

**SHEET INDEX**

**GENERAL**  
G-0.00 03 JULY 2012 TITLE SHEET  
G-0.01 08 JUNE 2012 LOCATION MAP / SYMBOLS  
G-0.02 08 JUNE 2012 SITE PHASING  
G-0.03 08 JUNE 2012 SITE PHASING

**CIVIL**  
C-0.1 08 JUNE 2012 NOTES, ABBREVIATIONS AND LEGEND  
C-1.0 08 JUNE 2012 SITE PLAN / PAVING PLAN  
C-1.1 08 JUNE 2012 DIMENSIONAL CONTROL PLAN  
C-1.2 08 JUNE 2012 JOINTING PLAN  
C-1.3 08 JUNE 2012 SIGNAGE AND MARKING PLAN  
C-2.0 08 JUNE 2012 GRADING PLAN  
C-3.0 08 JUNE 2012 DRAINAGE AREA MAP  
C-4.0 03 JULY 2012 UTILITY PLAN  
C-5.0 08 JUNE 2012 DETAILS  
C-5.1 08 JUNE 2012 DETAILS  
C-5.2 08 JUNE 2012 EROSION CONTROL PLAN  
C-5.3 08 JUNE 2012 EROSION CONTROL DETAILS  
C-5.4 08 JUNE 2012 EROSION CONTROL NOTES

**LANDSCAPE**  
L-1.0 03 JULY 2012 LANDSCAPE PLAN  
L-2.0 08 JUNE 2012 LANDSCAPE DETAILS

**IRRIGATION**  
IR-1.0 08 JUNE 2012 IRRIGATION PLAN

**STRUCTURE**  
S-0.01 08 JUNE 2012 GENERAL NOTES  
S-1.01 08 JUNE 2012 FOUNDATION PLAN  
S-3.01 08 JUNE 2012 ROOF FRAMING PLAN  
S-4.01 08 JUNE 2012 FOUNDATION DETAILS  
S-4.02 08 JUNE 2012 FOUNDATION DETAILS  
S-5.01 08 JUNE 2012 FRAMING DETAILS  
S-5.02 08 JUNE 2012 FRAMING DETAILS  
S-5.03 08 JUNE 2012 WINDOW AND DOOR FRAMING  
S-5.04 08 JUNE 2012 SPECIAL JOIST LOADING DIAGRAMS

**ARCHITECTURE**  
A-0.01 08 JUNE 2012 BUILDING SIDEWALK / SITE PLAN  
A-0.02 08 JUNE 2012 SITE DETAILS  
A-0.03 08 JUNE 2012 ARBY'S PROTOTYPICAL DWGS  
A-0.04 08 JUNE 2012 ARBY'S PROTOTYPICAL DWGS  
A-1.00 08 JUNE 2012 EXIT ANALYSIS PLAN  
A-1.01 08 JUNE 2012 BUILDING FLOOR PLAN  
A-1.02 08 JUNE 2012 BUILDING FLOOR PLAN - FINISHES  
A-1.03 08 JUNE 2012 WALL FINISH PLAN  
A-1.20 08 JUNE 2012 BUILDING ROOF PLAN  
A-1.21 08 JUNE 2012 ROOF DETAILS  
A-2.01 08 JUNE 2012 BUILDING ELEVATIONS  
A-3.01 08 JUNE 2012 BUILDING SECTIONS  
A-3.11 08 JUNE 2012 WALL SECTIONS  
A-3.12 08 JUNE 2012 WALL SECTIONS  
A-3.13 08 JUNE 2012 WALL SECTIONS  
A-3.15 08 JUNE 2012 SECTION DETAILS  
A-4.01 08 JUNE 2012 BUILDING REFLECTED CEILING PLAN  
A-4.02 08 JUNE 2012 RCP DETAILS  
A-4.20 08 JUNE 2012 INTERIOR BUILDING ELEVATIONS  
A-4.21 08 JUNE 2012 INTERIOR DETAILS AND SECTIONS  
A-6.10 08 JUNE 2012 COOLER LAYOUT  
A-7.10 08 JUNE 2012 DOOR AND WINDOW SCHEDULES  
A-7.11 08 JUNE 2012 DOOR DETAILS  
A-8.10 08 JUNE 2012 ENLARGED PLAN AND ELEVATIONS - SNACK AVE  
A-8.20 08 JUNE 2012 ARBY'S EQUIPMENT PLAN AND SCHEDULE  
A-8.21 08 JUNE 2012 ARBY'S INTERIOR ELEVATIONS  
A-8.22 08 JUNE 2012 ARBY'S INTERIOR ELEVATIONS AND MENU BOARD DETAILS  
A-9.01 08 JUNE 2012 AAFES FIXTURE PLAN

**MEP**  
MEP-1.01 03 JULY 2012 MEP SITE PLAN

**MECHANICAL**  
M-0.01 08 JUNE 2012 MECHANICAL LEGEND & NOTES  
M-1.01 08 JUNE 2012 MECHANICAL FLOOR AND ROOF PLANS  
M-2.01 08 JUNE 2012 MECHANICAL DETAILS  
M-2.02 08 JUNE 2012 MECHANICAL DETAILS  
M-2.03 08 JUNE 2012 MECHANICAL DETAILS  
M-2.04 08 JUNE 2012 MECHANICAL DETAILS  
M-3.01 08 JUNE 2012 MECHANICAL SCHEDULES

**ELECTRICAL**  
E-1.01 08 JUNE 2012 ELECTRICAL FLOOR PLAN - LIGHTING  
E-2.01 08 JUNE 2012 ELECTRICAL FLOOR PLAN - POWER  
E-2.02 08 JUNE 2012 ARBY'S SERVICE CENTER ENLARGED PARTIAL PLAN - POWER  
E-2.03 08 JUNE 2012 ELECTRICAL CONNECTIONS FOR HVAC EQUIPMENT FLOOR PLAN AND ROOF PLAN  
E-2.04 08 JUNE 2012 ELECTRICAL FLOOR PLAN - COMMUNICATION  
E-2.05 03 JULY 2012 ELECTRICAL FLOOR PLAN - SECURITY  
E-4.01 03 JULY 2012 ELECTRICAL DETAILS  
E-4.02 08 JUNE 2012 ELECTRICAL ELEVATIONS - POWER  
E-5.01 08 JUNE 2012 ELECTRICAL RISER DIAGRAM  
E-6.01 08 JUNE 2012 ELECTRICAL SCHEDULES  
E-6.02 08 JUNE 2012 KITCHEN SCHEDULES

**PLUMBING**  
P-0.01 08 JUNE 2012 PLUMBING LEGEND AND NOTES  
P-1.01 08 JUNE 2012 PLUMBING FLOOR PLANS - SHOPPETTE  
P-1.02 08 JUNE 2012 PLUMBING FLOOR PLANS - ARBY'S  
P-2.01 08 JUNE 2012 PLUMBING DETAILS  
P-2.02 08 JUNE 2012 PLUMBING DETAILS  
P-3.01 08 JUNE 2012 PLUMBING SCHEDULES AND RISER DIAGRAMS

**FIRE ALARM**  
FA-1.0 03 JULY 2012 FIRE ALARM PLAN  
FA-1.1 03 JULY 2012 FIRE ALARM PLAN

**FIRE PROTECTION**  
FP-1.00 03 JULY 2012 FIRE SPRINKLER SITE PLAN  
FP-1.01 03 JULY 2012 FIRE SPRINKLER FLOOR PLAN

**GASOLINE**  
GA-1.0 08 JUNE 2012 CANOPY REFLECTED CEILING PLAN AND ELEVATIONS  
GC-1.0 08 JUNE 2012 PETROLEUM SITE PLAN  
GE-1.0 08 JUNE 2012 CANOPY ELECTRICAL PLAN, DETAILS AND SCHEDULES  
GM-1.0 08 JUNE 2012 PETROLEUM PIPING PLAN AND ISOMETRIC W/STAGE II VAPOR RECOVERY  
GM-2.0 08 JUNE 2012 UNDERGROUND STORAGE TANK PLAN AND SECTION  
GM-3.0 08 JUNE 2012 SUBMERGED PUMP SUMP DETAILS  
GM-4.0 08 JUNE 2012 FILL/VENT/STAGE I & II VAPOR RECOVERY SUMP DETAILS  
GM-5.0 08 JUNE 2012 MISCELLANEOUS UNDERGROUND STORAGE TANK DETAILS  
GM-6.0 08 JUNE 2012 DISPENSER DETAILS W/VACUUM ASSIST  
GM-7.0 08 JUNE 2012 TANK SLAB REINFORCING PLAN AND SECTION  
GM-8.0 08 JUNE 2012 BILL OF MATERIAL W/VACUUM ASSIST  
SE-1.0 08 JUNE 2012 FUEL SITE ELECTRICAL PLAN



# EXCHANGE

ARMY & AIR FORCE EXCHANGE SERVICE

## BIGGS FIELD MINI-MALL #5

**AAFES PROJECT NUMBER:  
3770-05-000016**

**FORT BLISS, TEXAS  
PROJECT NUMBER 76627**

**SOLICITATION  
08 JUNE 2012**

3911 S. WALTON WALKER BLVD.  
DALLAS, TX 75236-1598  
www.aafes.com

ARCHITECTURE, LANDSCAPE ARCHITECTURE  
CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL  
AND PLUMBING

1201 NORTH BOWSER ROAD  
RICHARDSON, TEXAS 75081  
TEL. (214) 346-6200  
FAX (214) 739-0095

FUEL DISPENSING

8520 TELGE ROAD  
HOUSTON, TX. 77095  
(281) 855-6433  
FAX (281) 858-4304

FIRE PROTECTION

**REED FIRE PROTECTION ENGINEERING**  
14135 MIDWAY ROAD, SUITE G260  
DALLAS, TEXAS 75001  
214-658-7599  
214-638-4710 FAX

CODE DATA AND SITE INFORMATION																																										
<p><b>APPLICABLE CODES</b></p> <ul style="list-style-type: none"> <li>INTERNATIONAL BUILDING CODE 2009 (IBC)</li> <li>INTERNATIONAL MECHANICAL CODE 2009</li> <li>INTERNATIONAL PLUMBING CODE 2009</li> <li>NATIONAL ELECTRICAL CODE 2005</li> <li>INTERNATIONAL ENERGY CONSERVATION CODE 2006</li> <li>NATIONAL FIRE PREVENTION ASSOCIATION 30 2003</li> <li>NATIONAL FIRE PREVENTION ASSOCIATION 1001 2006</li> <li>STANDARDS FOR ACCESSIBILITY DESIGN 2010</li> <li>UFC 3-600-01/UFC 4-021-01</li> </ul>	<p><b>BUILDING INFORMATION</b></p> <p>ONE STORY, METAL FRAME WITH BRICK VENEER BUILDING WITH METAL JOIST ROOF SYSTEM INCLUDING A SALES FLOOR, FOOD SERVICE, STORAGE AND OFFICE AREA:</p> <p><b>AREA CALCULATIONS</b></p> <table border="0"> <tr><td>1. RETAIL SALES</td><td>3561 SF.</td></tr> <tr><td>2. PUBLIC RESTROOMS</td><td>274 SF.</td></tr> <tr><td>3. MPA / SUPPORT</td><td>859 SF.</td></tr> <tr><td>4. ADMINISTRATION</td><td>206 SF.</td></tr> <tr><td>5. ARBY'S W/ DRIVE THRU</td><td>965 SF.</td></tr> <tr><td>6. SEATING AREA (26 SEATS)</td><td>585 SF.</td></tr> <tr><td>7. CIRCULATION</td><td>394 SF.</td></tr> <tr><td>8. VESTIBULES</td><td>273 SF.</td></tr> <tr><td><b>GRAND TOTAL (BUILDING)</b></td><td><b>7117 SF.</b></td></tr> </table> <p><b>AREA COUNTED AS HALF SQUARE FOOTAGE</b></p> <table border="0"> <tr><td>9. CANOPIES (4 @ 35 SF.)</td><td>70 SF.</td></tr> <tr><td>10. GASOLINE CANOPY (2990 SF.)</td><td>1495 SF.</td></tr> </table> <p><b>AREA NOT COUNTED IN GOLDBOOK</b></p> <table border="0"> <tr><td>11. FREEZER/COOLER/DRY STORAGE</td><td>318 SF.</td></tr> </table>	1. RETAIL SALES	3561 SF.	2. PUBLIC RESTROOMS	274 SF.	3. MPA / SUPPORT	859 SF.	4. ADMINISTRATION	206 SF.	5. ARBY'S W/ DRIVE THRU	965 SF.	6. SEATING AREA (26 SEATS)	585 SF.	7. CIRCULATION	394 SF.	8. VESTIBULES	273 SF.	<b>GRAND TOTAL (BUILDING)</b>	<b>7117 SF.</b>	9. CANOPIES (4 @ 35 SF.)	70 SF.	10. GASOLINE CANOPY (2990 SF.)	1495 SF.	11. FREEZER/COOLER/DRY STORAGE	318 SF.	<p><b>BUILDING CLASSIFICATION</b></p> <p>OCCUPANCY TYPE MIXED USE: M, MERCANTILE/SALES AREA / SUPPORT S-2, LOW STORAGE (STORAGE) A-2, RESTAURANT (QSR)</p> <p>CONSTRUCTION TYPE IIB, FULLY SPRINKLED</p> <p><b>SITE INFORMATION</b></p> <table border="0"> <tr><td>TOTAL SITE</td><td>131,400 SF</td></tr> <tr><td></td><td>3.02 ACRES</td></tr> </table> <p><b>PARKING</b></p> <table border="0"> <tr><td>ACCESSIBLE SPACES</td><td>2</td></tr> <tr><td>FEV SPACES</td><td>2</td></tr> <tr><td>RETAIL SPACES</td><td>44</td></tr> <tr><td>TOTAL VEHICULAR</td><td>48</td></tr> <tr><td>MOTOR CYCLE</td><td>3</td></tr> <tr><td>PARKING RATIO (SPACE/1,000 SF)</td><td>6.74</td></tr> </table>	TOTAL SITE	131,400 SF		3.02 ACRES	ACCESSIBLE SPACES	2	FEV SPACES	2	RETAIL SPACES	44	TOTAL VEHICULAR	48	MOTOR CYCLE	3	PARKING RATIO (SPACE/1,000 SF)	6.74
1. RETAIL SALES	3561 SF.																																									
2. PUBLIC RESTROOMS	274 SF.																																									
3. MPA / SUPPORT	859 SF.																																									
4. ADMINISTRATION	206 SF.																																									
5. ARBY'S W/ DRIVE THRU	965 SF.																																									
6. SEATING AREA (26 SEATS)	585 SF.																																									
7. CIRCULATION	394 SF.																																									
8. VESTIBULES	273 SF.																																									
<b>GRAND TOTAL (BUILDING)</b>	<b>7117 SF.</b>																																									
9. CANOPIES (4 @ 35 SF.)	70 SF.																																									
10. GASOLINE CANOPY (2990 SF.)	1495 SF.																																									
11. FREEZER/COOLER/DRY STORAGE	318 SF.																																									
TOTAL SITE	131,400 SF																																									
	3.02 ACRES																																									
ACCESSIBLE SPACES	2																																									
FEV SPACES	2																																									
RETAIL SPACES	44																																									
TOTAL VEHICULAR	48																																									
MOTOR CYCLE	3																																									
PARKING RATIO (SPACE/1,000 SF)	6.74																																									







































**GENERAL**

1. LOADS THAT HAVE BEEN USED IN THE STRUCTURAL DESIGN INCLUDE THE FOLLOWING:

DEAD LOADS:

DEAD LOADS HAVE BEEN CALCULATED TO INCLUDE THE ACTUAL WEIGHT OF ALL WORK SHOWN ON THE STRUCTURAL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.

SUPERIMPOSED DEAD LOADS ON ROOF

INSULATION	3 PSF
METAL DECK	1.7 PSF
ROOF MEMBRANE	1.0 PSF
SPRINKLERS	2 PSF
CEILING	2 PSF
MECHANICAL	5 PSF
TOTAL SUPERIMPOSED DEAD LOAD	14.7 PSF

LIVE LOADS:

ROOF LOADS (BEFORE REDUCTIONS)..... 20 PSF

WIND LOADS:

WIND PRESSURES IN ALL DIRECTIONS HAVE BEEN CALCULATED BASED ON A WIND SPEED OF 90 MPH.

WIND LOADS ARE CALCULATED IN ACCORDANCE WITH ASCE 7-05 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES".

WIND IMPORTANCE FACTOR - I = 1.0 (CATEGORY 1)  
WIND EXPOSURE CATEGORY - C

UPLIFT ON ROOF:

REFER TO DIAGRAMS.

SEISMIC LOADS:

BASED ON INTERNATIONAL BUILDING CODE (IBC 2006)

BUILDING CLASSIFICATION	1 STANDARD OCCUPANCY STRUCTURES
SITE CLASSIFICATION	D
SHORT PERIOD SPECTRAL ACCELERATION	S <sub>s</sub> = 0.35g
ONE SECOND SPECTRAL ACCELERATION	S <sub>1</sub> = 0.10g
SEISMIC DESIGN CATEGORY	C

2. COMPLETE SHOP DRAWINGS FOR THE STRUCTURAL WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS. REVIEW OF SHOP DRAWINGS BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR CORRECT FABRICATION AND CONSTRUCTION OF THE WORK.

