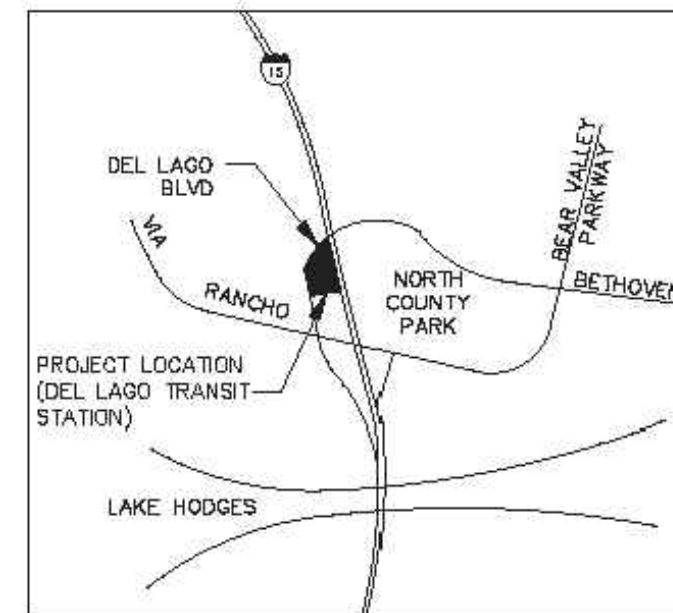


FAST EV SUNCHARGE DEL LAGO

SOLAR PHOTOVOLTAIC SYSTEM, BATTERY STORAGE SYSTEM, ELECTRIC VEHICLE CHARGING SYSTEMS

COORDINATES:
33° 4'21.81"N
117° 4'14.98"W

ADDRESS:
3310 DEL LAGO BLVD,
ESCONDIDO, CA 92029



LOCATION MAP
NTS



VICINITY MAP
NTS

PROJECT/SITE INFORMATION

PROJECT DESCRIPTION:
THIS PROJECT CONSISTS OF THE INSTALLATION OF A SINGLE SOLAR PHOTOVOLTAIC CARPORT STRUCTURE, ELECTRIC VEHICLE CHARGING UNITS, A BATTERY ENERGY STORAGE SYSTEM, AND AN EQUIPMENT BUILDING, LOCATED ON THE NORTH END OF THE DEL LAGO PARK & RIDE, IN ESCONDIDO, CA.

THE SITE IMPROVEMENTS WILL NEED ADDITIONAL DRAINAGE/CIVIL DESIGN AND THE EXISTING LANDSCAPE IRRIGATION SYSTEM WILL NEED TO BE MODIFIED AS A RESULT OF THIS INSTALLATION.

ALL ELECTRIC VEHICLE CHARGING EQUIPMENT WILL BE PROCURED AND CONSTRUCTED BY THE EVSE CONTRACTOR. ALL OTHER EQUIPMENT NOTED IN THIS PLANSET SHALL BE PROCURED AND CONSTRUCTED BY SDG&E AND/OR THEIR SUBCONTRACTOR.

ELECTRIC VEHICLE CHARGING:
TOTAL OF (4) ELECTRIC VEHICLE CHARGERS.
(1) IS AN ADA ACCESSIBLE AC LEVEL 2 EV CHARGER.
(2) IS A NON-ADA ACCESSIBLE AC LEVEL 2 EV CHARGERS
(1) IS A DC FAST CHARGER

SOLAR PHOTOTVOLTAIC CARPORT STRUCTURE:
15.3KW (DC@STC)
13.6KW (DC@PTC)
13.1KW (DC@CEC)

APPLICABLE CODES:
2008 NATIONAL ELECTRICAL CODE
2010 CALIFORNIA BUILDING CODE
SEE SUBCONSULTANT SHEETS FOR ADDITIONAL CODES REFERENCES

SHEET LIST

GENERAL		STRUCTURAL	
SHEET #:	SHEET CONTENT:		
G0.1	COVER SHEET	S0.1	GENERAL STRUCTURAL NOTES
G0.2	ABBREVIATIONS, LEGENDS & NOTES	S0.2	GENERAL STRUCTURAL NOTES
G0.3	SITE PLAN AND LAYDOWN AREA	S1.0	PLAN AND SECTION
		S2.0	CARPORT DETAILS
		S3.0	DETAILS
		S3.1	DETAILS
		S3.2	DETAILS
ELECTRICAL		LANDSCAPE ARCHITECTURE	
E0.1	ELECTRICAL NOTES & SYMBOLS	LA1.0	LANDSCAPE IRRIGATION PLAN
E1.0	ELECTRICAL SINGLE LINE DIAGRAM	LA1.1	LANDSCAPE IRRIGATION
E2.0	ELECTRICAL SCHEDULES		SCHEDULE & NOTES
E3.0	ELECTRICAL SITE PLAN		LANDSCAPE IRRIGATION
E3.1	ELECTRICAL SITE DISTRIBUTION PLAN	LA1.2	DETAILS
E3.2	UTILITY CONFLICT PLAN		LANDSCAPE PLANTING PLAN
E4.0	ENLARGED PLANS	LA2.0	LANDSCAPE PLANTING
E5.0	ELECTRICAL DETAILS	LA2.1	SCHEDULES & NOTES
E5.1	EV CHARGER DETAILS		LANDSCAPE PLANTING
CIVIL		LA2.2	DETAILS
GP0.1	CIVIL GRADING PLAN		

DESIGN TEAM LIST

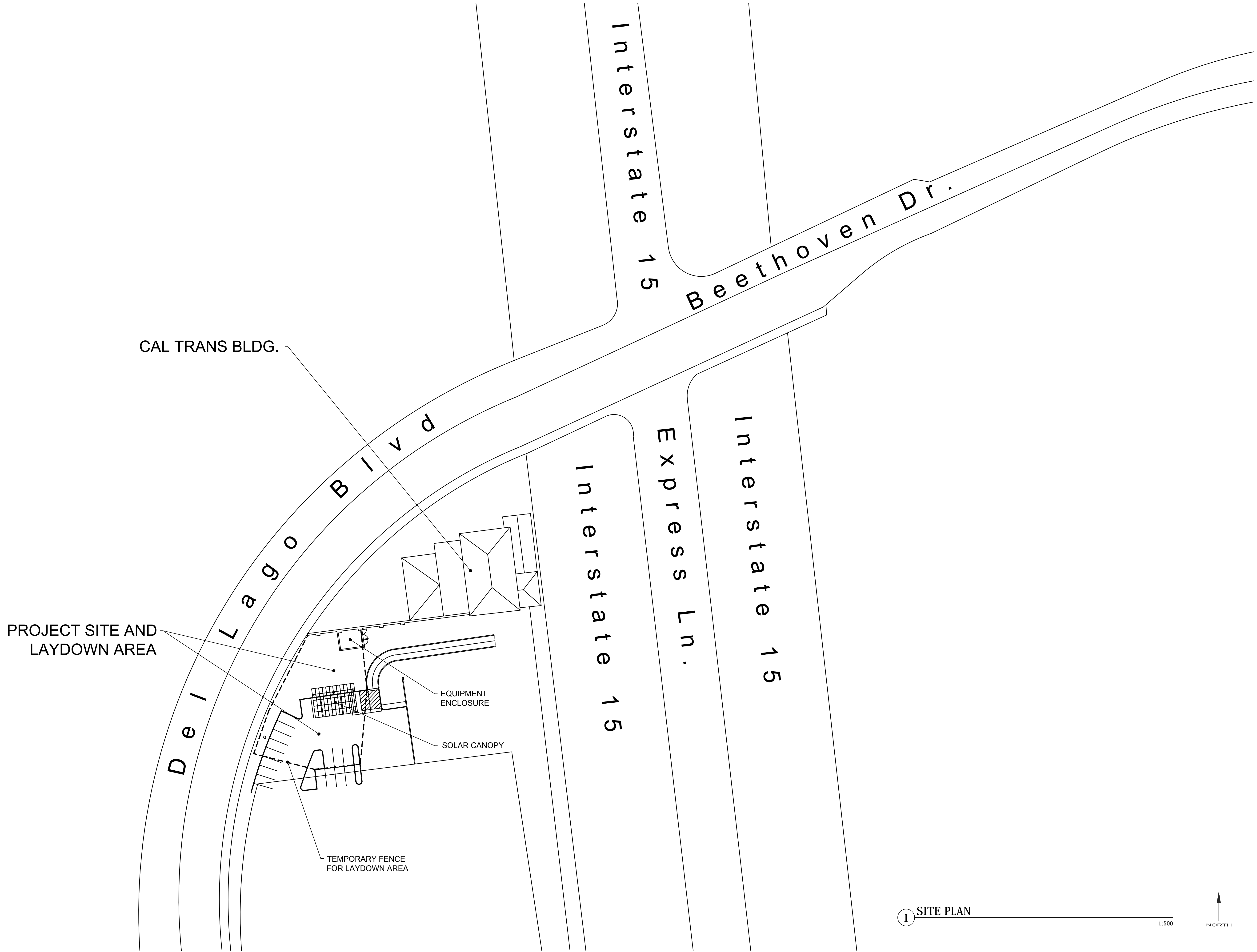
ELECTRICAL ENGINEER:
INDEPENDENT ENERGY SOLUTIONS
1090 JOSHUA WAY
VISTA, CA 92081
BRIAN DERSCH; P.E.
PHONE: 760-752-9706

STRUCTURAL ENGINEER:
KPFF
3131 CAMINO DEL RIO NORTH, SUITE 1080
SAN DIEGO, CALIFORNIA 92108
ANDREAS KARLSSON; P.E.
PHONE: 619-521-8500

CIVIL ENGINEER:
SNIPES-DYE ASSOCIATES
8348 CENTER DRIVE, SUITE G
LA MESA, CA 91942-2910
BILL SNIPES; P.E., L.S.
PHONE: 619-697-9234

LANDSCAPE ARCHITECT:
NERI LANDSCAPE ARCHITECTURE
928 HORNBLEND ST, SUITE #3
SAN DIEGO, CA 92109
JIM NERI
858.274.3222

[illegible]



CAL TRANS BLDG.

PROJECT SITE AND
LAYDOWN AREA

EQUIPMENT
ENCLOSURE

SOLAR CANOPY

TEMPORARY FENCE
FOR LAYDOWN AREA

1 SITE PLAN

1:500



FAST EV SUNCHARGE DEL LAGO

PHOTOVOLTAC SYSTEM
BATTERY STORAGE SYSTEM
EV CHARGING SYSTEMS
3310 DEL LAGO BLVD.
ESCONDIDO, CA 92029

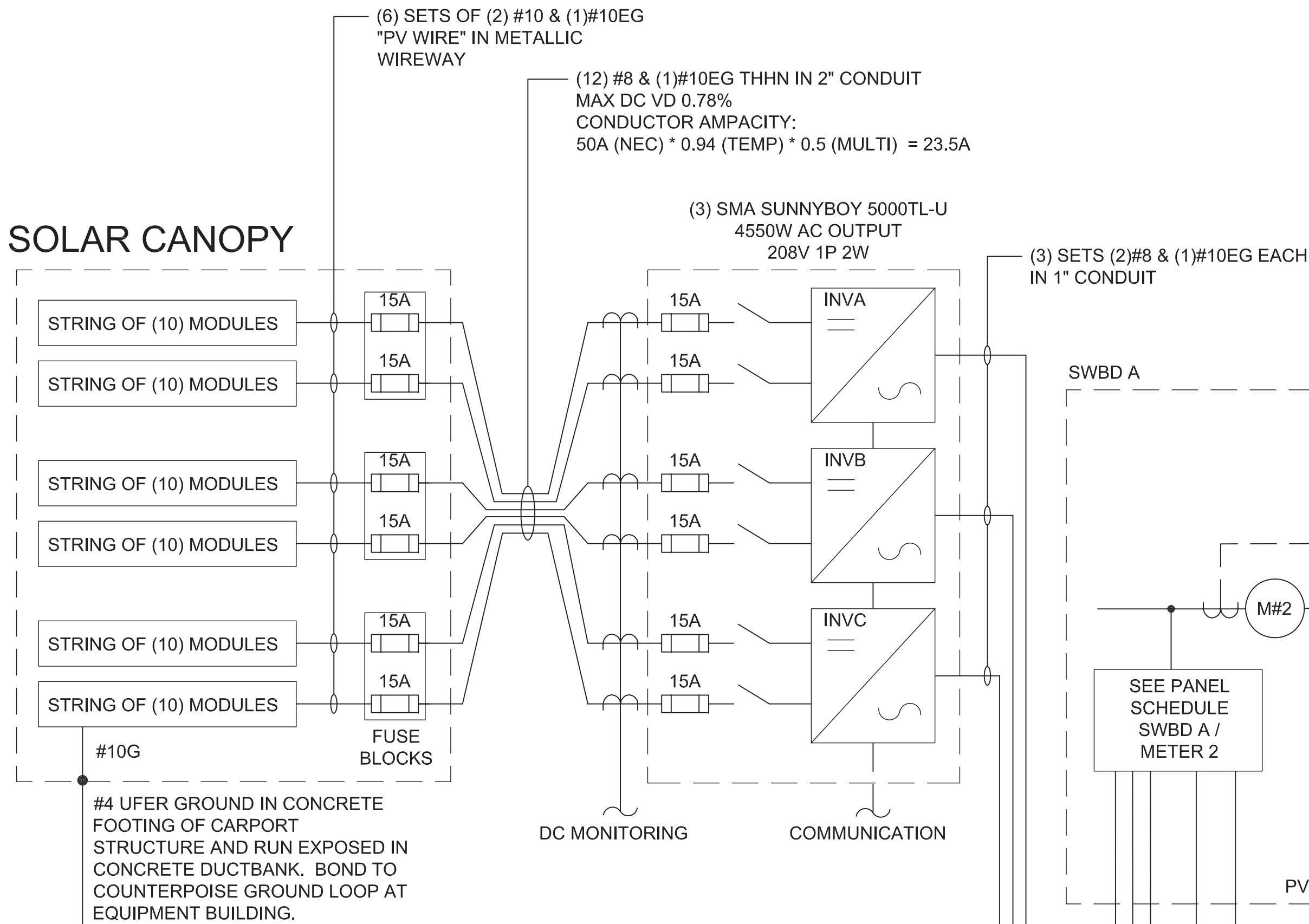
03.13.2013 - 30% SUBMITTAL
04.30.2013 - PREFINAL SUBMITTAL

SITE PLAN AND
LAYDOWN AREA

G0.3



DAS GENERAL NOTES AND EQUIPMENT NOTES		GENERAL CONDUIT/CONDUCTOR NOTES	GENERAL ELECTRICAL NOTES	
<div>DAS NOTES: THIS PV SYSTEM SHALL BE INSTALLED WITH A DATA ACQUISITION SYSTEM (DAS) . (SEE DETAILS BELOW) THIS SITE'S CURRENT POWER & ENVIRONMENTAL INFORMATION WILL BE WEB-ENABLED. SYSTEM SUPPLIER SHALL PROVIDE CLIENT WITH ALL NECESSARY HARDWARE, SOFTWARE & SERVICE CONTRACTS FOR COMMUNICATIONS AS NECESSARY. CLIENT AND/OR SITE IS TO PROVIDE LOCAL ACCESS NETWORK (LAN) CONNECTION TO THE INTERNET. THIS LAN WEB-ENABLED COMMUNICATION CONNECTION IS MANDATORY IN ORDER FOR REMOTE MONITORING/SERVICE ALERTS. TO COMMUNICATE TO THE INTERNET THE PV DAS/COMMUNICATION SYSTEM REQUIRES A STATIC IP ADDRESS OR DHCP SERVICE & PORTS CONFIGURED FOR OUTGOING COMMUNICATION. PORTS TO BE OPENED TO BE COORDINATED BY BOTH CLIENT AND DAS MONITORING IT REPRESENTATIVES.</div> <div>WIRING REQUIRED: INDOOR RS485 = BELDEN1325A, OUTDOOR RS485 = OMNI L21802. CONNECT THE POSITIVE CONDUCTOR TO ALL "POS" CONNECTIONS & THE NEGATIVE CONDUCTOR TO ALL "NEG" CONNECTIONS SO THEY CORRESPOND THROUGHOUT THE NETWORK THAT IS DAISY CHAINED TOGETHER.</div> <div>DAS EQUIPMENT: PLEASE SEE DAS INSTALLATION MANUAL FOR DAS SYSTEM WIRING/INSTALL.</div> <div>DAS BASESTATION: [1 TOTAL] DAS BASESTATION. NEMA 4X ENCLOSURE. OPERATING TEMPERATURE RANGE: -25°C TO +50°C (EXTENDED TEMPERATURE RANGE AVAILABLE). STORAGE TEMPERATURE RANGE: -40°C TO +70°C. 120VAC POWER SUPPLY. RS-485 COMMUNICATION WITH INVERTERS UP TO 4000' TOTAL. EITHER ETHERNET OR CELL CONNECTION TO DAS INTERFACE. CONNECT TO PERFORMANCE AND ENVIRONMENTAL ANALOG SENSORS THAT ARE LOCATED WITHIN 100' OF BASESTATION.</div> <div>ENVIRONMENTAL SENSOR - AMBIENT TEMPERATURE: [1 TOTAL] AMBIENT TEMPERATURE PROBE. INCLUDES ALL NECESSARY MOUNTING HARDWARE. CONNECTED TO THE DAS BASESTATION WITH #18-2 SHEATHED, SHIELDED TWISTED PAIR. CABLE SUPPLIED BY AURORA POWER ONE.</div> <div>PERFORMANCE SENSOR - MODULE TEMPERATURE: [1 TOTAL] BACK OF MODULE (BOM) THERMISTOR CONNECTED TO THE POWER ONE DAS BASESTATION WITH #18-2 CABLE. CABLE SUPPLIED BY DAS VENDOR.</div> <div>PERFORMANCE SENSOR - IRRADIANCE: [1 TOTAL] PYRANOMETER CONNECTED TO THE DAS BASESTATION. CABLE SUPPLIED BY DAS VENDOR. MUST USE SOLAR PATHFINDER OR EQUIVALENT TO CONFIRM THERE IS NO SHADING DURING THE SOLAR WINDOW. SEE PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.</div>		<div><div>1. ALL ABOVE-GROUND OUTDOOR CONDUIT TO BE RIGID METAL CONDUIT AND HAVE RAIN TIGHT CONNECTORS AND COUPLINGS UNLESS OTHERWISE NOTED.</div><div>2. ALL DC CONDUCTORS SHALL BE ROUTED IN RIGID METAL CONDUIT.</div><div>3. ALL DC PHOTOVOLTAIC CONDUCTORS INSTALLED ON THE UNDERSIDE OF THE SOLAR PHOTOVOLTAIC CANOPY WILL BE IN FREE AIR, NOT IN CONDUIT. THESE CONDUCTORS WILL TRANSITION TO RIGID METAL CONDUIT PRIOR TO DROPPING DOWN THE CANOPY COLUMN.</div><div>4. ALL UNDERGROUND CONDUIT TO BE SCHEDULE PVC UNLESS OTHERWISE NOTED.</div><div>5. CONDUIT CONTAINING DC SOURCE CIRCUIT CONDUCTORS TO BE STUBBED UNDER ARRAY SO AS TO NOT EXPOSE THE SUB-ARRAY CONDUCTORS TO DIRECT SUNLIGHT. CONDUIT TO HAVE END FITTING SEALED WITH CONDUIT PUTTY.</div><div>6. CONDUITS TO BE TERMINATED IN INVERTER ARE TO UTILIZE MANUFACTURER'S PROVIDED CONDUIT ENTRY POINTS.</div><div>7. ROUTING OF CONDUIT SHOWN ON PLANS IS APPROXIMATE.</div><div>8. SEAL ALL PENETRATIONS THROUGH WALLS AND FLOORS WITH FIRE RETARDANT MATERIALS AS REQUIRED BY NFPA. ALL PENETRATIONS TO BE SEALED AND PATCHED ACCORDINGLY.</div><div>9. CONCEAL ALL CONDUIT FROM PUBLIC VIEW WHERE REASONABLY POSSIBLE.</div><div>10. ALL CONDUIT CONTAINING DC CONDUCTORS MUST HAVE CONSPICUOUS LABEL AFFIXED AT INTERVALS OF TEN FEET MAXIMUM WORDED "CAUTION: SOLAR CIRCUIT".</div><div>11. CONDUITS CROSSING STRUCTURAL SEPARATIONS SHALL BE CONSTRUCTED WITH A FLEXIBLE CONNECTION AND ABLE TO ACCOMMODATE THE CALCULATED DIFFERENTIAL MOTION DURING EARTHQUAKES.</div><div>12. WHERE WIRE AND CABLE ROUTING IS NOT SHOWN AND DESTINATION ONLY INDICATED, CONTRACTOR SHALL DETERMINE EXACT ROUTING AND LENGTHS REQUIRED.</div><div>13. BENDS SHALL NOT DAMAGE THE RACEWAY OR SIGNIFICANTLY CHANGE THE INTERNAL DIAMETER OF RACEWAY.</div><div>14. SUPPORT CONDUCTORS IN VERTICAL CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS.</div><div>15. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND IN A NEAT INCONSPICUOUS MANNER. RUN PARALLEL AND AT RIGHT ANGLES TO STRUCTURAL MEMBERS. PROVIDE BOXES, FITTING AND BENDS FOR CHANGE IN DIRECTION. FASTEN CONDUIT SECURELY IN PLACE.</div><div>16. SUPPORT CONDUIT AT INDOOR LOCATIONS USING STEEL OR MALLEABLE IRON STRAPS. LAY-IN ADJUSTABLE HANGERS, CLEVIS HANGERS AND SPLIT-HANGERS. HANGER SPACING SHALL BE 10' MAXIMUM. USE APPROVED BEAM CLAMPS FOR CONNECTION TO STRUCTURAL MEMBERS.</div><div>17. PROVIDE PULL AND JUNCTION BOXES WHERE REQUIRED TO FACILITATE THE INSTALLATION OF WIRING IN ADDITION TO THOSE SHOWN ON THE DRAWINGS. BENDS IN CONDUITS BETWEEN PULL BOXES SHALL NOT EXCEED THE EQUIVALENT OF FOUR 90 DEGREE BENDS.</div><div>18. WHEN FIELD CUTTING IS REQUIRED, THE CONDUIT SHALL BE CUT SQUARE AND DEBURRED.</div></div> <div><div>GROUNDING NOTES:</div><div><div>• PER 690.43/250.134/250.140 PROVIDE CONTINUOUS PATH FOR EQUIPMENT GROUND (E.G.) CONDUCTOR(S) FROM THE SOLAR PV ARRAY TO THE INVERTER DC GROUND BUS BAR WITH ALL EXPOSED NON-CURRENT CARRYING METAL PARTS EQUIPMENT IN BETWEEN BONDED VIA E.G. BUS BAR(S)/TERMINAL BLOCK(S), GROUND BUSHINGS, ETC.</div><div>• PROVIDE CONTINUOUS PATH FOR GROUNDING ELECTRODE (GE) CONDUCTOR(S) FROM THE PV INVERTER AC SWITCHBOARD GROUND BUS TO SERVICE GROUND WITH ALL EXPOSED NON-CURRENT CARRYING METAL PARTS EQUIPMENT IN BETWEEN BONDED VIA E.G. BUS BAR(S)/TERMINAL BLOCK(S), GROUND BUSHINGS, ETC.</div><div>• ALL GEC BONDS ARE TO BE MADE VIA IRREVERSIBLE CONNECTIONS.</div><div>• EACH MODULE TO BE BONDED TO EQUIPMENT GROUND AS CALLED OUT ON DRAWINGS. SEE MODULE MANUFACTURER INSTRUCTIONS OF RECOMMENDED GROUNDING COMPONENTS. BONDING HARDWARE TO BE UL LISTED FOR PURPOSE. ATTACH TO UNDERSIDE OF ANODIZED ALUMINUM SOLAR MODULE FRAME. ATTACHMENT IS TO BE AT PRE-EXISTING HOLE MARKED "GROUND". ENSURE PROPER TORQUE AS WELL AS POSITIVE ELECTRICAL CONTACT THROUGH THE ANODIZING OF THE MODULE FRAME EXTRUSION.</div><div>• AVOID DIRECT CONTACT OF COPPER GROUND CONDUCTOR TO ALUMINUM FRAME VIA THE USE OF STAINLESS STEEL ISOLATING WASHERS AND/OR TIN PLATED COPPER LUGS.</div></div><div><div>DC & AC CONDUCTOR & CONDUIT AMPACITY NOTES:</div><div>AMPACITIES SHALL BE BASED ON 690.8 CURRENT SIZING & 310.16 75C AMPACITY COLUMN, DERATED PER 310.15(B)(2)(a), DERATED PER 310.15(B)(3)(a), AND ADJUSTED FOR ROOF TOP CONDUITS (WHERE APPLICABLE) AT MIN. DISTANCE OF 3.5" TO 4" ABOVE THE ROOF DECK IN ALL PLACES PER 310.15(B)(3)(c).</div></div></div>	<div><div>1. ELECTRICAL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE 2008 NATIONAL ELECTRICAL CODE AND THE AUTHORITIES HAVING JURISDICTION. ALL MATERIALS THAT ARE CAPABLE OF BEING LISTED ARE TO BE UL LISTED OR EQUIVALENT.</div><div>2. ALL JUNCTION BOXES SHALL BE MOUNTED IN ACCESSIBLE LOCATIONS.</div><div>3. ALL EMPTY CONDUITS SHALL BE EQUIPPED WITH PULL STRING.</div><div>4. EXTEND FEEDERS AND BRANCH CIRCUITS IN KIND WHEN A NEW PIECE OF EQUIPMENT IS INSTALLED AND AN EXISTING PIECE OF EQUIPMENT HAS TO BE RELOCATED</div><div>5. ALL MATERIALS AND EQUIPMENT INDICATED ON PLANS ARE NEW UNLESS SPECIFICALLY INDICATED OTHERWISE.</div><div>6. ALL INTERRUPTION OF ELECTRICAL POWER SHALL BE KEPT TO A MINIMUM. HOWEVER, WHEN AN INTERRUPTION IS NECESSARY, THE SHUTDOWN SHALL BE COORDINATED WITH THE UTILITY COMPANY AND CLIENT.</div><div>7. PROVIDE PLACARDS PER NEC AND UTILITY REQUIREMENTS.</div><div>8. EXISTING ELECTRICAL FACILITIES AND/OR EQUIPMENT NOT INVOLVED IN THIS PROJECT SHALL REMAIN UNCHANGED, UNLESS NOTED OTHERWISE</div><div>9. ALL CONDUCTORS SHALL BE COPPER WITH 75° OR 90° INSULATION AND WITH AMPACITY BASED ON 75C COLUMN (WHERE SO LISTED) PER NEC 2008 TABLE 310.16 FOR CONDUCTORS IN RACEWAY & TABLE 310.17 FOR CONDUCTORS IN FREE AIR.</div><div>10. ALL CONDUCTORS SHALL BE TYPE THWN-2/THHN WITHIN CONDUIT OUTSIDE OF BUILDING ENVELOPE, TYPE THWN/THHN WITHIN CONDUIT INSIDE BUILDING ENVELOPE AND TYPE USE-2 RHH/RHW-2 "SUNLIGHT RESISTANT" OUTSIDE OF CONDUIT OUTDOORS.</div><div>11. ALL CONDUCTORS ARE TO BE STRANDED COPPER OTHER THAN INTER-MODULE GROUNDING WIRE AT THE ARRAY.</div><div>12. ALL EQUIPMENT SUCH AS ENCLOSURES, METALLIC CONDUITS, JUNCTION BOXES, FIXTURES, FENCES AND ALL METALLIC EQUIPMENT SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED.</div><div>13. THE PHOTOVOLTAIC SYSTEM UTILITY INTERCONNECTION POINT SHALL MEET THE SPECIFIC REQUIREMENTS OF ARTICLE 690.64, NATIONAL ELECTRICAL CODE (NEC).</div><div>14. IN EVERY PULL BOX, TERMINAL BOX, AND AT ALL PLACES WHERE WIRES MAY NOT BE READILY IDENTIFIED BY NAMEPLATE MARKINGS ON THE EQUIPMENT TO WHICH THEY CONNECT, IDENTIFY EACH CIRCUIT WITH A PLASTIC LABEL OR TAG.</div><div>15. SAFETY REGULATIONS (LOCK OUT - TAG OUT, ETC.) AND PRACTICES SHALL BE ENFORCED BY THE SOLAR SYSTEM INTEGRATOR DURING CONSTRUCTION.</div><div>16. ALL MATERIALS TO BE COMPATIBLE AND NON-CORROSIVE WHEN IN CONTACT DUE TO DISSIMILAR METALS, ETC.</div><div>17. ROOFTOP CONDUCTORS IN CONDUIT TO HAVE DERATED AMPACITY IN ACCORDANCE WITH NEC 310.15 (B)(2)(C), 310.16, & 690.31(C). THEY ARE TO BE FURTHER DERATED PER NEC 310.15(B)(2)(a) IF REQUIRED.</div><div>18. COLOR CODING OF DC CONDUCTORS SHALL BE AS FOLLOWS: POSITIVE = RED OR BLACK. NEGATIVE = WHITE. EQUIPMENT GROUND = BARE OR GREEN OR GREEN WITH YELLOW STRIPES.</div><div>19. COLOR CODING OF AC CONDUCTORS FOR 240/120V 1-PHASE 3-WIRE SYSTEM SHALL BE AS FOLLOWS: LINE 1 = BLACK. LINE 2 = RED. PHASE. NEUTRAL (GROUNDED) = WHITE. EQUIPMENT GROUND = GREEN.</div><div>20. COLOR CODING OF AC CONDUCTORS FOR 208/120V 3-PHASE 4-WIRE SYSTEM SHALL BE AS FOLLOWS: PHASE A = BLACK. PHASE B = RED. PHASE C = BLUE. NEUTRAL (GROUNDED) = WHITE. EQUIPMENT GROUND = GREEN.</div><div>21. COLOR CODING OF AC CONDUCTORS FOR 480/277V 3-PHASE 4-WIRE SYSTEM SHALL BE AS FOLLOWS: PHASE A = BROWN. PHASE B = ORANGE. PHASE C = YELLOW. NEUTRAL (GROUNDED) = GRAY. EQUIPMENT GROUND = GREEN.</div><div>22. DC COLOR CODING OF TRANSFORMER LESS INVERTERS SHALL BE AS FOLLOWS: RED = POSITIVE CONDUCTOR AND BLACK = NEGATIVE CONDUCTOR DUE TO THE FACT THAT THERE IS NO GROUNDED CONDUCTOR.</div><div>23. ALL PARTS, MATERIAL, AND COMPONENTS SPECIFIED IN THIS DOCUMENT SHALL BE UTILIZED (OR EQUIVALENT.)</div><div>24. NO COPPER WILL BE IN DIRECT CONTACT WITH ALUMINUM DUE TO THEIR METALLURGIC INCOMPATIBILITY. INSTEAD A STAINLESS STEEL WASHER OR TIN PLATED COPPER WILL ALWAYS BE USED TO MINIMIZE GALVANIC CORROSION, UNLESS MANUFACTURER'S INSTALLATION INSTRUCTIONS STATE OTHERWISE.</div><div>25. ALL ALTERNATE POWER SOURCE PLACARDS SHALL MEET THE SPECIFICATIONS OF THE SAN DIEGO AREA NEWSLETTER: "THE PLAQUE SHALL BE METAL OR PLASTIC, WITH ENGRAVED OR MACHINE PRINTED LETTERS IN A CONTRASTING COLOR TO THE PLAQUE, INCLUDE THE LOCATION OF METER, DISCONNECTS, INVERTER, THE ARRAY, AND A FOOTPRINT OF THE ENTIRE BUILDING AND SITE. THE PLAQUE WILL BE ATTACHED BY POP-RIVETS, SCREWS, OR OTHER APPROVED FASTENERS."</div><div>26. ALL SOLAR MODULES, EQUIPMENT, AND METALLIC COMPONENTS ARE TO BE BONDED.</div><div>27. PHOTOVOLTAIC DC CONDUCTORS ENTERING A BUILDING SHALL BE INSTALLED IN A METALLIC RACEWAY AND SHALL BE IDENTIFIED EVERY FIVE FEET FOR THE ENTIRE LENGTH AS FOLLOWS: "CAUTION DC CIRCUIT" OR EQUIVALENT.</div><div>28. ALL LIGHTING CONTROLS SHALL BE CERTIFIED BY THE MANUFACTURER AND LISTED IN THE ENERGY COMMISSION'S DIRECTORIES.</div></div>	
PV SYSTEM SPECIFIC ELECTRICAL CHARACTERISTICS				
<div><div>• MODULE POWER POINT CURRENT : IMP = IMP(MODULE) =8.5A</div><div>• RATED MAXIMUM POWER POINT CURRENT (AT INVERTER INPUT) : IMPT = (IMP)/(# OF STRINGS IN PARALLEL) = (8.5A*2)=17A</div><div>• MODULE POWER POINT VOLTAGE: VMP = (MODULE VMP) = 30.0</div><div>• RATED MAXIMUM POWER POINT VOLTAGE: VMP = (MODULE VMP)/(# OF MODULES IN SERIES) = (30V*10) = 300V</div><div>• MODULE OPEN CIRCUIT VOLTAGE: VOC = (MODULE VOC) =37.9</div><div>• MAXIMUM SYSTEM VOLTAGE: MVOC = (VOC)/(# OF MODULES IN SERIES(TEMP CORRECTION FACTOR) = (37.9V*10*1.12) = 424.48V</div><div>• MODULE SHORT CIRCUIT CURRENT: ISC = (ISC MODULE) = 9.05A</div><div>• PHOTOVOLTAIC SOURCE CIRCUIT CURRENT: PSSC= (ISC)(1.25) = PHOTOVOLTAIC OUTPUT CIRCUIT CURRENT: POSC= (PSSC)(#OF STRINGS IN PARALLEL) = (11.31*2) = 22.6A</div><div>• MAXIMUM RATED OUTPUT CURRENT (INVERTER OUTPUT CIRCUIT CURRENT): IOCC = (IMP INVERTER) = 22A</div></div>				
EV CHARGER NOTES				
<div>I AM THE DESIGNER IN RESPONSIBLE CHARGE OF THIS EV CHARGING STATION PROJECT; I HAVE INSPECTED THE PROPOSED LOCATION FOR THE PROPOSED ACCESSIBLE EV CHARGING STATION AND HAVE DETERMINED THAT THE ACCESSIBLE ROUTE OF TRAVEL TO THE EV CHARGING STATION SHOWN ON THE SITE PLAN COMPLIES AS AN ACCESSIBLE ROUTE OF TRAVEL AS IS REQUIRED BY THE CALIFORNIA BUILDING CODE.</div> <div>SIGNATURE:</div> <div>PRINT NAME:</div> <div>DATE:</div> <div>IF THE BUILDING INISPECTOR DETERMINES NONCOMPLIANCE WITH THE ABOVE STATEMENT, HE/SHE SHALL REQUIRE COMPLETE, DETAILED PLANS CLEARLY SHWOING ALL EXISTING NON-COMPLYING CONDITIONS AND THE PROPOSED MODIFICATIONS TO MEET CURRENT ACCESSIBILITY PROVISIONS FOR THE PARKING SPACE AND ACCESSIBLE ROUTE OF TRAVEL TO THE EV CHARGING STATION TO THE EXTENT REQUIRED BY THE CALIFORNIA BUILDING CODE. THE REVISED PLANS MUST BE RESUBMITTED TO THE STRUCTURAL REVIEW SECTION FOR APPROVAL.</div> <div>TOTAL # OF EV CHARGING STATIONS: (5) (4) REGULAR EV CHARGING STATIONS (1) ADA ACCESSIBLE EV CHARGING STATION</div>				
		ELECTRICAL SYMBOLS		
<div><div><div><div>⏏</div><div>GROUND</div></div><div><div>⏏⏏</div><div>CONTACTS</div></div><div><div>⏏</div><div>CURRENT TRANSFORMER</div></div><div><div>⏏</div><div>TRANSFORMER</div></div><div><div>⏏</div><div>SOLAR MODULE</div></div><div><div>⏏</div><div>CIRCUIT BREAKER</div></div><div><div>⏏</div><div>IN-LINE FUSE</div></div></div><div><div><div><div><div></div><div></div></div><div></div></div><div>HAND OFF AUTO SWITCH</div></div><div><div><div><div></div><div></div></div><div></div></div><div>UTILITY CONNECTION (SEE UTILITY DRAWINGS)</div></div><div><div><div><div></div><div></div></div><div></div></div><div>GROUND ROD</div></div><div><div><div><div></div><div></div></div><div></div></div><div>INVERTER</div></div></div></div>		<div><div><div><div>Ⓜ</div><div>METER</div></div><div><div>⏏</div><div>WEATHERSTATION</div></div><div><div>⓪</div><div>WIRE/CONDUIT ID</div></div><div><div>⏏</div><div>LIGHT FIXTURE</div></div><div><div>Ⓟ</div><div>PHOTOCELL</div></div></div><div><div><div><div>ⓐ</div><div>ASTRONOMICAL TIME CLOCK</div></div><div><div>⏏</div><div>MANUAL SWITCH</div></div><div><div>⏏</div><div>DUPLEX RECEPTICAL</div></div><div><div>ⓐ</div><div>COPPER GROUND BUS</div></div><div><div>⏏</div><div>BATTERY SYSTEM</div></div><div><div>⏏</div><div>NON-FUSED LOAD BREAK SWITCH</div></div></div></div></div>		



PV SYSTEM SPECIFICATIONS:

PV INVERTER:
SMA SUNNY BOY 5000TL-US
208V 1P 2W AC OUTPUT
5300W 600V DC INPUT
96% EFFICIENCY
NEMA 3R ENCLOSURE

SUNIVA OPT-255-60-4-100
MODULE CHARACTERISTICS:
MONOCRYSTALLINE
Voc= 37.9V (AT STC)
Vmp= 30.0V (AT STC)
Isc= 9.05A
Imp= 8.5A
Pmax= 255W (AT STC)
PTC Rating= 226.5W
MAX SYSTEM VOLTAGE= 600VDC.
SERIES FUSE RATING= 15A

TOTAL MODULES: 60
TOTAL STRINGS: 6
MODULES PER STRING: 10
MAX STRINGS PER INVERTER: 14
SYSTEM SIZE: 15.3 KW DC (STC)
13.6 KW DC (PTC)
13.1 KW AC (CEC)

ARRAY TILT: 7.49°
ARRAY AZIMUTH: 148°

MAX SYSTEM VOLTAGE:
THE OUTPUT VOLTAGE IS
379.0 Voc X 1.12 AMBIENT TEMPERATURE
CORRECTION FACTOR (26F) = 424.5
VDCoc.
THIS IS COMPATIBLE WITH THE 600VDC
INPUT ALLOWED FOR THE INVERTER.

