

<b>HOODS</b>	<b>ALARMS</b>	<b>SPRINKLER SYSTEMS</b>	<b>SPRAY BOOTH</b>	<b>AST</b>	<b>UST</b>
Permit No. _____	Permit No. _____	Permit No. _____	Permit No. _____	Permit No. <u>13-100000601</u>	Permit No. _____

File Number: 35209

Address: 9525 Camino Media  
Bakersfield, CA 933

Date Received: 1-31-13

Business Name: Chevron

**SYSTEM:**

- | New                                 | Mod.                     |                          |
|-------------------------------------|--------------------------|--------------------------|
| <input type="checkbox"/>            | <input type="checkbox"/> | Commercial Hood System   |
| <input type="checkbox"/>            | <input type="checkbox"/> | Fire Alarm System        |
| <input type="checkbox"/>            | <input type="checkbox"/> | Fire Sprinkler System    |
| <input type="checkbox"/>            | <input type="checkbox"/> | Spray Finish System      |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Aboveground Storage Tank |
| <input type="checkbox"/>            | <input type="checkbox"/> | Underground Storage Tank |
|                                     | minor                    | Underground Storage Tank |
|                                     | modification             |                          |
|                                     | removal                  | Underground Storage Tank |
| <input type="checkbox"/>            | <input type="checkbox"/> | Other: _____             |

**BUILDING SQUARE FEET:**

Building Sq. Feet:   *f*  

Calculation Bldg. Sq. Ft:   *f*  

**INSPECTION LOG**

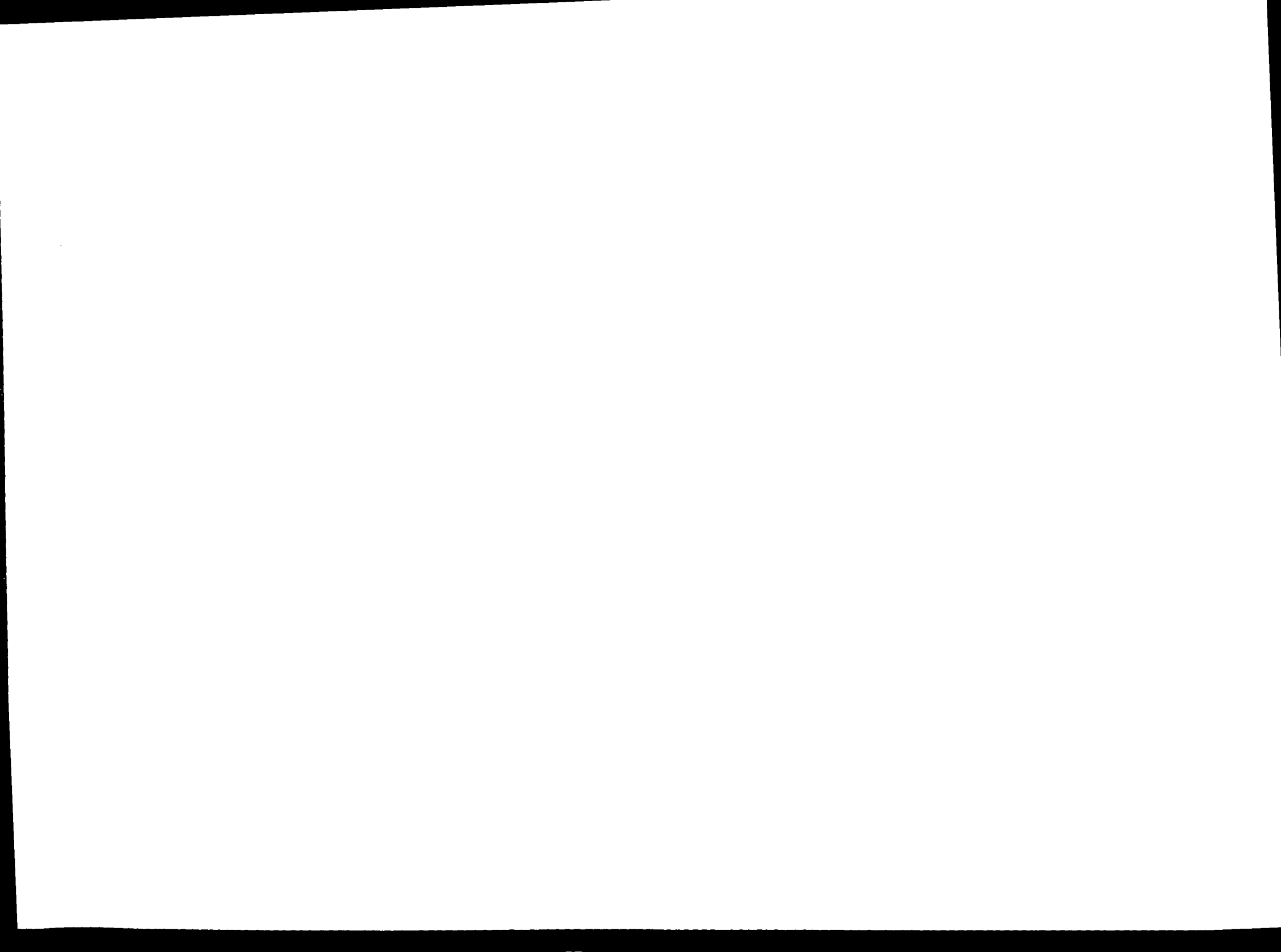
	Date	Time
1.	2/4/13	Final
2.		
3.		
4.		

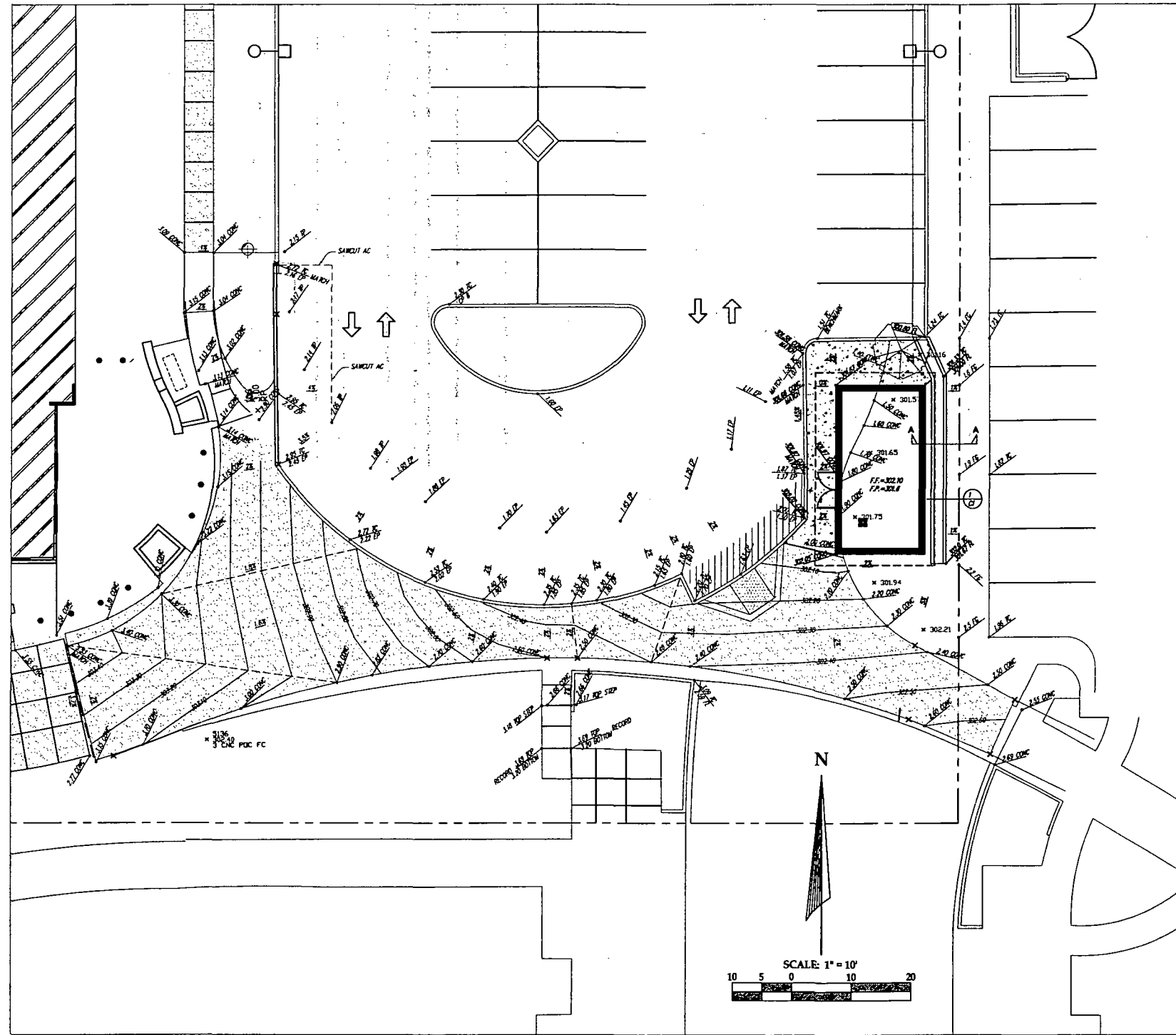
*[Signature]*  
**Signature**

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**Signature**

Comments: \_\_\_\_\_

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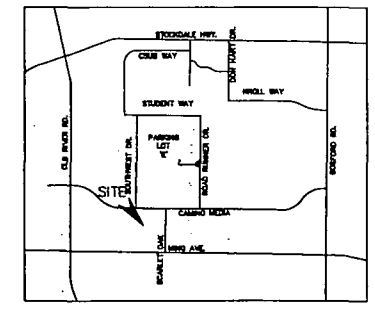
**GRADING NOTES**

1. ALL GRADING SHALL CONFORM TO THE CITY OF BAKERSFIELD ORDINANCES AND STANDARDS PERTAINING THERETO (CALIFORNIA BUILDING CODE 2010) AND SHALL BE SUPERSEDED AS ENGINEERED GRADING IN ACCORDANCE WITH CITY OF BAKERSFIELD ORDINANCES.
2. THE DESIGN ENGINEER SHALL EXERCISE SUFFICIENT SUPERVISORY CONTROL DURING GRADING AND CONSTRUCTION TO INSURE COMPLIANCE WITH THE PLANS, SPECIFICATIONS AND CODE WITHIN HIS PURVIEW.
3. THE SOIL ENGINEER, DESIGN ENGINEER, AND BUILDING OFFICIAL SHALL BE NOTIFIED 48 HOURS PRIOR TO PLACING ANY MATERIAL.
4. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS 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, HOLD HARMLESS, AND HOLD THE OWNER, ARCHITECT, AND THE ENGINEER HARMLESS FROM ANY LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, ARCHITECT, OR THE ENGINEER.
5. THE GRADING CONTRACTOR SHALL CONTACT ALL COMPANIES WITH UNDERGROUND FACILITIES PRIOR TO BEGINNING CONSTRUCTION AND VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND FACILITIES, INCLUDING TELEPHONE, ELECTRIC, WATER, SEWER, OIL AND GAS LINES. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR BURIED LINES NOT INDICATED ON THE PLAN OR FOR INFORMATION OBTAINED FROM OUTSIDE SOURCES. (USA - 1-800-642-2444)
6. THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING ALL AREAS TO + OR - 0.10 FOOT. IF AN AREA SHOULD BE FOUND TO BE MORE THAN 0.10 FOOT OUT OF TOLERANCE AFTER COMPACTING AND COMPLETION OF GRADING, THE CONTRACTOR SHALL RETURN AND CORRECT THE GRADING AT NO COST TO THE OWNER.
7. THE CONTRACTOR SHALL WATER AS REQUIRED DURING THE GRADING OPERATIONS TO PREVENT THE OCCURRENCE OF A DUST NUISANCE AND SHALL PROTECT CURBS AND OTHER OBJECTS WHICH ARE TO REMAIN. DUST CONTROL SHALL CONFORM TO THE SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT REGULATIONS.
8. EXCAVATION - EXCAVATION SHALL CONSIST OF ALL EXCAVATION INVOLVED IN GRADING THE PROJECT AS SHOWN ON THE PLANS.
9. EMBANKMENTS - EMBANKMENT CONSTRUCTION SHALL CONSIST OF CONSTRUCTING EMBANKMENTS INCLUDING THE PREPARATION OF AREAS WHERE THEY ARE TO BE PLACED, THE CONSTRUCTION OF DIMS WITHIN OR OUTSIDE THE CONSTRUCTION AREA, THE PLACING AND COMPACTING OF APPROVED MATERIAL WITHIN THE CONSTRUCTION AREA WHERE UNSUITABLE MATERIAL HAS BEEN REMOVED, AND THE PLACING AND COMPACTING OF EMBANKMENT MATERIAL IN HOLES, PITS, AND DEPRESSIONS. IT SHOULD ALSO CONSIST OF PREPARING SUB-GRADE AT THE GRADING PLANE, CONFORMING TO THE GRADE TOLERANCE, DOING NECESSARY FLOWING OR BEHOLDING, IMPORTING OR BORROW, PLACING AND COMPACTING MATERIAL TO THE LINE AND GRADES SHOWN ON THE PLANS. ALL EMBANKMENT CONSTRUCTION SHALL BE CONSIDERED AS INCLUDED IN THE CONTRACT PRICE.
10. THE WORK ENRAGED HEREIN SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION DATED JULY 2008, INCORPORATING AS THE SAME MAY APPLY IN ACCORDANCE WITH THE NOTES HEREON. IN CASE OF CONFLICT WITH THE STANDARD SPECIFICATIONS AND ANY NOTES HEREON, THE NOTES HEREON SHALL TAKE PRECEDENCE OVER AND BE USED IN LIEU OF SUCH CONFLICTING PORTIONS. SAID SPECIFICATIONS SHALL APPLY BUT NOT BE LIMITED TO THE FOLLOWING:
  - A) ALL CONCRETE SHALL BE CLASS "3" USING TYPE V CEMENT AS IN ACCORDANCE WITH SECTION 90 AND SHALL HAVE AT LEAST 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS, UNLESS OTHERWISE SPECIFIED.
  11. SWANSON ENGINEERING SHALL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO, OR USES OF, THESE PLANS. ALL CHANGES TO THESE PLANS MUST BE APPROVED, IN WRITING, BY SWANSON ENGINEERING.
  12. ALL GRADING SHALL CONFORM TO THE RECOMMENDATIONS CONTAINED IN AND MADE A PART HEREOF, THE PRELIMINARY SOIL REPORT FOR THIS PROJECT.
  13. PRIOR TO COMMENCING CONSTRUCTION, CONTRACTOR SHALL POTHOLE ALL UTILITIES THAT WILL BE AFFECTED BY THIS CONSTRUCTION TO DETERMINE IF ANY UTILITY CONFLICTS EXIST. ANY UTILITY CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER SO THAT DESIGN CHANGES CAN BE MADE PRIOR TO THE START OF CONSTRUCTION.
  14. UPON COMPLETION OF GRADING AND BEFORE THE START OF CONSTRUCTION, A FINAL SOILS REPORT SHALL BE PREPARED BY THE SOIL ENGINEER.

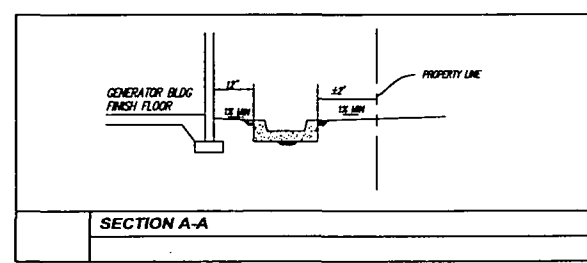
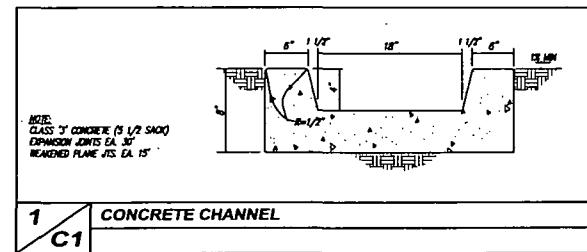
**ASSESSOR PARCEL NUMBER**  
APN 30-30-52

**BENCHMARK**  
TOP OF CURB IN FINISH LOT  
NORTHWEST CORNER OF GENERATOR BLDG.  
E.L. = 301.51

**UTILITY NOTE**  
NOT ALL UTILITIES WERE LOCATED BY THIS SURVEY AND THE SURVEYOR AND ENGINEER ASSUME NO RESPONSIBILITY FOR UNDERGROUND UTILITIES OR FACILITIES NOT SHOWN OR FOR INFORMATION OBTAINED FROM OUTSIDE SOURCES.



**VICINITY MAP**  
NO SCALE



15. THE SOIL ENGINEER SHALL REVIEW ALL EXCAVATIONS PRIOR TO BACKFILLING AND SHALL BE NOTIFIED OF ANY ITEM ENCOUNTERED DURING THE GRADING OPERATIONS THAT MIGHT AFFECT FOUNDATION STABILITY SO THAT RECOMMENDATIONS CAN BE MADE BY THE SOIL ENGINEER.
16. CUT AND FILL SLOPES NEARER THAN FIVE FEET FROM THE BUILDING FOUNDATIONS SHALL NOT BE STEEPER THAN 3:1. CUT AND FILL SLOPES SHALL NOT BE STEEPER THAN 2:1 FOR SLOPES FARTHER THAN FIVE FEET FROM FOOTING LINES.
17. ALL SLOPES GREATER THAN THREE FEET IN VERTICAL HEIGHT SHALL BE PREPARED AND MAINTAINED TO PREVENT EROSION.
18. IMPORTED FILL MATERIAL SHOULD CONSIST OF ESSENTIALLY GRANULAR, SILTY SANDS WITH LOW EXPANSION POTENTIAL AND FREE OF GRASSES, WEEDS, ROCKS LARGER THAN TWO INCHES IN DIAMETER, DEBRIS, AND SOLUBLE SULFATES IN EXCESS OF 200 PARTS PER MILLION. IMPORTED FILL SHOULD CONTAIN SUFFICIENT SILT AND CLAY BINDER TO RENDER THEM STABLE IN FOOTING TRENCHES AND CAPABLE OF MAINTAINING SPECIFIED ELEVATION TOLERANCES DURING PAVING OPERATIONS. IMPORTED SOILS SHOULD ALSO MEET THE FOLLOWING CRITERIA:
  - A) RANGE PASSING #200 SIEVE . . . . . 50
  - B) MINIMUM PERCENT PASSING #60 SIEVE . . . . . 20
  - C) MAXIMUM PLASTICITY INDEX . . . . . 10
  - D) MINIMUM R-VALUE . . . . . 50
  - E) MAXIMUM EXPANSION INDEX . . . . . 15
19. CLEARING AND GRUBBING - REMOVE ALL DEBRIS, SUCH AS METAL, TRASH, TREE ROOTS, BROKEN CONCRETE, VEGETATION, OTHER BIODEGRADABLE SUBSTANCES, AND UNSUITABLE SOIL FROM AREAS TO BE GRADED. UNSUITABLE SOIL IS SOIL THAT, IN THE OPINION OF THE BUILDING OFFICIAL, SOIL ENGINEER, OR CIVIL ENGINEER, IS NOT COMPACTIBLE TO SUPPORT OTHER SOIL OR STRUCTURES, OR TO SATISFACTORILY PERFORM ANY OTHER FUNCTIONS FOR WHICH THE SOIL IS INTENDED.
20. AREAS TO RECEIVE FILL SHALL BE SCARIFIED EIGHT INCHES, UNTIL THE SURFACE IS FREE FROM RUTS, HUMMOCKS OR OTHER UNLIVEN FEATURES WHICH WOULD TEND TO PREVENT UNIFORM COMPACTION BY THE EQUIPMENT TO BE USED. MOISTEN AND COMPACT TO AT LEAST 90% OF THE MAXIMUM DENSITY PER ASTM D1557 UNLESS OTHERWISE SPECIFIED.
21. ENGINEERED FILL MATERIALS SHOULD BE PLACED IN THIN LAYERS (LESS THAN EIGHT INCHES UNCOMPACTED THICKNESS), BROUGHT TO NEAR THE OPTIMUM MOISTURE CONTENT OR TO A MOISTURE CONTENT COMMENSURATE WITH EFFECTIVE COMPACTION AND SOIL STABILITY, AND COMPACTED TO A MINIMUM OF 90 PERCENT OF THE MAXIMUM DENSITY OBTAINABLE BY ASTM TEST METHOD D1557.
22. QUANTITIES FOR EARTHWORK  
CUT - 10 C.Y.  
FILL - 15 C.Y.  
QUANTITIES ARE FOR GRADING PERMIT ONLY. THE ENGINEER MAKES NO WARRANTY FOR ANTICIPATED SHRINKAGE FACTOR. THE CONTRACTOR SHALL NOT USE THESE QUANTITIES TO BASE HIS BID ON.
23. CONTRACTOR TO VERIFY DIMENSIONS AND ELEVATIONS OF EXISTING IMPROVEMENTS IN THE FIELD BEFORE PROCEEDING WITH WORK. ANY DISCREPANCIES THAT WILL AFFECT THE-INS TO EXISTING IMPROVEMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK.
24. BUILDING PAD PREPARATION: EXCAVATE EARTH MATERIAL TO A MINIMUM DEPTH OF ONE FOOT BELOW THE EXISTING GROUND SURFACE. THE BOTTOM OF THE EXCAVATION SHALL BE REVIEWED BY THE SOIL ENGINEER. SCARIFY THE BOTTOM 12 INCHES, MOISTEN TO NEAR OPTIMUM MOISTURE CONTENT, AND RECOMPACT TO 90% OF THE MAXIMUM DENSITY PER ASTM D1557. WORK TO LINES THREE FEET BEYOND THE EXTERIOR FOUNDATIONS, EXCEPT WHERE EXCAVATION MAY UNDERMINE OR DAMAGE ADJACENT BUILDINGS OR UTILITIES.



5500 Hwy. Ave. Suite 205 - Bakersfield, CA 93309  
P: (805) 837-1918 F: (805) 837-1929

**Swanson Engineering**

REGISTERED PROFESSIONAL ENGINEER  
STATE OF CALIFORNIA  
No. 40022  
Exp. 3/31/15

DATE: 2/1/13	DATE: 5/21/12
DESCRIPTION: ASSET GRADES TO EXIST. REVISED BY	ENGINEER: RJS
JOB NO.: 11-030	DATE: 5/21/12
FIELD GENERATOR/DWG	

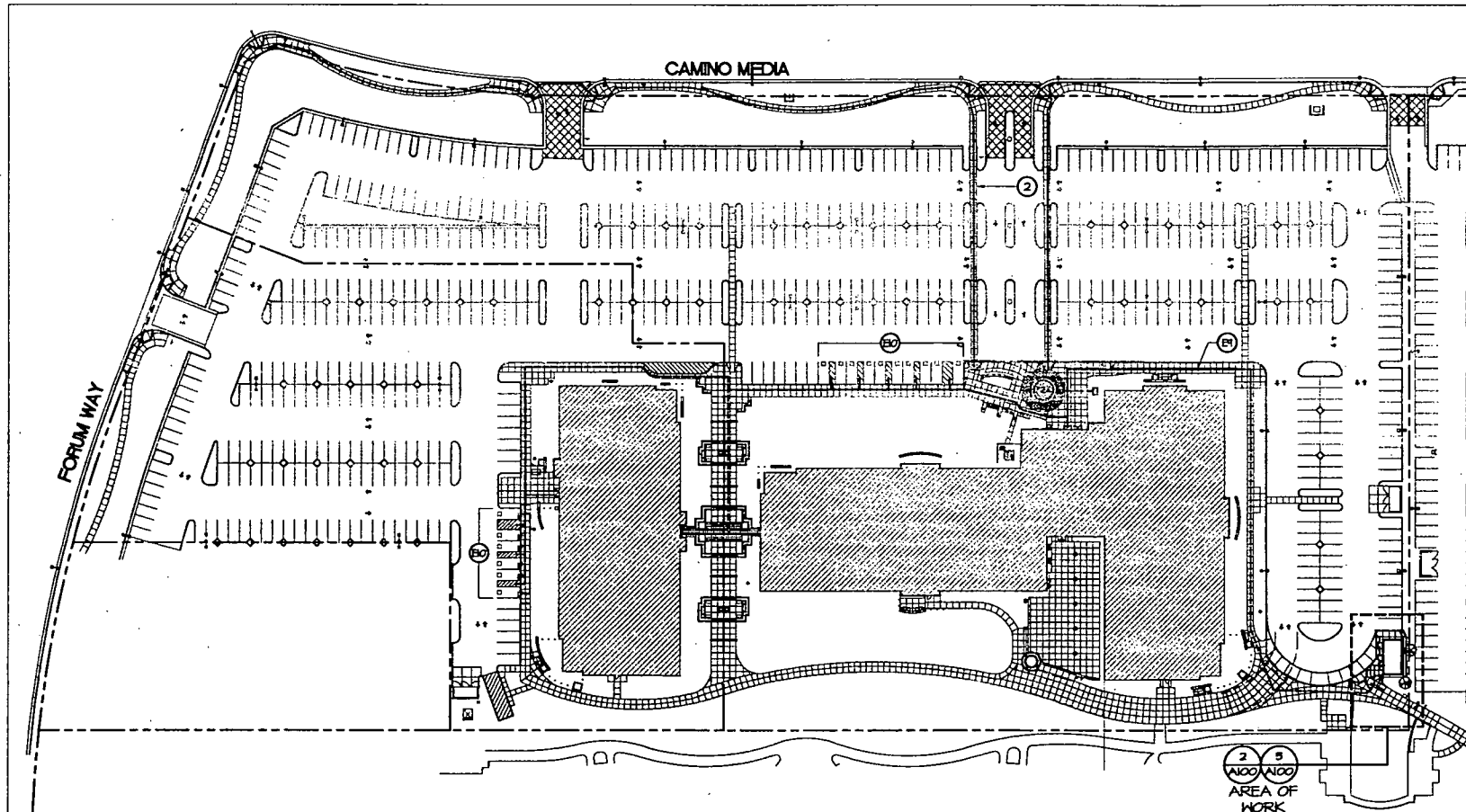
**CHEVRON CORPORATION  
CAMINO MEDIA  
EMERGENCY GENERATOR  
GRADING PLAN**

Tuesday, June 05, 2012 2:31:05 PM

**C1**

SHEET 1 OF 1

10



**PARKING SUMMARY**

<b>BUILDINGS 'A' + 'B'</b>	
1ST FLOOR GROSS AREA	50,426 SF.
2ND FLOOR GROSS AREA	46,718 SF.
	97,144 SF.
<b>BUILDING 'C'</b>	
1ST FLOOR GROSS AREA	22,001 SF.
2ND FLOOR GROSS AREA	21,855 SF.
	43,856 SF.
<b>TOTAL AREA</b>	143,041 SF.
<b>PARKING REQUIRED</b>	
143,041 SF / 250 SF. =	572 STALLS
<b>PARKING PROVIDED</b>	
631 TOTAL PARKING STALLS	
13 REG'D. ACCESSIBLE PARKING STALLS (1 IN 5 ACCESSIBLE STALLS TO BE VAN ACCESSIBLE)	
15 ACTUAL NUMBER OF ACCESSIBLE STALLS PROVIDED ON SITE (2 VAN ACCESSIBLE STALL)	

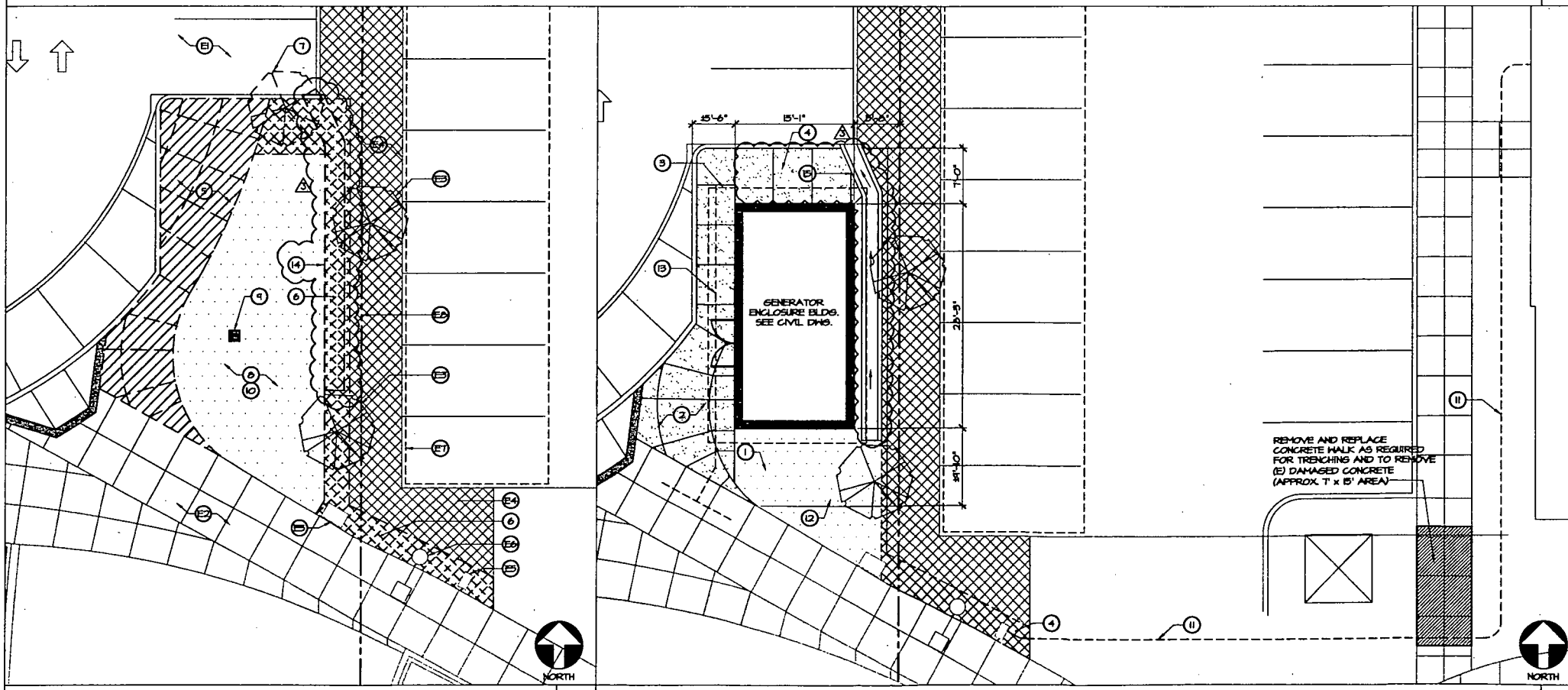
\*\*\* PARKING PROVIDED UNDER PREVIOUS PERMIT APPLICATION FOR ORIGINAL BUILDING CONSTRUCTION. NO CHANGE IN OCCUPANCY OR USE UNDER PROPOSED PROJECT CONTAINED HEREIN.

