DOCKETED

Docket Number:	09-AFC-08C
Project Title:	Genesis Solar Energy Project
TN #:	212617
Document Title:	Revised Genesis Solar Petition to Amend for Ammonia tanks and gas cylinder storage
Description:	This document supersedes and replaces TN 212350.
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Genesis Solar, LLC

(9-AFC-8)

Petition to Amend

Submitted by

Genesis Solar, LLC

July 2016

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Content

Genesis Solar, LLC, as project owner, petitions the California Energy Commission (CEC or Commission) to amend the certification for the Genesis Solar, LLC facility (9-AFC-8) (Decision). This Petition to Amend, (Amendment), requests an addition of a Gas Cylinder storage area and an Ammonia Bulk Storage pad. Due to the extreme weather conditions in the Mojave Desert and the concerns regarding the equipment deterioration.

Executive Summary

Genesis Solar, LLC as project owner, petitions the California Energy Commission (CEC or Commission) to comply with the Condition of Certification Gen-1, Gen-8 and Struc-1 regarding the manner of regulation of new construction at the Genesis Solar Facility. Genesis Solar, LLC propose to construct a cement pad for the storage of gas cylinders to prevent rusting and over-heating of cylinders that are required to be stored in a place that is protected from direct sun light and rain. The new cylinder storage area will house approximately 12 cylinders of Argon, 12 cylinders of oxygen, 12 cylinders of nitrogen and 12 cylinders of acetylene. These gases are used for welding repairs, fabrication of parts, purging of piping, and plasma cutting. The exact number of cylinders is not known, however, they would not exceed a total of 48 cylinders at any given time.
Additionally, this proposal addresses the construction of an ammonia storage slab at both Unit 1 and Unit 2 power blocks. The slabs will house ammonia product used in the process of pH control of the condensate. The ammonia is housed in a 3100 gallon bulk tank, self-contained and double walled.

Per the CEC Condition of certification, this compliance proposal is being submitted for approval due to the following **condition decisions**.

Gen-1

The project owner shall design, construct, and inspect the project in accordance with the 2007 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval (the CBSC in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously). The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility. All transmission facilities (lines, switchyards, switching stations and substations) are covered in the conditions of certification in the **Transmission System Engineering** section of this document. In the event that the initial engineering designs are submitted to the CBO when the successor to the 2007 CBSC is in effect, the 2007 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern. The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above. (Decision pg. 4)

GEN-8

The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval.
The project owner shall request the CBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-builts shall be provided to the CBO for retention by the CPM.

STRUC-1

Prior to the start of any increment of construction of any major structure or component listed in **Facility Design Table 2** of condition of certification **GEN-2**, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans and drawings for project structures. Proposed lateral force procedures, designs, plans and drawings shall be those for the following items:
1. Major project structures; Ammonia pad in Unit 1 and Unit 2 and the addition of the cylinder storage pad in the commons area.
2. Plans and designs are included for the major foundations, equipment supports, and anchorage; and
3. Designs for the ammonia tank pad and the cylinder storage pad.
Construction of any structure or component shall not begin until the CBO has approved the lateral force procedures to be employed in designing that structure or component.

1.0 Introduction

1.1 Overview

By this amendment Genesis Solar, LLC, petitions the Commission to consider the stated Condition of Certification to add a cylinder storage area for gas cylinders and an Ammonia bulk storage area for treatment of condensate at the Unit 1 and Unit 2 power blocks for pH control in the feed water system.

This Amendment contains all of the information that is required pursuant to the Siting Regulations (California Code of Regulations [CCR] Title 20, Section 1769, Post Certification Amendments and Changes). The information necessary to fulfill the requirements of Section 1769(a)(1) is contained in Sections 1.0 through 5.0 as summarized in Table 1 below.

TABLE 1

Informational Requirements for Post-Certification Amendments and Changes

Section 1769(a)(1) Requirement	Section of Petition Fulfilling Requirement
(A) A complete description of the proposed Modifications, including new language for any conditions that will be affected	Section 2.1 – Proposed changes in the Executive Summary
(B) A discussion of the necessity for the proposed changes	Section 1.3 -
(C) If the modification is based on information that was known by the petitioner during the certification proceeding, an explanation why the issue was not raised at that time	Section 2.2
(D) If the modification is based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision, an explanation of why the change should be permitted	Sections 3.2
(E) An analysis of the impacts the modification may have on the environment and proposed measures to mitigate any significant adverse impacts	Section 3.0
(F) A discussion of the impact of the modification on the facility's ability to comply with applicable laws, ordinances, regulations, and standards;	Section 3.3

TABLE 1

Informational Requirements for Post-Certification Amendments and Changes

Section 1769(a)(1) Requirement	Section of Petition Fulfilling Requirement
(G) A discussion of how the modification affects the public	Section 4.0
(H) A list of property owners potentially affected by the modification	Section 5.1
(I) A discussion of the potential effect on nearby property owners, the public and the parties in the application proceedings.	Section 5.2

1.2 Ownership of Genesis Solar, LLC

Genesis Solar, LLC, a wholly owned subsidiary of Nextera Energy Resources.

1.3 Summary of Environmental Impacts

The Siting Regulations require that an analysis be conducted to address the potential impacts the proposed project change may have on the environment and proposed measures to mitigate any potentially significant adverse impacts (Title 20, CCR, Section 1769 (a)(1)(E)). The regulations also require a discussion of the impact of the proposed change on the facility's ability to comply with applicable laws, ordinances, regulations and standards ("LORS") (Title 20, CCR Section 1769 (a)(1)(F)).

Section 3.0 of this Amendment includes a discussion of the potential environmental impacts associated with the proposed additions and a discussion of the consistency of the change with LORS. Section 3.0 concludes that there would be no significant environmental impacts associated with implementing the construction of the cylinder storage area, the ammonia slab at Unit 1 and the ammonia slab at Unit 2 specified in this Amendment and that the project would continue to comply with all applicable LORS.

The proposed changes to the site foot print will not adversely impact the environment. The proposed changes will not result in any significant physical change in the project or to the environment. The design of the plant will remain the same. Therefore, there is no possibility of any significant adverse environmental impacts resulting from the proposed changes to add the three storage areas. The amount of cylinders and bulk ammonia remain consistent with the present volumes on site.

2.0 Description of Project Changes

This section includes a complete description of the proposed modification consistent with the Siting Regulations (Title 20, CCR, Section 1769 (a)(1)(A)).

2.1 Changes to Condition of Certification

By way of background, the Decision for the Genesis Solar facility describes in GEN-1any alterations or additions will be presented to the CPM 30 days before commencement of work.

"Once the certificate of occupancy has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that requires CBO approval for compliance with the above codes. The CPM will then determine if the CBO needs to approve the work." (Decision, pg. 4)

The original Condition of Certification to the Decision will not be affected by the addition of the Ammonia Storage and Cylinder Storage pads. The cylinder pad will be built to CBO specification and inspected by the CBO as designated by GEN-3 to GEN-8 (Decision, p. 2.) The Ammonia Storage pads will also be built to CBO specifications and inspected by the CBO. (Decision p.2)

In light of the above, this Amendment proposes the following changes:

Within 30 days following receipt of the certificate of occupancy, the project owner shall submit to the CPM a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the Energy Commission's decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the certificate of occupancy within 30 days of receipt from the CBO.

