DOCKETED			
Docket Number:	06-AFC-07C		
Project Title:	Humboldt Bay Generating Station - Compliance		
TN #:	204979		
<b>Document Title:</b>	Petition for Project Modification- Spare Transformer		
Description:	N/A		
Filer:	Jonathan Fong		
Organization:	PG&E		
Submitter Role:	Public Agency		
Submission Date:	6/11/2015 2:23:13 PM		
Docketed Date:	6/11/2015		



HBGS-CEC-101

June 10, 2015

Mr. Jonathan Fong Compliance Project Manager California Energy Commission Energy Facilities Siting and Compliance Division 1516 Ninth Street, MS 2000 Sacramento, California 95814-5512

Subject: Humboldt Bay Generating Station (06-AFC-07C) - Petition for Project Modification, Spare 60-kV, 75 MVA Transformer

Dear Mr. Fong:

Enclosed please find a Petition for project modification for the Humboldt Bay Generating Station (HBGS), in compliance with Section 1769 of the California Energy Commission Siting Regulations. The purpose of this petition is to add a spare 60-kV, 75 MVA, spare transformer. The spare transformer would enhance plant reliability should one of the existing 60-kV transformers fail. The modification would not result in any environmental impacts or inconsistencies with Laws, Ordinances, Regulations, or Standards (LORS).

Should you have any questions, please contact me at 707-269-1810.

Sincerely,

fatt Washingto

Scott Washington Environmental Field Specialist

attachment

#### Introduction

Pursuant to the California Energy Commission Regulations Section 1769 (Post Certification Amendments and Changes), PG&E hereby submits this petition for project modification to add a 60-kV, 75 MVA spare transformer at the Humboldt Bay Generating Station (HBGS). PG&E believes the proposed modification constitutes an insignificant project change since it will not result in the modification to any conditions of certification or cause the project to not comply with applicable laws, ordinances, regulations, and standards (LORS). Below is the information required by Section 1769.

### **1.** Section 1769 (a)(1)(A) Provide a complete description of the proposed modification, including new language for any conditions that will be affected

On September 24, 2008, the California Energy Commission (CEC) granted a license to PG&E to construct and operate the HBGS. Construction began in September 2008 and the HBGS commenced commercial operation in October 2010. Electricity demand for the greater Humboldt County area is largely served by HBGS. Given this, plant reliability is essential.

HBGS interconnects with PG&E's 60-kV and 115-kV transmission systems. There are three generator stepup (GSU) transformers that were installed during HBGS construction, two 13.8/60-kV step-up transformers and one 13.8/115-kV step-up transformer. To enhance plant reliability, PG&E proposes to add a spare 60-kV GSU transformer in case one of the 60-kV transformers fails. The reciprocating engines connected to the 60kV system are run more frequently, as determined by the Cal-ISO. Given this, enhancing the reliability of the 60-kV system is merited. Since it can take up to 18 months for a new transformer to be manufactured and delivered to the site, it is beneficial to have a spare GSU transformer on site. The spare transformer will enable HBGS to continue to serve the Humboldt area without a long disruption in service.

The spare transformer will be located on an existing 17 foot x 22 foot foundation, which was originally built for the Humboldt Bay Power Plant (HBPP) Mobile Emergency Power Plants (MEPPS) transformer. The MEPPS transformers were removed as part of HBPP decommissioning. The foundation will be expanded to 27 feet x 27 feet to accommodate the HBGS spare GSU transformer. The maximum depth of excavation for the foundation will be 40 inches. In addition, a containment berm will be incorporated into the foundation. Figure 1 shows the location of the foundation. The engineering drawings (90% complete) for the new foundation are included in Attachment A.

Foundation installation for the spare transformer will occur in August 2015. The construction of the foundation will take approximately four weeks and require approximately six workers. The spare transformer is scheduled to be delivered to the HBGS site in early December 2015 and will be installed on the foundation upon arrival. It will take approximately two weeks and eight workers to set the transformer on the foundation, prepare it, and test it. As part of the installation, the transformer will be provided with a new 480V/C-3 phase electrical line to keep the transformer's control panel warm and prevent condensation inside the panel, which would damage the electrical connections.

In the event one of the existing 60-kV transformers failed, PG&E would remove the failed transformer and install the spare transformer in its place. The spare transformer would then be interconnected to the 60-kV transmission system. The failed transformer would be hauled off-site for repair. Once the repair is complete, it would be brought back to the site and set on the spare transformer foundation, serving as the spare from that point.

The proposed modification will not require changes to any Conditions of Certification.

#### 2. Section 1769 (a)(1)(B) Provide a discussion of the necessity for the proposed modification

Given the importance of the HBGS in serving the Humboldt County area, PG&E seeks to enhance reliability by adding a spare 60-kV GSU transformer. It can take from up to18 months for a transformer to be manufactured and delivered to the site. If one of the 60-kV transformers were to fail, it could potentially result in power outages in parts of the Humboldt region. The spare transformer alleviates this issue.

# 3. Section 1769 (a)(1)(C) - If the modification is based on information that was known by the petitioner during the certification proceeding, provide an explanation why the issue was not raised at that time

The decision to add a spare transformer was made after the HBGS was licensed. Therefore this modification is not based on information known by the petitioner during the certification proceeding.

# 4. Section 1769 (a)(1)(D) - If the project modification is based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision, provide an explanation of why the change should be permitted

The proposed modification does not undermine the assumptions, rationale, findings, or other basis of the Final Decision for the HBGS. In addition, the proposed modification should be permitted since it will enhance the reliability of the HBGS.

### 5. Section 1769 (a)(1)(E) – Provide an analysis of the impacts the modification may have on the environment and proposed measures to mitigate any significant adverse impacts

No environmental impacts are anticipated with the addition of the spare transformer. The spare transformer will be located within a previously disturbed area of the site, surrounded by other industrial project features.

For Cultural Resources, PG&E proposes to have a Cultural Monitor present during initial foundation excavation to determine whether the culturally sensitive Horizon A is present. Pursuant to Condition CUL-6, should the Cultural Resources Specialist believe that further monitoring is not necessary, a letter or email detailing the justification for changing the level of monitoring will be provided to the CEC Compliance Project Manager for review and approval prior to implementing any changes in monitoring. Paleontological monitoring is not necessary due to the maximum depth of excavation (40 inches), previous site disturbance, and depth of existing fill on the site.

It is not anticipated that excavation of the foundation would result in fugitive dust. However should it be necessary, fugitive dust mitigation such as water or a surfactant will be used to minimize wind blown dust resulting from the construction activity.

Lastly, the minimal traffic associated with workers and equipment for the project is not anticipated to result in traffic impacts along King Salmon Avenue. The project traffic combined with HBGS operations staff traffic and HBPP decommissioning staff traffic would be far less than the peak traffic associated with HBPP decommissioning and operations experienced in late 2009 through 2010 when an estimated 500 staff were on-site. During this time, there were no reported issues with traffic backing up onto King Salmon Avenue.

## 6. Section 1769 (a)(1)(F) Provide a discussion of the impact of the modification on the facility's ability to comply with applicable laws, ordinances, regulations, and standards

The addition of the spare transformer will not affect the ability of the HBGS to comply with applicable LORS. There are no environmental impacts associated with the proposed addition. In addition, a CEC delegate CBO will verify compliance with the applicable California Building Codes.

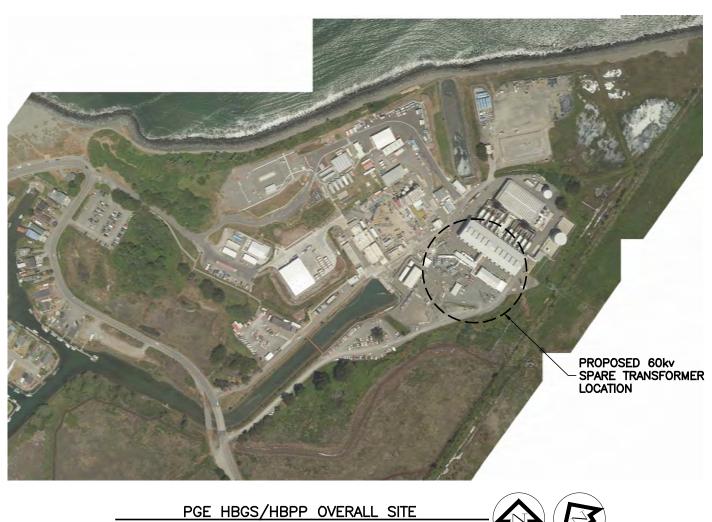
# 7. Section 1769 (a)(1)(G) and (H) – Provide a discussion of how the modification affects the public and a discussion of the potential effect on nearby property owners, the public and parties in the application proceedings.

The proposed modification to install a spare transformer will have no impact on the public, nearby property owners, and parties to the proceeding. Construction efforts associated with installation of the spare transformer will be within the HBGS site boundaries.

## 8. Section 1769 (a)(1)(H) - Provide a list of property owners potentially affected by the modification

Attachment B includes the list of property owners within 1,000 feet of the HBGS site.

Figure 1: Site Vicinity & Location Map



NO SCALE



SITE ADDRESS: 1000 KING SALMON AVE EUREKA, CA. 95503—6859 APN: 305—131—35 60kv YARD ROAD ALPHA

> HBGS PROPOSED SPARE NO SCALE

> > REVISION DE

PROPOS	POWERHOUSE NOINE ROOMS CONTROL ROOMS	<image/>	
SCRIPTION	HUMBOLDT BAY POWEF	R PLANT - PG&F (	PGE1504
	UNIT 3 DECO	MMISSIONING	
	PROPOSED 60kv VICINITY/LOC		۶
		SHEET	REV
		1 <sub>of</sub> 1	0

**Attachment A: 90% Transformer Pad Drawings** 

# PACIFIC GAS & ELECTRIC CO. Humboldt Bay Generating Station

1000 KING SALMON AVE. EUREKA, CA 95503

# FOUNDATION FOR

**60KV SPARE TRANSFORMER** 

ENGINEERS:



CHOW ENGINEERING INC.