3. ANY DEVIATION FROM, ADDITION TO, SUBSTITUTION FOR, OR MODIFICATION TO THE STRUCTURE OR ANY PART OF THE STRUCTURE SHOWN ON THESE DRAWINGS SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS THAT ARE SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN-WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING SUGGESTED.

4. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ELEVATIONS NOT SHOWN AND FOR EXACT LOCATIONS AND DIMENSIONS OF ALL ARCHITECTURAL DETAILS.

5. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS AT THE SITE AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

6. PRINCIPAL OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL, MECHANICAL, ELECTRIC, AND PLUMBING DRAWINGS FOR SLEEVES, CURBS, INSERTS AND SIMILAR DETAILS NOT SHOWN. SIZE AND LOCATION OF ALL OPENINGS SHALL BE VERIFIED BY THE CONTRACTOR. ANY DEVIATION FROM OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR APPROVAL PRIOR TO CONSTRUCTION.

7. THE STRUCTURAL DRAWINGS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.

8. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION UNLESS SO STATED OR NOTED. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE WORKMEN AND OTHER PERSONS DURING CONSTRUCTION.

9. THE CONTRACTOR SHALL PROVIDE TEMPORARY ERECTION BRACING AND SHORING OF ALL STRUCTURAL WORK AS REQUIRED FOR STABILITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONDITION WHICH, IN HIS OPINION, MIGHT ENDANGER THE STABILITY OF THE STRUCTURE OR CAUSE DISTRESS IN THE STRUCTURE.

10. CONSTRUCTION MATERIALS SHALL NOT BE STORED ON FLOORS OR ROOFS IN EXCESS OF THE DESIGN LIVE LOADS. IMPACT SHALL BE AVOIDED WHEN PLACING MATERIALS ON FLOORS OR ROOFS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENFORCE THESE REQUIREMENTS.

11. IF ANY INCONSISTENCIES OR DISCREPANCIES OCCUR WITHIN OR BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE GREATER QUANTITY OF ITEMS SHOWN, AND THE MOST COSTLY PRODUCT OR INSTALLATION METHOD SHALL BE PROVIDED, UNLESS INSTRUCTED OTHERWISE BY THE ENGINEER. IT SHALL BE DEEMED THAT THE CONTRACTOR BID AND INTENDS TO EXECUTE THE MORE STRINGENT OR HIGHER QUALITY REQUIREMENTS WITHOUT ANY INCREASE TO THE CONTRACT SUM OR CONTRACT TIME.

12. THE CONSTRUCTION DATUM AT FINISHED FLOOR = 100' - 0". REFER TO THE CIVIL PLANS FOR THE ACTUAL ELEVATION AT THE BUILDING.

**EARTHWORK AND FOUNDATIONS CONT.**

6. THE FOOTING EXCAVATIONS SHALL BE FREE OF SOFT OR LOOSE MATERIAL AND WATER WHEN CONCRETE IS PLACED IN FOOTINGS. WATER SHALL NOT BE ALLOWED TO STAND IN THE FOOTING EXCAVATIONS. IF THE FOOTING EXCAVATION SUBGRADE IS SOFTENED BY WATER, THE FOOTING SHALL BE UNDER CUT TO AN UNDISTURBED SUBGRADE.

7. THE FOUNDATION EXCAVATIONS SHALL BE BACKFILLED WITH SELECT FILL. SELECT FILL SHALL CONSIST OF A NON-EXPANSIVE SOIL WITH A LIQUID LIMIT LESS THAN 35 AND A PLASTICITY INDEX LESS THAN 15 AND GREATER THAN 4. AND SHALL CONTAIN NO MORE THAN 0.5% FIBROUS ORGANIC MATERIAL. THE BACKFILL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR (ASTM D-698) MAXIMUM DRY DENSITY AT A MOISTURE CONTENT WITHIN 1 PERCENTAGE POINT BELOW OR 3 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE CONTENT.

8. THE SUBGRADE SHALL BE STRIPPED OF ANY EXISTING PAVEMENTS, SURFACE VEGETATION, HIGHLY ORGANIC SOIL, AND ANY OTHER DELETERIOUS MATERIALS. FOLLOWING STRIPPING OPERATIONS, THE SUBGRADE SHALL BE PROFFROLLED UNDER THE OBSERVATION OF THE GEOTECHNICAL ENGINEER. SOFT OR COMPRESSIBLE ZONES SHALL BE REMOVED TO A FIRM SUBGRADE AND REPLACED WITH COMPACTED SELECT FILL.

9. FOLLOWING PROFFROLLING OPERATIONS THE SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF AT LEAST 6 INCHES AND RECOMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AT A MOISTURE CONTENT RANGING BETWEEN -1 AND +3 PERCENTAGE POINTS OF OPTIMUM.

10. PROVIDE 6" CAPILLARY WATER BARRIER BENEATH THE SLAB. PROVIDE A 10 MIL THICK POLYETHYLENE VAPOR BARRIER ABOVE THE CAPILLARY WATER BARRIER.

11. JOINTS IN CONCRETE ABUTTING THE BUILDING SHALL BE THOROUGHLY SEALED TO PREVENT THE INFILTRATION OF SURFACE WATER.

12. THE CONTRACTOR SHALL ENGAGE A REGISTERED SURVEYOR TO PERFORM SURVEYS, LAYOUTS, AND MEASUREMENTS FOR PIER DRILLING WORK. THIS INCLUDES LAYOUT WORK FOR EACH PIER TO LINES AND LEVELS REQUIRED BEFORE EXCAVATION, AND MEASUREMENTS OF EACH PIER'S ACTUAL FINAL LOCATION. PIERS SHALL BE CONSTRUCTED WITHIN THE FOLLOWING CENTERLINE TOLERANCES:

- MAXIMUM PERMISSIBLE VARIATION OF LOCATION: NOT MORE THAN 1".
- SHAFTS OUT OF PLUMB: NOT MORE THAN 1% OR 1".
- CONCRETE CUT-OFF ELEVATION: PLUS 1" TO MINUS 1".

13. THE DESIGN PENETRATION OF INDIVIDUAL SHAFTS SHALL BE EXCAVATED IN A CONTINUOUS OPERATION AND CONCRETE PLACED AS SOON AS PRACTICAL AFTER COMPLETION OF THE DRILLING AND INSPECTION IN ORDER TO PREVENT DETERIORATION OF BEARING SURFACES AND TO REDUCE THE POSSIBILITY OF SEEPAGE PROBLEMS. NO SHAFT SHALL BE LEFT OPEN FOR MORE THAN EIGHT HOURS.

14. DRILLED PIERS MAY REQUIRE TEMPORARY CASING TO PREVENT SOILS AND WATER FROM FLOWING INTO THE EXCAVATION WHILE THE SHAFT EXCAVATION IS BEING ADVANCED.

15. THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER 24 HOURS PRIOR TO COMMENCEMENT OF DRILLING. EACH PIER EXCAVATION SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO CONCRETING TO VERIFY:

- THE SOIL TYPE;
- THE MINIMUM PENETRATION;
- THE REMOVAL OF ALL SMEAR ZONES AND CUTTINGS;
- THAT GROUNDWATER SEEPAGE AND SLOUGHING OF LOOSE SOILS IS CORRECTLY HANDLED.

16. THE CONTRACTOR SHALL PROVIDE PIER BOLSTERS AND CENTERING DEVICES FOR PIER REINFORCEMENT.

17. "MUSHROOMING" AT THE TOP OF THE PIERS IS PROHIBITED.

**CAST-IN-PLACE REINFORCED CONCRETE**

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.

2. MILD STEEL REINFORCING BARS SHALL CONFORM TO ASTM A-615. NO. 3 BARS SHALL BE GRADE 40. NO. 4 AND LARGER BARS SHALL BE GRADE 60.

3. MILD STEEL REINFORCEMENT AND ACCESSORIES SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI SP-66.

4. PORTLAND CEMENT SHALL BE A SINGLE BRAND CONFORMING TO ASTM C-150, TYPE 1 UNLESS OTHERWISE APPROVED.

5. NORMAL WEIGHT AGGREGATES SHALL CONFORM TO ASTM C-33. ALL CONCRETE SHALL USE NORMAL WEIGHT AGGREGATES, UNLESS NOTED OTHERWISE. MAXIMUM NOMINAL SIZE OF COURSE AGGREGATE SHALL BE 1".

6. ALL ADDITIVES FOR AIR ENTRAINMENT, WATER REDUCTION, AND SET CONTROL SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. THE USE OF CALCIUM CHLORIDE IS PROHIBITED.

7. MIXES SHALL BE DESIGNED TO PROVIDE CONCRETE WITH A COMPRESSIVE STRENGTH AS FOLLOWS:

FOOTINGS, SLABS-ON-GRADE	4000 PSI
DRILLED PIERS	3000 PSI

8. CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED AS INDICATED IN THE SPECIFICATIONS. AIR CONTENT SHALL BE CHECKED BY AN ACI APPROVED TESTER WITH AN AIR METER.

9. CONCRETE SLUMPS SHALL BE AS INDICATED IN THE SPECIFICATIONS.

10. MILD STEEL REINFORCEMENT SHALL BE PLACED AND SECURED IN ACCORDANCE WITH CRSI "RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS."

11. REINFORCEMENT TENSION LAPS (CLASS B, UNLESS NOTED OTHERWISE), EMBEDMENT AND HOOK LENGTHS SHALL FOLLOW TABLE A.

12. THE TESTING LABORATORY SHALL BE NOTIFIED AFTER THE MILD STEEL REINFORCEMENT AND EMBEDS ARE POSITIONED PRIOR TO EACH CONCRETE PLACEMENT. NO CONCRETE SHALL BE PLACED UNTIL THESE ITEMS ARE CHECKED AND APPROVED BY THE TESTING LABORATORY.

13. EACH AREA OF CONCRETE WORK SHALL BE FINISHED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS. 3/4" CHAMFERS SHALL BE PROVIDED AT ALL EXPOSED EDGES.

14. FLOOR SLAB THICKNESS IS BASED UPON SERVICE LOADS ONLY. PLACEMENT OF A CRANE OR TRUCK ON THE DESIGNED FLOOR SLAB FOR ERECTION PURPOSES IS STRICTLY PROHIBITED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING AN ADEQUATE SLAB TO SUPPORT CRANE LOADS IF CRANES ARE REQUIRED TO BE PLACED ON THE SLAB.

15. EMBEDDED ITEMS WITH HEADED ANCHORS SHALL BE INSTALLED IN PLASTIC CONCRETE. IN ORDER TO MINIMIZE ADJACENT VOIDS AND ENSURE PROPER EMBEDMENT OF HEADED ANCHORS, THE CONCRETE SURROUNDING THESE EMBEDDED ITEMS SHALL BE THOROUGHLY CONSOLIDATED.

CONCRETE STRENGTH SHALL REACH 75% OF SPECIFIED STRENGTH BEFORE CONSTRUCTION LOADS ARE APPLIED.

16. LOADS ARE APPLIED.

**STRUCTURAL STEEL**

1. STRUCTURAL STEEL SHALL BE NEW STEEL AND SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION LRFD 13TH EDITION.

2. ANCHOR RODS SHALL BE IN ACCORDANCE WITH ASTM A307. ANCHOR RODS SHALL BE HEADED, NOT HOOKED.

3. ANGLES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE HOT-DIP GALVANIZED UNLESS PAINTING OF ELEMENT IS INDICATED ON ARCHITECTURAL DRAWINGS DAMAGED FINISHES SHALL BE CORRECTED IN THE FIELD.

4. WELDED CONSTRUCTION SHALL CONFORM TO THE AWS D-1.1 "STRUCTURAL WELDING CODE." WELDING PROCESSES AND OPERATOR SHALL BE QUALIFIED IN ACCORDANCE WITH AWS STANDARD QUALIFICATION PROCEDURE. ELECTRODES FOR FIELD AND SHOP WELDS SHALL BE E70XX UNLESS NOTED OTHERWISE. ALL WELDS SHALL BE INSPECTED PER AWS STANDARDS. DEFICIENCIES SHALL BE CORRECTED.

5. WELDS AT ARCHITECTURALLY EXPOSED STEEL SHALL BE GROUND SMOOTH.

6. W-SHAPES SHALL BE ASTM A992 WITH A MINIMUM YIELD STRENGTH (Fy) OF 50 KSI.

7. ANGLES AND PLATES SHALL ABE IN ACCORDANCE WITH ASTM A36.

8. HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500 GR B.

9. STEEL PIPE SHALL CONFORM TO ASTM A53 GR B.

10. ALL STEEL BEAMS SHALL BE ERECTED WITH NATURAL CAMBER UP.

11. HEADED ANCHORS SHALL CONFORM TO AWS-D-1.1, TYPE B.

12. ALL STRUCTURAL STEEL CONNECTIONS AND DETAILS SHALL CONFORM TO THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", DATED MARCH 2000. EXCLUDING SECTION 4.4.

13. ALL CONNECTIONS NOT FULLY DETAILED ON DRAWINGS SHALL BE DESIGNED BY THE FABRICATOR. CONNECTION DESIGNS SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE AISC MANUAL, 13TH EDITION. CONNECTIONS SHALL BE DESIGNED FOR THE FACTORED LOADS SHOWN ON THE DRAWINGS. WHERE DESIGN LOADS ARE NOT SHOWN, THE CONNECTION SHALL BE DESIGNED FOR ONE-HALF OF THE TOTAL UNIFORM LOAD TABULATED IN THE FACTORED UNIFORM LOAD TABLES. IN PART 5 OF THE AISC MANUAL FOR THE GIVEN BEAM, SPAN, AND GRADE OF STEEL SPECIFIED. EACH CONNECTION SHALL BE SHOWN IN DETAIL ON THE SHOP DRAWINGS AND SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW.

14. BOLTED CONNECTIONS FOR PRIMARY MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF THE RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", DATED JUNE 23, 2000. UNLESS NOTED OTHERWISE, ALL PRIMARY CONNECTIONS WITH HIGH STRENGTH BOLTS SHALL USE ASTM A325 BOLTS AND HEAVY HEX NUTS TIGHTENED TO THE SNUG-TIGHT CONDITION.

15. STEEL MEMBERS SHALL NOT BE SPLICED EXCEPT WHERE SHOWN ON THE DRAWINGS.

**LIGHT GAGE METAL FRAMING**

1. WITH EACH TYPE OF METAL FRAMING SYSTEM REQUIRED, PROVIDE MANUFACTURER'S STANDARD STEEL RUNNERS (TRACKS), BLOCKING INTELS, CLIP ANGLES, SHOES, REINFORCEMENTS, FASTENERS, AND ACCESSORIES AS RECOMMENDED BY MANUFACTURER FOR APPLICATIONS INDICATED AS NEEDED TO PROVIDE A COMPLETE FRAMING SYSTEM.

2. FOR 16 GAGE AND HEAVIER STUDS AND JOISTS, FABRICATE COMPONENTS OF STEEL SHEET WITH A MINIMUM YIELD POINT OF 50,000 PSI; ASTM A-446, GRADE D.

3. FOR 16 GAGE AND HEAVIER TRACK, FABRICATE COMPONENTS OF STEEL SHEET WITH A MINIMUM YIELD POINT OF 33,000 PSI; ASTM-446, GRADE A.

4. FOR 18 GAGE AND LIGHTER STUDS, JOISTS, AND TRACK, FABRICATE COMPONENTS OF STEEL SHEET WITH A MINIMUM YIELD POINT OF 33,000 PSI; ASTM-446, GRADE A.

5. ALL LIGHT GAGE METAL FRAMING SHALL HAVE A G-60 GALVANIZED COATING MEETING THE REQUIREMENTS OF ASTM-525.

TABLE A - REINFORCEMENT TENSION LAPS, EMBEDMENT AND HOOK LENGTHS  
f<sub>y</sub> = 60,000 psi, f<sub>c</sub> = 3000 psi

Ø	EMBEDMENT AND CLASS A LAP (in)								CLASS B LAP (in)									
	TOP BAR				OTHER BARS				TOP BAR			OTHER BARS			HOOKS (in)			
	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	90°	180°	ldh	8	10	12	14	
#3	0.375	22	32	17	25	28	42	22	32	6	6	4	8	11				
#4	0.500	29	43	22	33	37	56	29	43	8	8	4	12	11				
#5	0.625	36	54	28	41	47	74	36	54	10	5	5	14					
#6	0.750	43	64	33	50	56	84	43	64	12	6	6	16	12				
#7	0.875	63	94	48	72	81	122	63	94	14	7	7	19	12				
#8	1.000	72	107	55	82	93	139	72	107	16	8	8	22					
#9	1.125	81	121	62	93	105	157	81	121	19	12	10	12	25				
#10	1.270	91	136	70	105	118	177	91	136	22	11	12	28					
#11	1.410	101	151	78	116	131	196	101	151	24	13	13	31					

SEE BELOW FOR CIRCLED NOTES USED WITH THIS TABLE:  
NOTE: BAR SIZE DESIGNATION IS INCH - POUND SYSTEM, i.e. D = 4 IS 1/2 INCH DIAMETER

LOAD TO THE ELEMENT BEING DESIGNED  
NOTES FOR USE WITH TABLE A

1.) TABLE A PRESENTS LENGTHS OF TENSION DEVELOPMENT LENGTHS AND TENSION LAP SPlice LENGTHS BASED ON ACI 318-05, SECTION 12.2.2.

