DOCKETED

Docket Number:	09-AFC-08C
Project Title:	Genesis Solar Energy Project
TN #:	203312
Document Title:	Petition to Amend for Spare Transformer
Description:	Petition to Amend to allow Genesis (GSEP) to store an auxiliary 25-MVA three-phase transformer on site
Filer:	Eric Veerkamp
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	11/4/2014 3:30:22 PM
Docketed Date:	11/4/2014

NEXTera® ENERGY RESOURCES

October 28, 2014

Eric Veerkamp
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814

Re: Petition to Amend The Commission Decision For Genesis Solar Energy Center, Docket No. 09-AFC-8.

Dear Mr. Veerkamp,

Pursuant to Section 1769 of the California Energy Commission (CEC) Siting Regulations, NextEra Energy Resources hereby submits the attached Petition for a Staff Approved Project Change to Amend the Genesis Solar Energy Facility Docket No. 09-AFC-8. The requested changes do not affect the project description or any Conditions of Certification in the Commission Decision or subsequent amendments.

The petition is to allow the Genesis Solar Energy Facility to store a spare three-phase 25 MVA Auxiliary Transformer within the facility. The purpose of the proposed spare transformer is to minimize the outage period needed for replacement due to emergency failure of the on-line unit.

We have reviewed the Commission Decision (Docket No. 09-AFC-8), and we believe that the request is an insignificant project change and will not result in any new environmental impacts or require any modification to the existing Conditions of Certification contained in the Final Decision.

Thank you for your attention, and please feel free to call me at (561) 691-2232 should you have any questions or require any additional information.

Sincerely,

Charlyn M. Mosley

Charlyn Mosley
Senior Environmental Specialist
Genesis Solar Energy Project

enc.

cc: L. Goguts – Genesis
R. Garcia – NEER

GENESIS SOLAR ENERGY FACILITY APPLICATION FOR STAFF APPROVED PROJECT CHANGE

As required by Section 1769 of the CEC Siting Regulations, NextEra Energy Resources (NEER) hereby submits the following information in support of a staff approved project change at the Genesis Solar Energy Facility (Genesis).

Pursuant to Section 1769(a)(1)(A) and (B), this section provides a complete description of the proposed modifications, including new language for affected conditions, and the necessity for modifications.

The modification proposes to store one (1) spare three-phase 25 MVA Auxiliary Transformer at the Genesis site, which can be used as a replacement for the on-line unit in case of emergency failure. It will be mounted on a concrete foundation with secondary containment, to capture oil in case of spillage. Low power electrical supply will be provided for heating elements inside the control cabinet to prevent moisture build-up, and also to periodically check cooling fan operation. Attached are the spare foundation plans which include a Site Plan, transformer nameplate which provides product specifications, and the transformer outline. Genesis will use Bureau Veritas as the Chief Building Official (CBO) for the project.

Pursuant to Section 1769(a)(1)(C), a discussion is required if the modification is based on information that was known by the petitioner during the certification proceeding, and an explanation of why the issue was not raised at that time.

After review of the spare equipment strategy for Genesis, NEER recently determined that the Auxiliary Transformer is critical in maintaining the system's heat transfer fluid (HTS), and the Plant cannot operate without it. Should surprise failure occur, having the Spare Auxiliary Transformer would enable Genesis to quickly replace the unit within approximately one week and restore power. Without it, replacement would take approximately 6 months.

Pursuant to Section 1769(a)(1)(D), a discussion is required on whether the modification is based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision, and explanation of why the change should be permitted.

The modification is based on recent review of the NEER spare equipment strategy. The installation of a Spare Auxiliary Transformer is a reliability measure that minimizes outage time needed for replacement of the on-line unit in the event of a surprise failure.

Pursuant to Section 17699(a)(1)(E), an analysis of the impacts the modifications may have on the environment and proposed measures to mitigate any significant adverse impacts is required.

The storage of the spare auxiliary transformer will have no significant adverse impacts on the environment. The spare transformer will use non-PCB insulating oil and the foundation will be provided with secondary containment to adequately capture any potential oil spillage. The facilities Spill Prevention, Containment and Countermeasure (SPCC) plan, Stormwater Pollution Prevention Plan (SWPPP), and Hazardous Materials Business Plan (HMBP) will be modified to capture the additional oil and controls resulting from the new spare auxiliary transformer. The spare transformer will use non-PCB insulating oil meeting

Pursuant to Section 17699(a)(1)(F), a discussion of the impact of the modification on the facility's ability to comply with applicable laws, ordinances, regulations, and standards is required.

The proposed modification will not have an impact on the facility's ability to comply with applicable laws, ordinances, regulations and standards.

Pursuant to Section 1769(a)(1)(G), a discussion of how the modifications affect the public is required.

The proposed upgrade will have no significant environmental effects and will be in compliance with applicable LORS, therefore there will be no effects to the public.

Pursuant to Section 1769(a)(1)(H), a list of property owners potentially affected by the modification is required.

The proposed upgrade will have no significant environmental effects and will be in compliance with applicable LORS, therefore there will be no effects to the property owners.

Pursuant to Section 1769(a)(1)(I), a discussion of the potential effect on nearby property owners, the public and the parties in the application proceedings is required.

The proposed upgrade will have no significant environmental effects and will be in compliance with applicable LORS, therefore there will be no effects to the property owners, the public or other properties.

18.000 TYP

0.500 TYP

0.500 TYP

24.000 TYP

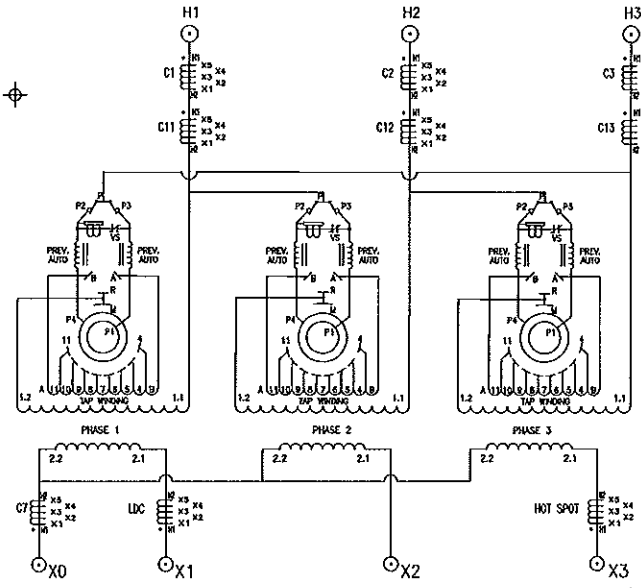
THREE PHASE POWER TRANSFORMER

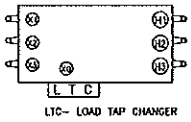
MANUFACTURED BY CG POWER SYSTEMS USA INC WASHINGTON, MO 63090, USA				
CUSTOMER'S P.O. NO. 2100164397				
TRANSFORMER			HV	LV
RATED VOLTAGE (NO LOAD) kV			13.8	4.16
RATED POWER (MVA)	CLASS	RISE° C		
	ONAN	55	15	15
	ONAF1	55	20	20
	ONAF2	55	25	25
RATED LINE CURRENT ONAF2			1045	3470
FULL WAVE IMPULSE LEVEL kVp			110	75
BUSHINGS IMPULSE LEVEL kVp			150	75
NEUTRAL BUSHINGS IMPULSE LEVEL				75
WINDING MATERIAL			COPPER	
FREQUENCY			60 Hz	
PHASES			3	
MANUFACTURER'S ORDER NO.			496902545-10	
MANUFACTURER'S SERIAL NO.			20151400563	
MODEL			ZUP1511003	
YEAR OF MANUFACTURE			2014	

LOW VOLTAGE										
VOLTAGE	AMPERE AT ONAF2 25 MVA	LOAD TAP CHANGER POS	CONNECTS IN EACH PHASES P1 TO	P4 TO	R TO	VOLTAGE	AMPERE AT ONAF2 25 MVA	LOAD TAP CHANGER POS	CONNECTS IN EACH PHASES P1 TO	P4 TO	R TO
4626	3120	16R	11	11	B	4131	3494	1L	A	11	A
4605	3134	15R	11	10	B	4114	3508	2L	11	11	A
4583	3163	14R	10	10	B	4081	3537	3L	11	10	A
4543	3178	13R	10	9	B	4064	3551	4L	10	10	A
4502	3206	12R	9	9	B	4032	3580	5L	10	9	A
4482	3221	11R	9	8	B	4016	3594	6L	9	9	A
4442	3249	10R	8	8	B	3984	3623	7L	9	8	A
4422	3264	9R	8	7	B	3968	3638	8L	8	8	A
4384	3293	8R	7	7	B	3937	3666	9L	8	7	A
4365	3307	7R	7	6	B	3921	3681	10L	7	7	A
4327	3336	6R	6	6	B	3891	3708	11L	7	6	A
4309	3350	5R	6	5	B	3876	3724	12L	6	6	A
4272	3378	4R	5	5	B	3846	3753	13L	6	5	A
4254	3393	3R	5	4	B	3832	3767	14L	5	5	A
4216	3422	2R	4	4	B	3803	3798	15L	5	4	A
4200	3436	1R	4	B	B	3788	3810	16L	4	4	A
4160	3470	NOR	A	A	A						

SERVICE ALTITUDE	<3300 FT.
INSULATION LIQUID PCB < 1 PPM	INHIBITED MINERAL OIL TYPE II
SERVICE	CONTINUOUS

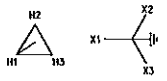
IMP. AT 15 MVA, NEUTRAL TAP POS	
POSITIVE SEQUENCE	##.# %





LTC– LOAD TAP CHANGER

VECTOR DIAGRAM Dyn1



CURRENT TRANSFORMER DETAILS

LOCATION	RATIO	ACCURACY	RATIO			
C1, C2, C3	2000:5MR	C800	X3–X4	300:5	X1–X3	1200:5
			X1–X2	400:5	X1–X4	1500:5
			X4–X5	500:5	X2–X5	1600:5
			X2–X3	800:5	X1–X5	2000:5
			X2–X4	1100:5	--	--
C11, C12, C13	8000:5MR	C800	X1–X2	1000:5	X2–X4	5000:5
			X3–X4	2000:5	X1–X4	6000:5
			X2–X3	30005	X2–X5	7000:5
			X1–X3	4000:5	X1–X5	8000:5
C7	600:5MR	C800	X2–X3	50:5	X2–X4	300:5
			X1–X2	100:5	X1–X4	400:5
			X1–X3	150:5	X3–X5	450:5
			X4–X5	200:5	X2–X5	500:5
			X3–X4	250:5	X1–X5	600:5
HOT SPOT	5485:5MR	C800	X1–X2	985:5	X2–X4	2500:5
			X2–X3	1000:5	X1–X4	3485:5
			X3–X4	1500:5	X3–X5	3500:5
			X1–X3	1985.5	X2–X5	4500:5
			X4–X5	2000:5	X1–X5	5485:5
LDC	4000:5MR	C800	X1–X2	500:5	X2–X4	2500:5
			X3–X4	1000:5	X1–X4	3000:5
			X2–X3	1500:5	X2–X5	3500:5
			X1–X3	2000:5	X1–X5	4000:5

APPROXIMATE WEIGHT AND VOLUMES				
	KG	LBS	LITERS	GALLONS
UNTANKING: CORE & WINDING	18269	40276		
TANK + FITTINGS	15033	33142		
OIL VOL. RADIATORS	756	1667	856	226
OIL VOL. LTC	903	1991	1022	270
OIL VOLUME MAIN TANK	10728	23652	12140	3207
OIL VOLUME TOTAL	12388	27310	14017	3703
TOTAL MASS	45690	100728		

NOTES:
- REFER TO TRANSFORMER INSTRUCTION MANUAL FOR INSTALLATION AND OPERATING INSTRUCTIONS
- TANK AND RADIATORS FOR 14.7 PSI VACUUM FILLING
- LIQUID LEVEL CHANGES 0.753" PER 10°C OF CHANGE IN OIL TEMPERATURE
- 25°C LIQUID LEVEL IS 8.1" BELOW THE TANK COVER

BUILT TO ANSI IEEE

R0.500

ø0.188 HOLE
6 PLACES

REV	DATE	BY	CHK	APP	DESCRIPTION
A	08/01/2014	AM	LT	AS	ISSUED
B	08/29/2014	AM	LT	AS	NOTES_CHANGED

CG POWER SYSTEMS USA INC WASHINGTON, MO 63090, USA

NAME: NAMEPLATE

MAT'L: .032" STAINLESS STEEL

DATE: 3/26/2012 | PART NUMBER: 1511003--04 | REV: D

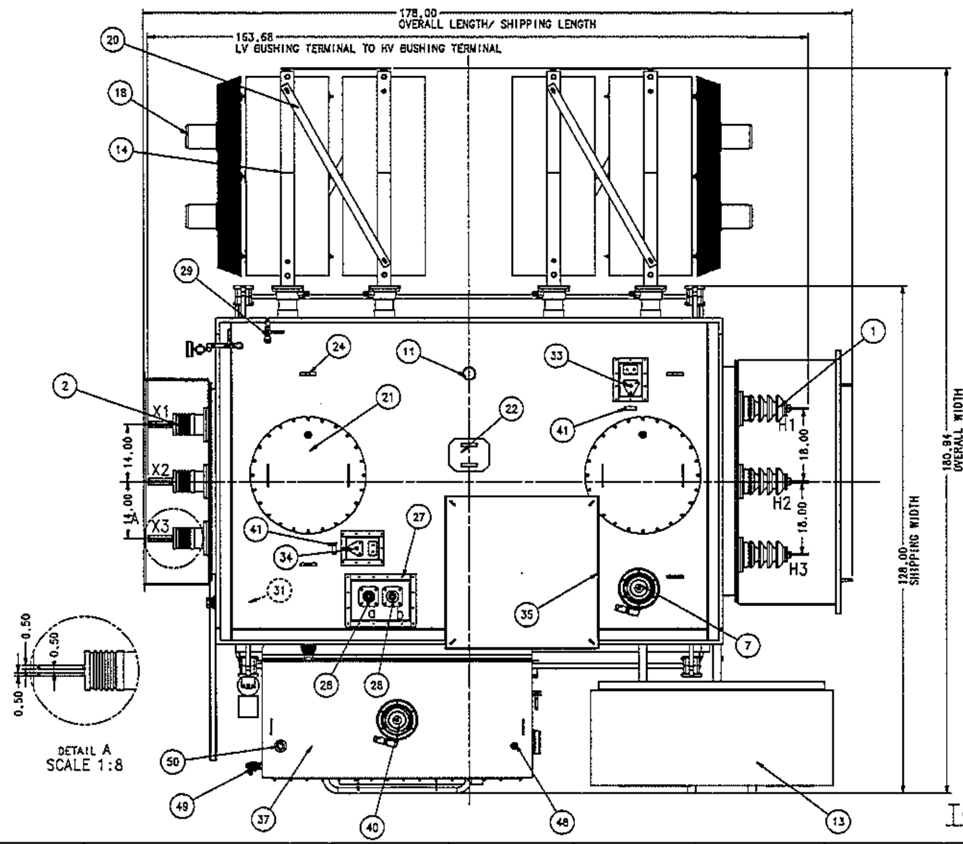
DECIMAL	ANGULAR	FRACTIONAL	SCALE	TOLERANCES (except as noted)	DRAWN BY:	APPROVED
± .032	± 2'	± 1/32	NTS	± .032	AM	AP