Once the certificate of occupancy has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that requires CBO approval for compliance with the above codes. The CPM will then determine if the CBO needs to approve the work.

Additionally, the implementation of the proposed storage areas will not adversely affect the Conditions of Certification listed to ensure that the Genesis Solar Energy Project will be designed and constructed in conformance with the applicable LORS pertinent to the engineering aspects summarized in the Decision. (Decision, p. 3)

2.2 Necessity of Proposed Changes

The Siting Regulations require a discussion of the necessity for the proposed modification to GEN 3, GEN 8 and STRUC 1 whether the additional storage areas is based on information known by the petitioner during the certification proceeding (Title 20, CCR, Sections 1769 (a)(1)(B), and (C)).

As described in Section 2.1 above, structural changes to the site does not change the decision as it is stated in GEN 3, GEN 8 and STRUC 1. The project owner did not know at the time of approval of the Decision that the storage areas would be necessary. Due to the extreme weather conditions in the Mojave Desert and the concerns regarding the equipment deterioration, Genesis Solar, LLC proposes to build and maintain the gas cylinders and Ammonia tank under a sun shielding awning and concrete slab hence keeping the integrity of the equipment.

Gas Cylinder Storage Area:

Storage area will consist of a sun shielding awning with a concrete slab. The Gas Cylinder slab will accommodate the following products;

1. Acetylene – 12 Cylinders with 150 SCF storage
2. Argon – 12 Cylinders with 330 SCF of storage or less
3. Nitrogen – 12 Cylinders with 330 SCF or less
4. Oxygen – 12 Cylinders with 330 SCF storage or less
5. See Attached Cylinder Chart.

These style cylinders are required by the manufacture not to be placed in direct sun light and not to be in the dirt, due to corrosion on the bottoms of high pressure cylinders.

Storage area is 30x10 with 3 divider walls. Slab is 6inches thick a ground penetration will be 2 inches. (See Drawings)

The Ammonia bulk Storage Area:

Consist of a double walled, self-contained, above ground tank with a 3100 gallon capacity filled to 2800 gallons.

A concreate pad 13x13, 6" thick reinforced with #4 rebar on12" centers with a 4" containment curb. and a shade cover will be installed. No additional electrical will be required. Ground penetration will be 2 inches. (See Drawings)

Work will be performed by outside contractor, estimate 16 days to complete. Two work trucks and 2 concrete trucks to deliver concreate.

The Tanks are being installed due the plant usage, Currently installed are two 330 gallon tanks, one at each plant, the rate of usage is 150 gallons per week, per plant. At this rate we have to order and refill every two weeks, creating a safety issue for handling, and a procurement problem.

3.0 Environmental Analysis of Proposed Project Changes and Consistency with LORS

The changes proposed by this Amendment are evaluated below. The end of this section addresses the consistency of the proposed changes to the addition to Conditions of Certification GEN 3, GEN 8 and STRUC 1 with LORS.

The proposed change has no possible potential impact on the following environmental disciplines: Biological Resources, Cultural Resources, Geology and Paleontology, Hazardous Materials Management, Land Use, Noise and Vibration, Socioeconomics, Soil and Water Resources, Traffic and Transportation, Waste Management, and Worker Safety and Fire Protection.

3.1 No Changes to GEN 3, GEN 8 and STRUC 1

This Amendment does not modify the decision requirements regarding the construction of the 3 storage areas to accommodate a cylinder storage area, and two ammonia storage areas. . The Amendment does not change the design or operation of the plant equipment. Accordingly, the proposed addition to the plant does not modify GEN 3, GEN 8 and STRUC 1 and will not result in any significant adverse environmental impact.

3.1.1 Air Quality

The proposed changes that incorporate GEN 3, GEN 8 and STRUC 1 will not cause any change to air quality.

3.1.2 Public Health

The proposed changes that incorporate GEN 3, GEN 8 and STRUC 1 will have no effect on public health.

3.2 Consistency of Amendment with the Certification and LORS

The Siting Regulations require a discussion of the consistency of the proposed project revisions with the applicable laws, ordinances, regulations, and standards (LORS) and whether the modifications are based upon new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision (Title 14, CCR Section 1769 (a)(1)(D)). If the project is no longer consistent with the certification, the petition for project change must provide an explanation for why the modification should be permitted.

This Amendment is consistent with all applicable LORS and is not based on new information that changes or undermines any bases for the Decision. The findings and conclusions contained in the Decision for the project are still applicable to the project as modified.

4.0 Potential Effects on the Public

This section discusses the potential effects on the public that may result from the modification proposed in this request for approval, per the Siting Regulations (Title 20, CCR, Section 1769(a)(1)(G)).

The proposed changes will not affect the public.

5.0 List of Property Owners and Potential Effects on Property Owners

5.1 List of Property Owners

In accordance with the Siting Regulations (Title 20, CCR, Section 1769(a)(1)(H)), the project owner will provide the Compliance Project Manager for the project a list of all property owners whose property is located within 500 feet of the project.

There are no property owners within 500 feet of the project.