7770 PARDEE LANE

**DAKLAND, CA 94621** 

PHONE: (510) 636-8500 FAX: (510) 636-8544

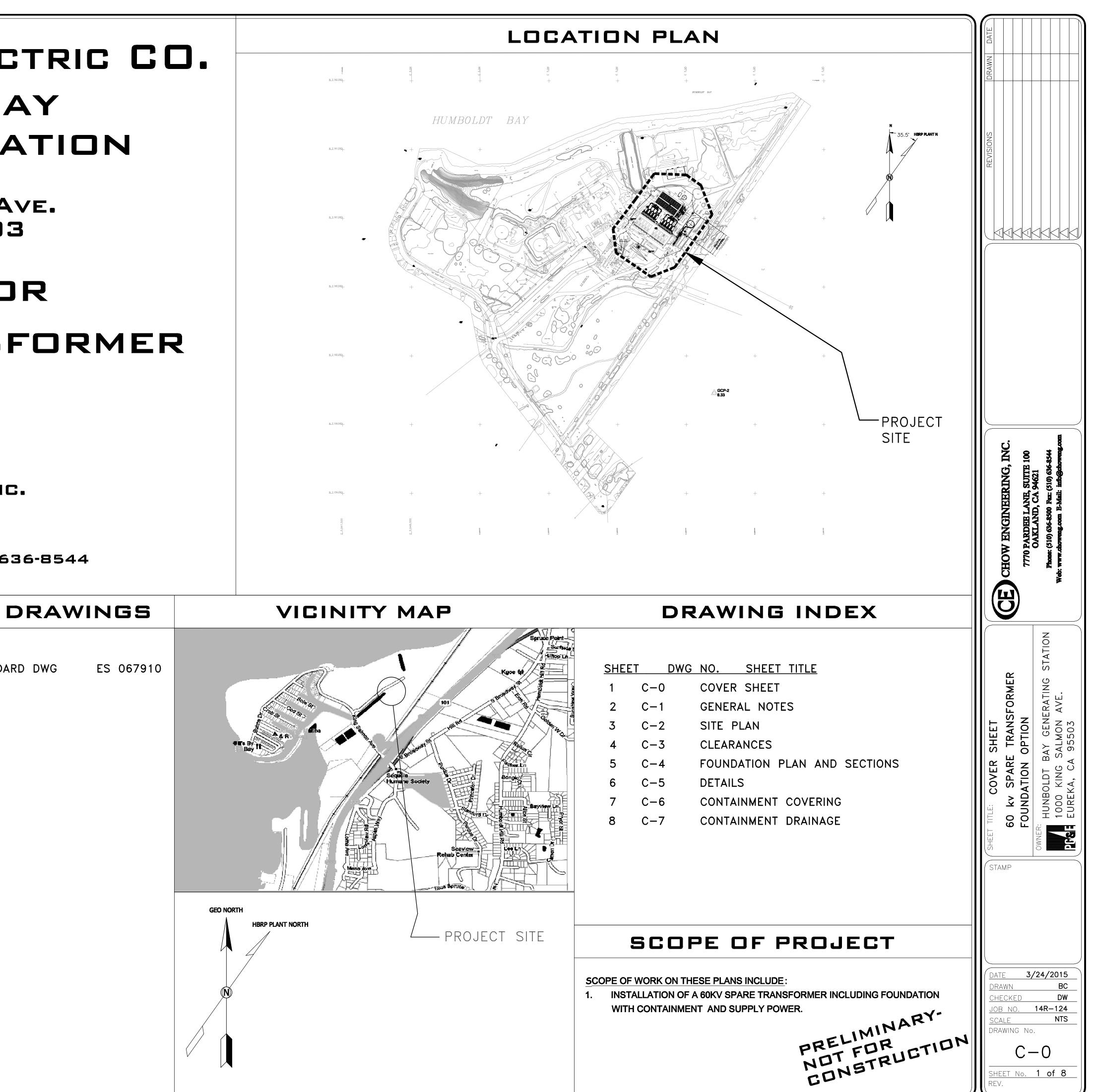
## ABBREVIATIONS

A.F.F.	above finish floor
A.F.F. A.G.	above grade, above ground
A.G. AGG	
	aggregate
ALT	alternate
ANCH	anchor
	approximately
@	at
B.G.S.	below grade surface
BLDG	building
B.O.F.	bottom of footing or foundation
BOT	bottom Octificantia Datibility of October
CBC	California Building Code
	center
	cast-in-drilled hole concrete pile
C/C	center to center
	clear
COL	column
	concrete
C.M.U	concrete masonary unit
	connection
CONST	0
CONSTR	
C.J.	construction joint
	continuous, continued
DET	detail
DIA	diameter
DIM	dimension
D.F.	Douglas Fir
	down
DWG	drawing
EA	each
E.F. E.W.	each face
E.VV. EL	each way
	elevation
ENGR	engineer equal
EXST, (E)	•
EXT	exterior
F.G.	finished grade
F.G. F.F.	finished floor
F.F. FTG	footing
FDN	foundation
JT	joint
51	Jourt

GLU GA G.B. HK HORIZ INSUL ISA LONG MFR MATL MAX MIN MISC N.F. N.S. N	glue gage grade break hook horizontal insulated International Symbol of Accessibility longitudinal manufacturer material maximum minimum or minute miscellaneous near face near side north
(N)	new
N.I.C.	not in contract
N.T.S.	not to scale
O.C.	on center
OPNG	opening
OPP	opposite
O.D.	outside diameter
LB	pound
PSI	pounds per square inch
PSF	pound per square foot
REF	reference
REINF	reinforcing steel
SECT	section
SF	square foot or square feet
SPEC	specification
STD	standard
STL	steel
	structural
SYMM	symmetrical
T.O.C.	top of concrete
T.O.S.	top of steel
TRANS.	transverse
TYP	typical
тот	total
U.G.	underground
U.O.N.	unless otherwise noted
W/	with

## REFERENCE DRAWINGS

PG&E GROUNDING DESIGN STANDARD DWG



GENERAL NOTES

- 1. ALL WORK SHALL BE IN COMPLIANCE WITH THE 2013 CALIFORNIA BUILDING CODE, 2013 CALIFORNIA FIRE CODE, 2013 CALIFORNIA MECHANICAL CODE, 2013 CALIFORNIA ELECTRICAL CODE, 2013 CALIFORNIA PLUMBING CODE, AND ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE PROJECT DOCUMENTS WITH CONDITIONS AT THE SITE, AND SHALL VERIFY EXISTING DIMENSIONS, ELEVATIONS, AND CONDITIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK. ANY DEVIATION, SUBSTITUTION OR ALTERATION TO THE DESIGN SHALL BE SUBJECT TO REVIEW BY THE ENGINEER.
- 3. ALL BUILDING AND UTILITY INFORMATION SHALL BE VERIFIED AND/OR REVISED AS NECESSARY BY THE CONTRACTOR IN THE FIELD.
- 4. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE APPLIED, SUBJECT TO REVIEW BY THE ENGINEER.
- 5. THIS IS AN ENERGIZED FACILITY. CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO PREVENT CONTACT WITH HIGH VOLTAGE EQUIPMENT, CONDUITS, AND POWER LINES.
- 6. DISCREPANCIES: THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS OR OF ANY VARIATIONS NEEDED IN ORDER TO CONFORM TO CODES, RULES AND REGULATIONS. UPON RECEIPT OF SUCH INFORMATION. THE ENGINEER WILL SEND WRITTEN INSTRUCTIONS TO ALL CONCERNED. ANY SUCH DISCREPANCY, OMISSION, OR VARIATION NOT REPORTED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND WORK SHALL BE PERFORMED IN A MANNER AS DIRECTED BY THE ENGINEER.
- 7. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE ADEQUATE SAFETY PRECAUTIONS AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING THE CONSTRUCTION.
- 8. SAFETY: THE CONTRACTOR SHALL ADEQUATELY PROTECT HIS WORK, ADJACENT PROPERTY, AND THE PUBLIC, AND BE RESPONSIBLE FOR DAMAGE OR INJURY DUE TO HIS ACT OR NEGLECT.
- 9. INSPECTIONS: ANY INSPECTIONS, SPECIAL OR OTHERWISE, THAT ARE REQUIRED BY THE BUILDING CODES, LOCAL BUILDING DEPARTMENTS, OR THESE PLANS, SHALL BE DONE BY AN INDEPENDENT INSPECTION COMPANY. JOB SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE, OR SUBSTITUTE, INSPECTIONS UNLESS SPECIFICALLY CONTRACTED FOR.
- 10. ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND PG&E EMPLOYEES AND THE PUBLIC ARE PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATION" OF THE U.S. DEPARTMENT OF LABOR AND WITH THE STATE OF CALIFORNIA DEPT. OF INDUSTRIAL RELATIONS' "CONSTRUCTION SAFETY ORDERS."
- 11. THE CIVIL ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR THE CONTRACTORS' AND SUBCONTRACTORS' COMPLIANCE WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATION: OF THE U.S. DEPARTMENT OF LABOR OR WITH THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS' "CONSTRUCTION SAFETY ORDERS."
- 12. CONTRACTOR AGREES THAT HE/SHE WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY: THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS: AND THAT THE CONTRACTOR SHALL DEFEND. INDEMNIFY AND HOLD THE ENGINEER AND OWNER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE ENGINEER.
- 13. PERMITS: THE CONTRACTOR AND/OR SUBCONTRACTORS SHALL OBTAIN ALL REQUIRED PERMITS.
- 14. ALL CONTRACTORS PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE THEMSELVES WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ALL DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM THEIR OPERATIONS, WHETHER OR NOT SHOWN ON THESE DRAWINGS.
- 15. AS-BUILTS: THE CONTRACTOR SHALL SUBMIT "AS-BUILT" DRAWINGS TO THE OWNER (PG&E) UPON COMPLETION OF WORK.

### CONCRETE ANCHORS

- 1. POST-INSTALLED ANCHORS SHALL BE AS FOLLOWS. NO SUBSTITUIONS ARE ALLOWED UNLESS WRITTEN APPROVAL IS GIVEN BY THE ENGINEER. ALL ANCHORS SHALL MEET THE REQUIREMENTS OF THE ICC REPORT LISTED.
  - A. MECHANICAL ANCHORS SHALL BE HILTI KWIK BOLT TZ STAINLESS STEEL ANCHORS INSTALLED PER ICC ESR-1917. PERIODIC SPECIAL INSPECTION IS REQUIRED.
  - B. ADHESIVE ANCHORS SHALL BE HILTI HIT-RE 500-SD ADHESIVE ANCHORS INSTALLED PER ICC ESR-2322. UNLESS NOTED OTHERWISE, USE STAINLESS STEELTHREADED ROD . PERIODIC SPECIAL INSPECTION IS REQUIRED.

### <u>CONSTRUCTION</u>

- 1. FIRE EXTINGUISHER: CONTRACTOR SHALL PROVIDE AND MAINTAIN A PORTABLE FIELD INSPECTOR AT THE JOB SITE THROUGHOUT CONSTRUCTION.
- 2. NO HAZARDOUS MATERIALS: NO HAZARDOUS CHEMICALS OR MATERIALS PROJECT.
- CONFORMANCE WITH THE APPROVED DRAWINGS AND SPECIFICATIONS.
- 4. PRIOR WRITTEN APPROVAL AND HOT WORK PERMIT FOR ALL FIELD WELDING IS REQUIRED.
- 5. RIGGING: ALL RIGGING SHALL BE SCHEDULED, COORDINATED, AND HAVE PRIOR APPROVAL FROM OWNER (PG&E).
- 6. SITE CLEANLINESS: CONTRACTOR SHALL PROVIDE LABOR AND EQUIPMENT INTERVALS.
- 7. ADJUST (E) TO (F.G.): EXISTING SLABS, CURBS, GUTTERS AND ASPHALT & ADJUSTED TO FINAL GRADE, UNLESS INDICATED OTHERWISE.
- 8. CONCRETE JOINTS: JOINTS IN CONCRETE CURBS, GUTTERS AND WALKS INDICATED OTHERWISE.
- SAWCUT.

