

REVIEW	NO	REVISION	DATE
ISSUED FOR:			
ISSUE DATE:	8/29/25		
SCALE:	AS NOTED		
DESIGNED BY:	RLM		
DRAWN BY:	BLM		
CHECKED BY:	RLM		

VILLAGE OF BYESVILLE S.R. 821 SANITARY SEWER IMPROVEMENTS PHASE I - ROLLING HILLS WWTP ABANDONMENT GUERNSEY COUNTY, OHIO	GENERAL - 00 SERIES COVER SHEET
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PROJECT NO.	241455
DISCIPLINE	GENERAL
SHEET NAME	00G-01
SHEET	OF
1	24

VILLAGE OF BYESVILLE

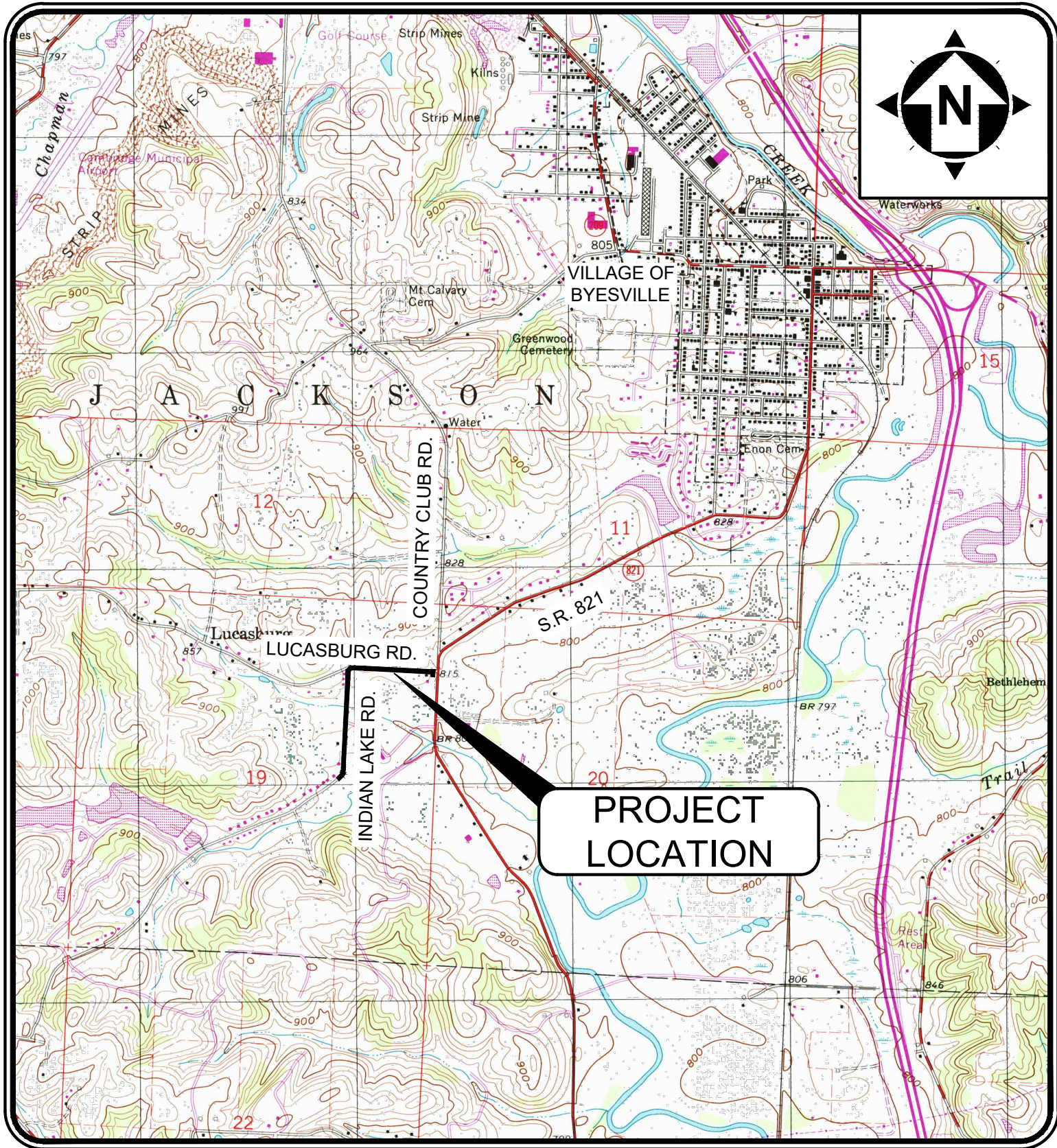
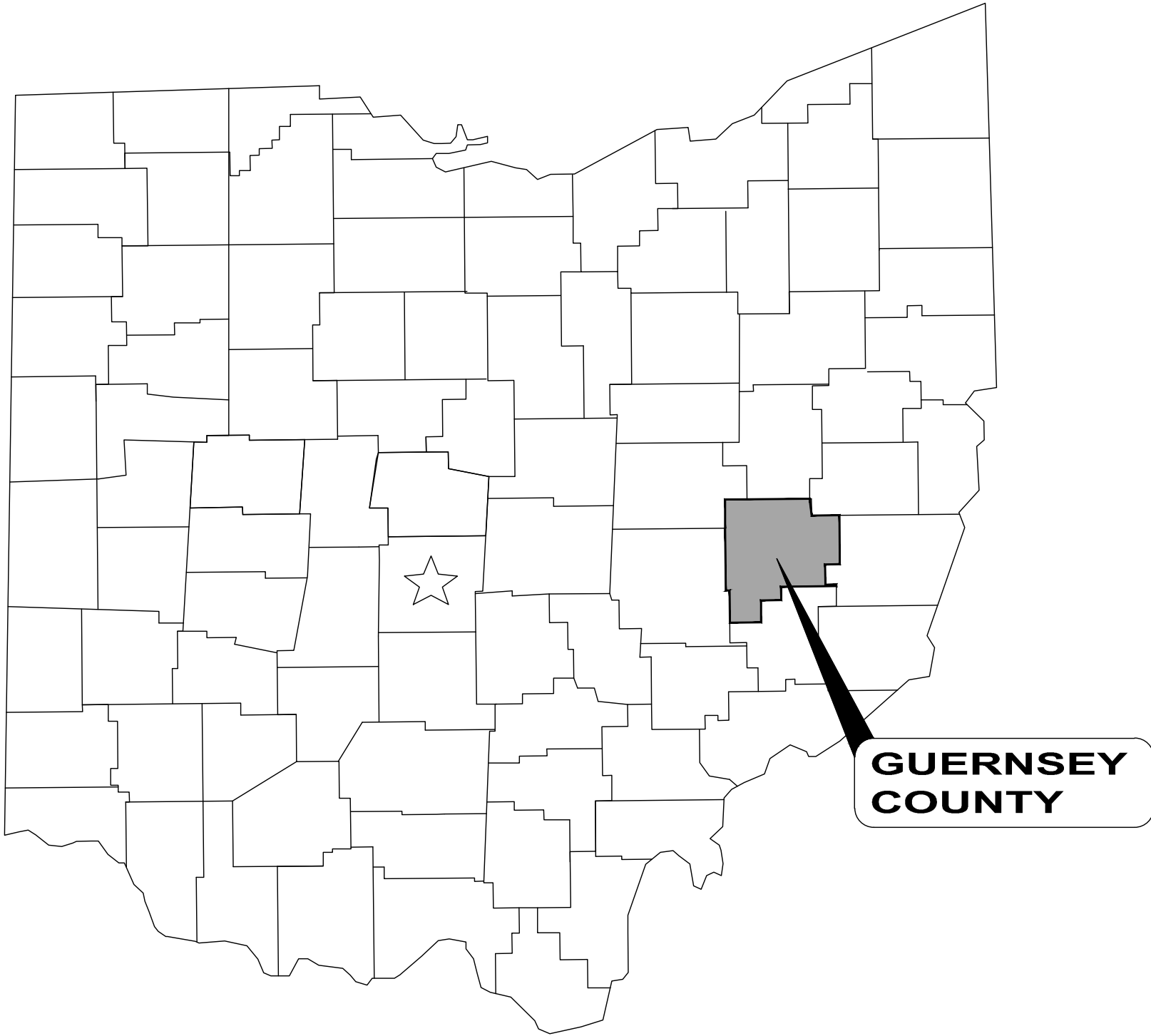
S.R. 821 SANITARY SEWER IMPROVEMENT

PHASE I - ROLLING HILLS WWTP

ABANDONMENT

GUERNSEY COUNTY, OHIO

SEPTEMBER 2025



LOCATION MAP
SCALE: 1" = 1000'

APPROVALS:

VILLAGE OF BYESVILLE
221 MAIN STREET
BYESVILLE, OH 43723
(740) 685-0800 PHONE

JAY JACKSON, MAYOR

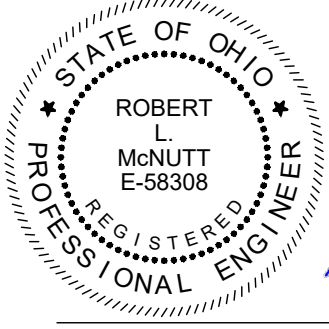
9/10/2025
DATE

BRENNAN DUDLEY, VILLAGE ADMINISTRATOR

9/10/2025
DATE

ENGINEER:

VERDANTAS
6397 EMERALD PARKWAY, SUITE 200
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(614) 793-8777 PHONE



Robert L. McNutt, P.E.

ROBERT McNUTT, P.E.

OHIO No. E-58308

08/28/2025

DATE



1. 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.
2. THE CONTRACTOR IS RESPONSIBLE TO CALL OHIO UTILITIES PROTECTION SERVICE @ 1-800-362-2764, THREE WORKING DAYS PRIOR TO CONSTRUCTION.



ENGINEER'S PROJECT No. 241455



Sheet List Table		
Sheet Number	Sheet Title	SHEET NAME
GENERAL - 00 SERIES: GENERAL		
1	COVER SHEET	00G-01
2	SHEET INDEX	00G-02
3	GENERAL NOTES	00G-03
4	GENERAL NOTES	00G-04
5	SYMBOLS LEGEND	00G-05
6	SURVEY CONTROL 1	00G-06
7	SURVEY CONTROL 2	00G-07
PLAN & PROFILES - 05 SERIES: CIVIL		
8	INDIAN LAKE RD.FM. STA. 0+00 TO 5+00	05C-01
9	INDIAN LAKE RD.FM. STA. 5+00 TO 12+50	05C-02
10	INDIAN LAKE RD.FM. STA. 12+50 TO END	05C-03
11	LUCASBURG RD. GRAVITY STA. 0+00 TO 5+00	05C-04
12	LUCASBURG RD. GRAVITY STA. 5+00 TO STA. 10+00	05C-05
LIFT STATION - 10 SERIES: CIVIL		
13	PUMP STATION SITE PLAN	10C-01
LIFT STATION - 10 SERIES: PROCESS		
14	PLAN & SECTIONS	10D-01
LIFT STATION - 10 SERIES: ELECTRICAL		
15	SPECIFICATIONS	10E-01
16	SINGLE LINE	10E-02
17	SITE PLAN	10E-03
18	ELECTRICAL RACK DETAIL	10E-04
STANDARD DETAILS - SD SERIES: DETAILS		
19	CONSTRUCTION DETAILS - 1	SD-01
20	CONSTRUCTION DETAILS - 2	SD-02
21	CONSTRUCTION DETAILS - 3	SD-03
22	CONSTRUCTION DETAILS - 4	SD-04
EROSION CONTROL - EC SERIES: CIVIL		
23	EROSION CONTROL - 1	EC-01
24	EROSION CONTROL - 2	EC-02

STATE OF OHIO

REGISTERED PROFESSIONAL ENGINEER

ROBERT L. McNUTT

E-68308

verdantas

8150 STERLING COURT
MENTOR, OHIO 44060
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VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

GENERAL - 00 SERIES
SHEET INDEX

PROJECT NO.	
241455	
DISCIPLINE	
GENERAL	
SHEET NAME	
00G-02	
SHEET	OF
2	24

1. THE CONTRACTOR SHOULD BE AWARE THAT THE INSTALLATION OF THE SANITARY SEWER MAY REQUIRE THE REMOVAL AND REPLACEMENT OF PAVEMENT, DRAINAGE PIPE, AND GRANULAR BACKFILL. THE LABOR AND MATERIAL COSTS ARE TO BE INCLUDED IN THE UNIT PRICES BID UNDER ITEM 901. SEE SPEC SECTIONS 901.03, 901.08 AND 901.09.
2. CONTRACTOR SHALL RESTORE MAILBOXES, PAPERBOXES AND POST AFTER INSTALLATION OF SEWER IS COMPLETE.
3. PRICES BID PER FOOT FOR ALL PIPE IS COMPLETE IN PLACE REGARDLESS OF SOIL OR ROCK CONDITIONS.
4. EXISTING UTILITIES SHOWN ARE FROM BEST AVAILABLE RECORDS AND FIELD INVESTIGATIONS, AND ARE NOT NECESSARILY COMPLETE OR EXACT. THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE PROPOSED CONSTRUCTION AND SHALL MAKE ADJUSTMENTS IN ELEVATIONS TO PROVIDE SUFFICIENT CLEARANCE BETWEEN THE PROPOSED AND EXISTING UTILITIES FOR TRADITIONAL AND TRENCHLESS CONSTRUCTION METHODS. UTILITY SERVICES BROKEN OR DAMAGED SHALL BE REPAIRED AT ONCE TO AVOID INCONVENIENCE TO CUSTOMERS. STORM SEWERS SHALL NOT BE INTERRUPTED OVERNIGHT. THE CONTRACTOR SHALL CALL THE OHIO UTILITIES PROTECTION SERVICE (1-800-362-2764) THREE WORKING DAYS PRIOR TO WORK EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS.
5. THE SPECIFICATIONS AND STANDARD CONSTRUCTION DRAWINGS OF THE BYESVILLE UTILITIES DEPARTMENT TOGETHER WITH THE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED HEREIN, IN FORCE AT THE TIME OF CONTRACT, SHALL GOVERN THIS PROJECT. SANITARY SEWER CONNECTIONS SHALL BE GOVERNED BY BYESVILLE UTILITIES RULES AND REGULATIONS AND MUST BE INSPECTED BY THE VILLAGE OF BYESVILLE OR AUTHORIZED REPRESENTATIVE. TWENTY-FOUR HOURS ADVANCE NOTICE OF WORK SHALL BE GIVEN FOR THE SCHEDULING OF AN INSPECTOR.
6. THE CONTRACTOR SHALL BASE HIS PROJECTED WORK SCHEDULES UPON THE FOLLOWING CRITERIA:

NO SOIL BORINGS WERE TAKEN AS PART OF THESE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL TAKE ALL SOIL BORINGS HE DEEMS NECESSARY. AT LEAST 48 HOUR NOTICE MUST BE GIVEN TO THE OWNER, AND THE LOCATION OF ALL SOIL BORINGS ARE SUBJECT TO THE APPROVAL OF THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM DIGGING SOIL BORES AND HE SHALL RESTORE ALL PROPERTY TO A CERTAIN SIMILAR OR EQUAL TO THE CONDITION THAT EXISTING BEFORE SUCH DIGGING WAS DONE. THE CONTRACTOR SHALL NOTE ALL DEWATERING, SHEETING, ETC. WHICH SHALL BE REQUIRED FOR CONSTRUCTION DUE TO SOIL AND WATER CONDITIONS. COST FOR DEWATERING, SHEETING, ETC., SHALL BE INCLUDED IN PRICE BID PER LINEAR FOOT OF RESPECTIVE ITEMS. ANY FOUNDATION SLAG REQUIRED SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF RESPECTIVE ITEMS.

APPLICABLE ROAD PERMITS HAVE BEEN INCLUDED IN THE SPECIAL CONSTRUCTION REQUIREMENTS AND SUPPLEMENTAL SPECIFICATIONS FOR THIS PROJECT. ANY COST FOR LABOR, EQUIPMENT, MATERIAL, ETC., TO COMPLY WITH THESE PERMITS SHALL BE INCLUDED IN THE PRICES BID. THE CONTRACTOR SHALL CONFINES HIS ACTIVITIES TO THE EXISTING RIGHT-OF-WAYS, CONSTRUCTION AND PERMANENT EASEMENTS AND SHALL NOT TRESPASS UPON OTHER PRIVATE PROPERTY WITHOUT THE WRITTEN CONSENT OF THE OWNER. THE CONTRACTOR SHALL BE SURE THAT ALL PERMITS REQUIRED TO OPEN CUT ROADS HAVE BEEN OBTAINED FROM THE GOVERNING LOCAL, COUNTY OR STATE DEPARTMENT PRIOR TO COMMENCEMENT OF WORK.