Item no.	Qty	Component Description	CG Part #
1	3	High Voltage Line Bushing, 25KV 150KV BIL 1767A Draw Lead, WARCO 41A05145-1V	
2	3	Low Voltage Line Bushhing, 5KV 75 KV BIL 4500A Bottom Connected, WARCO 45A0005310	
3	1	Low Voltage Neutral Bushing, 5 KV 75 KV BIL 442A Bottom Connected, WARCO 41A05011-1	
4	2	2 Hole Elpress connector for X0 grounding cable	
5	1	Oil Level Indicator-6" Dial 1/C (Low) , Qualitrol---LLG032-091-01 CS-35304	ZU21037911A01
6	1	Temperature Gauge Bi-metal Direct Mount, Qualitrol 150-101-01	ZU21011518A01
7	1	PRD w/Contact - 10PSI ANSI 3A01, Qualitrol 208-009-01	ZU21042390A01
8	1	Drain Valve- Flange Connected w/2" NPT plug and 3/8" sampler	ZU21030711A02A
9	1	Upper Filter Press connection - Globe Valve w/ 2" NPT Plug & Nipple	ZU21047523A02
10	2	Valve Drain Globe 1" W/Flange Connected, for Gas Monitor	ZU21071225A01
11	2	Vacuum Connection - 2" NPT Pipe & Cap	-
12	1	Rapid Pressure Rise Relay- Oil Space, Qualitrol #900-003-02 Military	ZU21069554A01
13	1	Control Cabinet - 72"H x 60" W x 24" D NEMA4	
14	4	Radiator 2100mm CC 29 panels, Galvanized, Demountable	ZURAD520210029G01
15	8	Lifting Eyes for Radiator	
16	8	Radiator Valve Asy Weld-On 197mm Circle Dia	ZU21035722B02
17	8	Radiator Drain & Vent Plugs 3/4"	
18	6	Cooling Fans, 25" 1/3HP, 1PH 230VAC 7400 SCFM, Krenz F26D A9712	ZU26047669A02
19	2	Cooling Fans Junction Box, NEMA 4	ZU26047838A01
20	8	Radiator Brace (Horizontal & Cross)	CG
21	2	Manhole 24" dia (Qty 2)	CG
22	1	Fall Protection safety post Mounting Plate, Unique Concepts #10816	ZU12041072A01
23	4	Jacking Provisions	CG
24	4	Lifting Lugs for Cover only	CG
25	4	Lifting Lugs for complete transformer	CG
26	11	Grounding Pads- Copper Faced 1/2-13 NEMA 2 hole spacing	CG

Item no.	Qty	Component Description	CG Part #
27	1	Enclosure for CT blocks	CG
28	2	Junction Block ASSY CT Epoxy Cast Lead Wire Type 37 & 20 Wires--- Control Maloney	
29	1	Gas Expansion Valve	CG
30	1	Pressure Vavuum Guage , w/shradder valve	CG
31	2	Ball Valve Brass 1/2" NPT-Pressure Vacuum guage	ZU21036765A01
32	1	LTC Equalization Valve, 1/2" NPT Ball Valve	ZU21036765A01
33	1	Core Grd Bushing 30BIL 0.63 STUD NC CM 70131557, Main Transformer	ZU02019299A01
34	1	Core Grd Bushing 30BIL 0.63 STUD NC CM 70131557, PA	ZU02019299A01
35	1	Neutral Grounding Resistor 4160 System, 2400V L-N 6 Ohm 400 A 10 Sec, 760 deg rise	
36	1	Eclipse GIC sensor	
37	1	Load Tap Changer (LTC) LTC RMV-II 1500A 15KV	ZU1511003RMVII
38	1	Load tap changer motor drive	Reinhausen
39	1	Liquid level guage w/1 low alarm contact, (LTC)	
40	1	Pressure relief device w/ 1 alarm contact, Messko (LTC)	
41		Nameplate for Core Ground Enclosures	
42	1	Nameplate for Center of Gravity	
43	1	Name Plate Stainless Steel, 18" x 24" x 0.32"	
44	1	CG Logo plate	
45	1	Shut off valve 2" Gate valve for Rapid rise relay	ZU21030805A01G
46	1	RTD Single Pt100 Ohm for Top Oil in Main tank, Qualitrol 103-023-01	ZU21069952A01
47	1	Dehydrating Breather for LTC, Reinhausen MTraB DB100-RM	
48	1	Liquid Fill Connection for LTC tank- 1" Pipe	
49	1	Drain Valve -Globe Valve W/2" NPT Plug and 3/8" Sampler for LTC	
50	1	Vacuum Connection - 2" Pipe with Cap for LTC	
51	1	LV Bus Duct throat, Removable-Undrilled	CG
52	1	Nameplate for Shipping Assembly	

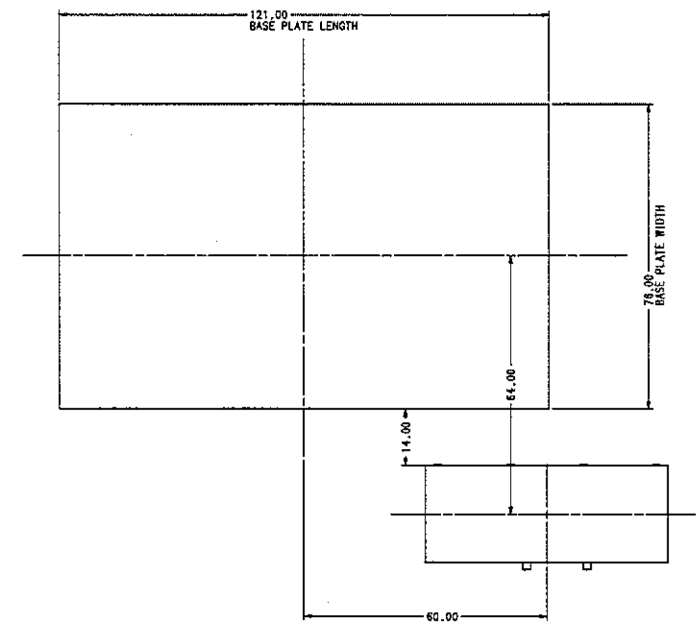
SHIP LOOSE ITEMS

Item #	Component	qty	Wt of Ea. lbs	Total Wt. Lbs
1	NGR	1	400	400
2	Radiator	4	1460	5840
3	Cooling Fans	6	50	300
4	Oil in Tote	315	7.375	2323
5	Miscellaneous Items			100
				8963



TOP VIEW

BASE VIEW



SPARE ITEMS:

1) 1 SET OF ASSEMBLY GASKETS
2) 2 CANS OF TOUCH-UP PAINT

SHIP UNIT OIL FILLED
RADIATOR OIL (226 GAL) & TANK OIL (89 GAL)
TO BE SHIPPED IN ONE 1TOTE.

REMAINING GAS SPACE 10.5" @ 25 deg

NEXTERA-GENESIS SOLAR

15/20/25 MVA
PRIMARY 13.8 kV,110kV BIL, DELTA
SECONDARY 4.16kV/ 2.4kV,75kV BIL, WYE

TOTAL WEIGHT :100728 LBS
SHIPPING WEIGHT : 91765 LBS

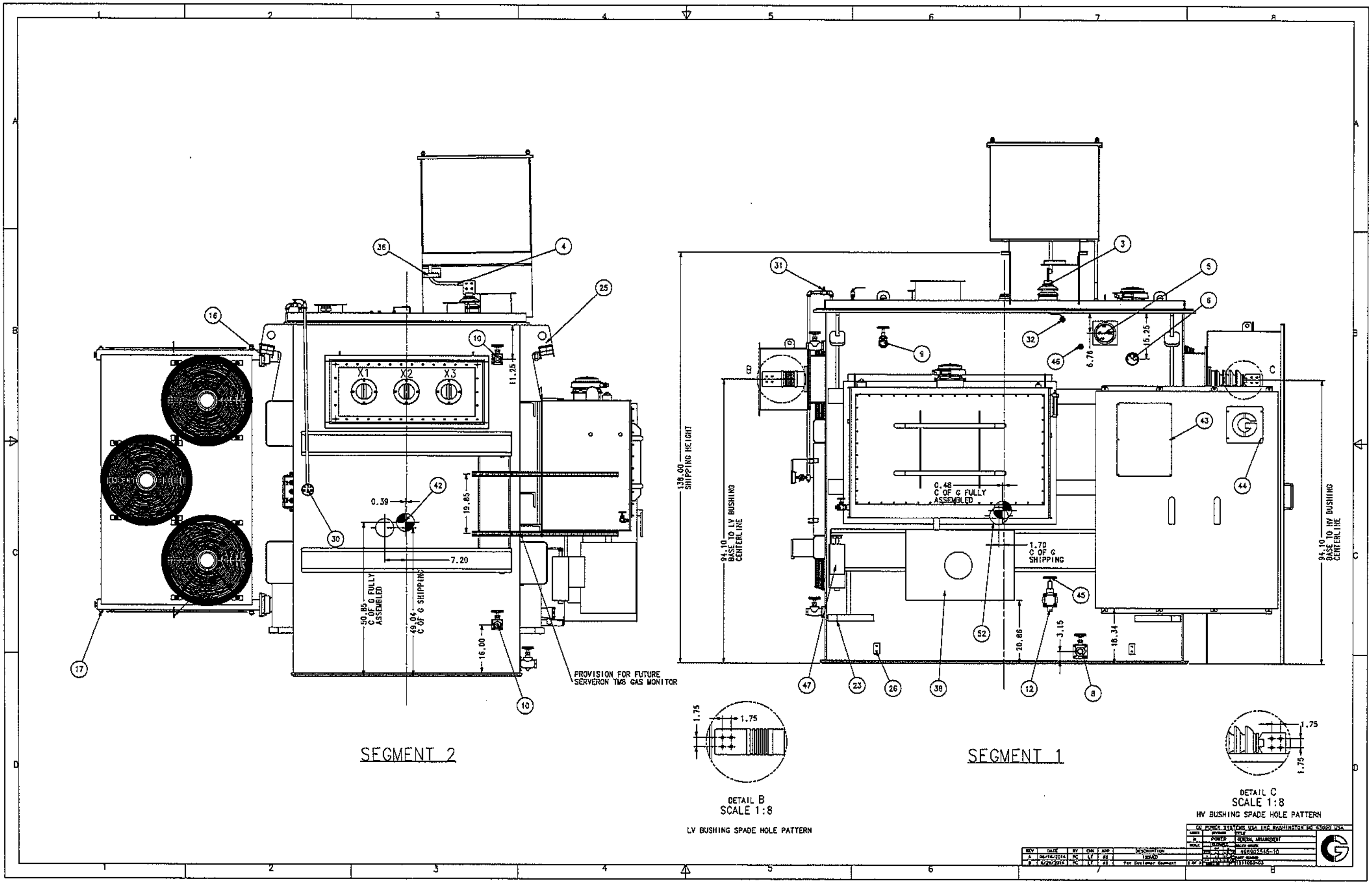
TYPE MINERAL OIL
COLOR : ANSI 70 GRAY
NON-SKID FINISH ON COVER
COALTAR COATING ON BASE

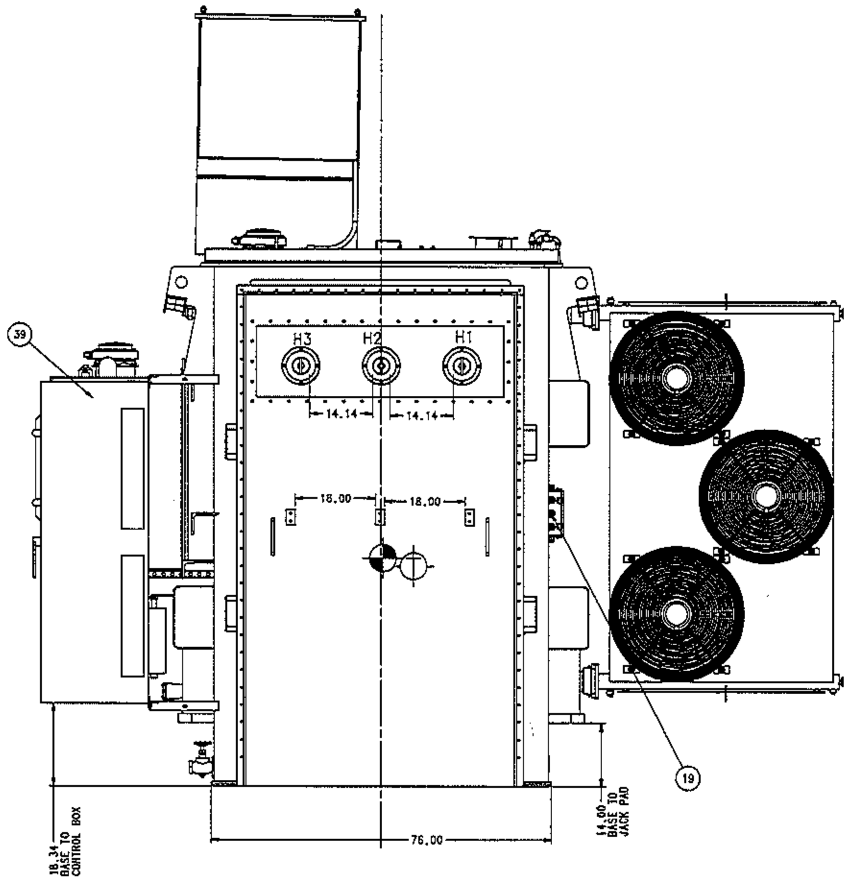
REV	DATE	BY	CHK	APP	DESCRIPTION
A	08/18/2014	PC	LT	AS	ISSUED
B	8/28/2014	PC	LT	AS	For customer comments removed inertaire system, moved item 10 from seg 3 to seg 2