2.) CLASS A LAP LENGTHS APPLY WHEN BAR LAPS ARE STAGGERED TO LAP HALF THE BARS AT THE SAME LOCATION OR WHEN BARS ARE LAPPED AT A LOCATION WHERE THE REINFORCEMENT AREA PROVIDED IS AT LEAST TWICE THAT REQUIRED.

3.) CLASS B LAP LENGTHS APPLY WHEN ALL BARS ARE SPLICED AT A LOCATION OF MAXIMUM STRESS IN THE BARS.

4.) CASE 1 LENGTHS APPLY TO BEAMS AND COLUMNS WITH CONCRETE COVER EQUAL OR GREATER THAN THE BAR DIAMETER. CLEAR BAR SPACING EQUAL OR GREATER THAN THE BAR DIAMETER AND WITH STIRRUPS OR TIES NOT LESS THAN THE CODE MINIMUM THROUGHOUT THE LENGTH IN THE TABLE, AND FOR OTHER ELEMENTS WITH CONCRETE COVER EQUAL OR GREATER THAN THE BAR DIAMETER AND CLEAR SPACING EQUAL OR GREATER THAN TWO TIMES THE BAR DIAMETER.

5.) CASE 2 LENGTHS APPLY TO BEAMS AND COLUMNS WITH CONCRETE COVER LESS THAN THE BAR DIAMETER, AND CLEAR BAR SPACING LESS THAN THE BAR DIAMETER, AND FOR OTHER ELEMENTS WITH CONCRETE COVER LESS THAN THE BAR DIAMETER AND CLEAR BAR SPACING LESS THAN TWO TIMES THE BAR DIAMETER.

6.) TOP BARS ARE HORIZONTAL REINFORCEMENT PLACED SO THAT MORE THAN 12" OF CONCRETE IS CAST BELOW THE REINFORCEMENT.

7.) HOOK LENGTH GIVEN IS THE STRAIGHT LINE DISTANCE FROM THE LOCATION OF MAXIMUM STRESS IN THE BAR TO THE OUTSIDE EDGE OF THE HOOK. MULTIPLY LENGTHS GIVEN BY 7.0 FOR HOOKS WITH SIDE COVER NORMAL TO THE HOOK NOT LESS THAN 2 1/2 AND FOR 90 DEGREE HOOKS WITH COVER ON BAR EXTENSION BEYOND HOOK NOT LESS THAN 2".

8.) LENGTHS SHOWN ARE EXTENSIONS FROM END OF BAR TO OUTSIDE OF HOOKED BAR.

**METAL DECKING**

1. ALL METAL DECKING SHALL COMPLY WITH THE SPECIFICATIONS OF THE STEEL DECK INSTITUTE FOR DESIGN AND ERECTION.

2. METAL DECKING SHALL BE INSTALLED CONTINUOUSLY ACROSS 2 OR MORE SPANS AND FASTENED TO RESIST DIAPHRAGM SHEAR FORCES AS SHOWN ON THE DRAWINGS. DECKING SHALL BE ATTACHED TO STEEL JOISTS AND FRAMEWORK IMMEDIATELY AFTER ALIGNMENT.

3. REFERENCE ROOF FRAMING PLAN FOR ROOF DECK SIZE AND GAGE. ROOF DECK SHALL HAVE A MINIMUM YIELD POINT OF 33,000 PSI.

4. METAL DUCTS, ELECTRICAL CONDUIT, AND PIPING SHALL NOT BE SUPPORTED FROM THE METAL DECK.

5. UNLESS OTHERWISE NOTED, METAL ROOF DECKING SHALL BE PAINTED AS REQUIRED BY THE ARCHITECTURAL PLANS.

**STEEL JOISTS**

1. STEEL JOISTS SHALL BE PROVIDED BY A JOIST MANUFACTURER THAT IS A MEMBER, IN GOOD STANDING, OF THE STEEL JOIST INSTITUTE.

2. FABRICATION AND ERECTION OF ALL OPEN WEB STEEL JOISTS AND BRIDGING SHALL CONFORM TO THE STANDARDS OF THE STEEL JOIST INSTITUTE, AND THE CONTRACTOR SHALL SO CERTIFY IN WRITING.

3. ALL BRIDGING SHALL BE DESIGNED BY JOIST MANUFACTURER. REFER ROOF FRAMING PLANS FOR THE MINIMUM NUMBER OF ROWS OF BRIDGINS.

4. ALL JOISTS SHALL BE CAMBERED IN ACCORDANCE WITH THE STANDARDS OF THE STEEL JOIST INSTITUTE.

5. ALL ROOF JOISTS SHALL BE PITCHED AND/OR SET ON A SLOPE TO ACHIEVE THE END SPAN ELEVATIONS SHOWN ON THE FRAMING PLAN.

6. ANY HANGERS SUPPORTED FROM JOISTS SHALL BE CONNECTED WITHOUT FIELD WELDING OR DRILLING HOLES IN JOISTS.

7. JOIST MANUFACTURER SHALL PROVIDE ADDITIONAL BRIDGING AT JOISTS TO RESIST NET UPLIFT FORCES AS SHOWN IN UPLIFT DIAGRAM. SEE BELOW.

8. UNLESS INDICATED OTHERWISE, ALL JOISTS OF SAME DESIGNATION AND LENGTH SHALL HAVE THE SAME NUMBER AND LOCATION OF PANEL OPENINGS.

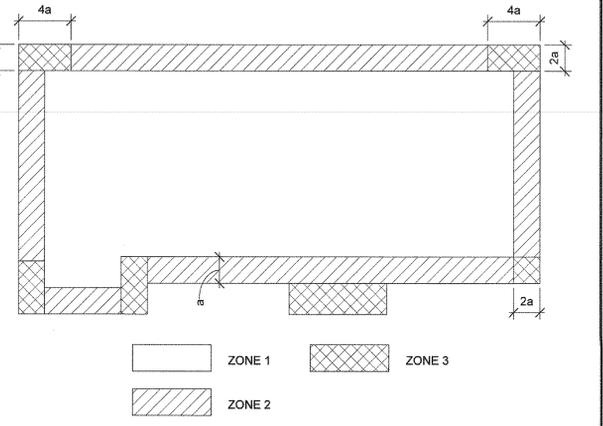
9. BETWEEN JOIST PANEL POINTS, THE BOTTOM CHORD OF THE JOIST SHALL NOT SUPPORT A VERTICAL LOAD IN EXCESS OF 50 LB UNLESS ADEQUATE EXTRA REINFORCEMENT IS PROVIDED. SEE S-5.01 FOR SPECIAL JOIST DIAGRAMS.

10. STEEL JOISTS SHALL BE DESIGNED TO PRODUCE A LIVE LOAD DEFLECTION OF LESS THAN 1/360 OF THE CLEAR SPAN LENGTH.

11. ALL BRIDGING SHALL BE WELDED OR BOLTED AT THE ENDS. ALL JOISTS SHALL BE WELDED AT THE ENDS, UNLESS SHOWN OTHERWISE.

12. WHERE FOUR OR MORE ROWS OF BRIDGING ARE REQUIRED, A ROW NEAREST MIDSPAN OF THE JOIST SHALL BE DIAGONAL BRIDGING WITH BOLTED CONNECTIONS AT CHORDS AND INTERSECTIONS.

13. JOIST MANUFACTURER SHALL BE RESPONSIBLE FOR DESIGNING JOIST TOP CHORD AND/OR JOIST SEAT EXTENSION AT BUILDING STOREFRONT TO RESIST UPLIFT PRESSURES SHOWN BELOW AND OTHER LOADS SPECIFIED ON THESE DRAWINGS IN LOAD COMBINATIONS SPECIFIED IN ASCE 7-05. DEAD LOAD SHALL BE NEGLECTED FOR UPLIFT CASES.



GROSS UPLIFT PRESSURE			
ZONE	AREA < 10 FT²	10 FT² < AREA < 100 FT²	AREA > 100 FT²
1	+10.0 PSF	+10.0 PSF	+10.0 PSF
2	-17.74 PSF	-16.69 PSF	-16.23 PSF
3	+10.0 PSF	+10.0 PSF	+10.0 PSF
3	-44.29 PSF	-22.41 PSF	-19.24 PSF

- 1.) ROOF DEAD LOAD FOR CALCULATING THE NET UPLIFT PRESSURE ON THE FLAT ROOF COMPONENTS AND CLADDING SHALL NOT EXCEED 7 PSF.
- 2.) PLUS (+) AND MINUS (-) SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM THE PROJECTED SURFACES, RESPECTIVELY.
- 3.) REFER ASCE 7-05 FOR ADDITIONAL WIND LOAD INFORMATION AND LOAD COMBINATIONS.
- 4.) "AREA" REFERS TO THE TRIBUTARY AREA CONTRIBUTING

**EARTHWORK AND FOUNDATIONS**

1. THE FOUNDATION DESIGN IS IN ACCORDANCE WITH A GEOTECHNICAL REPORT BY ALPHA TESTING, INC. (REPORT NO. 6090833) DATED OCTOBER 9, 2009. EXCERPTS FROM THE ABOVE REFERENCED REPORT ARE PROVIDED FOR INFORMATIONAL PURPOSES. REFER TO THE GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION REQUIREMENTS.

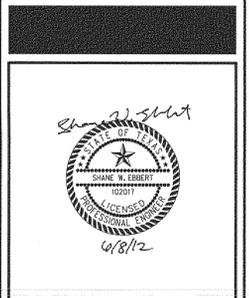
2. RECOMMENDATIONS FROM THE GEOTECHNICAL REPORT ALLOW FOR MAXIMUM DIFFERENTIAL MOVEMENT AFTER CONSTRUCTION OF 3/4".

3. ACCESS TO THE SITE SHALL BE GRANTED FOR THE GEOTECHNICAL ENGINEER TO OBSERVE ALL GRADING OPERATIONS AND THE REQUIRED TESTING FOR IMPLEMENTING THE RECOMMENDATIONS OF THE AFOREMENTIONED GEOTECHNICAL REPORT AND THE SPECIFICATIONS. THESE TESTS AND OBSERVATIONS SHOULD INCLUDE BUT NOT NECESSARILY BE LIMITED TO THE FOLLOWING:

- o OBSERVATION AND TESTING DURING SITE PREPARATION AND EARTHWORK
- o CONSULTATION AS REQUIRED DURING CONSTRUCTION
- o VERIFY THAT THE BUILDING PAD IS SUITABLE FOR CONSTRUCTION
- o OBSERVATION AND TESTING DURING CONSTRUCTION OF THE FOOTINGS.

4. LOCATE ALL UTILITIES AND UNDERGROUND SERVICES PRIOR TO FOOTING EXCAVATION. THE ENGINEER SHALL BE NOTIFIED IN CASE OF CONFLICT.

5. SQUARE FOOTINGS ARE DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 2,500 PSF. STRIP FOOTINGS ARE DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 2,000 PSF. THESE VALUES ARE APPLICABLE TO THE SOIL AT A DEPTH OF 3 FEET BELOW FINAL GRADE AT THE BUILDING EXTERIOR AND AT NOMINAL DEPTHS IN THE INTERIOR. THE ACTUAL BEARING STRATUM AND FOUNDING ELEVATIONS WILL BE VALIDATED BY THE GEOTECHNICAL ENGINEER.



Date	Rev No.	Description	By

DRAWN BY: CG

CHECKED BY: SWE

COORDINATION:

RECOMMENDED:

APPROVED:



BIGGS FIELD  
MINI-MALL #5  
FORT BLISS, TEXAS

SHEET TITLE:  
GENERAL NOTES

Date: 08 JUNE 12	Scale: 1/8" = 1'-0"	Sheet: S-0.01
Project Number: 3770-05-000016		















































































































**PIPE MATERIAL LIST**

<b>ABOVE FLOOR, INSIDE BUILDING</b>
SANITARY WASTE AND VENT PIPING SHALL BE STANDARD WEIGHT CAST IRON PIPE, STANDARD WEIGHT CAST IRON FITTINGS, WITH BELL AND SPIGOT ELASTOMERIC GASKET JOINTS OR NO-HUB CAST IRON SYSTEM CONFORMING TO CSIP, STANDARD NO. 301-75. NEOPRENE GASKETS SHALL CONFORM TO ASTM STANDARD C564-75.
DOMESTIC WATER PIPING SHALL BE DRAWN (HARD) COPPER WATER TUBE, TYPE "L", ASTM B88, WITH WROUGHT COPPER FITTINGS, ANSI B16.22 AND 95-5 SOLDER JOINTS.
<b>BELOW FLOOR INSIDE AND WITHIN 5 FT. OF BUILDING</b>
SANITARY WASTE AND VENT PIPING SHALL BE SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM-2665 WITH SOLVENT WELDED JOINTS.
GREASE WASTE AND VENT PIPING SHALL BE STANDARD WEIGHT CAST IRON PIPE, STANDARD WEIGHT CAST IRON FITTINGS, WITH BELL AND SPIGOT ELASTOMERIC GASKET JOINTS.
DOMESTIC WATER PIPING SHALL BE ANNEALED (SOFT) COPPER WATER TUBE, TYPE "K", ASTM B88, WITH NO JOINTS OR FITTINGS BELOW SLAB.
<b>ABOVE GRADE, OUTSIDE BUILDING</b>
DOMESTIC WATER PIPING SHALL BE SIZES 2-1/2 INCHES AND SMALLER: COPPER WATER TUBE, TYPE "K" RIGID, ASTM B-88 WITH WROUGHT COPPER FITTINGS, ANSI B16.22 AND 95-5 SOLDER JOINTS. PROVIDE 1 INCH THICK MOLDED FIBERGLASS INSULATION COVERED ALUMINUM JACKET.
<b>BELOW GRADE, BEYOND 5 FT. OUTSIDE BUILDING</b>
SANITARY WASTE AND VENT PIPING SHALL BE SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM-2665 WITH SOLVENT WELDED JOINTS.
GREASE WASTE AND VENT PIPING SHALL BE STANDARD WEIGHT CAST IRON PIPE, STANDARD WEIGHT CAST IRON FITTINGS, WITH BELL AND SPIGOT ELASTOMERIC GASKET JOINTS.
DOMESTIC WATER PIPING SHALL BE SCHEDULE 40 POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM D-1785 WITH SOLVENT WELDED JOINTS.