### EARTHWORK

- 1. EARTHWORK SHALL BE IN ACCORDANCE WITH GEOTECHNICAL REPORT, KLEINFELDER, INC.
- 2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION OWNERS REQUIREMENTS.
- 2. UNDERGROUND UTILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR OVERHEAD POWER LINES OR ANY OTHER EXISTING INSTALLATIONS
- 3. ASPHALT AND CONCRETE SPOILS SHALL BE HAULED OFF SITE. 4. EXCESS SOIL SPOILS SHALL BE HAULED ON SITE TO SPECIFIED LOCATION PER PG&E INSTRUCTIONS.
- 5. COMPACTION (MIN): FILL AND BACK FILL SHALL BE COMPACTED TO NOT THE OPTIMUM AS DETERMINED BY A.S.T.M. SOIL COMPACTION TEST D1557.
- 6. FIELD DENSITY: SHALL BE DETERMINED BY NUCLEAR GAUGE OR DRIVE BY THE SOIL ENGINEER AND APPROVED BY THE BUILDING OFFICIAL.
- 7. FILL PLACEMENT: NO FILL SHALL BE PLACED UNTIL STRIPPING OF ENGINEER.
- 8. BASE MATERIALS: AGGREGATE BASE SHALL BE EITHER CRUSHED INDICATED OTHERWISE.

### <u>PAVING</u>

- 1. AGGREGATE FOR GRAVELED AREAS SHALL MEET THE REQUIREMENTS OF CALTRANS CLASS 2 AGGREGATE BASE OR ASTM D448 SIZE NUMBER 27. 2. AGGREGATE FOR SUB-BASE SHALL MEET THE REQUIREMENTS OF CALTRANS
- CLASS 2 AGGREGATE SUB-BASE. 3. AGGREGATE FOR ASPHALT CONCRETE SHALL CONFORM CALTRANS

FIRE EXTINGUISHER OF THE TYPE SIZE APPROVED BY THE FIRE DEPARTMENT

SHALL BE USED OR STORED IN THIS AREA OR ADJACENT AREAS TO THIS

COMPLY W/DRAWINGS: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE, SUPERVISE, AND COMMUNICATE WITH THE ENGINEER, OWNER, AND SUBCONTRACTORS ALL WORK TO INSURE

FOR DEMOLITION AND REMOVAL OF DEBRIS. LIMITED CONSTRUCTION SPACE REQUIRES THAT ACCUMULATION OF DEBRIS BE REMOVED AT FREQUENT

CONCRETE PAVEMENT WITHIN THE LIMITS OF NEW CONSTRUCTION SHALL BE

SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 303-5.4 OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" UNLESS

SAWCUT REMOVALS: ALL PAVEMENT AND CONCRETE REMOVALS SHALL BE

"PROPOSED POWER PLANT, HUMBOLDT BAY PG&E FACILITY, EUREKA, CALIFORNIA", DATED SEPTEMBER 3, 2008 (REVISED OCTOBER 17, 2008) BY

PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE TO THE

LOCATING ALL BELOW GROUND UTILITES ON OR ADJACENT TO THE ZONE OF CONSTRUCTION. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO UNDERGROUND UTILITIES, VAULTS, FIRE HYDRANTS,

LESS THAN 95 PERCENT OF MAXIMUM DENSITY IN LAYERS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AT A MOISTURE CONTENT WITHIN 2% OF

CYLINDER METHOD. IN FINE-GRAINED COHESIVE SOILS, FIELD DENSITY MAY BE DETERMINED BY THE DRIVE-CYLINDER METHOD, A.S.T.M. D2937-71. THE METHOD OF DETERMINING FIELD DENSITY SHALL BE SHOWN IN THE COMPACTION REPORT. OTHER METHODS MAY BE USED IF RECOMMENDED

VEGETATION, REMOVAL OF UNSUITABLE SOILS, AND INSTALLATION OF SUBDRAINS (IF ANY) HAVE BEEN INSPECTED AND APPROVED BY THE SOIL

AGGREGATE BASE OR CRUSHED MISCELLANEOUS RECYCLABLE BASE AS DEFINED IN SECTION 200-2.2 AND SECTION 200-2.4 RESPECTIVELY OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" UNLESS

SPECIFICATIONS. AGGREGATE SHALL BE TYPE B, 3/4" MAXIMUM, MEDIUM GRADE. ASPHALTIC CONCRETE MIXES SHALL CONFORM TO CALTRANS STANDARD SPECIFICATIONS, PERFORMANCE GRADE (PG) 64-10.

### CONCRETE AND REINFORCEMENT

- 1. DEBRIS: REMOVE ALL DEBRIS FROM FORMS BEFORE POURING.
- 2. INSERTS: ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING, DOWELS, BOLTS, ANCHORS, PIPES, SLEEVES, ETC., SHALL BE SECURELY POSITIONED IN THE FORMS BEFORE PLACING CONCRETE.
- SPLICES: SPLICE BARS IN MEMBERS SUCH AS SPANDRELS, BEAMS, ETC., AS FOLLOWS: TOP BARS AT CENTERLINE OF SPAN, BOTTOM BARS AT THE SUPPORT. ALL REINFORCING STEEL SHALL BE SECURELY WIRED AND PROPERLY SUPPORTED ABOVE GROUND AND AWAY FROM THE FORMS.
- 4. CONSTRUCTION JOINTS: CONSTRUCTION JOINTS SHALL HAVE ENTIRE SURFACE REMOVED TO EXPOSE CLEAN, SOLIDLY EMBEDDED AGGREGATE. THE CONTRACTOR SHALL OBTAIN THE ENGINEER'S APPROVAL OF CONSTRUCTION JOINT LOCATION IN SLABS AND BEAMS.
- 5. TEMPERATURE AND SHRINKAGE REINFORCEMENT: SHALL HAVE A LAP OF THIRTY (30) BAR DIAMETERS, BUT NOT LESS THAN 18 INCHES, AND THE SPLICES IN ADJACENT BARS SHALL BE NOT LESS THAN FIVE (5) FEET APART.
- 6. REBAR GRADES: ALL REINFORCING STEEL SHALL BE NEW STOCK DEFORMED BARS CONFORMING TO ASTM A615 OR A706 AS FOLLOWS:
  - #3 & SMALLER BARS..... ...GRADE 40
  - #4 & LARGER BARS...... ...GRADE 60
- 7. WELDED WIRE FABRIC: WELDED WIRE FABRIC SHALL CONFORM TO ASTM A82 AND A185.
- 8. WELDING: TACK WELDING OF REBAR IS NOT PERMITTED UNLESS CALLED FOR OR APPROVED BY THE ENGINEER. WELDING OF STIRRUPS, TIES, INSERTS OR OTHER SIMILAR ELEMENTS TO LONGITUDINAL REINFORCING BARS SHALL NOT BE PERMITTED.
- REBAR COVER: MINIMUM REBAR COVER FOR CONCRETE SHALL BE AS SHOWN IN THIS TABLE:

EXPOSURE CONDITION	MINIMUM COVER	TOLERANCE (-)
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"	3/8 INCH
EXPOSED TO EARTH OR WEATHER: NO. 5 AND SMALLER BARS NO. 6 AND LARGER BARS	1-1/2" 2"	1/4 INCH 1/4 INCH
SLABS ON GRADE TOP BARS:	1-1/2" 	1/4 INCH 3/8 INCH

- 10. TOLERANCES FOR REBAR PLACEMENT: TOLERANCE FOR LONGITUDINAL LOCATION OF BENDS AND ENDS OF REINFORCEMENT SHALL BE PLUS OR MINUS TWO (2) INCHES, EXCEPT AT DISCONTINUOUS ENDS OF MEMBERS WHERE TOLERANCES SHALL BE  $\pm 1/2$ INCH.
- 11. CONCRETE QUALITY: SHALL BE AS SHOWN IN TABLE BELOW:

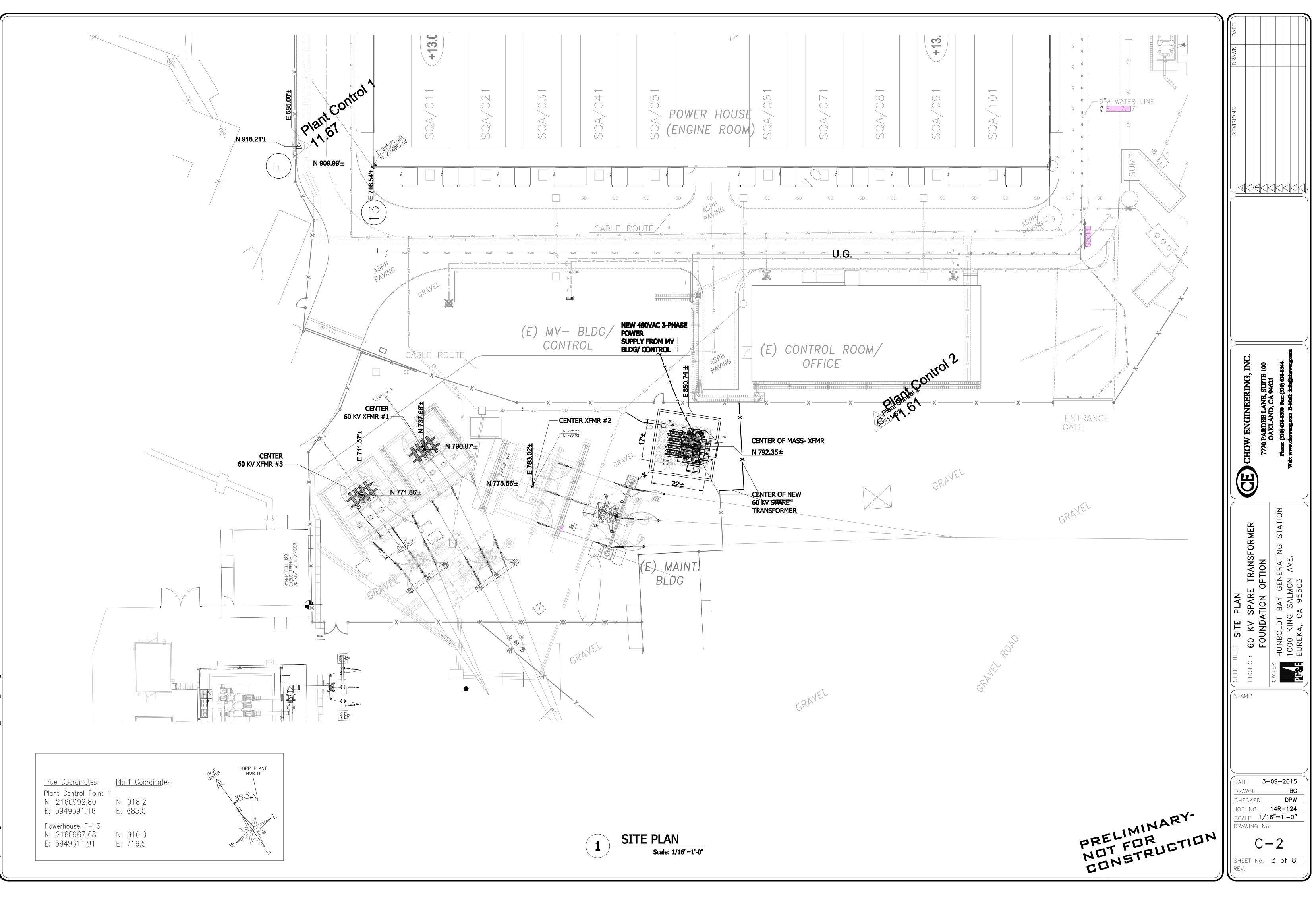
CONCRETE USE	STRENGTH AT 28 DAYS	SLUMP	AIR	AGGREGATE SIZE	AGGREGATE TYPE	14 15
ALL (OTHERWISE NOTED)				1"	I HARDROCK I	
PILE FOUNDATION	5000	4"	_	1"	HARDROCK	16