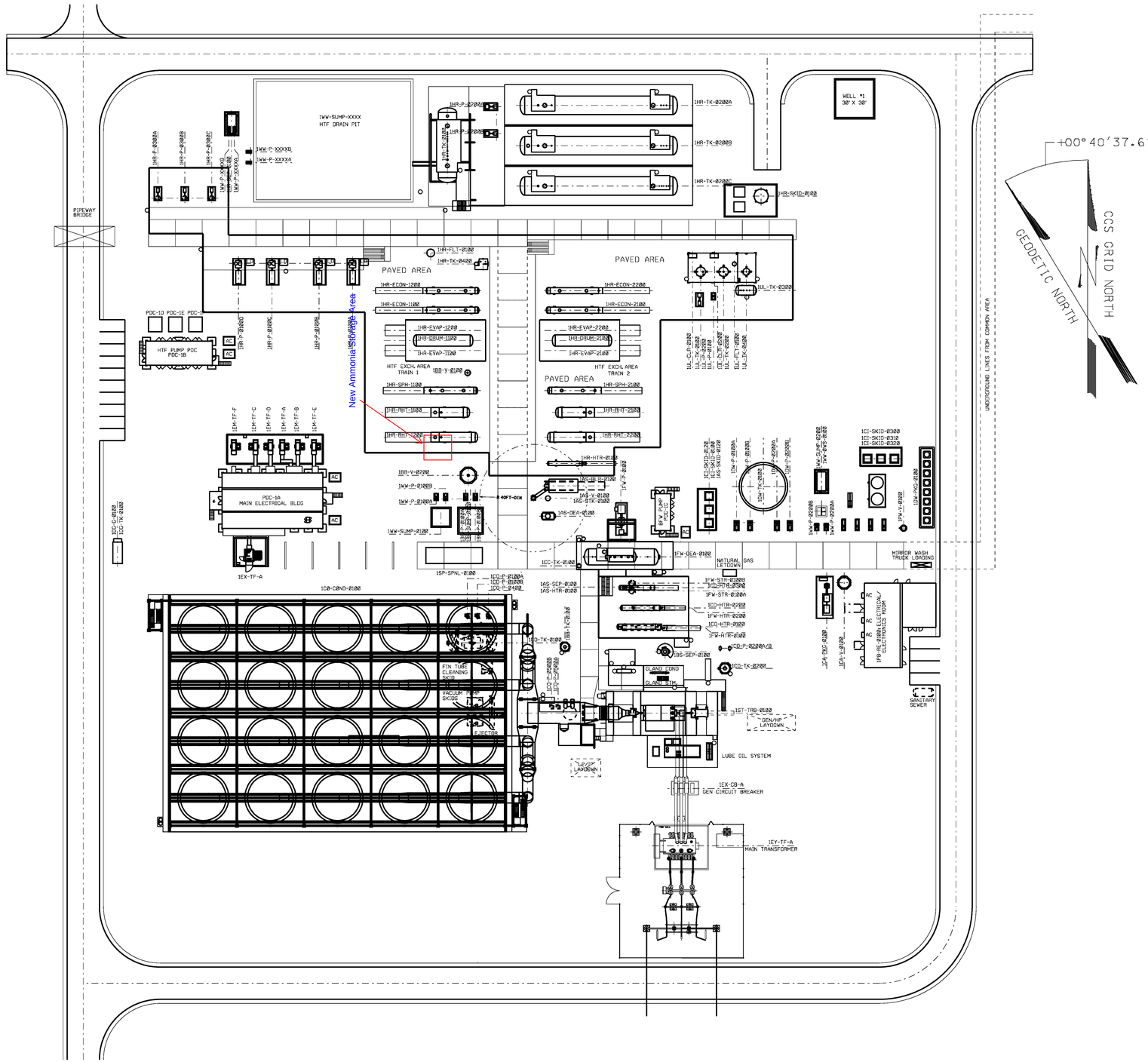
5.2 Potential Effects on Property Owners

This section addresses potential effects of the modification proposed in this Amendment on nearby property owners, the public, and parties in the application proceeding, per the Siting Regulations (Title 20, CCR, Section 1769 (a)(1)(I)).

There are no property owners within 500 feet of the project.

6.0

All Approved Drawings and Pictures are attached



EQUIPMENT LIST

ITEM NO.	AREA	EQUIPMENT DESCRIPTION	QTY.
AIR COOLERS			
1CC-HX-0100	1	CLOSED COOLING WET SURFACE (WSAC)	1
1CO-COND-0100	1	AIR COOLED CONDENSER (ACC)	1
1UL-CLR-0100	1	ULLAGE COOLER #1	1
1UL-CLR-0200	1	ULLAGE COOLER #2	1
BOILERS			
1AS-BLR-0100	1	AUXILIARY BOILER	1
DEAERATOR			
1AS-DEA-0100	1	AUXILIARY BOILER DEAERATOR	1
1FW-DEA-0100	1	DEAERATOR	1
EXCHANGERS			
1AS-HTR-0100	1	AUX. STEAM ELECTRIC SUPERHEATER	1
1CO-HTR-0100	1	LP FEEDWATER HEATER #1	1
1CO-HTR-0200	1	LP FEEDWATER HEATER #2	1
1CO-HTR-0300	1	LP FEEDWATER HEATER #3	1
1FW-HTR-0100	1	HP FEEDWATER HEATER #1	1
1FW-HTR-0200	1	HP FEEDWATER HEATER #2	1
1HR-ECON-1100/1200	1	ECONOMIZERS	2
1HR-ECON-2100/2200	1	ECONOMIZERS	2
1HR-EVAP-100/1200	1	EVAPORATORS	2
1HR-EVAP-2100/2200	1	EVAPORATORS	2
1HR-HTR-0100	1	HTF STEAM HEATER	1
1HR-SPH-1100./2100	1	HP SUPERHEATER	2
1HR-RHT-1100/1200	1	REHEATERS	2
1HR-RHT-2100/2200	1	REHEATERS	2
PUMPS			
1AS-P-0110A/B	1	AUX. BOILER FEED PUMPS (NOT SHN.)	2
1BB-P-0100A/B	1	BLOWDOWN SUMP PUMPS	2
1CC-P-0100A/B	1	CLOSED COOLING WATER PUMPS	2
1CC-P-0200A/B	1	WSAC BD WASTE WATER PUMPS	2
1CC-P-0300A/B	1	WSAC CIRCULATING PUMPS	2
1CO-P-0100A/B	1	CONDENSATE PUMPS	2
1CO-P-0200A/B	1	STEAM DUCT DRAIN PUMPS	2
1CO-P-0400	1	HOOD SPRAY PUMP	1
1CO-P-0500A/B	1	STEAM DUCT DRAIN PUMPS	2
1DW-P-0100A/B	1	DEMIN WATER PUMPS	2
1DW-P-0200A/B	1	DEMIN. WATER START UP PUMPS	2
1FW-P-0100	1	BOILER FEED WATER PUMP	1
1HR-P-0100A-D	1	HTF MAIN PUMPS	4
1HR-P-0200A/B	1	OVERFLOW RETURN PUMPS	2
1HR-P-0300A/B/C	1	HTF FREEZE PROTECTION PUMPS	3
1UL-P-0100	1	ULLAGE DISCHARGE PUMP	1
1UL-P-0200	1	ULLAGE CIRCULATION PUMP	1
1WW-P-0100A/B	1	OILY WATER SUMP PUMPS	2
1WW-P-0200A/B	1	CLEAN WATER SUMP PUMPS	2
SILENCERS			
1BB-SIL-0300	1	ATMOS. DRAIN TK SILENCER (NOT SHOWN)	1
1BB-SIL-0100	1	INTER. BD DRUM SILENCER (NOT SHOWN)	1
1BS-SIL-1100/2100	1	HP PSV SILENCER (NOT SHOWN)	2
1BS-SIL-1200/2200	1	HP MAINT. SILENCER (NOT SHOWN)	2
1BS-SIL-1300/2300	1	HRH PSV SILENCER (NOT SHOWN)	2
1BS-SIL-1400/2400	1	HRH MAINT. SILENCER (NOT SHOWN)	2
1FW-SIL-1100/2100	1	HP STEAM DRUM SILENCER (NOT SHOWN)	2
1ST-SIL-0100A/B	1	HP AUXILIARY SILENCER (NOT SHOWN)	2
1ST-SIL-0200A/B	1	HRH AUX. SILENCER (NOT SHOWN)	2
1ST-SIL-0300	1	GLAND STEAM SILENCER (NOT SHOWN)	1
1ST-SIL-0400	1	GLAND STM. PSV SILENCER (NOT SHOWN)	1
SKIDS			
1AS-SKID-0120	1	CHEMICAL INJECTION SKID	1
1CA-PKG-0100	1	PLANT/INSTRUMENT AIR PACKAGE	1
1CI-SKID-0100	1	PHOSPHATE INJECTION SKID	1
1CI-SKID-0120	1	AMMONIA INJECTION SKID	1
1CI-SKID-0300	1	WSAC SOD. HYPOCHLORITE INJECT SKID	1
1CI-SKID-0310	1	WSAC ACID INJECTION SKID	1
1CI-SKID-0320	1	WSAC SCALE CORROSION INHIBITOR	1
1DW-PKG-0100	1	DEMINERALIZER PACKAGE (RENTED)	1
1HR-SKID-0100	1	NITROGEN SKID	1