**KEYNOTES**

- (E) PARKING AREA TO REMAIN.
- (E) CONCRETE WALK/PAVING TO REMAIN.
- (E) TREE TO REMAIN.
- (E) LANDSCAPE TO REMAIN. PROTECT FROM DAMAGE DURING CONSTRUCTION.
- (E) FULL BOX. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- (E) LIGHT STANDARD TO REMAIN.
- (E) GARFPORT TO REMAIN.
- (E) PROPERTY LINE.
- (E) ACCESSIBLE PATH OF TRAVEL, SEE LEGEND.
- (E) ACCESSIBLE PARKING PROVIDED/APPROVED UNDER PREVIOUS PERMIT. (BIO-02537)
- (1) PROVIDE TURF TO MATCH EXISTING. MODIFY IRRIGATION SYSTEM AS REQUIRED FOR PROPOSED LANDSCAPE WORK. SEE GENERAL NOTES.
- (2) CONCRETE WALK/PAVING TO MATCH EXISTING. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
- (3) DASHED LINE INDICATES ROOF OVERHANGS ABOVE.
- (4) PROVIDE LANDSCAPING TO MATCH EXISTING FOLIAGE ADJACENT TO BUILDING. MODIFY IRRIGATION SYSTEM AS REQUIRED FOR PROPOSED LANDSCAPE WORK. SEE GENERAL NOTES.
- (5) SANICUT & REMOVE (E) CONCRETE WALK/PAVING.
- (6) TRIM & REMOVE (E) SHRUBS ONLY AS NECESSARY TO ACCOMMODATE NEW CONSTRUCTION.
- (7) REMOVE (E) TREE.
- (8) REMOVE (E) TURF & PREPARE PAD FOR PROPOSED BUILDING.
- (9) REMOVE (E) SUMP DRAIN. TRENCH AROUND (E) SUMP TO EXPOSE ROUTING OF (E) DRAIN PIPING. REMOVE ANY PIPING WITHIN 5'-0" OF BUILDING PERIMETER AND REROUTE WITH NEW PIPING TO DAYLIGHT AT FACE OF CONCRETE CURB.
- (10) REMOVE IRRIGATION PIPING IN AREA OF PROPOSED BUILDING. PROVIDE NEW IRRIGATION SYSTEM FOR PROPOSED LANDSCAPE/TURF AREAS.
- (11) NEW CONDUIT IN 12" WIDE BY 30" DEEP TRENCH. TRENCH TO BE HAND DUG TO AVOID DAMAGING POTENTIAL UNKNOWN FACILITIES ROUTES. SEE ELECTRICAL DRAWINGS. PATCH AND REPLACE SOD AND LANDSCAPING AND IRRIGATION AS REQUIRED TO MAKE AS NEW.
- (12) REGRADE AREA TO CREATE DRAINAGE SHALE. DRAIN AWAY FROM BUILDING AND PROPERTY LINE AND TOWARD PARKING AREA. PROVIDE CATCH BASIN AND STORM DRAIN PIPE THROUGH 6" CONCRETE CURB. REMOVE/PATCH (E) CONCRETE CURB TO MATCH EXISTING. DRAINAGE SHALE SHALL NOT EXCEED 18" BELOW FINISHED FLOOR OF GENERATOR BUILDING.
- (13) DASHED LINE REPRESENTS ACCESSIBLE PATH OF TRAVEL. FOR CONTINUATION, SEE LEGEND AND (1) ATOC.
- (14) EXCAVATE AREA FOR CONC. DRAINAGE CHANNEL, SEE CIVIL DWS.
- (E) CONC. DRAINAGE CHANNEL, SEE CIVIL DWS.

**OVERALL SITE PLAN**

1"=60'-0" 1



**LEGEND**

- (X) (E) LANDSCAPE TO REMAIN
  - (X) (E) LANDSCAPE TO REMOVED AND/OR TRIMMED
  - (X) LANDSCAPE
  - (X) (E) CONCRETE WALK TO BE REMOVED
  - (X) CONCRETE WALK/PAVING
  - ( ) BUILDING ENCLOSURE PERIMETER
  - (---) ACCESSIBLE PATH OF TRAVEL. \*\*\*
  - (---) ACCESSIBLE PATH OF TRAVEL FROM PUBLIC RIGHT-OF-WAY. \*\*\*
- \*\*\* THE ACCESSIBLE PATH OF TRAVEL IS A BARRIER-FREE ACCESS ROUTE WITHOUT ANY ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAX. SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/4" MAXIMUM AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP RESISTANT. GROSS SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 5%, UNLESS OTHERWISE INDICATED. ACCESSIBLE ROUTE OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM HALL AND ABOVE 27" AND LESS THAN 80".

**GENERAL NOTES**

1. CONCRETE WALKS/PAVING PROPOSED HEREIN SHALL BE PART OF ACCESSIBLE PATH OF TRAVEL. SEE LEGEND FOR ADDITIONAL DESCRIPTION AND REQUIREMENTS.
2. WHERE CONCRETE PAVING IS TYING INTO (E) CONCRETE MATCH POINTS OF CONNECTION TO BE FLUSH. COMPLYING WITH ACCESSIBLE PATH OF TRAVEL TYP.
3. SANICUTTING CONCRETE. LOCATE AND SANICUT CONCRETE PAVING ALONG (E) EXPANSION/CONTROL JOINTS. EXTENT OF CONCRETE REMOVAL SHOWN ON DRAWINGS IS APPROXIMATE.
4. LANDSCAPING/IRRIGATION: THE LANDSCAPING & IRRIGATION SCOPE OF WORK REFERENCED AS PART OF THIS PROJECT IS CONSIDERED "DESIGN-BUILD." THE CONTRACTOR SHALL PROVIDE DRAWINGS, SHOWING PROPOSED LANDSCAPE & IRRIGATION PLANS TO ARCHITECT/OWNER FOR REVIEW/APPROVAL PRIOR TO COMMENCEMENT OF WORK. FOR ACCEPTABLE LANDSCAPE INSTALLATION AT GENERATOR AREA, SEE (12) ATOC.
5. EXISTING CIVIL GRADING IS PROVIDED FOR REFERENCE ONLY. SEE SHEET G1.

DATE	DESCRIPTION	BY
5/25/12	ADDENDUM 1.1	
04/17/12	PLAN CHECK RESUBMITAL	

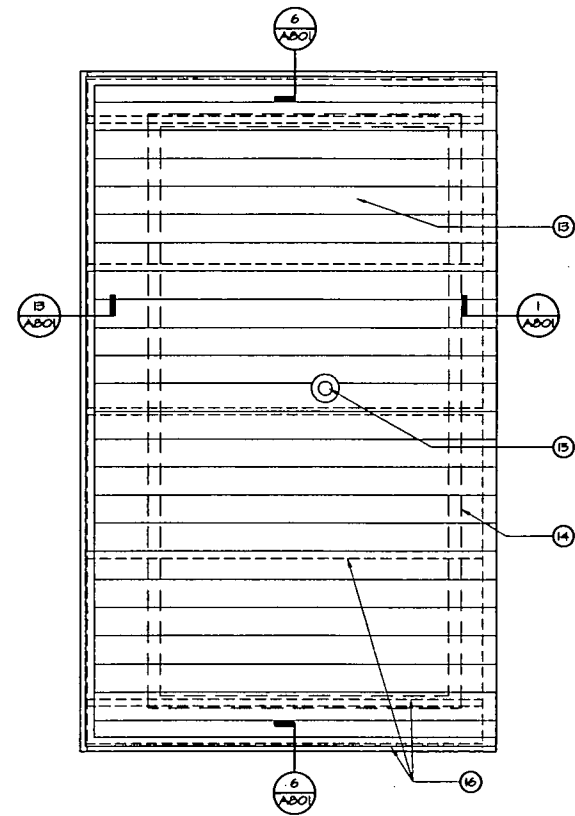


**Taylor Teter**  
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**CHEVRON CORPORATION**  
GENERATOR ENCLOSURE BUILDING  
BAKERSFIELD, CA  
DRAWING TITLE:  
SITE PLAN

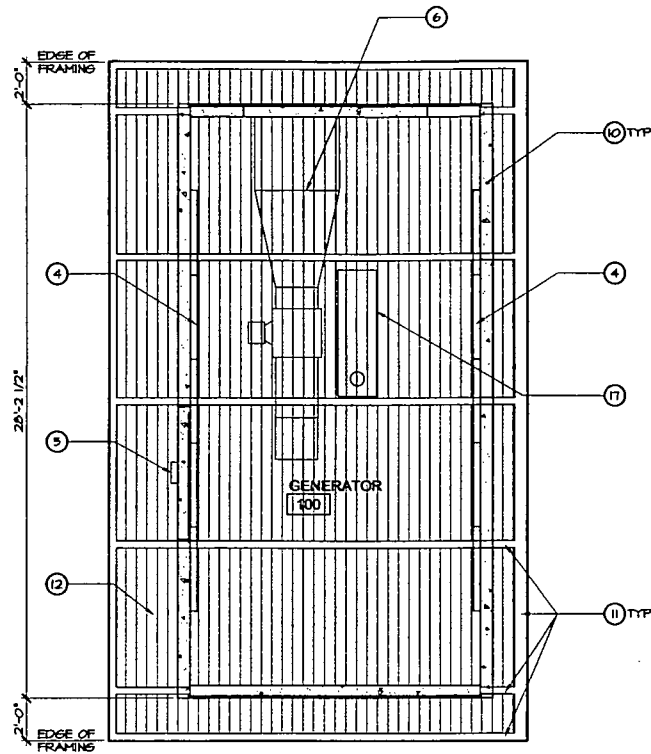
PROJECT NO.  
11-8478.00  
DRAWING  
**A100**



ROOF PLAN

SCALE: 1/4" = 1'-0"

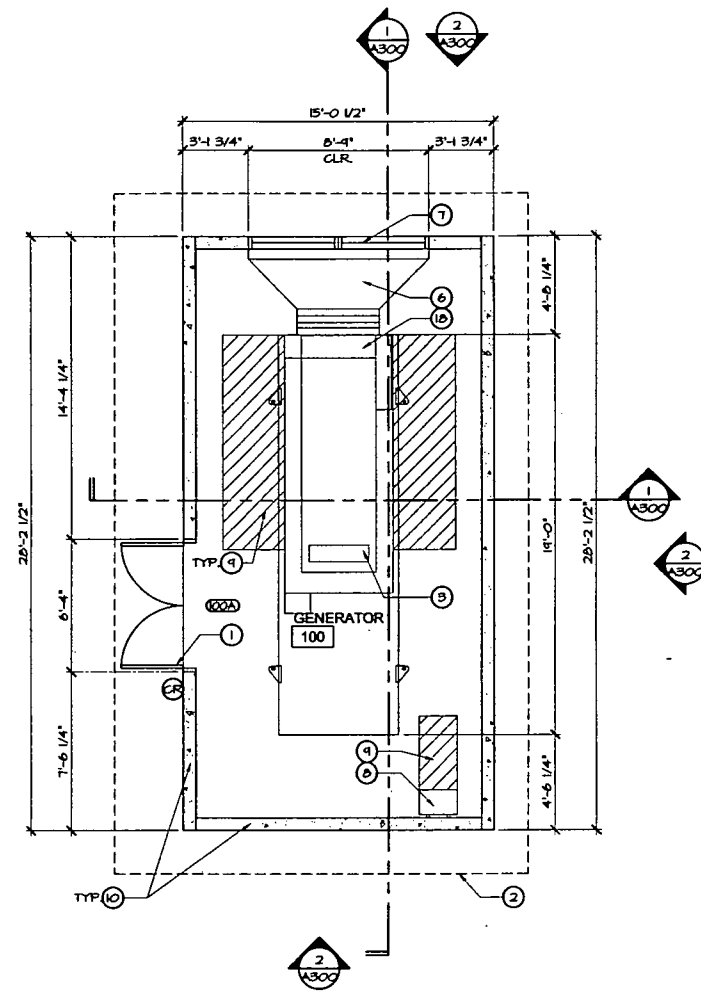
3



REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

2



FLOOR PLAN

SCALE: 1/4" = 1'-0"

1

KEYNOTES

- 1 DOOR AND FRAME PER SCHEDULE.
- 2 DASHED LINE INDICATES EDGE OF ROOF ABOVE.
- 3 GENERATOR AND BASE TANK, VERIFY POSITION OF GENERATOR ON TANK, SEE ELECTRICAL DRAWINGS.
- 4 WALL MOUNTED LIGHTS, SEE ELECTRICAL DRAWINGS.
- 5 EXTERIOR LIGHT, SEE ELECTRICAL DRAWINGS.
- 6 MECHANICAL EQUIPMENT/DUCTING, SEE MECHANICAL DRAWINGS.
- 7 6" ACOUSTIC WALL LOUVER.
- 8 TRANSFORMER, SEE ELECTRICAL DRAWINGS.
- 9 REQUIRED CLEAR AREA, SEE ELECTRICAL DRAWINGS.
- 10 TILT-UP CONCRETE PANEL, SEE STRUCTURAL DRAWINGS.
- 11 STEEL ROOF FRAME, SEE STRUCTURAL DRAWINGS.
- 12 EPICORE PREFORATED ROOF DECK, SEE STRUCTURAL DRAWINGS.
- 13 STANDING SEAM METAL ROOF.
- 14 OUTLINE OF BUILDING BELOW.
- 15 GTE EXHAUST THIMBLE, VERIFY POSITION, FOR FLASHING, SEE (17) ABOI.
- 16 ROOF FRAMING BELOW.
- 17 GENERATOR SILENCER, SEE ELECTRICAL DRAWINGS.
- 18 GENERATOR LOAD BANK, VERIFY SIZE AND POSITION, SEE ELECTRICAL DRAWINGS.

LEGEND

- 1 1/4" CONCRETE TILT-UP WALL PANEL, SEE STRUCTURAL DRAWINGS
- DOOR AND FRAME PER SCHEDULE
- 6" ACOUSTIC WALL LOUVER
- DOOR SYMBOL, SEE A100
- CARD READER LOCATIONS

GENERAL NOTES

1. FOR CLEARANCE/MOUNTING HEIGHTS, SEE (11) ABOI
2. TYPICAL INTERIOR WALL FINISH IS 2" ACOUSTIC WALL PANEL.
3. FOR ROOF PENETRATIONS, SEE (17) ABOI

No. Revisions


DATE: 04/17/12  
 MARK: C  
 DESCRIPTION: PLAN CHECK RESUBMITTAL



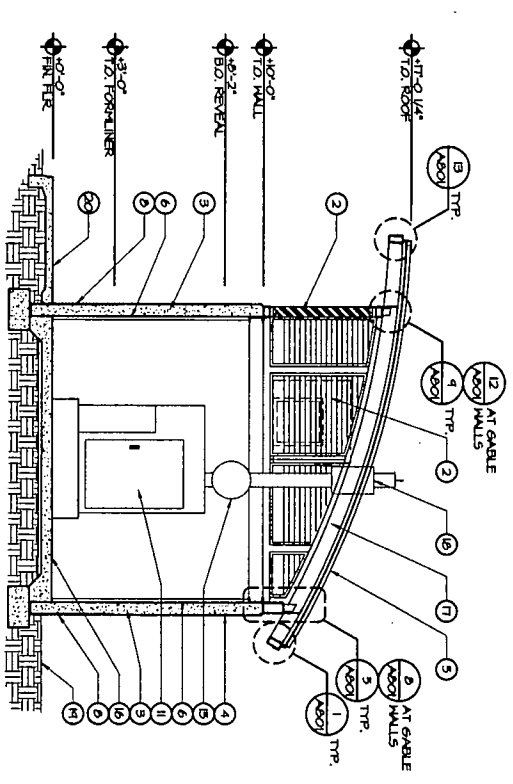
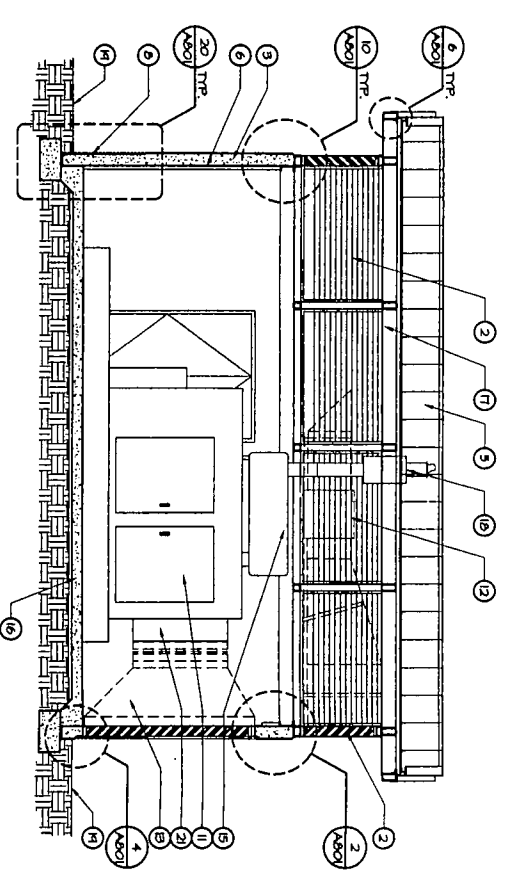
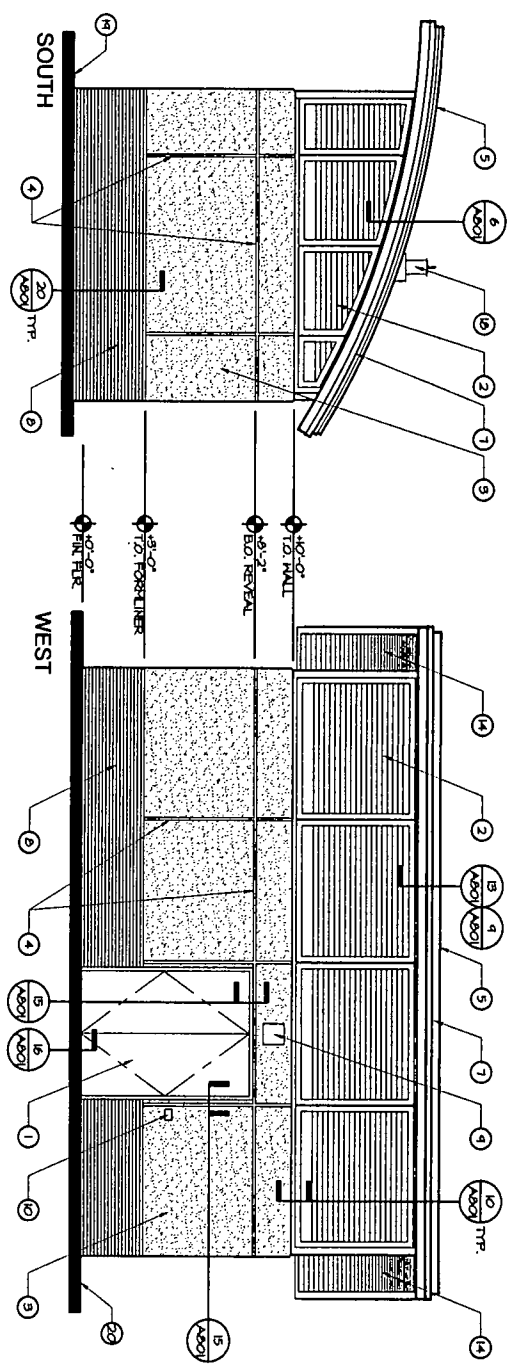
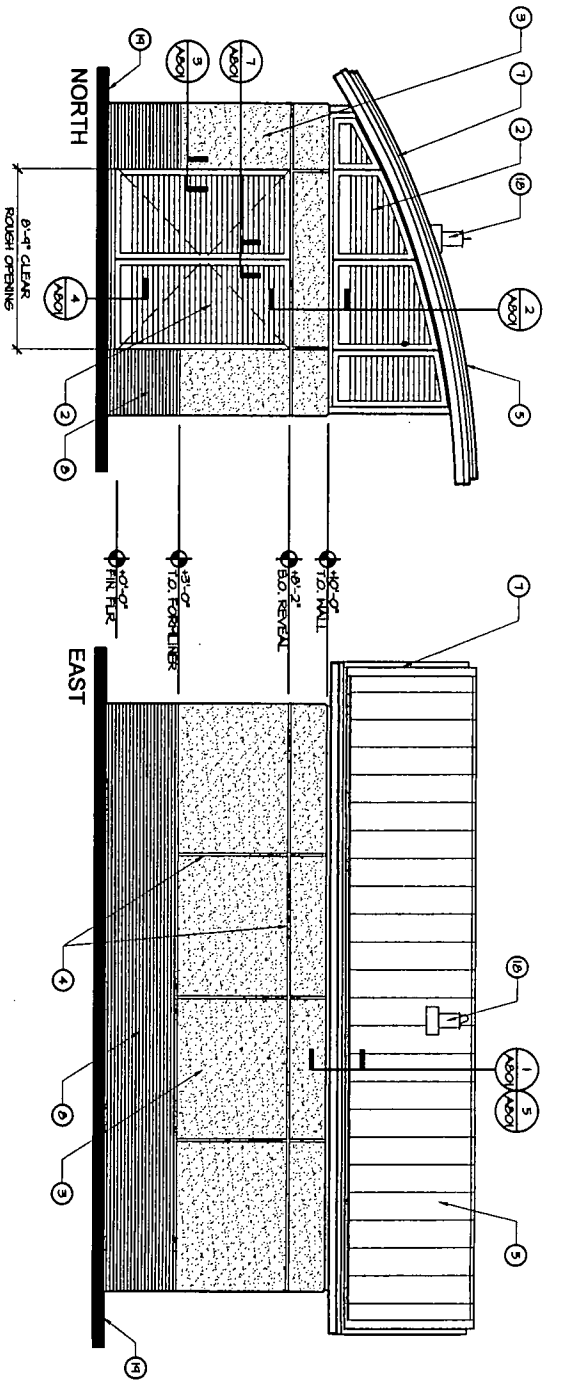
**Taylor Teter**  
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 121 E. BRIDGE ST. 150 - VIBALIA, CA 95291 - 958.826.8248



CHEVRON CORPORATION  
 GENERATOR ENCLOSURE BUILDING  
 BAKERSFIELD, CA  
 DRAWING TITLE: FLOOR PLAN

PROJECT NO. 11-8478.00  
 DRAWING A200

PLOT DATE: 4/17/12



EXTERIOR ELEVATIONS

BUILDING SECTIONS

SCALE: 1/4" = 1'-0"

KEYNOTES

LEGEND

- 1 DOOR AND FRAME PER SCHEDULE.
- 2 4" ACROSTIC LINER, LOWER SHALL BE FACTORY FINISHED FIELD PAINTED PER FINISH SCHEDULE. COLOR SHALL MATCH EXISTING. CONTRACTOR TO SCRUB BRUSH OUT FOR REFINISH/REPAIR.
- 3 1 1/4" CONCRETE TILT-UP WALL PANEL, SEE STRUCTURAL DRAWINGS. PANELS SHALL BE PAINTED PER FINISH SCHEDULE. COLOR SHALL BE FIELD PAINT AND MATCH EXISTING FIELD COLOR AT MAIN OFFICE.
- 4 WALL REVEAL, SEE (A) (H).
- 5 STANDING SEAM METAL ROOF.
- 6 2" ACROSTIC WALL PANEL.
- 7 GUSH ROOF FLASHING.
- 8 ROOF LINER REVEAL, BASE SHALL BE PAINTED PER FINISH SCHEDULE. COLOR SHALL BE VACUUM BASE AND MATCH EXISTING. ACCENT BASE AT MAIN OFFICE. SEE (A) (C).
- 9 EXTERIOR LIGHT, SEE ELECTRICAL DRAWINGS.
- 10 CANO REVEAL, SEE ELECTRICAL DRAWINGS.
- 11 GENERATOR AND TANK, VERIFY POSITION SEE ELECTRICAL DRAWINGS.
- 12 EXHAUST FAN, SEE MECHANICAL DRAWINGS.
- 13 FLASH, SEE MECHANICAL DRAWINGS, ATTACH TO LOAD BANK.
- 14 ENCASE PERFORATED METAL ROOF DECK.
- 15 GENERATOR SILENCER, SEE ELECTRICAL DRAWINGS.
- 16 CONCRETE SLAB, SEE STRUCTURAL DRAWINGS.
- 17 STEEL ROOF PAVING 48"-0" RAIRS ON INTERIOR FACE OF CURVED SECTIONS, SEE STRUCTURAL DRAWINGS.
- 18 EXTERIOR EXHAUST STACK AND THIMBLE, TOP WITH FLAPPER-TYPE CAP.
- 19 FINISHED EXTERIOR GRADE, (-0'-0").
- 20 FINISHED EXTERIOR GRADE @ CONCRETE WALK OF-0.
- 21 LOAD BANK, VERIFY SIZE AND POSITION, SEE ELECTRICAL DRAWINGS.

