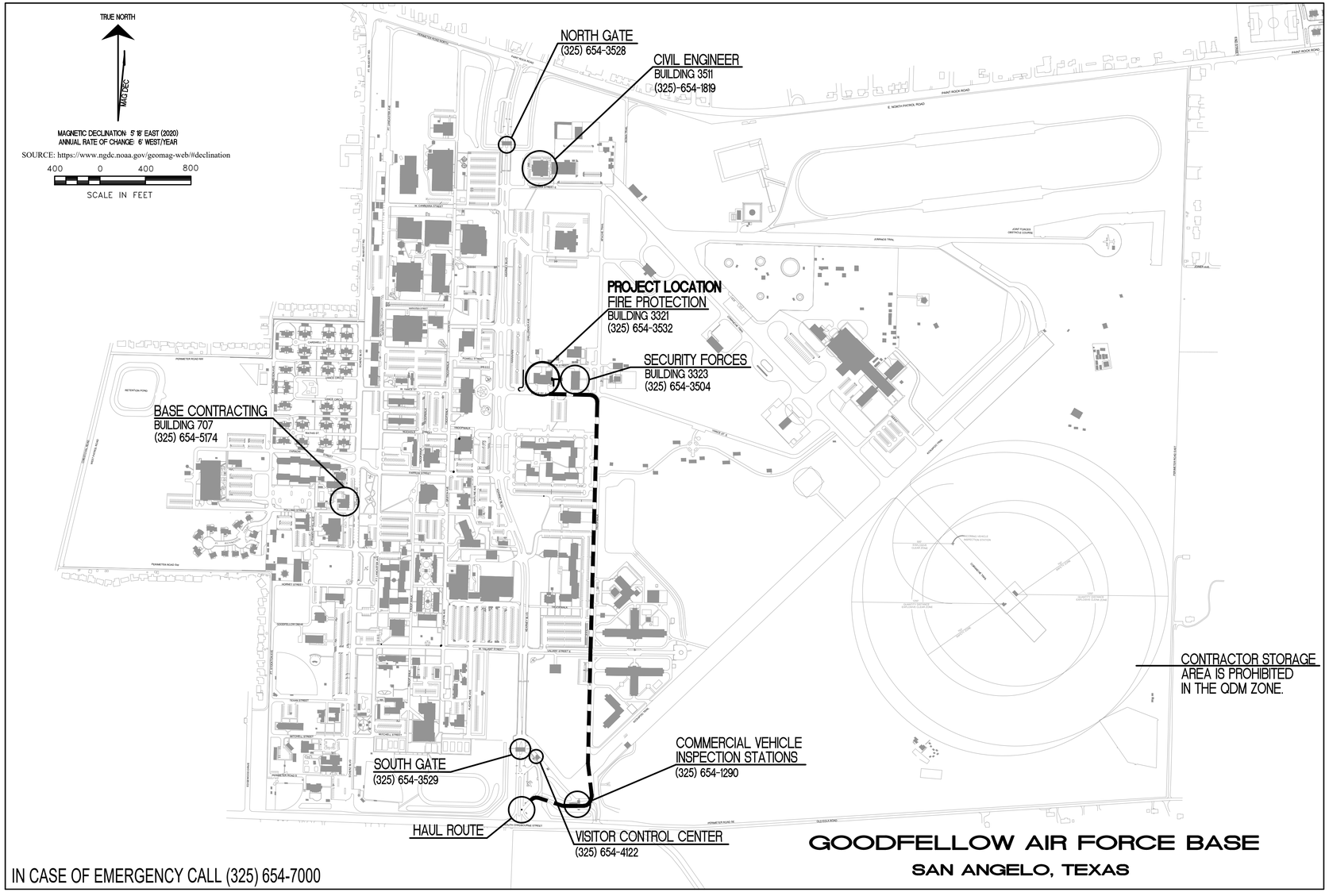
PROJECT NAME:

FIRE STATION ADD/ALTER, B3321

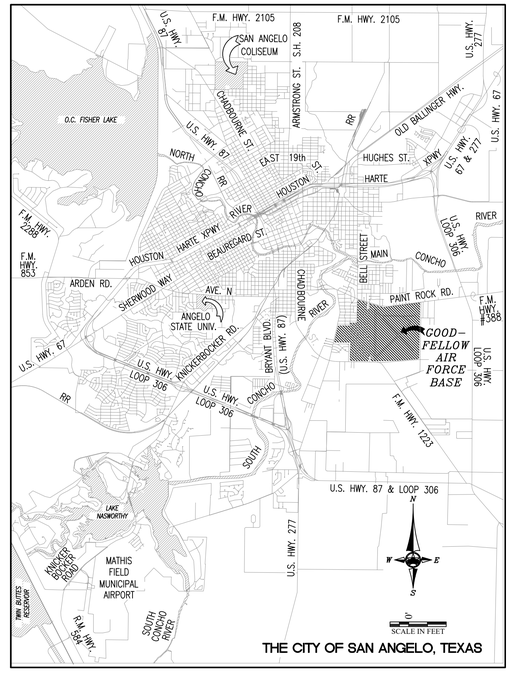
PROJECT NO.

PROJECT NO. 1039839

DATE	SIGNATURE
	RECOMMENDED (BCE)
	SUBMITTED (PROGRAMS CHIEF)
	FIRE CHIEF
	SAFETY
	ASSET MANAGEMENT
	BIO-ENVIRONMENTAL OFFICER
	SECURITY FORCES
	COMMUNICATIONS
	CHIEF OF OPERATIONS
	PROGRAM DEVELOPMENT
	PROGRAM MANAGEMENT
	PROJECT MANAGER
	USING AGENCY
	USING AGENCY



IN CASE OF EMERGENCY CALL (325) 654-7000



GENERAL NOTES

1. PROSPECTIVE OFFERERS SHALL ONLY CONTACT THE TEXAS GRANT ADMINISTRATOR/PROJECT MANAGER, TOM GREEN COUNTY, 113 WEST BEAUREGARD AVE. SAN ANGELO, TX, 76903, (325)-657-8060 FOR ANY AND ALL INFORMATION WITH REGARDS TO THIS SOLICITATION.
2. ALL WORK SHALL BE NEW, UNUSED, AND OF INDUSTRY-WIDE QUALITY OR AS INDICATED HEREIN, WHICHEVER IS OF THE HIGHEST QUALITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING DIMENSIONS, CONDITION, AND EQUIPMENT PRIOR TO START OF WORK.
3. THE CONTRACTOR SHALL INITIATE AND PROCESS FOR APPROVAL AF FORM #103 "WORK CLEARANCE REQUEST" FOR THE CONTRACTING OFFICER PRIOR TO PERFORMANCE OF ON-SITE WORK.
4. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO EXCAVATION OR TRENCHING. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE SERVICE LINES AS REQUIRED FOR CONSTRUCTION FOR THIS PROJECT.
5. THE CONTRACTOR SHALL HAND DIG WITHIN (2) FEET EITHER SIDE OF UTILITY CROSSING UNTIL THE UTILITY IS PHYSICALLY EXPOSED, PRIOR TO PERFORMING MECHANICAL TRENCHING OR EXCAVATING. CONTRACTOR SHALL PROVIDE NEW TOPSOIL AND HYDROMULCHING IN ALL AREAS WHERE DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES.
6. PROSPECTIVE OFFERERS ARE HIGHLY ENCOURAGED TO ATTEND THE SCHEDULED PRE-PROPOSAL SITE VISIT TO THOROUGHLY FAMILIARIZE THEMSELVES WITH ANY AND ALL EXISTING SITE AND PROJECT LOCATION CONDITIONS WHICH MAY AFFECT THE WORK UNDER THIS CONTRACT. THE GOVERNMENT SHALL NOT BE RESPONSIBLE FOR CONTRACTOR ERRORS OR OMISSIONS WHICH COULD BE MADE KNOWN BY ATTENDING A SCHEDULED SITE VISIT.
7. THE CONTRACTOR SHALL COORDINATE ALL COMMUNICATIONS WORK WITH THE ENGINEERING SECTION MANAGER AT FRONTIER COMMUNICATIONS AT 1-800-921-8102; WITH THE INSTALLATION OFFICE, SUDDENLINK CABLE AT 1-877-794-2724 AND THE GOODFELLOW AFB COMMUNICATIONS SQUADRON AT 325-654-3010.
8. THE CONTRACTOR SHALL INITIATE AND PROCESS FOR APPROVAL AF FORM #103 "WORK CLEARANCE REQUEST" TO THE GOODFELLOW AFB ASSIGNED PROJECT MANAGER PRIOR TO PERFORMANCE OF ON-SITE WORK. SITE UTILITIES THAT ARE LOCATED AND MARKED BY THE GOVERNMENT SHALL BE MAINTAINED BY THE CONTRACTOR.

PROJECT NOTES

1. THE CONTRACTOR SHALL MAINTAIN A CONSTRUCTION SITE NEAT AND CLEAN OF DEBRIS AS DIRECTED BY THE CONTRACTING OFFICER. THE CONTRACTOR'S WASTE DUMPSTERS SHALL BE EMPTIED ON A REGULAR BASIS. ROADWAYS SHALL BE CLEAR OF DIRT AND DEBRIS. THE CONTRACTOR SHALL WATER-DOWN AREA FOR DUST CONTROL.
2. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SILT FENCING AROUND THE LIMITS OF CONSTRUCTION SITE. SILT FENCING SHALL ALSO BE PROVIDED AROUND AREA STORM DRAINAGE SURFACE INLETS. AT THE POST CONSTRUCTION PHASE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL MATERIALS RELATED TO THE PROJECT SILT FENCING TO INCLUDE ACCUMULATED DEBRIS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRINGING THE AREA AROUND ALL SILT FENCING BACK TO THEIR ORIGINAL CONDITION PRIOR TO THE INSTALLATION OF SAID FENCING AND PROJECT CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN RECORDS OF THE ORIGINAL CONDITION OF THE SITE. SUCH RECORDS SHALL BE IN THE FORM OF COLOR PHOTOGRAPHS THAT SHALL BE KEPT ON FILE AS WELL AS TRANSMITTED TO THE GOVERNMENT FOR SAFE KEEPING.
3. THE CONTRACTOR SHALL INSTALL AND MAINTAIN A 6'-0" TALL TEMPORARY CONSTRUCTION CHAIN-LINK FENCE AROUND THE LIMITS OF WORK, NOT INCLUDING THE CONSTRUCTION ACCESS ROAD. COORDINATE CHAINS AND PADLOCKS ON GATES WITH GOODFELLOW FIRE DEPARTMENT. EACH GATE SHALL BE NUMBERED FOR EMERGENCY ACCESS AND SHALL HAVE INGRESS/EGRESS SIGNAGE AND AREA LIGHTING. THE CONTRACTOR SHALL MAINTAIN FIRE ACCESS THROUGH EACH INDIVIDUAL CONSTRUCTION SITE AT ALL TIMES.
4. TRUCK WASHOUT AREA SHALL BE CONSTRUCTED, MAINTAINED, AND CLEANED IN ACCORDANCE WITH TCEQ REGULATIONS. PROVIDE DETAILS AND MAINTENANCE PLAN AS PART OF THE STORMWATER POLLUTION PREVENTION PLAN. STORMWATER PERMITS SHALL BE REQUIRED PRIOR TO THE START OF CONSTRUCTION.
5. ALL CONTRACTORS SHALL STOCKPILE REQUIRED MATERIALS AND EQUIPMENT WITHIN THE LIMITS OF RESPECTIVE PROJECT AREAS OR STAGING AREA AS INDICATED ON THE DRAWINGS.
6. ALL HAUL ROADS SHALL BE MAINTAINED SUCH THAT UNOBSTRUCTED ACCESS SHALL BE PROVIDED AT ALL TIMES FROM THE ROAD TO THE STAGING AREA AND FROM THE STAGING AREA TO THE WORK SITE AND FACILITATE GOVERNMENT ACCESS TO THE BASE AT ALL TIMES. THE MAINTENANCE OF HAUL ROADS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT. THE HAUL ROAD LOCATIONS SHALL BE AS INDICATED ON THE STAGING/LAYDOWN AND ACCESS PLAN, OR BY THE CONTRACTING OFFICER.
7. THE CONTRACTOR SHALL COORDINATE ACTIVITIES THROUGHOUT THE PROJECT IN A MANNER THAT ALLOWS EMERGENCY ACCESS TO ALL EXISTING ROADWAYS AT ALL TIMES WITHOUT DELAYS TO EMERGENCY VEHICLES RESPONSE TIME.
8. WHILE WITHIN GOODFELLOW AFB, THE CONTRACTOR SHALL COMPLY WITH BASE REGULATIONS PERTAINING TO "NO FIREARMS" AND "NO ILLEGAL DRUGS."
9. ONLY RUBBER-TIRED VEHICLES SHALL BE ALLOWED ON EXISTING PAVEMENT THAT IS TO REMAIN IN PLACE.
10. ALL CONTRACTOR OPERATIONS SHALL BE CONDUCTED AND PERFORMED WITHIN ACCORDANCE OF DEPARTMENT OF LABOR OSHA REQUIREMENTS FOUND IN 29 CFR 1910 [1910.146 AND 1910.147] AND 29 CFR 1926, AND AIR FORCE OCCUPATIONAL SAFETY AND HEALTH [AFOSH] AND AIR FORCE INSTRUCTION [AFI] STANDARDS INCLUDING AFI 91-203, AIR FORCE CONSOLIDATED OCCUPATIONAL SAFETY INSTRUCTION. THE CONTRACTOR SHALL ALSO ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH PROJECT IDENTIFIED NATIONAL STANDARDS, MILITARY MANUALS, PAMPHLETS, INSTRUCTIONS, STANDARDS, HANDBOOKS AND WITH THE CORPS OF ENGINEERS [COE] SAFETY MANUAL 385-1-1 [EDITION IN EFFECT ON THE DATE OF THIS SOLICITATION]. ALL PROJECT SITES SHALL BE SUBJECT TO INSPECTION BY THE DEPARTMENT OF LABOR. IN THE EVENT OF CONFLICT BETWEEN THE OSHA STANDARDS AND THESE REQUIREMENTS, THE MOST STRINGENT SHALL APPLY.
11. AT ALL TIMES, THE CONTRACTOR SHALL MAINTAIN ONE FIRE LANE FREE OF OBSTRUCTION AND MAINTAIN ACCESS TO THE SITE AND ALL SURROUNDING ROADS AND STREETS.
12. GRASS AND WEEDY VEGETATION WITHIN THE AREAS UTILIZED BY THE CONTRACTOR, INCLUDING WORK AREAS, ADMINISTRATIVE AREAS AND STORAGE AREAS SHALL BE MOWED WHEN THE GRASS AND WEEDY VEGETATION IS AT A HEIGHT OF 6 INCHES, MOWING SHALL BE TO A HEIGHT OF 3 INCHES. MOWING SHALL BE ACCOMPLISHED WITH A ROTARY MOWER THAT LEAVES THE CLIPPINGS EVENLY DISTRIBUTED ON THE SOIL SURFACE. MOWING SHALL BE ACCOMPLISHED DURING PERIODS AND IN SUCH A MANNER THAT THE SOIL AND GRASS SHALL NOT BE DAMAGED. TOWED OR SELF-PROPELLED RIDING MOWERS SHALL NOT BE OPERATED WITHIN 3 FEET OF TREES OR SHRUBS. AREAS ADJACENT TO TREES AND SHRUBS SHALL BE MOWED WITH HAND-PROPELLED MOWERS.
13. EROSION CONTROL DEVICES SHALL BE USED FOR STAGING AREAS AND MATERIAL STOCKPILES WHEN NECESSARY TO CONTROL EROSION AND STORMWATER RUNOFF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. A SWPPP SHALL BE SUBMITTED PRIOR TO MOBILIZING.

17th CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: COVER SHEET

Date: SEP 2023

SEQ.	SHEET	OF
01	G-001	50

TYPICAL ABBREVIATIONS [WHERE APPLICABLE]

ACCORD.	ACCORDANCE
ACOUS. INSUL.	ACOUSTIC INSULATION
ADDTN.	ADDITION
ADJ.	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
ALUM.	ALUMINUM
ATTEN.	ATTENUATING
BITUM	BITUMINOUS
BLK	BLOCK
BLKG	BLOCKING
BM	BENCH MARK
BOT	BOTTOM
CAB	CABINET
CEM. BD.	CEMENTITIOUS BOARD
CER TILE	CERAMIC TILE
CLG	CEILING
CONC.	CONCRETE
CMU	CONC. MASONRY UNIT
COL.	COLUMN
CONF.	CONFERENCE
CONT.	CONTINUOUS
COORD	COORDINATE
CORR	CORRIDOR
DEMO	DEMOLITION
DET	DETAIL
DIM	DIMENSION
DIST	DISTANCE
DWG	DRAWING
EA	EACH
ELEC	ELECTRIC(AL)
E.W.C.	ELECTRIC WATER COOLER
EXIST.	EXISTING
EXP. JT.	EXPANSION JOINT
EQ	EQUAL
E.W.	EACH WAY
EXT.	EXTERIOR
EXT. CAB.	EXTINGUISHER CABINET
F.D.	FLOOR DRAIN
FEC	FIRE EXTINGUISHER CABINET
FIN	FINISH
FIN FLR	FINISH FLOOR
FLOUR.	FLOURESCENT
FLR.	FLOOR
FLR. E.J.	FLOOR EXPANSION JOINT
FURR'G	FURRING
GA.	GAUGE
GALV	GALVANIZED
GFE	GOVERNMENT FURNISH EQUIPMENT
GYP BD.	GYPSUM BOARD
H.C.	HANDICAPPED
HDWD.	HARDWOOD
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
INSUL	INSULATION
LAV	LAVATORY
MAINT	MAINTENANCE
MAX.	MAXIMUM
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MPE	MECHANICAL–PLUMBING–ELECTRICAL
MTD.	MOUNTED
MTL.	METAL
O.C.	ON CENTER
O.C.E.W.	ON CENTER EACH WAY
OPNG.	OPENING
ORIG. BLDG.	ORIGINAL BUILDING
P	PLATE
PLY'WD	PLYWOOD
PLBG.	PLUMBING
PROJ. MNT.	PROJECTOR MOUNT
PROT.	PROTECTION
PSI	POUNDS PER SQUARE INCH
RCP	REFLECTED CLG. PLAN
REF.	REFERENCE
RESIL.	RESILIENT
RM.	ROOM
SCHED.	SCHEDULE
SCTN.	SECTION
SCW	SOLID CORE WOOD
SPEC.	SPECIFICATION
S.S.	STAINLESS STEEL
STL.	STEEL
STRUCT.	STRUCTURE
SUSP. GRID CLG. SYS.	SUSPENDED GRID CEILING SYSTEM
THK.	THICK
TYP.	TYPICAL
TYP. MRKR./ TACK BD.	TYPICAL MARKER/TACK BOARD
UNC.	UNCASED
U.S.G.	UNITED STATES GYPSUM
V.C.T.	VINYL COMPOSITION TILE
VERT.	VERTICAL
V.W.C.	VINYL WALL COVERING
WD.	WOOD
WDW.	WINDOW
W/	WITH
W/MFR'S	WITH MANUFACTURER'S
W.W.F.	WELDED WIRE FABRIC
ø	DIAMETER

PRIVATIZED ELECTRICAL UTILITY SYSTEMS:

AEP TEXAS NORTH COMPANY IS THE UTILITY OWNER AND SOLE PROVIDER OF THE ELECTRICAL PRIMARY DISTRIBUTION UTILITY SYSTEM AT GOODFELLOW AIR FORCE BASE, TEXAS.

NEWLY PROVIDED SYSTEM INFRASTRUCTURE AND/OR MODIFICATIONS OF OR CONNECTIONS TO THE EXISTING SYSTEM INFRASTRUCTURE IDENTIFIED IN THE SPECIFICATIONS AND/OR DRAWINGS MUST BE COORDINATED WITH THE UTILITY OWNER PRIOR TO THE CONTRACT START DATE. TO CONNECT FACILITIES, THE CONSTRUCTION CONTRACTOR SHALL REQUEST THAT THE UTILITY OWNER PROVIDE THE REQUIRED CONNECTING FACILITIES, UP TO A POINT OF DEMARCATION WHICH INCLUDES ALL TERMINATIONS AT THE TRANSFORMER.

ALL WORK ON THE SYSTEM OR FACILITIES EXPECTED TO CONNECT TO THE SYSTEM SHALL COMPLY WITH THE UTILITY OWNER'S SPECIFICATIONS AND CONSTRUCTION STANDARDS. IN NO EVENT SHALL THE CONSTRUCTION CONTRACTOR CONNECT TO, OR OTHERWISE TOUCH THE UTILITY OWNER'S INFRASTRUCTURE WITHOUT THE UTILITY OWNER'S EXPRESS WRITTEN PERMISSION.

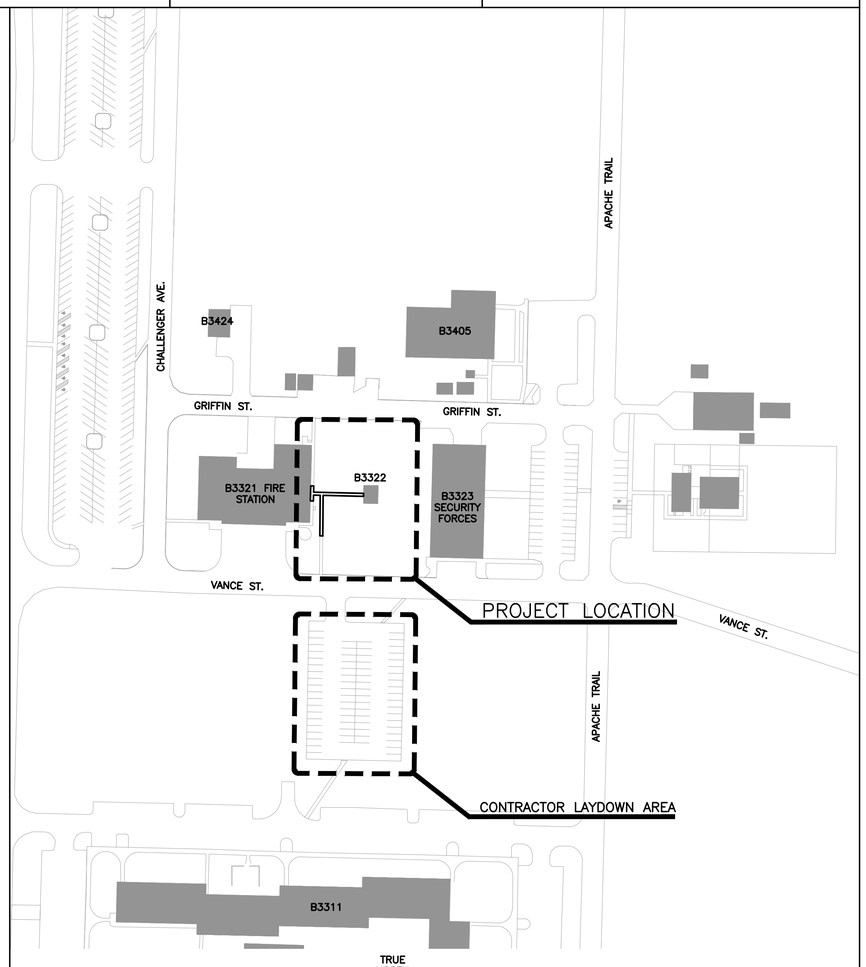
THE UTILITY OWNER: CONTACT VIA:
AEP TEXAS NORTH COMPANY
930 West 19th Street
San Angelo, Texas 76903
PHONE: 325–657–2800

ARCHITECT / ENGINEER RESPONSIBILITIES:
1. SITE PLAN WITH ADJACENT STREETS OR LANDMARKS IDENTIFIED.
2. BUILDING PLAN SHEETS WITH THE FOLLOWING INFORMATION:
   - A. LOCATION OF SERVICE ENTRANCE
   - B. REQUESTED TRANSFORMER LOCATION, IF A PREFERENCE IS KNOWN.
   - C. SQUARE FOOTAGE OF BUILDING SPACE WITH THE TYPE OF LOAD TO BE SERVED.
   - D. ELECTRICAL PANEL SCHEDULE
   - E. NUMBER AND SIZE OF SECONDARY CONDUCTORS TO BE TERMINATED AT THE TRANSFORMER
   - F. PROPOSED LOCATION OF OTHER UTILITY ROUTES AND ENTRANCES.
3. LOAD DEMAND INFORMATION FROM EXISTING SIMILAR BUILDINGS.
4. SCHEDULE OF WORK.

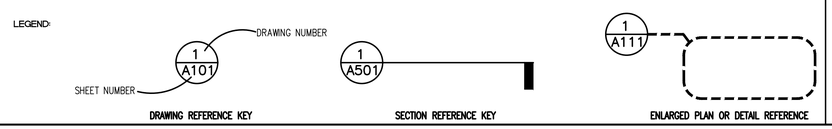
CONTRACTOR / BUILDER RESPONSIBILITIES:
1. CONTACT NAMES AND NUMBERS UPON ARRIVAL AT THE SITE.
2. LOCATION OF TRANSFORMER PAD.
3. INSTALL SECONDARY CONDUITS INTO THE APPROPRIATE WELL LOCATION BEFORE PAD INSTALLATION. THIS INCLUDES ANY REQUIRED METERING CABLE CONDUITS.
4. PROVIDE FINAL GRADE IN TRANSFORMER PAD AREA PRIOR TO PAD CONSTRUCTION.
5. INSTALLATION OF ANY REQUIRED INSTRUMENT RATED METERING EQUIPMENT.
6. PROVIDE SECONDARY CABLE TERMINALS.
7. PRIMARY CONDUIT DITCH COMPACTION IF REQUIRED.
8. ASPHALT AND/OR CONCRETE CUT AND REPAIR IF REQUIRED.
9. LOCATION OF OTHER UTILITY LINES INSTALLED DURING THIS CONSTRUCTION.
10. TEMPORARY POWER POLE, IF REQUIRED. LOCATION TO BE APPROVED BY AEP TEXAS. NOTE: ANY LINE EXTENSION REQUIRED FOR THE PURPOSE OF TEMPORARY SERVICE WILL REQUIRE A CIAC TO COVER THE COST OF INSTALLATION AND REMOVAL OF TEMPORARY FACILITIES AND ANY MATERIAL WHICH CANNOT BE REUSED.

AEP TEXAS RESPONSIBILITIES:
1. SIZING AND INSTALLATION OF ALL PRIMARY CONDUCTORS INCLUDING DITCH AND CONDUIT.
2. SIZING AND INSTALLATION OF DISTRIBUTION TRANSFORMERS.
3. CONSTRUCTION OF TRANSFORMER PAD.
4. INSTALLATION OF SECONDARY CABLE TERMINALS.

CONSTRUCTION NOTES:
1. THE EDGE OF THE TRANSFORMER PAD SHALL NOT BE CLOSER THAN TWO FEET FROM A WALL, OR FIVE FEET FROM A DOOR OR WINDOW, OR TWENTY FEET FROM A STAIRWELL OR FIRE ESCAPE.
2. TRANSFORMERS SHALL NOT BE COMPLETELY ENCLOSED BY WALLS, FENCES, OR LANDSCAPING WITHOUT VENTILATION WHICH IS APPROVED BY AEP TEXAS. THE ENTIRE WIDTH OF THE FRONT OF THE TRANSFORMER AND SECONDARY CABINET SHALL BE ACCESSIBLE. IF A FENCE IS INSTALLED, IT WILL HAVE SUFFICIENT GATES NECESSARY TO PROVIDE THIS ACCESS.
3. TRANSFORMERS WILL BE LOCATED IN THE AREAS WITH ALL WEATHER ACCESS BY SERVICE TRUCKS. IN ADDITION, THERE WILL BE NO STRUCTURES CONSTRUCTED ABOVE TRANSFORMERS WHICH WOULD INHIBIT CRANE OPERATIONS.
4. NO OTHER UTILITY LINES WILL BE INSTALLED WITHIN TWO FEET OF THE TRANSFORMER PAD.
5. NO CUSTOMER EQUIPMENT, EXCEPT INSTRUMENT RATED METERING EQUIPMENT WHICH IS PLACED ON THE SECONDARY BUSHINGS, SHALL BE ATTACHED TO AEP TEXAS TRANSFORMERS; NOR WILL THERE BE ANY HOLES DRILLED INTO THE TRANSFORMER CABINET FOR CONDUITS, CONDUCTORS OR METERS.
6. THE NUMBER AND SIZE OF THE SECONDARY CONDUCTORS WHICH ARE ALLOWED TO BE ATTACHED TO THE TRANSFORMER SECONDARY BUSHINGS WILL BE CONTROLLED BY AEP TEXAS. IF THE DESIGN REQUIRES MORE OR LARGER CONDUCTORS THAN ALLOWED FOR A PARTICULAR TRANSFORMER SIZE, AEP TEXAS WILL INSTALL A SECONDARY CABINET WITH BUS BARS ADJACENT TO THE TRANSFORMER. AEP TEXAS WILL SUPPLY AND INSTALL THE SECONDARY CONDUCTORS FROM THE TRANSFORMER TO THE SECONDARY CABINET. THE POINT OF INTERCONNECTION WILL BE THE BUS BARS WITHIN THE SECONDARY CABINET. THIS CABINET WILL REQUIRE A LARGER TRANSFORMER PAD.
7. TRANSFORMERS LARGER THAN 1000 kVA WILL REQUIRE A LARGER PAD.
8. TEMPORARY CONSTRUCTION POWER WILL BE SUPPLIED TO CUSTOMER SUPPLIED POWER POLES LOCATED WITHIN FIVE FEET OF AN EXISTING PAD MOUNTED TRANSFORMER OR WITHIN FIFTY FEET OF A PRIMARY POWER POLE.



LOCALIZED AREA PLAN
NOT TO SCALE



DRAWING INDEX

4TH CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: 17CES

PROJECT TITLE

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839
SHEET TITLE: GENERAL INFORMATION 1
Date: SEP 2023

SEQ.	SHEET	OF
02	G–002	50

A. GENERAL NOTES

1. CONSTRUCTION ACCESS TO THE SITE SHALL BE THROUGH THE EXISTING SOUTH GATE LOCATED ON SOUTH CHADBOURNE STREET. ALL CONSTRUCTION TRAFFIC ENTERING THE BASE IS REQUIRED TO PASS THROUGH THE COMMERCIAL VEHICLE SEARCH AREA LOCATED TO THE EAST OF KEARNEY BOULEVARD. HOURS OF OPERATION ARE FROM 6:00 A.M. TO 2:00 P.M. MONDAY THROUGH FRIDAY, PHONE 325–654–1290.

2. CONTRACTORS SHALL KEEP ALL PUBLIC ROADS AND STREETS CLEAN OF CONSTRUCTION DEBRIS, MUD, ETC. AT ALL TIMES. CONTRACTOR SHALL PROVIDE EQUIPMENT AND PERSONNEL TO CLEAN ANY STREETS AS REQUESTED BY THE CONTRACTING OFFICER. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS TO STREETS, PARKING AREAS AND BASE OR GOVERNMENT PROPERTY DAMAGED FROM THEIR CONSTRUCTION ACTIVITIES.

3. CONTRACTORS SHALL MAINTAIN A CONSTRUCTION SITE NEAT AND CLEAN OF DEBRIS AS DIRECTED BY CONTRACTING OFFICER. CONTRACTOR WASTE DUMPSTERS SHALL BE EMPTIED ON A REGULAR BASIS.

4. THE CONTRACTOR AND CONTRACTOR PERSONNEL WILL NOT BE REQUIRED TO PARTICIPATE IN BASEWIDE ACTIVE SHOOTER DRILLS, EMERGENCY RESPONSE DRILLS, AND OTHER INCIDENT RESPONSE DRILLS. THE GOVERNMENT WILL COORDINATE THE OCCURRENCE OF THESE DRILLS WITH THE CONTRACTOR IN THE EVENT THAT DRILLS WILL AFFECT CONTRACTOR ACCESS TO GOODFELLOW AFB.

B. STAGING NOTES

1. CONTRACTOR SHALL PROVIDE AND MAINTAIN A TEMPORARY CONSTRUCTION CHAIN LINK FENCE, 6 FEET HIGH, AROUND THE LIMITS OF WORK NOT INCLUDING THE CONSTRUCTION ACCESS ROAD. COORDINATE CHAIN AND PADLOCKS ON GATES WITH GOODFELLOW FIRE DEPARTMENT. EACH GATE SHALL BE NUMBERED FOR EMERGENCY ACCESS, SHALL HAVE ENTRY/EGRESS SIGNAGE AND AREA LIGHTING. CONTRACTORS SHALL MAINTAIN FIRE ACCESS THROUGH EACH INDIVIDUAL CONSTRUCTION SITE AT ALL TIMES.

2. TRUCK WASHOUT AREA SHALL BE CONSTRUCTED, MAINTAINED AND CLEANED IN ACCORDANCE WITH TCEQ REGULATIONS. PROVIDE DETAILS AND MAINTENANCE PLAN AS PART OF THE STORMWATER POLLUTION PREVENTION PLAN. STORMWATER PERMITS ARE REQUIRED PRIOR TO THE START OF CONSTRUCTION.

3. ALL CONTRACTORS SHALL STOCKPILE REQUIRED MATERIALS AND EQUIPMENT WITHIN LIMITS OF RESPECTIVE PROJECT AREAS OR STAGING AREA AS INDICATED ON THE DRAWINGS.

4. CONTRACTOR SHALL CONNECT TO EXISTING OR NEW FIRE HYDRANTS FOR TEMPORARY CONSTRUCTION WATER. INSTALL QUICK DISCONNECT, BACK FLOW PREVENTER AND SHUT–OFF VALVE ON 2 1/2" HOSE CONNECTION ONLY. PRIOR TO MAKING ANY CONNECTIONS TO BASE WATER SYSTEMS, THE CONTRACTOR MUST NOTIFY AND COORDINATE WITH 17CES. A FIRE PLUG USAGE PERMIT IS REQUIRED AND USAGE SHALL BE METERED AT ALL TIMES.

5. ALL TEMPORARY ELECTRIC POWER FACILITIES SHALL MEET OR EXCEED NESC AND NEC REQUIREMENTS AS APPLICABLE FOR PRIMARY AND SECONDARY FACILITIES.

C. ACCESS AND VEHICLE PARKING

1. ACCESS TO THE PROJECT FOR ALL CONSTRUCTION PERSONNEL, VEHICLES AND EQUIPMENT IS ILLUSTRATED ON THE LOCALIZED AREA PLAN SHOWN ON SHEET G–002. ACCESS ROUTES MAY BE SUBJECT TO CHANGE BASED ON OPERATIONAL REQUIREMENTS. POTENTIAL SCHEDULE IMPACTS SHALL BE COORDINATED WITH 17CES.

2. LOCATION OF ACCESS/ HAUL ROADS ARE AS INDICATED ON G–001 AND G–002.

3. ALL HAUL ROADS SHALL BE MAINTAINED SUCH THAT UNOBSTRUCTED ACCESS WILL BE PROVIDED AT ALL TIMES FROM THE ROAD TO THE STAGING AREA AND FROM THE STAGING AREA TO THE WORK SITE AND FACILITATE GOVERNMENT ACCESS TO THE BASE AT ALL TIMES. THE MAINTENANCE OF HAUL ROADS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT. THE HAUL ROAD LOCATIONS SHALL BE AS INDICATED ON G–000 AND G–001.

4. CONTRACTOR SHALL COORDINATE ACTIVITIES THROUGHOUT THE PROJECT IN A MANNER THAT ALLOWS EMERGENCY ACCESS TO ALL EXISTING ROADWAYS AT ALL TIMES WITHOUT DELAYS TO EMERGENCY VEHICLES RESPONSE TIME.

5. ALL CONTRACTOR VEHICLES AND PERSONNEL MAY BE SEARCHED BY SECURITY FORCES WHEN ENTERING THE BASE AND MAY EXPERIENCE DELAYS. ALL PERSONNEL ENTERING GOODFELLOW A.F.B. MUST HAVE A VALID PHOTO ID PER BASE SECURITY REQUIREMENTS. ALL VEHICLES ENTERING THE BASE MUST HAVE CURRENT/ VALID REGISTRATION, CURRENT/ VALID INSURANCE AND CURRENT/ VALID DRIVERS LICENSE FOR THE OPERATOR. ALL DRIVERS MUST COMPLY WITH ALL GOODFELLOW AFB DRIVING REQUIREMENTS (SPEED LIMITS, SEATBELTS, ETC.) PERSONNEL ATTEMPTING TO GAIN ACCESS TO GOODFELLOW AFB NOT IN COMPLIANCE WITH BASE SECURITY REQUIREMENTS MAY BE REJECTED ACCESS TO THE BASE..

6. WHEN NOT ENGAGED IN CONSTRUCTION ACTIVITIES, THE CONTRACTOR'S CONSTRUCTION EQUIPMENT AND VEHICLES SHALL BE PARKED WITHIN THE WORK AREA OR STAGING AREA.

D. COORDINATION AND COMMUNICATION DURING CONSTRUCTION

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CORDON OFF THE WORK AREAS AND STREET CROSSINGS BY USING APPROVED BARRICADES.

E. TRAFFIC CONTROL

1. ONLY RUBBER–TIRED VEHICLES SHALL BE ALLOWED ON EXISTING PAVEMENT THAT IS TO REMAIN.

2. ANY DAMAGE TO ROADS AND PAVEMENT DUE TO CONSTRUCTION EQUIPMENT, CONSTRUCTION TRAFFIC OR CONSTRUCTION ACTIVITY SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR AT HIS/ HER OWN EXPENSE.

F. EQUIPMENT AND STOCKPILE HEIGHT

1. STOCKPILE ALL CONSTRUCTION MATERIALS WITHIN STAGING AREA. MAXIMUM HEIGHT 15.00' WITH 5:1 SIDE SLOPES. PROVIDE EROSION CONTROL PROTECTION AROUND THE STOCKPILE LIMITS. ANY MATERIALS THAT ARE TO BE STOCKPILED FOR USE FOR OTHER PROJECTS ON THE BASE SHALL BE COORDINATED WITH 17CES. ALL MATERIAL NOT REQUIRED SHALL BE HAULED OFF GOVERNMENT PROPERTY.

G. EXCAVATION AND TRENCHES

1. OPEN TRENCHES AND EXCAVATIONS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH ORANGE AND WHITE TYPE III BARRICADES AND WITH FLASHING TYPE A–LOW INTENSITY WARNING LIGHTS FROM DUSK TILL DAWN.

H. OTHER SAFETY REQUIREMENTS

1. CONTRACTOR SHALL MAINTAIN SAFETY PRACTICES THAT CONFORM TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS.

2. CONTRACTOR SHALL MAINTAIN AT ALL TIMES ONE FIRE LANE FREE FROM OBSTRUCTION AND MAINTAIN ACCESS TO THE SITE AND ALL SURROUNDING ROADS AND STREETS.

I. CONTRACTOR SAFETY PLAN SUBMITTALS

1. CONTRACTOR SHALL FURNISH A CONSTRUCTION SAFETY PLAN IN ACCORDANCE WITH THE SPECIFICATIONS WITH THE PROJECT SCHEDULE. THE SAFETY PLAN SHALL IDENTIFY THE FOLLOWING ITEMS:

   A. PROPOSED ACCESS POINTS, STAGING AREA AND HAUL ROUTES.
   B. TEMPORARY MARKINGS TO BE USED, IF ANY.
   C. LOCATIONS AND TYPE OF BARRICADES OR OTHER TRAFFIC CONTROL DEVICES.
   D. METHODS BY WHICH THE CONTRACTOR WILL COMMUNICATE WITH 17CES.

J. MAINTENANCE OF STORAGE AREA

1. THE CONTRACTOR SHALL AT ALL TIMES KEEP THE CONSTRUCTION SITE, CONSTRUCTION TRAILER(S)/BUILDING(S), AND STORAGE AREA(S) IN A CLEAN, NEAT, WORKMAN LIKE CONDITION, FREE FROM ACCUMULATION OF WASTE, RUBBISH, WEEDS, OVERGROWN GRASS, OR CONSTRUCTION DEBRIS, TO THE SATISFACTION OF THE CONTRACTING OFFICER. ALL LOOSE OR LIGHT WEIGHT MATERIALS SHALL BE SECURED TO PREVENT BLOWING OR SCATTERING. THE BURNING OF TRASH OR CONSTRUCTION DEBRIS IS STRICTLY PROHIBITED ON GOODFELLOW AFB. PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS, TOOLS, EQUIPMENT, AND MATERIALS NOT THE PROPERTY OF THE GOVERNMENT. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL LEAVE THE WORK SITE AND STORAGE AREA(S) IN A CLEAN, NEAT, AND WORKMANLIKE CONDITION SATISFACTORY TO THE CONTRACTING OFFICER. REFER TO STATEMENT OF WORK.

2. THE CONTRACTOR SHALL KEEP FENCING IN A STATE OF GOOD REPAIR AND PROPER ALIGNMENT. GRASSED OR UNPAVED AREAS, WHICH ARE NOT ESTABLISHED ROADWAYS, WILL BE COVERED WITH A LAYER OF GRAVEL AS NECESSARY TO PREVENT RUTTING AND THE TRACKING OF MUD ONTO PAVED OR ESTABLISHED ROADWAYS, SHOULD THE CONTRACTOR ELECT TO TRAVERSE THEM WITH CONSTRUCTION EQUIPMENT OR OTHER VEHICLES; GRAVEL GRADATION WILL BE AT THE CONTRACTOR'S DISCRETION. MOW AND MAINTAIN GRASS LOCATED WITHIN THE BOUNDARIES OF THE CONSTRUCTION SITE FOR THE DURATION OF THE PROJECT. GRASS AND VEGETATION ALONG FENCES, BUILDINGS, UNDER TRAILERS, AND IN AREAS NOT ACCESSIBLE TO MOWERS WILL BE EDGED OR TRIMMED NEATLY.

3. GRASS AND WEEDY VEGETATION WITHIN THE AREAS UTILIZED BY THE CONTRACTOR, INCLUDING WORK AREAS, ADMINISTRATIVE AREAS, AND STORAGE AREAS, SHALL BE KEPT MOWED TO CONTROL VEGETATIVE GROWTH. VEGETATION SHALL BE MOWED WHEN IT REACHES A HEIGHT OF 6 INCHES. MOWING SHALL BE TO A HEIGHT OF 3 INCHES. MOWING SHALL BE ACCOMPLISHED WITH A ROTARY MOWER THAT LEAVES THE CLIPPINGS EVENLY DISTRIBUTED ON THE SOIL SURFACE. MOWING SHALL BE ACCOMPLISHED DURING PERIODS AND IN SUCH MANNER THAT THE SOIL AND GRASS WILL NOT BE DAMAGED. TOWED OR SELF–PROPELLED RIDING MOWERS SHALL NOT BE OPERATED WITHIN 3 FEET OF TREES OR SHRUBS. AREAS ADJACENT TO TREES AND SHRUBS SHALL BE MOWED WITH HAND–PROPELLED MOWERS.

4. EROSION CONTROL DEVICES SHALL BE USED FOR THE STAGING AREA AND ANY MATERIAL STOCK PILES WHEN NECESSARY TO CONTROL EROSION AND STORM WATER RUNOFF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

5. AREAS NOT MOWED: GOVERNMENT MAY IMMEDIATELY AFTER NOTICE TO THE CONTRACTOR AND AT THE DISCRETION OF THE CONTRACTING OFFICER MOW THE CONTRACTOR'S AREAS AT ANY TIME THE VEGETATION HEIGHT EXCEEDS 6 INCHES.

K. WATERING

1. THE CONTRACTOR SHALL COMPLY WITH THE CURRENT CITY OF SAN ANGELO, TEXAS WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN FOR ALL ON BASE WATER USAGE.

PROJECT NOTES

1. THESE PROJECT NOTES SHALL APPLY THROUGHOUT THE CONTENTS OF THESE CONSTRUCTION DOCUMENTS AND ALL WORK FOR THIS PROJECT.
2. THE CONTRACTOR SHALL VERIFY ALL EXISTING AND NEW DIMENSIONS AND CONDITIONS PRIOR TO COMMENCEMENT OF ANY AND ALL WORK FOR THIS PROJECT.
3. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, TOOLS, EQUIPMENT, AND ASSOCIATED WORK REQUIRED TO COMPLETELY EXECUTE THE PROJECT.
4. THE CONTRACTOR SHALL PROVIDE ALL WORK COMPLETE, IN TEH QUICKEST TIME PRACTICAL, AND IN A NEAT WORKMANLIKE MANNER.
5. THE CONTRACTOR SHALL PROVIDE ITEMS OF WORK NOT SPECIFICALLY INDICATED, BUT OBVIOUSLY AND/OR NORMALLY REQUIRED TO COMPLETELY AND PROPERLY EXECUTE THE WORK.
6. THE CONTRACTOR SHALL COMPLY WITH ALL LAWS GOVERNING SAFETY, SPECIFICALLY THE "OCCUPATIONAL SAFETY AND HEALTH" STANDARDS (OSHA)
7. THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE FEDERAL "AMERICANS WITH DISABILITIES ACT" AND THE "TEXAS ACCESSIBILITIES STANDARDS/TEXAS "ELIMINATIONS OF ARCHITECTURAL BARRIERS ACT" [LATEST EDITIONS]
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE EXISTING ON–SITE BUILDINGS AND OTHER INSTALLATIONS THAT ARE TO REMAIN INTACT DURING AND AFTER WORK FOR THIS PROJECT.
9. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT THE PROJECT DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO, BRACING AND SHORING OF DEAD LOADS, CONSTRUCTION LOADS, AND WIND LOADS.
10. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN FIRE EXTINGUISHERS ON SITE DURING CONSTRUCTION FOR THIS PROJECT.
11. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN A CLEAN, SECURE, WEATHERTIGHT, TEMPORARY FIELD OFFICE WITH ALL REQUIRED SERVICES DURING THE COURSE OF THE PROJECT. THE FIELD OFFICE SHALL BE A PORTABLE FACILITY PLACED ON SITE AT A LOCATION MUTUALLY AGREEABLE TO BOTH CONTRACTOR AND CONTRACTING OFFICER OR CONTRACTING OFFICER REPRESENTATIVE.
12. THE CONTRACTOR SHALL MAINTAIN A COMPLETE, CURRENT SET OF THE CONSTRUCTION DOCUMENTS AND DAILY PROJECT LOG IN THE FIELD OFFICE AT ALL TIMES. DAILY REPORTS INDICATING NUMBER OF EMPLOYEES WORKING, WORK PERFORMED, EQUIPMENT USED, AND PROGRESS PICTURES SHALL BE SUBMITTED VIA EMAIL TO THE CONTRACTING OFFICER OR CONTRACTING OFFICER REPRESENTATIVE ON A WEEKLY OR DAILY BASIS UNTIL PROJECT COMPLETION.
13. THROUGHOUT THE ENTIRE COURSE OF THE WORK, THE CONTRACTOR SHALL MAINTAIN A QUALIFIED SUPERINTENDENT ON SITE AT ALL TIMES MONDAY–FRIDAY DURING DESIGNATED WORK TIMES. CONTRACTOR SHALL PROVIDE AN ASSIGNED ALTERNATE ON SITE SUPERINTENDENT DURING THE PRIMARY SUPERINTENDENTS ABSENCE. BOTH SHALL HAVE FULL AUTHORITY TO ACT ON BEHALF OF THE CONTRACTOR.
14. THE CONTRACTOR SHALL COORDINATE ALL WORK FOR THIS PROJECT WITH WORK OF OTHER TRADES.
15. THE CONTRACTOR SHALL PROVIDE AND PROPERLY MAINTAIN PORTABLE TOILET(S) ON SITE FOR USE BY CONTRACTOR EMPLOYEES OR SUBCONTRACTORS. USE OF EXISITNG FIRE STATION RESTROOMS WILL NOT BE ALLOWED.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS FROM PROJECT SITE AND SHALL PROVIDE AND MAINTAIN DUMPSTERS, INCLUDING ALL ASSOCIATED DUMPING FEES, HAULING OF DEBRIS FROM SITE, AND REMOVAL FEES.
17. THE CONTRACTOR SHALL KEEP THE PROJECT FACILITY AND SITE FREE OF ALL DEBRIS ON A DAILY BASIS AND PROVIDE FINAL CLEANUP IN ACCORDANCE WITH THE SPECIFICATIONS AND TO THE CONTRACTING OFFICER'S SATISFACTION.
18. THE CONTRACTING OFFICER SHALL BE THE FINAL AUTHORITY IN MATTERS REGARDING INTERPRETATION OF THE INSTRUCTIONS AND INTENT OF THE CONSTRUCTION DOCUMENTS.
19. IN THE EVENT OF DISCREPANCIES, SPECIFICATIONS SHALL TAKE PRECEDENT OVER THE DRAWINGS,
20. UNLESS INDICATED OTHERWISE, ALL EXTERIOR AND INTERIOR FINISHES SHALL BE CODE COMPLIANT AND AS DIRECTED BY THE PROJECT MANAGER.
21. THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER OR CONTRACTING OFFICER REPRESENTATIVE WITH ALL MATERIAL AND/OR PRODUCT SAMPLES AND COLORS FOR PROPER SELECTION AND FINAL APPROVAL PRIOR TO INSTALLATION.
22. THE CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL PRODUCTS AND/OR MATERIALS LISTED IN THE SPECIFICATIONS FOR APPROVAL PRIOR TO INSTALLATION.
23. ALL CHANGES, MODIFICATIONS, AND/OR ALTERATIONS TO THE WORK INCLUSIVE OF THESE CONTRACT DOCUMENTS SHALL REQUIRE THE STANDARD CHANGE ORDER PROCESS AND THE ISSUANCE OF A SIGNED CHANGE ORDER (AIA G701) PRIOR TO PERFORMANCE WORK FOR SAID CHANGES, MODIFICATIONS AND/OR ALTERATIONS.
24. ALL PRODUCTS AND/OR MATERIALS SHALL NOT BE INSTALLED UNTIL APPROVED BY THE CONTRACTING OFFICER.
25. ALL PRODUCTS AND/OR MATERIALS SHALL BE PROVIDED, STORED, AND INSTALLED PER THE RESPECTIVE MANUFACTURER'S RECOMMENDATIONS, MINIMUM.
26. THE CONTRACTOR SHALL WARRANT ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER PROJECT COMPLETION. ANY MANUFACTURER AND/OR SPECIFIED WARRANTY THAT IS FOR PERIOD LONGER THAN THE ONE (1) YEAR WARRANTY SHALL BE SO WARRANTED.
27. THE CONTRACTOR SHALL ENSURE THAT ALL EXTERIOR GRADES AT NEW CONSTRUCTION PROVIDE FOR POSITIVE DRAINAGE AWAY FROM THE BUILDING.
28. ALL WELDERS SHALL BE CURRENTLY A.W.S. CERTIFIED AND WELDING SHALL COMPLY WITH CURRENT A.W.S. STANDARDS.
29. GYPSUM WALL AND CEILING BOARDS SHALL BE TEXTURED ORANGE PEEL THROUGHOUT AND/OR WHERE REQUIRED.
30. THE CONTRACTOR SHALL PROVIDE OWNER WITH A SINGLE "AS–BUILT" SET OF DRAWINGS COMPRISED OF RED–LINE MARKUPS OF ALL PROJECT ALTERATIONS AND/OR CHANGES.
31. ALL COMPACTION FOR FILL SHALL BE 95% STANDARD PROCTOR DENSITY, MINIMUM.
32. THE CONTRACTOR SHALL NOT SCALE DRAWINGS HEREIN.

17th CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: 17CES

PROJECT TITLE

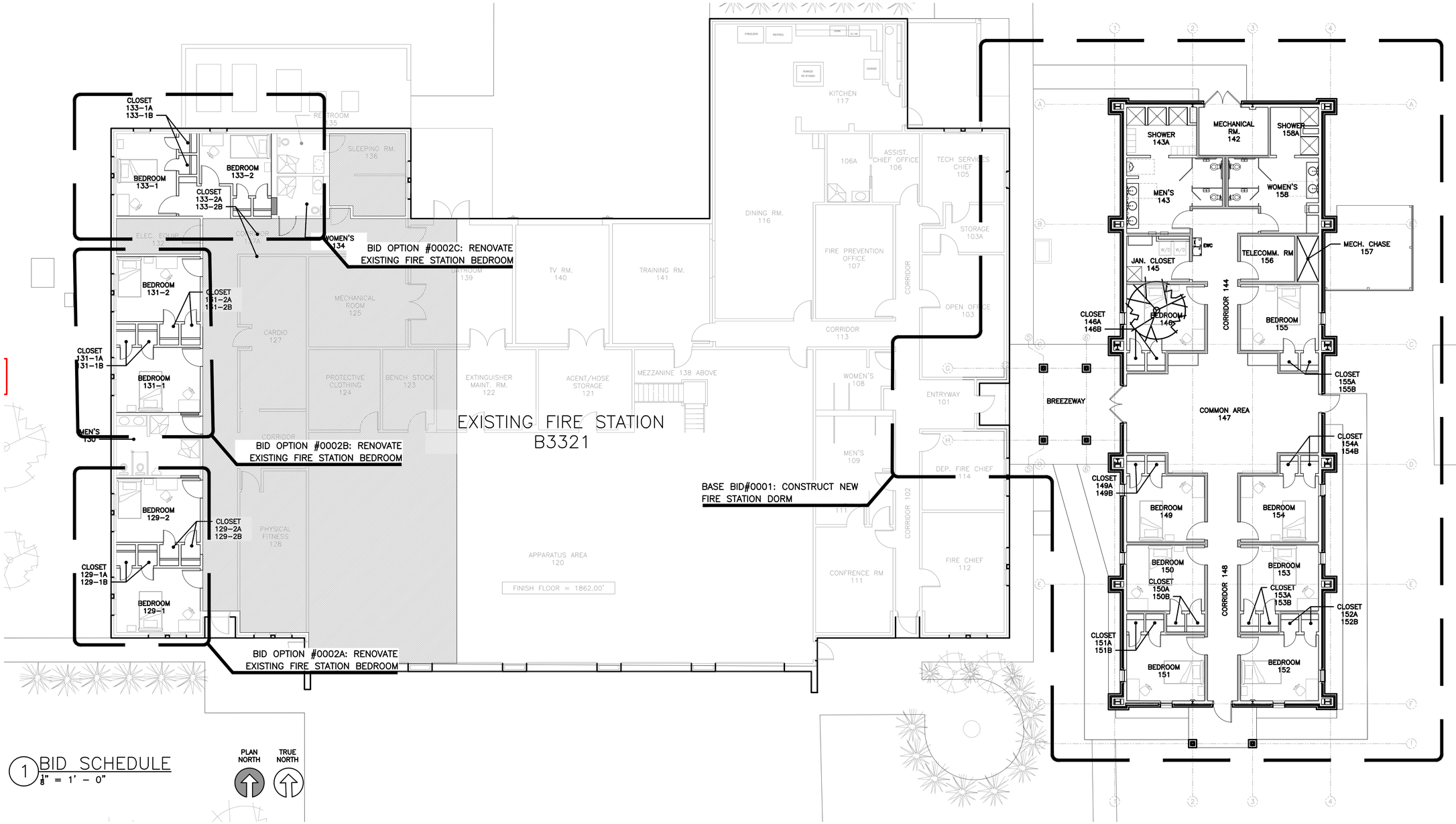
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: GENERAL INFORMATION 2

Date: SEP 2023

SEQ.	SHEET	OF
03	G-003	50



1 BID SCHEDULE
1/8" = 1' - 0"

BID SCHEDULE

BASE BID #0001 – CONSTRUCT NEW FIRE STATION DORM:
CONSTRUCT NEW 8-BEDROOM DORMITORY COMPLETE WITH MEN/WOMEN'S RESTROOMS, TELECOMMUNICATIONS ROOM, JANITOR'S CLOSET, AND MECHANICAL ROOM.

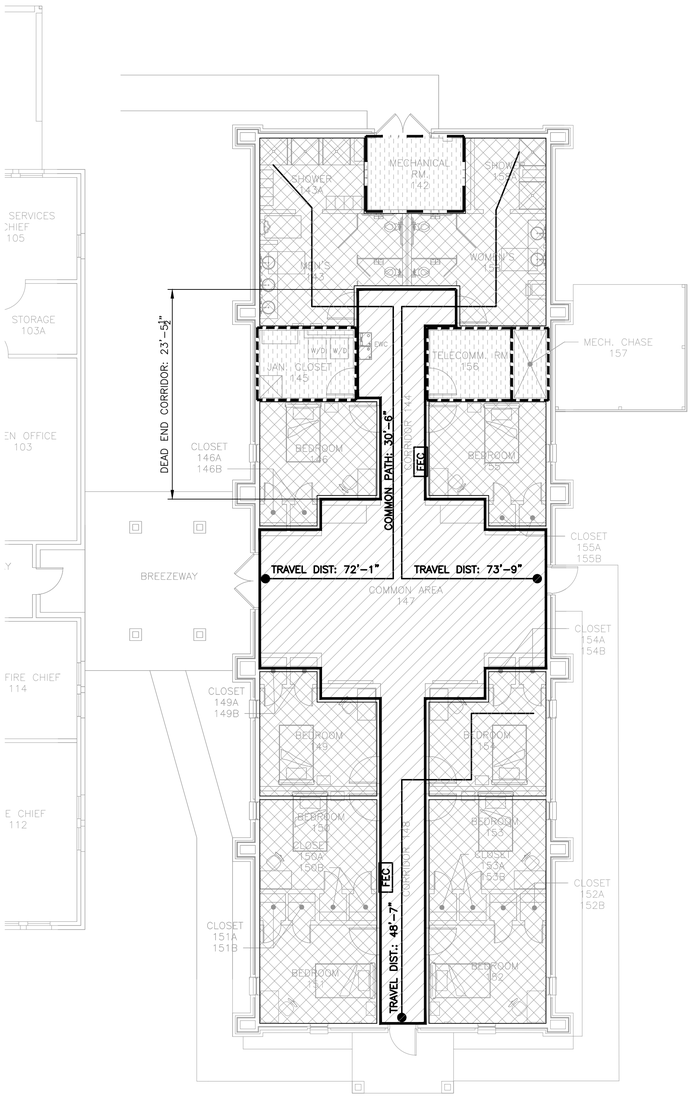
BID OPTION #0002/#0003/#0004 – RENOVATE EXISTING FIRE STATION BEDROOMS:
DEMO EXISTING INTERIOR PARTITIONS, FIXTURES, HVAC AND FINISHES AND PROVIDE NEW.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839
SHEET TITLE: BID SCHEDULE
Date: SEP 2023

SEQ. 04 | SHEET G-004 | OF 50



1 LIFE SAFETY PLAN
1/8" = 1' - 0"

PLAN NORTH

TRUE NORTH

FIRE STATION ADD/ALTER, B3321

LIFE SAFETY ANALYSIS

APPLICABLE CODES & STANDARDS

UNITED FACILITIES CRITERIA (UFC):

- UFC 1-200-01 GENERAL BUILDING REQUIREMENTS (2023)
- UFC 3-580-01 TELECOMMUNICATIONS INTERIOR INFRASTRUCTURE PLANNING AND DESIGN (2016)
- UFC 3-600-01 FIRE PROTECTION ENGINEERING FOR FACILITIES (2021)
- UFC 4-730-10 FIRE STATIONS (2021)

INTERNATIONAL BUILDING CODE IBC (2021)

INTERNATIONAL PLUMBING CODE IBC (2021)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 10 STANDARD FOR PORTABLE EXTINGUISHERS
- NFPA 13 INSTALLATION OF SPRINKLER SYSTEMS
- NFPA 14 INSTALLATION OF STANDPIPE AND HOSE SYSTEMS
- NFPA 70 NATIONAL ELECTRIC CODE (NEC) (2020)
- NFPA 72 NATIONAL FIRE ALARM CODE (2019)
- NFPA 90A STANDARD FOR INSTALLATION OF AIR-CONDITIONING AND VENTILATION SYSTEMS (2018)
- NFPA 101 LIFE SAFETY CODE (2018)
- ARCHITECTURAL BARRIERS ACT (ABA) 2015

IBC CHAPTER 3: OCCUPANCY TYPE

OCCUPANCY TYPE: R-2 DORMITORIES

NFPA CLASSIFICATION: RESIDENTIAL, CHAPTER 28: NEW HOTEL AND DORMITORIES

IBC CHAPTER 5: ALLOWABLE HEIGHTS/AREAS

ALLOWABLE BUILDING HEIGHT: PER TABLE 504.3

- ALLOWED: 75' (SPRINKLERED)
- ACTUAL: 15'-7"

ALLOWABLE NUMBER OF STORIES: PER TABLE 504.4

- ALLOWED: 5 STORIES
- ACTUAL: 1 STORY

ACTUAL BUILDING FOOTPRINT: 3,515 SQ.FT.

FIRE PROTECTION: FULLY SPRINKLERED IN ACCORDANCE WITH IBC 903.2.8

FIRE DETECTION: HEAT/SMOKE DETECTION, DUCT DETECTION, MANUAL PULL STATIONS, VISUAL STROBE AND AUDIBLE HORN ANNUNCIATION VIA ADDRESSABLE FIRE ALARM PANEL WITH POINT-TO-POINT DETECTION.

IBC CHAPTER 6: CONSTRUCTION TYPE

FIRE RESISTANCE REQUIREMENTS (TYPE 2B) CONSTRUCTION REQUIREMENTS: PER TABLE 601

- PRIMARY STRUCTURE: 0
- BEARING WALLS: 0
- NON BEARING WALLS: 0
- FLOOR CONSTRUCTION: 0
- ROOF CONSTRUCTION: 0

IBC CHAPTER 7: FIRE AND SMOKE RESISTANT FEATURES

FIRE PROTECTION AREAS: (PER NFPA 28.3.2.2.2)

- BOILER AND FUEL FIRED HEATER ROOMS: 1 HOUR AND SPRINKLERS
- GUEST LAUNDRY: 1 HOUR OR SPRINKLERS
- STORAGE ROOMS: 1 HOUR OR SPRINKLERS
- FIRE BARRIERS (FB) - PER NFPA SEC. 8.3
- SMOKE PARTITIONS - PER NFPA SEC. 8.3

LEGEND

- RESIDENTIAL OCCUPANCY (200 SQFT / OCC.)
- ASSEMBLY OCCUPANCY (15 SQFT. / OCC.)
- STORAGE / MECH. ROOM OCCUPANCY (500 SQFT. / OCC.)
- ½ HOUR RATED FIRE PARTITION
- 1 HOUR RATED FIRE PARTITION
- SMOKE PARTITION
- FEC — RECESSED FIRE EXTINGUISHER AND CABINET PER NFPA 10. BRACKET AND CABINET SHALL ACCOMMODATE 10LB A/B/C CHEMICAL TYPES. CABINETS TO HAVE FLAT PARTIAL GLASS FRONT WITH HINGED LATCHING DOOR. MOUNT PER NFPA 10 REQ'S

IBC CHAPTER 7 CONT'D:

OPENING PROTECTION

FIRE BARRIERS - PER NFPA SEC. 8.6

SMOKE PARTITIONS - PER NFPA SEC 8.6

PROTECTION OF VERTICAL OPENINGS PER NFPA 8.6

DOOR RATINGS:

1 HOUR FIRE BARRIERS: 45 MINUTE DOOR

SMOKE PARTITION: NO FIRE RATING REQUIRED
FIRE DOORS: PROVIDE SELF OR AUTOMATIC CLOSING FIRE DOORS WITH POSITIVE LATCHING HARDWARE PER NFPA 8.3.3.2
SMOKE PARTITIONS: PROVIDE SELF OR AUTOMATIC CLOSING FIRE DOORS WITH POSITIVE LATCHING HARDWARE. NO FIRE RATING REQUIRED. LOUVRES ARE NOT PERMITTED
DOORS OPENING ONTO EXIT ACCESS CORRIDORS SHALL HAVE NOT LESS THAN 20-MINUTE FIRE PROTECTION RATING IN ACCORDANCE WITH NFPA 8.3 (PER NFPA 28.3.6.2)
DOORS THAT OPEN ONTO EXIST ACCESS CORRIDORS SHALL BE SELF-CLOSING AND SELF-LATCHING PER NFPA 28.3.6.2.3

HVAC:
FIRE DAMPERS SHALL BE PROVIDED IN ALL AIR TRANSFER OPENINGS IN PARTITIONS THAT ARE REQUIRED TO HAVE A FIRE RESISTANCE RATING

CORRIDORS:
IN BUILDINGS PROTECTED BY AN APPROVED AUTOMATIC SPRINKLER SYSTEM, CORRIDORS SHALL HAVE 1/2 FIRE RESISTANCE RATING PER NFPA 28.3.6.1.3

IBC CHAPTER 10: MEANS OF EGRESS

OCCUPANT LOAD FACTOR:

ACCESSORY STORAGE AREAS, MECH. EQUIPMENT ROOMS: 500 (PER NFPA 101 TABLE 7.3.1.2)

331.91 SQFT./ (500) = .66 OCCUPANTS

ASSEMBLY: 15 NET (PER NFPA 101 TABLE 7.3.1.2)

964.62 SQFT. / (15) = 64.31

DORMITORIES : 200 (PER NFPA 101 TABLE 7.3.1.2)

2,218.47 SQFT. / (200) = 11.1 OCCUPANTS

CALCULATED OCCUPANT LOAD: 76.07 (77) * .2 OCC.