CG POWER SYSTEMS USA INC WASHINGTON MO 63090 USA

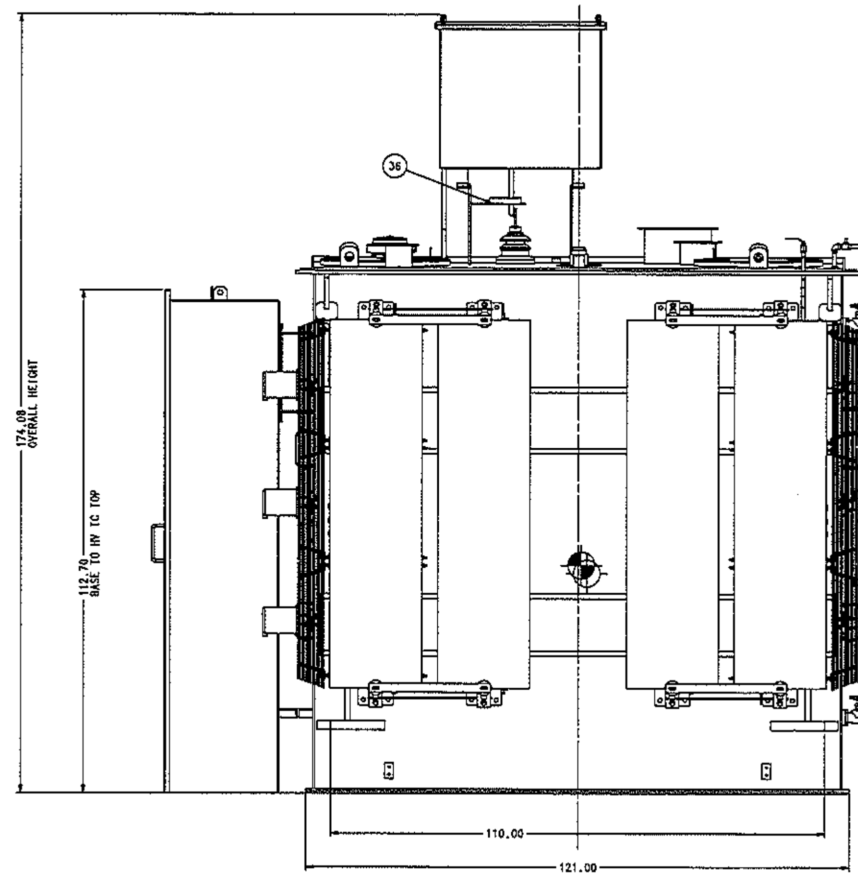
TITLE: GENERAL ARRANGEMENT

[illegible]


SEGMENT 2
SEGMENT 1
X1
X2
X3
0.39
7.20
19.85
11.25
16.00
50.85
C OF G FULLY
ASSEMBLED
49.04
C OF G SHIPPING
PROVISION FOR FUTURE
SERVERON TM8 GAS MONITOR
138.00
SHIPPING HEIGHT
94.10
BASE TO LV BUSHING
CENTERLINE
94.10
BASE TO HV BUSHING
CENTERLINE
0.48
C OF G FULLY
ASSEMBLED
1.70
C OF G
SHIPPING
15.25
6.76
20.88
3.15
18.34
1.75
DETAIL B
SCALE 1:8
LV BUSHING SPADE HOLE PATTERN
DETAIL C
SCALE 1:8
HV BUSHING SPADE HOLE PATTERN
GENERAL ARRANGEMENT
REV
DATE
BY
CHK
APP
DESCRIPTION
For Customer Comment



SEGMENT 4



SEGMENT 3

REV	DATE	BY	CHK	APP	DESCRIPTION
A	08/18/2014	PC	LT	AS	ISSUED
B	8/29/2014	PC	LT	AS	Per Customer Comments

GE POWER SYSTEMS USA INC WASHINGTON MO [illegible] USA

UNITS	[illegible]	TITLE
in	POWER	GENERAL ARRANGEMENT
SCALE	[illegible]	[illegible]
		49600[illegible]45-10
2 OF 2		[illegible]

GENESIS SOLAR LLC

SPARE TRANSFORMER SITE PREPARATION AND FOUNDATION

SGN-7209

11995 WILEY'S WELL ROAD
BLYTHE, CALIFORNIA 92225

SCOPE OF WORK STATEMENT:

THESE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS AND SPECIFICATIONS: PROVIDE POWER FEED TO NEW, SPARE TRANSFORMER AND CIRCUIT BREAKER PANEL. DESIGN TRANSFORMER FOUNDATION AND CONTAINMENT.

PROJECT ADDRESS:

SGN-7209
11995 WILEY'S WELL ROAD
BLYTHE, CALIFORNIA 92225

OWNER

GENESIS SOLAR LLC

700 UNIVERSE BLVD
JUPITER, FL 33408
TELEPHONE: (760) 921-1411

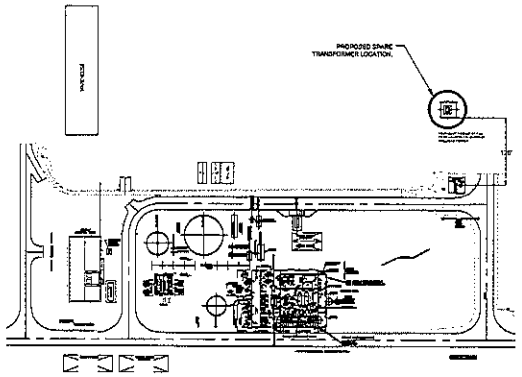
ENGINEERING CONTACTS

DESERT ENGINEERS
75401 PAINTED DESERT DRIVE
INDIAN WELLS, CALIFORNIA 92210
(760) 568-9600

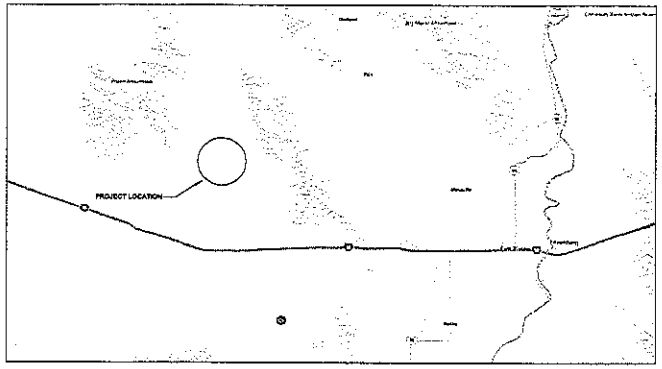
CIVIL ENGINEER – RON FIERO, PE

STRUCTURAL ENGINEER – BRIAN GOTTLIEB, PE

ELECTRICAL ENGINEER – FELIX ROTH, PE



SITE/FACILITY PLAN
NO SCALE



VICINITY MAP
NO SCALE

SHEET INDEX

APPLICABLE CODES

THE WORK SHOWN ON THESE DRAWINGS SHALL BE USED FOR CONSTRUCTION.

APPLICABLE CODES:
2013 CALIFORNIA BUILDING CODE (CBC), TITLE 24 PART 2
2013 CALIFORNIA ELECTRICAL CODE (CEC), TITLE 24 PART 3
2013 CALIFORNIA MECHANICAL CODE (CMC), TITLE 24, PART 4
2013 CALIFORNIA PLUMBING CODE (CPC), TITLE 24, PART 5
2013 CALIFORNIA FIRE CODE, TITLE 24 PART 9.

WORK EXEMPT FROM PERMIT BY THE CBC 2010 SECTION 105.2 OR ASCE 7-05 SECTION 13.1.4 NEED NOT BE DETAILED ON THE CONSTRUCTION DOCUMENTS. EXEMPTIONS FROM PERMIT REQUIREMENTS OF THE CODE SHALL NOT BE DEEMED TO GRANT AUTHORIZATION FOR ANY WORK TO BE DONE IN ANY MANNER IN VIOLATION OF THE PROVISIONS OF THIS CODE OR ANY OTHER LAWS OR ORDINANCES OF THIS JURISDICTION. THE INSPECTOR OF RECORD (IOR) SHALL ASSURE THAT THE ABOVE REQUIREMENTS ARE ENFORCED.

Dennis Hurvitz

Digitally signed by Dennis Hurvitz
DN: cn=Dennis Hurvitz, o=Desert Engineers, ou=Desert Engineers, email=Dennis@desertengineers.com, c=US
Date: 2014.10.09 14:31:32 -07'00'

NO.#	REMARKS	DATE

M21082
Exp. 6/13
09/25/14

DESERT ENGINEERS
CIVIL MECHANICAL ELECTRICAL PLUMBING STRUCTURAL ENGINEERING
75401 PAINTED DESERT DRIVE, INDIAN WELLS CA 92210
760 568 9600
http://DESERTENGINEERS.COM

SPARE TRANSFORMER SITE PREPARATION
GENESIS SOLAR SGN-7209
11995 Wiley's Well Road
Blythe, CA. 92225

DRAWN BY:	
DATE	09/25/14
SCALE	
JOB NO.	
SHEET	T-1.0
OF	SHEETS

GENERAL NOTES

PERFORM CONSTRUCTION AND WORKMANSHIP IN COMPLIANCE WITH THE DRAWINGS, SPECIFICATIONS AND THE 2013 CALIFORNIA BUILDING CODE (2013 CBC) & 2012 INTERNATIONAL BUILDING CODE (2012 IBC).

GOVERNING CODE AUTHORITY CITY OF BLYTHE, CALIFORNIA.

THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES AND VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION. NOTIFY THE STRUCTURAL ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES. DO NOT SCALE DRAWINGS.

ALL DETAILS, SECTIONS, AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE, UNLESS NOTED OTHERWISE. SPECIFIC NOTES AND DETAILS ON THE DRAWINGS TAKE PRECEDENCE OVER THESE GENERAL NOTES AND TYPICAL DETAILS.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE AND SHALL REPORT ANY DISCREPANCIES TO THE STRUCTURAL ENGINEER.

MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS ARE TO BE CONSIDERED PART OF THE DOCUMENT PACKAGE AND ARE TO BE USED TO DEFINE LOCATION AND CONFIGURATIONS INCLUDING BUT NOT LIMITED TO CONCRETE CURB HEIGHT AND LOCATION, FLOOR DRAINS, SLAB DEPRESSIONS, ROOF OPENINGS, DUCT PENETRATIONS, ELECTRICAL CONDUIT RUNS, CONNECTIONS FOR PIPES, DUCTS AND EQUIPMENT, DOORS, WINDOWS, NON-BEARING INTERIOR AND EXTERIOR WALLS, SLOPES, STAIRS, RAILINGS, AND WATERPROOFING.

REFER TO THE ARCHITECTURAL SPECIFICATIONS (WHERE APPLICABLE) FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE STRUCTURAL DRAWINGS.

ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS FOR THE WORKING DRAWINGS AND/OR ARCHITECTURAL SPECIFICATIONS WHERE APPLICABLE) SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY OF THE WORK INVOLVED. APPROVAL BY GOVERNING AGENCY DOES NOT CONSTITUTE AUTHORITY TO DEVIATE FROM THE PLANS OR SPECIFICATIONS.

THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, UNLESS OTHERWISE SHOWN. THEY DO NOT INDICATE MEANS AND METHODS OF CONSTRUCTION. CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE ADEQUATE ERECTION SHORING, BRACING AND GUYS THAT COMPLY WITH LOCAL STATE, OSHA AND NATIONAL SAFETY STANDARDS.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES COMPLYING WITH ALL LOCAL STATES OSHA, AND NATIONAL SAFETY STANDARDS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE AND SHALL REPORT ANY DISCREPANCIES TO THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL WORK AND MATERIALS INCLUDING THOSE FURNISHED BY SUB-CONTRACTORS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRACING AND SHORING ALL EXCAVATIONS, TEMPORARY AND EXISTING STRUCTURES AND PARTIALLY COMPLETED PORTIONS OF THE WORK TO ASSURE THE SAFETY OF ANY OF ALL WORK AND MATERIALS INCLUDING THOSE PERSONS COMING IN CONTACT WITH THE WORK.

THE CONTRACTOR SHALL INVESTIGATE THE SITE FOR FILLED EXCAVATIONS OR BURIED STRUCTURES SUCH AS FOUNDATIONS, CESSPOOLS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, THE STRUCTURAL ENGINEER SHALL BE IMMEDIATELY NOTIFIED.

OBSERVATION VISITS TO THE SITE BY FIELD REPRESENTATIVES OF THE STRUCTURAL ENGINEER DO NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES, OR METHODS OF CONSTRUCTION. CONSTRUCTION SUPPORT SERVICES PERFORMED BY REPRESENTATIVES OF THE STRUCTURAL ENGINEER SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES PERFORMED BY OTHERS. OBSERVATION VISITS TO THE SITE BY THE ENGINEERS FIELD REPRESENTATIVE SHALL NEITHER BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.

FOR PROPER FIELD OBSERVATION BY THE STRUCTURAL ENGINEER, THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF THE VARIOUS CONSTRUCTION PHASES.

NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, HOLES, POCKETS, ETC., IN STRUCTURAL ELEMENTS BUT ARE NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DOCUMENTS.

DURING AND AFTER CONSTRUCTION, BUILDER AND/OR OWNER SHALL KEEP LOADS ON STRUCTURE WITHIN THE LIMITS OF DESIGN LOADS.

ALL CODES AND SPECIFICATIONS NOTED ON THESE DRAWINGS SHALL BE THE LATEST APPROVED EDITIONS AND REVISIONS BY THE GOVERNING CODE AUTHORITY HAVING JURISDICTION OVER THIS PROJECT.

THE CONTRACTOR SHALL REVIEW AND STAMP ALL SHOP DRAWINGS PRIOR TO SUBMISSION TO THE STRUCTURAL ENGINEER. ...

SHOP DRAWINGS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT, ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO FABRICATION WITH SUFFICIENT TIME FOR REVIEW OF DESIGN INTENT (MINIMUM OF 10 WORKING DAYS).

ALL ASTM DESIGNATIONS SHALL BE AS AMENDED TO DATE UNLESS NOTED OTHERWISE.

IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS OR DETAILS ON THE STRUCTURAL DRAWINGS.

VIBRATIONAL EFFECTS OF MECHANICAL EQUIPMENT HAVE NOT BEEN CONSIDERED BY THE STRUCTURAL ENGINEER.

NO FRAMING OF ANY TYPE SHALL BE CONCEALED PRIOR TO INSPECTION BY GOVERNING AGENCIES.

GRADING AND DRAINAGE, ALL PAVING, FLAT WORK AND PLANTERS NEXT TO BUILDING SHALL BE PROPERLY GRADED TO CARRY WATER AWAY FROM BUILDINGS.

NO CHANGES ARE TO BE MADE TO THESE PLANS WITHOUT THE KNOWLEDGE AND CONSENT OF THE STRUCTURAL ENGINEER WHOSE SIGNATURE APPEARS HEREON.

CONTINUOUS (OR SPECIAL) INSPECTION SHALL MEAN INSPECTION DONE CONTINUOUSLY BY A REGISTERED SPECIAL INSPECTOR CURRENTLY LICENSED BY THE STATE AND THE CITY AND APPROVED BY THE ARCHITECT AND ENGINEER.

FOUNDATION

REFER TO SOIL INVESTIGATION BY: TERRACON CONSULTANTS, INC. DATED: NOVEMBER 10, 2010 ... SOIL INVESTIGATION AND ADDENDUM SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS.

