

San Mateo County

# San Mateo County Sheriff's Office Maple Street Correctional Facility

1300 Maple Street  
Redwood City, California

## Abbreviations

@	At	C O T G	Clean Out To Grade	H B	Hose Bib	PLWD	Plywood
X	By	C W	Cold Water	HDG	Hot Dipped Galvanized	PR	Pair
CL	Center Line	D B L	Double	HDW	Hardware	P T D F	Pressure Treated Doug Fir
°	Degrees	DEMO	Demolition	HM	Hollow Metal	R C P	Reflected Ceiling Plan
Ø	Diameter	DET	Detail	HR	Hour	R D	Roof Drain
(E)	Existing	D F	Drinking Fountain	HT	Height	REF	Refer To:
'	Foot/Feet	DIA	Diameter	J H	Joist Hanger	REINF	Reinforced
"	inch/inches	DIM	Dimension	JT	Joint	REQD	Required
(N)	New	DN	Down	LAM	Laminate	RM	Room
±	Plus/Minus	D S	Downspout	LAV	Lavatory	R O	Rough Opening
#	Pound/Number	DWG	Drawing	LT	Light	RR	Roof Rafter
(R)	Remove	E	East	I D	Inside Diameter	R W L	Rain Water Leader
A B	Anchor Bolt	EA	Each	I E	Invert Elevation	S	South
ABV	Above	E F	Exhaust Fan	INSUL	Insulation	SCH	Schedule
A C	Asphaltic Concrete	E J	Expansion Joint	INT	Interior	SEC	Section
ADJ	Adjustable	ELEC	Electrical	INV	Invert	SHT	Sheet
A F F	Above Finished Floor	ELEV	Elevation	I T	Information Technology	S O V	Shut Off Valve
ALUM	Aluminum	EMER	Emergency	MAX	Maximum	SPEC	Specification
ANCH	Anchor	E P	Electrical Panel	M B	Marker Board	SS	Sanitary Sewer
A P	Access Panel	EQ	Equal	MFR	Manufacturer	STD	Standard
ARCH	Architectural	EQUIP	Equipment	MH	MANHOLE	STO	Storage
ASPH	Asphalt	E/S	Each Side	MIN	Minimum	STRUC	Structural
BD	Board	F A	Fire Alarm	MR	Moisture Resistant	SUSP	Suspended
BLDG	Building	F D	Floor Drain	MTD	Mounted	T B	Tack Board
BLK	Block	F D C	Fire Dept Connection	MTL	Metal	T G	Top of Grate
BLKG	Blocking	FDN	Foundation	MUL	Mullion	T O C	Top Of Concrete
BM	Beam	F E	Fire Extinguisher	N	North	T O P	Top Of Plate
BOT	Bottom	F G	Finished Grade	N A	Not Applicable	T O S	Top Of Slab
B/T	Between	F H	Fire Hydrant	N I C	Not In Contract	T O W	Top Of Wall
BW	Bottom of Wall	FIN	Finish	NOM	Nominal	U O N	Unless Otherwise Noted
C	Conduit	F O C	Face Of Concrete	N R	Not Required	V C T	Vinyl Composite Tile
C A B	Cabinet	F O F	Face Of Finish	N T S	Not To Scale	V C TB	Vinyl Covered Tackboard
C B	Catch Basin	F O M	Face Of Masonry	O C	On Center	V I F	Verify In Field
C I	Cast Iron	F O S	Face Of Stud	O F S	Off Face of Stud	W	Waste
C J	Construction Joint	FRMG	Framing	O H	Overhang	W	West (elevation dwg's)
CLG	Ceiling	F S	Finished Surface	OPG	Opening	W B	White Board
CLR	Clear	FTG	Footing	OPP	Opposite	W C	Water Closet
COL	Column	FUT	Future	O/	Over	W/	With
CONC	Concrete	GALV	Galvanized	P A	Planting Area	W I	Woodwork Institute
CONST	Construction	G B	Grade Break	P C	Portland Cement	W/O	Without
CONT	Continuous	GC	General Contractor	PDF	Powder Driven Fastener	WD	Wood
CORR	Corridor	GL	Glass	P H	Panic Hardware	WP	Waterproof
CTR	Center	GR	Grade	P I P	Protect in Place	WT	Weight
CTSK	Countersink	GSM	Galvanized Sheet Metal	PL	Plate		
CUST	Custodial	GYP	Gypsum	P LAM	Plastic Laminate		

## General Notes

All work performed under the conditions of these drawings shall comply in every respect with the following:

2019 Cal. Administrative Code, Part 1, Title 24 CCR  
 2019 Cal. Building Code (CBC), Part 2, Title 24 CCR  
 2019 Cal. Electrical Code (CEC), Part 3, T-24 CCR  
 2019 Cal. Mechanical Code (CMC), Part 4, T-24 CCR  
 2019 Cal. Plumbing Code (CPC), Part 5, T-24 CCR  
 2019 Cal. Energy Code, Part 6, T-24 CCR  
 2019 Cal. Fire Code (CFC), Part 9, T-24 CCR  
 2019 Cal. Green Building Standards Code, Part 11, Title 24 CCR  
 2019 Cal. Referenced Standards Code, Part 12, Title 24 CCR, including ACC  
 California building code amendments  
 Title 19 CCR Public Safety State, Fire Marshal Regulations  
 2007 ASME A17.1 (w/ A17.1a/CSA B44a-08 Addenda)  
 Including all Safety Code for Elevators and Escalators  
 2010 ADA Standard for ACC design  
 NFPA 13 Standard for Installation of Sprinkler System (CA amended) 2016 Ed  
 NFPA 14 Standard for Installation of Standpipe and Hose System 2013 Edition  
 NFPA 17 Standard for Dry Chemical Extinguishing Systems, 2013 Edition  
 NFPA 17A Standard for Wet Chemical Extinguishing Systems, 2013 Ed  
 NFPA 20 Standard for Installation of Stationary Pumps, 2013 Ed  
 NFPA 22 Standard for Water tank of Private Fire Protection 2013 Edition  
 NFPA 24 Standard for Installation of Private Fire Service Mains and  
 Their Appurtenance 2016 Edition  
 NFPA 72 National Fire Alarm and Signaling Code (CA AMDT), 2016 Edition.  
 NFPA 80 Standard for Fire Doors and Other Opening Protectives, 2016  
 Edition.  
 NFPA 2001 Standard on Clean Agent Fire Extinguishing Systems 2015  
 Edition.  
 UL 300 Standard for Fire Testing of Fire Extinguishing Systems for Protection  
 of Commercial Cooking Equipment 2005 (R2010)  
 UL 464 Audible Signaling Devices for Fire Alarm and Signaling Systems,  
 Including Accessories 2003 Edition  
 UL 521 Standard for Heat Detectors for Fire Protective Signaling  
 Systems 1999 Edition  
 UL 1971 Standard for Signaling Devices for Hearing Impaired 2002 Edition  
 ICC 300 Standard for Bleachers, Folding and Telescopic Seating, and  
 Grandstands 2012 Edition  
 For a complete list of applicable NFPA standards refer to 2016 CBC (SFM)  
 Chapter 35 and California Fire Code Chapter 80.  
 See California Building Code, Chapter 35, for State of California amendments to  
 the NFPA Standards.

**California Title 24**  
 The intent of these drawings and specifications is that the work of the  
 alteration is to be in accordance with Title 24, CCR. Should any existing  
 conditions such as deterioration or non-complying construction be  
 discovered which is not covered by the contract documents wherein the  
 finished work will not comply with Title 24, CCR, notify the Architect and  
 District before proceeding with the work.

**Administrative Requirements**  
 The Contractor shall keep a copy of the 2019 California Building Code.

**Changes**  
 Work shall be executed strictly in accordance with approved plans,  
 addenda, and change orders.

**Site Examination**  
 The Contractor shall thoroughly examine the site and satisfy himself as to  
 the conditions under which the Work is to be performed. The Contractor  
 shall verify at the site all measurements and conditions affecting his work  
 and shall be responsible for same unless brought to the attention of the  
 Owner or his agent prior to proceeding with the Work. Commencement of  
 work by Contractor or any Subcontractor shall indicate a knowledge and  
 acceptance of all conditions described in the Documents or existing on site  
 which could affect their work.

**Moisture Proof Interior Spaces**  
 It is the intent of these Documents to provide for the construction of a  
 moisture proof enclosure of interior space. If the Owner, Contractor or any  
 Sub-contractors become aware of any assembly or condition, either shown  
 in the Drawings or constructed on-site, which does not, in their opinion,  
 satisfy this intent, it is their responsibility to notify the Architect within a  
 reasonable amount of time so that the condition or assembly can be  
 reviewed, and, if necessary, modifications can be made to the Documents  
 or to the Work without impacting the progress.

**Moisture Protection During Construction**  
 Should any special situations or climatic conditions occur during  
 construction the Owner, Contractor and Sub-contractors shall so notice and  
 implement any measures required to assure the protection of materials and  
 assemblies. The Contractor shall take all necessary measures to protect  
 new or existing construction and materials from damage due to weather or  
 any other adverse conditions.

**Use of Site**  
 Work shall occur while portions of the site are occupied by the Tenant.  
 Contractor is fully responsible for site safety and control of public access  
 near work zones. Roadways shall be maintained clear of construction  
 equipment or materials at all times. Existing landscaping shall be protected  
 as required to prevent any damage to plants and trees unless specified for  
 removal in plans or by Owner.

**Americans with Disabilities Act**  
 It is the intent of these Documents to meet guidelines for accessibility to  
 this public place of accommodation, by individuals with disabilities. These  
 guidelines have been applied during design and shall be applied during  
 construction.

If the Owner, Contractor or any Subcontractors become aware of any  
 assembly or condition, either shown in the Drawings or constructed on-site,  
 which does not, in their opinion, satisfy this intent or meet industry  
 standards for construction quality, it is their responsibility to notify the  
 Architect within a reasonable amount of time so that the condition or  
 assembly can be reviewed, and, if necessary, modifications can be made  
 to the Documents or to the Work without impacting the progress.

## Disclaimer

This project site is an occupied building. All construction activities shall be contained within fenced or barricaded areas in accordance with project specification and schedule requirements. Certain construction activities that generate disruptive noise, odors, dust, and debris must be scheduled when building is not occupied.

All work shown, noted, or detailed is new, except where indicated as existing or as existing to remain.

Contractor shall field verify all dimensions and existing conditions at the site and shall report any discrepancies in writing to the Architect by the means of a Request for Information (RFI) or as part of the applicable shop drawings or submittals.

Specific items noted to be verified or field verified are required to be verified prior to ordering materials or proceeding with the work.

Contractor is responsible for all incidental work necessary to complete the installation of new work. This includes, but is not limited to, the removal and/or reinstallation of all existing items, or portions of the existing construction whether shown or not.

Underground locating service (811 Dig) responsibility of the contractor prior to excavation work.

## Sheet Notes

All dimensions given take precedence over scale. Contractor shall not scale drawings to determine dimensions without consulting the Architect. Contractor shall review all dimensions for accuracy prior to construction.

Dimensions given as "CLR" are to face of finish. Otherwise, all dimensions are to face of stud/structure unless otherwise noted.

Repeating items or assemblies may not be noted or dimensioned at all occurrences where repetition is obvious or noted as typical.

Refer to Demolition Plans for items to be salvaged and/or relocated. Unless indicated elsewhere.

Refer to Structural Drawings for location of special floor and wall framing, special connections, anchorages.

Refer to Specifications for additional requirements.

For Abatement Work, refer to Specifications and Hazardous Materials Report.

**Use of Documents**  
 No guarantee for quality of construction is implied or intended by these Documents. The Contractor shall assume full responsibility for any construction deficiencies.

All Contract Documents described in the Construction Contract shall be considered one document and are intended to be used as one document. Contractor and all sub-contractors shall review all documents prior to bidding. Sub-contractors are responsible for any information pertaining to their work no matter where it may occur in these Documents.

**Dimension Control**  
 All dimensions and conditions shall be checked and verified, both in the Documents and on the job, by Contractor and each Sub-contractor before proceeding with the work. Any errors, omissions, discrepancies or deficiencies shall be brought to the attention of the General Contractor prior to proceeding with the Work. All dimensions take precedent over scale. Where dimensions are not entirely clear the Contractor shall notify the Architect and request clarification.

## Project Scope

- Construction and installation of parking shade structure and photovoltaic energy system.
- The following items are included in the scope of work. Not all scope items are listed here. Refer to all other components of the construction documents for additional scope.
  - If contractor does not intend to provide any of these items, contractor should not submit a bid on this project. If any questions arise during bid period as to these requirements, contractor shall contact architect for clarification.
  - Contractor shall ensure that construction operations in this project do not inhibit the continuous operation in other areas of the site of all low voltage systems including but not limited to: Fire Alarm, Energy Management, Security, Access, and Data. Contractor is responsible for all means and methods to ensure this requirement is met. Change orders for logistical operations related to continuous operation of these components will not be entertained.
  - Title 24/ADA compliant components throughout.
  - Title 24/ADA compliant directional / tactile signage.
  - Hazardous material abatement wherever it occurs.
  - All demolition required to accomplish and complete the work.
  - Parking Striping
  - Construction of drilled piers column and steel beam structure.
  - Installation of solar panels and electrical system

San Mateo County  
Sheriff's Office  
400 County Center  
Redwood City, CA



Maple Street  
Correctional Facility  
1300 Maple St  
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# Solar Shade Structure

REVISION	DATE
Issued For Permit	4/14/2021
Plan Check Resubmittal	11/11/2021

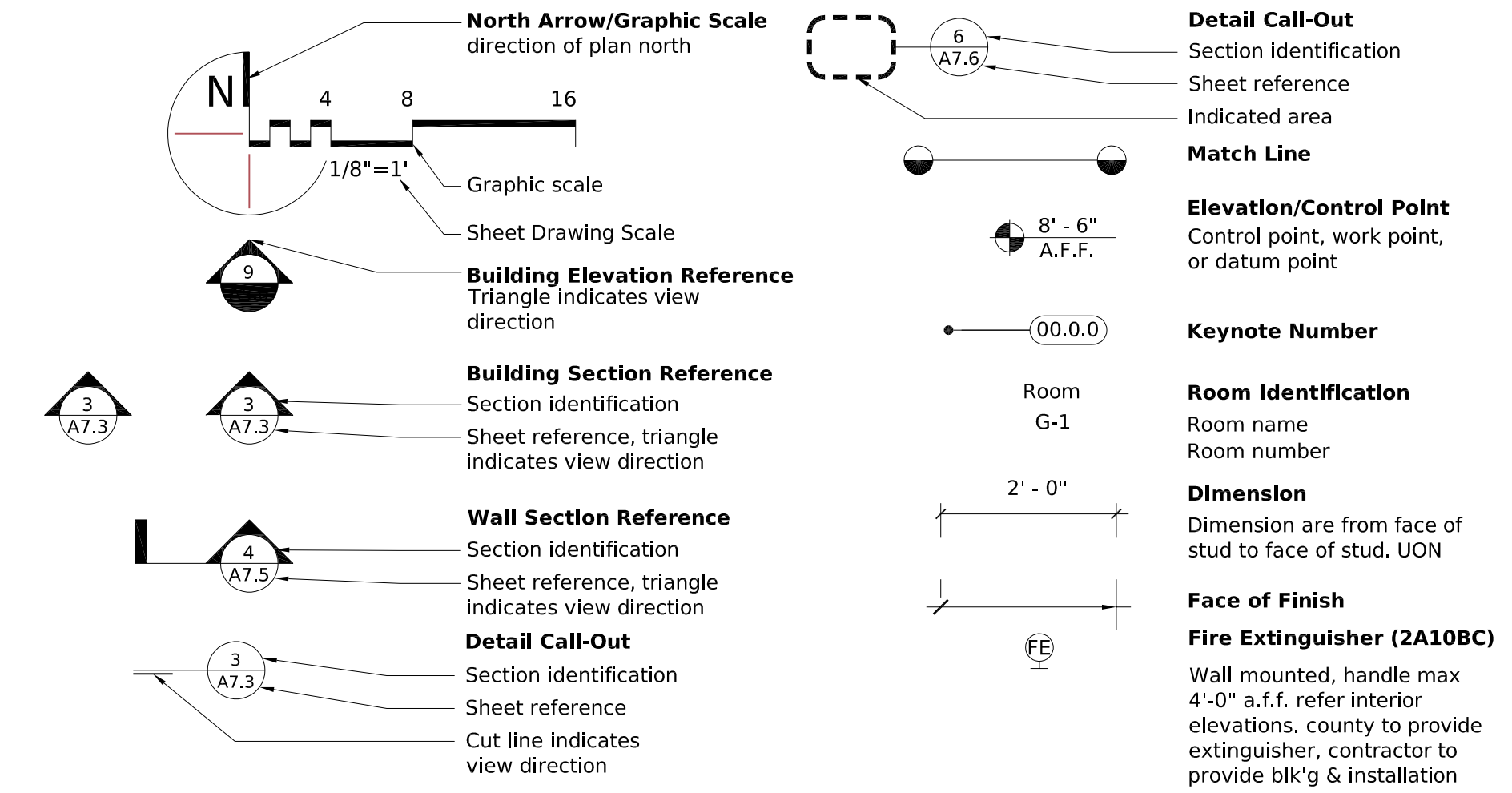
## Project Directory

<b>Owner</b>	San Mateo County 400 County Center Redwood City, CA 94063 (650) 599-7285	<b>Architect</b>	Bartos Architecture 1730 S. Amphlett Blvd., Suite 225 San Mateo, California 94402 (650) 340-1221
<b>Structural Engineer</b>	Rinne & Peterson, Inc. 1121 San Antonio Rd Palo Alto, CA 94303 (650) 428-2860	<b>Civil Engineer</b>	Lea & Braze Engineering, Inc. 2495 Industrial Parkway West Hayward, CA 94545 (510) 887-4086
		<b>Electrical Engineer</b>	American Consulting Engineers Electrical, Inc. 1590 The Alameda San Jose, CA 95126 (408) 236-2312

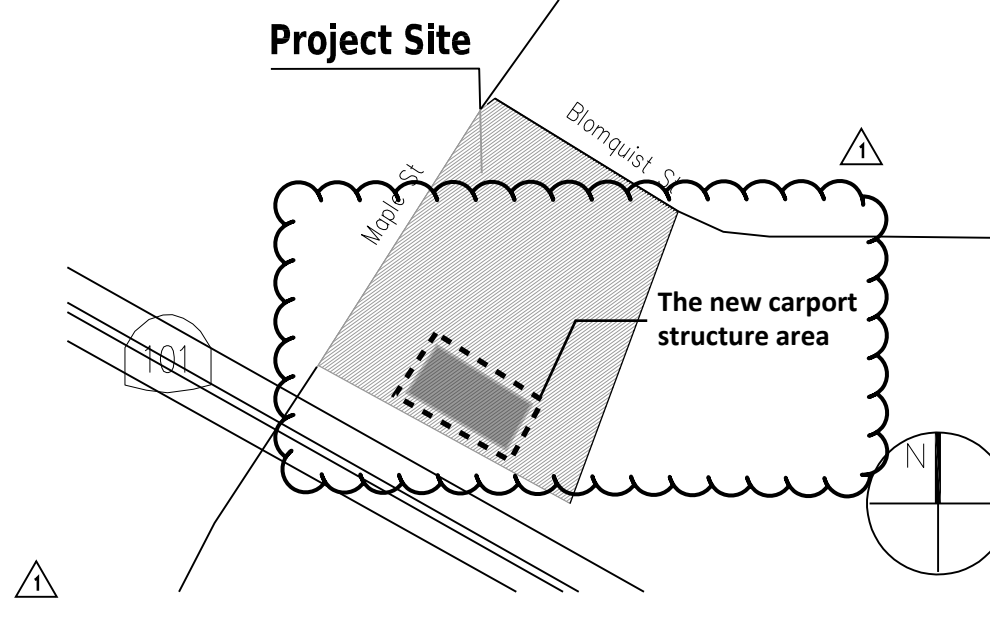
## Drawing Index

<b>Architectural</b>	A0.0 Title Sheet & Drawing Index
	A0.1 Site & Staging Plan
	A8.0 CAL GBSC Non-residential Mandatory Measures
	A8.1 CAL GBSC Non-residential Mandatory Measures
	A8.2 CAL GBSC Non-residential Mandatory Measures
<b>Civil</b>	C1.0 Title Sheet
	C2.0 Site Plan
	C3.0 Details
	C3.0 Grading Specifications
	E4.0 Erosion Control
	ER-2 Erosion Control Details
	BMP Best Management Practices
<b>Structural</b>	S0.1 General Notes
	S0.2 General Notes
	S2.1 Solar Structure Framing Plan and Elevation
	S3.1 Frame Elevations
	S5.1 Details
<b>REFERENCE ONLY</b>	
<b>Electrical</b>	E0.1 Electrical Cover Page
	E1.1 Electrical Site Plan New
	E1.2 Enlarged Electrical Site Plan New
	E1.3 PV Panel Layout
	E1.4 Enlarged Electrical Equipment Yard
	E3.1 New Single Line Diagram
	E3.2 PV Riser Diagram
	E3.3 PV Riser Diagram
	E4.1 Electrical Details
	E4.2 Electrical Details
	E4.3 PV Calculations
	E4.4 PV Labeling

## Legend & Symbols



## Vicinity Map

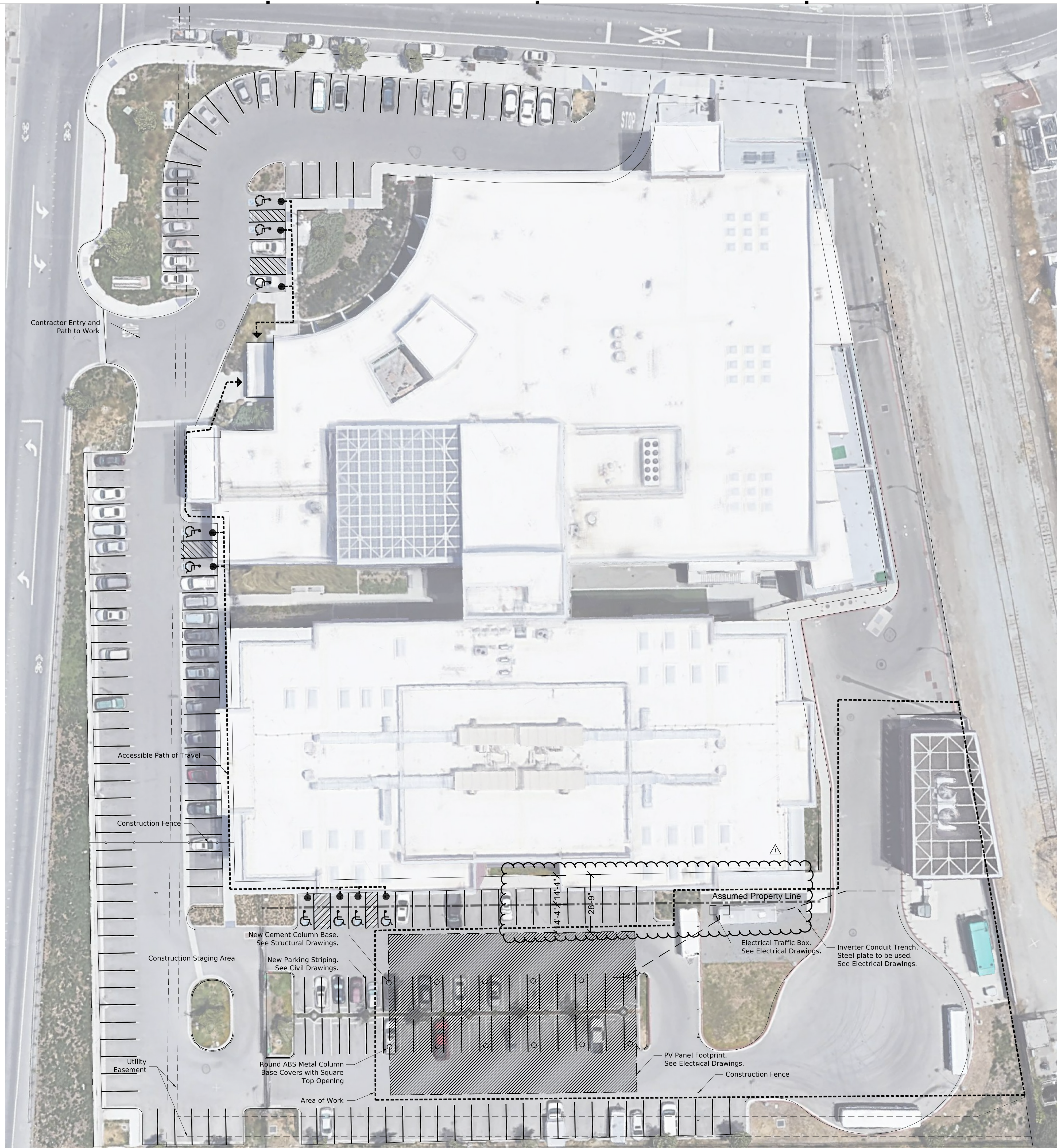


## Code Analysis

Occupancy Group: U (PV Structure): I-3 (Correctional Facility)  
 Construction Type: Type I (Steel and concrete)  
 Allowable area per CBC table 506.2 : 35,000 sf (non sprinkler)  
 Proposed area: 9,840 sf < 35,000 sf. Therefore ok

Title Sheet and  
Drawing Index

# A0.0



Site Plan

### Legend

- Accessible Path of Travel and Ground Floor Entry/Exit**

Accessible Path of Travel as indicated on plan is a barrier-free access route without any abrupt level changes exceeding 1/2" if beveled at 1:2 max slope, or vertical level changes exceeding 1/4" max and at least 48" in width. Surface is stable, firm, and slip resistant. Cross slope does not exceed 1:48 slope in the direction of travel is less than 5%, unless otherwise indicated. Accessible path of travel shall be maintained free of overhanging obstructions to 80" minimum, and protruding objects greater than 4" projection from wall and above 27" and less than 80".
- Design Professions in General Responsible in Charge Statement**

The POT identified in these construction documents is compliant with the current applicable California Building Code Accessibility provisions for path of travel requirements for alterations, additions and structural repairs. As a part of the design project, the POT was examined and any elements, components or portions of the POT that were determined to be noncompliant 1) have been identified and 2) the corrective work necessary to bring them into compliance has been included within the scope of this project's work through details, drawings and specifications incorporated into these construction documents. Any noncompliant elements, components or portions of the POT that will not be corrected by this project based on valuation threshold limitations or a finding of unreasonable hardship are so indicated in these construction documents.

During construction, if POT items within the scope of the project represented as code compliant are found to be nonconforming beyond reasonable construction tolerances, they shall be brought into compliance.
- (E) Accessible Parking**

Indicates (E) Accessible parking spaces w/ accessible parking sign and "NO PARKING" painted in 12" high letters in access aisle. Refer CBC 11B-502.
- (E) Van-Accessible Parking**

Indicates (E) Van-accessible parking spaces w/ min. 8'-0" wide aisle on side opposite driver's side of vehicle stall. Refer CBC 11B-502.3.4
- Scope of Work**

Indicates areas within the project's scope of work.
- Not in Contract**

Indicates areas not included in the contract.
- Contractor Entry & Path to Work**

Indicates the contractor's entry and path to the work area.

### Parking Count

Current Parking Spaces	189	
Lost Parking Spaces	12	
New Total Parking Spaces	177	
Per CBC 11B-208.2		
Required Accessible Spaces	6	Provided Spaces 9
Required Accessible Van Spaces	1	Provided Van Spaces 6
Total Spaces Covered	20	
% of Covered Spaces	10%	
Required Covered Spaces	x	Provided Spaces x
Required Covered Van Spaces	x	Provided Spaces x

### Site Plan Sheet Notes

- 1 A R100B (CA) sign shall be posted in a conspicuous place at each entrance to off-street parking facilities or immediately adjacent to and visible from each stall. The sign shall include the address where the towed vehicle may be reclaimed and the telephone number of the local traffic law enforcement agency.
- 2 One in every six accessible off-street parking stalls, but not less than one, shall be served by an accessible aisle of 8'-0" minimum width and shall be signed van accessible. The R7-8b sign shall be mounted below the R99B (CA) plaque or the R99C (CA) sign.
- 3 In each parking stall, a curb or parking bumper shall be provided if required to prevent encroachment of vehicles over the required width of walkways.
- 8 Blue paint, instead of white may be used for marking accessibility aisles.
- 9 The words "NO PARKING", shall be painted in white letters no less than 1'-0" high and located so that it is visible to traffic enforcement officials.
- 12 Where a van accessible parking space is provided, the loading and unloading access aisle shall be 8'-0" wide minimum, and shall be on the passenger side of the vehicle as the vehicle is going forward into the parking space.