EGRESS WIDTH REQUIREMENTS: 15.4"

ACTUAL PROVIDED: 144"

NUMBER OF EGRESS EXITS (NOT INCLUDING PRIMARY/SECONDARY MEANS OF ESCAPE REQUIRED BY NFPA 28.2.1.2)

MINIMUM NUMBER OF EXITS: 2

ACTUAL EXITS PROVIDED: 3

MAXIMUM TRAVEL DISTANCES TO EXITS (PER NFPA 28.2.6)

GUEST ROOM TO CORRIDOR DOOR MAXIMUM: 125' (NFPA 28.2.6.2)

CORRIDOR DOOR TO EXIT: 200' (NFPA 28.2.6.3.2)

MAXIMUM COMMON TRAVEL PATHS(PER NFPA 28.2.5.4): 50'

DEAD END CORRIDOR MAX (PER NFPA 28.2.5.6): 50'

IBC CHAPTER 29: PLUMBING SYSTEMS

RESIDENTIAL OCCUPANCY: DORMITORIES

11.76 OCC (12) 6 MALE / 6 FEMALE

WATER CLOSETS: 1 PER 10 (.6 MALE AND FEMALE)
LAVATORIES: 1 PER 10 (.6 MALE AND FEMALE)
SHOWERS: 1 PER 8 (.75 MALE AND FEMALE)
DRINKING FOUNTAIN: 1 PER 100 (.06 REQ'D)
1 SERVICE SINK

ASSEMBLY OCCUPANCY: AUDITORIUMS WITHOUT PERMANENT SEATING

64.31 (65 OCC.) 32.5 MALE / 32.5 FEMALE

WATER CLOSETS: 1 PER 125 MALE , 1 PER 65 FEMALE (.26 MALE / .5 FEMALE)
LAVATORIES: 1 PER 200 (.325 REQ'D)
SHOWERS: N/A
DRINKING FOUNTAIN: 1 PER 500 (.13 REQ'D)
1 SERVICE SINK

TOTAL FIXTURE REQUIREMENTS

MALE:
WATER CLOSETS: .86 REQ'D / 2 PROVIDED (+ 1 URINAL)
LAVATORIES: .925 REQ'D / 3 PROVIDED
SHOWERS: .75 REQ'D / 3 PROVIDED

FEMALE:
WATER CLOSETS: 1.1 REQ'D / 2 PROVIDED
LAVATORIES: .925 REQ'D / 2 PROVIDED
SHOWERS: .75 REQ'D / 2 PROVIDED

DRINKING FOUNTAIN: .19 REQ'D / 2 PROVIDED
SERVICE SINK: 1 REQ'D / 1 PROVIDED

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: LIFE SAFETY PLAN

Date: SEP 2023

SEQ. 05 | SHEET LS-101 | OF 50

GENERAL NOTES:

BUILDING CODES:
ALL STRUCTURAL FRAMING SYSTEMS PROVIDED BY THE CONTRACTOR SHALL BE DESIGNED IN GENERAL ACCORDANCE WITH THE FOLLOWING CODE REFERENCES:

1. UNIFIED FACILITIES CRITERIA (UFC) 1–200–01 GENERAL BUILDING REQUIREMENTS WITH CHANGE 1.
2. UNIFIED FACILITIES CRITERIA (UFC) 1–301–01 STRUCTURAL ENGINEERING, WITH CHANGE 1 REVISED.
3. INTERNATIONAL BUILDING CODE (IBC), 2012.
4. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 7–10, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
5. AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION (AISC) 360–10.
6. STEEL JOIST INSTITUTE (SJI) SPECIFICATIONS AND LOAD TABLES, 75 YEAR STEEL JOIST MANUAL.

DIVISION 1 – GENERAL REQUIREMENTS

CONTRACTOR SHALL PROVIDE NECESSARY EQUIPMENT, MATERIALS, AND LABOR REQUIRED TO PROVIDE NEW REINFORCED CONCRETE FOUNDATIONS AND SLABS, NEW PRE–ENGINEERED (PEB) METAL BUILDING, AND CONNECTED METAL CANOPIES AND BREEZEWAYS AS INDICATED IN THE FOLLOWING DRAWINGS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING EXISTING VEGETATION AND TOPSOIL TO A DEPTH OF 30" BELOW GRADE. THE CONTRACTOR SHALL GRADE AND COMPACT THE SUB–BASE IN PREPARATION FOR NEW CONCRETE PADS AND SLABS AS INDICATED. LIFTS SHALL BE COMPACTED IN 6" BASE MATERIAL LIFTS AS SPECIFIED AND COMPACTED TO A MINIMUM 95% PROCTOR DENSITY UNLESS NOTED OTHERWISE.

THE CONTRACTOR SHALL PROVIDE ALL TESTING REPORTS FROM A CERTIFIED GEOTECHNICAL ENGINEER AS SPECIFIED.

CONTRACT DOCUMENTS INCLUDE, BUT ARE NOT LIMITED TO, THE STRUCTURAL DOCUMENTS (DRAWINGS AND SPECIFICATIONS), BUT DO NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS, OR MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR. THE NOTES PRESENTED HEREIN ARE NOT INTENDED TO REPLACE THE SPECIFICATIONS. SEE THE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO THE GENERAL NOTES.

REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION OR ASSOCIATION OR TO CODES OF LOCAL OR STATE AUTHORITIES, SHALL MEAN THE LATEST STANDARD, CODE, SPECIFICATION OR TENTATIVE SPECIFICATION ADOPTED AT THE DATE OF TAKING BIDS, UNLESS SPECIFICALLY STATED OTHERWISE.

CONTRACT DOCUMENTS SHALL GOVERN IN THE EVENT OF A CONFLICT WITH THE CODE OF PRACTICE OR SPECIFICATIONS OF AISC, ASTM, AWC, SJI, AF&PA OR OTHER STANDARDS. WHERE A CONFLICT OCCURS WITHIN THE CONTRACT DOCUMENTS, THE MORE STRINGENT REQUIREMENT SHALL GOVERN.

CONTRACTOR HAS SOLE RESPONSIBILITY FOR MEANS, METHODS, SAFETY, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.

CONTRACTOR SHALL COORDINATE THE RELOCATION OF UTILITIES, IF REQUIRED BY THE REPAIRS. THE CONTRACTOR SHALL FOLLOW THE APPLICABLE CODES AND INDUSTRY STANDARDS WHEN MOVING EXISTING ELECTRICAL, MECHANICAL, COMMUNICATIONS, PLUMBING, WATER, AND SPRINKLER LINES, ETC. AS REQUIRED FOR THE PERFORMANCE OF THE STRUCTURAL REPAIRS.

THE CONTRACTOR SHALL HAVE ALL TEMPORARY SHORING DESIGNED AND CERTIFIED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS AS PART OF HIS WORK. THE CONTRACTOR SHALL SUBMIT ONE COPY OF THE ALL CERTIFIED TEMPORARY SHORING DOCUMENTS FOR REVIEW AND RECORD PURPOSES. DESIGN DOCUMENTS SHALL INCLUDE BUT NOT LIMITED TO: PLANS, SECTIONS, DETAILS, AND STRUCTURAL CALCULATIONS.

WORK SPECIFIED HEREIN SHALL BE INSPECTED IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE, LOCAL ORDINANCES, AND THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL COORDINATE REQUIRED INSPECTIONS WITH THE GOVERNMENT'S INSPECTOR(S).

THE CONTRACTOR SHALL TAKE NECESSARY STEPS TO MINIMIZE INTERFERENCE WITH THE OPERATIONS AND BASE MISSION. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL SUBMIT A DETAILED, WRITTEN WORK PLAN TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL.

WHERE APPLICABLE THE CONTRACTOR SHALL COORDINATE ALL WORK ON ROOFS WITH THE CONTRACTING OFFICER SO THAT THE ROOF WARRANTIES ARE NOT VOIDED. THE CONTRACTOR SHALL PROPERLY REINSTALL OR REPLACE ANY ROOF OR FACADE COMPONENTS THAT WERE REMOVED OR DAMAGED DURING THE COURSE OF THE WORK PRIOR TO DEPARTURE FROM THE WORK SITE EACH DAY. ANY ROOF OR FACADE COMPONENTS THAT ARE REINSTALLED OR REPLACED SHALL BE WATER TIGHT. ALL REPAIRS SHALL BE APPROVED BY THE CONTRACTING OFFICIAL PRIOR TO THE COMMENCEMENT OF REPAIR ACTIVITIES.

WHERE SUSPECT BUILDING MATERIALS ARE ENCOUNTERED DURING SELECTIVE DEMOLITION OR REPAIRS OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONTRACTING OFFICER PRIOR TO PERFORMING ANY SAMPLING, TESTING, ABATEMENT, HANDLING, AND DISPOSAL OF ANY SUSPECT BUILDING MATERIAL(S) AND SHALL ADHERE TO THE STANDARDS, PRACTICES AND PROTOCOLS OF BASE COMMAND.

DIVISION 2 – SITE WORK

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL BURIED UTILITIES IN THE CONSTRUCTION AREA PRIOR TO BEGINNING WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE, HAULING AND DISPOSAL OF ALL ITEMS SPECIFIED IN THE CONSTRUCTION DOCUMENT TO BE SELECTIVE DEMOLISHED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF AND DESIGN OF THE SLAB ON GRADE FOUNDATION AND CONCRETE PIERS FOR PEB COLUMNS. THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE STATE OF TEXAS TO THE CONTRACTING OFFICIAL PRIOR TO INSTALLATION.

DIVISION 3 – CONCRETE

ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c) OF 3,000 PSI.

ALL CONCRETE SHALL BE AIR ENTRAINED AND SHALL HAVE AN ENTRAINED AIR CONTENT RANGING BETWEEN 5 TO 7 PERCENT.

ALL CONCRETE REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.

FOR HOT WEATHER CONCRETE, THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF ACI 305.

FOR COLD WEATHER CONCRETE, THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF ACI 306.

THE CONTRACTOR SHALL BE SUBMIT ALL CONCRETE MIX DESIGNS SHOP DRAWINGS TO THE CONTRACTING OFFICIAL FOR APPROVAL PRIOR TO BEGINNING WORK.

THE CONTRACTOR SHALL SUBMIT ALL CONCRETE SHOP DRAWINGS PRIOR TO CASTING CONCRETE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL CONCRETE FORM WORKS TO BE USED ON THIS PROJECT. THE CONTRACTOR SHALL SUBMIT ALL FORM WORK CALCULATIONS AND SHOP DRAWINGS TO THE CONTRACTING OFFICIAL PRIOR TO BEGINNING CONCRETE WORK. ALL FORM WORK CALCULATIONS AND SHOP DRAWINGS SHALL BE DESIGNED, SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE STATE OF TEXAS.

DIVISION 4 – MASONRY

PROVIDE BRICK WAINSCOT AND STUCCO EXTERIOR WALL FINISH AS INDICATED AND AS SPECIFIED.

NEW BRICK VENEER TO MATCH EXISTING FIRE STATION FINISH AS MUCH AS POSSIBLE. CONTRACTOR SHALL SUBMIT SAMPLES OF BRICK TO THE GOVERNMENT FOR APPROVAL PRIOR TO INSTALLATION.

DIVISION 5 – STRUCTURAL STEEL
THE CONTRACTOR SHALL FIELD VERIFY ALL QUANTITIES AND RELEVANT DIMENSIONS OF STRUCTURAL STEEL AND MISCELLANEOUS STEEL MEMBERS USED IN THIS PROJECT PRIOR TO FABRICATION.

STEEL ANGLES SHALL MEET THE REQUIREMENTS OF ASTM A 36 AND SHALL BE PAINTED. SURFACES SHALL BE PREPARED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL SPECIFICATION SSPC–SP7.

ALL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC MANUAL, AISC SPECIFICATION, AND AISC CODE OF STANDARD PRACTICE.

BOLTS, NUTS, AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 325. STRUCTURAL BOLTS SHALL BE 3/4 INCH DIAMETER MINIMUM.

ALL CHEMICAL EPOXY ANCHORS SHALL BE HILTI HIT–HY 150 ADHESIVE ANCHORING SYSTEM OR APPROVED EQUIVALENT. ANCHORS SHALL CONSIST OF ¾" DIAMETER HILTI HAS RODS WITH A MINIMUM EMBEDMENT OF 6". IN THE EVENT THAT DAMAGE TO THE EXISTING CONCRETE WALL IS FOUND IN THE SPECIFIED CONNECTION AREA, THE CONTRACTING OFFICER SHALL BE IMMEDIATELY NOTIFIED AND ADHESION ANCHORS SHALL NOT BE INSTALLED UNTIL SUCH A TIME AS THE CONCRETE WALLS CAN BE EVALUATED.

EXTERIOR BREEZEWAY AND CANOPY ARE TO BE COMPRISED OF HOLLOW STRUCTURAL STEEL (HSS) MEMBERS UNLESS NOTED OTHERWISE. ALL EXPOSED MEMBERS WILL BE MED. BRONZE FINISH UNLESS NOTED OTHERWISE.

DIVISION 6 – WOOD AND PLASTIC

UNLESS STATED OTHERWISE, WOOD CONSTRUCTION SHALL BE DETAILED, FABRICATED, AND INSTALLED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE 2012 EDITION OF THE NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION AS PUBLISHED BY THE AMERICAN FOREST AND PAPER ASSOCIATION (AF&PA) AND THE AMERICAN WOOD COUNCIL (AWC).

THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION OF WOOD STRUCTURAL SHORING.

UNLESS OTHERWISE SPECIFIED, EACH PIECE OF LUMBER SHALL BEAR GRADE MARKS, STAMPS, OR OTHER IDENTIFYING MARKING INDICATING THE GRADES OF MATERIAL AND RULES OR STANDARDS UNDER WHICH PRODUCED.

MATERIAL FOR CRIBBING AND SHORING BEAMS SHALL BE SOUTHERN PINE No. 2 AND SHALL HAVE THE MINIMUM PROPERTIES LISTED BELOW. ALL LUMBER SHALL HAVE A MOISTURE CONTENT NOT EXCEEDING 19 PERCENT.

FB = 1,050 PSI
FT = 650 PSI
FV = 175 PSI
FC (PERP) = 565 PSI
FC = 1,100 PSI
E = 1,400,000 PSI

TEMPORARY SHORING

SCREW JACKS CAPABLE OF RESISTING A MINIMUM LOAD OF 1,300 LBS SHALL BE INSTALLED ON TIMBER CRIBBING. EACH JACK SHALL BE TIGHTENED UNTIL SHORING BEAM IS FULLY ENGAGED AGAINST THE BOTTOM OF THE EXISTING METAL FLOOR DECKING.

JACKS SHALL BE PERIODICALLY MONITORED AT LEAST ONCE A MONTH OR AFTER EACH SIGNIFICANT WEATHER EVENT. EACH JACK SHALL BE CHECKED TO VERIFY THAT IT IS ADEQUATELY TIGHT AND FULLY ENGAGED. WHERE JACKS ARE FOUND TO BE LOOSE, JACKS SHALL BE RE–TIGHTENED.

CRIBBING SHALL CONSIST OF 6X6 TIMBERS PLACE IN TWO LAYERS PERPENDICULAR TO EACH OTHER.

THE CONTRACTOR SHALL EXCAVATE THE TOP LAYER OF SOIL TO STIFF, DRY MATERIAL PRIOR TO THE INSTALLATION OF TIMBER CRIBBING. PROVISIONS SHALL BE MADE TO KEEP THE SHORING AREA AS DRY AS POSSIBLE TO AVOID IN ADVERTENT CRIBBING SETTLEMENT DUE TO THE SOFTENING OF THE BASE MATERIALS DUE TO EXCESSIVE MOISTURE EXPOSURE. TIMBER CRIBBING SHALL NOT BE PLACED ON LOOSE OR WET SOIL.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

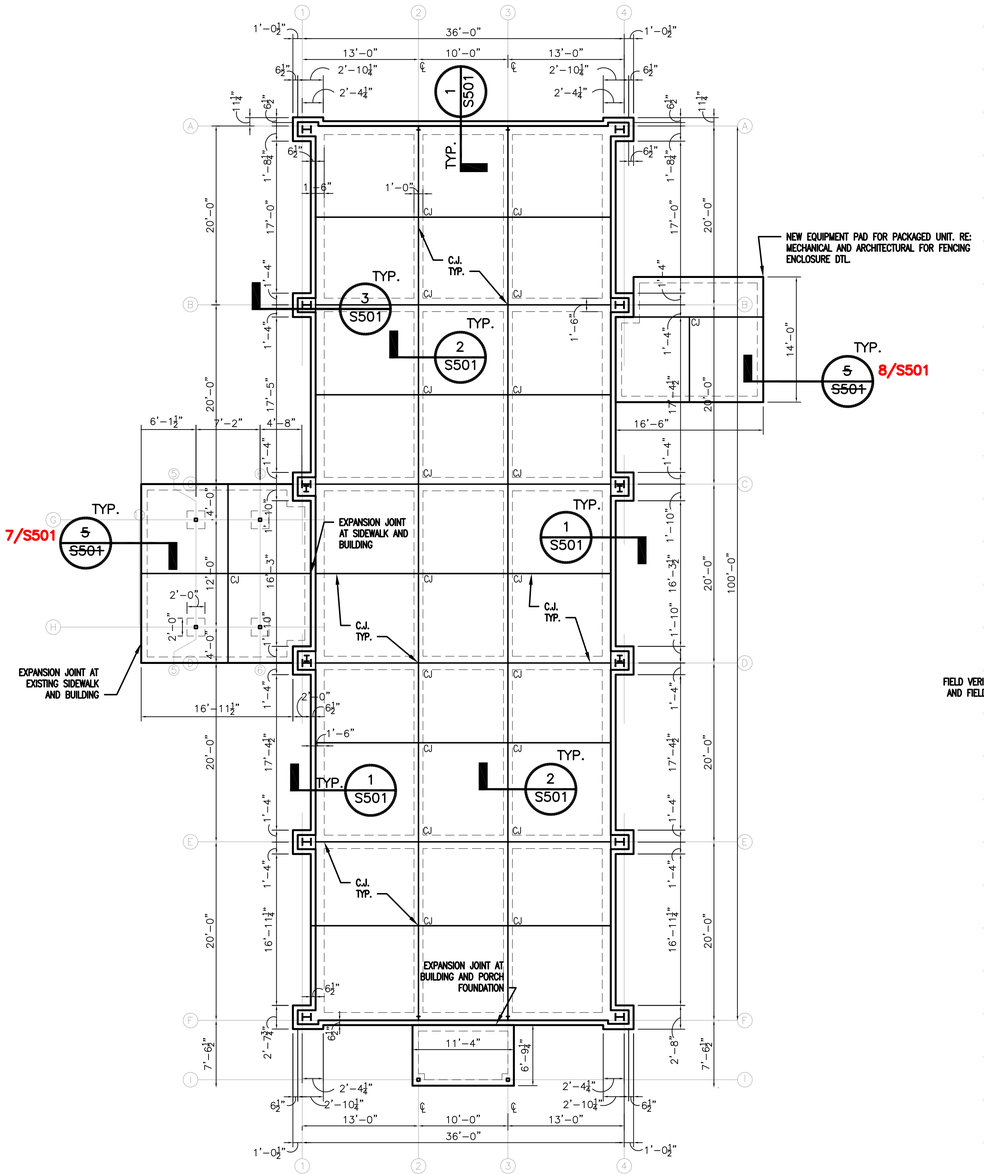
PROJECT TITLE
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE
STRUCTURAL NOTES, SYMBOLS, & ABBREVIATIONS

Date: SEP 2023

SEQ.	SHEET	OF
06	S-001	50

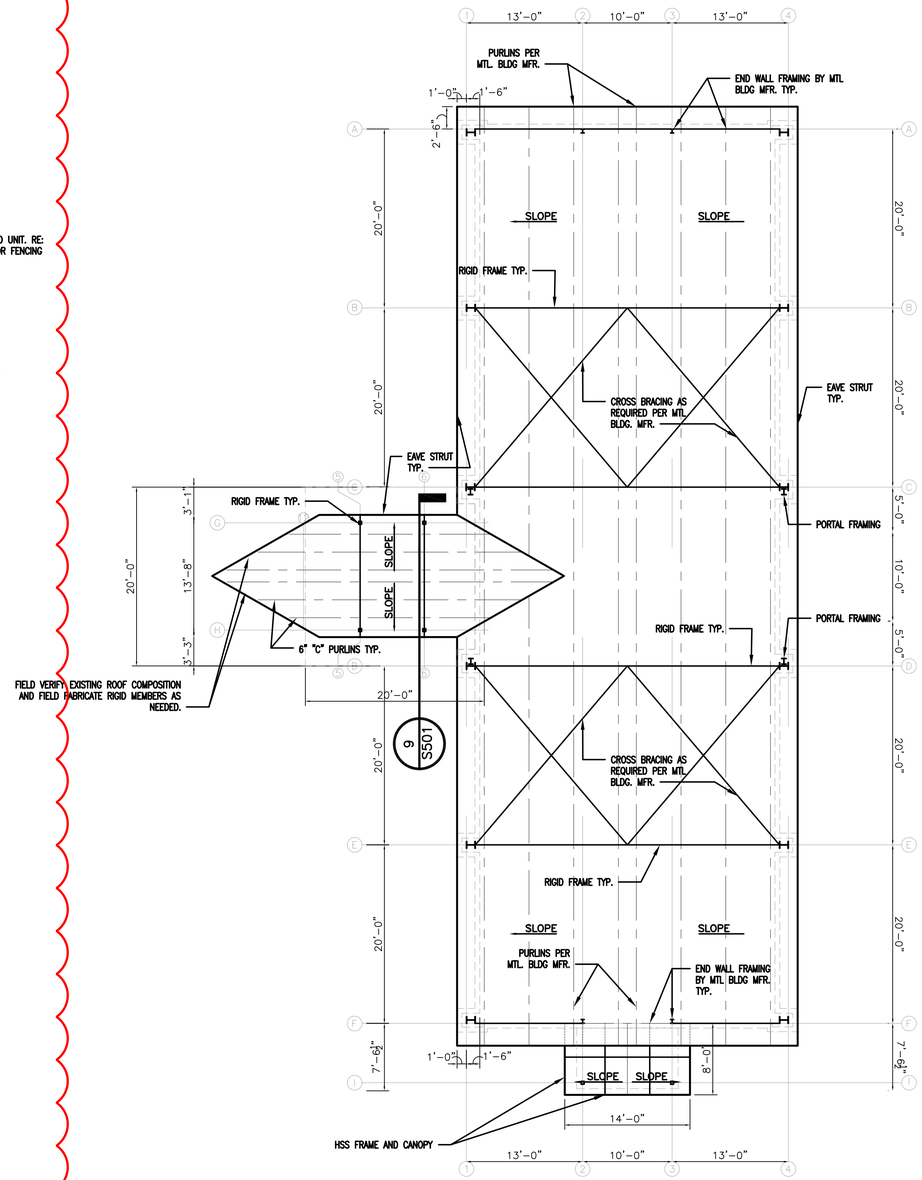


1 NEW ADDITION FRAMING PLAN

1/8" = 1' - 0"

PLAN NORTH

TRUE NORTH



2 NEW ADDITION ROOFING PLAN

1/8" = 1' - 0"

PLAN NORTH

TRUE NORTH

1

CONCRETE FINISHES

1. CONCRETE SLABS TO RECEIVE "TROWEL" FINISH. RE: ARCHITECTURAL FOR ROOMS TO RECEIVE FLOOR HARDENER.
2. CONCRETE SURFACES EXPOSED TO PUBLIC VIEW TO RECEIVE LIGHT BROOM FINISH UNLESS NOTED OTHERWISE.

NOTES: UNLESS NOTED OTHERWISE ON PLAN OR SECTION

1. DESIGN FOUNDATION BEARING PRESSURE (NET) 2 KSF.
2. PLACE 6" CAPILLARY WATER BARRIER AND VAPOR BARRIER UNDER ALL SLABS, U.N.O
3. CONSTRUCTION JOINTS (C.J.) SHALL BE PLACED AS SHOWN ON FOUNDATION PLANS THROUGH SLABS AND BEAMS
4. SEE GENERAL NOTES FOR CONCRETE PROTECTION FOR REINFORCING
5. FILL:
   - 5.1. REMOVE 2'-0" OF EXISTING MATERIAL AND REPLACE WITH NON-EXPANSIVE FILL UNDER THE 6" CAPILLARY BARRIER.
   - 5.2. ALL FILL PLACED UNDER BUILDING SLABS SHALL BE NON-EXPANSIVE AND SHALL BE COMPACTSED TO NO LESS THAN 95% MAX. PROCTOR DENSITY ACCORDING TO ASTM D1557, METHOD D.
6. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE OF THE SITE DURING CONSTRUCTION. THE SITE SHALL BE MAINTAINED IN A DEWATERED CONDITION DURING THE ENTIRE CONSTRUCTION PERIOD. PONDING OF WATER IN AND AROUND THE CONSTRUCTION SITE WILL NOT BE PERMITTED. ANY WATER, EITHER GROUND OR SURFACE MUST BE CONTINUALLY REMOVED.
7. FLOOR ELEVATION OF NEW ADDITION SHALL MATCH EXISTING FIRE STATION.

GENERAL NOTES

1. THESE DRAWINGS ARE FOR CONTRACTOR REFERENCE AND BIDDING PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A PREFABRICATED, PRE-ENGINEERED METAL BUILDING AND CONCRETE FOUNDATION USING THE BASIS OF DESIGN PROVIDED ABOVE. CONTRACTOR SHALL PROVIDE NECESSARY SHOP DRAWINGS OF FOUNDATION AND FRAMING COMPONENTS WITH APPROPRIATE DETAILS SIGNED AND APPROVED BY A PROFESSIONAL ENGINEER.
2. CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS, EQUIPMENT, AND CONDITIONS PRIOR TO START OF WORK.
3. ALL CONCRETE WORK SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH THE LATEST ACI STANDARD SPECIFICATIONS FOR CONCRETE AND REINFORCED CONCRETE 301-20.
4. CONTRACTOR SHALL ENSURE ALL CONCRETE SHALL BE STANDARD WEIGHT AND SHALL TEST AT 3000 PSI @ 28 DAYS.
5. ALL REINFORCING STEEL SHALL BE ASTM DESIGNATION A-615, GRADE 60, EXCEPT THAT GRADE 40 SHALL BE USED FOR BEAM STIRRUPS. DETAIL REINFORCING AND PROVIDE ACCESSORIES IN ACCORDANCE WITH THE LATEST ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.
6. UNLESS NOTED OTHERWISE, WHERE REINFORCING CONTINUOUS REINFORCING IS DESIGNATED, LAP TOP AND BOTTOM BARS AT 12" MIN. STAGGER LAPS. AT NON-CONTINUOUS ENDS OF ALL BEAMS AND SLABS PROVIDE ACI RECOMMENDED 90 HOOK FOR TOP BARS, EXCEPT AT CORNERS OMIT HOOK ON EXTERIOR TOP BARS AND PROVIDE "L" BARS (EXTERIOR HORIZONTAL TOP, BOTTOM AND ALL INTERMEDIATE BARS) LAPPING 12" MIN. IN EA. DIRECTION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING PIPE AND DUCT SLEEVES IN GRADE BEAMS AS INDICATED ON MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. THESE SLEEVES SHALL BE STEEL AND SHALL NOT INTERFERE WITH THE STRUCTURAL FRAMING NOR SHALL THEY IMPAIR THE STRENGTH OF THE STRUCTURE.

REVISIONS	DATE
1 CLARIFY DTL CALL OUTS	23 OCT 2023

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

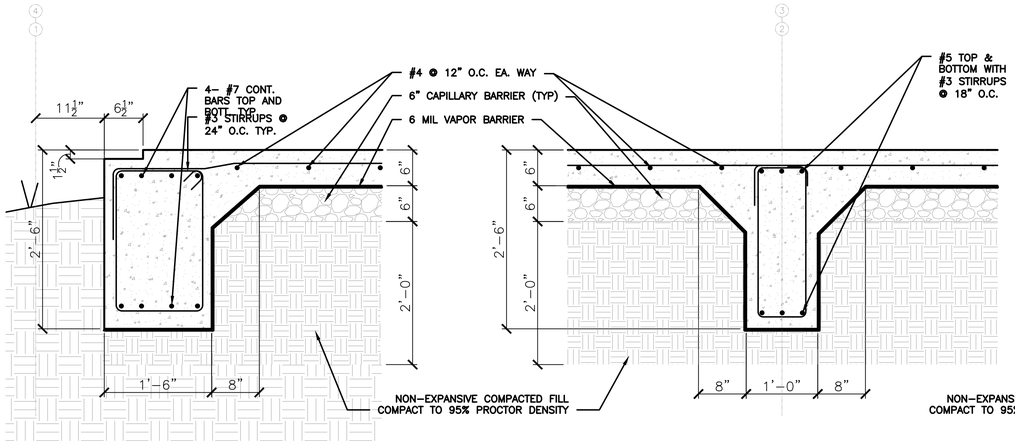
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: FOUNDATION & FRAMING PLAN

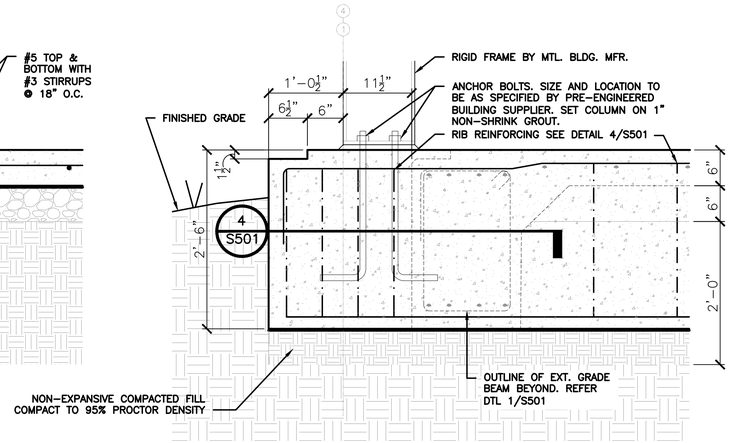
Date: SEP 2023

SEQ.	SHEET	OF
07	S-101	50

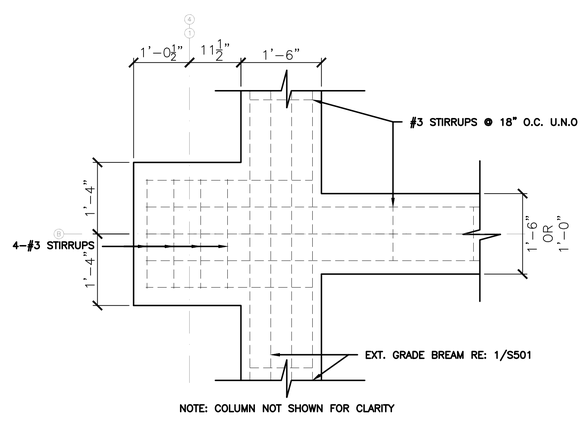


1 TYP. EXT. EDGE BEAM DTL.
1" = 1' – 0"

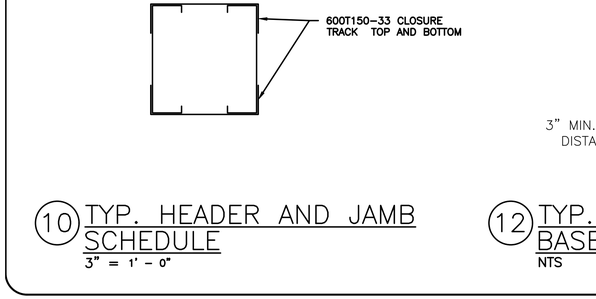
2 TYP. INT. GRADE BEAM DTL.
1" = 1' – 0"



3 TYP. COL. FOOTING DTL.
1" = 1' – 0"



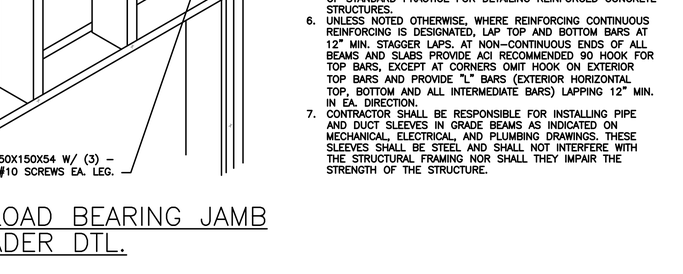
4 SECTION – GRADE BEAM
3/4" = 1' – 0"



6 BREEZEWAY COL. DTL.
1" = 1' – 0"

7 THICKENED SLAB EDGE DTL.
1–1/2" = 1' – 0"

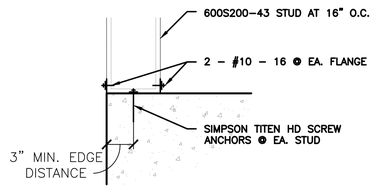
8 PACKAGED UNIT PAD DTL.
1–1/2" = 1' – 0"



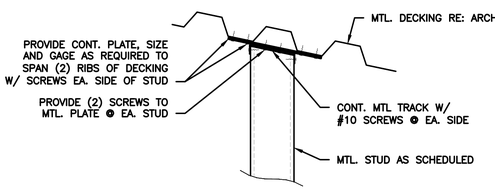
9 BREEZEWAY SECTION
3/4" = 1' – 0"

STEEL STUD WALL HEADER AND JAMB SCHEDULE							
MAX SPAN	LOCATION	HEADER TYPE	HEADER SECTIONS	JAMB SECTIONS	HEADER CONNECTION TO JAMB		
					CONNECTION TYPE	F3 SCREWS	F2 SCREWS
6'-0"	EXTERIOR WALL	A	2 - 2-600S200-54	2 - 2-600S200-54	STIFFCLIP HE-43	8-#10	4-#10

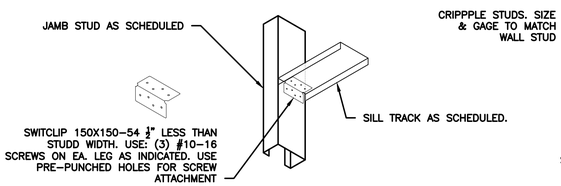
10 TYP. HEADER AND JAMB SCHEDULE
3" = 1' – 0"



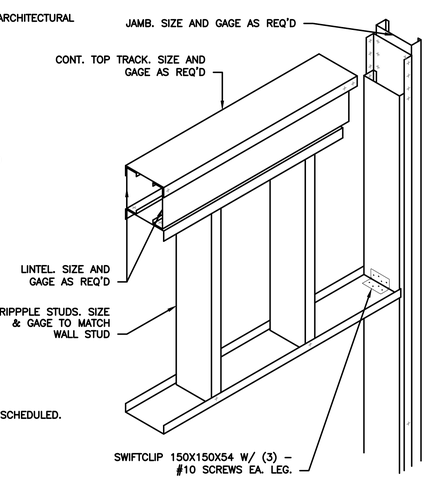
12 TYP. EXT. WALL MTL. STUD BASE MOUNTING DTL.
NTS



14 TYP. FRAMING DTL. – STUD @ MTL. DECKING
NTS



15 TYP. FRAMING DTL. – STUD @ MTL. DECKING
NTS



16 TYP. LOAD BEARING JAMB & HEADER DTL.
NTS

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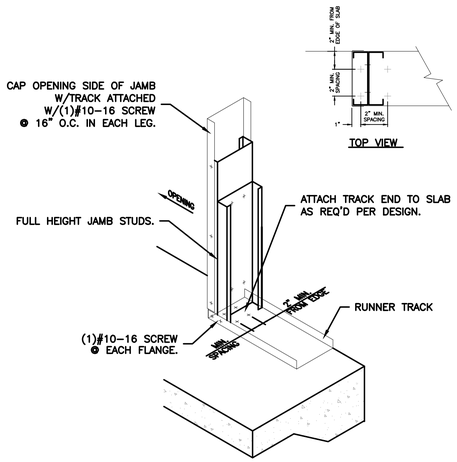
4TH CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

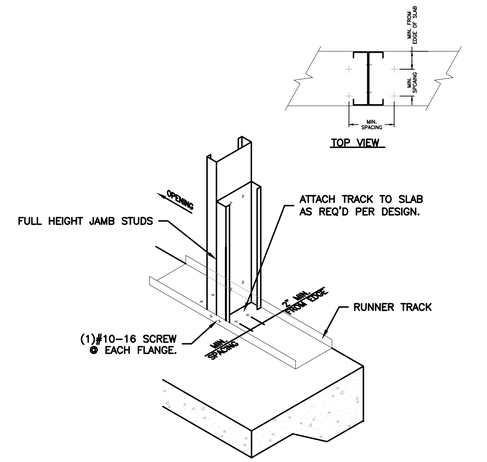
PROJECT TITLE
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839
SHEET TITLE: DETAILS
Date: SEP 2023

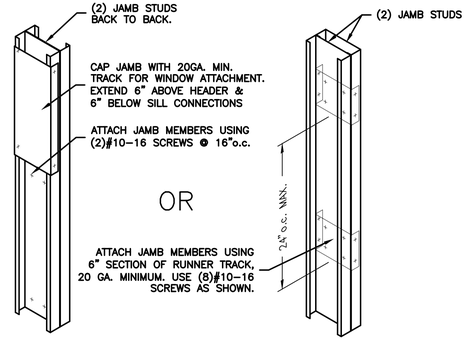
SEQ. 08 | SHEET S-501 | OF 50



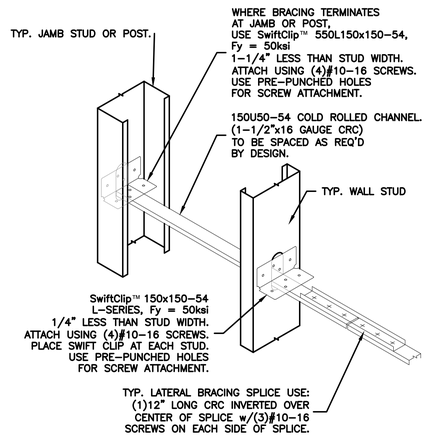
1 DOOR JAMB ANCHORAGE DTL.
NTS



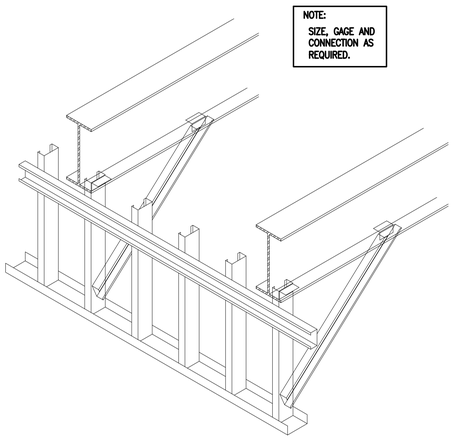
2 WINDOW JAMB ANCHORAGE DTL.
NTS



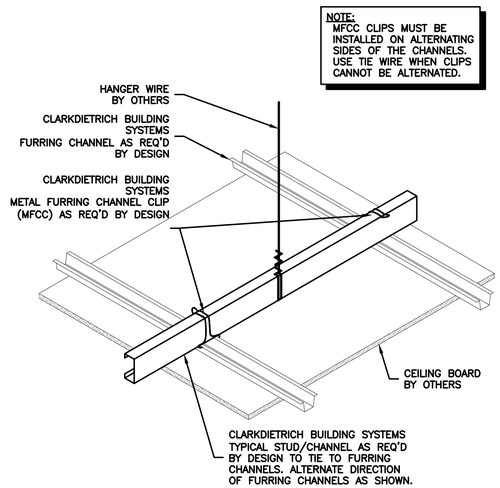
3 TYP. TIED JAMB STUD DTL.
NTS



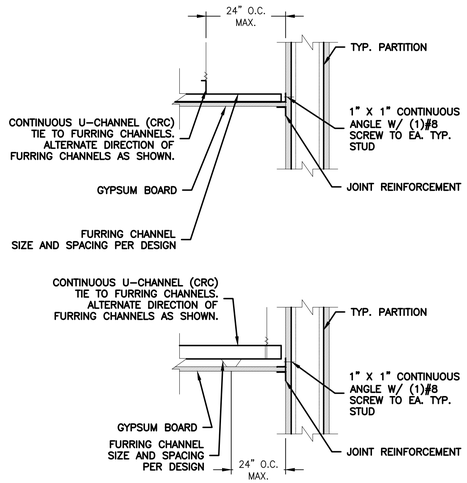
4 TYP. LATERAL BRACING DTL.
NTS



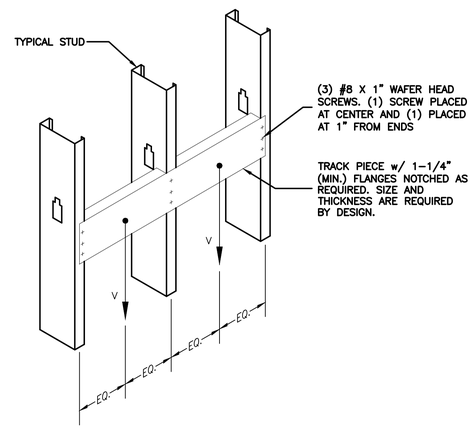
5 FASCIA DTL AT KICKED WALL
NTS



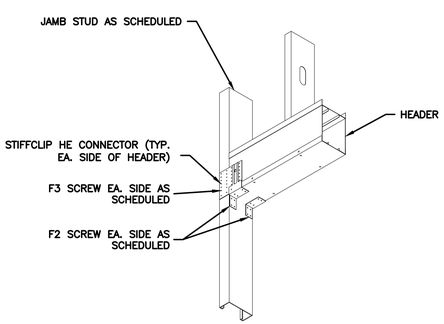
6 SUSP. CLG. FRAMING DTL – MTL FURRING CHANNELS
NTS



7 SUSP. CLG. FRAMING DTL – CEILING SECTION
NTS



8 BACKING PLATE DTL.
NTS



9 BOXED HEADER CONNECTION DTL.
NTS

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: DETAILS

Date: SEP 2023

SEQ.	SHEET	OF
09	S-502	50

GENERAL NOTES:

GENERAL NOTES:

1. CONSTRUCTION ACCESS TO THE BASE SHALL BE THROUGH THE EXISTING GATE LOCATED ON SOUTH CHADBOURNE STREET. ALL CONSTRUCTION TRAFFIC ENTERING THE BASE IS REQUIRED TO PASS THROUGH THE COMMERCIAL VEHICLE SEARCH AREA LOCATED TO THE EAST OF KEARNEY BOULEVARD. HOURS OF OPERATION ARE FROM 6:00 A.M. TO 2:00 P.M. MONDAY THROUGH FRIDAY, PHONE 325-654-1290.

2. CONTRACTORS SHALL KEEP ALL PUBLIC ROADS AND STREETS CLEAN OF CONSTRUCTION DEBRIS, MUD, ETC. AT ALL TIMES. CONTRACTOR SHALL PROVIDE EQUIPMENT AND PERSONNEL TO CLEAN ANY STREETS AS REQUESTED BY 17CES. CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS TO STREETS, PARKING AREAS AND BASE OR GOVERNMENT PROPERTY DAMAGED FROM THEIR CONSTRUCTION ACTIVITIES.

3. CONTRACTORS SHALL MAINTAIN A CONSTRUCTION SITE NEAT AND CLEAN OF DEBRIS AS DIRECTED BY CONTRACTING OFFICER. CONTRACTOR WASTE DUMPSTERS SHALL BE EMPTIED ON A REGULAR BASIS.

STAGING NOTES:

1. CONTRACTOR SHALL INSTALL AND MAINTAIN A TEMPORARY CONSTRUCTION CHAIN LINK FENCE, 6 FEET HIGH, AROUND THE LIMITS OF WORK NOT INCLUDING THE CONSTRUCTION ACCESS ROAD. COORDINATE CHAIN AND PADLOCKS ON GATES WITH GOODFELLOW FIRE DEPARTMENT. EACH GATE SHALL BE NUMBERED FOR EMERGENCY ACCESS, SHALL HAVE ENTRY/EGRESS SIGNAGE AND AREA LIGHTING. CONTRACTORS SHALL MAINTAIN FIRE ACCESS THROUGH EACH INDIVIDUAL CONSTRUCTION SITE AT ALL TIMES. CONTRACTOR SHALL MAINTAIN FIRE ACCESS TO EXISTING FIRE HYDRANTS ON SITE.

2. TRUCK WASHOUT AREA SHALL BE CONSTRUCTED, MAINTAINED AND CLEANED IN ACCORDANCE WITH TEXAS TCEQ REGULATIONS. PROVIDE DETAILS AND MAINTENANCE PLAN AS PART OF THE STORMWATER POLLUTION PREVENTION PLAN. STORMWATER PERMITS ARE REQUIRED PRIOR TO THE START OF CONSTRUCTION.

3. ALL CONTRACTORS SHALL STOCKPILE REQUIRED MATERIALS AND EQUIPMENT WITHIN LIMITS OF RESPECTIVE PROJECT AREAS OR STAGING AREA AS INDICATED ON THE DRAWINGS.

4. CONTRACTOR SHALL CONNECT TO EXISTING OR NEW FIRE HYDRANTS FOR TEMPORARY CONSTRUCTION WATER. INSTALL QUICK DISCONNECT, BACK FLOW PREVENTER AND SHUT-OFF VALVE ON 1 1/2" HOSE CONNECTION ONLY. PRIOR TO MAKING ANY CONNECTIONS TO BASE WATER SYSTEMS, THE CONTRACTOR MUST NOTIFY AND COORDINATE WITH 17CES. A FIRE PLUG USAGE PERMIT IS REQUIRED AND USAGE SHALL BE METERED AT ALL TIMES.

5. ALL TEMPORARY ELECTRIC POWER FACILITIES SHALL MEET OR EXCEED NESC AND NEC REQUIREMENTS AS APPLICABLE FOR PRIMARY AND SECONDARY FACILITIES.

ACCESS AND VEHICLE PARKING:

1. ACCESS TO THE PROJECT FOR ALL CONSTRUCTION PERSONNEL, VEHICLES AND EQUIPMENT IS ILLUSTRATED ON THE STAGING/LAYDOWN AND ACCESS PLAN. ACCESS ROUTES MAY BE SUBJECT TO CHANGE BASED ON OPERATIONAL REQUIREMENTS. POTENTIAL SCHEDULE IMPACTS SHALL BE COORDINATED WITH 17CES.

2. LOCATION OF ACCESS/HAUL ROADS ARE AS INDICATED ON SHEET G-001 AND G-002.

3. ALL HAUL ROADS SHALL BE MAINTAINED SUCH THAT UNOBSTRUCTED ACCESS WILL BE PROVIDED AT ALL TIMES FROM THE ROAD TO THE STAGING AREA TO THE WORK SITE AND FACILITATE GOVERNMENT ACCESS TO THE BASE AT ALL TIMES. THE MAINTENANCE OF HAUL ROADS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT. THE HAUL ROAD LOCATIONS SHALL BE AS INDICATED ON SHEET G-001 AND G-002.

4. CONTRACTOR SHALL COORDINATE ACTIVITIES THROUGHOUT THE PROJECT IN A MANNER THAT ALLOWS EMERGENCY ACCESS TO ALL EXISTING ROADWAYS AT ALL TIMES WITHOUT DELAYS TO EMERGENCY VEHICLES RESPONSE TIME.

5. ALL CONTRACTOR VEHICLES AND PERSONNEL MAY BE SEARCHED BY SECURITY FORCES WHEN ENTERING THE BASE AND MAY EXPERIENCE DELAYS. ALL PERSONNEL ENTERING GOODFELLOW AFB. MUST HAVE A VALID PHOTO ID PER BASE SECURITY REQUIREMENTS. ALL VEHICLES ENTERING THE BASE MUST HAVE CURRENT/VALID REGISTRATION, CURRENT/VALID INSURANCE AND CURRENT/VALID INSURANCE AND CURRENT/VALID DRIVERS LICENSE FOR THE OPERATOR. ALL DRIVERS MUST COMPLY WITH ALL GOODFELLOW AFB DRIVING REQUIREMENTS (SPEED LIMITS, SEATBELTS, ETC.)

6. WHEN NOT ENGAGED IN CONSTRUCTION ACTIVITIES, THE CONTRACTOR'S CONSTRUCTION EQUIPMENT AND VEHICLES SHALL BE PARKED WITHIN THE WORK AREA OR STAGING AREA.

7. THE CONTRACTOR SHALL ENSURE 24 HOUR ACCESS TO VANCE ST. TO AVOID DISRUPTION TO EMERGENCY SERVICES. VANCE ST. SHALL MAINTAIN OPERABILITY THROUGHOUT THE LIFE OF THE CONTRACT.

COORDINATION AND COMMUNICATION DURING CONSTRUCTION:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CORDON OFF THE WORK AREAS AND STREET CROSSINGS BY USING APPROVED BARRICADES.

TRAFFIC CONTROL:

1. ONLY RUBBER-TIRED VEHICLES SHALL BE ALLOWED ON EXISTING PAVEMENT THAT IS TO REMAIN.

2. ANY DAMAGE TO ROADS AND PAVEMENT DUE TO CONSTRUCTION EQUIPMENT, CONSTRUCTION TRAFFIC OR CONSTRUCTION ACTIVITY SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION BY THEY CONTRACTOR AT HIS/HER OWN EXPENSE.

EQUIPMENT AND STOCKPILE HEIGHT:

1. STOCKPILE ALL CONSTRUCTION MATERIALS WITHIN STAGING AREA. MAXIMUM HEIGHT 15.00' WITH 5:1 SIDE SLOPES. PROVIDE EROSION CONTROL PROTECTION AROUND THE STOCKPILE LIMITS. ANY MATERIALS THAT ARE TO BE STOCKPILED FOR USE FOR OTHER PROJECTS ON THE BASE SHALL BE COORDINATED WITH 17CES. ALL MATERIAL NOT REQUIRED SHALL BE HAULED OFF GOVERNMENT PROPERTY.

EXCAVATION AND TRENCHES:

1. OPEN TRENCHES AND EXCAVATIONS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH ORANGE AND WHITE TYPE III BARRICADES AND WITH FLASHING TYPE A-LOW INTENSITY WARNING LIGHTS FROM DUSK TILL DAWN.

OTHER SAFETY REQUIREMENTS:

1. CONTRACTOR SHALL MAINTAIN SAFETY PRACTICES THAT CONFORM TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OHSA) REGULATIONS.

2. CONTRACTOR SHALL MAINTAIN AT ALL TIMES ONE FIRE LANE FREE FROM OBSTRUCTION AND MAINTAIN ACCESS TO THE SITE AND ALL SURROUNDING ROADS AND STREETS.

CONTRACTOR SAFETY PLAN SUBMITTALS

1. CONTRACTOR SHALL FURNISH A CONSTRUCTION SAFETY PLAN IN ACCORDANCE WITH THE SPECIFICATIONS WITH THE PROJECT SCHEDULE. THE SAFETY PLAN SHALL IDENTIFY THE FOLLOWING ITEMS:
   1.1. PROPOSED ACCESS POINTS, STAGING AREA AND HAUL ROUTES.
   1.2. TEMPORARY MARKINGS TO BE USED, IF ANY.
   1.3. LOCATIONS AND TYPE OF BARRICADES OR OTHER TRAFFIC CONTROL DEVICES.
   1.4. METHODS BY WHICH THE CONTRACTOR WILL COMMUNICATE WITH 17 CES.

MAINTENANCE OF STORAGE AREA

1. THE CONTRACTOR SHALL AT ALL TIMES KEEP THE CONSTRUCTION SITE, CONSTRUCTION TRAILER(S)/BUILDING(S), AND STORAGE AREA(S) IN A CLEAN, NEAT, WORKMAN LIKE CONDITION, FREE FROM ACCUMULATION OF WASTE, RUBBISH, WEEDS, OVERGROWN GRASS, OR CONSTRUCTION DEBRIS, TO THE SATISFACTION OF THE CONTRACTING OFFICER. ALL LOOSE OR LIGHT WEIGHT MATERIALS SHALL BE SECURED TO PREVENT BLOWING OR SCATTERING. THE BURNING OF TRASH OR CONSTRUCTION DEBRIS IS STRICTLY PROHIBITED ON GOODFELLOW AFB. PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS, TOOLS, EQUIPMENT, AND MATERIALS NOT THE PROPERTY OF THE GOVERNMENT. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL LEAVE THE WORK SITE AND STORAGE AREA(S) IN A CLEAN, NEAT, AND WORKMANLIKE CONDITION SATISFACTORY TO THE CONTRACTING OFFICER. REFER TO STATEMENT OF WORK.

2. THE CONTRACTOR SHALL KEEP FENCING IN A STATE OF GOOD REPAIR AND PROPER ALIGNMENT. GRASSED OR UNPAVED AREAS, WHICH ARE NOT ESTABLISHED ROADWAYS, WILL BE COVERED WITH A LAYER OF GRAVEL AS NECESSARY TO PREVENT RUTTING AND THE TRACKING OG MUD ONTO PAVED OR ESTABLISHED ROADWAYS, SHOULD THE CONTRACTOR ELECT TO TRAVERSE THEM WITH CONSTRUCTION EQUIPMENT OR OTHER VEHICLES; GRAVEL GRADATION WILL BE AT THE CONTRACTOR'S DISCRETION. MOW AND MAINTAIN GRASS LOCATION WITHIN THE BOUNDARIES OF THE CONSTRUCTION SITE FOR THE DURATION OF THE PROJECT. GRASS AND VEGETATION ALONG FENCES, BUILDINGS, UNDER TRAILERS, AND IN AREAS NOT ACCESSIBLE TO MOWERS WILL BE EDGED OR TRIMMED NEATLY.

3. GRASS AND WEEDY VEGETATION WITHIN THE AREAS UTILIZED BY THE CONTRACTOR, INCLUDING WORK AREAS, ADMINISTRATIVE AREAS, AND STORAGE AREAS, SHALL BE KEPT MOWED TO CONTROL VEGETATION GROWTH. VEGETATION SHALL BE MOWED WHEN IT REACHES A HEIGHT OF 6 INCHES. MOWING SHALL BE TO A HEIGHT OF 3 INCHES. MOVING SHALL BE ACCOMPLISHED WITH A ROTARY MOWER THAT LEAVES THE CLIPPINGS EVENLY DISTRIBUTED ON THE SOIL SURFACE. MOWING SHALL BE ACCOMPLISHED DURING PERIODS AND IN SUCH A MANNER THAT THE SOIL AND GRASS WILL NOT BE DAMAGED. TOWED OR SELF-PROPELLED RIDING MOWERS SHALL NOT BE OPERATED WITHIN 3 FEET OF TREES OR SHRUBS. AREAS ADJACENT TO TREES AND SHRUBS SHALL BE MOWED WITH HAND-PROPELLED MOWERS.

4. EROSION CONTROL DEVICES SHALL BE USED FOR THE STAGING AREA AND ANY MATERIAL STOCK PILES WHEN NECESSARY TO CONTROL EROSION AND STORM WATER RUNOFF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

5. AREAS NOT MOWED: GOVERNMENT MAY IMMEDIATELY AFTER NOTICE TO THE CONTRACTOR AND THE DISCRETION OF THE CONTRACTING OFFICER MOW THE CONTRACTOR'S AREAS AT ANY TIME THE VEGETATION HEIGHT EXCEEDS 6 INCHES.

WATERING

1. THE CONTRACTOR SHALL COMPLY WITH THE CURRENT CITY OF SAN ANGELO, TEXAS WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN FOR ALL ON BASE WATER USAGE.

2. EXISTING INFORMATION SHOWN WAS TAKEN FROM AS BUILT DRAWINGS PROVIDED BY GOODFELLOW AIR FOR BASE (GAFB) AND A WALK-THRU OF THE FACILITY. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING CONDITIONS PRIOR TO BID AND NOTIFY THE CONTRACTING OFFICER OF ANY SUBSTANTIAL DISCREPANCIES WHICH WOULD IMPACT BASIS OF DESIGN AND CONSTRUCTION.

3. CONTRACTOR SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND TO VERIFY LOCATIONS, SIZE AND QUANTITIES OF EXISTING UTILITIES, MECHANICAL SYSTEMS, PLUMBING SYSTEMS, ETC. SUBMITTAL OF A BID SHALL SIGNIFY WILLINGNESS TO COMPLY WITH THE CONSTRUCTION DOCUMENTS AND ACCEPTANCE OF ON-SITE CONDITIONS AS THEY EXIST.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: 17CES

PROJECT TITLE

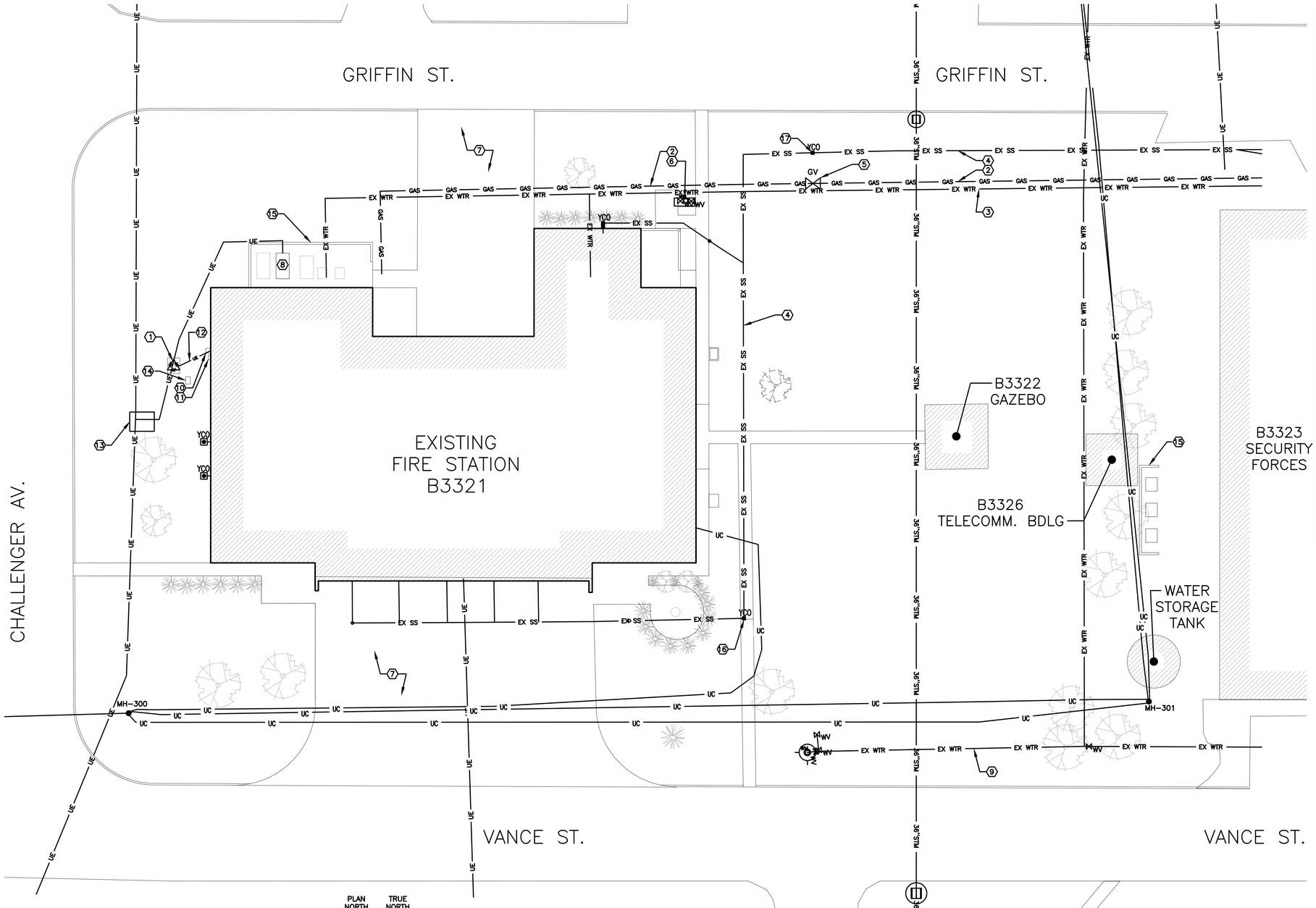
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: CIVIL SYMBOLS NOTES & ABBREVIATIONS

Date: SEP 2023

SEQ.	SHEET	OF
10	C-001	50



1 EXISTING BUILDING UTILITIES

1/16" = 1' - 0"

PLAN NORTH TRUE NORTH

GENERAL NOTES

1. ALL LABOR, MATERIALS, AND METHODS OF CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE UNIFIED FACILITIES CRITERIA (UFCs) AND OTHER APPLICABLE CODES AND STANDARDS.
2. THE CONTRACTOR SHALL BE REQUIRED FOR ACQUIRING AND SUBMITTING ALL REQUIRED PERMITS, INCLUDING AN AF FORM 103 "DIG REQUEST PERMIT", PRIOR TO POTHOLING, DIGGING, AND EXCAVATING THE SITE. NO CONSTRUCTION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL PLANS AND ANY OTHER DOCUMENTATION FROM ALL OF THE PERMITTING AND ANY OTHER REGULATORY AUTHORITIES. ANY PENALTIES, STOP WORK ORDERS OR ADDITIONAL WORK RESULTING FROM THE CONTRACTOR BEING IN VIOLATION OF THE REQUIREMENTS ABOVE, SHALL BE FULLY BORNE BY THE CONTRACTOR.
3. UTILITIES SHOWN ARE BASED OFF MOST RECENT INFORMATION, AND ONLY MEANT TO ASSIST THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF UTILITIES PRIOR TO START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES NOT INCLUDED IN THIS SCOPE OF WORK, REQUIRING REPAIR OR REPLACEMENT SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
4. CONTRACTOR SHALL COORDINATE LIMITS OF WORK AND LAYDOWN AREA WITH THE CONTRACTING OFFICER PRIOR TO START OF WORK.
5. UTILITY OUTAGES AND DISRUPTIONS SHALL BE COORDINATED WITH THE GOV'T AND SHALL BE PERFORMED AS SPECIFIED.
6. SITE WORK AREAS SHALL BE KEPT IN A CLEAN, SAFE, AND WORKMANLIKE CONDITION. DEBRIS SHALL BE CLEANED UP ON A DAILY BASIS, AND SITE SHALL BE MAINTAINED AS SPECIFIED.
7. WHEN EXCAVATING, THE CONTRACTOR SHALL HAND DIG AROUND AREAS WHERE EXISTING UTILITIES ARE SUSPECTED OR INDICATED ON THESE DRAWINGS.
8. REFER TO FIRE STATION AS BUILTS FOR ADDITIONAL UTILITY AND POWER INFORMATION.