**GENERAL NOTES**

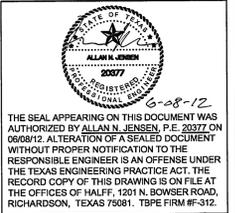
- ALL PLUMBING WORK SHALL COMPLY WITH THE 2009 EDITION OF THE INTERNATIONAL PLUMBING CODE.
- THIS CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THIS CONTRACTOR SHALL NOTIFY THE ARCHITECT/ ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
- ALL LAVATORIES AND SINKS SHALL BE SUPPLIED WITH HOT AND COLD WATER TO FAUCETS. PROVIDE CHROME PLATED BRASS SUPPLY WHEEL STOPS WITH WALL ESCUTCHEONS. PROVIDE CHROME PLATED FLEXIBLE RISERS OF SIZE REQUIRED TO PROPERLY CONNECT FIXTURE. PROVIDE 17 GAUGE CHROME PLATED SEMI-CAST BRASS P-TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON.
- PROVIDE TRUEBRO, INC. "HANDICAP" INSULATION KITS ON ALL LAVATORIES AND SINKS REQUIRED TO BE HANDICAP ACCESSIBLE. ALL FIXTURES SHALL COMPLY WITH THE STATE ACCESSIBILITY STANDARDS REQUIREMENTS. REFER TO SPECIFICATION Z21116.
- ALL WATER CLOSETS REQUIRED TO BE HANDICAP ACCESSIBLE SHALL ALLOW A FORWARD/PARALLEL APPROACH TO FLUSH CONTROL. TRIP LEVER OR FLUSH HANDLE CONTROLS SHALL BE MOUNTED ON THE WIDE/APPROACH SIDE.
- ROOF DRAINAGE WILL BE GUTTER AND DOWNSPOUT. REFER TO ARCHITECTURAL DRAWINGS.
- SANITARY ENTRY. EXTEND SANITARY PIPING TO 5'-0" BEYOND BUILDING. ROUTE SANITARY PIPING AT A MINIMUM OF 1/4" PER FOOT SLOPE. COORDINATE WITH CIVIL DRAWINGS AS TO INVERT PRIOR TO CONSTRUCTION.
- GREASE INTERCEPTOR WITH INSPECTION PORT. ROUTE GREASE WASTE AT A MINIMUM OF 1/4" PER FOOT SLOPE. COORDINATE LOCATION OF EQUIPMENT WITH SITE LAY-OUT PRIOR TO CONSTRUCTION. REFER ALSO TO DETAILS 5/P2.02 AND 6/P2.02.
- VTR (VENT THRU ROOF) SHALL BE FLASHED, AND OFF-SET A MINIMUM OF 10'-0" FROM FRESH AIR INTAKE. COORDINATE WITH MECHANICAL EQUIPMENT.
- DOMESTIC WATER SHALL BE PROVIDED WITH BFP (REDUCED PRESSURE BACKFLOW PREVENTER) AND METER. EXTEND DOMESTIC PIPING 5'-0" BEYOND BUILDING, TIE-IN TO SITE DOMESTIC WATER. COORDINATE WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
- COORDINATE NATURAL GAS ENTRY WITH LOCAL GAS COMPANY PRIOR TO CONSTRUCTION.
- DRAWINGS ARE DIAGRAMMATIC AND NOT TO BE SCALED. REFER TO ARCHITECTURAL PLANS AND FIELD CONDITIONS FOR DIMENSIONS.
- SEE SPECIFICATIONS FOR PIPING, VALVE AND INSULATION REQUIREMENTS.
- PLUMBING FIXTURES ARE TO BE FURNISHED COMPLETE WITH ALL NECESSARY STOPS, TRAPS, TAILPIECES, TRIM, ETC.
- PROVIDE WATER HAMMER ARRESTERS ON THE SUPPLY PIPING (CW & HW) WHERE INDICATED ON THE PLAN. ARRESTERS SHALL BE SIOUX CHIEF MODEL 652-A OR EQUAL. INSTALL ARRESTERS PER THE MANUFACTURER'S RECOMMENDATIONS. THE ARRESTERS SHALL BE RATED FOR INSTALLATION IN CONCEALED LOCATIONS. CAPPED AIR CHAMBERS ARE NOT ALLOWED. ALL HOT AND COLD WATER SUPPLY PIPING CONNECTION TO FIXTURES ARE TO BE 1/2", UNLESS NOTED OTHERWISE.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING A COMPLETE AND OPERABLE SYSTEM IN ACCORDANCE WITH THE INTENT OF THE PLANS, WHETHER OR NOT EVERY ELEMENT THEREOF IS SPECIFICALLY CALLED OUT.

**PLUMBING SYMBOLS LEGEND**

SYMBOLS	DESCRIPTION
SS	SANITARY SEWER PIPING (SS)
GW	GREASE WASTE PIPING (GW)
V	VENT PIPING (V)
CD	CONDENSATE DRAIN PIPING (CD)
DE	CONDENSATE EQUIPMENT DRAIN PIPING (D)
CW	COLD WATER PIPING (CW)
HW	HOT WATER PIPING (HW)
HWR	HOT WATER RETURN PIPING (HWR)
140F	140F HOT WATER PIPING
FW	FILTERED WATER
TP	TRAP PRIMER LINE (TP)
FIRE	FIRE PROTECTION PIPING (FIRE)
GAS	NATURAL GAS PIPING (GAS)
	SHUT-OFF VALVE
	SOLENOID VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	UNION
	STRAINER
	REDUCER
	DOUBLE CHECK VALVE (BACKFLOW PREVENTER)
	PIPING DOWN
	PIPING UP -OR- PIPING UP AND DOWN
	PIPING BRANCH DOWN
	PIPING BRANCH UP
	PIPING BRANCH - SIDE CONNECTION
	CAP ON END OF PIPE
	GROUND CLEANOUT (GCO)
	FLOOR CLEANOUT (FCO)
	DOUBLE CLEANOUT (DCO)
	HUB DRAIN (HD)
	FLOOR DRAIN (FD)
	FLOOR SINK (FS)
	HOSE BIBB (HB) OR WALL HYDRANT (WH)
	GAS COCK
	GAS REGULATOR
	ACCESS PANEL FOR TRAP PRIMER, VALVE, ETC.
	SHOCK ABSORBER

**GENERAL ABBREVIATIONS**

AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
BFF	BELOW FINISHED FLOOR
CONN	CONNECTION
CONT.	CONTINUATION
CLG	CEILING
CFH	CUBIC FEET PER HOUR
CONTR.	CONTRACTOR
DWG	DRAWING
DF	DRINKING FOUNTAIN
EC	ELECTRICAL CONTRACTOR (DIVISION 26)
EWC	ELECTRIC WATER COOLER
EL	ELEVATION
FPC	FIRE PROTECTION CONTRACTOR
FLR	FLOOR
FTE	FINISHED FLOOR ELEVATION
GPM	GALLONS PER MINUTE
GT	GREASE TRAP
GC	GENERAL CONTRACTOR
HVAC	HEATING VENTILATION AND AIR CONDITIONING
INV	INVERT OF PIPE ELEVATION
JC	JANITORS SINK
KEC	KITCHEN EQUIPMENT CONTRACTOR
LAV	LAVATORY
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
NTS	NOT TO SCALE
OFI	OWNER FURNISHED AND CONTRACTOR INSTALLED
OFI	OWNER FURNISHED AND INSTALLED
PSI	POUNDS PER SQUARE INCH
PC	PLUMBING CONTRACTOR
S.F.	SQUARE FEET
SHWR	SHOWER
SK	SINK
TOP	TOP OF PIPE ELEVATION
TP	TRAP PRIMER
TP	TYPICAL
UR	URINAL
VTR	VENT THROUGH ROOF
W.C.	WATER COLUMN
WTS	WATER TIGHT SLEEVE
W&V	WASTE AND VENT
WC	WATER CLOSET
WS	WASTE STACK



Date	Rev No.	Description	By

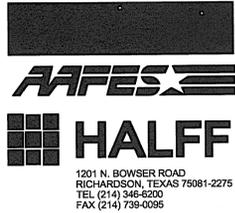
DRAWN BY: TAT  
BO

CHECKED BY: TWC  
AJ

COORDINATION:

RECOMMENDED:

APPROVED:



PROJECT:

MINI - MALL #5 E. BLISS

FORT BLISS TEXAS

SHEET TITLE:  
**PLUMBING LEGEND AND NOTES**

Date: 08JUN12 Scale: N.T.S. Sheet: P0.01  
Project Number: 3770-05-000016

File Name: I:\270009\27012\DWG\F001-SC-27012.dwg  
Current Tab: (Legend).rvt User: AJ2575  
Printed Date: 6/7/2012 2:55:21 PM





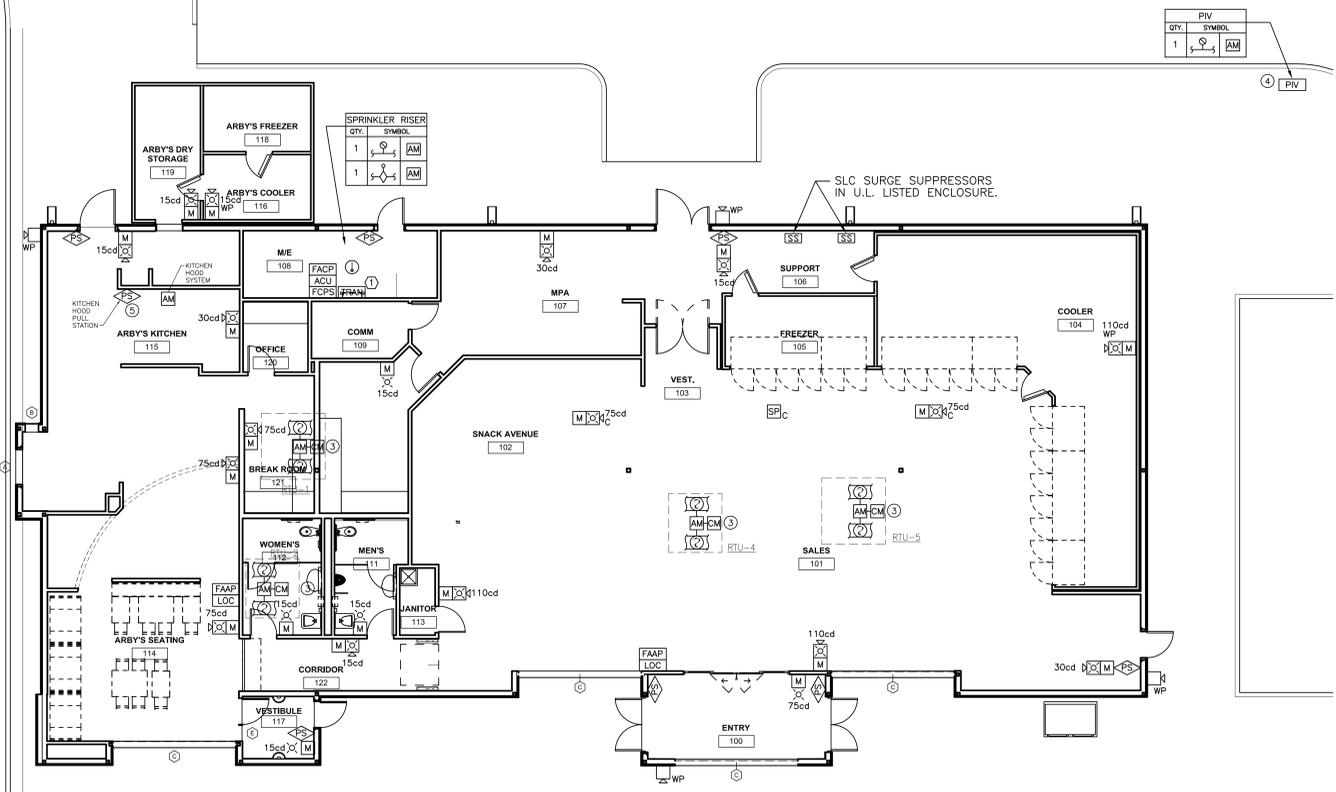








THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY ALBERT WILLIAM REED II, P.E. ON JUNE 8, 2012. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.



QTY.	SYMBOL	PIV
1	(Symbol)	AM

### GENERAL NOTES

- FIRE ALARM CONTRACTOR SHALL PROVIDE AND INSTALL DUCT DETECTION AS REQUIRED. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE CONNECTIONS WITH MECHANICAL TRADES FOR A COMPLETE AND APPROVED SYSTEM IN ACCORDANCE WITH BASE REQUIREMENTS. ALL DUCT DETECTION SHALL INITIATE AN SUPERVISORY SIGNAL.
- ALL FIRE ALARM/MNS WIRING SHALL BE RUN IN METALLIC RED CONDUIT. RACEWAY SYSTEM SHALL BE MINIMUM 3/4 INCH EMT TYPE. PAINT ALL FIRE ALARM CONDUIT RED. IN EXPOSED CEILING AREAS, CONDUIT MAY BE PAINTED TO MATCH SURROUNDINGS BUT PROVIDE 3/4 INCH RED BANDS EVERY 10 FEET ON CENTER.
- CONTRACTOR SHALL PROVIDE AND INSTALL REMOTE STATUS AND TEST SWITCHES FOR EACH DUCT SMOKE DETECTOR. EACH STATUS SWITCHES SHALL BE LABELED WITH RTU/AHU NUMBER AND DETECTOR ADDRESS. STATUS/TEST SWITCHES SHALL BE MOUNTED AT 6' A.F.F. IN ACCESSIBLE LOCATION.
- PAINT POWER SUPPLY DISCONNECT SWITCH RED AND LABEL "FIRE ALARM". FIRE ALARM CONTROL AND MNS PANELS 120VAC POWER SHALL BE DEDICATED. DEDICATED POWER CIRCUITS SHALL BE EQUIPPED WITH BREAKER LOCK (NON-SWEEPING STYLE).
- PROVIDE A SINGLE SWITCH OR OPERATING MECHANISM CAPABLE OF SHUTTING DOWN ALL HEATING, VENTILATING AND AIR CONDITIONING (HVAC) EQUIPMENT IN THE FACILITY IN ACCORDANCE WITH THE REQUIREMENTS OF UFC 4-010-01. THE HVAC EMERGENCY SWITCH SHALL BE LOCATED ADJACENT TO THE LOC.
- PROVIDE SURGE PROTECTION IN ACCORDANCE WITH UFC 3-520-01 AND NFPA 72.
- TRANSMITTER FREQUENCY SHALL BE 138.925 MHz NARROW BAND, VERTICAL POLARIZATION, WITH YAGI ANTENNA.
- SIGNALING LINE CIRCUITS - CLASS "A", STYLE 6. NOTIFICATION APPLIANCE CIRCUITS - CLASS "A", STYLE Z. ALL WIRING LEAVING BUILDING SHALL BE OUTDOOR RATED DIRECT BURIAL CABLE.
- STANDARDS:  
UFC 3-600-01 26 SEPTEMBER 2006/CHANGE 1, 14 JULY 2009  
UFC 4-021-01 9 APRIL 2008/CHANGE 1, JANUARY 2010  
NFPA 101 - 2012  
NFPA 72 - 2010 EDITION

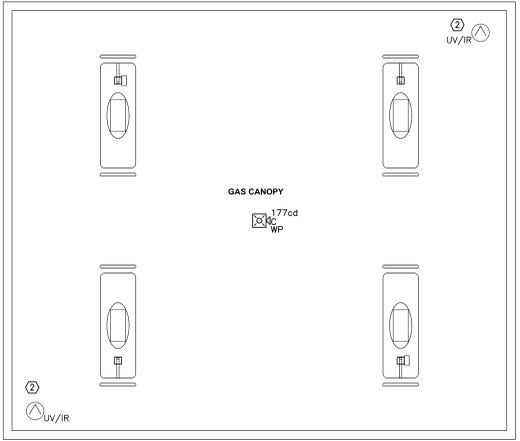
### SYMBOL LEGEND

(Symbol)	FIRE ALARM CONTROL PANEL
(Symbol)	FIRE CONTROL POWER SUPPLY
(Symbol)	FIRE ALARM ANNUNCIATOR PANEL
(Symbol)	AUTONOMOUS CONTROL UNIT
(Symbol)	LOCAL OPERATOR CONTROL
(Symbol)	TRANSEIVER WITH ANTENNA & MAST
(Symbol)	POST INDICATOR VALVE
(Symbol)	ADDRESSABLE PULL STATION
(Symbol)	ADDRESSABLE MONITOR MODULE
(Symbol)	ADDRESSABLE CONTROL MODULE
(Symbol)	SLC SURGE SUPPRESSOR IN U.L. LISTED ENCLOSURE LOCATED INDOORS.
(Symbol)	MASS NOTIFICATION SYSTEM AMBER STROBE
(Symbol)	FIRE ALARM/MNS STROBE
(Symbol)	FIRE ALARM/MNS SPEAKER STROBE
(Symbol)	FIRE ALARM/MNS SPEAKER ONLY.
(Symbol)	FIRE ALARM/MNS SPEAKER HORN (STH15)
(Symbol)	SMOKE DETECTOR-PHOTOELECTRIC
(Symbol)	HEAT DETECTOR-135°F RATE COMPENSATION
(Symbol)	SPRINKLER TAMPER SWITCH
(Symbol)	SPRINKLER WATERFLOW SWITCH
(Symbol)	SPRINKLER PRESSURE SWITCH
(Symbol)	DUCT SMOKE DETECTOR

### KEYED NOTES:

- CONTRACTOR SHALL PROVIDE AND INSTALL TRANSEIVER EQUAL TO STANDARD SYSTEM FOR MONACO. SYSTEM IS TO INCLUDE ANTENNA, MAST AERIAL, MOUNTING DEVICE, CONDUIT, SHIELDED COAX CABLE, AND WEATHERHEAD.
- LOC SHALL BE EQUIPPED WITH HVAC SHUT DOWN SWITCH PER UFC 4-021-01(4-4.2).
- CONTRACTOR SHALL PROVIDE AND INSTALL ADDRESSABLE CONTROL MODULES MECHANICAL TO INDICATE SHUT DOWN UPON ACTIVATION OF SHUT DOWN SWITCH PER UFC 4-021-01(4-4.2).
- CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION OF THE POST INDICATOR VALVE (PIV).
- RFPE IS NOT RESPONSIBLE FOR THE DESIGN OF THE ANSUL SYSTEM. REFER TO MECHANICAL DRAWINGS FOR LOCATION AND OTHER REQUIREMENTS.

