

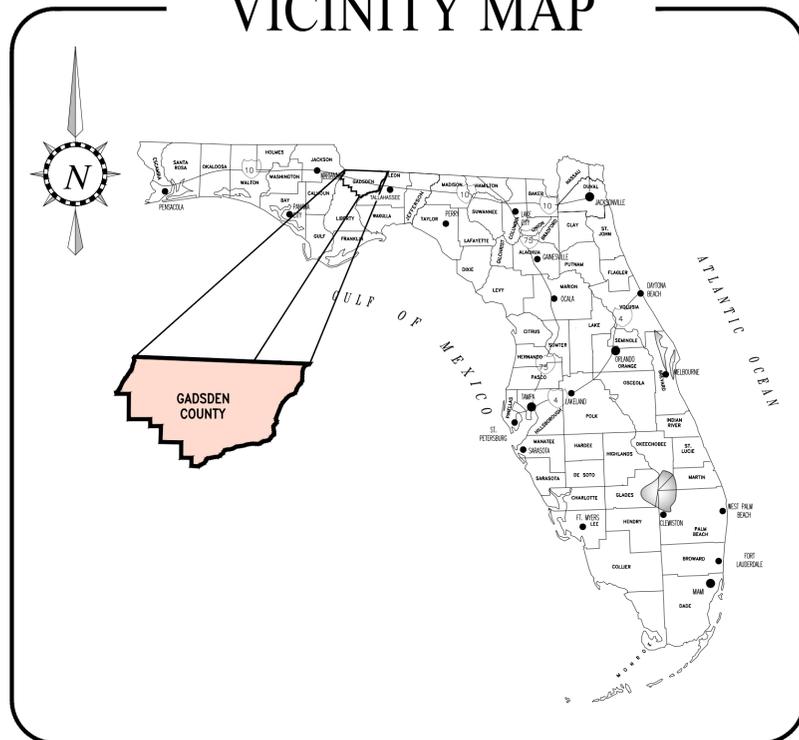


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VICINITY MAP



ERRORS AND OMISSIONS, IF ANY, IN THESE CONSTRUCTION DOCUMENTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.

GENERAL CONTRACTOR TO THOROUGHLY INSPECT EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS.

ANY DISCREPANCIES BETWEEN PLANS AND FIELD CONDITIONS SHALL BE NOTED AT ONCE AND CALLED TO THE ENGINEER'S ATTENTION 48 HOURS PRIOR TO SUBMITTING BIDS.

ALL CORRESPONDENCE IN REGARDS TO THESE CONSTRUCTION/BID DOCUMENTS SHALL BE DIRECTED TO REBEKAH FIELDER, P.E. AT DEWBERRY ENGINEERS, INC. CONSULTING ENGINEERS 2700 SOUTH BLAIR STONE ROAD, SUITE 204 D TALLAHASSEE, FL (850) 354-5184.

GOVERNING STANDARDS AND SPECIFICATIONS: FLORIDA DEPARTMENT OF TRANSPORTATION, STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION DATED CURRENT EDITION, AS AMENDED BY CONTRACT DOCUMENTS.

APPLICABLE DESIGN STANDARDS MODIFICATIONS: CURRENT EDITION For Design Standards Modifications click on "Design Standards" at the following web site: [HTTPS://WWW.FDOT.GOV/DESIGN/STANDARDPLANS/CURRENT/DEFAULT.SHTM](https://www.fdot.gov/design/standardplans/current/default.shtm)

OWNER, DEVELOPER, PERMITTING AGENCY, ENGINEER, SURVEYOR

OWNER: CITY OF GRETNA
14615 MAIN ST.
GRETNA, FL 32332
(850) 856-5257

ENGINEER: DEWBERRY ENGINEERS INC.
2700 S BLAIR STONE RD, SUITE 204 D
TALLAHASSEE, FLORIDA 32301
850-523-0062

SURVEYOR: DEWBERRY ENGINEERS INC.
203 ABERDEEN PARKWAY
PANAMA CITY, FLORIDA 32405
850-522-0644

BID DOCUMENTS FOR: CDBG-MIT (PUBLIC SAFETY BUILDING EXPANSION)

PREPARED FOR: CITY OF GRETNA GADSDEN COUNTY, FLORIDA

LOCATION MAP



NO.	REVISIONS DESCRIPTION	DATE
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FEBRUARY 2026

PREPARED BY:



PROJECT NUMBER: 50184155

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REBEKAH NICOLE FIELDER, P.E.
P.E. #: 99533

DATE:



Dewberry Engineers Inc. 2700 S. Blair Stone Rd. Ste. 204 D Tallahassee, FL 32301 850.523.0062

CDBG-MIT PUBLIC SAFETY BUILDING EXPANSION CITY OF GRETNA GRETN, FLORIDA

GENERAL NOTES:

- 1. THE EXACT LOCATION AND ELEVATION OF EXISTING STRUCTURES, UTILITIES, AND PIPING SHALL BE PHYSICALLY VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE CONSTRUCTION BEGINS. THESE DRAWINGS DO NOT INTEND TO SHOW IN COMPLETE DETAIL ALL EXISTING STRUCTURES, UTILITIES, OR PIPING. THE CONTRACTOR SHALL EXAMINE ALL AVAILABLE RECORDS AND MAKE ALL EXPLORATIONS AND EXCAVATIONS AS REQUIRED TO DETERMINE THE LOCATION OF EXISTING STRUCTURES, UTILITIES, AND PIPING, WHENEVER NECESSARY. THE OWNER RESERVES THE RIGHT TO CHANGE LOCATION OF LINES TO AVOID CONFLICT WITH EXISTING STRUCTURES, UTILITIES, OR PIPING. THE LOCATIONS OF UNDERGROUND UTILITIES HAVE NOT BEEN PHYSICALLY LOCATED BY THEIR OWNER OR ENGINEER.
2. THE CONTRACTOR SHALL CHECK PLANS FOR CONFLICTS AND DISCREPANCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER OR OWNER'S ENGINEER OF ANY CONFLICT BEFORE PERFORMING ANY WORK IN THE AFFECTED AREA.
3. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY COMPANIES IN ORDER TO PERMIT MARKING THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES ABOVE OR BELOW GROUND THAT MAY OCCUR AS A RESULT OF WORK CALLED FOR IN THESE CONTRACT DOCUMENTS.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LEARN, KNOW, AND COMPLY WITH THE REGULATIONS, ORDINANCES, PERMIT AND INSPECTION REQUIREMENTS OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND COMPLY WITH THE CONDITIONS OF THE VARIOUS PERMITS OF THE GOVERNMENTAL AGENCIES. THE CONTRACTOR SHALL SCHEDULE THE REQUIRED INSPECTIONS AND APPROVALS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE NECESSARY AGENCIES OF CONSTRUCTION COMMENCEMENT.
6. ALL SPECIFICATIONS AND DOCUMENTS REFERRED TO SHALL BE OF LATEST ISSUE AND SHALL BE CONSIDERED A PART OF THESE DOCUMENTS AS THOUGH INCLUDED.
7. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN ADEQUATE TRAFFIC CONTROL AND TO PROVIDE DETOURS AROUND CONSTRUCTION ACTIVITIES. NO STREET SHALL REMAIN CLOSED TO TRAFFIC OVERNIGHT. IN ADDITION, THE CONTRACTOR SHALL COOPERATE WITH LOCAL RESIDENTS IN GAINING ACCESS TO THEIR HOMES AND BUSINESSES DURING WORKING HOURS AND SHALL ASSIST AT ALL TIMES WHEN VEHICLES EXPERIENCE TROUBLE DUE TO CONSTRUCTION ACTIVITIES.
8. PRIOR TO COMMENCING CONSTRUCTION, CONTRACTOR SHALL INSTALL ANY REQUIRED SILT FENCING OR BAILED HAY BARRIERS (FLORIDA EROSION CONTROL MANUAL) FOR SILT/EROSION CONTROL. THERE WILL BE NO DIRECT PAYMENT FOR THIS WORK. COST SHALL BE INCLUDED IN OTHER ITEMS OF WORK. LOCATION SHALL BE AS SHOWN ON THE PLANS OR AS DIRECTED IN THE FIELD.
9. THE CONTRACTOR SHALL INSTALL ALL TRAFFIC CONTROL DEVICES REQUIRED FOR THE PROJECT IN ACCORDANCE WITH THE LATEST EDITION OF THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL.
10. WHERE IT BECOMES NECESSARY TO TEMPORARILY REMOVE, REPOSITION, OR SUPPORT EXISTING FACILITIES, UTILITY POLES, ETC. THIS WORK SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE AND IN ACCORDANCE WITH REQUIREMENTS OF THE OWNER OF THE EXISTING FACILITY, UTILITY POLE, ETC. THE CONTRACTOR SHALL GIVE PROPER NOTICE TO THE UTILITIES. THE CONTRACTOR SHALL PHYSICALLY EXAMINE THE ENTIRE PROJECT SITE AND INFORM HIMSELF FULLY IN REGARD TO ALL CONDITIONS PERTAINING TO THE PLACE WHERE THE WORK IS TO BE PERFORMED FOR PURPOSE OF DETERMINING HIS COST TO PERFORM THE WORK. THE CONTRACTOR SHOULD PAY SPECIAL ATTENTION TO AREAS INVOLVING CLEARING AND GRUBBING, EXISTING FACILITIES REMOVAL AND REPLACEMENT, SUPPORT ON RELOCATION, AND WORK INVOLVED IN WETLAND AREAS.
11. WORK ALONG STREETS MAY REQUIRE THE REMOVAL AND REPLACEMENT OF EXISTING DRAINAGE PIPE, STRUCTURES, HEADWALLS, ETC.. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR RELATED ITEMS OF WORK.
12. COPIES OF TEST REPORTS FOR ASPHALT, SUBGRADE, FILL, AND BACKFILL UNDER ROADWAYS AND STRUCTURES, AND UTILITY TRENCHES SHALL BE PROVIDED DIRECTLY TO THE ENGINEER FOR APPROVAL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE TESTING AND INSURE THAT ALL APPLICABLE TESTS HAVE BEEN PERFORMED. FAILURE TO OBTAIN TEST RESULTS AT ANY POINT OF CONSTRUCTION WILL REQUIRE THE REMOVAL OF THE IMPROVEMENT AND REPLACEMENT BY THE CONTRACTOR. IT SHOULD BE NOTED THAT THE ENGINEER WILL REQUIRE COMPACTION TESTING IN ACCORDANCE WITH THE TESTING SCHEDULE FOR UTILITY TRENCH FILL AND BACKFILL.
13. ANY DISTURBED SIGNS MUST BE REINSTALLED TO EXISTING OR ACCEPTABLE CONDITION BY THE OWNER AT THE CONTRACTOR'S EXPENSE.
14. CONTRACTOR SHALL HAVE COPIES OF ALL PERMITS (CITY, COUNTY, FDOT & FDEP) IN POSSESSION AT ALL TIMES DURING CONSTRUCTION. ANY INDIVIDUAL CREW OR INDIVIDUAL PERSON WORKING ON THE INSTALLATION OF ANY PART OF THIS PROJECT SHALL HAVE A SET OF PLANS AND SPECIFICATIONS WITH THEM AT ALL TIMES.
15. TESTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE TESTING SCHEDULE CONTAINED WITHIN THESE PLANS. SELECTION AND CONTRACTING WITH THE TESTING FIRMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND SCHEDULE ALL TESTS.
16. IT SHALL BE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND SCHEDULE THE ACTIVITIES OF THE UTILITY COMPANIES INCLUDING BUT NOT LIMITED TO TV, TELEPHONE, GAS, POWER, ETC., AND PROVIDE IN ACCORDANCE WITH THE UTILITY COMPANY ANY NECESSARY CONDUITS FOR CROSSINGS UNDER PAVEMENT. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR THIS SERVICE. ANY DAMAGE CAUSED BY THE UTILITY COMPANY TO THE IMPROVEMENTS OF THE CONTRACTOR SHALL BE REPAIRED IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT REPAIRS ARE PERFORMED, EITHER BY THE CONTRACTOR OR THE UTILITY COMPANY AT NO COST TO THE OWNER.
17. ALL CONSTRUCTION STAKING SHALL BE DONE AT CONTRACTORS EXPENSE.
18. STATIONING ON THE PLANS RELATES TO THE CENTERLINE OF ALL ROADWAYS/ RIGHT-OF-WAYS AND SHALL BE USED FOR LOCATION PURPOSES ONLY. CONTRACTOR SHALL NOT USE STATIONING WHEN CALCULATING PIPE LENGTHS.
19. THE CONTRACTOR SHALL TAKE WHATEVER PRECAUTIONS NECESSARY TO AVOID TRESPASSING AND DAMAGING PRIVATE PROPERTY.
20. ALL SPOIL MATERIAL FROM EXCAVATION SHALL BE PLACED ON THE UPLAND SIDE OF ANY SLOPED CONSTRUCTION AREA.
21. THE CONTRACTOR SHALL TAKE WHATEVER STEPS NECESSARY TO PREVENT EROSION INTO NEARBY WETLANDS WHICH INCLUDES TURBIDITY CURTAINS, HAY BALES, AND ALL OTHER METHODS TO CONTROL EROSION AT NO ADDITIONAL COST TO OWNER AND MAY BE DIRECTED TO DO SO BY THE ENGINEER.
22. THE CONTRACTOR SHALL MAINTAIN A REASONABLE ACCESS TO ALL RESIDENCES AND BUSINESSES DURING CONSTRUCTION.
23. ALL EXISTING CONCRETE, ASPHALT, TREES, STUMPS, AND OTHER DELETERIOUS MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FLORIDA LAWS.
24. DEWATERING: SHOULD LOWERING OF GROUNDWATER BE NECESSARY FOR THE INSTALLATION OF CONCRETE STRUCTURES, GRAVITY SEWER, FORCEMAINS, WATERMAINS, ETC., OR TO PREVENT LATERAL MOVEMENT OF MATERIAL UNDER CONCRETE ALREADY PLACED, SUCH LOWERING SHALL BE ACCOMPLISHED BY MEANS OF A WELL POINT SYSTEM OR OTHER APPROVED MEANS, AT CONTRACTOR'S EXPENSE. COMPREHENSIVE PLANS FOR DEWATERING OPERATIONS, IF USED, SHALL BE SUBMITTED BY THE CONTRACTOR TO ENGINEER PRIOR TO INSTALLATION.
25. CONTRACTOR SHALL FURNISH "AS BUILT PLANS" INDICATING LOCATIONS OF ALL FEATURES, PIPES, PONDS, PADS, MANHOLES, FITTINGS, VALVES, AND DEAD END RUNS WITH THREE (3) PHYSICAL FEATURES (LOT CORNERS, TREES, ETC.).
26. THE CONTRACTOR SHALL REMOVE AND REPLACE, TO THEIR ORIGINAL NATURE, ALL DISTURBED MATERIALS OR OBJECTS WITHIN THE PATH OF THE NEW UTILITIES AS NECESSARY. ALL REPLACED MATERIALS SHALL BE EQUAL OR BETTER AND SHALL BE APPROVED BY THE ENGINEER. THIS INCLUDES ALL LANDSCAPING WITHIN THE RIGHT OF WAY IN THE PATH OF THE NEW UTILITIES.
27. CONTRACTOR SHALL FOLLOW ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS FOR CONSTRUCTION.
28. A TWO AND ONE HALF FOOT STRIP OF SOD SHALL BE INSTALLED ON THE EDGE OF ALL ASPHALT AND ASPHALT MILLING AREAS AND AROUND ALL ABOVE GROUND CONCRETE STRUCTURES INCLUDING BUT NOT LIMITED TO VALVE PADS, BLOW OFF VAULTS, AND AIR RELEASE VAULTS. ALL OTHER DISTURBED AREAS SHALL BE RESTORED WITH SEED AND MULCH UNLESS OTHERWISE SPECIFIED IN PLANS.
29. PROPOSED SPOT ELEVATIONS REPRESENT PAVEMENT OR GROUND SURFACE GRADE UNLESS OTHERWISE NOTED ON DRAWINGS.

AS BUILT NOTES: AS BUILT/RECORD DRAWINGS

- 1. CONTRACTOR SHALL PROVIDE ENGINEER OF RECORD TWO SIGNED AND SEALED COPIES OF AS-BUILT DRAWINGS OF ALL FINISHED IMPROVEMENTS. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS OF ALL FINISHED IMPROVEMENTS IN PDF AND DWG FORMAT.
2. AS-BUILT DRAWINGS TO BE PERFORMED AND CERTIFIED BY A FLORIDA LICENSED PROFESSIONAL LAND SURVEYOR.
3. AS-BUILT DRAWINGS SHALL BE SUBMITTED AFTER COMPLETION OF ALL IMPROVEMENTS AND PRIOR TO FINAL INSPECTION.
4. AS BUILT DRAWINGS SHALL INCLUDE, BUT NOT BE LIMITED TO:
A. DETAIL OF THE POND CONTROL STRUCTURE INCLUDING STRUCTURE TYPE, STRUCTURE SIZE, INVERT OF ALL PIPES, ORIFICES, WEIRS AND THE INVERT CONNECTIONS AT OFF-SITE CONVEYANCE SYSTEMS, GRATES AND SKIMMERS.
B. POND CONSTRUCTION DETAILS SHOWING THE POND TOPOGRAPHY, TOP OF THE POND BERM/WALL AND POND BOTTOM ELEVATIONS AND THE LOCATION OF SAND FILTERS.
C. SHOW ENTIRE STORM WATER CONVEYANCE SYSTEM INCLUDING THE SIZE TYPE AND INVERT OF ALL PIPES, CHANNELS, ROOF DRAIN SYSTEMS, STRUCTURES, CURBING AND SPOT SHOT ELEVATIONS IN VEHICLE USE AREAS. DRAINAGE STRUCTURES SHALL INCLUDE "X" AND "Y" COORDINATES.
D. SHOW ALL TRAFFIC CONTROL DEVICES INCLUDING SIGNS, SIGNALS, PARKING STRIPPING AND PAVEMENT MARKINGS.
E. DELINEATE CONSERVATION AND DRAINAGE EASEMENT BOUNDARIES AND LABEL WITH THE "OR" BOOK AND PAGE NUMBER.
F. ANY ADDITIONAL ITEMS REQUIRED BY PERMITTING JURISDICTION.

ADA COMPLIANCE NOTES:

- THE CONTRACTOR & OWNER WILL BE HELD ACCOUNTABLE DURING CONSTRUCTION FOR ALL SITE IMPROVEMENTS. COMPLIANCE WITH FLORIDA STATUTES 553.5041 (F.S.), AND THE 2020 FLORIDA BUILDING CODE, ACCESSIBILITY, 7TH EDITION (FBC-A) IS MANDATORY. IF NON-COMPLIANT AT FINAL INSPECTION, CONTRACTOR WILL BE REQUIRED TO MODIFY CONSTRUCTION TO COMPLY WITH F.S. AND FBC-A. THE FOLLOWING ITEMS TAKE PRECEDENCE AND SUPERSEDE OTHER SITE DETAILS ON DRAWINGS: ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON AN ACCESSIBLE ROUTE NO LESS THAN 44" WIDE SO THAT USERS WILL NOT BE COMPELLED TO WALK OR WHEEL BEHIND PARKED VEHICLES EXCEPT BEHIND HIS OR HER OWN VEHICLE. §208.1 AND §502.3, FBC-A AND F.S. 553.5041.
2. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SERVING A PARTICULAR BUILDING SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE FROM THE ACCESSIBLE (H/C) PARKING TO AN ACCESSIBLE ENTRANCE. §208.3.1 FBC-A AND F.S. 553.5041(5)(B).
3. ACCESSIBLE PARKING SPACES SHALL BE 12' WIDE, AND OUTLINED WITH BLUE PAINT. §502.2 AND §502.6, FBC-A
4. ACCESS AISLES REQUIRED ADJACENT TO PARKING SPACES SHALL BE 5' WIDE WITH DIAGONAL STRIPING. §502, FBC-A
5. ACCESSIBLE PARKING AND ACCESS AISLES SHALL BE LEVEL (NOT TO EXCEED 1:48) ON A STABLE FIRM & SLIP RESISTANT SURFACE. RE: §302.1, §502.3, FBC-A
6. ACCESSIBLE PARKING SIGNS SHALL BE FDOT APPROVED AND SHALL READ "PARKING BY DISABLED PERMIT ONLY" AND SHALL INDICATE A \$250 FINE FOR ILLEGAL USE. INSTALL SIGNS A MINIMUM 60"(INCHES) FROM THE GROUND TO THE BOTTOM OF THE SIGN(S). RE: §502.6 AND F.S. 553.5041.
7. CURB RAMPS SHALL NOT EXCEED 1:12 SLOPE, AND CURB RAMP FLARES SHALL NOT EXCEED 1:10 SLOPE. CURB RAMPS AND FLARED SIDES SHALL NOT ENCRROACH UPON PARKING SPACES, ACCESS AISLES, OR VEHICULAR TRAFFIC LANES. THE COUNTER SLOPE OF ADJACENT ROAD SURFACES & GUTTERS SHALL NOT EXCEED 1:20. RE: §405.2, §406, FBC-A
8. CURB RAMPS SHALL HAVE A LANDING WITH A MINIMUM CLEAR LENGTH OF 36" SHALL BE LOCATED AT THE TOP SIDE OF EACH CURB RAMP. A CLEAR WIDTH AT LEAST AS WIDE AS THE CURB RAMP (EXCLUDING FLARED SIDES) LEADING TO IT. EXCEPTION: FOR ALTERATIONS, WHERE THERE IS NO LANDING, CURB RAMP FLARES SHALL BE PROVIDED, AND SHALL NOT BE STEEPER THAN 1:12 SLOPE. RE: §406, FBC-A
9. ALL RAMPS WITH A RISE GREATER THAN 6" SHALL PROVIDE EDGE PROTECTION COMPLYING WITH §405.9 FACBC. RAMPS SHALL HAVE 60" MIN LEVEL LANDINGS AT THE TOP & BOTTOM. RE: §405.7, FBC-A.
10. ALL RAMPS WITH A RISE GREATER THAN 6" SHALL PROVIDE EDGE PROTECTION COMPLYING WITH §405.9 FACBC. RAMPS SHALL HAVE 60" MIN LEVEL LANDINGS AT THE TOP & BOTTOM. RE: §405.7, FBC-A.
11. ACCESSIBLE ROUTES TO "MAIN ENTRY" FROM AN ACCESSIBLE PARKING SPACE, AND FROM THE "PUBLIC WAY", SHALL NOT EXCEED 1:20 SLOPE (UNLESS RAMPS, HANDRAILS WITH PROPER EXTENSIONS ARE PROVIDED) WITH CROSS SLOPE NOT IN EXCESS OF 1:48. RE: §206, §402 AND §403, FBC-A.
12. *CONNECT BUILDINGS WITHIN THE SAME SITE WITH AN ACCESSIBLE ROUTE WHICH SHALL NOT EXCEED 1:20 SLOPE (UNLESS RAMPS AND HANDRAILS ARE PROVIDED) AND A MAXIMUM CROSS SLOPE OF 1:48. RE: §206 FBC-A.

MAINTENANCE AND INSPECTION SCHEDULE

- 1. EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND AFTER EVERY 1/2" RAINFALL EVENT. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
2. MAINTENANCE SHALL BE PERFORMED ON ANY ROCK ENTRANCE THE CONTRACTOR PROVIDES WHEN ANY VOID SPACES ARE FULL OF SEDIMENT.
3. HAY BALES SHALL BE USED IN AREAS WHERE EFFECTIVENESS IS REQUIRED FOR LESS THAN 3 MONTHS. INSPECTION OF THE HAY BALES SHALL TAKE PLACE IMMEDIATELY AFTER EACH RAINFALL AND ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
4. INLET(S)/OUTFALLS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAIN EVENT AND ANY REQUIRED REPAIRS TO THE HAY BALES, SILT FENCE, OR FILTER FABRIC SHALL BE PERFORMED IMMEDIATELY.
5. BARE AREAS OF THE SITE THAT WERE PREVIOUSLY SEEDED OR SODDED SHALL BE RESEDED OR RESODDED PER MANUFACTURES' INSTRUCTIONS. ALL SOD ON SLOPES 3:1 OR GREATER SHALL BE PINNED.
6. MULCH AND SOD THAT HAS BEEN WASHED OUT SHALL BE REPLACED IMMEDIATELY. IF NEEDED CONTRACTOR SHALL PIN SOD ON SLOPES STEEPER THAN 4:1
7. MAINTAIN ALL OTHER AREAS OF THE SITE WITH PROPER CONTROLS AS NECESSARY.
8. IF PROPOSED EROSION AND SEDIMENTATION CONTROLS ARE FOUND INEFFECTIVE OR IN NEED OF MAINTENANCE INSPECTOR OR ENGINEER MAY DIRECT INSTALLATION OF ADDITIONAL MEASURES TO PROTECT THE ENVIRONMENT. THE ENGINEER SHALL FURNISH THE CONTRACTOR WITH INFORMATION PERTAINING TO THE CONSTRUCTION, OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL PRACTICES PER FLORIDA ADMINISTRATIVE CODE.

STORMWATER POLLUTION PREVENTION PLAN

- 1. SITE DESCRIPTION: CONSTRUCTION OF A NEW ASPHALT PARKING LOT, UTILITIES WITH ONSITE STORMWATER RETENTION AREA.
2. CONSTRUCTION ACTIVITY: CONSTRUCTION OF A NEW ASPHALT PARKING LOT, UTILITIES WITH ONSITE STORMWATER RETENTION AREA.
3. PROJECT LIMITS: SEE SHEET C4.0 (SITE PLAN).
4. PROJECT DESCRIPTION: CONSTRUCTION OF A NEW PUBLIC SAFETY BUILDING, ASPHALT PARKING LOT, UTILITIES WITH ONSITE STORMWATER RETENTION AREA.
5. MAJOR SOIL DISTURBING ACTIVITIES: N/A
6. TOTAL DISTURBED AREA: 54,163 SQUARE FEET OR 1.243 ACRES.
7. DESCRIPTION OF SOIL OR QUALITY OF DISCHARGE: N/A.
8. NAME OF RECEIVING WATERS: N/A.
9. CONTROLS: NARRATIVE: SEQUENCE OF SOIL DISTURBING ACTIVITIES AND IMPLEMENTATION OF CONTROLS.
A. THE SOIL DISTURBING ACTIVITIES FOR THIS PROJECT ARE AS FOLLOWS - ONLY UPON PROPER PLACEMENT OF ALL EROSION CONTROLS CAN SOIL DISTURBING ACTIVITIES TAKE PLACE. HAY BALES AND SILT FENCE WILL BE USED LATERALLY AT SPECIFIED INTERVALS. HAY BALES SHALL BE USED TO PREVENT SEDIMENTATION FROM ESCAPING PROJECT LIMITS.
B. EROSION AND SEDIMENT CONTROLS:
a. (1) STABILIZATION PRACTICES:
X TEMPORARY SODDING TEMPORARY GRASSING PERMANENT PLANTING, SODDING, OR SEEDING TEMPORARY MULCHING
ARTIFICIAL COVERING BUFFER ZONES PRESERVATION OF NATURAL RESOURCES
b. (2) STRUCTURAL PRACTICES:
SAND BAGGING X SILT FENCES X HAY BALES BERMS DIVERSION, INTERCEPTOR, OR PERIMETER DITCHES
PIPE SLOPE DRAINS FLUMES SEDIMENT TRAPS SEDIMENT BASINS STORM INLET SEDIMENT TRAP (ROCK BAGS)
STONE OUTLET STRUCTURES CURBS AND GUTTERS STORM SEWERS VELOCITY CONTROL DEVICES
TURBIDITY BARRIER RIP RAP
C. OTHER CONTROLS:
a. WASTE DISPOSAL: NO CONSTRUCTION WASTE MATERIAL WILL BE BURIED ON SITE
b. OFF SITE VEHICLE TRACKING:
HAUL ROADS DAMPENED FOR DUST CONTROL
X LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
X EXCESS DIRT ON ROAD REMOVED DAILY
c. SANITARY WASTE: N/A
d. FERTILIZERS AND PESTICIDES: FERTILIZERS AND/OR PESTICIDES SHALL BE APPLIED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS BY A LICENSED OR CERTIFIED APPLICATOR AS DIRECTED BY THE PROJECT ENGINEER.
e. NON-STORMWATER DISCHARGE (INCLUDING SPILL REPORTING): NO NON-STORMWATER DISCHARGES ARE ANTICIPATED.
A. APPROVED STATE, LOCAL PLANS, OR STORMWATER PERMITS: APPROVAL SHALL BE OBTAINED BY OWNER.
10. MAINTENANCE:
ALL OF THE CONTROLS SHALL BE MAINTAINED AT ALL TIMES. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN (7) CALENDAR DAYS AFTER THE SURROUNDING EXPOSED AREA HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT.
11. INSPECTION:
ALL CONTROLS SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR AFTER 0.5" OR MORE OF RAIN. AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE PER EACH INSPECTION. BASED ON INSPECTION RESULTS THE CONTROLS SHALL BE REVISED PER THE INSPECTION REPORTS.
A. THE CONTRACTOR SHALL INITIATE REPAIRS WITHIN 24 HOURS OF INSPECTION THAT INDICATE ITEMS ARE NOT IN GOOD WORKING ORDER. WHERE SITES HAVE BEEN PERMANENTLY STABILIZED, INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH. THE CONTRACTOR SHALL ALSO INSPECT AND CERTIFY THAT CONTROLS INSTALLED IN THE FIELD AGREE WITH THE LATEST STORMWATER POLLUTION PREVENTION PLAN.
B. IF INSPECTIONS INDICATE THAT INSTALLED STABILIZATION AND STRUCTURAL PRACTICES ARE NOT SUFFICIENT TO MINIMIZE EROSION, RETAIN SEDIMENT, AND PREVENT DISCHARGING POLLUTANTS, THE CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES, AS NEEDED.
C. RECORDS OF THE INSPECTION AND THE CONSTRUCTION PERMIT MUST BE MAINTAINED AT THE CONSTRUCTION SITE AND BE READILY AVAILABLE FOR INSPECTION.

SEAL NOT APPROVED UNLESS ACCOMPANIED WITH A VALID SIGNATURE

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY REBEKAH FIELDER, P.E. ON THE DATE NOTED ON THE ELECTRONIC SIGNATURE.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

REBEKAH FIELDER, P.E. ENGINEER OF RECORD LICENSE #99533 EB #8794

PRELIMINARY DOCUMENTS NOT FOR CONSTRUCTION

SCALE

REVISIONS

Table with 3 columns: NO., DESCRIPTION, DATE

DRAWN BY R.FIELDER
APPROVED BY R.FIELDER
CHECKED BY M.FREIDIN
DATE FEBRUARY 2026

TITLE GENERAL NOTES

PROJECT NO. 50184155

C2.0

SHEET NO.

E

D

C

B

A

Vertical text on the left margin: PROJECT NO. 50184155, SHEET NO. C2.0, DATE FEBRUARY 2026, DRAWN BY R.FIELDER, CHECKED BY M.FREIDIN, APPROVED BY R.FIELDER

Vertical text on the right margin: C:\L\GRETN\50184155-CDBG-MIT (PUBLIC SAFETY BUILDING EXPANSION)\C4.0\ONLY\PRODUCTION\C2.0 GENERAL NOTES.DWG

DESCRIPTION:

OFFICIAL RECORDS BOOK 307, PAGE 125

LOT NUMBERED ONE (1) OF BLOCK NO. 63 IN THE TOWN OF GRETN, FLORIDA, ACCORDING TO A MAP OF PLAT THEREOF RECORDED IN PLAT BOOK 1, PAGE 18, ON FILE IN THE OFFICE OF THE CLERK OF THE CIRCUIT COURT OF GADSDEN COUNTY, FLORIDA.

ALSO:

OFFICIAL RECORDS BOOK 494, PAGE 959

LOT NUMBERED TWO (2) OF BLOCK NO. 63 IN THE TOWN OF GRETN, FLORIDA, ACCORDING TO A MAP OF PLAT THEREOF RECORDED IN PLAT BOOK 1, PAGE 18, ON FILE IN THE OFFICE OF THE CLERK OF THE CIRCUIT COURT OF GADSDEN COUNTY, FLORIDA.

SURVEYOR'S NOTES:

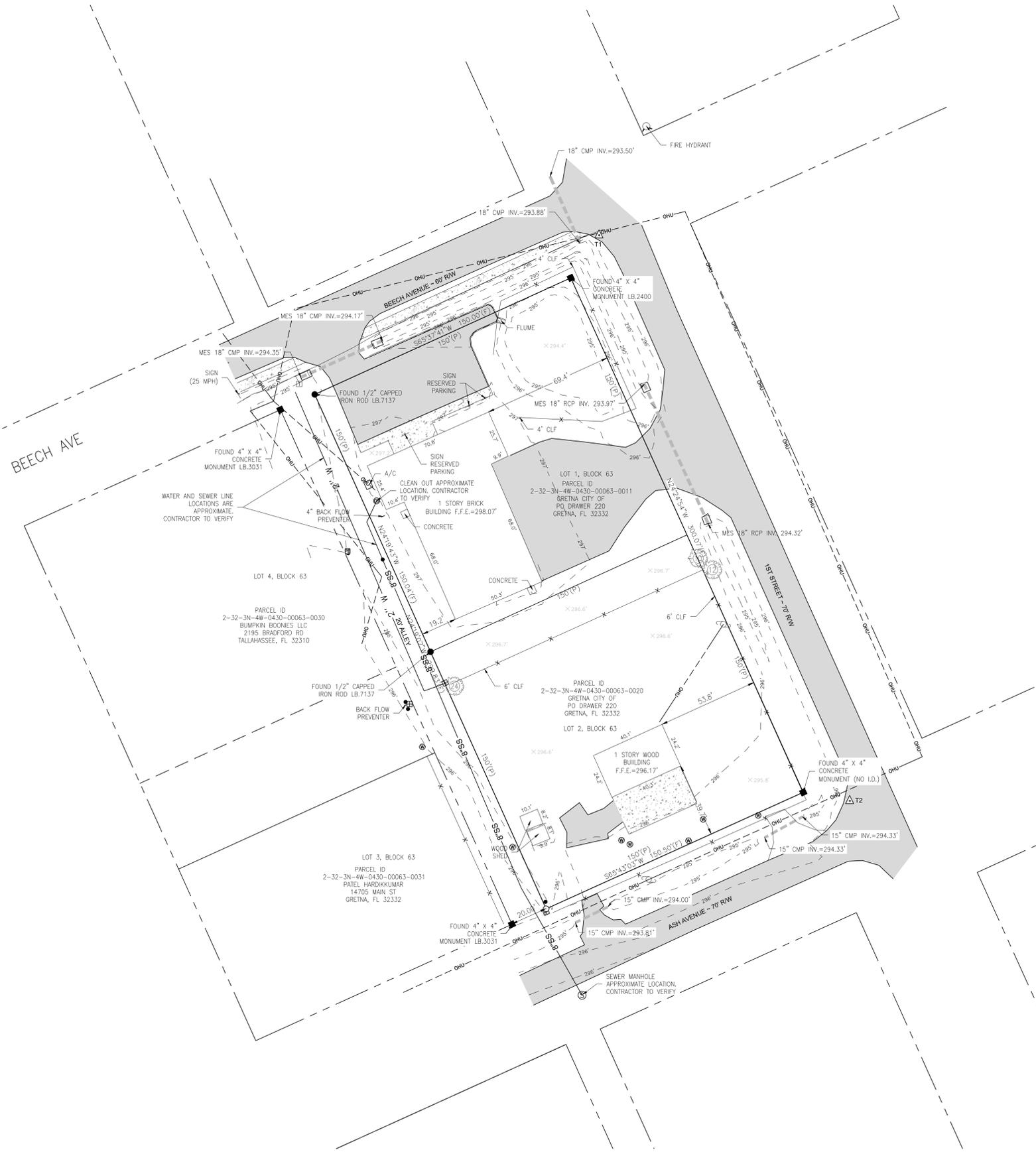
- BEARINGS SHOWN HEREON ARE REFERENCED TO FLORIDA STATE PLANE COORDINATES, NORTH ZONE, NAD 1983/2011, U.S. SURVEY FEET.
- VERTICAL DATUM SHOWN HEREON IS REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- THIS SURVEY, MAP, AND REPORT IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
- FLOOD NOTE: BY GRAPHIC PLOTTING ONLY; THE PROPERTY SHOWN HEREON LIES IN ZONE "X" AS PER THE F.E.M.A FLOOD INSURANCE RATE MAP No.1203902250 FOR THE CITY OF GRETN, GADSDEN COUNTY, FLORIDA; SEE COMMUNITY PANEL No. 120046; WHICH BEARS A EFFECTIVE DATE OF 02/04/2009.
- SOURCE OF INFORMATION: SUBDIVISION PLATS OF THE MAP OF GRETN (P.B.1, PAGE 18), AS RECORDED IN THE PUBLIC RECORDS OF GADSDEN COUNTY, FLORIDA.
- NO TITLE SEARCH, TITLE OPINION OR ABSTRACT WAS PERFORMED BY, NOR PROVIDED TO DEWBERRY ENGINEERS INC. FOR THE SUBJECT PROPERTY. THERE MAY BE DEEDS OF RECORD, UNRECORDED DEEDS, EASEMENTS, ENCROACHMENTS, RIGHT-OF-WAYS, BUILDING SETBACKS, RESTRICTIVE COVENANTS OR OTHER INSTRUMENTS WHICH COULD AFFECT THE BOUNDARIES OR USE OF THE SUBJECT PROPERTY.
- NO ATTEMPT HAS BEEN MADE BY DEWBERRY ENGINEERS INC. TO LOCATE OR DETERMINE UNDERGROUND UTILITIES, UTILITY LINES, FOUNDATIONS, OR OTHER UNDERGROUND STRUCTURES, EXCEPT AS SHOWN.
- NO ATTEMPT HAS BEEN MADE BY DEWBERRY ENGINEERS INC. TO LOCATE OR DETERMINE ENVIRONMENTAL WETLAND LINES, IF ANY EXIST.
- THERE MAY BE ADDITIONAL RESTRICTIONS NOT SHOWN ON THIS SURVEY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF GADSDEN COUNTY, FLORIDA.
- THE SURVEY DEPICTED HEREON WAS PREPARED IN ACCORDANCE WITH THE STANDARDS OF PRACTICE FOR PROFESSIONAL SURVEYORS AND MAPPERS AS DEFINED IN CHAPTER 5J-17 OF THE FLORIDA ADMINISTRATIVE CODE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS PURSUANT TO SECTION 472.027 OF THE FLORIDA STATUTES.

SYMBOLS & ABBREVIATIONS:

- R/W = RIGHT OF WAY
- L.B. = LICENSED BUSINESS
- L.S. = LICENSED SURVEYOR
- P.S.M. = PROFESSIONAL SURVEYOR AND MAPPER
- O.R. = OFFICIAL RECORDS
- (I.D.) = IDENTIFICATION
- (F) = FIELD MEASUREMENT
- (P) = PLAT DATA
- F.F.E. = FINISHED FLOOR ELEVATION
- B.F.P. = BACKFLOW PREVENTER
- CLF = CHAIN LINK FENCE
- A/C = AIR CONDITIONER
- INV. = INVERT
- ELEV. = ELEVATION
- TBM = TEMPORARY BENCHMARK
- M.E.S. = MITERED END SECTION
- CMP = CORRUGATED METAL PIPE
- T = TRAFFIC SIGN
- PULL BOX
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- MONITORING WELL
- CONCRETE BOLLARD / PILING
- GUY ANCHOR
- UTILITY POLE
- TELEPHONE BOX
- X-ELEV = SPOT ELEVATION AT "X"
- 10' = CONTOUR ELEVATION AT 1' INTERVALS
- OHU = OVERHEAD UTILITY LINE
- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE
- SET 5/8" CAPPED IRON ROD L.B. #8011
- FOUND 1/2" CAPPED IRON ROD L.B. #7137
- FOUND 4" X 4" CONCRETE MONUMENT

TEMPORARY SITE CONTROL POINTS:

DESCRIPTION	NORTHING	EASTING	ELEV. (NAVD 1988)
T1 SET NAIL AND DISK L.B. 8011	588699.07'	1917511.18'	296.56'
T2 SET NAIL AND DISK L.B. 8011	588398.66'	1917644.91'	296.32'



Dewberry Engineers Inc.
2700 S. Blair Stone Rd., Ste. 204 D
Tallahassee, FL 32301
850.523.0062

**CDBG-MIT PUBLIC SAFETY BUILDING
EXPANSION
CITY OF GRETN
GRETN, FLORIDA**

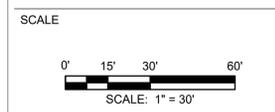
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REBEKAH FIELDER, P.E.
ENGINEER OF RECORD LICENSE
#99533
EB # 8794

PRELIMINARY DOCUMENTS
NOT FOR CONSTRUCTION



REVISIONS

NO.	DESCRIPTION	DATE

NO.	DESCRIPTION	DATE
DRAWN BY	R. FIELDER	
APPROVED BY	R. FIELDER	
CHECKED BY	M. FREIDIN	
DATE	FEBRUARY 2026	

TITLE
**EXISTING
CONDITIONS**

PROJECT NO. 50184155

C3.0

SHEET NO.



Dewberry Engineers Inc.
101 N. Monroe St., Suite 710
Tallahassee, FL 32301
850.523.0062

**CDBG-MIT PUBLIC SAFETY
BUILDING EXPANSION**
**CITY OF GRETNA
GRETNA, FLORIDA**

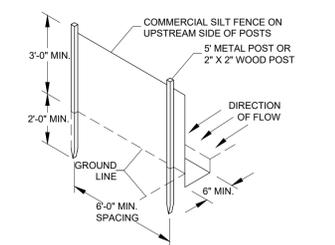
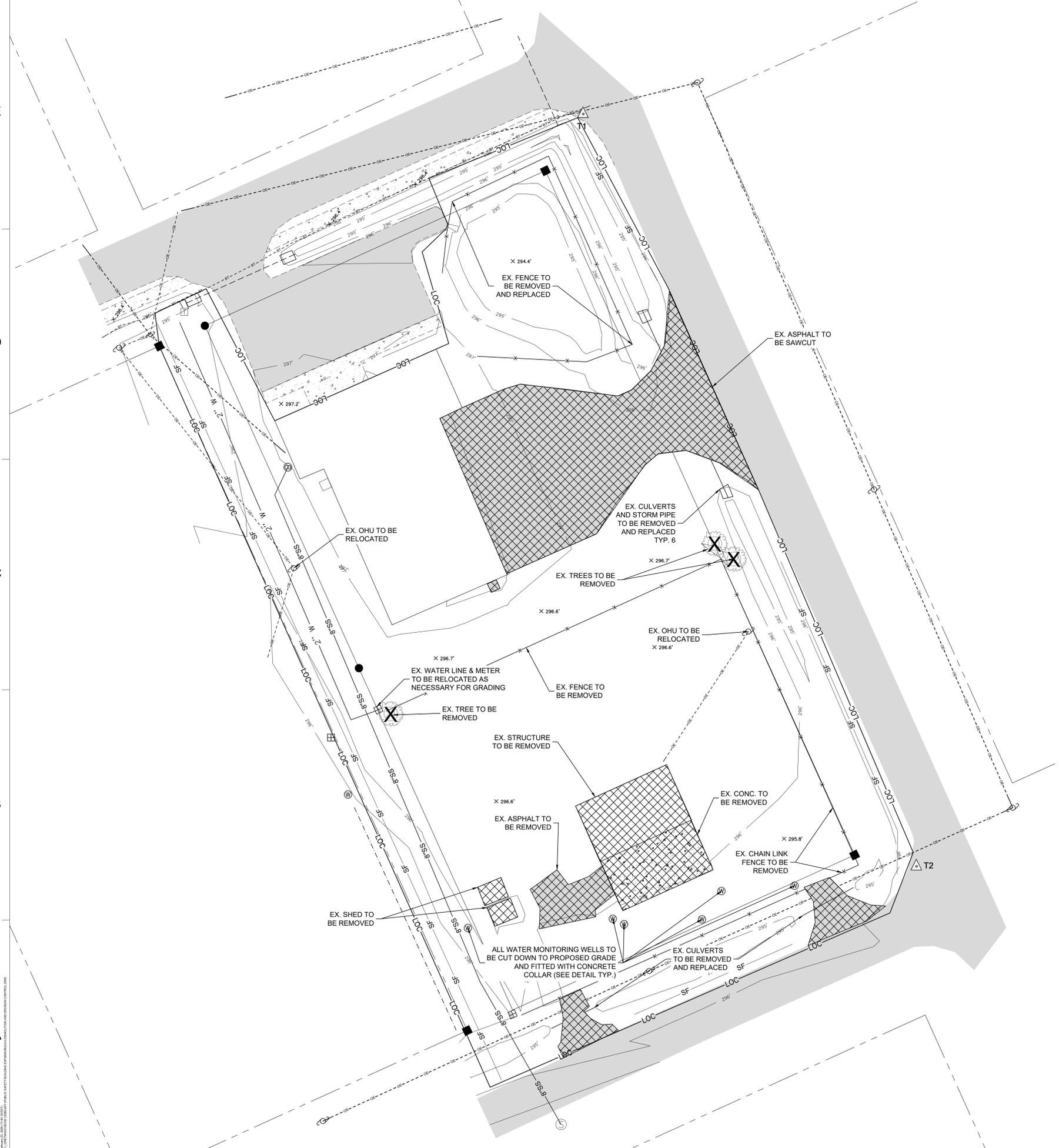
C:\GRETNA\30184155 CDBG-MIT (PUBLIC SAFETY BUILDING EXPANSION)\C4.0 DEMOLITION AND EROSION CONTROL.DWG

LEGEND	
EXISTING CONTOUR	---188---
EXISTING SPOT ELEVATION	x 188.04
PROPOSED SILT FENCE	SF
LIMITS OF CONSTRUCTION	LOC
EXISTING CONCRETE	[Pattern]
EXISTING ASPHALT	[Pattern]
TO BE REMOVED	[Pattern]
TREE TO BE REMOVED	X



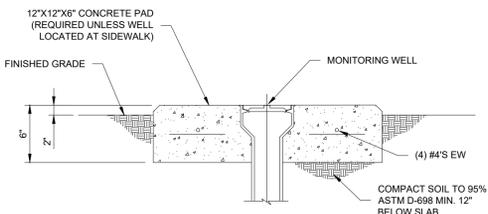
NOTES:

- EROSION CONTROL NOTES:**
- CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES.
 - CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES UNLESS OTHERWISE NOTED.
- DEMOLITION/EXCAVATION NOTES:**
- THIS SITE MAY CONTAIN EXISTING UTILITY LINES, UTILITY STRUCTURES AND MISCELLANEOUS UTILITY EQUIPMENT THAT MAY NOT HAVE BEEN SURVEYED AND IN CONFLICT WITH PROPOSED CONSTRUCTION.
 - ALL UTILITIES MUST REMAIN IN OPERATION THROUGHOUT CONSTRUCTION ACTIVITIES FOR THIS PRODUCT.
 - CONTRACTOR TO COORDINATE WITH UTILITY PROVIDER(S) AND CIVIL ENGINEER FOR ANY AND ALL UTILITIES THAT MAY BE IN CONFLICT WITH PROPOSED CONSTRUCTION ACTIVITIES.
 - WHERE EXISTING ITEMS SUCH AS ASPHALT, CONCRETE CURB AND GUTTER, ETC. ARE SHOWN TO BE REMOVED, THESE ITEMS SHALL BE SAWCUT.
 - CONTRACTOR IS RESPONSIBLE TO ADJUST ALL EXISTING AND PROPOSED UTILITIES TO FINISH GRADE.
 - CONTRACTOR IS RESPONSIBLE TO DEFLECT ANY UTILITIES NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS.
 - CONTRACTOR SHALL CLEAR, GRUB AND REMOVE ALL TRESS AND VEGETATION WITHIN LIMITS OF CONSTRUCTION (LOC).
- EROSION CONTROL NOTES:**
- THE EXISTING BUILDING AND FACILITIES SHALL REMAIN OPERATIONAL THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE CITY AS NEEDED.



NOTES:
DIG TRENCH 6" DEEP
LAY IN FABRIC TO BOTTOM OF TRENCH.
BACK TRENCH, COVERING FABRIC.

TYPE IV SILT FENCE
SCALE: N.T.S.



NOTE:
EXCAVATION, PIPE INSTALLATION, BACKFILLING, AND COMPACTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT PLANS AND SPECIFICATIONS.

TYPICAL CONCRETE COLLAR FOR MONITORING WELL
SCALE: NTS

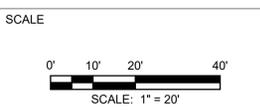
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REBEKAH FIELDER, P.E.
ENGINEER OF RECORD LICENSE
#99533
EB # 8794

PRELIMINARY DOCUMENTS
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REVISIONS

NO.	DESCRIPTION	DATE

DRAWN BY _____ R. FIELDER
APPROVED BY _____ R. FIELDER
CHECKED BY _____ M. FREIDIN
DATE _____ FEBRUARY 2026

TITLE
DEMOLITION AND EROSION CONTROL

PROJECT NO. 30184155

C4.0

SHEET NO.