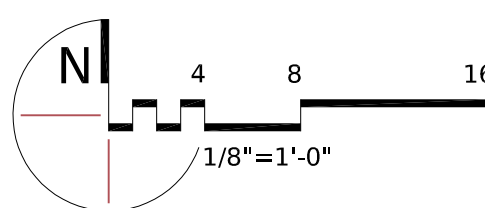
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2019 CALIFORNIA GREEN BUILDING STANDARDS CODE
NONRESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2020, Includes August 2019 Supplement)

Y NA RESPON PARTY
YES NOT APPLICABLE
RESPONSIBLE PARTY (i.e. ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR, ETC.)

1730 S. AMPHLETT BLVD, SUITE 225
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Table with 2 columns: Y, NA, RESPON PARTY

5.504.4 FINISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6.

5.504.4.1 Adhesives, sealants and caulks. Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products as specified in subsection 2, below.

2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.

TABLE 5.504.4.1 - ADHESIVE VOC LIMIT

Table with 2 columns: Architectural Applications, Current VOC Limit. Lists various applications like indoor carpet adhesives, wood flooring adhesives, etc.

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER, THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.
2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

TABLE 5.504.4.2 - SEALANT VOC LIMIT

Table with 2 columns: Sealants, Current VOC Limit. Lists sealant types like architectural, marine deck, nonmembrane roof, etc.

NOTE: FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THESE TABLES, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in Subsections 4.2.1, 4.36 and 4.37 of the 2007 California Air Resources Board Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 5.504.4.3 shall apply.

5.504.4.3.1 Aerosol Paints and coatings. Aerosol paints and coatings shall meet the PWMIR Limits for VOC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

TABLE 5.504.4.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS

Table with 2 columns: Coating Category, Current VOC Limit. Lists categories like flat coatings, nonflat coatings, specialty coatings, etc.

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT COMPOUNDS
2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE
3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

5.504.4.3.2 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:
1. Manufacturer's product specification
2. Field verification of on-site product containers

5.504.4.4 Carpet Systems. All carpet installed in the building interior shall meet at least one of the testing and product requirements:

- 1. Carpet and Rug Institute's Green Label Plus Program.
2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as CDPH Standard Method V1.1 or Specification 01350).
3. NSF/ANSI 140 at the Gold level or higher.
4. Scientific Certifications Systems Sustainable Choice; or
5. Compliant with the Collaborative for High Performance Schools California (2014 CA-CHPS) Criteria listed in the CHPS High Performance Product Database.

5.504.4.4.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.

5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 5.504.4.1.

5.504.4.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure (ATCM) for Composite Wood (17 CCR 93120 et seq.). Those materials not exempted under the ATCM must meet the specified emission limits, as shown in Table 5.504.4.5.

5.504.4.5.3 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

- 1. Product certifications and specifications.
2. Chain of custody certifications.
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.).
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AN/SZS 2269 or European 636 3S standards.
5. Other methods acceptable to the enforcing agency.

Table with 2 columns: Y, NA, RESPON PARTY

TABLE 5.504.4.5 - FORMALDEHYDE LIMITS

Table with 2 columns: Product, Current Limit. Lists products like hardwood plywood veneer core, particle board, etc.

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.
2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16 INCHES (8 MM).

5.504.4.6 Resilient flooring systems. For 80 percent of floor area receiving resilient flooring, installed resilient flooring shall meet at least one of the following:

- 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program;
2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010;
3. Compliant with the Collaborative for High Performance Schools California (2014 CA-CHPS) Criteria and listed in the CHPS High Performance Product Database; or
4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program).

5.504.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a Minimum Efficiency Reporting Value (MERV) of 13. MERV 13 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

Exceptions: Existing mechanical equipment.

5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.

Table with 2 columns: Y, NA, RESPON PARTY

5.504.7 ENVIRONMENTAL TOBACCO SMOKE (ETS) CONTROL. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University, or campus of the University of California, whichever are more stringent. When ordinances, regulations or policies are not in place, post signage to inform building occupants of the prohibitions.

Table with 2 columns: Y, NA, RESPON PARTY

SECTION 5.505 INDOOR MOISTURE CONTROL

5.505.1 INDOOR MOISTURE CONTROL. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1202 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures, see Section 5.407.2 of this code.

Table with 2 columns: Y, NA, RESPON PARTY

SECTION 5.506 INDOOR AIR QUALITY

5.506.1 OUTSIDE AIR DELIVERY. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 (Requirements For Ventilation) of the California Energy Code, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8.

5.506.2 CARBON DIOXIDE (CO2) MONITORING. For buildings or additions equipped with demand control ventilation, CO2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the California Energy Code, Section 120(c)(4).

Table with 2 columns: Y, NA, RESPON PARTY

SECTION 5.507 ENVIRONMENTAL COMFORT

5.507.4 ACOUSTICAL CONTROL. Employ building assemblies and components with Sound Transmission Class (STC) values determined in accordance with ASTM E 90 and ASTM E 413, or Outdoor-Indoor Sound Transmission Class (OITC) determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2.

Exception: Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, storage, enclosed parking structures and utility buildings.

Exception: (DSA-SS) For public schools and community colleges, the requirements of this section and all subsections apply only to new construction.

5.507.4.1 Exterior noise transmission, prescriptive method. Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in the following locations:

- 1. Within the 65 CNEL noise contour of an airport.
Exceptions:
1. Lw or CNEL for military airports shall be determined by the facility Air Installation Compatible Land Use Zone (AICUZ) plan.
2. Lw or CNEL for other airports and heliports for which a land use plan has not been developed shall be determined by the local general plan noise element.

2. Within the 65 CNEL or Lw noise contour of a freeway or expressway, railroad, industrial source or fixed-guideway source as determined by the Noise Element of the General Plan.

5.507.4.1.1. Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB Lw, -1-hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).

5.507.4.2 Performance Method. For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq-1hr) of 50 dBA in occupied areas during any hour of operation.

5.507.4.2.1 Site Features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the interior.

5.507.4.2.2 Documentation of Compliance. An acoustical analysis documenting complying interior soundlevels shall be prepared by personnel approved by the architect or engineer of record.

5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.

Note: Examples of assemblies and their various STC ratings may be found at the California Office of Noise Control: www.toolbox.org/PDF/CaseStudies/stc\_ccc\_ratings.pdf.

Table with 2 columns: Y, NA, RESPON PARTY

SECTION 5.508 OUTDOOR AIR QUALITY

5.508.1 Ozone depletion and greenhouse gas reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.

5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs.

5.508.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.

5.508.2 Supermarket refrigerant leak reduction. New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities.

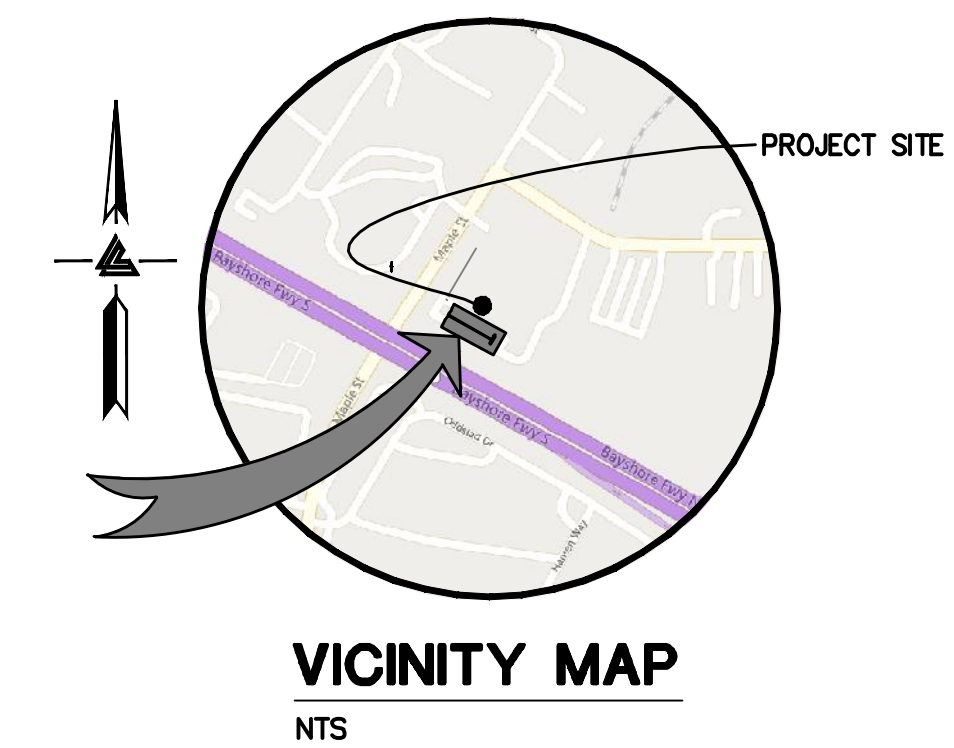
Exception: Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO2), and potentially other refrigerants.



# Solar Shade Structure

REVISION	DATE
Issued For Permit	4/14/2021
Plan Check Resubmittal	11/11/2021

# NEW SOLAR PV SYSTEM PHASE A 1300 MAPLE STREET REDWOOD CITY, CALIFORNIA



## OWNER'S INFORMATION

OWNER: SAN MATEO COUNTY - MAPLE STREET CORRECTIONAL FACILITY  
1300 MAPLE STREET  
REDWOOD CITY, CA

APN: 052-392-580

## REFERENCES

- THIS SITE PLAN IS SUPPLEMENTAL TO:
- TOPOGRAPHIC SURVEY BY F3 & ASSOCIATES, INC., ENTITLED: "TOPOGRAPHIC SURVEY" 1300 MAPLE ST REDWOOD CITY, USA DATED: MAY 2013
  - AS-BUILT PLAN BY TELAMON ENGINEERING CONSULTANTS, INC. ENTITLED: "MAPLE STREET CORRECTIONAL CENTER" 1300 MAPLE ST REDWOOD CITY, USA DATED: MAY 2014 PROJECT NO. 12.04009.00

THE CONTRACTOR SHALL REFER TO THE ABOVE NOTED SURVEY AND PLAN, AND SHALL VERIFY BOTH EXISTING AND PROPOSED ITEMS ACCORDING TO THEM.

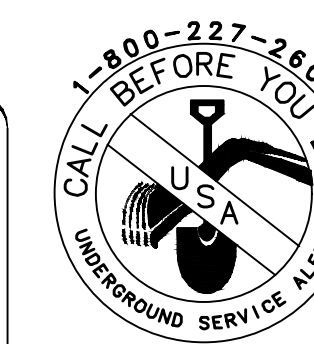


EXISTING	PROPOSED	DESCRIPTION
---	---	BOUNDARY
---	---	PROPERTY LINE
---	---	RETAINING WALL
---	---	LANDSCAPE RETAINING WALL
---	---	RAINWATER TIGHTLINE
---	---	SUBDRAIN LINE
---	---	TIGHTLINE
---	---	STORM DRAIN LINE
---	---	SANITARY SEWER LINE
---	---	WATER LINE
---	---	GAS LINE
---	---	STORM DRAIN PRESSURE LINE
---	---	SANITARY SEWER PRESSURE LINE
---	---	JOINT TRENCH
---	---	SET BACK LINE
---	---	CONCRETE VALLEY GUTTER
---	---	EARTHEN SWALE
---	---	CATCH BASIN
---	---	JUNCTION BOX
---	---	AREA DRAIN
---	---	CURB INLET
---	---	STORM DRAIN MANHOLE
---	---	FIRE HYDRANT
---	---	SANITARY SEWER MANHOLE
---	---	STREET SIGN
---	---	SPOT ELEVATION
---	---	FLOW DIRECTION
---	---	DEMOLISH/REMOVE
---	---	BENCHMARK
---	---	CONTOURS
---	---	TREE TO BE REMOVED
---	---	TREE PROTECTION FENCING

## ABBREVIATIONS

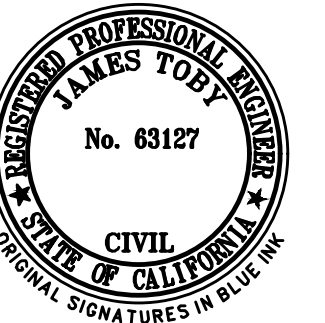
AB	AGGREGATE BASE	LF	LINEAR FEET
AC	ASPHALT CONCRETE	MAX	MAXIMUM
ACC	ACCESSIBLE	MH	MANHOLE
AD	AREA DRAIN	MIN	MINIMUM
BC	BEGINNING OF CURVE	MON.	MONUMENT
B & D	BEARING & DISTANCE	MRO	METERED RELEASE OUTLET
BM	BENCHMARK	(N)	NEW
BUB	BUBBLER BOX	NO.	NUMBER
BW/FG	BOTTOM OF WALL/FINISH GRADE	NTS	NOT TO SCALE
CB	CATCH BASIN	O.C.	ON CENTER
C & G	CURB AND GUTTER	O/V	OVER
CL	CENTER LINE	(PA)	PLANTING AREA
CPP	CORRUGATED PLASTIC PIPE (SMOOTH INTERIOR)	PED	PEDESTRIAN
CO	CLEANOUT	PIV	POST INDICATOR VALVE
COTG	CLEANOUT TO GRADE	PSS	PUBLIC SERVICES EASEMENT
CONC	CONCRETE	PL	PROPERTY LINE
CONST	CONSTRUCT or -TION	PP	POWER POLE
CONC COR	CONCRETE CORNER	PUE	PUBLIC UTILITY EASEMENT
CY	CUBIC YARD	PVC	POLYVINYL CHLORIDE
D	DIAMETER	R	RADIUS
DI	DROP INLET	RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE	RE	RIM ELEVATION
EA	EACH	RW	RAINWATER
EC	END OF CURVE	R/W	RIGHT OF WAY
EG	EXISTING GRADE	S	SLOPE
EL	ELEVATIONS	S.A.D.	SEE ARCHITECTURAL DRAWINGS
EP	EDGE OF PAVEMENT	SAN	SANITARY
EQ	EQUIPMENT	SD	STORM DRAIN
EW	EACH WAY	SDMH	STORM DRAIN MANHOLE
(E)	EXISTING	SHT	SHEET
FC	FACE OF CURB	S.L.D.	SEE LANDSCAPE DRAWINGS
FF	FINISHED FLOOR	SPEC	SPECIFICATION
FG	FINISHED GRADE	SS	SANITARY SEWER
FH	FIRE HYDRANT	SSCO	SANITARY SEWER CLEANOUT
FL	FLOW LINE	SSMH	SANITARY SEWER MANHOLE
FS	FINISHED SURFACE	ST.	STREET
G	GAS	STA	STATION
GA	GAGE OR GAUGE	STD	STANDARD
GB	GRADE BREAK	STRUCT	STRUCTURAL
HDPE	HIGH DENSITY CORRUGATED POLYETHYLENE PIPE	T	TELEPHONE
HORIZ	HORIZONTAL	TC	TOP OF CURB
HI PT	HIGH POINT	TOW	TOP OF WALL
H&T	HUB & TACK	TEMP	TEMPORARY
ID	INSIDE DIAMETER	TP	TOP OF PAVEMENT
INV	INVERT ELEVATION	TW/FG	TOP OF WALL/FINISH GRADE
JB	JUNCTION BOX	TYP	TYPICAL
JT	JOINT TRENCH	VC	VERTICAL CURVE
JP	JOINT UTILITY POLE	VCP	VITRIFIED CLAY PIPE
L	LENGTH	VERT	VERTICAL
LNDG	LANDING	W/	WITH
		WM	WATER LINE
		WM	WATER METER
		WWF	WELDED WIRE FABRIC

**NOTE:**  
FOR CONSTRUCTION STAKING  
SCHEDULING OR QUOTATIONS  
PLEASE CONTACT ALEX ABAYA  
AT LEA & BRAZE ENGINEERING  
(510)887-4086 EXT 116.  
aabaya@leabraze.com



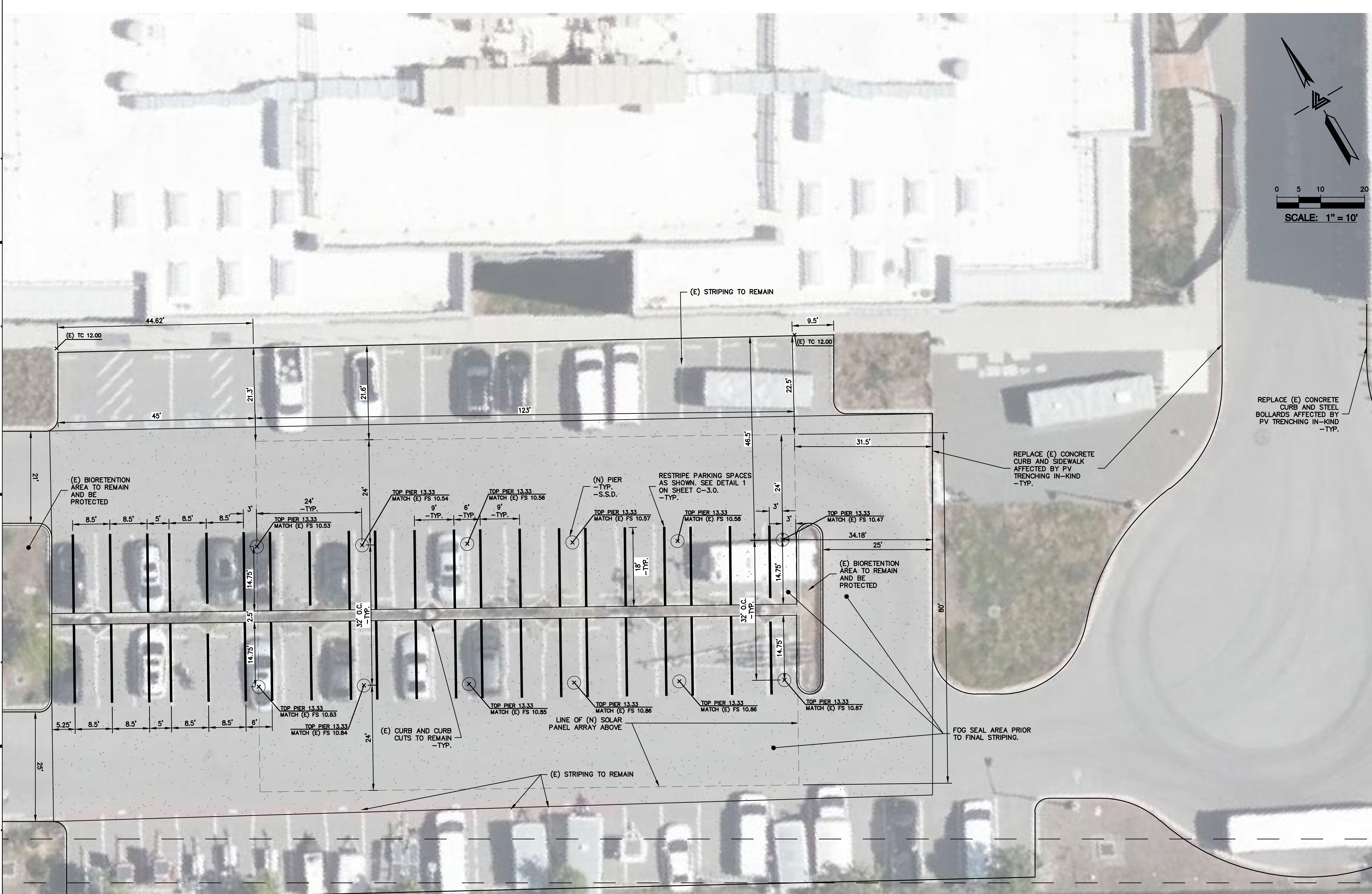
## SHEET INDEX

C-1.0	TITLE SHEET
C-2.0	SITE PLAN
C-3.0	DETAILS
C-4.0	GRADING SPECIFICATIONS
ER-1	EROSION CONTROL
ER-2	EROSION CONTROL DETAILS
BMP	BEST MANAGEMENT PRACTICES



# Solar Shade Structure

REVISION	DATE
Issued For Permit	4/14/2021
Plan Check Resubmittal	11/11/2021

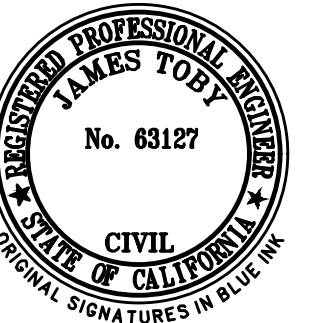


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**\*NOTE:**  
CONTRACTOR TO VERIFY DIMENSIONS, ELEVATIONS, AND LAYOUT PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER FROM PLANS, CONTRACTOR TO NOTIFY LEA & BRAZE ENGINEERING, INC. AND BARTOS ARCHITECTURE.

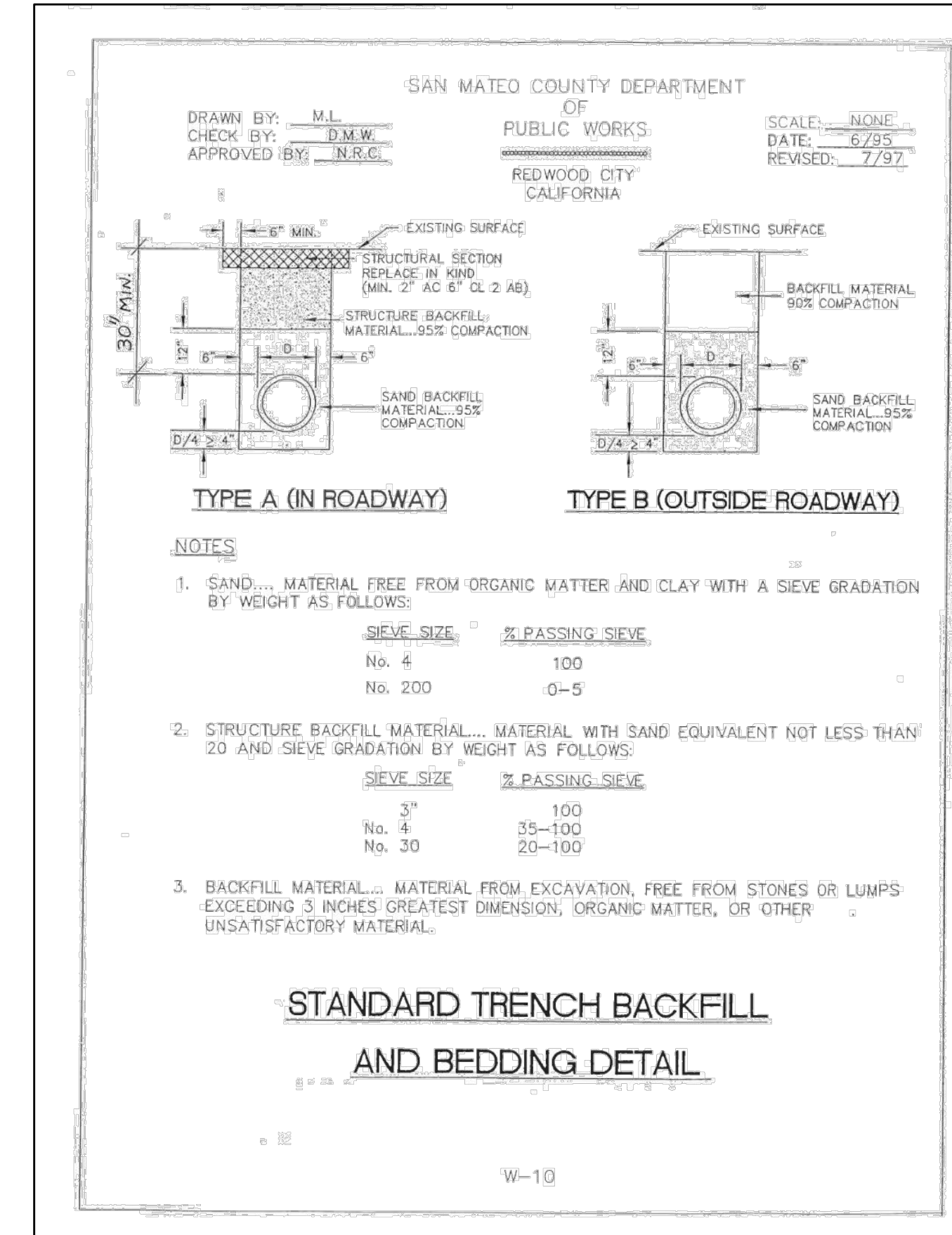
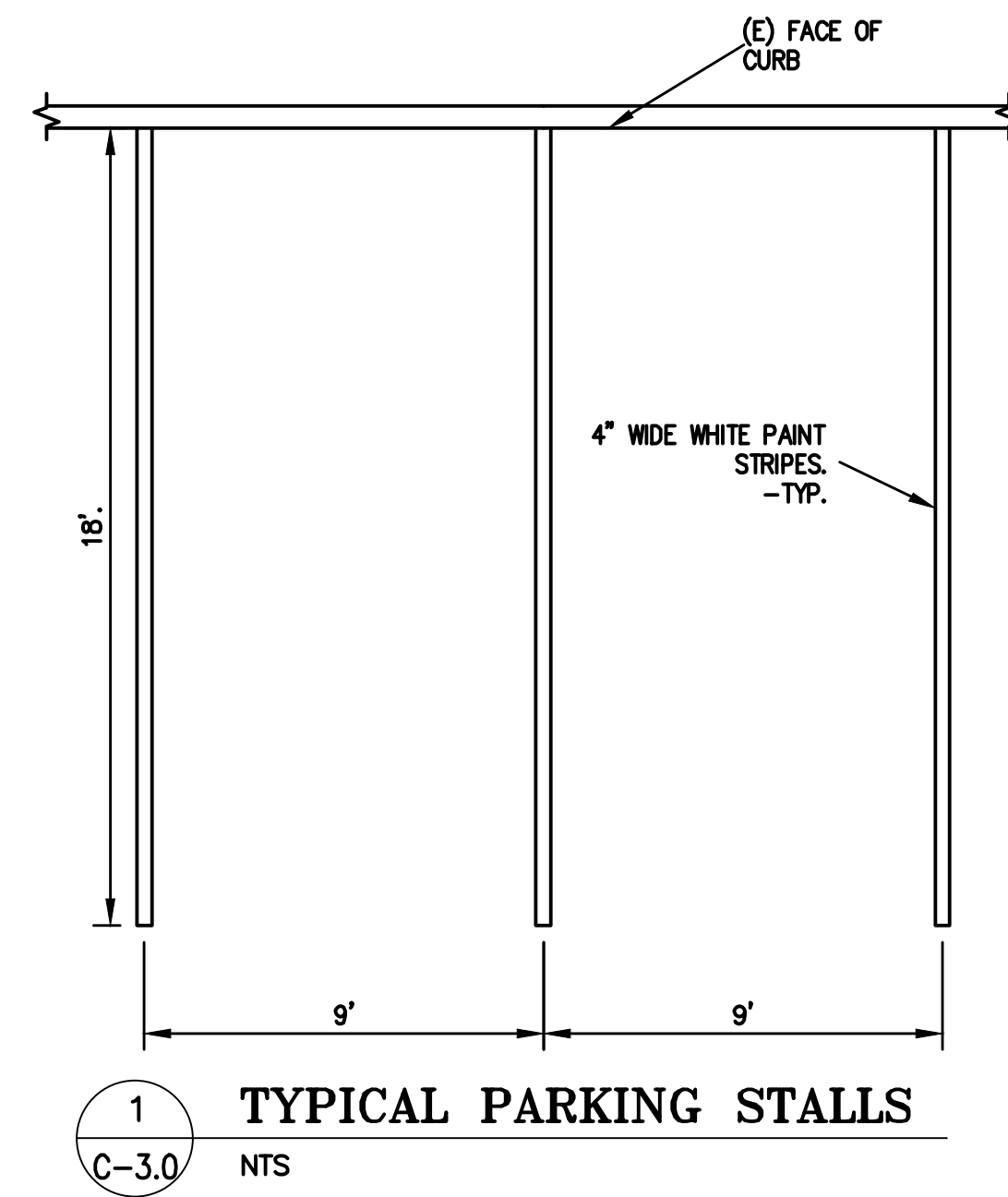
**\*AS-BUILT NOTE:**  
LOCATIONS AND ELEVATIONS SHOWN ARE BASED ON AS-BUILT PLANS BY TELAMON ENGINEERING CONSULTANTS, INC. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION AND EXCAVATION. IF FIELD CONDITIONS DIFFER FROM AS-BUILT PLANS, CONTRACTOR TO NOTIFY LEA & BRAZE ENGINEERING, INC.

