

Generator & ATS Replacement for: Fairfield Wastewater Treatment Plant



VICINITY MAP
SCALE: NONE
NORTH



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DRAWING LIST:

Cover Sheet

ELECTRICAL

E001 - Electrical General Notes
E100 - Wastewater Treatment Plant Demo & Construction Plans
E200 - Wastewater Treatment Plant One-Line Diagram
E300 - Electrical Details

STRUCTURAL

S300 - Structural Details & Notes

PLUMBING

P100 - Wastewater Treatment Plant Gas Piping Plans

NOVEMBER 30, 2018

GENERAL NOTES

GENERAL

1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.

RACEWAY & RACEWAY

- THE DRAWINGS SHOW THE GENERAL LAYOUT AND TYPICAL DETAILS. PROVIDE COMPLETE SYSTEMS. DRAWINGS ARE BASED ON THE SPECIFIED EQUIPMENT. RACEWAY LAYOUTS, BOXES, AND WIRING OF THE SYSTEMS ARE SUBJECT TO APPROVED SHOP DRAWINGS.
- ENSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS AND PROVIDE SUCH SIZES AND SHARES OF EQUIPMENT THAT FINAL INSTALLATION SHALL SATISFY THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.
- LOCATIONS OF OUTLETS, SWITCHES, APPLIANCES, ETC. AS SHOWN ON ELECTRICAL PLANS ARE APPROXIMATE. COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS AND DETAILS, AND WITH JOB CONDITIONS. INSTALL SWITCHES WITH OFF POSITION DOWN. INSTALL RECEPTACLES WITH GROUNDING POLE IN THE UP POSITION FOR VERTICAL MOUNTING AND AT RIGHT FOR HORIZONTAL MOUNTING.
- LOCATE AND INSTALL ELECTRICAL EQUIPMENT, JUNCTION AND PULL BOXES, PANELBOARDS, SWITCHES, CONTROLS, AND OTHER APPARATUS REQUIRING MAINTENANCE, INSPECTION, AND OPERATION SO AS TO BE READILY ACCESSIBLE.

RACEWAY INSTALLATION

- IN ALL ARCHITECTURALLY FINISHED SPACES, CONDUITS AND CABLES SHALL BE RUN CONCEALED IN PLUMB OR FLUSH CEILING, SLABS, MASONRY, AND PARTITIONS UNLESS OTHERWISE INDICATED. SAW CUTTING AND FINISHED PATCHING SHALL BE REQUIRED IN EXISTING SLABS AND MASONRY WALLS. IN UNFINISHED SPACES, RACEWAYS MAY BE RUN EXPOSED.
- UNLESS OTHERWISE INDICATED, EXACT ROUTING OF RACEWAYS SHALL BE DETERMINED BY THE CONTRACTOR TO SUIT PROJECT REQUIREMENTS AND FIELD CONDITIONS.
- PROVIDE SEPARATE RACEWAYS, JUNCTION BOXES, PULL BOXES AND WIREWAYS FOR ALL EMERGENCY SYSTEM WIRING.

WIRING INSTALLATION

- DO NOT USE WIRE SMALLER THAN NO. 12 AWG FOR ANY POWER OR LIGHTING CIRCUIT. USE LARGER SIZES WHERE INDICATED, AS REQUIRED BY CODES, AND AS FOLLOWS:

30 AMPERE CIRCUIT	NO. 10
40 AMPERE CIRCUIT	NO. 8
50 AMPERE CIRCUIT	NO. 6
60 AMPERE CIRCUIT	NO. 4

A. MINIMUM HOMERUN AND BRANCH CIRCUIT WIRING SIZES AND MAXIMUM HOMERUN CONDUIT FULL FOR 120 VOLT, 20 AMPERE CIRCUITS SHALL BE AS FOLLOWS:

LENGTH	CIRCUIT WIRE SIZE	HOMERUN WIRE SIZE	CONDUIT SIZE (Ø WIRE/CONDUIT)
0 TO 50	#12	#12	3/4"
51 TO 100	#12	#10	3/4"
101 TO 200	#10	#8	3/4"

GREATER THAN 200 - REQUEST DIRECTION FROM ARCHITECT.
NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN CONDUIT.

B. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 277 VOLT, 20 AMPERE CIRCUITS SHALL BE AS FOLLOWS:

LENGTH	CIRCUIT WIRE SIZE	HOMERUN WIRE SIZE	CONDUIT SIZE (Ø WIRE/CONDUIT)
0 TO 100	#12	#12	3/4"
101 TO 200	#12	#10	3/4"

GREATER THAN 200 - REQUEST DIRECTION FROM ARCHITECT.
NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN CONDUIT.

- DO NOT USE WIRE SMALLER THAN NO. 14 AWG FOR CONTROL CIRCUITS UNLESS OTHERWISE RECOMMENDED BY THE EQUIPMENT OR SYSTEM MANUFACTURER ON WIRING SHOP DRAWINGS, AND SO APPROVED BY THE ARCHITECT.
- WHERE GREATER THAN THREE (3) CURRENT-CARRYING CONDUCTORS ARE INSTALLED IN ANY ONE CONDUIT OR CABLE, CONDUCTORS MUST BE DERATED AND SIZES INCREASED, IF NEEDED, TO ACCOMMODATE CONDUIT DERATING AS REQUIRED BY NEC ARTICLE 310.
- CONDUCTORS SHALL BE COMPLETELY INSTALLED AND CONNECTED, PROVIDE ALL TERMINALS, LUGS, AND CONNECTORS TO SUIT THE APPLICATION, AND IN COMPLIANCE WITH EQUIPMENT MANUFACTURERS RECOMMENDATIONS.
- UNDER NO CIRCUMSTANCES SHALL ANY SWITCH OR CIRCUIT BREAKER BREAK A NEUTRAL CONDUCTOR.
- THE CIRCUIT NUMBERS INDICATED ON THE DRAWINGS ARE INTENDED AS A GUIDE FOR PROPER CONNECTION OF CIRCUITS AT PANELS. HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE FINAL CIRCUITING WORK FULFILLS THE FOLLOWING CONDITIONS:
 - LOADS ON PANE, BUSSES SHALL BE PHASE-BALANCED AS EVENLY AS POSSIBLE.

GROUNDING INSTALLATION

- EQUIPMENT GROUNDING
 - INSTALL AN INSULATED GROUND CONDUCTOR, RUN IN THE RACEWAY WITH THE PHASE CONDUCTORS, FOR EACH FEEDER SERVING PANELBOARDS, LIGHTING DIMMER BOARDS, MOTOR CONTROL, CENTERS, MOTORS, EQUIPMENT AND APPLIANCES UNLESS OTHERWISE NOTED.
 - INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL CONDUIT RUNS CONTAINING SECTIONS OF FLEXIBLE CONDUIT UNLESS OTHERWISE NOTED.
 - INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL BRANCH CIRCUIT RACEWAYS OR CABLES UNLESS OTHERWISE NOTED.
- TELECOMMUNICATIONS CLOSET GROUNDING
 - PROVIDE A #4 AWG GROUND CONDUCTOR RISER IN THE CONDUIT TO EACH TELECOMMUNICATIONS CLOSET GROUNDING BUSBAR (TGB) FROM THE TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMB) AND TO MAIN SERVICE GROUNDING ELECTRODE SYSTEM.
 - CONNECT THE GROUND RISER TO TMB AND TGBS PER TABLE STANDARD 807 - 1994.
 - PROVIDE ADDITIONAL #4 AWG GROUND CABLE CONNECTIONS FROM EACH TMB AND TGB TO THE CLOSEST BUILDING STEEL AND TO THE GROUND BUS IN THE ELECTRIC PANEL, REPAIRING THE OUTLETS AND EQUIPMENT IN THE ASSOCIATED TELECOMMUNICATIONS ROOM/CLOSET.
 - GROUND EACH TELECOMMUNICATIONS, FIRE ALARM, SECURITY, AND EMS SYSTEM EQUIPMENT AND CONTROL PANEL WITHIN EACH TELECOMMUNICATIONS ROOM/CLOSET TO THE ASSOCIATED CLOSET TMB OR TGB WITH A #4 AWG CONDUCTOR PER TABLE STANDARD 807 - 1994.

ADA SYMBOLS

- ALL HANDICAP SIGNAGE IN PROJECT TO USE DYNAMIC PICTOGRAM SYMBOL OF ACCESSIBILITY AS ADOPTED BY CONNECTICUT PUBLIC ACT 16-78. ALL REFERENCES TO OTHER SYMBOLS ON DRAWINGS ARE FOR REFERENCE ONLY.

ELEVATOR EQUIPMENT WIRING

- WORK INCLUDED
 - ELEVATOR EQUIPMENT WIRING INCLUDES POWER SERVICE CONNECTIONS, TELEPHONE SERVICE CONNECTIONS, PUBLIC ADDRESS SYSTEM CONNECTIONS AND FIRE ALARM SYSTEM CONNECTIONS.
 - ELEVATOR CONTROL, WIRING AND INTERLOCK CONTROLS ARE NOT INCLUDED.
- COMPONENTS
 - PROVIDE CIRCUIT BREAKER AND SHUNT TRIP, ELEVATOR FUSED DISCONNECT WITH DRY CONTACTS FOR ELEVATOR DRIVE UNIT POWER, AND POWER WIRING COMPLETE TO THE DRIVE UNIT.
 - PROVIDE BRANCH CIRCUITS FOR ELEVATOR CAB.
 - PROVIDE CONDUIT FOR ELEVATOR COMMUNICATION SYSTEMS.
 - PROVIDE CONDUIT AND WIRE FOR ELEVATOR RECALL SYSTEM, COORDINATE REQUIREMENTS WITH FIRE ALARM SYSTEM.
 - PROVIDE ELEVATOR PIT, RECEPTACLES AND SWITCHES.
 - PROVIDE HEAT DETECTORS AT THE TOP OF THE SHAFT AND INTERLOCK WITH THE DRIVE UNIT POWER SOURCE TO DISCONNECT POWER UPON SENSING OF FIRE AND BEFORE ACTIVATION OF ANY SPRINKLER HEADS. COORDINATE LOCATION OF DETECTOR WITH FD DRAWINGS.
 - PROVIDE LOCKING MECHANISMS FOR OVERCURRENT DEVICES ON BRANCH CIRCUITS SERVING ELEVATOR EQUIPMENT INCLUDING CAB, PIT AND MACHINE ROOM LIGHTING, VENTILATION, RECEPTACLES AND CONTROLLER POWER.
- COORDINATION
 - COORDINATE ENTIRE INSTALLATION WITH ELEVATOR SYSTEM SUPPLIER PRIOR TO COMMENCEMENT OF WORK.
 - IF THE HORSEPOWER RATING OF THE EQUIPMENT FURNISHED BY THE ELEVATOR SUPPLIER DIFFERS FROM THE HORSEPOWER LISTED ON THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO INSTALLING ANY WORK AND OBTAIN DIRECTION.