ELECTRICAL LOAD CALCULATION:

OVERALL TOTAL LOADS:

• SWBD A / METER #1: ESS (INVERTER+BATTERIES)	127.9KVA ~ 354.9A @ 120/208V DEMAND
• SWBD A / METER #2: PV AND AUXILIARY LOADS	22.9KVA ~ 63.5A @ 120/208V DEMAND
• SWBD B / METER #3: EV CHARGING SYSTEM	108.3KVA ~ 300.6A @ 120/208V DEMAND
• OVERALL TOTAL:	259.0KVA ~ 719.0A @ 120/208V DEMAND

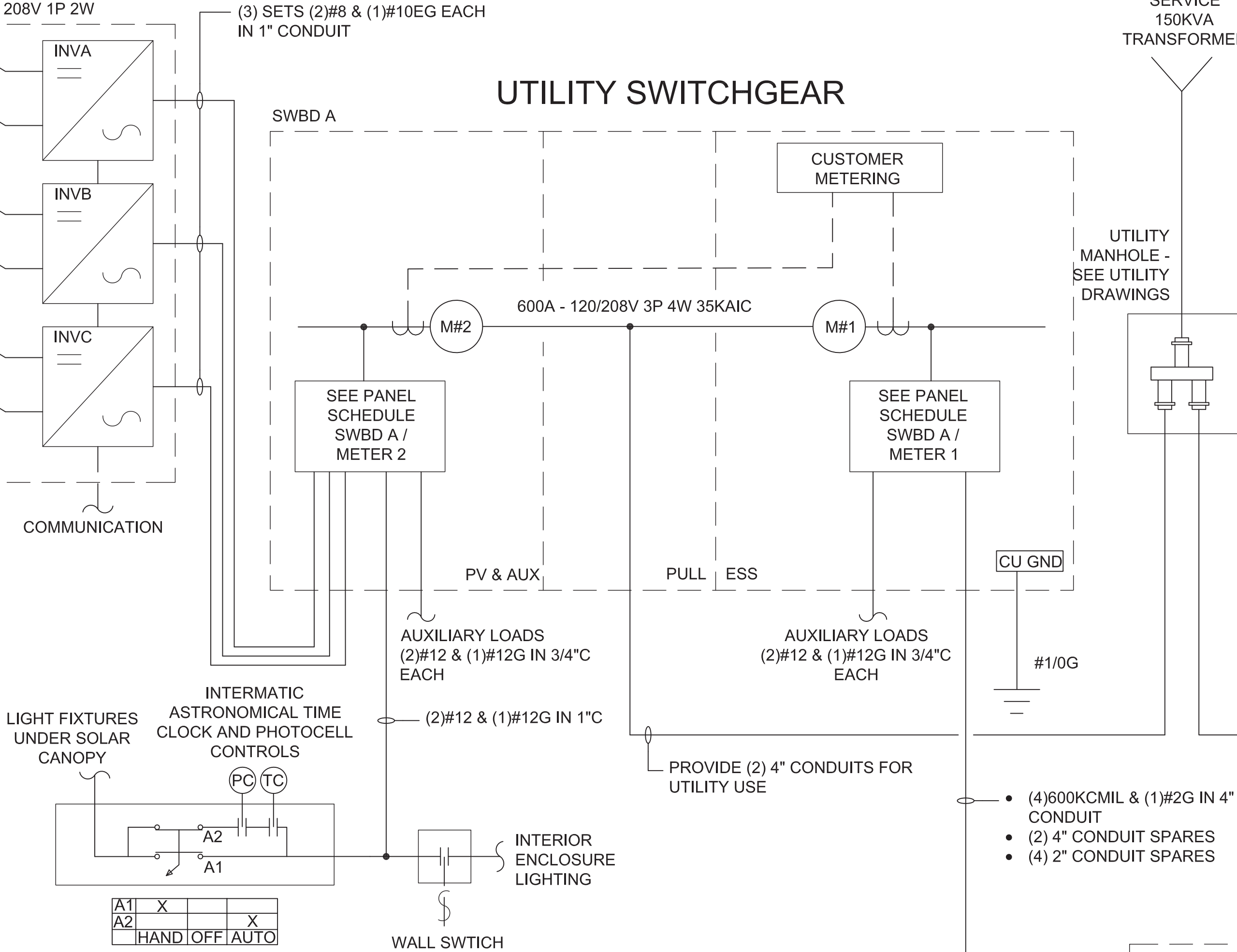
ONSITE POWER GENERATION (POWER FLOWING TO UTILITY)

• SWBD A / METER #1: ESS (INVERTER+BATTERIES)	125.0KVA ~ 347A @ 120/208V DEMAND
• SWBD A / METER #2: PV AND AUXILIARY LOADS	18.8 KVA ~ 52.0A @ 120/208V DEMAND
• ONSITE POWER GENERATION TOTAL:	143.7KVA ~ 399.0A @ 120/208V DEMAND

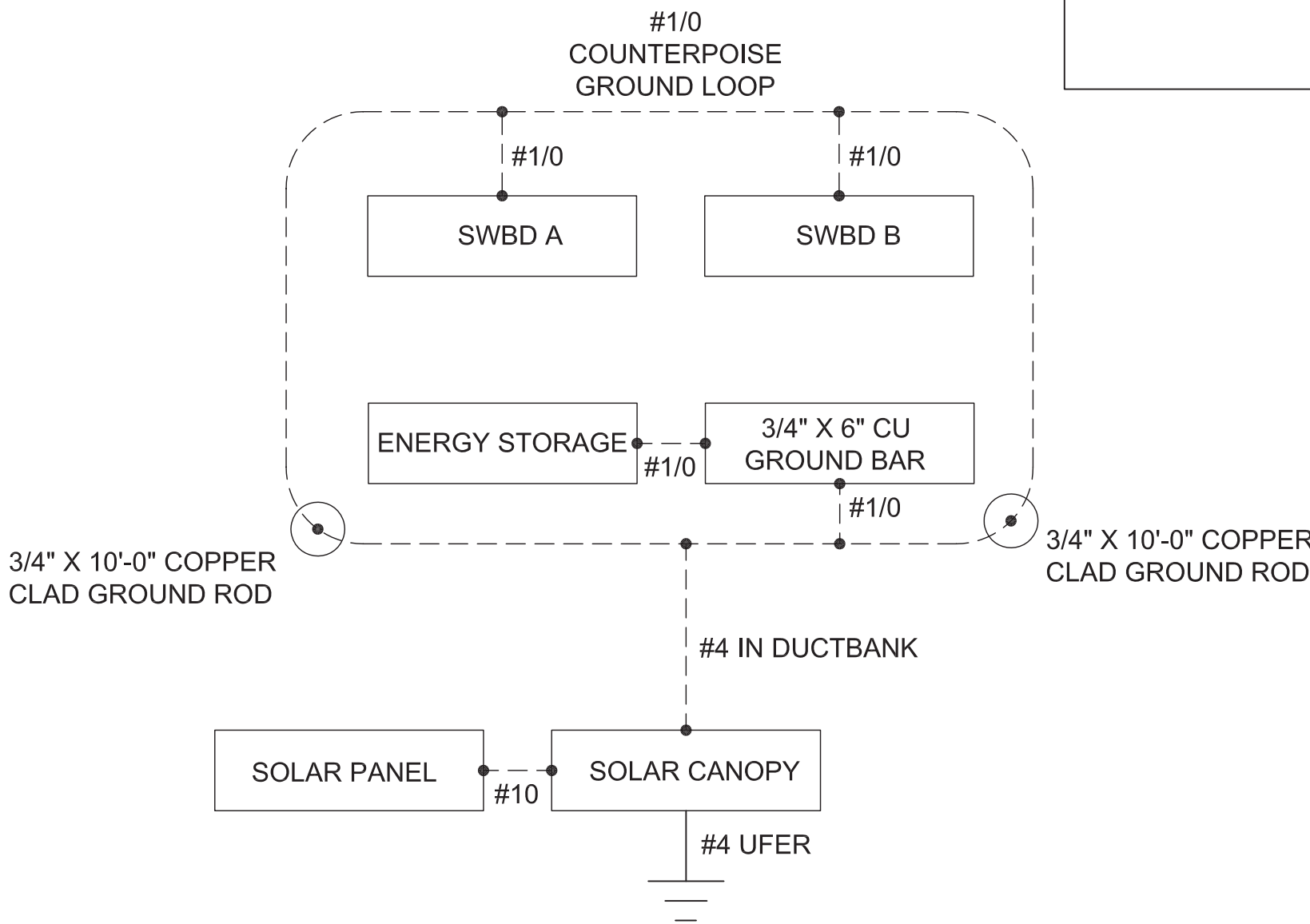
ENERGY USAGE (POWER FLOWING TO LOADS)

• SWBD A / METER #1: ESS (INVERTER+BATTERIES)	2.9KVA ~ 7.9A @ 120/208V DEMAND
• SWBD A / METER #2: PV AND AUXILIARY LOADS	4.1KVA ~ 11.5A @ 120/208V DEMAND
• SWBD B / METER #3: EV CHARGING SYSTEM	108.3KVA ~ 300.6A @ 120/208V DEMAND
• OVERALL TOTAL:	115.3KVA ~ 320.0A @ 120/208V DEMAND

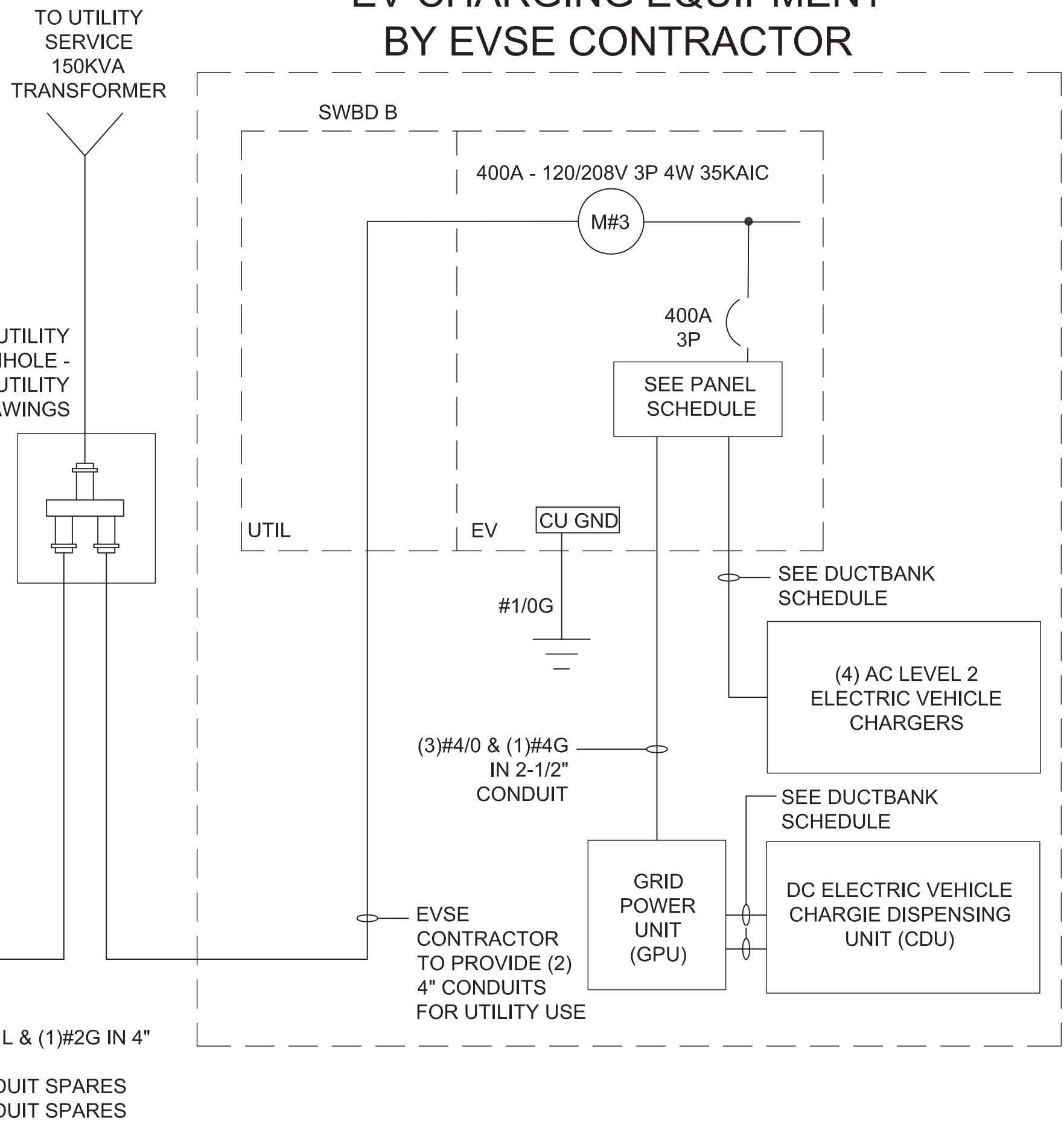
UTILITY SWITCHGEAR



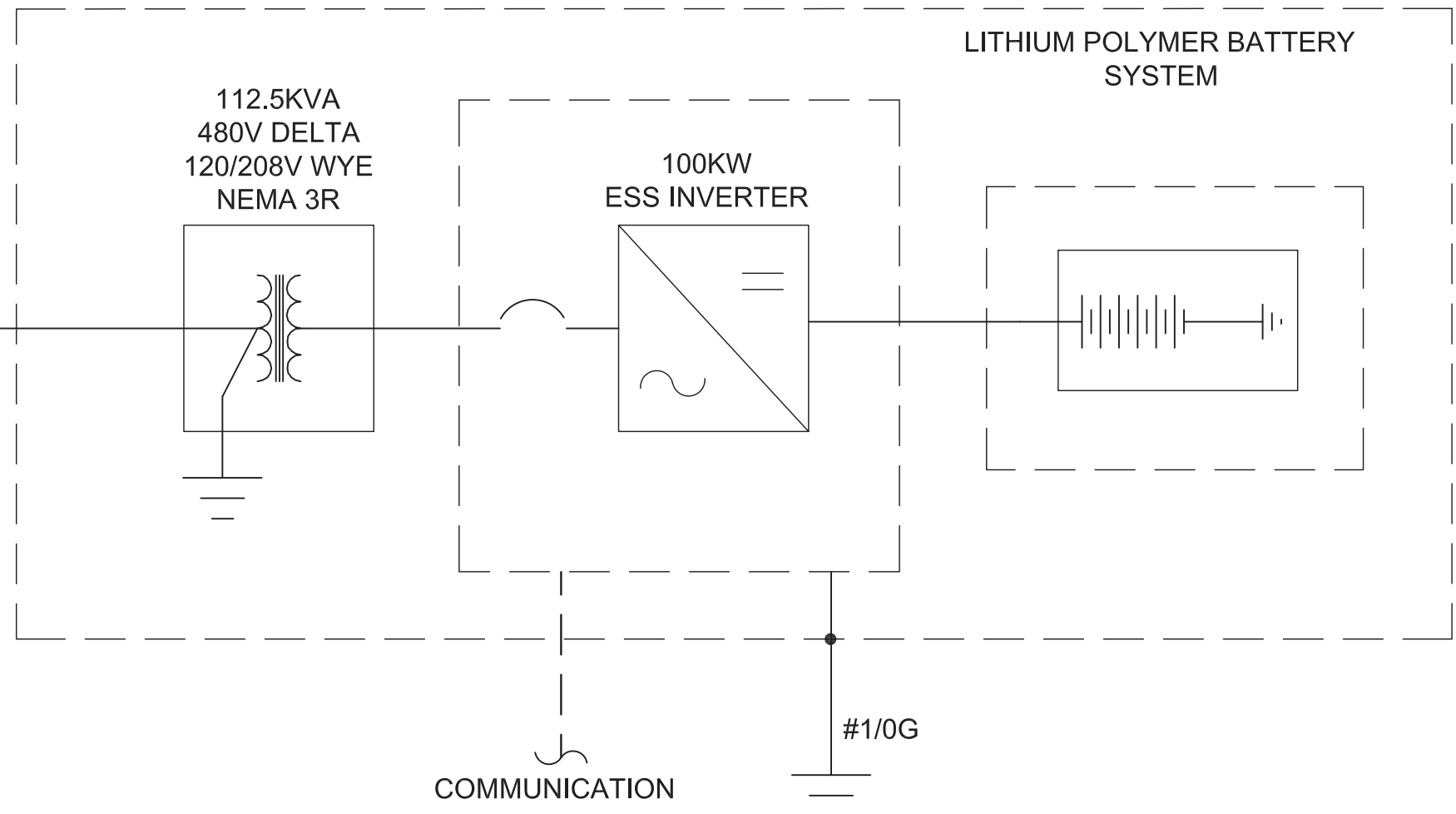
GROUNDING DIAGRAM



EV CHARGING EQUIPMENT
BY EVSE CONTRACTOR



ENERGY STORAGE SYSTEM TBD



FAST EV SUNCHARGE
DEL LAGO

DATE:	4/29/2013							PANEL VOLTAGE:				208/120V				CKT CODE:				1=(CONTINUOUS LOAD)						
JOB:	Del Lago Park and Ride							PHASE & WIRE:				3ph,4W								2=(NON-CONT. LOAD)						
PANEL:	SWBD A/ METER 1							BUS (AMPS):				400A								3=(RECEPTACLES)						
AIC RATING:	35,000AIC							MAINS:				400A								4=(KIT. EQUIPMENT)						
CKT	CB		LOAD DESIGNATION							LOAD			PHASES			LOAD			LOAD DESIGNATION			CB		CKT		
NO.	CODE	TRIP	POLE	DESCRIPTION				MISC	REC	LITE	VA	A	B	C	VA	MISC	REC	LITE	DESCRIPTION			TRIP	POLE	CODE	NO.	
1	1	400	3	DYNAPOWER INVERTER (VISIBLE BLADE FUSED SWITCH)				1			33333	33533	////	////	200					BUILDING LIGHTING			20	1	1	2
3	1							1			33333	////	33833	////	500				BUILDING FIRE ALARM			20	1	1	4	
5	1							1			33333	////	////	34333	1000				BUILDING COMMUNICATIONS			20	1	1	6	
7		20	1	SPARE								600	////	////	600					BUILDING RECEPTACLE			20	3	1	8
9		20	1	SPARE								////	0	////						SPARE			20	1		10
11		20	1	SPARE								////	////	0						SPARE			20	1		12
13				SPACE								0	////	////						SPACE						14
15				SPACE								////	0	////						SPACE						16
17				SPACE								////	////	0						SPACE						18
TOTAL											34133	33833	34333	CONNECTED KVA				102.3								
NOTES: Dynapower inverter is rated at 100kW but can have an overload AC power of 150kW. CKTS 1,2,3 should be visible blade fused load break switch --- --- ---															CONN.KVA (CODE 1)				102.3							
															CONN.KVA (CODE 2)				0.0							
															CONN.KVA (CODE 3)				0.0							
															CONN.KVA (CODE 4)				0.0							
BY: BD															FEEDER DEMAND KVA				127.9							
ISSUE DATE: 29-Apr-13															FEEDER DEMAND AMPS				354.9							
PANEL: SWBD A/ METER 1																										

DATE:		4/29/2013					PANEL VOLTAGE:				208/120V		CKT CODE:		1=(CONTINUOUS LOAD)																												
JOB:		Del Lago Park and Ride					PHASE & WIRE:				3ph,4W				2=(NON-CONT. LOAD)																												
PANEL:		SWBD A/ METER 2					BUS (AMPS):				225A				3=(RECEPTACLES)																												
AIC RATING:		35,000AIC					MAINS:				125A				4=(KIT. EQUIPMENT)																												
CKT		CB		LOAD DESIGNATION					LOAD			PHASES			LOAD			LOAD DESIGNATION			CB		CKT																				
NO.		CODE		TRIP		POLE		DESCRIPTION		MISC		REC		LITE		VA		A		B		C		VA		MISC		REC		LITE		DESCRIPTION		TRIP		POLE		CODE		NO.			
1		1		30		2		INVA		1						2275		2775						500		MISC								DAS		20		1		1		2	
3		1								1						2275				2775				500												LIGHTING		20		1		1	
5		1		1						2275						3275		1000														RECEPTACLES		20		1		3		6			
7		1		30		2		INVB		1						2275		3775						1500										COMMUNICATIONS		20		1		1		8	
9		1								1				2275				2275																SPARE		20		1				10	
11		1		1						2275						2275																SPARE		20		1				12			
13								SPACE										0														SPARE		20		1				14			
15								SPACE												0												SPARE		20		1				16			
17								SPACE														0										SPARE		20		1				18			
								TOTAL				6550		5050		5550		CONNECTED KVA					17.2																				
NOTES:												CONN.KVA (CODE 1)					16.2																										
CKTS 1,3, 5,7; & 9,11 SHALL BE FUSED PULLOUT												CONN.KVA (CODE 2)					0.0																										
---												CONN.KVA (CODE 3)					1.0																										
---												CONN.KVA (CODE 4)					0.0																										

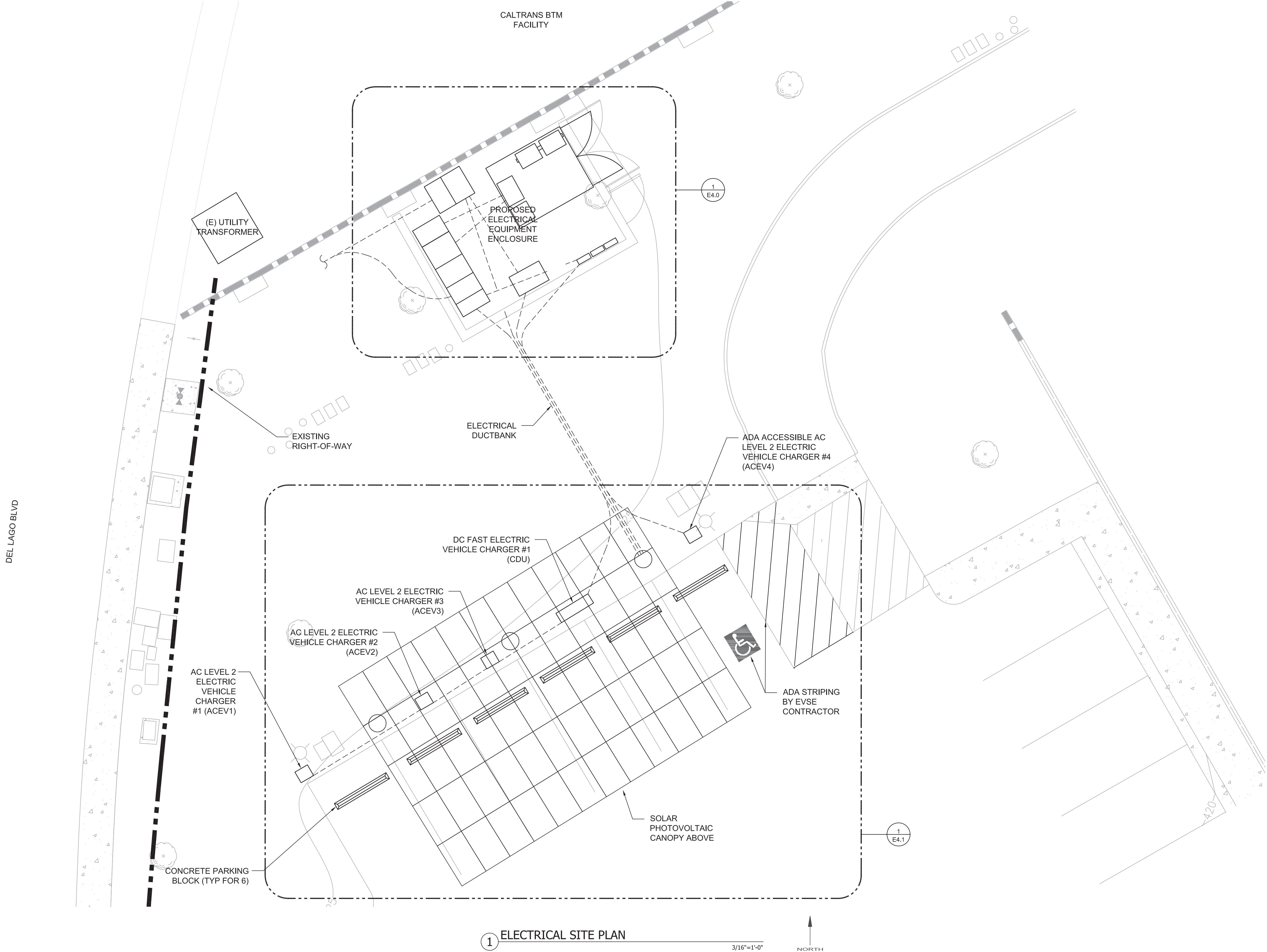
BY: BD												FEEDER DEMAND KVA					21.2																										
ISSUE DATE: 29-Apr-13												FEEDER DEMAND AMPS					58.8																										
PANEL: SWBD A/ METER 2																																											

DATE:		4/25/2013					PANEL VOLTAGE:				208/120V			CKT CODE:			1=(CONTINUOUS LOAD)																								
JOB:		Del Lago Park and Ride					PHASE & WIRE:				3ph,4W						2=(NON-CONT. LOAD)																								
PANEL:		SWBD B / METER 3					BUS (AMPS):				400A						3=(RECEPTACLES)																								
AIC RATING:		35,000AIC					MAINS:				400A						4=(KIT. EQUIPMENT)																								
CKT		CB		LOAD DESIGNATION					LOAD				PHASES				LOAD				LOAD DESIGNATION				CB		CKT														
NO.		CODE		TRIP		POLE		DESCRIPTION		MISC		REC		LITE		VA		A		B		C		VA		MISC		REC		LITE		DESCRIPTION		TRIP		POLE		CODE		NO.	
1		1		40		2		AC EV CHARGER 1		1						3120		6240						3120		1						AC EV CHARGER 3		40		2		1		2	
3		1								1						3120				6240				3120		1												1		4	
5		1		40		2		AC EV CHARGER 2		1						3120		6240						3120		1						AC EV CHARGER 4		40		2		1		6	
7		1								1						3120		6240						3120		1												1		8	
9		1		225		3		DC EV CHARGER		1						20391				20391												SPARE		20		1		10			
11		1								1						20391				20391				20391										SPARE		20		1		12	
13		1		20		1		GPU CONTROL POWER		1						20391		20391														SPARE		20		1		14			
15		1								1						500				500														SPACE						16	
17								SPACE												0												SPACE						18			
								TOTAL				32871		27131		26631		CONNECTED KVA				86.6																			
NOTES:																CONN.KVA (CODE 1)				86.6																					
---																CONN.KVA (CODE 2)				0.0																					
---																CONN.KVA (CODE 3)				0.0																					
---																CONN.KVA (CODE 4)				0.0																					

BY: BD																FEEDER DEMAND KVA				108.3																					
ISSUE DATE: 25-Apr-13																				FEEDER DEMAND AMPS				300.6																	
PANEL: SWBD B / METER 3																																									

LUMINAIRE SCHEDULE						
TYPE	MTG	LUMINAIRE DESCRIPTION	MANUFACTURER & CATALOG NUMBER	LAMP	BALLAST	INPUT
	MH			#/TYPE WATTS CT/CRI LUMENS	#/TYPE	VOLTS
A	SURFACE MOUNTED	FIXTURE DIRECT MOUNTED ON SOLAR CANOPY TO BE FLUSH WITH BOTTOM EDGE OF THE MAIN, STRUCTURAL BEAM, ADJACENT TO THE SUPPORT COLUMN. UL LISTED FOR WET LOCATION. FIXTURE SHALL HAVE DIE CAST HOUSING, SLIM, LOW PROFILE DESIGN WITH INTEGRAL WEATHER TIGHT LED D	BETA LIGHTING #PKG-EDG-5M-DM-04-D-UL-SV-350	40/LED 47W 5700°K 70 CRI 4,025 INIT LUMENS	1/EL PF > .90 THD < 20% 350mA	47W 120V 48VA
	13'					
B	WALL MOUNTED	COMPACT FLUORESCENT WALLPACK WITH ALUMINUM HOUSING LISTED FOR WET LOCATIONS AND HARSH ENVIRONMENTS WITH CUTOFF OPTICS AND MOLDED PRISMATIC BOROSILICATE GLASS LENS, FULLY GASKETED.	HE WILLIAMS #WPBC-142T-GX24q-4-120	(1) CFL TRT 42W 4100°K 82 CRI 3,200 INIT LUMENS	1/EL	42W 120V 46VA
	9' TO CENTER OF FIXTURE					

DUCTBANK SCHEDULE						
CALLOUT	CONDUIT SIZE	CONDUCTOR	CONDUIT DESCRIPTION	FROM	TO	RESPONSIBLE PARTY
A	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV1	SW8D B / METER #3	EV CONTRACTOR
B	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV1	SW8D B / METER #3	EV CONTRACTOR
	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV2	SW8D B / METER #3	EV CONTRACTOR
C	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV1	SW8D B / METER #3	EV CONTRACTOR
	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV2	SW8D B / METER #3	EV CONTRACTOR
	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV3	SW8D B / METER #3	EV CONTRACTOR
D	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV1	SW8D B / METER #3	EV CONTRACTOR
	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV2	SW8D B / METER #3	EV CONTRACTOR
	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV3	SW8D B / METER #3	EV CONTRACTOR
	1"	(2)#10 & (1)#10G	DCEV1 - 120VAC	DCEV1	SW8D B / METER #3	EV CONTRACTOR
	1"	SEE MANUAL	DCEV1 - CAN & ETHERNET	DCEV1	GPU	EV CONTRACTOR
	1"	SEE MANUAL	DCEV1 - SIGNAL	DCEV1	GPU	EV CONTRACTOR
	1"	SEE MANUAL	DCEV1 - CHARGE CONTROL	DCEV1	GPU	EV CONTRACTOR
	1"	SEE MANUAL	DCEV1 - E-STOP	DCEV1	GPU	EV CONTRACTOR
	2.5"	(2)#3/0 & (1)#6G	DCEV1 - DC POWER	DCEV1	GPU	EV CONTRACTOR
	E	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV4	SW8D B / METER #3
F	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV1	SW8D B / METER #3	EV CONTRACTOR
	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV2	SW8D B / METER #3	EV CONTRACTOR
	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV3	SW8D B / METER #3	EV CONTRACTOR
	1"	(2)#10 & (1)#10G	DCEV1 - 120VAC	DCEV1	SW8D B / METER #3	EV CONTRACTOR
	1"	SEE MANUAL	DCEV1 - CAN & ETHERNET	DCEV1	GPU	EV CONTRACTOR
	1"	SEE MANUAL	DCEV1 - SIGNAL	DCEV1	GPU	EV CONTRACTOR
	1"	SEE MANUAL	DCEV1 - CHARGE CONTROL	DCEV1	GPU	EV CONTRACTOR
	1"	SEE MANUAL	DCEV1 - E-STOP	DCEV1	GPU	EV CONTRACTOR
	2.5"	(2)#3/0 & (1)#6G	DCEV1 - DC POWER	DCEV1	GPU	EV CONTRACTOR
	1"	(2)#8 & (1)#10G	AC LEVEL 2 EV CHARGER	ACEV4	SW8D B / METER #3	EV CONTRACTOR
2"	(12)#8 & (1)#10G	DC PV FEEDER	CANOPY	PV INVERTERS	SDG&E	
1.5"	MFR RECOMMENDED	DAS	CANOPY	DAS SYSTEM	SDG&E	
	SPARE	SPARE	CAPPED @ CANOPY BASE	SW8D B / METER #3	SDG&E	
	2"	SPARE	CAPPED @ CANOPY BASE	COMMUNICATIONS	SDG&E	
-	#4 BARE COPPER	GROUND ELECTRODE CONDUCTOR ENCASED IN CONCRETE	BONDED TO CANOPY	BONDED TO COUNTERPOISE GROUND LOOP @ ENCLOSURE	SDG&E	



1 ELECTRICAL SITE PLAN

3/16"=1'-0"

NORTH

FAST EV SUNCHARGE DEL LAGO

PHOTOVOLTAIC SYSTEM
BATTERY STORAGE SYSTEM
EV CHARGING SYSTEMS
3310 DEL LAGO BLVD.
ESCONDIDO, CA 92029

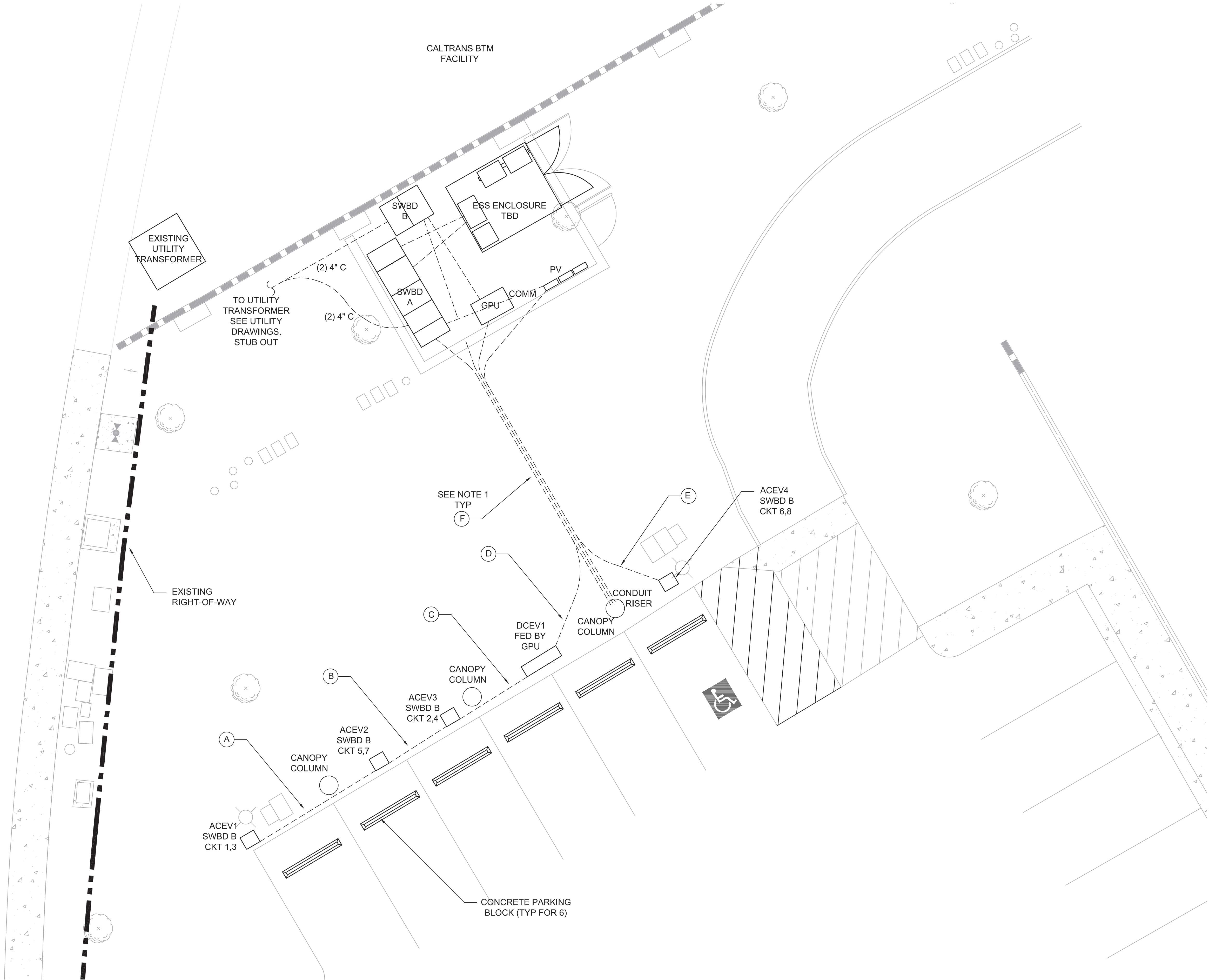
03.13.2013 - 30% SUBMITTAL
04.30.2013 - PREFINAL SUBMITTAL

ELECTRICAL
SITE PLAN

NOTES:

1. SEE DUCTBANK SCHEDULE ON SHEET E2.0.
2. SEE UTILITY CONFLICT PLAN ON SHEET E3.2.
3. SEE SINGLE LINE DIAGRAM ON SHEET E1.0

DEL LAGO BLVD



1 ELECTRICAL SITE AND PV LAYOUT PLAN

3/16"=1'-0"



FAST EV SUNCHARGE DEL LAGO

PHOTOVOLTAIC SYSTEM
BATTERY STORAGE SYSTEM
EV CHARGING SYSTEMS
3310 DEL LAGO BLVD.
ESCONDIDO, CA 92029

03.13.2013 - 30% SUBMITTAL
04.30.2013 - PREFINAL SUBMITTAL

ELECTRICAL
SITE DISTRIBUTION
PLAN

E3.1

NOTES:

1. NUMEROUS CONFLICTS WITH EXISTING SITE FEATURES/UTILITIES ARE EXPECTED THROUGH THIS PROJECT. THIS DRAWINGS INTENDS TO PORTRAY AS MUCH OF THAT INFORMATION THAT IS KNOWN AT THIS TIME BUT IT IS NO SUBSTITUTE FOR FIELD VERIFICATION. EXACT LOCATIONS OF ALL EXISTING SITE DISTRIBUTION MUST BE FIELD VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. ENGINEER TAKES NO RESPONSIBILITY FOR ACCURACY OF EXISTING SITE UTILITIY, IRRIGATION, FIBER OPTIC DUCTBANKS, ELECTRICAL DUCTBANKS, OR ANY OTHER BELOW GRADE STRUCTURE OR SYSTEM THAT IS SHOWN ON THESE DRAWINGS.
2. HAND EXCAVATE IN ALL AREAS NOTED AS POTENTIAL CONFLICTS WITH FIBER OPTIC OR ELECTRICAL DUCTBANKS.
3. EXISTING SITE IRRIGATION IS PRESENT THROUGHOUT THIS PROJECT SITE. SEE LANDSCAPE DRAWINGS FOR PROPOSED LANDSCAPE/IRRIGATION MODIFICATIONS.