**\*NOTE:**  
**FOR CONSTRUCTION STAKING SCHEDULING OR QUOTATIONS PLEASE CONTACT ALEX ABAYA AT LEA & BRAZE ENGINEERING (510)887-4086 EXT 116. aabaya@leabraze.com**



**Solar  
Shade  
Structure**

REVISION	DATE
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**PURPOSE:**

THE PURPOSE OF THIS PLAN IS TO STABILIZE THE SITE TO PREVENT EROSION OF GRADED AREAS AND TO PREVENT SEDIMENTATION FROM LEAVING THE CONSTRUCTION AREA AND AFFECTING NEIGHBORING SITES, NATURAL AREAS, PUBLIC FACILITIES OR OTHER AREAS THAT MIGHT BE AFFECTED BY SEDIMENTATION. ALL MEASURES SHOWN ON THIS PLAN SHOULD BE CONSIDERED THE MINIMUM REQUIREMENTS NECESSARY. SHOULD FIELD CONDITIONS DICTATE ADDITIONAL MEASURES, SUCH MEASURES SHALL BE PER CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL AND THE CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION. LEA & BRAZE ENGINEERING SHOULD BE NOTIFIED IMMEDIATELY SHOULD CONDITIONS CHANGE.

**EROSION CONTROL NOTES:**

- IT SHALL BE THE OWNER'S/CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CONTROL OF THE ENTIRE CONSTRUCTION OPERATION AND TO KEEP THE ENTIRE SITE IN COMPLIANCE WITH THIS EROSION CONTROL PLAN.
- THE INTENTION OF THIS PLAN IS FOR INTERIM EROSION AND SEDIMENT CONTROL ONLY. ALL EROSION CONTROL MEASURES SHALL CONFORM TO CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL, THE CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION, AND THE LOCAL GOVERNING AGENCY FOR THIS PROJECT.
- OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO, DURING, AND AFTER STORM EVENTS. PERSON IN CHARGE OF MAINTAINING EROSION CONTROL MEASURES SHOULD WATCH LOCAL WEATHER REPORTS AND ACT APPROPRIATELY TO MAKE SURE ALL NECESSARY MEASURES ARE IN PLACE.
- SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM, INCLUDING EXISTING DRAINAGE SWALES AND WATERCOURSES.
- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION WILL BE MINIMIZED. COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS CONCERNING POLLUTION SHALL BE MAINTAINED AT ALL TIMES.
- CONTRACTOR SHALL PROVIDE DUST CONTROL AS REQUIRED BY THE APPROPRIATE FEDERAL, STATE AND LOCAL AGENCY REQUIREMENTS.
- ALL MATERIALS NECESSARY FOR THE APPROVED EROSION CONTROL MEASURES SHALL BE IN PLACE BY OCTOBER 15TH.
- EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON, OR FROM OCTOBER 15TH THROUGH APRIL 15TH, WHICHEVER IS LONGER.
- IN THE EVENT OF RAIN, ALL GRADING WORK IS TO CEASE IMMEDIATELY AND THE SITE IS TO BE SEALED IN ACCORDANCE WITH THE APPROVAL EROSION CONTROL MEASURES AND APPROVED EROSION CONTROL PLAN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND REPAIRING EROSION CONTROL SYSTEMS AFTER EACH STORM.
- ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY LOCAL JURISDICTION'S ENGINEERING DEPARTMENT OR BUILDING OFFICIALS.
- MEASURES SHALL BE TAKEN TO COLLECT OR CLEAN ANY ACCUMULATION OR DEPOSIT OF DIRT, MUD, SAND, ROCKS, GRAVEL OR DEBRIS ON THE SURFACE OF ANY STREET, ALLEY OR PUBLIC PLACE OR IN ANY PUBLIC STORM DRAIN SYSTEMS. THE REMOVAL OF AFORESAID SHALL BE DONE BY STREET SWEEPING OR HAND SWEEPING. WATER SHALL NOT BE USED TO WASH SEDIMENTS INTO PUBLIC OR PRIVATE DRAINAGE FACILITIES.
- EROSION CONTROL MEASURES SHALL BE ON-SITE FROM SEPTEMBER 15TH THRU APRIL 15TH.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON OR FROM OCTOBER 1 THROUGH APRIL 30TH, WHICHEVER IS GREATER.
- PLANS SHALL BE DESIGNED TO MEET C3 REQUIREMENTS OF THE MUNICIPAL STORMWATER REGIONAL PERMIT("MRP") NPDES PERMIT CAS 612008.
- THE CONTRACTOR TO NPDES (NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM) BEST MANAGEMENT PRACTICES (BMP) FOR SEDIMENTATION PREVENTION AND EROSION CONTROL TO PREVENT DELETERIOUS MATERIALS OR POLLUTANTS FROM ENTERING THE TOWN OR COUNTY STORM DRAIN SYSTEMS.
- THE CONTRACTOR MUST INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO THE INCEPTION OF ANY WORK ONSITE AND MAINTAIN THE MEASURES UNTIL THE COMPLETION OF ALL LANDSCAPING.
- THE CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, CLEAN DUST FREE AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE TOWN INSPECTOR. THE ADJACENT STREET SHALL AT ALL TIMES BE KEPT CLEAN OF DEBRIS, WITH DUST AND OTHER NUISANCE BEING CONTROLLED AT ALL TIMES. THE CONTRACTOR BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY THE BY THEIR CONSTRUCTION, METHOD OF STREET CLEANING SHALL BE BY DRY SWEEPING OF ALL PAVED AREAS. NO STOCKPILING OF BUILDING MATERIALS WITHIN THE TOWN RIGHT-OF-WAY.
- SEDIMENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONTRACTOR SHALL INSTALL A STABILIZED CONSTRUCTION ENTRANCE PRIOR TO THE INSPECTION OF ANY WORK ONSITE AND MAINTAIN IT FOR THE DURATION OF THE CONSTRUCTION PROCESS SO AS TO NOT INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC RIGHT-OF-WAY UNTIL THE COMPLETION OF ALL LANDSCAPING.
- THE CONTRACTOR SHALL PROTECT DOWN SLOPE DRAINAGE COURSES, STREAMS AND STORM DRAINS WITH ROCK FILLED SAND BAGS, TEMPORARY SWALES, SILT FENCES, AND EARTH PERMS IN CONJUNCTION OF ALL LANDSCAPING.
- STOCKPILED MATERIALS SHALL BE COVERED WITH VISQUEEN OR A TARPULIN UNTIL THE MATERIAL IS REMOVED FROM THE SITE. ANY REMAINING BARE SOIL THAT EXISTS AFTER THE STOCKPILE HAS BEEN REMOVED SHALL BE COVERED UNTIL A NATURAL GROUND COVER IS ESTABLISHED OR IT IS SEEDED OR PLANTED TO PROVIDE GROUND COVER PRIOR TO THE FALL RAINY SEASON.
- EXCESS OR WASTE CONCRETE MUST NOT BE WASHED INTO THE PUBLIC RIGHT-OF-WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
- TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION AND DISPERSAL BY WIND

**EROSION CONTROL NOTES CONTINUED:**

- FUELS, OILS, SOLVENTS AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MUST NOT BE WASHED INTO THE DRAINAGE SYSTEM,
- DUST CONTROL SHALL BE DONE BY WATERING AND AS OFTEN AS REQUIRED BY THE TOWN INSPECTOR.
- SILT FENCE(S) AND/OR FIBER ROLL(S) SHALL BE INSTALLED PRIOR TO SEPTEMBER 15TH AND SHALL REMAIN IN PLACE UNTIL THE LANDSCAPING GROUND COVER IS INSTALLED. CONTRACTOR SHALL CONTINUOUSLY MONITOR THESE MEASURES, FOLLOWING AND DURING ALL RAIN EVENTS, TO PUBLIC OWNED FACILITIES.

**EROSION CONTROL MEASURES:**

- THE FACILITIES SHOWN ON THIS PLAN ARE DESIGNED TO CONTROL EROSION AND SEDIMENT DURING THE RAINY SEASON, OCTOBER 15TH TO APRIL 15. EROSION CONTROL FACILITIES SHALL BE IN PLACE PRIOR TO OCTOBER 15TH OF ANY YEAR. GRADING OPERATIONS DURING THE RAINY SEASON WHICH LEAVE DENUDE SLOPES SHALL BE PROTECTED WITH EROSION CONTROL MEASURES IMMEDIATELY FOLLOWING GRADING ON THE SLOPES.
- SITE CONDITIONS AT TIME OF PLACEMENT OF EROSION CONTROL MEASURES WILL VARY. APPROPRIATE ACTION INCLUDING TEMPORARY SWALES, INLETS, HYDROSEEDING, STRAW BALES, ROCK SACKS, ETC. SHALL BE TAKEN TO PREVENT EROSION AND SEDIMENTATION FROM LEAVING SITE. EROSION CONTROL MEASURES SHALL BE ADJUSTED AS THE CONDITIONS CHANGE AND THE NEED OF CONSTRUCTION SHIFT.
- CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF GRADING. ALL CONSTRUCTION TRAFFIC ENTERING ONTO THE PAVED ROADS MUST CROSS THE STABILIZED CONSTRUCTION ENTRANCES. CONTRACTOR SHALL MAINTAIN STABILIZED ENTRANCE AT EACH VEHICLE ACCESS POINT TO EXISTING PAVED STREETS. ANY MUD OR DEBRIS TRACKED ONTO PUBLIC STREETS SHALL BE REMOVED DAILY AND AS REQUIRED BY THE GOVERNING AGENCY.
- ALL EXPOSED SLOPES THAT ARE NOT VEGETATED SHALL BE HYDROSEEDED. IF HYDROSEEDING IS NOT USED OR IS NOT EFFECTIVE BY OCTOBER 15, THEN OTHER IMMEDIATE METHODS SHALL BE IMPLEMENTED, SUCH AS EROSION CONTROL BLANKETS, OR A THREE-STEP APPLICATION OF 1) SEED, MULCH, FERTILIZER 2) BLOWN STRAW 3) TACKIFIER AND MULCH. HYDROSEEDING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF SECTION 20" EROSION CONTROL AND HIGHWAY PLANTING" OF THE STANDARD SPECIFICATION OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, AS LAST REVISED. REFER TO THE EROSION CONTROL SECTION OF THE GRADING SPECIFICATIONS THAT ARE A PART OF THIS PLAN SET FOR FURTHER INFORMATION.
- INLET PROTECTION SHALL BE INSTALLED AT OPEN INLETS TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAIN SYSTEM. INLETS NOT USED IN CONJUNCTION WITH EROSION CONTROL ARE TO BE BLOCKED TO PREVENT ENTRY OF SEDIMENT. MINIMUM INLET PROTECTION SHALL CONSIST OF A ROCK SACKS OR AS SHOWN ON THIS PLAN
- THIS EROSION AND SEDIMENT CONTROL PLAN MAY NOT COVER ALL THE SITUATIONS THAT MAY ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. VARIATIONS AND ADDITIONS MAY BE MADE TO THIS PLAN IN THE FIELD. A REPRESENTATIVE OF LEA & BRAZE ENGINEERING SHALL PERFORM A FIELD REVIEW AND MAKE RECOMMENDATIONS AS NEEDED. CONTRACTOR IS RESPONSIBLE TO NOTIFY LEA & BRAZE ENGINEERING AND THE GOVERNING AGENCY OF ANY CHANGES.
- THE EROSION CONTROL MEASURES SHALL CONFORM TO THE LOCAL JURISDICTION'S STANDARDS AND THE APPROVAL OF THE LOCAL JURISDICTION'S ENGINEERING DEPARTMENT.
- STRAW ROLLS SHALL BE PLACED AT THE TOE OF SLOPES AND ALONG THE DOWN SLOPE PERIMETER OF THE PROJECT. THEY SHALL BE PLACED AT 25 FOOT INTERVALS ON GRADED SLOPES. PLACEMENT SHALL RUN WITH THE CONTOURS AND ROLLS SHALL BE TIGHTLY END BUTTED. CONTRACTOR SHALL REFER TO MANUFACTURES SPECIFICATIONS FOR PLACEMENT AND INSTALLATION INSTRUCTIONS.

**REFERENCES:**

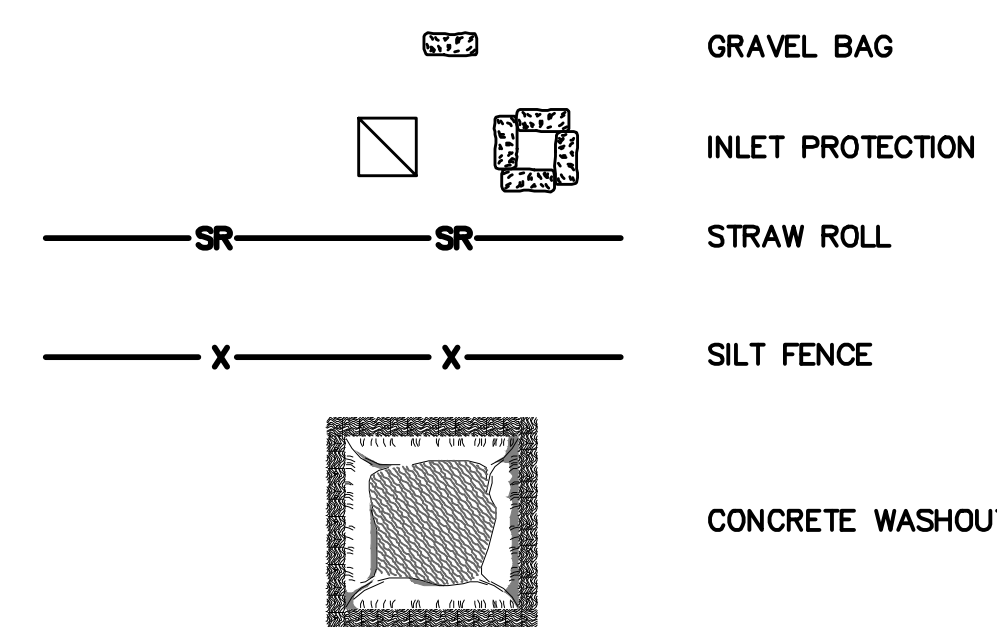
- CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL
- CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION

**PERIODIC MAINTENANCE:**

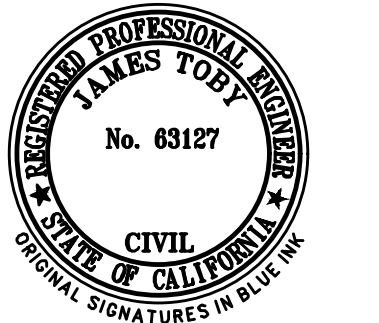
- MAINTENANCE IS TO BE PERFORMED AS FOLLOWS:
  - DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION SHALL BE REPAIRED AT THE END OF EACH WORKING DAY.
  - SWALES SHALL BE INSPECTED PERIODICALLY AND MAINTAINED AS NEEDED.
  - SEDIMENT TRAPS, BERMS, AND SWALES ARE TO BE INSPECTED AFTER EACH STORM AND REPAIRS MADE AS NEEDED.
  - SEDIMENT SHALL BE REMOVED AND SEDIMENT TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A DEPTH OF 1' FOOT.
  - SEDIMENT REMOVED FROM TRAP SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
  - RILLS AND GULLIES MUST BE REPAIRED.
- GRAVEL BAG INLET PROTECTION SHALL BE CLEANED OUT WHENEVER SEDIMENT DEPTH IS ONE HALF THE HEIGHT OF ONE GRAVEL BAG.
- STRAW ROLLS SHALL BE PERIODICALLY CHECKED TO ASSURE PROPER FUNCTION AND CLEANED OUT WHENEVER THE SEDIMENT DEPTH REACHED HALF THE HEIGHT OF THE ROLL.
- SILT FENCE SHALL BE PERIODICALLY CHECKED TO ASSURE PROPER FUNCTION AND CLEANED OUT WHENEVER THE SEDIMENT DEPTH REACHES ONE FOOT IN HEIGHT.
- CONSTRUCTION ENTRANCE SHALL BE REGRAVELED AS NECESSARY FOLLOWING SILT/SOIL BUILDUP.
- ANY OTHER EROSION CONTROL MEASURES SHOULD BE CHECKED AT REGULAR INTERVALS TO ASSURE PROPER FUNCTION



**EROSION CONTROL LEGEND**

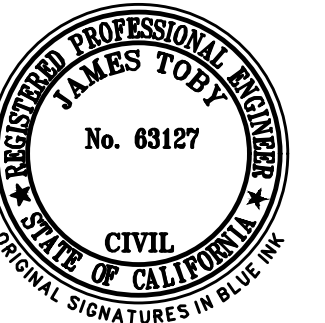


NOTE:  
SEAL ALL OTHER INLETS NOT INTENDED TO ACCEPT STORM WATER AND DIRECT FLOWS TEMPORARILY TO FUNCTIONAL SEDIMENTATION BASIN INLETS. -TYP



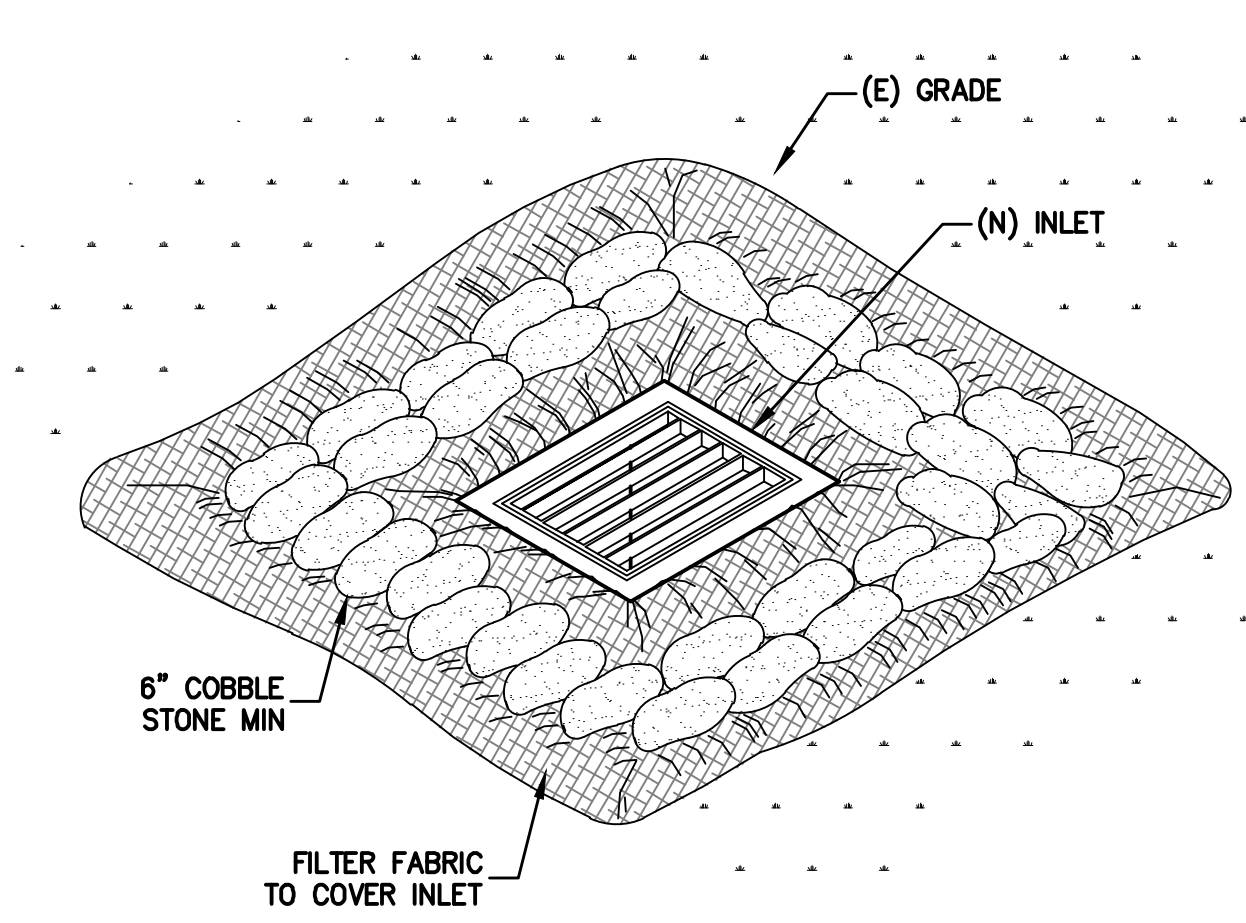
**Solar Shade Structure**

REVISION	DATE
Issued For Permit	4/14/2021
Plan Check Resubmittal	11/11/2021

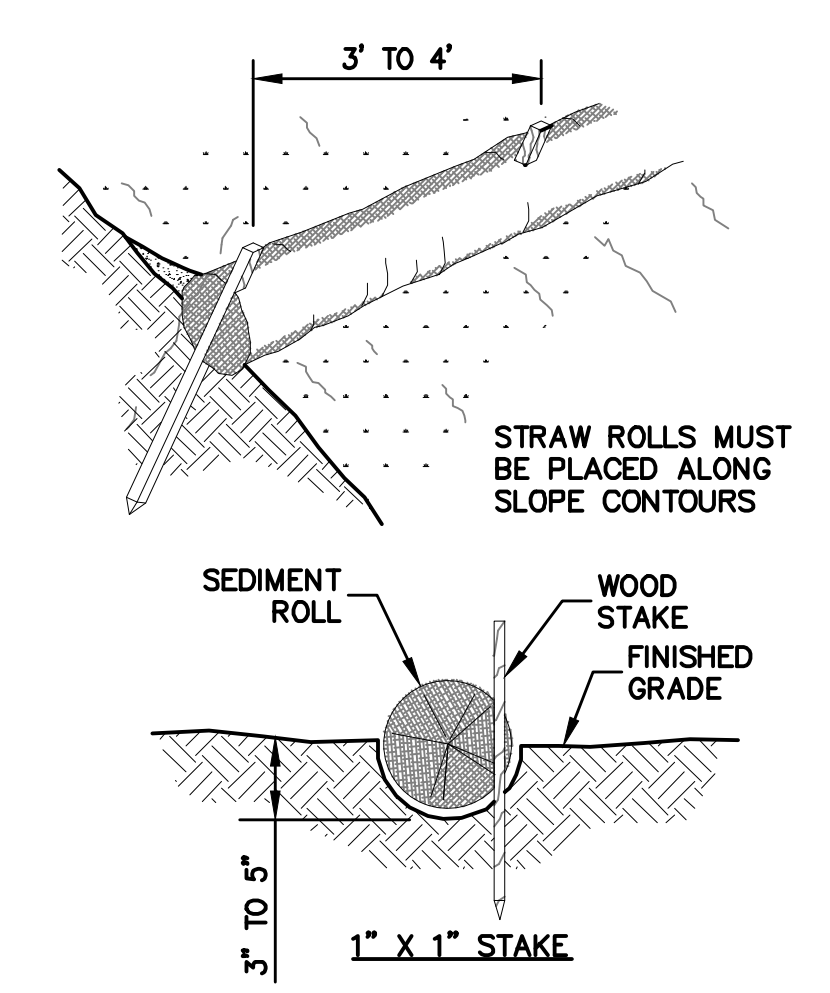


**Solar Shade Structure**

REVISION	DATE
Issued For Permit	4/14/2021
Plan Check Resubmittal	11/11/2021

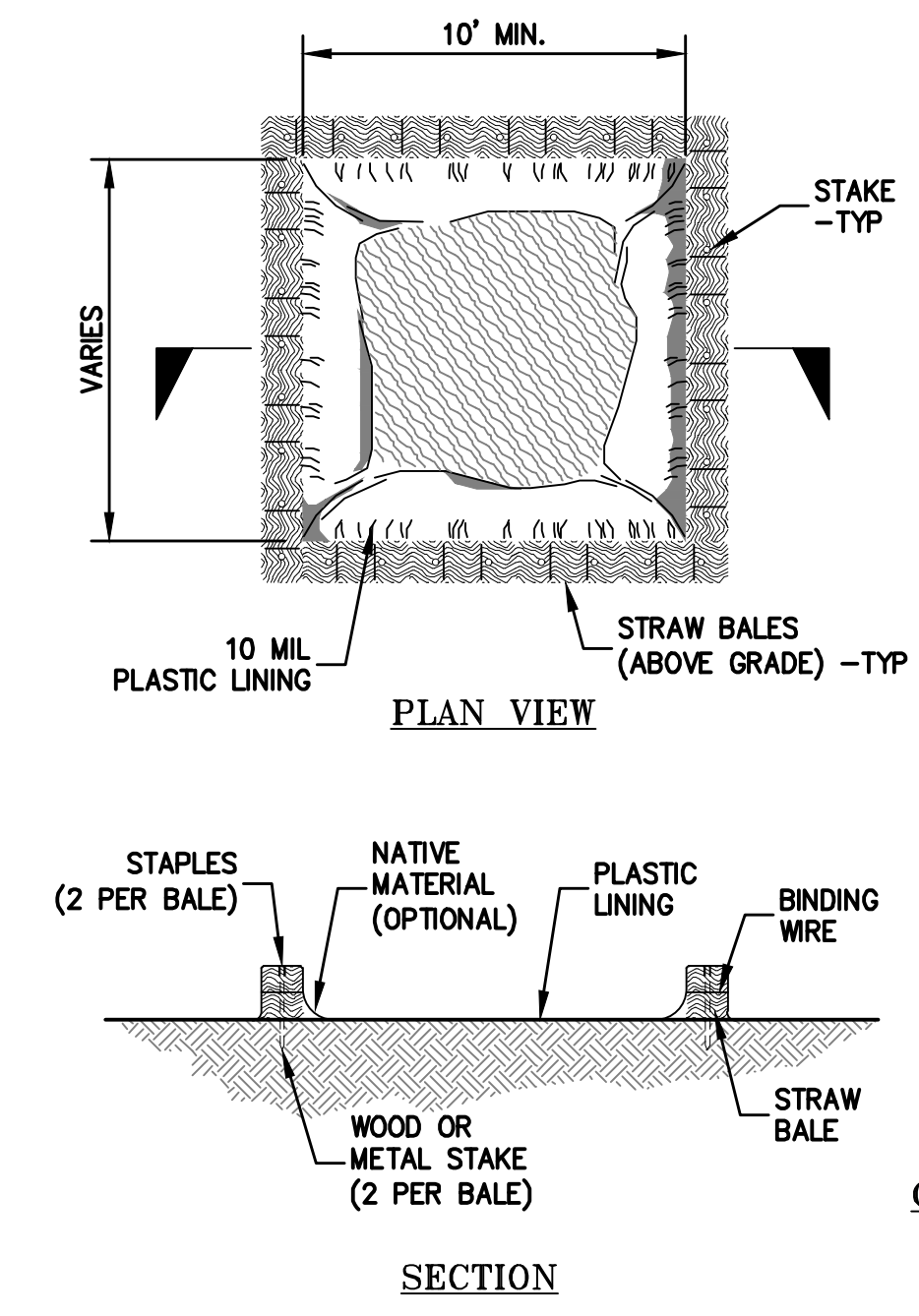


**1 INLET PROTECTION**  
ER-2 NTS

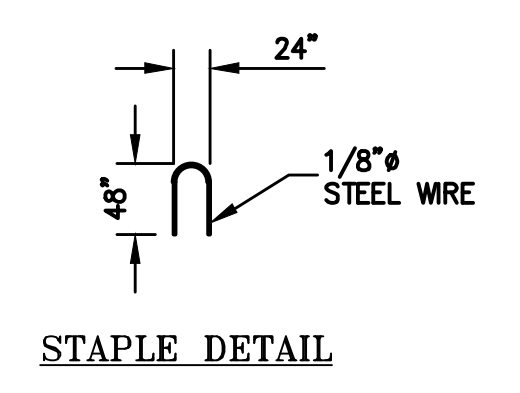


**NOTE:**  
1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3" TO 5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.  
2. CONTRACTOR IS RESPONSIBLE FOR REGULAR MAINTENANCE AND INSPECTION. THE SILT SHALL BE CLEANED OUT WHEN IT REACHES HALF THE HEIGHT OF THE ROLL.

