

CITY OF CONNEAUT

OLD MAIN STREET

BOOSTER PUMP STATION

REPLACEMENT

CONNEAUT, OHIO



FEBRUARY 2026

CONNEAUT COUNCIL:

TERRY MOISIO, JR.	PRESIDENT
RICK GAUGH	WARD 1
CHRIS CASTRILLA	WARD 2
OKEY EMERY	WARD 3
NIC CHURCH	WARD 4
MARIANA BRANCH	COUNCIL AT LARGE
NICK PERKOSKI	COUNCIL AT LARGE

OFFICIALS:

NICK SANFORD	CITY MANAGER
JOHN WILLIAMS	FINANCIAL DIRECTOR
MICHAEL M. COLBY	CHIEF OF POLICE
STEVEN LEE	FIRE CHIEF



- UNDERGROUND BUILDING SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE TO BUILDINGS.
- THE CONTRACTOR IS RESPONSIBLE TO CALL OHIO UTILITIES PROTECTION SERVICE @ 1-800-362-2764, THREE WORKING DAYS PRIOR TO CONSTRUCTION.



LOCATION MAP
NOT TO SCALE

APPROVALS:

CALEB RZESZETEK, DISTRIBUTION MANAGER	DATE
NICK SANFORD, CITY MANAGER	DATE

OFFICE:

THE CITY OF CONNEAUT
294 MAIN STREET
CONNEAUT, OH 44030

(440) 594-7401 PHONE
(440) 593-6908 FAX

PROJECT SITE:

LOCATED ON OLD MAIN STREET
AND SOUTH LIBERTY STREET

ENGINEER:

VERDANTAS
3875 EMBASSY PARKWAY
SUITE 200
AKRON, OH 44333

(330) 375-0800 PHONE
(330) 665-0620 FAX



Ryan Schuster
RYAN SCHUSTER, P.E.

P.E. No. 72755

2/25/2026
DATE



3875 EMBASSY PARKWAY
SUITE 200
AKRON, OH 44333

ENGINEER'S PROJECT No. 41632



BID	ISSUED FOR:
02/24/2026	ISSUE DATE:
AS NOTED	SCALE:
RSS	DESIGNED BY:
ELE	DRAWN BY:
RSS	CHECKED BY:

OLD MAIN STREET - BOOSTER
PUMP STATION REPLACEMENT
CITY OF CONNEAUT
ASHTABULA COUNTY, OHIO

GENERAL - 01 SERIES
COVER SHEET

PROJECT NO.	
41632	
DISCIPLINE	
GENERAL	
SHEET NAME	
00G-01	
SHEET	OF
1	21

GENERAL:

- 1. THE CONTRACTOR SHALL PERFORM ALL OF THE WORK AND FURNISH ALL OF THE LABOR AND MATERIALS NECESSARY FOR THE FINAL COMPLETION OF THIS CONTRACT IN THE MANNER AND UNDER THE CONDITIONS HEREIN SPECIFIED AND PROVIDED AND IN ACCORDANCE WITH THE CONTRACT DRAWINGS.
2. THE CONTRACTOR SHALL NOTIFY THE CITY OF CONNEAUT A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE A PRE-CONSTRUCTION MEETING. NO WORK SHALL BEGIN UNTIL A PRE-CONSTRUCTION MEETING HAS BEEN HELD.
3. A PRE-CONSTRUCTION VIDEO TAPE OF THE PROJECT AREA WILL BE REQUIRED AND SUBMITTED TO THE ENGINEER BEFORE CONSTRUCTION BEGINS.
4. ACCESS TO ALL DRIVEWAYS WILL BE MAINTAINED AT ALL TIMES EXCEPT THE TIME WHEN UTILITY INSTALLATION AND PAVEMENT REPLACEMENT WILL NOT PERMIT.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING A SITE FOR DISPOSAL OF ALL EXCAVATED MATERIAL THAT IS UNSUITABLE FOR USE AS BACKFILL AND ALL OTHER EXCESS EXCAVATED MATERIALS. THE CONTRACTOR SHALL PROVIDE THE CITY WITH THE LOCATION OF THE DISPOSAL SITE AND WRITTEN PERMISSION FOR USE OF THE SITE FROM THE PROPERTY OWNER.
6. ALL OVER-THE-ROAD VEHICLES USED ON THE PROJECT BY ALL CONTRACTORS AND SUBCONTRACTORS WILL BE CLEARLY MARKED SHOWING ITS COMPANY SYMBOL.
7. BEFORE THE CITY WILL APPROVE AND ACCEPT THE WORK AND RELEASE THE GUARANTY RETAINER, THE CONTRACTOR WILL FURNISH THE CITY OF CONNEAUT A WRITTEN REPORT INDICATING THE RESOLUTION OF ANY AND ALL PROPERTY DAMAGE CLAIMS FILED WITH THE CONTRACTOR BY ANY PARTY DURING THE CONSTRUCTION PERIOD. THE INFORMATION TO BE SUPPLIED SHALL INCLUDE, BUT NOT BE LIMITED TO, NAME OF CLAIMANT, DATE FILED WITH CONTRACTOR, NAME OF INSURANCE COMPANY AND/OR ADJUSTOR HANDLING CLAIM, HOW CLAIM WAS RESOLVED AND IF CLAIM WAS NOT RESOLVED FOR THE FULL AMOUNT, A STATEMENT INDICATING THE REASON FOR SUCH ACTION.
8. MATERIALS FOR "AS-DIRECTED" ITEMS SHALL NOT BE ORDERED OR DELIVERED TO THE PROJECT SITE OR WORK PERFORMED UNTIL AUTHORIZED BY THE ENGINEER.
9. ALL SHOP DRAWINGS WILL BE SUBMITTED TO THE ENGINEER FOR CHECKING.
10. THE CONTRACTOR SHALL NOTIFY THE CITY OF CONNEAUT POLICE AND FIRE DEPARTMENTS AND THE CITY ADMINISTRATOR AT LEAST 48 HOURS IN ADVANCE OF ANY STREET CLOSING OR TRAFFIC CHANGE.
11. THE CONTRACTOR SHALL PERFORM WORK AS TO NOT DISTURB, DAMAGE OR DESTROY ANY MAILBOX, PAPERBOX, TELEPHONE OR POWER POLES, SIGNS, LANDSCAPING ITEMS, ETC.. ANY ITEM DAMAGED OR DESTROYED SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ANY ITEM DISTURBED OR IN CONFLICT WITH THE WORK TO BE PERFORMED SHALL BE REMOVED AND RESET AT THE CONTRACTOR'S EXPENSE. PRIOR ENGINEER APPROVAL IS REQUIRED BEFORE ANY OF THE ABOVE ITEMS ARE PERFORMED.
12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY, WHEN ORDERED BY THE OWNER, WATER OR CALCIUM CHLORIDE FOR THE ALLEVIATION OR PREVENTION OF DUST NUISANCE ORIGINATING FROM HIS CONSTRUCTION ACTIVITIES. SUFFICIENT QUANTITIES OF CALCIUM CHLORIDE SHALL BE STORED ON THE JOB SITE AT ALL TIMES TO BE USED FOR DUST CONTROL. THE COST OF DUST CONTROL SHALL BE INCLUDED IN THE UNIT BID PRICES FOR ALL ITEMS OF THE PROPOSAL.
13. ALL SOIL AREAS DISTURBED SHALL BE TOPSOILED (4" THICK), SEEDED AND MULCHED. ALL TOPSOIL WORK INSIDE THE STREET RIGHT-OF-WAY SHALL BE INCLUDED IN THE UNIT BID PRICES FOR ALL ITEMS OF THE PROPOSAL.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT.
15. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS BEFORE INSTALLING ANY PROPOSED CONDUIT. ANY ADJUSTMENTS NEEDED SHALL BE APPROVED BY THE ENGINEER.
16. THE CITY OF CONNEAUT SPECIFICATIONS SUPPLEMENTED WHERE NECESSARY BY THE OHIO DEPT. OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS - CURRENT EDITION) SHALL GOVERN THE INSTALLATION OF WATER MAIN AND ASSOCIATED APPURTENANCES.
17. ALL MATERIAL, PERMANENT AND TEMPORARY, SHALL COMPLY WITH NSF 61 AND BE IN A CLEAN AND SANITARY CONDITION WHEN INSTALLED. TEMPORARY EQUIPMENT AND PIPING SHALL BE NEW PRODUCTS OR ONLY HAVE BEEN USED ON NON-POTABLE APPLICATIONS.

EXISTING UTILITIES:

- 1. EACH CONTRACTOR SHALL VISIT THE SITE PERSONALLY TO ASCERTAIN THE NATURE OF THE WORK AND THOROUGHLY FAMILIARIZE HIMSELF WITH THE SITE PRIOR TO BID SUBMISSION.
2. THE DATA SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE EXISTENCE OF FACILITIES ABOVE OR BELOW GROUND, WHICH MAY NOT BE SHOWN, MAY NOT BE A BASIS FOR A CLAIM FOR EXTRA WORK.
3. THE LOCATIONS OF THE UNDERGROUND UTILITIES ARE PLOTTED ACCORDING TO THE INFORMATION FURNISHED BY THE UTILITIES CONCERNED AND THE CITY DOES NOT GUARANTEE THE ACCURACY THEREOF.
4. BEFORE ANY WORK IS STARTED THAT WILL INTERFERE WITH THE EXISTING UTILITIES, THE CONTRACTOR SHALL CALL THE "OHIO UTILITIES PROTECTION SERVICE" AT 1-800-362-2764, FORTY-EIGHT (48) HOURS IN ADVANCE OF THE WORK. NON-MEMBER UTILITIES MUST BE CONTACTED DIRECTLY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, AT NO ADDITIONAL EXPENSE TO THE CITY OF CONNEAUT, TO AVOID DAMAGE TO EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES DURING THE ENTIRE PROJECT. IN THE EVENT OF DAMAGE TO EXISTING PUBLIC AND/OR PRIVATE UTILITIES, THE AGENCY CONCERNED SHALL BE NOTIFIED IMMEDIATELY AND ALL REPAIR WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE RESPECTIVE AGENCY AT NO ADDITIONAL EXPENSE TO THE CITY OF CONNEAUT, INCLUDING ANY INSPECTION FEES OR MAINTENANCE CREWS. THE UTILITY OWNERSHIPS ARE LISTED ON THE COVER SHEET.
5. WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

SALVAGED ITEMS:

- 1. THE CITY OF CONNEAUT SHALL RECEIVE ALL SALVAGED ITEMS SUCH AS PUMP SKID MANHOLE CASTINGS, FIRE HYDRANTS, VALVE CAPS, ETC. THE CITY OF CONNEAUT HAS THE RIGHT OF FIRST REFUSAL FOR ALL STEEL REMOVED FROM THE PROJECT.

RESTORATION:

- 1. THE CONTRACTOR SHALL CLEAN UP ALL DEBRIS AND MATERIALS RESULTING FROM HIS OPERATION AND RESTORE ALL SURFACES, STRUCTURES, DITCHES AND PROPERTY TO ITS ORIGINAL CONDITION TO THE SATISFACTION OF THE ENGINEER. ANY DITCHES DISTURBED DURING CONSTRUCTION SHALL BE REGRADED BY THE END OF THE SAME WORKDAY.
2. ALL EXISTING STORM AND SANITARY SEWER FACILITIES, INCLUDING TILE, DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR RECONNECTED TO THE EXISTING OR PROPOSED SYSTEM AS DIRECTED BY THE ENGINEER AT NO COST TO THE OWNER.

DEMOLITION:

- 1. THE CONTRACTOR SHALL REFER TO THE PROJECT SPECIFICATIONS AND CONSTRUCTION DRAWINGS.

WATER MAIN SPECIFICATIONS & NOTES:

- 1. BURIED WATER MAINS SHALL BE DUCTILE IRON PIPE, CEMENT LINED, AND MANUFACTURED IN ACCORDANCE WITH ANSII/AWWA C151/A21.51 WITH A THICKNESS CLASS OF 52. ALL PIPES, UNLESS OTHERWISE SPECIFIED, SHALL BE FURNISHED WITH PUSH-ON TYPE JOINTS, SUCH AS TYTON OR FASTITE WITH RESTRAINED TYPE JOINTS PROVIDED WITHIN THE LENGTHS NOTED ON THE DRAWING, AND BE IN ACCORDANCE WITH ANSII/AWWA C111/A21.11.
RESTRAINED PUSH-ON JOINTS SHALL BE COMPLETELY BOLTLESS; U.S. PTR FLEX, OR AS APPROVED. RESTRAINED MECHANICAL JOINTS SHALL BE MEGALUG AS MANUFACTURED BY EBAA IRON, INC., OR AS APPROVED. OF DUCTILE IRON AND WITH A WORKING PRESSURE OF AT LEAST 250 PSI AND A MINIMUM SAFETY FACTOR OF 2:1. MINIMUM LENGTH OF CUT PIECES OF WATER MAIN THAT MAY BE REUSED IS 5 LF.
2. FITTINGS SHALL BE DUCTILE IRON AND MANUFACTURED IN ACCORDANCE WITH ANSII/AWWA C110/A21.10 OR ANSII/AWWA C153/A21.53 (FOR COMPACT FITTINGS). ALL FITTINGS AND ACCESSORIES SHALL BE FURNISHED WITH MECHANICAL TYPE JOINTS IN ACCORDANCE WITH ANSII/AWWA C111/A21.11.
ALL FITTINGS, BENDS, TEES, PLUGS, ETC. SHALL BE TIED TO THE WATER MAIN WITH EITHER M.J. TYPE CONNECTIONS, TIE RODS OR MEGA-LUGS. TIE RODS SHALL BE 3/4" DIAMETER STAINLESS STEEL. FOR 8" DIAMETER PIPE USE FOUR RODS.
3. GATE VALVES SHALL BE RESILIENT SEAT, NON-RISING STEM WITH MECHANICAL JOINT TYPE ENDS WHICH MEET THE REQUIREMENTS OF AWWA C509. MECHANICAL JOINT ENDS SHALL COMPLY WITH AWWA C111, EXCEPT FOR TAPPING VALVES. THE OPERATING NUT SHALL BE 2" SQUARE, WHICH OPENS TO THE LEFT. VALVES SHALL COME EQUIPPED WITH A DOUBLE O-RING SEAL STUFFING BOX AND HAVE AN EPOXY COATING ON ALL EXTERIOR SURFACES WHICH COMPLIES WITH AWWA C550. EXPOSED GATE VALVES SHALL BE PROVIDED WITH A HANDWHEEL ACTUATOR.
4. VALVE BOXES SHALL BE CAST IRON, TWO PIECE SCREW TYPE, 5/4" DIA. CONFORMING TO ASTM A-126. EACH PIECE SHALL BE COATED, INSIDE AND OUTSIDE WITH A COAL-TAR PITCH VARNISH, SIMILAR TO THAT USED FOR COATING CAST IRON PIPE. HEIGHT RANGE OF BOX ASSEMBLED SHALL BE 36" TO 60". EACH BOX SHALL INCLUDE A CAST IRON LID WITH THE WORD "WATER" CAST INTO THE TOP. ALL VALVE BOXES SHALL INCLUDE ONE 1/2" VALVE BOX RISER.
5. WATER MAINS SHALL TYPICALLY HAVE 5'-0" OF COVER, MEASURED FROM THE TOP OF PIPE VERTICALLY TO THE FINAL FINISH GROUND GRADE OR AS SHOWN SPECIFICALLY ON THE PLANS OR AS DIRECTED BY THE CITY OF CONNEAUT.
6. TAPPING SLEEVES SHALL HAVE A STAINLESS STEEL BODY WITH A DUCTILE IRON FLANGED OUTLET WHICH COMPLIES WITH ANSII B16.1, CLASS 125 AND WITH MSS SP-60. THE GASKET SHALL COMPLETELY SURROUND THE INSIDE OF THE STAINLESS STEEL BODY. THE SLEEVE SHALL COME EQUIPPED WITH A 3/4" NPT BRASS TEST PLUG. MAXIMUM WORKING PRESSURE FOR 4" - 12" SIZES (250 psig) AND FOR 14" - 24" SIZES (200 psig).
TAPPING VALVES SHALL MEET OR EXCEED ALL APPLICABLE REQUIREMENTS OF ANSII/AWWA C509. THE INLET FLANGE SHALL COMPLY WITH ANSII B16.1, CLASS 125 DRILLING. THE MECHANICAL JOINT OUTLET SHALL COMPLY WITH ANSII/AWWA C111. THE VALVE SHALL HAVE A NON-RISING STEM (NRS). THE OPERATING NUT SHALL BE 2" SQUARE, WHICH OPENS TO THE LEFT. VALVES SHALL COME EQUIPPED WITH A DOUBLE O-RING SEAL STUFFING BOX AND HAVE AN EPOXY COATING ON ALL EXTERIOR SURFACES WHICH COMPLIES WITH AWWA C550.
7. BEFORE TESTING THE WATER MAIN, THE SYSTEM SHALL BE FLUSHED ACCORDING TO THE MOST CURRENT PROCEDURES SET FORTH BY THE CITY OF CONNEAUT WATER DEPT. ALL LEAKS SHALL BE LOCATED AND REPAIRED BY THE CONTRACTOR. ALL WATER SAMPLES SHALL BE OBTAINED AND TESTED BY THE CITY OF CONNEAUT.
8. WATER MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA C600. ALL TEST RESULTS MUST BE APPROVED BY THE CITY OF CONNEAUT BEFORE INSTALLATION OF WATER SERVICES. COST SHALL BE SUBSIDIARY TO THE INSTALLATION OF WATER MAIN. TEST PRESSURE SHALL BE 150 PSI.
9. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. COST SHALL BE SUBSIDIARY TO THE INSTALLATION OF WATER MAIN.
10. THE PROPOSED WATER SYSTEM SHALL MAINTAIN A MINIMUM STATIC PRESSURE OF 35PSI.
11. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 10 FOOT HORIZONTAL SEPARATION AND 18 INCH VERTICAL SEPARATION BETWEEN THE PROPOSED WATER MAIN AND EXISTING STORM SEWERS AS MEASURED FROM OUTSIDE EDGE TO OUTSIDE EDGE UNLESS NOTED ON THE PLAN AND PROFILE SHEETS.
12. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 10 FOOT HORIZONTAL SEPARATION AND 18 INCH VERTICAL SEPARATION BETWEEN THE PROPOSED WATER MAIN AND EXISTING SANITARY SEWERS FROM OUTSIDE EDGE TO OUTSIDE EDGE.
13. THE CONTRACTOR SHALL NOT OPERATE OR TURN ANY EXISTING WATER VALVE. IF VALVES NEED TO BE OPENED OR CLOSED HE SHALL NOTIFY THE CITY OF CONNEAUT.
14. ALL ROUGH GRADING TO WITHIN SIX (6) INCHES OF FINISH GRADE SHALL BE COMPLETED OVER THE PROPOSED WATER MAIN PRIOR TO ITS INSTALLATION.
15. THE LOCATION OF EXISTING WATER UTILITIES AS SHOWN ON THESE PLANS WERE DETERMINED FROM AVAILABLE DATA AT THE TIME OF FIELD SURVEYING IN ACCORDANCE WITH SECTION 153.63 OF THE OHIO REVISED CODE.
16. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS, PAYING ALL FEES, AND FOLLOWING ALL REQUIREMENTS ASSOCIATED WITH THE PERMITS. THE CITY OF CONNEAUT ASSUMES NO LIABILITY FOR NOT FOLLOWING THE ABOVE.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OHIO UTILITY PROTECTION SERVICE (OUPS) AS REQUIRED BY LAW.
18. NO WATERLINE TIE-INS SHALL BE DONE ON FRIDAYS OR THE DAY BEFORE A CITY HOLIDAY.
19. DEFLECT WATER MAIN AS REQUIRED TO MAINTAIN ALIGNMENT AS SHOWN ON PLANS. MAXIMUM DEFLECTION IS 3 DEGREES PER JOINT.

EXCESS EXCAVATION:

- 1. ALL EXCESS EXCAVATION SHALL BE DISPOSED OF IN A LOCATION TO BE SELECTED BY THE CONTRACTOR. THE CONTRACTOR MUST OBTAIN A PERMIT FROM THE CITY OF CONNEAUT IF THE MATERIAL IS TO BE DISPOSED OF WITHIN THE CITY LIMITS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL CONSTRUCTION MATERIALS/DEBRIS.

PRESERVATION OF PROPERTY CORNERS AND SURVEY MARKERS:

- 1. THE CONTRACTOR WILL CAREFULLY PRESERVE BENCH MARKS, PROPERTY CORNERS, REFERENCE POINTS, AND STAKES AND IN CASE OF DISTURBANCE, HE SHALL ENGAGE A REGISTERED SURVEYOR TO REPLACE THEM AT HIS EXPENSE AND SHALL BE RESPONSIBLE FOR ANY MISTAKES THAT MAY BE CAUSED BY THEIR LOSS OR DISTURBANCE.

SUBSURFACE CONDITIONS:

- 1. IT IS THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN INVESTIGATION OF SUBSURFACE CONDITIONS PRIOR TO SUBMITTING HIS BID.

PROTECTION AGAINST VANDALISM:

- 1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SUFFICIENT SITE SECURITY MEASURES AND / OR PERSONNEL TO PROTECT EXISTING FACILITIES AND TEMPORARY FACILITIES AT NO ADDITIONAL COST.

EXCAVATION, BACKFILL, AND COMPACTION:

- 1. ALL UTILITY LINES (i.e. STORM SEWERS, STORM LATERALS, SANITARY LATERALS, WATER MAINS, WATER SERVICE CONNECTIONS, GAS MAINS, GAS SERVICE CONNECTIONS, UNDERGROUND OBT CONDUITS, CABLE T.V. LINES) CROSSING THE PROPOSED IMPROVEMENTS, WHETHER SHOWN OR NOT SHOWN ON THE PLANS, SHALL BE PROTECTED AND SUPPORTED WITH HARDWOOD PLANKS OR REMOVED AND REPLACED, RECONNECTED AND SUPPORTED ACROSS THE ENTIRE WIDTH OF THE TRENCH. NO ADDITIONAL COMPENSATION WILL BE PAID FOR THE ABOVE WORK. IF ANY OF THESE LINES ARE DAMAGED DURING CONSTRUCTION, THEY SHALL BE REPLACED.

1. PROHIBITED CONSTRUCTION ACTIVITIES

- A. DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAINS, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER;
B. LOCATING STOCKPILE STORAGE AREAS IN ENVIRONMENTALLY SENSITIVE AREAS;
C. INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR OUTSIDE THE EASEMENT LIMITS;
D. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS, OR STORM SEWERS; ALL SUCH WATER WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE;
E. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE AND OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS, OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO.
F. PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF ANY STREAM;
G. DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA;
H. DISPOSAL OF TREES, BRUSH, AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS;
I. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT;
J. DISCHARGING INJURIOUS SILICA DUST CONCENTRATIONS INTO THE ATMOSPHERE RESULTING FROM BREAKING, CUTTING, CHIPPING, RILLING, BUFFING, GRINDING, POLISHING, SHAPING OR SURFACING CLOSER THAN 200 FEET TO PLACES OF RESIDENCES OR COMMERCIAL, PROFESSIONAL, QUASI-PUBLIC OR PUBLIC PLACES OF HUMAN OCCUPATION;
K. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED ON THE PLANS BY THE ENGINEER FOR SUCH PURPOSES;
L. RUNNING WELL POINT OR PUMP DISCHARGE LINES THROUGH PRIVATE PROPERTY OR PUBLIC PROPERTY AND RIGHTS-OF-WAY WITHOUT THE WRITTEN PERMISSION OF THE PROPERTY OWNER AND THE CONSENT OF THE ENGINEER;
M. OPERATIONS ENTAILING THE USE OF VIBRATORY HAMMERS OR COMPACTORS OUTSIDE THE HOURS OF 8:00 AM AND 5:00 P.M. OR OUTSIDE THE HOURS ALLOWED FOR CONSTRUCTION BY LOCAL ORDINANCES OR REGULATIONS; AND
N. NO CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE OR BOULEVARD WITHOUT THE PRIOR CONSENT OF MUNICIPAL OFFICIALS AND THE ENGINEER, AND CLOSING CLEAR ACCESS:
- BY FIRE PROTECTION EQUIPMENT AND EMERGENCY VEHICLES;
- BY THE PUBLIC TO ANY COMMERCIAL OR PROFESSIONAL PLACE OF BUSINESS, QUASI-PUBLIC OR PUBLIC ESTABLISHMENT, OR PLACE OF RESIDENCE; OR
- BY VEHICLES TO DRIVEWAYS WITHOUT THE PROVISION OF ALTERNATIVE MEANS OF BUILDING INGRESS AND EGRESS.

2. MITIGATIVE MEASURES

- EROSION/SEDIMENT CONTROL
1. SILT FENCES SHOULD BE TRENCHED SIX TO TWELVE INCHES DEEP, THE FABRIC LAID IN THE TRENCH, AND THE SOIL PROPERLY BACKFILLED INTO THE TRENCH TO PREVENT UNDERCUTTING.
2. ANY DISTURBED AREA THAT WILL NOT BE ACTIVELY UNDER CONSTRUCTION FOR A PERIOD OF 15 DAYS OR MORE WILL BE TEMPORARILY STABILIZED IMMEDIATELY BY SEEDING AND MULCHING OR BY ANCHORED STRAW MULCH.
3. AS CONSTRUCTION IS COMPLETED, PERMANENTLY STABILIZE EACH DISTURBED AREA IN STAGES WITH PERENNIAL VEGETATION INSTALLED ACCORDING TO OHIO EPA (OR EQUIVALENT) STANDARDS AND SPECIFICATIONS. FINAL GRADING WILL BE CONSISTENT WITH PRE-CONSTRUCTION TOPOGRAPHY FOR DRAINAGE AND AESTHETIC REASONS.
4. EXCAVATION PITS SHALL BE SURROUNDED WITH SILT BARRIERS TO PREVENT EROSION OF THE EXCAVATED PIT MATERIAL. STORM SEWER INLETS WILL BE SURROUNDED WITH SILT BARRIERS TO PREVENT SILTATION.
5. SLOPES EXCEEDING 15 PERCENT OR THAT TEND TO BE UNSTABLE REQUIRE SPECIAL TREATMENT SUCH AS WATER DIVERSION BERMS, SODDING, OR THE USE OF JUTE OR EXCELSIOR BLANKETS.
6. WHEN BORROW MATERIAL IS OBTAINED FROM OTHER THAN COMMERCIALY OPERATED SOURCES, EROSION OF THE BORROW SITE WILL BE SO CONTROLLED BOTH DURING AND AFTER COMPLETION OF THE WORK THAT EROSION WILL BE MINIMIZED AND SEDIMENT WILL NOT ENTER STREAMS OR OTHER BODIES OF WATER. WASTE OR DISPOSAL AREAS AND CONSTRUCTION ROADS SHALL BE LOCATED AND CONSTRUCTED IN A MANNER THAT WILL KEEP SEDIMENT FROM ENTERING STREAMS. TEMPORARY EROSION CONTROL BARRIERS AND LIMITED SITE CLEARING WILL BE USED AS NEEDED.
7. IF WORK IS SUSPENDED FOR ANY REASON, THE CONTRACTOR SHALL MAINTAIN THE SOIL EROSION AND SEDIMENTATION CONTROLS IN GOOD OPERATING CONDITION DURING THE SUSPENSION OF THE WORK. ALSO, WHEN SEASONAL CONDITIONS PERMIT AND THE SUSPENSION OF WORK IS EXPECTED TO EXCEED A PERIOD OF ONE MONTH, THE CONTRACTOR SHALL SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS LEFT EXPOSED WHEN THE WORK IS STOPPED.
8. INSTALL THE ABOVE EROSION AND SEDIMENT CONTROL MEASURES, AS APPROPRIATE, REFERRING TO OHIO EPA, STORM WATER TECHNICAL ASSISTANCE, RAINWATER AND LAND DEVELOPMENT MANUAL STANDARDS AND SPECIFICATIONS (FORMERLY ODNR) OR EQUIVALENT FOR PARTICULAR TECHNIQUES. THESE MEASURES ARE TO BE MAINTAINED IN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
LINK:
HTTP://EPA.OHIO.GOV/PORTAL/S35/STORM/TECHNICALASSISTANCE/RD11-6-14All.pdf

2. MITIGATIVE MEASURES - CONTINUED

- TRAFFIC CONTROL
9. AT LEAST ONE LANE OF TRAFFIC MUST BE MAINTAINED ALONG THE TRAVEL ROUTE TO THE CONSTRUCTION SITE.
10. ACCESS MUST BE MAINTAINED FOR EMERGENCY VEHICLES AT ALL TIMES.
11. NO TRENCH WILL BE LEFT OPEN AT THE END OF A WORK DAY, WHERE PRACTICAL; ANY OPEN TRENCH WILL BE PROPERLY IDENTIFIED AND BARRICADED FOR SAFETY PURPOSES.
12. ANY CONSTRUCTION EQUIPMENT OR EXCAVATIONS NEAR ROADS MUST BE MARKED WITH LIGHTS, REFLECTORS, OIL LANTERNS, OR SMUDGE POTS.
13. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL NECESSARY BARRICADES, WARNING SIGNS, DANGER SIGNALS, FLAG PERSON(S), WATCHERS, AND ALL OTHER APPROPRIATE PRECAUTIONS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR SAFETY.
14. PRIOR TO CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE, OR BOULEVARD, THE CONTRACTOR MUST HAVE CONSENT FROM LOCAL OFFICIALS AND THE ENGINEER.
AIR POLLUTION / NOISE CONTROL
15. CONSTRUCTION ACTIVITIES WILL BE LIMITED TO DAYTIME HOURS.
16. CONSTRUCTION EQUIPMENT WILL BE PROVIDED WITH INTAKE SILENCERS AND MUFFLERS, AS REQUIRED BY SAFETY STANDARDS.
17. ALL CONSTRUCTION VEHICLES SHOULD BE EQUIPPED WITH PROPER EMISSIONS CONTROL EQUIPMENT.
18. PERIODICALLY CHECK EQUIPMENT AND MACHINERY FOR PROPER TUNING TO MINIMIZE EXHAUST EMISSIONS AND NOISE.
19. UNPAVED AREAS WILL BE WET DOWN (AS NECESSARY) DURING CONSTRUCTION TO MINIMIZE DUST GENERATION.
DEWATERING
20. ALL DEWATERING FLOWS ARE TO BE SETTLED IN SILTATION BASINS OR DIRECTED THROUGH FILTERING DEVICES BEFORE DISCHARGE TO STABILIZED SITES, SUCH AS STREAMS OR STORM SEWERS; NOT ONTO EXPOSED SOILS, STREAM BANKS, OR ANY OTHER SITE WHERE THE FLOW COULD CAUSE EROSION.
21. SILT FROM CONSTRUCTION OPERATIONS SHALL NOT BE PERMITTED TO ENTER THE STORM SEWER SYSTEM. WHEN CONSTRUCTION OCCURS NEAR STORM SEWER INLETS, EROSION CONTROL MEASURES SUCH AS INLET FILTERS AND HAY BALES SHALL BE USED TO PREVENT SILT FROM ENTERING THE STORM SEWERS.
22. CONVEY WATER FROM THE CONSTRUCTION SITE IN A CLOSED CONDUIT. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DRAINAGE DITCHES.
ARCHAEOLOGICAL / HISTORICAL RESOURCES
23. CONTRACTORS AND SUBCONTRACTORS ARE REQUIRED UNDER OHIO REVISED CODE (O.R.C.) SECTION 149.53, TO NOTIFY THE OHIO'S STATE HISTORIC PRESERVATION OFFICE (SHPD), AND TO COOPERATE WITH THAT OFFICE IN ARCHAEOLOGICAL AND HISTORIC SURVEYS AND MITIGATION EFFORTS IF SUCH DISCOVERIES ARE UNCOVERED WITHIN THE PROJECT AREA.
24. CONTACT: OHIO STATE HISTORIC PRESERVATION OFFICE
25. DIANA WELLING, RESOURCE PROTECTION & REVIEW DEPARTMENT MANAGER
PHONE: 1-614-298-2000
26. DWELLING@OHIOHISTORY.ORG
GROUND WATER AND DRINKING WATER PROTECTION
27. REPORT ALL SPILLS TO THE APPLICANT AND TO THE OHIO EPA SPILL HOTLINE AT 1-800-282-9378.
28. POST THE OHIO EPA EMERGENCY SPILL HOTLINE NUMBER (1-800-282-9378) AT THE PROJECT SITE.



Table with 2 columns: ISSUED FOR, ISSUE DATE, SCALE, DESIGNED BY, DRAWN BY, CHECKED BY. Values include 02/24/2026, AS NOTED, and various initials.

OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT CITY OF CONNEAUT ASHTABULA COUNTY, OHIO
GENERAL - 01 SERIES OEPA GENERAL NOTES

Table with 2 columns: PROJECT NO., DISCIPLINE, SHEET NAME, SHEET, OF. Values include 41632, GENERAL, 00G-03, 3, 21.