KEYNOTES

1. EXISTING 300 KvA PAD MOUNTED TRANSFORMER.
2. EXISTING 1" – 10PSI GAS SERVICE LINE
3. EXISTING 2½" WATER SERVICE LINE
4. EXISTING 6" SANITARY SEWER LINE
5. EXISTING 1094 CFH GAS METER
6. EXISTING FIRE STATION WATER METER AND SERVICE BOX
7. CONCRETE APRON AND DRIVEWAY
8. EXISTING FIRE STATION EMERGENCY GENERATOR
9. EXISTING 6" WATER SERVICE LINE TO FIRE HYDRANT
10. EXISTING MAIN DISCONNECT
11. EXISTING ELECTRIC METER
12. PRIMARY SERVICE LINE. 3–#4/0 CU 15 KV IN 4" C & 4" C SPARE, CONCRETE ENCASED.
13. EXISTING ELECTRICAL MANHOLE AND ENCLOSURE MH–D8
14. EXISTING C–TV BOX
15. EXISTING EXTERIOR MECHANICAL ENCLOSURE
16. EXISTING YARD CLEANOUT, FL = 1858.67'
17. EXISTING YARD CLEANOUT, FL = 1856.56'

LEGEND	
SYMBOL	DESCRIPTION
EX SS	EXIST. SANITARY SEWER LINE
MH	SANITARY SEWER MANHOLE
36"STM	EXIST. STORMWATER LINE
	STORMWATER INLET
EX WTR	EXIST. DOMESTIC WATER LINE
WV	WATER VALVE
	FIRE HYDRANT
UE	UNDERGROUND ELECTRIC LINE
OE	OVERHEAD ELECTRIC LINE
	TRANSFORMER
GAS	GAS LINE
GV	GAS VALVE
M	METER
YCO	YARD CLEANOUT
UC	UNDERGROUND TELECOMM.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: EXISTING SITE UTILITIES

Date: SEP 2023

SEQ.	SHEET	OF
11	CU-101	50

CHALLENGER AV.

GRIFFIN ST.

GRIFFIN ST.

EXISTING
FIRE STATION
B3321
FINISH FLOOR = 1862.00'

FINISH FLOOR =
1862.00'

B3322
GAZEBO

B3323
SECURITY
FORCES

B3326
TELECOMM. BDLG

WATER
STORAGE
TANK

VANCE ST.

VANCE ST.

LEGEND:

- 1859.12' EXISTING SPOT ELEVATIONS
- 1860.00' EXISTING CONTOURS
- 1860.00' NEW CONTOURS
- NEW BUILDING
- EXISTING BUILDING
- NEW CONCRETE SURFACE

1 SITE GRADING PLAN

1/16" = 1' – 0"

PLAN NORTH

TRUE NORTH

GENERAL SITE NOTES:

1. CONTRACTOR SHALL VERIFY NEW GRADES WITH THE PROJECT MANAGER TO ENSURE POSITIVE DRAINAGE AWAY FROM THE NEW BUILDING.
2. PROVIDE ELECTRICAL SERVICE TO ALL NEW EXTERIOR ELECTRICAL ITEMS. AS REQUIRED.
3. REFERENCE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR EXTERIOR WORK AND INTERIOR CONTINUATIONS.
4. CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES FOR EXTERIOR AND INTERIOR CONTINUATIONS.
5. SITE PLAN DIMENSIONS WITHIN () ARE APPROXIMATE.
6. LOCATION OF EXISTNG ITEMS OUTSIDE OF PROJECT SITE ARE APPROXIMATE AND ARE FOR REFERENCE ONLY.
7. PROVIDE TOPSOIL AND HYDROMULCH AS INDICATED.
8. NEW CONCRETE SIDEWALKS SHALL BE FIBER REINFORCED CONCRETE.
9. FOR SIDEWALK CONCRETE EXPANSION JOINT SEE SHEET C–501, DETAIL #2

DUST:
1. TAKE PRECAUTIONS NECESSARY TO PREVENT DUST NUISANCE, BOTH ON–SITE AND ADJACENT BUILDINGS. CORRECT OR REPAIR DAMAGE CAUSED BY DUST.

EROSION CONRTOL:
1. TAKE PRECAUTIONS NECESSARY TO PREVENT EROSION AND TRANSPORTATION OF SOIL DOWNSTREAM, TO ADJACENT PROPERTIES AND INTO ON–SITE AND OFF–SIRE DRAINAGE SYSTEMS. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR MEETING THE REQUIREMENTS OF THE TPDES GENERAL PERMIT #TXR150000 AND SHALL PREPARE A "STORM WATER POLLUTION PREVENTION PLAN" WHERE REQUIRED AND ADHERE TO THE REQUIREMENTS SET FORTH THEREIN. THE CONTRACTOR SHALL PROVIDE THE PROJECT MANAGER AND GOV'T WITH COPIES OF ALL DOCUMENTS ASSOCIATED WITH THE PLAN.

SPILLAGE:
1. AVOID SPILLAGE BY COVERING AND SECURING LOADS WHEN HAULING ON OR ADJACENT TO PUBLIC STREETS OR HIGHWAYS. REMOVE SPILLAGE AND SWEEP, WASH OR OTHERWISE CLEAN PROJECT, STREET AND HIGHWAYS.

EXISTING PLANTS AND FEATURES:
1. DO NOT DAMAGE TOPS, TRUNKS AND ROOTS OF EXISTING TREES AND/OR SHRUBS THAT ARE INTENDED TO REMAIN. DO NOT USE HEAVY EQUIPMENT WITHIN BRANCH SPREAD. INTERFERING BRANCHES MAY BE REMOVED ONLY WITH THE PERMISSION OF THE PROJECT MANAGER. DO NOT DAMAGE PLANTS AND FEATURES THAT ARE TO REMAIN.

DIG TESS:
1. CONTRACT DIG TESS TO ARRANGE FOR UTILIY LOCATIONS WHERE REQUIRED.

7th CIVIL ENGINEER SQUADRON
READY • WILLING • ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

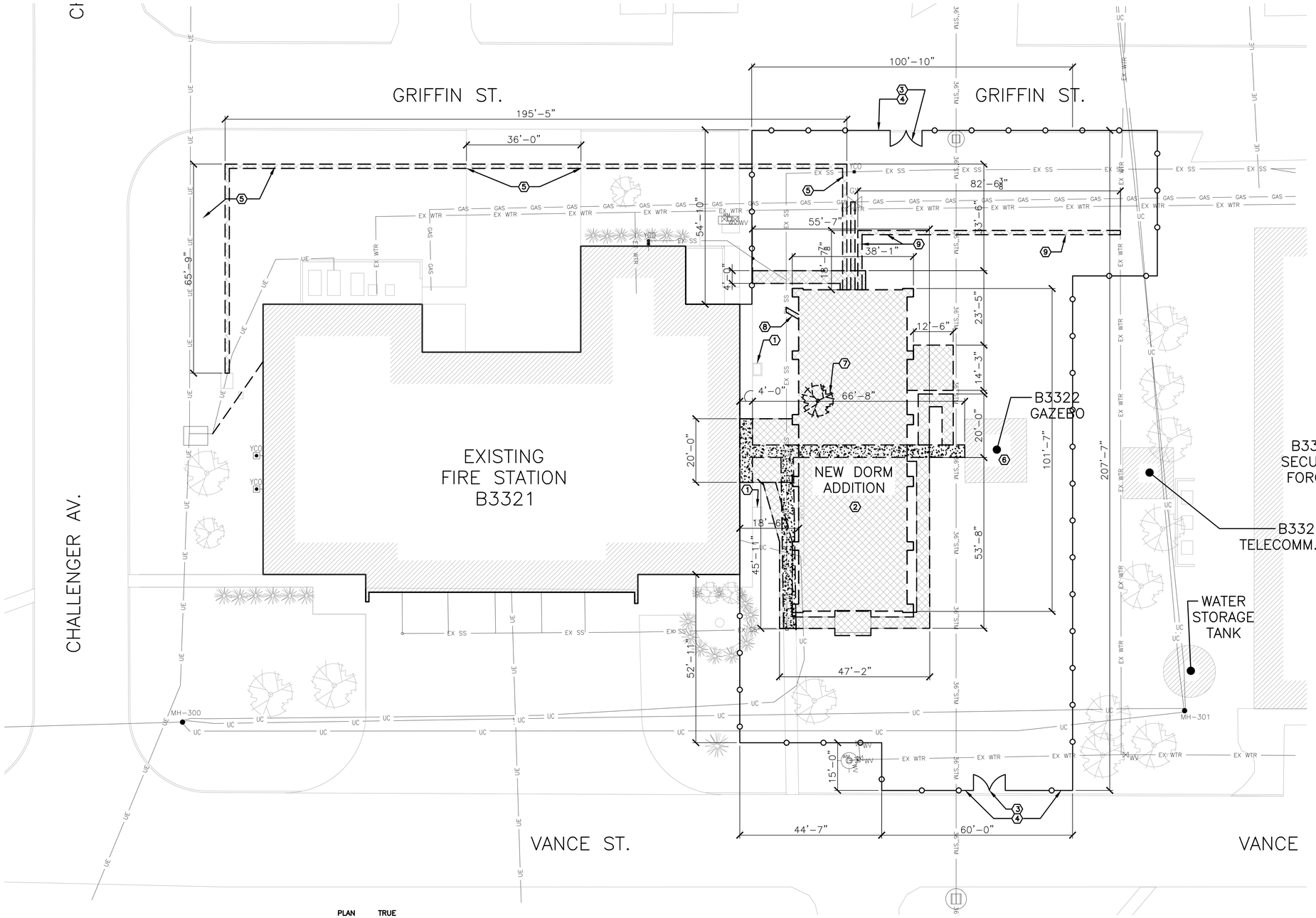
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: SITE CONTOURS

Date: SEP 2023

SEQ.	SHEET	OF
12	CG-101	50



1 SITE GRADING PLAN

1/16" = 1' - 0"

PLAN NORTH TRUE NORTH

KEYNOTES AS INDICATED BY (X)

1. EXISTING A/C UNITS AND PAD TO REMAIN. CONTRACTOR SHALL PROTECT FROM DAMAGE.
2. NEW BUILDING FOOTPRINT. CONTRACTOR SHALL EXCAVATE EARTHWORK AND FILL AS SPECIFIED.
3. PROPOSED CONTRACTOR ENTRY/EXIT. CONTRACTOR SHALL SAW CUT AND REPLACE CURB AS NEEDED FOR MATERIAL AND EQUIPMENT SHIPMENTS. CONTRACTOR SHALL PROVIDE TEMPORARY ROCK STABILIZED CONSTRUCTION ENTRANCE OR CONTROL MATS. CONTRACTOR SHALL ENSURE CONSTRUCTION DEBRIS ON VANCE ST. OR GRIFFIN ST. IS CLEANED DAILY AS SPECIFIED OR AS DIRECTED BY CO.
4. CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AROUND WORKSITE AS INDICATED. DUE TO HIGH WINDS EXPERIENCED IN WORK AREA, THE CONTRACTOR SHALL PROVIDE SAND BAGS OR WEIGHTS ON ALL POSTS. CONTRACTOR SHALL PROVIDE GOVERNMENT ACCESS TO FIRE HYDRANTS AT ALL TIMES.
5. CONTRACTOR SHALL TRENCH AND REMOVE FILL FOR NEW ELECTRICAL WIRING AND CONDUIT. CONTRACTOR SHALL HORIZONTALLY BORE UNDERNEATH EXISTING CONCRETE DRIVEWAY. CONTRACTOR SHALL PROVIDE HIGH VISIBILITY SIGNAGE AS SPECIFIED. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING DISTURBED AREAS UPON COMPLETION OF WORK.
6. EXISTING GAZEBO TO REMAIN. CONTRACTOR SHALL PROTECT.
7. CONTRACTOR SHALL DEMO EXISTING TREE.
8. CONTRACTOR SHALL TRENCH AND EXCAVATE EARTHWORK FOR NEW SANITARY SEWER CONNECTION. CONTRACTOR SHALL TIE INTO EXISTING 6" SANITARY SEWER LINE ONCE ONCE NEW SEWER LINE IS READY TO CONNECT.
9. CONTRACTOR SHALL TRENCH AND EXCAVATE EARTHWORK FOR NEW DOMESTIC WATER/GAS SERVICE LINES. CONTRACTOR SHALL TIE INTO EXISTING WATER/GAS LINES ONCE NEW SERVICE IS READY TO CONNECT. CONTRACTOR SHALL DEMO EXISTING GAS METER AND PROVIDE NEW AS INDICATED.

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS, EQUIPMENT, AND DIMENSIONS PRIOR TO START OF WORK.
2. CONTRACTOR SHALL ENSURE TO PROTECT ITEMS INDICATED AS "EXISTING TO REMAIN". ANY DAMAGE TO ITEMS OR BUILDING ELEMENTS OUTSIDE THE SCOPE OF WORK REQUIRING REPAIR OR REPLCEMENT SHALL BE PEFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
3. THE CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES.
4. CONTRACTOR SHALL PROVIDE EROSION AND SEDIMENT CONTROL DEVICES FOR ALL STORM DRAINAGE INLETS AND SILT FENCES AS SPECIFIED AND INDICATED IN GENERAL 001. 002. AND G003. REFER TO C-501 FOR EROSION CONTROL DETAILS.
5. REFER TO CU-101 FOR SITE UTILITIES LEGEND.
6. CONTRACTOR SHALL COORDINATE ALL UTILITY OUTAGES WITH THE GOVERNMENT AS SPECIFIED. CONTRACTOR SHALL ENSURE ALL NEW UTILITY WORK IS COMPLETED PRIOR TO DEMOLISHING OR CONNECTING TO EXISTING LINES.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

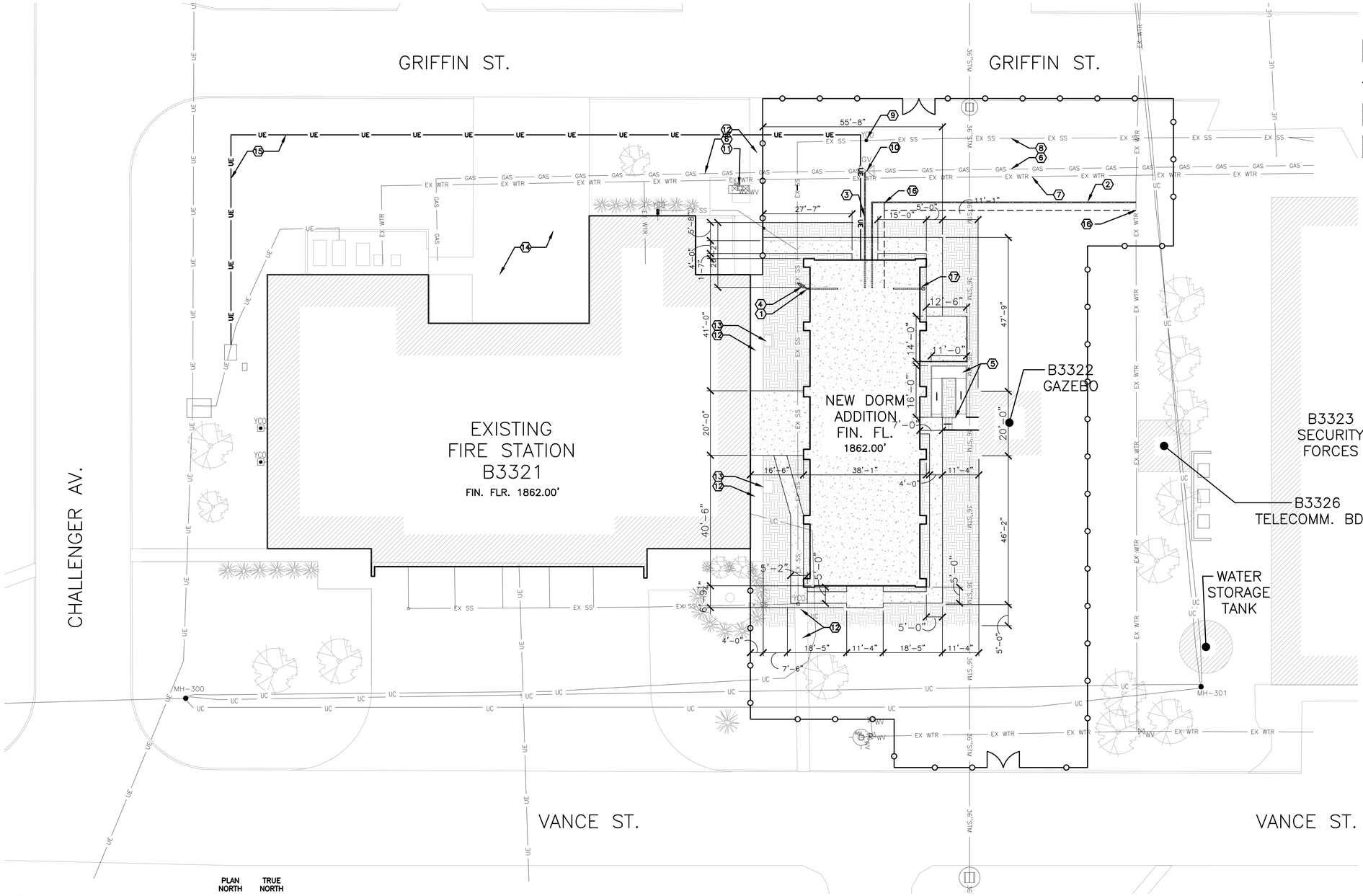
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: SITE DEMO

Date: SEP 2023

SEQ.	SHEET	OF
13	CD-101	50



1 NEW SITE PLAN

1/16" = 1' - 0"

PLAN NORTH

TRUE NORTH

KEYNOTES AS INDICATED BY (X)

1. CONTRACTOR SHALL PROVIDE NEW 4" SANITARY SEWER LATERAL OUTSIDE OF BUILDING TO CONNECT TO EXISTING 6" SANITARY SEWER LINE. REFER TO PLUMBING FOR ADDITIONAL INFORMATION
2. CONTRACTOR SHALL TAP INTO EXISTING 8" WATER MAIN. PROVIDE NEW 1 ½" DOMESTIC WATER SERVICE LINE. PROVIDE NEW SERVICE CONNECTION AND ACCESS BOX AT CONNECTION POINT.
3. NEW 1" GAS SERVICE LINE. PROVIDE NEW GAS METER ASSEMBLY, REGULATOR, AND CUTOFF VALVE. FOR EXTERIOR NATURAL GAS SERVICE, PROVIDE POLYETHYLENE PIPING AS SPECIFIED.
4. NEW TWO-WAY CLEANOUT RE:1/C501
5. NEW CONCRETE ADA COMPLIANT RAMP AND STAIRCASE. PROVIDE NEW ANODIZED ALUMINUM HANDRAILS WITH DK. BRONZE FINISH. RE: ARCHITECTURAL
6. EXISTING 1" -10PSI GAS LINE
7. EXISTING 2 ½" WATER SERVICE LINE
8. EXISTING 6" SANITARY SEWER LINE
9. EXISTING GROUND CLEANOUT FL = 1865.56
10. EXISTING 1094 CFH GAS METER
11. EXISTING FIRE STATION WATER METER AND SERVICE BOX
12. EXISTING CONCRETE SIDEWALK TO REMAIN.
13. EXISTING A/C UNITS AND PAD TO REMAIN. CONTRACTOR SHALL PROTECT.
14. EXISTING FIRE STATION DRIVEWAYS
15. NEW ELECTRIC SERVICE LINE AND CONDUIT
16. CONTRACTOR SHALL PROVIDE NEW DEDICATED WATER SERVICE FOR FIRE SUPPRESSION SYSTEM.SERVICE MAY BE TAPPED SEPARATELY FROM DOMESTIC WATER AS DETERMINED BY QFPE. REFER TO FA-101. REFER TO GAFB BASE STANDARDS FOR TYP. PIPE MATERIAL REQUIREMENTS.
17. CONTRACTOR TO PROVIDE NEW YARD CLEANOUT.

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITION, EQUIPMENT, ELEVATIONS, AND DIMENSIONS PRIOR TO START OF WORK.
2. CONTRACTOR SHALL ENSURE TO PROTECT ITEMS INDICATED AS "EXISTING TO REMAIN". ANY DAMAGE TO ITEMS OR BUILDING ELEMENTS OUTSIDE THE SCOPE OF WORK WILL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
3. THE CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES.
4. REFER TO CU-101 FOR SITE UTILITIES.
5. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT EROSION AND TRANSPORTATION OF SOIL DOWNSTREAM, TO ADJACENT PROPERTIES AND INTO ON-SITE OR OFF-SITE DRAINAGE SYSTEMS. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR MEETING THE REQUIREMENTS OF THE TPDES GENERAL PERMIT #TXR150000 AND SHALL PREP ARE A "STORM WATER POLLUTION PREVENTION PLAN" WHERE REQUIRED AND ADHERE TO THE REQUIREMENTS SET FORTH THEREIN. THE CONTRACTOR SHALL PROVIDE THE PROJECT MANAGER AND GOVT. WITH COPIES OF ALL DOCUMENTS ASSOCIATED WITH THE PLAN.
6. FOR SANITARY SEWER LATERALS OUTSIDE OF FACILITY CONTRACTOR SHALL PROVIDE PVC AS SPECIFIED.
7. FOR WATER SERVICE LINES 3" IN DIAMETER AND SMALLER, CONTRACTOR SHALL PROVIDE PVC RATED PIPING FOR DOMESTIC WATER USE AS SPECIFIED.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

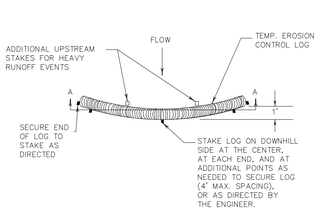
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

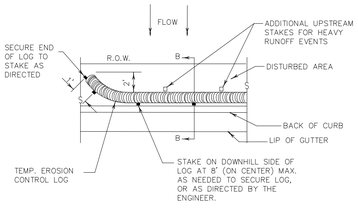
SHEET TITLE: SITE NEW

Date: SEP 2023

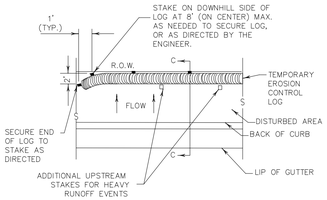
SEQ.	SHEET	OF
14	C-101	50



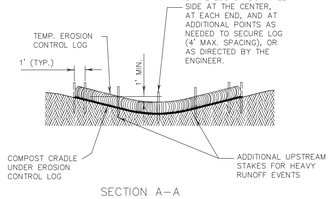
PLAN VIEW



PLAN VIEW



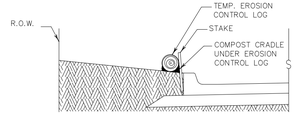
PLAN VIEW



SECTION A–A

EROSION CONTROL LOG DAM

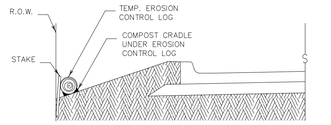
CL–D



SECTION B–B

EROSION CONTROL LOG AT BACK OF CURB

CL–BOC



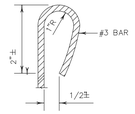
SECTION C–C

EROSION CONTROL LOG AT EDGE OF RIGHT–OF–WAY

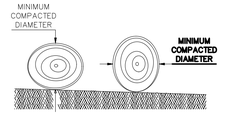
CL–ROW

LEGEND

- CL–D — EROSION CONTROL LOG DAM
- CL–BOC — EROSION CONTROL LOG AT BACK OF CURB
- CL–ROW — EROSION CONTROL LOG AT EDGE OF RIGHT–OF–WAY
- CL–SST — EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
- CL–SSL — EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
- CL–DI — EROSION CONTROL LOG AT DROP INLET
- CL–CI — EROSION CONTROL LOG AT CURB INLET
- CL–GI — EROSION CONTROL LOG AT CURB & GRATE INLET



REBAR STAKE DETAIL



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

GENERAL NOTES:

1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
4. FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
5. STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'–4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
6. DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
8. SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
9. TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.

SEDIMENT BASIN & TRAP USAGE GUIDELINES

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

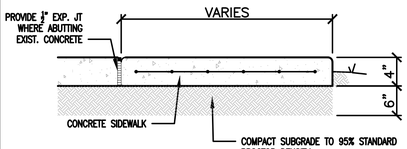
Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:

1. Within drainage ditches spaced as needed or min. 500' on center
2. immediately preceding ditch inlets or drain inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way
5. Just before the drainage leaves the construction limits where drainage flows away from the project.

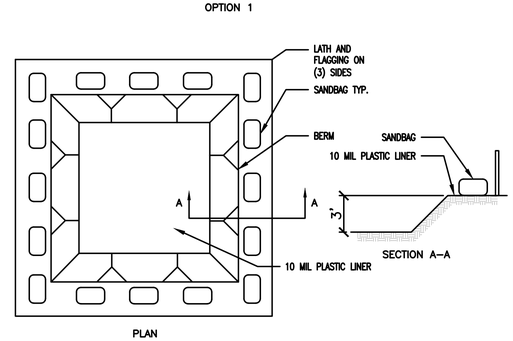
The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

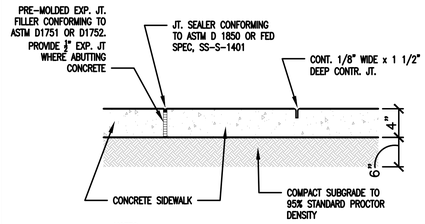
Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.



NOTES:
1. PROVIDE #3 BARS @16 O.C.E.W.
2. LIGHT BROOM FINISHED CONCRETE SURFACE
3. ROUND ALL CONCRETE EDGES ½" MIN.
3. RUNNING SLOPE OF SIDEWALKS SHALL HAVE MAX. 2% CROSS SLOPE AND MAX. 5% RUNNING SLOPE.

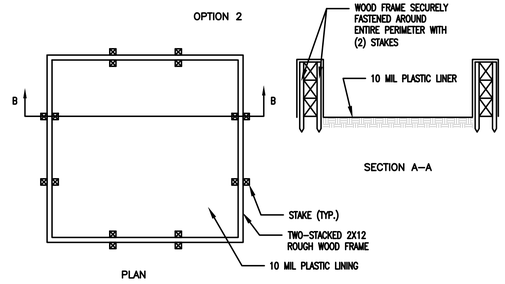
1 CONCR. SIDEWALK DTL.
NTS



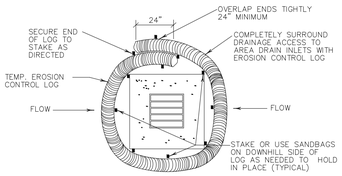


NOTES:
1. SIDEWALK CONCRETE CONTRACTION JOINTS SHALL BE EQUALLY SPACED BETWEEN EACH EXPANSION JOINT @ 5'–0" O.C. NOMINAL, MAXIMUM.
2. SIDEWALK CONCRETE EXPANSION JOINT LOCATIONS SHALL BE BASED ON 200 SQUARE FEET=WIDTH OF SIDEWALK×LENGTH.

2 EXPANSION JOINT DTL.
NTS

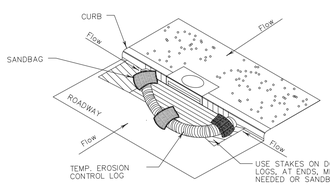


3 CONC. WASHOUT DTL.
NTS



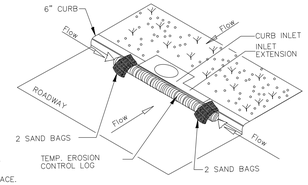
EROSION CONTROL LOG AT DROP INLET

CL–DI



EROSION CONTROL LOG AT CURB INLET

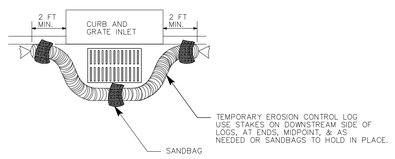
CL–CI



EROSION CONTROL LOG AT CURB INLET

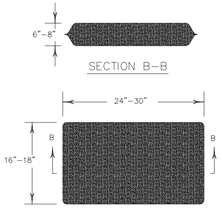
CL–CI

NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

CL–GI



4 EROSION CONTROL DTLS.
SCALE: NTS

SHEET 3 OF 3

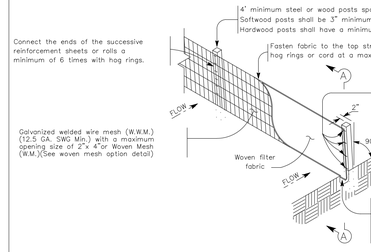
Texas Department of Transportation — Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

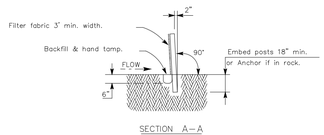
EROSION CONTROL LOG

EC(9)–16

FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.



TEMPORARY SEDIMENT CONTROL FENCE



SECTION A–A

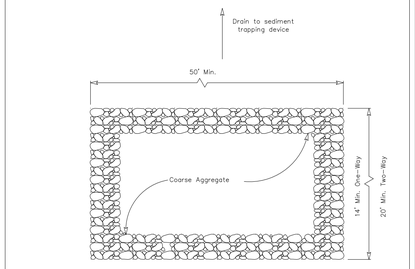
SEDIMENT CONTROL FENCE USAGE GUIDELINES

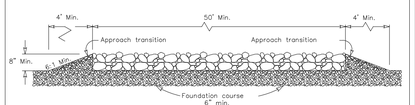
A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT . [2]Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

LEGEND

Sediment Control Fence — SCF





ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft. for one–way and 20 ft. for two–way traffic for the full width of the exit, or as directed by the engineer.

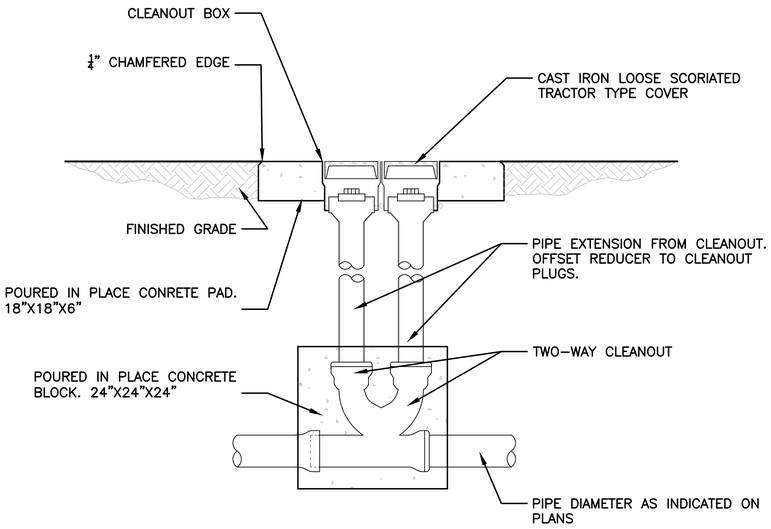
4TH CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

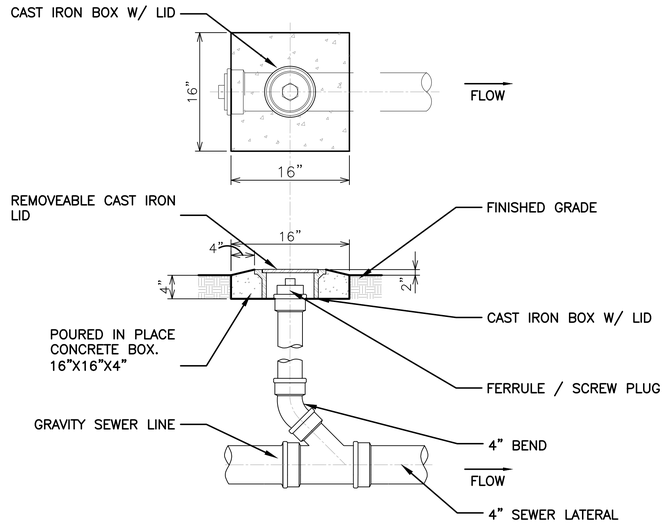
PROJECT TITLE
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839
SHEET TITLE: SITE DETAILS
Date: SEP 2023

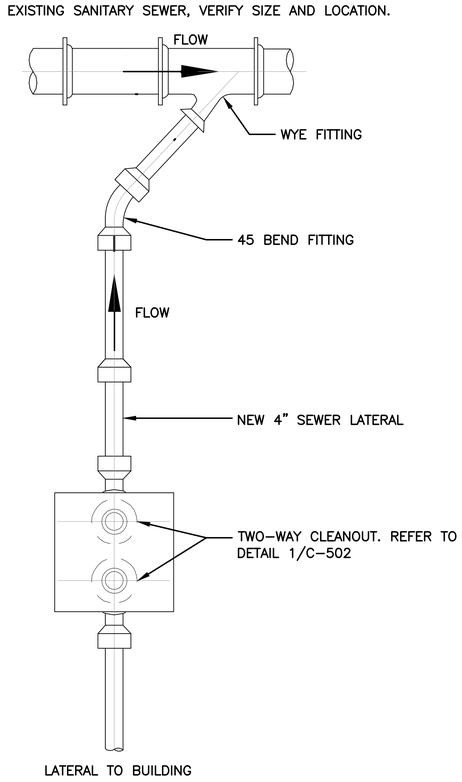
SEQ. 15 | SHEET C-501 | OF 50



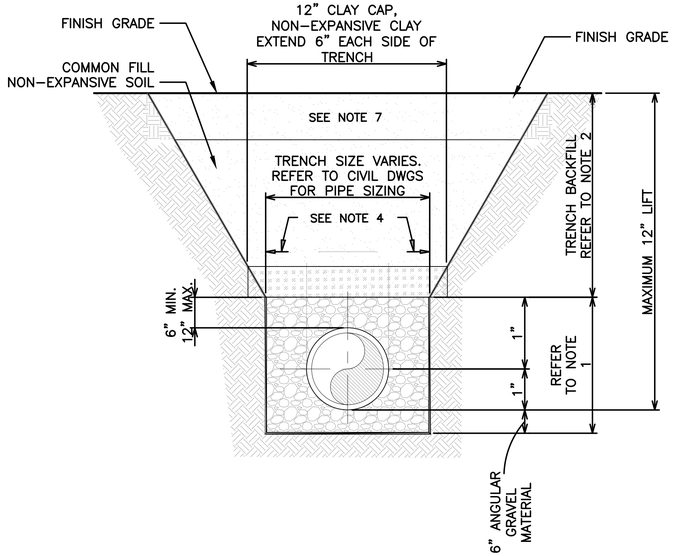
1 TWO-WAY CLEANOUT DTL. (TYP.)
N.T.S



2 YARD CLEANOUT DTL. (TYP.)
N.T.S



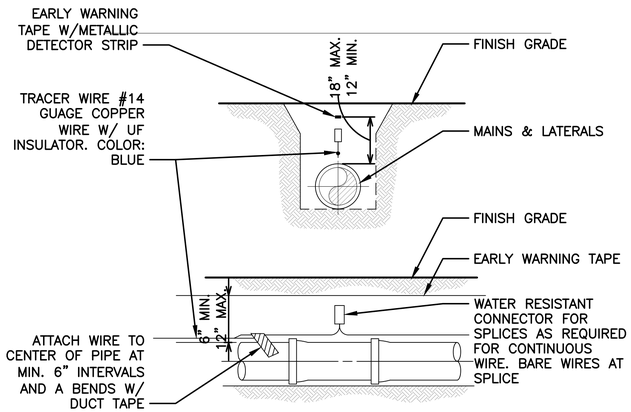
3 TYPICAL SEWER CONNECTION DETAIL
N.T.S



NOTES:

1. INITIAL BACKFILL AND HAUNCHING: ANGULAR GRAVEL MATERIAL COMPACTED TO 95% OF THE MAXIMUM DENSITY.
2. TRENCH BACKFILL-COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY. SITE EXCAVATED MATERIALS ARE NOT SUITABLE BACKFILL FOR COMMON FILL. COMMON FILL SHALL BE NON-EXPANSIVE SOIL.
3. 12"MAX.(6"MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
4. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
5. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
6. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH STATEMENT OF WORK AND TO THE SATISFACTION OF THE CONTRACTING OFFICER.
7. IN GREEN AREAS THE TOP ⅓ OF THE EXCAVATION THE USE OF EXCAVATED MATERIALS FOR FINAL BACKFILL OF TRENCHES. EXISTING MATERIAL MUST BE FREE OF LARGE STONES, CLODS AND ORGANIC MATTER. COMPACTED TO 95% OF STANDARD PROCTOR IN PAVED AREAS.

4 TRENCHING AND BEDDING DTL.
N.T.S



5 PIPE LOCATING DTL.
N.T.S

7TH CIVIL ENGINEER SQUADRON
READY - WILLING - ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

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Date: SEP 2023

SEQ.	SHEET	OF
16	C-502	50

KEYNOTES AS INDICATED BY ⟨X⟩

1. CONTRACTOR SHALL DEMO EXISTING HALF WALL INCLUDING FRAMING, GYP. BD., TRIM, AND MOLDING.
2. CONTRACTOR SHALL DEMO EXISTING CARPET FLOORING AND RUBBER BASE. CONTRACTOR SHALL SCRAPE AND PREPARE SURFACE FOR NEW FLOORING AND FLOOR BASE.
3. CONTRACTOR SHALL DEMO EXISTING CEILING SYSTEM AND LIGHT FIXTURES.
4. CONTRACTOR SHALL DEMO RESTROOM DOOR AND FRAME. CONTRACTOR SHALL DEMO EXISTING FLOOR BASE TO NEAREST JOINT.
5. CONTRACTOR SHALL CUT OPENING TO RESTROOM. PROVIDE NEW FRAMING AS NEEDED FOR NEW DOORWAY.
6. CONTRACTOR SHALL REMOVE EXISTING WALL BASE MATERIAL. CONTRACTOR SHALL PROTECT EXISTING FIXTURES AND PARTITIONS.
7. CONTRACTOR SHALL DEMO EXISTING METAL GUTTER AND DOWNSPOUT.
8. CONTRACTOR SHALL DEMO EXISTING STANDING SEAM METAL PANELS FOR NEW BREEZEWAY AND ADDITION. REMOVE ENTIRE PANEL TO RIDGE.
9. CONTRACTOR SHALL DEMO EXISTING WALL AND INSULATION TO STUD. EXISTING ELECTRICAL CONDUIT, WIRING, BOXES, AND CIRCUITS MAY BE REUSED WHERE APPLICABLE. HOWEVER, CONTRACTOR SHALL PROVIDE ALL NEW RECEPTACLES, COVERS, AND SWITCHES THROUGHOUT. REFER TO ELECTRICAL.

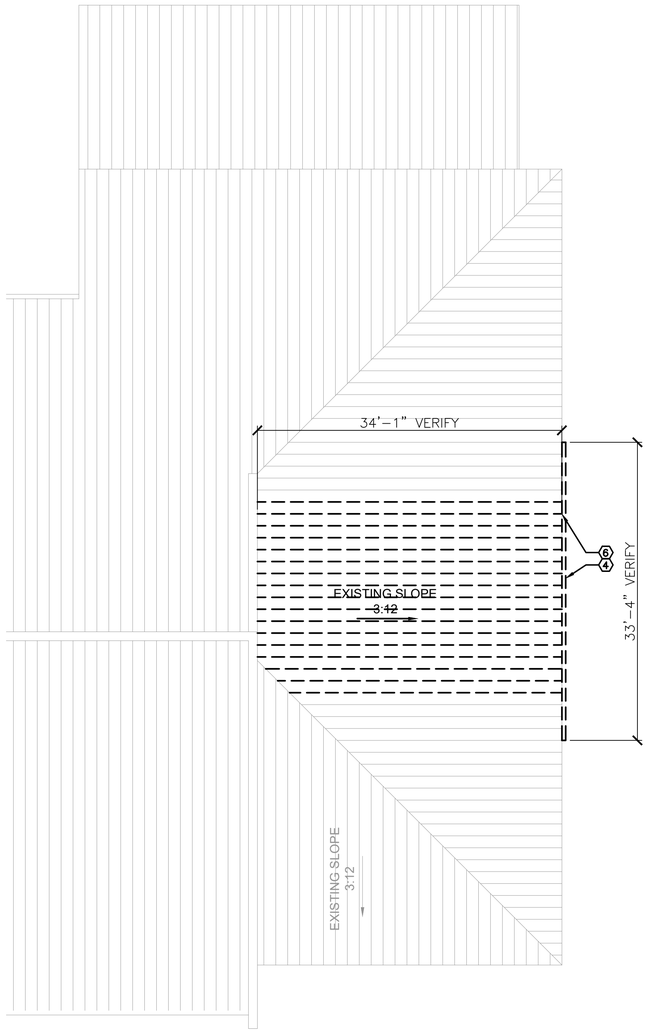
GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING DIMENSIONS, EQUIPMENT, AND CONDITIONS PRIOR TO START OF WORK.
2. CONTRACTOR SHALL ENSURE WORK AREAS SHALL BE KEPT CLEAN, SAFE, AND IN A WORKMANLIKE CONDITION. DEBRIS SHALL BE CLEANED ON A DAILY BASIS AND SITE SHALL BE MAINTAINED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PROTECT BUILDING ELEMENTS OUTSIDE THE SCOPE OF WORK AND LABELED AS "EXISTING TO REMAIN". DAMAGE TO THESE ITEMS REQUIRING REPAIR OR REPLACEMENT SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
4. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
5. FOR UNDER-SLAB DEMO, CONTRACTOR SHALL DEMO THE MINIMUM NECESSARY CONCRETE TO PROVIDE FOR NEW PLUMBING INSTALLATION.

LEGEND

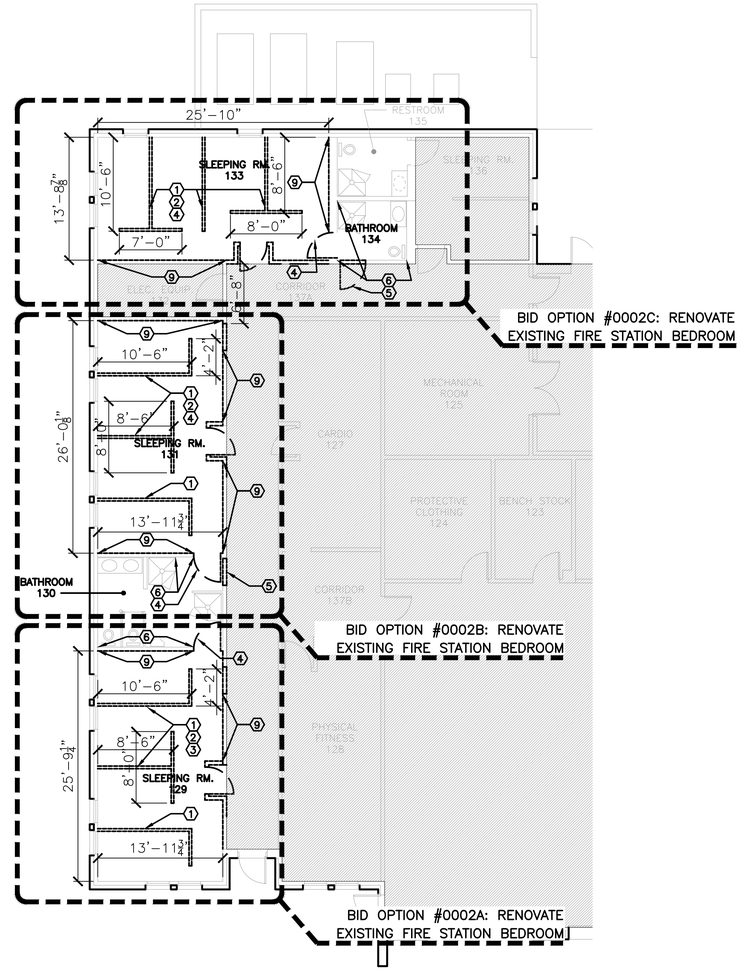
EXISTING TO REMAIN

DEMO



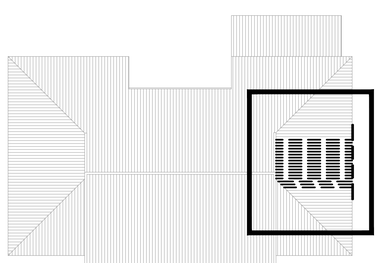
1 DEMO PLAN-BASE BID
1/8" = 1' - 0"

PLAN NORTH TRUE NORTH



2 DEMO PLAN-BID OPTION
1/8" = 1' - 0"

PLAN NORTH TRUE NORTH



KEY PLAN

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

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FIRE STATION ADD/ALTER, B3321
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17th TRAINING WING
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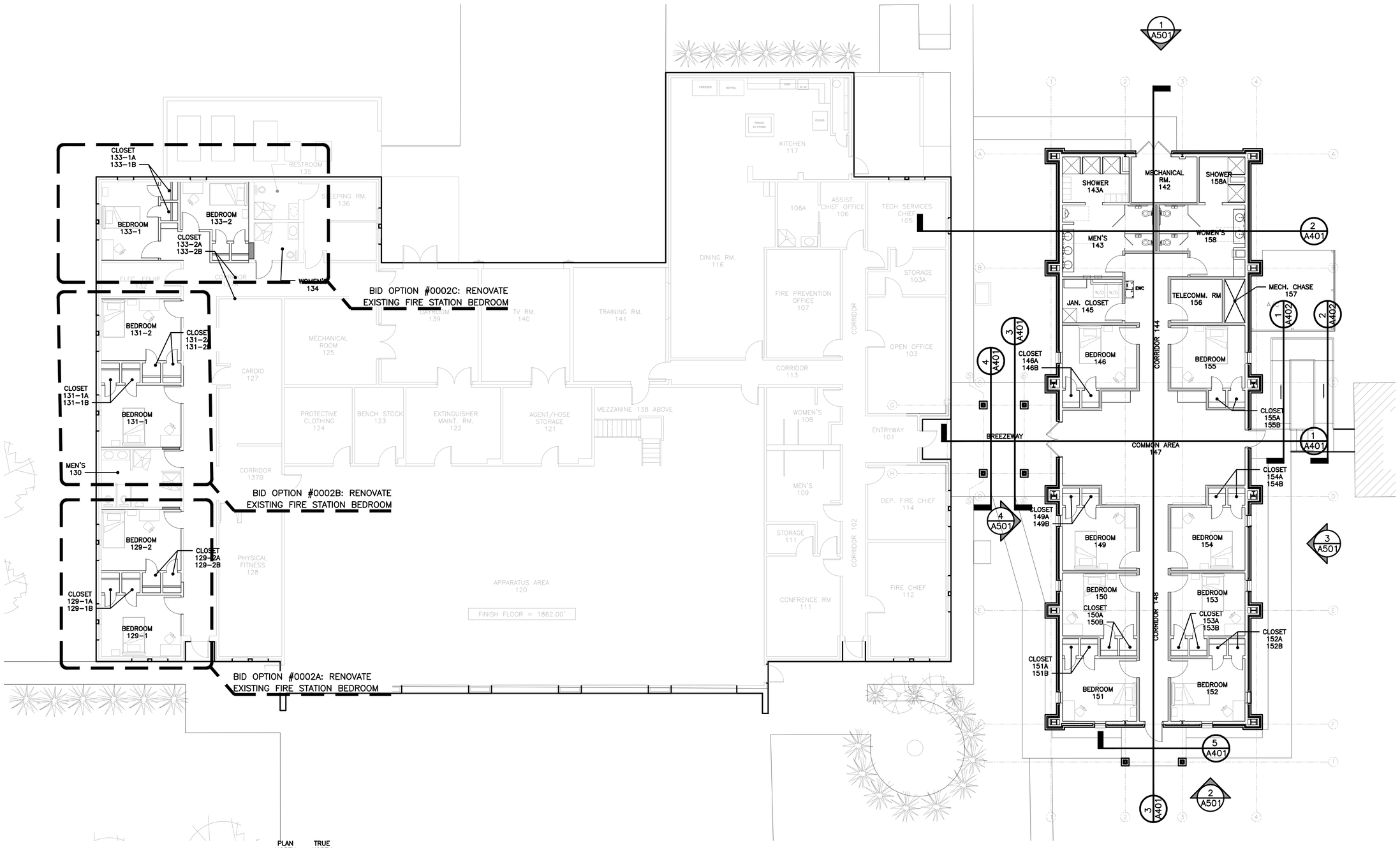
SHEET TITLE: DEMO PLAN

Date: SEP 2023

SEQ.	SHEET	OF
17	AD-101	50



1 OVERALL FLOORPLAN NEW

1" = 1' - 0"

PLAN NORTH TRUE NORTH

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING DIMENSIONS, EQUIPMENT, AND CONDITIONS PRIOR TO START OF WORK.
2. CONTRACTOR SHALL ENSURE WORK AREAS SHALL BE KEPT CLEAN, SAFE, AND IN A WORKMANLIKE CONDITION. DEBRIS SHALL BE CLEANED ON A DAILY BASIS AND SITE SHALL BE MAINTAINED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PROTECT BUILDING ELEMENTS OUTSIDE THE SCOPE OF WORK AND LABELED AS "EXISTING TO REMAIN". DAMAGE TO THESE ITEMS REQUIRING REPAIR OR REPLACEMENT SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
4. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.

LEGEND

SECTION TAG
RE: A/401

EXTERIOR TAG
RE: A/501

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

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FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

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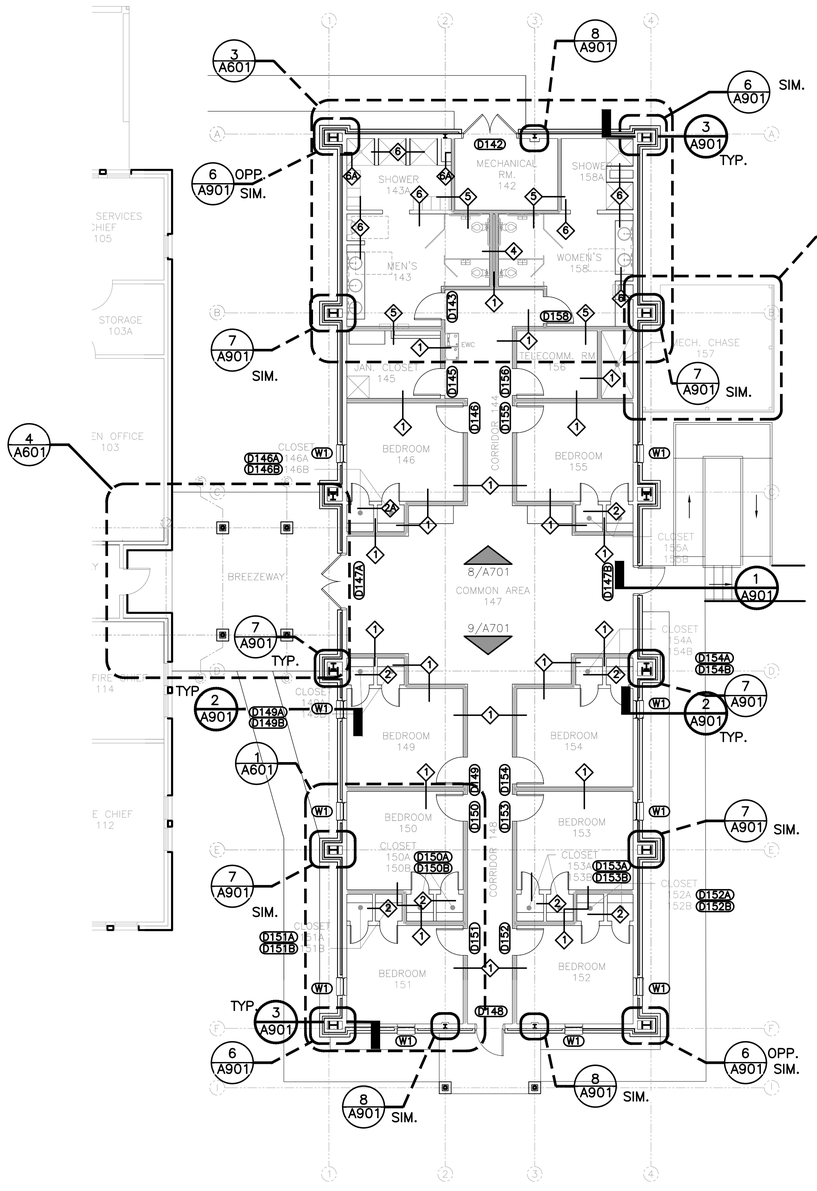
SHEET TITLE: FLOORPLAN NEW - OVERALL FLOORPLAN

Date: SEP 2023

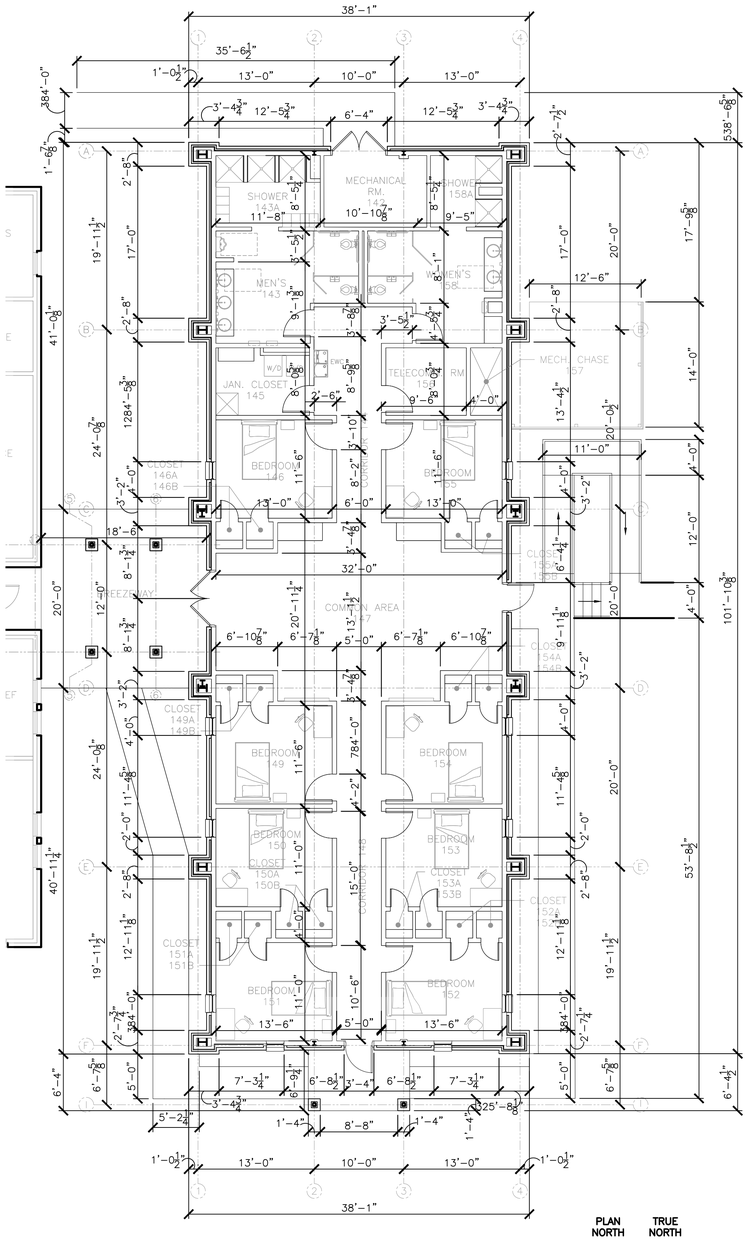
SEQ.	SHEET	OF
18	A-101	50



1 NEW FLOORPLAN – ANNOTATED PLAN

1/8" = 1' – 0"

PLAN NORTH TRUE NORTH



2 NEW FLOORPLAN – DIMENSION PLAN

1/8" = 1' – 0"

PLAN NORTH TRUE NORTH

GENERAL NOTES

1. FURNITURE IS SHOWN FOR CLARITY. FURNITURE TO BE PROVIDED BY OTHERS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING DIMENSIONS, EQUIPMENT, AND CONDITIONS PRIOR TO START OF WORK.
3. CONTRACTOR SHALL ENSURE WORK AREAS SHALL BE KEPT CLEAN, SAFE, AND IN A WORKMANLIKE CONDITION. DEBRIS SHALL BE CLEANED ON A DAILY BASIS AND SITE SHALL BE MAINTAINED IN ACCORDANCE WITH THE SPECIFICATIONS.
4. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PROTECT BUILDING ELEMENTS OUTSIDE THE SCOPE OF WORK AND LABELED AS "EXISTING TO REMAIN". DAMAGE TO THESE ITEMS REQUIRING REPAIR OR REPLACEMENT SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
5. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
6. IN ALL BID OPTIONS THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING, REPAIRING, TAPING, FLOATING, AND TEXTURING EXPOSED OR DAMAGED SURFACES FROM DEMO'D AREAS.

LEGEND

- 8/A701 — INTERIOR ELEVATION TAG RE: A701
- DXXX — DOOR TAG RE: A802
- W1 — WINDOW TAG RE: A-802
- X — PARTITION TYPE RE: A-601
- BATT INSULATION

4TH CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

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FIRE STATION ADD/ALTER, B3321
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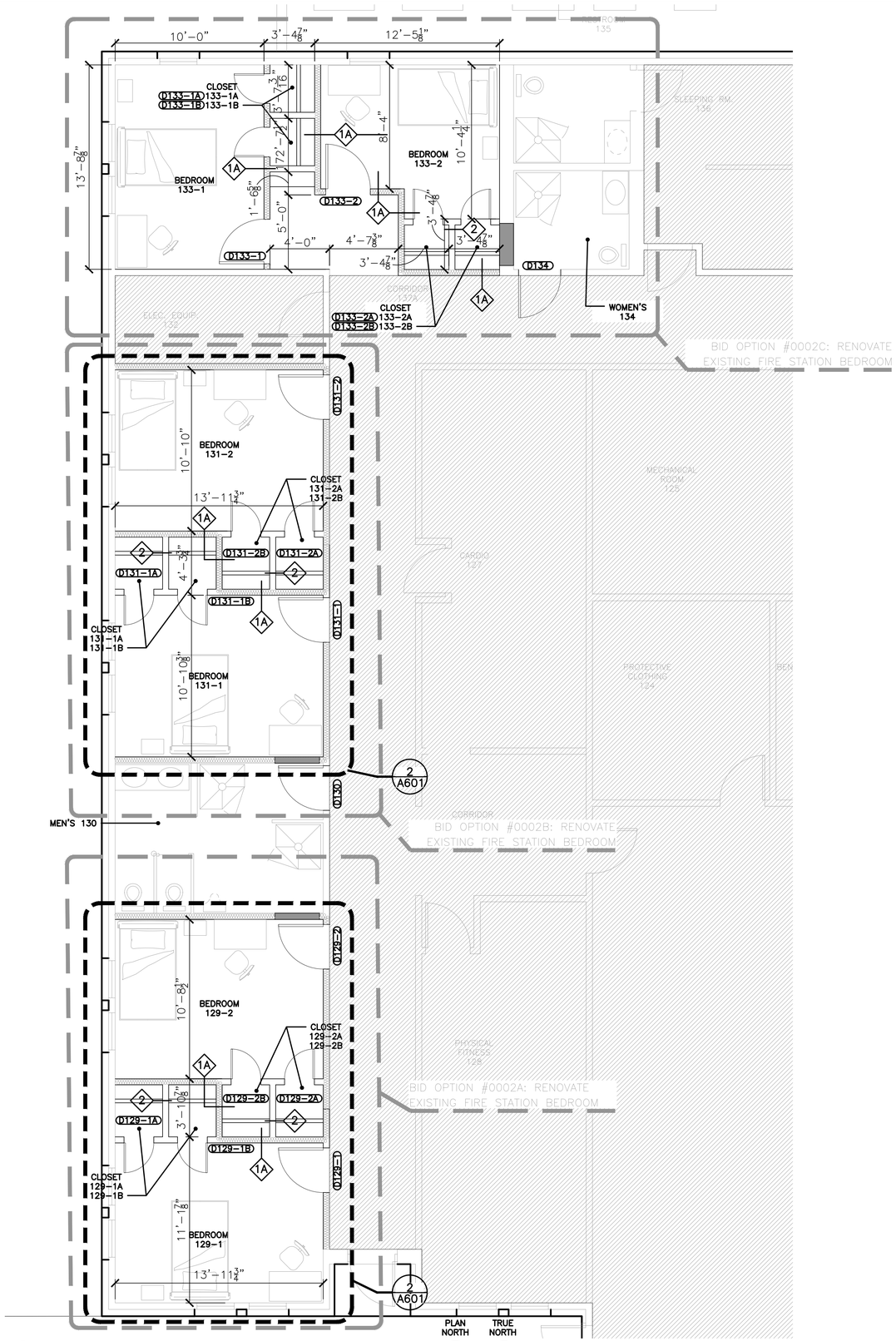
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: FLOORPLAN NEW – NEW ADDITION

Date: SEP 2023

SEQ.	SHEET	OF
19	A-102	50



1 FLOORPLAN NEW – BID OPTIONS
1/4" = 1' – 0"

GENERAL NOTES

1. FURNITURE IS SHOWN FOR CLARITY. FURNITURE TO BE PROVIDED BY OTHERS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING DIMENSIONS, EQUIPMENT, AND CONDITIONS PRIOR TO START OF WORK.
3. CONTRACTOR SHALL ENSURE WORK AREAS SHALL BE KEPT CLEAN, SAFE, AND IN A WORKMANLIKE CONDITION. DEBRIS SHALL BE CLEANED ON A DAILY BASIS AND SITE SHALL BE MAINTAINED IN ACCORDANCE WITH THE SPECIFICATIONS.
4. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PROTECT BUILDING ELEMENTS OUTSIDE THE SCOPE OF WORK AND LABELED AS "EXISTING TO REMAIN". DAMAGE TO THESE ITEMS REQUIRING REPAIR OR REPLACEMENT SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
5. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
6. WHERE BID OPTIONS REQUIRE THE DEMO OF RESTROOM DOORS. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLISHING EXISTING DOORS AS INDICATED ON THE DEMO PLAN. CONTRACTOR SHALL PATCH AND REPAIR SURROUNDING SURFACES, TAPE, FLOAT, TEXTURE TO MATCH, PRIME AND PAINT TO EXISTING WALL. CONTRACTOR SHALL PAINT THE ENTIRE WALL AND PROVIDE NEW FLOOR BASE SIMILAR TO EXISTING. CONTRACTOR SHALL TAPE OFF AND PROTECT EXISTING PARTITIONS, FLOORING, AND FIXTURES FROM DAMAGE.
7. IN ALL BID OPTIONS AREAS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING, REPAIRING, TAPING, FLOATING, AND TEXTURING EXPOSED OR DAMAGED SURFACES FROM DEMO'D AREAS.
8. IN ALL BID OPTION AREAS: WHERE EXISTING RESTROOM, CORRIDOR, OR ELECTRICAL CLOSET WALLS ARE TO REMAIN. CONTRACTOR SHALL PROVIDE NEW BATT INSULATION AND (2) LAYERS OF FC GYP. BD. ON THE BEDROOM SIDE. PROVIDE INSULATION TO TOP OF PARTITION.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY WALL CONSTRUCTION AND DUST/SOUND PROTECTION FOR AREAS UNDER CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS. CONTRACTOR ENTRANCE DURING CONSTRUCTION SHALL BE ADJACENT TO ROOM 129-1 UNLESS NOTED OTHERWISE.