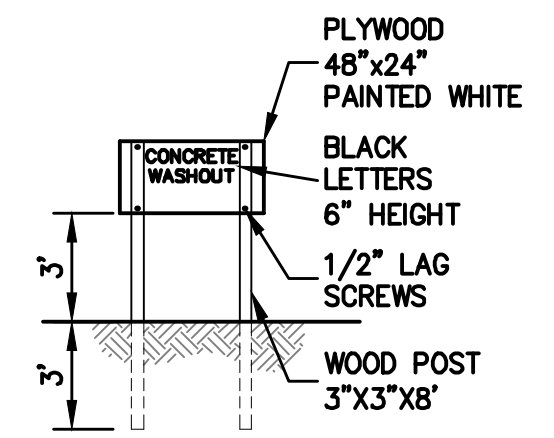
**2 STRAW ROLLS**  
ER-2 NTS



**3 CONCRETE WASHOUT**  
ER-2 NTS

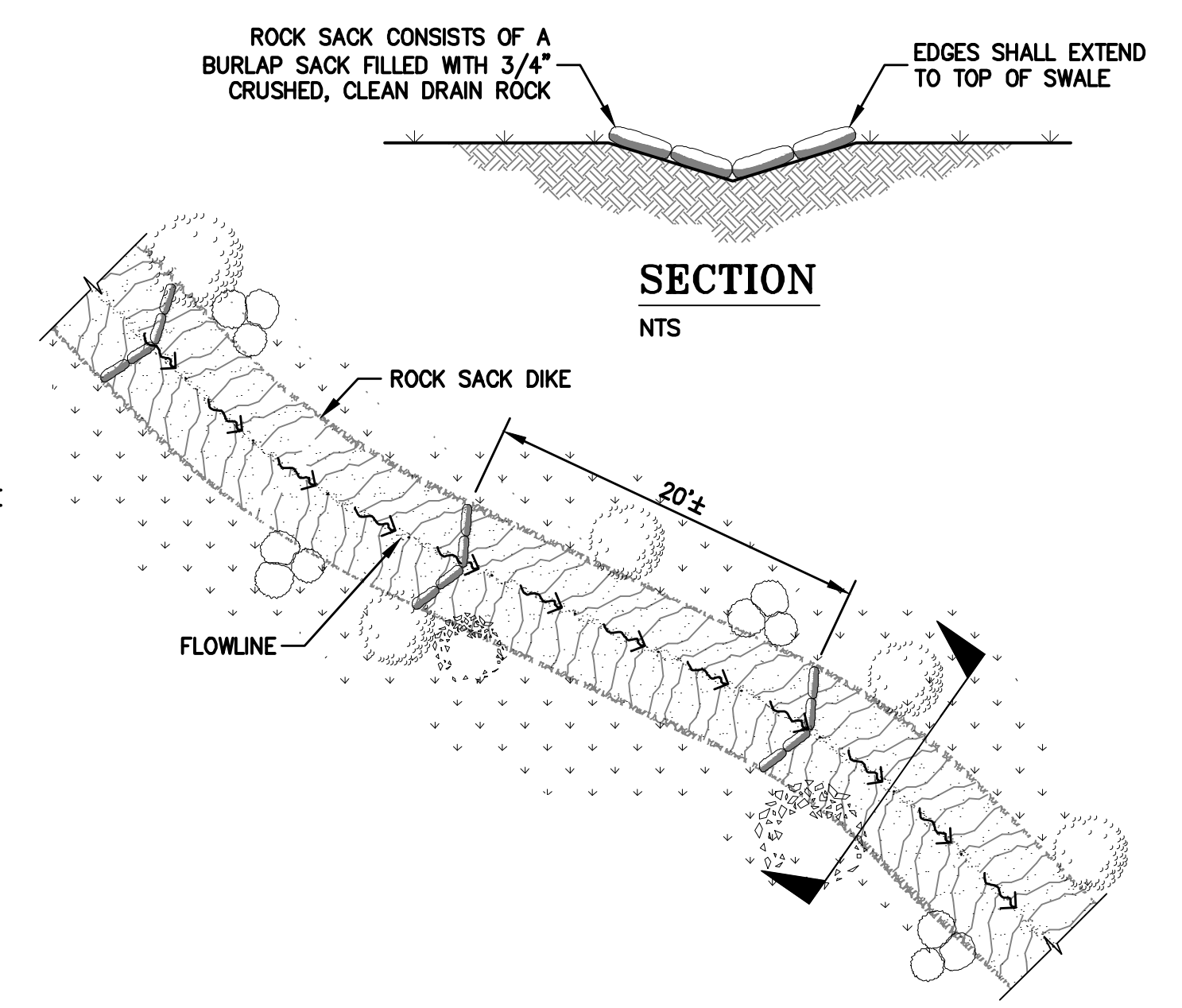


**STAPLE DETAIL**



**CONCRETE WASHOUT SIGN DETAIL**

**NOTES:**  
ACTUAL LAYOUT DETERMINED IN FIELD.  
THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 10' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

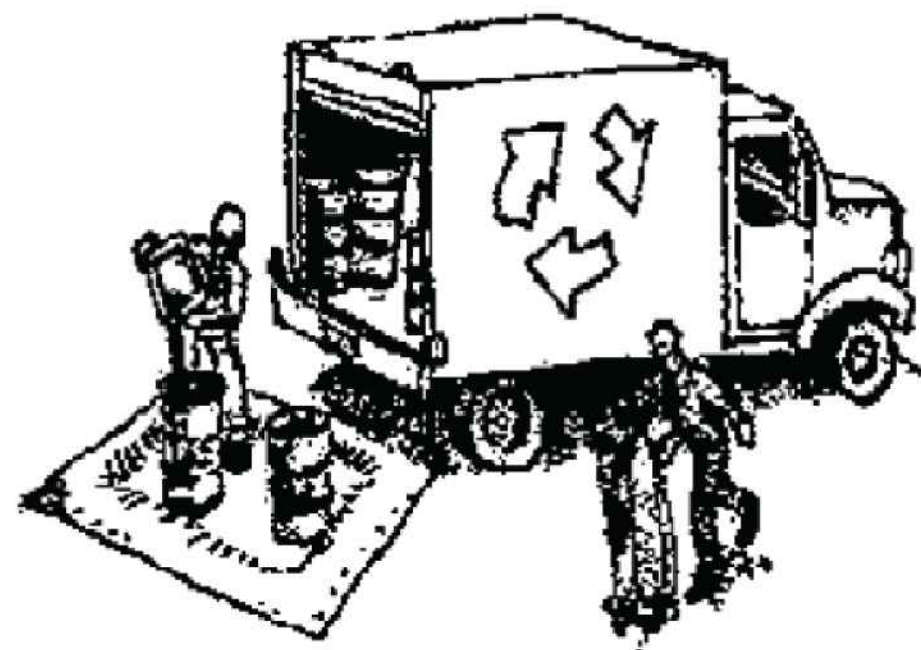


**4 ROCK SACK DIKE IN SWALE**  
ER-2 NTS

# Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

## Materials & Waste Management



### Non-Hazardous Materials

- ❑ Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- ❑ Use (but don't overuse) reclaimed water for dust control.

### Hazardous Materials

- ❑ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- ❑ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- ❑ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- ❑ Arrange for appropriate disposal of all hazardous wastes.

### Waste Management

- ❑ Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- ❑ Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- ❑ Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- ❑ Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- ❑ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

### Construction Entrances and Perimeter

- ❑ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- ❑ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

## Equipment Management & Spill Control



### Maintenance and Parking

- ❑ Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- ❑ Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- ❑ If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- ❑ If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- ❑ Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment.

### Spill Prevention and Control

- ❑ Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
- ❑ Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- ❑ Clean up spills or leaks immediately and dispose of cleanup materials properly.
- ❑ Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- ❑ Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- ❑ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- ❑ Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

## Earthmoving



- ❑ Schedule grading and excavation work during dry weather.
- ❑ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ❑ Remove existing vegetation only when absolutely necessary, and seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.
- ❑ Prevent sediment from migrating offsite and protect storm drain inlets, gutters, ditches, and drainage courses by installing and maintaining appropriate BMPs, such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.
- ❑ Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

### Contaminated Soils

- ❑ If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
  - Unusual soil conditions, discoloration, or odor.
  - Abandoned underground tanks.
  - Abandoned wells
  - Buried barrels, debris, or trash.

## Paving/Asphalt Work



- ❑ Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- ❑ Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- ❑ Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- ❑ Do not use water to wash down fresh asphalt concrete pavement.

### Sawcutting & Asphalt/Concrete Removal

- ❑ Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- ❑ Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- ❑ If sawcut slurry enters a catch basin, clean it up immediately.

## Concrete, Grout & Mortar Application



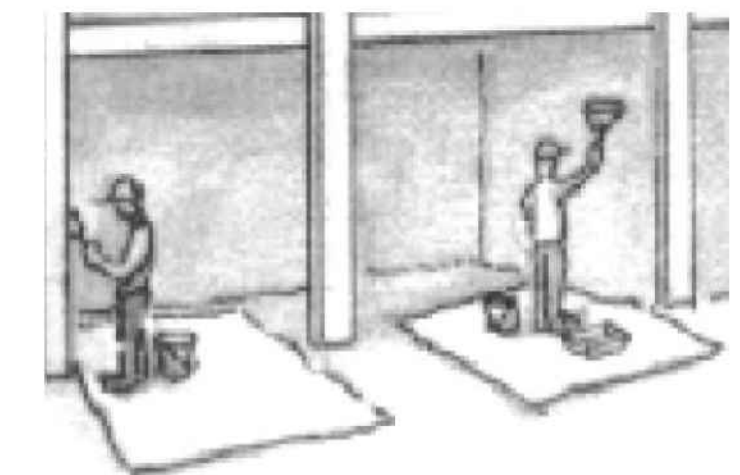
- ❑ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ❑ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- ❑ When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.

## Landscaping



- ❑ Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- ❑ Stack bagged material on pallets and under cover.
- ❑ Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

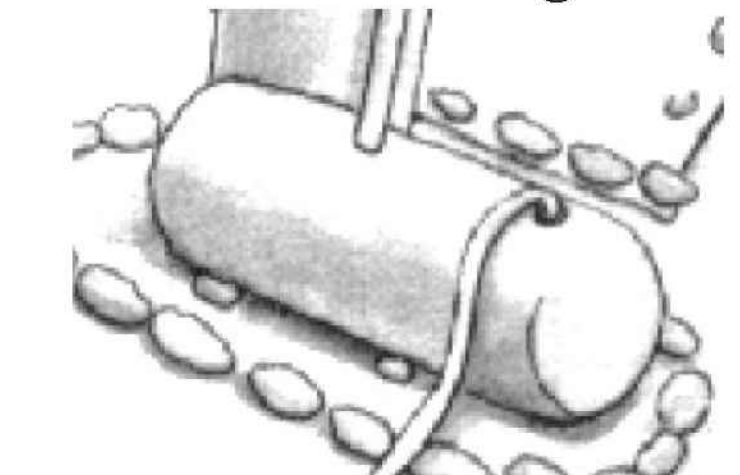
## Painting & Paint Removal



### Painting Cleanup and Removal

- ❑ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- ❑ For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ❑ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- ❑ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ❑ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

## Dewatering



- ❑ Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- ❑ Divert run-on water from offsite away from all disturbed areas.
- ❑ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ❑ In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

**Storm drain polluters may be liable for fines of up to \$10,000 per day!**







**Rinne & Peterson**  
STRUCTURAL ENGINEERS



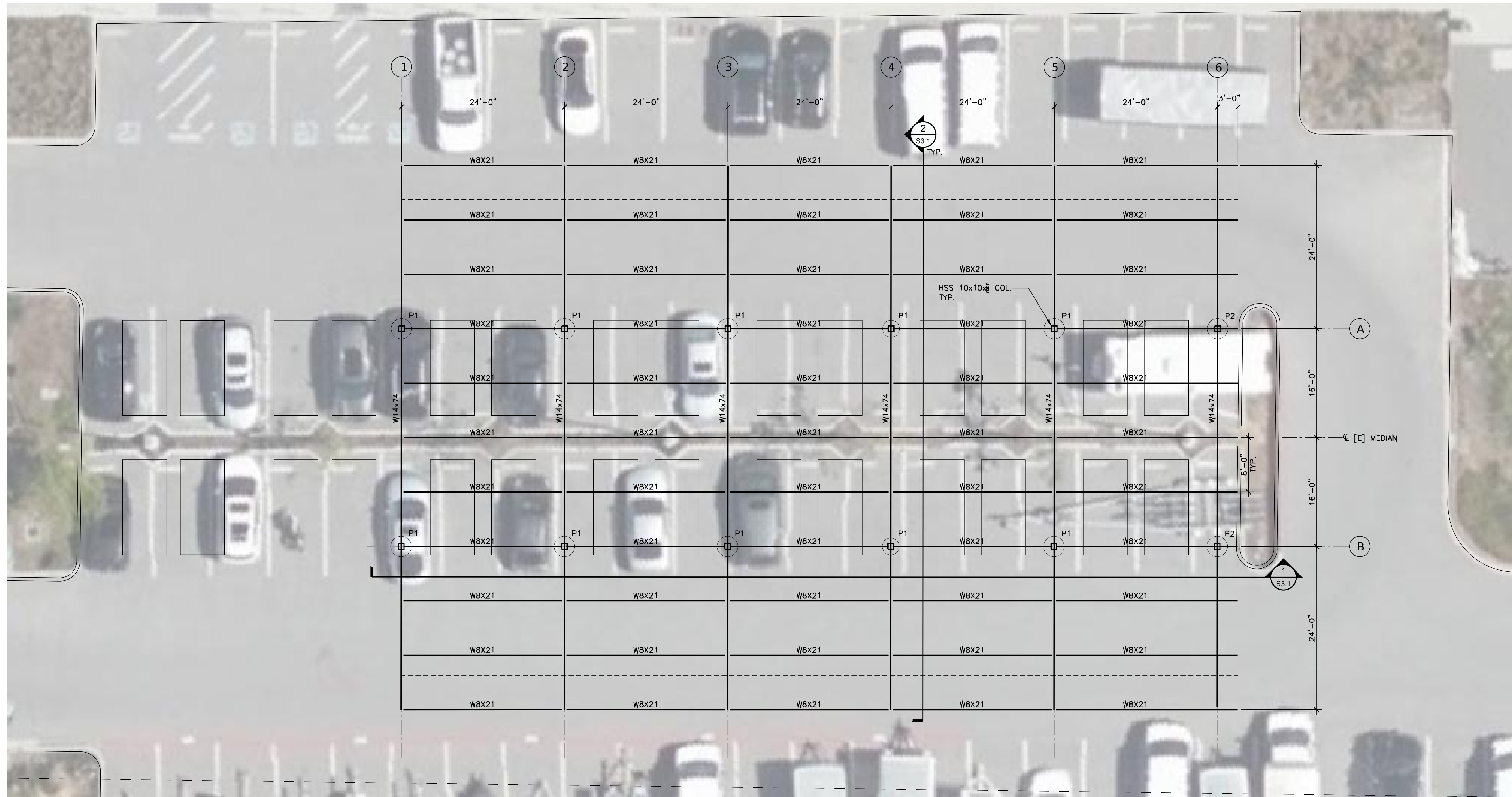
San Mateo County  
Sheriff's Office  
400 County Center  
Redwood City, CA



Maple Street  
Correctional Facility  
1300 Maple St  
Redwood City, CA 94063

# Solar Shade Structure

REVISION	DATE
Issued For Permit	4/14/2021
Plan Check Resubmittal	11/11/2021



**1** SOLAR STRUCTURE FRAMING PLAN 1/8"=1'-0"

**NOTES:**

- SEE SHEET S0.1 FOR GENERAL NOTES.
- P1 DENOTES PIER, SEE SCHEDULE **2**

MARK	DIAMETER	DEPTH
P1	36"	10'
P2	36"	15'

- NOTE:**
- SEE **3** FOR PROFILE.
  - DEPTH IS FEET BELOW ADJACENT GRADE.

**2** PIER SCHEDULE 20205-S21-2

R & P JOB No. 20205  
 PRINCIPAL-IN-CHARGE RH  
 REMARKS:

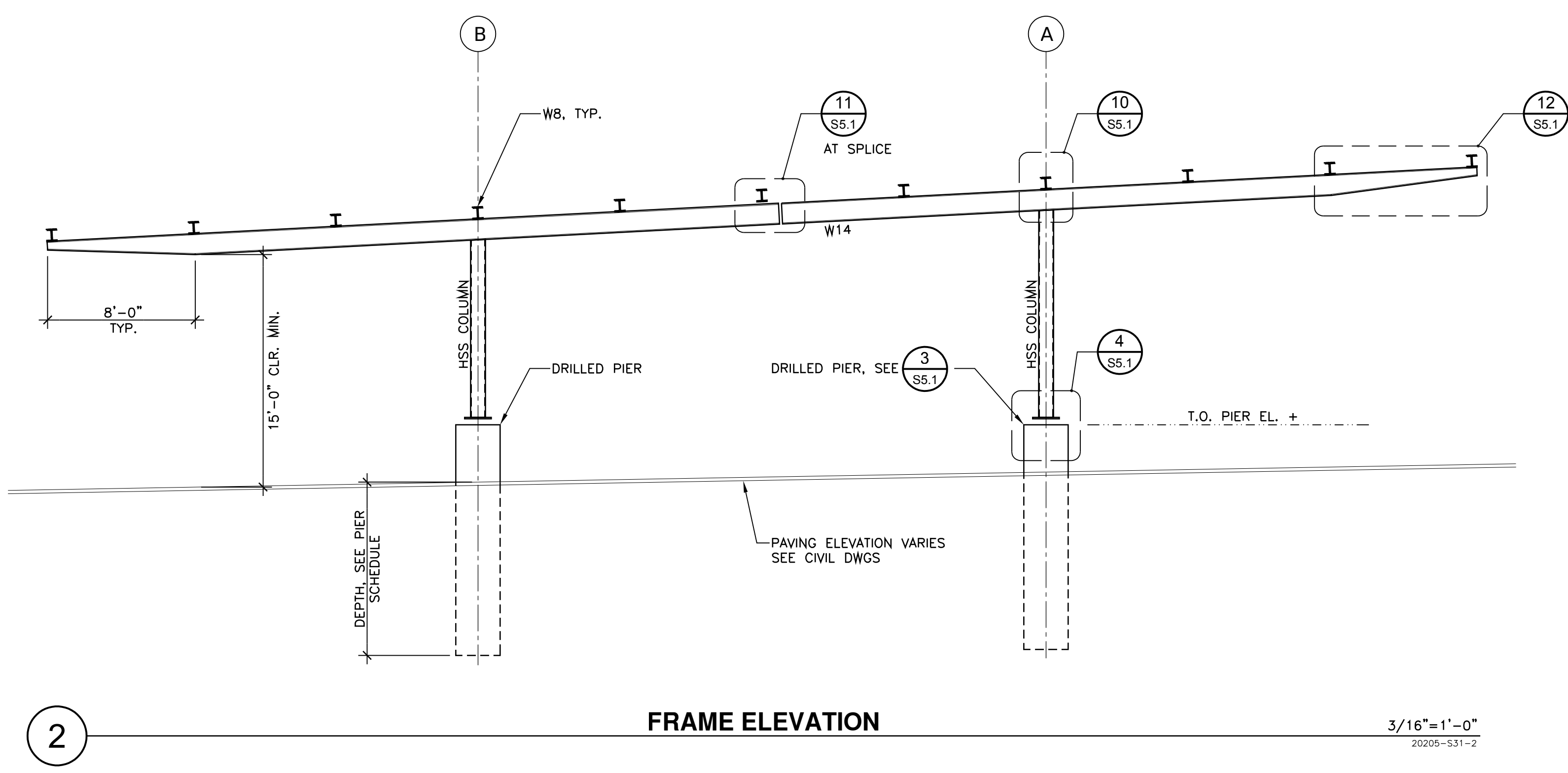
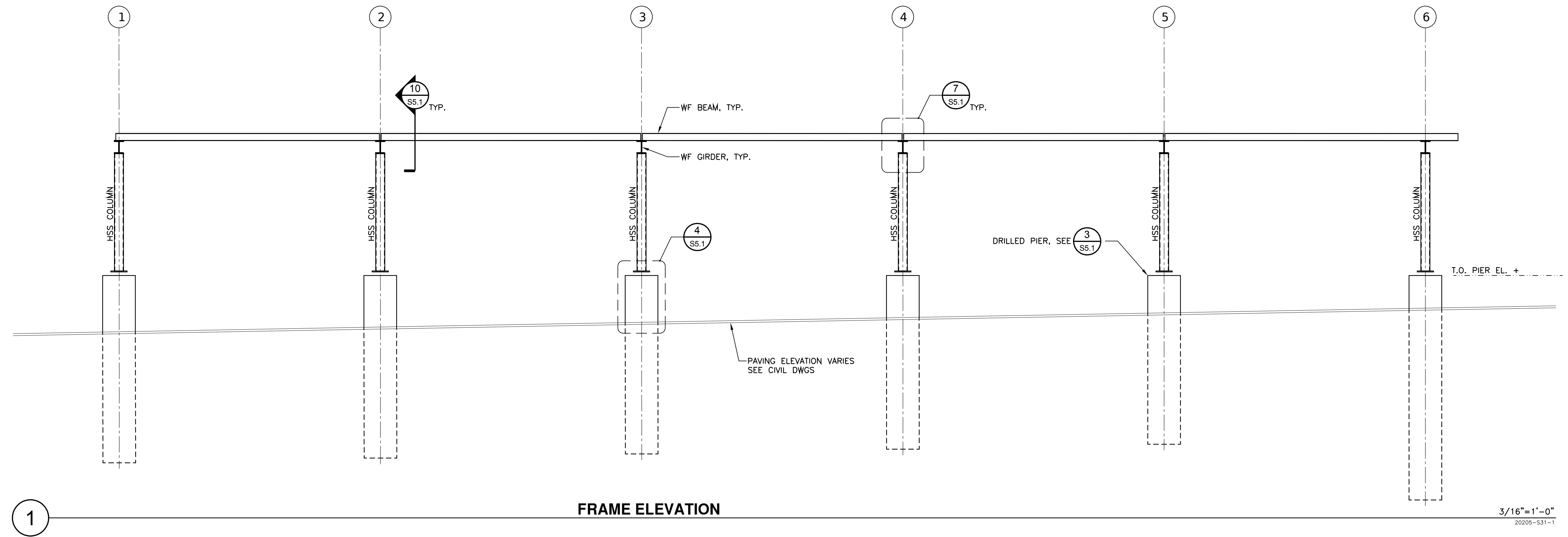
Solar Structure  
Framing Plan  
and Elevation

## S2.1



**Solar Shade Structure**

REVISION	DATE
Issued For Permit	4/14/2021
Plan Check Resubmittal	11/11/2021



20205  
RHP  
20205  
RH  
20205  
RH





**Rinne & Peterson**  
STRUCTURAL ENGINEERS



San Mateo County  
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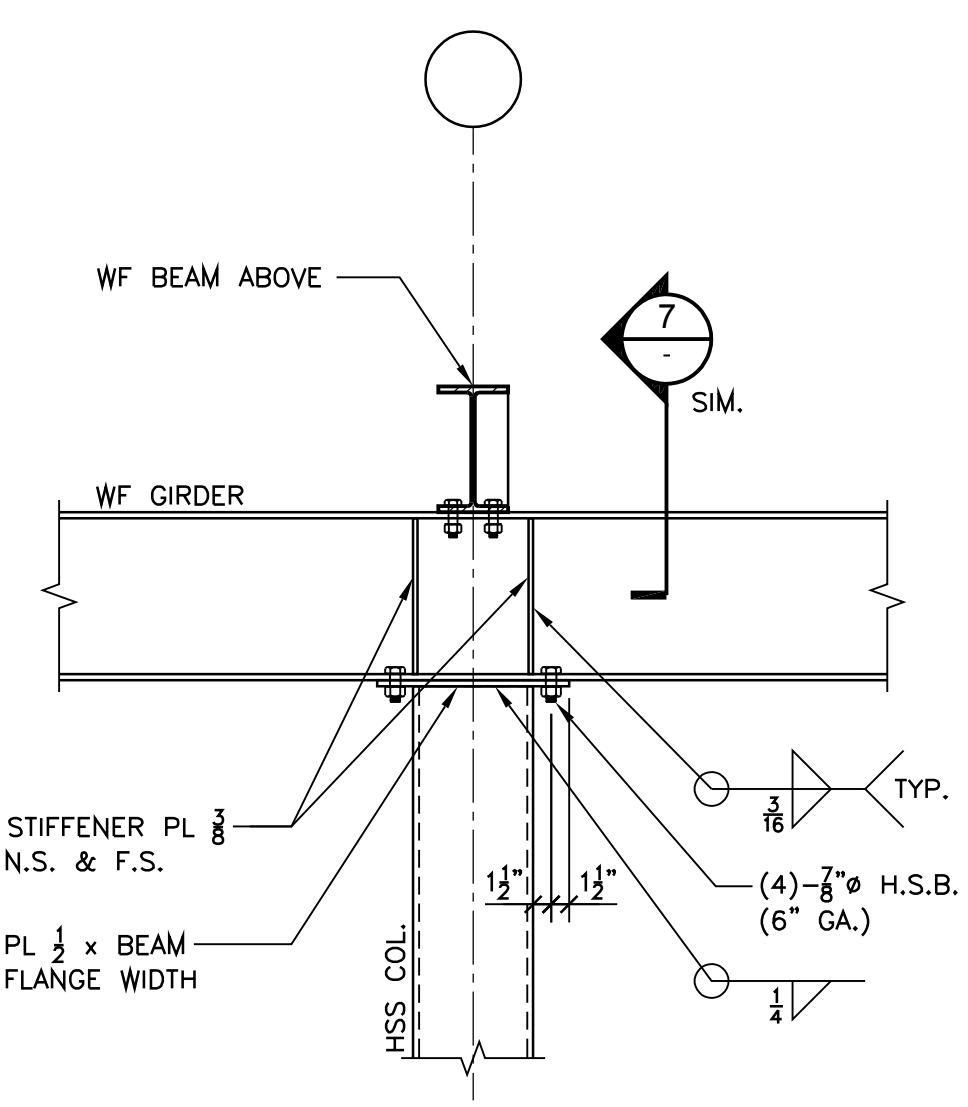
# Solar Shade Structure