MECHANICAL EQUIPMENT WIRING

- UNLESS OTHERWISE INDICATED OR SPECIFIED HEREIN, ALL MOTORS, MOTOR STARTERS, MOTOR CONTROLLERS, VARIABLE SPEED FREQUENCY DRIVES, AND ASSOCIATED CONTROL DEVICES ARE FURNISHED AND INSTALLED UNDER THE DIVISION. COORDINATE INSTALLATION AND LOCATIONS WITH OTHER DIVISION CONTRACTORS.
- POWER WIRING FROM THE INDICATED SOURCE TO THE STARTER/CONTROLLER/DRIVE UNIT, AND FROM THE STARTER/CONTROLLER/DRIVE UNIT TO THE MOTOR, INCLUDING ANY LOCAL PROTECTIVE SWITCHES PROVIDED AND INSTALLED BY THE DIVISION AND ALL ASSOCIATED LUGS, TERMINALS, AND CONNECTIONS, IS THE WORK OF THIS DIVISION.
- CONTROL CIRCUIT WIRING IS GENERALLY FURNISHED AND INSTALLED UNDER OTHER DIVISIONS EXCEPT THAT ANY SUCH WIRING SHOWN ON ELECTRICAL DRAWINGS IS WORK OF THIS DIVISION.
- PROVIDE 120 VOLT POWER TO ALL TEMPERATURE CONTROL PANELS (TCPs) SUPPLIED AND INSTALLED BY HVAC CONTRACTOR. USE EMERGENCY POWER SOURCES WHEN AVAILABLE. COORDINATE ALL POWER REPRESENTS AND PANEL LOCATIONS WITH TEMPERATURE CONTROLS CONTRACTOR.
- COOPERATE AND COORDINATE WITH THE OTHER TRADES IN THE INSTALLATION, CONNECTION, AND TESTING OF MECHANICAL EQUIPMENT. PERFORM WORK OF THIS SECTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS INSTRUCTIONS.

COORDINATION DRAWINGS

- DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.
- SHEET METAL, PIPING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER REVIEWED OR FURNISH AS CORRECTED PRIOR TO BEING USED AS BASIS FOR COORDINATION DRAWINGS.
- AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THEIR WORK:
 - MECHANICAL SHEET METAL
 - PLUMBING PIPING
 - MECHANICAL PIPING
 - SPRINKLER PIPING
 - ELECTRICAL WORK
- AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING IS RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COSTS INCURRED BY OTHER TRADES.
- THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.
- SUBMIT FINAL SIGNED COORDINATION DRAWING TO ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.
- ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND REINSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.
- EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUB-CONTRACTORS.
- THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO CONFLICTS WILL NOT BEAR ADDITIONAL COST.

AS-BUILT DRAWINGS

- PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE CLEAR AND CONSOLE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.
- PROVIDE AS-BUILT DRAWINGS INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:
 - INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP
 - DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND WORK INSTALLED.
 - EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
 - APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
 - CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

DEMOLITION AND REMOVALS

- THE EXISTING FACILITY WILL BE OCCUPIED AND IN OPERATION DURING THE PERFORMANCE OF THE WORK.
- WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING FEEDER OR BRANCH CIRCUIT SERVING OCCUPIED FACILITIES, COOPER WITH THE OWNER, AND SCHEDULE A MUTUALLY AGREEABLE PERIOD OF INTERRUPTION.
- WHERE RE-ASSEMBLY, RELOCATION OR MODIFICATION OF EXISTING EQUIPMENT IS INDICATED, PROVIDE AND MAINTAIN ALL TEMPORARY FEEDERS, CONNECTIONS, CIRCUIT PROTECTION, AND ANY OTHER MATERIALS AND APPURTENANCES REQUIRED TO MAINTAIN SERVICES TO OCCUPIED AREAS.
- NO WORK SHALL BE LEFT INCOMPLETE, NOR ANY HAZARDOUS SITUATION CREATED, WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. AT NO TIME SHALL THE WORK INTERFERE WITH OR CUT OFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNERS PRIOR WRITTEN PERMISSION.
- THE OWNER RESERVES THE RIGHT TO OPERATE ALL EXISTING ELECTRICAL AND MECHANICAL EQUIPMENT NOT INCLUDED IN THIS WORK, AND TO PERFORM ALL REQUIRED SERVICING AND REPAIRS TO SAME, AT ALL TIMES.
- IT IS REQUIRED THAT THE WORK INDICATED AND/OR SPECIFIED SHALL BE CARRIED OUT WITH A MINIMUM OF INTERFERENCE TO THE ESTABLISHED OPERATIONS OF THE BUILDING.
- REMOVE, ABANDON, REROUTE, OR RELOCATE ANY CONDUIT, WIRING, LIGHTING FIXTURES, OUTLETS, AND OTHER ELECTRICAL ITEMS, WHICH ARE LAD BARE IN THE COURSE OF, OR INTERFERE IN, THE ALTERATIONS. REMOVE ALL EXPOSED OUTLETS, CONDUIT, AND BRANCH CIRCUIT WORK, WHICH INTERFERE WITH THE ALTERATIONS.
- IT IS THE INTENTION OF THESE SPECIFICATIONS TO PROVIDE FOR THE CONTINUANCE OF ALL ELECTRICAL SERVICES PRESENTLY INSTALLED IN THE UNALTERED AREAS. PROVIDE ALL CONDUIT, WIRING, AND DEVICES NECESSARY TO MAINTAIN SERVICES TO THESE AREAS.
- COMPARE THE PLANS WITH THE EXISTING CONDITIONS TO DETERMINE THE AMOUNT OF WORK AFFECTED. REMOVE ALL UNUSED EXPOSED CIRCUIT WORK, OUTLETS, FIXTURES AND THE LIKE NOT REQUIRED BY THE ALTERATIONS.
- ALL MATERIALS REQUIRED TO BE REMOVED AND NOT REINSTALLED UNDER THIS DIVISION OF THE WORK, UNLESS OTHERWISE INDICATED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE REMOVED FROM THE SITE.
- WHERE FEEDERS AND BRANCH CIRCUITS OR DEVICES AND EQUIPMENT ARE INDICATED TO BE REMOVED, CONDUCTORS AND CABLES SHALL BE COMPLETELY REMOVED BACK TO THEIR SOURCE, EXPOSED OR ACCESSIBLE CONDUITS SHALL BE REMOVED COMPLETELY. CONDUITS EMBEDDED IN CONCRETE OR MASONRY SHALL BE CUT OFF FLUSH AND THE SURFACE PATCHED SMOOTH AND LEVEL.
- REMOVED MATERIALS SHALL BE DISPOSED OF USING LICENSED CARTING SERVICE.
- HAZARDOUS MATERIALS - CONTAINING PCBs (BALLASTS) AND THE LIKE SHALL BE DISPOSED OF BY AN EPA APPROVED LICENSED DISPOSAL SERVICE. CONTRACTOR SHALL OBTAIN AND HAVE ON FILE AFFIDAVIT AND RECEIPTS STATING HOW AND WHERE THE WASTE WAS DISPOSED OF OR CONVERTED.
- CONTRACTOR SHALL REMOVE ALL ELECTRICAL EQUIPMENT IN OR ON WALLS THAT ARE TO BE REMOVED - MAINTAIN CONTINUITY OF ALL EXISTING BRANCH CIRCUITRY TO EXISTING ROOMS NOT BEING RENOVATED. REWIRE ALL EXISTING BRANCH CIRCUITS THAT ARE TO REMAIN, AS REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR WALLS BEING REMOVED - REFER TO CONSTRUCTION SCHEDULE FOR THE DELAY.
- CONDUIT IN EXISTING OR NEW CEILING THAT IS NOT INTENDED FOR REUSE SHALL BE REMOVED BACK TO THE PANEL FROM WHICH IT ORIGINATES.
- CONDUCTORS THAT ARE NOT DEEMED REUSABLE SHALL BE REMOVED BACK TO THE NEAREST JUNCTION BOX, WHERE THE ENTIRE CIRCUIT IS TO BE REMOVED, THE CONDUCTORS SHALL BE REMOVED BACK TO THE PANELBOARD FROM WHICH THEY ORIGINATE.
- OUTAGES OF EXISTING ELECTRICAL (LIGHTING, POWER, AND SIGNAL) SYSTEMS NECESSITATED BY WORK OF ALL TRADES SHALL BE IN ACCORDANCE WITH FIELD SCHEDULES BY THE GENERAL CONTRACTOR AND OWNER - INCLUDE ALL ELECTRIC WORK OVERTIME AND SUPERVISION TO COMPLY - CONTRACTOR SHALL OBTAIN OWNERS GENERAL CONTRACTORS APPROVAL PRIOR TO DISRUPTING OF EXISTING ELECTRICAL SYSTEM.
- CONTRACTOR TO MAINTAIN CONTINUITY AND ACCESSIBILITY OF ALL EXISTING SYSTEMS AND SYSTEM EQUIPMENT FEEDERS WHICH MAY BE DISRUPTED FOR WORK OF ANY TRADE.
- CONTRACTOR TO MAINTAIN CONTINUITY AND ACCESSIBILITY OF ALL EXISTING ELECTRICAL (POWER, LIGHTING, AND SIGNAL) SYSTEMS EQUIPMENT FEEDERS AND BRANCH CIRCUITS ON FLOORS OR AREAS THAT ARE NOT AFFECTED BY DEMOLITION OR NEW CONSTRUCTION - REFER TO CONSTRUCTION SCHEDULE FOR ADDITIONAL INFORMATION.
- ANY EXISTING ELECTRICAL WORK WHICH IS PULLED OUT OR CUT AWAY SHALL BE REMOVED FROM THE SITE AS DIRECTED BY THE GENERAL CONTRACTOR AND THE OWNER.
- EXISTING ELECTRICAL EQUIPMENTS WHICH IS NOT TO BE REUSED SHALL BE REMOVED FROM DRYWALL PARTITIONS. ANY OPENING IN EXISTING PARTITIONS LEFT BY REMOVAL OF EXISTING ELECTRICAL EQUIPMENT SHALL BE PATCHED BY THIS CONTRACTOR WITH MATERIALS TO MATCH EXISTING.
- FOR PURPOSES OF THE CONTRACT, WHAT IS NOTED OR SHOWN ON DRAWINGS INDICATES THE SCOPE OF WORK, REQUIRED AND QUALITY OF MATERIALS REQUIRED.
- CONTRACTOR TO EXAMINE ALL CONTRACT DOCUMENTS AND PERFORM ALL DEMOLITION BOTH FOR AREAS BEING RENOVATED AND FOR AREAS WHICH MUST BE REWORKED TO PERMIT THE INSTALLATION OF WORK BY THE VARIOUS TRADES.
- CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE EXTENT OF DEMOLITION AND REMOVALS PRIOR TO THE SUBMISSION OF BIDS. NO CONSIDERATION SHALL BE GIVEN FOR FAILURE TO VISIT THE SITE.



