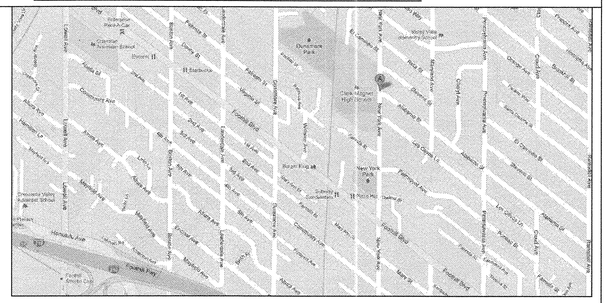
GLENDALE UNIFIED SCHOOL DISTRICT

356.72 KW DC STC SOLAR PHOTOVOLTAIC SYSTEM

CLARK MAGNET HIGH SCHOOL - LA CRESCENTA, CA

ROSEMONT MIDDLE VICINITY MAP



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W E
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MAP NOT TO SCALE

4747 NEW YORK AVE.
LA CRESCENTA, CA 91214

SCOPE OF WORK

WORK CONSISTS OF INSTALLING PHOTOVOLTAIC (PV) CANOPIES OVER EXISTING ON GRADE PARKING LOTS SOLAR POWER SYSTEM CONSISTS OF PB CANOPIES, ELECTRICAL EQUIPMENT CONCRETE PAD, LIGHTING, PV MONITORING AND METERING COMMUNICATIONS AND POWER INTERCONNECT TO THE UTILITY GRID. THE PV CONTRACTOR SHALL COORDINATE WITH THE OTHER TRADES FOR UNDERGROUND UTILITIES ASSOCIATED WITH THE PV SOLAR SYSTEM.

SPECIAL NOTES

PROJECT TEAM

DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE:

DAVID STOKES
QUATRO DESIGN GROUP
923 E 3RD ST, SUITE 115
LOS ANGELES, CA 90013
TEL:(213) 625-1995
FAX:(213) 625-1997
EMAIL: dstokes@qdg-architects.com

OWNER:

GLENDALE UNIFIED SCHOOL DISTRICT
2223 N. JACKSON ST.
GLENDALE, CA 91206
TEL: (818) 241-3111

CIVIL/STRUCTURAL:

PAUL SCOTT, S.E.
CARUSO, TURLEY, SCOTT, INC.
1215 W. RIO SALADO PKWY
TEMPE, AZ 85281
TEL: (480) 774-1700

ELECTRICAL ENGINEER:

CARL BURATTI, P.E.
BURATTI & ASSOCIATES, INC.
6345 BALBOA BLVD, Ste 259
ENCINO, CA 91316
TEL: (818) 345-7130

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
BLDG	BUILDING
CONC	CONCRETE
C	COMBINER BOX
D	DISTRIBUTION PANEL
DC	DIRECT CURRENT
EGC	EQUIPMENT GROUNDING CONDUCTOR
(E)	EXISTING
EMT	ELECTRICAL METALLIC TUBING
G	SOLAR GUARD METER
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
HDG	HOT DIPPED GALVANIZED
I	CURRENT
Imp	CURRENT AT MAX POWER
INVS	INVERTERS
Isc	SHORT CIRCUIT CURRENT
kVA	KILOVOLT AMPERE
kW	KILOWATT
LBW	LOAD BEARING WALL
MIN	MINIMUM
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OCP	OVERCURRENT PROTECTION
P	PANEL BOARD
PL	PROPERTY LINES
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
S	SUBPANEL
SCH	SCHEDULE
SS	STAINLESS STEEL
SSD	SEE STRUCTURAL DRAWINGS
STC	STANDARD TESTING CONDITIONS
SWH	SOLAR WATER HEATER
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
Vmp	VOLTAGE AT MAX POWER
Voc	VOLTAGE AT OPEN CIRCUIT
W	WATT
3R	NEMA 3R, RAINTIGHT

SHEET INDEX

THE BELOW LISTED DRAWINGS HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS WHO ARE LICENSED TO PREPARE SUCH DRAWINGS IN THIS STATE. THESE DRAWINGS HAVE BEEN REVIEWED FOR DESIGN INTENT AND APPEAR TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS. THESE DRAWINGS ALSO COORDINATE WITH MY PLANS AND ARE ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT. THE DRAWINGS THAT HAVE BEEN PREPARE BY OTHERS ARE AS FOLLOWS:

PC-02-112000

E 1	ELECTRICAL NOTES
E 2	ELECTRICAL SITE PLAN
E 3	ELECTRICAL SECTION VIEWS
E 4	LINE DIAGRAM - AC
E 5	LINE DIAGRAM - DC
E 6	MONITORING DETAILS
E 7	ELECTRICAL DETAILS
E 8	WARNING LABELS
E 9	LINE DIAGRAM (LIGHTING)
E 10	LIGHTING PLANS
E 11	TITLE 24 DOCUMENTATION

FP1	FULL PORTRAIT GENERAL STRUCTURAL NOTES
FP2	FULL PORTRAIT BOX BEAM
FP3	FULL PORTRAIT BOX BEAM DETAILS
FP4	FULL PORTRAIT BACK TO BACK

PC-02-111999

TP1	TEE PORTRAIT GENERAL STRUCTURAL NOTES
TP2	TEE PORTRAIT BOX BEAM
TP3	TEE PORTRAIT BOX BEAM DETAILS
TP4	TEE PORTRAIT BACK TO BACK

CODES

GOVERNING CODES:

CALIFORNIA CODE OF REGULATIONS:

2010 CALIFORNIA ADMINISTRATIVE CODE (CAC).....(PART 1, TITLE 24, CCR)

2010 CALIFORNIA BUILDING CODE (CBC), VOLUMES 1, AND 2 (PART 2, TITLE 24, CCR)
(2009 EDITION INTERNATIONAL BUILDING CODE WITH 2010 CALIFORNIA AMENDMENTS)

2010 CALIFORNIA ELECTRICAL CODE.....(PART 3, TITLE 24, CCR)
(2008 EDITION NATIONAL ELECTRICAL CODE WITH 2010 CALIFORNIA AMENDMENTS)

2010 CALIFORNIA MECHANICAL CODE (CMC).....(PART 4, TITLE 24, CCR)
(2009 EDITION IAPMO UNIFORM PLUMBING CODE WITH 2010 CALIFORNIA AMENDMENTS)

2010 CALIFORNIA PLUMBING CODE (CPC).....(PART 5, TITLE 24, CCR)
(2009 EDITION IAPMO UNIFORM PLUMBING CODE WITH 2010 CALIFORNIA AMENDMENTS)

2010 CALIFORNIA PLUMBING CODE (CPC).....(PART 6, TITLE 24, CCR)
(2009 EDITION IAPMO UNIFORM PLUMBING CODE WITH 2010 CALIFORNIA AMENDMENTS)

2010 CALIFORNIA ENERGY CODE.....(PART 6, TITLE 24, CCR)
(2008 EDITION CALIFORNIA ENERGY COMMISSION BUILDING ENERGY EFFICIENCY STANDARDS)

2010 CALIFORNIA FIRE CODE (CFC).....(PART 9, TITLE 24, CCR)
(2009 EDITION OF INTERNATIONAL FIRE CODE WITH 2010 CALIFORNIA AMENDMENTS)

2010 CALIFORNIA GREEN CODE.....(PART 11, TITLE 24, CCR)

2010 CALIFORNIA REFERENCED STANDARDS CODE.....(PART 12, TITLE 24, CCR)

NFPA 13 - 2010

NFPA 72 - 2010

REFERENCE CODE SECTIONS FOR APPLICABLE STANDARDS:

2010 CBC, CHAPTER 35

2010 CFC, CHAPTER 45

INSPECTIONS:

ALL INDEPENDENT TESTING AND INSPECTIONS SHALL BE PAID FOR AND SCHEDULED BY THE OWNER (DISTRICT).

A PROJECT INSPECTOR EMPLOYED BY THE OWNER (DISTRICT) AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTIONS OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, 2010 CALIFORNIA BUILDING CODE. A MINIMUM OF A CLASS II (TWO) INSPECTOR SHALL BE USED.

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
2. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENA OR CHANGE ORDERS APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.
3. A DSA CERTIFIED PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24, CCR).
4. A DSA CERTIFIED INSPECTOR WITH CLASS 2 CERTIFICATION IS REQUIRED FOR THIS PROJECT.
5. A DSA CERTIFIED INSPECTOR WHO IS SPECIFICALLY QUALIFIED IN MECHANICAL AND ELECTRICAL WORK WILL BE REQUIRED FOR THIS PROJECT.
6. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE SCHOOL BOARD SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THIS PROJECT.

SolarCity
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(888)-SOL-CITY (765-2489) | www.solarcity.com

GLENDALE USD- CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM

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4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP03 0145 72
AC FLS SS 60
DATE MAY 22 2012

LICENSED ARCHITECT
DAVID SCOTT STOKES
No.C 15700
REN 6.30.13
STATE OF CALIFORNIA

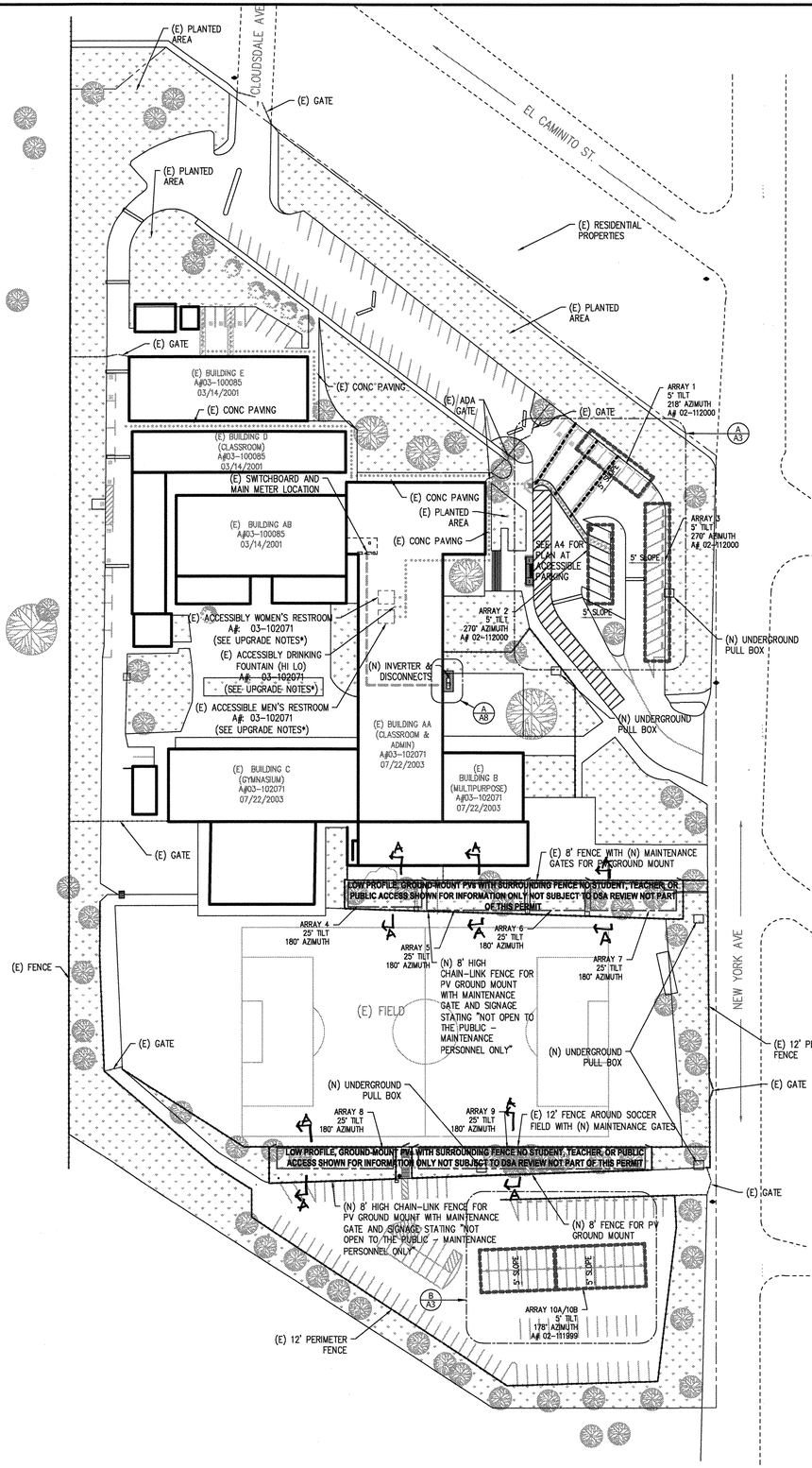
REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

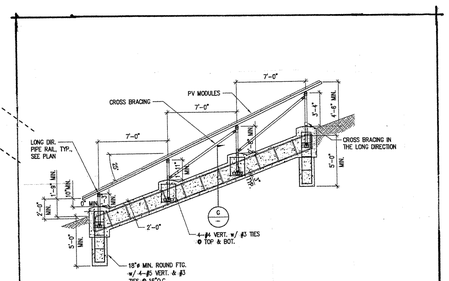
JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOVT
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: TITLE SHEET
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00

PAGE: PV T0.0
REV:



* SEE "MINIMUM UPGRADE NOTES" FOR SCOPE OF WORK AT THESE RESTROOMS AND WATER FOUNTAINS



A TYP. SECTION FOR ARRAYS 4,5,6,7, 8, &9
(SHOWN FOR REFERENCE ONLY - NOT A PART OF DSA APPROVAL)

PROPERTY PLAN

1"=60'-0"

0 60' 120'

PROJECT SUMMARY

THIS PROJECT WILL CONSIST OF THE INSTALLATION OF SOLAR PHOTOVOLTAIC CANOPIES OVER THE SOCCER FIELD & COURTYARD AREAS AT GLENDALE UNIFIED SCHOOL DISTRICT - ROSEMONT MIDDLE SCHOOL.

SOLAR MODULE: YINGLI YL240P-29b
INVERTER: (2) SOLECTRIA PVI-82kW (480V)

SUPPORT STRUCTURES:	PC#:
FULL CANTILEVER SOLAR SUPPORT STRUCTURE	02-112000
TEE SOLAR SUPPORT STRUCTURE	02-111999

CONSTRUCTION TYPE: IIB
OCCUPANCY GROUP: U
ALLOWABLE: 8,500 SF

NOT A PART OF THIS DSA APPROVAL (EXEMPTION PER IR 16-8, SEC 5)

ARRAY	WIDTH	LENGTH	AREA	NO. MODULES	kW	TOTAL SQ. FOOTAGE	DSA PC A#	NOTES
1	21'-9"	69'-6"	1,511.63 SQ. FT.	84	21.84	4,536.69 SQ. FT.	02-112000	FRONT PARKING LOT ARRAYS SEPARATED BY AT LEAST AN 8' SEISMIC GAP.
3	21'-9"	139'-1"	3,025.06 SQ. FT.	168	43.68		02-112000	
2	21'-9"	69'-6"	1,511.63 SQ. FT.	84	21.84	1,511.63 SQ. FT.	02-112000	FRONT PARKING LOT ARRAY
4	24'-2"	65'-3"	1,377.54 SQ. FT.	84	21.84	1,576.88 SQ. FT.	N/A	ARRAY 4 THROUGH ARRAY 9 ARE GROUND MOUNT ARRAYS ENCLOSED BY FENCING AND INACCESSIBLE TO UNAUTHORIZED PERSONNEL. GROUND MOUNT ARRAYS ARE IN COMPLIANCE WITH DSA IR 16-8 AND THEREFORE NOT SUBJECT TO DSA STRUCTURAL REVIEW. PER. IR 16-8 (rev 09-06-12)
5	24'-2"	87'-0"	2,102.5 SQ. FT.	128	33.28	2,102.5 SQ. FT.	N/A	
6	24'-2"	48'-11"	1,182.15 SQ. FT.	72	18.72	1,182.15 SQ. FT.	N/A	
7	24'-2"	65'-3"	1,771.84 SQ. FT.	108	28.08	1,576.88 SQ. FT.	N/A	
8	18'-1"	103'-4"	1,835.57 SQ. FT.	112	29.12	1,835.57 SQ. FT.	N/A	
9	18'-1"	201'-2"	3,639.04 SQ. FT.	224	58.24	3,639.04 SQ. FT.	N/A	
10A	38'-0"	66'-2"	2,514.33 SQ. FT.	140	36.40	5,532.16 SQ. FT.	02-111999	SOUTH PARKING LOT ARRAYS SEPARATED BY AT LEAST A 12' SEISMIC GAP.
10B	38'-0"	79'-5"	3,017.83 SQ. FT.	168	43.68		02-111999	
			TOTAL	1372	356.72	23,493.5 SQ. FT.		

ACCESSIBLE PATH OF TRAVEL

KEY

(N) ----------
(E) ....

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 CHANGES NOT EXCEEDING 1/4" MAX AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP RESISTANT. CROSS SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 5%, UNLESS OTHERWISE INDICATED. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANG OBSTRUCTIONS TO 80" MINIMUM AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM WALL AND ABOVE 27" AND LESS THAN 80". ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE PATH OF TRAVEL.

MINIMUM UPGRADE NOTES

VERIFY AND/OR PROVIDE THE FOLLOWING MINIMUM UPGRADES TO THE TOILET ROOMS:
1. ROOM IDENTIFICATION AND DOOR SIGNAGE AT ENTRY DOOR
2. SELF-CLOSING HINGE AT WHEELCHAIR ACCESSIBLE STALL DOOR.
3. SLIDE BOLT OR FLIP-OVER TYPE LATCH AT WHEELCHAIR ACCESSIBLE STALL DOOR.
4. LOOP OR U-SHAPED WIRE PULLS BOTH SIDES OF D.P. , STALL DOOR, 30"-44" A.F.F.
5. COAT HOOK AT 48" A.F F MAX. AT WHEELCHAIR ACCESSIBLE STALL.
7. ENTRY DOOR OPERATING PRESSURE TO OPEN 5 IBS. MAXIMUM.
8. DISPENSERS/WASTE DISPOSAL BINS CAN NOT PROJECT INTO CLEAR SPACE REQUIREMENTS OF ANY FLEXURE.
9. DISPENSERS AND OTHER PROTRUDING ELEMENTS, WITH LEADING EDGES BETWEEN 21" AND 80" AFF WITHIN THE CIRCULATION SPACE, MAY NOT PROJECT MORE THAN 4" FROM THE WALL.
10. LOCATE THE WASTE DISPOSAL BIN (INDICATE A SIZE) WHICH WILL NOT ENCROACH INTO ANY FIXTURE, MANEUVERING, OR DOOR CLEARANCE REQUIREMENT.

GENERAL NOTES:

G1: CONTRACTOR TO DEMO ALL EXISTING PARKING LOT LIGHT POLES & TREES AS REQUIRED.
G2: CONTRACTOR TO FIELD VERIFY ALL COLUMN LOCATIONS PRIOR TO STEEL ORDER.
G3: THIS PROJECT UTILIZES PC 02-112000 AND 02-111999. ALL FRAMING OPTIONS BEING UTILIZED ARE BOXED ON THE PC DRAWINGS.
G4: SEE DETAIL H/E7 FOR TYPICAL CONDUIT UNDERGROUND ROUTING METHOD.
G5: SEE DETAILS A/E7, D/E7, G/E7 FOR TYPICAL CONDUIT ATTACHMENT METHODS.
G6: SEE DETAIL D/E7 FOR ALLOWABLE PURLIN PENETRATIONS FOR CONDUIT AND WIRING
G7: ALL DIMENSIONS ON THIS SHEET ARE FOOTPRINT DIMENSIONS.
G8: MIN. 3000 psi CONCRETE
G9: SOLAR MODULE CLIP INSTALLATION LOCATION ON PANEL TO BE VERIFIED WITH MANUFACTURER FOR WARRANTY CONFORMANCE.
G10: A FORMAL SUBMITTAL IS REQUIRED FOR THE SOLAR MODULE CLIP WITH THE ACTUAL SIZE PER DETAIL C/A4 AND D/A4.
G11: SOLAR MODULE ATTACHMENT SCREW SHALL BE A 5/16" X 18-2-1/2" BOLT. THE SCREW SHOULD NOT BE TORQUED WITH A TORQUE WRENCH, NOR INSTALL WITH A HAMMER DRILL. THE SCREW SHOULD BE INSTALLED WITH A DRIVER SCREW GUN AT THE LOWEST POSSIBLE CLUTCH SETTING. MAXIMUM TORQUE OF THE SCREW IS 10.5 FT-LBS. SEE NOTE G12.
G12: THE IOR NEEDS TO BE PRESENT AT THE START OF INSTALLATION OF THE SOLAR MODULE CLIP SCREWS TO PROPERLY DETERMINE THE PROPER CLUTCH SETTING ON THE SCREW GUNS IS BEING UTILIZED.
G13: A FORMAL SUBMITTAL DETAILING THE PROPOSED SOLAR MODULE & SOLAR MODULE ATTACHMENT METHODS IS REQUIRED.
G14: THE IOR NEEDS TO PERIODICALLY INSPECT THE INSTALLATION OF THE SOLAR MODULE CLIPS TO ENSURE THE INSTALLATION MEETS WITH THE WRITTEN DESCRIPTION OF INSTALLATION AS APPROVED THROUGH THE SUBMITTAL PROCESS.
G15: THE IOR NEEDS TO PERFORM AN END OF PROJECT INSPECTION OF EACH CANOPY FROM A LIFT TO VERIFY ALL CLIPS HAVE BEEN INSTALLED AND THAT THERE ARE NO MISSING NOR IMPROPERLY INSTALLED CLIPS.
G16: SOILS CLASS SP/SM PER GEOTECHNICAL REPORT #LA-01420-01 ISSUED BY EARTH SYSTEMS (SOUTHERN CALIFORNIA) DATED 04-20-12 LISTING ALLOWABLE LATERAL BEARING PRESSURES OF 333 PSF/Ft.
G17: ALL AREAS WITHIN THESE SPACES MUST MEET WITH THE MAX 2% SLOPE, 0.5% CROSS SLOPE.
G18: THE SITE UTILIZES 0 PSF SNOW LOAD OPTION IN THE PC.

SolarCity
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GLENDALE USD- CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM

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4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP# 11 4572
AC FLS SS
DATE MAY 22 2012

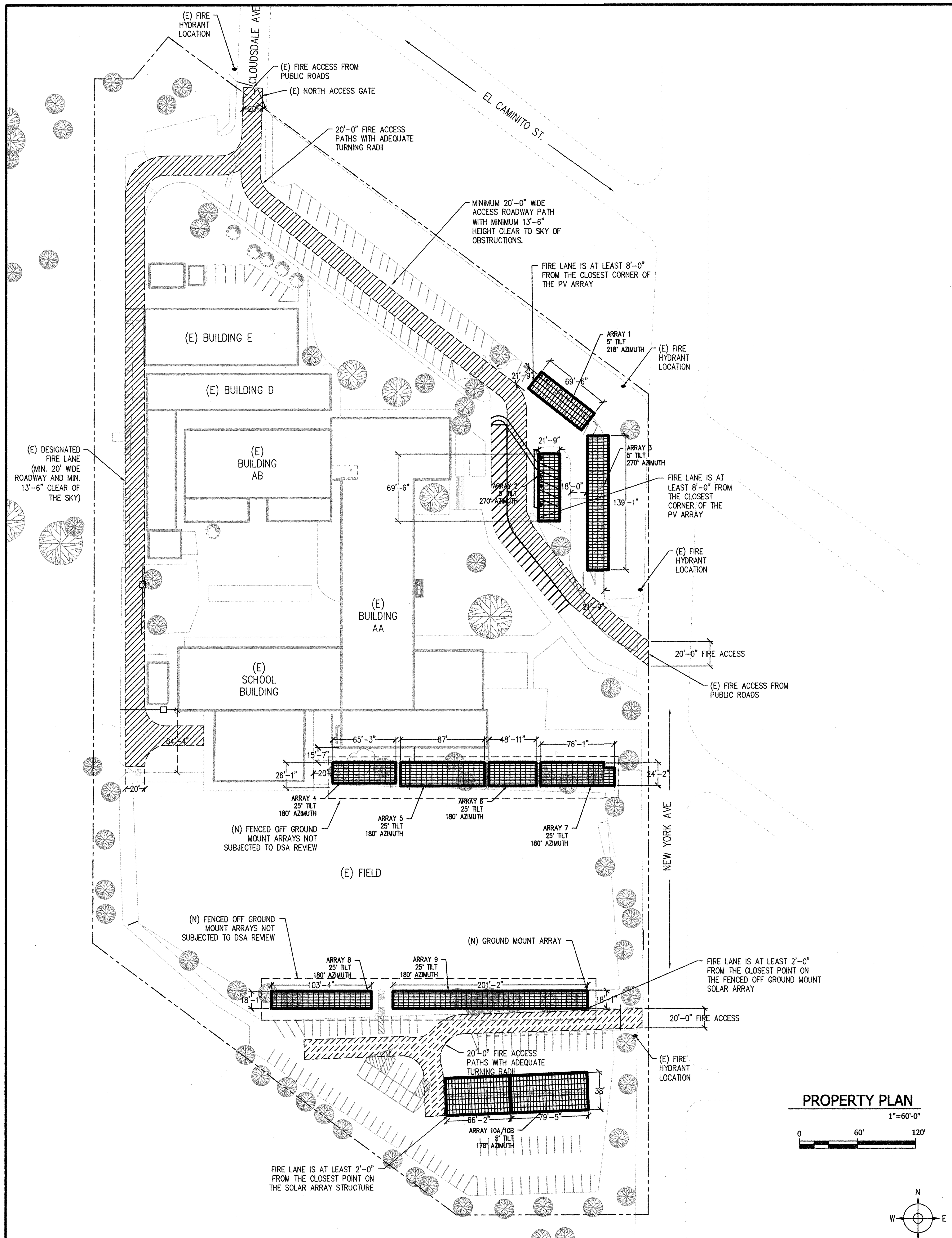
LICENSED ARCHITECT
DAVID SCOTT STOKES
No.C 15700
REN. 6-30-13
STATE OF CALIFORNIA

REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOVT DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012 PAYMENT TYPE: CASH
PAGE NAME: PROPERTY PLAN PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV A1 REV:



FIRE DEPARTMENT ACCESS PLAN

LEGEND

- (N) STRUCTURE POST
- (N) SOLAR MODULES
- (E) PREVIOUSLY APPROVED FIRE LANES REMAINING UNCHANGED
- (N) FIRE LANE AROUND PV ARRAYS
- (E) FENCE
- (E) FIRE HYDRANT

ARRAY	WIDTH	LENGTH	AREA	NO. MODULES	kW	TOTAL SQ. FOOTAGE
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			TOTAL	1372	356.72	23,493.5 SQ. FT.

SCOPE OF WORK

VERIFY EXISTING FIRE LANE MARKING AND/OR PROVIDE NEW FIRE LANE MARKING AS DIRECTED BY LOCAL FIRE AUTHORITY AND AS DESCRIBED BELOW.

FIRE LANE MARKING

SCOPE

The Fire Department is authorized to direct installation of approved signs or other approved notices for the identification of fire lanes. Identification may include one or more of the following:

REQUIREMENTS

Red Curb Marking:

Curb top and side shall be painted red, and the words, "FIRE LANE" shall be stenciled on the top and side of all red curbs at a maximum interval of 50 feet. Letters shall be three inches (3") in height with a minimum 3/4-inch in stroke.

Alternatively, if the roadway has no curbing, a 12-inch wide red stripe with the words "FIRE LANE" in white may be painted along and parallel with the edge of the roadway. The lettering shall be 8-inches high with a 3/4-inch stroke.

Signage:

Signs shall be of metal construction, measuring 12-inches wide and 18-inches high, and of a reflective type. Plastic or wooden signs are not acceptable. See detail A.

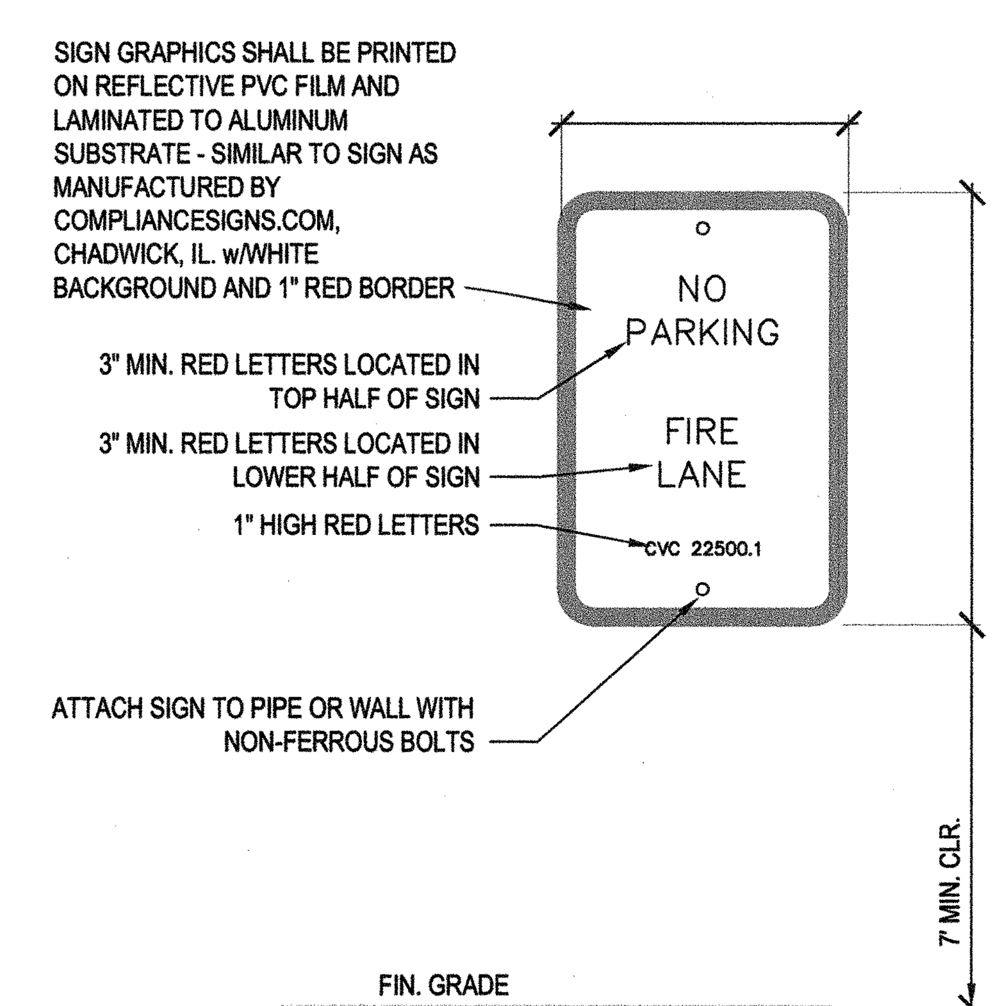
Signs shall read: "NO STOPPING – FIRE LANE 22500.1 CVC." Lettering shall be not less than one-inch in height and clearly visible from a vehicle.

Signs shall be in visible locations and mounted on galvanized metal poles at a height of 80 inches. Signs shall be maintained unobstructed by foliage, etc.

The distance between signs posted along the fire lane shall not exceed 125 feet. Not less than two signs shall be posted for each fire lane. If traffic flows in two directions, signs must be posted so as to be readable from either direction.

Roadway Surface Marking:

Outlining or painting the fire lane area in red with the words "FIRE LANE" in white, at intervals of not more than 50 feet or as otherwise directed by the Fire Department. Size of lettering shall be not less than 24 inches in height and three inches (3") in stroke.



(A) FIRE LANE SIGN
Scale: NTS

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DAVID SCOTT STOKES
No.C 15700
REN 6-30-13
STATE OF CALIFORNIA

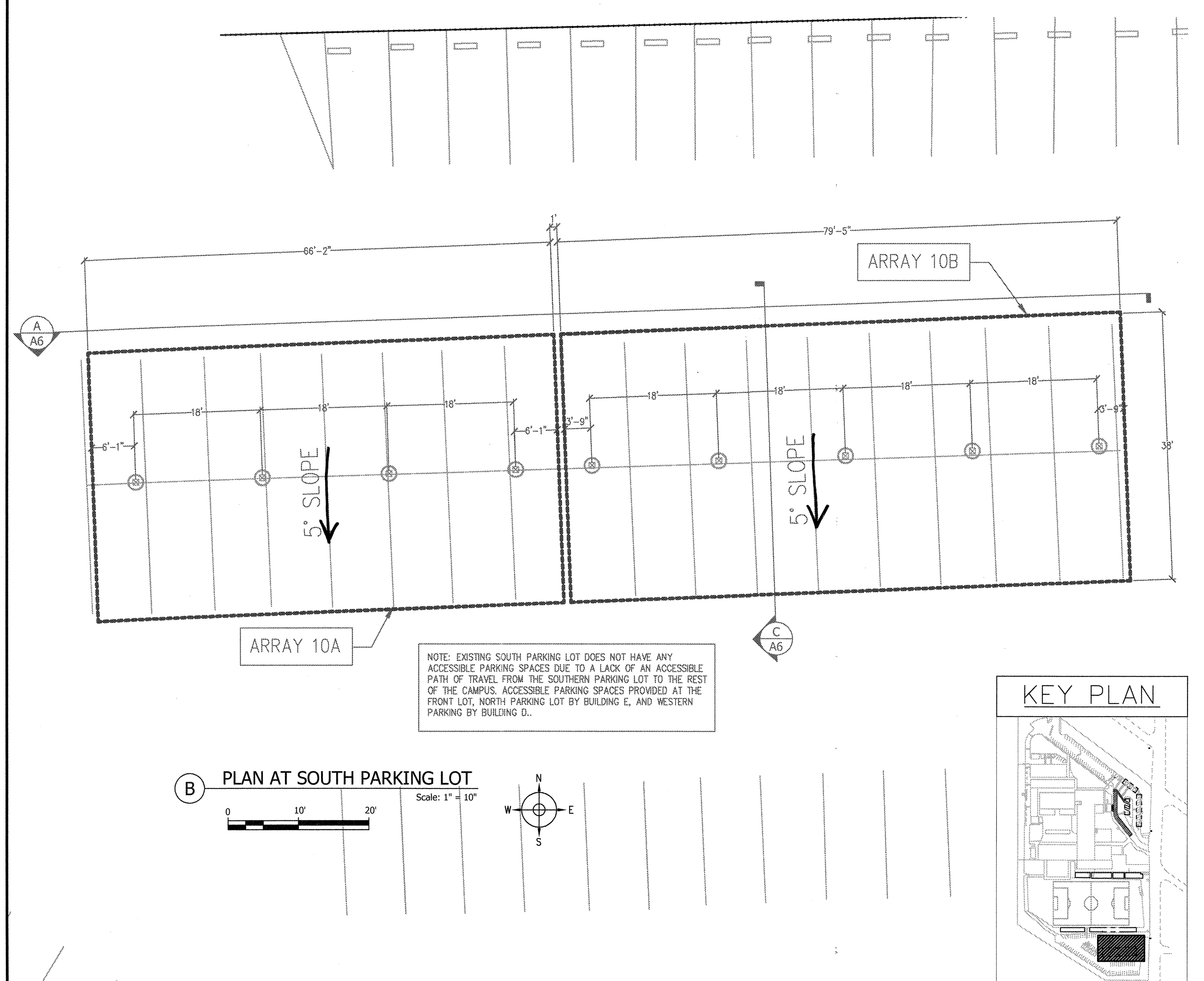
REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

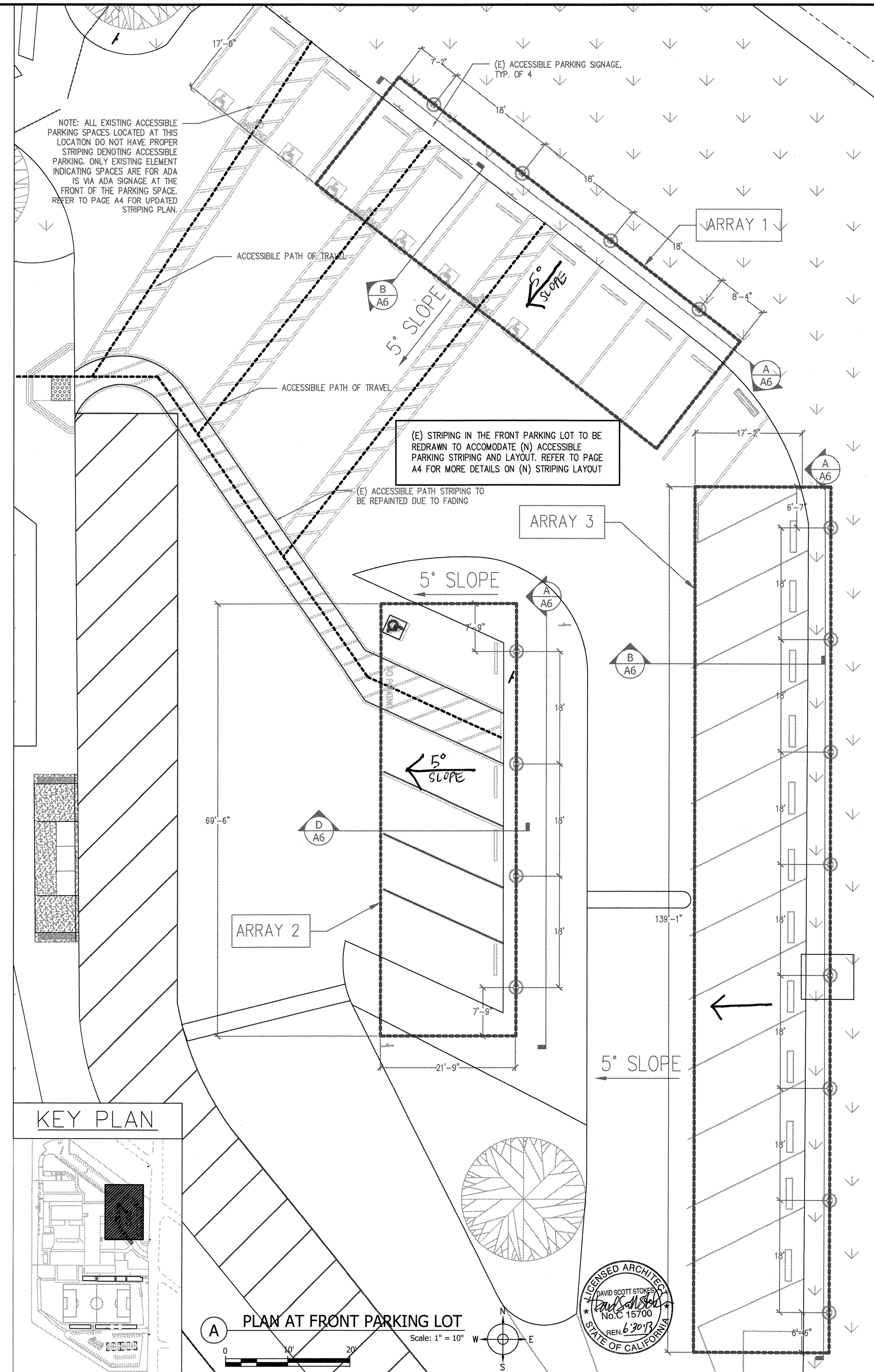
APPROVED 5/6-12

JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOV'T
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: FIRE ACCESS PLAN
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV A2
REV:



B PLAN AT SOUTH PARKING LOT



A PLAN AT FRONT PARKING LOT

LICENSED ARCHITECT
DAVID SCOTT STOKES
No. C 15700
REN. 6-30-13
STATE OF CALIFORNIA

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DESCRIPTION:
GLENDALE USD- CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM

CUSTOMER:
GLENDALE USD- CLARK MAGNET HIGH
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP03 1 1 4 5 7 2
AC ___ FLS ___ SS ___
DATE MAY 2 2 2012

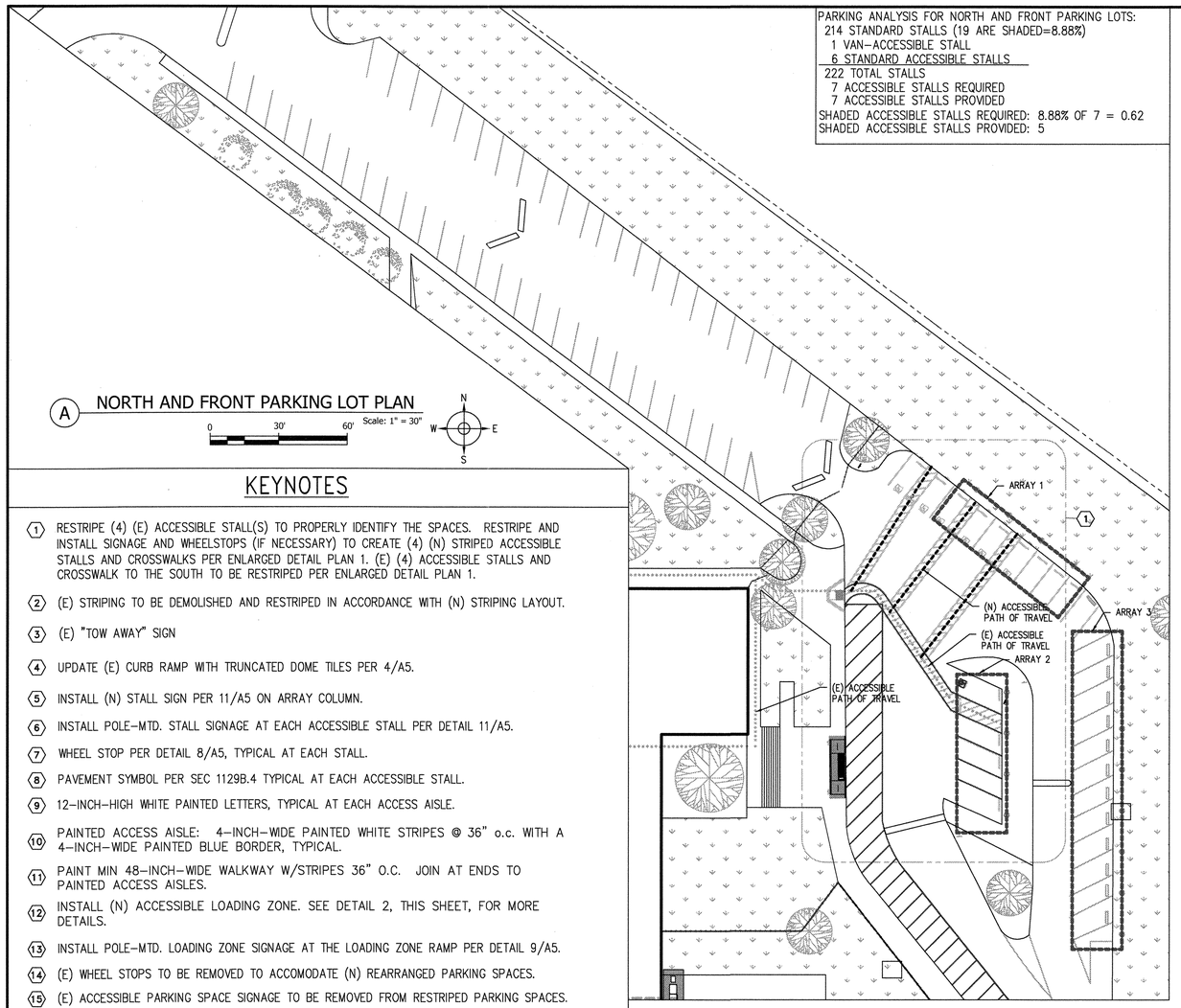
REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOV'T
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: ARRAY LAYOUT PLANS
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV A3
REV:

PARKING ANALYSIS FOR NORTH AND FRONT PARKING LOTS:
214 STANDARD STALLS (19 ARE SHADED=8.88%)
1 VAN-ACCESSIBLE STALL
6 STANDARD ACCESSIBLE STALLS
222 TOTAL STALLS
7 ACCESSIBLE STALLS REQUIRED
7 ACCESSIBLE STALLS PROVIDED
SHADED ACCESSIBLE STALLS REQUIRED: 8.88% OF 7 = 0.62
SHADED ACCESSIBLE STALLS PROVIDED: 5



A NORTH AND FRONT PARKING LOT PLAN
Scale: 1" = 30'
0 30' 60'

KEYNOTES

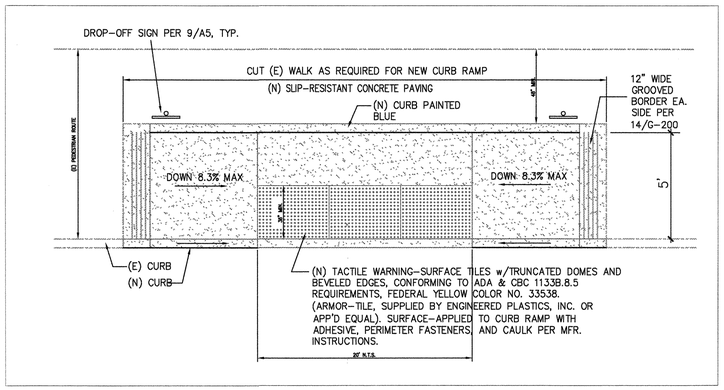
1. RESTRIPE (4) (E) ACCESSIBLE STALL(S) TO PROPERLY IDENTIFY THE SPACES. RESTRIPE AND INSTALL SIGNAGE AND WHEELSTOPS (IF NECESSARY) TO CREATE (4) (N) STRIPED ACCESSIBLE STALLS AND CROSSWALKS PER ENLARGED DETAIL PLAN 1. (E) (4) ACCESSIBLE STALLS AND CROSSWALK TO THE SOUTH TO BE RESTRIPED PER ENLARGED DETAIL PLAN 1.
2. (E) STRIPING TO BE DEMOLISHED AND RESTRIPED IN ACCORDANCE WITH (N) STRIPING LAYOUT.
3. (E) "TOW AWAY" SIGN
4. UPDATE (E) CURB RAMP WITH TRUNCATED DOME TILES PER 4/A5.
5. INSTALL (N) STALL SIGN PER 11/A5 ON ARRAY COLUMN.
6. INSTALL POLE-MTD. STALL SIGNAGE AT EACH ACCESSIBLE STALL PER DETAIL 11/A5.
7. WHEEL STOP PER DETAIL 8/A5, TYPICAL AT EACH STALL.
8. PAVEMENT SYMBOL PER SEC 1129B.4 TYPICAL AT EACH ACCESSIBLE STALL.
9. 12-INCH-HIGH WHITE PAINTED LETTERS, TYPICAL AT EACH ACCESS AISLE.
10. PAINTED ACCESS AISLE: 4-INCH-WIDE PAINTED WHITE STRIPES @ 36" o.c. WITH A 4-INCH-WIDE PAINTED BLUE BORDER, TYPICAL.
11. PAINT MIN 48-INCH-WIDE WALKWAY W/STRIPES 36" O.C. JOIN AT ENDS TO PAINTED ACCESS AISLES.
12. INSTALL (N) ACCESSIBLE LOADING ZONE. SEE DETAIL 2, THIS SHEET, FOR MORE DETAILS.
13. INSTALL POLE-MTD. LOADING ZONE SIGNAGE AT THE LOADING ZONE RAMP PER DETAIL 9/A5.
14. (E) WHEEL STOPS TO BE REMOVED TO ACCOMODATE (N) REARRANGED PARKING SPACES.
15. (E) ACCESSIBLE PARKING SPACE SIGNAGE TO BE REMOVED FROM RESTRIPED PARKING SPACES.