DEL LAGO BLVD

WARNING - ELECTRICAL DUCTBANK IN THIS AREA. LOCATE ELECTRICAL EQUIPMENT AND CANOPY COLUMNS TO MAINTAIN A MINIMUM OF 1'-0" CLEARANCE FROM FROM DUCTBANK. HAND EXCAVATE IN THIS AREA.

NUMEROUS CONFLICTS WITH IRRIGATION IN THIS AREA. SEE LANDSCAPE PLANS FOR PROPOSED MODIFICATION.

WARNING - FIBER OPTIC AND ELECTRICAL DUCTBANK CROSSINGS. HAND EXCAVATE IN THIS AREA

NUMEROUS CONFLICTS WITH IRRIGATION IN THIS AREA. SEE LANDSCAPE PLANS FOR PROPOSED MODIFICATION.

CALTRANS BTM FACILITY

EQUIPMENT ENCLOSURE

(E) FIBER OPTIC

(E) ELECTRICAL

COLUMN

DCEV1

COLUMN

ACEV3

COLUMN

ACEV2

ACEV1

ACEV4

NUMEROUS CONFLICTS WITH IRRIGATION IN THIS AREA. SEE LANDSCAPE PLANS FOR PROPOSED MODIFICATION.

1 ELECTRICAL SITE AND PV LAYOUT PLAN

3/16"=1'-0"



FAST EV SUNCHARGE
DEL LAGO

PHOTOVOLTAIC SYSTEM
BATTERY STORAGE SYSTEM
EV CHARGING SYSTEMS
33 TO DEL LAGO BLVD.
ESCONDIDO, CA 92029

03.13.2013 - 30% SUBMITTAL
04.30.2013 - PREFINAL SUBMITTAL

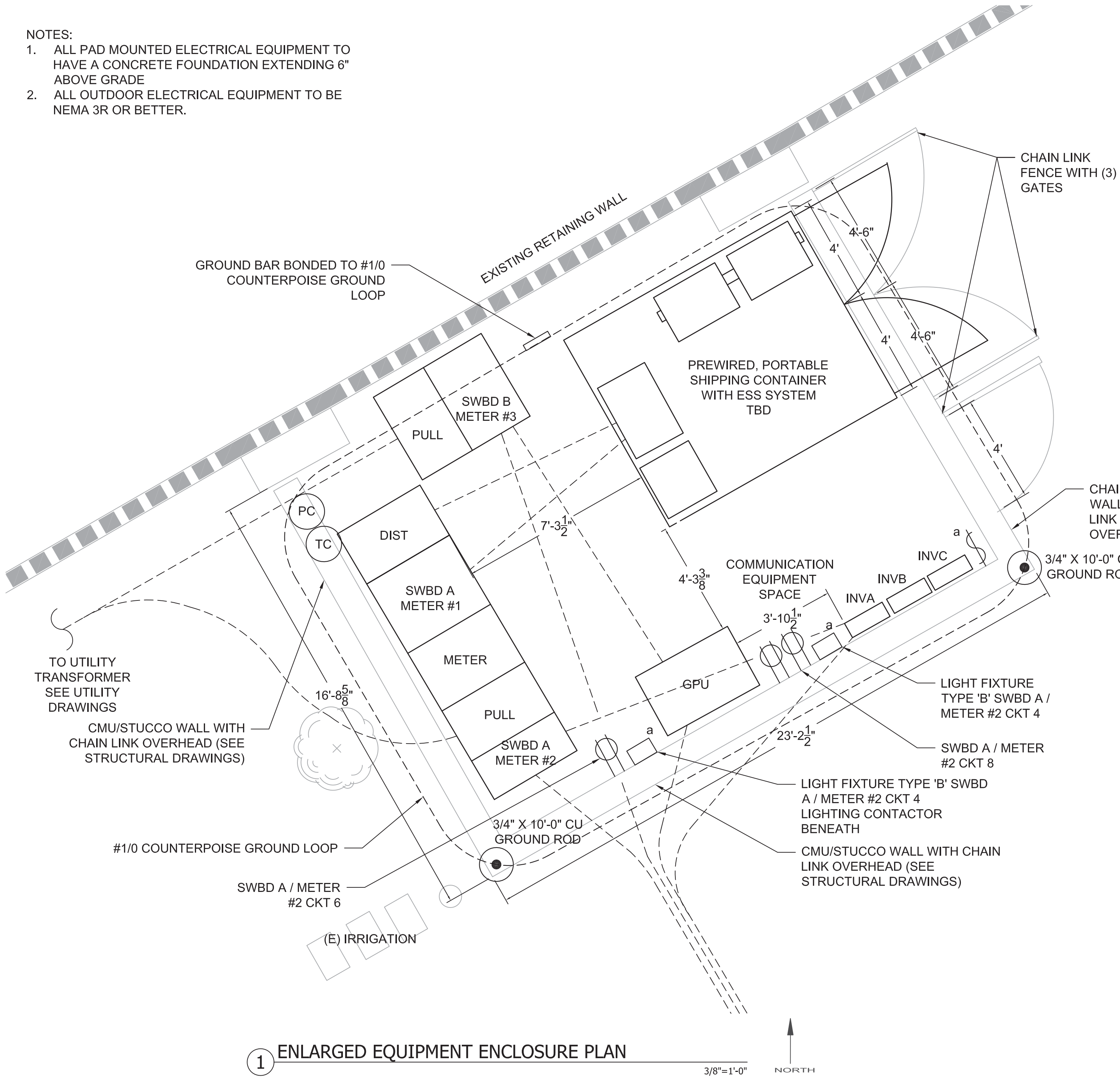
UTILITY
CONFLICT
PLAN

E3.2



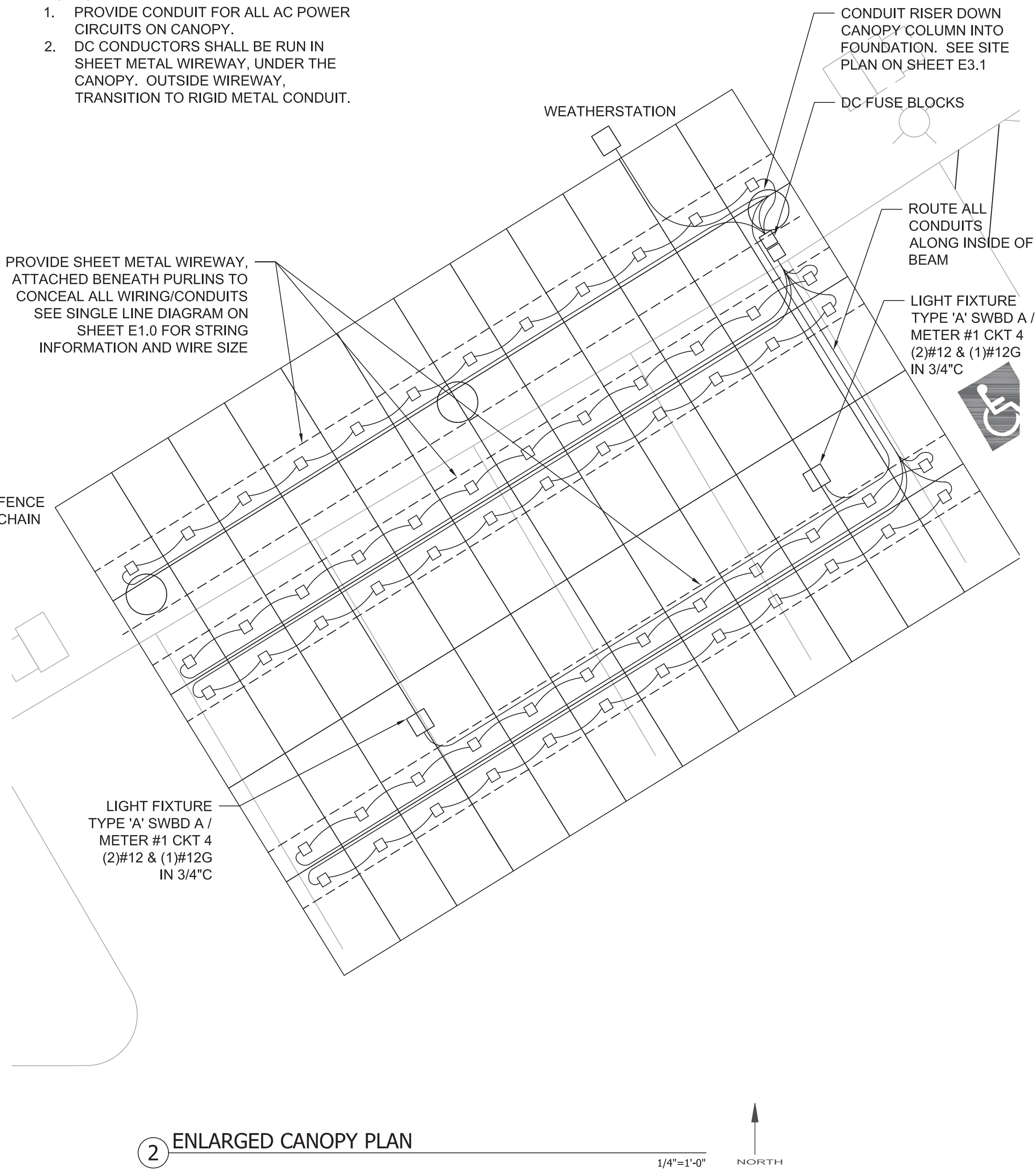
Independent Energy Solutions
Solar Electric Engineering & Construction
1090 Joshua Way, Vista, CA 92081
Ph 760.752.9706 Fx 760.752.9758
www.indenergysolutions.com

- NOTES:
1. ALL PAD MOUNTED ELECTRICAL EQUIPMENT TO HAVE A CONCRETE FOUNDATION EXTENDING 6" ABOVE GRADE
 2. ALL OUTDOOR ELECTRICAL EQUIPMENT TO BE NEMA 3R OR BETTER.



- NOTES:
1. PROVIDE CONDUIT FOR ALL AC POWER CIRCUITS ON CANOPY.
 2. DC CONDUCTORS SHALL BE RUN IN SHEET METAL WIREWAY, UNDER THE CANOPY. OUTSIDE WIREWAY, TRANSITION TO RIGID METAL CONDUIT.

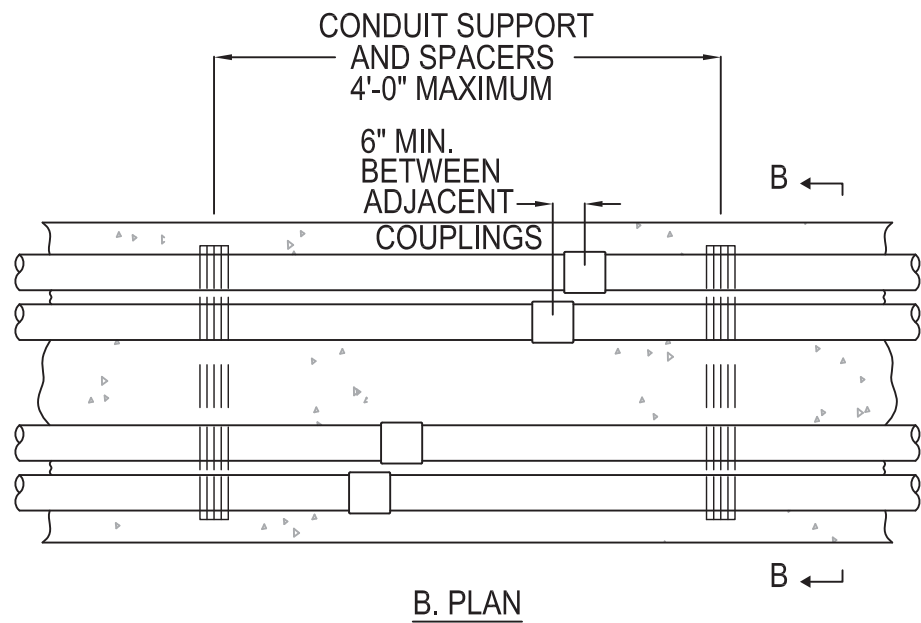
PROVIDE SHEET METAL WIREWAY, ATTACHED BENEATH PURLINS TO CONCEAL ALL WIRING/CONDUITS SEE SINGLE LINE DIAGRAM ON SHEET E1.0 FOR STRING INFORMATION AND WIRE SIZE



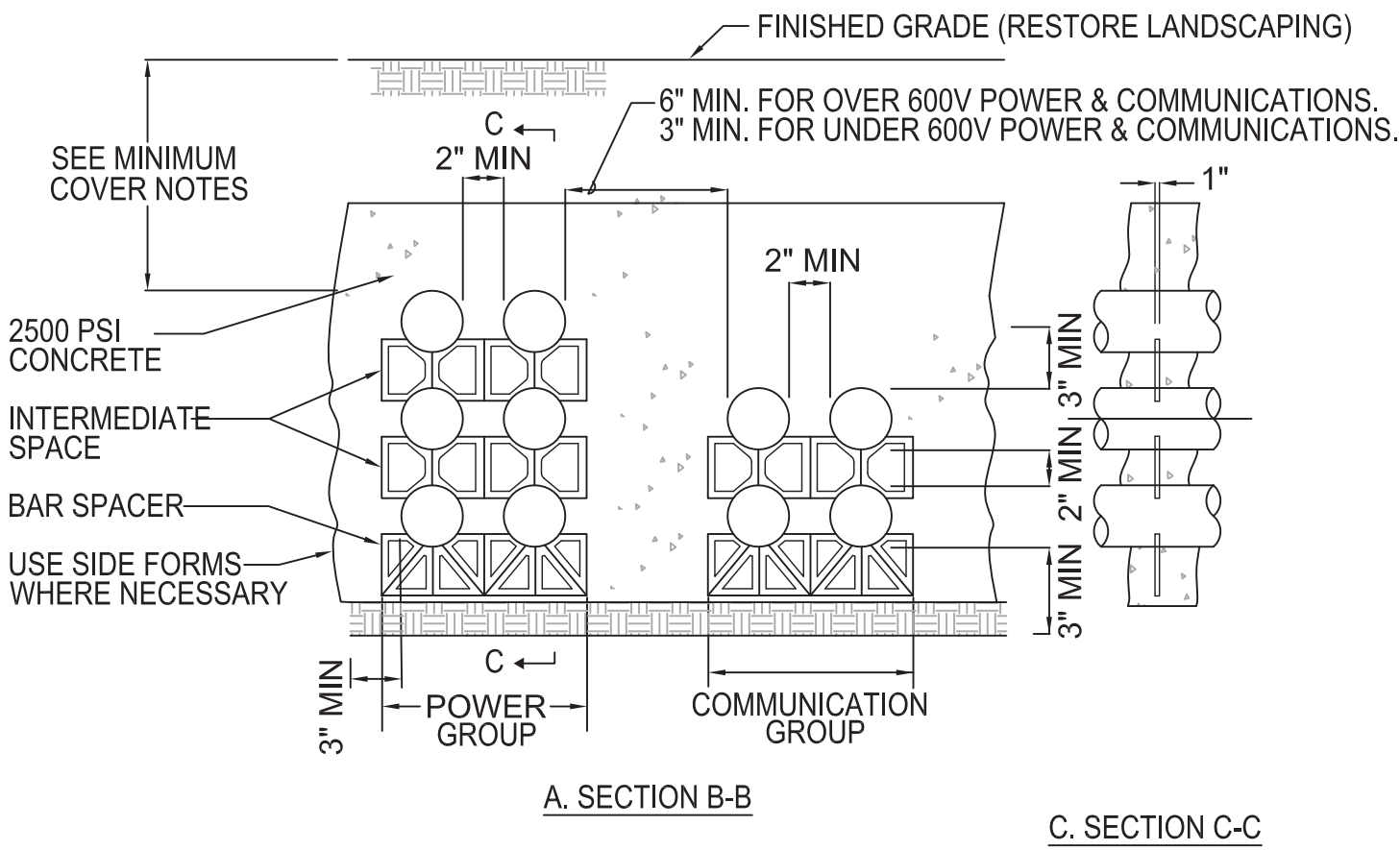
FAST EV SUNCHARGE DEL LAGO

PHOTOVOLTAIC SYSTEM
BATTERY STORAGE SYSTEM
EV CHARGING SYSTEMS
3310 DEL LAGO BLVD.
ESCONDIDO, CA 92029

- MINIMUM COVER NOTES:
1. ALL DUCTBANKS SHALL BE INSTALLED IN A TRENCH IN PARKWAY AREAS (NOT IN AREAS SUBJECT TO VEHICULAR TRAFFIC.
 2. ALL MINIMUM COVER SHALL BE IN ACCORDANCE WITH THE NEC TABLE 300.5. COLUMN 3: NONMETALLIC RACEWAYS LISTED FOR DIRECT BURIAL WITHOUT CONCRETE ENCASEMENT OR OTHER APPROVED RACEWAYS.
 3. IN TRENCH, BELOW 2" THICK CONCRETE OR EQUIVALENT, BURIAL DEPTH SHALL BE 12" MINIMUM.
 4. UNDER A MINIMUM 4" THICK CONCRETE EXTERIOR SLAB WITH NO VEHICULAR TRAFFIC AND THE SLAB EXTENDING NOT LESS THAN 6" BEYOND THE UNDERGROUND INSTALLATION, BURIAL DEPTH SHALL BE 4" MINIMUM.
 5. ALL OTHER AREAS, BURIAL DEPTH SHALL BE 18" MINIMUM.

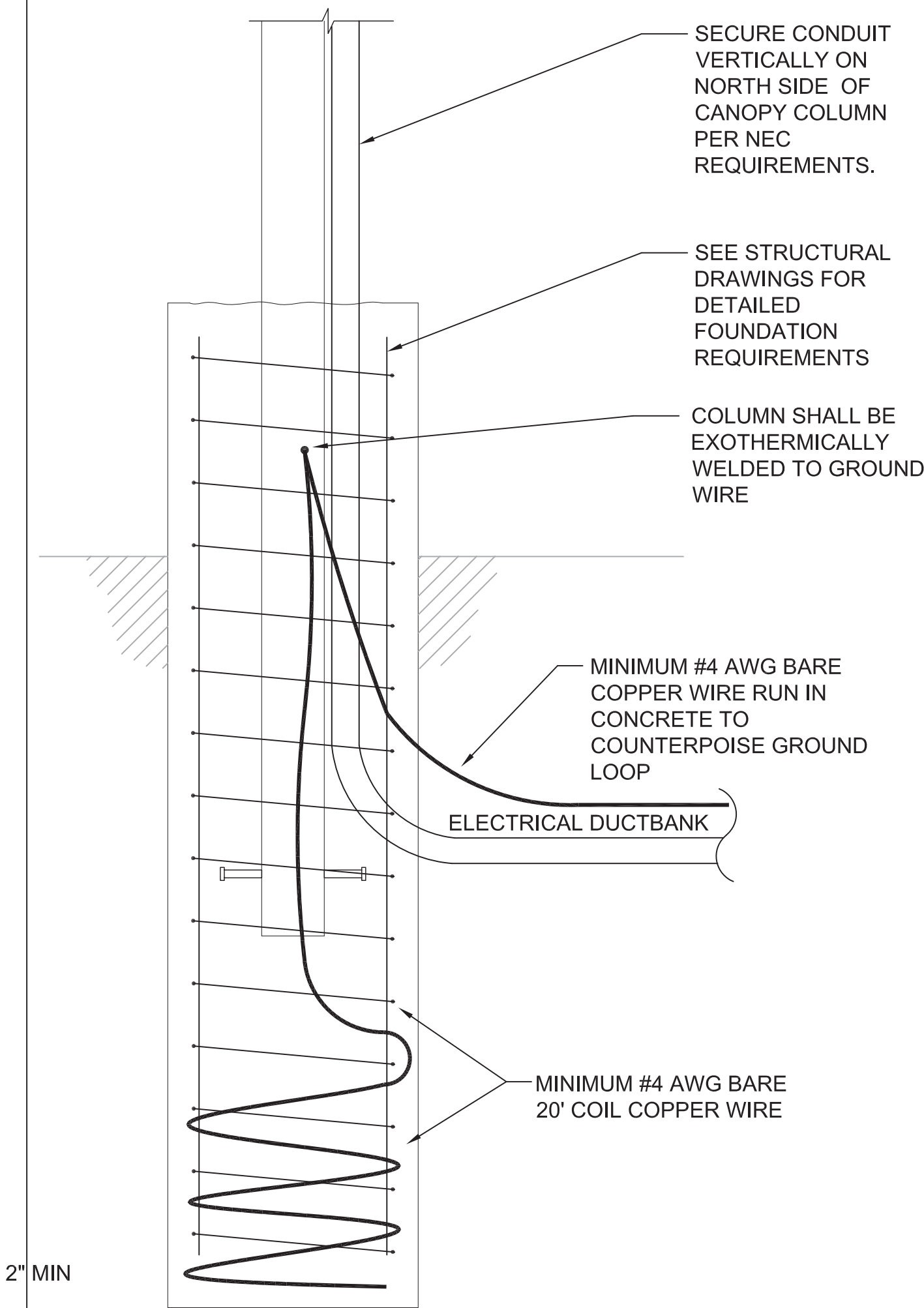


- NOTES:
1. FOR SIZE AND NUMBER OF CONDUITS AS WELL AS DUCT BANK FORMATION, SEE PLANS.
 2. COMMUNICATIONS CONDUIT GROUP SHALL BE SEPARATED FROM THE POWER GROUP ON EITHER LEFT OR RIGHT SIDE AS SHOWN ON PLANS.
 3. CONCRETE COVER ON TOP, SIDES, AND BOTTOM SHALL BE 3" MIN. BACKFILL WITH NATIVE SOIL.



4 DUCT BANK - TYPICAL ARANGMENT
SCALE: NTS

NOTE: THERE ARE A TOTAL OF (3) CANOPY COLUMNS ON THIS PROJECT. THIS DETAIL APPLIES ONLY TO THE NORTHEAST CANOPY COLUMN. THERE ARE TWO OTHER CANOPY COLUMNS ON THIS PROJECT THAT HAVE NO ELECTRICAL WORK.



1 NORTHEAST CANOPY COLUMN DETAIL
SCALE: NTS

Simply smarter.



Blink Pedestal Charger

Simply Smarter Pedestal Design

Electric Vehicle Supply Equipment (EVSE), such as the Blink Pedestal charger, provides a convenient method of charging electric vehicles. The pedestal design provides intelligent, user-friendly features to easily and safely charge electric vehicles.

Benefits of Blink's Unique Design

- Modern, stylish appearance
- Ease of installation
- Advertising space available
- Convenient cable management for long reach and storage between uses
- Connector holster for protection and storage
- Intuitive connector docking
- Selective height design for convenient conformity with ADA considerations
- 360° beacon light for easy wayfinding

J1772 Standard EV Connector

The SAE J1772 is the standard for electric vehicle charging in the United States.

- Ergonomic design
- Prevents accidental disconnection
- Grounded pole - first to make contact, last to break contact
- Designed for over 10,000 cycles
- Can withstand being driven over by a vehicle
- Safe in wet or dry conditions

Energy Meter

- Internal meter to monitor energy and demand usage
- Supports energy usage data evaluation
- Supports electric utility EV billing when certified to ANSI 12.20 and IEC standards
- Connects with AMI interface and smart meter capability for demand response and energy management

Touch Screen

- Convenient, user-friendly touch screen display
- Charge status and statistics
- Pre-loaded with Blink Commercial User Interface



Learn more at blinknetwork.com or ecotality.com

Simply smarter.



DC Fast Charger

Simply Smart Commercial Design

The Blink DC Fast Charger provides a quick and efficient method to charge electric vehicles. DC Fast Charging (480 volt 3-Phase AC input) is the fastest method for charging vehicles in fleet and commercial facilities. The Blink design provides intelligent user-friendly features to intuitively and safely charge electric vehicles and provides commercial opportunities to business owners.

Benefits of ECotality's Unique Commercial Charging Station Design

- Simplified 2-piece design; separate Grid Power Unit (GPU - containing the power electronics) and charging station allow for ease of installation and design aesthetics
- Exterior treatment and graphics fully customizable for rebranding
- 42" LCD display for optional media and advertising
- Adspace available through the Blink Network to provide additional revenue
- Connects with AMI Interface & Smart Meter capability for demand response and energy management
- Dual ports for increased user access and availability
- Beacon light and window for increased visibility

CHAdEMO Compliant EV Connector

- The CHAdEMO organization has endorsed a DC Fast Charger connector used on fast-charge-capable electric vehicles worldwide
- Ergonomic design
- Intuitive connector docking for protection and storage
- Prevents accidental disconnection
- Can withstand being driven over by a vehicle
- Safe in wet or dry use

Fast, Convenient and Easy to Use

- Capable of providing a full charge in less than 30 minutes*
- Integrated with the Blink Network
- Smart RFID technology allows for ease of payment
- Can operate independent of a retailer point of sale (POS) system
- Smartphone Application provides
 - Charge station locations and GPS navigation
 - Charge status
 - Notification of completion or interruption of charge
- User-friendly, interactive touchscreen display
- Web-based information delivery
- Charge status and cost
- Easily programmable start/stop timing

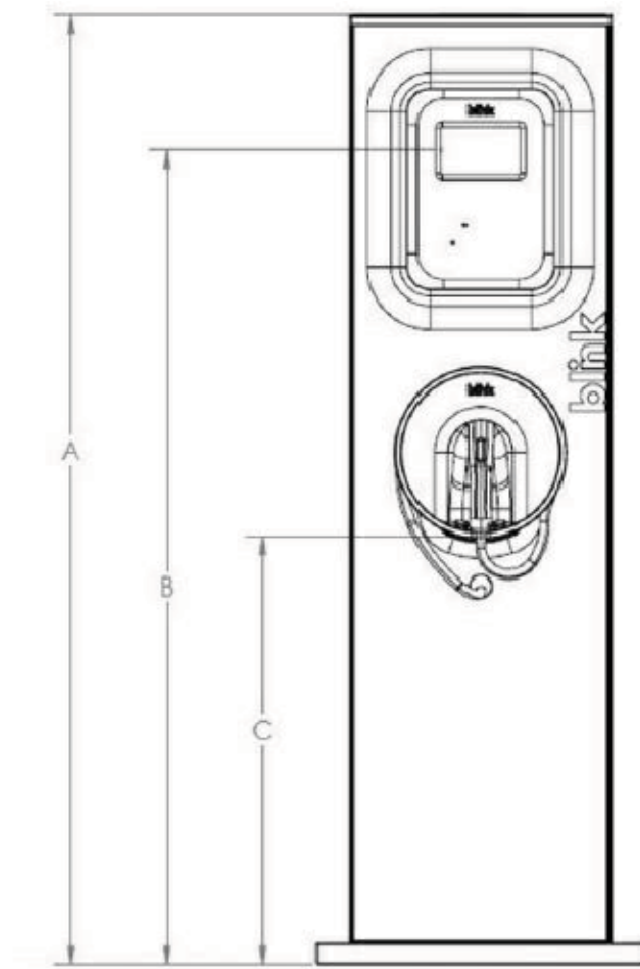
*Dependent on battery size, vehicle battery management system, state of charge, and operation under optimal conditions.

Learn more at BlinkNetwork.com



NOTE:

1. ALL ELECTRIC VEHICLE CHARGING UNITS, FOUNDATIONS, ELECTRICAL EQUIPMENT, CONSTRUCTION COSTS, PARKING STRIPING IMPROVEMENTS, SIGNAGE, OR ANY OTHER MISCELLANEOUS COST RELATED TO THE INSTALLATION OF ELECTRIC VEHICLE CHARGING UNITS SHALL BE PROCURED AND INSTALLED BY THE ELECTRIC VEHICLE CHARGING CONTRACTOR.
2. PROVIDE EV SIGNAGE AND PAVEMENT STRIPING/PAINTING PER STATE OF CALIFORNIA DOT TRAFFIC OPERATIONS POLICY DIRECTIVE #13-01.



Model Number	Part Number	Dimension A	Dimension B	Dimension C
PE-30Kice48	01-0135-0000	58'	48'	19.5'

2 ACCESSIBLE CHARGER ELEVATION

NTS



Proven Technology and Reliable Safety



Features

- Charge circuit interruption device (CCID) with automatic test
- Ground monitoring circuit
- Nuisance-tripping avoidance and auto re-closure
- Cold load pickup (randomized auto-restart following power outage)
- Certified energy and demand metering
- Wireless IEEE 802.11g
- LAN capable
- AMI interface capable
- Web-based bi-directional data flow
- Cord management system

Blink Level 2 Pedestal Charger Specifications

Input Voltage	208 VAC to 240 VAC +/- 10%
Input Phase	Single
Frequency	50/60 Hz
Input Current	30 Amps (maximum); 12A, 16A, 24A available
Breaker Size	40 Amps; settings at 15A/20A/30A available
Output Voltage	208 VAC - 240 VAC +/- 10%
Output Phase	Single
Pilot	SAE J1772-compliant
Connector/Cable	SAE J1772-compliant; UL-rated at 30A maximum
Cable Length	18 feet (estimated)
Exterior Dimensions	Pedestal: 66" H x 20" W x 17" D
Temperature Rating	-22° F (-30° C) to +122° F (+50° C)
Enclosure	NEMA Type 3R; sun-and-heat-resistant

Additional Features

- Smartphone applications for status changes and notifications of completion or interruption of charge
- Controllable output to support utility demand response requests
- Revenue systems support
- Multiple input current settings to conveniently accommodate electric service capabilities
- Multiple modes of communications including wireless, cellular, 802.15 protocol capable, LAN

Safety

- Interlocks with EV drive system so EV cannot drive when connector is inserted in vehicle inlet
- De-energizes EVSE if connector and cable are subjected to excessive strain
- Charge current interrupting device (CCID) with automatic test feature for personal protection
- Connector parts are de-energized until latched in vehicle inlet
- Meets all National Electric Code requirements
- UL Listed

Standards and Certifications

- SAE J1772 compliant
- NEC article 625 electric vehicle charging system
- UL and ULc to 2594

Proven technology and reliable safety



Blink DC Fast Charger Specifications

Maximum Output Power	60 kW Max (Setting Adjustable 30kW - 60 kW)
Maximum Output Current	200 Amps
Minimum Output Current	5 Amps
Output Voltage	200 VDC - 450 VDC
Input Voltage	208/380/400/480/575 VAC 3-Phase
Frequency	50/60 Hz
Input Current	200 Amps at 208 VAC 89 Amps at 480 VAC 74 Amps at 575 VAC
Connector/Cable	Yazaki-CHAdEMO compliant 120A rated
Cable Length	12 feet (estimated)
Charging Station Dimensions	52" W x 98" H x 15" D
Charging Station Weight	450 lbs
GPU Exterior Dimensions	47" W x 69" H x 30" D
GPU Weight	1,474 lbs
Temperature Rating	-4° F (-20° C) to +122° F (+50° C)
Enclosure	NEMA Type 3R; sun-and-heat-resistant
Charge Control	CHAdEMO compliant
Efficiency	90% or greater
Power Factor	.9 or better
Charge Ports	2

Energy Meter

- Internal meter to monitor energy and demand usage
- Supports energy usage data evaluation

Learn more at BlinkNetwork.com

Additional Features

- Certified energy and demand metering; meets ANSI C12.20 and IEC687
- Integrated Disconnect and Breaker
- Demand response capable via third-party software control system
- Multiple input current settings to conveniently accommodate electric service capabilities
- Communication systems include: Wireless IEEE 802.11g, cellular, and Ethernet capabilities
- Top hang cable management system

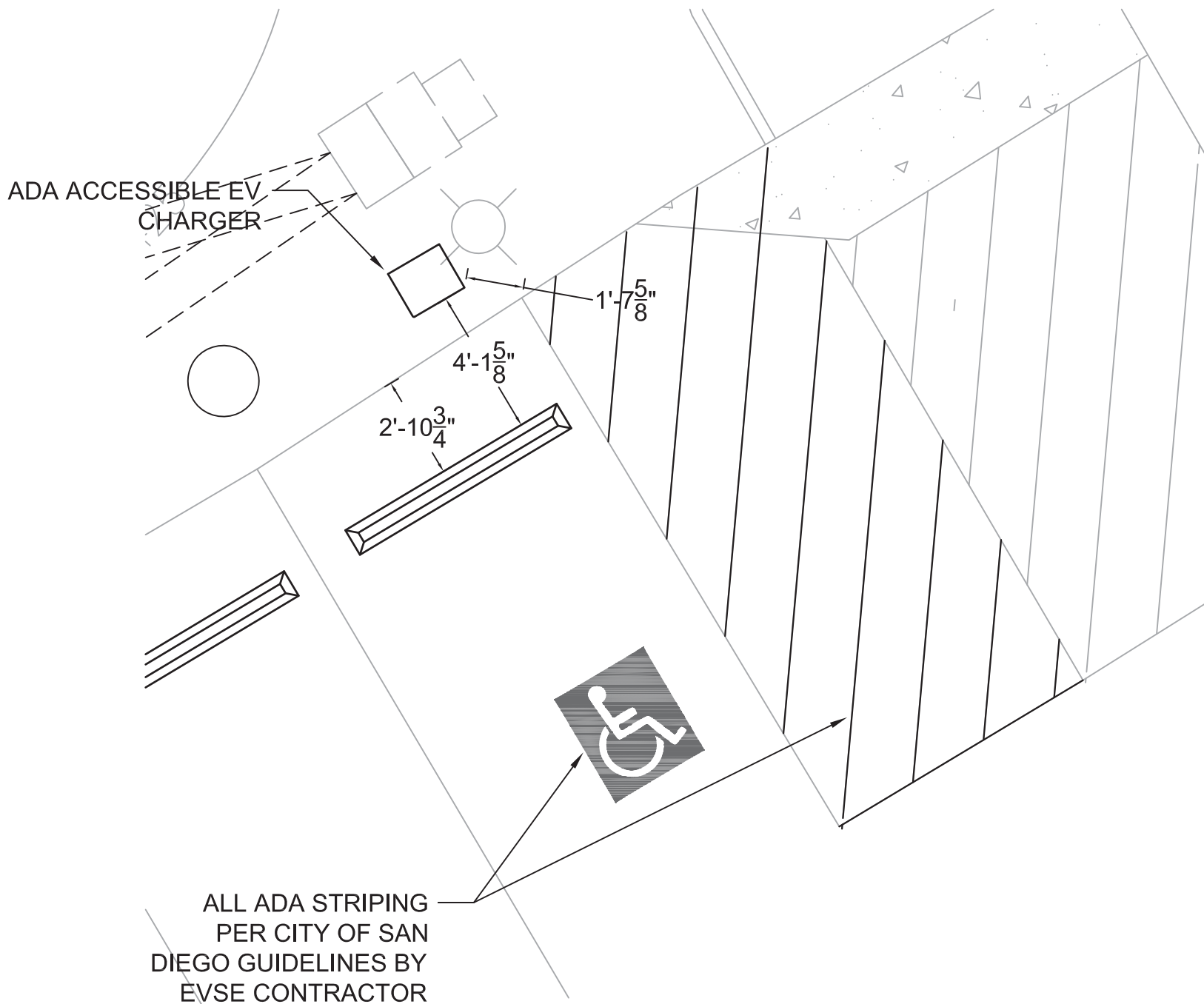
Quality Control and Facility Certifications

Manufacturing facility meets all relevant facility certifications, including:

- ISO-9001:2008
- UL manufacturing facility certification

Standards and Certifications

- NEC article 625 electric vehicle charging system



1 ACCESSIBLE CHARGER ENLARGED PLAN

1/4"=1'-0"



FAST EV SUNCHARGE DEL LAGO

PHOTOVOLTAIC SYSTEM
BATTERY STORAGE SYSTEM
EV CHARGING SYSTEMS
3310 DEL LAGO BLVD.
ESCONDIDO, CA 92029

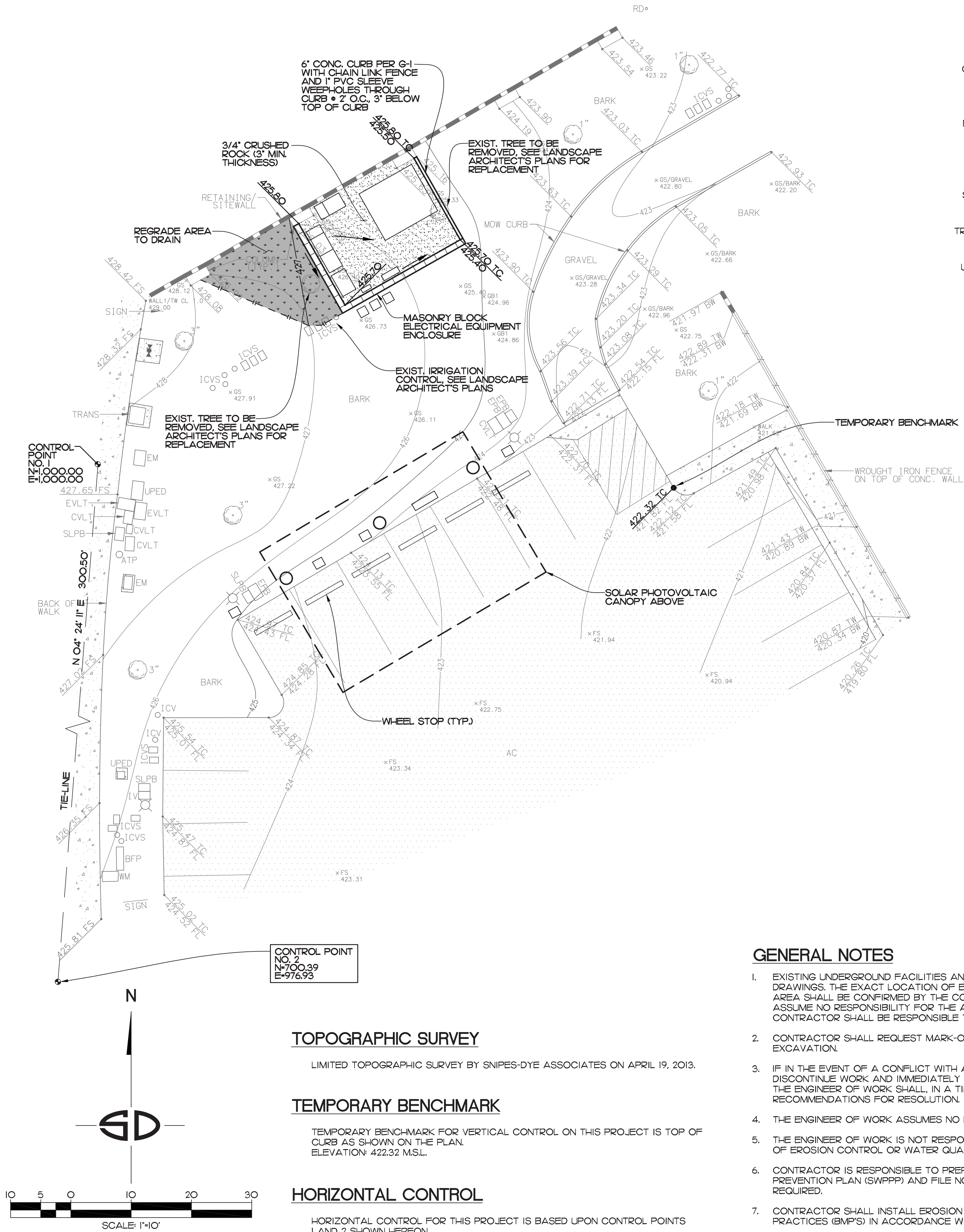
03.13.2013 - 30% SUBMITTAL

04.30.2013 - PREFINAL SUBMITTAL

EV CHARGER
DETAILS

E5.1

S:\SAMPLES\ES3301 Del Lago PTV\DWG\GP-01.dwg
Plotted: Tuesday, April 30, 2013 11:55am by mark



ABBREVIATIONS

- ATP - DENOTES AT&T PEDESTAL.
BFP - DENOTES BACKFLOW PREVENTOR W/ CAGE.
BW - DENOTES BOTTOM OF WALL.
CVLT - DENOTES COMMUNICATION VAULT.
EM - DENOTES ELECTRIC METER.
EPB - DENOTES ELECTRICAL PULLBOX.
EVL - DENOTES ELECTRICAL VAULT.
ICV - DENOTES IRRIGATION CONTROL VALVE.
IV - DENOTES IRRIGATION VAULT.
RD - DENOTES ROOF DRAIN.
SLPB - DENOTES STREET LIGHT PULLBOX.
TC - DENOTES TOP OF CURB.
TRANS - DENOTES TRANSFORMER.
TW - DENOTES TOP OF WALL.
UPED - DENOTES UTILITY PEDESTAL.
WM - DENOTES WATER METER.