ALLOWABLE SOIL PRESSURE 3000 PSF. ALL REQUIRED FILL AND BACKFILL SHALL BE COMPACTED TO AT LEAST (90%) OF THE MAXIMUM DENSITY OBTAINABLE BY THE ASTM DESIGNATION (D-1557-70T) METHOD OF COMPACTION.

CARRY ALL FOOTINGS A MINIMUM OF 18" INTO NATURAL GRADE OR APPROVED COMPACTED FILL. ACTUAL ELEVATION OF BOTTOM OF FOOTINGS SHALL BE AS DIRECTED BY THE SOILS ENGINEER DURING CONSTRUCTION.

ALL FOOTINGS SHALL BE INSPECTED BY THE BUILDING DEPARTMENT PRIOR TO POURING CONCRETE.

ALL WATER SHALL BE REMOVED FROM FOUNDATION EXCAVATIONS PRIOR TO POURING CONCRETE.

AT ALL POST TENSIONED FOUNDATIONS, SHOP DRAWING SHALL BE SUBMITTED FOR REVIEW BY THE BUILDING DEPARTMENT, ARCHITECT AND STRUCTURAL ENGINEER.

CAST IN PLACE CONCRETE

SCHEDULE OF STRUCTURAL CONCRETE 28 DAY STRENGTHS AND TYPES:

LOCATION IN STRUCTURE	STRENGTH (PSI)	TYPE
SLAB ON GRADE / FOOTINGS	4500 (U.N.O.)	HARDROCK
WALLS	4500 (U.N.O.)	HARDROCK
GRADE BEAMS	4500 (U.N.O.)	HARDROCK
BEAMS AND SUPPORTED SLABS	4000	HARDROCK
COLUMNS	4000	HARDROCK
FILL ON METAL DECK	4000	LT. WT.

CEMENT SHALL CONFORM TO ASTM C150, TYPE V CEMENT SHALL BE USED. MIX DESIGN TO BE IN ACCORDANCE WITH CBC SECTION 1904.2.

PROVIDE SILICEOUS, NORMAL WEIGHT AGGREGATES OF NATURAL SAND AND ROCK CONSISTING OF SILICA OR COMPOUNDS OTHER THAN CALCIUM OR MAGNESIUM CARBONATE FOR HARDROCK CONCRETE. AGGREGATES ARE TO COMPLY WITH ASTM C33 WITH PROVEN SHRINKAGE CHARACTERISTICS OF LESS THAN 0.05%.

PROVIDE LIGHT WEIGHT AGGREGATES CONSISTING OF EXPANDED SHALE FOR LT. WT. CONCRETE (110 PCF). AGGREGATES SHALL COMPLY WITH ASTM C330.

ALL REINFORCING STEEL, DOWELS, ANCHOR BOLTS, AND OTHER INSERTS SHALL BE SECURED IN POSITION PRIOR TO POURING CONCRETE OR GROUT. ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS OR STIRRUPS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.

ANCHOR BOLTS SHALL BE EMBEDDED INTO CONCRETE PER I.C.C. TABLE 1911.2 UNLESS NOTED OTHERWISE.

THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT PLACED IN CAST-IN-PLACE CONCRETE. TOLERANCES SHALL BE AS PER AMERICAN CONCRETE INSTITUTE (ACI-318).

CAST AGAINST AND PERMANENTLY EXPOSED TO GROUND = 3"

FORMED CONCRETE EXPOSED TO EARTH OR WEATHER
#6 THROUGH #18 BARS = 2"
#5 BARS W31 OR D31 WIRE, AND SMALLER = 1 1/2"

NOT EXPOSED TO WEATHER OR GROUND
#14 AND #18 BARS = 1 1/2"
#11 BAR AND SMALLER = 1"

BEAMS, COLUMNS AND WALL JAMBS PRIMARY REINFORCEMENT, TIES STIRRUPS, AND SPIRALS
#3 THROUGH # 11 BARS = 1 1/2"
#14 AND #18 BARS = 2 1/2"

SLABS ON GRADE
#3 THROUGH #11 BARS = AT CENTER RESTING ON STIRRUPS IN PLACE PRIOR TO POUR

BARS PARALLEL TO COLD JOINTS
#3 THROUGH #11 BARS = 2

THE CONTRACTOR SHALL PLACE ALL CONCRETE IN COMPLIANCE WITH ACI 301 AND ACI 304.

SUBMIT SHOP DRAWINGS TO THE OWNER AND STRUCTURAL ENGINEER INDICATING LOCATIONS OF ALL CONCRETE CONSTRUCTION JOINTS FOR REVIEW PRIOR TO PLACING CONCRETE. LOCATE JOINTS AT LOCATIONS TO MINIMIZE THE EFFECTS OF SHRINKAGE AS WELL AS LOCATIONS OF MINIMUM SHEAR STRESS.

PROVIDE KEYS IN CONSTRUCTION JOINTS UNLESS DETAILED OTHERWISE. THOROUGHLY CLEAN, REMOVE ALL LAITANCE AND THOROUGHLY WET AND REMOVE STANDING WATER IN CONSTRUCTION JOINTS BEFORE PLACING NEW CONCRETE AT VERTICAL JOINTS SLUSH WITH A COAT OF NEAT CEMENT BEFORE PLACING NEW CONCRETE.

ALL CONCRETE SHALL BE MAINTAINED ABOVE 50 DEGREES FAHRENHEIT AND IN A MOIST CONDITION A MINIMUM OF 7 DAYS AFTER PLACEMENT.

SLUMP IN CONCRETE USED FOR FLAT SURFACES SHALL NOT EXCEED 4 INCHES.

PROJECTING CORNERS OF COLUMNS, BEAMS, WALLS, ETC SHALL BE FORMED WITH A 3/4 INCH CHAMFER, UNLESS NOTED OTHERWISE ON THE ARCHITECT'S DRAWINGS.

ELECTRICAL CONDUIT AND MECHANICAL PIPES IN EXCESS OF 1 INCH DIAMETER SHALL NOT BE EMBEDDED IN CONCRETE UNLESS DETAILED. CONDUIT AND PIPES LESS THAN 1 INCH IN DIAMETER MAY BE EMBEDDED IN SLAB ON GRADE, AND ELEVATED SLABS PROVIDED THE SPACING EXCEEDS 2 INCHES ON CENTER IN HORIZONTAL RUNS, AND ARE PLACED WITHIN THE MIDDLE ONE-THIRD OF THE SECTION DEPTH.

PROVIDE CORNER BARS IN ALL WALLS AND AT WALL INTERSECTIONS TO MATCH SIZE AND SPACING OF HORIZONTAL BARS IN THOSE WALLS.

LOCATION OF SLOTTED INSERTS, WELD PLATES AND ALL OTHER ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

REINFORCING BARS SHALL NOT BE WELDED UNLESS SPECIFICALLY NOTED ON THE DRAWING AS BEING WELDED. WELDED REINFORCING SHALL CONFORM TO ASTM A706.

ALL CONCRETE WORK SHALL CONFORM TO THE LATEST ACI CODE AND DETAILING MANUAL. ALL CONCRETE CONSTRUCTION PER INTERNATIONAL BUILDING CODE.

DIMENSIONS ARE NOT FURNISHED TO SIMPSON "HDA" OR "PA" TYPE HOLDOWNS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SUPERINTENDENT, THE FRAMING CONTRACTOR AND THE CONCRETE CONTRACTOR TO LOCATE THE EXACT LOCATION REFER TO THE DETAILS AND MANUFACTURER'S SPECIFICATIONS FOR PROPER INSTALLATION.

COARSE AGGREGATE OR CONCRETE SHALL NOT CONTAIN LIGNITE, STEEL, OR OTHER MATERIALS THAT MAY BE DETRIMENTAL TO THE CONCRETE.

FLY ASH MAYBE SUBSTITUTED FOR A PORTION FOR THE CEMENT. A MAXIMUM OF 20% OF THE CEMENT MAY BE REPLACED BY FLY ASH. WHEN REPLACEMENT IS USED THE REPLACED CEMENT SHALL BE SUBSTITUTED WITH ONE AND ONE HALF TIMES WITH FLY ASH, WATER CEMENT RATIOS SHALL BE BASED ON THE WATER/CEMENT FLY ASH RATIO.

MIX DESIGN SHALL NOT CONTAIN LESS THAN A WATER/CEMENT RATIO OF 0.28.

FOUNDATION (WIDTHS AND DEPTHS), AND REINFORCING AS SHOWN ON PLANS ARE SUPERSEDED BY LOCAL CODES OR ORDINANCES WHICH REQUIRE INCREASES OF THE SAME.

CONCRETE MIX AND STRENGTH f'c AT 28 DAYS, SHALL CONFORM TO THE FOLLOWING TABLE:

LOCATION	UNIT WEIGHT	f'c	MIN CEMENT	MAX W/C	AIR ENTRAINING
SLAB ON GRADE	145 PCF	4500 PSI	470 LB/YD	0.54	3%
FOOTINGS	145 PCF	4500 PSI	470 LB/YD	0.54	3%

REFERENCE I.C.C. TABLE 19-A-3 WHEN SOIL CONTAINS MORE THAN 0.2% SULFATE CONCENTRATION AS STATED IN THE GEOTECHNICAL REPORT.

IF STRENGTH DATA FROM FIELD EXPERIENCE OR TRIAL MIXTURES ARE NOT AVAILABLE, THE MAXIMUM W/C RATIO SHALL BE AS SPECIFIED IN CBC TABLE 19-A-7.

ALL REINFORCING SHALL BE SUPPORTED IN CONFORMANCE WITH THE MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION (THE LATEST ADDITION).

REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR MISCELLANEOUS ITEMS TO BE CAST INTO CONCRETE.

INSPECTION IS REQUIRED FOR ALL CONCRETE 3000 PSI OR GREATER BY APPROVED SPECIAL INSPECTOR.

REINFORCING STEEL

PROVIDE REINFORCING STEEL COMPLYING WITH ASTM A615, GRADE 60. PROVIDE REINFORCING STEEL TO BE WELDED COMPLYING WITH ASTM A706, GRADE 60. FOR REINFORCING STEEL AT DUCTILE MOMENT FRAMES AND SHEAR WALLS, PROVIDE REINFORCING STEEL MEETING ASTM A706 AND ACTUAL YIELD STRENGTH BASED ON MILL TESTS NOT TO EXCEED SPECIFIED YIELD BY MORE THAN 18,000 PSI AND THE RATIO OF ACTUAL ULTIMATE TENSILE STRESS TO ACTUAL YIELD TENSILE STRESS SHALL NOT BE LESS THAN 1.25.

PROVIDE WELDED WIRE FABRIC COMPLYING WITH ASTM A82 AND A185. LAP WELDED WIRE FABRIC MINIMUM 1-1/2 SPACES OR 12 INCHES. PROVIDE DEFORMED WIRE STIRRUPS COMPLYING WITH ASTM A496 AND A497.

ALL BARS SHALL BE FREE OF LOOSE AND FLAKY RUST AND SCALE, GREASE OR OTHER MATERIALS WHICH MIGHT AFFECT OR IMPAIR BOND.

LAP REINFORCING STEEL AT SPLICES, AT WELL STAGGERED LOCATIONS AND TO THE FOLLOWING MINIMUM LENGTHS UNLESS NOTED OTHERWISE:

#3 AND #4	2'-0"	#8	5'-3"
#5	2'-6"	#9	6'-9"
#6	3'-0"	#10	8'-6"
#7	4'-3"	#11	10'-6"

SPLICE REINFORCING STEEL WHERE INDICATED PER PLAN.

ALL REINFORCING SHALL BE SECURELY TIED AND BRACED IN PLACE PRIOR TO PLACING CONCRETE.

MINIMUM CLEAR DISTANCES BETWEEN BARS INCLUDING AREAS AT SPLICES SHALL BE 1 INCH OR 1 BAR DIAMETER, WHICHEVER IS GREATER. MINIMUM CLEAR DISTANCE AT COLUMNS SHALL BE 1-1/2 INCHES OR 1-1/2 BAR DIAMETERS, WHICHEVER IS GREATER.

DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME SIZE, GRADE, SPACING AND NUMBER AS THE SPECIFIED VERTICAL REINFORCING AND SHALL LAP AS NOTED ABOVE, UNLESS NOTED OTHERWISE.

WELDING OF REINFORCING STEEL SHALL ONLY OCCUR WITH ASTM A706 BARS AND USING E-90XX LOW HYDROGEN ELECTRODES COMPLYING WITH ANSI/AWS D1.4.

ALL REINFORCING BAR BENDS SHALL BE MADE COLD.

SUBMIT SHOP DRAWINGS TO ARCHITECT INDICATING REINFORCING PLACEMENT FOR REVIEW PRIOR TO FABRICATION. PREPARE SHOP DRAWINGS IN CONFORMANCE WITH ACI 315.

ABREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
BAR	REINFORCING BAR
BD	BOARD
BLKG	BLOCKING
BLW	BELOW
BM	BEAM
BN	BOUNDARY NAIL
BOB	BOTTOM OF BEAM
BW	BOTH WAYS
CF	CONTINOUS FOOTING
CIDH	CAST-IN DRILLED HOLE
CJ	CEILING JOIST
CL	CENTERLINE
COL	COLUMN
CONC	CONCRETE
CONT	CONTINOUS
CPE	CONT PANEL EDGES
D	DEPTH
DBL	DOUBLE
DF	DOUGLAS FIR
DIA	DIAMETER
DO	DITTO
(E)	EXISTING
EJ	EXPANSION JOINT
EN	EDGE NAIL
EQ	EQUAL
EW	EACH WAY
FB	FLOOR BEAM
FG	FINISH GRADE
FJ	FLOOR JOIST
FLR	FLOOR
FMG	FRAMING
FN	FIELD NAIL
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FP	FULL PENETRATION
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GLB	GLUE-LAMINATED BEAM
GR BM	GRADE BEAM
GWB	GYPSUM WALLBOARD
GT	GIRDER TRUSS
H	HIGH
HDR	HEADER
HGT	HEIGHT
HGR	HANGER
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL STEEL
HT	HIP TRUSS
KP	KING POST
L	LOW
LT WT	LIGHT WEIGHT
LVL	LAMINATED VENEER LUMBER

ABREVIATIONS

RF	ROOF
RJ	ROOF JOIST
RR	ROOF RAFTER
RT	ROOF TRUSSES
SIM	SIMILAR
SIMP	SIMPSON PRODUCT
SM	SHEAR MAX
SMS	SHEET METAL SCREW
SQ	SQUARE
SS	SELECT STRUCTURAL
SSW	SIMPSON STRONG WALL
STD	STANDARD
STL	STEEL
SW	SHEAR WALL
THK	THICK
THRD	THREADED
TN	TOE NAIL
TOC	TOP OF CONCRETE
TOL	TOP OF LEDGER
TOM	TOP OF MASONRY
TOP	TOP OF PLYWOOD
TOS	TOP OF SHEATHING
TOW	TOP OF WALL
TSG	TAPPERED STEEL GIRDER
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W	WIDTH OF FOOTING
W/	WITH
WP	WEAKENED PLANE JOINT
WWF	WELDED WIRE FABRIC
DIA Ø	DIAMETER
@	AT
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MI	MALLEABLE IRON
MIN	MINIMUM
MLB	MICRO LAM BEAM
(N)	NEW
NG	NATURAL GRADE
O/	OVER
OC	ON CENTER
PJ	POUR JOINT
PLB	PARALLAM BEAM
PLWD	PLYWOOD
PT	PRESSURE TREATED
RB	ROOF BEAM
REINF	REINFORCING
REQ'D	REQUIRED

CONTRACTORS RESPONSIBILITY

EACH CONTRACTOR OR SUB-CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE WIND AND/OR SEISMIC RESISTING SYSTEM THAT IS LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK REQUIRING SPECIAL INSPECTION. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN THE FOLLOWING:

1. ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.
2. ACKNOWLEDGMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL.
3. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING AND THE DISTRIBUTION OF THE REPORTS.
4. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.

