NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPARTMENT
SAN ANGELO, TEXAS

INDEX OF DRAWINGS

BID ALTERNATES

ADD ALTERNATE #1:
FURNISH & INSTALL NEW 30'-0" WIDE DRIVEWAY & CURBING SECTION THAT CONNECTS NORTH PUBLIC PARKING LOT WITH WEST FIRE FIGHTER PARKING LOT. REFER TO PARTIAL SITE PLAN C/A-1 FOR DETAILED INFORMATION.

ADD ALTERNATE #2:
FURNISH & INSTALL (3) THREE 14'-0" x 14'-0" "BI-FOLDING" APPARATUS DOORS (AS PER SPEC. SECTION 10400-2). LOCATED ON EAST SIDE OF ENGINE BAY IN LIEU OF STANDARD OVERHEAD SECTIONAL DOORS (AS PER SPEC. SECTION 10340).

ADD ALTERNATE #3:
FURNISH & INSTALL (3) THREE 14'-0" X 14'-0" "HIGH-SPEED" APPARATUS DOORS (AS PER SPEC. SECTION 10400-3). LOCATED ON EAST SIDE OF ENGINE BAY IN LIEU OF STANDARD OVERHEAD SECTION DOORS (AS PER SPEC. SECTION 10340).

ADD ALTERNATE #4:
FURNISH & INSTALL (5) FIVE AIRVAC RECIRCULATION SYSTEMS TO FILTER THE ENGINE BAY EXHAUST. REFER TO DRAWING SHEET M-2 FOR SPECIFICATIONS.

BUILDING CODE ANALYSIS SUMMARY

BUILDING CODES

INTERNATIONAL BUILDING CODE	2015 EDITION
INTERNATIONAL ENERGY CODE	2009 EDITION
INTERNATIONAL FIRE CODE	2015 EDITION
INTERNATIONAL MECHANICAL CODE	2009 EDITION
INTERNATIONAL PLUMBING CODE	2009 EDITION
NATIONAL ELECTRICAL CODE	2008 EDITION

GENERAL INFORMATION

OCCUPANCY TYPE:

"R-2" SLEEPING QUARTERS & "B" OFFICES, FITNESS ROOM & TRAINING ROOM (UNDER 50 OCC.), MIXED OCCUPANCY SEPARATED BY 1-HOUR FIRE PROTECTION

"S-2" ENGINE BAY SEPARATED BY 2-HOUR FIRE PROTECTION FROM "R-2" & "B"

CONSTRUCTION TYPE: "V-B"

BUILDING DATA:
- BUILDING AREA: 11,100 SQ. FT. TOTAL
- BUILDING HEIGHT: ONE STORY

CONSTRUCTION REQUIREMENTS

FIRE RESISTANCE RATING REQUIREMENTS (IBC TABLE 601)

BUILDING ELEMENT	V-B
STRUCTURAL FRAME	0 HOURS
EXTERIOR BEARING WALLS	0 HOURS
INTERIOR BEARING WALLS	0 HOURS
EXTERIOR NON-BEARING WALLS	0 HOURS
INTERIOR NON-BEARING WALLS	0 HOURS
ROOF CONSTRUCTION	0 HOURS
FLOOR CONSTRUCTION	0 HOURS
EXTERIOR WALL OPENINGS	UNPROTECTED

OCCUPANCY REQUIREMENTS

ALLOWABLE HEIGHT AND AREA LIMITATIONS (IBC TABLE 506.2)

GROUP	AREA PER FLR/ NO. FLOORS	ALLOWABLE
R-2	2,546 SQ. FT. / 1	16,000 SQ. FT. / 4
B	3,870 SQ. FT. / 1	42,000 SQ. FT. / 4
S-2	4,824 SQ. FT. / 1	26,000 SQ. FT. / 3

INTERIOR FINISHES

WALL, CEILING AND FLOOR FINISH REQUIREMENTS (IBC TABLE 603.11)

GROUP	VERT. EXITS	EXIT ACCESS	ROOMS
R-2 (5)	N/A	CLASS C	CLASS C
B (5)	N/A	CLASS C	CLASS C
S-2 (N5)	N/A	CLASS B	CLASS C

FIRE PROTECTION SYSTEMS

SYSTEMS:

AUTOMATIC FIRE SPRINKLER SYSTEM (NFPA 13R) R-2 & B ONLY	PROVIDED
FIRE DETECTION AND MANUAL ALARM	NOT REQUIRED
PORTABLE FIRE EXTINGUISHERS	PROVIDED
FIRE ALARM SYSTEM	NOT REQUIRED
COMMERCIAL COOKING SYSTEM	PROVIDED

MEANS OF EGRESS

EXIT NUMBER AND EGRESS WIDTH (IBC TABLE 1004.1.2 AND TABLE 1006.3.2(2)

OCCUPANT AREA	LOAD	REQ'D EXITS	REQ'D EXIT WIDTH 0.2" PER
SLEEPING QUARTERS (2,546 SQ. FT. @ 200 GROSS)	13	2	5"
BUSINESS (3,870 SQ. FT. @ 100 GROSS)	37	1	16"
EQUIPMENT BAY (4,824 SQ. FT. @ 200 GROSS	25	1	5"

COMPONENTS:

EXIT ACCESS CORRIDORS	0 HOURS @ B & S-2 (IBC TABLE 1020.1) 30 MIN. @ R-2
TRAVEL DISTANCE	MAX. 250 FT. @ R-2 & B (IBC TABLE 1017.2) Max. 300 FT. @ S-2
COMMON PATH	MAX. 125 FT. @ R-2 & 100 FT. @ B (IBC 1006.2.1) MAX. 100 FT. @ S-2
DEAD END LIMIT	MAX. 20 FT. (IBC 1020.4)
EMERGENCY ESCAPE AND RESCUE	REQUIRED (IBC 1030)

JUNE 1, 2016

PROJECT CONTACTS

ARCHITECT:
GARY DONALDSON ARCHITECTURE
444 TURNER ST.
SAN ANGELO, TEXAS 76903
C/O: GARY DONALDSON
(325) 655-4805

CIVIL ENGINEER:
BLEYL & ASSOCIATES
318 W. HIGHLAND BLVD.
SAN ANGELO, TEXAS 76903
C/O: TIM WOLFF
(325) 262-4082

STRUCTURAL ENGINEER:
McCLANAHAN & ASSOC.
2007 CHRISTOVAL ROAD
SAN ANGELO, TEXAS 76903
C/O: BILL McCLANAHAN
(325) 657-3494

M.P.E. ENGINEER:
POWER SYSTEMS
P.O. BOX 2863
SAN ANGELO, TEXAS 76903
C/O: PAUL WILKERSON
(325) 654-2295

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REGISTERED ARCHITECT GARY DONALDSON STATE OF TEXAS
2/10/17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
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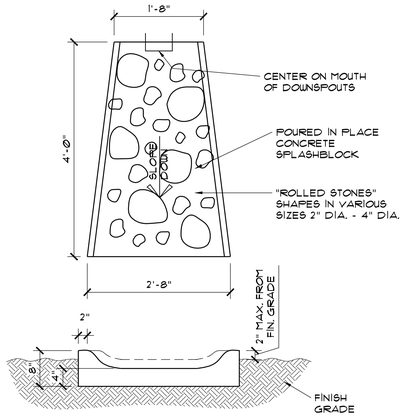
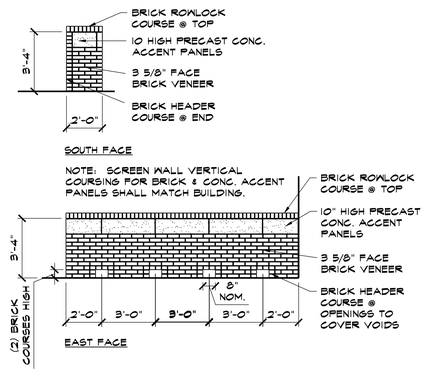
PROJECT NO. 201436

SET NO. _____



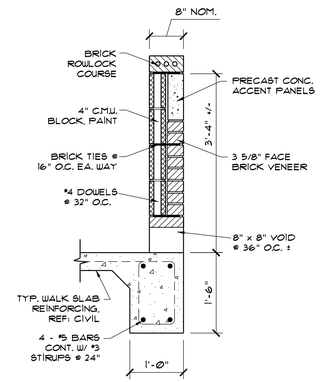
E SPLASH BLOCK DETAIL

SCALE: 3/4" = 1'-0"



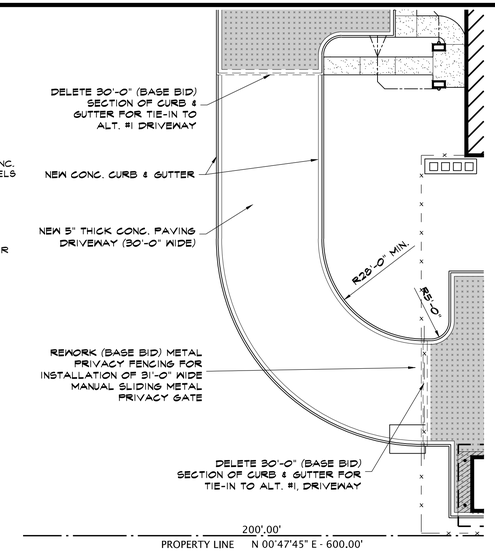
F SCREEN WALL ELEVATION

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



D SCREEN WALL SECTION

SCALE: 3/4" = 1'-0"



SITE LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	NEW BUILDING		EXISTING CONC. CURB
	NEW CONC. SIDEWALKS & ACCESSIBLE CURB RAMPS		NEW 8" THICK CONC. PAVING, REF: TO CIVIL.
	NEW CONC. CURB & GUTTER		NEW 5" THICK CONC. PAVING, REF: TO CIVIL.
	NEW PAINTED CONC. TIRE STOP		NEW UNDERGROUND ROOF DRAINAGE PIPING
— × — × —	NEW METAL PRIVACY FENCING	B-1	SUB-SURFACE BORING LOCATION

SITE PLAN NOTES:

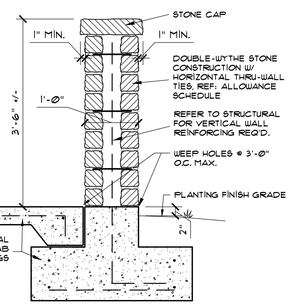
1. CONTRACTOR SHALL CHECK AND VERIFY ALL SITE DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES FOR CORRECTION BEFORE PROCEEDING WITH THE WORK.

2. CONTRACTOR SHALL CONSTRUCT TEMPORARY FENCING NECESSARY FOR COMPLETE PERIMETER OF PROJECT OR CONTRACT AREAS TO PREVENT ACCIDENTAL INJURY TO PERSONS AND PROPERTY DURING CONSTRUCTION PERIOD.

3. CONTRACTOR SHALL PROTECT ALL AREAS OF EXISTING PAVING AND CURBING ADJACENT TO CONSTRUCTION AREA AND PATCH BACK WHERE DAMAGED.

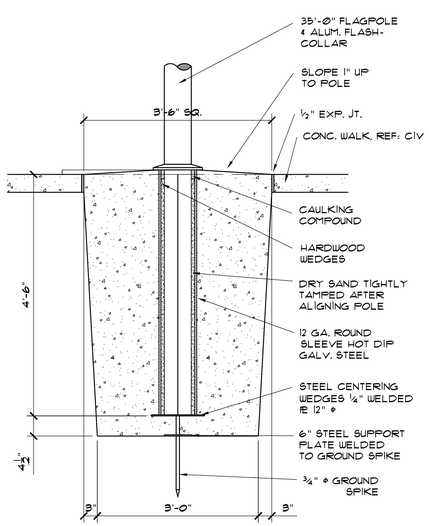
4. CONTRACTOR SHALL REMOVE ALL EXISTING CURBS AND PAVING WHICH ARE IN AREAS OF NEW CONTRACT UNLESS OTHERWISE NOTED.

5. REMOVE EXISTING TOPSOIL (AS DIRECTED BY STRUCTURAL DETAILS) FROM NEW AREA OF CONSTRUCTION AND STOCKPILE ON SITE WHERE DIRECTED BY ARCHITECT. REUSE TOPSOIL TO FILL IN NEW GRADES, AS REQUIRED.



K L-SHAPED PATIO HALF-WALL SECTION

SCALE: 3/4" = 1'-0"

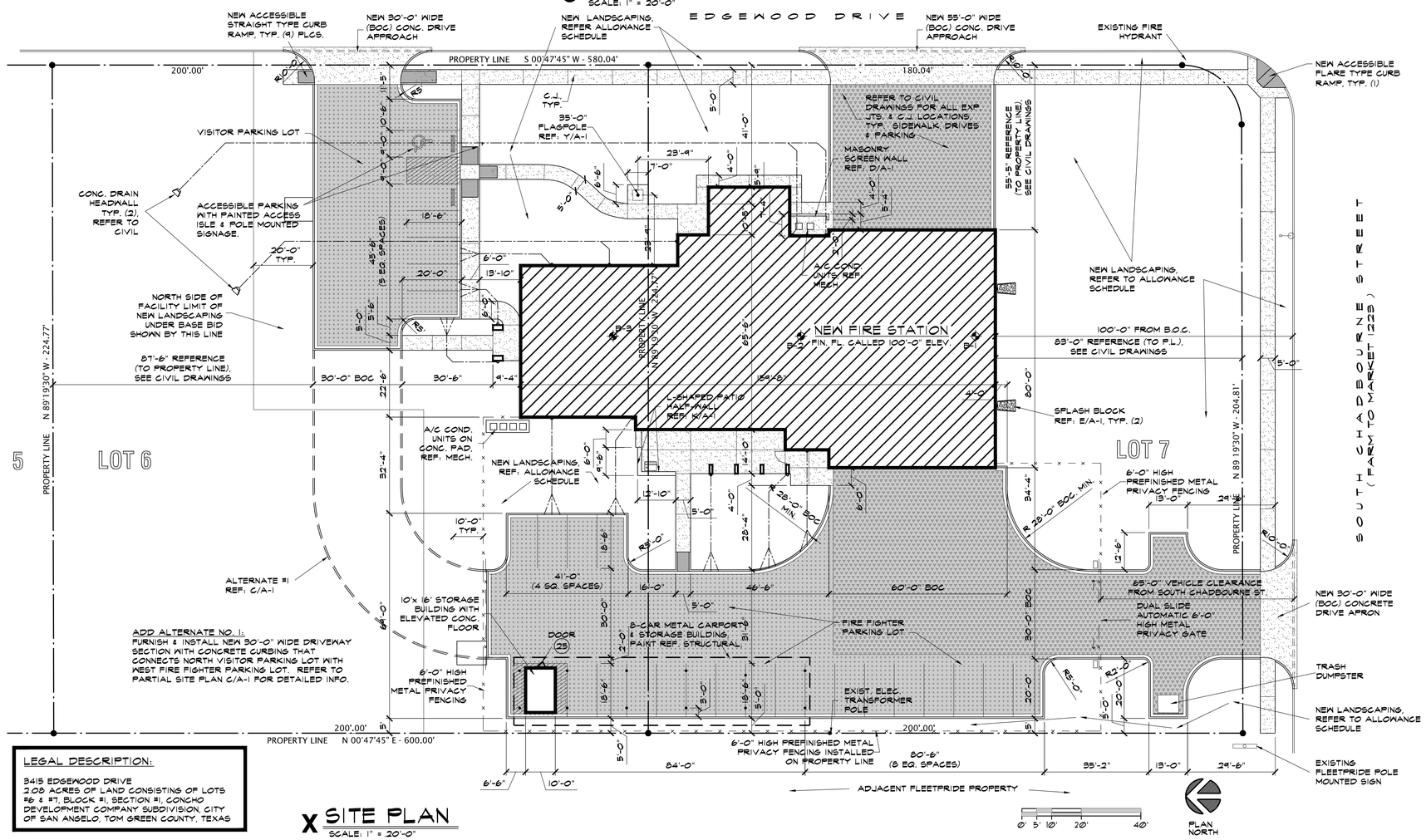


Y FLAGPOLE BASE DETAIL

SCALE: 3/4" = 1'-0"

C ALTERNATE #1 - PARTIAL SITE PLAN

SCALE: 1" = 20'-0"



ADD ALTERNATE NO. 1:
FURNISH & INSTALL NEW 30'-0" WIDE DRIVEWAY SECTION WITH CONCRETE CURBING THAT CONNECTS NORTH VISITOR PARKING LOT WITH WEST FIRE FIGHTER PARKING LOT. REFER TO PARTIAL SITE PLAN C/A-1 FOR DETAILED INFO.

LEGAL DESCRIPTION:

3415 EDGEWOOD DRIVE
2.05 ACRES OF LAND CONSISTING OF LOTS #6 & #7, BLOCK #1, SECTION #1, CONCHO DEVELOPMENT COMPANY SUBDIVISION, CITY OF SAN ANGELO, TOM GREEN COUNTY, TEXAS

X SITE PLAN

SCALE: 1" = 20'-0"

PROJECT:	201436
DATE©	6/1/2016
DRAWN	REH
REVISIONS	
1/24/17	

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SAN ANGELO, TEXAS

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GARY DONALDSON STATE REGISTERED ARCHITECT STATE OF TEXAS
2/10/17

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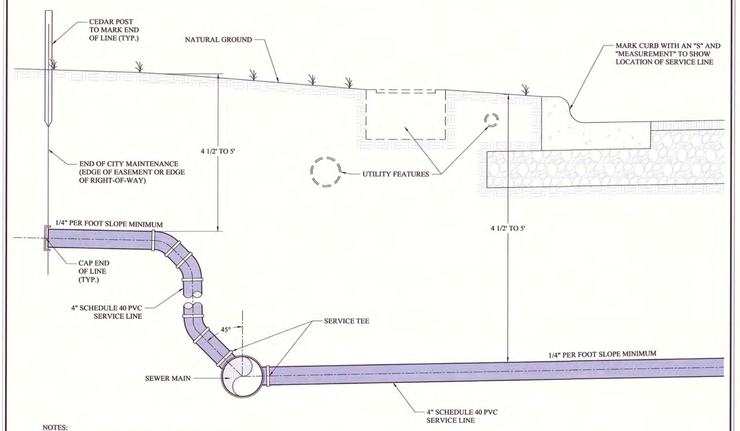
SHEET NO.
A-1
OF 9



NOTES:

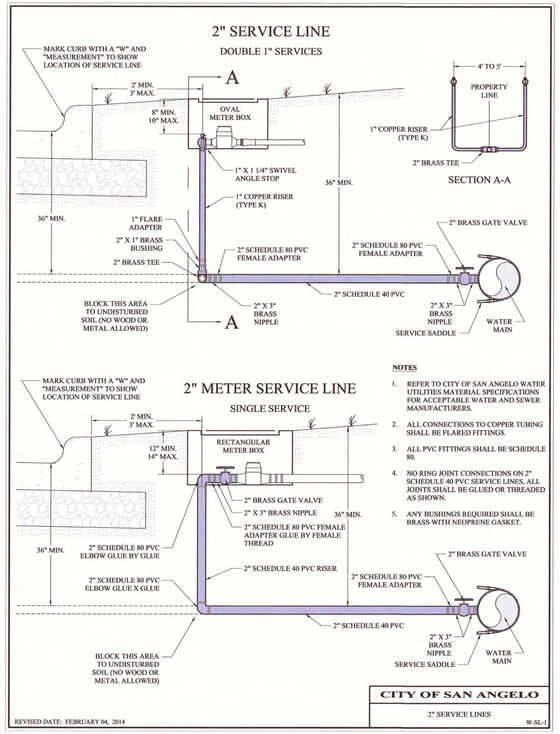
1. SEWER SERVICE LINE: 4" MINIMUM SIZE, SCHEDULE 40 PVC.
2. SERVICE LINE PIPE TO BE STANDARD 20' JOINTS, UNLESS TOTAL LENGTH OF SERVICE LINE IS LESS THAN 10', OR UNLESS APPROVED OTHERWISE BY THE CITY.
3. ALL JOINTS SHALL BE GLUED.
4. WHERE BENDS ARE NEEDED, MAXIMUM DEGREE ALLOWABLE SHALL BE 45°

REVISED DATE: FEBRUARY 04, 2014

CITY OF SAN ANGELO

SEWER SERVICE LINE

W-SA-SL-1



NOTES

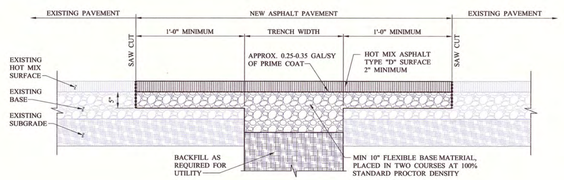
1. REFER TO CITY OF SAN ANGELO WATER UTILITIES MATERIAL SPECIFICATIONS FOR ACCEPTABLE WATER AND SEWER MANUFACTURERS.
2. ALL CONNECTIONS TO COPPER TUBING SHALL BE FLARED FITTINGS.
3. ALL PVC FITTINGS SHALL BE SCHEDULE 80.
4. NO RING JOINT CONNECTIONS ON 2" SCHEDULE 40 PVC SERVICE LINES. ALL JOINTS SHALL BE GLUED OR THREADED AS SHOWN.
5. ANY BUSHINGS REQUIRED SHALL BE BRASS WITH NEOPRENE GASKET.

REVISED DATE: FEBRUARY 04, 2014

CITY OF SAN ANGELO

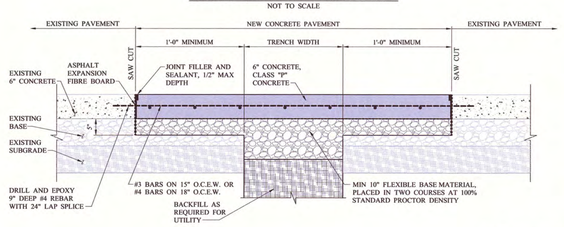
2" SERVICE LINES

W-SL-1



ASPHALT REPAIR ACROSS TRENCH AREA

NOT TO SCALE



CONCRETE REPAIR ACROSS TRENCH AREA

NOT TO SCALE

CITY OF SAN ANGELO

STREET UTILITY TRENCH REPAIRS FOR ASPHALT & CONCRETE STREETS

S-V-1

ABBREVIATIONS

AE	ACCESS EASEMENT
ASPH	ASPHALT
BL	BUILDING LINE
CL	CENTERLINE
CONC	CONCRETE
DIA	DIAMETER
DE	DRAINAGE EASEMENT
ESMT	EASEMENT
EX	EXISTING
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FLOW LINE
FND	FOUND
GV	GATE VALVE AND BOX
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HT	HEIGHT
INT	INTERSECTION
I.P. or IP	IRON PIPE
I.R. or IR	IRON ROD
JB	JUNCTION BOX
LT	LEFT
LF	LINEAR FEET
MH	MANHOLE
MAX	MAXIMUM
MIN	MINIMUM
NG	NATURAL GROUND
PVMT	PAVEMENT
P.O.B.	POINT OF BEGINNING
PVC	POLYVINYL CHLORIDE PIPE
PP	POWER POLE
PROP	PROPOSED
RED	REDUCER
RT	RIGHT
ROW	RIGHT OF WAY
SF	SQUARE FEET
STA	STATION
TEMP	TEMPORARY
TC	TOP OF CURB
TG	TOP OF GRATE
TP	TOP OF PAVEMENT
TRC	TOP OF RIBBON CURB
TS	TOP OF WALK/SIDEWALK
TW	TOP OF WALL
TYP	TYPICAL
UE	UTILITY EASEMENT
WTR SVC	WATER SERVICE
WSE	WATER SURFACE ELEVATION

STANDARD NOTES:

1. REVISIONS TO THESE ENGINEERING PLANS MUST BE AUTHORIZED BY BLEYL ENGINEERING (325-262-4082) PRIOR TO CONSTRUCTION.
2. TOPOGRAPHIC SURVEY WAS PERFORMED BY ENPROTEC/HIBBS & TODD, INC. ON OCTOBER 6, 2015.
3. SOIL BORINGS WERE PERFORMED BY ENPROTEC/HIBBS & TODD, INC. OCTOBER 2, 2015.
4. CONTRACTOR SHALL COMPLY WITH ALL CITY, STATE, AND FEDERAL RULES, STANDARDS, AND REQUIREMENTS, AS WELL AS WITH ALL APPLICABLE CONSTRUCTION DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THOSE DETAILS AND THESE PLANS TO THE ENGINEER BEFORE CONSTRUCTION.
5. THE CONTRACTOR SHALL:
   a. NOTIFY ALL APPROPRIATE UTILITY COMPANIES 48 HOURS PRIOR TO ANY EXCAVATION.
   b. NOTIFY ENGINEER OF ALL DESIRED FIELD CHANGES. THE ENGINEER'S APPROVAL MAY BE REQUIRED.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY AND SAFETY PROVISIONS REQUIRED TO PROTECT INDIVIDUALS, EQUIPMENT, MATERIALS AND WORKMANSHIP NECESSARY FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE OF MATERIALS IN SAFE AND WORKMANLIKE MANNER TO PREVENT INJURIES DURING AND AFTER WORKING HOURS UNTIL PROJECT COMPLETION.
7. THE CONTRACTOR SHALL ADVISE THE ENGINEER OF ANY APPARENT OR SPECIAL NEEDS TO COMPLETE THE SCOPE OF WORK INCLUDED IN THIS PROJECT. THESE MAY INCLUDE THE NEED FOR OWNER PROVIDED SERVICES SUCH AS WATER, STAFF AVAILABILITY, ETC.
8. ACCURATE RECORDS SHOWING THE INSTALLED LOCATIONS OF ALL IMPROVEMENTS SHALL BE MAINTAINED DURING CONSTRUCTION AND PROVIDED TO THE ENGINEER AS PART OF THE PROJECT COMPLETION.
9. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MAINTAIN ACCESS DURING THE CONSTRUCTION PERIOD. SCHEDULING OF ACTIVITIES SHOULD EMPHASIZE ACCESSIBILITY TO THE PROJECT SITE. EXTENDED PERIODS OF RESTRICTED ACCESS MUST BE LIMITED.
10. THE CONTRACTOR SHALL PROTECT EXISTING MONUMENTS, YARDS, PRIVATE UTILITIES, DRIVES, CURBS, MAIL BOXES, SIGNS, IMPROVEMENTS, CULVERTS, AND ALL OTHER FACILITIES FROM DAMAGE DURING CONSTRUCTION. DAMAGE DONE TO THESE ITEMS SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL MOVE AND REPLACE SUCH MOVABLE ITEMS AS MAIL BOXES, TRAFFIC CONTROL, BUSINESS SIGNS, AND STREET SIGNS AS NECESSARY FOR CONSTRUCTION. FENCES OR STRUCTURES WHICH REQUIRE DISMANTLING OR REMOVAL SHALL BE RECONSTRUCTED OR REPLACED TO EQUAL OR BETTER THAN ORIGINAL CONDITION.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE MUD AND/OR DIRT DEPOSITED ON EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY DAILY. ALL EQUIPMENT AND DEBRIS FROM CONSTRUCTION TO BE REMOVED FROM THE SITE AT END OF PROJECT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND PROTECTION OF CONSTRUCTION ACTIVITIES DURING THE CONTRACT PERIOD. THIS SHALL INCLUDE ANY EROSION CONTROL MEASURES AND RE-GRADING NECESSARY TO ACHIEVE THE LINES AND GRADES SET FORTH BY THESE PLANS.
13. ALL TESTING PROCEDURES USED ON THIS PROJECT SHALL CONFORM TO THE TCEQ, AWWA, NSF OR OTHER APPLICABLE STANDARDS. THE TESTING EXPENSE SHALL BE BORNE BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED.
14. TEXAS LAW PROHIBITS ALL ACTIVITIES IN WHICH PERSONS OR EQUIPMENT MAY COME WITHIN 6 FEET OF ENERGIZED OVERHEAD POWER LINES, AND FEDERAL REGULATIONS REQUIRE A MINIMUM CLEARANCE OF 10 FEET FROM THESE FACILITIES. THE ABOVE LAWS CARRY BOTH CRIMINAL AND CIVIL LIABILITIES, WITH CONTRACTORS AND OWNERS BEING LEGALLY RESPONSIBLE FOR THE SAFETY OF WORKERS UNDER THESE LAWS. IF YOU OR YOUR COMPANY MUST WORK NEAR OVERHEAD POWER LINES, CALL THE POWER COMPANY FOR THE LINES TO BE DE-ENERGIZED AND/OR MOVED AT YOUR EXPENSE.
15. FINAL COVER OF INSTALLED LINES SHALL NOT BEGIN PRIOR TO OBSERVATION AND ACCEPTANCE BY THE OWNER AND ENGINEER.
16. THE LOADING AND UNLOADING OF ALL MATERIALS AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PRACTICES AND SHALL AT ALL TIMES BE PERFORMED WITH CARE TO AVOID ANY DAMAGE TO THE MATERIAL. THE CONTRACTOR SHALL LOCATE AND PROVIDE THE NECESSARY STORAGE AREAS FOR MATERIALS AND EQUIPMENT.
17. ALL MATERIALS AND EQUIPMENT SHALL BE BOTH FURNISHED AND INSTALLED UNLESS OTHERWISE NOTED.
18. CONSTRUCTION SHALL COMPLY WITH THE LATEST REVISIONS OF OSHA REGULATIONS AND STATE OF TEXAS LAW CONCERNING TRENCHING AND SHORING. CONTRACTOR SHALL PROVIDE A TRENCH SAFETY SYSTEM TO MEET, AS A MINIMUM, THE REQUIREMENTS OF OSHA SAFETY AND HEALTH REGULATION, AS PUBLISHED IN THE FEDERAL REGISTER LATEST REVISIONS.
19. DETAILS PREPARED DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS, INCLUDING THE PLANS AND SPECIFICATIONS REQUIRED BY CHAPTER 756, SUBCHAPTER "C" OF THE TEXAS HEALTH AND SAFETY CODE.
20. ALL UNSATISFACTORY AND/OR WASTE MATERIALS INCLUDING ASPHALT, VEGETATION, ROOTS, CONCRETE AND DEBRIS SHALL BE HAULED OFF-SITE BY THE CONTRACTOR. INCLUDE COST OF THIS WORK, INCLUDING HAUL, IN OTHER ITEMS OF THIS PROJECT. CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AND STORMWATER POLLUTION CONTROL AT ALL TIMES DURING CONSTRUCTION OF PROPOSED FACILITIES.
21. CONTRACTOR SHALL CONFINE ALL WORK EFFORTS WITHIN THE DESIGNATED RIGHT-OF-WAY OR EASEMENTS UNLESS SPECIFICALLY AUTHORIZED BY THE OWNER. EXTREME CARE SHOULD BE EXERCISED WITHIN ADJACENT PROPERTY TO PROTECT THE EXISTING TREES AND FENCES.
22. CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS, AND CONFIRM POINTS OF CONNECTIONS TO EXISTING IMPROVEMENTS, INCLUDING CONFIRMATION OF ELEVATIONS AND GRADES OF EXISTING FACILITIES AND UTILITIES PRIOR TO STARTING ANY GRADING, PAVING OR UTILITY INSTALLATION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IMMEDIATELY. ANY CONFLICTS OR ERRORS BETWEEN EXISTING FIELD CONDITIONS AND ENGINEERING PLANS MUST BE RESOLVED PRIOR TO STARTING EXCAVATION OR SETTING ANY GRAVITY SEWER (STORM OR SANITARY) AND APPURTENANCES.
23. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM REQUIREMENTS.
24. APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
25. APPROPRIATE POLLUTION PREVENTION CONTROLS SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO APPLICABLE CONSTRUCTION ACTIVITIES.

GENERAL NOTES & UTILITY DETAILS

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
Texas Firm Registration No. 678
WWW.BLEYLENGINEERING.COM
SAN ANGELO OFFICE:
318 W. HIGHLAND BLVD.
SAN ANGELO, TEXAS 76903
(325) 262-4082
PROJECT No. 11962

PROJECT:	201436
DATE	6-1-2016
DRAWN	T.O.W.
REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
3415 Edgewood Drive
SAN ANGELO, TEXAS

STATE OF TEXAS
TIMOTHY O. WOLFF
100110
REGISTERED PROFESSIONAL ENGINEER
2-15-17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
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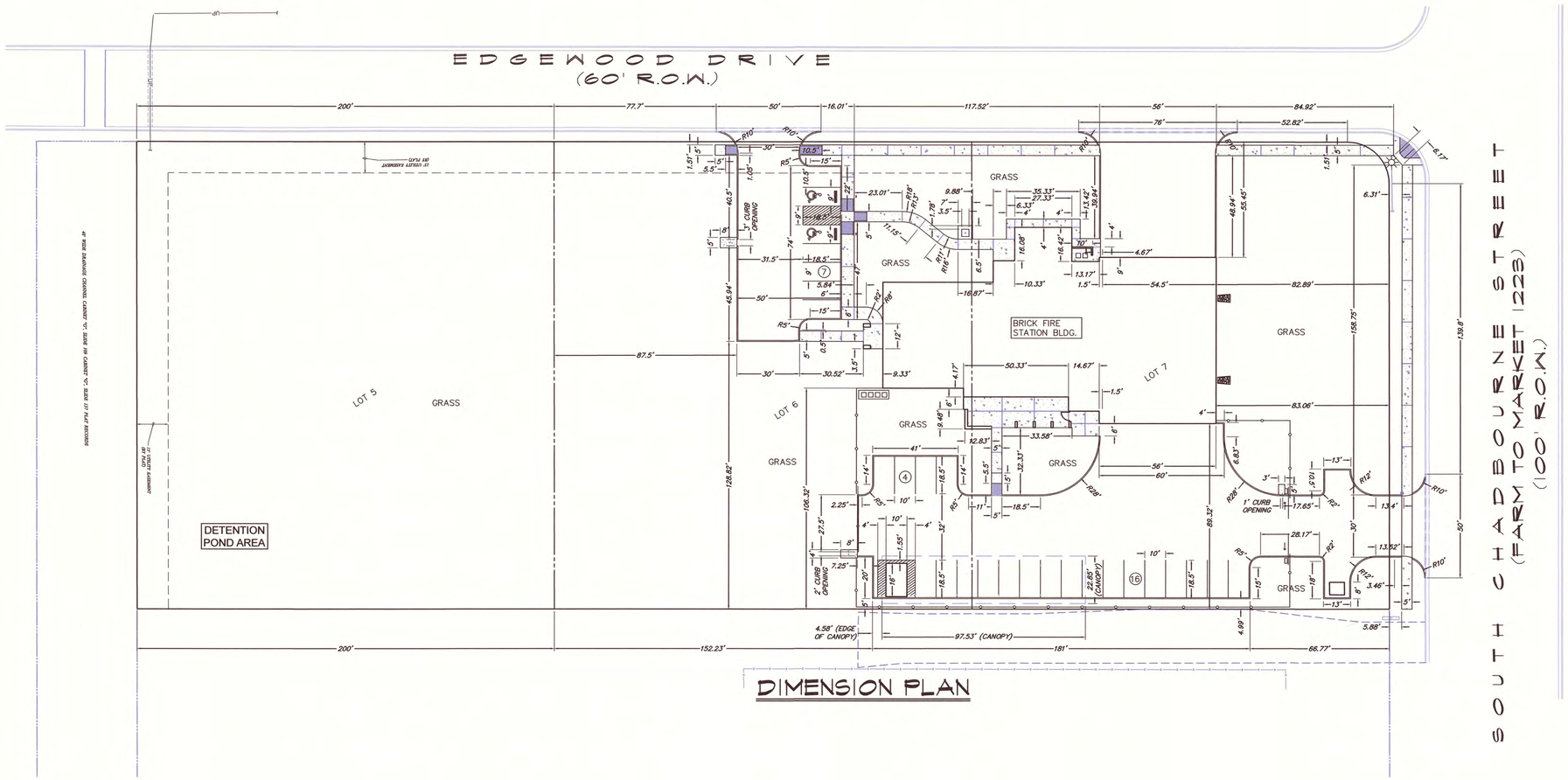
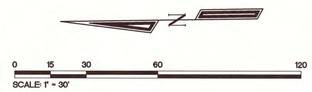
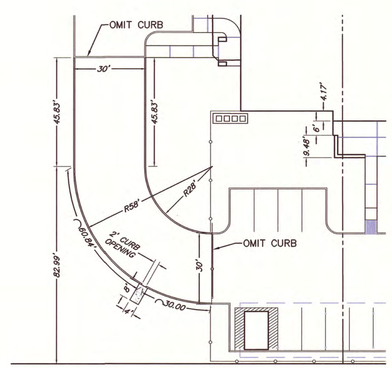
(325)655-4805 FAX 949-1306

SHEET NO.
C-1
OF 7



DIMENSION PLAN





ALTERNATE 1

ALL DIMENSIONS TO A CURB ARE MEASURED TO THE BACK OF CURB.

PARKING INFORMATION

	REQUIRED	PROVIDED
TOTAL	Sq. Ft. 6,617 (LIVING) @ 1 SPACE PER 275 Sq. Ft.	27 SPACES @ 9' x 18' (OR LARGER)
	24 SPACES @ 9' x 18'	
HCAP	TAS TABLE 208.2.4: 26-50 TOTAL	2 SPACES @ 9' x 18'
	2 HANDICAP SPACES	
VAN ACC.	TAS 208.4: 1 VAN SPACE PER 6 HCAP SPACES	1 SPACE @ 9' x 18'
	1 VAN-ACCESSIBLE HANDICAP SPACE	

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SAN ANGELO OFFICE:
318 W. HIGHLAND BLVD.
SAN ANGELO, TEXAS 76903
(325) 262-4082
PROJECT No. 11962

SITE TEMPORARY BENCHMARK (TBM) SET OR REFERENCED BY ENPROTEC/HIBBS AND TODD, INC. ON OCTOBER 6, 2015:

TBM 1: CHISELED "□" ON TOP OF THE SOUTHERNMOST "SAW TOOTH" ON WEST SIDE OF EDGEWOOD DR. @ NE CORNER THIS PROPERTY ELEVATION = 1856.63

FLOOD PLAIN: THIS ENTIRE PROJECT IS IN UNSHADED ZONE X IN ACCORDING TO FIRM MAP PANEL NO. 48451C0495 E, TOM GREEN COUNTY, TEXAS EFFECTIVE JUNE 19, 2012.

LOCATION AND ELEVATION OF EXISTING UTILITIES SHOWN HEREIN ARE PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES AT ALL CROSSINGS AND CONNECTION POINTS PRIOR TO ANY WORK. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.

IN THE EVENT OF A DISCREPANCY BETWEEN THESE PLANS AND THE CORRESPONDING SPECIFICATIONS, THE SPECIFICATIONS GOVERN IN ALL SITUATIONS.

ALL UTILITY CONSTRUCTION SHALL BE DONE PER LOCAL STANDARD DETAILS AND SPECIFICATIONS AND SHALL MEET ALL THE REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AS A MINIMUM.

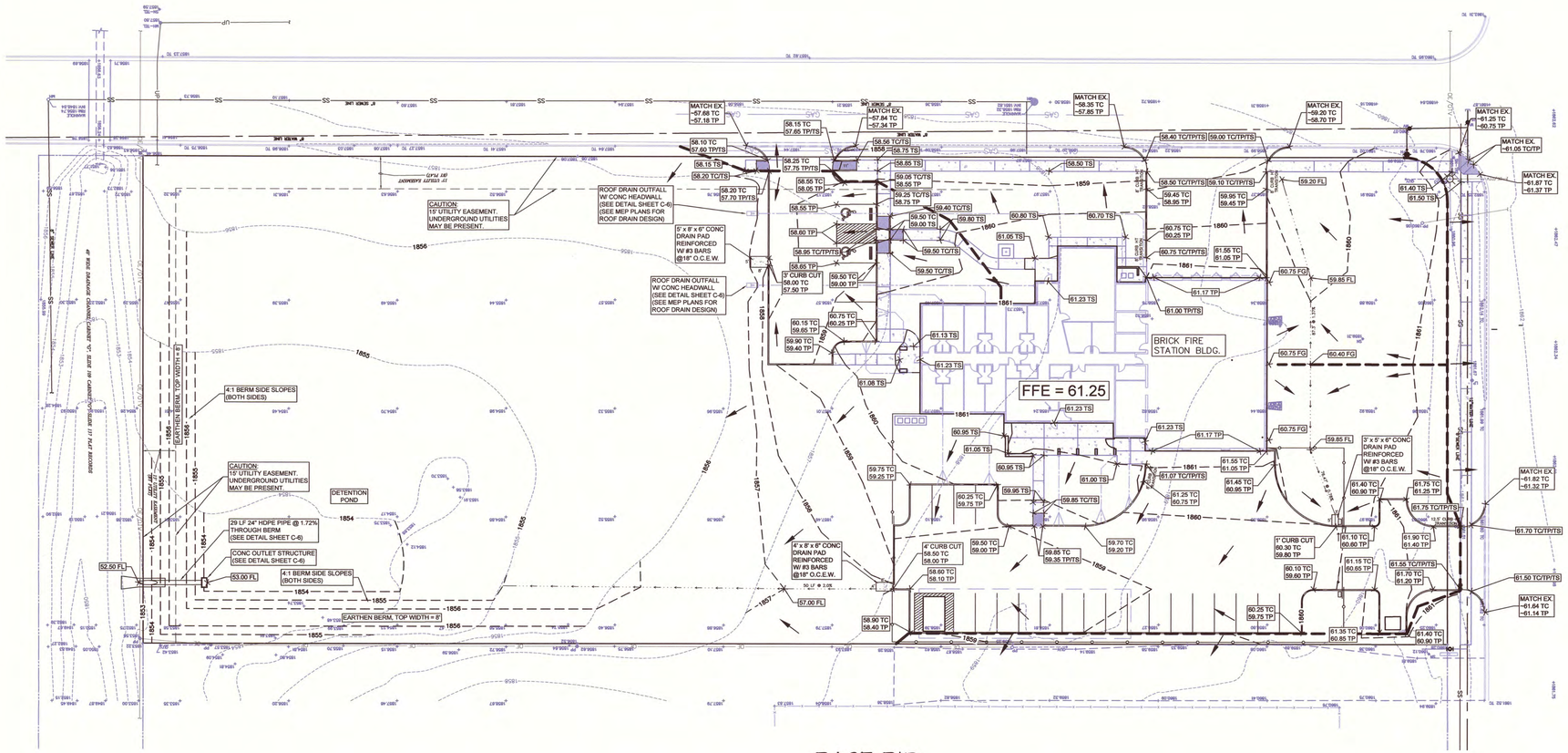
PROJECT:	201436
DATE	6-1-2016
DRAWN	T.O.W.
REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
3415 Edgewood Drive
SAN ANGELO, TEXAS

STATE OF TEXAS
TIMOTHY O. WOLFF
100110
REGISTERED PROFESSIONAL ENGINEER
7-15-17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.
C-2
OF 7



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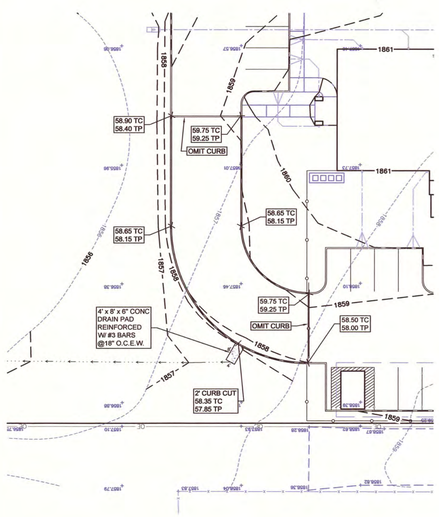

ALTERNATE 1

GRADING PLAN

SITE TEMPORARY BENCHMARK (TBM) SET OR REFERENCED BY ENPROTEC/HIBBS AND TODD, INC. ON OCTOBER 6, 2015:

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FLOOD PLAIN: THIS ENTIRE PROJECT IS IN UNSHADED ZONE X IN ACCORDING TO FIRM MAP PANEL NO. 48451C0495 E, TOM GREEN COUNTY, TEXAS EFFECTIVE JUNE 19, 2012.

SCALE: 1" = 30'

LOCATION OF EXISTING UNDERGROUND UTILITY LINES INDICATED ON THIS PLAN ARE APPROXIMATE, AND THE CONTRACTOR SHALL VERIFY THEIR LOCATION PRIOR TO COMMENCEMENT OF ANY TRENCHING OR EXCAVATION OPERATIONS.

NOTES:

1) CONTRACTOR SHALL COMPLY WITH ALL CITY OF SAN ANGELO STANDARDS AND REQUIREMENTS.
2) CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF SAN ANGELO STORMWATER DRAINAGE MANUAL AND STORMWATER ORDINANCE, INCLUDING ALL POLLUTION PROTECTION REQUIRMENTS.
3) TOPOGRAPHIC SURVEY WAS PERFORMED BY ENPROTEC/HIBBS AND TODD, INC. ON OCTOBER 6, 2015.
4) CONTRACTOR SHALL GRADE SITE TO ENSURE POSITIVE DRAINAGE.
5) FINISHED GRADES SHALL NOT ADVERSELY IMPACT OFFSITE DRAINAGE.
6) SIDEWALKS SHALL HAVE A MAXIMUM RUNNING SLOPE OF 5% AND A MAXIMUM CROSS SLOPE OF 2%.
7) VERIFY EXISTING PAVEMENT ELEVATIONS PRIOR TO CONSTRUCTION.
8) THE CONTRACTOR IS RESPONSIBLE FOR FINAL TEXAS ACCESSIBILITY STANDARDS (TAS) INSPECTION. TAS APPROVAL IS REQUIRED PRIOR TO FINAL PAYMENT AND ACCEPTANCE.
9) ACCESSIBLE PARKING SPACES AND AISLES SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION.
10) SLOPE OF FINISH GRADE SHALL NOT EXCEED 4:1.
11) LANDSCAPING SHALL NOT RESTRICT STORMWATER RUN-OFF.

LEGEND

GRADE BREAK

EXISTING CONTOUR
PROPOSED CONTOUR
PROPOSED FLOWLINE

TS	TOP OF SIDE WALK
TP	TOP OF PAVEMENT
TC	TOP OF CURB
TG	TOP OF GRATE
TB	TOP OF BERM
FL	FLOW LINE
FG	FINISHED GRADE
FFE	FINISHED FLOOR ELEVATION
RIM	MANHOLE/JUNCTION BOX TOP
HT	HEIGHT

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SAN ANGELO, TEXAS 76903
(325) 262-4082
PROJECT No. 11962

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IN THE EVENT OF A DISCREPANCY BETWEEN THESE PLANS AND THE CORRESPONDING SPECIFICATIONS, THE SPECIFICATIONS GOVERN IN ALL SITUATIONS.

ALL UTILITY CONSTRUCTION SHALL BE DONE PER LOCAL STANDARD DETAILS AND SPECIFICATIONS AND SHALL MEET ALL THE REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AS A MINIMUM.

PROJECT:	201436
DATE	6-1-2016
DRAWN	T.O.W.
REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
3415 Edgewood Drive
SAN ANGELO, TEXAS

STATE OF TEXAS
TIMOTHY O. WOLFF
100110
REGISTERED PROFESSIONAL ENGINEER
2-15-17

GARY DONALDSON
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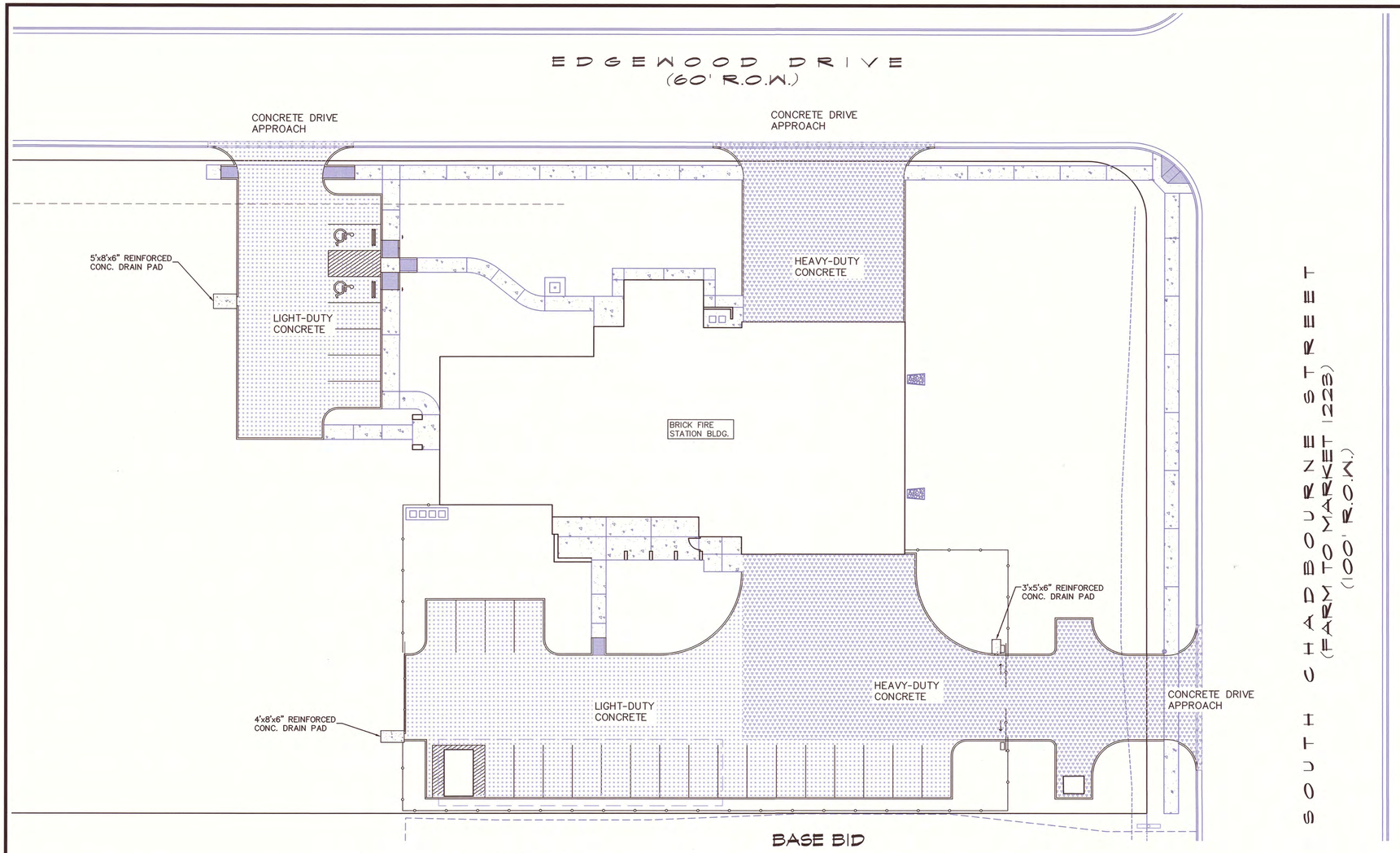
(325)655-4805 FAX 949-1306

SHEET NO.
C-3
OF 7



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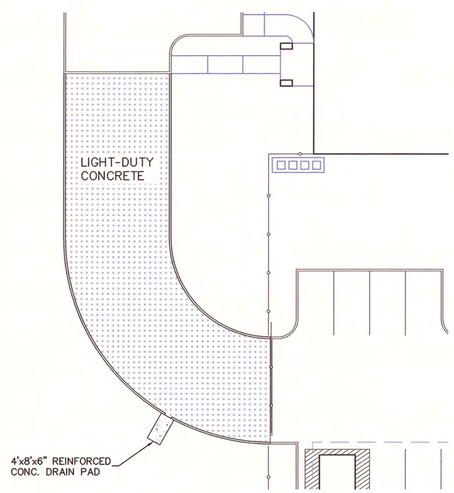
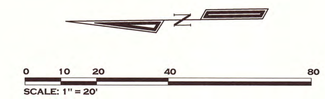


ALTERNATE 1

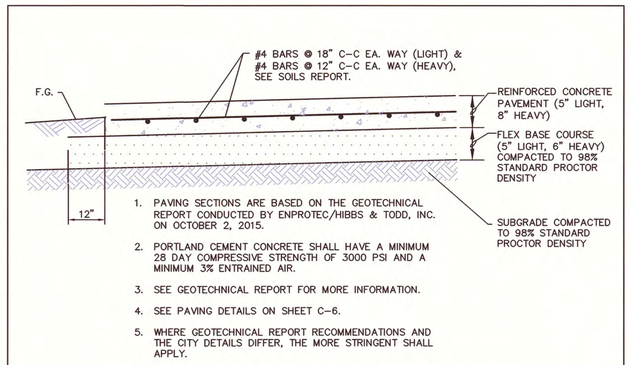


CONCRETE SIDEWALK

5-INCH CONCRETE PAVING

8-INCH HEAVY-DUTY CONCRETE PAVING

PAVING PLAN



1. PAVING SECTIONS ARE BASED ON THE GEOTECHNICAL REPORT CONDUCTED BY ENPROTEC/HIBBS & TODD, INC. ON OCTOBER 2, 2015.
2. PORTLAND CEMENT CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI AND A MINIMUM 3% ENTRAINED AIR.
3. SEE GEOTECHNICAL REPORT FOR MORE INFORMATION.
4. SEE PAVING DETAILS ON SHEET C-6.
5. WHERE GEOTECHNICAL REPORT RECOMMENDATIONS AND THE CITY DETAILS DIFFER, THE MORE STRINGENT SHALL APPLY.

TYPICAL CONCRETE PAVING SECTION

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PROJECT No. 11962

PROJECT:	201436
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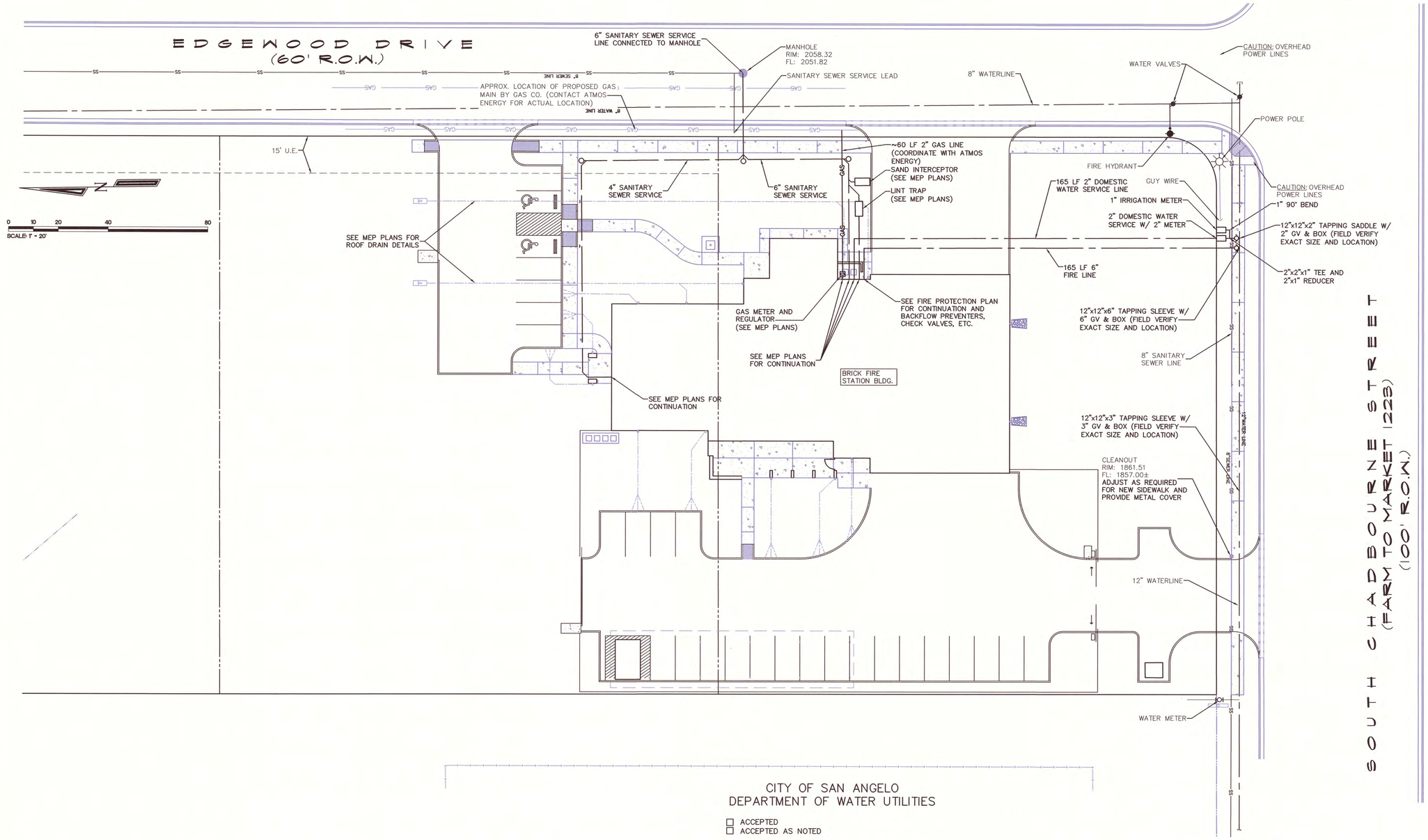
SHEET NO.
C-4
OF 7



CITY OF SAN ANGELO DEPARTMENT OF WATER UTILITIES

☐ ACCEPTED
☐ ACCEPTED AS NOTED

Drawing as to design only. Dimensions and locations are not verified, contractor to verify as to plans and/or installation requirements.

_____ DATE _____

CITY OF SAN ANGELO FIRE MARSHAL'S OFFICE

☐ ACCEPTED
☐ ACCEPTED AS NOTED

See IFC Section 508.5.1 for applicable distances of 400' or 600'.
Drawing as to design only. Dimensions and locations are not verified, contractor to verify as to plans and/or installation requirements.