1. THE COST OF PLUMBING, REROUTING AND DIVERTING ALL WATER AND SEWAGE DURING CONSTRUCTION SHALL BE INCLUDED FOR PAYMENT IN THE SWEETENER PAYMENT ITEM.
2. GRAVITY SEWERS SHALL HAVE FLEXIBLE ADAPTERS AT CONNECTIONS OF DISSIMILAR PIPE-CONCRETE COLLARS ARE NOT ACCEPTABLE.
3. ALL CONSTRUCTION SHALL CONFORM TO THE DEPT. OF LABOR, BUREAU OF LABOR STANDARDS SAFETY AND HEALTH REGULATIONS FOR THE CONSTRUCTION AND THE CONTRACT WORK HOURS AND SAFETY ACT. (CHAPTER XVII TITLE C&R, PART 1926 AND ALL ADDITIONS AND REVISIONS).
4. ALL WATER AND SANITARY OR STORM SEWER CROSSINGS SHALL HAVE AN EIGHTEEN INCH (18") MINIMUM VERTICAL SEPARATION OUTSIDE DIAMETER (O.D.) TO (O.D.) ALL WATER AND SANITARY OR STORM SEWER SHALL HAVE A TEN FOOT (10') MINIMUM HORIZONTAL SEPARATION (O.D.) TO (O.D.). ALL WATER LINES CROSSING OTHER UTILITIES SHALL HAVE A TWELVE INCH (12") MINIMUM VERTICAL SEPARATION (O.D.) TO (O.D.) AND FOUR FOOT (4') MINIMUM HORIZONTAL CLEARANCE SEPARATION (O.D.) TO (O.D.).
5. ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE STRICTLY PROHIBITED.
6. NO BRICK MANHOLE CONSTRUCTION WILL BE PERMITTED. MANHOLE CASTING AND COVER TO BE INDENTED SOLID TOP DESIGN WITH HIDDEN PICKHOLES. ALL LIDS TO BE LABELED "PORTAGE COUNTY WATER RESOURCES SANITARY SEWER". CASTING SHALL BE NEENAH R-1783-A WITH EXTRA HEAVY DUTY TYPE "B" LID (TOTAL WEIGHT APPROX. 470#) OR EAST JORDAN IRON WORKS CASTING 1522 WITH TYPE "A" LID. WHERE LABELED "WATERTIGHT" ON PLANS, LIDS SHALL BE SEALED WITH A NEOPRENE GASKET AND FOUR (4) 5/16" DIA. STAINLESS STEEL BOLTS.
7. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING PVC MARKERS AT ALL MANHOLES, CLEAN-OUTS, AIR RELEASE VALVE PITS, LINE VALVES, ETC. ON CROSS-COUNTRY SEWER LINES. INCLUDE A GPS LAT/LONG READING ON ALL REFERENCED ITEMS ABOVE. AFTER LATERAL WYE BRANCH, RISER AND CONNECTION HAVE BEEN INSTALLED, THE END OF THE CONNECTION SHALL BE SEALED WITH AN AIR TIGHT SPIGOT CAP OR AIR TIGHT PLUG AND THE CAP OR PLUG PAINTED YELLOW. THE END OF THE SANITARY CONNECTION SHALL BE MARKED WITH A 2'X 2" HARDWOOD STAKE, EXTENDING VERTICALLY FROM THE END OF THE CONNECTION TO A POINT APPROX. 3' ABOVE THE SURFACE OF THE GROUND.
8. LEAKAGE TEST FOR MANHOLES - VACUUM TESTING OF CONCRETE SEWER MANHOLES SHALL BE TESTED (IAW) IN ACCORDANCE WITH ASTM C-1244-93. LEAKAGE TEST FOR SEWERS - EITHER WATER OR AIR TEST SHALL BE CONDUCTED TO SHOW EXFILTRATION OR INFILTRATION NOT TO EXCEED 100 GALLONS PER INCH DIAMETER PER MILE PER DAY, AND A MINIMUM POSITIVE HEAD OF 2 FEET. AIR TESTING SHALL CONFORM TO ASTM F-1417 FOR PLASTIC PIPE. DEFLECTION TESTS FOR FLEXIBLE PIPE - NO PIPE SHALL EXCEED A DEFLECTION OF 5 PERCENT. ALL INSPECTION AND TESTING SHALL BE DONE BY AN EXPERIENCED AND QUALIFIED FIRM ENGAGED IN THIS TYPE OF WORK, AS APPROVED BY PCWR. WRITTEN REPORTS FOR ALL INSPECTION AND TESTING SHALL BE SUBMITTED TO PCWR FOR APPROVAL. ALL SANITARY SEWERS MUST BE FLUSHED AND PASS THE LATEST PROPOSED LOW PRESSURE AIR TEST REQUIREMENTS AND DEFLECTION TEST REQUIREMENTS OF THE OEPA. ALL FINAL TESTING AND INSPECTIONS SHALL BE PERFORMED AFTER COMPLETION OF CONSTRUCTION AND SEEDING OF DISTURBED AREAS. IF THE INSTALLATION FAILS TO MEET THE REQUIREMENTS OF THESE TESTS AND INSPECTIONS, THE CONTRACTOR SHALL REPAIR ALL DEFECTS AND RETEST THE INSTALLATION WITH NO ADDITIONAL COST TO THE COUNTY.
9. EACH SECTION OF FORCE MAIN SHALL BE SUBJECT TO A HYDROSTATIC TEST OF 50 PSI AT THE HIGH END OF THE PIPE OR TWICE THE WORKING PRESSURE WHICHEVER IS THE GREATER. ALL TESTING SHALL BE DONE IN THE PRESENCE OF THE ENGINEER OR HIS REPRESENTATIVE.

1. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DAMAGE TO THE EXISTING SEWERAGE SYSTEM RESULTING FROM NON-CONFORMANCE WITH GCW STANDARDS OR GENERAL NEGLIGENCE. ALL REPAIRS OR REPLACEMENTS MUST CONFORM TO GCW STANDARDS.
11. TWELVE (12") INCH GRADE ADJUSTMENT OF MANHOLES PERMITTED WITH CONCRETE GRADE RINGS. MAXIMUM ADJUSTMENT NOT TO EXCEED 12 INCHES. MINIMUM OF ONE GRADE RING REQUIRED.
12. WHERE INLET AND OUTLET PIPES CONNECT TO MANHOLES A FLEXIBLE WATERTIGHT JOINT AS APPROVED BY GCW IS REQUIRED.
13. THE GRAVITY SEWER AND FORCE MAIN SEWER SHALL CONFORM TO THE MATERIAL TYPES AS NOTED IN THE PLANS AND PROJECT SPECIFICATIONS. ALL NONMETALLIC PIPE SHALL INCLUDE THE INSTALLATION OF A TRACE WIRE. WATER TRACE WIRE SHALL BE #12 AWG STEEL-COPPER COMPOSITE WIRE WITH 45 MIL HIGH DENSITY POLYETHYLENE EXTERIOR COATING, 21% IACS CONDUCTIVITY, BLUE IN COLOR, AND HAVE 1,030 POUND MINIMUM BREAK LOAD. SEWER TRACE WIRE SHALL BE #12 AWG STEEL-COPPER COMPOSITE WIRE WITH 45 MIL HIGH DENSITY POLYETHYLENE EXTERIOR COATING, 21% IACS CONDUCTIVITY, GREEN IN COLOR, AND HAVE 1,030 POUND MINIMUM BREAK LOAD.
14. THE PREFERRED MINIMUM COVER FOR SANITARY SEWERS CONSTRUCTED UNDER A ROAD IS FIVE FEET (5'). UNDER NO CIRCUMSTANCES SHALL THE COVER FOR ANY SANITARY SEWER BE LESS THAN FIVE FEET (5').
15. SANITARY SEWER LATERALS ARE TO BE SIX INCH (6") DIAMETER AT A GRADE OF 1.0% UNLESS OTHERWISE NOTED ON THE PLANS OR APPROVED BY THE GCW CONSTRUCTION ENGINEER. A MINIMUM OF FIVE FOOT (5') COVER IS TYPICAL. ALL LATERALS SHALL MAINTAIN AN EIGHTEEN INCH (18") VERTICAL AND TEN FOOT (10') HORIZONTAL SEPARATION FROM ALL WATER LINES AND STORM SEWER UNLESS THE LATERAL IS CONSTRUCTED USING (D.I.P) DUCTILE IRON PIPE CLASS 53. ALL NEW LATERALS SHALL ENTER THE NEW SEWER PIPE AT A 45° ANGLE. NO LATERAL SHALL DROP AT A 90° ANGLE INTO THE SEWER PIPE.
16. PLACE PLUGS IN ENDS OF UNCOMPLETED CONDUIT AT THE END OF EACH DAY OR WHENEVER WORK STOPS. ALL NEWLY LAID SEWER SHALL BE FLUSHED AND ALL MANHOLES INSPECTED FOR CLEANLINESS UPON COMPLETION OF THE PROJECT.

1. THE CONTRACTOR SHALL REPLACE/REPAIR ALL EXISTING STORM SEWERS AND CATCH BASINS DISTURBED AS A RESULT OF THIS PROJECT. ANY STORM SEWERS UNDERNEATH ROADWAYS SHALL BE ODOT AND PORTAGE COUNTY ENGINEER APPROVED PIPE SECTIONS. STORM CULVERTS BENEATH DRIVE APRONS SHALL BE REPLACED IN KIND WITH THE SAME SIZE AND MATERIAL PIPE OR APPROVED EQUIVALENT MATERIAL. STORM SEWERS REPLACED WITHIN YARDS SHALL BE NON-PERFORATED H-Q CORRUGATED EXTERIOR, SMOOTH INTERIOR, STORM DRAINAGE PIPE BY HANCOR OR PCWR APPROVED EQUAL. ALL WORK SHALL BE PER ODOT ITEM CMS 611 REQUIREMENTS. THIS WORK IF REQUIRED SHALL BE INCLUDED IN THE PRICE BID UNDER ITEM 901.
2. ALL STORM INLET STRUCTURES SHALL BE PROTECTED FROM SILT INFILTRATION. GRATE OPENINGS SHALL BE COVERED WITH ENGINEERING FABRIC AND STRAW BALES SHALL BE PLACED AROUND ALL STORM INLET STRUCTURES TO PREVENT SILT FROM ENTERING STORM SYSTEM.
3. ALL STORM SEWER INSTALLED BENEATH PAVEMENT SHALL BE REINFORCED CONCRETE OF SAME SIZE OF PIPE BEING REPLACED. CONTROL DENSITY BACKFILL SHALL BE UTILIZED FOR STORM SEWER BENEATH PAVEMENT.

ALL TREES, STUMPS, BRUSH, SHRUBS, AND BUSHES THAT ARE MARKED ON THE PLANS TO BE REMOVED SHALL BE CUT DOWN, REMOVED AND LEGALLY DISPOSED OF BY THE CONTRACTOR, REGARDLESS OF INSTALLATION METHODS; TO INCLUDE WRENCHED DRILLING CONSTRUCTION. TREE STUMPS OUTSIDE OF THE TRENCH EXCAVATION LIMITS AND WITHIN FIELD OR TREED AREAS MAY REMAIN BUT SHALL BE CUT FLUSH WITH THE GROUND ELEVATION. TREE STUMPS WITHIN LAWN YARD AREAS SHALL BE GROUND AND REMOVED TO 6" BELOW THE GROUND ELEVATION. THE CONTRACTOR SHALL SAVE AND PROTECT ALL TREES OUTSIDE OF THE RIGHT OF WAY. WHEN PROTECTED TREES HAVE LIMBS PROTRUDING INTO THE RIGHT OF WAY AND IN CONFLICT WITH CONSTRUCTION EQUIPMENT, THE PROPERTY OWNER MAY GRANT PERMISSION TO PRUNE. THE CONTRACTOR SHALL GET APPROVAL FOR ALL TREE PRUNING FROM THE PCWR CONSTRUCTION ENGINEER. ANY TREES, STUMPS, BRUSH, SHRUBS, AND BUSHES NOT MARKED IN THE PLANS TO BE REMOVE THAT IS DEEMED BY THE CONTRACTOR AS NECESSARY FOR REMOVAL SHALL REQUIRE WRITTEN PERMISSION FROM THE PROPERTY OWNER AND PCWR BEFORE REMOVING. THE CONTRACTOR COSTS TO PERFORM ALL OF THIS DESCRIBED WORK WITHIN THE RIGHT OF WAY IS INCLUDED IN THE COST OF THE VARIOUS BID ITEMS.

ALL TREES, STUMPS, BRUSH, SHRUBS, AND BUSHES WHOSE TRUNK IS LOCATED WITHIN THE PERMANENT EASEMENT SHALL BE CUT DOWN, REMOVED AND LEGALLY DISPOSED OF BY THE CONTRACTOR. TREE TRUNKS AND LIMBS OF 6" DIAMETER AND GREATER SHALL BE CUT TO 10' LENGTHS, SAVED AND OFFERED TO THE PROPERTY OWNER. IF THE PROPERTY OWNER DOES NOT WANT THE WOOD, THE CONTRACTOR SHALL BE REQUIRED TO REMOVE ALL AND DISPOSE OFF THE SITE. TREE STUMPS OUTSIDE OF THE TRENCH EXCAVATION LIMITS AND WITHIN FIELD OR WOODED AREAS MAY REMAIN, BUT SHALL BE CUT FLUSH WITH THE GROUND SURFACE. TREE TRUNKS WITHIN LAWN AND WALKWAY AREAS SHALL BE REMOVED TO 6" BELOW THE GROUND ELEVATION. TREES, STUMPS, BRUSH, SHRUBS, AND BUSHES SHALL BE REMOVED WITHIN THE PERMANENT EASEMENT, REGARDLESS OF TRENCHLESS DRILLING CONSTRUCTION INSTALLATION METHODS USED BY THE CONTRACTOR. THE CONTRACTOR SHALL SAVE AND PROTECT ALL TREES OUTSIDE OF THE PERMANENT EASEMENT. WHEN PROTECTED TREES HAVE LIMBS PROTRUDING INTO THE PERMANENT EASEMENT AND IN CONFLICT WITH CONSTRUCTION EQUIPMENT, THE PROPERTY OWNER MAY GRANT PERMISSION TO PRUNE. THE CONTRACTOR SHALL GET APPROVAL FOR ALL TREE PRUNING FROM THE PCWR CONSTRUCTION OR DESIGN ENGINEER. THE CONTRACTOR COSTS TO PERFORM ALL OF THIS DESCRIBED WORK WITHIN THE PERMANENT EASEMENT IS INCLUDED IN THE COST OF THE VARIOUS BID ITEMS.

1. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE OHIO AND FEDERAL MANUALS OF UNIFORM TRAFFIC CONTROL DEVICES.
2. THE CONTRACTOR SHALL THOROUGHLY CLEAN OFF ALL ROADS OF ANY DIRT OR DEBRIS DAILY AND SHALL UTILIZE DUST CONTROL AS NECESSARY OR AS REQUESTED BY THE PCWR ENGINEERING INSPECTOR.
3. ALL DISTURBED UTILITIES, SIGNS, GUARD RAIL, MAIL AND/OR PAPER BOXES, ROADWAYS AND DRIVEWAYS SHALL BE PUT TEMPORARILY IN SERVICE AT THE END OF EACH WORK DAY, UNTIL PERMANENT REPAIRS CAN BE COMPLETED. THE CONTRACTOR SHALL REPLACE ALL SIDEWALKS AND DECORATIVE ISLANDS WITHIN GRANTED WORK EASEMENTS.

1. NO USING ANY SUBSTANCE OTHER THAN WATER TO CONTROL DUST.
2. NO OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AN OEPA OPEN BUILDING AIR PERMIT OR DISPOSING OF THE TREES AND STUMPS.
3. NO PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS, OR STORM SEWERS.
4. NO DISCHARGING POLLUTANTS - SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWERAGE - AND OTHER HARMFUL WASTE INTO OR ALONGSIDE RIVERS, STREAMS, IMPOUNDMENTS OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO.
5. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, ASPHALT OR CONCRETE ROADWAY SURFACES (INCLUDING ANY EARTH EXCAVATION OR EMBANKMENT MATERIAL). NOT PREVIOUSLY SPECIFIED OR APPROVED BY THE ENGINEER FOR SAID PURPOSES.
6. NO DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA.
7. NO HEAVY MOTORIZED CONSTRUCTION EQUIPMENT ENTERING THE STREAM CHANNEL.
8. NO DISPOSAL OF TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS.