STANDARD DRAWINGS

PRIVATE SITE IMPROVEMENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS INDICATED ON THE PLANS AND IN THE CURRENT EDITION OF THE SAN DIEGO AREA REGIONAL STANDARD DRAWINGS.

STANDARD SPECIFICATIONS

PRIVATE SITE IMPROVEMENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "GREEN BOOK" (2012 EDITION) INCLUDING THE REGIONAL AND CITY OF SAN DIEGO SUPPLEMENT AMENDMENT.

LEGEND

IMPROVEMENT	STD. DWG.	SYMBOL
EXISTING CONTOUR		— 425 —
EXISTING SPOT ELEVATION		× 426.11
PROPOSED FINISHED CONTOUR		— 427 —
PROPOSED SPOT ELEVATION		← 247.20
PROPOSED 3/4" CRUSHED ROCK		[Pattern]
PROPOSED ENCLOSURE		[Pattern]
PROPOSED REGRADED AREA		[Pattern]
PROPOSED 6" CONCRETE CURB	G-1	[Pattern]

SITE IMPROVEMENT NOTES

- THE MINIMUM GRADE FOR GRADED SWALES SHALL BE 1%.
- THE MINIMUM GRADIENT OF FINISHED GRADE AWAY FROM STRUCTURES SHALL BE 2% FOR A DISTANCE OF FIVE FEET OR AS INDICATED ON THE PLANS.
- FINISH GRADE SHALL BE DETERMINED AS THE ELEVATION OF ANY LANDSCAPE MATERIAL PLACED ON GRADE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERCUT GRADE TO ALLOW FOR PLACEMENT OF LANDSCAPE MATERIALS.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HANDLE ANY EXPORT OF EXCESS MATERIAL FOR THE SITE. RESPONSIBILITY SHALL INCLUDE ALL PERMITS AND APPROVALS BY THE APPROPRIATE AGENCIES. THE OWNER AND ENGINEER OF WORK WILL NOT ASSUME ANY RESPONSIBILITY FOR THE REMOVAL, TRANSPORTATION OR PLACEMENT OF EXCESS MATERIAL.
- FINISH GRADE SHALL BE INSPECTED BY THE ENGINEER OF WORK AND VERIFIED THAT THE ACTUAL GRADING IS REPRESENTATIVE OF THE PROPOSED GRADING AND THAT THE MINIMUM SLOPE GRADIENTS EXIST.
- THE MAXIMUM SLOPE GRADIENT SHALL BE 2:1 (HORIZONTAL TO VERTICAL).
- CONCRETE CURBS AND GUTTERS SHALL BE INSTALLED IN ACCORDANCE WITH THE REFERENCED DETAIL AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GSPWC) (2009 EDITION).
- SAW CUTTING OF EXISTING IMPROVEMENTS SHALL PROVIDE A CLEAN VERTICAL EDGE VOID OF CHIPPING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE TIMELY REMOVAL OF ALL SPOIL MATERIALS CREATED BY THE DEMOLITION OF EXISTING IMPROVEMENTS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF EXISTING IMPROVEMENTS. CONTRACTOR SHALL, IN ADVANCE OF CONSTRUCTING IMPROVEMENTS, NOTIFY THE ENGINEER OF WORK OF ANY CONFLICTS BETWEEN THE PROPOSED DESIGN AND EXISTING IMPROVEMENTS. THE ENGINEER OF WORK SHALL REVIEW THE CONFLICTS AND MAKE RECOMMENDATIONS FOR RESOLUTION IN A TIMELY MANNER.

GENERAL NOTES

- EXISTING UNDERGROUND FACILITIES AND UTILITIES ARE PLOTTED FROM RECORD DRAWINGS. THE EXACT LOCATION OF EXISTING FACILITIES WITHIN THE CONSTRUCTION AREA SHALL BE CONFIRMED BY THE CONTRACTOR. THE ENGINEER OF WORK SHALL ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF THE RECORD DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT EXISTING UTILITIES IF NECESSARY.
- CONTRACTOR SHALL REQUEST MARK-OUT OF ALL EXISTING FACILITIES PRIOR TO ANY EXCAVATION.
- IF IN THE EVENT OF A CONFLICT WITH ANY EXISTING FACILITIES, CONTRACTOR SHALL DISCONTINUE WORK AND IMMEDIATELY NOTIFY THE ENGINEER OF WORK OF THE CONFLICT. THE ENGINEER OF WORK SHALL, IN A TIMELY MANNER, REVIEW THE CONFLICT AND MAKE RECOMMENDATIONS FOR RESOLUTION.
- THE ENGINEER OF WORK ASSUMES NO LIABILITY FOR JOB SAFETY.
- THE ENGINEER OF WORK IS NOT RESPONSIBLE FOR THE INSTALLATION OR MAINTENANCE OF EROSION CONTROL OR WATER QUALITY "BEST MANAGEMENT PRACTICES".
- CONTRACTOR IS RESPONSIBLE TO PREPARE A PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND FILE NOTICE WITH THE APPROPRIATE STATE AGENCY, IF REQUIRED.
- CONTRACTOR SHALL INSTALL EROSION CONTROL AND SITE BEST MANAGEMENT PRACTICES (BMP'S) IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS.

ENGINEER OF WORK



Snipes-Dye associates
civil engineers and land surveyors
8348 CENTER DRIVE, STE. G, LA MESA, CA 91942
TELEPHONE (619) 697-9234 FAX (619) 460-2033
WILLIAM A. SNIPE'S R.C.E. 50477
EXPIRES 06-30-13



FAST EV SUNCHARGE DEL LAGO

PHOTOVOLTAIC SYSTEM
BATTERY STORAGE SYSTEM
EV CHARGING SYSTEMS
NEAR 3275 DEL LAGO BLVD.
ESCONDIDO, CA

04-30-13 PRE-FINAL SUBMITTAL

CIVIL GRADING
PLAN

GP0.1

ies Independent Energy Solutions
Solar Electric Engineering & Construction
1090 Joshua Way, Vista, CA 92081
Ph 760.752.9706 Fx 760.752.9758
www.indenergysolutions.com



GENERAL STRUCTURAL NOTES (G.S.N.)

DESIGN CRITERIA

CODE: 2010 CALIFORNIA BUILDING CODE, REFERRED TO AS "THE CODE"

GOVERNING JURISDICTION: CALTRANS

LIVE LOAD:

PV ARRAY (NON-CONCURRENT W/ WIND)..... 10 PSF

WIND ANALYSIS: METHOD 2 – ANALYTICAL PROCEDURE

BASIC WIND SPEED.....V = 85 MPH

IMPORTANCE FACTOR.....Iw = 1.0

WIND EXPOSURE..... = CATEGORY C

OCCUPANCY CATEGORY..... = II

GUST EFFECT FACTOR.....G = 0.85

SEISMIC ANALYSIS: EQUIVALENT LATERAL FORCE PROCEDURE HAS BEEN USED:

SITE CLASSIFICATION..... = S₀

OCCUPANCY CATEGORY..... = II

SEISMIC DESIGN CATEGORY..... = D

IMPORTANCE FACTOR.....I_e = 1.0

S_s = 1.053 g S_{0s} = 0.757 g

S₁ = 0.384 g S₀₁ = 0.418 g

SEISMIC LOAD RESISTING SYSTEM.....SLRS = INVERTED PENDULUM (NON-BUILDING STRUCTURE)

RESPONSE MODIFICATION COEFFICIENT.....R = 2

SYSTEM OVERSTRENGTH FACTOR.....Ω_o = 2

SEISMIC BASE SHEAR.....C_s = 0.38 W

GENERAL

- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. DO NOT SCALE THE DRAWINGS. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES. IN CASE OF CONFLICT, MORE COSTLY REQUIREMENTS GOVERN FOR BIDDING. SUBMIT CLARIFICATION REQUEST PRIOR TO PROCEEDING WITH WORK.
- ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY DEVIATION FROM THE APPROVED SET OF CONTRACT DOCUMENTS SHALL ONLY BE MADE AFTER WRITTEN APPROVAL BY THE ENGINEER OF RECORD. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
- NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK. UNLESS NOTED OTHERWISE, DETAILS IN STRUCTURAL DRAWINGS ARE TYPICAL AS INDICATED BY CUTS, REFERENCES OR TITLES.
- ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING CODES: LOCAL BUILDING CODE, AND ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, AND THOSE CODES AND STANDARDS LISTED IN THESE NOTES AND SPECIFICATIONS.
- SEE PV DRAWINGS FOR THE FOLLOWING:
 - TRENCHES, ETC., EXCEPT AS SHOWN OR NOTED.
 - ELECTRICAL CONDUIT RUNS.
 - LOCATION OF ELECTRICAL EQUIPMENT AND PRECISE COLUMN LOCATIONS.
- THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
- ASTM SPECIFICATIONS ON THE DRAWINGS SHALL BE OF THE LATEST REVISION.
- CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
- THESE CARPORT PLANS AND DETAILS PERTAINING TO THESE ARE PROPRIETARY TO M BAR C CONSTRUCTION INC. AND MUST BE ASSEMBLED BY M BAR C CONSTRUCTION INC. ONLY.
- ALL ELECTRIC VEHICLE CHARGING UNITS, FOUNDATIONS, ELECTRICAL EQUIPMENT, AND CONSTRUCTION COSTS RELATED TO THE INSTALLATION OF ELECTRIC VEHICLE CHARGING UNITS SHALL BE PROCURED AND INSTALLED BY THE ELECTRIC VEHICLE CHARGING CONTRACTOR.

CONCRETE

- ALL CONCRETE CONSTRUCTION SHALL CONFORM WITH THE CODE AND WITH THE PROVISIONS OF ACI 318, LATEST EDITION.
- CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND APPROVED BY THE STRUCTURAL ENGINEER. MIX DESIGN METHODS (TEST HISTORY OR TRIAL BATCH METHOD) PER THE CODE SHALL BE USED TO PROPORTION CONCRETE. SUBMIT MIX DESIGN METHOD DATA.
- SCHEDULE OF STRUCTURAL CONCRETE 28-DAY STRENGTH TYPES:

LOCATION IN STRUCTURE	STRENGTH	MAX DENSITY	MAX w/C RATIO
ALL FOOTINGS	3000 PSI	150 PCF	0.50

- PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, TYPE I OR II.
- AGGREGATE FOR HARDROCK CONCRETE SHALL CONFORM TO ALL REQUIREMENTS AND TESTS OF ASTM C-33 AND PROJECT SPECIFICATIONS. EXCEPTIONS MAY BE USED ONLY WITH PERMISSION OF THE STRUCTURAL ENGINEER.
- CONCRETE MIXING OPERATION, ETC. SHALL CONFORM TO ASTM C-94.
- PLACEMENT OF CONCRETE SHALL CONFORM TO CODE SECTION 1905 AND PROJECT SPECIFICATIONS. CLEAN AND ROUGHEN TO ¼" AMPLITUDE ALL CONCRETE SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED.
- ALL REINFORCING BARS, ANCHOR BOLTS, AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
- PROVIDE SLEEVES FOR ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. CORING CONCRETE IS NOT PERMITTED.
- REINFORCING SHALL BE ASTM A615, GR.60.

SPECIAL INSPECTION

THE FOLLOWING ELEMENTS OF CONSTRUCTION SHALL REQUIRE SPECIAL INSPECTION PER CHAPTER 17 OF THE CODE.

STEEL: SPECIAL INSPECTION TASK	CONTINUOUS	PERIODIC
3. MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK: <ol style="list-style-type: none">FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS CONFORMING TO AISC 360, LATEST EDITIONFOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.MANUFACTURERS' CERTIFIED TEST REPORTS.	–	X
4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS: <ol style="list-style-type: none">IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS.MANUFACTURER'S CERTIFICATE OF COMPLIANCE.	–	X
5. INSPECTION OF WELDING: <ol style="list-style-type: none">STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:<ol style="list-style-type: none">COMPLETE AND PARTIAL PENETRATION GROOVE WELDS.MULTIPASS FILLET WELDS.SINGLE-PASS FILLET WELDS > 5/16"PLUG AND SLOT WELDSSINGLE-PASS FILLET WELDS ≤ 5/16"SHOP WELDING: SPECIAL INSPECTION IS NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED BY THE GOVERNING JURISDICTION.	X	–

CONCRETE: SPECIAL INSPECTION TASK	CONTINUOUS	PERIODIC
1. REINFORCING STEEL PLACEMENT	–	X
2. REINFORCING STEEL WELDING.	–	–
3. BOLTS AND EMBED PLATES TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE.	X	–
4. POST-INSTALLED ANCHORS IN HARDENED CONCRETE (ESR-1385 & ESR-1917)	–	X
5. VERIFYING USE OF REQUIRED DESIGN MIX.	–	X
6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	–
7. CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	–
8. MAINTENANCE OF THE SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	–	X
11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	–	X
12. FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBERS BEING FORMED.	–	X

SOIL: SPECIAL INSPECTION TASK	CONTINUOUS	PERIODIC
1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	–	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	–	X

MASONRY: SPECIAL INSPECTION TASK (LEVEL 1)	CONTINUOUS	PERIODIC
1. COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED.	–	X
2. VERIFICATION OF 1'm PRIOR TO CONSTRUCTION EXCEPT WHERE SPECIFICALLY EXEMPTED BY CODE.	–	X
3. VERIFICATION OF SLUMP FLOW AND VSI AS DELIVERED TO THE SITE FOR SELF-CONSOLIDATING GROUT.	X	–
4. AT THE BEGINNING OF THE MASONRY CONSTRUCTION, THE FOLLOWING SHALL BE VERIFIED <ol style="list-style-type: none">PROPORTIONS OF SITE PREPARED MORTAR.CONSTRUCTION OF MORTAR JOINTSLOCATION OF REINFORCEMENT, CONNECTORS AND ANCHORAGES.	–	X
5. DURING CONSTRUCTION THE INSPECTION PROGRAM SHALL VERIFY <ol style="list-style-type: none">SIZE AND LOCATION OF STRUCTURAL ELEMENTSTYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.SPECIFIED SIZE, GRADE, AND TYPE OF REINFORCEMENTPROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°) OR HOT WEATHER (TEMPERATURE ABOVE 90°)	–	X
6. PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED: <ol style="list-style-type: none">GROUT SPACE IS CLEAN.PLACEMENT OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS AND ANCHORAGE.PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONSCONSTRUCTION OF MORTAR JOINTS.	–	X
7. GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE WITH CODE AND CONSTRUCTION DOCUMENT PROVISIONS.	X	–
8. PREPARATION OF ANY REQUIRED GROUT AND MORTAR SPECIMENS AND/OR PRISMS.	X	–
9. POST-INSTALLED ANCHORS	–	X

PIER FOUNDATIONS: SPECIAL INSPECTION TASK	CONTINUOUS	PERIODIC
1. OBSERVE DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH PIER.	X	–
2. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM PIER DIAMETER, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE) AND ADEQUATE END BEARING STRATA CAPACITY.	X	–
3. FOR CONCRETE PIERS, PERFORM ADDITIONAL INSPECTIONS PER CONCRETE SPECIAL INSPECTION TABLE.	–	–
4. FOR MASONRY PIERS, PERFORM ADDITIONAL INSPECTIONS PER MASONRY SPECIAL INSPECTION TABLE.	–	–

SPECIAL INSPECTION (CONT.)

- THE SPECIAL INSPECTIONS IDENTIFIED ON PLANS ARE, IN ADDITION TO, AND NOT A SUBSTITUTE FOR, THOSE INSPECTIONS REQUIRED TO BE PERFORMED BY THE GOVERNING JURISDICTION. SPECIALLY INSPECTED WORK WHICH IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF AN INSPECTOR FROM THE GOVERNING JURISDICTION IS SUBJECT TO REMOVAL OR EXPOSURE.
- FOR CONTINUOUS INSPECTION, WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE CONTINUOUSLY OBSERVED IN ACCORDANCE WITH THE PROVISIONS OF THE CODE, IT IS THE AGENT'S RESPONSIBILITY TO EMPLOY A SUFFICIENT NUMBER OF INSPECTORS TO ASSURE THAT ALL WORK IS INSPECTED IN ACCORDANCE WITH THOSE PROVISIONS.
- THE SPECIAL INSPECTORS MUST BE CERTIFIED BY THE GOVERNING JURISDICTION IN THE CATEGORY OF WORK REQUIRED TO HAVE SPECIAL INSPECTION.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM THE SPECIAL INSPECTOR OR INSPECTION AGENCY AT LEAST ONE WORKING DAY PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION. ALL WORK PERFORMED WITHOUT REQUIRED SPECIAL INSPECTION IS SUBJECT TO REMOVAL.
- A CERTIFICATE OF SATISFACTORY COMPLETION OF WORK REQUIRING SPECIAL INSPECTION MUST BE COMPLETED AND SUBMITTED TO THE GOVERNING JURISDICTION.
- THE SPECIAL INSPECTOR SHALL PROVIDE PERIODIC REPORTS AND A FINAL REPORT TO THE STRUCTURAL ENGINEER.
- THE SPECIAL INSPECTOR SHALL ENSURE THAT ALL DEFICIENCIES NOTED BY THE STRUCTURAL ENGINEER IN STRUCTURAL OBSERVATION REPORTS ARE CORRECTED. SUCH COMPLIANCE SHALL BE REFERENCED IN SPECIAL INSPECTOR REPORT.
- THE CONSTRUCTION MATERIALS TESTING LABORATORY MUST BE APPROVED BY THE CITY OF SAN DIEGO, DEVELOPMENT SERVICES, FOR TESTING OF MATERIALS, SYSTEMS, COMPONENTS AND, EQUIPMENTS.
- FABRICATOR MUST BE REGISTERED AND APPROVED BY THE CITY OF SAN DIEGO, DEVELOPMENT SERVICES, FOR THE FABRICATION OF MEMBERS AND ASSEMBLIES ON THE PREMISES OF THE FABRICATOR'S SHOP.
- PERIODIC INSPECTION SHALL OCCUR FREQUENTLY ENOUGH TO INSPECT ALL OF THE INSTALLED ITEMS AND TO PERIODICALLY WITNESS THE INSTALLATION OF THE ITEMS.
- FABRICATOR MUST SUBMIT AN "APPLICATION TO PERFORM OFF-SITE FABRICATION" TO THE INSPECTION SERVICES DIVISION FOR APPROVAL PRIOR TO COMMENCEMENT OF FABRICATION.
- FABRICATOR SHALL SUBMIT A "CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION" TO THE INSPECTION SERVICES DIVISION PRIOR TO ERECTION OF FABRICATED ITEMS AND ASSEMBLIES.
- NOTICE TO THE APPLICANT/OWNER/OWNER'S AGENT/ARCHITECT:**
BY USING THIS PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION/INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF THE GOVERNING JURISDICTION FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS, CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND, AS REQUIRED BY THE GOVERNING BUILDING CODES"
- NOTICE TO THE CONTRACTOR/BUILDER/INSTALLER/SUBCONTRACTOR/OWNER/BUILDER:**
BY USING THIS PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION/INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU ACKNOWLEDGE AND ARE AWARE OF, THE REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS. YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF THE GOVERNING JURISDICTION FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS, CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND, AS REQUIRED BY THE GOVERNING BUILDING CODES"

STRUCTURAL OBSERVATION

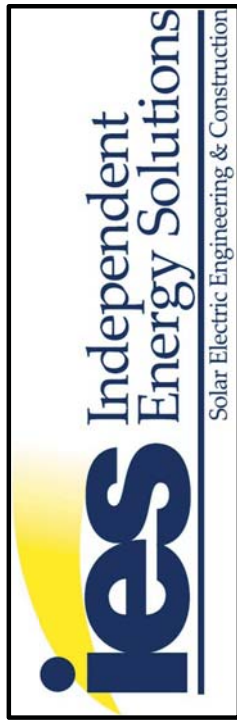
STRUCTURAL OBSERVATION PER THE REQUIREMENTS OF THE CODE IS REQUIRED. THE STRUCTURAL ENGINEER WILL PROVIDE OBSERVATION AT THE FOLLOWING STAGES OF CONSTRUCTION:

ITEM	STAGE
DRILLED PIER REINFORCING	BEFORE POUR
STRUCTURAL STEEL	AFTER ERECTION
COLD-FORMED FRAMING	90% COMPLETE

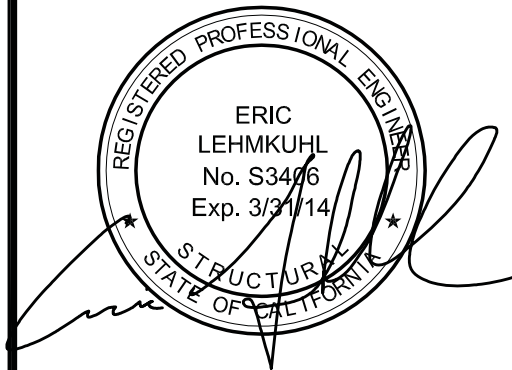
- STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE INSPECTIONS REQUIRED BY THE CODE.
- ALL OBSERVED DEFICIENCIES SHALL BE REPORTED IN WRITING TO THE OWNER'S REPRESENTATIVE, SPECIAL INSPECTOR, AND CONTRACTOR. THE STRUCTURAL OBSERVER SHALL SUBMIT A FINAL WRITTEN STATEMENT TO THE GOVERNING JURISDICTION THAT SITE VISITS HAVE BEEN MADE AND IDENTIFYING ANY REPORTED DEFICIENCIES THAT HAVE NOT BEEN RESOLVED. THE STRUCTURE WILL NOT BE IN COMPLIANCE UNTIL THE DESIGNER HAS NOTIFIED THE GOVERNING JURISDICTION THAT ALL DEFICIENCIES ARE RESOLVED.

SHOP DRAWINGS / SUBMITTALS

- THE STRUCTURAL SHOP DRAWING REVIEW IS INTENDED TO HELP THE ENGINEER VERIFY THE DESIGN CONCEPT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK THEIR OWN SHOP DRAWINGS.
- THE STRUCTURAL SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF A CURSORY REVIEW SHOWS MAJOR ERRORS WHICH SHOULD HAVE BEEN FOUND BY THE CONTRACTOR'S CHECKING.
- THE FOLLOWING SHOP DRAWINGS (AND CALCULATIONS WHEN APPLICABLE) ARE REQUIRED FOR SUBMITTAL FOR STRUCTURAL REVIEW.
 - CONCRETE MIX DESIGNS, INCLUDING STRENGTH AND SHRINKAGE TEST RESULTS
 - REINFORCING STEEL (EXCEPT WHERE NOTED BY NOTE 3 ABOVE)
 - STRUCTURAL STEEL AND DECK
 - WELDING PROCEDURE SPECIFICATIONS (SEE NOTE 10 BELOW)
- THE SHOP DRAWINGS SHALL REFERENCE THE DATA OF THE DESIGN USED TO PRODUCE THE SUBMITTAL.
- CONTRACTOR/SUBCONTRACTOR TO PROVIDE DIGITAL SHOP DRAWINGS IN PDF FORMAT FOR REVIEW BY THE ENGINEER OF RECORD. REDLINED COPY WILL BE RETURNED TO THE CONTRACTOR WITH REDLINES FOR REPRODUCTION AND DISTRIBUTION.



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03.13.2013 - 30% SUBMITTAL

04.30.2013 - PREFINAL SUBMITTAL

GENERAL
STRUCTURAL
NOTES

S0.1

GENERAL STRUCTURAL NOTES (G.S.N.)

FOUNDATION:

- FOUNDATIONS ARE DESIGNED BASED ON PRESUMPTIVE LOAD-BEARING VALUES PER TABLE 1806.2 OF THE CODE.
- FOOTINGS ARE DESIGNED BASED ON THE FOLLOWING INFORMATION:

ALLOWABLE BEARING = 1,500 PSF

PASSIVE EARTH PRESSURE = 100 PCF

COEFFICIENT OF FRICTION = ZERO
- FOOTINGS SHALL BEAR ON APPROVED COMPACTED FILL PER THE SOILS REPORT. MINIMUM DEPTH AND DIMENSIONS OF FOOTINGS SHALL BE AS FOLLOWS:

MINIMUM DEPTH BELOW LOWEST ADJACENT GRADE..... 1 FT

MINIMUM WIDTH..... 1 FT
- SLABS ON GRADE SHALL BEAR ON APPROVED SUBGRADE PER THE RECOMMENDATIONS OF THE SOILS REPORT OR AS APPROVED BY QUALIFIED PROFESSIONAL OR SPECIAL INSPECTOR.
- CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM EITHER SURFACE WATER, GROUND WATER, OR SEEPAGE, IF REQUIRED.
- CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING, AND SHORING REQUIRED AND SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS, AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES.
- FOUNDATIONS SHALL BE PLACED AND ESTIMATED ACCORDING TO DEPTHS SHOWN ON DRAWINGS. SHOULD SOIL ENCOUNTERED AT THESE DEPTHS NOT BE APPROVED BY THE INSPECTOR OR SOILS ENGINEER, FOUNDATION ELEVATIONS WILL BE ALTERED.
- FOOTING BACKFILL AND UTILITY TRENCH BACKFILL WITHIN BUILDING AREA SHALL BE MECHANICALLY COMPACTED IN LAYERS IN ACCORDANCE WITH THE SOILS REPORT AND APPROVED BY THE SPECIAL INSPECTOR.
- ALL ABANDONED FOOTINGS, UTILITIES, ETC. SHALL BE REMOVED.
- REMOVE CONTAMINATED SOILS PER THE SOILS REPORT.

DRILLED PIERS

- PILE FOUNDATIONS ARE DESIGNED BASED ON PRESUMPTIVE LOAD-BEARING VALUES PER TABLE 1806.2 OF THE CODE:

VERTICAL FOUNDATION PRESSURE = 2000 PSF

LATERAL BEARING PRESSURE = 150 PSF/FT*

* INCREASED FOR FOR ISOLATED POLES PER 1806.3.4.
- DESIGN AND PROVIDE A FULL-LENGTH WATERTIGHT TEMPORARY STEEL CASING, AS REQUIRED, TO MAINTAIN SHAFT WALLS WITHOUT DISPLACING AND TO WITHSTAND COMBINED COMPRESSIVE AND WITHDRAWAL STRESSES. WITHDRAW CASING AS CONCRETE IS PLACED, MAINTAINING A HEAD OF CONCRETE BETWEEN 5 AND 10 FEET ABOVE THE CASING BOTTOM.
- EACH DRILLED PIER MUST BE INSPECTED BY THE INSPECTOR PRIOR TO PLACING CONCRETE AND REINFORCING STEEL. ADJUST SHAFT LENGTHS UNDER DIRECTION OF THE SOILS ENGINEER AND THE OWNER'S REPRESENTATIVE BASED ON SOIL CONDITIONS AT TIME OF DRILLING.
- PRECAUTIONS SHOULD BE TAKEN DURING THE INSTALLATION OF PIERS TO MINIMIZE THE POSSIBILITY OF CAVING. CLOSELY SPACED PIERS SHOULD BE DRILLED AND FILLED ALTERNATELY, ALLOWING THE CONCRETE TO SET AT LEAST EIGHT HOURS BEFORE DRILLING AN ADJACENT HOLE. PIER EXCAVATIONS SHOULD BE FILLED WITH CONCRETE AS SOON AFTER DRILLING AND INSPECTION AS POSSIBLE; THE HOLES SHALL NOT BE LEFT OPEN OVERNIGHT.
- KEEP EXCAVATIONS FREE OF WATER BEFORE PLACING CONCRETE. IF UNABLE TO SEAL OFF WATER FLOW, ALLOW WATER LEVEL TO ATTAIN ITS NORMAL LEVEL AND PLACE CONCRETE BY THE TREMIE METHOD OR OTHER APPROVED METHOD.
- USE AN ELEPHANT TRUNK, TREMIE PIPE, OR OTHER APPROVED METHOD TO PLACE CONCRETE IN A CONTINUOUS AND SMOOTH FLOW WITHOUT SEGREGATING THE CONCRETE. DO NOT ALLOW CONCRETE TO FREE FALL MORE THAN 5 FEET UNLESS MEASURES ARE TAKEN TO ENSURE THAT CONCRETE DOES NOT HIT REBAR CAGE OR SIDES OF THE EXCAVATION DURING FREE FALL.
- MECHANICALLY VIBRATE THE CONCRETE AT EACH PIER.
- WHEN THE TREMIE METHOD IS ALLOWED, MAINTAIN AT LEAST 5 FEET OF CONCRETE HEAD ABOVE THE END OF THE TREMIE PIPE DURING THE ENTIRE CONCRETE PLACING OPERATION.
- PLACE REINFORCING STEEL IN ONE CONTINUOUS UNIT AND ACCURATELY HOLD SECURELY IN FINAL POSITION USING CHAIRS OR SPACERS DURING CONCRETE PLACEMENT.
- AN UNREINFORCED HEIGHT OF 6 INCHES AT THE BOTTOM OF THE SHAFT IS ACCEPTABLE.
- CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF ACI 336.3R, LATEST EDITION.
- THE CONCRETE PIER SHALL BE ALLOWED TO CURE FOR A MINIMUM OF 24H AFTER SETTING BEFORE APPLYING CONSTRUCTION LOADING. THIS INCLUDES BUT IS NOT LIMITED TO STEEL BEAMS, PURLINS AND PV PANELS.

POST-INSTALLED CONCRETE ANCHORS

- POST-INSTALLED ANCHORAGE SHALL BE AS DETAILED ON THE PLANS. SUBSTITUTION OF PRODUCTS SPECIFICALLY DETAILED IN THESE DRAWINGS SHALL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER OF RECORD.
- SPECIAL INSPECTION IS REQUIRED FOR ALL POST-INSTALLED ANCHORS, U.N.O.
- WHERE ANCHOR TYPE IS NOT NOTED OR AN ALTERNATE BRAND IS PREFERRED, THE FOLLOWING PRODUCTS ARE ACCEPTABLE TO BE SUBMITTED FOR A SUBSTITUTION REQUEST:

A. EXPANSION ANCHORS: UNLESS NOTED OTHERWISE, EXPANSION ANCHORS IN CONCRETE SHALL BE ONE OF THOSE LISTED BELOW AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.

A.1. HILTI KWIK BOLT TZ (ESR-1917)

A.2. ALTERNATE APPROVED BY KPFF
- ALL CONCRETE ANCHORS WHICH ARE EXPOSED TO THE WEATHER SHALL BE STAINLESS STEEL OR HOT DIP GALVANIZED.

STRUCTURAL STEEL

- ALL STRUCTURAL STEEL AND MISC. METALS EXPOSED TO THE WEATHER SHALL BE HOT-DIP GALVANIZED PER G60.
- ALL STRUCTURAL STEEL SHALL CONFORM TO THE ASTM DESIGNATION AS INDICATED BELOW (U.N.O.):

DESCRIPTION	DESIGNATION
ALL ANGLES, CHANNELS, AND MISC.	A-36
HSS SECTIONS	A-500, GRADE B
MACHINE BOLTS AND THREADED RODS	A-307

- THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STEEL FOR STRUCTURAL ENGINEER'S REVIEW BEFORE FABRICATION.
- HOLES IN STEEL SHALL BE 1/16" LARGER DIAMETER THAN NOMINAL SIZE OF BOLT USED, EXCEPT AS NOTED. COLUMN BASE PLATE HOLES MAY BE OVERSIZED PER AISC MANUAL.
- ALL STRUCTURAL STEEL SURFACES THAT ARE ENCASED IN CONCRETE, MASONRY, OR SPRAY ON FIREPROOFING, OR ARE ENCASED BY BUILDING FINISH, SHALL BE LEFT UNPAINTED.
- PROVIDE BEVELED WASHERS PER ANSI B18.23.1 AS REQUIRED ON SLOPED SURFACES.
- WELDING:

a. ALL WELDING IS TO BE DONE BY CERTIFIED WELDERS USING E70XX ELECTRODES (U.N.O.). ALL WELDS SHALL BE IN CONFORMITY WITH THE PROJECT SPECIFICATIONS AND THE CODE FOR WELDING IN BUILDING CONSTRUCTION (AWS D1.1 LATEST REVISION) OF THE AMERICAN WELDING SOCIETY. SEE SPECIAL INSPECTION SECTION FOR WELDING INSPECTION REQUIREMENTS.

b. A WRITTEN WELDING PROCEDURE SPECIFICATION SHALL BE SUBMITTED TO THE TESTING LABORATORY. IT SHALL INCLUDE ALL WELDING PROCEDURES TO BE USED AS DESCRIBED IN AWS, CHAPTER 4.

c. WHERE FIELD WELDING IS INDICATED, THE FIELD DESIGNATION IS GIVEN AS A RECOMMENDATION ONLY.