GENERAL NOTES

SCALE: 1/4" = 1'-0"

PLOT DATE: 4/12/12



DATE	DESCRIPTION
04/17/12	PLAN CHECK RESUBMITTAL

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DATE	04/17/12
DESCRIPTION	PLAN CHECK RESUBMITAL
NO.	C



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**CHEVRON CORPORATION**  
 GENERATOR ENCLOSURE BUILDING  
 BAKERSFIELD, CA  
 DRAWING TITLE:  
 ARCHITECTURAL DETAILS

PROJECT NO.  
 11-8478.00  
 DRAWING  
**A801**

<p>VERIFY W/ HFR        UPPER PANS, SHAPE FOR THIMBLE PENETRATION        SHADING INDICATES AREA OF LOWER PAN LAPPED BENEATH UPPER PAN OF METAL ROOFING        THIMBLE FLASHING ASSEMBLY        THIMBLE PIPING        LOWER PANS, SHAPE FOR THIMBLE PENETRATION        SEE 10 FOR ADDITIONAL INFORMATION        TOP VIEW</p>	<p>ZEE CLOSURE W/ NON-SKINNING BUTYL SEALANT APPLIED TO ENDS        24 GA. HIGH EAVE FLASHING        22 GA. ZEE 1 1/2\"/&gt; </p>	<p>GRACE ULTRA        5/8\"/&gt; </p>	<p>METAL ROOF PANEL        GRACE ULTRA        5/8\"/&gt; </p>	<p>JOGGLE CLEAT        GRACE ULTRA, EXTEND OVER ZEE AND DOWN FASCIA 1 1/2\"/&gt; </p>
<p><b>THIMBLE @ METAL ROOF</b> 3/4\" = 1'-0\" 17</p>	<p><b>HIGH EAVE</b> 3\" = 1'-0\" 13</p>	<p><b>UPPER CLOSURE PLATE</b> 1 1/2\" = 1'-0\" 9</p>	<p><b>LOWER CLOSURE PLATE</b> 1 1/2\" = 1'-0\" 5</p>	<p><b>LOW EAVE</b> 3\" = 1'-0\" 1</p>
<p>UPPER PANS        SHADING INDICATES AREA OF LOWER PAN LAPPED BENEATH UPPER PAN OF METAL ROOFING        SEAL PAN WHERE CUT TO PROVIDE WATERTIGHT CONDITION, ENSURE UPPER PAN RIB IS MIN. 2\"/&gt; </p>	<p>5/8\"/&gt;       MIN. 1/2\" GA. STEEL ANCHOR        (E) OPENING ANCHOR        NOTE: PROVIDE (E) OPENING ANCHOR ONLY IN LOCATIONS WHERE USE OF HOOD STUD ANCHOR IS IMPRACTICAL</p>	<p>6\"/&gt; </p>	<p>CURVED CLOSURE TRIM        LOW PROFILE CLIP        24 GA. CURVED GABLE FLASHING W/ PITTSBURG LOCK        METAL ROOF PANEL        22 GA. ZEE 1 1/2\"/&gt; </p>	<p>FOR MORE INFORMATION ON UPPER LOUVER CONNECTION, SEE 10        10'-0\" T.O. WALL        VERTICAL REVEAL        CONCRETE TILT-UP PANEL        2\"/&gt; </p>
<p><b>ISOMETRIC AT METAL ROOF</b> 1\" = 1'-0\" 18</p>	<p><b>TYP. H.M. FRAME ANCHOR</b> N.T.S. 14</p>	<p><b>TYP. TOP OF WALL</b> 1 1/2\" = 1'-0\" 10</p>	<p><b>CURVED RAKE</b> 3\" = 1'-0\" 6</p>	<p><b>BASE LOUVER HEAD</b> 1 1/2\" = 1'-0\" 2</p>
<p>1 1/2\"        3/4\"        1/2\"        10'-2\" B.O. REVEAL</p>	<p>CONCRETE TILT-UP PANEL        5 3/4\" H.M. DOOR FRAME, GROUT SOLID PUNCH &amp; DIMPLE, BODY PUTTY &amp; GRIND SMOOTH        1/4\" SHIM SPACER        CONT. SEALANT &amp; BACKER ROD EACH SIDE        DOOR</p>	<p>6\"/&gt; </p>	<p>CONCRETE TILT-UP PANEL        HORIZONTAL REVEAL        2\"/&gt; </p>	
<p><b>TYPICAL REVEAL</b> 1'-0\" = 1'-0\" 19</p>	<p><b>H.M. DOOR HEAD/JAMB</b> 3\" = 1'-0\" 15</p>	<p><b>BASE LOUVER MULLION</b> 1 1/2\" = 1'-0\" 7</p>	<p><b>BASE LOUVER JAMB</b> 1 1/2\" = 1'-0\" 3</p>	
<p>13'-0\" T.O. FORMLINER        TILT-UP CONCRETE PANEL        2\"/&gt; </p>	<p>TILT-UP CONCRETE PANEL BEYOND        H.M. DOOR FRAME PER SCHEDULE        5\" ADA COMPLIANT THRESHOLD        DOOR PER SCHEDULE        1/2\" FIBERBOARD CONTROL JOINT        SIDEWALK PER PLAN        FOOTING, SEE STRUCTURAL</p>	<p>HSS 6x4x1/4 STEEL FRAME, SEE STRUCTURAL        6\"/&gt; </p>	<p>HSS 6x3x1/4 STEEL FRAME, SEE STRUCTURAL        HSS 12x6x1/4 STEEL FRAME, SEE STRUCTURAL        10'-0\" T.O. WALL</p>	<p>CONCRETE WALL BEYOND        6\"/&gt; </p>
<p><b>BASE OF WALL RELIEF</b> 1\" = 1'-0\" 20</p>	<p><b>DOOR THRESHOLD</b> 1\" = 1'-0\" 16</p>	<p><b>CORNER AT WALL</b> 1 1/2\" = 1'-0\" 12</p>	<p><b>LOWER CORNER AT WALL</b> 1 1/2\" = 1'-0\" 8</p>	<p><b>BASE LOUVER SILL</b> 1 1/2\" = 1'-0\" 4</p>

PLT DATE: 4/17/12



**GENERAL STRUCTURAL**

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE CALIFORNIA BUILDING CODE (CBC) 2010 EDITION AND ALL OTHER PUBLICATIONS AND STANDARDS LISTED HEREIN. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDUM.
- CONTRACTOR SHALL READ AND FOLLOW ALL REFERENCED ICG-ES REPORTS FOR INSTALLATION OF ITEMS SHOWN. ALTERNATE METHODS OF CONSTRUCTION MAY BE SUBMITTED FOR APPROVAL TO THE PROJECT COORDINATOR WITH APPLICABLE ICG-ES REPORTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL VERIFY ALL DIMENSIONS, CONDITIONS, AND ELEVATIONS BEFORE STARTING WORK ON NEW (N) OR EXISTING (E) CONSTRUCTION. ALL DISCREPANCIES SHALL BE IMMEDIATELY CALLED TO THE ATTENTION OF THE ENGINEER OF RECORD AND SHALL BE RESOLVED BEFORE PROCEEDING. ALL WORK SHALL BE PERFORMED IN A WORKMAN LIKE MANNER IN ACCORDANCE WITH ACCEPTED CONSTRUCTION PRACTICES.
- ON PROJECTS WITH EXISTING STRUCTURES, ALL WORK SHALL BE DONE SO AS TO MINIMIZE DAMAGE TO THE EXISTING STRUCTURE AND FINISHES.
- ALL WORK SHALL CONFORM TO THE LATEST APPLICABLE CONSTRUCTION SAFETY REQUIREMENTS OF O.S.H.A. AND ANY OTHER GOVERNMENTAL AGENCY HAVING JURISDICTION IN THE AREA OF THE WORK.
- THE CONTRACTOR SHALL USE ADEQUATE NUMBERS OF SKILLED WORKMAN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK.
- THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR, AND DOES NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN CONNECTION WITH THE SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK. CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR, AND DOES NOT HAVE CONTROL OR CHARGE OF ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY OF THEIR AGENTS OR EMPLOYEES, OR ANY OTHER PERSONS PERFORMING ANY OF THE CONSTRUCTION WORK. THE CONTRACTOR AGREES TO INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
- THE STRUCTURAL SYSTEMS HAVE BEEN DESIGNED TO CARRY SUPERIMPOSED LIVE LOADS AS PRESCRIBED BY THE GOVERNING BUILDING CODES AND IN ACCORDANCE WITH STANDARD ENGINEERING PRACTICES. NO SPECIAL PROVISIONS HAVE BEEN MADE FOR CARRYING CONCENTRATED LOADS FROM STORAGE AND HANDLING OF CONSTRUCTION MATERIALS OR FROM OPERATION OF CONSTRUCTION EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE'S STABILITY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO, SCAFFOLDING, BRACING AND SHORING SYSTEMS REQUIRED FOR INSTALLATION, STABILITY AND SAFETY OF ALL NEW AND EXISTING CONSTRUCTION.
- STRUCTURAL OBSERVATION BY THE ENGINEER OF RECORD DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITY FOR BUILDING THE PROJECT, CONTROLLING THE PROGRESS, PROVIDING SAFE WORKING CONDITIONS, AND CORRECTING ANY DEVIATIONS FROM PROJECT REQUIREMENTS. SUCH OBSERVATIONS ARE NOT TO BE CONSIDERED AS INSPECTION OF THE WORK. RESPONSIBILITY FOR RESOLUTION OF ANY ITEMS NOTED DURING OBSERVATION IS NOT BEING IN CONFORMANCE WITH THE CONTRACT DOCUMENTS RESTS WITH THE CONTRACTOR, SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER OF RECORD.
- THE DETAILS ON THESE DRAWINGS SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY SHOWN OTHERWISE. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED, DETAILS OF A CHARACTER SIMILAR TO THOSE SHOWN SHALL BE USED, SUBJECT TO REVIEW BY THE ENGINEER OF RECORD.
- THE TYPICAL DETAILS SHOWN ON THE TYPICAL DETAIL SHEET S102 SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY SHOWN OTHERWISE. WHERE NO DETAIL IS SHOWN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
- NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES.
- OPENINGS, POCKETS, ETC., SHALL NOT BE PLACED IN SLABS, PILASTERS, OR WALLS UNLESS DETAILED ON THE STRUCTURAL DRAWINGS. FOR OPENINGS NOT SHOWN AND/OR DETAILED ON THE STRUCTURAL DRAWINGS AND WHICH PENETRATE STRUCTURAL ELEMENTS, OBTAIN APPROVAL FROM THE ENGINEER OF RECORD BEFORE PROCEEDING WITH WORK.
- IT IS THE INTENTION OF THESE DRAWINGS TO PROVIDE FOR THE FOLLOWING CONTINUITIES:
  - ALL ROOF AND FLOOR STRUTS SHALL BE CONTINUOUSLY CONNECTED FOR THE LENGTH OF THE ROOF OR FLOOR SYSTEM.
  - ALL WALL BRACINGS AND/OR SHEAR PANELS SHALL BE CONNECTED TO THE ROOF AND/OR FLOOR STRUTS.
 IF THE DETAILS WHICH REFLECT THESE CONTINUITIES ARE NOT EVIDENT ON THE DRAWINGS, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD FOR CLARIFICATION.
- FRAME OPENINGS AND SUPPORT MISCELLANEOUS EQUIPMENT AS DETAILED ON THE DRAWINGS. WHERE NO DETAILS ARE PROVIDED, OBTAIN APPROVAL FROM THE ENGINEER OF RECORD BEFORE PROCEEDING WITH WORK.
- ALL EQUIPMENT, MACHINERY, TANKS AND SLOS SHALL BE PLUMB AND LEVEL UNLESS NOTED OTHERWISE.
- ALL EXTERIOR GLAZING AND FRAMES SHALL BE DESIGNED TO RESIST THE WIND LOADS PRESENTED IN THE "BASIS OF DESIGN" SPECIFICATION.
- LATERALLY BRACE ALL SUSPENDED EQUIPMENT AND CEILING IN CONFORMANCE WITH THE BUILDING CODE.
- IT IS THE INTENT OF THESE PLANS TO PROVIDE DETAILS OF CONSTRUCTION NECESSARY TO GUIDE THE GENERAL CONTRACTOR WITH STRUCTURAL ASPECTS OF THE PROJECT ONLY. ARCHITECTURAL FEATURES SHALL BE COORDINATED WITH THE OWNER.
- SEE ALSO ARCHITECTURAL SPECIFICATIONS.

**BASIS OF DESIGN**

- DESIGN LOADS:
  - ROOF LIVE LOAD \_\_\_\_\_ 20 PSF
  - ROOF DEAD LOAD \_\_\_\_\_ 5 PSF
- SEISMIC FACTORS:
  - OCCUPANCY CATEGORY \_\_\_\_\_ II
  - IMPORTANCE FACTOR \_\_\_\_\_ 1.0
  - S<sub>s</sub> \_\_\_\_\_ 1.16
  - S<sub>i</sub> \_\_\_\_\_ 0.43
  - SITE CLASS \_\_\_\_\_ D
  - S<sub>0.5</sub> \_\_\_\_\_ 0.201
  - S<sub>0.1</sub> \_\_\_\_\_ 0.450
  - SEISMIC DESIGN CATEGORY \_\_\_\_\_ D
  - SEISMIC FORCE RESISTING SYSTEMS \_\_\_\_\_ CONCRETE WALLS
  - SEISMIC RESPONSE COEFFICIENT, C<sub>s</sub> \_\_\_\_\_ 0.1 (ULTIMATE)
  - RESPONSE MODIFICATION FACTOR, R \_\_\_\_\_ 4.0
  - SYSTEM OVERSTRENGTH FACTOR, β \_\_\_\_\_ 2.5
  - DEFLECTION AMP. FACTOR, C<sub>d</sub> \_\_\_\_\_ 4.0
  - ANALYSIS PROCEDURE USED \_\_\_\_\_ EQUIVALENT LATERAL FORCE METHOD
  - DESIGN BASE SHEAR \_\_\_\_\_ 4.4 KIPS H-S, 1.53 E-H KIPS
- WIND FACTORS:
  - BASIC WIND SPEED \_\_\_\_\_ 85 MPH
  - WIND EXPOSURE \_\_\_\_\_ B
  - IMPORTANCE FACTOR \_\_\_\_\_ 1.0

**BUILDING FOUNDATION AND PREPARATION**

- THE OWNER HAS OPTED TO NOT PROVIDE A GEOTECHNICAL INVESTIGATION OF THE AREA OF WORK TO BE DONE.
- FOUNDATION PREPARATION RECOMMENDATIONS ARE BASED ON CBC CHAPTER 18.
- ALLOWABLE SOIL BEARING PRESSURES ARE BASED ON CBC CHAPTER 18, TABLE 1806.2 FOR SOIL CLASSIFIED AS SILTY SAND ARE AS FOLLOWS:
  - COMBINED DEAD AND LIVE LOADS \_\_\_\_\_ 2,000 PSF
  - COMBINED DEAD AND SEISMIC LOADS \_\_\_\_\_ 2,667 PSF
- SITE PREPARATION:
  - GENERAL SITE CLEARING SHOULD INCLUDE REMOVAL OF ASPHALTIC DRIVEWAY PAVEMENT, VEGETATION, DEBRIS, EXISTING UTILITIES, STRUCTURES INCLUDING FOUNDATIONS, BASEMENT WALLS AND FLOORS, EXISTING STOCKPILED SOIL, TREES AND ASSOCIATED ROOT SYSTEMS, RUBBLE, RUBBISH, AND ANY LOOSE AND/OR SATURATED MATERIALS. SITE STRIPPING SHOULD EXTEND TO A MINIMUM DEPTH OF 2 TO 4 INCHES, OR UNTIL ALL ORGANICS IN EXCESS OF 3 PERCENT BY VOLUME ARE REMOVED. DEEPER STRIPPING MAY BE REQUIRED IN LOCALIZED AREAS. THESE MATERIALS WILL NOT BE SUITABLE FOR USE AS ENGINEERED FILL. HOWEVER, STRIPPED TOPSOIL MAY BE STOCKPILED AND REUSED IN LANDSCAPE OR NON-STRUCTURAL AREAS.
  - EXISTING FILL SOILS SHALL BE EXCAVATED AND STOCKPILED SO THAT THE NATIVE SOILS CAN BE PREPARED PROPERLY. THE FILL SOILS PREDOMINATELY CONSISTED OF SILTY SANDS. THESE SOILS MAY BE SUITABLE FOR REUSE AS ENGINEERED FILL, PROVIDED THEY ARE CLEANSSED OF EXCESSIVE ORGANICS AND DEBRIS.
  - FOLLOWING STRIPPING AND FILL REMOVAL OPERATIONS, THE EXPOSED SUBGRADE IN BUILDING PAD, AND EXTERIOR FLATWORK AREAS SHOULD BE SCARIFIED/EXCAVATED TO A DEPTH OF AT LEAST 12 INCHES, HORKEED UNTIL UNIFORM AND FREE FROM LARGE CLODS, MOISTURE-CONDITIONED AS NECESSARY, AND RECOMPACTED TO A MINIMUM OF 90 PERCENT OF MAXIMUM DENSITY BASED ON ASTM TEST METHOD D698. LIMITS OF RECOMPACTION SHOULD EXTEND 5 FEET BEYOND STRUCTURAL ELEMENTS. THIS COMPACTION EFFORT SHOULD STABILIZE THE SURFACE SOILS AND LOCATE ANY UNSUITABLE OR PLIANT AREAS.
- ENGINEERED FILL:
  - THE ORGANIC-FREE, ON-SITE, UPPER SOILS ARE PREDOMINATELY SILTY SANDS AND SANDS. THESE SOILS WILL BE SUITABLE FOR RE-USE AS ENGINEERED FILL, PROVIDED THEY ARE CLEANSSED OF EXCESSIVE ORGANICS, DEBRIS AND FRAGMENTS LARGER THAN 4 INCHES IN DIAMETER.
  - THE REFERRED MATERIALS SPECIFIED FOR ENGINEERED FILL ARE SUITABLE FOR MOST APPLICATIONS WITH THE EXCEPTION OF EXPOSURE TO EROSION, PROJECT SITE WINTERIZATION AND PROTECTION OF EXPOSED SOILS DURING THE CONSTRUCTION PHASE SHOULD BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR, SINCE THEY HAVE COMPLETE CONTROL OF THE PROJECT AT THIS TIME.
  - IMPORTED FILL MATERIAL SHOULD BE PREDOMINATELY NON-EXPANSIVE GRANULAR MATERIAL WITH A PLASTICITY INDEX LESS THAN 15 AND AN EXPANSION INDEX LESS THAN 20. IMPORTED FILL SHOULD BE FREE FROM ROCKS AND LUMPS GREATER THAN 4 INCHES IN DIAMETER. ALL IMPORTED FILL MATERIAL SHOULD BE SUBMITTED FOR APPROVAL TO THE SOILS ENGINEER AT LEAST 48 HOURS PRIOR TO DELIVERY TO THE SITE.
  - FILL SOILS SHOULD BE PLACED IN LIFTS APPROXIMATELY 6 INCHES THICK, MOISTURE-CONDITIONED AS NECESSARY, AND COMPACTED TO ACHIEVE AT LEAST 90 PERCENT OF MAXIMUM DENSITY AS DETERMINED BY ASTM TEST METHOD D1557. ADDITIONAL LIFTS SHOULD NOT BE PLACED IF THE PREVIOUS LIFT DID NOT MEET THE REQUIRED DRY DENSITY OR IF SOIL CONDITIONS ARE NOT STABLE. AN ESTIMATED MAXIMUM DRY DENSITY ON THE ORDER OF 122 PCF IS ANTICIPATED FOR THE ON-SITE SILTY SAND SOILS. HOWEVER, ADDITIONAL TESTING SHOULD BE PERFORMED DURING GRADING OPERATIONS TO ENSURE ACCURATE DENSITY MEASUREMENTS OF THE COMPACTED ENGINEERED FILL.
  - THE SHRINKAGE ON RECOMPACTED SOIL AND FILL PLACEMENT ARE ESTIMATED AT 12 TO 17 PERCENT. A SUBSIDENCE OF APPROXIMATELY 0.25 FEET MAY BE ASSUMED FOR THE UPPER NATIVE AND/OR FILL SOILS. THIS ESTIMATE IS BASED ON COMPACTION OF THE UPPER SOILS TO A MINIMUM OF 90 PERCENT OF MAXIMUM DENSITY BASED ON ASTM TEST METHOD D698. OVER-COMPACTION WOULD RESULT IN ADDITIONAL SHRINKAGE. THESE VALUES ARE APPROXIMATE AND SHOULD BE RE-EVALUATED DURING GRADING OPERATIONS.
- SPECIAL INSPECTION:
  - A REPRESENTATIVE OF A QUALIFIED GEOTECHNICAL FIRM SHALL BE PRESENT DURING ALL SITE CLEARING AND GRADING OPERATIONS TO TEST AND OBSERVE EARTHWORK CONSTRUCTION. THIS TESTING AND OBSERVATION IS AN INTEGRAL PART OF A GEOTECHNICAL FIRM'S SERVICE AS ACCEPTANCE OF EARTHWORK CONSTRUCTION AND IS DEPENDANT UPON COMPACTION OF THE MATERIAL AND THE STABILITY OF THE MATERIAL. THE SOILS ENGINEER MAY REJECT ANY MATERIAL THAT DOES NOT MEET COMPACTION AND STABILITY REQUIREMENTS.

**CONCRETE**

- THE QUALITY AND DESIGN OF CONCRETE SHALL BE IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE, 2010 EDITION EXCEPT ITEMS NOT SPECIFICALLY COVERED THEREIN SHALL ALSO CONFORM TO ACI 318-08.
- CEMENT SHALL BE TYPE II (NON-CORROSIVE SOILS) -OR- TYPE V (CORROSIVE SOILS) AND SHALL MEET THE REQUIREMENTS SET FORTH IN THE TABLE BELOW:

USE/LOCATION	f <sub>c</sub> (PSI)	SLUMP (IN)	W/C RATIO	MAX AGG. SIZE
FOUNDATION *	5,000	4	0.53	1 1/2" HR.
SLAB-ON-GRADE *	4,000	4	0.53	1" HR.
TILT-UP PANELS	4,000	4	0.45	3/4" HR.

- NOTES:
- AGGREGATE SPECIFICATION SHALL BE AS FOLLOWS:
    - ASTM C88 FOR HARD ROCK (HR) AGGREGATE (M3pcf)
  - ULTIMATE COMPRESSIVE STRENGTH (f<sub>c</sub>) SHOWN BASED ON 28 DAY STRENGTH
    - FOOTINGS, AND SLAB-ON-GRADE ARE DESIGNED FOR f<sub>c</sub> OF 2500 PSI, THEREFORE, NO SPECIAL INSPECTION IS REQUIRED.

- NO ADMIXTURES SHALL BE ADDED TO THE MIX DESIGN WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- ALL REINFORCING SHALL BE NEW STOCK DEFORMED BARS CONFORMING TO ASTM A615 UNO.
  - #3 BARS AND LARGER \_\_\_\_\_ GRADE 60
- ALL REBAR SHALL BE COLD BENT.
- SPICES IN REINFORCING STEEL SHALL BE LAPPED ACCORDING TO UNO.

- SEPARATE BARS 1/2 DIAMETERS OR 1" CLEAR, WHICHEVER IS GREATER, BARS INDICATED AS CONTINUOUS MAY BE FABRICATED IN CONVENIENT LENGTHS, STAGGER LAP SPICE LOCATIONS A MINIMUM OF 24". FABRICATION DETAILS SHALL CONFORM TO ACI MANUAL OF STANDARD PRACTICE.
- WELDING OF REINFORCING SHALL BE ALLOWED ONLY WHERE DETAILED ON DRAWINGS. ALL REINFORCING THAT IS TO BE WELDED SHALL BE ASTM A706, GRADE 60, CONFORMING TO CBC (104.3.1) AND IN ACCORDANCE WITH AASHTO SPECIFICATIONS. FABRICATION DETAILS SHALL CONFORM TO ACI 318 "ACI DETAILING MANUAL" AND CSI "MANUAL OF STANDARD PRACTICE". WELDING SHALL NOT BE DONE WITHIN TWO BAR DIAMETERS OF ANY BENT PORTION OF A BAR WHICH HAS BEEN BENT COLD. WELDING OF CROSSING BARS SHALL NOT BE PERMITTED FOR ASSEMBLY OF REINFORCEMENT UNLESS AUTHORIZED BY THE STRUCTURAL ENGINEER.
- FIELD SPICES NOT ORIGINALLY SHOWN ON DRAWINGS WILL BE PERMITTED ONLY WITH APPROVAL OF THE ENGINEER.
- MINIMUM CONCRETE COVER FOR REINFORCING SHALL BE AS FOLLOWS:
  - CAST AGAINST EARTH (EXCEPT SLABS ON GRADE) \_\_\_\_\_ 3"
  - SLABS ON GRADE \_\_\_\_\_ 1 1/2"
  - EXPOSED TO EARTH OR HEATHER
    - #5 BARS AND SMALLER \_\_\_\_\_ 1 1/2"
    - #6 BARS AND LARGER \_\_\_\_\_ 2"
  - NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND SLABS, WALLS, JOISTS
    - #11 BARS AND SMALLER \_\_\_\_\_ 3/4"
    - #14 AND #18 BARS \_\_\_\_\_ 1 1/2"

- CONCRETE TILT-UP PANELS
- #6 BARS AND SMALLER \_\_\_\_\_ 1"
  - #8 BARS AND LARGER \_\_\_\_\_ 2"

- ALL ANCHOR RODS SHALL BE OF HEX HEAD TYPE CONFORMING TO ASTM F1554 GRADE 36 UNO.
  - ALL REINFORCING STEEL, ANCHOR RODS, DOMELS AND OTHER INSERTS SHALL BE IN PLACE AND SHALL BE WELL SECURED IN POSITION PRIOR TO POURING CONCRETE.
  - ALL MOLDS, ORNAMENTS, GROOVES, ETC., SHOWN ON DRAWINGS SHALL BE PROVIDED FOR IN THE FORM WORK BEFORE CONCRETE IS POURED.
  - REFER TO BOTH ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATION AND SPACING OF ALL PLUMBING FIXTURES.
  - NO PIPES OR DIGTS SHALL BE PLACED IN CONCRETE FOOTINGS UNLESS SPECIFICALLY DETAILED.
  - CONSTRUCTION JOINTS NOT INDICATED ON THE DRAWINGS SHALL BE MADE AND LOCATED AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE. PROVISION SHALL BE MADE FOR TRANSFER OF SHEAR AND OTHER FORCES THROUGH THE JOINTS.
  - ALL EXPOSED INTERIOR CONCRETE FLOORS ARE TO RECEIVE A STEEL TROWELED FINISH, UNO, ON ARCHITECTURAL DRAWINGS.
  - ALL CONCRETE FLATWORK SHALL BE MET CURED BY MIST CURING, BY MOISTURE-RETAINING CURING, OR BY COMBINATIONS THEREOF IN ACCORDANCE WITH ACI 301 PROCEDURES. KEEP CONTINUOUSLY MOIST FOR NOT LESS THAN 7 DAYS AFTER THE FINISHING OPERATION IS COMPLETE.
- ALTERNATELY, A CURING COMPOUND MEETING ASTM C909 TYPE I, CLASS B AND AASHTO M448, TYPE I SPECIFICATIONS AND STATE OF CALIFORNIA AIR REGULATION BOARD SOLVENT EMISSIONS STANDARDS MAY BE USED SUCH AS "EUCILD" SUPER DIAMOND CLEAR VOX.