_____ DATE _____

SYMBOLS LEGEND

DESCRIPTION	PROPOSED	EXISTING
SANITARY SEWER MANHOLE		SS
WATER TAPPING SADDLE & VALVE		
WATER LINE GATE VALVE & BOX		
FIRE HYDRANT		
GAS LINE	GAS	GAS
UNDERGROUND TELEPHONE LINE	UGT	UGT

NOTES:
1) LOCATION OF EXISTING UNDERGROUND UTILITY LINES INDICATED ON THIS PLAN ARE APPROXIMATE, AND THE CONTRACTOR SHALL VERIFY THEIR LOCATION PRIOR TO COMMENCEMENT OF ANY TRENCHING OR EXCAVATION OPERATIONS.
2) CONTRACTOR SHALL COMPLY WITH ALL CITY OF SAN ANGELO AND TCEQ RULES, STANDARDS AND REQUIREMENTS.
3) ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF SAN ANGELO'S STANDARD DETAILS.
4) CONTRACTOR SHALL COORDINATE WATER AND SEWER TAPS WITH THE CITY OF SAN ANGELO'S WATER UTILITIES DEPARTMENT.
5) TAPPING SLEEVE AND VALVE TO BE INSTALLED BY CONTRACTOR. WATER METER WILL BE INSTALLED BY CITY OF SAN ANGELO ONCE THE METER DEPOSIT HAS BEEN PAID TO THE CITY.
6) CONTRACTOR SHALL NOTIFY OWNER (CITY OF SAN ANGELO, 325-657-4209) AT LEAST 72 HOURS PRIOR TO BEGINNING ANY WORK.

UTILITY PLAN

SITE TEMPORARY BENCHMARK (TBM) SET OR REFERENCED BY ENPROTEC/HIBBS AND TODD, INC. ON OCTOBER 6, 2015:

TBM 1: CHISELED "□" ON TOP OF THE SOUTHERNMOST "SAW TOOTH" ON WEST SIDE OF EDGEWOOD DR. @ NE CORNER THIS PROPERTY ELEVATION = 1856.63

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PROJECT:	201436
DATE	6-1-2016
DRAWN	T.O.W.
REVISIONS	

NEW FIRE STATION NO. 4
FOR
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3415 Edgewood Drive
SAN ANGELO, TEXAS

STATE OF TEXAS
TIMOTHY O. WOLFF
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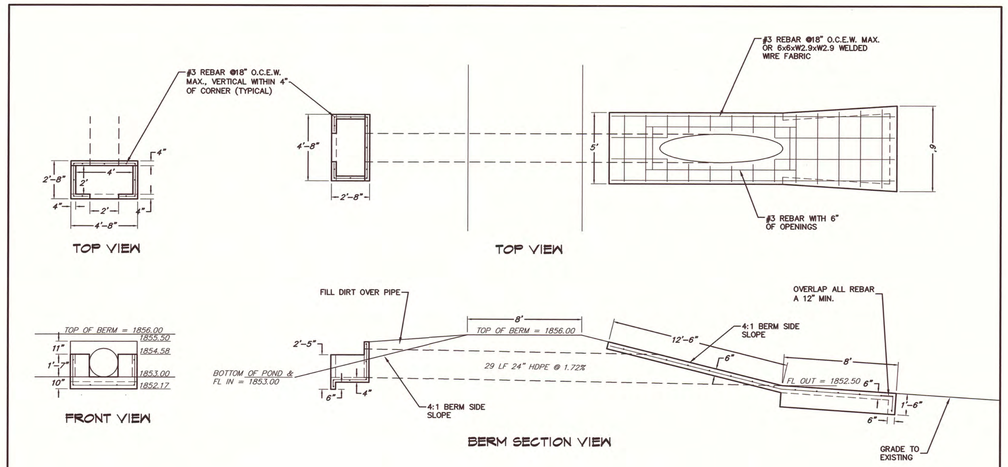
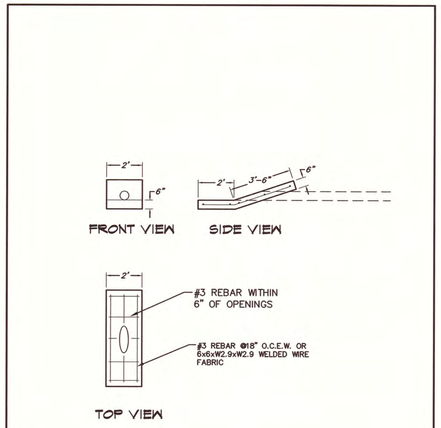


OUTLET STRUCTURE DETAIL

0 5 10 15 20

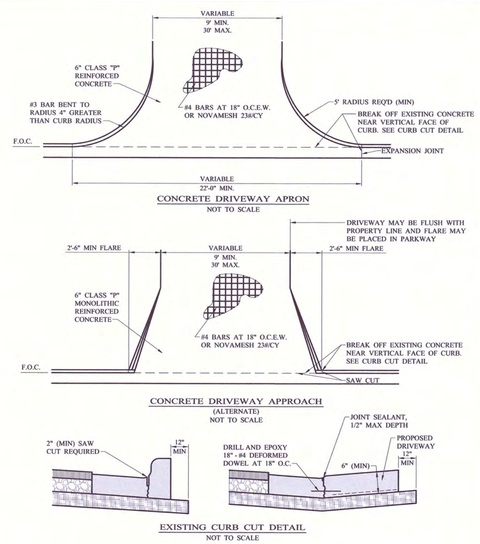
SCALE: 1" = 5'



ROOF DRAIN OUTLET HEADWALL DETAIL

0 4 8 12 16

SCALE: 1" = 4'



NOTES:

1. A ROUGH BROOM FINISH IS PREFERRED.
2. SLOPE OF DRIVEWAY SHALL NOT EXCEED 12:1 SLOPE.
3. WET SUBGRADE SHALL BE CORRECTED PRIOR TO PLACEMENT OF CONCRETE.
4. DRIVEWAY MAY BE FLUSH WITH THE PROPERTY LINE.

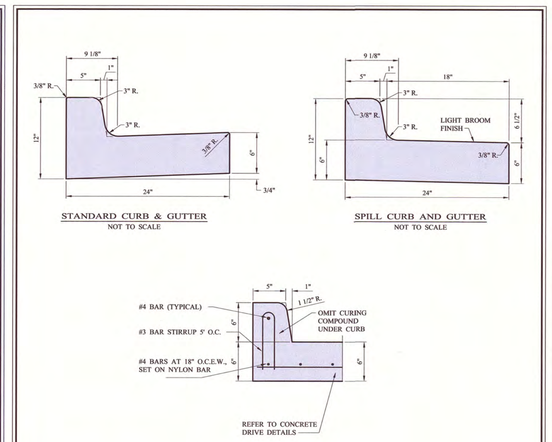
LAP SPLICE LENGTHS:

#3 - 21"
#4 - 24"

CITY OF SAN ANGELO

CONCRETE DRIVEWAY APPROACHES

S-V-1



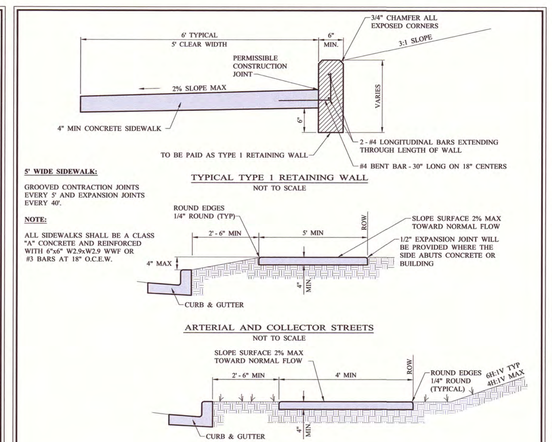
NOTES:

1. DIMENSIONS HEREIN SHOWN ARE MINIMUM REQUIRED. THE DESIGNER MAY ADJUST WIDTH ACCORDING TO THE NEED. CONCRETE FOR CURB AND GUTTER SHALL BE CLASS "A" CONCRETE EXCEPT FOR STANDARD MONOLITHIC CURB WHICH IS CLASS "P". THE USE OF MORTAR TOPPING IS OPTIONAL. IF NOT MACHINE LAID, A "MULE" FINISING TOOL SHALL BE USED.
2. ALL TOOLED CONTRACTION JOINTS WILL BE ON 10' SPACING AT 1-1/2" MINIMUM DEPTHS. 1/2" EXPANSION JOINTS ON 50' SPACING OR AT BEGINNING OF RADII, OR AT INTERSECTIONS. LIGHT BROOM FINISH.
3. EXTRUDED CONCRETE MAY USE A MODIFIED GRADATION FOR MACHINE LAID CURB AND GUTTER AS APPROVED BY THE CITY ENGINEER.
4. IF MACHINE LAID, A MAXIMUM 1" FLARE AT THE BOTTOM IS PERMITTED.

CITY OF SAN ANGELO

CONCRETE CURB & GUTTERS

S-T-1



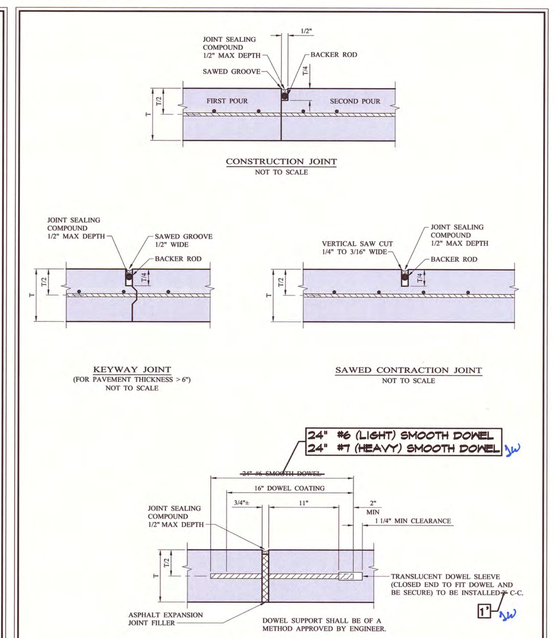
NOTES:

1. 6" SUBGRADE SHALL BE COMPACTED TO AN EQUIVALENT OF 95% STANDARD PROCTOR DENSITY.
2. A ROUGH BROOM FINISH IS PREFERRED.
3. LONGITUDINAL SLOPE OF SIDEWALK SHALL NOT EXCEED 5% , AND CROSS SLOPE OF SIDEWALK SHALL NOT EXCEED 2%.
4. WET SUBGRADE SHALL BE CORRECTED PRIOR TO PLACEMENT OF CONCRETE.
5. ALL SIDEWALKS ACROSS DRIVEWAYS SHALL BE 6" REINFORCED CONCRETE. SEE CONCRETE APPROACH SHEET S-X-2.
6. IN NARROW RIGHT OF WAY SITUATIONS, THE MINIMUM CLEAR WIDTH OF SIDEWALK SHALL BE 36 INCHES.

CITY OF SAN ANGELO

CONCRETE SIDEWALKS

S-FF-1



CITY OF SAN ANGELO

REINFORCED CONCRETE PAVEMENT DETAILS

S-S-1

PAVEMENT & OUTFALL DETAILS

PROJECT:	201436
DATE	6-1-2016
DRAWN	T.O.W.
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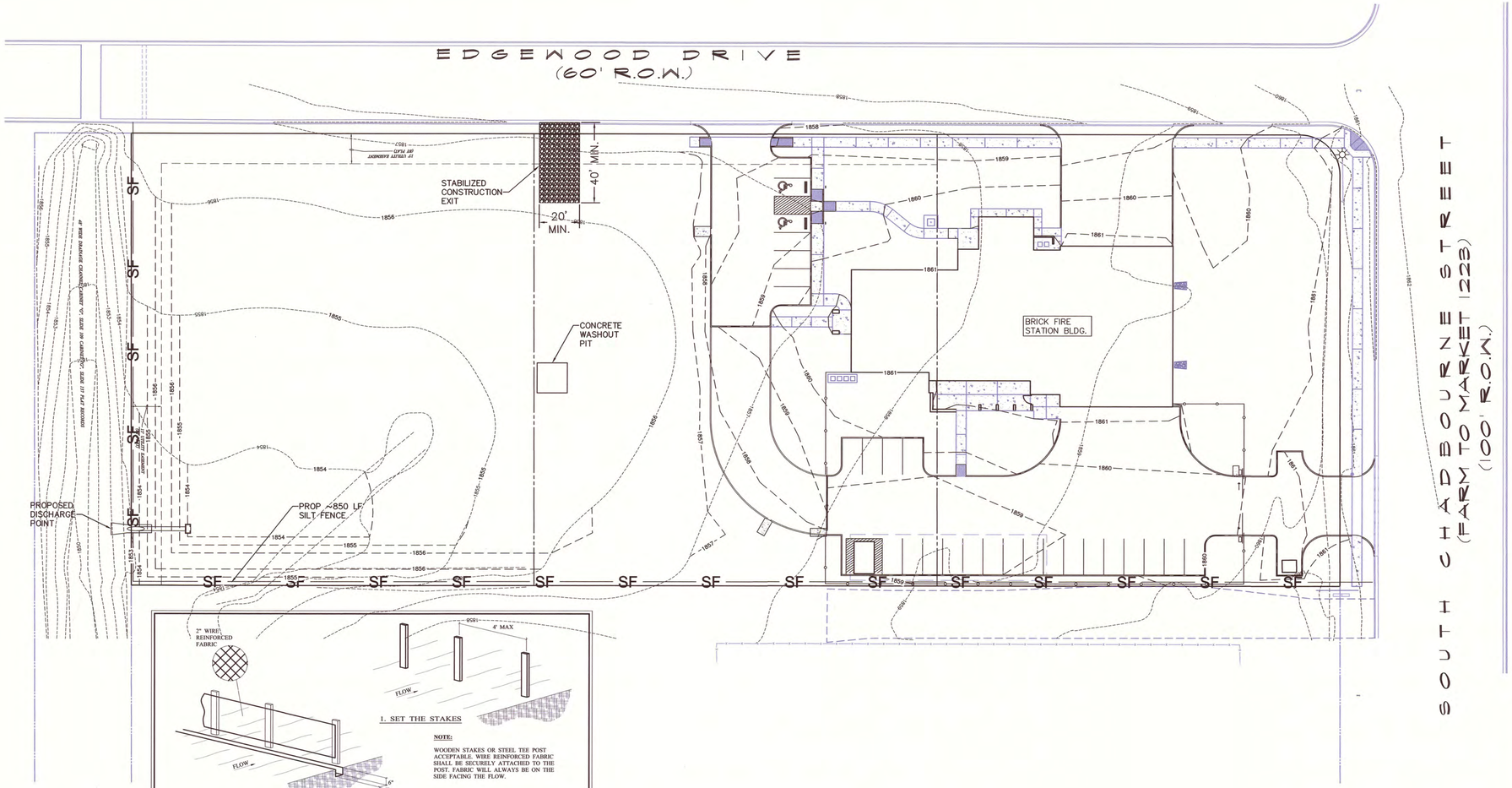
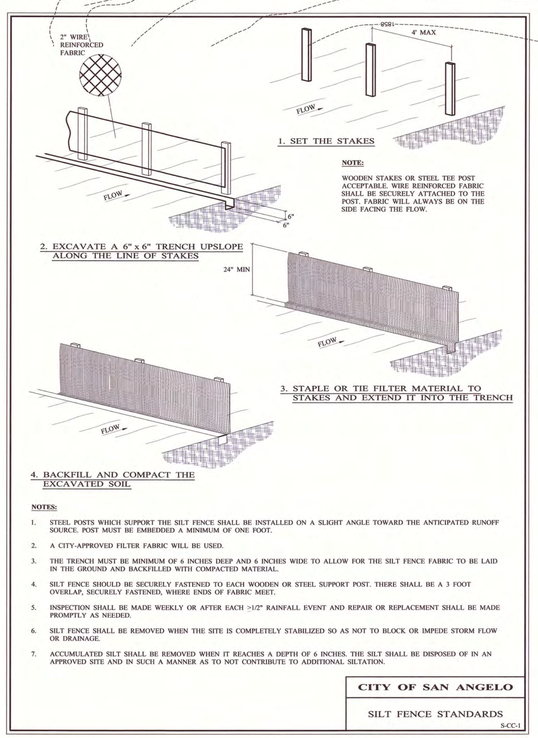
SHEET NO.

C-6

OF 7





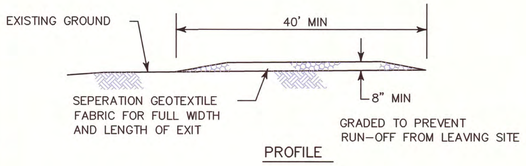
NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
2. A CITY-APPROVED FILTER FABRIC WILL BE USED.
3. THE TRENCH MUST BE MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH WOODEN OR STEEL SUPPORT POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED, WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH >1/2" RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

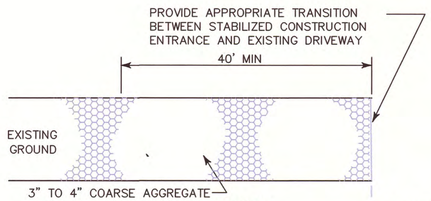
CITY OF SAN ANGELO

SILT FENCE STANDARDS

S-CC-1



PROFILE



PLAN VIEW

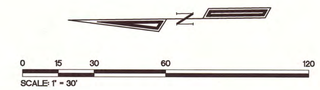
STABILIZED CONSTRUCTION EXIT

CONSTRUCTION NOTES:

1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 40 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMODATE A TRUCK WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE TRUCK WASHING AREA.
6. STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.

EROSION CONTROL PLAN

FLOOD PLAIN: THIS ENTIRE PROJECT IS IN UNSHADED ZONE X IN ACCORDING TO FIRM MAP PANEL NO. 48451C0495 E, TOM GREEN COUNTY, TEXAS EFFECTIVE JUNE 19, 2012.



EROSION CONTROL NOTES:

1. THE SITE SUPERINTENDENT, OR HIS REPRESENTATIVE, SHALL MAKE A VISUAL INSPECTION OF ALL SILTATION CONTROLS AND NEWLY STABILIZED AREAS ON A DAILY BASIS; ESPECIALLY AFTER A RAINFALL TO ENSURE THAT ALL CONTROLS ARE MAINTAINED AND PROPERLY FUNCTIONING. ANY DAMAGED CONTROLS SHALL BE REPAIRED PRIOR TO THE END OF THE WORK DAY, INCLUDING RE-SEEDING AND MULCHING OR RE-SODDING IF NECESSARY. ALL INSPECTIONS SHALL BE DOCUMENTED WITH A WRITTEN REPORT WITHIN 24 HOURS, WHICH MUST DETAIL ANY REPAIRS DEEMED NECESSARY. SUCH REPAIRS SHALL BE INITIATED WITHIN 24 HOURS OF THE REPORT.
2. CONTRACTOR SHALL ADHERER TO ALL STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND TEXAS POLLUTION DISCHARGE ELIMINATION (TPDES) REQUIREMENTS.
3. ALL SEDIMENT TRAPPING DEVICES SHALL BE INSTALLED AS SOON AS PRACTICAL AFTER THE AREA HAS BEEN DISTURBED. ALL SEDIMENT TRAPPING DEVICES SHALL BE CLEANED WHEN THE SEDIMENT LEVEL REACHES 25% CAPACITY. SEDIMENT SHALL BE DISPOSED OF BY SPREADING ON SITE OR HAULING AWAY IF NOT SUITABLE FOR FILL. SILT FENCE, HAY BALE BARRIERS, OR OTHER SEDIMENT TRAPPING DEVICES SHALL CONTROL ALL STORM WATER LEAVING THE SITE. ALL FILL OR CUT AREAS SHALL BE HYDRO-MULCHED OR SODDED AS PER THE ENGINEER'S PLANS.
4. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SEDIMENT CONTROL DEVICES AFTER THE SITE HAS BEEN STABILIZED AND VEGETATED AREAS HAVE REACHED 70% COVERAGE.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EXISTING SILT FENCE & OTHER EROSION CONTROL DEVICES.
6. CONTRACTOR SHALL COMPLY WITH ALL CITY OF SAN ANGELO STANDARDS AND REQUIREMENTS

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Texas Firm Registration No. 678
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PROJECT No. 11962

LOCATION AND ELEVATION OF EXISTING UTILITIES SHOWN HEREIN ARE PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES AT ALL CROSSINGS AND CONNECTION POINTS PRIOR TO ANY WORK. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.

IN THE EVENT OF A DISCREPANCY BETWEEN THESE PLANS AND THE CORRESPONDING SPECIFICATIONS, THE SPECIFICATIONS GOVERN IN ALL SITUATIONS.

ALL UTILITY CONSTRUCTION SHALL BE DONE PER LOCAL STANDARD DETAILS AND SPECIFICATIONS AND SHALL MEET ALL THE REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AS A MINIMUM.

PROJECT:	201436
DATE	6-1-2016
DRAWN	T.O.W.
REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
3415 Edgewood Drive
SAN ANGELO, TEXAS

STATE OF TEXAS
TIMOTHY O. WOLFF
100110
REGISTERED PROFESSIONAL ENGINEER
2-15-17

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SHEET NO.
C-7
OF 7

GENERAL STRUCTURAL NOTES

EARTHWORK:

1. Topsoil shall be stripped to elevation indicated on Foundation Plan. Scarify exposed subgrade six inches (6"), add water as required to bring subgrade material to optimum moisture content and recompact to 95% maximum density at optimum moisture content according to ASTM D1557. Stripped area is to extend 10'-0" outside bulding lines.
2. Provide compaction tests in subgrade, where indicated (11 locations).
3. Fill above compacted subgrade shall be limestone crusher screenings with approved gradation and PI. At Contractor's option, crushed limestone conforming to TxDot Item 247 grade 2 may be utilized from subgrade to bottom of six inch (6") compacted crusher screening base course below slab. Compact fill in eight inch (8") lifts to 95% maximum density at optimum moisture according to ASTM D1557. Select fill pad is to extend 10'-0" outside building lines.
4. Provide compaction tests, in each lift where indicated. (11 locations).
5. Foundation design is based upon a subsurface investigation by EHT Inc. dated October 2, 2015, for this specific site.
6. Plumbing and electrical trenches shall be backfilled with grout containing sand, water and two (2) sacks of cement per cubic yard of mix.

DRILLED PIERS:

1. Piers shall bear in strata approved by Engineer at time of construction.
2. Provide full-time laboratory observation of the pier drilling operation, reinforcing steel placement and concrete placement. Laboratory is to be paid by Owner and selected by Engineer.
3. Pier drilling equipment is to be at least equal to a Texoma 800 with a depth capacity of at least thirty-five feet (35'-0).
4. Pier bearing surface is to be dry and free of loose material.

MOISTURE BARRIER:

1. Moisture barrier beneath all floor slabs is to be W. R. Meadows "Vapor-Mat" 15 mil or Stego Wrap 15 mil.
2. Moisture barrier is to be laid continuously on compacted fill surface. Penetrations are to be taped. Joints are to be taped.
3. Extend moisture barrier to bottom of beam excavations.
4. Tape is to be by manufacturer of moisture barrier having a perm rate of 0.01.

CONCRETE:

1. Concrete shall have 4,000 psi compressive strength at twenty-eight (28) days and shall contain five and one-half (5 1/2) sacks of cement per cubic yard of mix. Flyash is NOT an acceptable cement substitute.
2. Concrete is to be approved mixes on file with Construction Services Testing Laboratory. Testing laboratory is to control water added to the mix at the site so that the water/cement ratio of approved mix is not exceeded.
3. Reinforcing steel shall be ASTM A615, grade 60, domestic manufacture.
4. Reinforcing in beams shall be spliced at mid-span for top bars and over footings for bottom bars. Laps shall be three feet (3'-0") minimum.
5. Splices in slab bars shall have a minimum lap of two feet (2'-0").
6. Exterior concrete shall be air-entrained with five percent (5%) air content.
7. Provide corner bars in all beam intersections lapping three feet (3'-0") in each direction. Bars shall be equal in size and number to beam bars.
8. Concrete cover of reinforcing steel shall be as follows:
   A. Beams: 3" bottom, 2" sides, 1 1/2" top
   B. Slabs-on-Fill: 1 1/2" top, 2 1/2" bottom
   C. Footings: 3" top, bottom and sides
9. Plumbing, electrical or mechanical piping and conduits shall occur below the vapor barrier. Piping and conduits shall not occur in concrete except where piping and conduits penetrate beams and slabs perpendicular to the face of the concrete. Cutting of reinforcing steel to clear plumbing is not acceptable.
10. Reinforcing steel shall be supported in place utilizing metal chairs with plates spaced no more than four feet (4'-0") on center.
11. Saw-cut joints shall be one inch (1") deep cut in straight lines without spalling edge of concrete. Fill slot with poured joint sealant.
12. Lifting equipment is NOT to be operated on the concrete slab.
13. Saw-cut joints within twelve (12) hours of concrete placement. Saw-cut joints occur between construction joints forming approximate square patterns spaced no more than sixteen feet (16'-0") on center.
14. Construction joints shown are not optional. Note wood-formed key is required. Do not place concrete across construction joints.
15. Expansion joints in foundation beams consist of one inch (1") premolded filler and 4-3/4"ø smooth bars x 2'-0" with plastic sleeve one end allowing 1 1/2" movement. Seal outside and top of joints with 1/2" deep vertical joint sealant.

STRUCTURAL METAL:

1. Structural steel shall conform to ASTM A992, Grade 50 and the Standard Specifications of Structural Steel for Buildings, Latest Edition and shall be of domestic manufacture.
2. Shop drawings are required for all steel shapes.
3. Work under this Contract shall be in accordance with applicable safety regulations.
4. Field and shop welding shall be by certified welders.

GLUE-LAMINATED WOOD BEAMS:

1. Glue-laminated wood beams are to have wet-use adhesives and be fabricated from wood having an allowable design bending stress of 2400 psi.
2. Provide hangers and connectors to complete installation of glue-laminated wood beam framing systems.

PREFABRICATED WOOD TRUSSES:

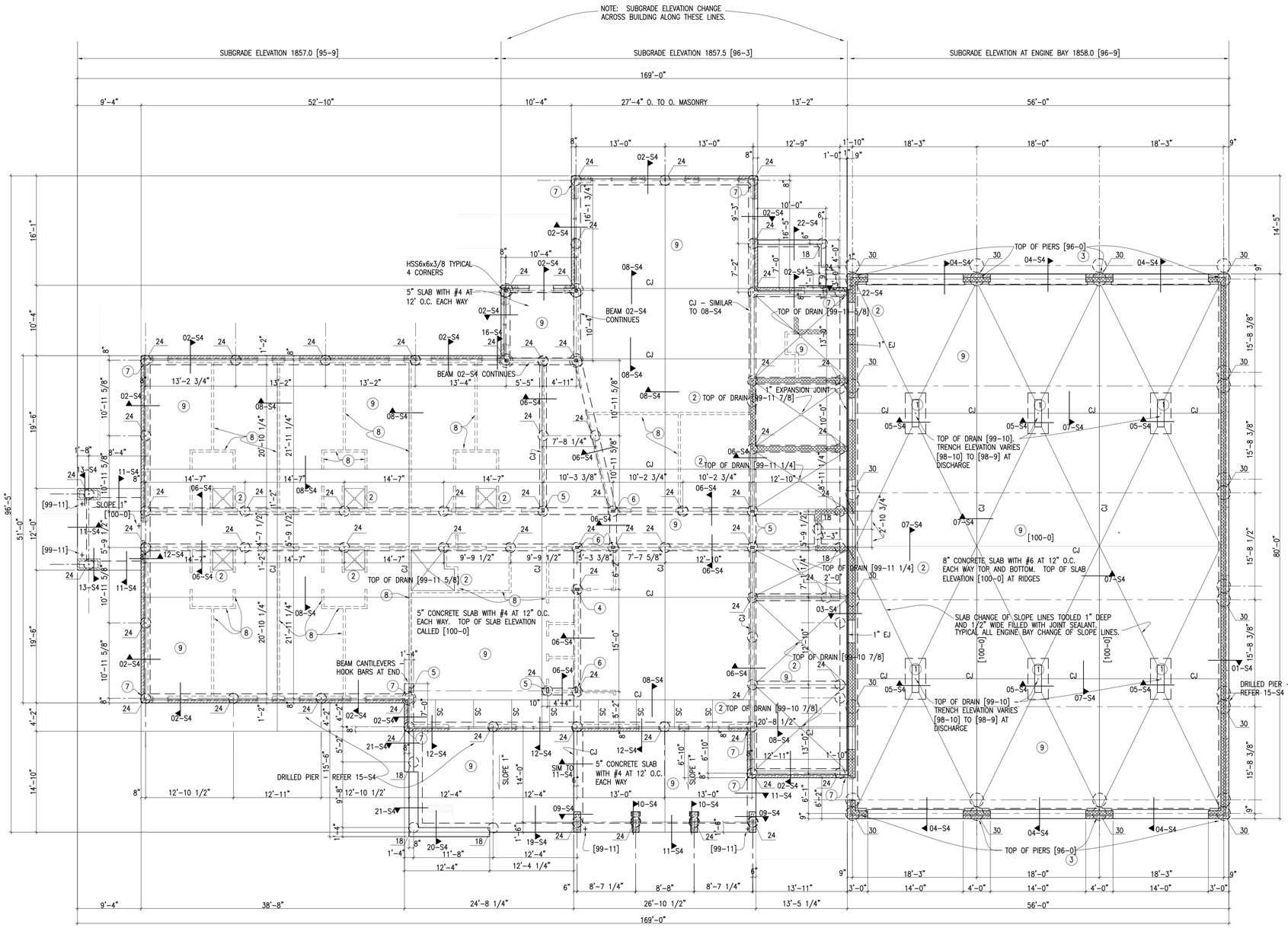
1. Refer to truss elevations for loading requirements.
2. Trusses shall be designed by Registered Texas Professional Structural Engineer.
3. Wood members shall be either #1 Southern Yellow Pine, kiln dried to less than 19% moisture or LVL with design bending stress of 2650 psi and E of 1,900,000 psi.
4. Plate connections shall be standard for plated truss industry.

WOOD FRAMING:

1. All framing shall be Southern Yellow Pine #1 Grade, kiln-dried to less than 19%. Sill plates are to be treated to resist rot and termites.
2. Utilize Simpson connectors at all framing joints. Submit proposed connectors where not otherwise indicated.

MISCELLANEOUS:

1. Design Criteria: 2016 International Building Code
   A. Roof Live Load: 20 psf
   B. Wind Load: 90 mph in 3 second gust
   C. Seismic Loads: Site Class D, Spectral Response Acceleration 0.2
2. Chemical Anchors are Hilti HIT System.
3. Abbreviations:
   A. SCJ - saw-cut joint
   B. CJ - construction joint
   C. EJ - expansion joint
   D. OH - opposite hand
4. Refer 15-S5 and 16-S5 for Lintel and Header Schedules. Where not otherwise indicated, provide lintels matching span and materials of scheduled lintels.
5. Dimensions indicated on Structural Drawings are taken from Architect's electronic file. The Contractor will verify on the ground, at this site, that structural dimensions are in agreement with Architectural dimensions. Refer discrepancies to Structural Engineer for modification before beginning construction or fabrication.



LEGEND

SCJ - SAW-CUT JOINT

CJ - CONTROL JOINT

EJ - EXPANSION JOINT

[100-0] ELEVATION REFERENCED TO SURVEY ELEVATION 1861.25'

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

FOUNDATION PLAN

FOUNDATION PLAN NOTES

1. TRENCH DRAIN 4'-0" LONG WITH McNICHOLS 1 1/2" TB940 GALVANIZED GRATING AND FRAME.
2. FLOOR RECESS WITH DRAIN. REFER ARCHITECT. MAINTAIN 5" SLAB THICKNESS.
3. TOP OF PIERS [96-8] TYPICAL UNLESS OTHERWISE INDICATED.
4. BUILT-UP WOOD COLUMN: 8-2x6 - PROVIDE 2-SIMPSON HHDQ11-SDS2.5 WITH 1"ø x 7 1/2" ANCHOR BOLTS AT SILL PLATE.
5. BUILT-UP WOOD COLUMN: 6-2x4 - PROVIDE 2-SIMPSON HTT22 WITH 5/8"ø x 7 1/2" ANCHOR BOLTS AT SILL PLATE.
6. BUILT-UP WOOD COLUMN: 6-2x6 - PROVIDE 2 SIMPSON HHDQ11-SDS2.5 WITH 1"ø x 7 1/2" ANCHOR BOLTS AT SILL PLATE.
7. REFER 10-S7 FOR TYPICAL CORNER FRAMING AND ANCHORAGE.
8. PROVIDE THICKENED SLAB 17-S4 AT ALL WALLS AND PARTITIONS NOT AT BEAM. REFER ARCHITECT FOR LOCATIONS AND DIMENSIONS.
9. DENSITY TEST IN SUBGRADE AND EACH LIFT OF SELECT FILL.

PROJECT:	2934
DATE©	6/01/2016
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REVISIONS	

NEW FIRE STATION #4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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SHEET NO.
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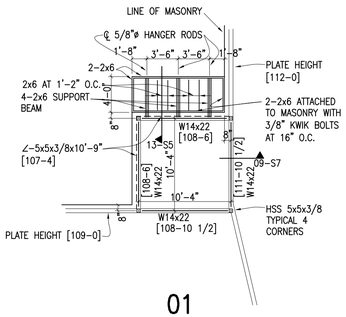

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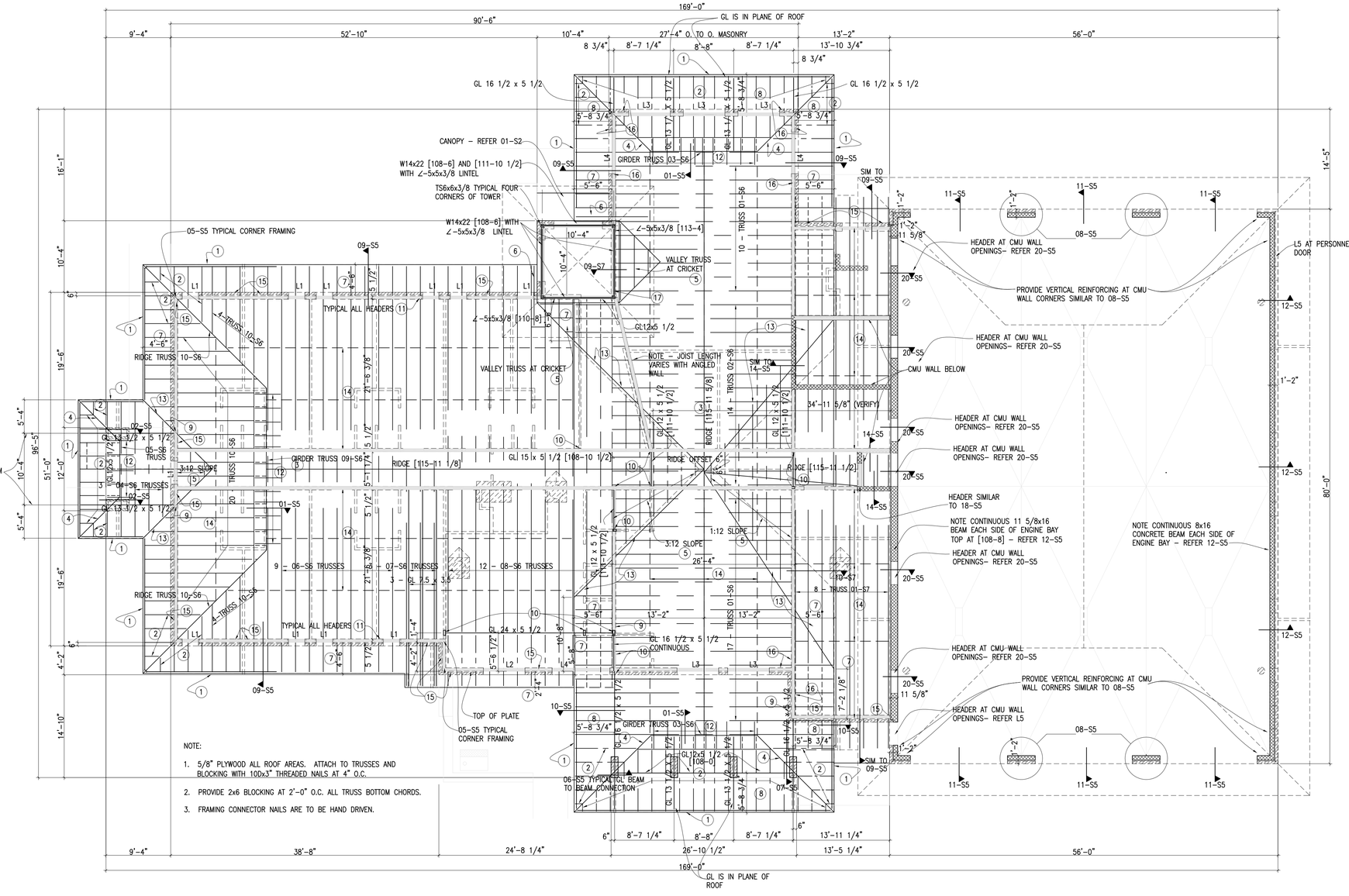

NOTE:

1. 5/8" PLYWOOD ALL ROOF AREAS. ATTACH TO TRUSSES AND BLOCKING WITH 10dx3" THREADED NAILS AT 4" O.C.
2. PROVIDE 2x6 BLOCKING AT 2'-0" O.C. ALL TRUSS BOTTOM CHORDS.
3. FRAMING CONNECTOR NAILS ARE TO BE HAND DRIVEN.

LOWER ROOF PLAN

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

ROOF FRAMING PLAN NOTES

1. 2 – 2x8 FASCIA
2. 2x8 ROOF JOISTS AT 2'-0" O.C. AND 2x8 CEILING JOISTS AT 2'-0" O.C. AT CONTRACTOR'S OPTION, TRUSSES MAY BE UTILIZED IN PLACE OF 2x8 FRAMING.
3. GIRDER TRUSS 09-S6.
4. 2-2x10 RIDGE BEAM.
5. VALLEY TRUSSES AT 2'-0" MAXIMUM SPACING. ATTACH TRUSSES TO MAIN ROOF DECK WITH SIMPSON VTC2 CONNECTORS AT 2'-0" O.C. EACH WAY.
6. 2x8 WITH 1/2"ø HILTI KWIK BOLTS AT 2'-0" O.C. 2x8 SLOPES WITH ROOF.
7. DIMENSION FROM FACE OF STUDS.
8. DIMENSION FROM CENTER OF BEAM.
9. BUILT-UP WOOD COLUMN – 8-2x6. REFER 04-S5.
10. BUILT-UP WOOD COLUMN – 6-2x4. REFER 04-S5.
11. BUILT-UP WOOD COLUMN – 6-2x6. 2-2x6 EXTEND TO BOTTOM OF HEADER. 4-2x6 EXTEND TO WALL TOP PLATE. REFER 04-S5.
12. 2x6 CANTILEVER AT 2'-0" O.C.
13. 2x8 VALLEY BLOCKING.
14. 2x4 BRACING IN "x" CONFIGURATION BETWEEN TRUSSES.
15. SHEAR WALL. REFER 03-S5.
16. SHEAR WALL. REFER 03 SIM-S5.
17. GL BEAM SEAT ∠-4x4x3/8x0'-5" AND 2 – SIMPSON PS720 STRAPS. WELD STRAPS TO COLUMN.

PROJECT:	2934
DATE:	6/01/2016
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NEW FIRE STATION #4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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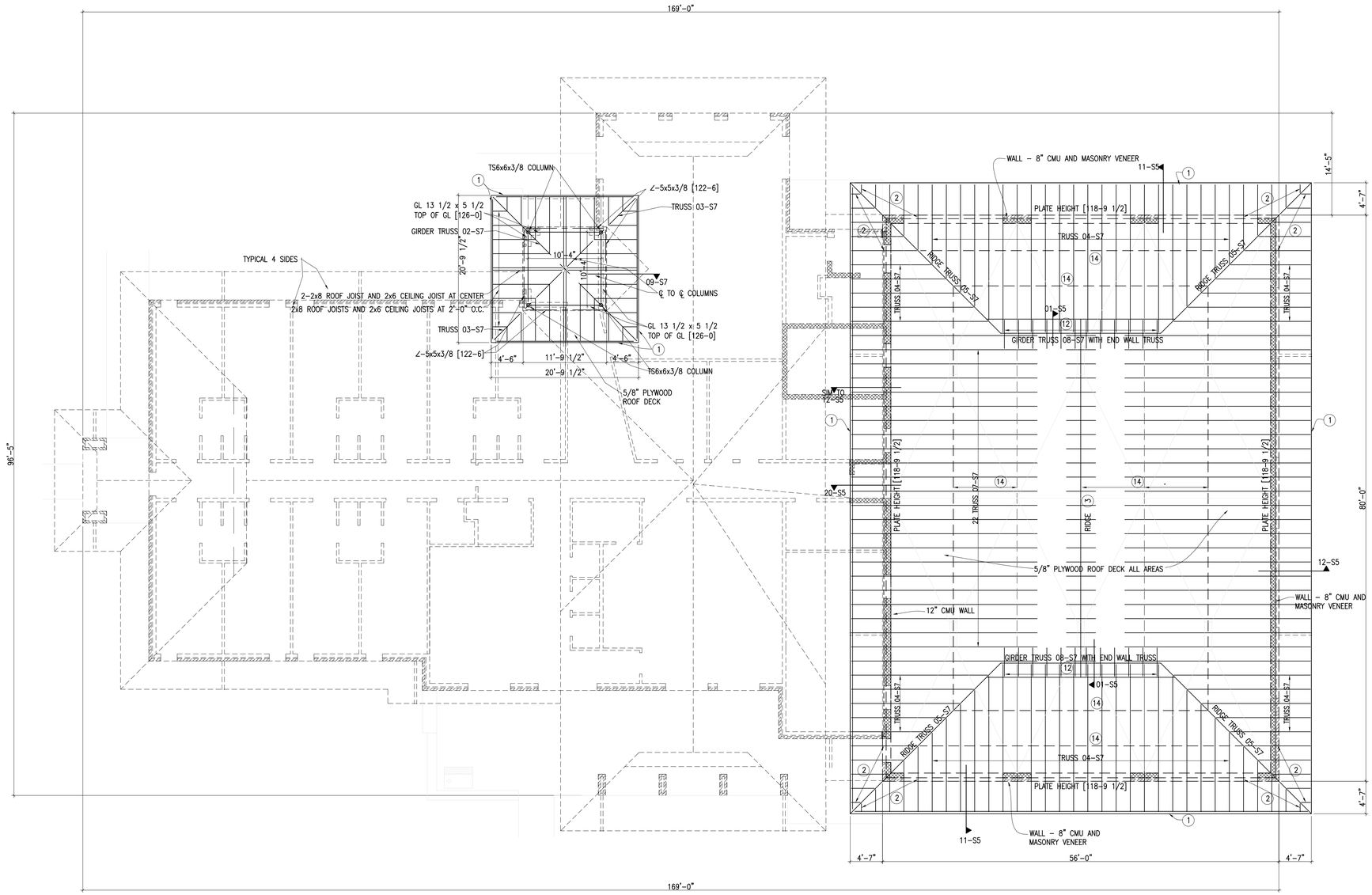
SHEET NO.
S-2
OF 8



ROOF FRAMING PLAN NOTES

1. 2 - 2x8 FASCIA
2. 2x8 ROOF JOISTS AT 2'-0" O.C. AND 2x8 CEILING JOISTS AT 2'-0" O.C. AT CONTRACTOR'S OPTION, TRUSSES MAY BE UTILIZED IN PLACE OF 2x8 FRAMING.
3. 2x10 RIDGE BLOCKING.
4. 2-2x10 RIDGE BEAM.
5. VALLEY TRUSSES AT 2'-0" MAXIMUM SPACING. ATTACH TRUSSES TO MAIN ROOF DECK WITH SIMPSON VTC2 CONNECTORS AT 2'-0" O.C. EACH WAY.
6. 2x8 WITH 1/2"ø HILTI KWIK BOLTS AT 2'-0" O.C. 2x8 SLOPES WITH ROOF.
7. DIMENSION FROM FACE OF STUDS.
8. DIMENSION FROM CENTER OF BEAM.
9. BUILT-UP WOOD COLUMN - 8-2x6.
10. BUILT-UP WOOD COLUMN - 6-2x4.
11. BUILT-UUP WOOD COLUMN - 6-2x6. 2-2x6 EXTEND TO BOTTOM OF HEADER. 4-2x6 EXTEND TO WALL TOP PLATE.
12. 2x6 CANTILEVER AT 2'-0" O.C.
13. 2x8 VALLEY BEAM.
14. 2x4 BRACING IN "x" CONFIGURATION BETWEEN TRUSSES.

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

UPPER ROOF PLAN

NOTE:

1. 5/8" PLYWOOD ROOF DECK ALL ROOF AREAS. ATTACH DECK TO EACH FRAMING MEMBER (TRUSSES, DIMENSION LUMBER STRUCTURAL, AND BLOCKING) WITH 10Dx3" THREADED NAILS AT 4" O.C.

2. PROVIDE 2x6 BLOCKING AT 2'-0" O.C. ALL TRUSS BOTTOM CHORDS AND ALL DIMENSION LUMBER CEILING FRAMING.

3. NAILS AND ATTACHMENT DEVICES ARE TO BE HAND-DRIVEN. NAIL GUNS ARE NOT TO BE UTILIZED FOR FRAMING ANCHOR ATTACHMENT.

PROJECT:	2934
DATE©	6/01/2016
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NEW FIRE STATION #4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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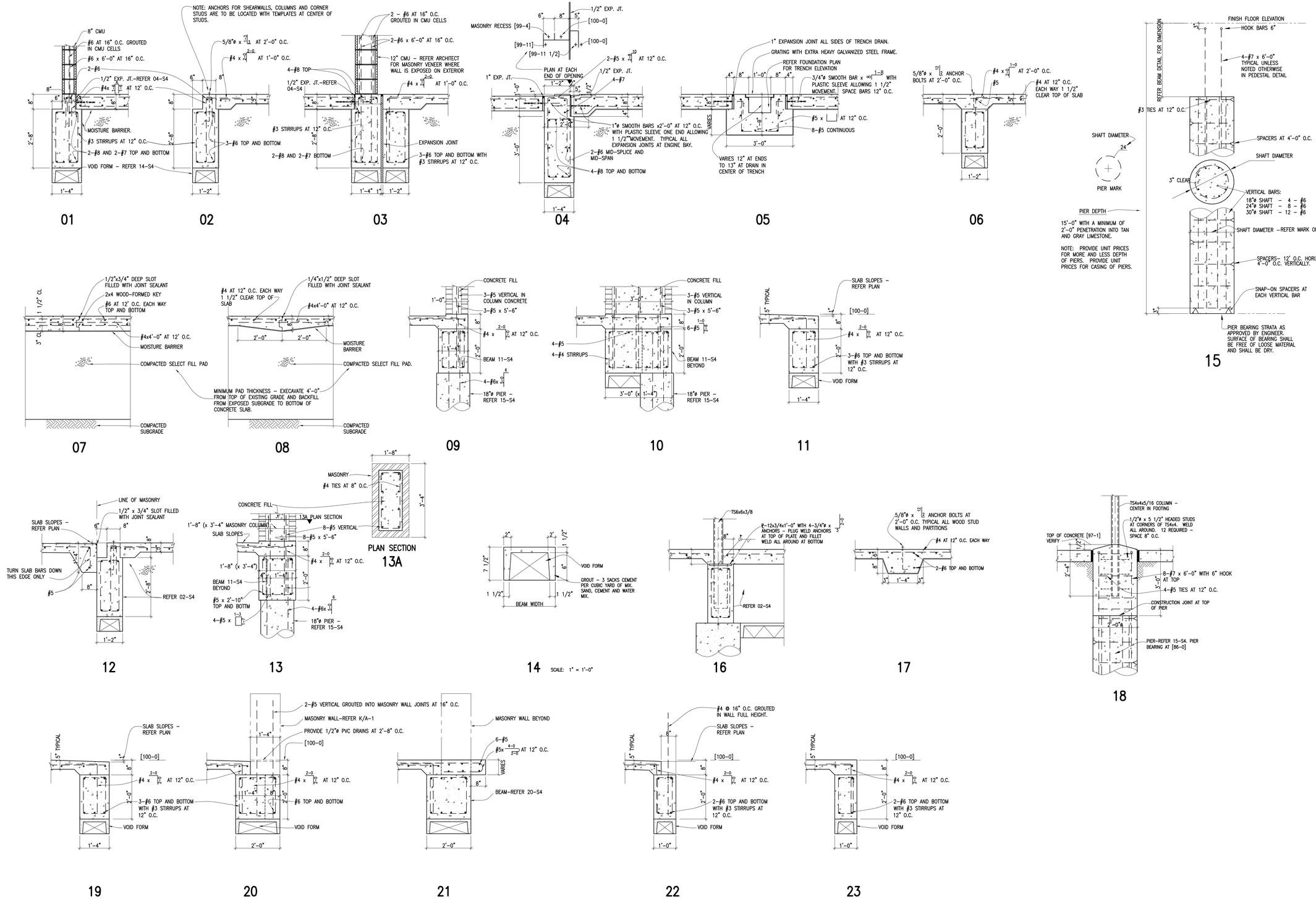

CONCRETE DETAILS SCALE: 1/8" = 1'-0" UNLESS NOTED OTHERWISE

PROJECT:	2934
DATE©	6/01/2016
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NEW FIRE STATION #4 FOR SAN ANGELO FIRE DEPT.

SAN ANGELO, TEXAS

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SHEET NO.

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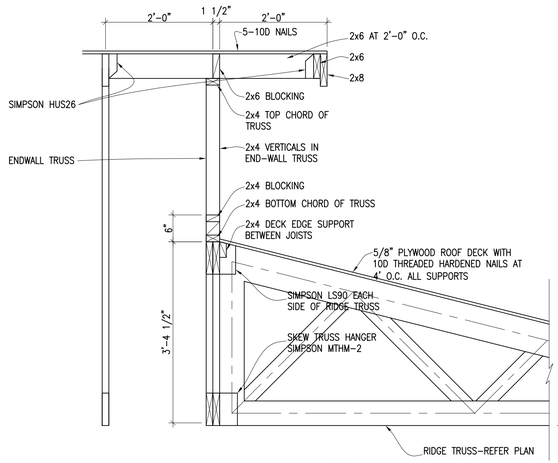

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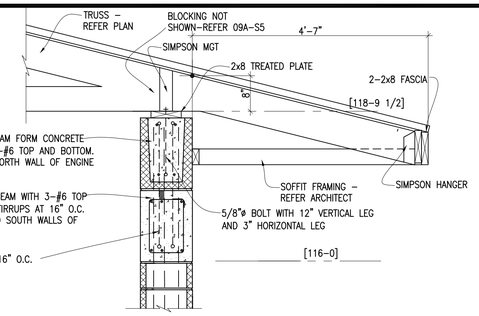

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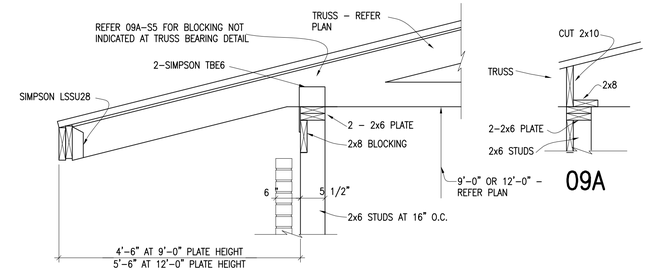

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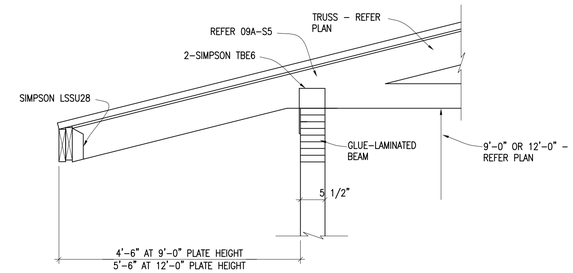

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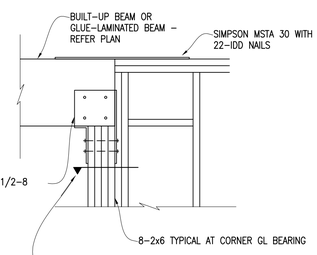

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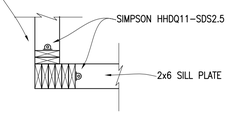

PLAN SECTION AT SILL PLATE

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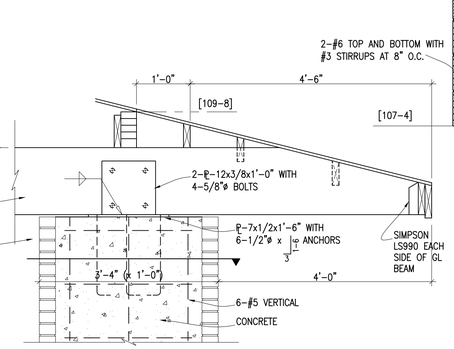

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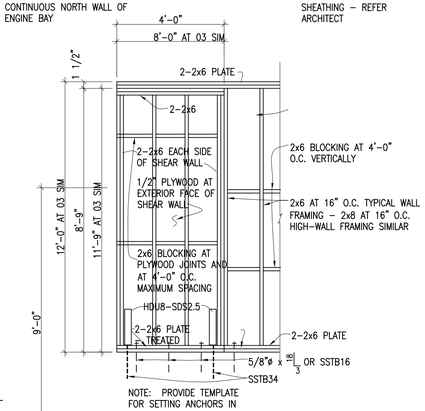

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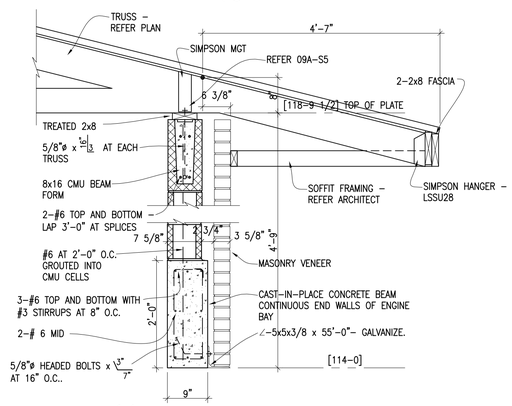
03 SIM

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



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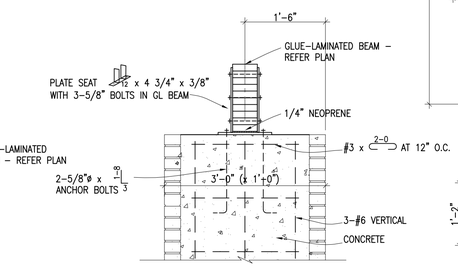

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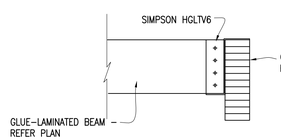

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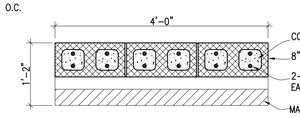

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NOTE: AT SIMILAR CONDITION, WALL CONTINUES OR MAKES A CORNER. REFER 03-S4 FOR TYPICAL WALL VERTICAL REINFORCING BARS.

15

LINTEL SCHEDULE

MARK	MASONRY SUPPORT	FRAMING AT STUD WALL	REMARKS
L 1	∠- 5 x 5 x 3/8	3 - 2x8	OPENING 3'-0" TO 4'-0"
L 2	∠- 5 x 5 x 3/8	3 - 2x10	OPENING 4'-0" TO 6'-0"
L 3	∠- 5 x 5 x 3/8	3 - 2x12	OPENING 6'-0" TO 10'-0"
L 4	∠- 5 x 5 x 3/8	3 - 2x12 WITH PLATES *	OPENING 10'-0" TO 12'-0"
L 5	∠- 5 x 5 x 3/8	8" CMU BEAM REFER 17-S9	
L 6	8x16 CMU BEAM WITH 2-#5 TOP AND BOTTOM	8" CMU	SIMILAR TO 18-S5

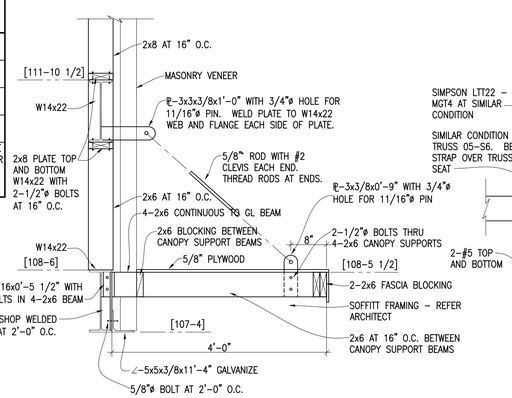
* 8 GAUGE PLATES 11 1/4" x OPENING + 2'-8" SCREWED WITH #12 BUGLE NEAD x 3" AT 6" O.C. STAGGERD TOP TO BOTTOM

16

HEADER SCHEDULE*

OPENING	WALL	DIMENSION LUMBER SECTION
3'-0" TO 4'-0"	2x4	2 - 2x8
4'-0" TO 6'-0"	2x4	2 - 2x10
6'-0" TO 8'-0"	2x6	2 - 2x12
8'-0" TO 10'-0"	2x6	3 - 2x12
10'-0" TO 14'-0"	2x6	3 - 2x12 WITH 2-8 GAUGE PLATES CONTINUOUS. REFER LINTEL SCHEDULE

* REFER 17-S5



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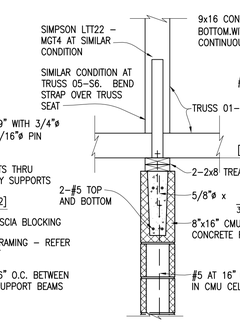

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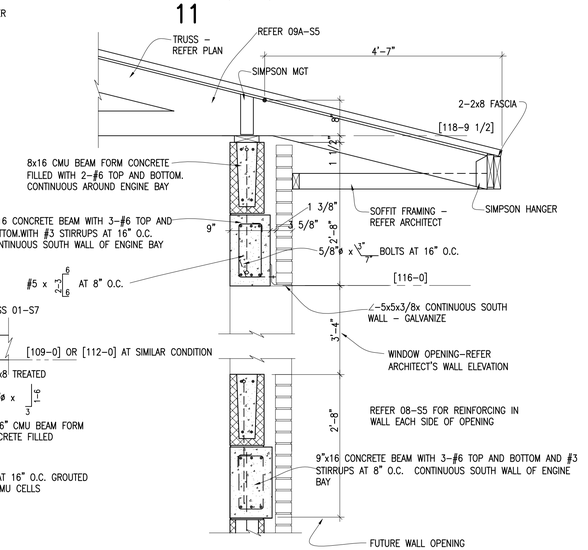
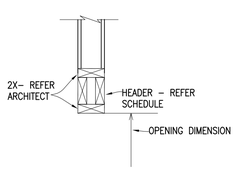
14 SIM



12

DETAILS SCALE: 3/4" = 1'-0" UNLESS NOTED OTHERWISE



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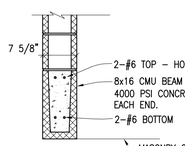

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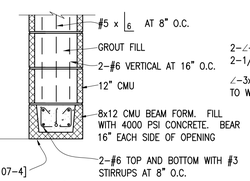

19

PROJECT:	2934
DATE©	6/01/2016
DRAWN	NSM
REVISIONS	

NEW FIRE STATION #4 FOR SAN ANGELO FIRE DEPT.