Z:\PROJECT FILES\CA\CONNEAUT\41632 - CONNEAUT OH OLD MAIN STREET BPS & WATERCAD\DWGS\SHEETS\G_41632 - OEPA GENERAL NOTES.DWG - 3 OEPA GENERAL NOTES - 2/25/2026 6:36:46 PM - JEE ELEY



Ryan S. Schuster

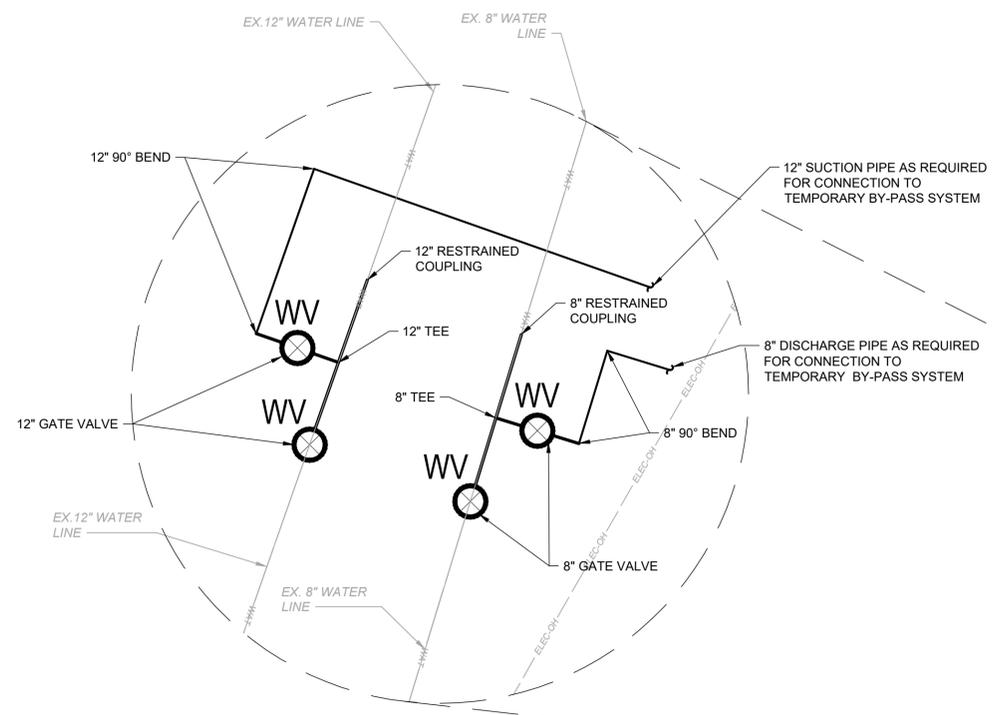
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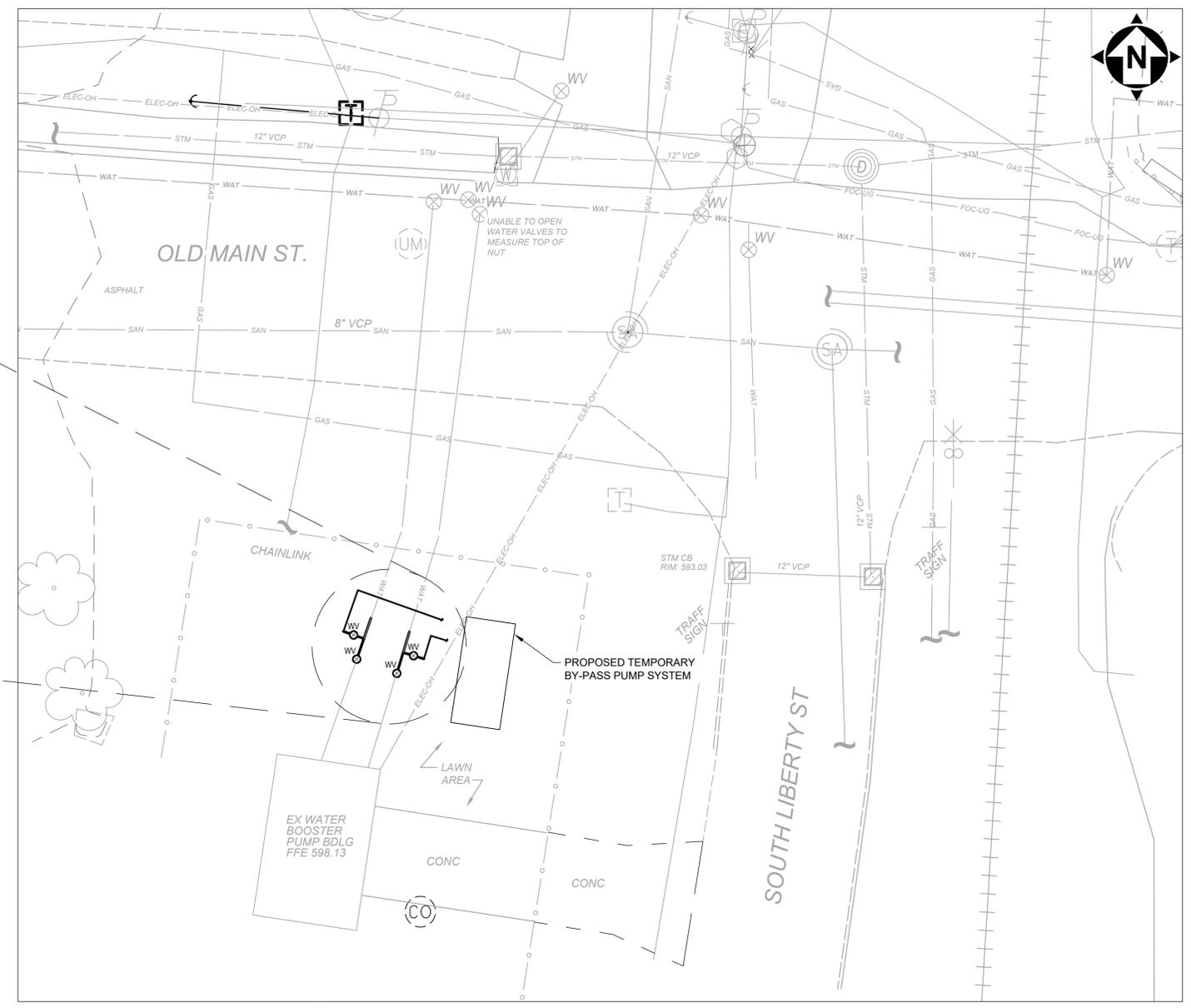
OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT
 ASHTABULA COUNTY, OHIO
 CITY OF CONNEAUT

GENERAL - 01 SERIES
BOOSTER PUMP STATION SITE PLAN

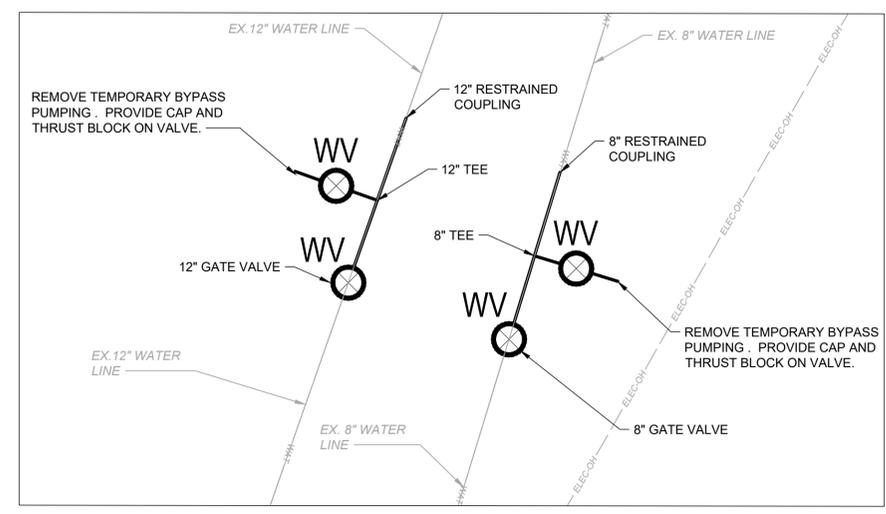
PROJECT NO.	41632
DISCIPLINE	CIVIL
SHEET NAME	C-01
SHEET	4
OF	21



BOOSTER STATION WATERLINE PROPOSED IMPROVEMENTS WITH TEMPORARY BYPASS
 SCALE: NA



SITE PLAN
 SCALE: 1" = 10'-0"

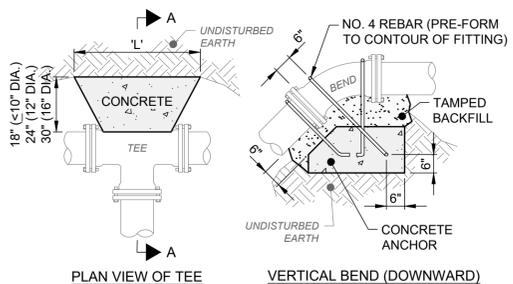
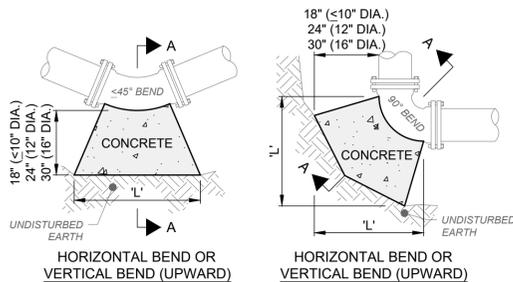
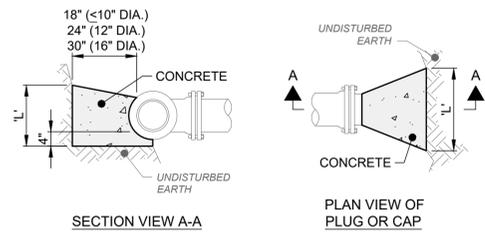


BOOSTER STATION WATERLINE PROPOSED IMPROVEMENTS FINAL ARRANGEMENT
 SCALE: NA

- NOTES**
- CONTRACTOR SHALL REMOVE FENCE AS APPROPRIATE TO PERFORM WORK. FENCE SHALL BE REPLACED WITH NEW FENCE.
 - CONTRACTOR SHALL CONTACT 811 NO DIG PRIOR TO ANY EXCAVATION EFFORTS.

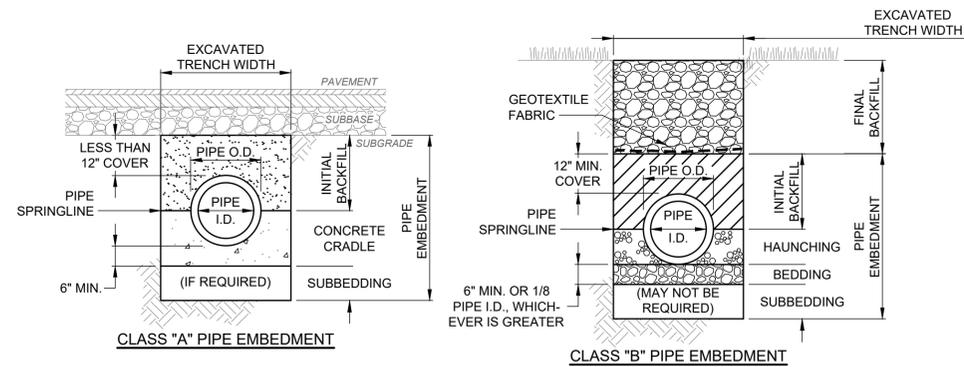
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MAIN DIA.	"L" DIMENSIONS					TEE	CAP & PLUG
	11.25"	22.5"	45"	90"			
4"	5"	9"	14"			14"	11"
6"	8"	12"	20"	27"	20"	17"	
8"	9"	16"	24"	31"	24"	23"	
10"	12"	20"	30"	39"	30"	31"	
12"	14"	24"	36"	47"	36"	38"	
16"	18"	32"	36"	54"	36"	49"	



- NOTES:**
1. ALL CONCRETE SHALL BE ODOT ITEM 499, CLASS QC-1.
 2. ALL DIMENSIONS SHOWN ARE MINIMUMS. THRUST BLOCKS SHALL BE POURED TO UNDISTURBED EARTH.
 3. DO NOT COVER BOLTS WITH CONCRETE ON MECHANICAL JOINTS.
 4. USE FORMS WHEN POURING CONCRETE TO MAINTAIN SHAPE AND DIMENSIONS OF THRUST BLOCKS.

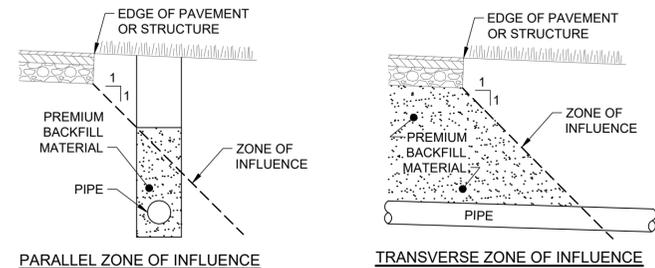
CONCRETE THRUST BLOCK DETAIL
 SCALE: NONE



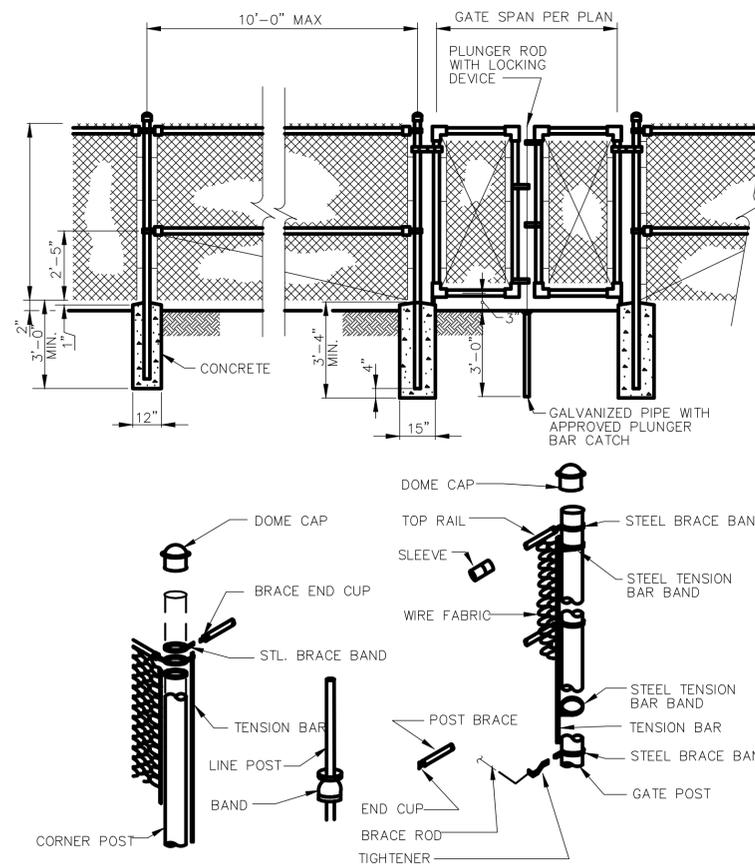
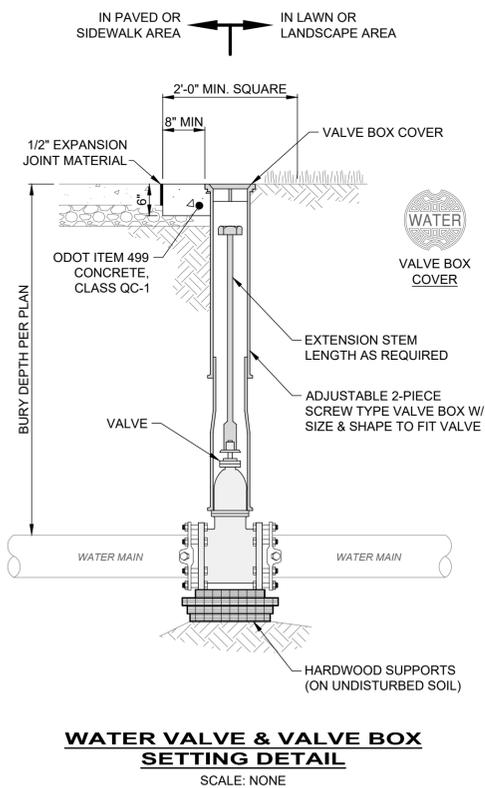
1. **EXCAVATED TRENCH WIDTH:** MEASURED FROM BOTTOM OF TRENCH TO 12" OVER TOP OF PIPE (WITHIN THE PIPE EMBEDMENT), THE MIN. TRENCH WIDTH SHALL BE 9" AND THE MAX. SHALL BE:
 - O.D.+24" FOR 24" AND SMALLER I.D. PIPE
 - O.D.+30" FOR 27" THRU 72" I.D. PIPE
2. **FINAL BACKFILL:** ALL AREAS UNDER AND WITHIN 5-FT OF PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE SHALL BE PREMIUM BACKFILL (ODOT ITEM 304 LIMESTONE). PAVEMENT INCLUDES ROADWAY, SHOULDER AND DRIVEWAY, BUT NOT SIDEWALK. NO SLAG OR SLACKER AGGREGATES ALLOWED. IN ALL OTHER AREAS, THE FINAL BACKFILL SHALL BE SUITABLE ON-SITE MATERIAL.
3. **PIPE EMBEDMENT:**
 - 3.1. **CLASS "A":** SHALL BE USED FOR ALL PIPES UNDER PAVEMENT OR STRUCTURES WITH LESS THAN 12" OF PIPE COVER TO THE SUBGRADE. THE CONCRETE CRADLE SHALL BE IN ACCORDANCE WITH ODOT ITEM 499, CLASS QC-1. THE INITIAL BACKFILL SHALL BE NO. 57 COURSE INTERLOCKING LIMESTONE AGGREGATE.
 - 3.2. **CLASS "B":** SHALL BE USED FOR ALL PIPES UNLESS OTHERWISE NOTED ON THE PLANS. BEDDING AND HAUNCHING SHALL BE NO. 8 OR 57 COURSE INTERLOCKING LIMESTONE AGGREGATE. IN AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE, THE INITIAL BACKFILL SHALL BE NO. 8 OR 57 COURSE INTERLOCKING LIMESTONE AGGREGATE. IN ALL OTHER AREAS, THE INITIAL BACKFILL MAY BE SUITABLE ON-SITE MATERIAL FOR RIGID PIPE, AND SHALL BE NO. 8 OR 57 COURSE INTERLOCKING LIMESTONE AGGREGATE FOR FLEXIBLE PIPE.
4. **NOTES FOR BETWEEN RESIDENCES:**

TRENCHING, EMBEDMENT AND BACKFILL DETAIL

NOT TO SCALE



- 4.1. WHERE BACKFILL OPERATIONS ARE LOCATED IN CLOSE PROXIMITY TO EXISTING STRUCTURES, COMPACTION SHOULD BE PERFORMED USING A WALK BEHIND TRENCH ROLLER (WACKER NEUSON RT, OR APPROVED EQUIVALENT) TO AVOID DISTURBANCE TO THE EXISTING STRUCTURE WALLS AND FOUNDATIONS. LARGE COMPACTION EQUIPMENT SHALL NOT BE ALLOWED IN THE SECTION OF THE TRENCH LOCATED WITHIN 25 FEET OF EXISTING STRUCTURES.
- 4.2. WHERE PIPE AND TRENCHING IS TO BE PLACED BETWEEN THE EXISTING RESIDENCES, THE INITIAL BACKFILL SHALL BE FINE AGGREGATE OF NATURAL SAND MEETING GRADATION REQUIREMENTS OF ODOT ITEM 703.02 A.2 OR SHOWN IN THE CONTRACT DOCUMENTS. THE MATERIAL SHALL NOT BE LUMPY OR FROZEN, AND SHALL BE FREE FROM SLAG, CINDERS, ASHES AND OTHER DELETERIOUS MATERIALS. SAND SHALL NOT CONTAIN A TOTAL OF MORE THAN 10% BY WEIGHT OF LOAM AND CLAY. VIBRATORY OR OTHER MECHANICALLY OPERATED COMPACTION EQUIPMENT SHALL NOT BE USED IN THESE AREAS DUE TO THE PROXIMITY OF THE TRENCH EXTENTS TO THE EXISTING STRUCTURES.
- 4.3. DESIGN OF THE TEMPORARY SUPPORT OF EXCAVATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, SINCE THEIR INSTALLATION AND PERFORMANCE IS INTEGRALLY TIED TO THE CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION. ALL APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS MUST BE FOLLOWED. IT IS THE RESPONSIBILITY OF THE INSTALLATION CONTRACTOR TO DEVELOP APPROPRIATE INSTALLATION METHODS AND EQUIPMENT SPECIFICATIONS PRIOR TO COMMENCEMENT OF WORK, AND TO OBTAIN THE SERVICES OF A QUALIFIED PROFESSIONAL ENGINEER TO DESIGN OR APPROVE SLOPED OR BENCHED EXCAVATIONS AND/OR LATERAL BRACING SYSTEMS AS REQUIRED BY OSHA CRITERIA.
5. **SUBBEDDING:** WHERE AN UNSTABLE TRENCH BOTTOM CONDITION IS ENCOUNTERED, EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH MATERIAL AS DIRECTED BY THE ENGINEER. THIS SHALL NOT BE CONSIDERED FOR ADDITIONAL PAYMENT.
6. **GEOTEXTILE FABRIC** SHALL BE PER ODOT 712.09, TYPE A, AND INSTALLED AFTER ALL INITIAL BACKFILL.



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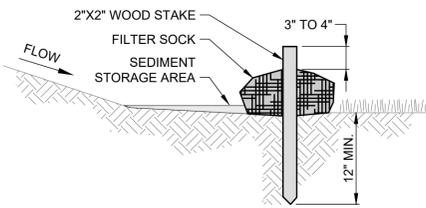
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OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT
 CITY OF CONNEAUT ASHTABULA COUNTY, OHIO

GENERAL - 01 SERIES
CONSTRUCTION DETAILS 1

PROJECT NO.	41632
DISCIPLINE	CIVIL
SHEET NAME	C-02
SHEET	OF
5	21

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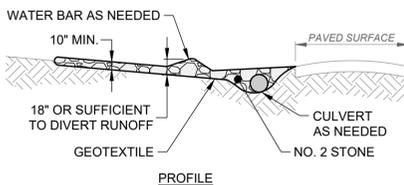
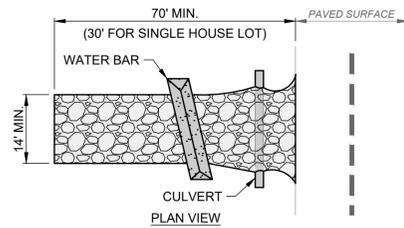


NOTES:

- FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST.
- COMPOST SHALL BE WEED, PATHOGEN AND INSECT FREE, FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH, BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER, AND CONSIST OF PARTICLES RANGING FROM 3/8" TO 2".
- FILTER SOCKS SHALL BE PLACED ON A LEVEL LINE ACROSS SLOPES PARALLEL TO THE BASE OF THE SLOPE. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND MID-SLOPE.
- FILTER SOCKS SHALL BE PLACED AT LEAST 5' FROM THE TOE OF SLOPE FOR SEDIMENT DEPOSIT.
- BUILT UP SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED 1/3 THE FILTER SOCK HEIGHT.
- WHEN A FILTER SOCK IS NO LONGER REQUIRED, IT SHALL BE DISPERSED ON-SITE.
- THE MAXIMUM DRAINAGE AREA PER 100 FEET OF FILTER SOCK IS 1/2 ACRE AND IS DEPENDENT ON THE SLOPE FOLLOWING THE GUIDANCE CHART BELOW:

MAX. SLOPE LENGTH ABOVE FILTER SOCK					
SLOPE	RATIO (H:V)	8'	12'	18'	24'
0% - 2%	0 - 50:1	125'	250'	300'	350'
2% - 10%	50:1 - 10:1	100'	125'	200'	250'
10% - 20%	10:1 - 5:1	75'	100'	150'	200'
20% - 50%	5:1 - 2:1	N/A	50'	75'	100'
≥ 50%	≥ 2:1	N/A	25'	50'	75'

FILTER SOCK DETAIL
SCALE: NONE



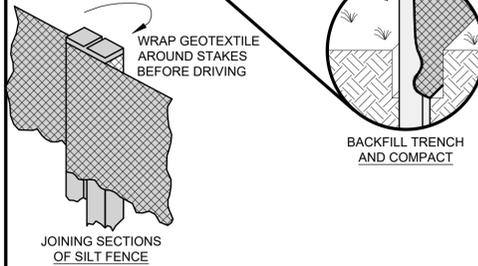
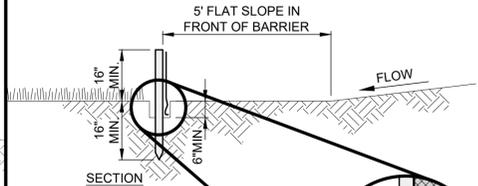
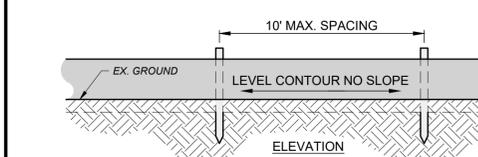
NOTES:

- GEOTEXTILE SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS MEETING THE FOLLOWING:

TENSILE STRENGTH	200 LB
PUNCTURE STRENGTH	80 PSI
TEAR STRENGTH	50 LB
BURST STRENGTH	320 PSI
ELONGATION	20%
EQUIVALENT OPENING SIZE	< 0.6 MM
PERMITTIVITY	0.001 CM/SEC.

- INSTALL WATER BAR, AS NEEDED, TO PREVENT SURFACE RUNOFF FROM FLOWING OUT ONTO PAVEMENT.
- APPLY ADDITIONAL STONE AS CONDITIONS DEMAND, REPLENISH STONE WHEN THE DEPTH IS LESS THAN 6", AND REPLACE IF STONES BECOMES MUD-LADEN.
- IMMEDIATELY REMOVE MUD DROPPED, WASHED OR TRACKED ONTO ROADS OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS BY SCRAPING OR SWEEPING.
- CONSTRUCTION ENTRANCE SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES OR PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
- CONSTRUCTION ENTRANCE SHALL REMAIN UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY.

CONSTRUCTION ENTRANCE
SCALE: NONE

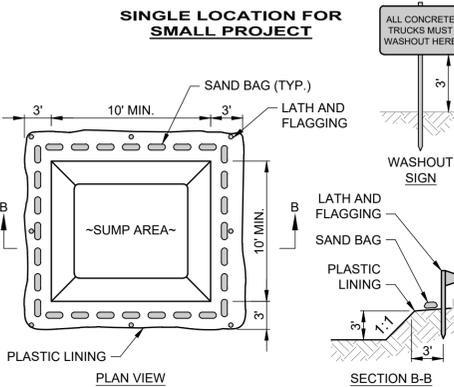
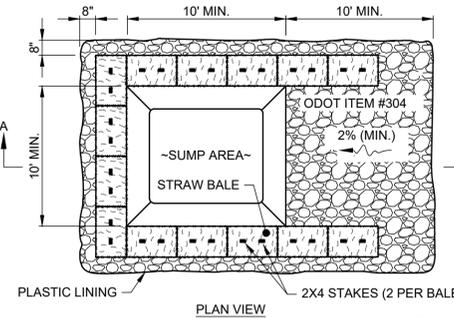
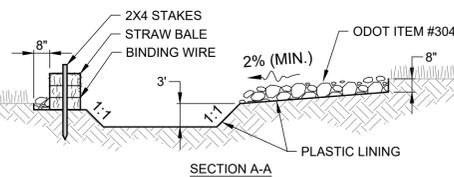


FABRIC PROPERTIES	VALUES	TEST METHOD
GRAB TENSILE STRENGTH	90 LB. MIN	ASTM D-1682
MULLEN BURST STRENGTH	190 PSI MIN	ASTM D-3786
SLURRY FLOW RATE	0.3 GAL./MIN./S.F. MAX.	
EQUIVALENT OPENING SIZE	40-80	US STD. SIEVE CW-02215
ULTRAVIOLET RADIATION STABILITY	90% MIN	ASTM-G-26

NOTES:

- PRESERVE VEGETATION FOR 5 FEET OR AS MUCH AS POSSIBLE UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE RE-ESTABLISHED WITHIN 7 DAYS FROM SILT FENCE INSTALLATION.
- THE MAXIMUM DRAINAGE AREA PER 100 FEET OF SILT FENCE IS DEPENDENT ON THE SLOPE, BUT NO MORE THAN 1/2 ACRE. SILT FENCE CANNOT BE USED FOR DRAINAGE AREAS WITH SLOPES GREATER THAN 50%.
- SILT FENCE MAY ONLY PASS RUNOFF AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, THEN CHANGE THE LAYOUT OF THE SILT FENCE, REMOVE ACCUMULATED SEDIMENT OR INSTALL OTHER PRACTICES.
- SILT FENCE SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, VERIFICATION FABRIC IS SECURELY ATTACHED TO FENCE POSTS, AND VERIFICATION FENCE POSTS ARE FIRMLY IN THE GROUND. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED 1/3 THE FENCE HEIGHT.

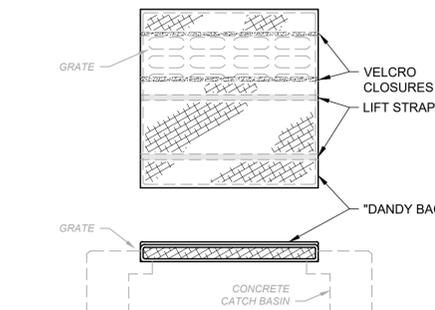
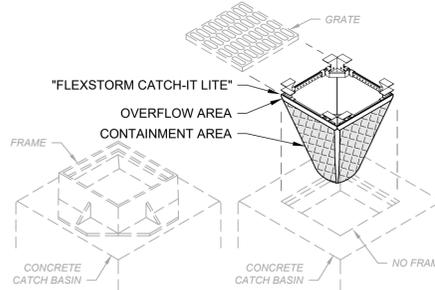
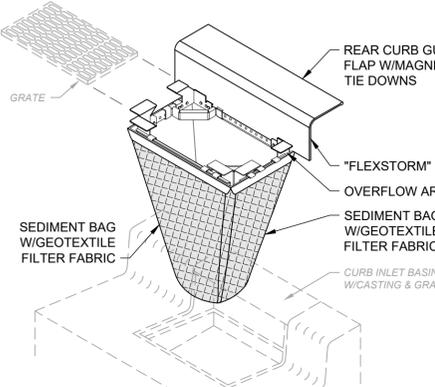
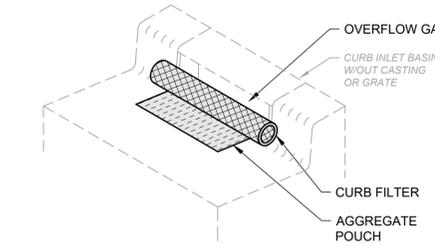
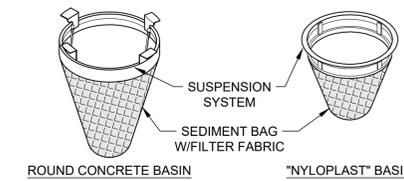
SILT FENCE
SCALE: NONE



NOTES:

- CONCRETE WASHOUT AREA SHALL BE LOCATED A MINIMUM OF 100' FROM STORM SEWER INLETS, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS.
- IF CONCRETE WASHOUT AREA IS LOCATED AWAY FROM A PAVED SURFACE, CONSTRUCT A GRAVEL ACCESS ROUTE EQUAL IN COMPOSITION TO A CONSTRUCTION ENTRANCE.
- CONCRETE WASHOUT AREA SHALL BE SUFFICIENT SIZE TO CONTAIN CONCRETE WASTE GENERATED. LARGE SITES MAY REQUIRE MULTIPLE CONCRETE WASHOUT AREAS.
- PLASTIC LINING SHALL BE DOUBLE-LINED, CONTINUOUS 10-MIL POLYETHYLENE SHEETING FREE OF HOLES, TEARS OR OTHER DEFECTS INSTALLED ON A SMOOTH, LEVEL SURFACE, FREE OF LARGE ROCKS AND DEBRIS.
- CONCRETE WASHOUT SIGNAGE SHALL BE CLEARLY VISIBLE AND LOCATED WITHIN 30 FEET OF EACH WASHOUT AREA.
- CONCRETE WASHOUT AREA SHALL BE COVERED DURING INCLEMENT WEATHER TO PREVENT OVERFLOW.
- PREFABRICATED, PORTABLE AND RE-USABLE CONCRETE WASHOUT CONTAINERS ARE ACCEPTABLE.
- CONCRETE WASHOUT AREA SHALL BE INSPECTED DAILY TO CHECK FOR DAMAGE AND DETERMINE IF IT NEEDS CLEANED OR REPLACED. ANY DAMAGE TO THE SIDEWALLS OR PLASTIC LINING SHALL BE REPAIRED IMMEDIATELY. REPLACE THE ENTIRE CONCRETE WASHOUT AREA WHEN IT IS 75% FULL.

CONCRETE WASHOUT AREA DETAIL
SCALE: NONE



NOTES:

- ALL NEW AND EXISTING STORM INLET BASINS WITHIN THE WORK LIMITS SHALL HAVE INLET PROTECTION INSTALLED.
- INLET PROTECTION SHALL BE INSTALLED AS EACH STORM INLET IS CONSTRUCTED.
- NOT ALL ITEMS SHOWN MAY APPLY OR DIFFERENT TYPES OR CONFIGURATIONS MAY BE REQUIRED. THE CONTRACTOR SHALL MEASURE EACH INLET TO CONFIGURE AND ASSEMBLE CUSTOMIZED INLET FILTERS.

INLET PROTECTION DETAIL
SCALE: NONE



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ISSUED FOR:	BID	RSS	RSS
ISSUE DATE:	02/24/2026	AS NOTED	AS NOTED
SCALE:		DESIGNED BY:	RSS
		DRAWN BY:	ELE
		CHECKED BY:	RSS

OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT
ASHTABULA COUNTY, OHIO
CITY OF CONNEAUT

GENERAL - 01 SERIES
SWPPP DETAILS 1

PROJECT NO.	41632
DISCIPLINE	CIVIL
SHEET NAME	C-03
SHEET	6
OF	21

ADMINISTRATIVE NOTES	
1.	AN OHIO EPA NPDES PERMIT IS REQUIRED WHERE CONSTRUCTION ACTIVITIES DISTURB 1 OR MORE ACRES OF LAND, OR SMALLER SITES LESS THAN 1 ACRE THAT ARE PART OF A LARGER COMMON DEVELOPMENT. DISTURBED LAND IS LAND IN WHICH VEGETATION HAS BEEN CLEARED AND SOILS ARE EXPOSED TO STORM WATER. A NOI IS NOT REQUIRED FOR THIS PROJECT AND MUST BE FILED WITH THE OHIO EPA AT LEAST 21 DAYS PRIOR TO THE START OF CONSTRUCTION BECAUSE THE TOTAL LAND DISTURBANCE IS LESS THAN 1 ACRE. THE LIMIT OF EARTH DISTURBANCE FOR THIS PROJECT IS APPROXIMATELY 0.10 ACRES.
2.	THE CONTRACTOR SHALL FOLLOW THE PRACTICES AND REQUIREMENTS PROVIDED IN THE OHIO EPA NPDES CONSTRUCTION SITE STORM WATER GENERAL PERMIT OH000006 AND THE ODNRAINWATER AND LAND DEVELOPMENT MANUAL. NO CONSTRUCTION ACTIVITIES MAY BEGIN UNTIL ALL OF THE FOLLOWING OCCUR: <ul style="list-style-type: none"> THE CONTRACTOR ATTENDS A PRE-CONSTRUCTION MEETING WITH THE SWCD TO DISCUSS OHIO EPA NPDES PERMIT REQUIREMENTS
3.	THE CONTRACTOR SHALL SELECT INDIVIDUALS TO BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND COMPLETING INSPECTION AND MAINTENANCE REPORTS. THE CONTRACTOR SHALL COMPLETE A "DELEGATION OF AUTHORITY FOR STORM WATER POLLUTION PREVENTION PLAN" AND PROVIDE A COPY TO THE OWNER AND SWCD.
4.	ALL PROCEDURES AND REQUIREMENTS CONTAINED IN THIS SWP3 APPLY TO ALL GENERAL AND SUBCONTRACTORS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT, INFORM, REQUIRE AND ENFORCE ALL ASPECTS AND PROCEDURES OF THE SWP3. THE CONTRACTOR SHALL HAVE ALL SUBCONTRACTORS THAT ARE OR MAY BE ENGAGED IN ACTIVITIES THAT COULD IMPACT STORM WATER COMPLETE A "SUBCONTRACTOR AGREEMENT FOR EROSION AND SEDIMENT CONTROL", AND PROVIDE A COPY TO THE OWNER AND SWCD.
5.	THE CONTRACTOR SHALL KEEP ON-SITE COPIES OF THE NPDES, SWP3 AND INSPECTION LOGS/REPORTS.
6.	ALL EROSION AND SEDIMENT CONTROL WORK SHALL BE SUBJECT TO INSPECTION BY THE SWCD AND OHIO EPA.

GENERAL NOTES

1.	THE CONTRACTOR IS REQUIRED TO DEVELOP THE SWP3 FOR THIS PROJECT AND SUBMIT FOR APPROVAL TO THE SWCD SHOWING THE ITEMS LISTED BELOW. SOME ITEMS MAY ALREADY BE SHOWN ON THE SWP3, BUT MOVED TO BETTER SUIT THE CONTRACTOR'S MEANS AND METHODS. <ul style="list-style-type: none"> LIMITS OF EARTH DISTURBING ACTIVITY CONSTRUCTION ENTRANCE(S) EROSION AND SEDIMENT CONTROL MEASURES INLET PROTECTIONS CONCRETE WASHOUT PIT(S) EQUIPMENT STAGING FUEL STORAGE AND VEHICLE FUELING AREA CONSTRUCTION TRAILER(S) SANITATION FACILITY MATERIAL STOCKPILE LOCATION(S) CHEMICAL COMPOUND MIXING AND STORAGE AREA ANY OTHER EROSION CONTROL REQUIRED
2.	ALL WORK REQUIRED TO IMPLEMENT THE SWP3 INCLUDING INSPECTION FEES, MAINTENANCE AND REPAIRS SHALL BE DONE BY AND AT THE EXPENSE OF THE CONTRACTOR.
3.	THE CONTRACTOR SHALL AMEND THE SWP3 WHEN THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE THAT REQUIRES INSTALLATION OF BMPS OR MODIFICATION TO EXISTING BMPS.
4.	ADDITIONAL OR DIFFERENT BMPS MAY BE NEEDED AS CONSTRUCTION PROGRESSES OR AS REQUIRED BY THE OWNER, SWCD OR OHIO EPA.
5.	PHASE CONSTRUCTION ACTIVITIES TO MINIMIZE LAND DISTURBED AT ANY ONE TIME AND LEAVE EXISTING VEGETATION IN PLACE AS LONG AS POSSIBLE.

SEDIMENT CONTROL NOTES

1.	INLET PROTECTION AND SEDIMENT BARRIERS MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING.
2.	PERIMETER SEDIMENT BARRIERS SHALL BE INSTALLED AS THE FIRST STEP OF GRADING AND WITHIN 7 DAYS FROM THE START OF CLEARING AND GRUBBING.
3.	SEDIMENT PONDS, TEMPORARILY MODIFIED PERMANENT PONDS AND PERIMETER SEDIMENT BARRIERS MUST BE INSTALLED AS THE FIRST STEP OF GRADING AND WITHIN 7 DAYS FROM THE START OF CLEARING AND GRUBBING, AND CONTINUE TO FUNCTION UNTIL ALL DISTURBED UPLAND AREAS ARE STABILIZED.
4.	SEDIMENT CONTROLS MUST POND RUNOFF TO BE CONSIDERED FUNCTIONAL.
5.	SEDIMENT-LADEN TRENCH OR GROUND WATER MUST PASS THROUGH A SEDIMENT-SETTLING POND OR BE DEWATERED IN-PLACE USING A SUMP PIT, FILTER BAG OR OTHER COMPARABLE METHOD, PRIOR TO DISCHARGE FROM THE SITE.
6.	TRENCH AND GROUND WATER FREE FROM SEDIMENT OR OTHER POLLUTANTS MAY BE DISCHARGED WITHOUT TREATMENT, PROVIDED THIS WATER DOES NOT BECOME POLLUTANT-LADEN BY TRAVERSING OVER DISTURBED SOILS OR OTHER POLLUTANT SOURCES.
7.	SETTLED MATERIAL SHALL BE DISPOSED OF IN A STABILIZED LOCATION WHERE IT WILL NOT BE CARRIED OFF-SITE OR INTO A STORM SEWER BY RAINFALL.