**TILT-UP CONCRETE WALLS**

- DURING ERECTION OF PANELS, THERE MUST BE PADS, SHIMS OR WEDGES NO MORE THAN 6'-0" APART TO PROVIDE A UNIFORM LOADING ON THE CONTINUOUS FOOTING.
- ALL TILT-UP CONCRETE WALL PANELS SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH PER CONCRETE NOTES FOR TILT-UP PANELS, UNO, ON PANEL ELEVATIONS AND SHALL HAVE DEVELOPED FULL ULTIMATE COMPRESSIVE STRENGTH AT THE TIME OF LIFTING, UNO. PANELS MUST BE 30 DAYS OLD PRIOR TO CONNECTING AT STEEL LEDGERCHORDS.
- ALL EMBEDDED ITEMS SHALL BE SECURELY ANCHORED IN PLACE PRIOR TO PLACING CONCRETE.
- ALL WALL PANELS SHALL BE CAST WITH EXTERIOR FACE DOWN UNO.
- ALL WELDING OF REINFORCING STEEL SHALL BE WITH LOW HYDROGEN ELECTRODES. SEE CONCRETE NOTES.
- PANEL JOINTS SHALL BE SEALED WITH 3/4" DIAMETER OPEN CELL FOAM ROD AND THICKOL 2255M POLYSULFIDE SEALANT, OR APPROVED EQUAL, AT EXTERIOR AND INTERIOR FACE OF PANELS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND PLACEMENT OF ALL LIFTING POINTS AND ADDITIONAL REINFORCEMENT OF STRONGBACKS REQUIRED TO ADEQUATELY TILT THE PRECAST CONCRETE PANELS. THE LIFT DESIGN SHALL BE BASED ON THE STRENGTH OF THE CONCRETE SPECIFIED BY THE STRUCTURAL DRAWINGS MODIFIED FOR THE EXPECTED TIME OF LIFT. CONTRACTOR MUST ALSO SUBMIT TO THE ENGINEER PRIOR TO TILTING UP, COPIES OF TEST REPORTS DONE TO SHOW THAT THE PANEL CONCRETE HAS ATTAINED THE STRENGTH REQUIRED BY THE LIFT DESIGN.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL BRACING REQUIRED FOR PRECAST PANELS PRIOR TO CONNECTION OF ALL SUPPORTING ELEMENTS SUCH AS ROOF SHEATHING AND FLOOR SLAB. SUCH BRACING MUST BE DESIGNED TO RESIST THE MAXIMUM SHORT TERM WIND LOADS FOR THE BUILDING IN ACCORDANCE WITH THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE AND ANY LOCAL ORDINANCES. BRACING WIND LOADS MUST BE CLEARLY SHOWN ON SHOP DRAWINGS.
- CONCRETE PANELS MUST BE CAST OFF SITE AND TRANSPORTED AFTER SPECIFIED CURING TIME.
- CONCRETE PANELS MUST BE DELIVERED AND INSTALLED ON WEEKENDS OR AFTER HOURS, (AFTER HOURS IS DEFINED AS 6:30 PM TO 5:30 AM)

By the Engineer, I certify that the drawings were prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer in the State of California. I am a member in good standing of the State Board of Professional Engineers and Geoscientists. I am a member in good standing of the State Board of Civil Engineers. I am a member in good standing of the State Board of Mechanical Engineers. I am a member in good standing of the State Board of Electrical Engineers. I am a member in good standing of the State Board of Chemical Engineers. I am a member in good standing of the State Board of Industrial Engineers. I am a member in good standing of the State Board of Aeronautical Engineers. I am a member in good standing of the State Board of Marine Engineers. I am a member in good standing of the State Board of Mining Engineers. I am a member in good standing of the State Board of Surveyors. I am a member in good standing of the State Board of Professional Geologists. I am a member in good standing of the State Board of Professional Land Surveyors. I am a member in good standing of the State Board of Professional Engineers and Geoscientists. I am a member in good standing of the State Board of Civil Engineers. I am a member in good standing of the State Board of Mechanical Engineers. I am a member in good standing of the State Board of Electrical Engineers. I am a member in good standing of the State Board of Chemical Engineers. I am a member in good standing of the State Board of Industrial Engineers. I am a member in good standing of the State Board of Aeronautical Engineers. I am a member in good standing of the State Board of Marine Engineers. I am a member in good standing of the State Board of Mining Engineers. I am a member in good standing of the State Board of Surveyors. I am a member in good standing of the State Board of Professional Geologists. I am a member in good standing of the State Board of Professional Land Surveyors.

DATE: 04/17/12  
 PLAN CHECK: RESUBMITAL  
 C



**Taylor Teter**  
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 ARCHITECTURE + ENGINEERING, LLP  
 7535 N. PALM AVE. 201 - FRENO, CA 93711 - 559.437.0887  
 128 S. BRIDGE ST. 150 - VISALIA, CA 93281 - 559.826.9246



CHEVRON CORPORATION  
 GENERATOR ENCLOSURE BUILDING  
 BAKERSFIELD, CA  
 DRAWING TITLE: SHEET SPECIFICATIONS

PROJECT NO. 11-8478.00  
 DRAWING S100  
 N.T.S. 4

**STRUCTURAL STEEL**

- ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED PER AISC SPECIFICATIONS FOR BUILDINGS AND SHALL CONFORM TO THE FOLLOWING, UNLESS:
  - HSS SHAPES: ASTM A500, GRADE B (Fy = 46 ksi)
  - ALL OTHER SHAPES: ASTM A36 (Fy = 36 ksi)
  - PLATES AND BARS: ASTM A36 (Fy = 36 ksi)
- FOR ANCHOR BOLT (AB)/ANCHOR ROD REQUIREMENTS SEE CONCRETE SPECIFICATIONS.
- ALL WELDED STUD BOLTS SHALL BE "NELSON" STUDS. "SEL SHEAR CONNECTORS" MANUFACTURED BY NELSON STUD WELDING, INC. ALL NELSON STUD ANCHORS (NSA) SHALL BE 3/4" CONFORMING TO ASTM A108 WITH FABRICATION AND INSTALLATION IN CONFORMANCE WITH ICC REPORT NUMBER ESR-2256, OCTOBER 1, 2010. USING A NELSON WELD GUN UNLESS NOTED OTHERWISE ON DETAILS - ALL WELDS SHALL BE MADE AND INSPECTED IN ACCORDANCE WITH AWS D11.
- ALL UNFINISHED NUTS AND BOLTS (M.B.) SHALL BE ASTM A307 UNLESS.
- ALL BOLT HOLES IN STEEL SHALL BE RANCHED OR DRILLED. NO TORCHING OF HOLES ALLOWED. HOLES SHALL BE 1/16" LARGER THAN THE NOMINAL BOLT DIAMETER, UNLESS.
- WELDING:
  - ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS USING THE SHIELDED ARC PROCESS AND IN ACCORDANCE WITH AWS STANDARDS. JOINT DETAILS SHALL COMPLY WITH AWS REQUIREMENTS FOR JOINTS ACCEPTED WITHOUT QUALIFICATION TESTS.
  - ALL WELDS SHALL BE UNIFORM IN SIZE AND APPEARANCE AND FREE OF PINHOLES, POROSITY, UNDERCUTTING OR OTHER DEFECTS. ALL BUTT WELDS SHALL BE FULL PENETRATION.
  - NO WELDING PERMITTED ON MEMBERS SUPPORTING LOADS.
  - WELD METAL SHALL HAVE A NOMINAL TENSILE STRENGTH OF 70,000 PSI MINIMUM.
  - ALL WELDS USED IN PRIMARY MEMBERS AND CONNECTIONS IN THE LATERAL FORCE RESISTING SYSTEM SHALL BE MADE WITH A FILLER METAL THAT HAS A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LEBS AT MINUS 20° F, AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION. SEE ELEVATION DRAWINGS FOR LOCATIONS OF THE LATERAL FORCE RESISTING SYSTEM.
  - ALL WELDING MUST BE 100% SCREENED FROM VIEW.
- ALL STEEL SHALL BE THOROUGHLY CLEANED, REMOVING ALL LOOSE MILL SCALE, GREASE, DIRT AND FOREIGN MATTER BY SCRAPING OR SANDBLASTING.
  - ALL STEEL TO BE GREY PRIMER COLOR. DO NOT SHOP PAINT TO THE FOLLOWING:
    - SURFACES WHICH WILL BE ENCASED IN CONCRETE OR MORTAR. PART EMBEDDED STEEL WHICH IS PARTIALLY EXPOSED ON EXPOSED PORTIONS AND INITIAL TWO INCHES OF EMBEDDED PORTIONS ONLY.
    - SURFACES WITHIN 2 INCHES OF JOINTS TO BE WELDED IN FIELD INCLUDING TOP FLANGES OF MEMBERS SUPPORTING STEEL DECKING WHICH ARE TO BE WELDED.
    - SURFACES WHICH WILL RECEIVE SPRAYED ON FIREPROOFING.
    - TOP FLANGE OF MEMBERS WHICH WILL HAVE SHEAR CONNECTOR STUDS APPLIED.
- FINAL PAINT AND COLOR FOR EXPOSED STEEL SHALL BE PER OWNER'S SPECIFICATION.
- IMMEDIATELY AFTER ERECTION, CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRASED AREAS OF SHOP PAINT. APPLY PRIMER TO EXPOSED AREAS WITH SAME MATERIAL AS USED FOR SHOP PRIMER.
- ALL CRANE WORK FOR STRUCTURAL STEEL ERECTION MUST BE PERFORMED ON WEEKENDS OR AFTER HOURS (AFTER HOURS IS DEFINED AS 6:30 PM TO 5:30 AM).

**STEEL DECK NOTES**

- STEEL DECKING SHALL BE AS INDICATED ON PLANS, FABRICATION AND INSTALLATION SHALL CONFORM TO ICC-ES REPORT NO. ESR-2047 (REISSUED 07/01/11) FOR EPIC METALS CORPORATION STEEL DECK.
- DECK PANELS SHALL SPAN OVER THREE SUPPORTS WHERE STRUCTURAL STEEL FRAMING PERMITS. DECK PANELS SHALL INCLUDE ALL ACCESSORIES FOR THIS TYPE OF DECKING, SUCH AS CLOSURE, FLASHING, ETC. PANELS SHALL BE ALIGNED AND PLACED IN ACCORDANCE WITH THE MANUFACTURER'S ICC-ES REPORT AND THESE DRAWINGS.
- WELDING SHALL CONFORM TO AWS D11 AND D13. SEE STRUCTURAL STEEL SPECIFICATIONS FOR ADDITIONAL WELDING REQUIREMENTS.
- ENDS OF STEEL DECKING PANELS SHALL BUTT OVER SUPPORTS (NO LAP).
- THE STEEL DECKING SHALL BE CLEANED OF ALL DIRT, DEBRIS, OIL, WATER AND ANY FOREIGN MATERIAL PRIOR TO APPLICATION OF CONCRETE.
- APPROVED SHOP DRAWINGS MUST BE ON JOB SITE FOR INSPECTION PURPOSES.
- ALL CRANE WORK FOR STRUCTURAL STEEL ERECTION MUST BE PERFORMED ON WEEKENDS OR AFTER HOURS (AFTER HOURS IS DEFINED AS 6:30 PM TO 5:30 AM).

**SUBMITTALS/SPECIAL CONDITIONS**

- PRIOR TO COMMENCEMENT OF EXCAVATION FOR FOUNDATIONS (AT LEAST 48 HOURS) THE CONTRACTOR IS TO CONTACT THE GEOTECHNICAL INSPECTOR, WHO IS TO ADVISE THE BUILDING OFFICIAL IN WRITING THAT THE BUILDING PAD WAS PREPARED AND COMPACTED IN ACCORDANCE WITH THE CBC AND SPECIFICATION RECOMMENDATIONS. ADDITIONALLY THAT THE FOUNDATION GRADING WAS PERFORMED IN CONFORMANCE WITH THE CBC RECOMMENDATIONS AND APPROVED PLANS. A COPY OF THE REPORT SHALL BE GIVEN TO THE STRUCTURAL ENGINEER OF RECORD.
- PRIOR TO REQUESTING A BUILDING DEPARTMENT FOUNDATION INSPECTION (AT LEAST 48 HOURS) THE CONTRACTOR IS TO CONTACT THE GEOTECHNICAL INSPECTOR, WHO IS TO ADVISE THE BUILDING OFFICIAL IN WRITING THAT THE BUILDING FOUNDATION FOOTING EXCAVATION DEPTH, BACKFILL MATERIALS AND DRAINAGE SUBSTANTIALLY CONFORMS WITH THE CBC RECOMMENDATIONS AND APPROVED PLANS WITH THE CITY OF BAKERSFIELD ORDINANCE MODIFICATIONS OF APPENDIX CHAPTER J. A COPY OF THE REPORT SHALL BE GIVEN TO THE STRUCTURAL ENGINEER OF RECORD.
- STEEL FABRICATORS WHO PERFORM WORK UNDER A CERTIFICATION PROGRAM (SUCH AS ICC) ARE TO SUBMIT COPIES OF THEIR APPROVAL. CBC SEC. 1704.2.2.
- SPECIAL INSPECTION REPORTS ARE TO BE SUBMITTED DIRECTLY TO THE ENFORCEMENT AGENCY PER CBC SEC. 1704.1.2 (WITH COPIES TO ENGINEER, GENERAL CONTRACTOR AND OWNER).
- SPECIAL INSPECTORS BACKGROUND AND QUALIFICATIONS SHALL BE FORWARDED TO THE BUILDING DEPARTMENT AT LEAST 3 DAYS BEFORE ANY INSPECTIONS ARE PERFORMED.
- THE FOLLOWING SHOP DRAWINGS/SUBMITTALS SHALL BE PROVIDED FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION OR DELIVERY:
  - CONCRETE MIX DESIGNS
  - REINFORCING STEEL SHOP DRAWINGS
  - PRE-CAST CONCRETE PANELS
  - STRUCTURAL STEEL
  - METAL DECK
  - MISCELLANEOUS STEEL

**CONTRACTOR RESPONSIBILITY**

CONTRACTOR RESPONSIBILITY - CBC 1704. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND- OR SEISMIC-FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM OR A WIND- OR SEISMIC-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS (SECTION 1705) SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT.

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

**STRUCTURAL OBSERVATION PROGRAM**

- STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE STRUCTURAL OBSERVATION PER CBC 1710. CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER 48 HOURS PRIOR TO COMPLETION OF THE FOLLOWING TO ARRANGE FOR PERIODIC OBSERVATION:
  - FOUNDATION AND SLAB REINFORCING PRIOR TO PLACEMENT OF CONCRETE.
  - ROOF DECK WELDING PRIOR TO PLACEMENT OF ROOFING.
  - SITE CAST TILT-UP PANEL REINFORCING, INSERTS AND EMBEDMENTS PRIOR TO PLACEMENT OF CONCRETE.
- OBSERVED DEFICIENCIES SHALL BE REPORTED IN WRITING TO THE OWNER'S REPRESENTATIVE, SPECIAL INSPECTOR, CONTRACTOR, AND BUILDING OFFICIAL. THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFYING ANY REPORTED DEFICIENCIES WHICH TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED. THE STRUCTURAL OBSERVER SHALL MAKE ADDITIONAL SITE VISITS AS NECESSARY TO VERIFY THAT ALL REPORTED DEFICIENCIES HAVE BEEN SATISFACTORILY CORRECTED.

**SPECIAL INSPECTION**

- IN ACCORDANCE WITH CBC SECTION 1704, APPENDIX CHAPTER I, SECTION 1704 AND SECTION 1707, OWNER SHALL EMPLOY A SPECIAL INSPECTOR WHO SHALL PROVIDE INSPECTION DURING CONSTRUCTION ON THE FOLLOWING TYPES OF WORK:
  - CONCRETE (PER CBC SECTION 1704.4 AND TABLE 1704.4)
    - PLACEMENT OF CONCRETE (WHEN Fc>2500 PSI).
    - TAKING OF TEST SPECIMENS (WHEN Fc>2500 PSI).
    - PLACEMENT OF REINFORCING STEEL.
    - WELDING OF REINFORCING STEEL.
    - EMBEDDED BOLTS IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE.
    - SHAPE, LOCATION AND DIMENSIONS OF FORMWORK.
    - ERECTION OF PRECAST MEMBERS.
    - MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.
    - IN-SITU STRENGTH PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.
    - USE OF REQUIRED DESIGN MIX.
  - STRUCTURAL STEEL (PER CBC SECTION 1704.3 AND TABLE 1704.3)
    - WELDING OF STRUCTURAL STEEL.
    - WELDING OF ROOF DECK.
  - ANCHORS IN CONCRETE/MASONRY
    - INSTALLATION OF EXPANSION ANCHORS.
    - INSTALLATION OF EPOXY ANCHORS.
  - SOILS (PER CBC SECTION 1704.7 AND TABLE 1704.7)
    - ADEQUACY OF MATERIALS BELOW FOOTINGS.
    - VERIFICATION OF EXCAVATIONS.
    - CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.
    - PROPER PLACEMENT AND COMPACTION OF CONTROLLED FILL.
    - SUBGRADE PREPARATION.

- THE PERIODIC AND/OR CONTINUOUS SPECIAL INSPECTION IS TO BE PERFORMED AS OUTLINED IN THE PLANS AND NOTES AS APPROVED BY THE ENFORCEMENT AGENCY PER TABLES IN CBC SECTION 1704.
- WHERE THIRD PARTY SPECIAL INSPECTION OF FABRICATOR SHOPS, PLANTS OR MANUFACTURES IS TRYING TO BE WAIVED THROUGH THE USE OF A CERTIFICATION PROGRAM, SUCH DOCUMENTATION SHALL BE SUBMITTED TO THE BUILDING OFFICIAL PRIOR TO PERMIT ISSUANCE. (PER CBC 1704.2.2)

By Special Inspection LP  
I expressly reserve the  
right to require the  
owner to provide a  
copy of this document  
to the local and state  
authorities, as well as  
to the public, for  
their information.

DATE	04/17/12
DESCRIPTION	PLAN CHECK RESUBMITTAL
MARK	C

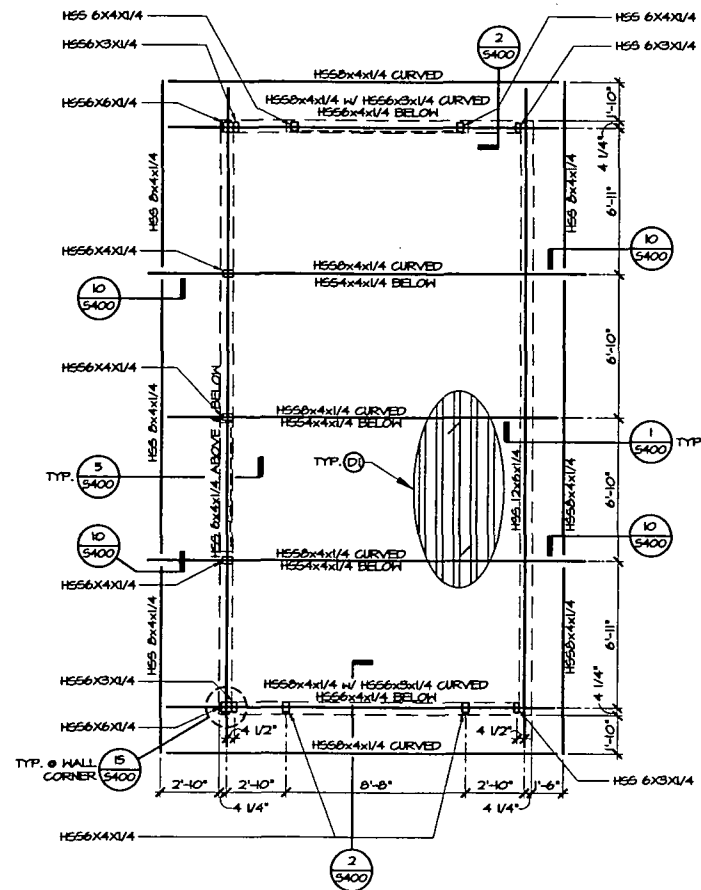


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125 S. BRIDGE ST., 100 - VISALIA, CA 93281 - 688-856-6248

CHEVRON CORPORATION  
GENERATOR ENCLOSURE BUILDING  
BAKERSFIELD, CA  
DRAWING TITLE:  
SHEET SPECIFICATIONS

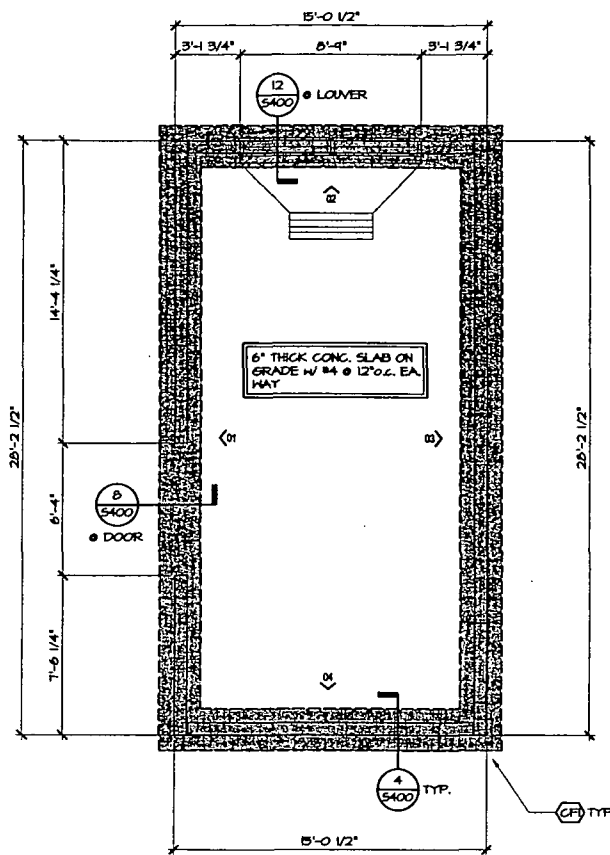
PROJECT NO.  
11-8478.00  
DRAWING  
**S101**

PLANT DATE: 4/12/12



ROOF FRAMING PLAN

1/4" = 1'-0" 15



FOUNDATION PLAN

1/4" = 1'-0" 7

**FOUNDATION NOTES:**

- SEE GENERAL NOTES AND TYPICAL DETAILS ON SHEETS S100, S101 & S102.
- COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
- PROVIDE CONC. SLAB (THICKNESS INDICATED PER PLAN) O/ 10 MIL MIN. MOISTURE BARRIER O/ COMPACTED NATIVE SOILS OR COMPACTED IMPORT MATERIAL.
- SEE CIVIL PLANS AND OR SITE PLAN FOR LOCATION AND DIMENSIONS OF SIDEWALKS, RAMP, EXTERIOR SLABS, MOM STRIPS AND PLANTERS, ETC.
- ALL EMBEDDED ITEMS SHALL BE IN PLACE AND SECURE PRIOR TO POURING OF CONCRETE.
- ALL EXTERIOR SLABS ARE TO BE POURED SEPARATE.
- TOP OF FOOTING (T.O.F.) ELEVATIONS SHALL BE (-) 1'-4" UNO.
- FOR PIPES/CONDUITS NEAR TO OR INTERSECTING FOUNDATIONS, SEE DETAILS (7) & (8).
- ALL DIMENSIONS ARE TO FACE OF WALL OR CENTER OF COLUMN, UNO.

**FOUNDATION SCHEDULE**

SYM.	DESCRIPTION	REMARKS
CF1	2'-0" WIDE x 1'-0" DP. FTG. W/ (3) #5 CONT. TOP & BOTTOM - NO CLOSED TIES	

**ROOF FRAMING NOTES:**

- SEE GENERAL NOTES ON SHEETS S100 & S101
- COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

**LEGEND:**

- PANEL NUMBER
- BUILDING GRID
- CONTINUOUS FOOTING TYPE PER SCHEDULE
- CONCRETE FOOTING PER SCHEDULE
- INDICATES WALL EXTENDING TO ROOF STRUCTURE
- INDICATES OPENING IN HALL BELOW
- INDICATES DECK SPAN DIRECTION FOR DECK INFORMATION SEE (14) (15)

The Engineer hereby certifies that he is a duly licensed Professional Engineer in the State of California, and that he is the author of the above drawings. He certifies that the drawings were prepared by him or under his direct supervision and that he is a duly licensed Professional Engineer in the State of California.

