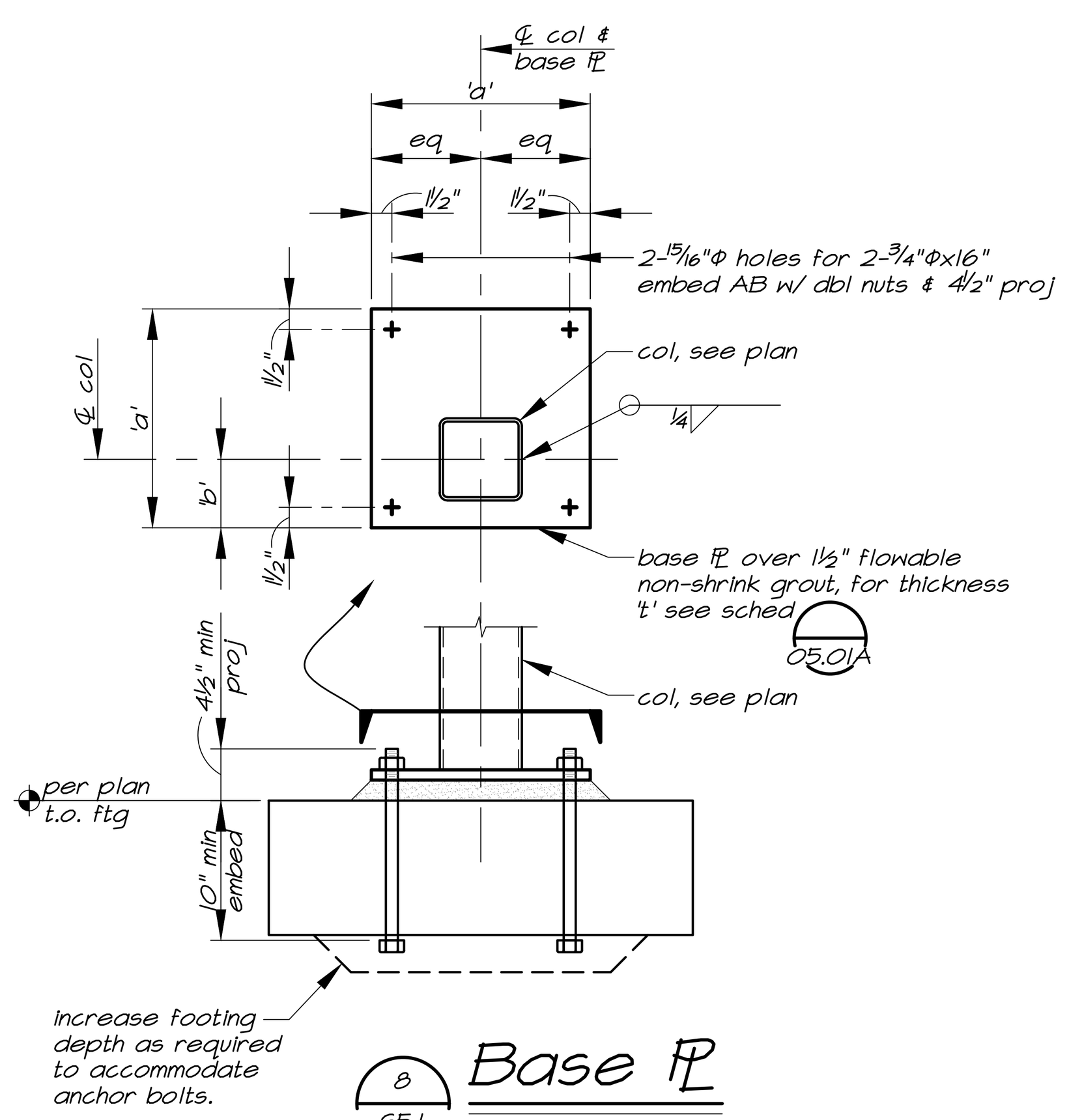
6 / S5.1 Base ℙ Schedule

n.t.s.



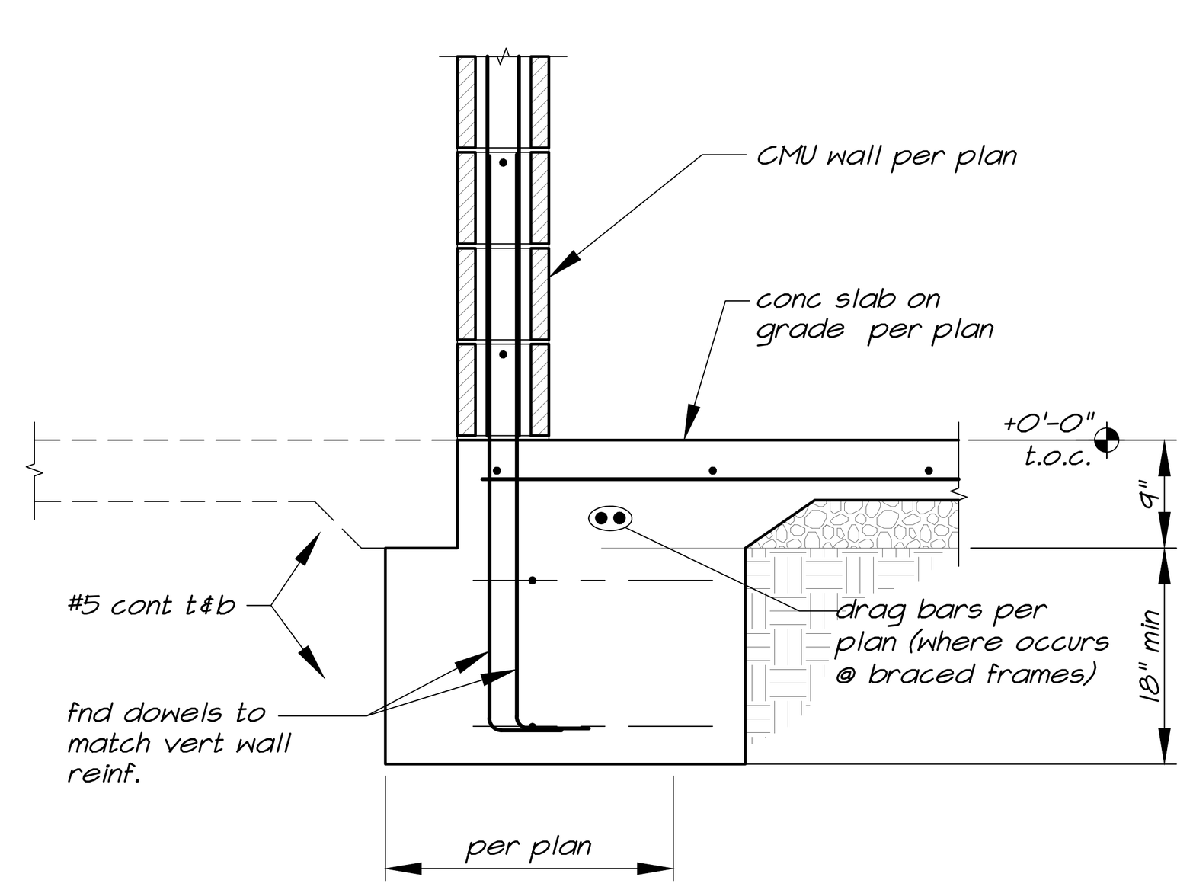
7 / S5.1 Base ℙ

1"=1'-0"



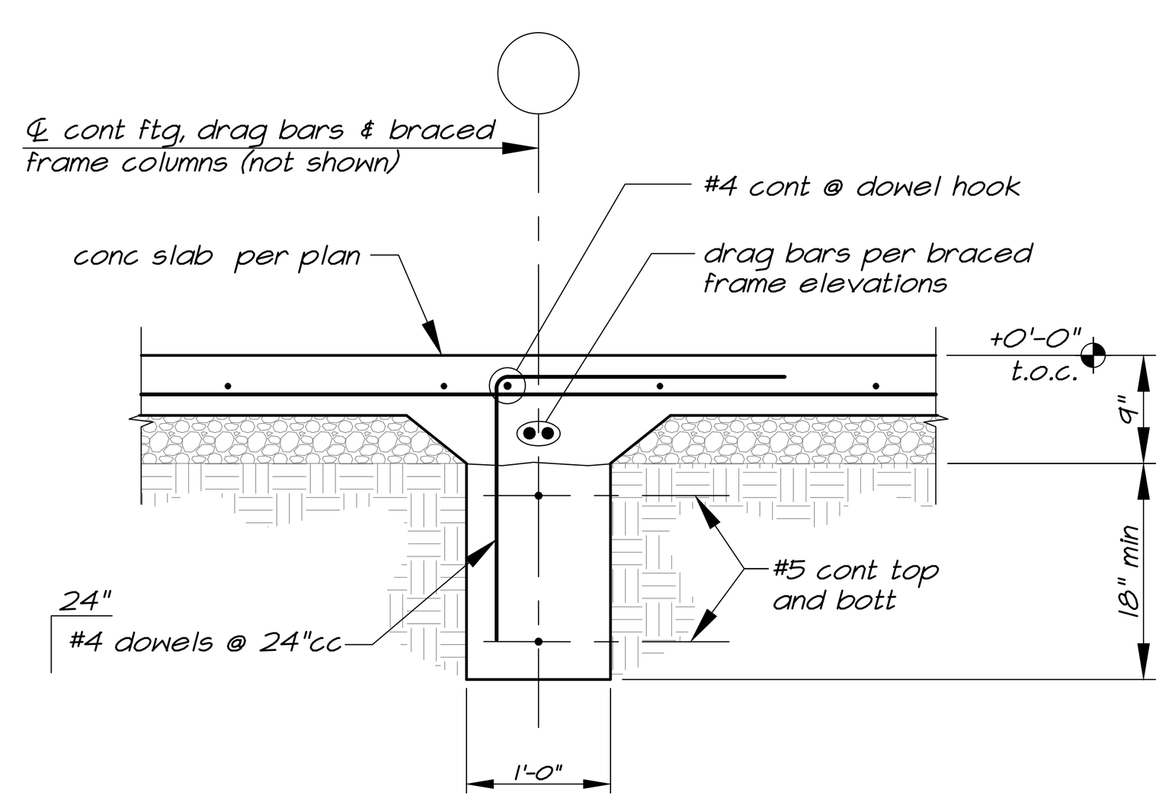
8 / S5.1 Base ℙ

1"=1'-0"



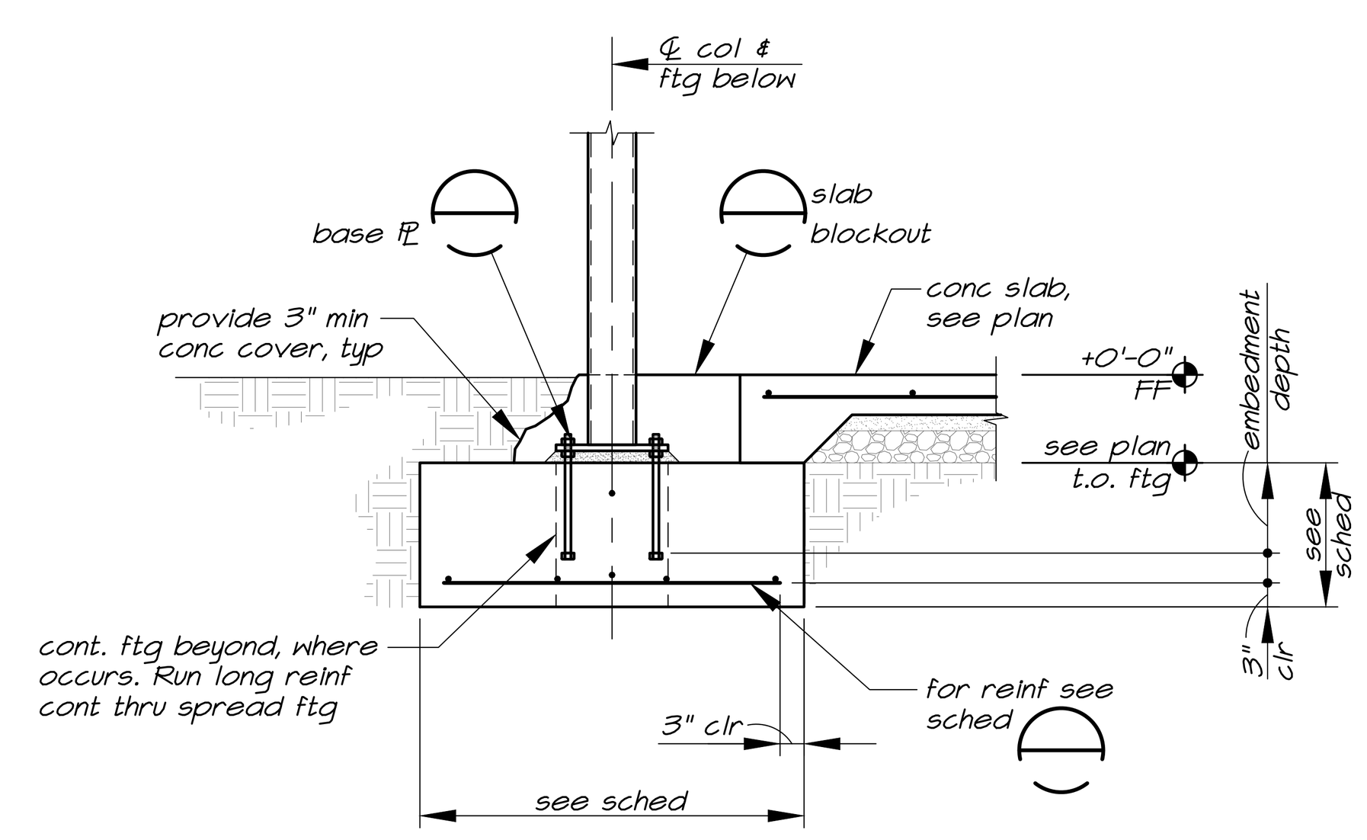
1 / S5.1 Continuous Footing

¾"=1'-0" perimeter



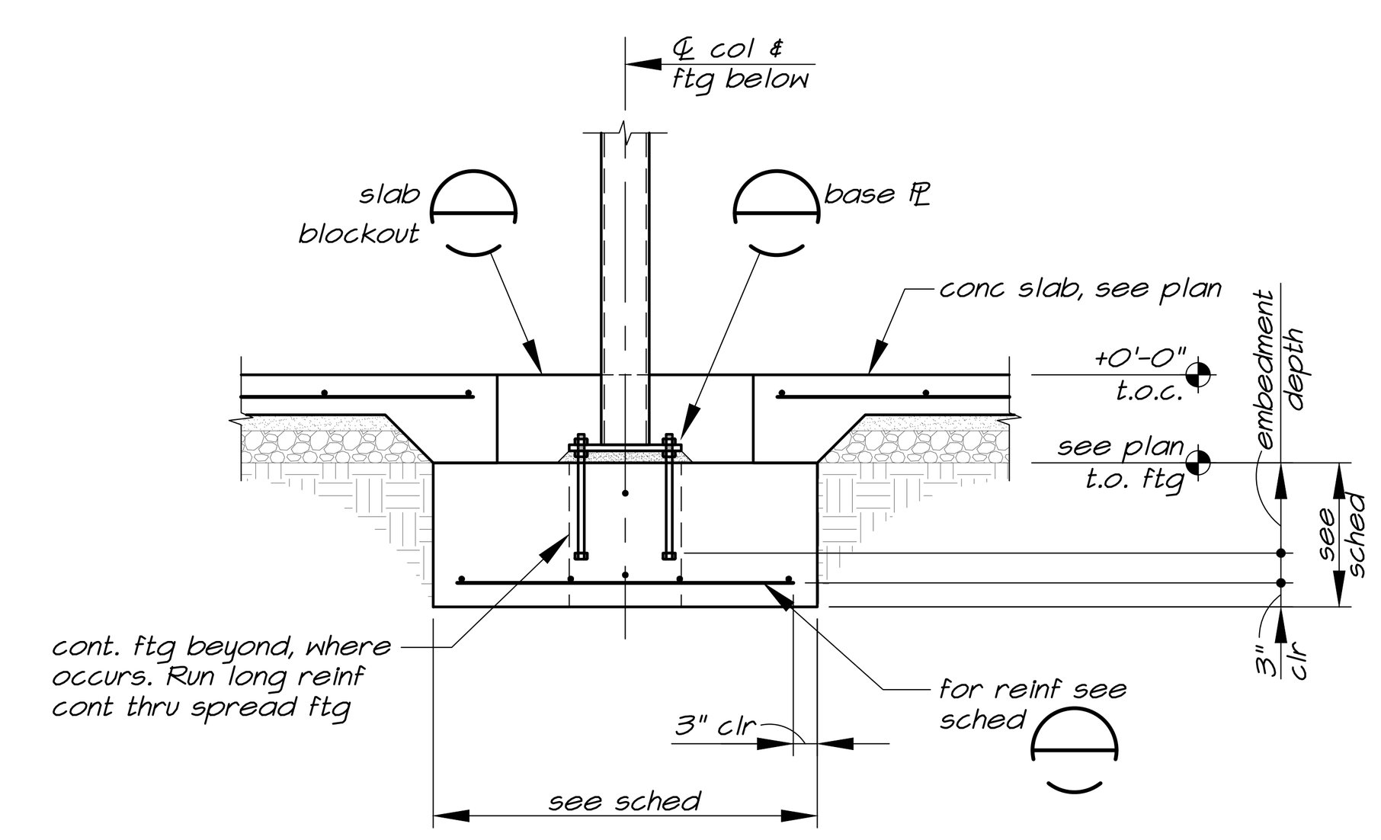
2 / S5.1 Continuous Footing

¾"=1'-0" interior



3 / S5.1 Column Footing

¾"=1'-0" perimeter



4 / S5.1 Column Footing

¾"=1'-0" interior

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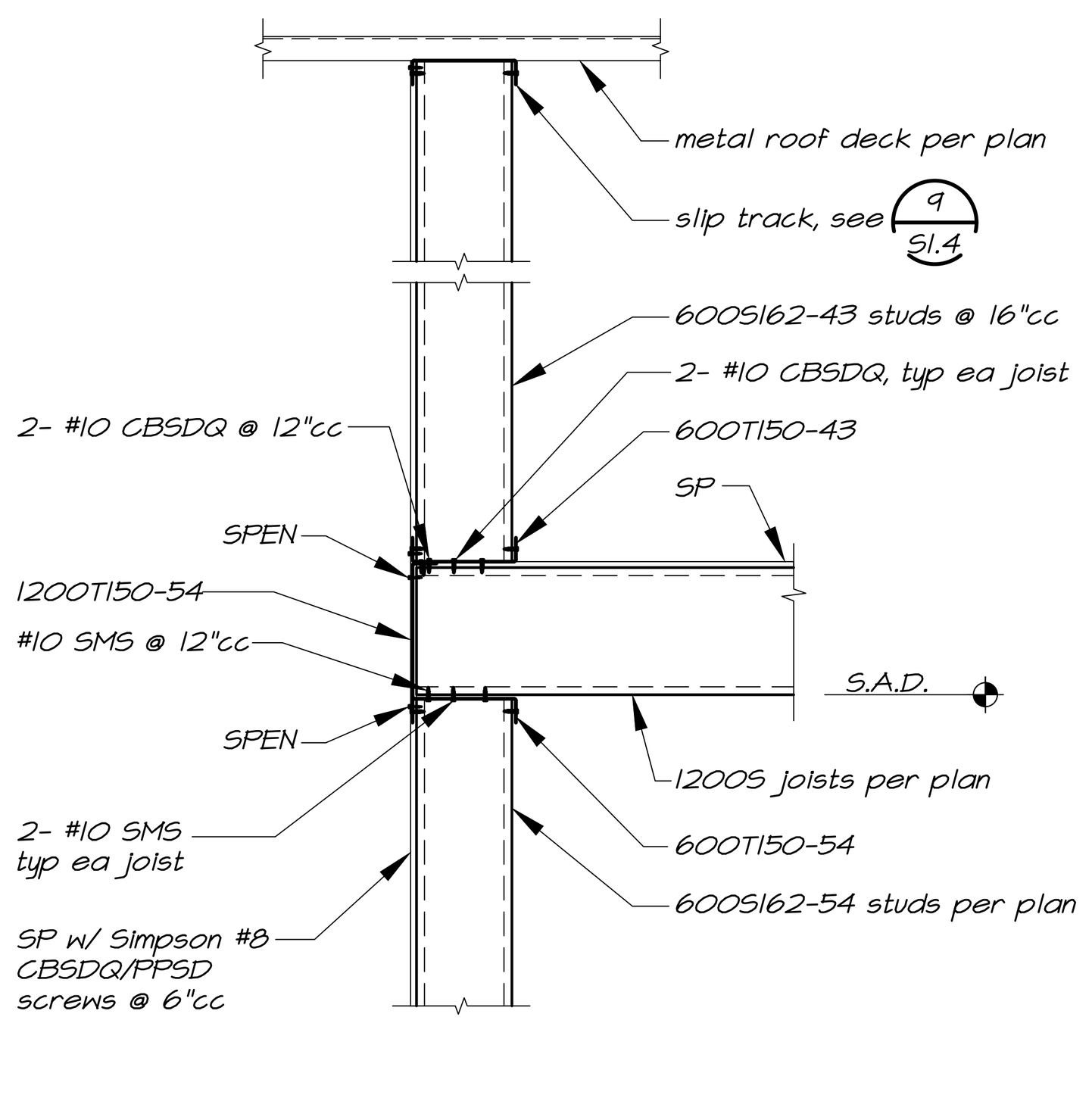
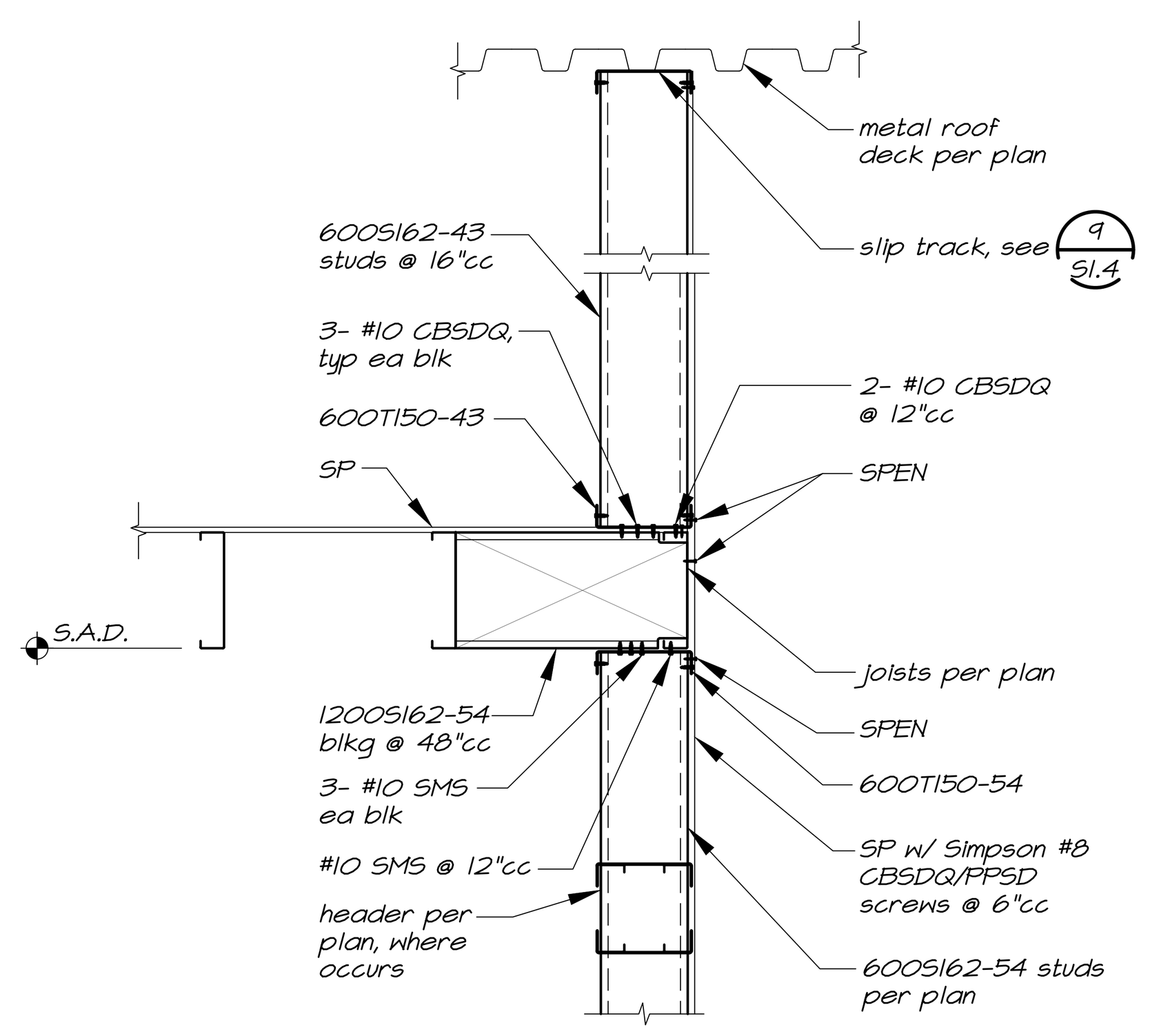


10 S5.2 **Detail**
1"=1'-0"



11 S5.2 **Detail**
1"=1'-0"

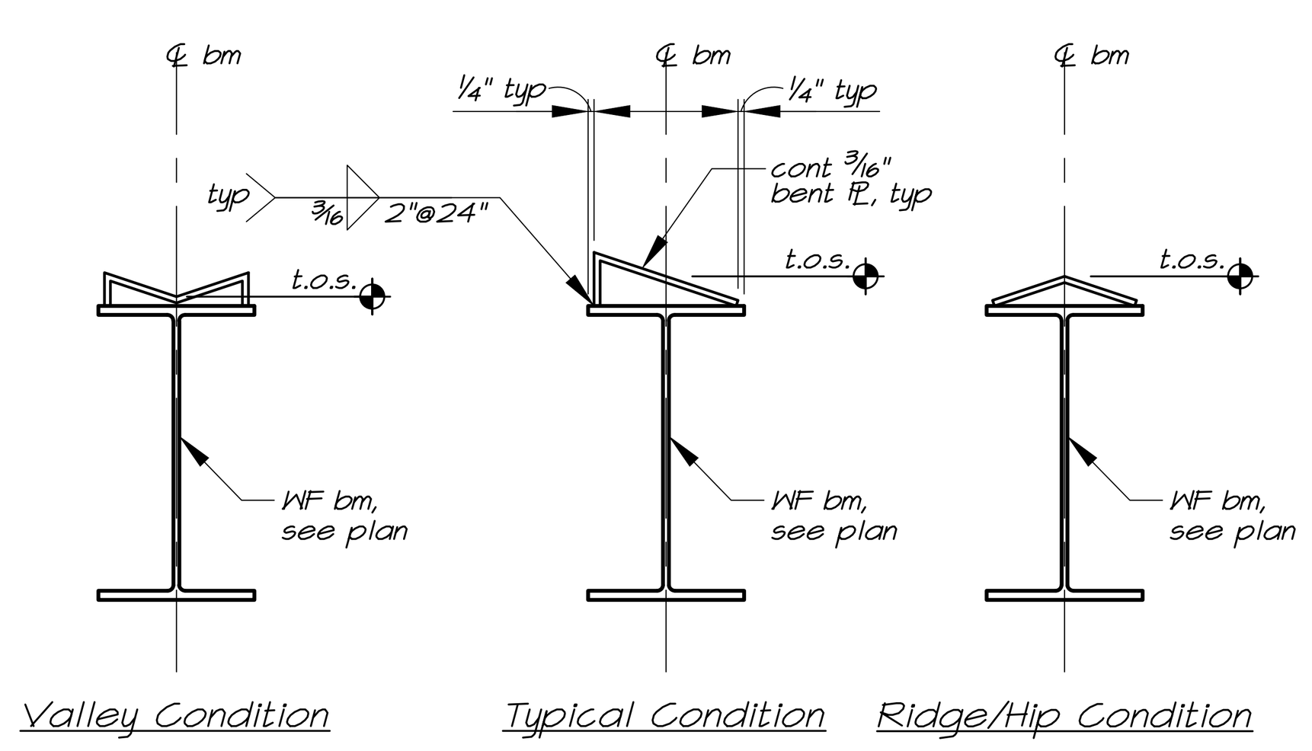
Deck Type	Depth & Gauge	Perpendicular Supports	Parallel Supports	Side Laps
N (roof)	3"x20ga	3-P.A.F. per sheet	P.A.F. @ 24"cc	VSC2 @ 24"cc

1. P.W. = 1"Φ (visible size) puddle weld
2. P.A.F. = Hilti Powder Actuated Fastener. See P.A.F. notes on sheet S1.1
   VSC2 = side lap connection w/ Verco PunchLok II system or (ASC Delta Grip system, or approved equal)
3. Metal decking shall be Verco or ASC, of type and gauge shown on plans and fastened as shown above.
4. For typical fastening patterns see 5 S5.2
5. Deck shall be 2-span minimum, typical.

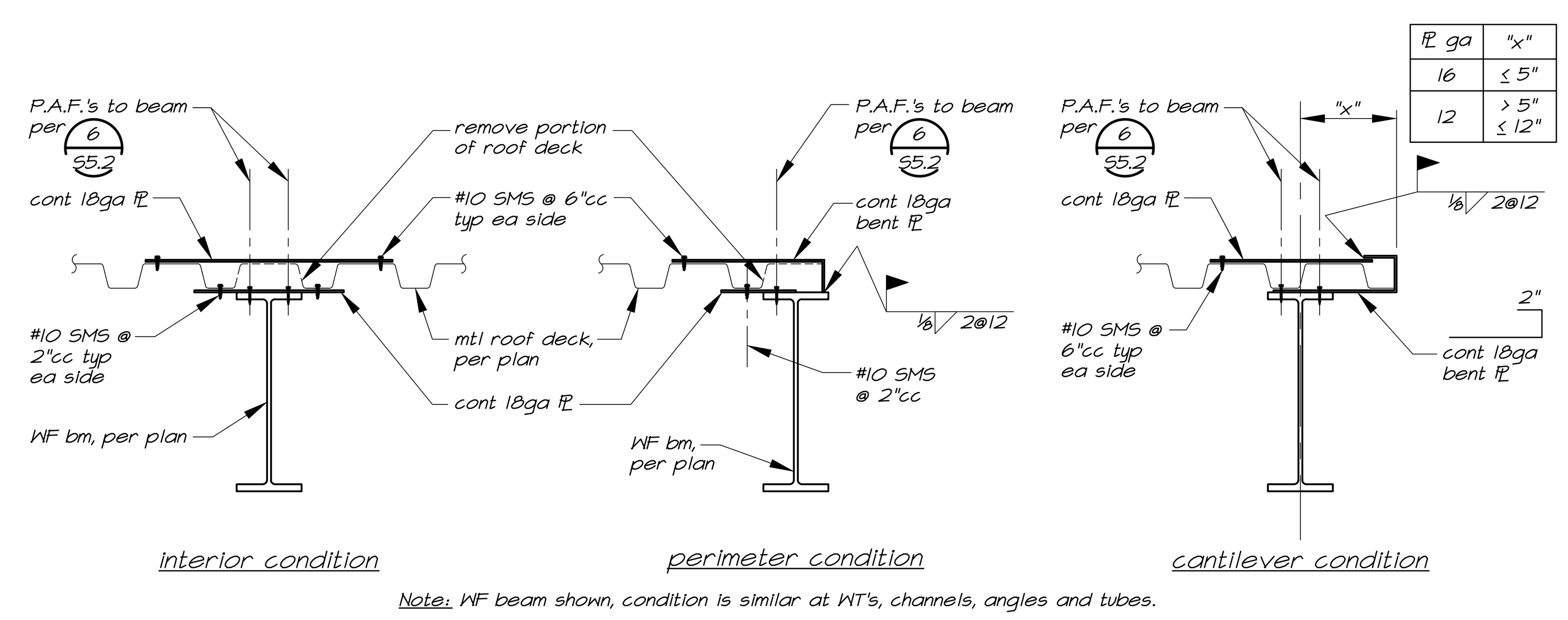
6 S5.2 **Deck Fastening Schedule**
n.t.s.

Deck Type	Profile	No. fasteners per sheet
N (roof)	24"	3

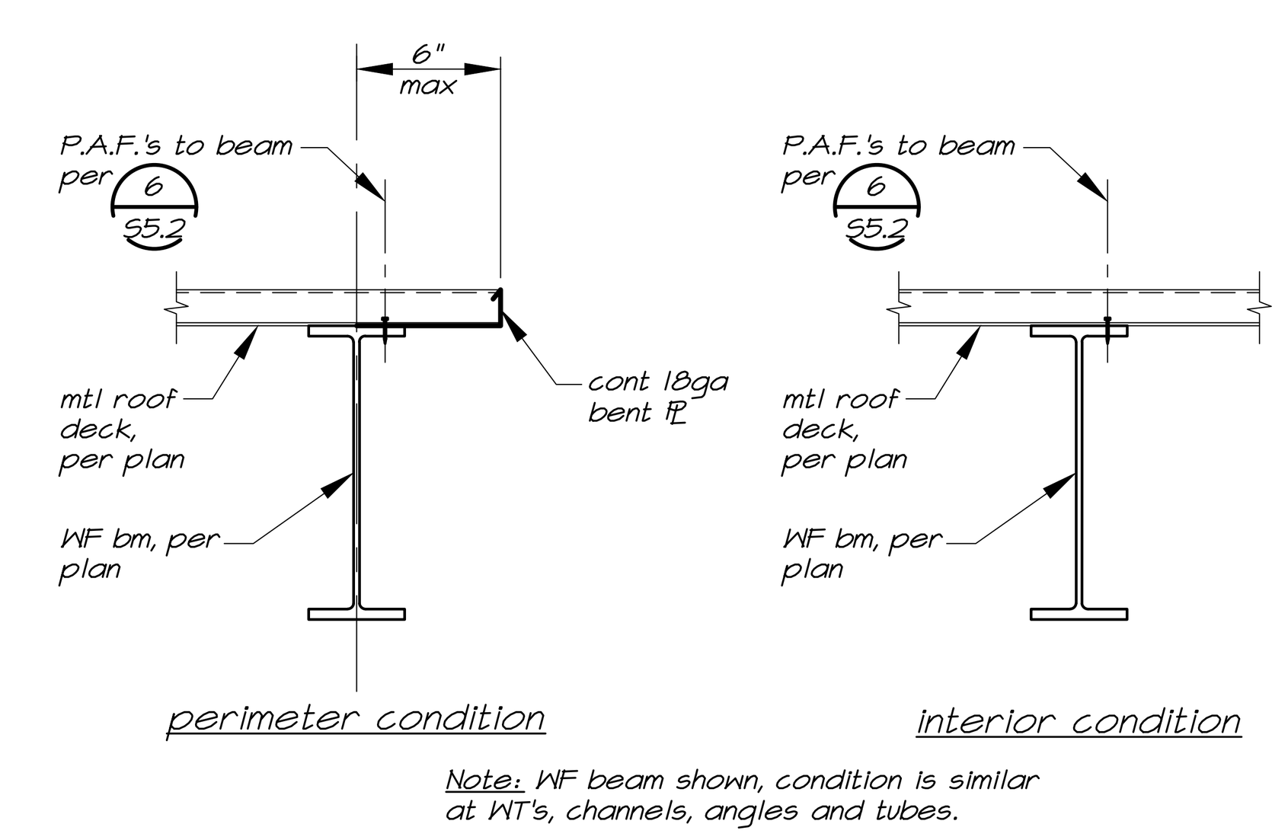
5 S5.2 **Deck Fastening Patterns**
n.t.s.



7 S5.2 **Metal Deck Support**
1½"=1'-0" @ sloped roof



8 S5.2 **Detail**
1½"=1'-0" roof deck parallel to beam

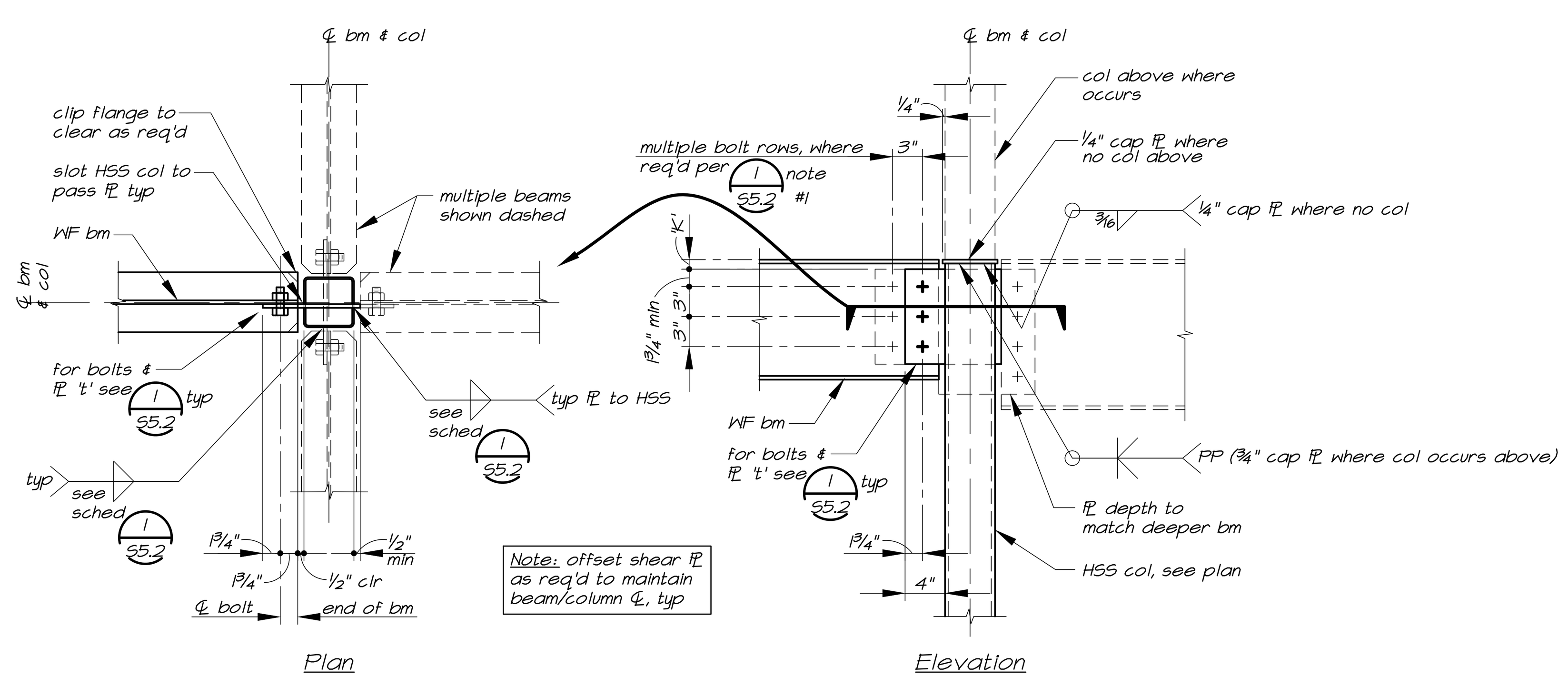


9 S5.2 **Detail**
1½"=1'-0" roof deck perpendicular to beam

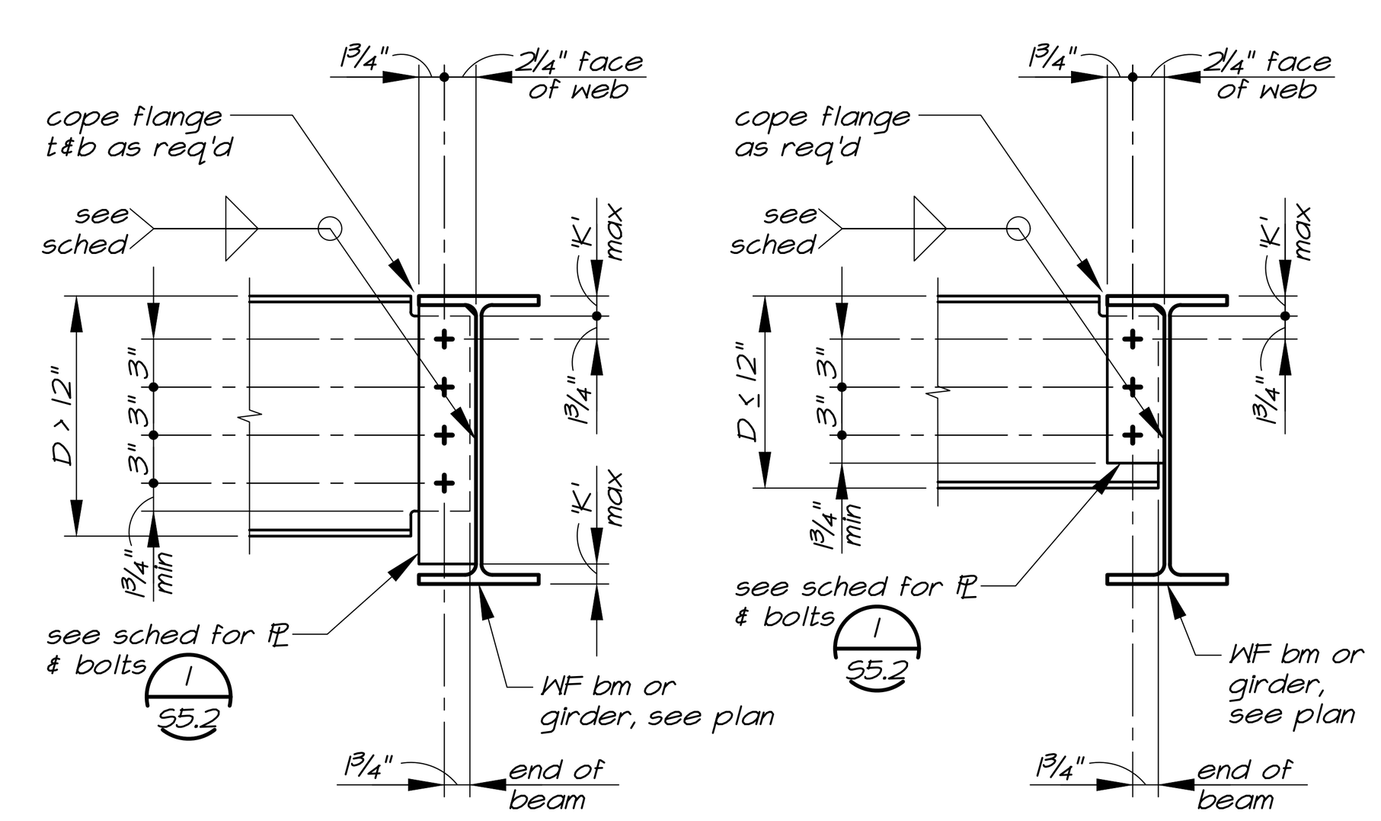
bm size	No. & Dia. A325-N Bolts per row, u.n.o.	shear ℙ thickness	W (fillet weld)
C6, C8 & C10	2 - 7/8"Φ	1/4"	1/4"
W8 & W10	2 - 7/8"Φ	1/4"	1/4"
W12 & W14	3 - 7/8"Φ	5/16"	1/4"
W16	4 - 7/8"Φ	3/8"	1/4"
W18	5 - 7/8"Φ	3/8"	1/4"
W21	5 - 7/8"Φ	3/8"	5/16"
W24	6 - 7/8"Φ	1/2"	5/16"
W27	7 - 7/8"Φ	1/2"	5/16"
W30	7 - 7/8"Φ	1/2"	3/8"
W33	8 - 7/8"Φ	1/2"	3/8"

Note:
1. Use A325-N bolts at connections, typ. A325 SC group A bolts are to be used at specific locations as indicated on framing plans. Use multiple rows of no. & dia. shown in schedule to achieve total number of bolts specified on plans. All slip critical connections shall have full-depth shear plates.