ROOFTOP UNIT SCHEDULE		
RTU-1		CM
RTU-2		CM
RTU-3		CM
RTU-4		CM
RTU-5		CM
RTU-6		CM
RTU-7		CM
EXHAUST FAN SCHEDULE		
EF-1		CM
EF-2		CM
KF-1		CM
KF-2		CM
RV		CM



# 01 FIRE ALARM PLAN

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

### SUBSCRIPT

(Symbol)	CEILING MOUNT APPLIANCE
(Symbol)	CEILING MOUNT APPLIANCE
(Symbol)	WEATHERPROOF APPLIANCE

Date	Rev No.	Description	By

DRAWN BY: RP  
 CHECKED BY: DR  
 COORDINATION:  
 RECOMMENDED:  
 APPROVED: AR

**AAFES**  
**HALFF**  
 1201 N. BOWSER ROAD  
 RICHARDSON, TEXAS 75081-2275  
 TEL (214) 348-6200  
 FAX (214) 738-0095

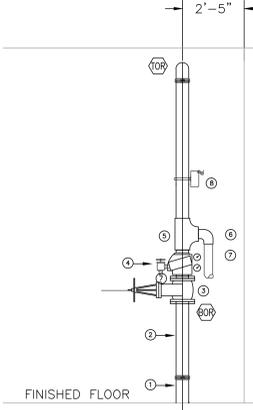
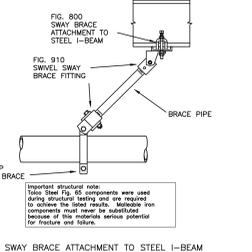
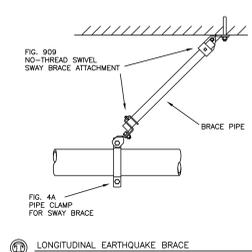
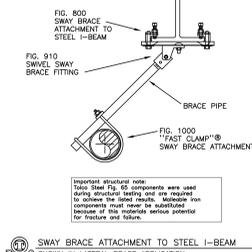
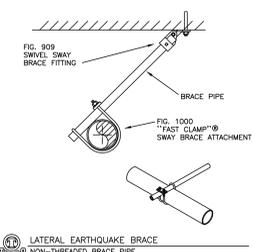
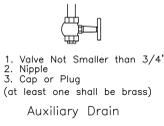
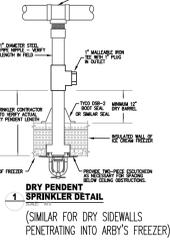
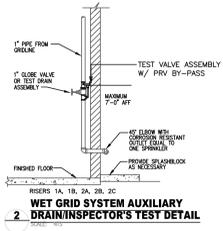
PROJECT:  
**MINI - MALL #5 E. BLISS**  
 FORT BLISS  
 TEXAS

SHEET TITLE:  
**FIRE ALARM PLAN**  
 Date: 03JUL12 Scale: 1/8" = 1'-0" Sheet: FA-1.0  
 Project Number: 3770-05-000016

REED  
 FIRE PROTECTION  
 ENGINEERING  
 14135 MIDWAY RD.  
 SUITE G200  
 ADDICKSON, TX 75001  
 800-381-5504  
 WWW.REEDFIRE.COM

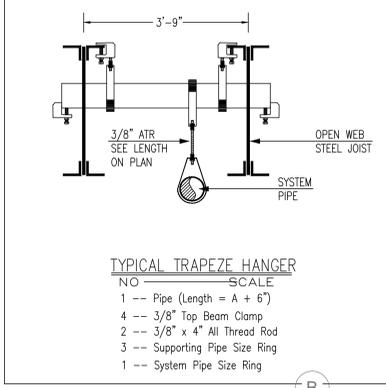




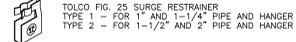


- GENERAL NOTES**
- 6" UNDERGROUND FIRELINE LEAD-IN TO 12" ABOVE FINISHED FLOOR.
  - 6" GROOVED X FLANGED SCHEDULE 40 SPOOL PIECE.
  - 6" FLANGED X FLANGED O.S.B.Y. GATE VALVE WITH SUPERVISORY SWITCH WIRING BY OTHERS.
  - 6" FLANGED X GROOVED ALARM CHECK VALVE WITH RETARDING CHAMBER, PRESSURE ALARM SWITCH, CLOSED DRAIN TRIM, TEST TRIM, ETC. DRAIN PIPE SHALL BE ROUTED OUTSIDE THE BUILDING AND SHALL BE INSTALLED TO PREVENT DAMAGE TO BUILDING, LANDSCAPE, AND VEHICLES. WIRING BY OTHERS. VARIABLE PRESSURE TRIM.
  - 6" GROOVED TEE.
  - 4" GROOVED ELBOW.
  - 4" PIPE DOWN TO 4" LEAD-IN FOR FREESTANDING FIRE DEPARTMENT CONNECTION AT NW CORNER OF BUILDING. SEE SHEET FP.100 FOR LOCATION.
  - WATER FLOW SWITCH WIRED BY OTHERS.

**A1 RISER DETAIL**  
SCALE: NONE

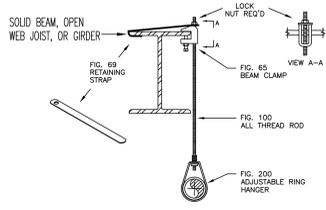


- TYPICAL TRAPEZE HANGER**  
NO SCALE
- 1 --- Pipe (Length = A + 6")
  - 4 --- 3/8" Top Beam Clamp
  - 2 --- 3/8" x 4" All Thread Rod
  - 3 --- Supporting Pipe Size Ring
  - 1 --- System Pipe Size Ring

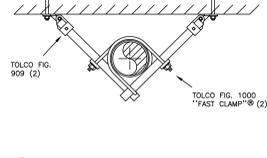


TOLCO FIG. 25 IS DESIGNED TO BE USED ONLY WITH TOLCO BAND HANGERS FIG. 200 AND 2NFPA TO RESTRAIN THE UPWARD MOVEMENT OF PIPE AS IT OCCURS DURING SPRINKLER HEAD ACTIVATION OR SEISMIC ACTIVITY

**FIGURE 25 SURGE RESTRAINER**  
FOR STEEL OR CPVC PLASTIC PIPE  
OR EQUAL

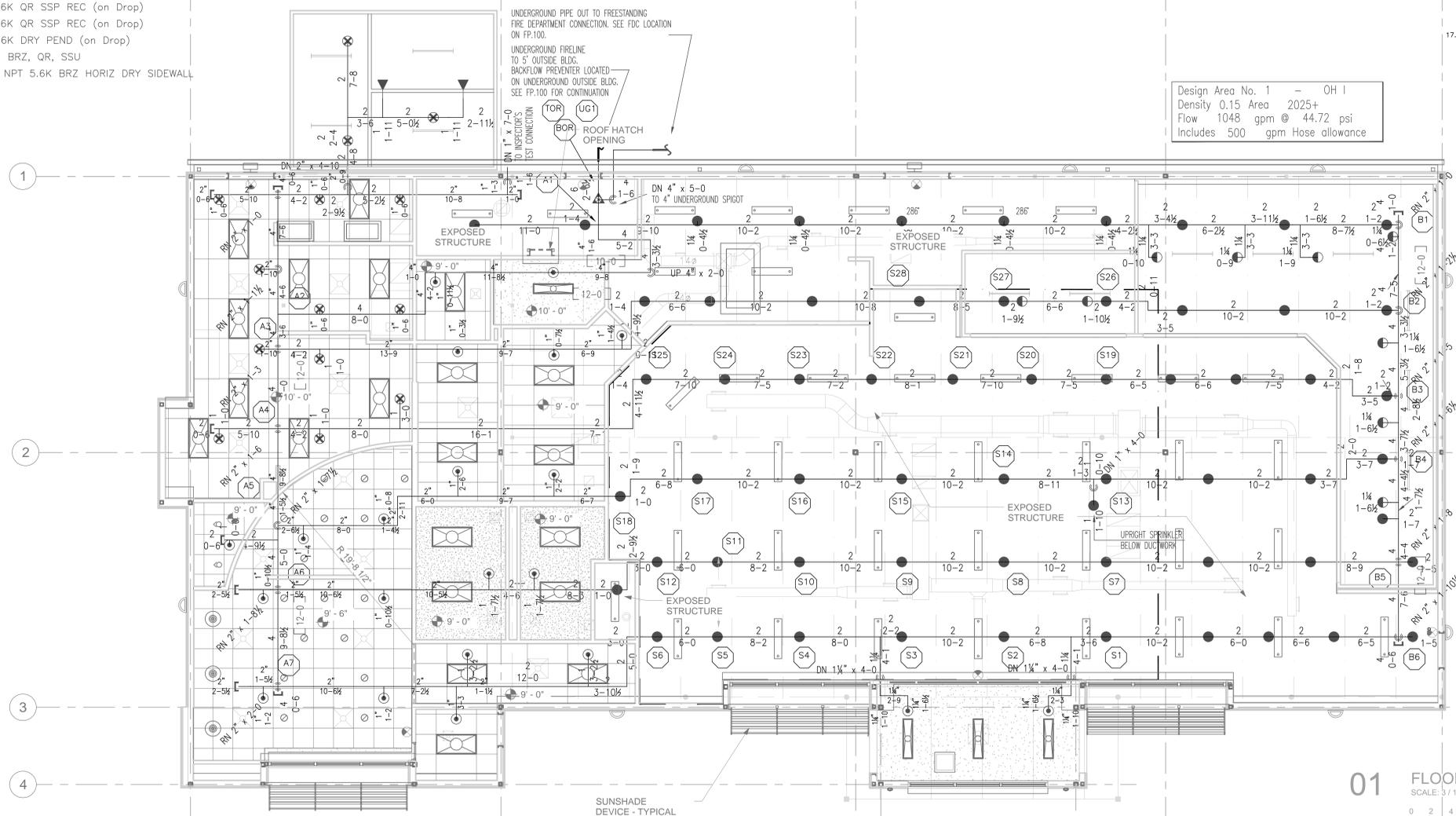


**TOP BEAM CLAMP, ROD, AND RING**  
OR EQUAL



**FAST CLAMP RISER BRACE**  
OR EQUAL

- SYMBOL LEGEND**
- 22 (1/2", K=5.6) 175F 1/2" 5.6K QR SSP REC (on Drop)
  - 14 (1/2", K=5.6) 200F 1/2" 5.6K QR SSP REC (on Drop)
  - 9 (1/2", K=5.6) 200F 1/2" 5.6K DRY PEND (on Drop)
  - 60 (1/2", K=5.6) 175F 1/2" OR, BRZ, QR, SSU
  - 2 (1", K=5.6) 200F DEG 1/2" NPT 5.6K BRZ HORIZ DRY SIDEWALL
- WET SPRINKLER RISER LOCATION  
HYDRAULIC REFERENCE POINT



Design Area No. 1 - OH I  
Density 0.15 Area 2025+  
Flow 1048 gpm @ 44.72 psi  
Includes 500 gpm allowance

**GENERAL NOTES**

- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND FALL UNDER THE "BUY AMERICAN" ACT.
- PROVIDE COMPLETE WET SYSTEM IN BUILDING AS SHOWN ON PLANS. DESIGN AND INSTALL IN ACCORDANCE WITH NFPA 13 2010 EDITION, NFPA 24 2008 EDITION, UFC 3-600-01 DECEMBER 2006 EDITION, CHANGE 1, 14JULY2009, BID DRAWINGS, AND SPECIFICATIONS.
- REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
- REFER TO ARCHITECTURAL DRAWINGS FOR ROOM FINISH SCHEDULE AND ROOM USE. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR THE LOCATION OF ALL CEILING-MOUNTED DEVICES. FIELD VERIFY AND COORDINATE THE LOCATIONS OF ALL SYSTEM COMPONENTS INCLUDING PIPING, ALARMS, DRAINS, TEST POINTS, ETC. WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL EQUIPMENT WITHIN THE BUILDING.
- PROVIDE SLEEVES AND WALL PLATES FOR ALL PENETRATIONS (EXCEPT WHERE NOTED) THROUGH WALLS OR FLOORS THAT MIGHT INCLUDE DRILLING THROUGH CONCRETE, METAL, SHEETROCK, OR OTHER MATERIALS. FIELD VERIFY APPROXIMATE WALL AND FLOOR PENETRATIONS SHOWN ON THE PLANS. SEAL ALL PENETRATIONS IN RATED SEPARATION TO MEET THE MINIMUM FIRE RATING OF THE WALL OR FLOOR. SEAL PENETRATIONS THROUGH COOLERS AND FREEZERS.
- THE TOTAL CALCULATED WATER DEMAND FOR EACH OCCUPANCY IS EQUAL TO THE SUM OF THE SPRINKLER SYSTEM DEMAND PLUS THE COMBINED HOSE STREAM ALLOWANCE REQUIRED PER UFC 3-600-01.
- COORDINATE THE LOCATIONS OF RISERS, DRAINS, TEST CONNECTIONS, AND OTHER SPRINKLER SYSTEM COMPONENTS WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL COMPONENTS OF THE BUILDING AND AS SHOWN ON THE PLANS.
- THE SPRINKLER SYSTEMS HAVE BEEN HYDRAULICALLY CALCULATED IN ACCORDANCE WITH NFPA 13, AND UFC 3-600-01 DENSITY AND SPACING REQUIREMENTS LISTED IN THE SPRINKLER DESIGN CRITERIA SCHEDULE OF THE DESIGN ANALYSIS. AREAS OF SPRINKLER CALCULATION FOR THIS FACILITY SHALL BE PERMITTED TO BE REDUCED FOR UTILIZING QUICK RESPONSE SPRINKLERS PER UFC 3-600-01 AND IN COMPLIANCE WITH UFC 4-010-01.
- PROVIDE RECESSED PENDENT SPRINKLERS WITH CHROME ESCUTCHEONS FOR AREAS WITH SUSPENDED CEILINGS. PROVIDE CHROME PENDENT SPRINKLERS WITH CHROME TWO-PIECE ESCUTCHEONS IN AREAS WITH SUSPENDED CEILINGS AND SURFACE-MOUNTED LIGHT FIXTURES. CENTER SPRINKLERS IN ONE DIRECTION FOR CEILING TILE. ALIGN SPRINKLERS WHERE POSSIBLE WITH LIGHT FIXTURES IN GYPSUM BOARD CEILINGS. PROVIDE QUICK RESPONSE BRASS UPRIGHT SPRINKLERS IN AREAS EXPOSED TO STRUCTURE.
- PROVIDE THREADED, GROOVED, OR WELDED BLACK SCHEDULE 10 AND SCHEDULE 40 FOR ALL WET PIPE SYSTEM. INSTALL GALVANIZED WHERE PIPE IS EXPOSED TO THE OUTSIDE ELEMENTS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- PROVIDE AUXILIARY DRAINAGE FOR ALL TRAPPED SECTIONS OF PIPE.
- PROVIDE ACCESS DOORS AND SIGNAGE WHERE ACCESS IS REQUIRED TO CONCEALED SPRINKLER EQUIPMENT, VALVES, AND CONTROLS LOCATED IN WALLS OR ABOVE CEILINGS AS APPROVED BY THE OWNER.
- THE CENTERLINE OF THE SPRINKLER PIPE SHALL BE INSTALLED AS NOTED ABOVE THE CEILING IN ALL AREAS WITH A CEILING, AND AS REQUIRED BELOW THE TOP OF STEEL/ROOF DECK IN EXPOSED AREAS TO POSITION SPRINKLER DEFLECTORS 1" TO 12" BELOW ROOF DECK OR AS NOTED ON PLAN.
- SPRINKLERS NEAR UNIT HEATERS AND OTHER HEAT SOURCES SHALL BE A HIGH TEMPERATURE AS DIRECTED BY NFPA 13 AND UFC-3-600-01.
- THE FIRE PROTECTION ENGINEER OF RECORD SHALL WITNESS ALL FINAL TESTS OF THE SYSTEMS.
- FLOW TEST RESULTS: SEE SHEET FP100 OR DESIGN ANALYSIS FOR FLOW TEST RESULTS. THE FIRE SPRINKLER CONTRACTOR SHALL PERFORM A NEW WATER FLOW TEST IF THE TEST RESULTS SHOWN ON THE PLAN ARE OVER 12 MONTHS. THE NEW WATER FLOW TEST SHALL BE USED IN THE NEW HYDRAULIC CALCULATIONS THAT SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR.
- THE SALES, AND STORAGE AREAS SHALL BE DESIGNED FOR ORDINARY HAZARD GROUP 1 OCCUPANCY. KITCHEN SERVICE, MECHANICAL AND COMMUNICATIONS ROOMS SHALL BE DESIGNED FOR ORDINARY GROUP HAZARD OFFICE, RESTROOMS, AND RESTAURANT SEATING SHALL BE DESIGNED FOR LIGHT HAZARD OCCUPANCY. STORAGE LIMITED TO 8 FT MAXIMUM HEIGHT.