REVISION DATE  
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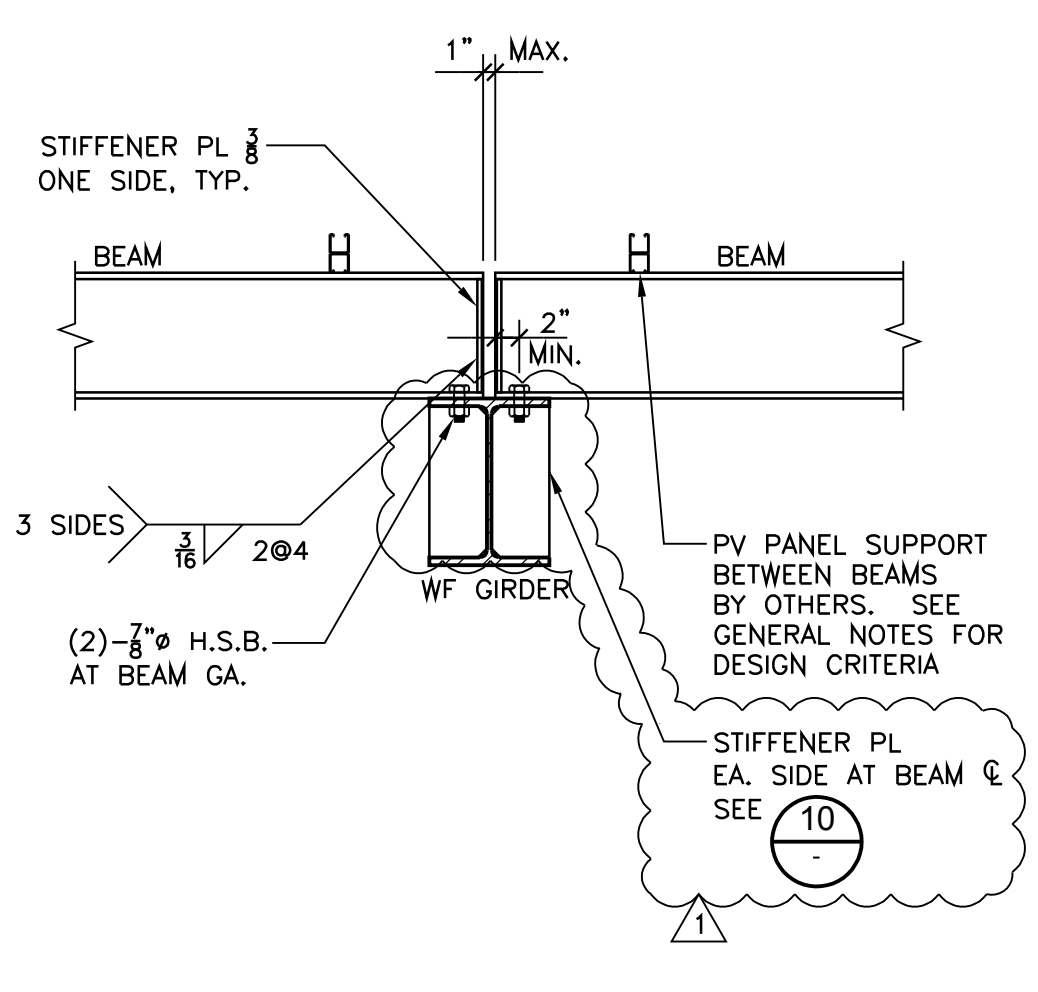
CLASS B LAP SPICE	F'c = 3000 PSI		F'c = 4000 PSI	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	28	21	24	18
#4	37	28	32	25
#5	46	36	40	31
#6	56	43	48	37
#7	81	62	70	54
#8	93	71	80	62
#9	104	80	90	70
#10	118	90	102	78
#11	131	100	113	87

**NOTES:**

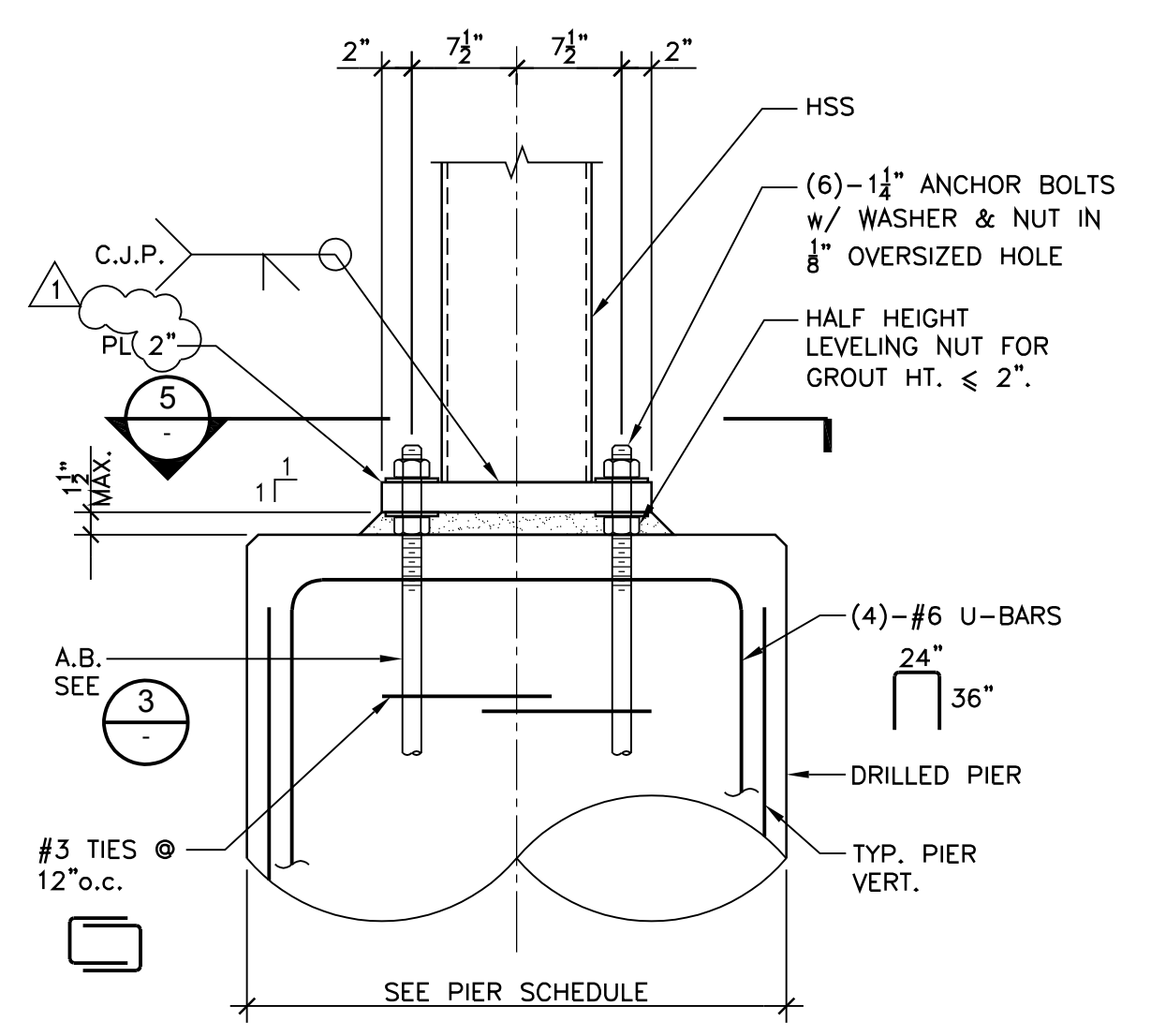
- DEVELOPMENT LENGTH AND SPICE LENGTH REQUIREMENTS ARE BASED ON 2010 CBC AND ACI-318-08. SPICE LENGTHS SHOWN IN TABLE ARE IN INCHES.
- TENSION BAR LAP SPICES SHALL CONFORM TO ACI CLASS B SPICE LENGTHS, UNLESS NOTED OTHERWISE.
- LAP SPICE LENGTHS ARE BASED ON GRADE 60 REINFORCING AND NORMAL WEIGHT CONCRETE.
- TOP REINFORCEMENT IS DEFINED AS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE CAST IN MEMBER BELOW THE DEVELOPMENT LENGTH OR SPICES.
- TENSION LAP SPICE CANNOT BE USED FOR #14 AND #18 BARS.
- WHERE 2 DIFFERENT BAR SIZES ARE LAPPED, THE SPICE LENGTH SHALL BE BASED ON THE LARGER BAR SIZE.
- COMPLY WITH ACI SECTION 12.2  
DEVELOPMENT LENGTH = LAP LENGTH / 1.3



**10 GIRDER TO COLUMN CONNECTION** 20205-551-10



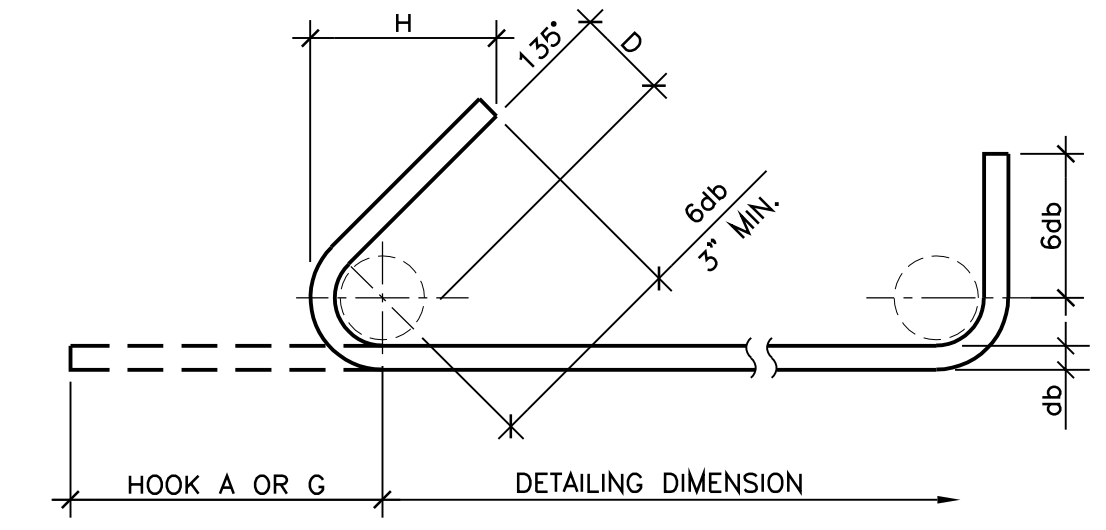
**7 BEAM TO GIRDER CONNECTION** 20205-551-7



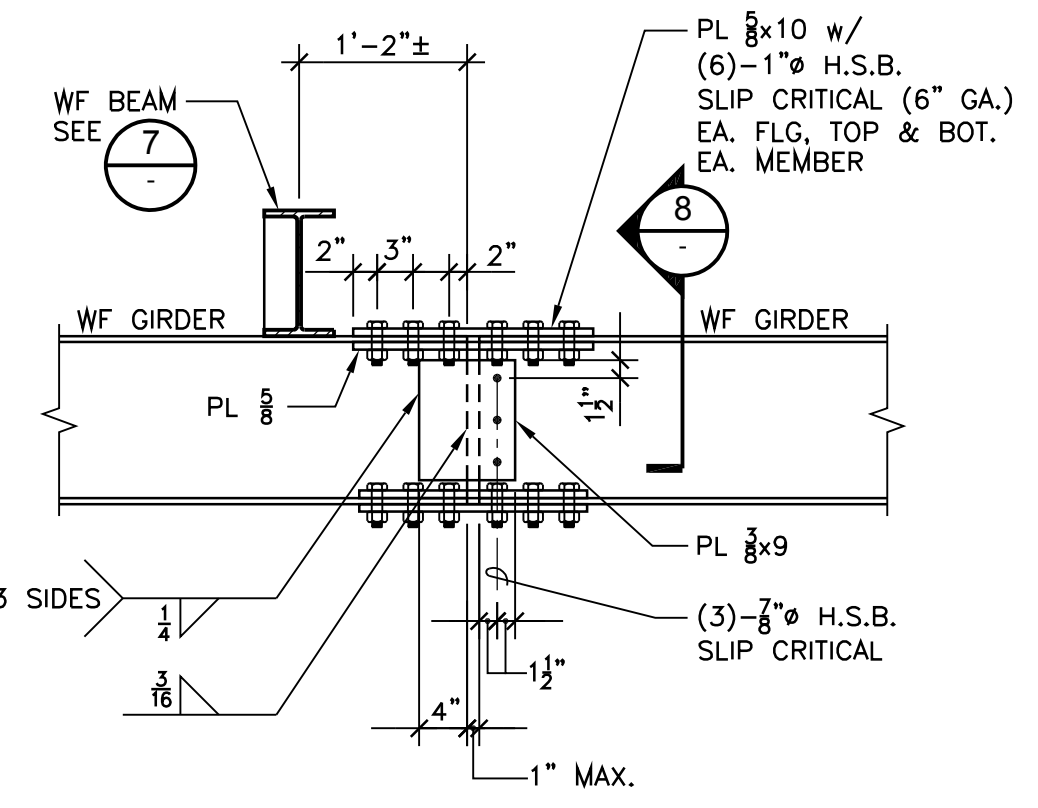
**4 COLUMN BASE DETAIL** 1/2"=1'-0" 20205-551-4

**1 REINFORCING BAR SPICES** [NORMAL WEIGHT CONCRETE] 20205-551-1

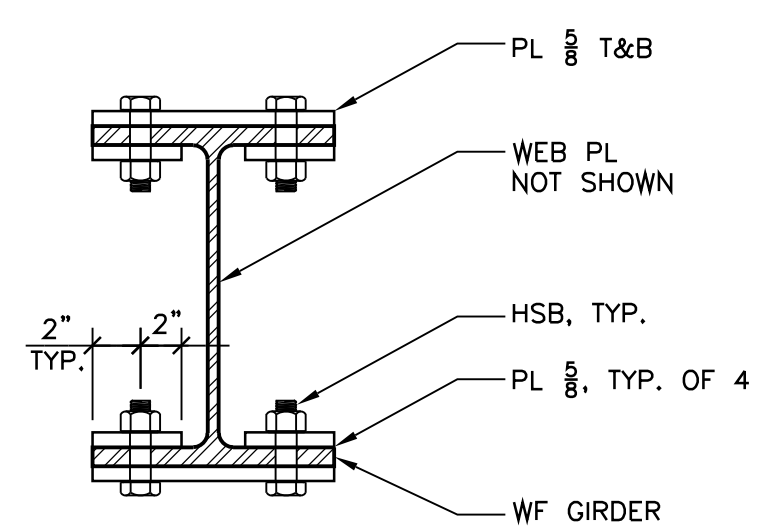
BAR SIZE	D	135° HOOK	
		HOOK A OR G	H APPROX.
#3	1 1/2"	5"	3 1/2"
#4	2"	6 1/2"	4 1/2"
#5	2 1/2"	8"	5 1/2"
#6	3"	10 1/2"	6 1/2"



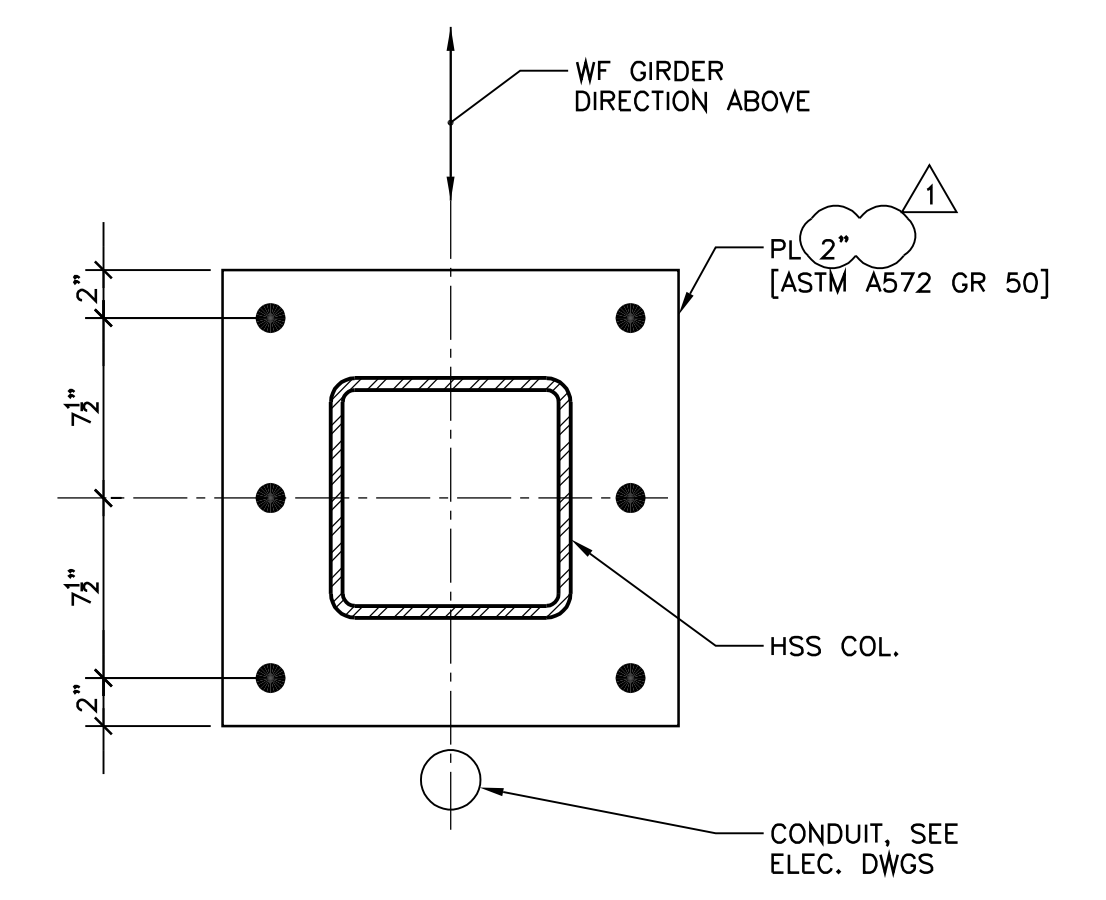
**2 SEISMIC STIRRUP/TIE HOOK** 20205-551-2



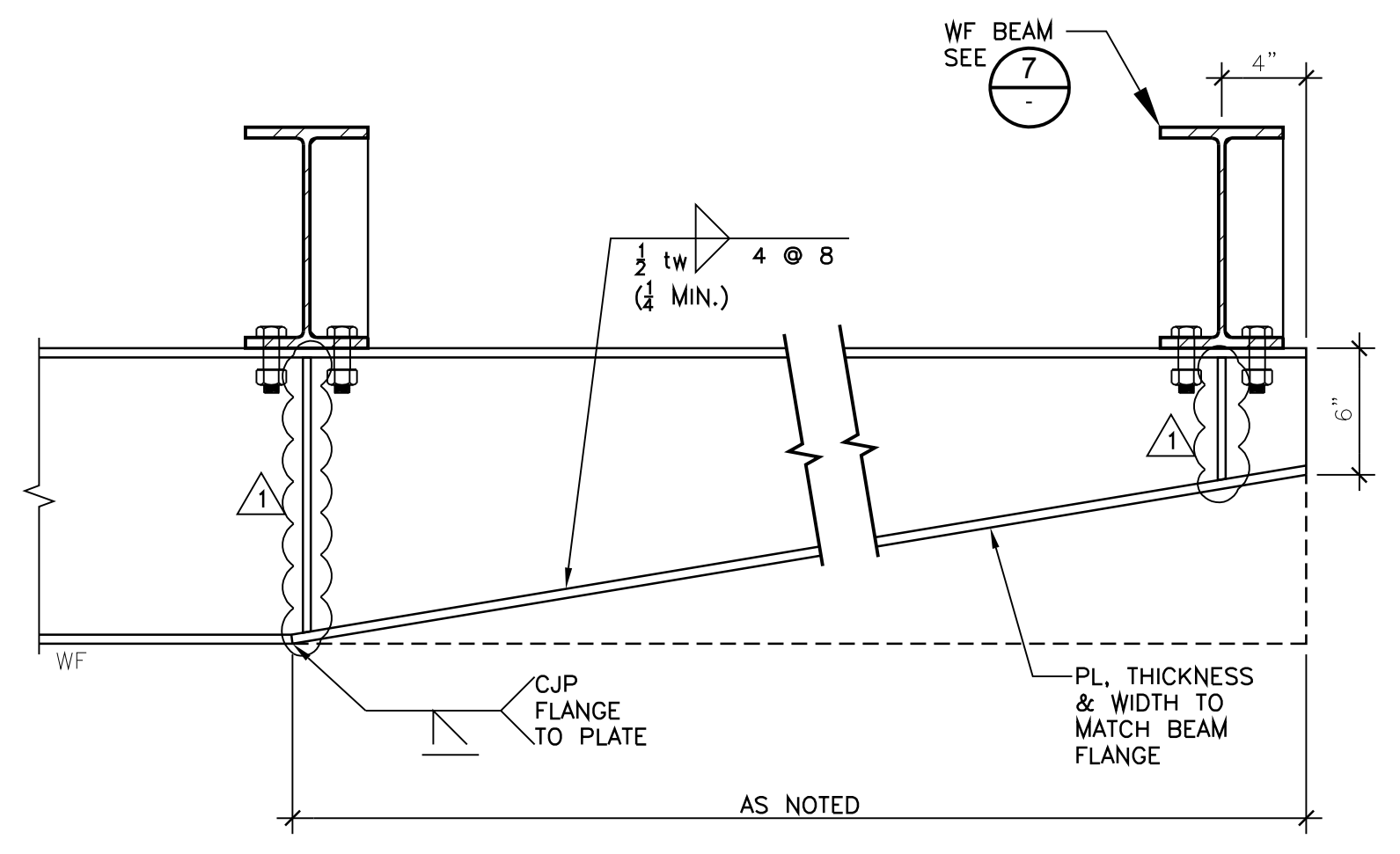
**11 GIRDER SPLICE** 20205-551-11



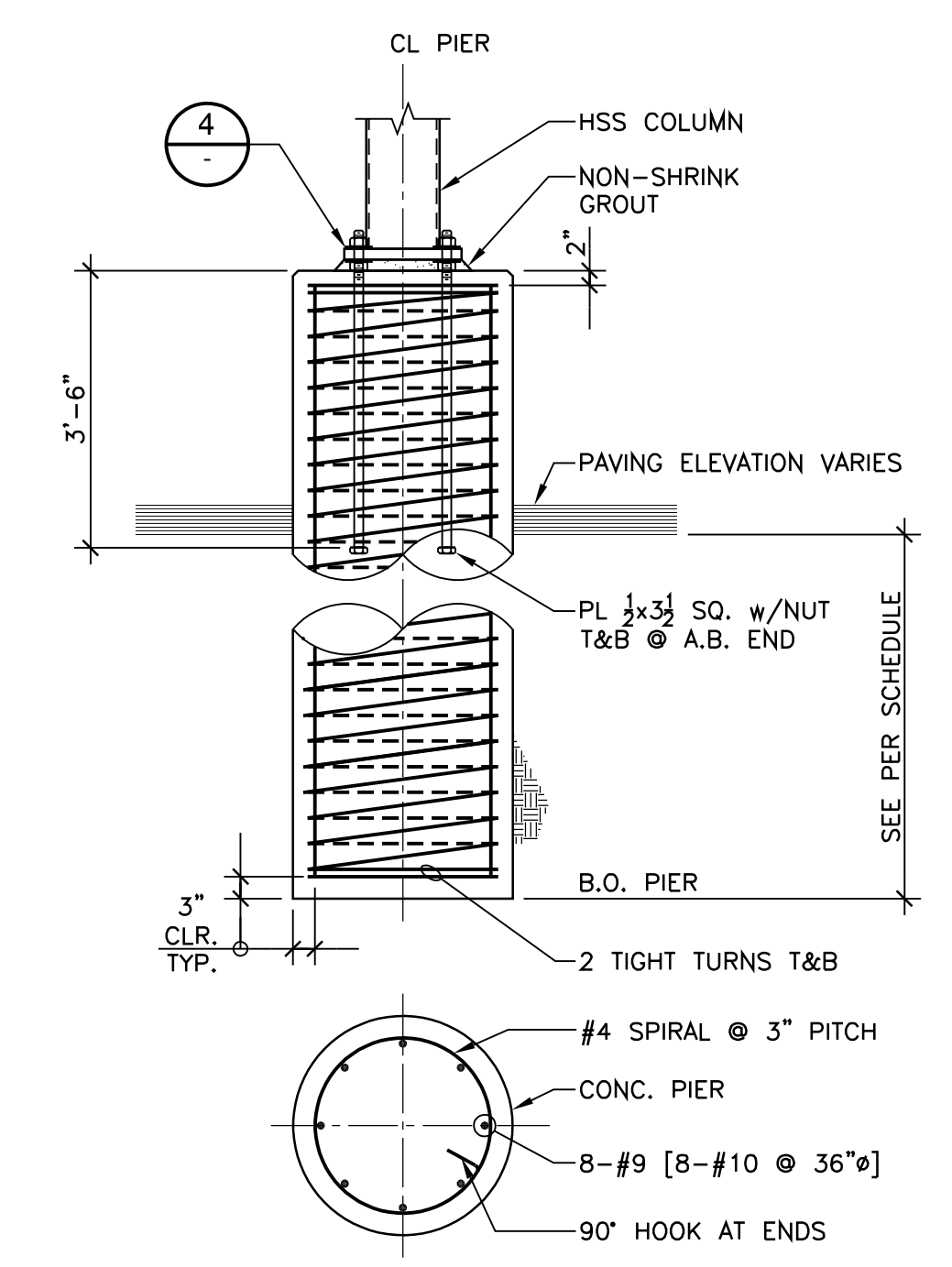
**8** 1 1/2"=1'-0" 20205-551-8



**5 BASE PLATE PLAN** 1 1/2"=1'-0" 20205-551-5



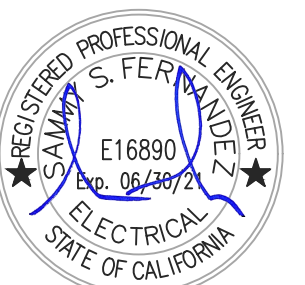
**12 TAPERED WF BEAM** 20205-551-12



**3 DRILLED PIER** 1/2"=1'-0" 20205-551-3

20205  
R. & P. JOB No.  
PRINCIPAL-IN-CHARGE  
REMARKS:





American Consulting Engineers

1500 The Americas, Suite 200  
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Tel: 650.251.0000 Fax: 650.251-2114  
Job # E19154-00

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## Solar Shade Structure

REVISION	DATE
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FOR REFERENCE ONLY