SAN ANGELO, TEXAS

McCLANAHAN AND ASSOCIATES
CONSULTING ENGINEER
3007 CHRISTOVAL ROAD
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STATE OF TEXAS
WILLIAM T. McCLANAHAN
30247
REGISTERED
PROFESSIONAL ENGINEER

2/3/17

REGISTERED ARCHITECT
GARY DONALDSON
5138
STATE OF TEXAS

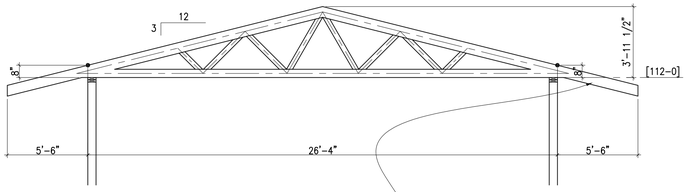
GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.

S-5

OF 8

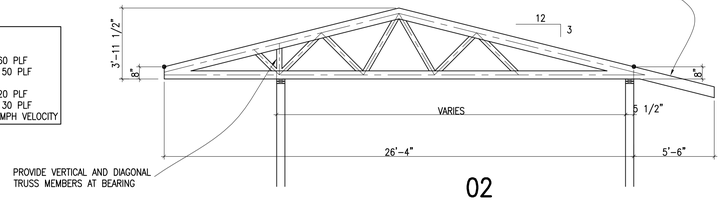
LOADING
TOP CHORD
LIVE LOAD – 60 PLF
DEAD LOAD – 50 PLF
BOTTOM CHORD
LIVE LOAD – 20 PLF
DEAD LOAD – 30 PLF
WIND LOAD – 90 MPH VELOCITY



01

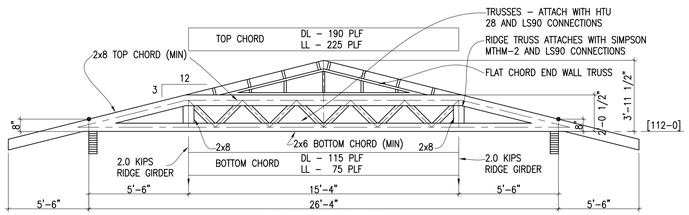
NOTE: EXTENDED TRUSS ENDS DO NOT OCCUR AT VALLEY TRUSS OVER-LAY ROOF.

LOADING
TOP CHORD
LIVE LOAD – 60 PLF
DEAD LOAD – 50 PLF
BOTTOM CHORD
LIVE LOAD – 20 PLF
DEAD LOAD – 30 PLF
WIND LOAD – 90 MPH VELOCITY



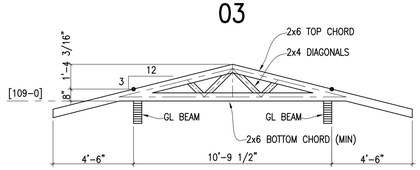
02

LOADING
TOP CHORD
LIVE LOAD – 30 PLF
DEAD LOAD – 25 PLF
BOTTOM CHORD
LIVE LOAD – 10 PLF
DEAD LOAD – 15 PLF
WIND LOAD – 90 MPH VELOCITY



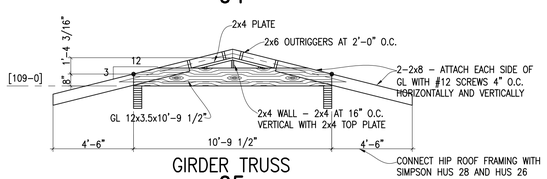
GIRDER TRUSS
03

LOADING
TOP CHORD
LIVE LOAD – 60 PLF
DEAD LOAD – 50 PLF
BOTTOM CHORD
LIVE LOAD – 20 PLF
DEAD LOAD – 30 PLF
WIND LOAD – 90 MPH VELOCITY

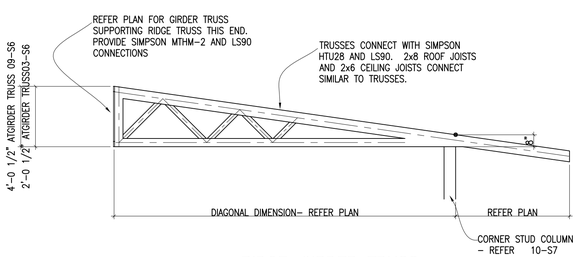


04

LOADING
TOP CHORD
LIVE LOAD – 30 PLF
DEAD LOAD – 25 PLF
BOTTOM CHORD
LIVE LOAD – 10 PLF
DEAD LOAD – 15 PLF
WIND LOAD – 90 MPH VELOCITY

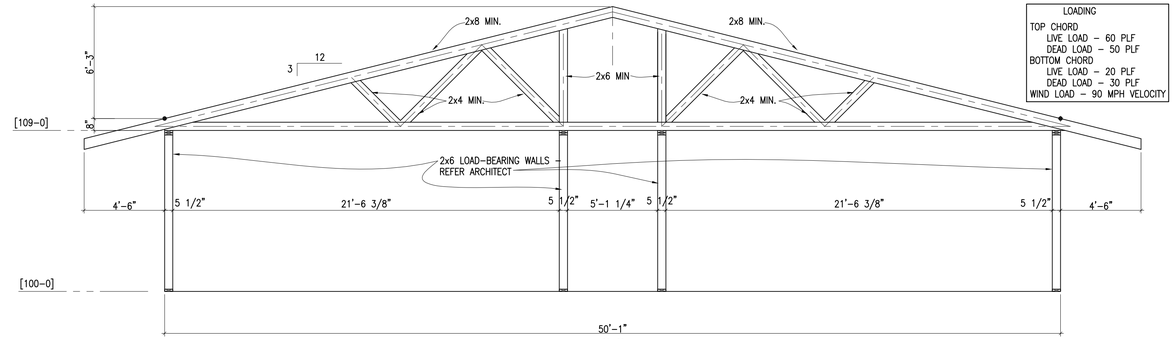


GIRDER TRUSS
05



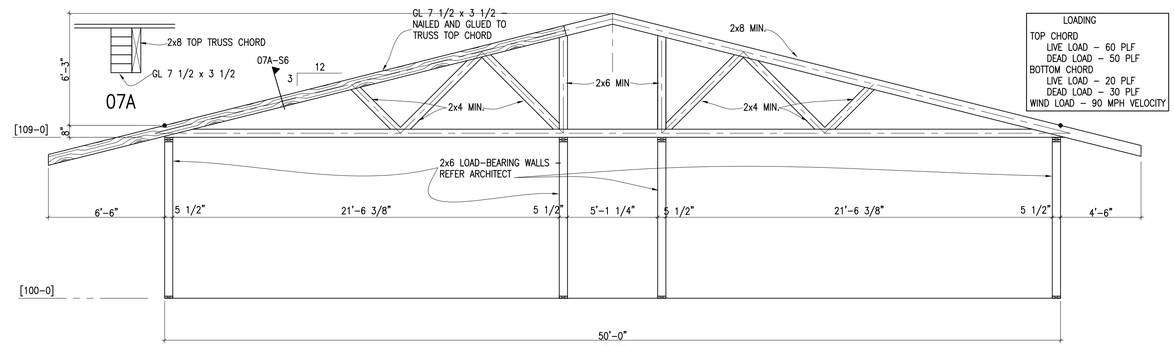
RIDGE-GIRDER TRUSS
10

LOADING
TOP CHORD
LIVE LOAD – 215 PLF
DEAD LOAD – 255 PLF
BOTTOM CHORD
LIVE LOAD – 130 PLF
DEAD LOAD – 85 PLF
WIND LOAD – 90 MPH VELOCITY



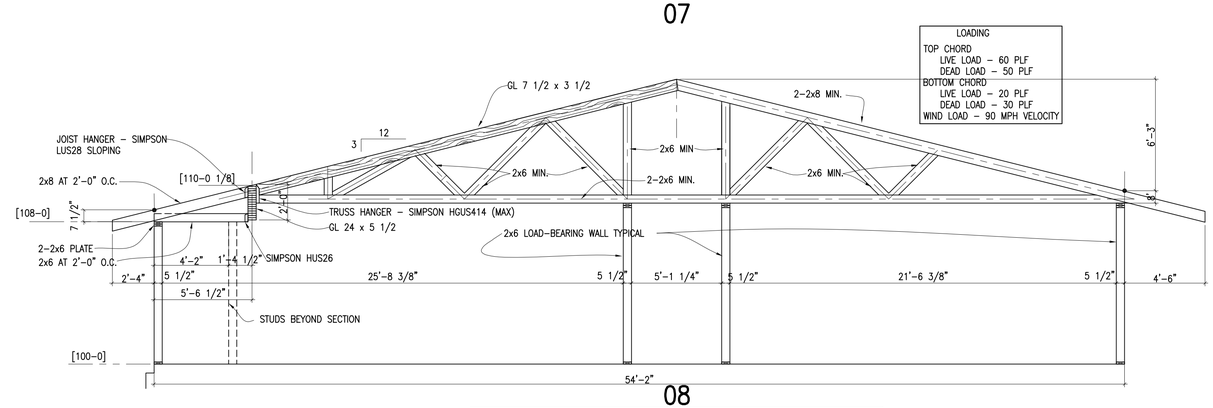
06

LOADING
TOP CHORD
LIVE LOAD – 60 PLF
DEAD LOAD – 50 PLF
BOTTOM CHORD
LIVE LOAD – 20 PLF
DEAD LOAD – 30 PLF
WIND LOAD – 90 MPH VELOCITY



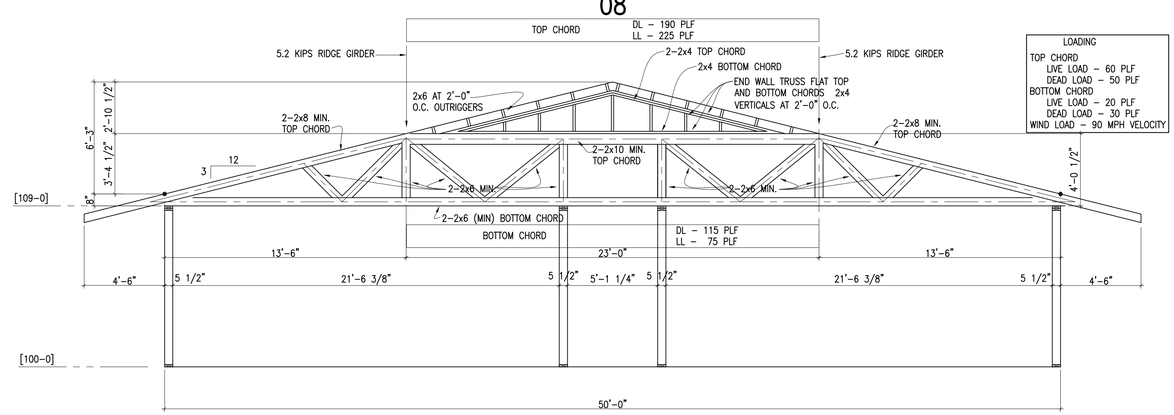
07

LOADING
TOP CHORD
LIVE LOAD – 60 PLF
DEAD LOAD – 50 PLF
BOTTOM CHORD
LIVE LOAD – 20 PLF
DEAD LOAD – 30 PLF
WIND LOAD – 90 MPH VELOCITY



08

LOADING
TOP CHORD
LIVE LOAD – 60 PLF
DEAD LOAD – 50 PLF
BOTTOM CHORD
LIVE LOAD – 20 PLF
DEAD LOAD – 30 PLF
WIND LOAD – 90 MPH VELOCITY



GIRDER TRUSS
09

TRUSS SCALE: 1/4" = 1'-0" UNLESS NOTED OTHERWISE

PROJECT:	2934
DATE©	6/01/2016
DRAWN	NSM
REVISIONS	

NEW FIRE STATION #4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

McCLANAHAN AND ASSOCIATES
CONSULTING ENGINEER
2007 CHRISTOVAL ROAD
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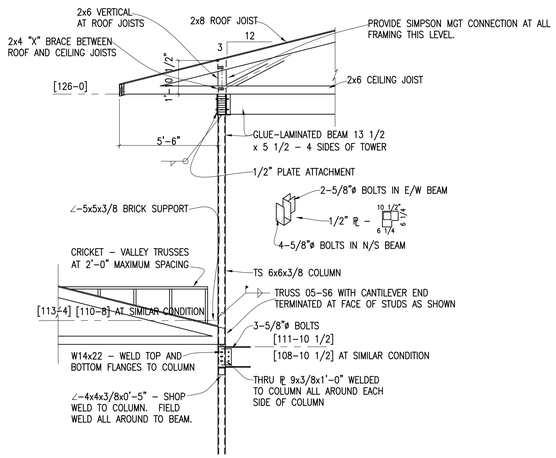
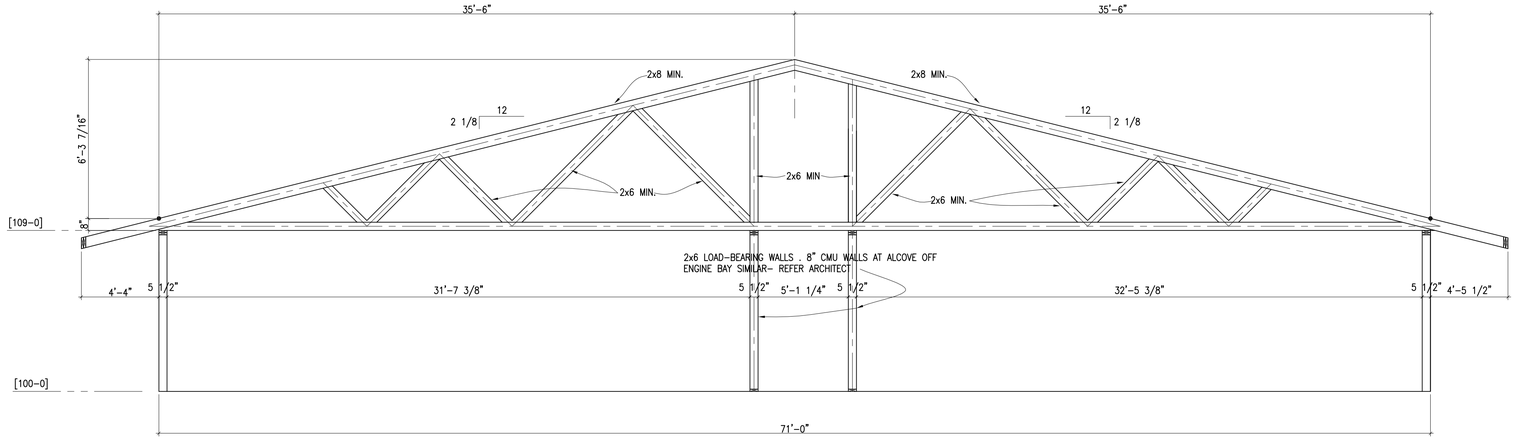
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.
S-6
OF 8

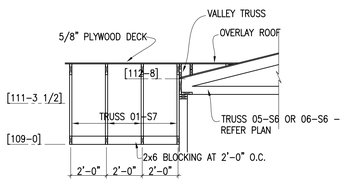


09
09 SIM



LOADING
TOP CHORD
LIVE LOAD - 60 PLF
DEAD LOAD - 50 PLF
BOTTOM CHORD
LIVE LOAD - 20 PLF
DEAD LOAD - 30 PLF
WIND LOAD - 90 MPH VELOCITY

01



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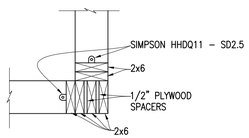
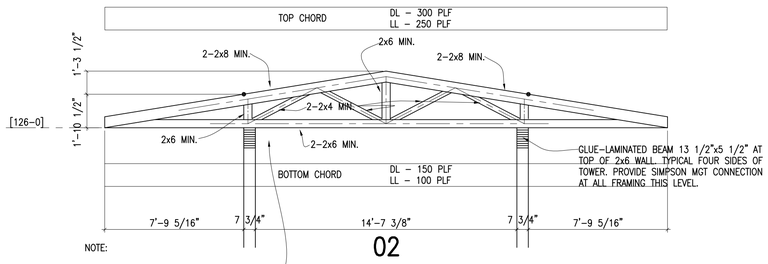
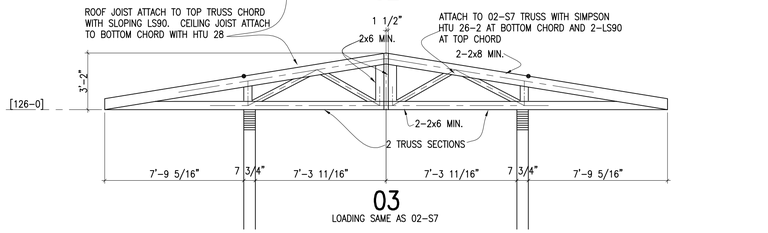


PLAN SECTION - TYPICAL WALL CORNER
11 NO SCALE

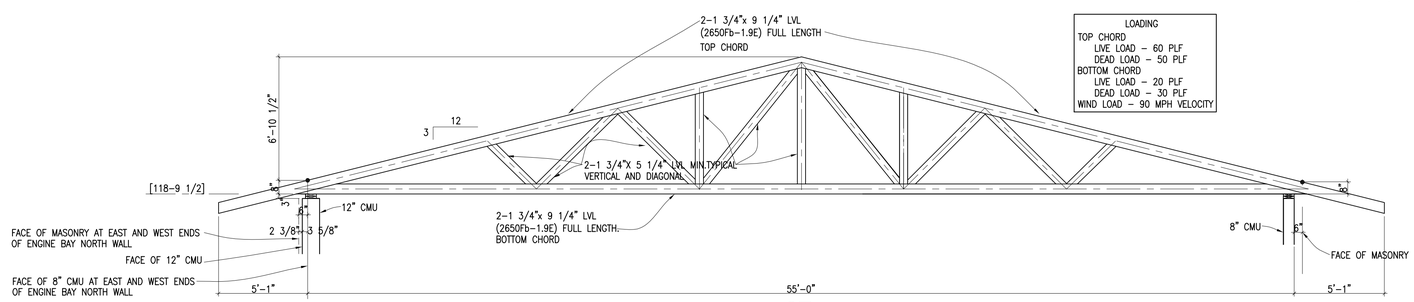


02

NOTE:
ROOF JOIST ATTACH TO TOP TRUSS CHORD WITH SLOPING LS90. CEILING JOIST ATTACH TO BOTTOM CHORD WITH HTU 28



03
LOADING SAME AS 02-S7



LOADING
TOP CHORD
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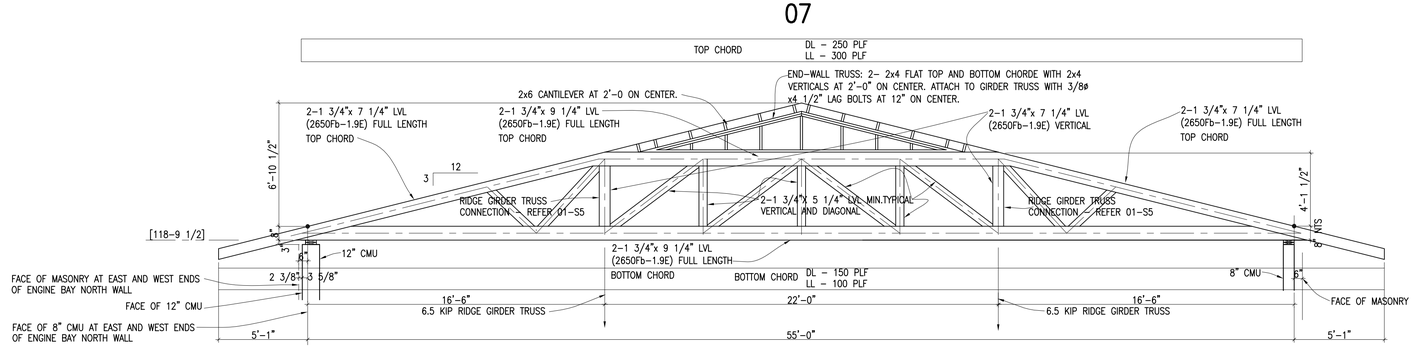
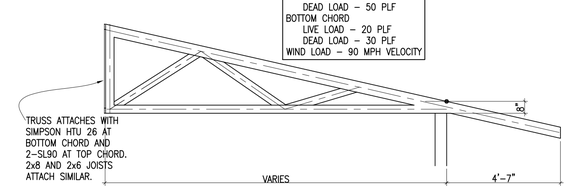
DEAD LOAD - 50 PLF
BOTTOM CHORD
LIVE LOAD - 20 PLF
DEAD LOAD - 30 PLF
WIND LOAD - 90 MPH VELOCITY

07



GIRDER TRUSS
08

LOADING
TOP CHORD
LIVE LOAD - 60 PLF
DEAD LOAD - 50 PLF
BOTTOM CHORD
LIVE LOAD - 20 PLF
DEAD LOAD - 30 PLF
WIND LOAD - 90 MPH VELOCITY



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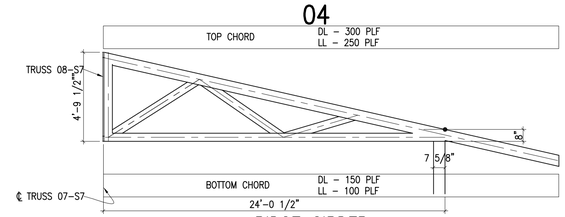

RIDGE GIRDER
05

TRUSS SCALE: 1/4" = 1'-0" UNLESS NOTED OTHERWISE

PROJECT:	2934
DATE:	6/01/2016
DRAWN	NSM
REVISIONS	

NEW FIRE STATION #4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

McCLANAHAN AND ASSOCIATES
CONSULTING ENGINEER
2007 CHRISTOVAL ROAD
SAN ANGELO, TEXAS 76903
F-357
PHONE (325) 657-3494

STATE OF TEXAS
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STATE OF TEXAS

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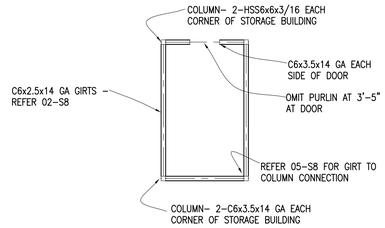
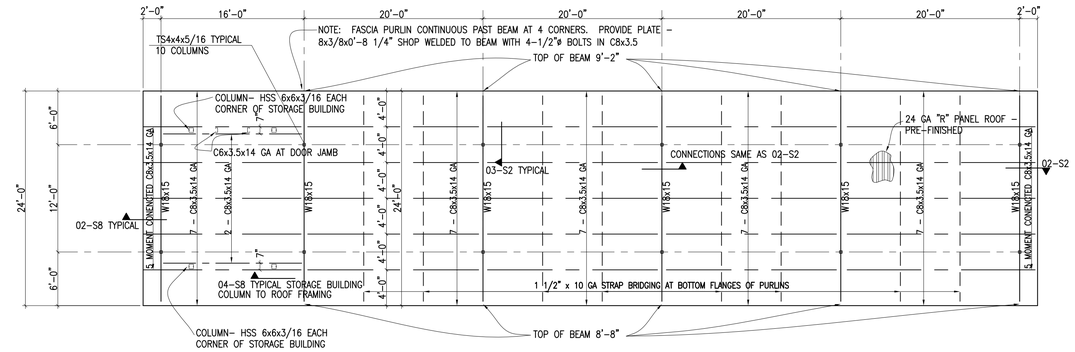
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.
S-7
OF 8

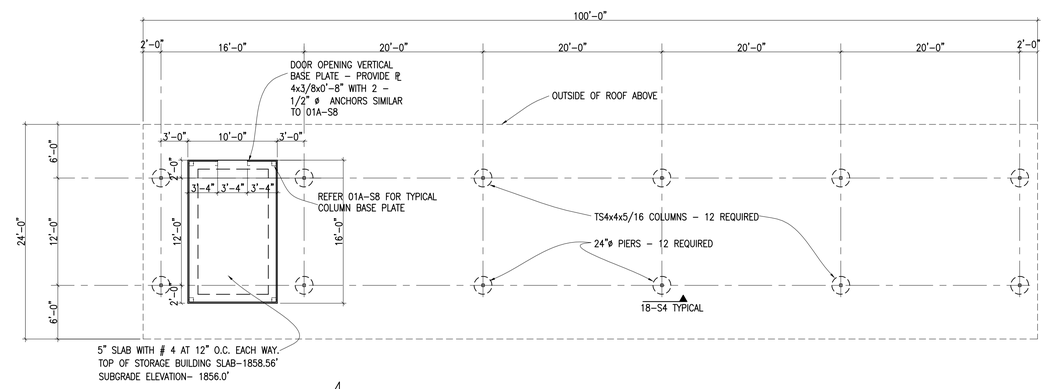


STORAGE BUILDING – WALL FRAMING



PARKING COVER ROOF FRAMING PLAN

PLANS SCALE: 1/8" = 1'–0"

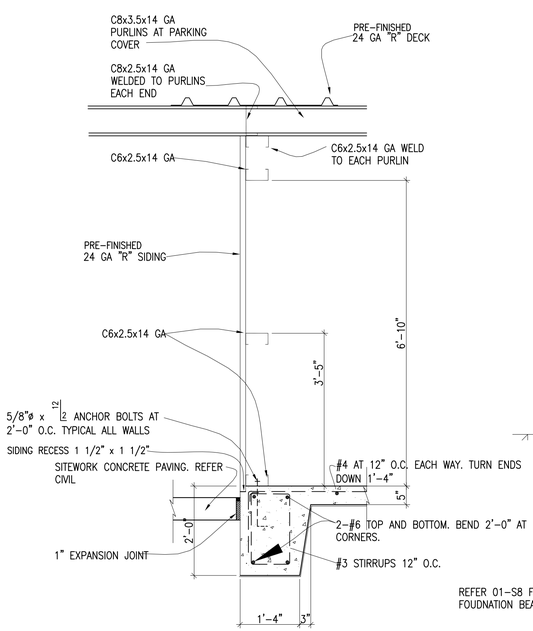


PARKING COVER FOUNDATION PLAN

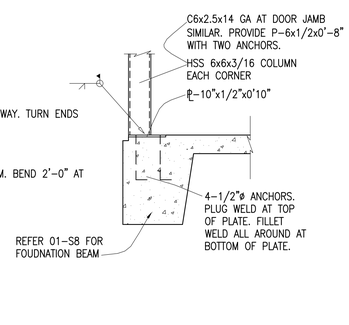
PLANS SCALE: 1/8" = 1'–0"

NOTE:

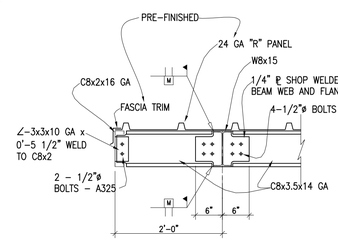
ALL PARKING COVER AND STORAGE BUILDING STRUCTURAL STEEL SHALL BE PRIMED AND PAINTED AS PER SPECIFICATION SECTION 0990.



01



01A



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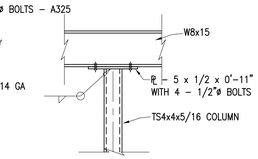

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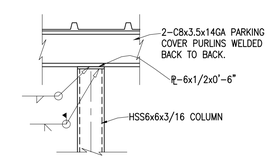

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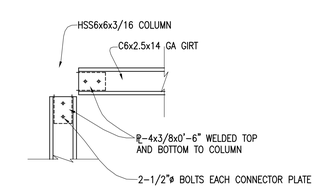

05

DETAIL SCALES: 1/2" = 1'–0"

STEEL DETAILS SCALE: 3/4" = 1'–0"

PROJECT:	2934
DATE©	6/01/2016
DRAWN	NSM
REVISIONS	

NEW FIRE STATION #4 FOR SAN ANGELO FIRE DEPT.

SAN ANGELO, TEXAS

McCLANAHAN AND ASSOCIATES
CONSULTING ENGINEER
2007 CHRISTOVAL ROAD
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STATE OF TEXAS
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SAN ANGELO, TEXAS 76903
(325)655–4805 FAX 949–1306

SHEET NO.

S-8

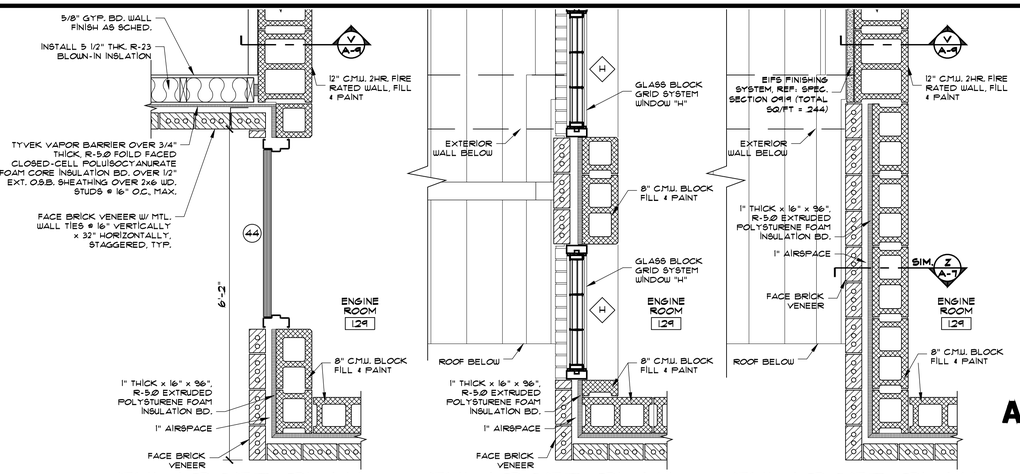
OF 8

ROOM FINISH SCHEDULE

SPACE NO.	ROOM DESIGNATION	FLOOR	BASE	WALLS NORTH	WALLS SOUTH	WALLS EAST	WALLS WEST	CEILING MAT'L	CEILING HEIGHT	REMARKS
101	CORRIDOR	11	20	30	30	30	30	40	9'-0"	
102	BEDROOM	10/11	20	30	30	30	30	40	9'-0"	
103	BATHROOM	12	21	30	30/32	30	30/32	40	9'-0"	
104	BEDROOM	10/11	20	30	30	30	30	40	9'-0"	
105	BEDROOM	10/11	20	30	30	30	30	40	9'-0"	
106	BATHROOM	12	21	30/32	30	30/32	30	40	9'-0"	
107	BEDROOM	10/11	20	30	30	30	30	40	9'-0"	
108	BEDROOM	10/11	20	30	30	30	30	40	9'-0"	
109	BATHROOM	12	21	30	30/32	30	30/32	40	9'-0"	
110	BEDROOM	10/11	20	30	30	30	30	40	9'-0"	
111	BEDROOM	10/11	20	30	30	30	30	40	9'-0"	
112	BATHROOM	12	21	30/32	30	30/32	30	40	9'-0"	
113	BEDROOM	10/11	20	30	30	30	30	40	9'-0"	
114	BEDROOM	10/11	20	30	30	30	30	40	9'-0"	
115	BATHROOM	12	21	30	30/32	30	30/32	40	9'-0"	
116	BEDROOM	10/11	20	30	30	30	30	40	9'-0"	
117	MECH.	11	20	30	30	30	30	40	9'-0"	
118	TOILET	12	21	30	30	30	30	40	9'-0"	
119	KITCHEN	11	20	30	30	30	30	40	7'-11"	
120	PANTRY	11	20	30	30	30	30	40	9'-0"	
121	PANTRY	11	20	30	30	30	30	40	9'-0"	
122	PANTRY	11	20	30	30	30	30	40	9'-0"	
123	STORAGE	11	20	30	30	30	30	40	9'-0"	
124	OFFICE	10	20	30	30	30	30	40	9'-0"	
125	FITNESS ROOM	14	20	30	30	30	30	40	12'-0"	
126	OFFICE	10	20	30	30	30	30	40	9'-0"	
127	TRAINING RM. / DINING RM.	11	20	30	30	30	30	40	12'-0"	
128	UTILITY	13	20	30	30	30	34	40	9'-0"	
129	ENGINE ROOM	13	22	34	34	34	34	41	16'-9"	VERIFY
130	STORAGE / SPRINKLER	13	20	30	30	30	34	40	9'-0"	
131	ELEC. / MECH.	13	20	30	34	30	34	40	9'-0"	
132	CLEAN ROOM	13	22	34	34	34	34	40	9'-0"	
133	LOCKERS	13	20	33	33	33	34	40	9'-0"	
135	VESTIBULE	11	20	30	30	30	30	40	26'-0"	VERIFY
136	ENTRY	13	20	34	34	34	34	40	9'-0"	
137	TOILET	12	21	34	33	34	34	40	9'-0"	

ROOM FINISH LEGEND

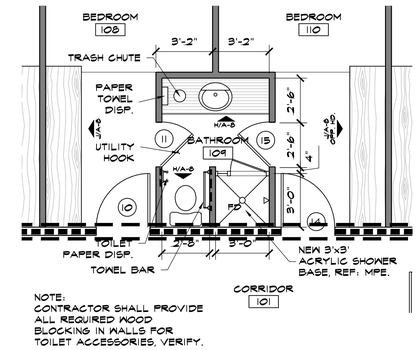
FLOORS		WALLS	
10	24" X 24" CARPET TILES	30	GYP. BOARD, TEXTURE & PAINT
11	18" X 18" L.V.T. VINYL COMPOSITION TILE	31	NOT USED
12	2"x2" CERAMIC TILE	32	SOLID SURFACING (SHOWERS ONLY)
13	CLEAR FLOOR SEALER	33	F.R.P. PANELING & TRIM SYSTEM
14	MONDO RESILENT FLOORING	34	BLOCK FILL AND PAINT
BASE		**CEILING**	
20	4" HIGH VINYL COVE	40	GYP. BOARD, TEXTURE & PAINT
21	6" HIGH x 8" WIDE CERAMIC SANITARY COVE	41	PREFINISHED METAL SOFFIT/CEILING PANELS
22	8" HIGH PAINTED		



D ENLARGED PLAN
SCALE: 3/4" = 1'-0"

C ENLARGED PLAN
SCALE: 3/4" = 1'-0"

B ENLARGED PLAN
SCALE: 3/4" = 1'-0"



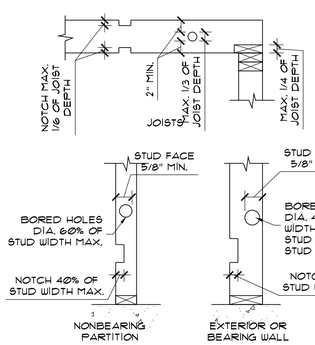
A QUARTERS ENLARGED PLAN
SCALE: 1/4" = 1'-0"

MATERIALS LEGEND

SYMBOL	MATERIALS
	12" C.M.U. WALL
	FACE BRICK VENEER ON 2x6 WOOD FRAMING
	2x WOOD FRAMED DRYWALL PARTITION
	2 HOUR FIRE RATED CMU & DRYWALL PARTITIONS
	1-HOUR FIRE RATED DRYWALL PARTITION
	1/2 HOUR FIRE RATED DRYWALL PARTITION
	STEEL TUBING COLUMNS AT TOWER, REF: STRUCTURAL
	MILLWORK WITH STAINLESS STEEL OR SOLID SURFACE COUNTERS
FE	FIRE EXTINGUISHER

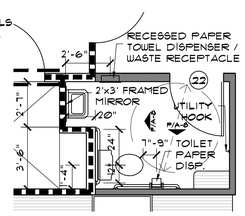
BID ALTERNATE NO. 2:
FURNISH & INSTALL (3) THREE 14'-0" x 14'-0" BI-FOLDING APPARATUS DOOR (AS PER SPEC. SECTION 10400-2) LOCATED ON EAST SIDE OF ENGINE BAY IN LIEU OF STANDARD OVERHEAD SECTIONAL DOORS (AS PER SPEC. SECTION 10400).

BID ALTERNATE NO. 3:
FURNISH & INSTALL (3) THREE 14'-0" x 14'-0" HI-SPEED APPARATUS DOOR (AS PER SPEC. SECTION 10400-3) LOCATED ON EAST SIDE OF ENGINE BAY IN LIEU OF STANDARD OVERHEAD SECTIONAL DOORS (AS PER SPEC. SECTION 10400).

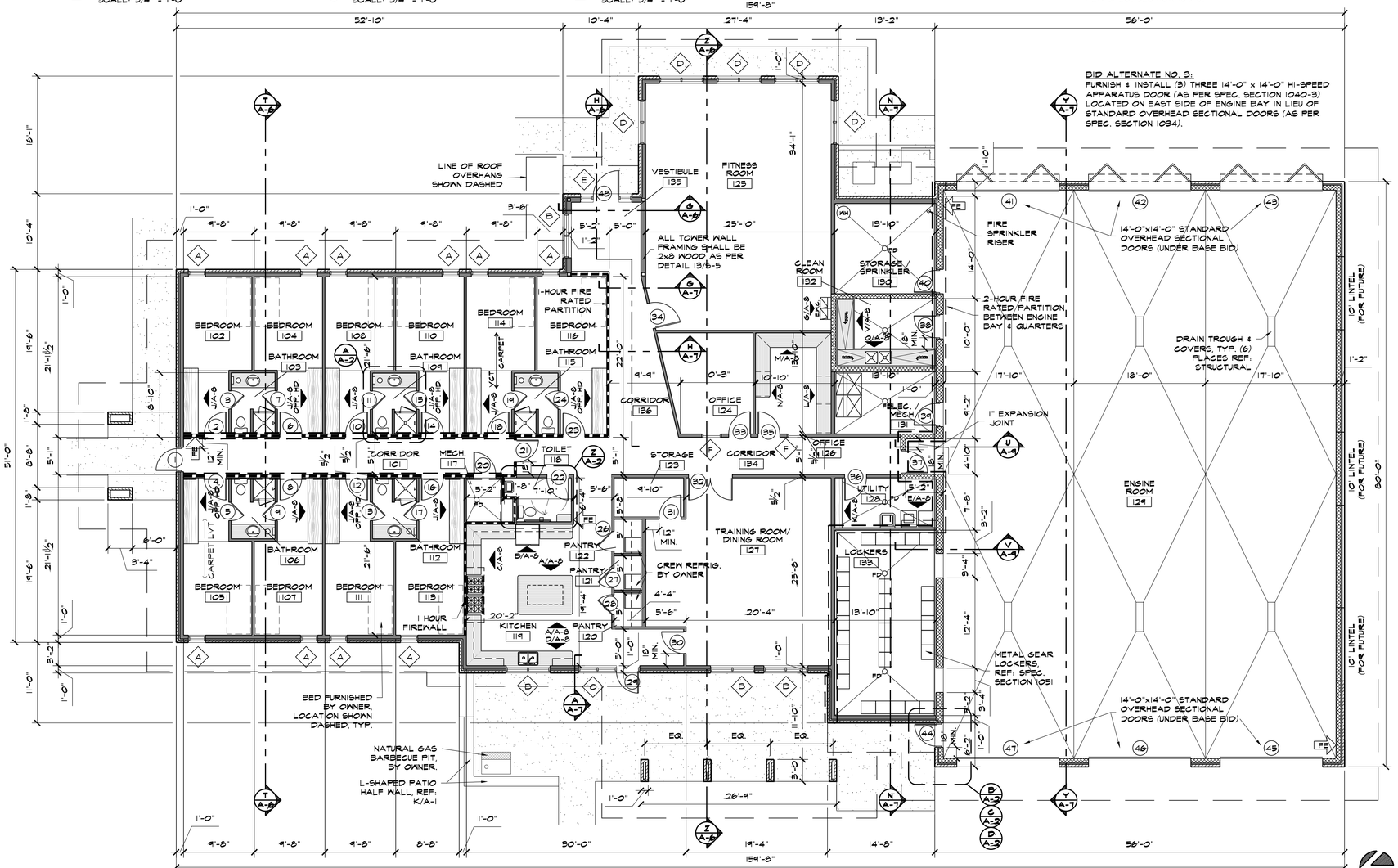


V CUTTING, NOTCHING & BORING HOLES IN STUDS & JOISTS
SCALE: 1" = 1'-0"

NOTE:
CONTRACTOR SHALL PROVIDE ALL REQUIRED WOOD BLOCKING IN WALLS FOR TOILET ACCESSORIES, VERIFY.



Z ENLARGED PLAN
SCALE: 1/4" = 1'-0"



Y FLOOR PLAN
SCALE: 1/8" = 1'-0"

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NEW FIRE STATION NO. 4
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SAN ANGELO, TEXAS

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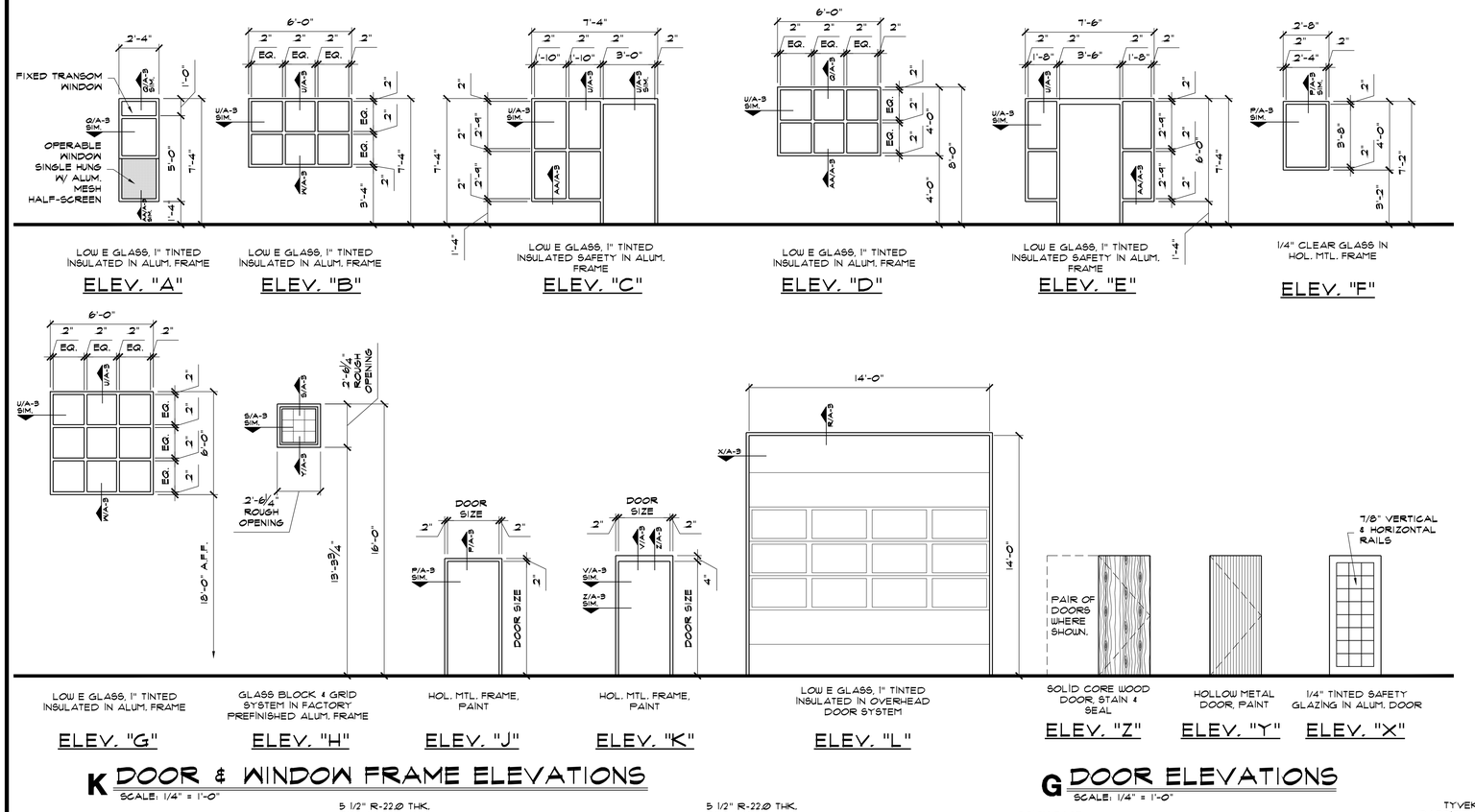
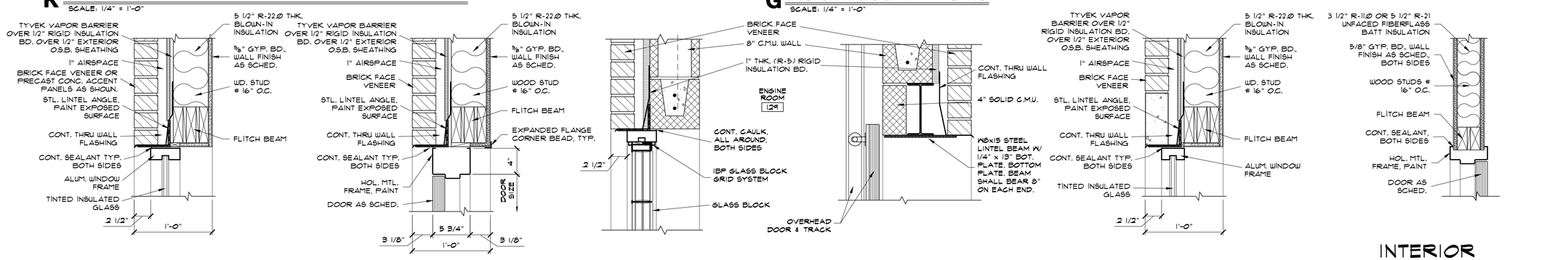
SHEET NO.
A-2
OF 9



K DOOR & WINDOW FRAME ELEVATIONS
SCALE: 1/4" = 1'-0"

G DOOR ELEVATIONS
SCALE: 1/4" = 1'-0"



U WINDOW HEAD — SCALE: 1 1/2" = 1'-0" — JAMB SIM.

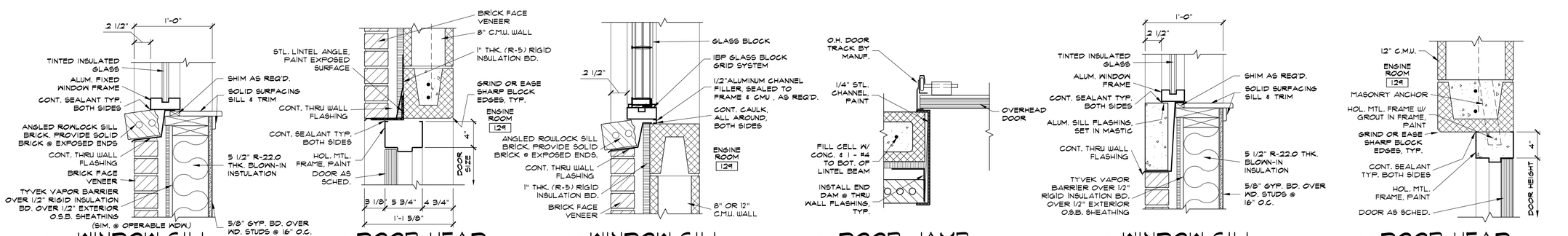
T DOOR HEAD — SCALE: 1 1/2" = 1'-0" — 2" JAMB SIM.

S WINDOW HEAD — SCALE: 1 1/2" = 1'-0" — JAMB SIM.

R DOOR HEAD — SCALE: 1 1/2" = 1'-0" — JAMB SIM.

Q WINDOW HEAD — SCALE: 1 1/2" = 1'-0" — JAMB SIM.

P INTERIOR DOOR HEAD — SCALE: 1 1/2" = 1'-0" — JAMB SIM.



AA WINDOW SILL — SCALE: 1 1/2" = 1'-0"

Z DOOR HEAD — SCALE: 1 1/2" = 1'-0" — 2" JAMB SIM.

Y WINDOW SILL — SCALE: 1 1/2" = 1'-0"

X DOOR JAMB — SCALE: 1 1/2" = 1'-0"

W WINDOW SILL — SCALE: 1 1/2" = 1'-0"

V DOOR HEAD — SCALE: 1 1/2" = 1'-0" — 2" JAMB SIM.

DOOR & FRAME SCHEDULE

MARK	FRAME DATA: ELEV.	FRAME DATA: DOOR OPENING SIZE	FRAME DATA: HEAD	FRAME DATA: JAMB	FRAME DATA: SILL	DOOR DATA: ELEV.	DOOR DATA: TYPE	DOOR DATA: THICK	NOTES
1	K/A-3	3'-0"x7'-0"	T/A-3	T/A-3 sim.	THRESH'D	Y	HOL. MTL.	1 3/4"	
2	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
3	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
4	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#3
5	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
6	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#3
7	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
8	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#3
9	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
10	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#3
11	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
12	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#3
13	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
14	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#3
15	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
16	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#3
17	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
18	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#3
19	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
20	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#3
21	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#2
22	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
23	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	#2
24	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
25	J/A-3	3'-0"x6'-8"	---	---	---	Y	HOL. MTL.	1 3/4"	STORAGE BLDG.
26	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
27	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
28	J/A-3	2'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
29	G/A-3	3'-0"x7'-0"	U/A-3	U/A-3 sim.	THRESH'D	X	ALUM.	1 3/4"	
30	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
31	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
32	J/A-3	6'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
33	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
34	J/A-3	3'-6"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
35	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
36	J/A-3	3'-0"x7'-0"	P/A-3	P/A-3 sim.	---	Z	S.C. WOOD	1 3/4"	
37	K/A-3	3'-0"x7'-0"	V/A-3	V/A-3 sim.	---	Y	HOL. MTL.	1 3/4"	#1
38	K/A-3	3'-0"x7'-0"	V/A-3	V/A-3 sim.	---	Y	HOL. MTL.	1 3/4"	#1
39	K/A-3	3'-0"x7'-0"	V/A-3	V/A-3 sim.	---	Y	HOL. MTL.	1 3/4"	#1
40			D E	L E T	E D				
41	L/A-3	14'-0"x14'-0"	R/A-3	X/A-3	THRESH'D	L	OVERHEAD	-	
42	L/A-3	14'-0"x14'-0"	R/A-3	X/A-3	THRESH'D	L	OVERHEAD	-	
43	L/A-3	14'-0"x14'-0"	R/A-3	X/A-3	THRESH'D	L	OVERHEAD	-	
44	K/A-3	3'-0"x7'-0"	T/A-3	T/A-3 sim.	THRESH'D	Y	HOL. MTL.	1 3/4"	
45	L/A-3	14'-0"x14'-0"	R/A-3	X/A-3	THRESH'D	L	OVERHEAD	-	
46	L/A-3	14'-0"x14'-0"	R/A-3	X/A-3	THRESH'D	L	OVERHEAD	-	
47	L/A-3	14'-0"x14'-0"	R/A-3	X/A-3	THRESH'D	L	OVERHEAD	-	
48	E/A-3	3'-6"x7'-0"	U/A-3	U/A-3 sim.	THRESH'D	X	ALUM.	1 3/4"	
49			D E	L E T	E D				
50	K/A-3	3'-0"x7'-0"	V/A-3	V/A-3 sim.	---	Y	HOL. MTL.	1 3/4"	#1

NOTES:
1. 1-1/2 HOUR FIRE RATED DOOR & FRAME.
2. 3/4 HOUR FIRE RATED DOOR & FRAME.
3. 20 MIN. FIRE RATED DOOR & FRAME.

PROJECT:	201436
DATE©	6/1/2016
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NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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2/10/17

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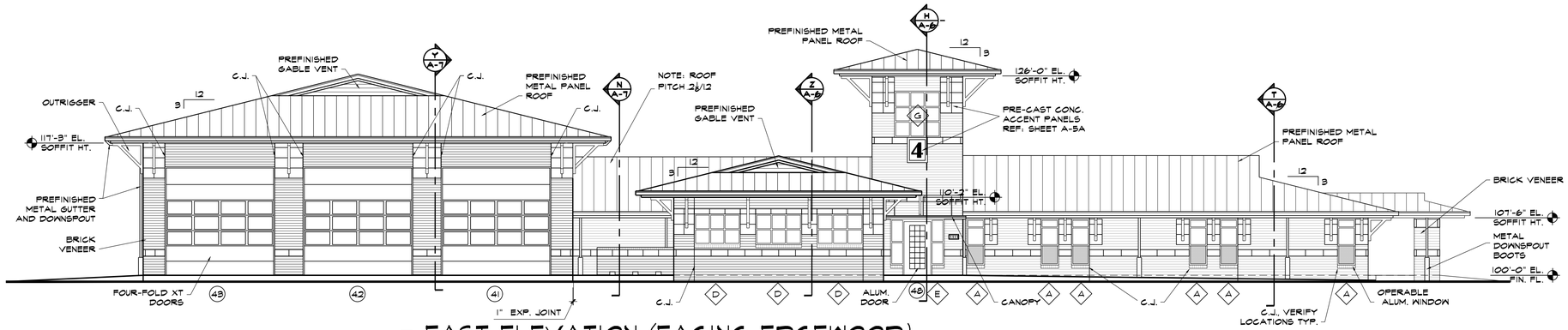
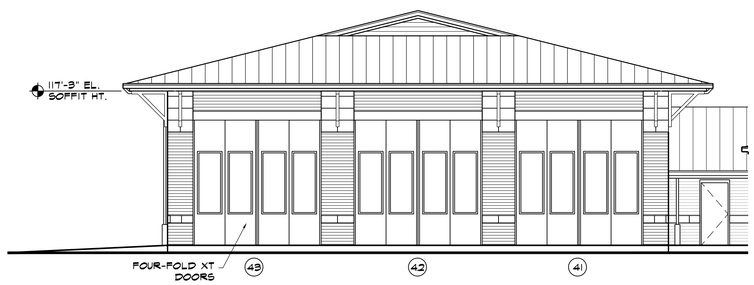
(325)655-4805 FAX 949-1306

SHEET NO.
A-3
OF 9



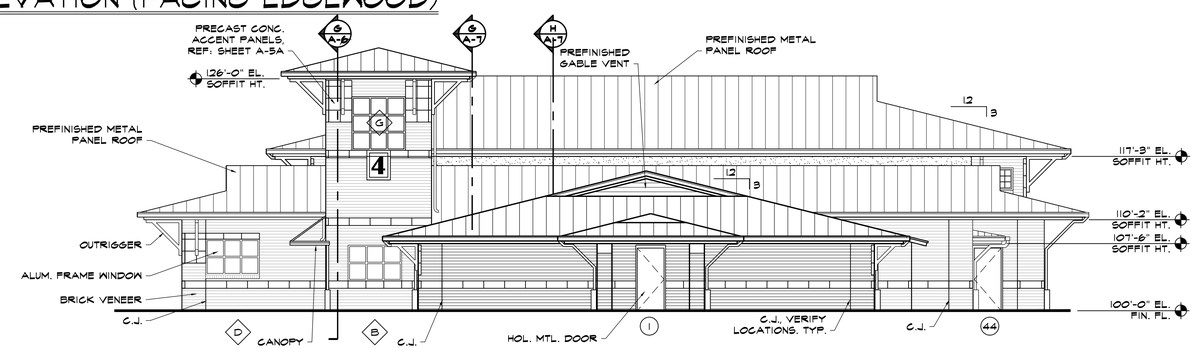
B EAST ELEVATION (FACING EDGEWOOD)

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



BID ALTERNATE NO. 2 - BIFOLDING DOORS
H EAST ELEVATION (FACING EDGEWOOD)

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

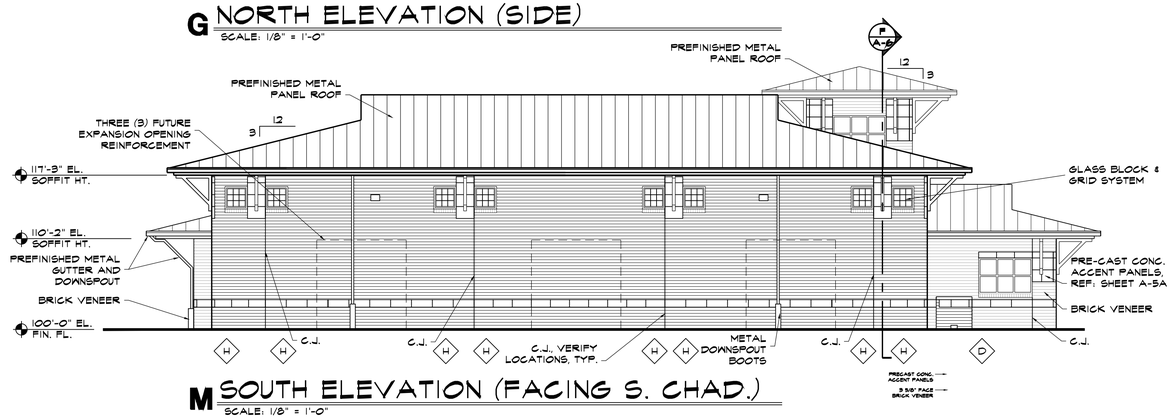


G NORTH ELEVATION (SIDE)

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

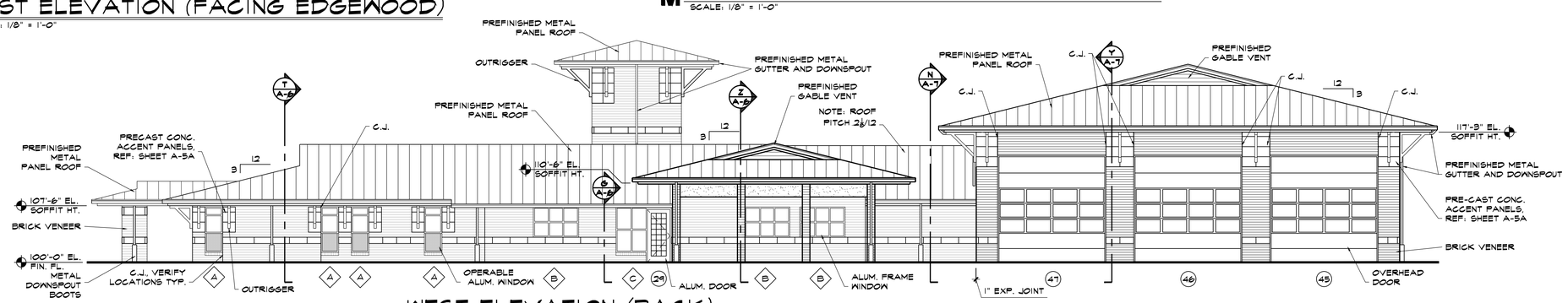
BID ALTERNATE NO. 3 - HI SPEED DOORS
N EAST ELEVATION (FACING EDGEWOOD)

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



M SOUTH ELEVATION (FACING S. CHAD.)