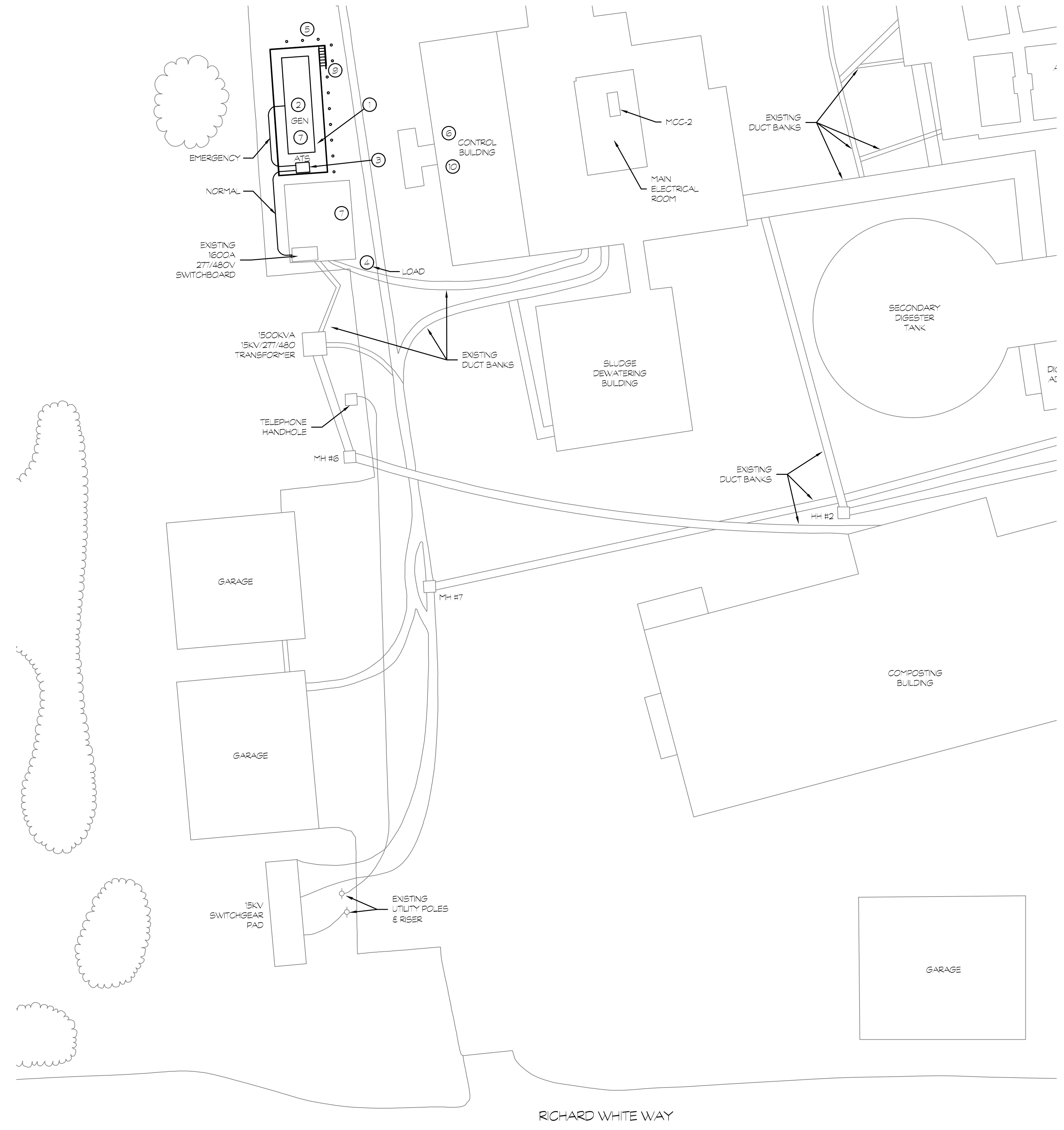
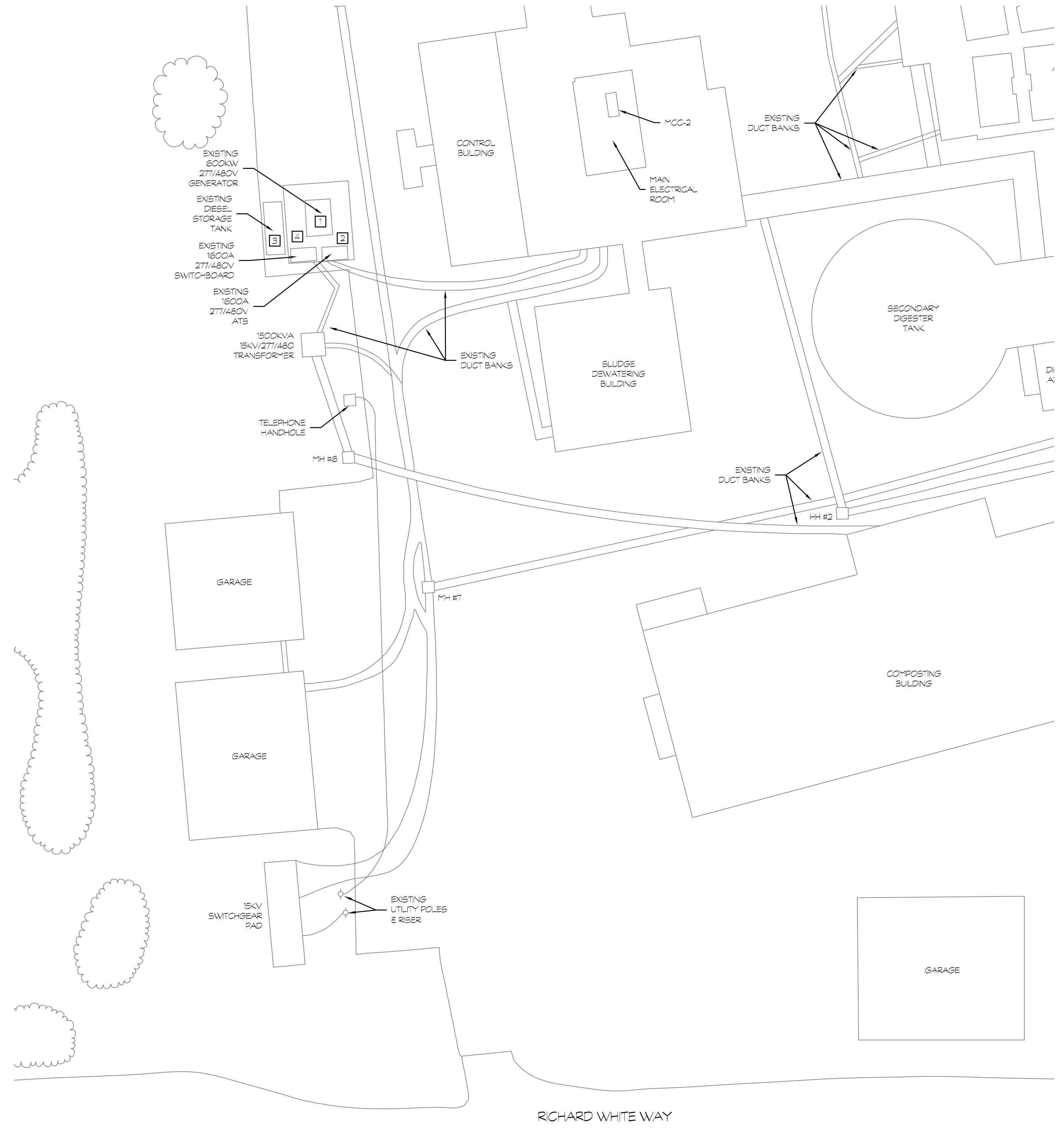
Revision	Description	Date	Revised By

ELECTRICAL DEMOLITION PLAN NOTES

- 1 REMOVE EXISTING 600KW DIESEL GENERATOR IN LOCATION SHOWN & MOVE IT TO A STORAGE LOCATION AS DICTATED BY OWNER. EXISTING GENERATOR SHALL NOT BE REMOVED UNTIL NEW GENERATOR IS IN PLACE ALONG WITH TEMPORARY PORTABLE GENERATOR.
- 2 REMOVE EXISTING 1800A ATS IN LOCATION SHOWN & MOVE IT TO A STORAGE LOCATION AS DICTATED BY OWNER. EXISTING ATS SHALL NOT BE REMOVED UNTIL NEW ATS IS IN PLACE & OPERATIONAL.
- 3 REMOVE EXISTING DIESEL STORAGE TANK FOR GENERATOR & PROPERLY DISPOSE OF IT. ALSO REMOVE EXISTING DIESEL TANK & DISPOSE OF IT PROPERLY.
- 4 EXISTING LEVEL SENSORS, LEAK DETECTORS, ASSOCIATED COMPONENTS & WIRING SHALL BE REMOVED. EXISTING UNDERGROUND CONDUIT CAN BE ABANDONED BUT BURIED FUEL LINES SHALL BE REMOVED.