ELECTRICAL  
NEW SITE PLAN

**E1.1**

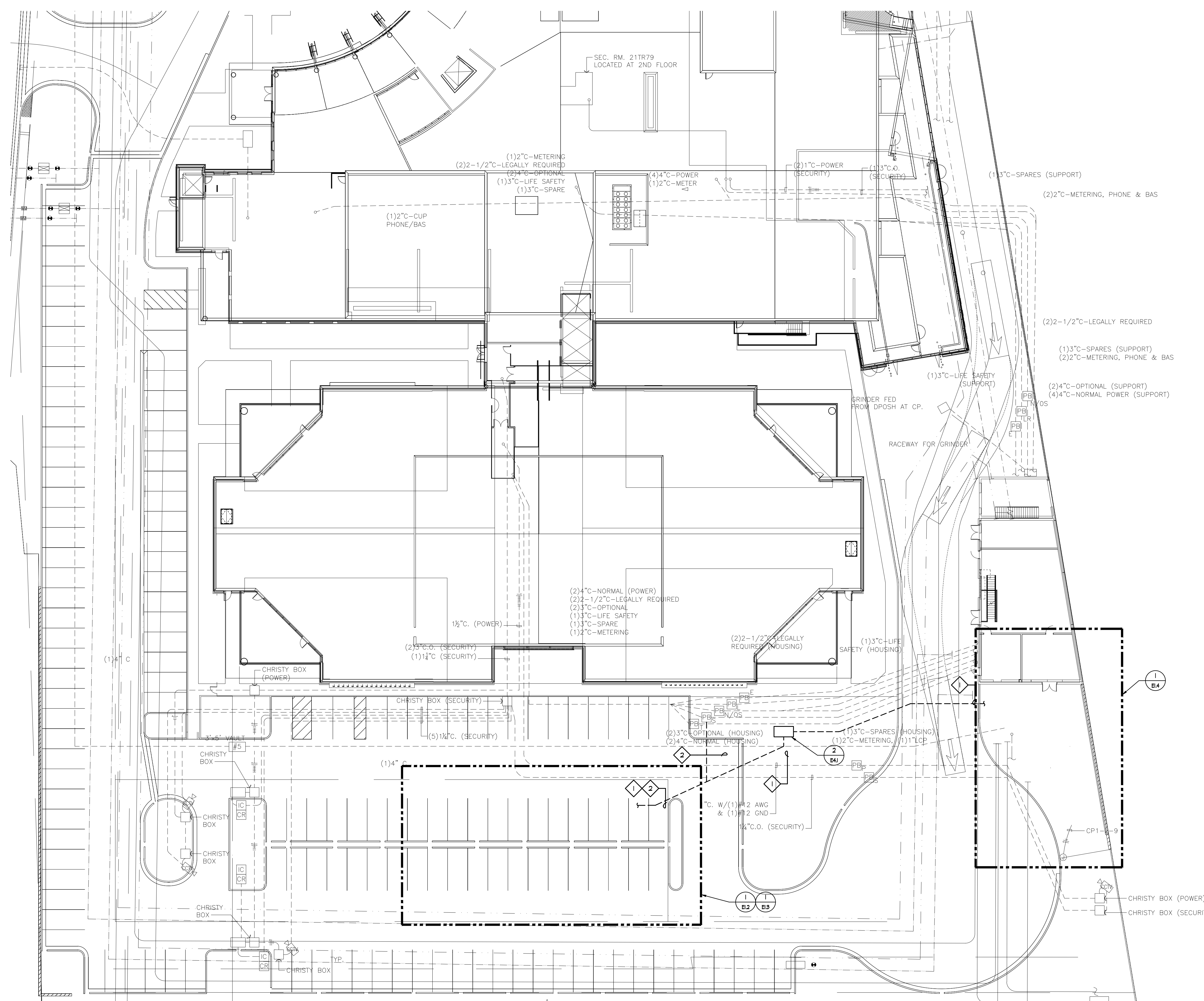
BA 21-001

### GENERAL NOTES:

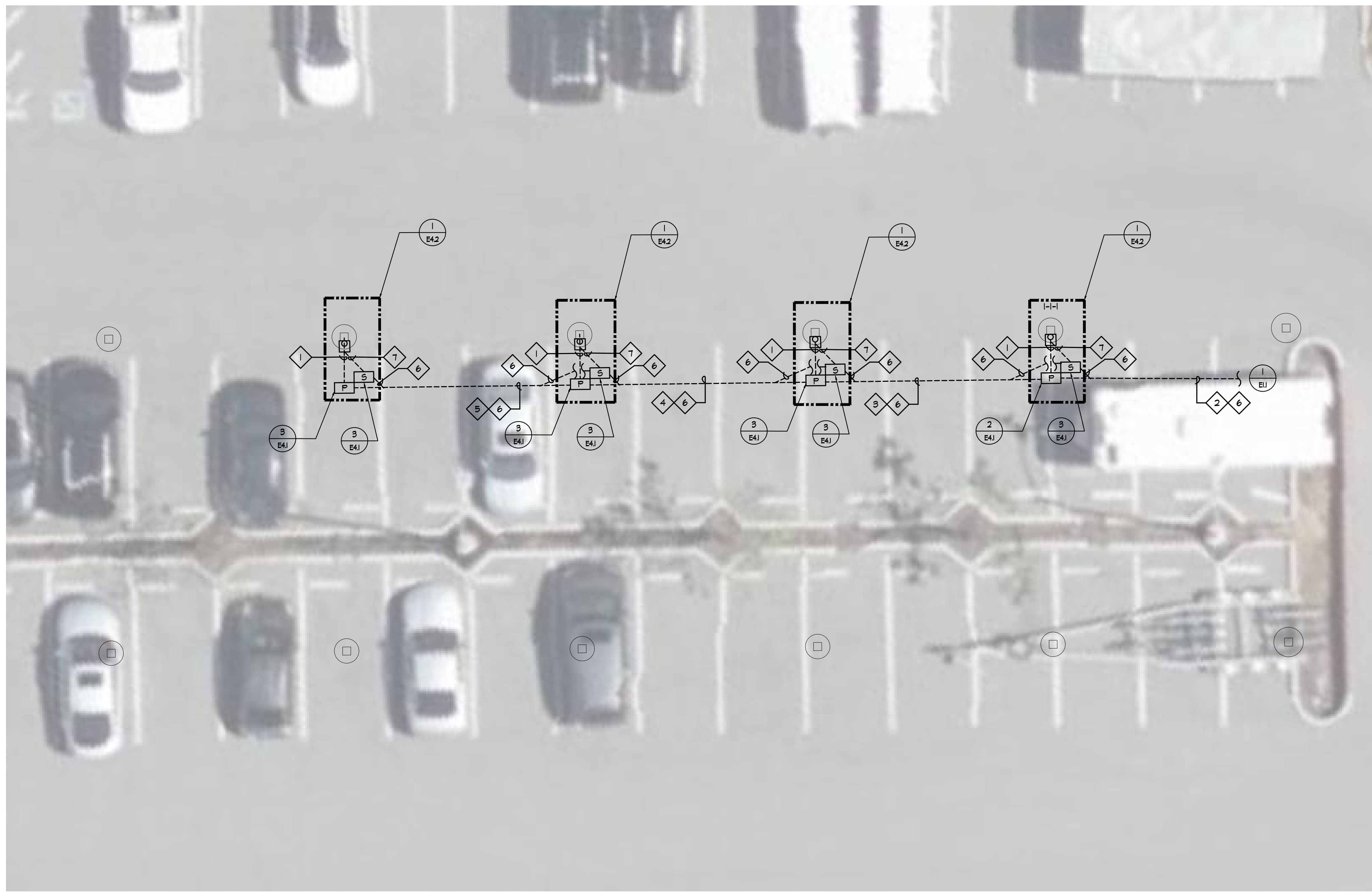
- CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONFLICTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SAM CUTTING AND REMOVAL OF EXISTING SURFACES TO FACILITATE UNDERGROUND SYSTEMS. THE CONTRACTOR SHALL PATCH AND REPAIR ALL DAMAGED AND CUT SURFACES TO MATCH ADJACENT.
- CONTRACTOR TO SITE SURVEY EXISTING CONDITIONS AND LOCATIONS OF EXISTING UNDERGROUND SYSTEMS, WHERE NEW TRENCH WORK OCCURS PRIOR TO BIDDING. CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE EXISTING UNDERGROUND SYSTEMS/CONDUIT/PIPES ARE NOT DAMAGED DURING INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS REQUIRED IN THE EVENT THE EXISTING UNDERGROUND SYSTEMS ARE DAMAGED AS A RESULT OF THE NEW ELECTRICAL TRENCH WORK.
- CONTRACTOR SHALL COORDINATE RECOMMENDED ELECTRICAL MILESTONE PLANS WITH THE ARCHITECTURAL MILESTONE PLANS TO ENSURE APPROPRIATE WORK IS COMPLETED DURING EACH MILESTONE.

### CONDUIT SCHEDULE:

- 1 (N) (4) 2" - PV INVERTER
- 2 (N) (1) 2" - SIGNAL



**1 ELECTRICAL NEW SITE PLAN**  
E1.1 SCALE: 1" = 20'-0"



**GENERAL NOTES:**

1. CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONFLICTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SAW CUTTING AND REMOVAL OF EXISTING SURFACES TO FACILITATE UNDERGROUND SYSTEMS. THE CONTRACTOR SHALL PATCH AND REPAIR ALL DAMAGED AND CUT SURFACES TO MATCH ADJACENT.
3. CONTRACTOR TO SITE SURVEY EXISTING CONDITIONS AND LOCATIONS OF EXISTING UNDERGROUND SYSTEMS. WHERE NEW TRENCH WORK OCCURS PRIOR TO BIDDING. CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE EXISTING UNDERGROUND SYSTEMS/CONDUIT/PIPES ARE NOT DAMAGED DURING INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS REQUIRED IN THE EVENT THE EXISTING UNDERGROUND SYSTEMS ARE DAMAGED AS A RESULT OF THE NEW ELECTRICAL TRENCH WORK.
4. CONTRACTOR SHALL COORDINATE RECOMMENDED ELECTRICAL MILESTONE PLANS WITH THE ARCHITECTURAL MILESTONE PLANS TO ENSURE APPROPRIATE WORK IS COMPLETED DURING EACH MILESTONE.

**CONDUIT SCHEDULE:**

- 1 (N) (1) 1 1/2" - PV INVERTER
- 2 (N) (4) 2" - PV INVERTER
- 3 (N) (3) 2" - PV INVERTER
- 4 (N) (2) 2" - PV INVERTER
- 5 (N) (1) 2" - PV INVERTER
- 6 (N) (1) 2" - SIGNAL
- 7 (N) (1) 1 1/4" - SIGNAL

1 **ENLARGED NEW ELECTRICAL SITE PLAN**

E1.2 SCALE: 1/4" = 1'-0"



**American Consulting Engineers**

1500 The Alameda, Suite 200 San Jose, CA 95128  
408/238-2312 Fax: 408/238-2316  
JOB # E10154-00

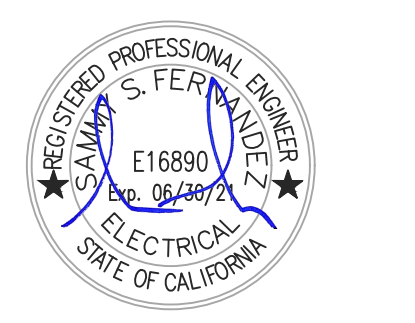
San Mateo County Sheriff's Office  
400 County Center  
Redwood City, CA

Maple Street Correctional Facility  
1300 Maple St  
Redwood City, CA 94063

**Solar Shade Structure**

REVISION	DATE
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408/336-2312  
408/336-2316  
408/336-2316  
E16154-00

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Sheriff's Office  
400 County Center  
Redwood City, CA



Maple Street  
Correctional Facility  
1300 Maple St  
Redwood City, CA 94063

**Solar  
Shade  
Structure**

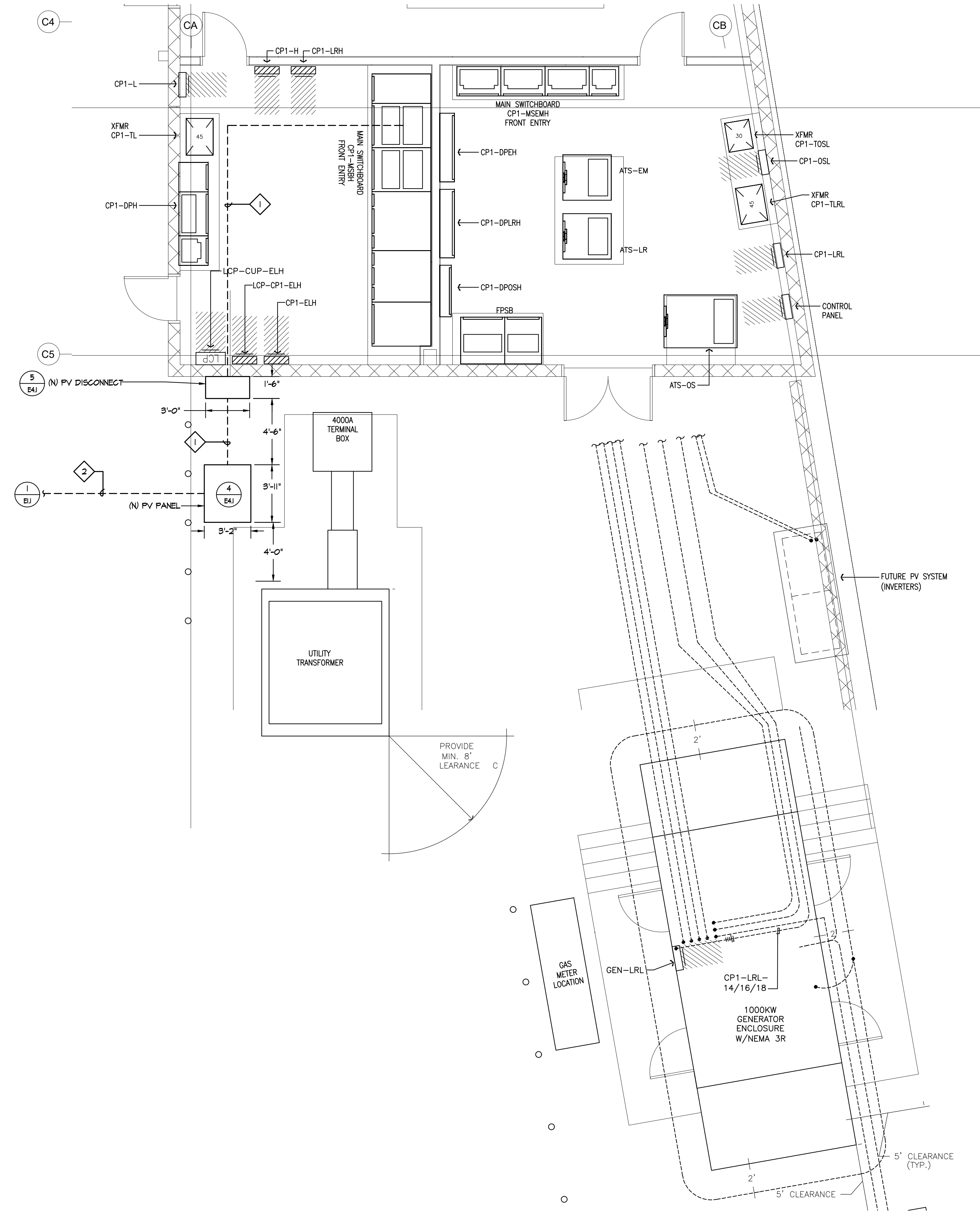
REVISION	DATE
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**FOR REFERENCE ONLY**

4-10-6	4-6-3	4-6-2	4-1-4	4-1-8	3-7-5	3-7-4	3-3-1	3-2-10	2-8-7	2-8-6	2-4-3	2-4-2	1-9-4	1-4-8	1-5-5	1-5-4	1-1-1
4-10-5	4-6-4	4-6-1	4-1-10	4-1-7	3-7-6	3-7-3	3-3-2	3-2-4	2-8-8	2-8-5	2-4-4	2-4-1	1-9-10	1-4-7	1-5-6	1-5-3	1-1-2
4-10-4	4-6-5	4-5-10	4-2-1	4-1-6	3-7-7	3-7-2	3-3-3	3-2-8	2-8-4	2-8-4	2-4-5	2-3-10	1-10-1	1-4-6	1-5-7	1-5-2	1-1-3
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**1 PV PANEL LAYOUT**

E1.3 SCALE: 1/4" = 1'-0"



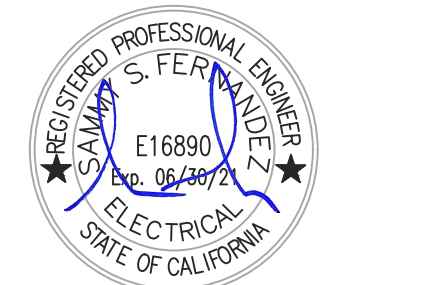
### GENERAL NOTES:

- CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONFLICTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SAM CUTTING AND REMOVAL OF EXISTING SURFACES TO FACILITATE UNDERGROUND SYSTEMS. THE CONTRACTOR SHALL PATCH AND REPAIR ALL DAMAGED AND CUT SURFACES TO MATCH ADJACENT.
- CONTRACTOR TO SITE SURVEY EXISTING CONDITIONS AND LOCATIONS OF EXISTING UNDERGROUND SYSTEMS, WHERE NEW TRENCH WORK OCCURS PRIOR TO BIDDING. CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE EXISTING UNDERGROUND SYSTEMS/CONDUIT/PIPES ARE NOT DAMAGED DURING INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS REQUIRED IN THE EVENT THE EXISTING UNDERGROUND SYSTEMS ARE DAMAGED AS A RESULT OF THE NEW ELECTRICAL TRENCH WORK.
- CONTRACTOR SHALL COORDINATE RECOMMENDED ELECTRICAL MILESTONE PLANS WITH THE ARCHITECTURAL MILESTONE PLANS TO ENSURE APPROPRIATE WORK IS COMPLETED DURING EACH MILESTONE.

### CONDUIT SCHEDULE:

- 1 2 SET OF (N) 4" C WITH (4) #600KCMIL + (1) #1/0 CU GND
- 2 (N) (4) 2" C - PV INVERTER

1 ENLARGED ELECTRICAL EQUIPMENT YARD  
E1.4 SCALE: 1/4" = 1'-0"



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1300 Maple St  
Redwood City, CA 94063

## Solar Shade Structure

REVISION	DATE
Issued For Permit	4/14/2021
Plan Check Resubmittal	11/11/2021

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ENLARGED ELECTRICAL EQUIPMENT YARD

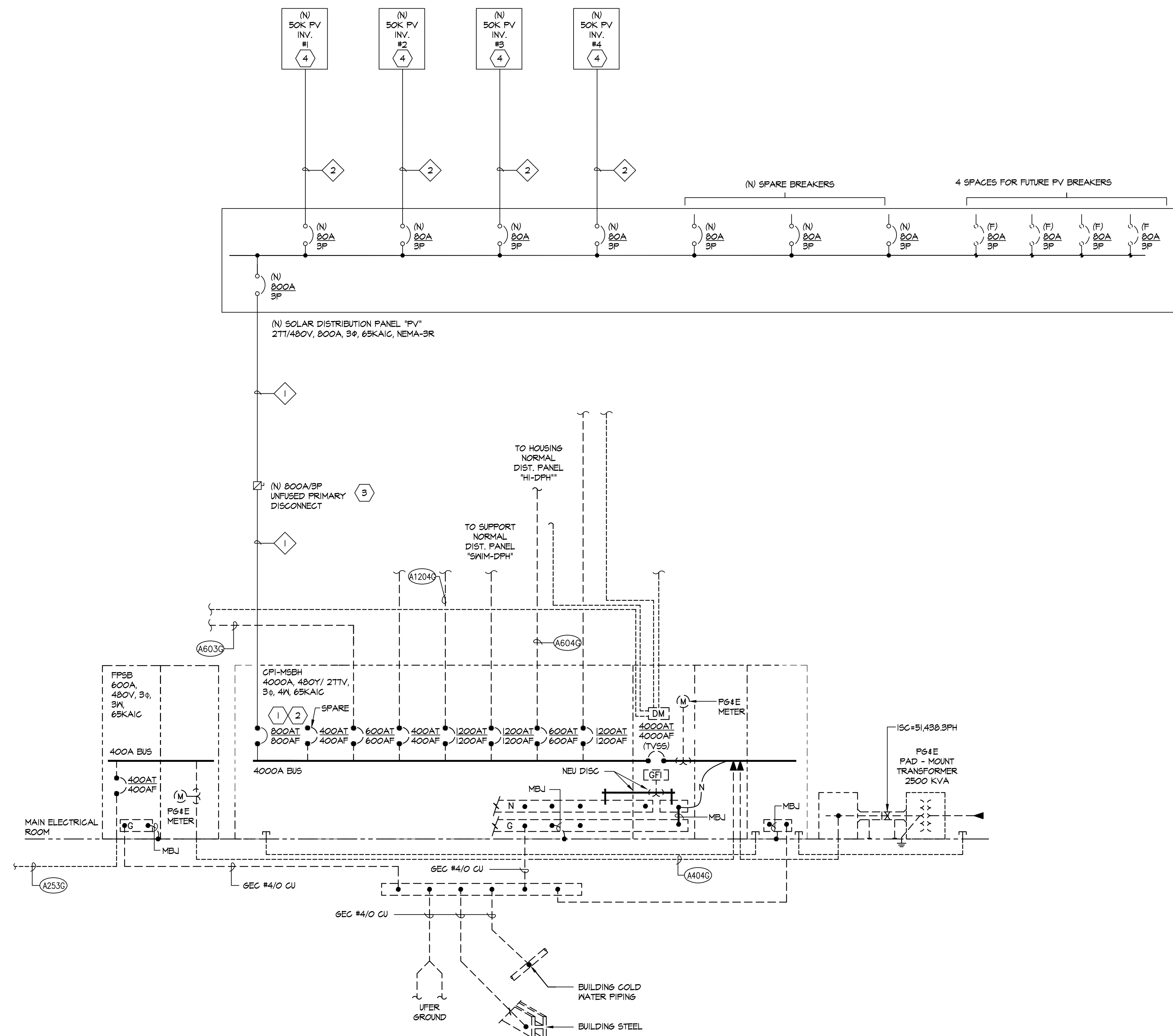
### E1.4

**SHEET NOTES:**

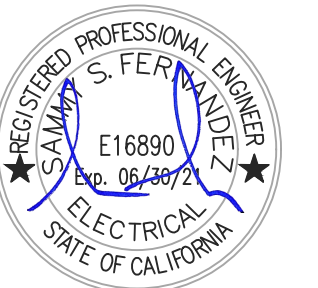
- 1 INSTALL (N) BREAKER IN SPACE AT FURTHEST POINT FROM MAIN BREAKER.
- 2 PROVIDE NEW BREAKER. MATCH EXISTING BREAKER FRAME, STYLE AND AIC RATINGS.
- 3 DISCONNECT SHALL BE ON PG&E'S APPROVED LIST FOR PV SYSTEM DISCONNECTS.
- 4 (N) PV INVERTER WITH BUILT IN DISCONNECT SWITCH.

**CONDUIT SCHEDULE:**

- 1 2 SET OF (N) 4" C WITH (4) #600KCMIL + (1) #1/0 CU GND
- 2 (N) 2" C WITH (4) #2 + (1) #6 CU GND



1 **SINGLE LINE DIAGRAM**  
E3.1 NOT TO SCALE



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**Solar Shade Structure**

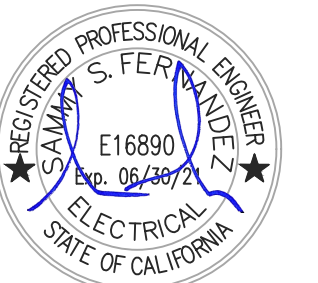
REVISION	DATE
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SINGLE LINE DIAGRAM

**E3.1**

BA 21-001



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JWB # E19154.02

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# Solar Shade Structure

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## GENERAL NOTES:

- TOTAL OF (4) ARRAYS WITH 346 SOLAR PHOTOVOLTAIC MODULES. SEE SOLAR PHOTOVOLTAIC MODULE LIST FOR SPECIFICATIONS. MODULE IS DESIGNED TO MEET UL 1703, UL 4703, UL FIRE SAFETY CLASS C, IEC 61215 ED2, AND IEC 61730 CLASS A STANDARDS.
- INVERTER HAS 6MMPY WITH 2 INPUTS PER MPPT.
- AC DISCONNECT IS INTEGRAL TO THE INVERTER.
- STRING INVERTERS RATED AT 50 KW OUTPUT AND IS RATED TO PROVIDE MAX 64A AT 480V AT AMBIENT TEMPERATURE BETWEEN -25 TO 60 DEG C. MAXIMUM INPUT CURRENT IS 120A. CEC WEIGHTED EFFICIENCY IS 91.5%. POWER FACTOR AT FULL LOAD IS GREATER THAN 0.99.
- INVERTER HAS INTERNAL GROUND FAULT PROTECTION (GFDI) IN ACCORDANCE WITH UL 1741. AND INVERTER IS IN COMPLIANCE WITH UL 1741, IEEE 1547, CSA 1071-01, IEEE 624.41.2, NEG ART. AND 690 REQUIREMENTS.
- INVERTER WILL BE CONFIGURED FOR 480V SYSTEM TO ALIGN WITH MAIN SERVICE PANEL.
- MAIN SERVICE PANEL IS 3 PHASE, 480VAC, 4000A, 4-WIRE.
- ALL CONDUCTORS SIZED ACCORDING TO NEG TABLE 310.16 CONDUIT COPPER AND NEG ARTICLE 690.8. ALSO SEE DESIGN CALCULATIONS.
- ALL CONDUITS SIZED ACCORDING TO NEG TABLE C.1 AND TABLE 310.15 (B)(2)(a). ALSO SEE DESIGN CALCULATIONS.
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2014 CEC CODE, UNLESS OTHERWISE NOTED.
- MODULE AND ARRAY GROUNDING IS PER RACKING MANUFACTURER'S SPECIFICATIONS.
- STRING CONDUCTORS MAXIMUM VOLTAGE DROP IS 1%. INVERTER FEEDER MAXIMUM VOLTAGE DROP IS 2%.
- PROVIDE ALL PV SYSTEM LABELING REQUIREMENTS PER CEC AND SHEET E4.4.