OTHER WASTE CONTROL NOTES	
1.	SOIL STOCKPILES SHALL BE RINGED WITH SILT FENCE ALONG THE BOTTOM FOOTPRINT. IF THE STOCKPILE WILL BE INACTIVE FOR 14 DAYS OR MORE, THE SURFACE SHALL BE SEEDED OR STABILIZED WITHIN 7 DAYS OF LAST DISTURBANCE.
2.	CONCRETE TRUCKS ARE NOT PERMITTED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS. ALL EXCESS CONCRETE AND CONCRETE WASHOUT, INCLUDING FROM HAND MIXERS AND LIGHT EQUIPMENT, MUST BE DISPOSED OF IN A CONCRETE WASHOUT AREA TO COLLECT AND HARDEN.
3.	OFF-SITE TRACKING OF SEDIMENT BY CONSTRUCTION VEHICLES MUST BE MINIMIZED. THE CONTRACTOR SHALL SWEEP ALL ADJACENT ROADS TO REMOVE MUD, DIRT OR ROCK TRACKED FROM THE SITE AT THE END OF EACH WORK DAY OR AS REQUIRED DURING THE DAY. DUMP TRUCKS HAULING MATERIAL FROM THE SITE SHALL BE COVERED WITH A TARPULIN.
4.	IT IS PROHIBITED TO BURN, BURY OR POUR ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS SOLID OR LIQUID WASTE INCLUDING TRASH, CONSTRUCTION DEBRIS, SOLVENTS, PAINT, DIESEL FUEL, GASOLINE, MOTOR OIL, HYDRAULIC FLUID, CEMENT CURING COMPOUND, ANTIFREEZE OR OTHER TOXIC OR HAZARDOUS WASTE. WASTE MATERIALS SHALL BE COLLECTED IN A SECURELY LIDDED DUMPSTER, DISPOSED OF IN AN APPROVED LANDFILL AND EMPTIED AS NECESSARY.
5.	FUEL TANKS, DRUMS AND OTHER CONTAINERS HOLDING CHEMICALS MUST BE STORED WITHIN A DIKED AREA WITH A VOLUME OF AT LEAST 110% OF THE LARGEST TANK. A DIKED AREA IS NOT NECESSARY IF A SELF-CONTAINED SPILL PROOF TANK IS USED.
6.	THE CONTRACTOR SHALL PROVIDE TEMPORARY SANITARY FACILITIES AT THE SITE. SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS 1 TIME PER WEEK, OR MORE OFTEN IF NECESSARY.
7.	ANY TOXIC OR HAZARDOUS MATERIAL SPILL, REGARDLESS OF SIZE, MUST BE REPORTED WITHIN 30 MINUTES TO THE LOCAL FIRE DEPARTMENT AND OHIO EPA.
8.	CONTAMINATED SOIL, SOIL WHERE CONSTRUCTION CHEMICALS HAVE BEEN SPILLED OR HAZARDOUS WASTE MATERIALS MUST BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.
9.	STORM WATER THAT COMES IN CONTACT WITH CONTAMINATED SOIL OR HAS A VISIBLE SHEEN MUST BE COLLECTED BY A VACUUM TRUCK AND DISPOSED OF AS A WASTE WATER.

EROSION CONTROL NOTES

1.	SPECIAL MEASURES SHALL BE TAKEN TO STABILIZE DRAINAGE CHANNELS AND STORM WATER OUTFALLS.										
2.	DIVERT SURFACE RUNOFF AWAY FROM DISTURBED AREAS AND STEEP SLOPES WHEREVER PRACTICABLE.										
3.	STABILIZATION OF DISTURBED AREAS SHALL BE INITIATED WITHIN THE TIME FRAMES IN THE FOLLOWING TABLES:										
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EROSION CONTROL TIMETABLE

	2025											
	J	F	M	A	M	J	J	A	S	O	N	D
STABILIZATION												
TEMP. SEEDING				o	o	o	o	o	o	o	o	
PERM. SEEDING					o	o	o	o	o	o	o	
SODDING					o	o	o	o	o	o	o	
MULCHING	o	o	o	o	o	o	o	o	o	o	o	o
PAVING					o	o	o	o	o	o	o	
o IRRIGATION NEEDED												

MAINTENANCE REQUIREMENTS	
1.	BMPS SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL UPSLOPE AREAS THEY CONTROL ARE STABILIZED.
2.	THE CONTRACTOR SHALL PROVIDE A QUALIFIED PERSON KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EROSION AND SEDIMENT CONTROLS, POSSESS THE TECHNICAL SKILLS TO ASSESS SITE CONDITIONS THAT COULD IMPACT STORM WATER QUALITY, AND CAN ASSESS THE EFFECTIVENESS OF ANY BMP SELECTED.
3.	A QUALIFIED PERSON MUST INSPECT BMPS AT LEAST ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF A 0.5" OR GREATER RAINFALL IN A 24-HOUR PERIOD TO DETERMINE IF THE SWP3 WAS PROPERLY IMPLEMENTED.
4.	THE QUALIFIED PERSON MUST PREPARE A WRITTEN REPORT AFTER EACH INSPECTION SUMMARIZING INSPECTION RESULTS INCLUDING THE FOLLOWING: <ul style="list-style-type: none"> DATE OF INSPECTION NAME AND QUALIFICATION OF THE INSPECTOR WEATHER CONDITIONS LOCATIONS WHERE IN-STREAM OR OFF-SITE SEDIMENTATION OR OTHER POLLUTANTS WERE OBSERVED. LOCATIONS OF BMPS NEEDING MAINTENANCE. LOCATIONS OF BMPS FAILING TO OPERATE CORRECTLY OR PROVIDE ADEQUATE PROTECTION. LOCATION OF AREAS IN NEED OF ADDITIONAL BMPS NOT IN PLACE AT THE TIME OF INSPECTION. CORRECTIVE ACTIONS REQUIRED, CHANGES TO THE SWP3 AND IMPLEMENTATION DATES. GRADING AND STABILIZATION ACTIVITY LOG EROSION AND SEDIMENT CONTROL AMENDMENT LOG
5.	ALL INCIDENCES OF NON-COMPLIANCE MUST BE IDENTIFIED IN THE REPORT. IF A REPORT DOES NOT IDENTIFY INCIDENCES OF NON-COMPLIANCE, IT MUST CONTAIN A CERTIFICATION THE SITE IS IN COMPLIANCE AT THE TIME OF INSPECTION.
6.	BMP MAINTENANCE OR REPAIR MUST BE COMPLETED WITHIN 3 DAYS, AND SEDIMENT POND MAINTENANCE OR REPAIR WITHIN 10 DAYS, OF THE INSPECTION THAT REVEALED A DEFICIENCY.
7.	WHEN AN INSPECTION REVEALS A BMP IS NOT EFFECTIVE AND A MORE APPROPRIATE BMP IS REQUIRED, THE SWP3 SHALL BE AMENDED, THE NEW BMP INSTALLED WITHIN 10 DAYS OF THE INSPECTION THAT REVEALED THE DEFICIENCY, AND THE "STORM WATER POLLUTION PREVENTION PLAN AMENDMENT LOG" FORM COMPLETED.
8.	WHEN AN INSPECTION REVEALS A BMP HAS NOT BEEN INSTALLED, BUT IS REQUIRED TO PROVIDE ADEQUATE CONTROL, IT MUST BE INSTALLED PRIOR TO THE NEXT STORM EVENT WHICH PRODUCES RUNOFF, BUT IN NO CASE LATER THAN 10 DAYS FROM THE INSPECTION THAT REVEALED THE DEFICIENCY.
9.	THE INSPECTION FREQUENCY MAY BE REDUCED TO 1 TIME PER MONTH IF THE ENTIRE SITE IS TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER WEATHER (I.E. SUSTAINED SNOW COVER OR FROZEN GROUND CONDITIONS). A WAIVER OF INSPECTION REQUIREMENTS IS AVAILABLE UNTIL 1 MONTH BEFORE THAWING CONDITIONS ARE EXPECTED IF ALL THE FOLLOWING CONDITIONS ARE MET:
10.	FROZEN CONDITIONS ARE ANTICIPATED TO CONTINUE FOR EXTENDED PERIODS OF TIME (I.E. MORE THAN 1 MONTH).
11.	SOIL DISTURBANCE ACTIVITIES HAVE BEEN SUSPENDED.
12.	THE BEGINNING AND ENDING DATES OF THE WAIVER PERIOD ARE DOCUMENTED IN THE SWP3.
13.	ONCE A DEFINABLE AREA HAS BEEN FULLY STABILIZED, IT MAY BE MARKED ON THE SWP3 AND NO FURTHER INSPECTION REQUIREMENTS ARE REQUIRED FOR THAT AREA OF THE SITE.
14.	INSPECTIONS SHALL BE PERFORMED UNTIL A NOT IS FILED WITH THE OHIO EPA.

PERMIT CLOSURE REQUIREMENTS

1.	FINAL STABILIZATION REQUIRES THE CONTRACTOR TO REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROLS FROM THE SITE AND ALL SEDIMENT TRAPPED BY THOSE CONTROLS BE PERMANENTLY STABILIZED.
2.	THE CONTRACTOR SHALL COMPLETE A "FINAL CERTIFICATION AND NOTIFICATION FOR EROSION AND SEDIMENT CONTROL" UPON PROJECT COMPLETION AND PROVIDE A COPY TO THE OWNER AND SWCD.
3.	ONCE CONSTRUCTION ACTIVITIES HAVE CEASED AND THE SITE REACHES FINAL STABILIZATION, THE CONTRACTOR MUST TERMINATE THE NPDES PERMIT COVERAGE BY FILING A NOT WITH THE OHIO EPA WITHIN 45 DAYS OF FINAL STABILIZATION. FINAL STABILIZATION IS DEFINED AS AN ESTABLISHED VEGETATIVE GROUND COVER OF AT LEAST 70% GROWTH DENSITY, OR OTHER MEANS OF PERMANENT STABILIZATION, OVER ALL AREAS DISTURBED DURING CONSTRUCTION.
4.	THE CONTRACTOR MUST MAINTAIN ALL REPORTS FOR 3 YEARS AFTER THE NOT IS FILED, AND PROVIDE DIGITAL COPIES TO THE OWNER AND SWCD.

TMDLS AND BMPS SELECTED	
1.	APPLICABLE TMDLS FOR THE SITE: <ul style="list-style-type: none"> (X) PHOSPHORUS () AMMONIA (X) HABITAT (X) NITROGEN (X) BACTERIA () FLOW () SEDIMENT/TOTAL SUSPEND SOLIDS (X) DISSOLVED OXYGEN/ORGANIC ENRICHMENT
2.	THE FOLLOWING BMPS ARE SELECTED TO ADDRESS APPLICABLE TMDLS FOR THE PROJECT:
CONSTRUCTION SITE: <ul style="list-style-type: none"> () DEMARCATED PROTECTED AREA BEFORE CONSTRUCTION (X) MAINTAIN PORTABLE TOILET AND EMPTY W/OUT SPILL (X) PROPER STORAGE OF LANDSCAPE FERTILIZER (X) MS4 MONTHLY INSPECTIONS DURING CONSTRUCTION (X) RESOLVE NON-COMPLIANCE SWP3 INSPECTION ITEMS () FINAL INSPECTION TO ENSURE BMP IMPLEMENTATION 	
TEMPORARY EROSION CONTROL: <ul style="list-style-type: none"> () CHECK DAMS () TEMPORARY DIVERSION () SLOPE DRAIN () STREAM UTILITY CROSSING () DEWATERING () STREAM CROSSING 	
TEMPORARY SEDIMENT CONTROL: <ul style="list-style-type: none"> () SEDIMENT BASIN () SEDIMENT TRAP (X) SILT FENCE (X) INLET PROTECTION (X) FILTER SOCK () FILTER BERM 	
SOIL STABILIZATION: <ul style="list-style-type: none"> (X) DUST CONTROL (X) PHASED DISTURBANCE (X) MULCHING (X) CLEARING AND GRUBBING () SODDING (X) TEMPORARY SEEDING (X) TOPSOILING (X) PERMANENT SEEDING () GRADE TREATMENT (X) CONSTRUCTION ENTRANCE () TEMPORARY ROLLED EROSION CONTROL PRODUCTS () TURF REINFORCEMENT MATTING (X) TREE AND NATURAL AREA PRESERVATION 	
PERMANENT EROSION CONTROL: <ul style="list-style-type: none"> () GRASSED SWALE () ROCK LINED CHANNEL () LEVEL SPREADER () ROCK OUTLET PROTECTION () DIVERSION () SUBSURFACE DRAIN 	
POLLUTION PREVENTION AND GOOD HOUSEKEEPING: <ul style="list-style-type: none"> (X) ROUTINE FACILITY INSPECTIONS (X) VISUAL ASSESSMENT OF STORM WATER DISCHARGE () ANNUAL COMPREHENSIVE SITE INSPECTION () SWEEP PARKING LOT AND DRIVE LANES (X) CLEAN CATCH BASINS (X) STORM WASTE IN LIDDED CONTAINERS (X) LOCATE SNOW DISPOSAL AREAS AWAY FROM BMPS () ESTABLISH "PICK-UP PET WASTE" STATION 	
POST-CONSTRUCTION: <ul style="list-style-type: none"> () WETLAND SETBACK () STREAM SETBACK () WATER QUALITY POND () PERMEABLE PAVEMENT () GRASS FILTER STRIP () INFILTRATION TRENCH () TREE BOX FILTER () SAND FILTER () GREEN ROOF () LTMA () BIORETENTION AREA () CISTERN () BIORETENTION WITH INTERNAL WATER STORAGE () OPEN CHANNEL SWALES () WET EXTENDED DETENTION BASIN () DRY EXTENDED DETENTION BASIN WITH FOREBAY () RETROFIT SWMF TO TREAT WQV () RETROFIT SWMF TO INCREASE INFILTRATION () RETROFIT SWMF POND TO FUNCTION AS WETLAND () AS-BUILT POST-BMPS () SUBMIT LTMA ANNUAL MAINTENANCE REPORT TO MS4 (X) REDUCE IMPERVIOUS SURFACES () DECREASE QUANTITY OF PARKING SPACES () LOW IMPACT DEVELOPMENT () CONSERVATION DEVELOPMENT () DISCONNECT DOWNSPOUT AND REDIRECT TO BMP () VEGETATE MAINTENANCE/STORAGE YARD OPEN AREAS (X) IMPLEMENT LOW-MOW OR NO-MOW PRACTICES () PEST MANAGEMENT PROGRAM 	

NOTES:	
1.	MULCH SHALL CONSIST OF ONE OF THE FOLLOWING: <ul style="list-style-type: none"> UNROTTED SMALL GRAIN STRAW SPREAD UNIFORMLY AT 2 TONS/AC. (2 TO 3 BALES). WOOD-CELLULOSE FIBER (I.E. HYDROSEEDING) APPLIED AT 1 TON/AC. ROLLED EROSION CONTROL PRODUCT OR MULCH MATTING APPLIED PER MANUFACTURER RECOMMENDATION. WOOD MULCH OR CHIPS APPLIED AT 6 TONS/AC.
2.	MULCH SHALL BE ANCHORED IMMEDIATELY BY ONE OF THE FOLLOWING METHODS: <ul style="list-style-type: none"> PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL USING A DISK, CRIMPER OR SIMILAR TOOL. DO NOT FINELY CHOP STRAW TO BE MECHANICALLY ANCHORED, BUT LEAVE LONGER THAN 6". NETTING PER MANUFACTURER RECOMMENDATION IN AREAS OF CONCENTRATED RUNOFF OR ON CRITICAL SLOPES. SYNTHETIC BINDERS AT MANUFACTURER RATE. WOOD-CELLULOSE FIBER BINDER AT A NET DRY WEIGHT OF 750 LB/AC. MIXED WITH WATER, AND CONTAIN 50 LB/100 GAL. MAX. OF WOOD CELLULOSE FIBER.

MULCHING DETAIL

1.	THE SEED BED SHALL BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION.
2.	SOIL AMENDMENTS MAY BE REQUIRED TO ESTABLISH VEGETATION. PERFORM SOIL TESTS TO PREDICT THE NEED FOR LIME OR FERTILIZER. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS
3.	APPLY SEED UNIFORMLY. COVER BROADCASTED SEED BY RAKING OR DRAGGING, AND LIGHTLY TAMPING INTO PLACE.
4.	MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
5.	INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.

TEMPORARY SEEDING SPECIES SELECTION			
DATES	SPECIES	LB/1,000 SF	LB/AC.
MARCH 1 - AUGUST 15	OATS	3	128
	TALL FESCUE	1	40
	PERENNIAL RYEGRASS	1	40
AUGUST 16 - OCTOBER 31	PERENNIAL RYEGRASS	2	40
	TALL FESCUE	1	40
	RYE	3	112
NOVEMBER 1 - FEBRUARY 28	TALL FESCUE	1	40
	PERENNIAL RYEGRASS	1	40
	TALL FESCUE	3	120
	WHEAT	1	40
	PERENNIAL RYEGRASS	1	40
	TALL FESCUE	2	40
	TALL FESCUE	1	40

TEMPORARY SEEDING DETAIL

TALL FESCUE	40 - 50	
CROWN VETCH	10 - 20	DO NOT SEED LATER THAN AUGUST
TALL FESCUE	20 - 30	
FLAT PEA	20 - 25	DO NOT SEED LATER THAN AUGUST
TALL FESCUE	20 - 30	
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE	90	
KENTUCKY BLUEGRASS	100 - 120	
PERENNIAL RYEGRASS	100 - 120	
KENTUCKY BLUEGRASS	100 - 120	FOR SHADED AREAS
CREeping RED FESCUE	100 - 120	

PERMANENT SEEDING FERTILIZATION AND MOWING CHART				
MIXTURE	FORMULA	LB/ AC.	TIME	MOW
CREeping RED FESCUE	10-10-10	500	FALL, YEARLY, OR AS NEEDED	>3"
DOMESTIC RYEGRASS				
KENTUCKY BLUEGRASS				
TALL FESCUE	10-10-10	500		>4"
TURF-TYPE FESCUE	10-10-10	500		
CROWN VETCH FESCUE	0-20-20	400	SPRING, AND YEARLY AFTER ESTABLISHED	DO NOT MOW
FLAT PEA FESCUE	0-20-20	400		

PERMANENT SEEDING SPECIES SELECTION			
SEED MIX	SEED RATE LB/AC.	NOTES:	
GENERAL USE			
CREeping RED FESCUE	20 - 40	FOR CLOSE MOWING AND WATERWAYS WITH <2.0 FT./SEC. VELOCITY	
DOMESTIC RYEGRASS	10 - 20		
KENTUCKY BLUEGRASS	20 - 40		
TALL FESCUE	40 - 50		
TURF-TYPE FESCUE	90		
STEEP BANKS OR CUT SLOPES			
TALL FESCUE	40 - 50		
CROWN VETCH	10 - 20	DO NOT SEED LATER THAN AUGUST	
TALL FESCUE	20 - 30		
FLAT PEA	20 - 25	DO NOT SEED LATER THAN AUGUST	
TALL FESCUE	20 - 30		
ROAD DITCHES AND SWALES			
TALL FESCUE	40 - 50		
TURF-TYPE FESCUE	90		
KENTUCKY BLUEGRASS	5		
LAWN			
KENTUCKY BLUEGRASS	100 - 120		
PERENNIAL RYEGRASS	100 - 120		
KENTUCKY BLUEGRASS	100 - 120	FOR SHADED AREAS	
CREeping RED FESCUE	100 - 120		

PERMANENT SEEDING DETAIL			
TALL FESCUE	40 - 50		
CROWN VETCH	10 - 20	DO NOT SEED LATER THAN AUGUST	
TALL FESCUE	20 - 30		
FLAT PEA	20 - 25	DO NOT SEED LATER THAN AUGUST	
TALL FESCUE	20 - 30		
TALL FESCUE	40 - 50		
TURF-TYPE FESCUE	90		
KENTUCKY BLUEGRASS	100 - 120		
PERENNIAL RYEGRASS	100 - 120		
KENTUCKY BLUEGRASS	100 - 120	FOR SHADED AREAS	
CREeping RED FESCUE	100 - 120		



BID	02/24/2026
ISSUED FOR:	AS NOTED
ISSUE DATE:	RSS
SCALE:	ELE
DESIGNED BY:	RSS
DRAWN BY:	
CHECKED BY:	

OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT	
CITY OF CONNEAUT ASHTABULA COUNTY, OHIO	
GENERAL - 01 SERIES	
SWPPP GENERAL NOTES	
PROJECT NO.	41632
DISCIPLINE	CIVIL
SHEET NAME	C-04
SHEET	OF
7	21

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ABBREVIATIONS

ACT	ACOUSTICAL CEILING TILE	ID	INSIDE DIAMETER
AFF	ABOVE FINISH FLOOR	INFO	INFORMATION
ALUM.	ALUMINUM	INSUL	INSULATION OR INSULATED
ARCH	ARCHITECT / ARCHITECTURAL	INT	INTERIOR
ASPH	ASPHALT		
BD	BOARD	JT	JOINT
BLDG.	BUILDING	KO	KNOCKOUT
BLK	BLOCK(ING)		
BM	BEAM	LAM	LAMINATE
BRG	BEARING	LAV	LAVATORY
BRK	BRICK	LP	LOW POINT
BTM	BOTTOM OF SLAB		
	BOTTOM	MFR	MANUFACTURER
		MANUF	MANUFACTURER
CJ	CONTROL JOINT	MAS	MASONRY
CLO.	CLOSET	MAX	MAXIMUM
CLG	CEILING	MECH	MECHANICAL
CLR	CLEAR	MEMB	MEMBRANE
CMU	CONCRETE MASONRY UNIT	MTL	METAL
CO	CLEAN OUT	MIN	MINIMUM
COL	COLUMN	MIR	MIRROR
CONC	CONCRETE	MISC	MISCELLANEOUS
CONT	CONTINUOUS	MO	MASONRY OPENING
CORR	CORRIDOR		
CPT	CARPET	N	NORTH
CT	CERAMIC TILE	NIC	NOT IN CONTRACT
		NO	NOMINAL
D / DRN	DRAIN	NO	NUMBERS
DBL	DOUBLE	NTS	NOT TO SCALE
DET	DETAIL		
DF	DRINKING FOUNTAIN		
DIA	DIAMETER	OC	ON CENTER
DIM	DIMENSION	OPNG	OPENING
DN	DOWN	OPP	OPPOSITE
DP	DAMP(ING)	OVHD	OVERHEAD
DR	DOOR		
DS	DOWNSPOUT	PL LAM	PLASTIC LAMINATE
DW	DISHWASHER	PTN	PARTITION
DWG	DRAWING	PLN	PROPERTY LINE
		PLUM	PLUMBING
		PLYWD	PLYWOOD
EA	EACH	PNL	PANEL
EJ	EXPANSION JOINT	PSF	POUNDS PER SQUARE FOOT
EIFS	EXTERIOR INSUL. FINISH SYSTEM	PSI	POUNDS PER SQUARE INCH
ELECT.	ELECTRICAL	PTS	PAINTED
ELEV	ELEVATION	PTD	POINTS
ENCL	ENCLOSURE		
EQ	EQUAL	R	RADIUS
EQUIP	EQUIPMENT	REF	REFRIGERATOR
EXIST.	EXISTING	REIN	REINFORCE(ING)
EX	EXISTING	REQD	REQUIRED
EXP	EXPANSION	REV	REVISE / REVISION
EXT	EXTERIOR	RM	ROOM
		RSTRM	RESTROOM
FD	FLOOR DRAIN		
FE	FIRE EXTINGUISHER	SAN	SANITARY
FEC	FIRE EXTINGUISHER CABINET	SECT	SECTION
FIN	FINISH	SCHED	SCHEDULE(D)
FL	FLOOR	SF	SQUARE FOOT (FEET)
FLUOR	FLUORESCENT	SIM	SIMILAR
FOS	FACE OF STUDS	SPLSH BLK	SPLASH BLOCK
FR(G)	FRAME(ING)	SPEC	SPECIFICATION
FT	FEET OR FOOT	STL	STEEL
FUR	FURRING	STRUC	STRUCTURAL / STRUCTURE
FVC	FIRE VALVE CABINET	SUSP	SUSPEND / SUSPENDED
GA	GAGE OR GAUGE	TEMP	TEMPERED
GALV	GALVANIZE(D)	TH	THRESHOLD
GC	GENERAL CONTRACTOR	THK	THICK / THICKNESS
GL	GLASS	THRU	THROUGH
GM	GALVANIZED METAL	TOS	TOP OF SLAB
GR	GRADE	TYP	TYPICAL
GWB	GYPSPUM WALL BOARD		
GYP. BD.	GYPSPUM BOARD	UL	UNDERWRITERS LABORATORY
HC	HOLLOW CORE	VCT	VINYL COMPOSITION TILE
"H"	HANDICAPPED ACCESSIBLE	VEST	VESTIBULE
HDW	HARDWARE	VIF	VERIFY IN FIELD
HM	HOLLOW METAL		
HORZ	HORIZONTAL	W	WITH
HT	HEIGHT	WD	WOOD
HTR	HEATER		
		&	AND
		@	AT
		'	FEET
		"	INCHES

GENERAL NOTES

- CODES:
THIS PROJECT IS DESIGNED TO BE IN COMPLIANCE WITH THE FOLLOWING APPLICABLE CODES:
2018 INTERNATIONAL BUILDING CODE (CHAPTER 27 (ELECTRICAL) REQUIRES THAT ALL ELECTRICAL COMPONENTS, EQUIPMENT AND SYSTEMS IN BUILDINGS AND STRUCTURES COVERED BY THE IBC COMPLY WITH THE REQUIREMENTS OF NFPA 70 - 2017 (NATIONAL ELECTRIC CODE), 2018 ENERGY CONSERVATION CODE, 2018 EXISTING BUILDING CODE, 2009 INTERNATIONAL FIRE CODE (ALONG WITH AMENDED LANGUAGE CONTAINED IN THE 2013 PHILADELPHIA FIRE CODE), 2018 INTERNATIONAL FUEL GAS CODE, 2018 INTERNATIONAL MECHANICAL CODE, 2009 INTERNATIONAL PERFORMANCE CODE FOR BUILDINGS AND FACILITIES (FOR ALTERNATIVE COMPLIANCE APPROACH), 2015 INTERNATIONAL PLUMBING CODE, 2015 INTERNATIONAL RESIDENTIAL CODE, 2018 INTERNATIONAL WILDLAND-URBAN INTERFACE CODE (SUPPLEMENTARY REQUIREMENTS THAT MAY BE USED TO MITIGATE FIRE AND LIFE-SAFETY HAZARDS IN UNIQUE WILDLAND AREAS), AND AS AMENDED AND BUY THE DEPARTMENT OF LABOR AND INDUSTRY.
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL CONDITIONS, LAWS, RULES, REGULATIONS AND ORDINANCES OF FEDERAL, STATE, COUNTY, OR AUTHORITIES RELATING THERE-TO. NO WORK SHALL BEGIN AT THE SITE UNTIL APPLICABLE APPROVALS AND REQUIRED PERMITS HAVE BEEN OBTAINED BY THE CONTRACTOR(S) COVERING SUCH WORK. SUBCONTRACTORS ARE TO VERIFY AND ASSURE PROPER CODE COMPLIANCE FOR ALL ASPECTS OF CONSTRUCTION WITHIN THEIR RESPECTIVE TRADES. PERMITS ARE TO BE PART OF WORK.
- SUBCONTRACTORS SHALL VERIFY AND ASSURE PROPER CODE COMPLIANCE FOR ALL ASPECTS OF CONSTRUCTION WITHIN THEIR RESPECTIVE TRADES. OBTAINING PERMITS SHALL BE PART OF THEIR RESPONSIBILITY.
- THE SCOPE OF THE PROJECT INCLUDES ALL WORK SHOWN OR INFERRED ON THE DRAWINGS AND SPECIFICATIONS TO BE PERFORMED BY THE PRIME CONTRACTOR(S) AND THEIR QUALIFIED SUBCONTRACTORS.
- CONTRACTOR DESIGNATIONS:
A. GENERAL CONTRACTOR - G.C.
B. MECHANICAL CONTRACTOR - M.C.
C. PLUMBING CONTRACTOR - P.C.
D. ELECTRICAL CONTRACTOR - E.C.
a. ALL CONTRACTORS WILL:
• SAFEGUARD THE OWNER'S PROPERTY AND THE ADJACENT PROPERTIES DURING CONSTRUCTION. CONTRACTORS SHALL REPLACE ANY AND ALL MATERIALS TO THEIR ORIGINAL CONDITIONS AT THE CONTRACTOR'S EXPENSE.
• VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOBSITE BEFORE COMMENCEMENT OF WORK; REPORT ALL ERRORS AND OMISSIONS OR DISCREPANCIES TO THE ARCHITECT / ENGINEER IN WRITING PRIOR TO THE START OF WORK. IN ALL CASES WHERE CONFLICTS MAY OCCUR THE ARCHITECT SHALL BE NOTIFIED AND WILL INTERPRET THE INTENT OF THE CONTRACT DOCUMENTS.
• INVESTIGATE, VERIFY AND BE RESPONSIBLE FOR ALL CONDITIONS AND DIMENSIONS OF THE PROJECT AND SHALL NOTIFY THE ARCHITECT / ENGINEER OF ANY CONDITION REQUIRING MODIFICATIONS OR CHANGES BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS.
• PROTECT AND STORE ALL FIXTURES, HARDWARE, ETC., AS WELL AS EQUIPMENT SPECIFIED HEREIN FOR THE DURATION OF THE JOB.
• COORDINATE WITH LOCAL UTILITIES FOR WATER, DRAINAGE, GAS, ELECTRICAL SERVICES, ETC., FOR APPLICABLE CONNECTIONS AS MAY BE REQUIRED.
• BE RESPONSIBLE FOR SCHEDULING ALL INSPECTIONS WITH PROPER AUTHORITIES DURING CONSTRUCTION AND NOTIFYING THE ARCHITECT / ENGINEER AND OWNER OF ALL INSPECTIONS. THE G.C. IS RESPONSIBLE FOR SCHEDULING FINAL INSPECTION SO THAT OWNER MAY RECEIVE AN "OCCUPANCY PERMIT".
- INTERIOR DIMENSIONS ARE TAKEN TO FACE OF GYPSUM BOARD, MASONRY OR COLUMN CENTER LINES UNLESS OTHERWISE NOTED.
- ALL CONTRACTORS WILL BE REQUIRED TO OBTAIN AND EXAMINE A FULL SET OF DRAWINGS AND WILL HAVE VISITED THE JOB SITE. THEY SHALL BE FAMILIAR WITH AND BE SATISFIED TO THE CONDITIONS UNDER WHICH THEY WILL BE OBLIGED TO OPERATE AND PERFORM PRIOR TO SUBMITTING A BID FOR THEIR TRADE FOR SPECIFIC CONSTRUCTION.
- THE G.C. SHALL BE RESPONSIBLE FOR COORDINATING THE CONSTRUCTION WITH ALL CONTRACTORS.
- THE G.C. SHALL PREPARE, IN CONJUNCTION WITH THE OTHER CONTRACTORS A CONSTRUCTION SCHEDULE INCLUDING EACH TRADE ENGAGED FOR THE DURATION OF THE WORK AND DISTRIBUTE A COPY TO OWNER AND ARCHITECT / ENGINEER.
- ALL CONTRACTORS SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT / ENGINEER FOR APPROVAL AS NOTED IN THE SPECIFICATIONS. MANUFACTURER'S NAMES AND MODEL NUMBERS ARE USED TO PROVIDE AN INDICATION OF QUALITY, STYLE AND SIZE DESIRED. OTHER MANUFACTURER'S MODELS, QUALITY STYLE AND SIZES MAY BE SUBMITTED BUT SHALL OTHER MANUFACTURER'S MODELS, QUALITY STYLE AND SIZES MAY BE SUBMITTED BUT SHALL PROCESS.
- EXISTING MATERIALS SCHEDULED FOR REUSE SHALL BE STORED BY CONTRACTOR AS REQUIRED. EXISTING MATERIALS SCHEDULED FOR TURNOVER TO THE OWNER SHALL BE REMOVED BY THE CONTRACTOR; MOVED BY THE CONTRACTOR TO OWNER'S DESIGNATED AREA WITHIN THE BUILDING.
- MATERIALS DAMAGED OR OTHERWISE DEEMED UNUSABLE BY ARCHITECT, ENGINEER OR OWNER SHALL BE DISPOSED OF BY CONTRACTOR IN A LEGAL AND SAFE MANNER.
- INTERRUPTION OF ELECTRIC, WATER, SANITARY, GAS OR HEATING SERVICE, PHONE, CATV OR MECHANICAL EQUIPMENT TO THE BUILDING SHALL NOT BE PERMITTED WITHOUT ONE WEEK PRIOR WRITTEN NOTICE TO THE OWNER.
- SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S SHOP DRAWING APPROVAL STAMP INDICATING THAT ALL DIMENSIONS AND ASSEMBLY OF COMPONENTS HAVE BEEN CROSS-CHECKED BY EACH RESPECTIVE TRADE FOR COMPLIANCE WITH THE PROJECT REQUIREMENTS. THE ARCHITECT / ENGINEER WILL NOT PROCESS SHOP DRAWINGS WITHOUT THE CONTRACTOR'S STAMP.
- THE G.C. SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS THAT ARE LOCATED SUCH THAT CONSTRUCTION PERSONNEL SHALL HAVE A MAXIMUM TRAVEL DISTANCE OF 75 FEET TO OBTAIN AN EXTINGUISHER AND SHALL PROVIDE A MINIMUM OF 2 PER FLOOR INCLUDING BASEMENT. FIRE EXTINGUISHERS SHALL BE MINIMUM 10 LBS AND BE CAPABLE OF EXTINGUISHING CLASSES A, B, C AND D TYPE FIRES.
- SPECIAL CARE IS TO BE TAKEN TO INSURE THAT RATED PARTITIONS AND OTHER ASSEMBLIES POSITIVELY SEALED AT ALL CONDUITS, DUCTWORK, PIPING OR ANY OTHER PENETRATIONS. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING THEIR PENETRATIONS TO MEET THE FIRE RATED ASSEMBLY REQUIREMENTS.
- EACH CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING THEIR OWN PENETRATIONS. MATERIALS USED FOR PATCHING SHALL THE SAME AS THE ADJACENT MATERIALS AND SHALL BE APPROVED BY THE ARCHITECT / ENGINEER.
- THE CONTRACTOR SHALL PROVIDE MATERIAL SAFETY DATA SHEETS (M.S.D.S.) FOR ALL CHEMICALS USED AT THE SITE FOR THE REVIEW OF THE CLIENT. THIS DOCUMENTATION MUST BE KEPT ON SITE AND READILY ACCESSIBLE AT ALL TIME DURING THE PROJECT.
- THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR DEVIATIONS FROM CONTRACT DOCUMENTS REQUIREMENTS BY THE ARCHITECT'S APPROVAL OF SHOP DRAWINGS OR OTHER SUBMITTALS UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE ARCHITECT IN WRITING OF SUCH DEVIATION AT THE TIME OF THE SUBMITTAL AND SUCH DEVIATION HAS BEEN APPROVED IN WRITING. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SUCH SUBMITTALS BY THE ARCHITECT'S APPROVAL THEREOF.
- THE CONTRACTOR SHALL DIRECT SPECIFIC ATTENTION IN WRITING ON SHOP DRAWINGS AND SIMILAR SUBMITTALS TO REVISIONS OTHER THAN THOSE REQUESTED BY THE ARCHITECT ON PREVIOUS SUBMITTALS. IN THE ABSENCE OF THE CONTRACTOR'S WRITTEN NOTICE, THE ARCHITECT'S APPROVAL OF A RESUBMISSION SHALL NOT APPLY TO SUCH REVISIONS

DRAWING LEGEND

ANNOTATIONS

DRAWING NAME AND TAG	 FLOOR PLAN SCALE : 1/4" = 1'-0"  SECTION SCALE : 1/4" = 1'-0"  DETAIL SCALE : 1/4" = 1'-0"  ELEVATION SCALE : 1/4" = 1'-0"								
SECTION TAGS									
DETAIL TAG									
TEXT APPEARANCE NOTING ELEMENTS	XXXXXXXXXXXXXXXXXXXXXXXXXXXX								
ELEVATION TAGS									
BUILDING ELEVATION TAG									
SPOT ELEVATION TAG	<table border="1"> <tr> <td>NEW</td> <td></td> <td>EXISTING</td> <td></td> </tr> </table>	NEW		EXISTING					
NEW		EXISTING							
COLUMN CENTERLINE TAG									
NOTE TAG	<table border="1"> <tr> <td>AC#</td> <td>AD#</td> </tr> <tr> <td>CONSTRUCTION</td> <td>DEMOLITION</td> </tr> </table>	AC#	AD#	CONSTRUCTION	DEMOLITION				
AC#	AD#								
CONSTRUCTION	DEMOLITION								
DOOR TAG	220D								
WINDOW TAG									
ROOM NAME / NUMBER TAG	<table border="1"> <tr> <td>XXXXX</td> </tr> <tr> <td>230</td> </tr> </table>	XXXXX	230						
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NORTH ARROW	PROJECT NORTH 								
REVISION TAG									
REVISION CLOUD									
ELECTRICAL PANEL OR WALL HEATER	<table border="1"> <tr> <td>EP</td> <td>WH</td> </tr> </table>	EP	WH						
EP	WH								
ELEVATION CHANGE	<table border="1"> <tr> <td>HIGH</td> <td>LOW</td> </tr> </table>	HIGH	LOW						
HIGH	LOW								
MATCH LINE TAG	<table border="1"> <tr> <td>A</td> <td>MATCH LINE</td> <td>MATCH LINE</td> <td>A</td> </tr> <tr> <td></td> <td>REF: DWG</td> <td>REF: DWG</td> <td></td> </tr> </table>	A	MATCH LINE	MATCH LINE	A		REF: DWG	REF: DWG	
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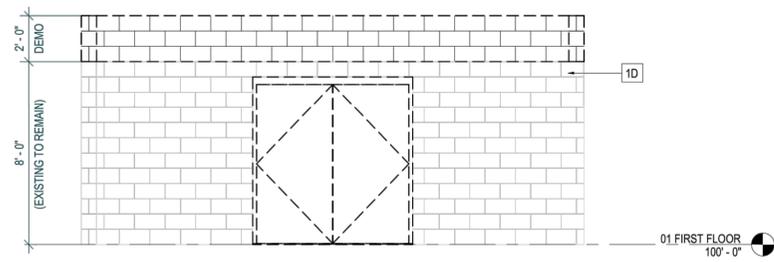