1. THE UTILITY POWER POLES ARE OWNED BY (OHIO EDISON). CONTRACTOR SHALL CONFIRM UTILITY POLE OWNERSHIP. CONTRACTOR SHALL COORDINATE AND PROVIDE UTILITY POLE OWNER (OHIO EDISON) TRUCK EQUIPMENT TO PROVIDE POLE HOLDS AND IF REQUIRED DURING SEWER CONSTRUCTION AT THE CONTRACTORS EXPENSE. THIS WORK IF REQUIRED IS INCLUDED WITH THE UNIT PRICE OF THE BID ITEMS 901.

1. ANY GAS SERVICE / MAIN LINES, WATER SERVICE / MAIN LINES, COMMUNICATIONS CABLE SERVICE / MAINS, OTHER UTILITY LINES OR UTILITY POLE (SHOWN OR NOT SHOWN ON THESE DRAWINGS) CONFLICT THAT REQUIRES TEMPORARY OR PERMANENT RELOCATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, WHO SHALL COORDINATE ALL RELOCATIONS WITH THROUGH THE OWNER OF THE UTILITY IN QUESTION. COSTS OF RELOCATIONS WILL BE RESPONSIBILITY OF OWNER OF THAT UTILITY.

1. ALL LATERALS THAT CROSS THE ROADWAY WILL BE BORED. ANYWHERE WHERE THAT IS NOT FEASIBLE THE CONTRACTOR SHALL GET APPROVAL FROM ENGINEER BEFORE ANY WORK IS DONE IN THAT LOCATION.

OUPS TICKET NUMBERS:
A411404602
A411404620

H:\2024\241455\DWG\SHEETS\G 241455 - GENERAL NOTES.DWG - 3 GENERAL NOTES - 8/29/2025 10:48:10 AM - BOB MARANK

GENERAL NOTES:

1. A PRE-CONSTRUCTION MEETING SHALL BE HELD AT THE VILLAGE ADMINISTRATION BUILDING (221 MAIN ST) AT LEAST 15 CALENDAR DAYS BEFORE THE START OF CONSTRUCTION. REPRESENTATIVES OF THE OWNER, DESIGN ENGINEER, GUERNSEY COUNTY ENGINEER'S OFFICE, AND THE CONTRACTOR SHALL BE IN ATTENDANCE. A SCHEDULE OF THE SEQUENCE OF EVENTS DURING CONSTRUCTION MUST BE SUBMITTED FOR REVIEW AT LEAST (7) SEVEN DAYS PRIOR TO THIS MEETING.
2. ALL WORK SHALL BE COMPLETELY ACCEPTABLE TO THE VILLAGE OF BYESVILLE OFFICIALS. NO WORK SHALL COMMENCE UNTIL ARRANGEMENTS HAVE BEEN MADE WITH THE VILLAGE OF BYESVILLE ENGINEER FOR INSPECTION. NECESSARY LINE AND GRADE STAKING TO BE PROVIDED BY THE CONTRACTOR.
3. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE VILLAGE OF BYESVILLE ENGINEER AT LEAST (7) SEVEN WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL PROVIDE A VIDEO RECORD OF THE SITE TO THE VILLAGE ENGINEER PRIOR TO THE START OF CONSTRUCTION. EMPHASIS OF THE VIDEO SHOULD BE ON EXISTING DEVELOPED AREAS CONTIGUOUS WITH THE PROJECT WORK AREAS.
5. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AN UP-TO-DATE COPY OF THE APPROVED PLANS. FOR ACCEPTANCE OF WORK, THE VILLAGE REQUIRES A SIGNED COMPLETE SET OF ALL APPROVED PLANS.
6. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND GOVERNMENT FEES, LICENSES, AND INSPECTIONS FOR THE PROPER EXECUTION OF THE IMPROVEMENTS SHOWN ON THE PLANS.
7. ALL PERTINENT STANDARD CONSTRUCTION DRAWINGS ARE AVAILABLE UPON REQUEST AT THE OFFICE OF THE VILLAGE ENGINEER.
8. APPROVAL OF THESE PLANS SHALL BE IN ACCORDANCE WITH THE VILLAGE OF BYESVILLE.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND VERIFY THE EXTENT OF WORK TO BE PERFORMED PRIOR TO MAKING THEIR BID. THIS IS ESPECIALLY TRUE WITH REGARD TO ANY REMOVAL ITEMS.
10. THE CONTRACTOR AND SUBCONTRACTOR SHALL ALSO ABIDE BY ALL ORDINANCES OF THE VILLAGE OF BYESVILLE.
11. THE CONTRACTOR IS SPECIFICALLY THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE.
12. ALL FIELD TILE BROKEN DURING EXCAVATION SHALL BE REPLACED TO ORIGINAL CONDITION OR CONNECTED TO THE CURB SUBDRAIN OR TO THE STORM SEWER SYSTEM AS DIRECTED BY THE ENGINEER.
13. INGRESS AND EGRESS SHALL BE MAINTAINED TO PUBLIC AND PRIVATE PROPERTY.
14. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY AND ALL EXISTING WORK DAMAGED DURING OR DUE TO THE EXECUTION OF THIS CONTRACT AT THEIR OWN EXPENSE. SAID WORK TO BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER'S ENGINEER AND THE VILLAGE OF BYESVILLE.
15. ALL SIGNS, FENCES, SHRUBS, DRAINAGE STRUCTURES, OR OTHER PHYSICAL FEATURES THAT ARE TO REMAIN INTACT WHICH ARE DISTURBED OR DAMAGED DURING WORK UNDER THE CONTRACT SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR UNLESS OTHERWISE PROVIDED IN THE CONTRACT. THE COST OF ALL SUCH WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS SANITARY SEWER ITEMS.
16. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS TO ORIGINAL CONDITION AS NEAR AS PRACTICABLE UPON COMPLETION OF THIS WORK. ANY DAMAGE TO OTHER UTILITIES DURING THIS WORK BY THE SUBCONTRACTOR SHALL BE REPAIRED BY THE APPROPRIATE UTILITY OWNER AT THE CONTRACTOR'S EXPENSE.
17. CARE SHALL BE EXERCISED WHEN WORKING THE AREA AROUND EXISTING TREES AND SHRUBS. TREES MAY BE REMOVED WITHIN THE PERMANENT AND TEMPORARY EASEMENTS ONLY. EFFORTS SHALL BE MADE TO PRESERVE TREES 24-INCHES CALIPER OR LARGER. NO TREES SHALL BE DAMAGED OR DISTURBED OUTSIDE OF THE EASEMENTS OR WHERE MARKED ON THE PLANS AS "DO NOT DISTURB".
18. THE COST OF DEWATERING OR ROCK EXCAVATION SHALL BE INCLUDED IN THE PRICE BID FOR SANITARY PIPE. THE BIDDER SHALL DETERMINE IF ANY DEWATERING OR ROCK EXCAVATION WILL BE REQUIRED AND ADJUST THEIR BIDS ACCORDINGLY.
19. THE FLOW IN ALL SEWERS, DRAINS, AND SANITARY SEWER COURSES ENCOUNTERED SHALL BE MAINTAINED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND WHENEVER SUCH VILLAGE OF BYESVILLE.
20. ALL EARTHWORK OPERATIONS, ESPECIALLY PAVEMENT SUBGRADE CONSTRUCTION, SHALL BE INSPECTED BY A REGISTERED SOILS ENGINEER EMPLOYED AND PAID FOR BY THE OWNER. ADDITIONALLY ALL FINAL GRADES SHALL BE FIELD CHECKED BY THE CONSTRUCTION MANAGER UPON COMPLETION OF THE CONTRACTOR'S OPERATIONS TO DETERMINE IF THE SITE HAS BEEN CONSTRUCTED TO THE GRADES INDICATED.
21. ALL ITEMS CALLED FOR ON THE PLANS FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED SHALL BE PERFORMED BY THE CONTRACTOR AND THE COST OF SAME AND SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS.
22. EROSION CONTROL MEASURES ARE TO BE INSTALLED PER PLAN OR AS SUCH DIRECTED BY THE VILLAGE AND ARE TO BE MAINTAINED UNTIL SUCH TIME THAT THEY ARE NO LONGER REQUIRED.
23. ALL AREAS IN THE RIGHT-OF-WAY ARE TO BE GRADED AND SEEDED AS SOON AS WORK IN THAT AREA IS COMPLETE.
24. THE CONTRACTOR IS RESPONSIBLE FOR THE PROVISION AND MAINTENANCE OF A PORTABLE TOILET ON THE SITE DURING ALL PHASES OF CONSTRUCTION.
25. THE CONTRACTOR AND/OR DEVELOPER IS RESPONSIBLE FOR ALL COMPACTION AS WELL AS ASPHALT AND CONCRETE TESTING. TESTING IS TO BE PERFORMED BY A REGISTERED CONTRACTOR AS SPECIFIED BY THE VILLAGE ENGINEER.
26. THE VILLAGE ENGINEER RESERVES THE RIGHT TO DIRECT PROJECT SPECIFIC CHANGES TO ANY CITY CONSTRUCTION NOTE AND SPECIFICATION.
27. NO CONSTRUCTION TRAFFIC IS PERMITTED ON STREETS ACCESSING NEIGHBORHOOD SUBDIVISIONS. NO TRACKED EQUIPMENT IS PERMITTED ON EXISTING STREET PAVEMENT.
28. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL OTHER FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. THE CONTRACTOR AND SUBCONTRACTORS SHALL INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS ASSOCIATED WITH THIS WORK.
29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL PERMITS NECESSARY TO PERFORM ALL WORK WITHIN AND/OR ADJACENT TO THE RIGHT-OF-WAY OF ALL ROADS AND HIGHWAYS. ALL FEES, BONDS, INSURANCE, AND OTHER COSTS REQUIRED BY THE OWNER OF SAID ROADS AND HIGHWAYS SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE PRICE BID FOR THE WORK.
30. THE CONTRACTOR SHALL PROVIDE THE VILLAGE ENGINEER AND GUERNSEY COUNTY ENGINEER WITH A 24 HOUR TELEPHONE NUMBER TO READILY CONTACT A RESPONSIBLE PARTY IN THE CASE OF AN EMERGENCY. THE COST AND/OR DAMAGES INCURRED RELATED TO WORK PERFORMED BY THE CONTRACTOR IN SUCH EMERGENCIES ARE THE CONTRACTORS RESPONSIBILITY AND NOT THE AFFECTED ENTITY.
31. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR BY REASON OF COMPLIANCE WITH ANY OF THE REQUIREMENTS INDICATED IN THE PLANS, BUT PAYMENT SHALL BE DEEMED TO BE INCLUDED AMONG THE SEVERAL ITEMS, AS BID UPON, UNLESS OTHERWISE SPECIFICALLY PROVIDED.
32. IN ADDITION TO THE DIRECT REQUIREMENTS OF THE CONTRACT SPECIFICATIONS, THE CONTRACTOR SHALL OBSERVE AND CONFORM TO THE SPECIFIC REQUIREMENTS OF ALL RIGHT-OF-WAYS INCLUDING EASEMENTS, COURT ENTRIES, RIGHTS OF ENTRY, OR ACTION FILED IN COURT IN ACCORDANCE WITH THE CODE OF THE APPLICABLE GOVERNING AGENCY. THE COST OF OPERATIONS NECESSARY TO FULFILL SUCH REQUIREMENTS SHALL BE INCLUDED IN THE TOTAL CONTRACT PRICE BID.

33. THE DESIGN SHOWN ON THESE DRAWINGS IS BASED UPON A FIELD SURVEY AND EXISTING RECORDS.
34. PRIOR TO THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL TAKE PHOTOGRAPHS AND VIDEO OF THE PROJECT SITE PER THE SPECIFICATIONS. A DIGITAL COPY OF ALL MEDIA SHALL BE SUBMITTED TO THE VILLAGE ENGINEER FOR REVIEW AND APPROVAL. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR PRE-CONSTRUCTION VIDEOTAPING.
35. ALL CONSTRUCTION STAKING SHALL BE PROVIDED BY THE CONTRACTOR. THIS WILL CONSIST OF ALIGNMENT AND GRADE STAKES SET AND MARKED IN THE FIELD. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY REPLACEMENT STAKES NECESSARY, REMOVED OR DESTROYED BY THEIR PERSONNEL OR EQUIPMENT.
36. THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS THROUGHOUT THE PROJECT AND SHALL BRING THE CURRENT SET OF AS-BUILT DRAWINGS TO EACH PROGRESS MEETING FOR REVIEW.
37. THE WORK OF THIS CONTRACT SHALL NOT INTERFERE WITH MAINTAINING CONTINUOUS FLOW IN THE EXISTING SANITARY SEWER, STORM SEWER, WATERLINES, POWER, TELEPHONE, CABLE TV, GAS, OR ANY OTHER SYSTEM THAT MAY BE ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL UTILITY POLES AND RELOCATE ANY UTILITY THAT IMPEDES CONSTRUCTION. NOTHING SHALL BE DONE BY ANY OTHER CONTRACTOR FOR THIS PROJECT WHICH WILL IN ANY WAY REDUCE THE QUALITY OR QUANTITY LEVEL OF SUCH OPERATIONS. THE CONTRACTOR SHALL NOTIFY THE OWNER (1) ONE WEEK PRIOR TO MODIFYING ANY FACILITIES. NO PAYMENT WILL BE MADE FOR ANY UTILITY MAINTENANCE UNLESS SPECIFICALLY NOTED AS A BID ITEM IN THE PROPOSAL. FAILURE TO PROPERLY MAINTAIN UTILITIES WILL RESULT IN THE REDUCTION OF THE PROPOSAL ITEM FOR UTILITY MAINTENANCE.
38. AT ALL UTILITY CROSSINGS, THE BACKFILL SHALL CONSIST OF COMPACTED GRANULAR MATERIAL BETWEEN THE DEEPER AND SHALLOWER PIPE UNLESS CONTROLLED DENSITY FILL OR CONCRETE IS SPECIFIED OTHERWISE IN THE DRAWINGS.
39. MANHOLES SHALL BE INSTALLED WITH ADJUSTING RINGS SO THAT THE TOP OF THE CASTING IS AT EXISTING GRADE. THE CASTING SHALL NOT PROTRUDE SO AS TO INTERFERE WITH MOWING.
40. BACKFILL: EARTH WILL NOT BE MOUNDED OVER THE TRENCH IN ANTICIPATION OF SETTLEMENT. THE CONTRACTOR SHALL COMPACT THE TRENCH AND ESTABLISH THE ORIGINAL DITCH GRADE AS WORK PROGRESSES. DRAINAGE MUST BE RESTORED AS QUICKLY AS PRACTICAL. IF EROSION OF THE DITCH LINE CAUSES SILTING OF EXISTING DRAINAGE LINES, THE CONTRACTOR SHALL CLEAN AS NECESSARY. BACKFILL AND CLEANUP OPERATIONS SHALL BE KEPT WITHIN 300 FEET OF PIPE LAYING OPERATIONS DAILY. CARE SHALL BE TAKEN TO INSURE THAT NO DITCH LINE ELEVATIONS ARE RAISED DUE TO EXCESS BACKFILL. COMPACTION IS TO BE CARRIED OUT WITH THE NECESSARY EQUIPMENT TO ACHIEVE THE COMPACTION REQUIREMENT OF ODOT CMS ITEM 304.05. THE CONTRACTOR SHALL MAINTAIN DRIVEWAYS ACCESSIBLE AT ALL TIMES BY USING PLATES OR COMPACTED GRANULAR FILL.
41. ROAD MAINTENANCE AREA: UNLESS PREEXISTING BEFORE CONSTRUCTION OPERATIONS, THE SURFACE WITHIN A MINIMUM OF 5 FEET FROM THE EDGE OF PAVEMENT SHALL BE MAINTAINED OBSTACLE FREE, BY THE CONTRACTOR, FOR POSITIVE DRAINAGE AND/OR SNOW PLOW/MAINTENANCE OF ROAD PAVEMENT.
42. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.
43. DISTURBANCE TO THIS SITE IS COVERED BY OEPA GENERAL PERMIT OHC000005 AND THE NPDES PERMIT.