MASONRY

- ALL MASONRY CONSTRUCTION SHALL CONFORM WITH THE CODE AND WITH THE PROVISIONS OF ACI 530, LATEST EDITION.
- CONCRETE BLOCK SHALL BE HOLLOW LOAD-BEARING CONCRETE MASONRY UNITS CONFORMING TO CODE SECTION 2103A.1, MEDIUM WEIGHT SINGLE OR DOUBLE OPEN END UNITS WITH A MAXIMUM LINEAR SHRINKAGE OF 0.065%.
- MORTAR SHALL CONFORM TO ASTM 270 AND SHALL CONFORM TO THE PROPORTION SPECIFICATIONS OF TBL. 2103A.8(2) FOR TYPE 'S' CONFORMING TO CODE SECTION 2103A.8.
- GROUT SHALL COMPLY WITH CODE SECTION 2103A.12.
- ALL CELLS SHALL BE GROUTED SOLID, U.N.O.
- STRENGTH REQUIREMENTS

f'm (psi)	BLOCK STRENGTH (psi)	GROUT STRENGTH (psi)
1,500	1,900	2,000

- COMPLIANCE WITH COMPRESSIVE STRENGTH REQUIREMENTS SHALL BE DETERMINED USING PRISM TESTING PER CODE SECTION 2105A.
- REINFORCING BARS - PROVIDE 1/2" CLEAR BETWEEN REINFORCING AND WALL OF MASONRY UNITS. SEE NOTES UNDER "REINFORCING STEEL" FOR ADDITIONAL REQUIREMENTS.
- VERTICAL BARS IN WALLS ARE TO BE PLACED IN CENTER OF CELLS UNLESS OTHERWISE SHOWN. VERTICAL BARS ARE TO BE TIED OR OTHERWISE FIXED INTO POSITION PRIOR TO GROUTING WITH WIRE POSITIONERS OR OTHER SUITABLE DEVICES AT INTERVALS NOT EXCEEDING 200 BAR DIAMETERS.
- VERTICAL BARS IN WALLS AND PILASTERS SHALL HAVE DOWELS OF EQUAL SIZE AND SPACING IN ALL FOOTINGS.
- HORIZONTAL BARS SHALL BE PLACED IN BOND BEAM BLOCKS.
- NO MORE THAN TWO BARS SHALL BE PLACED IN ANY ONE CELL. WHERE PLAN CALLS FOR MORE THAN TWO, DIVIDE EQUALLY AMONG ADJACENT CELLS.
- WHEN MULTIPLE BARS ARE LAPPED IN A CELL, LAP REBAR 65 BAR DIAMETERS MIN. AND STAGGER LAPS 24 IN. U.N.O.
- PIPES OR CONDUITS SHALL NOT BE EMBEDDED IN ANY MASONRY UNLESS SPECIFICALLY DETAILED ON THE APPROVED STRUCTURAL DRAWINGS. NOTIFY ENGINEER WHERE OTHERS SHOW PIPES OR CONDUITS EMBEDDED IN MASONRY THAT ARE NOT SHOWN ON THE APPROVED STRUCTURAL DRAWINGS.

COLD-FORMED STEEL (a.k.a. METAL STUDS)

- GENERAL

A. ALL COLD-FORMED METAL FRAMING CONSTRUCTION SHALL BE IN ACCORDANCE WITH AISI "SPECIFICATIONS FOR DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS," CURRENT EDITION.

B. ALL CALCULATED MEMBER PROPERTIES PER AISI SPECIFICATIONS ARE BASED ON THE FOLLOWING THICKNESSES:

MINIMUM THICKNESS	REFERENCE GAUGE	DESIGN THICKNESS
33 MIL	20 GA	0.0346"
43 MIL	18 GA	0.0451"
54 MIL	16 GA	0.0566"
68 MIL	14 GA	0.0713"
97 MIL	12 GA	0.1017"
118 MIL	10 GA	0.1242"

COLD-FORMED STEEL (a.k.a. METAL STUDS)

- ALL COLD-FORMED STEEL SHALL CONFORM TO THE FOLLOWING:

43 MIL AND LIGHTER	GR 33
54 MIL AND HEAVIER	GR 55

- ALL COLD-FORMED STEEL SHALL HAVE A MINIMUM GALVANIZED COATING CONFORMING TO G60.
- ALL APPROVED WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED FOR ALL APPROPRIATE DIRECTIONS COMPLYING WITH AWS D1.3. WELDING RODS SHALL CONFORM TO THE FOLLOWING:

43 MIL AND LIGHTER	E60XX
54 MIL AND HEAVIER	E70XX OR E6013
COLD-FORMED TO STRUCTURAL STEEL	E70XX LOW HYDROGEN

- ALL SCREWS SHALL BE FULLY DRIVEN AND PROTRUDE THE LARGER OF 3 THREADS OR 1/4" THROUGH THE LAST MATERIAL JOINED. THERE SHALL BE NO SPACE BETWEEN JOINING MEMBERS AT THE SCREW LOCATION.

REINFORCING STEEL

- REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 19 OF THE CODE, ASTM A615, GRADE 60 U.N.O. DEFORMATIONS SHALL BE IN ACCORDANCE WITH ASTM A-305.
- BARS SHALL BE CLEAN OF RUST, GREASE, OR OTHER MATERIALS LIKELY TO IMPAIR BOND. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. PROVIDE LAPS PER THE CODE. 9" MINIMUM. WWF SHALL BE SUPPORTED ON APPROVED CHAIRS.
- ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE.
- WHERE WELDING OF REINFORCING IS APPROVED BY THE STRUCTURAL ENGINEER, IT SHALL BE DONE BY AWS CERTIFIED WELDERS USING E9018 ELECTRODES OR AN APPROVED EQUAL. WELDING PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF STRUCTURAL WELDING CODE - REINFORCING STEEL, AWS-D1.4, LATEST REVISION. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-706.
- BARS IN SLABS SHALL BE SECURELY SUPPORTED ON WELL-CURED CONCRETE BLOCKS OR APPROVED METAL CHAIRS, PRIOR TO PLACING CONCRETE.
- REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH ACI 315, LATEST EDITION.
- COMPLETE AND DETAILED REINFORCING PLACEMENT DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE ARCHITECT FOR REVIEW BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION IN ACCORDANCE WITH SPECIFICATIONS AND APPLICABLE CODES. THESE APPROVED DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE PRIOR TO PLACING OF CONCRETE.
- REBAR SPACINGS GIVEN ARE MAXIMUM ON CENTER WHETHER STATED AS "O.C." OR NOT. UNLESS A SPECIFIED LENGTH IS GIVEN, ALL REBAR IS CONTINUOUS WHETHER STATED AS "CONT." OR NOT.
- CONCRETE PROTECTION FOR REINFORCEMENT

(i) CAST-IN-PLACE CONCRETE (NON-PRESTRESSED). THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

	MINIMUM COVER	TOLERANCES + OR -
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"	3/8"
B. CONCRETE EXPOSED TO EARTH OR WEATHER: <div>NO. 6 THROUGH NO. 18 BAR</div>	2"	3/8"
NO. 5 BAR, W31 OR D31 WIRE AND SMALLER	1 1/2"	3/8"
C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND: <div>SLABS, WALLS, JOISTS:</div>		
NO. 14 AND NO. 18 BAR	1 1/2"	3/8"
NO. 11 BAR AND SMALLER	3/4"	1/4"

POST-INSTALLED MASONRY ANCHORS

- POST-INSTALLED ANCHORAGE SHALL BE AS DETAILED ON THE PLANS. SUBSTITUTION OF PRODUCTS SPECIFICALLY DETAILED IN THESE DRAWINGS SHALL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER OF RECORD.
- SPECIAL INSPECTION IS REQUIRED FOR ALL POST-INSTALLED ANCHORS, U.N.O.
- WHERE ANCHOR TYPE IS NOT NOTED OR AN ALTERNATE BRAND IS PREFERRED, THE FOLLOWING PRODUCTS ARE ACCEPTABLE TO BE SUBMITTED FOR A SUBSTITUTION REQUEST:

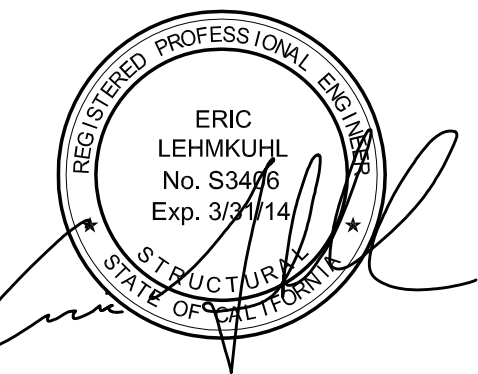
A. EXPANSION ANCHORS: UNLESS NOTED OTHERWISE, EXPANSION ANCHORS IN MASONRY SHALL BE ONE OF THOSE LISTED BELOW AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.

A.1. HILTI KWIK BOLT 3 (ESR-1385)

A.2. ALTERNATE APPROVED BY KPFF
- ALL MASONRY ANCHORS WHICH ARE EXPOSED TO THE WEATHER SHALL BE STAINLESS STEEL OR HOT DIP GALVANIZED.



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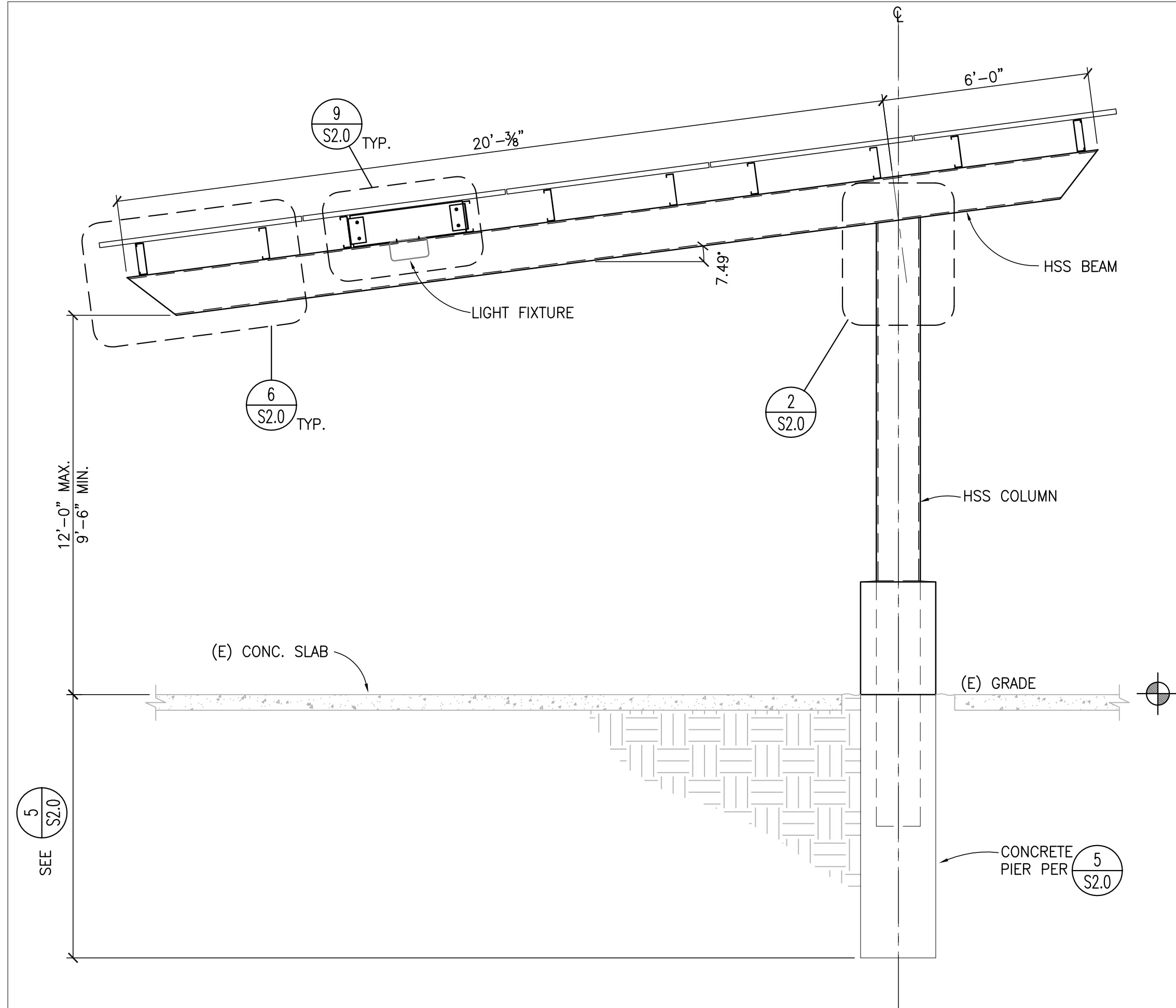
PHOTOVOLTAIC SYSTEM
BATTERY STORAGE SYSTEM
EV CHARGING SYSTEMS
NEAR 3275 DEL LAGO BLVD.
ESCONDIDO, CA

03.13.2013 - 30% SUBMITTAL

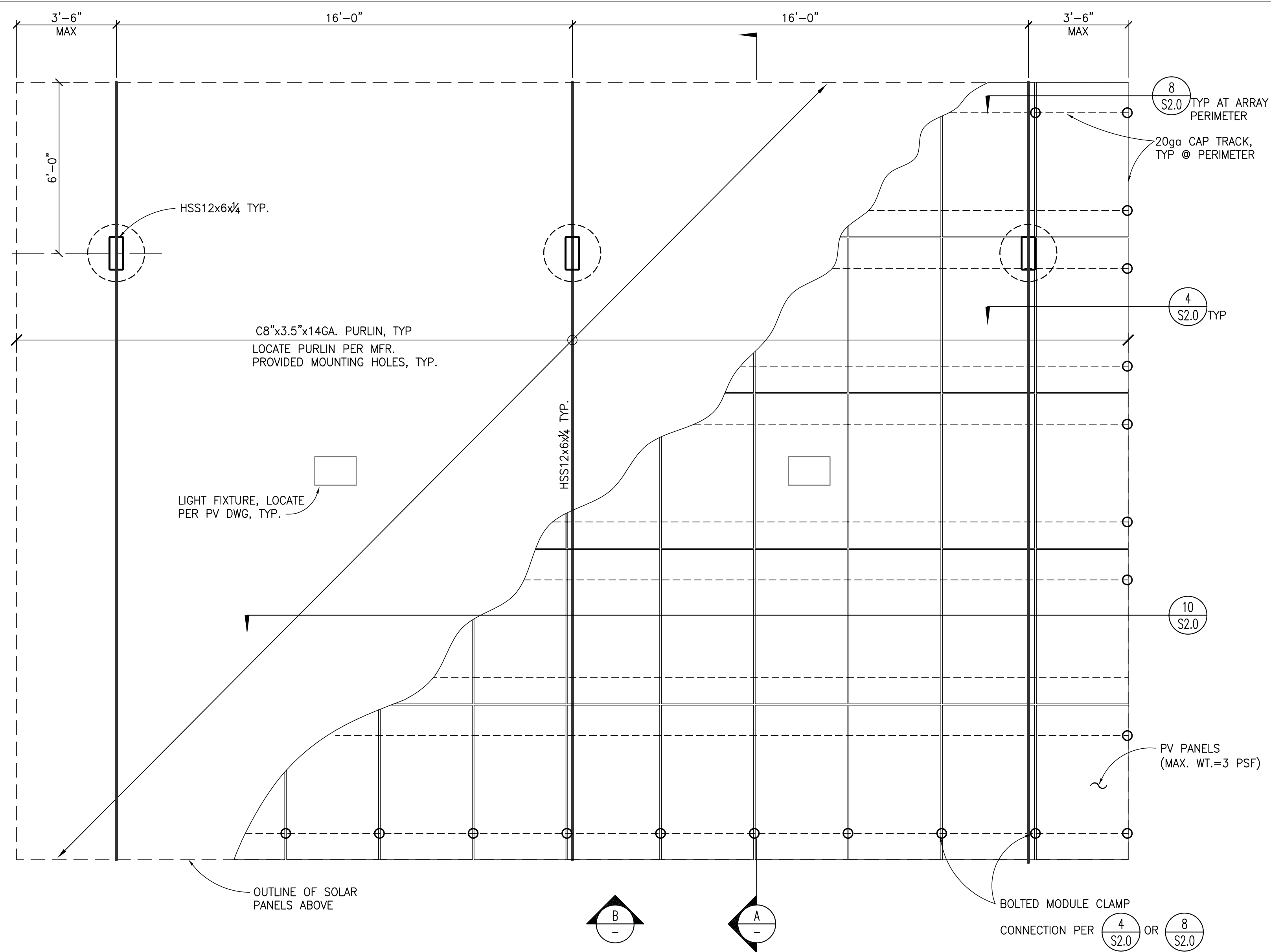
04.30.2013 - PREFINAL SUBMITTAL

GENERAL
STRUCTURAL
NOTES

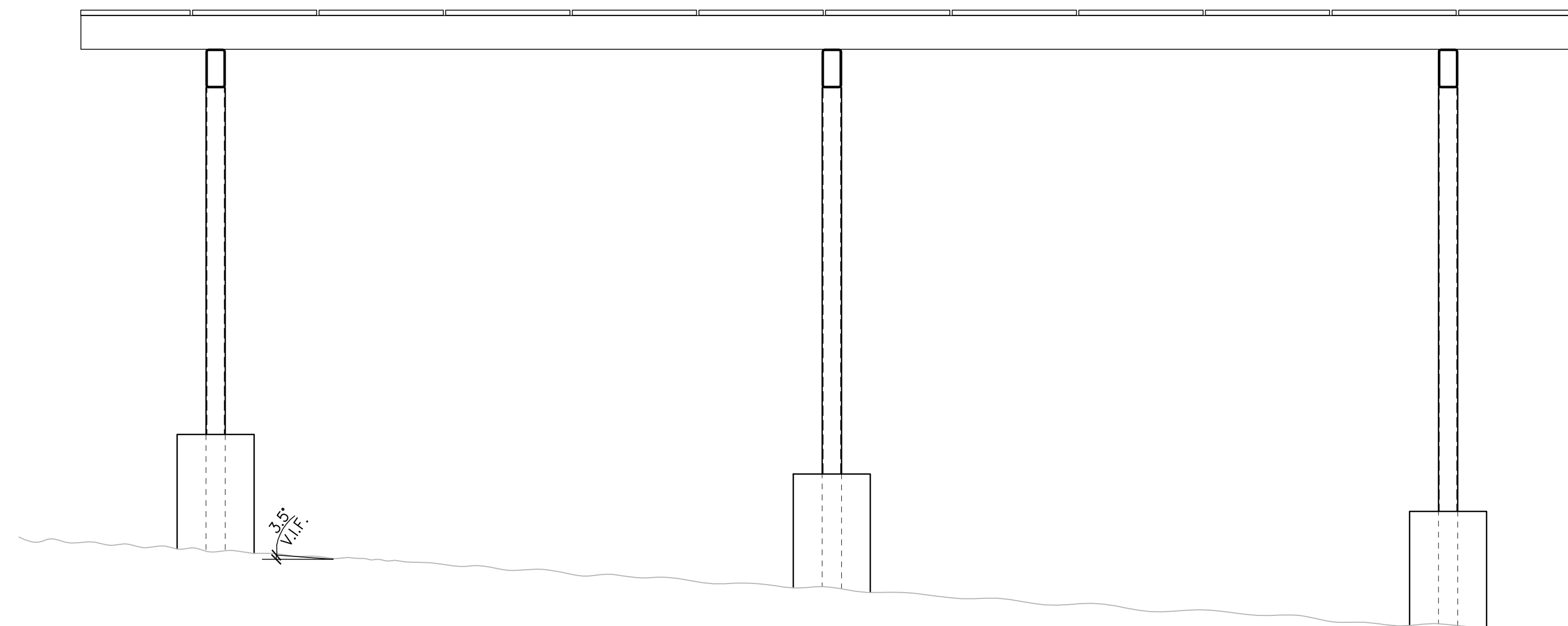
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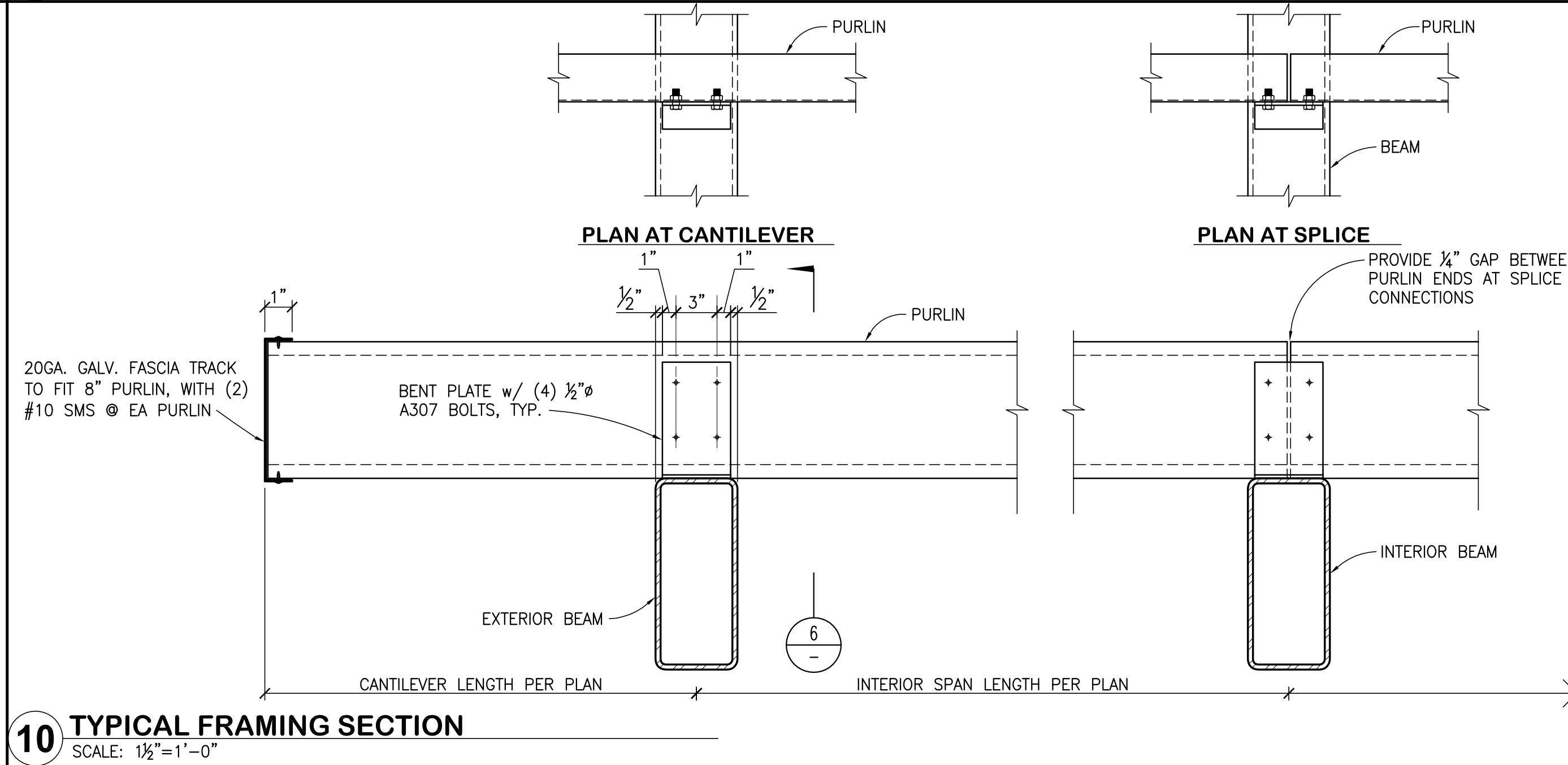
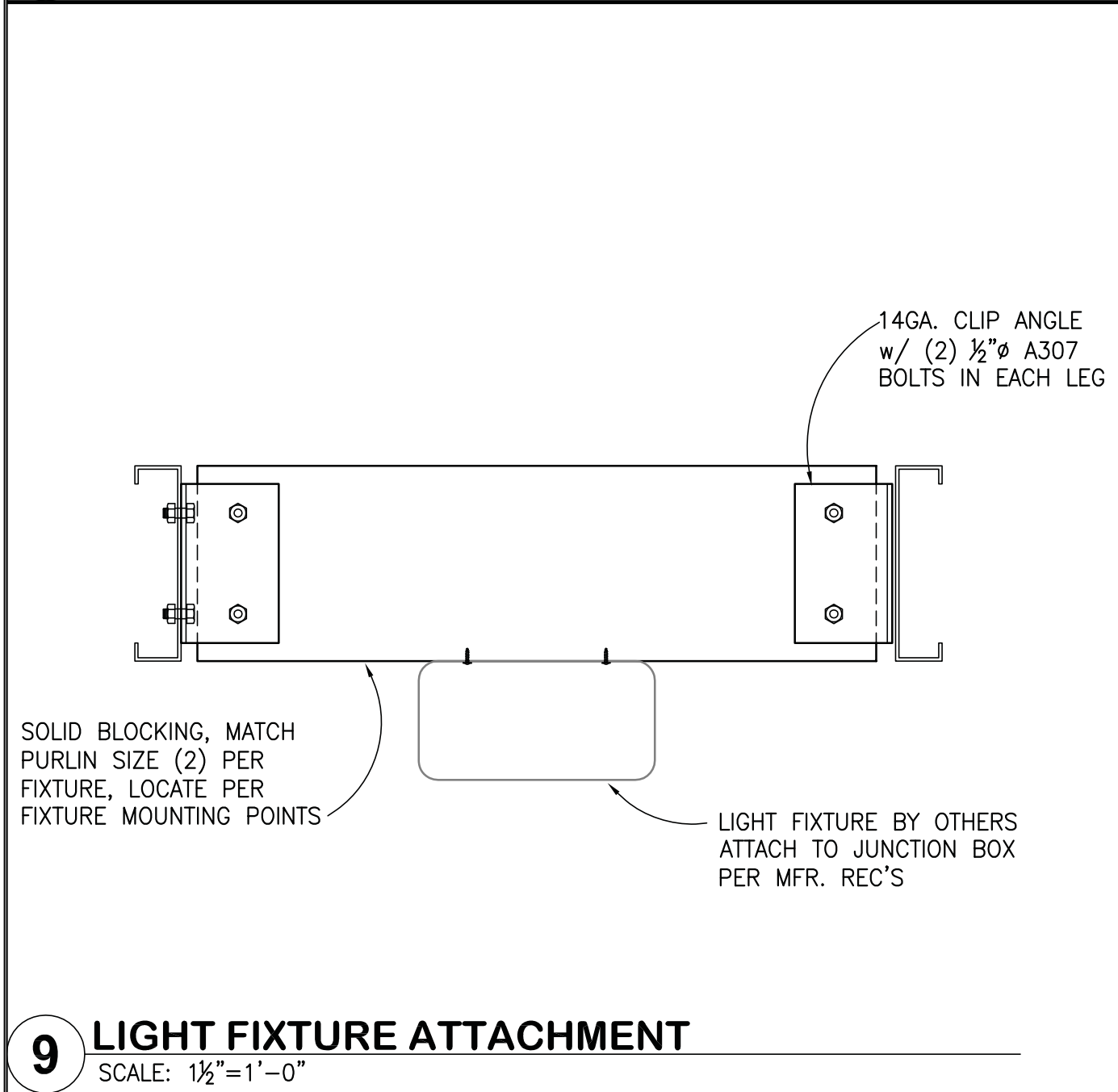
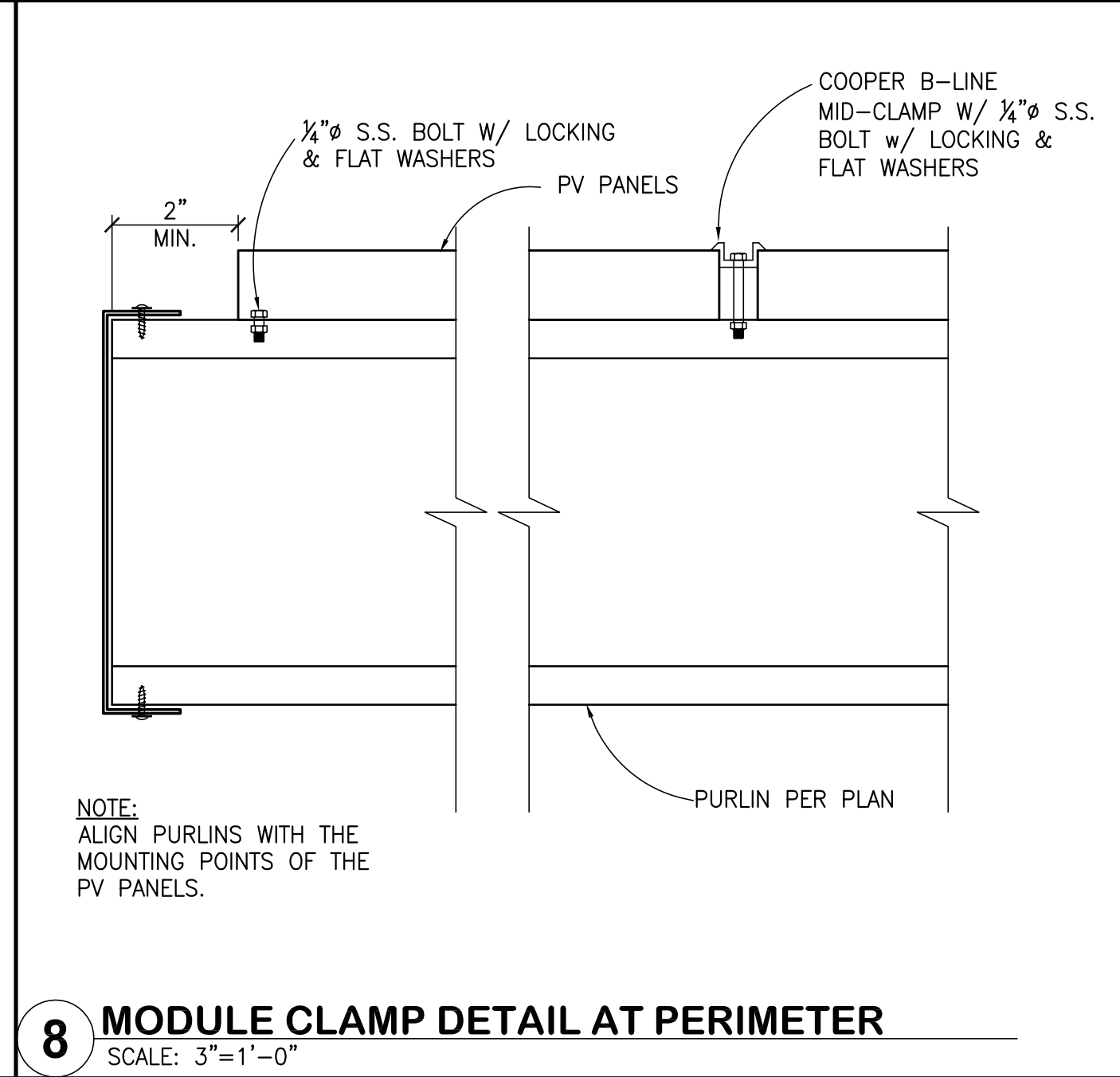
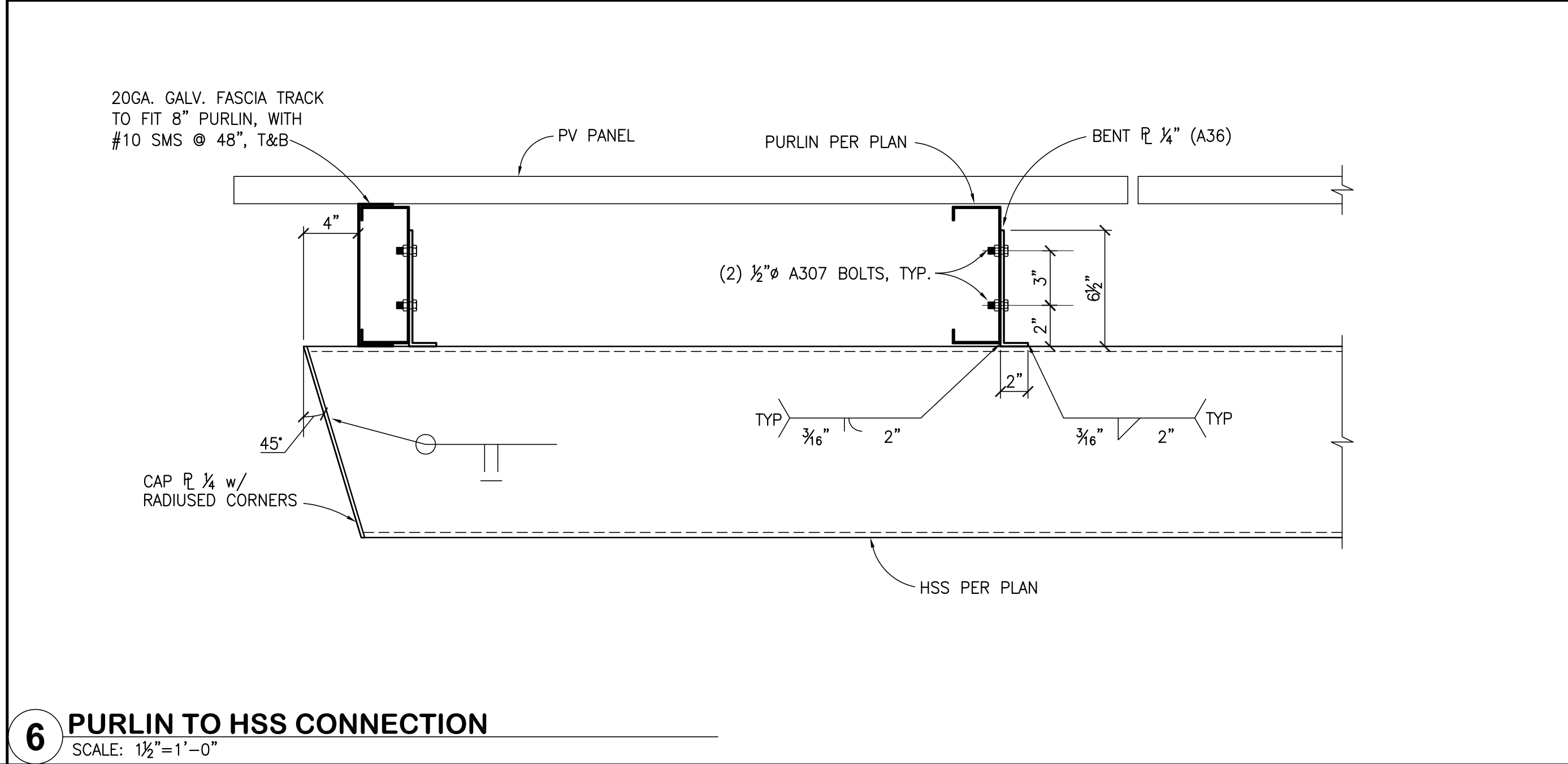
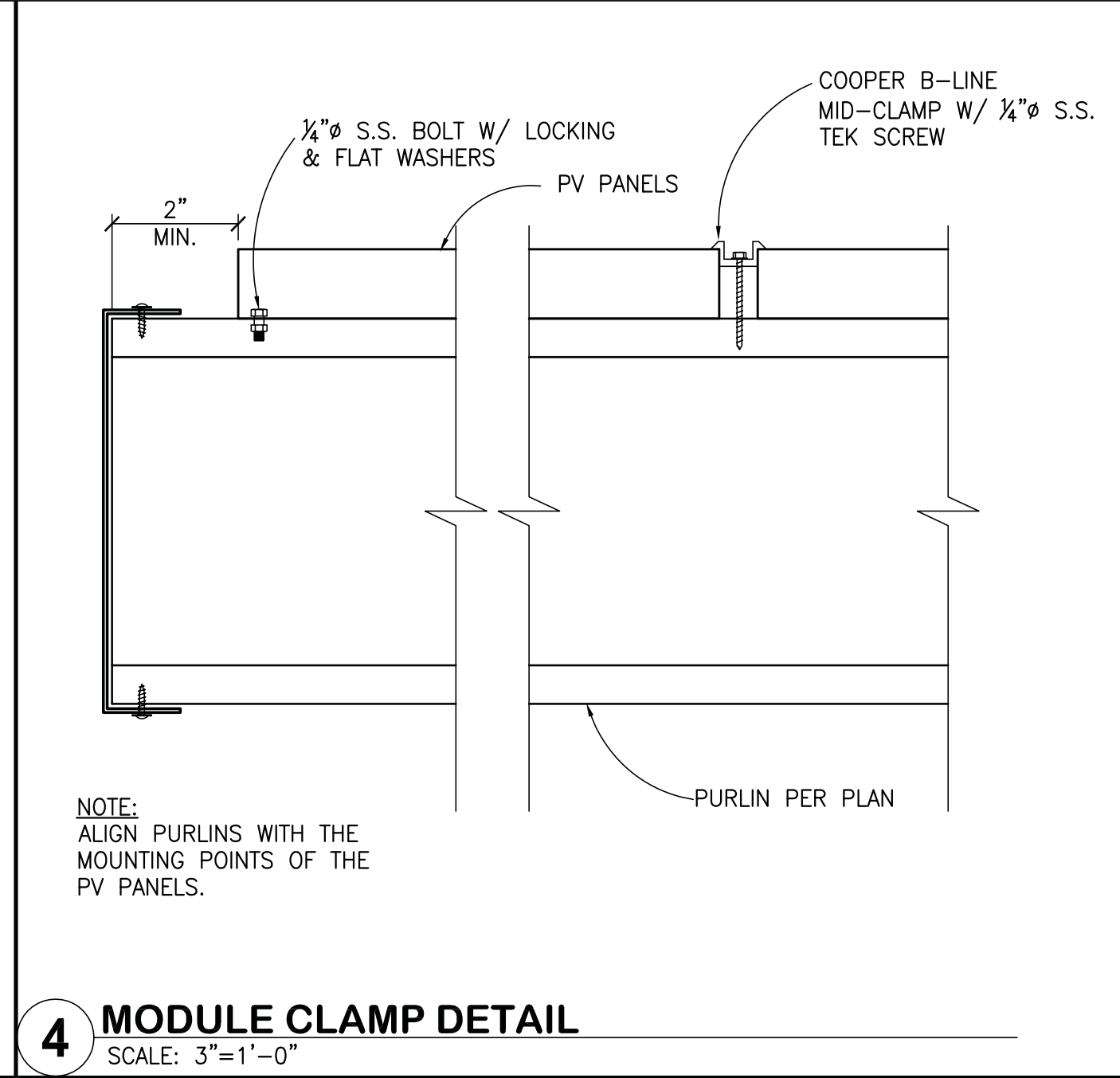
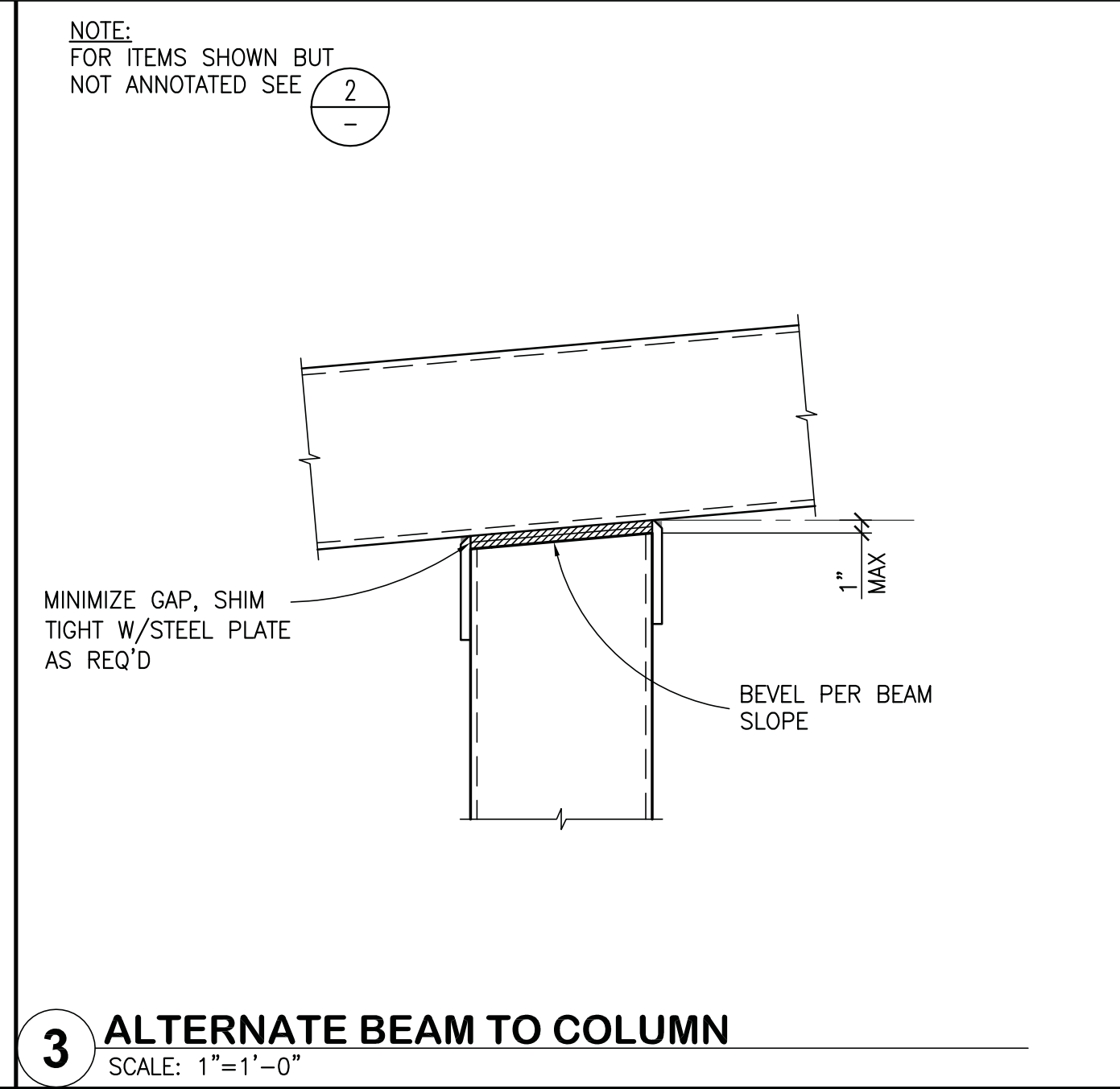
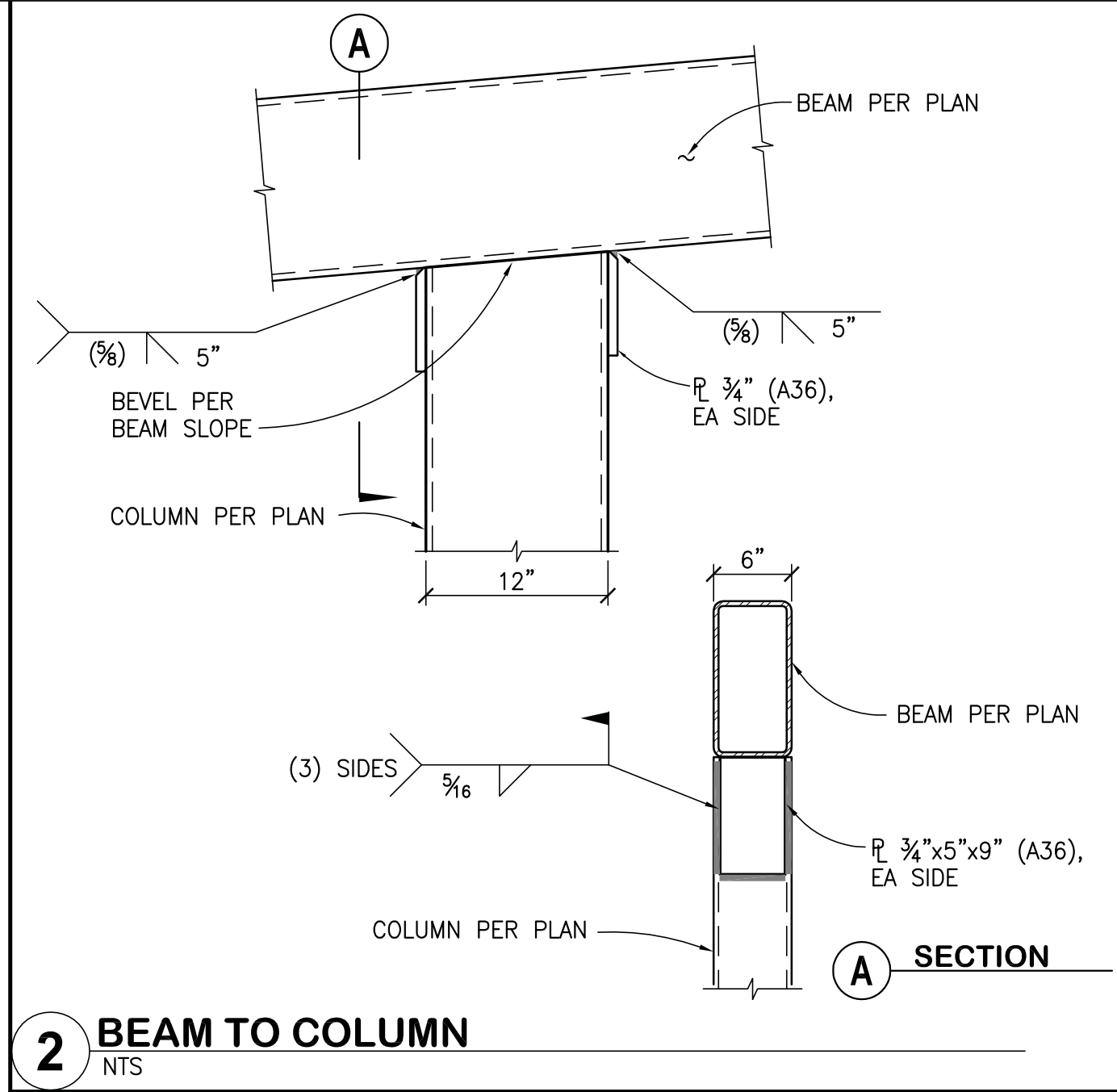
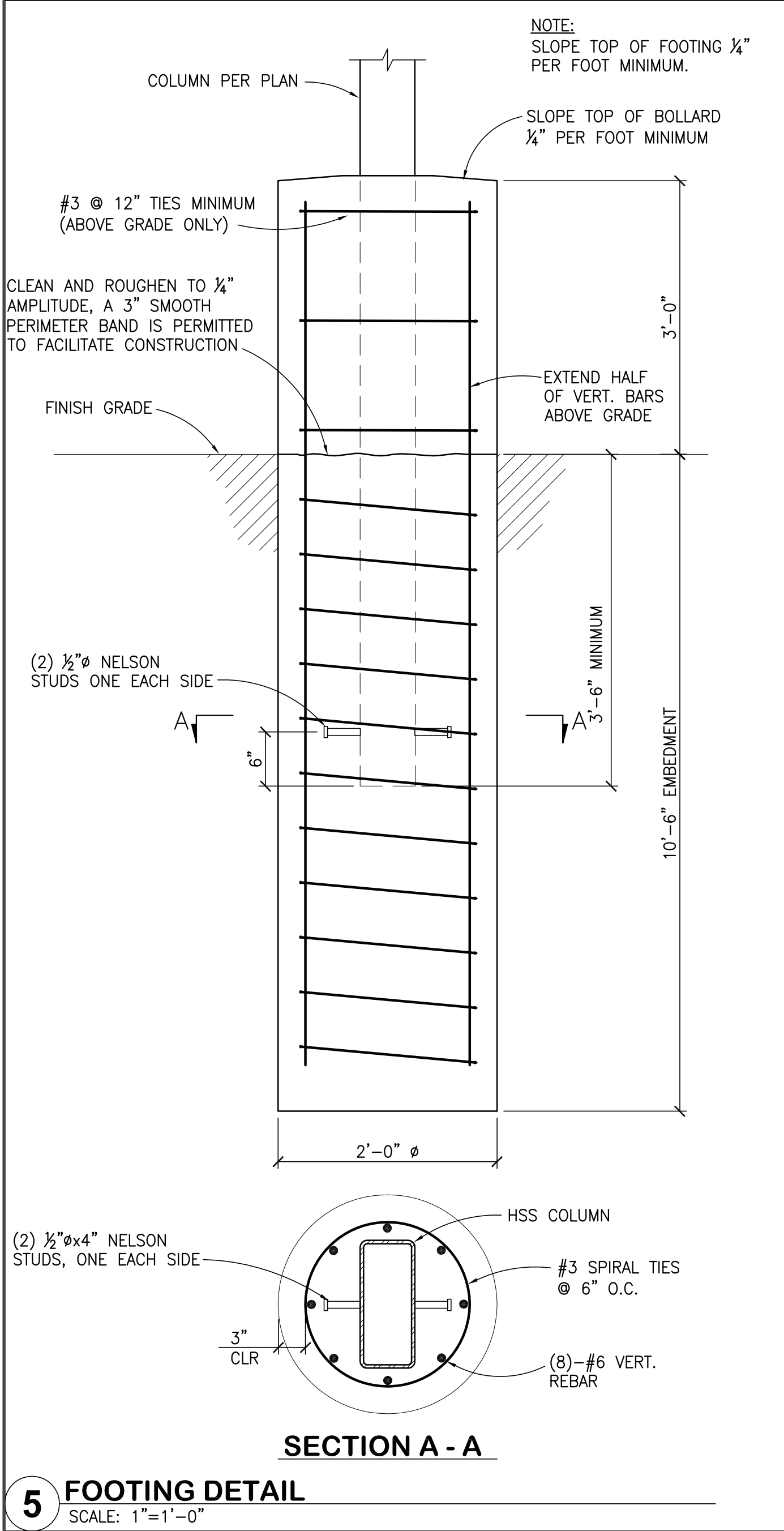
A SEMI-CANTILEVER SECTION
SCALE: 3/8"=1'-0"