**CDBG-MIT PUBLIC SAFETY
BUILDING EXPANSION**
**CITY OF GRETNA
GRETNA, FLORIDA**

C:\GRENA\30184155_CDBG-MIT (PUBLIC SAFETY BUILDING EXPANSION)\CAD\CIVIL\PRODUCTION\C5.0 SITE PLAN.DWG

SITE DATA TABLE			
PARCEL ID NUMBER	2-32-3N-4W-0430-00063-0011; 2-32-3N-4W-0430-00063-0020		
TOTAL SQUARE FOOTAGE OF ENTIRE PARCEL	45302		
TOTAL ACERAGE OF ENTIRE PARCEL	1.04		
TOTAL SQUARE FOOTAGE OF PROJECT AREA	54163.31		
TOTAL ACERAGE OF PROJECT AREA	1.24		
ZONING DISTRICT	MUNICIPAL		
SITE DENSITY	N/A		
MAXIMUM IMPERVIOUS SURFACE RATIO (ISR)	75%		
PARKING STATISTICS			
	RATIO	REQUIRED	PROVIDED
STANDARD STALLS REQUIRED	1/250 SF GFA	13	14
ADA STALLS REQUIRED (1 PER 25 STANDARD)	1 PER 25	1	1
LAND USE COMPONENT			
EXISTING IMPERVIOUS AREA TO BE REMOVED	SQUARE FOOTAGE	ACRES	% OF PROJECT AREA
BUILDINGS	1,135	0.03	2.10%
ASPHALT, SIDEWALK, MISC IMPERVIOUS	5,939	0.14	10.97%
PROPOSED IMPERVIOUS AREA	SQUARE FOOTAGE	ACRES	% OF PROJECT AREA
BUILDINGS	8,461	0.19	15.63%
ASPHALT, SIDEWALK, MISC IMPERVIOUS	21,096	0.48	38.96%
	SQUARE FOOTAGE	ACRES	% OF PROJECT AREA
TOTAL POST DEVELOPMENT IMPERVIOUS AREA	29,556	0.68	54.59%
TOTAL POST DEVELOPMENT PERVIOUS AREA	13,445	0.31	24.83%
TOTAL POND AREA	11,162	0.26	20.61%
TOTAL PROJECT AREA	54,163	1.243	100.00%



LEGEND

EXISTING CONTOUR -----188-----

EXISTING SPOT ELEVATION × 188.04

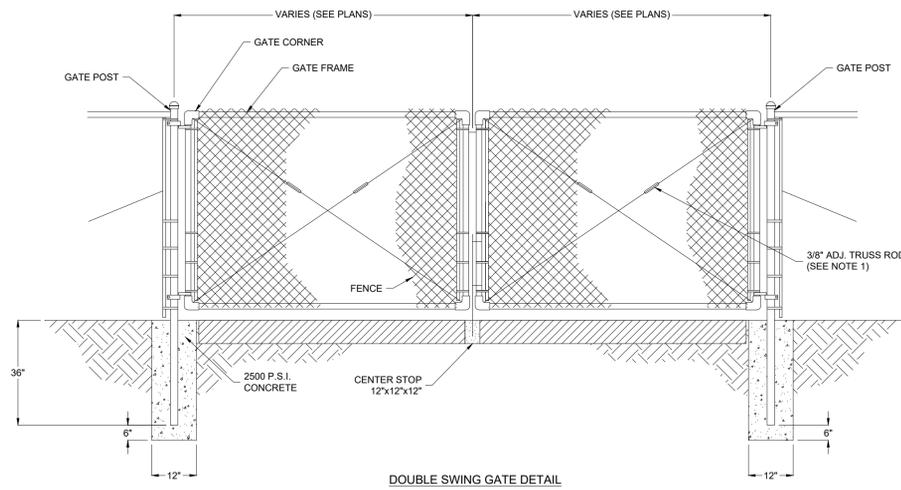
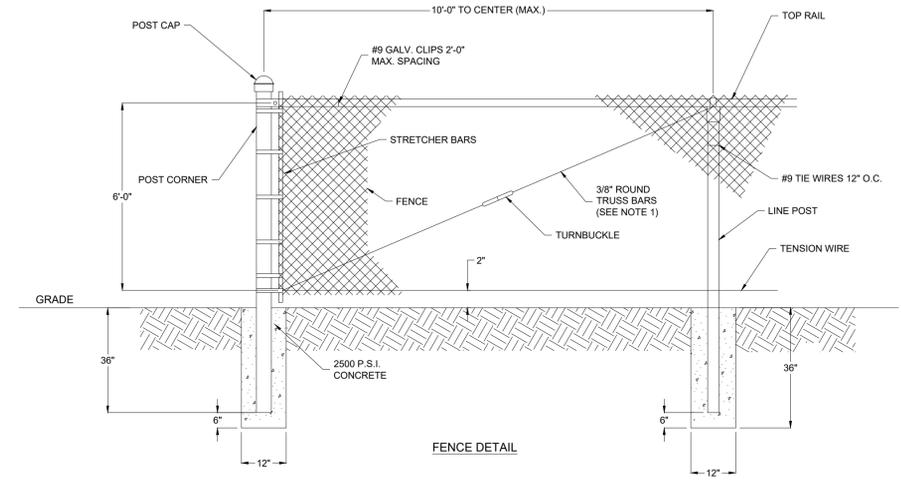
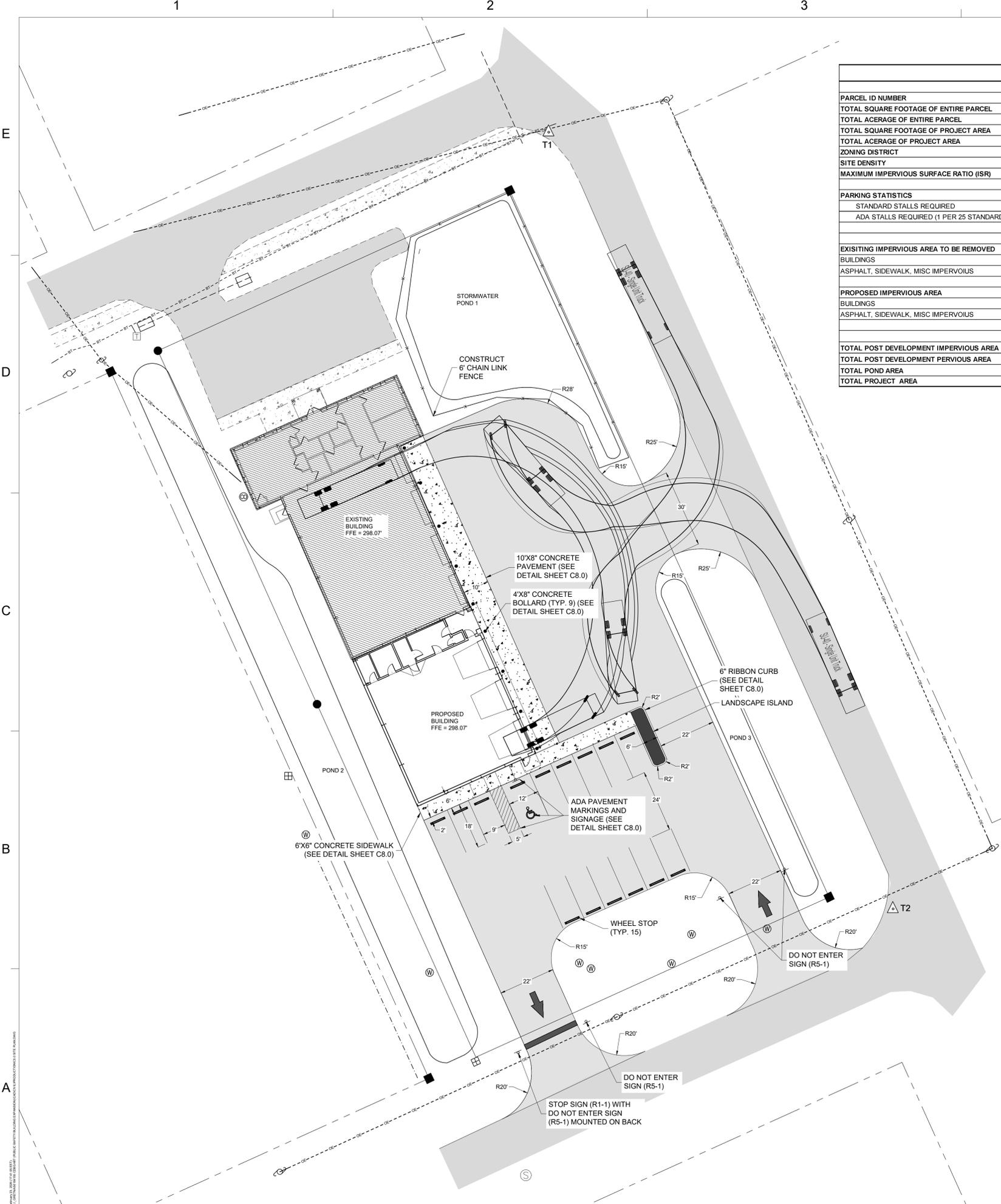
PROPOSED FENCE ————x———

PROPOSED CONCRETE [Pattern]

PROPOSED ASPHALT [Pattern]

LANDSCAPE ISLAND [Pattern]

PAVEMENT MARKINGS [Arrow]



- FENCE/GATE NOTES:**
- 1) TRUSS BARS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.
 - 2) CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO INSTALLATION.
 - 3) FENCING SHALL BE BLACK VINYL COATED.
 - 4) TYPICAL GATE IS 16'. VERIFY WITH COUNTY PRIOR TO CONSTRUCTION.

CHAIN LINK FENCE DETAILS
N.T.S.

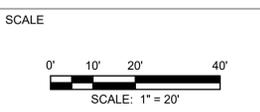
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REBEKAH FIELDER, P.E.
ENGINEER OF RECORD LICENSE
#99533
EB # 8794

**PRELIMINARY DOCUMENTS
NOT FOR CONSTRUCTION**



REVISIONS

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DRAWN BY _____ R. FIELDER
APPROVED BY _____ R. FIELDER
CHECKED BY _____ M. FREIDIN
DATE _____ FEBRUARY 2026

TITLE **SITE PLAN**

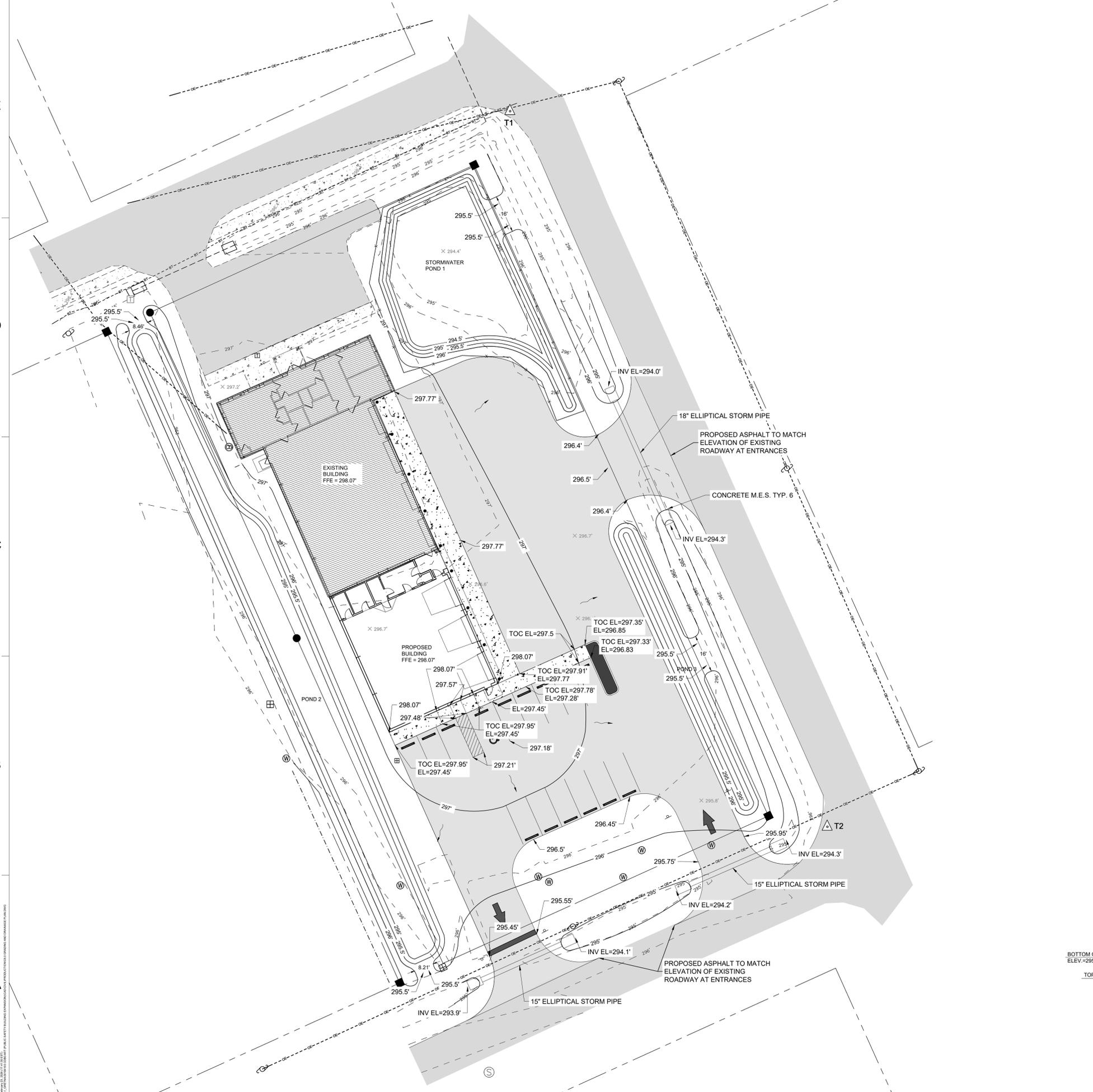
PROJECT NO. 50184155

C5.0

SHEET NO.

1 2 3 4 5

E
D
C
B
A

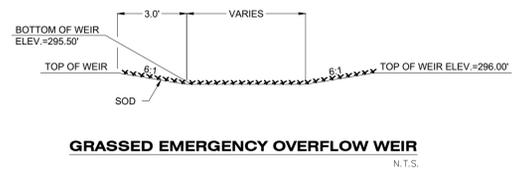


LEGEND

- EXISTING CONTOUR 188
- EXISTING SPOT ELEVATION x 188.04
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT
- PROPOSED LANDSCAPING
- PROPOSED CHAIN LINK FENCE
- PROPOSED CONTOUR 189
- PROPOSED SPOT ELEVATION x 296.44
- PROPOSED DRAINAGE FLOW ARROW →



NOTE:
ALL DISTURBED AREAS TO BE SODDED WITH ST. AUGUSTINE



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101 N. Monroe St., Suite 710
Tallahassee, FL 32301
850.523.0062

**CDBG-MIT PUBLIC SAFETY
BUILDING EXPANSION
CITY OF GRETNA
GRETNA, FLORIDA**

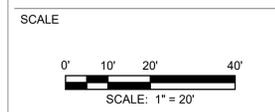
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EB # 8794

PRELIMINARY DOCUMENTS
NOT FOR CONSTRUCTION



REVISIONS

NO.	DESCRIPTION	DATE

DRAWN BY _____ R. FIELDER
APPROVED BY _____ R. FIELDER
CHECKED BY _____ M. FREIDIN
DATE _____ FEBRUARY 2026

TITLE
GRADING AND DRAINAGE PLAN

PROJECT NO. 50184155

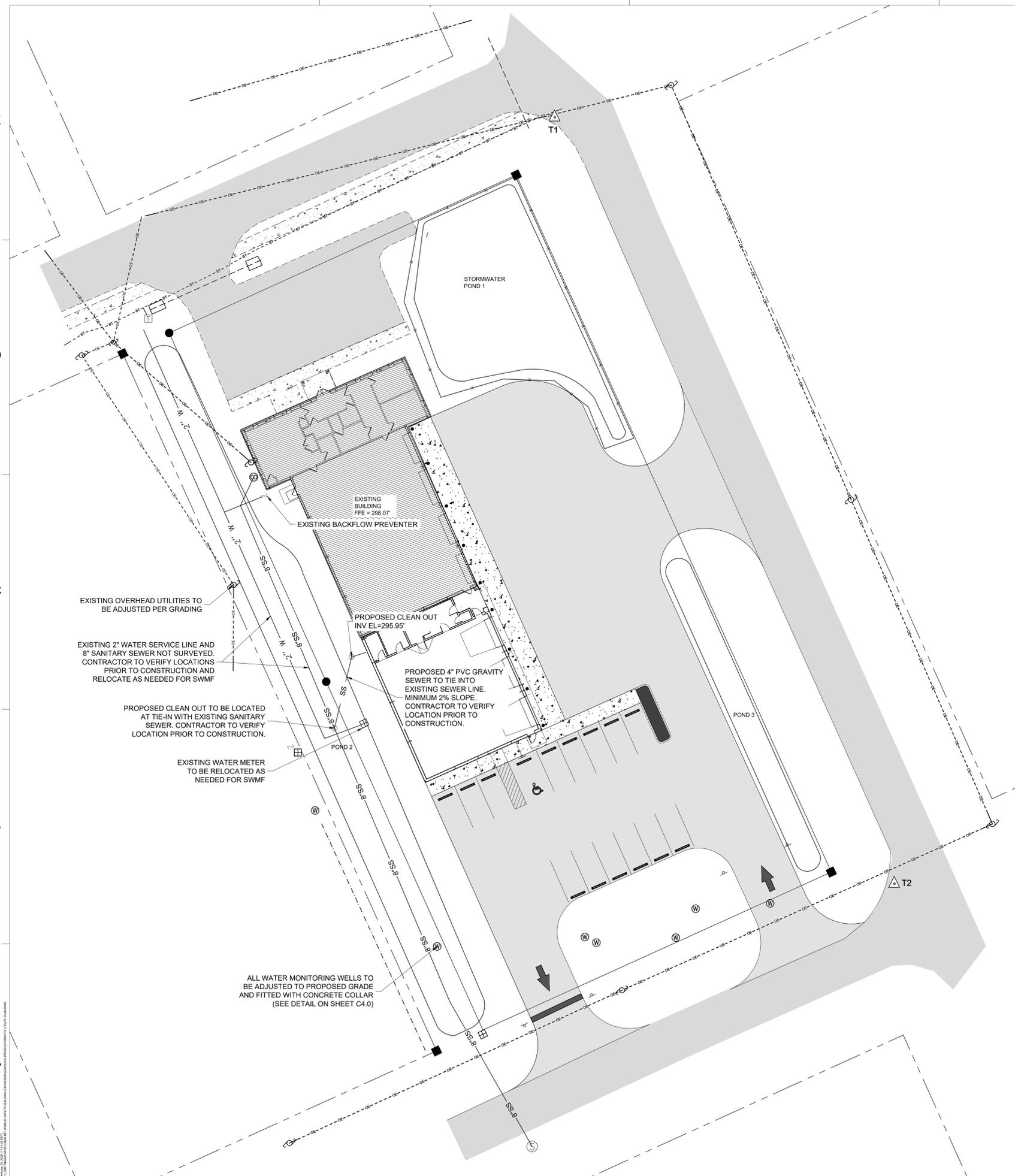
C6.0

SHEET NO.

01/20/2026 10:14 AM
 C:\PROJECTS\50184155\CDBG-MIT PUBLIC SAFETY BUILDING EXPANSION\C6.0 GRADING AND DRAINAGE PLAN.DWG

1 2 3 4 5

E
D
C
B
A



LEGEND	
EXISTING SANITARY SEWER MANHOLE	⊙
EXISTING 2" WATER SERVICE	— 2" W —
EXISTING 8" SANITARY SEWER	— 8" SS —
PROPOSED 4" PVC SANITARY SEWER	— SS —
EXISTING WATER METER	⊞
EXISTING POTABLE BACKFLOW PREVENTER	Z
PROPOSED CLEANOUT	⊙
PROPOSED UTILITY POLE	⊗
PROPOSED OVERHEAD UTILITIES	- - - - -



UTILITY NOTES:

EXISTING UTILITIES DISCLAIMER:
 THESE PLANS ARE BASED ON AVAILABLE INFORMATION. CONTRACTOR IS REQUIRED TO VERIFY LOCATION, BURY DEPTH, SIZE AND MATERIAL TYPE PRIOR TO ANY UTILITY IMPROVEMENTS. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES THAT ARE FOUND.

UTILITY NOTES:

1. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDERS ON UTILITY RELOCATIONS AND ADJUSTMENTS. REFER TO COVER SHEET FOR UTILITY OWNER INFORMATION.
2. CONTRACTOR SHALL ADJUST ALL UTILITIES INCLUDING BUT NOT LIMITED TO VALVES, MANHOLES, VAULTS, HYDRANTS, COMMUNICATION POST/BOXES, METERS, ETC., TO FINISH GRADE ELEVATION. COORDINATE WITH UTILITY PROVIDERS AS REQUIRED.
3. CONTRACTOR RESPONSIBLE TO REROUTE AND/OR DEFLECT UTILITIES AS NEEDED TO CONSTRUCT PROPOSED IMPROVEMENTS.
4. CONTRACTOR SHALL NOTIFY CIVIL ENGINEER IF ANY UTILITIES CONFLICT WITH PROPOSED IMPROVEMENTS.
5. ALL CLEANOUTS WITH VEHICULAR USE AREAS SHALL BE H-10 TRAFFIC RATED WITH CAST IRON LID INSTALLED FLUSH WITH FINISHED SURFACE.

EXISTING OVERHEAD UTILITIES TO BE ADJUSTED PER GRADING

EXISTING 2" WATER SERVICE LINE AND 8" SANITARY SEWER NOT SURVEYED. CONTRACTOR TO VERIFY LOCATIONS PRIOR TO CONSTRUCTION AND RELOCATE AS NEEDED FOR SWMF

PROPOSED CLEAN OUT TO BE LOCATED AT TIE-IN WITH EXISTING SANITARY SEWER. CONTRACTOR TO VERIFY LOCATION PRIOR TO CONSTRUCTION.

EXISTING WATER METER TO BE RELOCATED AS NEEDED FOR SWMF

ALL WATER MONITORING WELLS TO BE ADJUSTED TO PROPOSED GRADE AND FITTED WITH CONCRETE COLLAR (SEE DETAIL ON SHEET C4.0)



Dewberry Engineers Inc.
 101 N. Monroe St., Suite 710
 Tallahassee, FL 32301
 850.523.0062

**CDBG-MIT PUBLIC SAFETY
 BUILDING EXPANSION
 CITY OF GRETNA
 GRETNA, FLORIDA**

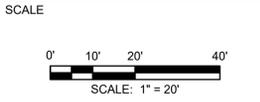
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REBEKAH FIELDER, P.E.
 ENGINEER OF RECORD LICENSE
 #99533
 EB # 8794

PRELIMINARY DOCUMENTS
 NOT FOR CONSTRUCTION



REVISIONS

NO.	DESCRIPTION	DATE

NO. DESCRIPTION DATE

DRAWN BY _____ R. FIELDER

APPROVED BY _____ R. FIELDER

CHECKED BY _____ M. FREIDIN

DATE _____ FEBRUARY 2026

TITLE
UTILITY PLAN

PROJECT NO. 50184155

C7.0

SHEET NO.

C:\GRETNA\50184155_CDBG-MIT_PUBLIC SAFETY BUILDING EXPANSION\CAD\CIVIL\PRODUCTION\C7.0 UTILITY PLAN.DWG

BUILDING BID DOCUMENTS

BUILDING ADDITION FOR PUBLIC WORKS GRETNA PUBLIC SAFETY FACILITY

CITY OF GRETNA, FLORIDA
BEECH AVENUE & 1ST STREET GRETNA, FLORIDA



212 NORTH ADAMS ST
QUINCY, FLORIDA 32351
FLA LIC NO ARO004180
850-815-4348

DRAWING INDEX

DRWG NO	DESCRIPTION
TI.1	TITLE SHEET
ARCHITECTURAL DRAWINGS	
A1.1	ARCH. BUILDING FLOOR PLAN
A1.2	ARCH. ROOF PLAN
A2.1	ARCH. BUILDING ELEVATIONS
A3.1	ARCH. BUILDING SECTIONS
A3.2	ARCH. BUILDING SECTIONS
A3.3	ARCH. BUILDING SECTIONS
A3.4	ARCH. BUILDING SECTIONS
A5.1	ARCH. SCHEDULES/DETAILS
STRUCTURAL DRAWINGS	
SI OF 1 STRUCT. FOUNDATION & WIND ANALYSIS	
PLUMBING, MECHANICAL & ELECT. FIRE PROTECT. DRWG	
FS.1	FIRE PROTECTION GUIDE SPEC./NOTES
FS.2	FIRE PROTECTION GUIDE DETAILS/NOTES
FS.3	FIRE PROTECTION OVERALL PLAN
MO.1	MECH. SCHEDULES
M1.1	MECH. BUILDING HVAC PLAN
M2.1	MECH. DETAILS, NOTES
M3.1	MECH. SPECIFICATIONS
PO.1	PLUMB. LEGENDS & NOTES
PI.1	PLUMB. WATER & SANITARY WASTE PLANS
P2.1	PLUMB. SPECIFICATIONS
EO.1	ELECT. NOTES/LEGENDS
EO.2	ELECT. SCHEDULES
EO.3	ELECT. RISER
E1.1	ELECT. DEMO. PLAN
E2.1	ELECT. LIGHTING PLAN
E2.2	ELECT. POWER & AUXILIARY PLAN
E2.3	ELECT. MECH. SYSTEMS POWER PLAN
E3.1	ELECT. DETAILS
E3.2	ELECT. DETAILS
E3.3	ELECT. DETAILS/CHARTS
E4.1	ELECT. SPECIFICATION
E4.2	ELECT. FIRE ALARM SPECIFICATIONS

GRETNA
PUBLIC
SAFETY
ADDITION

JOB NO: 25-005

DATE: 12-15-25

REV:

SHEET NO.

SYMBOL LEGEND

	SECTION CUT REFERENCE
	DRAWING NUMBER
	SHEET NUMBER
	DETAIL REFERENCE
	ELEVATION REFERENCE
	INTERIOR ELEVATION REFERENCE
	DRAWING NUMBER
	SHEET NUMBER
	DOOR REFERENCE
	REFER SCHEDULE
	WINDOW REFERENCE
	REFER SCHEDULE
	ACCESSORY REFERENCE
	REFER SCHEDULE
	WALL TYPE REFERENCE
	REFER SCHEDULE
	ROOM NUMBER

ABBREVIATIONS

A.F.F.	ABOVE FINISH FLOOR	GYP	GYPSUM
APPROX.	APPROXIMATE	HD	HEAD
A.S.	ACTUAL SIZE	HORIZ	HORIZONTAL
A.B.	ANCHOR BOLT	HT	HEIGHT
BLDG.	BUILDING	IN	INCH
BLKG.	BLOCKING	INSUL.	INSULATION
BM	BEAM	INT.	INTERIOR
BD	BOARD	JT.	JOINT
BOTT	BOTTOM	LLH	LONG LEG HORIZONTAL
BRG.	BEARING	LLV	LONG LEG VERTICAL
B.U.	BUILT-UP	MAX	MAXIMUM
CLG	CEILING	MIN	MINIMUM
CLR	CLEAR	M.O.	MASONRY OPENING
CMU	CONC. MASONRY UNIT	MTL	METAL
COL	COLUMN	N.I.C.	NOT IN CONTRACT
CONC.	CONCRETE	NO.	NUMBER
CONT.	CONTINUOUS	O.C.	ON CENTER
CONTR.	CONTRACTOR	OPNG.	OPENING
COORD.	COORDINATE	PTD	PAINTED
CTR	CENTER	PL	PLATE
DIA.	DIAMETER	PLWD	PLYWOOD
DIM.	DIMENSION	P.T.	PRESSURE TREATED
DBL	DOUBLE	RM	ROOM
DR	DOOR	REINF.	REINFORCING
DN	DOWN	REQ'D	REQUIRED
DS	DOWNSPOUT	R.O.	ROUGH OPENING
DTL	DETAIL	SECT.	SECTION
EA.	EACH	SIM.	SIMILAR
ELEC.	ELECTRICAL	SP	SPACE
ELEV.	ELEVATION	SQ	SQUARE
EQ.	EQUAL	STD	STANDING SEAM
EXIST.	EXISTING	STL	STEEL
EXP.	EXPANSION	STRUCT.	STRUCTURE
EXT.	EXTERIOR	TYP	TYPICAL
FT	FEET	U.N.O.	UNLESS NOTED OTHERWISE
F.V.	FIELD VERIFY	VERT.	VERTICAL
FIN.	FINISH	WDW	WINDOW
FLR	FLOOR	W/	WITH
FOUND.	FOUNDATION	WD	WOOD
GALV.	GALVANIZED	WWM	WELDED WIRE MESH
GA.	GAUGE		

GENERAL NOTES

- DIMENSIONS ARE TO FACE OF STUD, BLOCK OR CENTERLINE OF STEEL, UNLESS NOTED OTHERWISE.
- ALL EXISTING CONDITIONS AND DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO PROCEEDING WITH THE WORK HEREIN
- DO NOT SCALE DRAWINGS TO DETERMINE DIMENSIONS, ANY ITEMS IN QUESTION SHALL BE DIRECTED TO THE ARCHITECT.
- ANY QUESTIONS OR PERCEIVED DISCREPANCIES REGARDING THESE PLANS SHALL BE PROMPTLY BROUGHT TO THE ATTENTION OF THE ARCHITECT.
- ALL WORK SHALL BE EXECUTED IN FULL COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS AND CODES APPLYING TO THIS PROJECT.
- PROTECT EXPOSED SURFACES FROM DAMAGE.
- THE CONTRACTOR SHALL PROVIDE CRAFTSMAN-LIKE INSTALLATION AND FINISH OF ALL EXPOSED MATERIALS AND SYSTEMS.

VICINITY MAP



APPLICABLE CODES

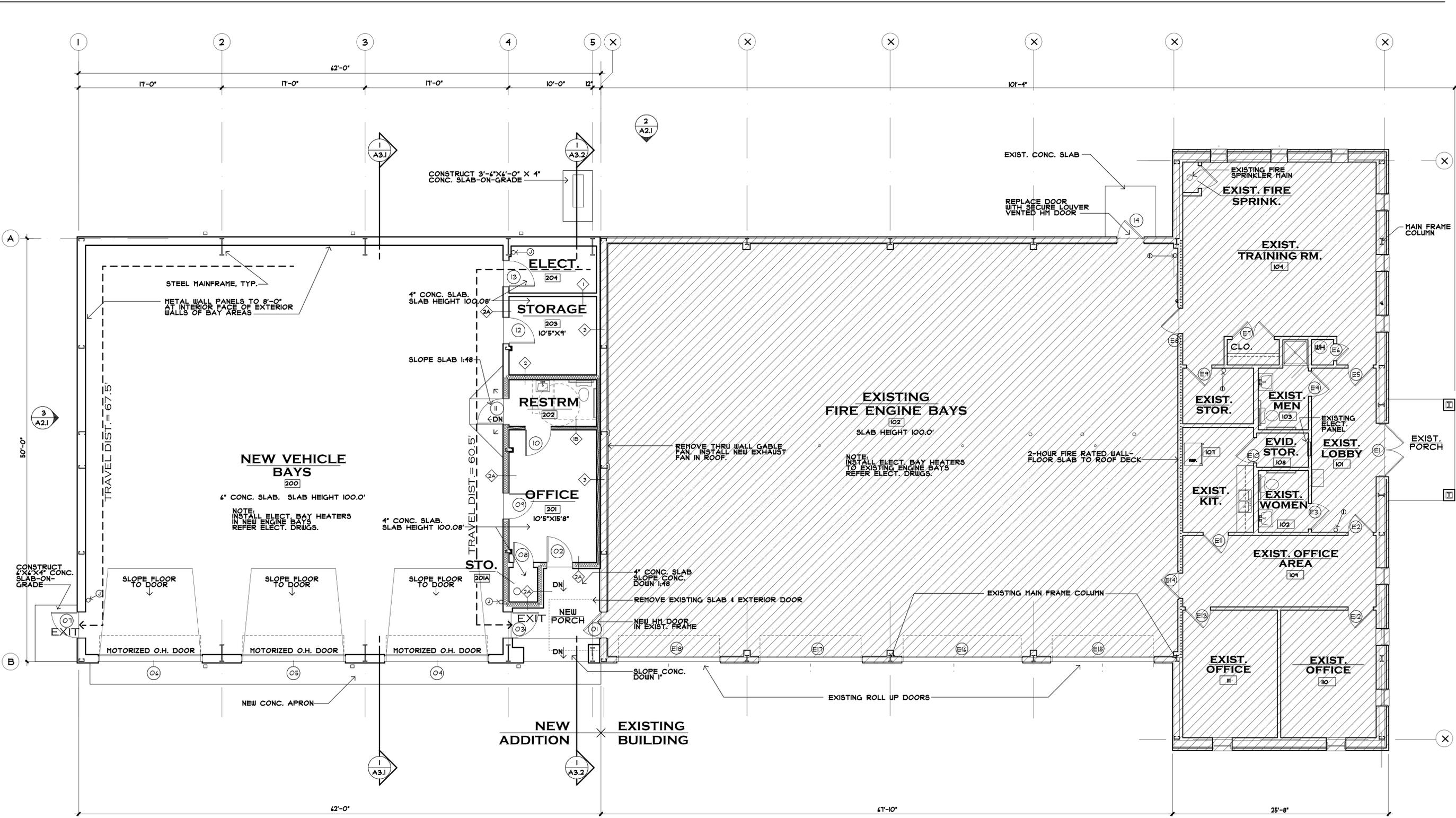
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FLORIDA BUILDING CODE - EXIST. BLDG 8TH EDITION 2023
FLORIDA BUILDING CODE - ACCESSIBILITY 8TH EDITION 2023
FLORIDA BUILDING CODE - MECHANICAL 8TH EDITION 2023
FLORIDA BUILDING CODE - PLUMBING 8TH EDITION 2023
FLORIDA BLDG CODE - ENERGY CONSRV. 8TH EDITION 2023
FLORIDA FIRE PREVENTION CODE - 8TH EDITION, 2023
NATIONAL ELECTRICAL CODE - CURRENT EDITION

DESIGN DATA

OCCUPANCY GROUP - MIXED
OCCUPANCY GROUP B BUSINESS
OCCUPANCY GROUP S-1 STORAGE
CONSTRUCTION TYPE - IIB
THE EXIST. BLDG. IS FIRE SPRINKLED.
FIRE SPRINKLER SHALL EXTEND INTO NEW ADDITIONS.
NEW BUILDING AREA: 3,100 SQ. FT.
EXIST. BUILDING AREA: 5,305 SQ. FT.
TOTAL NEW BUILDING AREA: 8,405 SQ. FT.
BLDG. HEIGHT: 2'-9" MAX. BLDG. STORIES= ONE

WALL LEGEND

	EXISTING WALLS
	NEW WALLS
	FIRE RESISTIVE WALL



FLOOR PLAN
SCALE: 3/16"=1'-0" WITH LIFE SAFETY PLAN

NOTE:
1. REFER TO A5.1 FOR WALL TYPES.
2. REFER TO A5.1 FOR ENLARGED FLOOR PLAN AND ACCESSORY SCHEDULE.

**LIFE SAFETY INFORMATION
OCCUPANT LOAD CALCULATION**

BUILDING PORTION	OCC. LOAD
NEW OFFICE AREA - BUSINESS OCC. (472 SF/150 = 4 OCC.)	4
NEW VEHICLE BAYS 200 - STORAGE S-1 (2,541 SF/300 = 9 OCC.)	9
EXISTING OFFICE AREA - BUSINESS OCC. (1,812 SF/150 = 13 OCC.)	13
EXISTING VEHICLE BAYS 102 - STORAGE S-1 (3,424 SF/300 = 12 OCC.)	12
TOTAL BUILDING OCCUPANT LOAD	38

TRAVEL DISTANCE

MAXIMUM TRAVEL DISTANCE =	47.5 FT
MAXIMUM TRAVEL DISTANCE ALLOWED STORAGE OCC. =	250 FT
TRAVEL DISTANCE IN EXISTING BUILDING UNCHANGED.	

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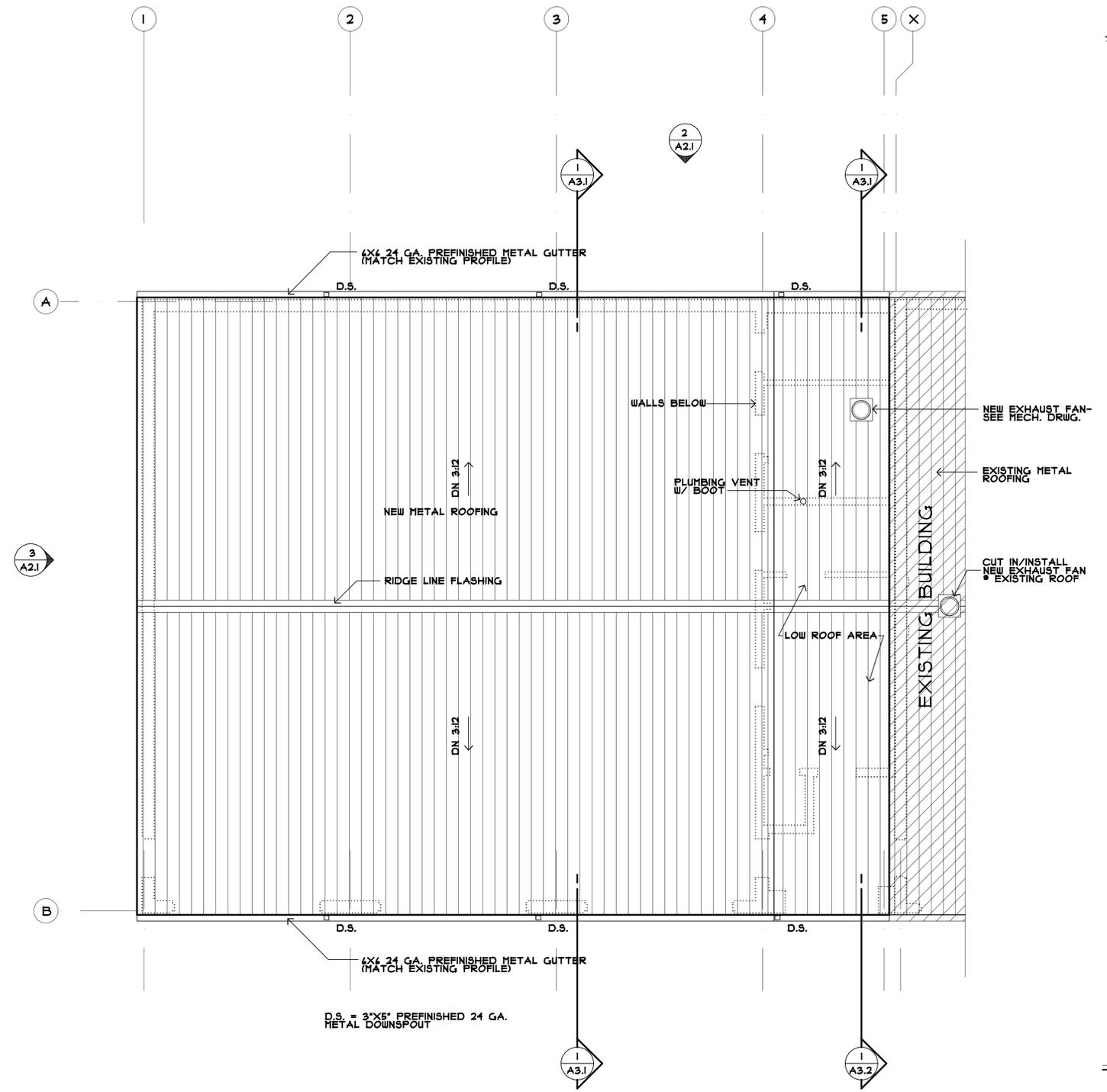
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GRETNA PUBLIC SAFETY FACILITY**
CITY OF GRETNA, FLORIDA
120 BEECH AVENUE GRETNA, FLORIDA

DATE: 12-15-25
REV:

JOB NO: 25-005

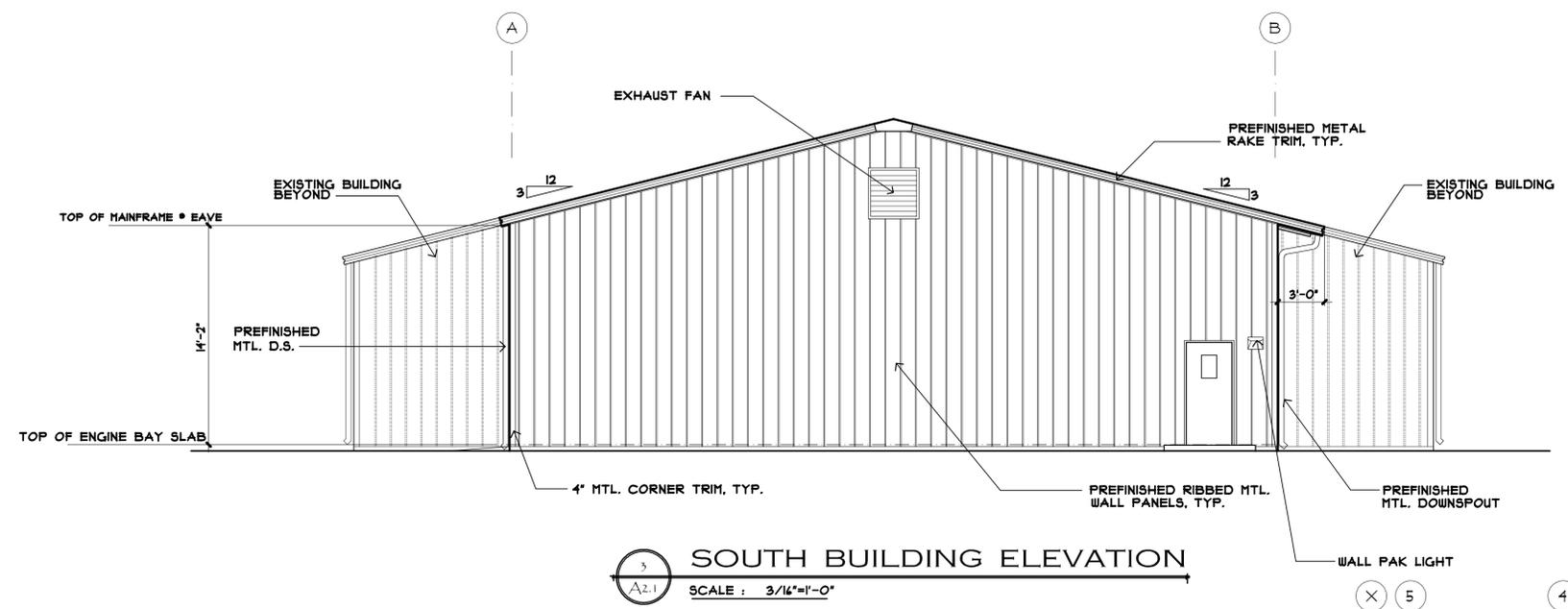
A1.2

SHEET NO.

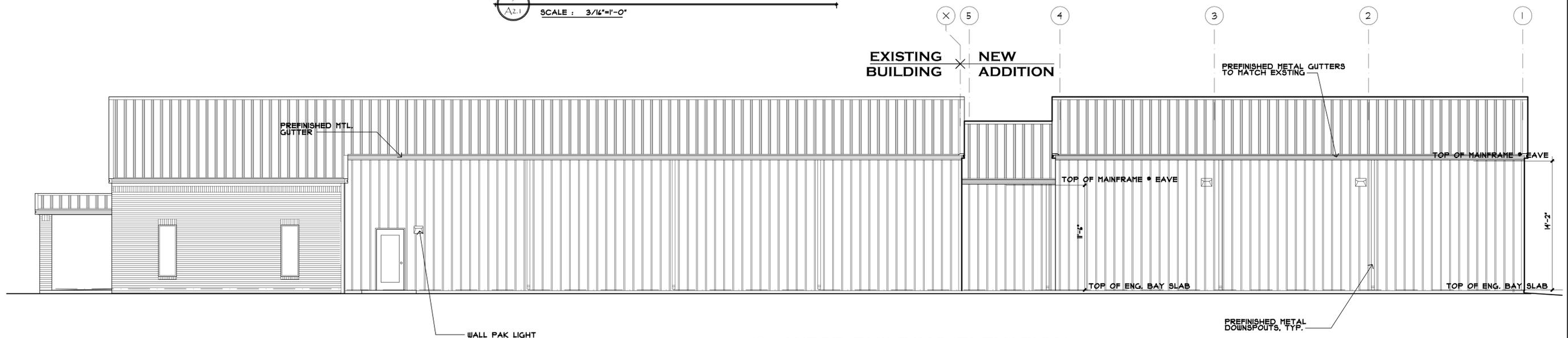


ROOF PLAN
SCALE: 3/16"=1'-0"
NORTH

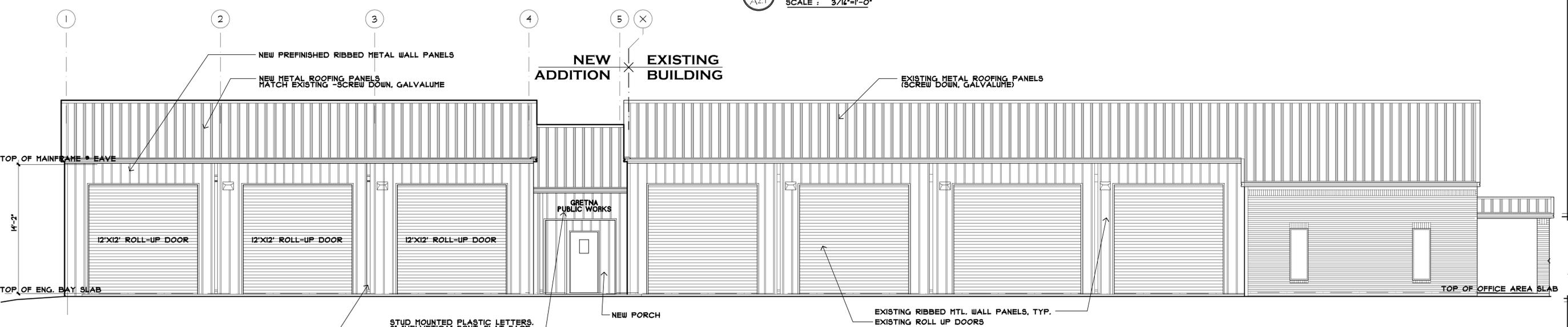
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SOUTH BUILDING ELEVATION
SCALE: 3/16"=1'-0"



WEST BUILDING ELEVATION
SCALE: 3/16"=1'-0"



EAST BUILDING ELEVATION
SCALE: 3/16"=1'-0"

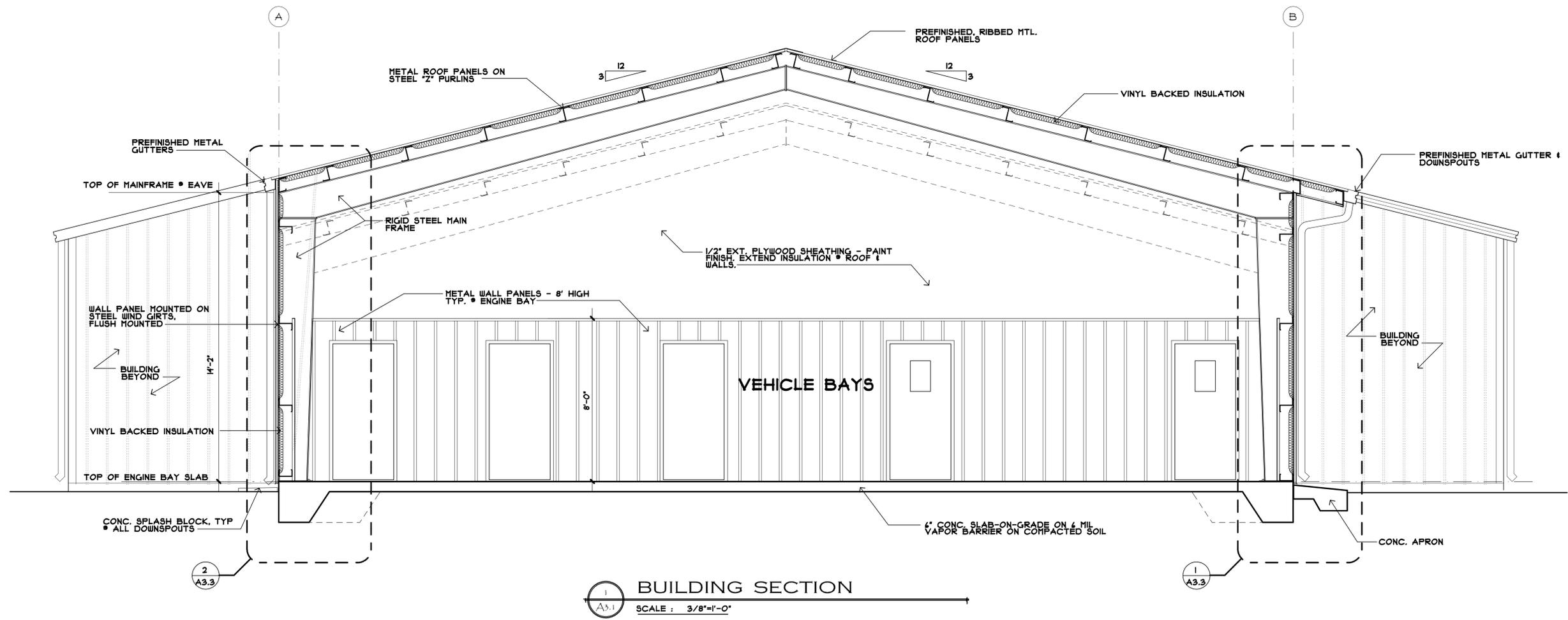
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BUILDING ADDITION FOR PUBLIC WORKS
GRETNA PUBLIC SAFETY FACILITY
CITY OF GRETNA, FLORIDA
 120 BEECH AVENUE GRETNA, FLORIDA

DATE: 12-15-25
 REV:
 JOB NO.: 25-005

A3.1

SHEET NO.



1
A3.1 **BUILDING SECTION**
 SCALE: 3/8"=1'-0"

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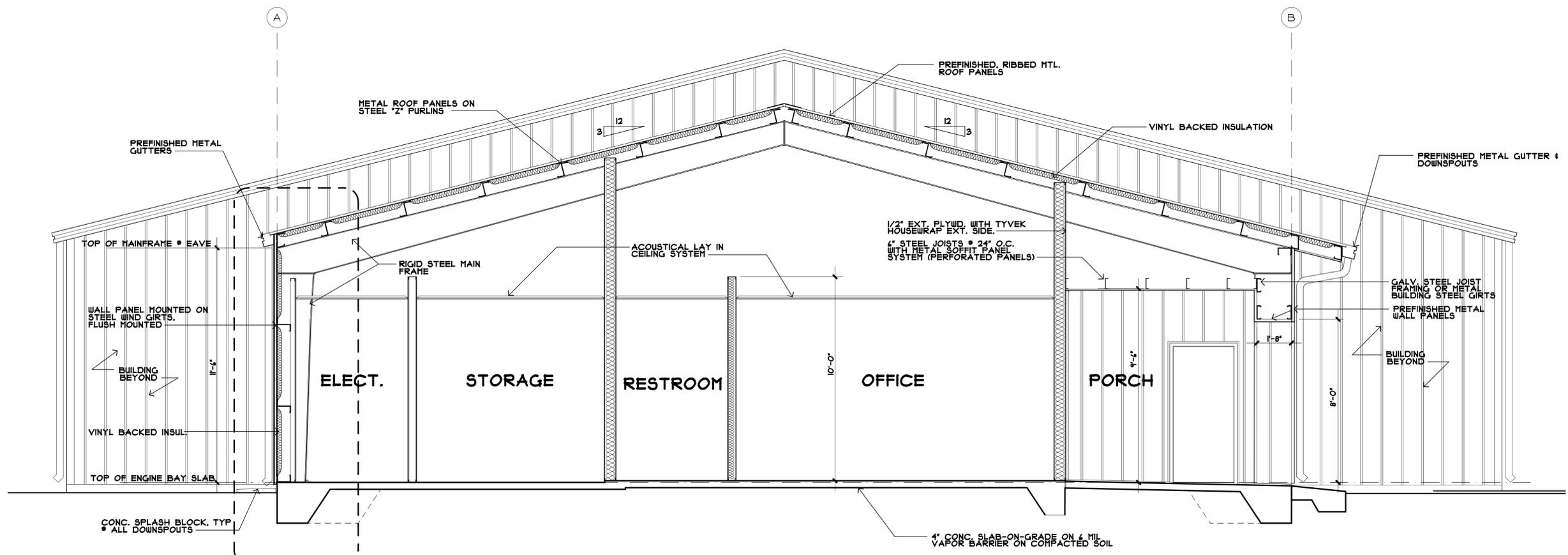
**BUILDING ADDITION FOR PUBLIC WORKS
GRETNA PUBLIC SAFETY FACILITY
CITY OF GRETNA, FLORIDA**
120 BEECH AVENUE GRETNA, FLORIDA

DATE: 12-15-25
REV:

JOB NO: 25-005

A3.2

SHEET NO.