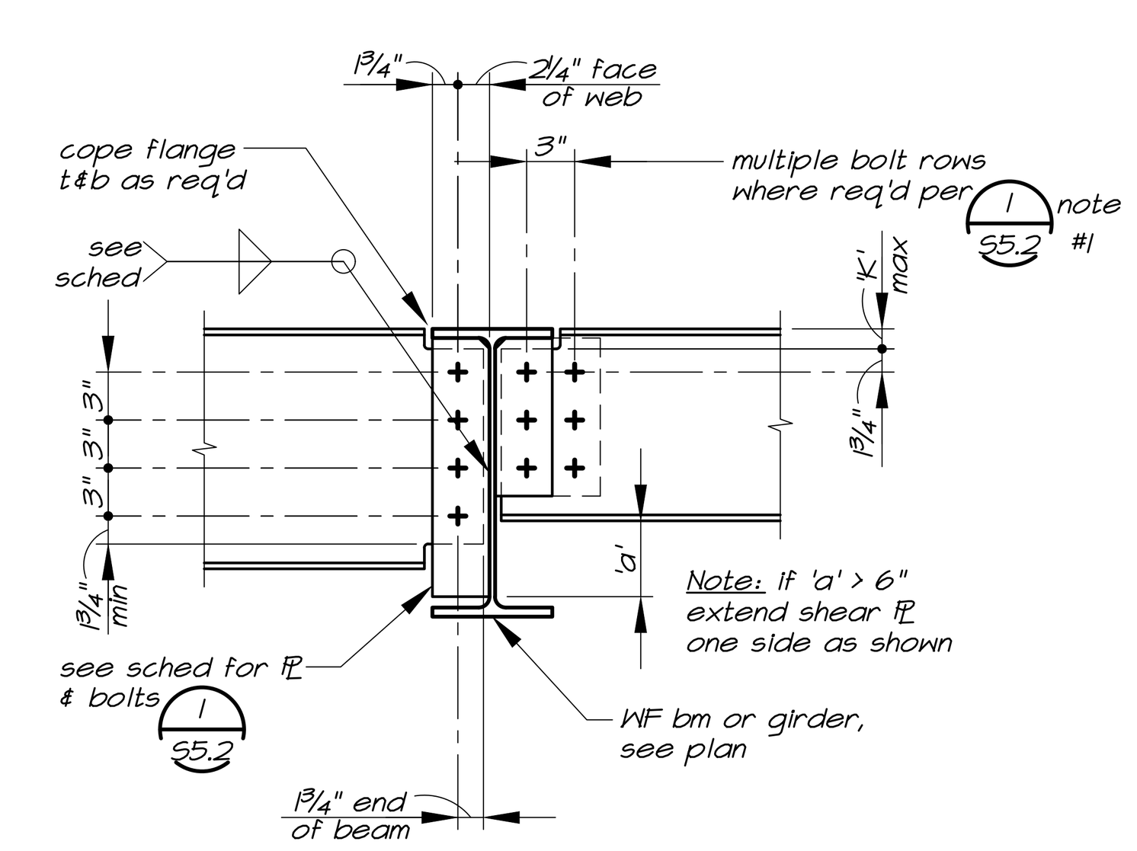
1 S5.2 **Connection Schedule**
n.t.s.



2 S5.2 **Beam to Column Connection**
1"=1'-0" one or multiple sides



3 S5.2 **Beam to Beam Connection**
1"=1'-0" one sided



4 S5.2 **Beam to Beam Connection**
1"=1'-0" two sided

GRA architecture
205 23rd Street, Suite 130
Sacramento, CA 95816
916 498-7900

REGISTERED PROFESSIONAL ENGINEER
WILLIAM D. BEVIER
No. 2271
STRUCTURAL
STATE OF CALIFORNIA
PRELIMINARY NOT FOR CONSTRUCTION

BEVIER STRUCTURAL ENGINEERING, INC.
2479 Sunrise Blvd.
Gold River, CA 95670
Tel: (916) 631-3030
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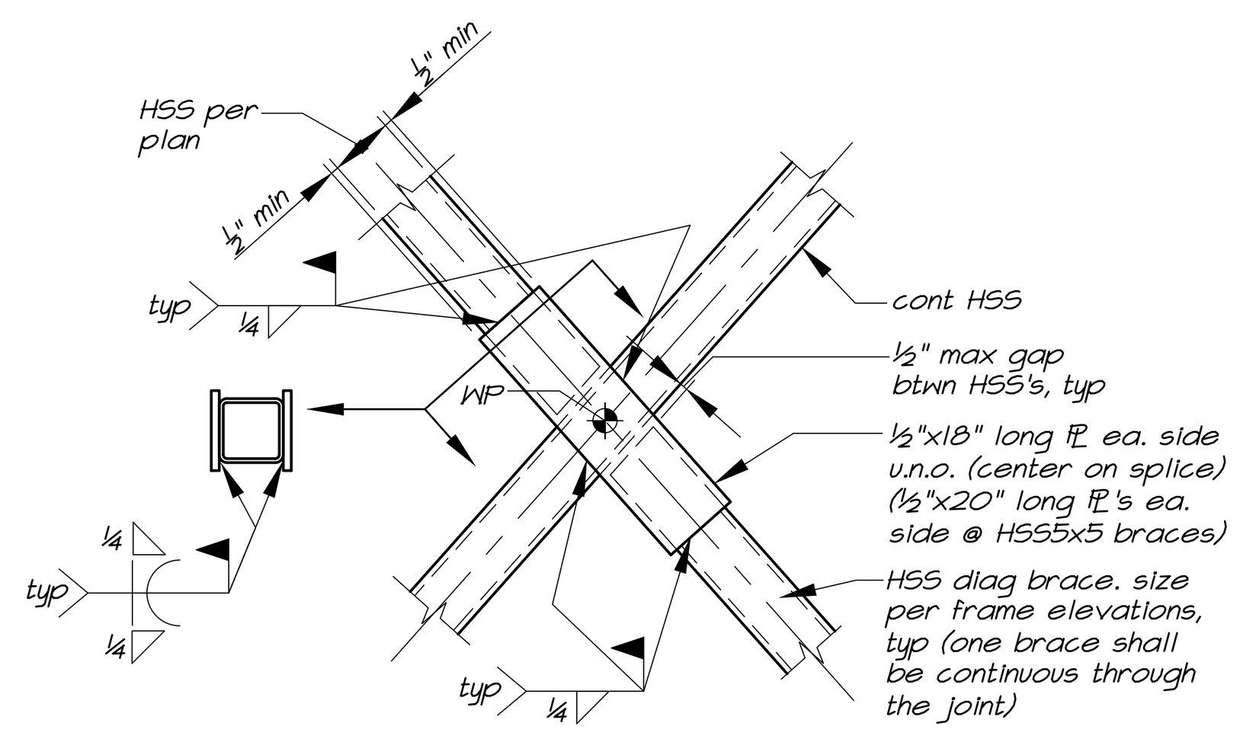
Web: www.bevier.net
Bevier Job No: 19087

DETAILS

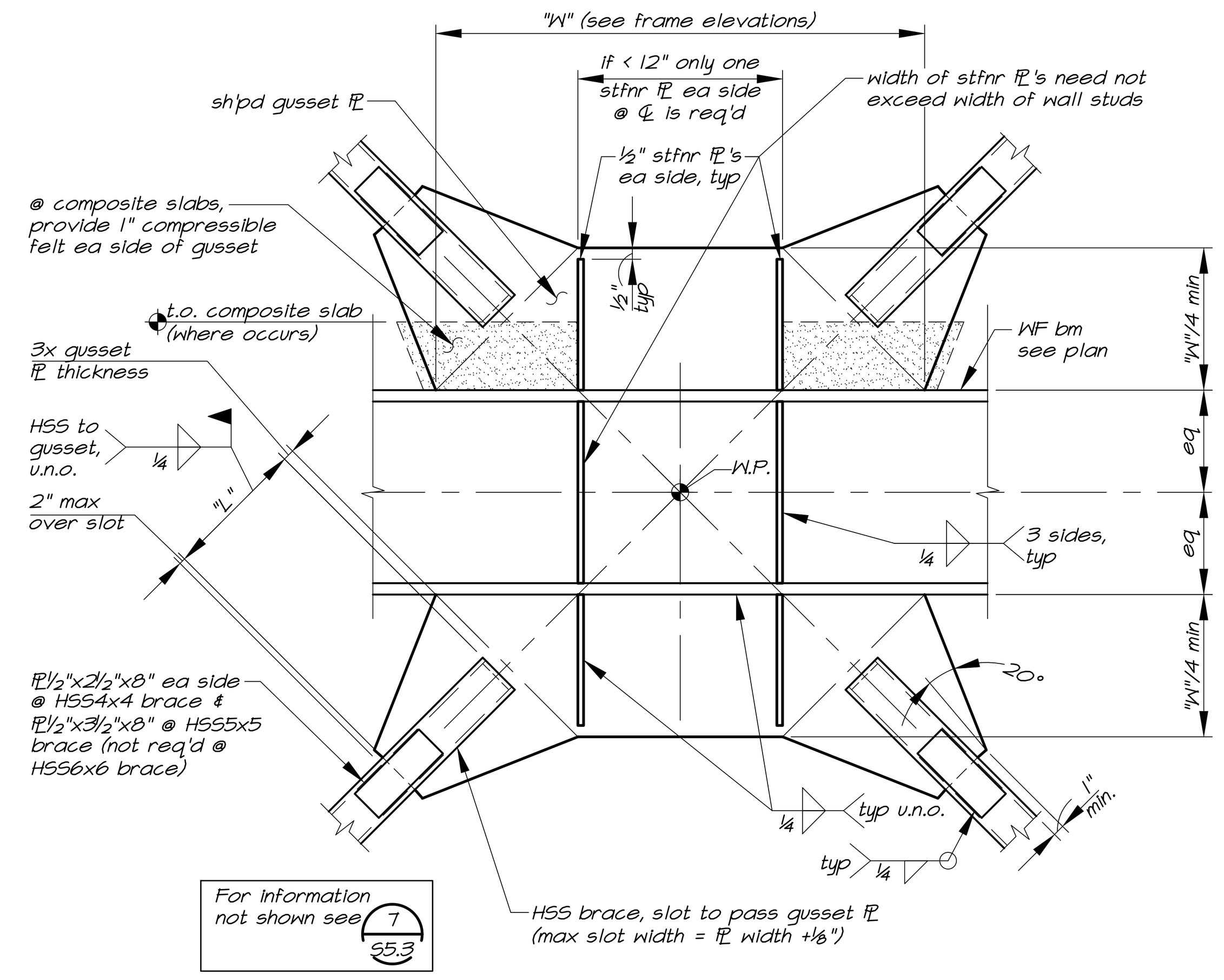
REVISIONS

DATE October 4, 2019
SCALE
DRAWN BY
JOB NO.
SHEET

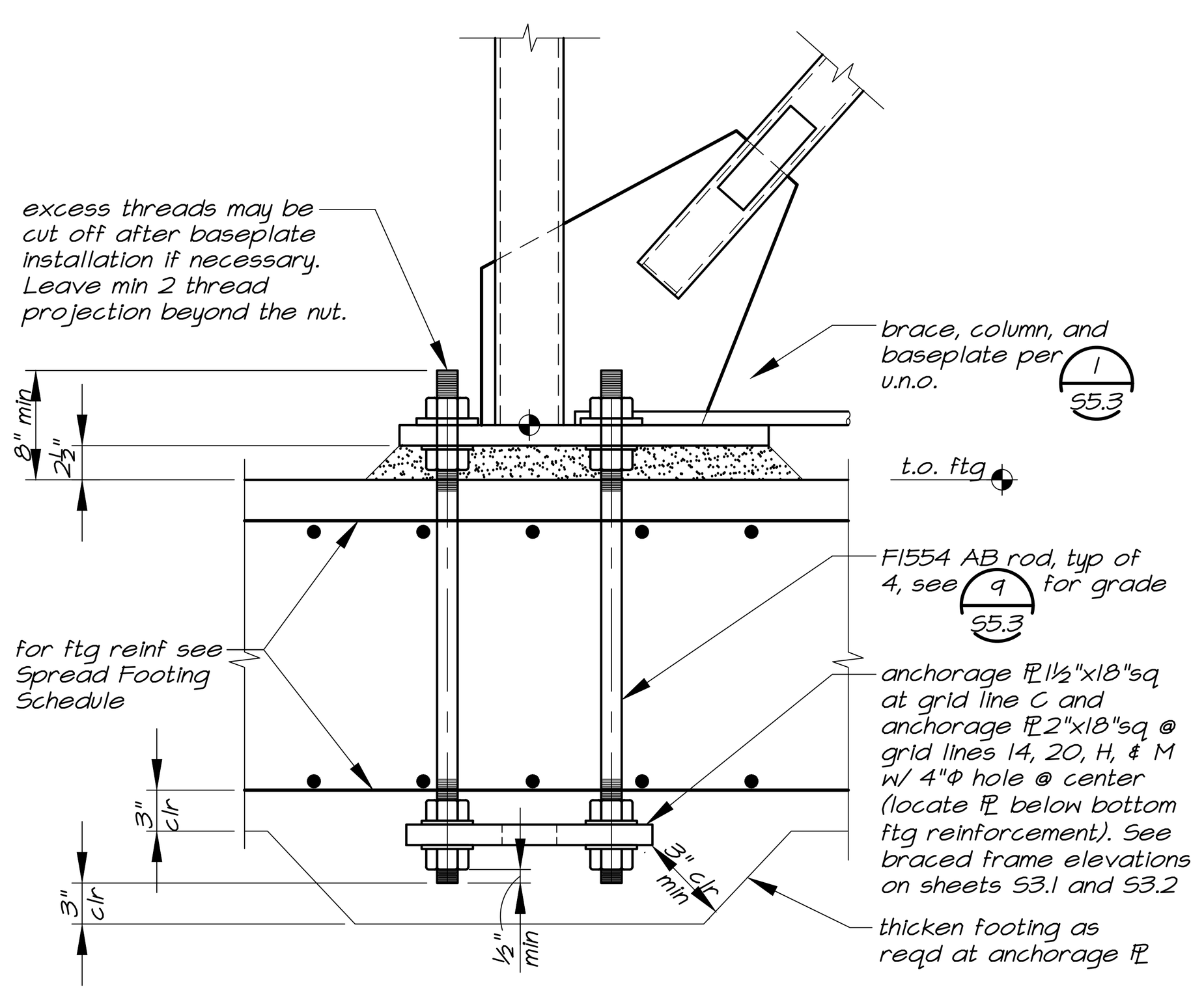
HSS brace Base Plate Connection Schedule (9/S5.3)				
mark	column size	base ℄ thickness	AB size	ref. detail
1	HSS5x5x½	1"	(4) 1"Φ x 18" embedment F1554, gr 36	6/S5.3
2	HSS5x5x½	1¼"	(6) 1⅛"Φ x 24" embedment F1554, gr 36	6/S5.3
3	HSS6x6x½ at grid line C	2"	(4) 1½"Φ F1554, gr 36	5/S5.3
4	HSS6x6x½ @ grid lines 14, 20, H, & M	2½"	(4) 1½"Φ F1554, gr 55 See braced frame elevations on sheets S3.1 and S3.	5/S5.3



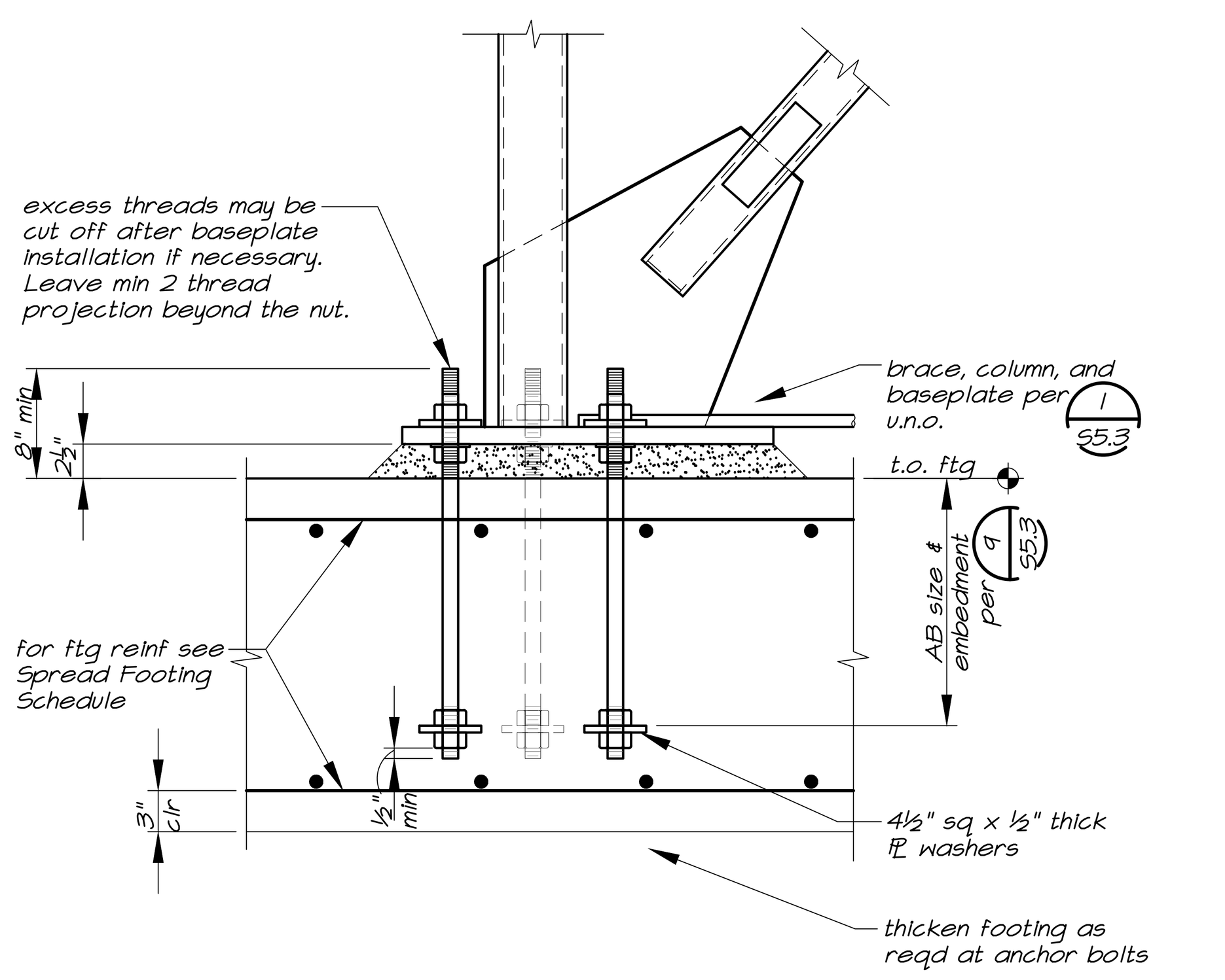
10/S5.3 Typ. X-Brace Connection
1"=1'-0"



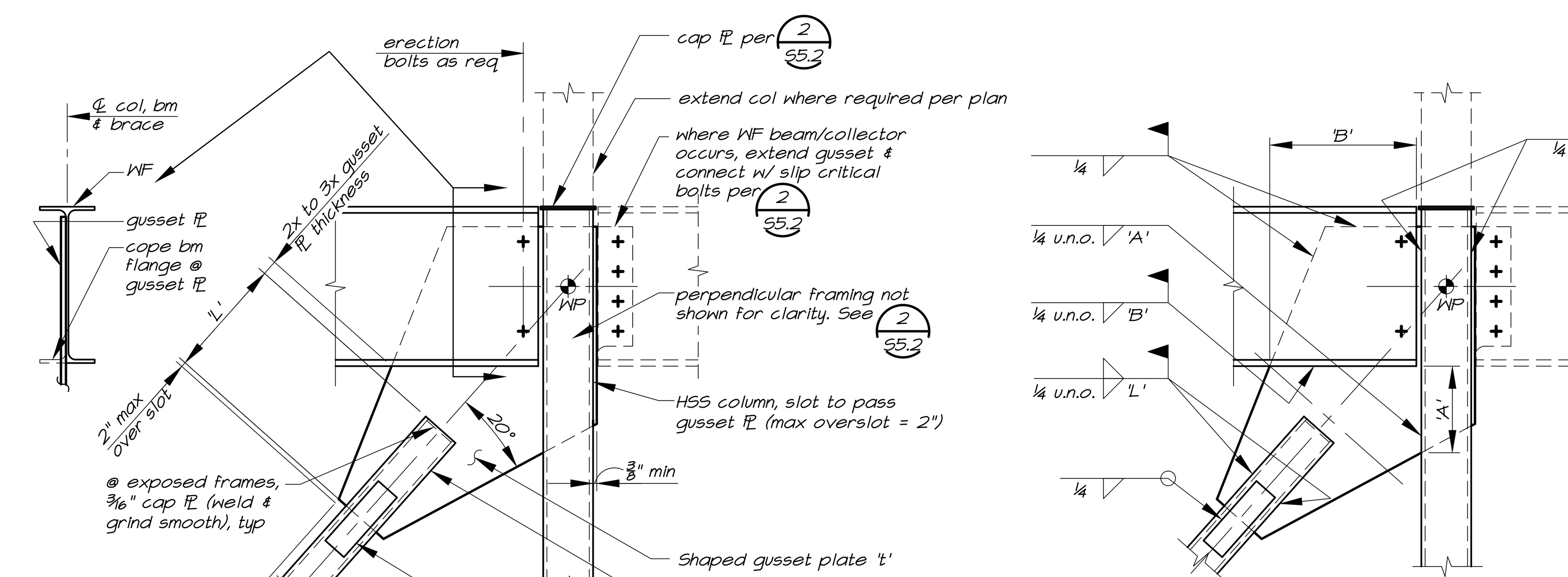
11/S5.3 Typ. Midspan Conn @ Beam
1"=1'-0"



5/S5.3 Braced Frame Anchor ℄
1"=1'-0"

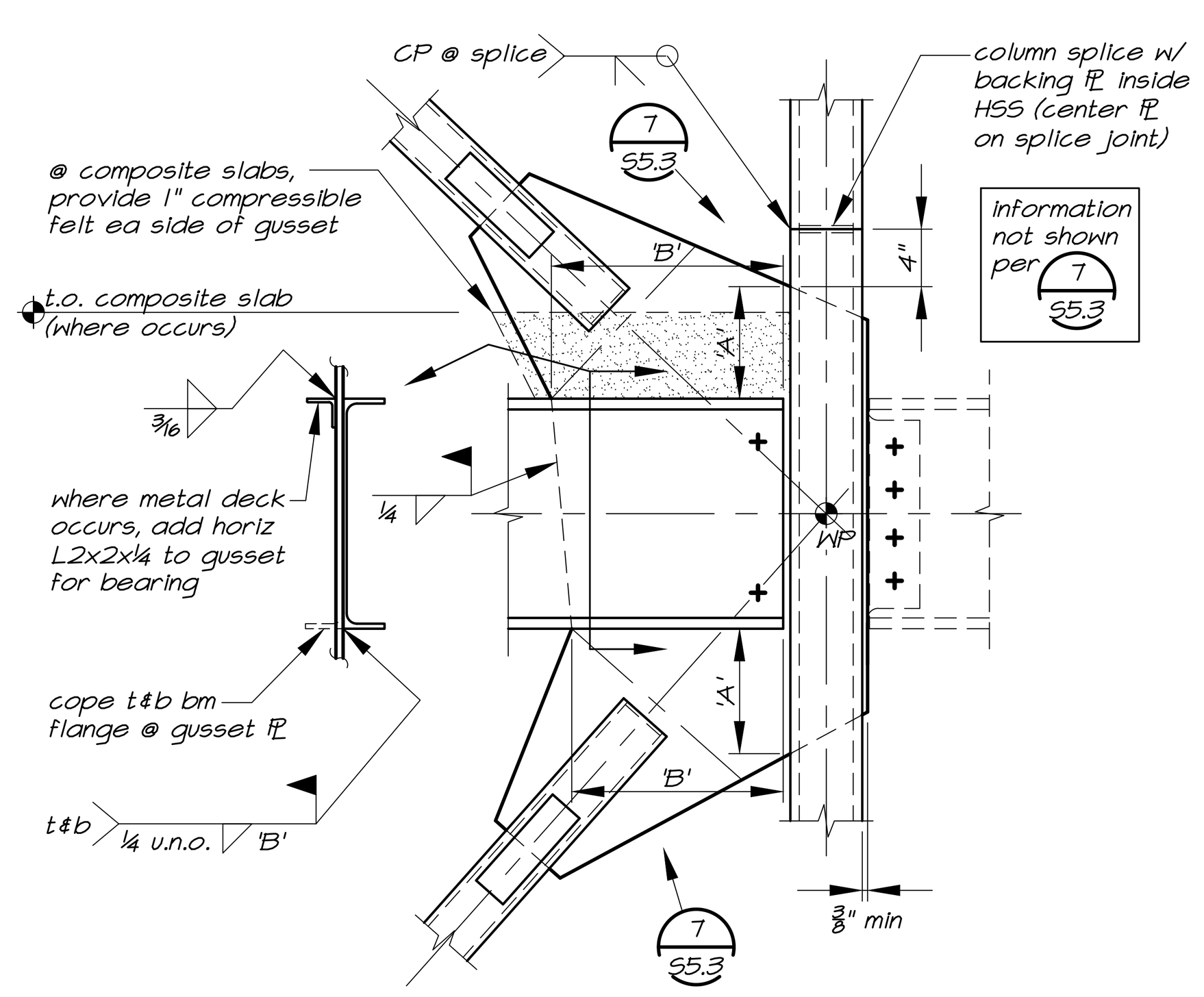


6/S5.3 Brace Frame Anchor ℄
1"=1'-0"

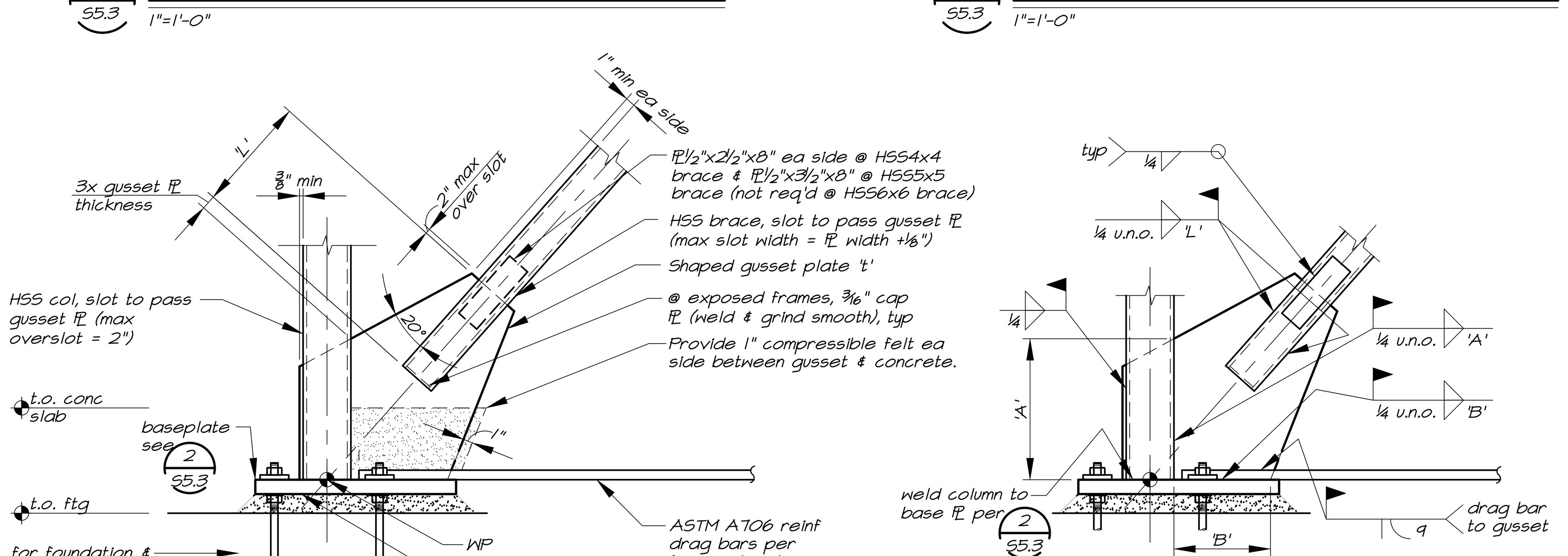


Notes:
1. The following information shall be as specified on the Frame Elevations:
'A' = length of weld of gusset to column (1" tolerance ±)*
'B' = length of weld of gusset to beam (1" tolerance ±)*
'L' = length of weld of brace to gusset (½" tolerance ±)*
't' = gusset plate thickness (½" u.n.o. on elevations).
(*The entire available length shall be welded.)
2. See braced frame elevations for other weld sizes.
3. Overslot shall terminate with a radius = ½ the slot width, grind smooth for erection and weld purposes, typ.

7/S5.3 Typical Braced Frame @ Column/Beam
1"=1'-0"

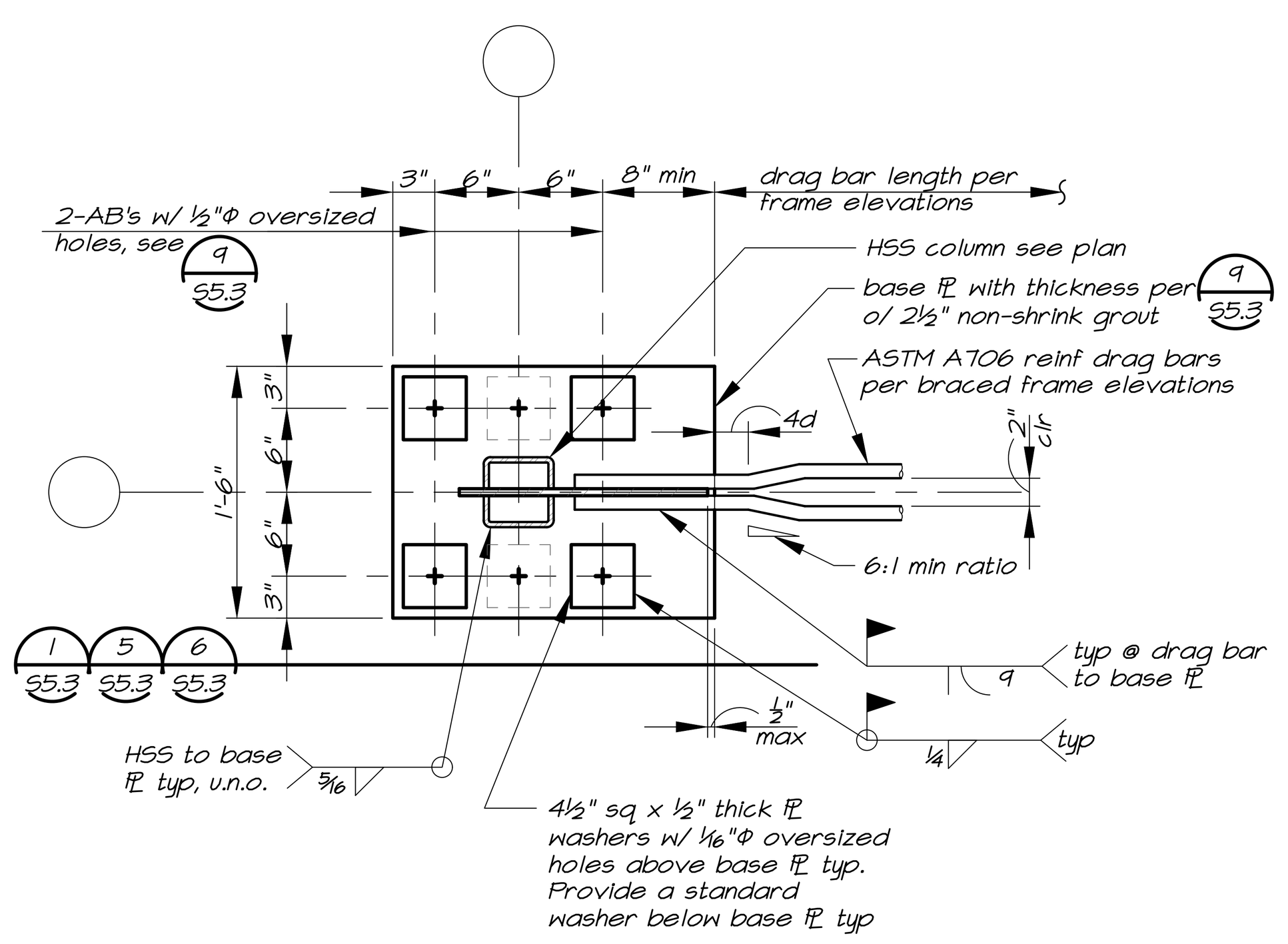


8/S5.3 Typ Brace Top & Btm @ Col
1"=1'-0"

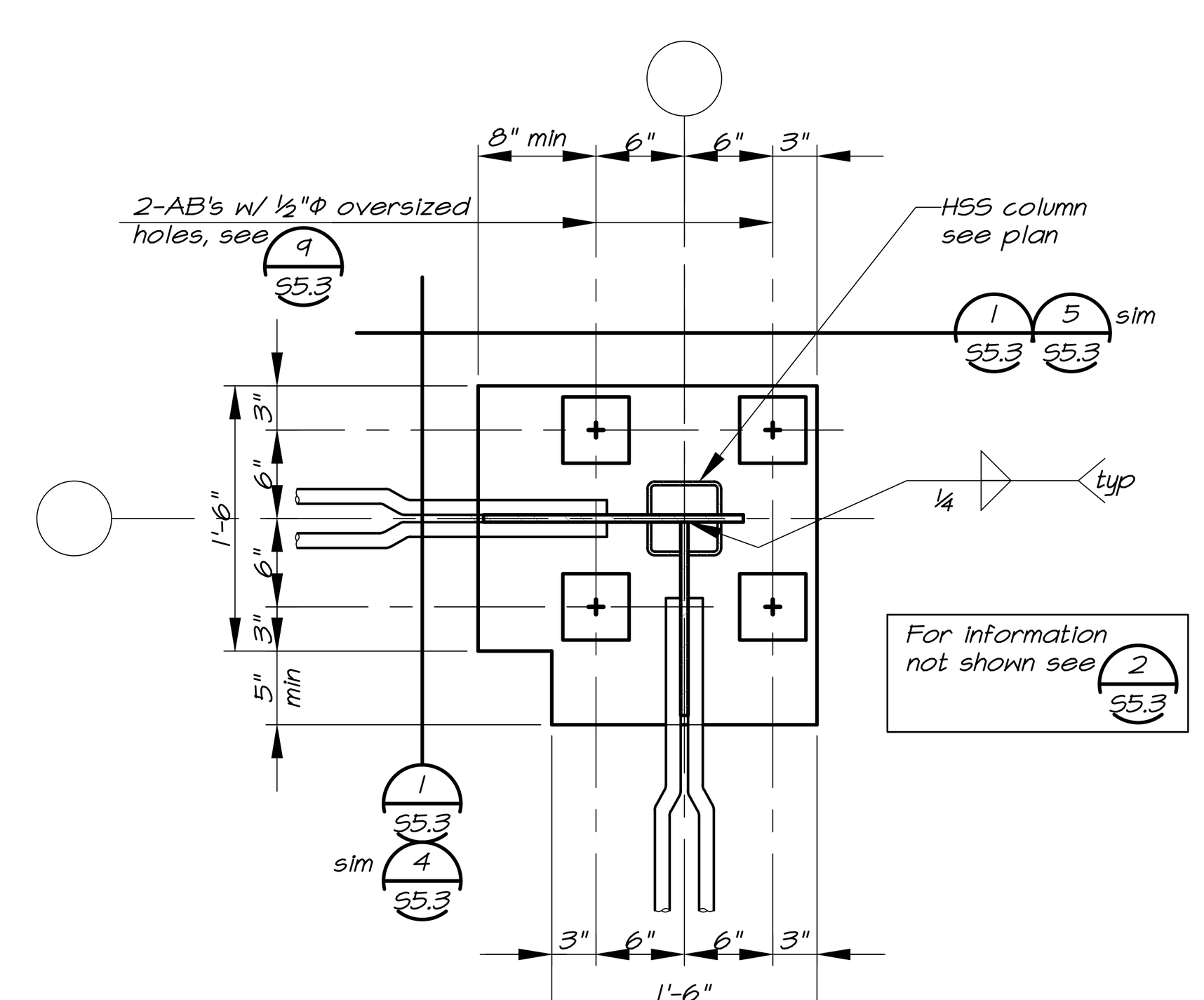


Notes:
1. The following information shall be as specified on the Frame Elevations:
'A' = length of weld of gusset to column (1" tolerance ±)*
'B' = length of weld of gusset to base ℄ (1" tolerance ±)*
'L' = length of weld of brace to gusset (½" tolerance ±)*
't' = gusset plate thickness (½" u.n.o. on elevations).
(*The entire available length shall be welded.)
2. See foundation details for spread footing, slab, curb, blockouts, etc
3. See braced frame elevations for other weld sizes.
4. Overslot shall terminate with a radius = ½ the slot width, grind smooth for erection and weld purposes, typ.

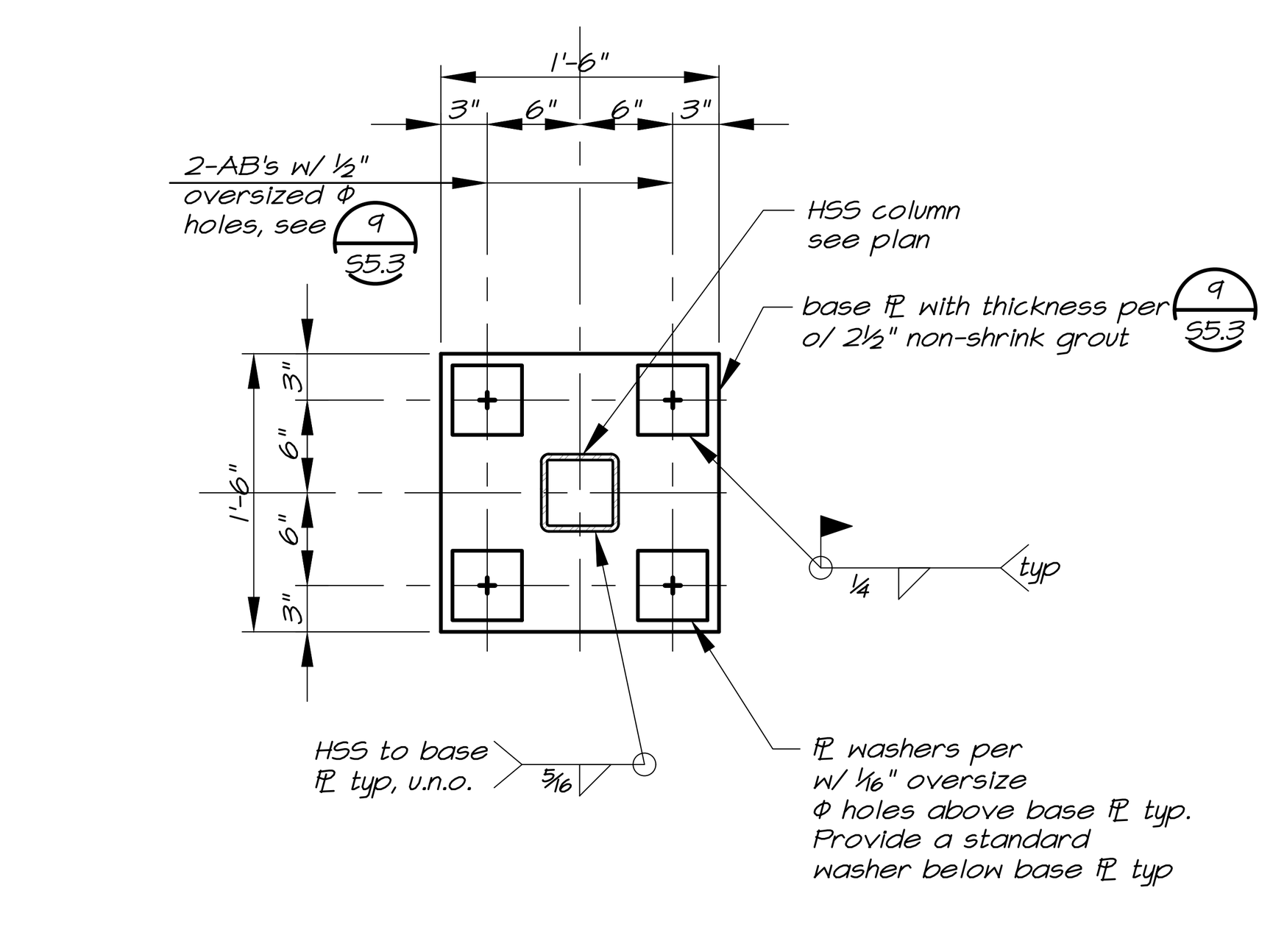
1/S5.3 Typ. Braced Frame @ Baseplate
1"=1'-0"



2/S5.3 Typ. Base @ Brace Frame
1"=1'-0"



3/S5.3 Braced Frame Corner Base
1"=1'-0"



4/S5.3 Braced Frame Base w/o Gusset
1"=1'-0"

GRA architecture
205 23rd Street, Suite 130
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SHEET

S5.3

UNIT HEATER SCHEDULE

UH 1 — UNIT HEATER – 1:
"REZNOR", MODEL UDAP–60. 60,000 BTU/HR INPUT, 49,800 BTU/HR OUTPUT, 765 CFM, FLUE KIT, 115V/1ø, 2.4 FLA, 15 MOCP, 155 WATTS THERMOSTAT, WEIGHT 75 LBS

UH 2 — UNIT HEATER – 2:
"REZNOR". MODEL UDAP–75. 75,000 BTU/HR INPUT, 62,250 BTU/HR OUTPUT, 960 CFM, FLUE KIT, 115V/1ø, 3.3 FLA, 15 MOCP, 217 WATTS THERMOSTAT, WEIGHT 80 LBS

APPLICABLE CODES

CODES:

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

A) STATE OF CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, BUILDING STANDARDS:
- 2016 EDITION OF THE CALIFORNIA BUILDING CODE.
- 2016 EDITION OF THE CALIFORNIA ELECTRICAL CODE.
- 2016 EDITION OF THE CALIFORNIA MECHANICAL CODE.
- 2016 EDITION OF THE CALIFORNIA PLUMBING CODE.
- 2016 EDITION OF THE CALIFORNIA ENERGY CODE.

B) NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) LIFE SAFETY CODE, CR.

DIFFUSER, REGISTER, & GRILLE SCHEDULE

EXAMPLE OF CALLOUT: SIZE — 8 x 8 CD1 / 8" – 240 CFM — TYPE; SIZE OF BRANCH DUCT TO DIFFUSER; BALANCE TO CFM INDICATED

SYMBOL — DESCRIPTION

CD1 — CEILING DIFFUSER – 1
"TITUS" MODEL MCD, MODULAR CORE, STEEL CONSTRUCTION, FRAME TYPE 3 FOR T–BAR INSTALLATION. DIFFUSER, SIZE AND BLOW PATTERN AS INDICATED ON DRAWINGS. FURNISH WITH AG–95 OPPOSED BLADE DAMPER AND OFF–WHITE FINISH.