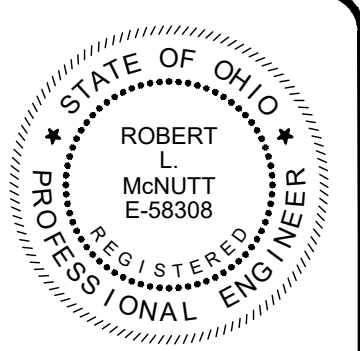
PRESERVATION NOTES:

1. ALL DRAIN TILE, FIELD TILE, AND STORM SEWERS DAMAGED, DISTURBED, OR REMOVED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH THE SAME QUALITY OR BETTER, MAINTAINING THE SAME GRADIENT AS EXISTING. REPLACED DRAIN TILE SHALL BE LAID PER THE STORM SEWER DETAIL. COST TO BE INCLUDED IN THE PRICE BID FOR THE VARIOUS UNIT PRICE BID ITEMS. ALL NECESSARY REPLACEMENT OF EXISTING PIPES IS TO BE PERFORMED AS SOON AS POSSIBLE. PRIOR TO BACKFILLING THE TRENCH.
2. CULVERTS, END SECTIONS, AND HEADWALLS DISTURBED OR DESTROYED DURING THE PERFORMANCE OF THE WORK SHALL BE RESTORED BY THE CONTRACTOR TO THE LOCATIONS AND GRADES EXISTING PRIOR TO CONSTRUCTION. THE COST OF THIS RESTORATION SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE RELEVANT ITEMS OF THE WORK.
3. THE CONTRACTOR SHALL CAREFULLY PRESERVE BENCHMARKS, PROPERTY CORNERS, AND REFERENCE POINTS AND IN CASE OF WILLFUL OR CARELESS DESTRUCTION, THEY SHALL BE RESPONSIBLE FOR ANY MISTAKES THAT MAY BE CAUSED BY UNNECESSARY LOSS OR DISTURBANCE. THE CONTRACTOR SHALL ALSO RESTORE ALL DISTURBED AREAS, FENCES, AND DITCHES TO THEIR ORIGINAL CONDITION.
4. ANY PROPERTY CORNERS, PERMANENT SURVEY MARKERS, OR MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REESTABLISHED BY THE CONTRACTOR USING A SURVEYOR REGISTERED BY THE OHIO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THROUGH GUERNSEY COUNTY ENGINEER'S OFFICE. COST TO BE INCLUDED IN THE PRICE BID FOR THE VARIOUS UNIT PRICE BID ITEMS. ALL CONSTRUCTION STAKING WILL BE PROVIDED BY THE CONTRACTOR. THIS WILL CONSIST OF ALIGNMENT AND GRADE STAKES SET AND MARKED IN THE FIELD. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY REPLACEMENT STAKES NECESSARY, REMOVED, OR DESTROYED BY THEIR PERSONNEL OR EQUIPMENT.
5. ALL SIGNS, FENCES, SHRUBS, DRAINAGE STRUCTURES, OR OTHER PHYSICAL FEATURES DISTURBED OR DAMAGED DURING THE WORK UNDER THIS CONTRACT SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR, OR REPLACED IN LIKE KIND AND QUALITY UNLESS OTHERWISE NOTED ON THE PLANS. EXISTING GRATES SHALL BE SALVAGED AND EXISTING CATCH BASINS OR INLETS SHALL BE REBUILT IN KIND MATERIAL. ALL EXISTING DRAINAGE DITCHES SHALL BE RESTORED TO EXISTING CONDITIONS AND GRADE. IF GUARDRAIL IS DISTURBED, THE CONTRACTOR SHALL PROVIDE NEW POSTS IN ACCORDANCE WITH THE CURRENT ODOT CMS ITEM 606.02, UNLESS OTHERWISE PROVIDED IN THE CONTRACT. THE COST OF ALL SUCH WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS UNIT PRICE BID ITEMS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING MAIL SERVICE IN THE CONSTRUCTION AREA. PRIOR TO DISTURBING ANY MAILBOXES, THE CONTRACTOR SHALL CONTACT THE POSTAL AUTHORITIES AND SHALL TEMPORARILY RELOCATE MAILBOXES WITH THE REQUIREMENTS THEREOF. THE CONTRACTOR SHALL RESTORE MAILBOXES TO THEIR ORIGINAL CONDITION AND LOCATION SUBSEQUENT TO CONSTRUCTION.
7. THE CONTRACTOR SHALL RESTRICT CONSTRUCTION ACTIVITY TO PUBLIC RIGHT-OF-WAY AND THOSE AREAS DEFINED AS TEMPORARY CONSTRUCTION EASEMENTS, PERMANENT UTILITY EASEMENTS, AND ACCESS EASEMENTS, PER WORK AGREEMENT. FOLLOWING THE CONSTRUCTION ACTIVITIES IMPACTING ANY OF THE R/W, THE R/W SHALL BE RESTORED BACK TO MATCH THE ORIGINAL CONDITION.
8. THE LENGTH OF THE TRENCH OPENED, OR THE AREA OF THE SURFACE DISTURBED AT ANY TIME SHALL BE LIMITED WITH REGARD TO BOTH EXPEDITIOUS CONSTRUCTION AND CONVENIENCE OF THE PUBLIC. NEW TRENCHES SHALL NOT BE OPENED WHEN OPEN TRENCHES NEED BACKFILLING OR WHEN LABOR IS NEEDED TO RESTORE THE SURFACE OF THE STREETS TO A SAFE AND PROPER CONDITION. IN NO CASE SHALL MORE THAN 50 FEET OF TRENCH BE OPENED IN ADVANCE OF THE COMPLETED WORK. IF ATTRIBUTABLE TO THE CONTRACTOR AND THE TRENCH WILL REMAIN OPEN FOR AN UNREASONABLE LENGTH OF TIME IN ADVANCE OF INSTALLING THE POPE OR OTHER ITEMS AS DETERMINED BY THE OWNER, THEN THE CONTRACTOR SHALL REFILL THE EXCAVATION, OR ANY PART THEREOF, UNTIL THEY ARE READY TO PROCEED WITH THE CONSTRUCTION OF THE WORK. THIS SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.
9. ALL EXCAVATED MATERIAL SHALL BE WORKED IN SUCH A MANNER THAT WILL NOT ENDANGER THE WORK NOR OBSTRUCT WALKS AND DRIVEWAYS, MANHOLE COVERS, INLETS, FIRE AND POLICE CALL BOXES. OTHER UTILITIES SHALL BE UNOBSTRUCTED AND ACCESSIBLE AT ALL TIMES. GUTTERS SHALL BE KEPT CLEAR OR OTHER SATISFACTORY PROVISIONS MUST BE MADE TO KEEP THEM UNOBSTRUCTED,
10. OPEN EXCAVATIONS: ALL EXCAVATIONS SHALL BE MAINTAINED AS SAFE AS POSSIBLE BY THE CONTRACTOR AT ALL TIMES AND BACKFILLED AS SOON AS PRACTICAL. OPEN EXCAVATIONS AFTER WORK HOURS REQUIRE TRAFFIC PLATES, TEMPORARY PAVEMENT, AND/OR LIGHTED BARRICADES AND CONSTRUCTION FENCE.
11. THE TRACKING OF MUD, DIRT, OR DEBRIS, OR SPILLAGE OF THE SAME, UPON STATE ROUTES, COUNTY ROADS, TOWNSHIP ROADS, RESIDENTIAL AND COMMERCIAL DRIVES, SIDEWALKS, OR BIKE PATHS IS PROHIBITED AND ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. FAILURE TO REMOVE SAID MUD, DIRT, OR DEBRIS, OR SPILLAGE MAY RESULT IN THE OWNER PROVIDING THAT SERVICE OR WITHHOLDINGS FROM MONEYS WHICH MAY BECOME DUE TO THE CONTRACTOR.

12. INGRESS AND EGRESS SHALL BE MAINTAINED AT ALL TIMES TO PUBLIC AND PRIVATE PROPERTY.
13. ROADWAY STORM DRAINAGE: I.E. DITCHES, PIPES, CULVERTS SHALL NOT BE OBSTRUCTED DURING SEWER CONSTRUCTION. TEMPORARY EROSION AND SEDIMENTATION MEASURES PER ODOT CMS 670.02 ARE TO BE INSTALLED AND MAINTAINED BY THE CONTRACTOR TO PREVENT SILTATION OF DRAINAGE DITCHES, SEWERS, CULVERTS, ETC.
14. ALL TREES, WHETHER SHOWN OR NOT SHOWN ON THE PLANS, ARE TO BE PRESERVED UNLESS APPROVAL TO REMOVE IS GIVEN BY THE OWNER OR THEIR REMOVAL HAS BEEN DESIGNATED ON THE PLANS. THE CONTRACTOR SHALL USE SPECIAL PRECAUTIONS TO AVOID DAMAGE TO ALL OTHER TREES. WHEN REQUIRED, LIMBS SHALL BE CAREFULLY AND NEATLY PRUNED AND PAINTED WITH A SEALING COMPOUND.
15. THE CONTRACTOR IS SPECIFICALLY THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE.

SANITARY SEWER NOTES:

1. ALL SANITARY SEWER PIPE AND FITTINGS AND METHODS OF CONSTRUCTION AND WORKMANSHIP FOR SANITARY SEWER LINES AND APPURTENANCES SHOWN ON THESE PLANS SHALL CONFORM TO THE RULES AND REGULATIONS OF THE VILLAGE OF BYESVILLE, DIVISION OF WASTEWATER, CURRENT ON THE DATE OF THE CONTRACT, UNLESS THE REQUIREMENTS OF SUCH RULES AND REGULATIONS ARE UPGRADED BY THE FOLLOWING SPECIFICATIONS OR BY THE CONSTRUCTION DETAILS SET FORTH HEREIN.
2. PRIOR TO THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS NECESSARY TO COORDINATE AND PROVIDE FULL-TIME INSPECTION SERVICE BY THE CITY FOR THE PROPOSED WORK.
3. THE DESIGN OF THE SANITARY SEWER COLLECTION SYSTEM SHALL BE SUCH THAT INFLOW AND INFILTRATION OF NON-POLLUTED WATERS IS MINIMIZED.
4. MAINTAIN A MINIMUM OF 10' HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN WATERLINES AS WELL AS SANITARY AND STORM SEWERS. PIPES SHALL BE CONCRETE ENCASED WHERE THE REQUIRED SEWER-WATERLINE SEPARATION CANNOT BE MAINTAINED.
5. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER SANITARY SEWER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED ON THIS PROJECT.
6. ALL SANITARY SEWER MANHOLES MUST BE PRECAST CONCRETE AND MEET THE VILLAGE OF BYESVILLE SPECIFICATIONS.
7. MANHOLES SHALL BE SET ON A FOUNDATION OF #57 STONE. BACKFILL SHALL CONSIST OF EXCAVATED EARTH MATERIAL, FINELY DIVIDED AND FREE OF STONES 2 INCHES OR GREATER IN DIMENSION TO AT LEAST 1 FOOT ABOVE PIPE TOP.
8. SANITARY SEWER LIDS ARE TO BE EAST JORDAN TYPE 1660 (OR APPROVED EQUAL) AND EMBOSSED "SANITARY SEWER".
9. MANHOLES SHALL BE BUILT OR ADJUSTED SO THAT THE TOPS CONFORM TO THE ELEVATIONS SHOWN ON THESE PLANS. PRIOR TO AND AFTER CONSTRUCTION, THE CONTRACTOR SHALL VERIFY MANHOLE CONSTRUCTION AND TOP OF CASTING ELEVATION. MANHOLE HEIGHT ADJUSTMENTS SHALL BE BY PRECAST CONCRETE ADJUSTMENT RINGS. PRECAST CONCRETE RISER RINGS ARE TO BE USED FOR ALL FINAL ADJUSTMENT OF MANHOLES.
10. SANITARY SEWER MANHOLE TOP OF CASTING SHALL BE SET AT 1½" ABOVE FINISHED GROUND GRADE, WHEN PLACED OUTSIDE OF PAVED AREAS.
11. DISTANCE FROM TOP OF CASTING TO THE FIRST MANHOLE STEP SHALL BE 22" TO 26", PER STANDARD DRAWING AA-S102.
12. THE CONTRACTOR'S SPECIFIC ATTENTION IS DIRECTED TO THE REQUIREMENTS OF EITHER INFILTRATION OR EXFILTRATION TEST AS SPECIFIED BY THE VILLAGE OF BYESVILLE. LEAKAGE THROUGH THE JOINTS OF THE SEWER SHALL NOT EXCEED THE FOLLOWING ALLOWABLE LIMITS: 100 GALLONS PER INCH OF TRIBUTARY SEWER DIAMETER PER 24 HOURS PER MILE OF LENGTH OR THE COMPUTED EQUIVALENT FOR SHORTER LENGTHS AND SHORTER PERIODS OF TIME. ALL SANITARY SEWER AND SERVICES SHALL BE TESTED. ALL SANITARY SEWERS SHALL BE SUBJECT TO AND PASS THE INFILTRATION OR EXFILTRATION TEST PRIOR TO ACCEPTANCE. AN AIR TEST IS ACCEPTABLE TO THE VILLAGE OF BYESVILLE. THIS AIR TEST SHALL FOLLOW STANDARD ITEM 901.20.
13. THE MINIMUM REQUIREMENTS FOR SANITARY SEWER PIPE SHALL BE SDR 25 OR ASTM D3034 POLYVINYL CHLORIDE (PVC) SEWER PIPE WITH AN ASTM D1784 CELL CLASSIFICATION OF 12454 B OR 12454 C, UNLESS OTHERWISE SHOWN ON THESE PLANS.
14. ALL PVC PIPE SHALL BE DEFLECTION TESTED 30 DAYS OR MORE AFTER THE TRENCH HAS BEEN BACKFILLED TO FINISHED GRADE. A RIGID MANDREL SHALL BE USED FOR THE TESTING. NO MECHANICAL PULLING DEVICES SHALL BE USED. PIPE DEFLECTION SHALL NOT EXCEED 5". PIPE EXCEEDING THE ALLOWABLE DEFLECTION SHALL BE LOCATED, EXCAVATED, REPLACED AND RETESTED AT THE SOLE EXPENSE OF THE CONTRACTOR. VILLAGE ENGINEER OR HIS REPRESENTATIVE MUST WITNESS TEST.
15. PIPE BEDDING TO BE CRUSHED # 57 AGGREGATE. ALL PIPES SHALL BE LAID WITH STONE OR GRAVEL BACKING AS SHOWN IN THE DETAILS.
16. ALL SANITARY SEWER PIPE TRENCHES SHALL BE IN ACCORDANCE WITH STANDARD DRAWINGS (SEWER PIPE INSTALLATION).
17. WHERE THE SANITARY AND STORM SEWER CROSS, THE TRENCH SHALL BE BACKFILLED TO THE BOTTOM OF THE PROPOSED STORM SEWER AND SANITARY LINE WITH COMPACTED GRANULAR MATERIAL, ITEM 304, 10 LINEAR FEET CENTERED ON THE STORM SEWER OR SANITARY SEWER LINE. THE COST OF THIS WORK IS TO BE INCLUDED IN THE BID PRICE FOR THE VARIOUS SEWER ITEMS.
18. 6 FOOT LONG CLAY DAMS ARE TO BE INSTALLED ON SANITARY SEWER PIPES AT MAXIMUM INTERVALS OF 150 FEET AND WITH A MINIMUM ONE DAM BETWEEN EACH PAIR OF MANHOLES. COST TO BE INCLUDED WITH VARIOUS SEWER ITEMS.
19. SEWER TRENCHES ARE TO BE DEWATERED TO 2" BELOW THE BELL OF PIPE PRIOR TO INSTALLATION.
20. TEMPORARY MECHANICAL BULKHEADS SHALL BE PLACED AT THE DOWNSTREAM CONNECTION POINT, AND SHALL REMAIN IN PLACE UNTIL REMOVAL IS DIRECTED BY THE VILLAGE ENGINEER.
21. ALL SANITARY LINES SHALL BE CLEANED OF DEBRIS (LEAVES, DIRT, STONE, ECT.) PRIOR TO THE VILLAGE TAKING OWNERSHIP.
22. ALL SANITARY TRUNK LINES ARE TO BE CAMERA/VIDEO TAPED PRIOR TO THE VILLAGE OF BYESVILLE'S FINAL ACCEPTANCE. A DIGITAL COPY OF THE MEDIA, WITH A SUMMARY REPORT IS TO BE PROVIDED TO THE VILLAGE ENGINEER.