## CONDUIT SCHEDULE:

- ① (2) #10 2KV 90° PV WIRE & (1) #6 BARE CU GND

## PHOTOVOLTAIC SYSTEM:

- | COMPONENT               | MANUFACTURER AND MODEL NUMBER   |
|-------------------------|---------------------------------|
| 1. PHOTOVOLTAIC MODULES | SUNPOWER SPR-X21-470-G04 (470W) |
| 2. STRING INVERTERS     | SMA SUNNY TRIPOWER CORE1 50-US  |

MODULE SPECS (NOMINAL)  
 ISC = 6.45A VPM = 11.6V  
 VOC = 41.5V STC = 470W  
 IMP = 6.06A PTC = 526.7W

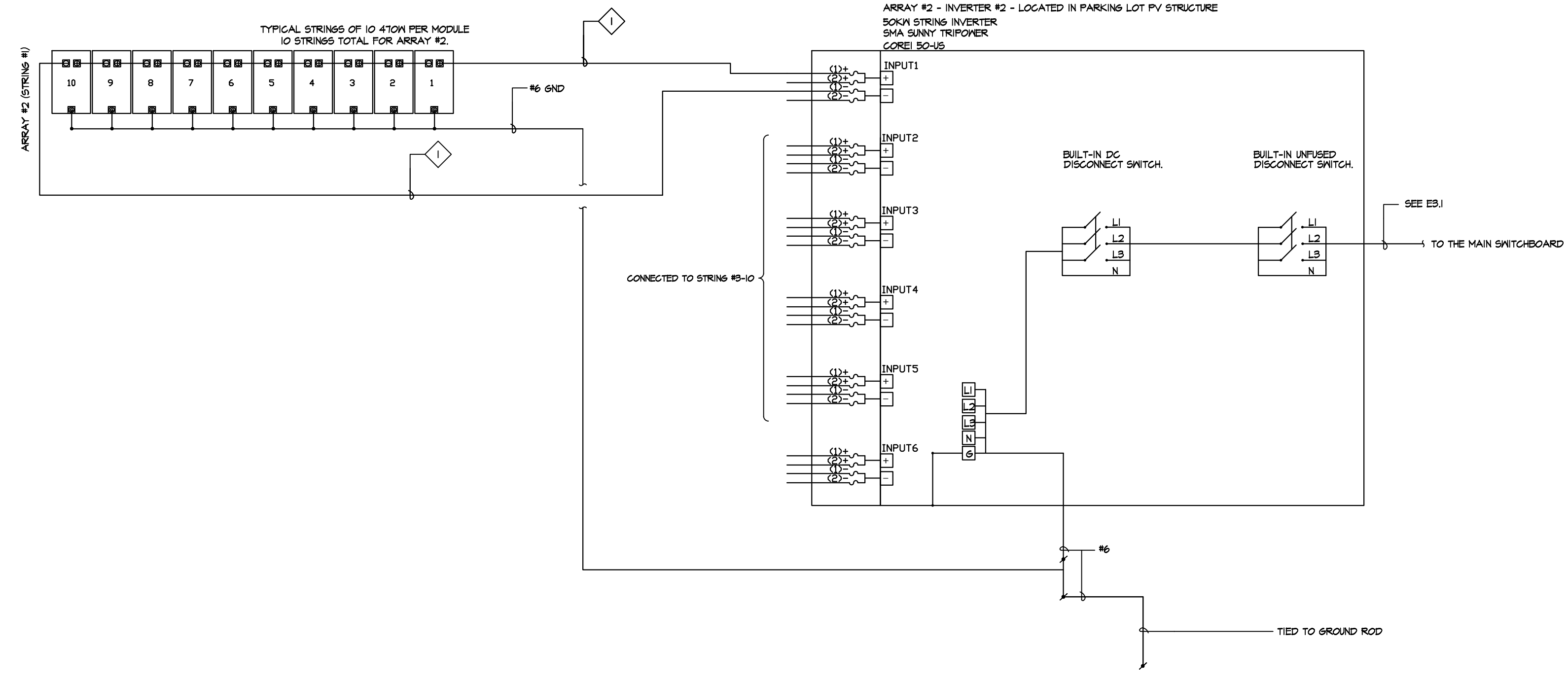
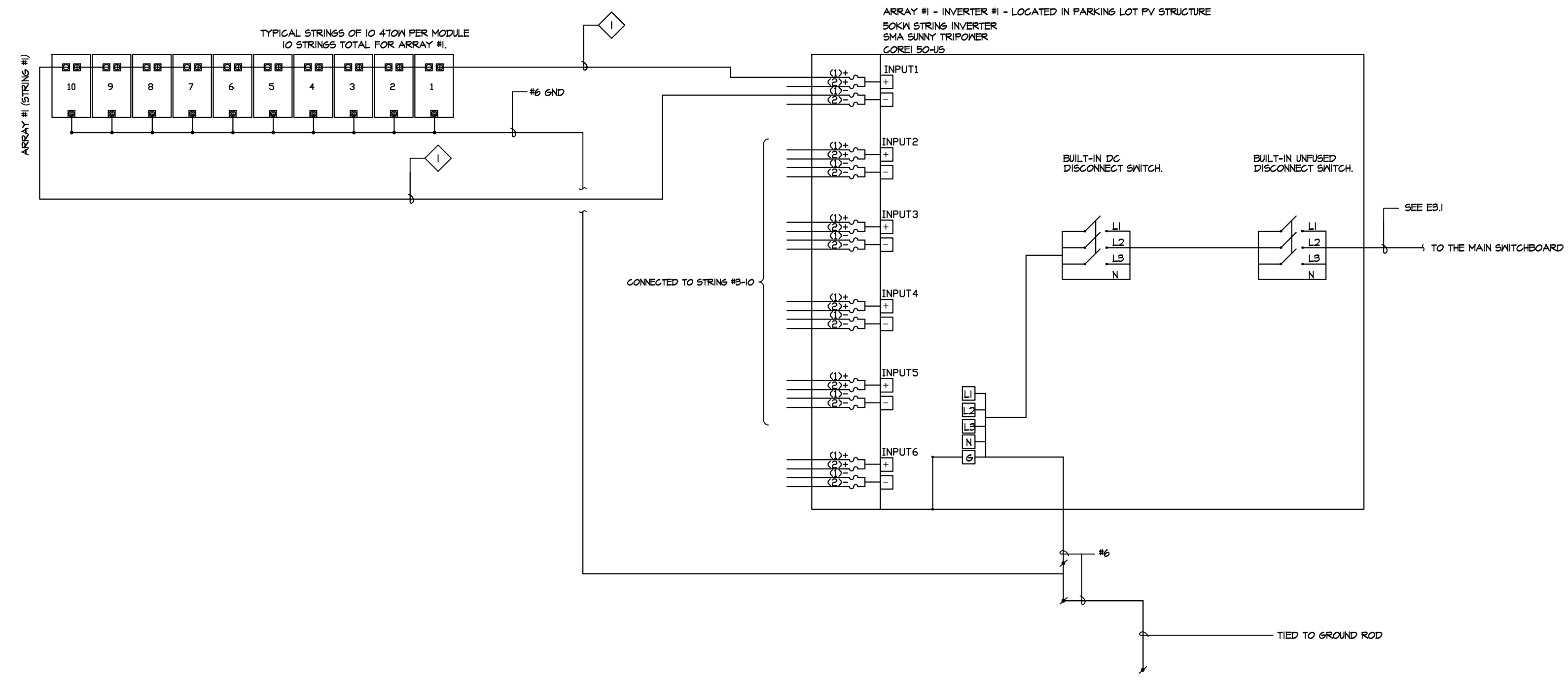
INVERTER SPECS: CORE1 50-US  
 NOMINAL DC INPUT = 120A  
 MAX CONTINUOUS AC OUTPUT = 64A/PHASE @ 480V  
 CEC EFF. = 91.5%  
 AC OUTPUT VOLTAGE = 480V, 4 WIRE, 60HZ

ARRAY #1  
 INVERTER CORE1 50-US  
 TOTAL NUMBER OF MODULES PER ARRAY = 100  
 MODULES PER STRINGS = 10  
 TOTAL NUMBER OF STRINGS = 10 PER ARRAY

ARRAY #2  
 INVERTER CORE1 50-US  
 TOTAL NUMBER OF MODULES PER ARRAY = 100  
 MODULES PER STRINGS = 10  
 TOTAL NUMBER OF STRINGS = 10 PER ARRAY

ARRAY #3  
 INVERTER CORE1 50-US  
 TOTAL NUMBER OF MODULES PER ARRAY = 100  
 MODULES PER STRINGS = 10  
 TOTAL NUMBER OF STRINGS = 10 PER ARRAY

ARRAY #4  
 INVERTER CORE1 50-US  
 TOTAL NUMBER OF MODULES PER ARRAY = 96  
 MODULES PER STRINGS = 10  
 TOTAL NUMBER OF STRINGS = 9 PER ARRAY  
 MODULES PER STRINGS = 6  
 TOTAL NUMBER OF STRINGS = 1 PER ARRAY





**GENERAL NOTES:**

- TOTAL OF (4) ARRAYS WITH 846 SOLAR PHOTOVOLTAIC MODULES. SEE SOLAR PHOTOVOLTAIC MODULE LIST FOR SPECIFICATIONS. MODULE IS DESIGNED TO MEET UL 1703, UL 4103, UL FIRE SAFETY CLASS G, IEC 61215 ED-2, AND IEC 61730 CLASS A STANDARDS.
- INVERTER HAS 6MPPT WITH 2 INPUTS PER MPPT.
- AC DISCONNECT IS INTEGRAL TO THE INVERTER.
- STRING INVERTERS RATED AT 50 KW OUTPUT AND IS RATED TO PROVIDE MAX 64A AT 480V AT AMBIENT TEMPERATURE BETWEEN -25 TO 60 DEG C. MAXIMUM INPUT CURRENT IS 120A. CEC WEIGHTED EFFICIENCY IS 91.5%. POWER FACTOR AT FULL LOAD IS GREATER THAN 0.99.
- INVERTER HAS INTERNAL GROUND FAULT PROTECTION (GFDI) IN ACCORDANCE WITH UL 1741. AND INVERTER IS IN COMPLIANCE WITH UL 1741, IEEE 1547, CSA 1071-01, IEEE C62.41.2, NEC ART. AND 690 REQUIREMENTS.
- INVERTER WILL BE CONFIGURED FOR 480V SYSTEM TO ALIGN WITH MAIN SERVICE PANEL.
- MAIN SERVICE PANEL IS 3 PHASE, 480VAC, 4000A, 4-WIRE.
- ALL CONDUCTORS SIZED ACCORDING TO NEC TABLE 310.16 CONDUIT COPPER AND NEC ARTICLE 690.B. ALSO SEE DESIGN CALCULATIONS.
- ALL CONDUITS SIZED ACCORDING TO NEC TABLE C.1 AND TABLE 310.15 (B)(2)(a). ALSO SEE DESIGN CALCULATIONS.
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2014 CEC CODE, UNLESS OTHERWISE NOTED.
- MODULE AND ARRAY GROUNDING IS PER RACKING MANUFACTURER'S SPECIFICATIONS.
- STRING CONDUCTORS MAXIMUM VOLTAGE DROP IS 1%. INVERTER FEEDER MAXIMUM VOLTAGE DROP IS 2%.
- PROVIDE ALL PV SYSTEM LABELING REQUIREMENTS PER CEC AND SHEET E4.4.

**CONDUIT SCHEDULE:**

① (2) #10 2KV 90° PV WIRE & (1) #6 BARE CU GND

**PHOTOVOLTAIC SYSTEM:**

COMPONENT	MANUFACTURER AND MODEL NUMBER
1. PHOTOVOLTAIC MODULES	SUNPOWER SPR-A21-410-G01 (410W)
2. STRING INVERTERS	SMA SUNNY TRIPOWER CORE1 50-US

MODULE SPECS (NOMINAL)	
ISG = 6.85A	VPM = 11.6V
VOC = 91.5V	STC = 410W
IPM = 6.06A	PTC = 526.7W

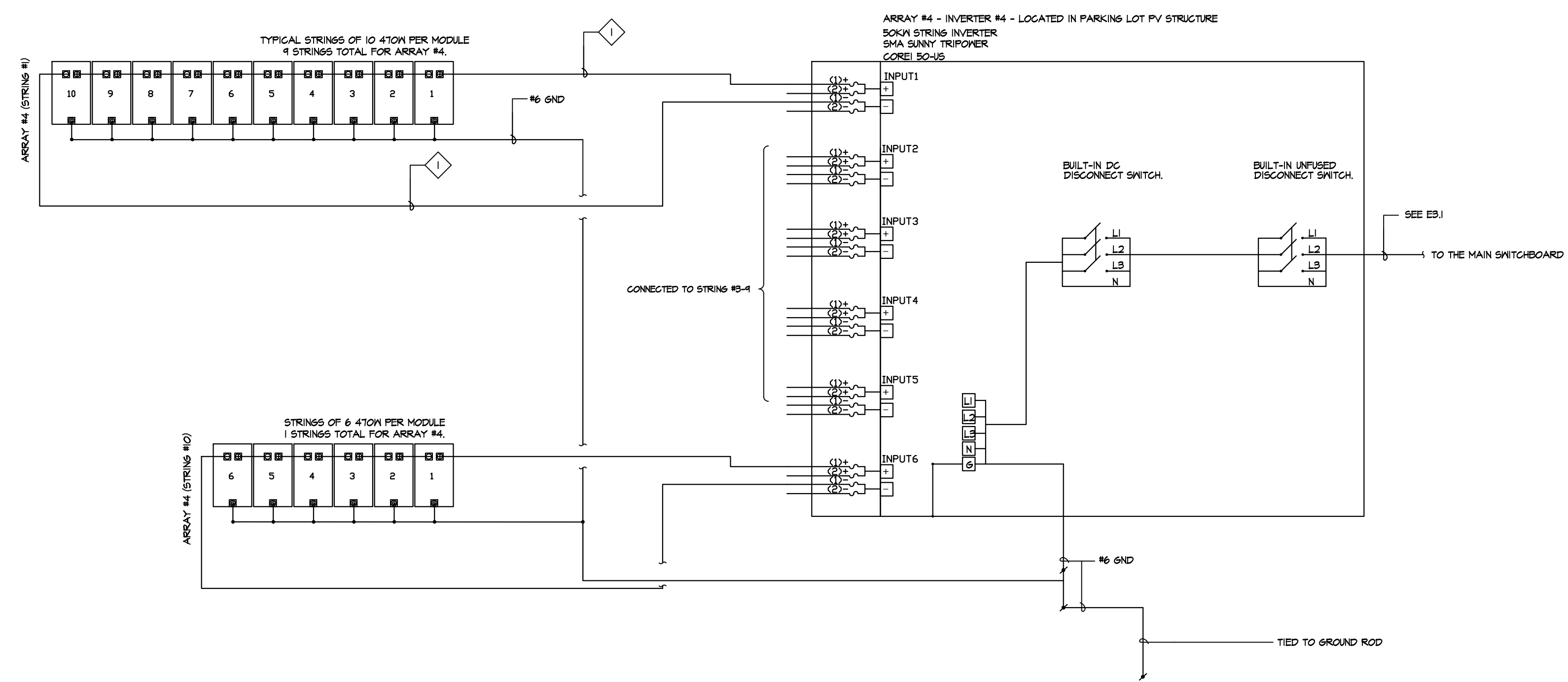
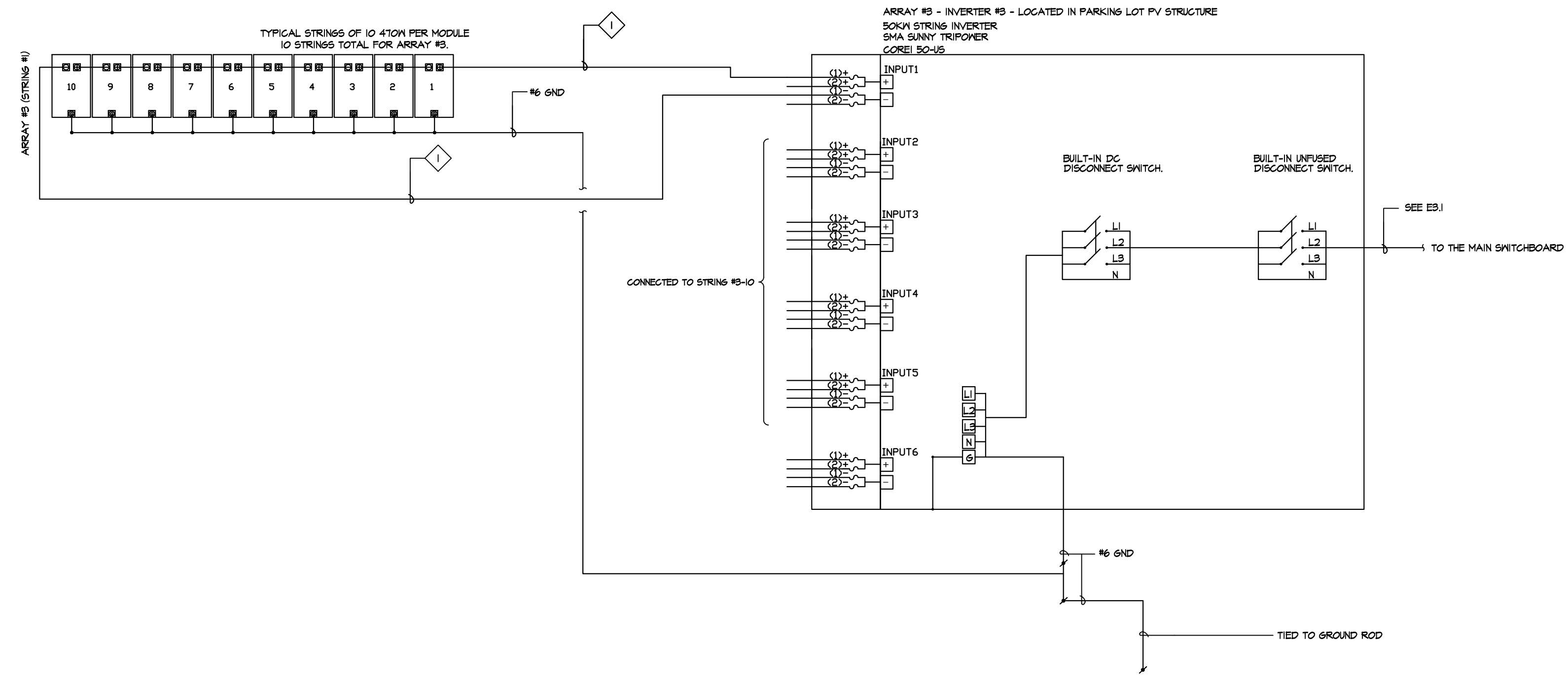
INVERTER SPECS: CORE1 50-US	
NOMINAL DC INPUT	= 120A
MAX CONTINUOUS AC OUTPUT	= 64A/PHASE @ 480V
CEC EFF.	= 91.5%
AC OUTPUT VOLTAGE	= 480V, 4 WIRE, 60HZ

ARRAY #1  
INVERTER CORE1 50-US  
TOTAL NUMBER OF MODULES PER ARRAY = 100  
MODULES PER STRING = 10  
TOTAL NUMBER OF STRINGS = 10 PER ARRAY

ARRAY #2  
INVERTER CORE1 50-US  
TOTAL NUMBER OF MODULES PER ARRAY = 100  
MODULES PER STRING = 10  
TOTAL NUMBER OF STRINGS = 10 PER ARRAY

ARRAY #3  
INVERTER CORE1 50-US  
TOTAL NUMBER OF MODULES PER ARRAY = 100  
MODULES PER STRING = 10  
TOTAL NUMBER OF STRINGS = 12 PER ARRAY

ARRAY #4  
INVERTER CORE1 50-US  
TOTAL NUMBER OF MODULES PER ARRAY = 96  
MODULES PER STRING = 10  
TOTAL NUMBER OF STRINGS = 9 PER ARRAY  
MODULES PER STRING = 6  
TOTAL NUMBER OF STRINGS = 1 PER ARRAY



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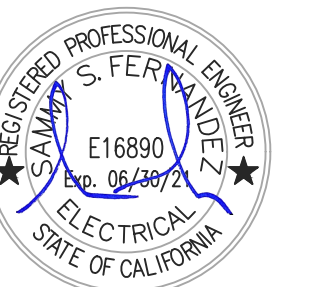
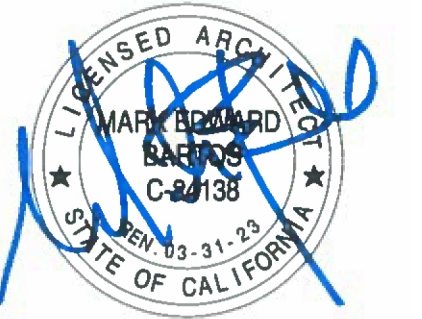
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400 County Center Redwood City, CA

Maple Street Correctional Facility  
1300 Maple St Redwood City, CA 94063

**Solar Shade Structure**

REVISION	DATE
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VOS # 019124-00

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Redwood City, CA

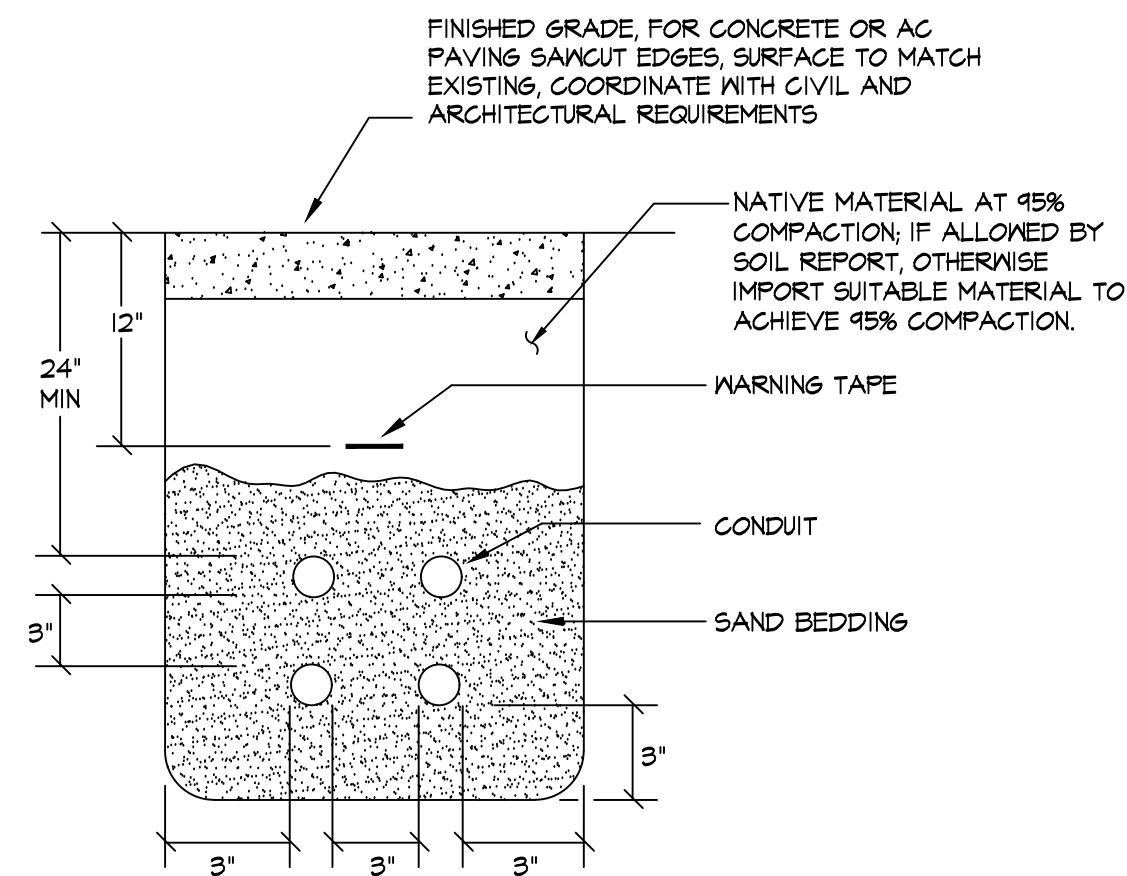


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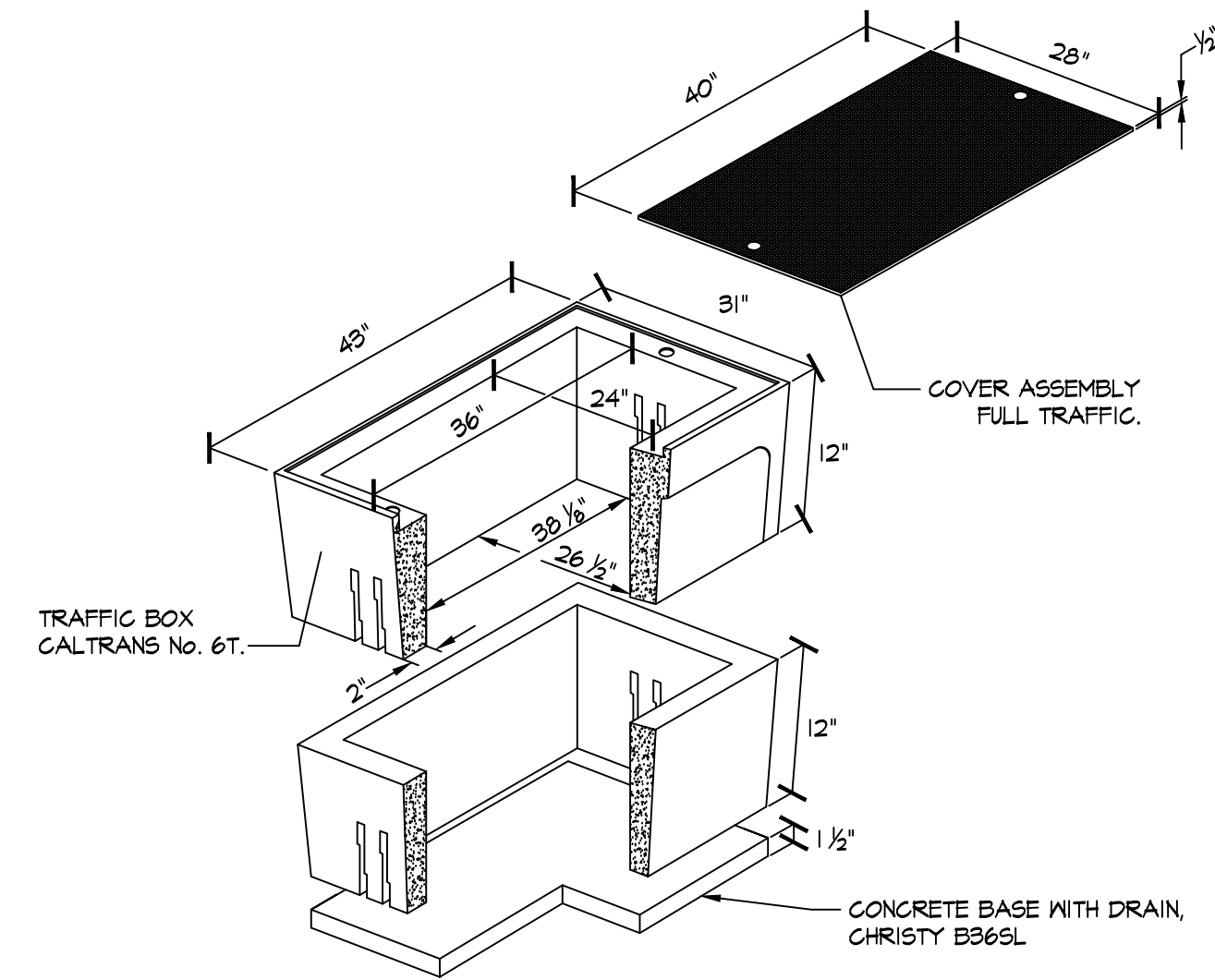
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1. COORDINATE TRENCH CONDUIT LAYOUT WITH OTHER CONDUIT SYSTEMS.

### 1 TYPICAL TRENCH DETAIL

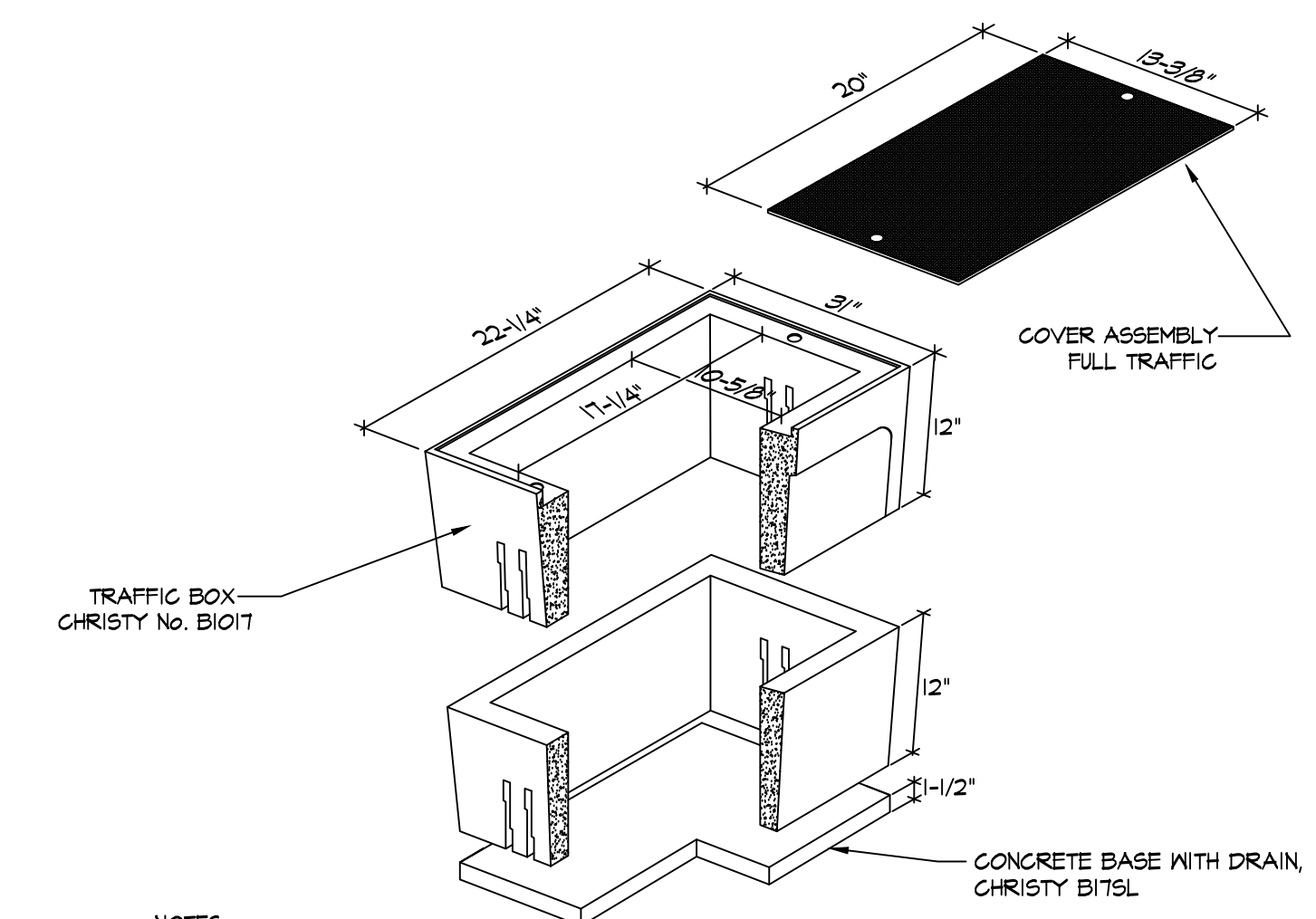
E4.1 NOT TO SCALE



NOTE:  
HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN.