ACCESSIBLE PATH OF TRAVEL

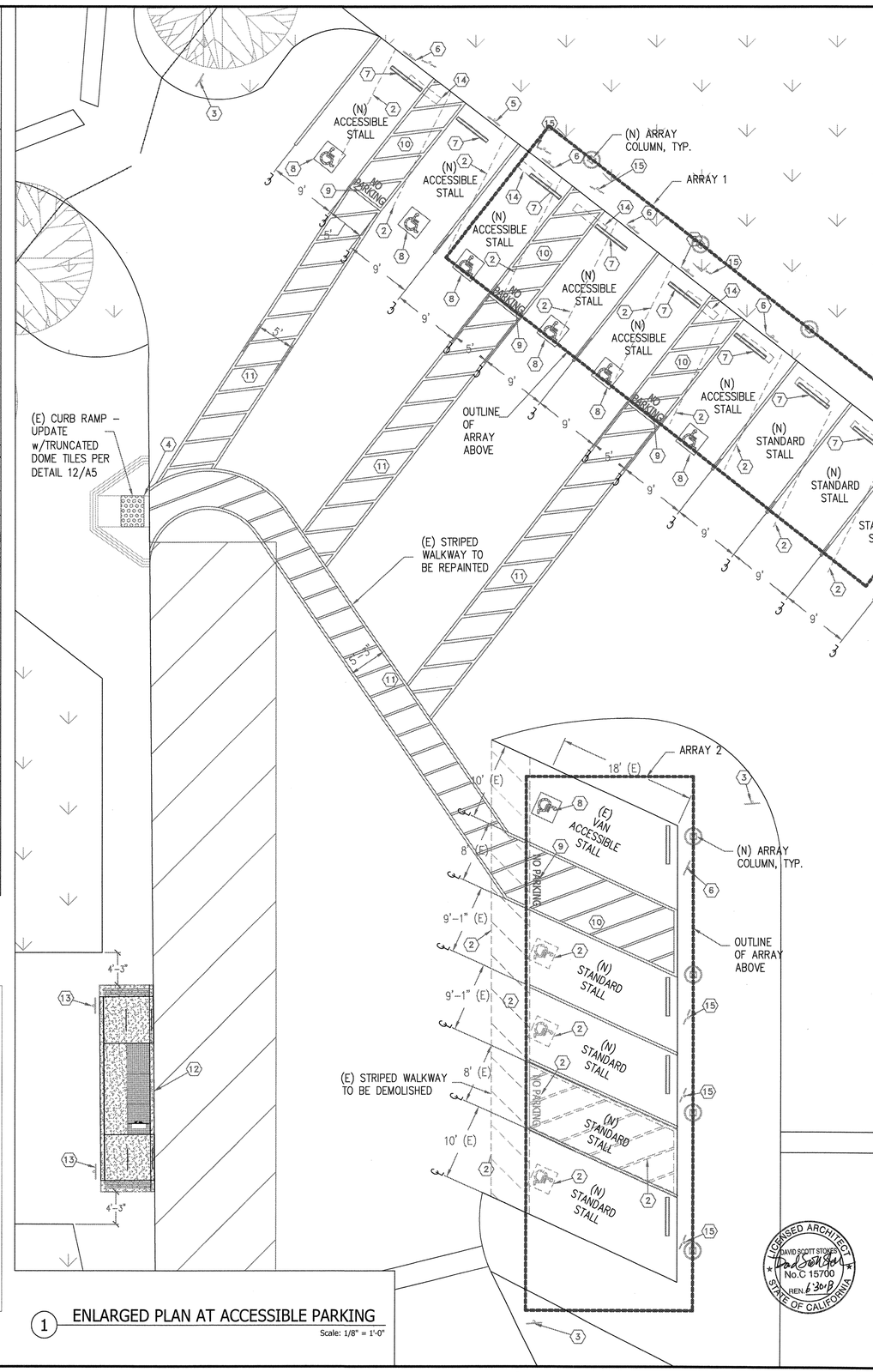
PATH OF TRAVEL (P.O.T.) AS INDICATED IS A BARRIER-FREE ACCESS ROUTE WITHOUT ANY ABRUPT VERTICAL CHANGES EXCEEDING 1/2" BEVELED AT 1:2 MAXIMUM SLOPE, EXCEPT THAT LEVEL CHANGES DO NOT EXCEED 1/4" VERTICAL AND IS AT LEAST 48" WIDE. SURFACE IS SLIP RESISTANT, STABLE, FIRM, AND SMOOTH. MAXIMUM CROSS-SLOPE IS 2% AND MAXIMUM SLOPE IN THE DIRECTION OF TRAVEL IS 5%. P.O.T. SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM (1133B.8.2) AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM WALL AND ABOVE 27" AND LESS THAN 80" (1133B.8.6). ARCHITECT TO VERIFY THAT ALL BARRIERS IN THE PATH OF TRAVEL HAVE BEEN REMOVED OR WILL BE REMOVED UNDER THIS PROJECT, AND PATH OF TRAVEL COMPLIES WITH CBC 1133B.

(N) ----------

(E) ··········



2 ACCESSIBLE LOADING ZONE DETAIL
Scale: 1/4" = 1'-0"



1 ENLARGED PLAN AT ACCESSIBLE PARKING
Scale: 1/8" = 1'-0"

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GLENDALE USD- CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM
GLENDALE USD- CLARK MAGNET HIGH
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP03 1 1 4 5 7 2
ACC FLS SS
DATE MAY 2 2 2012

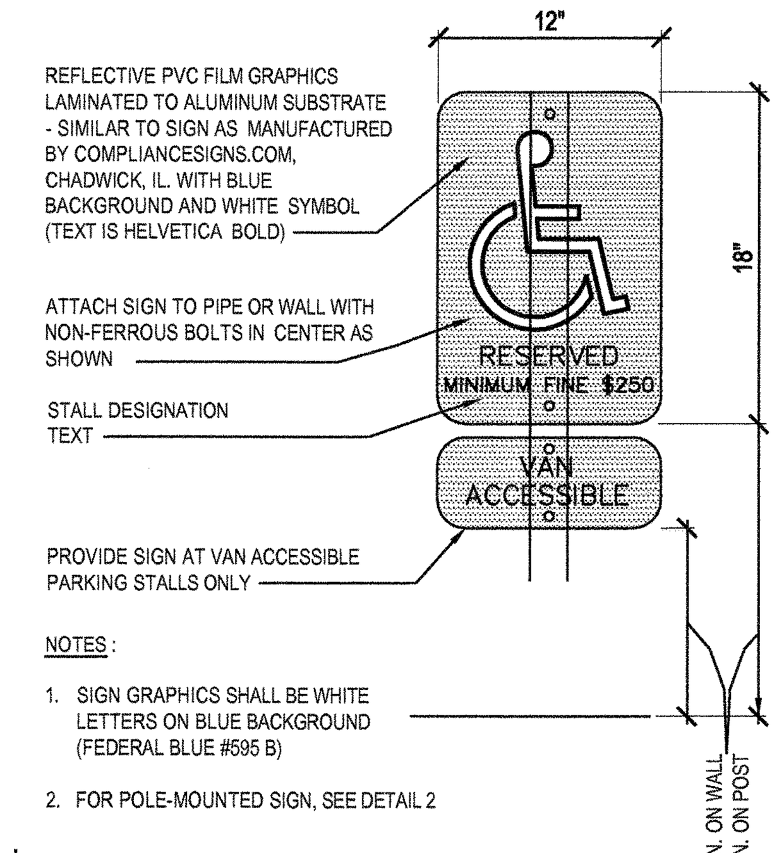
REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

JOB DETAILS
AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOVT
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: ACCESSIBILITY PARKING
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV A4
REV:

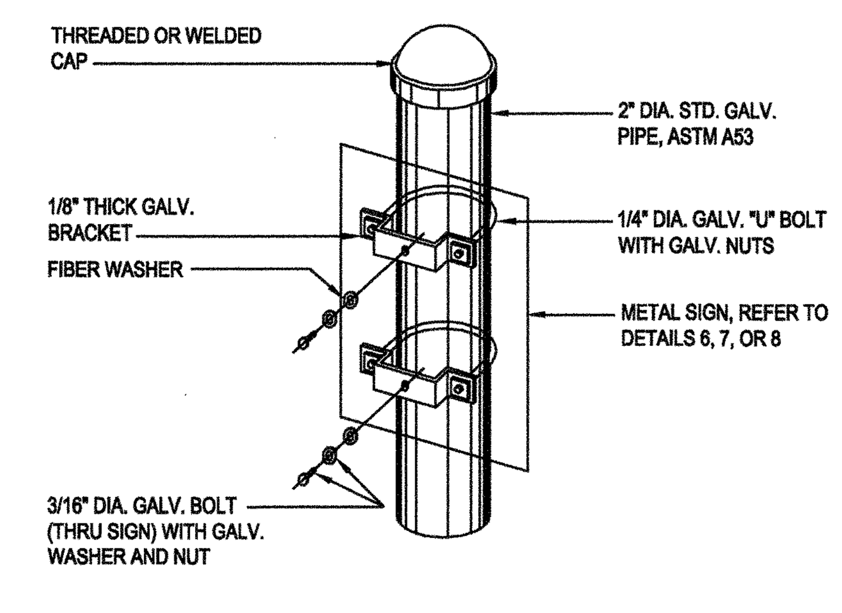
LICENSED ARCHITECT DAVID SCOTT STOKES No.C 15700 REN. 6/30/13 STATE OF CALIFORNIA

13 NOT USED
G821 REF. SCALE: N.T.S.



NOTES:
1. SIGN GRAPHICS SHALL BE WHITE LETTERS ON BLUE BACKGROUND (FEDERAL BLUE #595 B)
2. FOR POLE-MOUNTED SIGN, SEE DETAIL 2

11 ACCESSIBLE STALL SIGN
G821 REF. SCALE: N.T.S.



7 SIGN FACE ANCHORING
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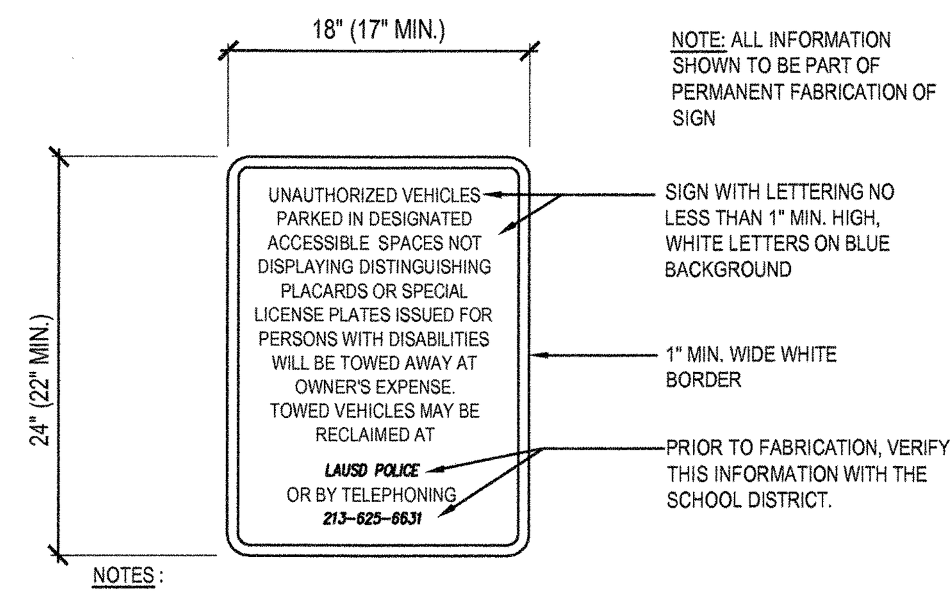
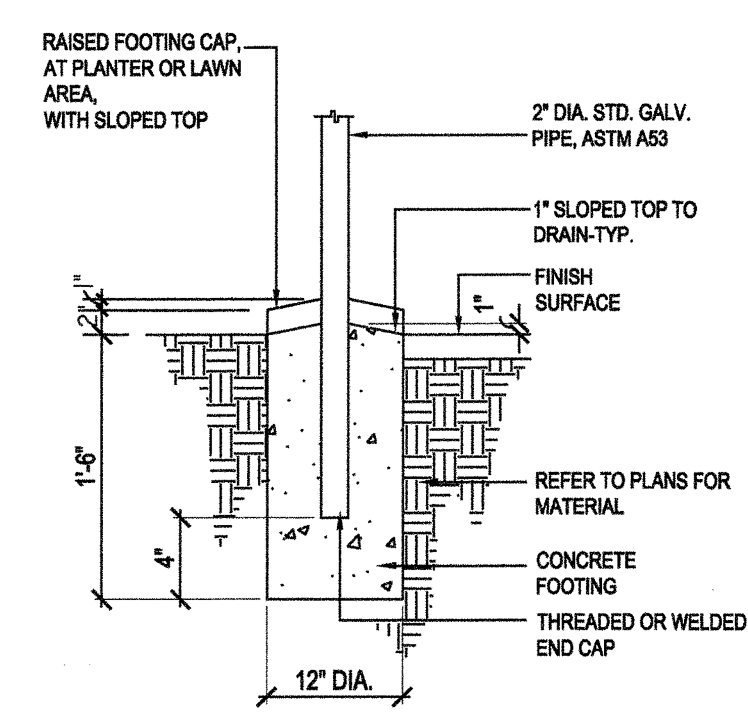


NOTES:
1. SIGN SHALL BE WHITE LETTERS ON BLUE BACKGROUND (FEDERAL BLUE #595 B) PRINTED ON REFLECTIVE PVC FILM GRAPHICS AND LAMINATED TO ALUMINUM SUBSTRATE - SIMILAR TO SIGN AS MANUFACTURED BY COMPLIANCESIGNS.COM, CHADWICK, IL.
2. FOR POLE-MOUNTED SIGN, SEE DETAIL 2

10 "TOW AWAY" SIGN
G821 REF. SCALE: N.T.S.



6 SIGN POLE BASE
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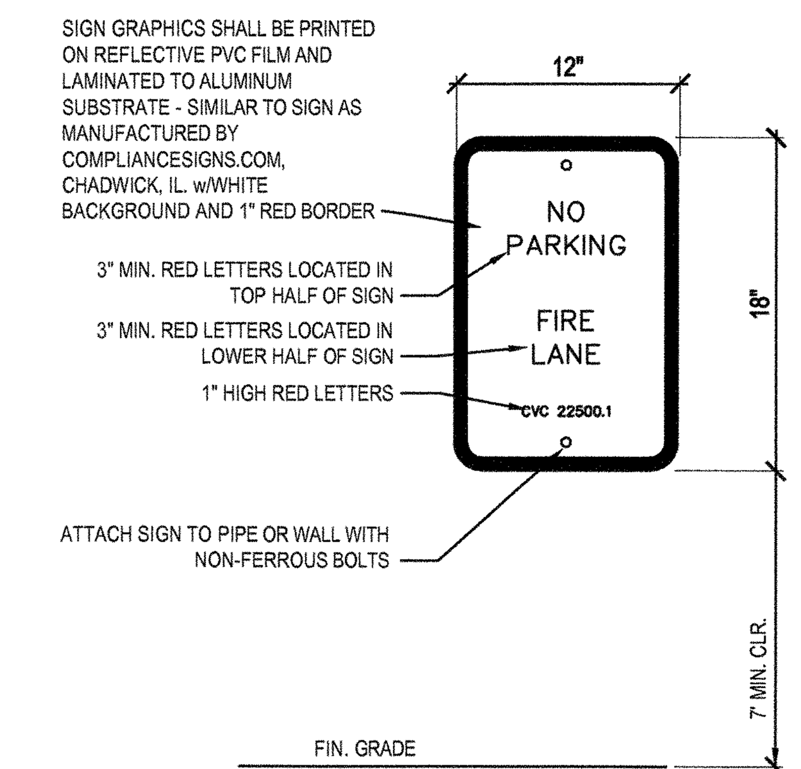
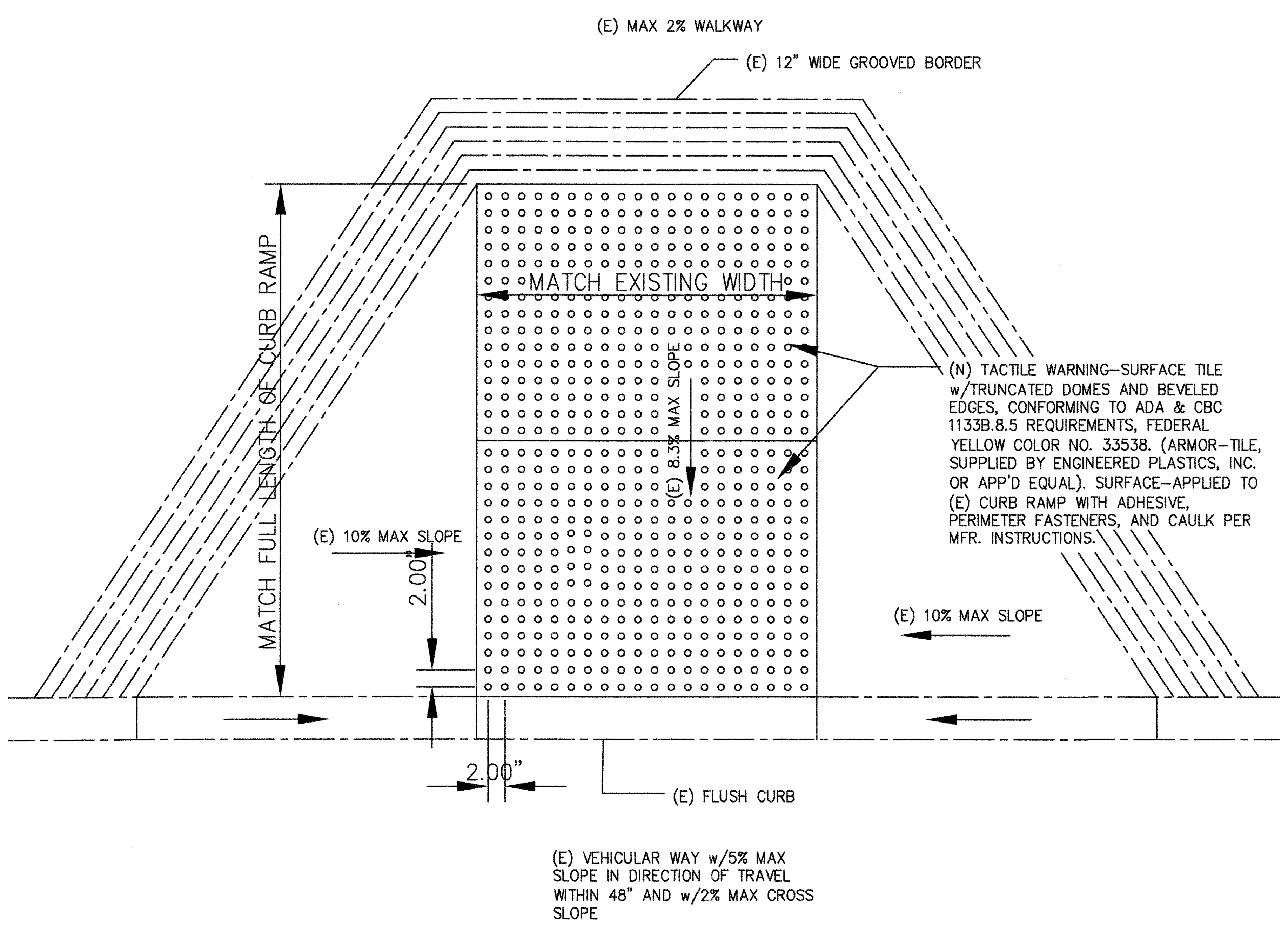
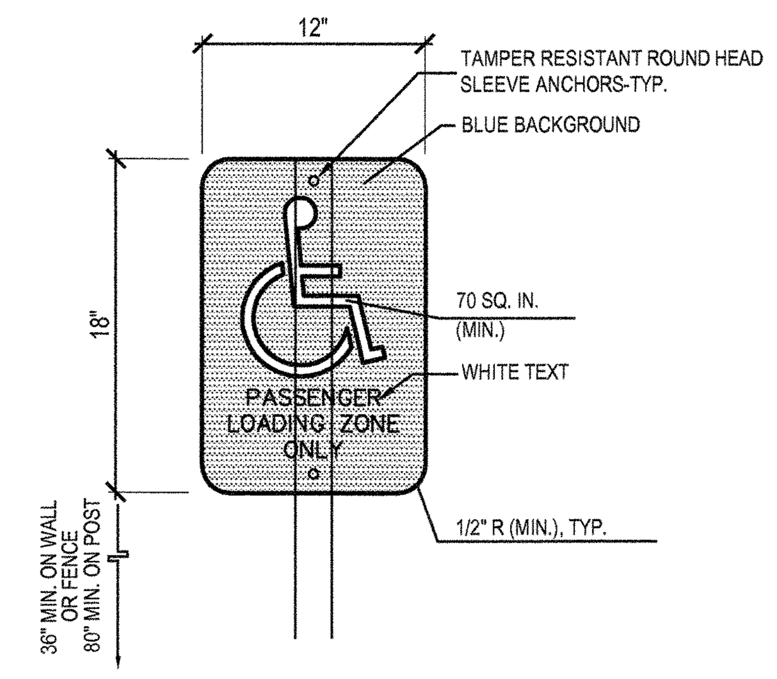


3 NO PARKING SIGN
G821 REF. SCALE: N.T.S.

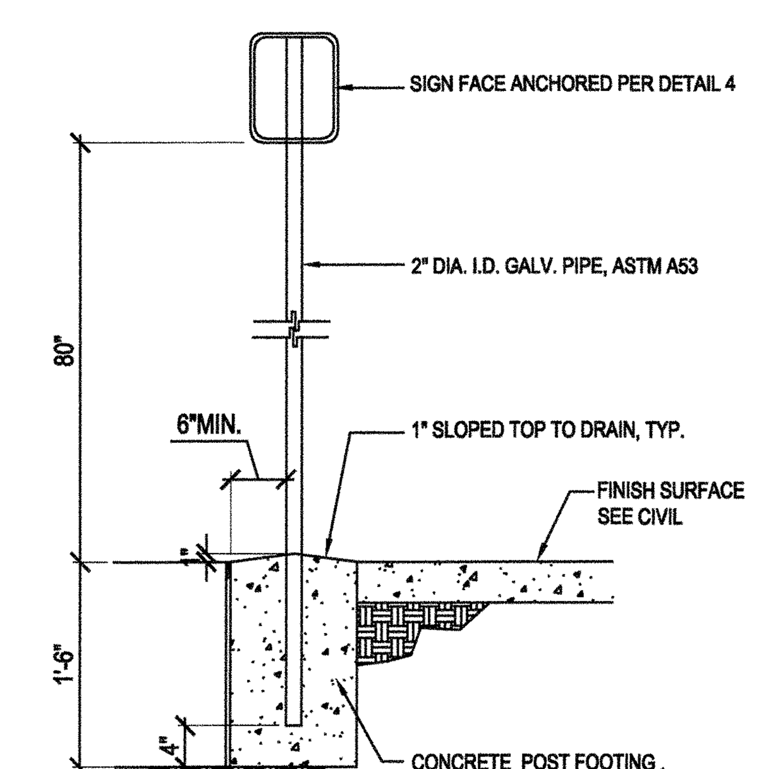


12 CURB RAMP DETAIL
G821 REF. SCALE: N.T.S.

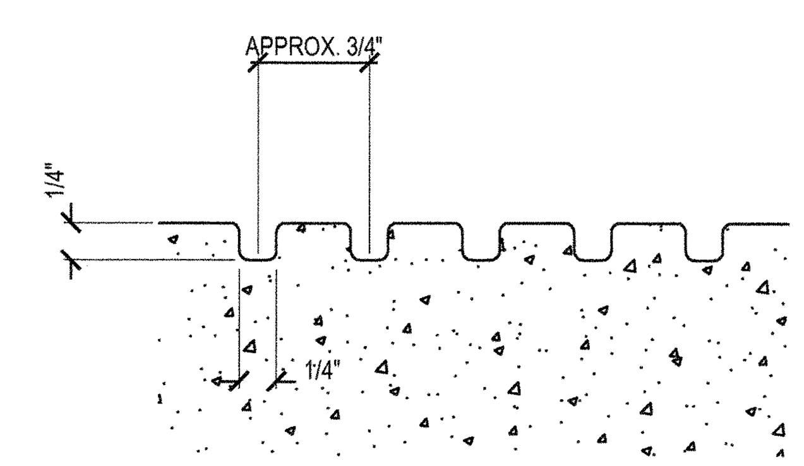


NOTES:
1. SIGN SHALL BE WHITE LETTERS ON BLUE BACKGROUND (FEDERAL BLUE #595 B) PRINTED ON REFLECTIVE PVC FILM GRAPHICS AND LAMINATED TO ALUMINUM SUBSTRATE - SIMILAR TO SIGN AS MANUFACTURED BY COMPLIANCESIGNS.COM, CHADWICK, IL.
2. FOR POLE-MOUNTED SIGN, SEE DETAIL 2

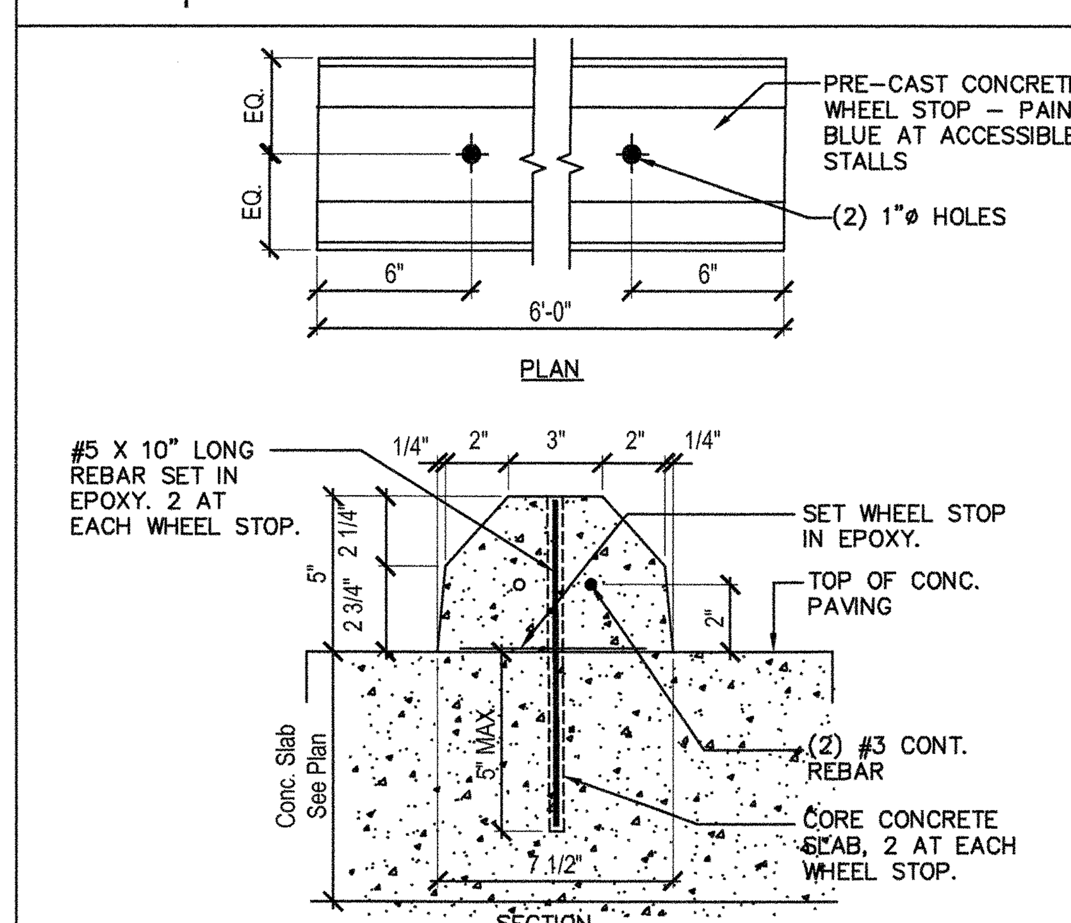
9 "DROP-OFF" SIGN
G821 REF. SCALE: N.T.S.



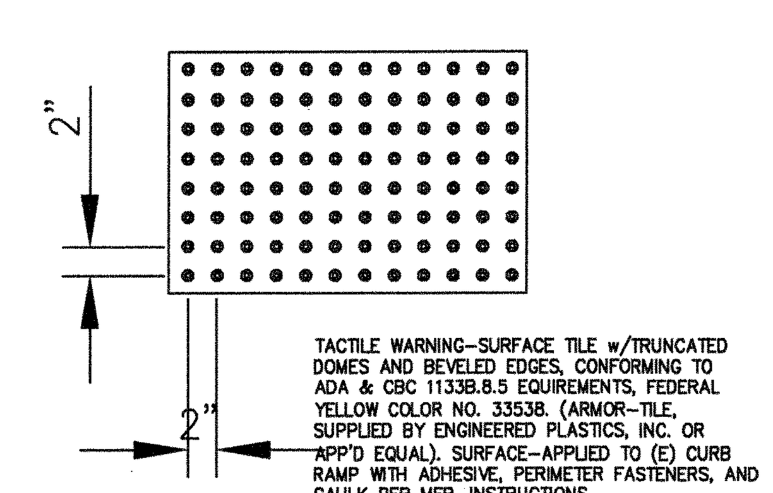
5 TYPICAL SIGN POLE - MOUNT
G821 REF. SCALE: N.T.S.



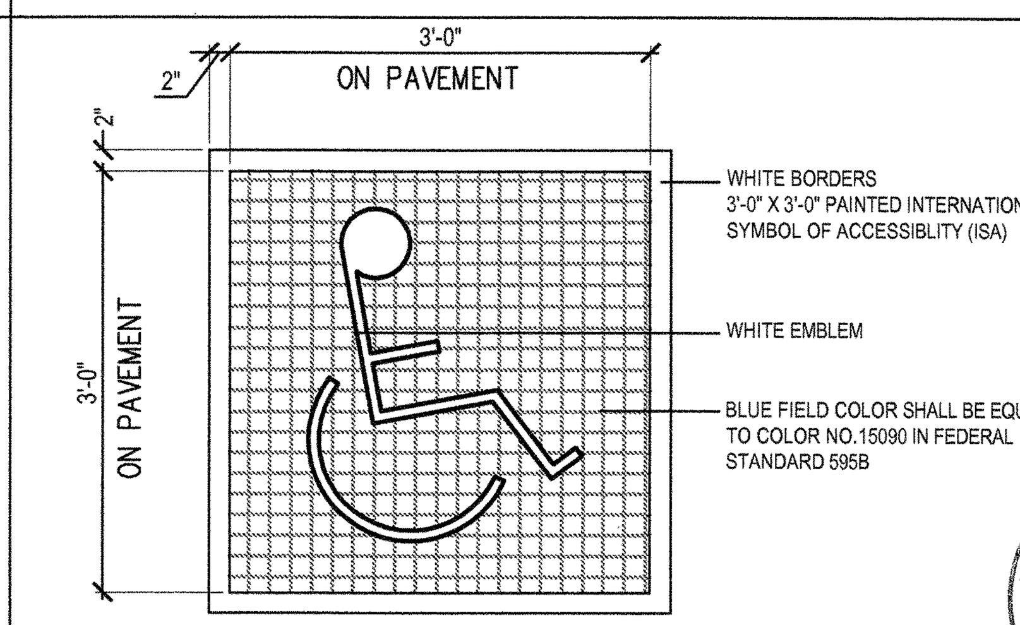
2 GROOVING DETAIL
G821 REF. SCALE: N.T.S.



8 PRE-CAST CONCRETE WHEEL STOP
G821 REF. SCALE: N.T.S.



4 TYPICAL TRUNCATED DOMES
G821 REF. SCALE: N.T.S.



NOTES:
GRID LINES ARE SHOWN FOR PROPORTION ONLY AND ARE NOT TO APPEAR AS PART OF SYMBOL.
ACCESSIBILITY SIGNAGE SHALL COMPLY WITH CHAPTER 11B OF THE CALIFORNIA BUILDING CODE.
SYMBOL SHALL BE LOCATED SO THAT IT IS VISIBLE TO A TRAFFIC ENFORCEMENT OFFICER WHEN A VEHICLE IS PARKED IN THE SPACE.

1 ISA SYMBOL AT ACCESSIBLE PARKING STALL
G821 REF. SCALE: N.T.S.

LICENSED ARCHITECT DAVID SCOTT STOKES No. C 15700 REN. 6-30-13 STATE OF CALIFORNIA

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8185070201

IDENTIFICATION STAMP
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AC ___ FLS ___ SS ___
DATE MAY 2 2 2012

REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

JOB DETAILS
AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOV'T DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012 PAYMENT TYPE: CASH
PAGE NAME: ACCESS DETAILS PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV A5 REV:

THIS DRAWING HAS BEEN PREPARED BY OTHER AND REVIEW BY:

CARUSO TURLEY SCOTT, INC.
CONSULTING STRUCTURAL ENGINEERS
FOR CORRECTNESS OF STRUCTURAL ITEMS ONLY

FOR STRUCTURAL DETAILS, SEE PC PLANS & STRUCTURAL PAGES	
SUPPORT STRUCTURES:	PC#
FULL CANTILEVER SOLAR SUPPORT STRUCTURE	02-112000
TEE SOLAR SUPPORT STRUCTURE	02-111999

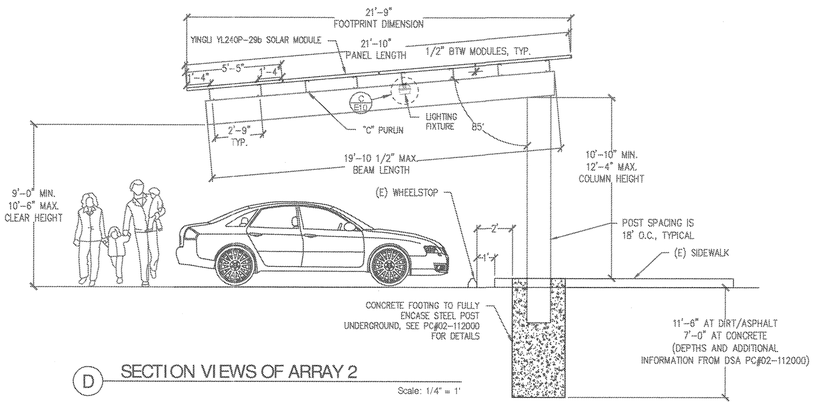
FOUNDATIONS FOR CLARK HIGH SCHOOL:

SOIL REPORT BY EARTH SYSTEMS SOUTHERN CALIFORNIA; JOB NO. LA-01420-01; DATED APRIL 20, 2012

DRILLED PIER FOOTING DESIGNS: ALLOWABLE LATERAL BEARING PRESSURE = 333 PSF/FT FOR DRILLED PIER FOOTINGS.

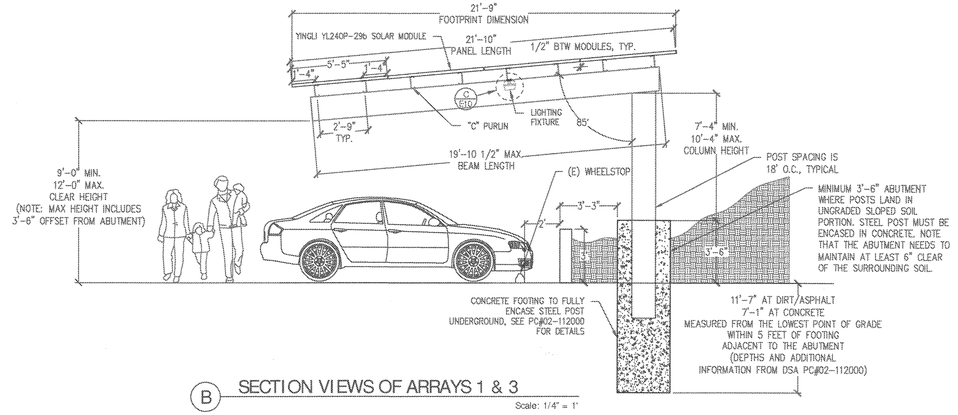
SPREAD FOOTING DESIGNS: ALLOWABLE BEARING PRESSURE EQUALS 3000 PSF.

REFER TO SOILS REPORT FOR ADDITIONAL INFORMATION PRIOR TO COMMENCEMENT OF EARTHWORK. SOILS ENGINEER SHALL INSPECT FOUNDATION EXCAVATIONS PRIOR TO PLACEMENT OF CONCRETE.



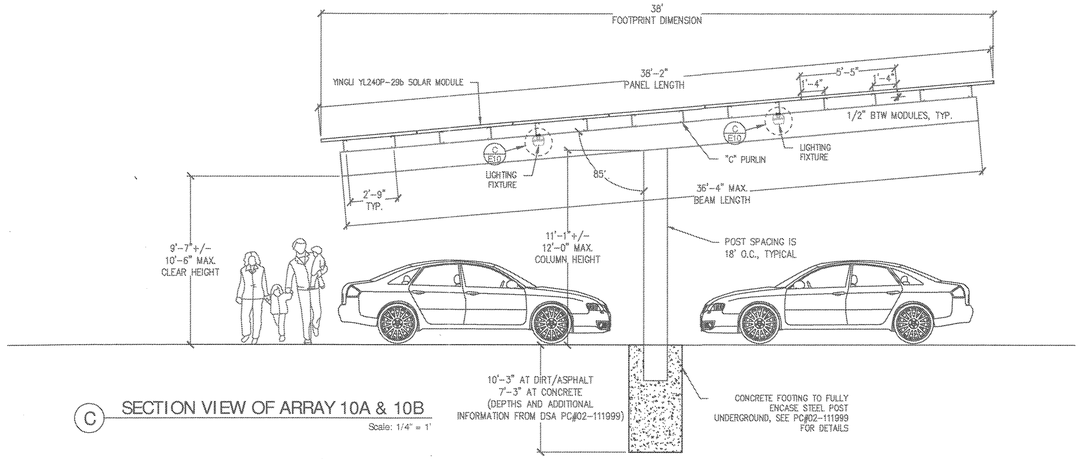
D SECTION VIEWS OF ARRAY 2

Scale: 1/4" = 1'



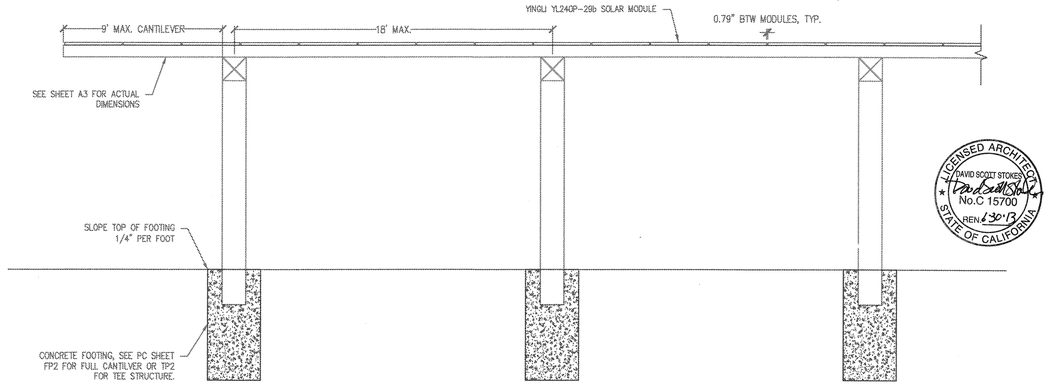
B SECTION VIEWS OF ARRAYS 1 & 3

Scale: 1/4" = 1'



C SECTION VIEW OF ARRAY 10A & 10B

Scale: 1/4" = 1'



A REAR ARRAY SECTION VIEW, TYP.

Scale: 1/4" = 1'

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No.C 15700
REN. 1-30-13
STATE OF CALIFORNIA

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REGISTERED PROFESSIONAL ENGINEER
FRED G. SCOTT
S 3325
EXP. 12/31/13
5/16/12
STRUCTURAL
STATE OF CALIFORNIA

GLENDALE USD- CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM

GLENDALE USD- CLARK MAGNET HIGH
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

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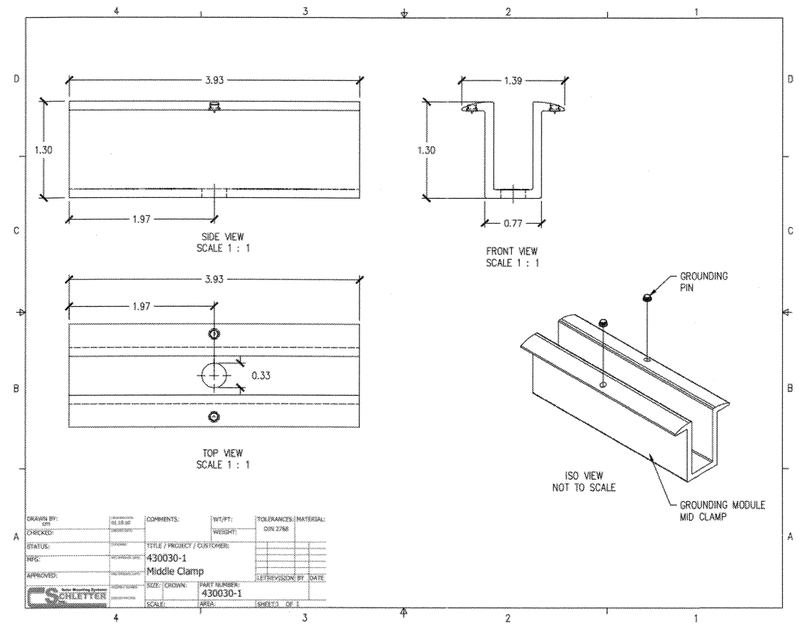
APPROVED 1 1 4 5 7 2
AGENT FLS FC SS ED
DATE MAY 22 2012

REVISIONS			
REV	BY	DATE	COMMENTS
REV A	BY	+/+/+	+

JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOV'T
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: ARRAY SECTION VIEWS
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV A6
REV:



D END ATTACHMENT DETAIL

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

C MID ATTACHMENT DETAIL

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

FOR STRUCTURAL DETAILS, SEE PC PLANS & STRUCTURAL PAGES

SUPPORT STRUCTURES:	PC#:
FULL CANTILEVER SOLAR SUPPORT STRUCTURE	02-112000
TEE SOLAR SUPPORT STRUCTURE	02-111999

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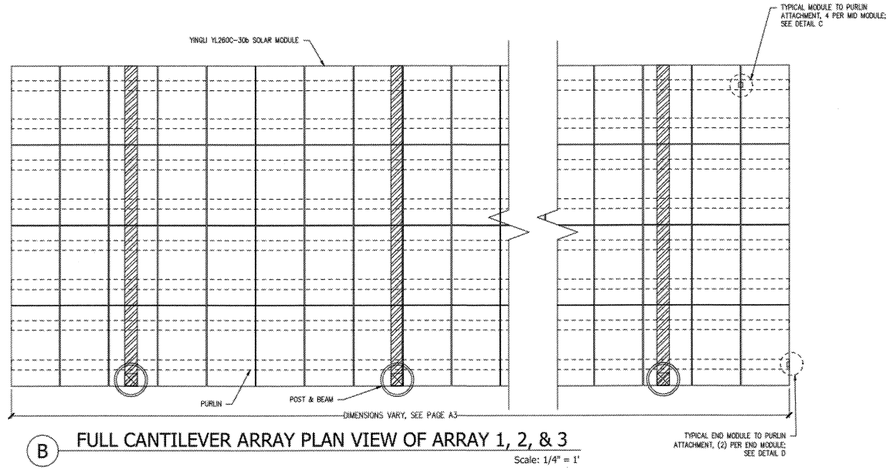
FOR CORRECTNESS OF STRUCTURAL ITEMS ONLY



B FULL CANTILEVER ARRAY PLAN VIEW OF ARRAY 1, 2, & 3

Scale: 1/4" = 1'

A TEE ARRAY PLAN VIEW, TYP. OF ARRAYS 10A & 10B

Scale: 1/4" = 1'

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REGISTERED PROFESSIONAL ENGINEER
PAUL G. SEIT
S 3325
EXP. 12/31/13
5/18/12
STRUCTURAL
STATE OF CALIFORNIA

DESCRIPTION:
GLENDALE USD- CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM

GLENDALE USD- CLARK MAGNET HIGH
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

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APP# 114572
FLS FC SS EO
DATE MAY 22 2012

LICENSED ARCHITECT
DAVID SCOTT STOKES
No. C 15700
REN: 6-30-13
STATE OF CALIFORNIA

REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

JOB DETAILS

MAP:	Glendale
MODULES:	(1372) YINGLI # YL260C-30b
MOUNTING SYSTEM:	STEEL SUPPORT STRUCTURES
INVERTER:	(1) SOLECTRIA # SGI 300KW
MARKET:	GOVT
DESIGN:	L. WU
CHECKED BY:	ES
DATE:	05/22/2012
PAYMENT TYPE:	CASH
PAGE NAME:	ARRAY DETAILS
PROJECT MANAGER:	D NAVARRO
JOB NUMBER:	JB-912072-00
PAGE:	PV A7
REV:	

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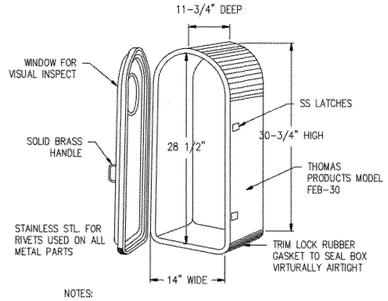
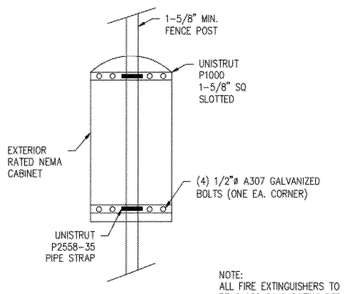


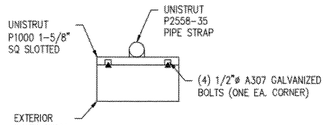
F NEMA EXTERIOR FIRE EXTINGUISHER CABINET

Scale: NTS



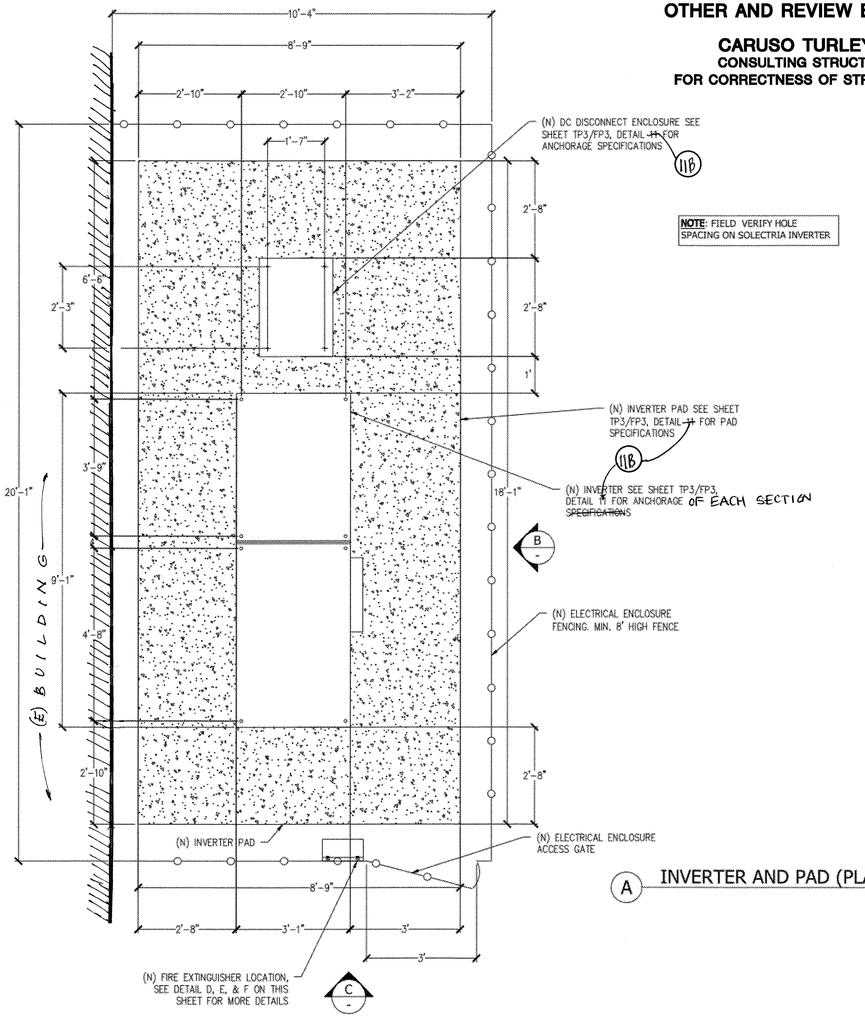
E REAR VIEW

Scale: NTS



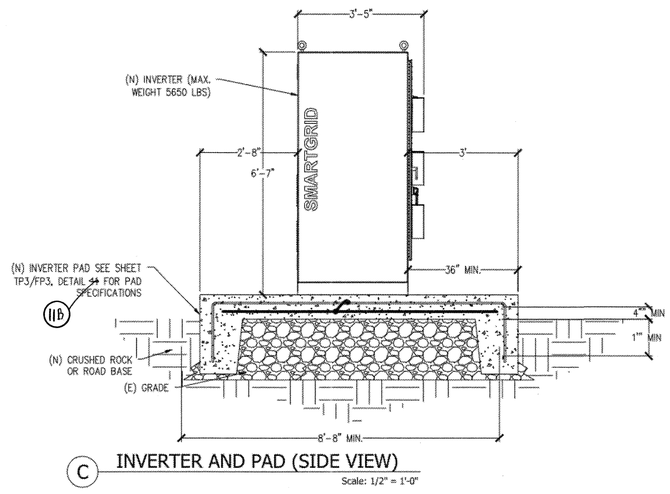
D OVERHEAD VIEW

Scale: NTS



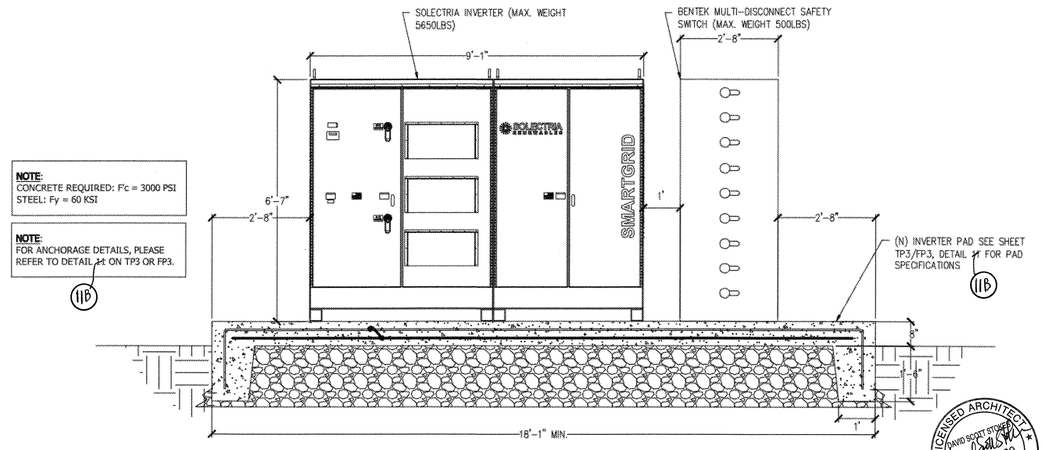
A INVERTER AND PAD (PLAN VIEW)

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



C INVERTER AND PAD (SIDE VIEW)

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



NOTE:
CONCRETE REQUIRED: F'c = 3000 PSI
STEEL: Fy = 60 KSI

NOTE:
FOR ANCHORAGE DETAILS, PLEASE REFER TO DETAIL 11 ON TP3 OR FP3.