EQUIPMENT LIST

ITEM NO.	AREA	EQUIPMENT DESCRIPTION	QTY.
STACK			
1AS-STK-0100	1	AUX. BOILER STACK	1
FILTERS & STRAINERS			
1FW-STR-0100A/B	1	BFW PUMP STRAINERS	2
1HR-FLT-0100	1	HTF SIDESTREAM FILTER	1
1UL-FLT-0100	1	HTF SYSTEM VENT CARBON FILTER	1
SUMPS			
1BB-SUMP-0100	1	BLOWDOWN SUMP	1
1WW-SUMP-0100	1	OIL/WATER SUMP	1
1WW-SUMP-0200	1	CLEAN WATER SUMP	1
GENERATOR			
1DG-G-0100	1	DIESEL STANDBY GENERATOR	1
1ST-TRB-0100	1	STEAM TURBINE GENERATOR	1
SAMPLE PANELS			
1AS-HX-0122	1	AUX. BOILER SAMPLE COOLER (NOT SHN.)	1
1SP-SPNL-0100	1	STEAM/WATER SAMPLE PANEL	1
TANKS & VESSELS			
1AS-SEP-0100	1	SEAL STEAM SEPARATOR	1
1AS-V-0100	1	AUX. BOILER BLOWDOWN DRUM	1
1BB-TK-0100	1	ATMOSPHERIC DRAINS TANK	1
1BB-V-0100	1	CONTINUOUS BLOWDOWN DRUM	1
1BB-V-0200	1	INTERMITTENT BLOWDOWN DRUM	1
1BS-SEP-0100	1	MOISTURE SEPARATOR	1
1CA-V-0100	1	AIR RECEIVER	1
1CC-TK-0100	1	CLOSED COOLING WATER EXP. TANK	1
1CO-TK-0100	1	CONDENSATE TANK	1
1CO-TK-0200	1	STEAM DUCT DRAINS TANK	1
1DG-TK-0100	1	DIESEL STORAGE TANK	1
1DW-TK-0100	1	DEMIN. WATER TANK	1
1HR-DRUM-1100/2100	1	HP STEAM DRUM	2
1HR-TK-0100	1	HTF EXPANSION VESSEL	1
1HR-TK-0200A-C	1	HTF OVERFLOW VESSELS	3
1HR-TK-0400	1	SGS HTF PSV'S DISCH. VESSEL	1
1PW-V-0100	1	POTABLE WATER PRESSURE TANK	1
1UL-TK-0100	1	ULLAGE VESSEL #1	1
1UL-TK-0200	1	ULLAGE VESSEL #2	1
1UL-TK-0300	1	ULLAGE DRAIN VESSEL	1
1UL-TK-0400	1	RECLAMATION FLASH VESSEL	1
1WW-OWS-0100	1	OIL/WATER SEPARATOR	1

H.P.F.S.
EL. 383'-7"

0 20 40 60 80 100 120

REDUCED PRINT SCALE
1" = 40' - 0"

REV	DATE	REVISION DESCRIPTION	BY	CHK	APPV	REFERENCE DWG NUMBER	REFERENCE DRAWINGS
A	02-15-11	ISSUED FOR INTERNAL REVIEW	RK	HB	RM	A4PA-0-PP-5-01	OVERALL SITE PLOT PLAN
1	03-31-11	ISSUED FOR DESIGN	RK	HB	RM		
2	10-17-11	UPDATED PLOT PLAN	RK	HB	RM		

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CONTRACT	44PA
DRAWING BY	R. KYLE
DESIGNED BY	R.KYLE
CHECKED BY	H. BORGE
SUPERVISOR	R. MANNING
APP. DATE	02-15-2011
LEAD ENGR/SPEC.	ART PINTO
APP. DATE	02-15-2011
FLUOR	
APP. DATE	
CLIENT	M. ROJAS
APP. DATE	02-15-2011

Genesis Solar Energy Project
Riverside County, California

PLOT PLAN UNIT 1
POWER BLOCK

SCALE 1"=40'

DRAWING NUMBER A4PA-1-PP-5-01

REV 2

CAD FILE NAME A4PA1PP501.DWG

PLOT DATE:

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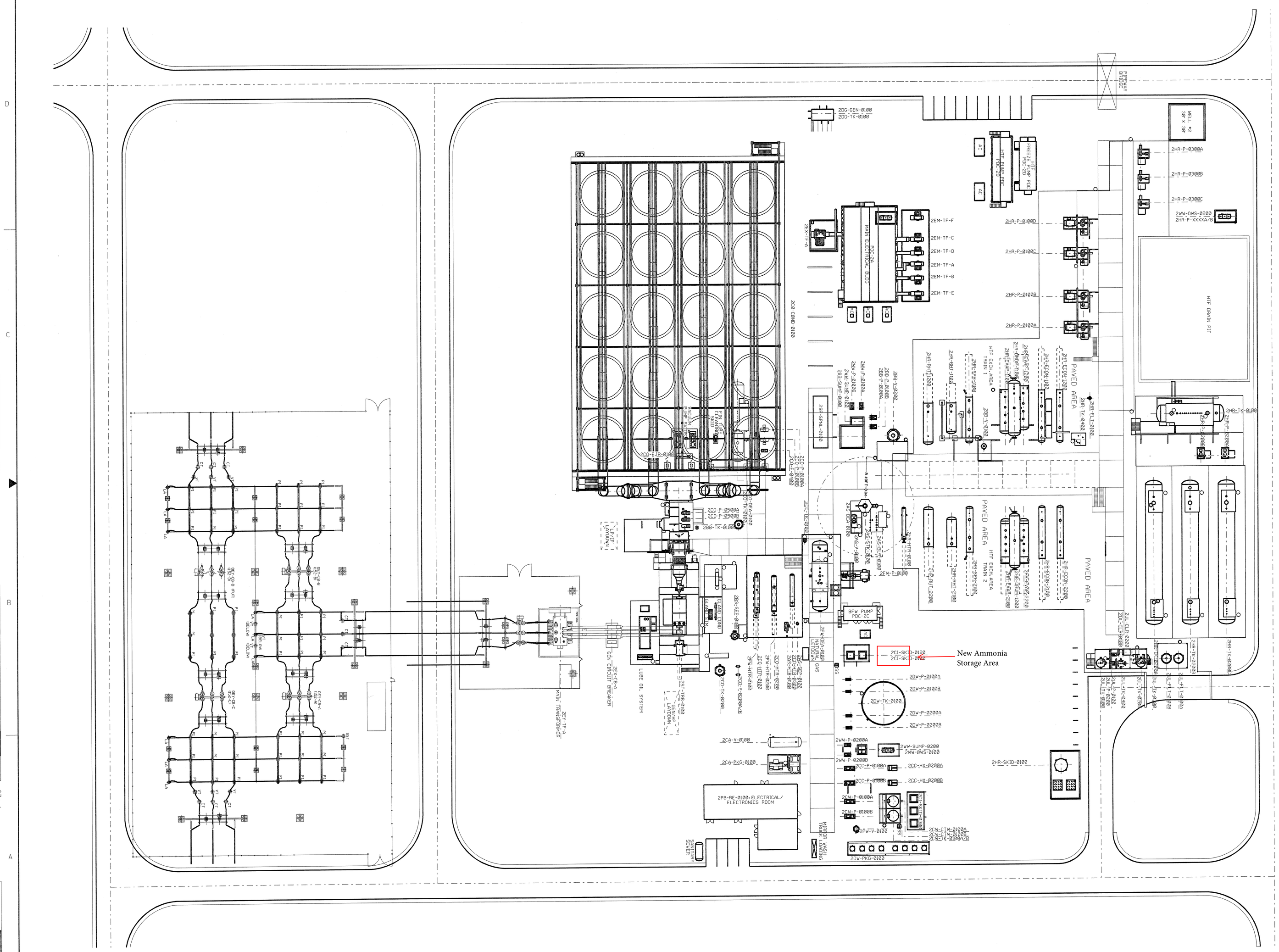