LEGEND

- EXISTING TO REMAIN
- DOOR INFILL
- X / A501 — ELEVATION TAG
- BATT INSULATION
- (X) — PARTITION TYPE RE: A801/A802
- (DXXX) — DOOR TAG RE: A801/A802

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

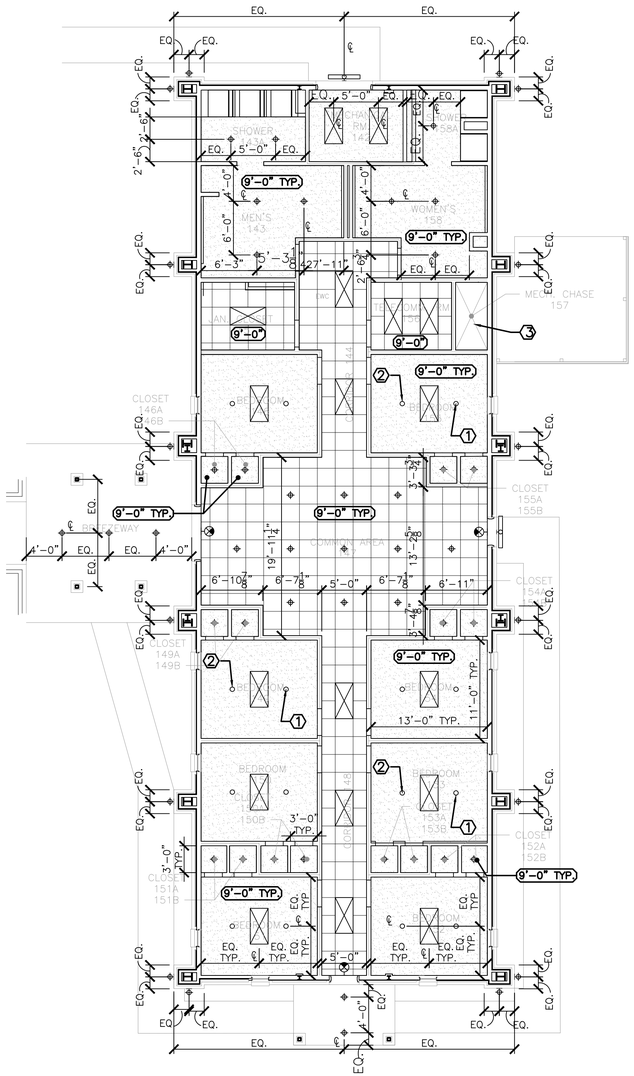
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: FLOORPLAN NEW – BID OPTIONS

Date: SEP 2023

SEQ.	SHEET	OF
20	A-103	50



1 REFLECTED CEILING PLAN – NEW ADDITION

1/8" = 1' – 0"

PLAN NORTH

TRUE NORTH

KEYNOTES AS INDICATED BY (X)

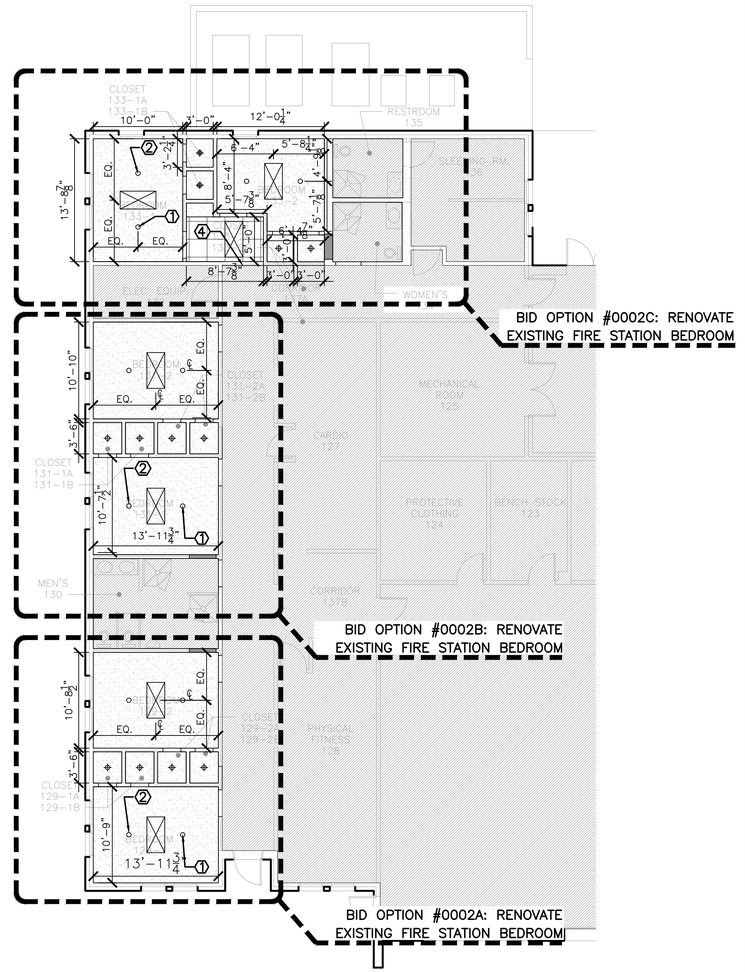
1. NEW PUBLIC ANNOUNCING (PA) SOFT START AUDIO OUTPUT SPEAKERS. TYP. ALL SLEEPING ROOMS.
2. NEW FIRE DEVICES AS REQ'D BY NEW QFPE DESIGN. TYP. ALL SLEEPING ROOMS. REFER TO FIRE ALARM.
3. MECHANICAL CHASE, NO CEILING REQ'D.
4. FURR DOWN BETWEEN NEW AND EXISTING CEILING GRIDS.

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING DIMENSIONS, EQUIPMENT, AND CONDITIONS PRIOR TO START OF WORK.
2. CONTRACTOR SHALL ENSURE WORK AREAS SHALL BE KEPT CLEAN, SAFE, AND IN A WORKMANLIKE CONDITION. DEBRIS SHALL BE CLEANED ON A DAILY BASIS AND SITE SHALL BE MAINTAINED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PROTECT BUILDING ELEMENTS OUTSIDE THE SCOPE OF WORK AND LABELED AS "EXISTING TO REMAIN". DAMAGE TO THESE ITEMS REQUIRING REPAIR OR REPLACEMENT SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
4. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
5. CONTRACTOR SHALL CENTER FIXTURES, SPRINKLER HEADS, DEVICES, AND ACCESSORIES BETWEEN CEILING TILES AS MUCH AS POSSIBLE.
6. IN BID OPTION AREAS, CONTRACTOR SHALL VERIFY CEILING HEIGHTS PRIOR TO DEMOLITION, AND PROVIDE NEW CEILINGS WITH SIMILAR HEIGHTS.

LEGEND

- EXISTING TO REMAIN
- 8'–0" — CEILING HEIGHT
- 2'–0" X 2'–0" X 7/8" SUSP. GRID CLG SYSTEM. RE: 2:/A201
- SUSP. 5/8" FC GYP BD CLG SYSTEM
- 2'4' LED RECESSED TROFFER LIGHT FIXTURE
- 6" LED ROUND RECESSED LIGHT FIXTURE
- SURFACE MOUNTED LED WALL PACK
- SURFACE MOUNTED LED UP/DN WALL SCONCE
- EXIT LIGHTING



2 REFLECTED CEILING PLAN – BID OPTIONS

1/8" = 1' – 0"

PLAN NORTH

TRUE NORTH

4TH CIVIL ENGINEER SQUADRON — READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

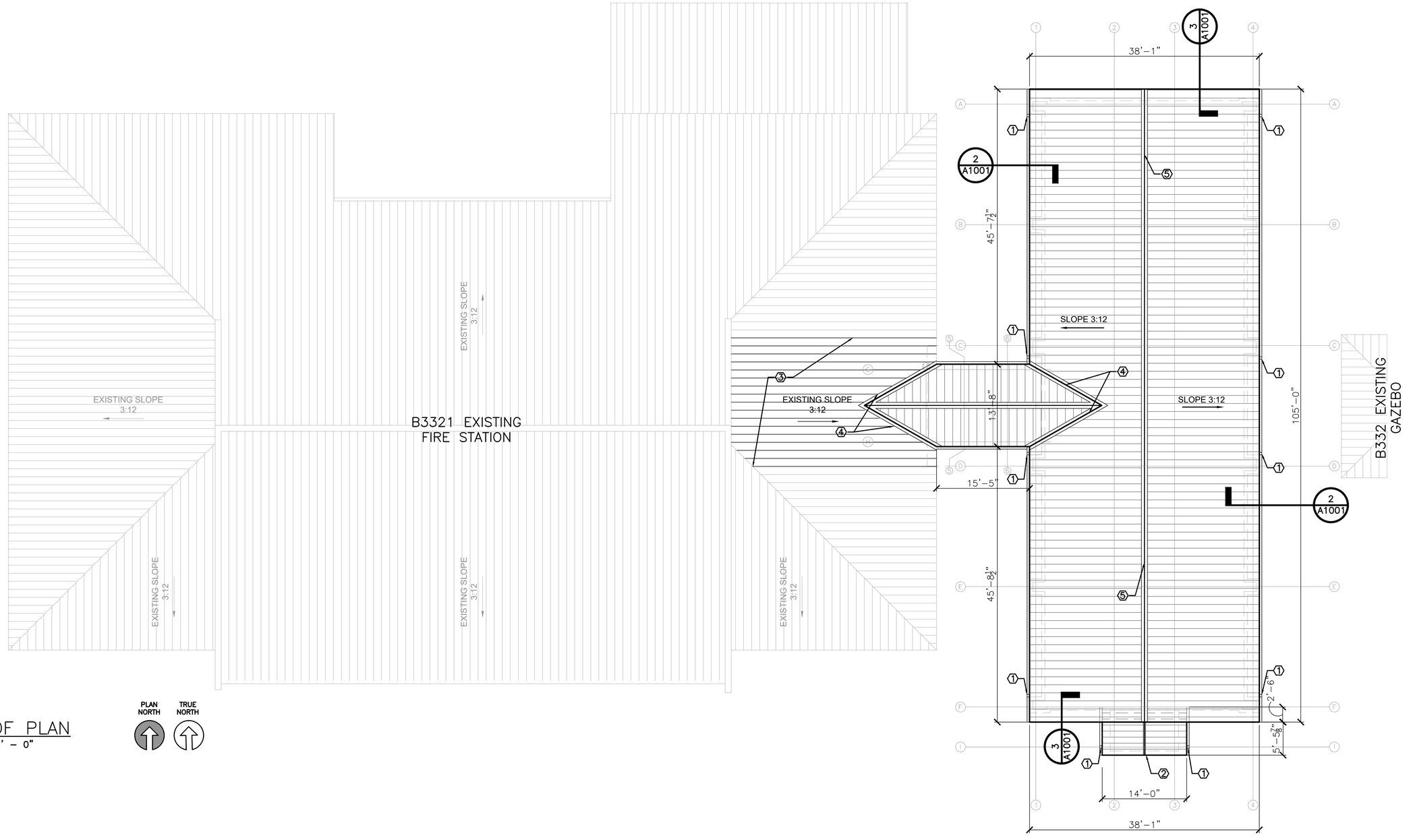
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: REFLECTED CEILING PLAN

Date: SEP 2023

SEQ.	SHEET	OF
21	A-201	50



1 ROOF PLAN
1/8" = 1' – 0"

PLAN NORTH

TRUE NORTH

KEYNOTES

1. CONTRACTOR SHALL PROVIDE NEW BOXED GUTTER AND DOWNSPOUTS. TRIM TO MATCH NEW MTL ROOF FINISH. RE: 2/A1001 FOR SOFFIT DTL.
2. NEW MTL ROOF CANOPY BELOW
3. CONTRACTOR SHALL PROVIDE NEW STANDING SEAM METAL ROOF PANELS TO MATCH EXISTING ROOF. COLOR MATCH TO EXISTING AS MUCH AS POSSIBLE. CONTRACTOR CONTRACTOR SHALL SEAL PENETRATIONS AND MODIFY EXISTING ROOF AS NEEDED FOR NEW BREEZEWAY.
4. CONTRACTOR SHALL PROVIDE NEW ROOF VALLEY TRIM.
5. CONTRACTOR SHALL PROVIDE NEW RIDGE CAP.

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING DIMENSIONS, EQUIPMENT, AND CONDITIONS PRIOR TO START OF WORK.
2. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PROTECT BUILDING ELEMENTS OUTSIDE THE SCOPE OF WORK AND LABELED AS "EXISTING TO REMAIN". DAMAGE TO THESE ITEMS REQUIRING REPAIR OR REPLACEMENT SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
3. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
4. CONTRACTOR SHALL ENSURE ALL SEAMS ARE WEATHERPROOFED AND SEALED PROPERLY.
5. CONTRACTOR SHALL PROVIDE CLOSURE STRIPS AND BUTYL TAPE PER MFR. RECOMMENDATIONS
6. CONTRACTOR SHALL PROVIDE FLASHING/SEALANT FOR THROUGH–ROOF PENETRATIONS PER MTL. BLDG. ROOF MFR RECOMMENDATIONS.
7. NEW STANDING SEAM MTL. ROOF TO MATCH EXISTING. SLOPE = 3 : 12 (2.7 : 12 @ BREEZEWAY).
8. CONTRACTOR SHALL PROVIDE RIDGE VENT W/COR–A–VENT LOW PROFILE FLOATING RIDGE VENT EQ. TO THAT BY RIGID GLOBAL BUILDINGS
9. CONTRACTOR SHALL PROVIDE THERMAL BLOCKS @ EA. PURLIN.

LEGEND

EXISTING ROOF — OR

NEW STANDING SEAM MTL. ROOF — OR

DIRECTION OF DOWNWARD SLOPE

NOTE: ALL ROOF PANEL LAPS SHALL FACE OPPOSITE TO THE PREVAILING WINDS (SAN ANGELO: SW TO NE WINDS)

ROOF PANELS
EXTERIOR
INTERIOR
PREVAILING WINDS

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

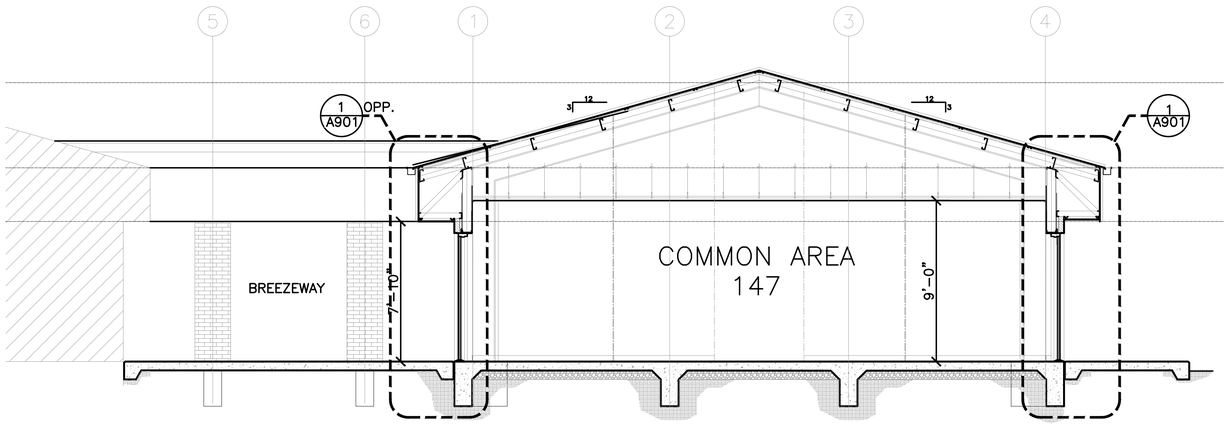
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

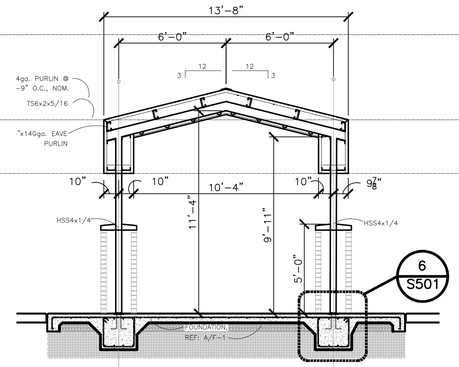
SHEET TITLE: ROOF PLAN

Date: SEP 2023

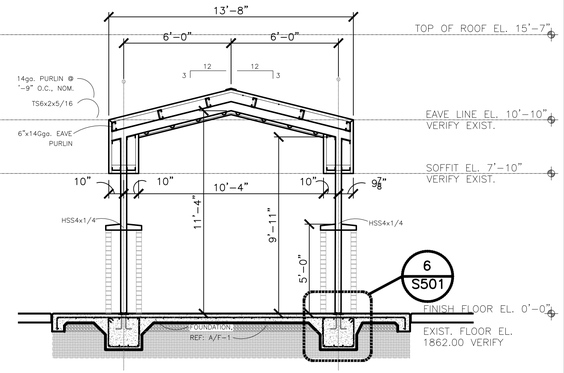
SEQ.	SHEET	OF
22	A-301	50



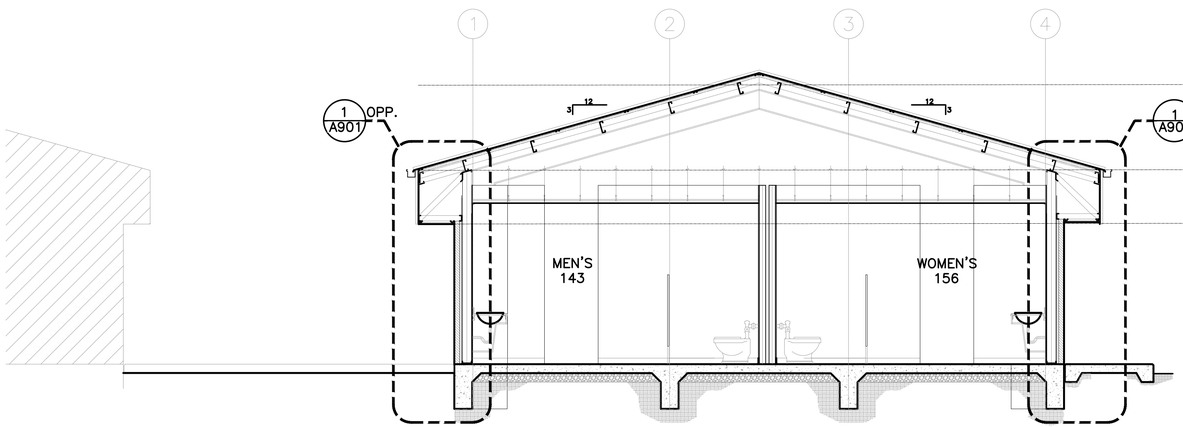
1 SECTION – THROUGH BREEZEWAY
1/4" = 1' – 0"



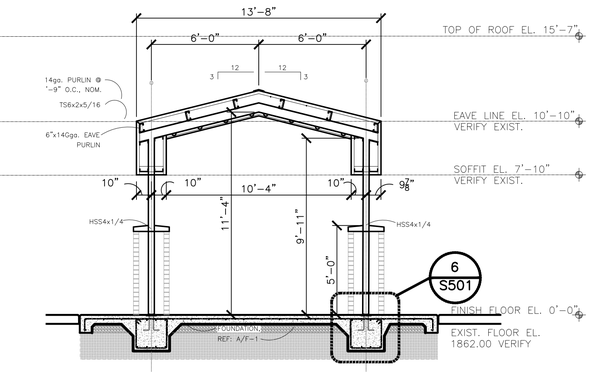
3 BREEZEWAY SECTION
1/4" = 1' – 0"



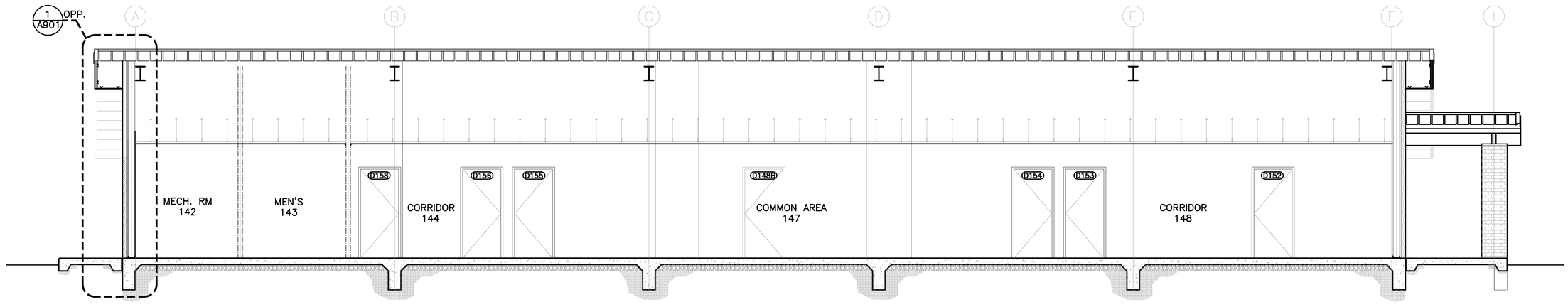
4 BREEZEWAY SECTION
1/4" = 1' – 0"



2 SECTION– THROUGH RESTROOMS
1/4" = 1' – 0"



6 SECTION – THROUGH PORCH
1/4" = 1' – 0"



3 SECTION – LONGITUDINAL
1/4" = 1' – 0"

5TH CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by:	Drawn by:	Reviewed by:	Submitted by:
JH/RM/LA	JH/RM/LA	RT/JH	I7CES

PROJECT TITLE

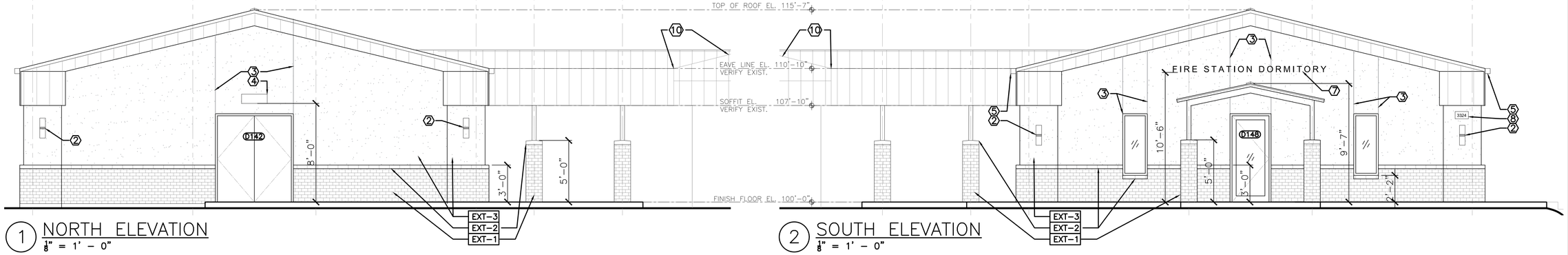
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: BUILDING SECTIONS

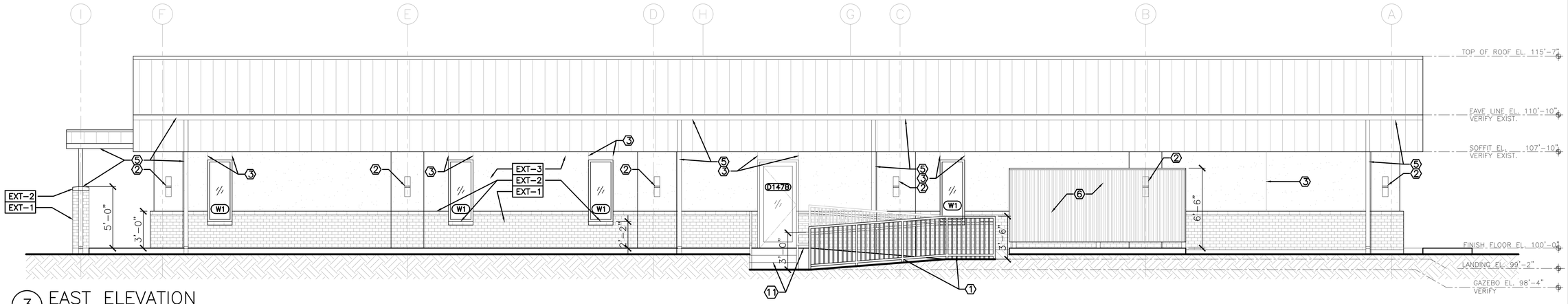
Date: SEP 2023

SEQ.	SHEET	OF
18	A-401	50

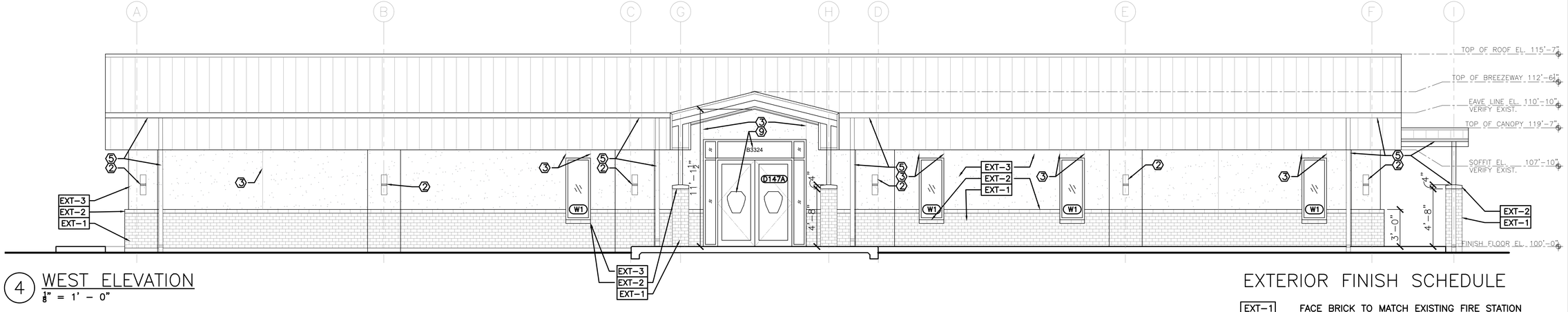


1 NORTH ELEVATION
1/8" = 1' - 0"

2 SOUTH ELEVATION
1/8" = 1' - 0"



3 EAST ELEVATION
1/8" = 1' - 0"



4 WEST ELEVATION
1/8" = 1' - 0"

KEYNOTES AS NOTATED BY

1. CONTRACTOR SHALL PROVIDE STEEL PIPE HANDRAIL AND INSTALL PER ADA REQUIREMENTS. DK. BRONZE FINISH
2. CONTRACTOR SHALL PROVIDE NEW EXTERIOR SURFACE MOUNTED LED UP/DN WALL SCONCE. TYP. DK. BRONZE FINISH. CENTER BETWEEN EDGE OF SOFFIT AND CAST STONE CAP. REFER TO ELECTRICAL FOR SCHEDULE
3. NEW CONTROL JOINT. TYP
4. CONTRACTOR SHALL PROVIDE NEW EXTERIOR SURFACE MOUNTED LED WALL PACK. REFER TO ELECTRICAL.
5. CONTRACTOR SHALL PROVIDE 5" METAL DOWNSPOUT AND GUTTER. MEDIUM BRONZE FINISH TO MATCH METAL ROOF
6. CONTRACTOR SHALL PROVIDE NEW MECHANICAL ENCLOSURE AND PAD. PROVIDE NEW METAL "R" PANEL ENCLOSURE WITH DK BRONZE FINISH. PROVIDE EDGE TRIM FOR EXPOSED EDGES. REFER TO A/601 FOR ADDITIONAL INFORMATION.
7. CONTRACTOR SHALL PROVIDE NEW EXTERIOR BUILDING ENTRANCE SIGNAGE IN ACCORDANCE WITH GAFB BASE STANDARDS AND RAISED ALUMINUM LETTERING, 6" HEIGHT. CENTER ABOVE PORCH CANOPY.
8. CONTRACTOR SHALL PROVIDE NEW EXTERIOR BUILDING SIGNAGE. BUILDING NUMBER TO BE DETERMINED. PROVIDED 1/8" ACRYLIC OR PAINTED ALUMINUM LETTERING WITH DK. BRONZE BACKGROUND AND WHITE LETTERING. REFER TO GAFB BASE STANDARDS.
9. CONTRACTOR SHALL PROVIDE FROSTED VINYL BUILDING ID NUMBER AND FIRE DEPT. EMBLEM ON GLASS STOREFRONT. FD EMBLEM AVAILABLE UPON REQUEST.
10. CONTRACTOR SHALL MODIFY EXISTING FIRE STATION ROOF TO ACCEPT NEW BREEZEWAY. CONTRACTOR SHALL FIELD VERIFY TYPE AND MATCH NEW.
11. NEW CONCRETE STAIRS AND RAMP. REFER TO A401 FOR ADDITIONAL INFORMATION.

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND JOB CONDITIONS PRIOR TO START OF WORK.
2. CONTRACTOR SHALL PROVIDE ALL WEATHERPROOFING, FLASHING, AND SEALANTS AT ALL ROOF VALLEYS, AND INTERSECTIONS OF NEW CONSTRUCTION AND EXISTING CONNECTIONS.
3. ALL METAL ROOF PANEL LAPS SHALL FACE OPPOSITE TO PREVAILING WINDS (SAN ANGELO: SW TO NE WINDS)

EXTERIOR FINISH SCHEDULE

EXT-1	FACE BRICK TO MATCH EXISTING FIRE STATION
EXT-2	CAST STONE CAP – WHITE OR LIMESTONE FINISH
EXT-3	CEMENT STUCCO – TAN FINISH TO MATCH FIRE STATION
D100	DOOR TAG
W1	WINDOW TAG

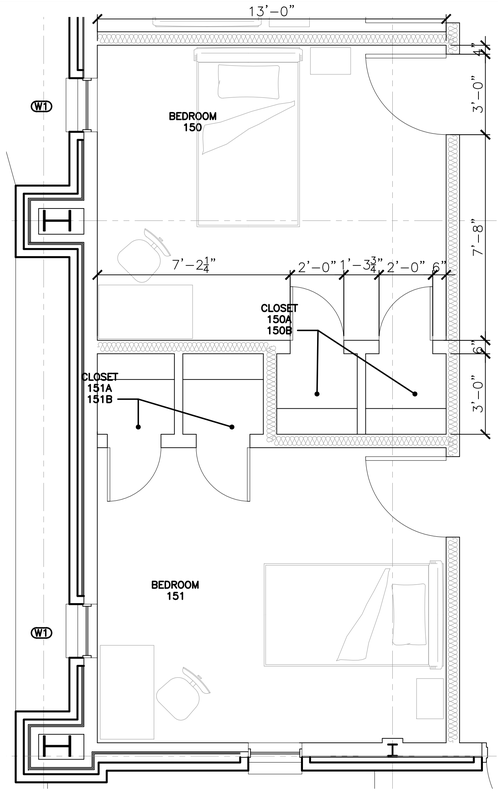
7TH CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

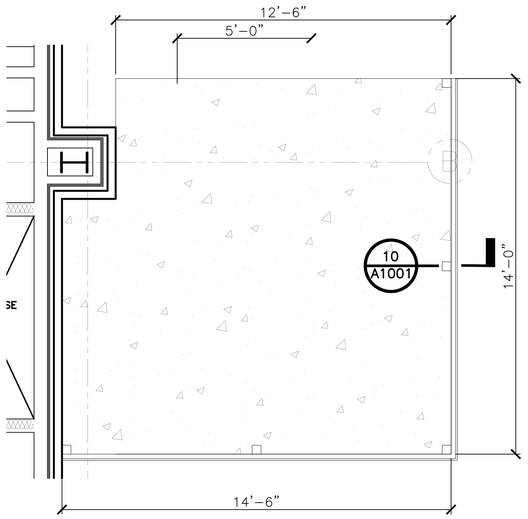
PROJECT TITLE
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839
SHEET TITLE: EXTERIOR ELEVATIONS
Date: SEP 2023

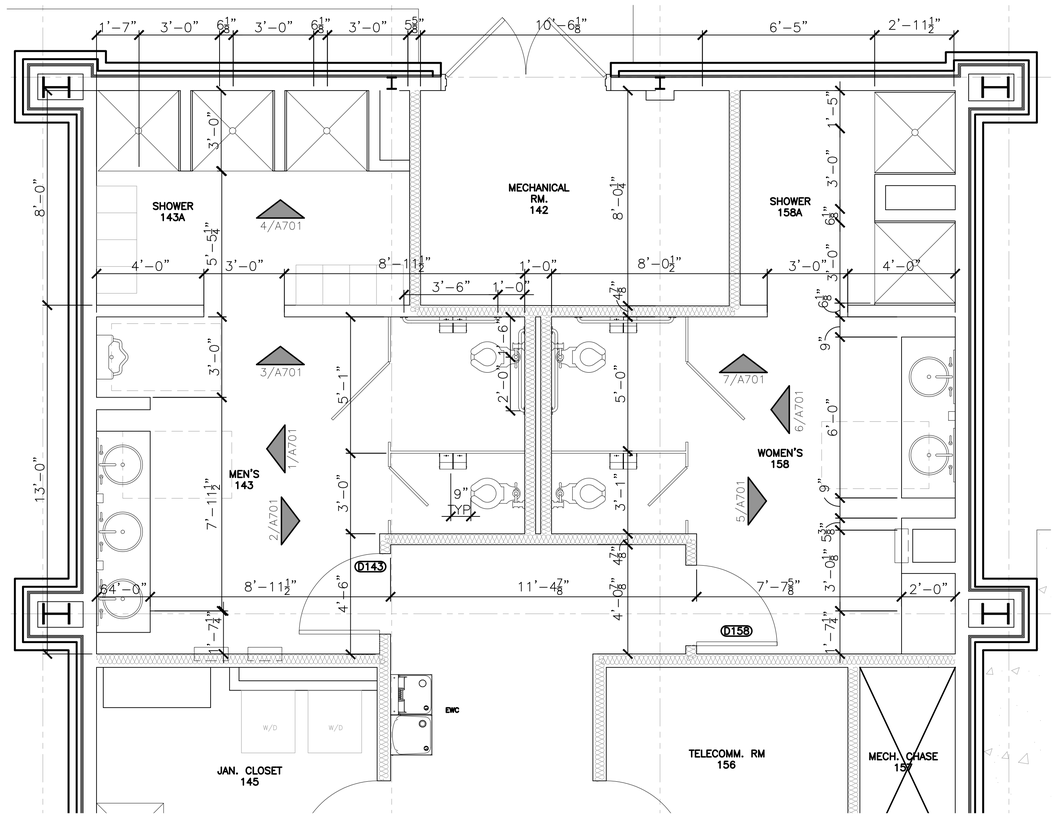
SEQ.	SHEET	OF
24	A-501	50



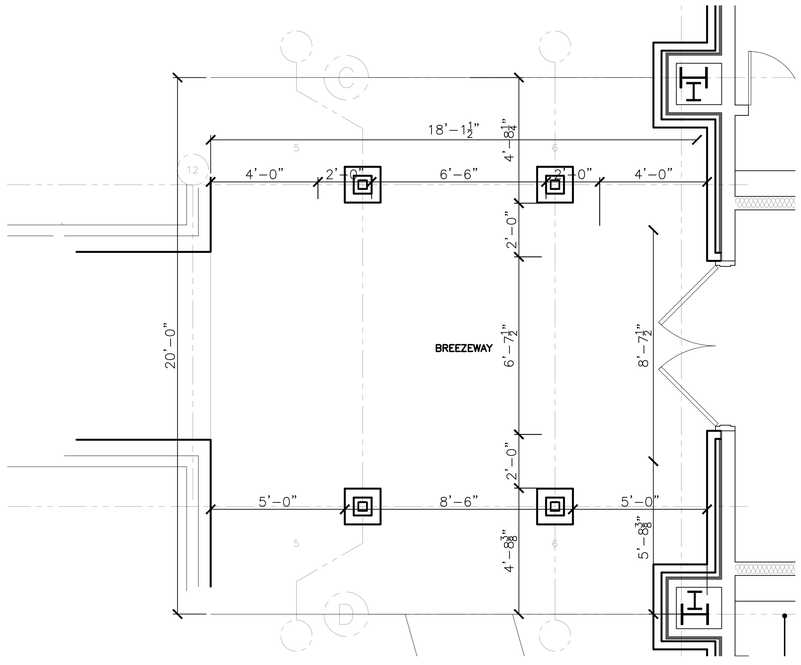
2 ENLARGED PLAN – TYP. DORM
3/8" = 1' – 0"



2 ENLARGED PLAN – HVAC ENCLOSURE
3/8" = 1' – 0"



3 ENLARGED PLAN – RESTROOMS
3/8" = 1' – 0"



3 ENL. PLAN – BREEZEWAY
3/8" = 1' – 0"

LEGEND

KEYNOTES ⓧ

INTERIOR ELEVATION RE: A701 X/A-601

KEYNOTES AS INDICATED BY

1. N/A

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING DIMENSIONS, EQUIPMENT, AND CONDITIONS PRIOR TO START OF WORK.
2. CONTRACTOR SHALL ENSURE WORK AREAS SHALL BE KEPT CLEAN, SAFE, AND IN A WORKMANLIKE CONDITION. DEBRIS SHALL BE CLEANED ON A DAILY BASIS AND SITE SHALL BE MAINTAINED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PROTECT BUILDING ELEMENTS OUTSIDE THE SCOPE OF WORK AND LABELED AS "EXISTING TO REMAIN". DAMAGE TO THESE ITEMS REQUIRING REPAIR OR REPLACEMENT SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
4. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
5. CONTRACTOR SHALL DEMOLISH ALL ITEMS NOT SPECIFICALLY INDICATED, BUT OBVIOUSLY AND/OR NORMALLY REQUIRED TO COMPLETELY AND PROPERLY EXECUTE THE DEMOLITION WORK.
6. FOR UNDER-SLAB DEMO, CONTRACTOR SHALL DEMO THE MINIMUM NECESSARY CONCRETE TO PROVIDE FOR NEW PLUMBING INSTALLATION.

TOILET ACCESSORY SCHEDULE (OR APPROVED EQUAL)

TAG #	NAME	MANUFACTURER	NOTES
TA-1	TOILET PAPER DISPENSER	KOALA KARE	GFCI – GOV'T FURNISHED CONTRACTOR INSTALLED
TA-2	SOAP DISPENSER	KOALA KARE	GFCI – GOV'T FURNISHED CONTRACTOR INSTALLED
TA-3	PAPER TOWEL DISPENSER	KOALA KARE	GFCI – GOV'T FURNISHED CONTRACTOR INSTALLED
TA-4	24" X 36" GLASS MIRROR	BOBRICK #B-3942	CFCI – CONTRACTOR FURNISHED & INSTALLED
TA-5	GRAB BAR, 36"	BOBRICK #B-5806 X 36	CFCI – CONTRACTOR FURNISHED & INSTALLED
TA-6	GRAB BAR, 42"	BOBRICK #B-5806 X 42	CFCI – CONTRACTOR FURNISHED & INSTALLED
TA-7	WASTE RECEPTACLE	BOBRICK #B-2400	CFCI – CONTRACTOR FURNISHED & INSTALLED
TA-8	SHOWER CURTAIN AND HOOKS		CFCI – CONTRACTOR FURNISHED & INSTALLED
TA-9	SHOWER CURTAIN		CFCI – CONTRACTOR FURNISHED & INSTALLED

4TH CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

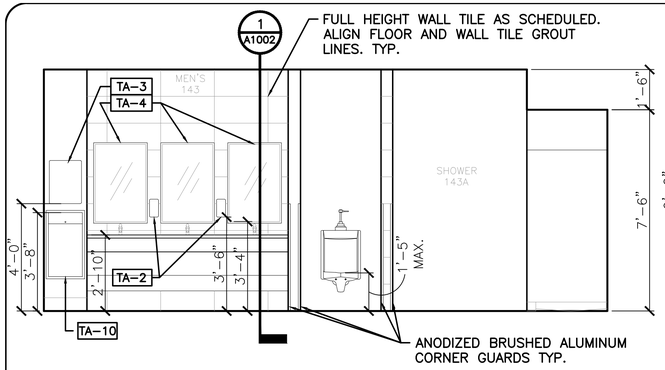
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

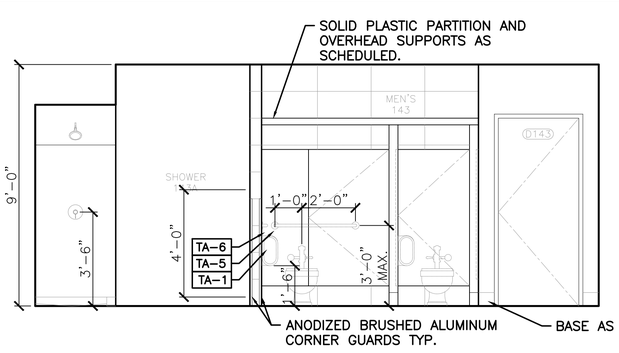
SHEET TITLE: ENLARGED PLANS

Date: SEP 2023

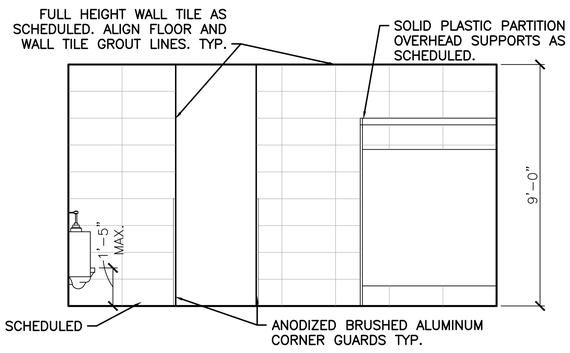
SEQ. 25 | SHEET A-601 | OF 50



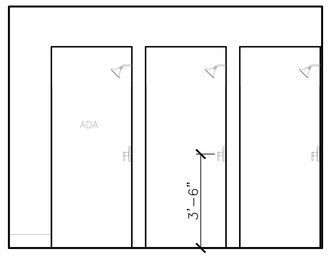
1 INT. ELEVATION–MEN'S RR
3/8" = 1'– 0"



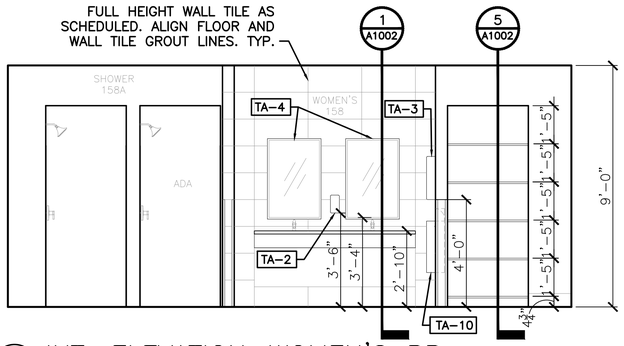
2 INT. ELEVATION–MEN'S RR
3/8" = 1'– 0"



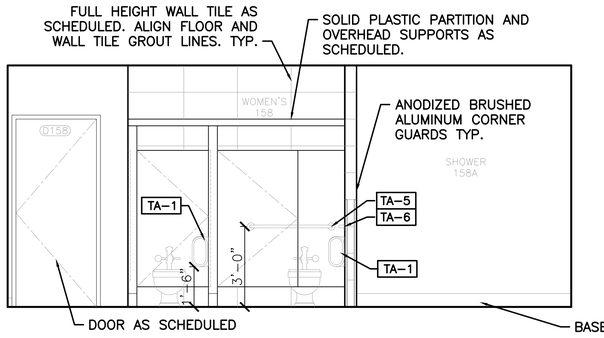
3 INT. ELEVATION–MEN'S RR
3/8" = 1'– 0"



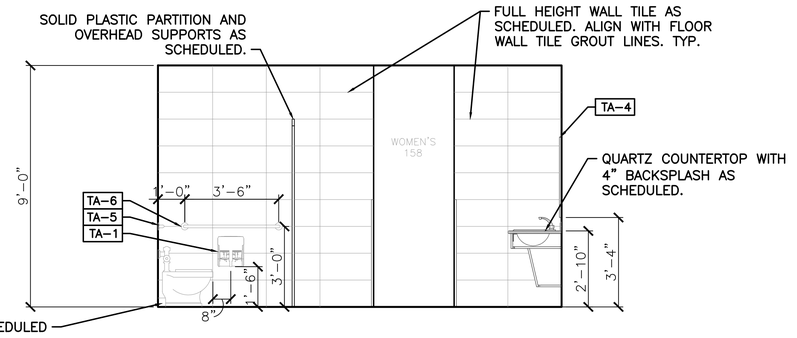
4 INT. ELEVATION–MEN'S RR
3/8" = 1'– 0"



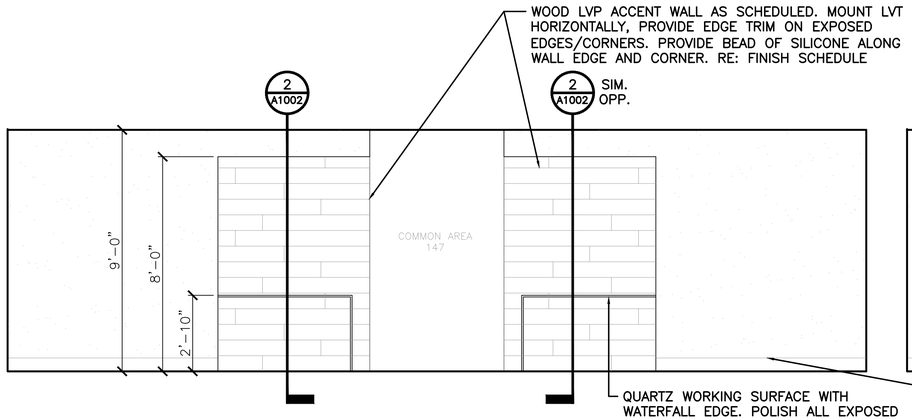
5 INT. ELEVATION–WOMEN'S RR
3/8" = 1'– 0"



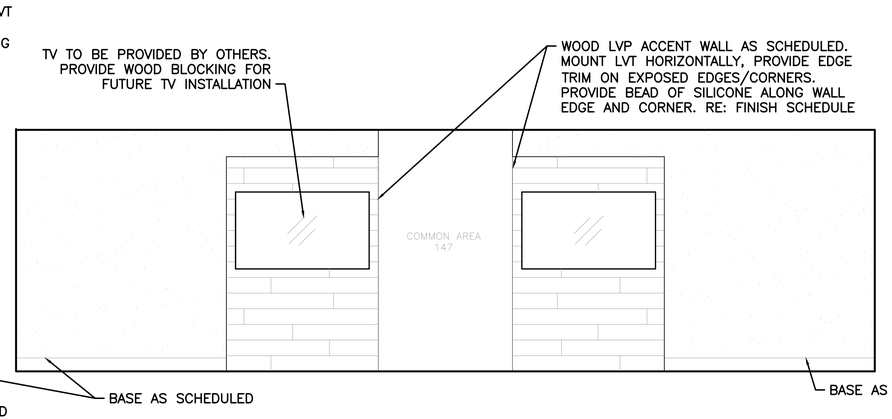
6 INT. ELEVATION–WOMEN'S RR
3/8" = 1'– 0"



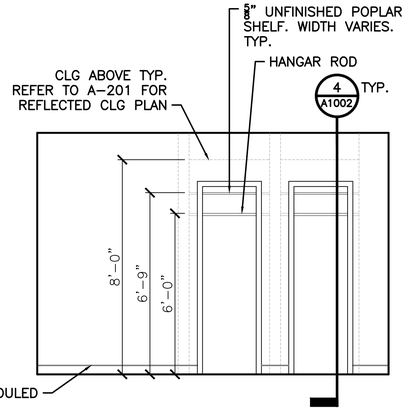
7 INT. ELEVATION–WOMEN'S RR
3/8" = 1'– 0"



8 INT. ELEVATION – COMMON RM.
3/8" = 1'– 0"



9 INT. ELEVATION – COMMON RM.
3/8" = 1'– 0"



10 TYP. DORM CLOSET
3/8" = 1'– 0"

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING DIMENSIONS, EQUIPMENT, AND CONDITIONS PRIOR TO START OF WORK.
2. CONTRACTOR SHALL ENSURE WORK AREAS SHALL BE KEPT CLEAN, SAFE, AND IN A WORKMANLIKE CONDITION. DEBRIS SHALL BE CLEANED ON A DAILY BASIS AND SITE SHALL BE MAINTAINED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PROTECT BUILDING ELEMENTS OUTSIDE THE SCOPE OF WORK AND LABELED AS "EXISTING TO REMAIN". DAMAGE TO THESE ITEMS REQUIRING REPAIR OR REPLACEMENT SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
4. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
5. CONTRACTOR SHALL DEMOLISH ALL ITEMS NOT SPECIFICALLY INDICATED, BUT OBVIOUSLY AND/OR NORMALLY REQUIRED TO COMPLETELY AND PROPERLY EXECUTE THE DEMOLITION WORK.
6. FOR UNDER–SLAB DEMO, CONTRACTOR SHALL DEMO THE MINIMUM NECESSARY CONCRETE TO PROVIDE FOR NEW PLUMBING INSTALLATION.

TOILET ACCESSORY SCHEDULE (OR APPROVED EQUAL)

TAG #	NAME	MANUFACTURER	MODEL	NOTES
TA-1	TOILET PAPER DISPENSER	GEORGIA PACIFIC	COMPACT, MFG #56744A	CFCI - CONTRACTOR FURNISHED & INSTALLED
TA-2	SOAP DISPENSER	SC JOHNSON	PROLINE CURVE, #BLK2LDP	CFCI - CONTRACTOR FURNISHED & INSTALLED
TA-3	PAPER TOWEL DISPENSER	TORK	PEAKSERVE MINI CONTINUOUS , #552538	CFCI - CONTRACTOR FURNISHED & INSTALLED
TA-4	24" X 36" GLASS MIRROR	BOBRICK	#B-3942	CFCI - CONTRACTOR FURNISHED & INSTALLED
TA-5	GRAB BAR, 36"	BOBRICK	#B-5806 X 36	CFCI - CONTRACTOR FURNISHED & INSTALLED
TA-6	GRAB BAR, 42"	BOBRICK	#B-5806 X 42	CFCI - CONTRACTOR FURNISHED & INSTALLED
TA-7	WASTE RECEPTACLE	BOBRICK	#B-2400	CFCI - CONTRACTOR FURNISHED & INSTALLED
TA-8	SHOWER ROD & FLANGE	ASI	#1204-36/1204-1	CFCI - CONTRACTOR FURNISHED & INSTALLED
TA-9	SHOWER CURTAIN & HOOKS	ASI	#1200-V36/1200-SHU	CFCI - CONTRACTOR FURNISHED & INSTALLED
TA-10	WASTE RECEPTACLE	BOBRICK	RECESSED, SATIN FINISH, #B-3644	CFCI - CONTRACTOR FURNISHED & INSTALLED

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I²CES

PROJECT TITLE
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839
SHEET TITLE: INTERIOR ELEVATIONS
Date: SEP 2023

SEQ. 26 | SHEET A-701 | OF 50

2 FINISH FLOOR PLAN—NEW ADDITION

1/8" = 1' – 0"

FINISH SCHEDULE (NEW ADDITION)

ROOM #	ROOM NAME	FLOOR	BASE	WALLS N	WALLS S	WALLS E	WALLS W	CLG.	CLG. HT.	NOTES
142	MECHANICAL RM.	CN-1	RB-1	PT-3	PT-3	PT-3	PT-3	CL-2	10'-0"	
143	MEN'S RR	TL-1	TL-1	TL-2	PT-1	TL-2/PT-1	TL-2 / PT-1 / PT-2	CL-2	9'-0"	
143A	MEN'S SHOWER	TL-1	TL-1	-	TL-2	PT-2	PT-2	CL-2	9'-0"	
144	CORRIDOR	CP-1	RB-1	PT-1	PT-1	PT-1	PT-1	CL-1	9'-0"	
145	JAN. CLOSET	CN-1	RB-1	PT-3	PT-3	PT-3	PT-3	CL-2	9'-0"	
146	BEDROOM 1	CP-4	RB-1	PT-2	PT-1	PT-1	PT-1	CL-2	9'-0"	
146A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
146B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
147	COMMON AREA	CP-1	RB-1	PT-1 / PT-2	PT-1 / PT-2	PT-1 / PT-2	PT-1 / PT-2	CL-1	9'-0"	
148	CORRIDOR	CP-1	RB-1	-	PT-1	PT-1	PT-1	CL-1	9'-0"	
149	BEDROOM 3	CP-4	RB-1	PT-1	PT-2	PT-1	PT-1	CL-2	9'-0"	
149A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
149B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
150	BEDROOM 5	CP-4	RB-1	PT-2	PT-1	PT-1	PT-1	CL-2	9'-0"	
150A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
150B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
151	BEDROOM 7	CP-4	RB-1	PT-1	PT-1 / PT-2	PT-1	PT-1 / PT-2	CL-2	9'-0"	
151A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
151B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
152	BEDROOM 8	CP-4	RB-1	PT-1	PT-1 / PT-2	PT-1	PT-2	CL-2	9'-0"	
152A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
152B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
153	BEDROOM 6	CP-4	RB-1	PT-2	PT-1	PT-1	PT-1	CL-2	9'-0"	
153A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
153B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
154	BEDROOOM 4	CP-4	RB-1	PT-1	PT-2	PT-1	PT-1	CL-2	9'-0"	
154A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
154B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
155	BEDROOM 2	CP-4	RB-1	PT-2	PT-1	PT-1	PT-1	CL-2	9'-0"	
155A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
155B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
156	TELECOMM RM.	CN-1	RB-1	PT-3	PT-3	PT-3	PT-3	CL-1	9'-0"	
158	WOMAN'S RR	TL-1	TL-1	TL-2	PT-1 / PT-2	TL-2/PT-1	TL-2 / PT-1	CL-2	9'-0"	
158A	WOMEN'S SHOWER	TL-1	TL-1	PT-2	TL-2	PT-1	-	CL-2	9'-0"	

FINISH SCHEDULE (BID OPTION – EXISTING FIRE STATION)

ROOM #	ROOM NAME	FLOOR	BASE	WALLS N	WALLS S	WALLS E	WALLS W	CLG.	CLG. HT.	NOTES
129-1	BEDROOM	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
129-1A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
129-1B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
129-2	BEDROOM	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
129-2A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
129-2B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
131-1	BEDROOM	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
131-1A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
131-1B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
131-2	BEDROOM	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
131-2A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
131-2B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
133	BEDROOM	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
133A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
133B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
134	BEDROOM	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
134A	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	
134B	CLOSET	CP-4	RB-1	PT-1	PT-1	PT-1	PT-1	CL-2	9'-0"	

DOOR SCHEDULE (NEW ADDITION)

DOOR #	ROOM NAME	TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNE	DOOR MATERIAL	DOOR FINISH	HARD WARE	FRAME TYPE	FRAME FINISH	NOTES
142	MECHANICAL RM.	D	6'-0"	7'-0"	1-3/4"	H.M.	PTD.	1	B	PTD.	SW#7675 "SEALSKIN"
143	MEN'S RR	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	4	A	PTD.	
145	JANITOR'S CLOSET	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	5	A	PTD.	
146	BEDROOM 1	A	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
146A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
146B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
147A	COMMON AREA	E	6'-0"	7'-0"	1-3/4"	ALUM.	TRANSPARENT	2	C	ALUM.	
147B	COMMON AREA	F	3'-0"	7'-0"	1-3/4"	ALUM.	TRANSPARENT	3	D	ALUM.	
148	CORRIDOR	F	3'-0"	7'-0"	1-3/4"	ALUM.	TRANSPARENT	3	D	ALUM.	
149	BEDROOM 3	A	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
149A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
149B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
150	BEDROOM 5	A	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
150A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
150B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
151	BEDROOM 7	A	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
151A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
151B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
152	BEDROOM 8	A	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
152A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
152B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
153	BEDROOM 6	A	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
153A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
153B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
154	BEDROOOM 4	A	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
154A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
154B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
155	BEDROOM 2	A	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
155A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
155B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
156	TELECOMM RM.	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	5	A	PTD.	
158	WOMAN'S RR	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	4	A	PTD.	

DOOR SCHEDULE (BID OPTIONS – EXISTING FIRE STATION)

DOOR #	ROOM NAME	TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNE	DOOR MATERIAL	DOOR FINISH	HARD WARE	FRAME TYPE	FRAME FINISH	NOTES
129-1	BEDROOM	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
129-1A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
129-1B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
129-2	BEDROOM	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
129-2A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
129-2B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
130	MEN'S RR	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN			PTD.	
131-1	BEDROOM	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
131-1A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
131-1B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
131-2	BEDROOM	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
131-2A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
131-2B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
133-1	BEDROOM	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
133-1A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
133-1B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
133-2	BEDROOM	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN	6	A	PTD.	
133-2A	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
133-2B	CLOSET	B	2'-0"	7'-0"	1-3/4"	WOOD	STAIN	7	E	PTD.	
134	MEN'S RR	C	3'-0"	7'-0"	1-3/4"	WOOD	STAIN			PTD.	

DOOR SCHEDULE NOTES:

1. 18 GA. GALV. HOLLOW MTL. DOORS & ALL DOOR FRAMES SHALL BE 16 GA. GALV. HOLLOW MTL FRAMES EQ. TO REPUBLIC BRAND DOORS AND FRAMES PER SDI-100.
2. WOOD DOORS SHALL BE EQUAL TO MASONITE ARCHITECTURAL BRAND. REFERENCE NOTE #3 BELOW.
3. INTERIOR DOORS SHALL BE STAIN GRAIN SOLID CORE WOOD DORES AS SCHEDULED. SOLID CORE WOOD DOORS SHALL BE 5-PLY W/ 1-3/8" HARDWOOD STILES, MIN., 1-1/8" SOLID WOOD RAILS, MIN., 5" WODE SOLID BLOCKING FOR HARDWARE AND STAVE CORES. ROTARY CUT BIRCH VENEER THROUGHOUT WITH UNIFORM COLOR AND GRAIN WITH NO SPLOTCHES LARGE OR SMALL.
4. WHERE FLOORING MATERIAL CHANGES BETWEEN ROOMS, THE CHANGES SHALL OCCUR AT THE CENTERLINE OF THE DOOR PANEL.
5. PROVIDE COMPLETE HARDWARE SCHEDULE OF ITEMS FOR REVIEW & APPROVAL PRIOR TO INSTALLATION.
6. PROVIDE COMPLETE HARDWARE AND ACCESSORIES FOR ALL DOORS LISTED HEREON, PROVIDE A.D.A. COMPLIANT DOOR HANDLES THROUGHOUT ONLY. RE: CURRENT A.D.A. REQUIREMENTS FOR ALL HARDWARE CRITERIA.
7. INCLUDE HARDWARE FOR ELECTRIC PANELS AS REQUIRED.

LEGEND

- TL–1: 24"X24" FLOOR TILE
- TL–2: 12X24" WALL TILE
- PT–1: FIELD PAINT SW#9856
- PT–2: ACCENT PAINT SW#9595
- PT–4: PAINT SW#7007
- CP–1: CARPET TILE
- CP–2: NOT USED
- CP–3: NOT USED
- CP–4: BROADLOOM CARPET
- LVP–1: LVP ACCENT WALL
- CN–1: POLISHED CONCRETE

FINISH LEGEND OR APPROVED EQ.

NAME	DESCRIPTION	MFR	MODEL/STYLE	COLOR/FINISH	REMARKS
FLOORING					
CN-1	POLISHED CONCRETE	-			
CP-1	CARPET TILE (FIELD)	SHAW	GRADIENT	COLORWAY: "ADRIFT" 34512 OR SIMILAR	24"X24" CARPET TILE, WARM GREY FINISH
CP-2	NOT USED				
CP-3	NOT USED				
CP-4	CARPET TILE (BEDROOM)	MANNINGTON	COLLECTION: DWELLING	COLORWAY: LIVELY	12' BROADLOOM, INSTALL WITH BACKING/CUSHION IN ACCORDANCE WITH SPECIFICATIONS AND MFR INSTRUCTIONS.
BASE					
RB-1	RUBBER BASE	TARKETT	4" RUBBER BASE	44 DARK BROWN	CONTINUOUS ROLLED GOODS
CEILING					
CL-1	24"X24" LAY-IN CEILING	ARMSTRONG CORP.	ARMSTRONG CIRRUS #577 / 2'X2' / BEVELED TEGULAR 9/16" OR SIMILAR	WHITE / 576	INSTALL AT HEIGHTS AS INDICATED.
CL-2	GYPSUM BOARD	-	-	PAINT PT-4 (BRIGHT CEILING WHITE) AS INDICATED	INSTALL AT HEIGHTS AS INDICATED.
PAINT					
PT-1	PAINT (FIELD)	SHERWIN WILLIAMS	EGGSHELL	SW#9856 WHITE SESAME	
PT-2	PAINT (ACCENT)	SHERWIN WILLIAMS	EGGSHELL	SW#9595 BRAINTREE	
PT-3	PAINT (DOOR FRAME)	SHERWIN WILLIAMS	OIL-BASED	SW#7675 SEALSKIN	
PT-4	PAINT (CEILING)	SHERWIN WILLIAMS	FLAT	SW#7007 CEILING BRIGHT WHITE	
MILLWORK					
PL-1	PLASTIC LAMINATE (MILLWORK)	WILSONART	HD HIGH PRESSURE LAMINATE	EMPIRE MOHAGANY 7122	
SS-1	SOLID SURFACE COUNTERTOP	WILSONART	QUARTZ. 3CM THICK U.N.O	VICENTIA Q4063	
TILE					
TL-1	PORCELAIN FLOOR TILE	DALTILE	FABRIC ART / 24X24	MODERN LINEAR TAUPE ML62	
TL-2	PORCELAIN WALL TILE	DALTILE	FABRIC ART / 12X24	MODERN LINEAR TAUPE ML62	HORIZONTAL STACK BOND
SPECIALTY					
GR-1	GROUT	Bostick	TRUCOLOR RAPID CURE	H145 MOBE PEARL	
TR-1	CARPET TO TILE	SCHLUTER	RENO-TK	ANODIZED ALUMINUM	PROVIDE AT ALL TERMINATION POINTS WHERE APPLICABLE
TR-2	METAL TILE TRIM	SCHLUTER	RENO-TK	ANODIZED ALUMINUM	PROVIDE AT ALL TERMINATION POINTS WHERE APPLICABLE
FRP-1	FIBERGLASS REINFORCED PLASTIC	CRANE COMPOSITES	GLASBOARD	PEBBLED / EMBOSSED	4'X8' SHEET
SP-1	SOLID PLASTIC PARTITIONS	SCRANTON PRODUCTS	HINY HIDERS TOILET PARTITIONS	GLACIER GREY / ORANGE PEEL FINISH	
CG-1	CORNER GUARDS	INPRO	ALUMINUM CORNER GUARD	1-1/2"X1-1/2" CLEAR ANODIZED ALUMINUM FINISH	SURFACE MOUNT IAW MFR INSTRUCTIONS
LVP-1	LUXURY VINYL PLANK ACCENT WALL	KOLAY	SPC CLICK + KAI	6"X48"X6.5MM LVP PLANK	VERAWOOD

4TH CIVIL ENGINEER SQUADRON
READY - WILLING - ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I^CES

PROJECT TITLE

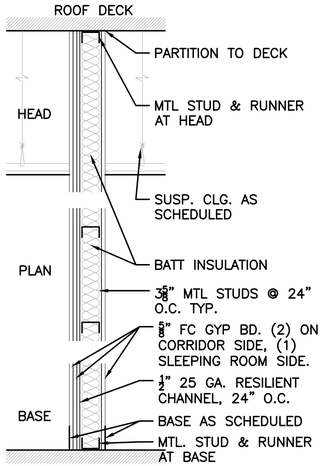
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: FINISHES AND SCHEDULES

Date: SEP 2023

SEQ.	SHEET	OF
27	A-801	50

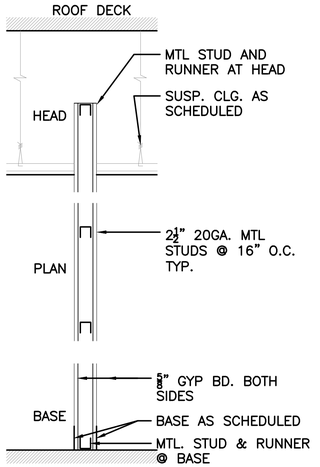


NOTE:
1A – BID OPTION AREAS
PARTITIONS TO MATCH HEIGHT OF EXISTING PARTITIONS.