Date	Rev No.	Description	By

DRAWN BY: CAP  
CHECKED BY:  
COORDINATION:  
RECOMMENDED:  
APPROVED:



PROJECT:  
**MINI - MALL #5 E. BLISS**  
**FORT BLISS TEXAS**

SHEET TITLE:  
**FIRE SPRINKLER FLOOR PLAN**

Date: 03JUL12 Scale: 3/16"=1'-0" Sheet: **FP.101**  
Project Number: 3770-05-000016

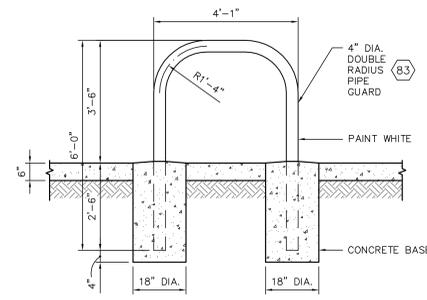


**01 FLOOR PLAN**  
SCALE: 3/16" = 1'-0"  
0 2 4 8  
3/16" = 1'-0"

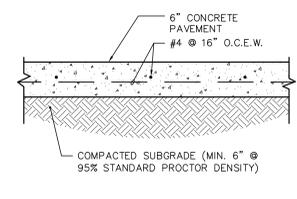
SDATES STIMES SUBSERVICIENTS/EELS

**PRE-ENGINEERED, PREFABRICATED CANOPY SPECIFICATIONS**

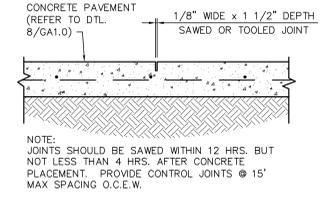
<b>COLUMNS:</b>	TUBULAR STEEL - A-500, GRADE B, PRIME FINISH.
<b>STRUCTURAL STEEL:</b>	ALL WIDE FLANGE W/BOLTED CONNECTIONS, A36 GRADE, PRIME FINISH.
<b>DECKING:</b>	SL-316 EMBOSSED WHITE, 20 GA. A-448, GRADE C MINIMUM.
<b>FASCIA:</b>	ALUMINUM COMPOSITE MATERIAL PANELS W/ 4mm THICK PRE-FINISHED ALUMINUM COMPOSITE MATERIAL SUBSTRATE
<b>FASCIA FRAMING:</b>	2" x 2" x 18 GAUGE ANGLE.
<b>FASTENERS:</b>	SCREWS AND RIVETS (STAINLESS STEEL).
<b>GUTTER:</b>	EMBOSSED, 20 GA.
<b>DRAINAGE:</b>	PVC IN COLUMNS.
<b>DESIGN:</b>	SITE SPECIFIC PARAMETERS PER THE BUILDING CODE, LATEST EDITION, CALCULATIONS SEALED BY A REGISTERED PROFESSIONAL ENGINEER INCLUDING ENTIRE CANOPY STRUCTURE AND FOOTINGS, (CANOPY DESIGN MUST BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION).



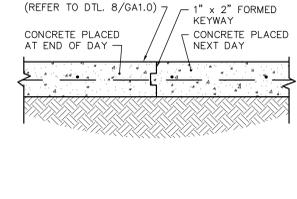
**7 DOUBLE RADIUS PIPE GUARD DETAIL**  
SCALE: 1/2"=1'-0"



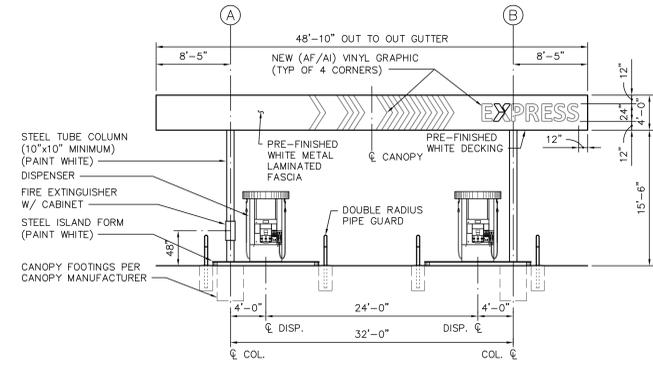
**8 CONCRETE PAVING DETAIL**  
SCALE: 1"=1'-0"



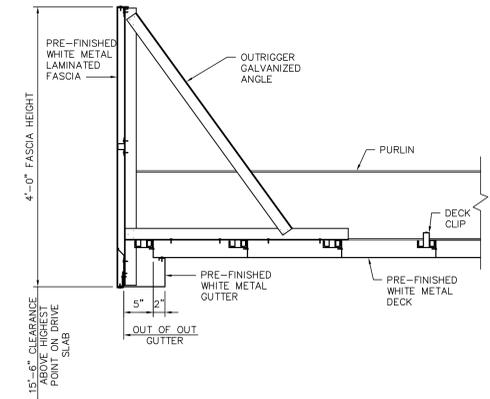
**9 CONTROLLED JOINT DETAIL**  
SCALE: 1"=1'-0"



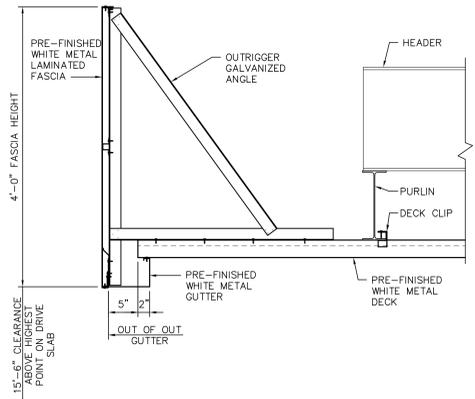
**10 CONSTRUCTION JOINT DETAIL**  
SCALE: 1"=1'-0"



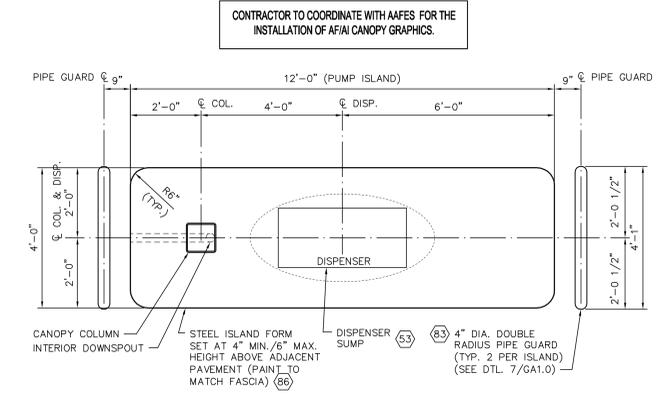
**3 CANOPY ELEVATION - SOUTH**  
SCALE: 1/8"=1'-0"



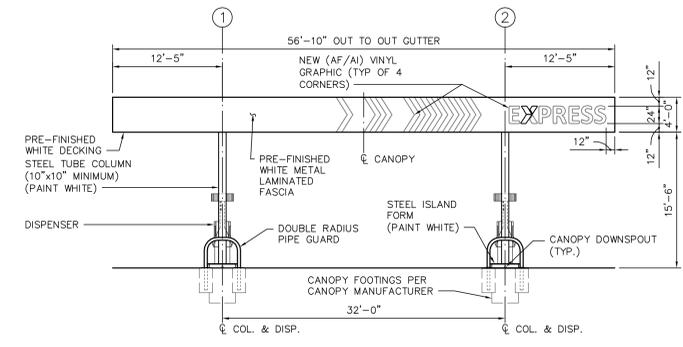
**4 SECTION THRU CANOPY FASCIA**  
SCALE: 1"=1'-0"



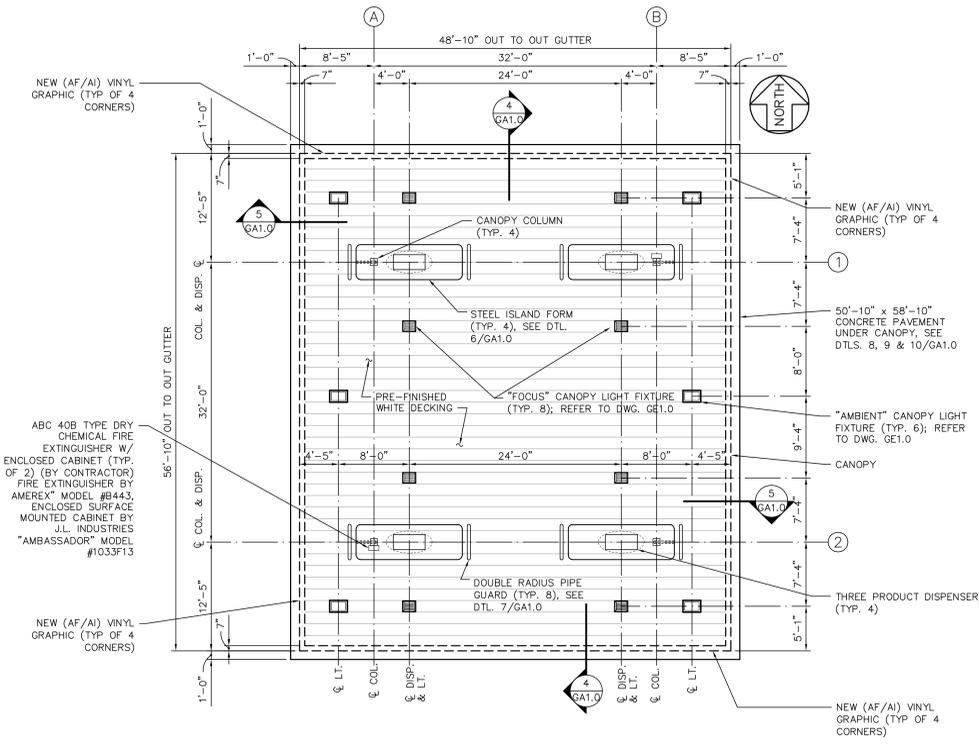
**5 SECTION THRU CANOPY FASCIA**  
SCALE: 1"=1'-0"



**6 ENLARGED PUMP ISLAND PLAN**  
SCALE: 1/2"=1'-0"



**2 CANOPY ELEVATION - WEST**  
SCALE: 1/8"=1'-0"



**1 CANOPY PLAN AND LIGHTING LAYOUT**  
SCALE: 1/8"=1'-0"

CONTRACTOR TO COORDINATE WITH AAES FOR THE INSTALLATION OF AF/AI CANOPY GRAPHICS.



Date	Rev No.	Description	By

DRAWN BY:  
CHECKED BY:  
COORDINATION:  
  
RECOMMENDED:  
APPROVED:



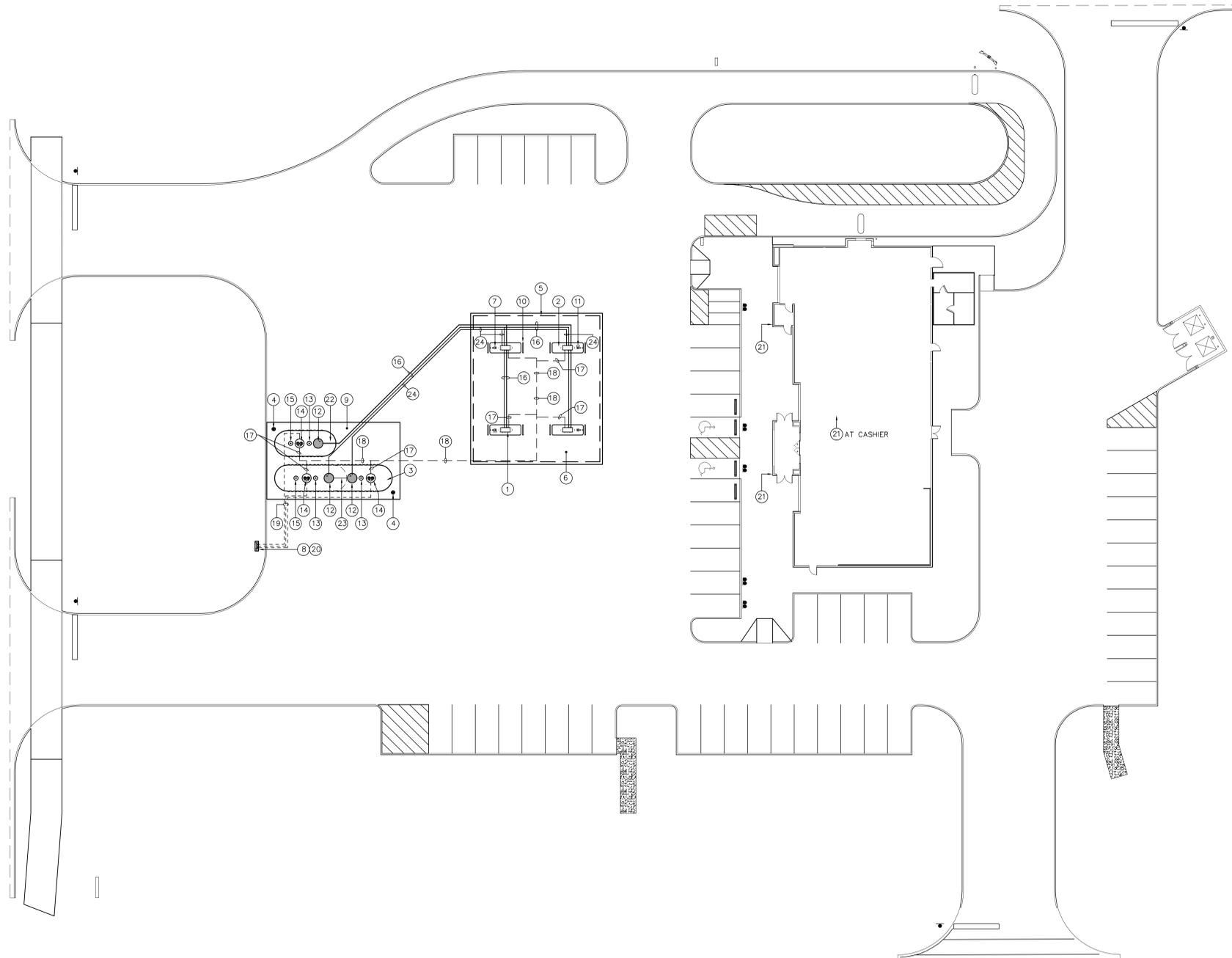
**BIGGS FIELD MINI-MALL #5**  
FORT BLISS, TEXAS

SHEET TITLE:  
**4 PACK CANOPY REFLECTED CEILING PLAN AND ELEVATIONS**

Date:	Scale:	Sheet:
08 JUN 12	AS SHOWN	GA1.0
Project Number:	3770-05-000016	



06-08-12



**GENERAL NOTES:**

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
2. SEE SPECIFICATIONS FOR GENERAL, PRODUCT AND EXECUTION REQUIREMENTS.
3. ACCESS SHALL BE PROVIDED TO SITE AND FACILITY AT ALL TIMES.
4. CONTRACTOR SHALL CONDUCT OPERATIONS SO AS NOT TO CREATE NUISANCE OR HAZARD TO PUBLIC OR TRAFFIC.
5. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. DITCHES OR STRUCTURES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION. ALL STORM WATER POLLUTION PREVENTION MEASURES SHALL BE IN COMPLIANCE WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM REQUIREMENTS.
6. CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH PART VI OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" DURING CONSTRUCTION. CONTRACTOR SHALL INSURE ALL TRAFFIC CONTROL DEVICES ARE MAINTAINED IN CLEAN AND FUNCTIONAL CONDITION.
7. RESTORE GRASSED AND LANDSCAPE AREAS DAMAGED DURING CONSTRUCTION TO ORIGINAL GRADE AND CONDITION. DISTURBED AREAS SHALL BE SEEDED, MULCHED AND FERTILIZED.
8. RESTORE ROADWAYS, PAVED SURFACES AND ACCESS ROUTES DAMAGED DURING CONSTRUCTION TO ORIGINAL CONDITION.

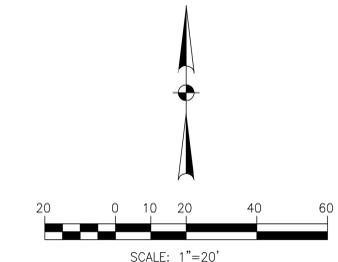
**KEY SCHEDULE:**

- 1 3 PRODUCT BLENDING DISPENSER; FURNISHED BY AAFES / INSTALLED BY G.C.
- 2 DISPENSER ISLAND; REF. DTL. 6/GA1.0.
- 3 24,000 GALLON DBL. WALL FRP TWO COMPARTMENT (14,000 GALLON REGULAR UNLEADED / 10,000 GALLON REGULAR UNLEADED) UNDERGROUND STORAGE TANK; REF. GM DWGS.
- 4 OBSERVATION WELL REF. DTL. 1/GM5.0.
- 5 56"-10" x 48"-10" CANOPY; REF. GA1.0.
- 6 58"-10" x 50"-10" x 6" THK. CONCRETE CANOPY SLAB W/ CONTROL JOINTS AT 15' MAX. SPACINGS EACH WAY; REF. DTLs. 8, 9 & 10/GA1.0.
- 7 CANOPY COLUMN, REF. TO GA1.0.
- 8 VENT RISER; REF. DTL. 5/GM5.0.
- 9 30'-0" x 51'-4 3/4" x 6" CONCRETE TANK SLAB W/ CONTROL JOINTS AT 15' MAX. SPACING EACH WAY; REF. DTLs. 1 & 2/GM7.0.
- 10 DOUBLE RADIUS PIPING BOLLARD; REF. DTL. 7/GA1.0.
- 11 FIRE EXTINGUISHER W/ CABINET; REF. GA1.0.
- 12 TANK PUMP SUMP; REF. DTLs. 1, 2 & 3/GM3.0.
- 13 TANK LEVEL PROBE; REF. DTL. 2/GM5.0.
- 14 TANK MULTI-PORT SUMP FOR FILL AND VENT/VAPOR; REF. DTLs. 2 & 3/GM4.0.
- 15 TANK HYDROSTATIC RESERVOIR; REF. DTL. 3/GM5.0.
- 16 2" RIGID DOUBLE WALL FRP PRODUCT PIPING W/ BONDED CLAMSHELL FITTINGS.
- 17 2" FRP STAGE II VAPOR RECOVERY PIPE.
- 18 3" FRP STAGE II VAPOR RECOVERY PIPE.
- 19 2" FRP VENT PIPE.
- 20 TANK OVERFILL ALARM AND ACKNOWLEDGEMENT SWITCH (MOUNTED TO VENT RISER SUPPORT); REF. DTL. 5/GM5.0.
- 21 EMERGENCY STOP BUTTON, REF. GE1.0.
- 22 12,000 GALLON DBL. WALL FRP SINGLE COMPARTMENT (12,000 GALLON PREMIUM UNLEADED) UNDERGROUND STORAGE TANK; REF. GM DWGS.
- 23 2" RIGID DOUBLE WALL FRP SIPHON LINE (FOR REGULAR UNLEADED TANKS ONLY) W/ BONDED CLAMSHELL FITTINGS.
- 24 2" RIGID DOUBLE WALL FRP PRODUCT PIPING W/ BONDED CLAMSHELL FITTINGS CAPPED AT SUMPS FOR FUTURE USE W/ DIESEL.