DATE	04/17/12
DESCRIPTION	PLAN CHECK RESUBMITTAL
NAME	C



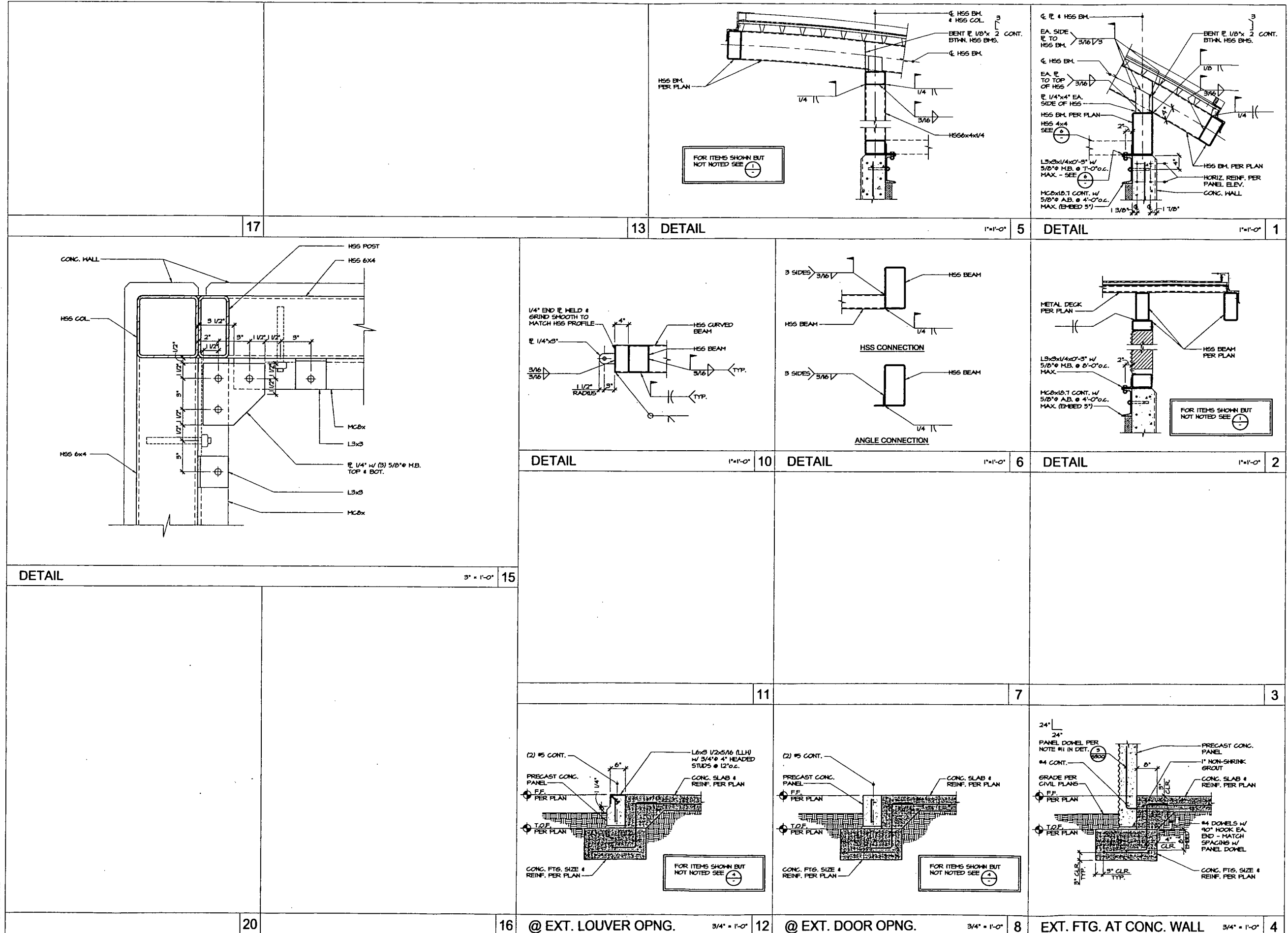
**Taylor Teter**  
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 122 S. BRIDGE ST. 180 - VISALIA, CA 93281 - 568.835.8248

CHEVRON CORPORATION  
 GENERATOR ENCLOSURE BUILDING  
 BAKERSFIELD, CA  
 DRAWING TITLE:  
 FOUNDATION AND ROOF FRAMING PLAN

PROJECT NO.  
11-8478.00

DRAWING  
**S200**

N.T.S. 4



NO.	DESCRIPTION	DATE	BY
C	04/17/12	PLAN CHECK RESUBMITTAL	



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**CHEVRON CORPORATION**  
 GENERATOR ENCLOSURE BUILDING  
 BAKERSFIELD, CA  
 DRAWING TITLE  
 FOUNDATION & FRAMING DETAILS

PROJECT NO.  
 11-8478.00  
 DRAWING  
**S400**

PLOT DATE: 4/18/12

500 gn

WO 9673



# BILLING & PERMIT STATEMENT



**BAKERSFIELD FIRE DEPARTMENT**  
**Prevention Services**  
 2101 H Street  
 Bakersfield, CA 93301  
 Phone: 661-326-3979 • Fax: 661-852-2171

**PERMIT #**

### SITE INFORMATION

LOCATION OF PROJECT <b>9525 Camino Medina</b>	PROPERTY OWNER <b>Cherex Corp.</b>
STARTING DATE <b>10-2012</b>	COMPLETION DATE <b>2-14-2013</b>
PROJECT NAME <b>Energy Center Generator Project</b>	NAME <b>Comp Office Energy Center.</b>
PROJECT ADDRESS <b>9525 Camino Medina Bakersfield 93311</b>	ADDRESS <b>9525 Camino Medina</b>
	PHONE # <b>661-654-7411</b>
	CITY BAKERSFIELD STATE CA
	ZIP CODE <b>93311</b>

### CONTRACTOR INFORMATION

CONTRACTOR NAME <b>Wallace &amp; Smith Builders</b>	CA LICENSE #	TYPE OF LICENSE <b>B</b>	EXPIRATION DATE	PHONE # <b>661-327-1436</b>
CONTRACTOR COMPANY NAME <b>Wallace and Smith General Contractor.</b>				FAX # <b>661-327-8865</b>
ADDRESS <b>3325 Canoco Dr.</b>	CITY <b>Bakersfield CA</b>			ZIP CODE <b>93311</b>

**Please make checks payable to CITY OF BAKERSFIELD. Thank you.**

**OFFICE USE ONLY**

PERMIT TYPE	FEE CALCULATION	TOTAL DUE	TREASURY ACCT NO
<input type="checkbox"/> Alarm - New & Modification (minimum charge)	\$280		
<input type="checkbox"/> Over 10,000 sq ft	\$0 .028 x sq ft		
<input type="checkbox"/> Sprinkler - New & Modification (minimum charge)	\$280		
<input type="checkbox"/> Over 10,000 sq ft	\$0 .028 x sq ft		
<input type="checkbox"/> Sprinkler - Minor Modification (<10 heads)	\$ 96 (inspection only)		84
<input type="checkbox"/> Commercial Hood (New & UL 300 Upgrade Modification) Additional Hood	\$235 \$ 58/hood		
<input type="checkbox"/> Commercial Hood - Minor Modification (add/move nozzle)	\$ 96 (inspection only)		84
<input type="checkbox"/> Spray Booth (New & Modification)	\$235		98
<input checked="" type="checkbox"/> Aboveground Storage Tank (1 inspection per installation) <b>AST</b>	\$180/tank		82
<input type="checkbox"/> Additional Tank <b>ATI</b>	\$ 96/tank		82
<input type="checkbox"/> Aboveground Storage Tank (Removal, Mod, or Inspect'n) <b>ATR</b>	\$109/tank		82
<input type="checkbox"/> Underground Storage Tank (Installation/Inspection) <b>NI</b>	\$878/tank		82
<input type="checkbox"/> Underground Storage Tank (Modification) <b>MOD</b>	\$878/site		82
<input type="checkbox"/> Underground Storage Tank (Minor Modification) <b>MTM</b>	\$167/site		82
<input type="checkbox"/> Underground Storage Tank (Removal) <b>TR</b>	\$573/tank		84
<input type="checkbox"/> Mandated UST Testing: Fuel Mont Cert/SB989/Cath. Prot. <b>NOTE:</b> \$96/hr for each type of test/per site/per UST system even if scheduled at the same time	\$ 96/hr (2 hrs minimum) = \$192		82
<input type="checkbox"/> Oil well (Installation, Inspection, or re-inspection) <b>X</b>	\$ 96/hr		82
<input type="checkbox"/> Tent <b>#</b>	\$ 96/tent		84
<input type="checkbox"/> After-hours inspection fee	\$121/hr (2 hrs minimum) = \$242		
<input type="checkbox"/> Pyrotechnic (1 permit per event, plus an inspection fee of \$96/hr during business hours) <b>NOTE:</b> After hours Pyrotechnic event inspection is @ \$121/hr	\$ 96/hr + (5 hrs min standby fee/insp) = \$576 (5 hrs min standby fee/insp) = \$605		84
<input type="checkbox"/> Re-inspection/Follow-up Inspection	\$ 96/hr		84
<input type="checkbox"/> Portable LPG (Propane): # of Cages? ____	\$ 96/hr		84
<input type="checkbox"/> Explosive Storage	\$266		84
<input type="checkbox"/> Copying & File Research (File Research fee \$50/hr)	\$0.25/page		84
<input type="checkbox"/> Miscellaneous			84



A member company of SH Group, Inc.

Project No: CHV01000

Today's Date: 10/25/2012

Project: Chevron Bakersfield, CA

Sheet: 1 of 1

By: Dan Tran

Trade: Electrical

Generator Submittal-Package 03-

Submittal Ref: REV1 - 23 3213-001

Contractor: Spring Mountain Industries

Corrections or comments made on the submittals during this review do not relieve contractor from compliance with requirements of the drawings and specifications. This review is for general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.

**Actions:**

- 1 - No exception taken    2 - Revise - No resubmission required    3 - Revise and resubmit    4 - Rejected    5 - Submit specified item  
6 - No action required    7 - Other - [Please specify]

Spec Section	Manufacturer	Drawing No./ Equipment Tag. No.	Action	Comments
263213	Caterpillar	Sub-base fuel tank	1	No exception taken



**Connie Yett**

---

**From:** Brad Chambless  
**Sent:** Wednesday, October 24, 2012 9:22 AM  
**To:** Dan Tran (dtran@syska.com)  
**Cc:** Jesus Pelayo (jesus.pelayo@teterae.com); Connie Yett  
**Subject:** Chevron Generator Fuel Tank  
**Attachments:** Pages from 26 3213-001B - Quinn Power Systems REVIEWED.pdf - Adobe Acrobat.pdf

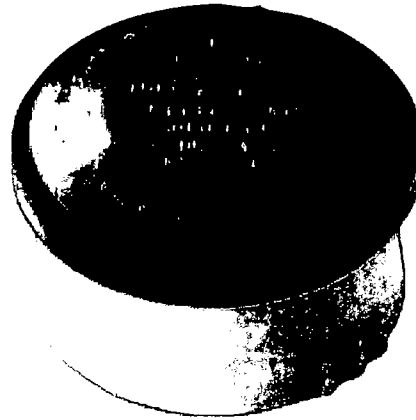
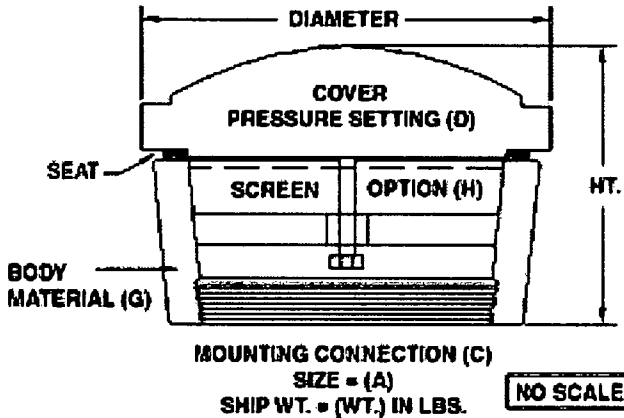
Dan,

See if the attached pages answer any questions you might have. The fuel tank is custom built.

Thanks.

- Brad

# MORRISON EMERGENCY VENT • SPECIFICATION SHEET • FIG. 244 SERIES



6" Fig. 244

## DESCRIPTION

UL Listed Emergency vent (pressure relief only) used on aboveground storage tanks, as a code requirement, to help prevent the tank from becoming over-pressurized and possibly rupturing if ever exposed to fire. Vent must be used in conjunction with a "normal vent." Correct application of this vent requires proper vent size and selection for the tank system in order to meet the specific venting capacity.

## SPECIFICATION / DETAIL OPTIONS

- A - Size: 6"
- B - Venting Capacity / CFH in 1000's
- C - Mounting connection: female N.P.T.- (BLANK); male N.P.T.- (M); flanged - (F)
- D - Pressure settings: 8, 10, 16 oz/in<sup>2</sup>. Pressure required to open vent.
- E - Cover: Cast iron painted -(PA) - Standard  
Cast iron powder coated -(PC) - Optional
- Bolt: steel-zinc plated
- F - Seat material: brass (BR) or viton o-ring(O)
- G - Body material: aluminum (AL) or iron (I)
- H - Screen :yes/no (3 mesh)
- DIA. - Diameter: dimension across vent.
- HT. - Height: dimension from base to top when closed.
- WT. - Shipping Weight

Conformance Including: NFPA 30, 30a, UL 142, UL 2244, API 2000, and PEI RP200.  
Additional References: NFPA 30, UL 142, Morrison Venting Guide.

I.D. NUMBER	A	B	C	D	E	F	G	H	DIA	HT	WT.
244M--0200 AV	6	246	M	8	PA	BR	AL	N	7.9	6.5	19.5
244MS-0200 AV	6	246	M	8	PA	BR	AL	Y	7.9	6.5	19.5
244MI-0200 AV	6	246	M	8	PA	BR	I	N	7.9	6.5	27.8
244OM-0200 AV	6	246	M	8	PA	O	AL	N	7.9	6.4	19.5
244OMS0200 AV	6	246	M	8	PA	O	AL	Y	7.9	6.4	19.5
244OMI0200 AV	6	246	M	8	PA	O	I	N	7.9	6.4	27.8
244M--0300 AV	6	246	M	10	PA	BR	AL	N	7.7	6.8	24
244MI-0300 AV	6	246	M	10	PA	BR	I	N	7.7	6.8	32.3
244OM-0300 AV	6	246	M	10	PA	O	AL	N	7.7	6.7	24
244OMI0300 AV	6	246	M	10	PA	O	I	N	7.7	6.7	32.3
244M--0400 AV	6	246	M	16	PA	BR	AL	N	8.1	7.8	35
244MS-0400 AV	6	246	M	16	PA	BR	AL	Y	8.1	7.8	35
244MI-0400 AV	6	246	M	16	PA	BR	I	N	8.1	7.8	43.3
244OM--0400 AV	6	246	M	16	PA	O	AL	N	8.1	7.7	35
244OMS0400 AV	6	246	M	16	PA	O	AL	Y	8.1	7.7	35
244OMI0400 AV	6	246	M	16	PA	O	I	N	8.1	7.7	43.3
244--0200 AV	6	246		8	PA	BR	AL	N	7.9	4.5	15.5
244S--0200 AV	6	246		8	PA	BR	AL	Y	7.9	4.5	15.5
244I--0200 AV	6	246		8	PA	BR	I	N	7.9	4.5	20.6
244O--0200 AV	6	246		8	PA	O	AL	N	7.9	4.2	15.5
244OS-0200 AV	6	246		8	PA	O	AL	Y	7.9	4.2	15.5
244OS-2200 AV	6	246		8	PC	O	AL	Y	7.9	4.2	15.5
244OI-0200 AV	6	246		8	PA	O	I	N	7.9	4.2	20.6
244--0300 AV	6	246		10	PA	BR	AL	N	7.7	4.8	21.5
244S--0300 AV	6	246		10	PA	BR	AL	Y	7.7	4.8	21.5
244I--0300 AV	6	246		10	PA	BR	I	N	7.7	4.8	26.6
244O--0300 AV	6	246		10	PA	O	AL	N	7.7	4.6	21.5
244OS-0300 AV	6	246		10	PA	O	AL	Y	7.7	4.6	21.5
244OI-0300 AV	6	246		10	PA	O	I	N	7.7	4.6	26.6
244--0400 AV	6	246		16	PA	BR	AL	N	8.1	5.7	33.2
244S--0400 AV	6	246		16	PA	BR	AL	Y	8.1	5.7	33.2
244I--0400 AV	6	246		16	PA	BR	I	N	8.1	5.7	38.3
244O--0400 AV	6	246		16	PA	O	AL	N	8.1	5.6	33.2
244OS-0400 AV	6	246		16	PA	O	AL	Y	8.1	5.6	33.2
244OI-0400 AV	6	246		16	PA	O	I	N	8.1	5.6	38.3
244OH-0400AV	6	298		8	PA	O	AL	N	8.5	6.5	21.5
244OH-0600 AV	6	298		16	PA	O	AL	N	8.6	7.8	41.4
244OMH0400 AV	6	298		8	PA	O	AL	N	8.5	6.6	23
244OMH0600 AV	6	298		16	PA	O	AL	N	8.6	7.8	42.9

Dwg. No. B-6675-S Date: 6/3/96 Rev. 8/4/98 Drawn By: A.K.

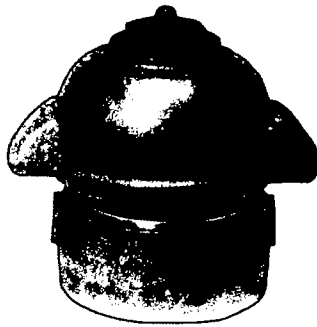
# Pressure/Vacuum Emergency Vents

## 143 and 143A

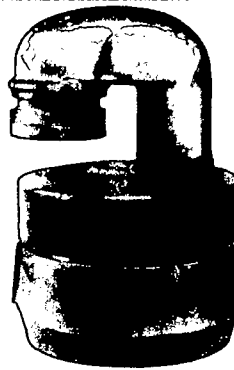
### Pressure/Vacuum Emergency Vent

Emergency vent with both pressure and vacuum relief for use on aboveground storage tanks. Pressure relief is handled in same manner as with the Morrison Fig. 244. Emergency vacuum relief can be utilized as a backup to the "normal" vent.

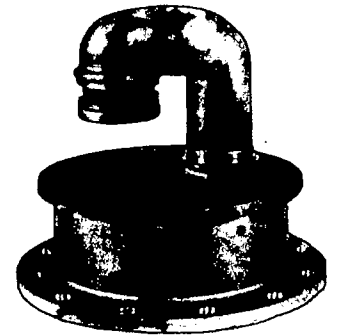
Opening pressure and vacuum settings are approximate.



6" Fig. 143



8" Fig. 143



8"/10" Fig. 143A

#### Construction Details

Body...aluminum  
 Cover...cast iron (except 10"—2.5 oz 143A is aluminum)  
 Vacuum Assembly and Seat Ring...brass  
 Vacuum Screen...type 304 stainless steel

Fig. No.	Size	Opening Pressure Setting (oz/in <sup>2</sup> )	Ship Weight (lbs)	Venting Capacity (CFH) (@ 2.5 PSI)	Mounting Connection	Vacuum Setting (oz/in <sup>2</sup> )
143	6"	8.0	22.50	246,130	Female NPT	1.0
		16.0	35.00	246,130	Female NPT	1.0
143A	8"	8.0	37.00	462,000	Female NPT	1.0
		16.0	43.00	462,000	Female NPT	1.0
143A	8"	8.0	44.00	509,550	Flanged	1.0
		16.0	74.00	509,550	Flanged	1.0
143A	10"	8.0	84.00	808,350	Flanged	1.0
		16.0	124.00	808,350	Flanged	1.0

**NOTE**... The 143 and 143A emergency vents should always be used in conjunction with a "normal vent" such as Morrison Fig. 548 or 548A.

#### WARNING!

The 244 and 143 Series emergency vents are for "emergency pressure relief only" and must be used in conjunction with a "normal vent" or pressure vacuum vent, such as a Morrison Fig. 354, 548, 748 OR 749.

#### WARNING!

The 244 and 143 series emergency vents must be properly sized and selected for each specific tank application in order to meet the proper "venting capacity" requirements.

# Emergency Vent Fittings

## 244A

### Flanged Adaptor

The 244A can be used with either Fig. 244F or Fig. 143A.

#### Construction Details

Carbon steel welded rim and skirt.

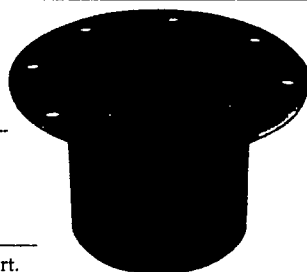


Fig. 244A

Size	Weight
6" (eight 7/8" holes on 11 1/2" B.C.)	12.0 lbs
8" (eight 7/8" holes on 11 3/4" B.C.)	19.0 lbs
10" (twelve 1" holes on 14 1/4" B.C.)	20.0 lbs

## 244C

### Companion Flange

The 244C can be used with either Fig. 244F or Fig. 143A.

#### Construction Details

Cast iron with NPT "center port" I.D.

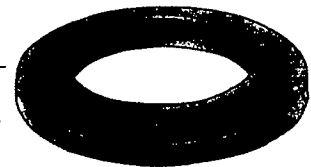


Fig. 244C

Size	Weight
8" (eight 7/8" holes on 11 3/4" B.C. w/8" NPT I.D.)	27.0 lbs
10" (twelve 1" holes on 14 1/4" B.C. w/10" NPT I.D.)	36.0 lbs

## 244N

### Pipe Nipple

Available (T.O.E.) Threaded One End or (T.B.E.) Threaded Both Ends.

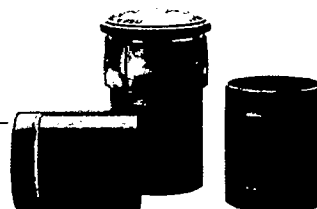


Fig. 244N

#### Construction Details

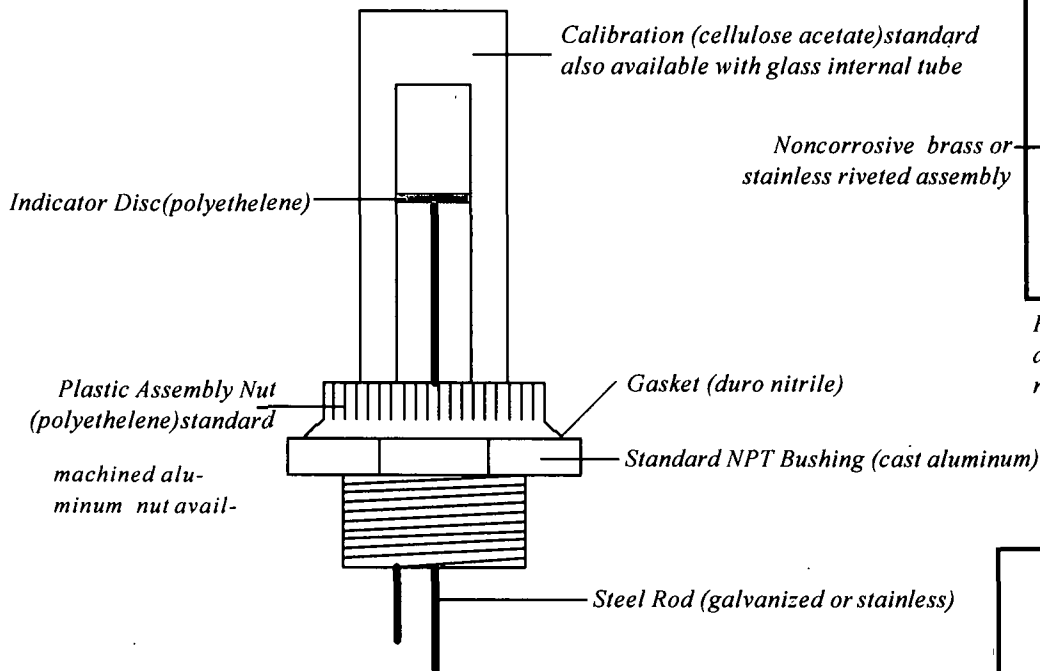
Carbon steel —NPT

Size	Weight
4" x 8"	7.0 lbs
6" x 8"	13.0 lbs
8" x 8"	20.0 lbs
8" x 12"	28.0 lbs

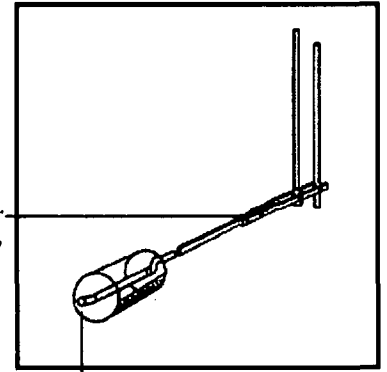
# THE AT -A- GLANCE

# Direct Reading Gauge

*One of the Industry's Most Popular Gauges*



Noncorrosive brass or  
stainless riveted assembly



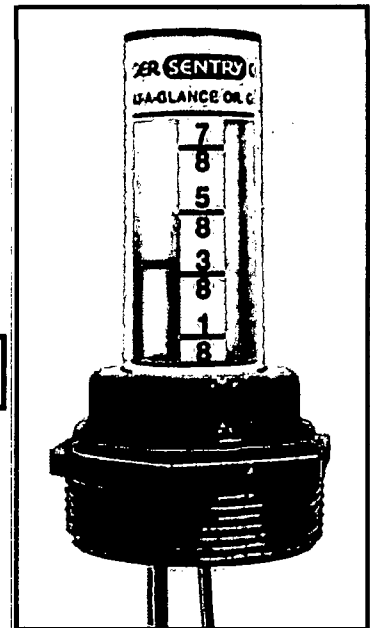
Float (polyethelene) standard  
also available in stainless steel and  
nitrotyll

Direct mechanical action, reliable construction and AT-A-GLANCE readability make this gauge a perfect choice for tanks with depths up to 12'.

- ⊙ Patented calibration assembly withstands pressure of 70 lbs. P.S.I.
- ⊙ Double plastic dome is almost indestructible.
- ⊙ Gallon readout available for standard 275 gal. oval tanks.
- ⊙ All internal tank parts available in stainless steel.
- ⊙ Repair parts available.

*Choose the model which best fits your tank: Type D-2 for 2" tank openings. Type D-1 1/2 for 1 1/2" tank openings.*

*Please specify model and tank depth when ordering. Packed individually.*



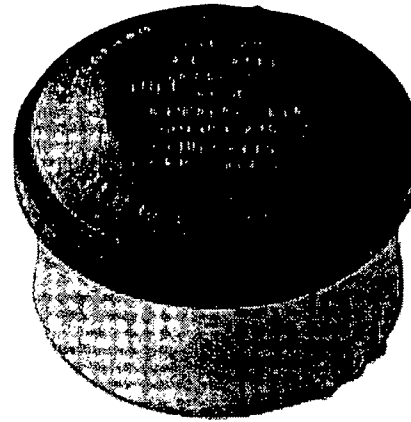
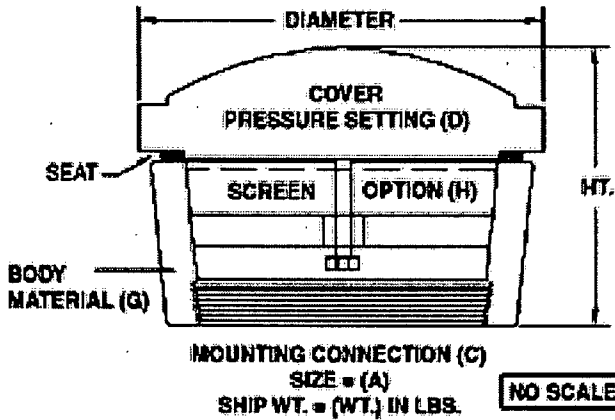
## KRUEGER **SENTRY** GAUGE

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1873 Siesta Lane: Green Bay, WI 54313-8021  
Phone: (920) 434-8860 : Fax (920) 434-8897  
Office Hours: 7:00 A.M. to 5:00 P.M. (CST)  
<http://www.kruegersentrygauge.com>





# MORRISON EMERGENCY VENT • SPECIFICATION SHEET • FIG. 244 SERIES



6" Fig. 244

## DESCRIPTION

UL Listed Emergency vent (pressure relief only) used on aboveground storage tanks, as a code requirement, to help prevent the tank from becoming over-pressurized and possibly rupturing if ever exposed to fire. Vent must be used in conjunction with a "normal vent." Correct application of this vent requires proper vent size and selection for the tank system in order to meet the specific venting capacity.

## SPECIFICATION / DETAIL OPTIONS

- A - Size: 6"
- B - Venting Capacity / CFH in 1000's
- C - Mounting connection: female N.P.T.- (BLANK); male N.P.T.- (M); flanged - (F)
- D - Pressure settings: 8, 10, 16 oz/in<sup>2</sup>. Pressure required to open vent.
- E - Cover: Cast iron painted -(PA) - Standard  
Cast iron powder coated -(PC) - Optional
- Bolt: steel-zinc plated
- F - Seat material: brass (BR) or viton o-ring(O)
- G - Body material: aluminum (AL) or iron (I)
- H - Screen :yes/no (3 mesh)
- DIA. - Diameter: dimension across vent.
- HT. - Height: dimension from base to top when closed.
- WT. - Shipping Weight

Conformance Including: NFPA 30, 30a, UL 142, UL 2244, API 2000, and PEI RP200.  
Additional References: NFPA 30, UL 142, Morrison Venting Guide.