CD2 — CEILING DIFFUSER – 2
"TITUS" MODEL MCD, STEEL CONSTRUCTION, FRAME TYPE 6 FOR SURFACE MOUNTING. FURNISH WITH AG–95 OPPOSED BLADE DAMPER AND OFF–WHITE FINISH. SIZE AND BLOW PATTERN AS INDICATED ON DRAWINGS.

R1 — RETURN REGISTER – 1
"TITUS" MODEL 50F, ½"x½"x1" EGG–CRATE GRID, ALUMINUM CONSTRUCTION, FRAME TYPE 3 FOR T–BAR INSTALLATION, OPPOSED BLADE DAMPER, OFF–WHITE PAINT, SIZE AS INDICATED ON DRAWINGS.

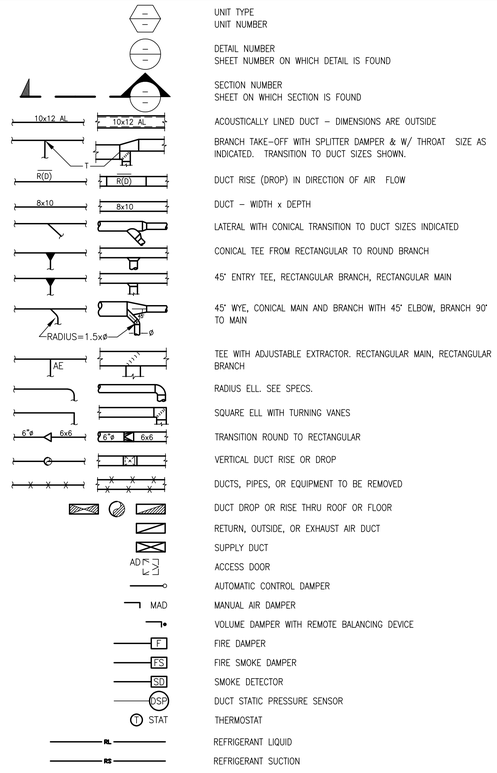
R2 — RETURN REGISTER – 2
"TITUS" MODEL 50F, ½"x½"x1" EGG–CRATE GRID, ALUMINUM CONSTRUCTION, FRAME TYPE FOR SURFACE MOUNTING, OPPOSED BLADE DAMPER, OFF–WHITE PAINT, SIZE AS INDICATED ON DRAWINGS.

SR1 — SUPPLY REGISTER – 1
"TITUS" MODEL 272RS, STEEL CONSTRUCTION, ADJUSTABLE BLADES, OPPOSED BLADE DAMPER, OFF–WHITE PAINT, SIZE AS INDICATED ON DRAWINGS.

ER — EXHAUST REGISTER – 1
SAME AS R1

SR — SIDEWALL RETURN
"TITUS" MODEL 23RL, STEEL CONSTRUCTION, OPPOSED BLADE DAMPER, OFF–WHITE PAINT, SIZE AS INDICATED ON DRAWINGS.

MECHANICAL LEGEND



UNIT TYPE / UNIT NUMBER

DETAIL NUMBER / SHEET NUMBER ON WHICH DETAIL IS FOUND

SECTION NUMBER / SHEET ON WHICH SECTION IS FOUND

ACOUSTICALLY LINED DUCT – DIMENSIONS ARE OUTSIDE

BRANCH TAKE–OFF WITH SPLITTER DAMPER & W/ THROAT SIZE AS INDICATED. TRANSITION TO DUCT SIZES SHOWN.

DUCT RISE (DROP) IN DIRECTION OF AIR FLOW

DUCT – WIDTH x DEPTH

LATERAL WITH CONICAL TRANSITION TO DUCT SIZES INDICATED

CONICAL TEE FROM RECTANGULAR TO ROUND BRANCH

45° ENTRY TEE, RECTANGULAR BRANCH, RECTANGULAR MAIN

45° WYE, CONICAL MAIN AND BRANCH WITH 45° ELBOW, BRANCH 90° TO MAIN

TEE WITH ADJUSTABLE EXTRACTOR. RECTANGULAR MAIN, RECTANGULAR BRANCH

RADIUS ELL. SEE SPECS.

SQUARE ELL WITH TURNING VANES

TRANSITION ROUND TO RECTANGULAR

VERTICAL DUCT RISE OR DROP

DUCTS, PIPES, OR EQUIPMENT TO BE REMOVED

DUCT DROP OR RISE THRU ROOF OR FLOOR

RETURN, OUTSIDE, OR EXHAUST AIR DUCT

SUPPLY DUCT

ACCESS DOOR

AUTOMATIC CONTROL DAMPER

MANUAL AIR DAMPER

VOLUME DAMPER WITH REMOTE BALANCING DEVICE

FIRE DAMPER

FIRE SMOKE DAMPER

SMOKE DETECTOR

DUCT STATIC PRESSURE SENSOR

THERMOSTAT

REFRIGERANT LIQUID

REFRIGERANT SUCTION

MECHANICAL ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
ABV	ABOVE
ABC, OH	ABOVE CEILING, OVERHEAD
AC	AIR CONDITIONING
AD	ACCESS DOOR
ADA	AMERICANS W/ DISABILITIES ACT
AE	AIR EXTRACTOR
AFF	ABOVE FINISHED FLOOR
AL	ACOUSTICALLY LINED
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BR	BRANCH
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CAV	CONSTANT AIR VOLUME
CD	CONDENSATE DRAIN
CFM, f	CUBIC FEET OF AIR PER MINUTE
CFS	CUBIC FEET PER SECOND
CL	CENTERLINE
CO	CLEANOUT
CONC.	CONCRETE
CONN.	CONNECT
CR	CONDENSATE RETURN (STEAM)
CS	CURRENT SENSOR
CU	CONDENSING UNIT
CU FT	CUBIC FEET
CU IN	CUBIC INCHES
CVB	CONSTANT VOLUME BOX
CW	COLD WATER
DB	DRY BULB
DF	DOUGLAS FIR
DIA, ø	DIAMETER
DSP	DUCT STATIC PRESSURE SENSOR
EA, OA, RA, SA	EXHAUST, OUTSIDE, RETURN & SUPPLY AIR
E.C.	ELECTRICAL CONTRACTOR
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
FA	FACE AREA (SQUARE FEET)
FC	FLEXIBLE CONNECTION
FLA	FULL LOAD AMPS
FPI	FINS PER INCH
FPM	FEET PER MINUTE
GALV.	GALVANIZED
GA	GAUGE
GC	GENERAL CONTRACTOR
GSM	GALVANIZED SHEET METAL
HP	HORSE POWER
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
HZ	FREQUENCY (HERTZ)
LBS	POUNDS
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MC	MECHANICAL CONTRACTOR
MIN	MINIMUM
MPS	MEDIUM PRESSURE STEAM
(N) (E)	NEW, EXISTING
N.C.	NORMALLY CLOSED
NEG	NEGATIVE
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OP	OPERATING
PH	PHASE
POC	POINT OF CONNECTION
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTDF	PRESSURE TREATED DOUGLAS FIR
P&TRV	PRESSURE & TEMPERATURE RELIEF VALVE
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
(R) (D)	RISE, DROP
RD, OFL	ROOF DRAIN, OVERFLOW
REF	ROOF EXHAUST FAN
REQ'D	REQUIRED
RL	REFRIGERANT LIQUID
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
SAD	SEE ARCHITECTURAL DRAWINGS
SED	SEE ELECTRICAL DRAWINGS
SM	SHEET METAL
SMS	SHEET METAL SCREWS
SOV	SHUT OFF VALVE
SS	STAINLESS STEEL
SSD	SEE STRUCTURAL DRAWING
STL	STEEL
TA, FA	TO ABOVE, FROM ABOVE
TB, FB	TO BELOW, FROM BELOW
TBR	TO BE REMOVED
TCC	TEMPERATURE CONTROL CONTRACTOR
TCP	TEMPERATURE CONTROL PANEL
THK	THICK
TR	TO REMAIN
TSP	TOTAL STATIC PRESSURE
TV	TURNING VANES
TYP	TYPICAL
UG, UF	UNDERGROUND, UNDER FLOOR
UON	UNLESS OTHERWISE NOTED
UTR	UP THROUGH ROOF
VAC	VOLTS ALTERNATING CURRENT
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
WB	WET BULB
WG	WATER GAUGE
WOG	WATER OIL GAS PRESSURE RATING
WP	WATER PRESSURE
WPD	WATER PRESSURE DROP
WT, AT	WATERTIGHT, AIRTIGHT

CONDENSING UNIT SCHEDULE

SYMBOL	MANUFACTURER	MODEL	NOM. TONS	COOLING CAP (MBH)	HEATING CAP (MBH)	AMBIENT TEMP.	HSPF	SEER [EER]	COMPRESSOR RLA	COMPRESSOR LRA	FAN FLA	VOLT /PH	MCA	MOCP	OPERATING WEIGHT	REMARKS
CU 1	MITSUBISHI	PUZ–A36NKA7	3.0	36.0	38.0	105	9.90	19.10 [12.00]	8.0	13.0	1.0	208/1	25.0	31	215	
CU 2	MITSUBISHI	PUZ–A30NKA7	2.5	30.0	32.0	105	10.8	19.10 [10.00]	7.0	11.0	0.4	208/1	19.0	26	155	
CU 3	MITSUBISHI	PUZ–A12NKA7	1.0	12.0	14.0	105	12.8	27.0 [16.40]	7.0	12.0	0.5	208/1	11.0	28	95	
CU 4	MITSUBISHI	PUZ–A30NKA7	2.5	30.0	32.0	105	12.8	22.8 [11.80]	7.0	11.0	0.4	208/1	19.6	26	155	
CU 4	MITSUBISHI	PUZ–A18NKA7	1.5	19.0	–	105	–	18.5 [9.90]	7.0	12.0	0.5	208/1	11.0	28	100	

INDOOR UNIT SCHEDULE

SYMBOL	MANUFACTURER	MODEL	MAX. ESP (IN. WG.)	MAX. S.A. CFM	COOLING CAPACITY EAT °Fdb/wb	COOLING CAPACITY LAT °Fdb/wb	COOLING CAPACITY NOM. MBH	COOLING CAPACITY TOTAL MBH	HEATING CAPACITY EAT °F db	HEATING CAPACITY LAT °F db	HEATING CAPACITY TOTAL MBH	ELECTRICAL VOLT	PH	FLA	MCA	MOCP	OPERATING WEIGHT LBS.	REMARKS
FC 1	MITSUBISHI	PEAD–A36	0.5	1200	105/71	55/54	36.0	28.0	30	100	29.0	208	1	2.64	3.30	–	90	1,2,3,4,5,
FC 2	MITSUBISHI	PEAD–A30	0.5	1000	105/71	55/54	30.0	24.0	30	100	25.0	208	1	2.18	2.73	–	70	1,2,3,4,5
FC 3	MISTUBISHI	PLA–A12	0.5	350	105/71	55/54	12.0	9.80	30	100	10.0	208	1	0.36	1.00	–	55	1,2,3,4,5
FC 4	MISTUBISHI	PLA–A30	0.5	1000	105/71	55/54	29.8	23.1	30	100	32.0	208	1	0.74	1.00	–	60	1,2,3,4,5
FC 5	MISTUBISHI	PKA–A18	0.5	350	105/71	55/54	19.0	12.7	–	–	–	208	1	0.33	1.00	–	30	1,2,3,4,5

PROVIDE
1. MERV 8 FILTER.
2. CONDENSATE OVERFLOW SWITCH FOR UNIT SHUTDOWN.
3. 7–DAY PROGRAMMABLE THERMOSTAT

AIR CONDITIONING UNIT SCHEDULE

SYMBOL	MANUFACTURER	MODEL	NOMINAL TONS	COOLING CAPACITY TOTAL MBH	SENSIBLE MBH	EDB °F	EWB °F	AMB °F	SEER	EER	FAN CFM	ESP IN WG	FLA	HP	BHP	OA (CFM)	HEATING CAPACITY MBH INPUT	MBH OUTPUT	TE	COMPRESSOR RLA	LRA	UNIT ELECTRICAL VOLTS	PHASE	HZ	MCA	MOCP	MIN. UNIT DICONNECT SIZE FLA	LRA	OPERATING WEIGHT LBS.	REMARKS
AC 1	CARRIER	48VG–B24	2	20.83	16.80	80	67	105	15.0	12.0	800	0.4	4.1	0.5	–	–	40	33	81	11.7	58.3	208	1	60	19.4	30	–	–	425	SEE: 1, 2, 3
AC 2	CARRIER	48VG–B30	2.5	25.06	19.84	80	67	105	15.0	12.0	1000	0.4	4.1	0.5	–	–	40	33	81	8.7	58.3	208	3	60	16.2	20	–	–	425	SEE: 1, 2, 3
AC 3	CARRIER	48VG–B24	2	20.83	16.80	80	67	105	15.0	12.0	800	0.4	4.1	0.5	–	–	40	33	81	11.7	58.3	208	1	60	19.4	30	–	–	425	SEE: 1, 2, 3
AC 4	CARRIER	48VG–B36	3	32.38	25.34	80	67	105	16.0	12.5	1200	0.4	6.0	0.75	–	–	60	49	81	11.6	73.0	208	3	60	21.7	30	–	–	500	SEE: 1, 2, 3
AC 5	CARRIER	48VG–B24	2	20.83	16.80	80	67	105	15.0	12.0	800	0.4	4.1	0.5	–	–	40	33	81	11.7	58.3	208	1	60	19.4	30	–	–	425	SEE: 1, 2, 3
AC 6	CARRIER	48HCDA05	4	47.70	37.00	80	67	105	15.6	13.0	1600	0.6	2.5	1.0	–	–	72	59	82	6.2	41	460	3	60	12.0	15	11	61	725	SEE: 1, 2, 3
AC 7	CARRIER	48VG–B24	2	20.83	16.80	80	67	105	15.0	12.0	800	0.4	4.1	0.5	–	–	40	33	81	11.7	58.3	208	1	60	19.4	30	–	–	425	SEE: 1, 2, 3
AC 8	CARRIER	48HCDB09	8.5	97.80	78.60	80	67	105	13.8 IEER	12.0	3400	0.6	3.4	2.5	–	–	125	103	82	6.2 / 6.2	41 / 41	460	3	60	21.0	25	22	116	1250	SEE: 1, 2, 3

PROVIDE:
1. 7 DAY PROGRAMMABLE THERMOSTAT.
2. DISPOSABLE FILTER.
3. ECONOMIZER W/ POWER EXHAUST

EVAPORATIVE COOLER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	CFM	ESP	% EFFICIENCY	EDB	EWB	LDB	DRIVE	FAN RPM	FAN MHP	FAN VOLTS	FAN PH	OPERATING WEIGHT LBS.
EVP 1	CHAMPION	AD15012B	8,800	0.60	75	105	67	---	BELT	368	2.0	460	3	1025
EVP 2	CHAMPION	AD15012B	10,000	0.60	75	105	67	---	BELT	405	3.0	460	3	1075

PROVIDE:
1. CURB
2. FILL KIT
3. DOWN DISCHARGE
4. SINGLE POINT ELECTRICAL CONNECTION
5. ON/OFF/COOLING CONTROL PANEL
6. EVP–1: MOTOR–110464–9, PUMP–110467 1.2 AMPS, 73 WATTS
7. EVP–2: MOTOR–110465–9, PUMP–110467 1.2 AMPS, 73 WATTS

PACKAGED TERMINAL HEAT PUMP UNIT

SYMBOL	MANUFACTURER	MODEL		COOLING CAPACITY TOTAL MBH	COOLING CAPACITY SENSIBLE MBH	EDB °F	EWB °F	AMB °F	EER @ ARI	FAN CFM	FAN ESP IN WG	FAN AMPS	HEATING CAPACITY TOTAL (REVERSE) MBH	HEATING CAPACITY AMB °F	HEATING CAPACITY EDB °F	HEATING CAPACITY COP	SUPPLEMENTAL HEAT (FOR DEFROST CYCLE ONLY) KW	SUPPLEMENTAL HEAT (FOR DEFROST CYCLE ONLY) AMPS	UNIT ELECTRICAL VOLTS	PHASE	HZ	MCA	MOCP	COMPRESSOR RLA	COMPRESSOR LRA	OPERATING WEIGHT LBS.	REMARKS
PTAC 1	LG	LP093HDUC		10.2	7.24	78	63	95	12.4	270	0.1	0.36	7.61	32	68	3.5	2.1	10.1	208	1	60	14.5	15	4.30	26	127	1,2,3,4,5,6,7,8
PTAC 2	LG	LP093HDUC		10.2	7.24	78	63	95	12.4	270	0.1	0.36	7.61	32	68	3.5	2.1	10.1	208	1	60	14.5	15	4.30	26	127	1,2,3,4,5,6,7,8

PROVIDE:
1. CORROSION PROTECTION FEATURE.
2. WALL SLEEVE AND OUTDOOR EXTRUDED ALUMINUM LOUVER
3. QUIET STC 31 CHASIS
4. LG "VERDANT" SYSTEM: ANTENNA, REMOTE WALL MOUNTED THERMOSTAT & OCCUPANCY SENSOR
6. FILTER MERV 8
7. CONDENSATE DRAIN KIT
8. 30 AMP CORD

COMPLIANCE NOTES

MECHANICAL AND PLUMBING EQUIPMENT SHALL CONFORM TO THE FOLLOWING AS STATED IN THE ENERGY EFFICIENCY STANDARDS, 2016.

1. BE CERTIFIED BY THE MANUFACTURER AS COMPLYING WITH THE EFFICIENCY REQUIREMENTS AS PRESCRIBED IN SECTIONS:
   - 110.1 APPLIANCES REGULATED BY THE APPLIANCE EFFICIENCY STANDARDS:
   - 110.2 HVAC EQUIPMENT EFFICIENCY AND PACKAGED CONTROLS:
   - 110.3 SERVICE WATER HEATING EFFICIENCY AND CONTROLS:
   - 110.4 POOL AND SPA HEATING EFFICIENCY AND CONTROLS:
   - 110.5 RESTRICTIONS ON PILOT LIGHTS:
2. BE SPECIFIED AND INSTALLED IN ACCORDANCE WITH SECTIONS.
   - 120.1 REQUIREMENTS FOR VENTILATION:
   - 120.2 REQUIRED CONTROLS FOR HVAC SYSTEMS:
     - 120.2 (H) DEMAND SHED CONTROLS.
     - 120.2 (I) ECONOMIZER FAULT DETECTION & DIAGNOSTIC.
   - 120.3 REQUIREMENTS FOR PIPE INSULATION:
   - 120.4 REQUIREMENTS FOR DUCT INSULATION:
   - 120.5 REQUIREMENTS FOR MECHANICAL SYSTEMS
   - 120.8 BUILDING COMMISSIONING
   - 120.9 REQUIREMENTS FOR COMMERCIAL BOILERS

EXHAUST FAN SCHEDULE

SYMBOL	MANUFACTURER	MODEL	CFM	ESP (IN. WG.)	SONES MAX.	ELECTRICAL MHP	ELECTRICAL VOLTS	ELECTRICAL PH	REMARKS
REF 1	GREENHECK	GB–180 –15	4400	0.500	18.5	1.5	460	3	ROOF MOUNTED. SEE NOTES BELOW.
REF 2	GREENHECK	GB–200 –15	5000	0.500	17.2	1.5	460	3	ROOF MOUNTED. SEE NOTES BELOW.
REF 3	GREENHECK	G–90–D	500	0.375	7.4	0.07	115	1	ROOF MOUNTED. SEE NOTES BELOW.
REF 4	GREENHECK	GB–101 HP–4	550	0.500	9.8	0.25	115	1	ROOF MOUNTED. SEE NOTES BELOW.

PROVIDE:
1) BACKDRAFT DAMPER
2) ROOF CURB
3) SPEED CONTROL
4) BIRDSCREEN
5) LINE VOLTAGE THERMOSTAT

GRA architecture
205 23rd Street, Suite 130
Sacramento, CA 95816
916 498-7900

LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENO, CALIFORNIA 95841

MECHANICAL LEGEND, SCHEDULES, AND NOTES

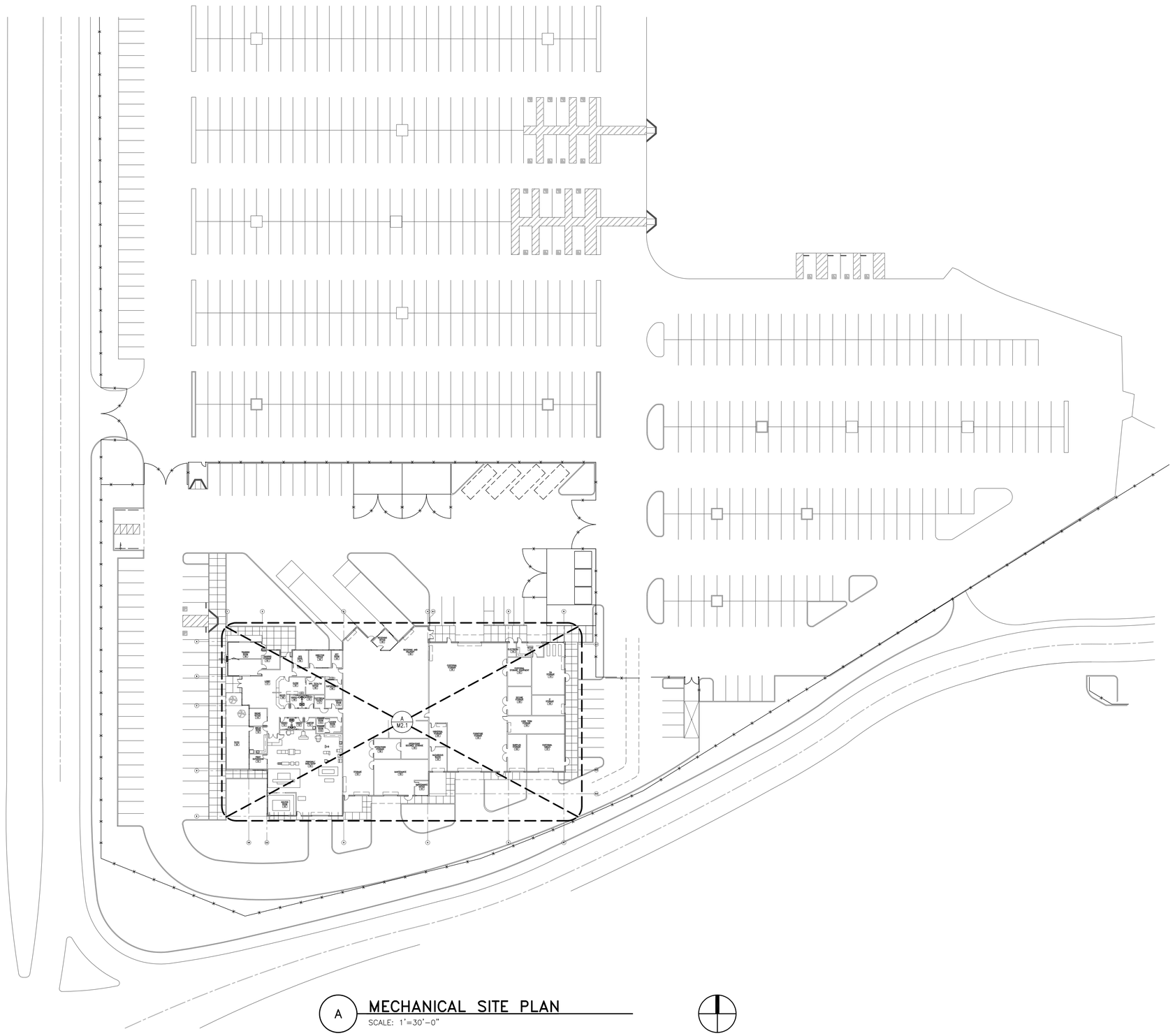
REVISIONS

DATE JULY 30, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

MO.1

TURLEY & ASSOCIATES — MECHANICAL ENGINEERING GROUP, INC.
2401 Capitol Avenue, Sacramento, CA 95816
(916) 325-1060 FAX: (916) 325-1070
Email: office@turleyhvac.com

Project Engineer:	BP	Job Number:	19186
Project Manager:	BP	Plot Date: Oct 04, 2019 - 7:33pm	
Project Drafter:	ZH	Login: ZHuder	



A MECHANICAL SITE PLAN
SCALE: 1"=30'-0"

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LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENO, CALIFORNIA 95841

MECHANICAL SITE PLAN

REVISIONS

DATE	JULY 30, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

M1.0

REGISTERED PROFESSIONAL ENGINEER BRYANT J. PROVENCAL No. M030446 Exp. 12/31/19 MECHANICAL STATE OF CALIFORNIA

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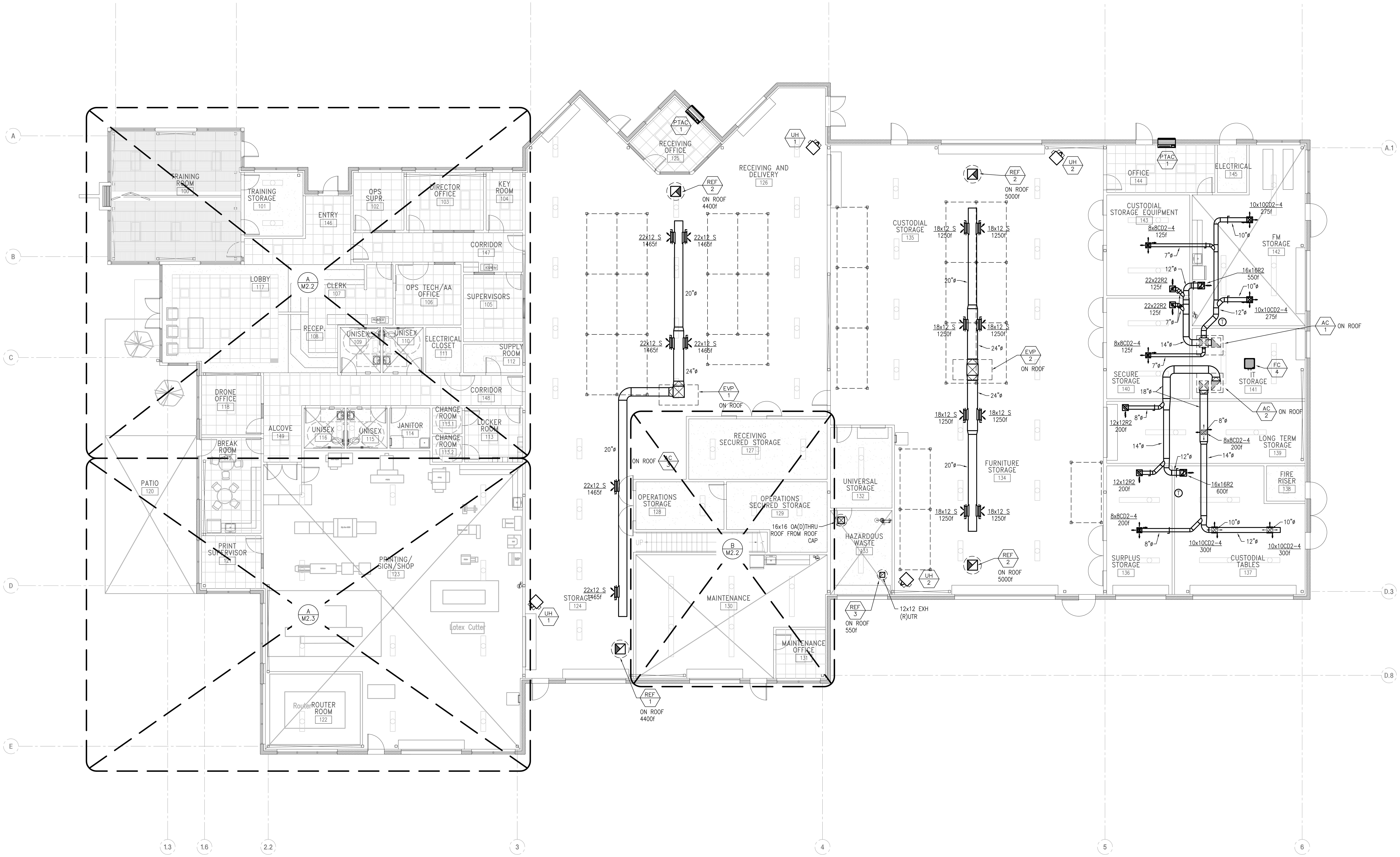
Email: office@turleymech.com

Project Engineer:	BP	Job Number:	19186
Project Manager:	BP	Plot Date: Oct 04 2019 - 7:34pm	
Project Drafter:	ZH	Login: JTrudler	



A MECHANICAL FLOOR PLAN
SCALE: 1/8"=1'-0"

GRA architecture

205 23rd Street, Suite 130
Sacramento, CA 95816
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LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENTO, CALIFORNIA 95841

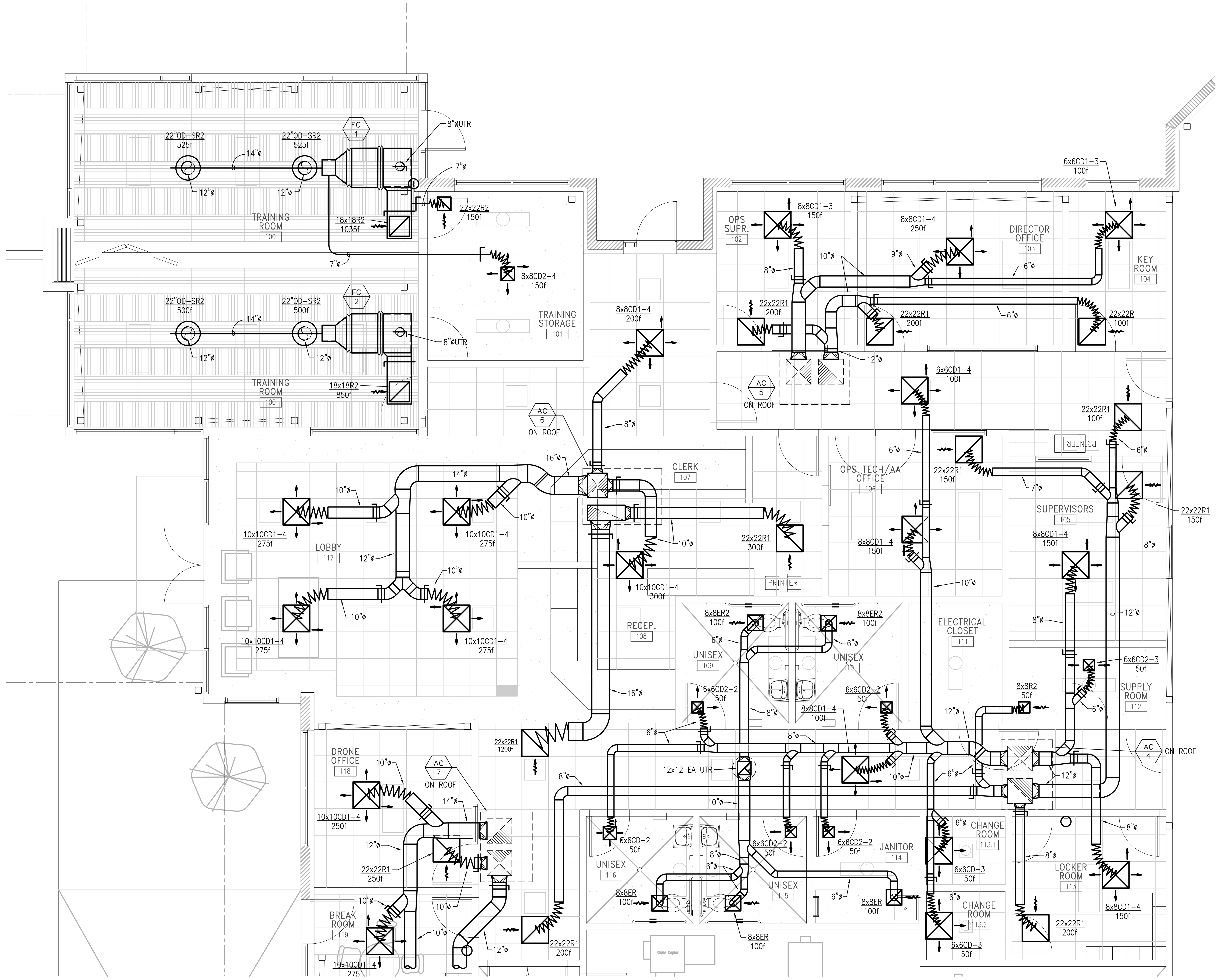
MECHANICAL FLOOR PLAN

REVISIONS

DATE	JULY 30, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

TURLEY & ASSOCIATES MECHANICAL ENGINEERING GROUP INC.

M2.1



A MECHANICAL FLOOR PLAN

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

Registered Professional Engineer
Brian J. Provencal
No. M030446
Exp. 12/31/19
Mechanical
State of California

TURLEY & ASSOCIATES
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Project Engineer:	BP	Job Number:	19186
Project Manager:	BP	Plot Date: Oct 04, 2019 - 7:34pm	
Project Drafter:	ZH	Login: JTrusler	

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LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
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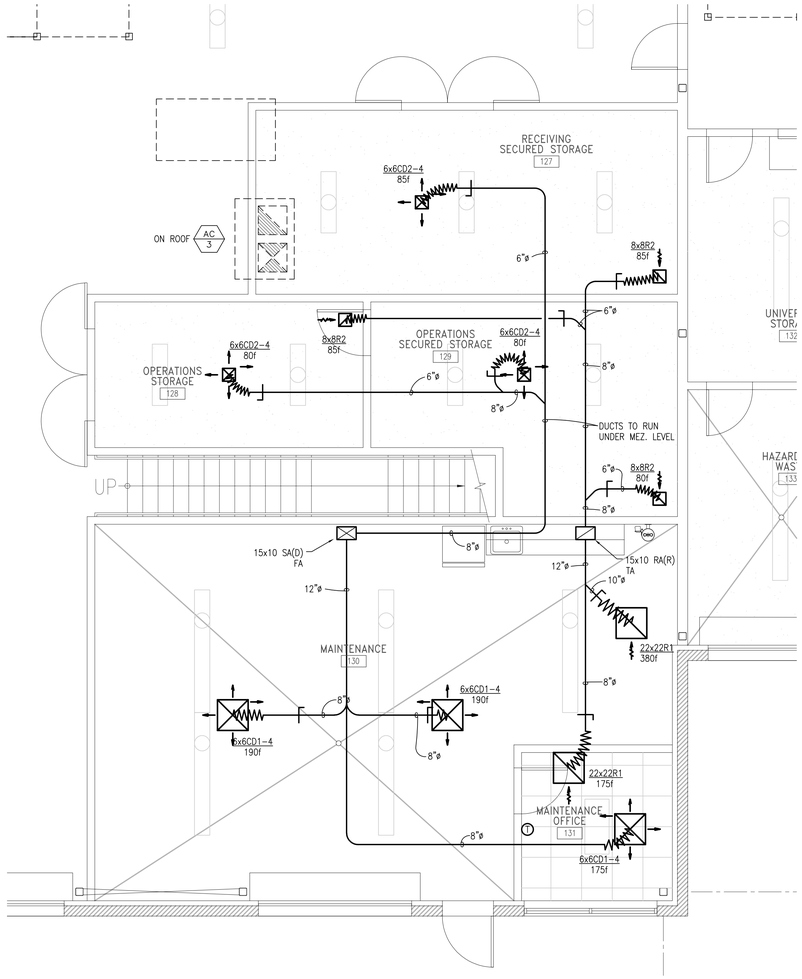
SACRAMENO, CALIFORNIA 95841

ENLARGED MECHANICAL FLOOR PLANS

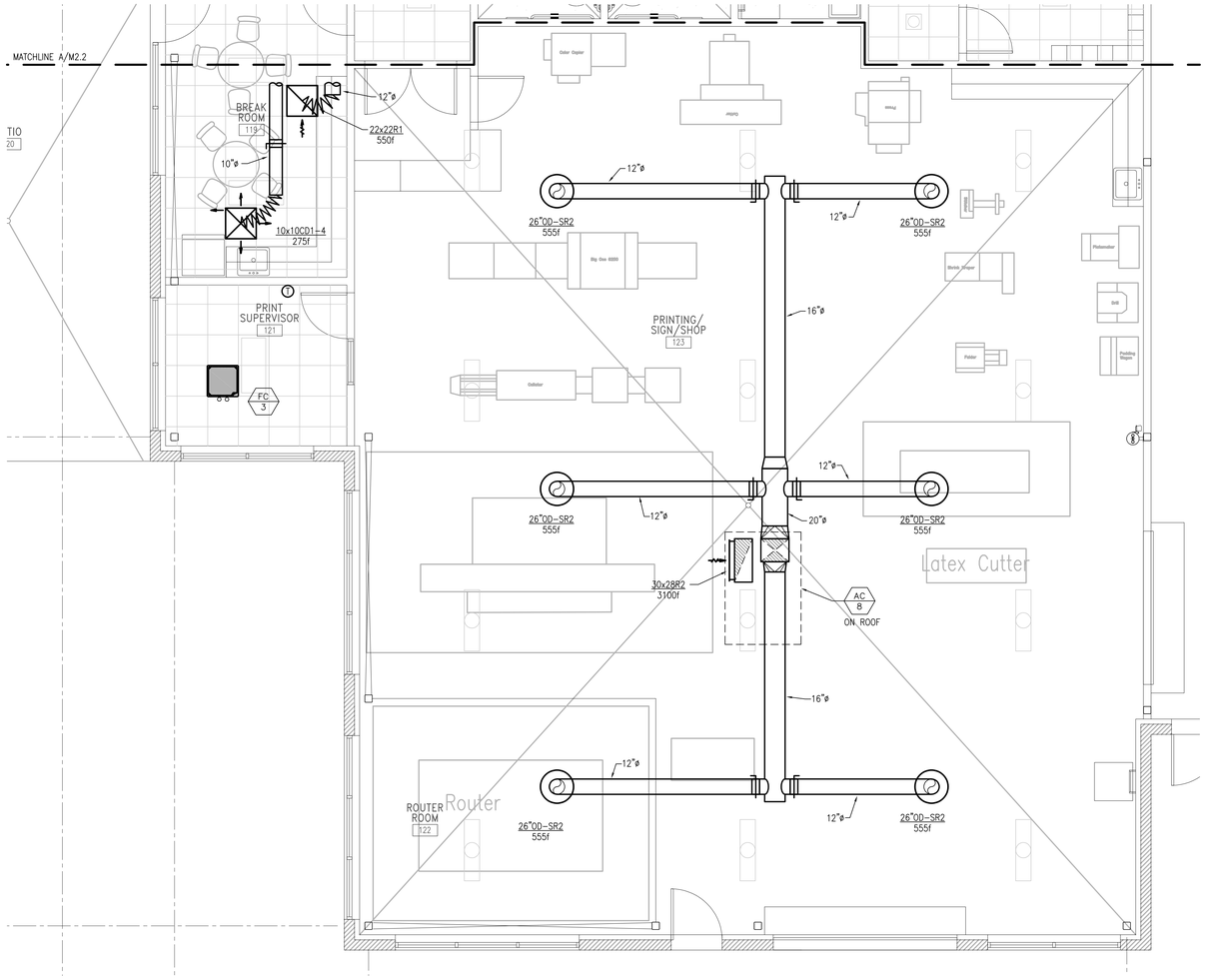
REVISIONS

DATE	JULY 30, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	M2.2



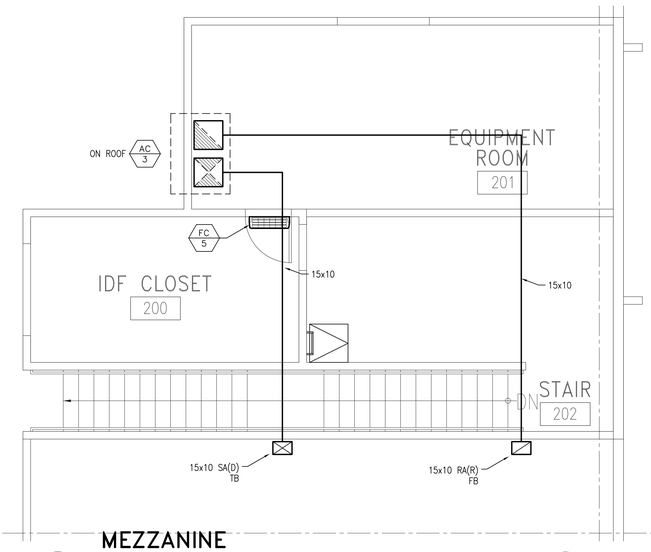
B MECHANICAL FLOOR PLAN

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



A MECHANICAL FLOOR PLAN

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



C MEZZANINE MECHANICAL FLOOR PLAN

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

GRA architecture
205 23rd Street, Suite 130
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LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
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ENLARGED MECHANICAL FLOOR PLANS

REVISIONS

DATE	JULY 30, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

M2.3

REGISTERED PROFESSIONAL ENGINEER — BRYANT J. PROVENCAL — No. M030446 Exp. 12/31/19 — MECHANICAL — STATE OF CALIFORNIA

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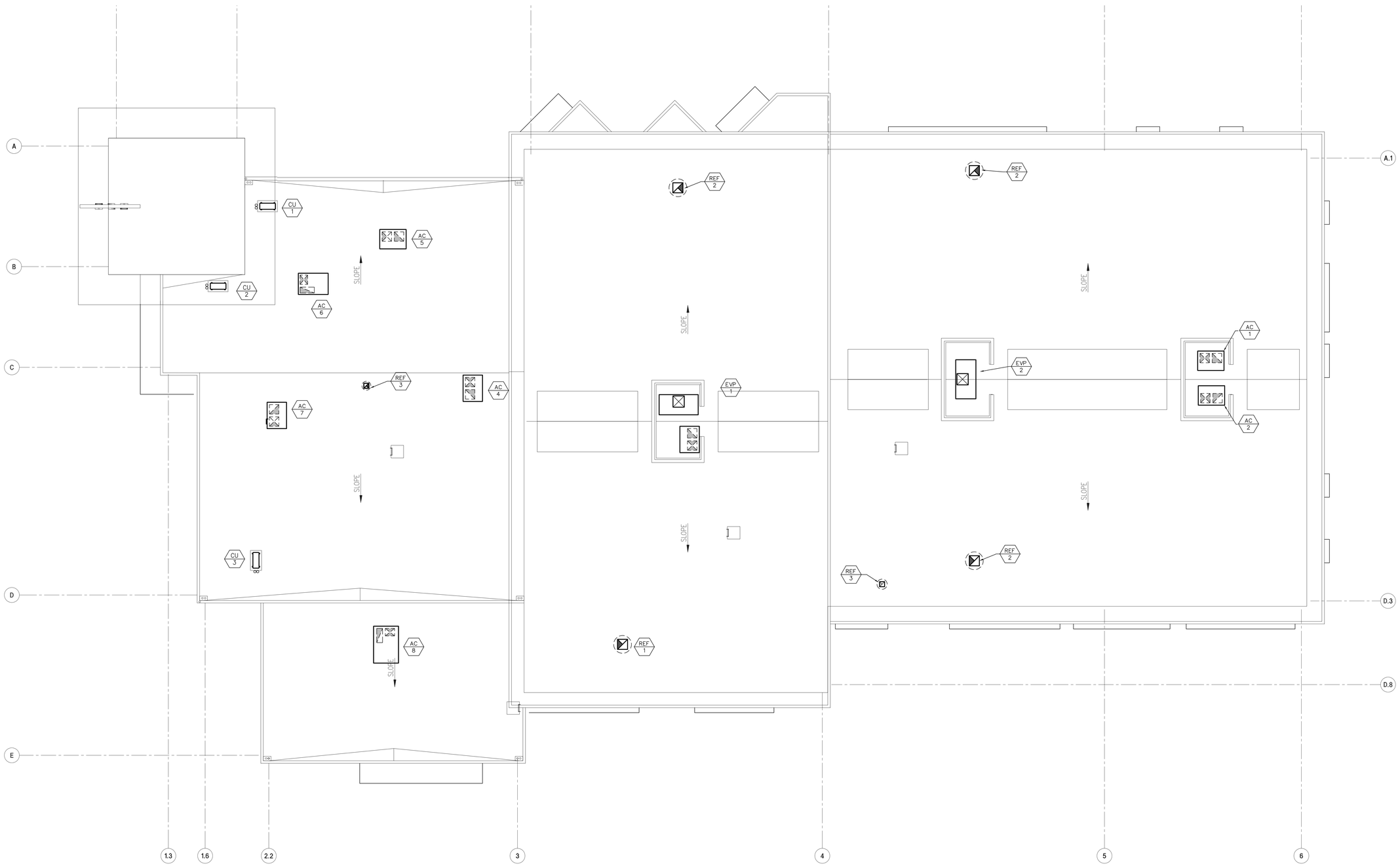
Project Engineer:	BP	Job Number:	19100
Project Manager:	BP	Plot Date: Oct 04, 2019 - 7:54pm	
Project Drafter:	ZH	Login: JTrudler	