**UNATTENDED FUELING NOTES:**

1. OPERATING INSTRUCTIONS SHALL BE CONSPICUOUSLY POSTED IN THE DISPENSING AREA. THE INSTRUCTIONS SHALL INCLUDE LOCATION OF EMERGENCY CONTROLS AND THE REQUIREMENT THAT THE USER STAY OUTSIDE THE VEHICLE AND IN VIEW OF THE FUELING NOZZLE DURING DISPENSING.
2. WARNING SIGNS SPECIFIED "EMERGENCY INSTRUCTIONS" SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF EVERY DISPENSER. THE INSTRUCTIONS SHALL INCORPORATE THE FOLLOWING OR EQUIVALENT WORDING:

EMERGENCY INSTRUCTIONS  
IN CASE OF FIRE OR SPILL:  
1. USE EMERGENCY STOP BUTTON  
LOCATED ON BUILDING EXTERIOR  
(THIS WILL NOTIFY LOCAL FIRE  
DEPARTMENT).



Date	Rev No.	Description	By

DRAWN BY:  
CHECKED BY:  
COORDINATION:  
  
RECOMMENDED:  
APPROVED:

**EXCHANGE**

**HALFF**

1201 N. BOWSER ROAD  
RICHARDSON, TEXAS 75081-2275  
TEL (214) 346-6200  
FAX (214) 739-0065  
TBPE FIRM NO. 312

**morris + associates**  
Build on Our Strengths

ENGINEERING • ARCHITECTURE • ENVIRONMENTAL

12715 TELLE ROAD  
CYPRESS, TX 77429 (281) 855-6433  
FAX (281) 855-4264

**BIGGS FIELD  
MINI-MALL #5**

**FORT BLISS, TEXAS**

SHEET TITLE:  
  
**PETROLEUM SITE PLAN**

Date: 08 JUN 12	Scale: AS SHOWN	Sheet: GC1.0
Project Number: 3770-05-000016		

PANELBOARD SCHEDULE - PANELBOARD FD 'A'													
		Voltage: 120	Mains: MLO	Branches Rated: 42	10,000 A.I.C.								
		Bus: 225	Spaces: 32	Panel Type: CH									
		PHASE											
NOTES	TERMINATION POINT	DESCRIPTION	LOAD	BREAKER	A	B	C	BREAKER	LOAD	DESCRIPTION	TERMINATION POINT	NOTES	
	S1	FACTORY WIRED LIGHT CONTROL POWER	180	15-1	3	330		2	20-1	150	SITE CONTROLLER	TB6	P,E
	S2	STAGE 2 CONTACTOR CANOPY LIGHTS -1	800	20-1	3	650		4	FILLER	0	DISPENSER #1	TB1	P,E,L
	S2	STAGE 2 CONTACTOR CANOPY LIGHTS -2	240	20-1	5		1050	6	20-1	250	OVERFILL ALARM ELECTRONICS	TB6	P
	S2	STAGE 2 CONTACTOR CANOPY SIGNAGE	1500	20-1	7	1860		8	20-1	360	VEEDED ROOT & LLD TEST POWER	TB6	P,E
	L	FACTORY WIRED E-STOP POWER	3072	125-2	14	3072		10	FILLER	0	INTERCOM RECEPTACLE	TB6	P,E
		SURFEED TO PANEL -B- PHASE -A- ONLY	0	FILLER	11	0	0	12	FILLER	0	SPACE		
		SPACE	0	FILLER	17	0	0	14	FILLER	0	SPACE		
		SPACE	0	FILLER	19	0	0	20	FILLER	0	SPACE		
		SPACE	0	FILLER	23	0	0	24	FILLER	0	SPACE		
		SPACE	0	FILLER	25	0	0	26	FILLER	0	SPACE		
		SPACE	0	FILLER	27	0	0	28	FILLER	0	SPACE		
		SPACE	0	FILLER	29	0	0	30	FILLER	0	SPACE		
		SPACE	0	FILLER	31	0	0	32	FILLER	0	SPACE		
		SPACE	0	FILLER	33	0	2748	34	20-2	2HP	STP #1	TB4	E,L
		SPACE	0	FILLER	35	0	2748	36	20-2	2HP	STP #2	TB4	E,L
		SPACE	0	FILLER	37	0	1703	38	20-2	2HP	FUTURE STP #3		
		SPACE	0	FILLER	39	0	1248	40	20-2	2HP	NO WIRING REQ'D.		
		SPACE	0	FILLER	41	0	2400	42	20-2	2HP			

PANELBOARD SCHEDULE - PANELBOARD FD 'B'													
		Voltage: 120	Mains: MLO	Branches Rated: 32	10,000 A.I.C.								
		Bus: 225	Spaces: 32	Panel Type: CH									
		PHASE											
NOTES	TERMINATION POINT	DESCRIPTION	LOAD	BREAKER	A	B	C	BREAKER	LOAD	DESCRIPTION	TERMINATION POINT	NOTES	
		SPACE	0	FILLER	1	768	0	2	20-SN	768	DISPENSER #1	TB1	P,E,L
		SPACE	0	FILLER	3	0	0	4	SWN	0	SWITCH NEUTRAL	TB1	P,E,L
		SPACE	0	FILLER	5	768	0	6	20-SN	768	DISPENSER #2	TB1	P,E,L
		SPACE	0	FILLER	7	0	0	8	SWN	0	SWITCH NEUTRAL	TB1	P,E,L
		SPACE	0	FILLER	9	768	0	10	20-SN	768	DISPENSER #3	TB1	P,E,L
		SPACE	0	FILLER	11	0	0	12	SWN	0	SWITCH NEUTRAL	TB1	P,E,L
		SPACE	0	FILLER	13	768	0	14	20-SN	768	DISPENSER #4	TB1	P,E,L
		SPACE	0	FILLER	15	0	0	16	SWN	0	SWITCH NEUTRAL	TB1	P,E,L
		SPACE	0	FILLER	17	768	0	18	FILLER	0	SPACE		
		SPACE	0	FILLER	19	0	0	20	FILLER	0	SPACE		
		SPACE	0	FILLER	21	768	0	22	FILLER	0	SPACE		
		SPACE	0	FILLER	23	0	0	24	FILLER	0	SPACE		
		SPACE	0	FILLER	25	768	0	26	FILLER	0	SPACE		
		SPACE	0	FILLER	27	0	0	28	FILLER	0	SPACE		
		SPACE	0	FILLER	29	768	0	30	FILLER	0	SPACE		
		SPACE	0	FILLER	31	0	0	32	FILLER	0	SPACE		

**PANEL NOTES**

S1 THIS CIRCUIT IS FOR STAGE 1 LIGHTING CONTROL (PHOTOCELL 1 ONLY).

S2 THIS CIRCUIT IS FOR STAGE 2 LIGHTING CONTROL (TIME CLOCK & PHOTOCELL 2 ONLY).

P THIS CIRCUIT IS FOR ELECTRONIC EQUIPMENT AND REQUIRES A SERIES CONNECTED SURGE SUPPRESSOR. CIRCUIT IS PROTECTED BY A POWER INTEGRITY MODEL ZTAS-03-15-1.

E THIS CIRCUIT IS DISCONNECTED WITH E-STOP CONTROLS.

L THIS CIRCUIT BREAKER IS PROVIDED WITH A PADLOCKABLE DEVICE.

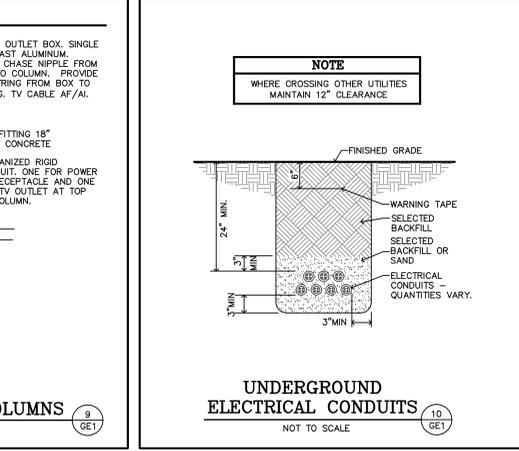
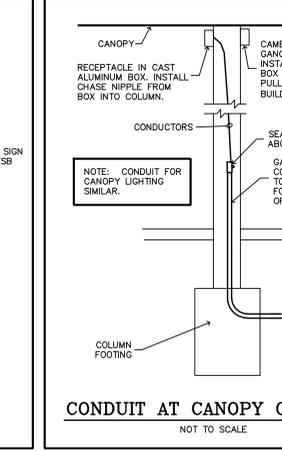
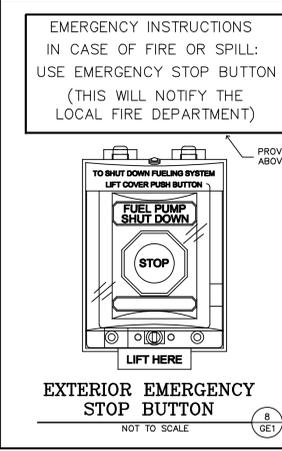
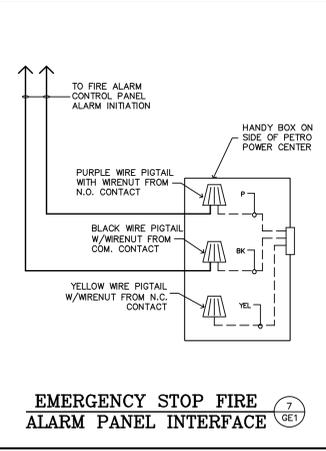
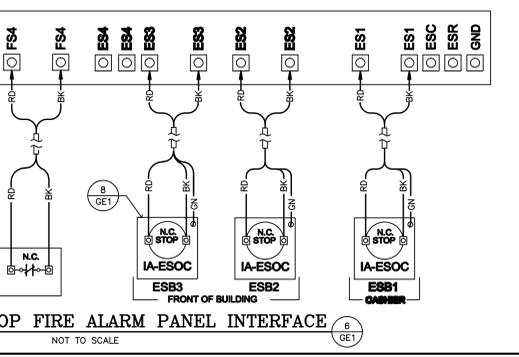
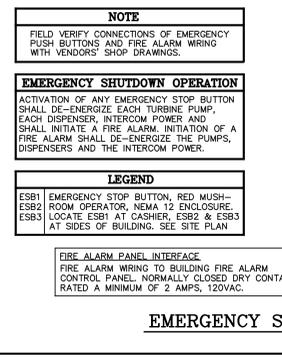
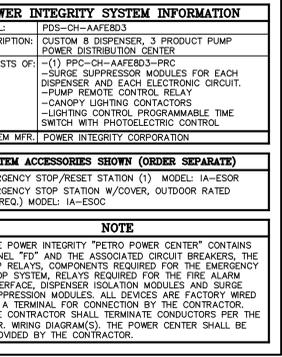
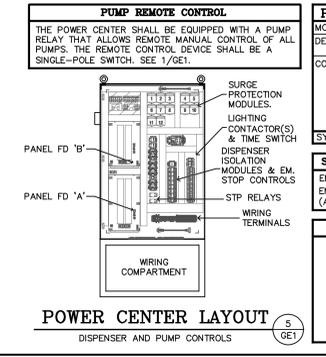
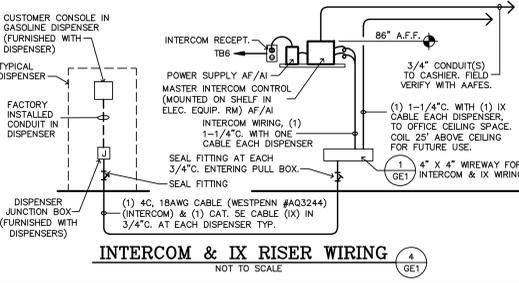
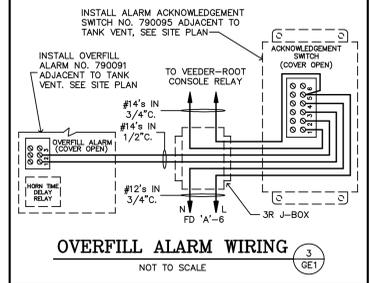
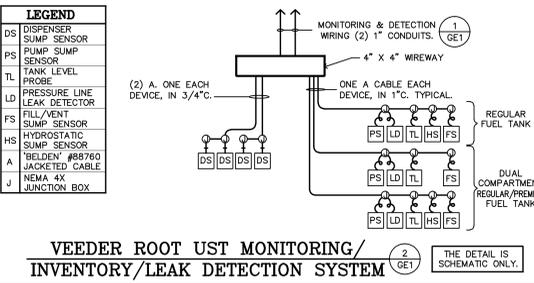
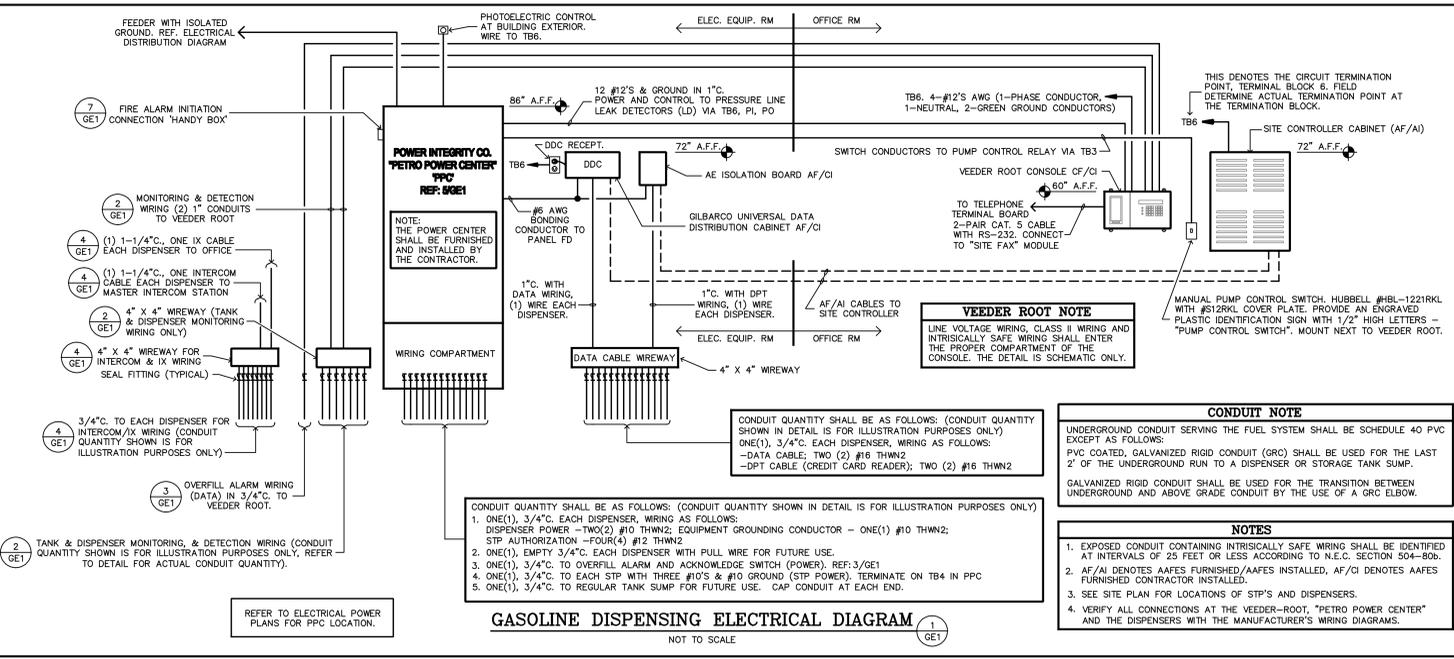
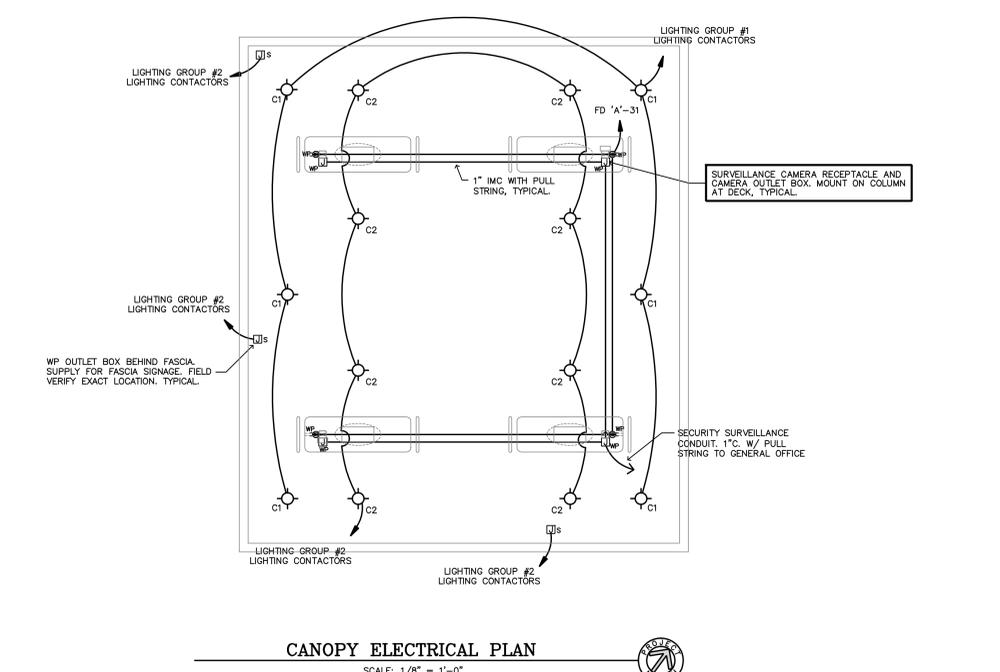
**NOTE**