11B

B INVERTER AND PAD (FRONT VIEW)

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

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REGISTERED PROFESSIONAL ENGINEER
Paul G. Scott
S 3305
EXP. 12/31/13
5/18/12
STRUCTURAL
STATE OF CALIFORNIA

JOB NUMBER: JB-912072-00
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CONTACT: GLENDALE USD- CLARK MAGNET HIGH
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP# 11 4 5 7 2
AC FLS TCSS ED
DATE MAY 2 2 2012

REVISIONS			
REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

JOB DETAILS

HAU: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKED: GOVT
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: INVERTER SECTION VIEWS
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV A8
REV:

LICENSED ARCHITECT
DAVID SCOTT STOKES
LIC # 15700
REN 6-30-13
STATE OF CALIFORNIA

ELECTRICAL NOTES

1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2008 NATIONAL ELECTRIC CODE AS AMENDED BY THE 2010 CALIFORNIA ELECTRIC CODE.
2. EACH UNGROUNDED CONDUCTOR OF THE MULTIWIRE BRANCH CIRCUIT WILL BE IDENTIFIED BY PHASE AND SYSTEM PER ART 210.5.
3. A NATIONALLY-RECOGNIZED TESTING LABORATORY SHALL LIST ALL EQUIPMENT IN COMPLIANCE WITH ART 110.3.
4. CIRCUITS OVER 250V TO GROUND SHALL COMPLY WITH ART. 250.97, 250.92(B)
5. DC CONDUCTORS INSIDE BUILDING SHALL BE IN METALLIC RACEWAY PER ART 690.31(E).
6. ALL ABOVE GROUND CONDUIT SHALL BE EMT WITH RAINTIGHT FITTINGS, ALL CONDUIT EXPOSED TO VEHICULAR DAMAGE SHALL BE RMC. ALL BELOW GROUND CONDUIT SHALL BE SCHEDULE 40 PVC
7. ALL WIRES SHALL BE PROVIDED WITH STRAIN RELIEF AT ALL ENTRY INTO BOXES AS REQUIRED BY UL LISTING.
8. INSTALLATION SHALL COMPLY WITH ART. 250.52, 250.53
9. INSTALL PARALLEL CONDUCTORS PER ART 310.4
10. ALL VALUES FOR IMP AND ISC AND VMP ARE MANUFACTURER'S LISTED DATA UNCORRECTED BY NEC.
11. REFER TO CURRENT MANUFACTURER'S PLANNING AND INSTALLATION MANUAL FOR TORQUE SPECS FOR ALL BOLTS AND TERMINAL CONNECTIONS.
12. DC STRING CIRCUITS SHALL BE RUN IN OUTDOOR AMBIENT CONDITIONS.
13. PV INVERTER CONTAINS INTEGRATED AC AND DC DISCONNECTS AND GFDI.
14. BURIED CONDUCTORS SHALL BE BURIED TO THE MINIMUM DEPTH SPECIFIED IN ART. 300.50.
15. ALL CONDUCTORS ARE COPPER UNLESS NOTED OTHERWISE.

GROUNDING NOTES

16. SINGLE-CONDUCTOR CABLE USED AS A GROUNDED CONDUCTOR IN PHOTOVOLTAIC POWER SYSTEMS SHALL BE IDENTIFIED AT THE TIME OF INSTALLATION BY DISTINCTIVE WHITE MARKING AT ALL TERMINATIONS.
17. THE DC GEC SHALL BE CONTINUOUS FROM THE INVERTER GROUND BUSBAR TO THE MAIN ELECTRICAL SERVICE GROUNDING ELECTRODE SYSTEM. THE DC GEC SHALL BE ATTACHED TO THE GROUND ELECTRODE USING AN IRREVERSIBLE MEANS AS CALLED OUT IN ART. 250.64 AND 690.47.
18. PV INVERTER CONTAINS AN INTEGRATED GFDI CIRCUIT. DO NOT BOND THE GROUNDED DC CONDUCTOR TO GROUND EXCEPT THROUGH THE INVERTER GFDI.
19. ALL EXPOSED METAL PARTS (RAIL, PIPE, BOXES, ETC) SHALL BE GROUNDED USING PROPER GROUNDED METHODS APPROVED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
20. #10 BARE COPPER EGC AT SOURCE CIRCUITS SHALL BE ROUTED SECURELY TO MOUNTING HARDWARE IN A MANNER THAT PROTECTS FROM PHYSICAL HARM.
21. FERROUS METAL RACEWAYS ENCLOSING GEC CONDUCTORS SHALL BE ELECTRICALLY CONTINUOUS OR BONDED IN ACCORDANCE WITH ART. 250.64(E).
22. MODULE FRAMES, RAIL, AND POSTS SHALL BE BONDED WITH EQUIPMENT GROUND CONDUCTORS AND GROUNDED AT THE MAIN ELECTRIC PANEL.
23. BOTH ENDS OF ALL METALLIC CONDUIT CONTAINING GROUNDING ELECTRODE CONDUCTORS SHALL BE BONDED PER ART 250.64(E).
24. GROUNDING ELECTRODE CONDUCTOR TO BE BONDED TO (E) UFER PER ART 250.30(A)(4)(A).
25. DC GROUNDING ELECTRODE CONDUCTOR SIZED PER ART 250.166(D).

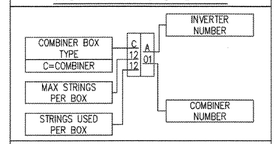
ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
BLDG	BUILDING
CONC	CONCRETE
C	COMBINER BOX
D	DISTRIBUTION PANEL
DC	DIRECT CURRENT
EGC	EQUIPMENT GROUNDING CONDUCTOR
(E)	EXISTING
EMT	ELECTRICAL METALLIC TUBING
G	SOLAR GUARD METER
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
HDG	HOT DIPPED GALVANIZED
I	CURRENT
Imp	CURRENT AT MAX POWER
INVS	INVERTERS
Isc	SHORT CIRCUIT CURRENT
kVA	KILOVOLT AMPERE
kW	KILOWATT
LBW	LOAD BEARING WALL
MIN	MINIMUM
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OCP	OVERCURRENT PROTECTION
P	PANEL BOARD
PL	PROPERTY LINES
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
S	SUBPANEL
SCH	SCHEDULE
SS	STAINLESS STEEL
SSD	SEE STRUCTURAL DRAWINGS
STC	STANDARD TESTING CONDITIONS
SWH	SOLAR WATER HEATER
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
Vmp	VOLTAGE AT MAX POWER
Voc	VOLTAGE AT OPEN CIRCUIT
W	WATT
3R	NEMA 3R, RAINTIGHT

LEGEND

- BREAKER, 2 POLE
- BREAKER, 3 POLE
- COMBINER BOX, DC (SEE BELOW FOR MORE INFO)
- CURRENT TRANSFORMER
- DISCONNECT, FUSED
- DISCONNECT, NON FUSED
- GROUND
- FUSE
- METER
- PHOTOVOLTAIC MODULE
- LINEAR FLUORESCENT FIXTURE

COMBINER BOX NUMBERING SYSTEM



MODULE CHARACTERISTICS

YINGLI YL260C-30b

Voc	= 38.6 V
Vmp	= 30.8 V
Isc	= 8.91 A
Imp	= 8.46 A
Tkvoc	= -0.14V/°C
Tlow	= 1 °C (FROM ASHRAE TABLE)

INDEX

SYSTEM COMPONENTS:

- (1372) YINGLI YL260C-30b PHOTOVOLTAIC MODULES CONFIGURED INTO (98) SERIES STRINGS OF (14) MODULES PER STRING
- (1) SOLECTRIA PVI-300kW (480V) 3φ GRID TIE INVERTER

TEMP DATA

ASHRAE EXTREME ANNUAL DRY BULB MEAN MINIMUM TEMPERATURE = 1° C
ASHRAE 2% DRY BULB = 35° C
(BURBANK-GLENDALE-PASADENA AP, CA)

MAX SYSTEM VOC CALCULATIONS

LOWEST EXPECTED AMBIENT TEMPERATURE FOR LA CRESCENTA, CA = 1°C
MAX VOLTAGE = # OF MODULES/STRING X (MODULE Voc -(Tstc-Trecord_low) X Tkvoc)

MAX VOC = 38.6 VDC - (25°C - 1°C)*-0.14
= 38.6 - -3.36 = 41.96 VDC
MAX SYSTEM VOC = 41.96 VDC * 14 MODULES IN SERIES = 587.44 VDC

ENGINEER OF RECORD

CARL BURATTI
BURATTI & ASSOCIATES, INC.
6345 BALBOA BLVD, STE 259
ENCINO, CA 91316
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FAX: (818) 345-7129
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GLENDALE USD- CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM

GLENDALE USD- CLARK MAGNET HIGH
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

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DATE MAY 2 2 2012

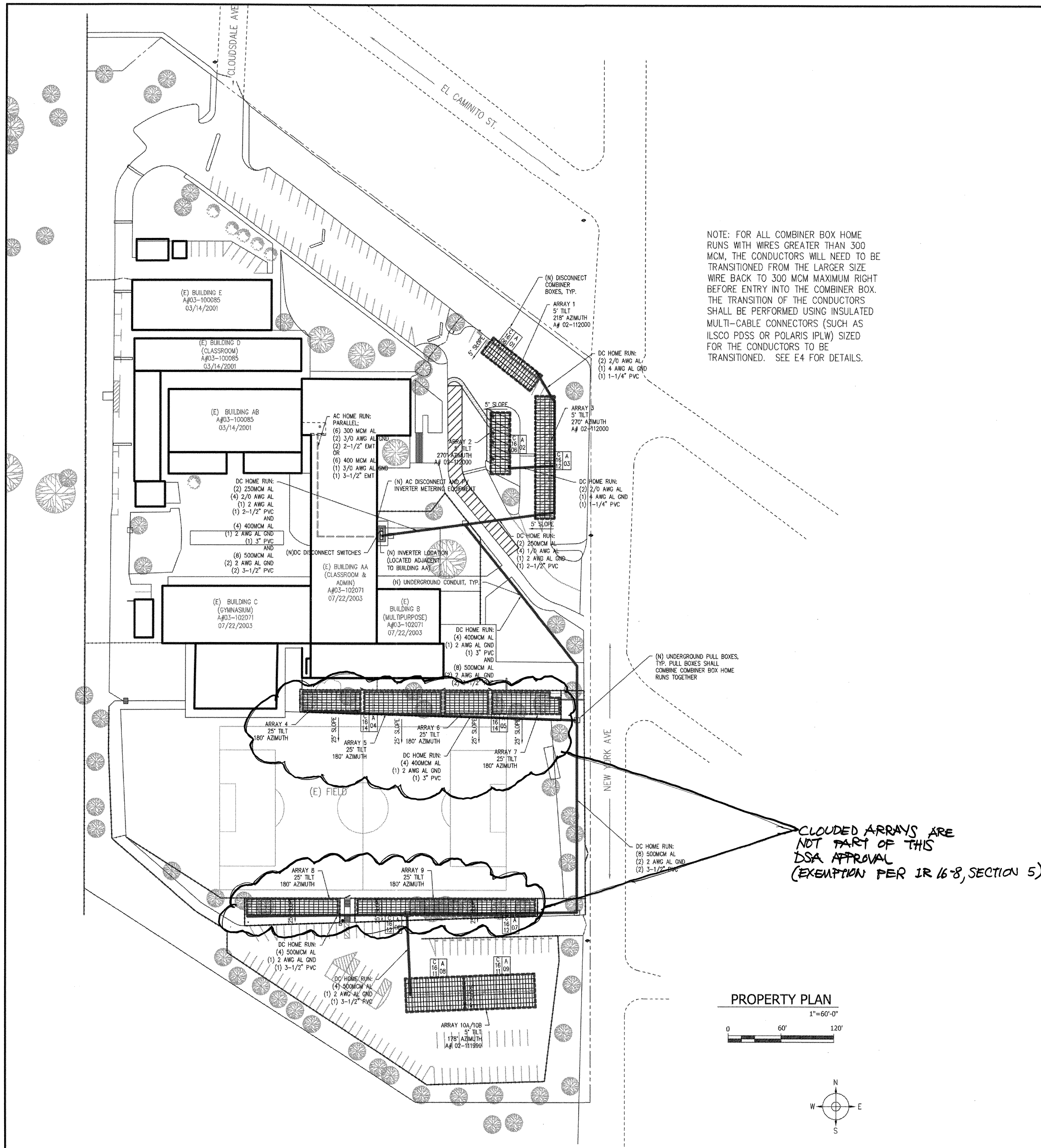
CARL R. BURATTI
E-17127
Exp. 6-30-13
ELECTRICAL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

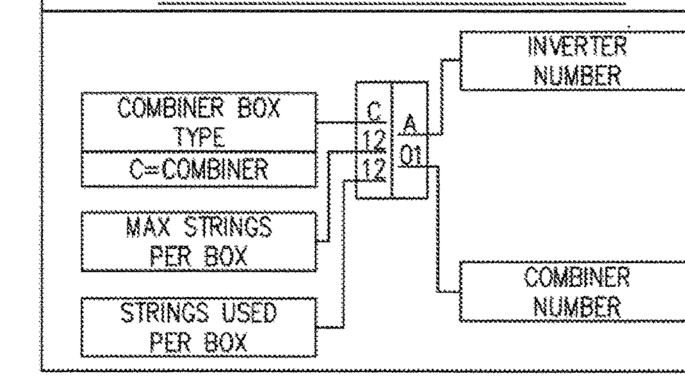
JOB DETAILS

JOB:
Glendale
MODULES:
(1372) YINGLI # YL260C-30b
MOUNTING SYSTEM:
STEEL SUPPORT STRUCTURES
INVERTER:
(1) SOLECTRIA # SGI 300KW
MARKET:
GOVT
DESIGN: L. WU
CHECKED BY:
ES
DATE:
05/22/2012
PAYMENT TYPE:
CASH
PAGE NAME:
ELECTRICAL NOTES
PROJECT MANAGER:
D NAVARRO
JOB NUMBER:
JB-912072-00
PAGE:
PV E1
REV:



NOTE: FOR ALL COMBINER BOX HOME RUNS WITH WIRES GREATER THAN 300 MCM, THE CONDUCTORS WILL NEED TO BE TRANSITIONED FROM THE LARGER SIZE WIRE BACK TO 300 MCM MAXIMUM RIGHT BEFORE ENTRY INTO THE COMBINER BOX. THE TRANSITION OF THE CONDUCTORS SHALL BE PERFORMED USING INSULATED MULTI-CABLE CONNECTORS (SUCH AS ILSCO PDSS OR POLARIS IPLW) SIZED FOR THE CONDUCTORS TO BE TRANSITIONED. SEE E4 FOR DETAILS.

COMBINER BOX NUMBERING SYSTEM



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DESCRIPTION: GLENDALE USD– CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM

CUSTOMER: GLENDALE USD– CLARK MAGNET HIGH
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

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DATE MAY 22 2012

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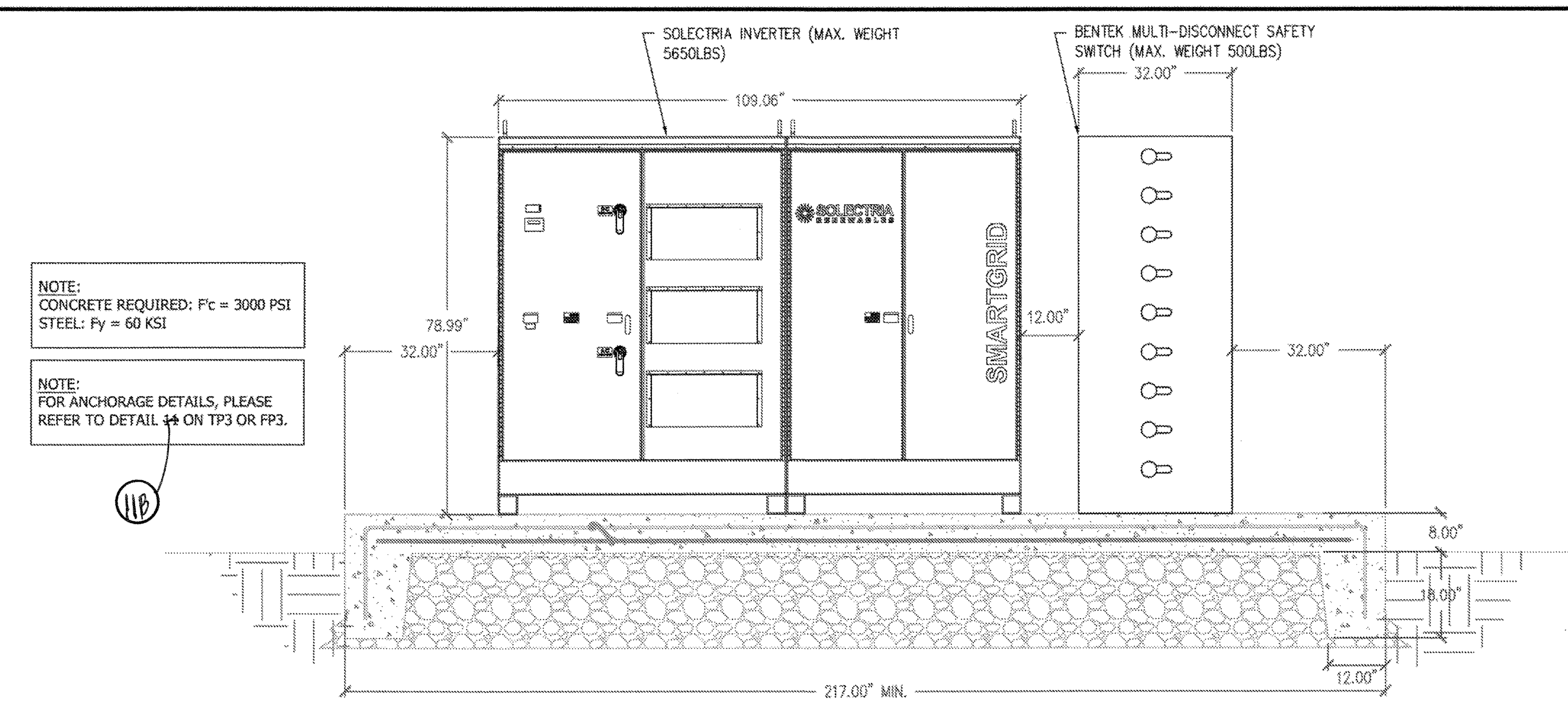
JOB DETAILS

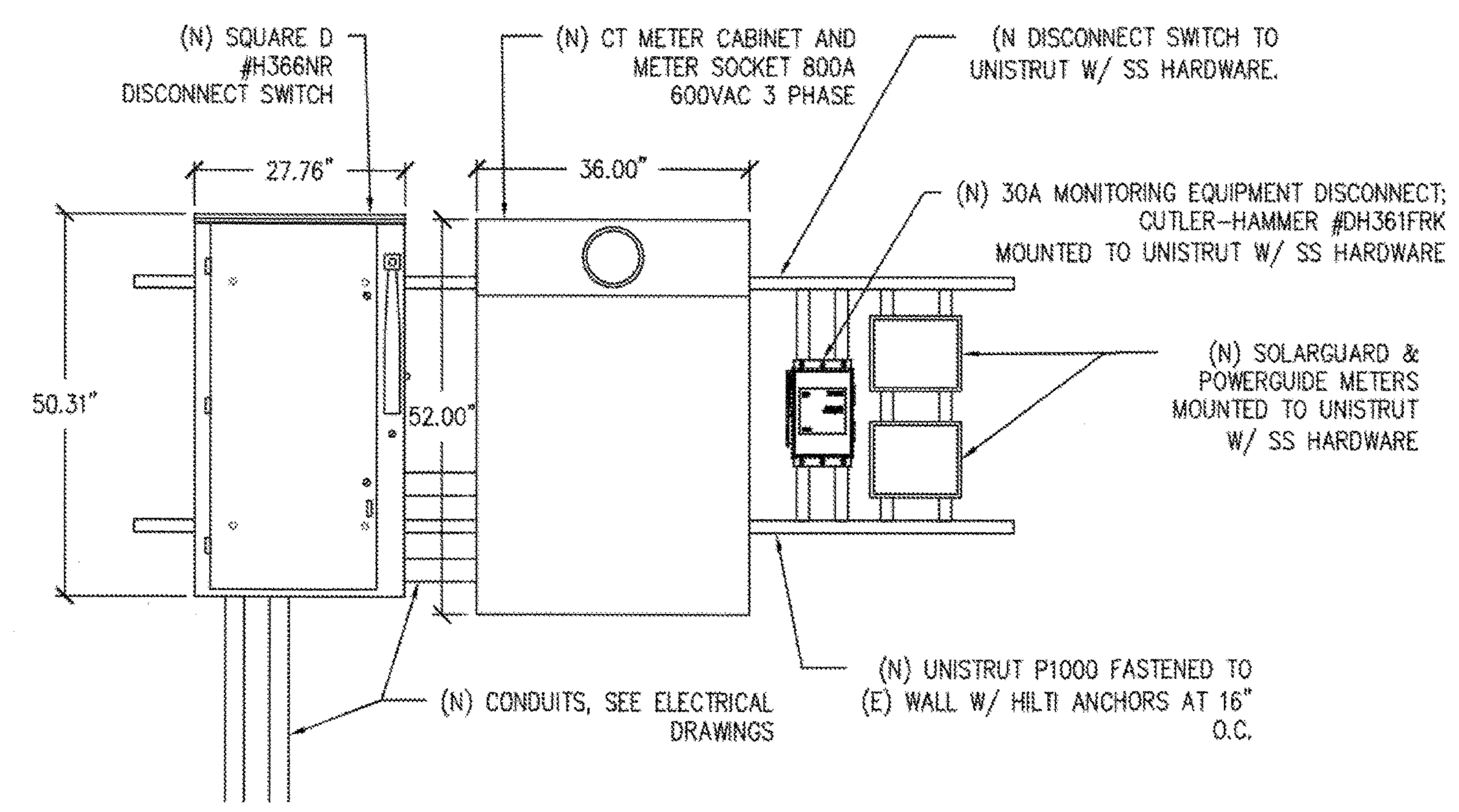
AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOV'T
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: ELECTRICAL SITE PLAN
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV E2
REV:

FOR STRUCTURAL DETAILS, SEE PC PLANS & STRUCTURAL PAGES



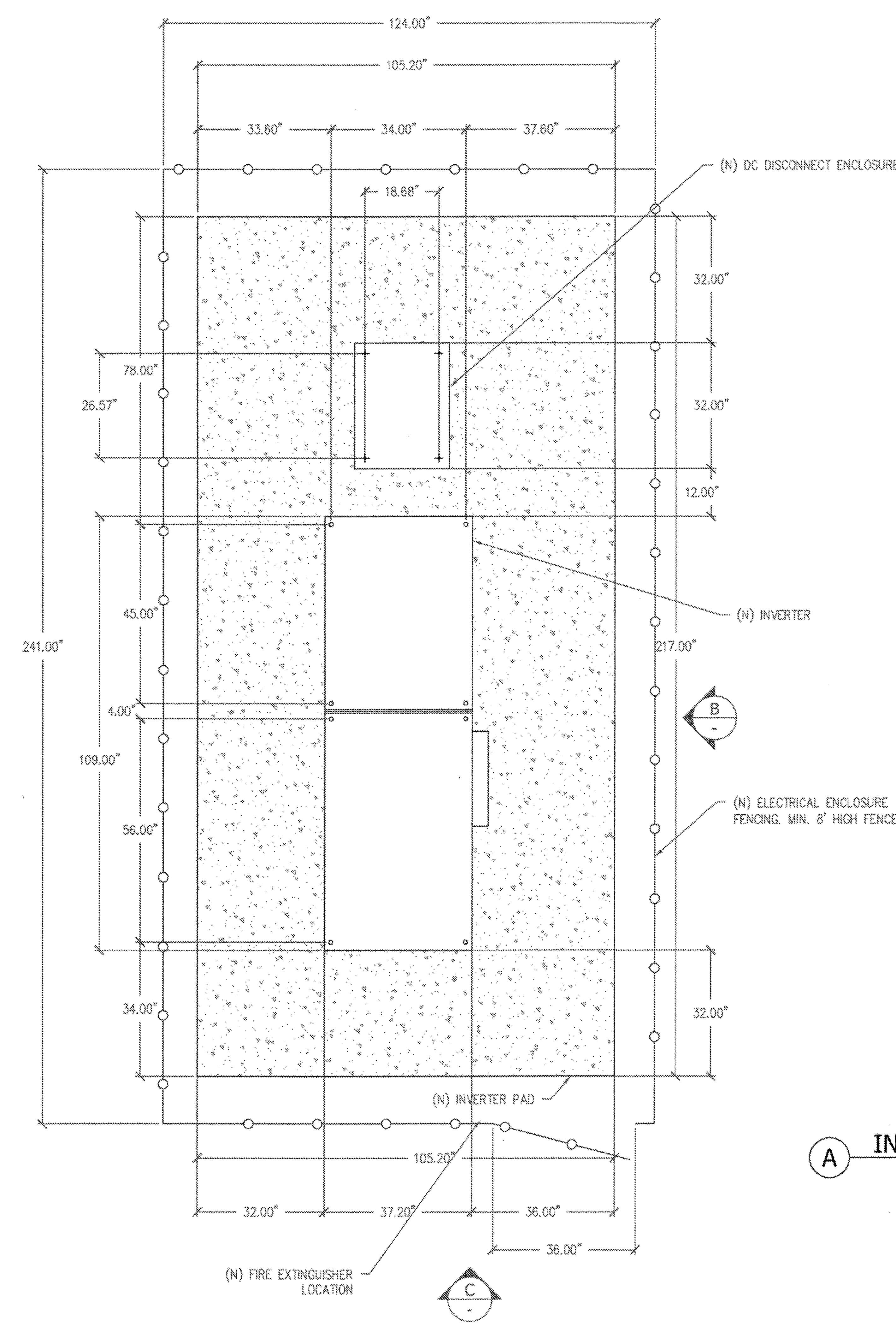
B INVERTER AND PAD (FRONT VIEW)

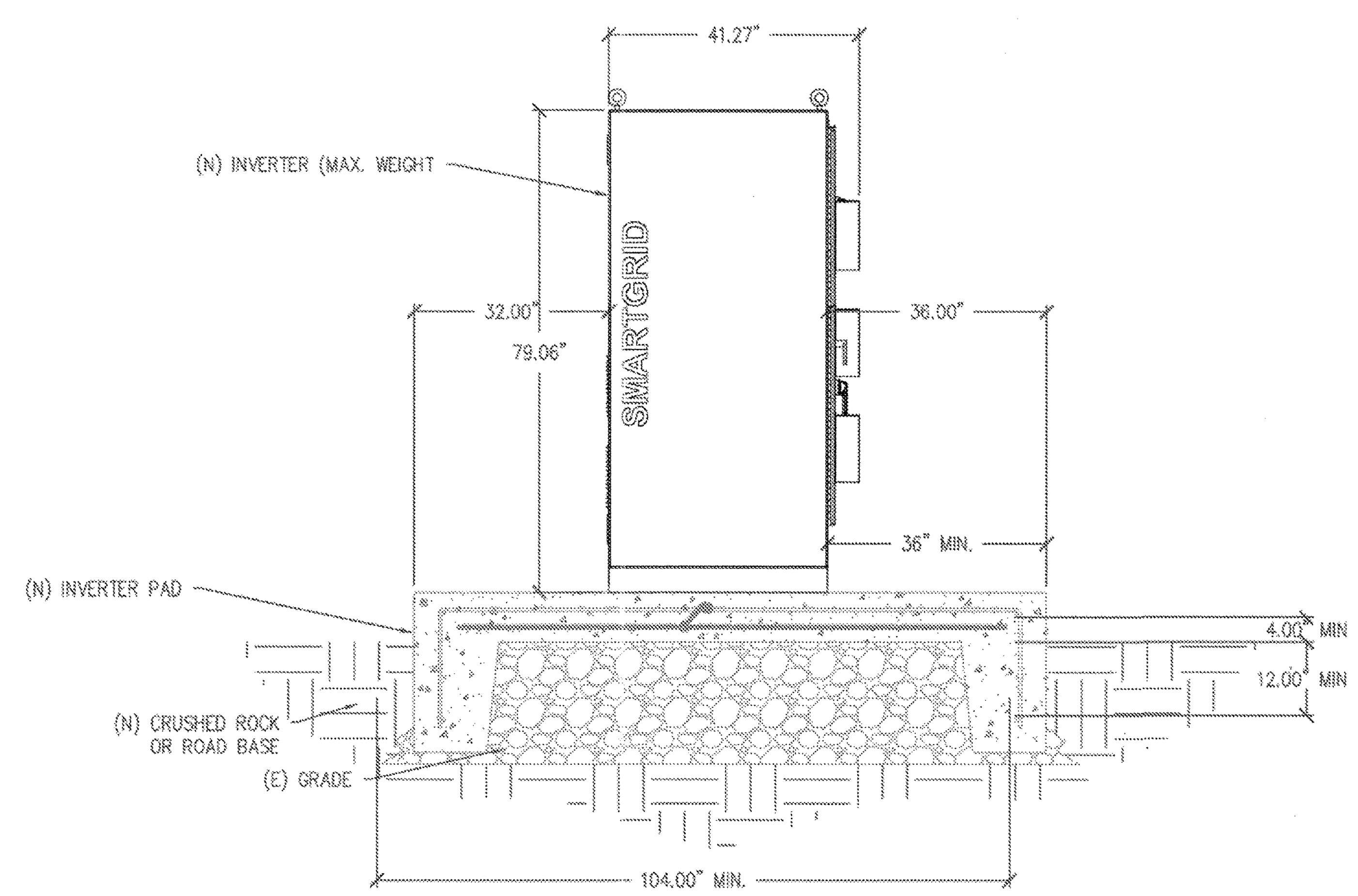
Scale: 1/2" = 1'-0"



D DISCONNECT EQUIPMENT MOUNTING

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





C INVERTER AND PAD (SIDE VIEW)

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

A INVERTER AND PAD (PLAN VIEW)

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

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GLENDALE USD- CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM

GLENDALE USD- CLARK MAGNET HIGH
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LA CRESCENTA, CA 91214
8185070201

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REVISIONS

REV	BY	DATE	COMMENTS
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JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOV'T
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: INVERTER SECTION VIEWS
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV E3
REV:

LEGEND

Symbol	Description
	BREAKER, 2 POLE
	BREAKER, 3 POLE
	COMBINER BOX, DC (SEE BELOW FOR MORE INFO)
	CURRENT TRANSFORMER
	DISCONNECT, FUSED
	DISCONNECT, NON FUSED
GEC	GROUND
	FUSE
M	METER
DC	PHOTOVOLTAIC MODULE

MODULE CHARACTERISTICS

YINGLI YL-260C-30b

Voc = 38.6 V
Vmp = 30.8 V
Isc = 8.91 A
Imp = 8.46 A
Tkvoc = -.14 V/°C
Tlow = 1 °C (ASHRAE DATA)

CLARK MAGNET HIGH SCHOOL - GLENDALE SCHOOL DISTRICT
356.72 KW

SYSTEM COMPONENTS:
- (1372) YINGLI YL-260C-30b PHOTOVOLTAIC MODULES CONFIGURED INTO (98) SERIES STRINGS OF (14) MODULES PER STRING
- (1) SOLECTRIA SGI-300 (480V) GRID TIED INVERTER

MAX SYSTEM VOC CALCULATIONS

LOWEST EXPECTED AMBIENT TEMPERATURE FOR LA CRESCENTA, CA = 1°C BASED ON ASHRAE DATA

MAX VOLTAGE = # OF MODULES/STRING X (MODULE Voc -(Tstc-Trecord_low) X Tkvoc)

MAX VOC = 38.6 VDC - (25°C - 1°C)*-0.14
= 38.6 - -3.36 = 41.96 VDC
MAX SYSTEM VOC = 41.96 VDC * 14 MODULES IN SERIES = 587.44 VDC

COMBINER BOX NUMBERING SYSTEM

COMBINER BOX TYPE C=COMBINER — C
MAX STRINGS PER BOX — 12
STRINGS USED PER BOX — 12
INVERTER NUMBER — A
COMBINER NUMBER — 01

SHEET NOTES

INTERCONNECTION NOTES

1. LOAD SIDE CONNECTION SHALL BE MADE VIA A DEDICATED CIRCUIT BREAKER IN CONFORMANCE WITH ARTICLE 690.64(B)

MARKING AND SIGNAGE

2. PROVIDE A PLACARD ON THE AC DISCONNECT SWITCH WITH THE FOLLOWING INFORMATION IN 1/4" HIGH LETTERING PER NEC 690-54 (SEE LABEL #2, PV1):
CAUTION - POSSIBLE BACKFEED FROM PHOTOVOLTAIC POWER SYSTEM:
VNOM = 480 VAC
Inom = 360 AAC

3. PROVIDE A PLACARD ON THE DC DISCONNECT SWITCHES WITH THE FOLLOWING INFORMATION IN 1/4" HIGH LETTERING PER NEC 690-53 (SEE LABEL #3, L-PV1):

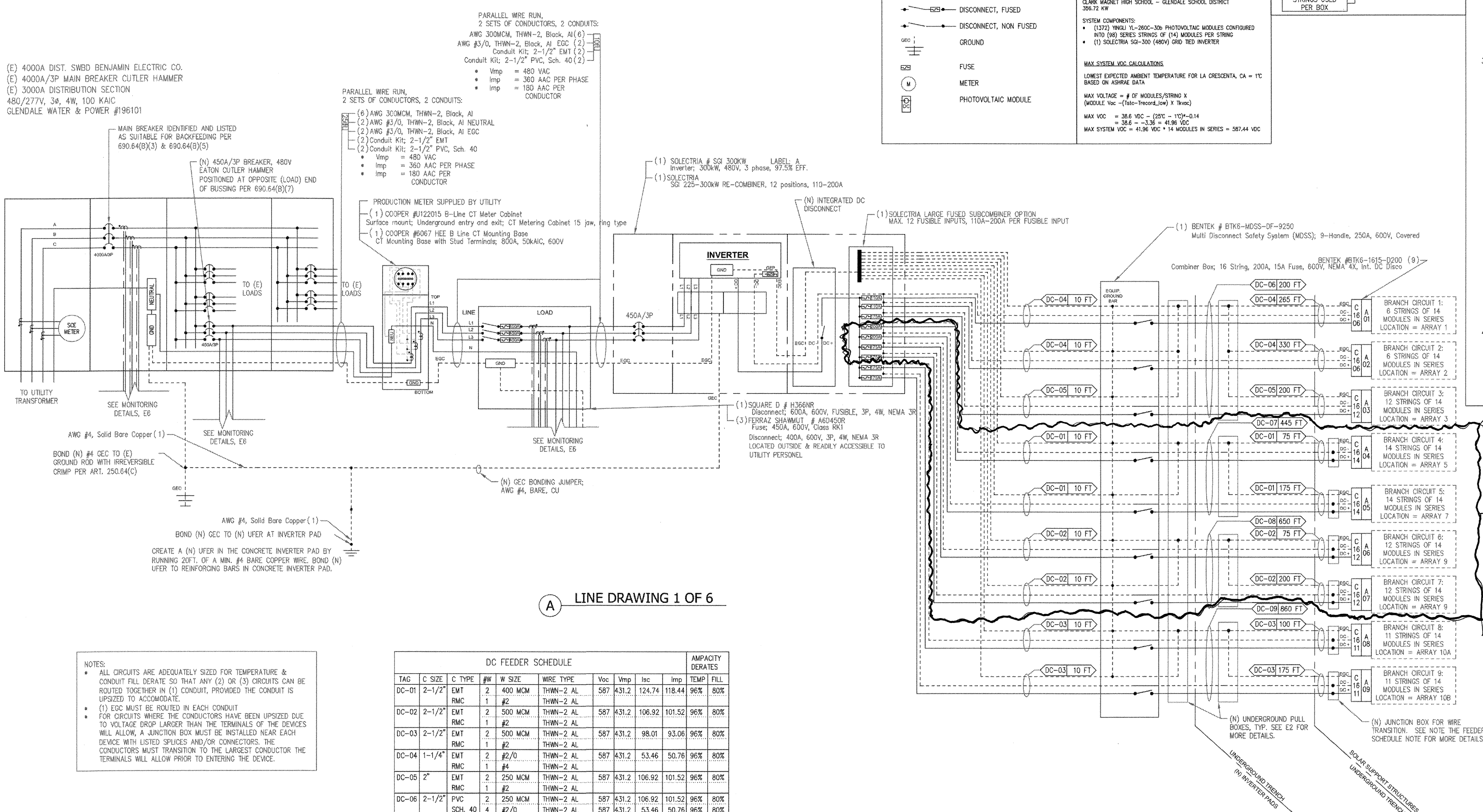
6-STRING ARRAY:
PHOTOVOLTAIC POWER SOURCE DISCONNECT
OPERATING CURRENT: 50.76 ADC
OPERATING VOLTAGE: 412 VDC
MAXIMUM SYSTEM VOLTAGE: 587 VDC
SHORT-CIRCUIT CURRENT: 53.46 ADC

11-STRING ARRAY:
PHOTOVOLTAIC POWER SOURCE DISCONNECT
OPERATING CURRENT: 93.06 ADC
OPERATING VOLTAGE: 412 VDC
MAXIMUM SYSTEM VOLTAGE: 587 VDC
SHORT-CIRCUIT CURRENT: 98.01 ADC

12-STRING ARRAY:
PHOTOVOLTAIC POWER SOURCE DISCONNECT
OPERATING CURRENT: 101.52 ADC
OPERATING VOLTAGE: 412 VDC
MAXIMUM SYSTEM VOLTAGE: 587 VDC
SHORT-CIRCUIT CURRENT: 106.92 ADC

14-STRING ARRAY:
PHOTOVOLTAIC POWER SOURCE DISCONNECT
OPERATING CURRENT: 118.44 ADC
OPERATING VOLTAGE: 412 VDC
MAXIMUM SYSTEM VOLTAGE: 587 VDC
SHORT-CIRCUIT CURRENT: 124.74 ADC

4. PROVIDE A SIGN ON DC DISCONNECTS PER ART 690.17 THAT SHALL READ:
WARNING ELECTRIC SHOCK HAZARD. DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.



(A) LINE DRAWING 1 OF 6

NOTES:
- ALL CIRCUITS ARE ADEQUATELY SIZED FOR TEMPERATURE & CONDUIT FILL DERATE SO THAT ANY (2) OR (3) CIRCUITS CAN BE ROUTED TOGETHER IN (1) CONDUIT, PROVIDED THE CONDUIT IS UPSIZED TO ACCOMODATE.
- (1) EGC MUST BE ROUTED IN EACH CONDUIT
- FOR CIRCUITS WHERE THE CONDUCTORS HAVE BEEN UPSIZED DUE TO VOLTAGE DROP LARGER THAN THE TERMINALS OF THE DEVICES WILL ALLOW, A JUNCTION BOX MUST BE INSTALLED NEAR EACH DEVICE WITH LISTED SPLICES AND/OR CONNECTORS. THE CONDUCTORS MUST TRANSITION TO THE LARGEST CONDUCTOR THE TERMINALS WILL ALLOW PRIOR TO ENTERING THE DEVICE.

DC FEEDER SCHEDULE										AMPACITY DERATES	
TAG	C SIZE	C TYPE	#W	W SIZE	WIRE TYPE	Voc	Vmp	Isc	Imp	TEMP	FILL
DC-01	2-1/2"	EMT	2	400 MCM	THWN-2 AL	587	431.2	124.74	118.44	96%	80%
		RMC	1	#2	THWN-2 AL						
DC-02	2-1/2"	EMT	2	500 MCM	THWN-2 AL	587	431.2	106.92	101.52	96%	80%
		RMC	1	#2	THWN-2 AL						
DC-03	2-1/2"	EMT	2	500 MCM	THWN-2 AL	587	431.2	98.01	93.06	96%	80%
		RMC	1	#2	THWN-2 AL						
DC-04	1-1/4"	EMT	2	#2/0	THWN-2 AL	587	431.2	53.46	50.76	96%	80%
		RMC	1	#4	THWN-2 AL						
DC-05	2"	EMT	2	250 MCM	THWN-2 AL	587	431.2	106.92	101.52	96%	80%
		RMC	1	#2	THWN-2 AL						
DC-06	2-1/2"	PVC	2	250 MCM	THWN-2 AL	587	431.2	106.92	101.52	96%	80%
		SCH. 40	4	#2/0	THWN-2 AL	587	431.2	53.46	50.76	96%	80%
			1	#2	THWN-2 AL						
DC-07	3"	PVC	4	400 MCM	THWN-2 AL	587	431.2	124.74	118.44	96%	80%
		SCH. 40	1	#2	THWN-2 AL						
DC-08	3-1/2"	PVC	4	500 MCM	THWN-2 AL	587	431.2	106.92	101.52	96%	80%
		SCH. 40	1	#2	THWN-2 AL						
DC-09	3-1/2"	PVC	4	500 MCM	THWN-2 AL	587	431.2	98.01	93.06	96%	80%
		SCH. 40	1	#2	THWN-2 AL						

NOTE: FOR ALL COMBINER BOX HOME RUNS WITH WIRES GREATER THAN 300 MCM, THE CONDUCTORS WILL NEED TO BE TRANSITIONED FROM THE LARGER SIZE WIRE BACK TO 300 MCM MAXIMUM RIGHT BEFORE ENTRY INTO THE COMBINER BOX. THE TRANSITION OF THE CONDUCTORS SHALL BE PERFORMED USING INSULATED MULTI-CABLE CONNECTORS (SUCH AS ILSCO PDSS OR POLARIS IPLW MULTI-CABLE CONNECTORS) SIZED FOR THE CONDUCTORS TO BE TRANSITIONED. SEE E4 FOR DETAILS.

LINE DIAGRAM - AC
N.T.S.