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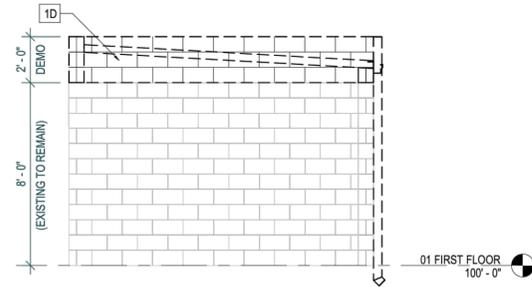
OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT
 ASHTABULA COUNTY, OHIO
 CITY OF CONNEAUT
BOOSTER PUMP STATION - 20 SERIES
LEGENDS NOTES AND ABBREVIATIONS

PROJECT NO.	41632
DISCIPLINE	ARCHITECTURAL
SHEET NAME	AG-01
SHEET	OF
8	21

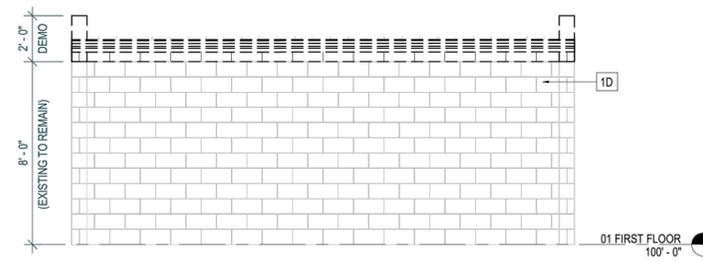
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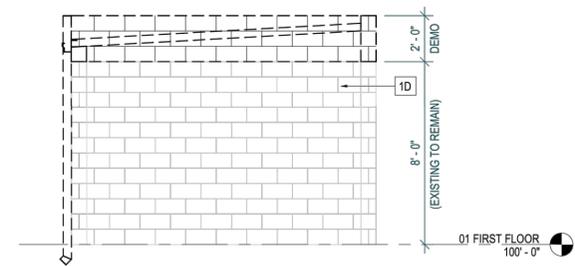
2 NORTH ELEVATION - DEMO
AD101 SCALE: 1/4" = 1'-0"



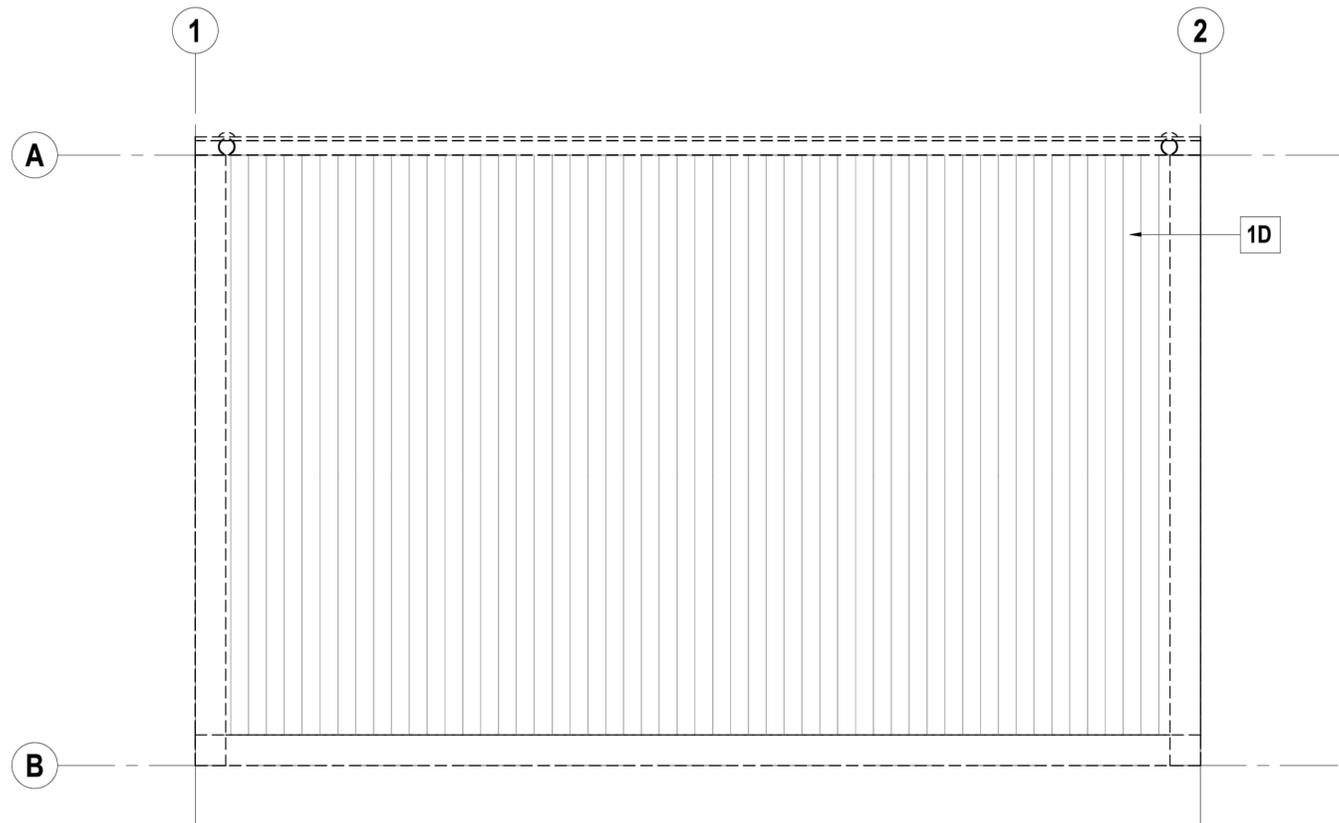
5 WEST ELEVATION - DEMO
AD101 SCALE: 1/4" = 1'-0"



3 SOUTH ELEVATION - DEMO
AD101 SCALE: 1/4" = 1'-0"



4 EAST ELEVATION - DEMO
AD101 SCALE: 1/4" = 1'-0"



1 ROOF PLAN DEMO
AD101 SCALE: 1/2" = 1'-0"

GENERAL DEMOLITION NOTES

- A. CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS ON THE SITE PRIOR TO COMMENCING WORK. ALL INQUIRIES AND DISCREPANCIES SHALL BE DIRECTED TO ARCHITECT.
- B. DURING DEMOLITION CONSTRUCTION CONTRACTOR MUST CONTAIN THE DUST AND DEBRIS WITHIN THE AREA OF THEIR WORK.
- C. COORDINATE DEMOLITION LIMITS WITH NEW WORK PLANS.
- D. REFER TO STRUCTURAL DRAWINGS FOR LIMITS OF FOUNDATION TO REMAIN.
- E. PROTECT OTHER EXISTING STRUCTURES THAT ARE TO REMAIN AND ARE EXPOSED DURING DEMOLITION.
- F. WHERE REMOVING PORTIONS OF MASONRY OR CONCRETE, USE A SAW TO CUT CLEAN, SHARP LINES. REMOVE MASONRY AT NEAREST EXISTING MORTAR JOINT(S).
- G. WHERE ADJACENT OR INTERSECTING CONSTRUCTION IS TO REMAIN, TRIM, GRIND, SCRAPE, OR SAND FACES OF DEMOLISHED ITEMS FLUSH WITH ADJACENT SURFACES TO REMAIN.
- K. COORDINATE WORK BETWEEN TRADES AND OTHER DISCIPLINES. ADDITIONAL ITEMS OF WORK APPLICABLE TO THESE AREAS, MAY APPEAR ELSEWHERE IN THE CONSTRUCTION DOCUMENTS.
- L. CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY SHORING AND BRACING.
- M. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR EXTENT OF DEMOLITION.
- N. ALL CONSTRUCTION DEBRIS SHALL BE REMOVED EACH DAY AND CONSTRUCTION AREA SHALL BE CLEANED.
- O. PHASING AND SEQUENCING TO BE DETERMINED BY GENERAL CONTRACTOR IN COORDINATION WITH THE OWNER.
- P. REMOVE EXISTING HOUSE KEEPING PAD AND REPLACE. NEW PAD SHALL BE SIZED (LENGTH, WIDTH, AND HEIGHT) FOR THE NEW EQUIPMENT. REFERENCE PROCESS MECHANICAL CONSTRUCTION DOCUMENTS.

GRAPHIC LEGEND

- EXISTING WALL OR PORTION THEREOF TO BE REMOVED.
- EXISTING DOOR AND FRAME TO BE REMOVED.
- EXISTING WALL TO REMAIN

DEMOLITION PLAN CODED NOTES

- 1D. PROVIDE A FULL DEPTH SAWCUT AT HORIZONTAL MASONRY JOINT AT ELEVATION 108'-0" +/- . DO NOT DAMAGE MEP OR PROCESS MECHANICAL EQUIPMENT, BRACKETS, ETC. WITHOUT SPECIFIC DIRECTION FROM EACH DISCIPLINE.

CODE DATA:

USE GROUP: U - UTILITY AND MISCELLANEOUS (NO CHANGE)
CONSTRUCTION TYPE: 5B, COMBUSTIBLE
AREA: 294 SF (NO CHANGE)



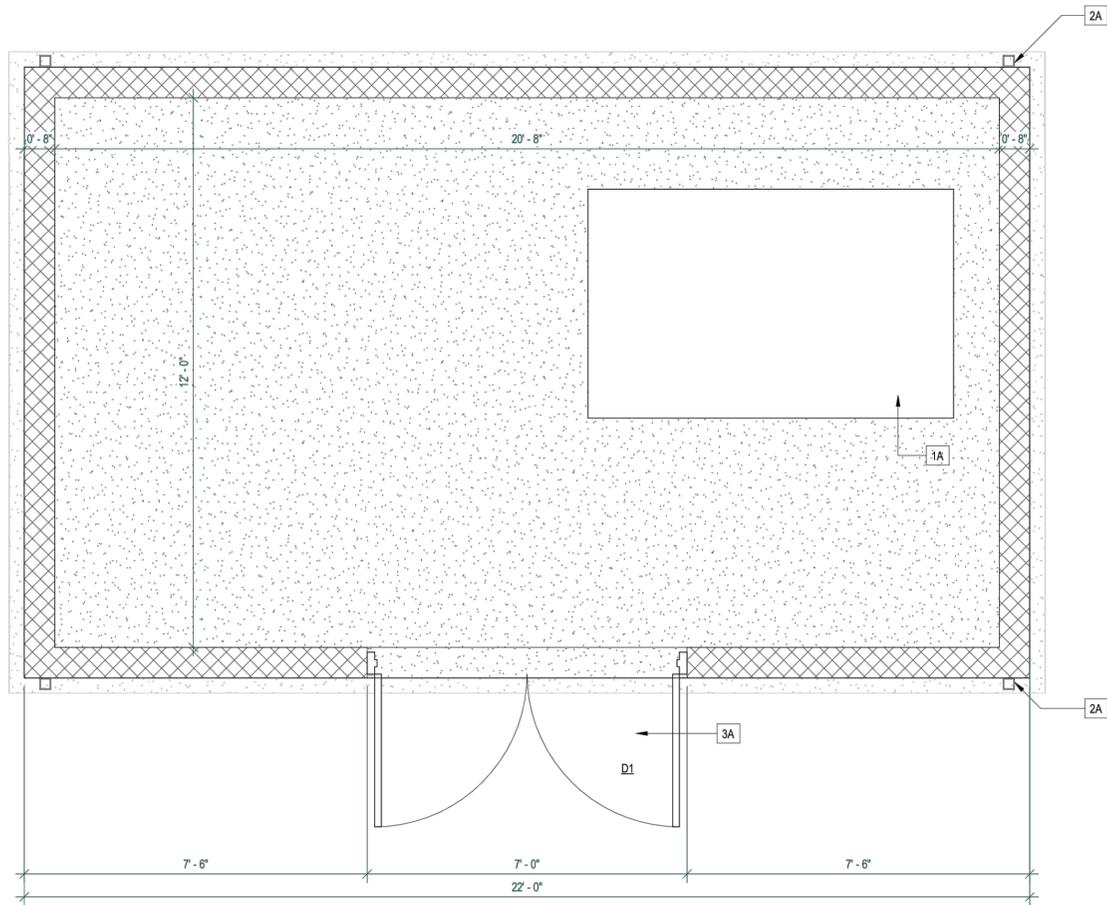
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OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT
CITY OF CONNEAUT ASHTABULA COUNTY, OHIO

BOOSTER PUMP STATION - 20 SERIES
FIRST FLOOR DEMOLITION PLAN

PROJECT NO.	41632
DISCIPLINE	ARCHITECTURAL
SHEET NAME	AD-01
SHEET	9
OF	21

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1 FIRST FLOOR NEW WORK PLAN
AC101 SCALE: 1/2" = 1'-0"

GENERAL FLOOR PLAN NOTES

- A. FINISH FLOOR ELEVATION IS EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
- B. VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.
- C. EXTERIOR DIMENSIONS SHOWN ARE TO OUTSIDE FACE OF FOUNDATION WALL OR ROUGH OPENINGS, TYPICAL UNLESS NOTED OTHERWISE.
- D. INTERIOR DIMENSIONS SHOWN ARE TO FACE OF CMU OR CONCRETE CONSTRUCTION, UNLESS NOTED OTHERWISE.
- E. ALL DOORS INSTALLED IN MASONRY PARTITIONS TO BE LOCATED 0'-8" FROM EDGE OF JAMB OF DOOR TO ADJACENT WALL, UNLESS NOTED OTHERWISE.
- F. PROVIDE SEALANT AT JOINTS BETWEEN ALL DISSIMILAR MATERIALS.
- G. PAINT ALL EXPOSED, UNFINISHED EXTERIOR STEEL (DOORS, FRAMES, LINTELS, BOLLARDS, ETC.).
- H. COORDINATE WORK BETWEEN TRADES AND OTHER DISCIPLINES. ADDITIONAL ITEMS OF WORK MAY APPEAR ELSEWHERE IN THE CONSTRUCTION DOCUMENTS.

NEW WORK CODED NOTES

- 1A. EQUIPMENT PAD, SEE OTHER DRAWINGS
- 2A. NEW DOWNSPOUT WITH SPLASH BLOCKS
- 3A. NEW FACTORY FINISHED INSULATED METAL DOOR & METAL FRAME WITH NEW HARDWARE TO MATCH EXISTING



Christopher Scott Blue, License #17287
Expiration Date 12/31/2027

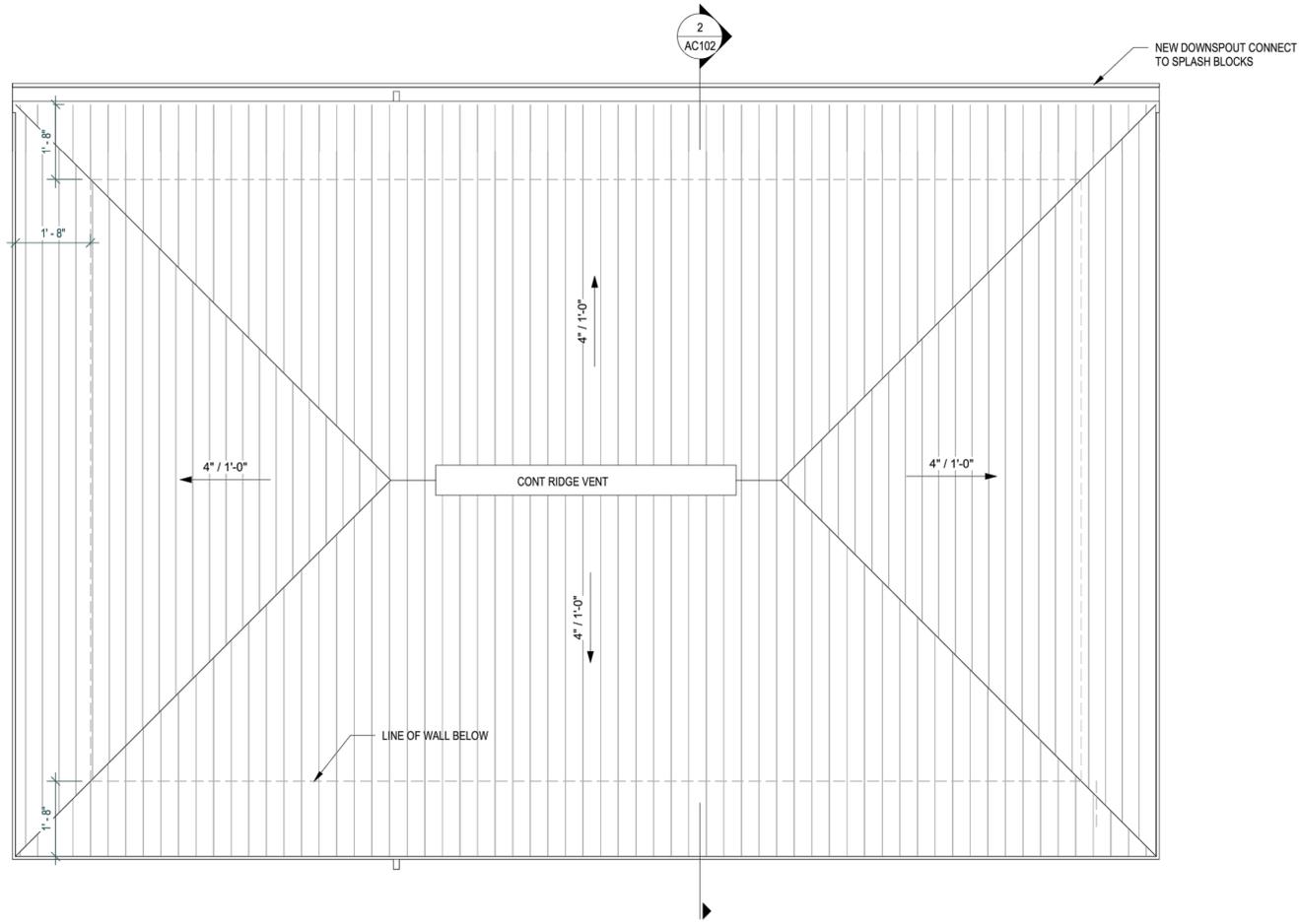


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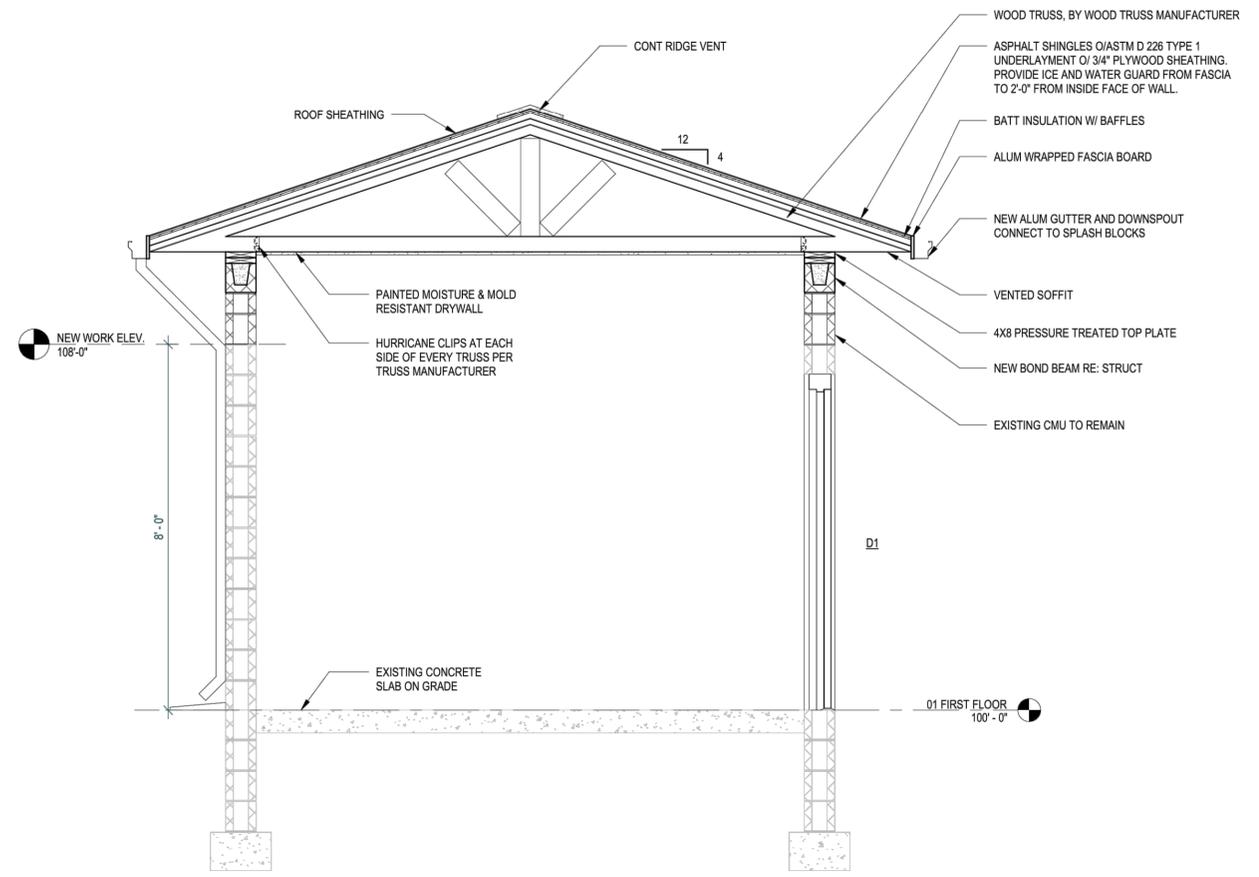
OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT
CITY OF CONNEAUT ASHTABULA COUNTY, OHIO
BOOSTER PUMP STATION - 20 SERIES
FIRST FLOOR NEW WORK PLAN

PROJECT NO.	
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DISCIPLINE	
ARCHITECTURAL	
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1
AC102 **ROOF PLAN**
SCALE: 1/2" = 1'-0"



2
AC102 **BUILDING SECTION**
SCALE: 1/2" = 1'-0"



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OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT
CITY OF CONNEAUT ASHTABULA COUNTY, OHIO
BOOSTER PUMP STATION - 20 SERIES ROOF NEW WORK PLAN

PROJECT NO.	41632
DISCIPLINE	ARCHITECTURAL
SHEET NAME	AC-02
SHEET	11
OF	21

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GENERAL:

- 1. THE GENERAL NOTES AND TYPICAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY. THE WORK SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS, CONSTRUCTION SPECIFICATIONS AND THE LATEST EDITION OF THE APPLICABLE LOCAL AND STATE BUILDING CODES.
A. WHERE CONFLICT IS FOUND TO EXIST BETWEEN THE SPECIFICATIONS AND THESE NOTES, THE REQUIREMENTS OF THE SPECIFICATIONS SHALL GOVERN.
B. ALL WORK SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF THE OHIO BUILDING CODE (LATEST EDITION) OR THESE DOCUMENTS - WHICHEVER IS MORE STRINGENT.
2. THESE NOTES ARE GENERAL REQUIREMENTS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREINAFTER FOR USE ON THIS PROJECT.
4. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS OR SPECIFICATIONS ARE NOT IN AGREEMENT WITH THESE NOTES, THE CONTRACTOR SHALL CONTACT THE ARCHITECT/ENGINEER FOR CLARIFICATION.
5. SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER/ARCHITECT.
6. SHOP DRAWINGS PREPARED BY THE CONTRACTORS, SUPPLIERS, ETC., WILL BE REVIEWED BY THE ENGINEER/ARCHITECT ONLY FOR CONFORMANCE WITH DESIGN CONCEPT. NO WORK AFFECTED BY THE SHOP DRAWINGS SHALL BE STARTED WITHOUT SUCH REVIEW.
7. THE GENERAL CONTRACTOR SHALL COORDINATE ALL REVISIONS, CORRECTIONS, AND COMMENTS INDICATED ON THE SHOP DRAWINGS BY THE ARCHITECT/ENGINEER.
8. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR AND SHALL CONFORM TO THOSE SHOWN ON THE ARCHITECTURAL DRAWINGS. DIMENSIONS AND ELEVATIONS MARKED "REF" ARE FOR REFERENCE ONLY AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO USING THEM FOR ANY CONSTRUCTION.
9. THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.
10. ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER ARE SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
11. ALL REQUIRED MATERIAL TESTING SHALL BE PERFORMED AT THE EXPENSE OF CONTRACTOR AND PERFORMED BY AN APPROVED TESTING AGENCY OR LABORATORY. TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
12. THE OWNER SHALL EMPLOY A TESTING AGENCY TO PERFORM SPECIAL INSPECTIONS. CONTRACTOR SHALL ADHERE TO THE STRUCTURAL QUALITY ASSURANCE PLAN AS PER SECTION 17 OF THE IBC 2018. THE CONTRACTOR SHALL COORDINATE WITH THE SPECIAL INSPECTOR.
13. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY WORK THAT IS DAMAGED OR IS NON-COMPLIANT IN ACCORDANCE WITH THE GOVERNING CODE OR AS INDICATED IN THE CONTRACT DOCUMENTS OR AS DEMEANED BY THE BUILDING OFFICIAL, ARCHITECT OR ENGINEER OF RECORD.
14. ALL STRUCTURES ARE DESIGNED TO BE STABLE AND SELF-SUPPORTING AT THE COMPLETION OF CONSTRUCTION. CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, AND TEMPORARY SUPPORTS OF THE STRUCTURE SO THAT IT WILL BE STABLE DURING ALL STAGES OF CONSTRUCTION. THE STRUCTURE IS DESIGNED FOR A COMPLETED CONDITION ONLY AND THEREFORE MAY REQUIRE ADDITIONAL SUPPORT TO MAINTAIN STABILITY BEFORE COMPLETION. PROVIDE TEMPORARY SHORING FOR EXISTING CONSTRUCTION UNTIL NEW CONSTRUCTION IS IN PLACE AND PROPERLY ANCHORED IN FINAL FORM.
15. ALL MATERIALS AND EQUIPMENT FURNISHED WILL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
17. COORDINATE WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR MISCELLANEOUS ITEMS, LINTELS, ROOF EDGES, INSERTS, ETC.
18. COORDINATE WITH CIVIL, MECHANICAL, PROCESS, AND ELECTRICAL DRAWINGS FOR SLEEVES, DRAINS, ROOF DRAINS, INSERTS, HANGERS, OPENINGS, AND CONDUIT RUNS IN WALLS AND SLABS, SIZE AND LOCATION OF MACHINE OR EQUIPMENT SUPPORTS, BASE AND ANCHOR BOLTS, RAILING, ETC. THE CONTRACTOR SHALL PROVIDE THESE OPENINGS IN ACCORDANCE WITH THE OTHER CONTRACT DRAWINGS. UNLESS OTHERWISE SHOWN, SEE STANDARD DETAILS FOR CONSTRUCTION OF OPENINGS IN EXISTING WALLS AND SLABS.
19. COORDINATE WITH SITE, ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND CIVIL DRAWINGS FOR PADS, PAVEMENT AND OTHER SITE STRUCTURES.
20. WATERPROOFING, MASONRY AND OTHER REQUIRED NON-STRUCTURAL ITEMS ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE WITH CIVIL/SITE AND ARCHITECTURAL DRAWINGS.
21. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE OWNER TO AVOID SYSTEM/OPERATION INTERRUPTIONS.
22. MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK SHALL BE STORED AT OWNER'S DESIGNATED LOCATIONS.
23. THE CONTRACTOR SHALL AT ALL TIMES KEEP THE WORK AREA AND SURROUNDING PREMISES FREE OF WASTE, SURPLUS MATERIALS, RUBBISH, AND DEBRIS RESULTING FROM THE WORK.
24. ALL CONTRACTORS SHALL CONFORM TO THE SAFETY REQUIREMENTS OF THE OWNER, AIA DOCUMENTS A201, OSHA SAFETY AND HEALTH STANDARDS, OWNERS SAFETY REGULATIONS, AND ANY OTHER LOCAL AUTHORITY IN CONNECTION WITH THE PROJECT. ALL EXCAVATIONS SHALL BE PROPERLY SHORED IN ACCORDANCE WITH OSHA STANDARDS AND REQUIREMENTS. ENGINEER DOES NOT ASSUME ANY RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY.
25. NO SUBSTITUTIONS OF MATERIAL WILL BE ALLOWED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.

GOVERNING CODES AND STANDARDS:

- 1. THE FOLLOWING CODES AND STANDARDS SHALL BE UTILIZED BY THE CONTRACTOR TO ESTABLISH MINIMUM LEVELS OF QUALITY AND CONSTRUCTION TECHNIQUES.
a. GENERAL
• OHIO BUILDING CODE (OBC) AND THE INTERNATIONAL BUILDING CODE, (IBC) 2024 EDITION, LOCALLY AMENDED. THE ABOVE SHALL GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR CONTRACT PROVISIONS ARE MORE RESTRICTIVE.
• INTERNATIONAL BUILDING CODE, IBC 2018 ED, LOCALLY AMENDED. THE ABOVE SHALL GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR CONTRACT PROVISIONS ARE MORE RESTRICTIVE.
• INTERNATIONAL EXISTING BUILDING CODE, IIBC 2018 ED.
• AMERICAN SOCIETY OF CIVIL ENGINEERS, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES", ASCE 7-16.
• AMERICAN SOCIETY OF CIVIL ENGINEERS, "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION", ASCE 37-14.
b. CONCRETE
• AMERICAN CONCRETE INSTITUTE, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", ACI 318-14.
• AMERICAN CONCRETE INSTITUTE, "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES", ACI 350-06.
• AMERICAN CONCRETE INSTITUTE, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", A 301.
• AMERICAN CONCRETE INSTITUTE, "RECOMMENDED PRACTICE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION", ACI 302.
• AMERICAN CONCRETE INSTITUTE, "GUIDE FOR SPECIFYING, PROPORTIONING, MIXING, PLACING, AND FINISHING STEEL FIBER REINFORCED CONCRETE", ACI-544.
• AMERICAN CONCRETE INSTITUTE, "GUIDE TO FORMWORK FOR CONCRETE", ACI 347.
• AMERICAN CONCRETE INSTITUTE, "HOT WEATHER CONCRETING", ACI-305R.
• AMERICAN CONCRETE INSTITUTE, "COLD WEATHER CONCRETING", ACI-306R.
• AMERICAN CONCRETE INSTITUTE, "GUIDE TO MASS CONCRETE", ACI 207.
• AMERICAN CONCRETE INSTITUTE, "SELECTING PROPORTIONS FOR NORMAL, HEAVY WEIGHT AND MASS CONCRETE", ACI 211.1.
• AMERICAN CONCRETE INSTITUTE, "COOLING AND INSULATING SYSTEMS FOR MASS", ACI 207.4R.
• PORTLAND CEMENT ASSOCIATION, "DESIGN AND CONTROL OF CONCRETE MIXTURES".
• AMERICAN CONCRETE INSTITUTE, "ACI DETAILING MANUAL", ACI SP-66.
• CONCRETE REINFORCING STEEL INSTITUTE, "MANUAL OF STANDARD PRACTICE", MSP-2.
c. MASONRY
• THE MASONRY SOCIETY, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", TMS 402-16.
• THE MASONRY SOCIETY, "SPECIFICATIONS FOR MASONRY STRUCTURES", TMS 602-16.
• NATIONAL CONCRETE MASONRY ASSOCIATION, "NCMA TEK NOTES".
• THE BRICK INDUSTRY ASSOCIATION, "TECHNICAL NOTES ON BRICK CONSTRUCTION".

DESIGN LOADS:

Table with 4 columns: LIVE LOADS (REDUCIBLE PER GOVERNING CODE), UNIFORM (PSF), CONCENTRATED (LBS), and sub-items (a-f). Includes snow loads, wind loads, earthquake design data, and frost depth.

SUBMITTALS:

- 1. SHOP DRAWINGS AND SUBMITTALS
a. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.
b. ELECTRONIC DRAWING FILES WILL NOT BE PROVIDED TO THE CONTRACTOR.
c. REVIEW OF SHOP DRAWINGS WILL BE FOR CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS REGARDING ARRANGEMENT AND SIZES OF MEMBERS AND THE CONTRACTOR'S INTERPRETATION OF THE DESIGN LOADS, IF APPLICABLE, AND CONSTRUCTION DOCUMENT DETAILS. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY TO COMPLY WITH THE CONSTRUCTION DOCUMENTS.
2. SUBMITTALS
a. THE STRUCTURAL QUALITY ASSURANCE PLAN AND SPECIFICATIONS IDENTIFY THE REQUIRED SUBMITTALS. PRIOR TO (OR WITH) THE FIRST SUBMITTAL, CONTRACTOR SHALL SUBMIT A LIST OF ALL REQUIRED SUBMITTALS FOR ENGINEER'S REVIEW.
3. DEFERRED SUBMITTALS
a. DEFERRED SUBMITTALS INCLUDE THOSE PORTIONS OF THE PROJECT THAT ARE FURNISHED BY THE CONTRACTOR AND DESIGNED BY SOMEONE OTHER THAN THE ENGINEER OF RECORD AND ARE SUBMITTED AT THE TIME OF THE APPLICATION.
b. DEFERRED SUBMITTALS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL PRIOR TO FABRICATION AND INSTALLATION.
c. SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTALS:
• SHALL BE INCLUDED IN THE CONTRACTOR'S SCOPE OF SERVICES AND SHALL BE SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE.
• DESIGN OF DEFERRED.
• SUBMITTALS SHALL BE IN ACCORDANCE WITH THE GOVERNING BUILDING CODE INDICATED ABOVE.
• SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE WHO SHALL REVIEW AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING.
• DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
• SUBMITTAL DOCUMENTS MAY ALSO INCLUDE SUBSTANTIATING CALCULATIONS, WHEN REQUIRED.
d. THE FOLLOWING SHALL BE CONSIDERED DEFERRED SUBMITTALS:
• TEMPORARY/PERMANENT SHORING AND UNDERPINNING
• PREFABRICATED WOOD TRUSSES
• SLOTTED CHANNEL STRUT FRAMING (E.G. UNISTRUT)

REINFORCEMENT

- 1. ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED SHALL BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI-318, LATEST EDITION) AND MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (CRSI, LATEST EDITION). REINFORCING STEEL SHALL NOT BE HEATED OR WELDED AND MUST BE DRY AND FREE OF CONTAMINANTS SUCH AS RUST, DIRT, GREASE, AND PROTECTIVE COATINGS.
2. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60. ALL REINFORCING USED IN SEISMIC DESIGN CATEGORY (SDC) D AND HIGHER OR REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A706 GRADE 60.
3. REINFORCING STEEL SHALL NOT BE HEATED OR WELDED AND MUST BE DRY AND FREE OF CONTAMINANTS SUCH AS RUST, DIRT, GREASE, AND PROTECTIVE COATINGS.
4. WHERE GRADE BEAMS OR STRIP FOOTINGS INTERSECT COLUMN FOUNDATIONS, EXTEND GRADE BEAM OR STRIP FOOTING REINFORCEMENT CONTINUOUSLY THROUGH THE COLUMN FOUNDATION.
5. ALL WELDED WIRE REINFORCING SHALL CONFORM TO ASTM A185, A1064 PROVIDED IN FLAT SHEETS OR ROLLS.
6. PROVIDE DOWELS FROM FOUNDATIONS TO MATCH COLUMN, PIER AND WALL VERTICAL REINFORCING. WHERE SHOWN, PROVIDE DOWELS OUT OF WALLS TO MATCH SLAB REINFORCING.
7. PROVIDE ADEQUATE BOLSTERS, HI-CHAIRS, SUPPORT BARS, ETC., TO MAINTAIN SPECIFIED CLEARANCES FOR THE ENTIRE LENGTH OF ALL REINFORCING BARS. SUPPORTS THAT BEAR DIRECTLY ON EXPOSED SURFACES SHALL BE A CRSI CLASS 1 AND 3.
8. ALL DEVELOPMENT AND SPLICE LENGTHS SHALL BE PER ACI 318 WITH CLEAR SPACING GREATER OR EQUAL TO 3 BAR DIAMETER. PROVIDE CLASS "B" TENSION LAP SPLICE OR FULL MECHANICAL SPLICE (ACI 318, SECT. 25.4.2) FOR ALL STEEL IN WALLS, COLUMNS, AND SLABS. SEE LAP SCHEDULE ON SHEET SD-S-04 FOR LAP LENGTHS, UNO.
9. LAP SPLICES SHALL NOT BE MADE AT POINTS OF MAXIMUM STRESS AS DETERMINED BY THE ENGINEER. LAP SPLICES FOR CONTINUOUS SLAB OR LONGITUDINAL BEAM BARS, WITH DOUBLE MAT OF REINFORCING, SHALL BE LOCATED IN THE MIDDLE 1/3 OF THE SPAN FOR TOP BARS AND CENTERED OVER THE SUPPORT FOR THE BOTTOM BARS. LAP SPLICE IN BEAMS, CONTINUOUS SLABS AND WALLS SHALL BE STAGGERED. CENTERLINE OF STAGGERS SHALL BE A MINIMUM OF A SPLICE LENGTH APART.
10. A TOP BAR IS A HORIZONTAL BAR WHERE MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST DIRECTLY BELOW THE BAR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS. FOR EPOXY-COATED REINFORCEMENT, MULTIPLY THE TABULATED VALUES BY 1.5 FOR 'REGULAR BARS' AND 1.3 FOR 'TOP BARS'.
11. CONCRETE CONSTRUCTION SHALL BE REINFORCED CONCRETE EXCEPT WHERE PLAIN CONCRETE IS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE NOTED, MINIMUM REINFORCING STEEL SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING SCHEDULES:
Table with 4 columns: SLAB THICKNESS, SIZE, SPACING E.W., LOCATION. Includes wall and floor slab details.
12. SUBMIT REINFORCING SHOP DRAWINGS FOR REVIEW. AT A MINIMUM, THESE DRAWINGS SHALL SHOW THE GENERAL PLACEMENT OF REINFORCING, CONSTRUCTION JOINTS, CONTROL JOINTS, EXPANSION JOINTS, CONCRETE MEMBER DIMENSIONS, DOWELS, BAR LENGTHS, SPLICE LENGTH, AND REINFORCING BEND TABLES.
13. IN ADDITION TO NORMAL ACCESSORIES USED TO HOLD REINFORCING STEEL FIRMLY IN POSITION, EXTRA ACCESSORY BARS SHALL BE USED AS FOLLOWS:
a. IN SLABS, #5 RAISER BARS AT 36" ON CENTER MAXIMUM TO SUPPORT TOP REINFORCING STEEL.
b. IN WALLS WITH TWO CURTAINS, #3 U OR Z-SHAPE SPACERS AT 6'-0" ON CENTER EACH WAY.
14. TACK WELDING OR WELDING OF REBAR SHALL NOT BE PERMITTED UNLESS OTHERWISE CALLED FOR OR APPROVED BY THE ENGINEER. IF APPROVED, REINFORCING TO BE WELDED IN ACCORDANCE WITH AWS SPECIFICATION D1.4. ALL REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A706.
15. BARS SHOWN WITH 90° HOOKS SHALL HAVE A STANDARD 90° HOOK, UNO. BARS SHOWN WITH 180° HOOKS SHALL HAVE A STANDARD 180° HOOK, UNO. ALL HOOKS SHALL BE ACI STANDARD HOOKS UNLESS DIMENSIONED OTHERWISE. BARS ENDING IN RIGHT ANGLE BENDS OR HOOKS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, SECT. 25.3. IN CASES WHERE REINFORCING BARS CANNOT BE EXTENDED AS REQUIRED TO PROVIDE SPECIFIED DEVELOPMENT LENGTH DUE TO AN ADJACENT STRUCTURE, EXTEND AS FAR AS POSSIBLE AND END IN STANDARD HOOKS.
16. LAP SPLICE WELDED WIRE FABRIC ONE SPACE PLUS 2 INCHES AT EDGES AND ENDS AND PROVIDE ADDITIONAL REINFORCING WHERE SHOWN ON DRAWINGS. PLACE MESH 2 INCHES FROM TOP OF SLAB FOR SLABS ON GROUND AND 1 INCH FROM TOP OF SUPPORTED SLABS UNLESS NOTED OTHERWISE.