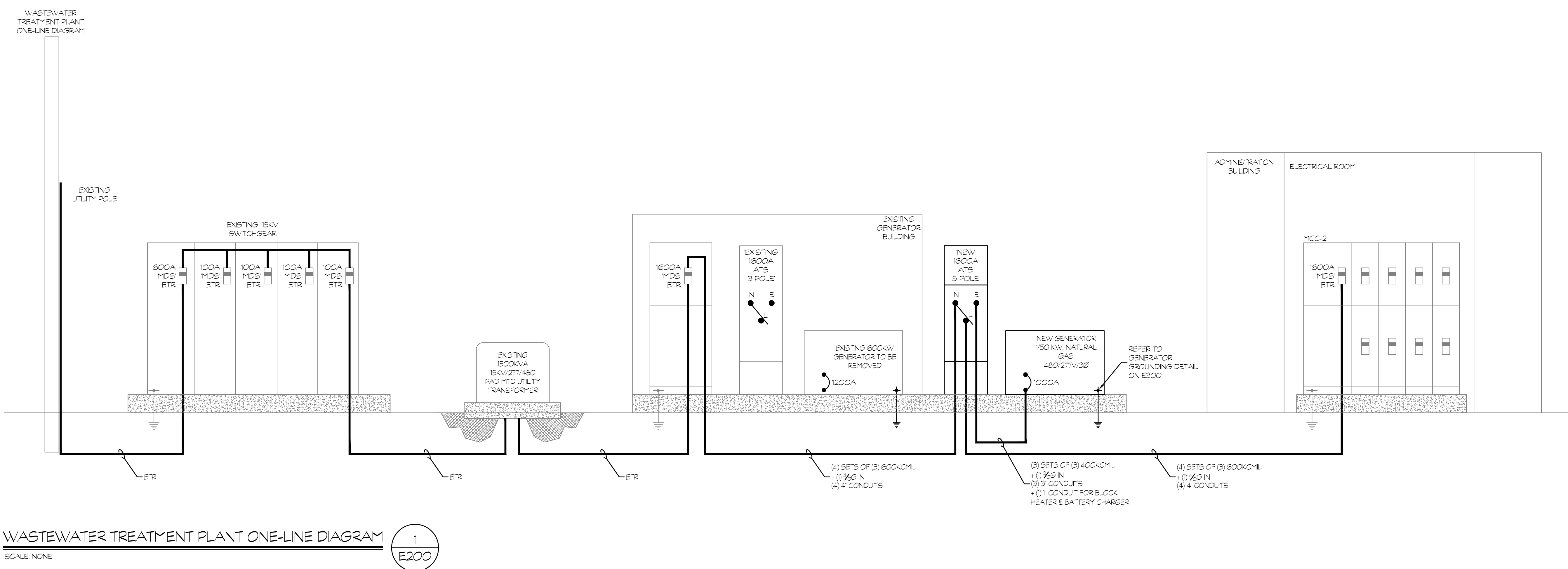
ELECTRICAL CONSTRUCTION PLAN NOTES

- 1 NEW CONCRETE PAD & PLATFORM FOR GENERATOR & ATS. PAD NEEDS TO BE RAISED TO ELEVATION 16.3. THE EXISTING ELEVATION FOR THE GENERATOR IS APPROXIMATELY 12.26. REFER TO DRAWING 8300 FOR MORE DETAILS.
- 2 NEW 750KW STANDBY NATURAL GAS GENERATOR W/ VLT 2 ENCLOSURE. GENERATOR SHALL COME WITH MAINLINE CIRCUIT BREAKER, BLOCK HEATER, BATTERY CHARGER, CONTROLLER & REMOVE ANNUNCIATOR PANEL. INSTALL ON TOP OF NEW CONCRETE PAD IN LOCATION SHOWN. REFER TO ONE-LINE DIAGRAM FOR SIZE OF WIRE & CONDUIT.
- 3 NEW 1800A 277/480V 3-PHASE NEMA 3R ATS. ATS SHALL BE MOUNTED IN LOCATION SHOWN ON EXTENDED GENERATOR PAD. REFER TO ONE-LINE DIAGRAM FOR MORE INFORMATION.
- 4 INTERCEPT EXISTING CONDUIT THAT IS CURRENTLY FEEDING MCC-2 FROM THE EXISTING ATS. RUN NEW CONDUIT FROM PROPOSED LOCATION FOR NEW ATS TO THIS LOCATION & PULL NEW CONDUCTORS FROM ATS TO MCC-2.
- 5 BOLLARDS TO PROTECT GENERATOR & ATS FROM VEHICULAR TRAFFIC. BOLLARDS SHOULD BE PLACED 5' APART. REFER TO DRAWING 8300 FOR MORE DETAILS.
- 6 PROPOSED LOCATION FOR NEW GENERATOR ANNUNCIATOR PANEL. ANNUNCIATOR PANEL SHALL BE COMPATIBLE W/ GENERATOR SUPPLIED & LOCATION SHALL BE APPROVED BY OWNER. COORDINATE EXACT LOCATION W/ OWNER DURING CONSTRUCTION. ASSUME A RUN OF 180' WITHIN THE BUILDING FOR WIRING THE ANNUNCIATOR PANEL.
- 7 WIRE FACTORY INSTALLED OR RECEPTACLE FOR GENERATOR TO NEAREST GENERAL PURPOSE RECEPTACLE CIRCUIT LOCATED IN EXISTING GENERATOR BUILDING.
- 8 TEMPORARY GENERATOR WILL NEED TO BE PROVIDED DURING SWITCHOVER FROM OLD GENERATOR TO NEW TO ENSURE THAT THERE IS NEVER A PERIOD OF TIME WHERE THE FACILITY COULD BE WITHOUT POWER. LOCATION OF TEMPORARY GENERATOR TO BE DICTATED BY OWNER TO BE PLACED IN THE LOCATION OF LEAST DISRUPTION.
- 9 SAFETY GUARDRAIL/HANDRAIL TO BE INSTALLED ON CONCRETE STEPS & AROUND THE CONCRETE PAD THE GENERATOR & ATS WILL BE SET ON. REFER TO 42 GUARDRAIL/HANDRAIL DETAIL (TYPICAL) ON SHEET 8300 FOR MORE INFORMATION. CONCRETE STEPS SHALL HAVE A RISE OF 1" & 11" WIDE.
- 10 REMOVE EMERGENCY SHUT-OFF STOP BUTTON FOR GENERATOR. PROVIDE W/ PROTECTIVE COVER INSTALL IN LOCATION SHOWN. CONSULT W/ OWNER FOR BEST LOCATION.

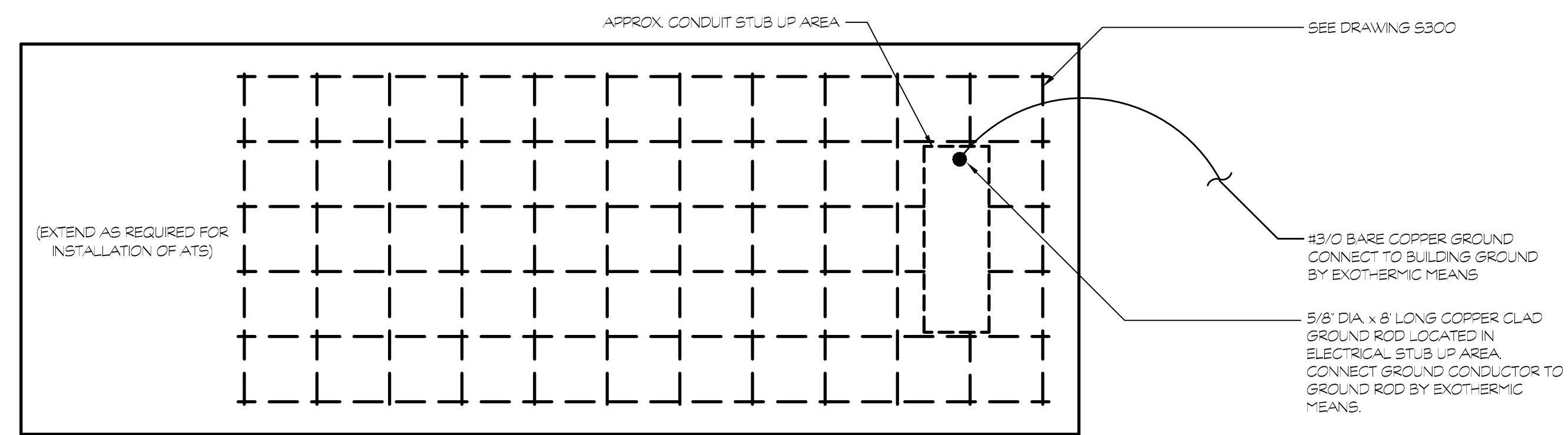
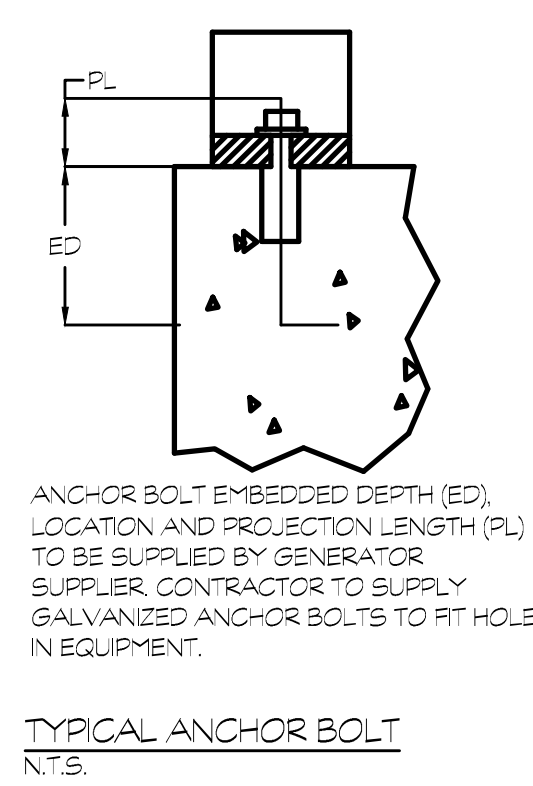
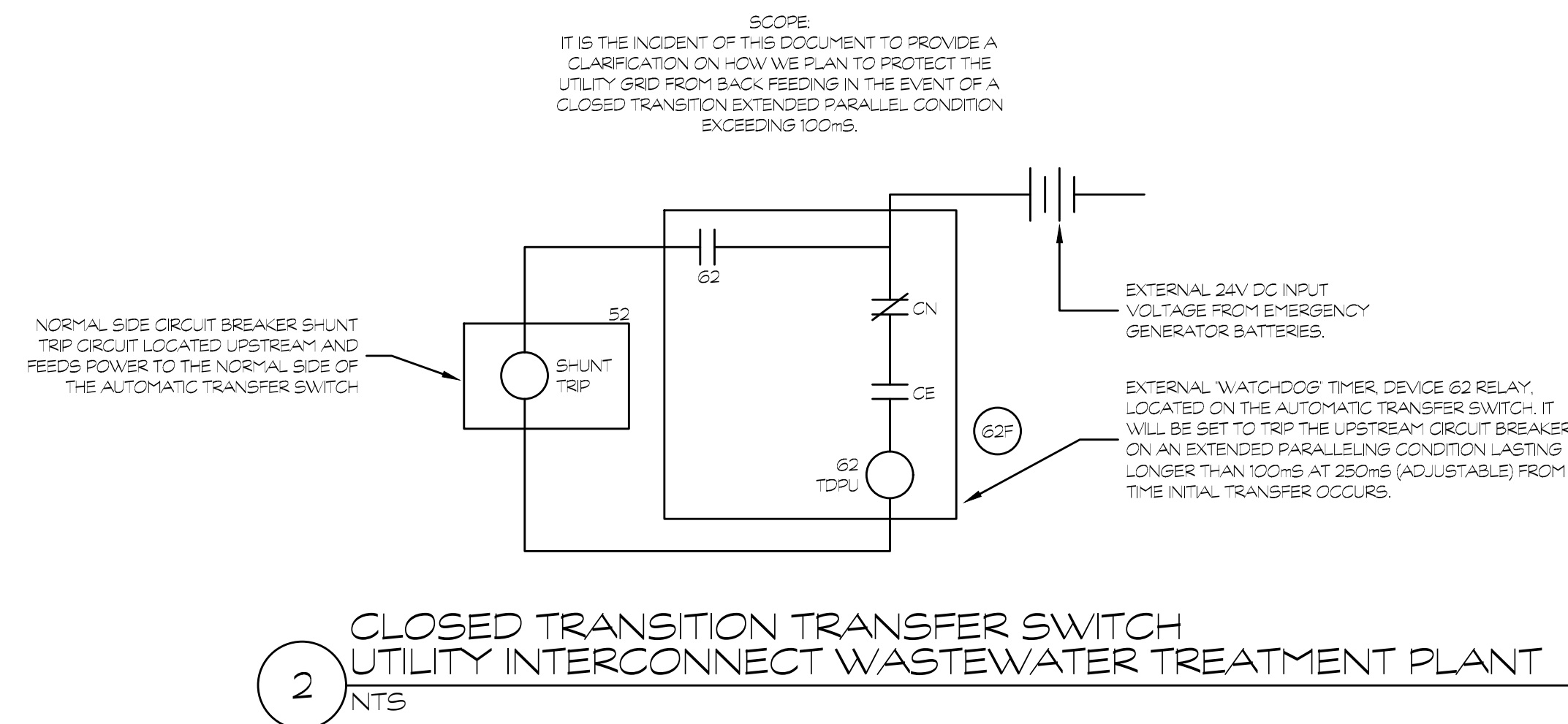