### 2 B2436 TRAFFIC BOX DETAIL

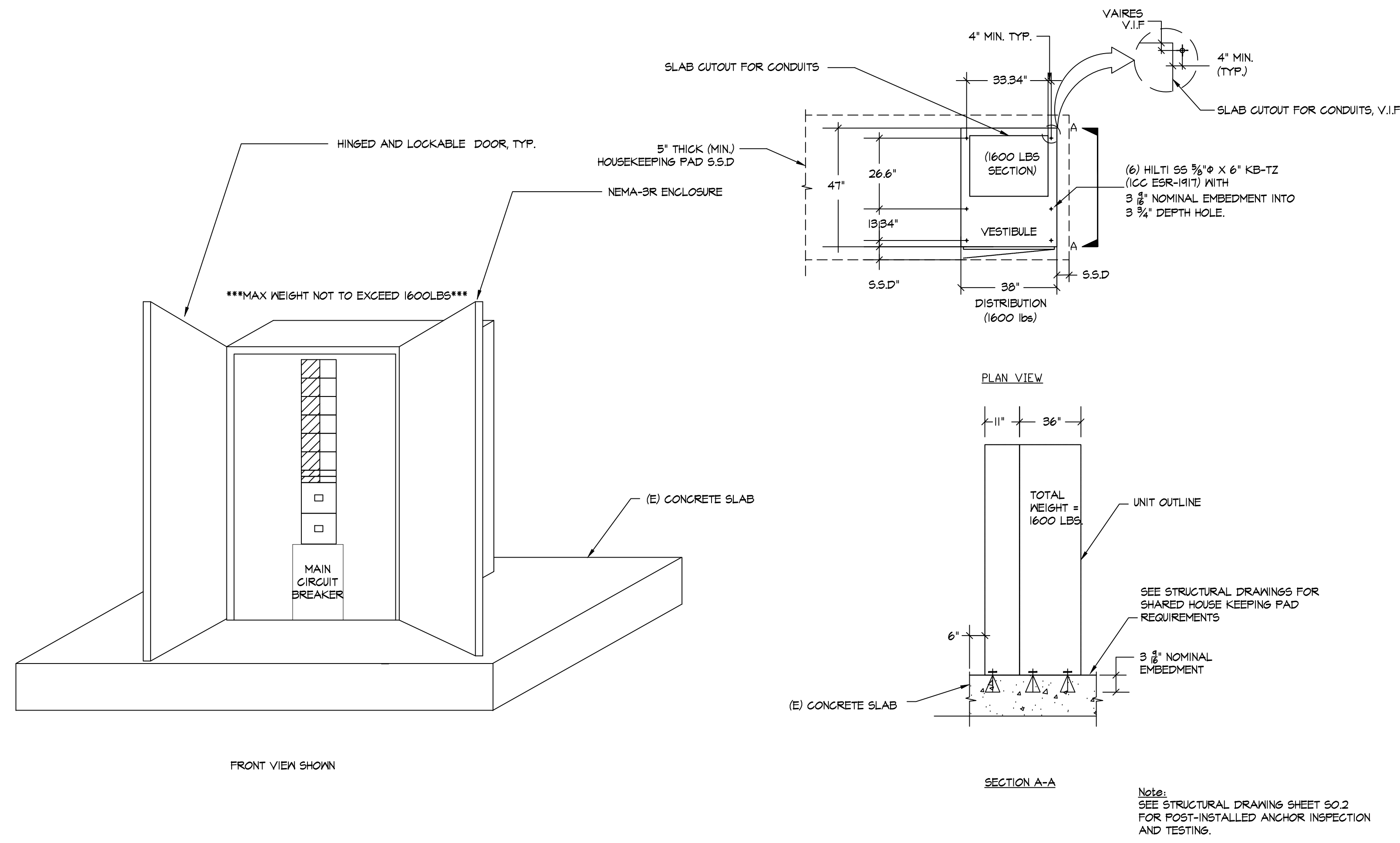
E4.1 SCALE: N.T.S.



NOTES:  
1. HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN.  
2. ALL CONDUITS SHALL ENTER FROM SIDES OF FULL BOX. CONTRACTOR SHALL PROVIDE FULL BOX EXTENSION AS REQUIRED. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM OF THE FULL BOX.  
3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS.  
4. PROVIDE BELL ENDS ON ALL CONDUIT.

### 3 B1017 ELECTRICAL VAULT

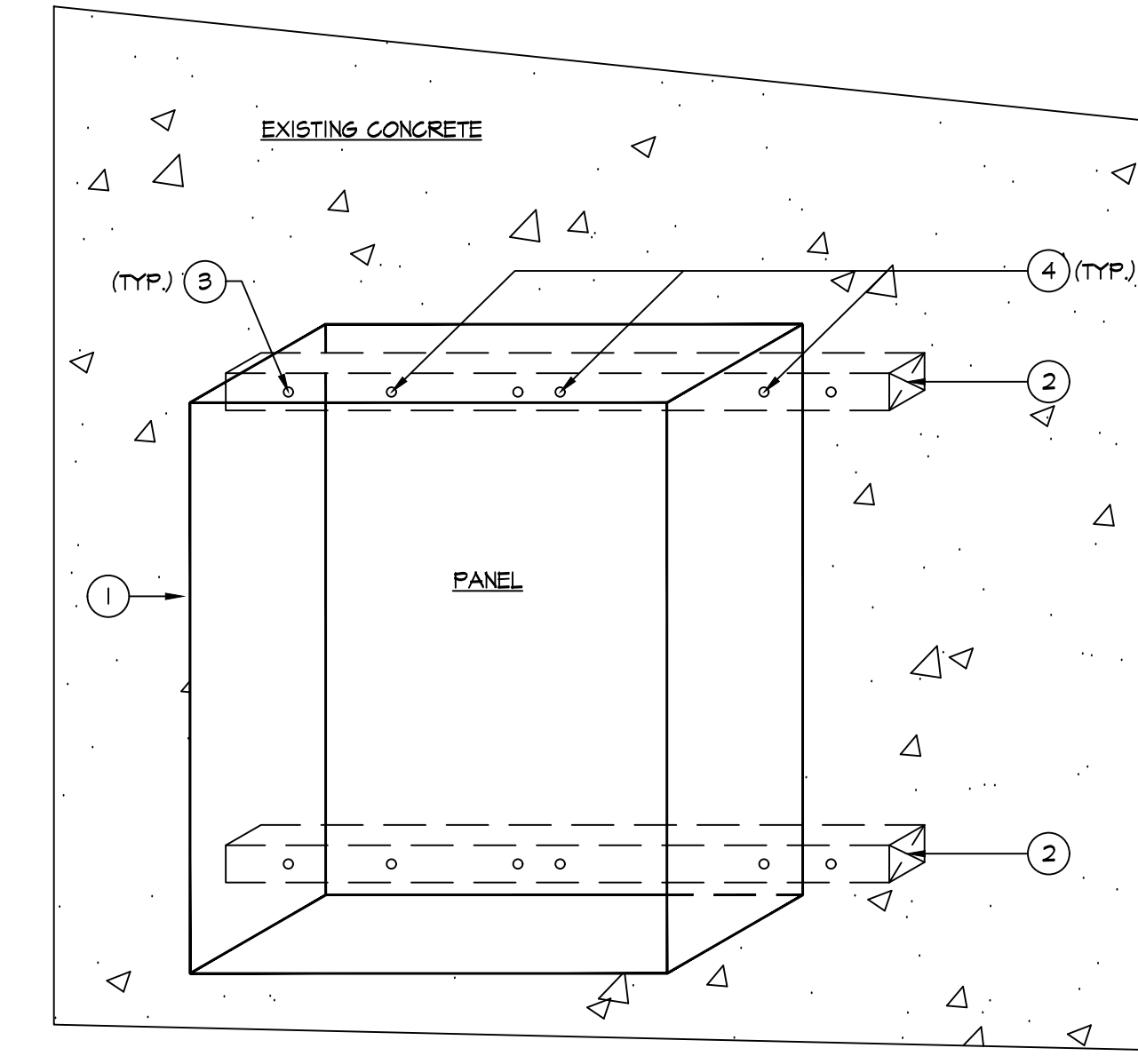
E4.1 NOT TO SCALE (FULL TRAFFIC COVER)



NOTE:  
SEE STRUCTURAL DRAWING SHEET 50.2 FOR POST-INSTALLED ANCHOR INSPECTION AND TESTING.

### 4 NEMA 3R 800A DISTRIBUTION PANEL ELEVATION

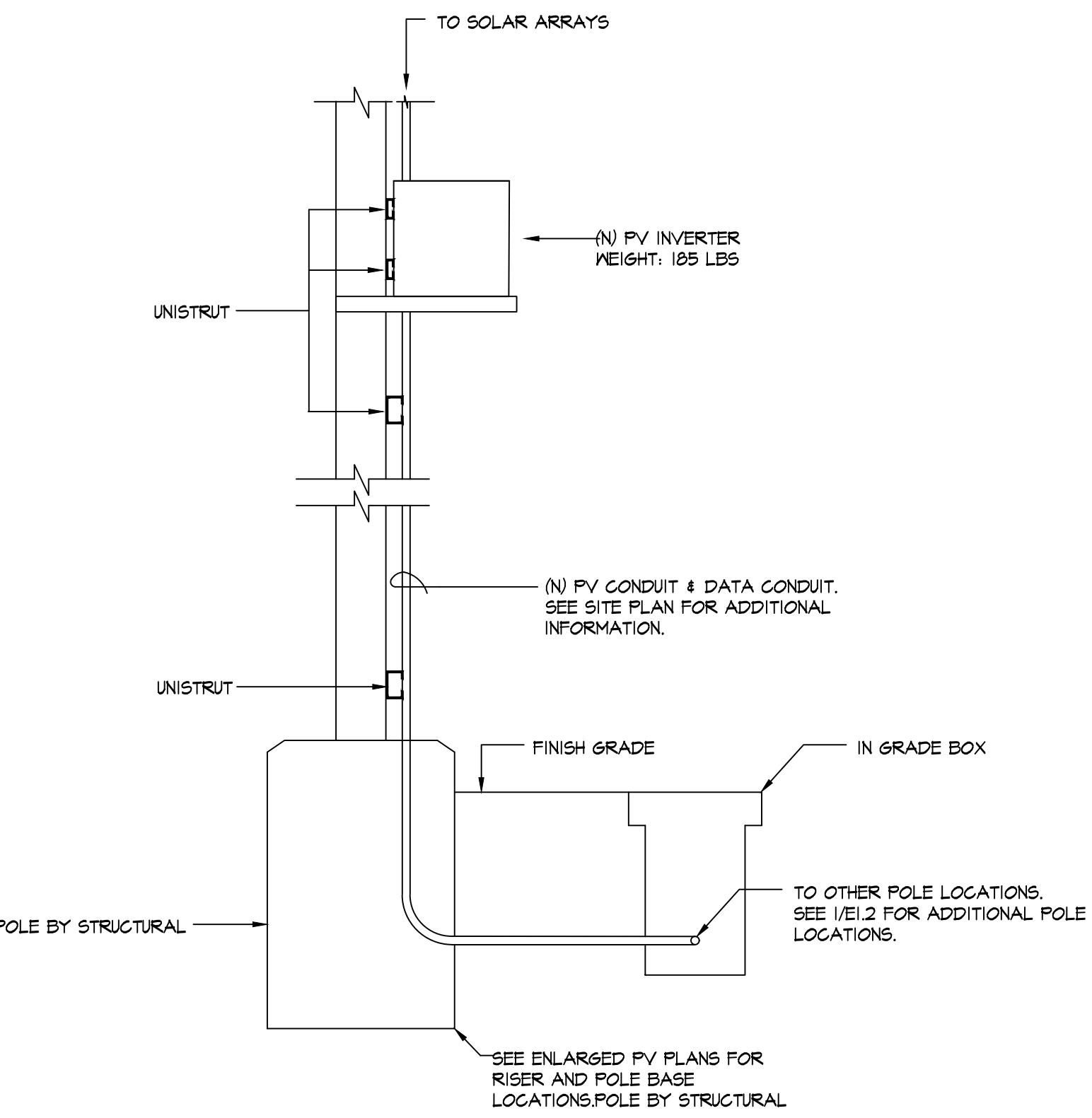
E4.1 NOT TO SCALE



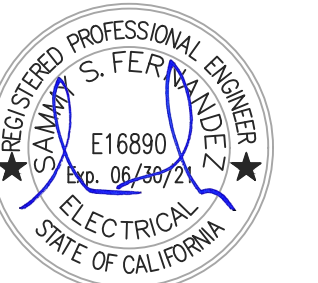
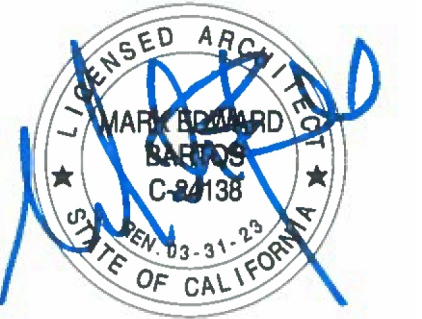
- ① NEMA-3R ELECTRICAL ELECTRICAL DISCONNECT MAX WEIGHT (175LBS).
- ② UNISTRUT 1000 MIN. 50" SPANNING OVER 3 STUDS.
- ③ PROVIDE CONCRETE ANCHORS, (1) BOLT PER WALL STUD, MINIMUM (3) STUDS.
- ④ PROVIDE 3/8" HEX HEAD CAP SCREW (MIN. OF 3) WITH 3/8" CHANNEL NUT.

### 5 WALL MOUNTED PANEL INSTALLATION (100A-600A)

E4.1 NOT TO SCALE



1 **POLE RISER DETAIL (PV)**  
 E4.2 NOT TO SCALE



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 400 County Center  
 Redwood City, CA

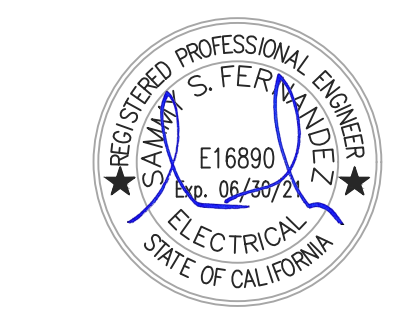


Maple Street  
 Correctional Facility  
 1300 Maple St  
 Redwood City, CA 94063

**Solar  
 Shade  
 Structure**

REVISION	DATE
Issued For Permit	4/14/2021
Plan Check Resubmittal	11/11/2021

**FOR REFERENCE ONLY**



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San Mateo County Sheriff's Office  
400 County Center  
Redwood City, CA



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### Electrical Design Calculations

#### PV System Specifications

1. System Size: 186kW / (4) 50kW inverters

2. System Components: Component

Photovoltaic Modules	SunPower 470W SPR-X21-470-COM
Inverters	SMA Sunny Tripower Core1 50-US
Mounting System	ProSolar

3. PV Module Specs:

Isc= 6.45A	Vmp= 77.6V
Voc= 91.5V	STC= 470W
Imp= 6.06A	
Temp. Coefficient VOC (mV/DEG C)= -223.2mV/degC	

4. Inverter Specs:

50kW
CEC efficiency= 98%
Max Continuous AC Output= 64A
AC output Voltage= 480V
Phases= 3 phase

5. Array Strings:

Inverter Size =	1- 50kW	2- 50kW	3- 50kW	4- 50kW
Mds per string =	10	10	10	10/6
# of Strings =	10	10	10	9/1
Total # Modules =	100	100	100	96

6. Array Wiring Data: Required Conductor Ampacity (NEC 690.8.B.1): 10.08A  
Fuse Size (Next Size > Req. Cond. Amps.) Per Mfg's data sheet: 15A  
String Home Run Conductor Chosen: #10  
Number of Current Carrying Conductors in Free Air: 2  
Longest String Distance: 100 feet

### Inverter Feeder Sizing

#### Inverter to Main Switchboard

1. NEC Required Wire Ampacity:  
CEC-Required OCPD >= Inverter Maximum Continuous Output Current x 1.25 Continuous Duty  
50kW  
Max. Continuous Output Current = 64A  
CEC-Required OCPD >= 80A  
Overcurrent Protection (AC breaker) Size = 80A Equals next higher Std. Size per CEC 240.6(A)

2. Wire Type and Size: 50kW  
# of Parallel Conductors = 1  
# of Phases = 3  
Type = THWN-2  
Conductor Size = 2  
Conductor Ampacity = 115 CEC 310.16 (75 degreeC column)

3. Working Voltage: 480V

4. Derated Ampacity of Wire:  
Derated Amp = base ampacity x temp. correction factor x CCC derating factor  
50kW CEC 310.16 (90 degree C column)  
base ampacity = 115 degrees C  
Average High Ambient Temperature = 86 deg F  
temperature correction factor = 1  
# of Current Carrying Conductors = 3 CEC 310.15(B)(2)(a)  
CCC derating factor = 1  
Total derated Amperage = 115

5. Grounding Electrode Conductor Size: 50kW  
Ungrounded Conductor Size = 2  
GEC = #6 Bare CEC 250.66

6. Inverter Output Voltage Drop: 50kW  
Conductor Length = 350  
Conductor Size = 2  
Maximum Current Draw = 64  
Volts Dropped = 7.3  
% Voltage Drop = 1.57%

### Array Specifications

#### Array Electrical Specifications (Per Inverter)

1. Maximum Power Point Current (at STC) Produced by Array:  
Max. Imp = Imp x Number of Strings  
Imp = 6.06A  
# of Strings = 10  
Max Imp = 60.6A

2. Short Circuit Current Produced by Array:  
Array Isc = Isc x Number of Strings  
Isc = 6.45A  
# of Strings = 10  
Array Isc = 64.5A

3. Maximum Power Point Voltage (at STC) Produced by Array:  
Max Vmp = Vmp x Modules per String  
Vmp = 77.6V  
Modules per String = 10  
Max Vmp = 776V

4. Open Circuit Voltage Produced by Array:  
Array Voc = Voc x Modules per String  
Voc = 91.5V  
Modules per String = 10  
Array Voc = 915V

5. STC Watts Produced by Array:  
STC Watts = Total Number of Modules x STC watts of Module

50kW	50kW	
Total # Modules =	100	96
STC Watts of Modules =	470	470
STC Watts =	47000	45120
		CEC 250.66

### System Voltage Calculations

#### Maximum System Voltage Calculations

1. Lowest Ambient Temperature for Site:  
Delta Celcius Temp. from STC= Record Low Temp. at Site - STC Temp  
STC Temp= 25  
Record Low Temp. at Site = -8.9  
Delta Celcius Temp. from STC= -33.9

2. Low Temperature Voltage Multiplier (per NEC 690.7(A)):  
LTM=Delta Celcius Temp x Mfg. Voc Temp. Coefficient/100  
Mfg. Voc Temp. Coefficient = -0.2232  
LTM= 0.0756

3. Maximum System Voltage (DC) at Low Temperature:  
Max. Voltage LT = ((LTM)x(max voltage produced by array))+(max voltage by array)  
Max voltage by array= 915V  
Max Voltage Low Temp = 984V

### Array Wiring

#### Array Wiring - PV source Circuits and Calculations (DC) CEC690.8 (A)(1) to (A)(4)

1. Wire Type/Size: #10 AWG (USE-2 or PV Wire in Free Air)

2. Temperature Derated Ampacity of HomeRun Wires in Free Air:  
Tem. Derated Amps = base ampacity x temp. correction factor x CCC derating factor  
base ampacity = 55A (CEC 310.17)  
temp. corr. Factor = 0.91 (CEC 310.17 & 690.31(B))  
CCC derating Factor = 1  
Tem. Derated Amps = 50.05A

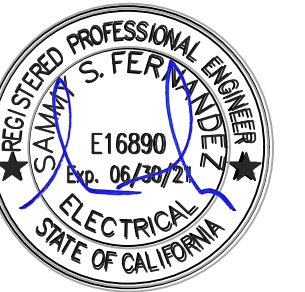
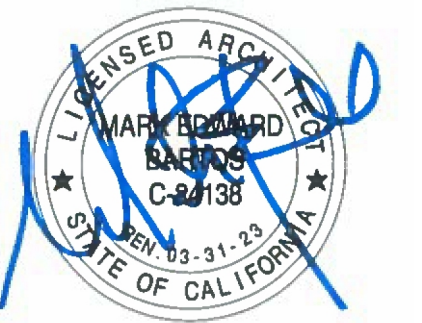
3. Temperature Derated Ampacity of HomeRun Wires in Conduit:  
Tem. Derated Amps = base ampacity x temp. correction factor x CCC derating factor  
base ampacity = 55A  
temp. corr. Factor = 1  
CCC derating Factor = 0.5  
Tem. Derated Amps = 27.5A

4. NEC Required Wire Ampacity:  
CEC-Required Amp Rating = Isc x 1.25 max illumination x 1.25 continuous load  
c 6.45A  
CEC-Required Amp Rating= 10.08A

5. Equipment Ground Conductor Size:  
Ground Size = #10 in Jacket or #6 Bare Copper

6. Overcurrent Protection (Fuse) Size:  
Source Circuit Protective Fuse Size = 15A Equals next higher Standard Size per CEC 240.6(A)

7. PV Source Voltage Drop Calculation:  
Voltage Drop (VD) = (2 x Length of Conductor x Conductor Resistance x Imp)/1000  
Average Homerun Length = 100 feet  
Conductor Resistance = 1.24 (CEC Chapter 9, Table 8, Uncoated Stranded Copper)  
Module Imp/String = 6.06 (CEC 690.8(A)(1) through (B)(1))  
VDC = 1.50V  
Warmest Day Voltage (WDV)= # of modules/string x Vmp  
WDV = 776.0V  
Voltage Drop Percent = VD/WDV x 100  
VD % = 0.19%  
Combiner Box Corrected Voltage - WDV - VD  
CBCV = 774.5V



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**1 SOLAR PANEL INSTALLATION**  
E4.4 SCALE: NOT TO SCALE

**PHOTOVOLTAIC UN FUSED AC DISCONNECT**

AC DISCONNECT RATINGS:  
OPERATING CURRENT: 30 AMPS PER PHASE  
OPERATING VOLTAGE: 480 VOLTS AC, 3 PHASE  
CURRENT RATING: 400 AMPS  
VOLTAGE RATING: 600 VOLTS AC

**2 LABEL FOR SOLAR**  
E4.4 SCALE: NOT TO SCALE

**WARNING**

ELECTRIC SHOCK HAZARD.  
DO NOT TOUCH TERMINAL.  
TERMINALS ON BOTH THE LINE AND LOADS SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

**4 LABEL FOR SOLAR**  
E4.4 SCALE: NOT TO SCALE

**SMA INTERNAL PHOTOVOLTAIC DC DISCONNECT COMBINER**

MAXIMUM POWER POINT CURRENT: 67.12A  
MAXIMUM POWER POINT VOLTAGE: 425.6VDC  
MAXIMUM PV SYSTEM VOLTAGE: 525.0VDC  
SHORT CIRCUIT CURRENT: 70.88A

**3 LABEL FOR SOLAR**  
E4.4 SCALE: NOT TO SCALE

**SMA INTERNAL PHOTOVOLTAIC DC DISCONNECT COMBINER**

MAXIMUM POWER POINT CURRENT: 58.73A  
MAXIMUM POWER POINT VOLTAGE: 425.6VDC  
MAXIMUM PV SYSTEM VOLTAGE: 525.0VDC  
SHORT CIRCUIT CURRENT: 60.02A

**5 LABEL FOR SOLAR**  
E4.4 SCALE: NOT TO SCALE

**SMA TRIPPOWER PHOTOVOLTAIC INVERTER**

GRID TIED PHOTOVOLTAIC POWER SOURCE WITH INTERNAL DC DISCONNECT/COMBINER

MAXIMUM INVERTER INPUT:  
OPERATING CURRENT 66ADC  
OPERATING VOLTAGE 150-1000 VDC  
OPERATING DC POWER 24.5 KW STC  
MAXIMUM SYSTEM VOLTAGE 1000 VDC

MAXIMUM INVERTER OUTPUT:  
AC OPERATING VOLTAGE 480 VAC 39  
MAX. AC OUTPUT CURRENT PER PHASE 18A/36A

**6 LABEL FOR SOLAR**  
E4.4 SCALE: NOT TO SCALE

**WARNING**

ELECTRIC SHOCK HAZARD.  
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED.

**7 LABEL FOR SOLAR**  
E4.4 SCALE: NOT TO SCALE

**WARNING**

ELECTRIC SHOCK HAZARD.  
IF A GROUND FAULT IS INDICATED, NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED

**8 LABEL FOR SOLAR**  
E4.4 SCALE: NOT TO SCALE

**WARNING**

THIS PANEL HAS A SECONDARY POWER SOURCE FROM (2) PHOTOVOLTAIC SYSTEMS  
TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO SERVICING THE PANEL  
MAXIMUM AC OUTPUT CURRENT: 29 AMPS/PHASE  
OPERATING AC VOLTAGE: 480 VOLTS

**9 LABEL FOR SOLAR**  
E4.4 SCALE: NOT TO SCALE

**GENERAL NOTES:**

- LABELS AND MARKINGS SHALL BE APPLIED TO THE APPROPRIATE COMPONENTS IN ACCORDANCE WITH THE NEG.
- SOLAR MODULES ARE SUPPLIED FROM THE MANUFACTURER WITH MARKINGS PRE-APPLIED TO MEET THE REQUIREMENTS OF THE NEG.
- THE INVERTER IS SUPPLIED FROM THE MANUFACTURER WITH THE APPROPRIATE LABELS AND MARKINGS TO MEET THE REQUIREMENTS OF THE NEG.
- ALL LABELS WILL BE ETCHED WITH WHITE GRAPHICS ONTO 1/4" RED PLASTIC PLACARDS WITH A MINIMUM TEXT HEIGHT OF 3/8". THE LABEL WILL BE EFFECTIVELY BONDED TO THE APPROPRIATE LOCATIONS AND COMPONENT ENCLOSURES IN CLEARLY VISIBLY PLACES WITH REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT. ALL CAPITAL LETTERS SHOULD BE USED IN ARIAL OR SIMILAR NON-BOLD FONT.

**SHEET NOTES:**

- PROVIDED THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC DISCONNECTING MEANS. THIS PLAGE SHALL BE APPLIED TO THE MAIN SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC DISCONNECTING MEANS.
- LABEL FOR UTILITY AC DISCONNECT.
- PHOTOVOLTAIC DC COMBINER, OPERATING SPECIFICATIONS LABEL APPLIED TO EACH (TYP).
- UTILITY AC DISCONNECT WARNINGS LABEL WITH SYSTEM SPECIFICATIONS, APPLIED TO ALL AC DISCONNECTING MEANS.
- PHOTOVOLTAIC DC COMBINER, OPERATING SPECIFICATIONS LABEL APPLIED TO EACH (TYP).
- LABEL REQUIRED AT EACH INVERTER TO SPECIFY INDIVIDUAL INVERTER OPERATING PARAMETERS.
- LABEL REQUIRED AT EACH JUNCTION BOX, COMBINER BOX, DISCONNECT, AND DEVICE WHERE ENERGIZED, UNDERGROUND CIRCUITS MAY BE EXPOSED DURING SERVICE.
- LABEL REQUIRED FOR MAIN SERVICE PANEL TO INFORM PERSONNEL THAT MAIN IS ALSO SUPPLIED BY A PHOTOVOLTAIC POWER SOURCE.
- LABEL FOR SYSTEM OWNER'S KWH GENERATION METER BEING FED BY A PHOTOVOLTAIC SYSTEM.
- LABEL FOR INVERTER SHALL BE DEPENDENT ON SIZE OF INVERTER. 30KW INVERTER SHALL HAVE A MAXIMUM AC OUTPUT OF 36A PER PHASE, WHILE 15KW INVERTER SHALL HAVE A MAXIMUM AC OUTPUT OF 18A PER PHASE.

**PHOTOVOLTAIC GENERATION METER**

**10 LABEL FOR SOLAR**  
E4.4 SCALE: NOT TO SCALE

**CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED**

**11 LABEL FOR SOLAR**  
E4.4 SCALE: NOT TO SCALE