STRUCTURAL STEEL

STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR THE DESIGN FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS (LATEST EDITION). ALL COLUMN AND DOUBLER PLATES SHALL CONFORM TO ASTM A-572, GRADE 50, FY=50 KSI. AND THE FOLLOWING ASTM STANDARD SPECIFICATIONS, UNLESS NOTED OTHERWISE.

- ALL STRUCTURAL STEEL UNLESS NOTED BELOW = ASTM A992 (50 KSI)
- PIPES = ASTM A53, GRADE B (35 KSI)
- TUBES = ASTM A500, GRADE B (46 KSI)
- ANCHOR BOLTS AND UNFINISHED BOLTS = ASTM A307 U.N.O.
- THREADED ROUND STOCK = ASTM A36
- HIGH STRENGTH BOLTS = SEE NOTE BELOW

MILL CERTIFICATES SHALL ACCOMPANY ALL STRUCTURAL STEEL. ALL STRUCTURAL STEEL SHALL BE IDENTIFIABLE IN THE FIELD WITH THE CORRESPONDING MILL CERTIFICATES.

ALL BOLTS SHALL BE UNFINISHED, CONFORMING TO ASTM A307 OF SIZES SHOWN ON DRAWINGS, UNLESS NOTED OTHERWISE.

HIGH STRENGTH BOLTS:

PROVIDE HIGH STRENGTH BOLTS, NUTS AND WASHERS COMPLYING WITH ASTM A325.

ALL HIGH STRENGTH BOLTS SHALL BE SLIP-CRITICAL HIGH STRENGTH BOLTS (A325-SC) UNLESS NOTED OTHERWISE.

ASSEMBLE HIGH STRENGTH BOLTS IN COMPLIANCE WITH THE SPECIFICATION OF STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" 1985 EDITION. TIGHTEN A325-N BOLTS TO A SNUG TIGHT CONDITION. TIGHTEN A325-SC BOLTS TO AT LEAST THE MINIMUM PROPER TENSION USING ONE OF THE FOLLOWING TIGHTENING METHODS: TURN-OF-NUT, CALIBRATED WRENCH OR DIRECT TENSION INDICATOR TIGHTENING.

HEADED STUD ANCHORS SHALL BE MANUFACTURED FROM C1015, C1017, OR C1020 COLD DRAWN STEEL CONFORMING TO ASTM A108. STUD SIZE SHALL BE AS NOTED ON PLANS.

SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. INDICATE A WELDING PROCEDURE FOR DUCTILE MOMENT FRAMES INCLUDING THE SEQUENCE OF WELDING AT GIRDER TO COLUMN AND COLUMN TO BASE PLATE CONNECTIONS AND COLUMN SPLICES AS WELL AS THE SEQUENCE OF WELDING WITHIN EACH FRAME. SHOP DRAWINGS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT, ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO FABRICATION WITH SUFFICIENT TIME FOR REVIEW OF DESIGN INTENT (MINIMUM OF 10 WORKING DAYS) ALSO SEE NEXT 3 NOTES BELOW.

A WELDING PROCEDURE SPECIFICATION (W.P.S.) PER A.W.S D1.1 SHALL BE DEVELOPED BY THE FABRICATOR/ERECTOR AND APPROVED BY THE ENGINEER OF RECORD OR HIS DESIGNEE. THE W.P.S. SHALL INCLUDE THE WELDING PARAMETERS RECOMMENDED BY THE ELECTRODE MANUFACTURER.

COMPLETE JOINT PENETRATION GROOVE WELDS SHALL HAVE A FILLER METAL WITH A NOTCH TOUGHNESS OF 20 FOOT-POUNDS AVERAGE AT 70 DEGREES FAHRENHEIT.

WELD STRUCTURAL STEEL IN COMPLIANCE WITH ANSI/AWS D1.1-94. WELDERS SHALL BE CERTIFIED AS REQUIRED BY THE GOVERNING CODE AUTHORITY. WELDING SHALL BE DONE BY THE ELECTRIC ARCH PROCESS USING APPROVED COATED RODS. WELDING MAYBE PERFORMED USING THE SUBMERGED ARC PROCESS WITH AUTOMATIC WELDING (SAW-1). USE E-90xx LOW HYDROGEN ELECTRODES FOR WELDING OF REINFORCING STEEL. PERFORM SHOP WELDING BY AN APPROVED FABRICATOR.

BUILDING STRUCTURAL STEEL IS DESIGNED FOR UNSHORED CONSTRUCTION UNLESS NOTED OTHERWISE.

CAMBER STRUCTURAL STEEL BEAMS AND GIRDERS SUPPORTING FLOOR LOADS WITH SPANS GREATER THAN 35'-0" L/360 UNLESS NOTED OTHERWISE. DO NOT CAMBER MEMBERS BELOW ELEVATOR ENTRANCE DOORS.

UNLESS A LARGER SIZE FILLET WELD IS INDICATED, PROVIDE MINIMUM SIZE OF WELD PER AISC. WELD LENGTHS INDICATED ARE THE NET EFFECTIVE LENGTH REQUIRED.

FIELD CUTTING OR BURNING OF STRUCTURAL STEEL IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED IS PROHIBITED WITHOUT PRIOR APPROVAL. IF APPROVED, THE CONTRACTOR SHALL HAVE THE CONNECTION TESTED BY ULTRASONIC TESTING METHOD BY AN INDEPENDENT TESTING LAB.

AS REQUIRED APPLY SPRAYED FIREPROOFING OVER STRUCTURAL STEEL WITH MONOKOTE MK6/CBF OR MK/ED AS MANUFACTURED BY W.R. GRACE AND COMPANY AS APPROVED BY ICC EVALUATION REPORT NO. 4607. OBTAIN APPROVAL FOR SUBSTITUTE PRODUCTS AS INDICATED IN GENERAL SECTION. HOURLY FIRE RESISTIVE REQUIREMENTS SHALL BE DETERMINED USING TABLE 17.A OF THE CBC AND BUILDING TYPES OF CONSTRUCTION AS INDICATED ON ARCHITECTURAL DRAWINGS.

WHERE EXPOSED STEEL SURFACES ARE EXPOSED TO VIEW IN THE FINISHED WORK. USE ONLY MATERIALS THAT ARE SMOOTH AND FREE FROM SURFACE BLEMISHES. REMOVE SUCH BLEMISHES BY GRINDING OR WELDING AND GRINDING PRIOR TO CLEANING AND APPLICATION OF FINISHES.

SHOP PRIME ALL STRUCTURAL STEEL, EXCEPT AT CONNECTION LOCATIONS, AND STEEL WHICH REQUIRES FIREPROOFING. FOR THE PROTECTION OF EXPOSED STRUCTURAL STEEL SEE ARCHITECTURAL DRAWINGS.

BOLT HOLES IN STEEL, SHALL BE 1/16 INCH LARGER IN DIAMETER THAN THE NORMAL SIZE OF THE BOLT USED EXCEPT AS NOTED.

FABRICATOR SHALL REVIEW THE WELDING PROCESS AND MATERIALS TO ENSURE CONFORMANCE WITH THE LATEST SAC/FEMA GUIDELINES AND RECOMMENDATIONS.

MINIMUM NOMINAL TENSILE STRENGTH OF WELD METAL SHALL BE 70 KSI.

STRUCTURAL STEEL CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND COORDINATING ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS WITH ARCHITECTURAL DRAWINGS IN CASE OF CONFLICTS THE ARCHITECT / ENGINEER IS TO BE NOTIFIED.

ALL GROUT UNDER STEEL BEARING PLATES SHALL BE SOLID DRYPACK OR NON-SHRINK GROUT PLACED AS DIRECTED BY THE MANUFACTURER (f'c = 4,000 PSI MIN)

ALL COMPLETE PENETRATION GROOVE WELDS EMPLOYED FOR THE ORDINARY MOMENT FRAME FULLY RESTRAINED CONNECTIONS BE TESTED 100 PERCENT BY ULTRASONIC TESTING OR BY RADIOGRAPHY CBC 1703.

CONTINUOUS INSPECTION REQUIRED FOR ALL FIELD WELDING BY APPROVED SPECIAL INSPECTOR.

NOTE
ALL NOTES ON THIS SHEET SHALL APPLY TO EACH SHEET OF THIS SET OF STRUCTURAL DRAWINGS

STRUCTURAL OBSERVATION

STRUCTURAL OBSERVATION IS REQUIRED IN ACCORDANCE W/ SECTION 4-211 OF THE 2013 CALIFORNIA ADMINISTRATIVE CODE. STRUCTURAL OBSERVATION SHALL BE REQUIRED ON FOUNDATIONS PRIOR TO POUR & ON ROOF & WALL SHEATING PRIOR TO COVERING.

REQUIRED SPECIAL INSPECTIONS

IN ADDITION TO THE REGULAR INSPECTIONS, THE FOLLOWING CHECKED ITEMS WILL ALSO REQUIRE SPECIAL INSPECTION IN ACCORDANCE WITH SEC. 1709 OF THE INTERNATIONAL BUILDING CODE & SEC 1707.3 OF THE CBC

ITEM	REQUIRED?	REMARKS
SOILS COMPLIANCE PRIOR TO FOUNDATION INSPECTION	YES	SEE SOILS REPORT
STRUCTURAL CONCRETE OVER 2,500 PSI	YES	4500 PSI
FIELD WELDING	YES	
HIGH STRENGTH BOLTS	N/A	
EXPANSION / EPOXY ANCHORS	YES	
STRUCTURAL MASONRY	N/A	
MOMENT FRAMES / CONNECTIONS	N/A	
SEE SHEET S-1.1 FOR ADDITIONAL INFORMATION		

TESTS AND INSPECTIONS

1. PROVIDE ALL STRUCTURAL MATERIAL FROM TESTED STOCK. FURNISH COPIES OF TEST REPORTS TO ARCHITECT & GOVERNING CODE AUTHORITY UPON REQUEST.
2. SEE TABLE(S) ON SHEET S-1.1 FOR TEST AND INSPECTION REQUIREMENTS.
3. THE USE OF ROLLED STEEL SECTIONS, BOLTS, & OR REBAR MANUFACTURED OUTSIDE THE UNITED STATES WILL REQUIRE VERIFICATION THAT THE PRODUCTS COMPLY WITH APPLICABLE ASTM STANDARD. FOREIGN STEEL WILL REQUIRE MILL CERTIFICATES, & REPRESENTATIVE TESTING BY AGENCIES APPROVED BY THE GOVERNING CODE AUTHORITY TO DEMONSTRATE COMPLIANCE. ALL FOREIGN BOLTS & CONNECTORS SHALL BE APPROVED BY THE GOVERNING CODE AUTHORITY.
4. A TESTING LABORATORY SHALL PROVIDE CONTINUOUS INSPECTION, COMPLYING WITH CHAPTER 17 OF THE 2013 CBC FOR THE FOLLOWING
   A. FIELD WELDING
   B. CONCRETE & REINFORCING STEEL WHEN SPECIFIED COMPRESSIVE STRENGTH EXCEEDS 2500 PSI
   C. BOLTS INSTALLED IN CONCRETE
   D. HIGH-STRENGTH BOLTS
   E. VERMICULITE FILL
   F. EXPANSION AND EPOXY ANCHORS
5. ALL COMPLETE PENETRATION GROOVE WELDS CONTAINED IN JOINTS OF ORDINARY AND SPECIAL MOMENT-RESISTING FRAMES SHALL BE TESTED 100% EITHER BY ULTRASONIC TESTING OR BY RADIOGRAPHY.
6. SEE SHEET S-1.1 FOR ADDITIONAL INFORMATION.