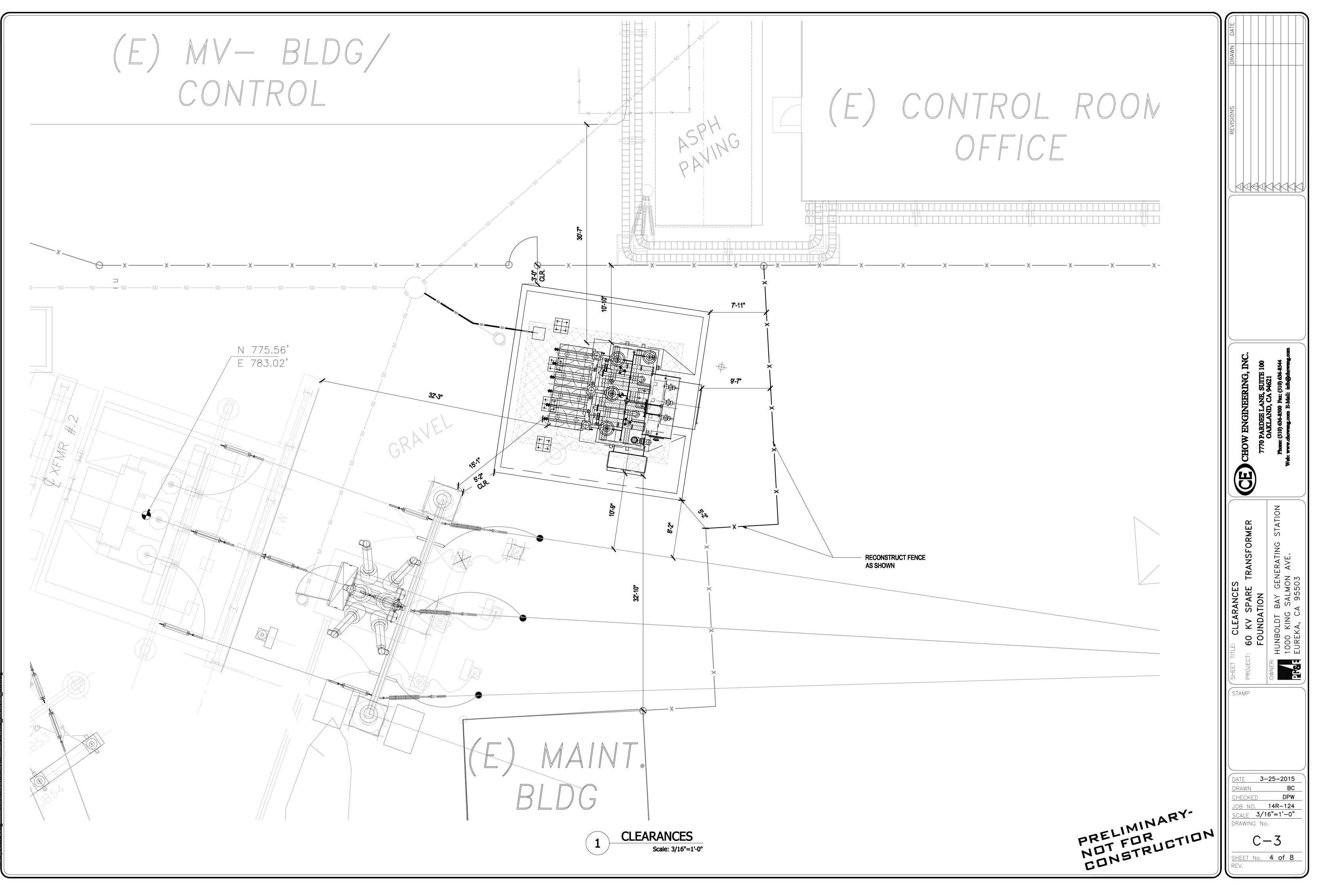
- 12. CONCRETE WEIGHT: ALL CONCRETE SHALL BE OF REGULAR WEIGHT OF 145 17 POUNDS PER CUBIC FOOT UNLESS NOTED OTHERWISE.
- 13. AGGREGATE: SIZE OF AGGREGATE SHALL CONFORM TO ASTM C33-85. 3/4".....ASTM SIZE C67

1"..... .....ASTM SIZE C57

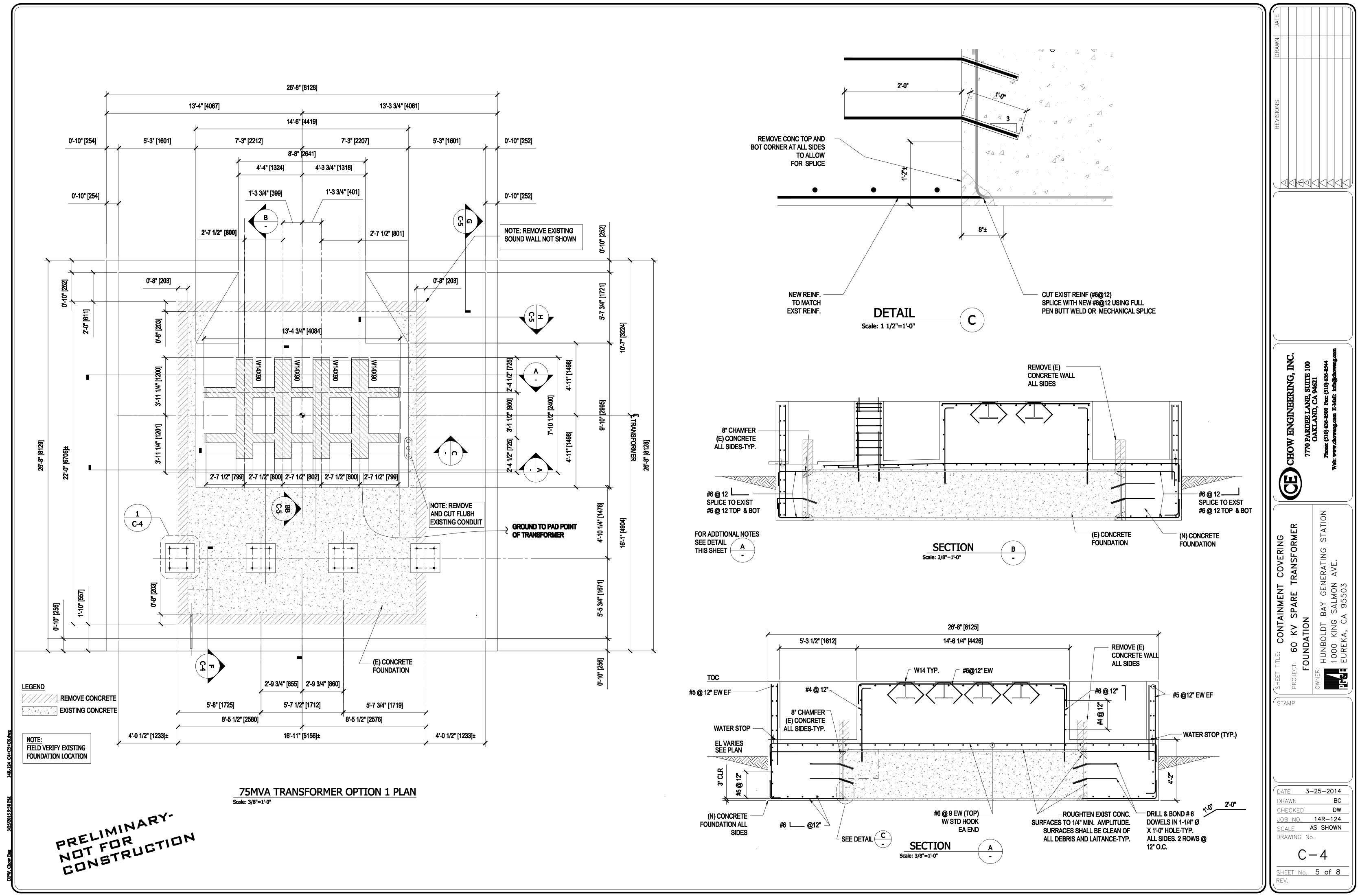
- 14. CEMENT: SHALL BE TYPE II.
- 15.. CONCRETE AGE: NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT UNLESS APPROVED BY TESTING AGENCY.
- 16. WET SET: REINFORCEMENT MAY NOT BE WET SET IN CONCRETE POURS.
- 17. ROUGHENED SURFACES: WHERE INDICATED ON THE DRAWINGS, ROUGHENED SURFACES SHALL BE PROVIDED BY MEANS OF HEAVY RAKING OR GROOVING. OTHER METHODS MAY BE ACCEPTABLE PENDING WRITTEN APPROVAL FROM THE ENGINEER. ALL INTERFACING SURFACES MUST BE CLEAN AND FREE OF LOOSE MATERIALS.
- 18. ADMIXTURES: NO ADMIXTURES SHALL BE ADDED TO THE CONCRETE MIX WITHOUT THE APPROVAL OF THE ENGINEER, UNLESS NOTED OTHERWISE. ADMIXTURES OR CONCRETE CONTAINING CHLORIDES SHALL NOT BE USED.
- 19. CURING: CONCRETE SHALL BE MAINTAINED ABOVE 50F AND IN A CONTINUOUSLY MOIST CONDITION FOR AT LEAST 7 DAYS AFTER PLACEMENT. ALTERNATIVELY, THE CURING COMPOUND METHOD MAY BE USED. PROTECT CURING COMPOUND FROM DAMAGE FOR 7 DAYS AFTER PLACEMENT OF CONCRETE.
- 20. FINISH: CONCRETE SHALL HAVE A LIGHT BROOM FINISH ON ANY WALKING SURFACE.