ISSUED FOR:	REVIEW	NO	REVISION	DATE
ISSUE DATE:	8/29/25			
SCALE:	AS NOTED			
DESIGNED BY:	RLM			
DRAWN BY:	BLM			
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VILLAGE OF BYESVILLE S.R. 821 SANITARY SEWER IMPROVEMENTS PHASE I - ROLLING HILLS WWTP ABANDONEMENT GUERNSEY COUNTY, OHIO	GENERAL - 00 SERIES GENERAL NOTES
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PROJECT NO. 241455	
DISCIPLINE GENERAL	
SHEET NAME 00G-04	
SHEET 4	OF 24

EXISTING PLAN LINE SYMBOLOGY:

	FENCE, GENERAL
	FENCE, BARBED WIRE
	FENCE, CHAIN LINK
	FENCE, DECORATIVE
	FENCE, ELECTRIC
	FENCE, VINYL
	FENCE, WOOD
	FENCE, WOVEN WIRE
	CABLE RAIL
	GUARDRAIL
	HANDRAIL
	TELEPHONE, ABANDONED
	TELEPHONE
	TELEPHONE, OH
	TELEPHONE, UG
	TELEPHONE, SERVICE
	TELEPHONE, SERVICE OH
	TELEPHONE, SERVICE, UG
	ELECTRIC, ABANDONED
	ELECTRIC, DUCT BANK
	ELECTRIC
	ELECTRIC, OH
	ELECTRIC, UG
	ELECTRIC, SERVICE
	ELECTRIC, SERVICE OH
	ELECTRIC, SERVICE, UG
	GAS, ABANDONED
	GAS
	GAS, SERVICE
	SANITARY, ABANDONED
	SANITARY SEWER
	SANITARY SEWER / PLUG
	SANITARY LEACH LINE
	SANITARY SEWER, (> 8')
	SANITARY SEWER, SERVICE
	UTILITY TO BE REMOVED
	STORM CULVERT
	TELEPHONE, ABANDONED
	TELEPHONE
	TELEPHONE, OH
	TELEPHONE, UG
	TELEPHONE, SERVICE
	TELEPHONE, SERVICE OH
	TELEPHONE, SERVICE, UG
	COMMUNICATION LINE
	WATER LINE, ABANDONED
	WATER LINE
	WATER LINE, SERVICE
	NON-POTABLE WATER LINE
	ALUM SOLUTION LINE
	CHLORINE SOLUTION LINE
	SULFUR DIOXIDE SOLUTION LINE
	BRUSH LINE
	BUSH LINE
	TREE LINE
	MAJOR CONTOUR
	MINOR CONTOUR
	TOP OF BANK
	TOP OF DITCH
	BOTTOM OF DITCH
	STREAM
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	RIGHT-OF-WAY C/L
	SURVEY STATIONING
	PAVED ROADWAY
	GRAVEL DRIVEWAY
	CURB FACE
	CURB BACK
	CURB BACK
	WETLAND AREA
	ABANDON IN PLACE

EXISTING PLAN SYMBOLOGY:

	SANITARY MANHOLE
	SANITARY CLEANOUT
	SANITARY LINE CAP
	SANITARY LINE PAINT MARKING
	SANITARY STRUCTURE NUMBER
	SANITARY VENT PIPE
	STORM MANHOLE (SOLID LID)
	STORM MANHOLE (OPEN GRATE)
	CURB INLET
	CURB INLET (DOUBLE)
	CATCH BASIN
	CATCH BASIN (ROUND LID)
	CATCH BASIN (DOME)
	CATCH BASIN (SIDE INLET)
	DRAIN
	DOWNSPOUT
	STORM CLEANOUT
	STORM LINE CAP
	STORM ENDWALL
	STORM HEADWALL
	STORM LINE PAINT MARKING
	STORM STRUCTURE NUMBER
	ROCK CHANNEL PROTECTION
	SURFACE DRAINAGE FLOW
	STORM FLOOD ROUTING ARROW
	FIRE HYDRANT
	WATER SIAMESE CONNECTION
	WATER VALVE
	WATER VALVE BOX
	WATER METER
	WATER METER PIT
	WATER LINE REDUCER
	WATER LINE CAP
	WATER LINE PLUG
	WATER LINE PAINT MARKING
	POST INDICATOR VALVE
	WATER MANHOLE
	WATER FLUSHING ASSEMBLY
	WATER FIXTURE
	WATER FITTING (TEE)
	WATER FITTING (CROSS)
	WATER FITTING (45° WYE)
	WATER FITTING (11.25°)
	WATER FITTING (22.50°)
	WATER FITTING (45°)
	WATER FITTING (90°)
	IRRIGATION SPRINKLER HEAD
	IRRIGATION CONTROL BOX
	IRRIGATION BOX
	STEAM MANHOLE
	STEAM VENT
	COMBINED SEWER MANHOLE
	GAS LIGHT POST (YARD)
	GAS MANHOLE
	GAS VALVE
	GAS VALVE BOX
	GAS METER
	GAS REGULATOR
	GAS VENT PIPE
	GAS LINE PAINT MARKING
	GAS LINE FIXTURE
	ELECTRIC LIGHT POST (YARD)
	ELECTRIC MANHOLE
	ELECTRIC PULL BOX
	ELECTRIC CONTROL BOX
	ELECTRIC JUNCTION BOX
	ELECTRIC VAULT BOX
	ELECTRIC METER
	ELECTRIC PEDESTAL
	ELECTRIC RISER BOX
	ELECTRIC TRANSFORMER
	ELECTRIC HVAC UNIT
	ELECTRIC GROUND LIGHT
	ELECTRIC LINE PAINT MARKING
	CABLE TV MANHOLE
	CABLE TV PEDESTAL
	CABLE TV PAINT MARKING
	TELEPHONE MANHOLE
	TELEPHONE PULL BOX
	TELEPHONE PEDESTAL
	TELEPHONE RISER BOX
	TELEPHONE LINE PAINT MARKING
	TELEPHONE PAY PHONE
	FIBER OPTIC CABLE MANHOLE
	FIBER OPTIC CABLE PAINT MARKING
	TRAFFIC CONTROL MANHOLE
	TRAFFIC CONTROL BOX
	TRAFFIC CONTROL PAINT MARKING
	TRAFFIC PULL BOX
	TRAFFIC SIGNAL PEDESTAL
	UNKNOWN, PULL BOX
	UNKNOWN, CLEANOUT
	UNKNOWN, MANHOLE
	UNKNOWN, VALVE
	MONITORING WELL
	TEST WELL
	WATER WELL
	SOIL BORING
	SWAMP
	POLE, ELECTRIC
	POLE, TELEPHONE
	POLE, LIGHT
	POLE, LIGHT, DECORATIVE
	POLE, LIGHT-OVERHEAD
	POLE, CABLE TV
	POLE, UTILITY
	POLE, GENERAL
	POLE, TRAFFIC CONTROL
	POLE, GUY
	POLE, BRACE
	POLE, ELECTRIC/TELEPHONE
	POLE, ELECTRIC w/ LIGHT
	POLE, ELECTRIC/CABLE TV
	POLE, ELECTRIC/TELEPHONE/ LIGHT
	POLE, ELEC./TELE./LIGHT/CABLE TV
	POLE, TELEPHONE/ LIGHT
	POLE, TELEPHONE/CABLE TV
	POLE, TELEPHONE/ LIGHT/CABLE TV
	POLE, CABLE TV w/ LIGHT
	POLE, GUY WIRE
	SIGN
	SIGN, DOUBLE SIDED
	SIGN, DUAL POST
	SIGN, RAILROAD
	POST
	BOLLARD
	DELINEATOR POST
	PARKING BUMPER BLOCK
	HANDICAP PARKING SYMBOL
	HANDICAP PARKING SYMBOL
	HANDICAP DETECTABLE WARNING
	MAIL BOX

	PAPERBOX
	PARKING METER
	GRAVE HEADSTONE
	EX. BARBEQUE GRILL
	FUEL PUMP
	FLAG POLE
	RAISED PAVEMENT MARKER
	GUARDRAIL, CENTER POST
	GUARDRAIL, BOTTOM POST
	GUARDRAIL, TOP POST
	FENCE POST
	PICNIC TABLE
	BENCH
	DECIDUOUS TREE
	EVERGREEN TREE
	STUMP
	BUSH
	IRON PIN FOUND
	SOLID IRON PIN FOUND
	IRON PIPE FOUND
	DRILL HOLE FOUND
	CHISELED "X" FOUND
	MONUMENT BOX FOUND
	MONUMENT CONCRETE FOUND
	MONUMENT RIGHT-OF-WAY FOUND
	PK NAIL FOUND
	MAG NAIL FOUND
	SPIKE FOUND
	HUB FOUND
	AXLE FOUND
	WOOD POST FOUND
	CORNER STONE FOUND
	AERIAL TARGET FOUND
	GPS CONTROL FOUND
	BENCHMARK FOUND

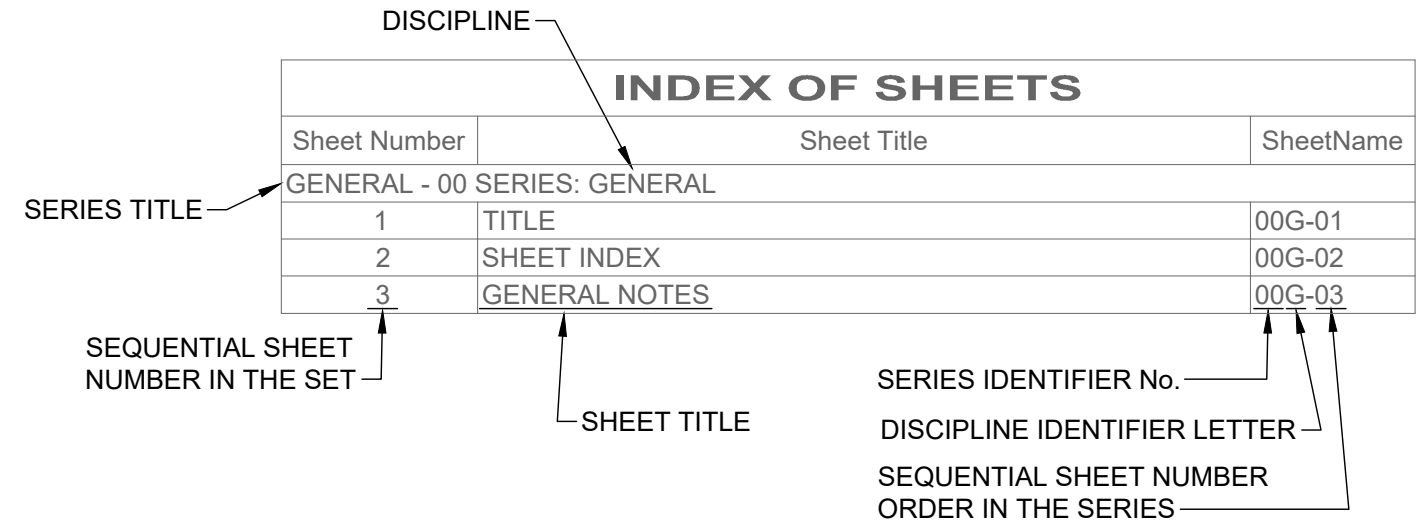
SERIES INFORMATION:

GENERAL - 00 SERIES
PLAN & PROFILE - PP SERIES
LIFT STATION - 10 SERIES
STANDARD DETAILS - SD SERIES
EROSION CONTROL - EC SERIES

DISCIPLINE INFORMATION:

IDENTIFIER:	DISCIPLINE:
G	GENERAL
C	CIVIL
S	STRUCTURAL
A	ARCHITECTURAL
D	PROCESS
M	MECHANICAL (PLUMBING & HVAC)
E	ELECTRICAL
Y	INSTRUMENTATION

INDEX EXPLANATION:



GENERAL SYMBOLOGY NOTES:

- THIS IS A STANDARD SHEET SHOWING COMMONLY USED SYMBOLOGY.
- ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
- SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE NEW IMPROVEMENTS SO AS TO HIGHLIGHT SPECIFIC TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
- SYMBOLOGY OR DIAGRAMMATICAL LEGENDS MAY BE SHOWN ON INDIVIDUAL SHEETS FOR SCHEDULES, DIAGRAMS, DETAILS, SCHEMATICS OR EQUIPMENT.

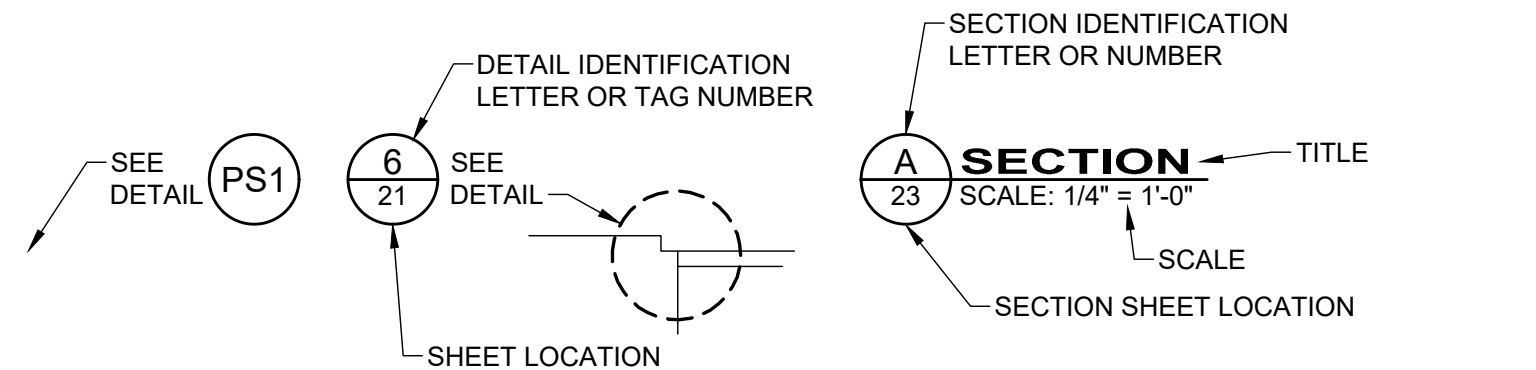
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	REVISION DESCRIPTION

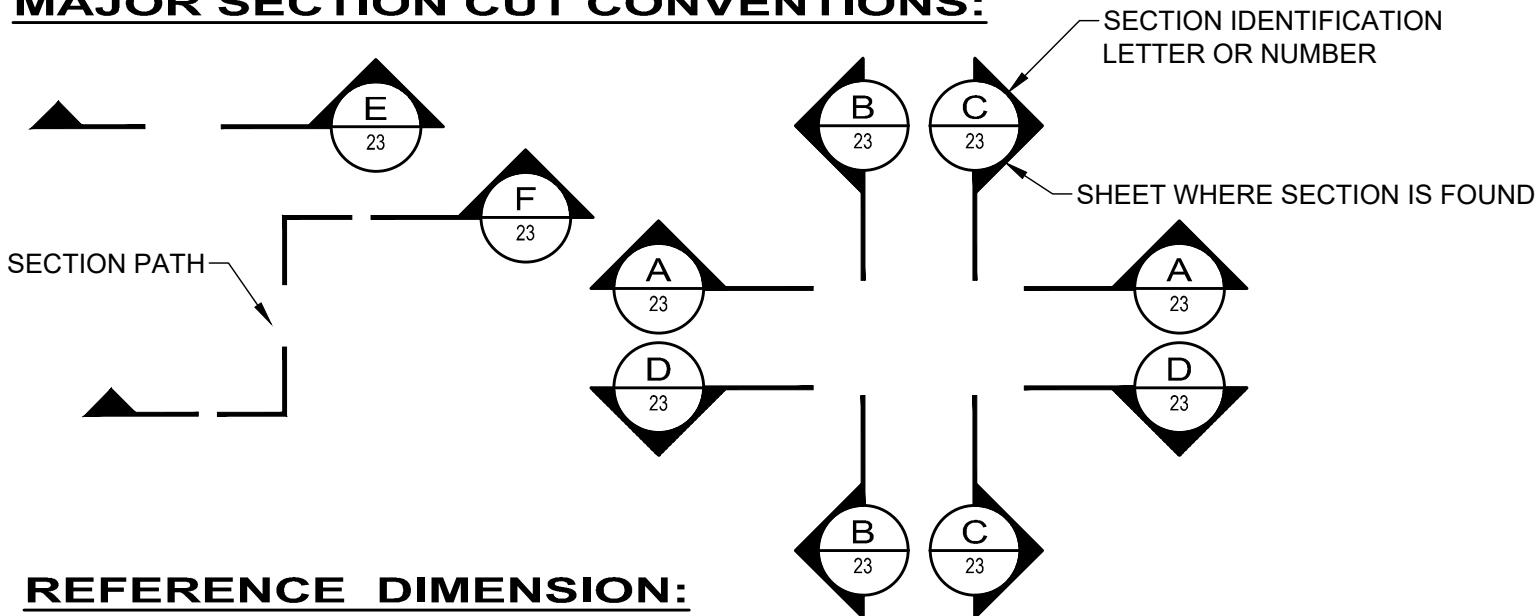
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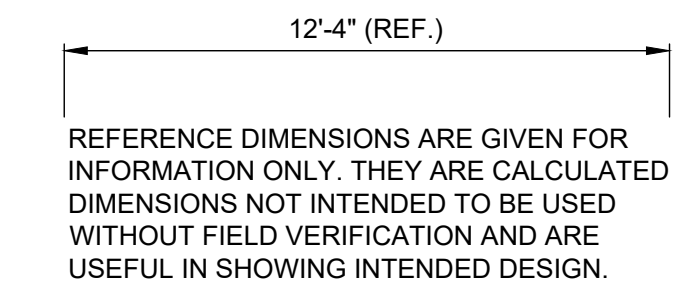
DETAIL REFERENCES:



MAJOR SECTION CUT CONVENTIONS:



REFERENCE DIMENSION:



ABBREVIATIONS

PIPE MATERIAL ID:

BR	= BRASS
BS	= BLACK STEEL
BZ	= BRONZE
CI	= GRAY CAST IRON
CU	= COPPER
CS	= CAST IRON
CT	= CARBON STEEL TUBING
DIP	= DUCTILE IRON PIPE
DR	= DIAMETER RATIO
FRP	= FIBERGLASS REINFORCED PLASTIC
GS	= GALVANIZED STEEL
HDPE	= HIGH-DENSITY POLYETHYLENE PIPE
PVC	= POLYVINYL CHLORIDE PIPE
SS	= STAINLESS STEEL
STL	= STEEL PIPE
SDR	= STANDARD DIAMETER RATIO
SCH	= SCHEDULE

OTHER:

ADD'L	= ADDITIONAL
AGG	= AGGREGATE
ALUM.	= ALUMINUM
BTWN	= BETWEEN
C/L	= CWNTERLINE
CLR	= CLEAR
CONC	= CONCRETE
CONT	= CONTINUOUS
DWL	= DOWEL(S)
EF	= EACH FACE
EL	= ELEVATION
EMBED	= EMBEDMENT
EW	= EACH WAY
FF	= FINISH FLOOR
FG	= FINISH GRADE
FND	= FOUNDATION
HORIZ	= HORIZONTAL
HP	= HIGH POINT
LP	= LOW POINT
MAX	= MAXIMUM
MFR	= MANUFACTURER
MIN	= MINIMUM
REF	= REFERENCE
REINF	= REINFORCING
STRC	= STRUCTURE
TI	= TOP OF
TYP	= TYPICAL
UNO	= UNLESS NOTED OTHERWISE
VERT	= VERTICAL

VALVE ID:

AC	= AIR CHECK VALVE
AN	= ANGLE VALVE
AR	= AIR RELEASE VALVE
AV	= AIR & VACUUM VALVE
BA	= BALL VALVE
B'FLY	= BUTTERFLY VALVE
BK	= BACKPRESSURE VALVE
BP	= BACKFLOW PREVENTER
CV	= CHECK VALVE
CO	= CONE VALVE
GV	= GATE VALVE
GL	= GLOBE VALVE
KG	= KNIFE GATE VALVE
KN	= KNIFE VALVE
MV	= MUD VALVE
PD	= PLUG DRAIN VALVE
PF	= PRESSURE RELIEF
PG	= PRESSURE REGULATOR
PI	= PINCH VALVE
PV	= PLUG VALVE
PRV	= PRESSURE REDUCING VALVE
PT	= PRESSURE TEMPERATURE RELIEF
RF	= RATE-OF-FLOW CONTROLLER
SV	= SOLENOID VALVE
SU	= SURGE VALVE
TE	= TELESOPING VALVE
TM	= TEMPERATURE CONTROL VALVE

EQUIPMENT ID:

AC	= AIR COMPRESSOR
AER	= AERATOR
B	= BLOWER
BFP	= BELT FILTER PRESS
CLS	= CLASSIFIER
C	= COMMUNITOR
CMF	= COMPACTOR
CFD	= CHEMICAL FEEDER
CNV	= CONVEYOR
CNT	= CENTRIGUGE
CC	= CALIBRATION CYLINDER
CFD	= CHEMICAL FEEDER
CP	= CONTROL PANEL
CR	= CRANE
D	= DECANTER
DR	= DRIVE
DFL	= DISC FILTER
F	= FAN
FL	= FILTER
FM	= FLOW METER
GBT	= GRAVITY BELT THICKENER
GR	= GRINDER
GEN	= GENERATOR
HB	= HOSE BIB
M	= MOTOR
MX	= MIXER
P	= PUMP
PS	= PUMP STATION
SMP	= SAMPLER
SCR	= SCREEN

GATE ABBREVIATIONS:

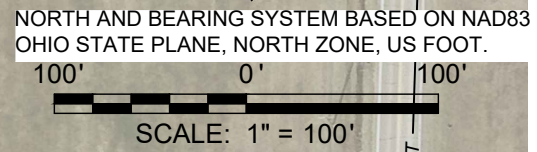
BG	- BULKHEAD GATE
SG	- SLIDE GATE
SP	- STOP PLATE
SL	- STOP LOG
ALUM	- ALUMINUM
SS	- STAINLESS STEEL
CI	- CAST IRON
POLY	- POLYMER
B/C	- BOTTOM OF CHANNEL
T/C	- TOP OF CHANNEL
A	- HEIGHT
B	- WIDTH



REVIEW	ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NO	NO	NO	NO	NO	NO	NO
REVISION	REVISION	REVISION	REVISION	REVISION	REVISION	REVISION
DATE	DATE	DATE	DATE	DATE	DATE	DATE

VILLAGE OF BYESVILLE S.R. 821 SANITARY SEWER IMPROVEMENTS PHASE I - ROLLING HILLS WWTP ABANDONEMENT GUERNSEY COUNTY, OHIO	GENERAL - 00 SERIES SYMBOLS LEGEND
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PROJECT NO.	
241455	
DISCIPLINE	
GENERAL	
SHEET NAME	
00G-05	
SHEET	OF
5	24



PROJECT NO. 241455		VILLAGE OF BYESVILLE S.R. 821 SANITARY SEWER IMPROVEMENTS PHASE I - ROLLING HILLS WWTP ABANDONEMENT GUERNSEY COUNTY, OHIO GENERAL - 00 SERIES SURVEY CONTROL 1				ISSUED FOR:	REVIEW	NO	REVISION	DATE	
DISCIPLINE GENERAL						ISSUE DATE:	8/29/25				
SHEET NAME 00G-06						SCALE:	AS NOTED				
SHEET 6						DESIGNED BY:					
OF 24		DRAWN BY:	JSD								
		CHECKED BY:	JSD								



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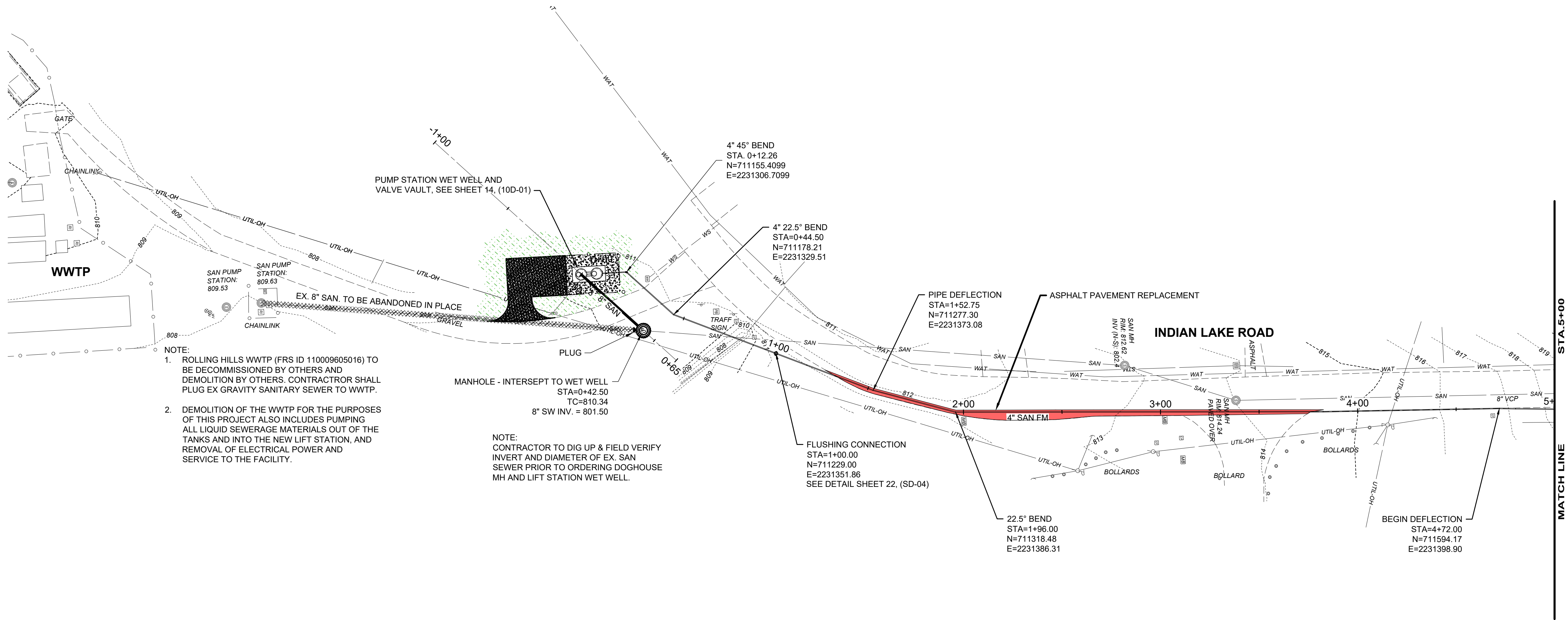
8150 STERLING COURT
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REVIEW	NO	REVISION	DATE
ISSUED FOR:			
ISSUE DATE:	8/29/25		
SCALE:	AS NOTED		
DESIGNED BY:			
DRAWN BY:	JSD		
CHECKED BY:	JSD		

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONMENT
GUERNSEY COUNTY, OHIO

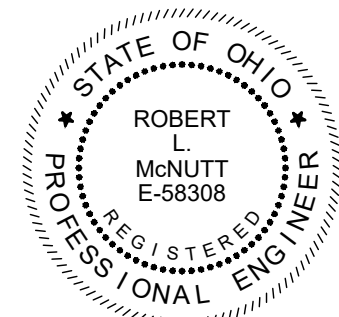
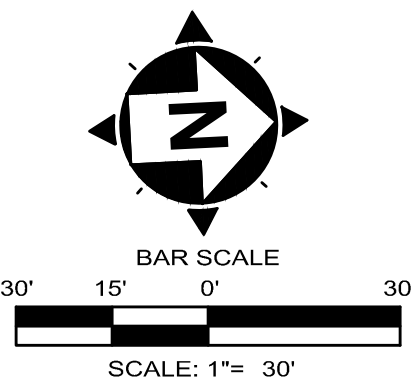
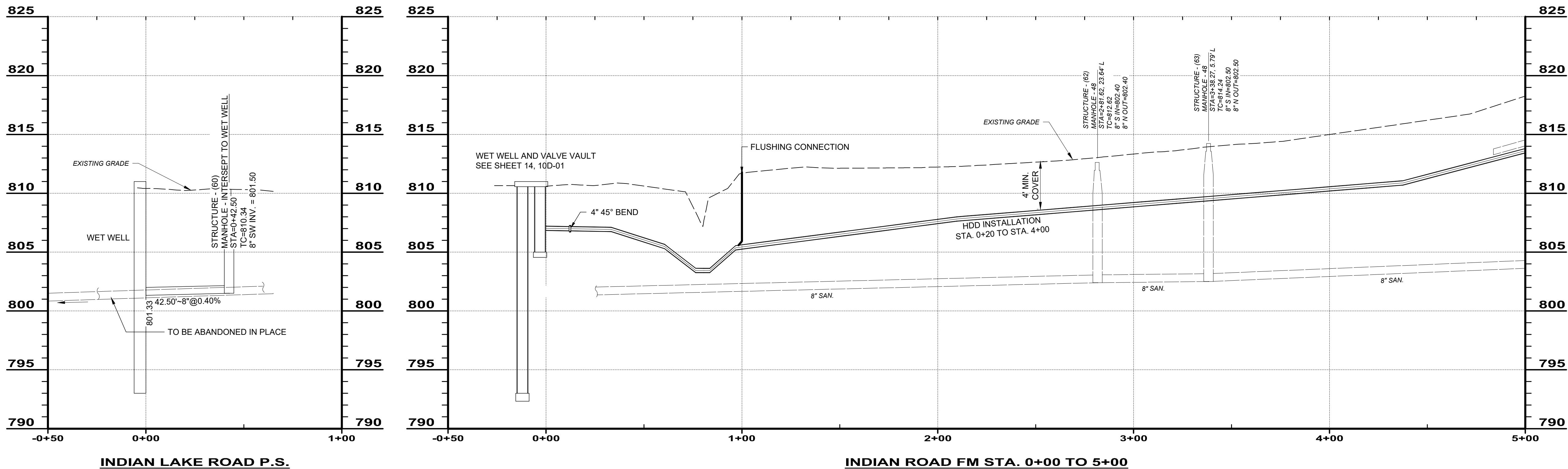
GENERAL - 00 SERIES
SURVEY CONTROL 2

PROJECT NO.	241455
DISCIPLINE	GENERAL
SHEET NAME	00G-07
SHEET	7
OF	24



- NOTE:
1. ROLLING HILLS WWTP (FRS ID 110009605016) TO BE DECOMMISSIONED BY OTHERS AND DEMOLITION BY OTHERS. CONTRACTOR SHALL PLUG EX GRAVITY SANITARY SEWER TO WWTP.
 2. DEMOLITION OF THE WWTP FOR THE PURPOSES OF THIS PROJECT ALSO INCLUDES PUMPING ALL LIQUID SEWERAGE MATERIALS OUT OF THE TANKS AND INTO THE NEW LIFT STATION, AND REMOVAL OF ELECTRICAL POWER AND SERVICE TO THE FACILITY.

NOTE:
CONTRACTOR TO DIG UP & FIELD VERIFY
INVERT AND DIAMETER OF EX. SAN
SEWER PRIOR TO ORDERING DOGHOUSE
MH AND LIFT STATION WET WELL.



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8/29/25	AS NOTED			
SCALE:	RLM			
DESIGNED BY:	RLM			
DRAWN BY:	BLM			
CHECKED BY:	RLM			

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

PLAN & PROFILES - 05 SERIES

INDIAN LAKE RD.FM. STA. 0+00 TO 5+00

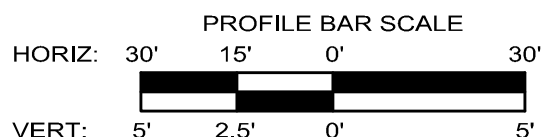
PROJECT NO.
241455

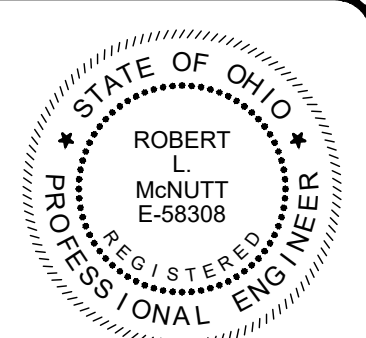
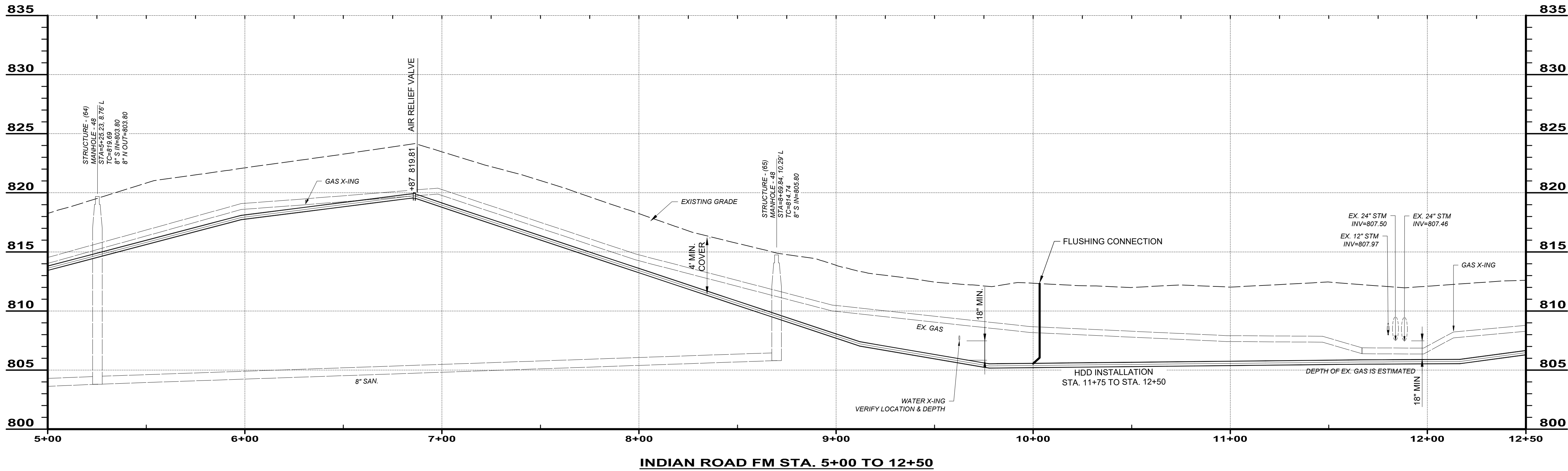
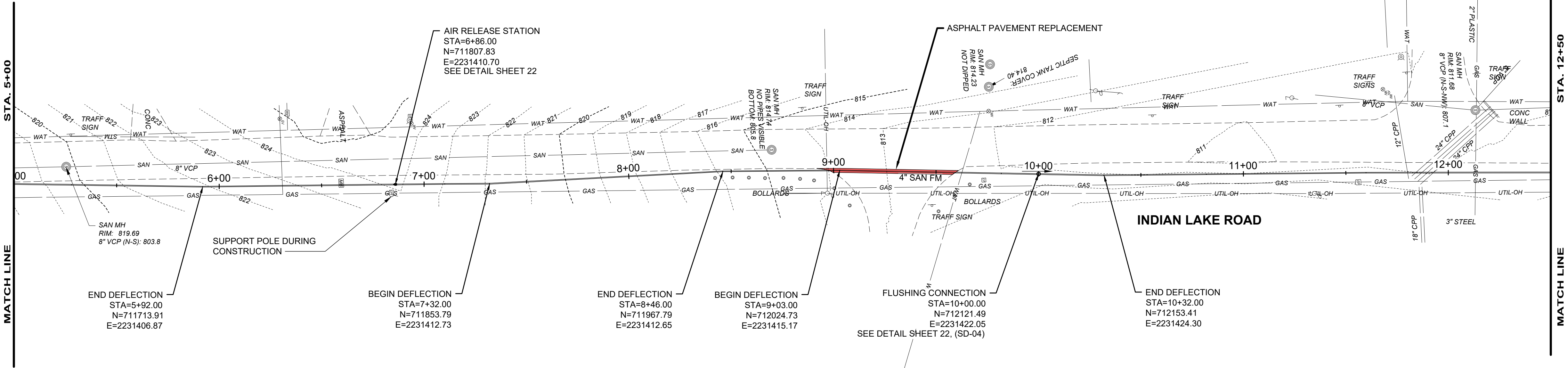
DISCIPLINE
CIVIL