WASTEWATER TREATMENT PLANT - DEMO PLAN
SCALE 1" = 20'
1
E100

WASTEWATER TREATMENT PLANT - CONSTRUCTION PLAN
SCALE 1" = 20'
2
E100

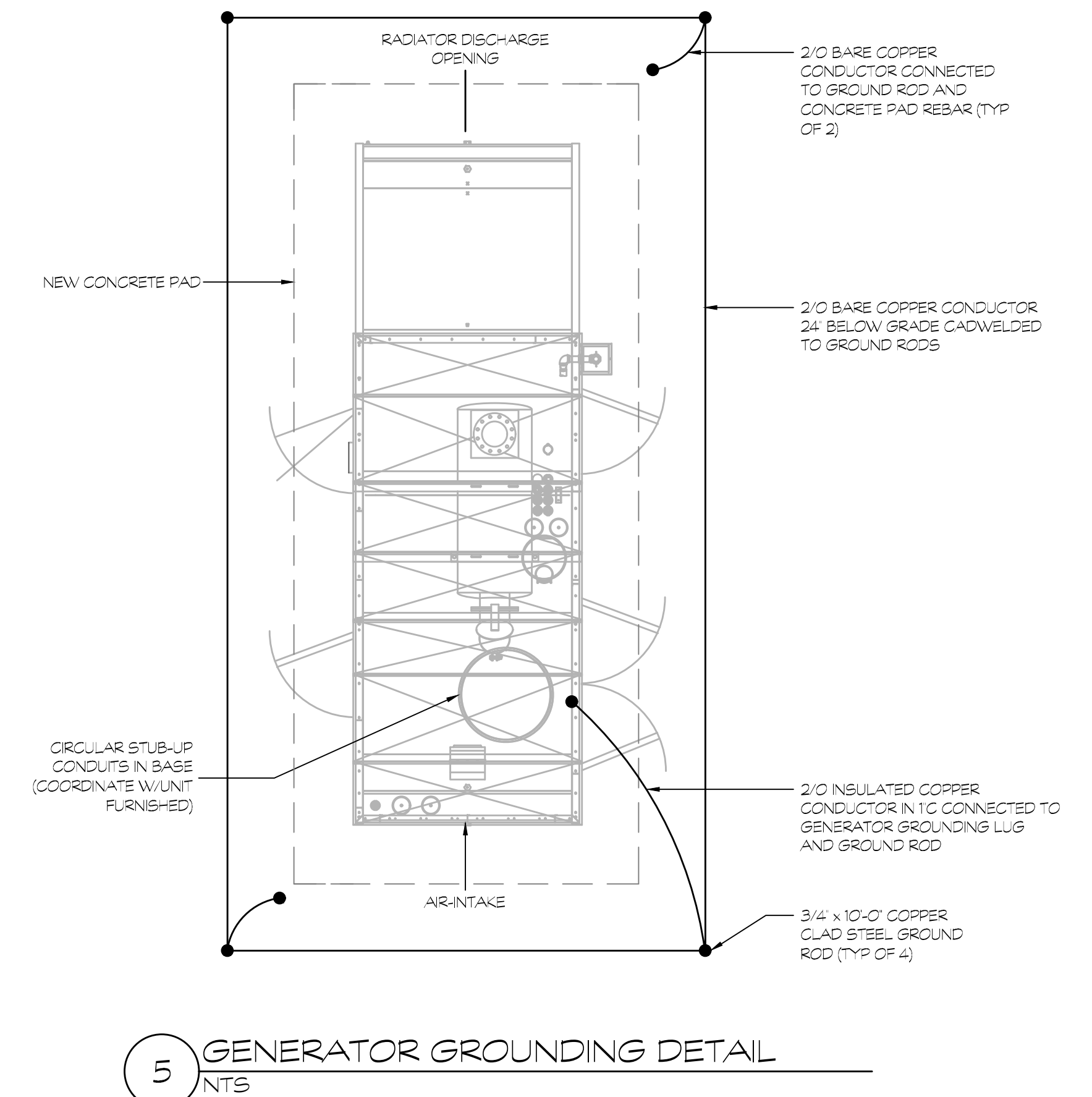
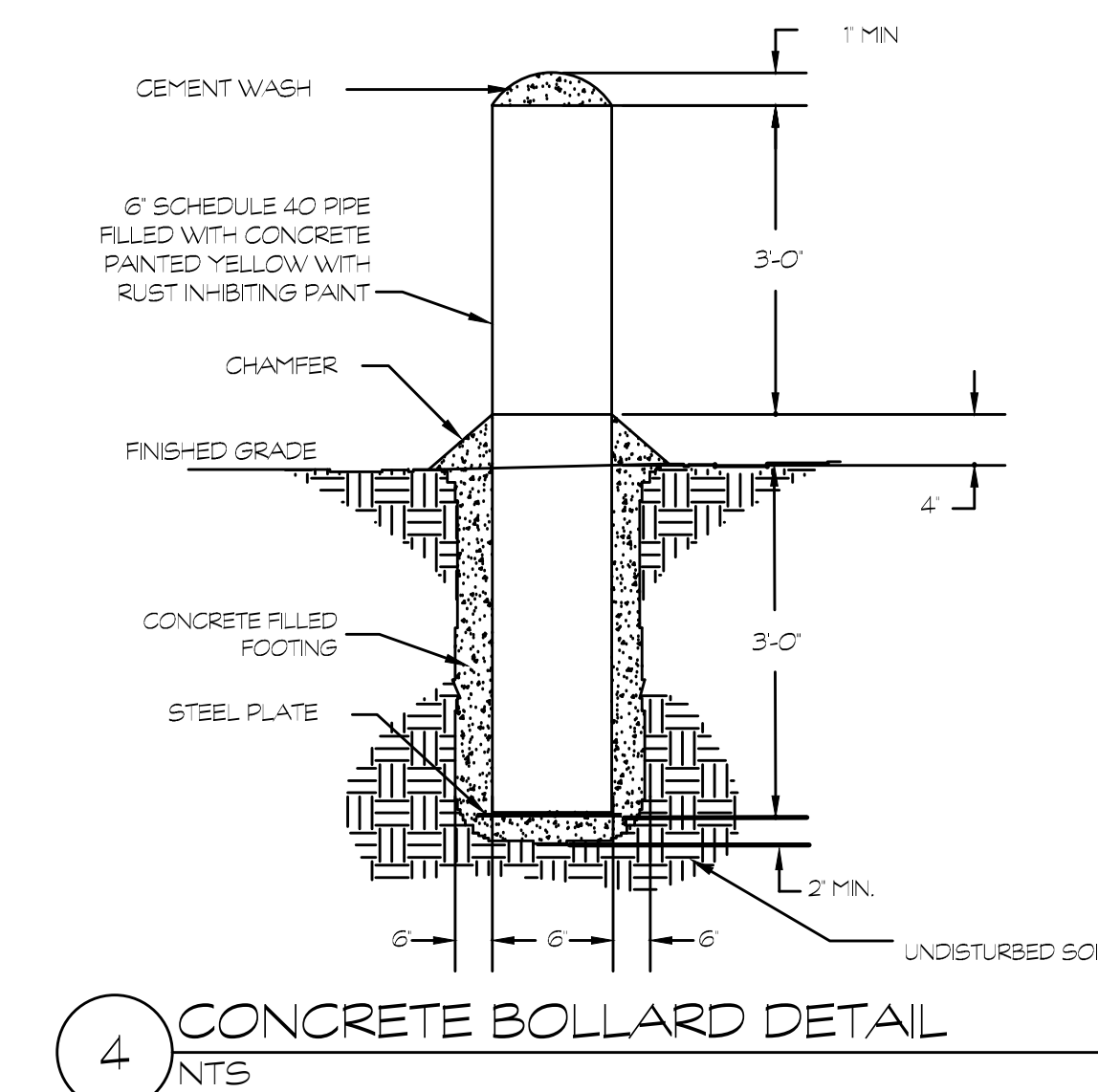
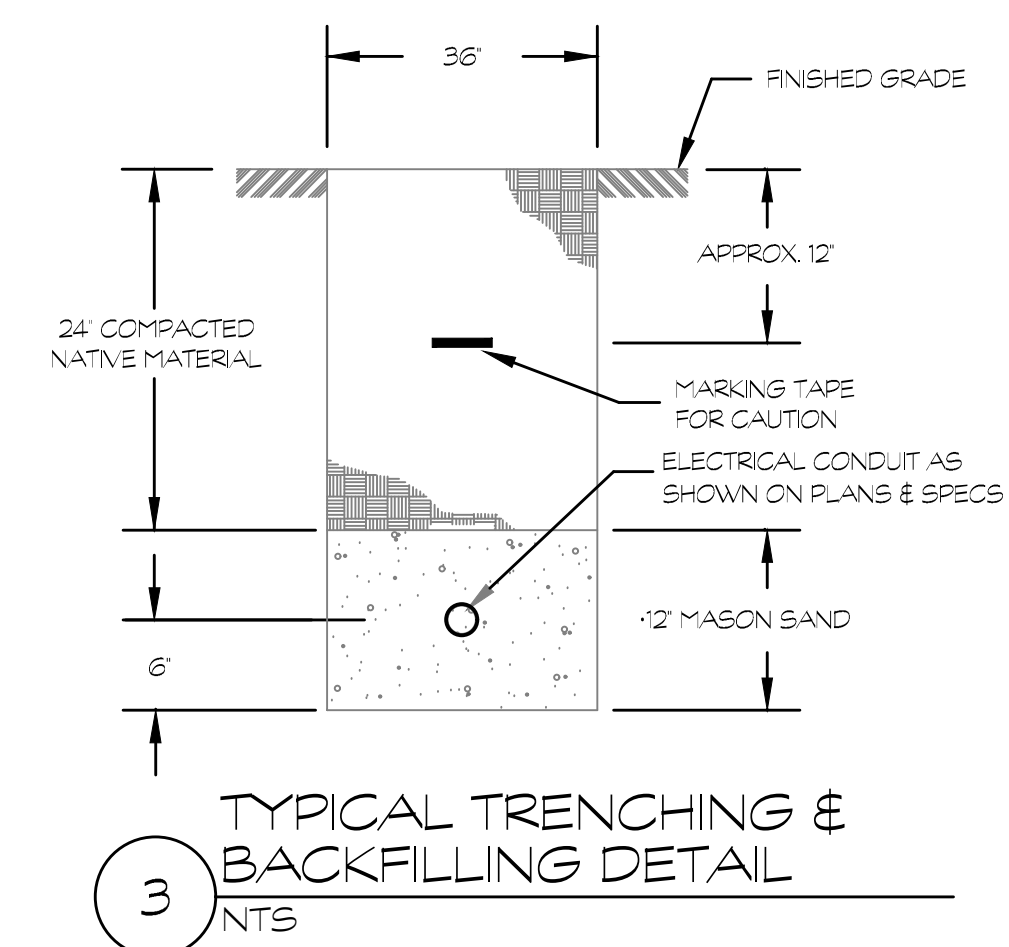