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

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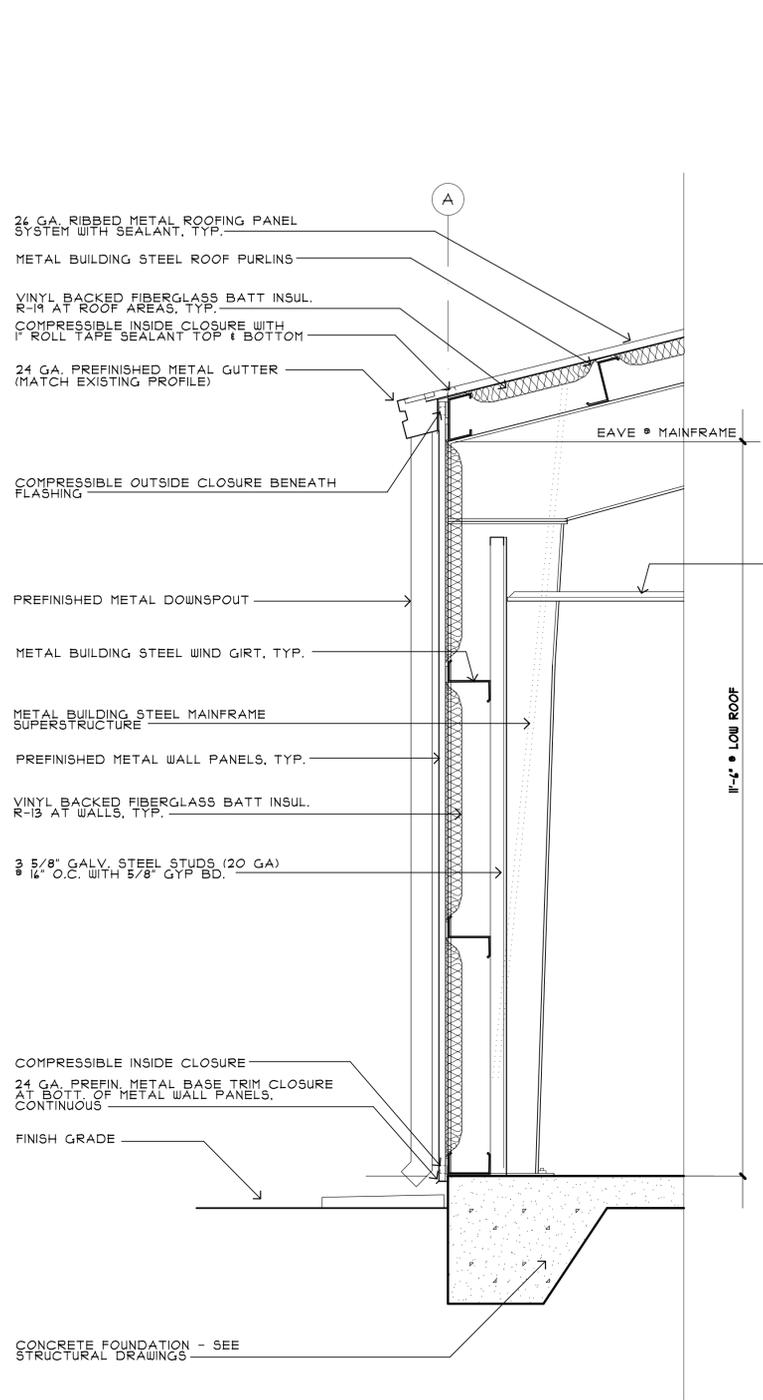
**BUILDING ADDITION FOR PUBLIC WORKS
GRETNA PUBLIC SAFETY FACILITY
CITY OF GRETNA, FLORIDA**
120 BEECH AVENUE GRETNA, FLORIDA

DATE: 12-15-25
REV:

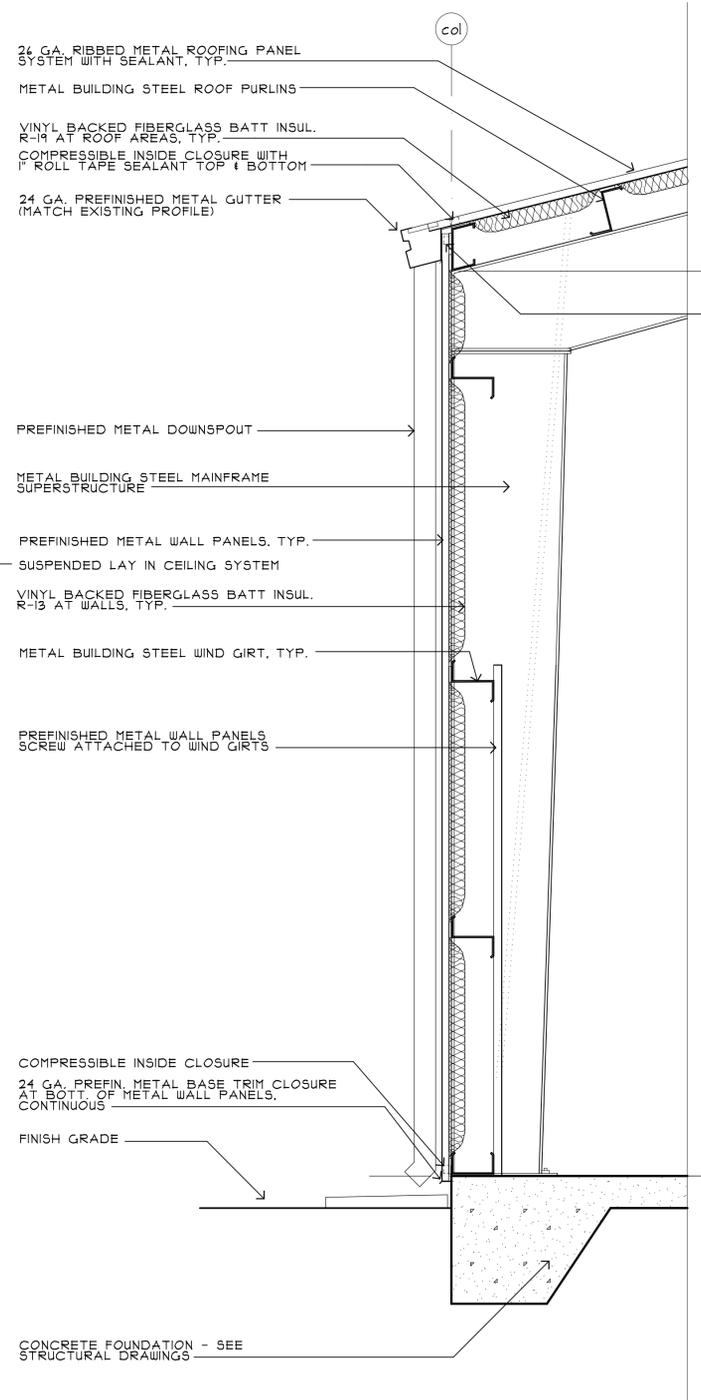
JOB NO: 25-005

A3.3

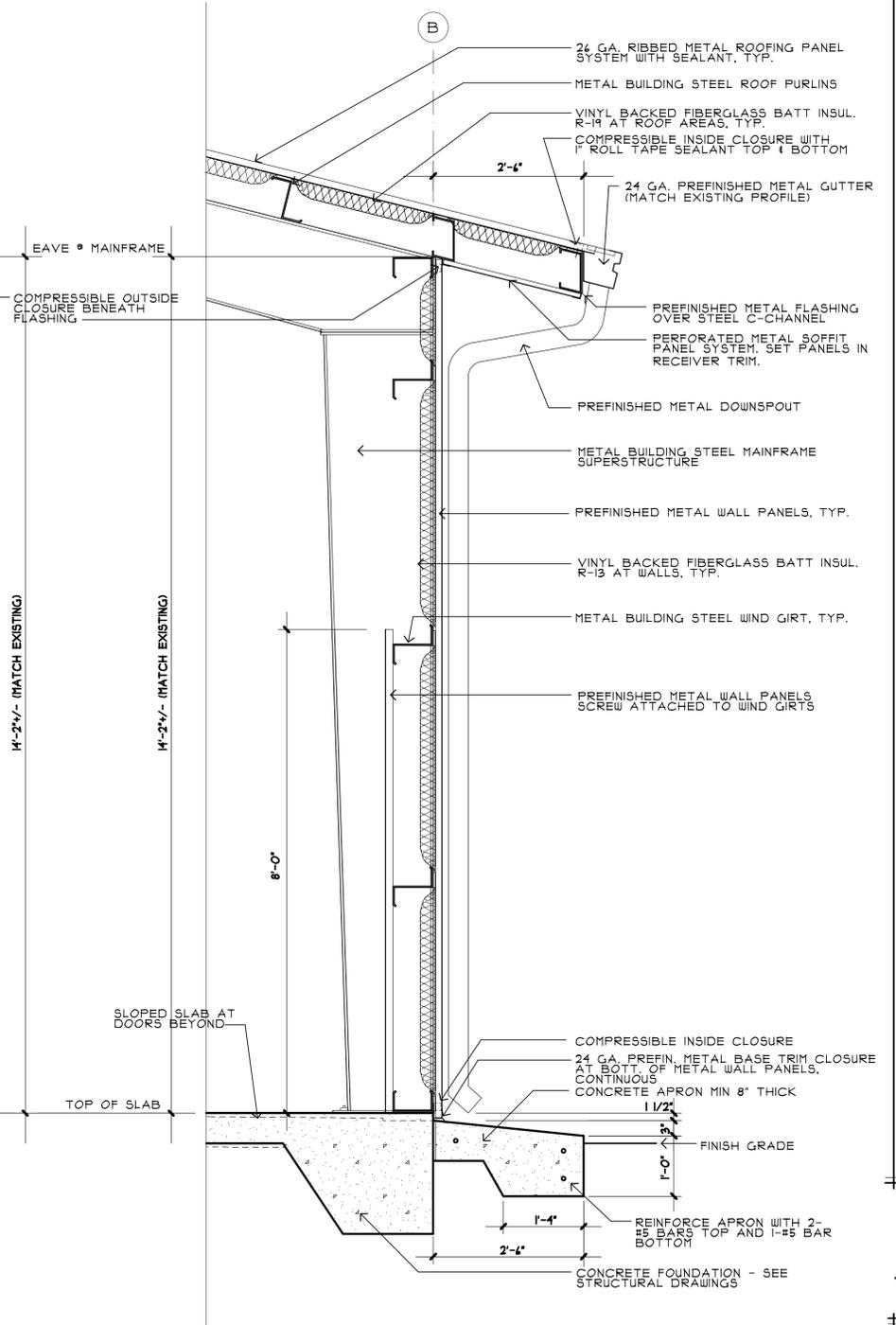
SHEET NO.



5 WALL SECTION
SCALE: 3/4"=1'-0"



2 WALL SECTION
SCALE: 3/4"=1'-0"



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

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212 NORTH ADAMS ST
QUINCY, FLORIDA 32351
FLA LIC NO. ARO004780
850-815-4348

**BUILDING ADDITION FOR PUBLIC WORKS
GRETNA PUBLIC SAFETY FACILITY
CITY OF GRETNA, FLORIDA**
120 BEECH AVENUE GRETNA, FLORIDA

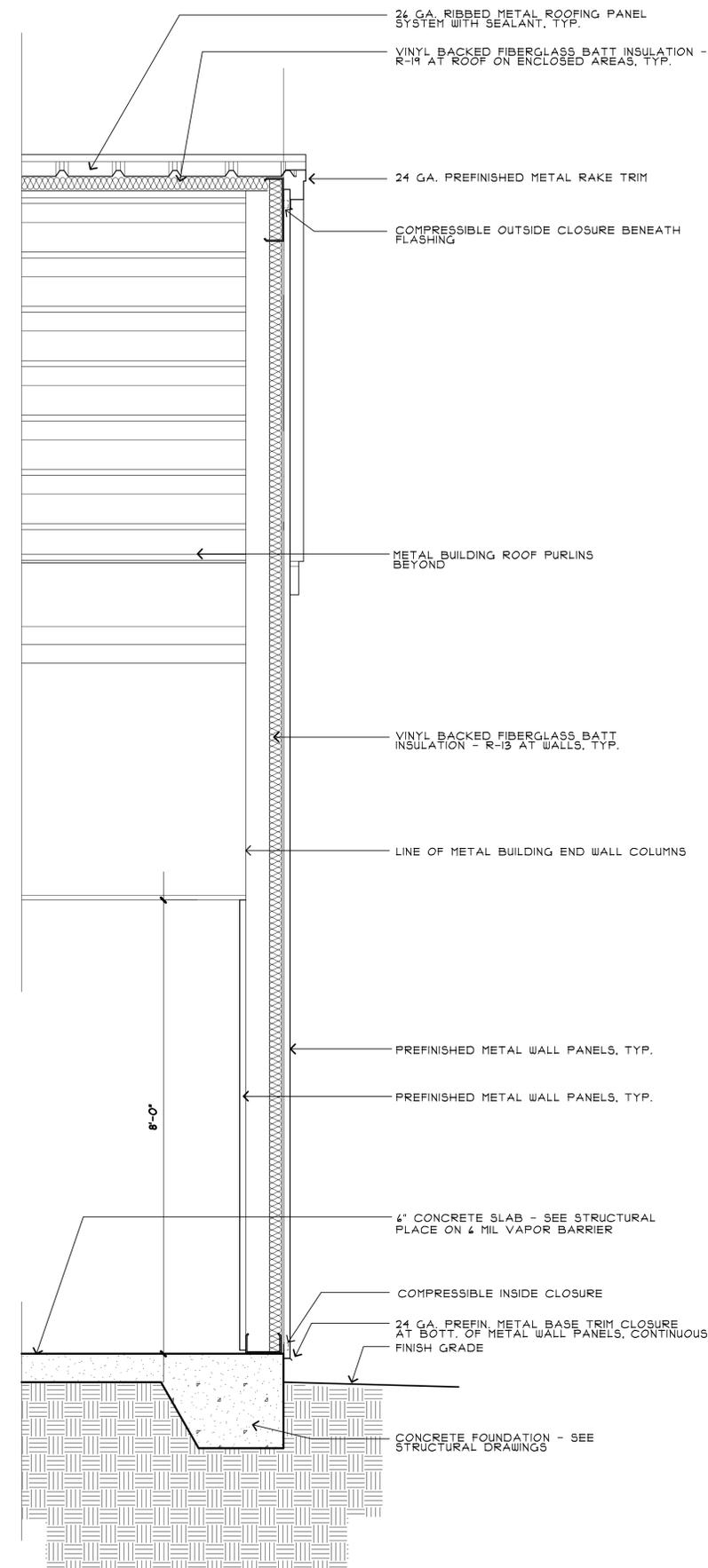
DATE: 12-15-25

REV:

JOB NO: 25-005

A3.4

SHEET NO.



1
A3.4 **WALL SECTION**
SCALE: 3/4"=1'-0"

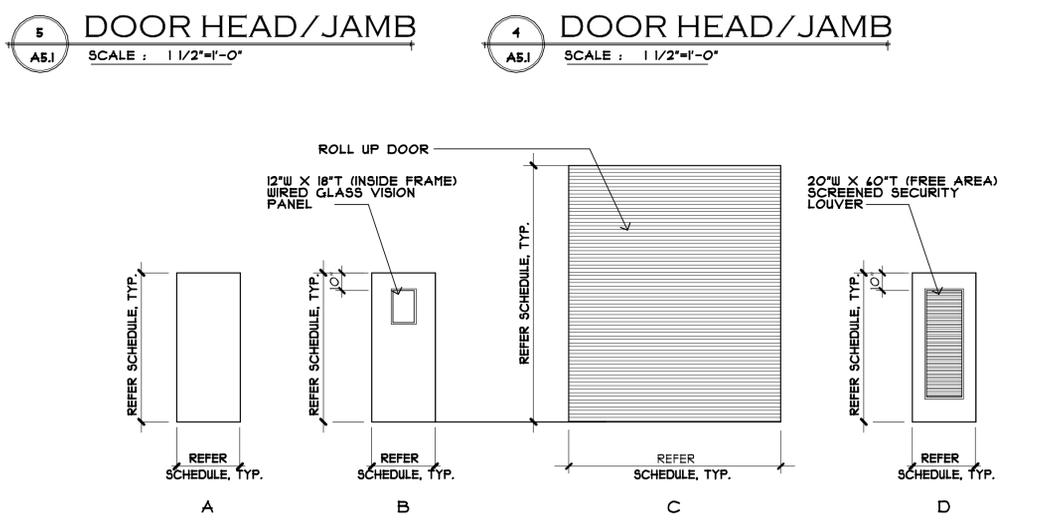
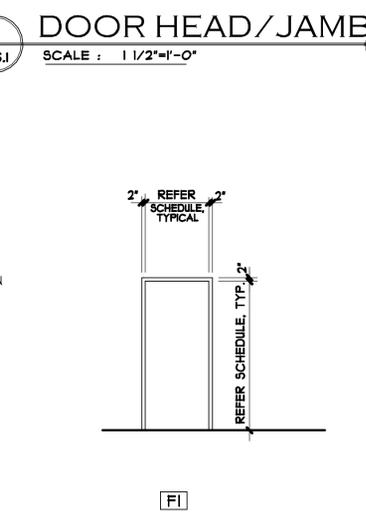
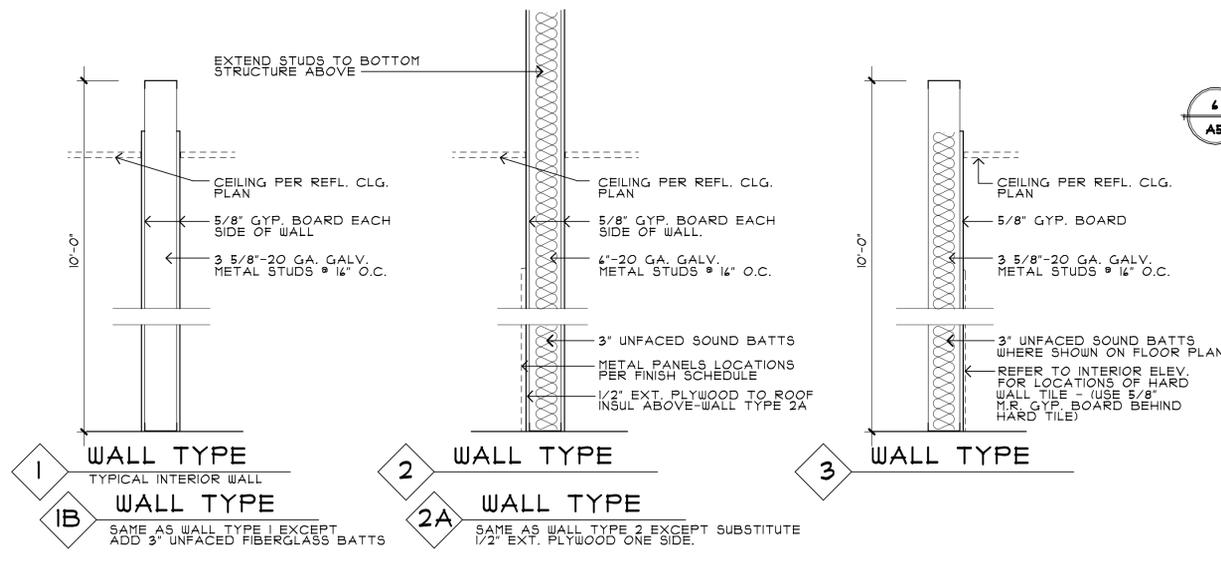
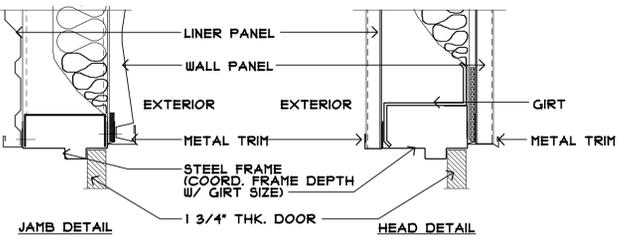
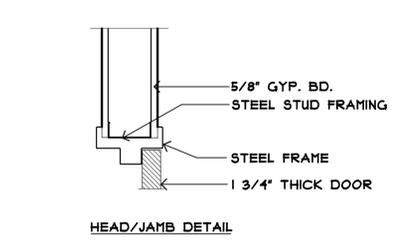
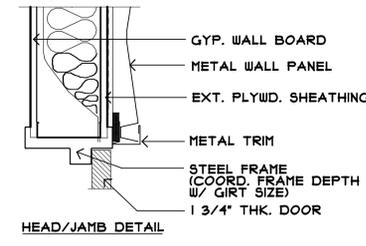
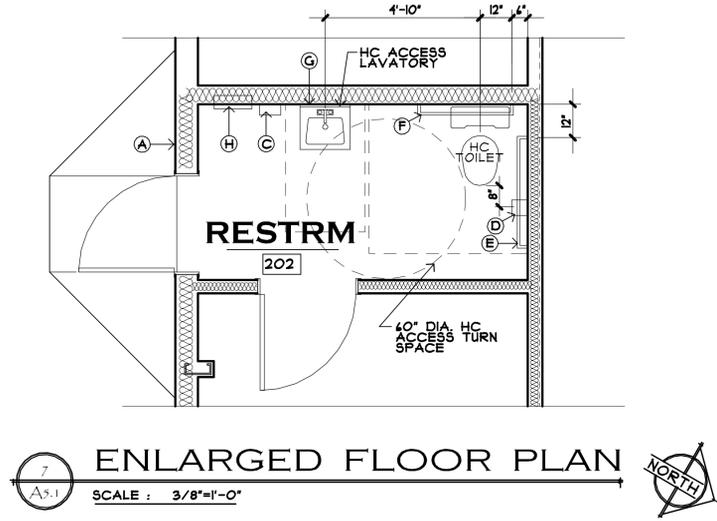
FINISH SCHEDULE													
ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS								CEILING	REMARKS
				NORTH		SOUTH		EAST		WEST			
				HTL./FIN.	COLOR	HTL./FIN.	COLOR	HTL./FIN.	COLOR	HTL./FIN.	COLOR		
MAIN LEVEL													
200	NEW VEHICLE BAYS	SCONC	--	MP-8'	MP-8'	MP-8'	MP-8'	MP-8'	MP-8'	--			
201	OFFICE	VCT	RB	PGB	PGB	PGB	PGB	PGB	PGB	LAY IN			
201A	STORAGE	VCT	RB	PGB	PGB	PGB	PGB	PGB	PGB	LAY IN			
202	HC ACCESS RESTROOM	VCT	RB	PGB	PGB	PGB	PGB	PGB	PGB	LAY IN			
203	STORAGE	VCT	RB	PGB	PGB	PGB	PGB	PGB	PGB	LAY IN			
204	ELECTRICAL	SCONC	RB	PGB	PGB	PGB	PGB	PGB	PGB	LAY IN			

FINISH SCHEDULE ABBREVIATIONS

HDP	HIGH DEFINITION PORCELAIN TILE	PGB	PAINTED GYPSUM WALLBOARD	PCONC	POLISHED CONCRETE - SEE SPECS
CPT-1	LOOP PILE CARPET SQUARES	PTDCMU	PAINTED C.M.U.	EPOXY	EPOXY COATING
CPT-2	CUT PILE CARPET	PT	PAINT FINISH	PLYWD-8'	PTD PLYWOOD TO 8' ABOVE SLAB. PGB ABOVE
VCT	VINYL COMPOSITION TILE	RB	RUBBER BASE	MP-8'	METAL WALL PANELS (NUMBER DENOTES HEIGHT)
SCONC	SEALED CONCRETE	LAY IN	ACOUSTICAL LAY IN CEILING SYSTEM		

DOOR SCHEDULE												
NO.	DOOR SIZE W X H X TH (INCHES)	DOOR MAT'L	DOOR TYPE	FIRE RAT'G/LABEL	DOOR FINISH	FRAME				HRDWR. SET #	DETAIL	REMARKS
						MAT'L	TYPE	FINISH	JAMB TYPE			
01	36 X 84 X 1 3/4 F.V.	HM	A		PT	HM	FI	PT		SET 1		
02	36 X 84 X 1 3/4	HM	B		PT	HM	FI	PT	4/A5.1	SET 2		
03	36 X 84 X 1 3/4	HM	D		PT	HM	FI	PT	4/A5.1	SET 1		
04	144 X 144	MTL	C		PREFIN	MTL	--	PT		SET 3		
05	144 X 144	MTL	C		PREFIN	MTL	--	PT		SET 3		
06	144 X 144	MTL	C		PREFIN	MTL	--	PT		SET 3		
07	36 X 84 X 1 3/4	HM	B		PT	HM	FI	PT	4/A5.1	SET 1		
08	28 X 84 X 1 3/4	HM	A		PT	HM	FI	PT	5/A5.1	SET 4		
09	36 X 84 X 1 3/4	HM	B		PT	HM	FI	PT	4/A5.1	SET 5		
10	36 X 84 X 1 3/4	HM	A		PT	HM	FI	PT	5/A5.1	SET 4		
11	36 X 84 X 1 3/4	HM	A		PT	HM	FI	PT	4/A5.1	SET 1		
12	36 X 84 X 1 3/4	HM	A		PT	HM	FI	PT	4/A5.1	SET 5		
13	36 X 84 X 1 3/4	HM	A		PT	HM	FI	PT	4/A5.1	SET 5		
14	36 X 84 X 1 3/4 F.V.	HM	D		PT	HM	FI	PT		SET 1		

ABBREVIATIONS
 SCWD: SOLID CORE WOOD HCWD: HOLLOW CORE WOOD HM: HOLLOW METAL INSULATED DOOR PT: PAINT ST: STAIN WD/LVR: WOOD LOUVER
 WD/GL: WOOD/GLASS STFRNT: METAL/GLASS STOREFRONT SYSTEM UNFIN: UNFINISHED PREFIN: PREFINISHED METAL
 REFER TO 1/A5.1 FOR DOOR TYPES, 2/A5.1 FOR JAMB DETAILS, AND 3/A5.1 FOR DOOR FRAME TYPE.



DATE: 12-15-25
REV:

JOB NO: 25-005

A5.1

SHEET NO.

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Material Notes:

- Concrete - Normal weight only, with 28 day compressive strengths of:
Slabs on grade.....3000 psi
Footings.....3000 psi
- Steel
Reinforcing steel bars.....ASTM A615, Grade 60
Welded wire fabric.....A992, Fy = 50 ksi
Plates, angles, bars.....ASTM A36, Fy = 36 ksi
Anchor bolts.....ASTM F1554, grade 36 min. or Grade 55
- Grout - 5000 psi, non-shrink
The design plans and specifications submitted as part of the permit application are in compliance with the standards established in rule 62B-33.007, Florida Administrative Code.
Scope of work has been designed and shall be constructed in accordance with the following applicable building codes:
Florida Building Code, Building - 2023 - Rev. 8

Concrete Notes:

- Concrete work shall conform to all requirements of ACI 301 "Specification for Structural Concrete", unless noted otherwise as required for these contract documents.
- Concrete mix designs shall be established by the supplier in accordance with ACI specifications. Mix designs and backup data shall be submitted to the engineer for approval prior to placement of concrete.
- All concrete shall be normal weight (150 pcf) unless noted otherwise on the plans.
- Air-entraining agents conforming to ASTM C260 shall be added to all concrete exposed to freezing and thawing to produce 5% entrained air. Air-entraining admixtures shall not be added to concrete used for trowel finished interior slabs-on-grade or elevated slabs.
- Concrete for floor slabs shall have a maximum slump of 5 inches at the point of delivery.
- No calcium chloride shall be used in any concrete.
- "C.J." on slab and foundation plan indicates a key-formed construction joint or saw-cut contraction joint in the concrete slab. Saw-cut joints shall be 1/4 the slab depth (1" min.) and shall be installed within 24 hours of slab placement. "C.J.'s", if not shown on plans, shall be spaced per note 6. "C.J." shall be placed between isolation joints at columns. "C.J." shall not be placed in elevated slabs. No control joints allowed in column center lines.
- Unless noted otherwise, all interior and exterior slabs on grade shown the structural drawings, including steps shall be 4" thick, of the following type:
ACI 309 Type B. Slab with shrinkage control reinforcement - Reinforce slab with 3 x 6 - W1.4 x W1.4 WWF supported at 1" from top of slab. WWF shall lap cross wires plus 2" (minimum at splices). "C.J.'s" are to divide the slab such that concrete within "C.J.'s" is not greater than 12'-0" in either direction.
- Temporary excavation for footings, pipes, pits or other purposes shall be sloped and braced in accordance with OSHA requirements.
- Reinforcing steel placement shall be inspected by a qualified structural engineer in accordance with ACI 318 section 1.3.
- Provide bar supports and drawers in accordance with ACI 315 "Details and Detailing of Concrete Reinforcing".
- Splices not shown on the drawings shall be subject to approval. Lap all tension bars a minimum of 24 bar diameters unless noted otherwise.
- Welding of reinforcing steel shall not be permitted except as authorized or directed by the structural engineer.
- Horizontal reinforcement in footings and walls shall be continuous around corners.
- All field bending of reinforcing shall be done cold. Heating of bars is not permitted.
- Principal openings are shown on structural drawings. See architectural, mechanical, and electrical drawings for additional openings, embeds, sleeves, depressions, slopes, etc.

- Unless noted otherwise, all openings shall be reinforced with (2) #5 bars, all sides, extended a minimum of 3'-0" beyond opening.
- Provide a minimum of (2) #4 bars, 4'-0" long at reentrant corners of slabs-on-grade and elevated slabs, centered about corner, unless noted otherwise.
- All debris shall be removed from forms prior to placement of concrete.
- Unless noted otherwise, vertical control joints in step walls and retaining walls shall be placed no more than 25'-0" apart and shall be 3/4" deep "V", chamfered on both sides. Construction joints shall occur at control joints and shall be keyed. 50% of the specified horizontal reinforcement shall stop 3" each side of the control joint.
- Foundation walls shall be laterally braced until concrete has attained the specified design strength and all excavations are properly backfilled.
- Minimum concrete cover for cast-in-place concrete reinforcement:
Concrete cast against and permanently exposed to earth.....3 inches
Concrete exposed to earth or weather:
No. 6 bars and larger.....2 inches
No. 5 bars and smaller.....1 1/2 inches
Concrete not exposed to weather or in contact with ground:
Slabs, walls, joists (No. 11 bars and smaller).....1 1/2 inches
Beams, Columns (All reinforcement).....1 1/2 inches
- Refer to geotechnical engineer's report for subgrade preparation including crushed aggregate base and vapor barrier requirements and recommendations exceeding any shown here.
- Concrete test reports shall be available at job site.
- All foundation and retaining walls shall be backfilled per geotechnical engineer's recommendations.

General Foundation Notes:

- General Notes For Foundation
- All construction conform to the 2023 Florida Building Code, Rev. 8.
 - In the event of a conflict between plans and the codes, the codes shall govern.
 - Lot shall be landscaped to prevent the detention of surface water.
 - Concrete: 3000 psi Steel: Grade 60
 - All fill shall be compacted to 95% of maximum dry density as determined by the Modified Proctor Test.
Definition:
a. Compaction test will not be required when the fill is less than 12 inches in depth, the inspector shall use best judgement.
b. When the fill is 12 inches to 18 inches in depth, compaction test will be required only if the inspector's judgement is that the compaction is questionable.
c. When the fill is 18 inches in depth or more, compaction test will be required.
 - All splices in footing steel shall be lapped 40 bar diameters in concrete block and 30 bar diameters in monolithic slabs.
 - Steel interior grade beams shall be spliced to steel exterior grade beams to assure continuity of footing throughout structure.
 - Exterior grade beams shall run continuous around the perimeter of the structure to assure continuity.
 - All concrete slabs shall have control joints to control cracking spaced maximum of 15 feet in each direction.
 - Soil shall be chemically treated for termites.
 - The contractor shall verify all dimensions at the site prior to beginning construction.
 - All reinforcing steel shall be located min. 3" from concrete surface.
 - A clean compacted sand fill at least 18 inches thick shall be placed under all exterior and interior grade beams. Note: This may be omitted in areas that have at least 30 inches of clean compacted natural soil that has minimum bearing capacity of 2000 psi and is free of mulch, organic material and plastic clays and consist of at least 50% sand (exl.).
 - Any organic material under foundation shall be removed prior to construction, unless otherwise specified.
 - For stem walls 5' or higher, formwork shall be braced before backfilling.
 - Concrete block shall have minimum compressive strength of 1500 psi (Grade N-1 or better).
 - Additional #5 with fitted colls at load bearing points on walls.

Design Loads:

Live Loads:
Roof: 20 psf
Floor: 40 psf

Dead Loads:
Roof: 10 psf

Wind Loads:
Wind Speed: 120 mph, 3 sec. gust/ 110 mph, sustained
Exposure Category: "B"
Enclosure Classification: "Enclosed"
Risk Category: II

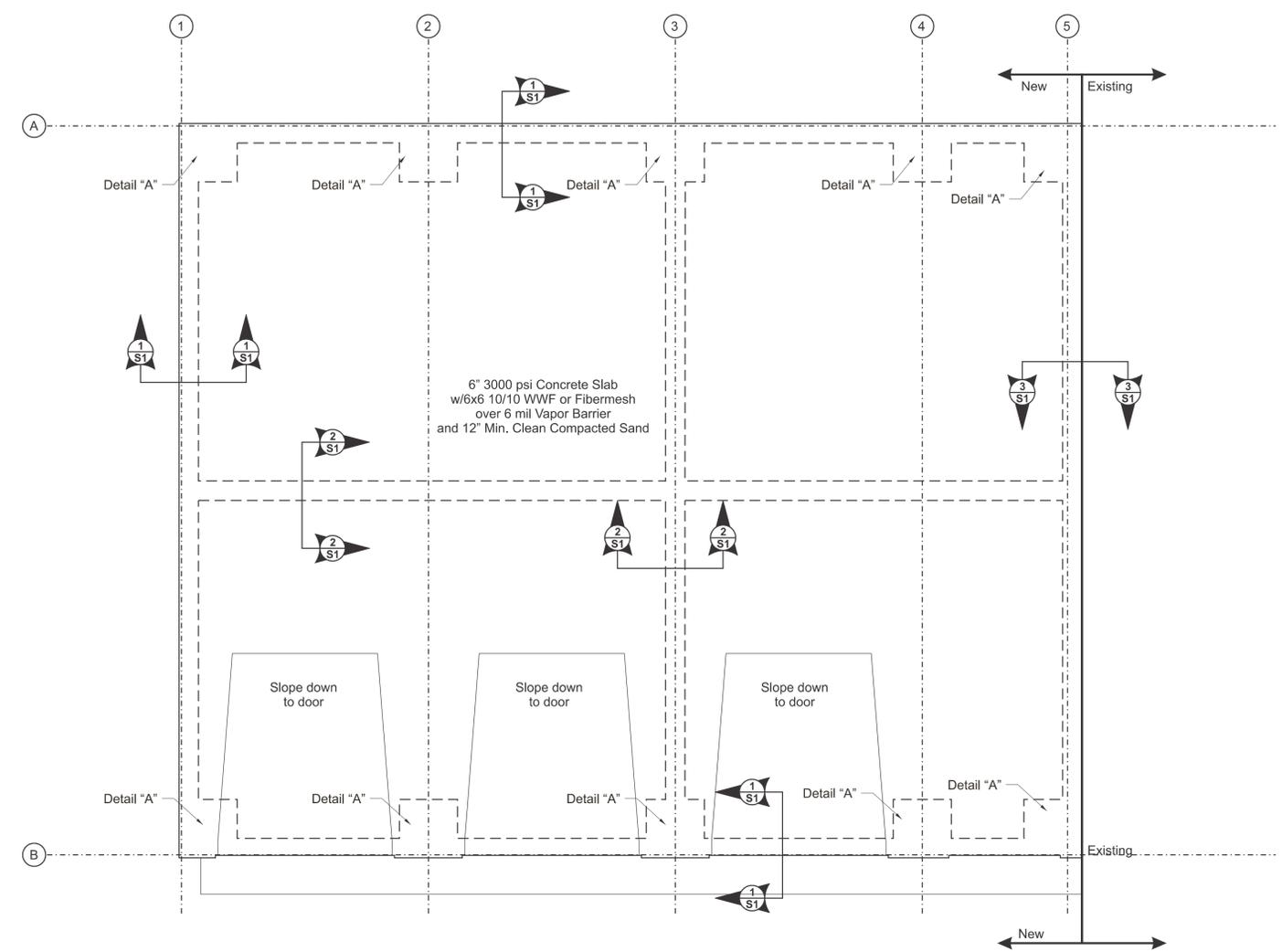
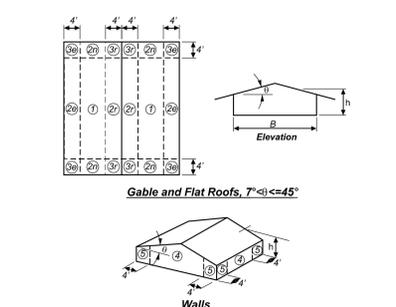
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Florida Building Code, Building - 2023 - Rev. 8

Component and Cladding Design Pressures

Zone	Wall Zones		
	10 SF Trib.	100 SF Trib.	500 SF Trib.
4	-13.9	-11.9	-11.9
5	-17.1	-13.3	-13.3
4 and 5	12.7	10.8	10.8

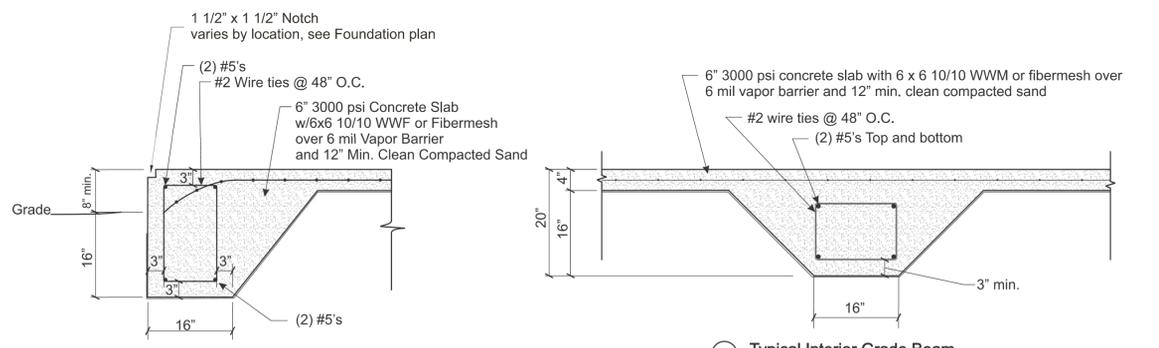
Zone	Roof Zones		
	10 SF Trib.	100 SF Trib.	500 SF Trib.
Zones 1 and 2e	-18.1	-12.3	-12.3
Zones 2n, 2r and 3e	-28.9	-14.9	-14.9
Zone 3r	-34.4	-17.1	-17.1

All Zones	8.4	5.9	5.9
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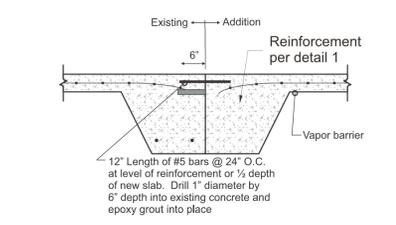
Foundation Plan
Scale: 3/16"=1'-0"

****Refer to Architectural for Dimensions!**
*****Design is based on assumed MBM reactions, submit MBM reactions to EOR prior to construction for review and approval!**

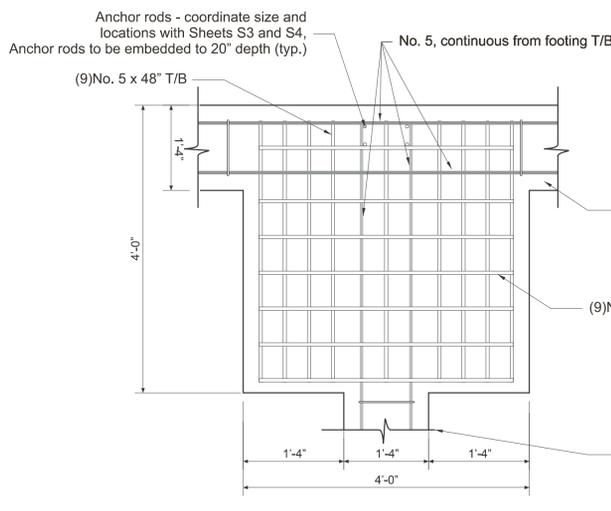


1 Typical Exterior Grade Beam
Scale: 3/4"=1'-0"

2 Typical Interior Grade Beam
Scale: 3/4"=1'-0"



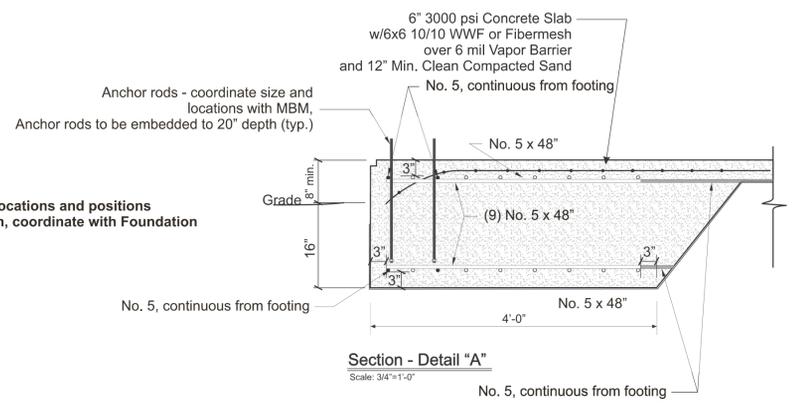
3 Connection to Existing Foundation
N.T.S.



Plan View - Foundation Layout - Detail A
Scale: 3/4"=1'-0"

****Grade beam locations and positions vary by location, coordinate with Foundation Plan**

****Grade beam locations and positions vary by location, coordinate with Foundation Plan**



Section - Detail A
Scale: 3/4"=1'-0"

Digitally signed by Thomas E Beitelman
Date: 2025.12.16 13:59:17 -05'00'

This item has been digitally signed and sealed by Thomas Beitelman on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SECTION 211313-WET PIPE FIRE PROTECTION SPRINKLER

1.1 SUMMARY

- A. This Section specifies automatic sprinkler systems for buildings and structures. Materials and equipment specified in this Section include:
 1. Pipes, fittings, valves, and specialties.
 2. Sprinklers
- B. These documents are for design criteria & bid purposes only and shall not be submitted as PERMIT documents nor shall "The Design Group Inc" assume any responsibility as the Engineer of Record (EOR) for said systems.
- C. Bidding contractor must provide field verified "shop drawings" to include all necessary calculations, site investigation, product cut-sheets, etc in accordance with 2021 NFPA 13, as well as local AHJ requirements.

1.2 SUBMITTALS

- A. Product Data for each type sprinkler head, valve, piping specialty, fire protection specialty, and fire department connection required.
- B. Shop Drawings prepared in accordance with 2021 NFPA 13 identified as "Working Plans," showing all hangers, expansion joints and locations of drain points and including hydraulic calculations. Submitted working plans shall be designed by NICET Level III or Level IV certified fire protection sprinkler designer with documents signed/sealed by State of Georgia registered fire protection professional engineer for submission to the authority having jurisdiction (AHJ).
- C. Test Reports and Certificates including "Contractor's Material & Test Certificate for Aboveground Piping" and "Contractor's Material & Test Certificate for Underground Piping" as described in 2021 NFPA 13.
- D. List of existing materials to be reused (e.g., sprinkler piping in first floor general storage area).

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Installation of fire protection piping, equipment, specialties, and accessories shall be performed only by qualified licensed installer. The term qualified means experienced in such work (experienced shall mean having a minimum of 5 projects similar in size and scope), familiar with all precursors required, and has complied with all the licensing requirements of the authority jurisdiction. Upon request, submit evidence to the Engineer.

B. Regulatory Requirements: Comply with the requirements of the following codes:

1. 2021 NFPA 13 - Standard for the Installation of Sprinkler Systems.
2. UL Compliance: Fire protection system materials and components shall be Underwriter's Laboratories listed and labeled, approved for the application anticipated.
3. Compliance: 2023 FPPC

1.4 PIPE AND FITTING MATERIALS

- A. Steel Pipe: ASTM A 120, Schedule 40, seamless, black steel pipe, plain or threaded ends.
- B. Steel Pipe: ASTM A120, Schedule 10, seamless, black steel pipe, plain or roll grooved ends. Minimum wall thickness shall conform to NFPA 13 requirements.
- C. Plastic Pipe: Schedule CPVC or XL thin wall approved for wet pipe fire sprinkler system per 2021 NFPA13.
- D. Cast-iron Threaded Fittings: ANSI B16.4, Class 250, standard pattern, for threaded joints. Threads shall conform to ANSI B1.20.1.
- E. Grooved Mechanical Fittings: ASTM A 536, Grade 65-45-12 ductile iron; ASTM A 47 Grade 32510 malleable iron; or ASTM A53, Type F or Types E or S, Grade B fabricated steel fittings with grooves or shoulders designed to accept grooved end couplings.
- F. Grooved Mechanical Couplings: consist of ductile or malleable iron housing, a synthetic rubber gasket of a central cavity pressure-responsive design, with nuts, bolts, locking pin, locking toggle, or lugs to secure roll-grooved pipe and fittings. Grooved mechanical couplings including gaskets used on dry-pipe systems shall be listed for dry-pipe service.
- G. Cast-Iron Threaded Flanges: ANSI B16.1, Class 250, raised ground face, bolt holes spot faced.
- G. Gasket Materials: thickness, material, and type suitable for fluid or gas to be handled, and design temperatures and pressures.
- H. Attic piping material to be galvanized steel.

1.5 GENERAL DUTY VALVES

- A. Gate Valves - 2 Inch and Smaller: body and bonnet of cast bronze, 175 pound cold water working pressure - non-shock, threaded ends, solid wedge, outside screw and yoke, rising stem, screw-in bonnet, and malleable iron handwheel. Valves shall be capable of being repacked under pressure, with valve wide open.
- B. Gate Valves - 2-1/2 Inch and Larger: iron body; bronze mounted, 175 pound cold water working pressure - non-shock. Valves shall have solid taper wedge, outside screw and yoke, rising stem, flanged bonnet, with body and bonnet conforming to ASTM A 120 Class B; replaceable bronze wedge rising rings; flanged ends; and a packing assembly consisting of a cast iron gland flange, brass gland, packing, bonnet, and bronze bonnet bushing. Valves shall be capable of being repacked under pressure, with valve wide open.
- C. Swing Check Valves: MSS SP-71; Class 175, cast iron body and bolted cap conforming to ASTM A 126, Class B; horizontal swing, with a bronze disc or cast iron disc with bronze disc ring, and flanged ends. Valve shall be capable of being retitted while the valve remains in the line.

1.6 SPECIALTY VALVES

- A. Alarm Check Valve: 175 psig working pressure, designed for horizontal or vertical installations, and have cast iron, flanged inlet and outlet, bronze grooved seat with "O" ring seals, single hinge pin and latch design. Provide trim sets for bypass, drain, electric sprinkler alarm pressure switch, pressure gages, drip cup assembly piped without valves separate from main drain line, retarding chamber, and fill line attachment with strainer.
- B. Detector Check Valves: Galvanized cast iron body, with a bolted cover with air bleed device for access to internal parts; 175 psig working pressure. One piece bronze disc with bronze bushings, pivot and replaceable seat. Provide threaded bypass taps in the inlet and outlet for bypass meter connection. Valve shall be set to allow minimal water flow through the bypass meter; when major water flow is required, the water pressure will fully open the damper.

- C. Double Check Backflow Preventer: Provide double check valve assembly bolted together with OS&Y gate valves on each side. Backflow preventer shall be rated to 175 psig working pressure and tested at 350 psi, and meeting ASTM A68 Class 30B and A108 Class B standards for gray iron castings. Provide supervisory switches on the OS&Y valves.

1.7 AUTOMATIC SPRINKLERS

- A. Sprinkler Heads: List in or bulb type (verify), and style as indicated or required by the application or indicated by architect. Unless otherwise indicated, provide heads with nominal 1/2 inch discharge orifice, having a 5.6K Factor. Quick response sprinkler heads shall be installed in guest rooms, public areas, corridors, lobby, mechanical rooms, etc. and in all other areas of the building compartment in which such rooms occur with protective guards. Sprinkler heads shall be rated for "intermediate" temperature ranges (175°F) in boiler rooms, mechanical heater rooms, kitchen and storage areas and other locations where elevated temperatures are likely to occur at ceiling level. All other sprinkler heads shall Quick Response type be rated for "Light Hazard" with ordinary temperature range at 135°F per 2021 NFPA-13.
- B. Sprinkler Head Finishes: Provide heads with the following finishes:
 1. Upright, Pendent, and Sidewall Styles: chrome plated or white in finish spaces, exposed to view; rough bronze finish for heads in unfinished spaces and not exposed to view. Heads shall be wax-coated where installed exposed to acids, chemicals, or other corrosive fumes.
 2. Concealed Style: rough brass, with painted white cover plate.
 3. Pendent Sprinklers in finished spaces exposed to view shall be semi-response Style: bright chrome, with bright chrome escutcheon plate or white with white escutcheon plate.
- C. Sprinkler Head Cabinet and Wrench: finished steel cabinet, suitable for wall mounting, with hinged cover and space for 6 spare sprinkler heads plus sprinkler head wrench. Provide a separate cabinet for each style sprinkler head on the project.

1.8 FIRE DEPARTMENT CONNECTIONS

- A. Yard Type Samese Connections: yard mounted with corrosion resistant escutcheon and two-way connections. Connection sizes shall be 4 inch outlet and two 2-1/2 inch female inlets, having NH standard threads, for the connection size indicated, as specified in NFPA 1963. Each inlet shall have a clapper valve, and plug and chain. Unit shall have wall escutcheon of cast brass, finish to match connections, with words "AUTO SPRINKLER - FIRE DEPT CONNECTION" in raised letters.

1.9 ALARM DEVICES

- A. General: Types and sizes shall mate and match piping and equipment connections. Coordinate with building fire alarm contractor for exact requirements.
- B. Water Flow Indicators: wire type waterflow detector, rated to 250 psig, designed for horizontal or vertical installation; have 2 SPDT circuit switches to provide isolated alarm and auxiliary contacts, 7 amps 125 volts AC and 0.25 ampere 24 volts DC, complete with factory-set, field-adjustable retard element to prevent false signals, and tamper-proof cover which sends a signal when cover is removed.
- C. Supervisory Switches: SPST, normally closed contacts, designed to signal valve in other than full open position.

1.10 PIPE APPLICATIONS

- A. Install Schedule 40 steel pipe with threaded joints and fittings for 2 inch and smaller, and galvanized piping in attic. Provide with automatic air venting devices to protect against pipe & system corrosion.
- B. Install Schedule 40 steel pipe with roll-grooved ends and grooved mechanical couplings.
- C. Install Schedule 10 Steel pipe with roll-grooved ends and grooved mechanical couplings.
- D. Install CPVC or XL thin-wall piping above finished ceilings. Products shall NOT be installed in attics or other areas where freezing temperatures may be issue or not allowed; must always be approved by local authority having jurisdiction or State Fire Marshall agent prior to installation.

1.11 PIPING INSTALLATIONS

- A. Locations and Arrangements: Drawings (plans, schematics, and diagrams) indicate the general location and arrangement of piping systems. So far as practical, install piping as indicated.
- B. Install sprinkler piping to provide for system drainage in accordance with 2021 NFPA 13. Provide all necessary drain valves required for system drainage.
- C. Use approved fittings to make all changes in direction, branch takeoffs from mains, and reductions in pipe sizes.
- D. Install unions in pipes 2 inch and smaller, adjacent to each valve. Unions are not required on flanged devices or in piping installations using grooved mechanical couplings.
- E. Install flanges or flange adaptors on valves, apparatus, and equipment having 2-1/2 inch and larger connections.
- F. Hangers and Supports: Comply with the requirements of 2021 NFPA 13 and NFPA 14. Hanger and support spacing and locations for piping joined with grooved mechanical couplings shall be in accordance with the grooved mechanical coupling manufacturer's written instructions, for rigid systems.
- G. Make connections between underground and above-ground piping using an approved transition piece strapped or fastened to prevent separation.
- H. Install mechanical sleeve seal at pipe penetrations in basement and foundation walls. Penetrations of all rated walls shall be sealed in an approved manner by methods and materials meeting the rating of the wall.
- I. Install test connections sized and located in accordance with 2021 NFPA 13 complete with shut-off valve. Test connections may also serve as drain pipes. Provide discharge piping to building exterior, and provide splash block at each discharge.
- J. Install pressure gage on the riser or feed main at or near each test connection. Provide gage with a connection not less than 1/4 inch and having a soft metal seated globe valve, arranged for draining pipe between gage and valve. Install gages to permit removal, and where they will not be subject to freezing.