CAST-IN-PLACE CONCRETE AND REINFORCEMENT:

- 1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318 AND ACI 350.
2. CONCRETE SHALL HAVE THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS:
CAST-IN-PLACE CONCRETE: 4,500 PSI
FILL CONCRETE (CLSM) 100 PSI
3. USE 6% ±1.5%, ENTRAINED AIR PER ASTM C260 FOR ALL CONCRETE EXPOSED TO WEATHER.
4. ADMIXTURES SHALL CONTAIN NO MORE THAN 0.05% CHLORIDE IONS BY WEIGHT OF CEMENT WHEN TESTED IN ACCORDANCE WITH AASHTO T260.
5. CONCRETE SHALL BE PROPORTIONED, BATCHED, MIXED, PLACED, CONSOLIDATED, AND CURED IN ACCORDANCE WITH ACI 301, 304, 308, 309 AND 318. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED IN ACCORDANCE WITH ACI 304 AND ACI 309.
6. CONTRACTOR SHALL KEEP A COPY OF "FIELD REFERENCE MANUAL: STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE ACI 301 WITH SELECTED ACI REFERENCES", (ACI PUBLICATION SP-15) AT THE PROJECT FIELD OFFICE.
7. ALL REINFORCING DETAILS SHALL CONFORM TO THE ACI DETAILING MANUAL, SP-66, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.
8. SUBMIT FOR APPROVAL CONCRETE MIX DESIGN AND CERTIFICATION OF CONCRETE MATERIALS CONFORMING TO THE FOLLOWING EXPOSURE CATEGORIES:
Table with 3 columns: CATEGORY, NON-AIR ENTRAINED CLASS, AIR ENTRAINED CLASS.
9. THE CONTRACTOR SHALL EMPLOY A TESTING LABORATORY APPROVED BY THE ENGINEER/ARCHITECT TO PERFORM THE TESTING SPECIFIED PER PARAGRAPH 1.6.4 OF ACI 301. THE TESTING LABORATORY SHALL MEET THE REQUIREMENTS OF ASTM E329. TESTING SHALL BE MADE BY AN ACI CONCRETE FIELD-TESTING TECHNICIAN GRADE 1 OR APPROVED EQUIVALENT. A TECHNICIAN GRADE 1 SHALL BE PRESENT DURING ALL CONCRETE PLACEMENT.

- 10. ALL SLABS SHALL BE POURED MONOLITHICALLY, EXCEPT FOR THE REQUIRED CONSTRUCTION JOINTS, CONTROL JOINTS, AND/OR EXPANSION JOINTS.
11. PROVIDE PERIMETER INSULATION AGAINST EXTERIOR FOUNDATION WALLS AND GRADE BEAMS AND UNDER THE SLAB ADJACENT TO THE EXTERIOR OF THE BUILDING AS SHOWN ON THE ARCHITECTURAL DRAWINGS.
12. PROVIDE 3/4 INCH CHAMFER ON ALL EXPOSED CORNERS OF SLABS UNLESS OTHERWISE INDICATED ON THE ARCHITECTURAL DRAWINGS. MINIMUM CLEARANCES FOR REINFORCING STEEL SHALL BE MAINTAINED. CHAMFERS SHALL EXTEND 2'-0", MINIMUM, BELOW GRADE.
13. CURE ALL CONCRETE FOR A MINIMUM 7-DAYS. APPLY CURING COMPOUND AT THE MAXIMUM COVERAGE RATE OF 300 SQUARE FEET PER GALLON. USE PRODUCT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. SEE SPECIFICATIONS.
14. CONTRACTOR SHALL PROVIDE BONDING AGENT TO ALL SURFACES BETWEEN EXISTING AND FRESH CONCRETE. BONDING AGENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. PRIOR TO APPLICATION OF BONDING AGENT, THE EXISTING CONCRETE BASE SURFACE SHALL BE THOROUGHLY CLEANED TO REMOVE ANY GREASE, OIL OR OTHER CONTAMINANTS THAT MAY PREVENT ADEQUATE BOND TO THE EXISTING CONCRETE. REMOVE WEAK OR DETERIORATED CONCRETE.
15. THE CONCRETE INTERFACE OF ALL CONSTRUCTION JOINTS SHALL BE ROUGHEN TO 1/4", MINIMUM, AMPLITUDE. PRIOR TO CASTING AGAINST THE GREEN CONCRETE, APPLY BONDING AGENT (OR GREEN CONCRETE SHALL BE SATURATED SURFACE DRY. WET GREEN CONCRETE FOR A MINIMUM OF 4 HOURS, REMOVE ANY STANDING WATER).
16. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS NOT INDICATED ON THE DRAWINGS FOR REVIEW BY THE ENGINEER/ARCHITECT.
17. ALUMINUM OR DISSIMILAR METALS IN CONTACT WITH CONCRETE SHALL BE COATED WITH GRAY EPOXY PRIMER, EPOXY PRIMER SHALL BE PRE-APPROVED BY THE ENGINEER.
18. FORMWORK, FOR ALL CONCRETE THAT WILL BE EXPOSED IN THE COMPLETED STRUCTURE, SHALL BE CONSTRUCTED FROM A METAL OR SUITABLE SURFACE PLYWOOD THAT WILL PRODUCE AN ACCEPTABLY SMOOTH SURFACE. SEE SPECIFICATIONS.
19. PITCH CONCRETE SLABS TO FLOOR DRAINS SHOWN ON MECHANICAL OR ARCHITECTURAL DRAWINGS.
20. CONCRETE PROTECTION (CLEAR COVER) FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
• 2 INCHES, FORMED EDGES
• 2 INCHES, EXPOSED TO EARTH, WATER OR WEATHER
• 3 INCHES, CAST ON GRADE
21. ANCHOR BOLTS SHALL BE ASTM F1554 GR 36, UNLESS OTHERWISE NOTED.

CONCRETE MASONRY:

- 1. MASONRY IS SUPPORTED IN THE COMPLETED CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SUPPORTING THE MASONRY DURING CONSTRUCTION IN CONFORMANCE WITH LOCAL, STATE AND NATIONAL LAWS AND AS REQUIRED.
2. MASONRY CONSTRUCTION AND MATERIAL SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1/ASCE 6) EXCEPT AS MODIFIED IN THE SPECIFICATIONS AND BELOW. A COPY OF ACI 530.1/ASCE 6 SHALL BE ON THE JOB SITE AT ALL TIMES THAT MASONRY WORK IS BEING PERFORMED.
3. SUBMIT FOR REVIEW, PRIOR TO CONSTRUCTION, SHOP DRAWINGS SHOWING A PLAN AND ELEVATION VIEW OF ALL CMU WALL, AND A PLAN THAT SHOWS ALL DOWELS REQUIRED FOR VERTICAL CMU REINFORCING THAT EXTEND OUT OF CONCRETE. SHOW WALL THICKNESS, AND DIMENSION WALL LENGTH AND LOCATION. SHOWING TOP ELEVATIONS OF WALLS, BOND BEAMS AND GROUT POURS. SHOW LOCATION OF CONTROL JOINT LOCATIONS, SOLID UNITS, CELLS TO BE GROUT FILLED, OPENING, LINTEL, JOINT REINFORCEMENT, REINFORCING BAR AND EMBEDMENT.
4. SUBMIT FOR REVIEW, PRIOR TO CONSTRUCTION, DOCUMENTATION FOR THE BLOCK, MORTAR, GROUT, ADMIXTURES, REINFORCING, BAR POSITIONER AND OTHER ACCESSORIES PROPOSED FOR USE. SUBMIT A WRITTEN DESCRIPTION OF THE METHOD OF REINFORCEMENT AND GROUT, AND OF GROUT CONSOLIDATION.
5. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, NORMAL WEIGHT.
6. CONCRETE MASONRY UNITS WHICH CONTAIN VERTICAL REINFORCEMENT SHALL BE TWO CORE UNITS AND WITH CORES AND WEBS VERTICALLY ALIGNED.
7. MORTAR FOR CONCRETE MASONRY UNITS SHALL BE NON-AIR ENTRAINED PORTLAND CEMENT-LIME CONFORMING TO ASTM C270, TYPE S. CEMENT IN MORTAR SHALL BE LOW-ALKALI AND NON-STAINING. TYPE N MORTAR AND MASONRY CEMENT SHALL NOT BE USED FOR CMU CONSTRUCTION.
8. ADMIXTURES SHALL NOT BE USED IN THE MORTAR OR GROUT. ANTI-FREEZE AND CALCIUM CHLORIDE SHALL NOT BE USED.
9. MINIMUM NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS SHALL BE:
NET AREA COMPRESSIVE STRENGTH OF ASTM C90 CMU, F_{cmu} = 2,000 PSI
NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY, F_m = 2,000 PSI
10. COARSE GROUT SHALL CONFORM TO ASTM C476 WITH A MAXIMUM AGGREGATE SIZE OF 3/8" AND A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
11. ALL LOAD BEARING CONCRETE BLOCK WALLS SHALL BE REINFORCED VERTICALLY AS SHOWN ON PLAN, UNLESS NOTED OTHERWISE.
12. PROVIDE (1) #5 VERTICAL BAR IN FIRST CORE AT EACH CORNER, END OF WALL, AND ADJACENT TO OPENINGS AND CONTROL JOINTS.
13. VERTICAL REINFORCEMENT SHALL EXTEND THROUGH BOND BEAMS AND TO WITHIN 2 INCHES OF THE TOP OF WALLS. TERMINATE TOP OF BAR WITH A 12° 90 DEGREE HOOK.
14. REINFORCING STEEL SPLICES SHALL BE LAPPED A MINIMUM OF 48 BAR DIAMETERS BUT NO LESS THAN 12 INCHES, UNLESS NOTED OTHERWISE.
15. ANCHORAGE OF REINFORCING STEEL INTO CONCRETE SHALL BE 36 BAR DIAMETERS BUT NO LESS THAN 12 INCHES, UNLESS NOTED OTHERWISE.
16. HORIZONTAL JOINT REINFORCING SHALL BE, UNLESS SHOWN OTHERWISE, STANDARD 9 GAGE, LADDER TYPE CONFORMING TO ASTM A951, SPACED VERTICALLY AT 8 INCH ON CENTERS ABOVE AND BELOW OPENINGS FOR THREE CONSECUTIVE COURSES AND AT 16 INCHES ON CENTERS ELSEWHERE. EXTEND REINFORCEMENT 2 FEET BEYOND EACH SIDE OF OPENING BUT DO NOT EXTEND THROUGH CONTROL JOINTS. PROVIDE FACTORY FABRICATED "T" AND "L" SHAPED PIECES AT INTERSECTIONS AND CORNERS.
17. JOINT REINFORCEMENT SHALL BE SPLICED BY LAPPING THE LONGITUDINAL WIRES AT LEAST 12 INCHES; THE CROSS-WIRES WITHIN THE LAP SHALL BE REMOVED SO THAT THE LONGITUDINAL WIRES ARE SIDE BY SIDE. ALTERNATELY WHERE JOINT REINFORCING IS NOT REQUIRED IN BETWEEN EACH COURSE, SPLICES MAY BE MADE BY BUTTING THE ADJACENT SECTIONS OF JOINT REINFORCING AND CENTERING A 48 INCH LENGTH OF JOINT REINFORCING IN THE JOINT IMMEDIATELY ABOVE OR BELOW THE BUTT JOINT. SPLICE WITH "T" AND "L" SHAPED PIECES AT INTERSECTIONS AND CORNERS.
18. BOND BEAMS SHALL BE PROVIDED IN EACH WALL AT TOP OF WALL. FILL BOND BEAMS WITH GROUT. REINFORCE BOND BEAMS WITH (2) # 5 UNLESS NOTED OTHERWISE. PROVIDE CORNER BARS WITH 2'-0" LEGS AND BAR SUPPORTS TO OBTAIN THE REQUIRED CLEARANCE. BOND BEAMS IN 8" CMU SHALL BE REINFORCED WITH (1) #5.



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Table with 3 columns: ISSUED FOR, ISSUE DATE, SCALE, AS NOTED, DESIGNED BY, DRAWN BY, CHECKED BY. Includes values like BID 02/24/2026, BAS, MRS, BAS.

OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT CITY OF CONNEAUT ASHTABULA COUNTY, OHIO BOOSTER PUMP STATION - 20 SERIES STRUCTURAL GENERAL NOTES

Table with 2 columns: PROJECT NO. (41632), DISCIPLINE (STRUCTURAL), SHEET NAME (SG-01), SHEET (12) OF (21).

Z:\PROJECT FILES\CAZ\CONNEAUT\1632 - CONNEAUT OH OLD MAIN STREET BPS & WATERGARDING\SHEETS\PDF_S_41962 - STRUCTURAL GENERAL NOTES-2, 2/20/2026, 5:48:14 PM - BART STROBEL

- 19. BOND BEAM REINFORCEMENT AND GROUT AT WALL CONTROL JOINTS SHALL BE CONTINUOUS FROM A DUMMY CONTROL JOINT IN BOTH FACES OF BOND BEAM ALIGNED WITH WALL CONTROL JOINTS. THE BLOCK FACE SHELLS AT DUMMY CONTROL JOINTS SHALL BE FREE OF MORTAR AND GROUT. THE DUMMY CONTROL JOINT IN EXPOSED FACES SHALL HAVE BACKING ROD AND CAULK SEAL AS REQUIRED FOR THE CONTROL JOINT.
- 20. CONTROL JOINTS: NEW MASONRY CONTROL JOINTS SHALL MATCH EXISTING CONTROL JOIST LOCATIONS
- 21. MECHANICALLY VIBRATE GROUT IN VERTICAL SPACES IMMEDIATELY AFTER POURING AND AGAIN MINUTES LATER.
- 22. PROVIDE CLEANOUTS IF GROUT LIFT EXCEEDS 4'-0" IN BLOCK WALLS. MAXIMUM GROUT LIFT SHALL BE 8'-0".

WOOD:

- 1. ALL WOOD DESIGN, SPECIFICATIONS AND ERECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION."
- 2. ALL WOOD SHALL COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE NORTHEASTERN LUMBER MANUFACTURERS ASSOCIATION OR THE PACIFIC LUMBER INSPECTION BUREAU.
- 3. ALL SAWN LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED GRADING AGENCY THAT HAS BEEN APPROVED BY AN ACCREDITATION BODY THAT COMPLIES WITH DOC P520.
- 4. SAWN LUMBER FOR BEAMS, JOIST AND STUDS SHALL HAVE THE FOLLOWING MINIMUM GRADE UNLESS NOTED OTHERWISE:

MEMBER SIZE	F _y (PSI)	F _x (PSI)	E (PSI)	F _v (PSI)	WOOD GRADE
2x	875	135	1,400,000	1150	S.P.F. NO. 1/2
BEAM WIDTH 2-4"	550	135	1,200,000	1150	S.P.F. NO. 1/2
- 5. ALL 2x BEARING WALLS SHALL BE BLOCKED HORIZONTALLY AT 4'-0" OC. VERTICAL SPACING FOR ALL BEARING AND SHEARWALLS.
- 6. ALL PLYWOOD SHALL BE APA RATED SHEATHING CONFORMING TO STANDARD PS 1-08 WITH THE FOLLOWING NOMINAL THICKNESS AND SPAN/INDEX RATIO, UNLESS NOTED OTHERWISE:
- 7. ALL SILL PLATES RESTING ON CONCRETE OR MASONRY SHALL BE NATURALLY DURABLE (SPECIES FOR BOTH DECAY AND TERMITE RESISTANCE) OR PRESERVATIVE TREATED USING WATER-BORNE PRESERVATIVES IN ACCORDANCE WITH AWPA U1.
- 8. CONNECTION HARDWARE AND FASTENERS SHALL BE GALVANIZED STEEL, MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS BY SIMPSON STRONG-TIE COMPANY INC. OR AN APPROVED EQUAL. DO NOT OVERLAP SIMPSON CONNECTORS.

PREFABRICATED TIMBER TRUSSES:

- 1. FABRICATOR SHALL BE AN "APPROVED FABRICATOR" IN ACCORDANCE WITH IBC SECTION 1704.2.5, REGISTERED AND APPROVED BY THE LOCAL BUILDING DEPARTMENT.
- 2. DESIGN WOOD ROOF TRUSSES FOR THE FOLLOWING SUPERIMPOSED DESIGN LOADS. DEAD LOAD DOES NOT INCLUDE THE SELF-WEIGHT OF THE TRUSSES. TRUSSES SHALL HAVE SUFFICIENT CAPACITY TO SUPPORT A 200LB HANGING POINT LOAD FROM ANYWHERE ON THE BOTTOM CHORD ALONG WITH THE LOADING PROVIDED ON THE DRAWINGS.

	DEAD LOAD = 10 PSF
TOP CHORD:	LIVE LOAD = SEE DESIGN LOADS
	WIND LOAD = SEE WIND DIAGRAM
BOTTOM CHORD:	DEAD LOAD = 10 PSF
	LIVE LOAD = 5 PSF
- 3. THE PROVIDED DESIGN LOADING SHALL BE APPLIED TO THE TRUSS IN ACCORDANCE WITH THE GOVERNING BUILDING CODE.
- 4. FOR WOOD TRUSSES DESIGNATED AS SPECIAL, SEE TRUSS LOADING DIAGRAMS FOR APPLICABLE DESIGN LOADS.
- 5. WOOD TRUSS MANUFACTURER SHALL SUPPLY SHOP DRAWINGS AND CALCULATIONS FOR THE WOOD TRUSSES INDICATING THE FOLLOWING INFORMATION FOR APPROVAL:
 - a. TRUSS CONFIGURATION INCLUDING SPAN, PITCH AND SPACING OF PANEL POINTS.
 - b. SPECIES, GRADE AND NOMINAL SIZE OF LUMBER USED.
 - c. TRUSS CALCULATIONS SHALL INCLUDE, BUT NOT LIMITED TO DESIGN LOADS USED, PANEL POINT LOADS, TRUSS END REACTIONS, MEMBER AXIAL AND FLEXURAL FORCES, STRESSES AND COMBINED LOADING DESIGN, JOINT AND SPLICE CONNECTION DESIGN, ANY SPECIAL CASES REQUIRED TO PROVIDE A COMPLETE DESIGN.
 - d. JOINT AND SPLICE CONNECTION DESIGN SHALL INCLUDE TEST DATA VERIFYING LATERAL LOAD CAPACITY OF PLATES. METAL PLATES SHALL MEET THE REQUIREMENTS OF THE TRUSS PLATE INSTITUTE, ANS/ITP 1, "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION."
 - e. CALCULATIONS AND DRAWINGS SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.
 - f. TRUSS MEMBERS TO WALL CONNECTION HARDWARE AND TRUSS MEMBERS TO TRUSS GIRDER CONNECTION HARDWARE SHALL BE SIZED AND IDENTIFIED IN THE SHOP DRAWINGS. CONNECTION HARDWARE SHALL BE GALVANIZED STEEL, MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS BY SIMPSON STRONG-TIE COMPANY INC. OR AN APPROVED EQUAL. CONNECTION HARDWARE SHALL BE SIZED FOR VERTICAL AND LATERAL LOADS.
- 6. ALL WOOD SHALL COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE NORTHEASTERN LUMBER MANUFACTURERS ASSOCIATION OR THE PACIFIC LUMBER INSPECTION BUREAU.
- 7. ALL SAWN LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED GRADING AGENCY.

POST-INSTALLED FASTENERS:

- 1. POST-INSTALLED ANCHORS SHALL BE USED ONLY WHERE SPECIFIED ON THE STRUCTURAL DRAWINGS.
- 2. ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION IS REQUIRED FOR ALL INSTALLERS OF ADHESIVE ANCHORS IN HORIZONTAL OR UPWARDLY INCLINED ORIENTATION. THIS CERTIFICATION CAN BE OBTAINED THROUGH ACI OR APPROVED EQUIVALENT.
- 3. FASTENERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING IN COORDINATION WITH INFORMATION HEREIN. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED IF CONFLICTS EXIST BETWEEN THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS AND THE REQUIREMENTS HEREIN.
- 4. REINFORCEMENT STEEL SHALL NOT BE CUT. PRIOR TO DRILLING THE CONCRETE, THE CONTRACTOR SHALL BE LOCATED WITH A MAGNETIC BAR LOCATOR. POST-INSTALLED ANCHOR BOLTS AND FASTENERS SHALL BE INSTALLED TO MISS REINFORCEMENT STEEL IN CONCRETE. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS.
- 5. DRILL HOLES USING ROTARY PERCUSSION DRILL WITH A DEPTH GAGE. DO NOT DRILL THROUGH FULL THICKNESS OF CONCRETE. USE OF A DIAMOND CORE BIT WITH ROUGHENING TOOL FOR ANCHOR HOLES MUST BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO DRILLING. UNLESS OTHERWISE SHOWN IN THE DRAWINGS, ALL HOLES SHALL BE DRILLED PERPENDICULAR TO THE CONCRETE SURFACE. CLEAN HOLES IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. IF CONCRETE IS DAMP, BLOW DRY HOLE WITH OIL-FREE COMPRESSED AIR. CLEAN HOLE WITH WATER ONLY IF RECOMMENDED BY MANUFACTURER. ADHESIVE ANCHORS MAY NOT BE SET IF WATER IS SEEPING INTO HOLE AND THE STRUCTURAL ENGINEER, OF RECORD SHALL BE NOTIFIED.

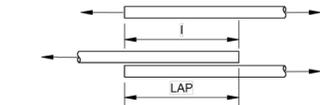
- 6. ANCHOR SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE SUBMITTED AND APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF MEETING THE PERFORMANCE OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR ITS USE, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE, INSTALLATION TEMPERATURE, MOISTURE CONDITION OF CONCRETE, AND DRILLING METHODS.
- 7. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL ANCHOR PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF ANCHOR INSTALLATION.
- 8. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS. CONTRACTOR SHALL CONTACT STRUCTURAL ENGINEER SHOULD THE LAYOUT OF THE ANCHOR, EMBEDMENT, SPACING OR EDGE DISTANCES, IS MODIFIED.
- 9. EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES:

- a. ANCHORAGE TO CONCRETE:
 - ADHESIVE ANCHORS:
 - A. HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HIT-Z ROD
 - B. HILTI HIT-HY 200 SAFE SET SYSTEM INSTALLED USING HILTI HOLLOW DRILL BIT AND VACUUM WITH HAS-V-36 GRADE 36 THREADED ROD
 - C. HILTI HIT-RE 500V3 SAFE SET SYSTEM INSTALLED USING HILTI HOLLOW DRILL BIT AND VACUUM WITH HAS THREADED ROD
 - D. SIMPSON SET-XP WITH ASTM A36 THREADED ROD
 - E. SIMPSON SET-XP INSTALLED USING SIMPSON SPEED CLEAN DXS SYSTEM WITH ASTM A36 THREADED ROD
 - F. APPROVED EQUAL
 - REBAR DOWELING INTO CONCRETE:
 - A. HILTI HIT-HY 200 SAFE SET SYSTEM INSTALLED USING HILTI HOLLOW DRILL BIT AND VACUUM WITH CONTINUOUSLY DEFORMED REBAR
 - B. HILTI HIT-HY 500V3 SAFE SET SYSTEM INSTALLED USING HILTI HOLLOW DRILL BIT AND VACUUM WITH CONTINUOUSLY DEFORMED REBAR
 - C. SIMPSON SET-XP WITH CONTINUOUSLY DEFORMED REBAR
 - D. SIMPSON SET-XP INSTALLED USING SIMPSON SPEED CLEAN DXS SYSTEM WITH CONTINUOUSLY DEFORMED REBAR
 - E. APPROVED EQUAL
- b. ANCHORAGE TO SOLID GROUTED MASONRY:
 - ADHESIVE ANCHORS:
 - A. HILTI HIT-HY 270 SAFE SET SYSTEM INSTALLED USING HILTI HOLLOW DRILL BIT AND VACUUM WITH HILTI HAS CONTINUOUSLY THREADED ROD OR DEFORMED REBAR
 - B. SIMPSON SET-XP WITH ASTM A36 THREADED ROD OR CONTINUOUSLY DEFORMED REBAR
 - C. SIMPSON SET-XP INSTALLED USING SIMPSON SPEED CLEAN DXS SYSTEM WITH ASTM A36 THREADED ROD OR CONTINUOUSLY DEFORMED REBAR
 - D. APPROVED EQUAL
 - ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY:
 - ADHESIVE ANCHORS USE:
 - A. HILTI HIT-HY 270 SAFE SET SYSTEM INSTALLED USING THE APPROPRIATE SIZE SCREEN TUBE PER THE ADHESIVE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS AND A HILTI HOLLOW DRILL BIT AND VACUUM WITH HILTI HAS CONTINUOUSLY THREADED ROD OR DEFORMED REBAR.
 - SIMPSON SET-XP THE APPROPRIATE SIZE SCREEN TUBE PER THE ADHESIVE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS WITH ASTM A36 THREADED ROD
 - B. SIMPSON SET-XP INSTALLED USING SIMPSON SPEED CLEAN DXS SYSTEM WITH ASTM A36 THREADED ROD
 - C. APPROVED EQUAL

SPECIAL INSPECTIONS:

PER THE IBC SECTION 1705, SPECIAL INSPECTIONS ARE REQUIRED FOR THE FOLLOWING ITEMS:

- 1. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:
 - a. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK DESIGNATED TO ASSURE IT IS CONSTRUCTED IN CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS.
 - b. THE SPECIAL INSPECTOR SHALL SUBMIT INSPECTION REPORTS AND TESTS TO THE BUILDING OFFICIAL AND REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
 - c. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK.
 - d. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND TESTS, AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS OR TESTS, SHALL BE SUBMITTED WITHIN THE AGREED UPON TIME TO THE BUILDING OFFICIAL PRIOR TO THE START ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
 - e. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A STATEMENT OF RESPONSIBILITY ACKNOWLEDGING THE AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.



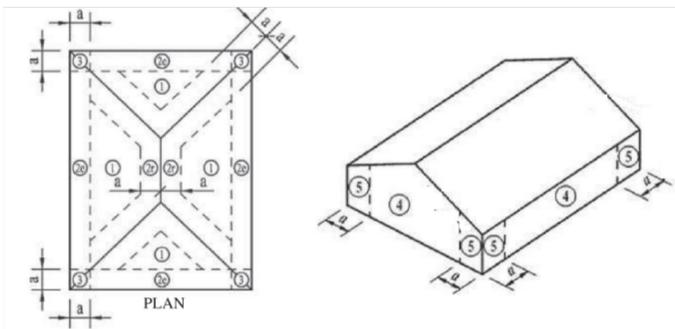
LAP TABLE (f'c = 4,500 PSI)

BAR SIZE	LAP CLASS	UNCOATED BARS			
		TOP BARS		OTHER BARS	
		CASE 1	CASE 2	CASE 1	CASE 2
#3	A	18	26	14	20
	B	23	34	18	26
#4	A	24	35	18	27
	B	30	46	24	35
#5	A	29	44	23	34
	B	38	57	30	44
#6	A	35	53	27	40
	B	46	68	35	53
#7	A	51	77	39	59
	B	66	99	51	77
#8	A	58	87	45	67
	B	76	114	58	87

NOTES:

- 1. TABULATED VALUES ARE BASED ON A MINIMUM YIELD STRENGTH OF 60,000 PSI. LENGTHS ARE IN INCHES.
- 2. CASES 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL MEMBER, CONCRETE COVER, AND OC SPACING OF THE BARS ARE DEFINED AS:
 - BEAMS AND COLUMNS
 - CASE 1: CONCRETE COVER AT LEAST 1.0d, AND OC SPACING AT LEAST 2.0 d
 - CASE 2: CONCRETE COVER LESS THAN 1.0d, OR OC SPACING AT LESS THAN 2.0 d
 - OTHER BARS
 - CASE 1: CONCRETE COVER AT LEAST 1.0d, AND OC SPACING AT LEAST 3.0 d
 - CASE 2: CONCRETE COVER LESS THAN 1.0d, OR OC SPACING AT LESS THAN 3.0 d
- 3. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.

- 2. CONCRETE:
 - a. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT. (PERIODIC)
 - REINFORCING BAR WELDING:
 - VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706. (PERIODIC)
 - INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" (PERIODIC)
 - INSPECT ALL OTHER WELDS (CONTINUOUS)
 - c. INSPECT ANCHORS CAST IN CONCRETE (PERIODIC)
 - d. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:
 - ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. (CONTINUOUS)
 - MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE. (PERIODIC)
 - e. VERIFY USE OF REQUIRED MIX DESIGN. (PERIODIC)
 - f. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. (CONTINUOUS)
 - g. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES. (CONTINUOUS)
 - h. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES. (PERIODIC)
 - i. INSPECT PRESTRESSED CONCRETE FOR:
 - APPLICATION OF PRESTRESSING FORCES. (CONTINUOUS)
 - GROUTING OF BONDED PRESTRESSING TENDONS. (CONTINUOUS)
 - j. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS. (PERIODIC)
 - k. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS. (PERIODIC)
 - l. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED. (PERIODIC)
 - m. NO INSPECTION IS REQUIRED FOR SLABS-ON-GRADE.
- 4. MASONRY: (LEVEL B)
 - a. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS. (PERIODIC)
 - b. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:
 - PROPORTIONS OF SITE-PREPARED MORTAR. (PERIODIC)
 - CONSTRUCTION OF MORTAR JOINTS. (PERIODIC)
 - GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGE (PERIODIC)
 - LOCATION OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS AND ANCHORAGES. (PERIODIC)
 - PRESTRESSING TECHNIQUE. (PERIODIC)
 - PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY (CONTINUOUS/PERIODIC)
 - c. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:
 - GROUT SPACE (PERIODIC)
 - GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES (PERIODIC)
 - PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS. (PERIODIC)
 - CONSTRUCTION OF MORTAR JOINTS. (PERIODIC)
 - d. VERIFY DURING CONSTRUCTION:
 - SIZE AND LOCATION OF STRUCTURAL ELEMENTS. (PERIODIC)
 - TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION. (PERIODIC)
 - WELDING OF REINFORCEMENT. (CONTINUOUS)
 - PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F). (PERIODIC)
 - APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE. (PERIODIC)
 - PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE. (CONTINUOUS)
 - PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS. (CONTINUOUS/PERIODIC)
 - e. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS. (CONTINUOUS)



WIND PRESSURE (ASCE 7-16) FOR COMPONENTS & CLADDING

Area	Surface Pressure (psf)			
	10 sf	20 sf	100 sf	200 sf
Negative Zone 1	-42.3	-42.3	-31.9	-31.9
Negative Zone 2a	-57.2	-52.3	-40.9	-36.0
Negative Zone 2b	-59.8	-52.9	-46.9	-40.0
Negative Zone 3	-75.2	-67.7	-50.2	-42.7
Positive All Zones	23.8	20.5	16.0	16.0
Overhang Zone 1	-51.0	-34.2	-54.1	-54.1
Overhang Zone 2a	-65.9	-64.1	-59.9	-58.2
Overhang Zone 2b	-78.4	-74.7	-66.0	-62.2
Overhang Zone 3	-100.1	-88.8	-82.6	-51.4
Negative Zone 4	-34.6	-29.8	-28.4	-26.5
Negative Zone 5	-42.7	-33.2	-30.3	-26.5
Positive Zone 4 & 5	31.5	27.1	25.7	23.3

NOTES:

- 1. VALUES LISTED IN THE ABOVE TABLE ARE BASED UPON AN ENCLOSED BUILDING USING THE SPECIFIED WIND LOADING AS INDICATED IN THE DESIGN LOAD SECTION OF THE GENERAL NOTES.
- 2. PRESSURE (POSITIVE) AND SUCTION (NEGATIVE) VALUES SIGNIFY LOADING ACTING TOWARDS AND AWAY FROM THE BUILDING SURFACES, RESPECTIVELY (PULL HEIGHT, UNLESS NOTED).
- 3. VALUES LISTED IN THE ABOVE TABLE ARE ULTIMATE WIND PRESSURES. TO OBTAIN ALLOWABLE STRESS DESIGN WIND VALUES, MULTIPLY THE VALUES SHOWN IN THE ABOVE TABLE BY 0.6.
- 4. EFFECTIVE WIND AREAS, UNLESS NOTED OTHERWISE:
 - a = 3.0 ft
- 5. SUCTION VALUES LISTED IN ROOF ZONES 1, 2 & 3 INDICATE GROSS UPLIFT PRESSURES.