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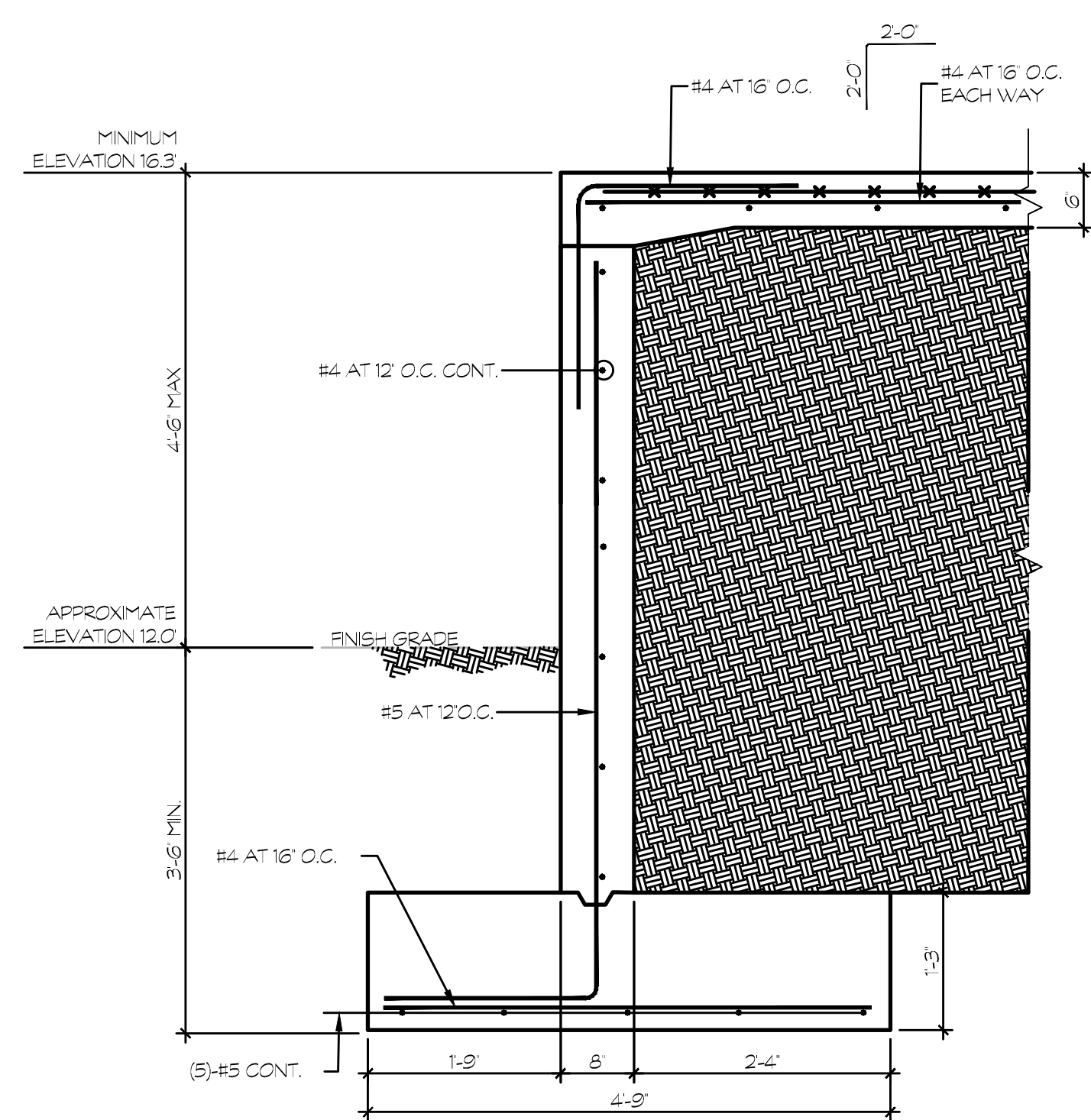


1 GENERATOR CONCRETE PAD DETAIL
NTS

- NOTES
1. INSPECT AND COMPACT ALL SOIL. PROVIDE 1/2" BASE OF ITEM #4 PROCESSED STONE, COMPACTED.
 2. ALL EXPOSED EDGES SHALL BE 3/4" CHAMFER.
 3. SEE DRAWING 5300 FOR ADDITIONAL INFORMATION.
 4. GENERATOR PAD SHALL EXTEND TO LOCATION OF NEW ATS.

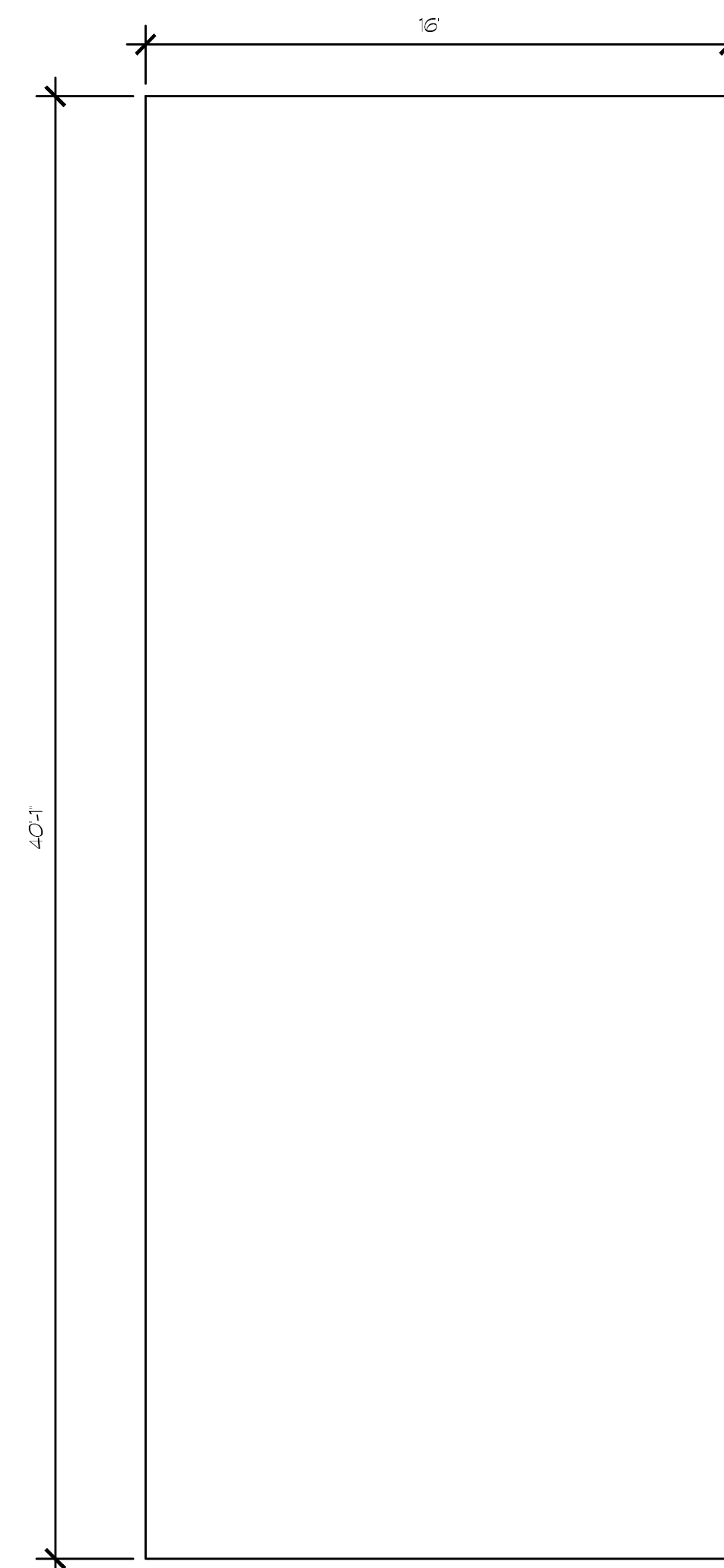


5 GENERATOR GROUNDING DETAIL
NTS



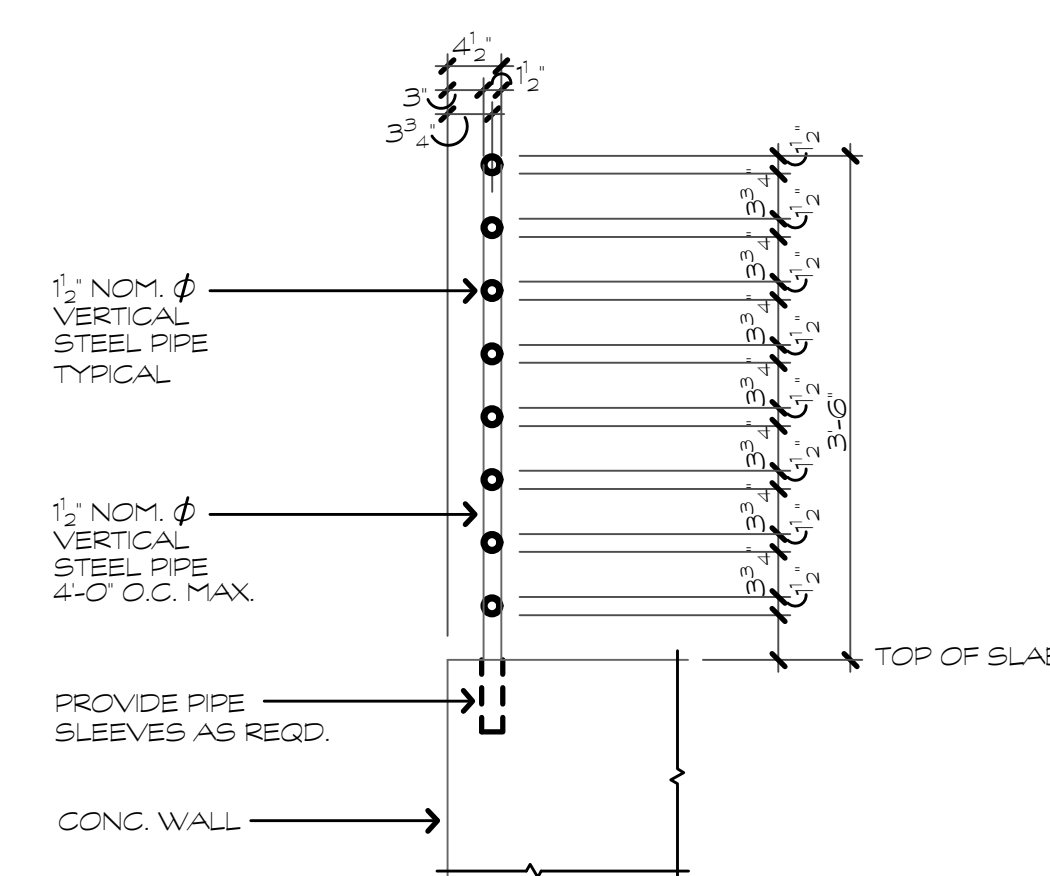
WASTEWATER TREATMENT WALL FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

1
S300



WASTEWATER TREATMENT PLANT FOUNDATION DIMENSIONS
SCALE: 1/4" = 1'-0"

2
S300



42" GUARDRAIL/HANDRAIL DETAIL
SCALE: 3/4" = 1'-0"

3
S300

GENERAL

GOVERNING CODE: 2018 CONNECTICUT STATE BUILDING CODE, (2018 INTERNATIONAL BUILDING CODE)

- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
- SHOP DRAWINGS ARE TO BE CHECKED BY THE CONTRACTOR AND SUBCONTRACTOR AND BEAR CHECKERS INITIALS BEFORE BEING SUBMITTED TO THE ARCHITECT FOR APPROVAL.