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



S WEST ELEVATION (BACK)

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

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NEW FIRE STATION NO. 4
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(325)655-4805 FAX 949-1306

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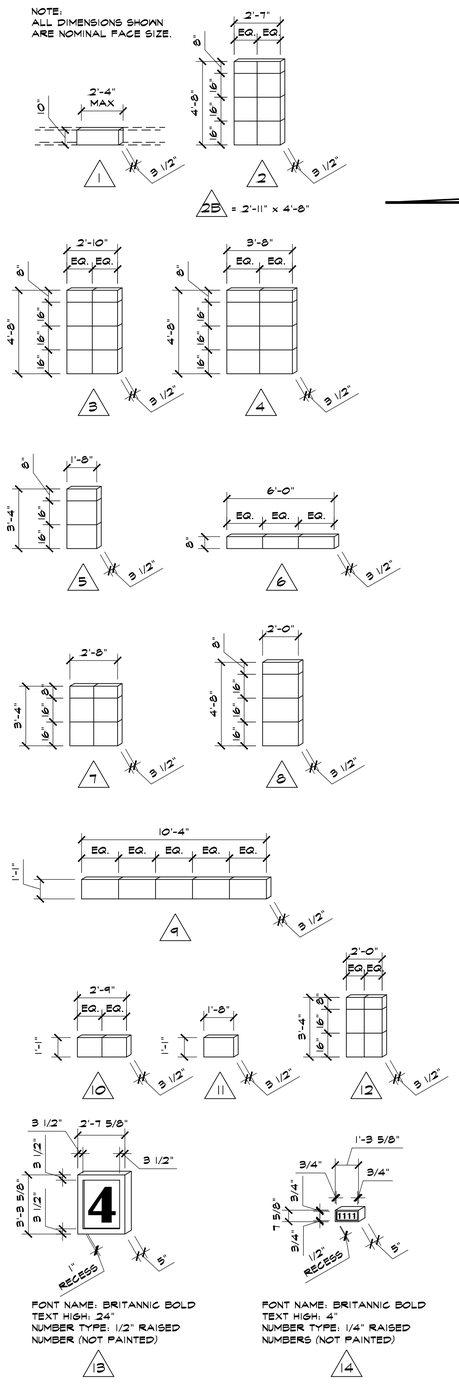
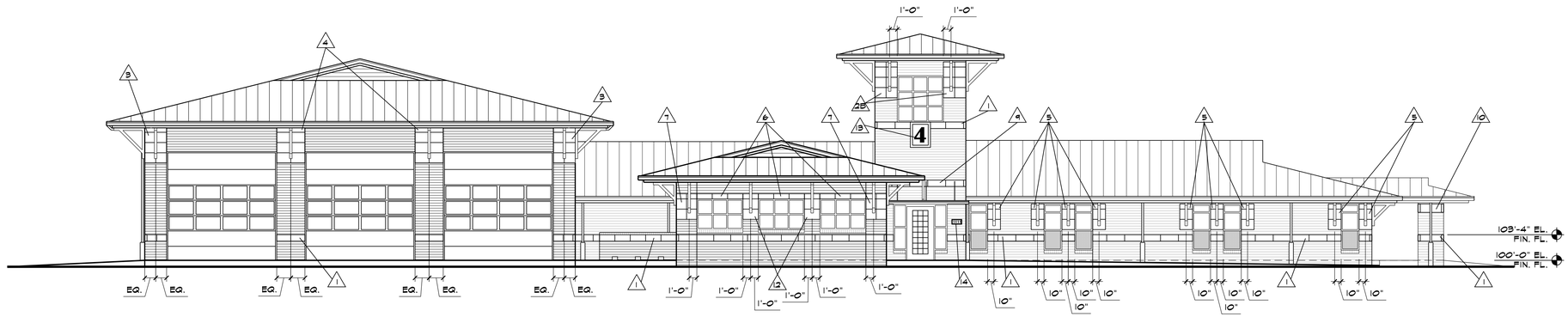
A-4
OF 9

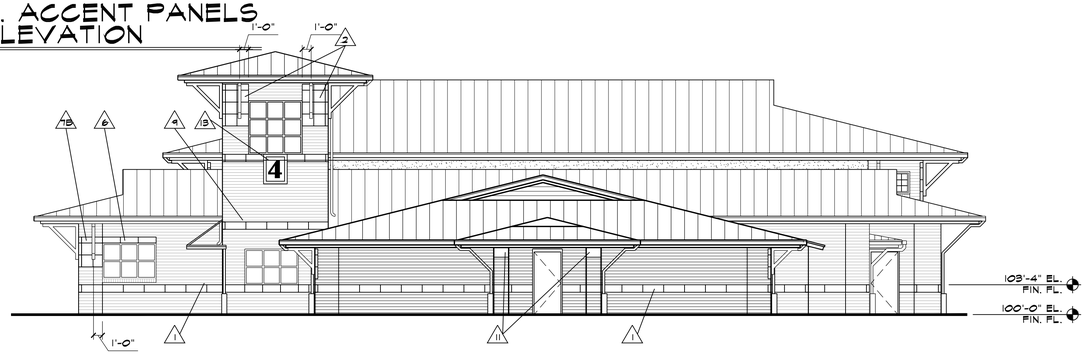
NOTE:
ALL DIMENSIONS SHOWN
ARE NOMINAL FACE SIZE.



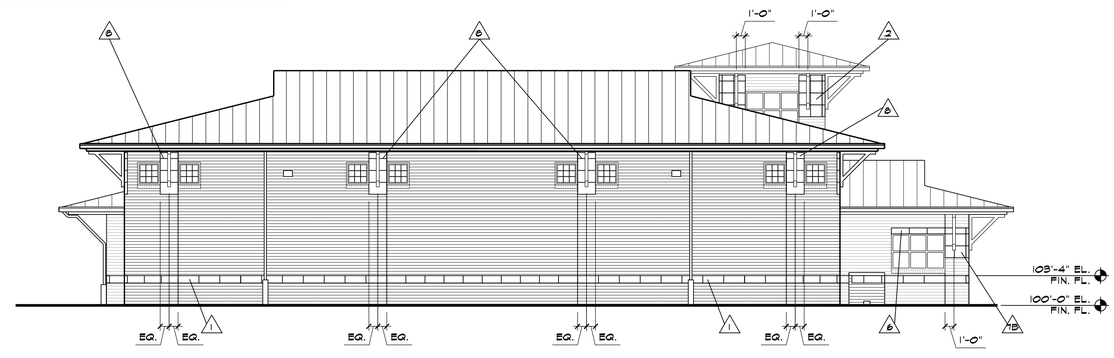
V PRECAST CONC. ACCENT PANELS
SCALE: 1/4" = 1'-0"



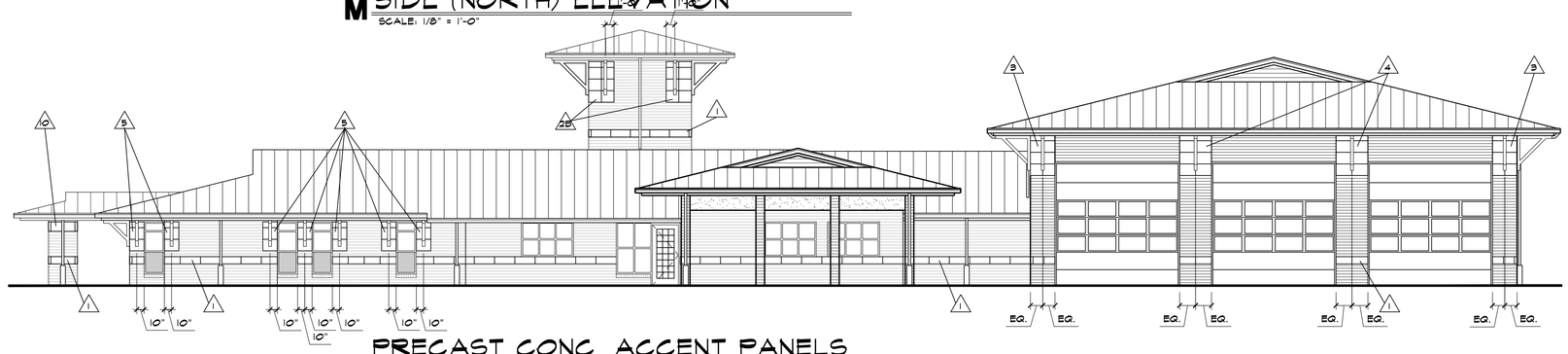
B PRECAST CONC. ACCENT PANELS
FRONT (EAST) ELEVATION
SCALE: 1/8" = 1'-0"



G PRECAST CONC. ACCENT PANELS
SIDE (SOUTH) ELEVATION
SCALE: 1/8" = 1'-0"



M PRECAST CONC. ACCENT PANELS
SIDE (NORTH) ELEVATION
SCALE: 1/8" = 1'-0"



S PRECAST CONC. ACCENT PANELS
REAR (WEST) ELEVATION
SCALE: 1/8" = 1'-0"

PROJECT:	201436
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NEW FIRE STATION NO. 4
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SHEET NO.
A-5
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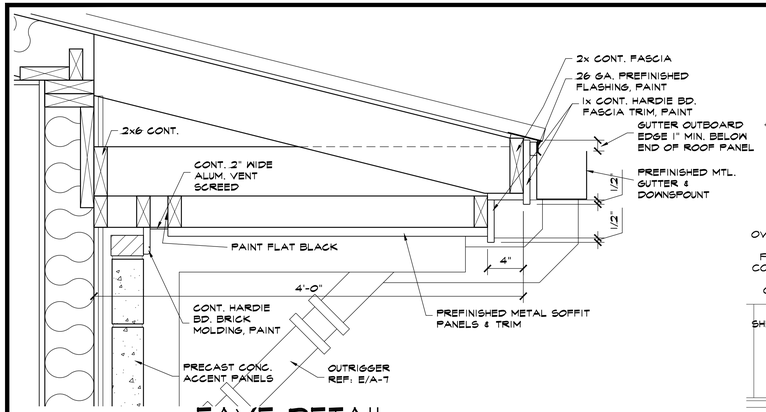
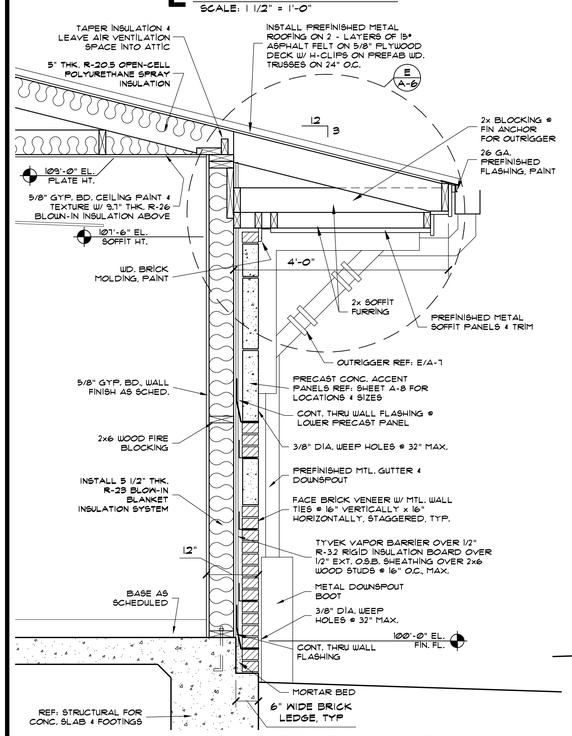


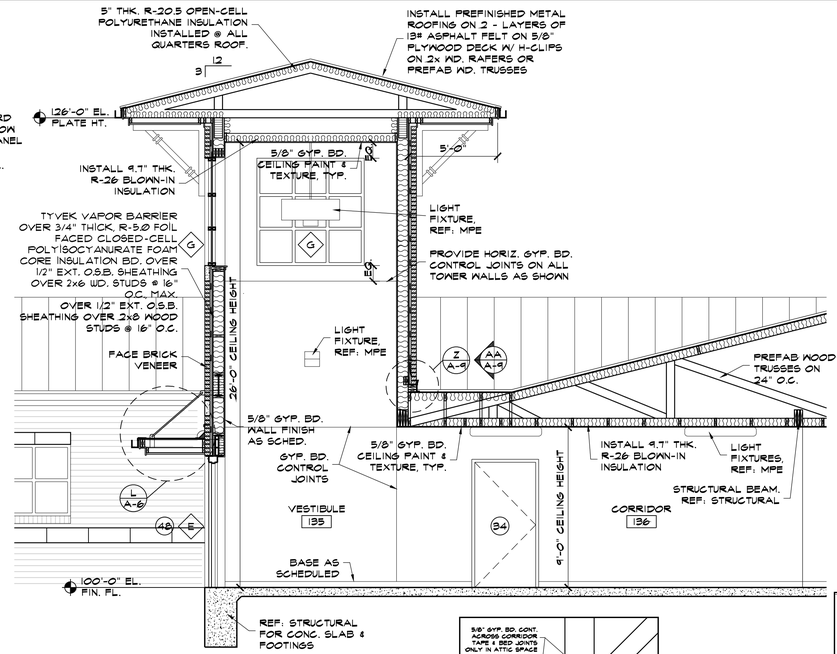
E EAVE DETAIL

SCALE: 1 1/2" = 1'-0"



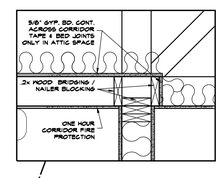
V WALL SECTION

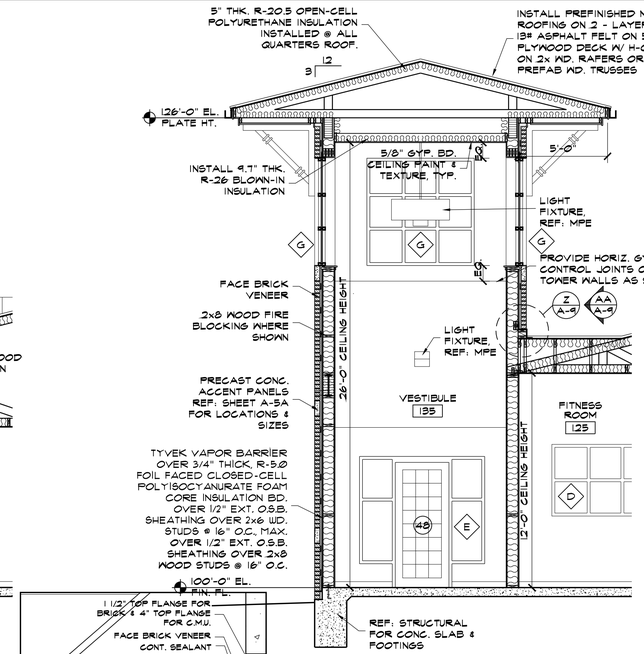
SCALE: 3/4" = 1'-0"



H BUILDING SECTION

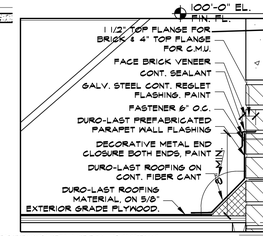
SCALE: 1/4" = 1'-0"

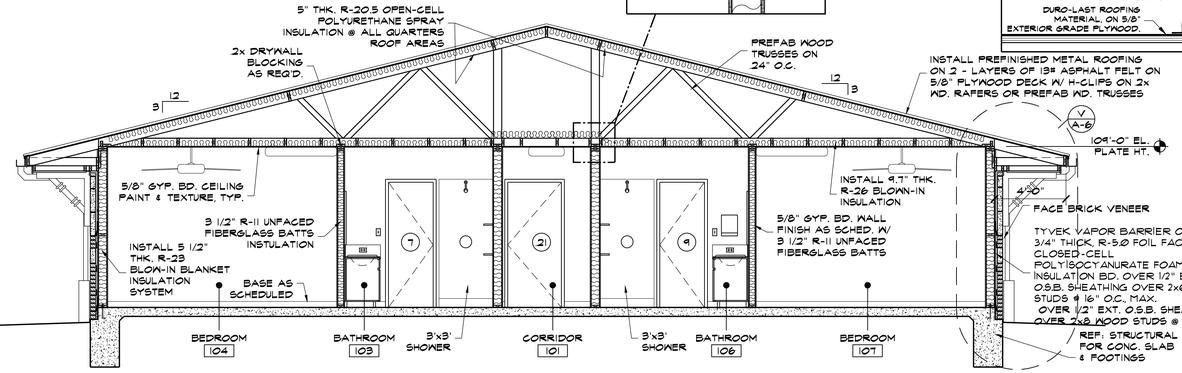




G BUILDING SECTION

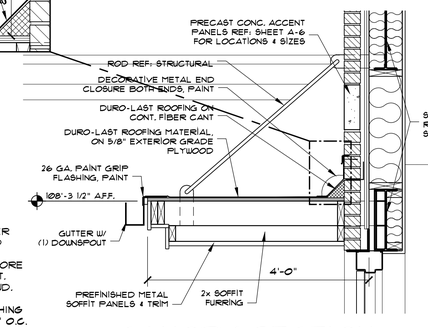
SCALE: 1/4" = 1'-0"





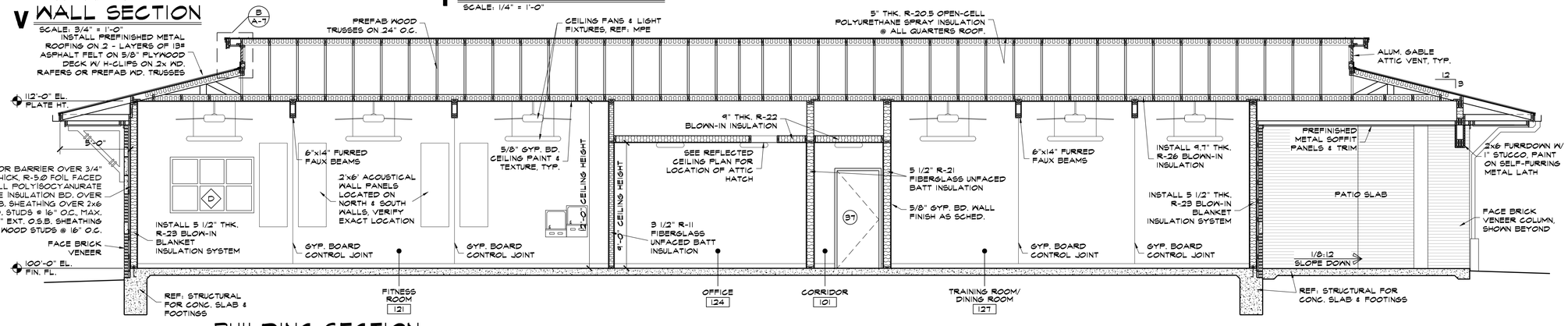
T BUILDING SECTION

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



L CANOPY SECTION

SCALE: 3/4" = 1'-0"



Z BUILDING SECTION

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

PROJECT:	201436
DATE©	6/1/2016
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REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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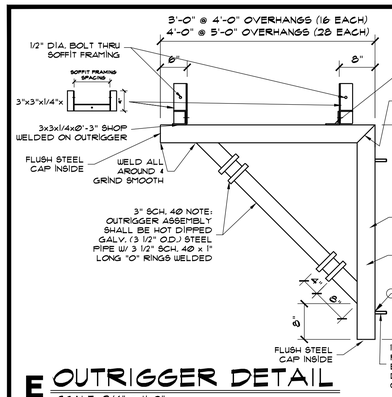
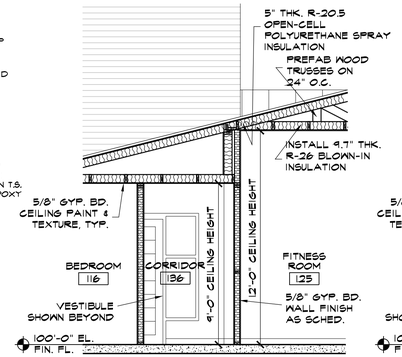
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.
A-6
OF 9



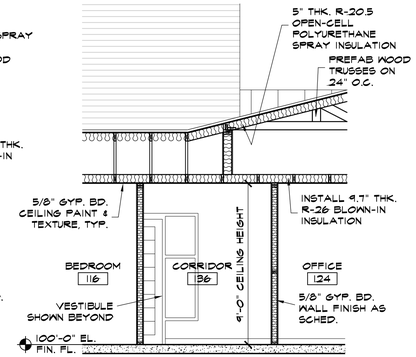
E OUTRIGGER DETAIL

SCALE: 3/4" = 1'-0"



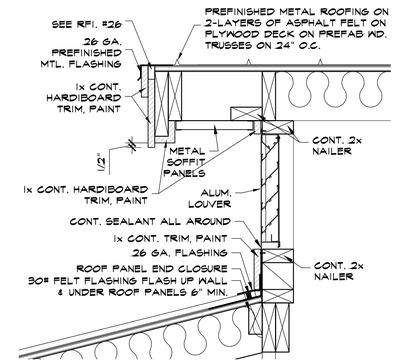
G BUILDING SECTION

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



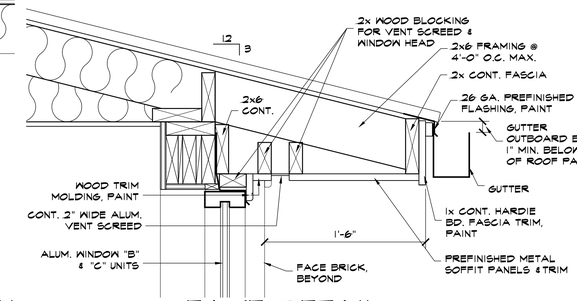
H BUILDING SECTION

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



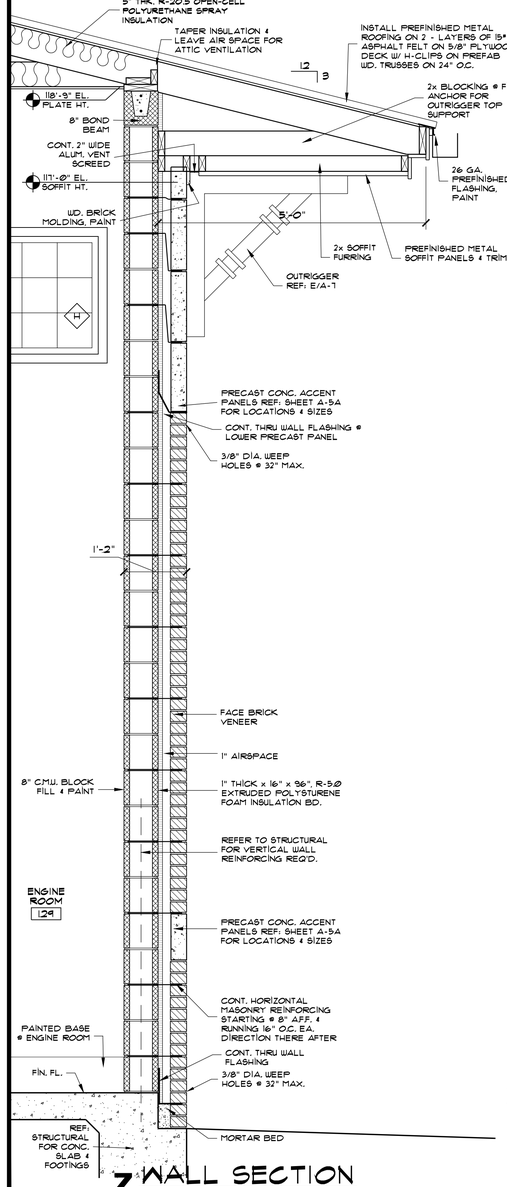
B GABLE LOUVER SECTION

SCALE: 1 1/2" = 1'-0"



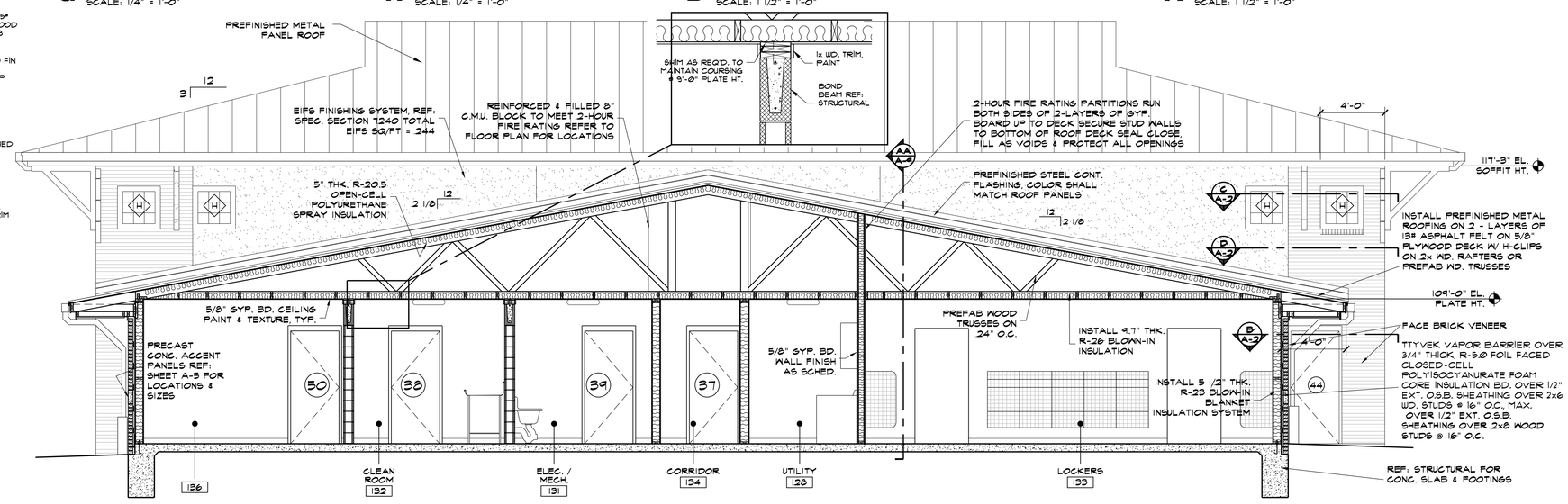
A EAVE DETAIL

SCALE: 1 1/2" = 1'-0"



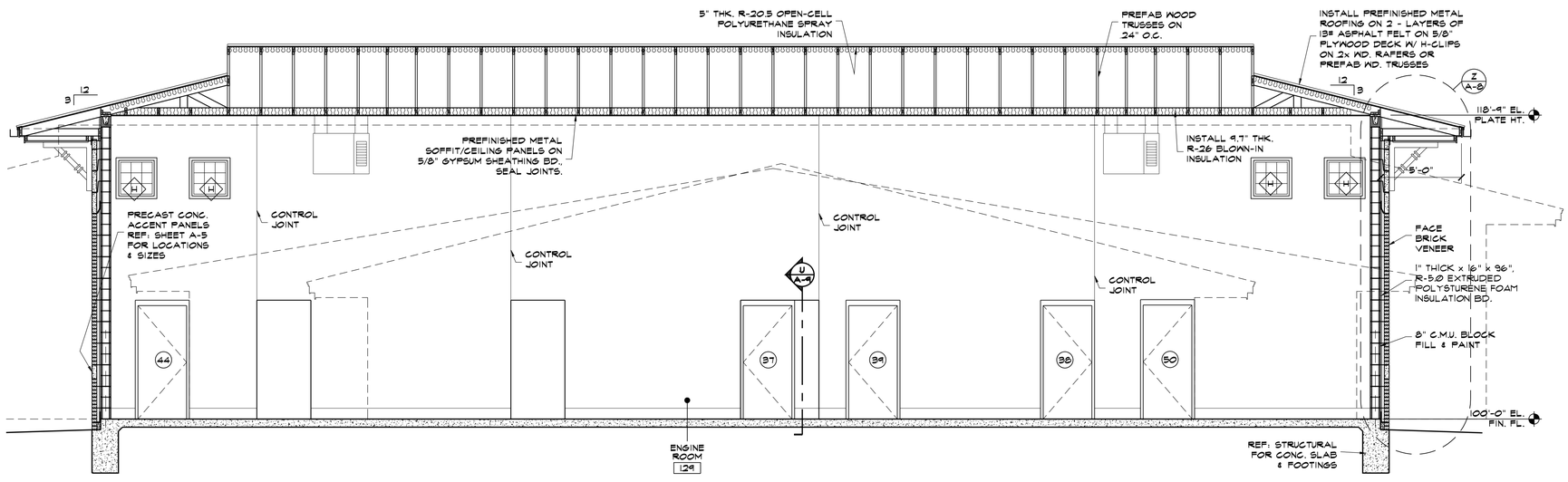
Z WALL SECTION

SCALE: 3/4" = 1'-0"



N BUILDING SECTION

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



Y BUILDING SECTION

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

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DATE©	6/1/2016
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REVISIONS	

NEW FIRE STATION NO. 4
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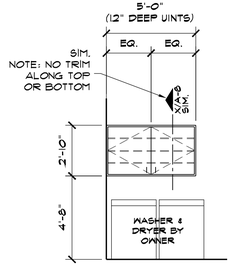
SHEET NO.

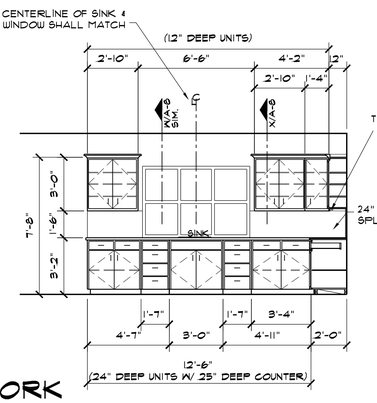
A-7

OF 9



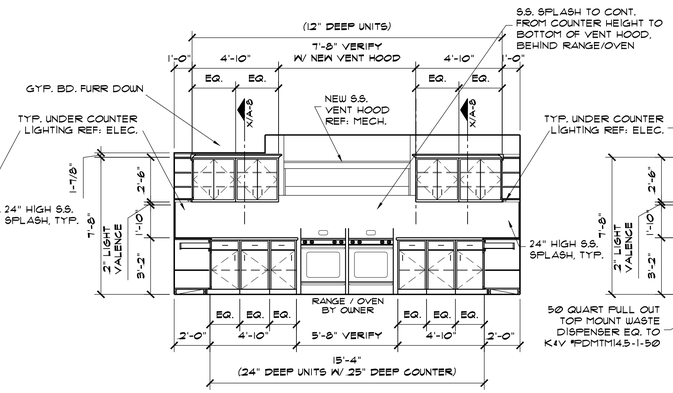
E UTILITY MILLWORK ELEVATION

SCALE: 1/4" = 1'-0" ROOMS: 128



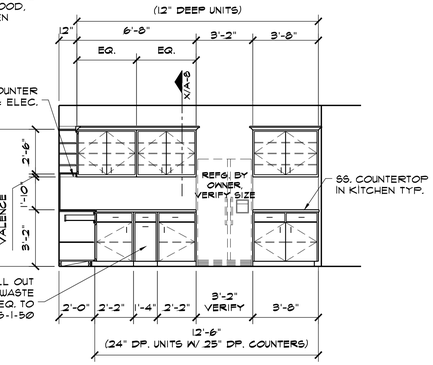
D KITCHEN MILLWORK ELEV.

SCALE: 1/4" = 1'-0" ROOMS: 119



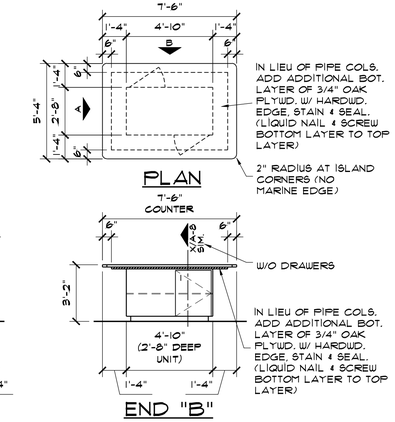
C KITCHEN MILLWORK ELEV.

SCALE: 1/4" = 1'-0" ROOMS: 119



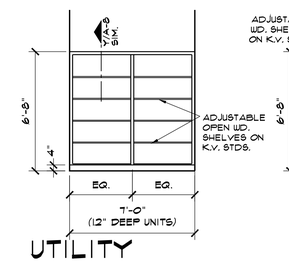
B KITCHEN MILLWORK ELEV.

SCALE: 1/4" = 1'-0" ROOMS: 119



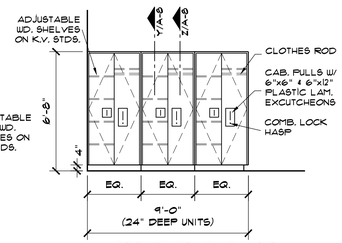
A KITCHEN ISLAND ELEVATION

SCALE: 1/4" = 1'-0" ROOMS: 119



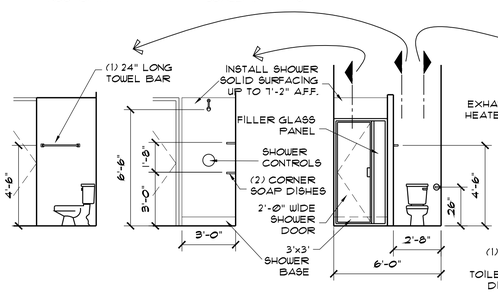
K UTILITY MILLWORK ELEV.

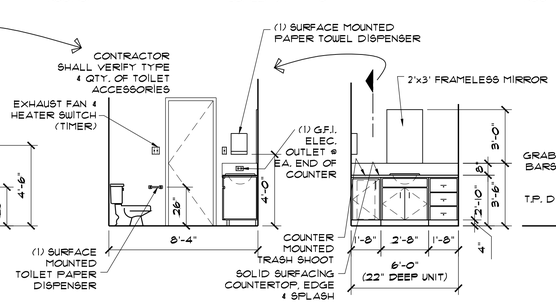
SCALE: 1/4" = 1'-0" ROOMS: 128



J BEDROOMS LOCKER ELEV.

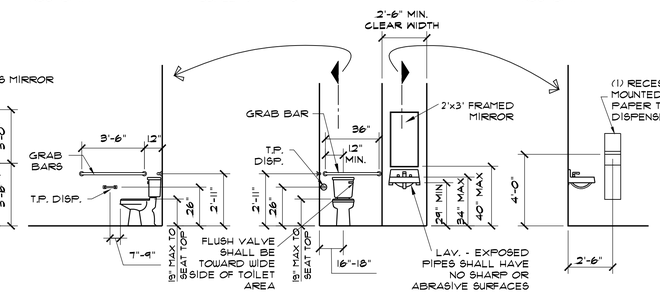
SCALE: 1/4" = 1'-0" ROOM: 103, 106, 109, 112, & 115





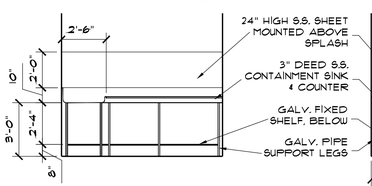
H BATHROOMS MILLWORK ELEVATION

SCALE: 1/4" = 1'-0" ROOMS: 103, 106, 109, 112, & 115



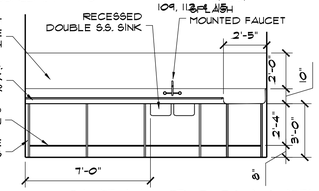
F TOILET ELEVATION

SCALE: 1/4" = 1'-0" ROOMS: 118 & 137



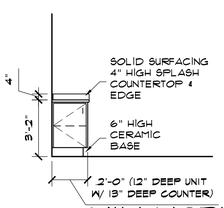
V CLEAN ROOM MTL. COUNTERS ELEVATION

SCALE: 1/4" = 1'-0" ROOMS: 132



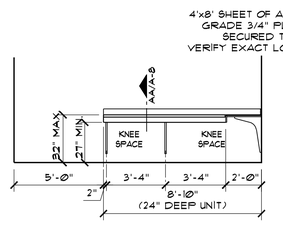
Q CLEAN ROOM MTL. COUNTERS ELEVATION

SCALE: 1/4" = 1'-0" ROOMS: 132



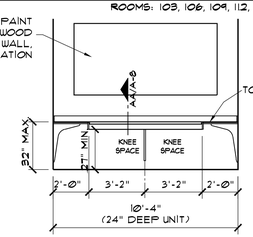
P MILLWORK ELEV.

SCALE: 1/4" = 1'-0" ROOM: 118 & 137



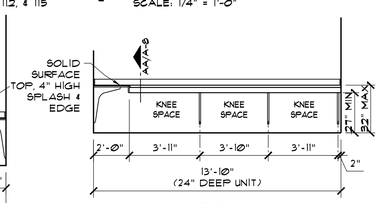
N MILLWORK ELEV.

SCALE: 1/4" = 1'-0" ROOM: 126



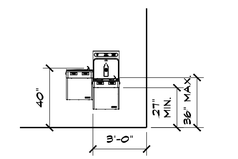
M MILLWORK ELEV.

SCALE: 1/4" = 1'-0" ROOM: 126



L MILLWORK ELEV.

SCALE: 1/4" = 1'-0" ROOM: 126



G E.W.C. ELEVATION

SCALE: 1/4" = 1'-0" ROOM: 125

TYP. MILLWORK NOTES:

1. ALL NOTES ARE TYPICAL UNLESS SPECIFICALLY NOTED OTHERWISE.

2. REFER TO SPECIFICATIONS FOR QUALITY, SPECIES, AND CUT OF WOOD.

3. THE FOLLOWING LIST OF ITEMS IS TYPICAL FOR ALL MILLWORK. REFER TO 1/4" MILLWORK ELEVATIONS AND TYPICAL MILLWORK SECTIONS FOR DIMENSIONS, QUANTITY, AND ARRANGEMENT OF THESE ITEMS.

4. NOMINAL OR DRESSED DIMENSIONAL LUMBER & TRIM MEMBERS MAY BE UTILIZED THROUGHOUT THIS PROJECT WHENEVER DIFFERENCE IS 3/4" OR LESS ON ALL MEMBERS & 1/4" OR MORE.

TYPICAL MILLWORK COMPONENTS:

BACKS: IN NON-EXPOSED AREAS ONLY, TO BE 1/2" MASONITE WITH 1x BLOCKING OR SHIMS IF REQUIRED.

CABINET BASE: 2x BLOCKING AS REQUIRED FOR 4" OR 6" FINISH BASE.

DOORS: 3/4" PLYWOOD WITH PLASTIC LAMINATE CLAD FACES, HARDWOOD VENEER EDGES.

DRAWERS: 1/4" PLYWOOD BOTTOMS, 1/2" SIDES AND BACK, AND ¾" FRONT WITH PLASTIC LAMINATE CLAD FACES. MOUNT DRAWER WITH K-V #300 GUIDES.

ENDS: 3/4" PLYWOOD WITH 3/4" x 1 1/2" HARDWOOD EDGE.

TOP OF CABINETS: 3/4" PLYWOOD WITH 3/4" x 1 1/2" HARDWOOD EDGE.

BASE AND WALL BRACKETS:

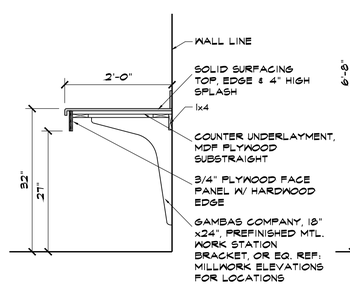
BOTTOM AND SHELVES: 3/4" PLYWOOD WITH HARDWOOD EDGE BANDS AT ALL EXPOSED EDGES.

OPEN SHELVING:

BOTTOM, DIVIDERS, ENDS, AND SHELVES: 3/4" PLYWOOD WITH 3/4" x 1 1/2" HARDWOOD EDGE. NOTE: ON VERTICAL DIVIDERS, CENTER HARDWOOD EDGE ON DIVIDER.

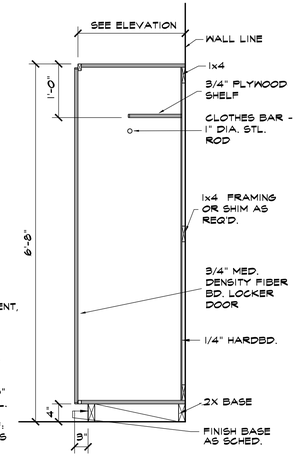
STORAGE CABINETS:

BOTTOM AND SHELVES: ¾" PLYWOOD WITH HARDWOOD EDGE BANDS.



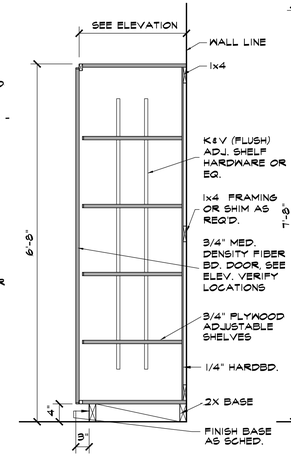
AA MILLWORK SECTION

SCALE: 3/4" = 1'-0"



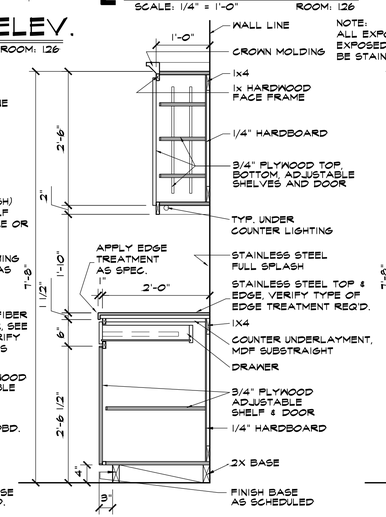
Z LOCKER SECTION

SCALE: 3/4" = 1'-0"



Y SHELVING SECTION

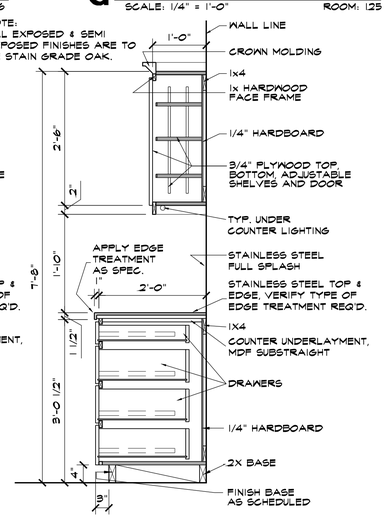
SCALE: 3/4" = 1'-0"



X MILLWORK SECTION

SCALE: 3/4" = 1'-0"

NOTE: ALL EXPOSED & SEMI EXPOSED FINISHES ARE TO BE STAIN GRADE OAK.



W MILLWORK SECTION

SCALE: 3/4" = 1'-0"

PROJECT:	201436
DATE©	6/1/2016
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REVISIONS	

NEW FIRE STATION NO. 4
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REGISTERED ARCHITECT GARY DONALDSON STATE OF TEXAS
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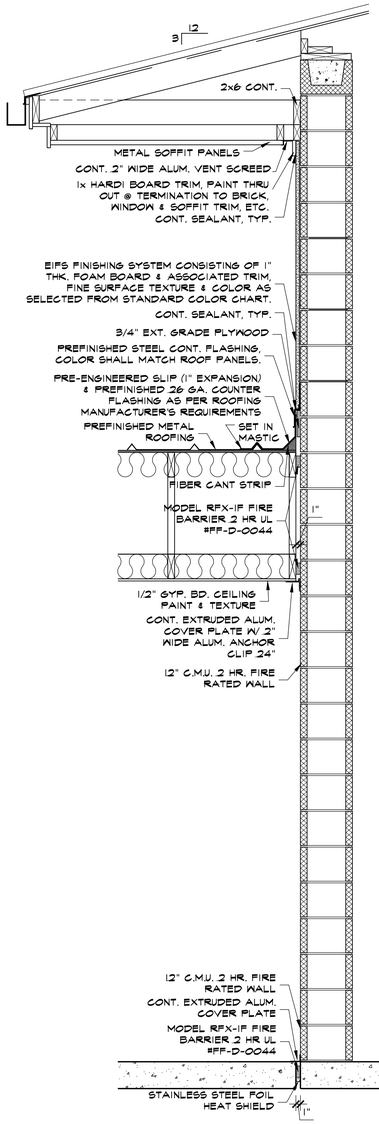
SHEET NO.
A-8
OF 9

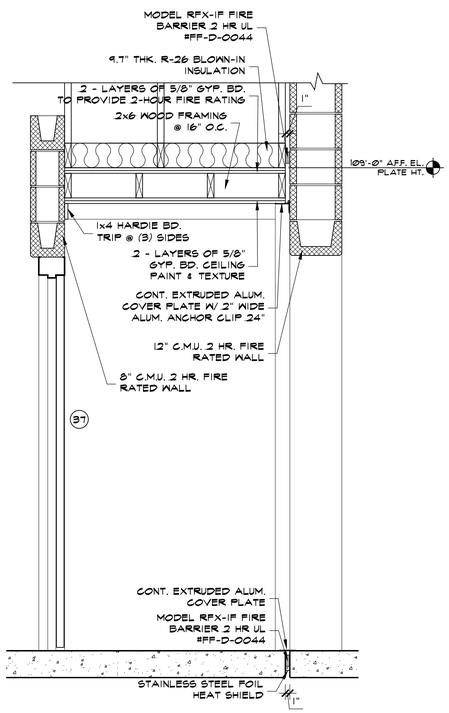
REFLECTED CEILING LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	LIGHT FIXTURES		SUPPLY AIR GRILLE
			RETURN AIR GRILLE
	CEILING FAN		EXHAUST FAN
	ATTIC ACCESS PANELS		EXIT LIGHT
	METAL SOFFIT OR CEILING PANELS	AV	AIR VAC
	GYP. BD. CEILING PAINT & TEXTURE		



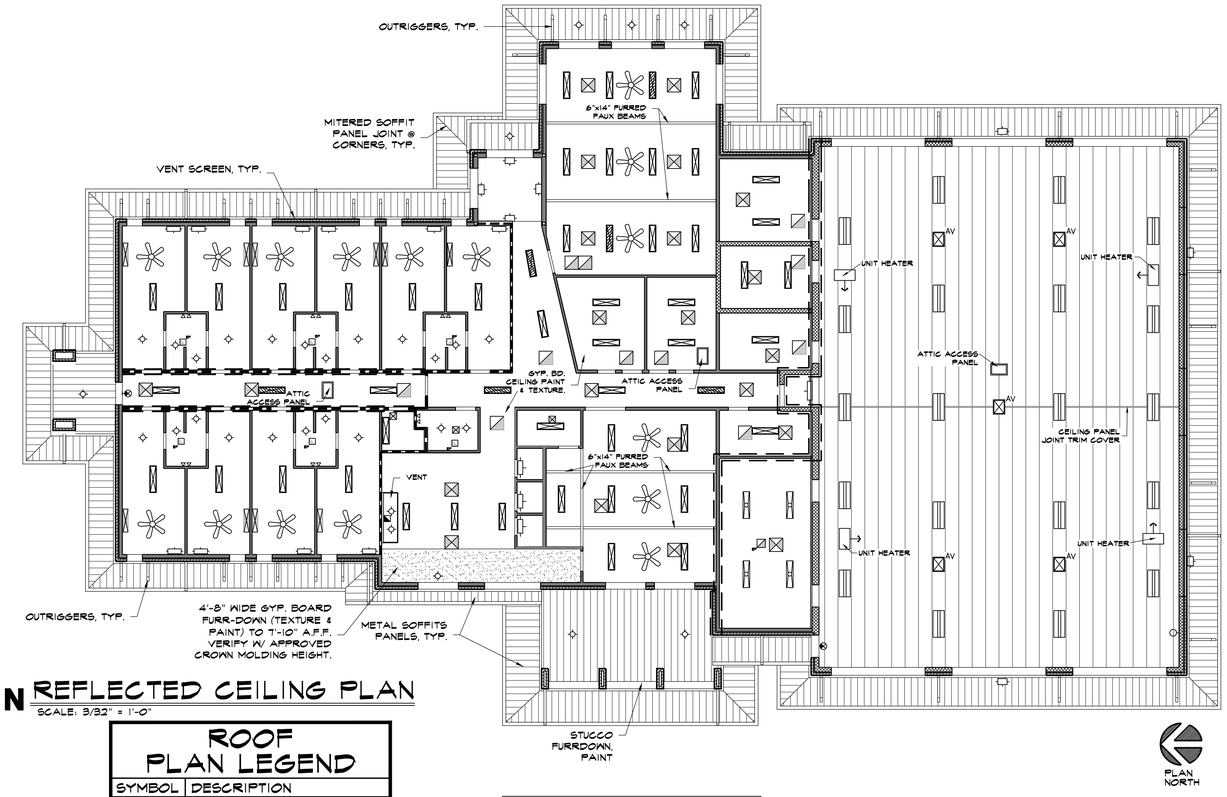
V EXPANSION JOINT WALL SECTION

SCALE: 3/4" = 1'-0"



U WALL SECTION

SCALE: 3/4" = 1'-0"

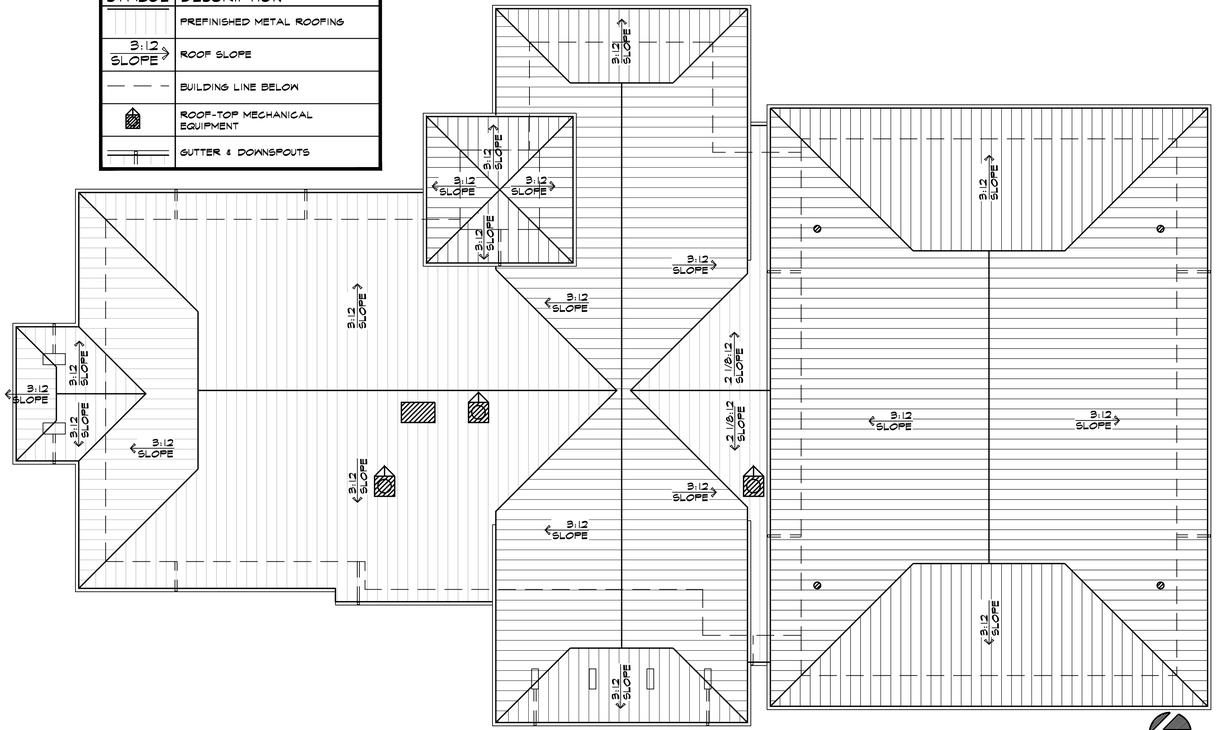


N REFLECTED CEILING PLAN

SCALE: 3/32" = 1'-0"

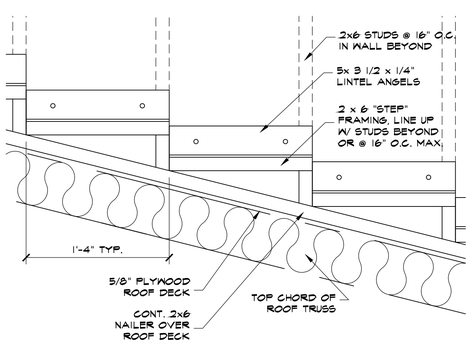
ROOF PLAN LEGEND

SYMBOL	DESCRIPTION
	PREFINISHED METAL ROOFING
3:12 SLOPE	ROOF SLOPE
	BUILDING LINE BELOW
	ROOF-TOP MECHANICAL EQUIPMENT
	GUTTER & DOWNSPOUTS



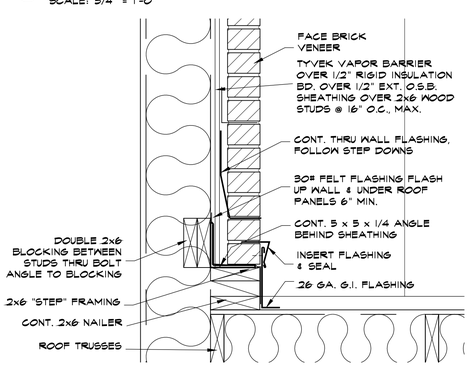
Y ROOF PLAN

SCALE: 3/32" = 1'-0"



AA FLASHING DETAIL

SCALE: 1 1/2" = 1'-0"



Z FLASHING DETAIL

SCALE: 1 1/2" = 1'-0"

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NEW FIRE STATION NO. 4 FOR SAN ANGELO FIRE DEPT.

SAN ANGELO, TEXAS

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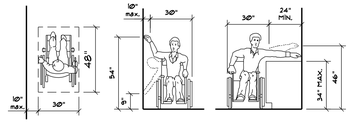
SHEET NO.