1.12 PIPE JOINT CONSTRUCTION

- A. Threaded Joints: conform to ANSI B1.20.1, tapered pipe threads for field out threads. Join pipe, fittings, and valves as follows:
 1. Note the internal length of threads in fittings or valve ends, and proximity of internal seat or wall, to determine how far pipe should be threaded into joint.
 2. Align threads at point of assembly.
 3. Apply appropriate tape or thread compound to the external pipe threads.
 4. Assemble joint to appropriate thread depth. When using a wrench on valves place the wrench on the valve end into which the pipe is being threaded.
 5. Damaged Threads: Do not use pipe with threads which are corroded or damaged. If a weld opens during cutting or threading operations, that portion of pipe shall not be used.
- B. Flanged Joints: Align flanges surfaces parallel. Assemble joints by sequencing bolt tightening to make initial contact of flanges and gaskets as flat and parallel as possible. Use suitable lubricants on both threads. Tighten bolts gradually and uniformly to appropriate torque specified by the bolt manufacturer.
- C. Mechanical Grooved Joints: cut or roll grooves on pipe ends dimensionally compatible with the couplings.
- D. End Treatment: After cutting pipe lengths, remove burrs and fins from pipe ends.

1.13 VALVE INSTALLATIONS

- A. General: Install fire protection specialty valves, fittings, and specialties in accordance with the manufacturer's written instructions, 2021 NFPA 13 and 24, and the authority having jurisdiction.
- B. Gate Valves: Install supervised-open gate valves so located to control all sources of water supply except fire department connections. Where there is more than one control valve, provide permanently marked identification signs indicating the portion of the system controlled by each valve.
- C. Install check valves in each water supply connection.
- D. Alarm Flow Valves: Install electric valves in the vertical position, in proper direction of flow including the bypass check valves and retard chamber drain line connection. Install valve trim in accordance with the valve manufacturer's appropriate trim diagram. Test valve and alarm pressure switch for proper operation.
- E. Detector Check Valves: Install in proper direction of flow in a location to detect system leakage and unauthorized use of water, and to prevent BACKFLOW into public water mains. Install bypass meter with gate valves on each side of the meter to permit meter removal, and check valve downstream from the meter.
- F. Install approved valving and BACKFLOW prevention at the water supply main in accordance with NFPA 24 requirements.
- G. All valves, controls, components, etc. shall comply with 2020 NFPA 25 "Standards for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems."

1.14 SPRINKLER HEAD INSTALLATIONS

- A. Use proper tools to prevent damage during installations.
- 1.15 FIRE DEPARTMENT CONNECTION INSTALLATIONS
 - A. Install automatic drip valve(s) at the check valve on the fire department connection to the system riser.
 - B. Install mechanical sleeve seal at pipe penetration in outside walls.

1.16 FIELD QUALITY CONTROL

- A. Flush, test, and inspect sprinkler piping systems in accordance with 2021 NFPA 13. Conduct a two-hour hydrostatic test at 200 psig, and inspect all piping for leaks.
- B. Flush, test, and inspect standpipe systems in accordance with 2021 NFPA 14.
- C. Replace piping system components which do not pass the test procedures specified, and reset repaired portion of the system.
- D. Provide owner and architect with copies of Contractor's material and test certificates.

1.17 FIRE RATED WALL PENETRATIONS

- A. Seal all penetrations of rated walls with UL-Classified wirelapping materials meeting ASTM E814 requirements, and fully preserving the rating of the wall assembly.

1.18 FIRE PROTECTION SYSTEM NOTES

- A. Coordinate the placement of sprinkler heads, pipes and valves with all mechanical ducts, diffusers, lights, structures, ceiling systems and equipment.
- B. Contractor shall pay for all inspections, flow test, system shutdown, isolations, required fire watch certificates, connection fees, demand charges and license in connection with his/her work.
- C. Contractor shall maintain a clean work premise at all times and shall clean construction site of all debris at completion of his/her job.
- D. If Quick Response (QR) type sprinkler heads are used contractor may decrease actual coverage area by up to 40% in accordance with 2010 NFPA 13 guidelines. Verify actual requirements and conditions (i.e. ceiling height, slope, etc.) prior to effort.

- H. Light fixtures, HVAC ducts, HVAC diffusers, plumbing pipes and electrical conduits shall take preference. Add additional heads as required to meet coverage requirements.
- I. Ceiling grid mains shall not be cut or adjusted. Contractor shall make necessary off-sets or adjustments based on ceiling framing. Heads to be located in center of fits.
- J. Contractor shall make reasonable effort to identify water supplies that could lead to Microbial Induced Corrosion (MIC). Such efforts shall consist of discussions with the local water purveyor and or fire official, familiar with conditions in the local area, or laboratory testing of water supplies. When conditions are found that may result in MIC contamination of the fire protection piping or components, the Engineer of Record, informed by project Fire Protection Sprinkler contractor, shall design corrective measures. Return to be immediately relayed to owner and architect prior to necessary action.
- K. Backflow prevention and/or metering shall comply with local water purveyor requirements including maximum allowable pressure drop.
- L. Fire protection sprinkler shop drawings shall include classification of hazard occupancy for each room or area, design approach (which includes system type), details, device temperature rating, spacing for each separate hazard occupancy, building or structure ratings, characteristics of water supply, main size and location, reliability for the most hydraulically demanding area, flow test data with time, date, information on whom conducted the test, test elevation, static gauge pressure at no flow, flow rate with residual gauge pressure, hydrant buff coefficient, and location of test in relation to the hydraulic point of service.

- J. Undergroud piping:
 1. All pipe to be C-90, Class 150, DR 14, high pressure PVC piping rated at 150 psi; product shall conform to ANSI, AWWA and Uni-Bell plastic & ASTM D 3139 standard specification.
 2. Burst test pressure capability of C900 Class 150 psi at least 755 psi, with sustained pressure test capability of 500 psi.
 3. Fittings shall be cast iron (push-on type or mechanical joint) conforming to ANSI and AWWA standard specifications.
 4. Thrust blocks, retainer glands or rodding shall be provided at all bends, tees, and fire hydrants.
 5. All pipes shall be hydrostatically tested upon completion of installation.
 6. All valves shall be cast iron. Valves outside of valve pits shall have mechanical joint ends and non-rising stems with square operating nuts.
 7. All trenching, pipe laying, and back filling shall be in accordance with federal OSHA regulations and NFPA standards.
 8. Design, installation and testing of underground systems shall be accordance with NFPA regulations and local codes.
 9. All non-metal lines below grade shall have tracer wiring attached for future line location.

- K. Above ground piping:
 1. System piping and fittings to be as follows: Bulk and cross mains- schedule 10 pipe conforming to ASTM A-120 with mechanical grooved fittings. Pipe segments to be connected by mechanical grooved couplings. Grooves are to be rolled grooved in conformance with grooved manufacturer's recommendations. Lines, risers-riples, drops, and drains shall be schedule 40 pipe conforming to ASTM A-120 with cast iron threaded fittings conforming to ANSI B16.4.
 2. Pipe hangers are to be installed in accordance with the applicable portions of the NFPA13. Hangers are to be swivel type hanger rings for 1'-12" and smaller pipe. 2" and larger pipe materials shall have device type hanger rings, and attached to the roof structure by all threaded rods with nuts and washers or top beam type "C" clamps. When nuts and washers are used, a double nut and washer configuration is required at the top and bottom of attachment.
 3. System is to be hydrostatically tested at 200 psi for a minimum of two hours with no leaks per NFPA13.
 4. As system is to be hydraulically calculated, no modifications to the piping arrangement are to be made without first consulting original project Registered Professional Engineer and Architect.
 5. All water flow switches and tamper switches to be furnished and installed with this work.
 6. Head guards are to be installed in all storage rooms, janitor closets, electrical rooms, equipment rooms, kitchens and mechanical rooms.
 7. Contractor shall provide backflow devices, valves, vaults, post indicator valve, etc. in compliance with local requirements and code.

- L. Contractor shall maintain the integrity of all fire walls, floors, structures and ceilings with "PRO-SET" fire system materials or approved equal.

END OF SECTION 211313

FIRE PROTECTION SPRINKLER HEAD DATA

OCCUPANCY HAZARD CATEGORY	SQUARE FOOT PER HEAD	MAXIMUM SPACING BETWEEN SPRINKLERS	SYSTEM DESIGN CRITERIA	HOSE ALLOWANCE
LIGHT HAZARD (OFFICE, RESTROOMS,)	LH 225 SF PER HEAD	15 FT	0.1 GPM/50 FT, OVER MOST REMOVE 1,500 SQ.FT. AREA	100 GPM
ORDINARY HAZARD GROUP 2 (STORAGE, TRUCK BAY)	OH-2 130 SF PER HEAD	15 FT	0.2 GPM/50 FT, OVER MOST REMOVE 1,500 SQ.FT. AREA	250 GPM

GENERAL NOTES:
 1. MAXIMUM DISTANCE FROM WALL, 1/2 OF THE MAXIMUM DISTANCE BETWEEN SPRINKLER HEADS.
 2. MINIMUM DISTANCE BETWEEN SPRINKLERS: TYPICALLY 6'-0".
 3. DISTANCE FROM CEILING: MINIMUM 1"; MAXIMUM 12" FOR UNOBSTRUCTED CONSTRUCTION; THE MINIMUM 1" IS TYPICAL, HOWEVER, CONCEALED, RECESSED, AND FLUSH SPRINKLERS MAY BE MOUNTED LESS THAN 1" FROM THE CEILING AND SHALL BE INSTALLED BASED ON THEIR LISTING.
 4. IF HEADS INSTALLED IN LAV-IN CEILING PANELS THEN ITEMS SHALL BE INSTALLED IN CENTER OF TILE WITH FLEXIBLE UL APPROVED PIPING AS INDICATED IN DETAIL.

SPRINKLER HEAD TEMPERATURE RATING

SPRINKLER TEMPERATURE CLASSIFICATION	SPRINKLER NOMINAL TEMPERATURE RATING	MAXIMUM AMBIENT TEMPERATURE RATING	BULB COLOR	THREAD SIZE	NOMINAL K-FACTOR	NOTES
ORDINARY	135°F	100°F	ORANGE	1/2"	5.6	1,2,3,4
ORDINARY	155°F	100°F	RED	1/2"	5.6	1,2,3,4
INTERMEDIATE	175°F	190°F	YELLOW	1/2"	5.6	1,2,3,4
INTERMEDIATE	200°F	190°F	GREEN	1/2"	5.6	1,2,3,4
HIGH	286°F	225°F	BLUE	1/2"	5.6	1,2,3,4

- NOTES:
 1. INSTALL HEADS TO HAVE EITHER SURFACE MOUNTED ESCUTCHEONS OR RECESSED TYPE ESCUTCHEONS, SEE ARCHITECTURAL REFLECTED CEILING PLANS & COMMENTS FOR ADDITIONAL DIRECTION.
 2. APPROVED HEAD FINISHES TO BE USED WITH ARCHITECT APPROVAL ARE: (A) BRASS, (B) CHROME, (C) WHITE POLYESTER, (D) BLACK TEFLON OR (E) BLACK POLYESTER
 3. PRODUCTS TO COMPLY WITH FM APPROVAL.
 4. INFORMATION INDICATED ARE FOR QUICK RESPONSE UPRIGHT OR PENDENT TYPE SPRINKLER HEADS, UNLESS OTHERWISE NOTED.

FIRE PROTECTION - SCOPE OF WORK

THE CONTRACTORS ARE RESPONSIBLE TO PROVIDE ALL LABOR AND MATERIALS AS REQUIRED AND AS INDICATED ON THE DRAWINGS AND NOTES. THE WORK SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:

THE WORD "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".

1. PERFORMANCE OF ALL WORK AS DESCRIBED ON PROPOSED CONTRACT DRAWINGS AND AS REFERRED TO IN THE SPECIFICATIONS, NOTES & DETAILS AS APPLICABLE FOR EACH PARTICULAR CONSTRUCTION DISCIPLINE.
2. SPRINKLER HEAD AND PIPING NEW WORK AS REQUIRED, IN COMPLIANCE WITH 2021 NFPA 13, 14 & 24 REGULATIONS, AS WELL AS 2023 FPPC.
3. COORDINATE FLOW SWITCHES, ALARM CONNECTIONS, & SHUNT TRIP DEVICES WITH BUILDING ALARM CONTRACTOR INCLUDING NOTIFICATION SYSTEMS.
4. RESTORATION OF EXISTING SYSTEMS, DEVICES, FINISHES, ETC. DAMAGED OR ALTERED BY NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY THE OWNER, ARCHITECT AND/OR ENGINEER.
5. CONTRACTORS SHALL FIELD VERIFY ALL SITUATIONS AND CONDITIONS BEFORE WORK. ANY ADDITIONAL COMPENSATION SEEKED FOR FAILURE TO COMPLY WITH THIS ITEM IS NOT APPROVED.
6. THIS PROJECT CONSIST OF FULLY SPRINKLED BUILDING WET PIPE SYSTEM IN COMPLIANCE WITH 2021 NFPA 13 REGULATION. BUILDING IS A SINGLE STORY CITY MUNICIPAL BUILDING LOCATED NEAR GRETNA, FLORIDA.
7. HYDRANT FLOW TEST DATA HAS NOT BEEN MADE AVAILABLE TO THE DESIGN TEAM, HOWEVER IT IS ASSUMED THAT THE SITE'S MUNICIPAL WATER SUPPLY IS SUFFICIENT TO MEET THE BUILDING'S SPRINKLER DEMANDS WITHOUT THE NEED OF A FIRE PUMP. CONTRACTOR SHALL CONDUCT A HYDRANT FLOW TEST AND PERFORM NECESSARY HYDRAULIC CALCULATIONS WITH APPROVAL OF LOCAL FIRE AUTHORITY PRIOR TO INSTALLATION. THIS PROTOCOL IS MANDATED BY 2021 NFPA 13 & 14, AS WELL LOCAL REGULATIONS. COORDINATE DEMAND PRIOR TO INSTALLATION; SEE DETAILS & SPECIFICATIONS FOR ADDITIONAL INFORMATION.
8. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE INTENT AND MEANING OF THE DRAWINGS AND SPECIFICATIONS, WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR SPECIFIED HEREIN OR NOT, AT NO ADDITIONAL COST TO THE OWNER. THE INSTALLATION SHALL BE PERFORMED & LEFT IN SATISFACTORY OPERATING CONDITION IN ACCORDANCE WITH THE INTENT OF THESE SPECIFICATIONS & THE LATEST EDITION OF LOCAL, MUNICIPAL, STATE, AND NATIONAL LAWS, CODES, AND ORDINANCES.
9. THE APPLICABLE CODES ANOR LAWS SHALL GOVERN THE MINIMUM REQUIREMENTS ONLY. WHERE THE DRAWINGS AND/OR SPECIFICATIONS CALL FOR MATERIALS, PIPING, OR SIZES IN EXCESS OF THE CODE REQUIREMENTS, THE DRAWINGS AND SPECIFICATIONS SHALL BE FOLLOWED.



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 850-875-4348

BUILDING ADDITION FOR PUBLIC WORKS
GRETNA PUBLIC SAFETY FACILITY
 CITY OF GRETNA, FLORIDA
 BEECH AVENUE & 1ST STREET
 GRETNA, FLORIDA

DATE: 9-2-25

REV:

JOB NO: 25-005

SHEET NO.

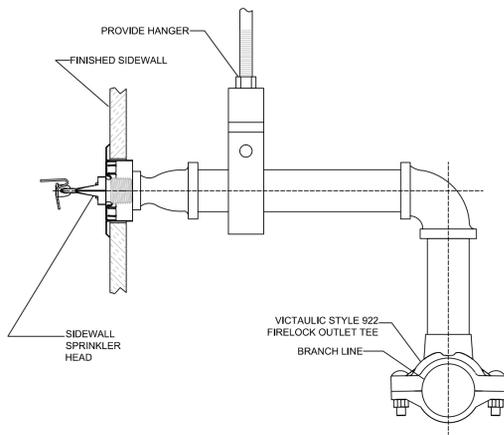
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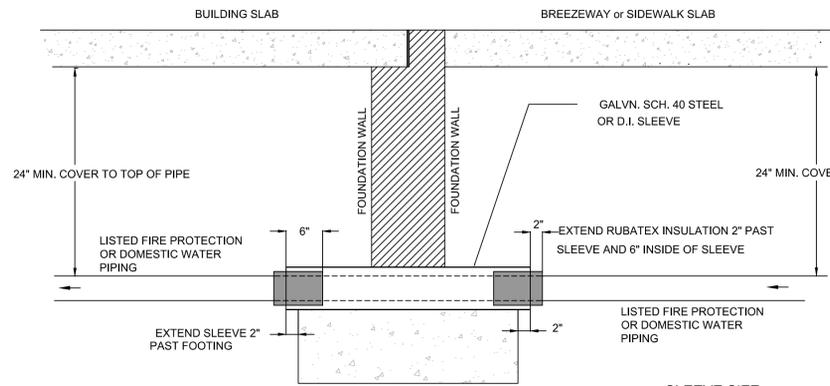
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Digitally signed by J. Kyle Cox
 Date: 2025.09.02
 DN: cn=J. Kyle Cox, o=The Design Group, Inc., email=j.kyle.cox@designgroupinc.com

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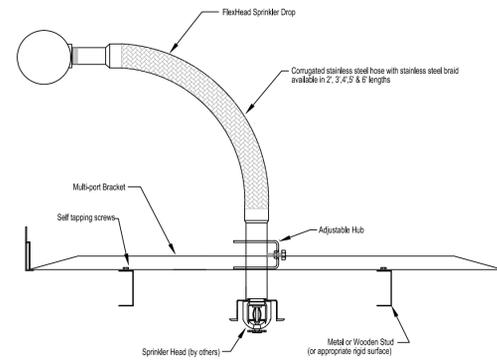
SIDEWALL SPRINKLER HEAD DETAILS
NTS



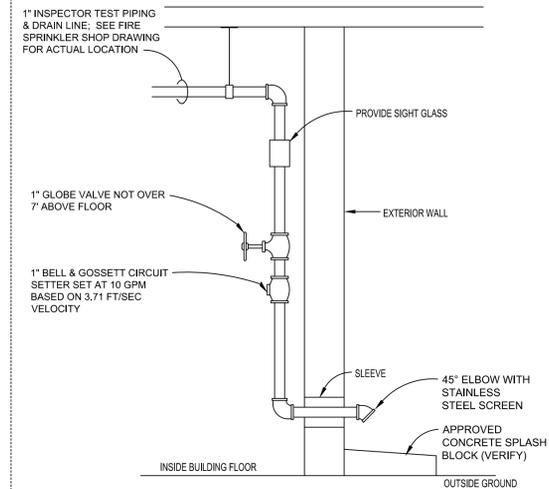
PIPE ON TOP OF FOOTING DETAIL
NOT TO SCALE

SPECIAL NOTES:
1. IF PIPE IS RUN UNDER FOOTING WITH NO PROTECTION MINIMUM CLEARANCE TO TOP OF PIPE IS 3 FEET.
2. VERIFY FOOTING INFORMATION WITH BUILDING STRUCTURAL DRAWINGS PRIOR TO INSTALLATION.

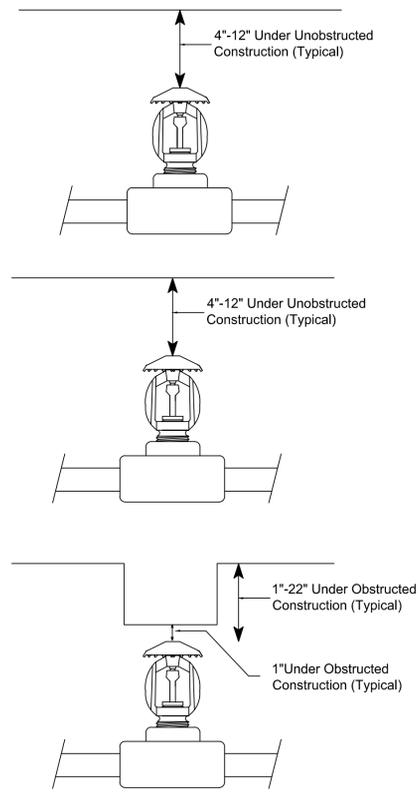
SLEEVE SIZE
2" TO TOP OF PIPE
2" TO BOTTOM OF PIPE
+ PIPE SIZE
= SLEEVE SIZE



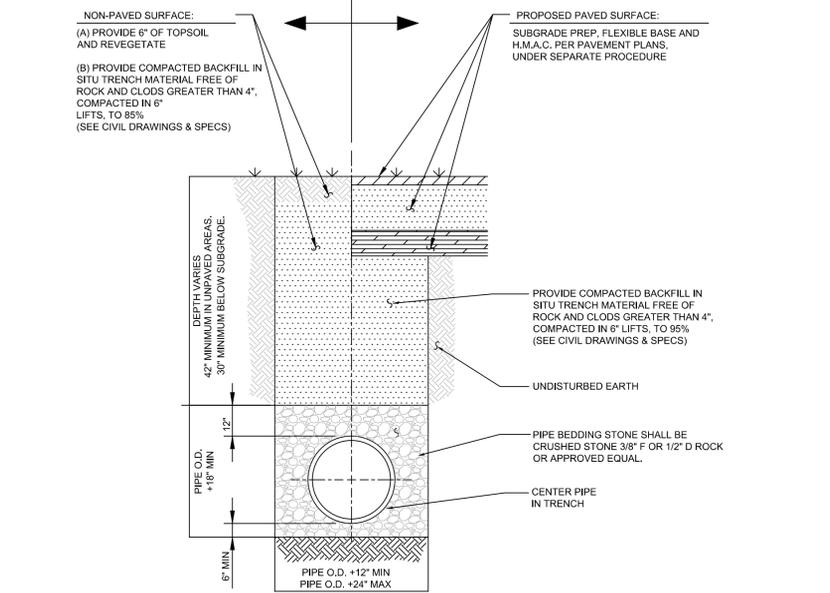
FIRE PROTECTION SPRINKLER FLEXIBLE PIPE DETAIL
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INSPECTORS TEST & DRAIN LINE DETAIL
NOT TO SCALE

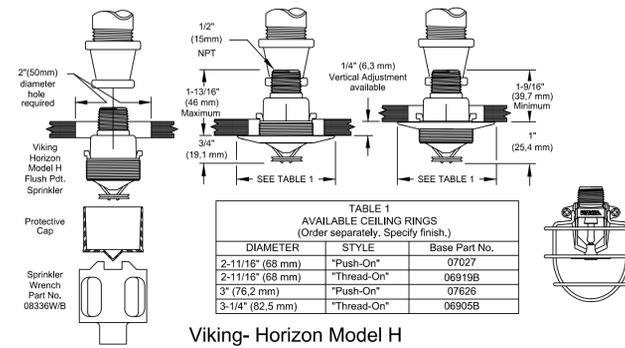


FIRE SPRINKLER HEAD OBSTRUCTION DETAIL
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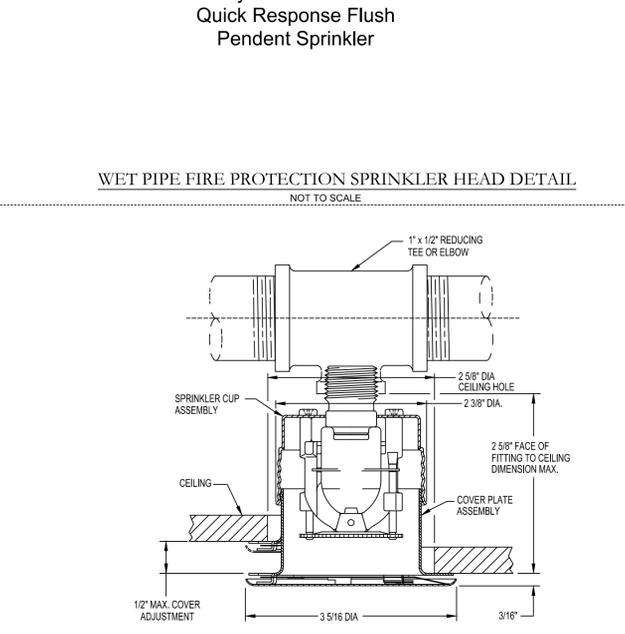


UNDERGROUND PIPING TRENCHING DETAIL
NTS

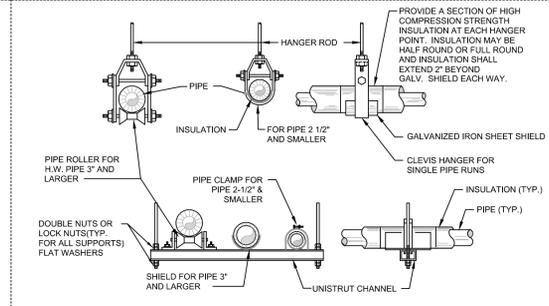
SPECIAL NOTES:
1. ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
2. COORDINATE WORK EFFORT WITH PROJECT CIVIL DRAWINGS TO ASSURE COMPLIANCE WITH LOCAL REQUIREMENTS & SOIL CONDITIONS.



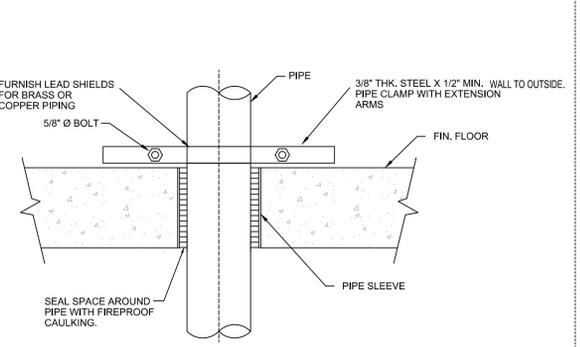
WET PIPE FIRE PROTECTION SPRINKLER HEAD DETAIL
NOT TO SCALE



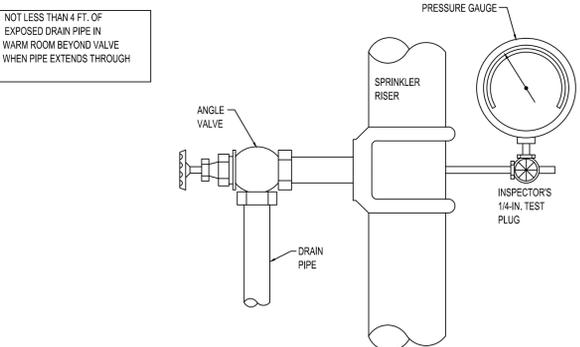
CONCEALED QUICK RESPONSE SPRINKLER HEAD DETAIL
NOT TO SCALE



PIPING HANGERS AND SUPPORTS DETAIL
NOT TO SCALE



PIPE RISER SUPPORT DETAIL
NOT TO SCALE



DRAIN CONNECTION FOR SYSTEM RISER
NOT TO SCALE



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QUINCY, FLORIDA 32351
FLA LIC. NO. AA26000893
850-875-4348

**BUILDING ADDITION FOR PUBLIC WORKS
GRETTA PUBLIC SAFETY FACILITY
CITY OF GRETTA, FLORIDA**

BEECH AVENUE & 1ST STREET GRETTA, FLORIDA

DATE: 9-2-25
REV:

JOB NO: 25-005

FS.2

SHEET NO.

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Consulting Engineers
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NO. 62881
J. KYLE COX
DATE: 2025.09.02
25A.11-37-09-06007

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HANGER INSTALLATION REQUIREMENTS									
NOMINAL PIPE SIZE	MAXIMUM DISTANCE BETWEEN HANGERS								
	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
BLAZEMASTER CPVC	5' 6"	6' 0"	6' 6"	7' 0"	8' 0"	9' 0"	10' 0"	N/A	N/A
THREADABLE LIGHTWALL	N/A	12' 0"	12' 0"	12' 0"	12' 0"	12' 0"	12' 0"	N/A	N/A
STEEL PIPE (10' 40)	N/A	12' 0"	12' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"

100 PSI STATIC PRESSURE ON SYSTEM REQUIRES UP-LIFT RESTRAINT WITHIN 12 INCHES HORIZONTALLY OF HEAD FOR ARM-OVERS AND END OF BRANCH LINE

THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER ON THE LINE SHALL NOT EXCEED 36" FOR 1" PIPE, 48" FOR 1 1/4" PIPE AND 60" FOR 1 1/2" PIPE OR LARGER

THE CUMULATIVE HORIZONTAL LENGTH OF AN UNSUPPORTED ARMOVER TO A SPRINKLER, SPRINKLER DROP, OR SPRIG-UP SHALL NOT EXCEED 24"

TRAPEZE INSTALLATION REQUIREMENTS									
SPAN OF TRAPEZE (Schedule 10)	NOMINAL PIPE SIZE SUPPORTED								
	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"	
1 FT. 6 IN.	1"	1"	1"	1"	1"	1"	1-1/4"	1-1/4"	
2 FT. 0 IN.	1"	1"	1"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	
2 FT. 6 IN.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	2"	
3 FT. 0 IN.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	1-1/2"	2"	
4 FT. 0 IN.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"	
5 FT. 0 IN.	2"	2"	2"	2"	2"	2"	2-1/2"	2-1/2"	
6 FT. 0 IN.	2"	2"	2"	2"	2"	2-1/2"	2-1/2"	3"	
7 FT. 0 IN.	2"	2"	2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	
8 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	
9 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	4"	
10 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	3"	4"	

PROJECT INFO NOTES

- A. EXISTING FIRE RISER TO REMAIN.
- B. FIRE SPRINKLER CONTRACTOR SHALL EXTEND EXISTING FIRE SPRINKLER SYSTEM INTO EXISTING TRUCK BAY AND NEW TRUCK BAY/OFFICES.



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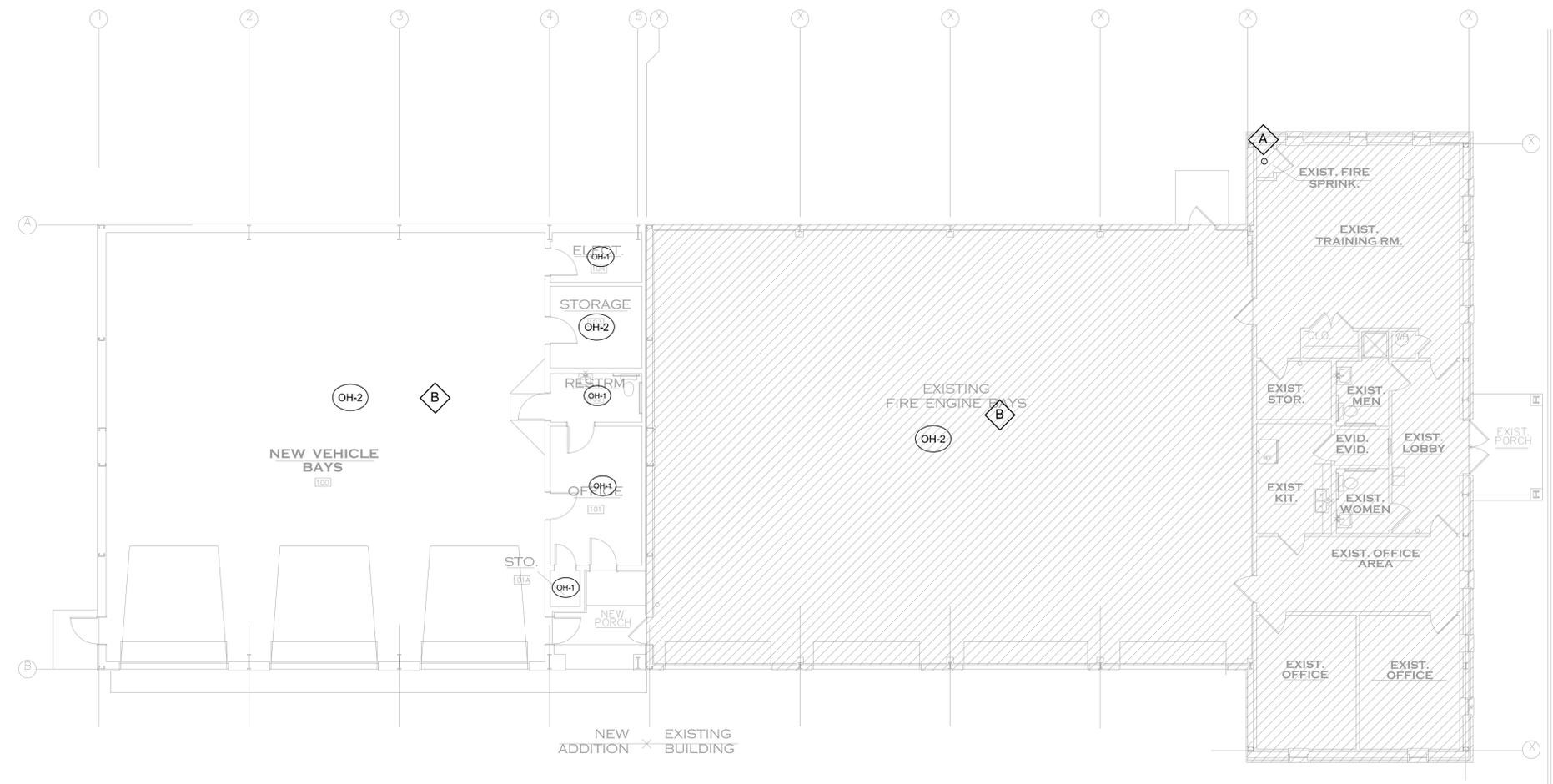
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SHEET NO.

FIRE PROTECTION SPRINKLER PIPE HANGER SCHEDULE
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OVERALL BUILDING FIRE PROTECTION SPRINKLER PLAN



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PANA 11-37-19-06007

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GENERAL HVAC NOTES

- ALL MECHANICAL EQUIPMENT AND INSTALLATIONS SHALL CONFORM WITH THE REQUIREMENTS OF THE LOCAL CODE OFFICE'S LATEST APPROVED VERSION OF THE FLORIDA MECHANICAL CODE, THE FLORIDA BLDG. CODE, THE STATE ENERGY CODE, NFPA 54, NFPA 90A, 101, UNDERWRITERS LABORATORIES AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
- PRIOR TO PURCHASING ANY MATERIALS OR STARTING ANY WORK, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DUCTWORK SIZES, EQUIPMENT LOCATIONS, ETC. SHOWN ON THE DRAWINGS OR AFFECTING THIS WORK AND SHALL REPORT ANY DEVIATIONS TO THE ARCHITECT.
- SUBMITTALS AND SHOP DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE ARCHITECT AND MECHANICAL ENGINEER PRIOR TO ORDERING, PURCHASING, OR FABRICATING ANY MECHANICAL EQUIPMENT. THESE SHALL INCLUDE ALL EQUIPMENT SPECIFIED ON THE PLANS OR IN THE PROJECT SPECIFICATIONS. IF ANY MECHANICAL EQUIPMENT SUBMITTED DEVIATES FROM THAT SHOWN IN THE PLANS AND SPECIFICATIONS AS BASIS OF DESIGN, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY AND ALL CHANGES REQUIRED OF OTHER TRADES TO ACCOMPLISH THE WORK USING SUBMITTED EQUIPMENT.
- ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL POWER SHALL BE INSTALLED WITH DISCONNECT SWITCHES AT EACH PIECE OF EQUIPMENT. COORDINATE SWITCH TYPE (FUSED OR NON-FUSED) WITH EQUIPMENT CHARACTERISTICS, MANUFACTURER'S RECOMMENDATIONS, AND ELECTRICAL PLANS AND SPECIFICATIONS. SEE SPECIFICATIONS FOR DESCRIPTION OF INTERFACE WITH DIVISION 16 WORK.
- ALL ELECTRICAL CHARACTERISTICS OF POWERED MECHANICAL EQUIPMENT SHALL BE VERIFIED AND FIELD COORDINATED WITH DIVISION 16 CONTRACTOR BEFORE ANY EQUIPMENT IS PURCHASED OR ORDERED.
- ALL REQUIRED CONTROL WIRING NOT SHOWN ON ELECTRICAL DRAWINGS SHALL BE INCLUDED AS PART OF THE MECHANICAL WORK. WIRING IN HVAC PLENUM SPACES SHALL BE INSTALLED ACCORDING TO CODE REQUIREMENTS.
- UNLESS OTHERWISE NOTED, STARTERS, TRANSFORMERS, CONTROLS AND CONTROL WIRING REQUIRED FOR ALL MECHANICAL SYSTEMS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- INSTALL FIRE DAMPERS IN ALL RATED WALL, FLOOR, AND CEILING PENETRATIONS AS APPLICABLE. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF RATED AREAS. PROVIDE ACCESS DOORS IN DUCT AT EACH FIRE DAMPER LOCATION. INSTALL SMOKE DAMPERS IN ALL DUCT PENETRATIONS THROUGH SMOKE RATED WALLS. WHERE DUCTS PENETRATE WALLS THAT CARRY BOTH SMOKE AND FIRE RATINGS, THE DAMPERS INSTALLED SHALL BE COMBINATION SMOKE AND FIRE DAMPERS. ALL DAMPERS SHALL BE U.L. 555 LABELED.
- FIRE ALARM CONTRACTOR SHALL PROVIDE SMOKE DETECTORS FOR THE SUPPLY AND RETURN AIR TRUNKS OF ALL HVAC EQUIPMENT SUPPLYING GREATER THAN 2000 CFM TO ANY SPACE. PER IMC 606, DUCT SMOKE DETECTORS SHALL SHUT DOWN THE AIR DISTRIBUTION SYSTEM UPON ACTIVATION. PER IMC 606, DUCT SMOKE DETECTORS TO BE CONNECTED TO THE BUILDING FIRE ALARM PANEL AS APPLICABLE. IF THE OCCUPANCY DOES NOT REQUIRE A FIRE ALARM PANEL, THE ACTIVATION OF DUCT SMOKE DETECTORS SHALL ACTIVATE AN AUDIBLE AND VISIBLE SIGNAL IN AN APPROVED LOCATION. SIGNAL TO BE IDENTIFIED AS "AIR DUCT DETECTOR TROUBLE". HVAC UNITS MAY BE RESET AT FIRE ALARM PANEL.
- FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR ALL WIRING AND EQUIPMENT TO MONITOR SMOKE DETECTORS AND SHUT DOWN HVAC UNIT UPON SMOKE DETECTOR ACTIVATION. FIRE ALARM CONTRACTOR SHALL PROVIDE DUCT DETECTORS, AND MECHANICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING DETECTOR IN DUCT. FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND OPERATION OF BUILDING FIRE ALARM SYSTEM.
- ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- SUPPLY, RETURN, EXHAUST, AND OUTDOOR AIR DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL AS RECOMMENDED IN SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS, LATEST EDITION. ALL JOINTS, SEAMS, AND TAKE-OFFS IN SUPPLY AND RETURN SHEET METAL DUCTWORK SHALL BE SEALED WITH MASTIC DUCT SEALER TO SMACNA CLASS A, NO CLOTH DUCT TAPE IS ALLOWED.
- ALL SHEET METAL SUPPLY, RETURN, AND VENTILATION AIR DUCT WORK SHALL BE INSULATED WITH FIBERGLASS DUCT INSULATION WITH FOIL VAPOR BARRIER, U.L. LISTED, MINIMUM R-4 OR OTHERWISE AS REQUIRED BY LOCAL ENERGY CODES. USE R-8 IN ATTICS OR OUTSIDE THE BUILDING INSULATION ENVELOPE. EXHAUST DUCT WORK SHALL BE INSULATED WITH THE SAME WITHIN 10' OF EXTERIOR WALL OR ROOF OPENING.
- ALL MECHANICAL EQUIPMENT SHALL BE LABELED WITH BAKELITE NAMEPLATE WITH 2" HIGH WHITE LETTERS ON A BLACK BACKGROUND. NAMEPLATE SHALL SHOW EQUIPMENT TAG USED ON THESE DRAWINGS. ELECTRICAL DISCONNECTS FOR EQUIPMENT SHALL BE LABELED TO MATCH EQUIPMENT SERVED.
- ALL DUCTWORK SHALL BE SUPPORTED BY THE BUILDING STRUCTURE AND SHALL NOT HANG FROM OR REST ON CEILING TILES OR CEILING STRUCTURE. DUCT SUPPORTS AND CONNECTION TO STRUCTURE SHALL BE AS PER SMACNA STANDARDS.
- FLEXIBLE DUCTWORK SHALL BE THERMAFLEX M-KE (U.L. 181 LISTED CLASS 1 FLEXIBLE AIR DUCT) OR EQUAL. PROVIDE THERMAFLEX M-KE R-6 (R-6 MINIMUM VALUE OR AS REQUIRED BY LOCAL ENERGY CODE) IN UNCONDITIONED SPACES. USE R-8 IN ATTICS AND SPACES OUTSIDE THE BUILDING INSULATION ENVELOPE. AIR CONNECTORS ARE NOT ACCEPTABLE. SIZE TO MATCH DEVICE NECK, PROVIDE ROUND GALVANIZED STEEL DUCT RUN-OUTS TO PROVIDE A MAXIMUM FLEXIBLE DUCT LENGTH OF 5'-0". FLEXIBLE DUCTWORK SHALL BE ROUTED AS STRAIGHT AS POSSIBLE AND SHALL BE ROUTED AND SUPPORTED WITHOUT FORMING GRIMPS OR OTHER AIR FLOW RESTRICTIONS. PROVIDE SQUARE TO ROUND ADAPTERS OR BOOTS AS REQUIRED TO CONNECT TO AIR DEVICE NECK.
- BRANCH RUN-OUT DUCTS SHALL BE SAME SIZE AS DIFFUSER NECK IF NOT NOTED OTHERWISE.
- SHEET METAL DUCTWORK SHOWN AS BEING INTERNALLY LINED SHALL BE LINED WITH 1" THICK, 3 LB/CFWT. DENSITY DUCT LINER, MINIMUM R-4 OR AS REQUIRED BY APPLICABLE ENERGY CODE. CERTAINTED "TOUGHSEAL" OR EQUAL BY JOHNS-MANVILLE OR KNAUF. LINE ALL DUCTWORK A MINIMUM OF 15'-0" DOWNSTREAM AND UPSTREAM (WHERE POSSIBLE) OF ALL AIR HANDLING UNITS, FAN COIL UNITS, AND TERMINAL UNITS. LEADING EDGE OF INSULATION SHALL HAVE SHEET METAL NOSING. DUCT THAT IS INTERNALLY INSULATED SHALL BE EXTERNALLY INSULATED AS WELL TO ACHIEVE REQUIRED TOTAL U-VALUE.
- DUCTWORK DIMENSIONS SHOWN ON DRAWING ARE INSIDE CLEAR DIMENSIONS. CONTRACTOR SHALL ADJUST TOTAL DUCT WORK DIMENSIONS TO ACHIEVE SHOWN INSIDE CLEAR DIMENSIONS.
- DUCTWORK AND EQUIPMENT SHOWN IS DIAGRAMMATIC. COORDINATE AND ROUTE DUCTWORK TO MEET JOB REQUIREMENTS. LOCATION OF EQUIPMENT MUST BE COORDINATED WITH ALL DISCIPLINES BEFORE FINAL LOCATIONS ARE SELECTED. WEIGHTS OF EQUIPMENT MUST BE VERIFIED AND COORDINATED WITH STRUCTURAL SYSTEMS MANAGERS BEFORE EQUIPMENT CAN BE MOVED INTO LOCATION OR INSTALLED.
- ALL CONDENSATE DRAIN LINES FROM HVAC EQUIPMENT LOCATED INSIDE THE BUILDING SHALL BE TRAPPED AND SHALL DRAIN INTO BUILDING FLOOR DRAINS, ROOF DRAINS, OR STORM DRAINS. CONDENSATE SHALL BE INSULATED SCHEDULE 40 PVC (EXCEPT INSULATED TYPE L COPPER IN HVAC PLENUMS). CONDENSATE SHALL BE PUMPED AS REQUIRED.
- ALL PIPING ABOVE GRADE SHALL BE SUPPORTED BY THE BUILDING STRUCTURE, AND SHALL NOT REST ON CEILING TILES OR CEILING STRUCTURE. PIPE HUNG FROM JOISTS SHALL BE HUNG FROM THE TOP CHORD OF JOISTS.
- ALL PIPE AND DUCT PENETRATIONS OF FIRE AND/OR SMOKE RATED ASSEMBLIES SHALL BE FIRESTOPPED AS REQUIRED TO RESTORE ASSEMBLY TO ORIGINAL INTEGRITY. FIRE BARRIER PRODUCTS SHALL BE MANUFACTURED BY 3M COMPANY, CP25 CAULK, CP195 COMPOSITE PANEL, FS195 WRAP/STRIP, OR PSS 7900 SERIES SYSTEMS AS RECOMMENDED BY MFG. FOR PARTICULAR APPLICATIONS, OR EQUIVALENT SYSTEM AS APPROVED BY LOCAL CODE OFFICIALS.
- ANY WALL, FLOOR, OR CEILING SURFACE THAT IS DISTURBED DURING THE COURSE OF THIS WORK SHALL BE REPAIRED TO EXISTING OR LIKE-NEW CONDITION.
- OUTSIDE HARDWARE FOR EXHAUST FANS SHALL BE PLACED IN A LOCATION SUITABLE TO OWNER. CONTRACTOR SHALL COORDINATE PLACEMENT WITH OWNER BEFORE FINAL INSTALLATION. OUTSIDE HARDWARE FOR EXHAUST FANS AND FRESH AIR INTAKES SHOULD BE CONSTRUCTED SO AS TO BE WEATHERTIGHT AND SHOULD INCLUDE INTEGRAL BIRD OR INSECT SCREENS.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, ETC. TO FIT WITHIN THE SPACE ALLOWED BY ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY PRODUCTS AND MATERIALS FOR A COMPLETE MECHANICAL SYSTEM.

HVAC LEGEND		
SYMBOL - SINGLE LINE	SYMBOL - DOUBLE LINE	DESCRIPTION
		CEILING DIFFUSER
		CEILING RETURN GRILLE
		SIDEWALL SUPPLY REGISTER OR GRILLE
		SIDEWALL RETURN REGISTER OR GRILLE
		EQUIPMENT DESIGNATION
		DIFFUSER TAG: TYPE "A", NECK SIZE 8", BALANCED FOR 200 CFM
		LOUVER TAG: TYPE "WL-1", SIZE FOR 75 CFM @ 500 FPM
		DROP
		RISE
		DUCT SIZE - RECTANGULAR
		DUCT SIZE - ROUND
		DUCT TRANSITION
		RETURN AIR DUCT TURNED DOWN
		RETURN AIR DUCT TURNED UP
		RECT. ELBOW WITH TURNING VANES
		LINED DUCT
		FLEXIBLE DUCT
		DUCT SMOKE DETECTOR
		FIRE DAMPER
		FIRE/SMOKE DAMPER
		CEILING RADIATION DAMPER
		MOTOR OPERATED DAMPER
		MANUAL VOLUME DAMPER
		BACKDRAFT DAMPER
		FLEXIBLE EQUIPMENT CONNECTOR
		THERMOSTAT, HUMIDISTAT, CARBON DIOXIDE WALL-MOUNTED SENSOR, OR AS NOTED
		REVISION TAG (#1)
		UNDER CUT (DOOR) 1"
		CONNECT TO EXISTING

HVAC ABBREVIATIONS	
SYMBOL	DESCRIPTION
MBH	1000 BTU/HR
A/C	ABOVE CEILING
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
CD	CONDENSATE DRAIN
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE (IN. W.C.)
HP	HEAT PUMP UNIT OR HORSEPOWER
CU	CONDENSING UNIT
OA	OUTSIDE AIR
WL	WALL LOUVER
FC	FLEXIBLE EQUIPMENT CONNECTOR
IDU	DUCTED OR DUCTLESS MINI-SPLIT FAN COIL
ODU	MINI-SPLIT HEAT PUMP OR CONDENSING UNIT
FNU	FURNACE UNIT
DN	DOWN
CTE	CONNECT TO EXISTING

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF OUTDOOR UNIT SCHEDULE																	
Tag Reference	M-NET Address	Model Number	Modules	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Efficiency (SEER)	EER2 (SEER2)	Heating COP @ 47°F (HSPFF)	Design Cooling Outdoor Temp DB (°F)	Design Heating Outdoor Temp WB (°F)	Corrected Cooling Total Capacity (BTU/h)	Corrected Heating Capacity (BTU/h)	Electrical Per Module				
													208/230 or (480V)	MCA	RFS	MOC	
HP-1	N/A	TRU240721KA7	0NA	12,000	14,000	16.4	0.26	4.94	95.0	21.2	10,752.4	9,037.4	208/230V/1-phase	11	15	28	1, 2, 3, 4, 5

- Notes & Options:
- Nominal cooling capacities are based on indoor coil EAT of 80°F (DB/WB), outdoor of 95°F (DB)
 - Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)
 - Efficiency values for EER, IEER, COP are based on AHR1 1230 test method for mixture of ducted & non-ducted indoor units.
 - For systems with multiple modules, refrigerant pipe dimensions indicate total system combined piping downstream of module training.
 - Added field charge listed is in addition to factory charge, this must be updated based upon final as-built piping layout.

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF INDOOR UNIT SCHEDULE																				
System Tag	Room Name	Tag Reference	M-NET Address	Model	Type	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Design Entering Temp DBWB (°F) / (Water in temp)	Heating Design Entering Temp DBWB (°F) / (Water in temp)	Corrected Capacities			Estimated Cooling Coil LAT (°F) / (LWT)	Estimated Heating Coil LAT (°F) / (LWT)	Refrig Pipe Dim Liquid/Suction (inch)	Fan Speed Setting	Peak Fan Airflow (cm) / (Design gpm) (GLUS/min)	Voltage / Phase 208/230V/1-phase	Electrical MCA/MPS	Notes / Options
										Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Capacity (BTU/h)								
IF-1	OFFICE	CFC-1	N/A	TLA0A0121CA0A	Ceiling-Cassette (Four-Way)	12,000	14,000	73.0/60.9	70	10,752.4	10,370.6	3,037.4	54.8	55.8	1/4 / 1/2	HIGH	530	208/230V/1-phase		1, 2, 3, 4

- Notes & Options:
- Nominal cooling capacities are based on indoor coil EAT of 80°F (DB/WB), outdoor of 95°F (DB)
 - Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)
 - See outdoor unit schedule for outdoor ambient conditions, connected capacity, and other factors associated with corrected capacities
 - See schematic piping/control diagram for indication of required indoor unit remote controllers, system controllers, and integration devices.
 - Full demand corrected capacity includes device associated with indoor vs. outdoor connected capacity indicated on outdoor unit schedule for associated system. Partial corrected capacity assumes sufficient diversity exists such that the connected capacity on one does not apply. It is the designer's responsibility to ensure "Diamond System Builder" is set in the appropriate output capacity setting (full demand/partial demand) prior to generating this schedule.
 - It is recommended to always base heating corrected capacity on full demand.