FOUNDATIONS

- BACKFILLING SHALL BE ACCOMPLISHED TO EQUAL HEIGHTS ON BOTH SIDES OF FOUNDATION WALLS TO PREVENT MOVEMENTS DUE TO UNBALANCED EARTH PRESSURE.
- ALL FOOTINGS ARE TO REST ON UNDISTURBED NATURAL SOIL, AS DENIED IN THE SPECIFICATIONS, OR CONTROLLED COMPACTED FILL, RESPECTIVE OF ELEVATIONS SHOWN ON DRAWINGS.
- IF FILL MATERIALS ARE ENCOUNTERED AT FOOTING BEARING ELEVATIONS, ALL FILL MATERIAL SHALL BE EXCAVATED AND DISPOSED OF LEGALLY OFF-SITE. THE OVER EXCAVATION SHALL BE BACKFILLED WITH CONTROLLED COMPACTED FILL TO THE BOTTOM OF FOOTING ELEVATION AS REQUIRED.
- ALL CONTROLLED COMPACTED BACKFILL UNDER FOOTINGS AND WITHIN THE FOOTPRINT OF THE STRUCTURE SHALL BE COMPACTED TO 98% OF THE "MODIFIED OPTIMUM DENSITY".
- BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE AT LEAST 3'-6" BELOW FINISHED GRADE. PRIOR TO PROCEEDING WITH FOOTING EXCAVATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF FINISH GRADES AND BOTTOM OF EXTERIOR FOOTING ELEVATIONS TO MAINTAIN THE 3'-6" FROST PROTECTION.
- ALL SOIL SURROUNDINGS AND UNDER ALL FOOTINGS SHALL BE PROTECTED FROM FREEZING AND FROST ACTION DURING THE COURSE OF CONSTRUCTION.
- WHERE FOOTINGS ARE IN CLOSE PROXIMITY OF SUBSURFACE PIPES OR CONDUIT, BOTTOM OF FOOTINGS SHALL BE AT LEAST 8" BELOW INVERT ELEVATION OF PIPES OR CONDUITS.
- KEEP FOUNDATION EXCAVATIONS FREE OF WATER AT ALL TIMES.
- PLACEMENT OF ALL COMPACTED FILL MATERIALS MUST BE UNDER SUPERVISION OF AN APPROVED TESTING LABORATORY. CONCRETE FOUNDATIONS SHALL NOT BE PLACED UNTIL SUBGRADE HAS BEEN CHECKED IN PLACE AND APPROVED BY TESTING LABORATORY.
- FOUNDATION DESIGN SITE PREPARATION THE FOUNDATION DESIGN AS INDICATED ON THE STRUCTURAL DRAWINGS HAS BEEN BASED ON THE FOLLOWING SITE PREPARATION: THE SITE HAS BEEN PREPARED BY THE EXCAVATION AND REMOVAL FROM THE SITE OF ALL EXISTING FILL AND CONTAMINATED SOILS. THE FOUNDATION DESIGN IS BASED ON THE CONTROLLED BACKFILLING OF THE SITE EXCAVATION WITH CONTROLLED FILL COMPACTED TO AT LEAST 98% OF THE "MODIFIED OPTIMUM DENSITY" IN ACCORDANCE WITH ASTM D1557.

CONCRETE

MATERIALS

CONCRETE SHALL DEVELOP STRENGTH IN 28 DAYS AS FOLLOWS:

LOCATION	STRENGTH (PSI)
FOUNDATIONS	3000
WALLS	3000
SLABS ON GRADE	3500

- ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS MUST FOLLOW THE LATEST ACI CODE AND THE LATEST ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.
- REINFORCING STEEL SHALL BE 60,000 PSI YIELD.
- NO TACK WELDING OF REINFORCING WILL BE PERMITTED.
- UNLESS NOTED OTHERWISE, ALL LAP SPICES SHALL BE CLASS B, IN ACCORDANCE WITH ACI 318-02.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185.
- WELDED WIRE FABRIC LAP SPICES SHALL BE STAGGERED TO AVOID FOUR MESH THICKNESS AT CORNERING END LAP AND SIDE LAP LOCATION.
- NO CALCIUM CHLORIDE OR ADMIXTURES CONTAINING MORE THAN 0.1% CHLORIDE BY WEIGHT OF ADMIXTURE SHALL BE USED IN THE CONCRETE.
- ALL HORIZONTAL STEEL SHOWN IN SECTIONS AND DETAILS SHALL BE CONTINUOUS, UNLESS OTHERWISE NOTED. ALL LAPS SHALL BE CLASS B SPICES IN ACCORDANCE WITH ACI 318.
- AT INTERSECTIONS OF REINFORCED CONCRETE WALLS, PROVIDE CORNER DOWELS OF SAME SIZE AND AT THE SAME SPACING AS THE SMALLER HORIZONTAL REINFORCING. DOWELS SHALL HAVE A CLASS B LAP WITH HORIZONTAL REINFORCING IN EACH DIRECTION.
- PROVIDE CORROSION RESISTANT ACCESSORIES IN ALL EXPOSED CONSTRUCTION.
- ALL KEYS IN CONCRETE WALLS SHALL BE 2" X 4" UNLESS NOTED OTHERWISE.
- SEE ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, SITE, UTILITY AND EQUIPMENT DRAWINGS FOR CONCRETE PADS, SLEEVES, OPENINGS, RECESSES, AND BUILT-IN WORK IN CONCRETE ELEMENTS.
- THE CONTRACTOR SHALL FURNISH, LOCATE AND INSTALL ALL ACCESSORIES FOR PROPER ANCHORAGE OF WOOD AND METAL FRAMING, WOOD BLOCKING, BRICK WORK AND MASONRY UNITS. HE SHALL BE SOLELY RESPONSIBLE FOR FURNISHING, LOCATING AND INSURING PROPER QUANTITY OF ALL FASTENING DEVICES.
- ALL CONCRETE TO REMAIN EXPOSED TO VIEW SHALL RECEIVE A SMOOTH RUBBED FINISH.
- ALL CONCRETE CORNERS WITH BOTH SIDES EXPOSED TO VIEW SHALL BE SQUARE UNLESS OTHERWISE SHOWN OR NOTED. THE EDGES SHALL BE RUBBED PRODUING A SMOOTH, DENSE SURFACE WITHOUT FITS OR IRREGULARITIES.
- PROVIDE CLEARANCE FROM EDGE OF REINFORCING TO EDGE OF CONCRETE AS FOLLOWS:

FOOTINGS (AGAINST EARTH)	3"
WALLS, INTERIOR FACE	3/4"
WALLS, EXTERIOR FACE (8" AND SMALLER)	1 1/2"
WALLS, EXTERIOR FACE (8" AND LARGER)	2"
SLABS (EXTERIOR)	1 1/2"
SLABS ON GRADE (W.W.F.)	1/2" X THK. FROM TOP SURFACE





PLUMBING GENERAL NOTES

GENERAL
 THE INTENT OF THESE CONTRACT DOCUMENTS (SPECIFICATIONS AND DRAWINGS) IS FOR THE CONTRACTOR TO FURNISH AND INSTALL COMPLETE PLUMBING SYSTEMS. ALL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS, OPERATING, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION, AND READY FOR GENERAL USE BY THE OWNER.

WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY, AND/OR MORE EXTENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.

ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATIONS BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS, PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS SPECIFIED AND AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. DO NOT SCALE DRAWINGS. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.

PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GENERAL CONDITIONS AND WITH THE PROVISIONS OF ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND LAWS.

WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCARFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS, SPECIFIED HEREIN AND AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

ALL EQUIPMENT, MATERIALS AND RELATED SYSTEMS COMPONENTS SHALL BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE.

STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.

COORDINATION
 THE CONTRACTOR SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS, INCLUDING PROJECT MANUAL, PLANS AND SPECIFICATIONS OF ALL TRADES BEFORE SUBMITTING BID. REFER TO SPECIFICATIONS, PROJECT MANUAL AND PLANS, INCLUDING ALL EQUIPMENT SCHEDULES FOR INFORMATION.

ALL OF THE CONTRACT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO FORM A TOTAL DESIGN PACKAGE. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER TO DETERMINE WHICH TRADE CONTRACTOR IS RESPONSIBLE FOR VARIOUS PORTIONS OF THE WORK.

ALL WORK AND ACTION DERIVED AND DESCRIBED SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.

THE PLUMBING CONTRACTOR SHALL VERIFY THESE DRAWINGS WITH EXISTING FIELD CONDITIONS.

AS-BUILT DRAWINGS
 PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITH THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEER'S COMMENTS TO PRODUCE A CLEAR AND CONSPICUOUS SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD) VERSION AS REQUIRED BY THE OWNER. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.

PIPE SEALS
 ALL PIPES PENETRATING A SLAB ON GRADE OR FOUNDATION WALL BELOW GRADE AND IN CONTACT WITH EARTH SHALL BE PROVIDED WITH A Poured IN PLACE SCHEDULE 80 GALVANIZED STEEL WATER TIGHT SLEEVE WITH INTEGRAL WATER STOP AND SEAL EQUAL TO LINK SEAL.

PIPING GENERAL
 NO PIPING SHALL BE COVERED UNTIL TESTED APPROVED BY THE AUTHORITIES HAVING JURISDICTION.

ALL PIPING SHALL BE RUN PERPENDICULAR AND/OR PARALLEL TO FLOORS, INTERIOR WALLS, STAIRWAYS AND VALVES SHALL BE GROUDED NEATLY AND SHALL BE RUN AS TO MAXIMIZE HEADROOM OR PASSAGE CLEARANCE. ALL VALVES, CONTROLS AND ACCESSORIES CONCEALED IN FURRED SPACES AND REQUIRING ACCESS FOR OPERATION AND MAINTENANCE SHALL BE ARRANGED TO ASSURE THE USE OF A MINIMUM NUMBER OF ACCESS DOORS.