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(888)-SOL-CITY (765-2489) | www.solarcity.com

DESCRIPTION: GLENDALE USD- CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM

CUSTOMER: GLENDALE USD- CLARK MAGNET HIGH
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

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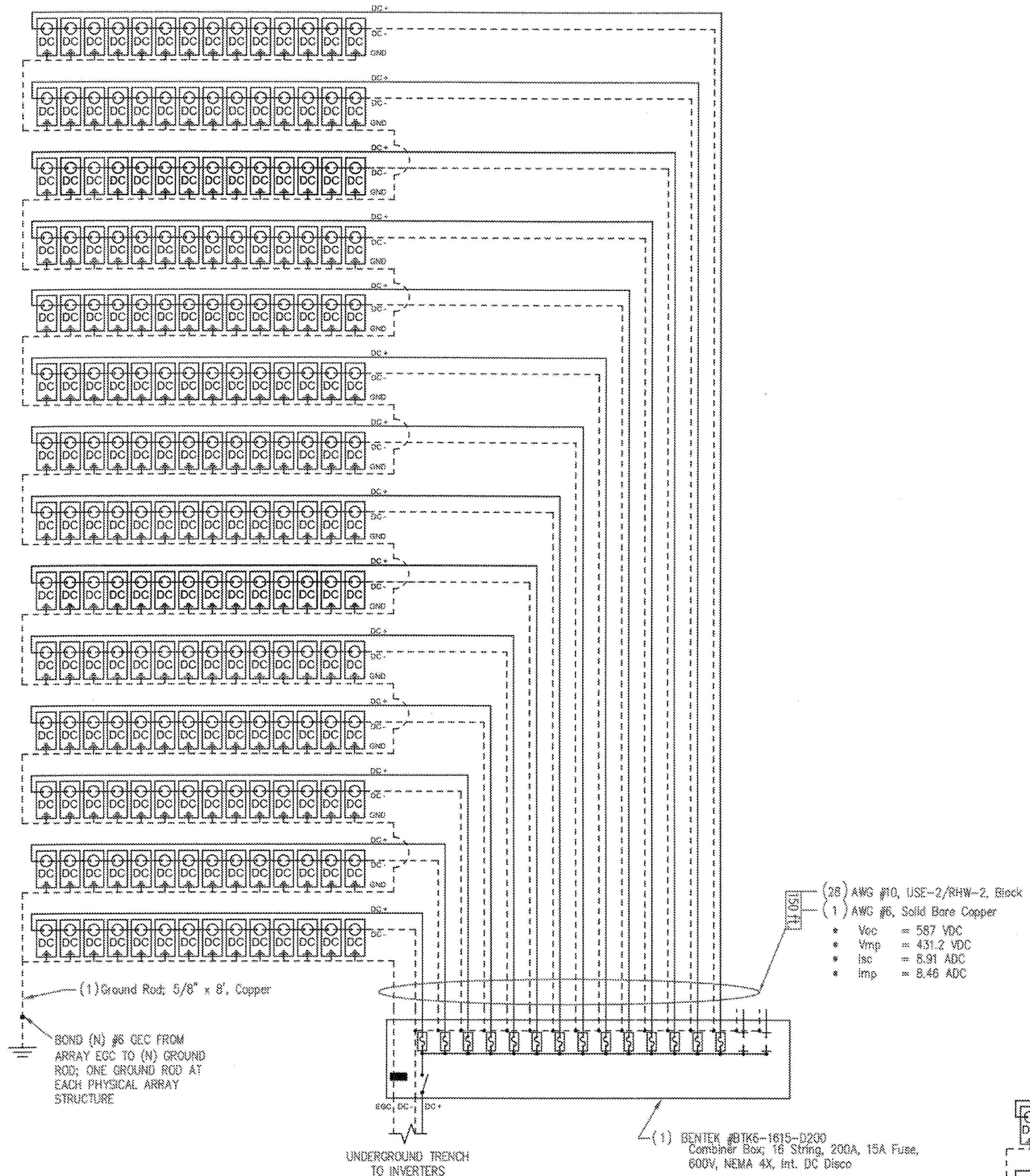
DATE MAY 2 2 2012

REGISTERED PROFESSIONAL ENGINEER
CARL R. BURAS
E-17727
Exp. 6-30-13
ELECTRICAL
STATE OF CALIFORNIA

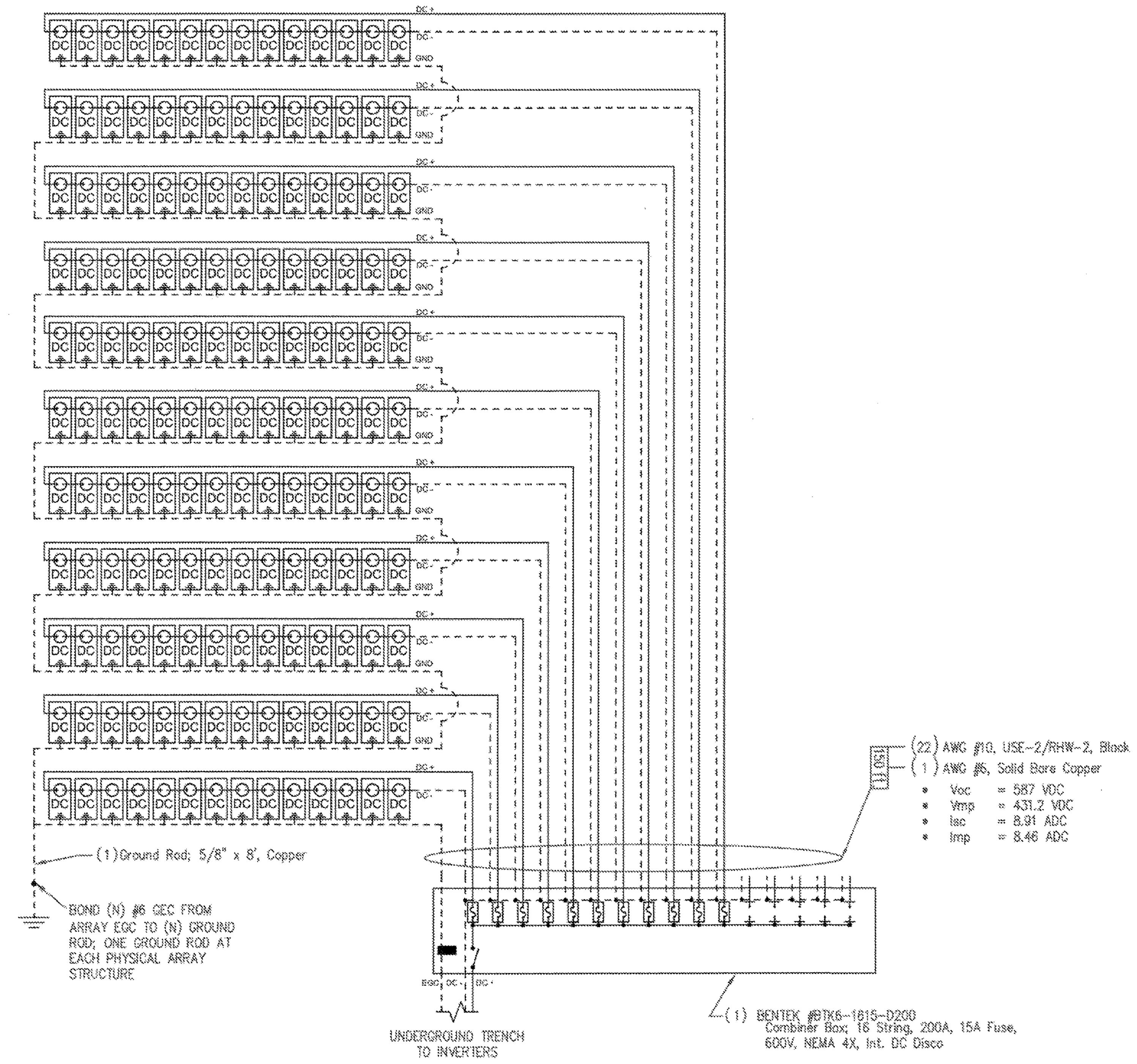
REVISIONS			
REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOV'T
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: LINE DIAGRAM - AC
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV E4
REV:



(D) LINE DRAWING 5 OF 6: 14 STRING BRANCH CIRCUIT

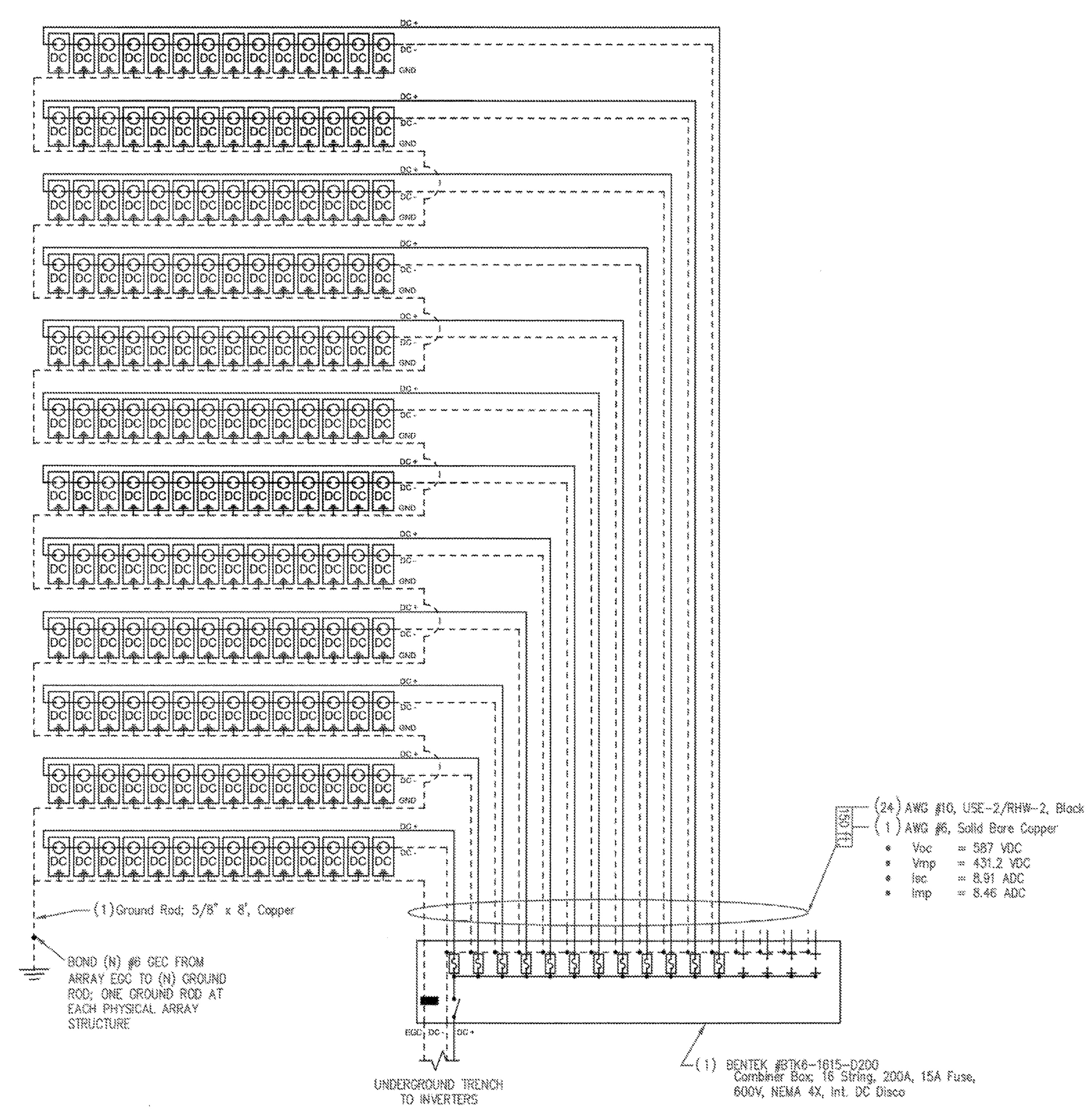


(B) LINE DRAWING 3 OF 6: 11 STRING BRANCH CIRCUIT

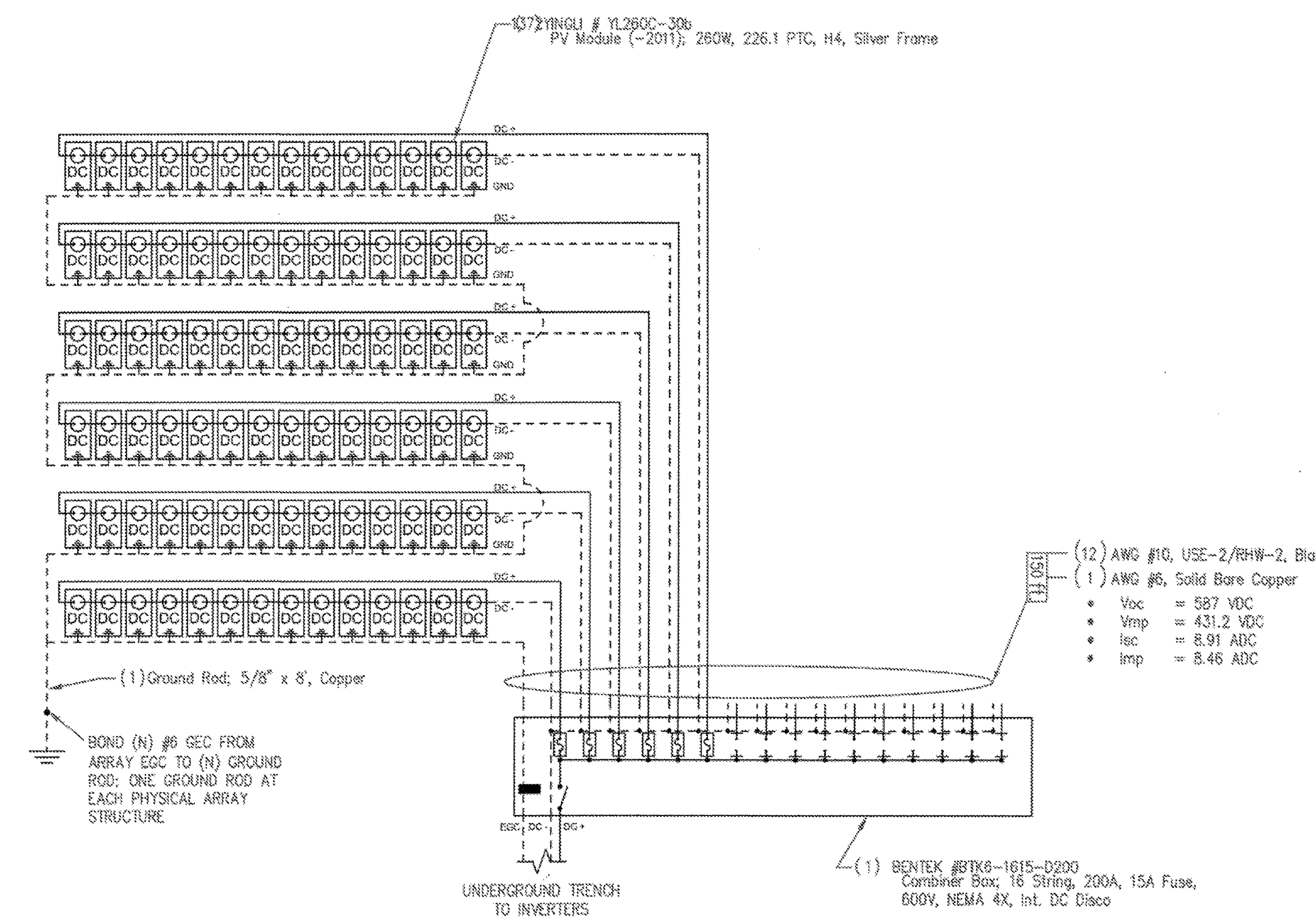
NOTE: ALL WIRING TO/FROM ARRAY PANELS TO BE IN WATER TIGHT CONDUIT WHERE EXPOSED TO PHYSICAL DAMAGE.

LINE DIAGRAM - DC

1"=100'-0"



(C) LINE DRAWING 4 OF 6: 12 STRING BRANCH CIRCUIT



(a) LINE DRAWING 2 OF 6: 6 STRING BRANCH CIRCUIT

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CUSTOMER: GLENDALE USD- CLARK MAGNET HIGH
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DATE MAY 2 2 2012

REGISTERED PROFESSIONAL ENGINEER
CARL R. BURAZ...
E-...
Exp. 6-30-13
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REVISIONS

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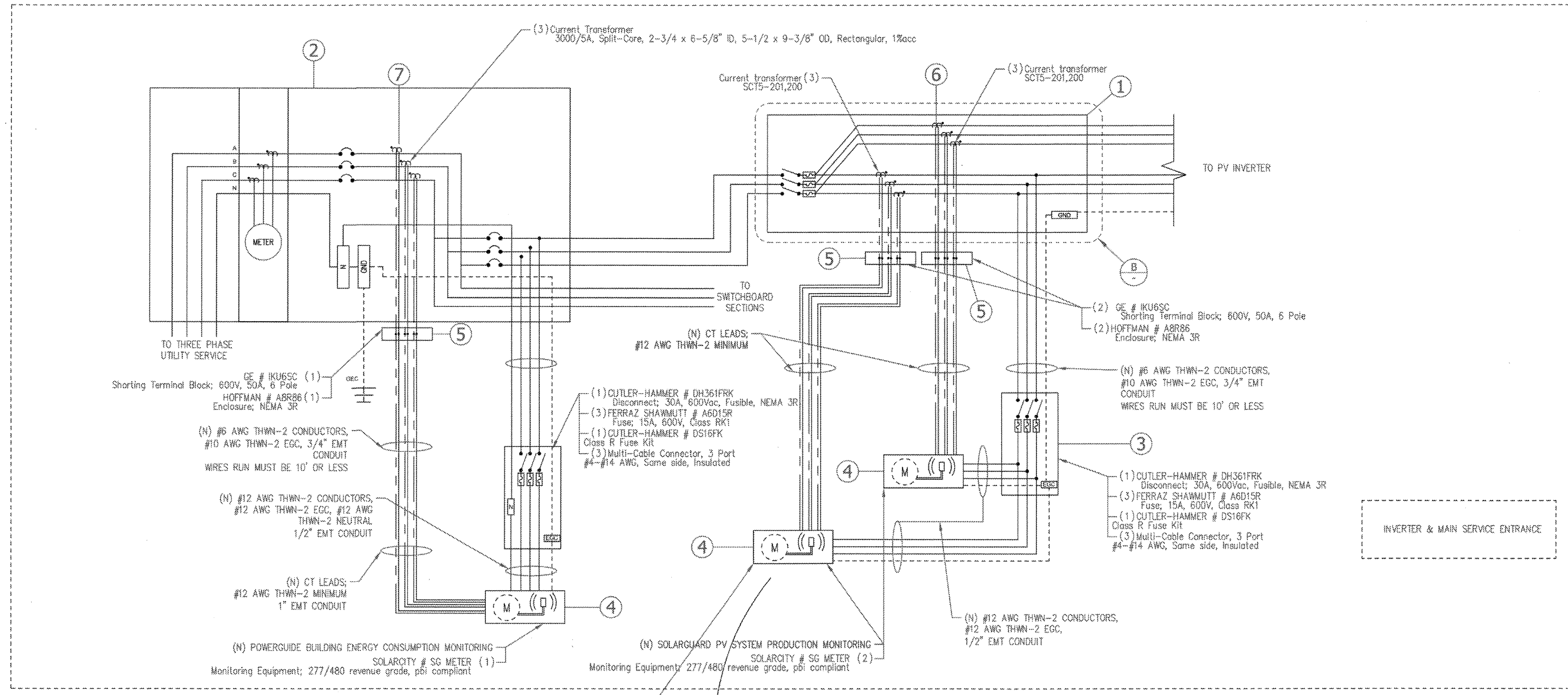
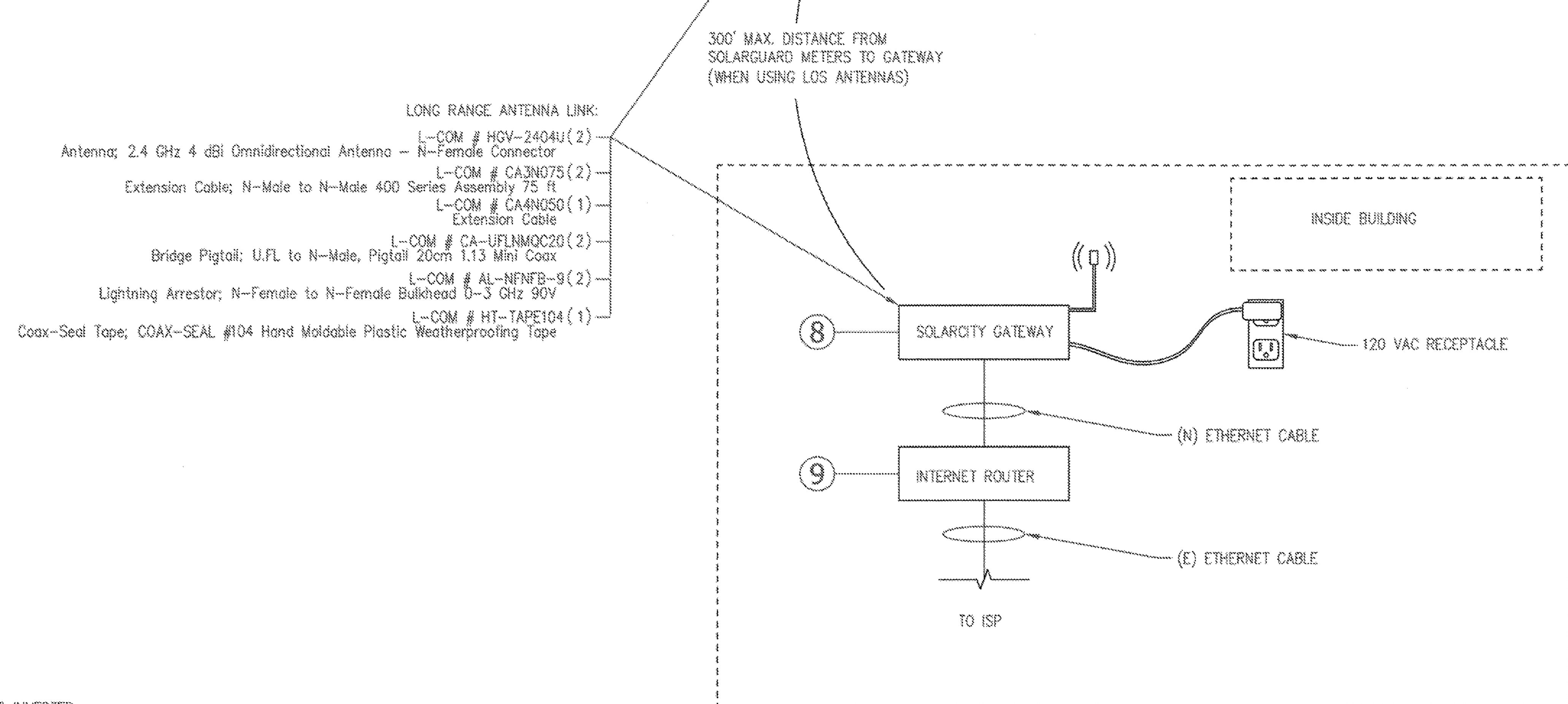
JOB DETAILS

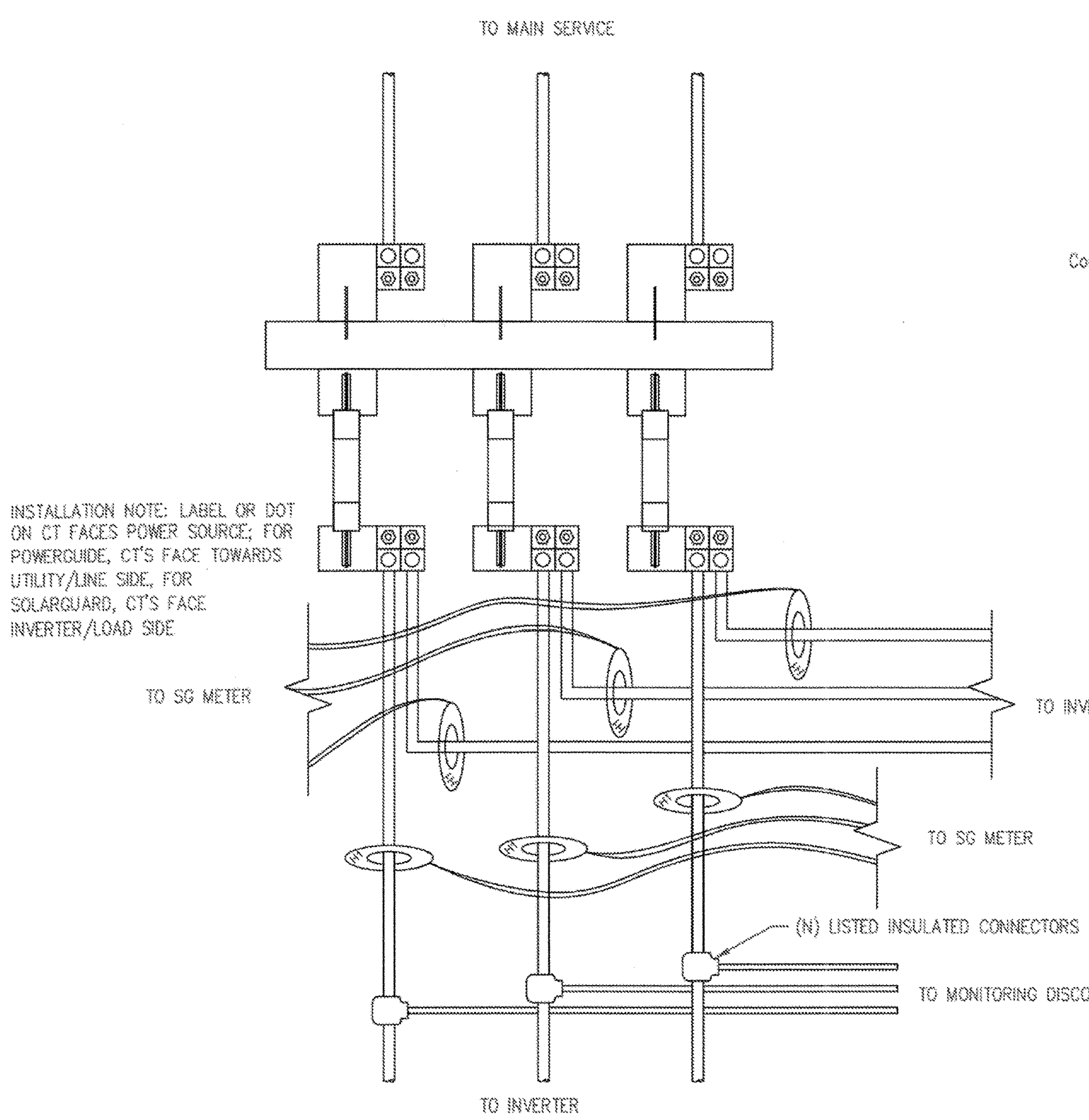
AHJ: Glendale	
MODULES: (1372) YINGLI # YL260C-30b	
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES	
INVERTER: (1) SOLECTRIA # SGI 300KW	
MARKET: GOV'T	DESIGN: L. WU
CHECKED BY: ES	
DATE: 05/22/2012	PAYMENT TYPE: CASH
PAGE NAME: LINE DIAGRAM - DC	PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00	
PAGE: PV E5	REV:





NOTES:
1. (N) PV AC DISCONNECT; SEE LINE DRAWING FOR PRODUCT TYPE AND SPECIFICATIONS
2. (E) MAIN SERVICE ENTRANCE
3. (N) SOLARCITY MONITORING EQUIPMENT DISCONNECT; 30A, 600 VDC
4. (N) SOLARCITY SG METER - REVENUE GRADE, CSI PBI COMPLIANT
5. (N) SHORTING TERMINAL BLOCK - 600V, 50A, 6 POLE; GE #IKU6SC
6. (N) SOLID CORE CURRENT TRANSFORMERS:
   - H1 LABEL FACES TOWARD SOURCE
   - WHITE WIRES TO Ix1 TERMINALS IN SG METER
   - BLACK WIRES TO Ix2 TERMINALS IN SG METER
7. (N) SPLIT CORE CURRENT TRANSFORMERS:
   - H1 LABEL FACES TOWARD SOURCE
   - BLACK WIRES TO Ix1 TERMINALS IN SG METER
   - WHITE WIRES TO 1x2 TERMINALS IN SG METER
8. (N) SOLARCITY GATEWAY; LOCATED WITHIN 80' OF SG METERS, INDOORS, OR IN SHADED WEATHERPROOF, NON-METALLIC ENCLOSURE
9. (E) INTERNET ROUTER; ALWAYS ON INTERNET CONNECTION, AVAILABLE ETHERNET PORT (10BASE-T/100BASE-TX)

(A) MONITORING DETAILS



(B) AC DISCONNECT

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356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM
GLENDALE USD- CLARK MAGNET HIGH
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP03 114572
AC FLS SS
DATE MAY 2 2 2012

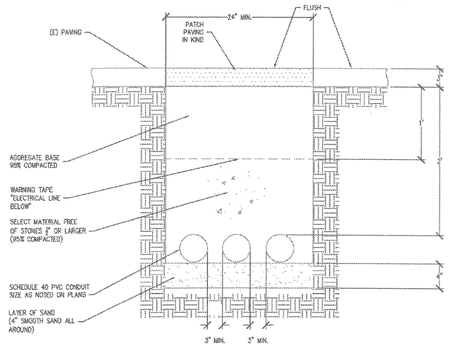
REGISTERED PROFESSIONAL ENGINEER
CARL R. BURATTI
E-16727
Exp. 6-30-13
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

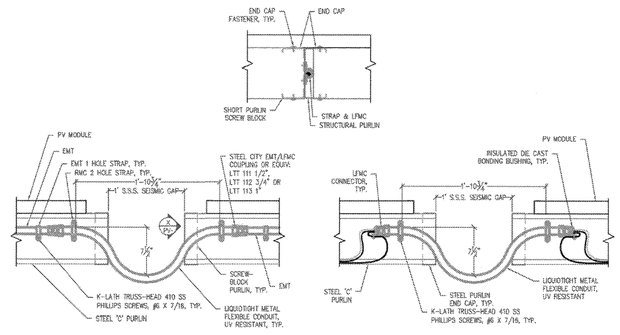
JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOV'T
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: MONITORING DETAILS
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV E6
REV:



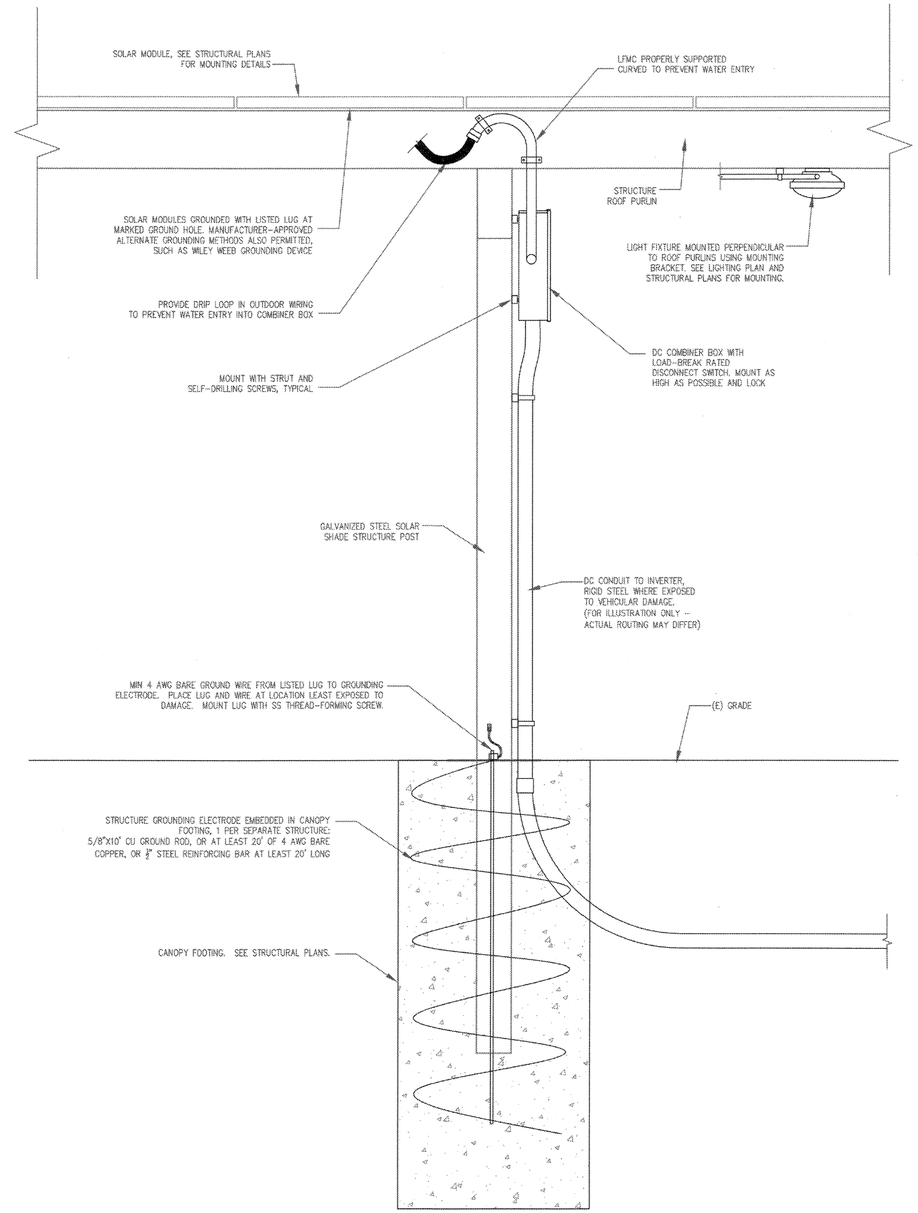
H TRENCHING DETAIL

Scale: NTS



D WIRING BRIDGE

Scale: NTS

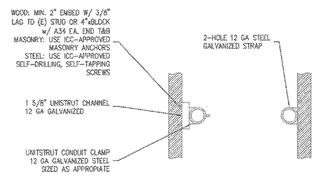


A CANOPY GROUNDING / EQUIPMENT MOUNTING

Scale: NTS

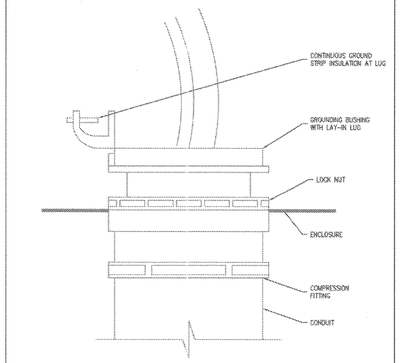
NOTE:

ALL HOLES FOR CONDUIT SHALL BE PROVIDED WITH CONDUIT FITTINGS HAVING AN ENVIRONMENTAL RATING APPROVED TO MAINTAIN NEMA 3R ENCLOSURE RATING (UL508A, TABLE 19.2). IN GENERAL, COMPONETS MARKED "WEATHERPROOF" OR "RAINPROOF" SHALL BE INSTALLED ONLY BELOW THE LOWEST UNINSULATED LIVE PARTS WITHIN THE ENCLOSURE CONDUIT OPENINGS ABOVE THE LOWEST UNINSULATED LIVE PARTS SHALLE BE PROVIDED WITH CONDUIT FITTINGS MARKED "WET LOCATION" OR "RAINTIGHT".



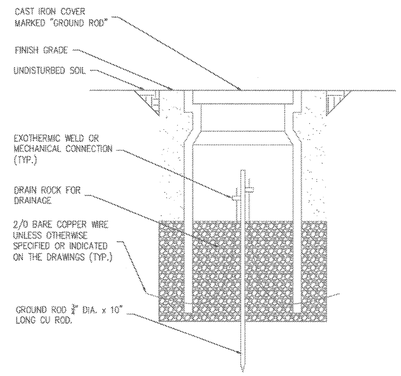
G CONDUIT ATTACHMENT

Scale: NTS



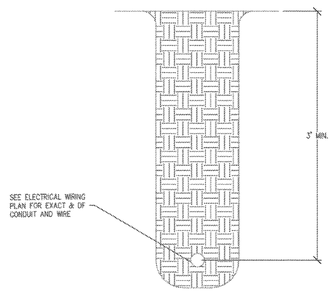
E CONDUIT GROUNDING

Scale: NTS



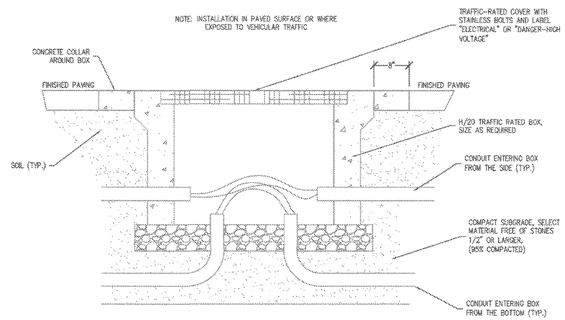
C GROUND ROD DETAIL

Scale: NTS



F BORING DETAIL

Scale: NTS



B TRAFFIC RATED PULL BOX

Scale: NTS

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP# 11457 2
AC FLS FC SS EO
DATE MAY 2 2 2012

REGISTERED PROFESSIONAL ENGINEER
JOEL B. BURATTO
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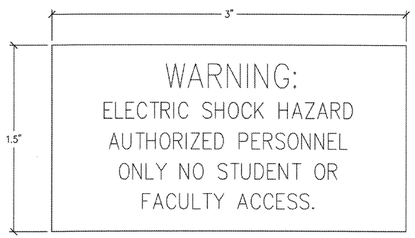
EXP 6-30-13
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	·/·/·	·

JOB DETAILS

AHJ: Glendale
UTILITY: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOVT
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: ELECTRICAL DETAILS
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV E7
REV:

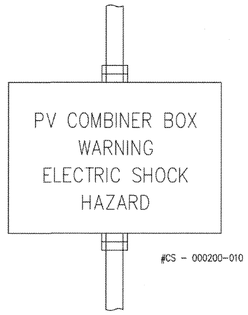


NOTE:

1. TOP OF SIGN TEXT 5" MIN. CLEAR SPACE FROM GATE OR DOOR JAMB (STRIKE SIDE)
2. PROVIDE A BLANK PANEL FOR BACK SIDE
3. CONTRAST BETWEEN CHARACTER, SYMBOLS AND THEIR BACKGROUND SHALL BE 70% MINIMUM AND HAVE A NON-GLARE FINISH.
4. CHARACTERS SHALL HAVE A WIDTH-TO-HEIGHT RATIO OF BETWEEN 3:5 AND 1:1
5. SIGN SHALL BE 0.04" THK (MIN.) ALUMINUM SHEET
6. RAISED UPPERCASE LETTER 1/8" TALL, MIN.

12 AUTHORIZED PERSONNEL

Scale: NTS



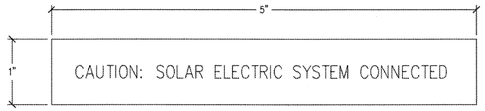
#CS - 000200-010

NOTE:

1. RED BACKGROUND
2. WHITE LETTERING
3. MINIMUM 1/8" LETTER HEIGHT
4. ALL CAPITAL LETTERS
5. ARIAL OR SIMILAR FONT, NON-BOLD
6. REFLECTIVE WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT.
(DURABLE ADHESIVE MATERIALS MAY MEET THIS REQUIREMENT)

9 COMBINER BOX

Scale: NTS



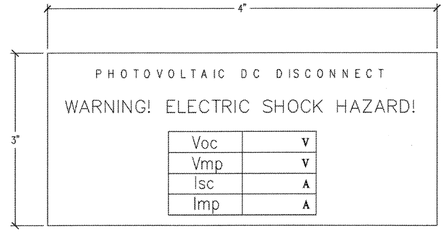
#CS - 000200-032

NOTE:

1. RED BACKGROUND
2. WHITE LETTERING
3. MINIMUM 3/8" LETTER HEIGHT
4. ALL CAPITAL LETTERS
5. ARIAL OR SIMILAR FONT, NON-BOLD
6. REFLECTIVE WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT.
(DURABLE ADHESIVE MATERIALS MAY MEET THIS REQUIREMENT)

6 MAIN SERVICE DISCONNECT

Scale: NTS



#CS - 00200-002

NOTE:

1. PV SYSTEM DC DISCONNECT
2. WHITE BACKGROUND
3. BLACK LETTERING
4. TEXT HEIGHT: 5/16", AND 1/8"
5. MATERIAL NOTE: TEXT PRINTED ON ALUMINUM BACKING WITH UV-RATED PLASTIC
LAMINATE COATING AND OUTDOOR RATED ADHESIVE.

3 DC DISCONNECT

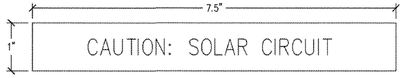
Scale: NTS

NOTE:

1. INVERTER IDENTIFICATION LABEL
2. BLACK BACKGROUND
3. WHITE LETTERING
4. TEXT HEIGHT: 1/2'
5. MATERIAL NOTE: ENGRAVED ON OUTDOOR-RATED PLASTIC LAMINATE WITH ADHESIVE BACKING SUITABLE ENVIRONMENT.

11 INVERTER

Scale: NTS



#CS - 000200-030

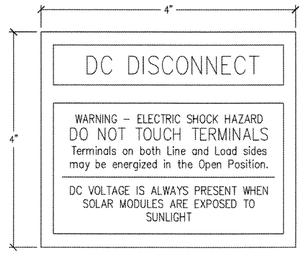
NOTE:

1. RED BACKGROUND
2. WHITE LETTERING
3. MINIMUM 3/8" LETTER HEIGHT
4. ALL CAPITAL LETTERS
5. ARIAL OR SIMILAR FONT, NON-BOLD
6. REFLECTIVE WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT.
(DURABLE ADHESIVE MATERIALS MAY MEET THIS REQUIREMENT)

MARKING FOR DC CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES, AND JUNCTION BOXES

8 SOLAR CIRCUIT

Scale: NTS



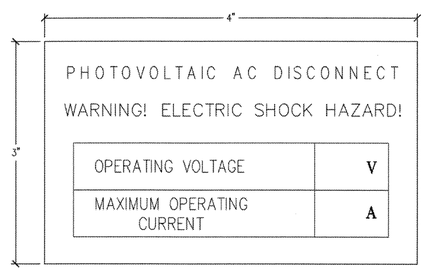
#CS - 000200-006

NOTE:

1. RED BACKGROUND
2. WHITE LETTERING
3. MINIMUM 1/8" LETTER HEIGHT
4. ALL CAPITAL LETTERS
5. ARIAL OR SIMILAR FONT, NON-BOLD
6. REFLECTIVE WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT.
(DURABLE ADHESIVE MATERIALS MAY MEET THIS REQUIREMENT)

5 DC DISCONNECT

Scale: NTS



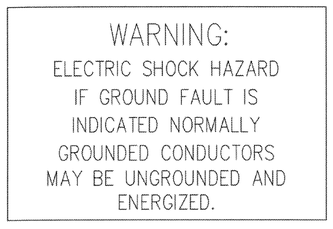
#CS - 000200-000

NOTE:

1. PV SYSTEM UTILITY AC DISCONNECT WARNING LABEL.
2. WHITE BACKGROUND
3. BLACK LETTERING
4. TEXT HEIGHT: 5/16", AND 1/8"
5. MATERIAL NOTE: TEXT PRINTED ON ALUMINUM BACKING WITH UV-RATED PLASTIC
LAMINATE COATING AND OUTDOOR RATED ADHESIVE.

2 PV SYSTEM UTILITY AC DISCONNECT

Scale: NTS



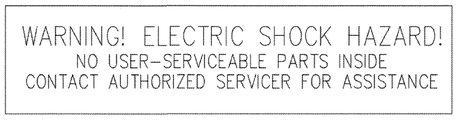
#CS - 000200-009

NOTE:

1. RED BACKGROUND
2. WHITE LETTERING
3. MINIMUM 1/8" LETTER HEIGHT
4. ALL CAPITAL LETTERS
5. ARIAL OR SIMILAR FONT, NON-BOLD
6. REFLECTIVE WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIORNMENT. (DURABLE ADHESIVE MATERIALS MAY MEET THIS REQUIREMENT)
7. WARNING LABEL SHALL APPEAR ON THE UTILITY-INTERACTIVE INVERTER OR BE APPLIED BY THE INSTALLER NEAR THE GROUND-FAULT INDICATOR AT A VISIBLE LOCATION.

10 INVERTER GROUND-FAULT WARNING

Scale: NTS



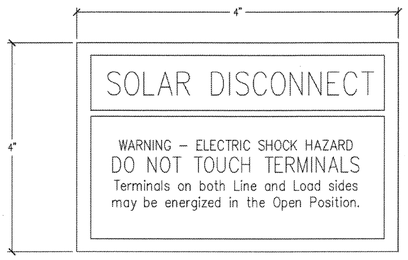
#CS - 000200-004

NOTE:

1. RED BACKGROUND
2. WHITE LETTERING
3. MINIMUM 1/8" LETTER HEIGHT
4. ALL CAPITAL LETTERS
5. ARIAL OR SIMILAR FONT, NON-BOLD
6. REFLECTIVE WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT.
(DURABLE ADHESIVE MATERIALS MAY MEET THIS REQUIREMENT)

7 SHOCK HAZARD

Scale: NTS



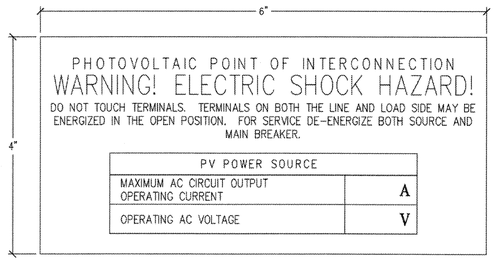
#CS - 000200-003

NOTE:

1. RED BACKGROUND
2. WHITE LETTERING
3. MINIMUM 3/8" LETTER HEIGHT
4. ALL CAPITAL LETTERS
5. ARIAL OR SIMILAR FONT, NON-BOLD
6. REFLECTIVE WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT.
(DURABLE ADHESIVE MATERIALS MAY MEET THIS REQUIREMENT)

4 PV SYSTEM MAINTENANCE DISCONNECT

Scale: NTS



#CS - 000200-008

NOTE:

1. IDENTIFICATION PLACARD PER NEC. 230.2(E)
2. TO BE PLACED ON EXISTING MAIN SWITCHGEAR
3. ALUMINUM BACKGROUND
4. BLACK LETTERING
5. TEXT HEIGHT: 1/2",3/8", AND 1/8"
6. MATERIAL NOTE: TEXT PRINTED ON ALUMINUM BACKING WITH UV-RATED PLASTIC
LAMINATE COATING AND OUTDOOR RATED ADHESIVE.

1 POINT OF INTERCONNECTION

Scale: NTS

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APPD0 11 4 5 7 2
AC FLS SS ED
DATE MAY 2 2 2012

REGISTERED PROFESSIONAL ENGINEER
JOEL B. BURAS
E-17121
Exp. 6-30-13
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	+/+/A	*

JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOV'T
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: WARNING LABELS
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV E8
REV:

MANDATORY NOTES:

DETERMINING INSTALLED LIGHTING POWER
INSTALLED LIGHTING POWER HAS BEEN DETERMINED IN ACCORDANCE WITH §130(C AND D).

CONTROLS FOR INEFFICIENT LIGHTING SYSTEMS
ALL OUTDOOR LUMINAIRES WITH LAMPS RATED OVER 100 W MUST EITHER: HAVE A LAMP EFFICACY OF AT LEAST 60 LUMENS PER WATT; OR BE CONTROLLED BY A MOTION SENSOR [§132(A)].

OUTDOOR LUMINAIRE CUTOFF
OUTDOOR LUMINAIRES THAT USE LAMPS RATED GREATER THAN 175 W ([§132(B)]) IN THE HARDSCAPE AREAS, PARKING LOTS, BUILDING ENTRANCES, CANOPIES AND ALL OUTDOOR SALES AREAS WILL BE REQUIRED TO BE DESIGNATED CUTOFF IN A PHOTOMETRIC TEST REPORT THAT INCLUDES ANY TILT OR OTHER NON-LEVEL MOUNTING CONDITIONS.

CONTROLS TO TURN OFF THE LIGHTS DURING THE DAY
ALL PERMANENTLY INSTALLED OUTDOOR LIGHTING MUST BE CONTROLLED BY A PHOTOELECTRIC SWITCH OR ASTRONOMICAL TIME SWITCH THAT AUTOMATICALLY TURNS OFF THE OUTDOOR LIGHTING WHEN DAYLIGHT IS AVAILABLE ([§132(C)1]).

CONTROLS TO PROVIDE THE OPTION TO TURN OFF A PORTION OF THE LIGHTS
FOR LIGHTING OF BUILDING FACADES, PARKING LOTS, GARAGES, SALES AND NON-SALES CANOPIES, AND ALL OUTDOOR SALES AREAS, AUTOMATIC CONTROLS ARE REQUIRED TO PROVIDE THE OWNER WITH THE ABILITY TO TURN OFF THE LIGHTING OR TO REDUCE THE LIGHTING POWER BY AT LEAST 50 PERCENT BUT NOT EXCEEDING 80 PERCENT WHEN THE LIGHTING IS NOT NEEDED [§132(C)2].

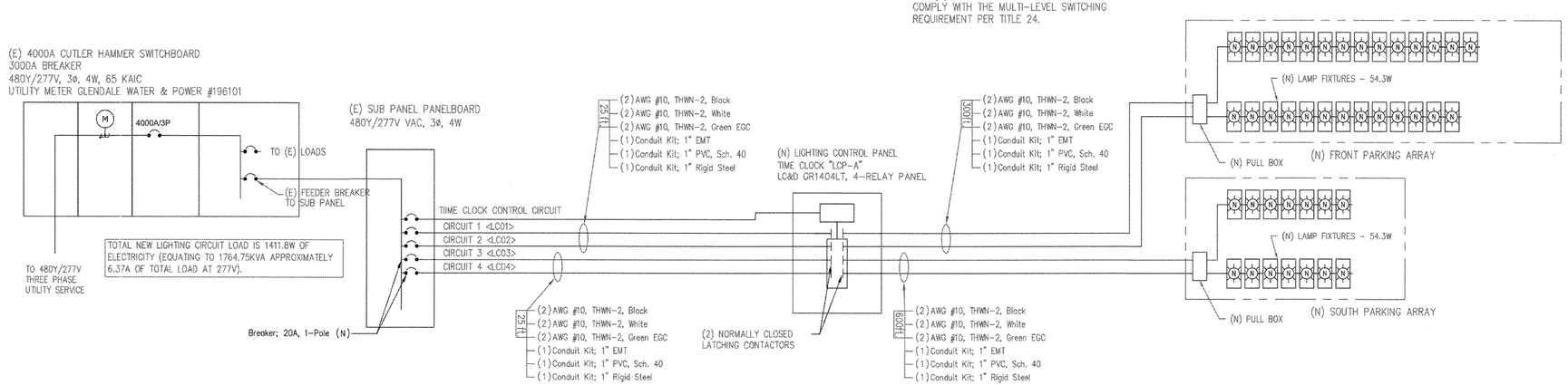
SYMBOL	LABEL	DESCRIPTION	LAMP TYPE	WATTAGE	MANUFACTURER	CATALOG NUMBER	VOLTAGE	QUANTITY
	FCP	SURFACE MOUNTED 4 FOOT (2) LAMP T8 FLUORESCENT LUMINAIRE WITH SPECULAR REFLECTOR AND CLEAR WRAP LENS. POLYCARBONATE CONSTRUCTION WITH STAINLESS STEEL CLIPS AND TAMPER PROOF SCREWS.	TWO (2) 32W 4100K (MIN.) T8 FLUORESCENT LAMPS.	54.3W	GVA	FAD-PC-232-277-PH-SS-TRS	120-277V	27

USE EMT WHEN ROUTING BETWEEN FIXTURES UNDER THE ARRAY. USE SCH. 40 PVC IN THE TRENCH. USE RIGID STEEL IN AREAS WHERE EXPOSED TO STRONG PHYSICAL DAMAGE (SUCH AS THE POST STUB UPS AS NECESSARY)

LIGHTING CIRCUIT (LC01) AND CIRCUIT (LC02) HAVE 0.3801kW (0.4751kVA) AND 0.3258kW (0.4073kVA) RESPECTIVELY (EQUATING TO APPROXIMATELY 1.715A AND 1.47A RESPECTIVELY AT 277V).