A-9

OF 9

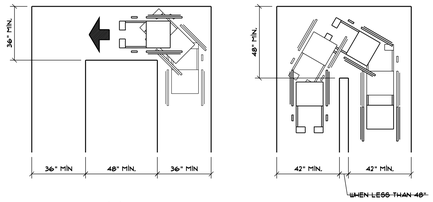
MOUNTING HEIGHTS FOR CHILDREN

	AGES: 4 thru 10 or 11 Grades: Pre-K thru 5 or 6	AGES: 11 thru 14 or 15 Grades: 6 thru 8 or 9
REACH RANGES		
FRONTAL APPROACH	42" MAX.	45" MAX.
SIDE APPROACH	48" MAX.	51" MAX.
RAMPS AND STAIRS		
TOP OF HANDRAIL GRIPPING SURFACE	28" - 34"	30" - 34"
ELEVATORS		
CAR CONTROL FLOOR BUTTONS		
FRONTAL APPROACH	42" MAX.	45" MAX.
SIDE APPROACH	48" MAX.	51" MAX.
EMERGENCY COMMUNICATION HIGHEST OPERABLE PART	42" MAX.	45" MAX.
PLATFORM LIFTS (WHEELCHAIR LIFTS)		
CONTROLS/ OPERATING MECHANISMS	28" - 42"	28" - 45"
DRINKING FOUNTAINS AND WATER COOLERS		
FRONTAL APPROACH		
SPOUT HEIGHT (TO OUTLET)	32" MAX.	34" MAX.
KNEE CLEARANCE	26" MIN.	28" MIN.
SIDE APPROACH		
SPOUT HEIGHT (TO OUTLET)	32" MAX.	34" MAX.
WATER CLOSETS		
TOP OF SEAT	14" - 15"	15" - 17"
GRAB BARS	28" - 30"	30" - 32"
FLUSH CONTROLS	42" MAX.	44" MAX.
URINALS		
RIM OF BASIN	14" MAX.	16" MAX.
FLUSH CONTROLS	42" MAX.	44" MAX.
LAVATORIES AND SINKS		
RIM OR COUNTER SURFACE	30" MAX.	32" MAX.
KNEE CLEARANCE	26" MIN.	28" MIN.
TO FAUCETS FROM FRONT EDGE	18" MAX.	20" MAX.
MIRRORS		
TO BOTTOM OF REFLECTIVE SURFACE	34" MAX.	37" MAX.
BATHTUBS		
TOP OF SEAT	14" - 15"	15" - 16"
GRAB BARS	28" - 30"	30" - 32"
HAND SHOWER HEAD MOUNTING	42" MAX.	45" MAX.
SHOWER STALLS		
TOP OF SEAT	14" - 15"	15" - 16"
GRAB BARS	28" - 30"	30" - 32"
HAND SHOWER HEAD MOUNTING		
FRONTAL APPROACH	42" MAX.	45" MAX.
SIDE APPROACH	48" MAX.	51" MAX.
STORAGE		
FRONTAL APPROACH	42" MAX.	45" MAX.
SIDE APPROACH		
DISTANCE FROM WHEELCHAIR		
0" - 10"	48" MAX.	51" MAX.
10" - 21"	42" MAX.	45" MAX.
CONTROLS AND OPERATING MECHANSIMS		
HIGHEST OPERABLE PART		
FRONTAL APPROACH	42" MAX.	45" MAX.
SIDE APPROACH	48" MAX.	51" MAX.
TELEPHONES		
HIGHEST OPERABLE PART		
FRONTAL APPROACH	42" MAX.	45" MAX.
SIDE APPROACH	48" MAX.	51" MAX.
FIXED OR BUILT-IN SEATING AND TABLES, READING AND STUDY AREAS, AND WORK STATIONS.		
HEIGHT OF TABLES OR COUNTERS	28" - 30"	28" - 32"
KNEE CLEARANCES	26"	28"
DRESSING AND FITTING ROOMS		
TOP OF BENCH	14" - 15"	15" - 17"
FOOD SERVICE LINES		
TOP OF TRAY SLIDE	30" MAX.	32" MAX.

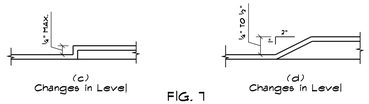


(a) Clear Floor Space Parallel Approach
(b) High and Low Side Reach Limits
(c) Maximum Side Reach Over Obstruction

FIG. 6
Side Reach

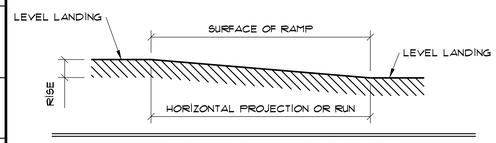


(a) 90 Degree Turn
(b) Turn around an Obstruction



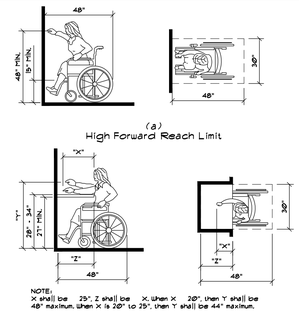
(c) Changes in Level
(d) Changes in Level

FIG. 7
ACCESSIBLE ROUTE



	MAXIMUM RISE		MAXIMUM HORIZONTAL PROJECTION	
SLOPE	in	mm	ft	m
1:12 to < 1:16	30	760	30	9
1:16 to < 1:20	30	760	40	12

FIG. 16
COMPONENTS OF A SINGLE RAMP RUN AND SAMPLE RAMP DIMENSIONS



(a) High Forward Reach Limit

NOTE:
X shall be 25", Z shall be X. When X 20", then Y shall be 48" maximum. When X is 20" to 25", then Y shall be 44" maximum.

(b) Maximum Forward Reach over an Obstruction

FIG. 5
Forward Reach

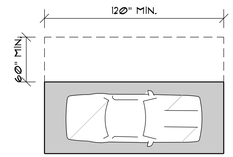
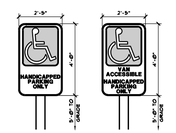
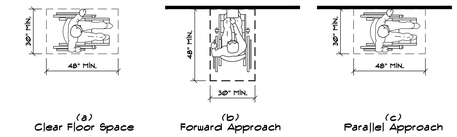


FIG. 10
ACCESS AISLE AT PASSENGER LOADING ZONES

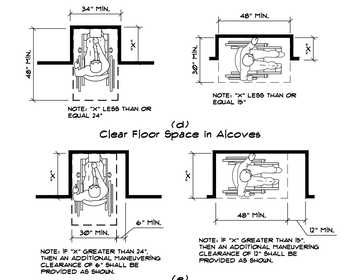


- CHARACTER WIDTH TO HEIGHT RATIO BETWEEN 3/5 AND 1/1.
- CHARACTER STROKE WIDTH TO HEIGHT RATIO BETWEEN 1/5 AND 1/10
- CHARACTERS AND BACKGROUND SHALL HAVE AN EGGSHELL, MATTE, OR OTHER NON-GLARE FINISH
- CHARACTERS AND BACKGROUND SHALL CONTRAST. EITHER LIGHT CHARACTERS ON DARK BACKGROUND OR DARK CHARACTERS ON LIGHT BACKGROUND

FIG. 11
PARKING SIGNAGE



(a) Clear Floor Space
(b) Forward Approach
(c) Parallel Approach



(d) Clear Floor Space in Alcoves
(e) Additional Maneuvering Clearances for Alcoves

FIG. 4
MINIMUM CLEAR FLOOR SPACE FOR WHEELCHAIRS

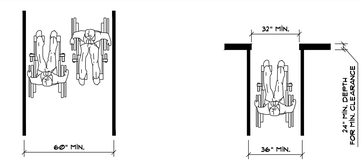
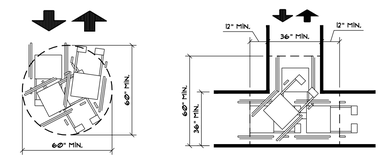


FIG. 2
MINIMUM CLEAR WIDTH FOR TWO WHEELCHAIRS

FIG. 1
MINIMUM CLEAR WIDTH FOR SINGLE WHEELCHAIR



(a) 60" Diameter
(b) T-Shaped Space for 180 degree turns

FIG. 3
WHEELCHAIR TURNING SPACE

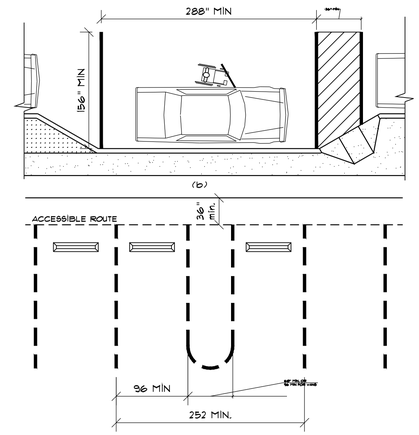


FIG. 9
DIMENSIONS OF PARKING SPACES

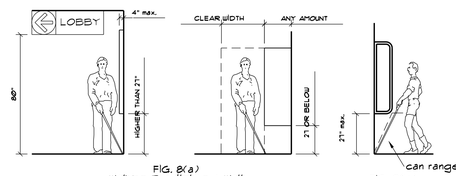


FIG. 8(a)
Walking Parallel to a Wall

FIG. 8(b)
Walking Perpendicular to a Wall

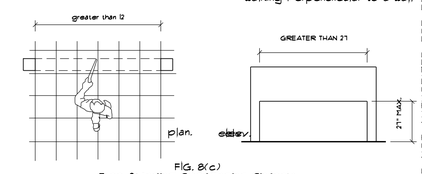


FIG. 8(c)
Free-Standing Overhanging Objects

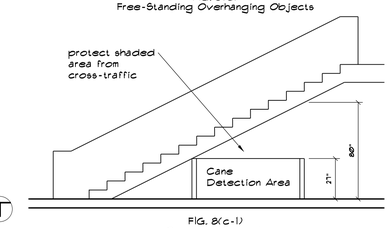


FIG. 8(c-1)
Overhead Hazards

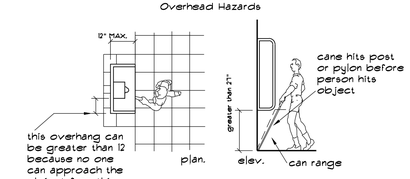


FIG. 8(d)
Objects Mounted on Posts or Pylons

FIG. 8
Protruding Objects

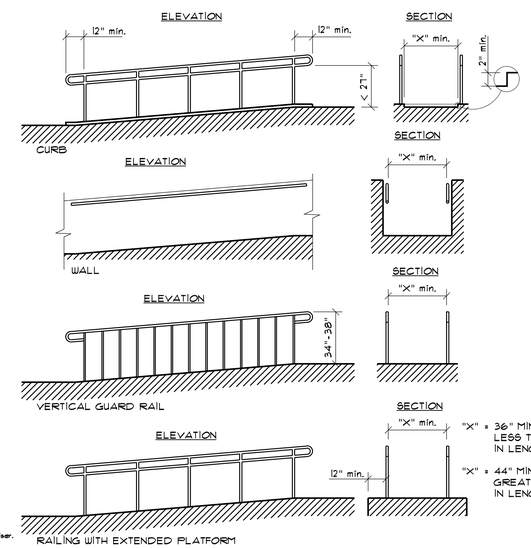
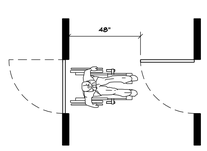


FIG. 17
EXAMPLES OF EDGE PROTECTION AND HANDRAIL EXTENSIONS



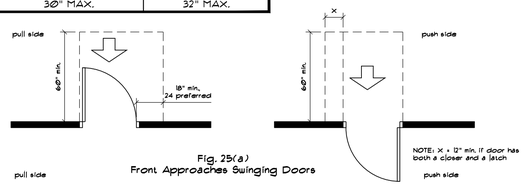


Fig. 25(a)
Front Approaches Swinging Doors

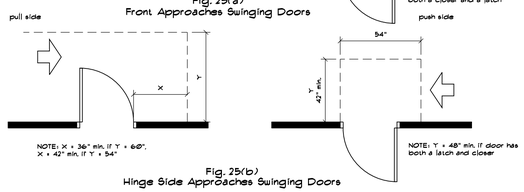


Fig. 25(b)
Hinge Side Approaches Swinging Doors

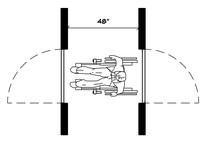


FIG. 26
TWO HINGED DOORS IN SERIES

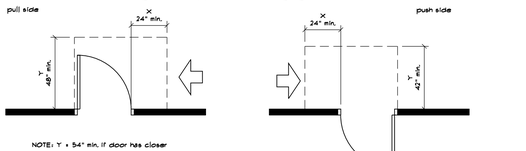


Fig. 25(c)
Latch Side Approaches Swinging Doors

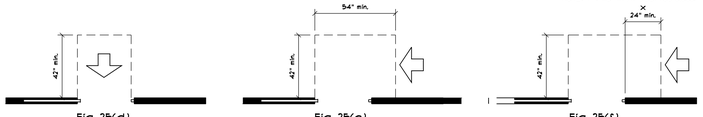


Fig. 25(d)
Front Approach
Sliding Doors and Folding Doors

Fig. 25(e)
Slide Side Approach
Sliding Doors and Folding Doors

Fig. 25(f)
Latch Side Approach
Sliding Doors and Folding Doors

NOTE: All doors in alcoves shall comply with the clearances for front approaches.

FIG. 25
MANEUVERING CLEARANCES AT DOORS

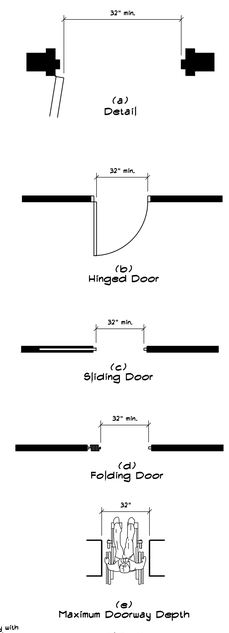
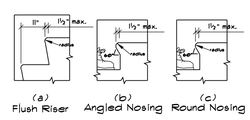
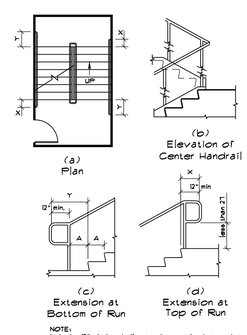


FIG. 24
CLEAR DOORWAY WIDTH AND DEPTH



(a) Flush Riser
(b) Angled Nosing
(c) Round Nosing

FIG. 18
Usable Tread Width and Examples of Acceptable Nosings



NOTE:
X is the 12" min. handrail extension required at each top riser.
Y is the minimum handrail extension of 12" plus the width of one tread that is required at the bottom riser.

FIG. 19
STAIR HANDRAILS

PROJECT:	201436
DATE©	6/1/2016
DRAWN	REH
REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

If this document is not SIGNED and DATED on the seal, then it is NOT FOR REGULATORY APPROVAL, PERMITTING OR CONSTRUCTION.

GARY DONALDSON REGISTERED ARCHITECT STATE OF TEXAS
2/10/17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.
ADA/TAS-1
OF 2

NOTE:
1. THE COMPLETE TEXAS DEPT. OF LICENSING & REGULATION, TEXAS ACCESSIBILITY STANDARDS CAN BE PURCHASED FROM:

OFFICE OF THE SECRETARY OF STATE
TEXAS REGISTER DIVISION
P.O. BOX 13824
AUSTIN, TEXAS 78711

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http://www.license.state.tx.us/ab/abtas.htm

2. CONTRACTOR SHALL BE RESPONSONSIBLE FOR VERIFYING CONSTRUCTION WITHIN THE PROJECT TO COMPLY WITH THE APPROPRIATE REQUIREMENTS SHOWN WITHIN THE PLANS AND WITHIN THE TYPICAL DETAILS SHOWN ON A.D.A. SHEETS (ADA-1, ADA-2) TO MEET ALL A.D.A. AND/OR T.A.S. REQUIREMENTS FOR A FULLY ACCESSIBLE FACILITY.

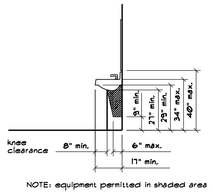


FIG. 31
LAVATORY CLEARANCES

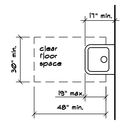


FIG. 32
CLEAR FLOOR SPACE AT LAVATORIES

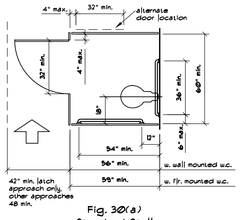


Fig. 30(a)
Standard Stall

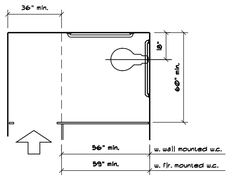


Fig. 30(a-1)
Standard Stall (end of row)

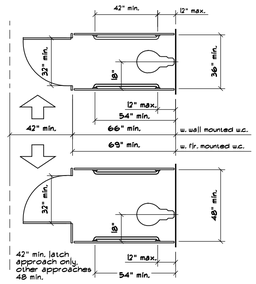


Fig. 30(b)
Alternate Stalls

FIG. 30
TOILET STALLS

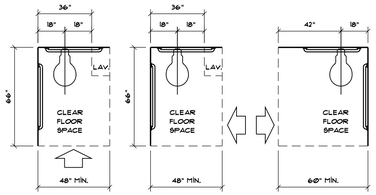
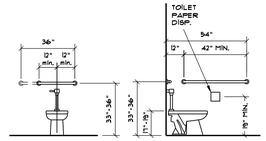


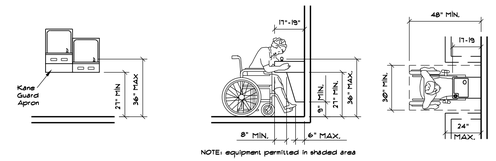
FIG. 28
CLEAR FLOOR SPACE AT WATER CLOSETS



(A)
Back Wall

(B)
Side Wall

FIG. 29
GRAB BARS AT WATER CLOSETS



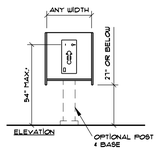
(A)
Spout Height and Knee Clearance

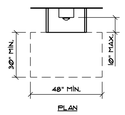
(B)
Clear Floor Space

(C)
Free-Standing Fountain or Cooler

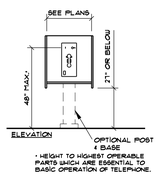
(D)
Built-In Fountain or Cooler

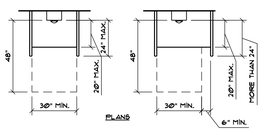
FIG. 27
DRINKING FOUNTAINS AND WATER COOLERS





(a)
Side Reach Possible





(b)
Forward Reach Required

FIG. 44
MOUNTING HEIGHTS AND CLEARANCES FOR TELEPHONES

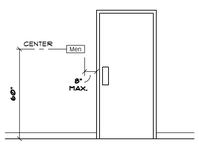


FIG. 43(e)
SIGNAGE MOUNTING LOCATION AND HEIGHT

(a)
Proportions
International Symbol of Accessibility

(b)
Display Conditions
International Symbol of Accessibility

(c)
International TDD Symbol
Parallel Approach

(d)
International Symbol of Access for Hearing Loss

FIG. 43
INTERNATIONAL SYMBOLS

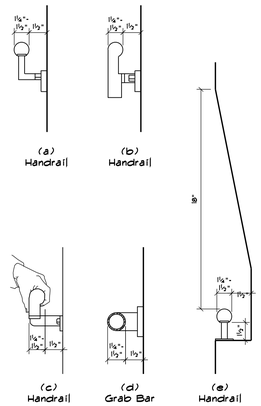


FIG. 39
NOMINAL SIZE AND SPACING OF HANDRAILS AND GRAB BARS

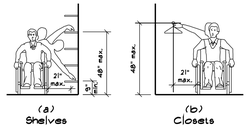


FIG. 38
STORAGE SHELVES AND CLOSETS

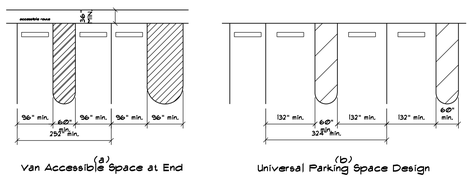


FIG. A5
PARKING SPACE ALERNATIVES

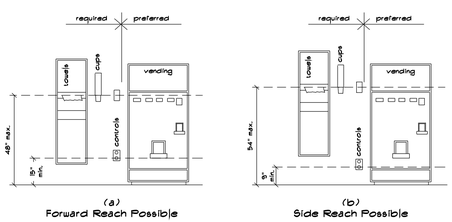


FIG. A8
CONTROL REACH LIMITATIONS

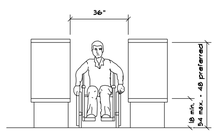


FIG. 55
CARD CATALOG

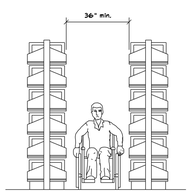


FIG. 56
STACKS

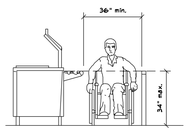


FIG. 53
FOOD SERVICE LINES

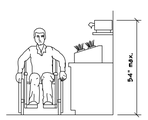
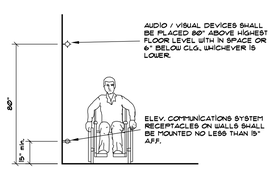
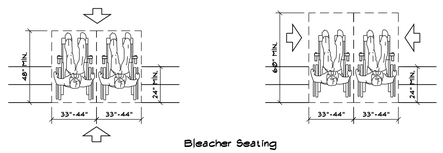


FIG. 54
TABLEWARE AREAS



CONTROLS AND AUDIO / VISUAL ALARMS



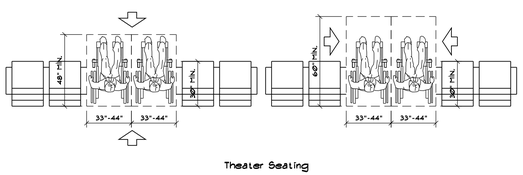


FIG. 46
SPACE REQUIREMENTS FOR WHEELCHAIR SEATING SPACES IN SERIES

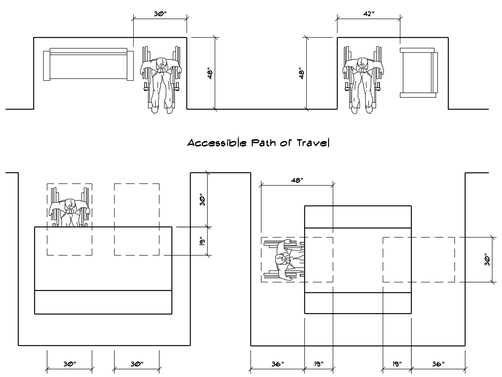


FIG. 45
MINIMUM CLEARANCE FOR SEATING AND TABLES

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING CONSTRUCTION WITHIN THE PROJECT TO COMPLY WITH THE APPROPRIATE REQUIREMENTS SHOWN WITHIN THE PLANS AND WITHIN THE TYPICAL DETAILS SHOWN ON A.D.A. SHEETS (ADA-1, ADA-2) TO MEET ALL A.D.A. AND/OR T.A.S. REQUIREMENTS FOR A FULLY ACCESSIBLE FACILITY.

PROJECT:	201436
DATE©	6/1/2016
DRAWN	REH
REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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GARY DONALDSON REGISTERED ARCHITECT STATE OF TEXAS
2/10/17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

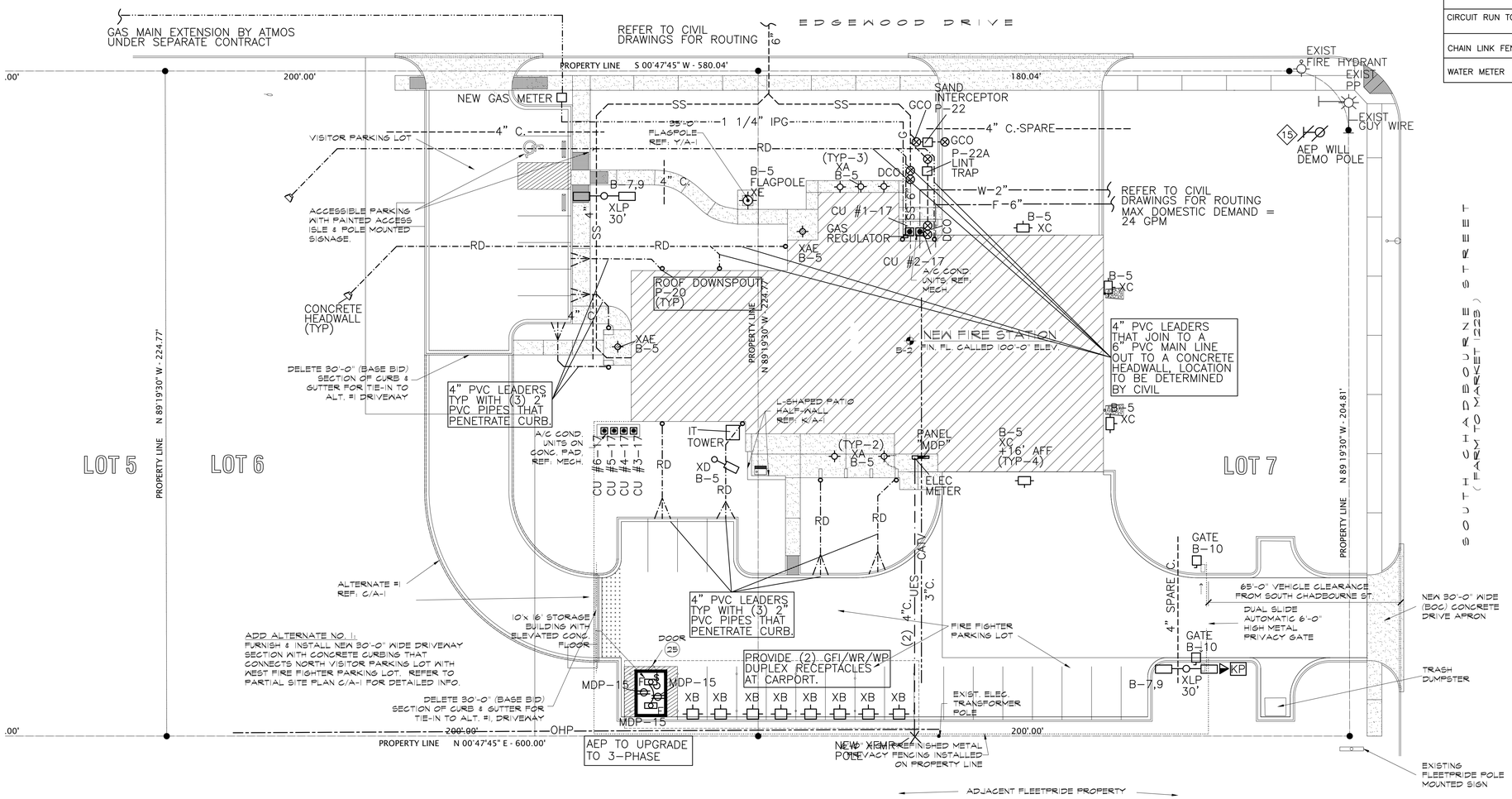
SHEET NO.
ADA/TAS-2
OF 2

UTILITY NOTES:

1. FOLLOW ALL NATIONAL, STATE AND LOCAL CODES FOR UTILITY INSTALLATION. EXISTING UTILITY LOCATIONS ARE REPRESENTATIVE IN NATURE ONLY. THIS SHEET IS INTENDED TO ILLUSTRATE NEW WORK ONLY.
2. MAINTAIN MINIMUM 10'-0" WORKING CLEARANCE FROM OVERHEAD POWER LINES TO ANY SIGNS OR STRUCTURES.
3. MAINTAIN MINIMUM SEPARATION BETWEEN SEWER AND WATER LINES OF 5'-0". MAINTAIN MINIMUM SEPARATION BETWEEN GAS AND ELECTRIC LINES OF 3'-0". MAINTAIN REQUIRED CLEARANCES BETWEEN ALL OTHER UTILITIES.
4. MOUNT NEW ELECTRICAL METER BASE AT XFMR. INSTALL MAIN PANEL "MDP" ON BUILDING AS SHOWN. INSTALL MAIN BREAKER IN PANEL "MDP".
5. SERVICE DELIVERY WILL BE FROM NEW POLE MOUNTED TRANSFORMERS WITH UNDERGROUND SERVICE. SERVICE VOLTAGE IS 120/208 VOLT, THREE PHASE, CONNECTED LOAD IS 435 AMPS. CONTACT GARY PITTMAN, AEP/WTU, (325) 657-2866, TO LOCATE SERVICE LOCATION AT NEW POLE. CONTRACTOR IS RESPONSIBLE FOR METER AND METER BASE AT BLDG. CONTRACTOR IS RESPONSIBLE TO INSTALL UNDERGROUND SERVICE TO BUILDING, INCLUDING DITCHING & 4" CONDUITS, PULLSTRINGS, & LONG RADIUS SWEEPS.
6. INSTALL CUTOFF VALVE, 2" GRINELL 3810, IN VALVE BOX AS SHOWN. WATER METER IS NEW. ESTIMATED DOMESTIC PEAK DEMAND IS 24 GPM. CONTACT LANCE OVERSTREET, (325)-657-4260 WITH THE CITY OF SAN ANGELO DEPT. OF PUBLIC WORKS FOR CHARGES OR FEES FOR WATER SERVICE. PROVIDE DOUBLE CHECK BACKFLOW PREVENTER FOR DOMESTIC SERVICE.
7. CONTACT EARLA AHRENS, (325)-481-3705, WITH ATMOS FOR CHARGES OR FEES FOR NATURAL GAS SERVICE. UTILITY WILL INSTALL 5# METER AT PROPERTY LINE AND TAP. CONTRACTOR TO INSTALL YARD SERVICE LINE AND SET REGULATOR AT BUILDING. MAXIMUM PEAK DEMAND IS 1210 CFH.
8. TELEPHONE & CATV SERVICES ARE NEW. TELEPHONE SERVICE IS VOICE OVER IP ON CITY NETWORK. CONTACT STEVEN BOYCE, 325-486-4183, FOR CATV UTILITY WORK.
9. APPLICABLE CODES:
   2015 INTERNATIONAL BUILDING CODE
   2008 NATIONAL ELECTRICAL CODE
   2009 INTERNATIONAL MECHANICAL CODE
   2009 INTERNATIONAL PLUMBING CODE
   2015 INTERNATIONAL FIRE CODE
   2009 INTERNATIONAL ENERGY CONSERVATION CODE
10. CONTRACTOR TO INSTALL NEW SEWER LINES FROM BUILDING TO EXISTING SEWER MAIN AS SHOWN ON PLAN. INSTALL CLEANOUT EVERY 80'. CONTACT LANCE OVERSTREET, (325)-657-4260 WITH THE CITY OF SAN ANGELO DEPT. OF PUBLIC WORKS FOR CHARGES OR FEES FOR SEWER SERVICE.
11. SAND INTERCEPTOR & 6" SEWER TAP TO BE INSTALLED. CONTRACTOR IS RESPONSIBLE TO INSTALL 2" VENT IN NEW EXTERIOR WALL.
12. COORDINATE ALL WORK SHOWN WITH CIVIL ENGINEERING DRAWINGS.
13. CARPORT-PROVIDE (1) "XB" LIGHT FIXTURE FOR EVERY 9'-0" LENGTH OF CARPORT.
14. REFER TO SHEET MPE-2 FOR SITE DETAILS.
15. REMOVE UNUSED POWER POLE PER AEP.
16. AEP WILL SET A NEW TRANSFORMER POLE TO LIMIT URD SERVICE TO APPROX. 90'.
17. REFER TO CIVIL DRAWINGS FOR BUILDING WATER AND SEWER SERVICES.
18. CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH IRRIGATION CONTRACTOR DURING CONSTRUCTION. IRRIGATION CONTRACTOR IS RESPONSIBLE TO INSTALL SLEEVES UNDER PAVEMENT OR CONCRETE. PROVIDE BACKFLOW PREVENTER FOR NEW IRRIGATION METER.

SYMBOL LEGEND

SANITARY SEWER & MANHOLE	SS
WATER VALVE & FIRE HYDRANT	W
STORM INLET & MANHOLE	
EXISTING ELECTRIC	E
EXISTING TELEPHONE	T
EXISTING CABLE TV	CATV
EXISTING GAS	G
EXISTING WATER	W
EXISTING SEWER	SS
EXISTING COMMUNICATIONS	C
PROPOSED UNDERGROUND ELECTRIC	UES
PROPOSED OVERHEAD ELECTRIC	OHP
PROPOSED TELEPHONE	T
PROPOSED CABLE TV	CATV
PROPOSED GAS	G
PROPOSED WATER	W
PROPOSED SEWER	SS
PROPOSED COMMUNICATIONS	C
PROPOSED ROOF DRAIN	RD
PADMOUNT TRANSFORMER	
ELECTRICAL DISCONNECT SWITCH	
ELECTRICAL METER	
POWER POLE (SIZE)	40
CIRCUIT RUN TO PANEL	
CHAIN LINK FENCE	
WATER METER	



SITE UTILITY PLAN

SCALE: 1" = 20'-0"

PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW

REVISIONS

NEW FIRE STATION NO. 4 FOR SAN ANGELO FIRE DEPT.

SAN ANGELO, TEXAS

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STATE OF TEXAS — PAUL R. WILKERSON — 50732 — REGISTERED PROFESSIONAL ENGINEER

02-10-17

MEP PROJECT #1611

Power Systems
P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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GARY DONALDSON ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

ORDINANCES

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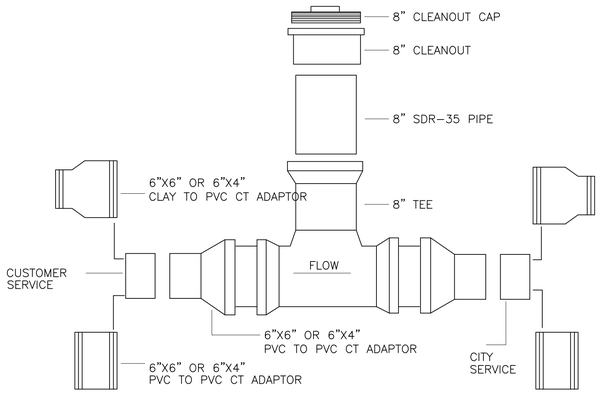
SHEET NO.

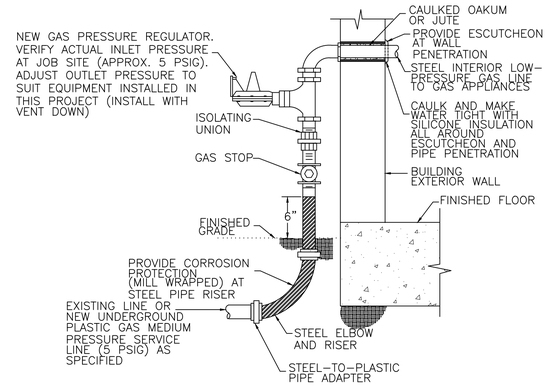
MPE-1

1 OF 17



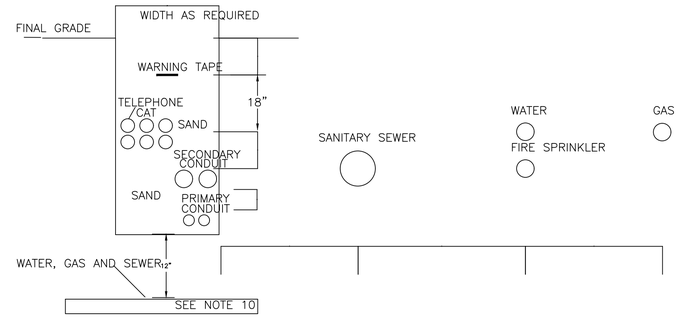
SEWER SAMPLE PORTS

NO SCALE
NOTE: PROVIDE IF REQUIRED BY CODE AUTHORITY.



GAS BUILDING ENTRY DETAIL

SCALE: NONE



UTILITY TRENCHING DETAIL

NO SCALE

Trenching and Conduit

1. All dimensions are minimums and may require adjustments due to site specific requirements, avoidance of obstructions, other utilities, etc.

2. Trench and completed conduit system shall be inspected by ESP before backfill.

3. All conduit for electrical facilities shall be Grey PVC Schedule 40, except for bends for switchgear, risers, and other as specified which shall be rigid galvanized steel. Galvanized conduit shall be wrapped continuously with Scotch tape No. 50 to 6" above ground line.

4. Backfill to be select material, 1/4" maximum aggregate size.

5. Minimum trench width shall be 18".

6. Trench shall be free of debris and bottom shall be undisturbed, tamped, or smooth earth or sand. Where excavation is in rock, conduit shall be laid on 4" of clean tamped backfill.

7. Install 190 lbs. test pull string or "Mule Tape" in each conduit. Conduit shall be clear of any debris or soil and should be swabbed after entire run is complete. Conduit shall be plugged or capped at ends.

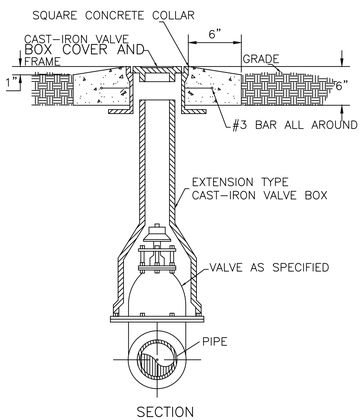
8. Backfill shall be compacted to not less than 95% of the density of the surrounding undisurbed soil.

9. All conduit bends for primary cable shall have a 36" radius.

10. Crossings of other utilites shall be made with a minimum of 12" separation and backfilled with stable sand (one sack concrete mix) a distance of 5 feet both sides of the crossing.

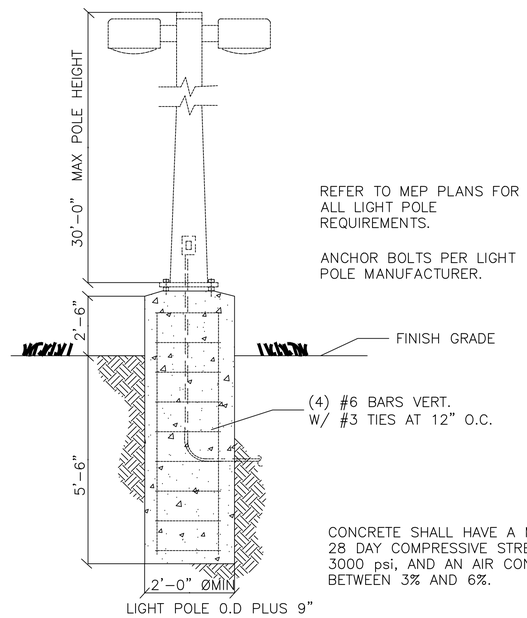
11. All PVC conduit sections shall be joined using chemical cleaner and cement intended for this purpose following manufacturer's instructions.

12. Sewer Line depth shall be as required by Code to maintain flow. Water Line depth shall be 42" min. Gas Line depth shall be 30" min.



TYPICAL VALVE BOX DETAIL

NO SCALE



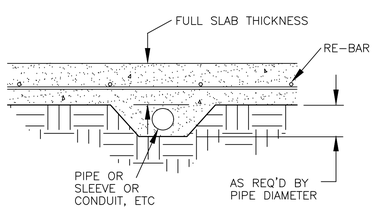
REFER TO MEP PLANS FOR ALL LIGHT POLE REQUIREMENTS.

ANCHOR BOLTS PER LIGHT POLE MANUFACTURER.

CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 psi, AND AN AIR CONTENT BETWEEN 3% AND 6%.

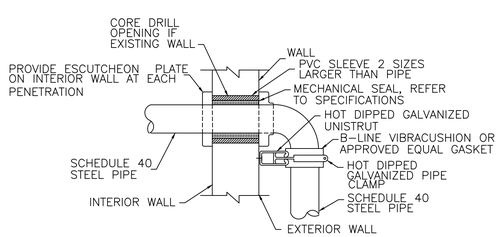
LIGHT POLE PIER DETAILS

NO SCALE



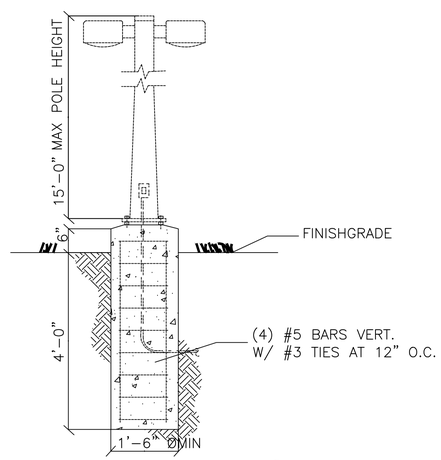
PIPE IN SLAB DETAIL

NO SCALE



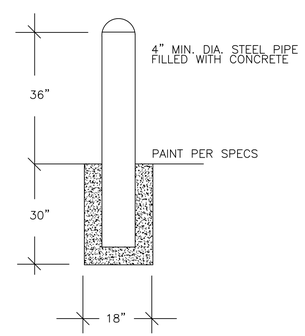
TYPICAL GAS WALL PENETRATION DETAIL

NO SCALE:



LIGHT POLE PIER DETAILS

NO SCALE



BOLLARD DETAIL

NO SCALE

SITE UTILITY DETAILS

NO SCALE

MEP PROJECT #1611

Power Systems

P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW
REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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STATE OF TEXAS
PAUL R. WILKERSON
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REGISTERED PROFESSIONAL ENGINEER

02-10-17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.
MPE-2
2 OF 17

MECHANICAL SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	MOTORIZED VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BUTTERFLY VALVE
	THREE-WAY MOTORIZED VALVE
	SOLENOID VALVE
	CHECK VALVE
	BALANCING VALVE
	GAUGE COCK
T&P	A.S.M.E. TEMPERATURE & PRESSURE RELIEF VALVE
	GAS COCK
	PRESSURE GAUGE
	THERMOMETER
G	GAS LINE
MV	AUTOMATIC AIR VENT
	STRAINER WITH DRAIN VALVE
	FLEXIBLE PIPE CONNECTION
	UNION
	PIPE ANCHOR
WH	WALL HYDRANT
F	FLOW SWITCH
T	THERMOSTAT
H	HUMIDISTAT
SS	SANITARY SEWER LINE
MH	MANHOLE
CW	COLD WATER LINE
HW	HOT WATER LINE
HWR	HOT WATER RECIRCULATING LINE
180	180 HOT WATER LINE
HWS	HOT WATER SUPLY LINE
HWR	HOT WATER RETURN LINE
HSS	HYDRONIC SYSTEM SUPPLY LINE
HSR	HYDRONIC SYSTEM RETURN LINE
CWS	CHILLED WATER SUPPLY LINE
CWR	CHILLED WATER RETURN LINE
D	CONDENSATE DRAIN LINE WITH FLOW DIRECTION
	FLOW DIRECTION
A	AIR LINE
	CUT-OFF VALVE
V	VENT LINE
STS	STORM SEWER LINE
	90 ELL UP
	90 ELL DOWN
	TEE DROPPING DOWN
	TEE RISING UP

NOTE: ALL SYMBOLS DO NOT NECESSARILY APPEAR ON THESE DRAWINGS

FAN SCHEDULE

UNIT NUMBER	PEF #1-17	PEF #2-17	PRV #3-17
AREA SERVED	REST ROOM	REST ROOM	LOCKERS
MANUFACTURER	BROAN	GREENHECK	GREENHECK
MODEL NUMBER	658	SP-A110	GB-101
CFM	70	75	400
SP (IN. WC)	.25	.25	.375
FAN HP	70 WATTS	49 WATTS	1/4
RPM	———	950	1,012
ELECTRICAL SVC	120/1/60	120/1/60	120/1/60
DUCT SIZE	6"Ø	8" x 6"	10" X 10"
ROOF OPENING	7"Ø	8" SQ.	14.5" SQ.

NOTES:
1. PRV FANS TO BE FURNISHED WITH ROOF CURB, GRAVITY DAMPER & BIRDSCREEN. PEF FANS TO BE FURNISHED WITH ROOF CAP, GRAVITY DAMPER & BIRDSCREEN.
2. FANS MAY BE APPROVED EQUAL, PROVIDED ALL LOCAL, STATE AND FEDERAL CODES WHICH ARE APPLICABLE ARE MET.
3. VERIFY ROOF OPENING DIMENSIONS WITH FAN MANUFACTURER.
4. ALL EXHAUST DUCTS SHALL BE ALUMINUM.
5. RESTROOM EXHAUST FANS TO SWITCH WITH LIGHTS.
6. LOCKER ROOM FAN TO OPERATE CONTINUOUSLY.

DIFFUSER SCHEDULE

SYMBOL	NOMINAL SIZE	TYPE	FINISH	TITUS MODEL NO.	COMMENTS
S-1	VARIOUS	SUPPLY WALL	WHITE	DL	DRUM LOUVER, FLANGED MOUNTING
S-2	24 x 24	SUPPLY 2 WAY	WHITE	TDC	FULL LAY-IN PANEL (2) SECTORIZING BAFFLES
S-3	24 x 24	SUPPLY 3 WAY	WHITE	TDC	FULL LAY-IN PANEL (1) SECTORIZING BAFFLE
S-4	24 x 24	SUPPLY 4 WAY	WHITE	TDC	FULL LAY-IN PANEL
S-5	12 x 12	SUPPLY 4 WAY	WHITE	TDC	12 x 12 BORDER TYPE 3 LAY-IN
S-6	12 x 12	SUPPLY 2 WAY	WHITE	TDC	12 x 12 LAY-IN (2) SECTORIZING BAFFLES
S-7	12 x 12	SUPPLY 3 WAY	WHITE	TDC	BORDER TYPE 1 FOR GYPBOARD CEILING, (1) SECTORIZING BAFFLE
S-8	12 x 12	SUPPLY 4 WAY	WHITE	TDC	BORDER TYPE 1 FOR GYPBOARD CEILING
S-9	18 x 18	SUPPLY 4 WAY	WHITE	TDC	BORDER TYPE 1 FOR GYPBOARD CEILING, STEEL
S-10	24 x 24	SUPPLY 2 WAY	WHITE	PAS	FULL LAY-IN PANEL, PERFORATED, 2 BAFFLES
S-11	15 x 15	SUPPLY 3 WAY	WHITE	TDC	BORDER TYPE 1 FOR GYPBOARD CEILING, STEEL
S-12	VARIOUS	SUPPLY WALL	WHITE	301 RS	FLANGED MOUNTING, STEEL
R-1	24 x 24	RETURN GRILLE	WHITE	50F	EGGCRATE LAY-IN PANEL BORDER TYPE 3, ALUMINUM
R-2	18 x 18	RETURN GRILLE	WHITE	50F	EGGCRATE FLANGED PANEL BORDER TYPE 1, ALUMINUM
R-3	VARIOUS	WALL RETURN GRILLE	WHITE	350 RL	FLANGED MOUNTING
R-4	36 x 18	WALL RETURN, ALUMINUM	WHITE	56FL	AEROBLADE WALL RETURN, 0° DEFLECTION, ALUMINUM
R-5	12 x 12	RETURN GRILLE	WHITE	50F	EGGCRATE FLANGED PANEL BORDER TYPE 1, ALUMINUM
E-1	18 x 18	EXHAUST	WHITE	50F	BORDER TYPE 1 WITH AG-15 OBD FOR GYPBOARD CEILING, ALUMINUM
E-2	12 x 12	EXHAUST	WHITE	50F	BORDER TYPE 1 WITH AG-15 OBD, ALUMINUM
E-3	12 x 12	EXHAUST	WHITE	50F	BORDER TYPE 3 WITH AG-15 OBD, ALUMINUM
L-1	18 x 8	HOODED WALL CAP	BLACK	GREENHECK MODEL HC	RECTANGULAR HOODED WALL CAP, BACK DRAFT DAMPER, INSECT SCREEN
L-2	24 x 16	FRESH AIR INTAKE/ EXHAUST LOUVER	FINISH AS PER ARCHITECHT	CESCO SLX6-DB-38	FRESH AIR INTAKE LOUVER, WALL MOUNT, DRAINABLE BLADE

NOTES: 1. ALL DIFFUSERS ARE NOT NECESSARILY USED ON THIS PROJECT.

HVAC EQUIPMENT LEGEND

PRV	POWER ROOF VENTILATOR, INSTALL ON FACTORY ROOF CURB. PROVIDE PROPER ROOF CURB FOR ROOF TYPE AND SLOPE.
VEF	VENTILATION EXHAUST FAN. PROVIDE WITH WALL COLLAR, WEATHERHOOD AND OSHA APPROVED MOTORSIDE GUARD.
PRF	PACKAGE EXHAUST FAN. INSTALL ABOVE CEILING PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
RTU	ROOFTOP PACKAGE UNIT. INSTALL ON 14" HIGH FACTORY ROOF CURB. PROVIDE PROPER CURB FOR ROOF TYPE AND SLOPE.
AHU	AIR HANDLING UNIT WITH COOLING COIL AND ELECTRIC HEAT. PROVIDE HORIZONTAL UNITS WITH 3" DRAIN PAN WITH FLOATING SWITCH.
CU	CONDENSING UNIT. INSTALL ON 4" THICK CONCRETE PAD. CONCRETE PAD TO EXTEND 6" BEYOND UNIT ON ALL SIDES.
PTAC	PACKAGE TERMINAL AIR CONDITIONING UNIT. PROVIDE A WALL SLEEVE.
OBD	OPPOSED BLADE MANUALLY OPERABLE BALANCING DAMPER. NATIONAL CONTROLLED AIR OR APPROVED EQUAL.
FCU	CASED FAN COIL UNIT WITH ELECTRIC HEAT. PROVIDE HORIZONTAL UNITS WITH 3" DRAIN PAN WITH FLOATING SWITCH.
RSF	ROOF SUPPLY FAN. INSTALL ON FACTORY ROOF CURB. PROVIDE PROPER ROOF CURB FOR ROOF TYPE AND SLOPE.

AIR COMPRESSOR UNIT SCHEDULE

UNIT NUMBER	CU #1-17	CU #2-17	CU #3-17	CU #4-17	CU #5-17	CU #6-17
MANUFACTURER	CARRIER	CARRIER	CARRIER	MITSUBISHI	MITSUBISHI	MITSUBISHI
MODEL NO.	24ACC436-3	24ACC448-3	24AAA560-3	MXZ-3C30NA2	MXZ-3C30NA2	MXZ-4C36NA2
NOMINAL CAPACITY (TONS)	3	4	4.5	2.5	2.5	3
COOLING CAP. (BTUH)	33,850	43,200	53,000	28,400	28,400	35,400
CFM SUPPLY AIR	1,200	1,600	2,000	———	———	———
SEER	14.0	14.5	14.0	16.0	16.0	16.0
HEAT CAPACITY (BTUH)	———	———	———	28,600	28,600	36,000
ELEC. DATA	208/1Ø/60	208/1Ø/60	208/1Ø/60	208/1Ø/60	208/1Ø/60	208/1Ø/60
MIN CKT AMPS	18.1	20.9	27.5	22.1	22.1	22.1
MOCP	30	35	40	25	25	25
WEIGHT (LBS)	225	270	337	137	137	139
COMBINATION	———	———	———	9+9+9	9+9+9	9+9+9+9
HSPF				9.6	9.6	9.8

NOTES:
1. ANY SUBSTITUTION MUST MEET MITSUBISHI SPECS OR CARRIER SPECS.
2. CONDENSING UNITS TO MATCH WITH AIR HANDLING UNITS.
3. CONDENSING UNITS TO BE FURNISHED WITH HAIL GUARDS. ALL UNITS SHALL HAVE DISCONNECT SWITCH MOUNTED ON EXTERIOR WALL.
4. CONTRACTOR TO VERIFY REFRIGERATION LINE SIZES WITH MANUF. RECOMMENDATIONS.

GAS FIRED UNIT HEATER SCHEDULE

UNIT NUMBER	UH #1-17
MANUFACTURER	REZNOR
MODEL NO.	VENTURION MODEL BE-100
HEAT CAP. (BTUH)	100,000
VENT	4"
HP	1/3
CFM	1645
GAS CONNECTION	1/2"

HVAC LEGEND

- T — THERMOSTAT
- EXHAUST FAN
- CEILING EXHAUST GRILLE
- DOOR GRILLE
- VOLUME DAMPER
- FD FIRE DAMPER
- SUPPLY DIFFUSER
- RETURN AIR DIFFUSER
- NECK SIZE / DIFFUSER STYLE / CFM
- SUPPLY FAN
- E — EMS SENSOR
- DT — DUCT TRANSITION
- 10"Ø — RECTANGULAR CEILING DIFFUSER WITH ROUND DUCT
- G.I. DUCT W/ACOUSTICAL DUCT LINER
- 24X14 — RETURN AIR REGISTER (OR GRILLE).
- SPLITTER DAMPER
- RECTANGULAR CEILING DIFFUSER
- SIDE WALL SUPPLY AIR REGISTER, W/EXTRACTOR.
- RECTANGULAR TO ROUND ADAPTER
- DT — DUCT TRANSITION (SINGLE LINE)
- FLEX DUCT, CLASS I
- H — HUMIDISTAT

GENERAL NOTES:

1. THE GENERAL CONTRACTOR SHALL PROVIDE ALL ROOF OPENINGS. HE SHALL VERIFY SIZES AND LOCATIONS IN THE FIELD BEFORE ROOFING IS INSTALLED.
2. THE HVAC UNITS AND ACCESSORIES, EXHAUST FANS & CURBS, SUPPLY REGISTERS, RETURN GRILLES, FILTERS, AND RELATED CONTROL SYSTEM COMPONENTS FOR THE HEATING AND AIR CONDITIONING SYSTEMS ARE PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR. UNLESS OTHERWISE NOTED.
3. ALL WORK SHALL BE PERFORMED BY A LICENSED CONTRACTOR. CONTRACTOR SHALL INSTALL SYSTEMS, EQUIPMENT & COMPONENTS IN ACCORDANCE WITH MINIMUM REQUIREMENTS SHOWN IN THESE PLANS. ANY DEVIATION FROM THE DESIGN PLANS SHALL ONLY BE PERFORMED IF APPROVED BY THE OWNER REPRESENTATIVE OR DESIGN ENGINEER. ALL WORK SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS OF ALL APPLICABLE CODES AND STANDARDS. HOWEVER, ANY DEVIATION FROM THE DESIGN PLANS IMPLIED BY LOCAL CODES THAT SUGGESTS INSTALLATION OF LESS THAN THE REQUIREMENTS SPECIFIED IN THESE DESIGN PLANS SHALL NOT BE ALLOWED WITHOUT APPROVAL BY THE OWNER REPRESENTATIVE OR THE DESIGN ENGINEER.
4. FLEXIBLE RATED AIR DUCT SHALL CONFORM TO REQUIREMENTS OF U.L. 181. UNLESS OTHERWISE NOTED ON PLAN, FLEXIBLE DUCT RUN-OUTS SHALL BE RUN AS STRAIGHT AS POSSIBLE AND BE ADEQUATELY SUPPORTED. FLEX DUCT SHALL BE STRETCHED OUT TO BE SMOOTH; DO NOT KINK, TWIST, OR COMPRESS FLEX. PROVIDE SHEETMETAL FITTING AT ALL DUCT CONNECTIONS TO AIR DEVICES. FLEXIBLE AIR CONNECTORS SHALL NOT BE ACCEPTABLE.
5. MECHANICAL CONTRACTOR SHALL PROVIDE/INSTALL HUMIDISTAT, REMOTE TEMPERATURE SENSORS, THERMOSTATS AND MAKE ALL FINAL CONNECTIONS. E.C. SHALL PROVIDE J-BOXES, CONDUIT, AND WIRING FOR TEMPERATURE SENSORS, HUMIDISTAT, AND THERMOSTATS.
6. BUILDING AIR FLOW

   NORMAL OPERATION:
   BUILDING MUST BE BALANCED AND TESTED FOR PROPER OPERATION BY THE MECHANICAL CONTACTOR. M.C. SHALL BALANCE THE BUILDING AND INSURE A POSITIVE PRESSURE IN THE BUILDING WITH ALL AHUS, EXHAUST FANS, AND SUPPLY FANS RUNNING AS SHOWN IN THE AIR BALANCE SCHEDULE ON THIS SHEET. THE FRESH AIR INTRODUCED TO THE AIR HANDLING UNITS DURING NORMAL OPERATION SHALL BE 33% OF THE AMOUNT SHOWN ON THE AIR BALANCE SCHEDULE. PROVIDE MOTORIZED DAMPERS IN THE FRESH AIR DUCTS AND A CONTROL SYSTEM TO SENSE THE OPERATION OF THE KITCHEN HOOD FAN (SEE BELOW). E.C./CONTROLS CONTRACTOR SHALL PROVIDE INTERLOCK WIRING AS REQUIRED TO PROVIDE THE ABOVE OPERATING SEQUENCE.

   KITCHEN HOOD OPERATION:
   WHEN THE KITCHEN HOOD EXHAUST FAN PRV #4-17 IS OPERATING, THE MOTORIZED DAMPERS IN THE FRESH AIR DUCTS FOR THE AIR HANDLING UNITS SHALL OPEN TO ALLOW THE AMOUNT OF FRESH AIR SHOWN ON THE AIR BALANCE SCHEDULE. WHEN THE KITCHEN HOOD EXHAUST FAN STOPS, THE MOTORIZED DAMPERS SHALL RETURN TO THE NORMAL OPERATION AMOUNT SCHEDULED ABOVE.
7. PROVIDE BALANCING DAMPERS IN ALL BRANCH DUCTS AS SHOWN FOR SYSTEM BALANCING.
8. LOCATE ALL ROOF TOP EQUIPMENT BY COORDINATING WITH STRUCTURE.
9. INSTALL TURNING VANES IN SUPPLY AND RETURN AIR DUCTWORK IN ALL SQUARE ELBOWS.
10. SEAL ALL SEAMS OF ALL DUCTS WITH MASTIC. SEAL ALL CONNECTIONS TO CURBS, RTU'S, DIFFUSERS, ETC., WITH SILICONE SEALER.
11. DUCTWORK SHALL HAVE RIGHT-OF-WAY OVER ALL PLUMBING PIPES AND ELECTRICAL CONDUIT ETC. DO NOT RELOCATE DUCTWORK BY BUILDING OFFSETS UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE AND ENGINEER. MECHANICAL CONTRACTOR SHALL FIELD MEASURE ALL CONDITIONS AND BE RESPONSIBLE FOR COORDINATION AND FIT. DO NOT SCALE DUCTWORK SIZES ON DRAWINGS.
12. ALL DUCTWORK SHALL BE PER "SMACNA" STANDARDS. KEEP A COPY OF THE "SMACNA" STANDARDS ON THE JOBSITE. ESPECIALLY REFER TO THE "SMACNA" STANDARDS FOR ELBOWS AND FITTINGS. ALSO REFER TO DETAILS AND SECTIONS IN THIS SET OF DRAWINGS WHICH TAKE PRECEDENCE OVER THE PLANS.
13. DUCTWORK LAYOUTS ARE ACTUAL. ALL RISES, DROPS, AND OFFSETS REQUIRED (EVEN IF NOT SHOWN) SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER. DUCTWORK DIMENSIONS ARE INSIDE "CLEAR" DIMENSIONS AND DO NOT INCLUDE INSULATION. SEE SPECIFICATIONS FOR ADDITIONAL INSULATION REQUIREMENTS. WHERE STRUCTURAL OBSTRUCTIONS ARE ENCOUNTERED, DUCT DIMENSIONS MAY BE CHANGED TO PROVIDE DUCTS OF EQUAL AREAS WITH ASPECT RATIOS NO GREATER THAN 4 TO 1. IF THE ABOVE CRITERIA CAN NOT BE MET, THE CONTRACTOR OR OWNER'S REPRESENTATIVE SHALL CONTACT THE ENGINEER TO WORK OUT AN ACCEPTABLE SOLUTION.
14. SUPPORT DUCTS FROM THE STRUCTURE WITH STRAPS AT EACH JOINT PER "SMACNA" STANDARDS.
15. ALL DUCTWORK SHALL BE RUN ABOVE THE FINISHED CEILING AND BETWEEN JOIST OR AS TIGHT TO THE JOISTS AS POSSIBLE UNLESS OTHERWISE NOTED.
16. ALL DIFFUSERS SHALL BE INSULATED WITH FIBERGLASS INSULATION WITH VAPOR BARRIER PERMANENTLY ATTACHED TO THE DIFFUSER. DIFFUSERS SHALL BE INSTALLED BY MECHANICAL CONTRACTOR WITH SQUARE TO ROUND TRANSITIONS WHERE REQUIRED.
17. THE MECHANICAL CONTRACTOR SHALL CERTIFY THAT THE TEMPERATURE CONTROL SYSTEM HAS BEEN INSTALLED, AS SPECIFIED AND HAS BEEN TESTED TO ASSURE THAT CONTROL ELEMENTS ARE CALIBRATED, ADJUSTED, AND IN PROPER WORKING CONDITION. A COPY OF THE CERTIFICATION SHALL BE FURNISHED TO THE OWNER & ENGINEER.
18. THE MECHANICAL CONTRACTOR SHALL PROVIDE AN OPERATION AND MAINTENANCE MANUAL TO THE BUILDING OWNER UPON COMPLETION OF THE JOB. THE MANUAL SHALL INCLUDE BASIC DATA RELATING TO THE OPERATION AND MAINTENANCE OF HVAC SYSTEMS AND EQUIPMENT AS WELL AS NAMES AND ADDRESSES OF QUALIFIED SERVICE AGENCIES. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED. HVAC CONTROL DIAGRAMS, SCHEMATICS, CONTROL SEQUENCE DESCRIPTIONS, AND CALIBRATION INFORMATION SHALL BE INCLUDED. THE MANUAL SHALL INCLUDE A COPY OF THE CONTROL SYSTEMS TESTING REPORT MENTIONED IN GENERAL NOTE 17.