A MECHANICAL ROOF PLAN

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

GRA architecture
205 23rd Street, Suite 130
Sacramento, CA 95816
916 498-7900

LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD

SACRAMENO, CALIFORNIA 95841

MECHANICAL ROOF PLAN

REVISIONS

DATE	JULY 30, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

REGISTERED PROFESSIONAL ENGINEER — BRYANT J. PROVENCIO — No. M030446 Exp. 12/31/19 — MECHANICAL — STATE OF CALIFORNIA

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Project Engineer:	BP	Job Number:	19100
Project Manager:	BP	Plot Date: Oct 04, 2019 - 7:34pm	
Project Drafter:	ZH	Login: JTrudler	

M3.1

WATER AND WASTE SERVICE CALCULATIONS

JOB NAME: ARC CORP. YARD DATE: 10/04/19

FIXTURE TYPE	NO.	WASTE		COLD WATER		HOT WATER		TOTAL WATER
		FU	TOTAL	FU	TOTAL	FU	TOTAL	FU
HAND SINK	0	0	0	0.75	0	0.75	0	0
BATH TUB/SHOWER	0	3	0	3	0	3	0	0
CLOTHES WASHER	0	3	0	3	0	3	0	0
DRINKING FOUNTAIN	0	0.5	0	0.5	0	0	0	0
HOSE BIBB	5	0	0	1	5	0	0	5
KITCHEN SINK	1	3	3	1.5	1.5	1.5	1.5	2
LAVATORY (SINGLE)	4	1	4	0.75	3	0.75	3	4
SERVICE SINK	1	3	3	2.25	2.25	2.25	2.25	3
FLOOR DRAIN, EMERGENCY	0	0	0	0	0	0	0	0
FLOOR SINK RECEPTOR	0	3	0	0	0	0	0	0
SHOWER	1	2	2	1.5	1.5	1.5	1.5	2
SINK	3	2	6	1.5	4.5	1.5	4.5	6
WATER CLOSET, 1.28 TANK	0	4	0	2.5	0	0	0	0
WATER CLOSET, 1.28 FV	4	4	16	5	20	0	0	20
ICE MAKER	1	0	0	1	1	0	0	1
EMERGENCY EYE WASH 1	3	3	9	3	9	3	9	12
EMERGENCY EYE WASH 2	1	4	4	4.5	4.5	4.5	4.5	6
TOTAL FU			47.0		52.3		26.3	61.0

EQUIVALENT COLD WATER FLOW RATE (GPM):	55	
ADDITIONAL DEMAND LOAD (GPM)	0	
PRESSURE AVAILABLE AT MAIN (PSI):	40	
PRESSURE BOOSTER PUMP	0	
MINIMUM REQUIRED FIXTURE PRESSURE (PSI):	20	
ELEVATION RISE (FT):	3	
METER LOSS (PSI):	3	
BACKFLOW PREVENTER LOSS (PSI):	10	0
ADDITIONAL LOSSES (PSI):	0	
EQUIVALENT PIPE LENGTH FROM METER TO MOST REMOTE FIXTURE (FT):	400	
FRICTION LOSS PRESSURE AVAILABLE (PSI):	5.70	
MAXIMUM ALLOWABLE FRICTION LOSS (PSI/100 FT):	1.42	
WATER FLOW VELOCITY (FPS):	3.69	
CALCULATED FRICTION HEAD LOSS (PSI/100 FT):	1.14	
MINIMUM REQUIRED 'WATER' PIPE SIZE (INCHES):	2.5	
MINIMUM REQUIRED 'WASTE' PIPE SIZE (INCHES):	4	
(CALCULATIONS PER THE UPC/CPC)		

WATER PIPE SIZING CHART

PIPE SIZES CALCULATED BASED ON UPC/CPC APPENDIX A

SIZE: TYPE L COPPER		CW MAX FLOW		CW FIXTURE UNIT VALUES		HW MAX FLOW		HWFU
NOMINAL DIAMETER	INTERNAL DIAMETER	GPM	FPS	FLUSH TANK	FLUSH VALVE	GPM	FPS	HOT WATER
3/8"	0.44	0.7	1.4	0	0	0.7	1.4	0
1/2"	0.545	1.2	1.6	0	0	1.2	1.6	0
3/4"	0.785	3.1	2.0	3	0	3.1	2.0	3
1"	1.025	6.2	2.4	7	0	6.2	2.4	7
1-1/4"	1.265	10.7	2.7	13	0	10.7	2.7	13
1-1/2"	1.505	16.9	3.1	23	0	16.9	3.1	23
2"	1.985	35.1	3.6	66	20	35.1	3.6	66
2-1/2"	2.465	62.0	4.2	180	79	62.0	4.2	180
3"	2.945	99.0	4.7	370	234	99.0	4.7	370

PLUMBING FIXTURE CONNECTION SCHEDULE

FIXTURE NAME	SYMBOL	VENT	WASTE		COLD WATER		HOT WATER	
			BR	RI	BR	RI	BR	RI
ELECTRIC DRINKING FOUNTAIN	EDF	1½"	2"	1½"	¾"	½"	–	–
FLOOR DRAIN	FD	1½"	2"	2"	–	–	–	–
FLOOR SINK	FS	1½"	2"	2"	–	–	–	–
HOSE BIBB	HB	–	–	–	¾"	¾"	–	–
KITCHEN SINK	KS	INDIRECT DRAIN			¾"	½"	¾"	½"
LAVATORY	L	1½"	2"	1½"	¾"	½"	¾"	½"
JANITOR SINK	JS	2"	3"	3"	¾"	¾"	¾"	¾"
SINK	S	1½"	2"	1½"	¾"	½"	¾"	½"
WATER CLOSET FLUSH VALVE (FV)	WC	2"	4"	4"	1¼	1"	–	–

PLUMBING FIXTURE SCHEDULE

EEW–1 "GUARDIAN" EYEWASH STATION MODEL #G1750, ALL STAINLESS STEEL, 2 SPRAY HEADS, OPERATIONAL STAY OPEN WATER FLOW. PROVIDE "GUARDIAN"MODEL G3600LF THERMOSTATIC MIXING VALVE SET TO 85°F WITH INDEPENDENT ROUGH–IN. ADA ACCESSIBLE.

EEW–2 "GUARDIAN" EYEWASH SHOWER STATION MODEL #GBF1994, ALL STAINLESS STEEL BARRIER–FREE, 4 SPRAY HEADS, OPERATIONAL STAY OPEN WATER FLOW. PROVIDE "GUARDIAN"MODEL G3800LF THERMOSTATIC MIXING VALVE SET TO 85°F WITH INDEPENDENT ROUGH–IN. ADA ACCESSIBLE.

FD–1 FLOOR DRAIN, "SMITH" 2005, 5" DIA., NB TOP, CAST IRON BODY, TRAP PRIMER CONNECTION.

HB–1 HOSE BIBB, "WOODFORD" MODEL B74, LOCKING COVER, VACUUM BREAKER, LOOSE KEY

L–1 LAVATORY, "AMERICAN STANDARD" 0355.012 20" x 18" VITREOUS CHINA, 2385.403 SINGLE LEVER FAUCET AND GRID STRAINER, PROVIDE SUPPLIES STOPS AND 17 GA. CHROME PLATED BRASS P–TRAP, WALL HUNG, ADA.

JS–1 MOP SINK: "FLOORSTONE" MODEL 96 W/DROP FRONT. PROVIDE MR0371 FAUCET WITH VACUUM BREAKER, DOUBLE STOPS, BUCKET HOOK W/ BRAVE, MR–370 HOSE WITH CLAMP, AND STAINLESS RIM GUARD.

RD–1 "JAY R. SMITH" MODEL 1010ERC, SUMP RECEIVER, UNDER DECK CLAMP, PROVIDE CAST IRON DOME. EXTENSION AS REQUIRED.

OFD–1 "JAY R. SMITH" 10180ERC, 2" WATER DAM COLLAR, SUMP RECEIVER, UNDER DECK CLAMP, PROVIDE CAST IRON DOME. EXTENSION AS REQUIRED.

S–1 "KOHLER" MODEL K–3331 18GA STAINLESS STEEL, SINGLE BOWL, UNDER MOUNT SINK. PROVIDE WITH "KOHLER" MODEL K–7506 SINGLE LEVER FAUCET WITH PULLOUT SPRAY HEAD, AND K–8801 DUO–STRAINER. ADA.

TP–1 TRAP PRIMER "PPP INC." MODEL P–2 TRAP PRIMER, PROVIDE WITH BALL VALVE, UNION AND "J.R. SMITH" MODEL 4762 DRYWALL ACCESS DOOR.

WC–1 WATER CLOSET: "AMERICAN STANDARD" 3043.102 10" ROUGH IN. "SLOAN ROYAL" #111 FLUSH VALVE, "OLSONITE #95 SEAT WITH SS/CH, 1.28 GPF, FLOOR MOUNT, ADA.

WHA–1 WATER HAMMER ARRESTER, "J. R. SMITH" HYDROTROL, PROVIDE ACCESS DOOR.

PLUMBING EQUIPMENT SCHEDULE

WH 1 — WATER HEATER – 1
"A.O. SMITH" MODEL BTH–120, 60 GALLON STORAGE CAPACITY, 120,000 BTU/HR INPUT RATING, 230 GPH RECOVERY RISE AT 60°F. 95% THERMAL EFF. POWER DIRECT VENT. PROVIDE WITH 4"ø CONCENTRIC VENT KIT. 960 LBS OPERATING WEIGHT.

ET 1 — EXPANSION TANK – 1
"AMTROL" ST–8 "THERM–X–TROL", DIAPHRAGM TYPE, PRESSURIZED TANK. OPERATING WEIGHT = 35 LBS.

CP 1 — CIRCULATING PUMP – 1
"BELL & GOSSETT" MODEL NBF–9U/LW LEAD FREE. 9FT HEAD, 0.5GPM FLOW RATE, 115V/1ø/60HZ, 41 WATTS. PROVIDE COMPLETE WITH "B&G" A25–3/4 AQUASTAT AND TC–1 AUTOMATIC TIMER KIT.

SP 1 — SUMP PUMP – 1
"WEIL" MODEL 1622 SUBMERSIBLE SUMP PUMP, 2 HP, 80 GPM @ 30 FT HEAD. 24" BASIN.

SO 1 — SAND/OIL INTERCEPTOR – 1
"JENSEN PRECAST" MODEL JP500EE–SO SAND–OIL INTERCEPTOR, 500 GALLON STORAGE CAPACITY, H–20 TRAFFIC RATED, 24" CAST IRON COVERS.

PLUMBING ABBREVIATIONS

ABV	ABOVE
ABC, OH	ABOVE CEILING, OVERHEAD
AD	ACCESS DOOR
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
BR	BRANCH
CL	CENTERLINE
CO	CLEANOUT
CW	COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DIA, ø	DIAMETER
FC	FLEXIBLE CONNECTION
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FSR	FIRE SPRINKLER RISER
GCO	GRADE CLEANOUT
HW	HOT WATER
HWR	HOT WATER RETURN
I.E.	INVERT ELEVATION
(N) (E)	NEW, EXISTING
NIC	NOT IN CONTRACT
POC	POINT OF CONNECTION
P, TRV	PRESSURE & TEMPERATURE RELIEF VALVE
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
(R) (D)	RISE, DROP
RD, OFL	ROOF DRAIN, OVERFLOW
RI	ROUGH–IN
RO	RUN–OUT
SMS	SHEET METAL SCREWS
SOV	SHUT OFF VALVE
TA, FA	TO ABOVE, FROM ABOVE
TB, FB	TO BELOW, FROM BELOW
TBR	TO BE REMOVED
TP	TRAP PRIMER
UG, UF	UNDERGROUND, UNDERFLOOR
UON	UNLESS OTHERWISE NOTED
UTR	UP THROUGH ROOF
V, VR, VTR	VENT, VENT RISER, VENT THRU ROOF
WT	WATERTIGHT
WCO	WALL CLEANOUT

COMPLIANCE NOTES

MECHANICAL AND PLUMBING EQUIPMENT SHALL CONFORM TO THE FOLLOWING AS STATED IN THE ENERGY EFFICIENCY STANDARDS, 2016.

1. BE CERTIFIED BY THE MANUFACTURER AS COMPLYING WITH THE EFFICIENCY REQUIREMENTS AS PRESCRIBED IN SECTIONS:

111. APPLIANCES REGULATED BY THE APPLIANCE EFFICIENCY STANDARDS:
112. HVAC EQUIPMENT EFFICIENCY AND PACKAGED CONTROLS:
113. SERVICE WATER HEATING EFFICIENCY AND CONTROLS:
114. POOL AND SPA HEATING EFFICIENCY AND CONTROLS:
115. RESTRICTIONS ON PILOT LIGHTS:

2. BE SPECIFIED AND INSTALLED IN ACCORDANCE WITH SECTIONS.

121. REQUIREMENTS FOR VENTILATION:
122. REQUIRED CONTROLS FOR HVAC SYSTEMS:
123. REQUIREMENTS FOR PIPE INSULATION:
124. REQUIREMENTS FOR DUCT INSULATION:

PIPING MATERIAL SCHEDULE

1. SOIL, STORM, WASTE AND VENT PIPE UNDERGROUND AND TO 6" ABOVE GROUND: SERVICE WEIGHT CAST IRON SOIL PIPE AND FITTINGS, ASPHALTIC COATED, CONFORMING TO CAST IRON SOIL PIPE INSTITUTE STANDARD #301 ASTM A–888 OR ASTM A–74 AND SO STAMPED. JOINTS SHALL BE NO–HUB CONFORMING TO CAST IRON SOIL PIPE INSTITUTE STANDARD #310; TY–SEAL OR EQUAL WITH GASKETS CONFORMING TO ASTM C 564 AND ASTM A74. SUSPENDED PIPE WITH NO–HUB JOINTS SHALL HAVE A SWAYBRACE AT 20'–0" MAXIMUM SPACING.

2. WASTE AND VENT PIPE ABOVE GROUND FROM LAVATORIES OR SINKS, RAINWATER LEADERS AND OVERFLOWS ABOVE THE FLOOR: CAST IRON SOIL PIPE AND FITTINGS WITH NO HUB JOINTS CONFORMING TO THE REQUIREMENTS OF CISPI STANDARD 301, ASTM A–888 OR ASTM A–74 FOR ALL PIPE AND FITTINGS. JOINTS SHALL CONFORM TO CISPI 310 AND SHALL BE HUBLESS COUPLINGS COMPOSED OF STAINLESS STEEL SHIELD, CLAMP ASSEMBLY AND ELASTOMERIC SEALING SLEEVE. DWV DRAINAGE TUBING AND FITTINGS ARE ACCEPTABLE WHEN APPROVED. CONDENSATE DRAINS SHALL BE TYPE L HARD COPPER, WITH LONG SWEEP ELBOWS AND CLEANOUT TEES AT EACH CHANGE IN DIRECTION. CONNECT CONDENSATE DRAINS TO AIR CONDITIONING UNITS WITH P–TRAP AND RUN TO AN APPROVED RECEPTOR AND DRY WELL. PROVIDE VIBRATION ELIMINATORS AT A.C. UNITS.

3. WATER PIPE (HOT AND COLD WATER): TYPE L COPPER TUBING, HARD TEMPER, WITH WROUGHT COPPER FITTINGS. CAPPED OR PLUGGED OUTLETS SHALL BE SCHEDULE 40 SCREWED BRASS. PROVIDE FULL SOLDER CUP FITTINGS.

4. GAS PIPE: SCHEDULE 40 BLACK STEEL WITH MALLEABLE IRON SCREWED FITTINGS ABOVE GRADE; WELDED BELOW GRADE WITH CLASS 150 WELDING FITTINGS. CONNECT TO EACH ITEM OF GAS–FIRED EQUIPMENT WITH DRIP LEG AND VALVE. PROVIDE FLEX CONNECTION IN APPROVED SIZES WHERE APPLICABLE

PLUMBING LEGEND

- COLD WATER LINE
- CONDENSATE DRAIN
- FIRE SERVICE LINE
- GAS
- HOT WATER LINE
- HOT WATER RETURN
- LIQUID PETROLEUM GAS
- OVERFLOW
- RAINWATER LEADER
- RISE OR DROP IN DIRECTION OF FLOW
- SANITARY SOIL OR WASTE LINE
- SECONDARY CONDENSATE DRAIN LINE
- TRAP PRIMER LINE
- VENT
- CLEANOUT & WALL CLEANOUT
- FIRE DEPARTMENT CONNECTION
- FLOOR/ GRADE CLEAN OUT
- FLOOR DRAIN
- HOSE BIBB/ WALL HYDRANT
- TRAP
- TRAP PRIMER
- BALANCING VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- FLEXIBLE CONNECTION
- GATE VALVE
- SHUT OFF COCK
- PRESSURE GAUGE
- PRESSURE REDUCING VALVE
- REDUCER
- PRESSURE & TEMPERATURE RELIEF VALVE
- SHUT OFF VALVE
- STRAINER
- STRAINER & DRAIN VALVE WITH HOSE FITTING
- SOLENOID VALVE
- THERMOMETER
- UNION

APPLICABLE CODES

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

A) STATE OF CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24,

2016 EDITION OF THE CALIFORNIA BUILDING CODE.
2016 EDITION OF THE CALIFORNIA ELECTRICAL CODE.
2016 EDITION OF THE CALIFORNIA FIRE CODE.
2016 EDITION OF THE CALIFORNIA MECHANICAL CODE.
2016 EDITION OF THE CALIFORNIA PLUMBING CODE.

B) NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) LIFE SAFETY CODE

REGISTERED PROFESSIONAL ENGINEER
BRIAN J. PROVENCAL
No. M030446
Exp. 12/31/19
MECHANICAL
STATE OF CALIFORNIA

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MECHANICAL ENGINEERING GROUP, INC.
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Project Engineer:	BP	Job Number:	19186
Project Manager:	BP	Plot Date: Oct 04, 2019 - 7:34pm	
Project Drafter:	ZH	Login: JTrusler	

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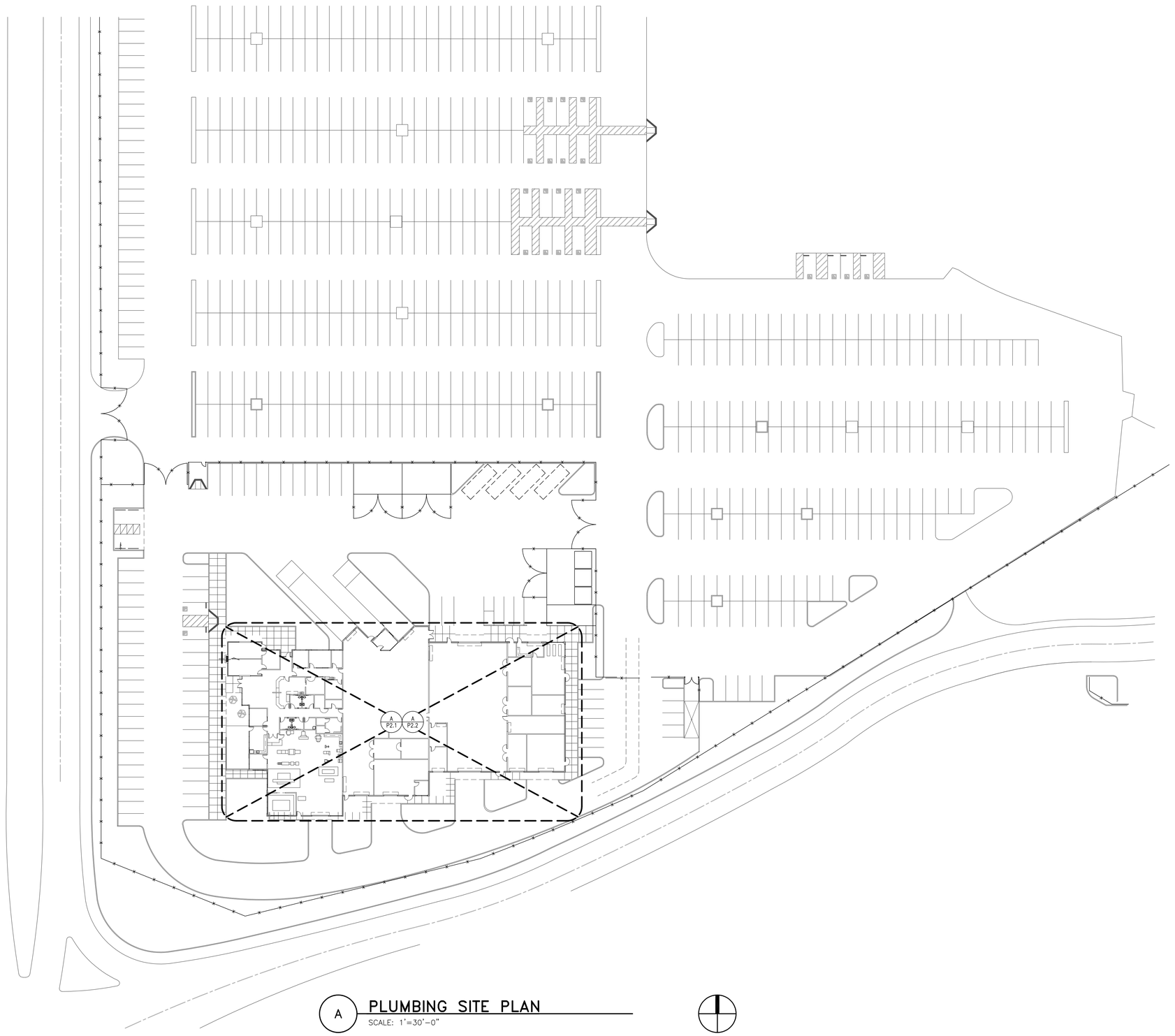
LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENTO, CALIFORNIA 95841

PLUMBING LEGEND, SCHEDULES, AND NOTES

REVISIONS

DATE JULY 30, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

P0.1



A PLUMBING SITE PLAN
SCALE: 1"=30'-0"

GRA architecture
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LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENO, CALIFORNIA 95841

PLUMBING SITE PLAN

REVISIONS

DATE	JULY 30, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

REGISTERED PROFESSIONAL ENGINEER
BRYANT J. PROVENCAL
No. M030446
Exp. 12/31/19
MECHANICAL
STATE OF CALIFORNIA

TURLEY & ASSOCIATES | MECHANICAL ENGINEERING GROUP INC.
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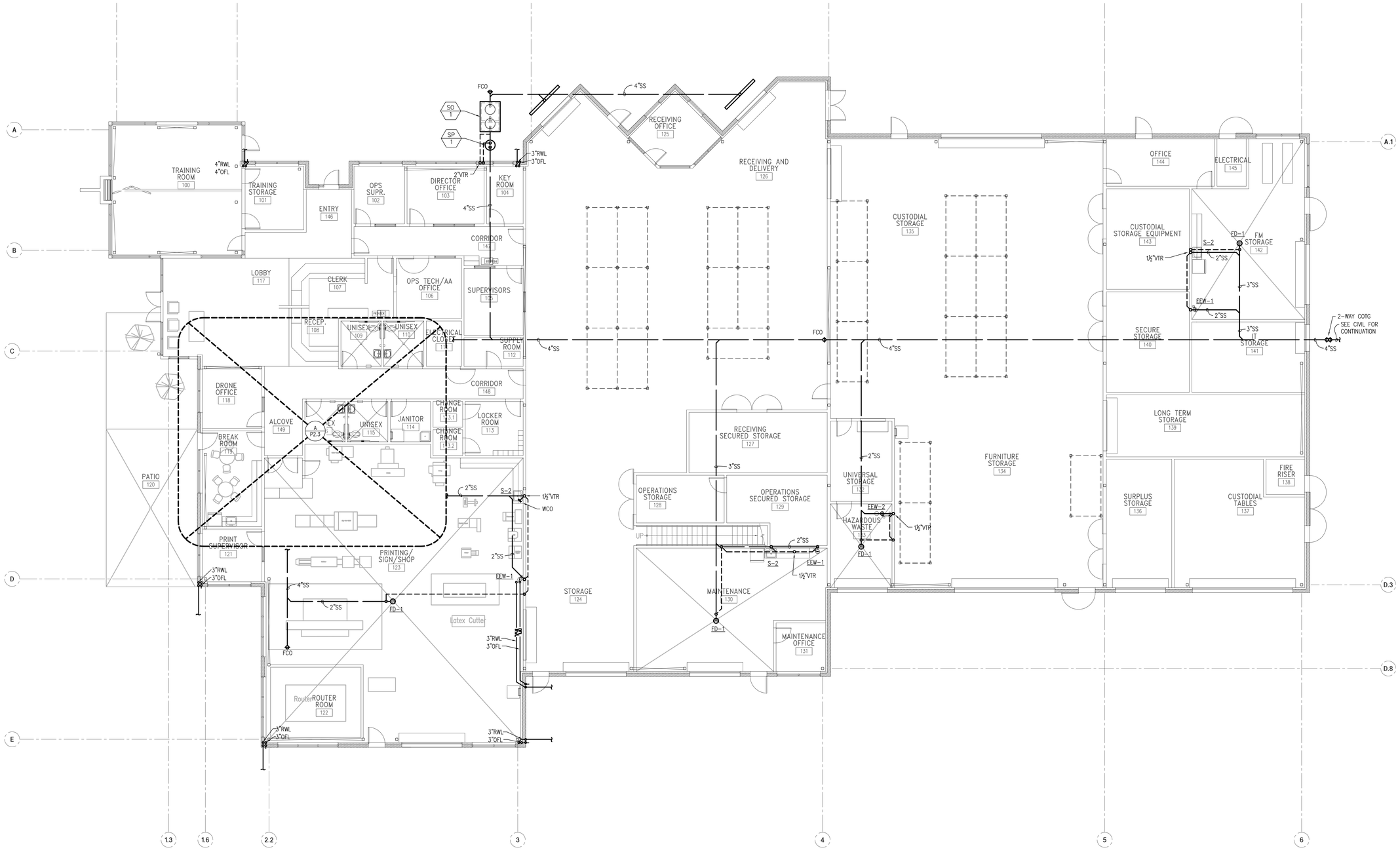
Project Engineer:	BP	Job Number:	19100
Project Manager:	BP	Plot Date: Oct 04 2019 - 7:34pm	
Project Drafter:	ZH	Login: JFoster	

P1.0



A PLUMBING WASTE & VENT FLOOR PLAN

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

GRA architecture

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PLUMBING WASTE AND VENT FLOOR PLAN

REVISIONS

DATE	JULY 30, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

REGISTERED PROFESSIONAL ENGINEER — BRYAN P. PROVENCHER — No. MC30446 Exp. 12/31/19 — MECHANICAL — STATE OF CALIFORNIA

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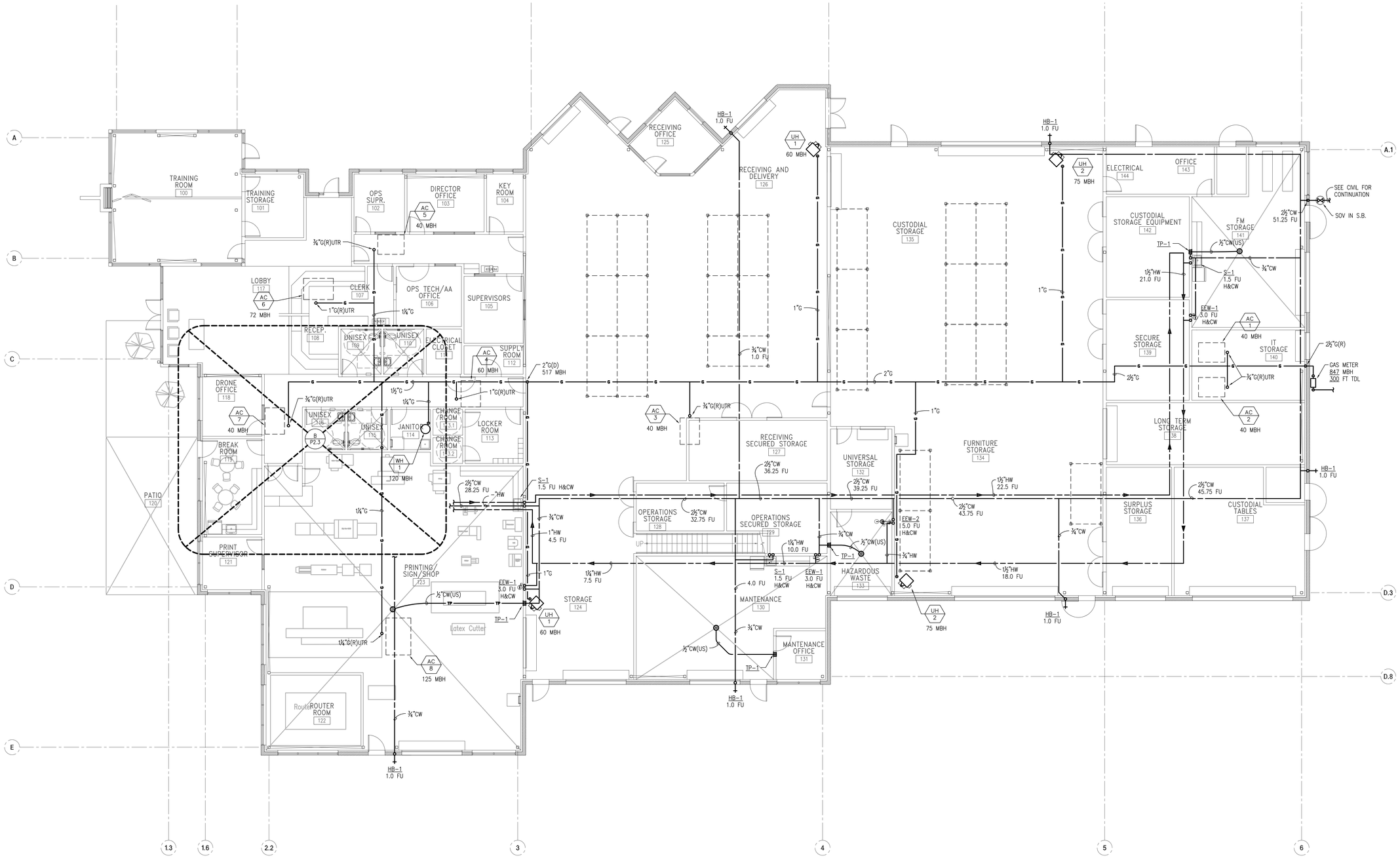
Project Engineer:	BP	Job Number:	19106
Project Manager:	BP	Plot Date: Oct 04, 2019 - 7:34pm	
Project Drafter:	ZH	Login: JTrosler	

P2.1



A PLUMBING GAS, HOT & COLD WATER FLOOR PLAN

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

GRA architecture
205 23rd Street, Suite 130
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SACRAMENO, CALIFORNIA 95841

PLUMBING GAS, HOT AND COLD WATER FLOOR PLAN

REVISIONS

DATE	JULY 30, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	P2.2

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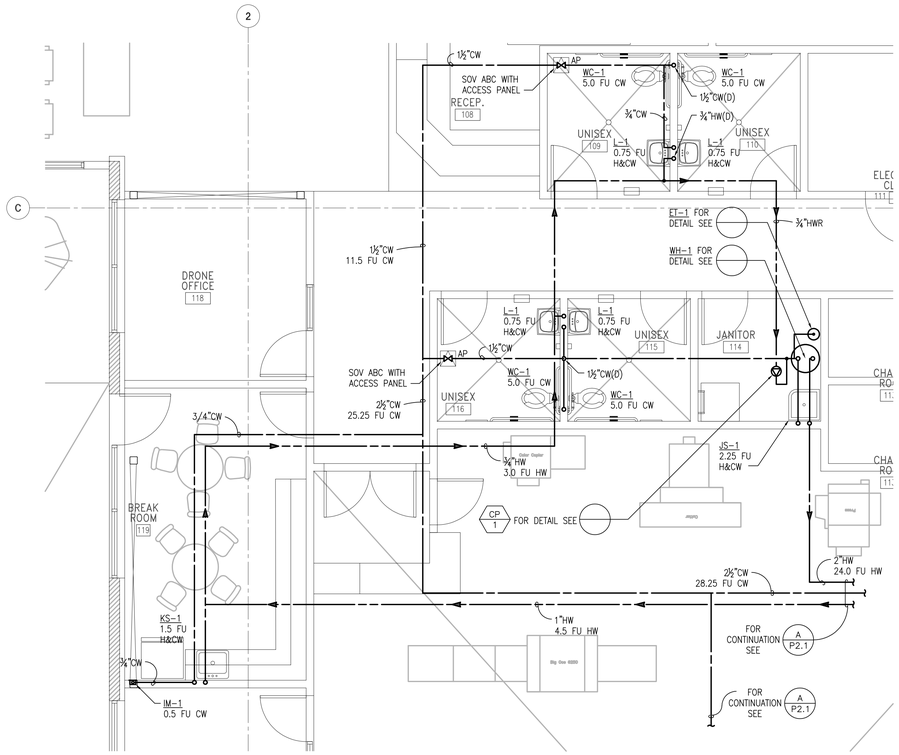
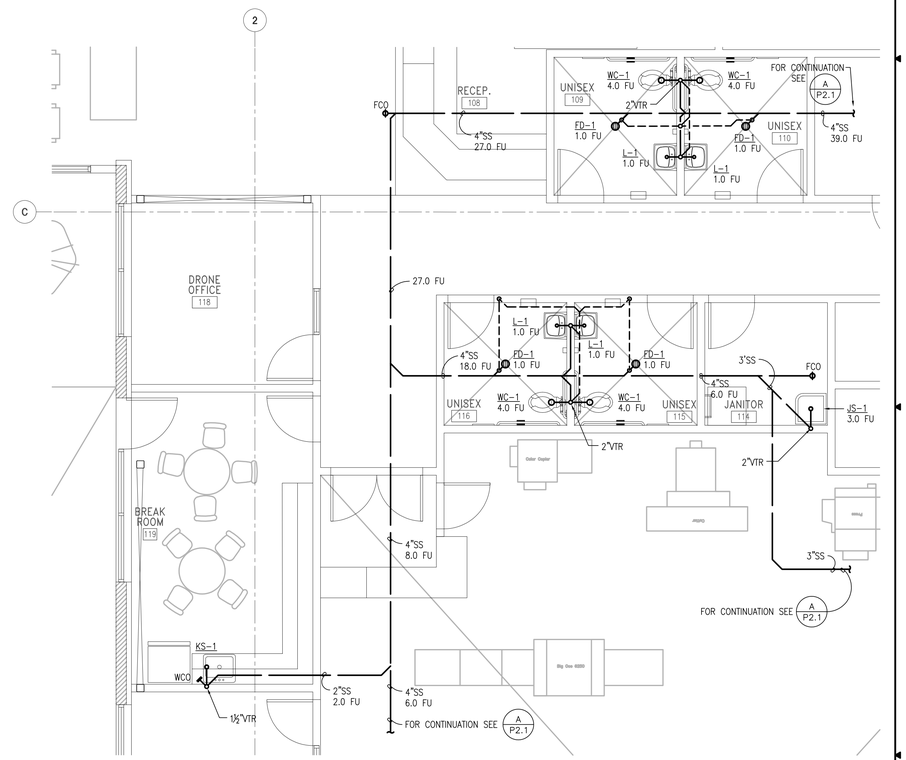
REGISTERED PROFESSIONAL ENGINEER — BRIAN P. TURLEY — No. M030446 — Exp. 12/31/19 — MECHANICAL — STATE OF CALIFORNIA

Project Engineer:	BP	Job Number:	19100
Project Manager:	BP	Plot Date: Oct 04, 2019 - 7:54pm	
Project Drafter:	ZH	Login: JTrotter	



B ENLARGED PLUMBING HOT & COLD WATER FLOOR PLAN

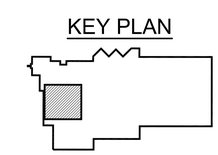
SCALE: 1/4"=1'-0"



A ENLARGED PLUMBING WASTE & VENT FLOOR PLAN

SCALE: 1/4"=1'-0"

KEY PLAN



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ENLARGED PLUMBING FLOOR PLANS

REVISIONS

DATE JULY 30, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

REGISTERED PROFESSIONAL ENGINEER No. M030446 Exp. 12/31/19 MECHANICAL STATE OF CALIFORNIA

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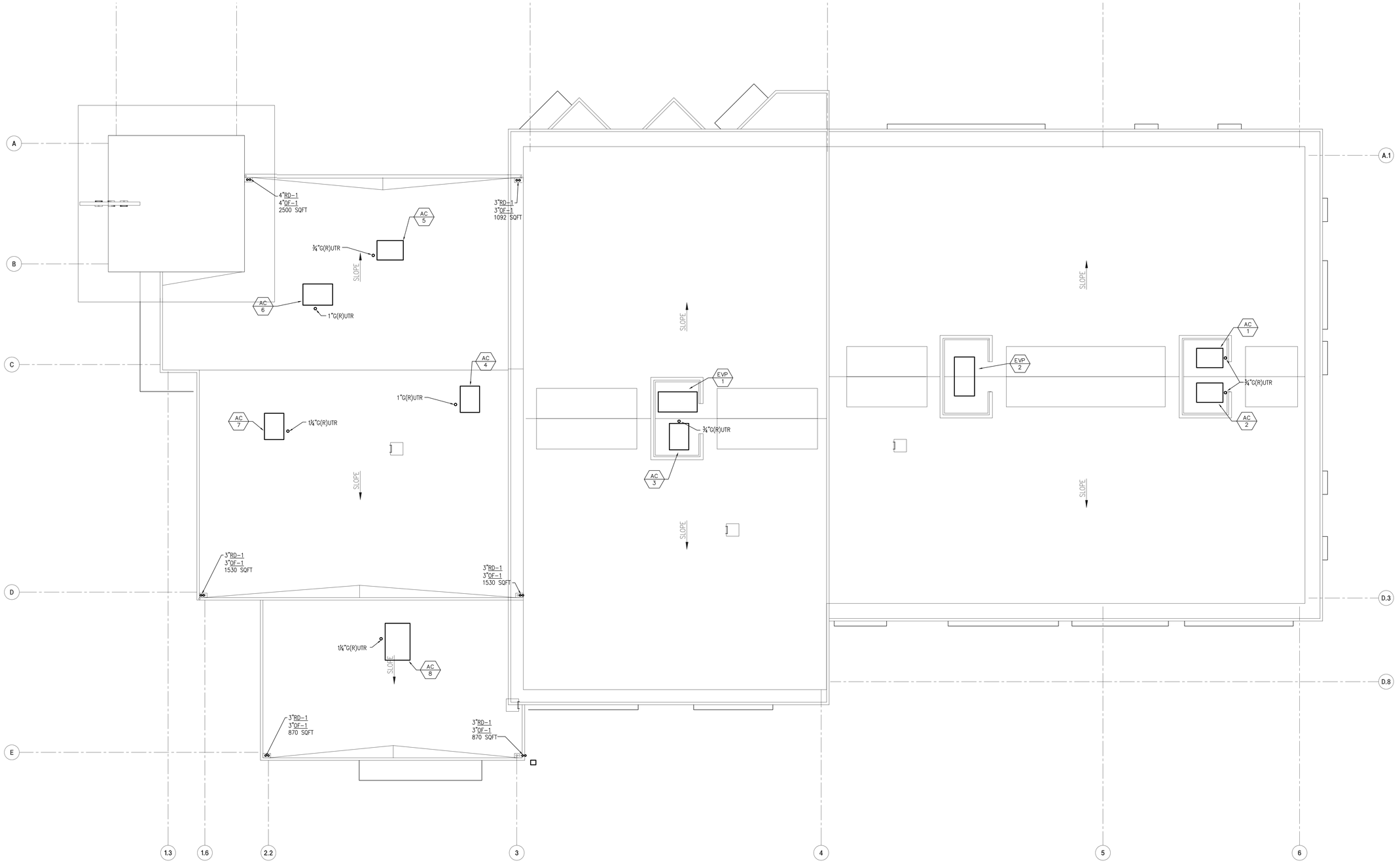
Project Engineer:	BP	Job Number:	19136
Project Manager:	BP	Plot Date: Oct 04, 2019 - 7:34am	
Project Drafter:	ZH	Login: JTrusler	

P2.2



A PLUMBING ROOF PLAN

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

GRA architecture
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LOS RIOS COMMUNITY COLLEGE DISTRICT
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SACRAMENO, CALIFORNIA 95841

PLUMBING ROOF PLAN

REVISIONS

DATE	JULY 30, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

P3.1

REGISTERED PROFESSIONAL ENGINEER — BRYANT J. PROVENCAL — No. M030446 Exp. 12/31/19 — MECHANICAL — STATE OF CALIFORNIA

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Project Engineer:	BP	Job Number:	19100
Project Manager:	BP	Plot Date: Oct 04 2019 - 7:34pm	
Project Drafter:	ZH	Login: JTrudler	

SYMBOLS LIST

SOME OF THESE SYMBOLS SHOWN MAY NOT BE USED ON THIS PROJECT

POWER DISTRIBUTION

- SWITCHBOARD, DISTRIBUTION BOARD, SUBSTATION OR MOTOR CONTROL CENTER, FLOOR MOUNTED.
- PANELBOARD, 277/480V, SURFACE MOUNTED ON WALL.
- PANELBOARD, 277/480V, FLUSH MOUNTED IN WALL.
- PANELBOARD, 120/208V, SURFACE MOUNTED ON WALL.
- PANELBOARD, 120/208V, FLUSH MOUNTED IN WALL.
- DRY-TYPE STEP-DOWN TRANSFORMER, FLOOR MOUNTED 3Ø,480-120/208V, UON.
- ELECTRIC MOTOR, NIEC. MAKE POWER CONNECTIONS ONLY AS NOTED ON PLANS.
- F — INDOOR EXHAUST FAN MOTOR, SINGLE PHASE. MAKE POWER CONNECTIONS TO INCLUDE JUNCTION BOX MOUNTED MANUAL MOTOR STARTER AND DISCONNECT ADJACENT TO FAN WITH 2 #12 CONDUCTORS PLUS GROUND IN 1/2" FLEXIBLE CONDUIT BETWEEN STARTER AND MOTOR.
- V — INDOOR FAN POWERED VAV BOX MOTOR, SINGLE PHASE, MOUNTED FROM STRUCTURE ABOVE, NIEC. MAKE POWER CONNECTIONS TO INCLUDE JUNCTION BOX MOUNTED MANUAL MOTOR STARTER AND DISCONNECT ADJACENT TO VAV BOX WITH 2 #12 CONDUCTORS PLUS GROUND IN 1/2" FLEXIBLE CONDUIT BETWEEN STARTER AND MOTOR.
- P — PULLBOX OR HANDHOLE, SIZE AND TYPE AS NOTED ON PLANS.
- A / AF — SAFETY DISCONNECT SWITCH, 3 POLE, UON. ADJACENT NUMBER INDICATES FUSE SIZE WHEN APPLICABLE. LABELING CONVENTION AS FOLLOWS:

A: 30A, NON-FUSED	AF: 30A, FUSED
B: 60A, NON-FUSED	BF: 60A, FUSED
C: 100A, NON-FUSED	CF: 100A, FUSED
D: 200A, NON-FUSED	DF: 200A, FUSED
E: 400A, NON-FUSED	EF: 400A, FUSED
F: 600A, NON-FUSED	FF: 600A, FUSED
G: 800A, NON-FUSED	GF: 800A, FUSED

- 1 — MAGNETIC MOTOR STARTER. ADJACENT NUMBER INDICATES NEMA SIZE OF STARTER.
- 1 — COMBINATION MAGNETIC MOTOR STARTER/SAFETY DISCONNECT SWITCH. ADJACENT NUMBER INDICATES NEMA SIZE OF STARTER.
- PACKAGE MOTOR CONTROLLER OR STARTER FURNISHED AND INSTALLED UNDER ANOTHER DIVISION WITH EQUIPMENT CONTROLLED. PROVIDE SINGLE-POINT POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- VFD — VARIABLE FREQUENCY DRIVE FURNISHED AND INSTALLED UNDER ANOTHER DIVISION. PROVIDE POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- VFD — VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT FURNISHED AND INSTALLED UNDER ANOTHER DIVISION. PROVIDE POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- DRIVEN GROUND ROD.
- DRIVEN GROUND ROD IN GROUND WELL WITH COVER.
- ELECTRICAL VEHICLE CHARGING STATION, WALL MOUNTED.
- ELECTRICAL VEHICLE CHARGING STATION, PEDESTAL MOUNTED.
- 2,4,6 — BRANCH CIRCUIT POWER DISTRIBUTION BOX OF MANUFACTURED WIRING SYSTEM WITH MODULAR CONNECTORS FOR INTERFACE TO BRANCH CIRCUIT MODULAR CABLE SETS AND CABLE OR CONDUIT HOMERUN. BOX MOUNTED FROM STRUCTURE ABOVE IN ACCESSIBLE CEILING SPACE. ADJACENT NUMBERS INDICATE CIRCUITS AVAILABLE AT BOX.
- 2,4,6 — DEVICE BRANCH CIRCUIT POWER DISTRIBUTION BOX FOR INTERFACE BETWEEN MULTI-CIRCUIT HOMERUN AND MC CABLE BRANCH CIRCUITING. MINIMUM BOX SIZE IS 10"X10"X4" DEEP. BOX MOUNTED FROM STRUCTURE ABOVE IN ACCESSIBLE CEILING SPACE. ADJACENT NUMBERS INDICATE CIRCUITS AVAILABLE AT BOX.
- INDICATES CABLE TERMINATION LUGS AT EQUIPMENT BUS.
- BOLTED PRESSURE OR HIGH PRESSURE CONTACT SWITCH.
- FUSED SWITCH.
- MEDIUM-VOLTAGE LOAD INTERRUPTER SWITCH.
- GROUP MOUNTED MOLDED CASE CIRCUIT BREAKER.
- INDIVIDUALLY FIXED MOUNTED INSULATED-CASE OR POWER CIRCUIT BREAKER.
- INDIVIDUALLY DRAW-OUT MOUNTED INSULATED-CASE OR POWER CIRCUIT BREAKER.
- 52 — MEDIUM-VOLTAGE, INDIVIDUALLY DRAW-OUT MOUNTED VACUUM CIRCUIT BREAKER.
- G — INDICATES INTEGRAL GROUND FAULT RELAY WHEN ASSOCIATED WITH CIRCUIT BREAKER.
- C — INDICATES COMMUNICATION NETWORK WIRING WHEN ASSOCIATED WITH CIRCUIT BREAKER.
- EO — INDICATES ELECTRICALLY OPERATED WHEN ASSOCIATED WITH CIRCUIT BREAKER.
- ST — INDICATES SHUNT TRIP WHEN ASSOCIATED WITH OVERCURRENT PROTECTION DEVICES.
- K 1 — INDICATES KIRK-KEY INTERLOCK WHEN ASSOCIATES WITH OVERCURRENT PROTECTION DEVICES. ADJACENT NUMBER CORRESPONDS WITH DEVICE INTERLOCK.
- GFR — GROUND FAULT RELAY WITH SHUNT TRIP.
- GFA — GROUND FAULT ALARM, NO SHUNT TRIP.
- M — UTILITY METER.
- TRANSFORMER.
- CONNECTION TO GROUND.
- CURRENT TRANSFORMERS.
- POTENTIAL TRANSFORMERS.
- V — AUTOMATIC OR MANUAL TRANSFER SWITCH.
- NORM. EM. — AUTOMATIC TRANSFER/BY-PASS ISOLATION SWITCH.
- G — EMERGENCY GENERATOR.
- BATTERIES.
- NEUTRAL SERVICE DISCONNECT LINK.
- SPD — SURGE PROTECTION DEVICE, 'SPD'.
- C — CONTROL CONTACTOR.
- NORMALLY OPEN CONTACT.
- NORMALLY CLOSED CONTACT.
- DMU — DIGITAL METERING UNIT.
- WHM — WATT HOUR METER.
- GND — GROUND BUS.
- NEU — NEUTRAL BUS.