LIGHTING CIRCUIT (LC03) AND CIRCUIT (LC04) BOTH HAVE 0.3801kW (0.4751kVA) RESPECTIVELY (EQUATING TO APPROXIMATELY 1.715A RESPECTIVELY AT 277V).

THE (N) ASTRONOMICAL TIME CLOCK SCHEDULED TO COMPLY WITH THE MULTI-LEVEL SWITCHING REQUIREMENT PER TITLE 24.



A SINGLE LINE DIAGRAM FOR LIGHTING SYSTEM

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JOEL B. RUNAS
E-17121
EXP. 6-30-13
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	+/-/+	*

JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOVT DESIGN: L. WU
DRAWN BY: ES
DATE: 05/22/2012 PAYMENT TYPE: CASH
PAGE NAME: LINE DIAGRAM (LIGHTING) PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV E9 REV:

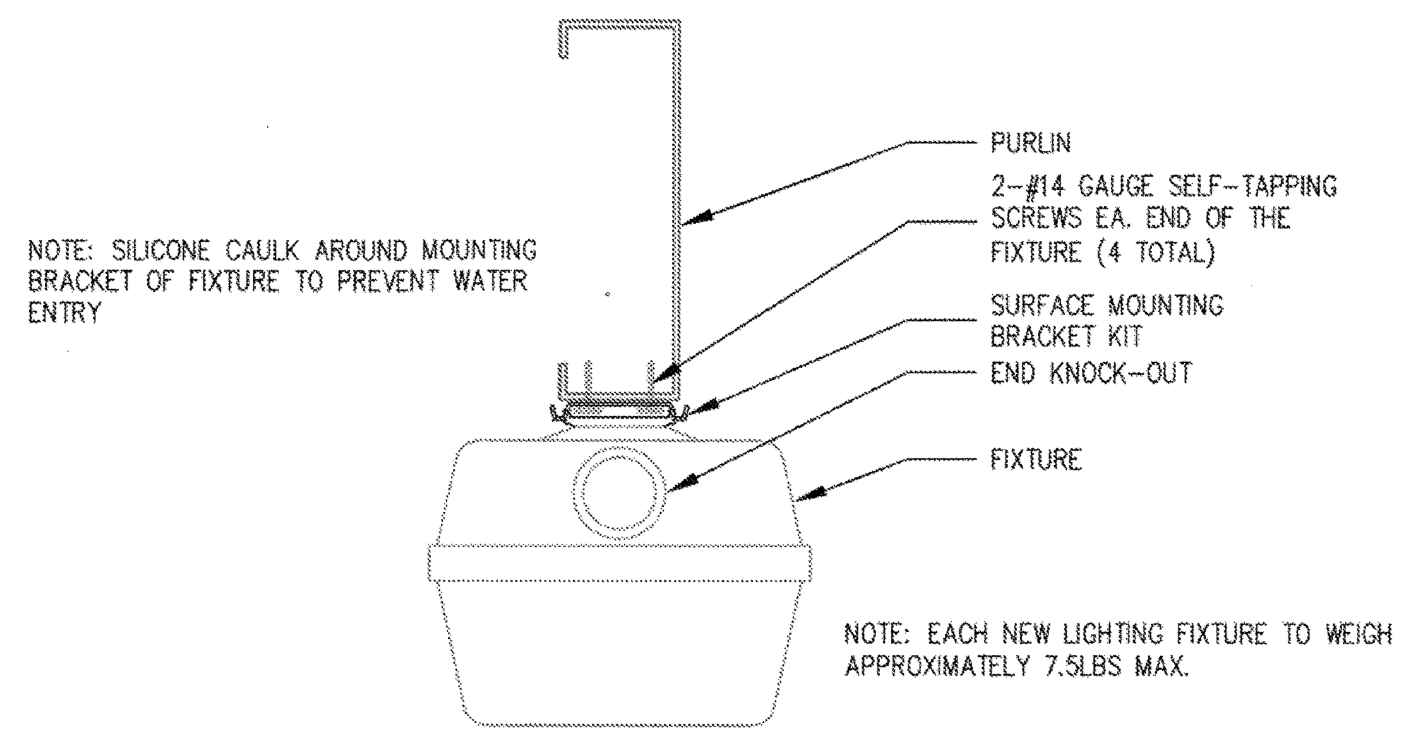
SHEET NOTES

1. (N) HOME RUN FOR FRONT PARKING ARRAY LIGHTING CIRCUITS TO RUN BACK TO (N) TIME CLOCK LIGHTING CONTROL PANEL IN BUILDING AA
2. (N) HOME RUN FOR THE SOUTH PARKING ARRAY LIGHTING CIRCUITS TO RUN BACK TO (N) TIME CLOCK LIGHTING CONTROL PANEL IN BUILDING AA
3. (N) LIGHTING CIRCUIT ROUTING; PV WIRES AND LIGHTING WIRES SHALL BE RUN IN THE SEPARATE CONDUITS
4. (N) LIGHT FIXTURE, SEE SCHEDULE ON THIS SHEET.
5. (N) TRENCHING OF LIGHTING CIRCUIT. LIGHTING CIRCUIT CONDUITS CAN SHARE THE SAME TRENCH AS THE PV CONDUITS AS LONG AS THE CONDUITS ARE KEPT SEPARATE FROM EACH OTHER AND CLEARLY IDENTIFIED
6. (N) ASTRONOMICAL TIME CLOCK LOCATED IN THE ELECTRICAL ROOM IN BUILDING AA. LIGHTING CIRCUITS SHALL BE POWERED FROM A SEPARATE PANEL.

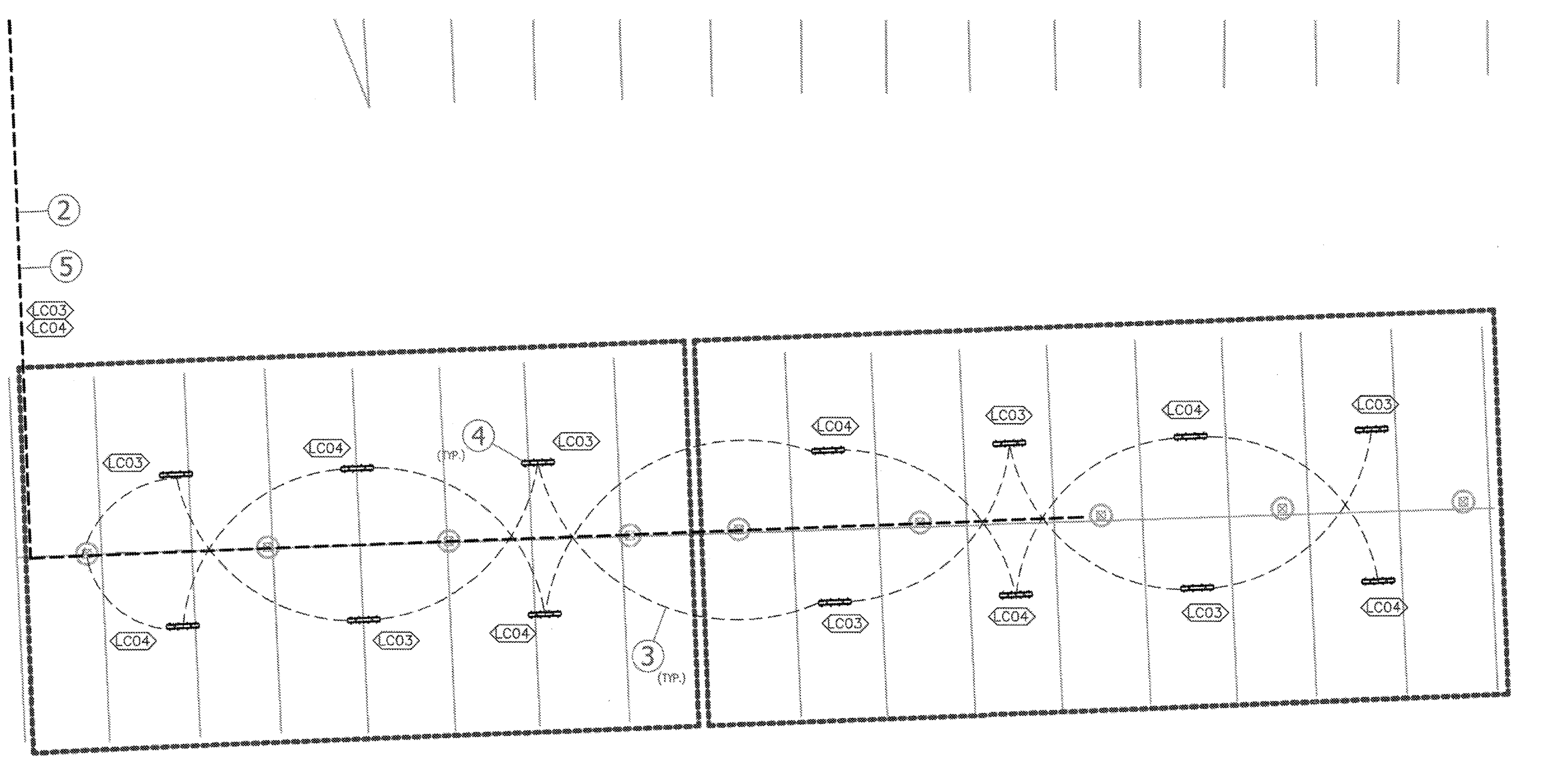
LC01 (N) LIGHTING CIRCUIT NUMBER

SITE LEGEND

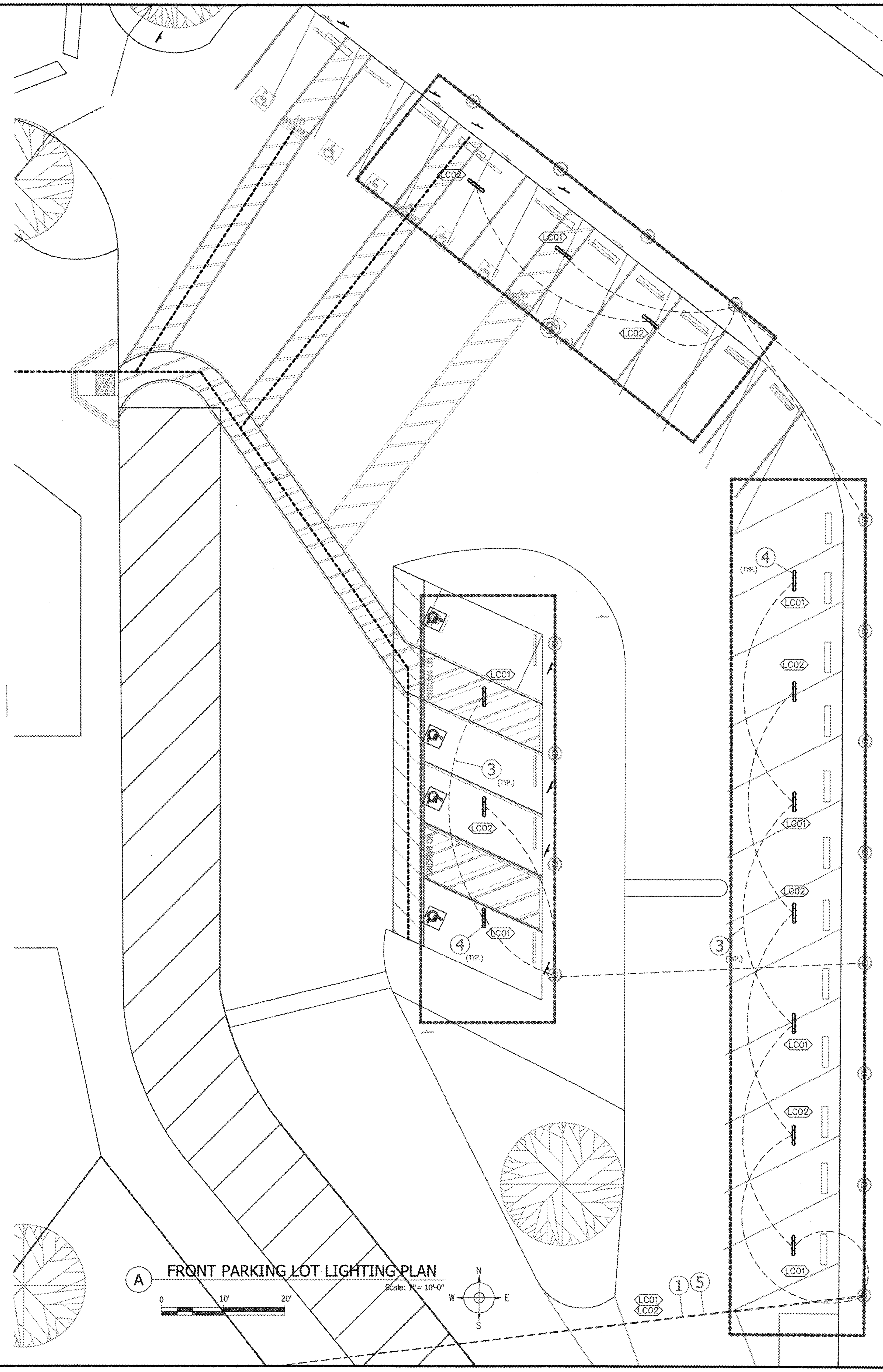
Symbol	Description
(fixture symbol)	LIGHTING FIXTURE
PC	PHOTOCELL
TC	TIMECLOCK
MS	MOTION SENSOR
$	SWITCH
(post symbol)	CANOPY POST/BEAM LOCATION



C FLUORESCENT ARRAY LIGHTING MOUNTING
SCALE: NTS



B SOUTH PARKING LOT LIGHTING PLAN
Scale: 1"= 10'-0"



A FRONT PARKING LOT LIGHTING PLAN
Scale: 1"= 10'-0"

SolarCity
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(888)-SOL-CITY (765-2489) | www.solarcity.com

DESCRIPTION: GLENDALE USD- CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM
CUSTOMER: GLENDALE USD- CLARK MAGNET HIGH
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP03 1 1 4 5 7 2
AC ✓ FLS JC SS ED
DATE MAY 2 2 2012

REGISTERED PROFESSIONAL ENGINEER
CARL R. BURAZZ
E-1[illegible]727
Exp. 6-30-13
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKET: GOV'T
DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012
PAYMENT TYPE: CASH
PAGE NAME: LIGHTING PLAN
PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV E10
REV:

Certificate of Compliance (Page 1 of 4) OLTG-1C

Project Name: GLENDALE USD – CLARK MAGNET HIGH SCHOOL	Date: 05/22/2012
Project Address: 4747 NEW YORK AVE., LA CRESCENTA, CA, 91214	Total Hardscape Illuminated Area: 45,477

General Information

Phase of Construction: ☐ New Construction ☐ Addition ☒ Alteration

Documentation Author's Declaration Statement

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

Name: LEO WU, P.E., LEED AP	Signature:		
Company: SOLAR CITY		Date: 05/22/2012	
Address: 3055 CLEARVIEW WAY		If Applicable: CEA # / CEPE #	
City/State/Zip: SAN MATEO, CA, 94402		Phone: (650) 963-5820	

Principal Lighting Designer's Declaration Statement

- I am eligible under Division 3 of the California Business and Professions Code to accept responsibility for the lighting design.
- This Certificate of Compliance identifies the lighting features and performance specifications required for compliance with Title 24, Pages 1 and 6 of the California Code of Regulations.
- The design features represented on this Certificate of Compliance are consistent with the information provided to document this design on the other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Name: CARL BURATTI, P.E.	Signature:		
Company: BURATTI & ASSOCIATES, INC.		Phone: (818) 345-7130	
Address: 6345 BALBOA BLVD., STE 259		License #: E14727	
City/State/Zip: ENCINO, CA 91316		Date: 05/22/2012	

Principal Lighting Designer's Declaration

☒ I certify that this Certificate of Compliance documentation is accurate and complete, and accounts for all outdoor lighting power, including building mounted, pole mounted, as well as all other outdoor lighting designed for the site, and that Additional Lighting Power Allowances for Specific Applications or Additional Lighting Power Allowances for Ordinance Requirements have not been counted more than one time for the same area, in accordance with Section 147 of the Standards.

Outdoor Lighting Mandatory Measures
Indicate location on building plans of Mandatory Measures Note Block: PV E9

LIGHTING COMPLIANCE FORMS & WORKSHEETS (check box if worksheet is included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, please refer to the Nonresidential Manual published by the California Energy Commission.

☒	OLTG-1C	Certificate of Compliance. All 4 pages required on plans for all submittals.
☒	OLTG-2C	(Page 1 of 3) Lighting Wattage Allowances for General Hardscape, Sales Frontage, or Ornamental Lighting. Optional on plans.
☒	OLTG-2C	(Page 2 of 3) Lighting Wattage Allowances for Per Application or Per Area. Optional on plans.
☐	OLTG-2C	(Page 3 of 3) Additional Lighting Power Allowance for Ordinance Requirements. Optional on plans.

2008 Nonresidential Compliance Forms *July 2010*

Certificate of Compliance (Page 2 of 4) OLTG-1C

COMPLIANCE FIXTURE / LIGHTING CONTROL SCHEDULE and FIELD INSPECTION CHECKLIST

Project Name: GLENDALE USD – CLARK MAGNET HIGH SCHOOL Date: 05/22/2012

INSTALLATION CERTIFICATE, OLTG-1-INST (Retain a copy and verify form is completed and signed.) **Field Inspection** ☐

CERTIFICATE OF ACCEPTANCE, OLTG-2A (Retain a copy and verify form is completed and signed.) **Field Inspection** ☐

Luminaire Schedule — **Installed Watts**

A	B	C	D	E	F		G	H	I
Name Or Item Tag	Luminaire Description [1]. See footnote below (i.e.: 1 lamp pole-top shoe-box 400 watt metal halide)	Cutoff Designation	Watts per Luminaire	Special Features	How wattage was determined: Default from §130	How wattage was determined: According to §130 (d or e)	Number of Luminaires	Installed Watts (D x G)	Field Inspection [2]: Pass
FCP	(2) 32W T8 WET LISTED FLUORESCENT	N/A	54.3	☐	☐	☒	27	1466.1	☐
				☐	☐	☐			☐
				☐	☐	☐			☐
				☐	☐	☐			☐
				☐	☐	☐			☐
				☐	☐	☐			☐
				☐	☐	☐			☐
				☐	☐	☐			☐

Enter total into OLTG-1C, Page 4 of 4, Row H: Total Installed Watts: 1466.1

1. Type of luminaire (i.e.: post top, wall pack, surface, shoe box); for non-incandescent luminaires, indicate nominal lamp wattage and lamp type (i.e.: fluorescent, incandescent, HID); ballast type (i.e.: electronic or magnetic); number of lamps and number of ballasts per luminaire. For incandescent luminaires, the luminaire wattage listed in column D shall be the maximum relamping rated wattage on a permanent factory-installed label on the luminaire, NOT the wattage of the lamp (bulb) used, in accordance with Section 130(d or e).
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

EXEMPT LUMINAIRES **Field Inspection** ☐

Name or Symbol	Description of exempt luminaires in accordance with §147

MANDATORY CONTROLS **Field Inspection** ☐

#	Description	Location	#	Description	Location
1–2	TIME SWITCH	FRONT PARKING ARRAY			
3–4	TIME SWITCH	SOUTH PARKING ARRAY			

SPECIAL FEATURES INSPECTION CHECKLIST (See Page 2 of 4 of OLTG-1C)

The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification. The local enforcement agency determines the adequacy of the justification, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

Field Inspector Notes or Discrepancies:

2008 Nonresidential Compliance Forms *July 2010*

Certificate of Compliance (Page 3 of 4) OLTG-1C

Project Name: GLENDALE USD – CLARK MAGNET HIGH SCHOOL Date: 05/22/2012

A. OUTDOOR LIGHTING ZONE

OUTDOOR LIGHTING ZONE: ☐ OLZ 1 ☐ OLZ 2 ☒ OLZ 3 ☐ OLZ 4

Is the Outdoor Lighting Zone: ☒ Default in accordance with §10-114, or ☐ Amended by AHA

Complete the information below if the default Outdoor Lighting Zone has been amended by the local jurisdiction having authority (AHA):

- ☐ The site is a government designated park, recreation area, wildlife preserve, or portion thereof, and has been designated as LZ2 or LZ3, in accordance with Table 10-114-A, because the site is contained within such a zone.
- ☐ The local jurisdiction having authority has officially adopted a change to the State Default Lighting Zone and has notified the Energy Commission by providing the materials required in §10-114(d) to the Executive Director.
- ☐ The adopted change is posted on the Energy Commission website.

B. ADDITIONAL LIGHTING POWER ALLOWANCE FOR ORDINANCE REQUIREMENTS

Are additional lighting power allowances for ordinance in Table 147-C used? ☐ Yes ☒ No

Complete the information below if additional lighting power allowances for ordinance requirements are used:

- ☐ The local jurisdiction having authority has officially adopted specific outdoor light levels, which are expressed as average or minimum footcandle levels, by following a public process that allowed for formal public notification, review, and comment about the proposed change.
- ☐ The local jurisdiction having authority which adopted specific outdoor light levels and has notified the Commission by providing the following materials required §10-114(f) to the Executive Director.

C. ACCEPTANCE FORMS

Required Acceptance Tests

Designer:

*This form is to be used by the designer and attached to the plans. Listed below is the acceptance test for the Lighting system, **OLTG-2A**. The designer is required to check the acceptance tests and list all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance. If all the lighting system or control of a certain type requires a test, list the different lighting and the number of systems. The NA7 Section in the Appendix of the Nonresidential Reference Appendices Manual describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately. **Forms can be grouped by type of Luminaire controlled.***

Enforcement Agency:

Systems Acceptance. *Before Occupancy Permit is granted for a newly constructed building or space or when ever new lighting system with controls is installed in the building or space shall be certified as meeting the Acceptance Requirements. The **OLTG-2A** form is not considered a complete form and is not to be accepted by the enforcement agency unless the boxes are checked and/or filled and signed. In addition, a Certificate of Acceptance forms shall be submitted to the enforcement agency that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of §10-103(b) of Title 24 Part 6. The field inspector must receive the properly filled out and signed forms before the building can receive final occupancy. A copy of the **OLTG-2A** for each different lighting luminaire control(s) must be provided to the owner of the building for their records.*

Certificate of Acceptance

Equipment Requiring Testing	Luminaires Controlled: Description	Number of Units Controlled	Location	OLTG-2A [1] Outdoor Lighting Acceptance Tests
ASTRONOMICAL TIME CLOCK	TIME SWITCH	4	ELECTRICAL ROOM	ATS

*1. Insert: **OMS** for Outdoor Motion Sensor; **OLSC** for Outdoor Lighting Shutoff Controls; **OP** for Outdoor Photocontrol; **ATS** for Astronomical Time Switch; and, **STS** for Standard (non-astronomical) Time Switch acceptance.*

2008 Nonresidential Compliance Forms *July 2010*

CERTIFICATE OF COMPLIANCE (Page 4 of 4) OLTG-1C

Project Name: GLENDALE USD – CLARK MAGNET HIGH SCHOOL Date: 05/22/2012

ALLOWED AND INSTALLED OUTDOOR LIGHTING POWER

		Lighting Wattage Power Allowance
A	Lighting power allowance for general hardscape (from OLTG-2C Page 1 of 3)	6,189
B	Specific application lighting wattage allowance per unit length (from OLTG-2C Page 1 of 3)	
C	Specific application wattage allowance for ornamental lighting (from OLTG-2C Page 1 of 3)	
D	Specific application wattage allowance per application (from OLTG-2C Page 2 of 3)	
E	Specific application lighting wattage allowance per area (from OLTG-2C Page 2 of 3)	1,466.1
F	Additional lighting power allowance for ordinance requirements (from OLTG-2C Page 3 of 3)	
G	Total Allowed Wattage = Sum of rows A through F:	7,655.1
H	Total Installed Watts (from Luminaire Schedule, (from OLTG-1C (Page 2 of 4)	1,466.1

Provided that the lighting wattage power allowances listed in rows A through F are identical to the lighting wattage power allowances taken from OLTG-2C Pages 1 through 3, complies if Installed Wattage in row H is less than or equal to the Total Installed Wattage in row G ☒ Yes ☐ No

NOTES:

2008 Nonresidential Compliance Forms *July 2010*

OUTDOOR LIGHTING WORKSHEET (Page 1 of 3) OLTG-2C

Project Name: GLENDALE USD – CLARK MAGNET HIGH SCHOOL Date: 05/22/2012

A. LIGHTING POWER ALLOWANCE FOR GENERAL HARDSCAPE

AREA WATTAGE ALLOWANCE (AWA)			LINEAR WATTAGE ALLOWANCE (LWA)			INITIAL WATTAGE ALLOWANCE	TOTAL GENERAL HARDSCAPE LIGHTING ALLOWANCE
A	B	C	D	E	F	G	H
ILLUMINATED HARDSCAPE AREA	AWA PER SQUARE FOOT	AWA (A X B)	PERIMETER LENGTH OF GENERAL HARDSCAPE	LWA PER LINEAR FOOT	LWA (D X E)	IWA (WATTS)	C + F + G
45,477	0.092	4,184	1,342	0.92	1,235	770	6,189

Enter total into OLTG-1C, Page 4 of 4, Row A, Lighting Power Allowance for General Hardscape: 6,189

☐ **Yes:** AWA, LWA, and IWA from Table 147-A was used as appropriate for the Outdoor Lighting Zone

B. SPECIFIC APPLICATION LIGHTING WATTAGE ALLOWANCE PER UNIT LENGTH (Available only for sales frontage)

DETERMINE WATTAGE ALLOWANCE				LUMINAIRE TYPE		DESIGN WATTS			
A	B	C	D	E	F	G	H	I	J
Specific Lighting Application	Lineal Feet of Frontage	Sales Frontage allowance for OLZ (watts per lf)	Wattage Allowance (B x C)	Name or Symbol	Luminaire Type	Luminaire Quantity	Watts per Luminaire	Design Watts (G x H)	Allowed Watts Minimum of D or I

Enter total into OLTG-1C, Page 4 of 4, Row B, Specific Application Lighting Wattage Allowance Per Unit Length:

C. SPECIFIC APPLICATION WATTAGE ALLOWANCE FOR ORNAMENTAL LIGHTING

DETERMINE WATTAGE ALLOWANCE				LUMINAIRE TYPE		DESIGN WATTS			
A	B	C	D	E	F	G	H	I	J
Specific Lighting Application	Square feet of Hardscape	Ornamental Lighting Allowance for OLZ (watts per ft²)	Wattage Allowance (B x C)	Name or Symbol	Luminaire Type	Luminaire Quantity	Watts per Luminaire	Design Watts (G x H)	Allowed Watts Minimum of D or I

Enter total into OLTG-1C, Page 4 of 4, Row C: Specific Application Wattage Allowance for Ornamental Lighting:

2008 Nonresidential Compliance Forms *March 2010*

OUTDOOR LIGHTING WORKSHEET (Page 2 of 3) OLTG-2C

Project Name: GLENDALE USD – CLARK MAGNET HIGH SCHOOL Date: 05/22/2012

D. SPECIFIC APPLICATION LIGHTING WATTAGE ALLOWANCE PER APPLICATION

DETERMINE WATTAGE ALLOWANCE				DESIGN WATTS					ALLOWANCE
A	B	C	D	E	F	G	H	I	J
Specific Lighting Application	Number of Applications	Specific Application Allowance (watts)	Wattage Allowance (B x C)	Luminaire Symbol	Luminaire Type	Luminaire Quantity	Watts per Luminaire	Design Watts (G x H)	Allowed Watts Minimum of D or I

Enter total into OLTG-1C, Page 4 of 4, Row D, Specific Application Wattage Allowance Per Application:

E. SPECIFIC APPLICATION LIGHTING WATTAGE ALLOWANCE PER AREA

DETERMINE WATTAGE ALLOWANCE				LUMINAIRE TYPE		DESIGN WATTS			
A	B	C	D	E	F	G	H	I	J
Specific Lighting Application	Illuminated Area of Application	Specific Application Allowance (watts per ft²)	Wattage Allowance (B x C)	Code for Luminaire Type	Luminaire Type	Luminaire Quantity	Watts per Luminaire	Design Watts (G x H)	Allowed Watts Minimum of D or I
NON-SALES CANOPY	1,515	0.408	618.12	FCP	2x32 T8 FLUORSCENT	3	54.3	162.9	162.9
NON-SALES CANOPY	1,515	0.408	618.12	FCP	2x32 T8 FLUORSCENT	3	54.3	162.9	162.9
NON-SALES CANOPY	3,030	0.408	1,236.24	FCP	2x32 T8 FLUORSCENT	7	54.3	162.9	380.1
NON-SALES CANOPY	3,032	0.408	1,237.06	FCP	2x32 T8 FLUORSCENT	8	54.3	162.9	434.4
NON-SALES CANOPY	2,526	0.408	1,030.61	FCP	2x32 T8 FLUORSCENT	6	54.3	162.9	325.8

Enter total into OLTG-1C, Page 4 of 4, Row E; Specific Application Lighting Wattage Allowance Per Area: 1466.1

2008 Nonresidential Compliance Forms *March 2010*

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(888)-SOL-CITY (765-2489) | www.solarcity.com

GLENDALE USD– CLARK MAGNET HIGH
356.72kW SOLAR SUPPORT STRUCTURE PV SYSTEM
4747 NEW YORK AVE
LA CRESCENTA, CA 91214
8185070201

IDENTIFICATION STAMP
CIV. OF THE STATE ARCHITECT
APP# 03 114572
AC FLS SS ED
DATE MAY 22 2012

LICENSED PROFESSIONAL ENGINEER — CARL E. BURATTI — E-14727 — EXP. 6-30-13 — ELECTRICAL — STATE OF CALIFORNIA

REVISIONS

REV	BY	DATE	COMMENTS
REV A	BY	*/*/*	*

JOB DETAILS

AHJ: Glendale
MODULES: (1372) YINGLI # YL260C-30b
MOUNTING SYSTEM: STEEL SUPPORT STRUCTURES
INVERTER: (1) SOLECTRIA # SGI 300KW
MARKER: GOVT DESIGN: L. WU
CHECKED BY: ES
DATE: 05/22/2012 PAYMENT TYPE: CASH
PAGE NAME: TITLE 24 DOCUMENTATION PROJECT MANAGER: D NAVARRO
JOB NUMBER: JB-912072-00
PAGE: PV E11 REV:

PATENTS PENDING

ABBREVIATIONS

NOTE: ABBREVIATIONS MAY OR MAY NOT HAVE PERIODS, BUT SHALL BE READ AS SAME.

A.B.	ANCHOR BOLT
A.B.C.	AGGREGATE BASE COURSE
ACI	AMERICAN CONCRETE INSTITUTE
A/C	AIR CONDITIONER
A.F.F.	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ALT.	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	AMERICAN PLYWOOD ASSOCIATION
ARCH'L	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
A.W.T.S.	AUTOMATIC WELDED THREADED STUDS
BM	BEAM
B.F.F	BELOW FINISHED FLOOR
BLK	BLOCK
B.O.B.	BOTTOM OF BEAM
B.O.D.	BOTTOM OF DECK
B.O.F.	BOTTOM OF FOOTING
BRG	BEARING
C	CAMBER
C.C.	CENTERLINE TO CENTERLINE
C & C	COMPONENTS & CLADDING
CBC	CALIFORNIA BUILDING CODE
CFS	COLD FORMED STEEL
C.G.	CENTER OF GRAVITY
C.I.P.	CAST IN PLACE
C.L.	CENTERLINE
C.L.B.	CENTERLINE OF BEAM
C.L.C.	CENTERLINE OF COLUMN
C.L.F.	CENTERLINE OF FOOTING
C.L.W.	CENTERLINE OF WALL
CLR	CLEAR
CONC	CONCRETE
CONC C.J.	CONCRETE CONTROL JOINT
CONC S.J.	CONCRETE SAWCUT JOINT
C.M.U.	CONCRETE MASONRY UNIT
CONN	CONNECTION
CONT	CONTINUOUS
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
D.F. (D.F.L.)	DOUGLAS FIR LARCH
DL	DEAD LOAD
DIA	DIAMETER
DN	DOWN
DSA	DIVISION OF STATE ARCHITECT
DWG(S)	DRAWING(S)
E.C.	END TO CENTERLINE
E.E.	END TO END
E.O.S.	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EXP. BOLT (E.B.)	EXPANSION BOLT
EXP. JT (E.J.)	EXPANSION JOINT
E.W.	EACH WAY
F.F.	FINISHED FLOOR
F.O.M.	FACE OF MEMBER
F.O.S.	FACE OF STEEL
F.O.W.	FACE OF WALL
GA	GAGE (UNIT OF MEASUREMENT)
GALV	GALVANIZED
G.S.N.	GENERAL STRUCTURAL NOTES
GLB (GLULAM)	GLUED-LAMINATED BEAM
H.F.	HEM FIR
HORIZ	HORIZONTAL REINFORCING
H.S.	HEADED STUDS
IBC	INTERNATIONAL BUILDING CODE
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
ICC	INTERNATIONAL CODE COUNCIL
I.F.W.	INSIDE FACE OF WALL
I.O.D.	INTERPRETATION OF DRAWINGS
JST	JOIST
K(KIP)	1000 POUNDS
KLF	KIPS PER LINEAR FOOT
LBS (#)	POUNDS
LGR	LEDGER
LGS	LIGHT GAGE STEEL
LGSEA	LIGHT GAGE STEEL ENGINEERS ASSOCIATION
L.O.D.	LOCATION OF DETAILS
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAS	MASONRY
MAS C.J.	MASONRY CONTROL JOINT
MAX	MAXIMUM
MBMA	METAL BUILDING MANUFACTURERS ASSOCIATION
MECH'L	MECHANICAL
MFR'D	MANUFACTURED
MFR('S)	MANUFACTURER('S)
MIN	MINIMUM
MWFRS	MAIN WIND FORCE RESISTANCE SYSTEM
N/A	NOT APPLICABLE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.F.W.	OUTSIDE FACE OF WALL
OPP	OPPOSITE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PCI	PRECAST/PRESTRESSED CONCRETE INSTITUTE
P.C.	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PLF	POUNDS PER LINEAR FOOT
±	PLUS OR MINUS
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSIONED
PTI	POST-TENSIONING INSTITUTE
REINF	REINFORCING
SDI	STEEL DECK INSTITUTE
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
SJI	STEEL JOIST INSTITUTE
SIM	SIMILAR
SQ.	SQUARE
SSMA	STEEL STUD MANUFACTURERS ASSOCIATION
STD	STANDARD
STL	STEEL
TL	TOTAL LOAD
T.O.B.	TOP OF BEAM
T.O.C.T.	TOP OF CONCRETE TOPPING
T.O.D.	TOP OF DECK
T.O.F.	TOP OF FOOTING
T.O.L.	TOP OF LEDGER
T.O.M.	TOP OF MASONRY
T.O.P.	TOP OF PLATE
T.O.P.C.	TOP OF PRECAST CONCRETE
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TPI	TRUSS PLATE INSTITUTE
TYP	TYPICAL
T&G	TONGUE AND GROOVE
UBC	UNIFORM BUILDING CODE
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL REINFORCING
WCLA	WEST COAST LUMBER ASSOCIATION
WCLIB	WEST COAST LUMBER INSPECTION BUREAU
W.W.F.	WELDED WIRE FABRIC
WWPA	WESTERN WOOD PRODUCTS ASSOCIATION
W/	WITH
W/C	WATER TO CEMENT RATIO
W/O	WITHOUT

GENERAL STRUCTURAL NOTES

Applies unless noted otherwise on drawings

BUILDING CODE:

2010 EDITION OF THE CALIFORNIA BUILDING CODE.

OCCUPANCY GROUP PER SITE-SPECIFIC DOCUMENTS. ALLOWABLE AREA AND MINIMUM SEPARATION BETWEEN STRUCTURES TO BE DETERMINED AT EACH SPECIFIC LOCATION PER CBC WHICH IS TO BE CHECKED AT BACKCHECK.

II-B CONSTRUCTION

LOADS:

ROOFS:
ROOF DEAD LOAD = ACTUAL WEIGHT OF MEMBER:
SOLAR PANEL = 3 PSF (MAX)
PURLIN = 4 PLF
FOR 10 DEGREE ROOF SLOPE:
C&C WIND LOAD = 18.9 PSF (TOWARD THE SURFACE).
C&C WIND LOAD = 20.8 PSF (AWAY FROM THE SURFACE).
MWFRS WIND LOAD = 18.9 PSF / 4.4 PSF (TOWARD THE SURFACE).
MWFRS WIND LOAD = 17.8 PSF / 0.0 PSF (AWAY FROM THE SURFACE).
ROOF LIVE LOAD = 10 PSF. DESIGN FOR 300 POUND POINT LOAD LOCATED TO CAUSE MAXIMUM MOMENTS AND SHEAR. USE THE 300 POUND LOAD WITH WIND, BUT NOT WITH 10 PSF ROOF LIVE LOAD.
NO STEEL DECK IS TO BE PLACED ON THE STRUCTURE – NOW OR IN THE FUTURE.

LATERAL:
OCCUPANCY CATEGORY II
WIND:
3 SECOND WIND GUST = 85 MPH.
WIND IMPORTANCE FACTOR = 1.0.
EXPOSURE C.
THIS DESIGN CAN BE USED FOR ANY ROOF SLOPE FROM 0 DEGREES TO 10 DEGREES.

SEISMIC:
SEISMIC IMPORTANCE FACTOR = 1.0.
SHORT PERIOD SPECTRAL ACCELERATION Ss = 2.85.
ONE SECOND SPECTRAL ACCELERATION S1 = 1.15.
REDUNDANCY FACTOR p = 1.3.
Sds = 1.005 (MAX.).
Sd1 = 1.16 (MAX.).
SEISMIC DESIGN CATEGORY D.
BASIC SEISMIC-FORCE RESISTING SYSTEM = CANTILEVERED COLUMN SYSTEMS DETAILED TO CONFORM TO THE REQUIREMENTS FOR ORDINARY STEEL MOMENT FRAMES.
RESPONSE MODIFICATION FACTOR (R)= 1.25.
ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE PROCEDURE.
Cs = 1.52.
DESIGN BASE SHEAR (3 PANEL) = 2690 LBS.
DESIGN BASE SHEAR (4 PANEL) = 3680 LBS.

FOUNDATIONS:

ALL FOOTINGS SHALL BE DESIGNED FOR THE SPECIFIC SITE. DRILLED PIER FOOTING DESIGNS ARE BASED ON THE ALLOWABLE LATERAL BEARING PRESSURES SHOWN IN DETAIL 2. THE ALLOWABLE LATERAL BEARING PRESSURE MAY BE MULTIPLIED BY 2.0 PER CBC SECTION 1806A.3.4. THE DRILLED PIER FOOTINGS ARE DESIGNED AS CONSTRAINED (SECTION 1807A.3.2.2, EQUATION 18A-2) WHERE PLACED IN A CONCRETE PAVEMENT AREA AND AS UNCONSTRAINED (SECTION 1807A.3.2.2, EQUATION 18A-1 OR CZERNIAK, WHICHEVER IS DEEPER) WHERE PLACED IN ASPHALT PAVEMENT AREAS OR DIRT AREAS.

SPREAD FOOTING DESIGNS ARE BASED ON CBC SECTION 1806A, CLASS 5 SOILS. SPREAD FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL 2 FEET MINIMUM BELOW ADJACENT EXISTING GRADE. DESIGN SOIL BEARING VALUE = 1500 PSF. SOILS ENGINEER MUST VERIFY THAT 1500 PSF SOILS (MINIMUM) ARE PRESENT AT SITE.

CONCRETE:

SPECIFIED 28 DAY COMPRESSIVE STRENGTH F'c:

FOUNDATIONS --- 3,000 PSI

GENERAL:

ALL CAST-IN-PLACE CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE ACI. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED UNLESS NOTED OTHERWISE. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED. NO OTHER ADMIXTURES PERMITTED WITHOUT APPROVAL. FOR CONCRETE WITHOUT PLASTICIZER, MAXIMUM SLUMP 4 1/2" AT POINT OF PLACEMENT U.N.O. IF PLASTICIZER IS USED, A HIGHER FINAL SLUMP MAY BE ALLOWED UPON STRUCTURAL ENGINEER'S APPROVAL.

FOR REINFORCING INFORMATION, SEE REINFORCING SECTION OF G.S.N., PLANS, SCHEDULES AND DETAILS.

FLY ASH – SHALL BE LIMITED TO 50% OF TOTAL CEMENTITIOUS MATERIALS BY WEIGHT.

TEST DATA FOR EACH CONCRETE MIX SHALL BE SUBMITTED FOR REVIEW PER CHAPTER 5 OF ACI 318. REFERENCE FIGURE R5.3 FOR SUBMITTAL REQUIREMENTS AND OPTIONS. CONCRETE MIX DESIGNS THAT ARE SUBMITTED WITHOUT THE APPROPRIATE TEST DATA CANNOT BE REVIEWED.

IT IS ACCEPTABLE AND INTENDED TO USE EARTH CUTS FOR THE DRILLED PIER FOOTING AND SPREAD FOOTING. THE FOOTING DESIGNS INDICATED ON THIS SHEET DO NOT APPLY IF THE EARTH CUTS ARE UNSTABLE AND/OR DO NOT STAND ON THEIR OWN.

THE FOOTINGS INDICATED ON THIS SHEET DO NOT APPLY WHERE ORGANIC FILL MATERIALS EXIST.

CONCRETE SHALL BE ADEQUATELY VIBRATED AROUND THE EMBEDDED STEEL COLUMNS TO ENSURE THE CONCRETE HAS COMPLETELY SURROUNDED THE STEEL COLUMN AND TO ENSURE THE CONCRETE AT THE INSIDE OF THE STEEL COLUMN HAS RISEN TO THE LEVEL OF THE CONCRETE IN THE REMAINDER OF THE DRILLED PIER OR SPREAD FOOTING. CONCRETE SHALL SLOPE UP SLIGHTLY TOWARDS COLUMNS TO PREVENT WATER FROM PONDING AROUND COLUMNS.

IT IS ACCEPTABLE FOR CONCRETE TO FREE FALL INTO FOOTINGS.

REINFORCING:

ALL REINFORCING PER CRSI SPECIFICATIONS AND HANDBOOK. ASTM A615 (Fy = 60 KSI / GRADE 60) DEFORMED BARS FOR ALL BARS. WHERE SHOWN ON DRAWINGS ALL GRADE 60 REINFORCING TO BE WELDED SHALL BE ASTM A706. NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER. LATEST ACI CODE AND DETAILING MANUAL APPLY. CLEAR CONCRETE COVERAGES AS FOLLOWS:

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ------------------ 3"
EXPOSED TO EARTH OR WEATHER
#6 OR LARGER -- 2"
#5 AND SMALLER -- 1 1/2"
ALL OTHER PER LATEST EDITION OF ACI 318

ALL REINFORCING SHALL BE CHAIRED TO ENSURE PROPER CLEARANCES. SUPPORT OF FOUNDATION REINFORCING MUST PROVIDE ISOLATION FROM MOISTURE/CORROSION BY USE OF A PLASTIC OR CONCRETE CHAIR. DUCT-TAPE COVERED REINFORCING IS NOT AN ACCEPTABLE CHAIR.

ALL DIMENSIONS REFERENCED IN DRAWINGS AS "CLEAR" SHALL BE FROM FACE OF STRUCTURE TO EDGE OF REINFORCING, AND SHALL NOT BE LESS THAN STATED, NOR GREATER THAN "CLEAR" DIMENSION PLUS 3/8". ALL OTHERS SHALL BE PLUS OR MINUS 1/4" TYPICAL UNLESS NOTED OTHERWISE.

FIELD BENDING OR STRAIGHTENING OF DEFORMED BARS SHALL BE LIMITED TO #5 BARS AND SMALLER AND SHALL BE FIELD BENT OR STRAIGHTENED ONLY ONCE. ANY BEND SHALL BE LIMITED TO 90 DEGREES. IF FIELD BENDING OR STRAIGHTENING OF #6 BARS OR LARGER IS REQUIRED, OR IF A SECOND BEND IS REQUIRED FOR #5 BARS AND SMALLER, HEAT SHALL BE APPLIED FOR BENDING OR STRAIGHTENING. CONTRACTOR SHALL SUBMIT PROCEDURE FOR APPLYING HEAT TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO BENDING OR STRAIGHTENING BARS.

STRUCTURAL STEEL:

GENERAL:

ALL CONSTRUCTION PER LATEST AISC STEEL CONSTRUCTION

ALL CONSTRUCTION PER LATEST AISC STEEL CONSTRUCTION MANUAL. ALL WIDE FLANGE STEEL SHALL BE ASTM A992 (Fy = 50 KSI). ALL PIPE STEEL SHALL BE ASTM A500 (Fy = 42 KSI) OR ASTM A53, TYPE E OR S, GRADE B (Fy = 35 KSI). ALL MISCELLANEOUS STEEL UNLESS NOTED OTHERWISE SHALL BE ASTM A36 (Fy = 36 KSI). IF CALLED OUT ON PLANS, Fy = 50 KSI PLATE STEEL SHALL BE ASTM A529 OR A572.

ALL STRUCTURAL ROLLED STEEL MEMBERS WITH Fy GREATER THAN 36 KSI ARE TO BE IDENTIFIED WITH AN ASTM SPECIFICATION MARK OR TAG PER IBC SEC. 2203.1.

HOLLOW STRUCTURAL SHAPE (HSS):

HSS COLUMNS ARE CALLED OUT ON THE DRAWINGS AS EITHER ASTM A500 (Fy = 46 KSI) OR ASTM A572 (Fy = 65 KSI).

ASTM A500 (Fy = 46 KSI) HSS SECTIONS ARE TO BE PRODUCED PER THE SPECIFICATIONS SET FORTH IN AISC.

ASTM A572 (Fy = 65 KSI) HSS SECTIONS ARE TO BE PRODUCED BY DIRECT-FORMING OR FOLDING OF THE PLATE FOLLOWED BY AN ELECTRIC RESISTANCE WELD ALONG THE SEAM. INLINE INSPECTION OF THE WELD ZONE DURING PRODUCTION BY NON-DESTRUCTIVE TESTING (NDT) (ULTRASONIC INSPECTION) IS REQUIRED.

THE TERMS PIPE AND ROUND HOLLOW STRUCTURAL SHAPE (HSS) ARE USED SYNONYMOUSLY THROUGHOUT THESE DOCUMENTS ALONG WITH THE TERMS TUBE STEEL AND RECTANGULAR OR SQUARE HSS.

BOLTS:

ALL BOLTS SHALL BE ASTM A325 AND SHALL BE INSTALLED AS SLIP CRITICAL CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE. TIGHTEN BOLTS PER AISC SPECIFICATIONS. IT IS ACCEPTABLE TO USE OVERSIZE HOLES OR SLOTTED HOLES PER AISC SPECIFICATIONS.