SHEET NAME
05C-01

SHEET
8

OF
24





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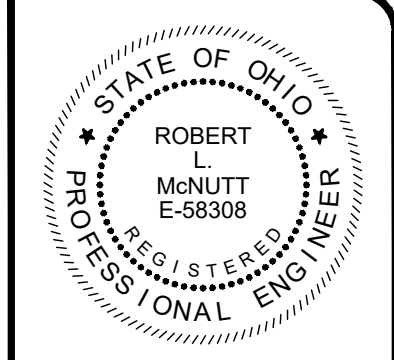
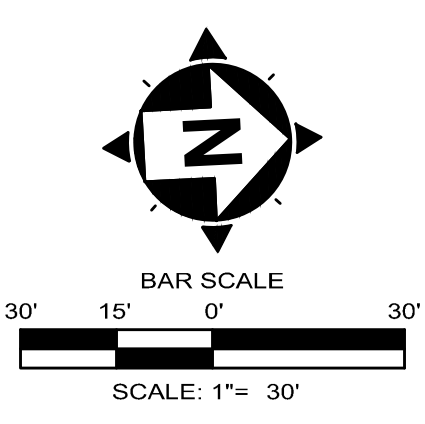
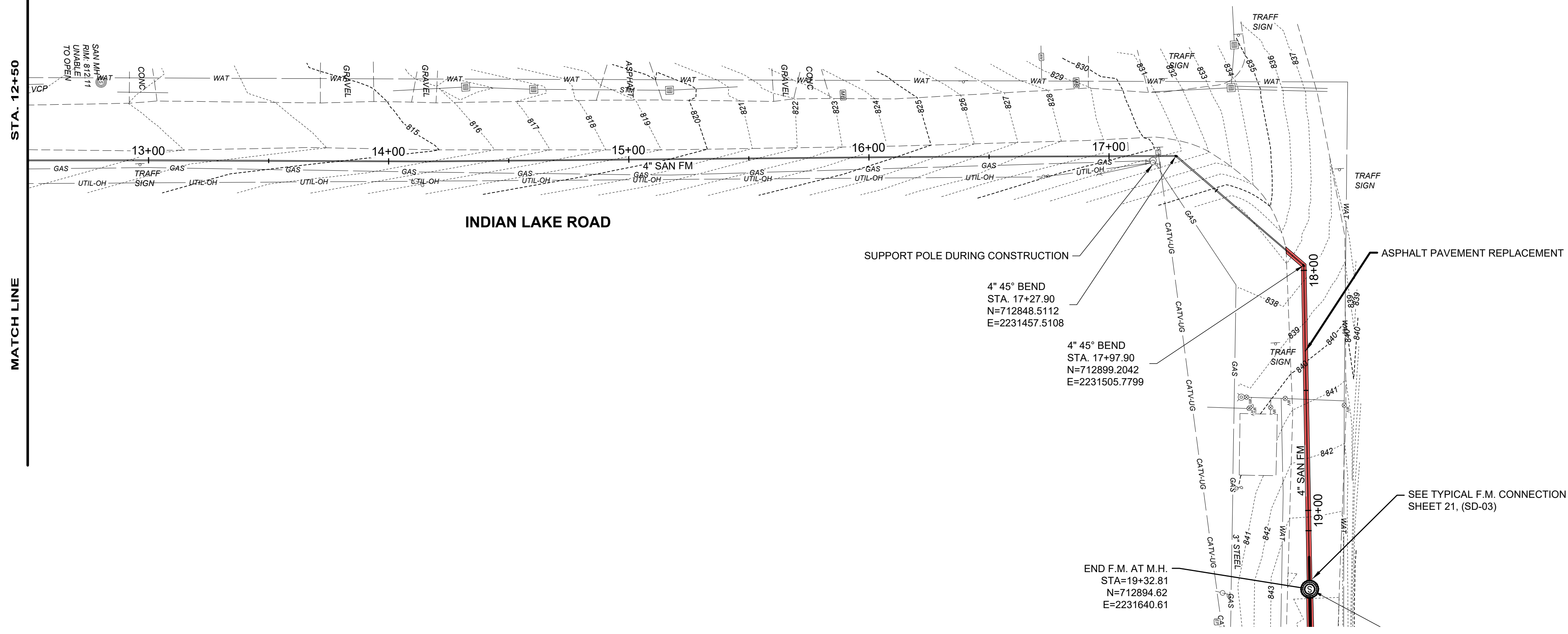
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	8/29/25			
ISSUE DATE:	AS NOTED			
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CHECKED BY:				

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

PLAN & PROFILES - 05 SERIES
INDIAN LAKE RD.FM. STA. 5+00 TO 12+50

PROJECT NO.	241455
DISCIPLINE	CIVIL
SHEET NAME	05C-02
SHEET	9
OF	24

STA. 12+50
MATCH LINE



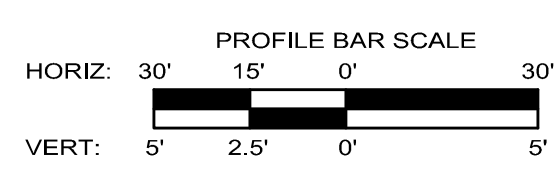
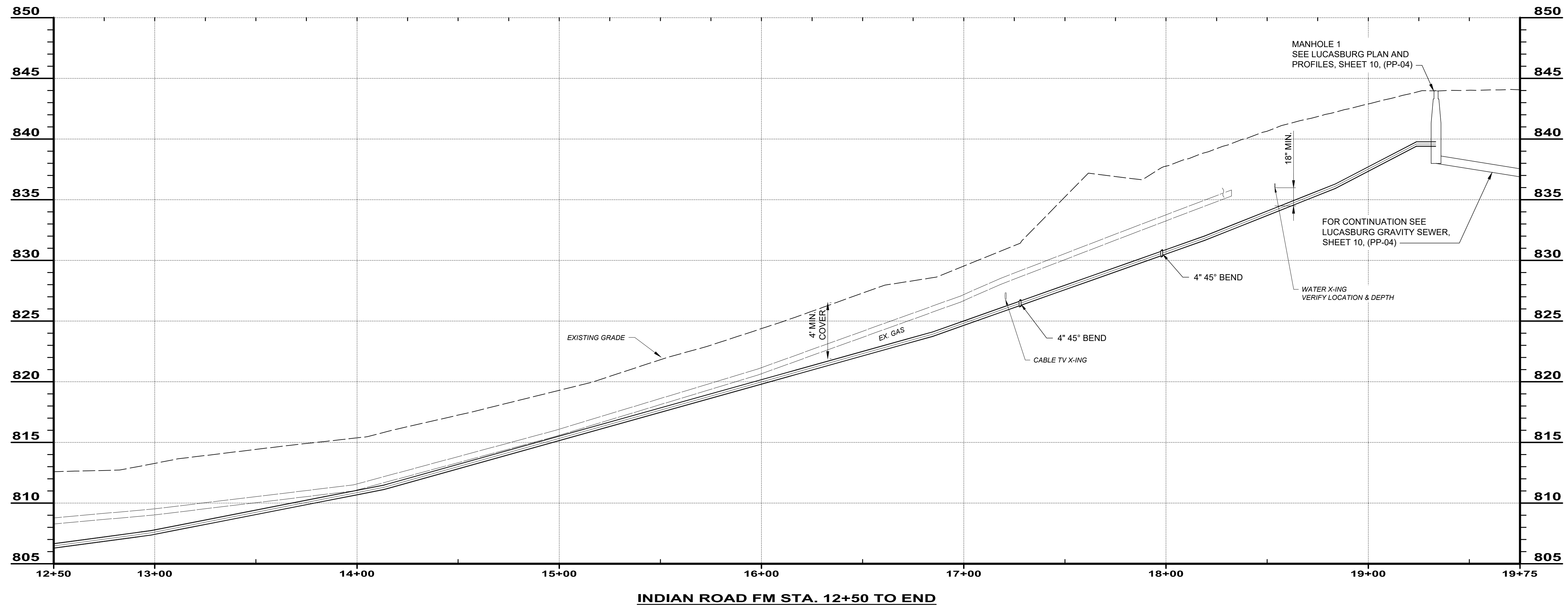
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MENTOR, OHIO 44060
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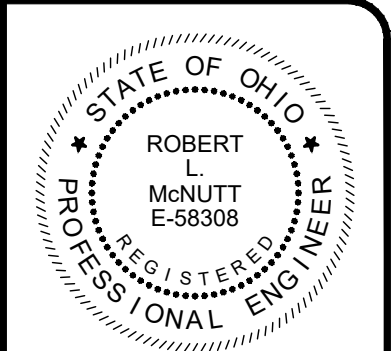
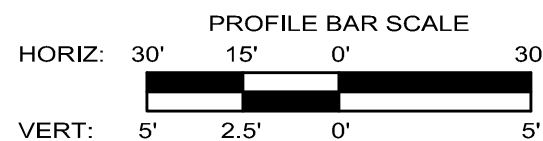
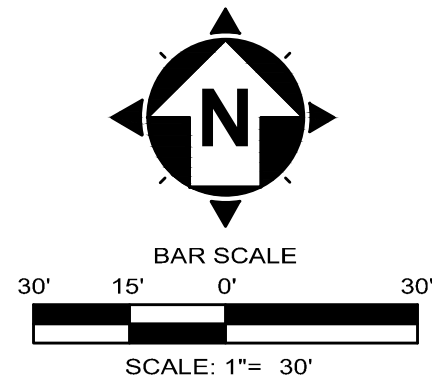
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	8/29/25			
ISSUE DATE:	AS NOTED			
SCALE:	RLM			
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CHECKED BY:				

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

PLAN & PROFILES - 05 SERIES
INDIAN LAKE RD.FM. STA. 12+50 TO END

PROJECT NO. 241455	
DISCIPLINE CIVIL	
SHEET NAME 05C-03	
SHEET 10	OF 24





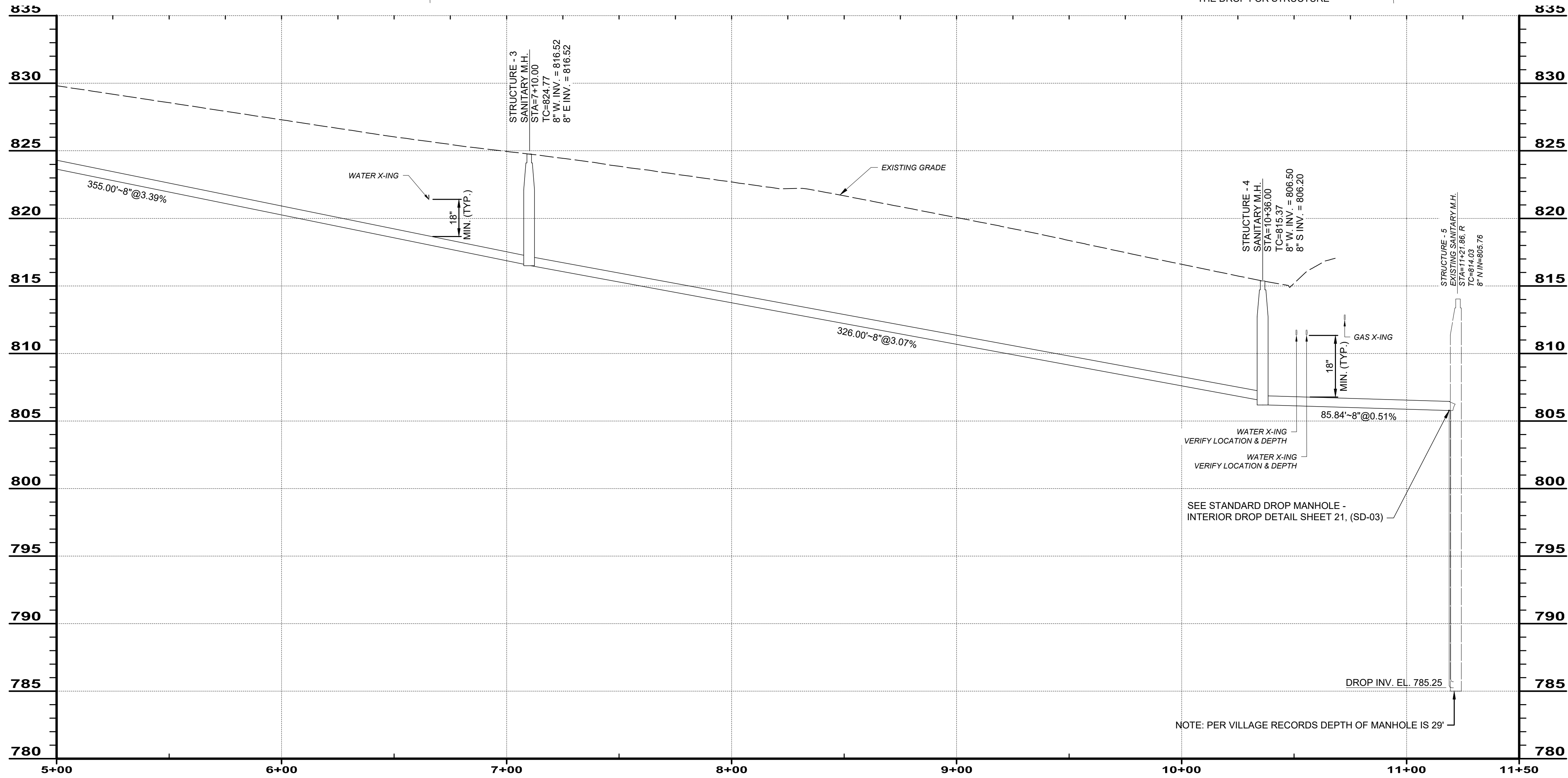
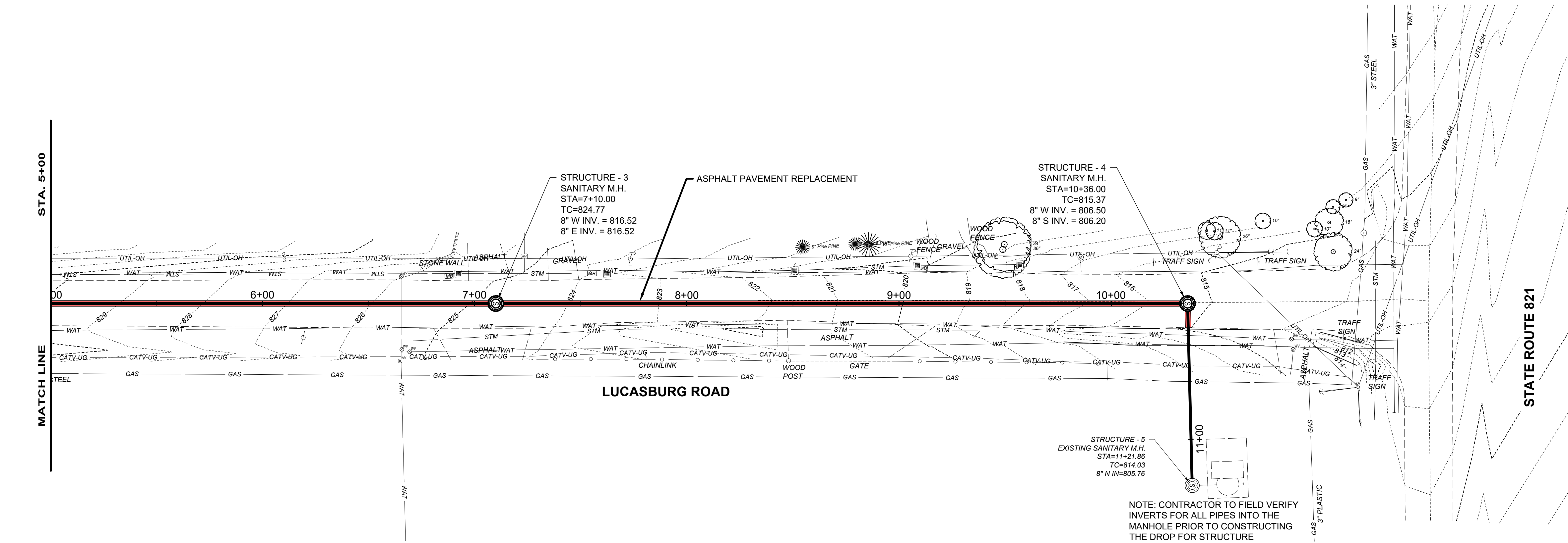
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ISSUE DATE:	8/23/25			
SCALE:	AS NOTED			
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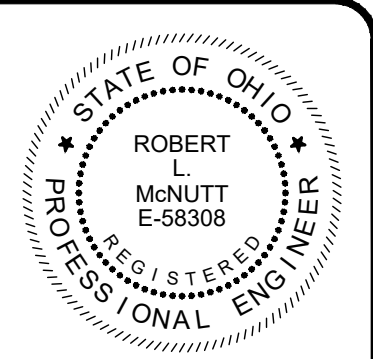
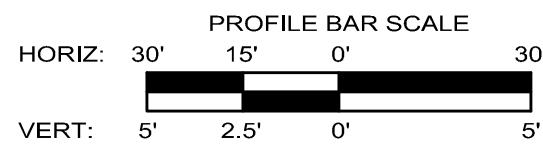
VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