EXHAUST FAN SCHEDULE													
TAG	BASIS OF DESIGN	TYPE	CFM	E.S.P.	SONES	OPER. HP(W)	MOTOR HP(W)	ELECTRICAL			CONTROL	WEIGHT (LBS)	NOTES
								V / P	MCA	MOP			
WEF-1	GREENHECK SE1-16-436-A	WALL MOUNT	3,000	0.25	17.0	0.81	1	120/1	20	35	WALL SWITCH	94	1,3,5,6,7,8,9
REF-2	GREENHECK GB-160	ROOF	3,000	0.25	16.3	0.93	1	120/1	20	35	WALL SWITCH	120	1,3,4,5,6,10
EF-3	GREENHECK CSP-A200	CABINET INLINE	120	0.25	1.0	0.03	(50)	120/1	0.6	15	INTERLOCKED w/ LIGHTS	25	1,2,3,5

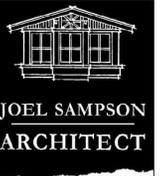
- NOTES:
- OUTSIDE HARDWARE FOR EXHAUST FANS SHOULD BE CONSTRUCTED SO AS TO BE WEATHERTIGHT.
 - SPEED CONTROLLER ABOVE ACCESSIBLE CEILING
 - BACKDRAFT DAMPER
 - VIBRATION ISOLATORS
 - ELECTRICAL DISCONNECT OR BREAKER AS REQUIRED BY VENDOR & NEC
 - PROVIDE WALL SWITCH ADJACENT TO LIGHT SWITCH
 - OSHA MOTOR GUARD
 - PROVIDE w/ HIGH WIND RATED WALL LOUVER, GREENHECK EVH-302D, AMCA 540 / 550
 - PROVIDE w/ WALL HOUSING FOR METAL BUILDING SYSTEM APPLICATION. WALL ANCHORING AND FASTENERS PER ASCE 7-16
 - PROVIDE w/ CURB RATED PER ASCE-7-16. REFER TO EQUIPMENT TIE-DOWN DETAIL

ELECTRIC SPACE HEATER SCHEDULE											
TAG	BASIS OF DESIGN	HEATING OUTPUT (WATTS)	FAN CFM	TYPE	BASE UNIT WT. (LBS)	ELECTRICAL			LOCATION	ROUGH-IN DIMENSIONS (W X H X D)	NOTES
						V / P	MCA	MOP			
EUH-1, EUH-2, EUH-3	REZNROR EGH8	10,000	1,300	SUSPENDED	85	240/1	42.2	50	NEW VEHICLE BAYS	21-7/8" X 17-1/2" X 18-1/2"	1,2,3
EUH-4, EUH-5, EUH-6	REZNROR EGH8	10,000	1,300	SUSPENDED	85	240/1	42.2	50	EXISTING ENGINE BAYS	21-7/8" X 17-1/2" X 18-1/2"	1,2,3

- NOTES:
- INTERLOCK REMOTE THERMOSTAT, WHERE SHOWN ON PLANS.
 - WATTAGE SELECTED AT 240/1.
 - SUSPENDED, PER DETAIL. MAINTAIN CLEARANCES ON ALL SIDES, PER MANUFACTURER.

AIR DISTRIBUTION EQUIPMENT SCHEDULE		
TAG	DESCRIPTION	NOTES
A	STEEL SQUARE CONE DIFFUSER, FIXED AIR PATTERN, 4-WAY THROW, ROUND NECK, SIZED AS SHOWN, WHITE, LAY-IN FRAME, PRICE SCD.	1,2,3
B	STEEL 45° DEFLECTION RETURN GRILLE, 3/4" SPACING BETWEEN BLADES, SIZE AS SHOWN, O.B. DAMPER WHEN DUCT MOUNTED, PRICE 530.	1,2,3

- NOTES:
- VERIFY MOUNTING TYPE WITH ARCHITECTURAL RCP.
 - SUPPLY DIFFUSERS AND GRILLES SHALL NOT COME SUPPLIED WITH VOLUME DAMPERS. MANUAL VOLUME DAMPERS SHALL BE INSTALLED AT BRANCH TAKE-OFFS NEAR TRUNK (SEE DETAIL SHEET).
 - BACK INSULATION SHALL BE INCLUDED ON ALL SUPPLY DIFFUSERS AND GRILLES.
 - PROVIDE FULL SIZE LINED PLENUM, INTERIOR PAINTED FLAT BLACK.



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**BUILDING ADDITION FOR PUBLIC WORKS
GRETNA PUBLIC SAFETY FACILITY**
CITY OF GRETNA, FLORIDA
BEECH AVENUE & 1ST STREET GRETNA, FLORIDA

DATE: 9-02-25

REV:

JOB NO25-005

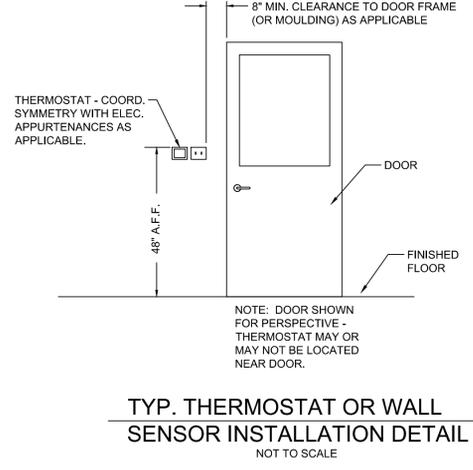
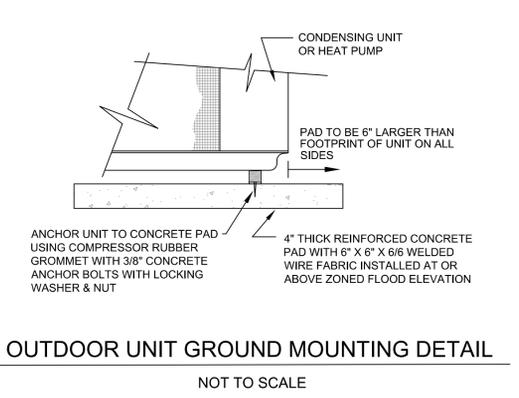
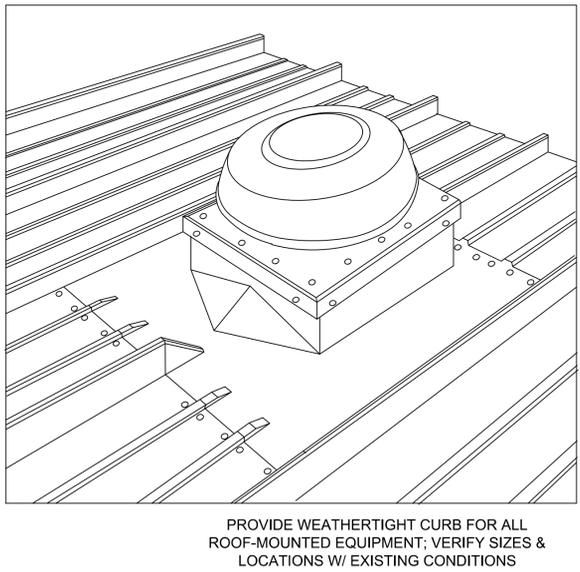
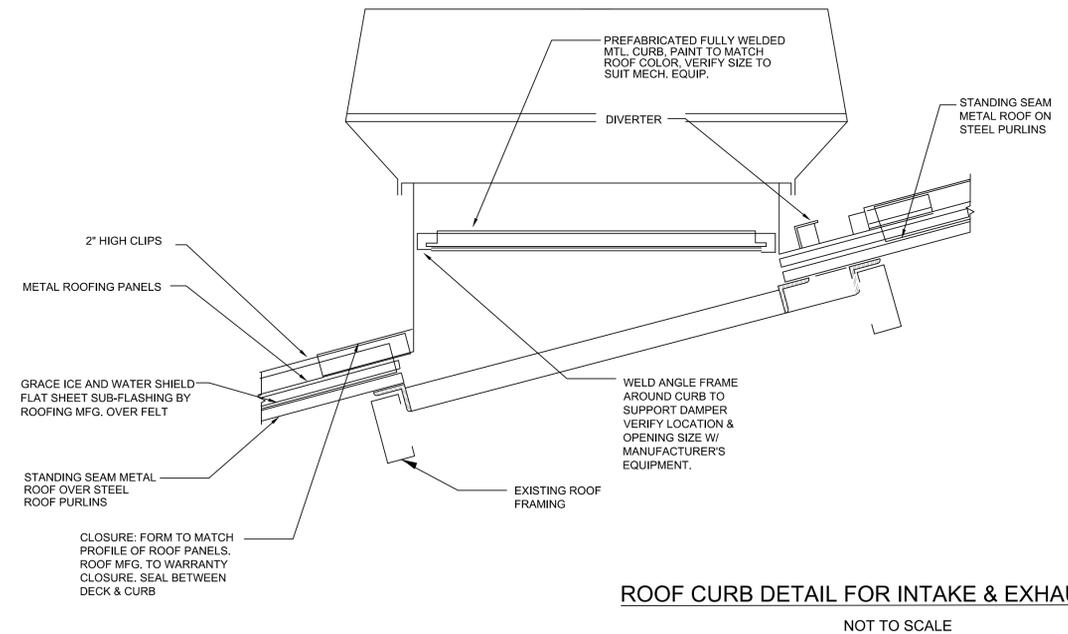
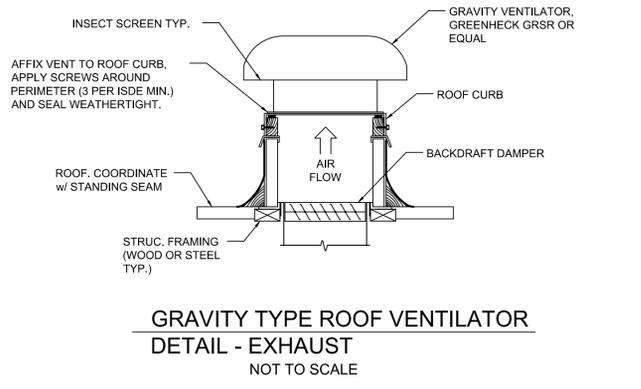
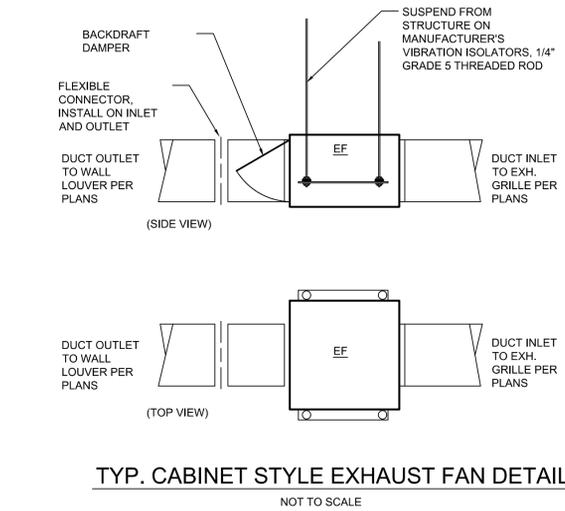
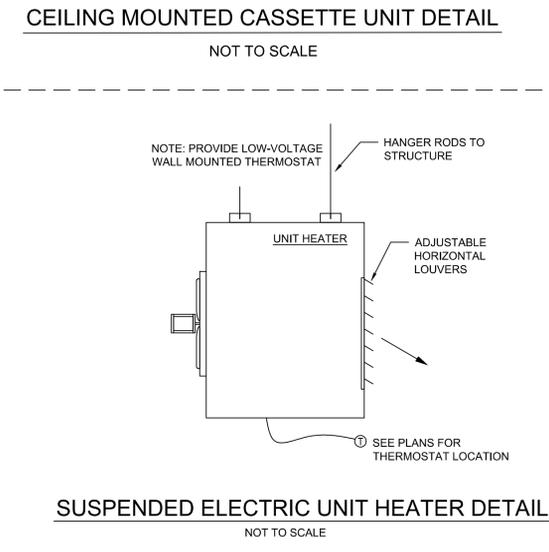
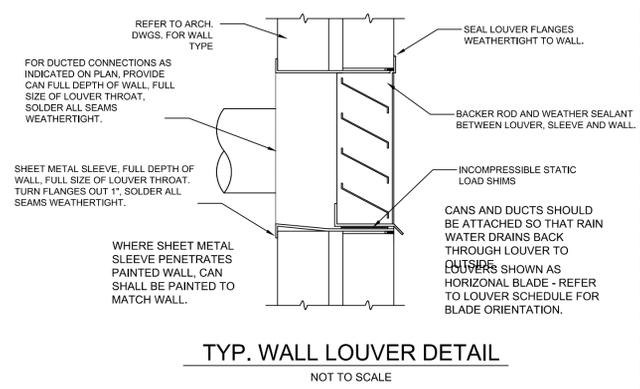
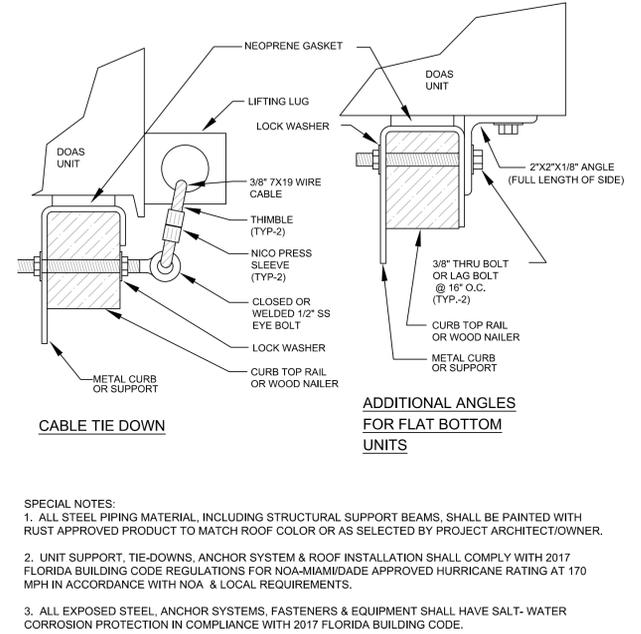
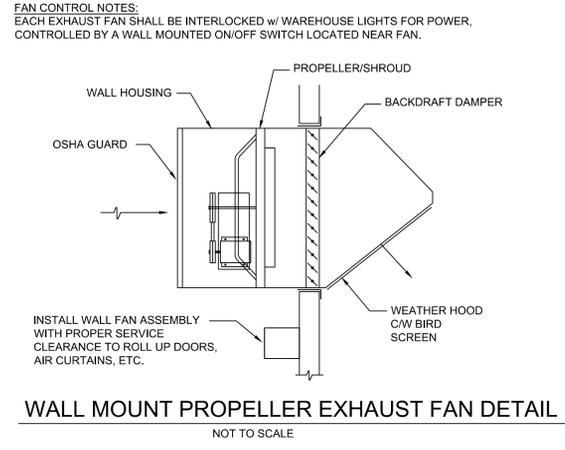
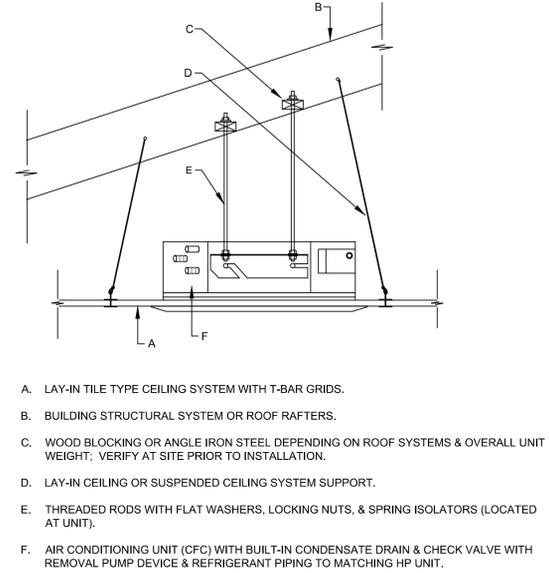
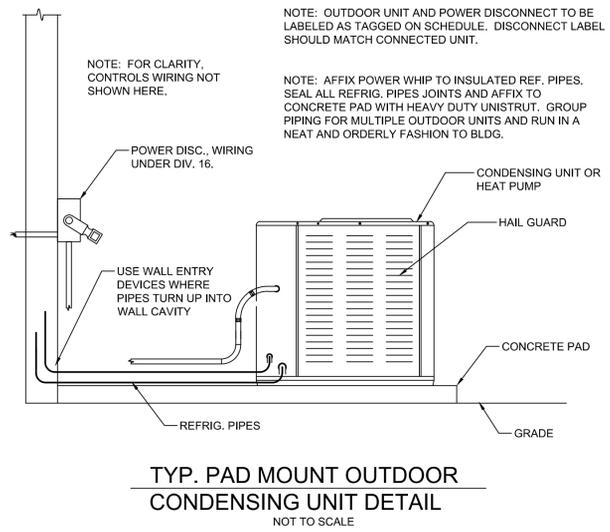
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SHEET NO.

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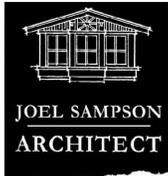
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Digitally signed by J. Kyle Cox Date: 2025.09.02 09:11:26 -0500

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**BUILDING ADDITION FOR PUBLIC WORKS
GRETNA PUBLIC SAFETY FACILITY**
CITY OF GRETNA, FLORIDA
BEECH AVENUE & 1ST STREET GRETNA, FLORIDA

DATE: 9-02-25

REV:

JOB NO25-005

M3.1

SHEET NO.

SECTION 15010 - MECHANICAL GENERAL

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Specification: This specification is intended to cover all portions of this building.
- B. Reference Codes: This installation shall comply with the following codes and regulations, along with all Georgia amendments.
 1. Current Georgia State Minimum Standard Mechanical Code.
 2. Current NFPA No. 90A Installation of Air Conditioning and Ventilation Systems.
 3. Current Georgia State Minimum Standard Plumbing Code.
 4. Current Georgia State Minimum Standard Gas Code.
 5. Current NFPA #54 National Fuel Gas Code.
 6. Current Georgia State Minimum Standard Gas Code.
 7. Current NFPA No.70, National Electric Code.
 8. Current Georgia State Minimum Life Safety Code.
 9. Current Georgia State Minimum Standard Fire Prevention Code.
 10. Current Georgia State Energy Code for Buildings

C. Reference Standards: This installation shall comply with the following standards.

1. Manufacturers Standardization Society of the Valve and Fittings Industry (1815 North Ft. Meyer Drive, Arlington, VA 22209), MSS-SP-58-2002, called MSS-SP-58, MSS-SP-69-2003, called MSS-SP-69.
2. American Society of Heating and Ventilating and Air Conditioning Engineers Guide, Fundamentals, 2009 Edition.
3. Sheet Metal and Air Conditioning Contractor National Association (SMACNA) HVAC Duct Construction Standards, Metal & Flexible, 2005 Edition, Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems, 1986 Edition, Seismic Restraint Manual Guidelines for Mechanical Systems, Second Edition.
4. American Society of Sanitary Engineers (ASSE) Standard, Latest Edition.
5. North American Insulation Manufacturers Association (NAIMA) Fibrous Glass Duct Construction Standards.

1.2 REGULATIONS

- A. Attention is called to the fact that all work shall be done in accordance with all applicable City, County and State regulations, which regulations shall be considered as minimum requirements, and shall not alter the arrangement and pipe sizes indicated on the plans, except where they conflict.
- B. Contractor is responsible for obtaining all permits and paying all fees required to complete the Work

1.3 DRAWINGS

- A. The work is shown on the project drawings and specifications.

1.4 PROTECTION OF PUBLIC

- A. If the contractor must operate any potentially dangerous devices before all specified safety valves controls and devices are installed, he shall notify the Architect in writing. He shall not operate such devices under these conditions until arrangements for supervision by competent operators have been instituted and Architect's written approval has been issued.

1.5 EXCAVATION, SHORING AND BRACING

- A. Excavate and back-fill for the installation of all underground work.
- B. Provide all shoring and bracing to prevent cave-ins during the construction period.

1.6 SHOP DRAWINGS

- A. Shop drawings shall be submitted for but not limited to the following items:
 1. All Scheduled Equipment
 2. Ductwork & Accessories
 3. Hangers
 4. Piping & Accessories
 5. Supports
 6. Vibration Isolation
 7. Fixtures
 8. Roof Portals
 9. Control System
 10. Duct Systems
 11. Equipment Curbs
 12. Insulation
 13. Filters
 14. Access Panels
 15. Louvers
 16. Refrigerant Pipe Sizes
- B. Provide with the submittal package the proposed Test & Balance Company's credentials as described in Section 15950. Include a letter from the Test & Balance company indicating that they have read Section 15950 and will perform testing and balancing of the mechanical systems as described in that Section.
- C. Provide a complete list of all accessories and options (indicate factory or field installed) for all scheduled mechanical equipment, including air distribution devices. Provide manufacturer generated specifications and ratings sheets for each individual piece of air conditioning and heating equipment. Generic photocopies from manufacturers catalog will not be accepted.
- D. In addition to cut sheets, provide a summary sheet indicating exactly what pipe material joining methods, valves, etc. will be provided in the various piping systems.
- E. The Contractor shall produce 1/2" scale CAD-generated ductwork and piping shop drawing for every area of the building. Contractor shall coordinate all new mechanical systems with other Divisions, specifically including piping, lights, the building structure, and ceiling heights. It shall be the Contractor's responsibility to ensure that the mechanical work is coordinated with all other trades. The shop drawings submitted shall reflect this coordination in its entirety, including location of piping 2" and larger, all ductwork (except runouts to diffusers), and all equipment by dimensions to column lines. Bottom of duct and bottom of pipe dimensions shall be taken from finished floor, and shall be recorded on the shop drawings for review. Any interferences or conflicts not resolved during normal shop drawing coordination between trades shall be specifically noted to the Architect for his instructions. Conflicts arising out of work installed (or ductwork already fabricated) without shop drawings or shop drawings that have no been completely coordinated, shall be the Contractor's responsibility and at his expense for any necessary changes.
- F. The Contract Drawings are diagrammatic and indicated generally the size and location of ductwork and equipment. While duct sizes shall not be decreased, it is recognized that job site conditions may require re-routing or re-sizing of ductwork, and the Contractor shall be responsible for this coordination. Ductwork that has to be re-sized and/or re-routed as a result of this coordination effort shall be the Contractor's responsibility and at his expense. Ductwork re-sized shall be equivalent to that shown on the drawings.
- G. Steel fabrication shop drawings shall be coordinated with all Division 15 equipment and roof openings. The resulting coordination shall be confirmed and verification shall be submitted with associated equipment and roof curbs.
- H. Division 15 shall coordinate with structural steel contractors to insure where ductwork is required to be routed within joist space that an alternate to bracing is installed. Failure to coordinate shall subject the Contractor to full cost incurred to meet the design intent on the contract documents.

1.7 MOTORS, WIRING AND ELECTRICAL EQUIPMENT

- A. All motors required for this work shall be built in accordance with the latest standards of National Electrical Manufacturer's Association, and shall be especially designed for quiet operation. All motors shall be selected for operation within their nameplate amperage. Adjustable bases shall be provided with motors and equipment which have belt drives.
- B. All electrical materials shall comply with requirements of the National Electric Code. All contactors, starters, relays and panels used in this work, which are included in Underwriters Label Service, shall be new and bear the National Board of Fire Underwriters inspection label. Material not included in Underwriters Label service shall be new and conform to NEMA or other applicable industry standard.
- C. Division 16, ELECTRICAL, provides for the furnishing of conduit and wire from electrical source to electrical use, called "path of power," and for the installation of certain line voltage devices specified in Division 15 which lie in the "path of power," including but not limited to:
 1. Manual switches.
 2. Line voltage thermostats.
 3. Solid state speed controllers.
 4. Operators for domestic dampers.
 5. Aquastats for operating hot water circulating pumps.
 6. Alarms for Flow Switches and Valve Supervisor Switches.
- D. The "path of power" terminates at contactors or control panels of the following listed items of equipment. These control panels contain starters/contactors for the motors or heaters installed on or within the unit and are specified in Division 15. Any wiring past the point of termination described above is Division 15 work.
 1. Packaged Rooftop Units.
 2. Domestic Water Heaters.
 3. Make-up Air Units.

4. Condensing and/or Heat Pump Units.
 5. Fan Coil Units.
 6. Ductless Split Systems.
 7. Electric Heaters.
- E. Division 16, ELECTRICAL, provides for electrical power to any given item of equipment at the voltage and phase required by the primary use only. If the item of equipment contains devices such as fans, thermostats, motorized dampers or other controls which require other than primary voltage for their proper function, then transformers shall be furnished under Division 15 for that purpose.
 - F. Voltage and phase for Division 15 equipment shall be as specified by Division 16. Division 15 Contractor shall submit a list of all mechanical equipment requiring electrical connections to the Contractor prior to release of any equipment, for coordination with the Division 16 contractor. A copy of this list that has been reviewed and approved by the General Contractor shall be submitted to the Architect with the submittal for mechanical equipment. Failure to include this list may result in the rejection of the entire mechanical equipment submittal.
 - G. The control power source (point of connection for control power) for major equipment except those single phase fans which are thermostatically controlled and those items listed in C above, are provided at the combination starters.
 - H. The automatic control of signal for STOP-START of major equipment is furnished and installed to and from combination starts as part of Division 15.
 - I. All other conduit and wire, not in "path of power" described above is included in Division 15.
 - J. If any Division's Contractor makes a change by submittal, by delivery, by wiring rearrangement or power requirements, which results in increased costs, the Contractor initiating the change shall bear all cost increases.
 - K. All motors that are 1 HP and larger shall be high efficiency motors with nominal and minimum full load efficiencies equal to or greater than those specified by the State Energy Code. Specifications shall be submitted for each motor furnished.
 - L. Starters or contactors shall be furnished in Division 15 for each motor.
 1. Magnetic starters shall be NEMA standard sizes adequate for the load served, Size 00, 1, 2, 3, 4. Half sizes and/or quarter sizes are not acceptable.
 2. Overload relays shall be unit constructed, hand reset melting alloy type, and shall be provided for all ungrounded legs.
 3. Units shall have NEMA-1 enclosures, three thermal overloads in three-phase starts, HAND-OFF-AUTO switches as required by the "controls" specification section.
 4. All fractional HP single-phase motors shall have internal thermal overload protection except where starters are scheduled.
 5. All motor starters shall be of the same manufacturer and shall be General Electric Type CR-306, or equal by Square-D, Westinghouse, Allen-Bradley, Furnas, Siemens, or Cutler-Hammer subject to full compliance with all criteria.

- M. Where power wiring to Division 15 equipment is not within the equipment curb, roof curb and boots shall be provided under Division 16. The portal location shall be coordinated with Division 15 equipment power inlet requirements, and located not to block access for equipment servicing.

1.8 ACCESS PANELS

- A. Shall be provided to permit operation of concealed valves, dampers, or equipment. The following table lists types of Bico access frames and doors. Panels of equivalent construction by Titus, Milcor, Hohmann, and Barnard or Zurn are acceptable.
- B. Wall:

1. Sheetrock	Style G
2. Plaster	Style A
3. Masonry	Style C
- C. Ceiling:

1. Sheetrock	Style G
2. Plaster	Style A
3. Concealed spline	Style D
4. Lay-in tile	None
- D. Fire Rated Wall or Ceiling Style F (U.L. Listed)
- E. Sizes shall be: Small valves - 12" x 12". Multiple valves and dampers - 24" x 24"
- F. Access panels shall be insulated for sound barrier equal to wall in which it is installed.
- G. Acoustical Tile: Coordinate with tile installed to provide a removal tile at access point. Install a colored thumb tack to mark the access panel of above ceiling equipment, control instrument, valves or relay.

1.9 WARRANTY

- A. The Contractor shall operate the air conditioning, heating and ventilating systems and plumbing systems for a period of one week to the satisfaction of the Architect. Thereafter, the Contractor shall guarantee and be responsible for all materials and workmanship (parts and labor) for a period of one (1) year following the date of acceptance by the Architect.
- B. The Contractor shall also provide maintenance for the one (1) year period by providing four (4) periodic inspections at approximately three-month intervals, which shall include the following.
 1. Check all bearing, align and oil or grease.
 2. Check belt tensions and pulley adjustment and adjust as necessary.
 3. Check filters and advise Owner when change is necessary.
 4. Check refrigerant charges and oil levels and replenish as necessary.
 5. Check and re-calibrate controls as necessary.
- C. Any required maintenance for the above shall be performed and materials needed shall be furnished by the Contractor. Not included in the materials to be furnished by the Contractor are fuel, electricity, water and filters. Provide the Owner with four (4) copies of the inspection reports indicating all items checked and adjustment or repairs performed.
- D. Water heaters shall be guaranteed for five years; parts and labor.
- E. All equipment compressors shall be guaranteed for five years; parts and labor.

1.10 CUTTING AND PATCHING

- A. The Contractor shall set sleeves for pipes, ducts and equipment accurately before the concrete walls and floors are poured.
- B. Should the contractor neglect to perform this preliminary work and should cutting and patching be required in order to install the piping, ductwork or equipment, then the expense of the cutting and restoring of surfaces to their original condition shall be borne by the Contractor.

1.11 BASIS OF DESIGN

- A. When brand, trade or manufacturer's names are used for basis of design, they are used in the interest of brevity to describe the style, type, size, quality or arrangement of articles of equipment and are not intended to limit competition. If articles of equipment by manufacturers other than basis of design are submitted for installation, the Architect shall compare them with specified articles of equipment on basis of qualities mentioned. The size, weight and arrangement of other equipment shall be checked by the Contractor to ascertain that it can be installed, connected, operated, and serviced successfully, and that walking space and service space can be maintained without altering equipment space or enclosures or the work of other trades. Manufacturers not listed as "Acceptable Manufacturers" will not be considered.
- B. If any Division's Contractor makes a change by submittal, by delivery or by wiring rearrangement which results in increased costs, the Contractor initiating the change shall bear all cost increases.

1.12 AS-BUILT DRAWINGS

- A. Per the Georgia State energy Code, the Contractor shall produce and submit to the Architect, "As-Built" drawings, four (4) copies, as described below.
- B. As work progresses, neatly and clearly record on four (4) sets of mechanical plans (in red) all changes and deviations from the contract drawings in size, locations, etc., of all piping, ductwork terminal units and other equipment. Record (in red) final location of piping, ductwork, starts, valves, thermostats, etc., by dimensions to adjacent walls and floors. Make sufficient measurement to accurately locate all equipment. Locate underground lines by dimension from building walls.

1.13 OPERATION AND MAINTENANCE MANUALS

- A. Operation and Maintenance manuals (6 sets) shall be provided to the Owner or the Owners designated representative. Manuals shall be in accordance with the Georgia State Energy Code for Buildings.
 1. Manuals shall include as a minimum the following:
 - a. Final, corrected submittal data with equipment sizes and selected options for each piece of equipment, including Engineer's submittal review comments.
 - b. Current manufacturer's published operation and maintenance manuals for each piece of equipment.
 - c. Name, address and phone number of at least one LOCAL service agency.
 - d. HVAC controls system maintenance and calibration information including wiring diagrams, schematics, and control drawings.
 - e. Complete narrative of how each system is intended to operate, including suggested set-points.
 - f. Copy of the final Test & Balance report.
 - g. Copy of the final As-built drawings.

- h. Controls certification letter.
- i. Copy of Engineer's final punch list items, with each item checked off when completed or an explanation of why the item was not completed.

1.14 INTERFACES WITH OTHER WORK

- A. There are many interfaces between the work involved with Division 15 and the work involved with other Sections and Divisions, particularly with Division 16. Contractor shall be aware of the requirements of these other Sections or Divisions and his responsibilities at the interfaces.
- B. No mechanical equipment, piping, or ductwork shall be placed within 42" of switchboards and/or panel boards.
- C. No water piping (domestic, storm, sanitary, etc., except sprinkler piping when required) shall be located above electrical switchboards and/or panel boards. When sprinklers are required, shields must be provided over the panels.

1.15 EQUIPMENT IDENTIFICATION

- A. Equipment Identification:
 1. All mechanical equipment shall be labeled with Bakelite nameplates with 2" high white letters on a black background, securely affixed to equipment for outdoor or indoor service.
 2. Equipment Identification numbers shall be the same as those scheduled on the design drawings. Identification shall be located where it can be conveniently read, and shall be located in the same relative position on like equipment.
 3. In addition to the above ID tags, all scheduled equipment shall be provided with permanent factory installed engraved nameplate labels listing complete model and serial numbers, unit voltage, motor sizes, etc.
 4. Identify all disconnect switches that are not directly attached to the equipment that they serve, with identical ID tags as specified above for the equipment.

1.16 PIPE IDENTIFICATION

- A. All piping systems shall be identified.
 1. All piping systems within the building except as noted herein shall be identified with clear black letters and number stenciled on the outside surface of the pipe or insulation, indicating the system contents by abbreviated letters and direction of the flow.
 2. This identification marking shall be applied to the pipe systems where pipe enters or leaves a wall or floor, and item of equipment such as pumps, fan coil units and tanks, and at tees. Identification shall be applied no less than 50 feet apart on horizontal pipe; and one identification per floor on vertical pipe.
 3. Letters and numbers shall be high on pipe 2" and smaller.
 4. Letters and numbers shall be 1" high on pipe 3" and larger.
 5. Directional arrows shall be 4" long and wide.
 6. Letters and numbers shall be black on white pipe or insulation.
 7. Letters and number shall be white on dark pipe or insulation.
 8. Pipe identification symbols shall be the same as shown on the drawings.
 9. Soil, vent and refrigerant piping shall not be identified.

1.17 PERMITS AND INSPECTIONS

- A. The Contractor shall secure and pay for all permits, fees, inspections, and utility connection costs.
- B. BOILER TEST CERTIFICATES: It shall be the Contractor's responsibility to have each boiler, large (greater than 120 gallon capacity) water heater, and pressure vessel inspected by a State of Georgia certified inspector upon installation. Each inspection report shall be submitted to the Georgia Department of Labor, Safety Engineering Section, 1700 Century Circle, Atlanta, Georgia 30345 to the attention of Director of Engineering, PLUS a copy of each report transmitted to the Architect. ONE additional copy of each report shall be included in EACH of the FOUR Close-Out Manuals.

1.18 EQUIPMENT & MATERIAL PROTECTION

- A. All equipment and material shall be kept clean and free of debris as construction progresses. Closures shall be provided over duct, piping and major equipment openings during storage, erection and prior to connection. Material finishes shall be protected by covers to prevent impingement of corrosive, abrasive and disfiguring foreign matter. Accidental finish damage shall be repaired equivalent to original finish.

1.19 TEST, BALANCE AND REPORT

- A. See Section 15950.

1.20 PROHIBITED MATERIALS

- A. All products, materials or assemblies which contain asbestos or polychlorinated biphenyl (PCB) in any form or in any concentration whatsoever, are expressly forbidden from being used on this project.

1.21 SITE VISIT AND FAMILIARIZATION

- A. Contractors proposing to undertake work under this Division shall visit the site of the work and fully inform themselves of all conditions that effect the work or cost thereof, examine the drawings and specifications as related to the site conditions, and acquaint themselves with the utility companies from whom services will be supplied; verify locations of utility services and determine requirements for connections.
 - B. Consideration will not be granted for any alleged misunderstanding of the amount of work to be performed. Tender of proposal shall convey full agreement to all items and conditions specified, indicated on the drawings, and/or required by nature of the site.
 - C. Attention is called to the fact that this scope of work includes renovation to an existed facility and/or an addition to an existing building. When the work is finished, the mechanical systems shall be complete in every respect, and completely integrated with all affected mechanical and control systems.
 - D. Existing mechanical systems in the existing facility shall not be interrupted without prior approval of the Owner or Architect.
- 1.22 DISINFECTION AND TESTING OF WATER SYSTEM
- A. Sanitize plumbing potable water systems after cleaning and pressure tests, with chlorinated potable water solution to 200 ppm chlorine residual after 24-hours minimum, then flushed with fresh potable water until effluent chlorine content does not exceed make-up. Water samples shall be sent to Local Health Department (LHD) for testing. A letter of approval must be obtained from the LHD before the system is put into service.
 - B. All domestic water piping shall be disinfected with chlorine before it is placed into operation. The chlorinating material shall be liquid chlorine conforming to Federal Specification BB-C-120 and shall be introduced to the system by experienced operators only. The chlorine solution applied to the piping sections or system shall contain at least fifty (50) parts per million of available chlorine and shall remain in the sections or system for a period of not less than sixteen (16) hours. During the disinfection period all valves shall be opened and closed at least four (4) times. After the disinfection period, the chlorinated water shall be flushed from the system with clear water until the residual chlorine content is not greater than two-tenths parts per million (0.2PPM). Submit certification to the Architect and Owner that the system was disinfected.

END OF SECTION

SECTION 15950 - TESTING, ADJUSTING, AND BALANCING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 1. Testing, adjusting, and balancing of air systems.
- B. The Contractor shall obtain the services of an independent test, adjustment, and balance (TAB) agency to test, adjust, and balance:
 1. Each supply, return, exhaust, relief, and outdoor air distribution systems.
- C. The Contractor and the TAB Agency shall review the proposed system installations and determine all measuring and balancing devices required for proper test and balance of the systems. These shall include, but not be limited to, manual air volume balancing dampers, etc. The Contractor shall be responsible for providing these in the locations recommended by the TAB Agency, in addition to any shown on the drawings. These devices shall be provided under the Contract.
- D. Instruments used for testing and balancing shall have been calibrated within a period of six months of the time of the testing and balancing and such instruments shall be checked for accuracy prior to the start of the work. Submit verification for certification to the Architect and the Owner.
- E. Perform Work in accordance with AABC National Standards, latest edition. TAB shall include all equipment and distribution systems and shall be reported, as a minimum, on forms as published by the AABC, NEBB, or approved equal. Report shall include a diagram(s) of each system showing all devices in the system.
- F. The TAB Agency shall, unless approved by the Owner, be an AABC or NEBB member and the work shall be done by an AABC or NEBB certified TAB Technician and Commissioning Agent.
- G. All corrections required by the report shall be executed by the Contractor to the satisfaction of the Owner, Architect, Engineer, and TAB agency. All costs associated with testing and balancing, as well as costs of any necessary

- re-testing, shall be borne by the Contractor.
- H. Testing and Balancing Agency shall be kept informed of any major changes made to the systems during construction, and shall be provided with a complete set of contract documents, as-built drawings, approved submittals, applicable specification sections, addenda and change orders.

1.2 SUBMITTALS

- A. Draft Reports: Submit for review prior to final acceptance of Project.
- B. Test Reports: Submit prior to final acceptance of Project and for inclusion in operating and maintenance manuals. Assemble in soft cover, letter size, 3-ring binder, with table of contents page and tabs, and cover identification. Include reduced scale drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat locations.

PART 2 EXECUTION

2.1 EXAMINATION

- A. Before starting work, verify systems are complete and operable.
- B. The TAB Agency shall check refrigerant superheat settings.
- C. The TAB Agency shall test drain pans for proper drainage under operating conditions.
- D. Report defects, deficiencies, or abnormal conditions in mechanical systems preventing system balance to Owner, Architect, and Engineer.
- E. Beginning of work means acceptance of existing conditions.

2.2 INSTALLATION TOLERANCES

- A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.
- B. Air Outlets and Inlets: Adjust to within plus or minus 10 percent of design.

2.3 AIR SYSTEM PROCEDURE

- A. Examine all air handling systems to see that they are free from obstructions that may prevent proper balancing of system.
- B. Ensure that all dampers, grilles, and registers are open or in normal positions, that moving equipment is lubricated, filters are installed and clean, and perform other inspection and maintenance activities to ensure that the operation of the system is as specified.
- C. Adjust air handling and distribution systems to deliver design supply, return, and exhaust air quantities within previously stated tolerances.
- D. Make air quantity measurements in ducts by traverse of entire cross sectional area of duct.
- E. Measure air quantities at air inlets and outlets.
- F. Use volume control devices to regulate air quantities only to extent those adjustments do not create objectionable air motion or sound levels. Change volume using dampers mounted in ducts, not dampers on ceiling diffusers. Leave dampers on ceiling diffusers open for seasonal adjustment by Owner.
- G. Vary total system air quantities by adjustment of fan speeds. Vary branch air quantities by damper regulation.
- H. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across fan. Allow for pressure drop equivalent to 50 percent loading of filters.
- I. Adjust automatic outside air, return air, and exhaust air dampers for design conditions.
- J. Measure temperature conditions across outside air, return air, and exhaust air dampers to check leakage.
- K. At modulating damper locations, take measurements and balance at extreme conditions.
- L. The TAB Agency shall check all the systems operating together to ensure that the air conditioning spaces are under an overall positive pressure.

2.4 FIELD QUALITY CONTROL

- A. Verify recorded data represents actually measured or observed conditions.
- B. Permanently mark settings of valves, dampers, and other adjustment devices. Set and lock memory stops.

END OF SECTION

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GENERAL PLUMBING NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE FLORIDA PLUMBING CODE (IPC) WITH ADOPTED STATE AMENDMENTS AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
- PLUMBING FIXTURES SHALL BE "HIGH EFFICIENCY" WITH WATER SENSE COMPLIANT FLOW OR FLUSH RATES AS REQUIRED BY GEORGIA AMENDMENTS TO THE IPC.
- EXPOSED FIXTURES: CHROME PLATED BRASS AND COPPER TUBING WITH THREADED PLATED BRASS FITTINGS.
- JOIN PIPES OF DISSIMILAR METALS WITH DIELECTRIC UNIONS OR SIMILAR ISOLATING DEVICES. DO NOT DIRECTLY CONNECT TO PIPES OF DISSIMILAR METALS.
- ROUTE PIPING PARALLEL TO BUILDING STRUCTURE AND MAINTAIN GRADIENT.
- INSTALL PIPING TO MAINTAIN HEADROOM. GROUP PIPING TO CONSERVE SPACE. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.
- INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.
- PROVIDE CLEARANCE IN HANGERS AND FROM STRUCTURE AND OTHER EQUIPMENT FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.
- SLEEVE PIPE PASSING THROUGH PARTITIONS, WALLS AND FLOORS.
- INSTALL IDENTIFICATION ON PIPING SYSTEMS OR INSULATION COVERINGS INCLUDING UNDERGROUND PIPING PER PIPE LABELING DETAIL. LABELS SHALL INCLUDE NAME OF FLUID INSIDE PIPE ALONG WITH DIRECTIONAL FLOW ARROWS. ALL GAS PIPING SHALL BE PAINTED YELLOW WITH PIPE MARKERS APPLIED AFTER PAINTING. NON-STEEL GAS PIPING SHALL HAVE LABELS APPLIED NOT EXCEEDING 5 FEET APART.
- PROTECT PIPING SYSTEMS FROM ENTRY OF FOREIGN MATERIALS BY TEMPORARY COVERS, COMPLETING SECTIONS OF THE WORK, AND ISOLATING PARTS OF COMPLETED SYSTEM.
- CONTRACTOR SHALL SECURE AND PAY FOR ALL FEES AND PERMITS REQUIRED TO ACCOMPLISH THE WORK SHOWN.
- BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY EXACT LOCATIONS, ELEVATIONS, AND CHARACTERISTICS OF UTILITIES AND PIPING AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES. PIPE SLOPES SHOULD BE VERIFIED TO ENSURE PROPER ELEVATIONS ARE OBTAINED AT CONNECTION POINTS.
- EXACT LOCATIONS AND MOUNTING HEIGHTS OF PLUMBING FIXTURES SHALL BE OBTAINED FROM ARCHITECTURAL DRAWINGS.
- CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH UTILITY COMPANIES FOR SERVICE AND CONNECTIONS AND SHALL PAY FOR ALL FEES, CHARGES, PERMITS, AND METERS.
- ALL SANITARY DRAINAGE PIPES 2" AND SMALLER SHALL BE SLOPED AT 1/4" PER FOOT MINIMUM. AND ALL SANITARY DRAINAGE PIPES 3" AND LARGER SHALL BE SLOPED AT 1/8" PER FOOT MINIMUM. GREASE WASTE PIPES SHALL ALL BE SLOPED AT MIN. 1/4" PER FOOT.
- ALL PIPING ABOVE GRADE SHALL BE PROPERLY SUPPORTED FROM THE BUILDING STRUCTURE AND SHALL NOT REST ON CEILING TILES OR BE SUPPORTED FROM CEILING TILES.
- LOCATE ALL SECTIONAL OR MAIN CONTROL VALVES WITHIN 1'-0" OF ACCESS PANELS, CEILING TILES, OR OTHER POINTS OF ACCESS.
- PLUMBING AND FIRE PROTECTION PIPING IS NOT TO BE INSTALLED IN ELECTRICAL ROOMS, CLOSETS, TELEPHONE ROOMS, OR ELEVATOR EQUIPMENT ROOMS EXCEPT PIPING SERVING THAT ROOM.
- WATER PIPING ROUTED ABOVE CEILING AND IN EXTERIOR WALLS SHALL BE ROUTED ON HEATED SIDE (UNDERSIDE) OF CEILING INSULATION AND HEATED SIDE (INSIDE) OF WALL INSULATION.
- TOPS OF ALL FLOOR DRAINS AND FLOOR CLEANOUTS SHALL BE LEVEL WITH FINISHED FLOOR AT INSTALLATION LOCATION TO PREVENT TRIP HAZARDS - FLOORS SHALL SLOPE TO FLOOR DRAINS.
- PRIME ALL FLOOR DRAIN AND INDIRECT DRAIN TRAPS WITH WATER BASED TRAP PRIMERS AS SHOWN ON PLANS. MECH. TRAP GUARDS MAY BE USED IN LIEU OF WATER BASED TRAP PRIMERS WHERE THE AUTHORITY HAVING JURISDICTION ALLOWS.
- ALL VENT AND FLUE OUTLETS SHALL BE 10'-0" MINIMUM FROM ANY FRESH AIR INTAKE.
- DURING THE PROGRESS OF THE PROJECT, MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE PLUMBING SYSTEMS. THE RECORD DRAWING SHALL SHOW CHANGES IN MANUFACTURER (WITH NUMBERS AND TRADE NAMES), MATERIALS, SIZES, LOCATIONS, AND HOOK-UP POINTS. AS-BUILTS SHALL BE GIVEN TO OWNER'S CONSTRUCTION MANAGER AT COMPLETION OF JOB.
- UPON COMPLETION OF THIS JOB, CONTRACTOR SHALL INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING INSTALLATION AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOIL, MARKINGS, AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY THESE PLANS.
- CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL PLUMBING EQUIPMENT WITH THE ELECTRICAL DRAWINGS AND THE ELECTRICAL CONTRACTOR, AND SHALL FURNISH EQUIPMENT WIRED FOR THE VOLTAGES SHOWN THEREIN. PLUMBING CONTRACTOR SHALL WIRE AND START ALL ELECTRICAL PLUMBING EQUIPMENT, ELECTRICAL CONTRACTOR SHALL PROVIDE WIRING, CONDUIT, BREAKERS, AND OTHER APPROPRIATE ELECTRICAL EQUIPMENT.
- ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC. INSTALLED IN HVAC PLENUM SPACES SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723.
- ALL PIPE PENETRATIONS OF FIRE OR SMOKE RATED ASSEMBLIES SHALL BE FIRE STOPPED AS REQUIRED TO RESTORE ASSEMBLY TO ORIGINAL INTEGRITY. FIRE BARRIER PRODUCTS SHALL BE AS MANUFACTURED BY 3M COMPANY, CP25 CAULK, CS195 COMPOSITE PANEL, FS195 WRAP/SHRINK, OR PSS 7900 SERIES SYSTEMS AS RECOMMENDED BY MANUFACTURER FOR PARTICULAR APPLICATIONS, OR EQUIVALENT SYSTEM AS APPROVED BY LOCAL CODE OFFICIALS.
- ALL VENT THRU ROOF PENETRATIONS SHALL BE ROUTED TO TERMINATE AT THE LEAST VISIBLE LOCATION FROM THE ENTRY VIEW.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY PRODUCTS AND MATERIALS FOR A COMPLETE PLUMBING SYSTEM.
- EQUIPMENT AND PIPING LOCATIONS AND ROUTING SHOWN ARE DIAGRAMMATIC AND INTENDED TO SHOW THE INTENT OF THE DESIGN. COORDINATE FINAL LOCATIONS AND PIPE ROUTING WITH ARCHITECTURAL PLANS AND FIELD CONDITIONS.
- TEMPER ALL HAND WASHING SINKS TO A MAXIMUM OF 110 DEG. F. USING ASSE 1070 TEMPERATURE LIMITING DEVICE, ALL OTHER LOCATIONS TO A MAXIMUM OF 120 DEG. F UNLESS HIGHER TEMPERATURES ARE REQ'D FOR PROPER OPERATION.
- ALL FIXTURES USING PRESSURIZED WATER SUPPLIES SHALL BE INSTALLED WITH SHUT OFF VALVES FOR ISOLATION AND SERVICE.
- CONTRACTOR SHALL FIELD COORDINATE REQUIRED DRAIN PIPE INVERTS WITH SITE CONTRACTOR BEFORE ORDERING PIPE.
- CONTRACTOR SHALL HAVE A THOROUGH COORDINATION AND CONSTRUCTABILITY MEETING WITH ALL JOB TRADES BEFORE FINAL PRICING/BUDGETING OR PURCHASING ANY EQUIPMENT, AND ENGINEER SHALL BE NOTIFIED BEFORE FINAL PRICING/BUDGETING OR PURCHASING ANY EQUIPMENT OF CONFLICTS, DISCREPANCIES, OR OTHER ISSUES THAT MAY INCREASE PROJECT COST SO THAT ISSUES MAY BE RESOLVED BEFORE PRICING. THESE PLANS WERE DEVELOPED BASED ON THE ARCHITECTURAL PLANS AVAILABLE AT THE TIME OF DESIGN, AND ARE DIAGRAMMATIC IN NATURE.
- ALL PIPING ACCESSORIES INSTALLED UNDERGROUND INCLUDING, BUT NOT LIMITED TO SHUT OFF VALVES, BACKFLOW DEVICES, PRESSURE REDUCING VALVES, ETC. SHALL BE INSTALLED IN A BOX OR VAULT FOR SERVICEABILITY AND PROTECTION. THESE DEVICES SHALL NOT BE DIRECT BURIED BELOW GRADE.
- MAX. "DEAD LEG" LENGTH OF ANY PIPING SHALL BE 12 INCHES.