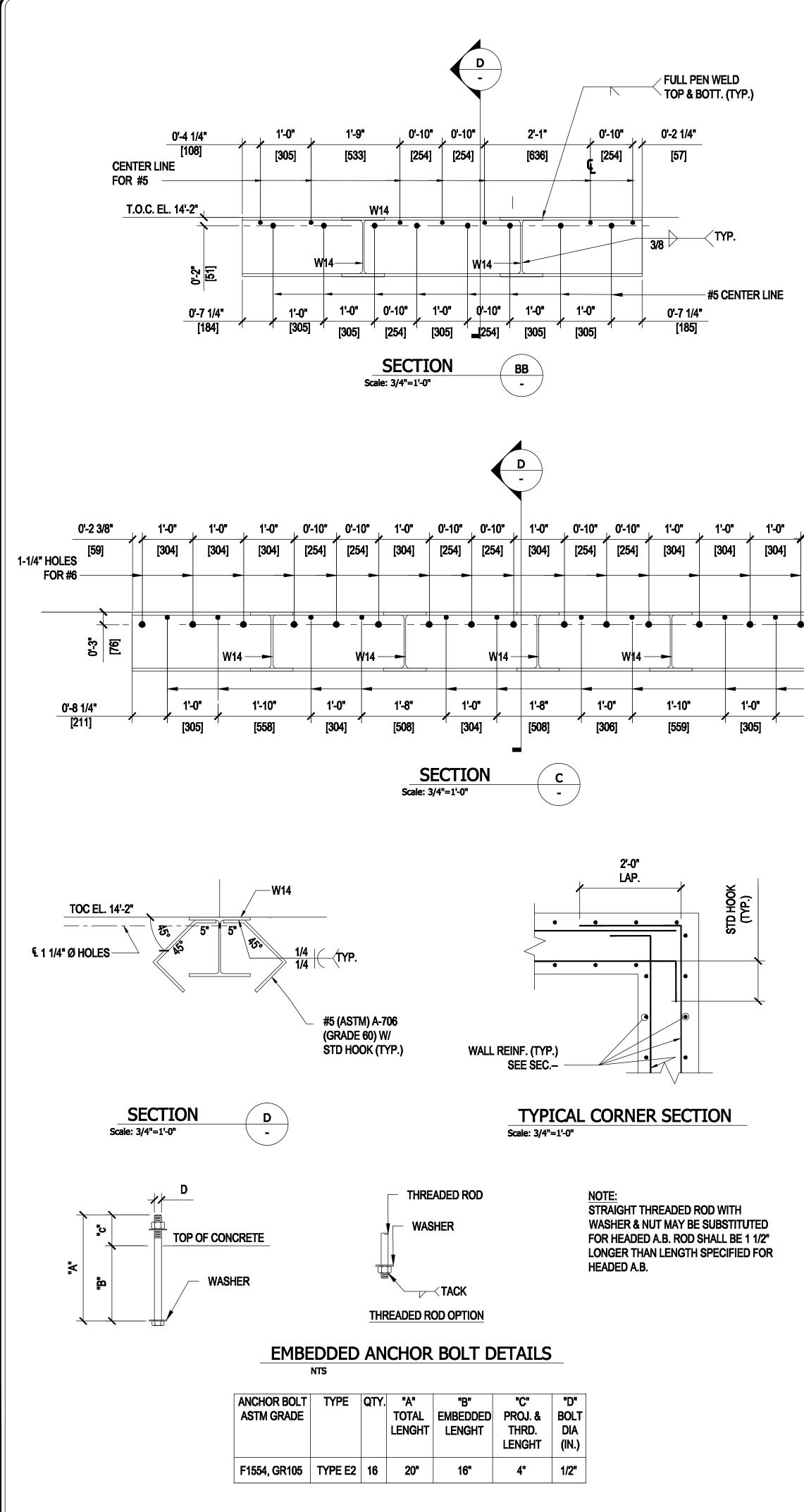
i	DATE
STEEL NOTES	
1. ALL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE A.I.S.C. "STEEL CONSTRUCTION MANUAL", LATEST EDITION. THE ERECTOR SHALL MEET ALL CAL O.S.H.A. SAFETY STANDARDS.	DRAWN
<ol> <li>THE CONTRACTOR IS RESPONSIBLE FOR THE FIT OF ALL STRUCTURAL STEEL AND SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.</li> <li>WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY</li> </ol>	SNO
(AWS) D1.1 "STRUCTURAL WELDING CODE" USING E70 ELECTRODES. QUALIFIED WELDERS APPROVED BY THE BUILDING DEPARTMENT SHALL PERFORM ALL STRUCTURAL WELDING. A REGISTERED DEPUTY INSPECTOR	REVISIONS
SHALL CONTINUOUSLY INSPECT ALL FIELD WELDING BY USING NONDESTRUCTIVE TESTING OF ALL FULL PENETRATION WELD CONNECTIONS. WELDERS SHALL HAVE LIGHT GAUGE STEEL CERTIFICATION WHEN WELDING	
LIGHT GAUGE STEEL. 4. ALL EXPOSED WELDS SHALL BE FILLED AND GROUND SMOOTH WHERE METAL	
COULD COME IN CONTACT WITH BUILDING OCCUPANTS. 5. BASE PLATES SHALL BE SHOP WELDED TO THE COLUMNS. ENDS OF COLUMNS SHALL BE CUT SQUARE TO ALLOW FOR FULL BEARING. TERMINATE ALL BASEPLATE WELDS AT LEAST 1/2" FROM FLANGE TOES AND "K" REGION.	
6. NO CUTTING, BURNING, OR HOLES OTHER THAN THOSE SPECIFICALLY DETAILED SHALL BE ALLOWED THROUGH STRUCTURAL STEEL MEMBERS WITHOUT PRIOR CONSENT OF THE ENGINEER. BOLT HOLES SHALL CONFORM TO AISC SPECIFICATION, AND SHALL BE STANDARD HOLES UNLESS NOTED	
OTHERWISE. 7. CONNECTIONS SHALL HAVE THE CONNECTION ANGLES SHOP WELDED AND FIELD BOLTED.	
<ol> <li>CONNECTIONS SHALL BE MADE WITH ASTM A325 3/4" DIA. GALVANIZED BOLTS UNLESS OTHERWISE NOTED. BOLTED CONNECTIONS UNDER TENSION SHALL BE PRETENSIONED JOINTS. ALL OTHER BOLTED CONNECTIONS CAN BE SNUG TIGHTENED JOINTS.</li> </ol>	
9. BOLTED CONNECTIONS SHALL BE INSPECTED PER RCSC SPECIFICATION, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, JUNE 30, 2004" BY A.I.S.C.	
10. COLUMN BASE PLATES SHALL BE GROUTED WITH "FIVE-STAR" NON-SHRINK GROUT OR APPROVED ALTERNATE, WHERE REQUIRED. MINIMUM COMPRESSIVE STRENGTH SHALL BE 5,000 PSI U.N.O. ALL SURFACES SHALL	RING, INC. SUITE 100 94621 (510) 636-8544 (510) 636-8544
BE PROPERLY CLEANED OF FOREIGN MATERIAL PRIOR TO THE GROUTING OPERATION.	
<ol> <li>PROVIDE MILL REPORTS AND IDENTIFICATION OF STEEL (AFFIDAVIT OF COMPLIANCE) AS REQUIRED BY THE GOVERNING AGENCY.</li> <li>RECTANGULAR TUBULAR STEEL MEMBERS SHALL CONFORM TO ASTM A500,</li> </ol>	HOW ENGIN 7770 PARDEE L/ 0AKLAND, Phone: (510) 636-8500 www.choweng.com B
GRADE B, FY=46 KSI. CIRCULAR PIPE MEMBERS SHALL BE ASTM A53, GRADE B. ALL W AND T SHAPES SHALL BE ASTM A992. CHANNELS, ANGLES, AND PLATES SHALL BE ASTM A36, U.N.O.	HOW ENGIN 7770 PARDEE I 0AKLAN Phone: (510) 636-850 : www.choweng.com
13. PAINT UNGALVANIZED STEEL WITH ONE SHOP COAT OF ZINC CHROMATE PRIMER OR EQUAL. FIELD CONNECTIONS AND DAMAGED PAINT SHALL BE	
REPAIRED TO THE SATISFACTION OF THE OWNER (PG&E). 14. FLOOR GRATING SHALL BE TYPE W-19-4 WITH 1 " X 3/16" BARS U.O.N. 15. ALL PLATFORM STEEL INCLUDING BUT NOT LIMITED TO GUARDRAILS,	
HANDRAILS, CAGES, LADDERS, AND FLOOR GRATING SHALL BE HOT DIP GALVANIZED ACCORDING TO ASTM A-123. 16. APPLY COLD GALVANIZING COMPOUND TO ALL SHOP AND FIELD	STATION
CONNECTIONS MADE ON ALL GALVANIZED MEMBERS TO THE SATISFACTION OF THE OWNER (PG&E).	MER TING
17. ALL NEW PLATFORMS TO HAVE 3 INCHES MINIMUM CLEARANCE FROM ALL PIPES AND EQUIPMENT.	NOTES IRANSFORMER GERNERATING MON AVE. 5503
SPECIAL INSPECTIONS	・   とえる
1. ANY INSPECTIONS, SPECIAL OR OTHERWISE, THAT ARE REQUIRED BY THE BUILDING CODES, LOCAL BUILDING DEPARTMENTS, OR THESE PLANS, SHALL BE DONE BY AN INDEPENDENT INSPECTION COMPANY. JOB SITE VISITS BY THE ENGINEER DO	F TITLE: GENERAL 60 KV SPARE FOUNDATION R: HUMBOLDT BA 1000 KING S/ EUREKA, CA §
NOT CONSTITUTE, OR SUBSTITUTE, INSPECTIONS UNLESS SPECIFICALLY CONTRACTED FOR. 2. THE CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL SPECIAL	FOUL EET TITLE
INSPECTIONS REQUIRED BY THE STATE AND LOCAL AGENCIES AS STATED IN CBC SECTION 1704.	STAMP
LEGEND	
SD-1 SECTION OR DETAIL NUMBER DRAWING NUMBER ON WHICH SECTION OR DETAIL APPEARS	
EXISTING STRUCTURE OR EQUIPMENT PRELIMINARY PRELIMINARY PRELIMINARY PRELIMINARY CONSTRUCTOR	DATE         3-25-2015           DRAWN         BC           CHECKED         DPW
PREL FOR NOT FTRUCTION	JOB NO.     14R-124       SCALE     NTS       DRAWING No.
CONST	
	SHEET No. 2 of 8 REV.