REQUIRED	TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
X	1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318 CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
X	2. REINFORCING BAR WELDING:				
X	a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706.	-	X		
X	b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" AND		X	AWS D1.4 ACI 318: 26.6.4	-
X	c. INSPECT ALL OTHER WELDS	X	-		
X	3. INSPECT ANCHORS CAST INTO CONCRETE.	-	X	ACI 318: 17.8.2	-
X	4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:				
X	a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X	-	ACI 318: 17.8.2.4	-
X	b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	-	X	ACI 318: 17.8.2	-
X	5. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
X	6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C172 ASTM C31 ACI 318: 26.4, 26.12	1908.10
X	7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
X	8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3-26.5.5	1908.9
X	9. INSPECT PRESTRESSED CONCRETE FOR:				
X	a. APPLICATION OF PRESTRESSING FORCES; AND	X	-	ACI 318: 26.10	-
X	b. GROUTING OF BONDED PRESTRESSING TENDONS.	X	-		-
X	10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	-	X	ACI 318: CH. 26.8	-
X	11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	X	ACI 318: 26.11.2	-
X	12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: CH. 26.11.2(b)	-

MINIMUM TESTS

VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5.B.1.b.3 FOR SELF-CONSOLIDATING GROUT					
VERIFICATION OF F _{at} AND F _{at,c} IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.4.B PRIOR TO CONSTRUCTION, EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE					
REQUIRED	INSPECTION TASK	FREQUENCY		REFERENCE FOR CRITERIA	
		CONTINUOUS	PERIODIC	TMS 402/ ACI 530/ ASCE 5	TMS 602/ ACI 530.1/ ASCE 6
X	1. VERIFY COMPLIANCE WITH APPROVED SUBMITTAL	-	X	-	ART. 1.5
X	2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
X	a. PROPORTIONS OF SITE PREPARED MORTAR	-	X	-	ART. 2.1, 2.6 A
X	b. CONSTRUCTION OF MORTAR JOINTS	-	X	-	ART. 3.3 B
X	c. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES	-	X	-	ART. 2.4 B, 2.4 H
X	d. LOCATION OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES	-	X	-	ART. 3.4, 3.6 A
X	e. PRESTRESSING TECHNIQUE	-	X	-	ART. 3.6 B
X	f. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X	X	-	ART. 2.1 C
X	3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
X	a. GROUT SPACE	-	X	-	ART. 3.2 D, 3.2 F
X	b. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES	-	X	SEC. 6.1	ART. 2.4, 3.4
X	c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES	-	X	SEC. 6.1, 6.2.1, 6.2.6, 6.2.7	ART. 3.2 E, 3.4, 3.6 A
X	d. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS	-	X	-	ART. 2.6 B, 2.4 G.1 b
X	e. CONSTRUCTION OF MORTAR JOINTS	-	X	-	ART. 3.3 B
X	4. VERIFY DURING CONSTRUCTION				
X	a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	-	X	-	ART. 3.3 F
X	b. TYPE, SIZE, AND LOCATION OF ANCHORS INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION	-	X	SEC. 1.2.1 (e), 6.1.4.3, 6.2.1	-
X	c. WELDING REINFORCEMENT	X	X	SEC. 8.1.6.7.2, 9.3.3.4 (c), 11.3.3.4 (b)	-
X	d. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40 DEG F (4.4 DEG C)) OR HOT WEATHER (TEMPERATURE ABOVE 90 DEG F (32.2 DEG C))	-	X	-	ART. 1.8 C, 1.8 D
X	e. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	-	X	-	ART. 3.6 B
X	f. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	-	X	-	ART. 3.5, 3.6 C
X	g. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X	X	-	ART. 3.3 B.9, 3.3 F.1 b
X	5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS	-	X	-	ART. 1.4 B.2 a.3, 1.4 B.2 b.3, 1.4 B.2 c.3, 1.4 B.3 1.4 B.4



verdantas
REGISTERED PROFESSIONAL ENGINEER

ISSUED FOR:	BID	AS NOTED	BAS	MRS	BAS
ISSUE DATE:	02/24/2026				
SCALE:					
DESIGNED BY:					



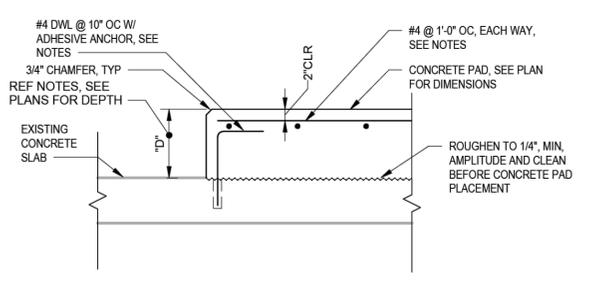
verdantas

ISSUED FOR:	BID	AS NOTED	BAS	MSR	BAS
ISSUE DATE:	02/24/2026	AS NOTED	BAS	MSR	BAS
SCALE:		AS NOTED	BAS	MSR	BAS
DESIGNED BY:		AS NOTED	BAS	MSR	BAS
DRAWN BY:		AS NOTED	BAS	MSR	BAS
CHECKED BY:		AS NOTED	BAS	MSR	BAS

OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT
ASHTABULA COUNTY, OHIO
CITY OF CONNEAUT

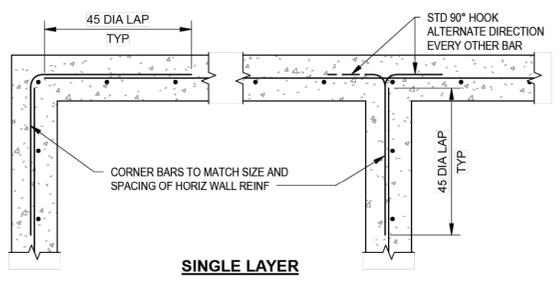
BOOSTER PUMP STATION - 20 SERIES
STRUCTURAL STANDARD DETAILS

PROJECT NO.	41632
DISCIPLINE	STRUCTURAL
SHEET NAME	SG-03
SHEET	14
OF	21

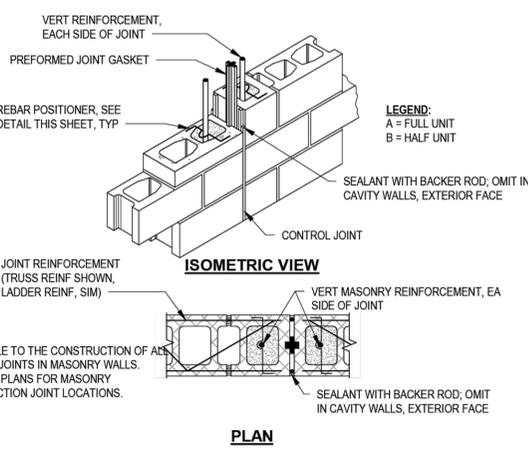


- NOTES:
- FOR "D" LESS THAN 10", REINFORCING CAN BE #4@1'-2" OC AND #4DWL @12" OC.
 - ADHESIVE ANCHOR DEPTH SHALL BE 2/3 EXISTING SLAB DEPTH. MAXIMUM DEPTH DOES NOT NEED TO EXCEED 5 1/2".
 - AT A MINIMUM, FOR SMALL PADS, PROVIDE (2) DOWELS AT EACH SIDE OF THE PAD FOR A TOTAL OF (4) DOWELS.
 - PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE PROJECT REPRESENTATIVE.
 - COORDINATE LOCATION OF ELECTRICAL CONDUIT AND DRAINAGE PIPING PENETRATIONS WITHIN THE EQUIPMENT PAD. STUB UP PENETRATIONS ON THE SAME SIDE OF THE EQUIPMENT AS REQUIRED FOR CONNECTION TO EQUIPMENT. EQUIPMENT DRAINS SHALL BE LOCATED AS REQUIRED FOR DRAINAGE FROM EQUIPMENT. EQUIPMENT PAD SHALL BE CONFIGURED ACCORDINGLY.
 - THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER AND AS APPROVED BY THE PROJECT REPRESENTATIVE. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE OR OTHER ACCEPTABLE MEANS, MATCHING THE BASE PLATE, WHILE PAD IS BEING PLACED.
 - EQUIPMENT BASES SHALL BE INSTALLED LEVEL, REFER TO EQUIPMENT MANUFACTURERS DOCUMENTS FOR MINIMUM LEVELING REQUIREMENT.
 - WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE GROUT IS PLACED. ANCHOR BOLTS MAY BE USED FOR LEVELING WITH DOUBLE NUTS. HOWEVER, PRIOR TO TIGHTENING, THE BASE PLATE MUST BE HARD-SHIMMED AND THE LEVELING NUTS BACKED OFF. EACH ANCHOR BOLT MUST HAVE ITS OWN SHIM PACK AND THE NUT FULLY TIGHTENED PRIOR TO GROUTING. WEDGES OR SHIMS THAT ARE LEFT IN PLACE SHALL NOT BE EXPOSED TO VIEW.

1 EQUIPMENT PAD
SD-S-03 SCALE: 3/4" = 1'-0"



5 CONCRETE WALL CORNER
SD-S-03 SCALE: 3/4" = 1'-0"

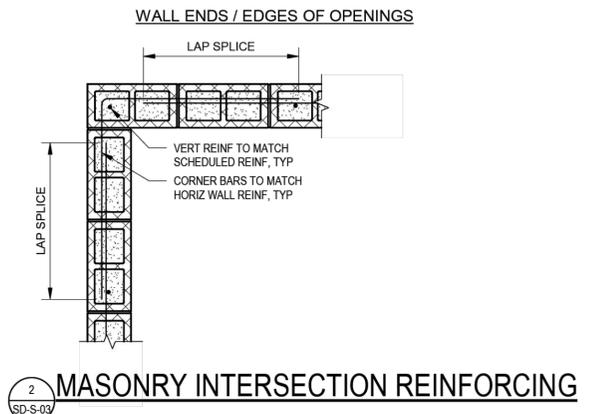
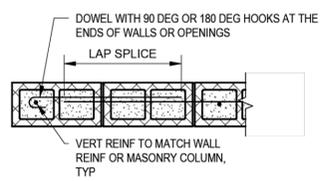


6 VERTICAL CMU CONTROL JOINT DETAIL
SD-S-03 SCALE: 1" = 1'-0"

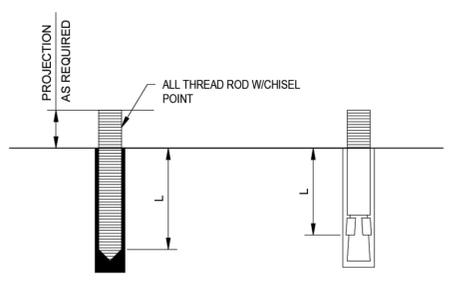
CMU LAP TABLE (f'm = 2,000 PSI)

BAR SIZE	WALL THICKNESS	
	8"	12"
#3	12"	19"
#4	13"	35"
#5	20"	58"
#6	38"	79"
#7	52"	111"
#8	79"	174"

- NOTES:
- TABULATED VALUES ARE BASED ON A MINIMUM YIELD STRENGTH OF 60,000 PSI. LENGTHS ARE IN INCHES.
 - SINGLE REINFORCEMENT SHALL BE CENTERED IN CELL OF CONCRETE MASONRY UNIT. DOUBLE REINFORCEMENT SHALL HAVE A MASONRY COVER OF 1.5" FOR #5 BAR AND SMALLER AND 2" FOR #6 BAR AND LARGER.
 - LAP LENGTH SHALL BE THE TABULATED VALUES OR 48 BAR DIAMETER, WHICH EVER IS LARGER.



2 MASONRY INTERSECTION REINFORCING
SD-S-03

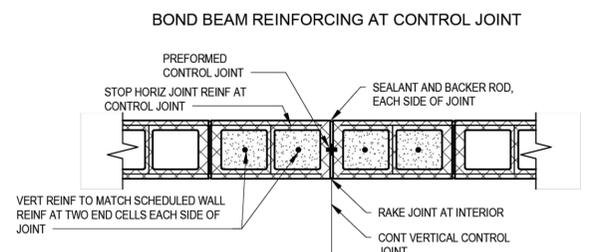
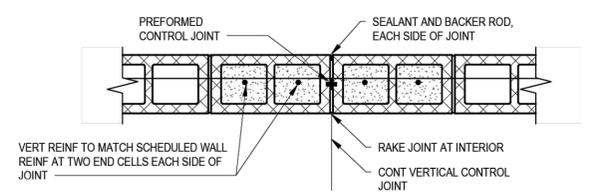


ADHESIVE ANCHOR EXPANSION ANCHOR

DIAMETER	MINIMUM EMBEDMENT LENGTH, L	
	ADHESIVE ANCHOR	EXPANSION ANCHOR
3/8"	4 1/2"	3 1/2"
1/2"	6"	4 3/4"
5/8"	7 1/2"	5 1/2"
3/4"	9"	6 1/2"
7/8"	10 1/2"	-
1"	12"	-

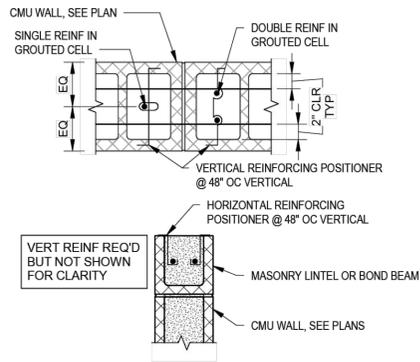
- NOTES:
- CONFORM TO ICC EVALUATION SERVICE REPORT (ES REPORT) REQUIREMENTS AND MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
 - PROVIDE TYPE 316 STAINLESS STEEL ALL-THREAD ROD MATERIAL.
 - PROVIDE HOLE DIAMETER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
 - EXPANSION ANCHOR EMBEDMENT LENGTHS ARE BASED ON HILTI KWIK BOLT TZ STAINLESS STEEL ANCHORS. SUBMIT ICC EVALUATION SERVICE REPORT (ES REPORT) FOR ALTERNATE PRODUCTS.
 - ADHESIVE ANCHOR EMBEDMENT LENGTHS ARE BASED ON HILTI HIT-RE 500-V3 ADHESIVE. SUBMIT ICC ES REPORT FOR ALTERNATE PRODUCTS.

7 CONCRETE ANCHORS
SD-S-03 SCALE: 12" = 1'-0"

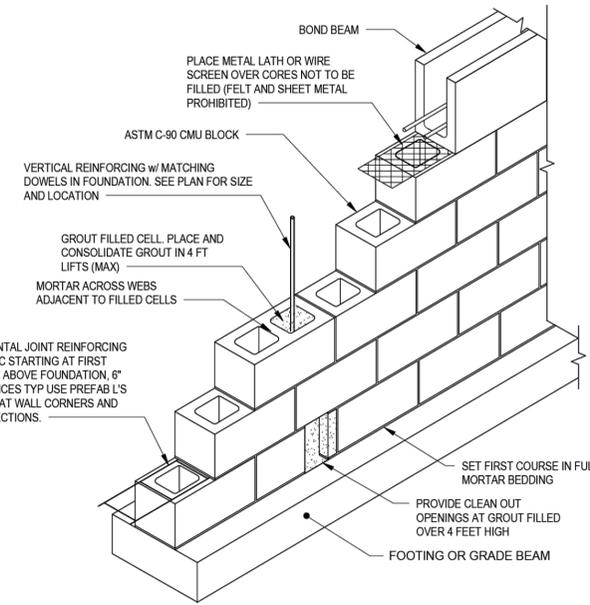


- NOTES:
- SEE PLAN FOR CONTROL JOINT LOCATIONS
 - ALL HORIZONTAL BOND BEAM REINFORCING SHALL BE CONTINUOUS ACROSS ALL VERTICAL CONTROL JOINTS

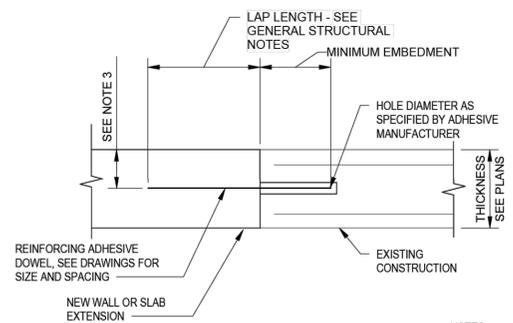
3 CONTROL JOINTS IN MASONRY WALLS
SD-S-03 SCALE: 1" = 1'-0"



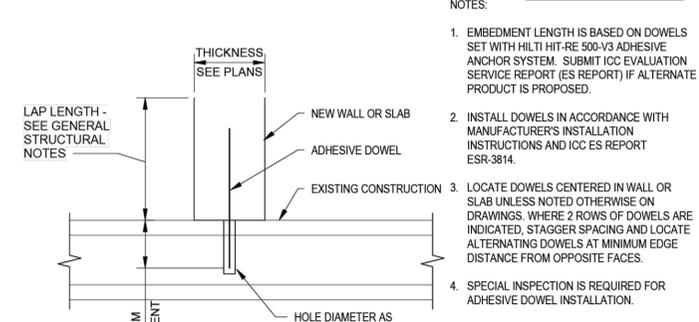
8 TYPICAL CMU REINF POSITIONERS DETAIL
SD-S-03 SCALE: 1" = 1'-0"



9 CMU WALL CONSTRUCTION
SD-S-03 SCALE: 3/4" = 1'-0"

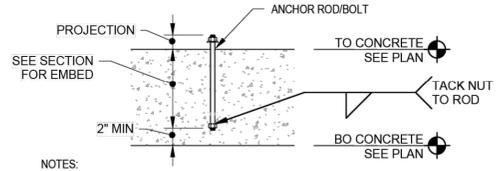


DOWEL SIZE	MINIMUM EMBEDMENT
#3	5"
#4	7"
#5	8"
#6	10"
#7	12"
#8	14"
#9	16"

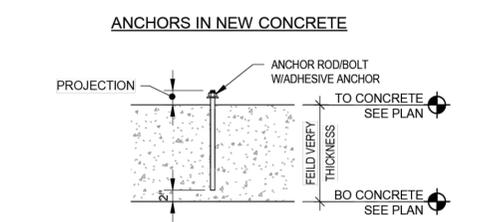


- NOTES:
- EMBEDMENT LENGTH IS BASED ON DOWELS SET WITH HILTI HIT-RE 500-V3 ADHESIVE ANCHOR SYSTEM. SUBMIT ICC EVALUATION SERVICE REPORT (ES REPORT) IF ALTERNATE PRODUCT IS PROPOSED.
 - INSTALL DOWELS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ICC ES REPORT ESR-3814.
 - LOCATE DOWELS CENTERED IN WALL OR SLAB UNLESS NOTED OTHERWISE ON DRAWINGS. WHERE 2 ROWS OF DOWELS ARE INDICATED, STAGGER SPACING AND LOCATE ALTERNATING DOWELS AT MINIMUM EDGE DISTANCE FROM OPPOSITE FACES.
 - SPECIAL INSPECTION IS REQUIRED FOR ADHESIVE DOWEL INSTALLATION.

4 REBAR DOWELS SET WITH ADHESIVE 1
SD-S-03 SCALE: 12" = 1'-0"



- NOTES:
- USE HEAD BOLTS OR TACK WELD
 - COORDINATE PROJECTION WITH EQUIPMENT SUPPLIER UNLESS NOTED OTHERWISE
 - DO NOT USE 'J' BOLTS. 'J' BOLTS ARE NOT ACCEPTABLE
 - ANCHOR BOLTS TO BE STAINLESS STEEL UNLESS NOTED OTHERWISE



- NOTES:
- ANCHOR FOR VERTICAL TURBINE PUMPS SHALL PROJECT THROUGH EQUIPMENT PAD.
 - VERTICAL TURBINE PUMPS ANCHORS SHALL EXTEND TO WITHIN 2" FROM THE BOTTOM OF THE SLAB.
 - ANCHOR BOLTS TO BE STAINLESS STEEL UNLESS NOTED OTHERWISE

10 CONCRETE ANCHORS
SD-S-03 SCALE: 3/4" = 1'-0"

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02/24/2026	ISSUE DATE:	AS NOTED	DESIGNED BY:	ELE
	SCALE:		DRAWN BY:	RSS
			CHECKED BY:	

OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT
 ASHTABULA COUNTY, OHIO
 CITY OF CONNEAUT

BOOSTER PUMP STATION - 20 SERIES
 DEMOLITION PLAN & PROFILE

PROJECT NO.	
41632	
DISCIPLINE	
PROCESS	
SHEET NAME	
20D-01	
SHEET	OF
16	21

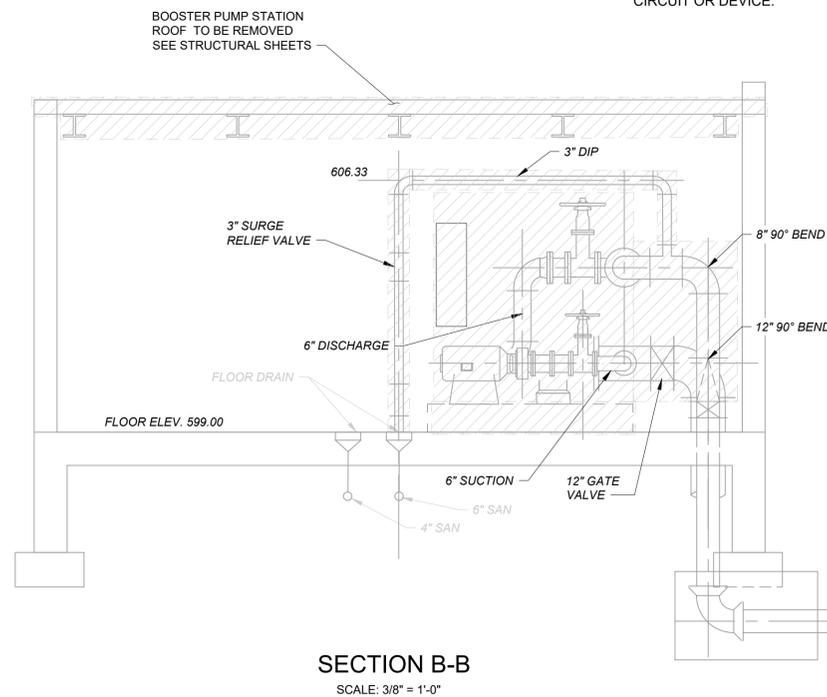
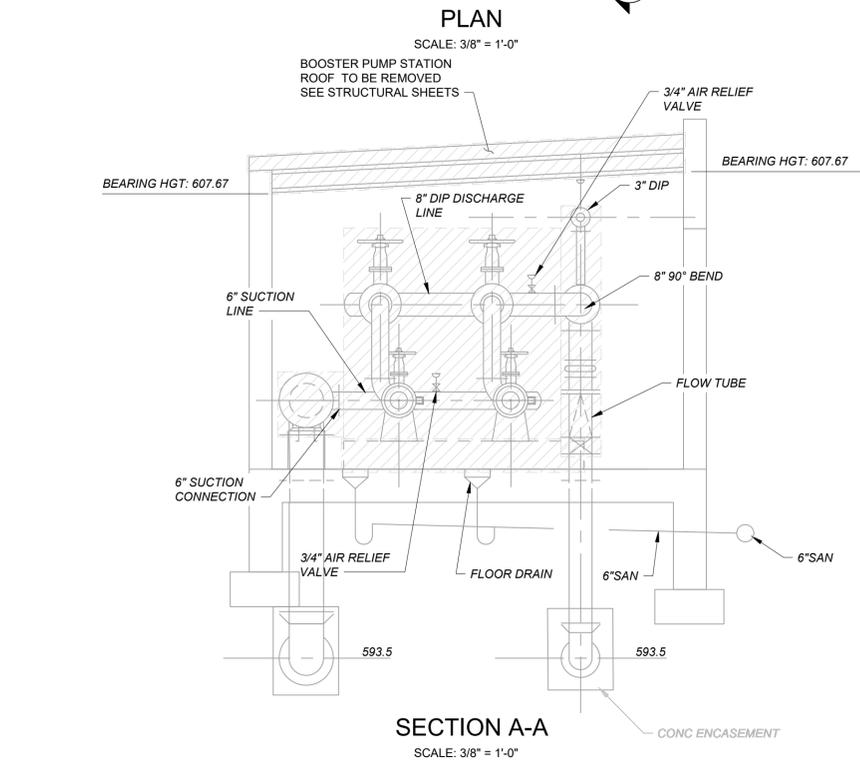
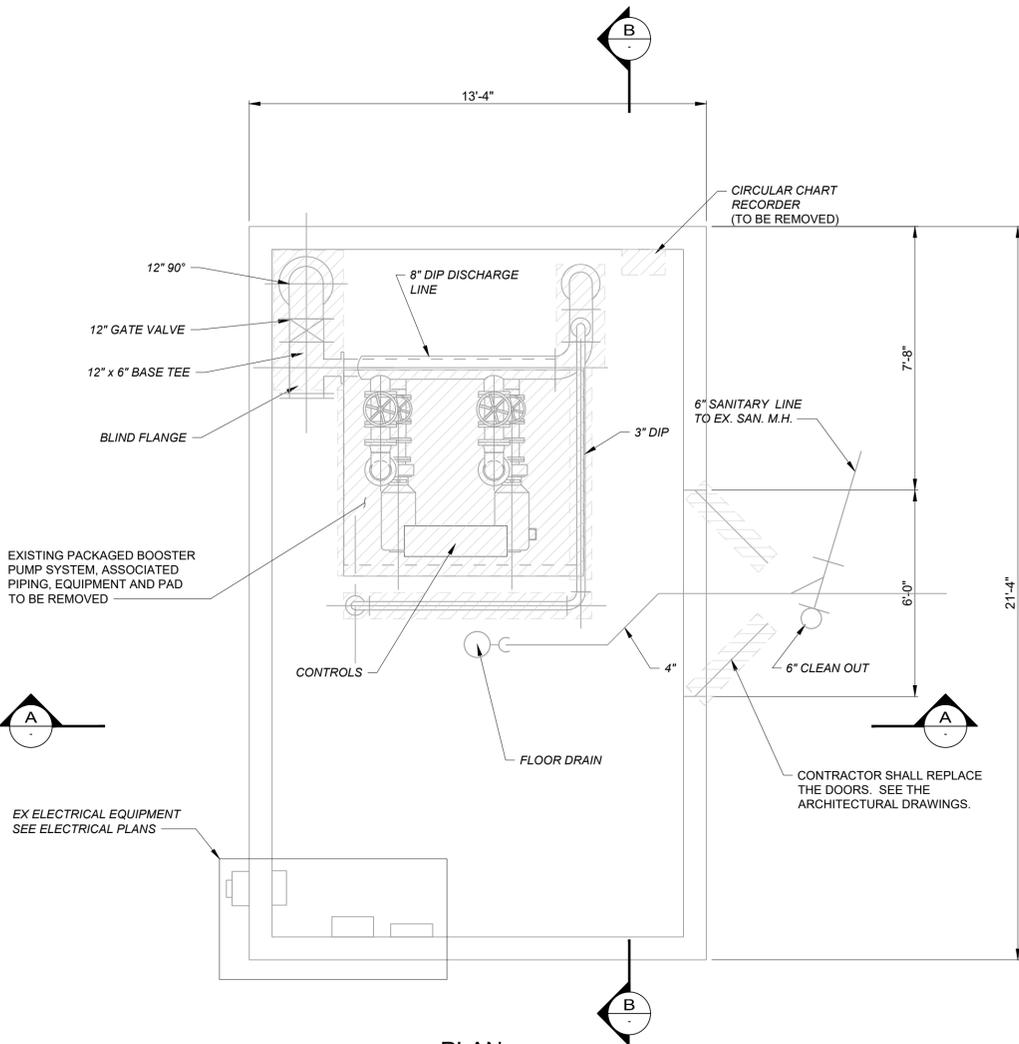


PHOTO 1 - EXISTING PUMP SKID

NOTES:

- CONTRACTOR SHALL REMOVE THE EXISTING PUMP SKID IN ITS ENTIRETY, INCLUDING PIPING, SKID, AND ELECTRICAL AS SHOWN IN ELECTRICAL DRAWINGS AND ELECTRICAL AS DESCRIBED IN NOTE 2.
- EC TO DISCONNECT AND LOTO EACH CIRCUIT IN FACILITY PRIOR TO DEMOLITION OF BRANCH CIRCUIT OR DEVICE.

NOTES:

- PUMP STATION IS BASED ON EXISTING 1988 RECORD DRAWINGS. CONTRACTOR SHALL FIELD VERIFY.

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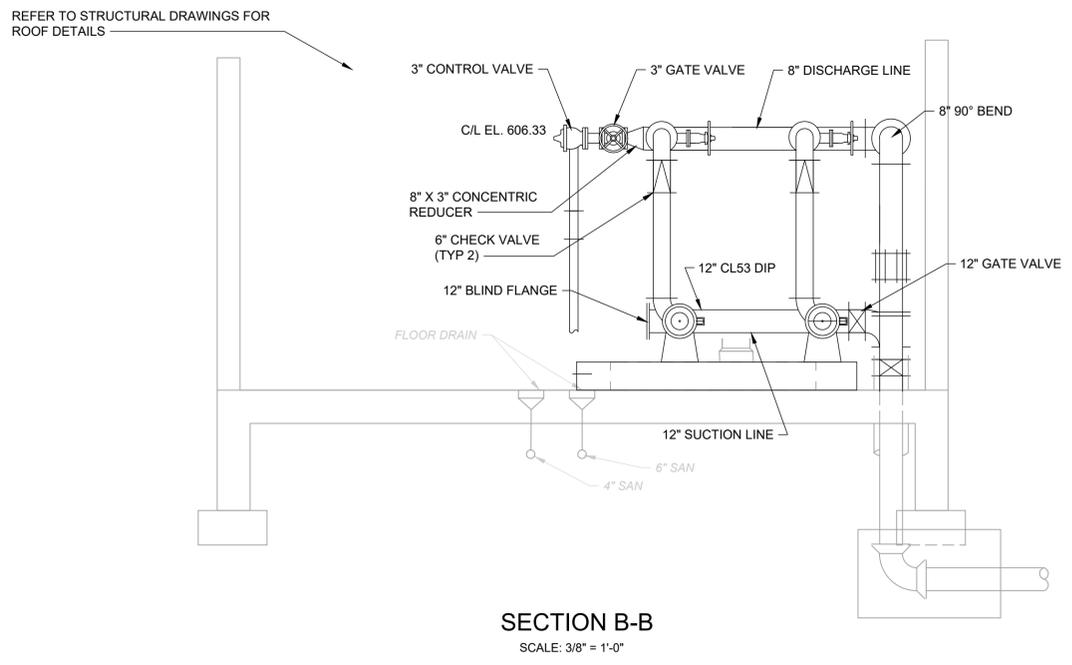
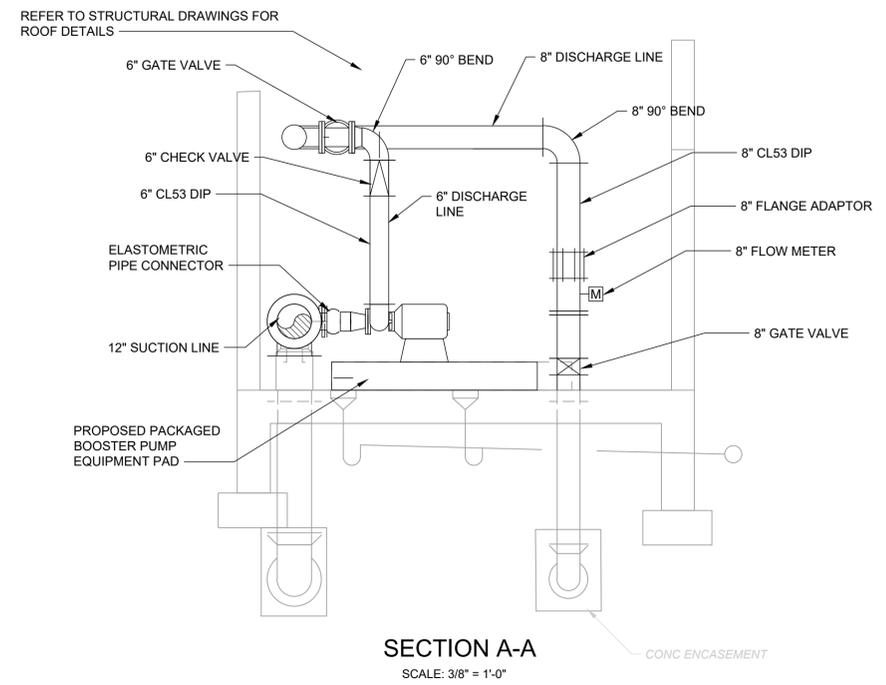
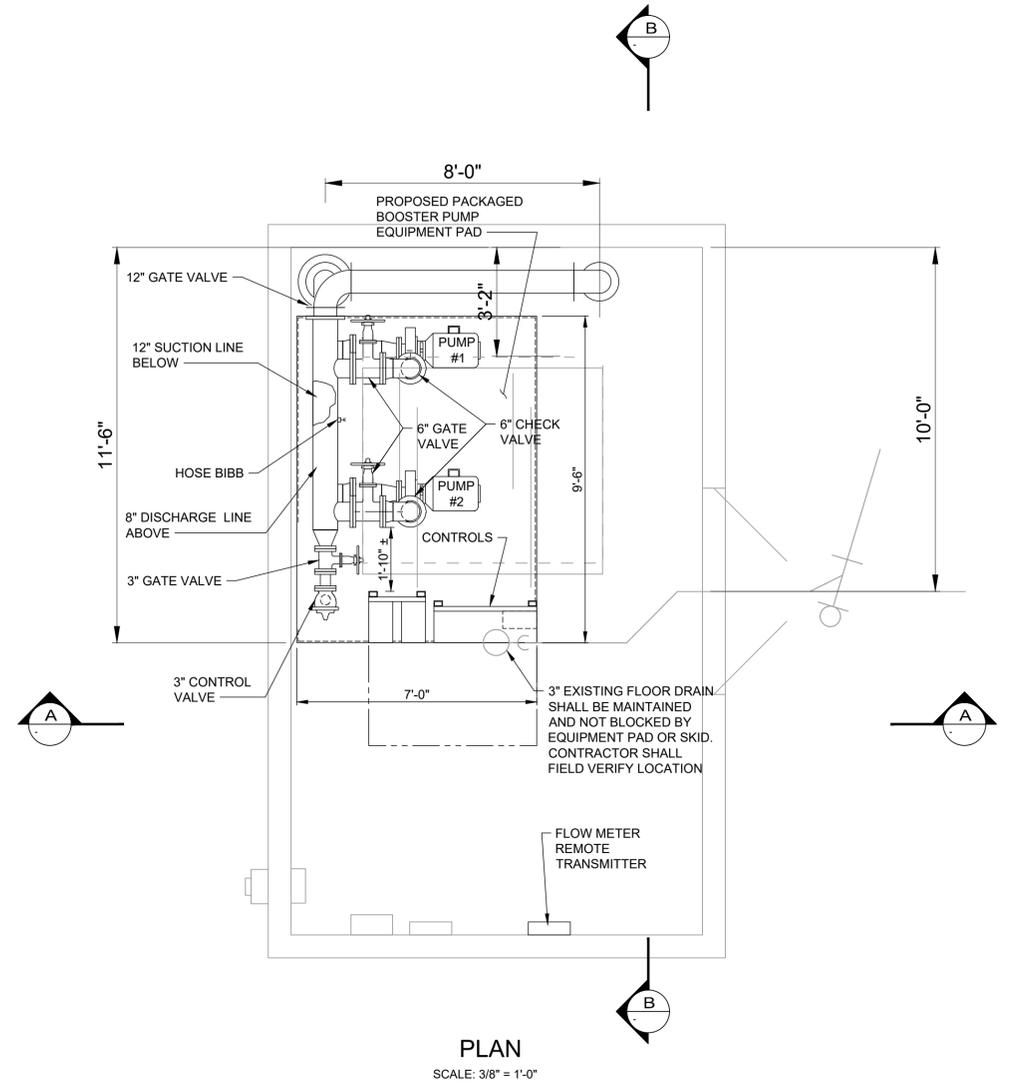
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ISSUE DATE:	02/24/2026	AS NOTED	RSS	ELE
SCALE:				
DESIGNED BY:				
DRAWN BY:				
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SEQUENCE OF CONSTRUCTION

1. CONTRACTOR SHALL PERFORM ALL FIELD MEASUREMENTS.
2. SETUP BOOSTER STATION BYPASS SYSTEM
3. REMOVE ROOF OF EXISTING BOOSTER STATION.
4. REMOVE EXISTING PUMP SKID.
5. INSTALL NEW PUMP SKID.
6. PERFORM OPERATIONAL DEMONSTRATION OF THE PUMP STATION.
7. REMOVE TEMPORARY BOOSTER STATION BYPASS.
8. CONSTRUCT NEW ROOF AND REPLACE DOORS

BOOSTER STATION NOTES

1. THE CONTRACTOR SHALL PROVIDE AN OPERATIONAL PUMP STATION, PERMANENT OR TEMPORARY, AT ALL TIMES THROUGH THE DURATION OF THE PROJECT.
2. CONTRACTOR SHALL PROVIDE A TEMPORARY BYPASS PLAN AS A SUBMITTAL. THE PLAN SHALL BE APPROVED BY THE OWNER AND ENGINEER PRIOR TO MOBILIZATION.
3. THE CONTRACTOR SHALL PERFORM FIELD MEASUREMENTS PRIOR TO ORDERING AND THE DESIGN OF THE NEW PUMP SKID.
4. CONTRACTOR SHALL PAINT ALL INTERIOR SURFACES AS REQUIRED IN THE SPECIFICATIONS. ALL INTERIOR WALLS AND CEILING SHALL BE PAINTED.
5. PUMP SKID MANUFACTURER SHALL DESIGN THE PUMP SKID AND SUBMIT FOR APPROVAL BY THE ENGINEER AND OWNER. THE CONTRACTOR SHALL PERFORM ALL REQUIRED FIELD MEASUREMENTS FOR THE DESIGN OF THE PUMP SKID. THE DESIGN OF THE SKID SHALL CONSIDER EXISTING CONDITIONS AND RESTRAINTS INCLUDED BUT NOT LIMITED TO LOCATION OF EXISTING FLOOR DRAIN, DOOR ACCESS, EXISTING SUCTION/DISCHARGE PIPING FLOOR PENETRATIONS, AND ELECTRICAL PANEL CLEARANCES AS REQUIRED BY LOCAL, STATE, AND FEDERAL BUILDING CODES.



OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT
ASHTABULA COUNTY, OHIO
CITY OF CONNEAUT
BOOSTER PUMP STATION - 20 SERIES
PROPOSED PLAN & SECTIONS

PROJECT NO.	41632
DISCIPLINE	PROCESS
SHEET NAME	20D-02
SHEET	OF
17	21

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1. SCOPE OF WORK

1.1 THE WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THESE GENERAL NOTES, CONSTRUCTION DRAWINGS AND CONTRACT DOCUMENTS. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, TOOLS, LABOR, SUPERVISION AND ANY OTHER MISCELLANEOUS ITEMS REQUIRED TO INSTALL THE EQUIPMENT AND/OR DEVICES AS SPECIFIED HEREIN AND SHOWN ON THE DRAWINGS, UNLESS SPECIFICALLY EXCLUDED...

1.2 THE CONTRACTOR SHALL PROVIDE THE INSTALLATION, INTERCONNECTION AND TESTING OF COMPLETE AND OPERABLE SYSTEMS.

1.3 INCLUDED IN THIS WORK IS THE FURNISHING, BY THE CONTRACTOR, OF OFFICE MATERIAL, EQUIPMENT STORAGE AND SHOP FACILITIES FOR THE CONSTRUCTION WORK DURING THE ENTIRE CONSTRUCTION PERIOD. CAPACITY, ARRANGEMENTS AND LOCATION OF THESE FACILITIES ARE SUBJECT TO APPROVAL BY THE CONSTRUCTION MANAGER AND SHALL COMPLY WITH APPLICABLE CODES AND REGULATIONS.

1.4 TO ENABLE ORDERLY REVIEW DURING PROGRESS OF THE WORK, AND TO PROVIDE FOR SYSTEMATIC DISCUSSION OF PROBLEMS, THE CONSTRUCTION MANAGER WILL CONDUCT PROJECT MEETINGS THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR WILL BE EXPECTED TO ATTEND THESE MEETINGS.

1.5 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ON THE PROJECT REQUIRED TO BE PERFORMED BY ELECTRICIANS, INCLUDING THAT DUE TO JURISDICTION AND/OR LOCAL PRACTICES.

1.6 THE CONTRACTOR SHALL EMPLOY QUALIFIED ELECTRICAL WORKERS, AND LABORERS TO PERFORM THE WORK TO BE DONE.

1.7 THE CONTRACTOR SHALL PROVIDE ALL TOOLS, CONSTRUCTION EQUIPMENT, TEST EQUIPMENT, AND TESTING FACILITIES AND SHALL MAKE TESTS AND KEEP RECORDS AS SPECIFIED HEREIN.

1.8 THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH ALL OTHER TRADES, PERMANENT FACILITY PERSONNEL, AND THE CONSTRUCTION MANAGER. COORDINATION SHALL ALLOW WORK TO BE INSTALLED IN THE MOST DIRECT MANNER AND SO INTERFERENCE BETWEEN CONDUITS, PIPING, DUCTS, EQUIPMENT, AND STRUCTURAL FEATURES WILL BE AVOIDED.

1.9 CABLE TRAY AND RACEWAY ROUTING.

1.9.a EQUIPMENT, INSTRUMENTS, DEVICES, PANELS AND JUNCTION BOXES LOCATIONS ARE SHOWN ON THE ELECTRICAL LAYOUT DRAWINGS.

1.9.b ONLY THE GENERAL CABLE OR RACEWAY TRAY ROUTING PLANS ARE SHOWN ON THE ELECTRICAL LAYOUT DRAWINGS. THE ROUTING FROM INDIVIDUAL ITEMS IS NOT DEPICTED ON THE DRAWINGS.

1.9.c THE DIFFERENT WIRING CLASSES AND WIRE ASSIGNED TO THEM (MEDIUM VOLTAGE POWER, LOW VOLTAGE POWER, CONTROL, INSTRUMENTATION) ARE ALL INDICATED ON THE DRAWING OR IN THE CABLE, CONDUIT AND WIRE SCHEDULE.

1.9.d IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE BEST CABLE TRAY OR RACEWAY ROUTING FOR ALL WIRES NOT SPECIFICALLY ROUTED, WHILE MAINTAINING THE WIRE CLASS SEGREGATION REQUIREMENTS OF THE NEC.

1.9.e THE CONTRACTOR SHALL PRESENT THE ROUTING PLAN TO THE CONSTRUCTION MANAGER FOR APPROVAL BEFORE PROCEEDING.

1.10 RUNS FROM OUTLETS REFERRED TO AS "HOME RUNS" MAY BE USED ON CONTRACTOR'S CONSTRUCTION DRAWINGS. THEY ARE INDICATED BY POINTING IN THE GENERAL DIRECTION OF PANELS. CONTRACTOR SHALL BE RESPONSIBLE TO CONTINUE SUCH CIRCUITS TO THE PANELS AS THOUGH THE ROUTES WERE COMPLETELY INDICATED. HOME RUNS SHALL BE INSTALLED FROM OUTLETS AS SHOWN ON CONTRACTOR'S DRAWINGS.

1.11 THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL DETAILS OF THE WORK AND VERIFY ALL DIMENSIONS IN THE FIELD SO THAT THE OUTLETS AND EQUIPMENT WILL BE PROPERLY LOCATED AND READILY ACCESSIBLE. LIGHTING FIXTURES, OUTLETS, AND OTHER EQUIPMENT AND MATERIALS SHALL BE LOCATED TO AVOID INTERFERENCE WITH CABINETS, MECHANICAL OR STRUCTURAL FEATURES. DEVIATIONS FROM DRAWINGS REQUIRED TO MAKE WORK OF THIS CONTRACT CONFORM TO BUILDING AS CONSTRUCTED, OR AS TO WORK OF OTHER CONTRACTORS, SHALL BE MADE BY THE CONTRACTOR AT THEIR EXPENSE. THE ENGINEER RESERVES THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF EQUIPMENT AND OUTLETS PRIOR TO INSTALLATION WITHOUT ADDITIONAL CHARGES.

2. CONTRACT DOCUMENTS

2.1 THE CONTRACT DOCUMENTS SHALL CONSIST OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS ISSUED BY THE ENGINEER. EACH DOCUMENT IS COMPLEMENTARY, AND THE REQUIREMENTS SHOWN, WRITTEN OR REASONABLY INFERABLE THERE FROM ONE DOCUMENT IS CONSIDERED AS WRITTEN, SHOWN OR IMPLIED IN ALL.

2.2 THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL OF THE PLANS INCLUDING ARCHITECTURAL, LAYOUT, PIPING AND MECHANICAL PLANS. HE SHALL PERFORM ALL WORK AND PROVIDE ALL MATERIAL REQUIRED BY THE ELECTRICAL CONTRACTOR SHOWN UNDER THESE AND ALL OTHER SECTIONS OF THE PLANS AND SPECIFICATIONS.

2.3 THE CONTRACTOR SHALL MAINTAIN AN UP TO DATE SET OF AS-BUILT DRAWINGS NEATLY MARKED WITH ALL CHANGES (RED LINED) FROM THE ORIGINAL DESIGN. THESE DRAWINGS SHALL BE DELIVERED TO THE CONSTRUCTION MANAGER AT THE COMPLETION OF THE PROJECT PRIOR TO RECEIVING FINAL PAYMENT.

3. CODES AND STANDARDS

3.1 THE ELECTRICAL EQUIPMENT, MATERIALS AND INSTALLATION PROVIDED FOR THIS PROJECT SHALL CONFORM IN DESIGN, FABRICATION, TESTING AND PERFORMANCE, TO THE LATEST EDITION OF STANDARDS AND GUIDELINES PUBLISHED BY THE FOLLOWING ORGANIZATIONS WHERE APPLICABLE. THE LATEST EDITION OF THE STANDARDS, DOCUMENTS, AND PUBLICATIONS, REFERENCED HEREIN BY BASIC DESIGNATION SHALL BECOME PART OF THESE SPECIFICATIONS TO THE EXTENT REFERENCED.

- ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
FM FACTORY MUTUAL FM STANDARDS
IEEE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
NEC NATIONAL ELECTRICAL CODE
NFPA NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS
NFPA 70 NATIONAL ELECTRIC CODE
NFPA 70E STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
NFPA 72 NATIONAL FIRE ALARM CODE
NEMA NATIONAL ELECTRICAL MFR'S ASSOCIATION
UL UNDERWRITERS' LABORATORIES, INC.
ICEA INSULATED CABLE ENGINEERS ASSOCIATION
IPCEA INSULATED POWER CABLE ENGINEERS ASSOCIATION STANDARDS
ISA INSTRUMENT SOCIETY OF AMERICA STANDARDS

3.2 ALL LOCAL, STATE AND FEDERAL CODES, STANDARDS AND REGULATIONS IN EFFECT HAVING JURISDICTION IN THE AREA WHERE THE EQUIPMENT WILL BE INSTALLED. ANY CONFLICT BETWEEN THE ABOVE MENTIONED DOCUMENTS AND THIS SPECIFICATION SHALL BE REFERRED TO THE ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH THE FABRICATION OF THE AFFECTED PARTS.

4. CODES AND PERMITS

4.1 THE INSTALLATION AND MATERIALS SHALL COMPLY WITH ALL LAWS APPLYING TO ELECTRICAL INSTALLATION IN EFFECT, WITH THE REGULATIONS OF THE NEC WHERE SUCH REGULATIONS DO NOT CONFLICT WITH LAWS IN EFFECT, AND WITH THE REGULATIONS OF THE PUBLIC UTILITY COMPANY FURNISHING THE SERVICE.

5. GUARANTEE

5.1 THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS, WORKMANSHIP AND THE SUCCESSFUL OPERATION OF ALL EQUIPMENT AND APPARATUS UNDER THIS CONTRACT FOR A PERIOD OF (18) EIGHTEEN MONTHS FROM THE DATE OF FINAL ACCEPTANCE OF THE WHOLE WORK. CONTRACTOR SHALL GUARANTEE TO REPAIR OR REPLACE AT HIS OWN EXPENSE ANY PART OF THE APPARATUS WHICH MAY SHOW DEFECT DURING THAT TIME PROVIDED SUCH DEFECT IS DUE TO IMPROPER MATERIALS OR WORKMANSHIP AND NOT TO CARELESSNESS OR IMPROPER USE BY THE OWNER. BY DEFAULT, OWNER MAY HAVE SUCH WORK DONE AND CHARGED TO THE CONTRACTOR.

6. CONSTRUCTION, SHOP DRAWINGS AND MATERIALS

6.1 CONTRACTOR SHALL SUBMIT AN ELECTRONIC SET OF SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING ELECTRICAL CONSTRUCTION AND/OR PURCHASE OF EQUIPMENT INCLUDED THEREIN.

6.1.a THE FOLLOWING IS THE MINIMUM EXPECTATION OF SHOP DRAWINGS THAT WILL BE REQUIRED FOR THE PROJECT:

- A. TRANSFORMERS
B. SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, MOTOR CONTROLLERS
C. DISCONNECT SWITCHES AND ASSOCIATED FUSES
D. RACEWAYS: CONDUIT, CABLE TRAY AND WIREWAY
E. WIRE, CABLE INCLUDING GROUND SYSTEM
F. LIGHTING FIXTURES
G. CONTROL PANELS
H. ALL PREFABRICATED CONCRETE: MANHOLES, VAULTS, POLE BASES

6.2 RECEIPT OR APPROVAL OF SHOP DRAWINGS BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF COMPLYING WITH CONTRACT DOCUMENTS.

6.3 ALL MATERIAL SHALL BE UL LISTED UNLESS OTHERWISE REQUIRED.

6.4 CONTRACTOR SHALL MAKE PROVISIONS FOR TIMELY AND SAFE DELIVERY AND SAFE STORAGE OF MATERIALS.

6.5 MFRS' NAMES ARE LISTED TO ESTABLISH FUNCTION AND QUALITY OF MATERIAL OR EQUIPMENT. MATERIALS SO LISTED SHALL BE BID AS SPECIFIED UNLESS WRITTEN APPROVAL IS OBTAINED TO SUBSTITUTE MATERIALS OF EQUAL QUALITY BY OTHER MFRS. LETTERS REQUESTING APPROVAL AND INCLUDING COMPLETE ENGINEERING INFORMATION DESCRIBING PERFORMANCE AND SHOWING DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER AT LEAST 5 WORKING DAYS PRIOR TO BID OPENING.

7. FIELD DEVICES & WIRING:

7.1 ALL MOTORS AND INSTRUMENTS SHALL BE HAVE AN EQUIPMENT IDENTIFYING TAG AS INDICTED HEREIN, ON PLANS OR IN SPECIFICATIONS SECTION 26.

7.2 TERMINAL BLOCKS SHALL BE LABELED AS INDICATED HEREIN, ON PLANS OR IN SPECIFICATIONS SECTION 26.

7.3 POWER CABLES ARE TO BE COLOR CODED BY PHASE AS INDICATED HEREIN.

8. EXCAVATION AND BACKFILLING:

8.1 THE CONTRACTOR SHALL PERFORM ALL EXCAVATION, TRENCHING AND BACKFILLING WORK, AND REMOVE ALL DEBRIS IN CONNECTION WITH THEIR WORK. BACKFILLING SHALL BE DONE WITH MATERIALS ACCEPTABLE TO THE CONSTRUCTION MANAGER AND THOROUGHLY COMPACTED. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND PROPERLY INSTALLED TO ELIMINATE ANY SETTLEMENT.

9. WORKMANSHIP

9.1 THE CONTRACTOR SHALL BE HELD SOLELY RESPONSIBLE FOR THE PROPER INSTALLATION OF THEIR WORK. THEY SHALL ARRANGE WITH THE PROPER CONTRACTORS FOR THE BUILDING IN OF ANCHORS, ETC., AND FOR THE LEAVING OF REQUIRED CHASES, OPENINGS, ETC., AND SHALL DO ALL CUTTING AND PATCHING MADE NECESSARY BY THEIR FAILURE OR NEGLECT TO MAKE SUCH ARRANGEMENTS WITH OTHERS. ANY CUTTING OR PATCHING DONE BY THIS CONTRACTOR SHALL BE SUBJECT TO THE DIRECTIONS OF THE CONSTRUCTION MANAGER AND SHALL NOT BE STARTED UNTIL APPROVAL HAS BEEN OBTAINED.

9.2 ALL CUTTING, WELDING OR DRILLING OF CONCRETE OR STRUCTURAL MEMBERS SHALL BE PROPERLY REINFORCED AND PATCHED TO MATCH AS NEARLY AS POSSIBLE THE SURROUNDING WORK. BEFORE CUTTING, WELDING OR DRILLING ANY CONCRETE OR STRUCTURAL MEMBER, THE CONTRACTOR SHALL SECURE THE APPROVAL OF THE CONSTRUCTION MANAGER.

9.3 THE CONTRACTOR SHALL ASSIGN PERSONS IN DIRECT CHARGE OF WORK WHO ARE THOROUGHLY EXPERIENCED IN THE CLASS OF CONSTRUCTION WORK SPECIFIED HEREIN. ALL LABOR SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKERS UNDER THE SUPERVISION OF COMPETENT SUPERVISORS.

9.4 THE CONTRACTOR SHALL PERIODICALLY REMOVE ALL DEBRIS AND WASTE IN ORDER TO MAINTAIN SAFE WORKING AND OPERATING CONDITIONS, AND SHALL DISPOSE OF THE SAME IN AN APPROVED MANNER. AT THE COMPLETION OF WORK, THEY SHALL REMOVE ALL THEIR RUBBISH, TOOLS, SCAFFOLDS AND SURPLUS MATERIALS FROM AND ABOUT THE SITE, LEAVING THEIR WORK CLEAN AND THE AREAS READY FOR OCCUPANCY.

10. PERFORMANCE AND QUALITY ASSURANCE TESTING

10.1 UPON COMPLETION, THE COMPANY SHALL REVIEW AND APPROVE THE INSTALLATION TO ENSURE THAT THE WORK WAS DONE IN ACCORDANCE WITH THE DESIGN DRAWINGS AND CODE REQUIREMENTS, WITH ANY REQUIRED CORRECTIVE ACTIONS AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CERTIFICATES, PERMITS OR INSPECTIONS BY THE AUTHORITIES HAVING JURISDICTION.

10.2 THE INSTALLATION SHALL BE TESTED FREE FROM ALL GROUNDS AND SHORT CIRCUITS. ALL EQUIPMENT FURNISHED SHALL BE DEMONSTRATED TO OPERATE IN ACCORDANCE WITH THE REQUIREMENTS OF THESE SPECIFICATIONS AND PLANS. CONSULT WITH THE OWNER'S REPRESENTATIVE PRIOR TO TESTING AND ADJUSTING TO DETERMINE INTENDED FUNCTION. PERFORM SUCH TESTS AND MAKE NECESSARY ADJUSTMENTS TO ENSURE THAT DESIGN FUNCTION IS OBTAINED. THESE TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE CONSTRUCTION MANAGER OR THEIR AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY ALL THOSE WHO ARE REQUIRED TO BE PRESENT DURING THE TESTS (SUCH AS THE FIRE MARSHAL FOR THE TESTING OF THE FIRE ALARM SYSTEM AND EMERGENCY EXIT LIGHTING SYSTEM). NOTIFICATION OF A TEST SHALL BE MADE TO PERSONS THAT ARE TO ATTEND AS REQUIRED BY THEIR DEPARTMENT AT LEAST 7 DAYS IN ADVANCE.

10.3 NORMAL FEEDERS, CIRCUITS, AND SERVICE ENTRANCE CONDUCTORS WITH WIRE SIZE #2 AND LARGER SHALL BE TESTED FOR LEAKAGE PHASE-TO-GROUND AND PHASE-TO-PHASE PRIOR TO ENERGIZATION OF THE ELECTRICAL SYSTEM. THE CONTRACTOR SHALL SUBMIT A WRITTEN REPORT TO THE CONSTRUCTION MANAGER SHOWING METHODS AND READINGS TAKEN.

11. MATERIALS AND INSTALLATION

11.1 CONDUIT

11.1.a MATERIALS: EXTERIOR - ALL CONDUITS SHALL BE PVC (BELOW GRADE) AND RIGID STEEL ABOVE GRADE (UON ON PLANS). TRANSITION FROM PVC TO STEEL CONDUIT BELOW GRADE WITH PVC COATED RIGID SWEEPS. INTERIOR - ALL CONDUITS SHALL BE STEEL PER PLANS. ANY INTERIOR AREAS SUBJECT TO POTENTIAL IMPACT WITH CONDUIT (IE STORAGE AREAS, FORKLIFT PATHWAYS) SHALL BE PROTECTED.

11.1.b CONDUITS MUST USE EXPANSION JOINTS AS PER NEC.

11.1.c BEFORE INSTALLATION, THE INTERIOR AND EXTERIOR OF ALL CONDUIT AND FITTINGS SHALL BE INSPECTED AND CLEANED OF ALL DIRT, CUTTINGS AND OTHER FOREIGN MATERIALS.

11.1.d WHEN CONDUIT IS INSTALLED WHERE NO LOCATION DIMENSIONS ARE GIVEN ON THE DRAWINGS, APPROVAL OF THE LOCATIONS OF THESE CONDUITS SHALL BE OBTAINED FROM THE COMPANY REPRESENTATIVE PRIOR TO INSTALLATION.

11.1.e CONDUITS SHALL NOT BE FASTENED TO REMOVABLE MEMBERS SUCH AS PIPING. CONDUIT HANGERS SHALL BE SUPPORTED FROM BUILDINGS AND STRUCTURES, NOT FROM EQUIPMENT.

11.1.f CONNECTIONS TO INTERIOR BOXES, PANELS, EQUIPMENT AND RELATED ITEMS SHALL BE MADE WITH DOUBLE LOCKNUTS, ONE INSIDE AND ONE OUTSIDE, WITH AN INSULATING BUSHING ON EACH END OF THE CONDUIT IN ADDITION TO LOCKNUTS. OUTDOOR CONNECTIONS SHALL BE MADE WITH "MYERS" HUBS OR APPROVED EQUAL.

11.1.g ALL CONDUITS SHALL HAVE THEIR ENDS PLUGGED BY CAPS, COUPLINGS W/ PLUGS OR OTHER APPROVED MEANS DURING CONSTRUCTION WORK.

11.1.h ALL CONDUIT SUPPORTS SHALL BE ALUMINUM. THE USE OF PERFORATED STRAP OR PLUMBERS STRAP IS NOT PERMITTED.

11.1.i IN CROSSING OF PIPING, THE CONDUIT SHOULD CLEAR THE PIPE BY A MINIMUM OF 6 INCHES.

11.1.j EXPOSED CONDUITS IN BUILDINGS, UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS, SHALL BE SUBJECT TO THE FOLLOWING REQUIREMENTS:

- A. ALL CONDUITS SHOULD RUN PARALLEL OR PERPENDICULAR TO WALLS, CEILINGS, BEAMS AND COLUMNS.
B. ALL CONDUIT RUNS SHALL CLEAR ALL CRANE SYSTEMS, DOORS, WINDOWS, ACCESS WALLS AND OPENINGS.
C. PARALLEL RUNS SHOULD BE GROUPED IN NEATLY ALIGNED BANKS WHERE POSSIBLE WITH MINIMUM 1" CLEARANCE BETWEEN CONDUITS.
D. CONDUITS TERMINATING AT CABLE TRAYS SHALL ATTACH TO TRAY AND SHALL BE ELECTRICALLY BONDED TO EDGE OF TRAY OR TO THE GND WIRE IN CABLE TRAY.

11.1.k CONDUITS SHALL BE INSTALLED, WHEREVER POSSIBLE, IN SUCH MANNER AS TO AVOID THE COLLECTION OF CONDENSED MOISTURE IN THE CONDUIT. DRAINS SHALL BE INSTALLED AT LOW POINTS IN EXPOSED CONDUIT RUNS.

11.1.l PULL POINTS SHALL BE PROVIDED IN EACH CONDUIT RUN TO CONFORM WITH THE REQUIREMENTS OF THE NEC OR CABLE MFR'S RECOMMENDATION.

11.1.m CONDUIT RUNS SHALL BE IDENTIFIED AT TERMINATIONS AND PULL POINTS WITH STAMPED ALUMINUM BANDS.

11.1.n EACH CONDUIT SHALL BE CLEANED OF ALL OBSTRUCTION BY PULLING A MANDREL THROUGH THE ENTIRE LENGTH OF RUN PRIOR TO PULLING WIRE OR CABLE IN CONDUIT.

11.1.o CONDUIT SEALING AND DRAINING SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC. SEALING METHODS SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE SEAL MFR.

11.1.p CONDUIT UNIONS SHALL BE INSTALLED IN ALL CONDUITS CONNECTED TO TAPPED EQUIPMENT SO THAT THE EQUIPMENT CAN BE REMOVED WITHOUT DISTURBING THE CONDUIT (OR SEAL).

11.1.q ALL BOLTS, NUTS & WASHERS SHALL BE CADMIUM PLATED.

11.1.r ALL CONDUITS ROUTED TO EXTERIOR CABLE TRAYS SHALL ENTER THROUGH THE BOTTOM OF THE CABLE TRAY UON.

11.2 CONDUIT BENDS

11.2.a ALL BENDS SHALL HAVE RADIUS NOT LESS THAN SHOWN IN THE NEC OR SHALL BE MADE UP OF SCREW-JOINTED CONDUIT FITTINGS. NOT MORE THAN THE EQUIVALENT OF FOUR (4) 90° BENDS SHALL BE USED IN ANY RUN BETWEEN TERMINALS AND CABINETS, OR BETWEEN OUTLETS AND JUNCTION OR PULL BOXES.

11.2.b A GROUP OF EXPOSED CONDUITS THAT CHANGE DIRECTION UTILIZING BENDS SHALL HAVE THE MINIMUM BENDING RADIUS OF THE LARGEST CONDUIT IN THE GROUP FOR VERTICAL CHANGES AND SHALL HAVE THE SAME BEND RADIUS POINT FOR A HORIZONTAL CHANGE.

11.2.c BENDS SHALL BE FREE FROM CRACKS, CRIMPS OR OTHER DAMAGE TO THE CONDUIT OR ITS COATING. THE CONDUIT AFTER BENDING SHALL BE TRUE AND ROUND WITH FULL INSIDE AREAS FOR THE LENGTH OF THE BEND. CONDUIT BENDS SHALL COMPLY WITH NEC.

11.3 CONDUIT JOINTS

11.3.a ALL JOINTS IN ALUMINUM SHALL BE THREADED OR ALUMINUM PUSH FITTINGS. ALL CUT THREADS AND ANY WRENCH MARKS SHALL BE COATED WITH COLD SEALING COMPOUND. ALL THREADED JOINTS SHALL BE MADE UP TIGHT WITH A MINIMUM OF FIVE (5) FULL THREADS.

11.4 CABLE TRAY

11.4.a MATERIALS: TRAYS SHALL BE THE BRAND/MODEL INDICATED ON PLANS OR AS DESCRIBED IF NO SPECIFIC BRAND/MODEL IS GIVEN. SUBSTITUTIONS MUST BE APPROVED BY ENGINEER.

11.4.b CABLE TRAY AND TRAY SUPPORT MATERIALS, WHEN ASSEMBLED AND MOUNTED SHALL SUPPORT THE FULL CABLE LOAD WITH A MAXIMUM OF 2" DEFLECTION WITHOUT PERMANENT DEFORMATION.

11.4.c TRAY FITTINGS, SUCH AS BRANCHES, REDUCERS, FLAT ELBOWS, TEES AND CROSSES, SHALL BE USED FOR CHANGES IN DIRECTION. THE DIMENSIONS OF TRAY FITTINGS SHALL PROVIDE AMPLE BENDING RADIUS FOR THE CABLES CONTAINED IN THE TRAY. THE TERMINATION SHALL BE PROVIDED WITH A PROTECTOR GUARD TO PREVENT DAMAGE TO THE CABLES. AS REQUIRED, PROVIDE ADDITIONAL SUPPORTS FOR INDIVIDUAL CABLES WHERE THE CABLE LEAVES THE CABLE TRAY FOR FINAL TERMINATION.

11.4.d TRAYS SHALL BE CAREFULLY ALIGNED, LEVELED AND PLUMBED. TRAY SECTIONS AND FITTINGS SHALL BE ASSEMBLED ON THEIR SUPPORTS AND JOINTED TOGETHER, USING MFR'S STANDARD CONNECTOR UNITS.

11.4.e POWDER COATED STEEL ANGLES, TRAPEZE HANGERS, CHANNELS, BOLTING, AND MISCELLANEOUS MATERIALS REQUIRED FOR THE SUPPORT OF TRAYS FROM THE BUILDING STRUCTURE, SHALL BE ALUMINUM AND SUPPLIED AND INSTALLED BY THE CONTRACTOR.

11.4.f ALL EXTERIOR CABLE TRAYS TO BE SUPPLIED WITH COVERS, INSTALLED BY THE CONTRACTOR AFTER ALL CABLES ARE INSTALLED.

11.5 JUNCTION AND PULL BOXES

11.5.a MATERIALS: BOXES SHALL BE THE BRAND/MODEL INDICATED ON PLANS OR AS DESCRIBED IF NO SPECIFIC BRAND/MODEL IS GIVEN. ALL BOXES SHALL BE UL/FM RATED FOR LOCATION. SUBSTITUTIONS MUST BE APPROVED BY ENGINEER.

11.5.b BOXES FOR INDOOR INSTALLATION SHALL CONFORM TO THE FOLLOWING:

- A. BE HEAVY DUTY POWDER COATED METAL OR ALUMINUM, WITH ALUMINUM COVERS AND BRONZE OR CADMIUM PLATED SCREWS OR BOLTS UNLESS OTHERWISE PERMITTED OR SPECIFIED.
B. BE NEMA 12 IN NON-HAZARDOUS AREAS OR AS SHOWN ON DRAWINGS AND HAVE GASKETED COVERS ON BOXES CONTAINING TERMINAL BLOCKS.
C. HAVE PIANO HINGED COVER AND INTERIOR MOUNTING PANEL WHERE USED FOR ENCLOSING TERMINAL BLOCKS AND CONTROL RELAYS.

11.5.c BOXES FOR OUTDOOR INSTALLATION SHALL CONFORM TO THE FOLLOWING:

- A. BE HEAVY DUTY STAINLESS STEEL WITH STAINLESS STEEL COVERS. SCREWS OR BOLTS UNLESS OTHERWISE NOTED.
B. HAVE THREADED CONDUIT ENTRANCES SUCH AS "MYERS" HUBS, OR APPROVED EQUAL AND HAVE RUBBER OR NEOPRENE COVER GASKETS.
C. BE NEMA 4 WATERTIGHT IN OUTDOOR NON-HAZARDOUS AREAS AND HAVE A DRIP LIP AND OTHER FEATURES REQUIRED FOR RAIN TIGHT CONSTRUCTION; UNLESS OTHERWISE NOTED.
D. HAVE PIANO HINGED COVER AND INTERIOR MOUNTING PANELS WHEN USED FOR ENCLOSING TERMINAL BLOCKS, CONTROL RELAYS, ETC AND HAVE A DRAIN FITTING INSTALLED IN THE BOTTOM OF THE BOX.

11.5.d IDENTIFICATION: NAMEPLATES, WITH TITLE AND TAG NO., FABRICATED FROM PLASTIC WITH BLACK LETTERS ON WHITE BACKGROUND SHALL BE PERMANENTLY AFFIXED TO ALL JUNCTION BOXES.

ELECTRICAL SYMBOL LEGEND

Table with columns for POWER, DUPLEX RECEPTACLE, 20A 120V, 220V RECEPTACLE, HAND HOLE, SIZE AS INDICATED, GROUND FAULT INTERRUPTER PROTECTED RECEPTACLE, SIMPLEX RECEPTACLE, 20A 120V, MOTOR - HORSEPOWER AS INDICATED, COUNTERTOP RECEPTACLE - 6" ABOVE COUNTER, QUADRUPLEX RECEPTACLE, 20A 120V, MOTOR CONTROL SWITCH, ISOLATED GROUND RECEPTACLE, IN-FLOOR MOUNT DUPLEX RECEPTACLE, 20A 120V, MOTORIZED DOOR CONTROL SWITCH, 'IN-USE' WEATHER PROTECTED GFI TYPE RECEPTACLE, CEILING MOUNT DUPLEX RECEPTACLE, 20A 120V, DIMMING SWITCH, RECEPTACLE WITH LOCKING COVER, SPECIAL PURPOSE RECEPTACLE - WALL & CLG/FLR MOUNT, COMBINATION MAGNETIC STARTER / DISCONNECT, CEILING MOUNTED RECEPTACLE, DISCONNECT SWITCH, ENCLOSED CIRCUIT BREAKER, HORIZONTALLY MOUNTED RECEPTACLE, JUNCTION BOX, PANELBOARD, RECEPTACLE TO BE WIRED TO DEDICATED CIRCUIT, JUNCTION BOX WALL MOUNTED, MAGNETIC STARTER, TRANSFORMER, CURRENT TRANSFORMER, RANGE RECEPTACLE, CIRCUIT BREAKER, MOTOR STARTER SWITCH, OVERHEAD DOOR CONTROLLER, QUAD RECEPTACLE, MOTOR STARTER, UTILITY POWER POLE, TRANSFORMER



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OLD MAIN STREET - BOOSTER PUMP STATION REPLACEMENT ASHTABULA COUNTY, OHIO CITY OF CONNEAUT GENERAL - 01 SERIES ELECTRICAL SPECIFICATIONS

Table with columns: PROJECT NO. 41632, DISCIPLINE ELECTRICAL, SHEET NAME E-01, SHEET 18 OF 21

11.6 WIRE AND CABLE

11.6.a MATERIALS: ALL WIRE / CABLE SHALL BE COPPER (UON) AND ACCORDING TO THE CABLE SCHEDULES AND/OR CONSTRUCTION DRAWINGS. ANY DEVIATION MUST BE APPROVED BY ENGINEER & OWNER'S REPRESENTATIVE.

11.6.b ALL WIRE AND CABLE WILL BE EITHER INSTALLED IN RACEWAY OR CABLE TRAY PROVIDED.

11.6.c CABLE ON REELS AND WIRE IN COILS SHALL BE PROTECTED DURING SHIPMENT, STORAGE AND HANDLING. THE ENDS OF CABLES SHALL BE TAPED WHILE ON REELS AND AFTER INSTALLATION. TAPE WILL BE REMOVED ONLY WHEN READY TO TERMINATE WIRE.

11.6.d CONDUCTORS SHALL BE CONTINUOUS FROM TERMINATION TO TERMINATION. CABLES SHALL NOT BE SPLICED TO MAKE USE OF SHORT LENGTHS AND SHALL NOT BE CUT FOR CONVENIENCE OF PULLING. MFR'S INSTRUCTIONS OR RECOMMENDATIONS FOR INSTALLATION, WIRING ACCESSORIES OR OTHER WIRING MATERIALS SHALL BE FOLLOWED.

11.6.e WHERE MULTI-CONDUCTOR CABLES ENTER CONTROL PANELS AND CABINETS, THE OUTER JACKET SHALL NOT BE STRIPPED BEYOND THE POINT WHERE THE FIRST CONDUCTOR LEAVES THE CABLE TO CONNECT TO THE TERMINAL STRIP. IF JACKET IS STRIPPED IN EXCESS OF THE ABOVE FROM ANY CABLE, THE CABLE SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

11.6.f THE PULLING OF WIRING INTO CONDUIT OR OTHER RACEWAYS SHALL BE DONE WITH ALL POSSIBLE CARE. THE CABLE REELS OR COILS SHALL BE SET UP IN SUCH A WAY THAT THE CONDUCTOR MAY BE TRAINED INTO THE RACEWAY AS DIRECTLY AS POSSIBLE WITH A MINIMUM NUMBER OF CHANGES OF DIRECTION AND BENDING. WHERE SEVERAL CABLES ARE CONTAINED IN ONE CONDUIT, ALL SUCH CABLES SHALL BE PULLED IN TOGETHER. PULLING COMPOUND OR POWDERED SOAPSTONE SHALL BE COMPATIBLE WITH THE CABLE INSULATION AND APPROVED FOR USE BY THE CABLE MFR. CABLE PULLING TENSIONS SHALL NOT EXCEED VALUES SPECIFIED BY THE CABLE MFR.

11.6.g ALL CONDUCTORS SHALL BE TERMINATED IN STRICT ACCORDANCE WITH THE MFR'S RECOMMENDED METHODS. PARTICULAR CARE AND COMPLIANCE WITH MFR'S INSTRUCTIONS SHALL BE UTILIZED IN CONNECTION WITH TERMINATING HIGH VOLTAGE CABLES. ALL CONDUCTORS SHALL BE CLEAN WHEN CONNECTIONS ARE MADE. WIRES, BUS BARS, AND POINTS OF CONTACT SHALL BE CLEANED WITH STEEL WOOL OR SAND PAPER TO REMOVE OXIDES AND DIRT.

11.6.h ALL CONNECTIONS SHALL BE MADE WITH PRESSURE TYPE CONNECTORS INSTALLED WITH THE TOOL RECOMMENDED BY THE MFR. ALL CONNECTORS SHALL BE RING TYPE. THE RING SHALL NOT BE CUT TO FACILITATE INSTALLATION. TAPED CONNECTIONS SHALL HAVE LAYERS OF INSULATING TAPE BUILT UP TO A THICKNESS NOT LESS THAN THE THICKNESS OF THE INSULATION ON THE CABLES BEING CONNECTED.

11.6.i LUGS SHALL BE USED FOR THE CONNECTION OF CABLES TO EQUIPMENT AND BUSES. PRESSED LUGS SHALL BE USED ON WIRES SIZED #8 AWG AND SMALLER. CAST LUGS SHALL BE USED ON WIRES LARGER THAN #8 AWG.

11.6.j POWER CABLE FOR ALL CIRCUITS 400 VOLTS AND ABOVE SHALL BE IDENTIFIED AT TERMINATIONS AND BOXES WITH HEAVY GAUGE STAMPED ALUMINUM BANDS. HEAT SHRINK WIRE MARKERS SHALL BE INSTALLED ON MOTOR, CONTROL AND INSTRUMENT LEADS AND THERMOCOUPLES AT ALL TERMINAL POINTS. IDENTIFICATION SHALL BE IN ACCORDANCE WITH THE DRAWINGS. COLORED WIRE MARKERS SHALL BE INSTALLED ON ALL FEEDERS AND INSULATED GROUNDLEADS AT ALL TERMINAL POINTS WHERE COLOR CODED WIRE IS NOT USED. COLOR CODE AS FOLLOWS:

PHASE A	208/120VAC BLACK	480/277VAC BROWN	415/240VAC BROWN
PHASE B	RED	ORANGE	ORANGE
PHASE C	BLUE	YELLOW	YELLOW
NEUTRAL	WHITE	GREY	GREY

11.6.k CONTROL WIRING COLOR CODES SHALL BE IN ACCORDANCE WITH SPECIFIC WIRING DRAWINGS.