PLUMBING LEGEND		
SYMBOL	DESCRIPTION	ABBREVIATION
—	ABOVE FINISHED CEILING	AFC
—	ABOVE FINISHED FLOOR	AFF
—	BELOW COUNTER	B/C
—	BELOW FINISHED FLOOR	BFF
—	BELOW GRADE	B/G
—	DOMESTIC COLD WATER PIPING	CW
—	DOMESTIC HOT WATER PIPING	HW
—	VENT PIPE	V
—	SANITARY SOIL	SS
—	VENT THROUGH ROOF OR WALL	VTR OR VTW
—	FLOOR CLEANOUT	FCO
—	FLOOR DRAIN	FD
—	FLOOR SINK (INDIRECT DRAIN)	FS
—	WALL CLEANOUT	WCO
—	CLEANOUT TO GRADE	COTG
—	P-TRAP	
—	PRESSURE REDUCING VALVE	PRV
—	BACKFLOW PREVENTER	BP
—	BALL VALVE	
—	SOLENOID VALVE	
—	UNION	
—	BLIND FLANGE/CAP	
—	PIPING CONNECTION ON TOP	
—	PIPING CONNECTION ON BOTTOM	
—	ELBOW TURNED DOWN	
—	ELBOW TURNED UP	
—	THERMOMETER	
—	CONNECT TO EXISTING	CTE

PIPING LABEL COLOR GUIDE		
PIPING SYSTEM FLUID	LABEL COLOR	TEXT COLOR
DOMESTIC COLD WATER	SAFETY GREEN	WHITE
DOMESTIC HOT WATER	SAFETY GREEN	WHITE
FIRE PROTECTION FLUIDS	SAFETY RED	WHITE

SIZE OF LEGEND LETTERS		
PIPE OR PIPE COVERING OUTER DIAM. (IN.)	LENGTH OF COLOR FIELD (IN.)	SIZE OF LETTERS (IN.)
3/4" TO 1-1/4"	8"	1/2"
1-1/2" TO 2"	8"	3/4"
2-1/2" TO 6"	12"	1-1/4"
8" TO 10"	24"	2-1/2"
OVER 10"	32"	3-1/2"

- NOTES:**
- IF AN EXISTING PIPE LABELING / MARKING SCHEME IS USED IN THE FACILITY, MATCH EXISTING SCHEME IN LIEU OF THESE DIRECTIONS. LABEL TEXT SHOULD MATCH FLUIDS IN TABLE, AND SHOULD INCLUDE FLOW ARROWS INDICATING DIRECTION OF FLUID FLOW.
 - IF FLUIDS MAY FLOW IN TWO DIRECTIONS, ARROWS SHOULD INDICATE SUCH.
 - APPLY LABELS SO THAT THEY ARE EASILY READABLE BY OCCUPANTS OR EMPLOYEES. FOR EASE OF READING, LABELS SHOULD BE APPLIED ON BOTTOM OF PIPES THAT ARE ABOVE OCCUPANT LEVEL, ON TOP OF PIPES THAT ARE BELOW OCCUPANT LEVEL, AND ON SIDE OF PIPES THAT ARE AT OR NEAR OCCUPANT LEVEL.
 - FOR PIPES SMALLER THAN 3/4", USE PERMANENTLY ENGRAVED LABELS AFFIXED TO PIPES.
 - APPLY LABELS NEAR VALVES, BRANCHES, WHERE A CHANGE IN DIRECTION OCCURS, AT ENTRY AND RE-ENTRY POINTS THRU WALLS, FLOORS, ROOFS, AND ON STRAIGHT SEGMENTS WITH SPACING BETWEEN LABELS THAT ALLOWS FOR EASY IDENTIFICATION.
 - PIPING SYSTEMS CONVEYING GASEOUS CONTENTS SHALL HAVE SYSTEM DESIGN PRESSURE INDICATED ON THE LABEL IN ADDITION TO SYSTEM FLUID AND DIRECTIONAL ARROWS.
 - NATURAL AND PROPANE GAS LABELS ON NON-STEEL PIPING SHALL BE APPLIED AT INTERVALS NOTE EXCEEDING 5 FEET.
 - THESE LABELING GUIDELINES DO NOT APPLY TO MEDICAL GAS AND VACUUM SYSTEMS. FOR THESE TYPES OF SYSTEMS, REFER TO THE LOCAL CODE OFFICIALS' LATEST ACCEPTED VERSION OF NFPA 99.

PLUMBING FIXTURE SCHEDULE						
TAG	FIXTURE	PIPING CONNECTION SIZES				SPECIFICATION
		S.S.	V.	C.W.	H.W.	
HWC	TANK TYPE LAVATORY, ADA.	3"		1/2"		<ul style="list-style-type: none"> HANDICAPPED WATER CLOSET SHALL BE FLOOR MOUNTED FLUSH TANK TYPE WITH ELONGATED BOWL AND 1.28 GPF AUTOMATIC FLUSH VALVE. SEAT SHALL BE COMMERCIAL TYPE WITH OPEN FRONT. INCLUDE ALL REQUIRED HARDWARE FOR A COMPLETE INSTALLATION. FIXTURE: KOHLER K-3999 SEAT: KOHLER K-4731-C
LAV	WALL MOUNT LAVATORY, PUBLIC (0.5 GPM)	2"	2"	1/2"	1/2"	<ul style="list-style-type: none"> KOHLER K-2005, ADA COMPLIANT, WHITE VITREOUS CHINA WALL MOUNT SINK, REAR CENTER DRAIN WITH OVERFLOW, 3 HOLE DRILLING ON 4", 21-1/4" L-R X 18-1/8" F-B X 7-1/4" DEEP, INCLUDE WALL HANGER/CARRIER. JR SMITH 9200 P-TRAP ** FOR CONDENSATE DISCHARGE ** DELTA 501 FAUCET, POLISHED CHROME. MCGUIRE 151 BRASS STRAINER. MCGUIRE BV-2165 QUARTER TURN BALL VALVE STOPS AND SUPPLIES WHITE COVERS OVER CW, HW, SS PIPES (TRUEBRO OR EQUAL)
NFWH	WALL HYDRANT			1/2"		<ul style="list-style-type: none"> NON-FREEZE TYPE WOODFORD, MODEL B65 PROVIDE KEYS BOX
WCO/GCO/FCO	WALLGRADE/ FLOOR CLEANOUT					<ul style="list-style-type: none"> J.R. SMITH, WATTS, ZURN
FD / FS	FLOOR DRAIN	3"				<ul style="list-style-type: none"> CAST IRON BODY, 4" ROUND NICKEL BRONZE ADJUSTABLE GRATE TRAP PRIMER SIDE CONNECTION J.R. SMITH 2005

DOMESTIC WATER HEATER SCHEDULE										
TAG	BASIS OF DESIGN	STORAGE CAPACITY (GAL.)	TOTAL INPUT (KW)	NO. OF ELEMENTS, KW EA.	RECOVERY GPH @ 80°F RISE	TEMP RISE @ 0.5 GPM	WATER CONN. (IN.)	SHIP WEIGHT (LBS.)	POWER	NOTES
IWH-1	EEMAX SPEC2412	INSTANT	2.4	-	-	33°F	3/8	10	SEE DIV. 16	1-4

- NOTES:**
- BASIS OF DESIGN IS EEMAX, APPROVED ALTERNATE BY RHEEM
 - INSTANTANEOUS WATER HEATER DATA IS BASED ON 110V MODEL.
 - PROVIDE ALL APPURTENANCES FOR A FULLY FUNCTIONING, CODE COMPLIANT WATER HEATING SYSTEM BASED ON IPC, PLANS, NOTES, AND DETAILS.
 - LOCATE WATER HEATER BELOW SINK, WHERE UNABLE TO LOCATE INSIDE MILLWORK, LOCATE ABOVE ACCESSIBLE CEILING. COORDINATE w/ ELECTRICAL TRADE AS REQUIRED.

SURFACE MOUNT

NOTES:

- SIZE STRUT TO ADEQUATELY SUPPORT LOAD (REFER TO MANUF. CATALOG)
- SIZE CALCIUM SILICATE SHIELD TO FIT PIPE AND INSULATION THICKNESS.
- SIZE CLAMP TO FIT CALCIUM SILICATE SHIELDS.
- BOLT OR WELD STRUT TO STRUCTURE BELOW.

HANGER SPACING CHART

PIPE SIZE	ROD DIAM.	MAX. SPACING
1/2" - 1-1/4"	3/8"	7'
1-1/2"	3/8"	9'
2"	3/8"	10'
2-1/2"	1/2"	11'
3"	1/2"	12'
3-1/2"	1/2"	13'
4"	5/8"	14'
5"	5/8"	16'
6"	3/4"	17'
8"	3/4"	19'
10"	7/8"	22'
12"	7/8"	23'
14"	1"	25'
16"	1"	27'

NOTES:

- SIZE STRUT TO ADEQUATELY SUPPORT LOAD (REFER TO MANUF. CATALOG)
- SIZE CALCIUM SILICATE SHIELD TO FIT PIPE AND INSULATION THICKNESS.
- SIZE CLAMP TO FIT CALCIUM SILICATE SHIELDS.
- AFFIX TO STRUCTURE ABOVE PER MANUF. RECOMMENDATIONS.

NOTE: ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH PIPE CLAMPS, AND SHALL BE PROTECTED BY 3" SHIELD INSIDE CLAMPS.

NOTE: ALL PIPE INSULATION LOCATED OUTSIDE OF BUILDING SHALL BE PROTECTED BY EMBOSSED METAL JACKETING.

SUSPENDED TRAPEZE MOUNT

NOTES:

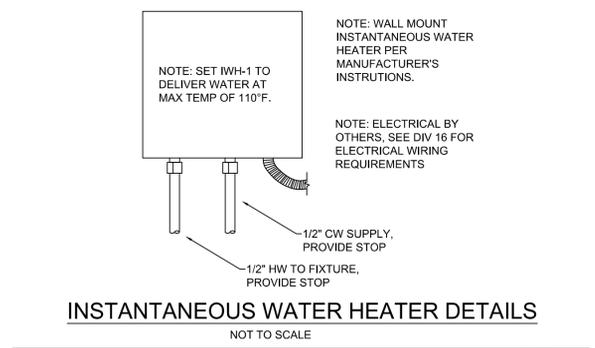
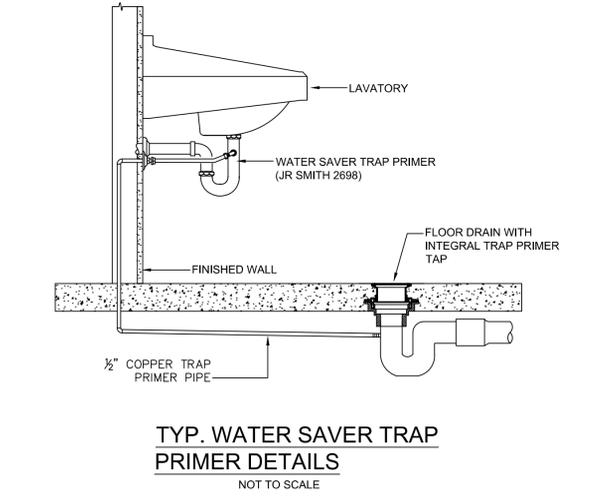
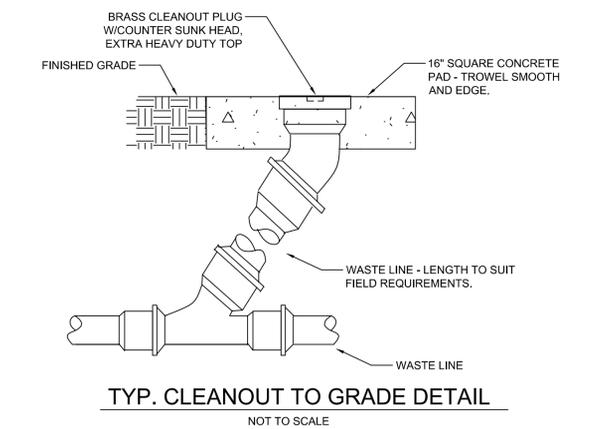
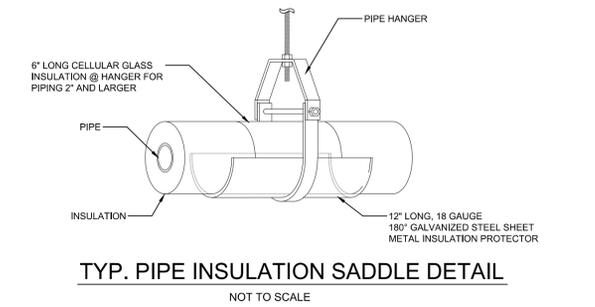
- SIZE STRUT TO ADEQUATELY SUPPORT LOAD (REFER TO MANUF. CATALOG)
- SIZE CALCIUM SILICATE SHIELD TO FIT PIPE AND INSULATION THICKNESS.
- SIZE CLAMP TO FIT CALCIUM SILICATE SHIELDS.
- AFFIX TO STRUCTURE ABOVE PER MANUF. RECOMMENDATIONS.

SUSPENDED CLEVIS HANGER

NOTES:

- SIZE HANGER TO ADEQUATELY SUPPORT LOAD (REFER TO MANUF. CATALOG)
- SIZE CALCIUM SILICATE SHIELD TO FIT PIPE AND INSULATION THICKNESS.
- SIZE HANGER TO FIT CALCIUM SILICATE SHIELDS.
- AFFIX TO STRUCTURE ABOVE PER MANUF. RECOMMENDATIONS.

TYP. PIPE HANGER DETAILS
NOT TO SCALE



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BUILDING ADDITION FOR PUBLIC WORKS
GRETTNA PUBLIC SAFETY FACILITY
CITY OF GRETTNA, FLORIDA
 BEECH AVENUE & 1ST STREET GRETTNA, FLORIDA

DATE: 9-02-25
REV:

JOB NO25-005

Po.1

SHEET NO.

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**BUILDING ADDITION FOR PUBLIC WORKS
GRETNA PUBLIC SAFETY FACILITY**
CITY OF GRETNA, FLORIDA
BEECH AVENUE & 1ST STREET GRETNA, FLORIDA

DATE: 9-02-25
REV:
REV#1-11/11/25

JOB NO25-005

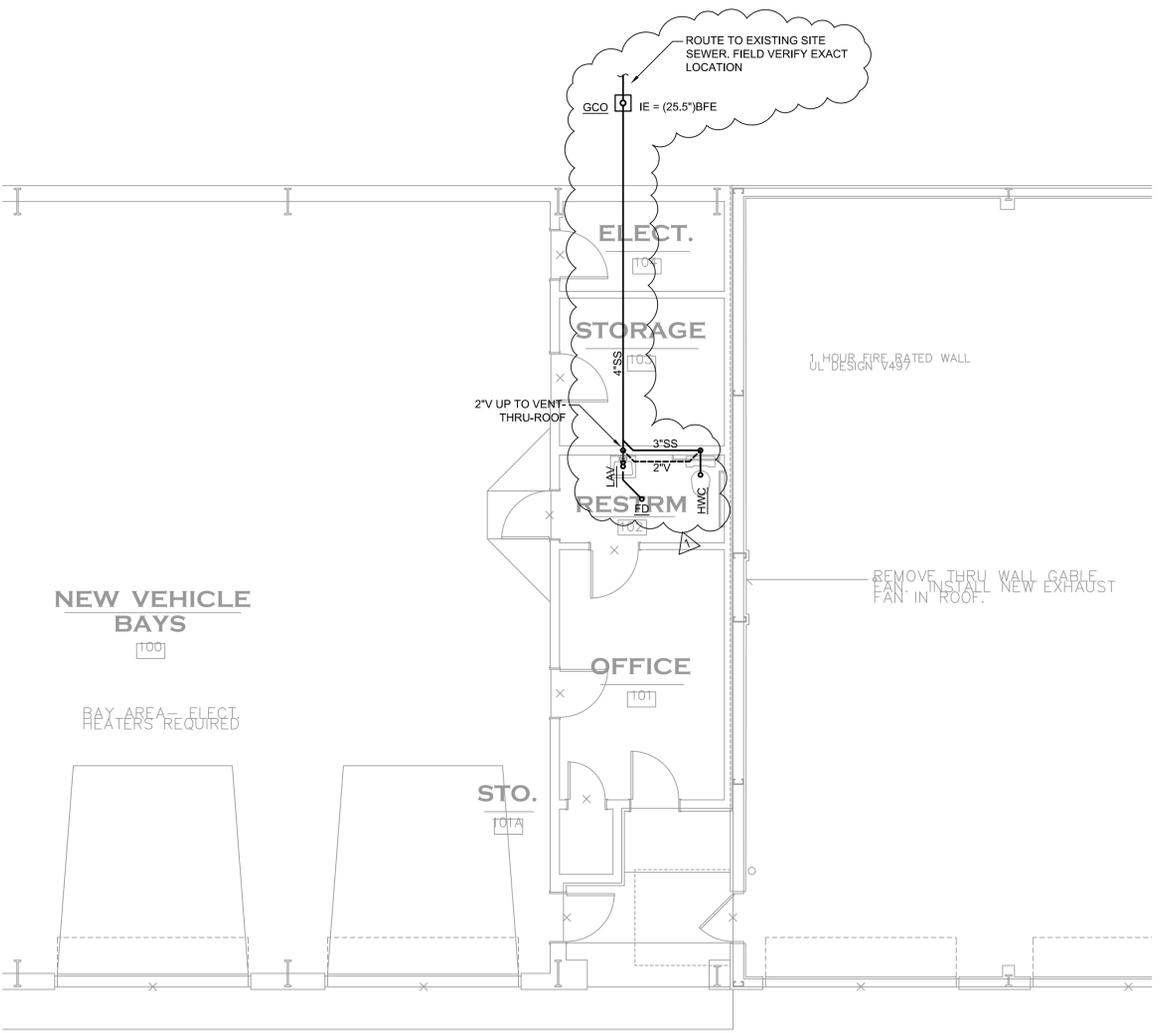
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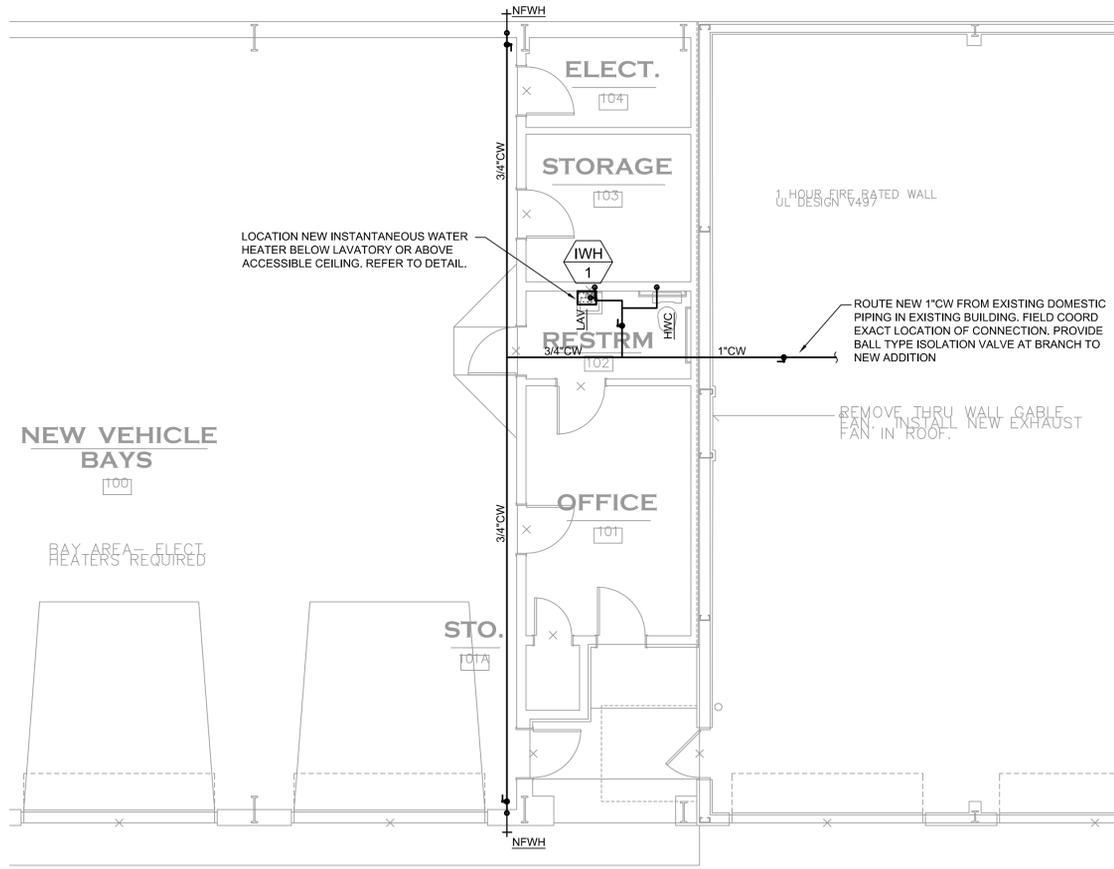
KEY NOTES

GENERAL NOTES

1. ALL DOMESTIC WATER AND SANITARY WASTE & VENT PIPING SHALL BE ROUTED CONCEALED.
2. ALL PIPING INSIDE WALLS SHALL BE SECURED SUCH THAT THERE IS NO MOVEMENT DUE TO WATER HAMMER
3. PROVIDE ISOLATION VALVES AT EACH FIXTURE GROUP. ALL FIXTURES SHALL BE CAPABLE OF REMOVAL / REPLACEMENT WITHOUT SHUTTING OFF BUILDING SUPPLY
4. PROVIDE ESCUTCHEONS AT ALL FIXTURE PIPE WALL PENETRATIONS
5. ALL DOMESTIC WATER PIPING SHALL BE COPPER, PROVIDE TYPE 'K' BELOW GRADE. PROVIDE TYPE 'L' ABOVE GRADE
6. SANITARY WASTE & VENT SHALL BE PVC.



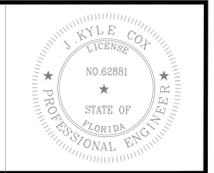
SANITARY WASTE & VENT PLAN
SCALE: 3/16" = 1'-0"



DOMESTIC WATER PIPING PLAN
SCALE: 3/16" = 1'-0"

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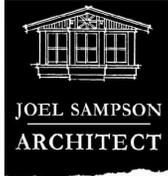
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**BUILDING ADDITION FOR PUBLIC WORKS
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CITY OF GREटना, FLORIDA
BEECH AVENUE & 1ST STREET GREटना, FLORIDA

DATE: 9-02-25

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SHEET NO.

SECTION 15080 - PLUMBING INSULATION

PART 1 GENERAL

1.1 GENERAL

A. Section 15010 applies.

PART 2 PRODUCTS

2.1 BASIS OF DESIGN

- A. Manufacturers shown below as Basis of Design
1. Acceptable Manufacturers for Glass Fiber and Mineral Fiber Insulation Products: CertainTeed, Knauf, Johns Manville, Owens-Corning.

2.2 PIPE INSULATION

- A. Domestic Hot Water Supply and Recirculation
1. ASTM C547, molded glass fiber pipe insulation.
 2. Thermal Conductivity: 0.23 at 75 degrees F.
 3. Operating Temperature Range: 0 to 850 degrees F.
 4. Vapor Barrier Jacket: ASTM C1136, Type I, factory applied reinforced foil kraft with self-sealing adhesive joints.
 5. Jacket Temperature Limit: minus 20 to 150 degrees F.
 6. Thickness: 1" thickness for 1-1/2" pipe and smaller. 1-1/2" thickness for pipes larger than 1-1/2".
- B. Domestic Cold Water Supply and Condensate Piping
1. ASTM C547, molded glass fiber pipe insulation.
 2. Thermal Conductivity: 0.23 at 75 degrees F.
 3. Operating Temperature Range: 0 to 850 degrees F.
 4. Vapor Barrier Jacket: ASTM C1136, Type I, factory applied reinforced foil kraft with self-sealing adhesive joints.
 5. Jacket Temperature Limit: minus 20 to 150 degrees F.
 6. Thickness: 1/2" thickness for all pipes.
- C. Pipe Insulation Jacket
1. ASTM C921, white Kraft paper with glass fiber yarn, bonded to aluminized film.
 2. Water vapor transmission: ASTM E96/E96M, 0.02 perm-inches.

PART 3 EXECUTION

3.1 INSTALLATION - PIPING SYSTEMS

- A. Paint insulation to match ceiling where piping and pipe insulation are exposed to view.
- B. Verify piping and equipment has been tested before applying insulation materials. Verify surfaces are clean and dry, with foreign material removed. Piping Exposed to View in Finished Spaces: Locate insulation and cover seams in least visible locations.
- C. Continue insulation through penetrations of building assemblies or portions of assemblies having fire resistance rating of one hour or less. Provide expanding fire stopping when continuing insulation through assembly. Finish at supports, protrusions, and interruptions.
- D. Hot and Cold Piping Systems:
1. Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.
 2. Furnish factory-applied or field-applied standard jackets. Secure with outward clinch expanding staples or pressure sensitive adhesive system on standard factory-applied jacket and butt strips or both.
 3. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.
 4. Do not insulate unions and flanges at equipment, but bevel and seal ends of insulation at such locations. For hot piping systems above 140 degrees F, insulate unions and flanges at equipment.
- E. Inserts and Shields:
1. Piping 1-1/2 inches Diameter and Smaller: Install steel shield between pipe hanger and insulation.
 2. Piping 2 inches Diameter and Larger: Install insert between support shield and piping and under finish jacket.
 - a. Insert Configuration: Minimum 6 inches long, of thickness and contour matching adjoining insulation; may be factory fabricated.
 - b. Insert Material: Compression resistant insulating material suitable for planned temperature range and service.
 3. Piping Supported by Roller Type Pipe Hangers: Install galvanized steel shield between roller and inserts.
 - a. Condensate Piping: Insulate entire piping system and components inside the building space to prevent condensation.
 - b. Pipe exposed in Mechanical Equipment or Finished Spaces: Finish with PVC jacket and fitting covers. Labels on exterior covers should be oriented so as to be easily readable and shall have directional flow arrows.

END OF SECTION

SECTION 15100 - PIPING AND ACCESSORIES

PART 1 GENERAL

1.1 GENERAL

A. Section 15010 is applicable.

1.2 PRESSURE

A. The working pressure of all pipes, fittings, valves, and joints shall be in excess of the maximum system pressure and maximum system temperature at the point of installation.

PART 2 PRODUCTS

2.1 PIPE HANGERS AND SUPPORTS

- A. Conform to ASME B31.9, ASTM F708.
- B. Hangers for Non Insulated Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron or carbon steel, adjustable swivel, split ring.
- C. Hangers for Insulated and Non Insulated Pipe Sizes 1/2" to 30 inches: Carbon steel, adjustable, clevis.
- D. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- E. Vertical Support: Steel riser clamp.
- F. Wall Support for Pipe Sizes to 3 inches: Cast iron hook.
- G. Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket and wrought steel clamp.
- H. Copper Pipe Support: Copper-plated, carbon-steel adjustable, ring.
- I. Floor Support for horizontal Pipe Sizes to 4 inches: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
- J. Floor Support for horizontal Pipe Sizes 6 inches and Over: Adjustable cast iron roll and stand, steel screws, and concrete pier or steel support.
- K. Ground support for exterior horizontal Pipe: Adjustable stainless steel roll and stand, and concrete pier support.

2.2 PIPE SLEEVES

- A. Sleeves are defined as holes that are provided to permit the passage of pipes (and insulation) through walls or floors. Soil, waste, vent, and domestic water pipes stubbed through walls and floors for plumbing fixture connections do not require sleeves.
- B. Masonry: Sleeves shall be schedule 40 steel pipe and shall be large enough to accommodate continuous passage of pipe plus insulation through the wall or floor system. Pipe sleeves shall extend 1" on both sides of a wall or floor.
- C. Concrete:
1. Sleeves through concrete walls and floor shall be formed by any device that forms a neat circular hole, of proper size, through the wall or floor system. Acceptable devices are pipe and sheet metal.
 2. Structural floor sleeves require extension above the floor surface to prevent water passage down the sleeves, and shall be made of schedule 40 black steel pipe extended 1" above the floor.
- D. Other Sleeves: Where sleeves pass through wood, drywall, plaster partitions, or suspended ceilings, sleeves shall be neatly cut holes sealed with caulk, finished with chrome plated escutcheon where exposed in visible areas.
- E. Sealing of annular space: For sleeves in masonry and concrete walls and elevated floor slabs, non-rated, annular spaces shall be packed with silicone RTV foam. Sleeves in exterior walls shall be sealed with a "Link Seal" assembly or packed with fiberglass and sealed at both ends with weather-resistant, non-hardening caulk. Where escutcheons are not required, the annular space shall be neatly sealed at the sleeve end. Pipes passing through ducts and plenums shall be sealed air tight. Annular spaces that pass through fire resistive or fire rated partitions, or ceilings shall be closed with 3M Fire Barrier Penetration Sealing System.
- F. Unused holes in floors made for duct or pipe penetrations shall be sealed neatly to match existing wall or floor.
- G. All sleeves shall be sized for full pipe size plus pipe insulation thickness through the entire length of the sleeve.
- 2.3 ESCUTCHEONS
- A. Escutcheons are annular shaped metal plates installed to cover annular spaces around pipes entering walls, floors, or other partitions. They are installed for decorative purposes in areas where these penetrations are visible. Escutcheons shall be chrome plated steel, fastened to remain secure and in position at all times.
- B. Escutcheons for water closets, plated supply pipes, and shower heads shall be chrome plated brass with setscrew.

C. Escutcheons are not to be installed on the bell of any soil or drain pipes, on any pipe larger than 4", on insulated pipe if exterior diameter of insulation is larger than 4", or on pipes which do not enter the wall or floor at right angles.

2.4 FLASHING

- A. Flashing shall be sheet lead, 4 lbs. per square foot, and shall extend out from pipe and edge of drain a minimum of 12".
- B. Roof drains, floor drains, area drains, and equipment room drains installed where membrane water-proofing is installed shall be flashed.
- C. Vent stacks and other pipes through roof shall be flashed. Flashing may be caulked into pipe bell if flush with finished roof, or on 3" and larger may employ 4 lb. boot flashing. Vents shall extend a minimum of 12" above finished roof elevation at penetration. Refer to roof pipe portals for piping through roof other than sanitary vents or overflow drains.

2.5 PIPES AND TUBES

- A. Sanitary Sewer (SS), Grease Waste (GW), and Vent Piping (V) Piping
1. Sanitary Sewer (SS): PVC, schedule 40, with PVC fittings and elastomeric gasket joints. Solvent weld with ASTM D2564 solvent cement.
 2. Grease Waste (GW): PVC, schedule 40, with PVC fittings and elastomeric gasket joints. Solvent weld with ASTM D2564 solvent cement.
 3. Vent Piping (V): PVC, schedule 40, with PVC fittings and elastomeric gasket joints. Solvent weld with ASTM D2564 solvent cement.
 4. WRAP ALL NON-METALIC PIPING IN HVAC PLENUM SPACES WITH 3M Fire Wrap 5A+.
- B. Domestic Water Piping, Cold water (CW), Hot water (HW) & Hot water return (HWR)
1. Underground: Type K Copper Tubing ASTM B42, Tempered O61 annealed without fittings.
 2. Above ground: Type L copper tubing, ASTM B88, drawn with wrought copper fittings and grade 95TA solder joints.
 3. Exposed fixtures: Chrome plated brass and copper tubing with threaded plated brass fittings.
- C. Compressed Air piping (CA): Steel, ASTM A53/A53M, Grade B, Schedule 40 black w/ malleable iron or forged steel fittings, screwed or welded.
- D. TPR Drain Piping: PVC, Schedule 40, with PVC fittings and elastomeric gasket joints. Solvent weld with ASTM D2564 solvent cement.
- E. Trap Primer piping (TP): Type K Copper Tubing ASTM B42, Tempered O61 annealed without fittings.

2.6 VALVES

- A. For drinking water service, provide valves and equipment complying with NSF 61.
- B. Gate Valves:
1. Up to 2 inches: Bronze body, bronze trim, non-rising stem, hand wheel, inside screw, double wedge disc, soldered or threaded.
 2. Over 2 inches: Iron body, bronze trim, rising stem, hand wheel, OS&Y, solid wedge, flanged or grooved ends.
- C. Ball Valves:
1. Up to 2 inches: Bronze or stainless steel one piece body, chrome plated brass ball, teflon seats and stuffing box ring, lever handle, solder or threaded ends.
 2. Over 2 inches: Cast steel flanged body, chrome plated steel ball, Teflon seat and stuffing box seals and lever handle.
- D. Relief Valves:
1. Bronze body, Teflon seat, stainless steel stem and springs, automatic, direct pressure actuated capacities ASME certified and labeled.
- E. Plug Valves:
1. Up to 2 inches: Bronze body, bronze tapered plug, non-lubricated, teflon packing, threaded ends.
 2. Over 2 inches: Cast iron body and plug, pressure lubricated, Teflon packing, flanged ends.
- F. Butterfly Valves:
1. Up To 2 inches: Bronze body, stainless steel disc, resilient replaceable seat, threaded ends, extended neck, 10-position lever handle.
 2. Over 2 inches: Iron body, chrome plated iron disc, resilient replaceable seat, wafer or lug ends, extended neck, 10 position lever handle.
- G. Swing Check Valves:
1. Up to 2 inches: Bronze body and swing disc, solder or threaded ends.
 2. Over 2 inches: Iron body, bronze trim, swing disc, renewable disc and seat, flanged ends.
- H. Spring Loaded Check Valves:
1. Iron body, bronze trim with threaded, wafer or flanged ends and stainless steel spring with renewable composition disc.
- I. Relief Valves:
1. Bronze body, Teflon seat, stainless steel stem and springs, automatic, direct pressure actuated capacities ASME certified and labeled.

2.7 METERS AND GAGES

- A. Thermometers:
1. Scale Range: Temperature ranges for services listed are as follows:
 - a. Domestic Hot Water: 30 to 240 deg F, with 2-degree scale divisions
 - b. Domestic Cold Water: 0 to 100 deg F, with 2-degree scale divisions
- B. Liquid-In-Glass Thermometers Description: ASTM E 1.
- a. Case: Die cast and aluminum finished in baked-epoxy enamel, glass front, spring secured, 9 inches (230 mm) long.
 - b. Adjustable Joint: Finish to match case, 180-degree adjustment in vertical plane, 360-degree adjustment in horizontal plane, with locking device.
 - c. Tube: Red or blue reading, organic-liquid filled with magnifying lens.
- Retain paragraph above or below. Tube type above is recommended.
- d. Tube: Red or blue reading, mercury filled with magnifying lens.
 - e. Scale: Satin-faced nonreflective aluminum with permanently etched markings.
 - f. Stem: Copper-plated steel, aluminum, or brass for separable socket, of length to suit installation.
2. Thermometer Wells: Fitting with protective well for installation in threaded pipe fitting to hold test thermometer.
- a. Material: Brass, for use in copper piping.
 - b. Material: Stainless steel, for use in steel piping.
 - c. Material: Steel, for use in steel piping.
 - d. Extension-Neck Length: Nominal thickness of 2 inches but not less than thickness of insulation. Omit extension neck for wells for piping not insulated.
 - e. Retain one of three subparagraphs below.
 - f. Insertion Length: To extend to one-third of diameter of pipe.
 - g. Cap: Threaded, with chain permanently fastened to socket.
 - h. Heat-Transfer Fluid: Oil or graphite.

C. Pressure Gages

1. Description: ASME B40.1, phosphor-bronze bourdon-tube type with bottom connection; dry type, unless liquid-filled-case type is indicated.
 2. Cases are also constructed of molded aluminum and phenolic plastic. Lenses are also made of clear acrylic plastic.
 3. Case: Drawn steel, brass, or aluminum with 4-1/2-inch diameter, glass lens.
 4. Connector: Brass, NPS 1/4.
 5. Scale: White-coated aluminum with permanently etched markings.
 6. Range: 0-100 PSI.
- D. Test Plugs
1. Description: Nickel-plated, brass-body test plug in NPS 1/2 fitting.
 2. Body: Length as required to extend beyond insulation.
 3. Pressure Rating: 500 psig minimum.
 4. Core Inserts: One or two self-sealing valves, suitable for inserting 1/8-inch OD probe from dial-type thermometer or pressure gage.
 5. Test-Plug Cap: Gasketed and threaded cap, with retention chain or strap.
 6. Test Kit: Pressure gage and adapter with probe, two bimetal dial thermometers, and carrying case.
- E. Calibrated Flow Balancing Valves
1. Furnished with calibrated nameplate and memory stop.
 2. Fitted with capped readout fittings.

2.8 PIPING SPECIALTIES

- A. Flanges, Unions, and Couplings:
1. Pipe Size 2 inches and Under: Malleable iron unions for threaded ferrous piping; bronze unions for copper pipe, soldered joints.
 2. Pipe Size Over 2 inches: Forged steel flanges for ferrous piping; bronze flanges for copper piping; preformed neoprene gaskets.
 3. Grooved and Shouldered Pipe End Couplings: Malleable iron housing, C-shape elastomer composition sealing gasket, steel bolts, nuts, and washers.
 4. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier. Dielectric unions shall be used for joining ferrous and non-ferrous metals to prevent galvanic corrosion.
- B. Strainers:
1. Size 2 inches and Under: Threaded brass or iron body for 175 psig working pressure, Y pattern with 1/32 inch stainless steel perforated screen.
 2. Size 2-1/2 inch to 4 inch: Flanged iron body for 175 psig working pressure, Y pattern with 3/64 inch stainless steel perforated screen.

C. Flexible Connectors:

1. Corrugated stainless steel hose with single layer of stainless steel exterior braiding, minimum 9 inches long with copper tube ends for maximum working pressure 300 psig.
- D. Water Hammer Arrestors:
1. Install on all fixture branches having quick-closing valves and at the tops of all risers to prevent water hammer. Each water hammer arrestor shall be sized and certified according to the Plumbing and Drainage Institute standard - WH201.

2.9 DRAINAGE FIXTURES

- A. Floor Drain (FD): Floor drain shall be epoxy coated cast iron drain with anchor flange, reversible clamping collar with primary and secondary weep holes, adjustable round nickel bronze strainer and no hub outlet.
1. Basis of design: Wats FD-100-A

2.10 CLEANOUTS (CO)

- A. Cleanouts shall be provided at the base of each stack, and at each change in direction greater than 45 degrees. Cleanouts shall be of the same nominal size as the connected pipe up to and including 4" and not less than 4" in larger pipe.
- B. The distance between cleanouts in horizontal soil and waste lines shall not be greater than 50 feet for pipes up to and including 3", 80 feet for lines 4" and larger.
- C. All cleanouts shall be made with a caulking cast ferrule having a cast brass cleanout screw plug, having a raised nut not less than 1" high, except that cleanouts underground under floor slabs shall be extended through the slabs, flush with the floor line, provided with countersunk caps.
- D. Basis of Design: J.R. Smith, according to the following table.
1. Exposed piping, cast iron: 4470
 2. Exterior or unfinished area floors, cast iron: 4031
 3. Finished ceramic or quarry tile floors: 4051
 4. Vinyl tile floors (recessed top for tile insert): 4151
 5. All walls: 4472
 6. Carpeted area floors (carpet cleanout markers): 4031-X

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify excavations are to required grade, dry, and not over-excavate.

3.2 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt, on inside and outside piping before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.3 INSTALLATION - INSERTS

- A. Install inserts for placement in concrete forms.
- B. Install inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
- C. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
- D. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
- E. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut inserted into and grouted flush with slab.

3.4 INSTALLATION - PIPING SYSTEMS

- A. Install dielectric connections wherever joining dissimilar metals.
- B. Label all piping with labels and directional flow arrows per 22 0001.
- C. Install unions downstream of valves and at equipment or apparatus connections.
- D. Route piping parallel to building structure and maintain gradient.
- E. Install piping to maintain headroom. Group piping to conserve space. Group piping whenever practical at common elevations.
- F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- G. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- H. Sleeve pipe passing through partitions, walls and floors.
- I. Install piping system allowing clearance for installation of insulation and access to valves and fittings.
- J. Install identification on piping systems including underground piping.
- K. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

3.5 INSTALLATION - VALVES

- A. Install valves with stems upright or horizontal, not inverted.
- B. Install ball or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- C. Install ball or butterfly valves for throttling, bypass, or manual flow control services.
- D. Provide lug end butterfly valves adjacent to equipment when functioning to isolate equipment.
- E. Install spring loaded check valves on discharge of pumps.
- F. Install plug valves for throttling service. Install non-lubricated plug valves only when shut-off or isolating valves are also installed.
- G. Install 3/4 inch drain ball valves at main shut-off valves, low points of piping, bases of vertical risers, and equipment drains. Pipe to nearest drain.

3.6 INSTALLATION - PIPING SPECIALTIES

- A. Install pressure gages with pulsation dampers. Provide ball valve to isolate each gage. Extend nipples and siphons to allow clearance from insulation.
- B. Install thermometers in piping systems in sockets in short couplings. Enlarge pipes smaller than 2-1/2 inches for installation of thermometer sockets. Allow clearance from insulation.
- C. Install gages and thermometers in locations where they are easily read from normal operating level. Install vertical to 45 degrees off vertical.
- D. Adjust gages and thermometers to final angle, clean windows and lenses, and calibrate to zero.
- E. Provide drain and hose connection with valve on strainer blow down connection.
- F. Test backflow preventers in accordance with ASSE.

3.7 INSTALLATION - PLUMBING SUPPLY PIPING

- A. Install water piping in accordance with ASME B31.9.
- B. Insulate all domestic hot water (and recirculating) pipes and domestic cold water pipes per specs.
- C. Establish elevations of buried piping outside the building to obtain not less than two (2) ft of cover.
- D. Provide support for utility meters in accordance with requirements of utility companies.
- E. Slope water piping and arrange to drain at low points.
- F. Install piping from relief valves, back-flow preventers and drains to nearest drain.
- G. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to lavatories, sinks, washing machine outlets, and other fixtures and equipment with quick acting valves.
- H. Provide water service complete with approved reduced pressure back-flow preventer and water meter with by-pass valves, pressure reducing valve, and sand strainer.
- I. Install flow controls in water circulating systems as indicated on Drawings.
- J. Disinfecting of Domestic Water Systems:
1. Prior to starting, verify system is complete, flushed and clean.
 2. Verify pH of water to be treated is between 7.4 and 7.8 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
 3. Inject disinfectant, free chlorine in liquid, powder and tablet or gas form, throughout system to obtain residual from 50 to 80 mg/L.
 4. Bleed water from outlets to obtain distribution and test for disinfectant residual at minimum 15 percent of outlets.
 5. Maintain disinfectant in system for 24 hours.
 6. When final disinfectant residual tests less than 25 mg/L, repeat treatment.
 7. Flush disinfectant from system until residual concentration is equal to incoming water or 1.0 mg/L.
 8. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

3.8 INSTALLATION - PLUMBING DRAINAGE PIPING

- A. Install bell and spigot pipe with bell end upstream.
- B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linsed oil. Install with clearance at cleanout for rodding of drainage system.

C. Encase exterior cleanouts in concrete flush with grade.

D. Install floor cleanouts at elevation to accommodate finished floor.

E. Establish elevations of buried piping outside building to provide not less than 2 ft of cover.

F. Install piping penetrating roofed areas to maintain integrity of roof assembly.

G. Establish invert elevations, slopes for drainage per plumbing plans notes. Maintain gradients.

H. Test drainage piping in accordance with local code requirements.

3.9 INSTALLATION - PIPE HANGERS AND SUPPORTS

- A. Support horizontal piping as scheduled.
- B. Install hangers with minimum 1/2 inch space between finished covering and adjacent work.
- C. Place hangers within 12 inches of each horizontal elbow.
- D. Use hangers with 1-1/2 inch minimum vertical adjustment.
- E. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers.
- F. Support vertical piping at every floor. Support vertical cast iron pipe at each floor at hub.
- G. Where piping is installed in parallel and at same elevation, provide multiple pipe or trapeze hangers.
- H. Hanger hangers for pipe movement without disengagement of supported pipe.
- I. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

3.10 SERVICE CONNECTIONS

- A. Install sanitary sewer services. Before commencing work check invert elevations required for sewer connections, confirm inverts and verify proper slope for drainage and proper cover to avoid freezing.

3.11 PIPE CLEANING

- A. Flush heating system hot water, and cooling system chilled water piping with clean water. Where temporary construction strainers are installed, remove and install permanent strainer. Remove and clean or replace other strainer screens.

END OF SECTION

SECTION 15401 - PLUMBING FIXTURES

PART 1 GENERAL

1.1 GENERAL

A. Section 15010 is applicable.

PART 2 PRODUCTS

2.1 BASIS OF DESIGN

- A. Fixture and accessory brands and model numbers shown below are intended to establish minimum acceptable quality. Models deemed by the engineer to be of inferior quality as compared to the Basis of Design will not be accepted. Equivalent fixtures and accessories by the manufacturers noted below are acceptable unless noted otherwise.
1. Fixtures: Toto, Kohler, Crane, American Standard
 2. Sinks: Just, Moen, Kohler, Advance Tabco, Elkay, Toto
 3. Faucets: Toto, Delta, Kohler, Zurn, Symmons, Moen
 4. Supplies: Brasscraft, McGuire, ProFlo, Franklin Brass
 5. Water Closet Seats: Kohler, Toto, American Standard, Proflo, Bemis, Bemke
 6. Drinking Fountains: Elkay, Kohler
 7. Fixture Carriers: J.R. Smith, Zurn, Josam
 8. Floor drains: Watts, J.R. Smith, Josam, Zurn
 9. Indirect drains: Watts, J.R. Smith, Josam, Zurn
 10. Cleanouts: Watts, J.R. Smith, Josam, Zurn, Wade
 11. Hose Bibbs: Woodford, Chicago, T&S Brass
 12. Wall Hydrants: Josam, Woodford, J.R. Smith

PART 3 PLUMBING FIXTURES:

3.1 FIXTURES ARE SCHEDULED ON THE PLANS.

PART 4 EXECUTION

4.1 INSTALLATION

- A. Verify adjacent construction is ready to receive rough-in work of this section. Review final millwork shop drawings. Confirm location and size of fixtures and openings before rough in and installation. If discrepancies exist between millwork sizes and fixtures specified, contact Engineer for direction.
- B. All fixtures shall be installed straight, level, and plumb. When three or more of the same fixture are installed adjacent to each other, use equal spacing between fixtures.
- C. All fixtures and equipment shall be installed with all accessories required for a complete and fully functional installation, regardless of whether all equipment and accessories are listed on the plans or in the specifications.
- D. All vitreous china fixtures shall be bright white in color unless otherwise noted. Faucets shall be polished chrome unless otherwise noted. If these colors are unavailable, contact Engineer for approved alternatives.
- E. Install each fixture with chrome plated rig or flexible supplies with screwdriver stops, reducers, and escutcheons. All water and drain piping exposed to view shall be chrome plated. Piping underneath counters with closing doors need not be chrome plated.
- F. All handicapped fixtures shall be installed according to ADA and local code requirements. All handicapped drains shall be covered.
- G. All floors where floor drains are installed shall slope to drain, minimum 2%. This contractor shall coordinate with the applicable trades to ensure that the proper slope is achieved.
- H. Prime all floor drains. Where accessible, prime drain by water-saver trap primer from adjacent lavatory. Otherwise prime floor drain using water-valve trap primer from domestic water supply. In lieu of water-based trap primers, mechanical trap guards may be used where Owner and AHJ allow.
- I. All pressure operated fixtures and equipment shall be furnished with water stops. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.
- J. All hand washing fixtures shall have a delivered water temperature limit of 110 degrees F unless specified otherwise. This may be accomplished with a tempering valve at each device to maintain delivered temperature below 110 F. See plans for location of tempering valves as applicable.

END OF SECTION

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PANELBOARD SCHEDULE

PANEL MP

120/208 VOLTS, 3 PHASE, 4 WIRE, 400 AMP MAIN LUGS ONLY
ISOLATED NEUTRAL BUS, GROUND BUS
SURFACE MOUNT, HINGED FRONT TRIM, NEMA 1 ENCLOSURE

NOD STYLE PANEL
54 CKT PANEL
24,000 A (SYM) AVAILABLE FAULT

CKT NO.	CIRCUIT DESCRIPTION	BRKR A/POLE	CKT VA				VOLT-AMPERES/PHASE			CKT VA				BRKR A/POLE	CIRCUIT DESCRIPTION	CKT NO.
			LGT	REC	MISC	HVAC	PH A	PH B	PH C	LGT	REC	MISC	HVAC			
1	LTS - EXTERIOR NEW ADDITION	20/1	94	0	0	0	994			0	900	0	0	20/1	REC - OFFICE	2
3	LTS - INTERIOR NEW ADDITION	20/1	1150	0	0	0		1330		0	180	0	0	20/1	REC - RESTROOM	4
5	SPARE	20/1	0	0	0	0			720	0	720	0	0	20/1	REC - STORAGE	6
7	SPARE	20/1	0	0	0	0	540			0	540	0	0	20/1	REC - TRUCK BAY REAR	8
9	OAF-1	20/1	0	0	0	92		812		0	720	0	0	20/1	REC - TRUCK BAY FRONT	10
11	INS-1	25/1	0	0	0	2400			2580	0	180	0	0	20/1	REC - CORD REEL	12
13	WEF-1	35/1	0	0	0	2400	2580			0	180	0	0	20/1	REC - CORD REEL	14
15			0	0	0	3000		3180		0	180	0	0	20/1	REC - CORD REEL	16
17	HP-1	30/2	0	0	0	3000			3800	0	0	800	0	20/1	REC - DOOR OPENER	18
19			0	0	0	2592	3392			0	0	800	0	20/1	REC - DOOR OPENER	20
21	EUH-6	45/3	0	0	0	2592		3392		0	0	800	0	20/1	REC - DOOR OPENER	22
23			0	0	0	2592			2592	0	0	0	0	---	SPACE	24
25			0	0	0	2592	2592			0	0	0	0	---	SPACE	26
27	EUH-5	45/3	0	0	0	2592		2592		0	0	0	0	---	SPACE	28
29			0	0	0	2592			2592	0	0	0	0	---	SPACE	30
31			0	0	0	2592	2592			0	0	0	0	---	SPACE	32
33	EUH-4	45/3	0	0	0	2592		2592		0	0	0	0	---	SPACE	34
35			0	0	0	2592			2592	0	0	0	0	---	SPACE	36
37			0	0	0	2592	2592			0	0	0	0	---	SPACE	38
39	EUH-3	45/3	0	0	0	2592		2592		0	0	0	0	---	SPACE	40
41			0	0	0	2592			2592	0	0	0	0	---	SPACE	42
43			0	0	0	2592	2592			0	0	0	0	---	SPACE	44
45	EUH-2	45/3	0	0	0	2592		2592		0	0	0	0	---	SPACE	46
47			0	0	0	2592			2592	0	0	0	0	---	SPACE	48
49			0	0	0	2592	2592			0	0	0	0	---		50
51	EUH-1	45/3	0	0	0	2592		2592		0	0	0	0	30/3	TVSS	52
53			0	0	0	2592			2592	0	0	0	0	---		54
N/A	N/A	N/A	0	0	0	0	13430			1600	7080	750	4000	200/2	SUB-FED BREAKER FOR EXISTING PANEL "A"	N/A
N/A	N/A	N/A	0	0	0	0		13430		1600	7080	750	4000			N/A

LOAD SUMMARY:		CONNECTED:		DEMAND:		DEMAND TOTAL:		VOLTAGE		TOTAL	
LIGHTING:	1244	X 125%	=	1555.0	6404.0	/	208	=	178.0	X 125% =	222.48
RECEPTACLES:	3600	(FIRST 10K + 50% OF REMAINING)	=	3600			FEEDER SIZE:				4 #350 KOMIL, 1 #4G, IN 3" C.
MISCELLANEOUS:	2400	X 100%	=	2400			FEEDER BREAKER:				300/3
HVAC:	57548	NOTE 1	=	56492			NOTE 1				125% OF LARGEST MOTOR AND 100% OR REMAN LOAD

GENERAL PANELBOARD SCHEDULE SPECIAL NOTE:
PERMANENTLY LABEL EACH SWITCHBOARD MAIN BREAKER AS "MAIN SERVICE DISCONNECT". FIELD MARK ELECTRICAL SERVICE EQUIPMENT INCLUDING SWITCHBOARDS AND PANELBOARDS WITH AVAILABLE FAULT CURRENT DATA AS REQUIRED IN NEC 110.24 AND ARC-FLASH WARNING LABELS PER NEC 110.16.