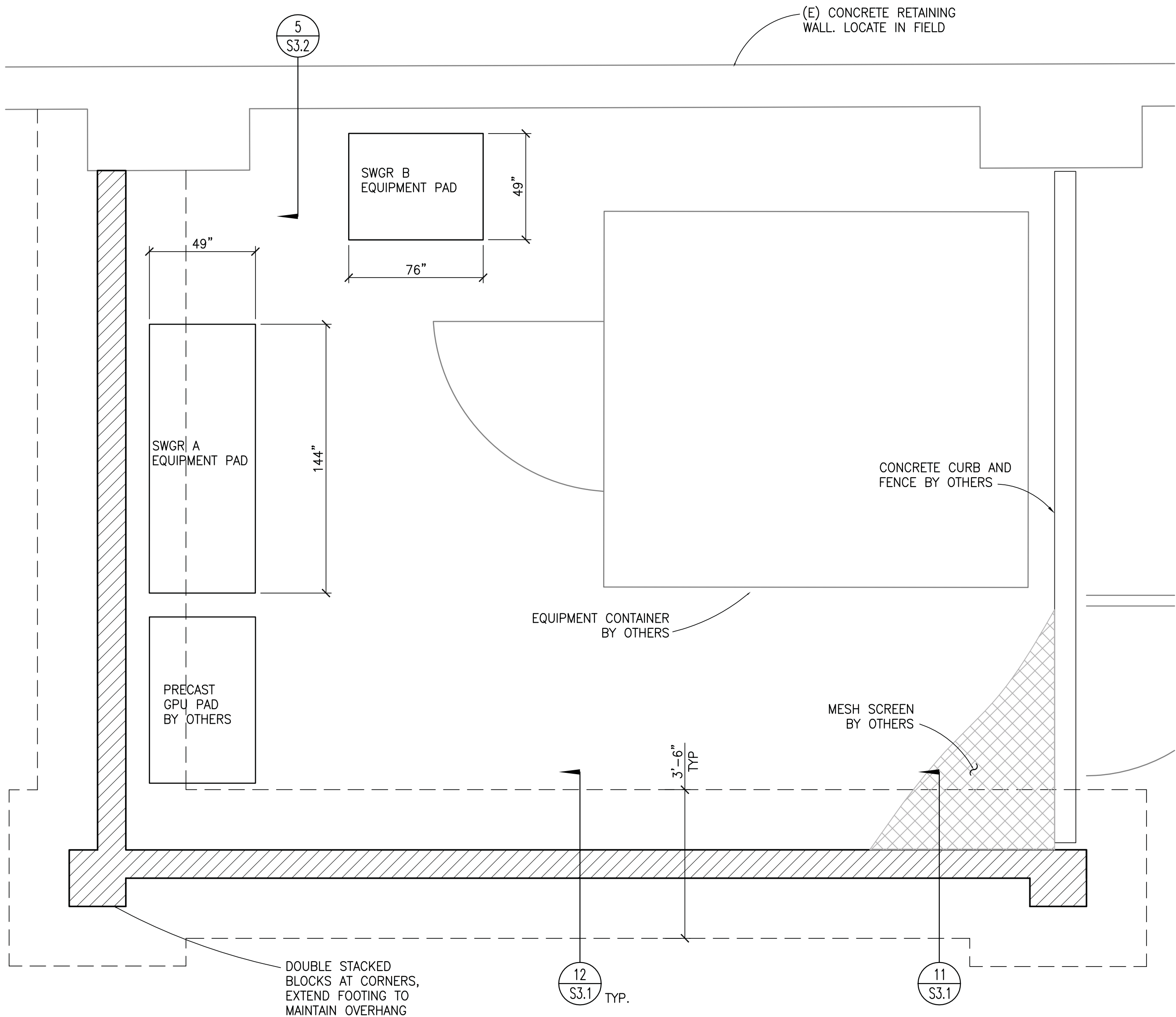


PLAN VIEW AT 16'-0" BAY - SEMI-CANTILEVER STRUCTURE
SCALE: 3/8"=1'-0"

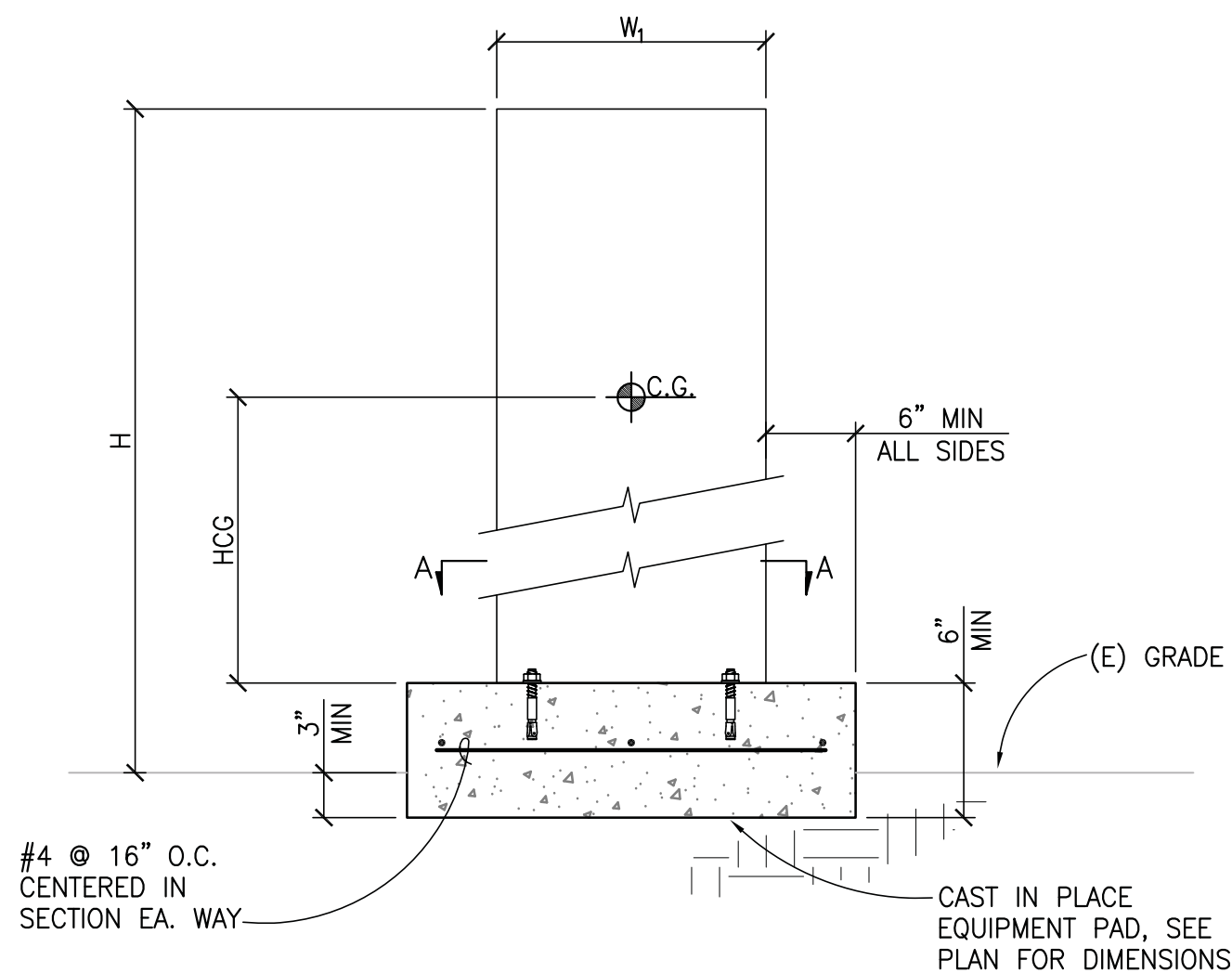


B SEMI-CANTILEVER SECTION
SCALE: 3/8"=1'-0"





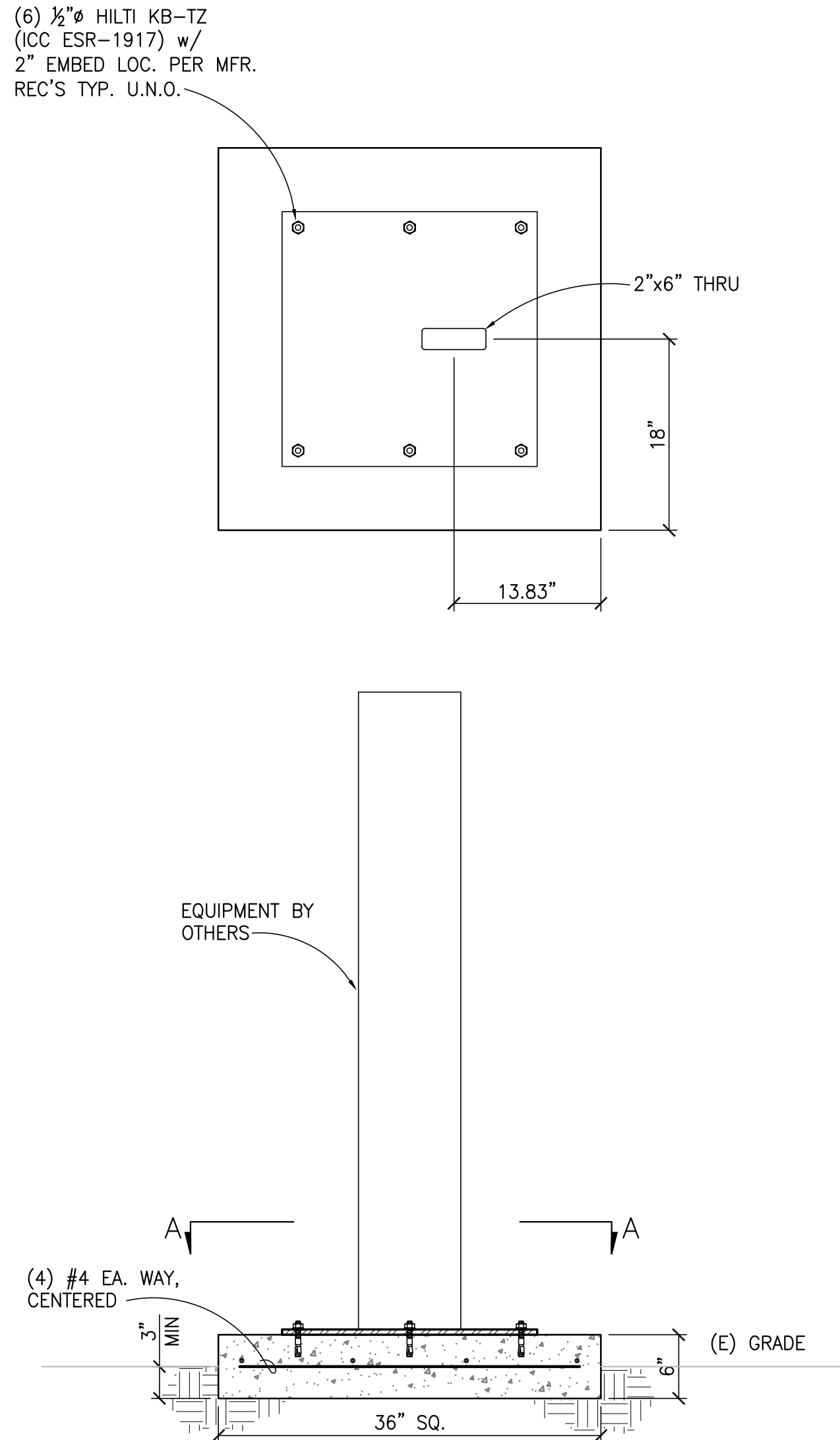
9 EQUIPMENT ENCLOSURE: PARTIAL PLAN
SCALE: 1/2"=1'-0"



SECTION A-A

EQUIPMENT ID	MAX WT (#)	H (in)	HCG (in)	L (in)	W (in)
SWGR A	3000	90	60	144	49
SWGR B	3000	90	60	76	49

11 EQUIPMENT PADS AND ANCHORAGE
SCALE: 1/2"=1'-0"

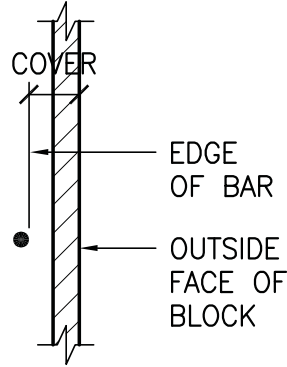


12 EVSE CONCRETE PEDESTAL AND ANCHORAGE
SCALE: 1"=1'-0"

MASONRY REINFORCING BAR DEVELOPMENT & LAP SPLICE LENGTH. (INCHES) FOR CMU STRENGTH f'm = 1500 PSI							
NOMINAL BLOCK SIZE	COVER (IN.)	REINFORCING BAR SIZE					
		#3	#4	#5	#6	#7	#8
8"	<3/4"	16	22	34	54	63	72
	≥3/4"	16	21	26	46	62	72

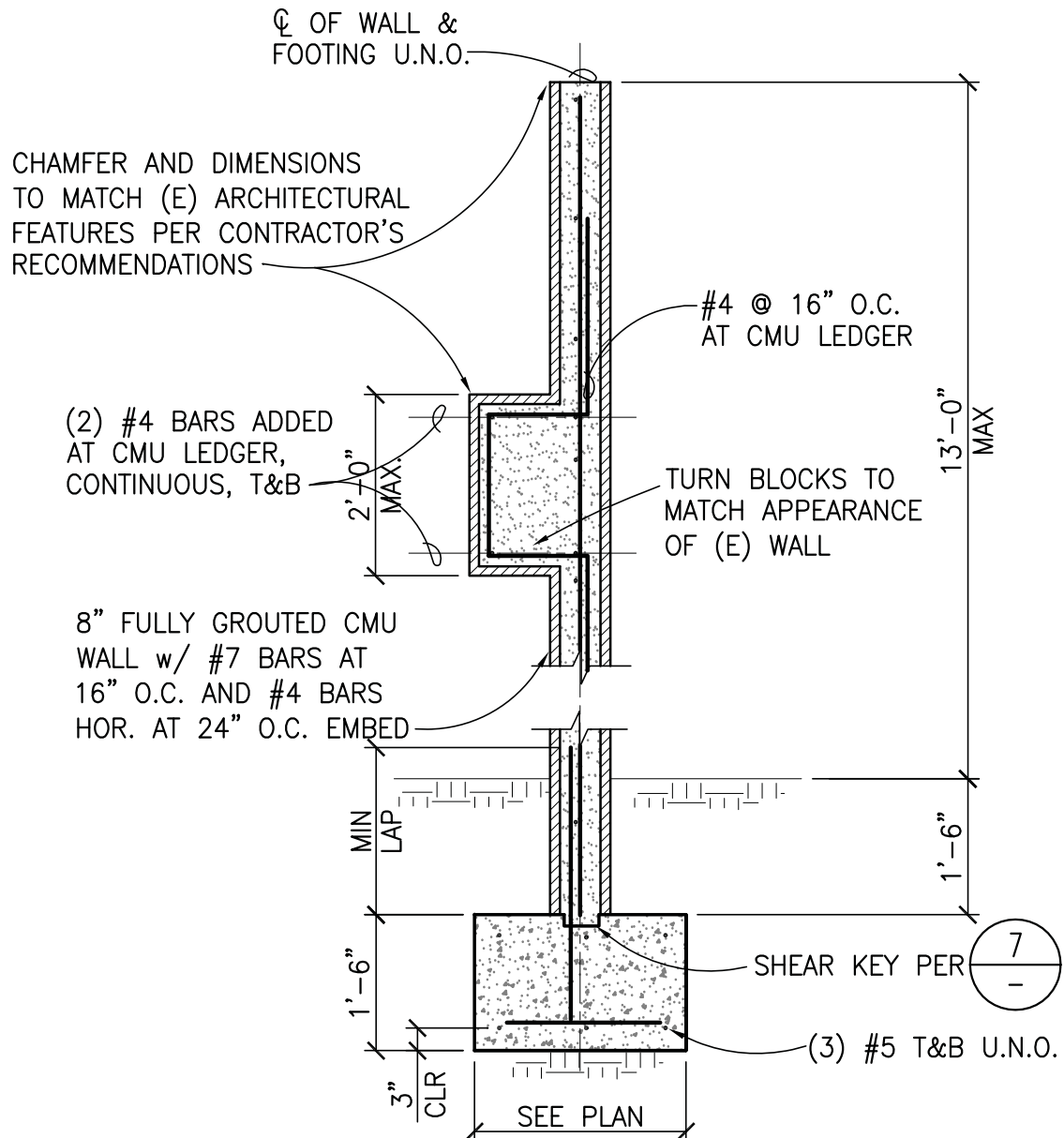
NOTES:

- COVER ≤ BAR SPACING ASSUMED. COVER IS DISTANCE FROM OUTSIDE FACE OF BLOCK TO EDGE OF BAR.
- BARS SPLICED BY NONCONTACT LAP SPLICES SHALL BE SPACED TRANSVERSELY A DISTANCE APART NOT GREATER THAN 1/5 THE REQUIRED LENGTH OF THE LAP SPLICE OR MORE THAN 6".
- #9 AND LARGER BARS SHALL BE SPLICED BY WELDING OR BY APPROVED MECHANICAL CONNECTORS THAT CAN DEVELOP 125% OF THE SPECIFIED BAR STRENGTH IN TENSION.
- WHEN ADJACENT LAP SPLICES ARE SEPARATED BY 3" OR LESS, THE REQUIRED LAP LENGTH SHALL BE INCREASED BY 30%.



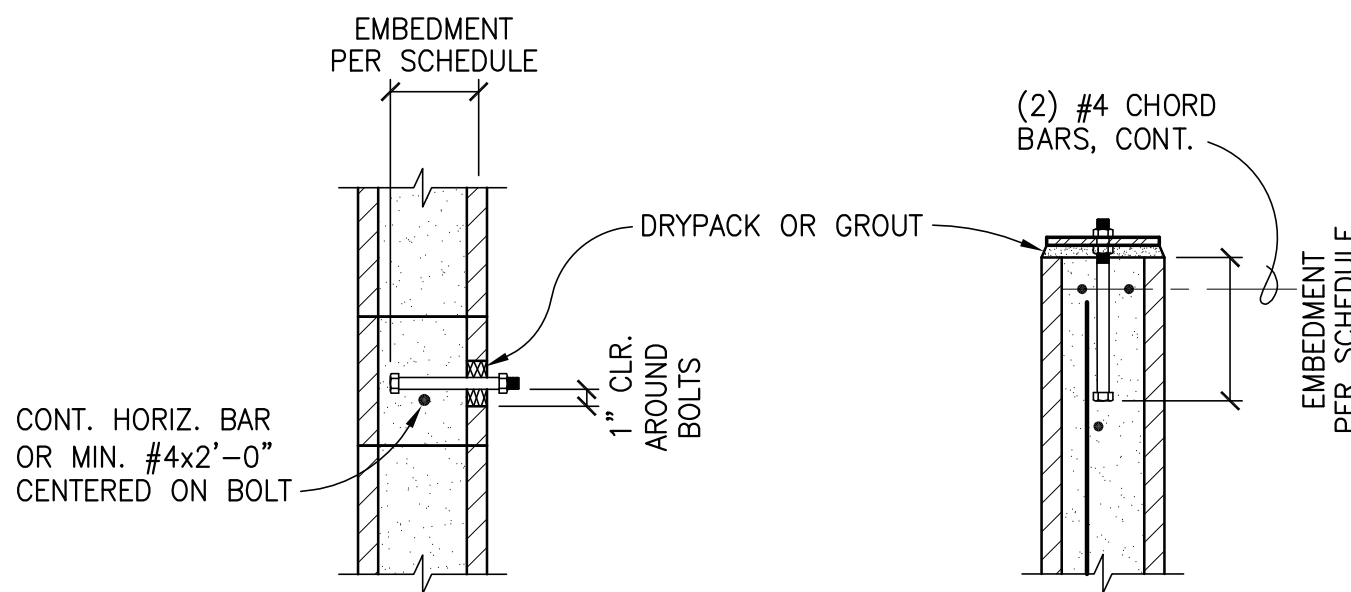
1 TYP. REINF. LAP SPLICE FOR MASONRY WALLS

No Scale



12 CONT. FOOTING AT EXTERIOR CMU WALL

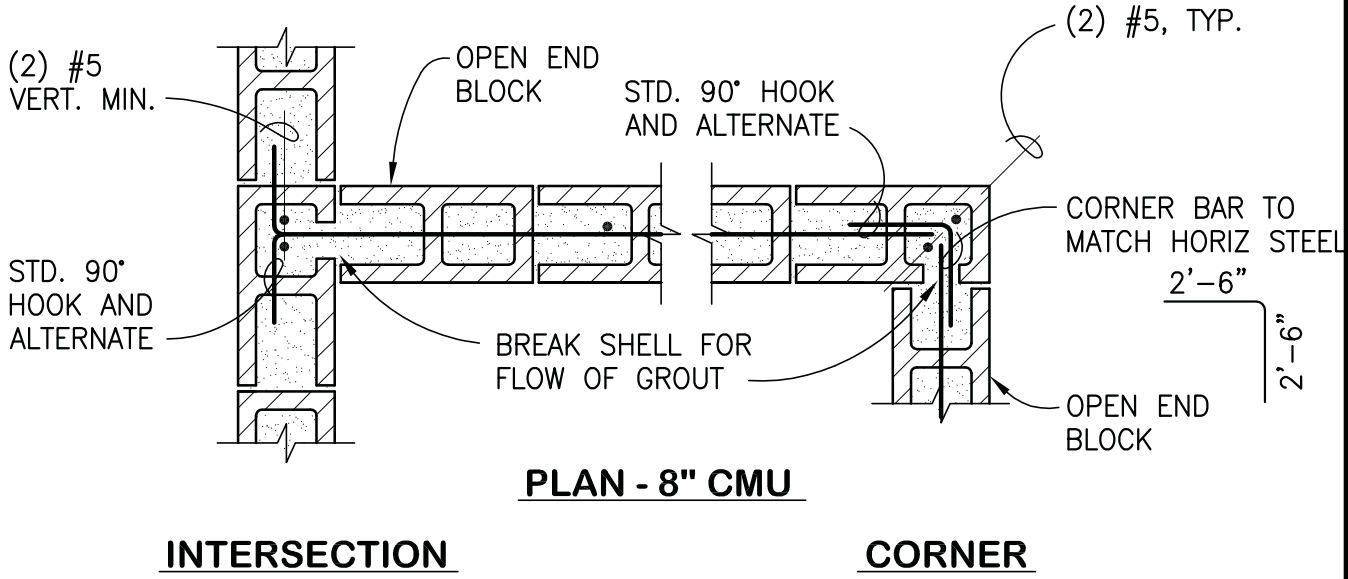
SCALE: 1/2"=1'-0"



MINIMUM EMBEDMENT LENGTH			
BOLT SIZE Ø	HORIZ. EMBED	VERT. EMBED	MIN. WALL THK.
1/2"	4"	6"	6"
5/8"	5"	7"	8"
3/4"	6"	8"	8"
7/8"	7"	9"	10"
1"	8"	10"	12"

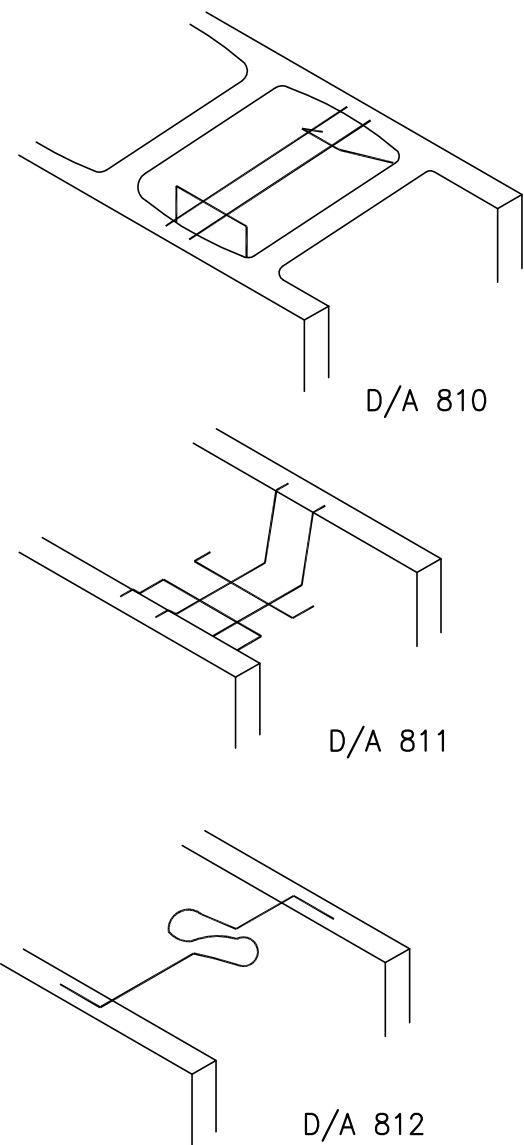
9 BOLT EMBEDMENT-CMU WALLS

SCALE: 1"=1'-0"



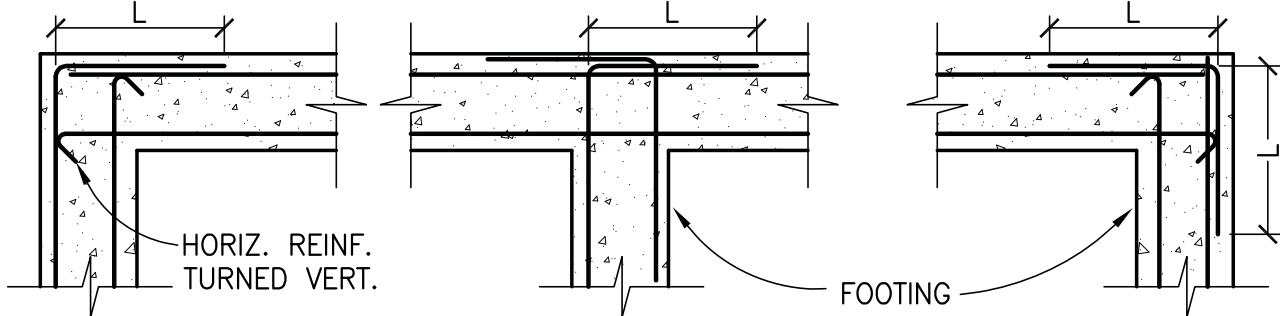
2 TYP. CMU WALL INTERSECTION AND CORNER DETAIL