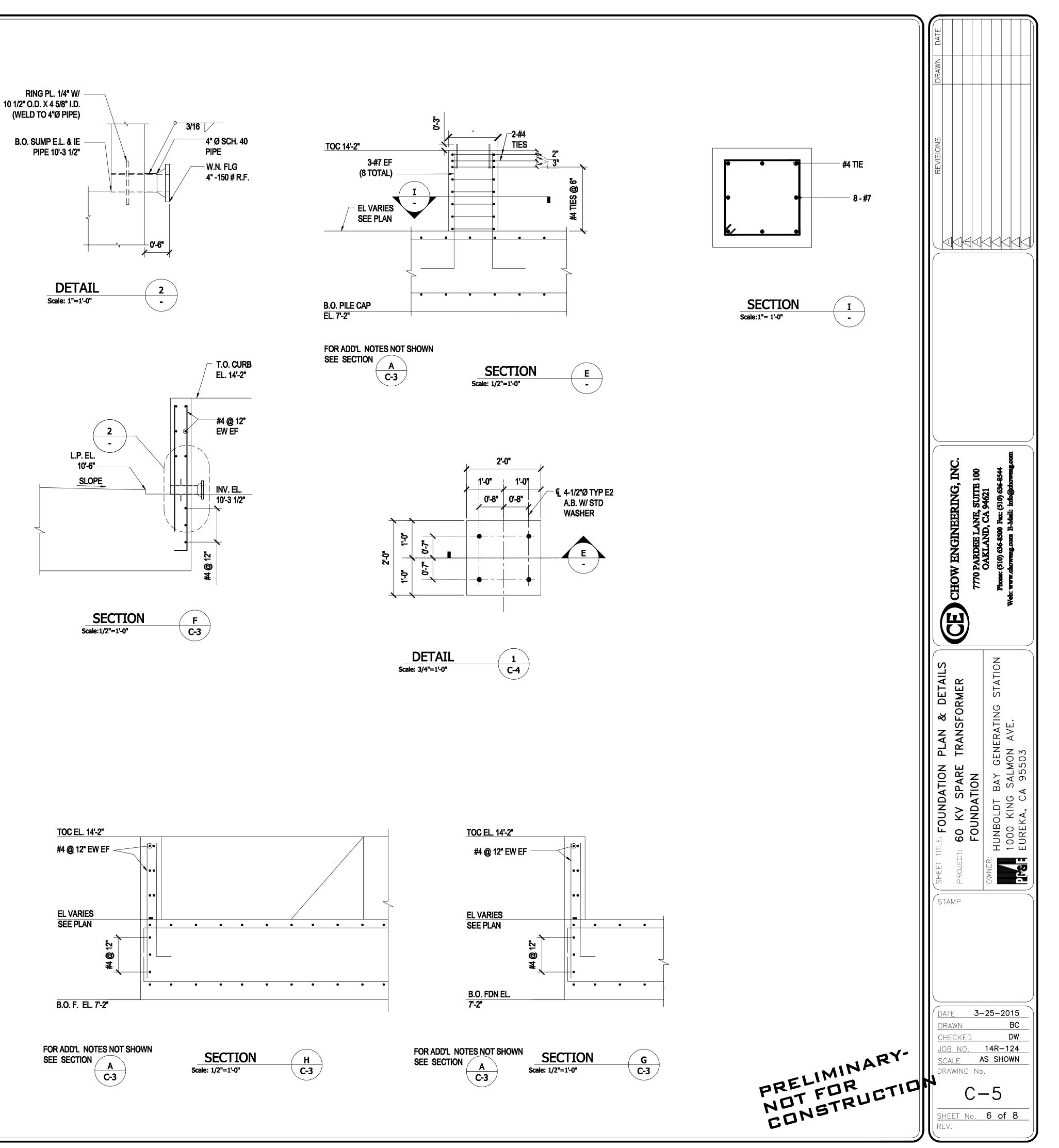


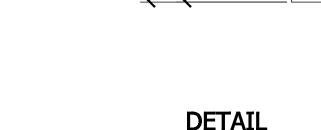


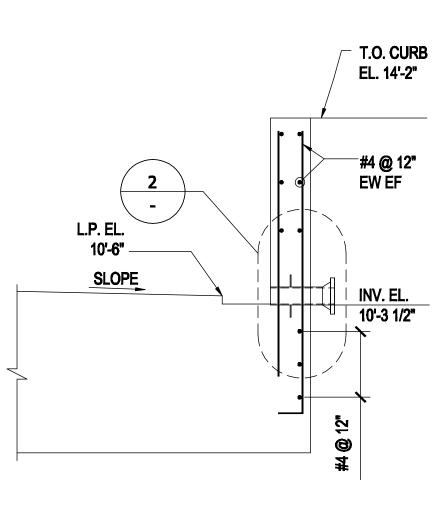


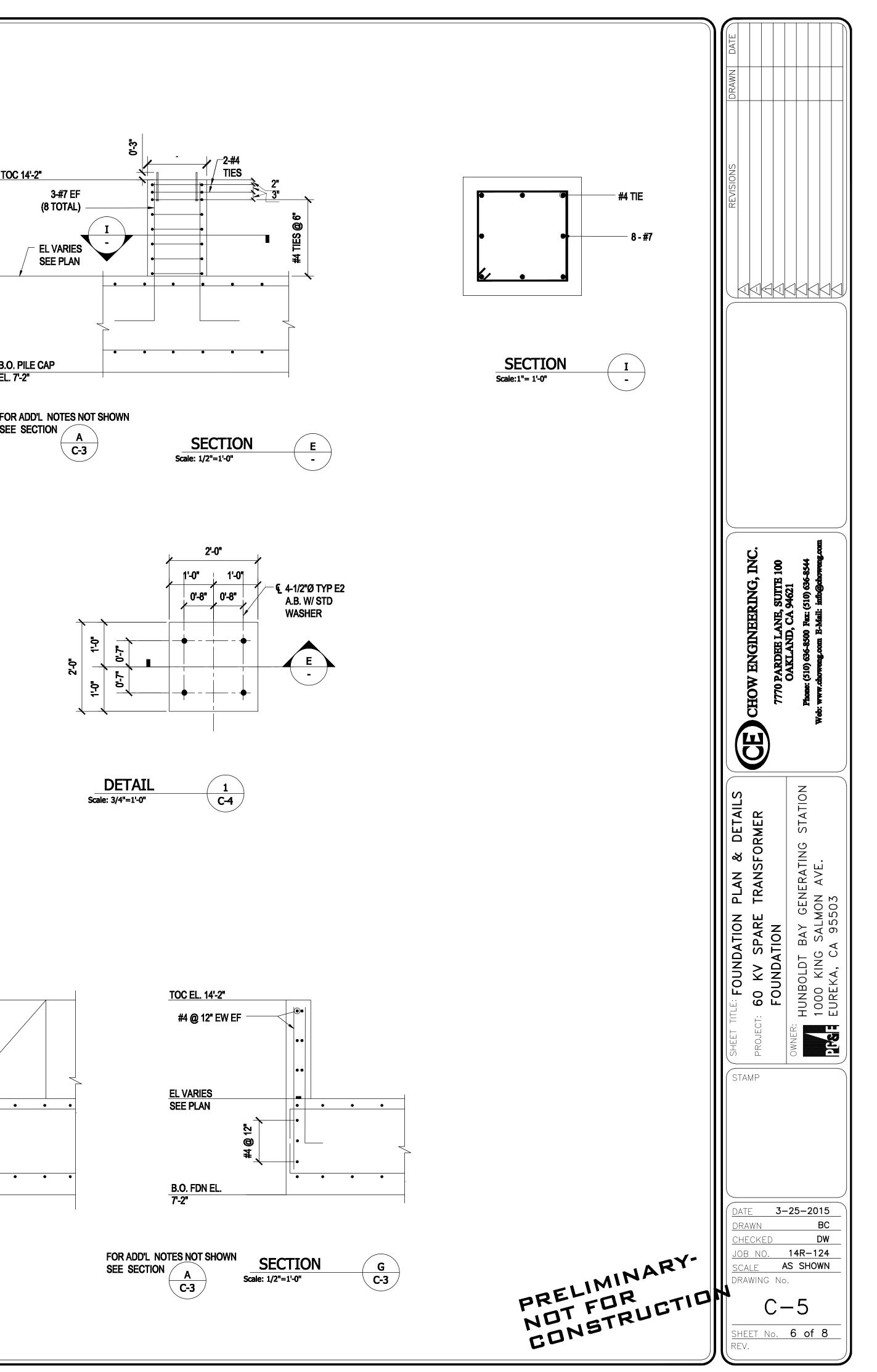


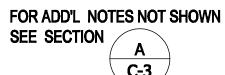


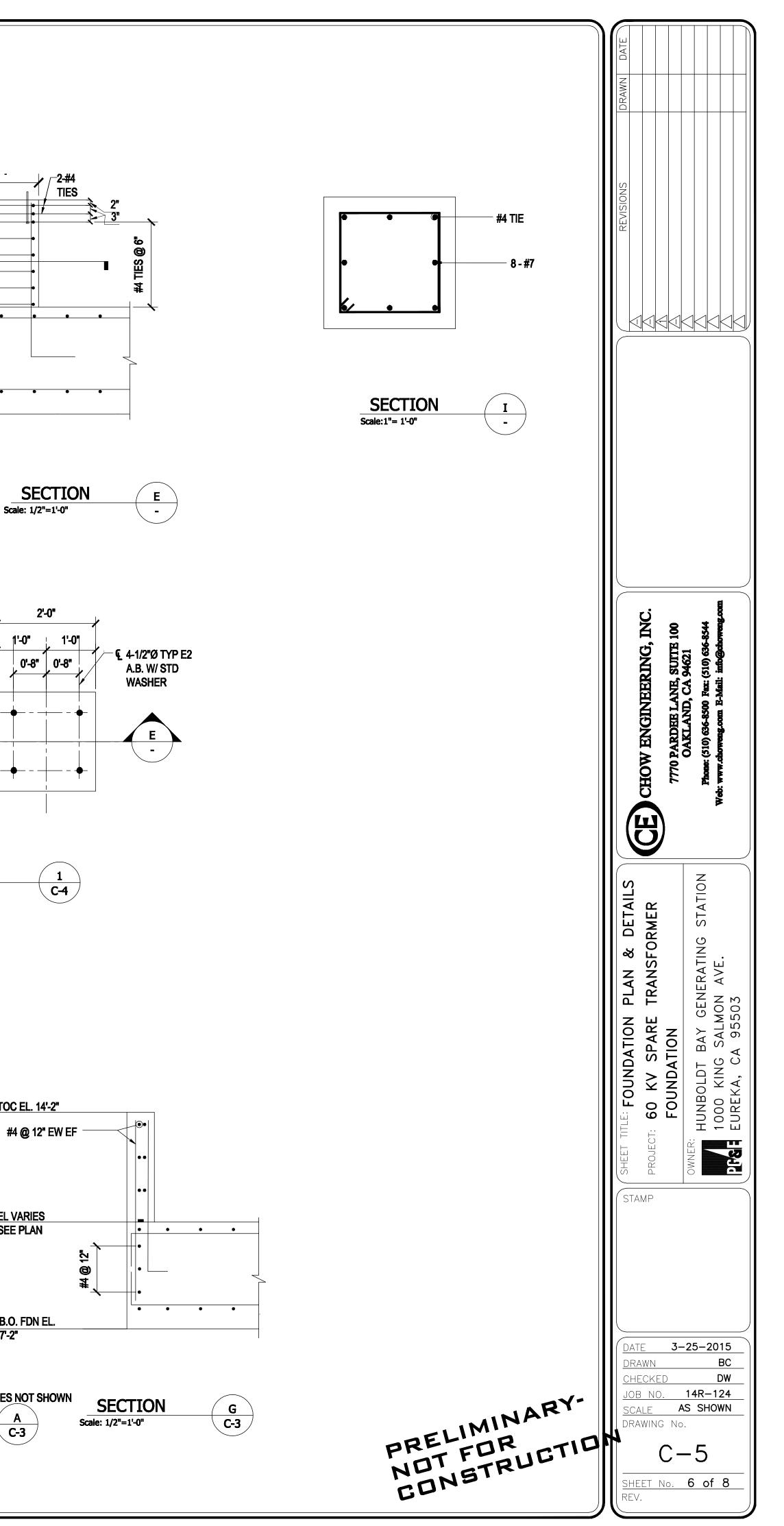












B.O. SUMP E.L. & IE PIPE 10'-3 1/2"