11.6.l CONTROL WIRING IDENTIFICATION SHALL BE IN ACCORDANCE WITH SPECIFIC WIRING DIAGRAMS AND SCHEMATICS.

11.6.m AFTER INSTALLATION OF WIRING AND ASSOCIATED DEVICES HAS BEEN COMPLETED, ELECTRICAL CONDUCTORS SHALL BE TESTED TO ENSURE CONTINUITY, PROPER SPLICING AND FREEDOM FROM GROUND (EXCEPT "MADE GROUND" AND THOSE REQUIRED FOR PROTECTION). ALL 480VAC CIRCUITS AND ABOVE SHALL HAVE INSULATION RESISTANCE TEST COMPLETED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND UL REQUIREMENTS UTILIZING A MEGGER. DO NOT HIT POT THE CABLES AS THIS SHALL BE CONSIDERED DESTRUCTIVE.

11.7 ELECTRICAL EQUIPMENT AND DEVICES

11.7.a MATERIALS: EQUIPMENT/DEVICES SHALL BE THE BRAND/MODEL INDICATED ON PLANS OR AS DESCRIBED IF NO SPECIFIC BRAND/MODEL IS GIVEN. ALL EQUIPMENT/DEVICES SHALL BE UL/FM RATED FOR LOCATION. SUBSTITUTIONS MUST BE APPROVED BY ENGINEER.

11.7.b ALL EQUIPMENT SHALL BE COMPLETELY ASSEMBLED, INSTALLED AND CONNECTED AS SHOWN ON THE COMPANY OR MFR'S DRAWINGS AND SHALL BE FULLY PREPARED AND MADE READY FOR OPERATION AS NECESSARY BY THE CONTRACTOR. THE CONTRACTOR MAY HAVE THE USE OF ANY SPECIAL TOOLS FURNISHED WITH THE EQUIPMENT SPECIFICALLY FOR INSTALLATION PURPOSES. THE CONTRACTOR SHALL BECOME KNOWLEDGEABLE WITH AND FOLLOW SPECIAL INSTRUCTIONS OF THE MFR FOR THE HANDLING AND INSTALLATION OF THE EQUIPMENT.

11.7.c WHERE EQUIPMENT IS MOUNTED ON WALLS AND/OR COLUMNS CONTRACTOR SHALL PROVIDE STRUCTURAL STEEL SUPPORTS AND SUITABLE ANCHORS.

11.7.d AFTER INSTALLATION, ALL EQUIPMENT SHALL BE LEFT IN A CLEAN CONDITION. ALL INSULATORS, BUSHINGS, INSULATING MATERIALS AND OTHER PARTS WHICH ARE DEPENDENT UPON FOR THEIR INSULATING QUALITIES SHALL BE THOROUGHLY CLEANED. NO OVERALL PAINTING OF EQUIPMENT WILL BE REQUIRED, BUT HOUSING SURFACES WHICH HAVE BEEN SOILED OR MARRED SHALL BE TOUCHED UP OR REFINISHED WITH PRIMER AND TOP COAT PAINT TO MATCH THE EQUIPMENT. DURING INSTALLATION, THE CONTRACTOR SHALL TAKE ALL POSSIBLE CARE TO KEEP THE DOORS OF SWITCHGEAR ASSEMBLIES, MOTOR CONTROL CENTERS AND PANELBOARDS CLOSED IN ORDER TO PREVENT THE ENTRANCE OF DUST AND OTHER FOREIGN MATTER.

11.7.e CONTRACTOR SHALL PROPERLY GROUND ALL EQUIPMENT, RACEWAYS, AND ANY SERVICE CONDUCTOR THAT IS TO BE GROUNDED IN ACCORDANCE WITH THE NEC AND ELECTRIC UTILITY COMPANY REQUIREMENTS.

11.7.f ANY POWERHOUSE, MOTOR CONTROL CENTER OR SWITCHGEAR SHALL BE SET AND SECURED ON ITS SUPPORTS. THE NECESSARY CONNECTIONS BETWEEN SECTIONS TO FORM A COMPLETELY ASSEMBLED AND INTERCONNECTED GROUP SHALL BE MADE INCLUDING INSTALLATION OF REMOVABLE CIRCUIT BREAKERS, POTENTIAL TRANSFORMERS, AND COMPLETING ALL EXTERNAL CONNECTIONS, THE RAILS ADJUSTED TO ENSURE SMOOTH BREAKER TRAVEL AND CONTACTS ON THE HOUSING SHALL BE INSPECTED AND TIGHTENED IF FOUND LOOSE.

11.7.g ARC FLASH HAZARD WARNINGS SHALL BE ATTACHED TO ALL APPLICABLE EQUIPMENT PER NEC 2014, SECTION 110.16.

11.7.h ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE LABELED AND LISTED BY CERTIFIED TESTING LABORATORY OR AGENCY.

11.8.i ALL INTERIOR DISTRIBUTION EQUIPMENT WITH TERMINATIONS (IE PANELBOARDS, SWITCHBOARDS, DISCONNECT/STARTERS, CONTROL PANELS, TRANSFORMERS, VFDs, MCCs) SHALL BE NEMA TYPE 12 WITH RATINGS OF BEING DUST TIGHT.

11.8 CONDUIT

11.8.a MATERIALS: ALL CONDUITS SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE NOTED. ALL CONCRETE SHALL BE 3000PSI MINIMUM AND DYED RED THROUGHOUT.

11.8.b ALL UNDERGROUND UTILITY CONDUITS SHALL HAVE 3000PSI CONCRETE ENCASEMENT DYED RED ON THE TOP. 6" MINIMUM CONCRETE COVER AND 24" BELOW FINISHED GRADE WITH EXCEPTIONS AS ALLOWED BY THE NEC. CONDUIT SHALL BE FIRMLY FIXED IN PLACE BY BEING WREDED TO REINFORCING STEEL OR BY OTHER APPROVED MEANS TO AVOID BEING DISTURBED DURING BACKFILLING OR POURING OF CONCRETE. SEE DETAILS ON PLANS.

11.8.c INSTALL #20 HMWPE GROUND CABLE IN CONCRETE.

11.8.d CONTRACTOR TO USE SPACERS EVERY 60" MAXIMUM. (CARLON SNAP-N-STAC OR EQUAL)

11.9 GROUNDING

11.9.a MATERIALS:

A. GROUND RODS: COPPER-CLAD STEEL

B. GROUND BUS: RECTANGULAR BARS OF ANNEALED COPPER, 1/4 X 2 INCHES IN CROSS SECTION WITH INSULATORS

C. GROUNDING ELECTRODE CONDUCTORS: BARE COPPER

D. BONDING JUMPERS: BARE COPPER

E. EQUIPMENT GROUNDING CONDUCTORS: COPPER WITH GREEN-COLORED INSULATION

F. UNDERGROUND GROUNDING CONDUCTORS: SOFT DRAWN BARE COPPER

G. GROUNDING CONNECTORS: BRONZE SUITABLE FOR GROUNDING AND BONDING APPLICATIONS, IN CONFIGURATIONS REQUIRED FOR PARTICULAR INSTALLATION.

11.9.b GROUNDING SHALL BE IN ACCORDANCE WITH NFPA 70 AND DETAILS/NOTES HEREIN PLAN SET.

11.9.c NON-CURRENT CARRYING PARTS OF ALL ELECTRICAL EQUIPMENT SHALL BE BONDED TO THE EQUIPMENT GROUND SERVING THIS EQUIPMENT.

11.9.d INSTALL SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN CONDUITS WITH ALL BRANCH CIRCUITS AND FEEDERS. SIZE EQUIPMENT GROUNDING CONDUCTORS IN ACCORDANCE WITH NFPA 70. TERMINATE EACH END ON SUITABLE LUG, BUS, OR BUSHING.

11.9.e INSTALL SOLID CONDUCTORS FOR NO. 10 AWG AND SMALLER, AND STRANDED FOR NO. 8 AND LARGER.

11.9.f BURY UNDERGROUND GROUNDING CONDUCTORS AT LEAST 30 INCHES BELOW GRADE.

11.9 ISOLATED GROUNDING CONDUCTORS: GREEN-COLORED WITH CONTINUOUS YELLOW STRIPE. ON FEEDERS WITH ISOLATED GROUND, IDENTIFY GROUNDING CONDUCTOR WHERE VISIBLE TO NORMAL INSPECTION. WITH ALTERNATING BANDS OF GREEN AND YELLOW TAPE, WITH AT LEAST THREE BANDS OF GREEN AND TWO BANDS OF YELLOW.

11.9.g ISOLATED GROUNDING RECEPTACLE CIRCUITS: INSTALL AN ISOLATED EQUIPMENT GROUNDING CONDUCTOR CONNECTED TO THE RECEPTACLE GROUNDING TERMINAL. ISOLATE CONDUCTOR FROM RACEWAY AND FROM PANELBOARD GROUNDING TERMINALS. TERMINATE AT EQUIPMENT GROUNDING TERMINAL OF THE APPLICABLE DERIVED SYSTEM OR SERVICE, UNLESS OTHERWISE INDICATED.

11.9.h PERFORM TESTS AND INSPECTIONS.

A. INSPECT PHYSICAL AND MECHANICAL CONDITION. VERIFY TIGHTNESS OF ALL BOLTED CONNECTIONS WITH CALIBRATED TORQUE WRENCH ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

B. TEST GROUND RESISTANCE AT SERVICE DISCONNECT ENCLOSURE GROUNDING TERMINAL, AT GROUND TEST WELLS, AND AT INDIVIDUAL GROUND RODS. MAXIMUM MEASURED GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS.

C. MEASURE GROUND RESISTANCE NO FEWER THAN TWO FULL DAYS AFTER LAST TRACE OF PRECIPITATION AND WITHOUT SOIL BEING MOISTENED BY ANY MEANS.

PREPARE AND SUBMIT TEST AND INSPECTION REPORTS TO COMMISSIONING AGENT.

11.10 LIGHTNING PROTECTION

11.10.a DESIGN & MATERIALS: THE DESIGN AND ALL MATERIALS SHALL CONFORM TO THE CODE REQUIREMENTS OF THE NFPA 780, LIGHTNING PROTECTION INSTITUTE 175 AND UL 96 AND 96A.

A. AIR TERMINALS SHALL BE UTILIZED.

B. COPPER MATERIALS SHALL BE USED FOR CONTACT WITH COPPER SURFACES, THE EARTH, ALKALINE-BASE PAINT, CONCRETE OR MASONRY, OR EXCESSIVE MOISTURE SUCH AS FLAT ROOFS, IN ACCORDANCE WITH NFPA 780 4.2, UL 96A 7, AND LPI 175 18-23.

C. ALUMINUM MATERIALS SHALL BE USED ON ALUMINUM, GALVANIZED STEEL, OR PAINTED METAL SURFACES, IN ACCORDANCE WITH NFPA 780 4.2, UL 96A 7, AND LPI 175 18-23.

D. ALL CONDUCTORS SHALL BE COPPER.

11.10.b ONLY APPROVED ADHESIVE SHALL BE USED ON MEMBRANE ROOF AREAS TO SECURE THE CABLES AND BASES IN POSITION. NO MECHANICAL FASTENERS SHALL BE DRIVEN INTO THE MEMBRANE ROOFING.

11.10.c CABLE FASTENERS SHALL BE SPACED NO MORE THAN 36" ON CENTER USING SOLD COPPER OR ALUMINUM CLIPS WITH STAINLESS STEEL PINS ON MASONRY SURFACES AND STAINLESS STEEL NAILS ON NAILING SURFACES.

11.10.d AIR TERMINALS SHALL BE APPLIED TO ALL BUILDINGS WITH SHEET METAL ROOFS OR BUILDINGS NOT OF STEEL MEMBER CONSTRUCTION. EXCEPTIONS TO THIS REQUIREMENT SHALL BE GIVEN TO BUILDINGS ADEQUATELY PROTECTED BY HIGHER LOCATED SYSTEMS, PER NFPA 780.

11.10.e METAL BODIES WITHIN 72" OF LPS CONDUCTORS SHALL BE BONDED AS REQUIRED BY NFPA 780 4.19, UL 96A 11, AND LPI 175 110.

12. IDENTIFICATION NAMEPLATES AND LABELS

12.1 IDENTIFICATION NAMEPLATES:

12.1.a MATERIALS:

A. INDOOR CLEAN, DRY LOCATIONS: USE PLASTIC NAMEPLATES.

B. OUTDOOR LOCATIONS: USE PLASTIC SUITABLE FOR EXTERIOR USE.

C. MOTORS AND INSTRUMENT CONNECTION - STAINLESS STEEL IDENTIFICATION TAG.

12.1.b PLASTIC NAMEPLATES: TWO-LAYER OR THREE-LAYER LAMINATED ACRYLIC OR ELECTRICALLY NON-CONDUCTIVE PHENOLIC WITH BEVELED EDGES; MINIMUM THICKNESS OF 1/16 INCH (1.6 MM); ENGRAVED TEXT.

12.1.c MOUNTING HOLES FOR MECHANICAL FASTENERS: TWO, CENTERED ON SIDES FOR SIZES UP TO 1 INCH (25 MM) HIGH, FOUR, LOCATED AT CORNERS FOR LARGER SIZES.

12.2 IDENTIFICATION LABELS:

12.2.a MATERIALS: USE SELF-ADHESIVE LAMINATED PLASTIC LABELS; UV, CHEMICAL, WATER, HEAT, AND ABRASION RESISTANT.

A. USE ONLY FOR INDOOR LOCATIONS ON ALL NON-EQUIPMENT UNLESS OTHERWISE NOTED. 12.2.b TEXT: USE FACTORY PRE-PRINTED OR MACHINE-PRINTED TEXT. DO NOT USE HANDWRITTEN TEXT UNLESS OTHERWISE INDICATED.

12.3 FORMAT FOR EQUIPMENT IDENTIFICATION:

12.3.a MINIMUM SIZE: 1 INCH (25 MM) BY 2.5 INCHES (64 MM).

12.3.b LEGEND:

A. EQUIPMENT DESIGNATION OR OTHER APPROVED DESCRIPTION.

B. OTHER INFORMATION AS INDICATED.

12.3.c TEXT: ALL CAPITALIZED UNLESS OTHERWISE INDICATED.

12.3.d MINIMUM TEXT HEIGHT:

A. SYSTEM DESIGNATION: 1 INCH (25 MM).

B. EQUIPMENT DESIGNATION: 1/2 INCH (13 MM).

C. OTHER INFORMATION: 1/4 INCH (6 MM).

D. EXCEPTION: PROVIDE MINIMUM TEXT HEIGHT OF 1 INCH (25 MM) FOR EQUIPMENT LOCATED MORE THAN 10 FEET (3.0 M) ABOVE FLOOR OR WORKING PLATFORM.

12.3.e COLOR:

A. NORMAL POWER SYSTEM: WHITE TEXT ON BLACK BACKGROUND.

12.4 FINAL CONNECTIONS TO ALL MOTORS AND INSTRUMENTS WILL BE SUPPLIED WITH A STAINLESS STEEL TAG IDENTIFYING THE EQUIPMENT (UON ON PLANS OR IN SPECIFICATIONS SECTION 26). THE IDENTIFICATION TAG WILL BE SUPPLIED ON THE CONNECTION POINT, NOT THE EQUIPMENT, TO FACILITATE FUTURE REPLACEMENT.

12.5 TERMINAL BLOCKS WILL BE CLEARLY LABELED AT EACH TERMINATION POINT. THE LABELING SYSTEM WILL BE TYPED, NOT WRITTEN AND WILL PROTECT THE LETTERING.

13. WIRE AND CABLE MARKERS

13.1 MARKERS FOR CONDUCTORS AND CABLES: USE WRAP-AROUND SELF-ADHESIVE VINYL CLOTH, WRAP-AROUND SELF-ADHESIVE VINYL SELF-LAMINATING, HEAT-SHRINK SLEEVE, OR PLASTIC SLEEVE.

13.2 MARKERS FOR CONDUCTOR AND CABLE BUNDLES: USE PLASTIC MARKER TAGS SECURED BY NYLON CABLE TIES.

13.3 LEGEND: POWER SOURCE AND CIRCUIT NUMBER OR OTHER DESIGNATION INDICATED.

13.4 TEXT: USE FACTORY PRE-PRINTED OR MACHINE-PRINTED TEXT, ALL CAPITALIZED UNLESS OTHERWISE INDICATED.

13.4.a DO NOT USE HANDWRITTEN TEXT.

13.5 MINIMUM TEXT HEIGHT: 1/8 INCH (3 MM)

13.6 COLOR: BLACK TEXT ON WHITE BACKGROUND UNLESS OTHERWISE INDICATED.

14. GENERAL MOUNTING HEIGHTS

14.1 MOUNT DEVICES AT HEIGHTS INDICATED BELOW UNLESS OTHERWISE NOTED ON PLANS. HEIGHTS ARE TO CENTER OF DEVICE (UON), WHERE A DEVICE NOT LISTED BELOW IS BEING INSTALLED. MOUNTING HEIGHT SHALL FOLLOW ANY REGULATION REQUIREMENTS, TYPICAL INDUSTRY STANDARDS AND/OR MANUFACTURER'S REQUIREMENTS.

LIGHT SWITCHES 48"

RECEPTACLE, GENERAL 18"

RECEPTACLE, COUNTER 6" ABOVE COUNTERTOP

SPECIAL PURPOSE OUTLET AS NOTED OR APPROPRIATE FOR USE

TELEPHONE/DATA 18", 60" FOR STANDING LOCATIONS

THERMOSTAT 60"

PUSHBUTTONS 48"

INTERCOMS 54" INTERIOR, 48" EXTERIOR

CARD READERS 48"

FIRE ALARM HORN/STROBE 80"-96" WALL MOUNTED, 30" MAXIMUM CEILING MOUNTED

FIRE ALARM PULL STATION 48"

LIGHTING FIXTURES AS INDICATED ON SCHEDULE

PANELBOARDS TOP AT 78"

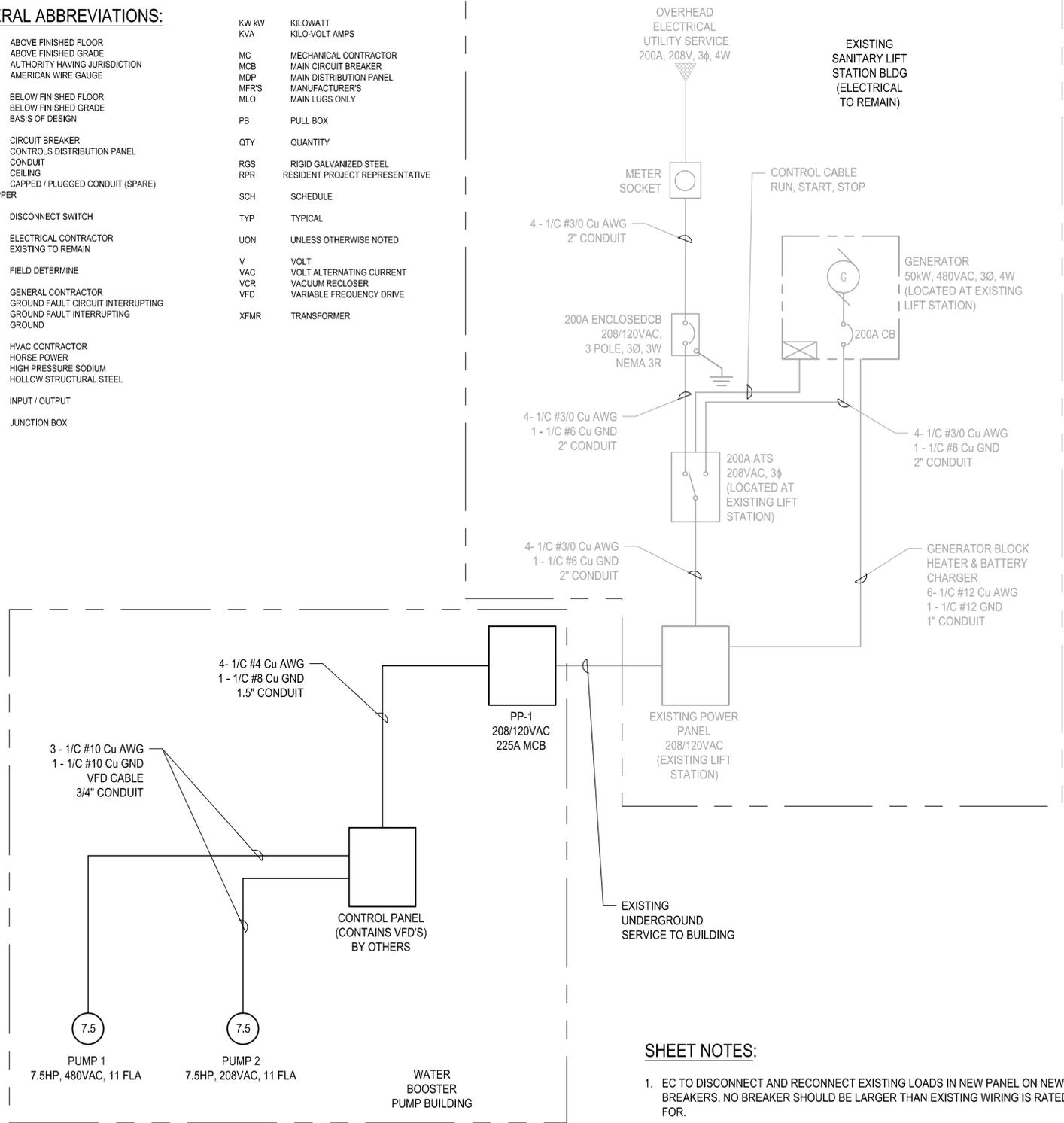
SAFETY SWITCHES 60" OR ADJACENT DEVICE SERVED AS ALLOWED PER CODE

HMI SCREENED DEVICE 60" AT SCREEN (WALL MOUNTED)

14.2 HEIGHTS ARE FOR REFERENCE AND ALL NATIONAL OR LOCAL CODES SHALL TAKE PRECEDENCE. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO CONFIRM HEIGHTS PRIOR TO ROUGH-IN.

GENERAL ABBREVIATIONS:

AFF	ABOVE FINISHED FLOOR	KW	KILOWATT
AFG	ABOVE FINISHED GRADE	KVA	KILO-VOLT AMPS
AHJ	AUTHORITY HAVING JURISDICTION	MC	MECHANICAL CONTRACTOR
AWG	AMERICAN WIRE GAUGE	MCB	MAIN CIRCUIT BREAKER
BFF	BELOW FINISHED FLOOR	MDP	MAIN DISTRIBUTION PANEL
BFG	BELOW FINISHED GRADE	MFR'S	MANUFACTURER'S
BOD	BASIS OF DESIGN	MLO	MAIN LUGS ONLY
CB	CIRCUIT BREAKER	PB	PULL BOX
CDP	CONTROLS DISTRIBUTION PANEL	QTY	QUANTITY
C	CONDUIT	RGS	RIGID GALVANIZED STEEL
CLG	CEILING	RPR	RESIDENT PROJECT REPRESENTATIVE
CP	CAPPED / PLUGGED CONDUIT (SPARE)	SCH	SCHEDULE
CU	COPPER	TYP	TYPICAL
DS	DISCONNECT SWITCH	UON	UNLESS OTHERWISE NOTED
EC	ELECTRICAL CONTRACTOR	V	VOLT
ETR	EXISTING TO REMAIN	VAC	VOLT ALTERNATING CURRENT
FD	FIELD DETERMINE	VCR	VACUUM RECLOSUR
GC	GENERAL CONTRACTOR	VFD	VARIABLE FREQUENCY DRIVE
GFCI	GROUND FAULT CIRCUIT INTERRUPTING	XFMR	TRANSFORMER
GFI	GROUND FAULT INTERRUPTING GROUND		
HC	HVAC CONTRACTOR		
HP	HORSE POWER		
HSS	HIGH PRESSURE SODIUM		
HPS	HOLLOW STRUCTURAL STEEL		
I/O	INPUT / OUTPUT		
JB	JUNCTION BOX		



SHEET NOTES:

1. EC TO DISCONNECT AND RECONNECT EXISTING LOADS IN NEW PANEL ON NEW BREAKERS. NO BREAKER SHOULD BE LARGER THAN EXISTING WIRING IS RATED FOR.

PANELBOARD: 'PP-1'										MCB RATING: 225A		VOLTS: 208		A.I.C. RATING: 10KA			
										MAINS RATING: 225A		PHASE: 3		MOUNTING: SURFACE			
										LOCATION: BUILDING		WIRES: 4		NEMA 3R ENCLOSURE			
CKT	CIRCUIT DESCRIPTION	WIRE	G.	C.	TRIP	POLE	A	B	C	POLE	TRIP	C.	G.	WIRE	CIRCUIT DESCRIPTION	CKT	
1	LIGHTING	#12	12	3/4"	20	1	0.4	5.0						#6		2	
3	RECEPTACLE	#12	12	3/4"	20	1		1.0	5.0		3	70	1*	3	CONTROL PANEL	4	
5	E.F. DAMPER	#12	12	3/4"	20	1			0.5	5.0				#6		6	
7	UNIT HEATER	#10	10	3/4"	30	3	2.9	0.0			1	20			SPARE	8	
9								2.9	0.0		1	20			SPARE	10	
11		#10							2.9	0.0					SPACE	12	
13	SPARE					20	1	0.0	0.0						SPACE	14	
15	SPARE					20	1		0.0	0.0					SPACE	16	
17	SPACE								0.0	0.0					SPACE	18	
19	SPACE							0.0	0.0						SPACE	20	
							TOTAL LOAD	8.3	8.9	8.4							
							IN KVA	A	B	C							
REMARKS: XXX										PANEL TOTALS							
										TOTAL CONNECTED LOAD (KVA)		25.6					
										TOTAL DEMAND LOAD (KVA)		20.5					



verdantas

ISSUED FOR:	BID	02/24/2026	AS NOTED	PSM	PSM	CJZ
ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:		

OLD MAIN STREET - BOOSTER
PUMP STATION REPLACEMENT
CITY OF CONNEAUT
ASHTABULA COUNTY, OHIO

GENERAL - 01 SERIES
ELECTRICAL SINGLE LINE

PROJECT NO.	41632
DISCIPLINE	ELECTRICAL
SHEET NAME	E-02
SHEET	OF
19	21

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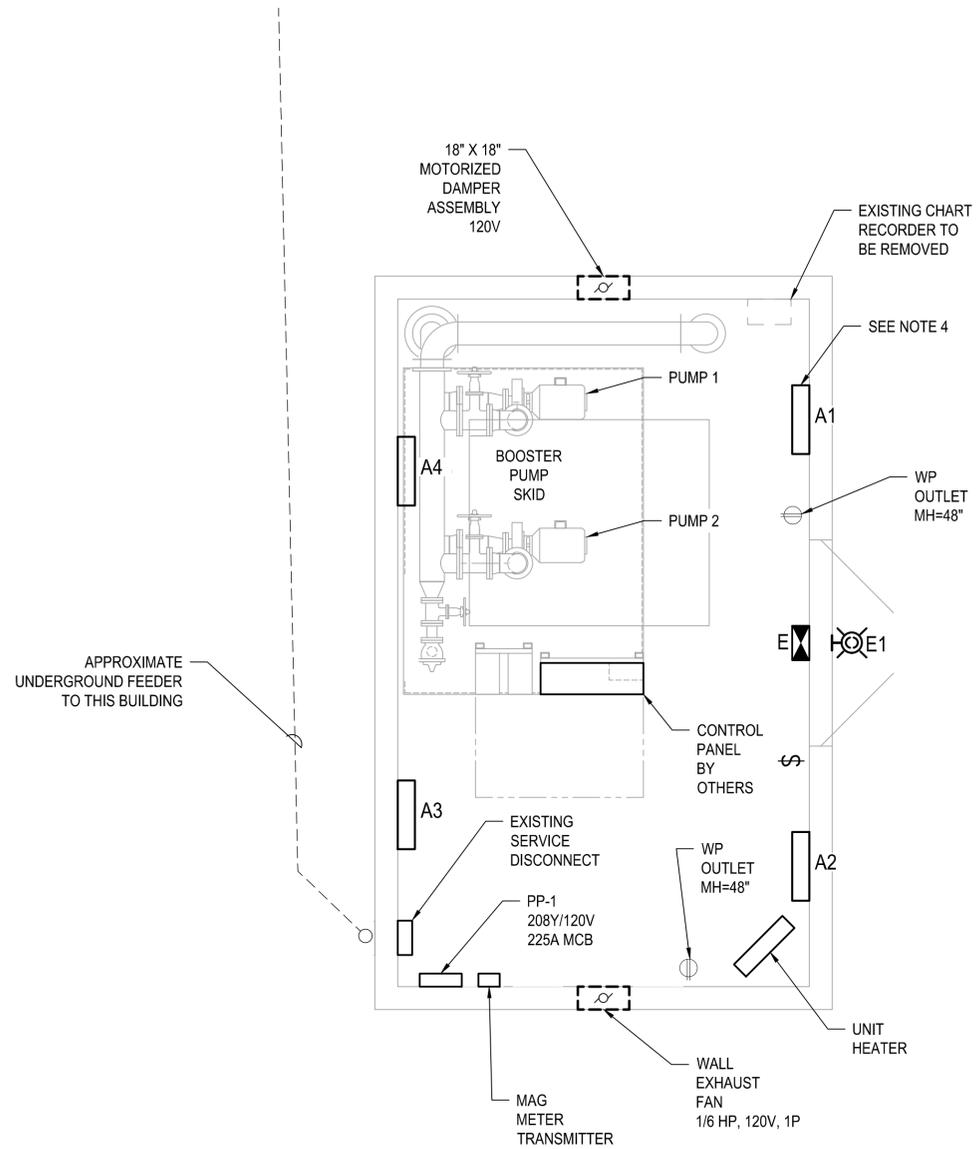


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BID	ISSUED FOR:
02/24/2026	ISSUE DATE:
3/8" = 1'-0"	SCALE:
PSM	DESIGNED BY:
PSM	DRAWN BY:
CJZ	CHECKED BY:

**OLD MAIN STREET - BOOSTER
PUMP STATION REPLACEMENT**
ASHTABULA COUNTY, OHIO
CITY OF CONNEAUT
**GENERAL - 01 SERIES
ELECTRICAL BUILDING PLAN**

PROJECT NO.	
41632	
DISCIPLINE	
ELECTRICAL	
SHEET NAME	
E-03	
SHEET	OF
20	21



BOOSTER STATION BUILDING POWER PLAN

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



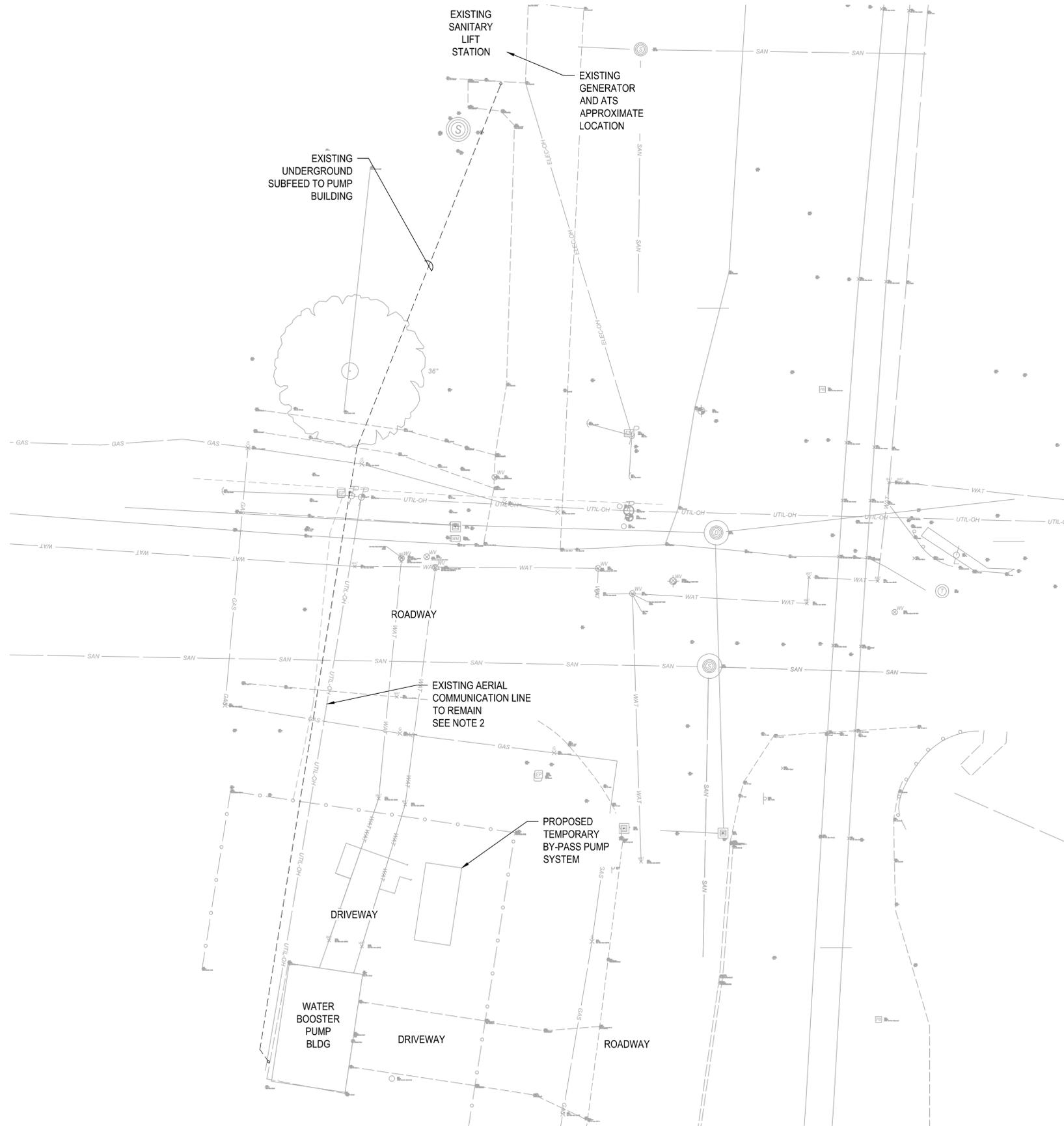
SHEET NOTES:

- ALL BELOW GRADE CONDUIT SHALL BE SCH. 40 PVC AND ABOVE GRADE CONDUIT SHALL BE RGS.
- ELECTRICAL CONTRACTOR SHALL COORDINATE CONTROLS WITH PROPER INTEGRATOR
- CONTRACTOR TO REPLACE IN KIND SERVICE PANEL INSIDE BUILDING AS WELL AS BRANCH CIRCUIT TO VFD CONTROL CABINET
- CONTRACTOR TO DISCONNECT AND REPLACE EXISTING LIGHTING WITH NEW TYPE A LED

LIGHT FIXTURE SCHEDULE (BASIS OF DESIGN)													
TYPE	DESCRIPTION	MOUNTING	LAMP						RATINGS	MT HGT	LUMINAIRE		REMARKS
			#	TYPE	WATTS	LUMENS	COLOR TEMP.	VOLTS	MANUFACTURER		MODEL NO.		
A	2' LINEAR SURFACE MOUNTED LUMINAIRE. HIGH-IMPACT RESISTANT HOUSING WITH GASKETED LENS. POLY-CARBONATE LENS FOR UNIFORM DISTRIBUTION. LISTED FOR WET LOCATIONS. NEMA 4X	INTERIOR WALL	4	L.E.D.	27	3000	4000	MVOLT 120-277V	8'-0"	LITHONIA LIGHTING	DMW2-3000LM-PCL-MD-MVOLT-GZ10-30K-80CRI	OR EQUIVALENT	
E	EMERGENCY COMBINATION EXIT AND LIGHT UNIT. CONSTRUCTION FROM DIE-CAST ALUMINUM. FULLY GASKETED AND CORROSION RESISTANT. POLY CARBONATED LENSED EXIT FACE AND LAMP HEADS. SERVICE REMOTE HEAD. 90 MINUTE BATTERY BACK-UP WITH SELF DIAGNOSTICS.	INTERIOR WALL	1	L.E.D.	12	5000	5000	120	7'-6"	DUAL LITE	D'YNC-S-R-W-12	OR EQUIVALENT	

- NOTES:
 1. LUMINARIES REQUIRE TRANSITION TO 1/2" HUB.
 2. DIMMING FEATURE NOT USED. INSTALL FOR 100% LUMEN OUTPUT.

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SHEET NOTES:

1. ALL BELOW GRADE CONDUIT SHALL BE SCH. 40 PVC AND ABOVE GRADE CONDUIT SHALL BE RGS.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE CONTROLS WITH PROPER INTEGRATOR.



PUMP STATION SITE PLAN

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



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BID	ISSUED FOR:
02/24/2026	ISSUE DATE:
1/8" = 1'-0"	SCALE:
PSM	DESIGNED BY:
PSM	DRAWN BY:
CJZ	CHECKED BY:

**OLD MAIN STREET - BOOSTER
PUMP STATION REPLACEMENT**
CITY OF CONNEAUT
ASHTABULA COUNTY, OHIO

**GENERAL - 01 SERIES
ELECTRICAL SITE PLAN**

PROJECT NO.	
41632	
DISCIPLINE	
ELECTRICAL	
SHEET NAME	
E-04	
SHEET	OF
21	21