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EL. 382'-8"

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REDUCED PRINT SCALE
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REFERENCE DWG NUMBER	REFERENCE DRAWINGS
A4PA-0-PP-5-01	OVERALL SITE PLOT PLAN
A4PA-2-PP-5-03	PLOT PLAN UNIT 2 POWER BLOCK EQUIPMENT LIST

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CONTRACT	A4PA
DRAWING BY	A. LIVINGSTON
DESIGNED BY	R.KYLE
CHECKED BY	H. BORGE
SUPERVISOR	R. MANNING — APP DATE 04-13-2012
LEAD ENGR/SPEC.	ART PINTO — APP DATE 04-13-2012
FLUOR	A-PINTO — APP DATE 7 May 12
CLIENT	M. McCORD — APP DATE 04-13-2012
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DRAWING NUMBER	A4PA -2 -PP -5 -01
REV	1
CAD FILE NAME	A4PA2PP501.DWG

Genesis Solar Energy Project
Riverside County, California

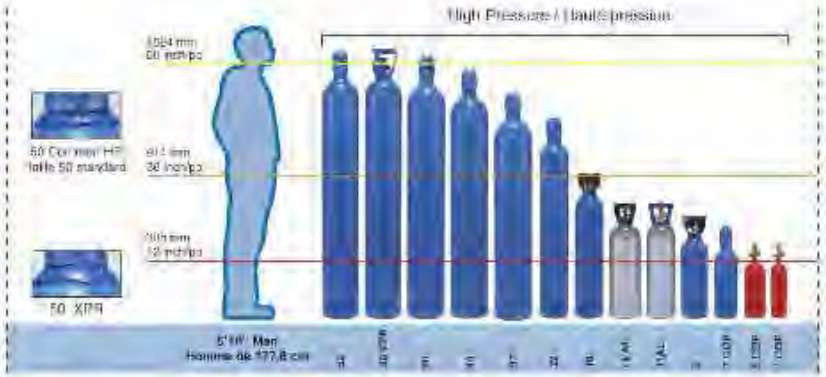
PLOT PLAN UNIT 2
POWER BLOCK

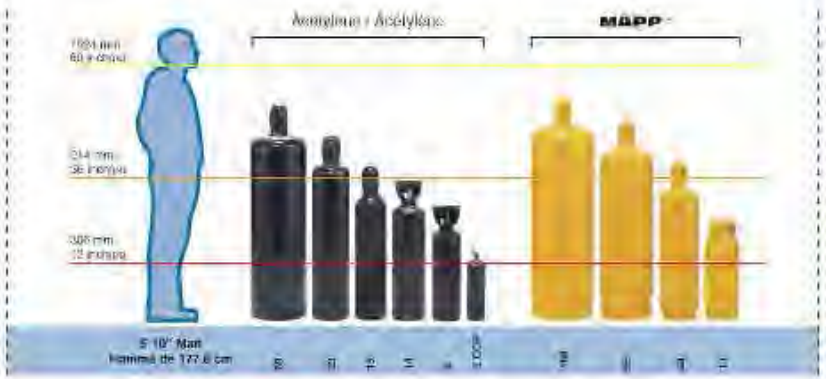
PLOT DATE:

A4PA_D.DWG 250210


Extend Cover North
95"
112"
7'-9 1/2"
Ø1 1/2"
D
10'-2" OD

Cylinder size chart / Tableau de tailles de bouteilles





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AIR LIQUIDE

Cylinder colors - Industrial gases
Couleur des bouteilles - gaz industriels

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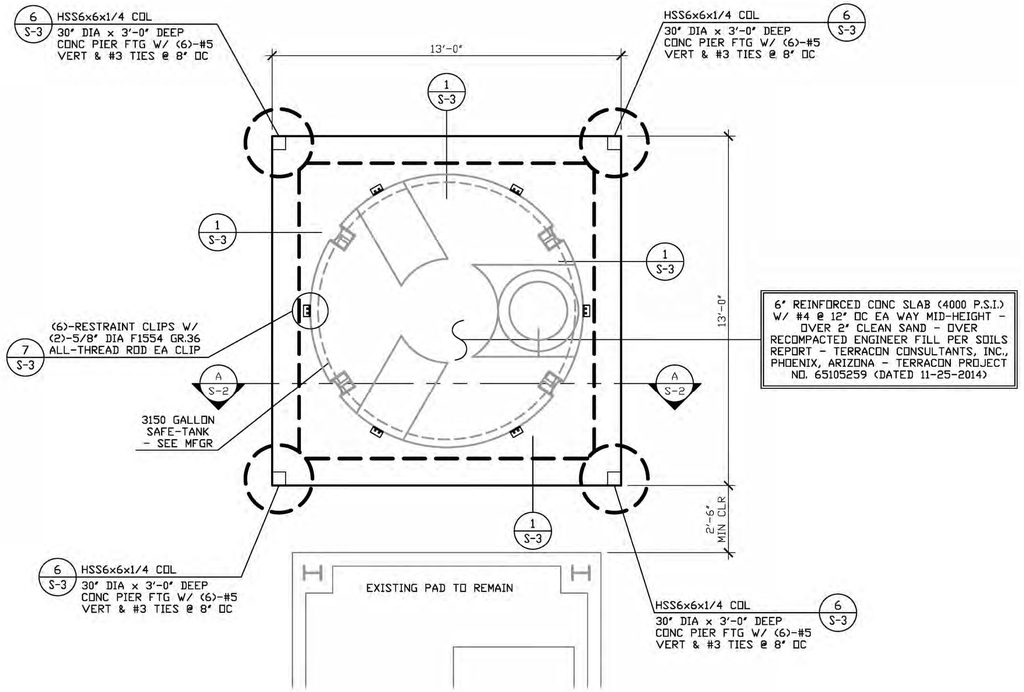
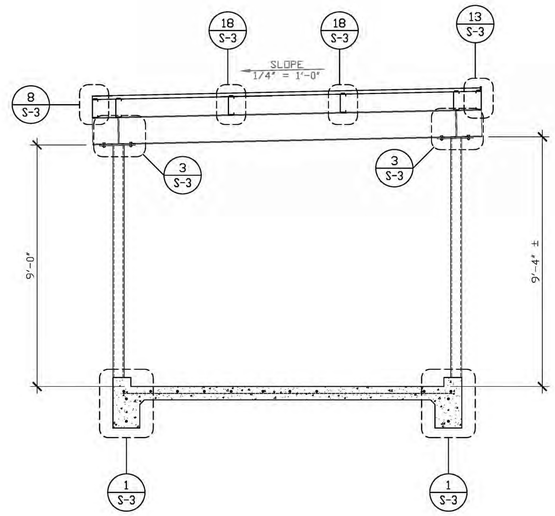
AIR LIQUIDE