PATENTS PENDING

WELDING:

UNLESS NOTED OTHERWISE, ALL WELDS PER LATEST EDITION OF THE AWS STANDARDS. ALL WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING AGENCY. ALL WELDING DONE BY E70 SERIES LOW HYDROGEN RODS UNLESS NOTED OTHERWISE. FOR GRADE 60 REINFORCING BARS, USE E90 SERIES. THESE DRAWINGS DO NOT DISTINGUISH BETWEEN SHOP AND FIELD WELDS; THE CONTRACTOR MAY SHOP WELD OR FIELD WELD AT THEIR DISCRETION. SHOP WELDS AND FIELD WELDS SHALL BE SHOWN ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW.

ALL FULL (COMPLETE) PENETRATION WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY.

ALL SPOT WELDS SHALL BE PER LATEST AISI AND AWS STANDARDS.

STEEL CONNECTORS:

SCREW FASTENERS:

ALL STEEL SCREWS SHALL BE IN ACCORDANCE WITH AISI-GENERAL AND AISI-NAS.
Fy = 50 ksi AND Ft = 70 ksi FOR ALL SCREWS.

1. MINIMUM SPACING OF SCREWS SHALL NOT BE LESS THAN 3 TIMES THE NOMINAL DIAMETER. MINIMUM EDGE DISTANCE FOR SCREWS SHALL NOT BE LESS THAN 1.5 TIMES THE NOMINAL SCREW DIAMETER.
2. THE HEAD OF THE SCREW OR WASHER SHALL HAVE A DIAMETER, DW, OF NOT LESS THAN 5/16". WASHERS SHALL BE AT LEAST 0.05" THICK.

SCREW NUMBER DESIGNATION	8	10	12 (12-14)	14
NOMINAL DIAMETER	0.164"	0.190"	0.216"	0.250"

COLD FORMED STRUCTURAL STEEL FRAMING:

GENERAL:

ALL COLD FORMED STEEL COMPONENTS INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH THE LATEST EDITION OF "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" BY THE AISI.

FRAMING:

ALL STRUCTURAL STEEL FRAMING MATERIAL AND ITS ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN IRON AND STEEL INSTITUTE "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBER".

ALL WELDING TO BE PERFORMED BY WELDERS HOLDING A VALID CERTIFICATE AND HAVING CURRENT EXPERIENCE IN LIGHT GAUGE STEEL. CERTIFICATES SHALL BE ISSUED BY AN ACCEPTED TESTING AGENCY. DO NOT NOTCH FLANGES OF MEMBERS WITHOUT EXPRESSED APPROVAL OF THE ENGINEER OF RECORD. ALL WELDING TO BE PERFORMED IN AN APPROVED FABRICATORS SHOP.

STRUCTURAL STEEL MEMBERS ARE FURNISHED TO A SPECIFIED MINIMUM Fy = 55,000 PSI. U.N.O. THE GRADE AND THE ASTM SPECIFICATION NUMBER OR OTHER SPECIFICATION DESIGNATION SHALL BE INDICATED BY PAINTING, DECAL, TAGGING OR OTHER SUITABLE MEANS ON EACH BUNDLE OF FABRICATED ELEMENTS. IT IS ACCEPTABLE TO USE THE Fy SHOWN ON THE MILL CERTIFICATION IN LIEU OF THE "ORDERED" Fy. IT IS ACCEPTABLE TO USE STEEL WITH Fy = 70 KSI IF THE STEEL USED IS IN THE AISI AND/OR AISC SPECIFICATION, THE ELONGATION IN A 2" COUPON IS A MINIMUM OF 10% AND THE RATIO OF Ft OVER Fy IS AT LEAST 1.08.

MILS	GAGE NO.	MIN DELIVERED THICKNESS	DESIGN THICKNESS
12	30	0.0120"	0.0126"
14	29	0.0132"	0.0139"
16	26	0.0174"	0.0183"
33	20	0.0336"	0.0354"
43	18	0.0447"	0.0470"
54	16	0.0561"	0.0590"
68	14	0.0713"	0.0750"
97	12	0.0998"	0.1050"
118	10	0.1283"	0.1350"

GENERAL NOTES:

THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. EXCEPT WHERE NOTED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER OF RECORD SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA. ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF A REGISTERED ENGINEER RECOGNIZED BY THE BUILDING CODE JURISDICTION OF THIS PROJECT.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE ARCHITECT. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL ITEMS WITH THE APPROPRIATE TRADE DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS, BUT APPLY UNLESS NOTED OTHERWISE.

CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF AN OPTION IS CHOSEN, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES, APPROVALS AND THE COORDINATION OF THE WORK WITH ALL RELATED TRADES AND SUPPLIERS.

SPECIAL INSPECTION – STRUCTURAL ONLY:

SPECIAL INSPECTION IS REQUIRED PER CHAPTER 17A OF THE CBC FOR THE FOLLOWING:

CONCRETE CONSTRUCTION:

1. CONCRETE:
A. DURING THE TAKING OF TEST SPECIMENS.
B. THE PLACEMENT OF ALL FOUNDATION CONCRETE.

2. REINFORCING STEEL: INSPECTION OF IN-PLACE REINFORCING FOR CONFORMANCE PRIOR TO THE CLOSING OF FORMS OR THE DELIVERY OF CONCRETE TO THE JOBSITE FOR THE FOLLOWING:
A. REINFORCING FOR SPREAD FOOTING AND DRILLED PIER CONCRETE FOUNDATIONS.
B. REINFORCING FOR INVERTER SLABS ON THE GROUND.

STEEL CONSTRUCTION:

1. WELDING:
A. PERIODIC VISUAL INSPECTION OF ALL FIELD WELDS.
B. CONTINUOUS INSPECTION OF ALL MULTIPASS FILLET WELDS OR SINGLE PASS FILLET WELDS LARGER THAN 5/16".
C. NON-DESTRUCTIVE TESTING OF ALL COMPLETE PENETRATION WELDS BY AN AWS CERTIFIED INDEPENDENT TESTING LABORATORY AT THE CONTRACTORS EXPENSE.
D. VERIFICATION OF VALID WELDER'S CERTIFICATES.
E. ALL STRUCTURAL STEEL FABRICATORS SHALL EMPLOY AN AWS CERTIFIED INDEPENDENT TESTING LAB TO PROVIDE SHOP WELD INSPECTIONS PER CODE. INSPECTION REPORTS SHALL BE SUBMITTED TO ENGINEER OF RECORD PRIOR TO STEEL INSTALLATION.

2. STEEL FRAMES: VERIFICATION OF BRACING, STIFFENING, MEMBER LOCATIONS, AND PROPER JOINT DETAIL APPLICATION AT ALL STEEL FRAME CONNECTIONS.

3. HIGH STRENGTH BOLTING:
A. VERIFICATION OF SLIP CRITICAL BOLT INSTALLATION FOR ASTM A325 BOLTS.

DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:

A. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATION.
B. THE SPECIAL INSPECTOR IS NOT AUTHORIZED TO APPROVE DEVIATIONS FROM THE DESIGN DRAWINGS OR SPECIFICATIONS, AND ALL DEVIATIONS MUST BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD AND/OR DSA PRIOR TO PROCEEDING WITH THE WORK. ALL REQUESTS FOR DEVIATIONS SHALL BE INITIATED BY THE CONTRACTOR VIA WRITTEN REQUEST FOR INFORMATION (RFI).
C. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE DSA AND TO THE ENGINEER OR ARCHITECT OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE DSA AND/OR THE ARCHITECT OR ENGINEER OF RECORD.
D. CONTRACTOR SHALL PROVIDE THE SPECIAL INSPECTOR ACCESS TO ALL ITEMS REQUIRING SPECIAL INSPECTION. ACCESS SHALL BE PROVIDED BY IN-PLACE LADDERS, SCAFFOLDS, LIFTS AND/OR OTHER EQUIPMENT OPERATED BY THE CONTRACTOR'S PERSONNEL AS REQUIRED FOR SAFE OBSERVATION. INSPECTOR IS NOT RESPONSIBLE OR AUTHORIZED TO OPERATE CONTRACTOR'S EQUIPMENT.
E. UPON COMPLETION OF THE ASSIGNED WORK THE ENGINEER OR ARCHITECT SHALL COMPLETE AND SIGN THE APPROPRIATE FORMS CERTIFYING THAT TO THE BEST OF THEIR KNOWLEDGE THE WORK IS IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

THE SOLAR PANELS AND THEIR ANCHORAGE SYSTEMS ARE DEFERRED ITEMS. PER TITLE 24, PART 1, SECTION 4-317 (g), THEIR DESIGNS SHALL BE REVIEWED AND APPROVED BY DSA PRIOR TO INSTALLATION. THE DEFERRED SUBMITTAL DOCUMENTS SHALL BE STAMPED AND SIGNED BY EITHER AN ARCHITECT OR REGISTERED ENGINEER WITH A VALID CALIFORNIA LICENSE. PLEASE NOTE THAT ADDITIONAL CANOPY FRAMING AND BEARING BLOCKS MAY BE REQUIRED FOR CONNECTING THE SOLAR PANEL ANCHORAGE SYSTEM TO THE CANOPY.

NOTES FOR SITE SPECIFIC PHOTOVOLTAIC (PV) INSTALLATION:

1. THESE DRAWINGS ARE FOR THE STEEL STRUCTURES SUPPORTING PV PANELS. NO PROVISIONS ARE INCLUDED IN THESE DRAWINGS FOR THE PV PANELS OR THE PV PANEL INSTALLATION.
2. THE PV PANELS AND THE PV PANEL INSTALLATION SHALL BE SUBMITTED AS A SITE SPECIFIC APPLICATION. (REFER TO THE BOX NOTE REGARDING THE SOLAR PANELS AND THEIR ANCHORAGE BEING A DEFERRED ITEM).
3. PV PANELS SHALL BE INSTALLED PER DRAWINGS THAT HAVE BEEN SUBMITTED TO AND REVIEWED/PERMITTED BY DSA. THE PV DRAWINGS SHALL PROVIDE THE MINIMUM FOLLOWING INFORMATION.

A. LOCATION ALL ELECTRICAL EQUIPMENT.
B. WIRING DIAGRAMS TO AND FROM ALL PV PANELS AND ELECTRICAL EQUIPMENT.
C. ALL GROUNDING DETAILS FOR STRUCTURES AND EQUIPMENT.
D. ALL DISCONNECTION LOCATIONS AND DETAILS.
E. EQUIPMENT WARNING LABELS FOR INVERTER OVER VOLTAGE. SINGLE 120 VOLT SUPPLY WITHOUT MULTI BRANCH CIRCUITS AND ELECTRICAL SHOCK HAZARD.

4. REFER TO CEC ARTICLE 690 FOR ADDITIONAL REQUIREMENTS AND DETAILS.

NOTE: PV SYSTEM SHALL BE MARKED. MARKING IS NEEDED TO PROVIDE EMERGENCY RESPONDERS WITH APPROPRIATE WARNING AND GUIDANCE WITH RESPECT TO ISOLATING THE SOLAR ELECTRIC SYSTEM. THIS CAN FACILITATE IDENTIFYING ENERGIZED ELECTRICAL LINES THAT CONNECT THE SOLAR PANELS TO THE INVERTER AND MAIN SERVICE DISCONNECT. THE LABEL SHALL BE OF A WEATHER-RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT. MARKING CONTENT SHALL READ: "CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED". THIS LABEL SHALL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECT IN A LOCATION CLEARLY VISIBLE FROM THE LOCATION WHERE THE LEVER IS OPERATED.

ADDITIONAL MARKING IS REQUIRED OF THE DC CIRCUIT. MARKING IS REQUIRED ON ALL INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES AND JUNCTION BOXES TO ALERT FIRE SERVICE TO AVOID CUTTING THEM. MARKING SHALL BE PLACED EVERY 10 FEET, AT TURNS AND ABOVE AND/OR BELOW PENETRATIONS AND AT ALL DC COMBINER AND JUNCTION BOXES. MARKING FOR CIRCUIT SHALL READ: "CAUTION: SOLAR CIRCUIT".

PATENTS PENDING

	GOVERNING LOAD COMBOS		M MAX(K')	V MAX(K)
	PURLIN	DL + 0.75W + 0.75Lr	4.05	0.68
	~~BEAM 3P~~	~~DL + 0.75W + 0.75Lr~~	~~50.53~~	~~6.73~~
	BEAM 4P	DL + 0.75W + 0.75Lr	99.07	9.65
10.5' CLR.	~~COLUMN AND FOOTING STRONG AXIS 3P~~	~~DL + 0.75W (MWFRS) + 0.75Lr~~	~~56.75~~	~~2.68~~
	COLUMN AND FOOTING STRONG AXIS 4P	DL + 0.75W (MWFRS) + 0.75Lr	104.46	3.64
	~~COLUMN AND FOOTING WEAK AXIS 3P~~	~~(1 + .14 SDS) DL + 0.7pE~~	~~37.80~~	~~2.69~~
	COLUMN AND FOOTING WEAK AXIS 4P	(1 + .14 SDS) DL + 0.7pE	56.71	3.67
12' CLR.	~~COLUMN AND FOOTING STRONG AXIS 3P~~	~~DL + 0.75W (MWFRS) + 0.75Lr~~	~~57.84~~	~~2.68~~
	COLUMN AND FOOTING STRONG AXIS 4P	DL + 0.75W (MWFRS) + 0.75Lr	106.04	3.65
	~~COLUMN AND FOOTING WEAK AXIS 3P~~	~~(1 + .14 SDS) DL + 0.7pE~~	~~41.95~~	~~2.69~~
	COLUMN AND FOOTING WEAK AXIS 4P	(1 + .14 SDS) DL + 0.7pE	62.39	3.68

3P = 3 PANELS, 4P = 4 PANELS

SHEET INDEX FOR 02-112000	
~~FL1~~	~~FULL LANDSCAPE GENERAL STRUCTURAL NOTES~~
~~FL2~~	~~FULL LANDSCAPE BOX BEAM~~
~~FL3~~	~~FULL LANDSCAPE BOX BEAM DETAILS~~
~~FL4~~	~~FULL LANDSCAPE BACK TO BACK~~
FP1	FULL PORTRAIT GENERAL STRUCTURAL NOTES
FP2	FULL PORTRAIT BOX BEAM
FP3	FULL PORTRAIT BOX BEAM DETAILS
FP4	FULL PORTRAIT BACK TO BACK

IDENTIFY THE OPTIONS TO BE USED BY CROSSING OUT OPTIONS NOT USED IN ANY SPECIFIC PROJECT.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP03 1 1 4 5 7 2
AC ✓ FLS 7C SS EP
DATE MAY 2 2 2012

REGISTERED PROFESSIONAL ENGINEER
PAUL S. SCOTT
S 3325
STRUCTURAL
STATE OF CALIFORNIA
3/20/12

PATENTS PENDING

PRE-CHECK (PC) DOCUMENT
CODE: 2010 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

DSA APP. NO 02-112000

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
02-112000
AC FLS SS KB
DATE 3.22.12

THESE DRAWINGS/CALCULATIONS ARE CONSIDERED PRELIMINARY –NOT FOR CONSTRUCTION OR RECORDING UNLESS THE STRUCTURAL ENGINEER OF RECORD'S SEAL IS AFFIXED WITH WRITTEN SIGNATURE.

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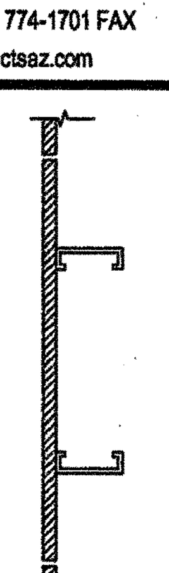
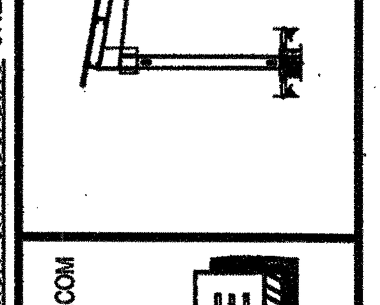


PORTRAIT SOLAR PANELS ON FULL CANTILEVER SOLAR SUPPORT STRUCTURE DSA PRE-CHECK



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DRAWING EDITION/REF JOB #

SITE PROJECT:

REVISIONS:

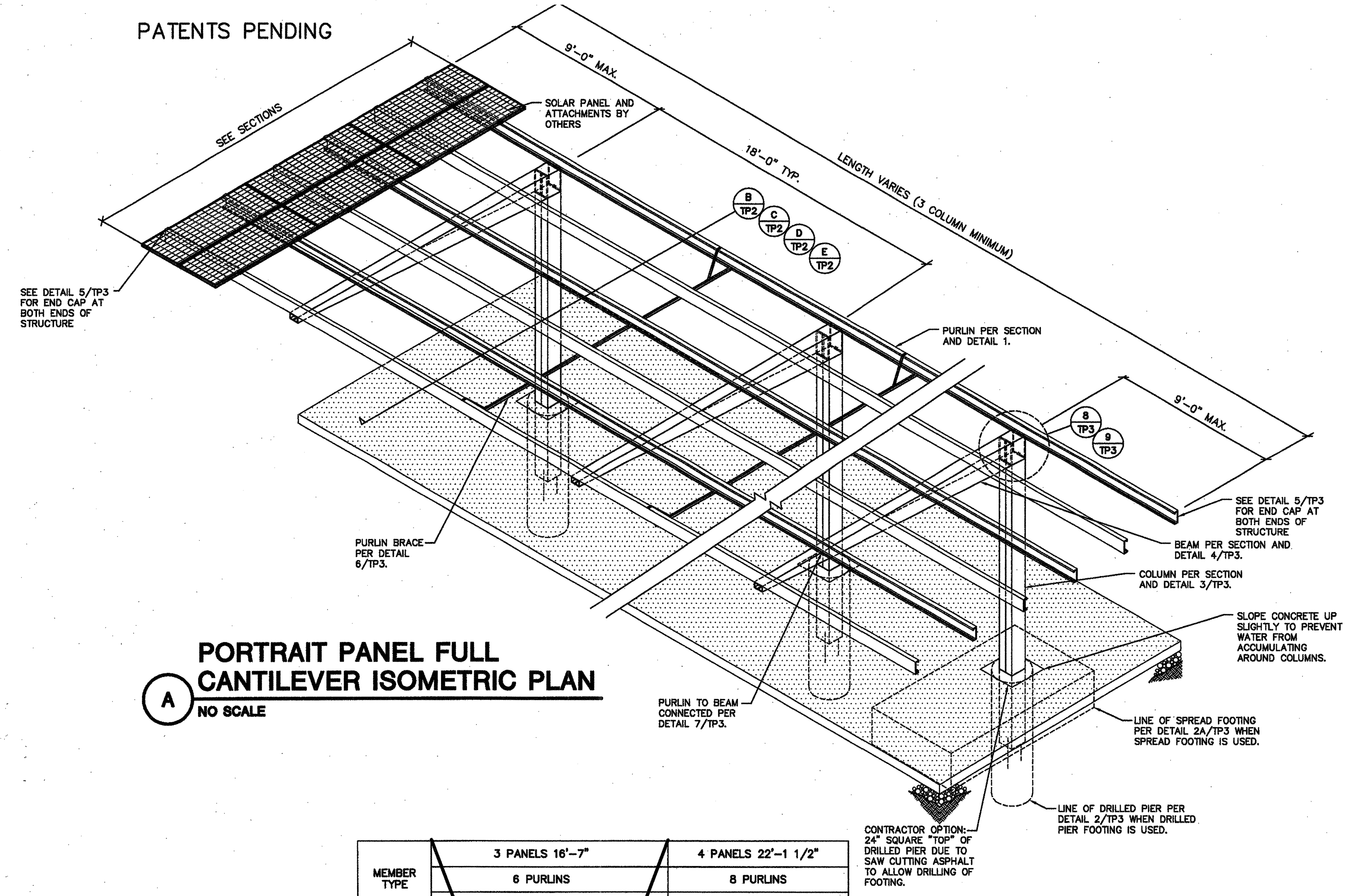
JOB NUMBER: 11-071

DRAWN:	ENGINEER:	CHECKED:
BLP	PGS	DST

DATE: 3/15/12

SHEET: FP1

PATENTS PENDING



PORTRAIT PANEL FULL CANTILEVER ISOMETRIC PLAN

(A) NO SCALE

MEMBER TYPE		3 PANELS 16'-7"	4 PANELS 22'-1 1/2"
		6 PURLINS	8 PURLINS
		85 MPH/EXPOSURE C	85 MPH/EXPOSURE C
BEAM SIZES	BEAM WITH WELDED CONNECTION PER DETAIL 8/FP3	10 GA.; 16"; 8"	10 GA.; 4 #8 BEAM REINFORCING; 8'-0" FOR Fy=55ksi; 8'-0" FOR Fy=70ksi; 4 #8 BEAM REINFORCING
	BEAM WITH BOLTED CONNECTION PER DETAIL 9/FP3	10 GA.; 16"; 8"	10 GA.; 16"; 8"; 4"; 2"; 10 GA. LIGHT GAGE HALF-CEE (A CEE SHAPE CUT IN HALF); 8'-0" FOR Fy=55ksi; 8'-0" FOR Fy=70ksi
COLUMN SIZES	CLEAR HEIGHT		
	10'-6"	8"; 16"; HSS 16"x8"x1/4" Fy= 46 ksi; HSS 16"x8"x1/4" Fy= 65 ksi	8"; 16"; HSS 16"x8"x3/8" Fy= 46 ksi; HSS 16"x8"x5/16" Fy= 65 ksi
	12'-0"	8"; 16"; HSS 16"x8"x1/4" Fy= 46 ksi; HSS 16"x8"x1/4" Fy= 65 ksi	8"; 16"; HSS 16"x8"x3/8" Fy= 46 ksi; HSS 16"x8"x5/16" Fy= 65 ksi

ARRAY 2
ARRAYS 1&3 (where occurs)

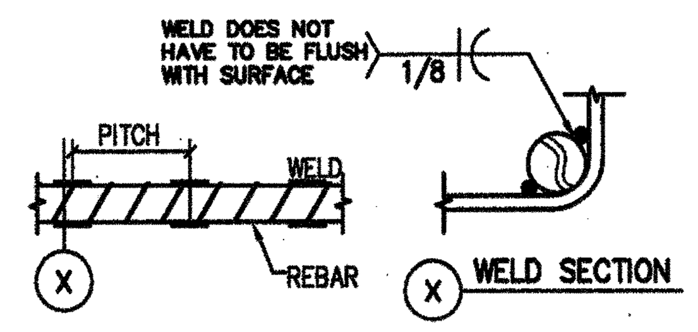
ARRAYS 1 & 3 (where occurs)

NOTES:
1. FOR BEAM REINFORCING INFORMATION NOT SHOWN, SEE DETAIL 4/FP3.
2. BEAM REINFORCEMENT WITH REBAR OPTION MAY ALSO BE USED WITH BOLTED CONNECTION.

TABLE OF BEAM AND COLUMN SIZES

REBAR SIZE	WELD LENGTH (IN) – PITCH (C.TO C. SPACING) (IN)	MINIMUM NUMBER OF 2" LONG WELDS
#8	2 – 13	7

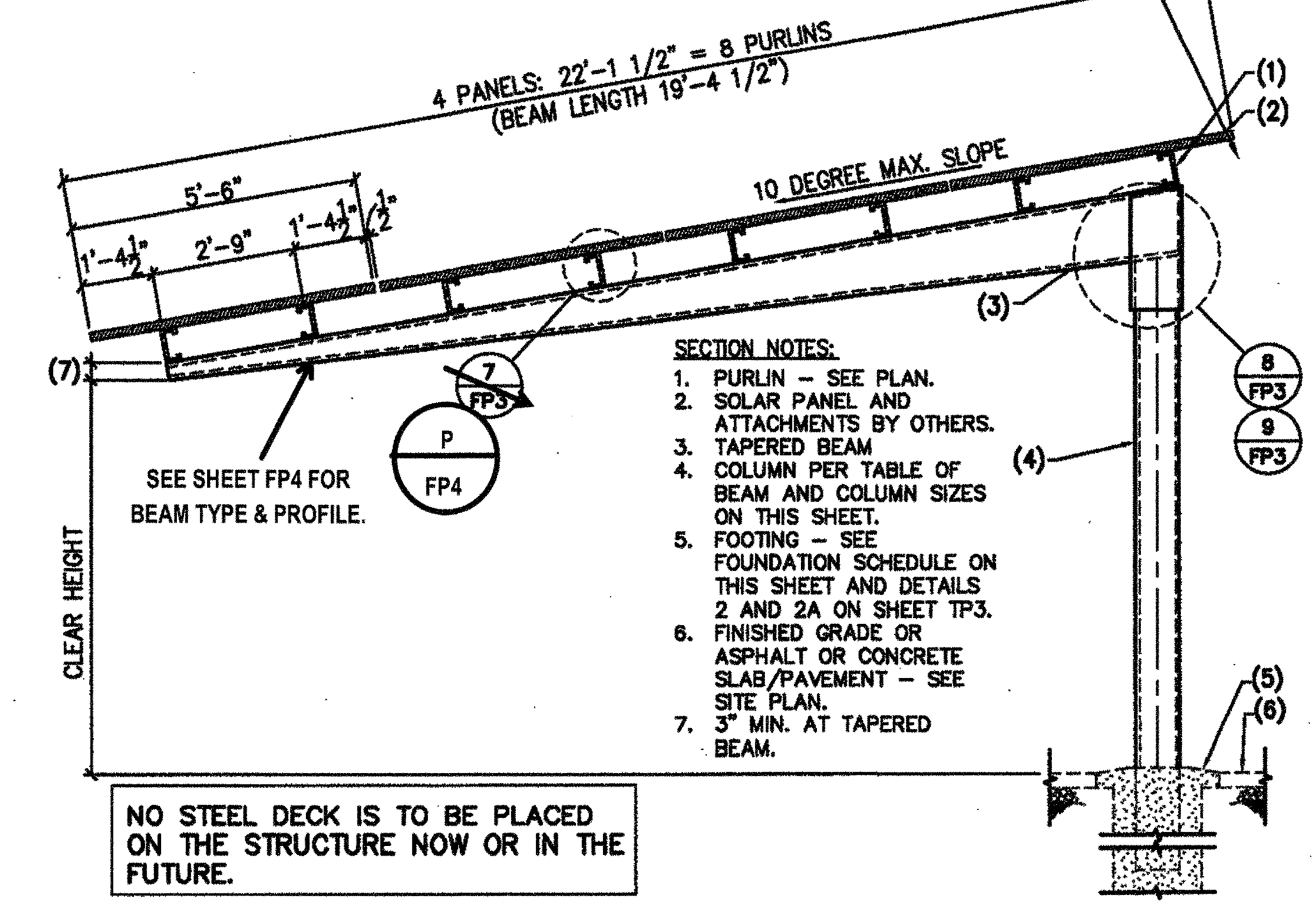
NOTE:
IT IS ACCEPTABLE TO USE A CLOSER CENTER TO CENTER SPACING THAN WHAT IS SHOWN, BUT IT IS NOT ACCEPTABLE TO SPACE THE WELDS ANY FARTHER THAN WHAT IS SHOWN.



(X) WELD SECTION

PATENTS PENDING

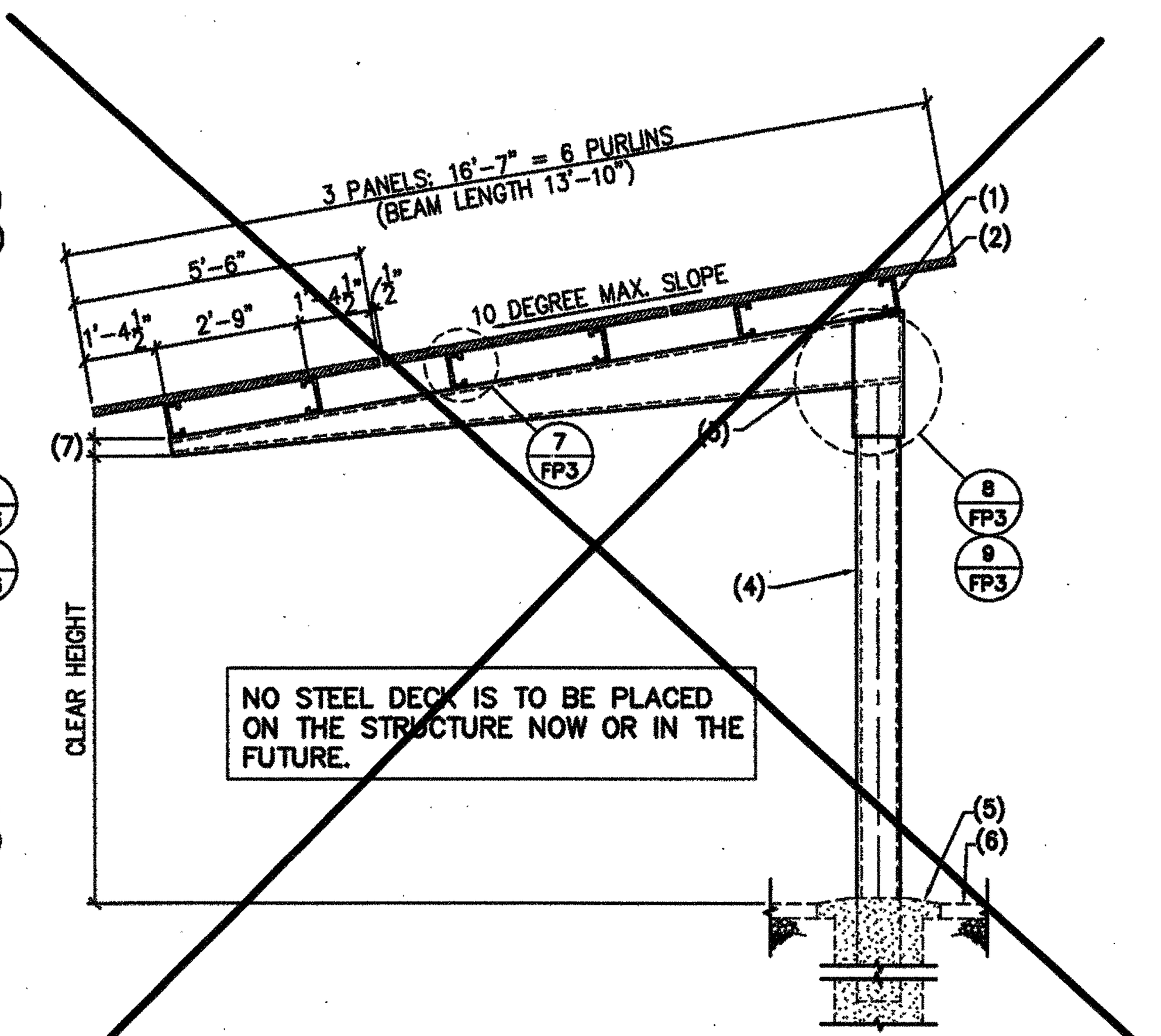
NOTE:
THE PV PANEL SIZE USED TO DETERMINE THE DIMENSIONS SHOWN ON THIS DRAWING WERE 3'-4" (40") x 5'-6" (66"). THERE IS A GAP OF 1/2" BETWEEN THE PV PANELS IN LANDSCAPE AND 1/2" GAP BETWEEN THE PANELS IN PORTRAIT. THE BEAM LENGTHS NEED TO BE REVISED IF PV PANELS OF DIFFERENT SIZES ARE USED. IF THE BEAMS GET LONGER THE STRUCTURAL ENGINEER MUST CHECK THE BEAM, COLUMN AND FOOTING. IF THE BEAMS GET SHORTER NO RECALCULATION IS REQUIRED.



SECTION NOTES:
1. PURLIN – SEE PLAN.
2. SOLAR PANEL AND ATTACHMENTS BY OTHERS.
3. TAPERED BEAM
4. COLUMN PER TABLE OF BEAM AND COLUMN SIZES ON THIS SHEET.
5. FOOTING – SEE FOUNDATION SCHEDULE ON THIS SHEET AND DETAILS 2 AND 2A ON SHEET TP3.
6. FINISHED GRADE OR ASPHALT OR CONCRETE SLAB/PAVEMENT – SEE SITE PLAN.
7. 3" MIN. AT TAPERED BEAM.

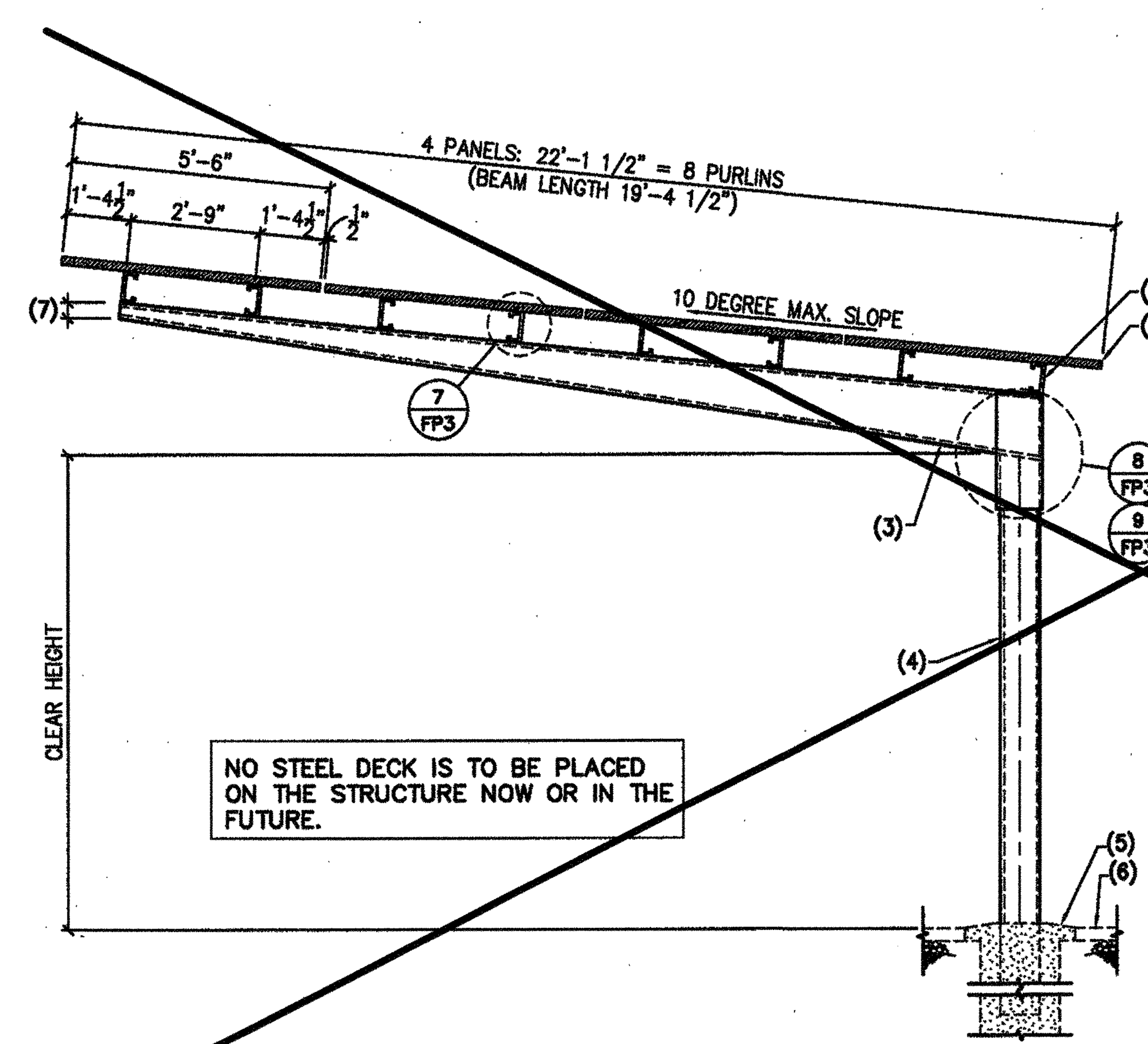
NO STEEL DECK IS TO BE PLACED ON THE STRUCTURE NOW OR IN THE FUTURE.

(B) SECTION AT PORTRAIT TAPERED FULL CANTILEVER BEAM AT 10 DEGREE SLOPE



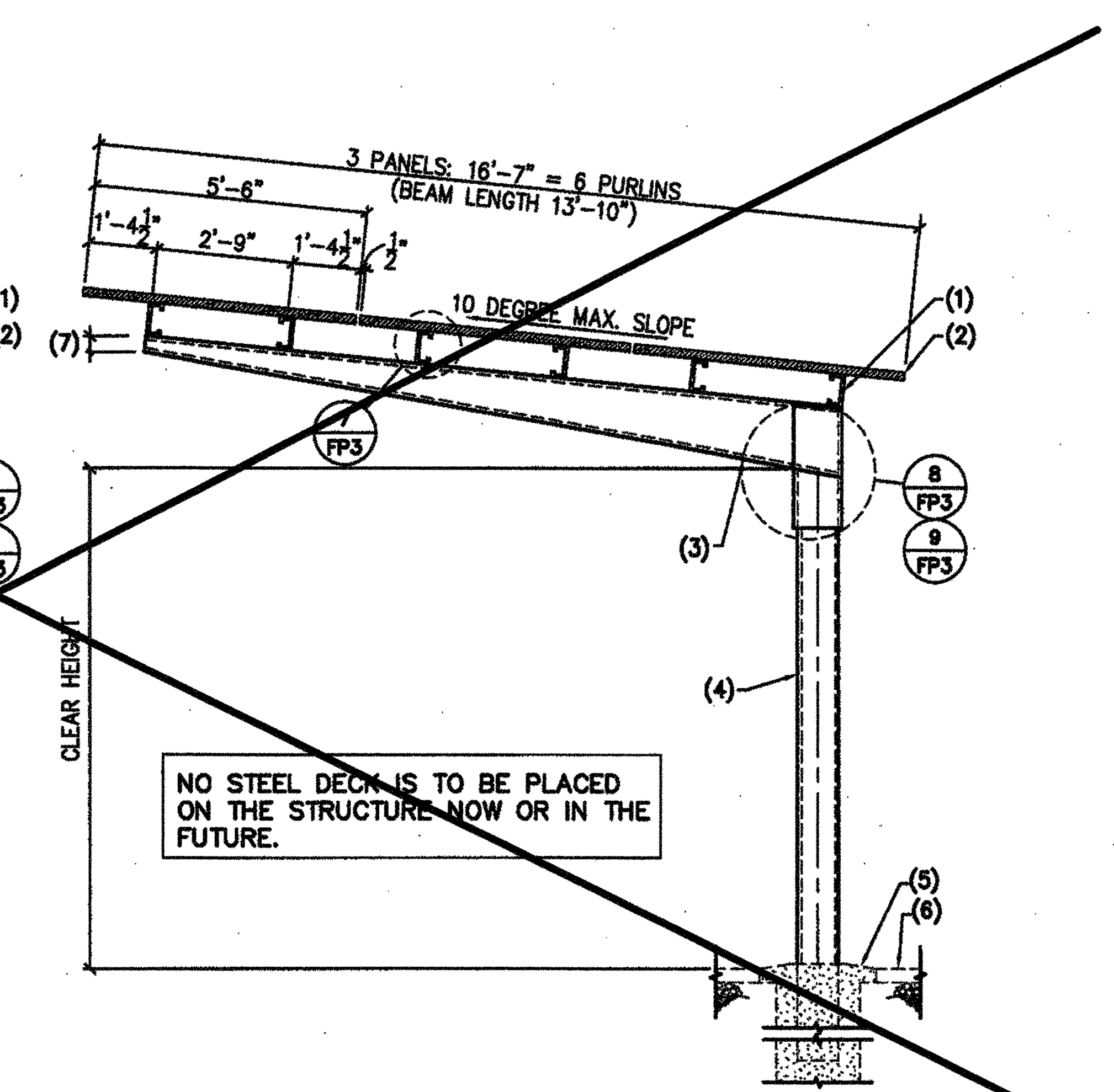
NO STEEL DECK IS TO BE PLACED ON THE STRUCTURE NOW OR IN THE FUTURE.

(C) SECTION AT PORTRAIT TAPERED FULL CANTILEVER BEAM AT 10 DEGREE SLOPE



NO STEEL DECK IS TO BE PLACED ON THE STRUCTURE NOW OR IN THE FUTURE.

(D) SECTION AT PORTRAIT TAPERED FULL CANTILEVER BEAM AT 10 DEGREE SLOPE



NO STEEL DECK IS TO BE PLACED ON THE STRUCTURE NOW OR IN THE FUTURE.

(E) SECTION AT PORTRAIT TAPERED FULL CANTILEVER BEAM AT 10 DEGREE SLOPE

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APP03 1 1 4 5 7 2
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REGISTERED PROFESSIONAL ENGINEER
S 3325
10/15/12
STRUCTURAL
STATE OF CALIFORNIA

FULL-CANT FOUNDATION SCHEDULE

NOTE: DRILLED PIER SIZE BASED ON THE ALLOWABLE LATERAL SOIL BEARING (PASSIVE) PRESSURE PER SOILS REPORT. IF NO SOILS REPORT IS PROVIDED, USE PASSIVE PRESS = 100 PSF/FT. SPREAD FOOTINGS SHALL BEAR 24" MIN. BELOW LOWEST ADJACENT FINISHED GRADE. SEE GSN AND DETAIL FOR ADDITIONAL INFORMATION.

			DRILLED PIER EMBEDMENT DEPTH (32" DIAMETER)								SPREAD FOOTING SIZE		
			PASSIVE = 100PSF/FT		PASSIVE = 200PSF/FT		PASSIVE = 300PSF/FT		PASSIVE = 400PSF/FT				
PANEL ORIENTATION	# OF PANELS	CLEAR HEIGHT (MAX.)	DIRT AND/OR ASPHALT PAVEMENT (UNCONSTRAINED)	CONCRETE PAVEMENT (CONSTRAINED)	DIRT AND/OR ASPHALT PAVEMENT (UNCONSTRAINED)	CONCRETE PAVEMENT (CONSTRAINED)	DIRT AND/OR ASPHALT PAVEMENT (UNCONSTRAINED)	CONCRETE PAVEMENT (CONSTRAINED)	DIRT AND/OR ASPHALT PAVEMENT (UNCONSTRAINED)	CONCRETE PAVEMENT (CONSTRAINED)	THICKNESS	WIDTH	LENGTH
P	3	10'-6"	12'-7"	7'-11"	10'-0"	6'-4"	8'-9"	5'-6"	7'-11"	5'-0"	56"	9'-0"	9'-6"
P	3	12'-0"	12'-8"	8'-2"	10'-1"	6'-6"	8'-10"	5'-8"	8'-0"	5'-2"	56"	9'-6"	9'-6"
P	4	10'-6"	13'-5"	9'-5"	12'-3"	7'-6"	10'-8"	6'-8"	9'-9"	5'-11"	56"	9'-6"	11'-6"
P	4	12'-0"	15'-0"	9'-8"	12'-1"	7'-6"	10'-0"	6'-7"	9'-0"	6'-0"	56"	10'-0"	11'-6"

FOUNDATION SCHEDULE

PATENTS PENDING

PRE-CHECK (PC) DOCUMENT

CODE: 2010 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

DSA APP. NO 02-112000

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PORTRAIT SOLAR PANELS ON FULL CANTILEVER SOLAR SUPPORT STRUCTURE DSA-PRE CHECK

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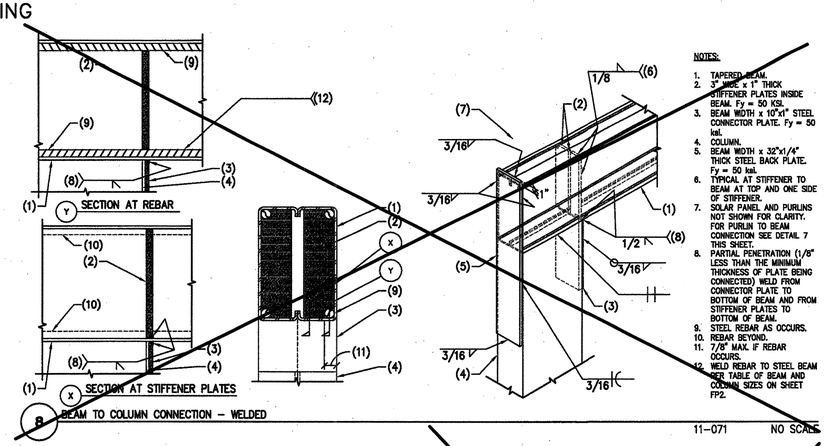
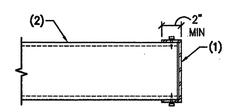
DRAWING EDITION/REF JOB #
SITE PROJECT:
REVISIONS:

JOB NUMBER:		
11-071		
DRAWN:	ENGINEER:	CHECKED:
BLP	PGS	DST
DATE: 3/15/12		
SHEET: FP2		

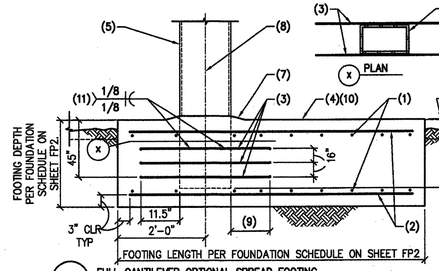
PATENTS PENDING



8 BEAM TO COLUMN CONNECTION – WELDED 11–071 NO SCALE

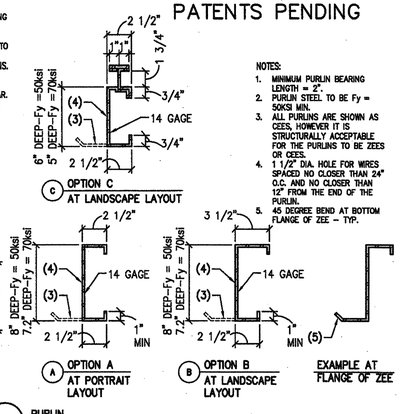


5 END CAP AT PURLIN 10–788 NO SCALE

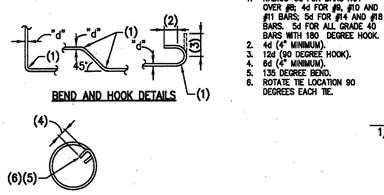


2A FULL CANTILEVER OPTIONAL SPREAD FOOTING NO SCALE

PATENTS PENDING

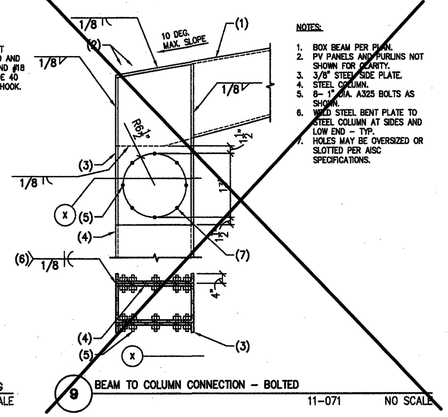


1 PURLIN 11–071 NO SCALE



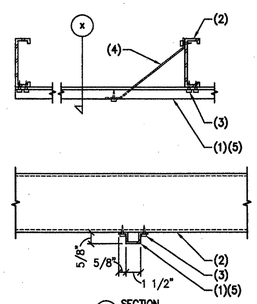
NOTES:
1. RADIUS=3d FOR BARS NOT OVER #8; 4d FOR #9, #10 AND #11 BARS; 5d FOR #14 AND #18 BARS. 5d FOR ALL GRADE 40 BARS WITH 180 DEGREE HOOK.
2. 4d (4" MINIMUM).
3. 12d (90 DEGREE HOOK).
4. 6d (4" MINIMUM).
5. 135 DEGREE BEND.
6. ROTATE TIE LOCATION 90 DEGREES EACH TIE.

10 TYPICAL REINFORCING BAR DETAILS AT DRILLED PIER REINFORCING 201–32M NO SCALE

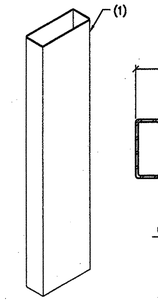


NOTES:
1. BOX BEAM PER PLAN.
2. PV PANELS AND PURLINS NOT SHOWN FOR CLARITY.
3. 3/8" STEEL SIDE PLATE.
4. STEEL COLUMN.
5. 8– 1" DIA. A325 BOLTS AS SHOWN.
6. WELD STEEL BENT PLATE TO STEEL COLUMN AT SIDES AND LOW END – TYP.
7. HOLES MAY BE OVERSIZED OR SLOTTED PER AISC SPECIFICATIONS.