AIR HANDLING UNIT SCHEDULE

UNIT NUMBER	FCU #1-17	AHU #1-17	AHU #2-17	AHU #3-17
MANUFACTURER	MITSUBISHI	CARRIER	CARRIER	CARRIER
MODEL NO.	MSZ-GL09NA	59SP5A060E17-14	59SP5A100E21-20	59SP5A120E24-22
NOMINAL CAPACITY (TONS)	3/4	3	4	4.5
COOLING CAP. (BTUH)	9,000	33,850	43,200	53,000
CFM SUPPLY AIR	399	1,200	1,600	2000
SEER	16.0	14.0	14.5	14.5
HEATING CAPACITY (BTUH)	10,900	60,000	100,000	120,000
ELEC. DATA	208/1Ø/60	208/1Ø/60	208/1Ø/60	208/1Ø/60
MIN CKT AMPS	FROM CU OUTDOORS	10.6	13.4	11.9
MOCP	———	15	20	20
INDOOR COIL	———	CNPHP3617ALA	CNPHP4821ALA	CNPHP6024ALA
WEIGHT (LBS)	23	182	203	234
EFFICIENCY		95%	95%	95%

NOTES:
1. SUPPLY AHU WITH DISPOSABLE FILTERS, DISCONNECTS, FRESH AIR DAMPERS, AND FEATURES TO COMPLY WITH LOCAL CODES.
2. PROVIDE CONDENSATE PUMP FOR FCU #1-17.
3. POWER FOR FCU'S MAY BE INSTALLED AS TYPE MC CABLE.
4. PROVIDE CONCENTRIC VENTING FOR ALL AHU'S.
5. FURNISH WIRED REMOTE CONTROLLER ACCESSORY WITH UNITS FCU #1-17.

ELECTRICAL CONTRACTOR

1. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL LOW VOLTAGE CONTROL WIRING CONDUITS FOR AIR CONDITIONING UNITS AND ALL FANS. COORDINATE WITH AIR CONDITIONING AND ELECTRICAL PLANS. (LOW VOLTAGE WIRE SUPPLIED BY MECHANICAL CONTRACTOR).
2. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL DISCONNECTS FOR EQUIPMENT AS REQUIRED BY CODE.
3. PROVIDE DATA CONNECTION AT ALL UNITS TO BE CONTROLLED BY DDC SYSTEM.
4. THE ELECTRICAL CONTRACTOR SHALL VERIFY DISCONNECTS FOR AIR CONDITIONING UNITS ARE SUPPLIED WITH AHU'S.

PLUMBING CONTRACTOR

1. PLUMBING CONTRACTOR TO PROVIDE & INSTALL CONDENSATE DRAINS FOR ALL A/C UNITS ACCORDING TO LOCAL CODE REQUIREMENTS. PROVIDE FULL SIZE "P" TRAPS.
2. PLUMBING CONTRACTOR TO COORDINATE PLUMBING VENT STACKS WITH OUTSIDE AIR INTAKES OF A/C UNITS & SUPPLY FANS. MAINTAIN AT LEAST 10'-0" MIN. CLEARANCE OR PER LOCAL CODE REQUIREMENTS.

GENERAL CONTRACTOR

1. EXHAUST FAN OPENINGS ARE BASED ON GREENHECK EQUIPMENT. IF OTHER FANS ARE USED VERIFY ROOF OPENING REQUIREMENTS. THE GENERAL CONTRACTOR SHALL LOCATE, CUT, AND FRAME ROOF OPENINGS AS SHOWN FOR ALL ROOF-MOUNTED EQUIPMENT AND EXHAUST FANS.
2. ANY FRAMING REQUIRED FOR DIFFUSER INSTALLATION IN CEILING SHALL BE BY THE GENERAL CONTRACTOR.
3. AIR CONDITIONING ROOF OPENING SIZES AND ROOF CURBS ARE BASED ON CARRIER EQUIPMENT. IF OTHER EQUIPMENT IS USED, VERIFY ROOF OPENING SIZES.

GENERAL HVAC NOTES

A ALL DUCT DIMENSIONS SHOWN ARE INSIDE FREE AREA DIMENSIONS.

B ALL DUCTWORK SHALL BE INSTALLED CONCEALED AS HIGH AS POSSIBLE UNLESS OTHERWISE SHOWN

C AIR DEVICES ARE SHOWN IN APPROXIMATE LOCATION ONLY. REFER TO ARCHITECT AND/OR ARCHITECTURAL DRAWINGS FOR EXACT LOCATION.

D PROVIDE FLEXIBLE DUCT CONNNECTIONS AT ALL EQUIPMENT CONNECTION POINTS.

E CONTRACTOR SHALL COORDINATE ALL WORK SHOWN ON DRAWINGS WITH ALL ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND PLUMBING DRAWINGS AND REPORT ANY DISCREPANCIES TO OWNER IMMEDIATELY.

F FLEX DUCT TO BE CLASS I, R-6 INSULATION. MAX FLEX DUCT LENGTH IS 5 FEET.

G HOUSEKEEPING PAD SIZE AND FLOOR DRAIN LOCATIONS SHALL BE COORDINATED WITH THE SIZE AND LOCATION OF THE EXACT EQUIPMENT BEING PROVIDED.

H EQUIPMENT SHOWN ON THE FLOOR PLANS AND ELEVATIONS ILLUSTRATE THE GENERAL ARRANGEMENT AND SPACE ALLOCATIONS. THE CONTRACTOR SHALL VERIFY THE SPACE REQUIREMENTS FOR EACH SYSTEM COMPONENT USING MANUFACTURER CERTIFIED SHOP DRAWINGS AND MAKE THE NECESSARY ADJUSTMENTS IN EQUIPMENT PLACEMENT AND CONNECTION IN ORDER TO ACCOMMODATE THE EXACT EQUIPMENT TO BE INSTALLED.

I DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ROUTING OF EQUIPMENT WITH ALL OTHER TRADES.

J PROVIDE FULL SIZE P-TRAP FOR ALL CONDENSATE DRAINS. PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL CONDENSATE DRAINS.

K PROVIDE SCREEN FOR ALL FRESH AIR INTAKES.

L UPON COMPLETION, PROVIDE COMPLETE TEST AND BALANCE OF ALL EQUIPMENT TO MEET OWNER'S REQUIREMENTS.

M COMPLY WITH 2009 INTERNATIONAL MECHANICAL CODE.

AIR BALANCE SCHEDULE

UNIT NUMBER	RETURN AIR (CFM)	OUTSIDE AIR (CFM)	EXHAUST AIR (CFM)	SUPPLY AIR (CFM)
AHU #1-17	960	240		1200
AHU #2-17	1280	320		1600
AHU #3-17	1600	400		2000
FCU #1-17	374	25		399
FCU #1-17	374	25		399
FCU #1-17	374	25		399
FCU #1-17	374	25		399
FCU #1-17	374	25		399
FCU #1-17	374	25		399
FCU #1-17	374	25		399
FCU #1-17	374	25		399
FCU #1-17	374	25		399
FCU #1-17	374	25		399
PEF #1-17			-70	
PEF #1-17			-70	
PEF #1-17			-70	
PEF #1-17			-70	
PEF #1-17			-70	
PEF #2-12			-75	
PRV #3-17			-400	
PRV #4-17			-1,125	
TOTALS	7,580	1,210	-1,950	8,790

NOTE: PRV #3-17 DOES NOT EXHAUST FROM THE SAME SPACE AS THE REMAINDER OF THE EQUIPMENT IN THIS SCHEDULE.

MEP PROJECT #1611

Power Systems
P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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MECHANICAL COVER SHEET
NO SCALE

PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW
REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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STATE OF TEXAS
PAUL R. WILKERSON
50732
REGISTERED PROFESSIONAL ENGINEER
02-10-17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

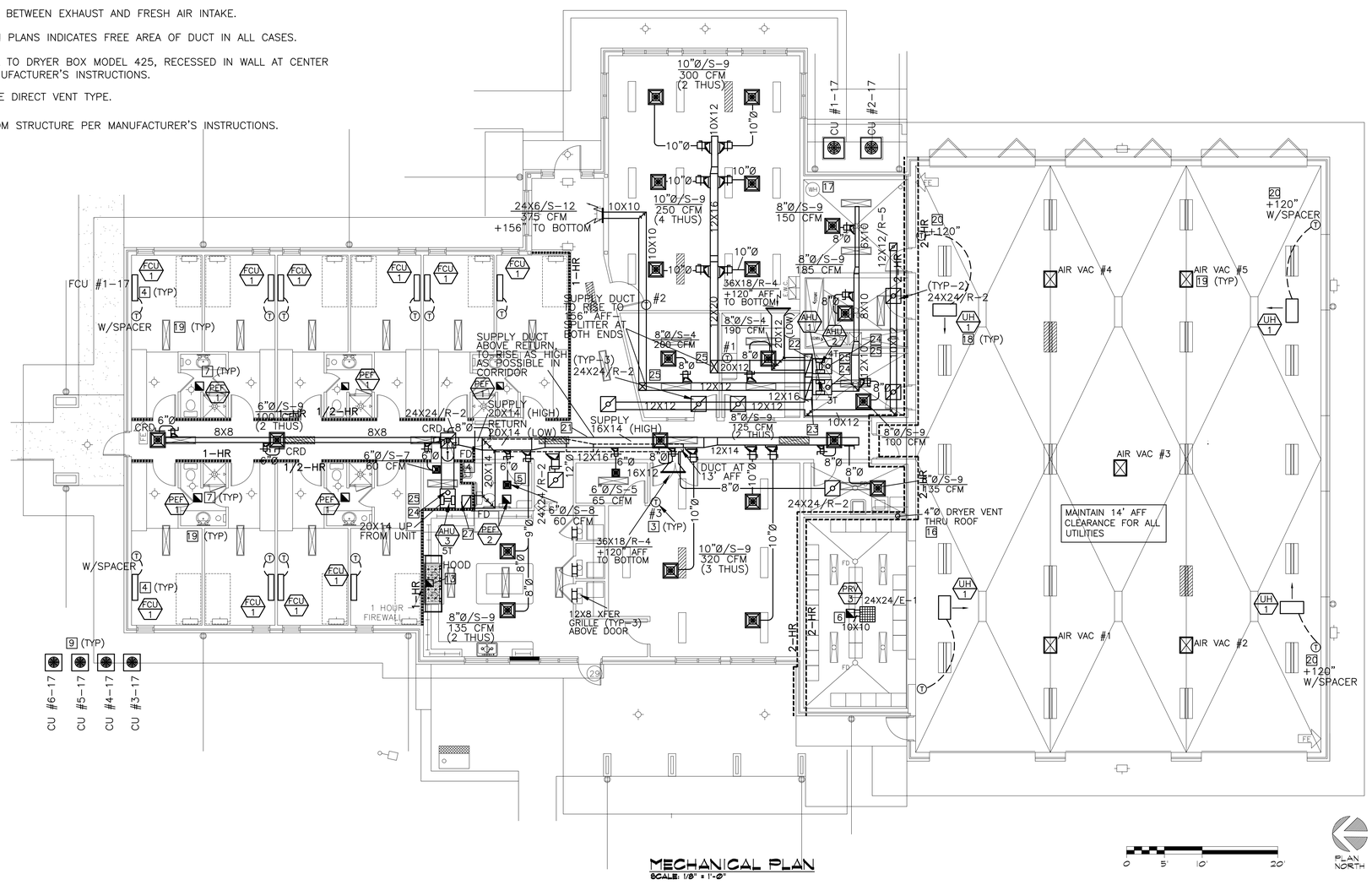
SHEET NO.
M-1
3 OF 17

MECHANICAL NOTES INDICATED BY "□":

1. ALL INDOOR FAN UNITS REQUIRE POWER FROM OUTDOOR UNIT.
2. REFER TO DETAIL ON SHEET E-3 FOR PIPE IN SLAB DETAIL.
3. PROVIDE CARRIER 33CSPTN-02 PROGRAMMABLE THERMOSTAT FOR ALL UNITS. MOUNT ON ON WALL AT 48" AFF AT LOCATIONS SHOWN. PROVIDE LOCKING COVERS FOR ALL THERMOSTATS. THERMOSTATS SHALL COMPLY WITH 2009 IECC.
4. REFER TO PLUMBING PLAN FOR CONDENSATE DRAIN ROUTING.
5. EXHAUST FAN PEF #2-17 IS MOUNTED ABOVE CEILING FOR RESTROOM. FAN TO SWITCH WITH LIGHT IN RESTROOM. RESTROOM EXHAUST BASED ON 2 CFM/SQ. OR 1 AIR CHANGE EVERY 5 MINUTES. TERMINATE EXHAUST DUCT IN ROOF CAP.
6. EXHAUST FAN PRV #3-17 IS MOUNTED ABOVE ON ROOF FOR LOCKER ROOM. FAN TO RUN CONTINUOUSLY. PROVIDE OFFSET & TRANSITION AS REQUIRED.
7. EXHAUST FANS PEF #1-17 ARE MOUNTED IN CEILING OF BATHROOM. FAN TO SWITCH WITH LIGHTS IN BATHROOM. HEATER TO BE SWITCHED TO TIMER SWITCH. TERMINATE EXHAUST IN ROOF CAP.
8. ALL GRILLES TO HAVE OBD OR MEANS OF CONTROLLING AIR FLOW.
9. PROVIDE CONCRETE PAD FOR OUTDOOR CU UNITS.
10. INSTALL FIRE DAMPER AT MEMBRANE PENETRATION OF RATED ASSEMBLY. INSULATE ANY DUCT IN ATTIC WITH R-8 INSULATION.
11. PROVIDE RETURN FILTER GRILLE.
12. DUCT RETURN AIR FROM RETURN AIR GRILLE TO FCU.
13. REFER TO SHEET M-4 FOR HOOD DETAILS AND SPECIFICATIONS. HOOD SERVED BY PRV #4-17.
14. MAINTAIN 10'-0" MINIMUM BETWEEN EXHAUST AND FRESH AIR INTAKE.
15. SIZE OF DUCT SHOWN ON PLANS INDICATES FREE AREA OF DUCT IN ALL CASES.
16. DRYER BOX TO BE EQUAL TO DRYER BOX MODEL 425, RECESSED IN WALL AT CENTER LINE OF DRYER, PER MANUFACTURER'S INSTRUCTIONS.
17. GAS WATER HEATER TO BE DIRECT VENT TYPE.
18. INSTALL UNIT HEATER FROM STRUCTURE PER MANUFACTURER'S INSTRUCTIONS.
19. FURNISH AIR VAC SYSTEM UNDER ADD ALTERNATE #4.
20. CONTRACTOR TO PROVIDE ACCUSTAT AT THERMOSTAT FOR UNIT HEATERS. SET AT 80°F. MOUNT THERMOSTAT AT 120" AFF. UNIT HEATERS TO TURN OFF WHEN ANY OVERHEAD DOOR IN ENGINE ROOM OPENS. INSTALL 15'-0" IN FROM DOOR AND BOTTOM OF UNIT AT 150" A.F.F. AT DIRECTION SHOWN ON PLAN.
21. CONTRACTOR TO INSTALL SUPPLY DUCT ABOVE RETURN; TO RISE AS HIGH AS POSSIBLE IN CORRIDOR.
22. 20X12 RETURN DOWN TO PLATFORM.
23. 16X12 RETURN DOWN TO PLATFORM.
24. PROVIDE A CONCENTRIC VENT FOR FURNACE UP TO APPROVED ROOF CAP.
25. SUPPLY DUCT TO RISE TO 156" AFF (SPLITTER AT BOTH TURNS).
26. PROVIDE A 8"Ø FRESH AIR CAP UP TO ROOF FOR AHU #1-17. PROVIDE A 10"Ø FRESH AIR CAP UP TO ROOF FOR AHU #2-17. PROVIDE A 10"Ø FRESH AIR CAP TO ROOF FOR AHU #3-17. PROVIDE MOTORIZED DAMPERS IN THE FRESH AIR DUCTS FOR ALL AIR HANDLING UNITS, INSTALLED IN AN ACCESSIBLE POSITION. REFER TO BUILDING OPERATION SEQUENCE IN GENERAL NOTES ON SHEET M-1. PROVIDE BUILDING AUTOMATION CONTROLS TO ACCOMPLISH THIS WORK.
27. 20x14 RETURN DOWN TO PLATFORM.

AIR CONDITIONING CONTRACTOR

1. THE AIR CONDITIONING CONTRACTOR SHALL FURNISH AND INSTALL ALL AIR CONDITIONING UNITS, EXHAUST FANS DUCTWORK, INSULATION, DIFFUSERS, THERMOSTATS, ELECTRIC HEATERS AND FIRE DAMPERS (AS REQUIRED).
2. MAINTAIN 10'-0" MIN. CLEARANCE BETWEEN EXHAUST LOUVERS AND FRESH AIR INTAKES.
3. CONTROL EXHAUST FANS WITH SEPARATE SWITCH IN BATHROOM.
4. FURNISH AND INSTALL ALL LOW VOLTAGE CONTROL WIRING FOR A/C UNITS AND FANS.
5. INSTALL MIN. 24 GA DOUBLE LOCKING BALANCING DAMPERS ON EACH BRANCH DUCT RUN AT MAIN DUCT. USE 4 SHEET METAL SCREWS AT EACH DAMPER. PROVIDE SPIN-IN TAP FITTING WITH SCOOP.
6. SEAL ALL DUCTWORK PER SMACNA REQUIREMENTS.
7. ALL FLEX DUCT SHALL BE U.L. LISTED, CLASSIFIED AS A CLASS 1 AIR DUCT, WITH AN R-6 VALUE, AND MEET LOCAL CODE REQUIREMENTS. MAXIMUM LENGTH OF FLEX DUCT IS 5'.
8. ALL SUPPLY AIR DUCTWORK SHALL BE INSULATED WITH 2" FOIL BACKED SCHRIM DUCT INSTALLATION WITH FIRE RATED VAPOR BARRIER (R-8). FLAME AND SMOKE RATING - 25 AND 50 RESPECTIVELY, UNLESS LINED DUCT IS PROVIDED. ALL RECTANGULAR DUCT SHALL BE LINED WITH 1 1/2" LINER.
9. ALL DUCTWORK TO BE INDEPENDENTLY HUNG FROM STRUCTURAL MEMBERS.
10. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED PER SMACNA LOW VELOCITY DUCT MANUAL. (LATEST ISSUE.)
11. ALL DOVETAILS INSTALLED IN A/C DUCTS/PLENUMS SHALL HAVE A VOLUME CONTROL DAMPER.
12. AIR CONDITIONING CONTRACTOR SHALL COORDINATE DIFFUSER LOCATIONS WITH THE REFLECTED CEILING PLAN.
13. THE AIR CONDITIONING CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE COVERING A ONE YEAR PERIOD FOR ALL PARTS, LABOR AND SHIPPING COSTS, AND AN ADDITIONAL FOUR YEAR PERIOD FOR THE A/C COMPRESSOR AND HEAT EXCHANGER PARTS.
14. THE AIR CONDITIONING CONTRACTOR SHALL, UPON COMPLETION OF PROJECT, PERFORM A COMPLETE TEST AND BALANCE OF ALL EQUIPMENT W/ PROPER INSTRUMENTATION. REPORT RESULTS TO OWNER.



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

MEP PROJECT #1611

Power Systems
P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW
REVISIONS	

NEW FIRE STATION NO. 4
FOR
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SAN ANGELO, TEXAS

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STATE OF TEXAS
PAUL R. WILKERSON
50732
REGISTERED PROFESSIONAL ENGINEER

02-10-17

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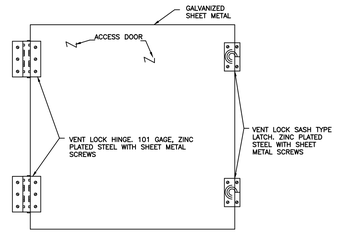
SHEET NO.
M-2
4 OF 17



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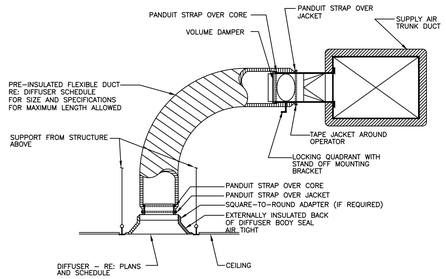
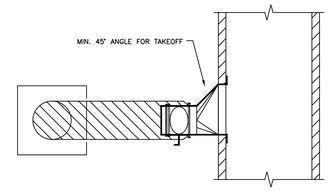


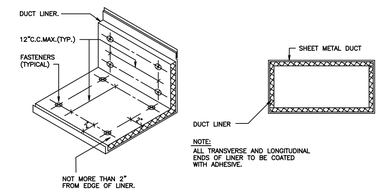
ELEVATION

CEILING DIFFUSER DETAIL

NO SCALE

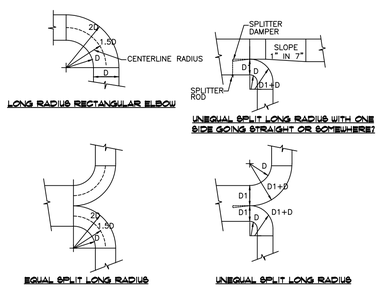


PLAN VIEW



DUCT LINER DETAIL

SCALE: NONE



LONG RADIUS RECTANGULAR ELBOW

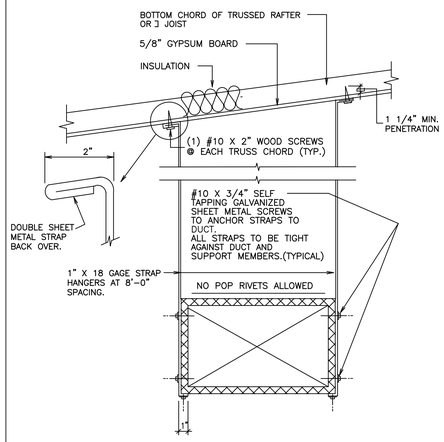
UNEQUAL SPLIT LONG RADIUS WITH ONE SIDE GOING STRAIGHT OR SOMEWHERE!

EQUAL SPLIT LONG RADIUS

UNEQUAL SPLIT LONG RADIUS

SPLITTER DETAIL

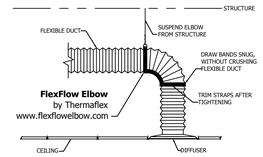
NO SCALE



DUCT STRAP HANGER DETAIL

SCALE: NONE

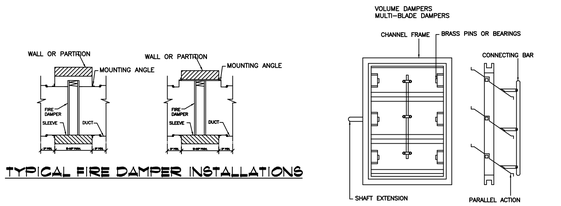
NOTE: SUPPORT DUCT EVERY 8' MAXIMUM.



NOTE: INSTALL FLEXIBLE DUCTWORK SUPPORTS AT ALL ROUND NECK OUTLETS/INLETS UNLESS OTHERWISE NOTED ON DRAWINGS.

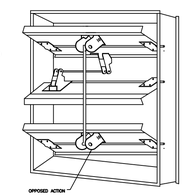
FLEXIBLE DUCT CONNECTION TO AIR OUTLET / INLET

NOT TO SCALE



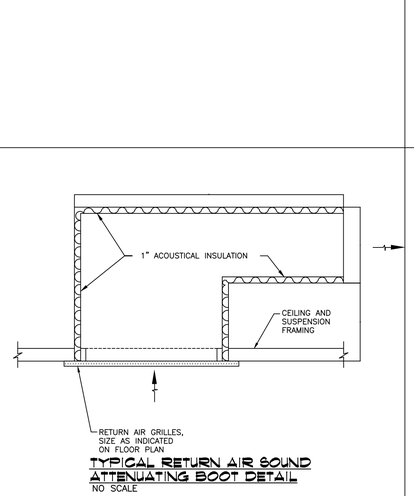
TYPICAL FIRE DAMPER INSTALLATIONS

1. DAMPER SHALL BE INSTALLED WITHIN FIRE WALL OR FLOOR SLAB. DAMPER SHALL BE MOUNTED IN A SLEEVE, FACTOR APPLIED OR FIELD FABRICATED WITH INSIDE DIMENSIONS EQUAL TO NOMINAL DUCT DIMENSIONS.
2. SLEEVE SHALL NOT BE LESS THAN 16 GAUGE STEEL FOR SIZED 36 WIDTH OR 24 HEIGHT AND UNDER, AND MUST NOT BE LESS THAN 14 GAUGE STEEL OVER 36 WIDTH OR 24 HEIGHT.
3. DAMPER SHALL BE INSTALLED IN SLEEVE, WITH #10X1/2 S.M. SCREWS OF 1/4X1/2 BOLTS AND NUTS. FASTENERS SHALL BE NO MORE THAN 9 INCHES ON CENTER, AND 2-3/4 INCHES FROM CORNERS.
4. MOUNTING AND EXPANSION CLEARANCE: WHEN SIZING MASONRY OPENING, TWO ADDITIONS HAVE TO BE MADE TO LISTED DIMENSIONS. ALLOW 1/2" FOR MOUNTING ANGLES AND ALLOW 1/2" FOR THERMAL EXPANSION. FOR HORIZONTAL FASTENER CLEARANCE, ALLOW 1/4" ADDITIONAL (1/2" TOTAL) TO LISTED DIMENSIONS. FOR WIDTH USED MULTIPLY THE THERMAL EXPANSION. FOR VERTICAL INSTALLATION, ALL VERTICAL CLEARANCE SHOULD BE ABOVE TOP OF SLEEVE. ALL HORIZONTAL CLEARANCE SHOULD BE DIVIDED EQUALLY ON BOTH SIDES OF SLEEVE. FOR HORIZONTAL INSTALLATION, ALL CLEARANCES ARE DIVIDED EQUALLY ON ALL SIDES.
5. SLEEVE SHALL NOT BE ATTACHED TO WALL (OR SLAB), BUT RETAINED ON EACH SIDE BY A 1"-1/2"X1/8" MOUNTING ANGLE FRAME ATTACHED TO SLEEVE #10X1/2" S.M. SCREWS OR 1/4X1/2" BOLTS, NOT OVER 9 INCHES ON CENTER. THIS ANGLE FRAME ALLOWS ALL CLEARANCE BETWEEN SLEEVE AND WALL (OR SLAB) AND SHALL OVERLAP WALL A MINIMUM OR 1" ON ALL FOUR SIDES.
6. A SUITABLE TIGHTLY COVERED, ACCESS TO THE DAMPER MUST BE PROVIDED IN THE DUCTING TO ALLOW INSPECTION AND MAINTENANCE.
7. SLEEVE SHALL BE INSTALLED SO DAMPER BLADE LOCKS ARE UPPERMOST IN HORIZONTAL INSTALLATIONS AND TOWARD ACCESS DOOR IN ALL CASES.
8. FOR INSTALLATION REQUIRING FLUSH MOUNTING, ANGLE FRAME MAY BE NOTCHED TO ALLOW IT TO BE MOUNTED FACING INTO THE WALL (OR SLAB).
9. THE FOLLOWING DUCT-SLEEVE CONNECTIONS MAY BE USED ON ALL SYSTEMS:
   A. INSIDE SLIP
   B. PLAIN "S" SLIP
   C. BEADED "S" SLIP
   D. ALL-SEEG
   E. ALTERNATE BAR SLIP (STANDING SLIP)
   F. REINFORCED BAR SLIP (CLEAT)
   G. ANGLE SLIP
   H. DOUBLE "S" SLIP
   I. DIPS SLIP
   J. DIPS SLIP
   K. POCKET LOCK
   L. ANGLE REINFORCED STANDING SEAM
   M. ANGLE REINFORCED POCKET LOCK
   N. EXPANSION ANGLE
   O. METAL FASTENERS SHALL BE SPACED A MINIMUM
   P. OF APPROXIMATELY 16" ON CENTER
10. MAXIMUM SINGLE DAMPER OF MULTIPLE DAMPER ASSEMBLY SHALL BE 40"X40" IN VERTICAL MOUNTINGS, 42" HEIGHT X 36" WIDTH IN HORIZONTAL MOUNTINGS.
11. IN MULTIPLE DAMPER ASSEMBLIES, UNITS SHALL BE FASTENED TOGETHER USING MOUNTING HOLES AS PROVIDED.
12. AS WITH ALL JOINTS, CONTRACTOR MUST SEAL SLEEVE, IN FIELD, AFTER INSULATION.
13. UL LABEL SHALL BE RIVETED TO FIRE DAMPER.



FIRE DAMPER INSTALLATION DETAILS

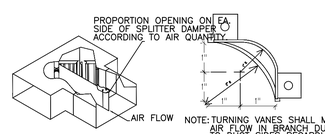
NO SCALE



TYPICAL RETURN AIR SOUND ATTENUATING BOOT DETAIL

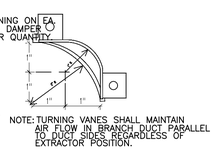
NO SCALE

NOTES:
1. INSTALL AT ALL RETURN GRILLES, UNLESS PRECLUDED BY STRUCTURAL CONSIDERATIONS.



TYPICAL SPLITTER DAMPER

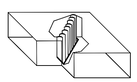
NO SCALE



NOTE: TURNING VANES SHALL MAINTAIN AIR FLOW IN BRANCH DUCT PARALLEL TO DUCT SIDES REGARDLESS OF EXTRACTOR POSITION.

TYPICAL TURNING VANE

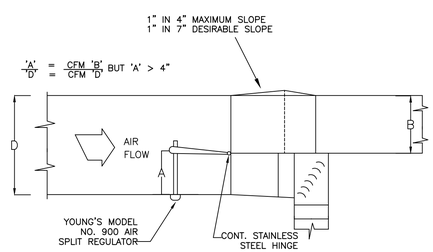
NO SCALE



TYPICAL ELBOW NO SCALE

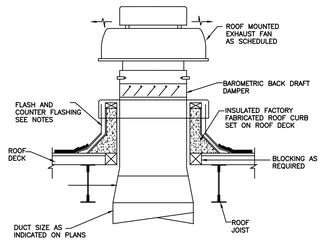
DUCT TURNS 2 1/2" O.C.

DUCT DETAILS



FULL ELBOW TAKE-OFF DETAIL

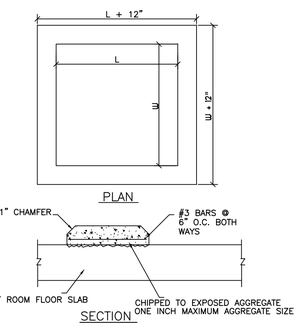
NO SCALE



TYPICAL ROOF MOUNTED EXHAUST FAN DETAIL

NO SCALE

NOTES:
1. PROVIDE FLASHING SUITABLE FOR BUILT-UP ROOFING.



CONCRETE EQUIPMENT PAD DETAIL

NOTES:

1. L IS THE OVERALL LENGTH OF THE EQUIPMENT
2. W IS THE OVERALL WIDTH OF THE EQUIPMENT
3. CONCRETE SHALL BE NOT LESS THAN 3.000 PSI @28 DAYS.
4. HORIZONTAL SURFACES SHALL BE TAMPED AND SCREEDED TO A TRUE SURFACE (TAKING CARE TO FILL ALL LOW SPOTS) AND STEEL TROWELED TO A HARD SLATE-LIKE SURFACE. THE PAD SHALL NOT BE MARKED OFF IN AREAS OR SCORED, BUT SHALL BE LEFT IN ONE PLAIN SURFACE.
5. ALL VERTICAL SURFACES SHALL HAVE A RUBBED FINISH.
6. ALL EXPOSED EDGES SHALL BE CHAMFERED 1".
7. WHERE ONE EDGE OF PAD IS LOCATED ADJACENT TO A WALL OR OTHER CONSTRUCTION, PROVIDE 1" THICK PRE MOLDED EXPANSION JOINT FILLER BETWEEN THE PAD AND THE ADJACENT CONSTRUCTION AND DO NOT CHAMFER THE EDGE ADJACENT TO THE EXPANSION JOINT FILLER.
8. ALL REINFORCING BARS SHALL BE COVERED WITH NOT LESS THAN 1-1/2" OF CONCRETE.
9. THIS DETAIL IS TYPICAL FOR MISCELLANEOUS FLOOR-SUPPORTED EQUIPMENT FOR WHICH NO SPECIFIC DETAIL IS PROVIDED.
10. CONCRETE FOR PADS SHALL BE LIGHTWEIGHT CONCRETE WITH A MINIMUM OF 5.5 SACKS OF CEMENT PER CUBIC YARD. WATER TO CEMENT RATION SHALL NOT EXCEED 6 GALLONS OF WATER PER SACK.
11. SLUMP OF THE CONCRETE SHALL NOT EXCEED 3 INCHES.

MEP PROJECT #1611

PowerSystems

P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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MECHANICAL DETAILS

SCALE: NONE

PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW
REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

If this document is not SIGNED and DATED on the seal, then it is NOT FOR REGULATORY APPROVAL, PERMITTING OR CONSTRUCTION.

STATE OF TEXAS
PAUL R. WILKERSON
50732
REGISTERED PROFESSIONAL ENGINEER

02-10-17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.
M-3
5 OF 17

GREENHECK
Building Value in Air.

Printed Date: 2/1/2017
Job: FIRE STATION # 4 - SAN ANGELO
Mark: GHEP PROXIMITY HOOD
Model: GHEP - 90.00 - S

GHEP

Type 1, Baffle Filter Single Wall - Exhaust Only Low Proximity

Model	Hood Length (in.)	Width (in.)	Bottom Width (in.)	Height (in.)		Exhaust Volume (CFM)	Exhaust SP (in. w.g.)	Double Island
				Front	Back			
GHEP	90	26	17	6	24	1125	0.418	No

Selected Options & Accessories:

Option or Accessory	Description
Mounting Height	60 in. off Finished Floor.
Integral Air Space	Factory Mounted on Back - 3" wide
Filter Type	Stainless Steel Baffle Filters

Material: 430 SS Where Exposed
UL Listing: UL 710 w/out Exhaust Fire Damper

Features:
Performance Enhancing Lip (PEL)
Standing Seam Construction for Superior Strength
Stainless Steel Finish for Higher Corrosion Resistance

Hood End Conditions:
Back Wall - Limited Combustible

Section Data:

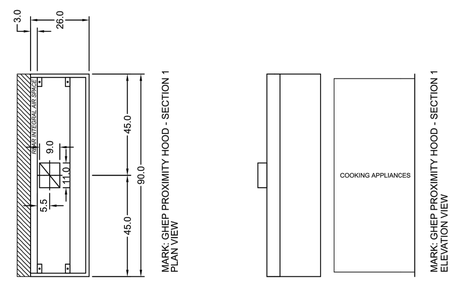
Section Num.	Length (in.)	Volume (CFM)	SP (in. wg)	Filter Qty 16" W	Filter Qty 20" W	Filter Ht. (in.)	Temp. Rating	Light Qty	Light Type	Foot Candles	Drain Location	Weight (lbs)
1	90	1125	0.418	3	2	16	450 deg F	0	None	na	Right	187.5

Exhaust Collar Data:

Section Num.	Collar Num.	Collar Size (LxW) in. or Diameter (in.)	Pos. Off Left (in.)	Pos Off Back (in.)	Velocity (fpm)	Mounting Option
1	1	11 x 9	45	5.5	1636	Factory Mounted Exhaust Collar(s)

GREENHECK
Building Value in Air.

Printed Date: 2/1/2017
Job: FIRE STATION # 4 - SAN ANGELO
Mark: GHEP PROXIMITY HOOD
Model: GHEP - 90.00 - S



NOTE: All dimensions are in units of in.

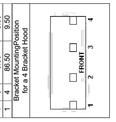
GREENHECK
Building Value in Air.

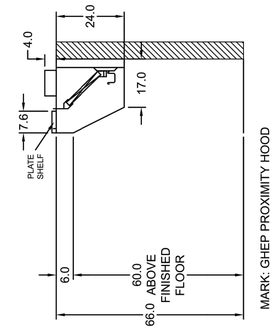
Printed Date: 2/1/2017
Job: FIRE STATION # 4 - SAN ANGELO
Mark: GHEP PROXIMITY HOOD
Model: GHEP - 90.00 - S

Hanger Bracket Locations

Side of Hood	Bracket #	Distance Left (in)	Distance Off Front (in)
1	1	3.50	22.00
1	2	86.50	22.00
1	3	3.50	5.50
1	4	86.50	5.50

Bracket Mounting Position for 4 Bracket Hood





NOTE: All dimensions are in units of in.

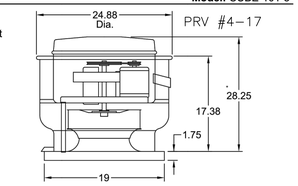
GREENHECK
Building Value in Air.

Printed Date: 2/1/2017
Job: FIRE STATION # 4 - SAN ANGELO
Mark: KEF-1
Model: CUBE-101-3

Model: CUBE-101-3

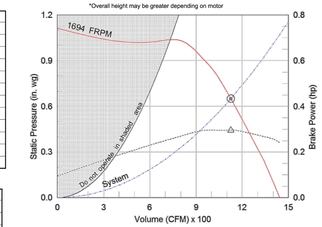
Belt Drive Upblast Centrifugal Roof Exhaust Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	58
Weight w/ Acc's (lb)	94
Max T Motor Frame Size	56
Roof Opening (in.)	14.5 x 14.5



*Overall height may be greater depending on motor

Performance	
Requested Volume (CFM)	1,125
Actual Volume (CFM)	1,125
External SP (in. wg)	0.65
Total SP (in. wg)	0.65
Fan RPM	1694
Operating Power (hp)	0.29
Elevation (ft)	1,791
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.070
Drive Loss (%)	11.2
Tip Speed (ft/min)	4,934
Static Eff. (%)	44



Operating Bhp point
Operating point at Total SP
Operating point at External SP
Fan curve
System curve
Brake horsepower curve

Motor	
Motor Mounted	Yes
Size (hp)	1/3
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	7.2

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	72	73	77	70	63	64	58	53	73	61	10.8

Notes:
All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4 dBA - A weighted sound pressure level, based on 11.0 dB attenuation of octave band at 5 ft. - dBA levels are not licensed by AMCA International.
Sones - calculated using AMCA 301 at 5 ft

GREENHECK
Building Value in Air.

Printed Date: 2/1/2017
Job: FIRE STATION # 4 - SAN ANGELO
Mark: KEF-1
Model: CUBE-101-3

Model: CUBE-101-3

Belt Drive Upblast Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Drain trough - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Internal lifting lugs

Selected Options & Accessories:

UL/cUL 762 Listed - "Power Ventilators for Rest. Exh. Appliances"
Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Roof Curb-Galv., GPI-19-G12, Under Sized 1.5 in. Total
Curb Extension-Galv., VCE-19-G15.25
Grease Trap (PN 475538)
Heat Baffle (Attached)
Unit Warranty: 1 Yr (Standard)

GREENHECK
Building Value in Air.

Printed Date: 2/1/2017
Job: FIRE STATION # 4 - SAN ANGELO
Mark: Canopy Switch
Model: Switches Only

Switches Only

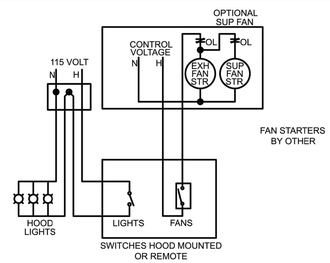
Switches Only

Standard Construction Features:
Switches to be used to control kitchen ventilation systems.

Options & Accessories:

Mounting Location	
Light Switch	1 - 2 Position Light Switch
Fan Switch	1 - 2 Position Fan Switch
Switch Mounting Location	Ship Loose for Remote Mounting

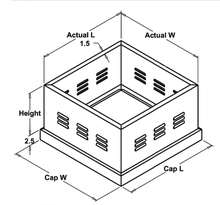
CONTROL PANEL 'LF' INSTALLATION DETAIL



GREENHECK
Building Value in Air.

Printed Date: 2/1/2017
Job: FIRE STATION # 4 - SAN ANGELO

VCE Vented Curb Extension



NOTES: All dimensions shown are in units of inches

STANDARD CONSTRUCTION FEATURES

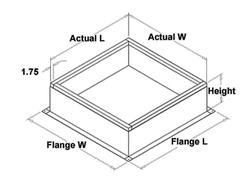
• Welded Aluminum (0.064 in.) or galvanized (18 ga) construction • Louvered vents to vent heat • Designed to provide required 40 in. minimum discharge height above roof line when used with an 8 in. high roof curb and Greenheck model CUBE fan per NFPA 96.
NOTE: Damper Trays are not available.

Mark	Qty.	Cap W x L	Actual W x L	Height
KEF-1	1	19 x 19	17.5 x 17.5	15.25

GREENHECK
Building Value in Air.

Printed Date: 2/1/2017
Job: FIRE STATION # 4 - SAN ANGELO

Roof Curb
Model: GPI



Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 8 in. to 42 in. as specified in 0.5 in. increments.

Notes:
- The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in..
- The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size.
- The Roof Opening Dimension may NOT be the Structural Opening Dimension.
- Damper Tray is optional and must be specified. Tray size is same as damper size.
- Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel. Gridwork is welded to the frame and the frame is welded to the curb.

Roof Curb Configuration:

ID #:	Tag:	Qty:	Curb Cap W x L:	Actual W x L:	Flange W:	Flange L:	Height:	Step Hgt:	Damper Tray W x L:
3	KEF-1	1	19 x 19	17.5 x 17.5	21.5	21.5	12	N/A	x

Notes: All dimensions shown are in units of in.

MEP PROJECT #1611

Power Systems

P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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KITCHEN RANGE DETAILS

SCALE: NONE

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PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW

REVISIONS

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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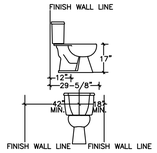
STATE OF TEXAS
PAUL R. WILKERSON
50732
REGISTERED PROFESSIONAL ENGINEER

02-10-17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.
M-4
6 OF 17

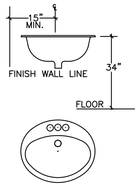


WATER CLOSET, HANDICAPPED: P-1A

KOHLER K-3427 "HIGHLINE" OR APPROVED EQUAL, 17" TALL, FLOOR MOUNTED, WHITE 1.6 GALLON PER FLUSH TANK, ELONGATED BOWL, VITREOUS CHINA WITH BOLT CAPS, K-7637 ANGLE STOP WITH SUPPLY K-4650 LUSTRA SEAT, WHITE, CHECK HINGE

ROUGH-IN:	CW	HW	WASTE	VENT
	3/4"	4"	2"	

NOTE: THIS IS A HANDICAPPED ACCESSIBLE FIXTURE AND MUST STRICTLY COMPLY WITH ALL A.D.A. REQUIREMENTS PERTAINING TO IT.



LAVATORY: P-3

FIXTURE: KOHLER K-2196-4 "PENNINGTON", VITREOUS CHINA, COUNTERTOP 4" CENTERS, 20 1/4" x 17 1/2".

SUPPLY: DELTA 190, "WATERFALL" SERIES, LEVER HANDLE, HIGH SPOUT. PROVIDE 2.0 GPM FLOW AERATOR. PROVIDE LEONARD MODEL 170 THERMOSTATIC MIXING VALVE CHECKSTOPS, LIMIT SET @ 110° F. MIXING VALVE MUST BE CERTIFIED TO MEET ASSE 1070.

STRAINER: K-13885 OFFSET DRAIN.

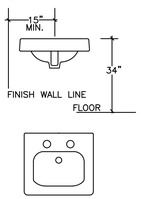
P-TRAP: EBC TA125. 1 1/4" CHROME TRAP. WITHOUT CLEANOUT, PROVIDE ESCUTCHEON.

STOPS: EBC LA12 1/2 X 3/8 LAVATORY SUPPLY, FLEX CHROME RISERS AND OVAL HANDLE STOPS.

GUARDS: TRUEBRO 102W INSULATION GUARDS FOR SUPPLY & TRAP. TRUEBRO 105W INSULATION GUARD FOR DRAIN.

ROUGH-IN:	CW	HW	WASTE	VENT
	1/2"	1/2"	2"	1 1/2"

LAVATORY: P-3A



FIXTURE: KOHLER K-2054 "JAMESTOWN", WALL MOUNT VITREOUS CHINA, 20" x 18", 4" CENTERS. PROVIDE LEONARD MODEL 170 THERMOSTATIC MIXING VALVE CHECKSTOPS, LIMIT SET @ 110° F. MIXING VALVE MUST BE CERTIFIED TO MEET ASSE 1070.

SUPPLY: DELTA 190, "WATERFALL" SERIES, LEVER HANDLE, HIGH SPOUT. PROVIDE 2.0 GPM FLOW AERATOR. PROVIDE LEONARD MODEL 170 THERMOSTATIC MIXING VALVE CHECKSTOPS, LIMIT SET @ 110° F. MIXING VALVE MUST BE CERTIFIED TO MEET ASSE 1070.

STRAINER: K-13885 OFFSET DRAIN OR SD R7308 1 1/4" OFFSET GRID DRAIN.

P-TRAP: SANITARY DASH R 367, 1 1/4" CHROME TRAP, WITHOUT CLEANOUT, PROVIDE ESCUTCHEON.

STOPS: EASTMAN 5M12 LAVATORY SUPPLY, FLEX CHROME RISERS AND OVAL HANDLE STOPS.

CARRIER: JOSAM 17100 CONCEALED WALL SUPPORT.

GUARDS: TRUEBRO 102W INSULATION GUARDS FOR SUPPLY & TRAP. TRUEBRO 105W INSULATION GUARD FOR DRAIN.

ROUGH-IN:	CW	HW	WASTE	VENT
	1/2"	1/2"	2"	

NOTES: LAVATORY IS A HANDICAPPED ACCESSIBLE FIXTURE AND MUST STRICTLY COMPLY WITH ALL ADA REQUIREMENTS PERTAINING TO IT WHEN MOUNTED AT 34" AFF TO LIP.

WORK SINK: P-5

FIXTURE: INTEGRAL WITH STAINLESS TABLE.

SUPPLY: ELKAY LK-167 C.P., PRE RINSE SPOUT, 24" RISER, 36" S.S. PROTECTED FLEXIBLE HOSE.

P-TRAP: SANITARY-DASH R371 1 1/2" 176A WITHOUT CLEANOUT, PROVIDE ESCUTCHEON.

STOPS: EASTMAN 5M12 SUPPLY WITH DUAL STOP FOR BUBBLER; FLEXIBLE RISERS.

GUARDS: TRUEBRO 102W INSULATION GUARDS FOR SUPPLY & TRAP. TRUEBRO 105W INSULATION GUARD FOR DRAIN IF NOT COVERED.

ROUGH-IN:	CW	HW	WASTE	VENT
	1/2"	1/2"	2"	1 1/2"

KITCHEN SINK: P-5A

FIXTURE: ELKAY CR 3322-4, 20GA STAINLESS STEEL, 7 1/4" BOWL DEPTH, 33" X 22", 4 HOLE.

SUPPLY: DELTA 190, "WATERFALL" SERIES, LEVER HANDLE, HIGH SPOUT, WITH HOSE SPRAY. HANDLES 2.0 GPM AND HOSE SPRAY.

STRAINER: SANITARY DASH SS250 METAL STRAINER

P-TRAP: SANITARY DASH R371 1 1/2" CHROME TRAP, PROVIDE ESCUTCHEON.

STOPS: EASTMAN 5M12 WITH FLEXIBLE CHROME RISERS AND OVAL HANDLE STOPS, WITH DUAL STOP FOR DISHWASHER CONNECTION.

DISPOSER WASTE: SANITARY DASH R322.

DISPOSER: IN-SINK-ERATOR 333, 1/2 HP.

ROUGH-IN:	CW	HW	WASTE	VENT
	1/2"	1/2"	2"	1 1/2"

ELECTRIC WATER COOLER: P-6A

HALSEY TAYLOR HTHB-HACGBBLSS-WF OR APPROVED EQUAL DUAL LEVEL, LEAD FREE, SELF CONTAINED ELECTRIC REFRIGERATED WATER, COOLER WITH CAPACITY TO CHILL WATER FROM 80D TO 50F AT 8 GPH FLOW RATE. UNIT SHALL BE DESIGNED TO CONFORM WITH THE AMERICAN DISABILITIES ACT (ADA) STANDARDS. ELECTRICAL CHARACTERISTICS SHALL BE 120V., 60HZ., SINGLE PHASE. STAINLESS STEEL FINISH. CANE SHROUD. MOUNT HIGH UNIT AT 40" AFF TO BUBBLER ORIFICE. MOUNT LOW UNIT AT 36" AFF TO BUBBLER ORIFICE. PROVIDE BOTTLEFILLER & FILTER.

ROUGH-IN:	CW	HW	WASTE	VENT
	1/2"	--	2"	1 1/2"

GAS FIRED WATER HEATER: P-7

WATER HEATER SHALL BE BRADFORD WHITE MODEL LG2PDV57H803N OR AN APPROVED EQUAL. WATER HEATER SHALL HAVE 75 GALLON STORAGE CAPACITY, AN INPUT OF 80,000 BTUH AND A RECOVERY OF 77 GALLONS PER HOUR AT AN 100 DEG. F. RISE. HEATER SHALL HAVE PORCELAINIZED GLASS-LINED TANK. TANK SHALL BE PROTECTED WITH MAGNESIUM ANODE RODS. TANK SHALL HAVE INTELLIGENT GAS CONTROL WITH SPARK TO PILOT IGNITION. UNIT SHALL PROVIDE CLOSED COMBUSTION VENTING SYSTEM WITH CONCENTRIC VENT KIT. SENSOR SHALL PREVENT BURNER OPERATION IF FLAMMABLE VAPORS ARE PRESENT. WORKING PRESSURE RATING SHALL BE 150 PSI. PROVIDE ASME RATED TEMPERATURE & PRESSURE RELIEF VALVE, AND 3-YEAR WARRANTY. UNIT TO HAVE FOAMITE INSULATION. THE WATER HEATER SHALL BE UL LISTED AND EXCEED THE MINIMUM EFFICIENCY REQUIREMENTS OF ASHRAI/IES 90.1b-1992. PROVIDE CONCENTRIC VENT TERMINATION. INSTALL WATTS N36 VACUUM RELIEF VALVE IN COLD WATER SUPPLY LINE. PROVIDE EXPANSION TANK OR VALVE AT WATER HEATER.

UTILITY SINK: P-8A

ADVANCE TABCO MODEL 8-OP-16, 18 GAUGE TYPE 304 SERIES STAINLESS STEEL, LEG MOUNTED, 20"X16" SINGLE COMPARTMENT, HIGH BACK SPLASH, SATIN FINISH.

ADVANCE TABCO MODEL K-240 SERVICE FAUCET

ADVANCE TABCO MODEL K-242 MOP HANGER BRACKET. 3.5" BASKET DRAIN.

HOSE BIBB: P-10

FIXTURE: WOODFORD MODEL B65 FREEZEPROOF 3/4" MALE HOSE THREAD, VACUUM BREAKER.

ROUGH-IN:	CW	HW
	3/4"	--

HOSE BIBB: P-10A

ACORN HOSE VALVE, MODEL 8121 3/4" WITH VACUUM BREAKER, BRASS, CARTRIDGE OPERATED, ROUGH CHROME-PLATED. PROVIDE SECURE MOUNTING INSIDE CHASE. MOUNTED AT AFF. 18".

SHOWER: P-12

SUPPLY: SYMMONS REGULAR SAFETY MIX NO. 1-100 WITH SHOWERHEAD SHOWER CONTROL MUST BE CERTIFIED TO MEET ALL REQUIREMENTS OF ASSE 1016.

DRAIN: 2" STAINLESS STEEL FLOOR DRAIN

BASE: AQUATIC MODEL 3636APANB, 36X36X6, SINGLE DRAIN, PLAIN CURBS, CAST INTEGRAL, WHITE ACRYLIC

WASHING MACHINE BOX: P-15

FIXTURE: OATEY 38878, WITH VALVES AND 1 1/2" DRAIN.

DRYER VENT KIT

FIXTURE: OATEY 110185.

DOWNSPOUT BOOT: P-16

FIXTURE: JR SMITH MODEL #178524, 4" INLET

RECIRCULATING PUMP: P-14

FIXTURE: BELL & GOSSET PL36B BRONZE LEAD FREE 1/6 HP, 1750 RPM, 120 VOLT, 1 PHASE. PROVIDE CORD & PLUG CONNECTION, 1 1/2" FLANGE DISCHARGE.

NOTE: NO SUBSTITUTIONS ALLOWED, UNLESS PRODUCT IS UNAVAILABLE.

FLOOR SINK: P-20

FIXTURE: JOSAM 49000-7 CAST IRON BODY, 2 1/2" CENTER OPENING, DOME STRAINER AND DEEP SEAL P-TRAP.

TRENCH DRAIN: P-21

FIXTURE: MIFAB PROFORMER T1400, 48" X 6", 3" DRAIN WITH T1400-PG-SBG LOAD CLASS E 304 SS BAR GRATE PROVIDE SECTIONS AS REQUIRED

SAND OIL INTERCEPTOR: P-22

SEE DETAIL THIS SHEET.

LINT TRAP: P-22A

JAY R. SMITH 8910-50 FABRICATED STEEL LINT AND SEDIMENT INTERCEPTOR, GRAY DUCO COATING, STAINLESS STEEL PRIMARY AND SECONDARY LINT SCREENS, DIAMOND PLATE COVER, 4" THREADED INLET AND OUTLET, VERIFY COVER IS RATED FOR TRAFFIC AT INSTALLATION LOCATION.

FLOOR DRAIN FD (3")

FIXTURE: JOSAM 30000-5A, 5" DIA. NIKALOY STRAINER, CI BODY AND DEEP SEAL P-TRAP.

NOTE: PROVIDE TRAP PRIMER FOR RESTROOM DRAINS.

WATER CUT OFF VALVE

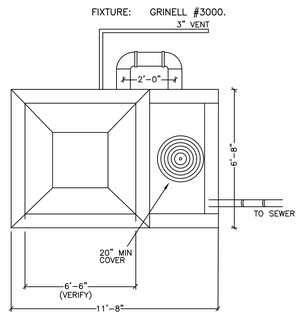
GRINNELL: 3810-2" BALL VALVE

WATER METER CUT OFF VALVE BOX

WESTERN IRON WORK 461-S WITH WORD "WATER" CAST INTO SURFACE

GATE VALVE

FIXTURE: GRINELL #3000.



GENERAL PLUMBING NOTES

1. CONTRACTOR SHALL COMPLY WITH 2009 INTERNATIONAL PLUMBING CODE AND ALL APPLICABLE LOCAL CODES AND AMENDMENTS.
2. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO MINIMIZE CONFLICTS.
3. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO OWNER PROVIDED EQUIPMENT.
4. PLUMBING CONTRACTOR IS RESPONSIBLE FOR CONDENSATE DRAINS FROM AIR HANDLER UNITS.
5. SLEEVE AND FIRE CAULK ALL PENETRATIONS OF RATED ASSEMBLIES.
6. SLEEVE ALL PENETRATIONS OF SLAB.
7. PROVIDE UNIONS AT WATER HEATERS. PROVIDE COUPLINGS TO ALL EQUIPMENT AS REQUIRED. PROVIDE PHYSICAL PROTECTION FOR METERS AND PIPING AROUND BUILDING.
8. MAINTAIN 5' CLEARANCE BETWEEN WASTE AND WATER LINES.
9. PLUMBING FIXTURES MAY BE KOHLER, KILGORE, MANSFIELD, CRANE, AMERICAN STANDARD OR EQUAL. PROVIDE SUPPLY STOPS AT EACH FIXTURE RISER.
10. DO NOT SCALE DRAWINGS. FIELD VERIFY LOCATION OF FIXTURES AND LINES.
11. INSTALL CUTOFF VALVE IN FLUSH BOX AT WATER SERVICE ENTRANCE TO BUILDING.
12. INSTALL GAS SHUT-OFF VALVES WITHIN 6' OF EQUIPMENT.
13. INSTALL WATER HAMMER ARRESTORS AT WATER HEATER AND ONE ARRESTOR FOR EACH FIXTURE GROUP IN AN ACCESSIBLE LOCATION.
14. MAINTAIN 10' CLEARANCE FROM VENT STACKS TO OUTSIDE AIR INTAKES.
15. INSTALL DOUBLE CLEANOUTS AT EXTERIOR OF BUILDING. FURNISH WITH RECESSED COVERS TO PREVENT TRIPPING HAZARD.