WIRING DEVICES

- J — JUNCTION BOX, WALL MOUNTED, +18" UON.
- J — JUNCTION BOX, MOUNTED IN FLUSH FLOOR BOX.
- J — JUNCTION BOX, MOUNTED FLUSH IN CEILING.
- J — JUNCTION BOX, SURFACE OR PENDANT MOUNTED TO STRUCTURE IN ACCESSIBLE CEILING SPACE.
- J — JUNCTION BOX, MOUNTED ON CONDUIT STANCHION FLOOR PENETRATION, +12" UON.
- SINGLE-PLEX CONVENIENCE RECEPTACLE DEVICE, WALL MOUNTED, +18" UON.
- USB — 'USB' DENOTES DUPLEX CONVENIENCE RECEPTACLE DWBICE WITH INTERGRAL USB POWER OUTLETS, WALL MOUNTED, +18" UON.
- IG — 'IG' DENOTES ISOLATED GROUND. DUPLEX CONVENIENCE RECEPTACLE DEVICE, WALL MOUNTED, +18" UON.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, WALL MOUNTED, +18" UON.
- DENOTES WALL MOUNTED OVER COUNTER, 6" ABOVE BACK SPLASH UON.
- G — 'G' DENOTES GROUND FAULT CURRENT INTERRUPTER (GFCI), 'A' DENOTES ARC FAULT CURRENT INTERRUPTER (AFCI).
- WP — DUPLEX RECEPTACLE, WEATHER RESISTANT WITH GROUND FAULT CURRENT INTERRUPTER 'GFCI', WITH WEATHERPROOF COVER, WALL MOUNTED, +18" UON.
- SHADING DENOTES SPLIT WIRED DEVICE.
- SHADING DENOTES DEVICE CONNECTED TO EMERGENCY POWER CIRCUIT.
- SHADING DENOTES CONTROLLED RECEPTACLE.
- SHADING DENOTES SPECIALTY DEVICE, TYPE AS NOTED ON PLANS.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FLUSH FLOOR BOX.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FLUSH FLOOR BOX.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTING.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTING.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED FLUSH IN CEILING.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED FLUSH IN CEILING.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED ON CONDUIT STANCHION FLOOR PENETRATION, +12" UON.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FLOOR MONUMENT.
- COMBINATION POWER/TELECOMMUNICATION DEVICE, MOUNTED IN FLUSH FLOOR BOX. TYPE AS NOTED ON PLANS OR IN SPECIFICATIONS.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, CORD OR REEL HUNG FROM STRUCTURE ABOVE. TYPE AS NOTED ON PLANS.
- P — ELECTRIFIED FURNITURE PARTITION POWER FEED, WALL MOUNTED, +18" UON. CONSISTS OF 4 11/16" SQ. X 2 1/8" DEEP. JUNCTION BOX, SINGLE GANG RING, AND STAINLESS STEEL COVER PLATE WITH KO TO ACCEPT FURNITURE WHIP.
- P T — ELECTRIFIED FURNITURE PARTITION COMBINATION POWER/TELECOMMUNICATION FEEDS, MOUNTED IN FLUSH FLOOR BOX WITH KO'S IN COVER TO ACCEPT FURNITURE WHIPS
- P — ELECTRIFIED FURNITURE PARTITION POWER FEED, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTING WITH KO IN COVER TO ACCEPT FURNITURE WHIP.
- POWER/TELECOMMUNICATION POLE, MOUNTED TO EXTEND FROM FLOOR TO CEILING. TYPE AS NOTED ON PLANS.
- S — SINGLE-POLE, SINGLE-THROW SWITCH, WALL MOUNTED, +42" UON.
- S^3 — THREE-WAY SWITCH, WALL MOUNTED, +42" UON.
- S^4 — FOUR-WAY SWITCH, WALL MOUNTED, +42" UON.
- S^K — KEY-OPERATED, SINGLE-POLE, SINGLE-THROW SWITCH, WALL MOUNTED, +42" UON.
- S^P — PILOT LIGHT, SINGLE-POLE, SINGLE-THROW SWITCH, WALL MOUNTED, +42" UON.
- S^T — MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD ELEMENT, MOUNTED ADJACENT TO MOTOR.
- S^M — MANUAL MOTOR STARTER/DISCONNECT SWITCH, MOUNTED ADJACENT TO MOTOR.
- S^F — SWITCH FURNISHED UNDER ANOTHER DIVISION, BUT INSTALLED AND WIRED UNDER THIS DIVISION, WALL MOUNTED, +42" UON.
- S^D — WALL BOX DIMMER SWITCH, +42" UON. SIZED PER CONNECTED LOAD ON PLANS AND FURNISHED FOR LAMP SOURCE SERVED. PROVIDED FOR DE-RATING WHEN INSTALLED GANGED LOCATIONS.
- S^{TC} — SINGLE-POLE, TIMER CONTROLLED SWITCH, WALL MOUNTED, +42" UON.
- S^{EP} — SINGLE-POLE, SINGLE-THROW, EXPLOSION PROOF SWITCH, WALL MOUNTED, +42" UON.
- S — LINE-VOLTAGE MULTIPLE GANG SWITCHING STATION, WALL MOUNTED, 42" UON. REFER TO PLANS FOR DEVICE QUANTITIES AND TYPES.
- L — LOW-VOLTAGE LIGHTING CONTROL SWITCHING STATION, WALL MOUNTED, +42" UON. REFER TO PLANS AND SCHEDULES FOR DEVICE QUANTITIES AND RELAYS CONTROLLED
- M — LIGHTING CONTROL OCCUPANCY SENSOR WITH DUAL LEVEL SWITCHING, WALL MOUNTED, +42" UON.
- M1 — LIGHTING CONTROL OCCUPANCY SENSOR WITH SINGLE LEVEL SWITCHING, WALL MOUNTED, +42" UON.
- M — LIGHTING CONTROL OCCUPANCY SENSOR, CEILING MOUNTED FOR AREA COVERAGE.
- D — PRESET SCENE CONTROL LIGHTING STATION WITH DIMMING CAPABILITIES, WALL MOUNTED, +42" UON. REFER TO PLANS AND SCHEDULES FOR CONTROL.
- DM — COMBINATION LIGHTING CONTROL DIMMER/MOTION SENSOR, WALL MOUNTED, +42", UON.
- ETD — EGRESS LIGHTING TRANSFER DEVICE
- CONTROL STATION, WALL MOUNTED, +42" UON.
- PC — PHOTOELECTRIC CELL
- DS — DAYLIGHT SENSOR

RACEWAYS

- CONDUIT RUN EXPOSED ON WALL OR CEILING.
- CONDUIT RUN CONCEALED IN SLAB, UNDER SLAB OR UNDERGROUND.
- CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING.
- CONDUIT HOMERUN, CONTINUOUS RUN TO PANEL OR EQUIPMENT CABINET.
- FLEXIBLE METALLIC CONDUIT.
- CONDUIT TURNED UP
- CONDUIT TURNED DOWN.
- CONDUIT CAPPED OR STUBBED WITH INSULATED BUSHINGS.
- CONDUIT SLEEVE, WITH INSULATING BUSHINGS.
- CROSSMARKS ON BRANCH CIRCUIT CONDUIT RUNS INDICATE THE QUANTITY OF CONDUCTORS AS FOLLOWS (GROUND CONDUCTORS ARE NOT NOTED, BUT SHOULD BE INCLUDED IN EVERY CONDUIT WITH POWER CONDUCTORS):
  1. NO CROSSMARKS INDICATES TWO #12 AWG CONDUCTORS, UON.
  2. THREE TO SIX CROSSMARKS INDICATES THE QUANTITY OF #12 AWG CONDUCTORS, UON.
  3. SEVEN OR MORE CROSSMARKS INDICATES THE QUANTITY OF #10 AWG CONDUCTORS, UON.
- MULTI-OUTLET TWO PIECE SURFACE RACEWAY; TYPE, DEVICE SPACING AND MOUNTING AS NOTED ON PLANS.
- TWO PIECE SURFACE METAL RACEWAY, MOUNTED AS NOTED IN PLANS.
- CABLE TRAY, CABLE RUNWAY OR LADDER RACK SUSPENDED FROM STRUCTURE ABOVE. REFER TO PLANS FOR SIZE AND MOUNTING.

LIGHTING

- LIGHT FIXTURE, RECESSED IN CEILING.
- LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- LIGHT FIXTURE, WALL MOUNTED.
- STRIP LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- STRIP LIGHT FIXTURE, SURFACE MOUNTED IN ARCHITECTURAL CEILING COVE.
- STRIP LIGHT FIXTURE, SURFACE MOUNTED VERTICALLY ON WALL OR IN COVE.
- DOWNLIGHT FIXTURE, RECESSED IN CEILING.
- DOWNLIGHT/INDUSTRIAL FIXTURE, SURFACE OR PENDANT MOUNTED.
- SINGLE DIRECTIONAL, WALLWASH LIGHT FIXTURE, RECESSED IN CEILING.
- DUAL DIRECTIONAL, WALLWASH LIGHT FIXTURE, RECESSED IN CEILING.
- SINGLE DIRECTIONAL, WALLWASH LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- DUAL DIRECTIONAL, WALLWASH LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- ADJUSTABLE ACCENT LIGHT FIXTURE, RECESSED IN CEILING.
- ADJUSTABLE ACCENT LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- LINEAR WALLWASH LIGHT FIXTURE, RECESSED IN CEILING.
- LINEAR WALLWASH LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- LINEAR, MULTI-HEAD, ADJUSTABLE ACCENT LIGHT FIXTURES, RECESSED IN CEILING.
- SCONCE LIGHT FIXTURE, WALL MOUNTED.
- DECORATIVE CHANDELIER OR BOWL TYPE FIXTURE, PENDANT MOUNTED.
- J — LINEAR TRACK SYSTEM WITH PLUG-IN ADJUSTABLE LIGHT FIXTURE HEADS. TRACK SHALL BE EITHER RECESSED, SURFACE OR PENDANT MOUNTED TO CEILING AS NOTED IN FIXTURE SCHEDULE.
- EXIT SIGN LIGHT FIXTURE, CEILING OR WALL MOUNTED WITH DIRECTIONAL ARROWS AS NOTED ON PLANS. WORD 'EXIT' TO BE LOCATED IN SHADED FACE(S).
- COMBO EXIT SIGN AND EGRESS LIGHTING FIXTURE, CEILING OR WALL MOUNTED WITH ARROWS AS NOTED ON PLANS OR IN FIXTURE SCHEDULE.
- EMERGENCY SELF-POWERED BATTERY PACK WITH LIGHT FIXTURE HEADS AS NOTED ON PLANS OR IN FIXTURE SCHEDULE.
- HALF SHADING OF ANY FIXTURE INDICATES LIFE SAFETY/EGRESS LIGHTING.
- FULL SHADING OF ANY FIXTURE INDICATES STANDBY/CRITICAL LIGHTING.

EXTERIOR:

- SINGLE-HEAD AREA LIGHT FIXTURE WITH BRACKET ARM AND POLE, MOUNTED TO CONCRETE BASE.
- TWO-HEAD AREA LIGHT FIXTURES WITH BRACKET ARMS AND POLE, MOUNTED TO CONCRETE BASE.
- SINGLE-HEAD AREA POST-TOP LIGHT FIXTURE WITH POLE, MOUNTED TO CONCRETE BASE.
- AREA LIGHT FIXTURE, SURFACE OR RECESSED MOUNTED TO WALL.
- LIGHT FIXTURE BOLLARD, MOUNTED TO CONCRETE BASE.
- GROUND WELL MOUNTED FLUSH IN FINISHED GRADE.
- FLOODLIGHT FIXTURE, STANCHION MOUNTED ABOVE GRADE.
- LINEAR SIGN LIGHT FIXTURE, STANCHION MOUNTED ABOVE GRADE.
- STEPLIGHT FIXTURE, WALL MOUNTED.

TELECOMMUNICATION

- W — TELECOMMUNICATION DEVICE, WALL MOUNTED AT +42".
- TELECOMMUNICATION DEVICE, WALL MOUNTED, +18" UON.
- TELECOMMUNICATION DEVICE, WALL MOUNTED OVER COUNTER, 6" ABOVE BACK SPLASH, UON.
- TELECOMMUNICATION DEVICE, MOUNTED IN FLUSH FLOOR BOX.
- TELECOMMUNICATION DEVICE, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTING.
- TELECOMMUNICATION DEVICE, MOUNTED IN FLOOR MONUMENT.
- TELECOMMUNICATION DEVICE, MOUNTED ABOVE ACCESSIBLE CEILING IN SURFACE MOUNT BOX.
- COMBINATION POWER/TELECOMMUNICATION DEVICES, MOUNTED IN FLUSH FLOOR BOX. TYPE AS NOTED ON PLANS OR IN SPECIFICATIONS.
- COMBINATION POWER/TELECOMMUNICATION DEVICES, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTINGS. TYPE AS NOTED ON PLANS OR IN SPECIFICATIONS.
- T — ELECTRIFIED FURNITURE PARTITION TELECOMMUNICATION CABLE FEED, WALL MOUNTED, +18" UON. CONSISTS OF 4 11/16" SQ. X 2 1/8" DEEP. JUNCTION BOX, SINGLE GANG RING, AND STAINLESS STEEL COVERPLATE WITH 1 1/4" KO AND GROMMET. WRAP EXPOSED CABLE WITH SPIRAL WRAP.
- P T — ELECTRIFIED FURNITURE PARTITION COMBINATION POWER/TELECOMMUNICATION FEEDS, MOUNTED IN FLUSH FLOOR BOX WITH KO'S IN COVERS TO ACCEPT FURNITURE WHIPS. TELECOMMUNICATIONS WHIP SHALL BE 1 1/4" MINIMUM.
- T — ELECTRIFIED FURNITURE PARTITION TELECOMMUNICATION CABLE FEEDS, MOUNTED IN FIRE-RATED POKE-THRU THRU FLOOR FITTING WITH 1 1/4" KO'S IN COVER TO ACCEPT FURNITURE WHIPS.
- WAP — WIRELESS ACCESS POINT, WALL MOUNTED, 8" BFC UON.
- WAP — WIRELESS ACCESS POINT, CEILING MOUNTED.
- #D/#V — QUANTITY OF DATA AND/OR VOICE TELECOMMUNICATIONS DEVICES.

CONVENTIONS

- 1 — NUMBERED NOTE, APPLIES TO ALL DRAWINGS.
- 1 — NUMBERED SHEET NOTE, APPLIES TO DRAWING CONTAINING NOTES ONLY.
- 1 — OVERCURRENT PROTECTIVE DEVICE SPACE IDENTIFICATION TAG. REFERS TO LOCATION OF PROTECTIVE OR CONTROL DEVICE WITHIN SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, ETC.
- NAME — EQUIPMENT IDENTIFICATION TAG: ITEM FURNISHED AND INSTALLED UNDER ANOTHER SECTION AND WIRED UNDER THIS SECTION.
- P2 — CABLE AND/OR RACEWAY TAG, FUNCTION AS NOTED BELOW:
  P = POWER T = TELEPHONE C = COMMUNICATION
- 2004 — FEEDER SIZE. REFER TO FEEDER SCHEDULE.
- DETAIL REFERENCE: A / EXX.XX — SHEET NUMBER; DETAIL DESIGNATION
- FIXTURE IDENTIFICATION TAG: 2-F3 — FIXTURE TYPE; QUANTITY

AUDIO/VISUAL

- S — LOUDSPEAKER, WALL MOUNTED, 12" BELOW CEILING OR +96" AFF, WHICHEVER IS LOWER.
- S — LOUDSPEAKER, CEILING MOUNTED IN FLUSH BACK BOX. ADJACENT 70V OR 100V INDICATES DISTRIBUTED SAME VOLTAGE SPEAKER
- S — PROGRAM SPEAKER, CEILING OR STRUCTURE MOUNTED.
- IP — AUDIO AND VIDEO INTERFACE PLATE, WALL MOUNTED, +18" UON OR AS OTHERWISE NOTED.
- IP — AUDIO AND VIDEO INTERFACE PLATE, MOUNTED IN FLUSH FLOOR BOX.
- AV — AUDIO AND VIDEO CABLE DISPLAY PLATE, WALL MOUNTED, 4 11/16" BOX WITH 1 1/4" CONDUIT TO ACCESSIBLE CEILING. HEIGHT AS NOTED
- AV — AUDIO AND VIDEO CABLE AT PROJECTOR THROUGH SUPPORT, DIRECT CONNECT TO PROJECTOR
- TD — FLAT PANEL DISPLAY, WALL MOUNTED AT 60" AFF OR AS NOTED
- SD — SIGNAGE DISPLAY, WALL MOUNTED AT 84" AFF OR AS NOTED
- PR — PROJECTOR WITH PROJECTOR MOUNT, 1.5"-2" NPT COLUMN AND CEILING SUPPORT HARDWARE
- CP — AUDIO AND VIDEO CONTROL PANEL, FLUSH WALL MOUNTED AT 42" UON IN BACK BOX
- CP — AUDIO AND VIDEO CONTROL PANEL, MOUNTED ON CASEWORK IN SURFACE BOX OR WITH STAND
- CP — AUDIO AND VIDEO CONTROL PANEL, RACK MOUNTED
- C — VIDEO CONFERENCING CAMERA, WALL MOUNTED @ 84"UON
- C — VIDEO CONFERENCING CAMERA, CEILING MOUNTED IN CAMERA DOME
- PROJECTION SCREEN, SIZE AND TYPE AS NOTED
- PS — PROJECTION SCREEN 3 WAY POWER SWITCH, WALL MOUNTED, +42" UON.
- V — VOLUME CONTROLLER, WALL MOUNTED, +42" UON.
- MJ — MICROPHONE JACK, WALL MOUNTED, +18" UON.
- MJ — MICROPHONE JACK, MOUNTED IN FLUSH FLOOR BOX.
- I M — INTERCOM STATION, WALL MOUNTED, +42" UON. 'M' DENOTES MASTER STATION.
- I M — INTERCOM STATION, MOUNTED ON DESK. 'M' DENOTES MASTER STATION
- INDICATING CLOCK WITH CLOCK OUTLET, WALL MOUNTED, 12" BELOW CEILING OR +96" AFF, WHICHEVER IS LOWER.
- COMBINATION LOUDSPEAKER/INDICATING CLOCK WITH CLOCK OUTLET, WALL MOUNTED IN COMBINATION BACK BOX, 12" BELOW CEILING OR +96" AFF, WHICHEVER IS LOWER.
- TELEVISION JACK, WALL MOUNTED +18" UON OR AS NOTED
- TELEVISION JACK, MOUNTED IN FLUSH FLOOR BOX.

FIRE ALARM

- SMOKE DETECTOR INITIATING DEVICE, CEILING MOUNTED ON FLUSH OR SURFACE JUNCTION BOX.
- SMOKE DETECTOR INITIATING DEVICE, STRUCTURE MOUNTED ABOVE SUSPENDED CEILING TO SURFACE JUNCTION BOX.
- SMOKE DETECTOR INITIATING DEVICE, DUCT-MOUNTED TYPE WITH SAMPLING TUBE, LOCATED AT SUPPLY AIR FANS 2000cfm AND LARGER.
- SMOKE DETECTOR INITIATING DEVICE, HVAC UNIT MOUNTED.
- HEAT DETECTOR INITIATING DEVICE, CEILING MOUNTED ON FLUSH OR SURFACE JUNCTION BOX.
- COMBINATION SMOKE/CO DETECTOR INITIATING DEVICE, CEILING MOUNTED ON FLUSH OR SURFACE JUNCTION BOX.
- CARBON MONOXIDE DETECTOR INITIATING DEVICE, CEILING ON FLUSH OR SURFACE JUNCTION BOX.
- F — MANUAL PULL STATION INITIATING DEVICE, WALL MOUNTED AT +48" UON.
- D 2 — MOTOR OPERATED FIRE/SMOKE DAMPER 'FSD', NIEC. SYMBOL DENOTES INTERFACE FOR POWER, CONTROL AND POSSIBLY MONITORING CONNECTIONS FROM FIRE ALARM SYSTEM. ALSO, INCLUDES LOCAL POWER DISCONNECT MEANS. 'ES' BY FSD INDICATES END SWITCH CONNECTIONS FOR MONITORING BOTH 'OPEN' AND 'CLOSED POSITIONS. ADJACENT NUMBER INDICATES QUANTITY OF ACTUATORS AND END SWITCH GROUPS REQUIRING CONNECTION PER FSD, IF MORE THAN 1.
- SPRINKLER SYSTEM WATER FLOW SWITCH, NIEC. SYMBOL DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM.
- SPRINKLER SYSTEM TAMPER SWITCH, NIEC. SYMBOL DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM.
- SPRINKLER SYSTEM POST INDICATING VALVE 'PIV', NIEC. SYMBOL DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM. INCLUDE A REMOTE MOUNTED ADDRESSABLE MONITORING MODULE AT PIV.
- SM — REMOTE MOUNTED SINGLE INPUT, ADDRESSABLE, MONITORING MODULE FOR INITIATING CIRCUIT CONNECTION.
- DM — REMOTE MOUNTED DUAL INPUT, ADDRESSABLE, MONITORING MODULE FOR INITIATING CIRCUIT CONNECTION.
- CR — REMOTE MOUNTED PROGRAMMABLE CONTROL RELAY MODULE FOR ADDRESSABLE CONTROL.
- DPS — DIFFERENTIAL PRESSURE SWITCH, NIEC. SYMBOLS DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM TO ANNUNCIATE FAN OPERATION. INCLUDE A REMOTE MOUNTED ADDRESSABLE MONITORING MODULE AT EACH LOCATION.
- EOL — END-OF-LINE RESISTOR.
- PS — AIR PRESSURE SWITCH FOR PRE ACTION SPRINKLER SYSTEMS, NIEC. SYMBOL DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM. INCLUDE A REMOTE MOUNTED ADDRESSABLE MONITORING MODULE AT EACH LOCATION.
- MAGNETIC TYPE DOOR HOLD OPEN/RELEASE DEVICE, WALL MOUNTED, NIEC. SYMBOL DENOTES INTERFACE FOR POWER AND CONTROL CONNECTIONS FROM FIRE ALARM SYSTEM.
- AUDIBLE NOTIFICATION APPLIANCE, WALL MOUNTED, +90" AFF TO THE TOP OF APPLIANCE AND +6" BELOW THE CEILING,
- VISIBLE NOTIFICATION APPLIANCE, WALL MOUNTED, BOTTOM OF THE LENS NO LESS THAN 80" AFF AND TOP OF THE LENS NO GREATER THAN 96" AFF, NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.
- AUDIBLE/VISIBLE NOTIFICATION APPLIANCE, BOTTOM OF THE LENS NO LESS THAN 80" AFF AND TOP OF THE LENS NO GREATER THAN 96" AFF, NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.
- AUDIBLE NOTIFICATION APPLIANCE, CEILING MOUNTED IN FLUSH BACK BOX.
- DORM ROOM VISIBLE NOTIFICATION APPLIANCE, WITHIN 16" LINEAR OF EACH PILLOW, CEILING MOUNTED IN FLUSH BACK BOX. 177 CANDELA RATING OF STROBE.
- AUDIBLE/VISIBLE NOTIFICATION APPLIANCE, CEILING MOUNTED IN FLUSH BACK BOX. NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.
- FIREMAN'S TELEPHONE JACK, WALL MOUNTED, +42" UON.
- B — FIRE ALARM BELL. FURNISHED BY FIRE SPRINKLER CONTRACTOR. INSTALLED BY ELECTRICAL CONTRACTOR.
- HOOD — KITCHEN HOOD FIRE SUPPRESSION SYSTEM, INTERFACE.

ABBREVIATIONS

A	AMPERES	LFSB	LOW FREQUENCY SOUNDER BASE
AFC	ABOVE FINISHED CEILING	LSCP	LIFE SAFETY CONTROL PANEL
AFI	ARC FAULT CIRCUIT INTERRUPTER	LCP	LIGHTING CONTROL PANEL
AF	AMPERE OVERCURRENT FRAME SIZE (WHEN APPLIED TO CIRCUIT BREAKERS) OR AMPERE FUSE SIZE (WHEN APPLIED TO FUSES)	MBGB	MAIN BUILDING GROUND BUS
AFF	ABOVE FINISHED FLOOR	MCB	MAIN CIRCUIT BREAKER
AIC	ASYMMETRIC INTERRUPTING CURRENT	MCC	MOTOR CONTROL CENTER
AL	ALUMINUM	MLO	MAIN LUGS ONLY
AT	AMPERE OVERCURRENT TRIP (WHEN APPLIED TO CIRCUIT BREAKERS)	MT	EMPTY
ATS	AUTOMATIC TRANSFER SWITCH	MTC	EMPTY CONDUIT
BAS	BUILDING AUTOMATION SYSTEM	MTGB	MAIN TELECOM GROUND BUS
BFC	BELOW FINISHED CEILING	MTS	MANUAL TRANSFER SWITCH
BOC	BACK OF CURB	MW	MICROWAVE
BPS	BOLTED PRESSURE CONTACT SWITCH	(N)	NEW
C	CONDUIT	NC	NORMALLY CLOSED
CCTV	CLOSED CIRCUIT TELEVISION	NF	NON-FUSED
CL	CURRENT LIMITING CIRCUIT BREAKER OR FUSE	NIEC	NOT IN ELECTRICAL CONTRACT
CP	CIRCULATION PUMP	NO	NORMALLY OPEN
CKT	CIRCUIT	NTS	NOT TO SCALE
CT	CURRENT TRANSFORMER	OC	ON CENTER
CU	COPPER	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
DF	DRINKING FOUNTAIN	PDU	POWER DISTRIBUTION UNIT
DW	DISH WASHER	PIV	POST INDICATING VALVE
(E)	EXISTING TO REMAIN	PNL	PANEL
EC	ELECTRICAL CONTRACTOR	PT	POTENTIAL TRANSFORMER
EF	EXHAUST FAN	PVC	POLYVINYL CHLORIDE
EP	EXPLOSION PROOF	RF	REFRIGERATOR
EPO	EMERGENCY POWER OFF	(R)	EXISTING TO BE REMOVED
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM	(RL)	RELOCATED
EMT	ELECTRICAL METALLIC TUBING	(RR)	REMOVE AND RELOCATE
ETD	EMERGENCY TRANSFER DEVICE	RSC	RIGID STEEL CONDUIT
EVSE	ELECTRIC VEHICLE SUPPLY EQUIPMENT	SAD	SEE ARCHITECTURAL DRAWINGS
EVCS	ELECTRIC VEHICLE CHARGING STATION	SPD	SURGE PROTECTION DEVICE
EWH	ELECTRIC WATER HEATER	TC	TIME CLOCK
F	FUSED	TGB	TELECOMMUNICATIONS GROUND BUS
(F)	FUTURE	TP	TWISTED-PAIR
FACP	FIRE ALARM CONTROL PANEL	TX	TRANSFORMER
FAJB	FIRE ALARM JUNCTION BOX	TYP	TYPICAL
FFCP	FIREMAN'S FAN CONTROL PANEL	UON	UNLESS OTHERWISE NOTED
FLA	FULL LOAD AMPERES	UPS	UNINTERRUPTIBLE POWER SUPPLY
FMC	FLEXIBLE METAL CONDUIT	URAP	UPS REMOTE ANNUNCIATOR PANEL
FSD	FIRE/SMOKE DAMPER	UR	UNDERCOUNTER REFRIGERATOR
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR	V	VOLTS
FRAP	FIREMAN'S REMOTE ANNUNCIATOR PANEL	VA	VOLTS-AMPS
G	GROUND	VAV	VARIABLE AIR VOLUME
GB	GROUND BUS	VFD	VARIABLE FREQUENCY DRIVE
GD	GARBAGE DISPOSAL	VM	VENDING MACHINE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	W	WATTS
GND	GROUND	WAP	WIRELESS ACCESS POINT
GRAP	GENERATOR REMOTE ANNUNCIATOR PANEL	WH	WATER HEATER
GWH	GAS WATER HEATER	WP	WEATHERPROOF
HPC	HIGH PRESSURE CONTACT SWITCH	2SP	TWO SPEED
HVAC	HEATING,VENTING AND AIR CONDITIONING	1Ø	1 PHASE
IMC	INTERMEDIATE METAL CONDUIT	3Ø	3 PHASE
IWH	INSTANTANEOUS OR POINT OF USE WATER HEATER	1P	1 POLE
JB	JUNCTION BOX	2P	2 POLE
		3P	3 POLE
		3W	3 WIRE
		4W	4 WIRE

DRAWING INDEX

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ELECTRICAL
STATE OF CALIFORNIA

LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD

SACRAMENO, CALIFORNIA 95841

SYMBOLS LIST, ABBREVIATIONS, AND DRAWING INDEX

REVISIONS

DATE	AUGUST 15, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

E0.0

DSA ANCHORAGE NOTES

ELECTRICAL COMPONENT ANCHORAGE NOTE

ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED AND ANCHORED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IN INDICATED, THE FOLLOWING COMPONENTS WILL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTERS 13, 26, AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. ALL TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE ATTACHMENT OF THE FOLLOWING ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT.

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 HUNG FROM A WELL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION BRACING NOTE

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.8, 13.6.7, 13.6.5.6 AND 2016 CBC, SECTIONS 1616A.1.23, 1616A.1.24, 1616A.1.25, AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (e.g. SMACNA OR OSHPD OPM), COPIES OF THE BRACKING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEERING OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

ELECTRICAL DISTRIBUTION SYSTEMS, OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM #) 0043-013.

PROJECT: ARC CORP YARD

LOCATION: ELECT 145

PANEL - L1A

LOAD SERVED	Load(KVA) Ltg	Rec	Oth Tot	C. B. Amp	Pole	A	B	C		C. B. Amp	Pole	Load(KVA) Ltg	Rec	Oth Tot	LOAD SERVED
SPARE				20	1	1	*		2	20	1	1.0			SPARE
SPARE				20	1	3		*	4	20	1	1.0			SPARE
SPARE				20	1	5	*		6	20	1	1.0			SPARE
SPARE				20	1	7		*	8	20	1				SPARE
SPARE				20	1	9	*		10	20	1				SPARE
SPARE				20	1	11		*	12	20	1				SPARE
SPARE				20	1	13	*		14	20	1				SPARE
SPARE				20	1	15		*	16	20	1				SPARE
SPARE				20	1	17	*		18	20	1				SPARE
SPARE				20	1	19		*	20	20	1				SPARE
SPARE				20	1	21	*		22	20	1				SPARE
SPARE				20	1	23		*	24	20	1				SPARE
SPARE				20	1	25	*		26	20	1				SPARE
SPARE				20	1	27		*	28	20	1				SPARE
SPARE				20	1	29	*		30	20	1				SPARE
SPARE				20	1	31		*	32	20	1				SPARE
SPARE				20	1	33	*		34	20	1				SPARE
SPARE				20	1	35		*	36	20	1				SPARE
SPARE				20	1	37	*		38	20	1				SPARE
SPARE				20	1	39		*	40	20	1				SPARE
SPARE				20	1	41	*		42	20	1				SPARE
TOTALS ——>												3.0			<—— TOTALS

VOLTAGE: 120/208V, 3Ø, 4W
S.C.A.: 10K AIC RMS SYM
MOUNTING: SURFACE
BUS SIZE: 225 AMP BUSING
MAINS: 150 AMP MAIN BRKR

Connected Load (KVA)	Demand Factor	Demand Load	Load Description
3.0	125% OF LOAD CEC 220-14(i) CEC 220-56 CEC 620-14 CEC 517.73(A) 1.0 + 25% Largest CHARGING STATION 125%	3.8	<—— Lighting <—— Receptacles <—— Kitchen <—— Elevator <—— X-Ray <—— Mech <—— Electrical Vehicle <—— Other
3.0 KVA		3.8 KVA	10.4 Amps
		+25% Spare	13.0 Amps

PHASE BALANCE (SECT 1)

	A	B	C
KVA	1	1	1
%	33%	33%	33%
AMP	8	8	8

Feed: CONTRACTOR'S OPTION

ADDITIONAL FEATURES:

BREAKER NOTES

BREAKERS THAT SHARE NEUTRAL CONDUCTORS SHALL BE PROVIDED WITH HANDLE TIES.
DATE PRINTED: 10/02/19

PROJECT: ARC CORP YARD

LOCATION: ELECT 111

PANEL - L1B — SECTION 1

LOAD SERVED	Load(KVA) Ltg	Rec	Oth Tot	C. B. Amp	Pole	A	B	C		C. B. Amp	Pole	Load(KVA) Ltg	Rec	Oth Tot	LOAD SERVED
SPARE				20	1	1	*		2	20	1	1.0			SPARE
SPARE				20	1	3		*	4	20	1	1.0			SPARE
SPARE				20	1	5	*		6	20	1	1.0			SPARE
SPARE				20	1	7		*	8	20	1				SPARE
SPARE				20	1	9	*		10	20	1				SPARE
SPARE				20	1	11		*	12	20	1				SPARE
SPARE				20	1	13	*		14	20	1				SPARE
SPARE				20	1	15		*	16	20	1				SPARE
SPARE				20	1	17	*		18	20	1				SPARE
SPARE				20	1	19		*	20	20	1				SPARE
SPARE				20	1	21	*		22	20	1				SPARE
SPARE				20	1	23		*	24	20	1				SPARE
SPARE				20	1	25	*		26	20	1				SPARE
SPARE				20	1	27		*	28	20	1				SPARE
SPARE				20	1	29	*		30	20	1				SPARE
SPARE				20	1	31		*	32	20	1				SPARE
SPARE				20	1	33	*		34	20	1				SPARE
SPARE				20	1	35		*	36	20	1				SPARE
SPARE				20	1	37	*		38	20	1				SPARE
SPARE				20	1	39		*	40	20	1				SPARE
SPARE				20	1	41	*		42	20	1				SPARE
TOTALS ——>												3.0			<—— TOTALS

VOLTAGE: 120/208V, 3Ø, 4W
S.C.A.: 10K AIC RMS SYM
MOUNTING: SURFACE
BUS SIZE: 250 AMP BUSING
MAINS: 250 AMP MAIN BRKR

Connected Load (KVA)	Demand Factor	Demand Load	Load Description
3.0	125% OF LOAD CEC 220-14(i) CEC 220-56 CEC 620-14 CEC 517.73(A) 1.0 + 25% Largest CHARGING STATION 125%	3.8	<—— Lighting <—— Receptacles <—— Kitchen <—— Elevator <—— X-Ray <—— Mech <—— Electrical Vehicle <—— Other
3.0 KVA		3.8 KVA	10.4 Amps
		+25% Spare	13.0 Amps

PHASE BALANCE (SECT 1)

	A	B	C
KVA	1	1	1
%	33%	33%	33%
AMP	8	8	8

Feed: CONTRACTOR'S OPTION

ADDITIONAL FEATURES:

BREAKER NOTES

BREAKERS THAT SHARE NEUTRAL CONDUCTORS SHALL BE PROVIDED WITH HANDLE TIES.
DATE PRINTED: 10/02/19

PROJECT: ARC CORP YARD

LOCATION: ELECT 111

PANEL - L1B — SECTION 2

LOAD SERVED	Load(KVA) Ltg	Rec	Oth Tot	C. B. Amp	Pole	A	B	C		C. B. Amp	Pole	Load(KVA) Ltg	Rec	Oth Tot	LOAD SERVED
SPARE				20	1	43	*		44	20	1				SPARE
SPARE				20	1	45		*	46	20	1				SPARE
SPARE				20	1	47			48	20	1				SPARE
SPARE				20	1	49	*		50	20	1				SPARE
SPARE				20	1	51		*	52	20	1				SPARE
SPARE				20	1	53			54	20	1				SPARE
SPARE				20	1	55	*		56	20	1				SPARE
SPARE				20	1	57		*	58	20	1				SPARE
SPARE				20	1	59			60	20	1				SPARE
SPARE				20	1	61	*		62	20	1				SPARE
SPARE				20	1	63		*	64	20	1				SPARE
SPARE				20	1	65			66	20	1				SPARE
SPARE				20	1	67	*		68	20	1				SPARE
SPARE				20	1	69		*	70	20	1				SPARE
SPARE				20	1	71			72	20	1				SPARE
SPARE				20	1	73	*		74	20	1				SPARE
SPARE				20	1	75		*	76	20	1				SPARE
SPARE				20	1	77			78	20	1				SPARE
SPARE				20	1	79	*		80	20	1				SPARE
SPARE				20	1	81		*	82	20	1				SPARE
SPARE				20	1	83			84	20	1				SPARE
TOTALS ——>															<—— TOTALS

VOLTAGE: 120/208V, 3Ø, 4W
S.C.A.: 10K AIC RMS SYM
MOUNTING: SURFACE
BUS SIZE: 250 AMP BUSING
MAINS: MAIN LUGS ONLY

Connected Load (KVA)	Load Description
	<—— Lighting <—— Receptacles <—— Kitchen <—— Elevator <—— X-Ray <—— Mech <—— Electrical Vehicle <—— Other
KVA SECTION 2 TOTAL	

PHASE BALANCE (SECT 2)

	A	B	C
KVA			
%			
AMP			

ADDITIONAL FEATURES:

BREAKERS THAT SHARE NEUTRAL CONDUCTORS SHALL BE PROVIDED WITH HANDLE TIES.
DATE PRINTED: 10/01/19

PROJECT: ARC CORP YARD

LOCATION: ELECT 145

PANEL - HDP1

LOAD SERVED	Load(KVA) Ltg	Rec	Oth Tot	C. B. Amp	Pole	A	B	C		C. B. Amp	Pole	Load(KVA) Ltg	Rec	Oth Tot	LOAD SERVED
---					3	3	*		4	70	3	1.0			---
---					3			*				1.0			PANEL L1A VIA TX-1A
---					3		*					1.0			---
					3	9		*	10	125	3	1.0			PANEL L1B VIA TX-1B
---					3		*					1.0			---
---					3			*				1.0			---
					3	15	*		16	100	3	1.0			PANEL H1A
---					3			*				1.0			---
---					3		*								---
					3	21		*	22		3				
---					3		*								---
---					3			*							---
					3	27	*		28		3				
---					3			*							---
---					3		*								---
					3	33		*	34		3				
---					3		*								---
---					3			*							---
					3	39	*		40		3				
---					3			*							---
TOTALS ——>												9.0			<—— TOTALS

VOLTAGE: 120/208V, 3Ø, 4W
S.C.A.: 10K AIC RMS SYM
MOUNTING: SURFACE
BUS SIZE: 400 AMP BUSING
MAINS: 400 AMP MAIN BRKR

Connected Load (KVA)	Demand Factor	Demand Load	Load Description
9.0	125% OF LOAD CEC 220-14(i) CEC 220-56 CEC 620-14 CEC 517.73(A) 1.0 + 25% Largest CHARGING STATION 125%	11.3	<—— Lighting <—— Receptacles <—— Kitchen <—— Elevator <—— X-Ray <—— Mech <—— Electrical Vehicle <—— Other
9.0 KVA		11.3 KVA	31.3 Amps
		+25% Spare	39.1 Amps

PHASE BALANCE (SECT 1)

	A	B	C
KVA	3	3	3
%	33%	33%	33%
AMP	25	25	25

Feed: CONTRACTOR'S OPTION

ADDITIONAL FEATURES:

BREAKER NOTES

BREAKERS THAT SHARE NEUTRAL CONDUCTORS SHALL BE PROVIDED WITH HANDLE TIES.
DATE PRINTED: 10/02/19

PROJECT: ARC CORP YARD

LOCATION: ELECT 145

PANEL - H1A

LOAD SERVED	Load(KVA) Ltg	Rec	Oth Tot	C. B. Amp	Pole	A	B	C		C. B. Amp	Pole	Load(KVA) Ltg	Rec	Oth Tot	LOAD SERVED
SPARE				20	1	1	*		2	20	1	1.0			SPARE
SPARE				20	1	3		*	4	20	1	1.0			SPARE
SPARE				20	1	5	*		6	20	1	1.0			SPARE
SPARE				20	1	7		*	8	20	1				SPARE
SPARE				20	1	9	*		10	20	1				SPARE
SPARE				20	1	11		*	12	20	1				SPARE
SPARE				20	1	13	*		14	20	1				SPARE
SPARE				20	1	15		*	16	20	1				SPARE
SPARE				20	1	17	*		18	20	1				SPARE
SPARE				20	1	19		*	20	20	1				SPARE
SPARE				20	1	21	*		22	20	1				SPARE
SPARE				20	1	23		*	24	20	1				SPARE
TOTALS ——>												3.0			<—— TOTALS

VOLTAGE: 120/208V, 3Ø, 4W
S.C.A.: 24K AIC RMS SYM
MOUNTING: SURFACE
BUS SIZE: 100 AMP BUSING
MAINS: 100 AMP MAIN BRKR

Connected Load (KVA)	Demand Factor	Demand Load	Load Description
3.0	125% OF LOAD CEC 220-14(i) CEC 220-56 CEC 620-14 CEC 517.73(A) 1.0 + 25% Largest CHARGING STATION 125%	3.8	<—— Lighting <—— Receptacles <—— Kitchen <—— Elevator <—— X-Ray <—— Mech <—— Electrical Vehicle <—— Other
3.0 KVA		3.8 KVA	10.4 Amps
		+25% Spare	13.0 Amps

PHASE BALANCE (SECT 1)

	A	B	C
KVA	1	1	1
%	33%	33%	33%
AMP	8	8	8

Feed: CONTRACTOR'S OPTION

ADDITIONAL FEATURES:

BREAKER NOTES

BREAKERS THAT SHARE NEUTRAL CONDUCTORS SHALL BE PROVIDED WITH HANDLE TIES.
DATE PRINTED: 10/02/19

GENERAL SHEET NOTES

1. BREAKER FOR FIRE ALARM CONTROL PANEL AND OTHER FIRE ALARM DEVICES SHALL COMPLY WITH NFPA 72 § 10.5.5.
   a. PROVIDE DEDICATED CIRCUIT.
   b. PROVIDE LOCKOUT DEVICE AT BREAKER.
   c. PROVIDE BREAKER WITH RED TRIP HANDLE.
   d. IDENTIFY FIRE ALARM DEVICES CLEARLY ON PANEL DIRECTORY.
   e. ALL PANELS ARE PROVIDED WITH KEY AND LOCK FOR ACCESS ONLY TO AUTHORIZED PERSONNEL
   f. PROVIDE NAMEPLATE AT FIRE ALARM CONTROL PANEL INDICATING LOCATION OF PANEL SERVICING THE FACP, AND ROOM NUMBER WHERE PANEL IS LOCATED.
2. PER CEC 210.4(B), PROVIDE HANDLE TIE ATTACHMENT FOR SIMULTANEOUS DISCONNECT OF ALL MULTI-WIRE BRANCH CIRCUITS.