THE POWER INTEGRITY "PETRO POWER CENTER" CONTAINS PANEL FD 'A' & FD 'B' AND THE ASSOCIATED CIRCUIT BREAKERS. THE POWER CENTER SHALL BE PROVIDED BY THE CONTRACTOR.

NOTE: ALL CONDUITS SHALL BE ROUTED ON TOP OF THE CANOPY TO A COLUMN AND THEN BELOW GRADE TO THE BUILDING, TYPICAL.

FIXTURE C1: LSI#CRO-5-LED-100-CW, WHITE FINISH, RECESSED MOUNTING, LED LIGHT SOURCE, TYPICAL.

FIXTURE C2: LSI #CRO-FD-LED-30-CW, WHITE FINISH, RECESSED MOUNTING, LED LIGHT SOURCE, TYPICAL.



Date	Rev No.	Description	By

**DRAWN BY:**  
**CHECKED BY:**  
**COORDINATION:**  
**RECOMMENDED:**  
**APPROVED:**

# EXCHANGE

# HALFF

1201 N. BOWSER ROAD  
RICHARDSON, TEXAS 75081-2275  
TEL (214) 548-0200  
FAX (214) 738-0035  
TIME FROM NO. 312

**morris + associates**  
Build on Our Strengths

ENGINEERING • ARCHITECTURE • ENVIRONMENTAL  
12715 TULSA ROAD • CYPRESS, TX 77429 • (281) 855-6433  
FAX (281) 856-4504

**BIGGS FIELD MINI-MALL #5**  
FORT BLISS, TEXAS

**SHEET TITLE:**  
**CANOPY ELECTRICAL PLAN, DETAILS & SCHEDULES**

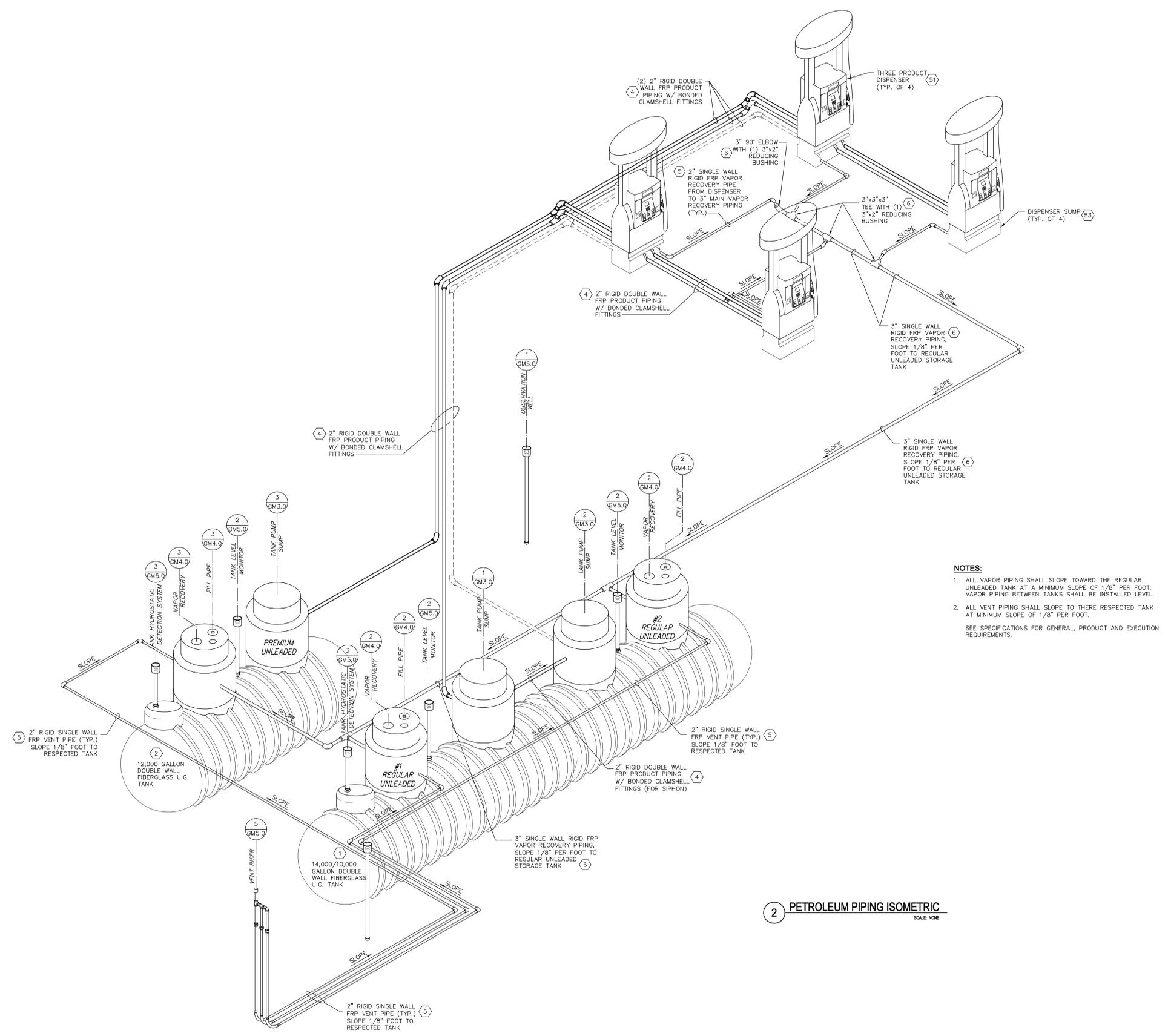
Date: 08 JUN 12    Scale: AS NOTED    Sheet: GE1.0  
Project Number: 3770-05-000018

**LAROSE & SCHOBER**  
ENGINEERING

1927 SOUTH NATIONAL SUITE B SPRINGFIELD, MO 65804  
PHONE 417.861.1596 FAX 417.861.8390  
LAROSE-SCHOBER.COM  
TEXAS CERT. OF AUTH. #12989



06-08-12



**2 PETROLEUM PIPING ISOMETRIC**  
SCALE NONE

**NOTES:**

- ALL VAPOR PIPING SHALL SLOPE TOWARD THE REGULAR UNLEADED TANK AT A MINIMUM SLOPE OF 1/8" PER FOOT. VAPOR PIPING BETWEEN TANKS SHALL BE INSTALLED LEVEL.
- ALL VENT PIPING SHALL SLOPE TO THERE RESPECTED TANK AT MINIMUM SLOPE OF 1/8" PER FOOT.

SEE SPECIFICATIONS FOR GENERAL, PRODUCT AND EXECUTION REQUIREMENTS.

Date	Rev No.	Description	By

DRAWN BY:  
 CHECKED BY:  
 COORDINATION:  
 RECOMMENDED:  
 APPROVED:

**X EXCHANGE**

**HALFF**

1201 N. BOWSER ROAD  
 RICHARDSON, TEXAS 75081-2275  
 TEL (214) 346-6200  
 FAX (214) 730-0066  
 TBPE FIRM NO. 312

**morris + associates**  
 Build on Our Strengths

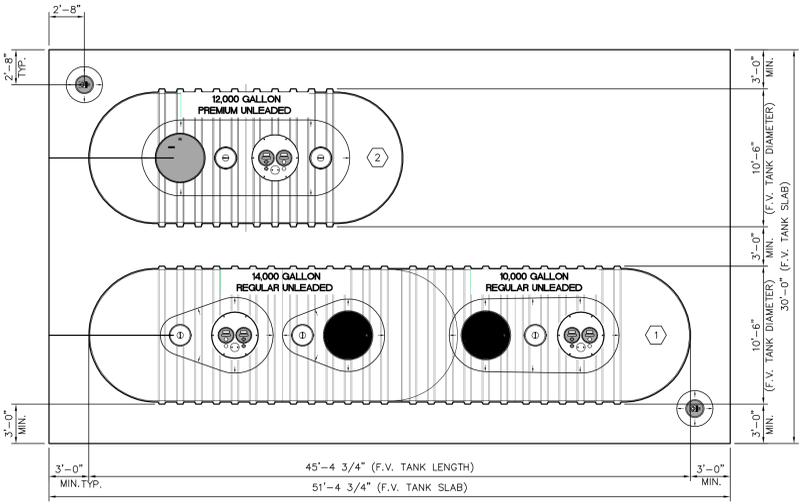
ENGINEERING • ARCHITECTURE • ENVIRONMENTAL

12715 TELLE ROAD  
 CYPRESS, TX 77429      (281) 855-6433  
 (281) 856-4304

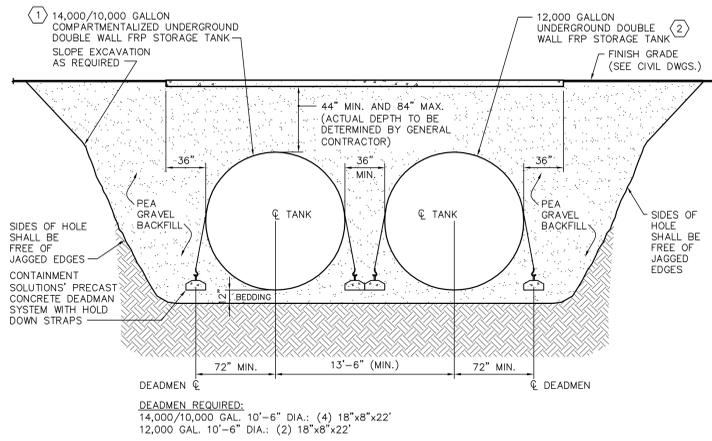
**BIGGS FIELD MINI-MALL #5**  
**FORT BLISS, TEXAS**

SHEET TITLE:  
**PETROLEUM PIPING PLAN AND ISOMETRIC W/ STAGE II VAPOR RECOVERY**

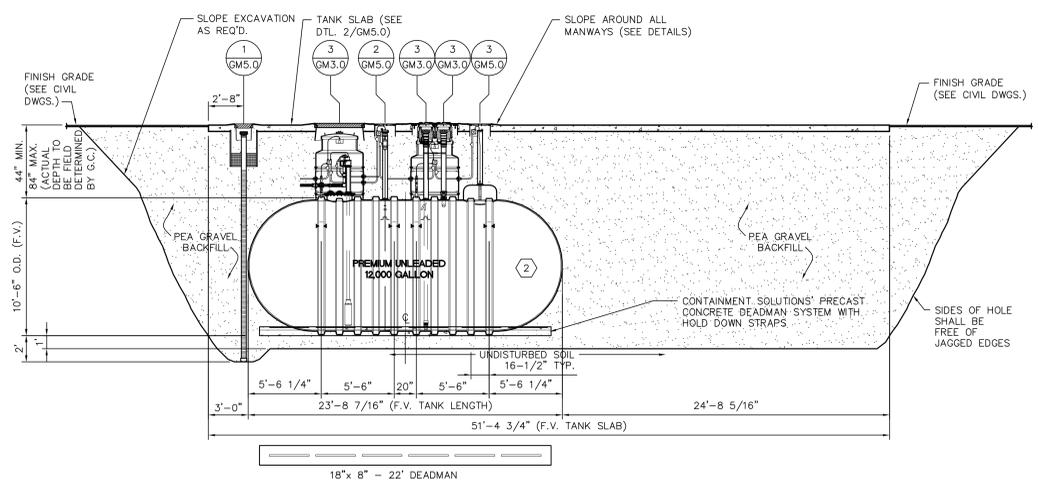
Date: 08 JUN 12	Scale: AS SHOWN	Sheet: GM1.0
Project Number: 3770-05-000016		



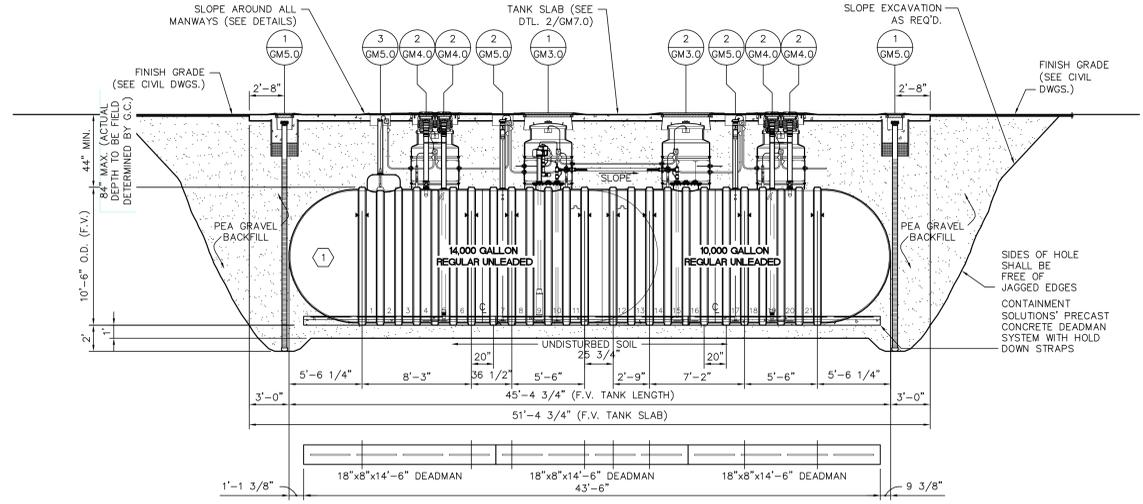
1 UNDERGROUND STORAGE TANK PLAN AND DEADMEN LOCATIONS  
SCALE: 3/16" = 1'-0"



2 SECTION AT UNDERGROUND STORAGE TANK  
SCALE: NONE



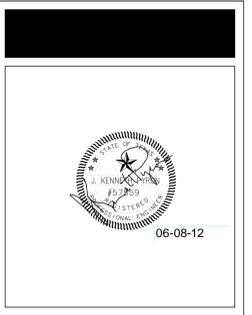
3 12,000 GALLON PREMIUM UNLEADED - STAGE I & II VAPOR RECOVERY DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANK  
SCALE: NONE



4 14,000 GALLON REGULAR UNLEADED / 10,000 GALLON REGULAR UNLEADED TANK - STAGE I & II VAPOR RECOVERY SECTION AT 14,000 / 10,000 GALLON COMPARTMENTALIZED DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANK  
SCALE: NONE

5 NOT USED

6 NOT USED



Date	Rev No.	Description	By

DRAWN BY:  
CHECKED BY:  
COORDINATION:  
  
RECOMMENDED:  
APPROVED:



BIGGS FIELD  
MINI-MALL #5  
FORT BLISS, TEXAS

SHEET TITLE:  
UNDERGROUND STORAGE TANK  
PLAN AND SECTIONS

Date: 08 JUN 12	Scale: AS SHOWN	Sheet: GM2.0
Project Number: 3770-05-000016		