NOTES:

1. FIXTURE SUBSTITUTION PERMITTED PROVIDED ARCHITECT CONCURRENCE OBTAINED AND ADA REQUIREMENTS ADHERED TO STRICTLY.
2. WATER CLOSET CONTROLS SHALL BE MOUNTED ON WIDE SIDE OF TOILET AREAS.
3. THIS PROJECT IS REQUIRED TO COMPLY WITH ADA AND THE STATE OF TEXAS ACCESSIBLITY STANDARDS (TAS) OF THE ARCHITECTURAL BARRIERS ACT, TAS 9102. ACCESSIBLE PLUMBING FIXTURES SHALL COMPLY WITH THE STANDARDS AND TABLE REQUIREMENTS.
4. CONTRACTOR TO INSURE THAT REQUIRED ADA CLEARANCES FOR ALL FIXTURES ARE MET AS MEASURED FROM CENTERLINE OF FIXTURE TO FINISHED WALL. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
5. EXPOSED INSULATION ON PIPING AND DRAINS TO BE TRUEBRO OR EQUAL. WRAPPED INSULATION WILL NOT BE ALLOWED.

PLASTIC METER/VALVE BOX

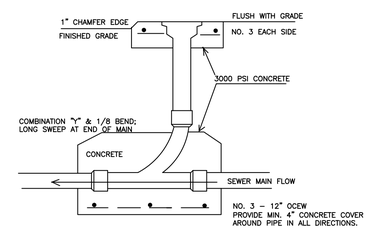
FIXTURE: WIW #34P18 WITH CAST IRON RING & COVER.

WATER HAMMER ARRESTORS:

FIXTURE: JOSAM 75000-S
INSTALL ONE ARRESTOR PER GROUP OF FIXTURES IN ACCESSIBLE LOCATION.

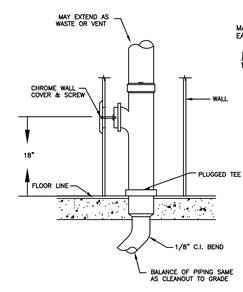
WATER HEATER DRAIN PAN

FIXTURE: OATEY #34152, 22" ALUMINUM SINGLE PHASE, WITH T & P VALVE



MAXIMUM SPACING = 75'-0" ON CENTER AND AT EACH CHANGE OF DIRECTION OF 45 DEG. OR MORE.

LINE CLEANOUT DETAIL
NO SCALE



WALL CLEANOUT DETAIL
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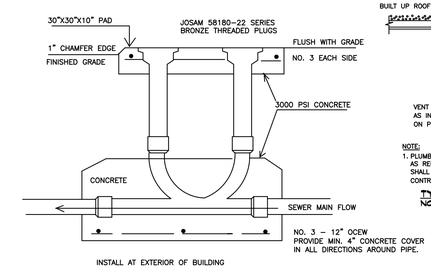
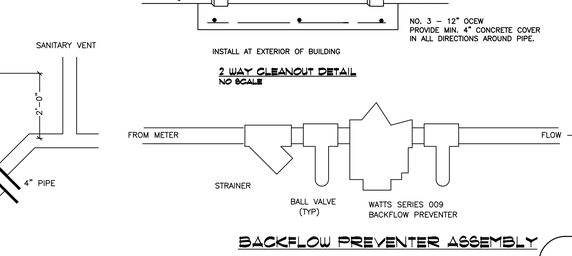


2 WAY CLEANOUT DETAIL
NO SCALE

BACKFLOW PREVENTER ASSEMBLY
NO SCALE

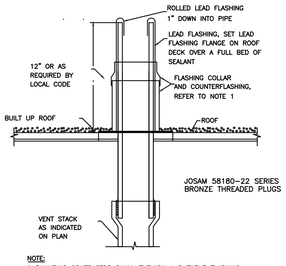


SAND INTERCEPTOR-1500 GAL: P-22
NO SCALE

MECHANICAL SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	MOTORIZED VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BUTTERFLY VALVE
	THREE-WAY MOTORIZED VALVE
	SOLENOID VALVE
	CHECK VALVE
	BALANCING VALVE
	GAUGE COCK
TAP	A.S.M.E. TEMPERATURE & PRESSURE RELIEF VALVE
	GAS COCK
	PRESSURE GAUGE
	THERMOMETER
G	GAS LINE
MV	AUTOMATIC AIR VENT
	STRAINER WITH DRAIN VALVE
	FLEXIBLE PIPE CONNECTION
	UNION
	PIPE ANCHOR
WH	WALL HYDRANT
F	FLOW SWITCH
T	THERMOSTAT
H	HUMIDISTAT
SS	SANITARY SEWER LINE
MH	MANHOLE
CW	COLD WATER LINE
HW	HOT WATER LINE
HWR	HOT WATER RECIRCULATING LINE
180	180 HOT WATER LINE
HWS	HOT WATER SUPLY LINE
HWR	HOT WATER RETURN LINE
HSS	HYDRONIC SYSTEM SUPPLY LINE
HSR	HYDRONIC SYSTEM RETURN LINE
CWS	CHILLED WATER SUPPLY LINE
CWR	CHILLED WATER RETURN LINE
D	CONDENSATE DRAIN LINE WITH FLOW DIRECTION
	FLOW DIRECTION
A	AIR LINE
	CUT-OFF VALVE
V	VENT LINE
STS	STORM SEWER LINE
	90 ELL UP
	90 ELL DOWN
	TEE DROPPING DOWN
	TEE RISING UP

NOTE: ALL SYMBOLS DO NOT NECESSARILY APPEAR ON THESE DRAWINGS



NOTE:
1. PLUMBING CONTRACTOR SHALL FURNISH A SUITABLE FLASHING AS RECOMMENDED BY THE ROOFING MANUFACTURER. FLASHING SHALL BE INSTALLED AND MADE WATERPROOF BY ROOFING CONTRACTOR IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.

TYPICAL VENT THRU ROOF DETAIL
NO SCALE

MEP PROJECT #1611

Power Systems
P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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ORDINANCES

THIS DRAWING IS REPRESENTATIVE IN NATURE ONLY. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL STATE, COUNTY, MUNICIPAL AND FEDERAL LAWS AND/OR ORDINANCES GOVERNING THE PROJECT. IF IN ANY INSTANCE THE PLANS AND SPECIFICATIONS ARE IN DIRECT CONFLICT WITH SUCH LAWS AND/OR ORDINANCES, THE LAWS AND/OR ORDINANCES SHALL HAVE JURISDICTION.

PLUMBING COVER SHEET
NO SCALE

PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW

REVISIONS

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

If this document is not SIGNED and DATED on the seal, then it is NOT FOR REGULATORY APPROVAL, PERMITTING OR CONSTRUCTION.

STATE OF TEXAS
PAUL R. WILKERSON
50732
REGISTERED PROFESSIONAL ENGINEER

02-10-17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

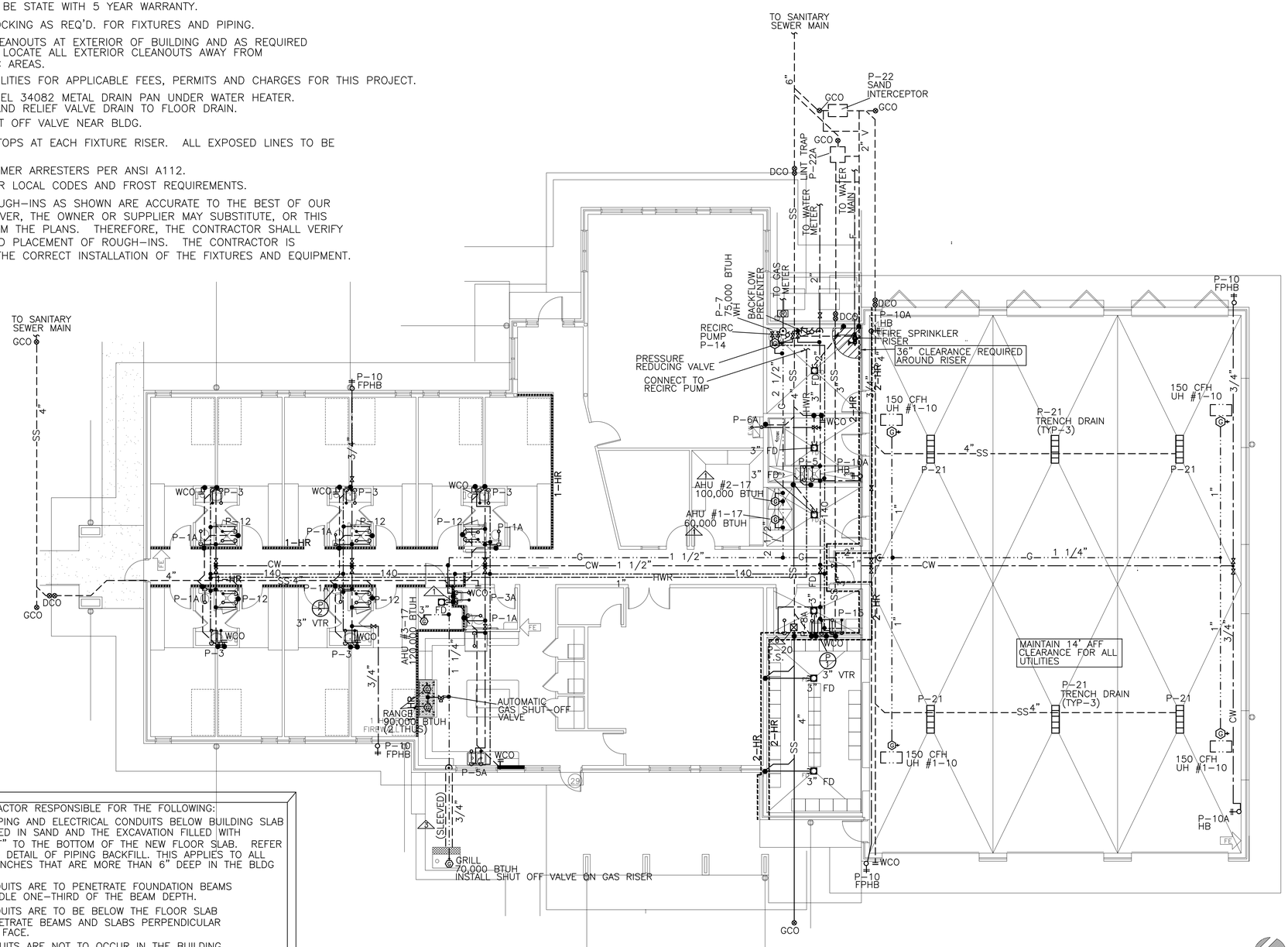
SHEET NO.
P-1
7 OF 17

GENERAL PLUMBING NOTES:

1. DO NOT SCALE DRAWINGS. FIELD VERIFY LOCATION OF FIXTURES AND LINES.
2. GENERAL CONTRACTOR AND PLUMBING CONTRACTOR SHALL VERIFY ALL REQUIREMENTS OF THIS PROJECT BEFORE BIDDING AND PROCEEDING WITH WORK.
3. PROVIDE PHYSICAL PROTECTION FOR METERS AND PIPING AROUND BUILDING.
4. PROVIDE COUPLINGS TO ALL EQUIPMENT AS REQUIRED. PROVIDE UNIONS AT WATER HEATER.
5. REFER TO SHEET P-1 FOR PLUMBING FIXTURE SPECIFICATIONS AND DETAILS.
6. PROVIDE CONDENSATE LINES FROM A/C UNITS ACCORDING TO LOCAL CODE REQUIREMENTS. ROUTE AS SHOWN. USE COPPER FOR EXPOSED PIPING.
7. MAINTAIN 5' CLEARANCE BETWEEN WASTE AND WATER LINES OR PER LOCAL CODES.
8. VERIFY WATER AND WASTE REQUIREMENTS WITH THE CITY OF SAN ANGELO. CONTACT FOR CHARGES AND FEES.
9. PROVIDE TRAP PRIMERS ON ALL DRAINS SUBJECT TO EVAPORATION AND IN REST ROOMS.
10. WATER HEATERS TO BE STATE WITH 5 YEAR WARRANTY.
11. PROVIDE WOOD BLOCKING AS REQ'D. FOR FIXTURES AND PIPING.
12. INSTALL DOUBLE CLEANOUTS AT EXTERIOR OF BUILDING AND AS REQUIRED BY LOCAL CODES. LOCATE ALL EXTERIOR CLEANOUTS AWAY FROM PEDESTRIAN TRAFFIC AREAS.
13. CONTACT LOCAL UTILITIES FOR APPLICABLE FEES, PERMITS AND CHARGES FOR THIS PROJECT.
14. INSTALL OATEY MODEL 34082 METAL DRAIN PAN UNDER WATER HEATER. ROUTE PRESSURE AND RELIEF VALVE DRAIN TO FLOOR DRAIN.
15. LOCATE WATER SHUT OFF VALVE NEAR BLDG.
16. PROVIDE SUPPLY STOPS AT EACH FIXTURE RISER. ALL EXPOSED LINES TO BE CHROME PLATED.
17. INSTALL WATER HAMMER ARRESTERS PER ANSI A112.
18. INCREASE VTR'S PER LOCAL CODES AND FROST REQUIREMENTS.
19. THE EQUIPMENT ROUGH-INS AS SHOWN ARE ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, THE OWNER OR SUPPLIER MAY SUBSTITUTE, OR THIS ITEM MAY VARY FROM THE PLANS. THEREFORE, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND PLACEMENT OF ROUGH-INS. THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT INSTALLATION OF THE FIXTURES AND EQUIPMENT.
20. PLUMBING CONTRACTOR TO COORDINATE VENT STACKS WITH OUTSIDE AIR INTAKES OF EQUIPMENT AND MAINTAIN AT LEAST 10'-0" CLEARANCE OR AS PER LOCAL CODE REQUIREMENTS.
21. PROVIDE THERMOSTATIC MIXING VALVE AT ALL HANDWASHING FIXTURES. MUST MEET ASSE 1070.
22. ALL EXPOSED PIPING TO BE COPPER.
23. PLUMBING CONTRACTOR TO COORDINATE SEWER LINE INSTALLATION WITH FOUNDATION DRAWINGS. MAINTAIN 12" CLEARANCE FROM FOOTINGS.
24. INSTALL TENT ABOVE ALL SUPPLY LINES IN ATTIC TO ALLOW BLOWN INSULATION.
25. OWNER PREFERS PEX PIPING. PROVIDE COST INCREASE/DECREASE AS A LINE ITEM IN BID TO INSTALL PEX PIPING. ALL PEX PIPING SHALL BE INSULATED OR FIRE WRAPPED, AND SUPPORTED ITS ENTIRE LENGTH. INSTALLATION SHALL BE AS NEAT AND PROFESSIONAL AS POSSIBLE.

PLUMBING NOTES INDICATED BY "△":

1. RUN 3/4" CONDENSATE LINE FROM AHU TO FLOOR DRAIN IN ROOM.
2. INSTALL CONDENSATE PUMP FOR EACH FCU. ROUTE CONDENSATE LINE TO FLOOR DRAIN IN AHU #3-17 MECHANICAL ROOM.
3. ROUTE GAS LINE UNDER SLAB. LINE TO BE SLEEVED.
4. DRAIN WATER HEATER TO FLOOR DRAIN IN ROOM. PROVIDE CONCENTRIC VENT TERMINATION KIT. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
5. DOMESTIC WATER MAXIMUM DEMAND IS 24 GPM.
6. CONTRACTOR TO COORDINATE WITH OWNER LOCATION OF ICE MAKER PRIOR TO INSTALLATION.



PLUMBING CONTRACTOR RESPONSIBLE FOR THE FOLLOWING:

ALL PLUMBING PIPING AND ELECTRICAL CONDUITS BELOW BUILDING SLAB ARE TO BE BEDDED IN SAND AND THE EXCAVATION FILLED WITH "FLOWABLE GROUT" TO THE BOTTOM OF THE NEW FLOOR SLAB. REFER TO 38-S8 FOR A DETAIL OF PIPING BACKFILL. THIS APPLIES TO ALL DITCHES AND TRENCHES THAT ARE MORE THAN 6" DEEP IN THE BLDG PAD.

PIPING AND CONDUITS ARE TO PENETRATE FOUNDATION BEAMS ONLY IN THE MIDDLE ONE-THIRD OF THE BEAM DEPTH.

PIPING AND CONDUITS ARE TO BE BELOW THE FLOOR SLAB AND ARE TO PENETRATE BEAMS AND SLABS PERPENDICULAR TO THE ELEMENT FACE.

ELECTRICAL CONDUITS ARE NOT TO OCCUR IN THE BUILDING SLAB WHERE CONDUIT IS HORIZONTAL. PROVIDE A MINIMUM OF 3" CLEAR BETWEEN THE CONDUIT AND THE BOTTOM OF A FLOOR SLAB.

PLUMBING PLAN

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

0 5' 10' 20'

PLAN NORTH

MEP PROJECT #1611

Power Systems
P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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PROJECT:	201436
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REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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PAUL R. WILKERSON 50732 REGISTERED PROFESSIONAL ENGINEER

02-10-17

GARY DONALDSON ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.
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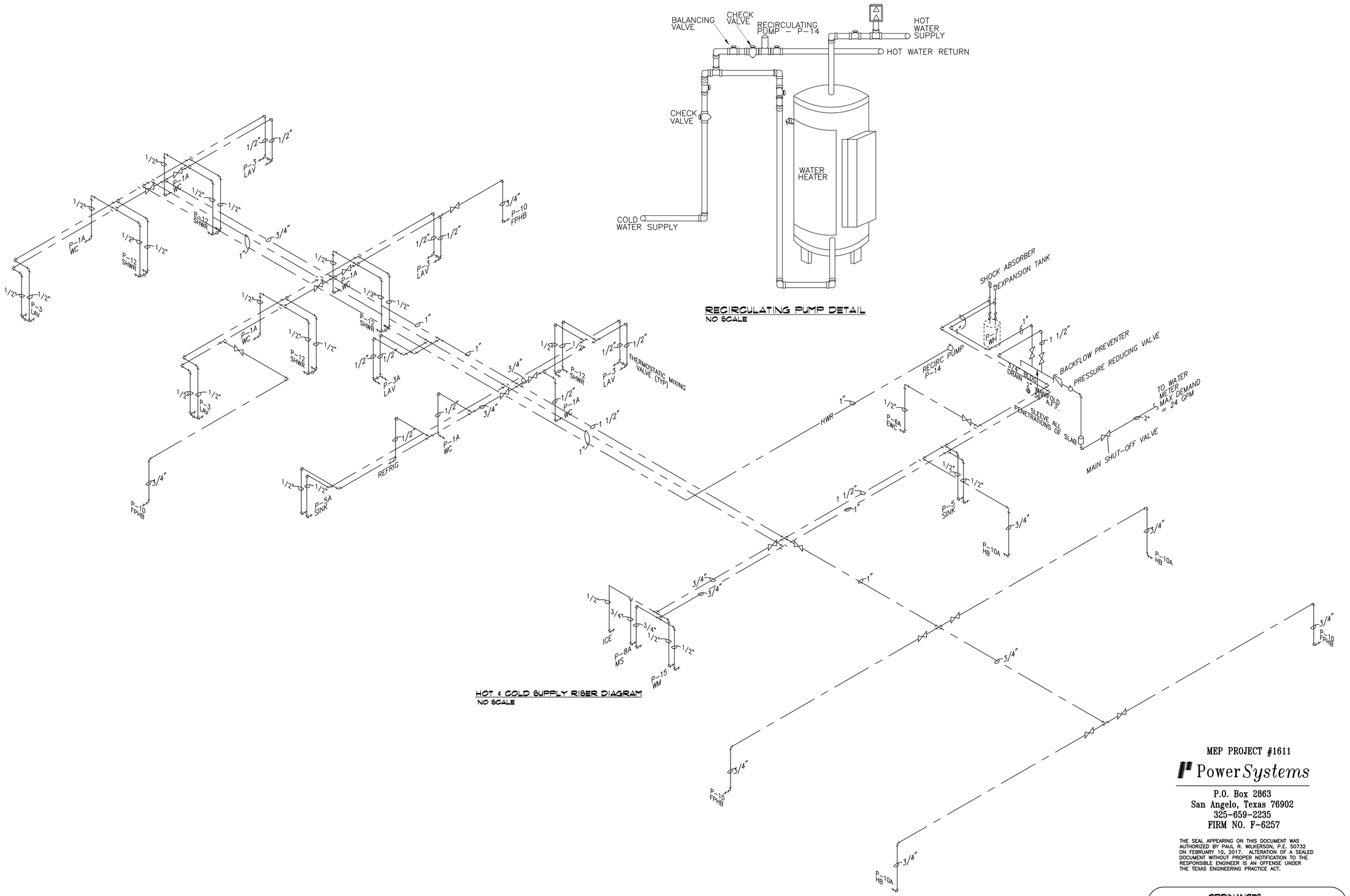

RECIRCULATING PUMP DETAIL
NO SCALE

HOT & COLD SUPPLY RISER DIAGRAM
NO SCALE

PLUMBING RISER DIAGRAMS
NO SCALE

MEP PROJECT #1611

PowerSystems
P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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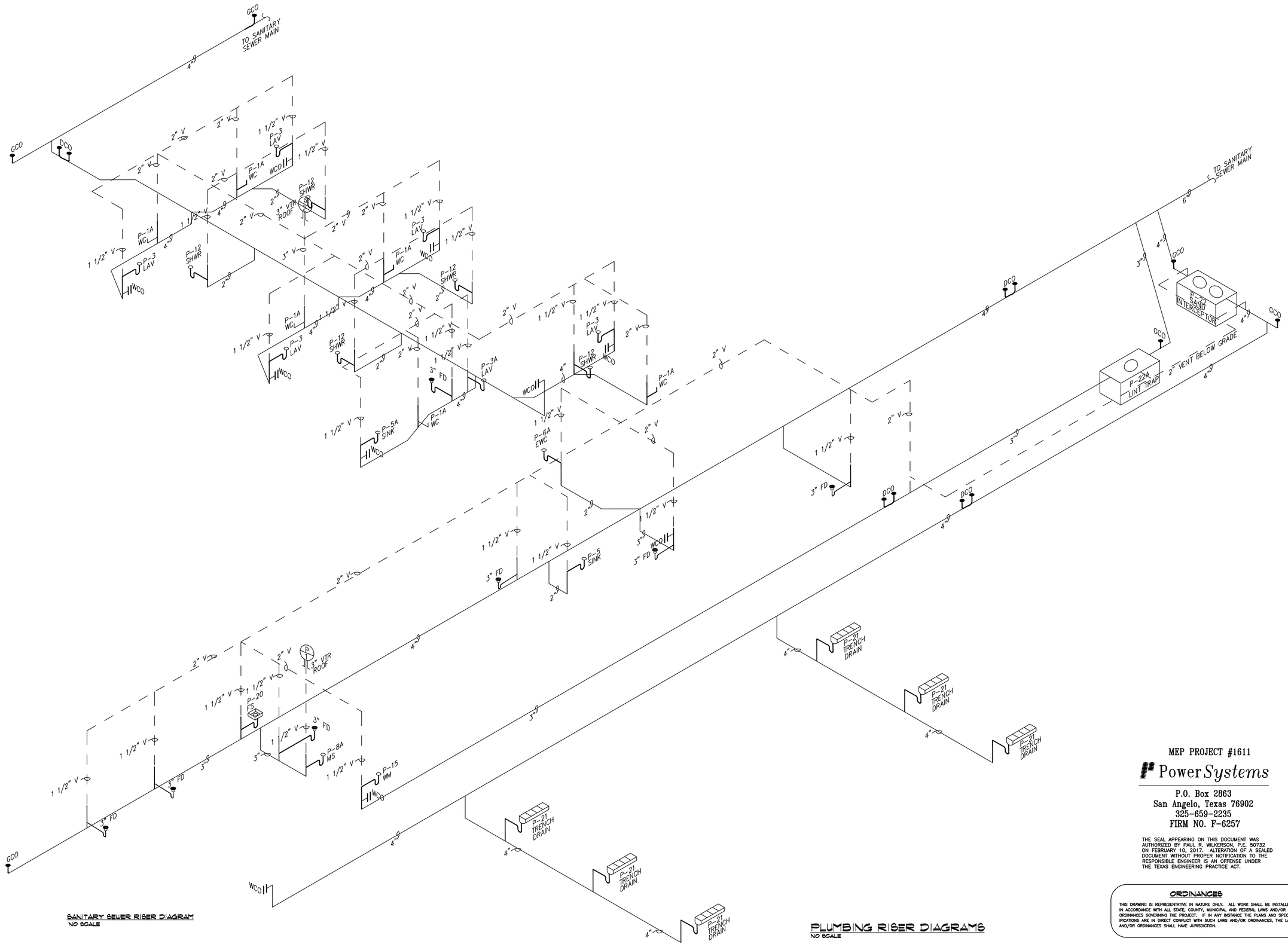

SANITARY SEWER RISER DIAGRAM
NO SCALE

PLUMBING RISER DIAGRAMS
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Power Systems

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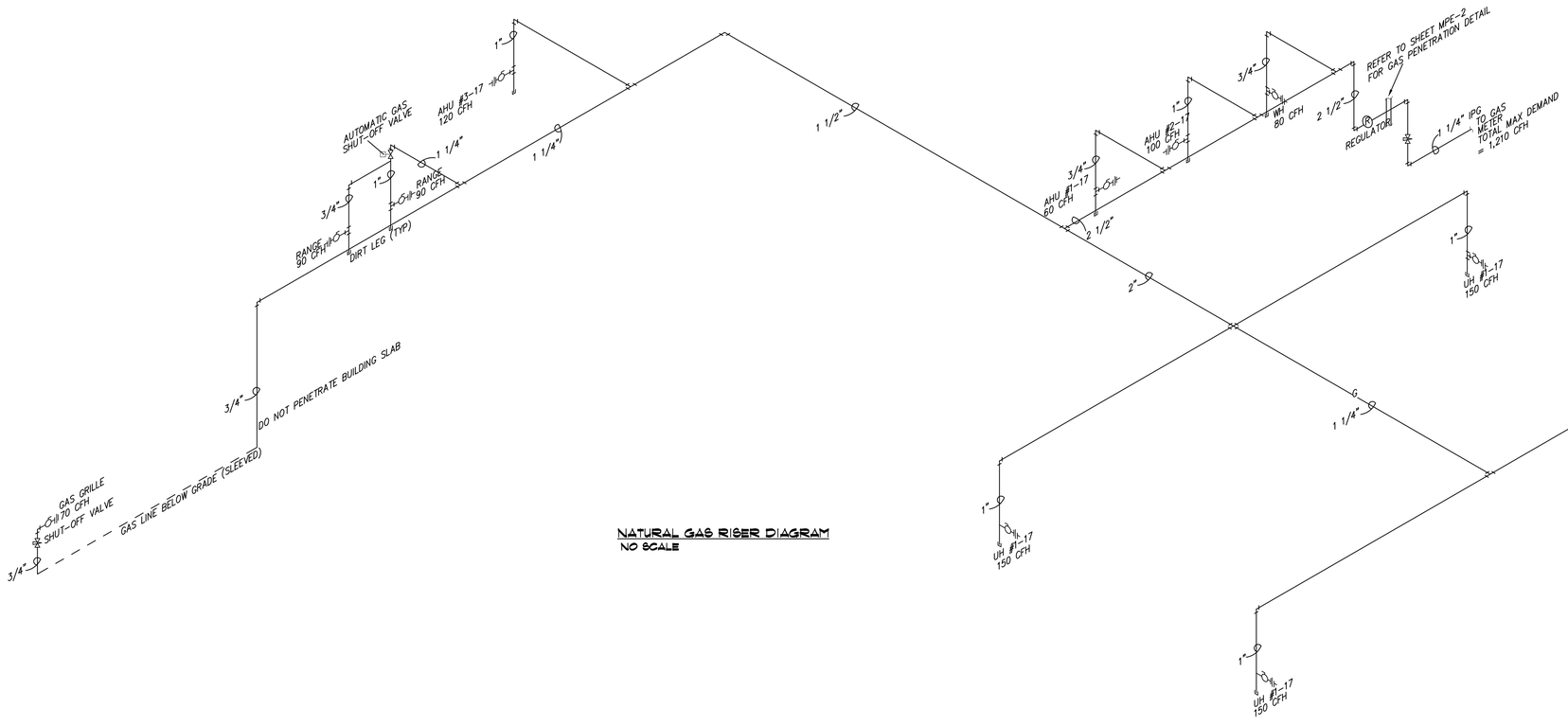

NATURAL GAS RISER DIAGRAM
NO SCALE

NATURAL GAS RISER DIAGRAM
NO SCALE

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FIRE ALARM SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	REMARKS
FACP	FIRE ALARM CONTROL PANEL	
FAP	FIRE ALARM PANEL	
PS	FIRE ALARM MANUAL PULL STATION, 46" AFF UON, SUBSCRIPT INDICATES ANNUNCIATION ZONE. NON-ADDRESSABLE	
S	SMOKE DETECTOR	
D	DUCT SMOKE DETECTOR WITH SAMPLING TUBE	
R	RELAY	
H	HEAT DETECTOR	
H	AUDIBLE/VISUAL ALARM, 6'-8" AFF UON	
H WP	WEATHERPROOF AUDIBLE ALARM	
H	ELECTROMAGNETIC DOOR HOLDER	
H	VISUAL ALARM, 6'-8" AFF UON	
FS	SPRINKLER SYSTEM FLOW SWITCH	
TS	SPRINKLER SYSTEM TAMPER SWITCH	
HOOD	KITCHEN HOOD FIRE SUPPRESSION SYSTEM	
FASPS	FIRE ALARM SIGNAL POWER SUPPLY	
H	AUDIBLE/VISUAL ALARM CEILING MOUNT	
SD	SMOKE DETECTOR CONNECTED TO SYSTEM	

NOTE: ALL SYMBOLS DO NOT NECESSARILY APPEAR ON THESE DRAWINGS

DISTRIBUTION SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	REMARKS
A-1,3,5	HOMERUN-TO CIRCUIT NO. 1,3,5 ON PANEL "A"	
	BRANCH CIRCUIT WIRING IN CONDUIT (NEUTRAL, PHASE, SWITCHLEG, GROUND)	
	CKT ROUTED THRU CONTACTOR CONTROLLED BY TIME CLOCK AND/OR PHOTOCELL	
	CIRCUIT ROUTED THRU CONTACTOR	
	BRANCH CIRCUIT CONCEALED IN WALL OR CEILING	
	BRANCH CIRCUIT OR CONDUIT UNDER FLOOR	
	BRANCH CIRCUIT OR CONDUIT EXPOSED AND/OR SURFACE MOUNTED	
P	PHOTOCELL	
J	JUNCTION BOX	
J	JUNCTION BOX, FLOOR MOUNTED PEDESTAL	
J	JUNCTION BOX, FLOOR MOUNTED FLUSH	
$M	MANUAL STARTER WITH THERMAL TRIP	
	DISCONNECT SWITCH, AMP/POLE/NEUTRAL/FUSE/ENCLOSURE	
	STARTER	
	COMBINATION STARTER/DISC. SW., AMP/POLE/STARTER/FUSE/ENCLOSURE	
	POWER AND/OR LIGHTING PANELBOARD, REFER TO PANELBOARD SCHEDULE	
	SWITCHBOARD, REFER TO SWITCHBOARD SCHEDULE OR RISER	
D	RECESSED DOWNLIGHT	
	SURFACE MOUNTED DOWNLIGHT	
D	FLUORESCENT LIGHT FIXTURE (CROSS HATCH INDICATES 24 HOUR OPERATION)	
B	WALL MOUNTED BELL	
C	GAME CLOCK	
CB	CALL BUTTON FOR INTERCOM SYSTEM	

NOTE: ALL SYMBOLS DO NOT NECESSARILY APPEAR ON THESE DRAWINGS

MISCELLANEOUS SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	REMARKS
IC	INTERCOM UNIT	
CCTV	CLOSED CIRCUIT TV CAMERA	
DA	DOOR ALARM	
IC	INTERCOM EQUIPMENT RACK	
DCC	DOOR CONTROL SYSTEM CABINET	
TVM	CLOSED CIRCUIT TELEVISION MONITOR	
MDS	DIGITAL DISPLAY MULTIFUNCTION TELEPHONE	

NOTE: ALL SYMBOLS DO NOT NECESSARILY APPEAR ON THESE DRAWINGS.

MISCELLANEOUS SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	REMARKS
	DUPLEX RECEPTACLE 20A/120V 18" AFF UON	
	RECEPTACLE MOUNTED ABOVE COUNTERTOP	
IG	RECEPTACLE WITH ISOLATED INSULATED GROUND	
	FOURPLEX RECEPTACLE 20A/120V 18" AFF UON	
C	CLOCK RECEPTACLE 120V 96" AFF UON	
	SPECIAL PURPOSE RECEPTACLE 18" AFF SEE PLANS FOR DETAILS	
	RECEPTACLE MOUNTED HORIZONTALLY	
	DUPLEX RECEPTACLE, FLOOR MTD. FLUSH	
	DUPLEX RECEPTACLE, FLOOR MTD. PEDESTAL	
WP	WEATHER-PROOF RECEPTACLE 18" AFF UON	
SP	DUPLEX RECEPTACLE W/SURGE SUPPRESSION 20A/125V 18" AFF UON	
$	SINGLE POLE SWITCH 20A, 48" AFF UON	
$3	THREE-WAY SWITCH 20A, 48" AFF UON	
$K	SINGLE POLE KEY OPERATED SWITCH 20A, 48" AFF UON	
$D	DIMMER SWITCH, 48" AFF UON	
$P	SWITCH WITH PILOT LIGHT, 48" AFF UON	
$T	SINGLE POLE SWITCH WITH TIMER, 48" AFF UON	
$V	VOLUME SWITCH FOR INTERCOM SYSTEM EQUAL TO SOUNDOLIER AT10 INDUCTIVE TYPE	
GFI	RECEPTACLE WITH GROUND FAULT INTERRUPTER, 18" AFF UON	
	DUPLEX RECEPTACLE, LOWER HALF SWITCHED	
MD	MOTION DETECTOR 360° CEILING MOUNT	

NOTE: ALL SYMBOLS DO NOT NECESSARILY APPEAR ON THESE DRAWINGS

COMMUNICATION AND DATA SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	REMARKS
	TELEPHONE OUTLET, 18" AFF UON	3/4" E.C. TO ABOVE CEILING
W	TELEPHONE OUTLET, WALL MOUNTED 48" AFF UON	3/4" E.C. TO ABOVE CEILING
P	PUBLIC PAY TELEPHONE OUTLET, 48" AFF UON	3/4" E.C. TO ABOVE CEILING
	DATA OUTLET, 18" AFF UON (2 PORTS)	1" E.C. TO ABOVE CEILING
TV	TELEVISION OUTLET, 18" AFF UON	3/4" E.C. TO ABOVE CEILING
SP	CEILING MOUNT SPEAKER FOR EMERGENCY SYSTEM	
S	CEILING MOUNT SPEAKER FOR INTERCOM	
WAP	WIRELESS ACCESS PORT	3/4" E.C. TO ABOVE CEILING

NOTE: ALL SYMBOLS DO NOT NECESSARILY APPEAR ON THESE DRAWINGS

GENERAL ELECTRICAL NOTES

A. ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE 2008 NATIONAL ELECTRICAL CODE AND LOCAL CODES.

B. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO MINIMIZE CONFLICTS.

C. ALL WIRE AND CABLE SIZES ARE FOR COPPER. ALUMINUM WILL NOT BE ALLOWED. MINIMUM WIRE SIZE IS #12. MINIMUM CONDUIT SIZE IS 3/4 INCH. ALL POWER CONDUCTORS TO BE INSTALLED IN CONDUIT.

D. NO CONDUCTOR SHALL BE LOADED BEYOND ITS ALLOWABLE AMPACITY.

E. CONFIRM WITH LOCAL CODES, MECHANICAL CONTRACTOR AND EQUIPMENT VENDORS ON THE LOCATION AND MOUNTING METHOD FOR DISCONNECT SWITCHES, MANUAL MOTOR STARTERS, COMBINATION STARTER/DISCONNECTS, ETC. PRIOR TO ELECTRICAL ROUGH-IN AND INSTALLATION. COMPLY WITH ADA MOUNTING HEIGHTS.

F. ELECTRICAL CONTRACTOR SHALL DOUBLE CHECK ALL FEEDER CONDUCTOR AND CONDUIT SIZES WITH NEC AND LOCAL CODES PRIOR TO BID, ORDERING OR CUTTING CONDUCTORS.

G. ELECTRICAL CONTRACTOR SHALL COORDINATE WORK WITH ARCHITECTURAL DRAWINGS AND REPORT ANY DISCREPANCIES TO ARCHITECT/ENGINEER IMMEDIATELY.

H. UNLESS OTHERWISE NOTED, BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER (THHN OR EQUAL) SIZED AS FOLLOWS:

BREAKER RATING	WIRE SIZE
20 AMP	#12 AWG
30	#10
40	#8
50	#8
60	#6
70	#4
80	#4
90	#3
100	#2
110	#2
125	#1
150	#1/0
175	#2/0
200	#3/0

ALL BRANCH CIRCUITS WITH AN OVERALL LENGTH IN EXCESS OF 75 FEET SHALL BE INCREASED IN WIRE SIZE TO ACCOMMODATE VOLTAGE DROP.

I. CONTRACTOR SHALL CONNECT MOTORIZED DAMPERS FROM ASSOCIATED UNITS POWER SUPPLY FOR ALL PRV, SEF, SSF MISCELLANEOUS FANS, ETC. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTRACTOR.

J. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO OWNER PROVIDED EQUIPMENT.

K. ALL J-BOXES SHALL BE ACCESSIBLE FOR FUTURE SERVICE PER NEC. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES AND POINTS OF ACCESS.

L. LIGHT FIXTURES SHALL BE OPERATED BY SWITCH LOCATED IN SAME ROOM UNLESS OTHERWISE NOTED.

M. CONDUITS SHALL NOT BE ROUTED EXPOSED IN FINISHED AREAS UNLESS NOTED.

N. SEE MECHANICAL FLOOR PLANS FOR THERMOSTAT LOCATIONS.

O. PROVIDE STAINLESS STEEL COVERPLATES.

P. SEAL AROUND ALL EXTERIOR WALL PENETRATIONS.

Q. DRAWINGS ARE SCHEMATIC IN NATURE AND MAY NOT BE DRAWN EXACTLY TO SCALE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT ROUTING OF ALL SERVICES WITH EXISTING CONDITIONS AND ALL OTHER TRADES TO AVOID SPACING OR ROUTING PROBLEMS.

R. ALL PENETRATIONS OF FIRE RATED PARTITIONS DUE TO THE INSTALLATION OF THE ELECTRICAL SYSTEMS SHALL BE SEALED TO MAINTAIN THE FIRE RATING OF THE WALL.

S. INSTALL MARKING TAPE IN TRENCH FOR ALL UNDERGROUND UTILITIES.

T. PERMANENTLY CONNECTED EQUIPMENT NOT SUPPLIED WITH ON/OFF UNIT SWITCH TO SERVE AS A DISCONNECTING MEANS SHALL BE SUPPLIED WITH DISCONNECT AS PER N.E.C. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO FURNISH ALL DISCONNECTS.

U. ALL RESTROOM, SNACK BAR, EXTERIOR AND ROOFTOP RECEPTACLES TO BE GFCI.

INTERIOR LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	LAMPS	REMARKS
B	METALUX	4WSNLED-LD4-64HL-F-UNV-L835-CD1-U	73W LED 3500° K	PREMIUM WRAPAROUND, 0-10V DIMMING, ACRYLIC LENS
B2	METALUX	4WSNLED-LD4-48HL-F-UNV-L835-CD1-U	48W LED 3500° K	PREMIUM WRAPAROUND, 0-10V DIMMING, ACRYLIC LENS
C	METALUX	4WSNLED-LD4-48HL-F-UNV-L835-CD1-U	73W LED 3500° K	4' SURFACE WRAPAROUND, 0-10V DIMMING, FROST ACRYLIC LENS
D	CORELITE	12-WS-5L35-1D-UNV-48-T1-4'STD-W	79W LED 3500° K	SUSPENDED RIGID PENDANT, DIRECT/INDIRECT DISTRIBUTION, WET LOCATION, 0-10V DIMMING, MOUNT AT 10'-8" TO THE BOTTOM OF FIXTURE.
DE	CORELITE	12-WS-5L35-1DB-UNV-48-T1-4'STD-W	79W LED 3500° K	SUSPENDED RIGID PENDANT, DIRECT/INDIRECT DISTRIBUTION, WET LOCATION, 0-10V DIMMING, MOUNT AT 10'-8" TO THE BOTTOM OF FIXTURE.
E	HALO	SLD612-9-35-WH-UNV-JB-SLD6TRMSN	15W LED 3500° K	6" SURFACE DOWNLIGHT, WET LOCATION SATIN NICKEL TRIM, JUNCTION BOX
F	METALUX	2SNLED-LD4-18SL-LN-UNV-L835-CD1-U	17W LED 3500° K	2' LENSED STRIPLIGHT, SEMI-FROST LENS, NARROW, MOUNT ABOVE DOOR HEIGHT
G	FAILSAFE	FWL-D-2-LD4-UNV-STD-STD-35-80-EDC-1-AMA	43W LED 3500° K	UP/DOWN, WET LOCATION, WALL MOUNT SEE NOTE 1.
H	LIGHTWAY	ADMV-24-LED-U-21W-3-P1-WSA	21W LED 3500° K	2' VANITY, WHITE SMOOTH FINISH, ACRYLIC DIFFUSER, WET LOCATION RATED
K	BROAN	658		COMBINATION HEATER, EXHAUST FAN
L	METALUX	HBLE-D-LD4-36-W-CL-UNV-L835-CD1-U	307W LED 3500° K	HIGH BAY EFFICIENCY LUMINAIRE, WET LOCATION RATED, CLEAR ACRYLIC LENS, SUSPEND FROM CLG, MOUNT AT 14'-0" A.F.F.
LE	METALUX	HBLE-D-LD4-36-W-CL-UNV-EL14W-L835-CD1-U	307W LED 3500° K	HIGH BAY EFFICIENCY LUMINAIRE, WET LOCATION RATED, CLEAR ACRYLIC LENS, SUSPEND FROM CLG, MOUNT AT 14'-0" A.F.F., EMERGENCY BATTERY BACKUP
M	DECO LIGHTING	DVTL-LED-20-035-UNV-CM	20W LED 3500° K	CEILING MOUNT HOOD LIGHT, VAPORTITE.
N	ATLANTIC LIGHTING	FM-44RB-DI-PF-2-T5-4-W-TW-UNIV	2-F28W T5	DIRECT/INDIRECT WALL VALANCE, 2 LAMP, SEE NOTE #2, WHITE SHIELDING MOUNT ON WALL AT 10'-0"
R	METALUX	4WSNLED-LD4-60HL-F-UNV-L835-CD1-U	67W LED 3500° K	PREMIUM WRAPAROUND, 0-10V DIMMING, ACRYLIC LENS
RE	METALUX	4WSNLED-LD4-60HL-F-UNV-EL14W-L835-CD1-U	67W LED 3500° K	PREMIUM WRAPAROUND, 0-10V DIMMING, ACRYLIC LENS
S	HALO	HU10244D9-30-P	15W LED 3500° K	UNDERCABINET LIGHT FIXTURE, SEE NOTE 3.
	PROGRESS LIGHTING	P2500	———	42" BUILDER FAN. BRUSH STAINLESS FINISH. MOUNT AT 120" A.F.F.
	SURE-LITES	CX71	INCLUDED-LED	EXIT LIGHT W/BATTERY BACKUP

EXTERIOR LIGHT FIXTURE SCHEDULE

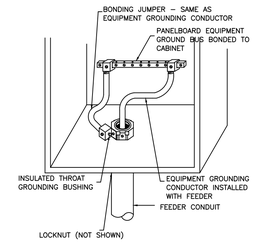
XA	PORTFOLIO	LD8AS40D010TE-ER8AS408 40-8LW1LI	46W LED 4000° K	8" APERTURE, 0-10V DIMMING, SPECULAR CLEAR, WIDE REFLECTOR
XAE	PORTFOLIO	LD8AS40D010TE-EM14-ER8AS40840-8LW1LI	46W LED 4000° K	8" APERTURE, 0-10V DIMMING, SPECULAR CLEAR, WIDE REFLECTOR, 14W EMERG. MODULE WITH REMOTE TEST SWITCH
XB	LUMINAIRE LED	AEL24-20W HO-208-4000	20W HO LED 4000° K	FORWARD THROW; MOUNT ON CARPORT STURCTURE; COLOR BY ARCHITECT
XC	MCGRAW-EDISON	ISC-F02-LED-E1-BL34-BZ	50W LED 4000° K	WALL MOUNT LUMINAIRE, BRONZE FINISH, FORWARD THROW TYPE IV, CYLINDER
XD	INVUE	EMM-F03-EL-5MQ-50-FL-BZ-VA6109-BZ-SRX4A15BZ X1	100W LED 4000° K	AREA LIGHT ON 15' SINGLE POLE, DARK BRONZE
XE	HUNZA	ST150/U/CAN-R-S/22-4-ST150FL-SBZ	62W LED 4000° K	FLAGPOLE INGROUND UPLIGHT, 22' REFLECTOR, ADJUSTABLE, FROSTED LENS SOLID BRONZE, 120 VOLT
XLP	INVUE	EMM-F03-EL-5MQ-50-FL-BZ-VA6109-BZ-SRX4A15BZ X1	100W LED 4000° K	DRIVE LIGHT ON 30' POLE, 2 ARMS @180', DARK BRONZE, 208 VOLT

NOTES:

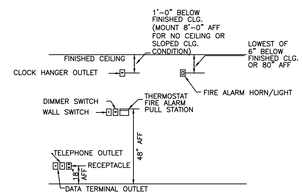
1. TOP LAMP TO BE CONNECTED TO EMERGENCY SYSTEM. BOTTOM LAMP TO BE SWITCHED AS INDICATED ON PLAN.
2. MOUNT FIXTURE AT HEIGHT DETERMINED BY ARCHITECT.
3. CONTACTOR RESPONSIBLE FOR DETERMINING REQUIRED LENGTH OF FIXTURE TO INSURE CONTINOUS LIGHTING UNDER CABINET. FIXTURE AVAILABLE IN 12", 21", 24", 33", 42". COORDINATE WITH ACTUAL CABINET DIMENSIONS.
4. CONNECT 2 LAMPS TO ONE BALLAST ON ROOM CKT., 1 LAMP TO SECOND BALLAST ON ZETRON INITIATED CKT.

ELECTRICAL ABBREVIATIONS

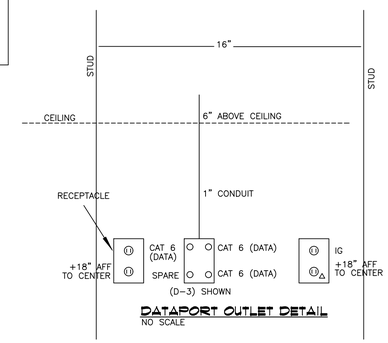
A	AMPERES	MAX	MAXIMUM
A/C	AIR CONDITIONING	MCB	MAIN CIRCUIT BREAKER
AFF	ABOVE FINISHED FLOOR	MCC	MOTOR CONTROL CENTER
AUX	AUXILIARY	MDP	MAIN DISTRIBUTION PANEL
ATS	AUTOMATIC TRANSFER SWITCH	MECH	MECHANICAL
AWG	AMERICAN WIRE GAGE	MIN	MINIMUM
		MISC	MISCELLANEOUS
BLDG	BUILDING	MLO	MAIN LUG ONLY
		MSB	MAIN SWITCHBOARD
C	CONDUIT	MTD	MOUNTED
CB	CIRCUIT BREAKER		
CCTV	CLOSED CIRCUIT TELEVISION		
CKT	CIRCUIT	NEC	NATIONAL ELECTRICAL CODE
CLG	CEILING	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
DWG	DRAWING	NF	NON FUSED
		NIC	NOT IN CONTRACT
EA	EACH	N.C.	NORMALLY CLOSED
EC	ELECTRICAL CONDUIT	N.O.	NORMALLY OPEN
EF	EXHAUST FAN		
ELEC	ELECTRIC/ELECTRICAL	NO.	NUMBER
EMT	ELECTRICAL METALLIC TUBING	NTS	NOT TO SCALE
EPO	EMERGENCY POWER OFF		
EQUIP	EQUIPMENT	OC	ON CENTER
EWC	ELECTRIC WATER COOLER		
		PF	POWER FACTOR
FA	FIRE ALARM	PH	PHASE
FACP	FIRE ALARM CONTROL PANEL	PNL	PANEL
		PVC	POLYVINYL CHLORIDE
G	GROUND	RECPT	RECEPTACLE
GFI	GROUND FAULT INTERRUPT	REF	REFER TO
		RGS	RIGID GALVANIZED STEEL
HP	HORSEPOWER		
HVAC	HEATING/VENTILATION/ AIR CONDITIONING	TYP	TYPICAL
		UL	UNDERWRITER'S LABORATORIES
IG	ISOLATED GROUND		
IMT	INTERMEDIATE METAL	UON	UNLESS OTHERWISE NOTED
J-BOX	JUNCTION BOX	V	VOLTS
		VA	VOLT-AMPERES
KVA	KILOVOLT-AMPERES		
KW	KILOWATTS	WP	WEATHERPROOF



PANELBOARD BONDING DETAIL
NO SCALE

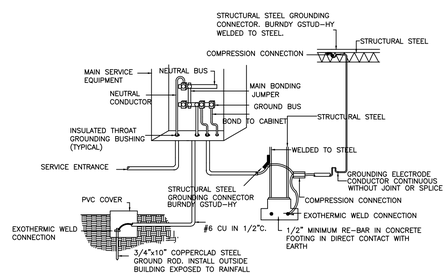


WIRING DEVICE MOUNTING HEIGHTS - TYPICAL
NO SCALE



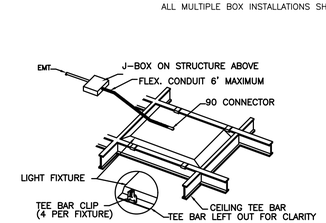
DATAPORT OUTLET DETAIL
NO SCALE

CADDY RBS16 BOX MOUNTING BRACKET MUST BE USED FOR ALL MULTIPLE BOX INSTALLATIONS SHOWN ABOVE.



SERVICE GROUNDING DETAIL
NO SCALE

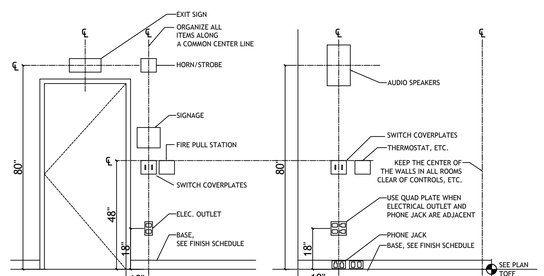
NOTE:
INSTALL GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH THE NEC ARTICAL 250. BONDING JUMPERS SHALL BE THE SAME SIZE AS THE GROUNDING CONDUCTORS.



NOTE: TYPICAL FOR ALL LIGHT FIXTURES

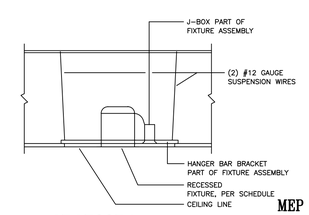
LAY-IN LIGHT FIXTURE DETAIL
NO SCALE

NOTE: VERIFY ALL HEIGHTS WITH ARCHITECT



NOTE:
THE ABOVE ELEVATIONS DEPICT TYPICAL LOCATIONS FOR VARIOUS PIECES OF MECHANICAL/ELECTRICAL/SIGNAGE, ETC. IT IS THE INTENT THAT THESE ITEMS BE ORGANIZED ALONG A COMMON CENTERLINE WHETHER IT BE TWO ITEMS OR NUMEROUS ITEMS. ALL ITEMS SHOULD BE ALIGNED HORIZONTALLY, AS WELL. COORDINATION DRAWINGS MUST BE MADE OF ELEVATIONS WITH 4 OR MORE DEVICES. THE ARCHITECT SHALL BE NOTIFIED TO RESOLVE PLACEMENT OF ITEMS DEVIATING FROM AGREED UPON LOCATIONS. HEIGHTS SHALL BE GOVERNED BY THE APPLICABLE CODE.

DEVICE ALIGNMENT DETAIL
SCALE: NONE



RECESSED DOWNLIGHT DETAIL
NO SCALE

MEP PROJECT #1611

Power Systems
P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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ORDINANCES

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ELECTRICAL COVER SHEET
SCALE: NONE

PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW

REVISIONS

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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PAUL R. WILKERSON 50732 REGISTERED PROFESSIONAL ENGINEER

02-10-17

GARY DONALDSON
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SHEET NO.
E-1
12 OF 17

GENERAL ELECTRICAL NOTES:

1 REFER TO SHEET E–4 FOR SERVICE ENTRANCE AND RISER DIAGRAM. REFER TO SHEET E–4 FOR PANEL SCHEDULES.

2 VERIFY MOUNTING HEIGHT OF RECEPTACLES AND SWITCHES WITH OWNER. IN ALL CASES INSURE COMPLIANCE WITH ADA MOUNTING HEIGHT REQMTS OF 48" MAX FOR SWITCHES; 15" MIN FOR RECEPTACLES AND JACKS; 48" MAX FOR THERMOSTATS.

3 COORDINATE ALL EQUIPMENT REQUIREMENTS WITH RESPECTIVE EQUIPMENT SUPPLIERS.

4 CONTACT AEP REGARDING ELECTRICAL SERVICE, GARY PITTMAN 325–657–2866. NEW MAIN PANEL "MDP" TO BE INSTALLED AS SHOWN ON SHEET E–4, ELECTRICAL RISER DIAGRAM.

5 ALL OUTDOOR RECEPTACLES TO BE WEATHER PROOF, GFI.

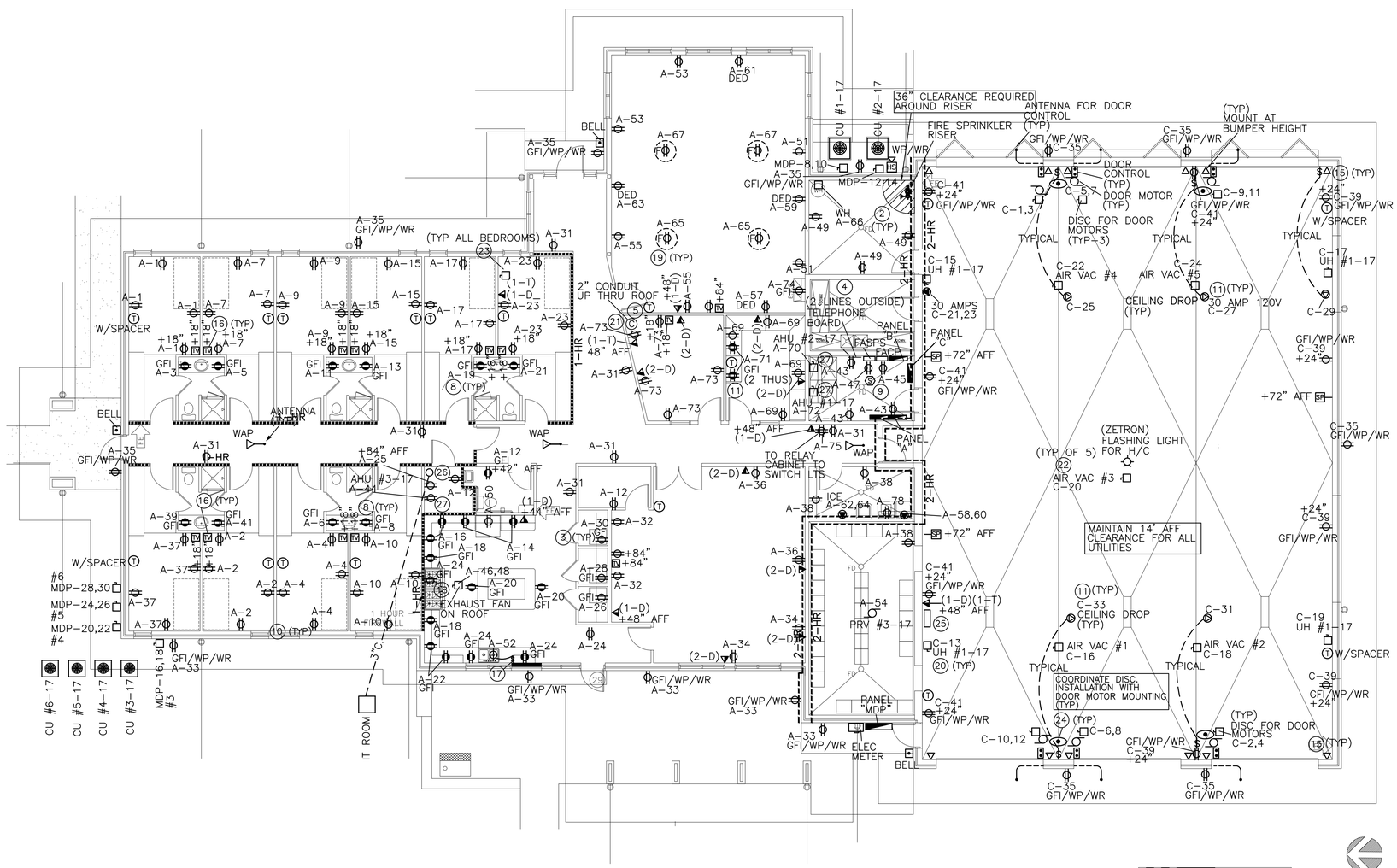
6 REFER TO SHEET MPE–1 AND SHEET MPE–2 FOR SITE NOTES AND DETAILS.