DESIGN DATA

1. EARTHQUAKE DESIGN DATA:
   SEISMIC METHOD = ANALYTICAL
   SEISMIC IMPORTANCE FACTOR I = 1
   OCCUPANCY CATEGORY = IV
   Ss = 0.534
   S1 = 0.252
   Sds = 0.423
   SEISMIC DESIGN CATEGORY = C
   BASIC SEISMIC-FORCE-RESISTING SYSTEM(S) = EQUIPMENT FORCES
   SEISMIC RESPONSE COEFFICIENT(S) CS = 0.218
   RESPONSE MODIFICATION FACTOR(S) R = 2.5
   ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE PROCEDURE
   DESIGN BASE SHEAR = ASD
2. FLOOD DESIGN DATA: NOT REQUIRED
3. SPECIAL LOADS: NOT APPLICABLE
4. SYSTEMS AND COMPONENTS REQUIRING SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE: SEE TABLE(S) ON SHEET S-1.1

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75104 PAINTED DESERT DRIVE, INDIAN WELLS CA 92210

GENERAL NOTES

SPARE TRANSFORMER SITE PREPARATION
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Blythe, CA. 92225

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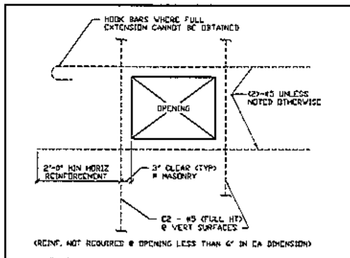
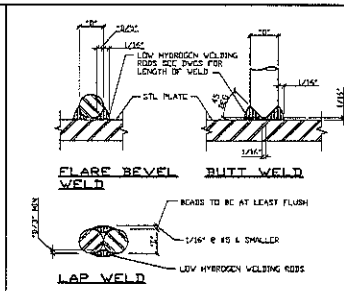
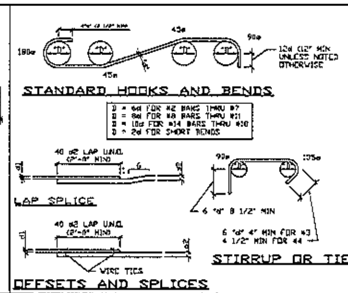


NOTE: DETAIL APPLIES TO CONCRETE WALLS, CONCRETE SLABS, CONCRETE TOPPING OVER STEEL DECK, & OPENINGS IN REINFORCED HOLLOW UNIT MASONRY WALLS WHEN THE WIDTH OF THE MASONRY OPENING DOES NOT EXCEED 4'-0"

1 / S-1.1 GENERAL DETAIL



2 / S-1.1 GENERAL DETAIL



3 / S-1.1 GENERAL DETAIL

NOTE: ALL NOTES ON THIS SHEET SHALL APPLY TO EACH SHEET OF THIS SET OF STRUCTURAL DRAWINGS

TABLE 1704.4 REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD[a]	IBC REFERENCE
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT	-	X	ACI 318: 3.5, 7.1-7.7	1913.4
2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1704.3, ITEM 5B	-	-	AWS D1.4 ACI 318: 3.5.2	-
3. INSPECT BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED	X	-	-	1911.5
4. VERIFYING USE OF REQUIRED DESIGN MIX	-	X	ACI 318: CH. 4, 5.2-5.4	1904.2.2, 1913.2, 1913.3
5. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	-	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1913.10
6. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	-	ACI 318: 5.9, 5.10	1913.6, 1913.7 1913.8
7. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	-	X	ACI 318: 5.11-5.13	1913.9
8. INSPECTION OF PRESTRESSED CONCRETE: A. APPLICATION OF PRESTRESSING FORCES B. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC-FORCE-RESISTING SYSTEM	X X	-	ACI 318: 18.20 ACI 318: 18.18.4	-
9. ERECTION OF PRECAST CONCRETE MEMBERS	-	X	ACI 318: CH. 16	-
10. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POSTTENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	-	X	ACI 318: 6.2	-
11. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	-	X	ACI 318: 3.11	-
12. POST INSTALLED ANCHORS	X	-	-	-

FOR SI: 1 inch = 25.4 mm

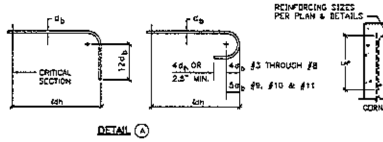
a. WHERE APPLICABLE, SEE ALSO SECTION 1707.1, SPECIAL INSPECTION FOR SEISMIC RESISTANCE

9 / S-1.1 SPECIAL INSPECTION TABLE (CONCRETE)

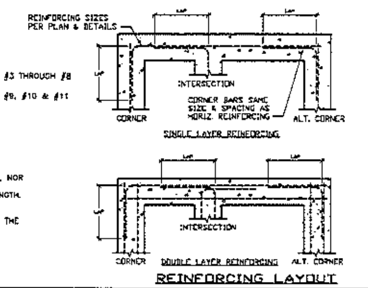
REBAR SPLICE AND EMBED LENGTH SCHEDULE

CONC. f'c = 4500 PSI (U.N.O.)

BAR #	LAP SPLICE LENGTHS: COLUMNS	LAP SPLICE LENGTHS: TOP BAR	LAP SPLICE LENGTHS: OTHER	DEVELOPMENT LENGTH: COLUMNS	DEVELOPMENT LENGTH: TOP BAR	DEVELOPMENT LENGTH: OTHER	DEVELOPMENT LENGTH: STANDARD HOOKS ℓdh
3	12"	21"	16"	8"	16"	12"	6"
4	12"	27"	21"	8"	21"	16"	8"
5	21"	51"	39"	15"	39"	30"	11"
6	25"	61"	47"	18"	47"	30"	13"
7	30"	80"	60"	21"	69"	53"	15"
8	34"	102"	78"	24"	78"	60"	17"
9	38"	115"	88"	27"	88"	68"	19"
10	43"	129"	99"	31"	99"	77"	22"
11	47"	143"	110"	34"	110"	85"	24"

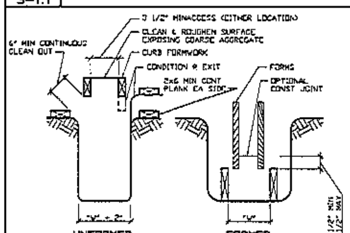


DETAIL (A)



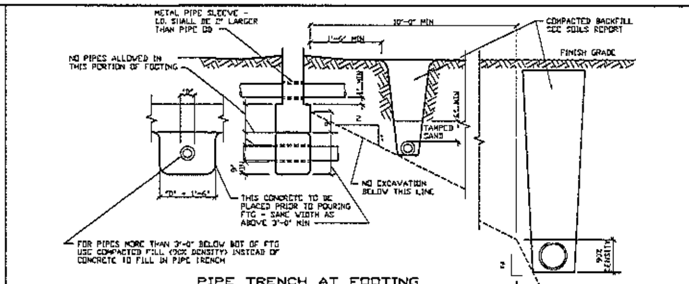
NOTES:
1. LAP SPLICES IN BEAMS ARE NOT PERMITTED WITHIN JOINTS, NOR WITHIN A DISTANCE OF TWICE THE MEMBER DEPTH FROM THE FACE OF THE JOINT, NOR AT CENTER 1/3 OF BEAM SPAN FOR BOTTOM REINFORCING, NOR AT END 1/3 OF BEAM SPAN FOR TOP REINFORCING.
2. LAP SPLICES IN BEAMS SHALL BE PERMITTED ONLY IF HOOP REINFORCEMENT IS PROVIDED AT A MAXIMUM SPACING OF 4" O/C ALONG THE LAP LENGTH.
3. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED IN COMPRESSION, SPLICE LENGTH SHALL BE OF THE DEVELOPMENT LENGTH OF LARGER BAR OR SPLICE LENGTH OF SMALLER BAR.
4. COLUMN LAP SPLICE LENGTH SPECIFIED IS WHERE TIES ARE USED THROUGHOUT THE LAP SPLICE LENGTH. FOR OTHER CONDITIONS USE 30db AS THE COLUMN LAP SPLICE LENGTH.
5. LENGTHS SHOWN ARE FOR HOOKS WITH SIDE COVER (NORMAL TO PLANE OF HOOK) NOT LESS THAN 2-1/2" AND FOR 90° HOOK, COVER ON BAR EXTENSION BEYOND HOOK NOT LESS THAN 2". FOR OTHER CONDITIONS MULTIPLY ABOVE STANDARD HOOK DEVELOPMENT LENGTH BY 1.43.
6. SPLICE AND EMBEDMENT LENGTHS ARE IN INCHES. SPLICES SHALL BE CLASS "B".
7. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" CONCRETE BELOW, OTHER BARS ARE BOTTOM OR VERTICAL BARS. WHERE REQUIRED EMBEDMENT CANNOT BE OBTAINED WITH STRAIGHT BARS, PROVIDE 180° OR 90° HOOK EQUALING LENGTH BELOW. SCHEDULE IS FOR GRADE 60 BARS EXCEPT #3 AND #4 WHICH ARE FOR GRADE 40 BARS.

6 / S-1.1 GENERAL DETAIL

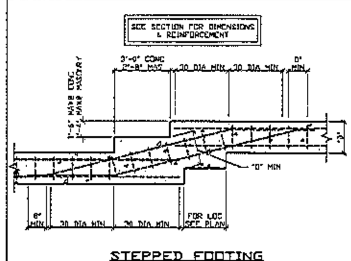


NOTES:
1. FOUNDATION CONCRETE MAY BE PLACED DIRECTLY INTO NEAT EXCAVATIONS, PROVIDED THE FOUNDATION TRENCH WALLS ARE STABLE AS DETERMINED BY THE STRUCTURAL ENGINEER & APPROVED BY DSA.
2. FORMWORK NOT PERMITTED BELOW GRADE UNLESS FOOTING AND WALL ARE FULLY FORMED.
3. STAKES NOT PERMITTED WITHIN FOOTING SECTION.

11 / S-1.1 GENERAL DETAIL



12 / S-1.1 GENERAL DETAIL



14 / S-1.1 GENERAL DETAIL

15 / S-1.1 NOT USED

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UNAUTHORIZED CHANGES & USES

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16 / S-1.1 NOT USED

18 / S-1.1 NOT USED

19 / S-1.1 NOT USED

20 / S-1.1 BG DISCLAIMER

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GENERAL NOTES & DETAILS

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Blythe, CA. 92225

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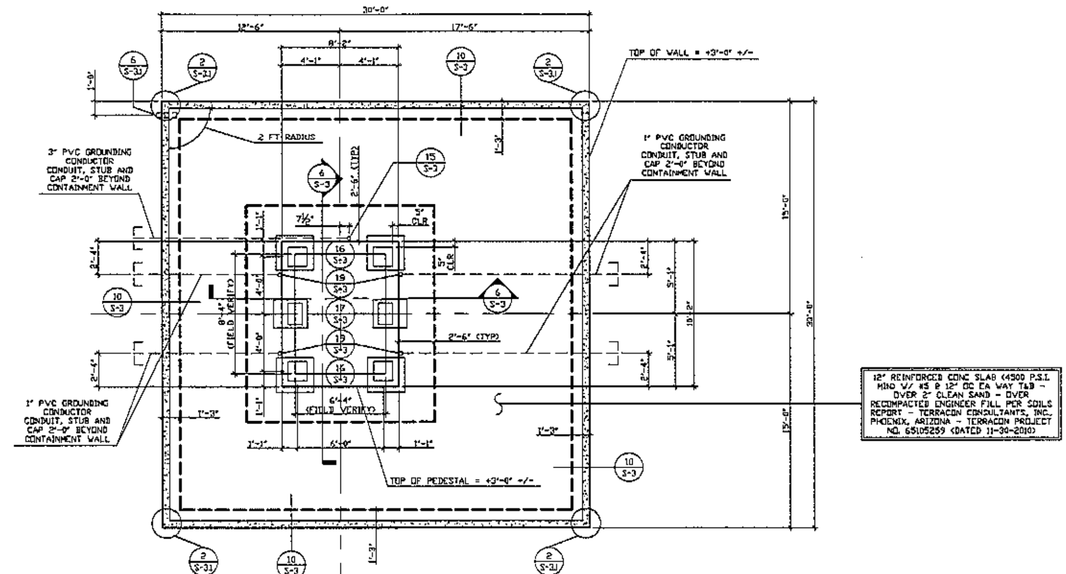
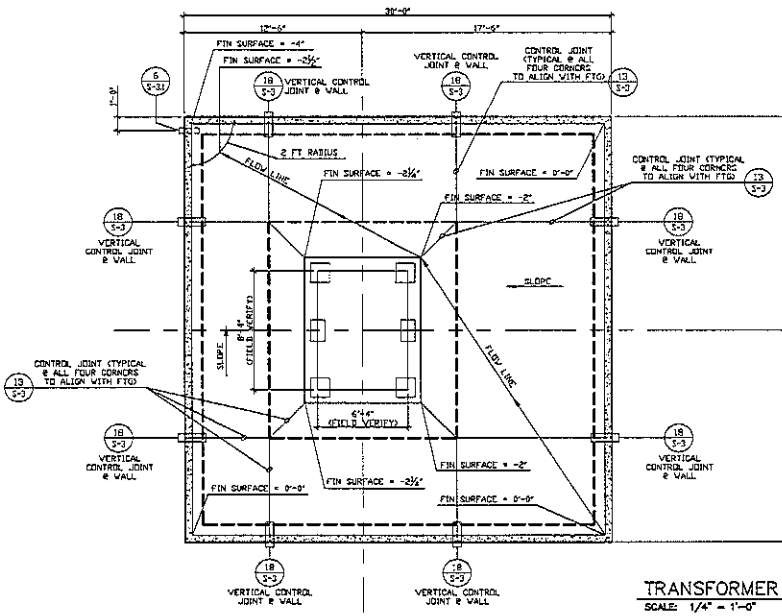


TRANSFORMER — DIMENSIONED FOUNDTION PLAN
SCALE: 1/4" = 1'-0"



TRANSFORMER — CONTROL JOINT & FLOW LINE PLAN
SCALE: 1/4" = 1'-0"

FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS WITH PLANS

"SOILS COMPACTION TEST AND APPROVAL REQUIRED BY SOILS ENGINEER AFTER FOUNDATION EXCAVATION AND CERTIFICATE OF ACCEPTANCE SHALL BE READY AT TIME OF FOUNDATION INSPECTION. THIS IS TO BE PROVIDED FOR ANY FOUNDATION WORK AT THE REQUEST OF THE INSPECTOR."

FOUNDATION NOTES

1. SEE SHEET S-1 AND S-1.1 FOR GENERAL NOTES AND TYPICAL DETAILS.
2. DIMENSIONS ARE TO CENTER LINE OR FACE OF FOOTINGS. SEE OTHER PLANS OF ARCH FOR LOCATIONS OF POSTS, WALLS AND ETC. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS WITH THE OWNER BEFORE COMMENCEMENT OF WORK.
3. ALL CONTINUOUS FOOTINGS SHALL EXTEND A DISTANCE EQUAL TO THE FOOTING DEPTH BEYOND THE END OF THE STUD WALL, UNLESS NOTED OTHERWISE. NO EXTENSION IS REQUIRED WHERE CONTINUOUS FOOTINGS CHANGE DIRECTION, UNLESS NOTED OTHERWISE.
4. VERIFY LOCATIONS OF ALL UNDERGROUND CONDUITS WITH THE ELECTRICAL, MECHANICAL AND PLUMBING DRAWINGS.
5. WRITTEN VERIFICATION FROM SOILS ENGINEER THAT HE HAS REVIEWED FOUNDATION PLANS AND DETAILS FOR CONFORMANCE WITH SOILS REPORT SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT.
6. SOILS ENGINEER SHALL BE RETAINED TO OBSERVE ALL GRADING, EXCAVATION, COMPACTION AND FOUNDATION CONSTRUCTION PROCEDURES.
7. PAD PREPARATION AND SOIL COMPACTION IF ANY REQUIRED SHALL BE DONE PER THE SOILS REPORT RECOMMENDATIONS.
8. ALL WELDING TO BE DONE IN A BUILDING DEPARTMENT APPROVED SHOP. IF FIELD WELDING IS REQUIRED, APPROVAL TO BE BY ARCHITECT OR STRUCTURAL ENGINEER - SPECIAL INSPECTION PROVIDED BY OWNER IS REQUIRED FOR ALL FIELD WELDING.
9. VERIFY ALL DIMENSIONS WITH OTHER DRAWINGS PRIOR TO COMMENCEMENT OF WORK.
10. SOILS ENGINEER TO REVIEW AND APPROVE ALL FOUNDATIONS AND FOUNDATION DETAILS PER FINAL SOILS REPORT PRIOR TO ISSUANCE OF PERMIT.
11. PRIOR TO THE CONTRACTOR REQUESTING A BUILDING DEPARTMENT FOUNDATION INSPECTION, THE SOILS ENGINEER SHALL ADVISE THE BUILDING OFFICIAL, IN WRITING, THAT:
A) THE BUILDING PAD WAS PREPARED IN ACCORDANCE WITH THE SOILS REPORT
B) THE UTILITY TRENCHES HAVE BEEN PROPERLY BACKFILLED AND COMPACTED, AND
C) THE FOUNDATION EXCAVATIONS COMPLY WITH THE INTENT OF THE SOILS REPORT
12. FASTENERS IN PRESERVATIVE-TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL CONFORM TO SECTION 2304.9.5 OF THE I.C.C. FASTENERS FOR PRESERVATIVE-TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. THE COATING WEIGHTS FOR ZINC-COATED FASTENERS SHALL BE IN ACCORDANCE WITH "ASTM A 153". EXCEPTION: FASTENERS OTHER THAN NAILS, TIMBER, RIVETS, WOOD SCREWS AND LAG SCREWS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH "ASTM B 695", CLASS 55 MINIMUM. FASTENING FOR WOOD FOUNDATIONS SHALL BE AS REQUIRED IN "AF&PA" TECHNICAL REPORT No.7.