I.D. NUMBER	A	B	C	D	E	F	G	H	DIA	HT	WT.
244M-0200 AV	6	246	M	8	PA	BR	AL	N	7.9	6.5	19.5
244MS-0200 AV	6	246	M	8	PA	BR	AL	Y	7.9	6.5	19.5
244MI-0200 AV	6	246	M	8	PA	BR	I	N	7.9	6.5	27.8
244OM-0200 AV	6	246	M	8	PA	O	AL	N	7.9	6.4	19.5
244OMS0200 AV	6	246	M	8	PA	O	AL	Y	7.9	6.4	19.5
244OMI0200 AV	6	246	M	8	PA	O	I	N	7.9	6.4	27.8
244M-0300 AV	6	246	M	10	PA	BR	AL	N	7.7	6.8	24
244MI-0300 AV	6	246	M	10	PA	BR	I	N	7.7	6.8	32.3
244OM-0300 AV	6	246	M	10	PA	O	AL	N	7.7	6.7	24
244OMI0300 AV	6	246	M	10	PA	O	I	N	7.7	6.7	32.3
244M-0400 AV	6	246	M	16	PA	BR	AL	N	8.1	7.8	35
244MS-0400 AV	6	246	M	16	PA	BR	AL	Y	8.1	7.8	35
244MI-0400 AV	6	246	M	16	PA	BR	I	N	8.1	7.8	43.3
244OM-0400 AV	6	246	M	16	PA	O	AL	N	8.1	7.7	35
244OMS0400 AV	6	246	M	16	PA	O	AL	Y	8.1	7.7	35
244OMI0400 AV	6	246	M	16	PA	O	I	N	8.1	7.7	43.3
244-0200 AV	6	246		8	PA	BR	AL	N	7.9	4.5	15.5
244S-0200 AV	6	246		8	PA	BR	AL	Y	7.9	4.5	15.5
244I-0200 AV	6	246		8	PA	BR	I	N	7.9	4.5	20.6
244O-0200 AV	6	246		8	PA	O	AL	N	7.9	4.2	15.5
244OS-0200 AV	6	246		8	PA	O	AL	Y	7.9	4.2	15.5
244OS-2200 AV	6	246		8	PC	O	AL	Y	7.9	4.2	15.5
244OI-0200 AV	6	246		8	PA	O	I	N	7.9	4.2	20.6
244-0300 AV	6	246		10	PA	BR	AL	N	7.7	4.8	21.5
244S-0300 AV	6	246		10	PA	BR	AL	Y	7.7	4.8	21.5
244I-0300 AV	6	246		10	PA	BR	I	N	7.7	4.8	26.6
244O-0300 AV	6	246		10	PA	O	AL	N	7.7	4.6	21.5
244OS-0300 AV	6	246		10	PA	O	AL	Y	7.7	4.6	21.5
244OI-0300 AV	6	246		10	PA	O	I	N	7.7	4.6	26.6
244-0400 AV	6	246		16	PA	BR	AL	N	8.1	5.7	33.2
244S-0400 AV	6	246		16	PA	BR	AL	Y	8.1	5.7	33.2
244I-0400 AV	6	246		16	PA	BR	I	N	8.1	5.7	38.3
244O-0400 AV	6	246		16	PA	O	AL	N	8.1	5.6	33.2
244OS-0400 AV	6	246		16	PA	O	AL	Y	8.1	5.6	33.2
244OI-0400 AV	6	246		16	PA	O	I	N	8.1	5.6	38.3
244OH-0400AV	6	298		8	PA	O	AL	N	8.5	6.5	21.5
244OH-0600 AV	6	298		16	PA	O	AL	N	8.6	7.8	41.4
244OMH0400 AV	6	298		8	PA	O	AL	N	8.5	6.6	23
244OMH0600 AV	6	298		16	PA	O	AL	N	8.6	7.8	42.9

Dwg. No. B-6675-S Date: 6/3/96 Rev. 8/4/98 Drawn By: A.K.

# Pressure/Vacuum Emergency Vents

## 143 and 143A

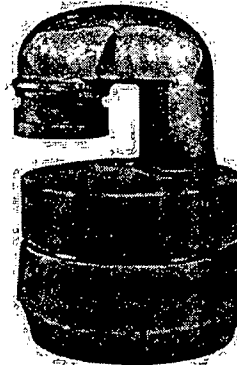
### Pressure/Vacuum Emergency Vent

Emergency vent with both pressure and vacuum relief for use on aboveground storage tanks. Pressure relief is handled in same manner as with the Morrison Fig. 244. Emergency vacuum relief can be utilized as a backup to the "normal" vent.

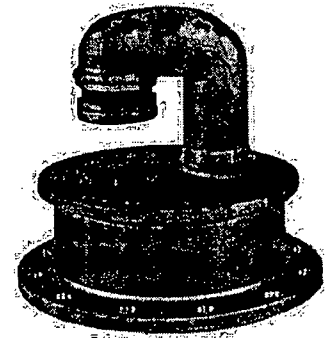
Opening pressure and vacuum settings are approximate.



6" Fig. 143



8" Fig. 143



8"/10" Fig. 143A

#### Construction Details

Body...aluminum  
 Cover...cast iron (except 10"—2.5 oz 143A is aluminum)  
 Vacuum Assembly and Seat Ring...brass  
 Vacuum Screen...type 304 stainless steel

Fig. No.	Size	Opening Pressure Setting (oz/in <sup>2</sup> )	Ship Weight (lbs)	Venting Capacity (CFH) (@ 2.5 PSI)	Mounting Connection	Vacuum Setting (oz/in <sup>2</sup> )
143	6"	8.0	22.50	246,130	Female NPT	1.0
		16.0	35.00	246,130	Female NPT	1.0
143A	8"	8.0	37.00	462,000	Female NPT	1.0
		16.0	43.00	462,000	Female NPT	1.0
143A	8"	8.0	44.00	509,550	Flanged	1.0
		16.0	74.00	509,550	Flanged	1.0
143A	10"	8.0	84.00	808,350	Flanged	1.0
		16.0	124.00	808,350	Flanged	1.0

**NOTE:** The 143 and 143A emergency vents should always be used in conjunction with a normal vent such as Morrison Fig. 548 or 548A.

**WARNING!**  
 The 244 and 143 Series emergency vents are for emergency pressure relief only and must be used in conjunction with a normal vent or pressure vacuum vent such as a Morrison Fig. 354, 548, 748 or 749.

**WARNING!**  
 The 244 and 143 series emergency vents must be properly sized and selected for each specific tank application in order to meet the proper venting capacity requirements.

# Emergency Vent Fittings

## 244A

### Flanged Adaptor

The 244A can be used with either Fig. 244F or Fig. 143A.

#### Construction Details

Carbon steel welded rim and skirt.

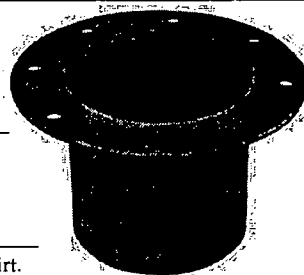


Fig. 244A

Size	Weight
6" (eight 7/8" holes on 11 1/2" B.C.)	12.0 lbs
8" (eight 7/8" holes on 14 1/2" B.C.)	19.0 lbs
10" (twelve 1" holes on 14 1/2" B.C.)	20.0 lbs

## 244C

### Companion Flange

The 244C can be used with either Fig. 244F or Fig. 143A.

#### Construction Details

Cast iron with NPT "center port" I.D.

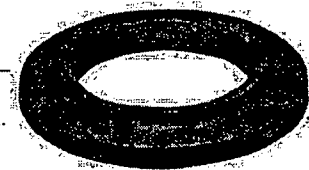


Fig. 244C

Size	Weight
8" (eight 7/8" holes on 11 1/2" B.C. w/8" NPT I.D.)	27.0 lbs
10" (twelve 1" holes on 14 1/2" B.C. w/10" NPT I.D.)	36.0 lbs

## 244N

### Pipe Nipple

Available (T.O.E.) Threaded One End or (T.B.E.) Threaded Both Ends.

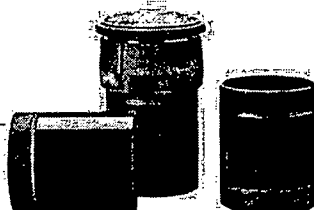


Fig. 244N

#### Construction Details

Carbon steel —NPT

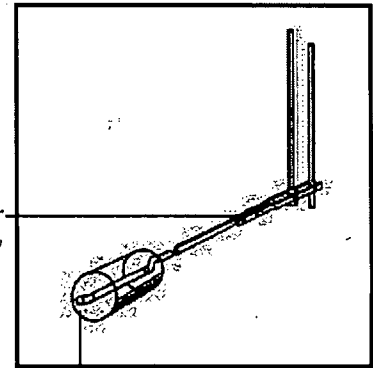
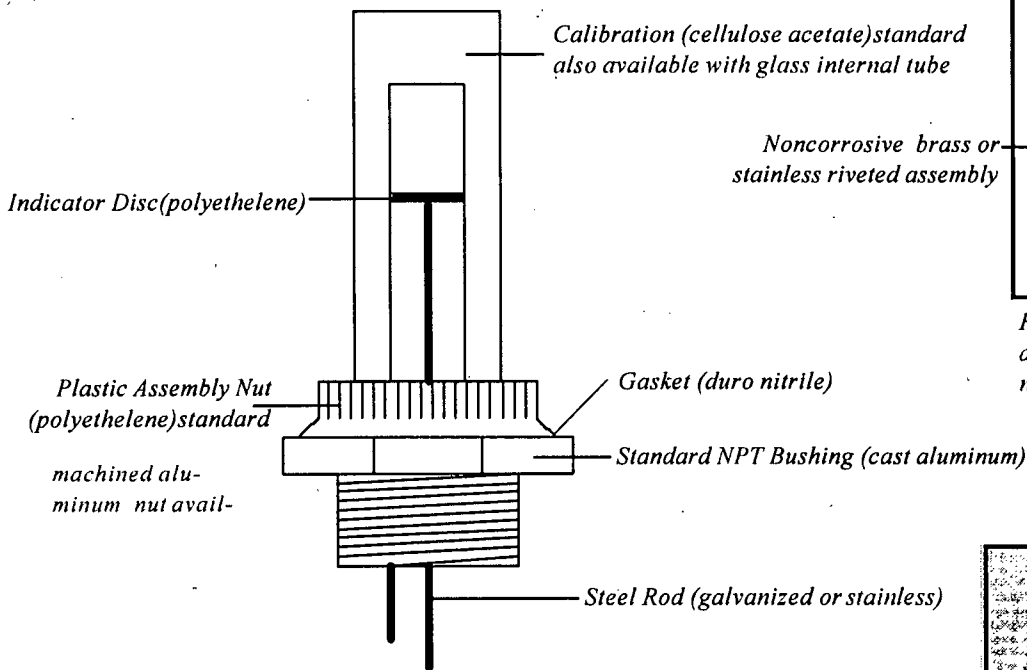
Size	Weight
4" x 8"	7.0 lbs
6" x 8"	13.0 lbs
8" x 8"	20.0 lbs
8" x 12"	28.0 lbs



# THE AT -A- GLANCE

# Direct Reading Gauge

*One of the Industry's Most Popular Gauges*



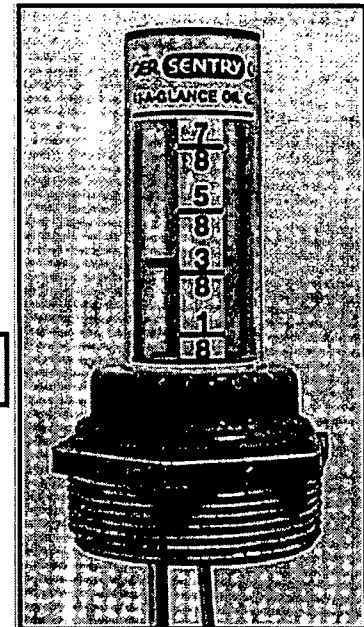
Float (polyethelene) standard also available in stainless steel and nitrophyll

Direct mechanical action, reliable construction and AT-A-GLANCE readability make this gauge a perfect choice for tanks with depths up to 12'.

- Patented calibration assembly withstands pressure of 70 lbs. P.S.I.
- Double plastic dome is almost indestructible.
- Gallon readout available for standard 275 gal. oval tanks.
- All internal tank parts available in stainless steel.
- Repair parts available.

Choose the model which best fits your tank: Type D-2 for 2" tank openings. Type D-1 1/2 for 1 1/2" tank openings.

Please specify model and tank depth when ordering. Packed individually.



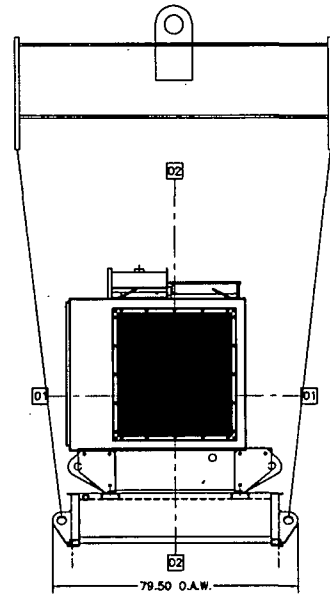
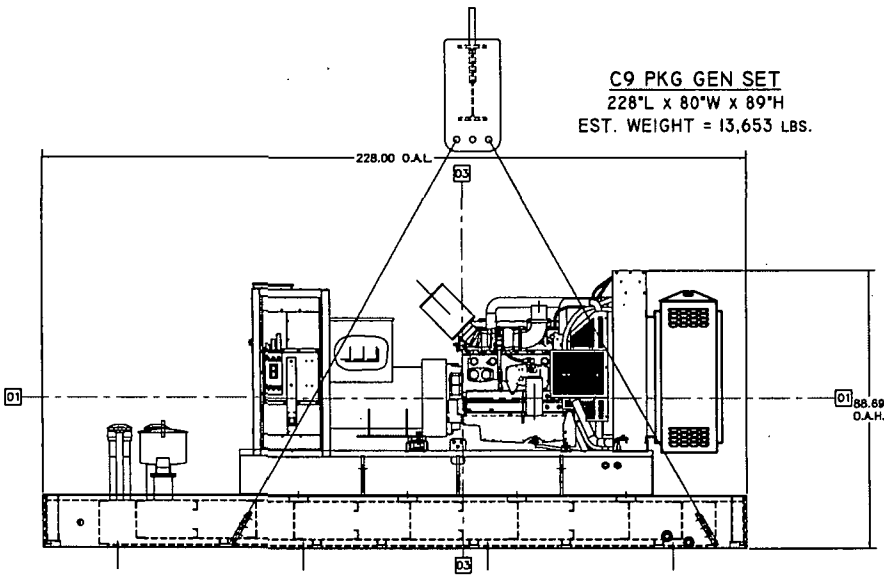
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Telex: 154221	Fax: (918) 436-1111
1000 W. 10th St. - Tulsa, Okla. 74103	Phone: (918) 436-1111
Telex: 154221	Fax: (918) 436-1111
1000 W. 10th St. - Tulsa, Okla. 74103	Phone: (918) 436-1111
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## **ABOVEGROUND STORAGE TANK**

**GUIDELINES FOR PERMIT TO INSTALL/REMOVE AST FOR DISPENSING OF FLAMMABLE OR COMBUSTIBLE LIQUIDS AND CONDITIONS FOR CLOSURE, EXCAVATION, REMOVAL & DISPOSAL, SOIL SAMPLING, PRELIMINARY SITE ASSESSMENTS**



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Page 2 of 2

### **GUIDELINES FOR PERMIT TO INSTALL AN AST FOR DISPENSING OF FLAMMABLE OR COMBUSTIBLE LIQUIDS**

1. Any aboveground storage tank installed within the City of Bakersfield for the purpose of Dispensing motor vehicle fuels must meet the requirements of Section 2206.2.3 (1) of the California Fire Code, 2007 Edition and Bakersfield Municipal Code.
2. The tank sizes shall not exceed a capacity of 12,000 gallons individual or 48,000 gallons aggregate.
3. Any aboveground storage of petroleum with a cumulative capacity of more than 1,320 gallon must complete a Spill Prevention, Control and Countermeasure (SPCC) Plan, per California Health & Safety Code Division 20 Chapter 6.67. A copy of this plan *must be submitted* to the Bakersfield Fire Department Office of Prevention Services located at 2101 H Street, Bakersfield, CA 93301 and can be reached at 661-326-3979.

### **APPLICATION PROCESS**

1. Provide two sets of a plot plan for the facility. This plan must include location of property lines, all buildings and openings to each building (i.e., windows, doors, vents, etc.), nearest road or intersection, all tanks piping, any fixed source of ignition (i.e., water heaters, forced air, AC units, etc.), all foundations, and equipment to be installed.
2. Construction details of tank pad seismic straps or fixtures, and crash posts.
3. Certification by the manufacturer that the tank meets the applicable codes.
4. Identification of the material to be stored in the aboveground storage tank.
5. Building permits for all reinforced concrete and electrical work must be obtained at the Bakersfield City Building Department located at 1715 Truxtun Avenue, Bakersfield, CA 661-326-3720. Construction cannot begin without their approved permit.
6. Complete any necessary application for the Air Pollution Control District for any storage or dispensing of gasoline or aviation fuel.
7. Applications must be fully completed or they will be returned - no exceptions.
8. Permit fee must be submitted with the application or the application will not be processed.
9. A final inspection must be completed before AST system is operational. This is to ensure compliance with the UFC regarding placement of placards, and where applicable, the testing of emergency shut-off device, and overfill/overspill.

### **GUIDELINES FOR PERMIT TO REMOVE AN AST**

1. Tanks may not be removed without an inspector present.
2. Tanks shall be either decontaminated or transported as hazardous waste.
3. A Hazardous Waste manifest will accompany either the rinseate or the tank and shall be present on site and presented upon request.
4. The interior of tanks being transported not as hazardous waste (decontaminated) shall have a lower explosive limit (LEL) of no greater than 5 percent immediately following cleaning and prior to the introduction of carbon dioxide (CO<sup>2</sup>).
5. The contractor shall certify on the inspection form that the cleaning process was properly conducted and the LEL results did not exceed 5 percent.
6. The decontaminated tank shall be inerted with the introduction of CO<sup>2</sup>, in the form of dry ice or from canisters.
7. A rate of 20 pounds of dry ice to 1,000 gallons of tank capacity, or the corresponding weight of CO<sup>2</sup>.
8. If canisters are used, they shall be bonded to the tanks.
9. A receipt for the CO<sup>2</sup> shall remain on site and presented upon request.
10. Prior to the removal of a decontaminated tank the LEL level will be no greater than 5 percent and the oxygen level will be no greater than 9 percent.

### **SOIL SAMPLING/PRELIMINARY SITE ASSESSMENT**

1. Soil samples shall be obtained under the direction of a professional engineer, geologist, or authorized representative of a State-approved laboratory.
2. Samples shall be collected, at a minimum, from depths of 2 and 6 feet below the tank bottom, dispensers, and product lines and from the following locations (unless waived by the local agency inspector on site):
  - A. From the center of the tank.
  - B. Below all dispensers.
  - C. Piping - every 20 feet and/or at connections, joints, bends, etc.
3. Any area of obvious contamination or likely areas of contamination may be required to be sampled.
4. All samples shall be analyzed by a State-certified laboratory.
5. Soil samples shall be analyzed for all known and suspected substances to have been stored in the tank. Additionally, methyl tertiary butyl ether (MTBE) shall be analyzed in all soil samples taken from beneath tank systems which contained any motor vehicle fuel.
6. All samples will be accompanied by a Chain-of-Custody sheet.
7. A soil sample report/preliminary assessment shall be submitted to the Office of Prevention Services within 5 days after results have been received and shall contain at a minimum the following information.
  - A. Name and location of where tanks were disposed.
  - B. Name and location of where rinseate was disposed.
  - C. A signed copy of the Hazardous Waste Manifest.
  - D. A tank disposal receipt from the scraping facility.
  - E. Copies of all lab data sheets and Chain-of-Custody documentation.
  - F. A plot plan showing the location of buildings, tanks, piping runs, dispensers, and ALL SAMPLE LOCATIONS WITH CORRESPONDING I.D. NUMBERS AND DEPTHS.

CSES

CESERS



**San Joaquin Valley**  
AIR POLLUTION CONTROL DISTRICT



**HEALTHY AIR LIVING™**



June 5, 2012

Chevron USA, Inc.  
PO Box 1392  
Bakersfield, CA 93302

Authority to Construct Number(s): **S-8148-1-0**

Rule 2010 3.0 – AUTHORITY TO CONSTRUCT

Enclosed please find Authority to Construct document(s) for your project. Please read the document(s) carefully and contact the Permit Services Division if the information does not appear correct or if you have any questions.

Remember to notify the Compliance Division when you begin operating to schedule a start-up inspection. After the Compliance Division has verified that the operation has satisfied all conditions of the Authority to Construct, a Permit to Operate may be issued. You will receive a Permit to Operate and billing, which must be paid to validate your Permit to Operate.

Contact the Permit Services Division prior to making changes to the equipment or operation, other than those described on the attached Authority to Construct document(s).

Permit Services Division or the Compliance Division can be reached at (661) 392-5500.

SEYED SADREDIN  
EXECUTIVE-DIRECTOR/APCO



# AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-8148-1-0

**ISSUANCE DATE:** 06/04/2012

**LEGAL OWNER OR OPERATOR:** CHEVRON USA INC  
**MAILING ADDRESS:** P.O. BOX 1392  
BAKERSFIELD, CA 93302

**LOCATION:** 9525 CAMINO MEDIA  
BAKERSFIELD, CA

**EQUIPMENT DESCRIPTION:**  
300 BHP CAT MODEL C9 TIER 3 CERTIFIED (OR EQUIVALENT) DIESEL-FIRED EMERGENCY STANDBY IC ENGINE  
POWERING AN ELECTRIC GENERATOR

## CONDITIONS

1. The permittee's request of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters [District Rule 2010]
2. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Alternative equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
4. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201]
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
7. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.**

Seyed Sadredin, Executive Director / APCO

8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
9. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart IIII]
10. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]
11. Emissions from this IC engine shall not exceed any of the following limits: 2.53 g-NOx/bhp-hr, 0.33 g-CO/bhp-hr, or 0.11 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
12. Emissions from this IC engine shall not exceed 0.05 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
13. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart IIII]
14. During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
15. An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
16. This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]
17. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
18. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]
19. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
20. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]







**CITY OF BAKERSFIELD  
BUILDING DEPARTMENT**  
1715 CHESTER AVE  
BAKERSFIELD CA 93301  
Office Phone: (661) 326-3720

**BUILDING PERMIT**

Application Number . . . . . 12-00000962 . . . . . Date 6/12/12  
 Property Address . . . . . 9525 CAMINO MEDIA  
 ATN (11 Digits) . . . . . 390-310-43-00-9  
 Application type description . . . . . COM ADD/ALT  
 Application valuation . . . . . 200000

Owner . . . . . Contractor  
 -----  
 CHEVRON USA INC . . . . . OWNER/BUILDER  
 P O BOX 1392  
 BAKERSFIELD CA 93302 . . . . . BAKERSFIELD CA 93301

-----  
**Work Description Information**  
 -----

COM ALT/REP/ADD . . . . . 1  
 Structure Information 000 000 . . . . . GENERATOR  
 Construction Type . . . . . UNKNOWN  
 Occupancy Type . . . . . UNKNOWN  
 Other struct info . . . . . FIRE SPRINKLERS n

Permit . . . . . COMMERCIAL ALTERATION  
 Additional desc . . . . .  
 Phone Access Code . . . . . 1175850  
 Permit Fee . . . . . 780.04 . . . . . Plan Check Fee . . . . . 638.23  
 Issue Date . . . . . 6/12/12 . . . . . Valuation . . . . . 200000  
 Expiration Date . . . . . 12/09/12

-----  
**Special Notes and Comments**  
 -----

"GENERATOR ENCLOSURE  
 "CHEVRON"

-----  
 Other Fees . . . . . FIRE FINAL INSPECTION . . . . . 96.00  
 -----

Fee summary	Charged	Paid	Credited	Due
Permit Fee Total	780.04	780.04	.00	.00
Plan Check Total	638.23	638.23	.00	.00
Other Fee Total	96.00	96.00	.00	.00
Grand Total	1514.27	1514.27	.00	.00

**CALL FOR INSPECTION**  
 (661) 323-INSP (or 4677)

Please input the Permit Number, the Job Address, and the Type of Inspection. Requests for inspection are accepted until 7 AM of the same day.

To schedule inspections on the internet site:  
<https://bakeweb.ci.bakersfield.ca.us/Click2GovBP/ScheduleInspections.jsp>

Inspector's office hours are: 8:00 - 8:30 AM

**DECLARATIONS**

Permit is issued in accordance with all applicable Federal, State and Local Ordinances. The permittee has properly signed and dated the reverse side of this form.

**This Permit expires after 180 days of inactivity.**

I have reviewed the above application, and find it to be correct/complete.

Permittee: \_\_\_\_\_ Date: \_\_\_\_\_

**EMISSIONS DATA [S9L04524]**

(S9L04524)-ENGINE (G5A06023)-GENERATOR (NBPO0323)-GENSET

**DECEMBER 17, 2012**

For Help Desk Phone Numbers [Click here](#)

## Engine Emissions Data

For Emissions feedback and questions contact: [engine\\_certification@cat.com](mailto:engine_certification@cat.com)

\*\*This link is case sensitive.\*\*

This emission data is Caterpillar's best estimate for this rating. If actual emissions are required then an emission test needs to be run on your engine.

Serial Number (Machine)	
Serial Number (Engine)	S9L04524
Sales Model	C9
Build Date	2012-10-10
Interlock Code Progression	No Interlock Code Progression
As Shipped Data	
Engine Arrangement Number	3950367
Certification Arrangement	
Test Spec Number	OK9838
Certification	EPA Emergency Stationary @ Constant
Labeled Model Year	2012
Family Code	CCPXL08.8NZS
Flash File	3488768
Flash File Progression	3488768
CORR FL Power at RPM	374 HP (279.0 KW ) at 1800 rpms
Advertised Power	280hp 1,800RPM
Total Displacement	8.8

This is not an official emission certificate. This is for emission data information only.

Caterpillar Confidential: Green  
 Content Owner: Shane Gilles  
 Web Master(s): [PSG Web Based Systems Support](#)  
 Current Date: Monday, December 17, 2012 3:08:51 PM  
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[Data Privacy Statement](#).

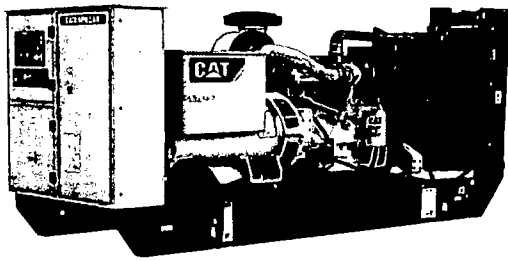


Image shown may not reflect actual package.

## STANDBY

**200 kW 250 kVA  
60 Hz 1800 rpm 480 Volts**

Caterpillar is leading the power generation marketplace with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

## FEATURES

### FUEL/EMISSIONS STRATEGY

- EPA Certified for Stationary Emergency Application (EPA Tier 3 emissions levels)

### DESIGN CRITERIA

- The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.

### UL 2200 / CSA - Optional

- UL 2200 listed packages
  - CSA Certified
- Certain restrictions may apply. Consult with your Cat® Dealer.

### FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested
- Flexible packaging options for easy and cost effective installation

### SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

### WORLDWIDE PRODUCT SUPPORT

- Cat dealers provide extensive post sale support including maintenance and repair agreements
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- The Cat® S-O-S<sup>SM</sup> program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

### CAT® C9 ATAAC DIESEL ENGINE

- Utilizes ACERT™ Technology
- Reliable, rugged, durable design
- Field-proven in thousands of applications worldwide
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight
- ADEM™A4 electronic engine control

### CAT GENERATOR

- Matched to the performance and output characteristics of Cat engines
- Load adjustment module provides engine relief upon load impact and improves load acceptance and recovery time
- UL 1446 Recognized Class H insulation

### CAT EMCP 4 CONTROL PANELS

- Simple user friendly interface and navigation
- Scalable system to meet a wide range of customer needs
- Integrated Control System and Communications Gateway

### SEISMIC CERTIFICATION

- Seismic Certification available
- Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength. IBC Certification requires that the anchoring system used is reviewed and approved by a Professional Engineer
- Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007
- Pre-approved by OSHPD and carries an OSP-0084-10 for use in healthcare projects in California

# STANDBY 200 ekW 250 kVA

60 Hz 1800 rpm 480 Volts



## FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	<ul style="list-style-type: none"> <li>• Light Duty Air filter</li> <li>• Service indicator</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Single element air filter</li> <li><input type="checkbox"/> Dual element air filter</li> <li><input checked="" type="checkbox"/> Heavy-duty dual element air filter with precleaner</li> <li><input type="checkbox"/> Air inlet shut-off</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Radiator package mounted</li> <li>• Coolant level sight gauge</li> <li>• Coolant drain line with valve</li> <li>• Fan and belt guards</li> <li>• Cat® Extended Life Coolant</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Radiator duct flange</li> <li><input checked="" type="checkbox"/> Low coolant level sensor</li> </ul>
Exhaust	<ul style="list-style-type: none"> <li>• Dry exhaust manifold</li> <li>• Exhaust flange outlet</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input checked="" type="checkbox"/> Critical Mufflers</li> <li><input type="checkbox"/> Stainless steel exhaust flex fittings with split cuff</li> <li><input type="checkbox"/> Manifold and turbocharger guards</li> <li><input type="checkbox"/> Elbows and through-wall kits</li> </ul>
Fuel	<ul style="list-style-type: none"> <li>• Primary fuel filter with integral water separator</li> <li>• Secondary fuel filters</li> <li>• Fuel priming pump</li> <li>• Engine fuel transfer pump</li> <li>• Fuel cooler</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Integral dual wall UL listed fuel tank bases</li> <li><input type="checkbox"/> Sub-base dual wall UL listed fuel tank base</li> <li><input type="checkbox"/> Manual transfer pump</li> <li><input type="checkbox"/> Fuel level switch</li> <li><input checked="" type="checkbox"/> Flexible fuel lines</li> </ul>
Generator	<ul style="list-style-type: none"> <li>• Class H insulation</li> <li>• Class H temperature Rise</li> <li>• VR6 voltage regulator with 3-phase sensing with load adjustment module</li> <li>• IP23 Protection</li> <li>• Power cable termination box (NEMA mech lug holes)</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Oversize generators</li> <li><input checked="" type="checkbox"/> Digital voltage regulator with kVAR/PF control</li> <li><input checked="" type="checkbox"/> Anti-condensation heaters</li> <li><input type="checkbox"/> Coastal Insulation Protection (CIP)</li> <li><input checked="" type="checkbox"/> Permanent magnet excitation (PMG)</li> <li><input type="checkbox"/> Internal excited (IE)</li> <li><input checked="" type="checkbox"/> Reactive droop</li> </ul>
Power Termination	<ul style="list-style-type: none"> <li>• Power center houses EMCP controller and control terminations (rear mounted)</li> <li>• Segregated low voltage wiring termination panel</li> <li>• Bottom cable entry</li> <li>• IP22 Protection</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Power center mounting option (right side)</li> <li><input checked="" type="checkbox"/> Circuit breakers, UL listed, 3 pole (80% &amp; <b>100%</b> rated)</li> <li><input type="checkbox"/> Circuit breakers, IEC compliant, 3-4 pole (100%)</li> <li><input type="checkbox"/> Power terminal strips (NEMA or IEC mechanical lug holes)</li> <li><input checked="" type="checkbox"/> Multiple circuit breakers <b>TWO (2)</b></li> <li><input checked="" type="checkbox"/> Shunt trip</li> <li><input checked="" type="checkbox"/> Auxiliary contacts</li> </ul>
Governor	<ul style="list-style-type: none"> <li>• ADEM™A4</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Load share module</li> </ul>
Control Panel	<ul style="list-style-type: none"> <li>• EMCP 4.1 (mounted in power center)</li> <li>• Speed adjust</li> <li>• Voltage adjustment</li> <li>• Emergency stop pushbutton</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> EMCP 4.2</li> <li><input checked="" type="checkbox"/> Local annunciator module (NFPA 99/110)</li> <li><input checked="" type="checkbox"/> Remote annunciator module (NFPA 99/110)</li> <li><input checked="" type="checkbox"/> Digital I/O module</li> </ul>
Lube	<ul style="list-style-type: none"> <li>• Lubricating oil and filter</li> <li>• Oil drain line with valves</li> <li>• Fumes disposal</li> <li>• Lube oil level indicator</li> <li>• Oil cooler</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Oil temperature sensor</li> <li><input type="checkbox"/> Manual pump pump</li> </ul>
Mounting	<ul style="list-style-type: none"> <li>• Formed steel wide base frame</li> <li>• Linear vibration isolation-seismic zone 4</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Off-skid base</li> <li><input checked="" type="checkbox"/> Formed steel wide base frame</li> </ul>
Starting/Charging	<ul style="list-style-type: none"> <li>• 24 volt starting motor</li> <li>• 24 volt, 45 amp charging alternator</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Jacket water heater with shut off valves</li> <li><input type="checkbox"/> Block heater</li> <li><input type="checkbox"/> Ether starting aid</li> <li><input checked="" type="checkbox"/> Battery disconnect switch</li> <li><input checked="" type="checkbox"/> Battery chargers (5 or <b>10 amp</b>)</li> <li><input type="checkbox"/> Oversize batteries</li> <li><input checked="" type="checkbox"/> Batteries with rack and cables</li> </ul>
General	<ul style="list-style-type: none"> <li>• Paint - Caterpillar Yellow except rails and radiators gloss black</li> <li>• Flywheel housing - SAE No.1</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> UL 2200 package</li> <li><input type="checkbox"/> CSA Certification</li> <li><input checked="" type="checkbox"/> Weather protective enclosure</li> <li><input type="checkbox"/> Sound attenuated protective enclosure</li> <li><input checked="" type="checkbox"/> Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007</li> </ul>

# STANDBY 200 ekW 250 kVA

60 Hz 1800 rpm 480 Volts



## SPECIFICATIONS

### CAT GENERATOR

Frame size.....	Upsize to 5024L	<del>LC5014F</del>
Excitation.....	Permanent Mag.	<del>Self Excitation</del>
Pitch.....		0.6667
Number of poles.....		4
Number of bearings.....		Single bearing
Number of Leads.....		012
Insulation.....	UL 1446 Recognized Class H with tropicalization and antiabrasion	
	- Consult your Caterpillar dealer for available voltages	
IP Rating.....	Drip Proof IP23	
Alignment.....	Pilot Shaft	
Overspeed capability.....		125
Wave form Deviation (Line to Line).....		2%
Voltage regulator.....	Three phase sensing	
Voltage regulation.....	Less than +/- 1/2% (steady state)	

### CAT DIESEL ENGINE

C9 ATAAC, I-6, 4-Stroke Water-cooled Diesel	
Bore.....	112.00 mm (4.41 in)
Stroke.....	149.00 mm (5.87 in)
Displacement.....	8.80 L (537.01 in <sup>3</sup> )
Compression Ratio.....	16.1:1
Aspiration.....	Air-to-Air Aftercooled
Fuel System.....	Hydraulic electronic unit injection
Governor Type.....	Caterpillar ADEM control system

### CAT EMCP 4 SERIES CONTROLS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed and Voltage Adjust
- Engine Cycle Crank
- 24-volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions

Digital indication for:

- RPM
- DC volts
- Operating hours
- Oil pressure (psi, kPa or bar)
- Coolant temperature
- Volts (L-L & L-N), frequency (Hz)
- Amps (per phase & average)
- kW, kVA, kVAR, kW-hr, %kW, PF (4.2 only)

Warning/shutdown with common LED indication of:

- Low oil pressure
- High coolant temperature
- Overspeed
- Emergency stop
- Failure to start (overcrank)
- Low coolant temperature
- Low coolant level

Programmable protective relaying functions:

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under Frequency (81 o/u)
- Reverse Power (kW) (32) (4.2 only)
- Reverse reactive power (kVA) (32RV)
- Overcurrent (50/51)

Communications:

- Four digital inputs (4.1)
- Six digital inputs (4.2 only)
- Four relay outputs (Form A)
- Two relay outputs (Form C)
- Two digital outputs
- Customer data link (Modbus RTU) (4.2 only)
- Accessory module data link (4.2 only)
- Serial annunciator module data link (4.2 only)
- Emergency stop pushbutton

Compatible with the following:

- Digital I/O module
- Local Annunciator
- Remote CAN annunciator
- Remote serial annunciator

# STANDBY 200 ekW 250 kVA

60 Hz 1800 rpm 480 Volts



## TECHNICAL DATA

Open Generator Set - - 1800 rpm/60 Hz/480 Volts	EM0095	
<b>Tier 3</b>		
<b>Generator Set Package Performance</b> Genset Power rating @ 0.8 pf Genset Power rating with fan	250 kVA 200 ekW	
<b>Coolant to aftercooler</b> Coolant to aftercooler temp max	49 °C	120 °F
<b>Fuel Consumption</b> 100% load with fan 75% load with fan 50% load with fan	58.2 L/hr 46.6 L/hr 34.9 L/hr	15.4 Gal/hr 12.3 Gal/hr 9.2 Gal/hr
<b>Cooling System<sup>1</sup></b> Air flow restriction (system) Air flow (max @ rated speed for radiator arrangement) Engine Coolant capacity with radiator/exp. tank Engine coolant capacity Radiator coolant capacity	0.12 kPa 497 m <sup>3</sup> /min 36.0 L 22.0 L 14.0 L	0.48 in. water 17551 cfm 9.5 gal 5.8 gal 3.7 gal
<b>Inlet Air</b> Combustion air inlet flow rate	22.0 m <sup>3</sup> /min	776.9 cfm
<b>Exhaust System</b> Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	435.7 °C 53.8 m <sup>3</sup> /min 170 mm 5.9 kPa	816.3 °F 1899.9 cfm 7 in 23.7 in. water
<b>Heat Rejection</b> Heat rejection to coolant (total) Heat rejection to exhaust (total) Heat rejection to aftercooler Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator	87 kW 227 kW 58 kW 14 kW 15.7 kW	4948 Btu/min 12909 Btu/min 3298 Btu/min 796 Btu/min 892.9 Btu/min
<b>Alternator<sup>2</sup></b> Motor starting capability @ 30% voltage dip Frame Temperature Rise	454 skVA LC5014F 130 °C	234 °F
<b>Lube System</b> Sump refill with filter	39.0 L	10.3 gal
<b>Emissions (Nominal)<sup>3</sup></b> NOx g/hp-hr CO g/hp-hr HC g/hp-hr PM g/hp-hr	2.52 g/hp-hr .33 g/hp-hr .11 g/hp-hr .046 g/hp-hr	

<sup>1</sup> For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

<sup>2</sup> Generator temperature rise is based on a 40° C (104° F) ambient per NEMA MG1-32.

<sup>3</sup> Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77°F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

# STANDBY 200 ekW 250 kVA

60 Hz 1800 rpm 480 Volts



## RATING DEFINITIONS AND CONDITIONS

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**Meets or Exceeds International Specifications:** AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, UL508A, 72/23/EEC, 98/37/EC, 2004/108/EC

**Standby** - Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year. Standby power in accordance with ISO8528. Fuel stop power in accordance with ISO3046. Standby ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the shutdown temperature.

**Ratings** are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions. **Fuel rates** are based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Cat representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.



# STANDBY 200 ekW 250 kVA

60 Hz 1800 rpm 480 Volts



## DIMENSIONS

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Package Dimensions	
Length	Information not available at this time.
Width	
Height	

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #).

Performance No.: EM0095

Feature Code: C09DE38

Gen. Arr. Number: 3405265

Source: U.S. Sourced

July 19 2012

20506012

[www.Cat-ElectricPower.com](http://www.Cat-ElectricPower.com)

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**PERFORMANCE DATA[EM0095]**

August 1, 2012

Performance Number: EM0095

Change Level: 01

SALES MODEL:	C9	COMBUSTION:	DI
ENGINE POWER (BHP):	312	ENGINE SPEED (RPM):	1,800
GEN POWER W/O FAN (EKW):	214.0	HERTZ:	60
GEN POWER WITH FAN (EKW):	200.0	FAN POWER (HP):	18.8
COMPRESSION RATIO:	16.1	ASPIRATION:	TA
APPLICATION:	PACKAGED GENSET	AFTERCOOLER TYPE:	ATAAC
RATING LEVEL:	STANDBY	AFTERCOOLER CIRCUIT TYPE:	JW+OC, ATAAC
PUMP QUANTITY:	1	INLET MANIFOLD AIR TEMP (F):	120
FUEL TYPE:	DIESEL	JACKET WATER TEMP (F):	192.2
MANIFOLD TYPE:	DRY	TURBO CONFIGURATION:	SINGLE
REF EXH STACK DIAMETER (IN):	4	TURBO QUANTITY:	1
MAX OPERATING ALTITUDE (FT):	3,281	TURBOCHARGER MODEL:	S310-1.25
		CERTIFICATION YEAR:	2005
		PISTON SPD @ RATED ENG SPD (FT/MIN):	1,759.8

**General Performance Data**

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (GAL/HR)	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP
EKW	%	BHP	PSI	LB/BHP-HR	GAL/HR	IN-HG	DEG F	DEG F	IN-HG	DEG F
200.0	100	310	254	0.347	15.4	63.3	121.4	1,059.4	41.9	816.2
180.0	90	281	230	0.351	14.1	58.8	121.1	1,030.1	37.9	801.5
160.0	80	252	206	0.358	12.9	54.3	120.8	1,001.3	34.4	791.7
150.0	75	237	194	0.363	12.3	52.0	120.7	987.0	32.7	787.4
140.0	70	223	182	0.368	11.7	49.6	120.6	972.9	31.0	783.1
120.0	60	194	159	0.380	10.5	44.6	120.5	945.1	27.5	773.5
100.0	50	165	135	0.392	9.2	37.6	120.5	911.8	23.4	758.6
80.0	40	135	111	0.406	7.8	30.1	120.7	887.3	19.1	739.4
60.0	30	108	87	0.422	6.4	22.7	121.1	812.1	14.8	716.8
50.0	25	91.7	75	0.432	5.7	19.0	121.2	778.4	12.7	701.7
40.0	20	77.1	63	0.445	4.9	15.4	119.9	718.0	10.8	655.1
20.0	10	47.9	39	0.484	3.3	8.1	118.2	568.4	7.2	533.3

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
EKW	%	BHP	IN-HG	DEG F	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
200.0	100	310	64	364.6	775.5	1,898.6	3,372.2	3,479.6	731.6	680.6
180.0	90	281	60	345.9	743.3	1,789.3	3,215.9	3,314.5	697.6	650.5
160.0	80	252	55	327.2	710.7	1,681.4	3,059.8	3,149.8	660.6	617.6
150.0	75	237	53	317.8	693.3	1,627.9	2,977.8	3,063.6	641.8	600.8
140.0	70	223	50	308.5	675.0	1,574.8	2,893.0	2,974.6	623.0	583.9
120.0	60	194	45	289.8	635.8	1,469.6	2,715.1	2,788.6	585.9	550.5
100.0	50	165	39	262.8	579.3	1,334.4	2,477.4	2,524.3	538.5	507.3
80.0	40	135	31	231.7	517.4	1,174.4	2,202.7	2,238.8	481.6	454.8
60.0	30	108	23	199.2	455.1	998.0	1,918.1	1,956.5	417.1	395.1
50.0	25	91.7	20	182.4	423.9	903.7	1,776.8	1,816.5	382.6	363.0
40.0	20	77.1	16	165.7	392.6	806.7	1,643.0	1,677.3	355.8	338.7
20.0	10	47.9	9	131.8	329.8	601.6	1,378.0	1,401.2	297.9	288.0

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHUAUST RECOVERY TO 360F	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
200.0	100	310	4,948	820	12,925	6,806	1,757	3,284	13,159	32,984	35,136
180.0	90	281	4,661	708	12,017	6,264	1,610	2,895	11,923	30,232	32,204
160.0	80	252	4,429	629	11,207	5,813	1,474	2,529	10,685	27,676	29,482
150.0	75	237	4,317	594	10,805	5,593	1,407	2,351	10,068	26,412	28,136
140.0	70	223	4,205	558	10,398	5,372	1,339	2,177	9,450	25,146	26,786
120.0	60	194	3,970	457	9,557	4,916	1,202	1,841	8,214	22,566	24,038
100.0	50	165	3,873	577	8,441	4,283	1,054	1,412	6,978	19,789	21,081
80.0	40	135	3,330	640	7,250	3,611	897	979	5,741	16,841	17,940
60.0	30	108	2,949	516	6,077	2,963	732	600	4,505	13,750	14,647
50.0	25	91.7	2,745	396	5,479	2,633	647	435	3,887	12,150	12,943
40.0	20	77.1	2,534	422	4,668	2,098	560	302	3,269	10,508	11,193
20.0	10	47.9	2,082	321	3,052	1,039	379	88	2,032	7,111	7,574

Emissions Data

RATED SPEED POTENTIAL SITE VARIATION: 1800 RPM

GENSET POWER WITH FAN	EKW	200.0	160.0	100.0	60.0	20.0
ENGINE POWER	BHP	310	237	165	91.7	47.9
PERCENT LOAD	%	100	75	60	25	10
TOTAL NOX (AS NO2)	G/HR	841	543	317	189	177
TOTAL CO	G/HR	188	175	213	255	236
TOTAL HC	G/HR	65	75	78	70	76
PART MATTER	G/HR	27.8	35.1	48.4	49.0	23.8
TOTAL NOX (AS NO2)	(CORR 5% O2) MG/NM3	1,383.5	1,115.7	865.8	848.0	1,482.0
TOTAL CO	(CORR 5% O2) MG/NM3	279.0	324.6	528.5	1,056.6	1,738.8
TOTAL HC	(CORR 5% O2) MG/NM3	84.8	122.7	177.3	251.0	501.3
PART MATTER	(CORR 5% O2) MG/NM3	34.5	57.9	120.4	179.1	136.9
TOTAL NOX (AS NO2)	(CORR 5% O2) PPM	674	543	422	413	712
TOTAL CO	(CORR 5% O2) PPM	223	260	421	845	1,391
TOTAL HC	(CORR 5% O2) PPM	158	229	331	469	936
TOTAL NOX (AS NO2)	G/HP-HR	2.72	2.29	1.93	2.06	3.69
TOTAL CO	G/HP-HR	0.61	0.74	1.29	2.78	4.92
TOTAL HC	G/HP-HR	0.21	0.32	0.47	0.76	1.58
PART MATTER	G/HP-HR	0.09	0.15	0.29	0.53	0.49
TOTAL NOX (AS NO2)	LB/HR	1.85	1.20	0.70	0.42	0.39
TOTAL CO	LB/HR	0.41	0.39	0.47	0.56	0.52
TOTAL HC	LB/HR	0.14	0.17	0.17	0.15	0.17
PART MATTER	LB/HR	0.08	0.08	0.11	0.11	0.05

RATED SPEED NOMINAL DATA: 1800 RPM

GENSET POWER WITH FAN	EKW	200.0	160.0	100.0	60.0	20.0
ENGINE POWER	BHP	310	237	165	91.7	47.9
PERCENT LOAD	%	100	75	60	25	10
TOTAL NOX (AS NO2)	G/HR	779	502	294	175	164
TOTAL CO	G/HR	100	94	114	137	126
TOTAL HC	G/HR	34	40	41	37	40
TOTAL CO2	KG/HR	151	122	91	56	33
PART MATTER	G/HR	14.2	18.0	24.8	25.1	12.2
TOTAL NOX (AS NO2)	(CORR 5% O2) MG/NM3	1,281.1	1,033.0	801.6	785.2	1,353.7
TOTAL CO	(CORR 5% O2) MG/NM3	149.2	173.6	281.5	565.0	929.8
TOTAL HC	(CORR 5% O2) MG/NM3	44.8	64.9	93.8	132.8	265.3
PART MATTER	(CORR 5% O2) MG/NM3	17.7	29.7	61.8	91.8	70.2
TOTAL NOX (AS NO2)	(CORR 5% O2) PPM	624	503	390	382	659
TOTAL CO	(CORR 5% O2) PPM	119	139	225	452	744
TOTAL HC	(CORR 5% O2) PPM	84	121	175	248	495
TOTAL NOX (AS NO2)	G/HP-HR	2.52	2.12	1.79	1.91	3.42
TOTAL CO	G/HP-HR	0.32	0.40	0.69	1.49	2.63
TOTAL HC	G/HP-HR	0.11	0.17	0.25	0.40	0.84
PART MATTER	G/HP-HR	0.05	0.08	0.15	0.27	0.25
TOTAL NOX (AS NO2)	LB/HR	1.72	1.11	0.65	0.39	0.36
TOTAL CO	LB/HR	0.22	0.21	0.25	0.30	0.28
TOTAL HC	LB/HR	0.08	0.09	0.09	0.08	0.09
TOTAL CO2	LB/HR	334	269	201	123	72
PART MATTER	LB/HR	0.03	0.04	0.05	0.06	0.03
OXYGEN IN EXH	%	11.7	12.6	13.5	14.5	16.2
DRY SMOKE OPACITY	%	0.4	0.6	1.0	1.6	0.7
BOSCH SMOKE NUMBER		0.23	0.50	0.92	1.36	0.56

**Altitude Derate Data**

**ALTITUDE CORRECTED POWER CAPABILITY (BHP)**

AMBIENT OPERATING TEMP (F)	50	60	70	80	90	100	110	120	130	NORMAL
ALTITUDE (FT)										
0	312	312	312	312	312	312	312	312	312	312
1,000	312	312	312	312	312	312	312	312	311	312
2,000	312	312	312	312	312	312	309	304	299	312
3,000	312	312	312	312	308	303	297	292	287	312
4,000	312	312	307	301	296	291	286	281	276	310
5,000	307	301	295	290	284	279	274	270	265	300
6,000	294	289	283	278	273	268	263	259	254	290
7,000	282	277	272	267	262	257	253	248	244	280
8,000	271	266	261	256	251	247	242	238	234	271
9,000	260	255	250	245	241	237	232	228	224	262
10,000	249	244	240	235	231	227	223	219	215	252
11,000	238	234	229	225	221	217	213	210	206	243
12,000	228	224	220	216	212	208	204	201	197	235
13,000	218	214	210	206	203	199	195	192	189	226
14,000	209	205	201	197	194	190	187	184	181	218
15,000	200	196	192	189	185	182	179	176	173	210

**Cross Reference**

Arrangement Number	Effective Serial Number	Engine Arrangement	
		Engineering Model	Engineering Model Version
2591808	S9L00003	GS322	

Test Spec	Setting	Effective Serial Number	Test Specification Data			
			Engine Arrangement	Governor Type	Default Low Idle Speed	Default High Idle Speed
0K6797	PP5628	S9L00003	2591808	ELEC		

**Performance Parameter Reference**

**Parameters Reference:DM9600-05**  
**PERFORMANCE DEFINITIONS**

PERFORMANCE DEFINITIONS DM9600

APPLICATION:

Engine performance tolerance values below are representative of a typical production engine tested in a calibrated dynamometer test cell at SAE J1995 standard reference conditions. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test Facilities to assure accurate calibration of test equipment. Engine test data is corrected in accordance with SAE J1995. Additional reference material SAE J1228, J1349, ISO 8665, 3048-1:2002E, 3046-3:1989, 1585, 2534, 2288, and 9249 may apply in part or are similar to SAE J1995. Special engine rating request(SERR)test data shall be noted.

PERFORMANCE PARAMETER TOLERANCE FACTORS:

Power	+/- 3%
Torque	+/- 3%
Exhaust stack temperature	+/- 8%
Inlet airflow	+/- 5%
Intake manifold pressure-gage	+/- 10%
Exhaust flow	+/- 6%
Specific fuel consumption	+/- 3%
Fuel rate	+/- 5%
Heat rejection	+/- 5%
Heat rejection exhaust only	+/- 10%

Torque is included for truck and industrial applications, do not use for Gen Set or steady state applications.

On C7 - C18 engines, at speeds of 1100 RPM and under these values are provided for reference only, and may not meet the tolerance listed.

These values do not apply to C280/3600. For these models, see the tolerances listed below.

C280/3600 HEAT REJECTION TOLERANCE FACTORS:

Heat rejection	+/- 10%
Heat rejection to Atmosphere	+/- 50%
Heat rejection to Lube Oil	+/- 20%
Heat rejection to Aftercooler	+/- 5%

TEST CELL TRANSDUCER TOLERANCE FACTORS:

Torque	+/- 0.5%
Speed	+/- 0.2%
Fuel flow	+/- 1.0%
Temperature	+/- 2.0 C degrees
Intake manifold pressure	+/- 0.1 kPa

OBSERVED ENGINE PERFORMANCE IS CORRECTED TO SAE J1995 REFERENCE AIR AND FUEL CONDITIONS.

REFERENCE ATMOSPHERIC INLET AIR

FOR 3500 ENGINES AND SMALLER

SAE J1228 reference atmospheric pressure is 100 KPA (29.61 in hg) and standard temperature is 25 (77) at 60% relative humidity.

FOR 3600 ENGINES

Engine rating obtained and presented in accordance with ISO 3048/1 and SAE J1995 JAN90 standard reference conditions of 25, 100 KPA 30% relative humidity and 150M altitude at the stated aftercooler water temperature.

MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE

Location for air temperature measurement air cleaner Inlet at stabilized operating conditions.

## PERFORMANCE DATA[EM0095]

### REFERENCE EXHAUST STACK DIAMETER

The Reference Exhaust Stack Diameter published with this dataset is only used for the calculation of Smoke Opacity values displayed in this dataset. This value does not necessarily represent the actual stack diameter of the engine due to the variety of exhaust stack adapter options available. Consult the price list, engine order or general dimension drawings for the actual stack diameter size ordered or options available.

### REFERENCE FUEL

#### DIESEL

Reference fuel is #2 distillate diesel with a 35API gravity; A lower heating value is 42,780 KJ/KG (18,390 BTU/LB) when used at 29 (84.2), where the density is 838.9 G/Liter (7.001 Lbs/Gal).

#### GAS

Reference natural gas fuel has a lower heating value of 33.74 KJ/L (905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500 BTU/CU FT) lower heating value gas. Propane ratings are based on 87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.

### ENGINE POWER (NET) IS THE CORRECTED FLYWHEEL POWER (GROSS) LESS EXTERNAL AUXILIARY LOAD

Engine corrected gross output includes the power required to drive standard equipment; lube oil, scavenge lube oil, fuel transfer, common rail fuel, separate circuit aftercooler and jacket water pumps. Engine net power available for the external (flywheel) load is calculated by subtracting the sum of auxiliary load from the corrected gross flywheel output power. Typical auxiliary loads are radiator cooling fans, hydraulic pumps, air compressors and battery charging alternators.

### ALTITUDE CAPABILITY

Altitude capability is the maximum altitude above sea level at standard temperature and standard pressure at which the engine could develop full rated output power on the current performance data set. Standard temperature values versus altitude could be seen on TM2001.

Engines with ADEM MEUI and HEUI fuel systems operating at conditions above the defined altitude capability derate for atmospheric pressure and temperature conditions outside the values defined, see TM2001. Mechanical governor controlled unit injector engines require a setting change for operation at conditions above the altitude defined on the engine performance sheet. See your Caterpillar technical representative for non standard ratings.

### REGULATIONS AND PRODUCT COMPLIANCE

TMI Emissions information is presented at 'nominal' and 'Potential Site Variation' values for standard ratings. No tolerances are applied to the emissions data. These values are subject to change at any time. The controlling federal and local emission requirements need to be verified by your Caterpillar technical representative. Log on to the Technology and Solutions Divisions (T&SD) web page ([http://tsd.cat.com/etsd/index.cfm?tech\\_id=2635ICAL](http://tsd.cat.com/etsd/index.cfm?tech_id=2635ICAL)) for information including federal regulation applicability and time lines for implementation. Information for labeling and tagging requirements is also provided.

### NOTES:

Regulation watch covers regulations in effect and future regulation changes for world, federal, state and local. This page includes items on the watch list where a regulation change or product change might be pending and may need attention of the engine product group. For additional emissions information log on to the TMI web page.

Additional product information for specific market application is available.

Customer's may have special emission site requirements that need to be verified by the Caterpillar Product Group engineer.