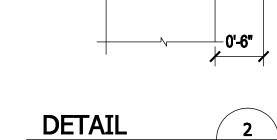
0'-2 3/8" [59]

#5 CENTER

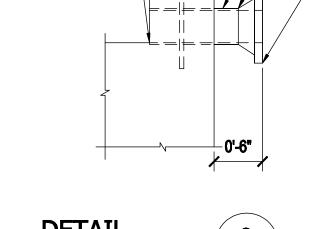
\_ LINE

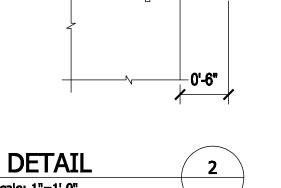
0'-8 1/8"

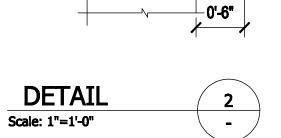
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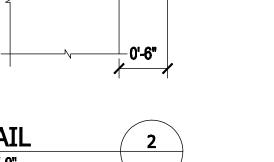


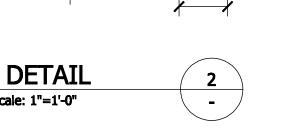


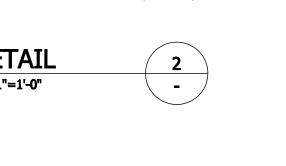


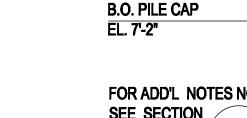


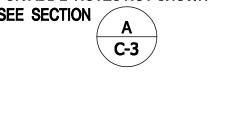




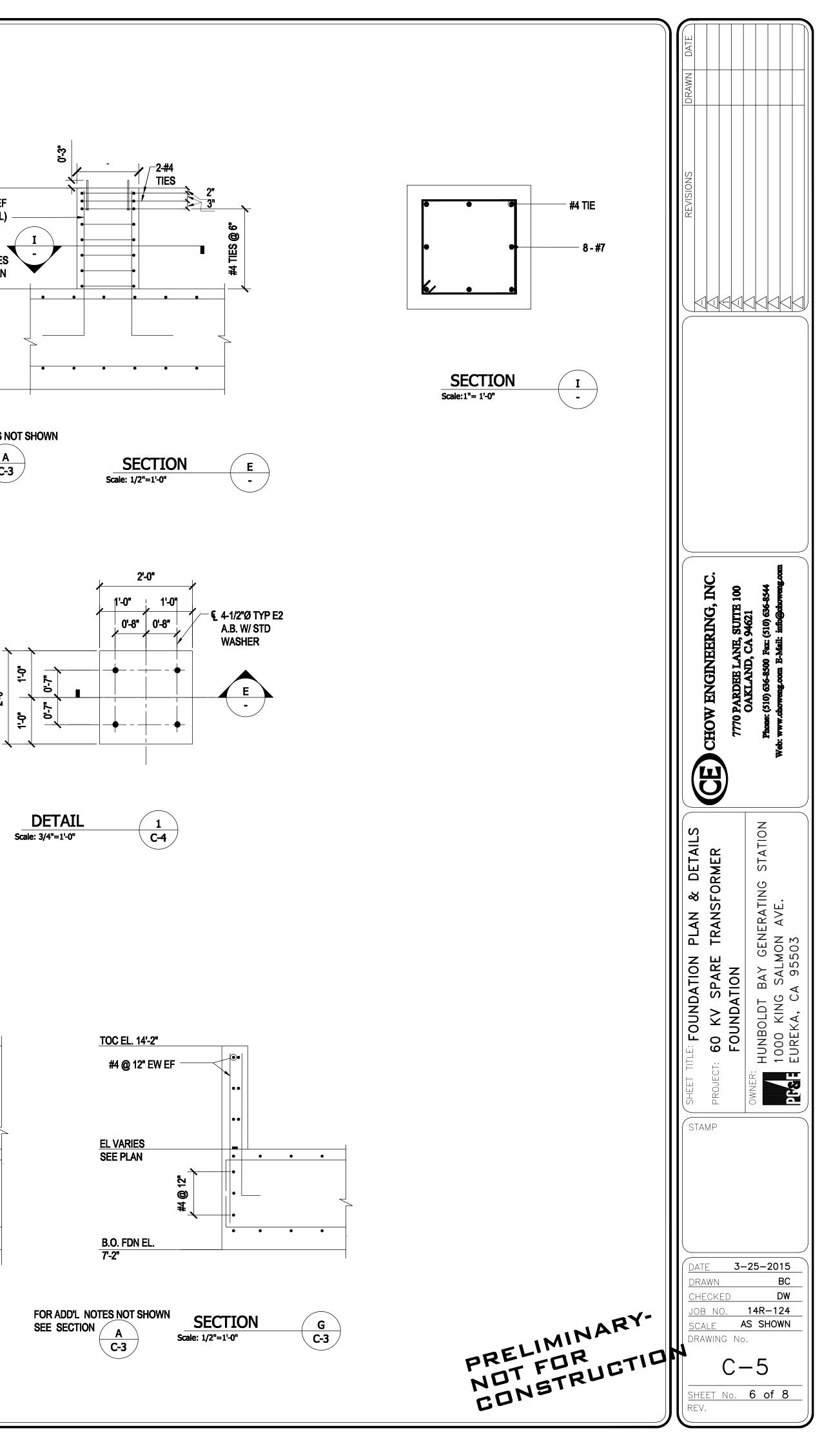


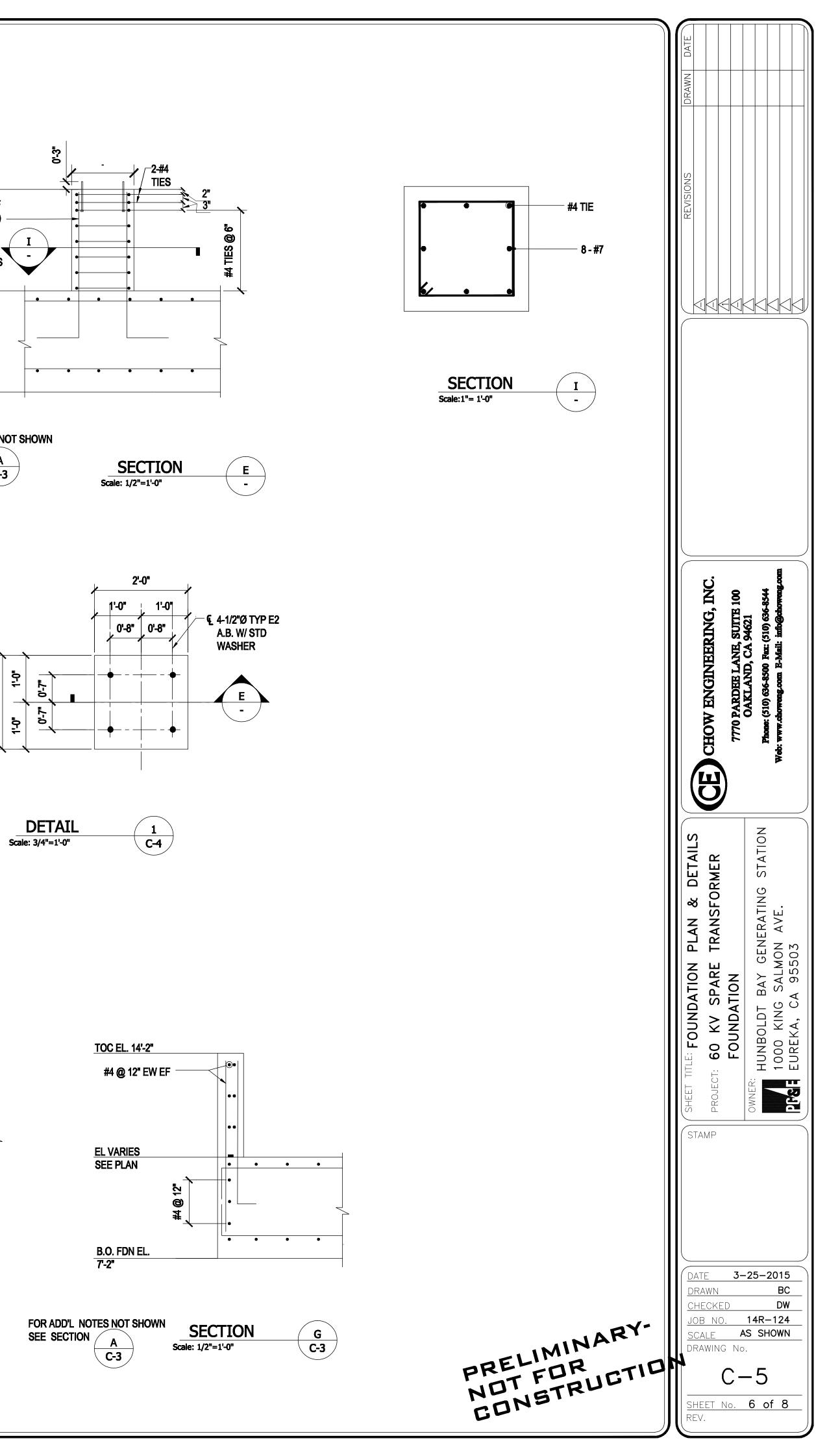