PROJECT GENERAL NOTES

1. UNLESS OTHERWISE NOTED, ALL CIRCUITRY SHOWN ON THESE DOCUMENTS IS DONE PER THE "ROUNDHOUSE" METHOD. FOR EVERY GROUP OF THREE (3) CONSECUTIVE CIRCUITS IN PHASE ORDER, THERE IS A DEDICATED NEUTRAL. FOR EXAMPLE, A HOMERUN COMPRISED OF CIRCUITS 1, 3 AND 5 CONTAINS FOUR (4) CONDUCTORS; THREE (3) HOTS AND ONE (1) NEUTRAL. A HOMERUN COMPRISED OF NON- CONSECUTIVE NUMBERS OUT OF PHASE ORDER. I.E. 1, 9 AND 11 OR 3, 5, 7 CONTAINS FIVE (5) CONDUCTORS; THREE (3) HOTS AND TWO (2) NEUTRALS. GROUND CONDUCTORS TYPICALLY ARE NOT SHOWN AS PART OF THE WIRE COUNT.
2. FOR ANY CIRCUIT WHERE A NEUTRAL CONDUCTOR IS SHARED BY MULTIPLE PHASE CONDUCTORS, PROVIDE OVERSIZED NEUTRAL CONDUCTOR, #10 MIN.
3. INSTALL AND CONNECT A CODE SIZED INSULATED OR BARE COPPER GROUNDING CONDUCTOR IN ALL BRANCH CIRCUITS AND FEEDERS.
4. MOUNTING HEIGHTS SHOWN ARE FROM FINISHED FLOOR TO THE CENTERLINE OF THE DEVICE. ALL MOUNTING HEIGHTS SHALL BE AS SHOWN ON THE SYMBOLS LIST UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
5. REFER TO POWER DRAWINGS FOR THE LOCATION OF ALL PANELBOARDS.
6. FURNISH AND INSTALL ALL PANELBOARDS WITH CIRCUIT BREAKERS AS SHOWN ON PANEL SCHEDULES.
7. REFER TO ELECTRICAL DRAWINGS FOR THE FIXTURE SCHEDULE.
8. SUBSCRIPTS ON SWITCH SYMBOLS (Sa) DENOTE THE FIXTURE CONTROLLED.
9. DO NOT INSTALL POWER OUTLETS BACK TO BACK IN STUD WALLS.
10. REFER TO ELECTRICAL ONE LINE DIAGRAM AND FEEDER SCHEDULE FOR THE SIZE OF CONDUITS AND CONDUCTORS BETWEEN MAJOR POWER COMPONENTS OF THE ELECTRICAL SYSTEM.
11. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONAL LOCATION OF OUTLETS AND FIXTURES AND LOCATION IN ELEVATION VIEW.
12. CONTRACTOR IS RESPONSIBLE TO SUBMIT REVISED LAYOUT OF EQUIPMENT IN MAIN ELECTRICAL ROOM OR ELECTRICAL CLOSET FOR WRITTEN APPROVAL BY ENGINEER IF PROPOSED INSTALLATION LAYOUT DIFFERS FROM CONSTRUCTION DOCUMENTS. SUBMISSION MUST BE APPROVED PRIOR TO RELEASE OF ORDER FOR EQUIPMENT AND PRIOR TO INSTALLATION.
13. THE CONTRACTOR SHALL VISIT THE JOBSITE AND VERIFY ALL EXISTING CONDITIONS BEFORE BIDDING AND SHALL INCLUDE IN THE BID THE NECESSARY COSTS TO CONSTRUCT THIS PROJECT IN ACCORDANCE WITH THE ELECTRICAL DRAWINGS, SPECIFICATIONS AND ALL APPLICABLE CODES.
14. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDER-WRITERS LABORATORIES AND BEAR THEIR LABEL.
15. ALL MECHANICAL LINE AND LOW VOLTAGE CONTROL AND INTERLOCK WIRING SHALL BE PROVIDED UNDER DIVISION 23. THIS SHALL ALSO INCLUDE THE SHUTDOWN WIRING FROM THE FIRE ALARM CONTROL RELAY AT EACH AC UNIT.
16. CONTRACTOR SHALL REMOVE ALL LEFT OVER CONDUIT, WIRE, SCRAPS, ETC. AND LEAVE PREMISES CLEAN AND FREE OF TRASH OR DEBRIS RESULTING FROM HIS WORK.
17. CONTRACTOR SHALL REPORT TO THE OWNER'S ENGINEER ANY OBSERVATIONS OF CONDITIONS WHICH ARE DISCOVERED IN THE BUILDING WHICH WOULD PREVENT THE CORRECT INSTALLATION OF THE ELECTRICAL SYSTEM.
18. PROVIDE INDIVIDUAL GFCI RECEPTACLES AT EACH LOCATION SHOWN, DO NOT USE FEED-THRU GFCI TYPE RECEPTACLES. LOCATE RECEPTACLE AT END OF A BRANCH CIRCUIT WIRE.
19. VERIFY THE EXACT LOCATION OF ALL MECHANICAL PUMP AND FAN MOTORS, SPRINKLER VALVE MONITORS AND FLOW SWITCHES, DUCT SMOKE DETECTORS, CONTROL DEVICES, ETC. PRIOR TO DETERMINING CONDUIT TERMINATION POINTS.
20. CONDUIT ROUTING (WHERE SHOWN) IS ESSENTIALLY DIAGRAMMATIC. CONTRACTOR SHALL LAYOUT RUNS TO SUIT FILED CONDITIONS AND THE COORDINATION REQUIREMENTS OF OTHER TRADES.
21. ALL CONDUIT AND RACEWAY PENETRATIONS THROUGH FIRE RATED WALLS AND FLOORS SHALL BE SEALED TO MAINTAIN THE FIRE SEPARATION RATING. REFER TO A-E/E6.3. REFER TO ARCHITECTURAL PLANS TO IDENTIFY ALL RATED CONSTRUCTION.
22. CONDUITS EMBEDDED IN SLABS SHALL BE NO LARGER THAN 1.25" TRADE SIZE OF 1/3 OR SLAB DEPTH, WHICHEVER IS SMALLER. SPACE CONDUITS 5" APART (CENTER-T0-CENTER).
23. REFER TO STRUCTURAL DRAWINGS FOR CONDUIT INSTALLATION REQUIREMENTS AND LIMITATIONS AT FOOTINGS AND FOR CONDUIT RUNS IN OR THROUGH CONCRETE SLABS, JOISTS AND BEAMS.
24. ALL CONDUITS CROSSING EXPANSION JOINTS SHALL BE PROVIDED WITH SPECIFIED EXPANSION/DEFLECTION FITTINGS.
25. INSTALL A POLYETHYLENE PULLING ROPE IN ALL EMPTY CONDUITS.
26. FIXTURES INDICATED AS EMERGENCY, WITH BATTERY BACK-UP, SHALL BE WIRED FOR NORMAL OPERATION (SWITCHED) U.O.N. DO NOT WIRE AS NIGHT LIGHT (24 HOUR OPERATION) U.O.N. EXIT LIGHTS ARE EXCEPTION.
27. TYPICAL FOR LINEAR FIXTURES WITH TWO LAMPS IN PROFILE WITH DUAL LEVEL SWITCHING, 'a' WILL CONTROL HALF OF THE LAMPS RUNNING THE LENGTH OF THE FIXTURE, 'b' THE LAMPS ON THE OTHER HALF OF THE FIXTURE. WHERE LINEAR FIXTURE HAS THREE LAMPS IN PROFILE, 'a' CONTROLS INBOARD LAMPS, 'b' CONTROLS OUTBOARD LAMPS.
28. WIRE FOR DUAL LEVEL SWITCHING OF INBOARD AND OUTBOARD LAMPS FOR ALL THREE AND FOUR LAMP 2' X 4' FLUORESCENT FIXTURES PER TITLE 24: 2-5319 (C) IN ROOMS WHERE MULTIPLE SWITCHES ARE INDICATED, UON. ALL FIXTURES INDICATED WITH STEP DIMMING BALLASTS SHALL BE DUAL LEVEL SWITCHES.
29. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS TO VERIFY LOCATION OF CEILING MOUNTED LIGHT FIXTURES. REPORT ANY DISCREPANCIES PRIOR TO ROUGH-IN.
30. LAMP ORIENTATION IN ROOMS CONTAINING 2' X 2' AND 2' X 4' FIXTURES SHALL BE THE SAME.
31. REFER TO ARCHITECTURAL PLANS AND IDENTIFY ALL SEISMIC JOINTS, AND INSTALL CONDUIT PER SEISMIC JOINT ELECTRICAL DETAIL F/E6.1.
32. ALL EXPOSED CONDUIT, BOXES, SUPPORTS, ETC. SHALL BE PAINTED TO MATCH SURROUNDING SURFACES.
33. ALL EXPOSED LIGHT FIXTURE CORDS AND CANOPIES SHALL BE APPROVED BY THE ARCHITECT FOR COLOR. PROVIDE WHITE UNLESS OTHERWISE NOTED.
34. DEVICE AND FACEPLATE COLORS SHALL BE COORDINATED WITH THE ARCHITECT, INCLUDING DESIGNER COLORS IN MAIN ENTRY LOBBIES AND OTHER SPACES AS REQUIRED.
35. NO METAL OR ARMOR-CLAD CABLE SHALL BE CONCEALED IN WALLS ON IN THIS PROJECT. PRODUCTS MAY BE USED ONLY IN ACCESSIBLE CEILING SPACE (i.e. "FIXTURE WHIPS").
36. ALL EXPOSED CONDUITS, CABLE TRAY, OPEN CABLING SHALL BE ROUTED AT RIGHT ANGLES TO THE BUILDING STRUCTURE.
37. DEVICE/OUTLET BOXES MOUNTED ON OPPOSITE SIDES OF RATED WALLS IN CORRIDORS, AND IN ANY AIRTIGHT SPACES, SHALL BE SEPARATED BY A MINIMUM OF 24".
38. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS OF WALL MOUNTED LIGHT FIXTURES, AND MOUNTING HEIGHTS OF ALL SUSPENDED FIXTURES. REPORT ANY DISCREPANCIES BETWEEN THE ELEVATIONS AND INFORMATION PROVIDED ON THE ELECTRICAL PLANS PRIOR TO ROUGH-IN.

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LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENTO, CALIFORNIA 95841

PANEL SCHEDULES AND PROJECT NOTES

REVISIONS

DATE: AUGUST 15, 2019
SCALE: AS NOTED
DRAWN BY: -
JOB NO.: 19-06
SHEET:

EO.1

GENERAL SHEET NOTES

A. CONTRACTOR SHALL PROVIDE COMPLETE SHOP DRAWINGS FOR ALL LIGHTING CONTROLS, TO INCLUDE PRODUCT DATA SHEETS, DETAILED ROOM BY ROOM WIRING DIAGRAMS, AND COMPLETE SEQUENCE OF CONTROL OPERATIONS.

B. REFER TO LIGHTING CONTROL SEQUENCE OF OPERATIONS ON SHEET E0.2 FOR ADDITIONAL PROGRAMMING REQUIREMENTS FOR NETWORKED LIGHTING CONTROLS.

C. WIRING DIAGRAMS HAVE BEEN PROVIDED TO CONVEY GENERAL DESIGN INTENT. PROVIDE ALL COMPONENTS, CABLING, ETC. AS REQUIRED TO PROVIDE A FULLY FUNCTIONAL SYSTEM MEETING THE DESIGN INTENT AS SHOWN ON THE PLANS.

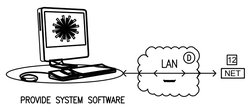
D. ROOM CONTROLLERS, POWER PACKS, ARE NOT NECESSARILY SHOWN ON THE PLANS. LOCATE IN AN EASILY SERVICEABLE LOCATION IN ACCESSIBLE CEILING SPACE. IF THE ROOM CEILING IS NOT ACCESSIBLE, LOCATE IN ADJACENT ROOM ACCESSIBLE CEILING SPACE AND DENOTE LOCATION ON THE RECORD DRAWINGS.

E. 0-10V WIRING IS NOT SHOWN ON THE PLANS. PROVIDE 18-AWG SOLID COPPER WIRE RATED 600V MIN., 105°C, WITH VIOLET GRAY SHEATHING. 0-10 WIRE MAY BE ROUTED FREE AIR, CABLE TIE WIRES TO CONDUIT FOR LINE VOLTAGE WIRING.

F. PROVIDE WIRING TO INTERCONNECT EACH INDIVIDUAL ROOM CONTROL AS REQUIRED TO NETWORK LIGHTING CONTROL SYSTEM.

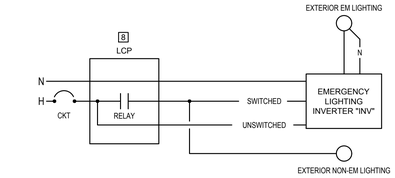
[#] NUMBERED SHEET NOTES

1. REMOTE DIMMING (OR SWITCHING) MODULE, NUMBER OF RELAYS CONTROLLED AS INDICATED ON THE PLANS. MAY CONSIST OF ONE DEVICE WITH MULTIPLE RELAYS, OR MORE THAN ONE SINGLE-RELAY DEVICE. DEVICE SHALL BE LOCATED CONCEALED IN AN EASILY ACCESSIBLE SPACE; PREFERRED LOCATION IS ABOVE THE ACCESSIBLE CEILING IMMEDIATELY IN FRONT OF THE ENTRY DOOR (LOCATION SHOWN ON THE PLANS IS DIAGRAMMATIC). THIS DEVICE MAY BE A FIXTURE INTEGRATED MODULE IF REQUIRED TO PROVIDE DESCRIBED FUNCTIONALITY; IF THIS OPTION IS SELECTED, 0-10V WIRING IS INTEGRAL TO THE FIXTURE, AND CAT5 CABLING BETWEEN EACH FIXTURE IS REQUIRED.
2. CEILING MOUNTED, DUAL TECHNOLOGY OCCUPANCY SENSOR, QUANTITY AS INDICATED ON PLANS. DEVICE SHOWN IN CORNER OF ROOM IS INTENDED TO BE A CORNER MOUNTED SENSOR.
3. DAYLIGHT SENSOR. FEATURE MAY BE INCORPORATED INTO A COMBINATION DEVICE (OCCCUPANCY + PHOTOCELL) DEPENDING UPON MANUFACTURER, PROVIDING THAT THE PERFORMANCE OF BOTH SENSORS IS NOT COMPROMISED.
4. HVAC INTERFACE DEVICE; ROOM HVAC TO SHUT DOWN WHEN ROOM IS VACANT. PROVIDE IN ANY INSTRUCTURAL SPACE, WHETHER OR NOT SHOWN ON PLANS.
5. LOW VOLTAGE DIMMER SWITCH, WITH ON/OFF AND RAISE LOWER CONTROL. DEVICE MAY INCORPORATE OCCUPANCY SENSING IN ADDITION TO, OR IN LIEU OF A CEILING SENSOR, IF THE DEVICE PROVIDES ADEQUATE COVERAGE IN THE SPACE (IN ROOMS UP TO 125 S.F.).
6. LOW VOLTAGE SCENE CONTROL SWITCH, WITH MINIMUM OF FOUR SCENE CONTROL BUTTONS AND MASTER RAISE LOWER. SCENE BUTTONS SHALL INCLUDE 'LECTURE MODE', 'AV MODE', 'WHITEBOARD ON/OFF', AND 'MASTER ON/OFF'.
7. NETWORK INTERFACE DEVICE, i.e. HUB OR BRIDGE. PROVIDES NETWORK INTERFACE TO THE CENTRAL BACKBONE NETWORK CONTROLLER. QUANTITY OF DEVICES MAY VARY BY MANUFACTURER; ONE DEVICE MAY BE REQUIRED FOR EACH ROOM THAT IS PART OF THE NETWORK, OR SEVERAL ROOMS MAY HOME RUN TO A SINGLE DEVICE.
8. NETWORK LIGHTING CONTROL RELAY PANEL FOR CONTROL OF EXTERIOR LIGHTING SHALL BE PART OF THE NETWORK LIGHTING CONTROL SYSTEM. REFER TO LCP SCHEDULES FOR ADDITIONAL REQUIREMENTS
9. NETWORK LIGHTING CONTROL CABLES PER MANUFACTURER, TYPICALLY CAT5 CABLE WITH RJ45 CONNECTORS.
10. 0-10V WIRING MAY BE RUN IN MC CABLE WITH POWER.
11. RECEPTACLE CONTROL DEVICE COMPATIBLE WITH THE SPECIFIED NETWORK LIGHTING CONTROL SYSTEM, RATED 20A. PROVIDE IN EACH PRIVATE OOFFIC, OPEN OFFICE AREA, RECEPTION OR LOBBY AREA, CONFERENCE ROOM, KITCHENETTE OR BREAK ROOM, AND COPY/WORK ROOM.
12. CENTRAL BACKBONE NETWORK CONTROLLER, FOR CONTROL, MONITORING, ADJUSTMENT, AND TIME BASED SCHEDULING OF THE NETWORK LIGHTING CONTROL SYSTEM. ALL LOCAL NETWORKS SHALL CONNECT TO THE CENTRAL CONTROLLER. EXACT REQUIREMENTS MAY VARY BY MANUFACTURER. PROVIDE DEDICATED 120V CIRCUIT AND ETHERNET CONNECTION EVEN IF NOT SHOWN ON THE PLANS.



E / E0.2 NETWORK LIGHTING CONTROLS

NTS



NOTES:
1. THE INVERTER SHALL PROVIDE BATTERY BACK-UP OF EXTERIOR BUILDING MOUNTED LIGHTING FOR EMERGENCY LIGHTING AT EXTERIOR EGRESS LANDINGS.
2. THE EXTERIOR LIGHTS SHALL BE POWERED AND CONTROLLED (ON/OFF) BY THE NETWORK LIGHTING CONTROL RELAY PANEL AT EACH BUILDING. UNDER NORMAL CONDITIONS, THE LIGHTS TURN ON AND OFF VIA A TIME BASED SCHEDULE FROM THE LCP.
3. PROVIDE AN UNSWITCHED CIRCUIT TO THE INVERTER FOR VOLTAGE SENSING AS SHOWN. UPON LOSS OF POWER OF THE 277V CIRCUIT, THE INVERTER WILL TURN THE LIGHTS ON FOR EMERGENCY EGRESS.
4. CIRCUIT ROUTED THROUGH THE INVERTERS SHALL BE ROUTED IN A CONDUIT SEPARATE FROM NON-EMERGENCY LIGHTING CIRCUITS.
5. PROVIDE 400W PURE SINE WAVE INVERTER, BODINE ELI-S-400 OR EQUAL. COORDINATE LOCATION IN THE FIELD.

F / E703 INVERTER WIRING DIAGRAM

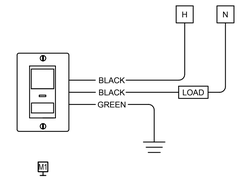
NTS

TYPICAL SCENE CONTROL SWITCH, SEQUENCE OF OPERATIONS (AT TYPICAL CLASSROOM WITH PRIMARY DAYLIT ZONE 'a', SECONDARY DAYLIT ZONE 'b', AND NON-DAYLIT ZONE 'c'):

1. SCENE 1: "LECTURE"
   a. Zone 'a' ON 100%
   b. Zone 'b' ON 100%
   c. Zone 'c' ON 100%
2. SCENE 2: "AV MODE"
   a. Zone 'a' ON, 20%
   b. Zone 'b' ON, 20%
   c. Zone 'c' ON, 20%
   d. Front row of lighting OFF
3. SCENE 3: "OFF"
   a. Zone 'a' OFF
   b. Zone 'b' OFF
   c. Zone 'c' OFF
4. RAISE/LOWER

G / E0.2 TYPICAL SCENE CONTROL SWITCH

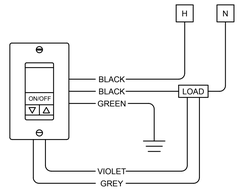
NTS



SINGLE RELAY WALL MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR
No neutral wiring required at device.
Typical at storage rooms, custodial rooms, etc.
Set time delay to 5 min., sensitivity to max.
Primary load (switchleg 'a') is manual on, automatic off

A / E0.2 SINGLE LEVEL WALLBOX SENSOR

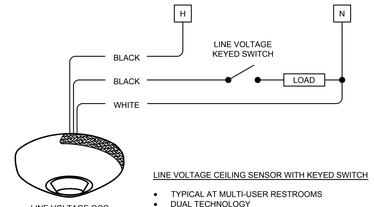
NTS



SINGLE RELAY WALL MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR
No neutral wiring required at device.
Typical at storage rooms, custodial rooms, etc.
Set time delay to 5 min., sensitivity to max.
Primary load (switchleg 'a') is manual on, automatic off

B / E0.2 WALLBOX SENSOR W/ 0-10V DIMMING

NTS

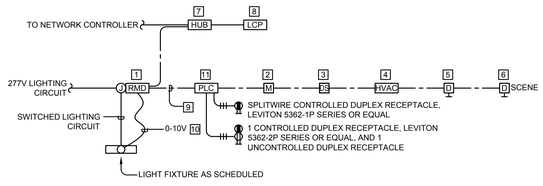


LINE VOLTAGE CEILING SENSOR WITH KEYED SWITCH

- TYPICAL AT MULTI-USER RESTROOMS
- DUAL TECHNOLOGY
- AUTOMATIC ON, AUTOMATIC OFF
- TIME DELAY - 10 MINUTES
- MINIMUM ON TIME - 15 MINUTES

C / E0.2 LINE VOLTAGE CEILING SENSOR

NTS



GENERAL NOTES:
1. REFER TO THE LIGHTING CONTROL MATRIX FOR ADDITIONAL REQUIREMENTS.
2. NOT ALL DEVICES SHOWN ON THIS WIRING DIAGRAM WILL BE USED IN EACH ROOM, REFER TO PLANS FOR ACTUAL DEVICE REQUIREMENTS.
3. SEE DETAIL H ON THIS SHEET FOR ADDITIONAL REQUIREMENTS SPECIFIC TO INSTRUCTIONAL SPACE.

D / E0.2 NETWORK LIGHTING CONTROLS

NTS

AMERICAN RIVER COLLEGE CORP YARD
LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER & CATALOG NUMBER	LIGHT SOURCE QTY/TYPE	BALLAST/ DRIVER	WATTS	VOLTAGE	DESCRIPTION	DETAIL
F1	LITHONIA 2BLT4-4EL-ADP-MVOLT-GZ10-LP840-NLTAIR2-RES7 OR APPROVED EQUAL	LED ~5000 LUMEN 4000K 80+ CRI MIN 50,000 HR L80	0-10V DIMMING LED DRIVER	38	277	2'X4' ARCHITECTURAL HIGH EFFICIENCY RECESSED LED TROFFER, STEEL HOUSING WITH WHITE POWDER COAT FINISH AND HIGHLY EFFICIENT SATIN WHITE LENS. PROVIDE WITH INTEGRAL WIRELESS MOTION/DAYLIGHT SENSOR, AND INTEGRAL LIGHTING CONTROL MODULE COMPATIBLE WITH THE SPECIFIED LIGHTING CONTROL SYSTEM.	
F1A	LITHONIA 2BLT4-6EL-ADP-MVOLT-GZ10-LP840-NLTAIR2-RES7 OR APPROVED EQUAL	LED ~6000 LUMEN 4000K 80+ CRI MIN 50,000 HR L80	0-10V DIMMING LED DRIVER	48	277	SAME AS FIXTURE TYPE F1, BUT WITH INCREASED LUMEN OUTPUT, AND HIGHER WATTAGE.	
F1B	LITHONIA 2BLT4-4EL-ADP-MVOLT-GZ10-LP840-NLTAIR2-RES7-E10WLCP OR APPROVED EQUAL	LED ~4000 LUMEN 4000K 80+ CRI MIN 50,000 HR L80	0-10V DIMMING LED DRIVER	40	277V	SAME AS FIXTURE TYPE F1, BUT WITH CA T20 COMPLIANT BATTERY BACK-UP.	
F2	LITHONIA 2BLT2-33L-ADP-MVOLT-EZ1-LP840-NLTAIR2-RES7 OR APPROVED EQUAL	LED ~3200 LUMEN 4000K 80+ CRI MIN 50,000 HR L80	0-10V DIMMING LED DRIVER	35	MVOLT	SAME PRODUCT FAMILY AS FIXTURE TYPE F1, BUT IN 2X2 CONFIGURATION.	
F2A	LITHONIA 2BLT2-33L-ADP-MVOLT-EZ1-LP840-NLTAIR2-RES7-E10WLCP OR APPROVED EQUAL	LED ~3200 LUMEN 4000K 80+ CRI MIN 50,000 HR L80	0-10V DIMMING LED DRIVER	35	MVOLT	SAME AS FIXTURE TYPE F1, BUT WITH CA T20 COMPLIANT BATTERY BACK-UP.	
F3	LITHONIA IBGN-30000LM-SEF-PFL-GND-MVOLT-GZ10-40K-80CRI-nMSI360D-DNA-IBAC120M20-WGIBG42DNA OR APPROVED EQUAL	LED ARRAY ~30,000 LUMEN 4000K 80+CRI >100,000 HRS L90	ELECTRONIC LED DRIVER, 0-10V DIMMABLE	186	MVOLT	NOMINAL 4' LONG, LINEAR LED HIGH BAY FIXTURE, LIGHTWEIGHT ALUMINUM HOUSING IN NATURAL ALUMINUM FINISH, AND SEMI-DIFFUSE ACRYLIC LENS. PROVIDE WITH AIRCRAFT CABLE MOUNTING HARDWARE AND WIRE GUARD. DLC COMPLIANT, 10 YEAR EXTENDED PRODUCT WARRANTY. PROVIDE WITH INTEGRAL MOTION/DAYLIGHT SENSOR, AND INTEGRAL LIGHTING CONTROL MODULE COMPATIBLE WITH THE SPECIFIED LIGHTING CONTROL SYSTEM.	
F4	LITHONIA WL4-40L-EZ1-LP840-N80-RES7PDT-DIM10-E10WLCP OR APPROVED EQUAL	LED ~4000 LUMENS 4000K 80+ CRI MIN 50,000 HR L70	0-10V DIMMING LED DRIVER	40	277V	SURFACE WALL MOUNTED LINEAR LED LUMINAIRE, NOMINAL 4'-0" LENGTH, WITH STEEL HOUSING WITH WHITE PAINTED FINISH, AND FROSTED ACRYLIC LENS. PROVIDE WITH INTEGRAL BATTERY BACK-UP AND INTEGRAL OCCUPANCY SENSOR; FIXTURE TO DIM TO 10% WHEN SPACE UNOCCUPIED.	
F5	LITHONIA CLX-L48-4000LM-SEF-RDL-MVOLT-GZ10-35K-80CRI (+ZACFPD120) OR APPROVED EQUAL	LED ~4000 LUMEN 4000K 80+ CRI MIN 100,000 HR L70	0-10V DIMMING LED DRIVER	28	277	NOMINAL 4' LONG SURFACE MOUNTED COMPACT LINEAR LED FIXTURE, WITH STEEL HOUSING WITH WHITE PAINTED FINISH, AND RUGGED FROSTED CONTOURED ACRYLIC LENS. INSTALL IN CONTINUOUS ROW WHERE INDICATED ON THE PLANS. PROVIDE WITH AC CABLE KIT AND SUSPEND FIXTURE AT +10'-0" A.F.F. U.O.N. WHERE CEILING IS OPEN TO STRUCTURE.	
F5A	LITHONIA CLX-L48-4000LM-SEF-RDL-MVOLT-GZ10-35K-80CRI (+ZACFPD120)-E10WLCP OR APPROVED EQUAL	LED ~4000 LUMEN 4000K 80+ CRI MIN 100,000 HR L70	0-10V DIMMING LED DRIVER	28	277	SAME AS FIXTURE TYPE F5, BUT WITH 10W CA TITLE 24 COMPLIANT BATTERY PACK.	
F5/8'	LITHONIA CLX-L96-4000LM-SEF-RDL-MVOLT-GZ10-35K-80CRI (+ZACFPD120)-E10WLCP OR APPROVED EQUAL	LED ~8000 LUMEN 4000K 80+ CRI MIN 100,000 HR L70	0-10V DIMMING LED DRIVER	52	277	SAME AS F5, BUT 8' IN LENGTH. INSTALL IN A CONTINUOUS ROW AS INDICATED ON THE PLANS.	
F6	GOTHAM EVO-40-15-6AR-MD-LSS-MVOLT-EZ1 OR APPROVED EQUAL	LED ~1500 LUMEN 4000K 80+CRI MIN 60,000 HR L70	0-10V DIMMING LED DRIVER	18.5	277V	LED DOWNLIGHT, NOMINAL 6" ROUND APERTURE, WITH SELF FLANGED SEMI-SPECULAR FINISHING TRIM AND 45° CUTOFF TO SOURCE AND SOURCE IMAGE. FULLY SERVICABLE AND UPGRADEABLE LENSED LED LIGHT ENGINE AND DRIVER ACCESSIBLE THROUGH APERTURE.	
F6A	GOTHAM EVO-40-15-6AR-MD-LSS-MVOLT-EZ1-EL OR APPROVED EQUAL	LED ~1500 LUMEN 4000K 80+CRI MIN 60,000 HR L70	0-10V DIMMING LED DRIVER	18.5	277V	SAME AS FIXTURE TYPE F6, BUT WITH EMERGENCY BATTERY PACK WITH INTEGRAL TEST SWITCH.	
F7	JUNO SLIMFORM SQUARE JSF SQ-7IN-10LM-35K-80CRI-MVOLT-ZT-WH OR APPROVED EQUAL	LED 1000 LUMEN 3500K 90+ CRI MIN 50,000 HR L70	0-10V DIMMING LED DRIVER	13	277	NOMINAL 7" SQUARE SLIM SURFACE MOUNTED LED FIXTURE INSTALLED OVER JUNCTION BOX, WITH WHITE PAINTED FINISH AND DIFFUSE LENS. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS TO MAINTAIN WET LOCATION LISTING.	
F8	PRUDENTIAL "HALF SNAP" HSS-LED35-SO-4'-SAL-TMW-UNV-SUR-X3-DM10 OR APPROVED EQUAL	LED 3520 LUMENS 3500K 80+ CRI MIN 50,000 HR L70	0-10V DIMMING LED DRIVER	36	277	NOMINAL 4' LONG SURFACE MOUNTED COMPACT LINEAR LED FIXTURE, WITH STEEL HOUSING WITH WHITE POWDER COAT FINISH, AND DIFFUSE SNAP-ON LENS. INSTALL IN CONTINUOUS ROW WHERE INDICATED ON THE PLANS.	
F10	EXITRONIX GCLED-U-WH LITHONIA ECBG-LED-M6 ISOLITE RLP-G-U-WW EVENLITE TLP-G-2U-W OR APPROVED EQUAL	LED			277V	LED EXIT SIGN WITH INTEGRAL, ADJUSTABLE EMERGENCY "LIGHT BAR", UNIVERSAL MOUNT, SINGLE OR DOUBLE FACE, AND FIELD SELECTABLE CHEVRONS, WITH WHITE THERMOPLASTIC HOUSING, GREEN LETTERS AND MAINTENANCE-FREE 90 MINUTE NI-CAD BATTERY.	
SF1	LITHONIA D-SERIES SIZE 1 DSX1 LED-30C-700-30K-T5W-120-SPA-P1RH1FCV-(FINISH TBD) OR APPROVED EQUAL	30-LED ARRAY 3000K 700mA ~8,000 LUMEN	ELECTRONIC LED DRIVER, 0-10V DIMMABLE	68	277	HIGH PERFORMANCE, LOW PROFILE, FULL CUT-OFF LED AREA LIGHT, DIE-CAST ALUMINUM HOUSING WITH INTEGRAL MOUNTING BLOCK AND ARM, INTEGRAL HEAT SINK FINS, AND TEXTURED POLYESTER POWDERCOAT FINISH (COLOR TO BE DETERMINED BY THE ARCHITECT). PROVIDE WITH TYPE V WIDE OPTICAL SYSTEM AND INTEGRAL MOTION/AMBIENT LIGHT SENSOR, PROGRAMMED TO DIM TO 30% LIGHT OUTPUT WHEN NO MOTION IS DETECTED. PROVIDE WITH 20' TALL, 4" SQUARE STRAIGHT STEEL POLE, FINISH TO MATCH THE FIXTURE FINISH, AND 24" DIA. 36" HIGH CONCRETE BASE. BUG RATING B3-U0-G1	
SF2	LITHONIA DSXW1 LED-10C-700-30K-T4M-MVOLT-BBW-PIR-(FINISH TBD) OR APPROVED EQUAL	10 LED ARRAY 3000K 700mA ~2,200 LUMEN	ELECTRONIC LED DRIVER, 0-10V DIMMABLE	27	277	WALL MOUNTED FULL CUT-OFF WALL MOUNTED FIXTURE, WITH CLEAR GLASS LENS, DIE CAST ALUMINUM HOUSING INTEGRAL THERMAL RADIATION FINS, AND TEXTURED POLYESTER POWDERCOAT FINISH (COLOR TBD BY THE ARCHITECT). PROVIDE WITH TYPE IV (FORWARD THROW) OPTICAL SYSTEM, UNIVERSAL VOLTAGE LED DRIVER. INTEGRAL MOTION/AMBIENT LIGHT SENSOR, PROGRAMMED TO DIM TO 30% LIGHT OUTPUT WHEN NO MOTION IS DETECTED. BUG RATING B1-U0-G1	
SF3	PHILIPS SLIM SURFACE S6S-8-30K-10-AL-Z10U OR APPROVED EQUAL	LED 1000 LUMEN 3000K 80 CRI MIN 50,000 HR L70	0-10V DIMMING LED DRIVER	14.7	277V	SAME AS FIXTURE TYPE F7, BUT 3000K COLOR TEMPERATURE FOR EXTERIOR APPLICATION. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS WITH BEAD OF CAULK AROUND PERIMETER OF HOUSING TO MAINTAIN WET LOCATION LISTING.	

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LOS RIOS COMMUNITY COLLEGE DISTRICT
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LIGHTING SCHEDULES & CONTROLS

REVISIONS

DATE AUGUST 15, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

E0.2

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INTERIOR LIGHTING COMPLIANCE FORMS

REVISIONS

DATE	AUGUST 15, 2019
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EXTERIOR LIGHTING & POWER COMPLIANCE FORMS

REVISIONS

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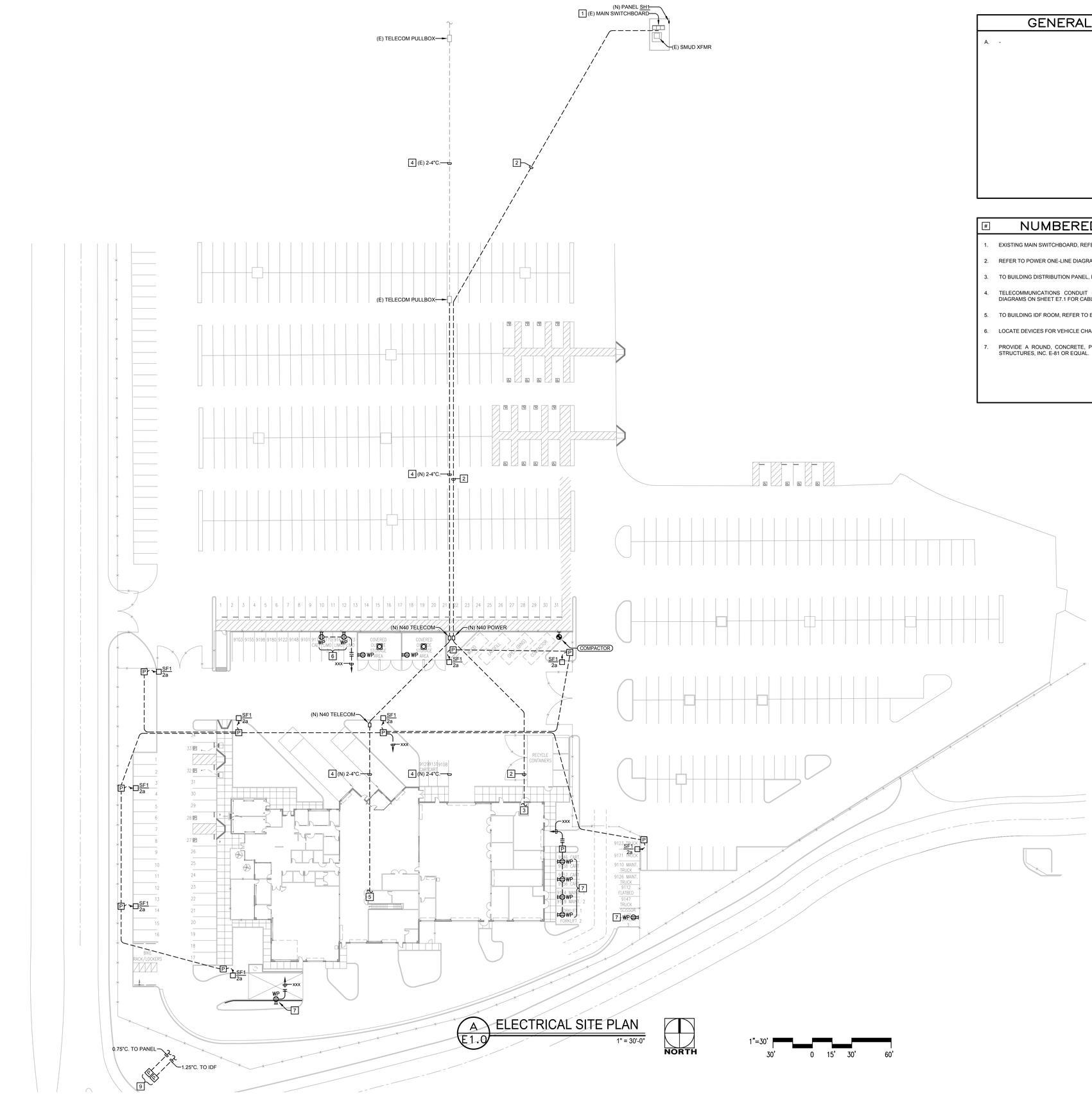
SHEET	

E0.4



A E1.0 ELECTRICAL SITE PLAN
1" = 30'-0"

NORTH

1"=30'
30' 0 15' 30' 60'

GENERAL SHEET NOTES

A. -

NUMBERED SHEET NOTES

1. EXISTING MAIN SWITCHBOARD, REFER TO POWER ONE-LINE DIAGRAM FOR NEW WORK.
2. REFER TO POWER ONE-LINE DIAGRAM FOR FEEDER AND SPARE CONDUIT REQUIREMENTS.
3. TO BUILDING DISTRIBUTION PANEL, REFER TO ENLARGED ROOM PLANS FOR LAYOUT.
4. TELECOMMUNICATIONS CONDUIT DUCT BANK; REFER TO TELECOMMUNICATIONS RISER DIAGRAMS ON SHEET E7.1 FOR CABLING REQUIREMENTS.
5. TO BUILDING IDF ROOM, REFER TO ENLARGED ROOM PLANS FOR LAYOUT.
6. LOCATE DEVICES FOR VEHICLE CHARGING, INSTALL ON CMU WALL AT +18".
7. PROVIDE A ROUND, CONCRETE, PLUG-IN BOLLARD WITH DEVICES AS INDICATED, UTILITY STRUCTURES, INC. E-81 OR EQUAL. REFER TO MOUNTING DETAIL.