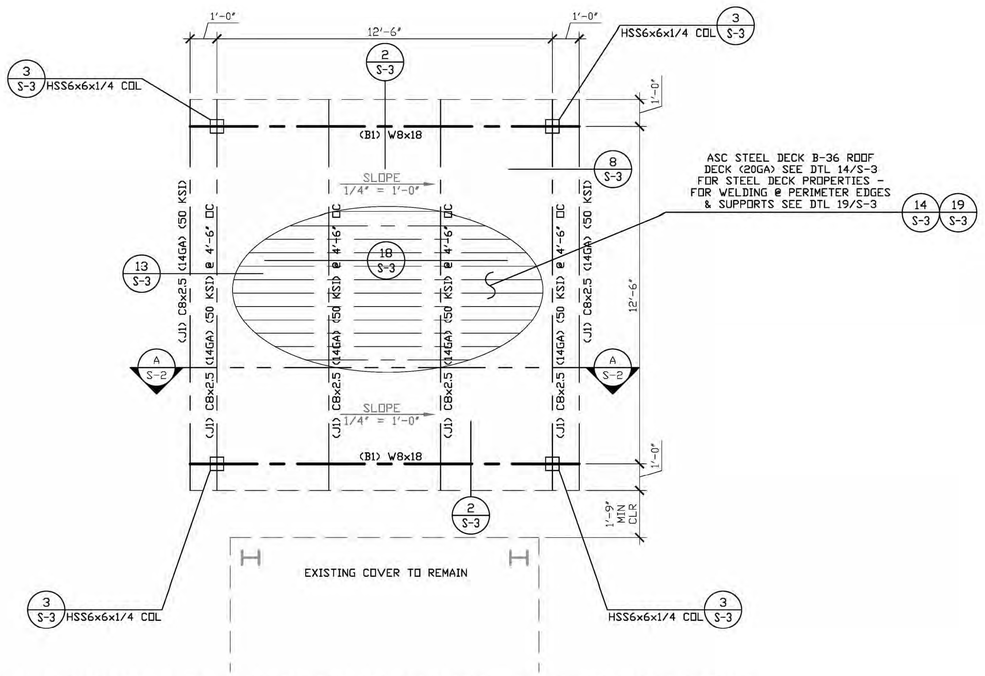
NEXTERA AMMONIA STORAGE TANK STRUCTURE - FOUNDATION PLAN

SCALE: 3/8" = 1'-0"



NEXTERA AMMONIA STORAGE TANK STRUCTURE - SECTION A

SCALE: 3/8" = 1'-0"



NEXTERA AMMONIA STORAGE TANK STRUCTURE - FRAMING PLAN

SCALE: 3/8" = 1'-0"

"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."

FIELD VERIFY ALL EXISTING DIMENSIONS & CONDITIONS

ROOF LOADS

DEAD LOAD

SLOPE ROOF	26.0 P.S.F.
FLAT ROOF	18.0 P.S.F.

LIVE LOAD

ROOF	20.0 P.S.F.

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 FOR LOCATIONS OF POSTS, WALLS AND ETC. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH THE OWNER AND ARCHITECT PRIOR TO 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 ARCHITECTURAL 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. DRYPACK SHALL BE IN PLACE & SUBJECT TO INSPECTION PRIOR TO POURING THE GRADE BEAM / SLAB.
12. 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
13. ADDITIONAL TESTS AS PROOF OF COMPLIANCE MAY BE REQUIRED BY THE BUILDING OFFICIAL TO BE MADE AT NO EXPENSE TO THE JURISDICTION. (CBC 104.2.9)

FRAMING NOTES

1. SEE SHEET S-1 AND S-1.1 FOR GENERAL NOTES AND TYPICAL DETAILS.
2. PROVIDE STRIPPING WHERE REQUIRED TO PROVIDE A UNIFORM SURFACE WHERE FLUSH JOIST AND BEAMS ARE DIFFERENT DEPTH.
3. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL STEEL AND GLU-LAM BEAMS FOR ENGINEER'S REVIEW PRIOR TO FABRICATION.
4. ALL FIELD WELDING SHALL BE DONE BY CERTIFIED WELDERS UNDER THE OBSERVATION OF AN APPROVED SPECIAL INSPECTOR. SUCH INSPECTOR SHALL SUBMIT HIS/HER CREDENTIALS FOR REVIEW OF APPROVAL BY THE LOCAL CITY DEPARTMENT OF BUILDING & SAFETY PRIOR TO REPORTING TO THE JOBSITE.
5. ALL CONNECTORS TO BE "SIMPSON" OR APPROVED EQUAL (UNO).
6. ALL SHOP WELDING SHALL BE DONE BY A FABRICATOR APPROVED BY THE LOCAL CITY DEPARTMENT OF BUILDING & SAFETY PER CBC SECTION 1701.7 (F), IN LIEU OF FABRICATOR APPROVAL; THE OWNER MAY EMPLOY A SPECIAL INSPECTOR, WHICH IS TO BE APPROVED BY THE LOCAL CITY DEPARTMENT OF BUILDING & SAFETY, WHO WILL INSPECT ALL PHASES OF SHOP WELDING DURING SUCH TIMES THE WELDING IS TAKING PLACE. THE FABRICATOR OR SPECIAL INSPECTOR SHALL SUBMIT THEIR CREDENTIALS FOR REVIEW AND APPROVAL BY THE DEPARTMENT OF BUILDING & SAFETY PRIOR TO THE START OF FABRICATION OR INSPECTION.