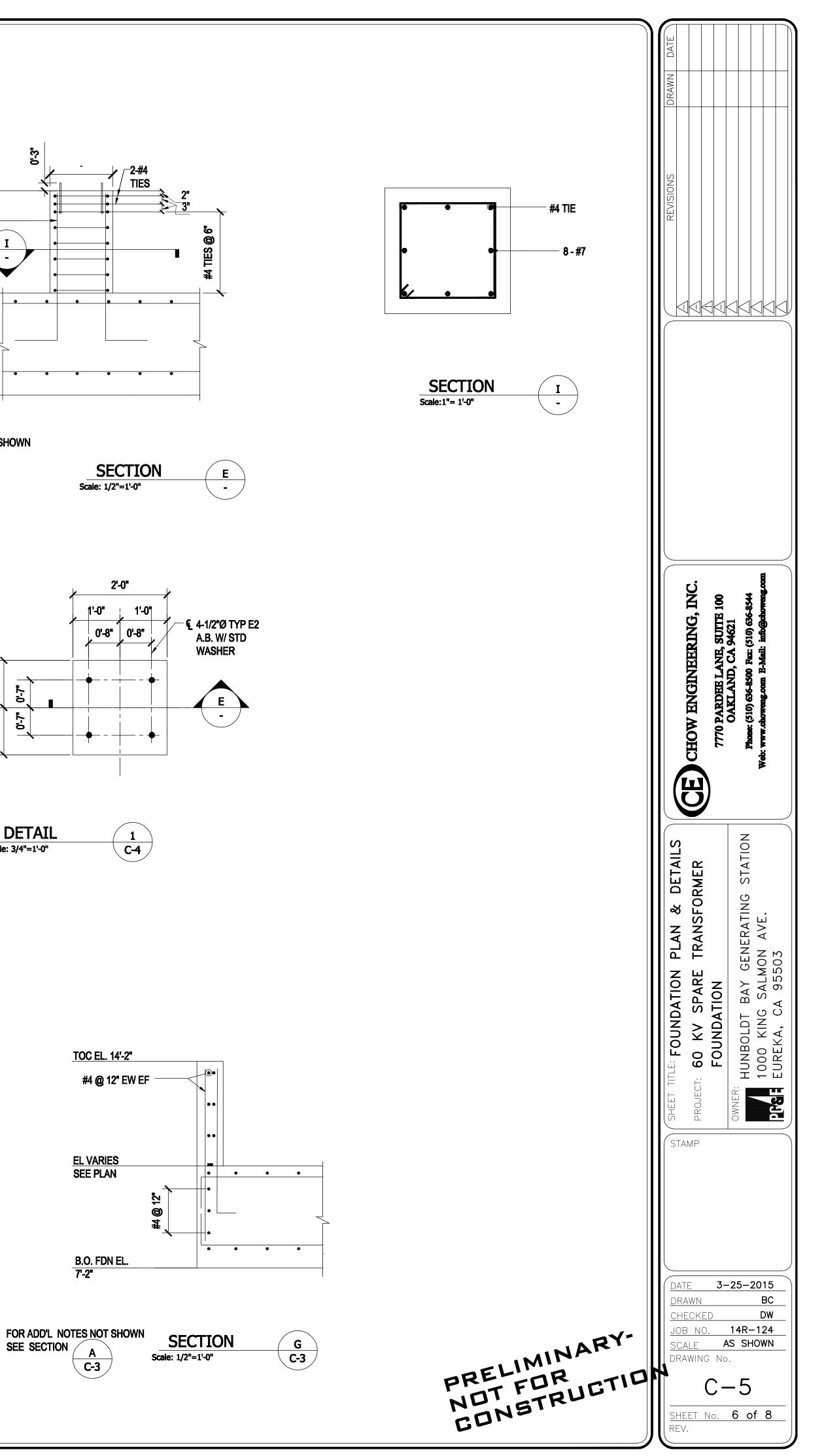


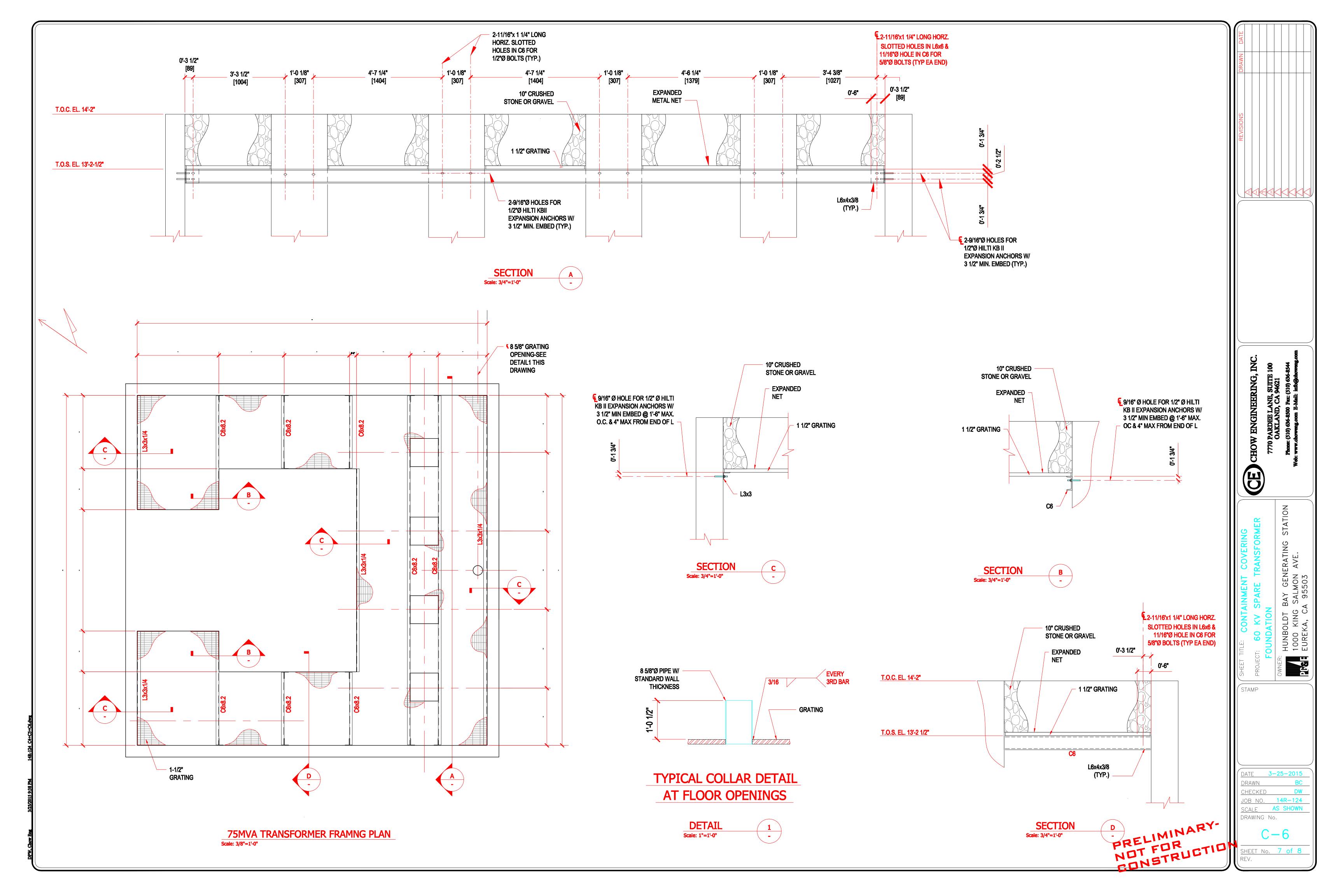


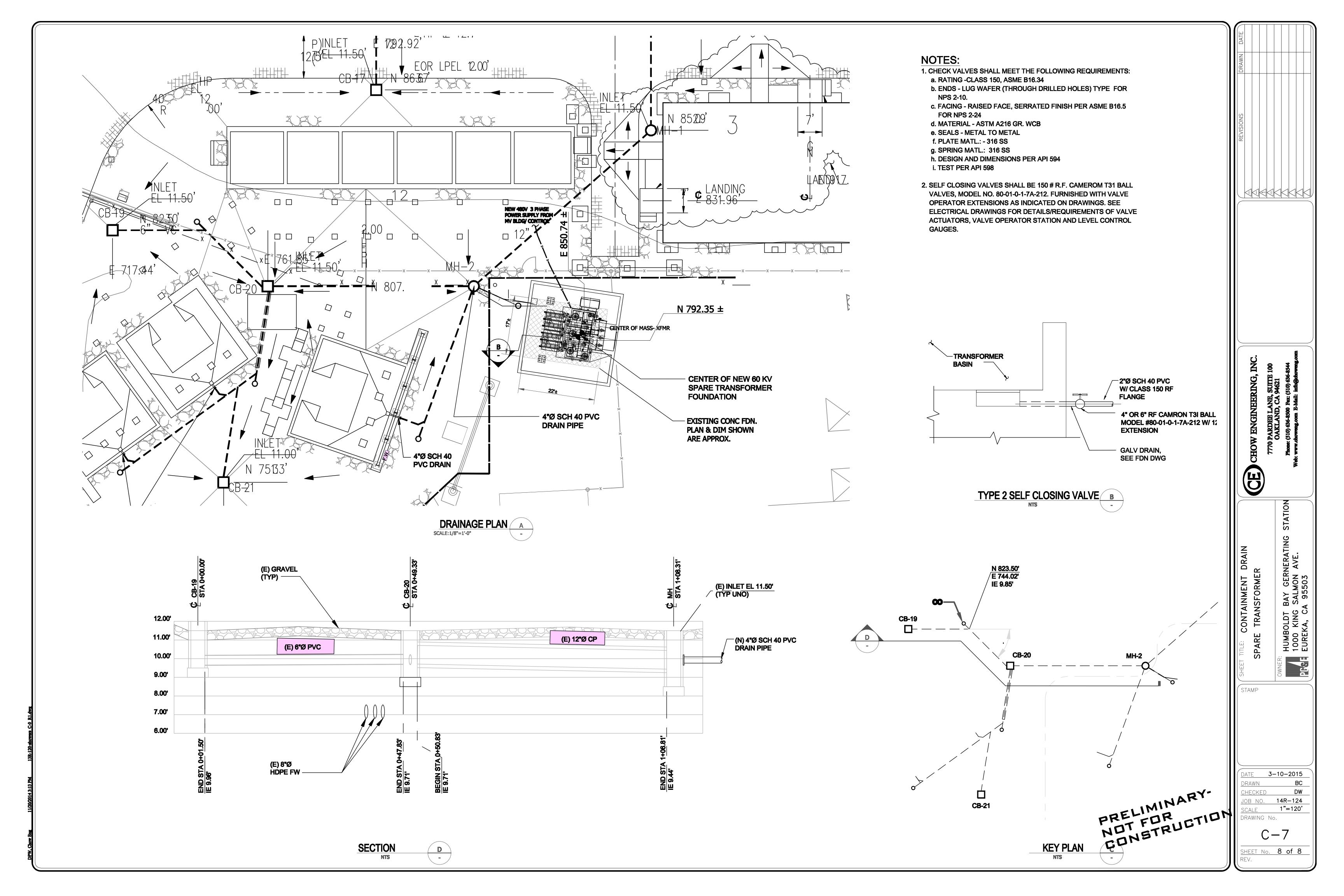












Attachment B: List of Property Owners

### **Property Owners Within 1,000 Feet of the HBGS Site**

APN 305-141-005 Humboldt Bay Harbor Recreational & Conservation District PO Box 1030 Eureka, CA 95502

APN 305-131-013, 016 & 038 Jim & Claire Hoff 3831 Turtle Creek Blvd – 20C Dallas, Tx 75219

APN 305-131-003 North Coast Railroad Authority 419 Talmage Road, Ste M Ukiah, CA 95482

APN 305-131-026 Humboldt Community Services District P.O. Box 158 Cutten, CA 95534