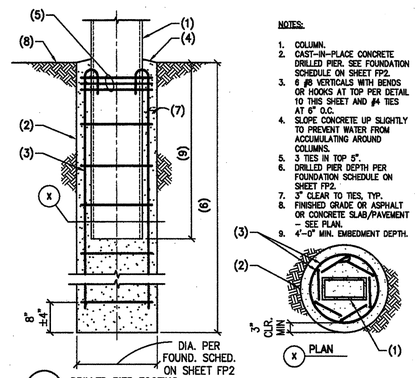
9 BEAM TO COLUMN CONNECTION – BOLTED 11–071 NO SCALE



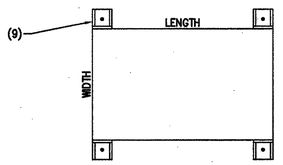
6 STEEL BRACING AT PURLINS 09–506 NO SCALE



3 COLUMN 10–788 NO SCALE



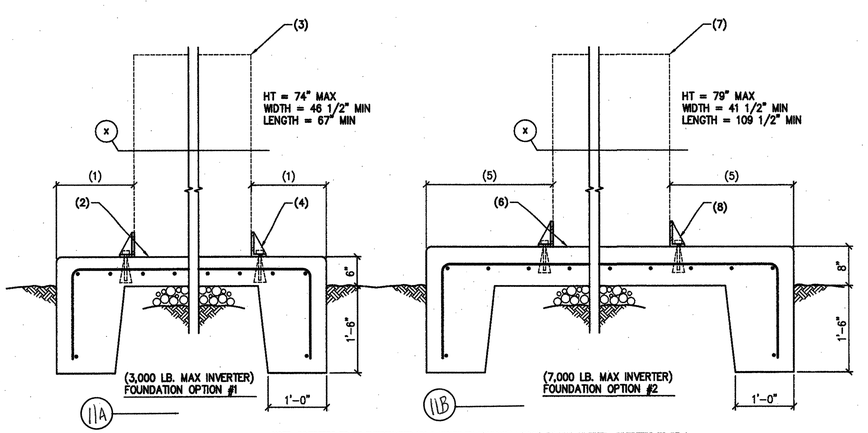
2 DRILLED PIER FOOTING 11–071 NO SCALE



NOTES:
1. 18" MIN ALL AROUND.
2. 7" SLAB WITH #4 AT 12" O.C. EACH WAY IN SLAB CENTER, LAP = 24" AT #4 AS REQUIRED.
3. INVERTER (3,000 lbs MAX.).
4. 5/8" DIA. HILTI KWIK BOLT TZ (CC ESR–1917) WITH 3 9/16" EMBEDMENT.
5. 32" MIN. ALL AROUND.
6. 9" SLAB WITH #6 @ 12" O.C. EACH WAY IN SLAB CENTER, LAP = 47" AT #6 AS REQUIRED.
7. INVERTER (7,000 lbs MAX.).
8. 5/8" DIA. HILTI KWIK BOLT TZ (CC ESR–1917) WITH 4 7/16" EMBEDMENT.
9. CONNECTION CLIP PER MFR. OR MFR. MAY PROVIDE ALTERNATE CONNECTION AND CALCULATIONS ON INVERTER ATTACHMENT TO SLAB/FOOTING.

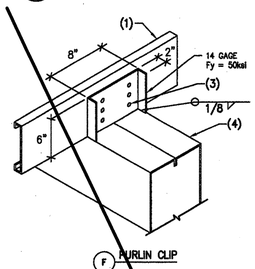
TEST LOAD FOR TZ BOLTS = 3.0K x 1.6 = 4.8K

NOTE:
MINIMUM CLEARANCE ALL AROUND TO BE AT LEAST EQUAL TO THE HEIGHT OF THE UNIT.

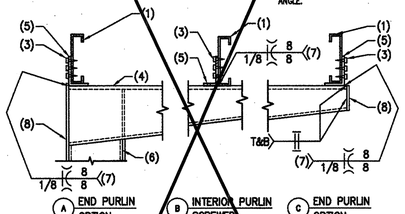


NOTE: INVERTERS TO BE SURROUNDED BY A FENCE TO RESTRICT ACCESS TO THE INVERTER. INVERTERS TO BE A MINIMUM OF 30' FROM ANY INHABITABLE BUILDING.

PATENTS PENDING 11 INVERTER/SLAB FOUNDATION 11–071 NO SCALE

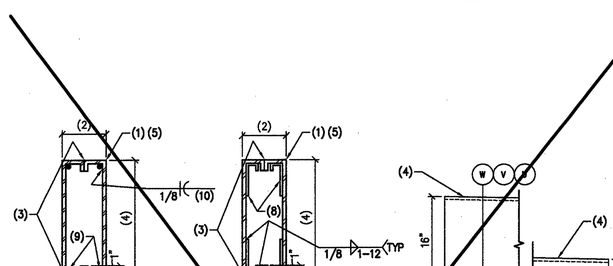


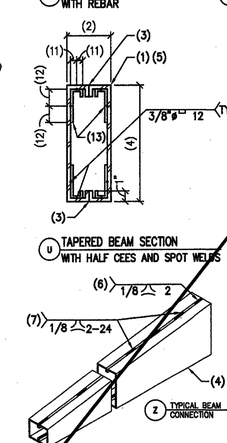
NOTES:
1. PURLIN.
2. STEEL END PLATE 1/4"x10" WIDE x 30" LONG AS OCCURS.
3. 6 – #12 x 3/4" LONG SCREWS TO PURLIN – TYP.
4. BEAM.
5. 6"x4"x0.25" STEEL CLIP ANGLE (LLV) x 8" LONG OR 1/4"x6"x4"x8" LONG. Fy = 50 KSI (MIN) OR 14 GAGE CLIP SHOWN IN DETAIL F THIS DETAIL.
6. COLUMN.
7. WELD CLIP ANGLE TO BEAM.
8. 16 GA. NON–STRUCURAL END PLATE.
9. 1/4"x9" HIGH x10" LONG END PLATE.
10. INCREASE LENGTH OF PLATE SO IT EXTENDS 6" ABOVE TOP OF STEEL BEAM AND ATTACH PURLIN TO STEEL END PLATE IN LIEU OF USING STEEL CLIP ANGLE.



NOTE:
A. ANY OF THESE CONNECTIONS SHOWN MAY BE USED AT CONTRACTOR'S OPTION.

7 PURLIN TO BEAM CONNECTION 09–506 NO SCALE





NOTES:
COMPOSITE SECTION MADE FROM 2– UNSTIFFENED CEE SECTIONS PER TABLE OF BEAM AND COLUMN SIZES ON SHEET FP2 – Fy = 55KSI.
2. DIMENSION PER TABLE OF BEAM AND COLUMN SIZES ON SHEET FP2.
3. WELD AT SEAM PER SECTION Z, THIS DETAIL.
4. TAPERED BEAM DEPTH VARIES FROM 16" TO 3".
5. TYPICAL RADIUS = 2.25".
6. TOP AND BOTTOM, EACH END.
7. TYP. TOP AND BOTTOM.
8. HALF–CEE BEAM REINFORCING. GAGE THICKNESS AND EXTENT PER TABLE OF BEAM AND COLUMN SIZES ON SHEET FP2.
9. REBAR BEAM REINFORCING. SIZE AND EXTENT PER TABLE OF BEAM AND COLUMN SIZES ON SHEET FP2.
10. WELD LENGTH AND SPACING PER TABLE OF BEAM AND COLUMN SIZES ON SHEET FP2.
11. 1" ±1/2" FOR SPOT WELD.
12. 2" ±1/2" FOR SPOT WELD.
13. STEEL HALF–CEE BEAM REINFORCING PER TABLE OF BEAM AND COLUMN SIZES ON SHEET FP2.

4 TAPERED BEAM NO SCALE

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REGISTERED PROFESSIONAL ENGINEER BRIAN L. PORTER S 3325 STRUCTURAL STATE OF CALIFORNIA
7/15/12

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PORTRAIT SOLAR PANELS ON FULL CANTILEVER SOLAR SUPPORT STRUCTURE DSA PRE–CHECK

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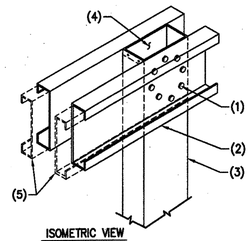
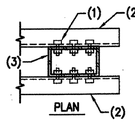
DRAWING EDITION/REF JOB #	
SITE PROJECT:	
REVISIONS:	
JOB NUMBER:	11–071
DRAWN: BLP / ENGINEER: PGS / CHECKED: DST	
DATE:	3/15/12
SHEET:	FP3

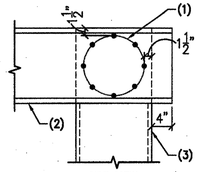
PATENTS PENDING



ISOMETRIC VIEW



PLAN

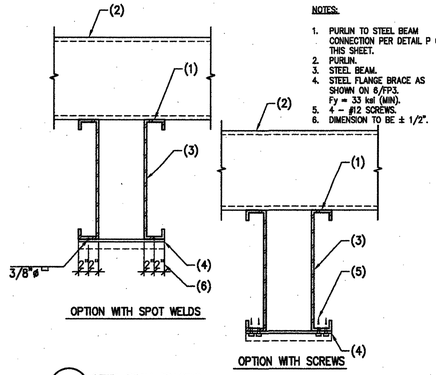


SIDE VIEW

NOTES:

1. 8–1" DIA. A325 BOLTS.
2. STEEL BEAM.
3. STEEL COLUMN.
4. 18 GAGE CAP WITH 1" CONNECTION RETURNS. AT TOP OF COLUMN, 2 – ø12 SCREWS EACH RETURN.
5. NESTED BEAM WHERE OCCURS.

(M) BACK–TO–BACK STEEL BEAMS BOLTED TO STEEL COLUMN



NOTES:

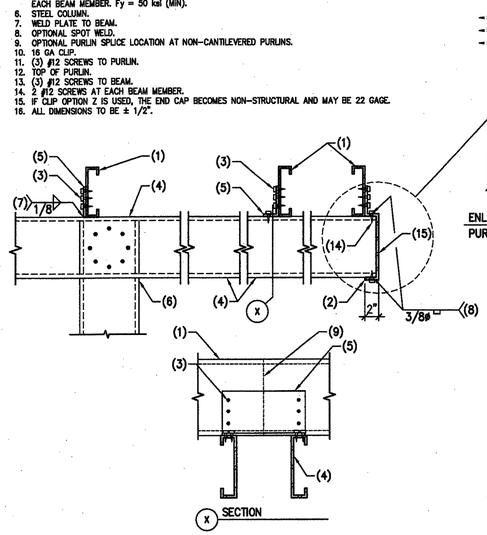
1. PURLIN TO STEEL BEAM CONNECTION PER DETAIL P ON THIS SHEET.
2. PURLIN.
3. STEEL BEAM.
4. STEEL FLANGE BRACE AS SHOWN ON 6/FP3. Fy = 33 ksi (MIN).
5. 4 – ø12 SCREWS.
6. DIMENSION TO BE ± 1/2".

(N) STEEL BEAM BRACING

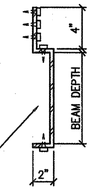
11–071 NO SCALE

NOTES:

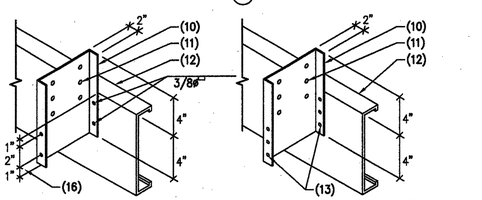
1. PURLIN.
2. 10 GA BEAM CAP PLATE W/ (4) ø12 TO BOTTOM OF BEAM AND (6) ø12 TO PURLIN.
3. (3) ø12 x 3/4" LONG SCREWS TO PURLIN.
4. STEEL BEAM.
5. 16"LONG x4"x10 GAUGE STEEL CLIP OR 16" LONG x 4"x6" (LLV) ANGLE WITH (2) ø12 SCREWS AT EACH BEAM MEMBER. Fy = 50 ksi (MIN).
6. STEEL COLUMN.
7. WELD PLATE TO BEAM.
8. OPTIONAL SPOT WELD.
9. OPTIONAL PURLIN SPLICE LOCATION AT NON–CANTILEVERED PURLINS.
10. 16 GA CLIP.
11. (3) ø12 SCREWS TO PURLIN.
12. TOP OF PURLIN.
13. (3) ø12 SCREWS TO BEAM.
14. 2 ø12 SCREWS AT EACH BEAM MEMBER.
15. IF CLIP OPTION Z IS USED, THE END CAP BECOMES NON–STRUCTURAL AND MAY BE 22 GAGE.
16. ALL DIMENSIONS TO BE ± 1/2".



X SECTION

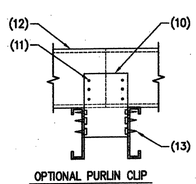


ENLARGED DETAIL OF PURLIN CLIP PER NOTE 2



OPTIONAL PURLIN CLIP WITH SPOT WELDS

OPTIONAL PURLIN CLIP WITH SCREWS



OPTIONAL PURLIN CLIP

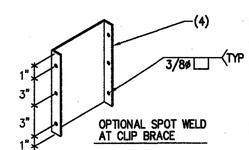
(Z) PURLIN CLIP OPTION Z

(P) PURLIN TO BEAM CONNECTION

11–071 NO SCALE

STRUCTURAL MEMBER SCHEDULE		
SOLAR CANOPY TYPE	STEEL BEAM SIZE (Fy=55 KSI)	NESTED BEAM SIZE (OPTION) (Fy=55 KSI)
~~3 PANEL FULL~~	~~(6) 16"x4"x1"x10 GA~~	
4 PANEL FULL	(2) 16"x4"x1"x10 GA	(2) 16"x4"x1"x10 GA. WITH 10 GA. NESTED BEAM (SEE DETAILS H AND K ON THIS SHEET FOR LENGTH AND LOCATION)

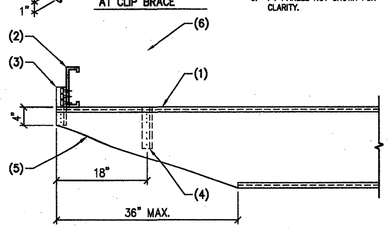
STRUCTURAL MEMBER SCHEDULE



OPTIONAL SPOT WELD AT CLIP BRACE

NOTES:

1. BEAM.
2. PURLIN.
3. PURLIN CLIP PER DETAIL P ON THIS SHEET.
4. PURLIN CLIP AS SHOWN TO BRACE BEAM WITH 6– ø12 SCREWS INTO EACH BEAM AS SHOWN.
5. CUT/COPE BEAM AS SHOWN.
6. PV PANELS NOT SHOWN FOR CLARITY.

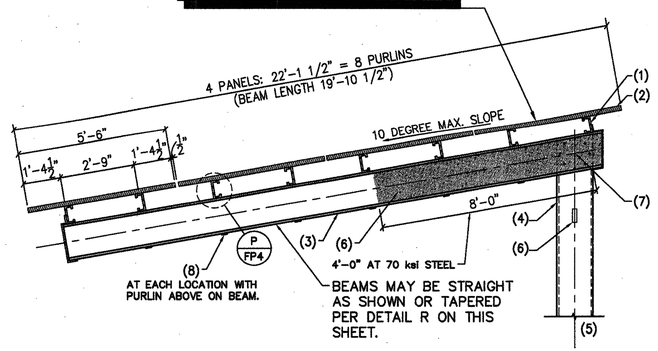


(R) BEAM TAPER OPTION

11–071 NO SCALE

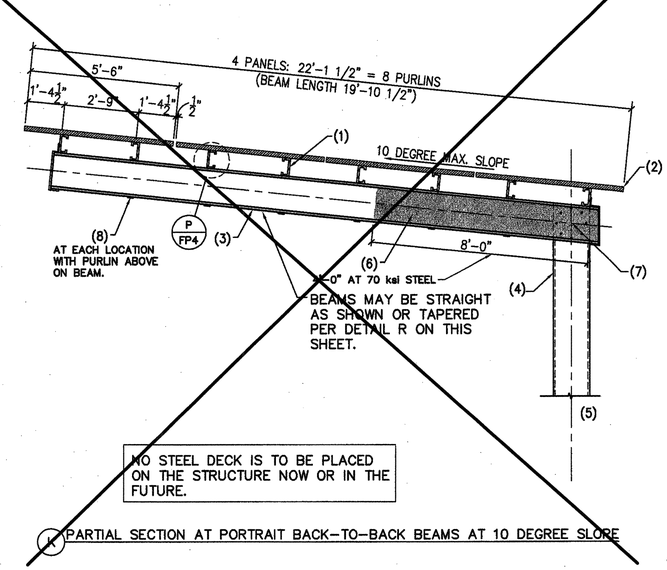
PATENTS PENDING

NOTE:
THE PV PANEL SIZE USED TO DETERMINE THE DIMENSIONS SHOWN ON THIS DRAWING WERE 3'–4" (40") x 5'–6" (66"). THERE IS A GAP OF 1/2" BETWEEN THE PV PANELS IN LANDSCAPE AND 1/2" GAP BETWEEN THE PANELS IN PORTRAIT. THE BEAM LENGTHS NEED TO BE REVISED IF PV PANELS OF DIFFERENT SIZES ARE USED. IF THE BEAMS GET LONGER THE STRUCTURAL ENGINEER MUST CHECK THE BEAM, COLUMN AND FOOTING. IF THE BEAMS GET SHORTER NO RECALCULATION IS REQUIRED.



NO STEEL DECK IS TO BE PLACED ON THE STRUCTURE NOW OR IN THE FUTURE.

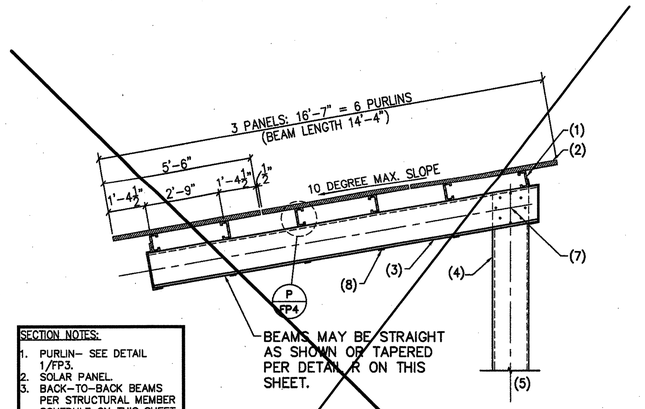
(H) PARTIAL SECTION AT PORTRAIT BACK–TO–BACK BEAMS AT 10 DEGREE SLOPE



NO STEEL DECK IS TO BE PLACED ON THE STRUCTURE NOW OR IN THE FUTURE.

(K) PARTIAL SECTION AT PORTRAIT BACK–TO–BACK BEAMS AT 10 DEGREE SLOPE

PATENTS PENDING

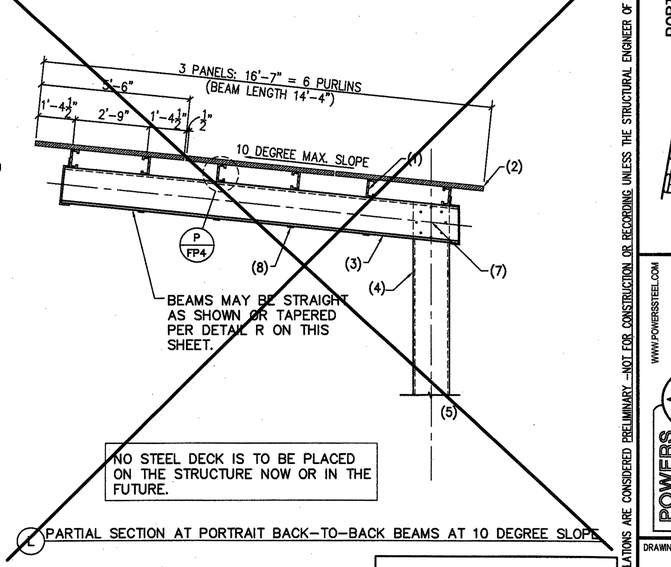


SECTION NOTES:

1. PURLIN– SEE DETAIL 1/FP3.
2. SOLAR PANEL.
3. BACK–TO–BACK BEAMS PER STRUCTURAL MEMBER SCHEDULE ON THIS SHEET.
4. COLUMN PER TABLE OF BEAM AND COLUMN SIZES ON SHEET FP2.
5. FOR FOOTING INFORMATION SEE FOUNDATION SCHEDULE ON SHEET FP2.
6. SHADED AREA INDICATES LOCATION OF NESTED BEAM WHERE OCCURS.
7. WORKPOINT – CENTERLINE OF BEAM AND COLUMN.
8. BEAM BRACE PER DETAIL N ON THIS SHEET AT EACH PURLIN.

NO STEEL DECK IS TO BE PLACED ON THE STRUCTURE NOW OR IN THE FUTURE.

(J) PARTIAL SECTION AT PORTRAIT BACK–TO–BACK BEAMS AT 10 DEGREE SLOPE



NO STEEL DECK IS TO BE PLACED ON THE STRUCTURE NOW OR IN THE FUTURE.

(L) PARTIAL SECTION AT PORTRAIT BACK–TO–BACK BEAMS AT 10 DEGREE SLOPE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP# 0 1 1 4 5 7 2
AC FLS SS KD
DATE MAY 2 2 2012

PRE-CHECK (PC) DOCUMENT
CODE: 2010 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

DSA APP. NO 02–112000

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
02-112000
AC KD FLS SS
DATE 3.22.12

REGISTERED PROFESSIONAL ENGINEER
S3325
STRUCTURAL
STATE OF CALIFORNIA
7/15/14

PATENTS PENDING

CARUSO TURLEY SCOTT INC.
consulting structural engineers
1215 W. Rio Salado Pkwy
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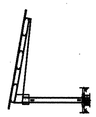
PORTRAIT SOLAR PANELS ON FULL CANTILEVER SOLAR SUPPORT STRUCTURE
DSA PRE–CHECK



POWERS STEEL & WIRE
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DRAWING EDITION/REF JOB #

SITE PROJECT:

REVISIONS:

JOB NUMBER: 11–071

DRAWN:	ENGINEER:	CHECKED:
BLP	PGS	DST

DATE: 3/15/12

SHEET: FP4

PATENTS PENDING

ABBREVIATIONS

NOTE: ABBREVIATIONS MAY OR MAY NOT HAVE PERIODS, BUT SHALL BE READ AS SAME.

A.B.	ANCHOR BOLT
A.B.C.	AGGREGATE BASE COURSE
ACI	AMERICAN CONCRETE INSTITUTE
A/C	AIR CONDITIONER
A.F.F.	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ALT.	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	AMERICAN PLYWOOD ASSOCIATION
ARCH'L	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
A.W.T.S.	AUTOMATIC WELDED THREADED STUDS
BM	BEAM
B.F.F	BELOW FINISHED FLOOR
BLK	BLOCK
B.O.B.	BOTTOM OF BEAM
B.O.D.	BOTTOM OF DECK
B.O.F.	BOTTOM OF FOOTING
BRG	BEARING
C	CAMBER
C.C.	CENTERLINE TO CENTERLINE
C & C	COMPONENTS & CLADDING
CBC	CALIFORNIA BUILDING CODE
CFS	COLD FORMED STEEL
C.G.	CENTER OF GRAVITY
C.I.P.	CAST IN PLACE
C.L.	CENTERLINE
C.L.B.	CENTERLINE OF BEAM
C.L.C.	CENTERLINE OF COLUMN
C.L.F.	CENTERLINE OF FOOTING
C.L.W.	CENTERLINE OF WALL
CLR	CLEAR
CONC	CONCRETE
CONC C.J.	CONCRETE CONTROL JOINT
CONC S.J.	CONCRETE SAWCUT JOINT
C.M.U.	CONCRETE MASONRY UNIT
CONN	CONNECTION
CONT	CONTINUOUS
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
D.F. (D.F.L.)	DOUGLAS FIR LARCH
DL	DEAD LOAD
DIA	DIAMETER
DN	DOWN
DSA	DIVISION OF STATE ARCHITECT
DWG(S)	DRAWING(S)
E.C.	END TO CENTERLINE
E.E.	END TO END
E.O.S.	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EXP. BOLT (E.B.)	EXPANSION BOLT
EXP. JT (E.J.)	EXPANSION JOINT
E.W.	EACH WAY
F.F.	FINISHED FLOOR
F.O.M.	FACE OF MEMBER
F.O.S.	FACE OF STEEL
F.O.W.	FACE OF WALL
GA	GAGE (UNIT OF MEASUREMENT)
GALV	GALVANIZED
G.S.N.	GENERAL STRUCTURAL NOTES
GLB (GLULAM)	GLUED-LAMINATED BEAM
H.F.	HEM FIR
HORIZ	HORIZONTAL REINFORCING
H.S.	HEADED STUDS
IBC	INTERNATIONAL BUILDING CODE
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
ICC	INTERNATIONAL CODE COUNCIL
I.F.W.	INSIDE FACE OF WALL
I.O.D.	INTERPRETATION OF DRAWINGS
JST	JOIST
K(KIP)	1000 POUNDS
KLF	KIPS PER LINEAR FOOT
LBS (#)	POUNDS
LGR	LEDGER
LGS	LIGHT GAGE STEEL
LGSEA	LIGHT GAGE STEEL ENGINEERS ASSOCIATION
L.O.D.	LOCATION OF DETAILS
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAS	MASONRY
MAS C.J.	MASONRY CONTROL JOINT
MAX	MAXIMUM
MBMA	METAL BUILDING MANUFACTURERS ASSOCIATION
MECH'L	MECHANICAL
MFR'D	MANUFACTURED
MFR('S)	MANUFACTURER('S)
MIN	MINIMUM
MWFRS	MAIN WIND FORCE RESISTANCE SYSTEM
N/A	NOT APPLICABLE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.F.W.	OUTSIDE FACE OF WALL
OPP	OPPOSITE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PCI	PRECAST/PRESTRESSED CONCRETE INSTITUTE
P.C.	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PLF	POUNDS PER LINEAR FOOT
±	PLUS OR MINUS
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSIONED
PTI	POST-TENSIONING INSTITUTE
REINF	REINFORCING
SDI	STEEL DECK INSTITUTE
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
SJI	STEEL JOIST INSTITUTE
SIM	SIMILAR
SQ.	SQUARE
SSMA	STEEL STUD MANUFACTURERS ASSOCIATION
STD	STANDARD
STL	STEEL
TL	TOTAL LOAD
T.O.B.	TOP OF BEAM
T.O.C.T.	TOP OF CONCRETE TOPPING
T.O.D.	TOP OF DECK
T.O.F.	TOP OF FOOTING
T.O.L.	TOP OF LEDGER
T.O.M.	TOP OF MASONRY
T.O.P.	TOP OF PLATE
T.O.P.C.	TOP OF PRECAST CONCRETE
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TPI	TRUSS PLATE INSTITUTE
TYP	TYPICAL
T&G	TONGUE AND GROOVE
UBC	UNIFORM BUILDING CODE
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL REINFORCING
WCLA	WEST COAST LUMBER ASSOCIATION
WCLIB	WEST COAST LUMBER INSPECTION BUREAU
W.W.F.	WELDED WIRE FABRIC
WWPA	WESTERN WOOD PRODUCTS ASSOCIATION
W/	WITH
W/C	WATER TO CEMENT RATIO
W/O	WITHOUT

GENERAL STRUCTURAL NOTES

Applies unless noted otherwise on drawings

BUILDING CODE:

2010 EDITION OF THE CALIFORNIA BUILDING CODE.

OCCUPANCY GROUP PER SITE-SPECIFIC DOCUMENTS. ALLOWABLE AREA AND MINIMUM SEPARATION BETWEEN STRUCTURES TO BE DETERMINED AT EACH SPECIFIC LOCATION PER CBC WHICH IS TO BE CHECKED AT BACKCHECK.

II-B CONSTRUCTION

LOADS:

ROOFS:
ROOF DEAD LOAD = ACTUAL WEIGHT OF MEMBER:
SOLAR PANEL = 3 PSF (MAX)
PURLIN = 4 PLF
FOR 10 DEGREE ROOF SLOPE:
C&C WIND LOAD = 18.9 PSF (TOWARD THE SURFACE).
C&C WIND LOAD = 20.8 PSF (AWAY FROM THE SURFACE).
MWFRS WIND LOAD = 18.9 PSF / 4.4 PSF (TOWARD THE SURFACE).
MWFRS WIND LOAD = 17.8 PSF / 0.0 PSF (AWAY FROM THE SURFACE).
ROOF LIVE LOAD = 10 PSF. DESIGN FOR 300 POUND POINT LOAD LOCATED TO CAUSE MAXIMUM MOMENTS AND SHEAR. USE THE 300 POUND LOAD WITH WIND, BUT NOT WITH 10 PSF ROOF LIVE LOAD.
NO STEEL DECK IS TO BE PLACED ON THE STRUCTURE - NOW OR IN THE FUTURE.

LATERAL:
OCCUPANCY CATEGORY II
WIND:
3 SECOND WIND GUST = 85 MPH.
WIND IMPORTANCE FACTOR = 1.0.
EXPOSURE C.
THIS DESIGN CAN BE USED FOR ANY ROOF SLOPE FROM 0 DEGREES TO 10 DEGREES.

SEISMIC:
SEISMIC IMPORTANCE FACTOR = 1.0.
SHORT PERIOD SPECTRAL ACCELERATION Ss = 2.85.
ONE SECOND SPECTRAL ACCELERATION S1 = 1.15.
REDUNDANCY FACTOR p = 1.3.
Sds = 1.005 (MAX.).
Sd1 = 1.16 (MAX.).
SEISMIC DESIGN CATEGORY D.
BASIC SEISMIC-FORCE RESISTING SYSTEM = CANTILEVERED COLUMN SYSTEMS DETAILED TO CONFORM TO THE REQUIREMENTS FOR ORDINARY STEEL MOMENT FRAMES.
RESPONSE MODIFICATION FACTOR (R)= 1.25.
ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE PROCEDURE.
Cs = 1.52.
DESIGN BASE SHEAR (6 PANEL) = 5250 LBS.
DESIGN BASE SHEAR (7 PANEL) = 6270 LBS.

FOUNDATIONS:

ALL FOOTINGS SHALL BE DESIGNED FOR THE SPECIFIC SITE. DRILLED PIER FOOTING DESIGNS ARE BASED ON THE ALLOWABLE LATERAL BEARING PRESSURES SHOWN IN DETAIL 2. THE ALLOWABLE LATERAL BEARING PRESSURE MAY BE MULTIPLIED BY 2.0 PER CBC SECTION 1806A.3.4. THE DRILLED PIER FOOTINGS ARE DESIGNED AS CONSTRAINED (SECTION 1807A.3.2.2, EQUATION 18A-2) WHERE PLACED IN A CONCRETE PAVEMENT AREA AND AS UNCONSTRAINED (SECTION 1807A.3.2.2, EQUATION 18A-1 OR CZERNIAK, WHICHEVER IS DEEPER) WHERE PLACED IN ASPHALT PAVEMENT AREAS OR DIRT AREAS.

SPREAD FOOTING DESIGNS ARE BASED ON CBC SECTION 1806A, CLASS 5 SOILS. SPREAD FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL 2 FEET MINIMUM BELOW ADJACENT EXISTING GRADE. DESIGN SOIL BEARING VALUE = 1500 PSF. SOILS ENGINEER MUST VERIFY THAT 1500 PSF SOILS (MINIMUM) ARE PRESENT AT SITE.

CONCRETE:

SPECIFIED 28 DAY COMPRESSIVE STRENGTH F'c:

FOUNDATIONS -- 3,000 PSI

GENERAL:

ALL CAST-IN-PLACE CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE ACI. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED UNLESS NOTED OTHERWISE. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED. NO OTHER ADMIXTURES PERMITTED WITHOUT APPROVAL. FOR CONCRETE WITHOUT PLASTICIZER, MAXIMUM SLUMP 4 1/2" AT POINT OF PLACEMENT U.N.O. IF PLASTICIZER IS USED, A HIGHER FINAL SLUMP MAY BE ALLOWED UPON STRUCTURAL ENGINEER'S APPROVAL.

FOR REINFORCING INFORMATION, SEE REINFORCING SECTION OF G.S.N., PLANS, SCHEDULES AND DETAILS.

FLY ASH - SHALL BE LIMITED TO 50% OF TOTAL CEMENTITIOUS MATERIALS BY WEIGHT.

TEST DATA FOR EACH CONCRETE MIX SHALL BE SUBMITTED FOR REVIEW PER CHAPTER 5 OF ACI 318. REFERENCE FIGURE R5.3 FOR SUBMITTAL REQUIREMENTS AND OPTIONS. CONCRETE MIX DESIGNS THAT ARE SUBMITTED WITHOUT THE APPROPRIATE TEST DATA CANNOT BE REVIEWED.

IT IS ACCEPTABLE AND INTENDED TO USE EARTH CUTS FOR THE DRILLED PIER FOOTING AND SPREAD FOOTING. THE FOOTING DESIGNS INDICATED ON THIS SHEET DO NOT APPLY IF THE EARTH CUTS ARE UNSTABLE AND/OR DO NOT STAND ON THEIR OWN.

THE FOOTINGS INDICATED ON THIS SHEET DO NOT APPLY WHERE ORGANIC FILL MATERIALS EXIST.

CONCRETE SHALL BE ADEQUATELY VIBRATED AROUND THE EMBEDDED STEEL COLUMNS TO ENSURE THE CONCRETE HAS COMPLETELY SURROUNDED THE STEEL COLUMN AND TO ENSURE THE CONCRETE AT THE INSIDE OF THE STEEL COLUMN HAS RISEN TO THE LEVEL OF THE CONCRETE IN THE REMAINDER OF THE DRILLED PIER OR SPREAD FOOTING. CONCRETE SHALL SLOPE UP SLIGHTLY TOWARDS COLUMNS TO PREVENT WATER FROM PONDING AROUND COLUMNS.

IT IS ACCEPTABLE FOR CONCRETE TO FREE FALL INTO FOOTINGS.

REINFORCING:

ALL REINFORCING PER CRSI SPECIFICATIONS AND HANDBOOK. ASTM A615 (Fy = 60 KSI / GRADE 60) DEFORMED BARS FOR ALL BARS. WHERE SHOWN ON DRAWINGS ALL GRADE 60 REINFORCING TO BE WELDED SHALL BE ASTM A706. NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER. LATEST ACI CODE AND DETAILING MANUAL APPLY. CLEAR CONCRETE COVERAGES AS FOLLOWS:

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ------------------- 3"
EXPOSED TO EARTH OR WEATHER
#6 OR LARGER -- 2"
#5 AND SMALLER -- 1 1/2"
ALL OTHER PER LATEST EDITION OF ACI 318

ALL REINFORCING SHALL BE CHAIRED TO ENSURE PROPER CLEARANCES. SUPPORT OF FOUNDATION REINFORCING MUST PROVIDE ISOLATION FROM MOISTURE/CORROSION BY USE OF A PLASTIC OR CONCRETE CHAIR. DUCT-TAPE COVERED REINFORCING IS NOT AN ACCEPTABLE CHAIR.

ALL DIMENSIONS REFERENCED IN DRAWINGS AS "CLEAR" SHALL BE FROM FACE OF STRUCTURE TO EDGE OF REINFORCING, AND SHALL NOT BE LESS THAN STATED, NOR GREATER THAN "CLEAR" DIMENSION PLUS 3/8". ALL OTHERS SHALL BE PLUS OR MINUS 1/4" TYPICAL UNLESS NOTED OTHERWISE.

FIELD BENDING OR STRAIGHTENING OF DEFORMED BARS SHALL BE LIMITED TO #5 BARS AND SMALLER AND SHALL BE FIELD BENT OR STRAIGHTENED ONLY ONCE. ANY BEND SHALL BE LIMITED TO 90 DEGREES. IF FIELD BENDING OR STRAIGHTENING OF #6 BARS OR LARGER IS REQUIRED, OR IF A SECOND BEND IS REQUIRED FOR #5 BARS AND SMALLER, HEAT SHALL BE APPLIED FOR BENDING OR STRAIGHTENING. CONTRACTOR SHALL SUBMIT PROCEDURE FOR APPLYING HEAT TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO BENDING OR STRAIGHTENING BARS.

STRUCTURAL STEEL:

GENERAL:

ALL CONSTRUCTION PER LATEST AISC STEEL CONSTRUCTION

ALL CONSTRUCTION PER LATEST AISC STEEL CONSTRUCTION MANUAL. ALL WIDE FLANGE STEEL SHALL BE ASTM A992 (Fy = 50 KSI). ALL PIPE STEEL SHALL BE ASTM A500 (Fy = 42 KSI) OR ASTM A53, TYPE E OR S, GRADE B (Fy = 35 KSI). ALL MISCELLANEOUS STEEL UNLESS NOTED OTHERWISE SHALL BE ASTM A36 (Fy = 36 KSI). IF CALLED OUT ON PLANS, Fy = 50 KSI PLATE STEEL SHALL BE ASTM A529 OR A572.

ALL STRUCTURAL ROLLED STEEL MEMBERS WITH Fy GREATER THAN 36 KSI ARE TO BE IDENTIFIED WITH AN ASTM SPECIFICATION MARK OR TAG PER IBC SEC. 2203.1.

HOLLOW STRUCTURAL SHAPE (HSS):

HSS COLUMNS ARE CALLED OUT ON THE DRAWINGS AS EITHER ASTM A500 (Fy = 46 KSI) OR ASTM A572 (Fy = 65 KSI).

ASTM A500 (Fy = 46 KSI) HSS SECTIONS ARE TO BE PRODUCED PER THE SPECIFICATIONS SET FORTH IN AISC.

ASTM A572 (Fy = 65 KSI) HSS SECTIONS ARE TO BE PRODUCED BY DIRECT-FORMING OR FOLDING OF THE PLATE FOLLOWED BY AN ELECTRIC RESISTANCE WELD ALONG THE SEAM. INLINE INSPECTION OF THE WELD ZONE DURING PRODUCTION BY NON-DESTRUCTIVE TESTING (NDT) (ULTRASONIC INSPECTION) IS REQUIRED.

THE TERMS PIPE AND ROUND HOLLOW STRUCTURAL SHAPE (HSS) ARE USED SYNONYMOUSLY THROUGHOUT THESE DOCUMENTS ALONG WITH THE TERMS TUBE STEEL AND RECTANGULAR OR SQUARE HSS.

BOLTS:

ALL BOLTS SHALL BE ASTM A325 AND SHALL BE INSTALLED AS SLIP CRITICAL CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE. TIGHTEN BOLTS PER AISC SPECIFICATIONS. IT IS ACCEPTABLE TO USE OVERSIZE HOLES OR SLOTTED HOLES PER AISC SPECIFICATIONS.

PATENTS PENDING

WELDING:

UNLESS NOTED OTHERWISE, ALL WELDS PER LATEST EDITION OF THE AWS STANDARDS. ALL WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING AGENCY. ALL WELDING DONE BY E70 SERIES LOW HYDROGEN RODS UNLESS NOTED OTHERWISE. FOR GRADE 60 REINFORCING BARS, USE E90 SERIES. THESE DRAWINGS DO NOT DISTINGUISH BETWEEN SHOP AND FIELD WELDS; THE CONTRACTOR MAY SHOP WELD OR FIELD WELD AT THEIR DISCRETION. SHOP WELDS AND FIELD WELDS SHALL BE SHOWN ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW.

ALL FULL (COMPLETE) PENETRATION WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY.

ALL SPOT WELDS SHALL BE PER LATEST AISI AND AWS STANDARDS.

STEEL CONNECTORS:

SCREW FASTENERS:

ALL STEEL SCREWS SHALL BE IN ACCORDANCE WITH AISI-GENERAL AND AISI-NAS.
Fy = 50 ksi AND Ft = 70 ksi FOR ALL SCREWS.

1. MINIMUM SPACING OF SCREWS SHALL NOT BE LESS THAN 3 TIMES THE NOMINAL DIAMETER. MINIMUM EDGE DISTANCE FOR SCREWS SHALL NOT BE LESS THAN 1.5 TIMES THE NOMINAL SCREW DIAMETER.
2. THE HEAD OF THE SCREW OR WASHER SHALL HAVE A DIAMETER, DW, OF NOT LESS THAN 5/16". WASHERS SHALL BE AT LEAST 0.05" THICK.

SCREW NUMBER DESIGNATION	8	10	12 (12-14)	14
NOMINAL DIAMETER	0.164"	0.190"	0.216"	0.250"

COLD FORMED STRUCTURAL STEEL FRAMING:

GENERAL:

ALL COLD FORMED STEEL COMPONENTS INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH THE LATEST EDITION OF "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" BY THE AISI.

FRAMING:

ALL STRUCTURAL STEEL FRAMING MATERIAL AND ITS ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN IRON AND STEEL INSTITUTE "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBER".

ALL WELDING TO BE PERFORMED BY WELDERS HOLDING A VALID CERTIFICATE AND HAVING CURRENT EXPERIENCE IN LIGHT GAUGE STEEL. CERTIFICATES SHALL BE ISSUED BY AN ACCEPTED TESTING AGENCY. DO NOT NOTCH FLANGES OF MEMBERS WITHOUT EXPRESSED APPROVAL OF THE ENGINEER OF RECORD. ALL WELDING TO BE PERFORMED IN AN APPROVED FABRICATORS SHOP.

STRUCTURAL STEEL MEMBERS ARE FURNISHED TO A SPECIFIED MINIMUM Fy = 55,000 PSI. U.N.O. THE GRADE AND THE ASTM SPECIFICATION NUMBER OR OTHER SPECIFICATION DESIGNATION SHALL BE INDICATED BY PAINTING, DECAL, TAGGING OR OTHER SUITABLE MEANS ON EACH BUNDLE OF FABRICATED ELEMENTS. IT IS ACCEPTABLE TO USE THE Fy SHOWN ON THE MILL CERTIFICATION IN LIEU OF THE "ORDERED" Fy. IT IS ACCEPTABLE TO USE STEEL WITH Fy = 70 KSI IF THE STEEL USED IS IN THE AISI AND/OR AISC SPECIFICATION, THE ELONGATION IN A 2" COUPON IS A MINIMUM OF 10% AND THE RATIO OF Ft OVER Fy IS AT LEAST 1.08.

MILS	GAGE NO.	MIN DELIVERED THICKNESS	DESIGN THICKNESS
12	30	0.0120"	0.0126"
14	29	0.0132"	0.0139"
16	26	0.0174"	0.0183"
33	20	0.0336"	0.0354"
43	18	0.0447"	0.0470"
54	16	0.0561"	0.0590"
68	14	0.0713"	0.0750"
97	12	0.0998"	0.1050"
118	10	0.1283"	0.1350"

GENERAL NOTES:

THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. EXCEPT WHERE NOTED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER OF RECORD SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA. ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF A REGISTERED ENGINEER RECOGNIZED BY THE BUILDING CODE JURISDICTION OF THIS PROJECT.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE ARCHITECT. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL ITEMS WITH THE APPROPRIATE TRADE DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS, BUT APPLY UNLESS NOTED OTHERWISE.

CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF AN OPTION IS CHOSEN, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES, APPROVALS AND THE COORDINATION OF THE WORK WITH ALL RELATED TRADES AND SUPPLIERS.

SPECIAL INSPECTION - STRUCTURAL ONLY:

SPECIAL INSPECTION IS REQUIRED PER CHAPTER 17A OF THE CBC FOR THE FOLLOWING:

CONCRETE CONSTRUCTION:

1. CONCRETE:
A. DURING THE TAKING OF TEST SPECIMENS.
B. THE PLACEMENT OF ALL FOUNDATION CONCRETE.

2. REINFORCING STEEL: INSPECTION OF IN-PLACE REINFORCING FOR CONFORMANCE PRIOR TO THE CLOSING OF FORMS OR THE DELIVERY OF CONCRETE TO THE JOBSITE FOR THE FOLLOWING:
A. REINFORCING FOR SPREAD FOOTING AND DRILLED PIER CONCRETE FOUNDATIONS.
B. REINFORCING FOR INVERTER SLABS ON THE GROUND.

STEEL CONSTRUCTION:

1. WELDING:
A. PERIODIC VISUAL INSPECTION OF ALL FIELD WELDS.
B. CONTINUOUS INSPECTION OF ALL MULTIPASS FILLET WELDS OR SINGLE PASS FILLET WELDS LARGER THAN 5/16".
C. NON-DESTRUCTIVE TESTING OF ALL COMPLETE PENETRATION WELDS BY AN AWS CERTIFIED INDEPENDENT TESTING LABORATORY AT THE CONTRACTORS EXPENSE.
D. VERIFICATION OF VALID WELDER'S CERTIFICATES.
E. ALL STRUCTURAL STEEL FABRICATORS SHALL EMPLOY AN AWS CERTIFIED INDEPENDENT TESTING LAB TO PROVIDE SHOP WELD INSPECTIONS PER CODE. INSPECTION REPORTS SHALL BE SUBMITTED TO ENGINEER OF RECORD PRIOR TO STEEL INSTALLATION.

2. STEEL FRAMES: VERIFICATION OF BRACING, STIFFENING, MEMBER LOCATIONS, AND PROPER JOINT DETAIL APPLICATION AT ALL STEEL FRAME CONNECTIONS.

3. HIGH STRENGTH BOLTING:
A. VERIFICATION OF SLIP CRITICAL BOLT INSTALLATION FOR ASTM A325 BOLTS.

DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:

A. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATION.
B. THE SPECIAL INSPECTOR IS NOT AUTHORIZED TO APPROVE DEVIATIONS FROM THE DESIGN DRAWINGS OR SPECIFICATIONS, AND ALL DEVIATIONS MUST BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD AND/OR DSA PRIOR TO PROCEEDING WITH THE WORK. ALL REQUESTS FOR DEVIATIONS SHALL BE INITIATED BY THE CONTRACTOR VIA WRITTEN REQUEST FOR INFORMATION (RFI).
C. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE DSA AND TO THE ENGINEER OR ARCHITECT OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE DSA AND/OR THE ARCHITECT OR ENGINEER OF RECORD.
D. CONTRACTOR SHALL PROVIDE THE SPECIAL INSPECTOR ACCESS TO ALL ITEMS REQUIRING SPECIAL INSPECTION. ACCESS SHALL BE PROVIDED BY IN-PLACE LADDERS, SCAFFOLDS, LIFTS AND/OR OTHER EQUIPMENT OPERATED BY THE CONTRACTOR'S PERSONNEL AS REQUIRED FOR SAFE OBSERVATION. INSPECTOR IS NOT RESPONSIBLE OR AUTHORIZED TO OPERATE CONTRACTOR'S EQUIPMENT.
E. UPON COMPLETION OF THE ASSIGNED WORK THE ENGINEER OR ARCHITECT SHALL COMPLETE AND SIGN THE APPROPRIATE FORMS CERTIFYING THAT TO THE BEST OF THEIR KNOWLEDGE THE WORK IS IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

THE SOLAR PANELS AND THEIR ANCHORAGE SYSTEMS ARE DEFERRED ITEMS. PER TITLE 24, PART 1, SECTION 4-317 (g), THEIR DESIGNS SHALL BE REVIEWED AND APPROVED BY DSA PRIOR TO INSTALLATION. THE DEFERRED SUBMITTAL DOCUMENTS SHALL BE STAMPED AND SIGNED BY EITHER AN ARCHITECT OR REGISTERED ENGINEER WITH A VALID CALIFORNIA LICENSE. PLEASE NOTE THAT ADDITIONAL CANOPY FRAMING AND BEARING BLOCKS MAY BE REQUIRED FOR CONNECTING THE SOLAR PANEL ANCHORAGE SYSTEM TO THE CANOPY.

NOTES FOR SITE SPECIFIC PHOTOVOLTAIC (PV) INSTALLATION:

1. THESE DRAWINGS ARE FOR THE STEEL STRUCTURES SUPPORTING PV PANELS. NO PROVISIONS ARE INCLUDED IN THESE DRAWINGS FOR THE PV PANELS OR THE PV PANEL INSTALLATION.
2. THE PV PANELS AND THE PV PANEL INSTALLATION SHALL BE SUBMITTED AS A SITE SPECIFIC APPLICATION. (REFER TO THE BOX NOTE REGARDING THE SOLAR PANELS AND THEIR ANCHORAGE BEING A DEFERRED ITEM).
3. PV PANELS SHALL BE INSTALLED PER DRAWINGS THAT HAVE BEEN SUBMITTED TO AND REVIEWED/PERMITTED BY DSA. THE PV DRAWINGS SHALL PROVIDE THE MINIMUM FOLLOWING INFORMATION.