NO.#	REMARKS	DATE

B.G. STRUCTURAL ENGINEERING, INC.
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PALM DESERT, CA 92211

REGISTERED PROFESSIONAL ENGINEER BRIAN GOTTLIEB No. C33047 EXP 6-30-17 CIVIL STATE OF CALIFORNIA

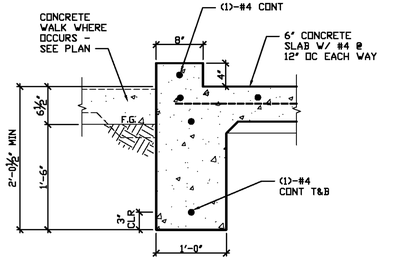
VALID ONLY IF SIGNED IN RED

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

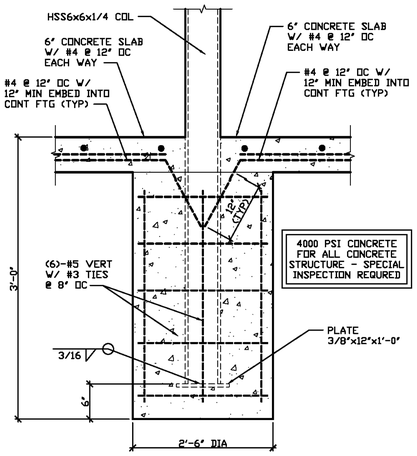
FOUNDATION & FRAMING PLAN

NEXTERA AMMONIA STORAGE TANK
GENESIS SOLAR SGN-7209
11995 Wiley's Well Road
Blythe, CA. 92225

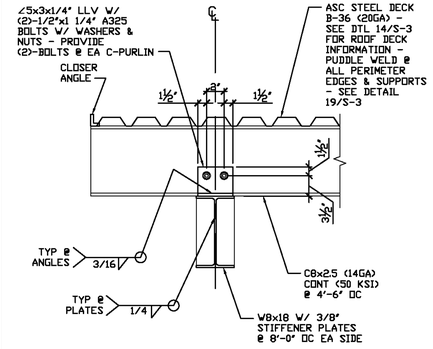
DRAWN BY:	SC
DATE	06/08/16
SCALE	AS NOTED
JOB NO.	800.1616
SHEET	S-2
OF	SHEETS



1 S-3 FOUNDATION DETAIL



6 S-3 FOUNDATION DETAIL



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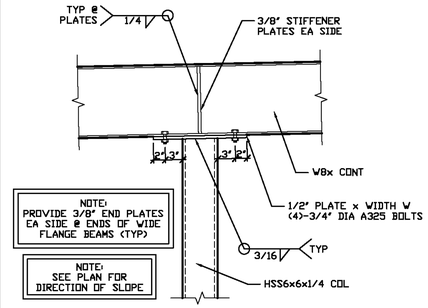
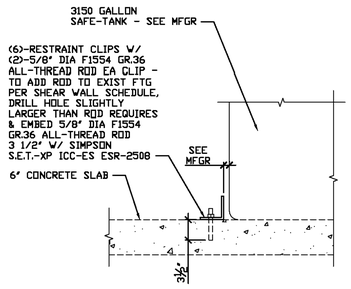
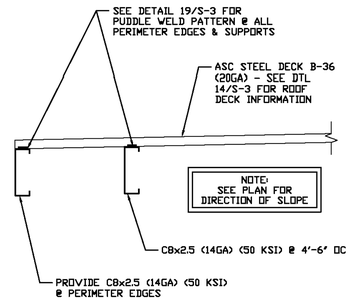


3 S-3 FRAMING DETAIL



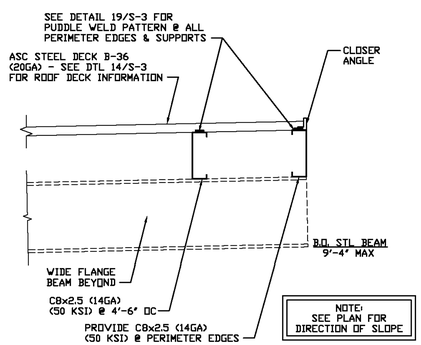
7 S-3 FOUNDATION DETAIL



8 S-3 FRAMING DETAIL

11 S-3 NOT USED

12 S-3 NOT USED

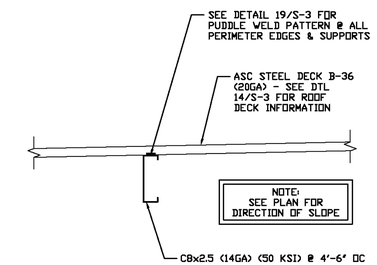


13 S-3 FRAMING DETAIL

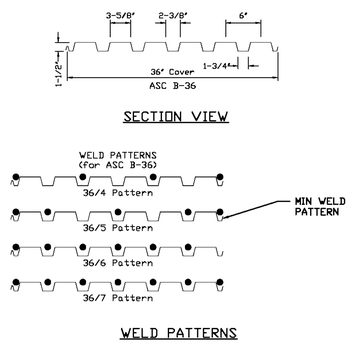
14 S-3 FRAMING DETAIL

16 S-3 NOT USED

17 S-3 NOT USED



18 S-3 FRAMING DETAIL



19 S-3 FRAMING DETAIL

20 S-3 BG DISCLAIMER

NOTE: ANY USE OR REUSE OF ORIGINAL OR ALTERED STRUCTURAL DRAWINGS BY OWNER, AGENTS OF OWNER, OR OTHER PARTIES WITHOUT THE REVIEW AND WRITTEN APPROVAL OF B.G. STRUCTURAL ENGINEERING, INC. SHALL BE AT THE SOLE RISK OF THE OWNER. FURTHERMORE, THE OWNER AGREES TO DEFEND, INDEMNIFY AND HOLD B.G. STRUCTURAL ENGINEERING, INC. HARMLESS FROM ALL CLAIMS, INJURIES, DAMAGES, LOSSES, EXPENSES, AND ATTORNEY'S FEES ARISING OUT OF THE MODIFICATION OR REUSE OF THESE DRAWINGS.

NOTE: THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, MATERIALS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS & PROGRAMS IN CONNECTION WITH THE WORK. THE ENGINEER DOES NOT GUARANTEE THE CONTRACT DOCUMENTS SHALL RELIEVE THE CONTRACTOR FROM ANY LIABILITY DUE TO NEGLIGENCE, INCOMPETENCE, OR ERRORS OF OMISSION OR COMMISSION OF THE CONTRACTOR.

UNAUTHORIZED CHANGES & USES

CAUTION: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

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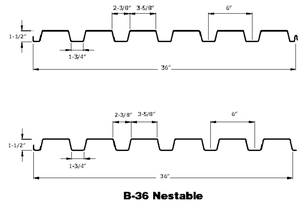
ASC Steel Deck

B-36 Roof Deck



The **B-36 profile** has been enhanced via physical testing to give you the highest diaphragm shear values of any of our prior B-series profiles.

Note: B 35 1/4" – Sacramento

B-36 Section Properties

Gauge	Weight (pst)	I (In4)	S+ (In3)	S– (In3)
22	1.68	0.178	0.18	0.195
20	2.04	0.22	0.235	0.246
18	2.7	0.302	0.321	0.336
16	3.36	0.379	0.407	0.415

1. Section properties are based on minimum 38 ksi steel (Fy).

B-36 Allowable Reactions (plf)

Gauge	Bearing Length 1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
22	416	468	520	572	625	677	729
	1007	1103	1213	1363	1513	1663	1813
20	700	776	853	929	1005	1082	1158
	1495	1617	1739	1897	2088	2280	2472
18	1443	1568	1693	1818	1943	2068	2193
	2734	2909	3084	3258	3436	3710	3985
16	2434	2608	2782	2957	3131	3305	3480
	4350	4578	4806	5034	5262	5490	5786

1. The top value reflects the allowable reaction at the panel end supports.
2. The bottom value reflects the allowable reaction at the interior supports.
3. Values are in pounds per linear foot.