### HEAT REJECTION DEFINITIONS:

Diesel Circuit Type and HHV Balance : DM9500

### EMISSIONS DEFINITIONS:

Emissions : DM1178



## PERFORMANCE DATA[EM0095]

August 1, 2012

SOUND DEFINITIONS:  
Sound Power : DM8702

Sound Pressure : TM7080

RATING DEFINITIONS:  
Agriculture : TM6008

Fire Pump : TM6009

Generator Set : TM6035

Generator (Gas) : TM6041

Industrial Diesel : TM6010

Industrial (Gas) : TM6040

Irrigation : TM5749

Locomotive : TM6037

Marine Auxiliary : TM6036

Marine Prop (Except 3600) : TM5747

Marine Prop (3600 only) : TM5748

MSHA : TM6042

Oil Field (Petroleum) : TM6011

Off-Highway Truck : TM6039

On-Highway Truck : TM6038

Date Released : 11/23/11

# SYSTEMS DATA

AUGUST 01, 2012

For Help Desk Phone Numbers [Click here](#)

Reference Number: EM0095

Version Symbol:

Change Level:

Sales Model: C9 DI TA AA

Eff. Serial Number Prefix: S9L

Engr. Model:

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Description	Answer	Unit
<i>Air Intake System</i>		
The installed system must comply with the system limits below for all emissions certified engines to assure regulatory compliance.		
MAX ALLOW INTAKE RESTR W/CLEAN ELEMENT	14.9	IN WTR
MAX ALLOW INTAKE RESTR W/DIRTY ELEMENT	30.1	IN WTR
MAX ALLOW INTAKE MANIFOLD TEMP	120	DEG F
ALLOW PRESS DROP-COMPR OUT TO MANF IN	4.4	IN HG
MAX TURBO INLET AIR TEMPERATURE	122	DEG F
MAX AIR FILTER INLET AIR TEMPERATURE	122	DEG F
<i>Cooling System</i>		
ENGINE ONLY COOLANT CAPACITY	5.8	GAL
TOTAL SYS COOLANT CAP (PKG GENSETS ONLY)	9.5	GAL
MAX ALLOW ENGINE COOLANT OUTLET TEMP	223	DEG F
REGULATOR START-TO-OPEN TEMP	189	DEG F
REGULATOR FULL OPENING TEMPERATURE	208	DEG F
REGULATOR LOCATION	OUTLET	
AMBIENT COOLING CAPABILITY AT RATED SPD	122	DEG F
MIN RECOMMENDED SYS PRESS CAP PRESSURE	10.0	PSI
MAX UNINTERRUPTED FILL RATE	3	GPM
MIN ALLOW COOLANT LOSS-PERCT OF TOTAL	90	PERCENT
COOL LOSS-MAX % OF PUMP PRESS RISE LOSS	10	PERCENT
AIR VENT CAPABILITY AT 35 PERCT PRL	3.80	PINTS/MIN
RADIATOR AIR FLOW (PKG GENSETS ONLY)	17,551.4	CU FT/MIN
<i>Engine Spec System</i>		
CYLINDER ARRANGEMENT	INLINE	
NUMBER OF CYLINDERS	6	CYL
CYLINDER BORE DIAMETER	4.4094	IN
PISTON STROKE	5.8661	IN
TOTAL CYLINDER DISPLACEMENT	537	CU IN
COMPRESSION RATIO (TO ONE)	16.1	
CRANKSHAFT ROTATION (FROM FLYWHEEL END)	CCW	
CYLINDER FIRING ORDER	1-5-3	
CYLINDER FIRING ORDER - CONTINUED	6-2-4	
NUMBER 1 CYLINDER LOCATION	FRONT	
STROKES/COMBUSTION CYCLE	4	STROKES
APPLICATION CLASS	GEN	
ENGINE DUTY CYCLE	STDB	
FACTORY TEST SPEC	0K9839	
EMISSION CERTIFICATION AGENCIES	EPA TIER 3	
STD - AFTERCOOLER DESIGN TEMP	120	DEG F

GENSET LINE FREQUENCY	60	HZ
<b>Exhaust System</b>		
The installed system must comply with the system limits below for all emissions certified engines to assure regulatory compliance.		
MAX ALLOW SYS BACK PRESS	23.7	IN WTR
MANIFOLD TYPE	DRY	
<b>Fuel System</b>		
MAX FUEL FLOW TO TRANSFER PUMP (TO ENG)	46.5	GPH
MAX ALLOW FUEL SUPPLY LINE RESTRICTION	4.1	IN HG
MAX ALLOW FUEL TMP FROM TRANSFER PUMP IN	151	DEG F
MAX FUEL FLOW TO RETURN LINE (FROM ENG)	29.9	GPH
MAX ALLOW FUEL RETURN LINE RESTR	20.7	IN HG
NORMAL FUEL PRESSURE-CLEAN SYSTEM	72.5	PSI
FUEL SYSTEM TYPE	HEUI	
<b>Lube System</b>		
RECOMMENDED OIL TYPE (API OR CAT SPEC)	CH-15W-40	
OIL FILTER TYPE	FUL-FL,S-O	
LUBE SYSTEM OIL COOLER TYPE	PLATE	
NOM OIL PRESS W/SAE 10W30 OIL @ 99 DEG C	50.8	PSI
MIN LI OP W/SAE 10W30 OIL @ 99 DEG C	110.2	PSI
CRANKCASE VENTILATION TYPE	TO ATM	
MAX OPERATING ANGLE (ANY DIRECTION)	10	DEG
FRONT SUMP STD/OPT/NAP	STD	
FRONT SUMP REFILL VOLUME W/FILTER CHANGE	41	QT
FRONT SUMP CAPACITY @ ADD MARK	34	QT
FRONT SUMP CAPACITY @ FULL MARK	38	QT
<b>Mounting System</b>		
C/G LOC - X DIMENSION - FRM REAR FACE OF BLK - (REF TM7077)	16.7716	IN
C/G LOC - Y DIMENSION - FRM CL OF CRANKSHAFT - (REF TM7077)	8.1890	IN
C/G LOC - Z DIMENSION - FRM CL OF CRANKSHAFT - (REF TM7077)	0.0071	IN
STD - FLYWHEEL HOUSING SIZE-SAE NUMBER	SAE1	
DRY WT ENG ONLY (DRAINED OF FLUIDS)	1,709	LB
ENGINE LENGTH	44.5275	IN
ENGINE WIDTH	44.8818	IN
<b>Starting System</b>		
LOWEST AMBIENT START TEMP W/O AIDS	32	DEG F

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# GENERATOR DATA

AUGUST 01, 2012

For Help Desk Phone Numbers [Click here](#)

## Selected Model

**Engine:** C9      **Generator Frame:** LC5024L      **Genset Rating (kW):** 200.0      **Line Voltage:** 480  
**Fuel:** Diesel      **Generator Arrangement:** 2351200      **Genset Rating (kVA):** 250.0      **Phase Voltage:** 277  
**Frequency:** 60      **Excitation Type:** AREP      **Pwr. Factor:** 0.8      **Rated Current:** 300.7  
**Duty:** STANDBY      **Connection:** SERIES STAR      **Application:** EPG      **Status:** Current

Version: 40059 /40001 /40144 /2476

## Spec Information

Generator Specification			Generator Efficiency		
<b>Frame:</b> LC5024L	<b>Type:</b> LC	<b>No. of Bearings:</b> 1	<b>Per Unit Load</b>	<b>kW</b>	<b>Efficiency %</b>
<b>Winding Type:</b> RANDOM WOUND	<b>Flywheel:</b> 14.0		0.25	50.0	88.5
<b>Connection:</b> SERIES STAR	<b>Housing:</b> 1		0.5	100.0	91.9
<b>Phases:</b> 3	<b>No. of Leads:</b> 12		0.75	150.0	93.5
<b>Poles:</b> 4	<b>Wires per Lead:</b> 1		1.0	200.0	94.1
<b>Sync Speed:</b> 1800	<b>Generator Pitch:</b> 0.6667				

Reactances	Per Unit	Ohms
SUBTRANSIENT - DIRECT AXIS $X''_d$	0.0476	0.0439
SUBTRANSIENT - QUADRATURE AXIS $X''_q$	0.0587	0.0541
TRANSIENT - SATURATED $X'_d$	0.0802	0.0739
SYNCHRONOUS - DIRECT AXIS $X_d$	1.7982	1.6572
SYNCHRONOUS - QUADRATURE AXIS $X_q$	1.0781	0.9936
NEGATIVE SEQUENCE $X_2$	0.0533	0.0491
ZERO SEQUENCE $X_0$	0.0034	0.0031

Time Constants	Seconds
OPEN CIRCUIT TRANSIENT - DIRECT AXIS $T'_{d0}$	2.2530
SHORT CIRCUIT TRANSIENT - DIRECT AXIS $T'_d$	0.1000
OPEN CIRCUIT SUBTRANSIENT - DIRECT AXIS $T''_{d0}$	0.0170
SHORT CIRCUIT SUBTRANSIENT - DIRECT AXIS $T''_d$	0.0100
OPEN CIRCUIT SUBTRANSIENT - QUADRATURE AXIS $T''_{q0}$	0.1830
SHORT CIRCUIT SUBTRANSIENT - QUADRATURE AXIS $T''_q$	0.0100
EXCITER TIME CONSTANT $T_e$	0.0100
ARMATURE SHORT CIRCUIT $T_a$	0.0150

Short Circuit Ratio: 0.73      Stator Resistance = 0.0171 Ohms      Field Resistance = 0.343 Ohms

Voltage Regulation		Generator Excitation		
<b>Voltage level adjustment: +/-</b>	5.0%	<b>No Load</b>	<b>Full Load, (rated) pf</b>	
<b>Voltage regulation, steady state: +/-</b>	0.5%		<b>Series</b>	<b>Parallel</b>
<b>Voltage regulation with 3% speed change: +/-</b>	0.5%	<b>Excitation voltage:</b>	10.6 Volts	30.74 Volts      Volts
<b>Waveform deviation line - line, no load: less than</b>	2.0%	<b>Excitation current</b>	1.06 Amps	2.53 Amps      Amps
<b>Telephone influence factor: less than</b>	50			

### Selected Model

Engine: C9	Generator Frame: LC5024L	Genset Rating (kW): 200.0	Line Voltage: 480
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Duty: STANDBY	Connection: SERIES STAR	Application: EPG	Status: Current

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### Generator Mechanical Information

#### Center of Gravity

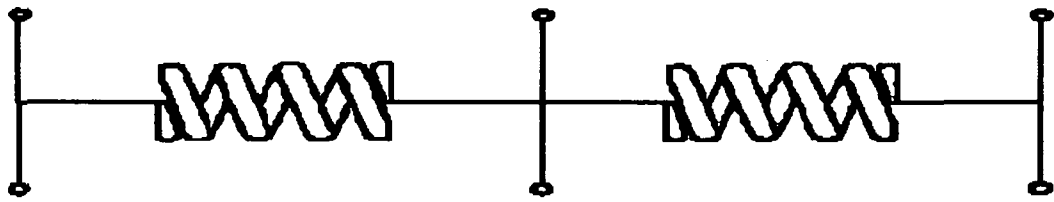
Dimension X	-530.0 mm	-20.9 IN.
Dimension Y	0.0 mm	0.0 IN.
Dimension Z	0.0 mm	0.0 IN.

- "X" is measured from driven end of generator and parallel to rotor. Towards engine fan is positive. See General Information for details
- "Y" is measured vertically from rotor center line. Up is positive.
- "Z" is measured to left and right of rotor center line. To the right is positive.

Generator WT = 895 kg	* Rotor WT = 357 kg	* Stator WT = 538 kg
1,973 LB	787 LB	1,186 LB

Rotor Balance = 0.0508 mm deflection PTP  
Overspeed Capacity = 125% of synchronous speed

#### Generator Torsional Data



TOTAL J = J1 + J2 + J3

K1 = Shaft Stiffness between J1 + J2 (Diameter 1)			K2 = Shaft Stiffness between J2 + J3 (Diameter 2)			
J1	K1	Min Shaft Dia 1	J2	K2	Min Shaft Dia 2	J3
6.3 LB IN. s <sup>2</sup>	37.0 MLB IN./rad	4.5 IN.	20.5 LB IN. s <sup>2</sup>	41.7 MLB IN./rad	4.3 IN.	2.0 LB IN. s <sup>2</sup>
0.711 N m s <sup>2</sup>	4.18 MN m/rad	115.0 mm	2.32 N m s <sup>2</sup>	4.71 MN m/rad	110.0 mm	0.23 N m s <sup>2</sup>
			<b>Total J</b>			
			28.9 LB IN. s <sup>2</sup>			
			3.261 N m s <sup>2</sup>			

**Selected Model**

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<b>Generator Cooling Requirements - Temperature - Insulation Data</b>	
<b>Cooling Requirements:</b>	<b>Temperature Data: (Ambient 40 °C)</b>
<b>Heat Dissipated:</b> 12.5 kW	<b>Stator Rise:</b> 105.0 °C
<b>Air Flow:</b> 30.6 m <sup>3</sup> /min	<b>Rotor Rise:</b> 105.0 °C
<b>Insulation Class: H</b>	
<b>Insulation Reg. as shipped: 100.0 MΩ minimum at 40 °C</b>	
<b>Thermal Limits of Generator</b>	
<b>Frequency:</b>	60 Hz
<b>Line to Line Voltage:</b>	480 Volts
<b>B BR 80/40</b>	318.0 kVA
<b>F BR -105/40</b>	362.0 kVA
<b>H BR - 125/40</b>	398.0 kVA
<b>F PR - 130/40</b>	398.0 kVA
<b>H PR - 150/40</b>	422.0 kVA
<b>H PR27 - 163/27</b>	438.0 kVA

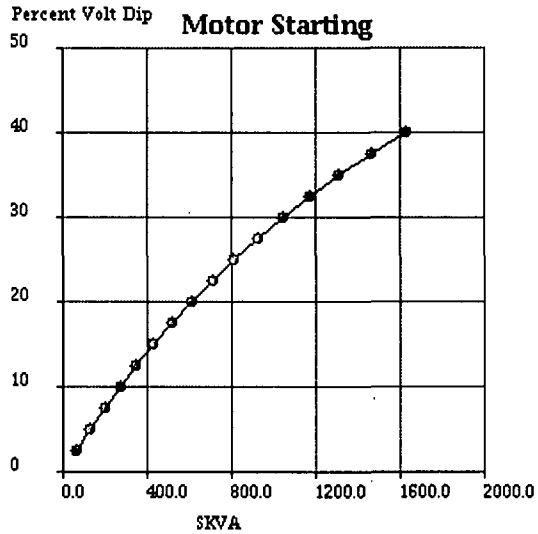
**Selected Model**

**Engine:** C9      **Generator Frame:** LC5024L      **Genset Rating (kW):** 200.0      **Line Voltage:** 480  
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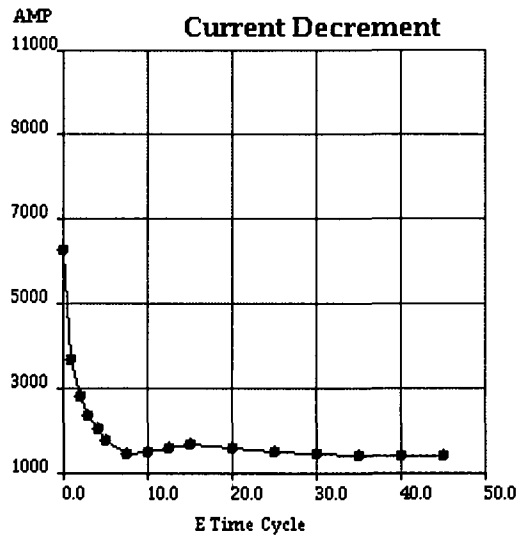
**Starting Capability & Current Decrement**  
**Motor Starting Capability (0.6 pf)**

SKVA	Percent Volt Dip
62	2.5
128	5.0
197	7.5
271	10.0
348	12.5
430	15.0
517	17.5
609	20.0
707	22.5
812	25.0
924	27.5
1,044	30.0
1,173	32.5
1,311	35.0
1,461	37.5
1,624	40.0



**Current Decrement Data**

E Time Cycle	AMP
0.0	6,262
1.0	3,691
2.0	2,840
3.0	2,378
4.0	2,035
5.0	1,754
7.5	1,441
10.0	1,509
12.5	1,592
15.0	1,663
20.0	1,610
25.0	1,498
30.0	1,441
35.0	1,422
40.0	1,420
45.0	1,423



**Instantaneous 3 Phase Fault Current:** 6262 Amps      **Instantaneous Line - Line Fault Current:** 5122 Amps  
**Instantaneous Line - Neutral Fault Current:** 8584 Amps

### Selected Model

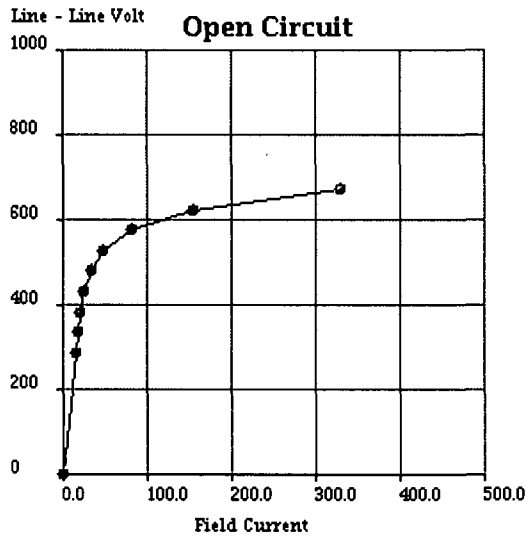
**Engine:** C9      **Generator Frame:** LC5024L      **Genset Rating (kW):** 200.0      **Line Voltage:** 480  
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### Generator Output Characteristic Curves

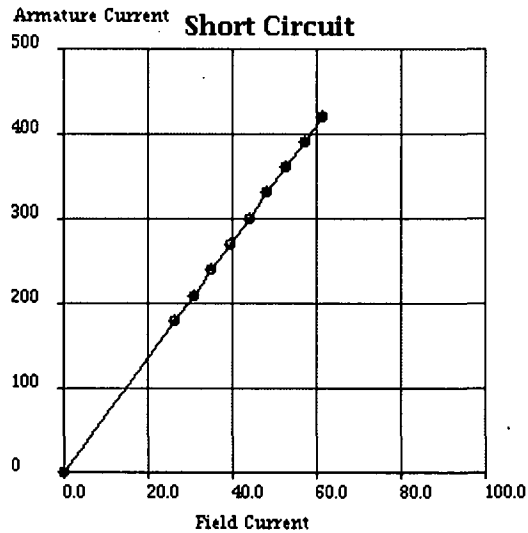
#### Open Circuit Curve

Field Current	Line - Line Volt
0.0	0
14.9	288
17.7	336
21.0	384
25.7	432
33.3	480
48.3	528
80.8	576
155.1	624
329.4	672



#### Short Circuit Curve

Field Current	Armature Current
0.0	0
26.4	180
30.8	210
35.2	241
39.6	271
44.0	301
48.4	331
52.8	361
57.2	391
61.5	421





**Selected Model**

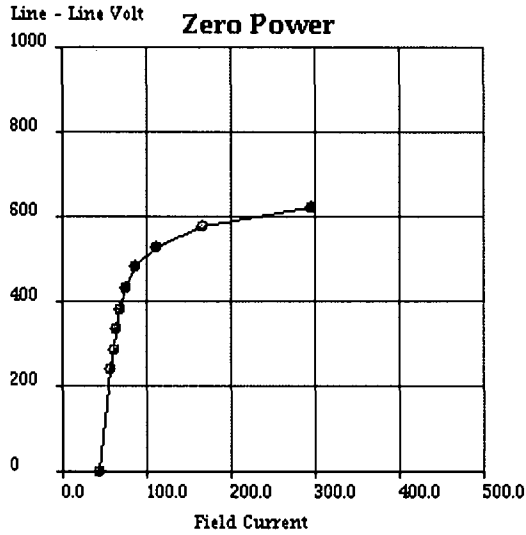
**Engine:** C9      **Generator Frame:** LC5024L      **Genset Rating (kW):** 200.0      **Line Voltage:** 480  
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**Generator Output Characteristic Curves**

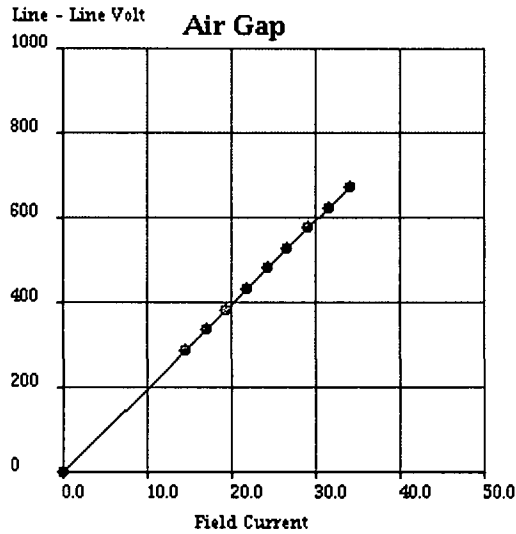
**Zero Power Factor Curve**

Field Current	Line - Line Volt
44.0	0
57.8	240
60.6	288
63.7	336
67.7	384
74.0	432
85.7	480
110.3	528
165.8	576
295.0	624



**Air Gap Curve**

Field Current	Line - Line Volt
0.0	0
14.6	288
17.0	336
19.4	384
21.9	432
24.3	480
26.7	528
29.2	576
31.6	624
34.0	672



Selected Model

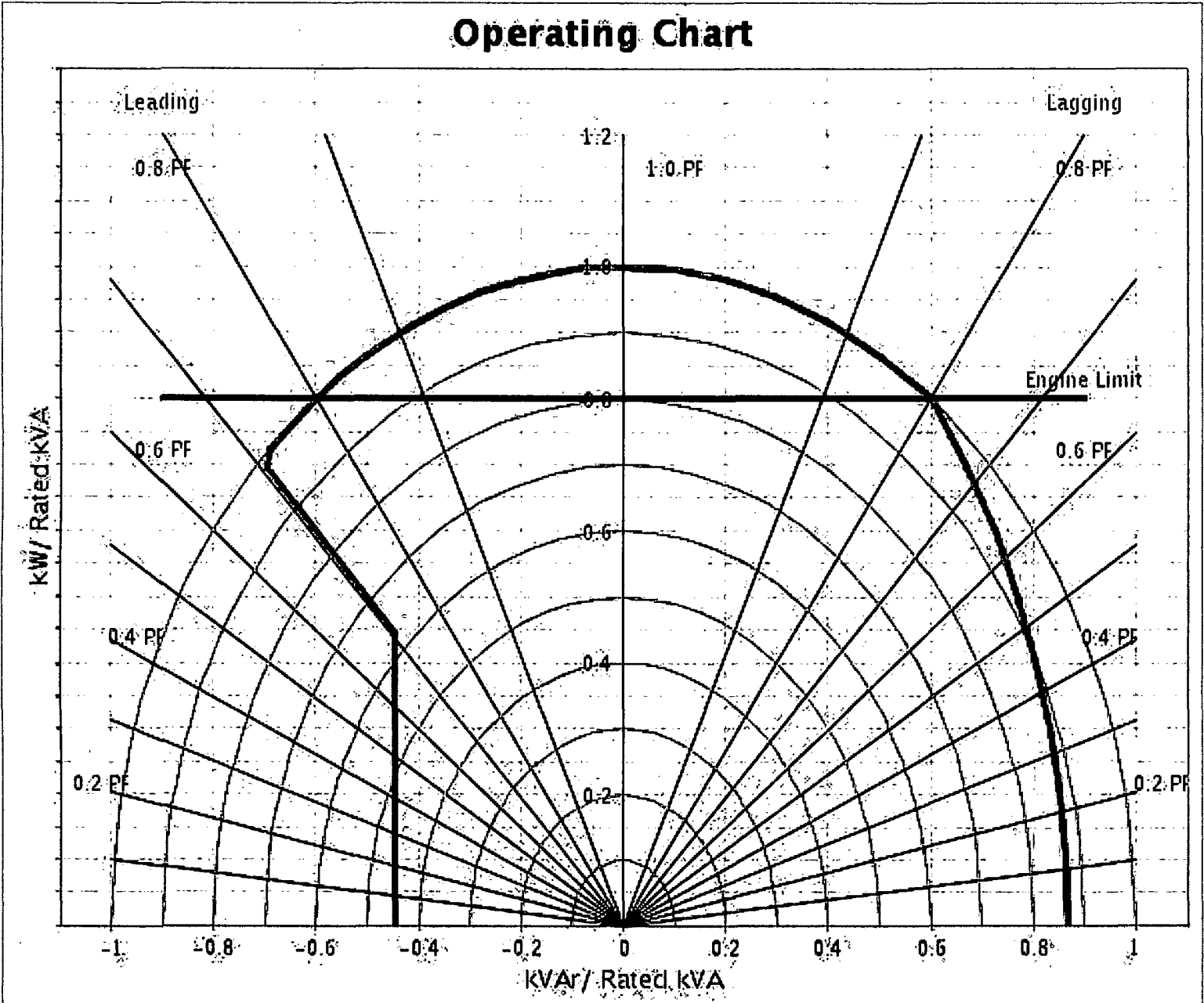
Engine: C9	Generator Frame: LC5024L	Genset Rating (kW): 200.0	Line Voltage: 480
Fuel: Diesel	Generator Arrangement: 2351200	Genset Rating (kVA): 250.0	Phase Voltage: 277
Frequency: 60	Excitation Type: AREP	Pwr. Factor: 0.8	Rated Current: 300.7
Duty: STANDBY	Connection: SERIES STAR	Application: EPG	Status: Current

Version: 40059 /40001 /40144 /2476

Reactive Capability Curve

[Click to view Chart](#)

### Operating Chart



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### Selected Model

<b>Engine:</b> C9	<b>Generator Frame:</b> LC5024L	<b>Genset Rating (kW):</b> 200.0	<b>Line Voltage:</b> 480
<b>Fuel:</b> Diesel	<b>Generator Arrangement:</b> 2351200	<b>Genset Rating (kVA):</b> 250.0	<b>Phase Voltage:</b> 277
<b>Frequency:</b> 60	<b>Excitation Type:</b> AREP	<b>Pwr. Factor:</b> 0.8	<b>Rated Current:</b> 300.7
<b>Duty:</b> STANDBY	<b>Connection:</b> SERIES STAR	<b>Application:</b> EPG	<b>Status:</b> Current

Version: 40059 /40001 /40144 /2476

### General Information

#### GENERATOR INFORMATION (DM7900)

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##### 1.Motor Starting

Motor starting curves are obtained in accordance with IEC60034, and are displayed at 0.6 power factor.

##### 2.Voltage Dip

Prediction of the generator synchronous voltage dip can be made by consulting the plot for the voltage dip value that corresponds to the desired motor starting kVA value.

##### 3.Definitions

###### A)Generator Keys

Frame: abbreviation of generator frame size

Freq: frequency in hertz.

PP/SB: prime/standby duty respectively

Volts: line - line terminal voltage

kW: rating in electrical kilo watts

Model: engine sales model

###### B)Generator Temperature Rise

The indicated temperature rises are the IEC/NEMA limits for standby or prime power applications. The quoted rise figures are maximum limits only and are not necessarily indicative of the actual temperature rise of a given machine winding.

###### C)Centre of Gravity

The specified centre of gravity is for the generator only. For single bearing, and two bearing close coupled generators, the center of gravity is measured from the generator/engine flywheel-housing interface and from the centreline of the rotor Shaft.

For two bearing, standalone generators, the center of gravity is measured from the end of the rotor shaft and from the centerline of the rotor shaft.

###### D)Generator Current Decrement Curves

The generator current decrement curve indicates the generator armature current arising from a symmetrical three-phase fault at the generator terminals. Generators equipped with AREP or PMG excitation systems will sustain 300% of rated armature current for 10 seconds.

###### E)Generator Efficiency Curves

The efficiency curve is displayed for the generator only under the given conditions of rating, voltage, frequency and power factor. This

is not the overall generating set efficiency curve.

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Content Owner: Shane Gilles

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