THE QUALITY MARK SHALL BE ON THE STAMP OR LABEL AFFIXED TO PRESERVATIVE-TREATED WOOD, AND SHALL INCLUDE THE FOLLOWING INFORMATION: IDENTIFICATION OF TREATING MANUFACTURER, TYPE OF PRESERVATIVE USED, MINIMUM PRESERVATIVE RETENTION (pcf), END USE FOR WHICH THE PRODUCT IS TREATED, "AWPA" STANDARD TO WHICH THE PRODUCT WAS TREATED AND IDENTITY OF THE APPOINTED INSPECTION AGENCY.

13. ADDITIONAL TESTS AS PROOF OF COMPLIANCE MAY BE REQUIRED BY THE BUILDING OFFICIAL TO BE MADE AT NO EXPENSE TO THE JURISDICTION (CBC 1703.7)

NO.#	REMARKS	DATE

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FOUNDATION PLAN

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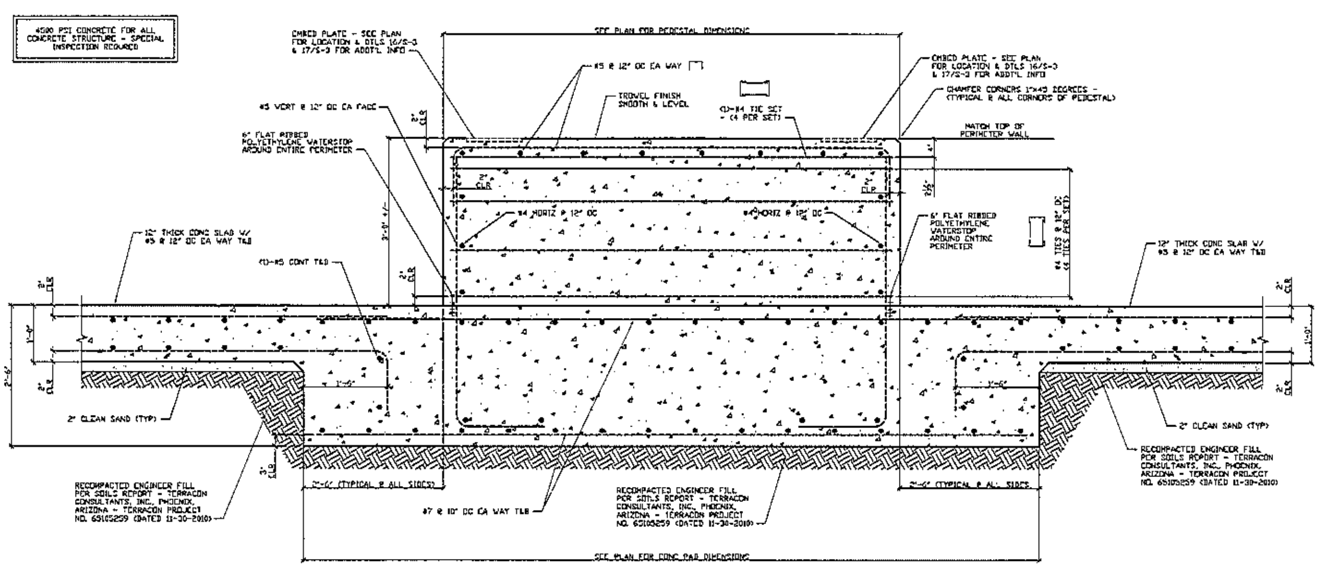
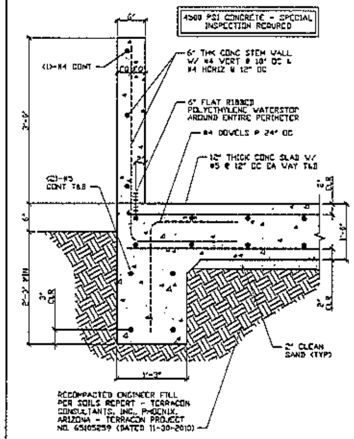
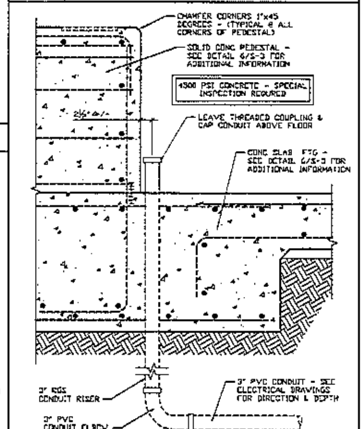


6 / S-3 FOUNDATION DETAIL



10 / S-3 FOUNDATION DETAIL



15 / S-3 FOUNDATION DETAIL

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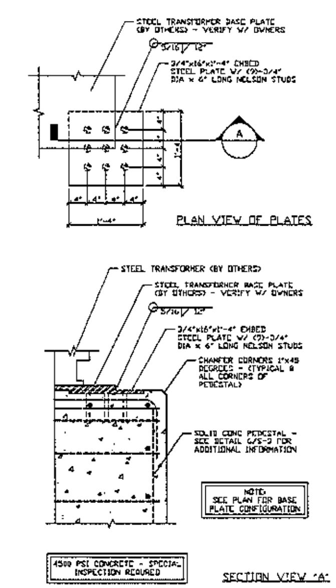
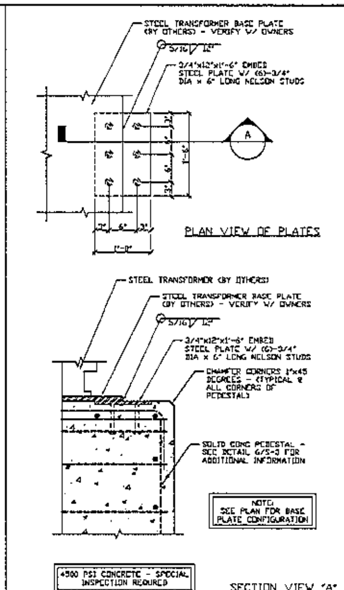
INSTRUMENTS OF SERVICE

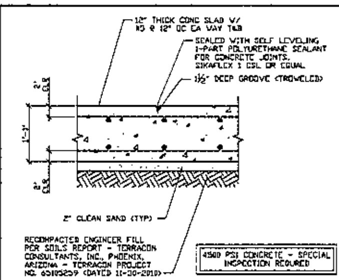
20 / S-3 BG DISCLAIMER



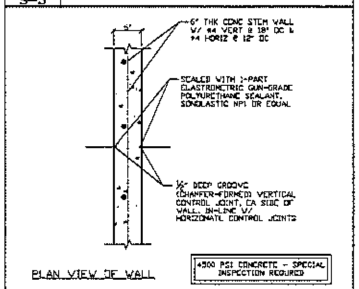
16 / S-3 FOUNDATION DETAIL



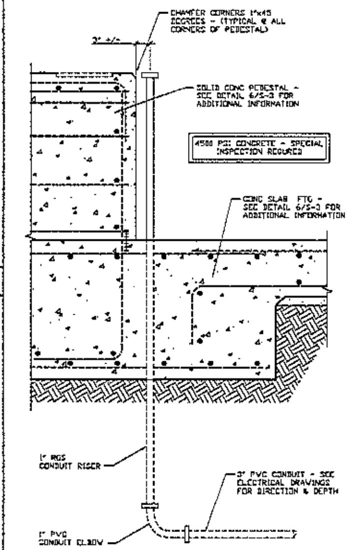
17 / S-3 FOUNDATION DETAIL



13 / S-3 FOUNDATION DETAIL



18 / S-3 FOUNDATION DETAIL



19 / S-3 FOUNDATION DETAIL

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FOUNDATION DETAILS

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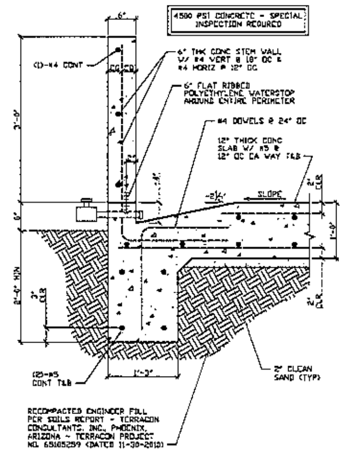
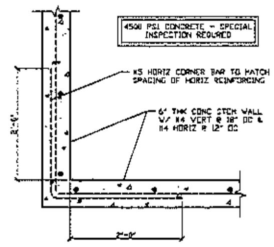
SCALE	N.T.S.
JOB NO.	800.1714
SHEET	S-3
OF	SHEETS



6 / S-3.1	FOUNDATION DETAIL



PLAN VIEW (TYP @ ALL CORNERS)

2 / S-3.1	FOUNDATION DETAIL

3 / S-3.1	NOT USED
4 / S-3.1	NOT USED
5 / S-3.1	NOT USED
7 / S-3.1	NOT USED
8 / S-3.1	NOT USED
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16 / S-3.1	NOT USED
17 / S-3.1	NOT USED
18 / S-3.1	NOT USED
19 / S-3.1	NOT USED

20 / S-3.1	BG DISCLAIMER

NO.#	REMARKS	DATE

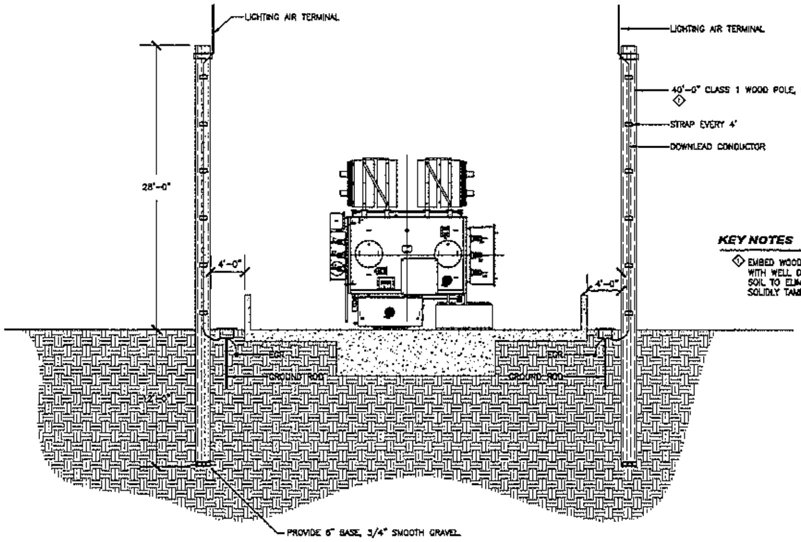
B.G. STRUCTURAL ENGINEERING, INC.
LIC. NO. C31047
BRIAN GOTTLIEB - CIVIL ENGINEER
(760) 565-3553
(760) 568-5681 FAX
EMAIL: Cad@bgstructural.com
75-175 MERLE DRIVE, SUITE 200,
PALM DESERT, CA 92211

DESERT ENGINEERS
CONSULTING ENGINEERS

FOUNDATION DETAILS

SPARE TRANSFORMER SITE PREPARATION
GENESIS SOLAR SGN-7209
11995 Wiley's Well Road
Blythe, CA. 92225

DRAWN BY:	SC
DATE	09/11/14
SCALE	N.T.S.
JOB NO.	800.1714
SHEET	S-3.1
OF	SHEETS

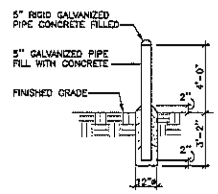


KEY NOTES

◇ EMBED WOOD POLE 12'-0" IN GRAVEL MIXED WITH WELL DRAINING PREDOMINANTLY SANDY SOIL TO ELIMINATE VOIDS. BACKFILL TO BE SOLIDLY TAMPED AND COMPACTED.

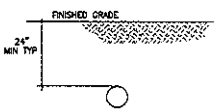
LIGHTING PROTECTION POLE DETAIL (F/–)

SCALE: NTS



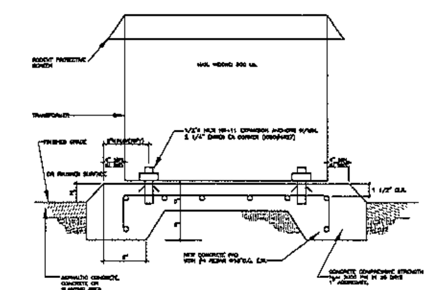
BARRIER POST DETAIL (D/–)

SCALE: NTS



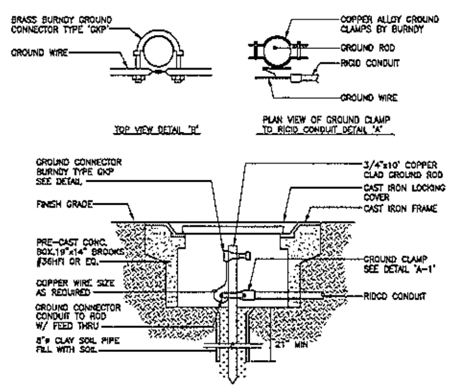
CONDUIT DUCT BANK SECTION (E/–)

SCALE: NTS



TYPICAL TRANSFORMER MOUNTING DETAIL (C/–)

SCALE: NTS

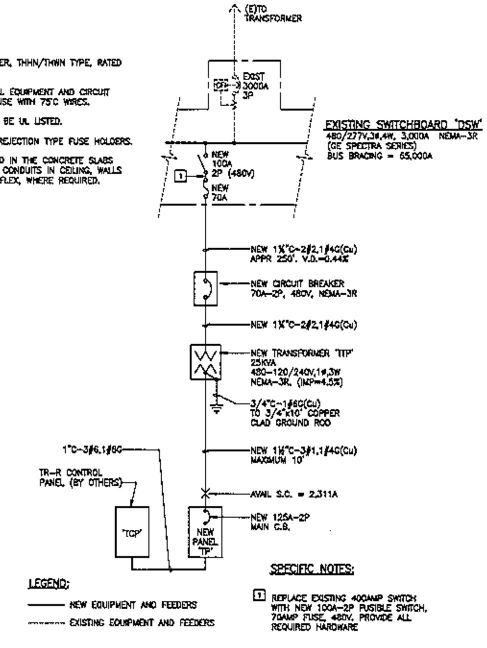


PRE-CAST CONCRETE BOX AND GROUND ROD DETAIL (B/–)

SCALE: NTS

GENERAL NOTES:

1. ALL CONDUCTORS SHALL BE COPPER, THHN/THWN TYPE, RATED 75°C, 600V.
2. ALL TERMINAL LUGS ON ELECTRICAL EQUIPMENT AND CIRCUIT BREAKERS SHALL BE RATED FOR USE WITH 75°C WIRES.
3. ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED.
4. FUSES SHALL BE PROVIDED WITH REJECTION TYPE FUSE HOLDERS.
5. ALL CONDUITS UNDERGROUND AND IN THE CONCRETE SLABS SHALL BE PVC SCH 40 TYPE. ALL CONDUITS IN CEILING, WALLS ETC. SHALL BE EMT OR METALLIC FLEX, WHERE REQUIRED.