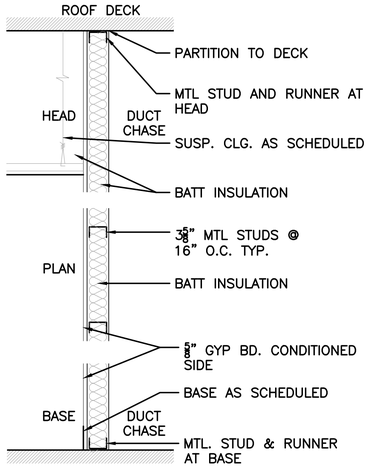
1A

1 NOTE:
SLEEPING AREA / CORRIDORS

1HR RATED WALL ASSEMBLY SEALED TO DECK. FIRESTOP ALL PENETRATIONS.

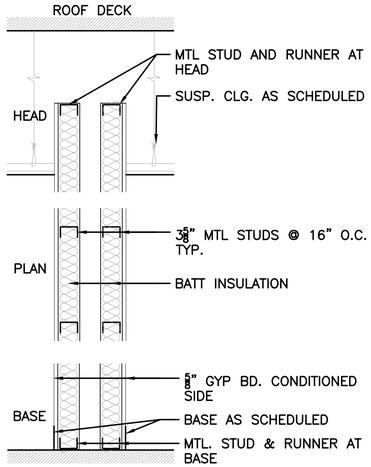


2 NOTE:
CLOSET PARTITIONS

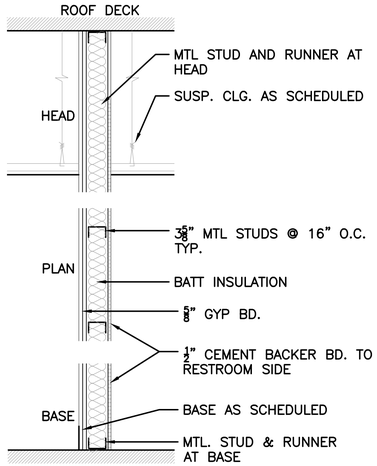


3 NOTE:
TELECOMM / MECH. CHASE

1HR RATED WALL ASSEMBLY. SEAL TO DECK. FIRESTOP ALL PENETRATIONS.

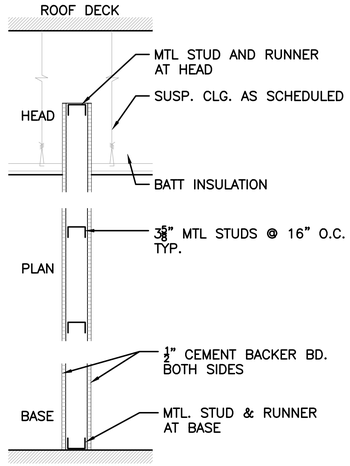


4 NOTE:
RESTROOM CHASE



5 NOTE:
MECHANICAL ROOM PARTITION

1HR RATED WALL ASSEMBLY. SEAL TO DECK. FIRESTOP ALL PENETRATIONS.

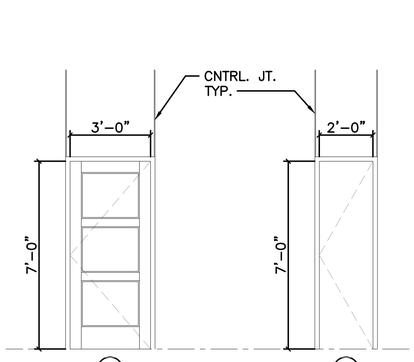


6 NOTE: RESTROOM PARTITIONS

6A 6A: PARTITIONS ONLY RECEIVE BACKER BD. AND TILE FINISH ON RESTROOM SIDE.

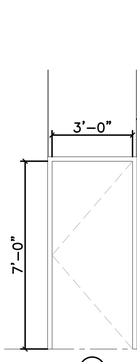
1 PARTITION TYPES
1" = 1' – 0"

NOTE:
REFER TO A/401 FOR PARTITION HEAD SUPPORT DTLS. AND SUSP. CLG. SUPPORT DTLS.

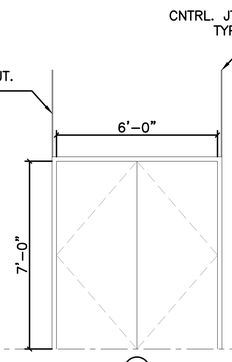


A HOLLOW MTL. FRAME SOLID CORE WOOD DOOR – MASONITE ARCHITECTURAL DOOR TYPE A104A OR SIM. 20 MINUTE FIRE RATED MIN.

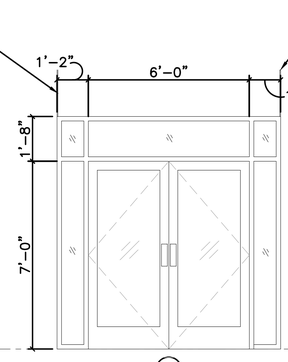
B HOLLOW MTL. FRAME SOLID CORE WOOD DOOR – FLUSH PANEL



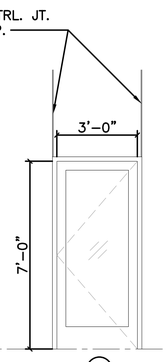
C HOLLOW MTL. FRAME SOLID CORE WOOD DOOR – FLUSH PANEL



D HOLLOW MTL. FRAME MTL. DOOR 45 MINUTE FIRE RATING MIN.

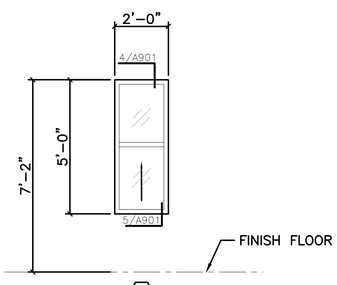


E ALUMINUM STOREFRONT DOOR/WINDOW SYSTEM – PAIR



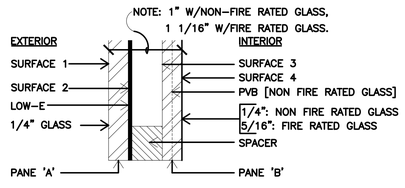
F ALUMINUM STOREFRONT DOOR/WINDOW SYSTEM – SINGLE

2 DOOR TYPES
3/4" = 1' – 0"



W1 ALUMINUM STOREFRONT WINDOW EQ. TO KAWNEER 8225TL SINGLE HUNG CASEMENT WINDOW. TEMPERED THERMAL PANE LOW E GLASS W/ #29 BLACK FINISH.

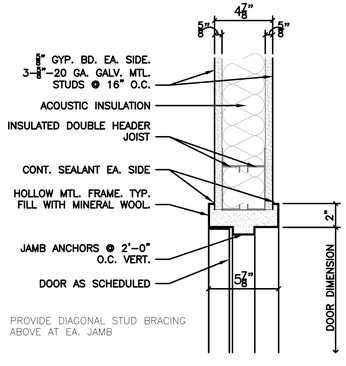
3 WINDOW TYPES
3/4" = 1' – 0"



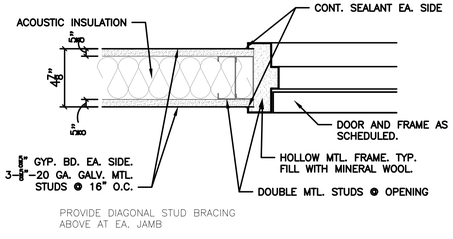
PANE 'A' = TINTED BRONZE ANNEALED GLASS.
PANE 'A' = LOW-E APPLIED TO SURFACE 2.
PANE 'B' = CLEAR SAFETY GLASS.
OR
PANE 'B' = FIRE RATED GLASS, WHERE INDICATED.

NOTE: CONDITION FOR ALL EXTERIOR GLASS WINDOWS.

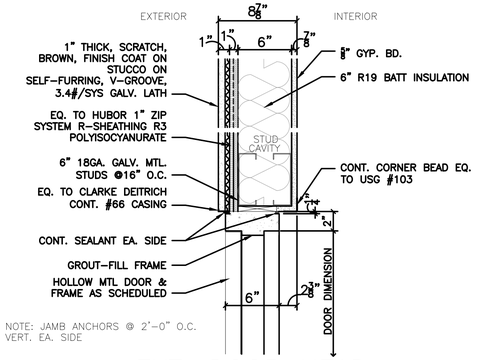
4 LOW "E" GLASS
NTS



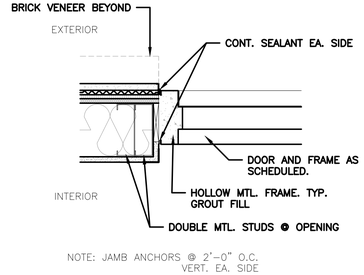
5 INT. DOOR HEAD
SCALE: 1 1/2" = 1'–0"



6 INT. DOOR JAMB
SCALE: 1 1/2" = 1'–0"



7 EXT. DOOR HEAD
JAMB SIM.
SCALE: 1 1/2" = 1'–0"



8 EXT. DOOR JAMB
SCALE: 1 1/2" = 1'–0"

7TH CIVIL ENGINEER SQUADRON
READY - WILLING - ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

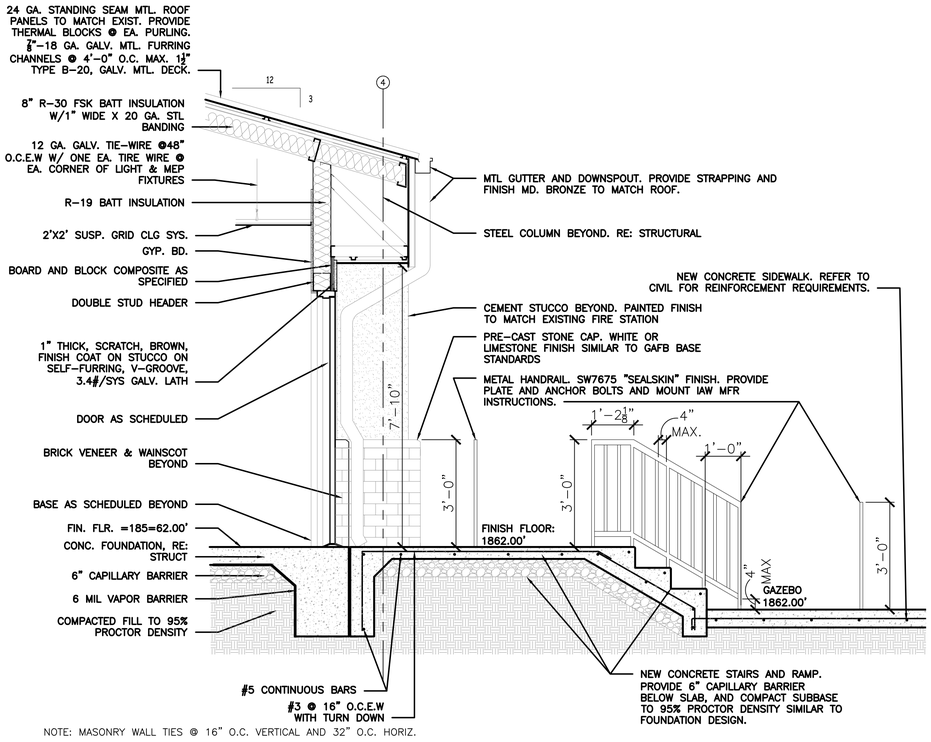
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: DOORS, WINDOWS, AND PARTITION TYPES

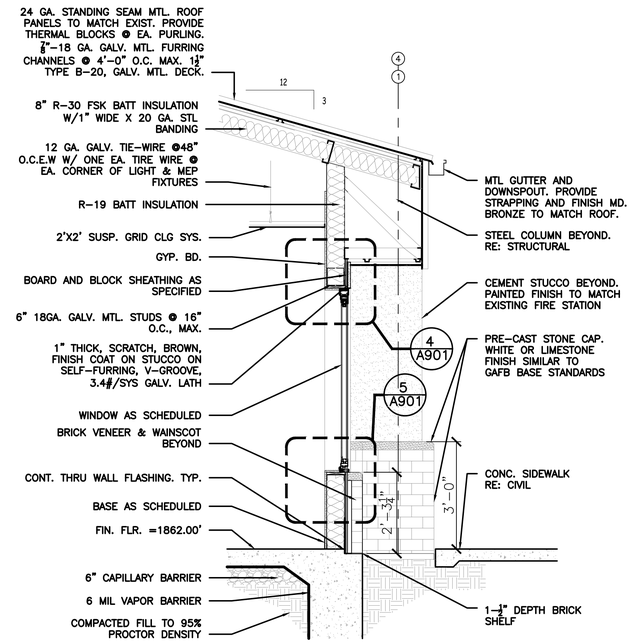
Date: SEP 2023

SEQ. 28 | SHEET A-802 | OF 50



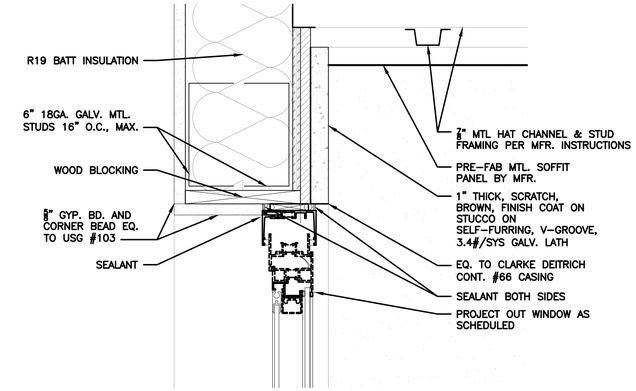
NOTE: MASONRY WALL TIES @ 16" O.C. VERTICAL AND 32" O.C. HORIZ.

1 WALL SECTION–THRU DOOR
1/2" = 1' – 0"

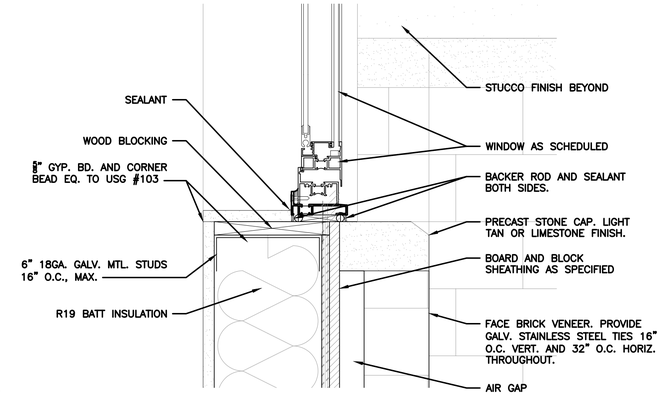


NOTE: MASONRY WALL TIES @ 16" O.C. VERTICAL AND 32" O.C. HORIZ.

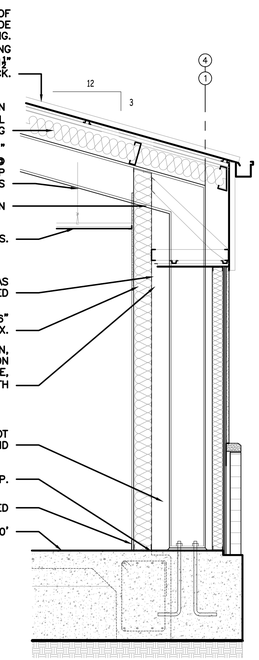
2 WALL SECTION–THRU WINDOW
1/2" = 1' – 0"



4 WINDOW HEAD DTL.
3" = 1' – 0"

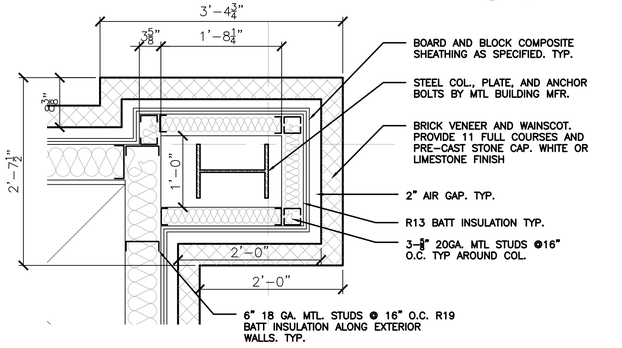


5 WINDOW SILL DTL.
3" = 1' – 0"

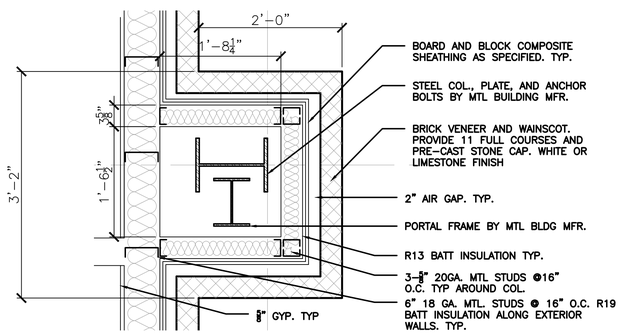


NOTE: MASONRY WALL TIES @ 16" O.C. VERTICAL AND 32" O.C. HORIZ.

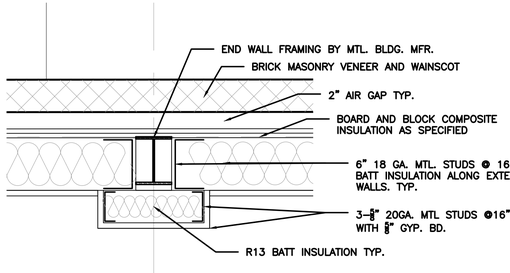
3 WALL SECTION–THRU COLUMN
1/2" = 1' – 0"



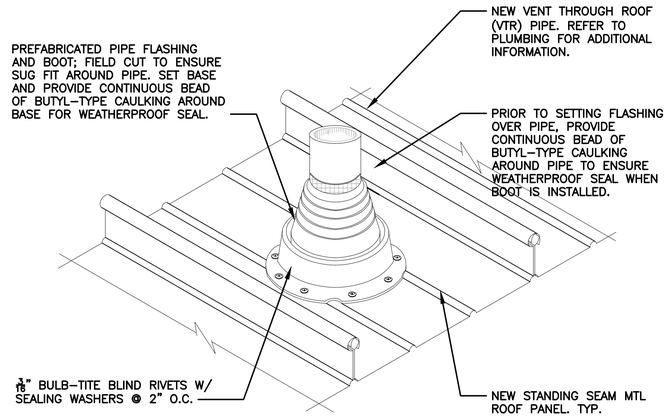
6 COL. FURRING DTL. – CORNER
1" = 1' – 0"



7 COL. FURRING DTL.–MIDDLE
3" = 1' – 0"



8 COL. FURRING DTL.–END WALL
3" = 1' – 0"



9 TUBULAR PENETRATION FLASHING DTL.
N.T.S

4TH CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

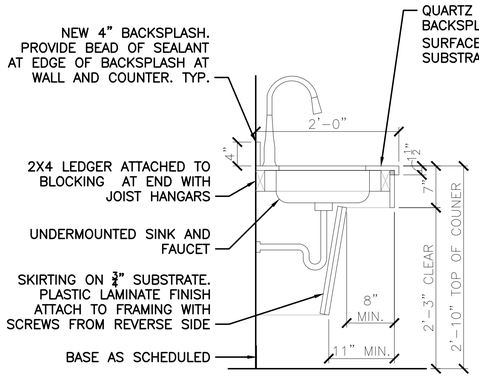
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

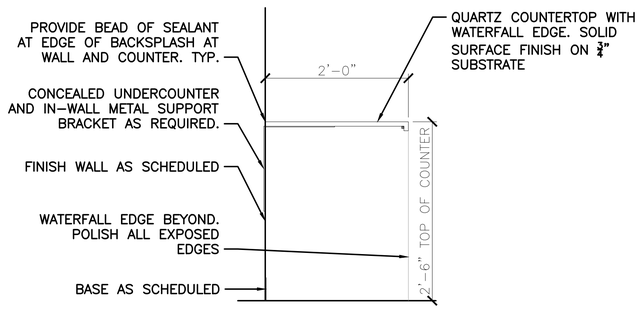
SHEET TITLE: WALL SECTIONS AND DETAILS

Date: SEP 2023

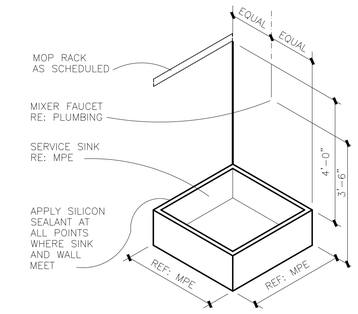
SEQ.	SHEET	OF
29	A-901	50



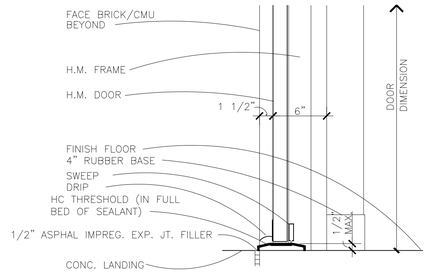
1 MILLWORK DTL.
1" = 1' - 0"



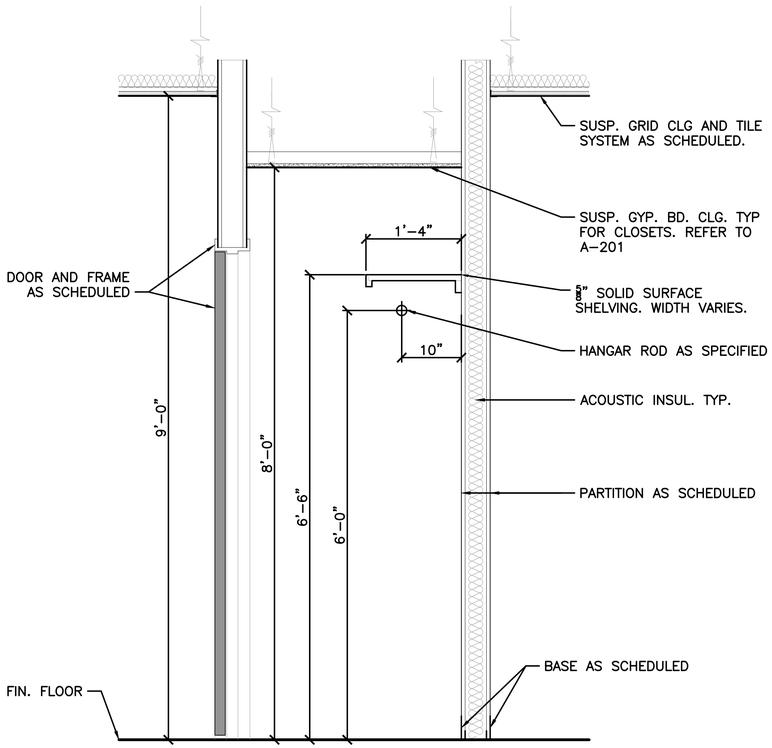
2 MILLWORK DTL.
1" = 1' - 0"



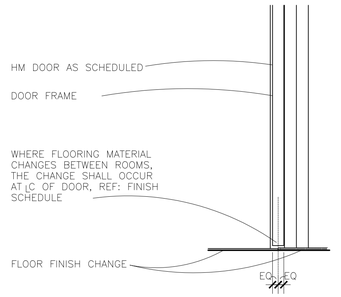
3 JAN. SINK DTL.
NTS



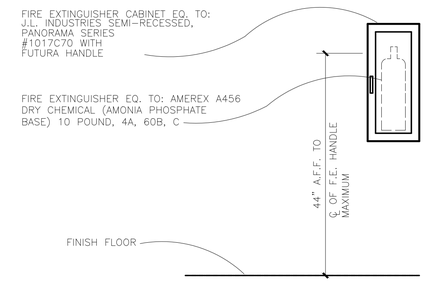
4 EXT. DOOR AND FRAME @ FLOOR
NTS



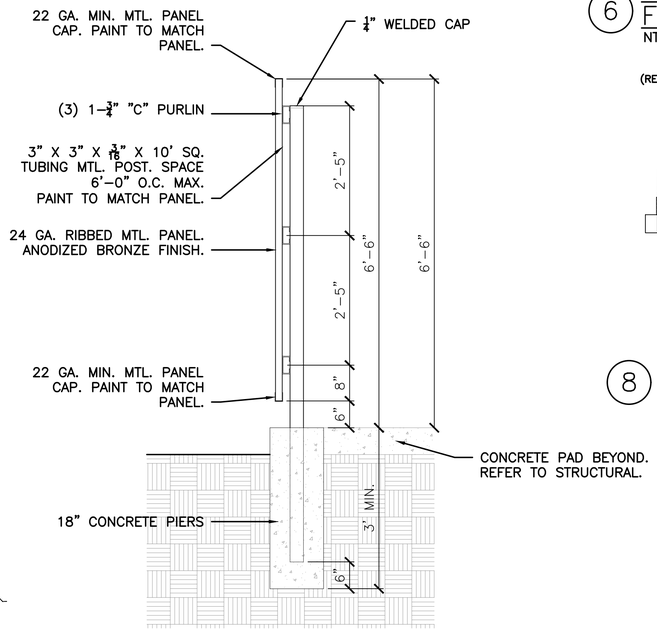
5 TYP. CLOSET SECTION
1" = 1' - 0"



6 INT. DOOR & FRAME @ FLOOR
NTS



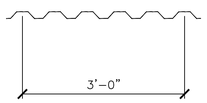
7 FIRE EXTINGUISHER CABINET DTL.
NTS

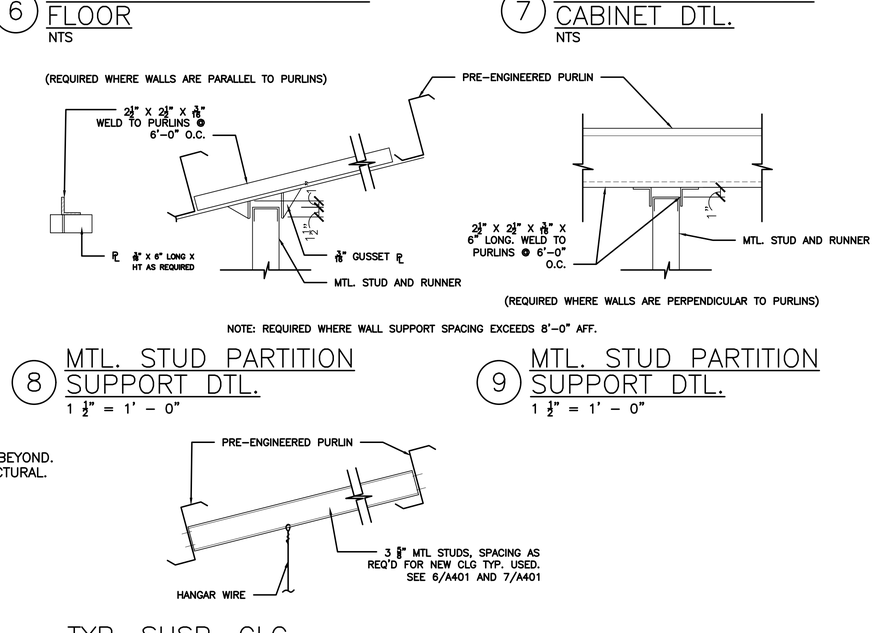


10 TYP. MTL. FENCE PANEL DTL.
¾" = 1' - 0"

PANEL PROFILE:

BOX RIBBED METAL PANEL





NOTE: REQUIRED WHERE WALL SUPPORT SPACING EXCEEDS 8'-0" AFF.

8 MTL. STUD PARTITION SUPPORT DTL.
1 ½" = 1' - 0"

9 MTL. STUD PARTITION SUPPORT DTL.
1 ½" = 1' - 0"

11 TYP. SUSP. CLG SUPPORT DTL.
1 ½" = 1' - 0"

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

PROJECT TITLE

Project Number: 1039839

SHEET TITLE: DETAILS

Date: SEP 2023

SEQ.	SHEET	OF
30	A-1001	50

MECHANICAL SYMBOLS AND ABBREVIATIONS (NOT ALL APPLY)

STANDARD SYMBOLS

SYMBOL	DESCRIPTION
PIPING–HVAC	
—CWS—	CHILLED WATER SUPPLY
—CWR—	CHILLED WATER RETURN
—HWS—	HEATING WATER SUPPLY
—HWR—	HEATING WATER RETURN
—TWS—	TOWER WATER SUPPLY
—TWR—	TOWER WATER RETURN
—LPS—	LOW PRESSURE STEAM
—MPS—	MEDIUM PRESSURE STEAM
—HPS—	HIGH PRESSURE STEAM
—C—	CONDENSATE, GRAVITY
—PC—	CONDENSATE, PUMPED
—FOS—	FUEL OIL SUPPLY
—FOR—	FUEL OIL RETURN
—FOG—	FUEL OIL GAGE LINE
—FOV—	FUEL OIL TANK VENT
—RD—	REFRIGERANT DISCHARGE (HOT GAS)
—RS—	REFRIGERANT SUCTION
—RL—	REFRIGERANT LIQUID
----NAME----	DEMO PIPE
(E) NAME	EXISTING PIPE
PIPING–PLUMBING	
————	COLD WATER
————	HOT WATER
————	HOT WATER RETURN
—W—	WATER
—NPW—	NON POTABLE WATER
————	SANITARY SEWER
----------	VENT
— D —	GRAVITY DRAIN
—PD—	PRESSURE DRAIN
—AD—	ACID WASTE, GRAVITY
—AV—	ACID VENT
—PAD—	ACID DRAIN, PUMPED
—RWL—	RAIN WATER LEADER
—ORWL—	OVERFLOW RAIN WATER LEADER
—ST—	STORM SEWER
—S—	SOFT WATER
--------	DEMO PIPE
	EXISTING PIPE
PIPING–SPECIALTY	
—AsH_3—	ARSINE (HIGHLY TOXIC)
—Cl_2—	CHLORINE (CORROSIVE)
—DMC—	DIMETHYLCADMIUM (METAL ORGANIC)
—DMT—	DIMETHYLTELLURIUM (METAL ORGANIC)
—H_2Se—	HYDROGEN SELENIDE (TOXIC)
—HCL—	HYDROGEN CHLORIDE (CORROSIVE)
—NH_3—	AMMONIA (TOXIC)
— F —	FLUORINE

SYMBOL	DESCRIPTION
—PAR—	PROCESS ARGON
—PH_3—	PHOSPHINE (HIGHLY TOXIC)
—PN_2—	PROCESS NITROGEN
— R12 —	DICHLORODIFLUOROMETHANE
— R14 —	TETRAFLUOROMETHANE
—Si_2H_6—	DISILANE (PYROPHORIC/TOXIC)
—SiH_4—	SILANE (PYROPHORIC/TOXIC)
PIPING–GASES	
— AR —	ARGON
— BA —	BREATHING AIR
— CA —	COMPRESSED AIR
—CDA—	CLEAN DRY AIR
— CH_4 —	METHANE
— C_2H_2 —	ACETYLENE
— CO_2 —	CARBON DIOXIDE
— G —	NATURAL GAS
— H_2 —	HYDROGEN
—HCV—	HOUSE CLEANING VACUUM
— HE —	HELIUM
—LAR—	LIQUID ARGON
—LCO_2—	LIQUID CARBON DIOXIDE
—LH_2—	LIQUID HYDROGEN
—LN_2—	LIQUID NITROGEN
— LO_2 —	LIQUID OXYGEN
—LPG—	LIQUID PETROLEUM GAS
— N_2 —	NITROGEN
— O_2 —	OXYGEN
—PV—	PROCESS VACUUM
—VAC—	VACUUM
PIPING–PROCESS LIQUIDS	
— DI —	DEIONIZED WATER
— HF —	HYDROFLUORIC ACID
—PCWR—	PROCESS COLD WATER RETURN
—PCWS—	PROCESS COLD WATER SUPPLY
—POR—	PROCESS OIL RETURN
—POS—	PROCESS OIL SUPPLY
— RO —	REVERSE OSMOSIS WATER
—SCW—	SOFTENED COLD WATER
PIPING–FITTINGS	
	SCREWED JOINT
	FLANGED JOINT
	WELDED JOINT
	UNION
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	ELBOW, TURNED DOWN
	ELBOW, TURNED UP
A.V.	AIR VENT
VAC. RELIEF	VACUUM RELIEF

SYMBOL	DESCRIPTION
	TEE, TURNED UP
	TEE, TURNED DOWN
	VALVE IN RISER
	VALVE ON ELBOW UP
	VALVE ON ELBOW DOWN
	45 ELBOW
	30 ELBOW
	90 ELBOW
	TEE
	CAP
	RUPTURE DISK
	SHOCK ABSORBER
	FLOOR DRAIN
	FLOOR SINK
	EXPANSION JOINT
	LINE STRAINER
CLEANOUT	CLEAN–OUT TO GRADE
	OPEN SIGHT DRAIN, AIR GAP
WCO	WALL CLEANOUT (WCO)
FCO	FLOOR CLEANOUT (FCO)
	DIRECTION AND FLOW
	PRESSURE GAUGE
VALVES	
	BALL VALVE
	GATE VALVE
	GLOBE VALVE
	PLUG COCK
	SWING CHECK VALVE
	SPRING CHECK VALVE
	HOSE BIBB
	NEEDLE VALVE
	BUTTERFLY VALVE
	MOTOR OPERATED GLOBE VALVE
	MOTOR OPERATED GATE VALVE
	SOLENOID OPERATED VALVE
	SOLENOID OPERATED 3–WAY VALVE
	SELF–CONTAINED TEMP. CONTROL VALVE
	EXTERNAL, PRESSURE REDUCING VALVE
	INTERNAL, PRESSURE REDUCING VALVE
	THREE WAY VALVE, ELECTRICAL
	THREE WAY VALVE, MANUAL
	THREE WAY VALVE, PNEUMATIC
	ANGLE VALVE
	RELIEF VALVE
	DIAPHRAGM VALVE
	BACKFLOW PREVENTER
FT	F & T TRAP
T	THERMOSTATIC TRAP

SYMBOL	DESCRIPTION
	BUCKET TRAP
	THERMODYNAMIC TRAP
	CONTROLS
AIR VENT	AIR VENT (SPECIFY MANUAL, AUTOMATIC OR VACUUM)
DM	DAMPER MOTOR
EP	ELECTRIC–PNEUMATIC RELAY
FS	FLOW SWITCH
0–100 PSI	PRESSURE GAUGE (WITH PRESSURE RANGE AND GAUGE COCK)
PE	PNEUMATIC–ELECTRIC RELAY
	PRESSURE SWITCH
	ORIFICE FLOW METER
R	RELAY
	TEMPERATURE SWITCH
60°–140°F	THERMOMETER (WITH TEMPERATURE RANGE)
	VENTURI FLOW METER
	ELECTRIC
S	SMOKE DETECTOR, DUCT
	FIRE DETECTOR, DUCT
S	FIRE/SMOKE DETECTOR, DUCT
T	T–STAT, ELECTRONIC
T	T–STAT, PNEUMATIC
TS	T–STAT, SENSOR
H	HUMIDISTAT, ELECTRONIC
ECO	DAMPER, ELECTRIC
POD	DAMPER, PNEUMATIC
	PARALLEL BLADE DAMPER
	OPPOSED BLADE DAMPER
	THERMOMETER
	SENSOR WELL
	PRESSURE GAUGE
	HVAC
	DIFFUSER, CEILING – RECTANGULAR
	DIFFUSER, CEILING – ROUND
	RETURN AIR OR EXHAUST GRILLE, CEILING
	RETURN AIR OR EXHAUST GRILLE, WALL
DL	DOOR LOUVER
24 x 12	DUCT SIZE, WHERE THE FIRST DIMENSION (E.G., 24) IS THE VISIBLE DUCT DIMENSION REFERENCE SPECIFICATION FOR INSULATION TYPE AND THICKNESS
24 x 12	DOUBLE–WALLDUCT, DUCT SIZE AS INDICATED FOR DUCTS ABOVE
24 x 12	SIDE ACCESS DOOR (VERTICAL)
	TOP ACCESS DOOR (HORIZONTAL)
	BOTTOM ACCESS DOOR (HORIZONTAL)
	SUPPLY AIR (S. A.)
	RETURN AIR (R. A.)
	OUTSIDE AIR (O. A.)
	DEMO DUCT
	EXISTING DUCT
	DEMO EQUIPMENT
	DEMO AIR DEVICES

SYMBOL	DESCRIPTION
SA	SOUND ATTENUATOR
	OUTSIDE AIR (O. A.)
	ACOUSTICAL LINING (A.L.)
	EXHAUST FAN
	SUPPLY FAN
	VENT FAN
	FLEXIBLE DUCT CONNECTION
	FINNED PIPE RADIATION
TAG SIZE FLOW	RECTANGULAR OUTLET, EXHAUST
TAG SIZE FLOW	SIDEWALL OUTLET, REGISTERS/GRILLES
TAG SIZE FLOW	SIDEWALL INLET, REGSTERS/GRILLES
TAG H FLOW UC	UNDERCUT DOOR (h = CLEARANCE)
TAG SIZE FLOW DG	DOOR GRILLE OR LOUVER
TAG SIZE FLOW TG	TRANSFER GRILLE OR LOUVER
TAG SIZE FLOW	RECTANGULAR 4–WAY OUTLET, SUPPLY
TAG SIZE FLOW	RECTANGULAR 4–WAY OUTLET, SUPPLY
TAG SIZE FLOW	RECTANGULAR 2–WAY OUTLET, SUPPLY
TAG SIZE FLOW	RECTANGULAR 1–WAY OUTLET, SUPPLY
TAG SIZE FLOW	RECTANGULAR OUTLET, RETURN
TAG SIZE FLOW	RECTANGULAR OUTLET, EXHAUST
TAG SIZE FLOW	ROUND OUTLET
TAG SIZE FLOW	LINEAR OUTLET (SIZE=NUMBER SLOTS X LENGTH OF SLOTS
TAG SIZE FLOW	LINEAR INLET (SIZE=NUMBER SLOTS X LENGTH OF SLOTS
TAG SIZE FLOW	LIGHT TROFFER OUTLET

MISCELLANEOUS

	CENTRIFUGAL PUMP
1 Y/Z	NUMBER DETAIL BUBBLE
AHU-1	EQUIPMENT MARK (AHU–1 SHOWN)
	END POINT OF REMOVAL
1	KEYED NOTE CONSTRUCTION
	MANHOLE
	POINT OF CONNECTION FROM NEW TO EXISTING CONSTRUCTION
	LETTER SECTION BUBBLE
	BREAK
1	KEYED NOTE, DEMOLITION
M	METER

TITLE

NOT TO SCALE

X
Y Z

DETAIL BUBBLE.
TITLE – INDICATES THE TITLE OF THE DETAIL
SCALE – INDICATES THE SCALE OF THE DETAIL (IF APPLICABLE)
X – DENOTES DETAIL NUMBER
Y – DENOTES REFERENCE SHEET NUMBER
Z – DENOTES SHEET NUMBER

ABBREVIATIONS

AC	ABOVE CEILING
A/C	AIR CONDITIONED
A.D.	ACCESS DOOR
A.F.F.	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
AS	AIR SEPARATOR
B	BOILER
B.F.	BELOW FLOOR
CH	CHILLER, WATER COOLED
CISP	CAST IRON SOIL PIPE
CKT	CIRCUIT
CLG.	CEILING
C.O.	CLEAN OUT
CPT	COMPRESSION TANK
CT	COOLING TOWER
CU	CONDENSING UNIT
CW	COLD WATER
DB	DRY BULB
DIA.	DIAMETER
DIR.A.	DIRECT ACTING
DN.	DOWN
DWG.	DRAWING
EA.	EACH
EAT	ENTERING AIR TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
ED	EJECTION DISCHARGE
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
EXST	EXISTING
°F	DEGREES FAHRENHEIT
FCO	FLOOR CLEAN OUT
F.D.	FIRE DAMPER
FLR	FLOOR
FM	FAN MOTOR
FPM	FEET PER MINUTE
F.S.D.	FIRE/SMOKE DAMPER
FT	FEET, FOOT
GFE	GOVERNMENT FURNISHED EQUIPMENT
GPM	GALLONS PER MINUTE
GW	GREASE WASTE
H	HOOD
HP	HORSEPOWER
HW	HOT WATER
HWCP	HOT WATER CIRCULATION PUMP
HZ	HERTZ
IN.	INCHES
IN. WTR.	INCHES OF WATER
LOUV	LOUVER
LAT	LEAVING AIR TEMPERATURE
M.V.	MEDICAL VACUUM
MAX.	MAXIMUM
MIN.	MINIMUM
M.L.O.	MAIN LUGS ONLY
MAU	MAKE UP AIR UNIT
N	NITROGEN
NO2	NITROUS OXIDE
N.C.	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
O2	OXYGEN
O.A.	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
O.C.	ON CENTER
O.H.P.	OVERHEAD PUMP
P	PUMP
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAGE
QTY.	QUANTITY
R.A.	RETURN AIR
REQ'D	REQUIRED
REV.A.	REVERSE ACTING
RPM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
S.A.	SMOKE DAMPER
SF	SUPPLY FAN
S.P.	STATIC PRESSURE
STS	STEAM SWITCH
SWBD	SWITCHBOARD
T.C.	TIME CLOCK
TMV	THERMOSTATIC MIXING VALVE TYPICAL
UH	UNIT HEATER
VAC.	VACUUM
V.A.	VOLUME DAMPER
V.T.R.	VENT THRU ROOF
W.C.O.	WALL CLEAN OUT
W.H.	WATER HEATER
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF

GENERAL NOTES:

THESE MECHANICAL GENERAL NOTES APPLY TO ALL MECHANICAL DRAWINGS:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CODES AS REFERENCED IN THE RFP AND THE REQUIREMENTS STATED IN THE APPLICABLE SECTIONS OF THE NATIONAL FIRE CODES (NFPA STANDARDS) CURRENT AT THE TIME OF ISSUANCE OF THE RFP. AMENDMENTS TO THESE CODES AS SET FORTH BY THE AUTHORITY HAVING JURISDICTION SHALL SUPERSEDE THE INTERNATIONAL CODES AND NFPA STANDARDS AS ISSUED.
2. DIVISION 23 OPERATIONS SHALL BE SUPERVISED BY A LICENSED MASTER MECHANICAL INSTALLER TO ENSURE THAT ALL WORK IS INSTALLED IN ACCORDANCE WITH THE APPLICABLE CODES AND THE CONSTRUCTION DOCUMENTS.
3. EXISTING INFORMATION SHOWN WAS TAKEN FROM AS BUILT DRAWINGS PROVIDED BY GOODFELLOW AIR FOR BASE (GAFB) AND A WALK–THRU OF THE FACILITY. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING CONDITIONS PRIOR TO BID AND NOTIFY THE CONTRACTING OFFICER OF ANY SUBSTANTIAL DISCREPANCIES WHICH WOULD IMPACT BASIS OF DESIGN AND CONSTRUCTION.
4. CONTRACTOR SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND TO VERIFY LOCATIONS, SIZE AND QUANTITIES OF EXISTING UTILITIES, MECHANICAL SYSTEMS, PLUMBING SYSTEMS, ETC. SUBMITTAL OF A BID SHALL SIGNIFY WILLINGNESS TO COMPLY WITH THE CONSTRUCTION DOCUMENTS AND ACCEPTANCE OF ON–SITE CONDITIONS AS THEY EXIST.
5. THE INSTALLER IS RESPONSIBLE FOR COORDINATING WITH OTHER TRADES. THE INSTALLER SHALL NOT INSTALL OR FABRICATE ANY WORK SHOWN UNTIL ALL SUCH WORK IS FULLY COORDINATED. FURNISH AND INSTALL ADDITIONAL DUCTWORK, PIPING, OFFSETS, AND FITTINGS AS REQUIRED TO COORDINATE THE INSTALLATION WITH OTHER TRADES AS PART OF THE WORK.
6. COORDINATE WITH AND OBTAIN APPROVAL FROM CONTRACTING OFFICER FOR ALL UTILITY OUTAGES A MINIMUM OF 7 DAYS IN ADVANCE.
7. SECURE OPENINGS THROUGH WALLS, ROOFS AND FLOORS FROM WEATHER DURING CONSTRUCTION.
8. SECURE OPENINGS THROUGH ROOFS AND FLOORS FROM FALL AND PROVIDE ALL APPROPRIATE FALL PROTECTION MEASURES PER OSHA REQUIREMENTS.
9. SALVAGE EQUIPMENT ITEMS TO A DESIGNATED STORAGE OR DISPOSAL AREA AS DIRECTED BY THE CONTRACTING OFFICER.
10. COVER ALL DUCTWORK OPENING DURING CONSTRUCTION TO PREVENT MIGRATION OF DUST.
11. INSTALL CONSTRUCTION FILTERS AT ALL RETURN OPENINGS OF ALL EQUIPMENT DURING CONSTRUCTION TO PREVENT MIGRATION OF DUST.
12. ALL PIPING AND CUT IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE SUSPENDED CEILING.
11. THE FIRST DUCT SIZE INDICATES THE DIMENSION OF FACE SHOWN ON PLAN VIEW ONLY.
12. ACCESS PANELS IN GYP BOARD CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. UNLESS OTHERWISE SPECIFIED THE ACCESS PANELS SHALL BE 16 GAGE PAINTABLE STEEL CONSTRUCTION WITH A PIANO HINGED DOOR, FLANGE FRAME, WALL SLEEVE AND KEYED LOCK. THE PANELS IN EXPOSED, FINISHED AREAS SHALL BE STAINLESS STEEL. THE ACCESS PANELS IN FIRE RATED ASSEMBLIES SHALL HAVE THE SAME RATING AS THE ASSEMBLY.
13. EXTERNAL STATIC PRESSURE NOTED THE ON THE SCHEDULES ONLY INCLUDES SYSTEM LOSSES AND EXCLUDES LOSSES DUE TO ITEMS IN THE UNIT ITSELF SUCH AS (COILS, CASING, DAMPERS AND CLEAN FILTERS)
14. DIFFUSERS RESISTER AND GRILLE SIZES SHOWN ON THE FLOOR PLAN ARE NECK SIZES.
15. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSER, REGISTER AND GRILLES.
16. IF A DAMPER IN THE DUCT IS LOCATED ABOVE A HARD CEILING FURNISH AND INSTALL A ROUND DAMPER YOUNG REGULATOR 5020–1200 OR EQUIVALENT WITH WORM GEAR REGULATOR USE WITH FLEXIBLE SHAFT AND CONCEALED CEILING CAP WITH BRACKET FASTENS ABOVE THE CEILING ACCESS THROUGH A 1" ZINC PLATEN THREADED STEEL CAP. PAINT SHALL BE APPROVED BY THE CONTRACTOR OFFICER BEFORE PAINTING THE CAP TO MATCH CEILING COLOR.
17. THE DRAWINGS ARE PART DIAGRAMMATIC IN NATURE AND THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL NEW PIPING, NEW DUCTS, NEW EQUIPMENT WITH THE EXISTING CONDITIONS SUCH AS PIPING, EQUIPMENT, STRUCTURAL COMPONENTS AND ETC. PRIOR TO SUBMISSION OF PIPING LAYOUT SHOP DRAWINGS AND COMMENCEMENT OF WORK. CONTRACTOR SHALL FURNISH AND INSTALL ALL BENDS, OFFSETS, ADDITIONAL PIPING WALL PENETRATIONS, EXISTING PIPE RE–ROUTING ETC. AS REQUIRED TO CONFIRM WITH EXISTING CONDITIONS AND TO PROVIDE A FULLY FUNCTIONAL SYSTEMS.
18. THESE DRAWINGS ARE ACCOMPANIED BY SPECIFICATIONS OF THE BUILDING AND DETAILS OF THE INSTALLATIONS INDICATING THE LOCATIONS OF EQUIPMENT, PIPING, DUCTWORK, OUTLETS, LIGHT FIXTURES, ETC. ITEMS SPECIFICALLY MENTIONED IN THE SPECIFICATIONS BUT NOT SHOWN ON THE DRAWINGS AND ITEMS SHOWN ON THE DRAWINGS BUT NOT SPECIFICALLY MENTIONED IN THE SPECIFICATIONS SHALL BE INSTALLED BY THE CONTRACTOR UNDER THE APPROPRIATE SECTION OR WORK AS IF THEY WERE INDICATED BY BOTH.
19. THE SPECIFICATIONS DETERMINE THE NATURE AND SETTING OF THE SEVERAL MATERIALS, THE DRAWINGS ESTABLISH THE QUANTITIES, DIMENSIONS, DETAILS AND THE SCHEDULES WHICH GIVE THE PERFORMANCE CHARACTERISTICS.
20. SHOULD THE DRAWINGS DISAGREE IN THEMSELVES AND WITH THE SPECIFICATIONS AND WITH VARIOUS CODES AND REGULATIONS, THE BETTER QUALITY OR GREATER QUANTITY OF WORK OR MATERIALS SHALL BE ASSUMED AND ESTIMATED AND UNLESS OTHERWISE DIRECTED BY THE CONTRACTING OFFICER AND ENGINEER IN WRITING SHALL BE PERFORMED OR FURNISHED. IN CASE THE SPECIFICATIONS SHOULD NOT FULLY AGREE WITH THE SCHEDULES, THE LATER SHALL GOVERN.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

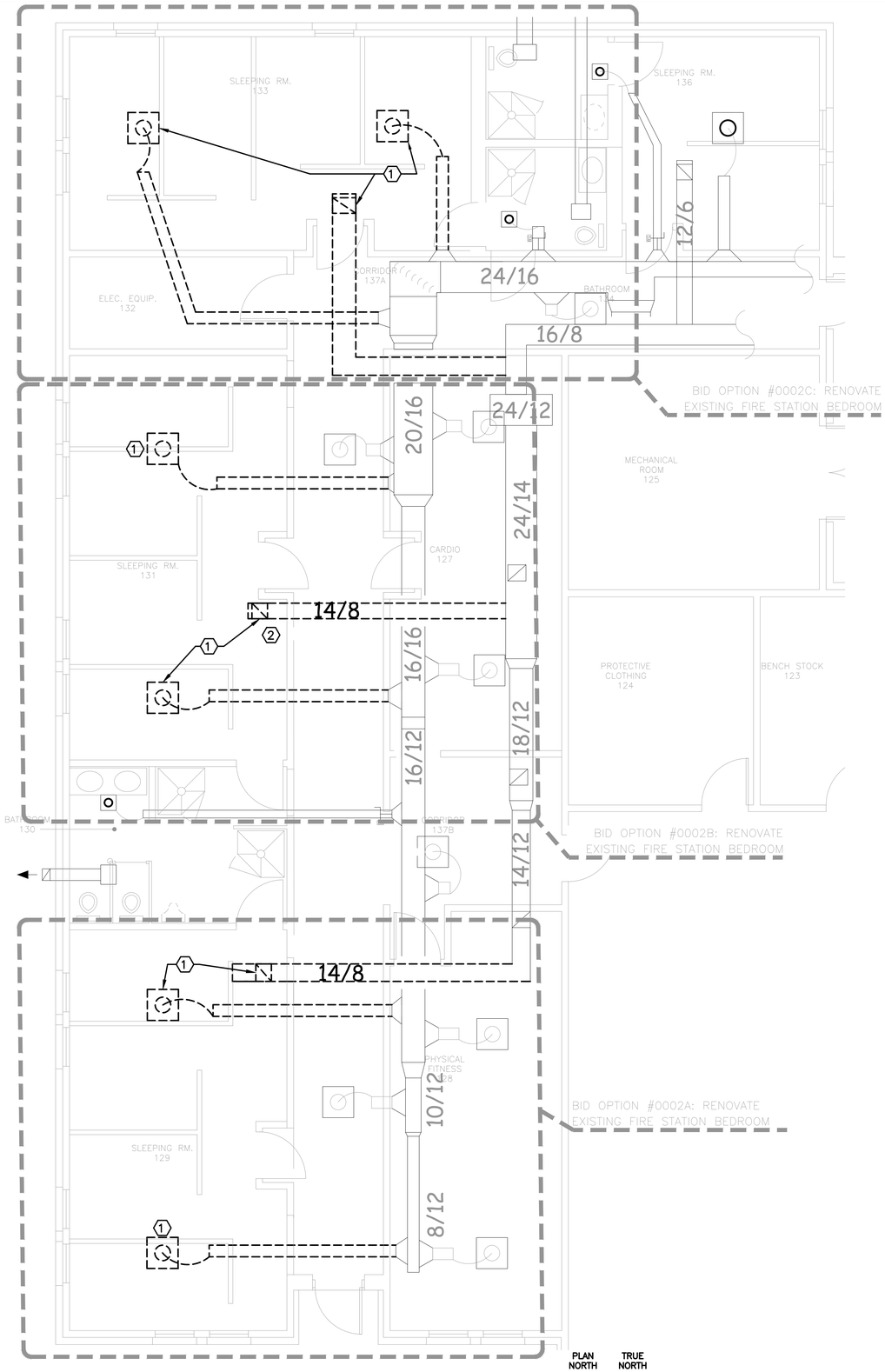
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: MECHANICAL SYMBOLS NOTES & ABBREVIATIONS

Date: SEP 2023

SEQ.	SHEET	OF
31	M–001	50



1 EXISTING BUILDING HVAC DEMOLITION PLAN
SCALE: 1/8"=1'-0"

GENERAL DEMOLITION NOTES:

1. REFERENCE SHEET M-001 FOR LEGENDS, SYMBOLS, ABBREVIATIONS AND FURTHER GENERAL NOTES.
2. NOT ALL EXISTING DUCTWORK IS SHOWN. DUCTWORK SHOWN IS THAT PERTAINING TO DEMOLITION / REMODEL. HVAC FACILITIES NOT SHOWN SHALL REMAIN IN SERVICE AND REMAIN UNTOUCHED.
3. PRIOR TO BIDDING, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS INCLUDING: EXACT LOCATIONS, SIZES AND QUANTITIES OF ITEMS WHICH ARE TO BE REMOVED, RELOCATED, AND/OR ADDED. SUBMITTAL OF A BID MUST SIGNIFY WILLINGNESS TO COMPLY WITH THE CONTRACTING OFFICER'S REQUIREMENTS; THE DESIGN AND SPECIFICATIONS; AND ACCEPTANCE OF ON-SITE CONDITIONS AS THEY EXIST.
4. FACILITIES NOT INDICATED OR NOT INDICATED TO BE REMOVED MUST REMAIN IN SERVICE EXCEPT:
   - 4.1. FACILITIES IN WALLS AND PARTITIONS BEING REMOVED MUST BE REMOVED.
   - 4.2. FACILITIES WHICH INTERFERE WITH THE INSTALLATION OF NEW PARTITIONS MUST BE RELOCATED AS REQUIRED TO ACCOMMODATE THE NEW PARTITIONING.
5. VERIFY ALL EXISTING PIPE SIZES BEFORE REMOVAL.
6. PERFORM ALL DEMOLITION IN ACCORDANCE WITH SPECIFICATIONS AND COORDINATE WITH PHASING PLAN.
7. SECURE ALL OPENINGS THROUGH WALLS, ROOFS, AND FLOORS FROM WEATHER DURING CONSTRUCTION. SECURE OPENINGS THROUGH ROOFS AND FLOORS WITH APPROPRIATE FALL PROTECTION MEASURES PER OSHA REQUIREMENTS.
8. COVER ALL DUCTWORK OPENINGS DURING CONSTRUCTION TO PREVENT MIGRATION OF DUST. INSTALL CONSTRUCTION FILTERS AT ALL RETURN OPENINGS OF ALL EQUIPMENT DURING CONSTRUCTION AND REPLACE AS REQUIRED TO PREVENT MIGRATION OF DUST.
9. PROVIDE DUST BARRIERS TO CRITICAL EQUIPMENT AREAS.
10. WHERE DEMOLITION WORK REQUIRES WORK IN HALLWAY: THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE MINIMUM CEILING TILES REQUIRED TO PERFORM WORK AND STORING TEMPORARILY UNTIL DEMOLITION IS COMPLETE, UPON WHICH THE CONTRACTOR SHALL REINSTALL SUCH CEILING TILES. WHERE DEMO WORK INSIDE OF CORRIDOR REQUIRES DEMOLITION OF GYP. BD. CEILINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING AND REMOVING THE MINIMUM AMOUNT OF AREA REQUIRED TO PERFORM WORK AND PROVIDING NEW GYP. BD. OF SIMILAR TYPE AND THICKNESS UPON COMPLETION OF DEMO WORK. UPON COMPLETION OF DEMOLITION CONTRACTOR SHALL PATCH, REPAIR, TAPE, AND FLOAT SEAMS TO MATCH EXISTING.
11. WHERE DEMOLITION WORK REQUIRES WORK IN FITNESS AREAS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE MINIMUM CEILING TILES REQUIRED TO PERFORM WORK AND STORING TEMPORARILY UNTIL DEMOLITION IS COMPLETE. THE GOVERNMENT WILL BE RESPONSIBLE FOR REMOVING FITNESS MACHINES AND EQUIPMENT PRIOR TO START OF CONTRACTOR WORK, AND WILL REINSTALL MACHINES AND EQUIPMENT UPON COMPLETION OF WORK.

KEYNOTES ⟨X⟩

1. CONTRACTOR SHALL DEMOLISH EXISTING SUPPLY AND RETURN AIR DUCT GRILLS, BRANCHES, INSULATION, AND CAP DUCTWORK AT MAIN TRUNK.
2. CONTRACTOR SHALL DEMOLISH EXISTING THERMOSTAT INCLUDING WIRING, DEVICES, CONDUIT, AND CIRCUIT.

LEGEND

— — DEMO

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

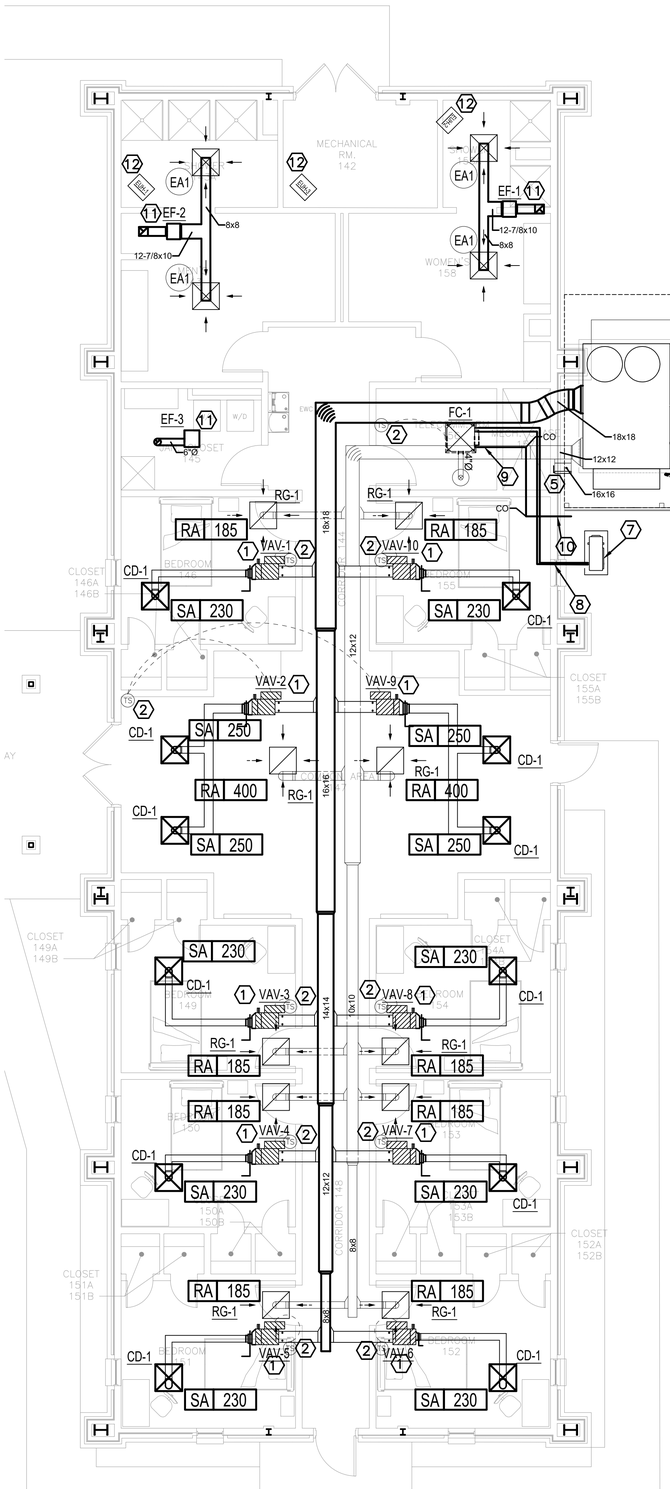
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: HVAC DEMO - BID OPTIONS

Date: SEP 2023

SEQ.	SHEET	OF
32	MD-101	50



1 HVAC PLAN – ADDITION

3/16" = 1' – 0"

GENERAL NOTES:

1. REFERENCE SHEET M–001 FOR LEGEND, SYMBOLS, ABBREVIATIONS AND FURTHER GENERAL NOTES.

KEYNOTES AS NOTATED BY: (X)

1. FURNISH AND INSTALL AIR TERMINAL UNIT, CONTROLS, AND APPURTENANCES (REF. 1/M–501).
2. FURNISH AND INSTALL A BACNET COMPATIBLE THERMOSTAT.
3. FURNISH AND INSTALL A NEW EQUIPMENT PAD WITH 4" OF GRAVEL BASE BENEATH THE FOOTPRINT OF THE PAD. THE NEW EQUIPMENT PAD SHALL BE 5 1/2" THICK, 3,000 PSI CONCRETE WITH #4 REINFORCEMENT BARS ON 10" CENTERS EACH WAY. EXTEND THE PAD 4" BEYOND THE EDGES OF THE EQUIPMENT CURB. CHAMFER OR RADIUS THE TOP EDGES 1/2" X 1/2".
4. FURNISH AND INSTALL A DEDICATED OUTDOOR AIR SYSTEM UNIT, PLENUM CURB, CONTROLS AND APPURTENANCES. COORDINATE THE INSTALLATION OF THE DUCT SMOKE DETECTOR SERVING DOAS–1 WITH THE FIRE ALARM INSTALLER.
5. FURNISH AND INSTALL A BAROMETRIC RELIEF DAMPER AND TERMINATE THE RELEIF AIR DUCT WITH A WEATHERHOOD WITH AN INSECT SCREEN.
6. FURNISH AND INSTALL A 2" HUB DRAIN AND DRY WELL. ROUTE CONDENSATE PIPING OVER THE HUB DRAIN, TURN DOWN AND TERMINATE WITH AN AIR GAP. FOR MORE INFORMATION REFERENCE DETAIL 2/M–502.
7. FURNISH AND INSTALL A DX UNIT AND APPURTENANCES (REF. 1/M–502). FURNISH AND INSTALL A CONTROL CIRCUIT AND REFRIGERANT PIPING FROM THE OUTDOOR UNIT TO THE INDOOR FAN COIL UNIT. SIZE AND INSTALL THE REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONNECTION FROM THE OUTDOOR UNIT TO THE INDOOR FAN COIL UNIT SHALL BE ROUTED IN LIQUID TIGHT FLEXIBLE CONDUIT.
8. ROUTE THE REFRIGERANT PIPING AND CONTROL CIRCUIT DOWN IN THE WALL TO 6" AFF. SLEEVE THE EXTERIOR FACING AND ROUTE THE PIPING AND CONTROL CIRCUIT OUT THROUGH THE SLEEVE. SEAL CAULK THE ANNULAR SPACE BETWEEN THE PIPING/CONDUIT AND THE SLEEVE WEATHER TIGHT.
9. ROUTE INSULATED 3/4" PIPING FROM THE INTEGRAL CONDENSATE PUMP UP TO ABOVE THE CEILING AND CONNECT TO THE GRAVITY SLOPED CONDENSATE PIPING.
10. ROUTE THE CONDENSATE DRAIN DOWN WITHIN THE WALL, PENETRATE OUTSIDE, TURN DOWN AND TERMINATE WITH A 2" AIR GAP.
11. FURNISH AND INSTALL A CEILING MOUNTED EXHAUST FAN, CONTROLS AND APPURTENANCES. THE EXHAUST FAN SHALL BE SUSPENDED AND SUPPORTED FROM THE STRUCTURE ABOVE. ROUTE EXHAUST DUCTWORK FROM THE UNITS DISCHARGE CONNECTION THROUGH A ROOF CURB TO A ROOF JACK TRANSITION AND CONNECT. THE ROOF CURB SHALL BE FABRICATED TO ACCOUNT FOR THE ROOF PITCH SUCH THAT THE ROOF JACK IS INSTALLED LEVEL.
12. FURNISH AND INSTALL A SUSPENDED ELECTRIC UNIT HEATER WITH INTEGRAL THERMOSTAT AND APPURTENANCES. THE HEATER SHALL BE SEQUENCED SUCH THAT THE TEMPERATURE OF THE ROOM DOES NOT FALL BELOW 45 DEG F (ADJ).