ALL PIPE LINES MADE WITH SCREWED FITTINGS MUST BE PROVIDED WITH A SUFFICIENT NUMBER OF FLANGES AND/OR UNIONS TO ALLOW FOR EASY AND CONVENIENT DISMANTLING OF THE SYSTEM WITHOUT BREAKING FITTINGS.

ALL PIPING SHALL RUN CONCEALED IN FURRED SPACES OF OCCUPIED AREAS OR CHASES. CONTRACTOR SHALL OBTAIN PERMISSION TO RUN ANY EXPOSED PIPES.

CAP ALL PIPE AND EQUIPMENT OUTLETS DURING CONSTRUCTION AND KEEP LINES AND INSIDE OF EQUIPMENT FREE OF FOREIGN MATERIALS.

PROVIDE FOR EXPANSION WITHOUT WARPING OR DISLOCATING LINES OR STRAINING CONNECTED EQUIPMENT. INSTALL PIPING TO CLEAR BUILDING CONSTRUCTION AND

TO AVOID INTERFERENCE WITH OTHER WORK, THE CONTRACTOR SHALL PROVIDE AND INSTALL COMPLETE PIPING EXPANSION SYSTEM (INCLUDING SEISMIC JOINT EXPANSION) AND DEVICES AS REQUIRED FOR PROPER EXPANSION COMPENSATION. STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT.

THE DRAWINGS INDICATE SCHEMATICALLY THE SIZE AND LOCATION OF PIPING. PIPING SHALL BE SET UP AND DOWN AND OFFSET AS REQUIRED TO MEET CONSTRUCTION CONDITIONS.

THIS CONTRACTOR SHALL INFORM HIMSELF OF THE GENERAL CONSTRUCTION SPECIFICATIONS AND PLANS OF THE EXACT DIMENSION OF FINISHED WORK AND OF THE HEIGHT OF FINISHED CEILINGS IN ALL ROOMS WHERE EQUIPMENT OR PIPES ARE TO BE PLACED AND ARRANGE HIS WORK IN ACCORDANCE WITH THE SCHEDULE OF INTERIOR FINISHES AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

UNIONS AND/OR FLANGES SHALL BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BY-PASSES AND IN LONG PIPING RUNS (100 FEET OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.

WHEREVER DISSIMILAR METALS ARE JOINED TOGETHER AN APPROVED DIELECTRIC FITTING SHALL BE USED. THE DIELECTRIC FITTING SHALL BE A LISTED ASSEMBLY.

ALL UNDERGROUND PIPING SHALL BE LAID ON 6" SAND AND BACKFILLED WITH CLEAN FINE EARTH COMPACTED TO 12" ABOVE PIPE. COMPLETE BACKFILL WITH AVAILABLE EARTH FREE OF LARGE BOULDERS AND SHARP ROCKS. TAMP BACKFILL IN 6" STRATIFICATIONS AND OVERLAP TO ALLOW FOR SETTLEMENT.

GAS PIPING
 INSTALL GAS PIPING AND GAS PIPING SPECIALTIES IN ACCORDANCE WITH NFPA 54, NFPA 98, AND AUTHORITIES HAVING JURISDICTION.

PROVIDE AND INSTALL INDEPENDENT GAS PRESSURE REGULATOR VENTS TO THE EXTERIOR AS REQUIRED IN NFPA 54/98 AND THE REGULATOR MANUFACTURER'S REQUIREMENTS.

LOCATE GAS PIPING WITH ADEQUATE SEPARATION BETWEEN ELECTRICAL CABLES, EQUIPMENT, AND CONDUIT.

SLOPE GAS PIPING TO LOW POINTS WITHOUT TRAPS. PROVIDE DIPS (PIPE FEE, NIPPLE AND CAP) AT BOTTOM OF ALL VERTICAL RISERS AND DROPS.

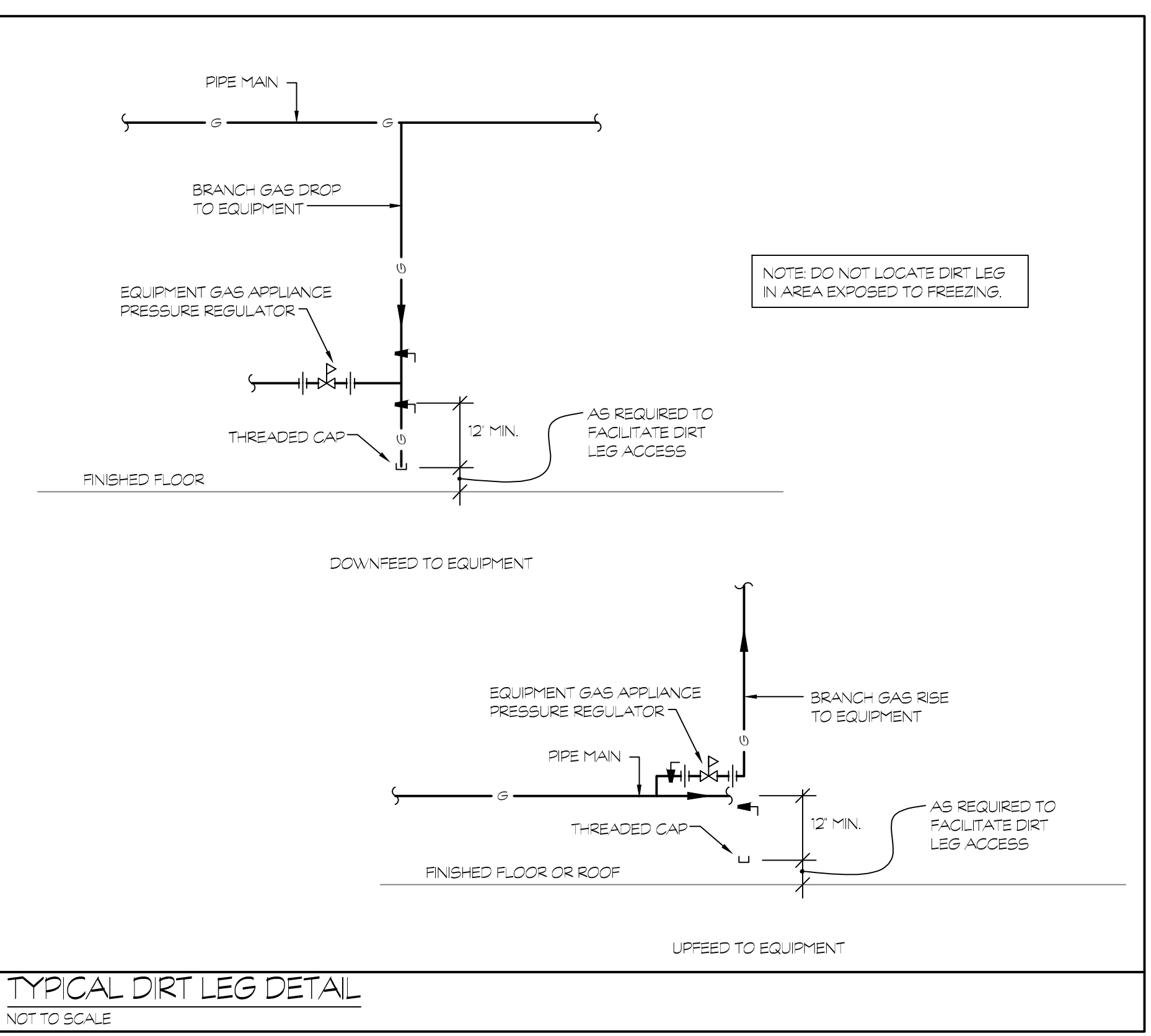
MAKE BRANCH CONNECTIONS TO MAINS FROM TOP OR SIDE, NOT FROM BOTTOM OF MAIN.

PROVIDE AND INSTALL GAS SHUT-OFF VALVES FOR THE PROPER AND SAFE CONTROL OF THE SYSTEM.

DO NOT LOCATE GAS VALVES IN SPACES USED AS AIR PLENUMS.

VERIFICATION: BEFORE MAKING A GAS CONNECTION, VERIFY THAT EQUIPMENT IS COMPATIBLE WITH THE TYPE AND PRESSURE OF GAS BEING SUPPLIED.

PURGING: PURGE GAS TO SAFE LOCATION.



PIPE AND FITTING SCHEDULE

DESCRIPTION	SIZE	PIPE		FITTING		REMARKS
		TYPE	SCHEDULE	TYPE	RATING	
GAS PIPING	2" AND SMALLER	STL-BLK	SCH. 40	MIT	CLASS 150	--
GAS PIPING	2 1/2" AND LARGER	STL-BLK	SCH. 40	WE	SCH. 40	--
SECONDARY CONTAINMENT PIPING (GAS)	ALL	STL-BLK	SCH. 40	WE	SCH. 40	DOUBLE WALL
ABBREVIATIONS	DESCRIPTION	ABBREVIATIONS		DESCRIPTION		
MIT	MALLEABLE IRON THREADED	STL-BLK		BLACK STEEL		
WE	BUT WELD					

VALVE SCHEDULE

DESCRIPTION	SIZE	TYPE						CLASS	REMARKS
		GATE	GLOBE	CHECK	BALL	PLUG	BALANCE		
GAS	2" AND SMALLER	--	--	--	--	PGVT	--	125PSI	--
GAS	2 1/2" AND LARGER	--	--	--	--	PGVF	--	125PSI	--

NOTES:
 1. SOLENOID VALVE: UL LISTED, FM APPROVED FOR GAS SERVICE, EXPLOSION PROOF, TWO-WAY NORMALLY CLOSED, ASCO 8044 SERIES W/MANUAL RESET. (EMERGENCY GAS SHUT-OFF VALVE ASSEMBLY)
 2. CALIBRATED PRESSURE RELIEF VALVE: INSTALL A MINIMUM OF 12" ABOVE WATER HEATER AND PIPE DISCHARGE TO ADEQUATE LOCATION, WATTS' MODEL 8400

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
PGVF	PLUG VALVE FLANGED - ASA APPROVED	PGVT	PLUG VALVE THREADED - ASA APPROVED

GAS METER ASSEMBLY

EQUIPMENT	LOAD
GENERATOR	= 11,401 CFH
TOTAL	= 11,401 CFH CONNECTED LOAD @ 2 W.C. PRESSURE

NOTES:
 COORDINATE GAS PRESSURE REQUIREMENTS WITH GAS COMPANY AND PROVIDE GAS PRESSURE REGULATOR VALVE ASSEMBLY SIZED AT INDICATED PRESSURES AND CAPACITIES.
 PROVIDE AND COORDINATE GAS METER CONCRETE PAD REQUIREMENTS WITH GAS COMPANY.

WASTEWATER TREATMENT PLANT - GAS PIPING PLAN
 SCALE: 1/4" = 1'-0"
 1
 P100