LEGEND:

——— NEW EQUIPMENT AND FEEDERS

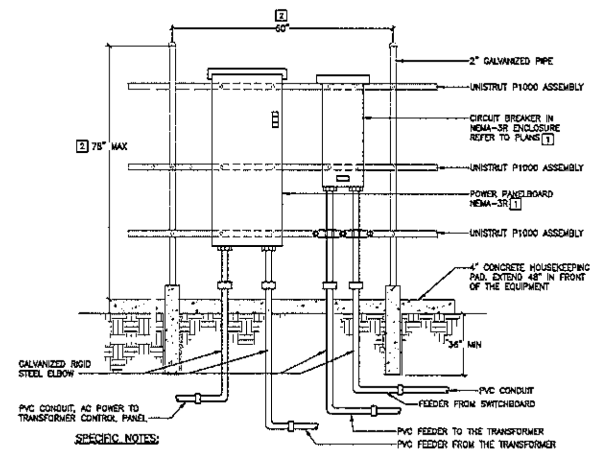
- - - - EXISTING EQUIPMENT AND FEEDERS

SPECIFIC NOTES:

[1] REPLACE EXISTING 400AMP SWITCH WITH NEW 100A-2P FUSIBLE SWITCH, 70AMP FUSE, 480V. PROVIDE ALL REQUIRED HARDWARE

PARTIAL ONE LINE DIAGRAM

SCALE: NTS



SPECIFIC NOTES:

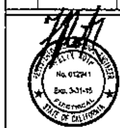
[1] MOUNT EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.

[2] COORDINATE EXACT DIMENSIONS FOR THE EQUIPMENT RACK IN FIELD. ADJUST DIMENSIONS WITHIN LIMITS PROVIDED, IN ORDER TO MATCH MOUNTING HOLES ON THE EQUIPMENT.

BOOST TRANSFORMER MOUNTING DETAIL [2] (A/–)

SCALE: NTS

NO.#	REMARKS	DATE



DESERT ENGINEERS

CONSULTING ENGINEERS

MECHANICAL, ELECTRICAL, PLUMBING AND STRUCTURAL DESIGN

DETAILS, SCHEDULES AND ONE LINE DIAGRAM

SPARE TRANSFORMER SITE PREPARATION
GENESIS SOLAR SGN-7209
11995 Wiley's Well Road
Blythe, CA. 92225

DRAWN BY:	
DATE	10/10/14
SCALE	
JOB NO.	
SHEET	E1.0
OF	SHEETS

GENERAL NOTES FOR UNDERGROUND CONDUITS:

1. DIG TRENCHES TO THE REQUIRED DEPTH WITHOUT POCKETS OR DIPS. REMOVE LARGE STONES FROM THE BOTTOM OF THE TRENCH AND FIRMLY TAMP LOOSE FILL IN THE TRENCH BOTTOM BEFORE CABLE AND CONDUIT IS LAID.
2. BACKFILL SHALL BE SOFT DIRT OR SAND TAMPED INTO PLACE. FILL TRENCH TO THE TOP AND RESTORE SURFACE TO ITS ORIGINAL CONDITION. REMOVE EXCESS EARTH. CONDUIT DUCT BANKS SHALL HAVE A MINIMUM EARTH COVER OF 24 INCHES AS SHOWN ON DRAWINGS, DEPENDING ON CONDITIONS OF SPECIFIC LOCATIONS.
3. RIGID GALVANIZED STEEL CONDUIT SHALL BE INSTALLED WHERE UNDERGROUND CONDUIT TURNS UP TO EXIT THE DUCT BANK, UNLESS OTHERWISE SPECIFIED. REFER TO THE ELECTRICAL INSTALLATION DETAIL FOR THIS REQUIREMENT.
4. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, TERMINATE ALL STUB-UPS 3 INCHES ABOVE THE CONCRETE PAD.
5. ENCASE ALL CONDUITS IN RED COLORED 2000 PSI CONCRETE WITH A MINIMUM COVER OF 3 INCHES ON TOP, BOTTOM, AND SIDES OF CONDUIT. THE TOP SURFACE OF CONCRETE SHALL BE SPRAYED WITH RED OXIDE, WHEN CONCRETE IS WET OR BEFORE INITIAL SET.
6. MARK UNDERGROUND CABLE TRENCHES WITH AN 18 INCH WIDE YELLOW, DETECTABLE, WARNING TAPE PLACED A MINIMUM OF 4 INCHES ABOVE INSTALLED CABLES. MARK THE TAPE THUS: "CAUTION --BURIED ELECTRICAL LINE BELOW".
7. WHEN CONDUIT STUB-UPS ARE WITHIN THE EQUIPMENT ENCLOSURE, THE CONTRACTOR SHALL VERIFY THE EQUIPMENT OPENINGS AND OBSTRUCTIONS TO AVOID MISALIGNMENT OF STUB-UPS AND OPENINGS.
8. ALL UNDERGROUND CONDUIT SHALL BE RIGID PVC SCHEDULE 40 OR AN APPROVED SUBSTITUTE, EXCEPT AS SPECIFIED HEREIN OR IN THE DRAWINGS. ELBOWS ARE GENERALLY TO BE RGS.

SPECIFIC NOTES:

[1] BOND FOOTING REBAR TO EXTERIOR GROUND RING (EGR) WITH #2/0 BARE SOLID COPPER TINNED WIRE.

[2] 3/4"x10' COPPER CLAD GROUND ROD. SEE DETAIL 'B' ON SHEET E1.0

[3] EXTERIOR GROUND RING (EGR) SHALL BE BARE TINNED 19-WIRE STRANDED COPPER CONDUCTOR, #4/0 AWG, BURIED IN EARTH MIN 30" BELOW FINISHED GRADE THE EGR SHALL BE INSTALLED MINIMUM 3 FEET AWAY FROM FOUNDATION. BOND TO THE SITE EXISTING EGR. COORDINATE IN FIELD.

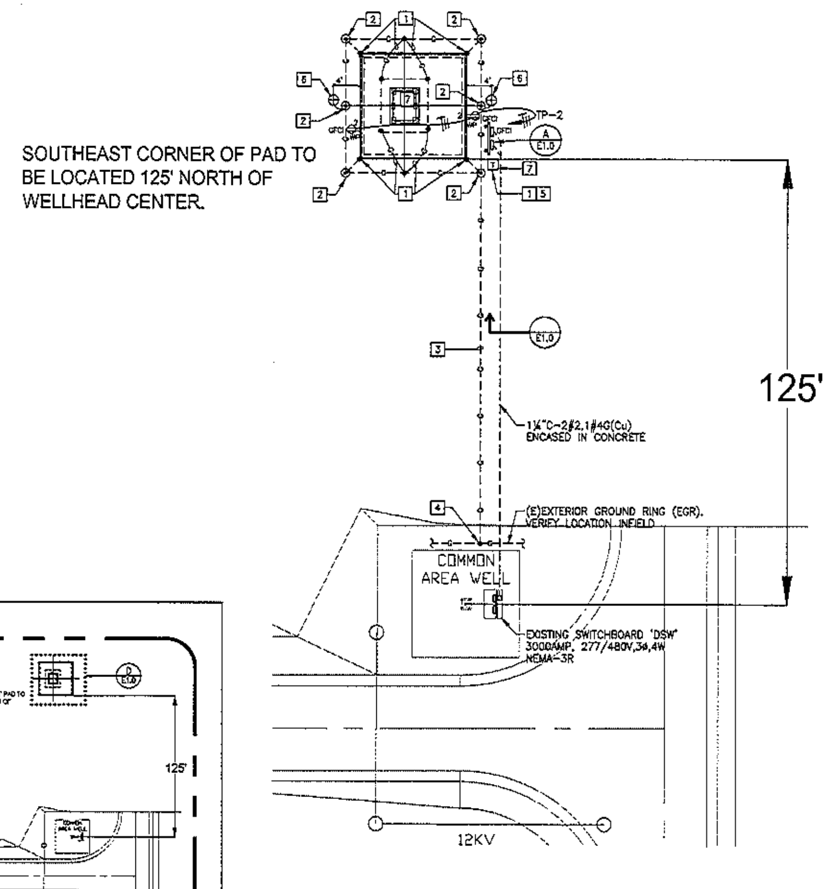
[4] BOND NEW EGR TO THE EXISTING SITE EGR WITH #4/0 AWG BARE TINNED SOLID COPPER CONDUCTOR. SUBJECT TO FIELD COORDINATION.

[5] BOND NEW SUPPORT STRUCTURE POWER PANEL AND CIRCUIT BREAKER TO THE EGR WITH #2/0 BARE SOLID COPPER TINNED WIRE.

[6] PROVIDE 3/8"x12" SOLID COPPER AIR TERMINAL FOR LIGHTING PROTECTION. PROVIDE ALL REQUIRED BASES, ADAPTERS AND MOUNTING HARDWARE. MOUNT ON THE TOP OF THE POLE. PROVIDE DOWNLEAD STRANDED COPPER CONDUCTOR, #2AWG, CLASS 1, TO THE EGR. LIGHTING PROTECTION EQUIPMENT SHALL BE BY THOMPSON COMPANY OR APPROVED EQUAL.

[7] BOND TRANSFORMER FRAME TO THE EGR WITH #2/0 BARE SOLID COPPER TINNED WIRE.

[8] PROVIDE 40' HIGH CLASS 1 WOOD UTILITY TYPE POLE, SEE DETAIL F/E1.0



ENLARGED TRANSFORMER PLAN (B)
SCALE: 1" = 20'-0"

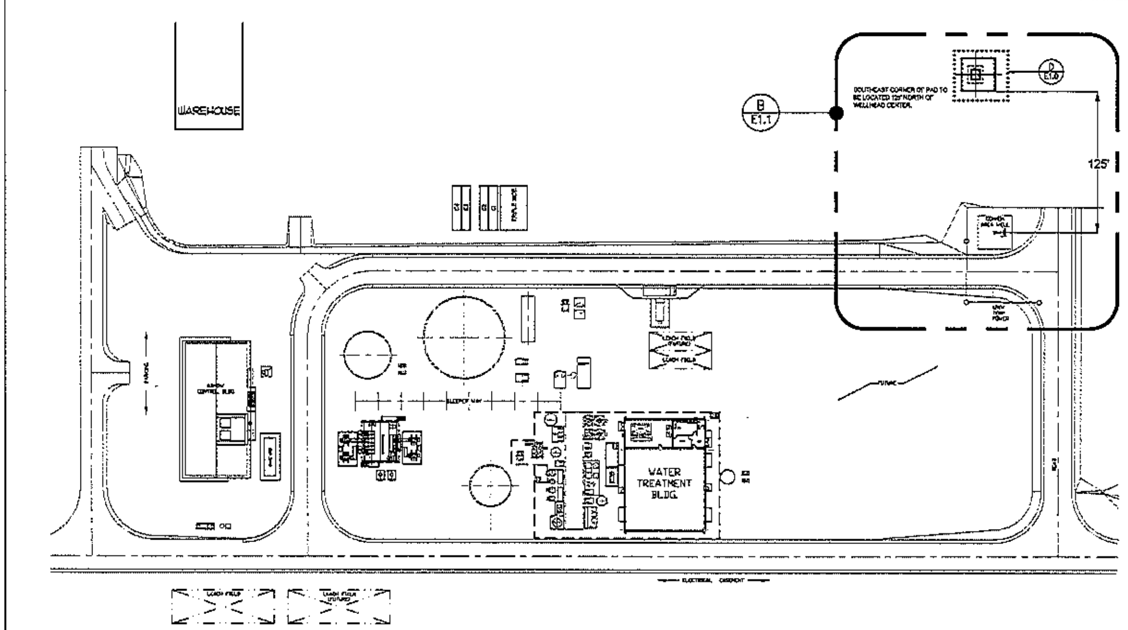
PANEL: 'TP' (NEW)	PANEL VOLTAGE: 120/240 1Ø 3W; BUS: 200A; MAINS: 125A-2P MCB; AIC RATING: 10,000 (NEMA 3R)	CIRCUIT CODE: blank or N : NON-CONTINUOUS; L : LONG-CONTINUOUS; R : DEMANDABLE RECEPTACLES; K : KITCHEN; NO. OF EQUIPMENT: 0
DATE: 09/24/14 TIME: 15:21:53; JOB: SPARE TRANSFORMER		

CKT NO	CODE	TRIP	POLE	DESCRIPTION	(NOTE)	M	R	L	ΦA	ΦB	A B	ΦA	ΦB	L	R	M	(NOTE)	DESCRIPTION	TRIP	POLE	CODE	CKT NO
1		50		MAIN CONTROL CAB.		1			4800			300				2		SERVICE RECEPT	20	1		2
3			2	--		–				4800			X					SPARE	20	1		4
5				SPACE					X			X						SPARE	20	1		6
7				SPACE						X			X					SPARE	20	1		8
9				SPACE					X			X						SPACE				10
11				SPACE						X			X					SPACE				12

PANEL NOTES:

PHASE TOTALS: ΦA: 5100 ΦB: 4800

TOTAL CONNECTED VA	9960
CONNECTED VA (CODE N)	9950
CONNECTED VA (CODE L)	0
CONNECTED VA (CODE R)	0
CONNECTED VA (CODE K)	0
PANEL CONNECTED KVA	10.0
PANEL DEMAND KVA	10.0
PANEL DEMAND AMPS	41.5
HIGH Ø AMPS W/LCL	43.0



SITE PLAN (A)
SCALE: 1" = 50'-0"

DESERT ENGINEERS
CONSULTING ENGINEERS

NO.#	REMARKS	DATE

SITE PLAN

SPARE TRANSFORMER SITE PREPARATION
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11995 Wiley's Well Road
Blythe, CA. 92225

DRAWN BY:	
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OF	SHEETS