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

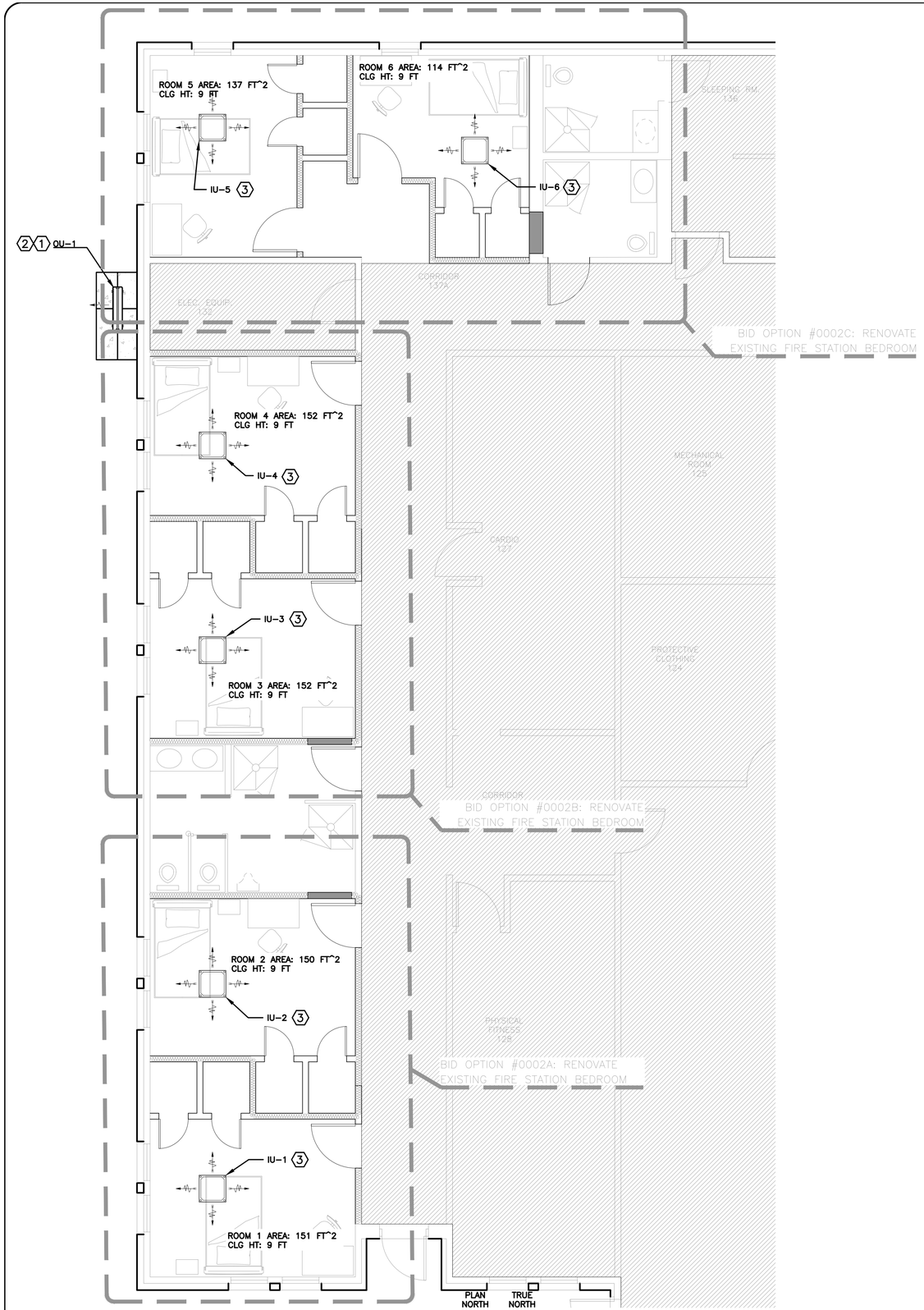
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: HVAC PLAN – NEW ADDITION

Date: SEP 2023

SEQ.	SHEET	OF
33	M-101	50



1 HVAC PLAN – BID OPTIONS
SCALE: 1/4"=1'-0"

GENERAL NOTES:

1. REFERENCE SHEET M–101 FOR LEGEND, SYMBOLS, ABBREVIATIONS, AND FURTHER GENERAL NOTES.
2. MINOR ALTERATION WORK INCLUDING: CUT, PATCH, PAINT AND OTHERWISE FINISH SURFACES SHALL MATCH ADJACENT SURFACES.
3. REGARDLESS OF WHICH BID OPTION IS AWARDED, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING (1) HEAT PUMP, CONCRETE PAD, CORRESPONDING PIPING FOR A COMPELTE AND FUNCTIONAL SYSTEM.

KEYNOTES: ⓧ

1. FURNISH AND INSTALL A NEW EQUIPMENT PAD WITH 4" OF GRAVEL BASE BENEATH THE FOOTPRINT OF THE PAD. THE NEW EQUIPMENT PAD SHALL BE 5–1/2" THICK, 3000 PSI CONCRETE WITH #4 REINFORCEMENT BARS ON 10" CENTERS EACH WAY. EXTEND THE PAD 4" BEYOND THE EDGES OF THE EQUIPMENT CURB. CHAMFER OR RADIUS THE TOP EDGES ½" X ½".
2. FURNISH AND INSTALL A HEAT PUMP AND PERTINENT APPURTENANCES (REF 7/M–501), FURNISH AND INSTALL A CONTROL CIRCUIT AND REFRIGERANT PIPING FORM THE HEAT PUMP UNIT TO EACH INDOOR UNIT (6 TOTAL). SIZE AND INSTALL THE REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONNECTION TO THE HEAT PUMP UNIT SHALL BE ROUTED IN LIQUID TIGHT FLEXIBLE CONDUIT.
3. FURNISH AND INSTALL A INDOOR UNIT AND PERTINENT APPURTENANCES IN ACCORDANCE WITH MFR INSTRUCTIONS.
4. FURNISH AND INSTALL A TEMPERATURE SENSOR.
5. ROUTE THE REFRIGERANT PIPING AND CONTROL CIRCUIT DOWN IN THE WALL TO 6" AFF. SLEEVE THE EXTERIOR FACING AND ROUTE THE PIPING AND CONTROL CIRCUIT OUT THROUGH THE SLEEVE. SEAL CAULK THE ANNULAR SPACE BETWEEN THE PIPING/CONDUIT AND SLEEVE WEATHER TIGHT.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

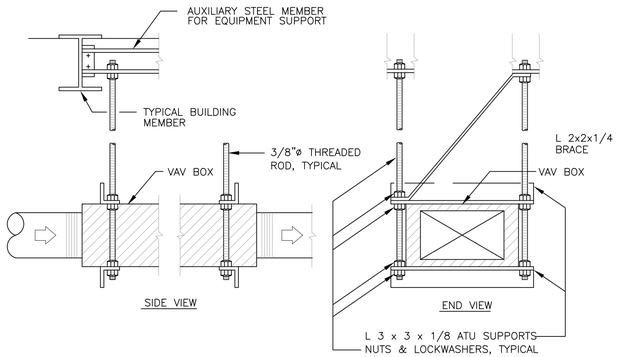
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

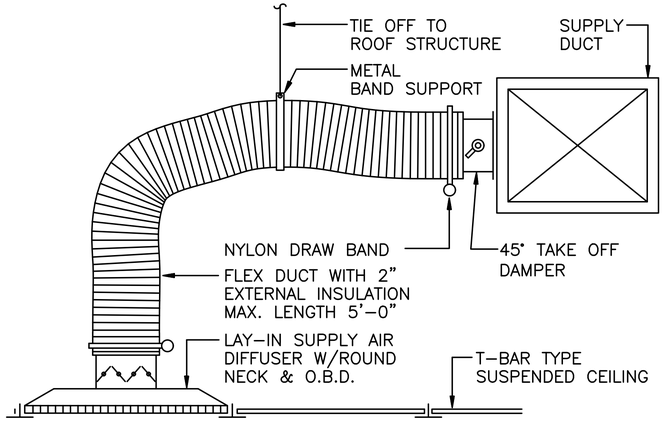
SHEET TITLE: HVAC PLAN – BID OPTIONS

Date: SEP 2023

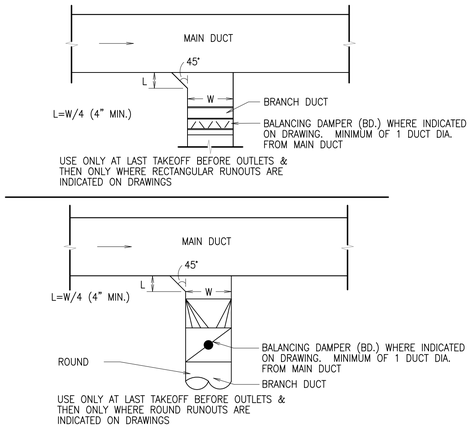
SEQ.	SHEET	OF
34	M-102	50



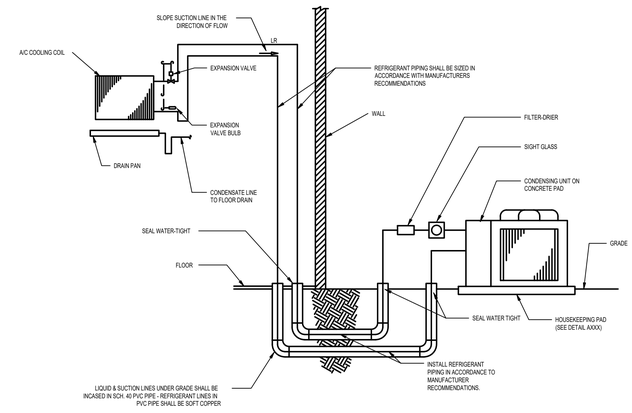
1 VAV BOX MOUNTING DETAIL
NTS



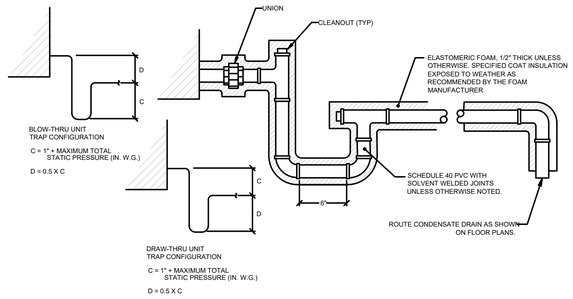
2 SUPPLY AIR DIFFUSER DETAIL
NTS



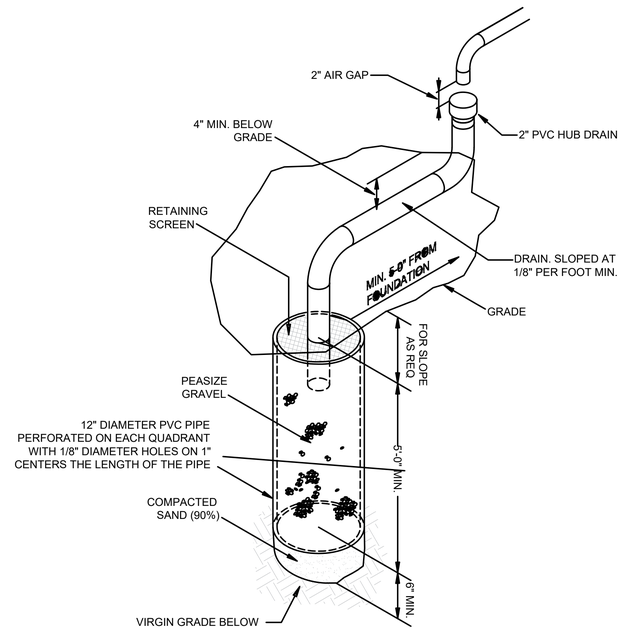
3 TYP. DUCT BRANCH CONNECTION DETAIL
NTS



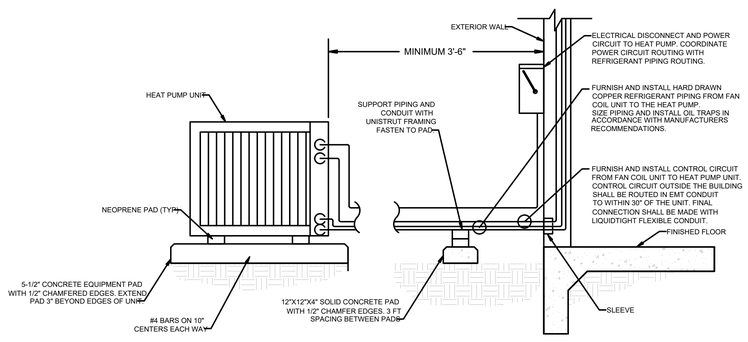
4 REFRIGERANT PIPING DIAGRAM
NTS



5 CONDENSATE TRAP INSTALLATION DETAIL
NTS



6 DRY WELL DETAIL
NTS



7 HEAT PUMP INSTALLATION DETAIL
NTS

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

PROJECT TITLE

Project Number: 1039839

SHEET TITLE: HVAC DETAILS

Date: SEP 2023

SEQ.	SHEET	OF
35	M-501	50

PACKAGED UNIT SCHEDULE

MARK	OUTSIDE AIR FLOW RATE (CFM)	EXTERNAL STATIC PRESSURE AT MAXIMUM AIR FLOW (W.G.)	SPACE SHR	COOLING								ELECTRICAL			NOTES
				MIN. COOLING SUPPLY AIR FLOW RATE	MAX COOLING SUPPLY AIR FLOW RATE (CFM)	ENTERING AIR DB TEMP. (F)	ENTERING AIR (WB) TEMP. (F)	LEAVING AIR DB TEMP (F)	LEAVING AIR WB TEMP. (F)	SENSIBLE CAPACITY (MBH)	LATENT CAPACTIY (MBH)	TOTAL CAPACITY (MBH) AT 97.8 (F) AMBIENT	VOLTS/ PHASE	MCA	MOCP	
PAC-1	375	2"	0.916	-	2840	74.3	60.3	52.6	51.3	63.7	5.9	69.6	208/3	74.1	90	1,2,3,4,5,6,7,8

NOTES:
1. FURNISH AND INSTALL PACKAGED UNIT WITH A METAL CONDENSER COIL (HAIL) GUARD.
2. FURNISH AND INSTALL PACKAGED UNIT WITH A FILTER RACK AND 2" THICK MERV 13 FILTERS.
3. FURNISH AND INSTALL THE UNIT WITH A SINGLE POINT ELECTRICAL CONNECTION AND NON-CORROSIVE DRAIN PAN.
4. THE CONDENSER SETION SHALL BE SELECTED BASED ON AN OUTDOOR AMBIENT AIR TEMPERATURE OF 105 F AT THE COOLING CONDITIONS.
5. FURNISH AND INSTALL UNIT WITH AN ECONOMIZER SEQUENCE, DAMPERS, RELEIF DAMPER, CONTROLS, AND ACCESSORIES.
6. THE PACKAGE UNIT SHALL BE A TRANE "HORIZON" MODEL OR APPROVED EQUAL.
7. SYSTEM SHALL INCLUDE LOW AMBIENT CONTROL.
8. SYSTEM SHALL INCLUDE SOUND ATTENUATION PACKAGE

FAN COIL UNIT SCHEDULE

MARK	NOMINAL COOLING CAPCAITY (BTUH)	SUPPLY AIR FLOW (CFM)	OUTSIDE AIR (CFM)	EFFICIENCY RATING (SEER)	ELECTRICAL								NOTES
					FAN COIL UNIT				HEAT PUMP UNIT				
					MARK	VOLTS/PHASE/HZ	MCA	MAX FUSE	MARK	VOLTS/PHASE	MCA	MAX FUSE	
FC/HP-1	18000	450	5	17	FC-1	POWERED BY OUTDOOR UNIT			HP-1	208-230/1	18.3	20	1,2,3,4,5,6

NOTES:
1. FURNISH AND INSTALL THE HEAT PUMP WITH CONDENSER COIL (HAIL) GUARD AND OPTIONAL WIND BAFFLE FOR EXTENDED OPERATING RANGE.
2. FURNISH AND INSTALL THE UNIT WITH SINGLE POINT OF ELECTRICAL CONNECTION.
3. FURNISH AND INSTALL THE UNIT WITH BACNET COMPATIBLE THERMOSTAT.
4. FURNISH AND INSTALL THE UNIT WITH A LOW AMBIENT STARTUP KIT.
5. FURNISH AND INSTALL THE FC UNIT WITH AN INTERGRAL CONDENSATE PUMP.
6. THE SYSTEM SHALL BE MANUFACTURED BY TRANE, CARRIER, BRYANT, OR APPROVED EQUAL.

FAN SCHEDULE

MARK	Description	CFM	EXTERNAL STATIC PRESSURE (WG)	SOUND (SONES)	FAN			ELECTRICAL	REFERENCE SELECTION: GREENHECK	NOTES
					RPM	WATTS	DRIVE	VOLTS/PHASE		
EF-1	144 MALE	290	0.25	1.3	1095	73	DIRECT	115/1	CSP-A390	1,2,3
EF-2	157 FEMALE	240	0.25	1.3	964	48	DIRECT	115/1	CSP-A390	1,2,3
EF-3	146 JANITOR	80	0.25	0.9	796	80	DIRECT	115/1	SP-B110	1,2

NOTES:
1. FURNISH AND INSTALL FAN WITH INTEGRAL BACKDRAFT DAMPER AND FAN SPEED CONTROLLER.
2. FURNISH AND INSTALL FEMP OR ENERGY STAR COMPLIANT FAN.
3. FURNISH AND INSTALL FAN TO BE CONTROLLED TO OPERATE WITH THE LIGHTIN OCCUPANCY OR VACANCY SENSOR + 15 MINUTES.

ELECTRIC UNIT HEATER SCHEDULE

MARK	HEATER SIZE	ELECTRICAL VOLTS/PHASE	NOTES
EUH-1	4 KW	208/3	1,2
EUH-2	4 KW	208/3	1,2
EUH-3	3 KW	208/3	1,2

NOTES:
1. FURNISH AND INSTALL AN ELECTRIC RESISTANCE HEATER WITH INTEGRAL
2. MOUNT THE UNIT HEATER SUSPENDED FROM THE STRUCTURE

DUCTLESS VRF W/ HEAT RECOVERY SCHEDULE

MARK	NOMINAL COOLING CAPCAITY (BTUH)	NOMINAL HEATING CAPCAITY (BTUH)	SUPPLY AIR FLOW (CFM)	OUTSIDE AIR (CFM)	EFFICIENCY RATING (SEER)	ELECTRICAL								BASIS OF DESIGN	NOTES
						FAN COIL UNIT				HEAT PUMP UNIT					
						MARK	VOLTS/PHASE/HZ	MCA	MAX FUSE	MARK	VOLTS/PHASE/HZ	MCA	MAX FUSE		
OU-1	60000	66000	-	4850	20.5	-	-	-	-	OU-1	208-230/1/60	36.3	40	6	1,2,3,4,5
IU-1	7500	8500	220/270/320	-	-	IU-1	208-230/1/60	0.5	15	-	-	-	-	7	5
IU-2	7500	8500	220/270/320	-	-	IU-2	208-230/1/60	0.5	15	-	-	-	-	7	5
IU-3	7500	8500	220/270/320	-	-	IU-3	208-230/1/60	0.5	15	-	-	-	-	7	5
IU-4	7500	8500	220/270/320	-	-	IU-4	208-230/1/60	0.5	15	-	-	-	-	7	5
IU-5	7500	8500	220/270/320	-	-	IU-5	208-230/1/60	0.5	15	-	-	-	-	7	5
IU-6	7500	8500	220/270/320	-	-	IU-6	208-230/1/60	0.5	15	-	-	-	-	7	5

NOTES:
1. FUNRNISH AND INSTALL THE HEAT PUMP WITH CONDENSER COIL (HAIL) GUARD AND OPTIONAL WIND BAFFLE FOR EXTENDED OPERATING RANGE.
2. FURNISH AND INSTALL THE UNIT WITH SINGLE POINT OF ELECTRICAL CONNECTION.
3. FURNISH AND INSTALL THE UNIT WITH BANET CAPATIBLE THERMOSTAT.
4. FURNISH AND INSTALL THE UNIT WITH A LOW AMBIENT STARTUP KIT.
5. THE SYSTEM SHALL BE MANUFACTURED BY TRANE, CARRIER, BRYANT, OR APPROVED EQUAL.
6. TOSHIBA/CARRIER MCY-MAP0607HS-UL-HEAT PUMP
7. TOSHIBA/CARRIER MMU-AP0071MH2UL-COMPACY 4-WAY CASSETTE

AIR DEVICE SCHEDULE

MARK	TYPE	NECK SIZE (IN)	MODULE SIZE (IN)	MATERIAL	MAX. CFM	THROW AT 100 FEET	TOTAL STATIC PRESSURE (IN WG)	NOISE CRITERIA RATING (NC)	BASIS OF DESIGN:	NOTES
CD1	SUPPLY CEILING DIFFUSER	6 Ø	24X24	ALUMINUM	275	5	0.099	25-30	TITUS OMNI	1
RG1	RETURN CEILING GRILLE	22X10	24X24	ALUMINUM	700	-	0.06	18	TITUS 350 FL	1
EG1	EXHAUST CEILING GRILLE	8X8	24X24	ALUMINUM	415	-	0.013	18	GREENHECK XG-CCS	1

NOTES:
1. FURNISH AND INSTALL AIR DEVICE WITH LAY-IN BORDER FRAME FOR LAY-IN CEILING AND SURFACE MOUNTING FRAME FOR ALL OTHER APPLICATIONS.

AIR TERMINAL UNIT SCHEDULE

MARK	TYPE	CFM		HEATING					
		MAX	MIN	CFM	MIN. KW (NOTE 3)	NOMINAL KW (NOTE 3)	ELECTRICAL VOLTAGE /PHASE	ELECTRICAL MCA	ELECTRICAL MOCP
VAV-1	SINGLE DUCT W/HEATING COIL (BEDROOM 146)	230	150	150	2.2	2.5	208/3	8.7	15
VAV-2	SINGLE DUCT W/HEATING COIL (COMMON AREA 147W)	500	300	300	4.3	4.5	208/3	15.6	20
VAV-3	SINGLE DUCT W/HEATING COIL (BEDROOM 149)	230	150	150	2.2	2.5	208/3	8.7	15
VAV-4	SINGLE DUCT W/HEATING COIL (BEDROOM 150)	230	150	150	2.2	2.5	208/3	8.7	15
VAV-5	SINGLE DUCT W/HEATING COIL (BEDROOM 151)	230	150	150	2.2	2.5	208/3	8.7	15
VAV-6	SINGLE DUCT W/HEATING COIL (BEDROOM 152)	230	150	150	2.2	2.5	208/3	8.7	15
VAV-7	SINGLE DUCT W/HEATING COIL (BEDROOM 153)	230	150	150	2.2	2.5	208/3	8.7	15
VAV-8	SINGLE DUCT W/HEATING COIL (BEDROOM 154)	230	150	150	2.2	2.5	208/3	8.7	15
VAV-9	SINGLE DUCT W/HEATING COIL (COMMON AREA 147E)	500	300	300	4.3	4.5	208/3	15.6	20
VAV-10	SINGLE DUCT W/HEATING COIL (BEDROOM 155)	230	150	150	2.2	2.5	208/3	8.7	15

NOTES APPLIY TO ALL VAV AIR TERMINAL UNITS:
1. INLET STATIC = 1.5" W.C.; MAX UNIT PRESSURE DROP = 0.5" W.C.: MAX NC = 25
2. PROVIDE DUCT TRANSITION AT UNIT WHERE UNIT INLET SIZE AND DUCT RUNOUT SIZE ARE DIFFERENT.
3. PROVIDE ELECTRIC REHEAT FOR VAVS

4TH CIVIL ENGINEER SQUADRON
READY - WILLING - ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

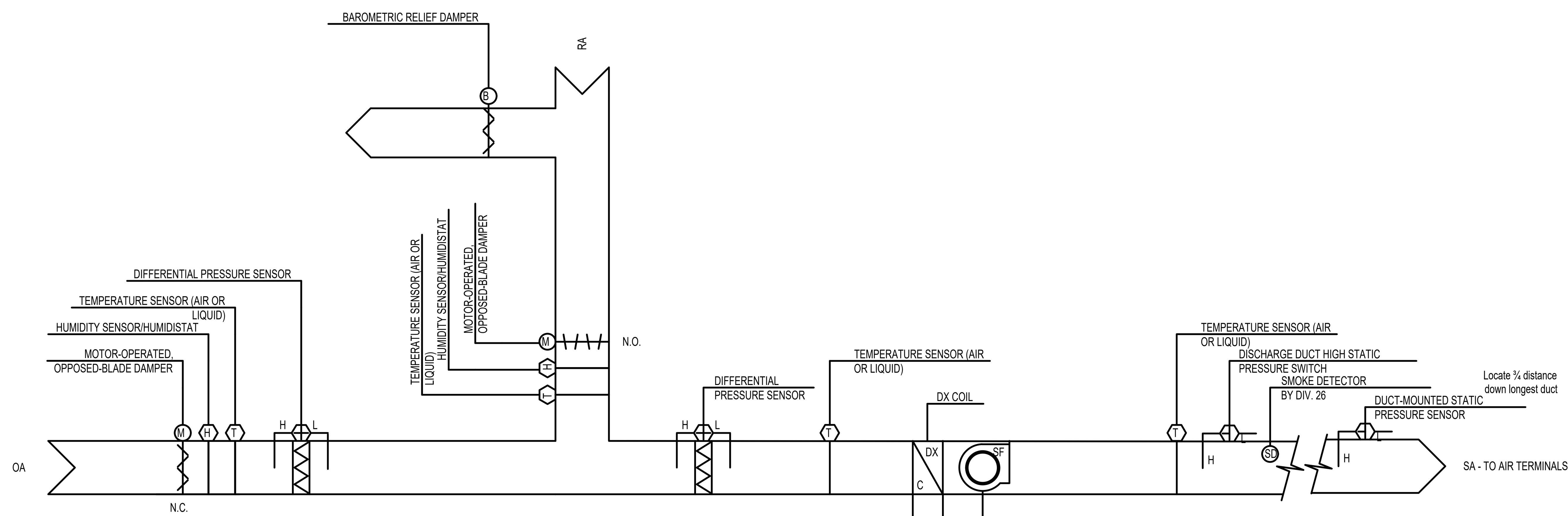
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

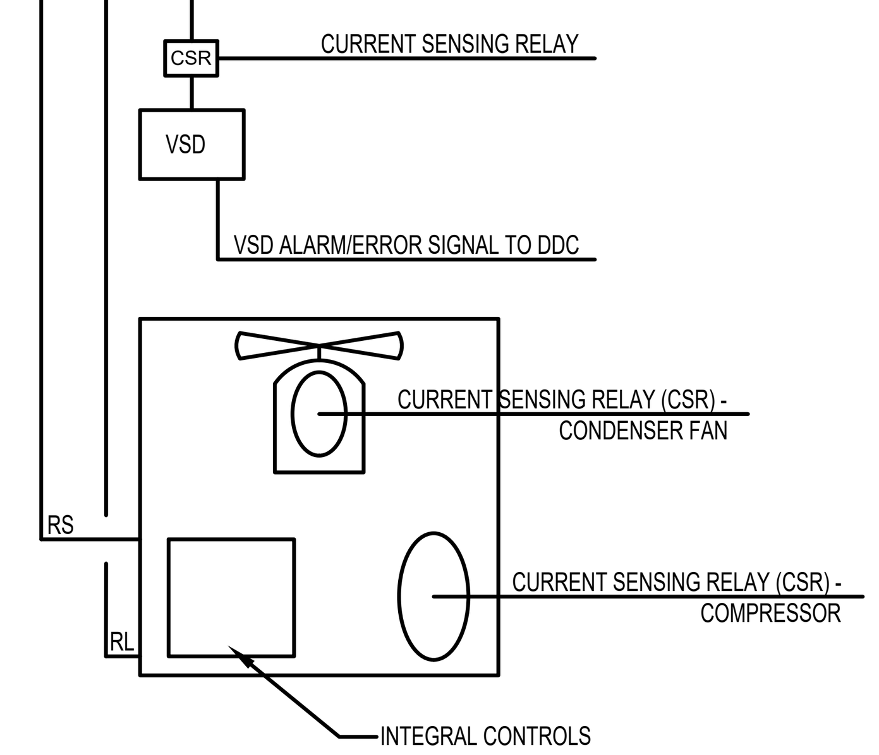
Project Number: 1039839

SHEET TITLE: HVAC SCHEDULES

Date: SEP 2023

SEQ.	SHEET	OF
36	M-601	50





UNIT SHALL CONSISTS OF A FILTER/SECTION, DIRECT EXPANSION COOLING COIL, FAN WITH VARIABLE-SPEED CONTROL, AND SAFETY CONTROLS.

WHEN THE UNIT IS STARTED, THE FAN SHALL START AND TH ECONDENSER WILL BE ENABLED. WHEN THE UNIT FAN IS STOPPED, THE UNIT WILL BE DISABLED. A BUILDING HIGH-LIMIT SETPOINT SHALL BE PROGRAMMED IN THE DDC CONTROLLER WHICH SHALL KEEP ALL ZONE SPACE TEMEPRATURES DURING UNOCCUPIED MODE BELOW 85 DEG. F (ADJ.). UPON SENSING A HIGH-LIMIT CONDITION, THE SYSTEM SHALL GO INTO FULL COOLING. THE SYSTEM SHALL STOP UPON THE EFFECTED ZONE TEMPERATURE FALLING 2 DEG. F (ADJ.) BELOW THE HIGH LIMIT SETPOINT. A BUILDING LOW LIMIT SETPOINT SHALL BE PROGRAMMED INTO THE DDC SYSTEM WHICH SHALL KEEP ALL THE ZONE SPACE TEMPERATURES DURING UNOCCUPIED MODE ABOVE 60 DEG. F (ADJ.). UPON SENSING A LOW LIMIT CONDITION, THE UNITS SUPPLY FAN SHALL START, AND THE AFFECTED ZONES SHALL GO INTO FULL HEATING. THE SYSTEM SHALL STOP UPON THE AFFECTED ZONE TEMPERATURE RISING 2 DEG. F (ADJ.) ABOVE THE LOW LIMIT SETPOINT.

THE UNIT'S INTEGRAL CONTROLS SHALL MODULATE THE COMPRESSOR TO MAINTAIN A CONSTANT DISCHARGE AIR TEMPERATURE AS STATED ON THE SCHEDULE (ADJ.).

SUPPLY TEMPERATURE RESET:
THE COOLING SETPOINT OF THE AHU SHALL BE RESET BASED ON THE OUTDOOR AIR TEMPERATURE. AS THE OUTDOOR AIR TEMPERATURE TEMPERATURE RISES FROM 50 DEG. F DB (ADJ.) TO 60 DEG. DB (ADJ.) THE COOLING SUPPLY AIR TEMPERATURE SETPOINT SHALL RESET DOWN FROM 65 DEG. F (ADJ.) TO 53 DEG. F (ADJ.).

THE DDC CONTROLLER SHALL MONITOR A DUCT STATIC PRESSURE SENSOR (OR MULTIPLE, AS REQUIRED) LOCATED APPROXIMATELY $\frac{2}{3}$ TO $\frac{3}{4}$ DOWN THE MAIN TRUNK LINE FROM THE UNIT AND MODULATE THE SPEED OF THE FAN TO MAINTAIN DUCT STATIC PRESSURE SETPOINT (1.0 IN. W.G., ADJ.) AT THE SENSING POINT.

THE AIR FLOW MEASURING STATION SHALL MONITOR THE OUTSIDE AIR. THE OUTSIDE AIR AND RETURN AIR DAMPERS SHALL MODULATE IN UNISON TO MAINTAIN THE SCHEDULED OUTSIDE AIR FLOW RATE.

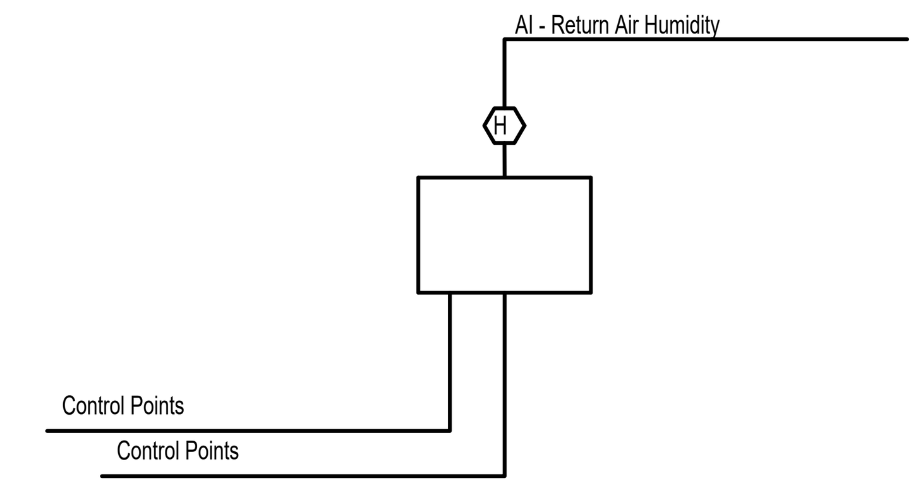
ECONOMIZER:
THE AIR ECONOMIZER IS INTEGRAL TO THE PACKAGED UNIT AND THE UNIT'S INTEGRAL SEQUENCE OF OPERATION FOR THE ECONOMIZER CYCLE SHALL CONFORM TO ASHRAE 90.1. THE BAROMETRIC RELIEF DAMPER SHALL OPEN DURING THE ECONOMIZER OPERATION.

SAFETY CONTROLS:
A MIXED AIR LOW-LIMIT TEMPERATURE SHALL BE SET AT 35 DEG. G (ADJ.). UPON SENSING A TEMPERATURE BELOW THE LOW-LIMIT, THE DDC SHALL ALARM AND THE OUTSIDE AIR DAMPER SHALL SPRING CLOSE AND THE RETURN AIR DAMPER SHALL SPRING OPEN.

1 DEDICATED OUTDOOR AIR SYSTEM DIAGRAM AND SEQUENCE

$\frac{1}{2}$" = 1' – 0"

INPUT/OUTPUT SUMMARY																																								
	HARDWARE																				SOFTWARE																			
	OUTPUT							INPUT													ALARMS																			
	DITIGAL			ANALOG				DIGITAL						ANALOG							DIGITAL			ANALOG																
POINT DESCRIPTION:	START/STOP	ENABLE/DISABLE	OPEN/CLOSE	MODULATE VALVE	DDC-DAMPER	LOCAL SPACE INDICATION	MODULATE AIR VOLUME	STATUS CONTACT	STATUS-DIFF. PRESSURE	CURR SENSING RELAY (ADJ. THRESHOLD)	STATUS RELAY	PHASE FAILURE	LOCAL BUTTON	TEMPERATURE	RELATIVE HUMIDITY	PRESSURE	VFD STATUS (Hz)	AIRFLOW (CFM)	CO2 (PPM)	VALVE POSITION	CONTACT CLOSURE	VSD ALARM/ERROR	HVAC SHUT-OFF SWITCH	HIGH LIMIT	LOW LIMIT	RUN TIME	OPTIMUM START/STOP	PEAK DEMAND LIMITING	DUTY CYCLING	ECONOMIZER OPTIMIZATION	SET POINT	PROGRAM OVERRIDE	BOILER RESET	CONDESNER WATER RESET	CHILLER DEMAND LIMIT	DDC LOOP CONTROL	SUPPLY/RETURN FAN TRACK	EVENT PROGRAMMING	SOFTWARE INTERLOCK	GRAPHIC SYMBOLOGY
DOAS																																								
...FAN	X																																							X
...VARIABLE FREQUENCY DRIVE							X										X					X														X				X
...DUCT STATIC PRESSURE																X								X	X						X					X				X
...SUPPLY AIR DISCHARGE														X										X	X						X					X				X
...MIXED AIR														X											X						X					X		X		X
...FILTER DIFFERENTIAL PRESSURE SENSOR																X								X																
...HIGH STATIC DISCHARGE ALARM								X													X																	X		X
...RETURN AIR														X	X									X																X
...SUPPLY AIR TOTAL (SUM OF DOAS BOX CFM)																																								X
...CONDENSER		X																																						X
...CONDENSER FAN CSR										X											X																			X
...COMPRESSOR CSR										X											X																			X
...AFMS																		X																						

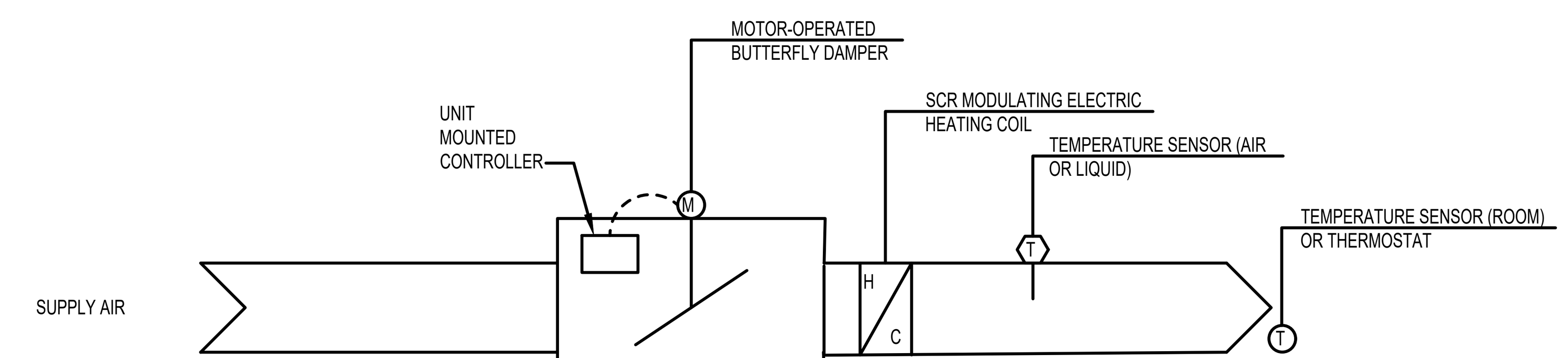


2 EXHAUST FAN DIAGRAM AND SEQUENCE

NO SCALE

SEQUENCE OF OPERATIONS:
THE EXHAUST AIR FANS SHALL OPERATE DURING OCCUPIED HOURS.

INPUT/OUTPUT SUMMARY																																							
	HARDWARE																					SOFTWARE																	
	OUTPUT							INPUT														ALARMS							PROGRAMS										
	DITIGAL			ANALOG				DIGITAL						ANALOG								DIGITAL			ANALOG														
POINT DESCRIPTION:	START/STOP	ENABLE/DISABLE	CLOSE DAMPER	MODULATE VALVE	DDC-DAMPER	LOCAL SPACE INDICATION	MODULATE FAN OR PUMP SPEED	STATUS CONTACT	WATER FLOAT SWITCH	CURR SENSING RELAY (ADJ.) THRESHOLD	SYSTEM ALARM	GAS METER PULSE KIT	LOCAL BUTTON	TEMPERATURE	RELATIVE HUMIDITY	FLOW GALLONS	KWH	AIRFLOW (CFM)	CO2 (PPM)	POSITION FEEDBACK	WATERFLOAT SWITCH	MOISTURE SENSOR	HVAC KILL SWITCH	SYSTEM ALARM	HIGH LIMIT	LOW LIMIT	RUN TIME	MOISTURE DETECTION	OPTIMUM START/STOP	PEAK DEMAND LIMITING	DUTY CYCLING	ECONOMIZER OPTIMIZATION	OCCUPIED/UNOCCUPIED	RESET	BOILER RESET	CONDENSER WATER RESET	CHILLER DEMAND LIMIT	DDC LOOP CONTROL	SUPPLY/RETURN FAN TRACK
EXHAUST FANS (EF-X)	X																																						
FAN COIL UNIT (FC-1)														X											X														



3 VAV UNIT WITH ELECTRIC HEATING COIL DIAGRAM AND SEQUENCE

NO SCALE

SEQUENCE OF OPERATIONS:
THESE UNITS CONSIST OF A MULTI-POINT AVERAGING VELOCITY SENSOR, PRIMARY AIR DAMPER AND ACTUATOR, ELECTRIC HEATING COIL WITH MODULATING CONTROL DEVICE.

AT FULL COOLING, PRIMARY AIR VALVE SHALL OPEN TO MAXIMUM FLOW (AS SCHEDULED) TO MAINTAIN SPACE COOLING SETPOINT (ADJUSTABLE). AS THE ROOM TEMPERATURE DECREASES, THE PRIMARY DAMPER SHALL BE MODULATED TOWARD THE CLOSED POSITION UNTIL THE AIR VALVE'S MINIMUM AIR FLOW SETPOINT IS REACHED. AS THE ROOM TEMPERATURE CONTINUES TO FALL, THE ELECTRIC HEATING COIL SHALL BE MODULATED ON TO MAINTAIN THE SPACE HEATING SETPOINT.

SPACE COOLING SETPOINT SHALL BE ADJUSTABLE VIA THERMOSTAT AS SHOWN ON M-102.

INPUT/OUTPUT SUMMARY																																						
	HARDWARE																				SOFTWARE																	
	OUTPUT								INPUT												ALARMS																	
	DITIGAL				ANALOG				DIGITAL						ANALOG						DIGITAL		ANALOG															
LSI - LOCAL SPACE INDICATION LSA - LOCAL SPACE ADJUSTMENT POINT DESCRIPTION:	START/STOP	ENABLE/DISABLE	OPEN/CLOSE	MODULATE VALVE	MODULATE DAMPER	LOCAL SPACE INDICATION	MODULATE HEATER	STATUS-AUX. CONTRACT	STATUS DIFF. PRESS. SWITCH	CURRENT SENSING RELAY (ADJ. THRESHOLD)	STATUS-RELAY	(KW) PULSE CONTACT	LOCAL BUTTON	TEMPERATURE	VALVE POSITIONS	PRESSURE	FAN SPEED (Hz)	AIRFLOW (CFM)	LOCAL ADJUSTMENT	DAMPER POSITION	CONTACT CLOSURE	START FAILURE	HIGH LIMIT	LOW LIMIT	RUN TIME	OPTIMUM START/STOP	PEAK DEMAND LIMITING	DUTY CYCLING	ECONOMIZER OPTIMIZATION	RESET	BOILER RESET	CONDESNER WATER RESET	CHILLER DEMAND LIMIT	DDC LOOP CONTROL	SUPPLY/RETURN FAN TRACK	EVENT PROGRAMMING	SOFTWARE INTERLOCK	DYNAMIC GRAPHIC CREATION
AIR TERMINAL (VAV)																																						
...DAMPER					X															X														X				
...DIFFERENTIAL PRESSURE SENSING																		X					X	X										X				
...MODULATE ELECTRIC HEATER							X																											X				
...SPACE TEMPERATURE														X									X	X		X								X				
...TEMP. SETPOINT...LSA																			X																			
...O.R. BUTTON													X																							X		
...DISCHARGE AIR TEMP.														X																								

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: 17CES

PROJECT TITLE

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: **HVAC CONTROLS**

Date: SEP 2023

SEQ.	SHEET	OF
37	M-701	50

ELECTRIC STANDARD SYMBOLS AND ABBREVIATIONS (NOT ALL APPLY)

STANDARD SYMBOLS - POWER

SYMBOL	DESCRIPTION
	SINGLE RECEPTACLE, 125V, 30A, NEMA 5-30R
	DUPLEX RECEPTACLE, 125V, 20A, NEMA 5-20R
GFI	DUPLEX RECEPTACLE, GFI, 125V, 20A, NEMA 5-20R
	DUAL DUPLEX RECEPTACLE, 125V, 15A, NEMA 5-15R
GFI	DUPLEX RECEPTACLE, GFI, 125V, 15A, NEMA 5-15R
	DUPLEX RECEPTACLE, 125V, 15A, NEMA 5-15R
	DUPLEX RECEPTACLE, CEILING SURFACE MOUNTED, 125V, 15A, NEMA 5-15R
	DUAL DUPLEX RECEPTACLE, RAISED FLOOR MOUNT, 125V, 20A, NEMA 5-20R
	RECEPTACLE, 20A, 125V, 2P/3W, LOCKING, NEMA REF XX-20R
PP	POWER POLE, RECESS MOUNT
	PLUG-IN STRIP, AS SPECIFIED ON PLANS
	PANELBOARD, 240V OR 208V, RECESS MOUNT
	PANELBOARD, 240V OR 208V, SURFACE MOUNT
	PANELBOARD, 480V, RECESS MOUNT
	PANELBOARD, 480V, SURFACE MOUNT
FACP	FIRE ALARM CONTROL PANEL, SURFACE MOUNT
J	JUNCTION BOX, SIZE FOR WIRE FILL OR AS SPECIFIED
J	JUNCTION BOX, FLOOR MOUNT
G	GENERATOR, AS SPECIFIED ON PLANS
	GROUND ROD
	GROUND
	TRANSFORMER, PAD MOUNT/POLE MOUNT AS SCHEDULED
EMCS	EMERGENCY MANAGEMENT CONTROL SYSTEM PANEL
C-TV	CABLE TV OUTLET,
	EXPOSED RACEWAY, CROSS LINES INDICATE WIRE NUMBER (| -PHASE, | -NEUTRAL, ? -SWITCH, ? -GROUND)
	CONCEALED RACEWAY, IN WALLS OR ABOVE CEILING
	POINT OF CONNECTION FROM NEW TO EXISTING CONSTRUCTION
	HOMERUN, NUMBER OF ARROWS INDICATES NUMBER OF PHASES
	MOTOR CONTROLLER, MOUNT TOP AT 72" ABOVE FLOOR UNLESS NOTE OTHERWISE

STANDARD SYMBOLS - POWER

SYMBOL	DESCRIPTION
C	BALANCED MAGNETIC SWITCH
	SAFETY SWITCH AND MOTOR CONTROLLER, COMBINATION, PROVIDE WITH ELECTRICAL LOCK-OUT PROVISIONS. MOUNT TOP AT 72" ABOVE FLOOR UNLESS NOTE OTHERWISE
	FUSED DISCONNECT, MOUNT TOP AT 72" ABOVE FLOOR UNLESS NOTE OTHERWISE
	SAFETY SWITCH, MOUNT TOP AT 72" ABOVE FLOOR UNLESS NOTE OTHERWISE
	ENCLOSED BREAKER, MOUNT TOP AT 72" ABOVE FLOOR UNLESS NOTE OTHERWISE
SFR	SWITCH-MOTOR RATED, THERMAL OVERLOAD, FOR FRACTIONAL HORSEPOWER MOTORS
	CABLE TRAY
	ELECTRICAL PRIMARY, AERIAL
	ELECTRICAL PRIMARY, AERIAL, EXISTING
	ELECTRICAL PRIMARY, UNDERGROUND
	ELECTRICAL PRIMARY, UNDERGROUND, EXISTING
	ELECTRICAL SECONDARY, AERIAL
	ELECTRICAL SECONDARY, AERIAL, EXISTING
	ELECTRICAL SECONDARY, UNDERGROUND
	ELECTRICAL SECONDARY, UNDERGROUND, EXISTING
	ELECTRICAL DUCTBANK
F	CEILING FAN, RECESSED
WH	WATT-HOUR METER
	CONDUIT OR WIRE REPAIR ITEM
HOA	HAND-OFF-AUTO SWITCH
	START/STOP STATION
_S	AUXILIARY SWITCH - FIRST LETTER DENOTES SWITCH TYPE P=PRESSURE; T=TEMPERATURE; V=VIBRATION; F=FLOW
	ON/OFF SWITCH
S	STOP PUSH BUTTON

STANDARD SYMBOLS - LIGHTING

SYMBOL	DESCRIPTION
	WALL PACK, WALL MOUNT
	LED LIGHT, WALL MOUNT
	LED LIGHT, WALL MOUNT, EMERGENCY
	LED LIGHT, RECESSED MOUNT

STANDARD SYMBOLS - LIGHTING

SYMBOL	DESCRIPTION
	LED LIGHT, RECESSED, SURFACE OR PENDANT MOUNT (SEE FIXTURE SCHEDULE FOR MOUNTING TYPE)
	LED LIGHT, SURFACE, PENDANT, OR RECESSED MOUNT, EMERGENCY (SEE FIXTURE SCHEDULE FOR MOUNTING TYPE)
	LED LIGHT, STRIP
	LED LIGHT, STRIP, NIGHT LIGHT
	LED LIGHT, STRIP, EMERGENCY
	LED LIGHT, CEILING OR PENDANT
	LED LIGHT, RECESSED
	EXIT LIGHT, WALL MOUNT, SINGLE FACE, 90 MINUTE BATTERY PACK, R LETTER MEANS RECESSED
Sa	SWITCH, SINGLE POLE SINGLE THROW (SPST) SWITCH, SMALL LETTER INDICATES DEVICE SWITCHED
S2a	SWITCH, DOUBLE POLE SINGLE THROW (DPST) SWITCH, SMALL LETTER INDICATES DEVICE SWITCHED (IF USED)
S3a	SWITCH, SINGLE POLE DOUBLE THROW (SPDT-3 POLE) SWITCH, SMALL LETTER INDICATES DEVICE SWITCHED (IF USED)
S4a	SWITCH, DOUBLE POLE DOUBLE THROW (DPDT-4 POLE) SWITCH, SMALL LETTER INDICATES DEVICE SWITCHED (IF USED)
SDa	SWITCH, SINGLE POLE, DIMMING TYPE SWITCH, SMALL LETTER INDICATES DEVICE SWITCHED (IF USED)
SEPO	SWITCH, EMERGENCY POWER OFF
SWPa	SWITCH, SINGLE POLE, WEATHERPROOF SWITCH, SMALL LETTER INDICATES DEVICE SWITCHED (IF USED)
PE	PHOTOCELL, HEAVY DUTY DIE CAST HOUSING, SPST, 120V OR 208/277V, 1800VA
OC	OCCUPANCY SENSOR, CEILING MOUNT
H	HUMIDITY SENSOR, CEILING MOUNT

STANDARD SYMBOLS - COMM/DATA

SYMBOL	DESCRIPTION
	DATA OUTLET, WALL MOUNT
	DATA JACK, FLOOR MOUNT
	COMBINATION DATA/TELEPHONE OUTLET, WALL MOUNT
	COMBINATION DATA/TELEPHONE JACK, FLOOR MOUNT
	TELEPHONE OUTLET, WALL MOUNT
	TELEPHONE JACK, FLOOR MOUNT
PA	PA/AUDIO,
SP	SPEAKER CEILING MOUNTED
SP	SPEAKER WALL MOUNTED
	COMMUNICATION CABLE, UNDERGROUND, EXISTING
	FIBER OPTIC CABLE

ANNOTATIVE SYMBOLS

X	KEY NOTE, X - DENOTES THE KEY NOTE NUMBER
XX	CIRCUIT IDENTIFICATION, XX - DENOTES FEEDER NUMBER/IDENTIFICATION

X
Y Z

TITLE

NOT TO SCALE

DETAIL BUBBLE,
TITLE - INDICATES THE TITLE OF THE DETAIL
SCALE - INDICATES THE SCALE OF THE DETAIL (IF APPLICABLE)
X - DENOTES DETAIL NUMBER
Y - DENOTES SHEET NUMBER
Z - DENOTES REFERENCE SHEET NUMBER

ABBREVIATIONS

A	AMPERE(S)	F.C.O.	FLOOR CLEAN OUT	N.T.S.	NOT TO SCALE
A.C.	ABOVE COUNTER	F.D.	FIRE DAMPER	O	OXYGEN
A/C	AIR CONDITIONED	FLR	FLOOR	O.A.	OUTSIDE AIR
A.D.	ACCESS DOOR	FPM	FEET PER MINUTE	OBD	OPPOSED BLADE DAMPER
A.F.F.	ABOVE FINISHED FLOOR	F.S.D.	FIRE/SMOKE DAMPER	O.C.	ON CENTER
AHU	AIR HANDLING UNIT	FT	FEET, FOOT	O.H.	OVERHEAD
AP	ACCESS PANEL	GFCI	GROUND FAULT CURRENT INTERRUPTER	P	PUMP
AS	AIR SEPARATOR	GND.	GROUND	PRV	PRESSURE REDUCING VALVE
B	BOILER	GPM	GALLONS PER MINUTE	PSIG	POUNDS PER SQUARE INCH
B.F.	BELOW FLOOR	GW	GREASE WASTE	QTY.	QUANTITY
B.G.	BELOW GRADE	H	HOOD	RA	RETURN AIR
CB	CIRCUIT BREAKER	HP	HORSEPOWER	REQ'D	REQUIRED
CH	WATER COOLED CHILLER	HW	HOT WATER	RPM	REVOLUTIONS PER MINUTE
CISP	CAST IRON SOIL PIPE	HWCP	HOT WATER CIRCULATION PUMP	RTU	ROOF TOP UNIT
CKT	CIRCUIT	HZ	HERTZ	SC	SHARED CIRCUIT
CLG.	CEILING	IN.	INCHES	S.D.	SMOKE DAMPER
C.O.	CLEANOUT	IN. WTR.	INCHES OF WATER	SF	SUPPLY FAN
CPT	COMPRESSION TANK	IG	ISOLATED GROUND	SP	STATIC PRESSURE
CT	COOLING TOWER	J-BOX	JUNCTION BOX	ST	STEAM
CU	CONDENSING UNIT	KVA	KILOVOLT AMPERE	SW	SWITCH
CW	COLD WATER	KW	KILOWATT	SWBD	SWITCHBOARD
DB	DRY BULB	LOUV.	LOUVER	T.C.	TIME CLOCK
DIA.	DIAMETER	LAT	LEAVING AIR TEMPERATURE	TEL.	TELEPHONE
DN.	DOWN	M.V.	MEDICAL VACUUM	TMV	THERMOSTATIC MIXING VALVE
DWG.	DRAWING	MAX.	MAXIMUM	TV	TELEVISION
(E)	EXISTING ITEM TO REMAIN	MIN.	MINIMUM	TYP.	TYPICAL
EA.	EACH	MLO	MAIN LUGS ONLY	UH	UNIT HEATER
EAT	ENTERING AIR TEMPERATURE	MAU	MAKE UP AIR UNIT	U.N.O.	UNLESS NOTED OTHERWISE
ED	EJECTION DISCHARGE	N	NITROGEN	V	VOLT(S)
EF	EXHAUST FAN	N2O	NITROUS OXIDE	VFD	VARIABLE FREQUENCY DRIVE
ESP	EXTERNAL STATIC PRESSURE	N.C.	NORMALLY CLOSED	V.T.R.	VENT THRU ROOF
EWT	ENTERING WATER TEMPERATURE	NIC	NOT IN CONTRACT	W.C.O.	WALL CLEAN OUT
EXST	EXISTING	NL	NIGHT LIGHT	WH	WATER HEATER
°F	DEGREES FAHRENHEIT	N.O.	NORMALLY OPEN	WP	WEATHERPROOF

GENERAL NOTES:

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH CODES ADOPTED BY THE AUTHORITY HAVING JURISDICTION (AHJ) AND THE REQUIREMENTS STATED IN THE RFP, UNIFIED FACILITY CRITERIA AND APPLICABLE SECTIONS OF THE NATIONAL FIRE CODES (NFPA STANDARDS) CURRENT AT THE RFP WAS AMENDMENTS TO THESE CODES AS SET FORTH BY THE AUTHORITY HAVING JURISDICTION SHALL SUPERSEDE THESE CODES AND NFPA STANDARDS AS ISSUED.