SCALE: 1"=1'-0"



6 VERTICAL BAR POSITIONER

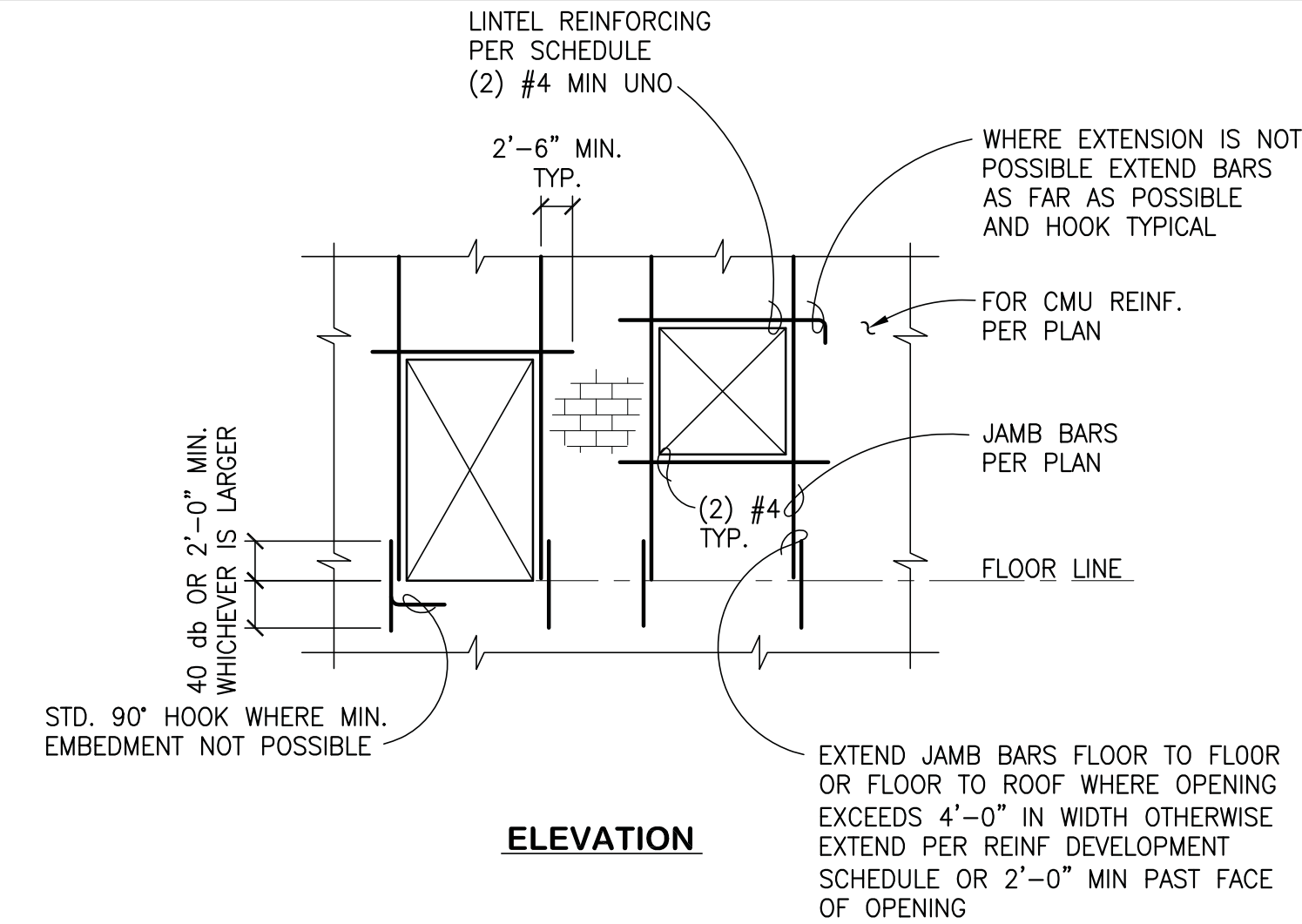
SCALE: 1"=1'-0"



NOTE: L=30D OR 1'-6" MINIMUM

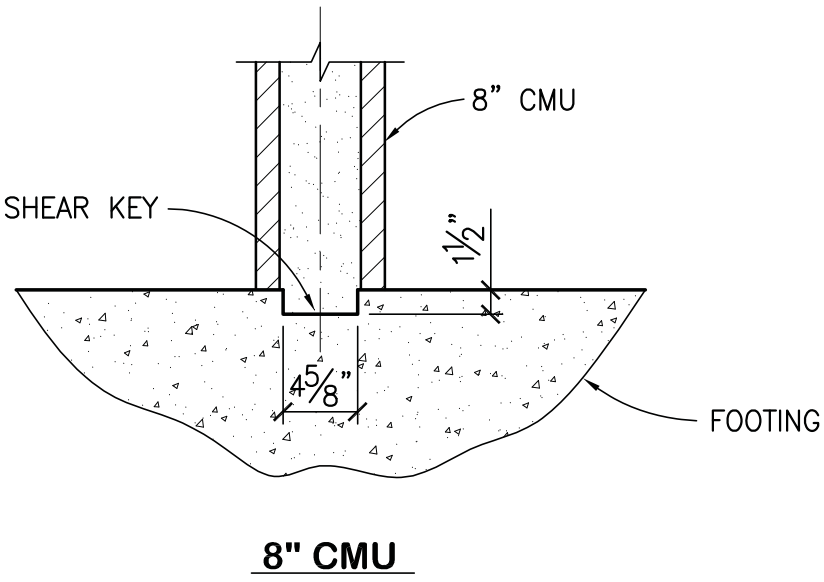
10 FOUNDATION CORNERS AND INTERSECTIONS

No Scale



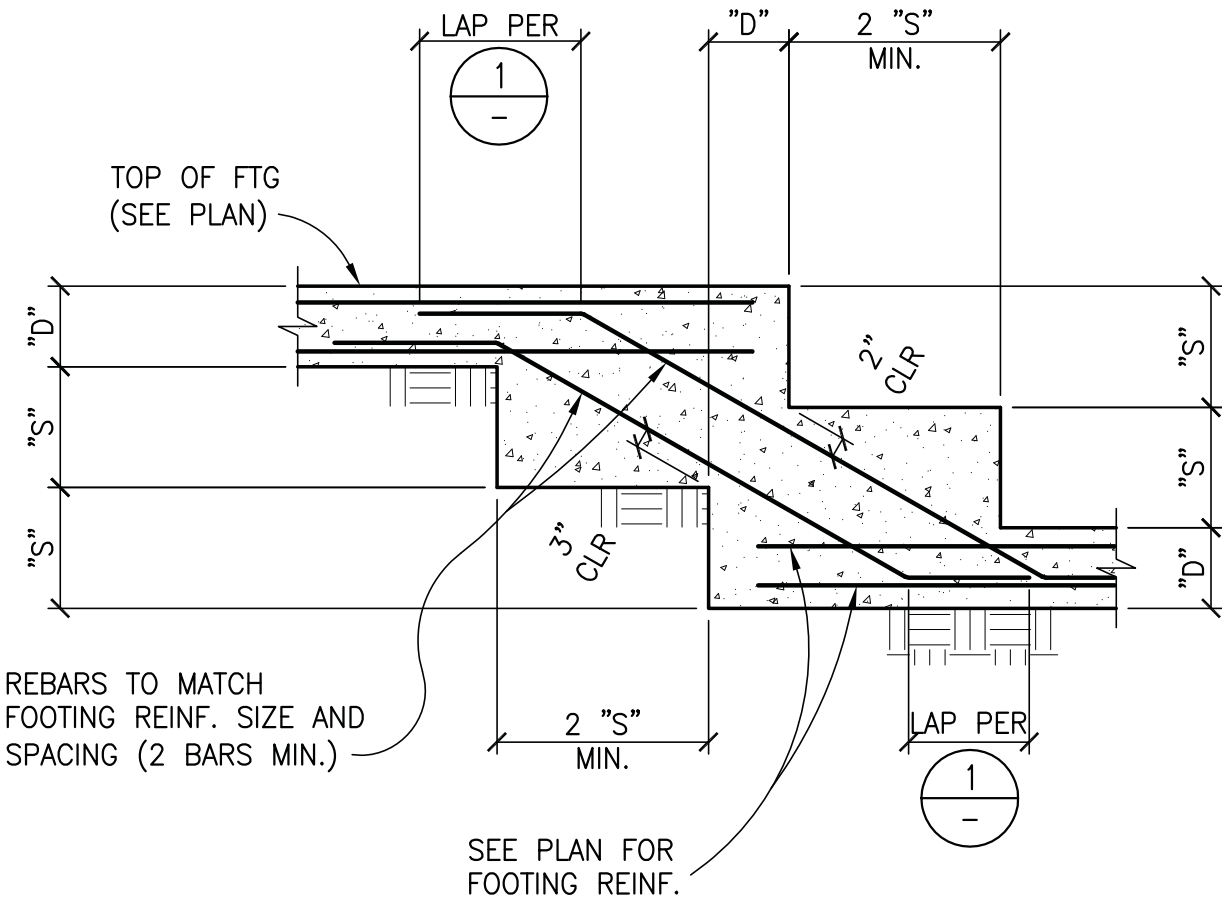
3 TYP. MIN. REINFORCING AT CMU WALL OPENINGS

SCALE: 1"=1'-0"



7 TYPICAL SHEAR KEY DETAIL

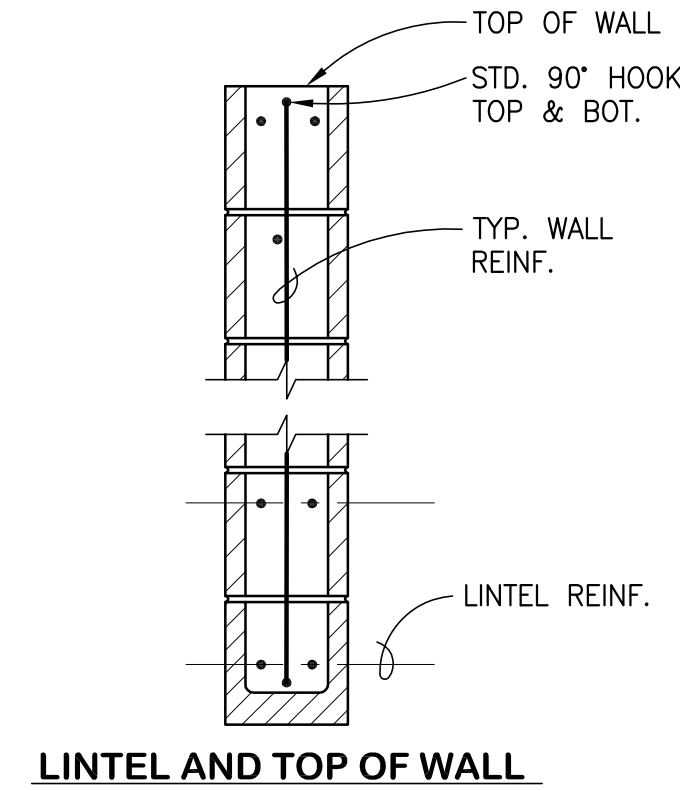
SCALE: 1"=1'-0"



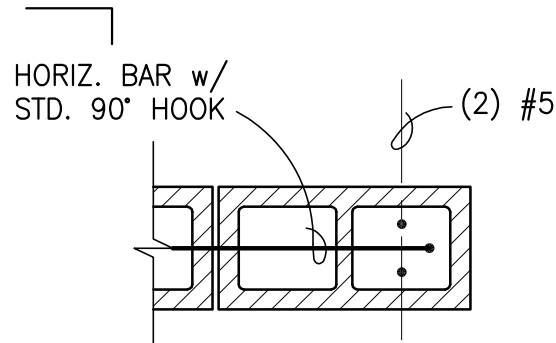
- NOTES:
- "D"=DEPTH OF FOOTING.
 - "S"=1'-6" MAX. U.N.O.

11 STEPPED FOOTING DETAIL

No Scale

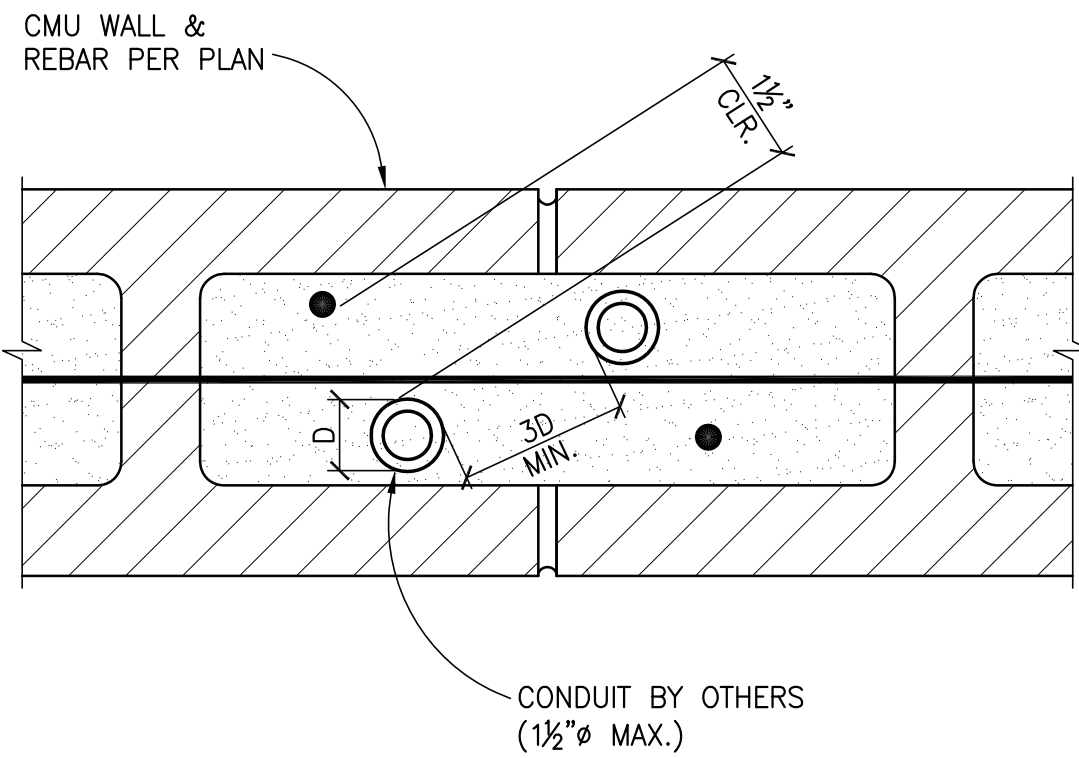


LINTEL AND TOP OF WALL



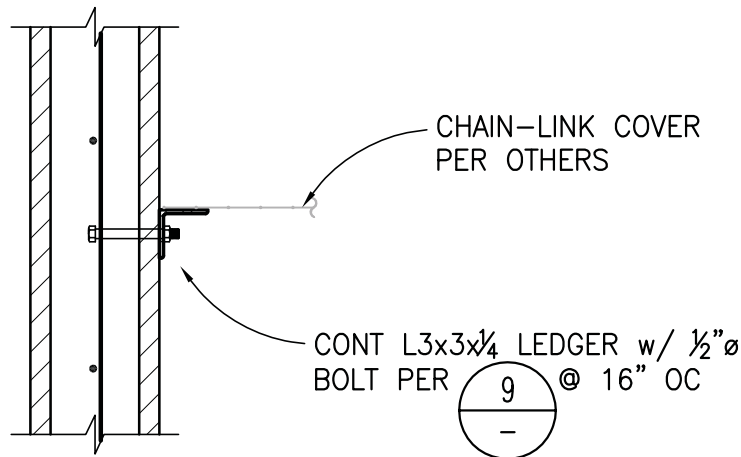
PLAN AT JAMB OR WALL END

- WHEREVER POSSIBLE, PLACE CONDUITS IN UNREINFORCED CELLS.
- WHEN CONDUITS MUST BE PLACED IN THE SAME CELL AS REBAR, SEE DETAIL BELOW.
- CONDUITS SHALL NOT BE RUN HORIZONTALLY IN WALLS.



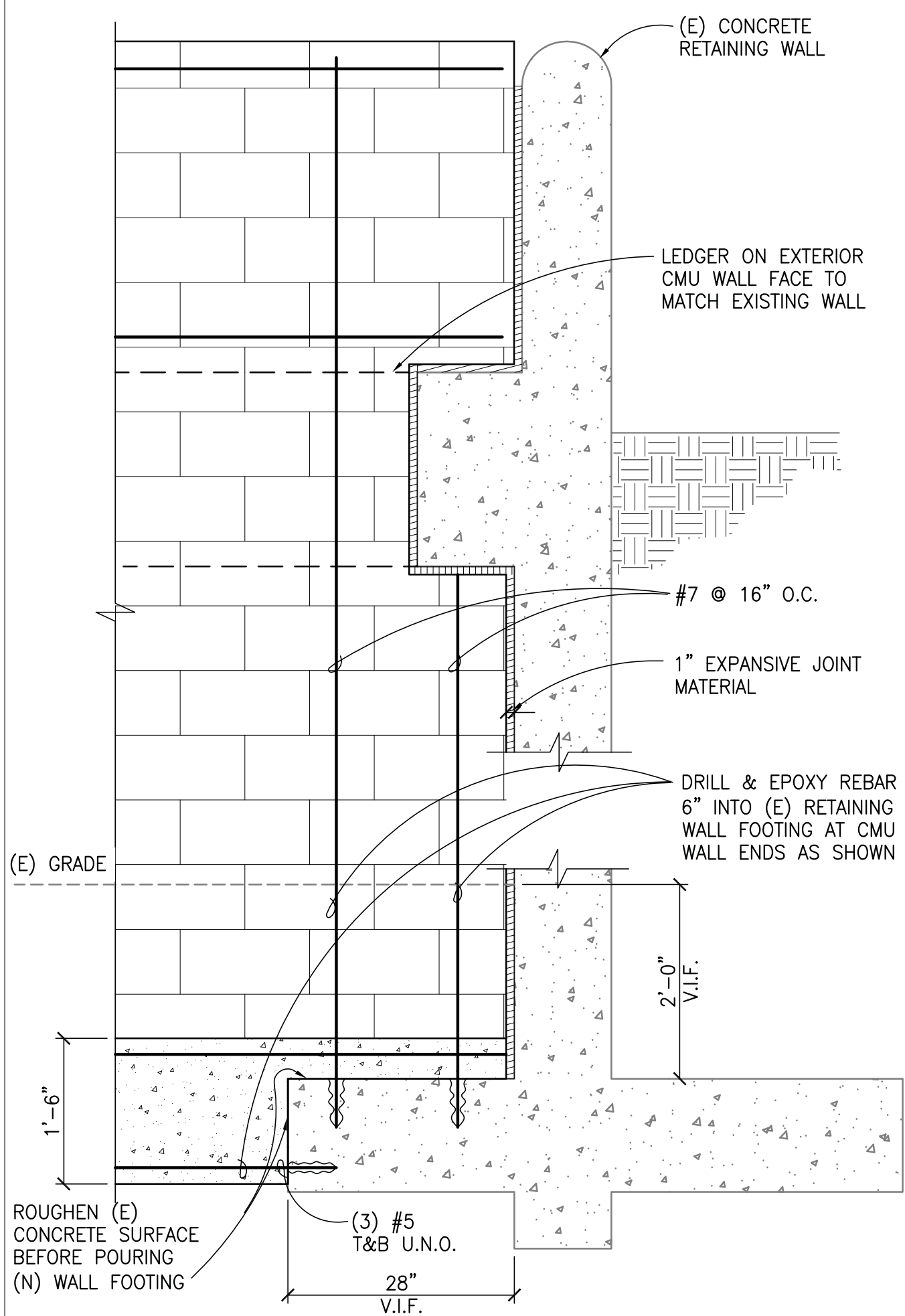
8 TYP. VERTICAL CONDUITS IN CMU WALLS

SCALE: 3/4"=1'-0"






















11 NON-STRUCTURAL LEDGER TO CMU WALL

No Scale



5 SECTION AT EXISTING RETAINING WALL
SCALE: 3/4"=1'-0"

IRRIGATION LEGEND

SYMBOL	MANUFAC-TURER	MODEL NUMBER	DESCRIPTION	GPM	RAD.	DETAIL/SHEET	Notes
	RAINBIRD	RWS-M-BGC-1402 w/ RWS SOCK	TREE BUBBLER IN 18" TUBE (2 per palm)	0.5	—	A/LA1.2	use 18" root watering system w/palms
		RWS-BGC-1402 w/ RWS SOCK	TREE BUBBLER IN 36" TUBE (2 per tree)	0.5	—		use 36" root watering system w/ trees
	HUNTER	PCB-50	PRESSURE COMPENSATING BUBBLER NOZZLE ON 4 INCH RISER	0.5	—	B/LA1.2	
	HUNTER	PGH-ADJ-02	12" POP-UP ADJUSTABLE ROTOR	0.9	30'		
	HUNTER	PRO6-12-CV-8	12" POP-UP GRAY, ARC AS INDICATED	0.24—0.95	8'		adjust nozzles to cover planting areas and not overspray on hardscape (as much as possible)
	HUNTER	PRO6-12-CV-10	12" POP-UP GRAY, ARC AS INDICATED	0.39—1.62	10'		
	HUNTER	PRO6-12-CV-ES-515	12" POP-UP GRAY END STRIP	0.65	5X15'		
	HUNTER	PRO6-12-CV-SS-530	12" POP-UP GRAY SIDE STRIP	1.3	5X30'		
			POINT OF CONNECTION AT DEL LAGO BOULEVARD. CONTRACTOR TO VERIFY.				
		METER	1/2 INCH WATER METER INSTALLED BY AGENCY. CONTRACTOR TO VERIFY.				
	WILKINS	975 XLS	1/2 INCH PRESSURE REDUCING BACKFLOW PREVENTER				
N/A	STRONGBOX	SBBC-3066	BACKFLOW PREVENTION ENCLOSURE				
	SUPERIOR	3200	2 INCH MASTER VALVE: SUPERIOR 3200, NORMALLY CLOSED				Locate all valve and valve boxes in planting areas. Install all valve boxes 1 inch above finished grade.
	CALSENSE	FM-15	1/2 INCH FLOW METER, IMMEDIATELY DOWNSTREAM FROM MASTER VALVE				
N/A		VALVE BOX	9 1/2 x 16 x 11 INCH RECTANGLUAR BOX WITH BOLT DOWN COVER (PER SPECIFICATIONS) WITH R.C.V. AND VALVE NUMBER HEAT BRANDED INTO TOP.				
	KING BROS.	BTU SERIES	LINE SIZE TRUE UNION BALL VALVE WITH SLIP ENDS				
	HUNTER	ICV-F6	ELECTRONIC CONTROL VALVE. SIZE AS SHOWN ON PLANS.				
	CALSENSE	ET2000e-24-66E	24 STATION CENTRAL CONTROLLER AND ENCLOSURE PEDESTAL				Locate controller enclosure in visible location in an easily accessible planting area, facing parking stall
N/A	HUNTER	SG-MC	RAIN SENSOR, MOUNT ON CONTROLLER ENCLOSURE, NOT ON LID				
	RAIN BIRD	33DLRC	QUICK-COUPLING VALVE				
	LASCO OR EQUIVALENT	CLASS 200 PVC	2 INCH PVC CLASS 200 PRESSURE MAINLINE, DOWNSTREAM OF P.O.C. WITH MINIMUM 18 INCHES COVER LOCATE WITHIN PLANTING AREAS TO THE MAXIMUM EXTENT POSSIBLE.			C,D/LA1.2	
	LASCO OR EQUIVALENT	SCHEDULE 40 PVC	SCHEDULE 40 PVC LATERAL LINES, DOWNSTREAM OF VALVES WITH MINIMUM 12 INCHES COVER LOCATE WITHIN PLANTING AREAS TO THE MAXIMUM EXTENT POSSIBLE. SLEEVE UNDER PAVEMENT.			C/LA1.2	All lateral lines shall be 3/4" unless otherwise noted
	LASCO OR EQUIVALENT	CLASS 200 PVC	PVC SLEEVE 2X PIPE SIZE. SEE NOTE 13				

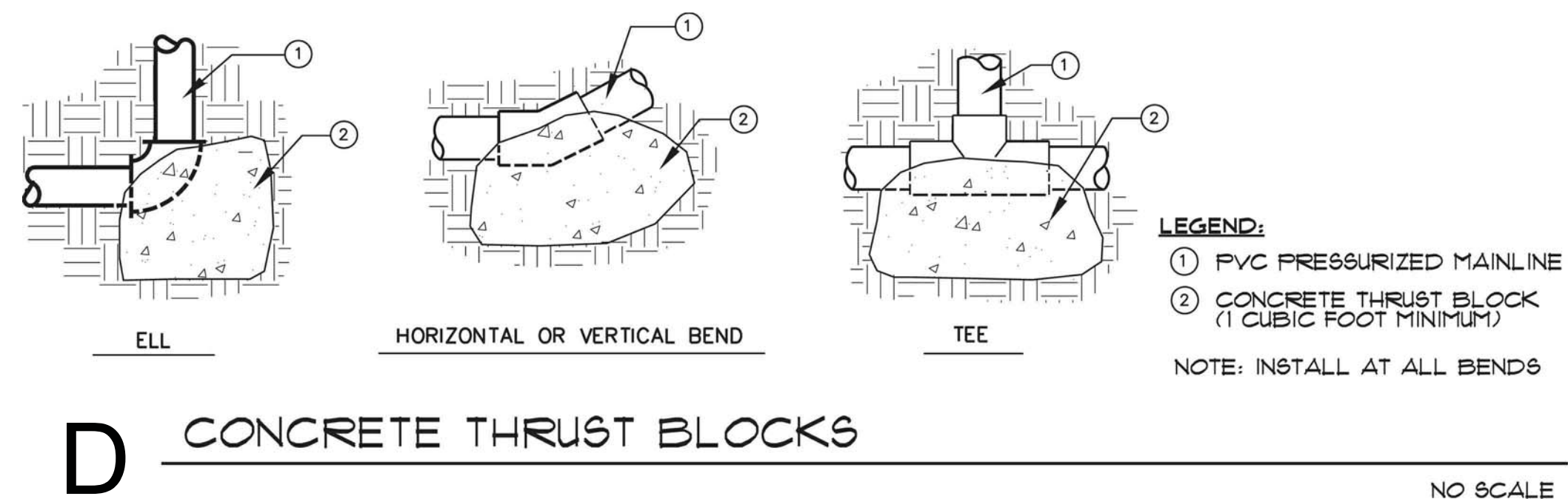
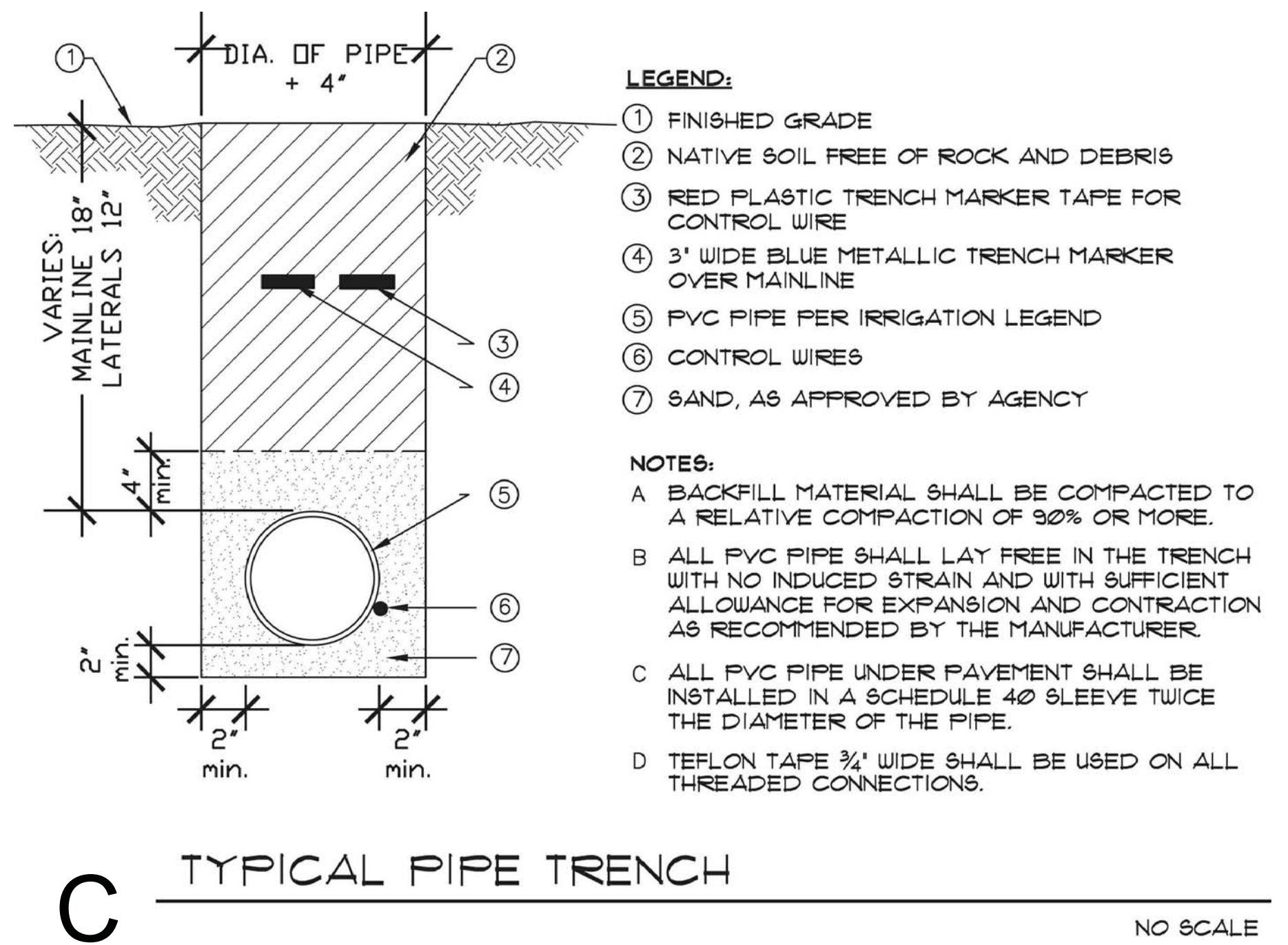
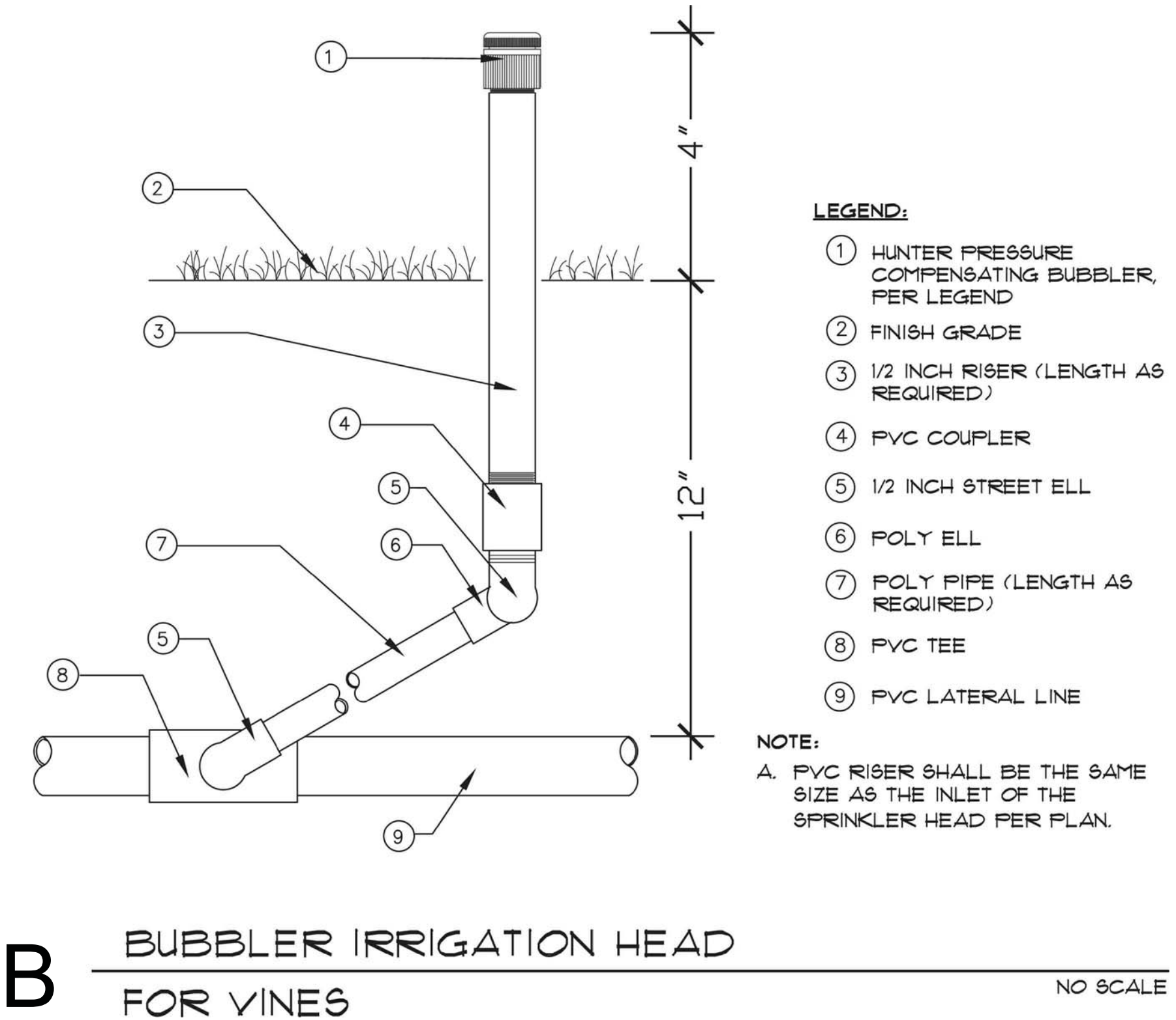
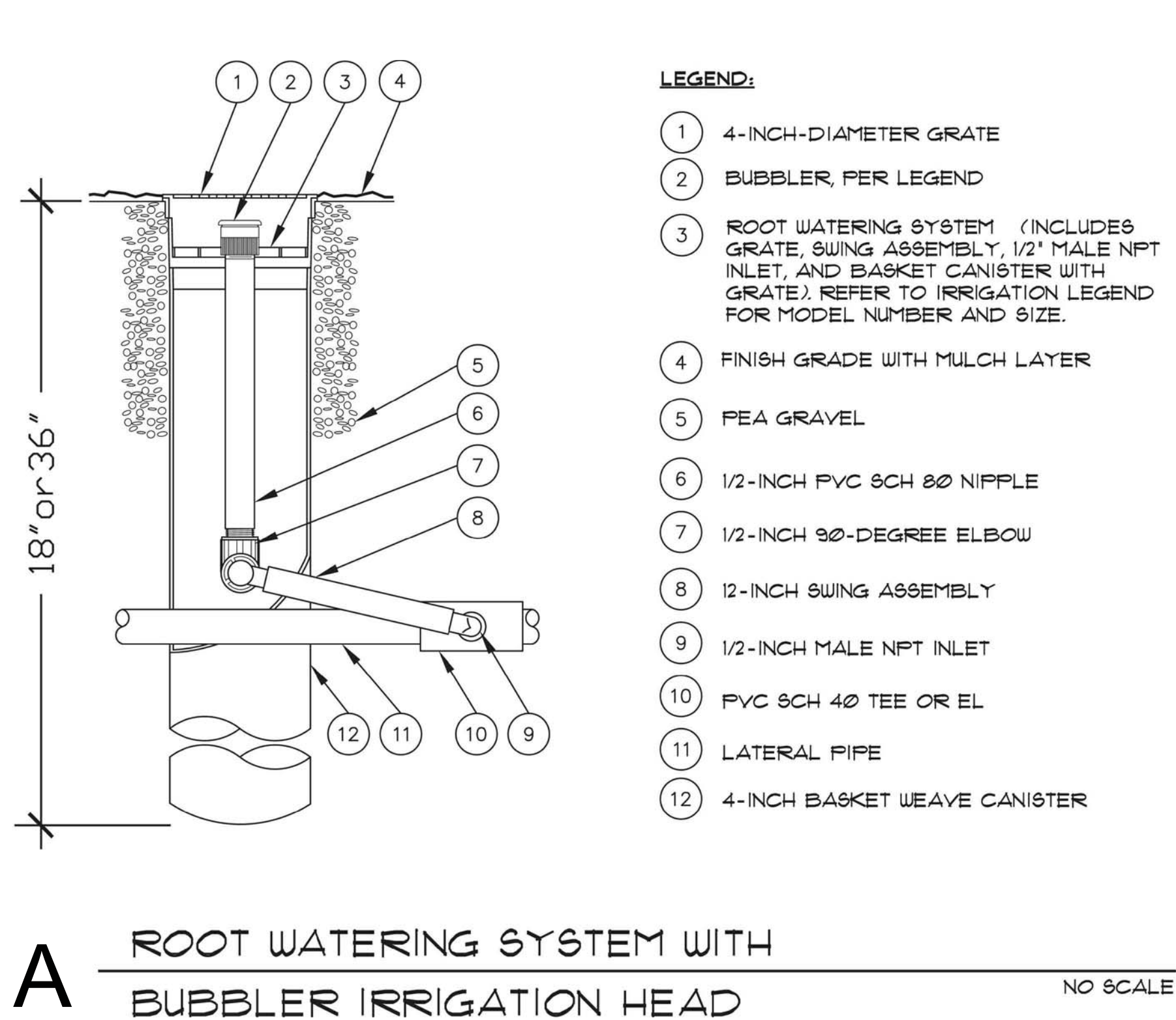
NOTE: NOT ALL EQUIPMENT APPEARS ON PLAN