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ELECTRICAL SITE PLAN

REVISIONS

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SHEET	

E1.0

NUMBERED SHEET NOTES

1. -

GENERAL SHEET NOTES

A. REFER TO SHEET Exxx FOR LIGHT FIXTURE INSTALLATION DETAILS.

B. REFER TO PROJECT GENERAL NOTES AND SPECIFICATION SECTION 260519 FOR ADDITIONAL LINE VOLTAGE WIRING REQUIREMENTS, INCLUDING LIMITATIONS FOR USE OF MC CABLE.

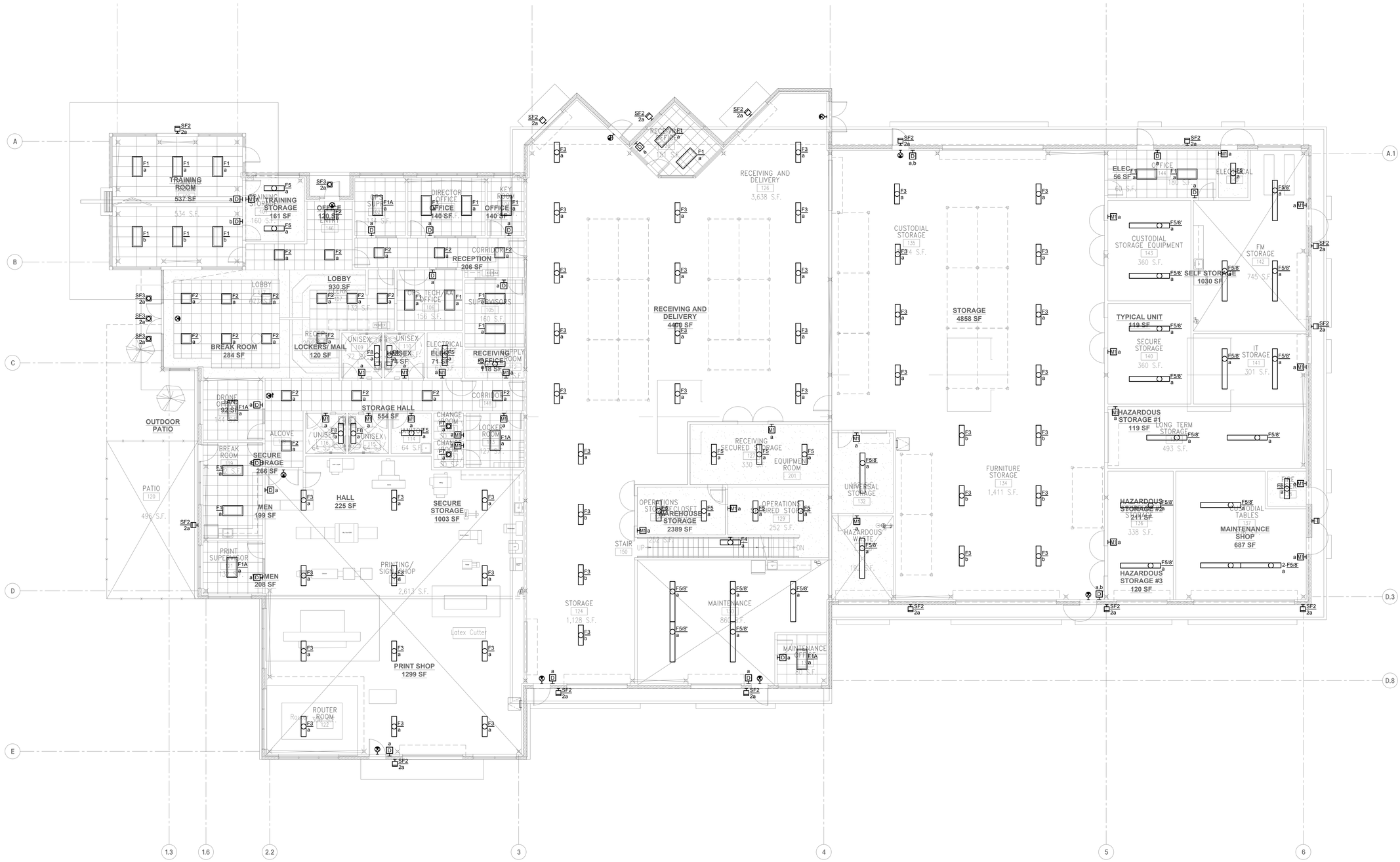
C. REFER TO TYPICAL WIRING DIAGRAMS ON SHEET Exxx, AND SPECIFICATION SECTION 260926 FOR LIGHTING CONTROL REQUIREMENTS. 0-10V WIRING, LOW VOLTAGE CABLE, AND SOME COMPONENTS OF THE LIGHTING CONTROL SYSTEM ARE NECESSARILY SHOWN ON THE PLANS, PROVIDE A COMPLETE WORKING SYSTEM.

D. REFER TO THE FIXTURE SCHEDULE ON SHEET E002 FOR ADDITIONAL INSTALLATION REQUIREMENTS, INCLUDING MOUNTING HEIGHT OF WALL MOUNTED AND SUSPENDED FIXTURES. VERIFY MOUNTING HEIGHTS OF FIXTURES WITH ARCHITECTURAL ELEVATIONS.

E. SHADING AT LIGHT FIXTURES INDICATES EMERGENCY POWER FROM CENTRAL INVERTER. LIGHT FIXTURES ARE NOT TO BE WIRED AS NIGHT LIGHTS U.O.N., WITH THE EXCEPTION OF EXIT SIGNS.

F. COORDINATE ALL FIXTURE LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING

G. PLANS. REPORT ANY DISCREPANCIES TO THE ARCHITECT IMMEDIATELY.



A E2.0 LIGHTING PLAN

1/8" = 1'-0"

NORTH

1/8" = 1'-0"

0 2' 6' 12' 24'

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LIGHTING PLAN

REVISIONS

DATE	AUGUST 15, 2019
SCALE	AS NOTED
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JOB NO.	19-06
SHEET	

E2.0

NUMBERED SHEET NOTES

1. SITE TELECOMMUNICATION RISERS UP TO 2ND FLOOR IDF ROOM.

GENERAL SHEET NOTES

A. AT TYPICAL WORKSTATIONS, DATA OUTLET AND POWER RECEPTACLE SHALL BE INSTALLED WITHIN 6" AND AT THE SAME ELEVATION.

B. REFER TO PROJECT GENERAL NOTES AND SPECIFICATION SECTION 260519 FOR ADDITIONAL LINE VOLTAGE WIRING REQUIREMENTS, INCLUDING LIMITATIONS FOR USE OF MC CABLE.

C. REFER TO FINAL, OWNER APPROVED FURNITURE PLANS AND EQUIPMENT LAYOUT PLANS TO VERIFY DIMENSIONS FOR WORKSTATION OUTLETS, FLOORBOXES, ELECTRIFIED FURNITURE POWER CONNECTIONS, CORD DROPS, ETC. PRIOR TO ROUGH-IN.

D. REFER TO MECHANICAL AND PLUMBING PLANS FOR EQUIPMENT ELECTRICAL REQUIREMENTS, REFER TO FINAL APPROVED MECHANICAL AND PLUMBING SHOP DRAWINGS TO VERIFY CONNECTION REQUIREMENTS PRIOR ROUGH-IN.

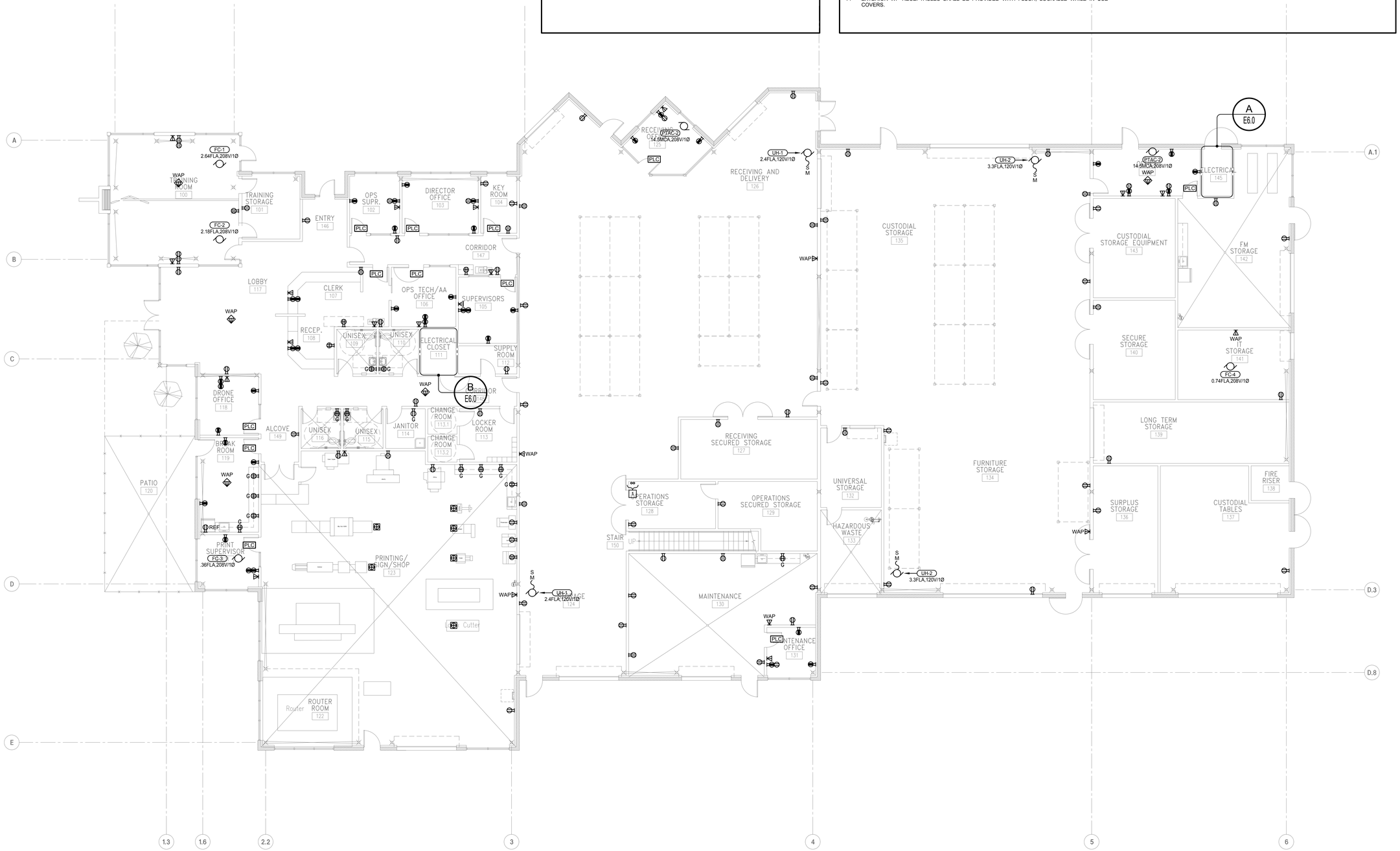
E. REFER TO THE LIGHTING CONTROL WIRING DIAGRAMS FOR RECEPTACLE CONTROL REQUIREMENTS.

F. EXTERIOR WP RECEPTACLES SHALL BE PROVIDED WITH FLUSH, LOCKABLE WHILE IN USE COVERS.

G. PROVIDE TERMINATED OUTLET FOR WIRELESS ACCESS POINTS (WAP), EQUIPMENT PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR; VERIFY EXACT LOCATION WITH THE OWNER AND PROVIDE PATCH CORD, LENGTH AS REQUIRED.

H. ALL DATA OUTLETS SHALL BE INSTALLED PER x/Ex U.O.N. WHERE DATA OUTLET IS INSTALLED IN AREA WITHOUT ACCESSIBLE CEILING, ROUTE CONDUIT TO IDF ROOM, OR TO NEAREST ACCESSIBLE CEILING SPACE.

I. ROUTE ALL CABLE IN CONDUIT AND/OR J-HOOKS WHEN NOT IN CABLE TRAY. INSTALL PER H/E802.



A E3.0 POWER & TELECOMMUNICTIONS PLAN

1/8" = 1'-0"

NORTH

1/8" = 1'-0"

0 2' 6' 12' 24'

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POWER & TELECOM PLAN

REVISIONS

DATE	AUGUST 15, 2019
SCALE	AS NOTED
DRAWN BY	-
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SHEET	

E3.0

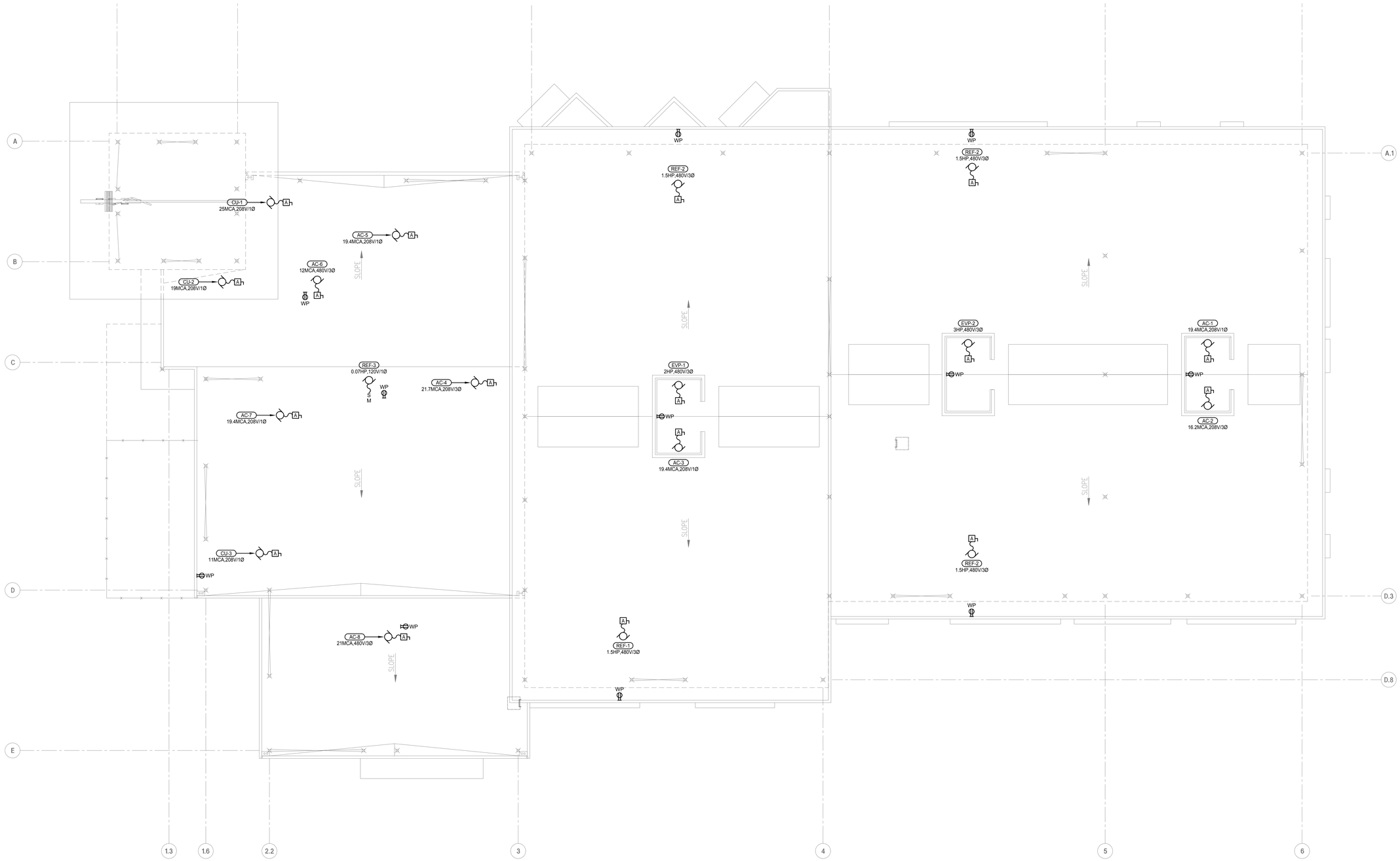
GENERAL SHEET NOTES

A. COORDINATE WITH MICHANICAL PLANS AND SCHEDULES, AND VERIFY EXACT LOCATION OF ALL MECHANICAL EQUIPMENT, CONNECTION REQUIREMENTS, ETC.

B. ROOFTOP EXTERIOR RECEPTACLES SHALL BE WEATHER RESISTANT, GFCI TYPE WITH WEATHERPROOF WHILE IN USE COVERS.

C. ALL ROOFTOP EQUIPMENT, DEVICES AND CONNECTIONS SHALL BE NEMA 3R WEATHER TIGHT.

D. MAKE CONDUIT PENETRATIONS INSIDE EQUIPMENT ROOF CURB WHERE POSSIBLE.



A E3.1 ROOF POWER PLAN

1/8" = 1'-0"

NORTH

1/8" = 1'-0"

0 2' 6' 12' 24'

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ROOF POWER PLAN

REVISIONS

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SHEET	

E3.1

NUMBERED SHEET NOTES

1. -

GENERAL SHEET NOTES

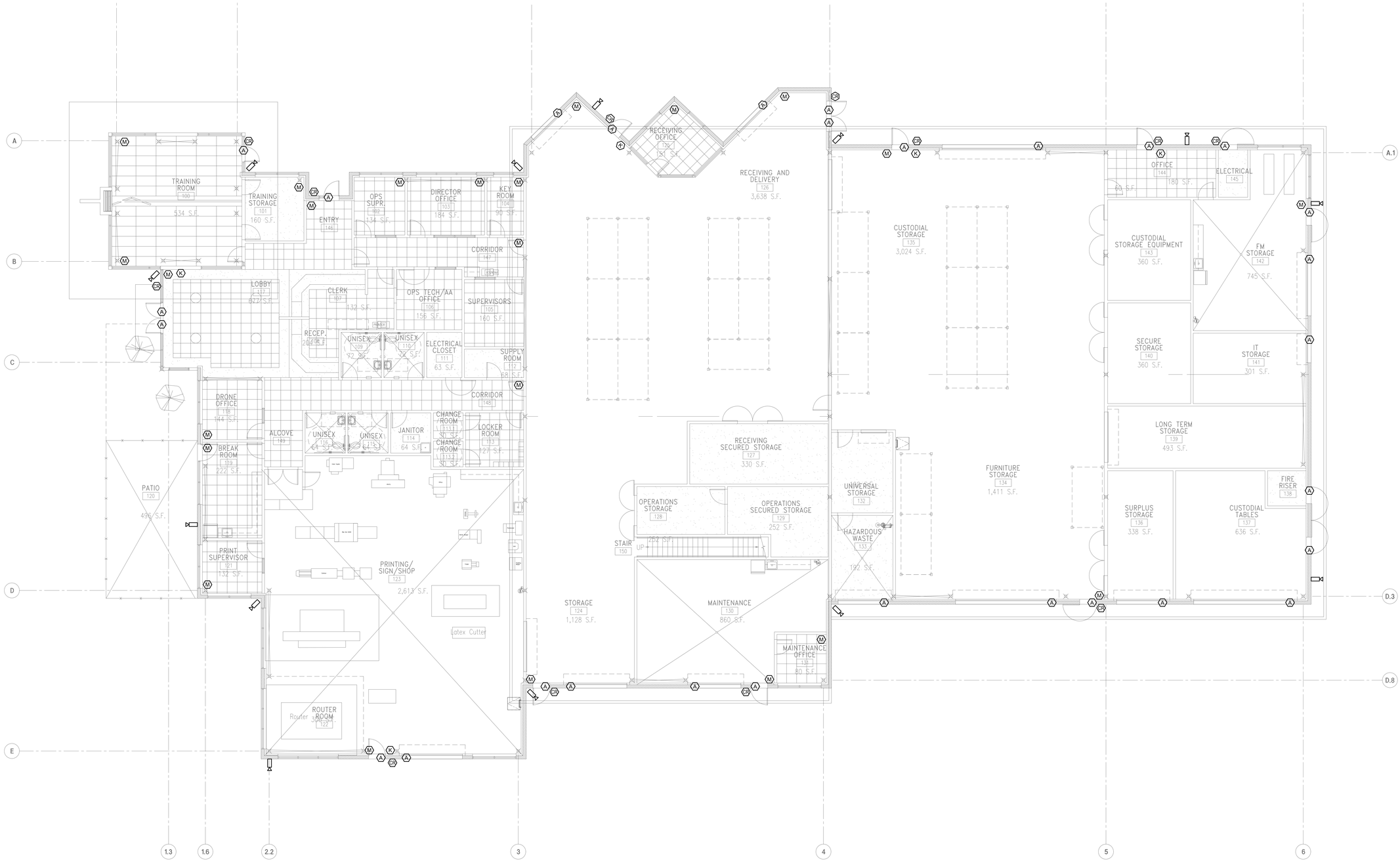
A. REFER TO SPECIFICATION SECTION 281300 FOR ADDITIONAL REQUIREMENTS FOR THE ACCESS AND INTRUSION SYSTEM. REFER TO x/Exxx FOR RISER DIAGRAM, x/Exxx FOR PANEL ELEVATION, AND x/Exxx FOR TYPICAL DOOR ELEVATIONS.

B. REFER TO AV RISER DIAGRAMS ON SHEET Exxx FOR ADDITIONAL REQUIREMENTS FOR THE TRAINING ROOM AV SYSTEM.

C. REFER TO SPECIFICATION SECTIONS 260546 AND 270536 FOR ADDITIONAL INSTALLATION EQUIREMENTS FOR SIGNAL SYSTEMS RACEWAY AND CABLE TRAY.

D. ALL LOW VOLTAGE CABLE SHALL BE INSTALLED IN CONDUIT, CABLE TRAY, OR J-HOOKS.

E. PROVIDE IN IP BASED SECURITY SURVEILLANCE SYSTEM, CONSISTING OF IP CAMERAS AND NETWORK RECORDING SYSTEM, PER SPECIFICATION SECTION 282300.



A E4.0 SIGNAL PLAN

1/8" = 1'-0"

NORTH

1/8" = 1'-0"
0 2' 6' 12' 24'

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SIGNAL PLAN

REVISIONS

DATE	AUGUST 15, 2019
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E4.0

GENERAL SHEET NOTES

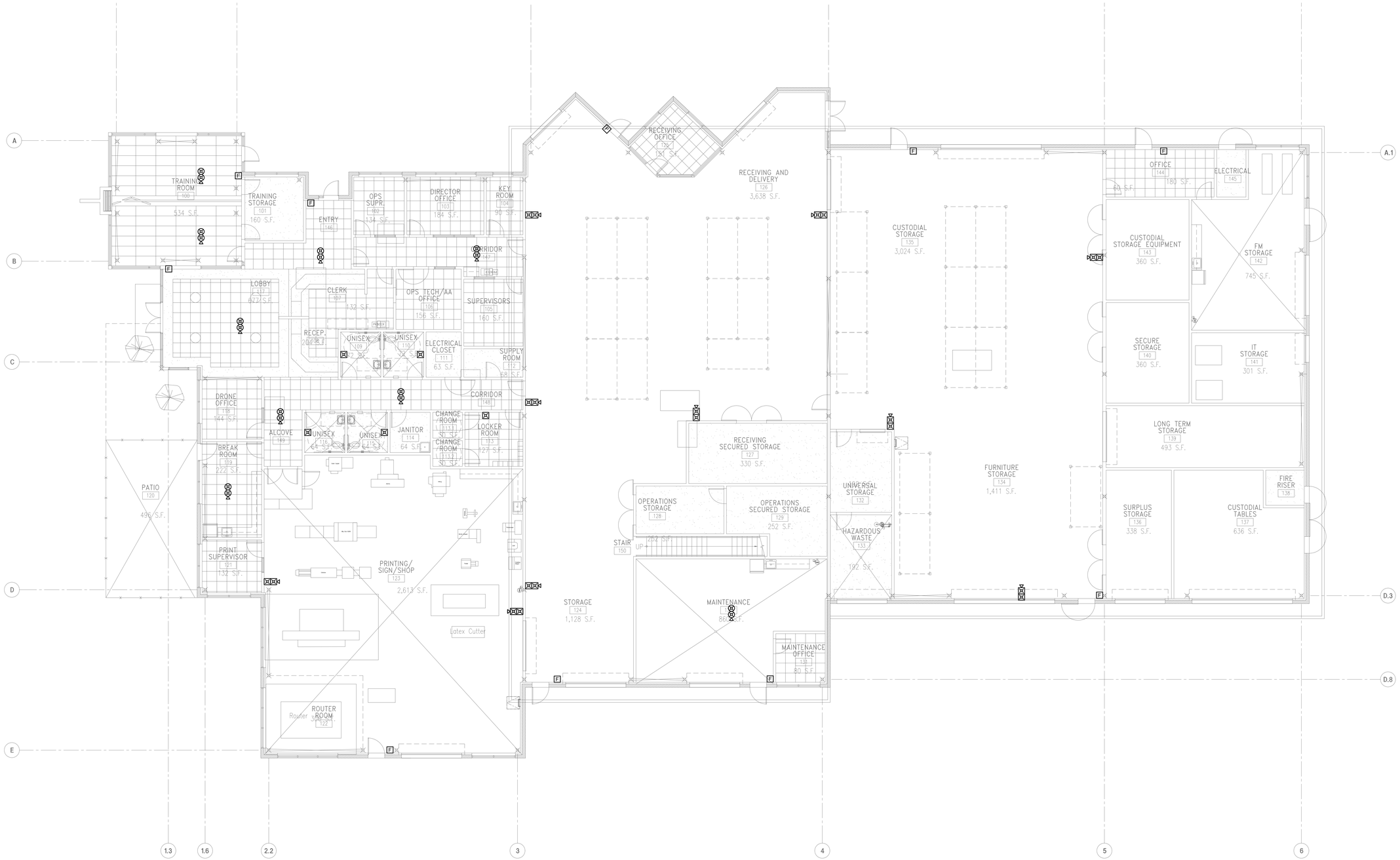
A. FIRE ALARM SYSTEM INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF APPLICABLE CODES, STANDARDS AND STATE REGULATIONS.

B. FIRE ALARM CIRCUITS AND CIRCUIT ROUTING ARE SHOWN SCHEMATICALLY FOR CLARITY ILLUSTRATING THE WIRING CONFIGURATION NECESSARY FOR PROPER CIRCUIT SUPERVISION.

C. COORDINATE CEILING MOUNTED FIRE ALARM DEVICE LOCATIONS WITH WITH NEW LIGHT FIXTURES TO AVOID CONFLICTS.

D. DO NOT INSTALL FIRE ALARM DEVICES BACK TO BACK IN STUD WALLS.

E. FIRE ALARM CABLE MAY BE ROUTED ABOVE ACCESSIBLE CEILING "FREE AIR". UTILIZE PLENUM RATED CABLE WHEN APPLICABLE, AND SUPPORT EVERY 48" WITH J-HOOKS. FOR ALL OTHER APPLICATIONS, FIRE ALARM CABLING SHALL BE ROUTED IN CONCEALED CONDUIT, MINIMUM SIZE 0.75". WHERE CEILING IS EXPOSED TO STRUCTURE, EXPOSED CONDUIT MAY BE INSTALLED IN A NEAT AN WORKMANLIKE MANNER AS REQUIRED, FOR ALL OTHER CONDITIONS USE OF EXPOSED CONDUIT BY PERMISSION ONLY.



A E5.0 FIRE ALARM PLAN

1/8" = 1'-0"

NORTH

1/8" = 1'-0"

0 2' 6' 12' 24'

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FIRE ALARM PLAN

REVISIONS

DATE AUGUST 15, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

E5.0

FIRE ALARM SYSTEM OPERATING MATRIX

RESULT OF OPERATION	PULL STATION	HEAT DETECTOR	DUCT DETECTOR	SMOKE DETECTOR	SYSTEM RESET	SIGNAL SILENCE	OPEN CIRCUIT SHORT, ETC.	POWER LOSS	SPRINK. VALVE TAMPER	WATER FLOW ALARM	PRIMARY ELEVATOR SMOKE DETECTOR	ALTERNATE ELEVATOR SMOKE DETECTOR	ELEVATOR SHUNT TRIP	DOOR HOLDER SMOKE DETECTOR
FACP ALARM	X	X		X						X	X	X		X
ANNUNCIATE ALARM	X	X		X						X	X	X		X
OFF SITE REPORTING ALARM	X	X	X	X					X	X	X	X		X
FACP TROUBLE						X	X	X		X				
ANNUNCIATE TROUBLE			X			X	X	X						
OFF SITE REPORTING TROUBLE						X	X	X	X					
AUDIBLE ALARM	X	X		X						X	X	X		X
VISUAL ALARM	X	X		X						X	X	X		X
SUPERVISING STATION	X	X	X	X			X		X		X	X		X
HVAC SHUTDOWN			X											
DEACTIVATE AUDIBLES					X	X								
DEACTIVATE VISUALS					X	X								
SYSTEM NORMAL					X									
RELEASE DOOR HOLD OPEN														X
RETURNS ELEVATOR TO PRIMARY FLOOR												X		
RETURNS ELEVATOR TO ALTERNATE FLOOR											X			
ELEVATOR CURTAIN CLOSE											X	X		
ELEVATOR SHUT DOWN													X	

FIRE ALARM SYSTEM CABLE SCHEDULE

CABLE TAG	CABLE	NO. OF CONDUCTORS	COLOR	AWG	CABLE USE
A	GENESIS	2(1PR)	RED/BLACK	#18	BUILDING INITIATION
B	GENESIS	2(1PR)	RED/BLACK	#12	VISUAL NOTIFICATION
C	GENESIS	2(1PR)	RED/BLACK	#18	MONITORED CIRCUIT
D	AQUA SEAL	2(1PR)	RED/BLACK	#18	UG INITIATION
E	AQUA SEAL	2(1PR)	RED/BLACK	#12	UG VISUAL NOTIFICATION
F	AQUA SEAL	2(1PR)	RED/BLACK	#16	UG VOICE NOTIFICATION
S	GENESIS	2(1PR)	RED/BLACK	#16	VOICE NOTIFICATION

[#] NUMBERED SHEET NOTES

1. MOUNT DOOR HOLDER SMOKE DETECTOR MAXIMUM 3' FROM DOOR AND A MINIMUM OF 1'.
2. MAXIMUM DISTANCE BETWEEN SMOKE DETECTORS IS 30' AND 15' FROM WALLS, MAXIMUM DISTANCE FROM A CORNER IS 21' WITH CEILING LESS 10' OR LESS.
3. MOUNT SMOKE DETECTOR MINIMUM OF 3' AWAY FROM DIFFUSER VENT.
4. MOUNT SMOKE DETECTOR FOR FIRE SMOKE DAMPER (FSD) WITHIN 3' OF SUPPLY VENT.
5. DUCT SMOKE DETECTOR SHALL BE MOUNTED 6 TO 10 TIMES THE DIAMETER OF DUCT FROM BEND OR OBSTRUCTION.
6. WHERE DUCT SMOKE DETECTORS ARE INSTALLED IN CONCEALED LOCATIONS OR GREATER THAN 10' AFF, DETECTORS SHALL BE PROVIDED WITH A REMOTE INDICATOR OR SUPERVISORY INDICATION ACCEPTABLE WITH AUTHORITY HAVING JURISDICTION (AHJ). ALL HVAC GREATER THAN 2000cfm SHALL HAVE A DUCT DETECTOR IN THE SUPPLY AIR DUCT. GREATER THAN 15,000cfm SHALL HAVE ONE IN BOTH SUPPLY AND RETURN AIR DUCTS. HOWEVER SHALL NOT BE REQUIRED WHERE THE ENTIRE SPACE SERVED BY THE AIR DISTRIBUTION SYSTEM IS PROTECTED BY SMOKE DETECTORS THAT TRIGGER HVAC SGUT-DOWN.
7. BEAM POCKET SPOT DETECTOR ARE REQUIRED FOR BEAMS GREATER THAN 18" BELOW CEILING AND SPACED MORE THAN 9' ON CENTER. EACH BAY FORMED BY BEAM SHALL BE TREATED AS A SEPARATE AREA. BEAMS LESS THAN 12" IN DEPTH AND SPACED LESS THAN 8' ON CENTER SHALL HAVE DETECTORS INSTALLED ON THE BOTTOM OF THE BEAM.
   - 7.1. OR, CEILINGS WITH BEAM DEPTHS LESS THAN 10 PERCENT OF THE CEILING HEIGHT, SMOOTH CEILING SPACING IS PERMITTED AND DETECTORS PLACED ON THE BOTTOM OF THE BEAM.
   - 7.2. BEAMS EQUAL TO OR GREATER THAN 10 PERCENT OF CEILING HEIGHT WITH BEAM SPACING GREATER THAN 40 PERCENT OF CEILING HEIGHT, SPOT DETECTORS SHALL BE LOCATED IN EACH CELL. NFPA 72 17.7.3.2.4.2
8. BEAMS PROJECTING LESS THAN 4" SHALL BE TREATED AS A SMOOTH CEILING.
9. SMOKE DETECTORS SHALL BE MOUNTED ON THE CEILING MINIMUM 4" FROM WALL, AND 4" MINIMUM TO 12" MAXIMUM FROM CEILING MOUNTED ON WALL.
10. MOUNT MANUAL PULL STATIONS AT 48" TO TOP OF BOX AFF, AND NO GREATER THAN 5' FROM DOOR.
11. MOUNT EXTERNAL HORN AT 90° MINIMUM AND 100° MAXIMUM TO THE TOP OF THE DEVICE.
12. FOR APPLICATIONS WHERE THE STRUCTURE IS BELOW 90°, MOUNT HORN AS HIGH AS WITH A MINIMUM OF 6" CLEARANCE TOT HE TOP OF THE DEVICE.
13. MOUNT HORN / SPEAKER STROBE AND STROBE ONLY THE THE ENTIRE LENS IS WITHIN 80° AND 96° AFF.
14. MOUNT FIRE ALARM CONTROL PANELS AND ANNUNCIATORS AT A MAXIMUM OF 48" TO THE TOP OF THE CONTROL PANEL OR KEY BOARDS. CBC11B-308
15. CEILING MOUNTED HORN / SPEAKER STROBE
16. MONITOR MODULE
17. RATE ANTICIPATOR HEAT DETECTOR, MOUNTED IN ABOVE CEILING / ATTIC SPACE.
18. APPROVED WIRE MANAGEMENT, ie J-HOOK OR D-RING.
19. ABOVE CEILING CIRCUITS ROUTING IN AN ACCESSIBLE ATTIC SPACE.
20. NON-ACCESSIBLE CEILINGS MUST USE EITHER EMT OR APPROVED WIREMOLD RACEWAY, AS SHOWN ON PLANS.
21. MULTI-CRITERIA PHOTOELECTRIC SMOKE / CO DETECTOR WITH SOUNDER BASE. MOUNT IN AREAS WHERE FOSSIL FUEL IS USED.
22. SMOKE / HEAT DETECTION COVERAGE IS REQUIRED IN ALL COMBUSTIBLE AREAS, UNLESS:
   - 22.1. CEILING IS ATTACHED DIRECTLY TO T HE UNDERSIDE OF THE SUPPORTING BEAM OR ROOF DECK.
   - 22.2. CONCEALED SPACE IS ENTIRELY FILLED WITH NON-COMBUSTIBLE INSULATION.
   - 22.3. THE SMALL CONCEALED SPACE OVER ROOMS THAT DO NOT EXCEED 50 SQ. FT. IN AREA.
   - 22.4. SPACES FORMED BY FACING STUDS OR SOLID JOISTS IN WALLS, FLOORS, OR CEILINGS WHERE THE FACING STUD OR SOLID JOIST IS LESS THAN 6".

   INACCESSIBLE SPACES THAT DO NOT MEET THIS CRITERIA MUST BE MADE ACCESSIBLE AND DETECTION MUST BE INSTALLED. NFPA72 17.5.3.1.1
23. DETECTION FOR CONCEALED ACCESSIBLE SPACES ABOVE SUSPENDED CEILING USED AS A RETURN PLENUM SHALL BE PROVIDED AT EACH CONNECTION FROM RETURN AIR PLENUM AT CENTRAL AIR HANDLING UNIT. NFPA 72 17.5.3.1.4
24. WITH EVERY NEW FIRE ALARM SYSTEM A DOCUMENTATION CABINET SHALL BE INSTALLED AT THE FIRE ALARM CONTROL PANEL OR AT ANOTHER LOCATION APPROVED BY AHJ. THE CABINET SHALL BE PROMINENTLY LABELED "SYSTEM RECORD DOCUMENTS".

FIRE ALARM SYSTEM COMPONENT SCHEDULE

SYMBOL	EQUIPMENT/DEVICE	MANUFACTURER	MODEL / PART #	CSFM LISTING YEAR	CSFM LISTING NO.
FACP	FIRE ALARM CONTROL PANEL	SILENT KNIGHT	5820XL-EVS	6/30/2017	7165-0559:0172
AMP-X	VOICE REMOTE AMPLIFIER	SILENT KNIGHT	EVS-50W	6/30/2017	7165-0559:0172
BP-X	REMOTE POWER BOOSTER	SILENT KNIGHT	5895XL	6/30/2017	7165-0559:0135
	ADDRESSABLE PHOTO-ELECTRIC SMOKE DETECTOR	SILENT KNIGHT	SK-PHOTO	6/30/2017	7272-0559:0149
	ADDRESSABLE HEAT DETECTOR	SILENT KNIGHT	K-HEAT-ROR	6/30/2016	7270-0559:0147
	ADDRESSABLE DUCT SMOKE DETECTOR WITH RELAY AND KEYED TEST SWITCH	SILENT KNIGHT	SK-DUCT	6/30/2017	7272-0559:0149
SM	ADDRESSABLE DUAL MONITOR MODULE	SILENT KNIGHT	SK-MONITOR	6/30/2017	7300-0559:0155
CR	ADDRESSABLE CONTROL RELAY MODULE	SILENT KNIGHT	SK-RELAY	6/30/2017	7300-0559:0155
F	INTELLIGENT PULL STATION	SILENT KNIGHT	SK-PULL-DA	6/30/2017	7150-0559:0161
XXcd 15/30/75/110	MULTI-CANDELA DUAL AUDIBLE STROBE 15cd TO 110cd Each W/SPEAKER 1/4W,1/2W,1W,2W	SYSTEM SENSOR	#SEP-SPSW DUAL STROBE EXPANDER #SPSW SPEAKER STROBE MODULE	6/30/2017	7300-1653:0221 7320-1653:0201
XW XXcd 15/30/75/110	(CEILING) SPEAKER/STROBE # INDICATES CANDELLA SETTING AS REQ.	SYSTEM SENSOR	#SEP-SPSW DUAL STROBE EXPANDER #SPSW SPEAKER STROBE MODULE	6/30/2017	7300-1653:0221 7320-1653:0201
XXcd 15/30/75/110	MULTI-CANDELA DUAL STROBE 15cd TO 110cd Each W/SYNC.	SYSTEM SENSOR	#SEP-SW DUAL STROBE EXPANDER #SW STROBE MODULE	6/30/2017	7300-1653-0221 7125-1653:0186
XW WP	SPEAKER (WEATHER PROOF) # SETTING AS REQ.	SYSTEM SENSOR	#SPV WITH BACK BOX	6/30/2017	7320-1653:201
	DOOR HOLD OPEN	PROVIDED BY OTHERS CONTROLLED BY FIRE ALARM SYSTEM	LCN SENTRONIC SEM 7800 SERIES MAGNETS U.L. LISTED	----------	----------

NOTE: QUANTITIES OF DEVICES SHOWN ON THIS SCHEDULE ARE ESTIMATED DEVICES INSTALLED. THE CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ALL COMPONENTS SHOWN ON FLOOR PLANS. THESE QUANTITIES, DO NOT INCLUDE SPARE DEVICES. REFER TO SPECIFICATIONS FOR SPARE DEVICE QUANTITIES.

FIRE ALARM NOTES

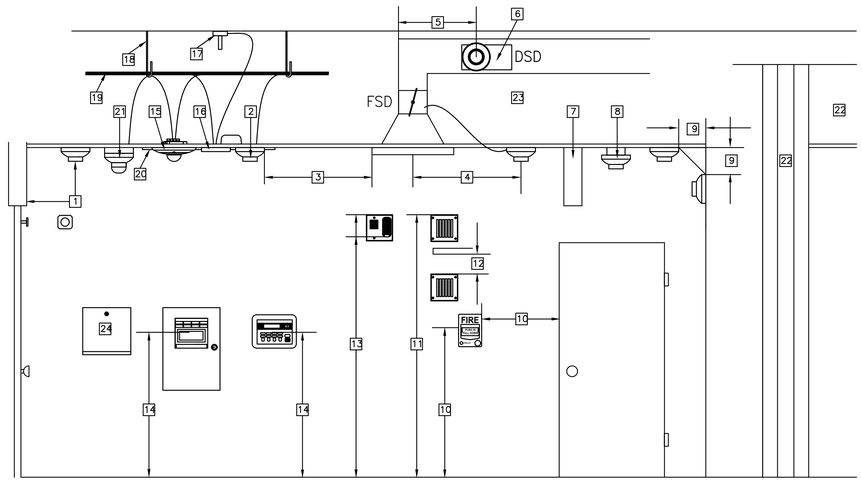
1. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS,INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

   STATE CALIFORNIA CODE OF REGULATIONS (CCR) 2016 TITLE 24 CALIFORNIA BUILDING CODE
   PART 2, 2016 CALIFORNIA BUILDING CODE (CBC), 2015 IBC.
   PART 3, 2016 CALIFORNIA ELECTRICAL CODE (CEC), 2015 NEC.
   PART 4, 2016 CALIFORNIA MECHANICAL CONDE (CMC), 2015 UMC.
   PART 5, 2016 CALIFORNIA PLUMBING CODE (CPC), 2015 UPC.
   PART 9, 2016 CALIFORNIA FIRE CODE (CFC) BASED ON 2015 IFC.
   2016 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 13, 72, 80, 90A, 99, AND 101.
2. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTATION AND SPECIFICATIONS, INCLUDING STATE FIRE MARSHALL LISTING SHEETS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.
3. UPON COMPLETION OF INSTALLATION OF THE SYSTEMS, 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 RECORD.
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 WITHIN THE SPECIFICATION WITHIN THE FIRE ALARM SECTION.
8. AUDIBLE DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15DECIBLES (Dba) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 Dba ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIED SPACE WITHIN THE BUILDING.
9. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.
10. THE CONTRACTOR SHALL ADJUST/INSTALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
11. VISUAL DEVICES SHOULD NOT EXCEED 2 FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELLA. VISUAL DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
12. UNDERGROUND AND EXTERIOR CONDUIT TO HAVE WATERTIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
13. ALL FIRE ALARM WIRING SHALL BE FLP OR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.
14. 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.
15. SMOKE DETECTORS SHALL BE NOT CLOSER THAN 1' FROM SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION OF NEWLY INSTALLED FIRE ALARM DEVICES SHALL BE COVERED UNTIL AREA IS READY TO BE TURNED OVER TO THE OWNER.
16. ALL FIRE ALARM CIRCUITS ARE TO BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE THE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANNER AS INDICATED ON THE DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
17. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO DEVICE SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
18. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM A COMMON USE AREA PANEL AND SHALL HAVE 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/EXPANDERS.
19. THE INSTALLER CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, FIGURE 10.18.2.1.1.
20. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
21. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
22. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS. AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AND CBC 907.6.5.2. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUIS BY UL OR SHALL MEET THE REQUIREMENTS OF FM STANDARD 3011.
23. BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE DSA PROJECT INSPECTOR TO THE EFFECT THAT THE SYSTEM HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH THE (2016) NFPA 72 SECTION 14.4.1.
24. TEST, INSPECTION AND MAINTENANCE SHALL COMPLY WITH NFPA 72 CHAPTER 14 REQUIREMENTS.
25. ALL DUCT SMOKE DETECTORS SHALL HAVE A KEYED TEST SWITCH MOUNTED AT 42" A.F.F.. FIELD VERIFY LOCATION.