1. INTERRELATION BETWEEN THE DRAWINGS AND THE SPECIFICATIONS: IN GENERAL, THE DRAWINGS INDICATE LOCATIONS, QUANTITIES AND CAPACITIES AND THE SPECIFICATIONS INDICATE QUALITY, OPTIONS, WARRANTIES AND COMPLIANCE STANDARDS. IN THE EVENT THERE IS A CONFLICT BETWEEN THE SPECIFICATIONS AND THE DRAWINGS, THE GREATER QUALITY OR QUANTITY SHALL BE REQUIRED. IN ALL CASES, THE ENGINEER OF RECORD SHALL BE THE INTERPRETER OF THE DOCUMENTS.
2. INTERRELATION BETWEEN THE DRAWINGS: IN THE EVENT OF A CONFLICT BETWEEN A DETAIL AND A FLOOR PLAN, THE LARGER SIZE, QUANTITY, LENGTH OR OPTIONS SHALL BE REQUIRED. IN THE EVENT OF A CONFLICT BETWEEN WHAT IS SHOWN ON THE FLOOR PLAN AND A KEYED NOTE, THE KEYED NOTE SHALL GOVERN. IN ALL CASES, THE ENGINEER OF RECORD SHALL BE THE INTERPRETER OF THE DOCUMENTS.
4. PRIOR TO BIDDING, THE DIVISION 26 INSTALLER SHALL VISIT THE JOB SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND TO VERIFY LOCATIONS AND SIZES OF EXISTING EQUIPMENT, CONDUCTORS, ETC. SUBMITTAL OF A BID SHALL SIGNIFY WILLINGNESS TO COMPLY WITH THE CONSTRUCTION DOCUMENTS AND ACCEPTANCE OF ON-SITE CONDITIONS AS THEY EXIST.
5. THE EXISTENCE AND LOCATION OF UTILITIES, MECHANICAL SYSTEMS, ELECTRICAL SYSTEMS AND OTHER CONSTRUCTION INDICATED AS EXISTING ARE NOT GUARANTEED. BEFORE BEGINNING WORK, INVESTIGATE AND VERIFY THE EXISTENCE AND LOCATION OF MECHANICAL AND ELECTRICAL SYSTEMS AND OTHER CONSTRUCTION AFFECTING THE WORK.
6. COOPERATE FULLY WITH SEPARATE CONTRACTORS SO WORK ON THOSE CONTRACTS MAY BE CARRIED OUT SMOOTHLY, WITHOUT INTERFERING WITH OR DELAYING WORK UNDER THIS CONTRACT. COORDINATE THE WORK OF THIS CONTRACT WITH WORK PERFORMED UNDER SEPARATE CONTRACTS.
7. DO NOT INTERRUPT UTILITIES SERVING FACILITIES OCCUPIED BY GOVERNMENT OR OTHERS UNLESS PERMITTED BY THE GOVERNMENT . THE CONTRACTOR SHALL PROVIDE THE GOVERNMENT WITH A MINIMUM 14 DAYS NOTIFICATION, UON
8. THE DRAWINGS ARE DIAGRAMMATIC ONLY AND SHALL NOT BE SCALED. NOT ALL NEC REQUIRED ITEMS SUCH AS RACEWAYS, CONDUCTORS, GROUNDING SYSTEMS, ETC. CAN BE SHOWN. FURNISH AND INSTALL RACEWAYS, CONDUCTORS, ETC. AS REQUIRED FOR A COMPLETE AND FUNCTIONAL, NEC COMPLIANT SYSTEM.
9. THE INSTALLER IS RESPONSIBLE FOR COORDINATING WITH OTHER TRADES. THE INSTALLER SHALL NOT INSTALL OR FABRICATE ANY WORK SHOWN UNTIL ALL SUCH WORK IS FULLY COORDINATED. FURNISH AND INSTALL ADDITIONAL RACEWAYS, CONDUCTORS, ETC. AS REQUIRED TO COORDINATE THE INSTALLATION WITH OTHER TRADES AS PART OF THE WORK.
10. TAKE FIELD MEASUREMENTS AS REQUIRED TO FIT THE WORK PROPERLY. RECHECK MEASUREMENTS BEFORE INSTALLING EACH PRODUCT. WHERE PORTIONS OF THE WORK ARE INDICATED TO FIT TO OTHER CONSTRUCTION, VERIFY DIMENSIONS OF OTHER CONSTRUCTION BY FIELD MEASUREMENTS BEFORE FABRICATION. COORDINATE FABRICATION SCHEDULE WITH CONSTRUCTION PROGRESS TO AVOID DELAYING THE WORK. FURNISH AND INSTALL ADDITIONAL RACEWAYS, CONDUCTORS, ETC. AS REQUIRED TO ACCOMMODATE FIELD CONDITIONS AS PART OF THE WORK.
11. THE WORK SHALL BE SUPERVISED BY A MASTER ELECTRICIAN TO ASSURE THAT ALL WORK IS INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND THE CONSTRUCTION DOCUMENTS.
12. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF LIGHTING FIXTURES.
13. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE TO THE PROPER SIDE OF THE DOOR ANY SWITCH, RECEPTACLE OR DEVICE BEING AFFECTED BY ANY CHANGE IN DIRECTION OF DOOR SWINGS AS SHOWN ON THE ARCHITECTURAL FLOOR PLAN.
14. MECHANICAL EQUIPMENT SIZES ARE AS DESIGNED, BREAKERS, CONDUIT, STARTERS, CONDUCTORS, ETC., SHALL BE ADJUSTED TO THE EQUIPMENT SUBMITTED AND APPROVED FOR INSTALLATION ON THIS PROJECT.
15. REMOTE MOUNTED MOTORS SHALL BE PROVIDED WITH RECEPTACLES AND PLUGS OR DISCONNECT SWITCHES TO BE COMPATIBLE WITH THE CONSTRUCTION TYPE AND THE NEC.
16. EACH MOTOR BEING INSTALLED ON THIS CONTRACT SHALL BE PROVIDED WITH THERMAL PROTECTION IN EITHER A MANUAL OR MAGNETIC STARTER. THERMAL ELEMENTS SHALL BE SIZED AND INSTALLED ACCORDING TO THE NAMEPLATE FULL LOAD AMP RATING OF THE MOTOR.
17. KILOWATT (KW) RATINGS FOR EQUIPMENT MOTOR LOADS ARE AS DESIGNED WITH 90% POWER FACTOR RATING ASSUMED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INCREASING THE SIZE, AS REQUIRED, OF ALL FEEDERS AND PROTECTIVE DEVICES SERVING ANY ITEMS OF EQUIPMENT SUPPLIED WITH POWER FACTOR RATINGS LESS THAN 90% EFFICIENCY.
18. IN ALL AREAS THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE ELECTRICAL AND MECHANICAL TRADES TO PROVIDE CLEARANCE ABOVE CEILING BETWEEN RECESSED LIGHTING FIXTURES AND THERMAL INSULATION OR DUCTWORK IN ACCORDANCE WITH THE NEC, PARAGRAPH 410-66.
19. A CIRCUIT SHALL BE DEFINED TO INCLUDE ALL OF THE FOLLOWING: CONDUIT, CONDUCTORS, BOXES, WIRING DEVICES, COVERPLATES, WIREWAYS, ETC.
20. MULTIWIRE BRANCH CIRCUITS AS DEFINED BY THE NATIONAL ELECTRICAL CODE SHALL NOT BE USED. A DEDICATED NEUTRAL CONDUCTOR SHALL BE RUN FOR EACH BRANCH CIRCUIT, UON.
21. THE CONTRACTOR SHALL LABEL EACH JUNCTION/PULL BOX COVER PLATE WITH THE CIRCUIT NUMBER OF THE CIRCUITS IT CONTAINS. LABEL EACH EXTING CONDUIT AT THE POINT WHERE IT EXITS THE JUNCTION BOX WITH THE CIRCUIT NUMBER IT CONTAINS. IF THE RACEWAY SYSTEM IS IN AN EXPOSED AREA LABEL THE INSIDE OF THE JUNCTION/PULL BOX COVER PLATE ONLY.
22. LABEL THE RECEPTACLE AND LIGHT SWITCH FACEPLATES WITH THE CIRCUIT DESIGNATION. THE LABEL SHALL BE CLEAR WITH 1/4" BLACK LETTERS AND SHALL BE MACHINE PRINTED.
23. RECEPTACLES RATED FOR 15A OR 20A/125V AND INSTALLED WITHIN 6FT OF THE OUTSIDE OF A SINK SHALL BE GFCI PROTECTED. IF THE RECEPTACLE IS NOT ACCESSIBLE THEN A GFCI PROTECTED CIRCUIT BREAKER SHALL BE USED.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

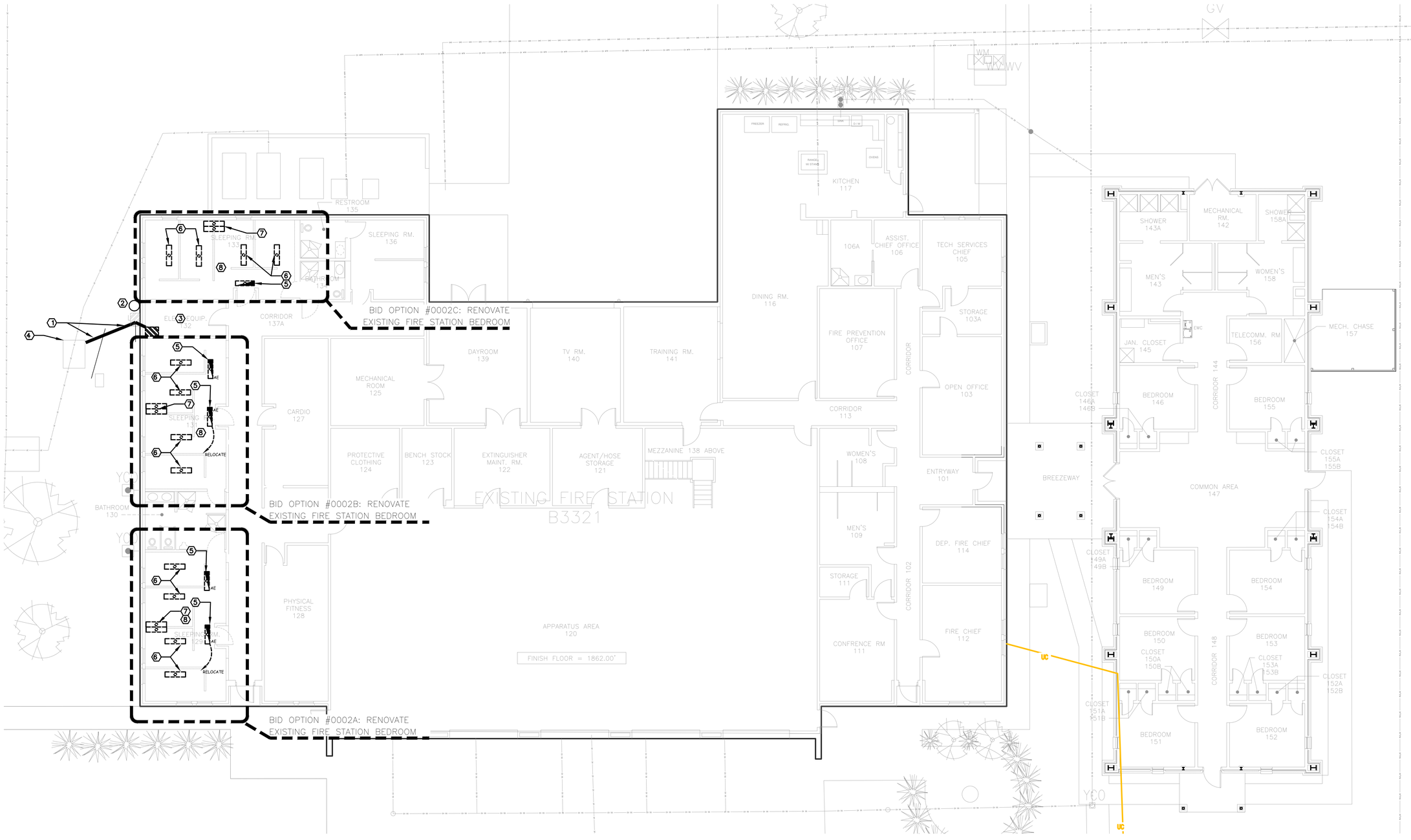
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: ELECTRICAL SYMBOLS NOTES & ABBREVIATIONS

Date: SEP 2023

SEQ.	SHEET	OF
38	E-001	50



KEYNOTES AS NOTATED BY ⟨X⟩

1. EXISTING UNDERGROUND SERVICE CIRCUIT FROM TRANSFORMER TO MAIN DISTRIBUTION PANEL. (MDP)
2. CONTRACTOR SHALL DEMO EXISTING MAIN SERVICE DISCONNECT AND METER.
3. CONTRACTOR SHALL DEMOLISH EXISTING MDP.
4. EXISTING 150KVA TRANSFORMER AND PAD
5. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING EMERGENCY LIGHTING IN ROOMS 129 AND 131. NEW LAMPS SHALL BE CONNECTED TO THE SAME CIRCUIT FEEDING EMERGENCY LIGHTING IN THESE TWO ROOMS.
6. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING LIGHT FIXTURES WITH NEW DIMMABLE LED EQUIVALENT AS SHOWN ON E601 LIGHTING SCHEDULE. REPLACE SWITCHES CONTROLLING THESE LIGHTS BY SWITCHES. CONTRACTOR SHALL ENSURE TO RELOCATE SWITCHES FOR EACH NEWLY PARTITIONED ROOM.
7. CONTRACTOR SHALL DEMOLISH EXISTING WALL MOUNTED FIXTURES. EXISTING CIRCUITS ARE TO REMAIN AND ENCLOSED IN JUNCTION BOXES ABOVE THE CEILING.
8. CONTRACTOR SHALL RELOCATE CIRCUITS IN BID OPTION ROOMS AS NEEDED TO ALLOW FOR NEW RECESSED FIXTURES AS SHOWN ON A-201

GENERAL NOTES

1. THESE WORK PLANS ARE ONLY MEANT TO CONVEY THE SCOPE OF WORK FOR CONTRACTOR BIDDING AND REFERENCE PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY PLANS, DRAWINGS, LINE DIAGRAMS, PANEL AND LOAD CALCULATIONS BEARING THE SEAL OF AN ELECTRICAL ENGINEER TO ENSURE THE COMPLETE INSTALLATION OF ALL NECESSARY ELECTRICAL SYSTEMS IN THE NEW ADDITION AND BID OPTION AREAS, IF AWARDED.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS, EQUIPMENT, CURRENT PANEL CAPACITY, NEW LOAD REQUIREMENTS, AND DIMENSIONS PRIOR TO START OF WORK.
3. PLACEMENT OF NEW SERVICE CIRCUIT, NEW MAIN SERVICE DISCONNECT, AND NEW MDP SHALL BE DONE BEFORE DEMOLITION. CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO FACILITY TO AVOID POWER INTERRUPTION. THE CONTRACTOR SHALL ENSURE TO HAVE ELECTRICAL EQUIPMENT AND MATERIALS INCLUDING PANELS, SWITCHES, WIRING, CONDUIT, AND ACCESSORIES READY AND AVAILABLE AT THE SITE PRIOR TO BEGINNING WORK ON THE EXISTING FIRE STATION.
4. THE CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO, ELECTRICAL, HVAC, STRUCTURAL AND GENERAL ARCHITECTURE.
5. EXISTING OUTLETS AND RECEPTACLES IN BID OPTION ROOMS ARE TO REMAIN UNLESS NOTED OTHERWISE.
6. THE GOVERNMENT HAS CONFIRMED WITH AEP, AS THE PRIMARY UTILITY PROVIDER, THAT A NEW, AND OR, UPSIZED TRANSFORMER WILL NOT BE REQUIRED TO PERFORM THE DESCRIBED IN THESE DRAWINGS.
7. CONTRACTOR SHALL DO ALL ELECTRICAL INSTALLATION ACCORDING NEC AND UFC STANDARDS.
8. IN BID OPTION AREAS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLISHING ANY EXISTING PUBLIC ANNOUNCING (PA) SPEAKERS, AND REUSING EXISTING CIRCUITS FOR NEW WORK. CONTRACTOR SHALL INSTALL NEW SOFT-START PUBLIC ANNOUNCING SPEAKERS IN EACH BEDROOM SIMILAR TO THOSE REQUIRED IN THE NEW ADDITION.

6TH CIVIL ENGINEER SQUADRON
READY - WILLING - ABLE

Designed by: JH/RM/LA
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Submitted by: I7CES

PROJECT TITLE

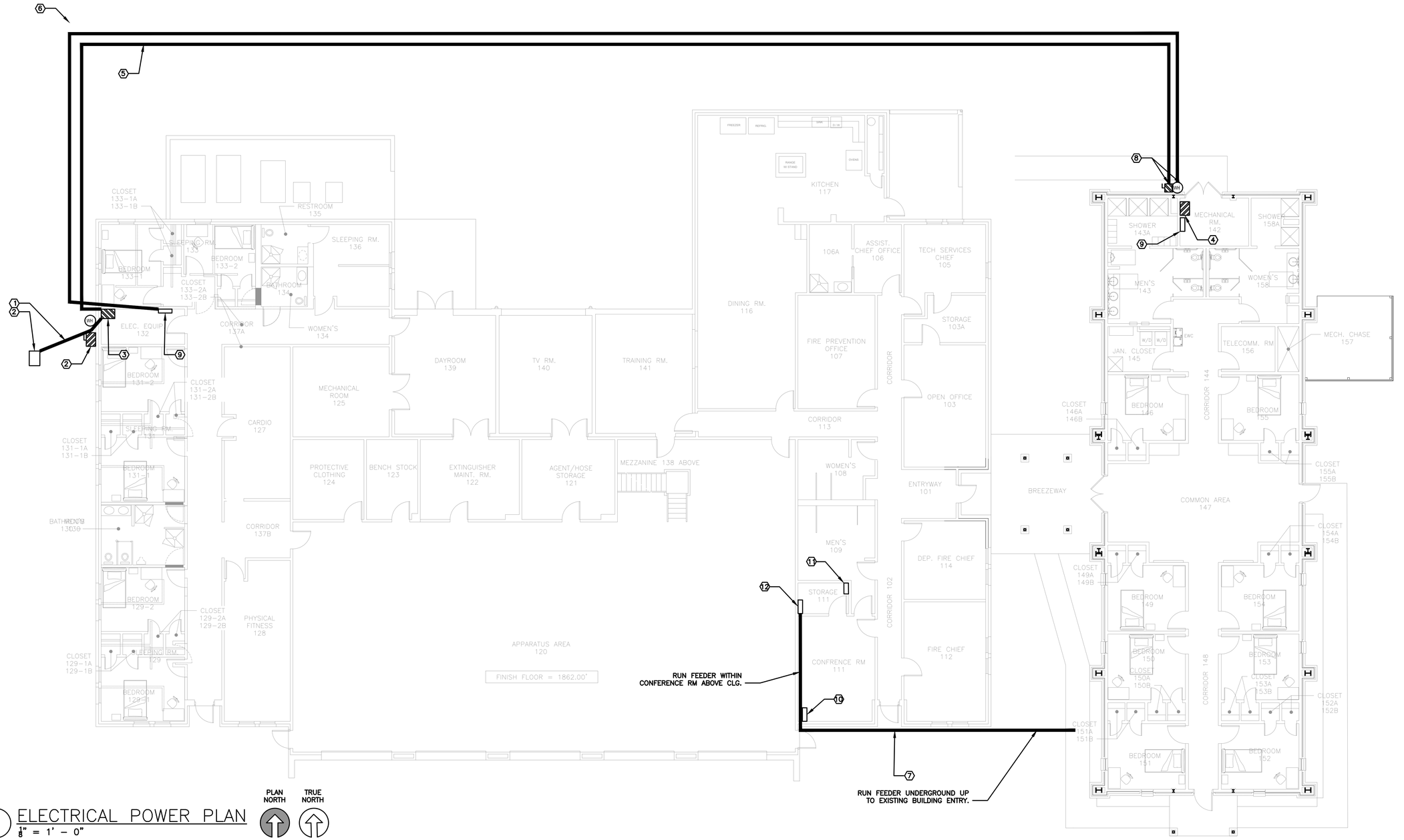
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: ELECTRICAL DEMOLITION PLAN

Date: SEP 2023

SEQ.	SHEET	OF
39	ED-101	50



1 ELECTRICAL POWER PLAN
1" = 1' - 0"

KEYNOTES AS INDICATED BY ⓧ

1. EXISTING UNDERGROUND SERVICE CONNECTION.
2. CONTRACTOR SHALL PROVIDE NEW GROUNDED MAIN SERVICE DISCONNECT AND METER. SIZE AND TYPE AS DETERMINED BY ELECTRICAL ENGINEER.
3. CONTRACTOR SHALL SIZE, FURNISH, AND INSTALL A NEW MAIN DISTRIBUTION PANEL AS NEEDED TO SUPPORT CURRENT FIRE STATION FUNCTIONS AND NEW BUILDING ADDITION.
4. CONTRACTOR SHALL PROVIDE NEW D1 PANEL INSIDE NEW ADDITION BUILDING MECHANICAL ROOM, INCLUDING NEW METER AND MAIN DISCONNECT OUTSIDE MECH ROOM. ALL D1 PANEL CIRCUIT BREAKERS SHALL BE INVERSE TIME CB RATED FOR OVERLOAD PROTECTION.
5. CONTRACTOR SHALL PROVIDE NEW 250FT UNDERGROUND FEEDER CIRCUIT FROM MDP TO D1
6. CONTRACTOR SHALL PROVIDE NEW C-TV FEEDER IN PVC CONDUIT FROM EXISTING SUDDENLINK SERVICE ENTRANCE TO NEW C-TV SPLITTER BOX. CONTRACTOR SHALL PROVIDE ALL NEEDED EQUIPMENT IN EXISTING SUDDENLINK ENTRANCE TO ACCOMMODATE NEW CONNECTION. NEW FLUSH MOUNTED SPLITTER BOX SHALL COLLECT ALL C-TV IN NEW BUILDING. SEE E-301
7. NEW VOICE/DATA/PA FEEDER FROM NEW BUILDING TO EXISTING TELEPHONE BOARD/DATA SWITCHES/SPEAKER BOX. CONTRACTOR SHALL PROVIDE NEW TELEPHONE/DATA/PA FEEDER IN PVC CONDUIT FROM NEW BUILDING FLUSH MOUNTED COLLECTION POINT BOX TO EXISTING TELEPHONE BOARD/DATA SWITCHES/SPEAKERS AMPLIFIER BOX. CONTRACTOR SHALL PROVIDE NEW DATA SWITCH NEXT TO EXISTING ONES ON B3321 TO ACCOMMODATE FOR NEW DEMAND. REFER TO DIVISION 27 "STATEMENT OF OBJECTIVES (SOO)" FOR ADDITIONAL INFORMATION.
8. REFER TO ONE-LINE DIAGRAM ON E-601 FOR CIRCUIT/CONDUCTORS SPECIFICATIONS.
9. EXISTING C-TV BOX
10. EXISTING SPEAKER AMPLIFIER BOX
11. EXISTING RELAYS CONTROL BOX
12. EXISTING TELEPHONE BOARD AND DATA SWITCHES

GENERAL NOTES

1. THESE WORK PLANS ARE ONLY MEANT TO CONVEY THE SCOPE OF WORK FOR CONTRACTOR BIDDING AND REFERENCE PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY PLANS, DRAWINGS, LINE DIAGRAMS, PANEL AND LOAD CALCULATIONS BEARING THE SEAL OF AN ELECTRICAL ENGINEER TO ENSURE THE COMPLETE INSTALLATION OF ALL NECESSARY ELECTRICAL SYSTEMS IN THE NEW ADDITION AND BID OPTION AREAS, IF AWARDED.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS, EQUIPMENT, CURRENT PANEL CAPACITY, NEW LOAD REQUIREMENTS, AND DIMENSIONS PRIOR TO START OF WORK.
3. PLACEMENT OF NEW SERVICE CIRCUIT, NEW MAIN SERVICE DISCONNECT, AND NEW MDP SHALL BE DONE BEFORE DEMOLITION. CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO FACILITY TO AVOID POWER INTERRUPTION. THE CONTRACTOR SHALL ENSURE TO HAVE ELECTRICAL EQUIPMENT AND MATERIALS INCLUDING PANELS, SWITCHES, WIRING, CONDUIT, AND ACCESSORIES READY AND AVAILABLE AT THE SITE PRIOR TO BEGINNING WORK ON THE EXISTING FIRE STATION.
4. THE CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO, ELECTRICAL, HVAC, STRUCTURAL AND GENERAL ARCHITECTURE.
5. EXISTING OUTLETS AND RECEPTACLES IN BID OPTION ROOMS ARE TO REMAIN UNLESS NOTED OTHERWISE.
6. THE GOVERNMENT HAS CONFIRMED WITH AEP, AS THE PRIMARY UTILITY PROVIDER, THAT A NEW, AND OR, UPSIZED TRANSFORMER WILL NOT BE REQUIRED TO PERFORM THE DESCRIBED IN THESE DRAWINGS.
7. CONTRACTOR SHALL DO ALL ELECTRICAL INSTALLATION ACCORDING NEC AND UFC STANDARDS.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7/CES

PROJECT TITLE

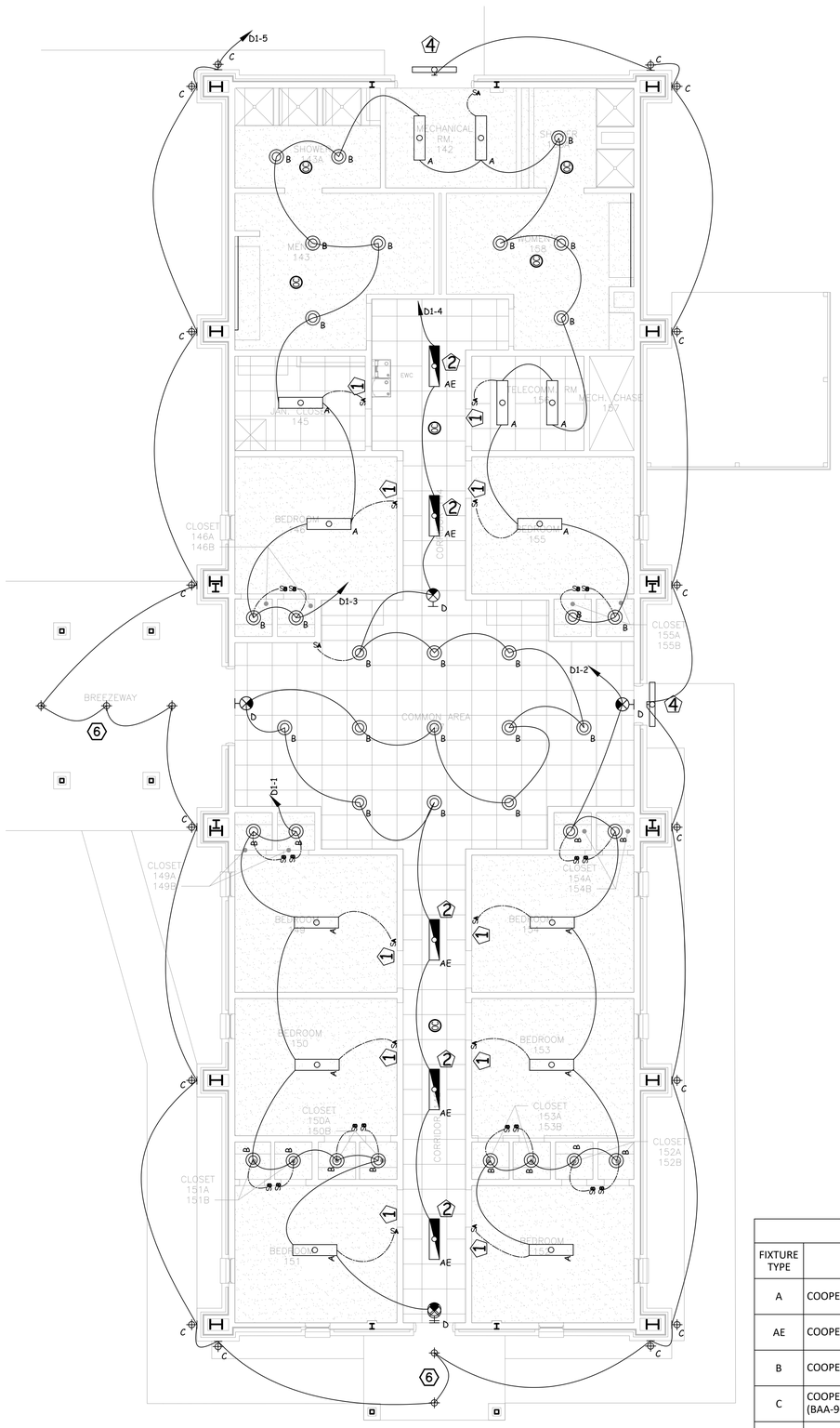
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: ELECTRICAL POWER SUPPLY

Date: SEP 2023

SEQ.	SHEET	OF
40	E-101	50



1 LIGHTING PLAN
3/16" = 1' – 0"

KEYNOTES AS INDICATED BY ⟨X⟩

1. ALL SWITCHES SA AND LIGHTS CONTROLLED BY THEM SHALL BE DIMMABLE SWITCHES
2. ALL CORRIDOR LIGHTING SHALL BE CONTROLLED BY OCCUPANCY SENSORS
3. NOT USED
4. OUTDOOR LIGHTING SHALL BE PHOTOCELL CONTROLLED AS INDICATED. CONTRACTOR SHALL PROVIDE SURFACE MOUNTED LED WALL PACKS ABOVE MECH. RM 142 AND EAST COMMON AREA RM147 ENTRANCES. COORDINATE WITH GAFB BASE STANDARDS FOR STANDARD PRODUCT TYPE.
5. RESTROOM LIGHTS TO BE CONTROLLED BY OCCUPANCY SENSORS.
6. CONTRACTOR SHALL PROVIDE SURFACE MOUNTED 6" LED ROUND LIGHTING, COMPLETE WITH CIRCUIT, AND CONDUIT BENEATH PORCH CANOPY AND BREEZEWAY. COORDINATE WITH GAFB BASE STANDARDS FOR STANDARD PRODUCT TYPE.

GENERAL NOTES

1. THESE WORK PLANS ARE ONLY MEANT TO CONVEY THE SCOPE OF WORK FOR CONTRACTOR BIDDING AND REFERENCE PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY PLANS, DRAWINGS, LINE DIAGRAMS, PANEL AND LOAD CALCULATIONS BEARING THE SEAL OF AN ELECTRICAL ENGINEER TO ENSURE THE COMPLETE INSTALLATION OF ALL NECESSARY ELECTRICAL SYSTEMS IN THE NEW ADDITION AND BID OPTION AREAS, IF AWARDED.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS, EQUIPMENT, CURRENT PANEL CAPACITY, NEW LOAD REQUIREMENTS, AND DIMENSIONS PRIOR TO START OF WORK.
3. PLACEMENT OF NEW SERVICE CIRCUIT, NEW MAIN SERVICE DISCONNECT, AND NEW MDP SHALL BE DONE BEFORE DEMOLITION. CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO FACILITY TO AVOID POWER INTERRUPTION. THE CONTRACTOR SHALL ENSURE TO HAVE ELECTRICAL EQUIPMENT AND MATERIALS INCLUDING PANELS, SWITCHES, WIRING, CONDUIT, AND ACCESSORIES READY AND AVAILABLE AT THE SITE PRIOR TO BEGINNING WORK ON THE EXISTING FIRE STATION.
4. THE CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO, ELECTRICAL, HVAC, STRUCTURAL AND GENERAL ARCHITECTURE.
5. EXISTING OUTLETS AND RECEPTACLES IN BID OPTION ROOMS ARE TO REMAIN UNLESS NOTED OTHERWISE.
6. THE GOVERNMENT HAS CONFIRMED WITH AEP, AS THE PRIMARY UTILITY PROVIDER, THAT A NEW, AND OR, UPSIZED TRANSFORMER WILL NOT BE REQUIRED TO PERFORM THE DESCRIBED IN THESE DRAWINGS.
7. CONTRACTOR SHALL DO ALL ELECTRICAL INSTALLATION ACCORDING NEC AND UFC STANDARDS.
8. ALL CONDUCTORS SHALL BE IN CONCEALED EMT CONDUITS IN WALLS OR ABOVE CEILING FOR INTERIOR APPLICATIONS AND IMC CONDUITS FOR EXTERIOR APPLICATIONS UNLESS NOTED OTHERWISE
9. MINIMUM CONDUCTOR SIZE ALLOWED IS #12 COPPER
10. CONTRACTOR SHALL PROVIDE ALL REQUIRED EQUIPMENTS TO PERFORM THIS JOB ACCORDING CODE, INDUSTRY STANDARDS, AND AS DESCRIBED EVEN IF ALL EQUIPMENT IS NOT LISTED ON THESE DRAWINGS.

LIGHT FIXTURE SCHEDULE

FIXTURE TYPE	MANUFACTURER MODEL #	DESCRIPTION	VOLTAGE / VA	MOUNTING	TYPE OF LAMPS	REMARKS
A	COOPER CRUZE ST (BAA-24CZ2-30-UNV-L840-CD-1-U)	2X4 LED TROFFER	120/277V 3000 LUMENS	SUSP. CLG. DROP IN	LED 4000K	
AE	COOPER CRUZE ST (BAA-24CZ2-30-UNV-EL14W-L840-CD-1-U)	2X2 LED TROFFER (EMERGENCY)	120/277V 3000 LUMENS	SUSP. CLG. DROP IN	LED 4000K	
B	COOPER PORTFOLIO (BAA-LD6C-10-90-40-D010-B26-M-1-H)	6" RECESSED CAN LIGHTING	120/277V 1100 LUMENS	RECESSED	LED 4000K	
C	COOPER LANERA (BAA-9002-W2-RW-LED3590-M-M-BZ-L1-UNV-WIS	UP/DN SURFACE MOUNTED EXT. LIGHT	120/277V	WALL MOUNTED	LED	
D	COOPER SURE-LITES (CX-7-1-SD)	SURFACE MOUNTED EXIT LIGHT		SURFACE MOUNTED	LED	
E	COOPER (BAA-S123DRP-S-560D-8-40-ETT-8FO-1-UNV-D0-F-W)	ARCHITECTURAL STRIP LIGHT	120/270V 560 LMS/FT	SURFACE MOUNTED	LED 4000K	

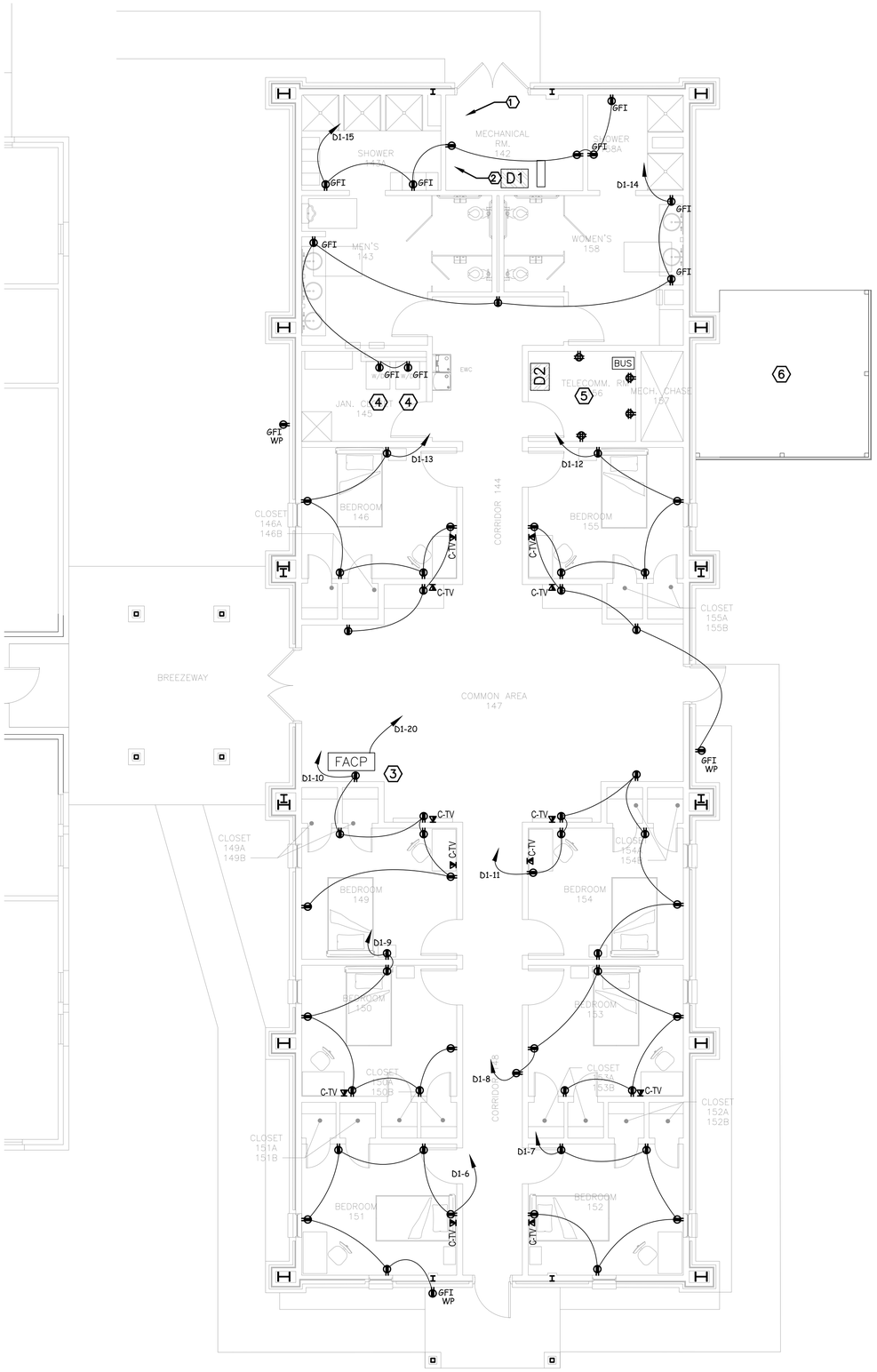
436 CIVIL ENGINEER SQUADRON
READY - WILLING - ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

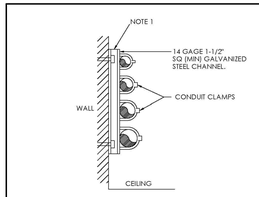
PROJECT TITLE
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839
SHEET TITLE: LIGHTING PLAN
Date: SEP 2023

SEQ. 41 | SHEET E-201 | OF 50

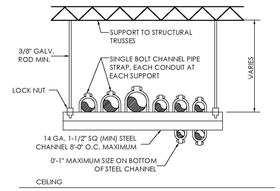


1 POWER PLAN
3/16" = 1' - 0"

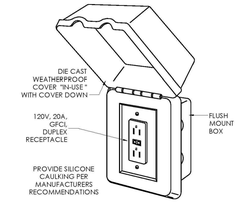


NOTES:
1. CONDUITS SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC.
2. CONDUITS SHALL BE INSTALLED AS CLOSE TO THE CEILING AS POSSIBLE.

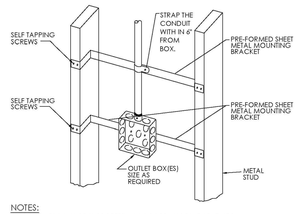
1 E-501 **WALL MOUNTED CONDUIT DETAIL**
NOT TO SCALE



2 E-501 **MULTIPLE CONDUIT SUPPORT DETAIL**
NOT TO SCALE

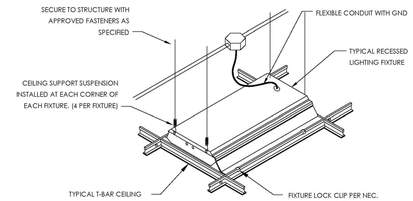


3 E-501 **RECEPTACLE DETAIL - WET LOCATION**
NOT TO SCALE



NOTES:
1. CONDUITS SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC.
2. THIS DETAIL TO BE USED FOR ALL OUTLET AND DEVICE BOX INSTALLATIONS NOT INCLUDED IN OTHER DETAILS. IF THE DEPTH OF BOX EXCEEDS 2-1/2", PROVIDE SUPPORT BRACKET SIMILAR TO AND EQUAL IN STRENGTH TO THE ONE SPECIFIED.

4 E-501 **BOX MOUNTING DETAIL**
NOT TO SCALE



5 E-501 **RECESSED FIXTURE MOUNTING DETAIL**
NOT TO SCALE

KEYNOTES

1. CONTRACTOR SHALL PROVIDE D1, ELECTRICAL PANEL. PROVIDE PANEL TYPE AND INSTALL AS SPECIFIED.
2. CONTRACTOR SHALL PROVIDE COAXIAL CABLE TV IN CONDUIT TO MECHANICAL ROOM NEW C-TV SPLITTER BOX
3. CIRCUIT BREAKER SERVING FACP CIRCUIT D1-20 SHALL HAVE AN APPROVED BREAKER LOCKING DEVICE TO COMPLY WITH NFPA 72
4. CONTRACTOR SHALL PROVIDE NEW GFCI OUTLETS, OR CIRCUITS APPROVED FOR WASHER AND DRYER USAGE.
5. CONTRACTOR SHALL PROVIDE DEDICATED ELECTRICAL PANEL FOR TELECOMMUNICATIONS ROOM IN ACCORDANCE WITH UFC 3-580-01 AND TIA-569-C. REFER TO DIVISION 27 "STATEMENT OF OBJECTIVES (SOO)" FOR ADDITIONAL INFORMATION.
6. CONTRACTOR SHALL PROVIDE NEW ELECTRICAL DISCONNECT AND DEDICATED CIRCUIT FOR NEW PACKAGED UNIT AND TELECOMMUNICATIONS ROOM FAN COIL UNIT.

GENERAL NOTES

1. THESE WORK PLANS ARE ONLY MEANT TO CONVEY THE SCOPE OF WORK FOR CONTRACTOR BIDDING AND REFERENCE PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY PLANS, DRAWINGS, LINE DIAGRAMS, PANEL AND LOAD CALCULATIONS BEARING THE SEAL OF AN ELECTRICAL ENGINEER TO ENSURE THE COMPLETE INSTALLATION OF ALL NECESSARY ELECTRICAL SYSTEMS IN THE NEW ADDITION AND BID OPTION AREAS, IF AWARDED.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS, EQUIPMENT, CURRENT PANEL CAPACITY, NEW LOAD REQUIREMENTS, AND DIMENSIONS PRIOR TO START OF WORK.
3. THE CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO, ELECTRICAL, HVAC, STRUCTURAL AND GENERAL ARCHITECTURE.
4. EXISTING OUTLETS AND RECEPTACLES IN BID OPTION ROOMS ARE TO REMAIN UNLESS NOTED OTHERWISE.
5. THE GOVERNMENT HAS CONFIRMED WITH AEP, AS THE PRIMARY ELECTRICAL SERVICE PROVIDER, THAT A NEW, AND OR, UPSIZED TRANSFORMER WILL NOT BE REQUIRED TO PERFORM THE DESCRIBED IN THESE DRAWINGS.
6. CONTRACTOR SHALL PERFORM ALL ELECTRICAL WORK ACCORDING NEC AND UFC STANDARDS.
7. THE CONTRACTOR SHALL PROVIDE GROUND CONDUCTOR FOR ALL CIRCUITS
8. ALL CONDUCTORS SHALL BE IN CONCEALED EMT CONDUITS IN WALLS OR ABOVE CEILING FOR INTERIOR APPLICATIONS AND IMC CONDUITS FOR EXTERIOR APPLICATIONS UNLESS NOTED OTHERWISE
9. MINIMUM CONDUCTOR SIZE ALLOWED IS #12 COPPER

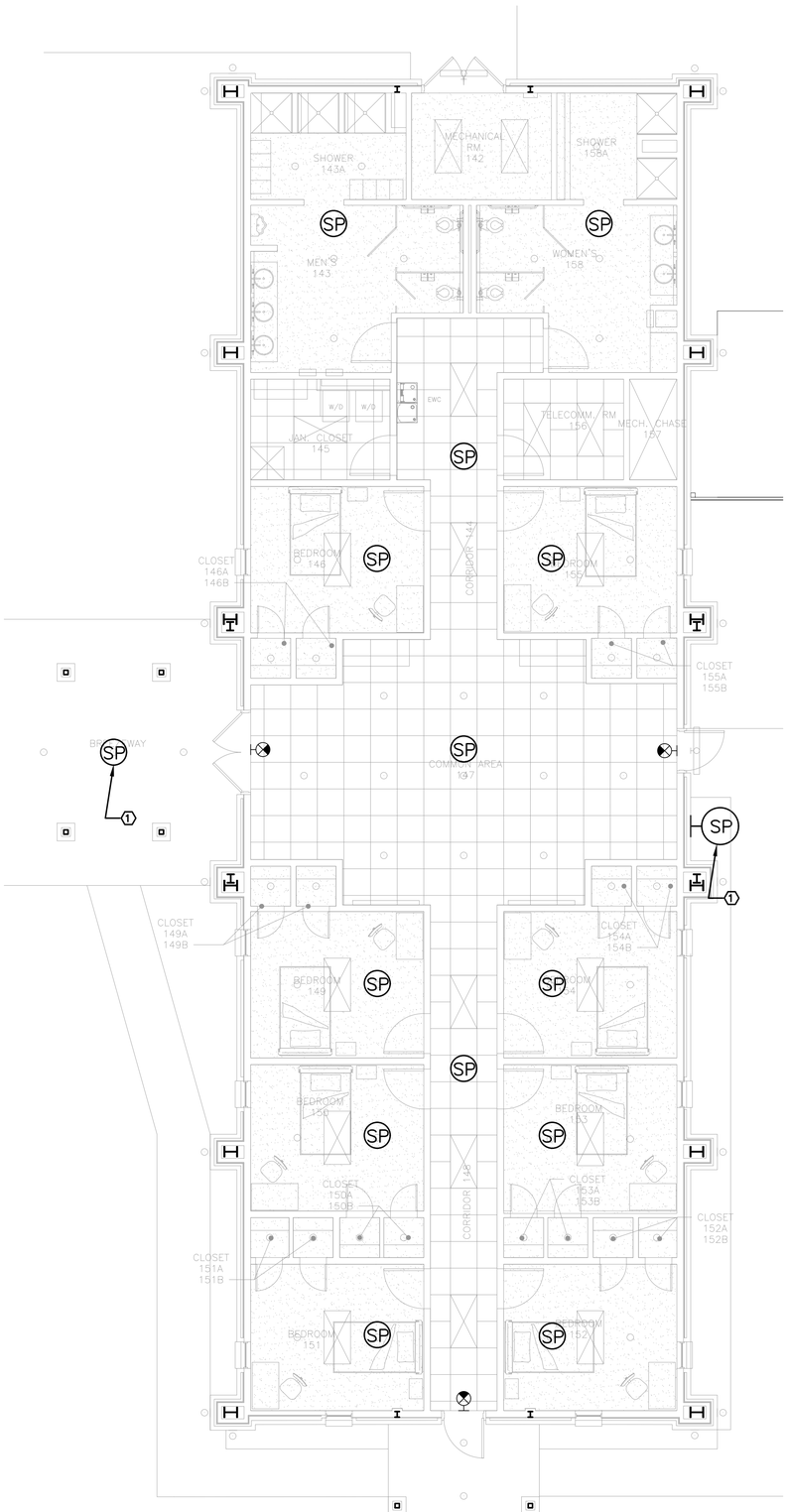
4TH CIVIL ENGINEER SQUADRON
READY - WILLING - ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839
SHEET TITLE: POWER PLAN
Date: SEP 2023

SEQ.	SHEET	OF
42	E-301	50



1 PA SYSTEM PLAN

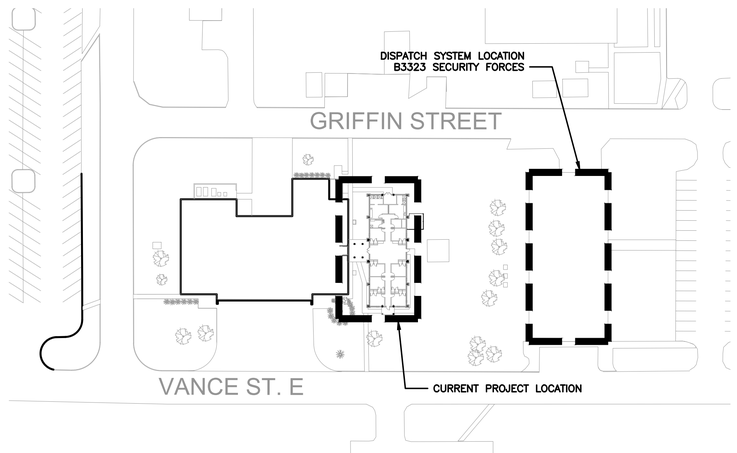
$\frac{3}{16}$" = 1' – 0"

KEYNOTES AS INDICATED BY ⓧ

1. OUTDOOR SPEAKERS SHALL BE RATED FOR OUTDOOR USE.

GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE DEDICATED ALERT SPEAKER WITH A SOFT–START AUDIO OUTPUT CONTROLLABLE FROM THE DISPATCH AND TIED INTO THE FIREFIGHTING ALERT SYSTEM/AMPLIFIER. CONTRACTOR SHALL TIE SPEAKERS TO ANY EXISTING ZONE IN THE PA/AMPLIFIER SYSTEM. SEE E–101
2. CONTRACTOR SHALL DO ALL ELECTRICAL INSTALLATION ACCORDING NEC AND UFC
3. ALL CONDUCTORS SHALL BE IN CONCEALED EMT CONDUITS IN WALLS OR ABOVE CEILING FOR INTERIOR APPLICATIONS AND IMC CONDUITS FOR EXTERIOR APPLICATIONS UNLESS NOTED OTHERWISE
4. MINIMUM CONDUCTOR SIZE ALLOWED IS #12 COPPER
5. CONTRACTOR SHALL PROVIDE ALL REQUIRED EQUIPMENTS TO PERFORM THIS JOB ACCORDING INDUSTRY STANDARDS AND AS DESCRIBED EVEN IF ALL EQUIPMENT IS NOT LISTED ON THESE DRAWINGS.



KEY PLAN

$\frac{1}{64}$" = 1' – 0"

17th CIVIL ENGINEER SQUADRON
READY - WILLING - ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: PA SYSTEM PLAN

Date: SEP 2023

SEQ.	SHEET	OF
43	E-401	50

FIRE STATION PANEL SCHEDULES
CONTRACTOR TO VERIFY

120 / 208 VOLT 3ϕ, 4W 600A MLO — PANEL MDP — SURFACE MOUNT

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	PHASE LOAD VA B	PHASE LOAD VA C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	--	--	/////	2,800 / 4,433			/////	2	--	--
3	45	3	COND UNIT 1		2,800 / 4,433		COND UNIT 2	4	70	3
5	--	--	/////			2,800 / 4,433	/////	6	--	--
7	--	--	/////	1,614 / 722			/////	8	--	--
9	25	3	AIR COMPRESSOR		1,614 / 722		FURNACE 2	10	20	3
11	--	--	/////			1,614 / 722	/////	12	--	--
13	--	--	/////	**9,211** / 10,376			/////	14	--	--
15	100	3	EMERGENCY ATC		**9,211** / 10,376		PANEL G1	16	100	3
17	--	--	/////			**9,211** / 10,376	/////	18	--	--
19	--	--	/////	**9,023** / 8,515			/////	20	--	--
21	100	3	PANEL L1		**9,023** / 8,515		PANEL P1	22	100	3
23	--	--	/////			**9,023** / 8,515	/////	24	--	--
25	--	--	/////	**16,965** / --			SPACE	26	--	1
27	**200**	**3**	PANEL D1		**16,965** / --		SPACE	28	--	1
29	--	--	/////			**16,965** / --	SPACE	30	--	1
			TOTAL	**63,659**	**63,659**	**63,659**	HIGHEST TOTAL AMPS		**531** AMPS	

TOTAL = NON-CONT VA + 1.25*CONT VA

120 / 208 VOLT 3ϕ, 4W 100A MCB — PANEL C1 — FLUSH MOUNT

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	PHASE LOAD VA B	PHASE LOAD VA C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	1	TELEPHONE BOARD	360 / 500			FIRE ALARM	2	20	1
3	20	1	RADIO		500 / 500		PA SYSTEM	4	20	1
5	20	1	BASE FIRE ALARM			500 / 500	BASE FIRE ALARM	6	20	1
7	20	1	BASE FIRE ALARM	500 / 500			BASE FIRE ALARM	8	20	1
9	20	1	BASE FIRE ALARM		500 / 540		RECEPTACLES	10	20	1
11	20	1	RECEPTACLES			720 / 100	CONTROL POWER	12	20	1
13	20	1	SPARE	180 / 180			SPARE	14-	20	1
15	20	1	SPARE		180 / 180		SPARE	16	20	1
17	20	1	SPARE			180 / 180	SPARE	18	20	1
19	--	1	SPACE	-- / --			SPACE	20	--	1
21	--	1			-- / --			22	--	1
23	--	1				-- / --		24	--	1
25	--	1		-- / --				26	--	1
27	--	1			-- / --			28	--	1
29	--	1				-- / --		30	--	1
			TOTAL	2,325	2,415	2,095	HIGHEST TOTAL AMPS		20 AMPS	

TOTAL = NON-CONT VA + 1.25*CONT VA

120 / 208 VOLT 3ϕ, 4W 225A MLO — PANEL L1 — SURFACE MOUNT

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	PHASE LOAD VA B	PHASE LOAD VA C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	1	PARKING LOT LTS	1160 / 1,860			APRON LIGHTS	2	20	1
3	20	1	EXTERIOR LIGHTS		400 / 550		EXTERIOR LIGHTS	4	20	1
5	20	1	PATIO LIGHTS			770 / 1,050	DORM LIGHTS	6	20	1
7	20	1	SPARE	770 / 910			WEST LIGHTS	8	20	1
9	20	1	KITCHEN LIGHTS		980 / 1,460		EAST LIGHTS	10	20	1
11	20	1	EAST HALL LTS			420 / 1,120	OFFICE LIGHTS	12	20	1
13	20	1	WEST EWC	500 / 1,080			GARAGE LIGHTS	14	20	1
15	20	1	WEST RECPTLS		900 / 1,080		GARAGE LIGHTS	16	20	1
17	20	1	WEST RECPTLS			900 / 1,080	GARAGE LIGHTS	18	20	1
19	20	1	DORM BED LIGHTS	400 / 360			WEST RECPTLS	20	20	1
21	20	1	WEST RECPTLS		720 / 540		WEST RECPTLS	22	20	1
23	20	1	WEST RECPTLS			720 / 540	WEST RECPTLS	24	20	1
25	20	1	DORM BED LIGHTS	400 / 900			WEST RECPTLS	26	20	1
27	20	1	DORM BED LIGHTS		400 / 360		WEST RECPTLS	28	20	1
29	20	1	WEST RECPTLS			360 / 400	DORM BED LIGHTS	30	20	1
31	20	1	SPARE	180 / 180			SPARE	32	20	1
33	20	1	**CLIN 002-DORM LIGHTS**		**320** / 180		SPARE	34	20	1
35	20	1	SPARE			180 / **780**	**CLIN 003-LIGHTS/RECPTLS**	36	20	1
37	--	1	SPACE	-- / --			SPACE	38	--	1
39	--	1	SPACE		-- / --		SPACE	4o	--	1
41	--	1	SPACE			-- / --	SPACE	42	--	1
			TOTAL	**9,023**	8,608	8,210	HIGHEST TOTAL AMPS		**75** AMPS	

TOTAL = NON-CONT VA + 1.25*CONT VA

120 / 208 VOLT 3ϕ, 4W 100A MCB — PANEL E1 — SURFACE MOUNT

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	PHASE LOAD VA B	PHASE LOAD VA C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	1	EXIT SIGNS	387 / 700			DORM LIGHTS	2	20	1
3	20	1	WEST LIGHTS		700 / 560		NIGHT LIGHTS	4	20	1
5	20	1	GARAGE LIGHTS			1,080 / 1,470	EAST LIGHTS	6	20	1
7	20	1	GARAGE LIGHTS	1,080 / 1,000			TRAFFIC SIGNAL		20	1
9	20	1	DOOR OPENER		902 / 902		DOOR OPENER	10	20	1
11	20	1	DOOR OPENER			902 / 902	DOOR OPENER	12	20	1
13	20	1	DOOR OPENER	902 / 360			RECEPTACLES	14	20	1
15	20	1	DROP LIGHTS		560 / 720		RECEPTACLES	16	20	1
17	20	1	RECEPTACLES			540 / 1,350	COND UNIT 3	18	25	2
19	20	1	FURN 3	662 / 1,350			/////	20	--	--
21	20	1	KITCHEN RECPTL		500 / 180		SPARE	22	20	1
23	20	1	SPARE			180 / 180	SPARE	24	20	1
25	20	1	SPARE	180 / 180			SPARE	26	20	1
27	20	1	SPARE		180 / --		SPACE	28	--	1
29	--	1	SPACE			-- / --		30	--	1
31	--	1		-- / --				32	--	1
33	--	1			-- / --			34	--	1
35	--	1				-- / --		36	--	1
37	--	1		-- / --				38	--	1
39	--	1			-- / --			4o	--	1
41	--	1				-- / --		42	--	1
			TOTAL	**6,886**	5,299	**6,882**	HIGHEST TOTAL AMPS		**57** AMPS	

TOTAL = NON-CONT VA + 1.25*CONT VA

120 / 208 VOLT 3ϕ, 4W 225A MLO — PANEL' P1 — SURFACE MOUNT

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	PHASE LOAD VA B	PHASE LOAD VA C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	1	WEST EXHAUST	500 / 1,270			FURNACE 1	2	20	1
3	20	1	WH RECIRC PUMP		100 / 400		EAST EXHAUST	4	20	1
5	20	1	COMPUTER RECPTL			360 / 720	EAST RECPTLS	6	20	1
7	20	1	EAST RECPTLS	900 / 720			EAST RECPTLS		20	1
9	20	1	EAST RECPTLS		720 / 500		EAST EWC	10	20	1
11	20	1	EAST RECPTLS			900 / 720	EAST RECPTLS	12	20	1
13	20	1	EAST RECPTLS	720 / 360			COMPUTER RECPTL	14-	20	1
15	20	1	DORM BED LIGHT		400 / 720		EAST RECPTLS	16	20	1
17	20	1	EAST RECP TLS			900 / 720	EAST RECPTLS	18	20	1
19	20	1	REFRIGERATOR	500 / 500			REFRIGERATOR	20	20	1
21	20	1	KITCHEN RECPTLS		360 / 902		DISPOSAL	22	20	1
23	20	1	KITCHEN RECP TLS			540 / 2,080	DISHWASHER	24	25	2
25	20	1	KITCHEN EXHAUST	500 / 2,080			/////	26	--	--
27	20	1	KITCHEN RECPTLS		180 / 180		SPARE	28	20	1
29	20	1	SPARE			180 / 180	SPARE	30	20	1
31	--	1	SPACE	-- / 180			SPARE	32	20	1
33	20	**2**	**CLIN 003 SPLIT SYSTEM**		**1,920** / --		SPACE	34	--	1
35	--	--	/////			**1,920** / --	SP ACE	36	--	1
37	--	1	SPACE	-- / --			SPACE	38	--	1
39	--	1	SP ACE		-- / --		SPACE	40	--	1
41	--	1	SPACE			-- / --	SP ACE	42	--	1
			TOTAL	**8,515**	**6,762**	**8,950**	HIGHEST TOTAL AMPS		**76** AMPS	

TOTAL = NON-CONT VA + 1.25*CONT VA

120 / 208 VOLT 3ϕ, 4W 100A MCB — PANEL G1 — FLUSH MOUNT

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	PHASE LOAD VA B	PHASE LOAD VA C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	--	-	/////	4, 453 / 2,392			HOSE DRYER	2	30	2
3	70	3	SCBA AIR COMP		4,453 / 2,392		/////	4	--	--
5	--	--	/////			4,453 / 500	ROOM EXHAUST	6	20	1
7	20	1	EXHAUST HOOD	534 / 400			STORAGE EXHAUST	8	20	1
9	20	1	GARAGE RECPTLS		540 / 540		GARAGE RECPTLS	10	20	1
11	20	1	GARAGE RECPTLS			540 / 662	WASHER	12	20	1
13	20	1	DRYER	662 / 720			GARAGE RECPTLS	14	20	1
15	20	1	GARAGE RECPTLS		540 / 540		GARAGE RECPTLS	16	20	1
17	20	1	GARAGE RECPTLS			540 / 720	GARAGE RECPTLS	18	20	1
19	20	1	GARAGE RECPTLS	540 / 540			DROP LIGHTS	20	20	1
21	20	1	DROP LIGHTS		540 / 500		INFRARED HEATER	22	20	1
23	20	1	GARAGE EXHAUST			534 / 534	GARAGE EXHAUST	24	20	1
25	20	1	SPARE	180 / 180			SPARE	26	20	1
27	20	1	SPARE		180 / 180		SPARE	28	20	1
29	20	1	SPARE			180 / 180	SPARE	30	20	1
31	--	1	SPACE	-- / --			SP ACE	32	--	1
33	--	1			-- / --			34	--	1
35-	--	1				-- / --		36	--	1
37	--	1		-- / --				38	--	1
39	--	1			-- / --			40	--	1
41	--	1				-- / --		42	--	1
			TOTAL	10,376	10,305	8,483	HIGHEST TOTAL AMPS		86 AMPS	

TOTAL = NON-CONT VA + 1.25*CONT VA

CONTRACTOR SHALL USE THE FOLLOWING PANEL SCHEDULE FOR BIDDING AND ESTIMATION PURPOSES ONLY.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOAD CALCULATIONS AND FOR SIZING THE NEW PANELBOARDS REQUIRED FOR THE NEW ADDITION

120 / 208 VOLT 3ϕ, 4W **225**A MCB — PANEL D1 — SURFACE MOUNT

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	PHASE LOAD VA B	PHASE LOAD VA C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	1	SW LIGHTS	1,500 / 1,500			SE LIGHTS	2	**20**	**1**
3	20	1	**N LIGHTS**		1,500 / 680		**FAN-CORRIDOR LIGHTS**	4	**20**	**1**
5	20	1	**EXTERIOR LIGHTS**			180 / 1,080	**SE-GYM** RECPTLS	6	20	1
7	20	1	**SW-GYM** RECPTLS	1,080 / 1,080			**SE-GYM** RECPTLS	8	20	1
9	20	1	**SW-GYM** RECPTLS		900 / 1,260		**SW-GYM** RECPTLS	10	20	1
11	20	1	**SW-GYM** RECPTLS			1,080 / 900	**SW-EWC** RECPTLS	12	20	1
13	20	1	**SE-DORMS RECPTLS**	1,260 / 1,260			**SE-D-CORR RECPTLS**	14	20	1
15	20	1	**NE-DORMS RECPTLS**		1,260 / 1,260		**NE-DORMS RECPTLS**	16	20	1
17	20	1	**NE-D-RROOM RECPTLS**			1,440 / 1,440	**NW-DORMS RECPTLS**	18	20	1
19	20	1	**SHOWER-WROOM RECPTLS**	1,350 / 600			**FIRE ALARM PANEL**	20	20	1
21	20	1	**NW-DORMS RECPTLS**		1,440 / 1,440		**NW-D-RROOM RECPTLS**	22	20	1
23	20	1	**EMCS**			200 / 1,420	**EXHAUST FANS**	24	20	1
25	--	--	/////	960 / 915			/////	26	--	--
27	**20**	**3**	**INDOOR SPLIT SYSTEM (ISS)**		960 / 915		**HWP 2**	28	20	**3**
29	--	--	/////			960 / 915	/////	30	--	--
31	--	1		-- / --				32	--	1
33	--	1			-- / --			34	--	1
35-	**20**	1	**HWP 1**			870 / 470	**HEATER UNIT FANS**	36	20	1
37	--	1		-- / 4,560			/////	38	--	--
39	--	1			4,560		**OUTDOOR CONDENSER (COND)**	40	**60**	**3**
41	~~20~~	1	**ATTIC LIGHTS-RECPTLS**			700 / 4,560	/////	42	--	--
			TOTAL	**16,965**	**16,720**	**16,963**	HIGHEST TOTAL AMPS		**142** AMPS	

TOTAL = NON-CONT VA + 1.25*CONT VA

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: ONE-LINE DIAGRAM & SCHEDULES

Date: SEP 2023

SEQ. 44 | SHEET E-601 | OF 50

PLUMBING SYMBOLS AND ABBREVIATIONS (NOT ALL APPLY)

STANDARD SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
PIPING–PLUMBING			ELBOW, TURNED DOWN		ANGLE VALVE
	COLD WATER		ELBOW, TURNED UP		RELIEF VALVE
	HOT WATER	A.V.	AIR VENT		DIAPHRAGM VALVE
	HOT WATER RETURN	VAC. RELIEF	VACUUM RELIEF		BACKFLOW PREVENTER
W	WATER		TEE, TURNED UP	FT	F & T TRAP
NPW	NON POTABLE WATER		TEE, TURNED DOWN	T	THERMOSTATIC TRAP
	SANITARY SEWER		VALVE IN RISER	B	BUCKET TRAP
	VENT		VALVE ON ELBOW UP	TD	THERMODYNAMIC TRAP
D	GRAVITY DRAIN		VALVE ON ELBOW DOWN	**CONTROLS**	
PD	PRESSURE DRAIN		45 ELBOW	A.V.	AIR VENT (MANUAL/AUTO/RELIEF)
AD	ACID WASTE, GRAVITY		30 ELBOW		FLOW SWITCH
AV	ACID VENT		90 ELBOW	0-100 PSI	PRESSURE GAUGE (WITH PRESSURE RANGE AND CAUCE COCK)
PAD	ACID DRAIN, PUMPED		TEE (SHOW SIZES WHEN REDUCING TEE)		PRESSURE SWITCH
RWL	RAIN WATER LEADER		CAP		ORIFICE FLOW METER
ORWL	OVERFLOW RAIN WATER LEADER		RUPTURE DISK		TEMPERATURE SWITCH
SD	STORM SEWER		SEALED AIR CHAMBER SHOCK ABSORBER	40-140 F	THERMOMETER (WITH TEMPERATURE RANGE)
S	SOFT WATER		FLOOR DRAIN		VENTURI FLOW METER
PIPING–GASES			FLOOR SINK		THERMOMETER
AR	ARGON		EXPANSION JOINT		SENSOR WELL
BA	BREATHING AIR		LINE STRAINER		PRESSURE GAUGE
CA	COMPRESSED AIR	COTG	CLEAN–OUT TO GRADE	**MISCELLANEOUS**	
CDA	CLEAN DRY AIR		OPEN SIGHT DRAIN, AIR GAP		CENTRIFUGAL PUMP
CH_4	METHANE	WCO	WALL CLEANOUT (WCO)		NUMBER DETAIL BUBBLE
C_2H_2	ACETYLENE	FCO	FLOOR CLEANOUT (FCO)		
CO_2	CARBON DIOXIDE		DIRECTION AND FLOW	AHU 1	EQUIPMENT MARK (AHU–1 SHOWN)
G	NATURAL GAS		PRESSURE GAUGE		END POINT OF REMOVAL
H_2	HYDROGEN		**VALVES**	1	KEYED NOTE CONSTRUCTION
HCV	HOUSE CLEANING VACUUM		BALL VALVE		MANHOLE
HE	HELIUM		GATE VALVE		POINT OF CONNECTION: NEW TO EXIST. CONSTRUCTION
LAR	LIQUID ARGON		GLOBE VALVE		LETTER SECTION BUBBLE
LCO_2	LIQUID CARBON DIOXIDE		PLUG COCK		
LH_2	LIQUID HYDROGEN		SWING CHECK VALVE		BREAK
LN_2	LIQUID NITROGEN		SPRING CHECK VALVE	1	KEYED NOTE, DEMOLITION
LO_2	LIQUID OXYGEN		HOSE BIBB	M	METER
LPG	LIQUID PETROLEUM GAS		NEEDLE VALVE		
N_2	NITROGEN		BUTTERFLY VALVE		
O_2	OXYGEN		BALANCING VALVE		
MV	MEDICAL VACUUM		MOTOR OPERATED GLOBE VALVE		
PV	PROCESS VACUUM		MOTOR OPERATED GATE VALVE		
VAC	VACUUM		SOLENOID OPERATED VALVE		
PIPING–FITTINGS		A B C	SOLENOID OPERATED 3–WAY VALVE		
	SCREWED JOINT		SELF–CONTAINED TEMP. CONTROL VALVE		
	FLANGED JOINT		EXTERNAL, PRESSURE REDUCING VALVE		
	WELDED JOINT		INTERNAL, PRESSURE REDUCING VALVE		
	UNION		THREE WAY VALVE, ELECTRICAL		
	CONCENTRIC REDUCER		THREE WAY VALVE, MANUAL		
	ECCENTRIC REDUCER		THREE WAY VALVE, PNEUMATIC		