212 NORTH ADAMS ST
QUINCY, FLORIDA 32351
FLA LIC. NO. AA26000893
850-875-4348

BUILDING ADDITION FOR PUBLIC WORKS
GRETTNA PUBLIC SAFETY FACILITY
CITY OF GRETTNA, FLORIDA
 BEECH AVENUE & 1ST STREET GRETTNA, FLORIDA

DATE: 9-2-25
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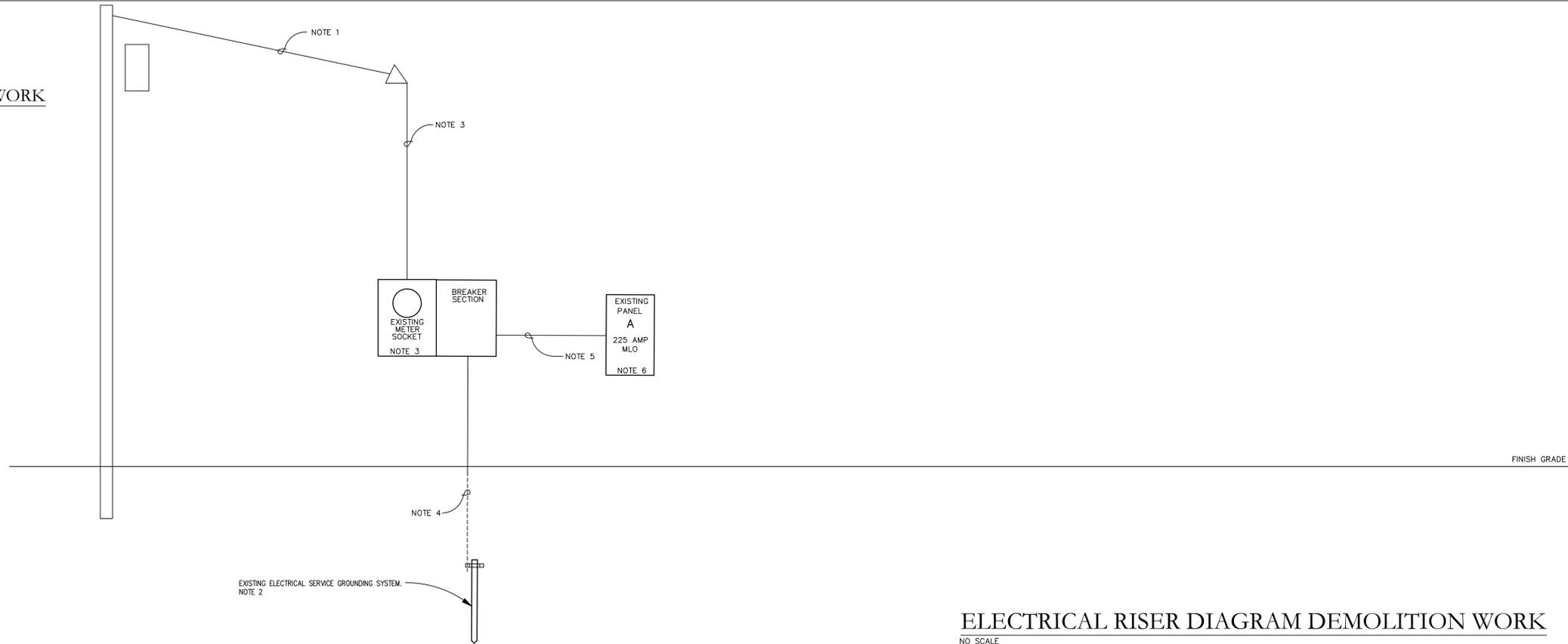
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ELECTRICAL RISER DIAGRAM DEMOLITION WORK
NOTES:

1. EXISTING 120/240 VOLT 1 PHASE OVERHEAD SERVICE TO BE REMOVED.
2. EXISTING MAST AND WEATHERHEAD TO BE REMOVED.
3. EXISTING METER AND BREAKER SECTION TO BE REMOVED.
4. EXISTING ELECTRICAL SERVICE GROUNDING SYSTEM TO BE REMOVED.
5. EXISTING FEEDER TO BE REMOVED.
6. EXISTING PANEL TO REMAIN. SEE NEW WORK FOR MORE INFORMATION FOR RECONNECTION.

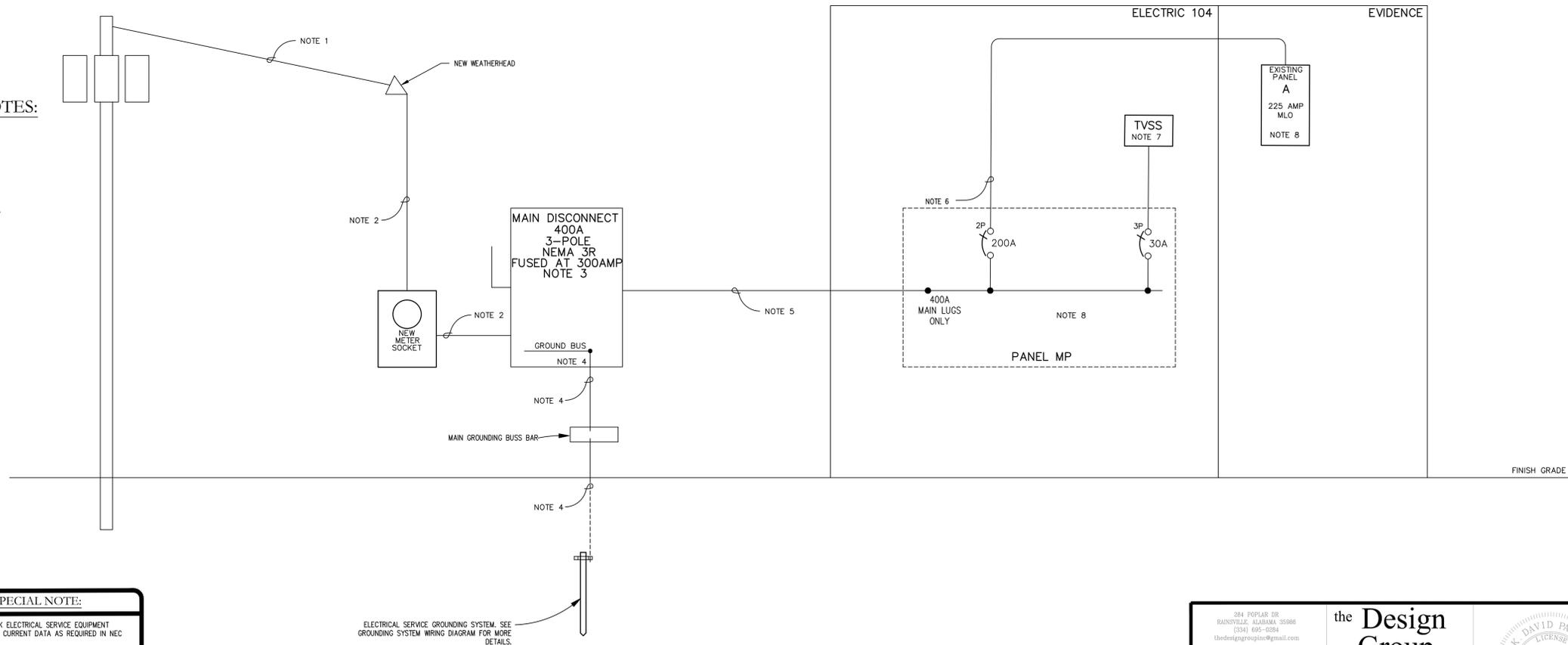


ELECTRICAL RISER DIAGRAM DEMOLITION WORK

NO SCALE

ELECTRICAL RISER DIAGRAM NEW WORK NOTES:

1. NEW OVERHEAD SERVICE DROP FROM EXISTING SECONDARY POLE BY POWER COMPANY. COORDINATE ALL WORK WITH POWER COMPANY AND INSTALL SERVICE IN ACCORDANCE WITH THEIR REQUIREMENTS. NEW SERVICE SHALL BE UPGRADED TO 120/208 VOLT 3 PHASE.
2. 4 #350 KCMIL IN 3" RMC.
3. PERMANENTLY LABEL MAIN DISCONNECT AS "MAIN SERVICE DISCONNECT".
4. 1 #2 BARE CU SERVICE GROUNDING ELECTRODE CONDUCTOR IN 3/4" PVC TO ELECTRICAL SERVICE GROUNDING SYSTEM. SEE ELECTRICAL SERVICE GROUNDING SYSTEM DETAIL FOR MORE DETAILS. GROUND PER NEC ARTICLE 250.
5. 4 #350 KCMIL 1 #4G IN 3" C.
6. 3 #1/0.1 #6G, -2" C.
7. PROVIDE #10, 1#10(C) IN 1" C. TO TVSS. TVSS SHALL BE MCG SURGE PROTECTION #160MXT-120Y, INSTALL IN STRICT ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.
8. FIELD MARK ELECTRICAL SWITCHBOARDS AND PANELBOARDS TO INDICATE THE DEVICE OR EQUIPMENT WHERE THE POWER SUPPLY ORIGINATES FROM.



ELECTRICAL RISER DIAGRAM NEW WORK

NO SCALE

GENERAL PANELBOARD SCHEDULE SPECIAL NOTE:

PERMANENTLY LABEL PANEL "MAIN SERVICE DISCONNECT". FIELD MARK ELECTRICAL SERVICE EQUIPMENT INCLUDING SWITCHBOARDS AND PANELBOARDS WITH AVAILABLE FAULT CURRENT DATA AS REQUIRED IN NEC 110.24 AND ARC-FLASH WARNING LABELS PER NEC 110.16.

ELECTRICAL SERVICE GROUNDING SYSTEM. SEE GROUNDING SYSTEM WIRING DIAGRAM FOR MORE DETAILS.

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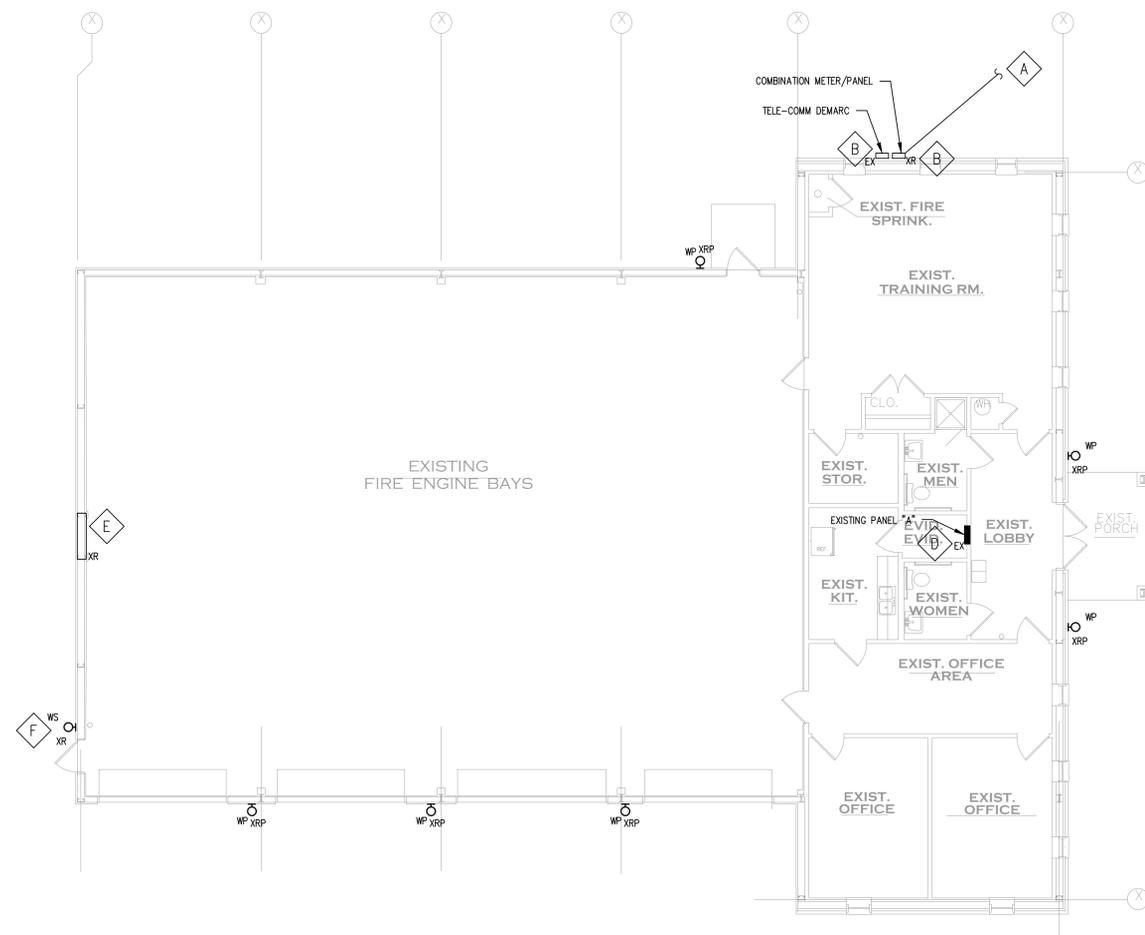


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GENERAL RENOVATION SPECIAL NOTE:

"EX" INDICATES EXISTING TO REMAIN. "XR" INDICATES EXISTING TO BE REMOVED. "XRP" INDICATES EXISTING TO BE RELOCATED. "XRL" INDICATES EXISTING THAT HAS BEEN RELOCATED. "XRP" EXISTING TO BE REPLACED. SEE NEW WORK FOR NEW FIXTURES.
FIXTURE/DEVICE SHOWN WHERE DESIGNATED DURING FIELD INVESTIGATION. ALL MAY NOT BE SHOWN DO TO OWNER WAS IN BUILDING AND DEVICES MAY HAVE BEEN NOT VISIBLE. CONTRACTOR SHALL DISCONNECT AND REMOVE EVERYTHING ELECTRICAL IN BUILDING EVEN IF NOT SHOWN, UNLESS NOTED AS "EX".



ELECTRICAL-DEMOLITION FLOOR PLAN



ELECTRICAL DEMOLITION KEY NOTES:

- A** EXISTING OVERHEAD SERVICE SHALL BE DISCONNECT AND REMOVED.
- B** EXISTING METER/PANEL SHALL BE DISCONNECTED AND REMOVED.
- C** EXISTING TELE-COMM DEMARC AND SERVICE SHALL REMAIN.
- D** CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING FEEDER FROM METER/PANEL. CONDUIT CAN BE ABANDONED IN PLACE. EXISTING PANEL SHALL REMAIN. SEE RISER DIAGRAM FOR MORE INFORMATION.
- E** CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING WALL EXHAUSTER. CIRCUIT SHALL REMOVED AND EXISTING BREAKER SHALL BE MARKED AS SPARE. CONTRACTOR SHALL REMOVE EXISTING CONTROLS.
- F** CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING LIGHT. CIRCUIT AND CONDUIT SHALL BE REMOVED BACK TO NEXT J-BOX/LIGHT.

GENERAL LIGHTING DEMOLITION FLOOR PLAN NOTES

- IT IS THE INTENT OF THE DEMOLITION WORK DEFINED IN THESE OR ARCHITECTURAL DRAWINGS TO PROPERLY PREPARE THE FACILITY FOR THE NEW WORK WHICH IS TO FOLLOW. EFFORT HAS BEEN MADE TO IDENTIFY THE WORK REQUIRED TO ACCOMPLISH THIS TASK. HOWEVER, NOT ALL DEMOLITION WORK MAY BE CLEARLY IDENTIFIED AS TO THE EXACT EXTENT OR NATURE. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FULFILL THE INTENT OF THE DEMOLITION WORK, WHETHER SPECIFICALLY SHOWN ON THE DRAWINGS OR NOT.
- WHERE WIRING AND CONDUIT ARE BEING REMOVED, BUT PARTS OF THE CIRCUIT ARE TO REMAIN INTACT, THE CONDUIT AND WIRING SHALL BE REMOVED BACK TO THE POINT OF CONNECTION INTO THE EXISTING FIXTURE OR BOX. COMPONENT OR CIRCUIT MUST BE MADE FUNCTIONAL AT THAT POINT.
- ALL FIXTURES, WIRING, CONTROLS, ETC REMOVED SHALL BE PROPERLY DISPOSED IN COMPLIANCE WITH EPA GUIDELINES, LOCAL LANDFILL REQUIREMENTS & OTHER LOCAL ORDINANCES; CONTRACTOR SHALL VERIFY EACH REQUIREMENT PRIOR TO EFFORT TO ASSURE ALL DOCUMENTATION HAS BEEN MAINTAINED FOR SUCH EVENTS.
- SOME AREAS RECEIVING DEMOLITION WORKS MAY NOT NECESSARILY RECEIVE NEW WORK EFFORT OR SUFFICIENT ACTION TO REFURBISH EXISTING SURROUNDINGS; IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO MAKE REQUIRED MODIFICATIONS, ADJUSTMENTS, PATCHING, REPAIRS, PAINTING & FINISHES TO MATCH EXISTING SURROUNDINGS AS DETERMINED BY OWNER-ARCHITECT; VERIFY ACTUAL ITEMS PRIOR TO DEMOLITION OR REPAIRS.
- SINCE OWNER WILL NOT REMAIN IN FACILITY DURING SUCH WORK PROPER MEASURES TAKEN TO ASSURE PROTECTION FROM SUCH ACTION WILL NOT BE NECESSARY; THIS EFFORT MEANS EXACT SCHEDULING WITH OWNER, ARCHITECT & OTHER RELATED SUBS IS NOT REQUIRED TO COMPLETE TASK; SEE ARCHITECTURAL DRAWING & SPECS FOR ADDITIONAL CONDITIONS.
- ALL BUILDING, MECHANICAL, PLUMBING, ELECTRICAL, OR FIRE PROTECTION RENOVATIONS IN FACILITIES CONSTRUCTED PRIOR TO JANUARY 01, 1985 SHALL BE TESTED BY STATE CERTIFIED ASBESTOS INSPECTOR & ABATEMENT AGENT PRIOR TO DEMOLITION & NEW WORK EFFORT. IF DURING RENOVATION OR DEMOLITION PROCESS CONTRACTORS, SUBCONTRACTORS OR OTHERS DISCOVER POSSIBLE MATERIALS THAT APPEAR OR MAYBE HAZARDOUS THEN OWNERS, ARCHITECT, ENGINEERS AND/OR THEIR REPRESENTATIVE AGENTS SHALL BE NOTIFIED IMMEDIATELY; ANY WORK ASSOCIATED WITH POSSIBLE CONCERN SHALL STOP UNTIL RESOLUTION OR REMEDIATION MAYBE IMPLEMENTED IN COMPLIANCE EPA GUIDELINES. THIS SAME OCCURRENCE SHALL APPLY TO LEAD OR OTHER SIMILAR PRODUCT.
- PROPERLY SEAL ALL PENETRATIONS THROUGH WALLS AND THE ROOF TO CODE AFTER ALL ELECTRICAL DEMOLITION. CONTRACTOR SHALL RESTORE PENETRATIONS TO REQUIRED FIRE RATING .
- SEVERAL ITEMS REFLECTED AS EXISTING HAVE BEEN EITHER FIELD VERIFIED OR OBTAINED FROM OWNER'S AGENTS OR EARLIER "AS-BUILT" DOCUMENTS PROVIDED BY OTHERS. THIS INFORMATION OR REFERENCE SHOULD IN NO WAY CONSTITUTE ACTUAL CONDITIONS & MUST BE VERIFIED BY BIDDING OR INSTALLING SUBS PRIOR TO EFFORT. THIS ACTION APPLIES TO ALL MATERIALS, COMPONENTS, PIPING, AIR DISTRIBUTION SYSTEMS, ETC.

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PROF. ENGINEER
FLORIDA
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LUMINAIRE SCHEDULE											
MARK	DESCRIPTION	BASIS OF DESIGN PRODUCT(S)		VOLTAGE	LAMP DATA			MOUNTING LOCATION	MOUNTING TYPE	MOUNTING HEIGHT	REMARKS
		MANUFACTURER	CATALOG NUMBER		QTY PER LUMINAIRE	WATTAGE	TYPE				
LHB	LED, LINEAR HIGH BAY STRIP, 12'x4'	LITHONIA	MSL 10000LM L/LV MVOLT G210 35K 80CRI WH	120	1	86	LED	CEILING	SURFACE	13'	PROVIDE AIRCRAFT CABLE AS REQUIRED.
FS	LED, SURFACE WRAPAROUND 1'x4'	LITHONIA	CLX L48 3000LM SEF RDL MVOLT G210 35K 80CRI WH	120	1	19	LED	CEILING	SURFACE		
FS2	LED, SURFACE WRAPAROUND 1'x4'	LITHONIA	CLX L48 5000LM SEF RDL MVOLT G210 35K 80CRI WH	120	1	32	LED	CEILING	SURFACE		
WP	LED, DIE CAST ALUMINUM, EXTERIOR WALL PACK, POLY CARBONATE LENS, INTEGRAL PHOTO CELL	LITHONIA	WDE2 LED P2 40K 80CRI VF MVOLT PE DDBXD	120	1	15	LED	WALL	SURFACE		CONTRACTOR SHALL MATCH MOUNTING HEIGHT OF EXISTING FIXTURES ON SAME SIDE OF EXISTING BUILDING
WP2	LED, DIE CAST ALUMINUM, EXTERIOR WALL PACK, POLY CARBONATE LENS, INTEGRAL PHOTO CELL	LITHONIA	WDE2 LED P2 40K 80CRI VW MVOLT PE DDBXD	120	1	15	LED	WALL	SURFACE		CONTRACTOR SHALL MATCH MOUNTING HEIGHT OF EXISTING FIXTURES ON SAME SIDE OF EXISTING BUILDING
	EMERGENCY EGRESS LIGHT, THERMOPLASTIC HOUSING, SELF DIAGNOSTICS.	LITHONIA	ELM2L UVOLT SDRT	120	FURNISHED WITH FIXTURE			UNIVERSAL	SURFACE		
	LED EXIT SIGN, THERMOPLASTIC HOUSING, RED LETTERS, DOUBLE FACED, SELF DIAGNOSTICS.	LITHONIA	LGM S W 3 R 120/277 ELN SD	120	FURNISHED WITH FIXTURE			UNIVERSAL	SURFACE		
	EXTERIOR EMERGENCY EGRESS LIGHT, THERMOPLASTIC HOUSING, SELF DIAGNOSTICS.	LITHONIA	AFB OEL DDBTDX UVOLT N WT	120	FURNISHED WITH FIXTURE			WALL	SURFACE	6" ABOVE CENTER LINE OF DOOR	

GENERAL LIGHTING FLOOR PLAN NOTES:

1. PROVIDE AN UNSWITCHED CONDUCTOR FOR EMERGENCY FIXTURES AND EXIT SIGNS SERVING THE SAME AREA.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING FIXTURE AND CONNECT NEW FIXTURE TO EXISTING CIRCUIT.



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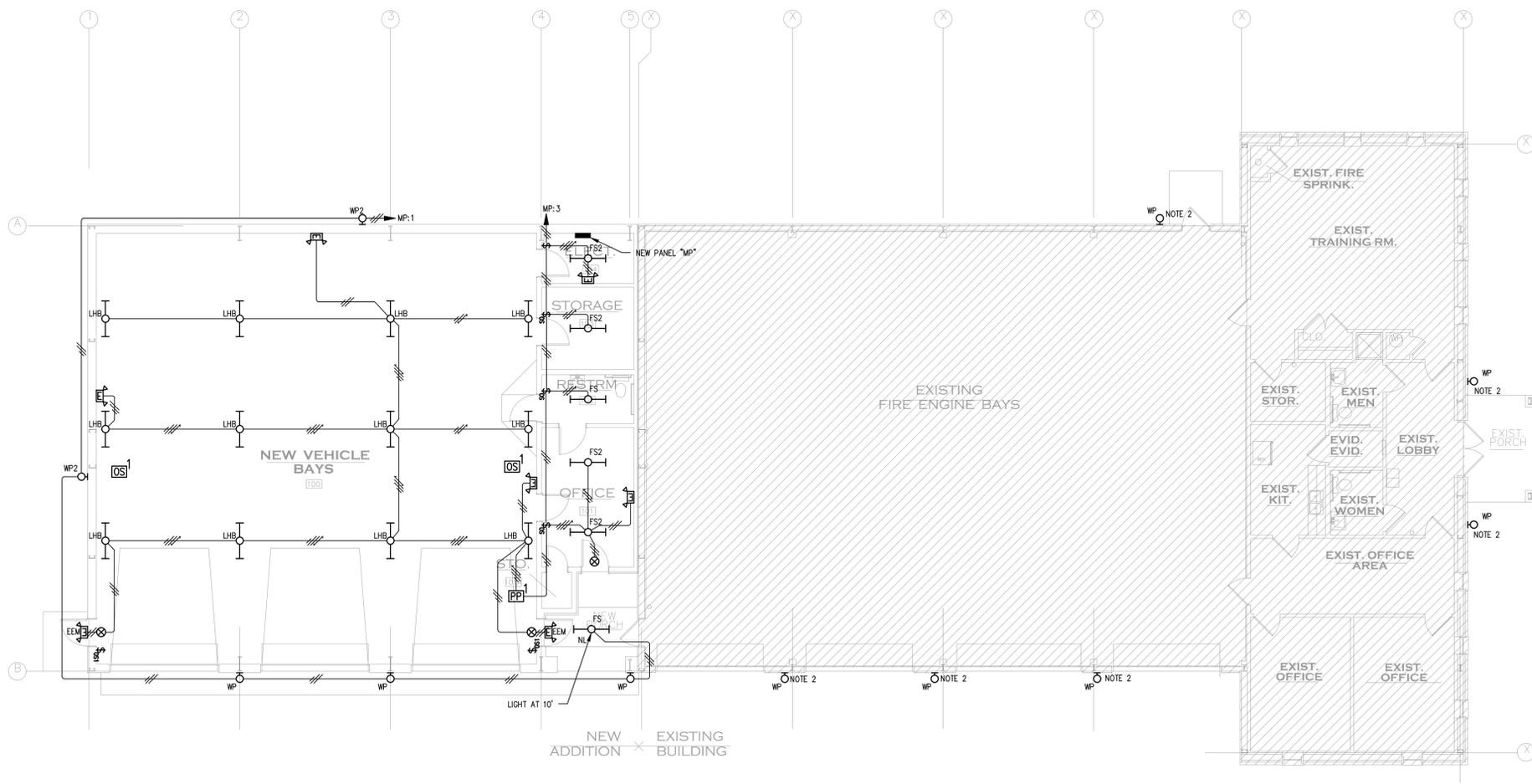
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ELECTRICAL - LIGHTING FLOOR PLAN LEGEND

- LOW VOLTAGE CABLING PER MANUFACTURERS RECOMMENDATIONS
- LINE VOLTAGE WIRING, SEE PLAN VIEWS FOR EXACT WIRING.
- LINE VOLTAGE HOMERUN "RP-A-2" INDICATES HOMERUN TO PANEL "RP-A" CIRCUIT "2".
- RELAY POWER PACK.
"1" DENOTES NIUGHT # NPP 16 D
"2" DENOTES NIUGHT # NPP 16
"3" DENOTES NIUGHT # NPP 16 D SW2
- WALL MOUNTED OCCUPANCY SENSOR.
"1" DENOTES NIUGHT # NW PDT 16 KIT
- CEILING MOUNTED OCCUPANCY SENSOR.
"2" DENOTES SENSOR SWITCH # CM PDT 9
- WALL MOUNTED SWITCH.
"OS" DENOTES NIUGHT # WSX PDT SA WHITE
"Z2" DENOTES 2 BUTTON ANALOG STATION LEVTON # 00LV-02W
"OS1" DENOTES NIUGHT # NPODM WHITE
"OS2" DENOTES NIUGHT # NPODM DX WHITE
"OS4" DENOTES NIUGHT # NPODM 4P DX WHITE
- WALL MOUNTED DIMMING SWITCH.
"D" DENOTES LEVTON # IP06-10Z, "G" DENOTES SWITCH "G".
- CONTACT CLOSURE INPUT, NIUGHT # NIO 15 KO
- RECEPTACLE RELAY POWER PACK, NIUGHT # NPP20PL
- EXTERIOR PHOTOCELL LEVTON # PCOUT-000
- 24 CIRCUIT LIGHTING CONTACTOR LEVTON # R24BD-L16

ELECTRICAL-LIGHTING FLOOR PLAN



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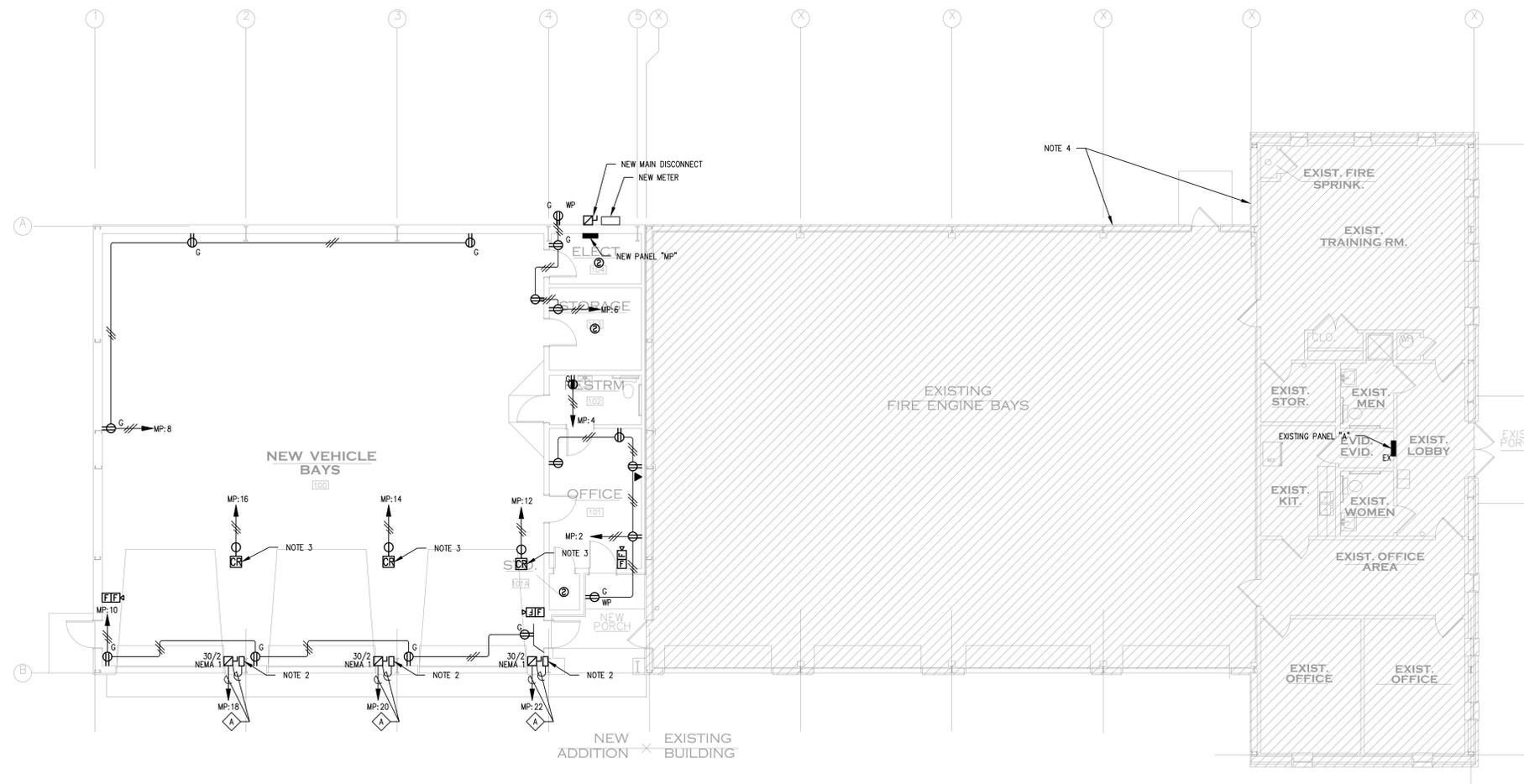
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GENERAL POWER FLOOR PLAN NOTES:

1. CONTRACTOR SHALL PROVIDE 3/4" BACK TO EXISTING TBB.
2. AUTOMATIC DOOR OPENER CONTROL PANEL. CONTRACTOR SHALL VERIFY EXACT REQUIREMENTS PRIOR TO ROUGH-IN. OWNER DID NOT HAVE INFORMATION OF EXACT DOOR OPENER DURING DESIGN.
3. CORD REEL MOUNTED IN CEILING FOR FIRE TRUCKS.(TYPICAL).
4. CONTRACTOR SHALL VERIFY EXISTING TRUCK BAY AND OFFICE BUILDING HAVE ALL REQUIRED FIRE ALARM DEVICE AS REQUIRED. IF ANY DEFICIENCIES ARE FOUND FIRE ALARM CONTRACTOR SHALL MAKE REQUIRED UPGRADE/CHANGES AS REQUIRED FOR A COMPLETE OPERATING SYSTEM. CONTRACTOR SHALL VERIFY ALL REQUIRED CHANGES AND INCLUDE ALL COST FOR A COMPLETE SYSTEM IN THEIR BID. NO CHANGE ORDERS WILL BE ISSUED BASED ON FIRE ALARM DRAWINGS.

GENERAL FIRE ALARM SYSTEM NOTES:

1. INSTALL COMMON ARE SMOKE DETECTORS AS REQUIRED BY CODE.
2. SIGNAL LINE CIRCUIT SHALL SERVE ONLY ONE FLOOR.
3. NOTIFICATION CIRCUIT SHALL SERVE ONLY ONE FLOOR.
4. INSTALL DUCT DETECTORS WITH SHUTDOWN AS REQUIRED BY CODE.
5. FIRE ALARM CONTRACTOR SHALL VERIFY ALL REQUIREMENTS WITH FIRE/SMOKE DAMPERS REQUIRED BY MECHANICAL SYSTEMS.
6. FIRE ALARM SYSTEM MUST COMPLY WITH ADA.
7. FIRE ALARM SYSTEM MUST COMPLY WITH NFPA72, 101, AND 90.
8. DESIGN IS MINIMALISTS. IT IS THE FIRE ALARM CONTRACTORS RESPONSIBILITY TO FULLY DESIGN FOR LOCAL CODES AND REQUIREMENTS. NO CHANGE ORDERS WILL BE ISSUED BASED ON FIRE ALARM DRAWINGS.



ELECTRICAL POWER AND AUXILIARY FLOOR PLAN CONDUIT AND CONDUCTOR LEGEND

◊ 2 #10, 1 #10G, 3/4"

ELECTRICAL-POWER AND AUXILIARY FLOOR PLAN



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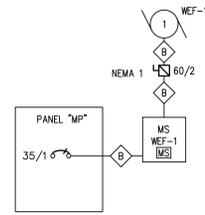
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MECHANICAL SYSTEM - POWER FLOOR PLAN CONDUIT AND CONDUCTOR LEGEND

- ⬠ 3 #8, 1 #10G, 3/4" C
- ⬠ 2 #8, 1 #10G, 3/4" C
- ⬠ 2 #10, 1 #10G, 3/4" C
- ⬠ 2 #12, 1 #12G, 3/4" C

WALL EXHAUST FAN RISER DIAGRAM



EXHAUST FAN RISER DIAGRAM LEGEND

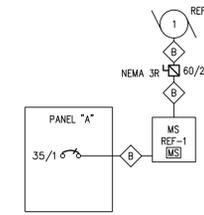
MS MOTOR STARTER, FWR, 1 HP, 120 VOLT, ELECTRONIC ADJUSTABLE OVERLOADS, ON-OFF SWITCH, CPT, NEMA 1 ENCLOSURE

- ⊙ WEF-1 WALL MOUNTED EXHAUST FAN, 1 HP
- ⊙ REF-1 ROOF MOUNTED EXHAUST FAN, 1 HP

WALL EXHAUST FAN RISER DIAGRAM NOTES

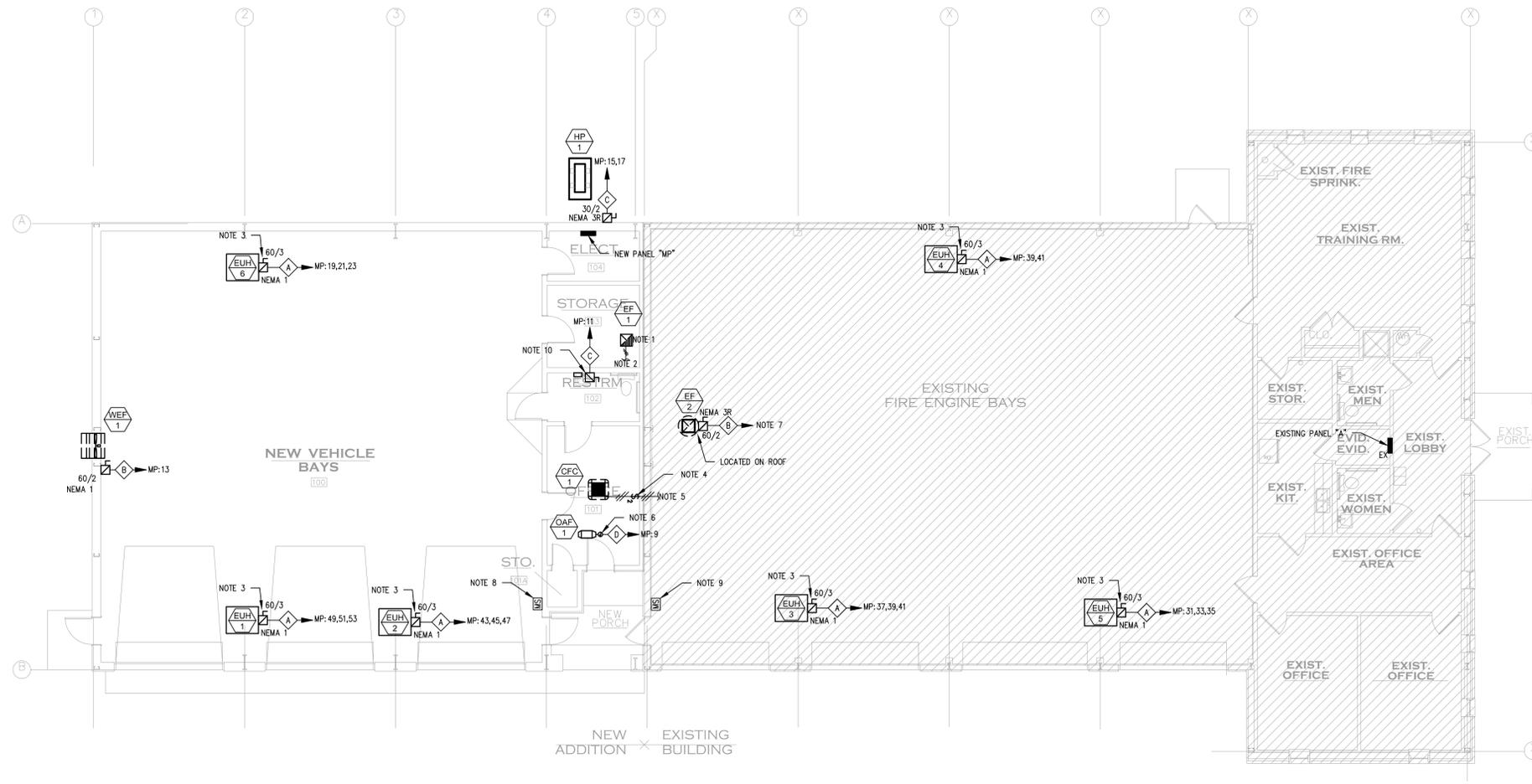
- 1. MOTOR CONTROL PANELS PROVIDED BY MECHANICAL CONTRACTOR. TYPICAL FOR ALL WEF'S.

WALL EXHAUST FAN RISER DIAGRAM



GENERAL MECHANICAL SYSTEMS POWER FLOOR PLAN NOTES:

1. SEE FAN SCHEDULE ON MECHANICAL SHEETS FOR CONTROL REQUIREMENTS.
2. CONNECT TO ROOM LIGHT CIRCUITS.
3. FOR ELECTRICAL HEATERS MOUNTED AT CEILING. TYPICAL OF 6. VERIFY ALL REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN.
4. LOCATED 6" BELOW CEILING.
5. OFC POWERED BY THE ASSOCIATED OUTDOOR UNIT.
6. JUNCTION BOX INTEGRAL WITH OAF UNIT. LOCATED ABOVE CEILING.
7. CONTRACTOR SHALL INSTALL NEW 35/1 BREAKER IN A:23.
8. WALL EXHAUST FAN MOTOR STARTER. VERIFY LOCATION WITH OWNER PRIOR TO ROUGH-IN.
9. ROOF EXHAUST FAN MOTOR STARTER. VERIFY LOCATION WITH OWNER PRIOR TO ROUGH-IN.
10. FOR INS-1 MOUNTED UNDER SINK NEXT TO INS-1. 30/2 NFDS, NEMA 1



MECHANICAL SYSTEMS-POWER FLOOR PLAN



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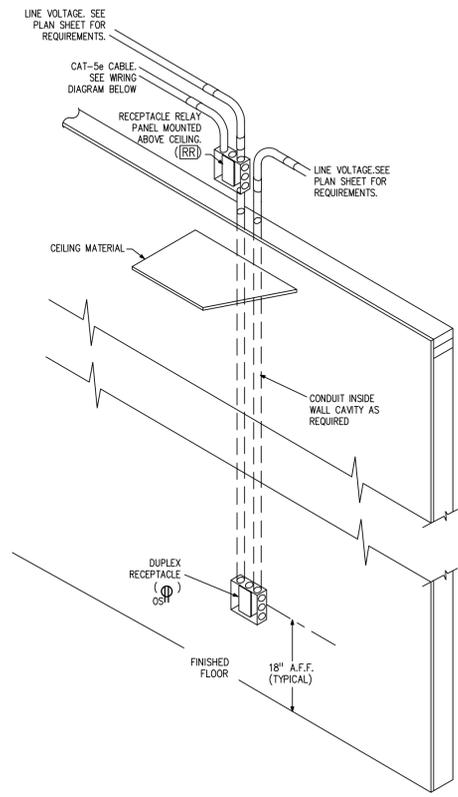
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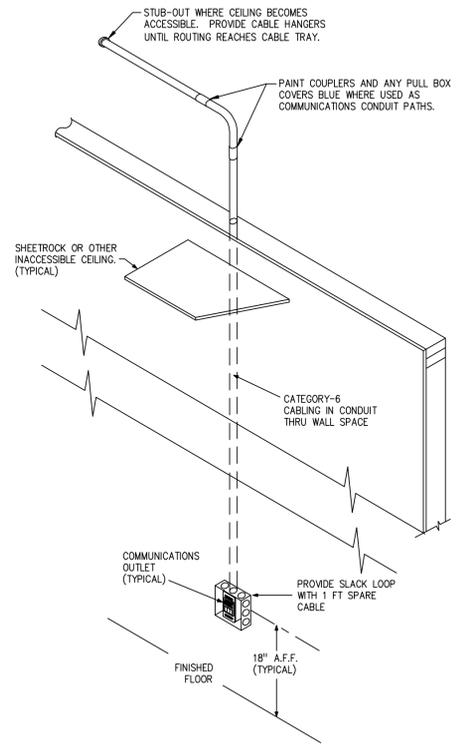
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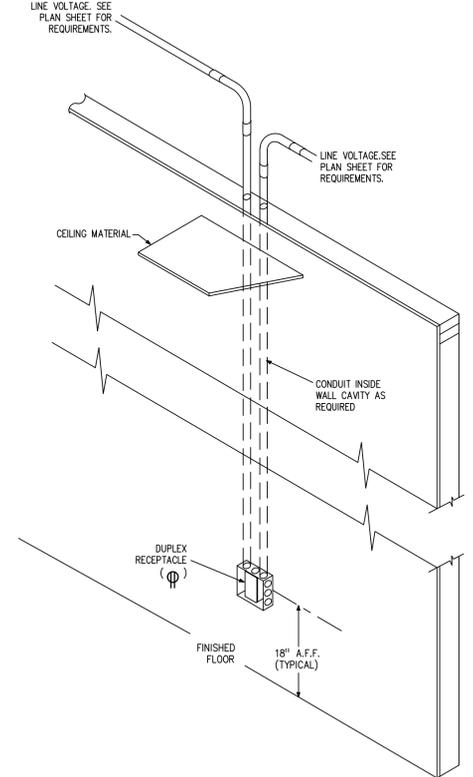
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PLUG RELAY PACK WIRING DETAIL
SCALE: NOT TO SCALE



COMMUNICATION OUTLET INSTALLATION DETAIL AT INACCESSIBLE CEILING LOCATIONS
SCALE: NOT TO SCALE

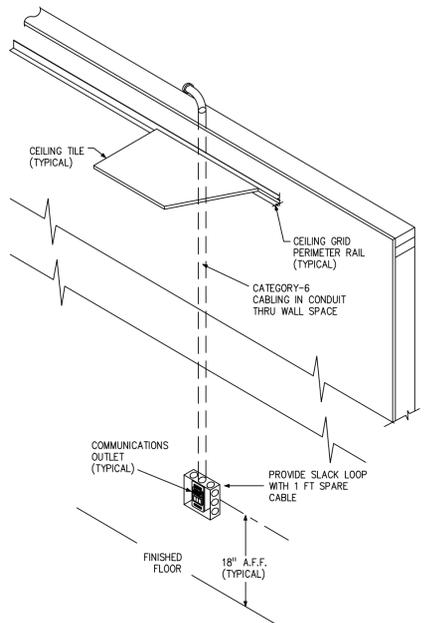


RECEPTACLE INSTALLATION DETAIL
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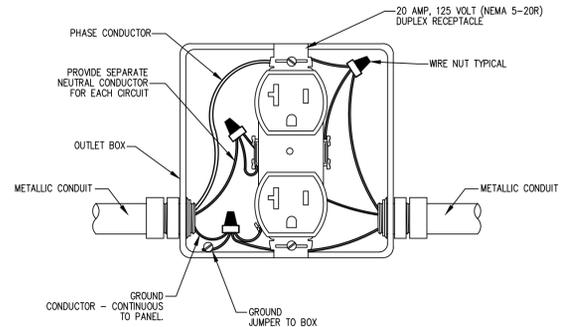
TYPICAL OCCUPANCY AND DAYLIGHT HARVESTING WIRING DIAGRAM LEGEND	
	LOW VOLTAGE CABLING PER MANUFACTURERS RECOMMENDATIONS
	LINE VOLTAGE WIRING, SEE PLAN VIEWS FOR EXACT WIRING.
	LINE VOLTAGE HOMERUN FROM PANEL, SEE PLAN VIEWS FOR EXACT WIRING.
	LINE VOLTAGE CONDUCTORS, SEE PLAN VIEWS FOR EXACT WIRING.
	SWITCHED CIRCUIT LINE VOLTAGE CONDUCTORS, SEE PLAN VIEWS FOR EXACT WIRING.
	RELAY ROOM CONTROLLER. SEE PLAN SHEET(S) FOR PART NUMBER
	RECEPTACLE RELAY PACK, 120VOLT 20A RATED. SEE PLAN SHEET(S) FOR PART NUMBER
	RJ45 ADAPTER. SEE PLAN SHEET(S) FOR PART NUMBER
	AUTOMATIC DIMMING CONTROL PHOTOCELL. SEE PLAN SHEET(S) FOR PART NUMBER
	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR. SEE PLAN SHEET(S) FOR PART NUMBER
	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH. SEE PLAN SHEET(S) FOR PART NUMBER

- NOTES:
- LINE VOLTAGE WIRING CONTINUATION AS REQUIRED.
 - DUPLEX RECEPTACLE SWITCHED WITH ROOM OCCUPANCY SENSOR. CONTRACTOR SHALL PROVIDE PLUG RELAY PACK AS REQUIRED (RRR). SEE PLUG RELAY PACK WIRING DETAIL ABOVE.

TYPICAL OCCUPANCY WIRING DIAGRAM
SCALE: NOT TO SCALE



COMMUNICATION OUTLET INSTALLATION DETAIL AT ACCESSIBLE CEILING LOCATIONS
SCALE: NOT TO SCALE



TYPICAL RECEPTACLE WIRING DETAIL
SCALE: NOT TO SCALE

- GENERAL NOTE:
- CONTRACTOR SHALL NOT WIRE CIRCUIT THROUGH DEVICE. PROVIDE PICTAL TO DEVICE FOR HOT, NEUTRAL, AND GROUND.



212 NORTH ADAMS ST
QUINCY, FLORIDA 32351
FLA LIC. NO. AA26000893
850-875-4348

BUILDING ADDITION FOR PUBLIC WORKS
GRETTNA PUBLIC SAFETY FACILITY
CITY OF GRETTNA, FLORIDA
BEECH AVENUE & 1ST STREET GRETTNA, FLORIDA

DATE: 9-2-25
REV:

JOB NO: 25-005

E3.1

SHEET NO.

384 POPULAR DR
RAINVILLE, ALABAMA 35098
(334) 695-0284
thedesigngroupinc@gmail.com

the Design Group of Florida inc.

Mechanical-Electrical
Consulting Engineers
FL License No. 31813

K DAVID PALMER
PROJ. LICENSE
NO. 62855

Digitally signed by K. David Palmer, DN: cn=K. David Palmer, o=The Design Group, ou=The Design Group, email=KDPalmer@designgroupinc.com, c=US
Date: 2025.09.02 11:38:54-0500

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212 NORTH ADAMS ST
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FLA LIC NO AA26000893
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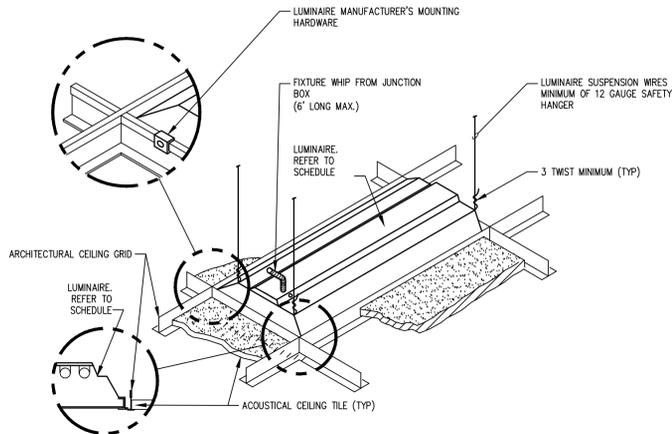
BUILDING ADDITION FOR PUBLIC WORKS
GRETTNA PUBLIC SAFETY FACILITY
CITY OF GRETTNA, FLORIDA
BEECH AVENUE & 1ST STREET GRETTNA, FLORIDA

DATE: 9-2-25
REV:

JOB NO: 25-005

E 3.2

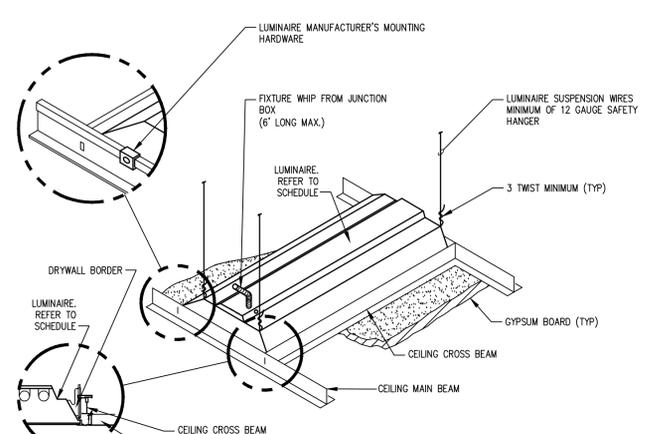
SHEET NO.



GENERAL NOTE:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S MOUNTING INSTRUCTIONS AND USING THE RECOMMENDED MOUNTING HARDWARE.

RECESSED LUMINAIRE MOUNTING - LAY-IN CEILING

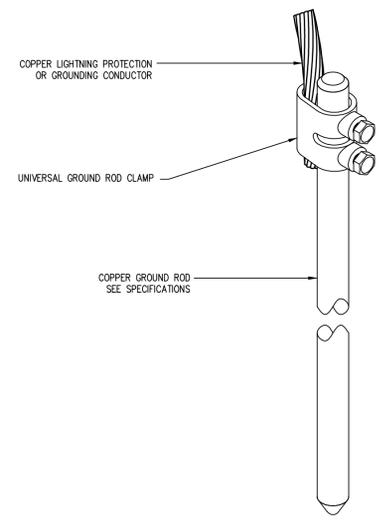
SCALE: NOT TO SCALE



GENERAL NOTE:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S MOUNTING INSTRUCTIONS AND USING THE RECOMMENDED MOUNTING HARDWARE.