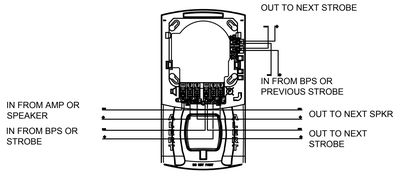
FIRE ALARM SYSTEM DESCRIPTION

SCOPE OF THIS PROJECT IS TO PROVIDE A NEW FIRE ALARM PANEL WITH NEW VOICE EVACUATION PANEL, INCLUDING FACP, VOICE AMPLIFIERS, POWER SUPPLIES, MICROPHONE, INITIATION, NOTIFICATION AND CONTROL DEVICES AS SHOWN ON PLANS AND SPECIFICATIONS. PROVIDE ALL NEW CABLING; CABLING SHALL BE INSTALLED IN CONDUIT OR SURFACE RACEWAY, OR EXPOSED IN ACCESSIBLE CEILING SPACE.

FIRE ALARM SYSTEM: CLASS B
IDC: CLASS B
SLC CIRCUIT: CLASS B
NOTIFICATION CIRCUIT: CLASS B



A E5.1 TYPICAL FIRE ALARM DEVICE INSTALLATION REQUIREMENTS
NTS



B E5.1 DUAL STROBE & SPEAKER DEVICE
NTS

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REGISTERED PROFESSIONAL ENGINEER SCOTT WHEELER No. E015491 Exp. 06/30/21 MECHANICAL ENGINEER

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AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENTO, CALIFORNIA 95841

FIRE ALARM SCHEDULES & NOTES

REVISIONS

DATE AUGUST 15, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

E5.1

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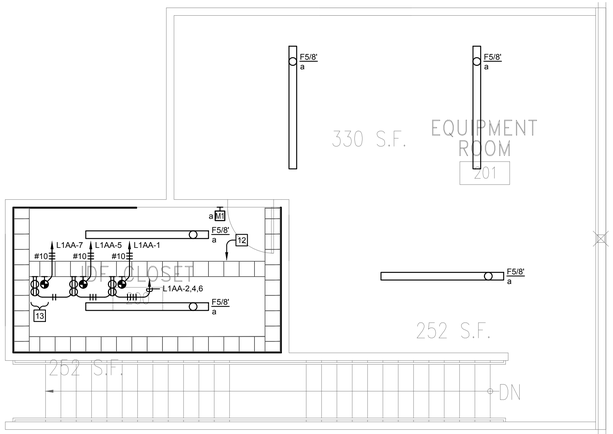
SACRAMENO, CALIFORNIA 95841

FIRE ALARM RISER & CALCULATIONS

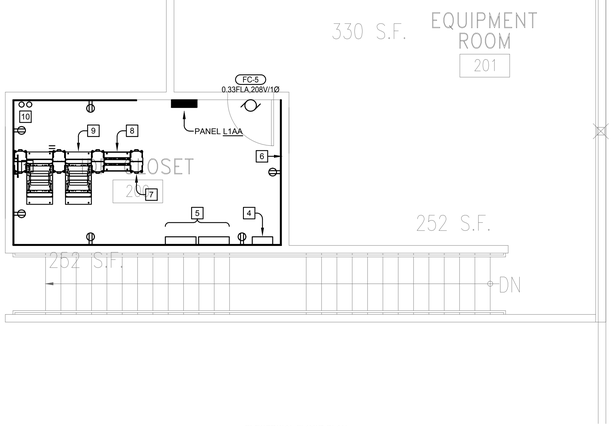
REVISIONS

DATE	AUGUST 15, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

E5.2



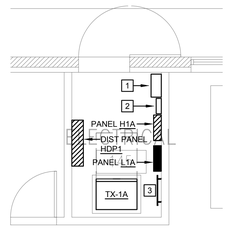
CABLE RUNWAY LAYOUT, CEILING PLAN



ELECTRICAL FLOOR PLAN

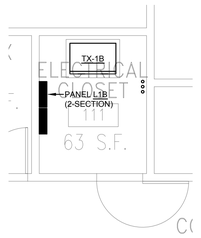
C E6.0 MEZANNINE LEVEL - IDF & EQUIPMENT ROOMS

1/4" = 1'-0"



A E6.0 ELECTRICAL ROOM

1/4" = 1'-0"



B E6.0 ELECTRICAL CLOSET

1/4" = 1'-0"

GENERAL SHEET NOTES

A. -

NUMBERED SHEET NOTES

1. PROVIDE MINI-INVERTER, BODINE ELI-S-400 OR EQUAL, WALL MOUNTED.
2. PROVIDE A 4-RELAY LIGHTING CONTROL PANEL, SENSOR SWITCH NLIGHT NPANEL-4 OR EQUAL, WALL MOUNTED.
3. BUILDING MAIN REFERENCE GROUND BUS, REFER TO B/E6.1.
4. FIRE ALARM CONTROL PANEL, SILENT KNIGHT 5820XL-EVS.
5. PROVIDE ACCESS AND INTRUSION SYSTEM CABINETS, REFER TO ELEVATION DETAIL.
6. PROVIDE PLYWOOD BACKBOARD, 4'W X 8'H X 0.75" COMMUNICATIONS GRADE AROUND PERIMETER OF THE IDF ROOM AT +3" A.F.F. A MINIMUM OF TWO COATS OF FIRE RETARDANT PAINT, COLOR TO MATCH WALL FINISH, SHALL BE APPLIED TO ALL SURFACES OF THE BOARD PRIOR TO INSTALLATION.
7. PROVIDE 10" VERTICAL CABLE MANAGERS, AS SHOWN, TYPICAL.
8. PROVIDE 19'X84" FLOOR MOUNTED, 2-POST IDF EQUIPMENT RACKS, REFER TO INSTALLATION DETAILS.
9. PROVIDE FLOOR MOUNTED 4-POST EQUIPMENT RACK, REFER TO SPECIFICATIONS AND INSTALLATION DETAILS.
10. SITE CONDUITS, REFER TO ELECTRICAL SITE PLAN, SHEET E1.1.
11. TELECOMMUNICATIONS GROUND BUS BAR.
12. OVERHEAD CABLE RUNWAY, REFER TO INSTALLATION DETAILS.
13. INSTALL OUTLETS AT CABLE RUNWAY.

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ENLARGED
ROOM PLANS

REVISIONS

DATE AUGUST 15, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

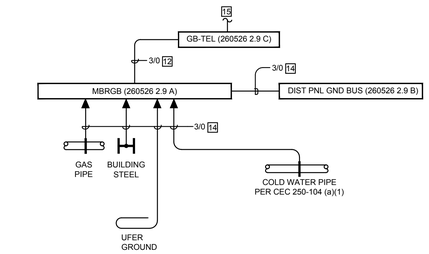
E6.0

COPPER FEEDER SCHEDULE

FEEDER TAG	FEEDER DESCRIPTION	CONDUIT	CONDUCTORS		REMARKS
			PHASE/NEUTRAL	GROUND	
8004	800 AMP,3 PHASE,4 WIRE	3-3.00"	3 SETS OF 4 #300 KCMIL	1 #1/0 PER SET	-
8003	800 AMP,3 PHASE,3 WIRE	2-3.00"	2 SETS OF 3 #500 KCMIL	1 #1/0 PER SET	-
7004	700 AMP,3 PHASE,4 WIRE	2-3.50"	2 SETS OF 4 #500 KCMIL	1 #1/0 PER SET	-
7003	700 AMP,3 PHASE,3 WIRE	2-3.00"	2 SETS OF 3 #400 KCMIL	1 #1/0 PER SET	-
6004	600 AMP,3 PHASE,4 WIRE	2-3.00"	2 SETS OF 4 #350 KCMIL	1 #1 PER SET	-
6003	600 AMP,3 PHASE,3 WIRE	2-2.50"	2 SETS OF 3 #350 KCMIL	1 #1 PER SET	-
5004	500 AMP,3 PHASE,4 WIRE	2-2.50"	2 SETS OF 4 #250 KCMIL	1 #2 PER SET	-
5003	500 AMP,3 PHASE,3 WIRE	2-2.00"	2 SETS OF 3 #250 KCMIL	1 #2 PER SET	-
4504	450 AMP,3 PHASE,4 WIRE	2-2.50"	2 SETS OF 4 #4/0	1 #2 PER SET	-
4503	450 AMP,3 PHASE,3 WIRE	2-2.00"	2 SETS OF 3 #4/0	1 #2 PER SET	-
4004	400 AMP,3 PHASE,4 WIRE	1-4.00"	4 #500 KCMIL	1 #2	-
4003	400 AMP,3 PHASE,3 WIRE	1-3.00"	3 #500 KCMIL	1 #2	-
3504	350 AMP,3 PHASE,4 WIRE	1-2.50"	4 #400 KCMIL	1 #2	-
3503	350 AMP,3 PHASE,3 WIRE	1-2.50"	3 #400 KCMIL	1 #2	-
3004	300 AMP,3 PHASE,4 WIRE	1-3.00"	4 #350 KCMIL	1 #4	-
3003	300 AMP,3 PHASE,3 WIRE	1-2.50"	3 #350 KCMIL	1 #4	-
2754	275 AMP,3 PHASE,4 WIRE	1-3.00"	4 #300 KCMIL	1 #4	-
2753	275 AMP,3 PHASE,3 WIRE	1-2.50"	3 #300 KCMIL	1 #4	-
2504	250 AMP,3 PHASE,4 WIRE	1-2.50"	4 #250 KCMIL	1 #4	-
2503	250 AMP,3 PHASE,3 WIRE	1-2.00"	3 #250 KCMIL	1 #4	-
2254	225 AMP,3 PHASE,4 WIRE	1-2.50"	4 #4/0	1 #4	-
2253	225 AMP,3 PHASE,3 WIRE	1-2.00"	3 #4/0	1 #4	-
2004	200 AMP,3 PHASE,4 WIRE	1-2.00"	4 #3/0	1 #6	-
2003	200 AMP,3 PHASE,3 WIRE	1-2.00"	3 #3/0	1 #6	-
1754	175 AMP,3 PHASE,4 WIRE	1-2.00"	4 #2/0	1 #6	-
1753	175 AMP,3 PHASE,3 WIRE	1-1.50"	3 #2/0	1 #6	-
1504	150 AMP,3 PHASE,4 WIRE	1-1.50"	4 #1/0	1 #6	-
1503	150 AMP,3 PHASE,3 WIRE	1-1.50"	3 #1/0	1 #6	-
1254	125 AMP,3 PHASE,4 WIRE	1-1.50"	4 #1	1 #6	-
1253	125 AMP,3 PHASE,3 WIRE	1-1.25"	3 #1	1 #6	-
1004	100 AMP,3 PHASE,4 WIRE	1-1.50"	4 #1	1 #8	-
1003	100 AMP,3 PHASE,3 WIRE	1-1.25"	3 #1	1 #8	-
904	90 AMP,3 PHASE,4 WIRE	1-1.25"	4 #2	1 #8	-
903	90 AMP,3 PHASE,3 WIRE	1-1.25"	3 #2	1 #8	-
804	80 AMP,3 PHASE,4 WIRE	1-1.25"	4 #4	1 #8	-
803	80 AMP,3 PHASE,3 WIRE	1-1.00"	3 #4	1 #8	-
704	70 AMP,3 PHASE,4 WIRE	1-1.25"	4 #4	1 #8	-
703	70 AMP,3 PHASE,3 WIRE	1-1.00"	3 #4	1 #8	-
604	60 AMP,3 PHASE,4 WIRE	1-1.25"	4 #6	1 #10	-
603	60 AMP,3 PHASE,3 WIRE	1-1.00"	3 #6	1 #10	-
504	50 AMP,3 PHASE,4 WIRE	1-1.00"	4 #6	1 #10	-
503	50 AMP,3 PHASE,3 WIRE	1-0.75"	3 #8	1 #10	-
404	40 AMP,3 PHASE,4 WIRE	1-0.75"	4 #8	1 #10	-
403	40 AMP,3 PHASE,3 WIRE	1-0.75"	3 #8	1 #10	-
304	30 AMP,3 PHASE,4 WIRE	1-0.75"	4 #10	1 #10	-
303	30 AMP,3 PHASE,3 WIRE	1-0.75"	3 #10	1 #10	-
204	20 AMP,3 PHASE,4 WIRE	1-0.75"	4 #12	1 #12	-
203	20 AMP,3 PHASE,3 WIRE	1-0.75"	3 #12	1 #12	-
154	15 AMP,3 PHASE,4 WIRE	1-0.75"	4 #12	1 #12	-
153	15 AMP,3 PHASE,3 WIRE	1-0.75"	3 #12	1 #12	-

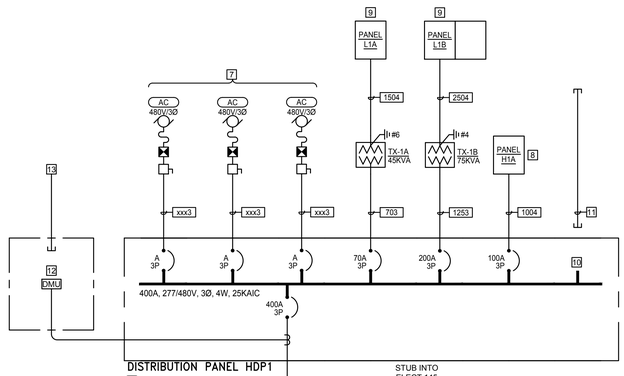
FEEDER SCHEDULE GENERAL NOTES

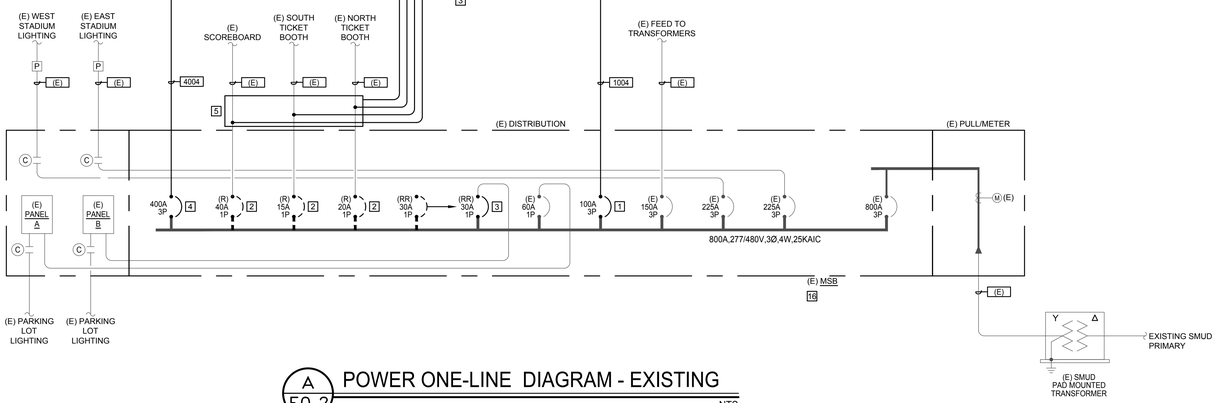
1. CONDUCTORS AND CONDUITS SHOWN IN THIS SCHEDULE ARE BASED ON COPPER CONDUCTORS WITH THHN/THWN INSULATION.
2. FEEDERS CONSISTING OF MULTIPLE SETS OF CONDUCTORS AND CONDUITS ARE TO BE PROVIDED WITH THE INDICATED SIZE GROUND CONDUCTOR IN EACH CONDUIT.



B E7.1 GROUND RISER DIAGRAM

NTS





A E0.2 POWER ONE-LINE DIAGRAM - EXISTING

NTS

GENERAL SHEET NOTES

A. BOLD LINE TYPE INDICATES NEW WORK; GRAYSCALE INDICATES EXISTING.

B. REFER TO SHEET E0.01 FOR PANEL SCHEDULES.

NUMBERED SHEET NOTES

1. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PREPARED SPACE AT EXISTING SWITCHBOARD. NEW BREAKER TO MATCH MANUFACTURER, TYPE, AIC RATING OF EXISTING BREAKERS. PROVIDE ENGRAVED NAMEPLATE.
2. REMOVE EXISTING BREAKERS (LOCATED IN BOTTOM TWO ROWS OF DISTRIBUTIONS SECTION) AND RETURN TO OWNER. SPACES ARE TO BE USED BY NEW BREAKER PER NOTE #4. CONDUCTORS ARE TO BE INTERCEPTED AND ROUTED TO NEW PANEL PER NOTE #xxx.
3. RELOCATE EXISTING BREAKER TO POSITION IN SWITCHBOARD CURRENTLY IDENTIFIED AS 'SPARE'. RECONNECT EXISTING FEEDER. SPACE IS ARE TO BE USED BY NEW BREAKER PER NOTE #4.
4. IN 4 BREAKER SPACES MADE VACANT BY REMOVAL/RELOCATION OF EXISTING BREAKERS PER NOTES #2 AND #3, PROVIDE A NEW GE THJK436400 35KAIC BREAKER. PROVIDE ALL NECESSARY MOUNTING HARDWARE.
5. INTERCEPT EXISTING FEEDERS FOR SCOREBOARD AND TICKET BOOTHS, AND SPLICE WITH NEW FEEDERS UTILIZING WATERPROOF RESIN SPLICE KIT. CONTRACTOR TO VERIFY APPROPRIATE POINT OF INTERCEPT IN THE FIELD, AND PROVIDE N30 IN-GROUND PULLBOX, OR SPLICE IN EXISTING PULLBOX.
6. PROVIDE A SERVICE RATED PANEL WITH BRANCH CIRCUIT BREAKERS UP TO 225AF, EATON PRL3A OR EQUAL. PER 2016 BUILDING ENERGY EFFICIENCY STANDARDS 130.5 (a) SEPARATION OF ELECTRICAL CIRCUITS FOR ELECTRICAL ENERGY MONITORING, THIS PANEL SHALL SERVE HVAC LOADS.
7. 480V, 3-PHASE HVAC AND OTHER SUCH LOADS SHALL BE FED DIRECTLY FROM THE BUILDING DISTRIBUTION PANEL. CONNECTIONS SHOWN ARE EXAMPLES; REFER TO PANEL SCHEDULES FOR ACTUAL CIRCUIT REQUIREMENTS, AND ELECTRICAL PLANS FOR FEEDER REQUIREMENTS.
8. PANELBOARD SERVES GENERAL LIGHTING LOADS.
9. PANELBOARD SERVES GENERAL RECEPTACLE AND SMALL APPLIANCE LOADS.
10. PROVISIONS FOR FUTURE BREAKERS
11. STUB CONDUIT UP TO ACCESSIBLE CEILING SPACE BELOW THE "PV READY" AREA OF THE ROOF FOR FUTURE PHOTOVOLTAIC BACKFEED, VERIFY EXACT LOCATION WITH THE ARCHITECT, REFER TO SHEET A2.60 ARCHITECTURAL ROOF PLAN.
12. PROVIDE DIGITAL POWER METER, INSTALLED IN A SEPARATE ENCLOSURE, TO MEET THE REQUIREMENTS OF SECTION 130.5(a) OF THE 2016 BUILDING ENERGY EFFICIENCY STANDARDS. ROUTE WIRING FOR PHASE MONITORING AND CTs IN 0.75" CONDUIT.
13. PROVIDE DATA CABLE IN 1.0" MTC TO IDF CABINET FOR POWER MONITORING.PROVIDE 0.75"C. FOR CT WIRING.
14. ALL GROUNDING CONDUCTORS SHALL BE INSTALLED IN 1.0"C WITH GROUNDING BUSHINGS, U.O.N.
15. FROM THE TELECOM GROUND BUS BAR PROVIDE INSULATED BONDING NETWORK CONNECTIONS AS FOLLOWS:
    - 1- #6 TO EACH OF THE RACKS AND EQUIPMENT CABINETS
    - 1-#6 TO THE CABLE TRAY AND/OR LADDER TRAY
    - 1-#6 TO GROUNDING BUSHINGS ON ALL LV CONDUITS
    - 1-#6 TO THE RELAY RACKS & PROTECTOR BLOCKS
16. PROVIDE THE FOLLOWING PREVENTATIVE MAINTENANCE AND REFURBISHMENT SERVICES ON THE EXISTING MAIN SWITCHBOARD:
    - INSPECT FOR PHYSICAL DAMAGE.
    - THOROUGHLY CLEAN THE INTERIOR OF THE ENCLOSURE, REMOVE ALL DEBRIS AND SCRAP WIRE.
    - SAND DOWN ANY PATCHES OF RUST, AND TOUCH UP INTERIOR AND EXTERIOR OF ENCLOSURE WITH RUST INHIBITING PAINT TO MATCH EXISTING COLOR.
    - TRAIN ALL EXISTING INTERIOR WIRING; BUNDLE AND CLAMP USING PLASTIC TIES IN A NEAT AND WORKMANLIKE MANNER.
    - PROVIDE NECESSARY HARDWARE AT ALL EXISTING BREAKERS TO PERMIT LOCKING IN THE OFF POSITION.
    - PERFORM MECHANICAL OPERATIONAL TESTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
    - UPDATE NAMEPLATE INFORMATION PER 260553.
    - CHECK AND ENSURE THAT ALL COVERS, BARRIERS AND DOORS ARE SECURE.
    - TIGHTEN ALL ELECTRICAL CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS PUBLISHED TORQUE-TIGHTENING VALUES FOR EQUIPMENT CONNECTORS. WHERE MANUFACTURER'S TORQUE REQUIREMENTS ARE NOT INDICATED, COMPLY WITH UL STANDARD 486A TIGHTENING TORQUE SPECIFICATIONS.

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REGISTERED PROFESSIONAL ENGINEER SCOTT WHEELER No. E015491 Exp. 06/30/21 ELECTRICAL

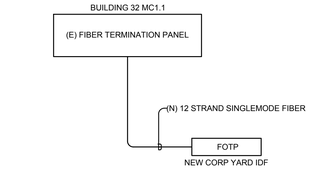
LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENO, CALIFORNIA 95841

POWER ONE-LINE DIAGRAM

REVISIONS

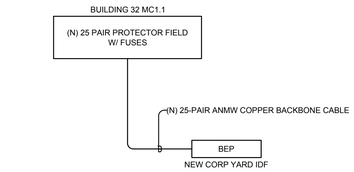
DATE AUGUST 15, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

E7.0



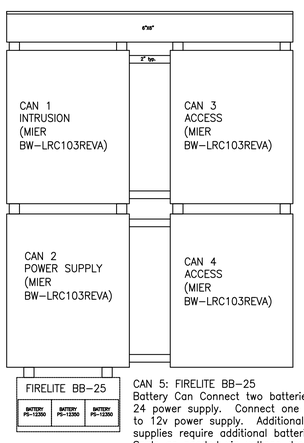
A E7.1 FIBER OPTIC BACKBONE RISER DIAGRAM

1/8" = 1'-0"



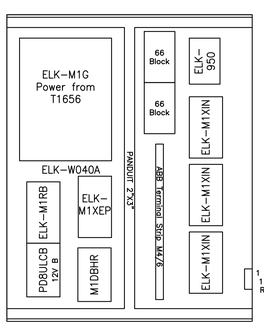
B E7.1 COMMUNICATIONS COPPER BACKBONE RISER DIAGRAM

1/8" = 1'-0"



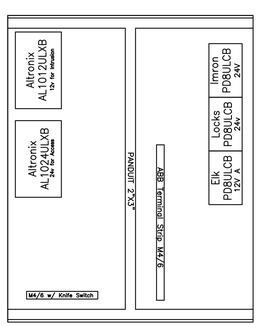
Use hinge gutter top of boxes for cable service loops. EMT above ceiling 40% fill max. Use station cable management or pipe to all end devices. No Splicing.

CAN 5: FIRELITE BB-25
Battery Can Connect two batteries to 24 power supply. Connect one battery to 12v power supply. Additional power supplies require additional batteries. Scale as needed via voltage drop calculations.



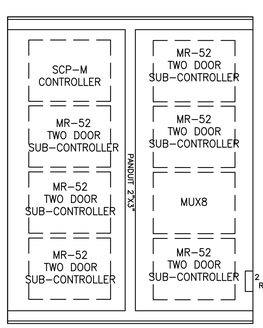
CAN 1
INTRUSION
Mier BW-LRC103REVA
24"w 30"h 6"d

Equipment shown within Access/Intrusion cans is meant to communicate placement within the can, not actual quantities required per project. Specific quantities are to be determined by Contractor and verified through shop drawing submittal process. Keypad, motions, door switch cables home run to this enclosure. List circuits used on PD8 as voltage drop allows, include two parallel circuits to power M1G, use one circuit for XEP via Can 3. Confirm with District pinning intentions.



CAN 2
POWER SUPPLY
Mier BW-LRC103REVA
24"w 30"h 6"d

Equipment shown within Access/Intrusion cans is meant to communicate placement within the can, not actual quantities required per project. Specific quantities are to be determined by Contractor and verified through shop drawing submittal process. Door lock power cables home run to this enclosure. Confirm with District pinning intentions.



CANS 3 & 4
ACCESS CONTROL
Mier BW-LRC103REVA
24"w 30"h 6"d

Equipment shown within Access/Intrusion cans is meant to communicate placement within the can, not actual quantities required per project. Specific quantities are to be determined by Contractor and verified through shop drawing submittal process. Push buttons, reader cables home rune to this enclosure. Confirm with District pinning intentions.

C E7.1 ACCESS/INTRUSION PANEL ELEVATION

NTS

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REGISTERED PROFESSIONAL ENGINEER SCOTT NEELEY No. E015491 Exp. 06/30/20 ELECTRICAL

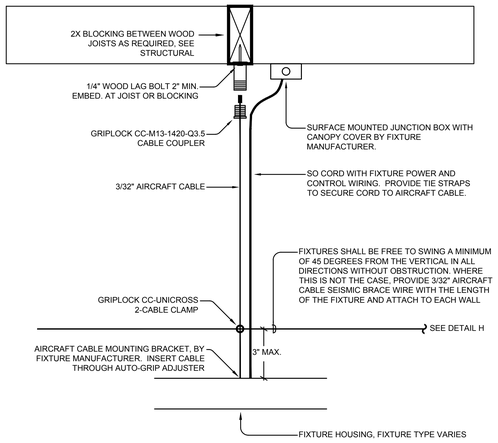
LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENO, CALIFORNIA 95841

LOW VOLTAGE RISER DIAGRAMS

REVISIONS

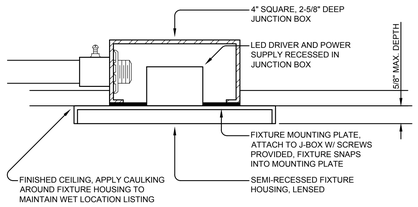
DATE AUGUST 15, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

E7.1



H / E8.0 SUSPENDED LIGHT FIXTURES

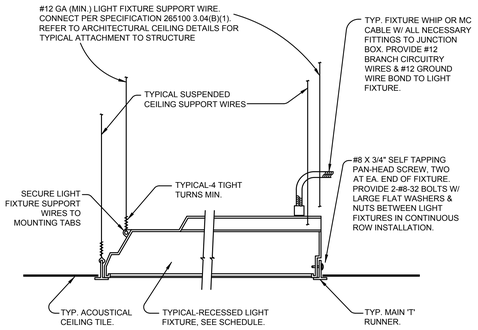
NONE



MAX FIXTURE WEIGHT: LESS THAN 2 LBS.

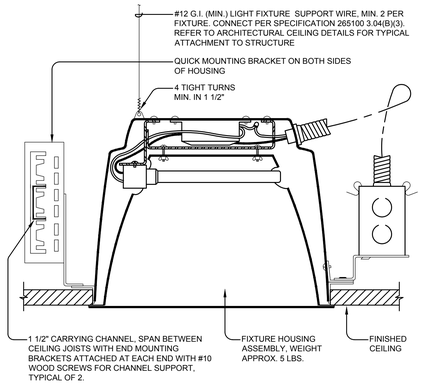
I / E8.0 SEMI-RECESSED FIXTURE

NONE



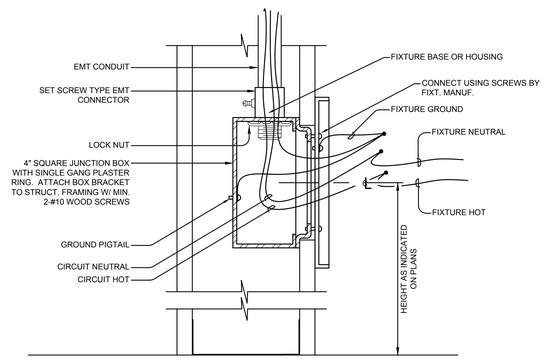
D / E8.0 RECESSED FIXTURE AT T-BAR CEILING

NONE



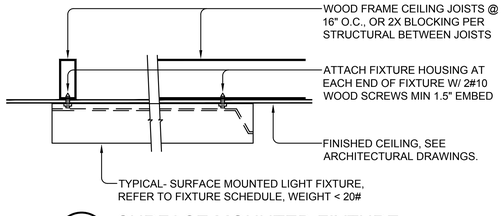
E / E8.0 RECESSED DOWNLIGHT

NONE



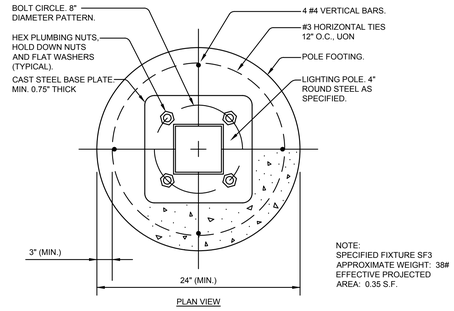
F / E8.0 WALL MOUNTED FIXTURE

NONE

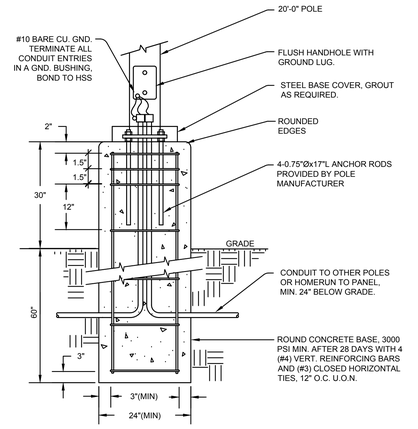


G / E8.0 SURFACE MOUNTED FIXTURE

NONE

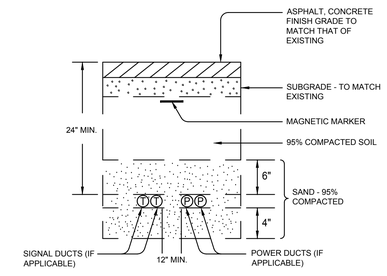


PLAN VIEW



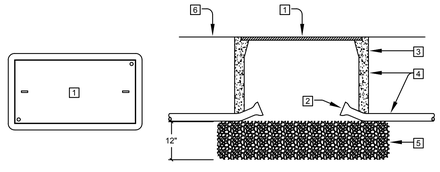
A / E8.0 RAISED LIGHTING POLE BASE DETAIL

NTS



B / E8.0 JOINT TRENCH DETAIL

NTS



1. CONCRETE COVER (TO SUIT APPLICATION) WITH HOLD DOWN BOLTS. LABEL COVER AS REQUIRED.
2. BELL ENDS TYP.
3. PRE CAST REINFORCED CONCRETE BOX, SIZE PER CEC. INSTALL FLUSH WITH GRADE.
4. SEAL AROUND CONDUIT, BOX & JUNCTION OF EXTENSION(S) WITH MORTAR.
5. CRUSHED ROCK
6. FINISHED GRADE

C / E8.0 SITE PULLBOX INSTALLATION DETAIL

NTS

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SCOTT WHEELER
No. E015491
Exp. 06/30/21
ELECTRICAL

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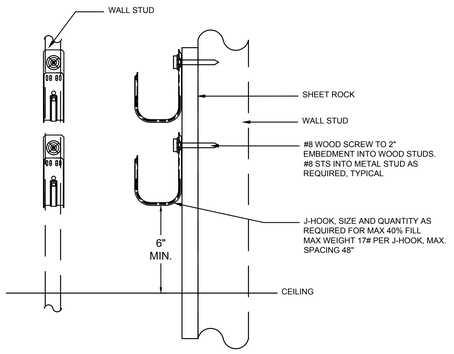
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENO, CALIFORNIA 95841

ELECTRICAL DETAILS

REVISIONS

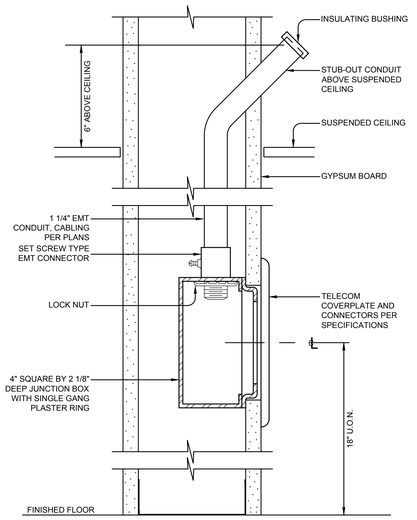
DATE AUGUST 15, 2019
SCALE AS NOTED
DRAWN BY -
JOB NO. 19-06
SHEET

E8.0



N / E8.1 J-HOOK WALL ATTACHMENT DETAIL

NTS



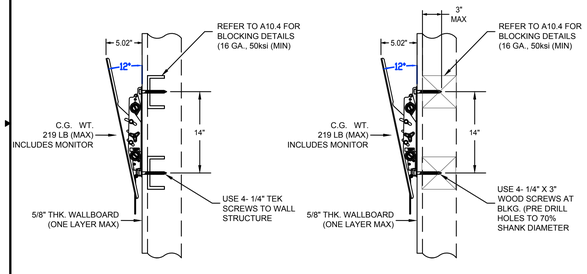
NOTE: TYPICAL INSTALLATION WITH CONDUIT STUBBED ABOVE CEILING UNLESS SHOWN OTHERWISE ON PLANS.

P / E8.1 TELECOMMUNICATIONS DEVICE

NONE

OSHPD APPROVED DETAIL - OPM-0281-13

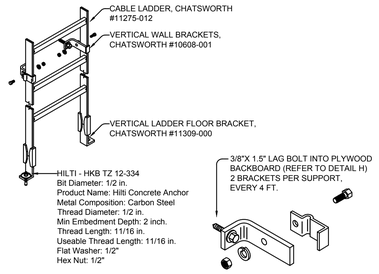
CHIEF MFG. #LSA1U MONITOR SUPPORT BRACKET: (ASTM A1008/A1011 12 GA., 30 ksi (MIN.)



STEEL STUD WALL SECTION **WOOD STUD WALL SECTION**

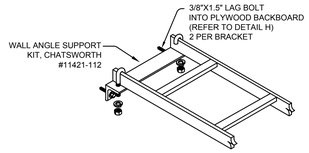
Q / E801 FLAT SCREEN TV WALL MOUNT

NTS



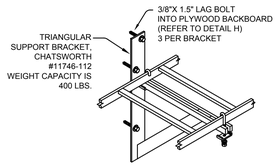
F / E8.1 VERTICAL LADDER SUPPORT

NTS



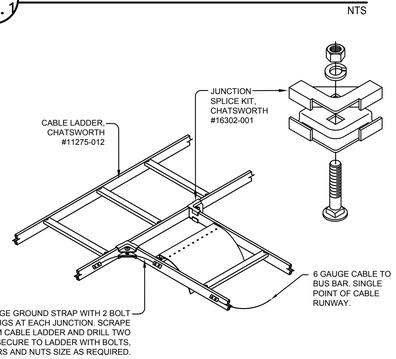
G / E8.1 LADDER END SUPPORT BRACKET

NTS



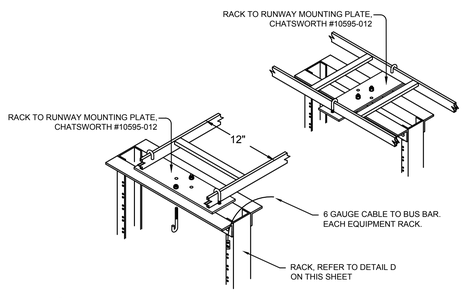
H / E8.1 ANGLE WALL SUPPORT

NTS



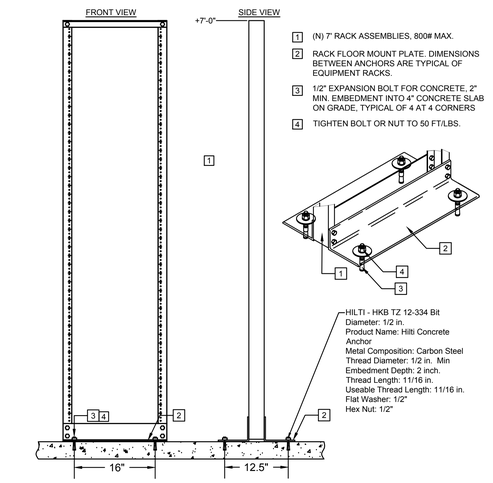
J / E8.1 LADDER JUNCTION KIT

NTS



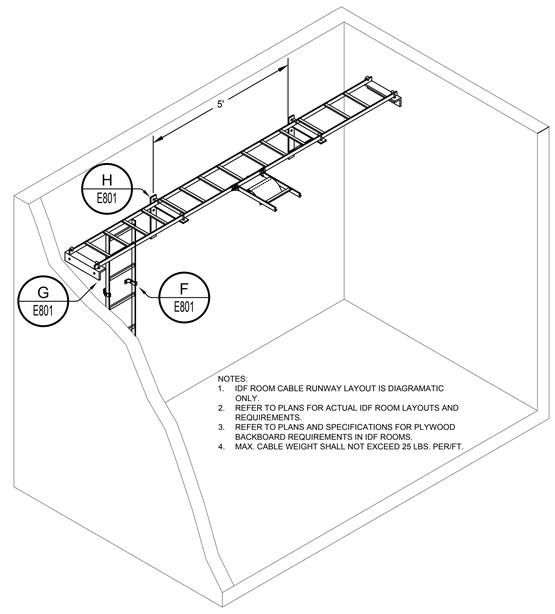
K / E8.1 LADDER TO RACK SUPPORT

NTS



D / E8.1 EQUIPMENT RACK BASE SUPPORT

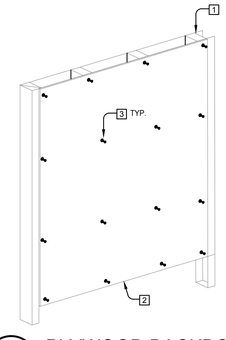
NTS



NOTES:
1. IDF ROOM CABLE RUNWAY LAYOUT IS DIAGRAMATIC ONLY.
2. REFER TO PLANS FOR ACTUAL IDF ROOM LAYOUTS AND REQUIREMENTS.
3. REFER TO PLANS AND SPECIFICATIONS FOR PLYWOOD BACKBOARD REQUIREMENTS IN IDF ROOMS.
4. MAX. CABLE WEIGHT SHALL NOT EXCEED 25 LBS. PER/FT.

E / E8.1 TYPICAL CABLE RUNWAY LAYOUT

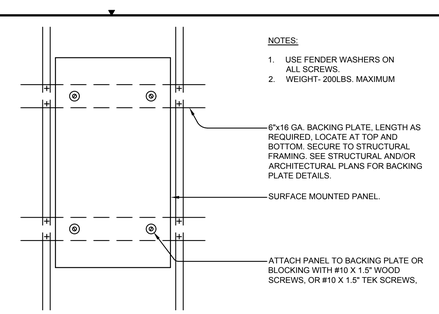
SCALE: NTS



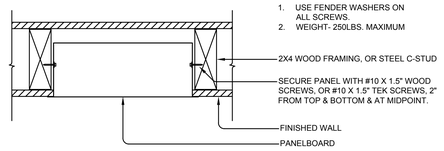
1. FRAMED WALL (METAL STUDS).
2. 3/4" THICK, 8' HIGH FIRE TREATED AND PAINTED PLYWOOD BACKBOARD CUT TO FIT, INSTALL +4" A.F.F.
3. ATTACH BACKBOARD TO METAL STUDS EVERY 12". AT WOOD FRAME CONSTRUCTION, USE #10x3" FLAT HEAD SMS.

M / E8.1 PLYWOOD BACKBOARD ATTACHMENT

NTS



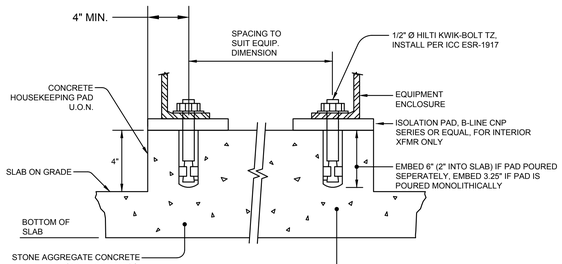
SURFACE MOUNTED PANEL, WOOD OR STEEL FRAMING - ELEVATION VIEW



RECESSED PANEL IN WOOD OR STEEL FRAMED WALL - PLAN VIEW

A / E8.1 SURFACE OR RECESSED PANELBOARD

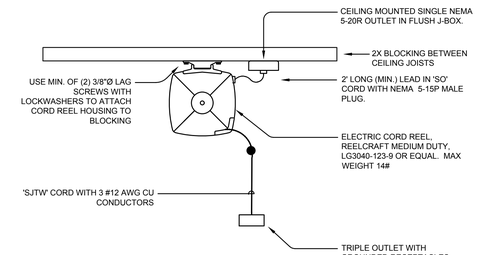
NTS



MAIN SWITCHBOARD : 2 PER SIDE PER CUBICLE, MAX WEIGHT 1,100# PER CUBICLE
TRANSFORMER : 2 PER SIDE PER CUBICLE, MAX WEIGHT 1,250#

B / E8.1 HOUSEKEEPING PAD ANCHORAGE

NTS



C / E8.1 CORD REEL INSTALLATION

NONE

GRA architecture
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The Engineering Enterprise
Consulting Engineers
1125 HIGH STREET
AUBURN, CA 95603
(530) 886-8556
REGISTERED PROFESSIONAL ENGINEER SCOTT WHEELER No. E015491 Exp. 06/30/21 ELECTRICAL

LOS RIOS COMMUNITY COLLEGE DISTRICT
AMERICAN RIVER COLLEGE
CORPORATION YARD
SACRAMENO, CALIFORNIA 95841

ELECTRICAL DETAILS

REVISIONS

DATE	AUGUST 15, 2019
SCALE	AS NOTED
DRAWN BY	-
JOB NO.	19-06
SHEET	

E8.1