ABBREVIATIONS

A.F.	ABOVE FLOOR
B.F.	BELOW FLOOR
CPT	COMPRESSION TANK
CT	COOLING TOWER
CU	CONDENSING UNIT
CW	COLD WATER
DB	DRY BULB
DIA.	DIAMETER
DIR.A.	DIRECT ACTING
DN.	DOWN
DWG.	DRAWING
EA.	EACH
EAT	ENTERING AIR TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
ED	EJECTION DISCHARGE
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
EXST	EXISTING
°F	DEGREES FAHRENHEIT
FCO	FLOOR CLEAN OUT
F.D.	FIRE DAMPER
FLR	FLOOR
FM	FAN MOTOR
FPM	FEET PER MINUTE
F.S.D.	FIRE/SMOKE DAMPER
FT	FEET, FOOT
GFE	GOVERNMENT FURNISHED EQUIPMENT
GPM	GALLONS PER MINUTE
GW	GREASE WASTE
H	HOOD
HP	HORSEPOWER
HW	HOT WATER
HWCP	HOT WATER CIRCULATION PUMP
HZ	HERTZ
IN.	INCHES
IN. WTR.	INCHES OF WATER
LOUV	LOUVER
LAT	LEAVING AIR TEMPERATURE
M.V.	MEDICAL VACUUM
MAX.	MAXIMUM
MIN.	MINIMUM
M.L.O.	MAIN LUGS ONLY
MAU	MAKE UP AIR UNIT
N	NITROGEN
NO2	NITROUS OXIDE
N.C.	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
O2	OXYGEN
O.A.	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
O.C.	ON CENTER
O.H.P.	OVERHEAD PUMP
P	PUMP
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH
QTY.	QUANTITY
R.A.	RETURN AIR
REQ'D	REQUIRED
REV.A.	REVERSE ACTING
RPM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
S.D.	SMOKE DAMPER
SF	SUPPLY FAN
S.P.	STATIC PRESSURE
STS	STEAM SWITCH
SWBD	SWITCHBOARD
T.C.	TIME CLOCK
TMV	THERMOSTATIC MIXING VALVE
TYPICAL	
UH	UNIT HEATER
VAC.	VACUUM
V.A.	VOLUME DAMPER
V.T.R.	VENT THRU ROOF
CH	CHILLER, WATER COOLED
CISP	CAST IRON SOIL PIPE
CKT	CIRCUIT
CLG.	CEILING
C.O.	CLEANOUT
CFM	CUBIC FEET PER MINUTE
UF	UNDERFLOOR
W.C.O.	WALL CLEAN OUT
WH	WATER HEATER
W.H.A.	WATER HAMMER ARESTOR
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
A/C	ABOVE CEILING
A/C	AIR CONDITIONED
A.D.	ACCESS DOOR
A.F.F.	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
AS	AIR SEPARATOR
B	BOILER

GENERAL NOTES:

THESE PLUMBING GENERAL NOTES APPLY TO ALL PLUMBING DRAWINGS:

1. ALL PLUMBING SHALL MEET THE REQUIREMENTS OF THE INTERNATIONAL PLUMBING CODE (IPC–LATEST EDITION AT TIME OF ISSUANCE OF THE RFP) AND THE CONTRACT SPECIFICATIONS.
2. THE DIVISION 22 OPERATIONS SHALL BE SUPERVISED BY A LICENSED MASTER PLUMBER TO ASSURE THAT ALL WORK IS INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND THE CONSTRUCTION DOCUMENTS.
3. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHALL NOT BE SCALED. NOT ALL ITEMS CAN BE SHOWN. CONTRACTOR SHALL DETERMINE LOCATIONS OF EXISTING SYSTEMS, CONDITIONS AND COMPONENTS IN THE FIELD.
4. CONTRACTOR SHALL DETERMINE EXACT LOCATIONS OF EXISTING UTILITIES IN THE FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSARY TO PERFORM WORK OF THIS SECTION.
5. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE HIS WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO, ELECTRICAL, HVAC, STRUCTURAL AND GENERAL ARCHITECTURE. CONTRACTOR SHALL ENSURE NO SANITARY SEWER PIPING IS ROUTING PARALLEL IN OR UNDER STRUCTURAL FOUNDATION BEAMS.
6. ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND CONTRACTING OFFICER, AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK INVOLVED.
7. NO WORK SHALL BE INSTALLED IN VIOLATION OF ANY GOVERNING CODES. ANY WORK SHOWN ON THE DRAWINGS WHICH IS IN VIOLATION OF SUCH CODES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK INVOLVED.
8. ALL PIPING PENETRATING CEILINGS AND WALLS SHALL BE INSTALLED WITH CHROME (STAINLESS STEEL WHERE NOTED) PLATED ESCUTCHEONS AT THE PENETRATION. ALL PIPING PENETRATING RATED PARTITIONS SHALL BE MADE WITH AN APPROVED UL FIRESTOP SYSTEM. EXPOSED PIPING SHALL BE CHROME PLATED.
9. VERIFY PLUMBING FIXTURE SCHEDULE WITH CONTRACTING OFFICER PRIOR TO START OF CONSTRUCTION. FIXTURE SELECTIONS AND INSTALLATION SHALL MEET ALL REQUIREMENTS OF THE ARCHITECTURAL BARRIERS ACT (ABA) ACCESSIBILITY REQUIREMENTS.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY EXISTING WORK DAMAGED DURING THE COURSE OF CONSTRUCTION, WITH EQUAL OR BETTER MATERIAL AND WITHOUT ADDITIONAL CHARGE.
11. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTION.
12. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS STEEL SHAPES, HANGER RODS, STRAPS, ETC. REQUIRED FOR ALL SYSTEM INSTALLATIONS FOR A COMPLETE, FUNCTIONAL, FURTHERMORE PROVIDE ALL SEISMIC RESTRAINTS AS REQUIRED BY THE INTERNATIONAL BUILDING CODE.
13. SEAL ALL EXTERIOR WALL PENETRATIONS WEATHER TIGHT. FURNISH AND INSTALL RATED SLEEVES AT ALL FIRE WALL PENETRATIONS AND SEAL AROUND ALL PIPE WITH FIRE STOP SEALANT. COORDINATE PENETRATIONS AND FIRE STOPPING WITH THE GENERAL CONTRACTOR AND OR CONSTRUCTION MANAGER.
14. CONTRACTOR SHALL MAKE TESTS AT HIS OWN EXPENSE, AS REQUIRED BY CONTRACTING OFFICER AND/OR ANY INSPECTION DEPARTMENT. TEST SHALL BE MADE TO VERIFY WHETHER THE EXISTING PIPING/EQUIPMENT SYSTEM AND NEW PIPING SYSTEMS AND EQUIPMENT INSTALLED COMPLY WITH SPECIFICATIONS AND ARE IN PROPER WORKING ORDER.
15. IF THERE IS A DISCREPANCY BETWEEN THE SPECIFICATIONS AND DRAWINGS, THE CONTRACTOR SHALL FURNISH AND INSTALL THE GREATER VALUE AND QUALITY OF EITHER THE SPECIFICATIONS OR DRAWINGS. IN ALL CASES, THE ENGINEER OF RECORD SHALL BE THE INTERPRETER OF THE DOCUMENTS.
16. IF THERE IS A DISCREPANCY BETWEEN THE DRAWING DETAILS AND DRAWING FLOOR PLAN, THE CONTRACTOR SHALL FURNISH AND INSTALL THE GREATER VALUE AND QUALITY OF EITHER THE DETAIL OR FLOOR PLAN. IN ALL CASES, THE ENGINEER OF RECORD SHALL BE THE INTERPRETER OF THE DOCUMENTS.
17. SANITARY, SOIL WASTE AND VENT PIPING SHALL SLOPE NOT LESS THAN: ¼" PER FOOT FOR PIPING 2 ½" IN DIAMETER OR LESS, ⅛" PER FOOT FOR PIPING 3" TO 6" IN DIAMETER, 1/16" PER FOOT FOR PIPING 8" OR LARGER IN DIAMETER.
18. THE CONTRACTOR SHALL PROVIDE ISOLATION VALVES ON WATER PIPING TO EACH GROUP OF FIXTURES. ACCESS PANELS ARE REQUIRED IN GYP BOARD CEILINGS AND WALLS FOR ALL VALVES, TRAPS, CLEANOUTS, ETC. ACCESS PANELS SHALL BE 16 GAGE PAINTABLE STEEL CONSTRUCTION WITH A PIANO HINGED DOOR, FLANGE FRAME, WALL SLEEVE AND VANDAL PROOF SCREWS. PANELS IN EXPOSED TILE OR BLOCK ACCESS PANELS IN FIRE RATED ASSEMBLIES SHALL HAVE THE SAME RATING AS THE ASSEMBLY.STOPS ARE REQUIRED AT ALL PLUMBING FIXTURES.
19. WHERE DISSIMILAR METALS ARE TO BE JOINED AS WELL AS PIPES THAT REQUIRE SUPPORTS, APPROVED INSULATION UNIONS AND COOPER CLAD BRACKETS TO SUPPORT PIPES ARE TO BE USED.
20. INSULATE ALL HOT AND COLD WATER PIPING. INSULATION SHALL BE OF THE TYPE SPECIFIED PER SPECIFICATIONS AND MINIMUM THICKNESS SPECIFIED IN ASHRAE STANDARD 90.1 LATEST EDITION (AT DATE OF RFP) AND UFC CRITERIA, WHICHEVER IS GREATER. ALL INSULATION SHALL HAVE COMPLETE FIRE AND SMOKE HAZARD RATINGS. INSULATION SHALL BE A CLASS FIBER TYPE AS MANUFACTURED BY OWNES–CORNING FIBERGLASS OR EQUIVALENT. INSULATION SHALL HAVE A MINIMUM DENSITY OF 4.0 LB AND A K FACTOR OF 0.25.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIXTURE, CASEWORK AND EQUIPMENT ROUGH–IN DIMENSIONS AND CORRECT FLOOR AND WALL PENETRATIONS.
22. ALL DOMESTIC WATER PIPING SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA.
23. DRAWINGS DO NOT INDICATE ALL DETAILS, FITTINGS AND EXACT LOCATION OF PIPE OR EQUIPMENT. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS AND LABOR IN AN APPROPRIATE MANNER TO ENSURE FULLY FUNCTIONAL SYSTEMS ACCEPTABLE TO THE CO, OWNER, AUDITED AND ENGINEER.

GENERAL DEMOLITION NOTES:

THESE PLUMBING GENERAL NOTES APPLY TO ALL PLUMBING DRAWINGS:

1. PERFORM ALL DEMOLITION IN ACCORDANCE WITH SPECIFICATION SECTION 02 41 00 EXISTING CONDITIONS – DEMOLITION. WORK IS TO BE PERFORMED WITH THE GOAL OF MAXIMIZING SALVAGE AND RECYCLING OF MATERIALS.
2. COORDINATE WITH AND OBTAIN APPROVAL FROM CONTRACTING OFFICER FOR ALL UTILITY OUTAGES A MINIMUM OF 72 HOURS IN ADVANCE.
3. SECURE ALL OPENINGS THROUGH WALLS, ROOFS AND FLOORS FROM WEATHER DURING CONSTRUCTION.
4. SECURE OPENINGS THROUGH ROOFS AND FLOORS FROM FALL AND PROVIDE ALL APPROPRIATE FALL PROTECTION MEASURES PER OSHA REQUIREMENTS.
5. SALVAGE EQUIPMENT ITEMS TO A DESIGNATED STORAGE OR DISPOSAL AREA AS DIRECTED BY THE CONTRACTING OFFICER.
6. CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION AND MARK APPROPRIATELY.
7. CONTRACTOR SHALL REVIEW OWNER'S HAZARDOUS MATERIAL TEST REPORTS AND COORDINATED WORK WITH ABATEMENT CONTRACTOR(S) AS APPROPRIATE. NOTIFY CONTRACTING OFFICER AND/OR CONTRACTING OFFICER'S REPRESENTATIVE IMMEDIATELY OF ANY MATERIAL SUSPECTED OR KNOWN TO BE HAZARDOUS FOR WORK INSTRUCTIONS PRIOR TO CONTINUING OF WORK ON THAT SECTION OR AREA OF CONSTRUCTION AS APPROPRIATE.
8. PIPING UNDER CONCRETE SLAB ON GRADE FLOORS MAY BE CUT BELOW CONCRETE FLOOR, CAPPED, AND ABANDONED IN PLACE IF NOT INTERFERING WITH INSTALLATION OF NEW PIPING OR OTHER TRADES.
9. CAP ALL UNUSED PIPING BELOW GRADE. MARK ABANDONED PIPING EXTERIOR TO BUILDING WITH METALLIC BURIED WARNING TAPE 6" BELOW GRADE.
10. PLUG ALL FLOOR DRAINS TO REMAIN PRIOR TO START OF CONSTRUCTION TO PREVENT ENTRY OF DEBRIS DURING CONSTRUCTION.
11. REMOVE ALL RUBBISH AND DEBRIS CAUSED BY THE DEMOLITION WORK AND DISPOSE OF PROPERLY. CLEAN ALL RELATED EXISTING AND NEW PLUMBING FIXTURES AND EQUIPMENT AT COMPLETION OF DEMOLITION WORK.

9TH CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: 7CES

PROJECT TITLE

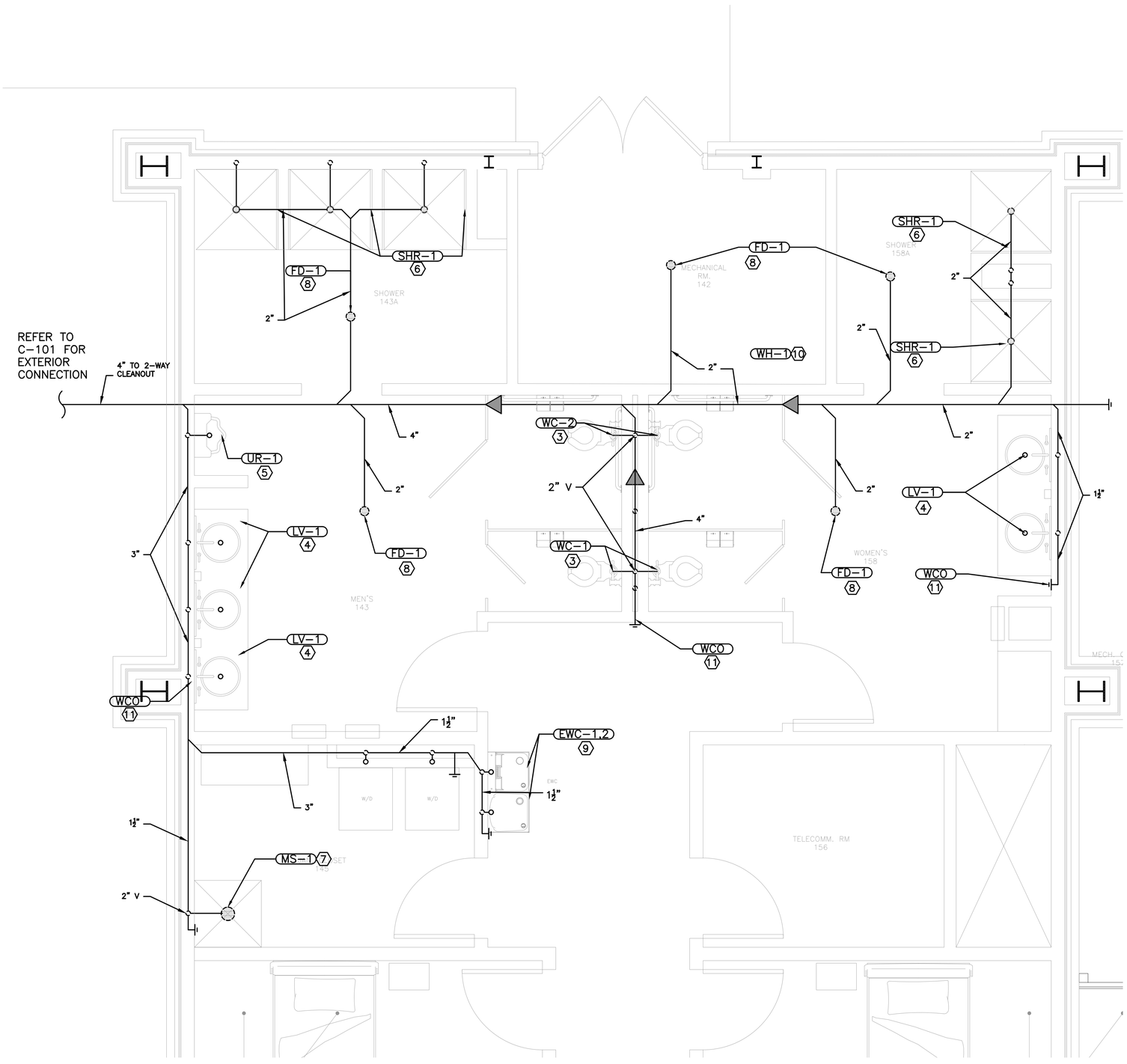
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: PLUMBING NOTES SYMBOLS & ABBREVIATIONS

Date: SEP 2023

SEQ.	SHEET	OF
45	P–001	50



1 SANITARY SEWER PLAN
3/16" = 1' - 0"

PLAN NORTH TRUE NORTH

GENERAL NOTES

1. REFERENCE SHEET P-001 FOR LEGEND, SYMBOLS, ABBREVIATIONS, SPECIFICATIONS AND FURTHER GENERAL NOTES.
2. ALL SANITARY SEWER PIPING SHALL BE PVC SCHEDULE 80.
3. CONTRACTOR SHALL ENSURE WASTE FROM CLOTHES SHALL DISCHARGE THROUGH AN AIR BREAK INTO A STANDPIPE.
4. AIR BREAK SHALL BE PROVIDED BETWEEN THE INDIRECT WASTE PIPE AND THE TRAP SEAL OF THE WASTE RECEPTOR.

KEYNOTES (X)

1. SS PIPING RISE FROM BELOW FLOOR TO SERVE THE PLUMBING FIXTURE(S). REFERENCE P-301 FOR MORE INFORMATION.
2. VENT PIPING RISE FROM BELOW FLOOR TO SERVE THE PLUMBING FIXTURE(S). REFERENCE P-301 FOR MORE INFORMATION.
3. FURNISH AND INSTALL A FLOOR-MOUNTED, FLOOR OUTLET, FLUSH VALVE WATER CLOSET AND APPURTENANCES. ROUTE 4" SS PIPING FROM THE HORIZONTAL 4" SS BELOW FLOOR TO THE FIXTURE AND CONNECT, ROUTE 2" VENT PIPING FROM THE WATER CLOSETS TO HORIZONTAL VENT PIPE ABOVE. HORIZONTAL VENT PIPE FROM WATER CLOSETS SHALL BE 3", PROVIDE 4" VTR.
4. FURNISH AND INSTALL AN UNDERMOUNT LAVATORY, FAUCET, THERMOSTATIC MIXING VALVE AND APPURTENANCES. ROUTE 1 ¼" SS PIPING FROM THE LAVATORY DRAIN ROUGH-IN CONNECTION DOWN WITHIN THE WALL TO THE HORIZONTAL SS PIPING BELOW THE FLOOR AND CONNECT. ROUTE 2" VENT PIPING UP WITHIN THE WALL FROM THE SS PIPING SERVING THE LAVATORY TO ABOVE THE CEILING AND CONNECT TO THE 2" HORIZONTAL VENT PIPING ABOVE. 2" VERTICAL VENT PIPE AND 2" HORIZONTAL PIPE TO VENTS ABOVE WATER CLOSETS. FURNISH AND INSTALL THE P-TRAP AND APPURTENANCES FROM THE DRAIN TO THE LAVATORY, AND CONNECT.
5. FURNISH AND INSTALL A WALL-HUNG URINAL AND FLUSH VALVE. ROUTE A 2" SS PIPE DOWN WITHIN THE WALL FROM THE OUTLET OF THE URINAL TO THE HORIZONTAL SS PIPE BELOW THE FLOOR AND CONNECT. ROUTE A 2" VENT PIPE UP IN THE WALL FROM THE FIXTURE TO THE HORIZONTAL VENT PIPING AND CONNECT. 2" VERTICAL VENT PIPE AND 2" HORIZONTAL PIPE TO VENTS ABOVE WATER CLOSETS.
6. FURNISH AND INSTALL A SHOWER ASSEMBLY, FAUCETS, THERMOSTATIC MIXING VALVE, ACCESSORIES AND APPURTENANCES. FURNISH AND INSTALL A GRID STRAINER SHOWER DRAIN. TRAP THE DRAIN, ROUTE 1 ½" SS PIPING BELOW FLOOR, AND CONNECT TO THE HORIZONTAL SS PIPING. ROUTE A 2" VENT UP IN THE WALL TO ABOVE THE CEILING AND CONNECT TO THE HORIZONTAL VENT PIPING.
7. FURNISH AND INSTALL A MOP BASIN, FAUCET, ACCESSORIES AND APPURTENANCES. ROUTE AND P-TRAP THE 1 ½" SS PIPING FROM THE DRAIN OF THE MOP BASIN TO THE SS PIPING BELOW THE FLOOR AND CONNECT. ROUTE A 2" VENT UP WITHIN THE WALL TO 2" HORIZONTAL VENT ABOVE CEILING AND CONNECT TO EWC. COMBINED 2" VENT PIPE TO 2" VTR.
8. FURNISH AND INSTALL A FLOOR DRAIN WITH TRIP GUARD ASSEMBLY. ROUTE A 2" SS PIPE FROM THE FLOOR DRAIN TRAP OUTLET TO THE HORIZONTAL SS PIPING BELOW FLOOR AND CONNECT. ROUTE A 2" VENT PIPE UP IN THE WALL FROM THE FIXTURE TO THE HORIZONTAL VENT PIPING IN THE ATTIC AND CONNECT.
9. FURNISH AND INSTALL A WALL-HUNG, BI-LEVEL DRINKING FOUNTAIN WITH BOTTLE FILLER. ROUTE A 1 ¼" SS PIPE FROM THE OUTLET OF THE ELECTRIC DRINKING FOUNTAIN DOWN WITHIN THE WALL AND TO THE HORIZONTAL SS AND CONNECT. FURNISH AND INSTALL A WCO. ROUTE A 2" VENT UP WITHIN THE WALL TO THE HORIZONTAL VENT ABOVE CEILING AND CONNECT TO MOP SINK (MS-1). COMBINED 2" VENT PIPE TO 2" VTR.
10. FURNISH AND INSTALL A GAS WATER HEATER, SUPPORT PLATFORM, EXPANSION TANK, DRAIN PAN, AND APPURTENANCES. REFERENCE DETAIL 3/P-501 FOR MORE INFORMATION. ROUTE THE ¾" T&P PIPING DOWN TO EXISTING FLOOR DRAIN, TURN DOWN AND TERMINATE.
11. FURNISH AND INSTALL ALL CLEANOUTS IN AN ACCESSIBLE LOCATION A MINIMUM OF 42" AFF. THE WALL CLEANOUT ACCESS COVER SHALL BE CONSTRUCTED OF STAINLESS STEEL.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I/CES

PROJECT TITLE

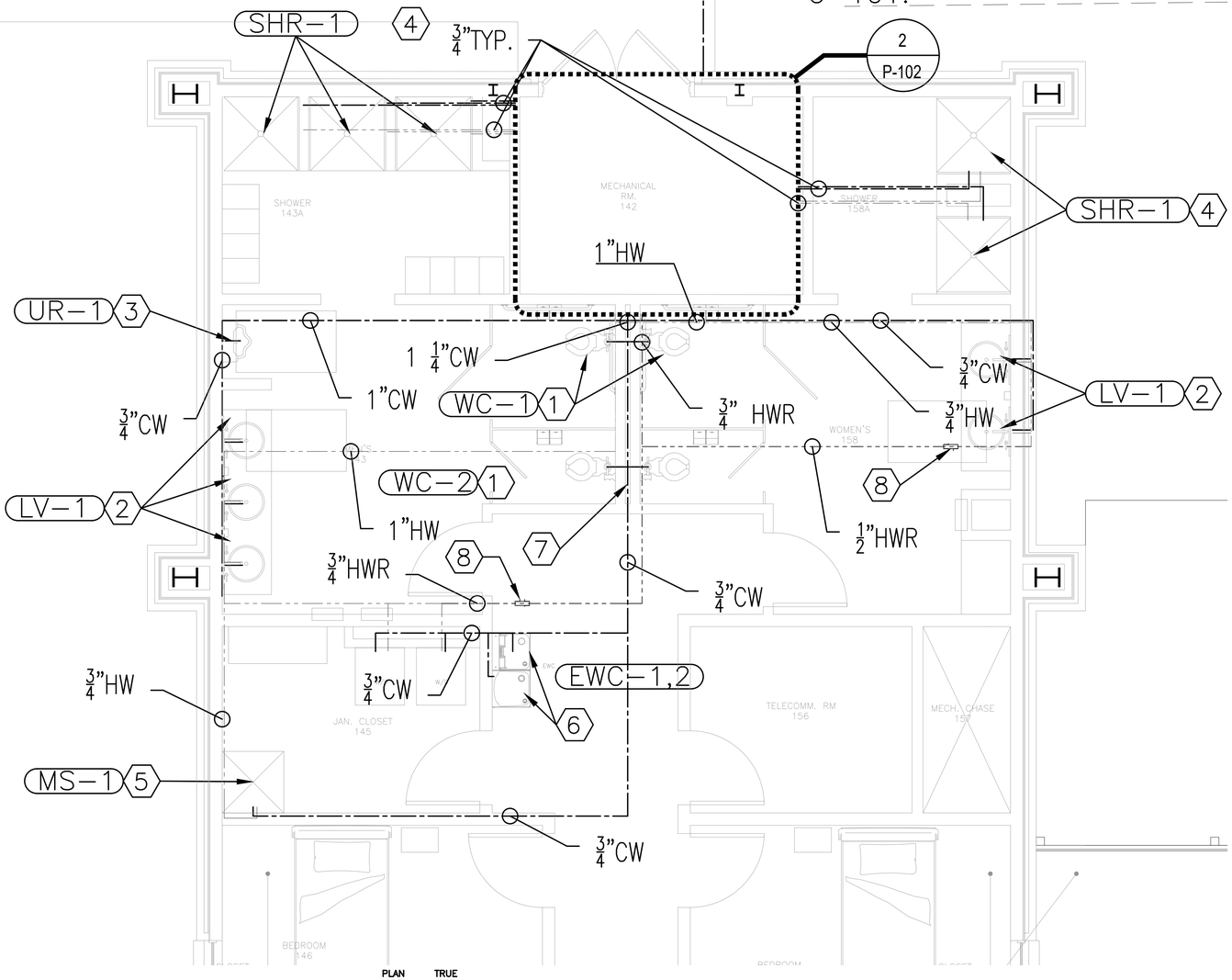
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: SANITARY SEWER PLAN

Date: SEP 2023

SEQ.	SHEET	OF
46	P-101	50



1 DOMESTIC WATER PLAN
1/4" = 1' - 0"

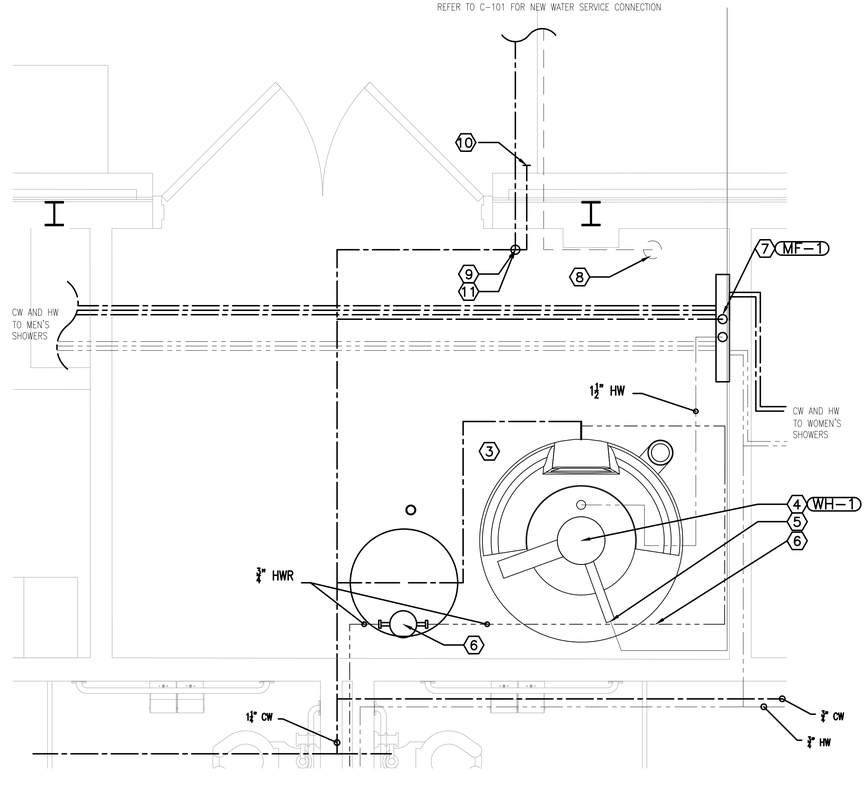
PLAN NORTH TRUE NORTH

GENERAL NOTES

1. REFERENCE SHEET P-001 FOR LEGEND, SYMBOLS, ABBREVIATIONS, SPECIFICATIONS AND FURTHER GENERAL NOTES.
2. DOMESTIC PLUMBING SHALL BE (PEX) OR APPROVED EQUAL.
   2.1. PEX PIPING SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR SHALL FURNISH AND INSTALL AN ACCESS PANEL FOR ITEMS IN INACCESSIBLE LOCATIONS.
4. FOR WASHER/DRYER LOCATIONS, WATER SUPPLY TO WASHER SHALL BE PROTECTED AGAINST BACKFLOW BY AN AIR GAP THAT INTEGRAL WITH THE MACHINE. (X)

KEYNOTES

1. FURNISH AND INSTALL A FLOOR-MOUNTED, FLOOR OUTLET, FLUSH VALVE WATER CLOSET AND APPURTENANCES. ROUTE A 1" CW PIPING FROM THE HORIZONTAL CW PIPING ABOVE THE CEILING DOWN WITHIN THE WALL TO THE ROUGH-IN CONNECTION AT THE WALL. FURNISH AND INSTALL A SUPPLY, STOP AND APPURTENANCES FROM THE CW ROUGH-IN TO THE WATER CLOSET AND CONNECT.
2. FURNISH AND INSTALL AN UNDERMOUNT LAVATORY, FAUCET, THERMOSTATIC MIXING VALVE AND APPURTENANCES. ROUTE ½" CW AND ½" HW PIPING FROM THE HORIZONTAL CW & HW PIPING ABOVE THE CEILING DOWN WITHIN THE WALL TO THE ROUGH-IN CONNECTION, TO THE THERMOSTATIC MIXING VALVE AND LAVATORY FAUCET AND CONNECT. FURNISH AND INSTALL THE SUPPLIES, STOPS, AND APPURTENANCES FROM THE CW, AND HW ROUGH-INS TO THE LAVATORY, THERMOSTATIC MIXING VALVE AND FAUCET AND CONNECT.
3. FURNISH AND INSTALL A WALL-HUNG URINAL AN DFLUSH VALVE. ROUTE A ¾" CW PIPE FROM THE HORIZONTAL CW PIPE ABOVE THE CEILING DOWN IN THE WALL TO THE INLET OF THE FLUSH VALVE AND CONNECT.
4. FURNISH AND INSTALL A SHOWER ASSEMBLY, FAUCETS, THERMOSTATIC MIXING VLAVE, ACCESSORIES AND APPERTINANCES. ROUTE ½" CW AND ½" HW PIPING FROM THE (PEX) MANIFOLD IN MECHANICAL ROOM, ABOVE THE CEILING DOWN WITHIN THE WALL TO THE ROUGH-IN AND CONNECT.
5. FURNISH AND INSTALL A MOP BASIN, FAUCET, ACCESSORIES AND APPURTENANCES. ROUTE ¾" CW AND ¾" HW FROM THE CW AND HW PIPING ABOVE THE CEILING DOWN IN THE WALL TO THE FAUCET AND CONNECT.
6. FURNISH AND INSTALL A WALL-HUNG, BI-LEVEL DRINKING FOUNTAIN WITH BOTTLE FILLER. ROUTE ½" CW PIPE FROM THE HORIZONTAL CW PIPE ABOVE THE CEILING DOWN IN THE WALL TO THE INLET OF THE ELECTRIC DRINKING FOUNTAIN AND CONNECT.
7. FURNISH AND INSTALL A WATER HAMMER ARRESTOR, VALVE AND ACCESS PANEL, THE ARRESTOR SHALL BE INSTALLED WITHIN THE WALL/CHASE CAVITY. FURNISH AND INSTALL AN ACCESS PANEL AT THE INACCESSIBLE LOCATION.
8. FURNISH AND INSTALL A CIRCUIT SETTER ABOVE THE CEILING. SET THE CIRCUIT SETTER TO 0.5 GPM.



2 ENLARGED MECHANICAL ROOM PLUMBING PLAN
¾" = 1' - 0"

PLAN NORTH TRUE NORTH

ENLARGED MECH. RM. KEYNOTES (X)

1. CONNECT TO EXITING DOMESTIC WATER LINE. RE:C101
2. NOT USED.
3. FURNISH AND INSTALL A GAS WATER HEATER, SUPPORT PLATFORM, EXPANSION TANK, DRAIN PAN, AND APPURTENANCES, REFERENCES SHEET P-501 FOR ADDITIONAL INFORMATION. ROUTE THE 3/4" T&P PIPING DOWN TO EXISTING FLOOR DRAIN, TURN DOWN AND TERMINATE.
4. FURNISH AND INSTALL GAS PIPING CONNECTION TO EQUIPMENT, REFERENCE SHEET P-501.
5. FURNISH AND INSTALL A DOMESTIC HOT WATER RECIRCULATION PUMP, REFERENCE SHEET P-501.
6. FURNISH AND INSTALL A DOMESTIC PLUMBING APPROVED PEX CW AND HW MANIFOLD.
7. CONTRACTOR TO FURNISH AND INSTALL RECIRCULATION PUMP. MOUNT IN ACCESSIBLE LOCATION ABOVE EXPANSION TANK.
8. DASHED LINE INDICATES NEW FIRE SUPPRESSION RISER ASSEMBLY AND DOUBLE CHECK BACKFLOW PREVENTER PER IPC. COORDINATE SIZE AND ASSEMBLY WITH QFPE. REFER TO FA-101.
9. DOMESTIC WATER RISER AND ENTRY POINT
10. CONTRACTOR TO PROVIDE NEW ½" EXTERIOR WALL HYDRANT AND COVERED ENCLOSURE.
11. CONTRACTOR TO PROVIDE NEW WATER SERVICE ENTRANCE ISOLATION VALVE.

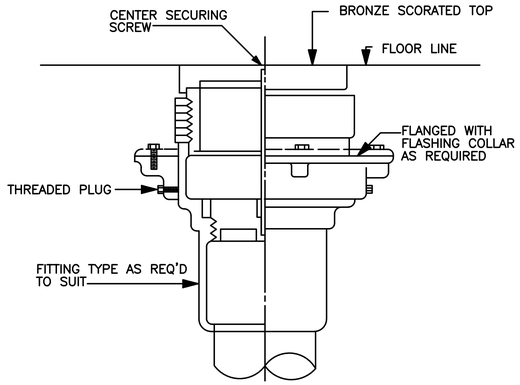
Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: 17CES

PROJECT TITLE

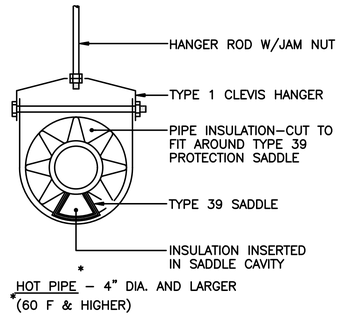
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839
SHEET TITLE: SANITARY SEWER PLAN
Date: SEP 2023

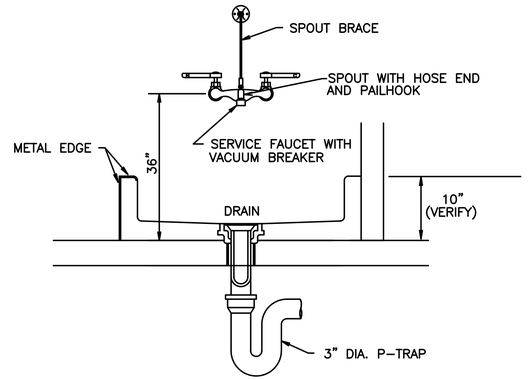
SEQ.	SHEET	OF
47	P-102	50



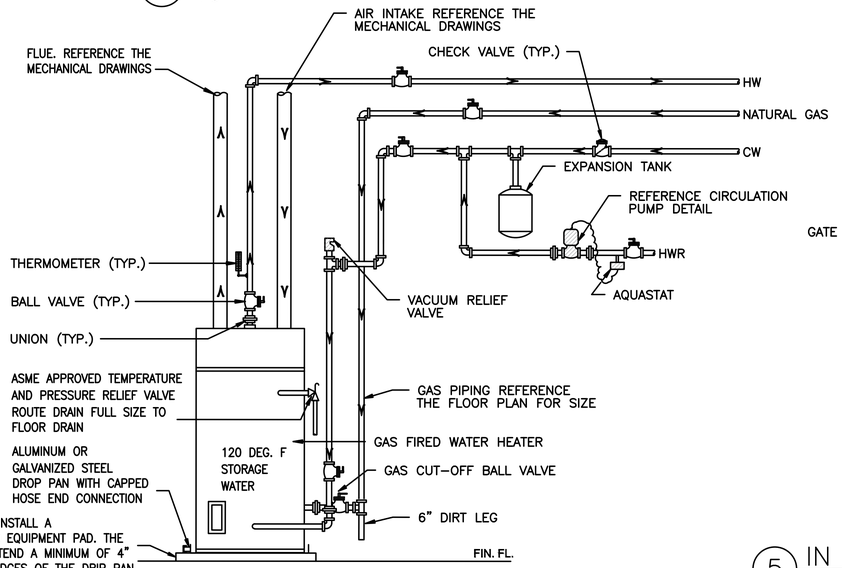
1 FLOOR DRAIN DETAIL (TYP.)
NTS



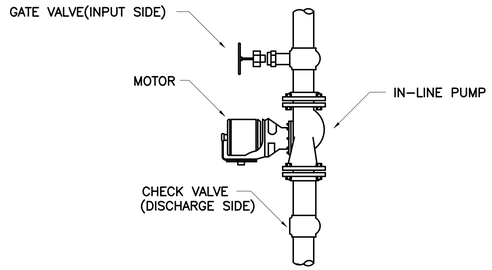
2 PIPE HANGAR DETAIL
NTS



3 MOP SINK DETAIL
NTS

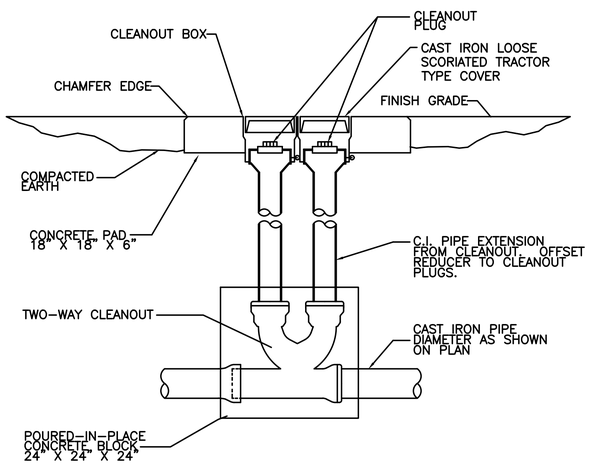


4 GAS FIRED WATER HEATER DTL
NTS

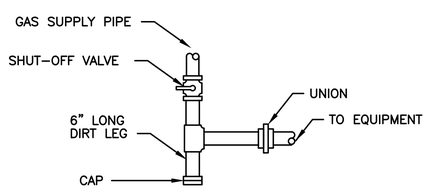


5 IN LINE RECIRCULATION PUMP DTL.
NTS

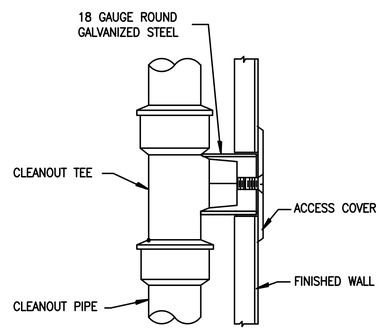
6 FLUE THROUGH ROOF DETAIL
NTS



7 EXTERIOR AND DOUBLE CLEANOUT DETAIL
NTS



8 GAS CONNECTION DETAIL (TYP.)
NTS



9 WALL CLEANOUT DETAIL
NTS

10 FIRE PROTECTION DETAIL WALL/FLOOR PENETRATION
NTS

4TH CIVIL ENGINEER SQUADRON
READY · WILLING · ABLE

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I7CES

PROJECT TITLE
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839
SHEET TITLE: PLUMBING DETAILS 1
Date: SEP 2023

SEQ. 50 | SHEET P-501 | OF 50

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	WASTE PIPE IN	VENT PIPE IN	COLD WATER IN	HOT WATER IN	WASTE FIXTURE UNITS	ELECTRICAL	REMARKS	BASIS OF DESIGN MANUFACTURER & MODEL NUMBER
WC-1	WATER CLOSET, 1.1/1.6 G.P.F. FLUSHOMETER, SIPHON JET WITH ENLONGATED BOWL AND TOP SULLY SPUD, MOUNT RIM AT 16-1/2" A.F.F. FOR ADA/ABA COMPLIANCE, VERIFY FLUSH HANDLE PER TDLR REQUIREMENTS. FLOOR FLANGE SHALL BE COPPER ALLOY, CAST IRON, OR PLASTIC. GASKET SHALL BE WAX-TYPE SEAL. COLOR: WHITE FLUSHVALVE: DUAL FLUSH MANUAL	4	2	1	-	4	N/A	VITREOUS CHINA, TOP SPUD, FLOOR MOUNTED, FLOOR OUTLET, ELONGATED BOW, PROVIDE WITH HEAVY DUTY INJECTION MOLDED PLASTIC, OPEN FRONT TOILET SEAT WITH COVER AND CHECK HINGES COMPLYING WITH ANSI Z124.5 FOR COMMERCIAL HEAVY DUTY. FIXTURE SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH ADA/ABA STANDARDS FOR ADULTS.	WATER CLOSET: KOHLER Highcliff Ultra #K-96057 FLUSH VALVE: SLOAN WES 111-1.6/1.1 SEAT: BEMIS COMMERCIAL #1955SSCT
WC-2	WATER CLOSET, 1.1/1.6 G.P.F. FLUSHOMETER, SIPHON JET WITH ENLONGATED BOWL AND TOP SUPPLY SPUD, MOUNT RIM AT 15" A.F.F., VERIFY FLUSH HANDLE PER TDLR REQUIREMENTS. COLOR: WHITE FLUSHVALVE: DUAL FLUSH MANUAL	4	2	1	-	4	N/A	VITREOUS CHINA, TOP SPUD, FLOOR MOUNTED, FLOOR OUTLET, ELONGATED BOW, PROVIDE WITH HEAVY DUTY INJECTION MOLDED PLASTIC, OPEN FRONT TOILET SEAT WITH COVER AND CKECK HINGES COMPLYING WITH ANSI Z124.5 FOR COMMERCIAL HEAVY DUTY. FIXTURE SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH ADA/ABA STANDARDS FOR ADULTS.	WATER CLOSET: KOHLER Highcliff Ultra #K-96057 FLUSH VALVE: SLOAN WES 111-1.6/1.1 SEAT: BEMIS COMMERCIAL #1955SSCT
UR-1	URINAL, 0.125 GPF FLUSHOMETER ULTRA HIGH EFFIICENCY WASHOUT, MOUNT RIM AT 17" A.F.F FOR ADA/ABA COMPLIANCE. COLOR: WHITE	2	2	3/4	-	2	N/A	VITREOUS CHINA, TOP SPUD, WALL CARRIER SYSTEM, BACK OUTLET, EXTENDED RIM, WASHOUT FLUSHING ACTION, CHROME-PLATED MANUAL FLUSHOMETER. FIXTURE SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH ADA/ABA STANDARDS FOR ADULTS.	URINAL: KOHLER BARDON #K-4991-ET-0 FLUSH VALVE: SLAON REGAL #186-0.125
UR-2	URINAL, 0.125 GPF FLUSHOMETER ULTRA HIGH EFFIICENCY WASHOUT, MOUNT RIM AT 24" A.F.F. COLOR: WHITE	2	2	3/4	-	2	N/A	VITREOUS CHINA, TOP SPUD, WALL CARRIER SYSTEM, BACK OUTLET, EXTENDED RIM, WASHOUT FLUSHING ACTION, CHROME-PLATED MANUAL FLUSHOMETER. PROVIDE WITH CONCEALED FLOOR MOUNTED HANGAR. PROVIDE WITH CONCEALED FLOOR MOUNTED HANGAR.	URINAL: KOHLER BARDON #K-4991-ET-0 FLUSH VALVE: SLAON REGAL #186-0.125
LV-1	LAVATORY, ACCESSIBLE, ADA COMPLIANT. UNDER COUNTER MOUNTED ENAMELED CAST IRON. COUNTED MOUNTED, SINGLE LEVER 4" ON CENTER CHROME-PLATED FAUCET, LESS POP-UP, 0.5 GPM AERATOR, GRID STRIANER DRAIN AND THERMOSTATIC MIXING VALVE. PIPE INSULATION: WHITE FOAM PER ADA COLOR: WHITE	2	2	1/2	1/2	1	N/A	FLUSHOMETER. FIXTURE SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH ADA/ABA STANDARDS FOR ADULTS. FURNISH AND INSTALL TMV-1 AND PIPING PROTECTION COVERS BELOW THE LAVATORY.	LAVATORY: KOHLER #K-2874 FAUCET: AMERICAN STANDARD #7385050.002
SHR-1	SHOWER ASSEMBLY WITH TEMPTROL PRESSURE BALANCED MIXING VALVE WITH INTEGRAL SERVICE STOPS, 1.5 GPM, VOLUME DIVERTER, INTEGRAL VOLUME CONTROL, VACUUM BREAKER, TRIM AND DRAIN.	2	2	1/2	1/2	2	N/A	THE HOT WATER LIMIT STOPS SHALL BE SET TO 110 DEGREES FARENHEIT. MIXING VALVE SHALL BE ASSE 1016 COMPLIANT.	SHOWER ASSEMBLY:
MS-1	HIGH DENSITY COMPONSITE SERVICE BASIN WITH INTEGRAL DRAIN, STAINLESS STEEL STRAINER, HOSE & BRACKET, MOP HANGAER AND WALL-MOUNTED CHROME PLATED FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4" THREAD ON SPOUT, STAINLESS STEEL WALL GUARDS.	3	2	1/2	1/2	2	N/A	THE FIXTURE SHALL BE FURNISHED AND INSTALLED WITH 120 DEGREE FARENHEIT PIPING.	MOP BASIN: #Z1996-24 FAUCET: DELTA #28T9 HOSE & BRACKET: ZURN #Z1996-HH MOP HANGER: ZURN #Z1996-MH WALL GUARD: ZURN #Z1996-WG
EWC-1,2	WATER COOLER, WALL MOUNTED, BI-LEVEL, UL LISTED, BARRIER FREE PER ANSI A117.1-1980. MEETS ADA AND TDLR ACCESSIBILITY REQUIREMENTS.	2	2	3/4	3/4	.5	120 V, DUPLEX RECEPTACLE	FIXTURE SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH ADA/ABA STANDARDS FOR ADULTS.	ELKAY #EZSTL8WSLK
TMV-1	PIPE PER MANUFACTURE RECOMMENDED PIPING INSTRUCTIONS. POINT OF USE ASSE 1070 COMPLIANT THERMOSTATIC MIXING VALVE.	-	-	1/2	1/2	-	N/A	-	WATTS #LFMMV
FD-1	FLOOR DRAIN, CAST IRON WITH ANCHOR FLANGE AND 6" SQUARE NICKEL BRONZE STARINER WITH VANDAL RESISTANT SCREWS.	3	2	-	-	2	N/A	FURNISH AND INSTALL WITH TRAP GUARD INSERT.	MIFAB #F1100 SERIES
RCP-1	DOMESTIC HOT WATER RECERCULATION PUMP, BRONZE CONSTRUCTION, DOMESTIC WATER CIRCULATOR PUMP, WITH AQUASTAT AND PROGRAMMABLE TIMER.	-	-	-	-	-	120 V, DUPLEX RECEPTACLE	FURNISH AND INSTALL WITH PROGRAMMABLE TIMER AND AQUASTAT.	BELL & GOSSETT #ECOCIRC 19-16 SERIES

WATER HEATER SCHEDULE

MARK	STORAGE (GALLONS)	RECOVERY CAPACITY @90° F RISE, BASED ON 96% THERMAL EFFICICNTY (GAL/HR)	ELECTRICAL VOLTS	ELECTRICAL PHASE	BASIS OF DESIGN	TYPE	NOTES
WH-1	119	388	120	1	AO SMITH BTH-300(A)	GAS-FIRED	1,2,3

NOTES:

1. REFERENCE DETAIL 3/P-501 FOR ADDITIONAL INSTALLATION REQUIRMENTS.
2. THE WATER HEATER SHALL BE INSTALLED IN ACCORDANCE WITH CODE/AHJ REQUIRED DRAIN PAN, T&P VALVE, EXPANSION TANK, HEAT TRAP, STAND, SHUT-OFF VALVES, CHECK VALVE AND APPURTENANCES
3. SET THE INTEGRAL WATER HEATER CONTROLS TO MAINTAING THE STORAGAE WATER AT 120° F.

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: I^CES

PROJECT TITLE

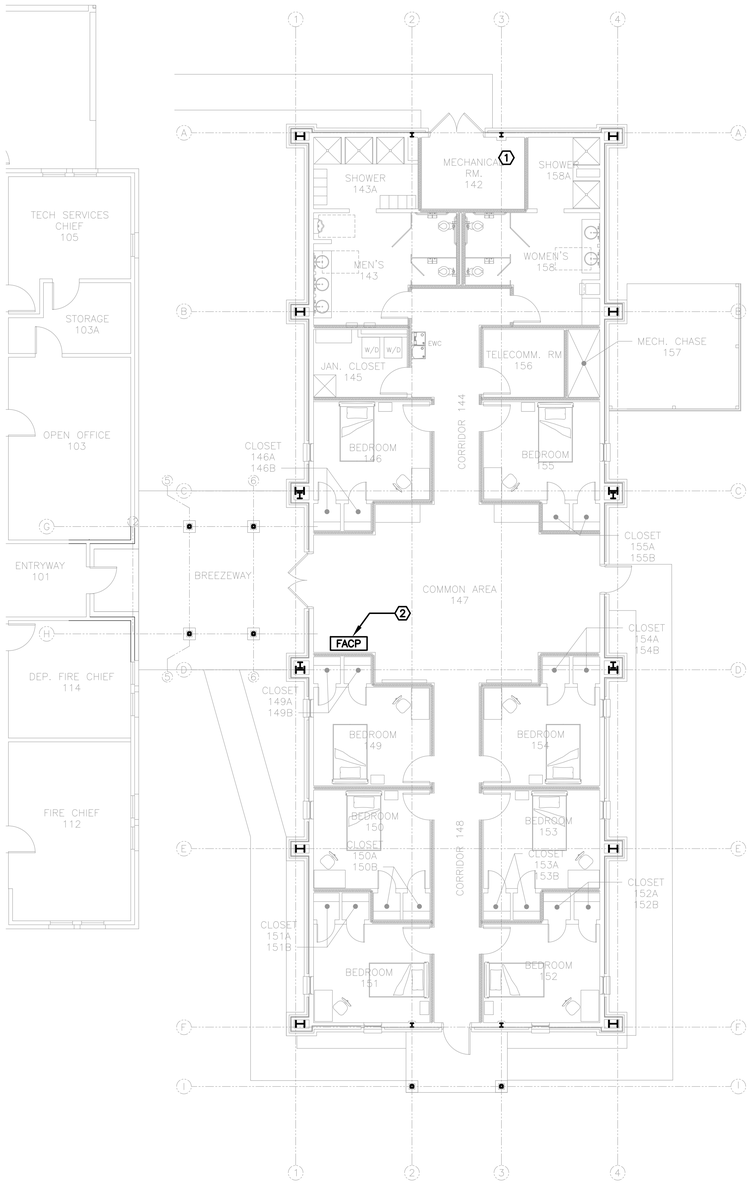
FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

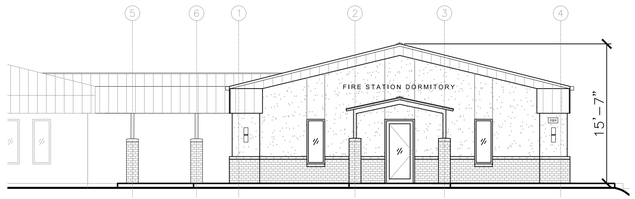
SHEET TITLE: PLUMBING SCHEDULES

Date: SEP 2023

SEQ. 52 | SHEET P-601 | OF 50



1 NEW ADDITION FLOORPLAN
1" = 1' – 0"



2 SOUTH ELEVATION
1" = 1' – 0"

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE THE SERVICES OF A QUALIFIED FIRE PROTECTION ENGINEER (QFPE) AS PART OF THEIR BID PROPOSAL TO COMPLETE THE REQUIRED ITEMS AS DESCRIBED IN THESE DRAWINGS.
2. THE INFORMATION PROVIDED ON THE CONTRACT DOCUMENTS SERVES TO GUIDE THE CONTRACTOR IN THE DESIGN AND INSTALLATION OF A COMPLETE FIRE PROTECTION SYSTEM.
3. MUST COMPLY WITH UFC 1–200–01. NOTE: THIS UFC REFERENCES ALL OTHER DOD UFCS AND BUILDING CODES. MUST COMPLY WITH UFC 3–600–01 AND ALL STANDARDS AND CODES REFERENCED BY THIS UFC. THIS INCLUDES, BUT IS NOT LIMITED TO, NFPA STANDARDS AND CODES, ICC CODES, TIA STANDARDS, CEREG DESIGN GUIDE.
4. ALL DESIGN WORK SHALL BE PERFORMED BY A QUALIFIED FIRE PROTECTION ENGINEER (QFPE). THIS FPE SHALL ALSO BE CONSIDERED THE QUALIFIED FIRE PROTECTION ENGINEER (QFPE) FOR THIS PROJECT AS DEFINED BY UFC 3–600–01, AND SHALL BE RESPONSIBLE FOR PERFORMING ALL WORK DESCRIBED IN THAT UFC FOR QFPE.
5. THE QFPE SHALL BE REGULARLY AND DIRECTLY INVOLVED IN ALL ASPECTS OF DESIGN, INSTALLATION, ACCEPTANCE TESTING AND COMMISSIONING OF FIRE PROTECTION, FIRE ALARM AND LIFE SAFETY SYSTEMS AND FEATURES. THE QFPE SHALL PERSONALLY CONDUCT AND/OR WITNESS ALL ACCEPTANCE TESTING FOR FIRE PROTECTION, FIRE ALARM AND LIFE SAFETY SYSTEMS AND FEATURES.
6. THE QFPE SHALL BE RESPONSIBLE FOR REVIEWING DESIGNS AND SUBMITTALS FOR ALL TRADES TO ENSURE THAT FIRE PROTECTION AND LIFE SAFETY FEATURES ARE MAINTAINED THROUGHOUT THE CONTRACT. THIS INCLUDES, BUT IS NOT LIMITED TO, DEVELOPING AND SUBMITTING THE REVIEW LETTER AT THE 100% DESIGN DESCRIBED IN UFC 3–600–01 SECTION 1–7.3.
7. ADDITIONAL INFORMATION REGARDING FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS CAN BE FOUND IN THE ARCHITECTURAL AND ELECTRICAL SECTIONS. THE QFPE AS DESCRIBED ABOVE SHALL BE RESPONSIBLE FOR OVERSEEING THE DESIGN, INSTALLATION, ACCEPTANCE TESTING AND COMMISSIONING OF ALL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS FOUND THROUGHOUT THIS CONTRACT.
8. THE CONTRACTOR SHALL PROVIDE AN AS BUILT DRAWING AT THE END OF PROJECT.

DESIGN NOTES:

1. THE QFPE SHALL COORDINATE WITH ALL TRADES TO ENSURE THAT ALL MEANS OF EGRESS AND LIFE SAFETY COMPONENTS AND SYSTEMS AS DESCRIBED IN UFC 3–600–01 AND NFPA 101 ARE DESIGNED, INSTALLED AND TESTED IN ACCORDANCE WITH THE STANDARDS OF THIS SECTION.
2. THE NEW BUILDING THAT MEETS THE MINIMUM REQUIREMENTS FOR FIRE SPRINKLERS SHALL BE FULLY SPRINKLERED IN ACCORDANCE WITH UFC 3–600– 01. THE MINIMUM PRESSURE AND FLOW REQUIREMENTS SHALL BE CALCULATED TO THE BASE OF RISER AND TO THE DEMARCATION BOUNDARY WITH POTABLE WATER AT THE BASE. THE BORE DATA SHALL BE ON THE NAMEPLATE FOR EACH SPRINKLER RISER. THE PRESSURE AND FLOW REQUIREMENTS AT THE POINT OF DEMARCATION SHALL BE PROVIDED IN WRITING TO THE GOVERNMENT NO LATER THAN THE 65% DESIGN STAGE.
3. THE QFPE SHALL BE RESPONSIBLE FOR DETERMINING IF THE NEW BUILDING MEETS THE MINIMUM REQUIREMENTS FOR FIRE SPRINKLERS PER UFC 3–600–01 AND INCLUDE THIS IN THE DESIGN ANALYSIS. ALL BUILDINGS, BOTH NEW AND EXISTING, THAT MEET THE THRESHOLD FOR REQUIRING SPRINKLERS SHALL BE PROVIDED WITH AUTOMATIC FIRE SPRINKLERS IN ACCORDANCE WITH UFC 3–600–01 AND NFPA 13.
4. NEW BUILDING SHALL HAVE CALCULATED FIRE FLOWS FOR FIREFIGHTING PURPOSES PERFORMED BY THE QFPE IN ACCORDANCE WITH UFC 3– 600–01 AND NFPA 1. THESE FIRE FLOWS SHALL BE PROVIDED TO THE GOVERNMENT IN WRITING PRIOR TO THE 65% DESIGN SUBMITTAL.
5. THE QFPE IS RESPONSIBLE FOR ALL FIRE PROTECTION DESIGN FROM THE POINT OF DEMARCATION DOWN THROUGHOUT BUILDING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL EQUIPMENT, MATERIALS AND CONSTRUCTION REQUIRED TO DELIVER A FULLY OPERATIONAL FIRE SPRINKLER AND FIRE ALARM SYSTEMS TO THE GOVERNMENT, FOR THE NEW BUILDING REQUIRING FIRE SPRINKLERS AND FIRE ALARM BY THE QFPE PER THIS SCOPE OF WORK.
6. IF BID OPTIONS ARE AWARDED. CONTRACTOR SHALL INCLUDE ALL NECESSARY SHOP DRAWINGS, CALCULATIONS, DIAGRAMS, DEVICES, MATERIALS, LABOR, SUPERVISION, AND ACCESSORIES NEEDED FOR COMPLETE AND FUNCTIONAL SYSTEM IN EACH BID OPTION AWARDED. IN EACH OPTION AWARDED THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DEMOLISHING EXISTING FIRE ALARM DEVICES, CORRESPONDING CONDUIT, JUNCTION BOXES, WIRING, AND ACCESSORIES AND PROVIDE NEW.

FIRE ALARM SYSTEM:

1. THE FIRE CONTROL UNIT SHALL COMPLY WITH UFC 3–600–01 AND NFPA 72. THE ADDRESSABLE FIRE ALARM CONTROL PANEL SHALL BE MONACO MAAP–X, MODEL 227–965–XX (WITH INTERNAL RADIO). THE SYSTEM SHALL INCLUDE AN OMNI DIRECTIONAL ANTENNA AND LIGHTENING ARRESTOR.
2. THE FIRE ALARM SYSTEM SHALL PROVIDE THE FOLLOWING:
   - A. TRANSMISSION OF ALARM, SUPERVISORY, AND TROUBLE SIGNALS TO THE GOODFELLOW AIR FORCE BASE FIRE DEPARTMENT (GFAFBFD).
   - B. CARBON MONOXIDE DETECTION IN ROOMS WITH AND ADJACENT TO FUEL BURNING EQUIPMENT INCLUDING DISTINCT NOTIFICATION FOR CARBON MONOXIDE ALARMS IN ACCORDANCE TO UFC 3–600–01
   - C. DEACTIVATION OF HEATING VENTILATION AND AIR CONDITIONING FANS UPON FIRE ALARM ACTIVATION
3. CONTRACTOR SHALL ENSURE THAT 17 CES FIRE ALARM TECHNICIANS, 17 CES FIRE PREVENTION OFFICE, PROJECT MANAGER AND OTHER STAKEHOLDERS IN ACCORDANCE WITH NFPA AND UFC–03–600–1; ARE NOTIFIED OF ALL ALARM SYSTEM AND SPRINKLER SYSTEM ACCEPTANCE TEST.
4. CONTRACTOR SHALL PROVIDE ALL CERTIFICATION DOCUMENTATION TO THE 17 CES FIRE PREVENTION OFFICE WHEN THE ALARM ACCEPTANCE TESTING IS COMPLETE.

KEYNOTES:

1. DESIRED LOCATION OF FIRE PROTECTION SYSTEM RISER. DESIGN TO BE MINIMUM DISTANCE FROM SURROUNDING WALLS TO ENSURE THAT IT DOES NOT OBSTRUCT THE EXHAUST FAN IN THE MECHANICAL ROOM.
2. LOCATION OF NEW FIRE ALARM CONTROL PANEL (FACP)

Designed by: JH/RM/LA
Drawn by: JH/RM/LA
Reviewed by: RT/JH
Submitted by: 17CES

PROJECT TITLE

FIRE STATION ADD/ALTER, B3321
PROJECT NO. 1039839
17th TRAINING WING
GOODFELLOW AIR FORCE BASE, TEXAS

Project Number: 1039839

SHEET TITLE: FIRE PROTECTION PLAN NOTES & SYMBOLS

Date: SEP 2023

SEQ. 54 | SHEET FA-001 | OF 50