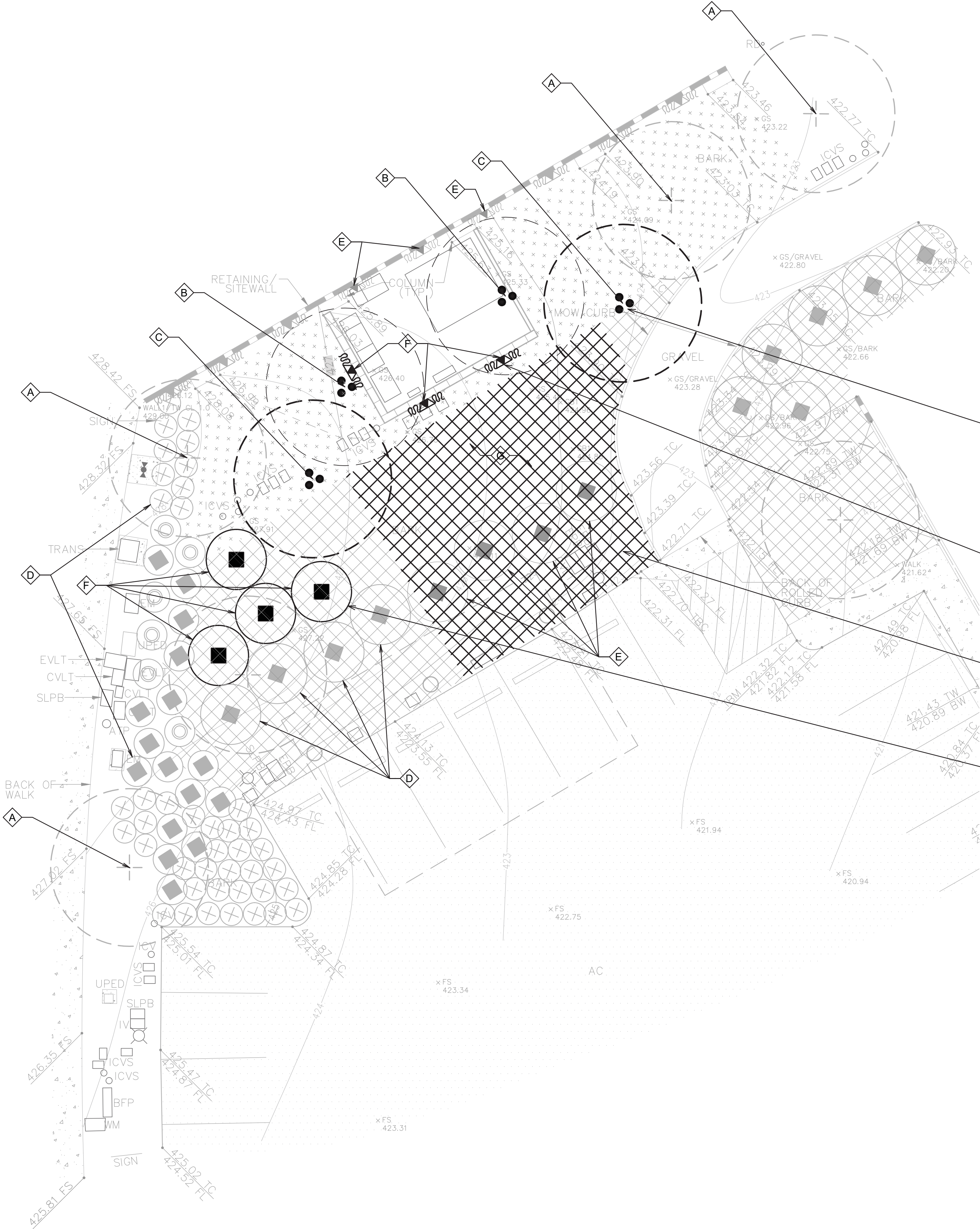
EXISTING IRRIGATION SYSTEM NOTES

1. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A SET OF THE RECORD DRAWINGS FROM THE OWNER, AND VERIFY SITE LOCATIONS OF ALL EXISTING IRRIGATION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT SHOULD THE EXISTING IRRIGATION BE IN CONFLICT WITH THE PROPOSED SYSTEM.
2. AREAS INDICATED ON PLANS AS 'EXISTING IRRIGATION TO REMAIN' MAY REQUIRE ADJUSTMENT AND/ OR RELOCATION TO ACHIEVE ADEQUATE COVERAGE.
3. EXISTING IRRIGATION TO REMAIN SHALL BE PROTECTED IN PLACE AND OPERABLE. EXISTING SYSTEMS SHALL NOT BE SHUT DOWN FOR MORE THAN 24 HOURS WITHOUT APPROVAL FROM THE OWNER, OR OWNER'S REPRESENTATIVE.
4. ALL RELOCATING AND RE-ROUTING OF PIPE SHALL BE GOVERNED BY THE SAME INSTALLATION DETAILS AND SPECIFICATIONS PROVIDED FOR THE NEW SYSTEM.
5. EXISTING IRRIGATION EQUIPMENT DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED WITH MATERIAL IN-KIND, AT NO EXPENSE TO THE OWNER.

GENERAL NOTES

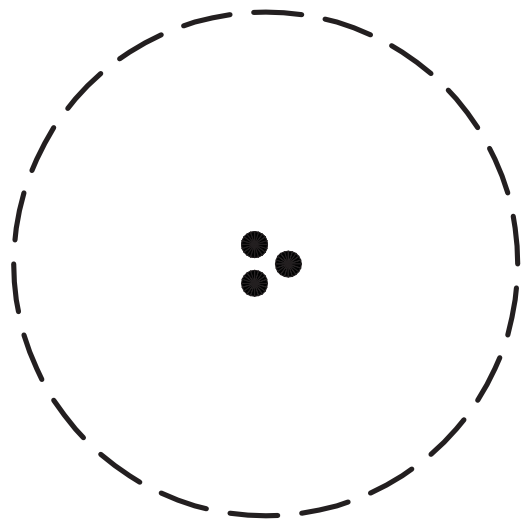
1. IRRIGATION SYSTEMS ARE TO BE INSTALLED AS SHOWN ON THE PLANS, AS DIRECTED, IN ACCORDANCE WITH CURRENT LOCAL PLUMBING CODES AS OF THE APPROVED DATE OF THESE PLANS.
2. THE CONTRACTOR SHALL MAKE SURE ALL LANDSCAPED AREAS AFFECTED BY THIS CONSTRUCTION RECEIVE 100% IRRIGATION COVERAGE.
3. IRRIGATION LINES AND EQUIPMENT ARE SHOWN DIAGRAMMATICALLY. THE CONTRACTOR SHALL INSTALL EQUIPMENT IN PLANTING AREAS UNLESS APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.
4. THE CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL UNDERGROUND UTILITIES, STRUCTURES, AND EXISTING IRRIGATION EQUIPMENT IN WORK AREA PRIOR TO ORDERING ANY IRRIGATION MATERIALS AND PROCEEDING WITH THE INSTALLATION OF THE IRRIGATION SYSTEM. IF A CONFLICT EXISTS BETWEEN SUCH OBSTACLES AND THE PROPOSED WORK, CONTRACTOR SHALL PROMPTLY NOTIFY THE LANDSCAPE ARCHITECT TO ARRANGE FOR REQUIRED RE-LOCATIONS PRIOR TO START OF CONSTRUCTION. IF THE CONTRACTOR FAILS TO NOTIFY THE LANDSCAPE ARCHITECT SHOULD THE LOCATIONS BE FOUND DIFFERENT, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY CHANGES AND ADDITIONS THAT MAY OCCUR TO THE SYSTEMS.
5. THE CONTRACTOR SHALL INSTALL MANIFOLDS (QUICK COUPLERS/ HOSE BIBS AND REMOTE CONTROL VALVES) ADJACENT TO WALKS AND CURBS (12" MAX. FROM SUCH EDGES) IN PLANTING AREAS. IN NO CASE SHALL VALVES BE LOCATED IN PAVED AREAS, UNLESS APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.
6. ALL LATERAL END RUNS ARE 3/4" SIZE UNLESS INDICATED OTHERWISE.
7. ALL IRRIGATION LINES PASSING UNDER ROADS, THROUGH WALLS, STRUCTURES, ETC. SHALL BE SLEEVED AS SPECIFIED. SLEEVES SHALL BE 2 TIMES THE DIAMETER OF PIPE TO BE SLEEVED, MINIMUM.
8. CONTROL WIRES PASSING UNDER ROADS, THROUGH WALLS, STRUCTURES, ETC. SHALL BE INSTALLED AS SPECIFIED IN CONDUIT SLEEVES AT LEAST 2 TIMES THE DIAMETER OF WIRE BUNDLE (2" SIZE MINIMUM). KEEP CONDUIT SEPARATE FROM WATER LINE SLEEVES.
9. WHERE LOW HEAD DRAINAGE OCCURS THE CONTRACTOR SHALL INSTALL AN ANTI-DRAIN VALVE UNDER EACH SPRINKLER HEAD. THE ANTI-DRAIN VALVE WILL BE THE SAME DIAMETER SIZE AS THE RISER AND SHALL BE INTEGRATED INTO THE RISER ASSEMBLY. VALVE SHALL BE "HUNTER HCV", OR APPROVED EQUAL UNLESS OTHERWISE SPECIFIED. IN THE CASE OF HEADS WITH BUILT-IN ANTI-DRAIN VALVES, THE MANUFACTURER'S INTEGRATED CHECK VALVE SHALL BE USED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXTENT OF ANY SIMULTANEOUS AND ESSENTIAL WORK BY OTHERS ON THE SITE. CONTRACTORS SHALL COORDINATE THEIR OPERATIONS AND SHALL COOPERATE TO MINIMIZE INTERFERENCE.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTING AND DIMENSIONING FROM FIXED OBJECTS, THE EXACT LOCATION OF REMOTE CONTROL WIRING ROUTE, MAINLINE ROUTE, VALVES AND ALL OTHER MAJOR IRRIGATION EQUIPMENT ON THE "AS-BUILT" DRAWINGS. SEE ALSO SPECIFICATIONS.
12. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING IRRIGATION CONTROLLER HAS POWER AND SHALL ESTABLISH CONTINUITY IN ALL VALVE WIRES TO THE EXISTING REMOTE CONTROL VALVES.





- KEY NOTES**
- A PROTECT EXISTING TREES IN PLACE
 - B EXISTING TREE TO BE RELOCATED (QTY 2)
 - C NEW LOCATION OF EXISTING TREE (QTY 2)
 - D PROTECT EXISTING SHRUBS IN PLACE (TYPICAL)
 - E REMOVE EXISTING PLANTS, TRANSPLANT TO PROTECTED/WATERED/MAINTAINED LOCATION DURING CONSTRUCTION - MOVE TO NEW LOCATION SHOWN ON PLAN UPON COMPLETION OF CONSTRUCTION (QTY: 4 SHRUBS, 3 VINES)
 - F NEW LOCATIONS OF SALVAGED PLANTS (QTY: 4 SHRUBS, 3 VINES)
 - G GROUNDCOVER AREA TO BE REPLANTED AFTER CONSTRUCTION

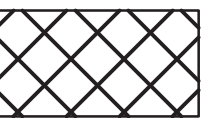
2 LOP CON
24" BOX EXISTING TO BE TRANSPLANTED



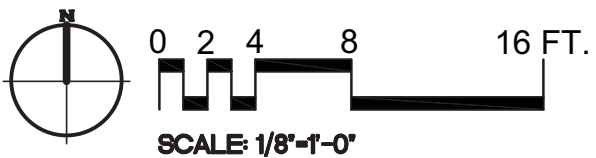
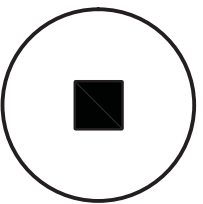
3 PAR TRI
1 GAL EXISTING TO BE TRANSPLANTED



308 PLANTS FROM FLATS
ROS PRO
2' O.C. TRIANG SPACING



4 HET ARB
5 GAL EXISTING TO BE TRANSPLANTED



PLANT MATERIAL SCHEDULE

TREES:						
SYMBOL	SIZE	BOTANICAL NAME	COMMON NAME	SPECS	REMARKS	DETAIL
LOP CON	EXIST	<i>Lophostemon confertus</i>	"Brisbane Box"	---	---	A,B/LA2.2
SHRUBS:						
SYMBOL	SIZE	BOTANICAL NAME	COMMON NAME	SPECS	REMARKS	DETAIL
HET ARB	EXIST	<i>Heteromeles arbutifolia</i>	"Toyon"	---	---	C/LA2.2
VINES:						
SYMBOL	SIZE	BOTANICAL NAME	COMMON NAME	SPECS	REMARKS	DETAIL
PAR TRI	EXIST	<i>Parthenocissus tricuspidata</i>	"Boston Ivy"	---	---	D/LA2.2
GROUNDCOVERS:						
SYMBOL	SIZE	BOTANICAL NAME	COMMON NAME	SPECS	REMARKS	DETAIL
ROS PRO	FLATS	<i>Rosmarinus officinalis 'Prostratus'</i>	"Prostrate Rosemary"	---	FULLY ROOTED	E,F/LA2.2

FERTILIZER TABLET SCHEDULE

(4) 7 GRAM TABLETS PER 6" BOX SIZE

(15) 7 GRAM TABLETS PER 15 GALLON CONTAINER

(8) 7 GRAM TABLETS PER 5 GALLON CONTAINER

(3) 7 GRAM TABLETS PER 1 GALLON CONTAINER

(1) 7 GRAM TABLETS PER 6" POT, PONY PAK, LINER OR GROUNDCOVER PLANT

GENERAL NOTES

1. SEE SPECIFICATIONS FOR ITEMS NOT COVERED ON THESE PLANS.

2. THE CONTRACTOR SHALL RECONCILE THE CALLOUT QUANTITIES WITH THE GRAPHIC QUANTITIES AND SHALL PROVIDE PLANTS EQUAL TO THE GRAPHIC QUANTITIES SHOWN ON THE PLANS. PLANT QUANTITIES SHOWN REFLECT QUANTITIES FOR THE SHEET THEY APPEAR ON ONLY.

3. ALL PLANT MATERIAL IS TO BE SUPPLIED AND INSTALLED BY THE LANDSCAPE CONTRACTOR.

4. THE LANDSCAPE ARCHITECT SHALL RETAIN THE OPTION TO TAG BOXED TREE MATERIAL AT A WHOLESALE NURSERY OF THEIR CHOICE AFTER THE BID HAS BEEN AWARDED.

5. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL OR REJECTION BY THE LANDSCAPE ARCHITECT UPON DELIVERY TO THE SITE.

6. PLANT MATERIAL LOCATIONS ON THE PLANTING PLAN ARE APPROXIMATE AND SHALL BE ADJUSTED AS DIRECTED BY THE LANDSCAPE ARCHITECT.

7. ALL GROUNDCOVER PLANTS SHALL BE FULLY ROOTED PLANT MATERIAL IN FLATS, PLUGS OR POTS.

8. BUDS AND BLOOMS ON ALL PLANTS MUST BE PROTECTED AT ALL TIMES, INCLUDING TRANSPORTATION AND INSTALLATION.

9. STAKE AND/OR GUY ALL TREES AS DIRECTED IN THE LEGEND AND PER THE PLANTING DETAILS.

10. TREES AND SHRUBS SHALL BE SHAPED AND PRUNED DURING THE MAINTENANCE PERIOD ONLY AS DIRECTED BY THE LANDSCAPE ARCHITECT.

11. THE CONTRACTOR SHALL GUARANTEE SHRUBS, GROUNDCOVERS AND PERENNIALS FOR A PERIOD OF THREE MONTHS AND TREES FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.

12. ALL TREES TO BE PLANTED A MIN 5' FROM UNDERGROUND UTILITIES.

13. THE LANDSCAPE PLAN IS FOR GENERAL SITE REFERENCE ONLY. REFER TO OTHER CONSTRUCTION DOCUMENTS FOR COMPLETE SCOPE OF WORK.

14. BEFORE COMMENCING ANY SITE EXCAVATION, VERIFY LOCATIONS OF ALL EXISTING SITE UTILITIES, INCLUDING WATER SEWER, GAS AND ELECTRICAL LINES. FLAG OR OTHERWISE MARK ALL LOCATIONS AND INDICATE UTILITY TYPE.

15. LOCATE REFUSE BIN AT APPROVED ON-SITE LOCATION. CONTRACTOR SHALL DISPOSE OF ALL SITE REFUSE AT CITY-APPROVED LOCATIONS.

17. ALL REQUIRED PLANTING AREAS SHALL BE COVERED WITH MULCH TO A MINIMUM DEPTH OF 3 INCHES, EXCLUDING SLOPES REQUIRING REVEGETATION AND AREAS TO BE PLANTED WITH GROUND COVER. ALL EXPOSED SOIL AREAS WITHOUT VEGETATION SHALL ALSO BE MULCHED TO THIS MINIMUM DEPTH.

18. ALL REQUIRED TREES SHALL HAVE AT LEAST ONE WELL DEFINED TRUNK AND SHALL NORMALLY ATTAIN A MATURE HEIGHT AND SPREAD OF AT LEAST 15 FEET.

19. PROPOSED LANDSCAPING SHALL NOT CONFLICT WITH EXISTING UTILITIES.

20. PROPOSED UTILITIES SHALL NOT CONFLICT WITH PROPOSED LANDSCAPING.

21. TREE ROOT BARRIERS SHALL BE INSTALLED WHERE TREES ARE PLACED WITHIN 5 FEET OF PUBLIC IMPROVEMENTS INCLUDING WALKS, CURBS, OR STREET PAVEMENTS OR WHERE NEW PUBLIC IMPROVEMENTS ARE PLACED ADJACENT TO EXISTING TREES. THE ROOT BARRIER WILL NOT WRAP AROUND THE ROOT BALL.

22. MAINTENANCE: ALL LANDSCAPE AREAS INSIDE THE LIMIT OF WORK SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE PROJECT HAS BEEN ACCEPTED BY THE OWNER. THE LANDSCAPE AREAS SHALL BE MAINTAINED FREE OF DEBRIS AND LITTER AND ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY GROWING CONDITION. DISEASED OR DEAD PLANT MATERIAL SHALL BE SATISFACTORILY TREATED OR REPLACED PER THE CONDITIONS OF THE PERMIT.

FAST EV SUNCHARGE DEL LAGO

PHOTOVOLTAIC SYSTEM
BATTERY STORAGE SYSTEM
EV CHARGING SYSTEMS
3310 DEL LAGO BLVD.
ESCONDIDO, CA 92029

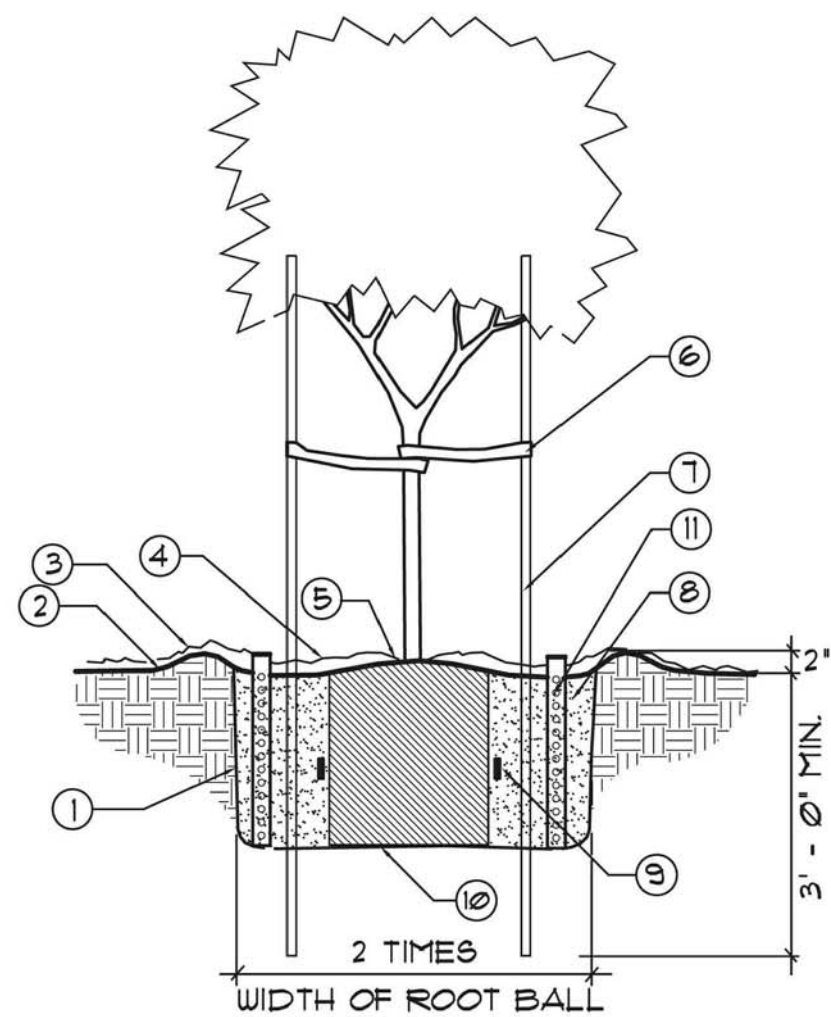
03.13.2013 – 30% SUBMITTAL
04.30.2013 – PREFINAL SUBMITTAL

LANDSCAPE
PLANTING SCHEDULES
& NOTES

LA2.1



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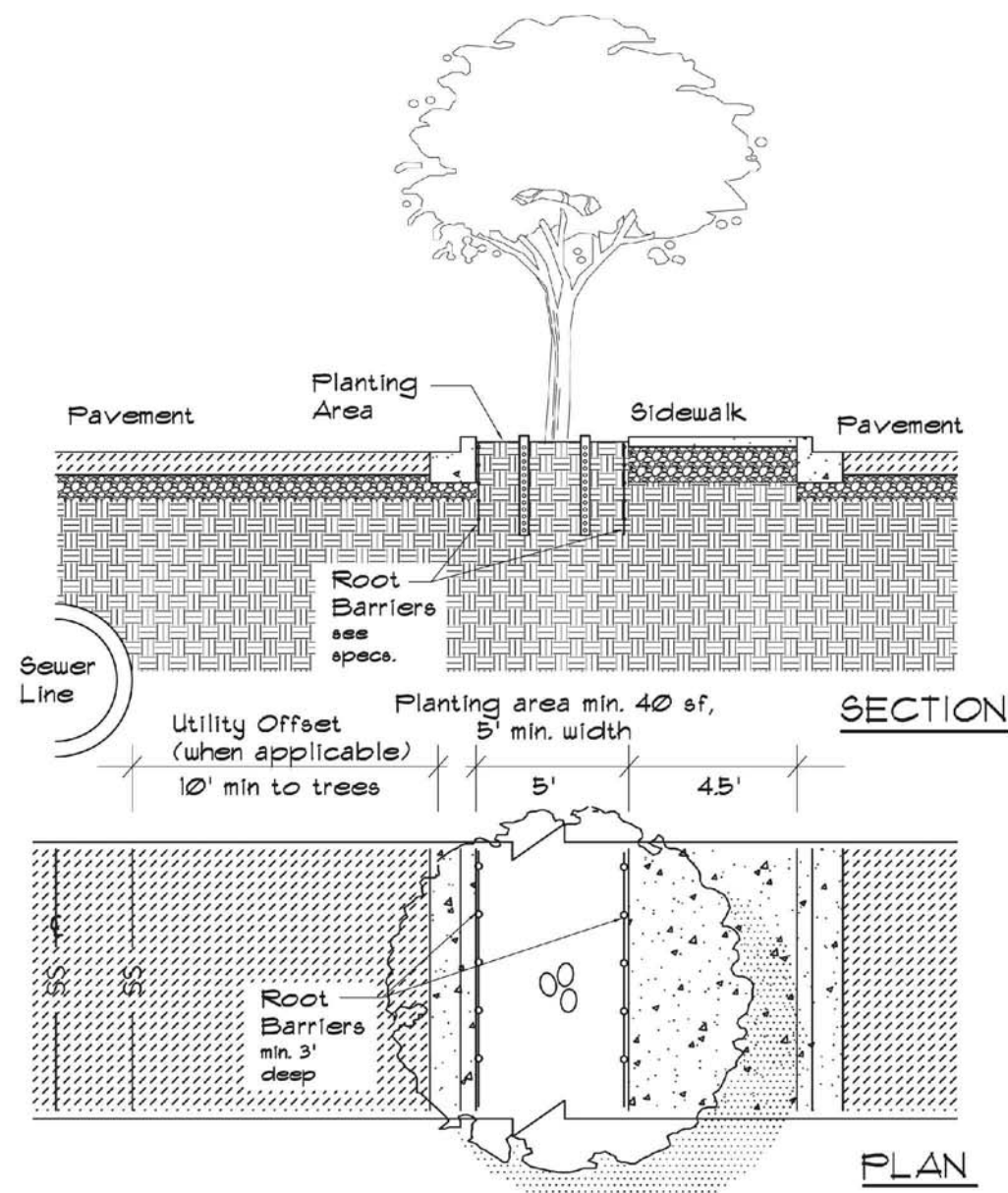


DETAIL LEGEND

- ① ROUGHEN SIDES AND BOTTOM OF PIT
- ② FINISHED GRADE
- ③ (2) INCH MULCH LAYER
DO NOT PLACE AGAINST CROWN OF PLANT
- ④ WATER BASIN
- ⑤ ROOTBALL SLIGHTLY HIGHER THAN FINISHED GRADE (DO NOT TRIM ROOTS)
- ⑥ 'CINCH-TIE' MANUFACTURED BY V.I.T. COMPANY, INC. ATTACH PER MANUFACTURER'S SPECIFICATIONS AND SECURE WITH FURRING NAIL AT STAKE
- ⑦ (2) 2-INCH DIAMETER X 10 FOOT LONG LODGEPOLE STAKES, USE TWO STAKES FOR TREES 15-GALLONS AND LARGER
- ⑧ PLANTING BACKFILL SHALL BE NATIVE SOIL.
- ⑨ FERTILIZER TABLET. INSTALL ONE WITH EACH 1 GALLON CONTAINER PLANT, INSTALL THREE WITH EACH 5 GALLON CONTAINER PLANT.
- ⑩ ROOTBALL RESTING ON FIRM SOIL TO AVOID SETTLING
- ⑪ 4' DIA. PERFORATED RIGID PVC PIPE WITH FILTER SOCK AND GRATE (TYP.) IN TWO PLACES. DO NOT FILL PIPE WITH GRAVEL.

A TREE PLANTING

NOT TO SCALE



SECTION

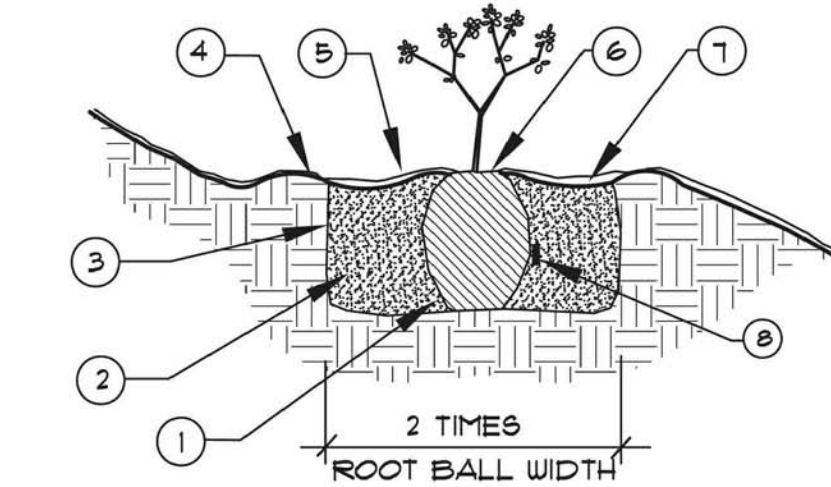
PLAN

NOTES:

1. ROOT BARRIERS SHALL BE INSTALLED WHEN TREES ARE WITHIN (5') OF HARDSCAPE, UNLESS OTHERWISE NOTED
2. WHERE POSSIBLE, INSTALL (10') EACH SIDE OF MEASURED TRUNK, PARALLEL TO HARDSCAPE (24") DEEP
3. INSTALL PARALLEL TO WALKS AND CURBS
4. DO NOT ENCIRCLE TREE, IF POSSIBLE
5. FOLLOW MANUFACTURER'S INSTRUCTIONS

B ROOT BARRIERS AND UTILITY OFFSETS

NOT TO SCALE

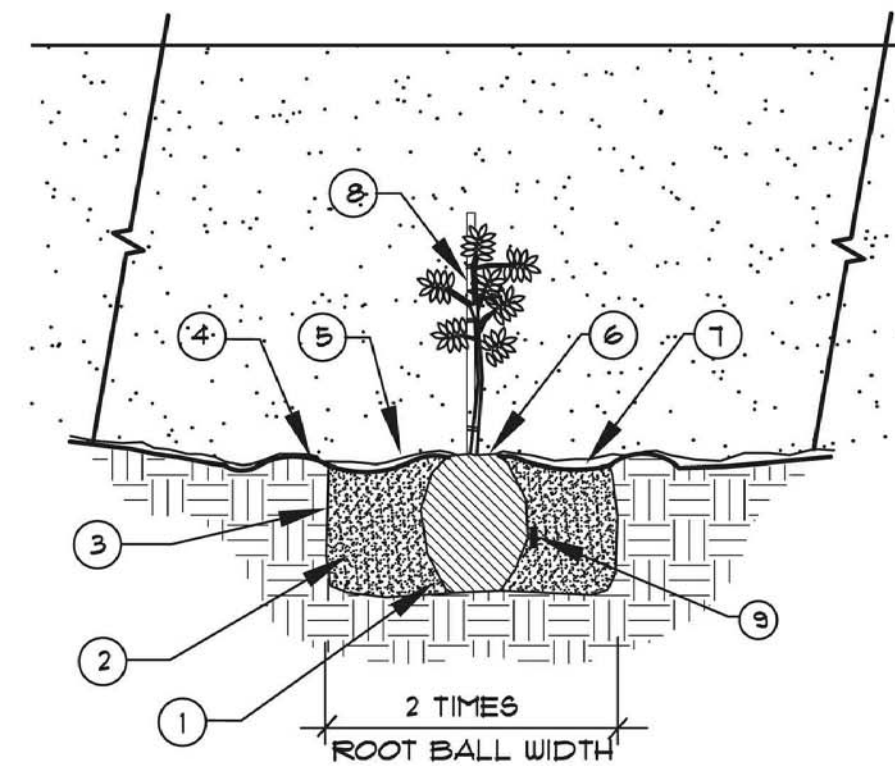


DETAIL LEGEND

- ① SOIL BALL RESTING ON FIRM SOIL TO AVOID SETTLING.
- ② BACKFILL WITH NATIVE SOIL.
- ③ ROUGHEN SIDES AND BOTTOM OF PIT.
- ④ FINISHED GRADE.
- ⑤ (2) INCH MULCH LAYER
DO NOT PLACE AGAINST CROWN OF PLANT
- ⑥ ROOTBALL SLIGHTLY HIGHER THAN FINISHED GRADE.
- ⑦ WATER BASIN.
- ⑧ FERTILIZER TABLET. INSTALL ONE WITH EACH 1 GALLON CONTAINER PLANT, INSTALL THREE WITH EACH 5 GALLON CONTAINER PLANT.

C SHRUB PLANTING

NOT TO SCALE

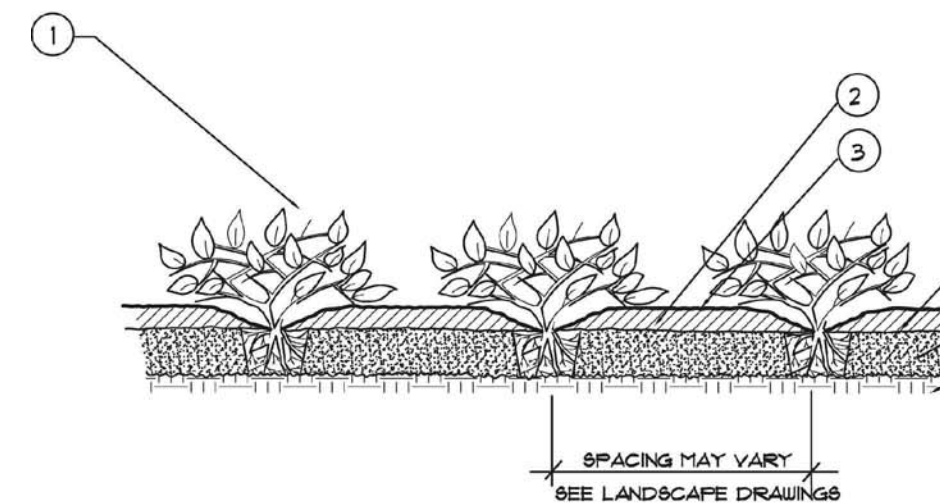


DETAIL LEGEND

- ① SOIL BALL RESTING ON FIRM SOIL TO AVOID SETTLING.
- ② BACKFILL WITH NATIVE SOIL.
- ③ ROUGHEN SIDES AND BOTTOM OF PIT.
- ④ FINISHED GRADE.
- ⑤ (2) INCH MULCH LAYER
DO NOT PLACE AGAINST CROWN OF PLANT
- ⑥ ROOTBALL SLIGHTLY HIGHER THAN FINISHED GRADE.
- ⑦ WATER BASIN.
- ⑧ PLANT STAKE -- LEAN STAKE AGAINST WALL. LOOSELY TIE VINE TO STAKE
- ⑨ FERTILIZER TABLET. INSTALL ONE WITH EACH 1 GALLON CONTAINER PLANT, INSTALL THREE WITH EACH 5 GALLON CONTAINER PLANT.

D VINE PLANTING AT WALL

NOT TO SCALE



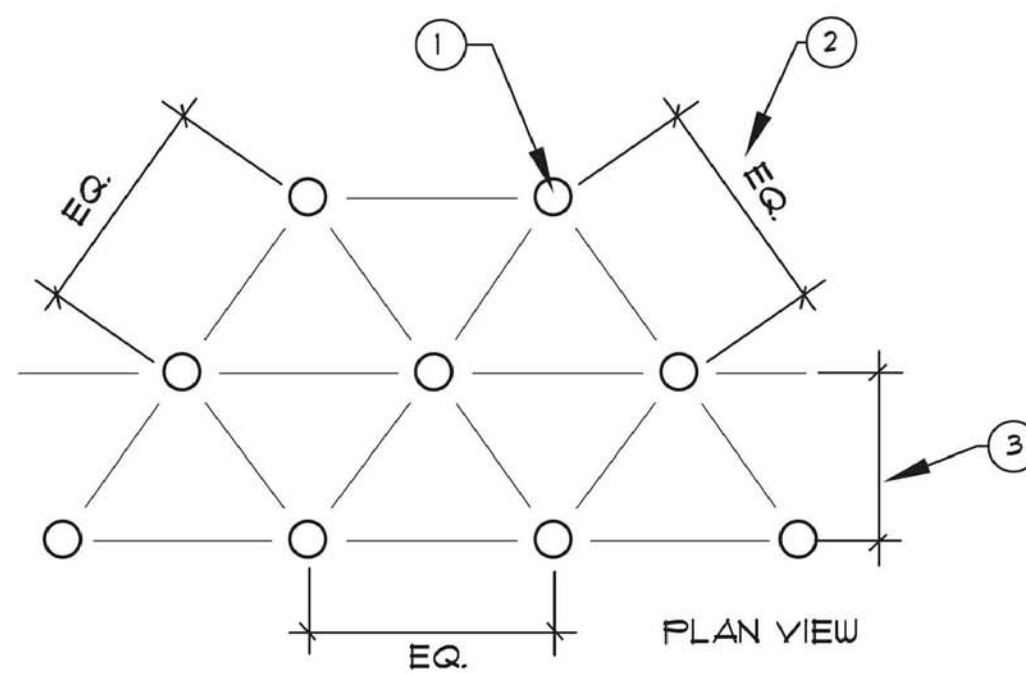
DETAIL LEGEND

- ① TYPICAL GROUND COVER PLANTED AT NURSERY LEVEL
- ② MINIMUM (2) INCH MULCH LAYER
- ③ FINISH GRADE
- ④ MINIMUM (6) INCH PLANTING DEPTH
- ⑤ 3'-4' PLANTING SOIL PER SPECIFICATIONS
- ⑥ SCARIFIED SUBGRADE

E GROUNDCOVER PLANTING

NOT TO SCALE

NO SCALE



DETAIL LEGEND

- ① PLANT MATERIAL
- ② TRIANGULAR SPACING PER PLANTING PLANS AND LEGENDS
- ③ PLANT ROW

F TRIANGULAR PLANT SPACING

NOT TO SCALE

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LANDSCAPE
PLANTING DETAILS