A. LOCATION ALL ELECTRICAL EQUIPMENT.
B. WIRING DIAGRAMS TO AND FROM ALL PV PANELS AND ELECTRICAL EQUIPMENT.
C. ALL GROUNDING DETAILS FOR STRUCTURES AND EQUIPMENT.
D. ALL DISCONNECTION LOCATIONS AND DETAILS.
E. EQUIPMENT WARNING LABELS FOR INVERTER OVER VOLTAGE. SINGLE 120 VOLT SUPPLY WITHOUT MULTI BRANCH CIRCUITS AND ELECTRICAL SHOCK HAZARD.

4. REFER TO CEC ARTICLE 690 FOR ADDITIONAL REQUIREMENTS AND DETAILS.

NOTE: PV SYSTEM SHALL BE MARKED. MARKING IS NEEDED TO PROVIDE EMERGENCY RESPONDERS WITH APPROPRIATE WARNING AND GUIDANCE WITH RESPECT TO ISOLATING THE SOLAR ELECTRIC SYSTEM. THIS CAN FACILITATE IDENTIFYING ENERGIZED ELECTRICAL LINES THAT CONNECT THE SOLAR PANELS TO THE INVERTER AND MAIN SERVICE DISCONNECT. THE LABEL SHALL BE OF A WEATHER-RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT. MARKING CONTENT SHALL READ: "CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED". THIS LABEL SHALL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECT IN A LOCATION CLEARLY VISIBLE FROM THE LOCATION WHERE THE LEVER IS OPERATED.

ADDITIONAL MARKING IS REQUIRED OF THE DC CIRCUIT. MARKING IS REQUIRED ON ALL INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES AND JUNCTION BOXES TO ALERT FIRE SERVICE TO AVOID CUTTING THEM. MARKING SHALL BE PLACED EVERY 10 FEET, AT TURNS AND ABOVE AND/OR BELOW PENETRATIONS AND AT ALL DC COMBINER AND JUNCTION BOXES. MARKING FOR CIRCUIT SHALL READ: "CAUTION: SOLAR CIRCUIT".

PATENTS PENDING

	GOVERNING LOAD COMBOS		M MAX(K')	V MAX(K)
	PURLIN	DL + 0.75W + 0.75Lr	4.05	0.68
	~~BEAM 6P~~	~~DL + 0.75W + 0.75Lr~~	~~67.12~~	~~8.17~~
	BEAM 7P	DL + 0.75W + 0.75Lr	91.88	9.59
10.5' CLR.	~~COLUMN AND FOOTING STRONG AXIS 6P~~	~~(1 + .14 SDS) DL + 0.7pE~~	~~68.11~~	~~5.18~~
	COLUMN AND FOOTING STRONG AXIS 7P	(1 + .14 SDS) DL + 0.7pE	84.41	6.19
	~~COLUMN AND FOOTING WEAK AXIS 6P~~	~~(1 + .14 SDS) DL + 0.7pE~~	~~68.88~~	~~5.24~~
	COLUMN AND FOOTING WEAK AXIS 7P	(1 + .14 SDS) DL + 0.7pE	85.47	6.27
12' CLR.	COLUMN AND FOOTING STRONG AXIS 6P	(1 + .14 SDS) DL + 0.7pE	75.92	5.19
	COLUMN AND FOOTING STRONG AXIS 7P	(1 + .14 SDS) DL + 0.7pE	93.70	6.19
	COLUMN AND FOOTING WEAK AXIS 6P	(1 + .14 SDS) DL + 0.7pE	76.86	5.25
	COLUMN AND FOOTING WEAK AXIS 7P	(1 + .14 SDS) DL + 0.7pE	94.88	6.27

6P = 6 PANELS, 7P = 7 PANELS

SHEET INDEX FOR 02-111999	
TL1	TEE LANDSCAPE GENERAL STRUCTURAL NOTES
TL2	TEE LANDSCAPE BOX BEAM
TL3	TEE LANDSCAPE BOX BEAM DETAILS
TL4	TEE LANDSCAPE BACK TO BACK
TP1	TEE PORTRAIT GENERAL STRUCTURAL NOTES
TP2	TEE PORTRAIT BOX BEAM
TP3	TEE PORTRAIT BOX BEAM DETAILS
TP4	TEE PORTRAIT BACK TO BACK

IDENTIFY THE OPTIONS TO BE USED BY CROSSING OUT OPTIONS NOT USED IN ANY SPECIFIC PROJECT.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP03 1 1 4 5 7 2
AC ✓ FLS TC SS ED
DATE MAY 2 2 2012

REGISTERED PROFESSIONAL ENGINEER
PAUL G. SCOTT
S 3325
3/20/12
STRUCTURAL
STATE OF CALIFORNIA

PATENTS PENDING

PRE-CHECK (PC) DOCUMENT

CODE: 2010 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

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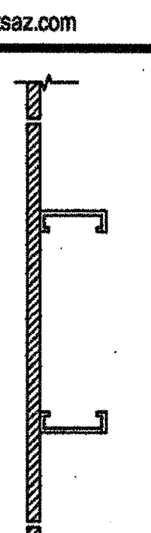

PORTRAIT SOLAR PANELS ON TEE
SOLAR SUPPORT STRUCTURE
DSA PRE-CHECK

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POWERS STEEL & WIRE
PATENTS PENDING

DRAWING EDITION/REF JOB #

SITE PROJECT:

REVISIONS:

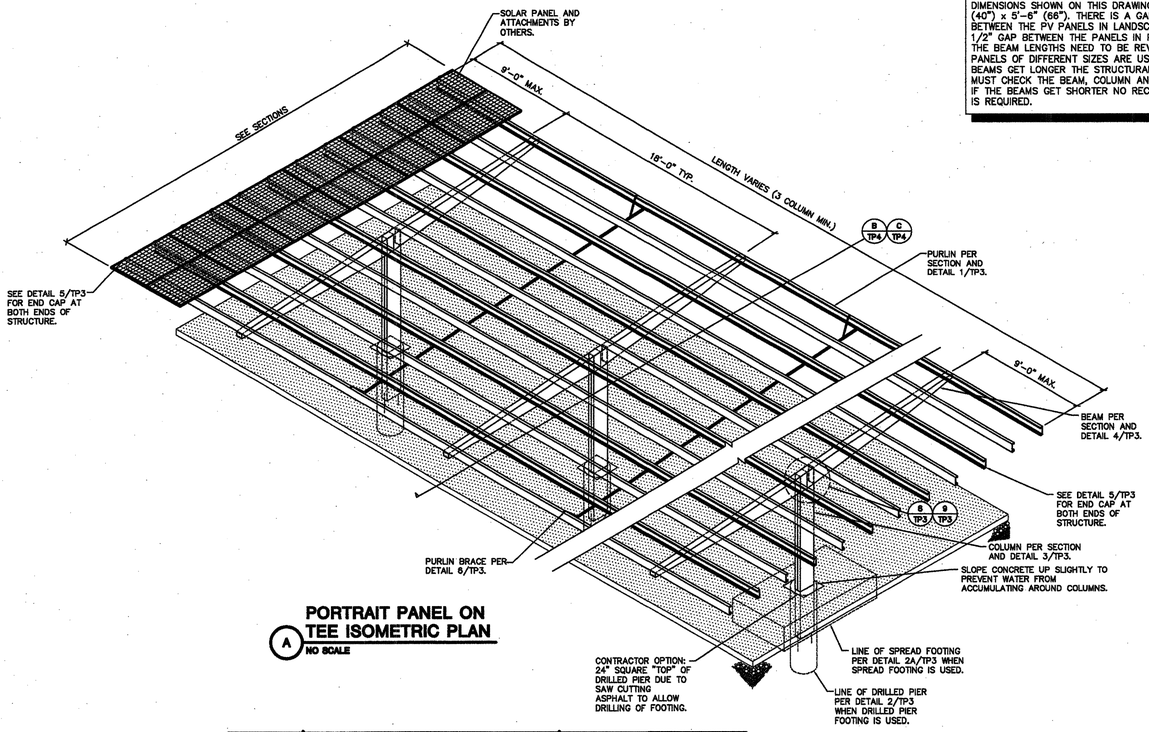
JOB NUMBER: 11-071

DRAWN:	ENGINEER:	CHECKED:
BLP	PGS	DST

DATE: 3/15/12

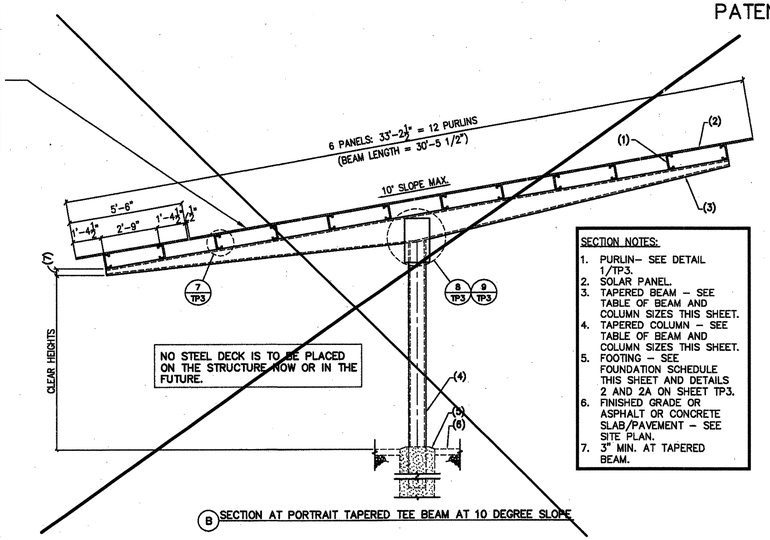
SHEET: TP1

PATENTS PENDING



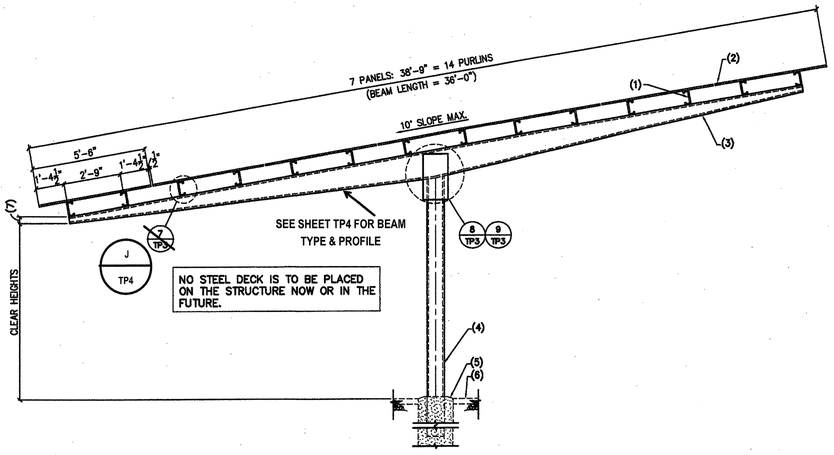
A PORTRAIT PANEL ON TEE ISOMETRIC PLAN
NO SCALE

NOTE:
THE PV PANEL SIZE USED TO DETERMINE THE DIMENSIONS SHOWN ON THIS DRAWING WERE 3'-4" (40") x 5'-6" (66"). THERE IS A GAP OF 1/2" BETWEEN THE PV PANELS IN LANDSCAPE AND 1/2" GAP BETWEEN THE PANELS IN PORTRAIT. THE BEAM LENGTHS NEED TO BE REVISED IF PV PANELS OF DIFFERENT SIZES ARE USED. IF THE BEAMS GET LONGER THE STRUCTURAL ENGINEER MUST CHECK THE BEAM, COLUMN AND FOOTING. IF THE BEAMS GET SHORTER NO RECALCULATION IS REQUIRED.



SECTION NOTES:
1. PURLIN– SEE DETAIL 1/TP3.
2. SOLAR PANEL.
3. TAPERED BEAM – SEE TABLE OF BEAM AND COLUMN SIZES THIS SHEET.
4. TAPERED COLUMN – SEE TABLE OF BEAM AND COLUMN SIZES THIS SHEET.
5. FOOTING – SEE FOUNDATION SCHEDULE THIS SHEET AND DETAILS 2 AND 2A ON SHEET TP3.
6. FINISHED GRADE OR ASPHALT OR CONCRETE SLAB/PAVEMENT – SEE SITE PLAN.
7. 3" MIN. AT TAPERED BEAM.

B SECTION AT PORTRAIT TAPERED TEE BEAM AT 10 DEGREE SLOPE

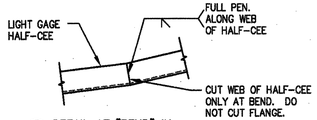


C SECTION AT PORTRAIT TAPERED TEE BEAM AT 10 DEGREE SLOPE

MEMBER TYPE	6 PANELS 33'-2 1/2"	7 PANELS 38-9"
	12 PURLINS	14 PURLINS
	85 MPH/EXPOSURE C	85 MPH/EXPOSURE C
BEAM SIZES – BEAM WITH WELDED CONNECTION PER DETAIL 8/TP3	10 GA. 16" 1" 8" 4 #4 BEAM REINFORCING 4'-0" NO REINFORCING REQ'D. FOR Fy=70ksi 10 GAGE STEEL	10 GA. 16" 1" 8" 4 #6 BEAM REINFORCING 4'-0" FOR Fy=55ksi 6'-0" FOR Fy=70ksi
BEAM SIZES – BEAM WITH BOLTED CONNECTION PER DETAIL 9/TP3	10 GA. 16" 1" 4" 2" 8" 14 GA. LIGHT GAGE HALF-CEE (A CEE SHAPE CUT IN HALF) 4'-0" NO REINFORCING REQ'D. FOR Fy=70ksi 10 GAGE STEEL Y TP2	10 GA. 16" 1" 4" 2" 8" 12 GA. LIGHT GAGE HALF-CEE (A CEE SHAPE CUT IN HALF) 14'-0" FOR Fy=55ksi 6'-0" FOR Fy=70ksi Y TP2
COLUMN SIZES – CLEAR HEIGHT 10'-6"	8" 16" HSS 16"x8"x5/16" Fy= 46 ksi HSS 16"x8"x1/4" Fy= 65 ksi	8" 16" HSS 16"x8"x3/8" Fy= 46 ksi HSS 16"x8"x5/16" Fy= 65 ksi
COLUMN SIZES – CLEAR HEIGHT 12'-0"	8" 16" HSS 16"x8"x3/8" Fy= 46 ksi HSS 16"x8"x5/16" Fy= 65 ksi	8" 16" HSS 16"x8"x1/2" Fy= 46 ksi HSS 16"x8"x3/8" Fy= 65 ksi

NOTES:
1. FOR BEAM REINFORCING INFORMATION NOT SHOWN, SEE DETAIL 4/TP3.
2. BEAM REINFORCING WITH REBAR OPTION MAY ALSO BE USED WITH BOLTED CONNECTION.

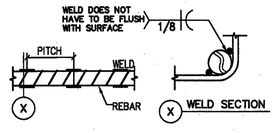
TABLE OF BEAM AND COLUMN SIZES
NO SCALE



Y DETAIL AT "BEND" IN LIGHT GAGE HALF-CEE

REBAR SIZE	WELD LENGTH (IN) – PITCH (C.TO C. SPACING) (IN)	MINIMUM NUMBER OF 2" LONG WELDS
#4	2 – 7	2
#6	2 – 10	4

NOTE:
IT IS ACCEPTABLE TO USE A CLOSER CENTER TO CENTER SPACING THAN WHAT IS SHOWN, BUT IT IS NOT ACCEPTABLE TO SPACE THE WELDS ANY FARTHER THAN WHAT IS SHOWN. PROVIDE THE MINIMUM NUMBER OF WELDS SHOWN.



TEE FOUNDATION SCHEDULE

NOTE: DRILLED PIER SIZE BASED ON THE ALLOWABLE LATERAL SOIL BEARING (PASSIVE) PRESSURE PER SOILS REPORT. IF NO SOILS REPORT IS PROVIDED, USE PASSIVE PRESS = 100 PSF/FT. SPREAD FOOTINGS SHALL BEAR 24" MIN. BELOW LOWEST ADJACENT FINISHED GRADE. SEE GSN AND DETAIL FOR ADDITIONAL INFORMATION.

PANEL ORIENTATION	# OF PANELS	CLEAR HEIGHT (MAX.)	DRILLED PIER EMBEDMENT DEPTH (32" DIAMETER)								SPREAD FOOTING SIZE		
			PASSIVE = 100PSF/FT		PASSIVE = 200PSF/FT		PASSIVE = 300PSF/FT		PASSIVE = 400PSF/FT				
			DIRT AND/OR ASPHALT PAVEMENT (UNCONSTRAINED)	CONCRETE PAVEMENT (CONSTRAINED)	DIRT AND/OR ASPHALT PAVEMENT (UNCONSTRAINED)	CONCRETE PAVEMENT (CONSTRAINED)	DIRT AND/OR ASPHALT PAVEMENT (UNCONSTRAINED)	CONCRETE PAVEMENT (CONSTRAINED)	DIRT AND/OR ASPHALT PAVEMENT (UNCONSTRAINED)	CONCRETE PAVEMENT (CONSTRAINED)	THICKNESS	WIDTH	LENGTH
P	6	10'-6"	12'-8"	9'-1"	10'-0"	7'-3"	8'-8"	6'-4"	7'-11"	5'-9"	56"	8'-0"	12'-8"
P	6	12'-0"	12'-11"	9'-3"	10'-1"	7'-6"	8'-9"	6'-7"	8'-0"	5'-11"	56"	8'-0"	12'-8"
P	7	10'-6"	13'-3"	9'-3"	10'-11"	7'-9"	9'-7"	6'-9"	8'-8"	6'-2"	56"	8'-6"	13'-6"
P	7	12'-0"	14'-0"	10'-1"	11'-0"	8'-0"	9'-8"	7'-0"	8'-9"	6'-4"	56"	9'-0"	13'-6"

FOUNDATION SCHEDULE

PATENTS PENDING

PATENTS PENDING

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PORTRAIT SOLAR PANELS ON TEE
SOLAR SUPPORT STRUCTURE
DSA PRE-CHECK

DRAWING EDITION/REF JOB #

SITE PROJECT:

REVISIONS:

JOB NUMBER: 11-071

DRAWN:	ENGINEER:	CHECKED:
BLP	PGS	DST

DATE: 3/15/12

SHEET: TP2

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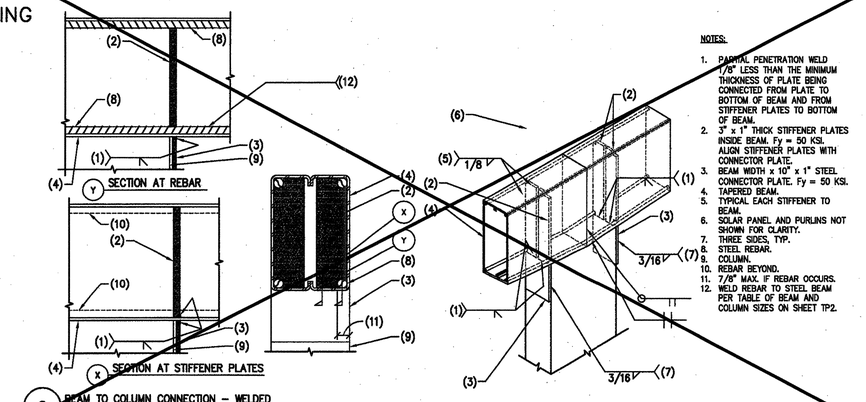
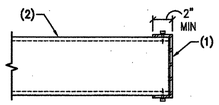
PATENTS PENDING



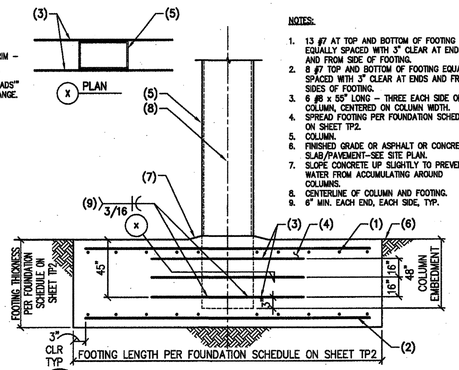
NOTES:
1. PARTIAL PENETRATION WELD 1/8" LESS THAN THE MINIMUM THICKNESS OF PLATE BEING CONNECTED FROM PLATE TO BOTTOM OF BEAM AND FROM STIFFENER PLATES TO BOTTOM OF BEAM.
2. 3" x 1" THICK STIFFENER PLATES INSIDE BEAM. Fy = 50 KSI. ALIGN STIFFENER PLATES WITH CONNECTOR PLATE.
3. BEAM WIDTH x 10" x 1" STEEL CONNECTOR PLATE. Fy = 50 KSI.
4. TAPERED BEAM.
5. TYPICAL EACH STIFFENER TO BEAM.
6. SOLAR PANEL AND PURLINS NOT SHOWN FOR CLARITY.
7. THREE SIDES, TYP.
8. STEEL REBAR.
9. COLUMN.
10. REBAR BEYOND.
11. 7/8" MAX. IF REBAR OCCURS.
12. WELD REBAR TO STEEL BEAM PER TABLE OF BEAM AND COLUMN SIZES ON SHEET TP2.

8 BEAM TO COLUMN CONNECTION – WELDED — 11-071 NO SCALE

NOTES:
1. CONTINUOUS END CAP TRIM – 16 GA MIN. ATTACH TO PURLIN WITH #12 x 3/4" SCREWS WITH "WAFER HEADS" AT TOP AND BOTTOM FLANGE.
2. PURLIN.



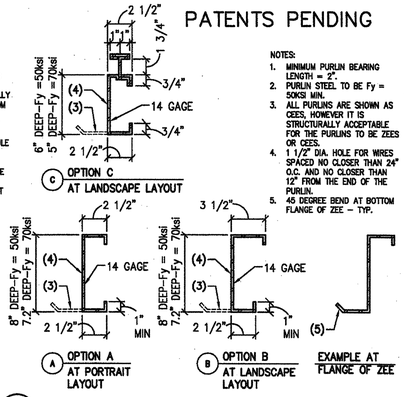
5 END CAP AT PURLIN — 10-788 NO SCALE



NOTES:
1. 13 #7 AT TOP AND BOTTOM OF FOOTING EQUALLY SPACED WITH 3" CLEAR AT ENDS AND FROM SIDE OF FOOTING.
2. 8 #7 TOP AND BOTTOM OF FOOTING EQUALLY SPACED WITH 3" CLEAR AT ENDS AND FROM SIDES OF FOOTING.
3. 6 #8 x 55" LONG – THREE EACH SIDE OF COLUMN, CENTERED ON COLUMN WIDTH.
4. SPREAD FOOTING PER FOUNDATION SCHEDULE ON SHEET TP2.
5. COLUMN.
6. FINISHED GRADE OR ASPHALT OR CONCRETE SLAB/PAVEMENT-SEE SITE PLAN.
7. SLOPE CONCRETE UP SLIGHTLY TO PREVENT WATER FROM ACCUMULATING AROUND COLUMNS.
8. CENTERLINE OF COLUMN AND FOOTING.
9. 6" MIN. EACH END, EACH SIDE, TYP.

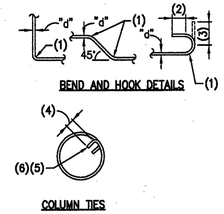
2A TEE OPTIONAL SPREAD FOOTING — NO SCALE

PATENTS PENDING



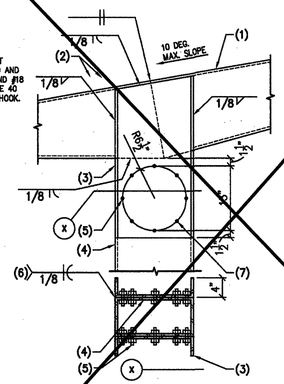
NOTES:
1. MINIMUM PURLIN BEARING LENGTH = 2".
2. PURLIN STEEL TO BE Fy = 50KSI MIN.
3. ALL PURLINS ARE SHOWN AS CEES, HOWEVER IT IS STRUCTURALLY ACCEPTABLE FOR THE PURLINS TO BE ZEES OR CEES.
4. 1 1/2" DIA. HOLE FOR WIRES SPACED NO CLOSER THAN 24" O.C. AND NO CLOSER THAN 12" FROM THE END OF THE PURLIN.
5. 45 DEGREE BEND AT BOTTOM FLANGE OF ZEE – TYP.

1 PURLIN — 11-071 NO SCALE



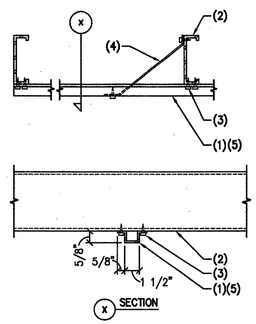
NOTES:
1. RADIUS=3d FOR BARS NOT OVER #8; 4d FOR #9, #10 AND #11 BARS; 5d FOR #14 AND #18 BARS. 5d FOR ALL GRADE 40 BARS WITH 180 DEGREE HOOK.
2. 4d (4" MINIMUM).
3. 12d (90 DEGREE HOOK).
4. 6d (4" MINIMUM).
5. 135 DEGREE BEND.
6. ROTATE TIE LOCATION 90 DEGREES EACH TIE.

10 TYPICAL REINFORCING BAR DETAILS AT DRILLED PIER REINFORCING — 201-32M NO SCALE

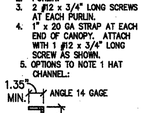


NOTES:
1. BOX BEAM PER PLAN.
2. PV PANELS AND PURLINS NOT SHOWN FOR CLARITY.
3. 3/8" STEEL SIDE PLATE.
4. STEEL COLUMN.
5. 8– 7/8" DIA. A325 BOLTS AS SHOWN.
6. WELD STEEL BENT PLATE TO STEEL COLUMN AT SIDES AND LOW END – TYP.
7. HOLES MAY BE OVERSIZED OR SLOTTED PER AISC SPECIFICATIONS.

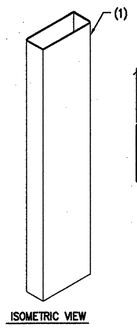
9 BEAM TO COLUMN CONNECTION – BOLTED — 11-071 NO SCALE



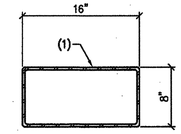
NOTES:
1. 16 GAUGE STEEL HAT CHANNEL BRACE. LOCATE AT MIDSPAN BETWEEN COLUMNS.
2. PURLIN.
3. 2 #12 x 3/4" LONG SCREWS AT EACH PURLIN.
4. 1" x 20 GA STRAP AT EACH END OF CANOPY. ATTACH WITH 1 #12 x 3/4" LONG SCREW AS SHOWN.
5. OPTIONS TO NOTE 1 HAT CHANNEL:



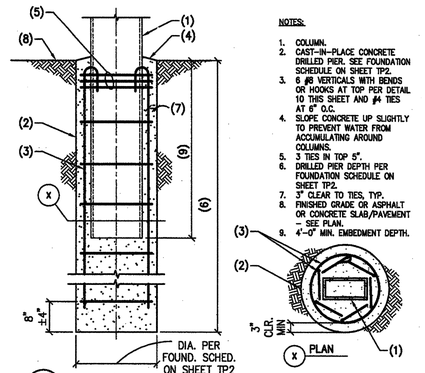
6 STEEL BRACING AT PURLINS — 09-506 NO SCALE



NOTES:
1. STEEL COLUMN.

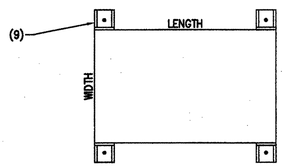


3 COLUMN — 10-788 NO SCALE



NOTES:
1. COLUMN.
2. CAST-IN-PLACE CONCRETE DRILLED PIER. SEE FOUNDATION SCHEDULE ON SHEET TP2.
3. 6 #8 VERTICALS WITH BENDS OR HOOKS AT TOP PER DETAIL 10 THIS SHEET AND #4 TIES AT 6" O.C.
4. SLOPE CONCRETE UP SLIGHTLY TO PREVENT WATER FROM ACCUMULATING AROUND COLUMNS.
5. 3 TIES IN TOP 5".
6. DRILLED PIER DEPTH PER FOUNDATION SCHEDULE ON SHEET TP2.
7. 3" CLEAR TO TIES, TYP.
8. FINISHED GRADE OR ASPHALT OR CONCRETE SLAB/PAVEMENT – SEE PLAN.
9. 4'-0" MIN. EMBEDMENT DEPTH.

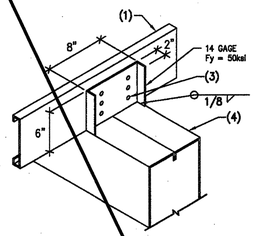
2 DRILLED PIER FOOTING — 11-071 NO SCALE



TEST LOAD FOR TZ BOLTS = 3.0K x 1.6 = 4.8K

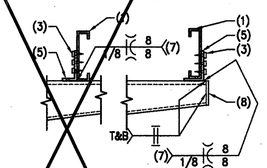
NOTE:
MINIMUM CLEARANCE ALL AROUND TO BE AT LEAST EQUAL TO THE HEIGHT OF THE UNIT.

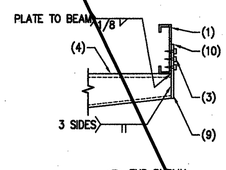
NOTES:
1. 18" MIN ALL AROUND.
2. 7" SLAB WITH #4 AT 12" O.C. EACH WAY IN SLAB CENTER, LAP = 24" AT #4 AS REQUIRED.
3. INVERTER (3,000 lbs MAX.).
4. 5/8" DIA. HILTI KWIK BOLT TZ (ICC ESR-1917) WITH 3 9/16" EMBEDMENT.
5. 32" MIN. ALL AROUND.
6. 9" SLAB WITH #6 @ 12" O.C. EACH WAY IN SLAB CENTER, LAP = 47" AT #6 AS REQUIRED.
7. INVERTER (7,000 lbs MAX.).
8. 5/8" DIA HILTI KWIK BOLT TZ (ICC ESR-1917) WITH 4 7/16" EMBEDMENT.
9. CONNECTION CLIP PER MFR, OR MFR. MAY PROVIDE ALTERNATE CONNECTION AND CALCULATIONS ON INVERTER ATTACHMENT TO SLAB/FOOTING.



F PURLIN CLIP

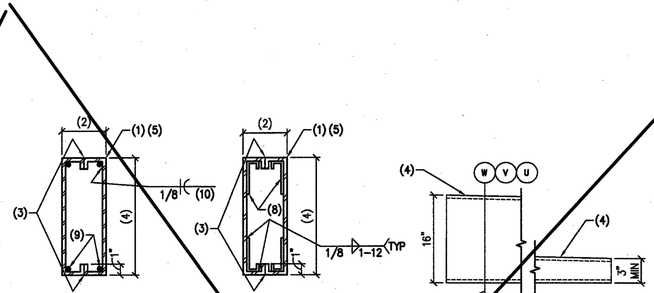
NOTES:
1. PURLIN.
2. STEEL END PLATE 1/4"x10" WIDE x 30" LONG AS OCCURS.
3. 6 – #12 x 3/4" LONG SCREWS TO PURLIN – TYP.
4. BEAM.
5. 6"x4"x0.25" STEEL CLIP ANGLE (LLV) x 8" LONG OR 1/4"x6"x4"x8" LONG. Fy = 50 KSI (MIN) OR 14 GAGE CLIP SHOWN IN DETAIL F THIS DETAIL.
6. COLUMN.
7. WELD CLIP ANGLE TO BEAM.
8. 16 GA. NON-STRUCURAL END PLATE.
9. 1/4"x9" HIGH x10" LONG END PLATE.
10. INCREASE LENGTH OF PLATE SO IT EXTENDS 6" ABOVE TOP OF STEEL BEAM AND ATTACH PURLIN TO STEEL END PLATE IN LIEU OF USING STEEL CLIP ANGLE.

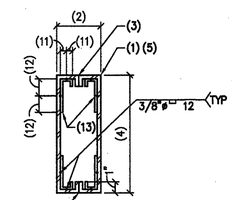




NOTE:
A. ANY OF THESE CONNECTIONS SHOWN MAY BE USED AT CONTRACTOR'S OPTION.

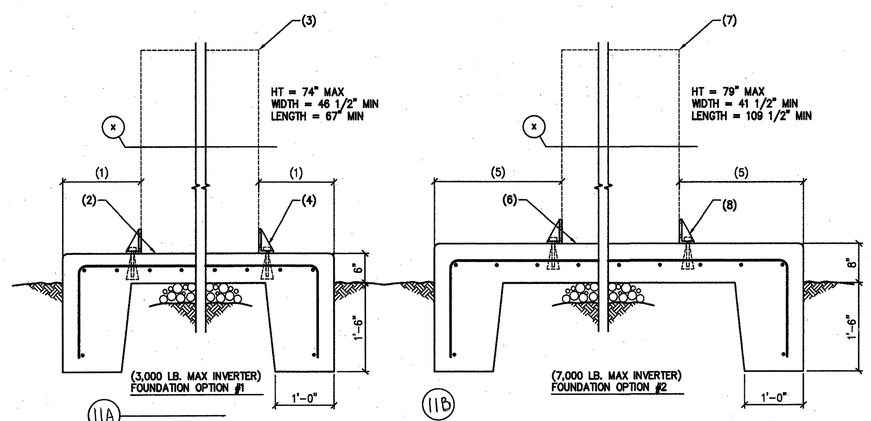
7 PURLIN TO BEAM CONNECTION — 09-506 NO SCALE





NOTES:
1. COMPOSITE SECTION MADE FROM 2– UNSTIFFENED CEE SECTIONS PER TABLE OF BEAM AND COLUMN SIZES ON SHEET TP2 – Fy = 55KSI.
2. DIMENSION PER TABLE OF BEAM AND COLUMN SIZES ON SHEET TP2.
3. WELD AT BEAM PER SECTION 7, THIS DETAIL.
4. TAPERED BEAM DEPTH VARIES FROM 8" TO 3".
5. TYPICAL RADIUS = .236".
6. TOP AND BOTTOM, EACH END.
7. TYP. TOP AND BOTTOM.
8. HALF-CEE BEAM REINFORCING. GAGE THICKNESS AND EXTENT PER TABLE OF BEAM AND COLUMN SIZES ON SHEET TP2.
9. REBAR BEAM REINFORCING. SIZE AND EXTENT PER TABLE OF BEAM AND COLUMN SIZES ON SHEET TP2.
10. WELD LENGTH AND SPACING PER TABLE OF BEAM AND COLUMN SIZES ON SHEET TP2.
11. 1" ±1/2" FOR SPOT WELD.
12. 2" ±1/2" FOR SPOT WELD.
13. STEEL HALF-CEE BEAM REINFORCING PER TABLE OF BEAM AND COLUMN SIZES ON SHEET TP2.

4 TAPERED BEAM — NO SCALE



NOTE: INVERTERS TO BE SURROUNDED BY A FENCE TO RESTRICT ACCESS TO THE INVERTER. INVERTERS TO BE A MINIMUM OF 30' FROM ANY INHABITABLE BUILDING.

11 INVERTER/SLAB FOUNDATION — 11-071 NO SCALE

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DIV. OF THE STATE ARCHITECT
APP03 11 4572
AC FLS SS ED
DATE MAY 22 2012

REGISTERED PROFESSIONAL ENGINEER PAUL G. SCOTT S 3325 STRUCTURAL STATE OF CALIFORNIA
3/20/12

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PRE-CHECK (PC) DOCUMENT
CODE: 2010 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

DSA APP. NO 02-111999

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
02-111999
AC FLS SS KB
DATE 3-20-12

THESE DRAWINGS/CALCULATIONS ARE CONSIDERED PRELIMINARY – NOT FOR CONSTRUCTION OR RECORDING UNLESS THE STRUCTURAL ENGINEER OF RECORD'S SEAL IS AFFIXED WITH WRITTEN SIGNATURE.

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PORTRAIT SOLAR PANELS ON TEE
SOLAR SUPPORT STRUCTURE
DSA PRE-CHECK

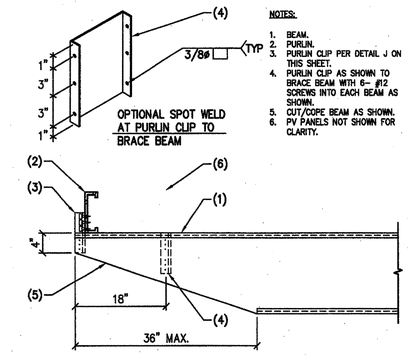
DRAWING EDITION/REF JOB #:

SITE PROJECT:

REVISIONS:

JOB NUMBER: 11-071
DRAWN: BLP | ENGINEER: PGS | CHECKED: DST
DATE: 3/15/12
SHEET: TP3

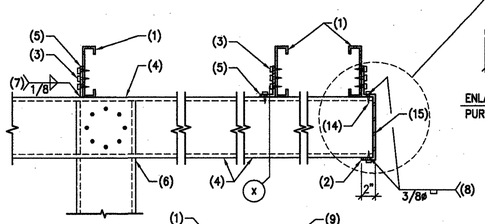
PATENTS PENDING

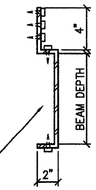


NOTES:
1. BEAM.
2. PURLIN.
3. PURLIN CLIP PER DETAIL J ON THIS SHEET.
4. PURLIN CLIP AS SHOWN TO BRACE BEAM WITH 6– ø12 SCREWS INTO EACH BEAM AS SHOWN.
5. CUT/COPE BEAM AS SHOWN.
6. PV PANELS NOT SHOWN FOR CLARITY.

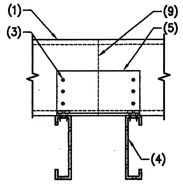
L BEAM TAPER OPTION
11–071 NO SCALE

NOTES:
1. PURLIN.
2. 10 GA BEAM CAP PLATE W/ (4) ø12 TO BOTTOM OF BEAM AND (6) ø12 TO PURLIN.
3. (3) ø12 x 3/4" LONG SCREWS TO PURLIN.
4. STEEL BEAM.
5. 16"LONG x4"x10 GAUGE STEEL CLIP OR 16" LONG x 4" x6" (LLV) ANGLE WITH (2) ø12 SCREWS AT EACH BEAM MEMBER. Fy = 50 ksi (MIN).
6. STEEL COLUMN.
7. WELD PLATE TO BEAM.
8. OPTIONAL SPOT WELD.
9. OPTIONAL PURLIN SPLICE LOCATION AT NON–CANTILEVERED PURLINS.
10. 16 GA CLIP.
11. (3) ø12 SCREWS TO PURLIN.
12. TOP OF PURLIN.
13. (3) ø12 SCREWS TO BEAM.
14. 2 ø12 SCREWS AT EACH BEAM MEMBER.
15. IF CLIP OPTION Z IS USED, THE END CAP BECOMES NON–STRUCTURAL AND MAY BE 22 GAGE.
16. ALL DIMENSIONS TO BE ± 1/2".

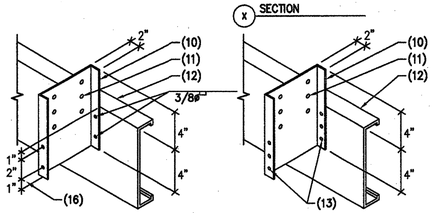




ENLARGED DETAIL OF PURLIN CLIP PER NOTE 2

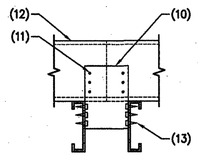


X SECTION



OPTIONAL PURLIN CLIP WITH SPOT WELDS

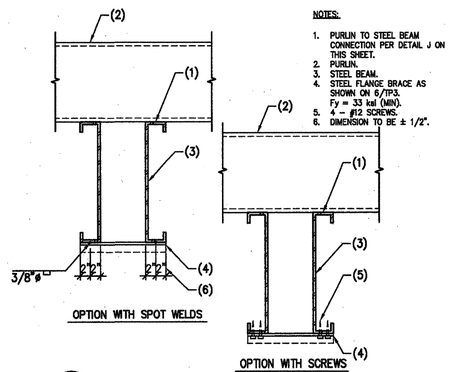
OPTIONAL PURLIN CLIP WITH SCREWS



OPTIONAL PURLIN CLIP

Z PURLIN CLIP OPTION Z

J PURLIN TO BEAM CONNECTION
11–071 NO SCALE



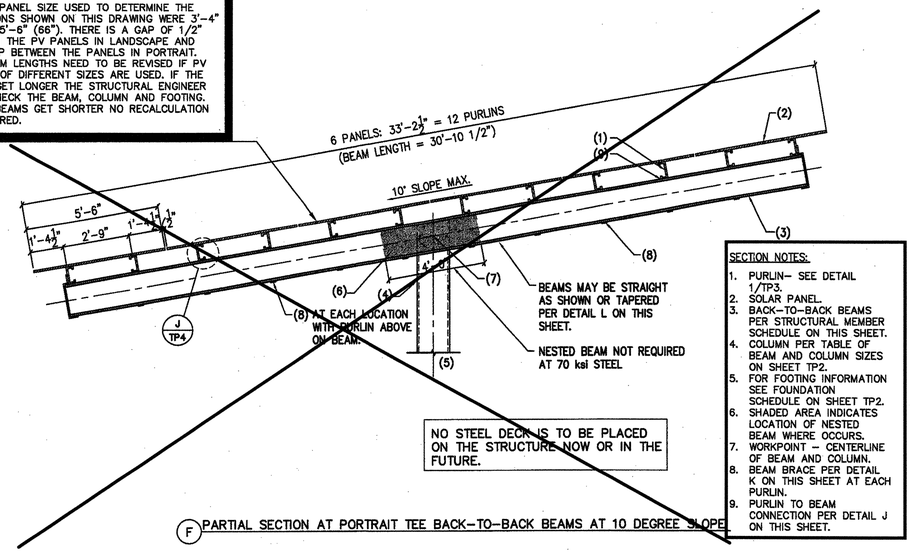
NOTES:
1. PURLIN TO STEEL BEAM CONNECTION PER DETAIL J ON THIS SHEET.
2. PURLIN.
3. STEEL BEAM.
4. STEEL FLANGE BRACE AS SHOWN ON 6/TP3. Fy = 33 ksi (MIN).
5. 4 – ø12 SCREWS.
6. DIMENSION TO BE ± 1/2".

OPTION WITH SPOT WELDS

OPTION WITH SCREWS

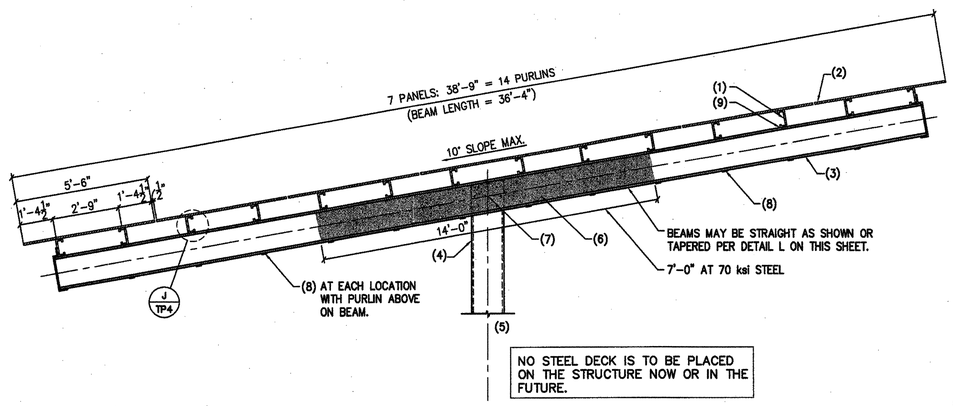
K STEEL BEAM BRACING (TO OCCUR AT EACH LOCATION WITH PURLIN ABOVE ON BEAM)
11–071 NO SCALE

NOTE:
THE PV PANEL SIZE USED TO DETERMINE THE DIMENSIONS SHOWN ON THIS DRAWING WERE 3'–4" (40") x 5'–6" (66"). THERE IS A GAP OF 1/2" BETWEEN THE PV PANELS IN LANDSCAPE AND 1/2" GAP BETWEEN THE PANELS IN PORTRAIT. THE BEAM LENGTHS NEED TO BE REVISED IF PV PANELS OF DIFFERENT SIZES ARE USED. IF THE BEAMS GET LONGER THE STRUCTURAL ENGINEER MUST CHECK THE BEAM, COLUMN AND FOOTING. IF THE BEAMS GET SHORTER NO RECALCULATION IS REQUIRED.



SECTION NOTES:
1. PURLIN– SEE DETAIL 1/TP3.
2. SOLAR PANEL.
3. BACK–TO–BACK BEAMS PER STRUCTURAL MEMBER SCHEDULE ON THIS SHEET.
4. COLUMN PER TABLE OF BEAM AND COLUMN SIZES ON SHEET TP2.
5. FOR FOOTING INFORMATION SEE FOUNDATION SCHEDULE ON SHEET TP2.
6. SHADED AREA INDICATES LOCATION OF NESTED BEAM WHERE OCCURS.
7. WORKPOINT – CENTERLINE OF BEAM AND COLUMN.
8. BEAM BRACE PER DETAIL K ON THIS SHEET AT EACH PURLIN.
9. PURLIN TO BEAM CONNECTION PER DETAIL J ON THIS SHEET.

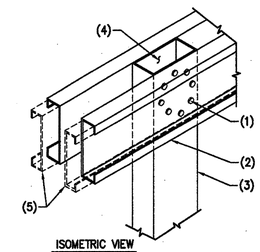
F PARTIAL SECTION AT PORTRAIT TEE BACK–TO–BACK BEAMS AT 10 DEGREE SLOPE



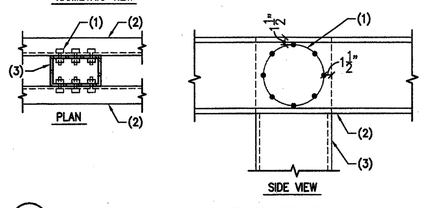
G PARTIAL SECTION AT PORTRAIT TEE BACK–TO–BACK BEAMS AT 10 DEGREE SLOPE

STRUCTURAL MEMBER SCHEDULE		
SOLAR CANOPY TYPE	STEEL BEAM SIZE (Fy=55 KSI)	NESTED BEAM SIZE (OPTION) (Fy=55 KSI)
6 PANEL TEE	(2) 18"x4"x1"x10 GA	(2) 16"x4"x1"x10 GA. WITH 12 GA. NESTED BEAM (SEE DETAIL F ON THIS SHEET FOR LENGTH AND LOCATION)
7 PANEL TEE	(2) 16"x4"x1"x10 GA	(2) 16"x4"x1"x10 GA. WITH 12 GA. NESTED BEAM (SEE DETAIL G ON THIS SHEET FOR LENGTH AND LOCATION)

STRUCTURAL MEMBER SCHEDULE



ISOMETRIC VIEW



NOTES:
1. 8–1" DIA. A325 BOLTS.
2. STEEL BEAM.
3. STEEL COLUMN.
4. 18 GAGE CAP WITH 1" CONNECTION RETURNS. AT TOP OF COLUMN, 2 – ø12 SCREWS EACH RETURN.
5. NESTED BEAM WHERE OCCURS.
6. HOLES MAY BE OVERSIZE OR SLOTTED PER AISC SPECIFICATIONS.

H BACK–TO–BACK STEEL BEAMS BOLTED TO STEEL COLUMN

IDENTIFICATION STAMP
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DATE MAY 22 2012

REGISTERED PROFESSIONAL ENGINEER
PAUL G. SCOTT
S3325
STRUCTURAL
STATE OF CALIFORNIA
5/15/12

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PORTRAIT SOLAR PANELS ON TEE SOLAR SUPPORT STRUCTURE DSA PRE–CHECK

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DRAWING EDITION/REF JOB #:

SITE PROJECT:

REVISIONS:

JOB NUMBER: 11–071

DRAWN:	ENGINEER:	CHECKED:
BLP	PGS	DST

DATE: 3/15/12

SHEET: TP4