B-36 Allowable Total (DL + LL) Uniform Load (psf)

Span Condition	Gauge		Span 5'0"	5'6"	6'0"	6'6"	7'0"	7'6"	8'0"	8'6"	9'0"	9'6"	10'0"
SINGLE SPAN	22	Stress	109	90	76	65	56	49	43	38	34	30	27
		Deflection	93	70	54	42	34	28	23	19	16	14	12
	20	Stress	143	118	99	85	73	64	56	49	44	40	36
		Deflection	115	87	67	53	42	34	28	23	20	17	14
	18	Stress	195	161	136	115	100	87	76	68	60	54	49
		Deflection	158	119	92	72	58	47	39	32	27	23	20
	16	Stress	247	205	172	146	126	110	97	86	76	69	62
		Deflection	199	149	115	90	72	59	49	40	34	29	25
DOUBLE SPAN	22	Stress	119	98	82	70	60	53	46	41	37	33	30
		Deflection	119	98	82	70	60	53	46	41	37	33	28
	20	Stress	150	124	104	89	76	66	58	52	46	41	37
		Deflection	150	124	104	89	76	66	58	52	46	41	35
	18	Stress	204	169	142	121	104	91	80	71	63	57	51
		Deflection	204	169	142	121	104	91	80	71	63	56	48
	16	Stress	252	209	175	149	129	112	99	87	78	70	63
		Deflection	252	209	175	149	129	112	99	87	78	70	60
TRIPLE SPAN	22	Stress	148	122	103	88	76	66	58	51	46	41	37
		Deflection	148	122	102	80	64	52	43	36	30	26	22
	20	Stress	187	155	130	111	95	83	73	65	58	52	47
		Deflection	187	155	126	99	79	65	53	44	37	32	27
	18	Stress	255	211	177	151	130	113	100	88	79	71	64
		Deflection	255	211	173	136	109	89	73	61	51	44	37
	16	Stress	315	261	219	187	161	140	123	109	97	87	79
		Deflection	315	261	217	171	137	111	92	76	64	55	47

1. Stress based on allowable flexural stress of 22.8 ksi.
2. Deflection based on maximum deflection of L/240.
3. Adequate bearing must be provided.
4. See page 31 for General Notes.

ASC STEEL DECK INFORMATION SHEET

NO.#	REMARKS	DATE

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FOUNDATION & FRAMING DETAILS

NEXTERA AMMONIA STORAGE TANK
GENESIS SOLAR SGN-7209
11995 Wiley's Well Road
Blythe, CA. 92225

DRAWN BY:	SC
DATE	06/08/16
SCALE	N.T.S.
JOB NO.	800.1616
SHEET	S-3
OF	SHEETS

6" Vent to Scrubber or Atmosphere at 240°

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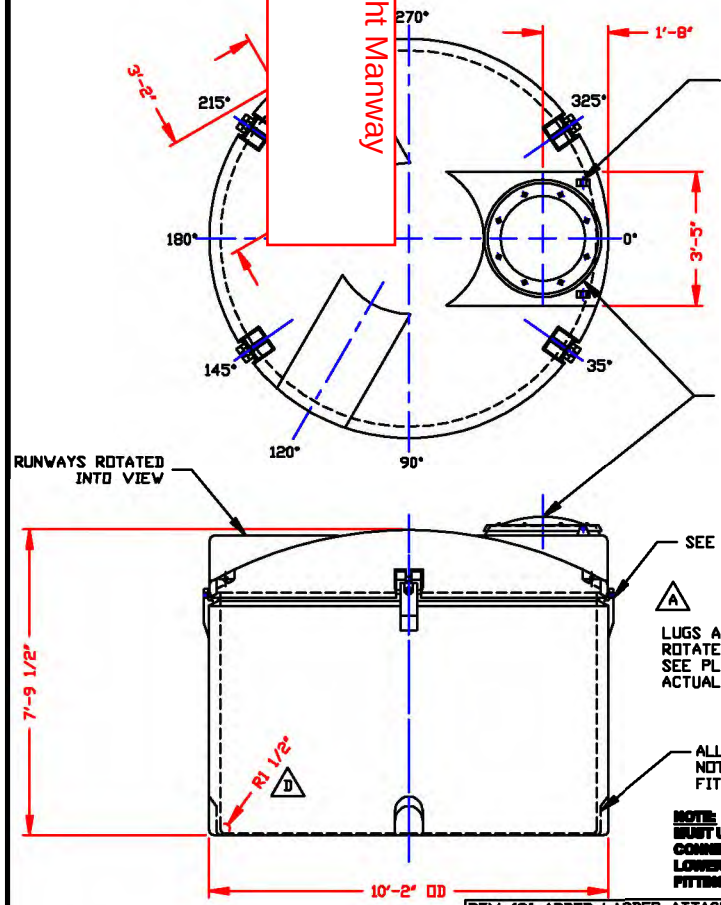
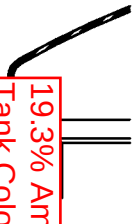
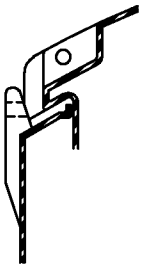
Vapor Tight Manway



NOZZLE SCHEDULE & ACCESSORIES						
SERVICE	MK	STOCK NO.	SIZE	FITTING	DEG	ELEV



DETAIL
1/2" = 1'-0"



LIP DETAIL AT LUG
SCALE: 1 1/2" = 1'-0"

19.3% Ammonia
Tank Color: Natural/ Natural
SG: 1.35/ 1.35
Quantity: 2
Seismic Restraint: Outdoors
Sesimic Material: Galv.

ER GENERATED DWG. DO NOT REVISE BY HAND.
VARY ±3% DUE TO VARIATIONS IN MULTIPLE
NS PREVALENT DURING MANUFACTURE & USAGE.
DTLS SEE COMPUTER FILE NO. 2003150, TITLE
ER SAFE-TANK" FOR OUTER TANK DTLS
LE NO. 2103550, TITLE "3150 GALLON OUTER
ALLON OPEN TOP TANK".
DIMENSION WILL VARY WITH THE PENETRATION
NK INTO THE OUTER TANK.

CAPACITIES/ U.S. GALLONS			
TANK	DESIGN CAP	DOME VOL	TOTAL VOL
INNER	3191	419	3610
OUTER	3551	N/A	3551

DWG TITLE: 3150 GALLON SAFE-TANK ASSEMBLY

SCALE: 3/8"=1'-0"
DATE: 12/15/00
POLY PROCESSING COMPANY LLC
DR: J BRANTLEY
CK: MB WILKERSON
SHEET: 1 OF 1
COMPUTER FILE: 2003150A
REV: D

REV "C" ADDED LADDER ATTACHMENT LUGS BY:JB 10/1/04 CK:WM
REV "B" ADDED FITTING NOTE BY:MBW 4/16/03 CK:JB
REV "A" MODIFICATION TO MOLD BY:MBW 9/10/02 CK:JB
REV "D" REVISED RADIUS BY:JB 3/2/10 CK:WM