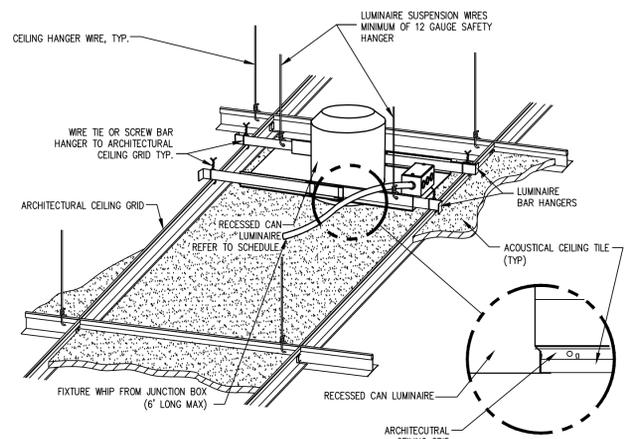
RECESSED LUMINAIRE MOUNTING - GYPBOARD CEILING

SCALE: NOT TO SCALE



GROUNDING ROD DETAIL

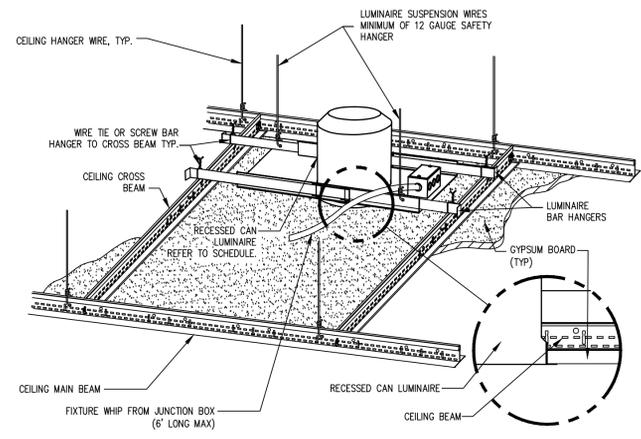
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GENERAL NOTE:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S MOUNTING INSTRUCTIONS AND USING THE RECOMMENDED MOUNTING HARDWARE.

RECESSED DOWNLIGHT MOUNTING - LAY-IN CEILING

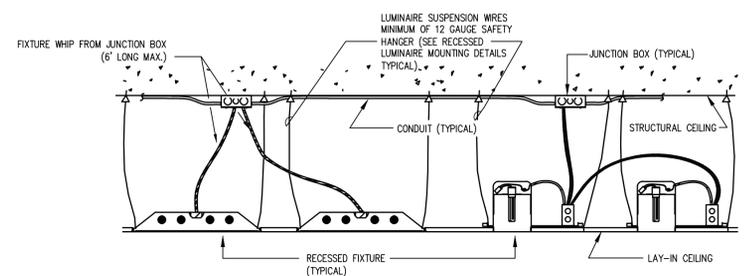
SCALE: NOT TO SCALE



GENERAL NOTE:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S MOUNTING INSTRUCTIONS AND USING THE RECOMMENDED MOUNTING HARDWARE.

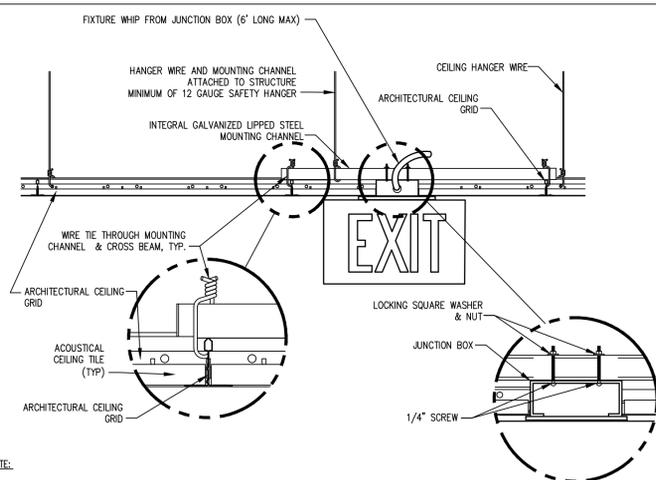
RECESSED DOWNLIGHT MOUNTING - GYPBOARD CEILING

SCALE: NOT TO SCALE



TYPICAL LIGHTING FIXTURE INSTALLATION DETAIL

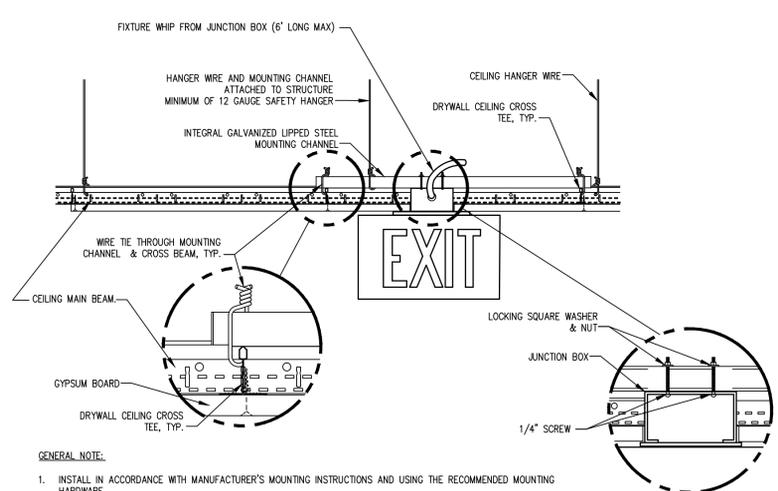
SCALE: NOT TO SCALE



GENERAL NOTE:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S MOUNTING INSTRUCTIONS AND USING THE RECOMMENDED MOUNTING HARDWARE.

EXIT SIGN MOUNTING - LAY-IN CEILING

SCALE: NOT TO SCALE



GENERAL NOTE:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S MOUNTING INSTRUCTIONS AND USING THE RECOMMENDED MOUNTING HARDWARE.

EXIT SIGN MOUNTING - GYPBOARD CEILING

SCALE: NOT TO SCALE

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Mechanical/Electrical
Consulting Engineers
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division of The Design Group, Inc.

PROF. K. DAVID PALMER
NO. 62855
FLORIDA
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2025.09.02 11:38:54-0500



212 NORTH ADAMS ST
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FLA LIC. NO. AA26000893
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BUILDING ADDITION FOR PUBLIC WORKS
GRETNA PUBLIC SAFETY FACILITY
CITY OF GRETNA, FLORIDA
BEECH AVENUE & 1ST STREET GRETNA, FLORIDA

DATE: 9-2-25
REV:

JOB NO: 25-005

E 3.3

SHEET NO.

USE CONDUCTOR SIZING CHARTS TO DETERMINE
WIRE GAUGE FOR ALL BRANCH CIRCUITING

CONDUCTOR SIZING CHART PER VOLTAGE DROP

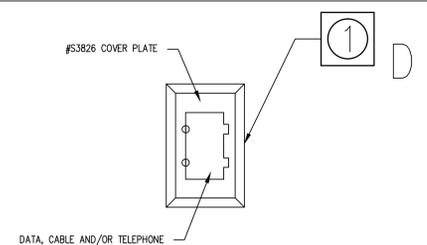
120 VOLT, 2 WIRE AMPS PER RUN

LENGTH OF RUN IN FEET	120 VOLT, 2 WIRE AMPS PER RUN																							
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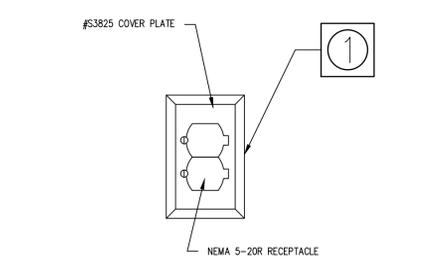
CONDUCTOR SIZING CHART PER VOLTAGE DROP

208 VOLT, 2 WIRE AMPS PER RUN

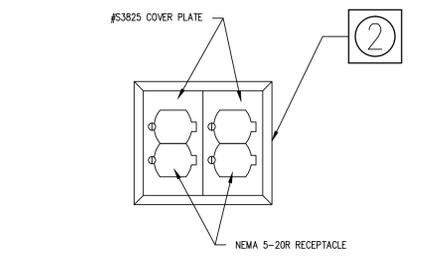
LENGTH OF RUN IN FEET	208 VOLT, 2 WIRE AMPS PER RUN																							
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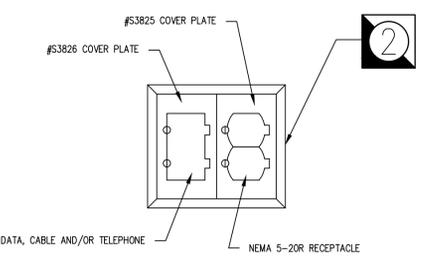
NOTE:
1. PROVIDE HUBBELL #B4236 CAST IRON BOX WITH #SB3083 CARPET FLANGE



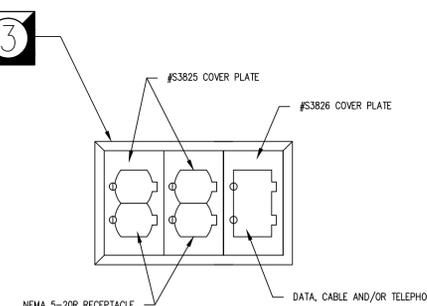
NOTE:
1. PROVIDE HUBBELL #B4236 CAST IRON BOX WITH #SB3083 CARPET FLANGE



NOTE:
1. PROVIDE HUBBELL #B4233 CAST IRON BOX WITH #SB3084 CARPET FLANGE

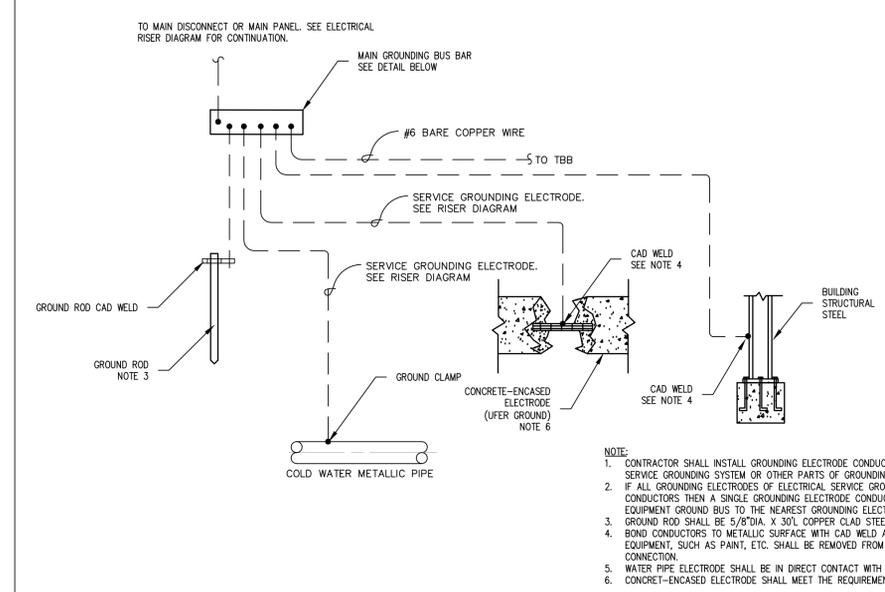


NOTE:
1. PROVIDE HUBBELL #B4233 CAST IRON BOX WITH #SB3084 CARPET FLANGE



NOTE:
1. PROVIDE HUBBELL #B4333 CAST IRON BOX WITH #SB3085 CARPET FLANGE

FLOOR BOX DETAILS DETAIL
SCALE: NOT TO SCALE



NOTE:
1. CONTRACTOR SHALL INSTALL GROUNDING ELECTRODE CONDUCTOR FROM EACH SERVICE EQUIPMENT GROUND BUS TO EACH ELECTRICAL SERVICE GROUNDING SYSTEM OR OTHER PARTS OF GROUNDING ELECTRODE AS SHOWN.

ELECTRICAL SPECIFICATION

PART ONE - GENERAL
1.01 DESCRIPTION

- A. Work included: Provide complete electrical installation where shown on the Drawings, as specified herein, and as needed for complete and proper installation including, but not necessarily limited to:
1. Service entrance, in conduit, from the point of connection with the power company;
2. Feeder system, in conduit, to branch circuit panels;
3. Branch circuit wiring system, in conduit, for lighting, motors, receptacles, junction boxes, and similar uses;
4. Panelboards and load centers, complete with circuit breakers as shown on the drawings;
5. Lighting fixtures and lamps;
6. Wall switches, receptacles, and similar items;
7. Hangers, anchors, sleeves, chases, supports, for fixtures, and other electrical materials and equipment in association therewith;
8. Wiring system, in conduit, up to and including safety switches, for equipment and controls provided under other sections of these Specifications;
9. Other items and services required to complete the systems.

- B. Related work described elsewhere:
1. Provide all required electrical connections and service to items described in all other Sections of these Specifications.
1.02 QUALITY ASSURANCE
A. Codes and Standards: -All work, equipment and apparatus will conform to the following requirements:
1. National Electrical Code of the National Fire Protection Association.
2. National Electrical Manufacturers Association.
3. Underwriters Laboratories, Inc.
4. Governmental agencies having jurisdiction.

- B. Qualifications of installers: For the actual fabrication, installation, and testing of the work of this Section, use only thoroughly trained and experienced workmen completely familiar with the items required and with the manufacturers' recommended methods of installation. In acceptance or rejection of the installed work, no allowance will be made for lack of skill on the part of workmen.
C. Without additional cost to the OWNER, provide such other labor and materials as are required to complete the work of this Section in accordance with the requirements of the governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.

- 1.03 SUBMITTALS
A. Submit:
1. A complete list of all materials proposed to be furnished and installed under this Section.
2. Manufacturers' specifications and catalog cuts as required to demonstrate compliance with the specified requirements.
3. Manufacturers' recommended installation procedures which, when approved by the ARCHITECT, will become the basis for accepting or rejecting actual installation procedures used on the Work.
B. Record Drawing: During progress of the Work, maintain an accurate record of the installation of all items.
C. Manual: Upon completion of this portion of the Work, and as a condition of its acceptance, deliver to the ARCHITECT four copies of an operation and maintenance manual. Include in the manual:
1. Copy of the approved record documents for this portion of the Work;
2. Copies of circuit directories;
3. Copies of warranties and guarantees.

- 1.04 PRODUCT HANDLING
A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.
B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the ARCHITECT and at no additional cost to the OWNER.

PART TWO - PRODUCTS

- 2.01 GENERAL
A. Provide only materials that are new, of the type and quality specified. Where Underwriters' Laboratories, Inc. have established standards for such materials, provide only materials bearing the UL label.
B. Temporary Power: provide temporary power as required for construction.
C. Grounding: Provide grounding as indicated and specified herein. The following are included as required grounding:

- 1. Conduits and other conductor enclosures;
2. Neutral or identified conductor of interior wiring system;
3. Panelboards and load centers;
4. Non-current carrying parts of fixed equipment, such as motors and starters.
D. Identification
1. Identify all panelboards, load centers, cabinets, safety switches, and other apparatus used for operation and control of circuits, appliances, and equipment.
2. Provide plastic laminate nameplates black face with white core letters, showing proper and complete identification.

- 2.02 PANELBOARDS:
A. Standard dead front circuit breaker panels with Main Circuit Breaker or Main Lugs Only as shown.
B. Bus shall be of the ampere rating called for, arranged for voltage, phase and number of wires indicated on the Drawings.
C. Front shall be complete with door and flush or surface mounted as indicated. The cabinet shall be not less than 14" wide. Proper trim shall be furnished for each panel.
D. Branch circuit breakers shall be toggle type, quick make, quick break, thermal-magnetic bolt on breakers. All multi-pole breakers shall be single-handle, common trip type.
E. Minimum circuit breaker installed in load centers shall be type QO with 10,000 amp interrupting capacity at 120 volts AC.

- 2.03 CONDUIT AND FITTINGS
A. Use and locations of Types of Conduits:
1. Thick wall rigid steel galvanized shall be used for all conduit runs buried in the earth, embedded in concrete or run exposed to the outside weather conditions.
2. Schedule 40 rigid PVC, where permitted, may be used underground for feeders and branch circuits, except penetrations at grade or concrete and all turns shall be rigid steel.
3. Aluminum rigid or EMT may be used in all indoor dry locations.
4. IMC is acceptable where permitted by the National Electric Code under Art. 345.
5. Galvanized steel EMT shall be used in all locations except where other types are listed as mandatory or permissive above.

- 6. Electrical non-metallic tubing may not be used.
7. Flexible metal conduit shall be aluminum or galvanized steel spiral interlocked type for connection to vibrating equipment or machinery. Bends shall be with radius large enough to prevent strain on the interlocking joints and permit complete flexibility.
a. Machinery connections shall not exceed 20 times nominal trade diameter.
b. Provide bond wire inside flexible conduit and non-metallic conduits.
8. Where PVC raceways are indicated they shall be Schedule 40. PVC shall be joined with solvent glue and the fittings used shall be standard products as supplied by the manufacturer.
9. Pull boxes shall be provided as require by the NEC.
10. Individual runs shall be anchored in place by means of straps or clamps specifically designed for the purpose. Wire, pipe straps, or nails shall not be used. Do not strap piping. Multiple runs shall be supported by assemblies, individual or trapeze type hanger to provide a rigid installation. Support runs on masonry walls by means of toggle bolts or expansion anchors; on structural steel by means of pipe clamps. Plastic insert anchors shall not be used.

- 2.04 CONDUCTORS
A. Conductors shall be copper (aluminum may be used only where indicated by note) installed in continuous system and, unless otherwise indicated, shall be as follows:
1. All general building wire shall have THHN insulation.
2. Sizes No. 14 and smaller shall be solid.
3. Size No. 12 may be solid or stranded, except that only stranded or only solid may be used.
4. Sizes No. 10 and larger shall be stranded.
5. Terminal lugs shall be used for connecting conductors larger than No. 10 and for all multiple connections to terminals.
6. Minimum size conductor for branch circuits shall be No. 12 AWG.
7. Color coding:
Ground Bare copper or green
Neutral White
Phase A Black
Phase B Red
Phase C Blue

- 2.05 BOXES
A. Outlet Boxes used in the conduit system shall be galvanized sheet steel, 2 1/8" x 4" or 4" square or 4" octagon depending upon the use. Device boxes in the wall shall be "file" boxes with square covers. Boxes containing wiring devices shall be fitted with a raised plaster ring to set flush with the wall service.
1. Where lighting switches are shown inside doorways, they shall be minimum of 4" and a maximum of 8" from edge of opening. Outlet boxes shall be set with 4" dimension vertical.
B. Exposed Boxes shall be cast aluminum.
C. Boxes shall meet NEC requirements for size to contain conductors.
D. Pull boxes shall be used in conduit system as indicated in the NEC and shall be sized according to the NEC.

- 2.06 WIRING DEVICES
A. Switches: Wall switches shall be quiet type with integral metal plaster ears and shall be totally enclosed in molded plastic base. All switches shall be white "decora" series with matching plastic wall plates. All ratings shall be 15 amp.
approved manufacturers:
a. Single pole: Hubbell cat. no. 12211 or equal.
b. Three-way: Hubbell cat. no. 12231 or equal.
c. Four-way Hubbell cat. no. 12241 or equal.

- 2.07 RECEPTACLES
A. Receptacles shall be molded plastic. Slot configuration shall be standard NEMA type as specified or shown. All receptacles shall be white white standard with matching wall plate.
1. Unless noted otherwise, all duplex receptacles shall be 3-pole grounding type, 125 volt, 15 amp duplex - NEMA 5-15R.
B. Ground fault interrupter receptacles shall be duplex type and have self contained circuit to open circuit when any fault current exceeding 5 milliamps flows to ground. Device shall have trip indicator, test button and reset button. This type shall be used for all outdoor receptacles. An upline ground fault receptacle may protect standard units farther down the line.
C. Weatherproof receptacles shall have gasketed die-cast aluminum cover with spring loaded, hinged door over each receptacle.

- 2.08 DEVICE PLATES
A. Except as noted otherwise, all wiring device plates on finished walls shall be smooth white plastic, standard size. Plates for devices in surface mounted boxes shall be designed to fit box and device without protruding sharp edges.
B. Device plates for receptacles and switches marked "WP" shall be die-cast aluminum with spring hinged, gasketed covers.

- 2.09 SAFETY AND DISCONNECT SWITCHES
All switches shall be quick-make, quick-break, with interlocked cover. Switches shall be of the ampere rating with number of poles and fuses shown. Enclosures for outdoor locations shall be NEMA 3R.

- 2.10 FUSES
All fuses shall be dual element time delay type. All motor circuits shall be fused at not less than 125% of motor nameplate amperes or as manufacturer recommends. Ratings shall be 250 volt.

- 2.11 BRANCH CIRCUITS
A. Circuits shall be provided as indicated. The circuit numbers indicated are the panel breaker numbers as shown in the panel schedule.
B. Circuits shall be 3 wire for single phase and 3 or 4 wire, as indicated, for 3 phase.
C. All circuits shall be run in continuous conduit as per the NEC. All conduits shall be as specified herein. Minimum size conduit shall be 1/2" nominal trade size.
D. All circuits shall be run concealed except as indicated. Minimum bury of branch circuit outside building shall be 24".

- 2.12 LOAD BALANCE
The connected single phase loads shall be connected at the panelboards to balance as near as possible the current flow in each phase conductor.

- 2.13 LIGHTING
A. General: Provide complete fixtures and lamps of types and sizes as indicated in Lighting Fixture Schedule shown on the Drawings, complete with supports and mounting accessories.
B. Fluorescent Ballasts: Rapid start, high power factor, ETL and CBM certified, high frequency electronic type.
C. Emergency lighting:

- 1. General: Emergency light shall be capable of remaining in service during a power failure for 90 minutes or longer. Batteries shall automatically recharge when normal power is restored.
2. Batteries shall be sealed, maintenance free, long life, with 3 year unconditional warranty and additional 3 year pro rata warranty. the battery shall be 6 or 12 volts.

- 3. Transfer switch shall be solid state type which instantly energizes the lamps upon power failure. It shall have a battery protection circuit which automatically shuts down the lamp load when the battery is discharged to 87.5% of its normal capacity.
4. The battery charger shall be solid state type capable of recharging the fully discharged battery in 12 to 24 hours and maintain the battery at full charge until needed. It shall be current limiting and short circuit proof. Units shall meet UL specifications.
5. Controls shall be test switch, high charge light, and AC check and ready light. Lights shall be visible from the floor below the unit.
D. Exit Lights:

- 1. Batteries shall meet the requirements described above.
2. Exit signs shall be as indicated in the Lighting Fixture Schedule on the Drawings and specified herein. Comply with UL 1571 and NFPA-101.
a. Minimum height of letters shall be 6".
b. Minimum stroke width shall be 3/4".
c. Minimum width of each letter shall be 2".
d. Minimum spacing shall be 3/8".
e. Luminance of face in normal operation and after one minute operation in emergency mode shall be equivalent to the visibility of a reference sign illuminated to five footcandles.

- E. Fluorescent Light Emergency Packs:
1. Batteries shall meet the requirements described above.
2. The inverter shall be all solid state, 87% minimum efficiency. Power output shall be capable of illuminating a fluorescent lamp to 500 to 600 lumens.
3. The unit shall be located in the fixture ballast channel. It shall be connected to an unswitched circuit conductor feeding the normal lighting.
4. Indicator lights on the pack shall be visible from the floor below the light.

- 2.14 OTHER MATERIALS
All other materials, not specifically described but required for a complete and proper installation of the work of this Section, shall be selected by the Contractor subject to the approval of the ARCHITECT.

PART THREE - EXECUTION

- 3.01 INSPECTION
Examine the areas and conditions under which the work of this Section will be installed. Correct condition detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

- 3.02 PREPARATION
A. Coordination:
1. Coordinate installation of electrical items with the schedules for other work, to prevent unnecessary delays in the total Work.
2. Where lighting fixtures and other electrical items are shown in conflict with locations of structural members and mechanical or other equipment, provide all required supports and wiring to clear the encroachment.
B. Accuracy of data: The data indicated on the Drawings and in these Specifications are as exact as could be secured, but their absolute accuracy is not guaranteed. Exact locations, distances, levels, and other conditions will be governed by the building. Use the Drawings and these Specifications for guidance, and secure the ARCHITECT's approval of all changes in location.
C. Measurements: Verify all measurements at the site. No extra compensation will be made because of differences between locations shown on the Drawings and measurements at the building.
D. Circuiting: The branch circuits and arrangement of home runs are to be designed for maximum economy consistent with sizes for voltage drop and other considerations.

- 3.03 INSTALLATION OF RACEWAYS AND FITTINGS
A. Concealment: Conceal all conduit in walls or ceiling space unless otherwise specifically approved by the ARCHITECT or indicated on the Drawings. Where conduit is allowed to be exposed, install the conduit parallel with or at right angles to structural members, walls, and lines of the building.
B. Installation:
1. Keep all conduit at least 6" away from the covering on hot water pipes.
2. Keep ends of conduit closed with approved conduit seals during construction of the building. Use conduit unions where union joints are required. Do not use running threads.
3. Where conduit is installed in concrete slabs, on the ground, underground, or exposed to the weather, make all joints liquidtight and gaslight. Bury all underground conduit to a depth of 2'-0" below finished grade unless otherwise shown on the Drawings.

- 3.05 INSTALLATION OF LIGHTING FIXTURES
A. Install all lighting fixtures complete and ready for service, in accordance with the Fixture Schedule on the Drawings.
B. Provide all lamps as shown on the Fixture Schedule.

- 3.06 INSTALLATION OF POWER EQUIPMENT
Provide all power and control wiring required for the work of other trades as described on the Drawings and in the various Sections of these Specifications, except where the furnishing and installing of such wiring is specified elsewhere.

- 3.07 INSTALLATION OF CONDUCTORS
Install conductors in accordance with the National Electrical Code.

- 3.08 INSTALLATION OF PANELS
A. Installation: Unless otherwise indicated on the Drawings, install all panels with the top of the trim 5'-0" above the finished floor. Panels located where they are not visible to the public may be surface mounted, if space permits.
B. Directories: Mount a typewritten directory behind glass or plastic on the inside of each panel door. On the directory, show the circuit number and complete description of all outlets on each circuit.

- 3.09 GROUND FAULT BREAKERS
Install ground fault interruption system or breakers for all circuits required by the National Electrical Code or shown on the Drawings.

- 3.09 TESTING
Upon completion of this portion of the Work, test all parts of the electrical system in the presence of the ARCHITECT. Demonstrate that all equipment furnished, installed, and/or connected under this Section of these Specifications functions electrically in the required manner.

END OF ELECTRICAL SPECIFICATION



212 NORTH ADAMS ST
QUINCY, FLORIDA 32351
FLA LIC. NO. AA26000893
850-875-4348

BUILDING ADDITION FOR PUBLIC WORKS
GRETNA PUBLIC SAFETY FACILITY
CITY OF GRETNA, FLORIDA
BEECH AVENUE & 1ST STREET GRETNA, FLORIDA

DATE: 9-2-25
REV:

JOB NO: 25-005

4.1

SHEET NO.

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REV:

JOB NO: 25-005

E 4.2

SHEET NO.

FIRE ALARM SYSTEMS
ANALOG ADDRESSABLE TYPE

PART ONE – GENERAL

- 1.01 SCOPE:
- The contractor shall furnish, install and place in good operating condition a fire detection and alarm system in accordance with the following specifications and as shown on the accompanying drawings.
 - The work described in this specification includes all labor, materials, equipment and services necessary to install and test the complete system. Any material not specifically mentioned in this specification, or not shown on drawings but required for proper performance and operation of the prescribed system, shall be furnished and installed.
 - The work covered by this specification shall be coordinated with related work specified elsewhere in the project documents.
 - The final system connections and testing shall be done under the direct supervision of the system supplier or a factory trained representative. The contractor shall provide the services of a factory trained technician to demonstrate the entire system to the complete satisfaction of the Owner's representative and to make all necessary adjustments to system operation as required by the Owner.
 - This specification establishes the requirements for the installation of a complete analog-addressable fire detection and alarm system. The system shall include, but not be limited to; Fire Alarm Control (FACP), Remote Operations and Display Unit (FARP), alarm initiating and signaling devices, Digital Alarm Communications Transmitter, enclosures and all other equipment necessary to furnish a fully operational system.
 - All equipment shall be the branded products of a single manufacturer.
 - It is the contractor's responsibility to meet the entire intent of the specifications. Approved submittal of substitute equipment shall only allow the contractor to proceed with installing the substitute equipment. Substitute equipment shall not be considered equal until final acceptance of the installed system. All costs of removal, relocation or replacing the substitute equipment shall be at the risk of the contractor.
 - In the case of substitutions of the equipment specified it shall be the contractor's obligation to submit sufficient information to evaluate the substitute equipment as equal to that specified.

1.02 STANDARDS

- The equipment and the installation shall comply with the following standards;
 - NFPA 72 National Fire Alarm Code
 - NFPA 70 National Electrical Code
 - NFPA 101 Life Safety Code
 - Applicable Local/State Building Code
 - American's with Disabilities Act, Public Law 101-336
- The equipment and all components shall be U.L. listed for use in fire protective signaling systems.

1.03 DOCUMENTATION

- The contractor shall submit three (3) complete sets of documentation within 30 calendar days after notice to proceed. All equipment referenced in the documentation shall be subject to approval. Documents shall include;
 - Detailed component and equipment list with manufacturer's model designations and part numbers.
 - Product sheets for each item of equipment.
 - Written confirmation that a factory trained representative will provide job site supervision during the system installation, perform all final testing and instruct operating personnel in system operation.
 - Standby battery calculations showing system power requirements and formulas used to calculate power requirements.
 - Detailed point-to-point equipment connection diagrams.
- Upon completion of the project the contractor shall provide two (2) copies of the following documentation within 30 calendar days of system acceptance;
 - Operation and Installation Manual
 - As-Built wiring diagrams for the installed system
 - Name, address and telephone number of the authorized factory service organization.

1.04 FUNCTIONAL REQUIREMENTS

- FIRE ALARM CONTROL PANEL (FACP)**
 - FACP shall support the required number of addressable devices as shown on the drawings, and shall be expandable to 125K (minimum) of the requirements of the building as shown on the drawings.
 - After proper passcode clearance, an operator shall be able to control outputs, review and acknowledge outstanding events, review the FACP event log and review FACP status.
- SYSTEM OPERATION**
 - The fire detection and alarm system shall detect all changes in status of monitored points and shall initiate appropriate actions to alert and/or evacuate occupants, provide event annunciation and activate auxiliary controls as specified herein.
 - The system shall accept, process and evaluate the following types of signals;
 - Automatic smoke detectors
 - Automatic heat detectors
 - Manual alarm stations
 - Sprinkler waterflow switches
 - Sprinkler tamper switches
 - Other supervisory type inputs
 - Control relay response confirmations
 - Detector sensitivity data
 - Analog type smoke detectors shall have their sensitivity continuously monitored. The control equipment shall evaluate the sensitivity data for determination of sensitivity change and shall automatically provide environmental compensation to maintain constant detector sensitivity. It shall be possible to automatically or manually adjust analog detection sensitivity.
 - The Fire Alarm Control Panel (FACP) shall communicate with field devices over one or more Style 6 analog-addressable signaling line circuits. These circuits shall have the following characteristics;
 - Circuit fault monitoring, including
 - Signaling line circuit open condition
 - Signaling line circuit short condition
 - Excessive electrical "noise" on the signaling line circuit
 - Ability to identify the location of short and open circuit conditions
 - Detector or device missing condition
 - Improper device type at a specific address
 - Un-configured device at an address
 - Multiple devices at the same address
 - Provide a single point address polling function that shall cause repeated polling of a selected device for system troubleshooting. Single device polling of a smoke detector shall cause the detector's LED to illuminate steadily allowing for ease of locating the detector or detectors when more than one device is mistakenly programmed at the same address.
 - Provide a circuit wiring distance of up to 1 mile.
 - Sub-circuits from addressable input/output modules, used to interface input or output devices (i.e. bells, conventional fire detectors, tampers, etc) shall be supervised. Initiating circuits shall be wired for Style B operation and indicating circuits wired for Style Y operation. Supervision shall include open circuit, short circuit and ground fault. Modules requiring external power for operation of two-wire conventional detector sub-circuits and initiating device circuits shall supervise the presence of external power. Equipment requiring external supervisory relays shall not be acceptable.
 - The system shall be capable of providing a summary output to a printer port, initiated by operator command, that include as a minimum the following information;
 - Analog values of all points including instantaneous value and long term average value
 - Points isolated
 - Points tested/failed test
 - Points out of sensitivity compensation
 - Event log contents
 - Each FACP shall be on site programmed. The programming software shall provide the following automated reports for owner review;
 - Project History (changes made to the system, with date stamp)
 - List of authorized system programmers
 - Full system configuration data
 - The system shall provide point isolation by single point or group of points. The system shall ignore signals from input devices when isolated. The system shall annunciate and remain in a trouble state while any device is isolated.
 - The system shall provide identification of point type, location and status. Each addressable and analog device shall have a field assigned 20 character zone identification message and a unique 20 character device location message.
 - The system shall provide standby batteries for complete system operation during AC power outages.
 - A fault condition shall be indicated when the system is operating on standby battery. When AC power is restored the system shall revert back to AC power without operator intervention or manual reset.
 - Each FACP shall be equipped with a battery charging circuit sufficient to recharge depleted batteries to within 70% of maximum capacity within 12 hours. Standby batteries shall be capable of supplying the system under full supervision for 60 hours. Following the 60 hour period, the system shall supply 100% general evacuation alarm output for a minimum of 15 minutes.

C. SYSTEM ALARM OPERATION

- Activation of any initiating device shall initiate the following system alarm response;
 - Sound an evacuation signal in all locations within the affected building.
 - The evacuation signal shall consist of audible slow whoop and voice evacuation message until silenced or reset.
 - Activation of visual alarm strobes. Upon operation of system silence, audible signals shall silence while visual signals shall continue to operate until the system is reset.
 - The alarm condition shall be visually and audibly indicated at the FACP as follows;
 - Illuminate a red "system fire alarm" LED indicator.
 - Illuminate a red "zone fire alarm" LED indicator. The indicator shall flash until the system is silenced. After the system is silenced, the zone alarm LED shall change from flashing to steady and remain illuminated until the system is reset.
 - Continuously sound an audible buzzer at the FACP that shall sound until the system is silenced. After silenced, the alarm buzzer shall change from a steady tone to a pulsed tone and remain active until the system is reset. It shall be possible to silence the FACP audible buzzer without causing building audible alarms to silence.
- Display specific information about the alarm condition on the LCD as follows;
 - Type of event
 - Numeric identification of point and zone in alarm
 - 20 character text message unique to the specific point in alarm
 - 20 character text message associated with the zone in alarm
 - An indication of the number of outstanding events in the system.
 - The system shall display the alarm condition at its remote operations and display unit.
 - Operation of the system silence switch shall silence all connected audible appliances. All displays shall remain illuminated until the system has cleared and reset. In the event of a subsequent alarm after system silence, the FACP shall re-sound the building alarm signals. All audible appliances that had been previously silenced shall re-sound and all audible appliances programmed to respond to the new alarm condition shall activate.
 - Each event shall be individually acknowledged before the system can be returned to normal operation. Access to the acknowledge function shall be restricted such that it may only be operated by authorized personnel.
- Upon activation of any smoke sensor, the system shall reset the detector for a period of 15 seconds. After reset, a second detector activation during the verification period shall initiate the alarm response as described previously with the addition of the following actions;
 - The system shall direct the HVAC system fans to shut down in accordance with relevant local, state and national codes.
 - The system shall recall building elevators in accordance with relevant local, state and national codes and standards.

PART TWO – PRODUCTS 2.01 GENERAL

- Manufacturers: Subject to compliance with this specification, provide products from the following;
 - American District Telegraph Co. (ADT)
 - Autocal Div.; Federal Signal Corp.
 - Fire Control Instruments, Inc.
 - Notifier; Div. of Pittway Corp.
 - Simplex Time Recorder Co.

2.02 FIRE ALARM CONTROL PANEL (FACP)

- The Fire Alarm Control Panel (FACP) shall be microprocessor based.
- The FACP shall be housed in a system enclosure consisting of a power supply/battery charger unit, batteries and all electronics required to meet functional requirements.
- As a minimum, the FACP shall provide the following operator controls and indicators;
 - Operators keypad.
 - 4 by 20 character back-lit LCD.
 - System power, alarm, trouble and supervisory LED indicators.
 - System reset, silence, panel silence, drill and lamp test switches.
- The FACP shall be of dead front construction housed in a modular, easily replaceable and expandable metal enclosure.

2.03 REMOTE OPERATIONS AND DISPLAY UNITS (FARP)

- Remote Operations and Display Units shall be provided as shown on the drawings. The Fire Alarm Control Panel (FACP) shall be capable of supporting the indicated remote units.
 - As a minimum, each remote unit shall be equipped with LED indicators for system power, alarm and trouble. There shall also be a key operated silence switch.
- Remote Operations and Display Units may be powered locally or from the FACP and shall be fully supervised by the FACP. In the event of loss of local power or a failure in communications to a remote unit, both the FACP and remote unit(s) shall audibly and visually annunciate the fault condition.
- Remote units shall be able to be located up to 1,000 feet away from the FACP over twisted pair cabling.

2.05 AUXILIARY RELAYS

- As required to conform to this specification, auxiliary relays shall be installed within the FACP for interface with HVAC equipment, elevators, dampers and other auxiliary equipment.
- Relays shall be provided on relay modules. Each module shall have the following characteristics;
 - Relay contacts shall be on site arranged for either normally open or normally closed operation.
 - Relay contacts shall be rated for 3.0 Amp at 120/240VAC and 30VDC.
 - The module shall provide one LED per relay that indicates relay status.
 - Each module shall have a "power on" LED indicating that operating power is present at the module.
- Remote auxiliary relays shall mount in a dedicated, UL listed enclosure designed for the purpose or in a remote operation and display unit. Remote relays shall be connected to the FACP via a twisted pair serial data line operating at distances up to 4,000 feet from the FACP.

2.06 ANALOG-ADDRESSABLE DETECTORS

- Analog-addressable smoke detectors shall be furnished and installed where shown on the drawings.
- Smoke detector assemblies shall consist of a detector base with removable head. Analog-addressable detectors shall have a unique address associated with the base. Detectors that have the address associated with the removable head will not be accepted.
- Analog-addressable detector addressing shall be by means of a coded card or switches. The address of the detector shall be visible from the floor without removing the detector head.
- In order to minimize the life-cycle cost of the system and to reduce disruption of normal activities, analog-addressable smoke detectors shall be capable of being serviced from the floor without the need for ascending a ladder for access to the detector. Service functions from the floor shall include routine functional test per NFPA requirements, identifying the analog-addressable detector's address and removal of the detector head for cleaning or replacement.
- Analog-addressable detectors shall be equipped with a visual status indicator and an output for a remote LED indicator.
- Photoelectric Smoke Detectors: Analog-addressable photoelectric detectors shall be provided where indicated on the drawings. Photoelectric detectors shall have an asymmetrical sampling chamber for ease of smoke entry while reducing nuisance alarm possibility from dust contamination. The detector sensing chamber shall be protected by an insect screen. It shall be possible to adjust detector sensitivity, from 0.5 to 4.0 percent per foot obscuration, from the Fire Alarm Control Panel (FACP).
- Detector Base: Smoke detectors shall be provided with a twist-lock base. The base shall be directly interchangeable with ionization and photoelectric type detector heads. Wiring shall be connected to terminals. Use of wire nuts is not acceptable.
- All detectors shall be equipped with a tamper resistant screw to keep the detector from being removed from the base by unauthorized personnel.

2.07 ADDRESSABLE FIELD MODULES

- Addressable modules shall be designed for surface or flush installation using standard electrical mounting hardware.
 - Each module assembly shall include a cover plate of "Beryllium" alloy material. With the exception of the mini-module described below, all modules shall have the following characteristics;
 - A visual indicator that displays active status and alarm condition.
 - Screw terminals for termination of field wiring. Each module shall include separate input/output terminals for the signaling line circuit and separate terminal connections for a spur circuit ("T-tapping") to be used as necessary.
- Addressable Contact Monitor Module: The contractor shall furnish and install addressable contact monitoring modules used to monitor normally open and normally closed type contact devices, including manual alarm stations, heat detectors, waterflow alarm devices and sprinkler tamper switches.
 - The module shall communicate with the FACP via the signaling line circuit, providing information of identity, location and status. The contact monitor module shall require one address on the signaling line circuit.
 - The module shall interface to the contact device via a supervised, Style B sub-circuit. The sub-circuit shall be supervised for opens and grounds. All contact devices attached to the sub-circuit shall report their status as a single identity.

- ADDRESSABLE CONTACT MONITOR MINI-MODULE: THE CONTRACTOR SHALL FURNISH AND INSTALL ADDRESSABLE CONTACT MONITOR MINI-MODULES TO MONITOR A SINGLE CONTACT DEVICE.
 - THE MINI-MODULE SHALL BE DESIGNED TO INSTALL INSIDE THE SAME ELECTRICAL BOX TO WHICH THE CONTACT DEVICE IS MOUNTED AND SHALL NOT REQUIRE ITS OWN ELECTRICAL BOX.
 - THE MODULE SHALL HAVE WIRE LEADS FOR FIELD TERMINATION WITH WIRE NUTS.
 - THE MINI-MODULE SHALL BE USED TO MONITOR NORMALLY OPEN TYPE CONTACT DEVICES, INCLUDING MANUAL ALARM STATIONS, HEAT DETECTORS, WATERFLOW ALARM DEVICES, SPRINKLER TAMPER SWITCHES AND OTHER AUXILIARY CONTACT TYPE DEVICES.
 - THE MODULE SHALL COMMUNICATE WITH THE FACP VIA THE SIGNALING LINE CIRCUIT, PROVIDING INFORMATION OF IDENTITY, LOCATION AND STATUS. THE CONTACT MONITOR MINI-MODULE SHALL REQUIRE ONE ADDRESS ON THE SIGNALING LINE CIRCUIT.
 - THE MODULE SHALL INTERFACE TO THE CONTACT DEVICE VIA A SUPERVISED, STYLE B SUB-CIRCUIT. THE SUB-CIRCUIT SHALL BE SUPERVISED FOR OPENS AND GROUNDS.
- ADDRESSABLE RELAY MODULE: THE CONTRACTOR SHALL FURNISH AND INSTALL, AS REQUIRED, ADDRESSABLE RELAY MODULES USED TO PROVIDE ONE VOLT-FREE CHANGEOVER, FORM "C" RELAY CONTACT FOR AUXILIARY CIRCUIT.
 - THE ADDRESSABLE RELAY SHALL BE CONTROLLED BY COMMAND FROM THE FACP VIA THE SIGNALING LINE CIRCUIT, PROVIDING INFORMATION OF IDENTITY, LOCATION AND STATUS. THE ADDRESSABLE RELAY MODULE SHALL REQUIRE ONE ADDRESS ON THE SIGNALING LINE CIRCUIT.
 - THE RELAY STATE SHALL BE CONTINUOUSLY MONITORED AND ANY CHANGE SHALL BE REPORTED TO THE FACP.
 - THE RELAY STATE SHALL BE RATED 1.0 AMP AT 24VDC.

2.08 MANUAL PULL STATIONS

- Double-action type, fabricated of metal or plastic, and finished in red with molded raised letter operating instructions of contrasting color. Stations requiring the breaking of a glass panel or a concealed glass rod are not acceptable.
 - Reset: Key or wrench operated reset station switch, double pole, double throw, and rated for the voltage and current at which they operate. Provide stations with screw terminals for connections.
 - Provide an addressable contact monitor module on each station.

2.09 ALARM INDICATING DEVICES

- Equip alarm indicating devices for mounting as indicated, with terminal blocks for system connections.
- Voice evacuation alarm consisting of the following components;
 - Digital Message Repeater sounds an alarm message of ten seconds of slow whoop, then a female voice saying "ATTENTION PLEASE. ATTENTION PLEASE. THE SIGNAL TONE YOU HAVE JUST HEARD INDICATES A REPORT OF AN EMERGENCY IN THIS BUILDING. WALK TO THE NEAREST EXIT AND LEAVE THE BUILDING. ALL HANDICAPPED OCCUPANTS SHALL FOLLOW THE BUILDING EVACUATION PLAN." Then five seconds of slow whoop and the message repeats, and cycles between message and whoop until silenced at the control panel. An integral 20 watt amplifier and paging microphone shall be provided, all housed in a NEMA 1 flush mounted enclosure. Operation of the microphone shall override the alarm.
 - The speaker strobe combination unit shall mount to standard electrical hardware without adapters. The speaker shall be UL 1480 listed for Fire Protective service. Speaker shall include both 25 and 70 VRMS input with field selectable power taps from 1/8 watt to 8 watts with listed sound output level up to 93 dba. The strobe shall incorporate a Xenon flashtube enclosed in a rugged acrylic lens and solid state circuitry. Strobes shall be UL 1971 listed Signaling Devices and produce one flash per second minimum at a rated intensity of 75 candelas.
 - Visual Alarm Signals: Strobe lights utilizing high-intensity, clear, optic lens and xenon flash tube operating at 24-V d.c. Provide luminaires having their lenses mounted on an aluminum face plate. Provide the word "FIRE" engraved in minimum 1-inch-high letters displayed on the units. Provide strobe lamps with listed intensity of 75 candelas, unless noted otherwise. Strobe lenses shall be factory connected to screw terminals. In any corridor where there are more than two visual alarm devices with less than 55' separation, the devices shall flash in synchronization.
 - Combination Signals: Provide factory-combined audible and visible alarm units of type indicated in a single mounting unit where indicated.

2.10 DIGITAL ALARM COMMUNICATIONS TRANSMITTER (DACT)

- REQUIREMENTS
 - The DACT shall communicate with the supervising station over public telephone lines.
 - The DACT shall utilize two telephone lines (numbers)
 - The supervising station shall be Underwriter Laboratories (UL) listed.
 - The DACT have a minimum of four supervised input channels programmed as follows;
 - Fire Alarm
 - Trouble Alarm
 - Sprinkler System 1 Supervisory
 - Sprinkler System 2 Supervisory
 - The DACT shall comply with the requirements of the National Fire Code, 5-5.3.2.1

2.11 SYSTEM COMMISSIONING AND SERVICE REQUIREMENTS

- SYSTEM PROGRAMMING**
 - The system shall be software configured via an IBM compatible PC. The complete software configuration shall be constructed on the computer without the need for connection to the system.
 - The fire detection and alarm system shall permit all system revision and expansion to be completed on site. Under no circumstances shall the system's site specific configuration program be required to be returned to the manufacturer for modification as a result of system expansion or revision.
 - The configuration shall be stored on standard floppy disk for subsequent downloading to the Fire Alarm Control Panel (FACP). The floppy disk configuration file shall contain the installation name and specific configuration revision number. The revision number shall allow for tracking of system modifications throughout the life of the system.
 - Each revision of the system configuration on floppy disk shall include the following information;
 - The date/time of the modifications to the configuration.
 - A description of the changes made to the system.
 - Identification of the programmer who input the program revisions.
 - It shall be possible to request and view the configuration revision on the FACP display after entry of the appropriate passcode.
 - The configuration software shall provide the ability to compare any two revisions of the site configuration and provide a printed report of the differences in the two revisions. This function shall allow the user to readily identify the areas necessary to be re-tested to insure the full integrity of the system after any program changes or additions. Change reports shall be generated and submitted to the Authority Having Jurisdiction (AHJ), showing all changes. In addition, a test report shall be submitted, showing evidence that the changes were tested and verified. Systems that do not have this capability must include cost of testing the complete system by the equipment manufacturer to meet NFPA standards, after each change is made to the system.
 - The manufacturer shall provide evidence showing that the configuration software has been submitted and approved by UL for use with the FACP. Configuration software that does not meet this requirement shall not be considered equal.
 - The configuration software shall provide logic functions that shall permit logical ANDing, ORing and NOTing of system points in order to meet all current and future logic requirements.
 - The configuration software shall include the ability to enable and disable groups of points upon event, that shall allow for the definition of functions such as, but not limited to, day/night enable/disable operation.
 - The configuration software shall provide software counters, that shall allow for the definition of functions such as, but not limited to, cross-zoning of smoke detectors.
 - The system shall allow, with entry of an appropriate password, selection of a commissioning mode function. In this mode, the system shall annunciate any fault condition within 7 seconds, in order to reduce commissioning and service time.
- SOLO TEST OPERATION**
 - The system shall have a Solo Test function that shall allow a single service technician to perform scheduled tests of initiating devices such as smoke detectors and pull stations.
 - The system shall allow the technician to select individual devices, a zone of devices or all initiating devices for solo test. While in the solo test mode, the technician shall be able to activate initiating devices without generating evacuation alarms. The system shall log the device or zone that has been activated.
 - When solo test is active, if an input is received from an initiating device that is not in a selected solo test zone or group, then the system shall interpret the event as real and shall perform the programmed annunciation and output response.
 - The system shall allow the technician to select Solo Test of selected indicating appliance circuits. While in this mode, the system shall pulse the selected indicating appliance circuits for 2 seconds every 30 seconds, allowing the technician to walk through the facility and verify proper operation of indicating appliances. Systems that require activation of initiating devices to test indicating circuits and appliances, or that only provide evacuation signal output during indicating appliance testing will not be acceptable.
 - For smoke detectors that have been programmed for alarm verification, the system shall maintain individual records of the number of times specific detectors have entered the alarm verification cycle.
 - A technician shall be able to request an alarm verification report that shall indicate any specific analog-addressable smoke detector or conventional detector zone that has experienced at least one verification cycle including the number of verification cycles that each detector/zone has experienced.
 - It shall be possible to set a verification cycle overflow threshold from 2 to 31. If a particular detector or zone of detectors exceeds this threshold, the system shall annunciate the address and the verification cycle overflow condition.
 - The system shall have a service reminder function that can be programmed to remind the Owner that the system requires scheduled maintenance. This function shall be programmable to activate the service reminder yearly, monthly, and/or weekly.
 - The system shall allow the service technician to selectively turn on any of the system outputs, by group, zone and individually, from the FACP keypad.
 - The system shall be programmable for automatic adjustment of smoke detector sensitivity, based on time of day, day of week and specific days of the year (holidays).
 - The system shall allow isolation of specific devices or zones of devices. The system shall not respond to inputs from isolated input devices or operate isolated outputs. The system shall remain in a fault condition while devices are isolated.
 - The system shall have a programmable timed alarm/trouble reminder that shall periodically annunciate if any silenced troubles or alarms exist in the system.

PART THREE – EXECUTION

- INSTALLATION**
 - The contractor shall furnish and install in accordance with the manufacturers instructions all wiring, conduit and fixture boxes required.
 - Wiring shall meet the requirements of NEC, Article 760. All wires shall be color-coded to correspond with the shop drawings and shall be sized as recommended by the manufacturer of the fire alarm control unit.
 - The FACP and all alarm initiating, alarm indicating and signaling line circuits shall be U.L. listed for Power Limited application.
 - Fire alarm system wires in junction boxes shall be permanently tagged and identified. Each junction box capacity shall be 40% greater than that required for associated fire alarm wires.
 - There shall be no splicing.
- TEST AND INSPECTION REQUIREMENTS**
 - Prior to making the final connections to any remote notification device(s), the system manufacturer or a trained representative shall furnish the Owner with a one year Fire Alarm Inspection and Test Agreement that shall provide at least 4 scheduled inspection/test visits during the warranty period. Any defective material shall be replaced at no additional charge to the owner during the first year. Any devices activated during the testing that require replacement shall be provided at no cost.
 - Each manual alarm station shall be tested at least twice annually. During quarterly tests of the system, at least one alarm initiating device shall be actuated/tested for each alarm circuit and a report of results forwarded to the owner.
- WARRANTY**
 - The contractor shall guarantee all equipment and wiring free from inherent mechanical and electrical defects for a period of one year from the date of beneficial use.

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