7 PROVIDE DISCONNECTS PER NEC FOR ANY PERMANENTLY CONNECTED EQUIPMENT WHICH DOES NOT HAVE INTEGRAL DISCONNECTS.

8 COORDINATE LOCATION OF DEVICES WITH ARCHITECT. DO NOT SCALE DRAWING. DEVICES ARE SHOWN IN SCHEMATIC LAYOUT ONLY.

NOTES INDICATED BY "○":

1. DATAPORTS TO BE LEVITON MULTIPORT OR EQUAL. CONFIGURE WITH TWO MODULES. INSTALL 1" CONDUIT TO EACH BOX WITH ONE CATEGORY 6 CABLE TERMINATION, AND ONE TELEPHONE TERMINATION. TERMINATE IN JUNCTION BOX ABOVE CEILING. CONTRACTOR TO PROVIDE BOX AND CONDUIT TO ABOVE CEILING.
2. RECEPTACLES OR BOXES IN RATED WALL MUST BE INSTALLED WITH FIRESTOPPING SEALANT AROUND BOXES. DO NOT INSTALL BOXES ON OPPOSITE SIDES OF RATED WALL CLOSER THAN 24". OBTAIN APPROVAL FROM ELECTRICAL INSPECTOR FOR THE USE OF METACAULK PUTTY PADS OR SHEETROCK IN STUD CAVITY TO INSTALL WITH LESS THAN 24 INCHES MINIMUM HORIZONTAL DISTANCE.
3. COORDINATE RECEPTACLE HEIGHTS WITH ARCHITECTURAL PLANS.
4. TELEPHONE BOARD IS NEW. PROVIDE 2 OUTSIDE LINES (FIRE ALARM WILL REPORT OVER CITY NETWORK).
5. PROVIDE CONDUIT SYSTEM FOR ALL COMPUTER CABLING INSTALLED IN CONCEALED SPACES. INSTALL CONDUIT TO ABOVE CEILING OR ACCESSIBLE LOCATION. DATA CABLING AND TERMINATIONS BY OWNER'S REP.
6. SECURITY SYSTEM TO BE PROVIDED AND INSTALLED BY OWNER'S REPRESENTATIVE.
7. ISOLATED GROUND RECEPTACLES TO HAVE IDENTIFYING MARK.
8. ALL RECEPTACLES IN BATHROOMS ABOVE COUNTER TO BE GFCI.
9. ARRANGE EQUIP. IN ELEC/MECH ROOM TO ENSURE ADEQUATE WORKING CLEARANCE.
10. PROVIDE CONVENIENCE OUTLET WITHIN 10' OFF ALL OUTDOOR EQUIPMENT.
11. COORDINATE EQUIPMENT REQUIREMENTS WITH OWNER. PROVIDE 10/3 OIL FIELD CORD WITH TWISTLOCK RECEPTACLE. PROVIDE WALL SWITCH TO CONTROL.
12. VERIFY PLACEMENT OF CATV OUTLETS BEFORE INSTALLING.
13. GFI PROTECTION MAY BE PROVIDED BY GFI BREAKER OR GFI OUTLET PROTECTING DOWNSTREAM OUTLETS.
14. INTERCOM SYSTEM TO BE PROVIDED & INSTALLED BY OWNER'S REPRESENTATIVE. CONTRACTOR TO PROVIDE BOX AND CONDUIT ABOVE CEILING.
15. DOOR SENSOR FURNISHED WITH DOORS.
16. VERIFY HEIGHT OF RECEPT & CATV BOX WITH ARCHITECT PRIOR TO INSTALLING.
17. DUAL SWITCH FOR LIGHT & DISPOSAL. DISPOSAL TO BE SWITCHED ON TOP.
18. REFER TO SHEET M–4 FOR HOOD EXHAUST CONTROL PANEL TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
19. CONTRACTOR TO VERIFY LOCATION OF FLOOR OUTLETS WITH OWNER PRIOR TO INSTALLATION.
20. PROVIDE AUTOMATIC SHUT DOWN OF UNIT HEATERS UPON OPENING OF ANY OVERHEAD DOOR.
21. OWNER'S REPRESENTATIVE WILL CONNECT INTERCOM CABLE TO SPEAKER; INSTALL ZETRON SYSTEM; INSTALL NETWORK ANTENNA & MAKE ALL CAT–6 TERMINATIONS. ALL OTHER WORK IS THE RESPONSIBILITY OF THE CONTRACTOR.
22. FURNISH APPURTENANCES FOR AIR VAC UNITS UNDER ALTERNATE #4.
23. PROVIDE DISCONNECTING MEANS FOR ALL FAN COIL UNITS IN BEDROOMS. COORDINATE WITH MECHANICAL.
24. PROVIDE POWER FOR A PHOTO EYE, TRACK MOUNTED DOOR SWITCH AND BI–FOLD DOOR SWITCH. COORDINATE WITH MECHANICAL.
25. INSTALL UL 508A CONTROL PANEL #AVES–6C/T2 FOR AIR VACS #1–5 UNDER ALTERNATE #4.
26. INSTALL 3'X3' PLYWOOD BACKBOARD, 3/4", PAINTED WITH FIRE RETARDED PAINT. PROVIDE SMARTRACK CABINET MODEL #SRW6U FOR IT EQUIPMENT. MOUNT AT 84" A.F.F.
27. PROVIDE POWER FOR MOTORIZED DAMPERS IN FRESH AIR DUCTS FOR ALL AIR HANDLING UNITS (QTY 3) FROM NEARBY HOUSE RECEPTACLE CIRCUIT.



ELECTRICAL PLAN

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

PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW
REVISIONS	

NEW FIRE STATION NO. 4 FOR SAN ANGELO FIRE DEPT.

SAN ANGELO, TEXAS

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02-10-17

RESPONSIBILITY OF ELECTRICAL CONTRACTOR

ALL PLUMBING PIPING AND ELECTRICAL CONDUITS BELOW BUILDING SLAB ARE TO BE BEDDED IN SAND AND THE EXCAVATION FILLED WITH "FLOWABLE GROUT" TO THE BOTTOM OF THE NEW FLOOR SLAB. REFER TO 38–58 FOR A DETAIL OF PIPING BACKFILL. THIS APPLIES TO ALL DITCHES AND TRENCHES THAT ARE MORE THAN 6" DEEP IN THE BLDG PAD.

PIPING AND CONDUITS ARE TO PENETRATE FOUNDATION BEAMS ONLY IN THE MIDDLE ONE–THIRD OF THE BEAM DEPTH.

PIPING AND CONDUITS ARE TO BE BELOW THE FLOOR SLAB AND ARE TO PENETRATE BEAMS AND SLABS PERPENDICULAR TO THE ELEMENT FACE.

ELECTRICAL CONDUITS ARE NOT TO OCCUR IN THE BUILDING SLAB WHERE CONDUIT IS HORIZONTAL. PROVIDE A MINIMUM OF 3" CLEAR BETWEEN THE CONDUIT AND THE BOTTOM OF A FLOOR SLAB.

MEP PROJECT #1611

Power Systems
P.O. Box 2863
San Angelo, Texas 76902
325–659–2235
FIRM NO. F–6257

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GARY DONALDSON ARCHITECTURE
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SHEET NO.

E–2

NOTES INDICATED BY " □ ":

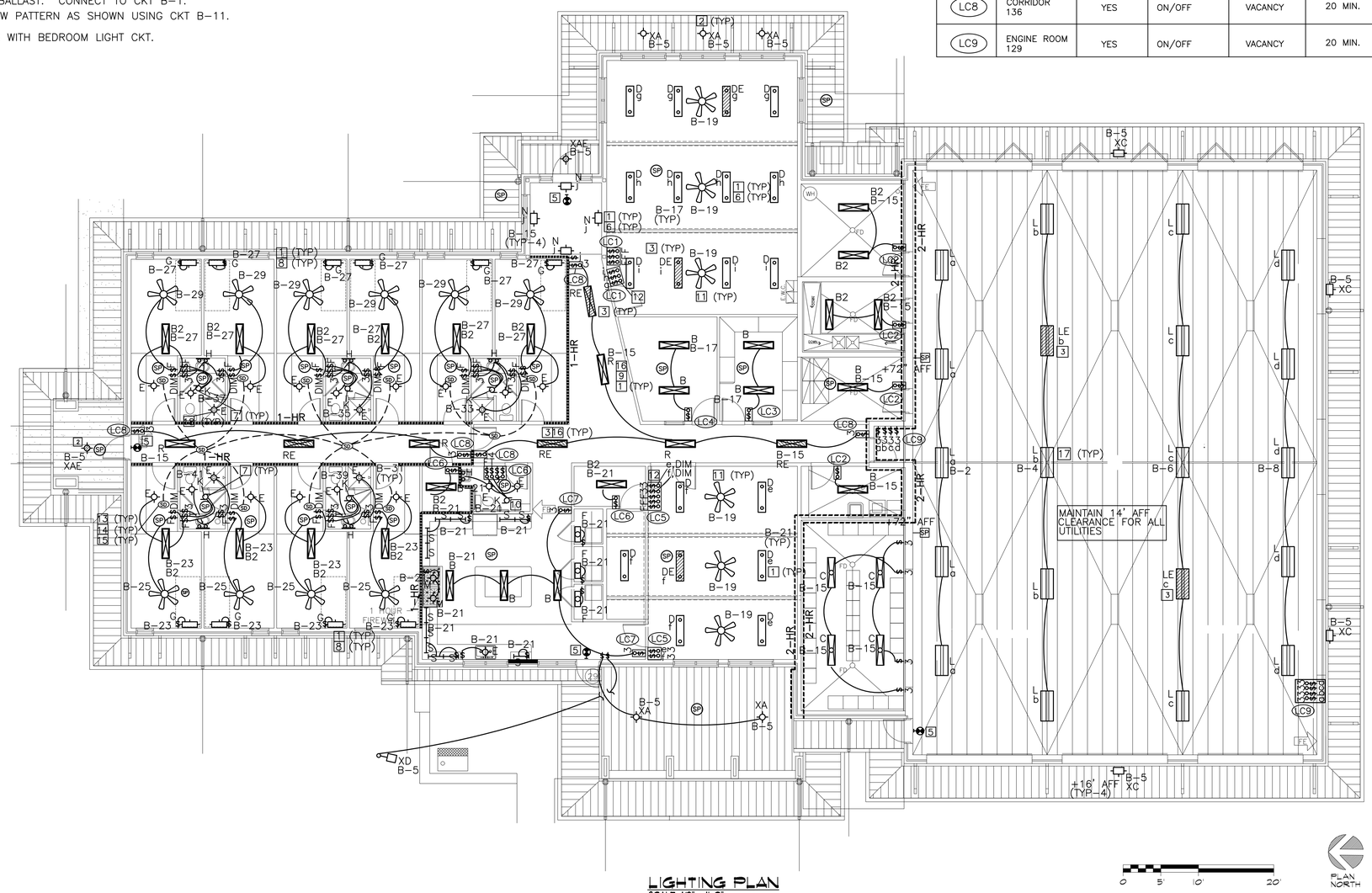
1. REFER TO ARCHITECTURAL DRAWINGS FOR CORRECT MOUNTING HEIGHTS OF LIGHT FIXTURES.
2. ALL EXTERIOR LIGHTS TO SWITCH VIA PHOTOCELL & CONTACTOR.
3. CONNECT EMERGENCY LIGHTS TO NEAREST LIGHT CIRCUIT.
4. SWITCH ALL COMMON AREA LIGHTS AS SHOWN ON PLAN.
5. CONNECT EXIT LIGHTS TO CIRCUIT B–3.
6. LIGHT FIXTURES AND FANS TO BE BRUSHED NICKEL.
7. SWITCH PEF #1–17 VIA RELAY WITH LIGHT FIXTURE IN BATH ROOMS.
8. FIXTURE TYPE G TO BE CONNECTED TO ZETRON EMERGENCY SYSTEM: TOP LAMP TO BE CONNECTED TO CIRCUIT B–1. LOWER LAMP TO BE SWITCHED AS SHOWN.
9. FIXTURE TO BE 24/7 NIGHTLITE FIXTURE.
10. SWITCH PEF #2–17 WITH LIGHT IN REST ROOM.
11. FANS TO BE SWITCHED SEPARATELY IN RESIDENT RESTROOMS.
12. GANG SWITCH LOCATION FOR LIGHTS AND FANS.
13. SMOKE DETECTORS TO BE SINGLE STATION, 120 VOLT, AND SHALL OPERATE IN TANDEM WITH BATTERY BACKUP.
14. SMOKE DETECTORS MUST BE ON A DEDICATED CIRCUIT.
15. MAINTAIN MINIMUM 3'–0" CLEARANCE FROM A/C SUPPLY AND RETURN A/C REGISTERS TO SMOKE DETECTORS.
16. ONE LAMP IN TYPE R & RE FIXTURES TO BE CONNECTED TO ZETRON EMERGENCY NOTIFICATION SYSTEM USING SEPARATE BALLAST. CONNECT TO CKT B–1.
17. SWITCH BAY LIGHTS IN ROW PATTERN AS SHOWN USING CKT B–11.
18. CIRCUIT BATHROOM LIGHTS WITH BEDROOM LIGHT CKT.

GENERAL LIGHTING NOTES:

1) LIGHT SWITCHES AND COVER PLATES TO BE DETERMINED BY ARCHITECT. INCLUDE COST IN BID FOR STAINLESS STEEL COVERPLATES.
2) EXTERIOR LIGHTS TO BE SWITCHED VIA PHOTOCELL ON, TIME CLOCK OFF.
3) ALL FIXTURES SHALL BE 120 VOLT UNLESS OTHERWISE NOTED. SEE SHEET E–1 FOR RECOMMENDED MANUFACTURER AND CATALOG NUMBERS OF FIXTURES.
4) ALL FLUORESCENT LIGHTING FIXTURES SHALL BE PROVIDED WITH T8 LAMPS WHERE POSSIBLE UNLESS T5 NOTED OTHERWISE.
5) CONTRACTOR SHALL CHECK AND VERIFY FIXTURE QUANTITY AND MAKE PROPER ADJUSTMENTS FOR ANY CHANGES IN PLANS DUE TO ADDITIONAL REQUIREMENTS.
6) ALL LIGHTING TO BE INSTALLED AND OPERATED IN STRICT ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES.
7) WHENEVER APPLICABLE ALL INCANDESCENT FIXTURES SHALL BE PROVIDED WITH ENERGY EFFICIENT INCANDESCENT LAMPS.
8) ALL CIRCUITS TO BE #12 THHN COPPER IN 3/4" CONDUIT MINIMUM UNLESS OTHERWISE NOTED. TYPE MC CABLE IS NOT ALLOWED.
9) BALLASTS FOR FLUORESCENT FIXTURES SHALL BE ELECTRONIC TYPE. BALLASTS TO HAVE IN–LINE FUSE HOLDER AND FUSES. BALLASTS SHALL BE EQUIVALENT TO ADVANCE ELECTRONIC BALLASTS, 10% THD. USE 4100 DEG K LAMPS IN ALL FIXTURES.

LIGHTING CONTROL SYSTEM CHART

SYMBOL KEY	AREA	SMART SWITCH	SWITCH CONTROL	MOTION SENSOR TYPE	SENSOR TIMEOUT	DAYLIGHT CONTROLS
LC1	FITNESS ROOM 125	YES	ON/OFF	VACANCY	20 MIN.	N/A
LC2	STORAGE SPRINKLER 130 CLEAN ROOM 132 ELEC/MECH. 131 UTILITY 128	YES	ON/OFF	VACANCY	20 MIN.	N/A
LC3	OFFICE 126	YES	ON/OFF	VACANCY	20 MIN.	N/A
LC4	OFFICE 124	YES	ON/OFF	VACANCY	20 MIN.	N/A
LC5	TRAINING ROOM/ DINING ROOM 127	YES	ON/OFF,DIM	VACANCY	20 MIN.	N/A
LC6	STORAGE 123/ MECH 117/ TOILET 118	YES	ON/OFF	VACANCY	20 MIN.	N/A
LC7	KITCHEN 119	YES	ON/OFF	VACANCY	20 MIN.	N/A
LC8	CORRIDOR 136	YES	ON/OFF	VACANCY	20 MIN.	N/A
LC9	ENGINE ROOM 129	YES	ON/OFF	VACANCY	20 MIN.	N/A



LIGHTING PLAN

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

MEP PROJECT #1611

Power Systems

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PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW
REVISIONS	

NEW FIRE STATION NO. 4
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SHEET NO.
E-3

PANEL "A" RECEPTACLES & EQUIP. — SECTION ONE

CKT	CKT BRKR	WIRE	SERVES	CONTINUOUS VA LIGHTS	CONTINUOUS VA OTHER		NON-CONT. VA RECEPT	NON-CONT. VA OTHER	SERVES	WIRE	CKT BRKR	CKT
1	20/1	#12	BEDROOM 102 RECEPTACLES			A	720	720	BEDROOM 107 RECEPT	#12	20/1	2
3	20/1	#12	REST ROOM RECEPTACLES [2]			B	1500	1500	BEDROOM 111 RECEPT	#12	20/1	4
5	20/1	#12	REST ROOM RECEPTACLES [2]			C	1500	1500	REST ROOM RECEPT [2]	#12	20/1	6
7	20/1	#12	BEDROOM 104 RECEPTACLES			A	720	1500	REST ROOM RECEPT [2]	#12	20/1	8
9	20/1	#12	BEDROOM 108 RECEPTACLES			B	720	720	BEDROOM 113 RECEPT	#12	20/1	10
11	20/1	#12	REST ROOM RECEPTACLES [2]			C	1500	720	STORAGE RECEPTS	#12	20/1	12
13	20/1	#12	REST ROOM RECEPTACLES [2]			A	1500	1500	KITCHEN RECEPTS [2]	#12	20/1	14
15	20/1	#12	BEDROOM 110 RECEPTACLES			B	720	1500	KITCHEN RECEPTS [2]	#12	20/1	16
17	20/1	#12	BEDROOM 114 RECEPTACLES			C	720	1500	KITCHEN RECEPTS [2]	#12	20/1	18
19	20/1	#12	REST ROOM RECEPTACLES [2]			A	1500	1500	KITCHEN RECEPTS [2]	#12	20/1	20
21	20/1	#12	REST ROOM RECEPTACLES [2]			B	1500	1500	KITCHEN RECEPTS [2]	#12	20/1	22
23	20/1	#12	BEDROOM 116 RECEPTACLES			C	720	1500	KITCHEN RECEPTS [2]	#12	20/1	24
25	20/1	#12	NETWORK RACK			A		1000	KITCHEN RECEPTS [2]	#12	20/1	26
27	20/1	#12	SPARE			B	1000	1000	KITCHEN RECEPTS [2]	#12	20/1	28
29	20/1	#12	SPARE			C	1000	1000	KITCHEN RECEPTS [2]	#12	20/1	30
31	20/1	#12	CORRIDOR RECEPTACLES			A	1080	360	TRAINING ROOM RECEPTS	#12	20/1	32
33	20/1	#12	EXTERIOR RECEPTACLES [2]			B	1080	360	TRAINING ROOM RECEPTS	#12	20/1	34
35	20/1	#12	EXTERIOR RECEPTACLES [2]			C	720	360	TRAINING ROOM RECEPTS	#12	20/1	36
37	20/1	#12	BEDROOM 105 RECEPTACLES			A	720	540	UTILITY ROOM RECEPTS	#12	20/1	38
39	20/1	#12	REST ROOM RECEPTACLES [2]			B	1500		SPARE	#12	20/1	40
41	20/1	#12	REST ROOM RECEPTACLES [2]			C	1500		SPARE	#12	20/1	42
TOTAL NON-CONTINUOUS VA							74,530			X1.0	74,530	
TOTAL CONTINUOUS VA					1,400					X1.25	1,750	
							TOTAL CONN. VA	75,930				
							TOTAL CONN. AMPS	211				
							CALC. PANEL VA				54,680	
								CALC. VA			CALC. AMPS	
							PHASE A	17,657			147	
							PHASE B	18,837			157	
							PHASE C	18,186			152	

SERVICE: 120/208V, 3Ø, 4W, 60HZ
MAINS = 225 AMP MLO
A.I.C. = 22,000 AMPS

PANEL "A" NOTES:
1. SQUARE D TYPE NQ OR EQUAL, SURFACE MOUNT, NEMA-1
2. PROVIDE GFCI RECEPTACLES FOR KITCHEN, EXTERIOR & RESTROOM APPLICATIONS
3. THIS IS A TWO-SECTION PANEL

PANEL "A" RECEPTACLES & EQUIP. — SECTION TWO

CKT	CKT BRKR	WIRE	SERVES	CONTINUOUS VA LIGHTS	CONTINUOUS VA OTHER		NON-CONT. VA RECEPT	NON-CONT. VA OTHER	SERVES	WIRE	CKT BRKR	CKT
43	20/1	#12	ELEC. RM RECEPTS			A	720	1650	AHU #3-17	#12	20/1	44
45	20/1	#12	FACP [4]		500	B	500		KITCHEN EXHAUST	#12	20/2	46
47	20/1	#12	FASPS [4]		500	C		500				48
49	20/1	#12	STORAGE RECEPTS			A	540		REFRIG.	#12	20/1	50
51	20/1	#12	FITNESS RM RECEPTS			B	1000	1300	DISPOSAL	#12	20/1	52
53	20/1	#12	FITNESS RM RECEPTS		400	C	1000	1000	PRV #3-17	#12	20/1	54
55	20/1	#12	FITNESS RM RECEPTS			A	1200		SPARE	#12	20/1	56
57	20/1	#12	FITNESS RM RECEPTS			B	1200	2800	DRYER	#10	30/2	58
59	20/1	#12	FITNESS RM RECEPTS			C	1200	2800				60
61	20/1	#12	FITNESS RM RECEPTS			A	1200	2000	ICE MAKER	#10	30/2	62
63	20/1	#12	FITNESS RM RECEPTS			B	1200	2000				64
65	20/1	#12	FITNESS RM RECEPTS			C	1200	1000	WATER HEATER	#12	20/1	66
67	20/1	#12	FITNESS RM RECEPTS			A	1200		SPARE	#12	20/1	68
69	20/1	#12	OFFICE 126 RECEPTS			B	720	1650	AHU #2-17	#12	20/1	70
71	20/1	#12	CHARGERS			C	500	1080	AHU #1-17	#12	20/1	72
73	20/1	#12	OFFICE 124 RECEPTS			A	900	1350	DRINKING FOUNTAIN	#12	20/1	74
75	20/1	#12	ZETRON UNIT			B		200	SPARE	#12	20/1	76
77	20/1	#12	SPARE			C		1500	WASHING MACHINE	#12	20/1	78
79	20/1	#12	SPARE			A			SPARE	#12	20/1	80
81	20/1	#12	SPARE			B			SPARE	#12	20/1	82
83	20/1	#12	SPARE			C			SPARE	#12	20/1	84
TOTAL NON-CONTINUOUS VA										X1.0		
TOTAL CONTINUOUS VA										X1.25		
							TOTAL CONN. VA					
							TOTAL CONN. AMPS					
							CALC. PANEL VA					
								CALC. VA			CALC. AMPS	
							PHASE A					
							PHASE B					
							PHASE C					

SERVICE: 120/208V, 3Ø, 4W, 60HZ
MAINS = 225 AMP MLO
A.I.C. = 22,000 AMPS

PANEL "A" NOTES:
1. SQUARE D TYPE NQ OR EQUAL, SURFACE MOUNT, NEMA-1
2. PROVIDE GFCI RECEPTACLES FOR KITCHEN, EXTERIOR & RESTROOM APPLICATIONS
3. THIS IS A TWO-SECTION PANEL
4. FURNISH HLO-1 HANDLE LOCK OFF

PANEL "B" LIGHTING

CKT	CKT BRKR	WIRE	SERVES	CONTINUOUS VA LIGHTS	CONTINUOUS VA OTHER		NON-CONT. VA RECEPT	NON-CONT. VA OTHER	SERVES	WIRE	CKT BRKR	CKT
1	20/1	#12	NOTIFICATION LIGHTS [4]	612		A			ENGINE RM LIGHTS	#12	20/1	2
3	20/1	#12	EXIT SIGNS [2]	1535		B			ENGINE RM LIGHTS	#12	20/1	4
5	20/1	#12	EXTERIOR LIGHTS [3]	1535		C			ENGINE RM LIGHTS	#12	20/1	6
7	20/2	#12	SITE LIGHTS [3]	1535		A			ENGINE RM LIGHTS	#12	20/1	8
9				900		B		800	SECURITY GATE	#12	20/1	10
11	20/1	#12	SPARE			C			SPARE	#12	20/1	12
13	20/1	#12	SPARE			A			SPARE	#12	20/1	14
15	20/1	#12	UTILITY/CORR LTS	1520		B			SPARE	#12	20/1	16
17	20/1	#12	FITNESS LTS	1440		C			SPARE	#12	20/1	18
19	20/1	#12	CEILING FANS		1200	A			SPARE	#12	20/1	20
21	20/1	#12	TRAINING RM LTS	1543		B			SPARE	#12	20/1	22
23	20/1	#12	BEDROOM LTS	1100		C			SPARE	#12	20/1	24
25	20/1	#12	CEILING FANS		800	A			SPARE	#12	20/1	26
27	20/1	#12	BEDROOM LTS	1650		B			SPARE	#12	20/1	28
29	20/1	#12	CEILING FANS		1200	C			SPARE	#12	20/1	30
31	20/1	#12	SMOKE DETECTORS [2]	400		A			SPARE	#12	20/1	32
33	20/1	#12	BATHROOM FAN/ HEATER			B		1500	SPARE	#12	20/1	34
35	20/1	#12	BATHROOM FAN/ HEATER			C		1500	SPARE	#12	20/1	36
37	20/1	#12	BATHROOM FAN/ HEATER			A		1500	SPARE	#12	20/1	38
39	20/1	#12	BATHROOM FAN/ HEATER			B		1500	SPARE	#12	20/1	40
41	20/1	#12	BATHROOM FAN/ HEATER			C		1500	SPARE	#12	20/1	42
TOTAL NON-CONTINUOUS VA							6,300			X1.0	8,300	
TOTAL CONTINUOUS VA					16,145					X1.25	20,181	
							TOTAL CONN. VA	24,445				
							TOTAL CONN. AMPS	68				
							CALC. PANEL VA				28,481	
								CALC. VA			CALC. AMPS	
							PHASE A	6,390			53	
							PHASE B	11,066			92	
							PHASE C	11,025			92	

SERVICE: 120/208V, 3Ø, 4W, 60HZ
MAINS = 150 AMP MLO
A.I.C. = 22,000 AMPS

PANEL "B" NOTES:
1. SQUARE D NQOD OR EQUAL, SURFACE MOUNT, NEMA-1
2. PROVIDE HLO-1 HANDLE LOCKOFF
3. EXTERIOR LIGHTS TO SWITCH VIA PHOTOCELL ON, TIMER OFF
4. ZETRON ACTIVATED CIRCUIT VIA RELAY

PANEL "C" ENGINE BAY

CKT	CKT BRKR	WIRE	SERVES	CONTINUOUS VA LIGHTS	CONTINUOUS VA OTHER		NON-CONT. VA RECEPT	NON-CONT. VA OTHER	SERVES	WIRE	CKT BRKR	CKT
1	20/2	#12	DOOR MOTOR [3]			A		720	DOOR MOTOR [3]	#12	20/2	2
3						B		720				4
5	20/2	#12	DOOR MOTOR [3]			C		720	DOOR MOTOR [3]	#12	20/2	6
7						A		720				8
9	20/2	#12	DOOR MOTOR [3]			B		720	DOOR MOTOR [3]	#12	20/2	10
11						C		720				12
13	20/1	#12	UNIT HEATER			A		750	SPARE	#12	20/1	14
15	20/1	#12	UNIT HEATER			B		750	AIR VAC UNIT [4]	#12	20/1	16
17	20/1	#12	UNIT HEATER			C		750	AIR VAC UNIT [4]	#12	20/1	18
19	20/1	#12	UNIT HEATER			A		750	AIR VAC UNIT [4]	#12	20/1	20
21	30/2	#10	RECEPT			B		2000	AIR VAC UNIT [4]	#12	20/1	22
23						C		2000	AIR VAC UNIT [4]	#12	20/1	24
25	30/1	#10	AMBULANCE RECEPT			A		2000	SPARE	#12	20/1	26
27	30/1	#10	AMBULANCE RECEPT			B		2000	SPARE	#12	20/1	28
29	30/1	#10	AMBULANCE RECEPT			C		2000	SPARE	#12	20/1	30
31	30/1	#10	AMBULANCE RECEPT			A		2000	SPARE	#12	20/1	32
33	30/1	#10	AMBULANCE RECEPT			B		2000	SPARE	#12	20/1	34
35	20/1	#12	EXTERIOR RECEPTS [2]			C	900		SPARE	#12	20/1	36
37	20/1	#12	SPARE			A			SPARE	#12	20/1	38
39	20/1	#12	ENGINE BAY RECEPTS			B	900		SPARE	#12	20/1	40
41	20/1	#12	ENGINE BAY RECEPTS			C	900		SPARE	#12	20/1	42
TOTAL NON-CONTINUOUS VA							38,420			X1.0	38,420	
TOTAL CONTINUOUS VA										X1.25		
							TOTAL CONN. VA	38,420				
							TOTAL CONN. AMPS	107				
							CALC. PANEL VA				38,420	
								CALC. VA			CALC. AMPS	
							PHASE A	11,740			98	
							PHASE B	13,890			116	
							PHASE C	12,790			107	

SERVICE: 120/208V, 3Ø, 4W, 60HZ
MAINS = 150 AMP MLO
A.I.C. = 22,000 AMPS

PANEL "C" NOTES:
1. SQUARE D TYPE NQ OR EQUAL, SURFACE MOUNT, NEMA-1
2. PROVIDE GFCI, WEATHER PROOF WEATHER RESISTANT RECEPTS
3. BASED ON 1/2 HP MOTOR
4. FURNISH UNDER ALT #4.

PANEL "MDP" MAIN PANEL

CKT	CKT BRKR	WIRE	SERVES	CONTINUOUS VA LIGHTS	CONTINUOUS VA OTHER		NON-CONT. VA RECEPT	NON-CONT. VA OTHER	SERVES	WIRE	CKT BRKR	CKT
1				1912	2000	A	19120	6300				2
3	225/3	#4/0	PANEL "A"		500	B	16940	1500				4
5				5813	0	C	17140	8150	PANEL "B"	#1/0	150/3	6
7				5220	900	A		3880				8
9	150/3	#1/0	PANEL "C"		1200	B	900	6880	CU #1-17 [2]	#10	30/2	10
11						C	1800	3000				12
13	20/1	#12	CARPORT RECEPTS			A	360	11740	CU #2-17 [2]	#8	35/2	14
15	20/1	#12	SITE STORAGE ROOM RECEPTS/LIGHTS	200		B	360	2172				16
17			SPACE			C		2172	CU #3-17 [2]	#8	40/2	18
19			SPACE			A		12990				20
21			SPACE			B		10990	CU #4-17 [2]	#10	25/2	22
23			SPACE			C		2508				24
25			SPACE			A		2508	CU #5-17 [2]	#10	25/2	26
27			SPACE			B		3300				28
29			SPACE			C		3300	CU #6-17 [2]	#10	30/2	30
TOTAL NON-CONTINUOUS VA							157,818			X1.0	157,818	
TOTAL CONTINUOUS VA				17,545						X1.25	21,931	
							TOTAL CONN. VA	175,363				
							TOTAL CONN. AMPS	487				
							CALC. PANEL VA				156,799	
								CALC. VA			CALC. AMPS	
							PHASE A	49,684			414	
							PHASE B	54,471			454	
							PHASE C	52,644			439	

SERVICE: 120/208V, 3Ø, 4W, 60HZ
MAINS = 600 AMP MB
A.I.C. = 42,000 AMPS

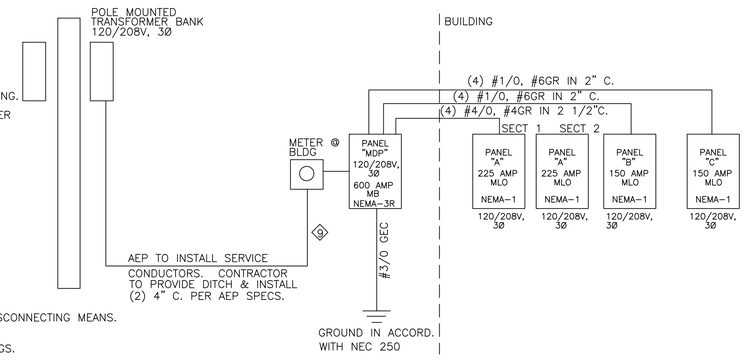
PANEL "MDP" NOTES:
1. SQUARE D TYPE I-LINE OR EQUAL, SURFACE MOUNT, NEMA-3R
2. PROVIDE HCAR BREAKERS FOR HVAC EQUIPMENT
3. PANEL LOADING CALCULATED ON COOLING BASIS

CALCULATION NOTES:

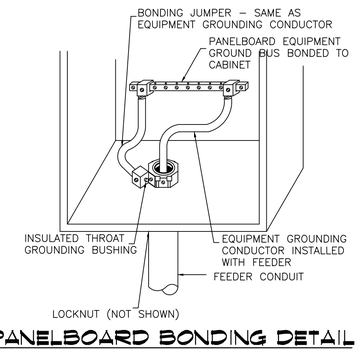
1. NEC 220-3: LIGHTING & GEN. RECEPT. FIGURED AT 4 VA PER SQ. FT. OR ACTUAL LOAD WHICHEVER IS GREATER.
2. NEC 220-10: LIGHTING LOADS AND CONTINUOUS LOADS CALCULATED AT 125% FOR CIRCUIT RATING.
3. NEC 220-13: RECEPTACLE LOADS CALCULATED AT 100% FOR FIRST 10 KVA; 50% FOR REMAINDER OVER 10 KVA.
4. NEC 220-14: MOTOR LOADS CALCULATED IN ACCORDANCE WITH NEC 430.

NOTES:

1. PROVIDE INSTALLATION TO MEET CITY OF SAN ANGELO CODES & 2008 NEC.
2. ALL PANEL BUSSES AND CONNECTIONS TO BE COPPER.
3. PANELBOARDS TO BE SQUARE D TYPE NQ OR EQUAL.
4. PROVIDE OUTSIDE MAIN CIRCUIT BREAKER TO PROTECT FEEDER CIRCUITS & FURNISH OUTDOOR DISCONNECTING MEANS.
5. PERFORM ALL GROUNDING WORK IN ACCORDANCE WITH NEC ARTICLE 250. ALL CONNECTIONS TO GROUND BUS TO BE MADE WITH EXOTHERMIC WELD PROCESS OR POWER COMPRESSION FITTINGS.
6. SUBSTITUTION OF FIXTURES PERMITTED. NOT ALL FIXTURES IN SCHEDULE MAY BE USED ON THIS PROJECT.
7. BALANCE PHASES AT FULL LOAD TO MAINTAIN MAXIMUM 20% UNBALANCE.
8. ALL WORK IS NEW WORK.
9. CONTRACTOR IS RESPONSIBLE FOR ALL DITCHING & ALL CONDUIT FROM XMFRS TO BUILDING. COMPLY WITH ALL UTILITY REQUIREMENTS. PAY ANY UTILITY CHARGES & FEES.



ELECTRICAL RISER DIAGRAM
NO SCALE



PANELBOARD BONDING DETAIL
NO SCALE

ELECTRICAL SCHEDULES AND RISER DIAGRAM
NO SCALE

MEP PROJECT #1611

Power Systems
P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PAUL R. WILKERSON, P.E. 50732 ON FEBRUARY 10, 2017. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

ORDINANCES

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PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW

REVISIONS

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

If this document is not SIGNED and DATED on the seal, then it is NOT FOR REGULATORY APPROVAL, PERMITTING OR CONSTRUCTION.

STATE OF TEXAS
PAUL R. WILKERSON
50732
REGISTERED PROFESSIONAL ENGINEER

02-10-17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

SHEET NO.
E-4
15 OF 17

SECTION 15300
FIRE PROTECTION SYSTEM

PART 1 GENERAL

1.01 SCOPE

A. Furnish all material, labor, tools, equipment and working plans to install and place in operation a complete fire sprinkler system and manual dry standpipe system. The contractor shall be responsible for preparing the plans, calculations, and obtaining the approval of the City of San Angelo, Texas.

B. The work will include the entire automatic fire sprinkler and manual dry standpipe system including, but not limited to, the necessary underground piping, excavation and backfill to serve the automatic fire sprinkler system, alarm system, flow and tamper switches, testing, approval and fees.

C. Working plans shall be prepared by the contractor before commencing installation. The plans shall be detailed and submitted by the contractor to the City of San Angelo, Texas for approval.

D. After approvals have been attained four copies of the approved drawings bearing a "Stamp of Approval" shall be submitted to the Architect for review.

1.02 FIRE SPRINKLER AND MANUAL DRY PIPE STANDPIPE SYSTEM

A. Light and ordinary hazard areas are to be designed and installed in accordance with NFPA 13, Standard for the Installation of Fire Sprinkler Systems.

B. Residential areas shall be designed and installed in accordance with NFPA 13R, Standard for the Installation of Fire Sprinkler Systems in Occupancies Up to and Including Four Stories in Height.

C. Standpipe system shall be designed and installed in accordance with NFPA 14, Standard for the Installation of Standpipe, Private Hydrant, and Hose Systems. When the installation has been completed, a letter of approval shall be delivered to the Architect. System to provide coverage for entire building as noted.

D. Available water pressure and flow is to be determined by testing at the site.

E. Provide Fire Department connections where indicated on the drawings. Fire Department connections to be readily accessible.

1.03 CONSTRUCTION

A. The sprinkler contractor shall cut holes in walls, ceilings, and floor where required. Holes in ceilings for one (1) inch drop nipples to sprinkler heads shall be cut by the ceiling contractor.

B. Where holes are cut through walls or ceilings, there shall be a neatly cut hole in the proper size for the pipe and all pipe passing through the walls or ceilings shall have a ceiling or wall plate that will completely cover the hole.

C. The ceiling and wall plates, where required, shall be Grinnell Co. Fig. 395 or equal.

D. Where holes are cut in smoke or rated fire walls, the contractor shall seal around penetration to maintain the integrity of the wall.

1.04 FEES, TESTS & GUARANTEES

A. All permits, fees, etc., for the installation, inspection or construction of the work which may be required shall be obtained and paid for by the contractor.

B. All inspections, examinations and tests required shall be arranged and paid for by the contractor as necessary to obtain complete and final acceptance of the Fire Protection Systems.

C. The entire fire protection installations shall be guaranteed for one (1) year from date of acceptance against defective materials, equipment, and workmanship. The liability of the contractor under this guarantee is limited to repair or replacement of defective equipment, materials or workmanship, and any damage done to the existing premises or content. The guarantee period is to commence on the date of final acceptance of the installation by the architect.

D. Provide certification that the system has been tested and meets or exceeds code requirements. Provide replacement part numbers for all equipment.

PART 2 PRODUCTS

2.01 MATERIALS

A. Materials and equipment shall be new and approved for the particular application intented.

B. All materials, equipment, valves and devices installed and/or furnished under this section shall be listed and/or approved for such use.

2.02 PIPE AND FITTINGS

A. All fire protection system piping inside the building shall be installed by means of screwed, flanged or welded fittings as specified herein. Victaulic Coupling System also will be acceptable.

B. All screwed fittings and pipe shall have threads cut to standard pipe thread dimensions.

C. Pipe shall be properly reamed after cutting threads.

D. Joint compound shall be applied to male threads of the screwed pipe and fittings only.

E. Fire protection system pipe shall conform to the requirements of NFPA 13R, and NFPA 14 as required. NFPA 13R sprinkler pipe within the building may be CPVC piping, subject to the specifications contained in Plumbing Specifications. Fittings shall be of a type specifically approved for use in sprinkler systems.

2.03 VALVES AND BOXES

A. All gate valves in supply pipes to sprinklers shall be sealed open in a satisfactory manner.

B. All control, drain, test and alarm valves shall be provided with identification signs of the standard design adopted by the agencies named in this section of the specifications.

C. Valve boxes shall be provided at the locations required by applicable codes.

2.04 SLEEVES AND ESCUTCHEONS

A. All piping passing through the exterior walls of the building shall be sealed, caulked and finished with a one piece escutcheon.

B. Pipes above ground shall be supported by means of approved hangers or wall/floor clamps. Hangers shall have adjustable rod suspension members. Piping shall be supported in accordance with NFPA 13 and 13R as applicable.

C. Pipe installed underground shall be firmly supported by the trench bottom. All tees, plugs, caps, and bends on pipe shall be anchored by the use of thrust blocks. Thrust blocks shall be cast using 3000 pound, 5 sack concrete.

2.05 PROTECTION OF EQUIPMENT AND MATERIALS

A. The contractor shall take such precautions as may be necessary to protect all equipment and materials from damage. The Architect reserves the right to reject any damaged materials or equipment.

2.06 SPRINKLER HEADS

A. All sprinkler heads, unless otherwise noted, shall be regular 165 degree F. rated chrome heads. All heads in the residence areas to be recessed, quick response type heads. Sprinkler heads shall be manufactured by Reliable or approved equal. Finish shall be as approved by Owner.

B. All sprinkler heads shall be FM approved and UL listed.

2.07 FIRE DEPARTMENT CONNECTION – AUTOMATIC SPRINKLERS

A. Furnish and install a siamese inlet and check valve with ball drip, with finish of chrome plated brass and lettering "AUTO SPKR" in raised cast form on surface.

B. Threading and sizing to match local fire department requirements.

C. Fire Dept. Connection shall be a two–way flush wall type, Potter Roemer series 5021 or equal.

2.08 SPARE SPRINKLER HEADS

A. At the sprinkler entry, contractor to provide a wall–mounted cabinet for storage of spare sprinklers. Contractor to furnish a stock of spare heads as required by NFPA. Furnish one sprinkler head wrench for each type of sprinkler.

2.09 BACKFLOW PREVENTER

A. Provide approved double check valve assembly, approved for fire protection service, as shown on the drawings.

2.10 FIRE DEPARTMENT CONNECTION – MANUAL–DRY STANDPIPE SYSTEM

A. Furnish and install a Siamese connection equal to Potter Roemer 5021, polished chrome finish and lettering "DRY STANDPIPE" size per NFPA 14.

2.11 FIRE HOSE VALVE

A. Furnish and install at each standpipe outlet a 2 1/2" fire hose valve equal to Potter Roemer 4065, polished brass angle valve. Valve threads shall match hose threads of the City of San Angelo Fire Department.

B. Furnish and install on each valve a cap and chain equal to Potter Roemer 4625 polished brass.

2.12 WALL PLAQUE

A. Furnish and install an all weather red plastic (18" X 12") wall plaque that reads "MANUAL STANDPIPE FOR FIRE DEPARTMENT USE ONLY"

B. Letters shall be white and shall be a minimum of 1" in height.

PART 3 EXECUTION

3.01 TESTING

A. All sprinkler piping after installation shall be tested at a minimum of 200 psi hydrostatic pressure for a period of two (2) hours. Contractor to notify Architect 24 hours prior to testing system piping.

3.02 INSTRUCTIONS AND INSPECTIONS

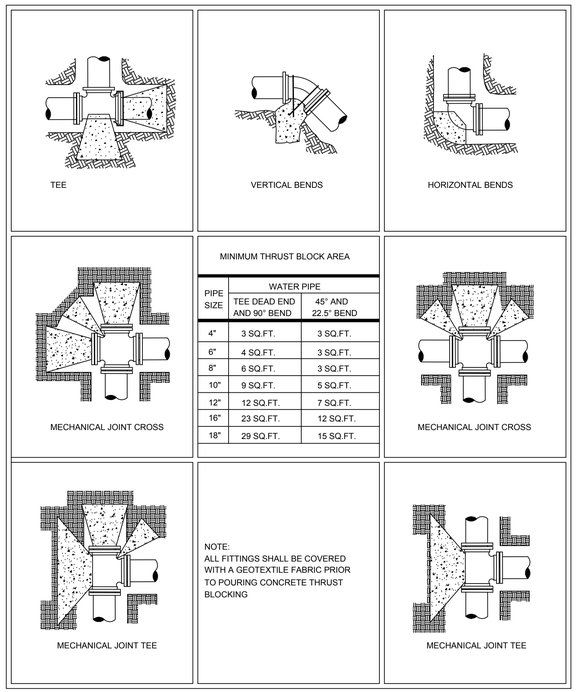
A. After installation of this system is completed and before acceptance by owner, contractor shall instruct maintenance personnel on the care and maintenance of the system. Included in these instructions shall be the following: three copies of NFPA 13R and three copies of NFPA 25, Standard for Inspection, Testing, and Maintenance of Water–Based Fire Protection Systems.

B. For a period of one (1) year after acceptance, contractor shall make two (2) inspections of the sprinkler system. Contractor shall furnish the owner with all inspection certificates after each inspection.

3.03 FLOW & TAMPER SWITCH

A. Provide flow and tamper switch on each riser. Wire switch to fire alarm control panel located in approved location. Provide stand alone communicator to automatically call monitoring agency approved by Fire Marshal. Provide two phone lines to communicator.

END OF SECTION

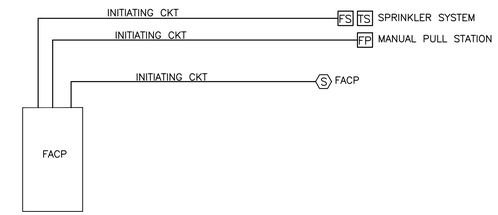


MINIMUM THRUST BLOCK AREA

PIPE SIZE	WATER PIPE	
	TEE DEAD END AND 90° BEND	45° AND 22.5° BEND
4"	3 SQ.FT.	3 SQ.FT.
6"	4 SQ.FT.	3 SQ.FT.
8"	6 SQ.FT.	3 SQ.FT.
10"	9 SQ.FT.	5 SQ.FT.
12"	12 SQ.FT.	7 SQ.FT.
16"	23 SQ.FT.	12 SQ.FT.
18"	29 SQ.FT.	15 SQ.FT.

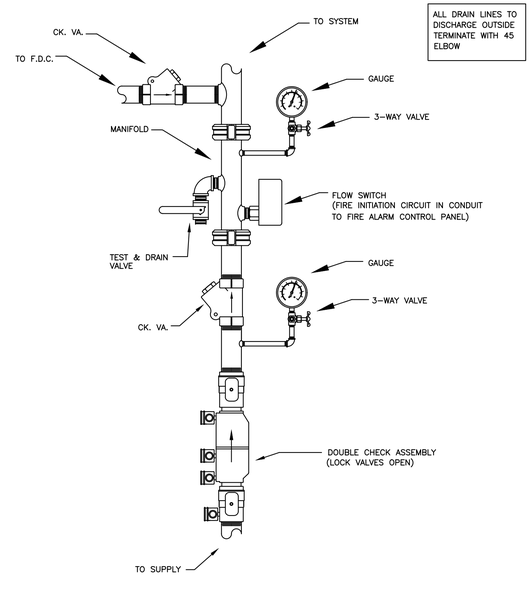
Underground Notes:

All material to be UL/FM approved for fire service.
All underground to comply with N.F.P.A. #24.
Concrete thrust block to be provided at all changes in pipe direction.
Minimum bury depth to be 36" to top of pipe.
New underground pipe to tested at 200psi for 2hrs.
All underground fittings to be mechanical joint, UNO.



FIRE ALARM SYSTEM-ONE LINE DIAGRAM - TYPICAL

NO SCALE



SPRINKLER RISER DETAIL - NFPA 13R

NO SCALE

FIRE PROTECTION COVER SHEET

NO SCALE

MEP PROJECT #1611

Power Systems
P.O. Box 2863
San Angelo, Texas 76902
325-659-2235
FIRM NO. F-6257

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PROJECT:	201436
DATE©	06-01-2016
DRAWN	ALW

REVISIONS

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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STATE OF TEXAS
PAUL R. WILKERSON
50732
REGISTERED PROFESSIONAL ENGINEER

02-10-17

GARY DONALDSON
ARCHITECTURE
FACILITIES PLANNING
949 TURNER STREET
SAN ANGELO, TEXAS 76903
(325)655-4805 FAX 949-1306

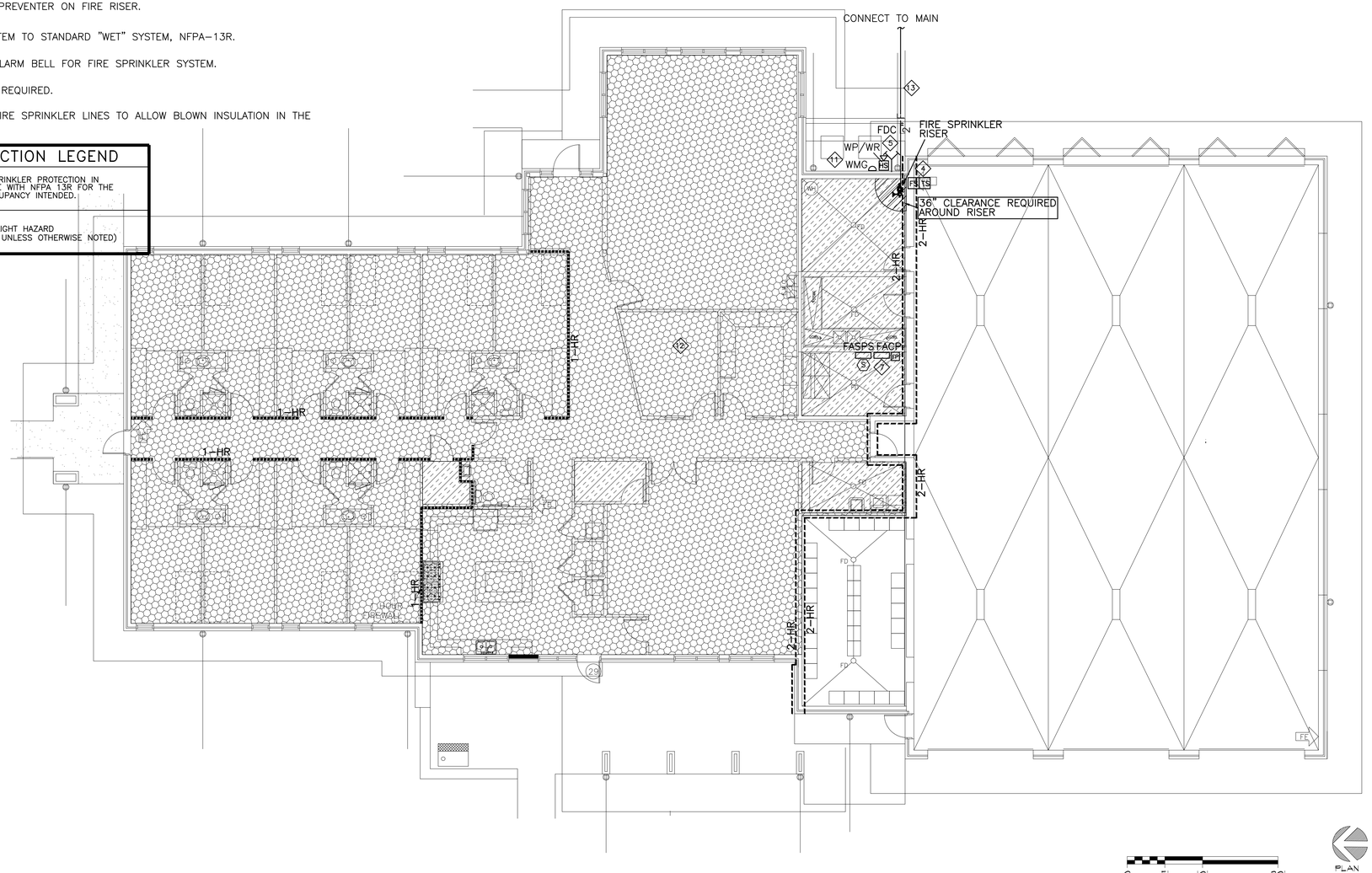
SHEET NO.
FP-1

NOTES:

1. ENTIRE SYSTEM SHALL BE HYDRAULICALLY CALCULATED AS FOLLOWS: MINIMUM SPRINKLER DISCHARGE OF 18 GPM TO ANY SINGLE SPRINKLER AND NOT LESS THAN 13 GPM PER SPRINKLER WITHIN A COMPARTMENT UP TO A MAXIMUM OF FOUR SPRINKLERS. CALCULATIONS TO INCLUDE A 10% SAFETY MARGIN, MINIMIMUM. CALCULATIONS TO INCLUDE ENTIRE SPRINKLER INSTALLATION SHALL BE IN ACCORDANCE WITH LATEST EDITION OF NFPA 13R AND THE CITY OF SAN ANGELO LOCAL ORDINANCES.
2. COORDINATE SPRINKLER PIPING AND SPRINKLER HEADS WITH ARCHITECTURAL, STRUCTURAL, HVAC, PLUMBING AND ELECTRICAL WORK.
3. PROVIDE DRAIN VALVE AND MAIN DRAIN FOR SYSTEM. TERMINATE DISCHARGE LINE OUTDOORS.
4. FIRE SPRINKLER RISER: REFER TO DETAIL, SHEET FP–1.
5. LOCATION OF FIRE DEPARTMENT CONNECTION.
6. REFER TO SHEET FP–1 THRUST BLOCK DETAILS.
7. INSTALL FIRELINE FROM CITY SUPPLY TO FIRE SPRINKLER RISER. PROVIDE SEPARATE METERED LINE FOR DOMESTIC USE AS SHOWN ON DRAWINGS. CONTRACTOR IS RESPONSIBLE TO SIZE WATER SERVICE SIZE FROM SUPPLY TO RISER. DOMESTIC DEMAND IS SHOWN ON SHEET MPE–1.
8. PROVIDE TAMPER & FLOW SWITCH AT FIRE RISER. INTERFACE TAMPER & FLOW SWITCHES WITH CONTROL PANEL EQUAL TO EDWARDS FS1004. PROVIDE COMMUNICATOR TO NOTIFY APPROVED CENTRAL MONITORING SERVICE OVER CITY DATA NETWORK. PROVIDE TAMPER & FLOW SWITCH AT EACH ISOLATION VALVE.
9. PROVIDE BACKFLOW PREVENTER ON FIRE RISER.
10. FIRE SPRINKLER SYSTEM TO STANDARD "WET" SYSTEM, NFPA–13R.
11. PROVIDE 120 VOLT ALARM BELL FOR FIRE SPRINKLER SYSTEM.
12. SPRINKLER ATTIC AS REQUIRED.
13. PROVIDE TENT FOR FIRE SPRINKLER LINES TO ALLOW BLOWN INSULATION IN THE ATTIC.

FIRE PROTECTION LEGEND

	PROVIDE SPRINKLER PROTECTION IN ACCORDANCE WITH NFPA 13R FOR THE USE & OCCUPANCY INTENDED.
	NFPA 13R LIGHT HAZARD (ALL AREAS UNLESS OTHERWISE NOTED)



FIRE PROTECTION PLAN

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

RESPONSIBILITY OF ELECTRICAL CONTRACTOR

ALL PLUMBING PIPING AND ELECTRICAL CONDUITS BELOW BUILDING SLAB ARE TO BE BEDDED IN SAND AND THE EXCAVATION FILLED WITH "FLOWABLE GROUT" TO THE BOTTOM OF THE NEW FLOOR SLAB. REFER TO 38–S8 FOR A DETAIL OF PIPING BACKFILL. THIS APPLIES TO ALL DITCHES AND TRENCHES THAT ARE MORE THAN 6" DEEP IN THE BLDG PAD.

PIPING AND CONDUITS ARE TO PENETRATE FOUNDATION BEAMS ONLY IN THE MIDDLE ONE–THIRD OF THE BEAM DEPTH.

PIPING AND CONDUITS ARE TO BE BELOW THE FLOOR SLAB AND ARE TO PENETRATE BEAMS AND SLABS PERPENDICULAR TO THE ELEMENT FACE.

ELECTRICAL CONDUITS ARE NOT TO OCCUR IN THE BUILDING SLAB WHERE CONDUIT IS HORIZONTAL. PROVIDE A MINIMUM OF 3" CLEAR BETWEEN THE CONDUIT AND THE BOTTOM OF A FLOOR SLAB.

MEP PROJECT #1611

Power Systems

P.O. Box 2863
San Angelo, Texas 76902
325–659–2235
FIRM NO. F–6257

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THIS DRAWING IS REPRESENTATIVE IN NATURE ONLY. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL STATE, COUNTY, MUNICIPAL AND FEDERAL LAWS AND/OR ORDINANCES GOVERNING THE PROJECT. IF IN ANY INSTANCE THE PLANS AND SPEC–IFICATIONS ARE IN DIRECT CONFLICT WITH SUCH LAWS AND/OR ORDINANCES, THE LAWS AND/OR ORDINANCES SHALL HAVE JURISDICTION.

PROJECT:	201436
DATE©	06-01-2016
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REVISIONS	

NEW FIRE STATION NO. 4
FOR
SAN ANGELO FIRE DEPT.
SAN ANGELO, TEXAS

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STATE OF TEXAS
PAUL R. WILKERSON
50732
REGISTERED PROFESSIONAL ENGINEER

02–10–17

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FP–2
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