PLAN & PROFILES - 05 SERIES
LUCASBURG RD. GRAVITY STA. 0+00 TO 5+00

PROJECT NO.	
241455	
DISCIPLINE	
CIVIL	
SHEET NAME	
05C-04	
SHEET	OF
11	24



LUCASBURG GRAVITY STA. 5+00 TO END



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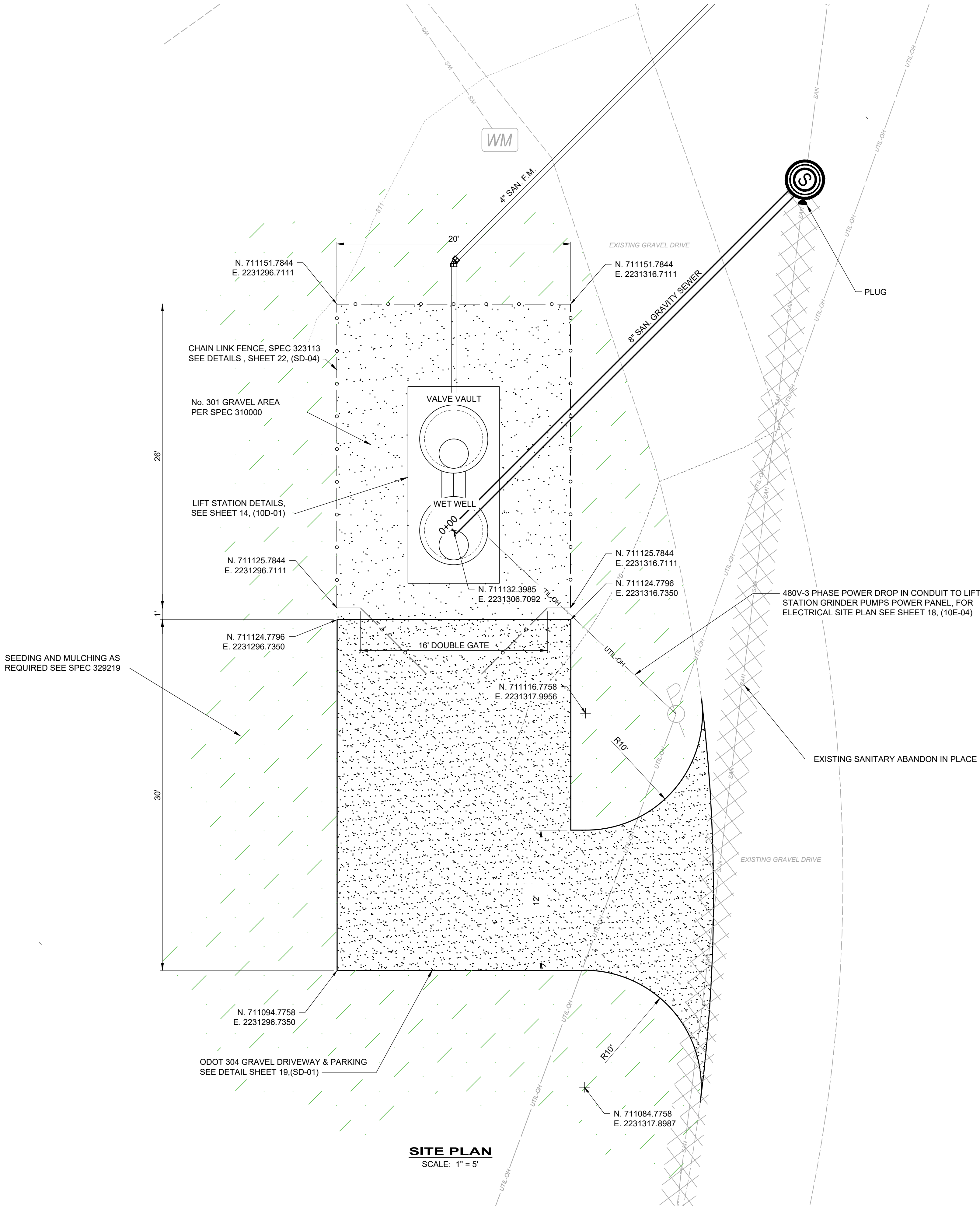
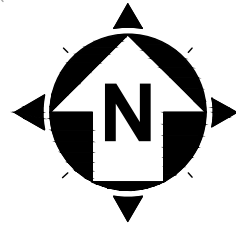
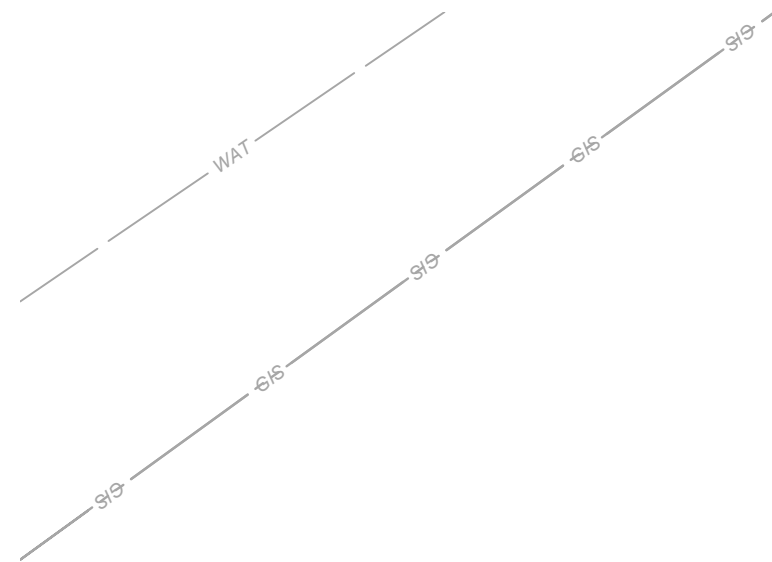
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8/29/25	AS NOTED			
SCALE:	RLM			
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CHECKED BY:				

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

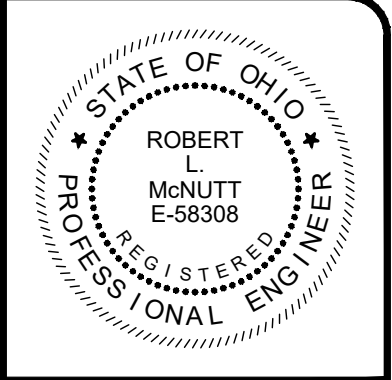
PLAN & PROFILES - 05 SERIES

LUCASBURG RD. GRAVITY STA. 5+00 TO STA. 10+00

PROJECT NO.	241455
DISCIPLINE	CIVIL
SHEET NAME	05C-05
SHEET	12
OF	24



SITE PLAN
SCALE: 1" = 5'



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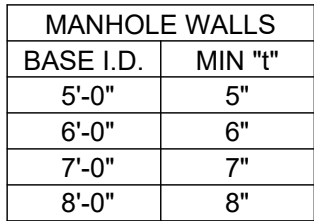
REVIEW	NO	REVISION	DATE
ISSUED FOR:			
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SCALE:			
DESIGNED BY:			
DRAWN BY:			
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VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

LIFT STATION - 10 SERIES
PUMP STATION SITE PLAN

PROJECT NO.	241455
DISCIPLINE	CIVIL
SHEET NAME	10C-01
SHEET	OF
13	23

1. ONE (1) DUPLEX NEMA 4X STAINLESS STEEL CONTROL PANEL W/DRIP SHIELD
2. PADLOCK HASP AND STAPLE
3. 12-GAUGE 304 POWER DISTRIBUTION BLOCK
4. MAGNETIC TYPE CIRCUIT BREAKERS, PER PUMP
5. TRANSFORMER
6. CONDENSATION HEATER
7. SEAL FAIL AND OVERTEMP RELAYS
8. RUN LIGHTS AND ALARM BEACON LIGHT
9. PANEL LIGHT AND FAN
10. CONTROLLER
11. H-O-A SWITCHES, PER PUMP
12. SURGE ARRESTOR
13. ALTERNATOR
14. THERMAL OVERLOAD STARTERS, PER PUMP
15. CONTROL CIRCUITRY BREAKERS
16. GFCI RECEPTACLE
17. DOOR SWITCH ACTIVATED FLUORESCENT LIGHT
18. 4-FLOAT LOGIC, UL LISTING AND TERMINAL STRIP



- NOTES:
1. ALL PIPE OPENINGS SHALL BE PREFABRICATED. PROVIDE FLEXIBLE CONNECTIONS ("Z" LOCK) FOR ALL PIPES.
 2. JOINT SEAL BETWEEN PRE-CAST MANHOLE SECTIONS SHALL BE RESILIENT AND FLEXIBLE GASKET JOINTS PER ASTM C-443.
 3. PRE-CAST MANHOLE SHALL CONFORM TO ASTM C-478.
 4. SEE PRE-CAST CONCRETE MANHOLE (SANITARY) DETAIL FOR MANHOLE SPECIFICATIONS, DIMENSIONS, ETC.

Excel Fluid Group Duplex Pump Station		
Item:	Description:	QTY:
A	Wet well HDPE 72" X 216"	1
B	Alum Hatch Door with Safety Grates	1
C	Pump Station Inlet Pipe	1
D	Pump Station Discharge Pipe	1
E	4" Plug Valves	3
F	4" Check Valves	2
G	4" Bypass with Camlock Fitting & Cap	1
H	Barnes Chopper Pumps	2
I	Breakaways 3"x4"	2
J	Float Assembly	4

Item:	Description:	Elevation:
K	Top of Pump Station	811.00
L	Discharge	807.00
M	Gravity Inlet	801.00
N	High Water Alarm	800.17
O	Lag Pump On	800.67
P	Lead Pump On	799.67
Q	Pumps Off	795.00
R	Wet well Floor	793.00



SANITARY LIFT STATION DETAIL (ALTERNATIVE)
SCALE: NONE

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN "FOOT"		EXCEL		DESIGN AND BIDDING SAMPLE BOOK		DO NOT SCALE DRAWINGS		REVISION		A-1	
15950 Commerce Park Dr. Brook Park, Ohio 44135											
DRAWN BY: NAME DMH		SIGNATURE:		DATE:		TITLE:					
CHECKED:						DUPLUX HDPE PUMP STATION					
APPROVED:											
MFG:											
Q.L.A.											
WEIGHT: N/A						DWG NO. Q8481 A3					
						SHEET OF 1					

PUMP STATION GENERAL NOTES	
1.	NO SUBSURFACE INVESTIGATIONS WERE PERFORMED. SUBCONTRACTOR SHALL ADVISE ENGINEER IF UNSTABLE SOIL CONDITIONS ARE FOUND.
2.	CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PIPING LAYOUT AND ORIENTATION OF IN-USE AND DISCHARGE.
3.	CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS AND SEQUENCING OF ALL WORK.
4.	INSTALLATION OF EQUIPMENT IN PUMP STATION AND VALVE PIT SHALL BE DONE IN ACCORDANCE WITH CONFINED SPACE ENTRY REGULATIONS.
5.	PUMPS MUST BE LOCATED FOR EASE OF SERVICE (NO CONFINED SPACE REQUIRED FOR ROUTINE MAINTENANCE).
6.	PUMP RATE CAPACITY MUST BE VERIFIED BY FIELD TEST.
7.	THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS EXPANDED AND AMENDED FROM TIME TO TIME, AND ALL RULES AND REGULATIONS THERETO APPLICABLE.
8.	A DUST SUSPENSIBLE CENTRIFUGAL PUMP SYSTEM SHALL BE USED AS MANUFACTURED BY EXCEL OR AN APPROVED EQUAL.
9.	ALL CONCRETE WORK IS THE RESPONSIBILITY OF THE CONTRACTOR. FIELD INSTALLED ELECTRICAL CONNECTIONS ARE BY THE CONTRACTOR.



verdantas

8150 STERLING COURT
MENTOR, OHIO 44060
(440) 951-9000

ISSUED FOR:	NO	REVISION	DATE
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VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONMENT
GUERNSEY COUNTY, OHIO

LIFT STATION - 10 SERIES
PLAN & SECTIONS

PROJECT NO.	
241455	
DISCIPLINE	
PROCESS	
SHEET NAME	
10D-01	
SHEET	OF
14	23

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. THE EQUIPMENT OR DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC, THE MFR'S INSTRUCTIONS AND ACCORDING TO PLANS AND DRAWINGS PROVIDED. WRITTEN APPROVAL FROM THE AUTHORIZED COMPANY REPRESENTATIVE SHALL BE OBTAINED PRIOR TO MAKING ANY DEVIATION FROM THE DRAWINGS OR ANY SUBSTITUTION OF MATERIALS. IF SUCH PRIOR APPROVAL HAS NOT BEEN OBTAINED, IT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO CHANGE, WITHOUT ADDITIONAL COMPENSATION, ANY ITEMS SUBSEQUENTLY DISCOVERED TO BE UNACCEPTABLE.

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 HIS 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 MFR'S 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 INDICTED 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 HIS 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 HIS WORK. HE 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 HIS 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 WORKMEN 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, HE SHALL REMOVE ALL HIS RUBBISH, TOOLS, SCAFFOLDS AND SURPLUS MATERIALS FROM AND ABOUT THE SITE, LEAVING HIS 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 HIS 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 ALUMINUM ABOVE GRADE (UON ON PLANS). TRANSITION FROM PVC TO ALUMINUM CONDUIT BELOW GRADE WITH PVC COATED RIGID SWEEPS. INTERIOR - ALL CONDUITS SHALL BE ALUMINUM 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 UOIN.

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, LEVELLED AND PLUMBED. TRAY SECTIONS AND FITTINGS SHALL BE ASSEMBLED ON THEIR SUPPORTS AND JOINED 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 WATER TIGHT 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.



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VILLAGE OF BYESVILLE S.R. 821 SANITARY SEWER IMPROVEMENTS PHASE I - ROLLING HILLS WWTP ABANDONEMENT GUERNSEY COUNTY, OHIO	LIFT STATION - 10 SERIES SPECIFICATIONS
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PROJECT NO. 241455	
DISCIPLINE ELECTRICAL	
SHEET NAME 10E-01	
SHEET 15	OF 24

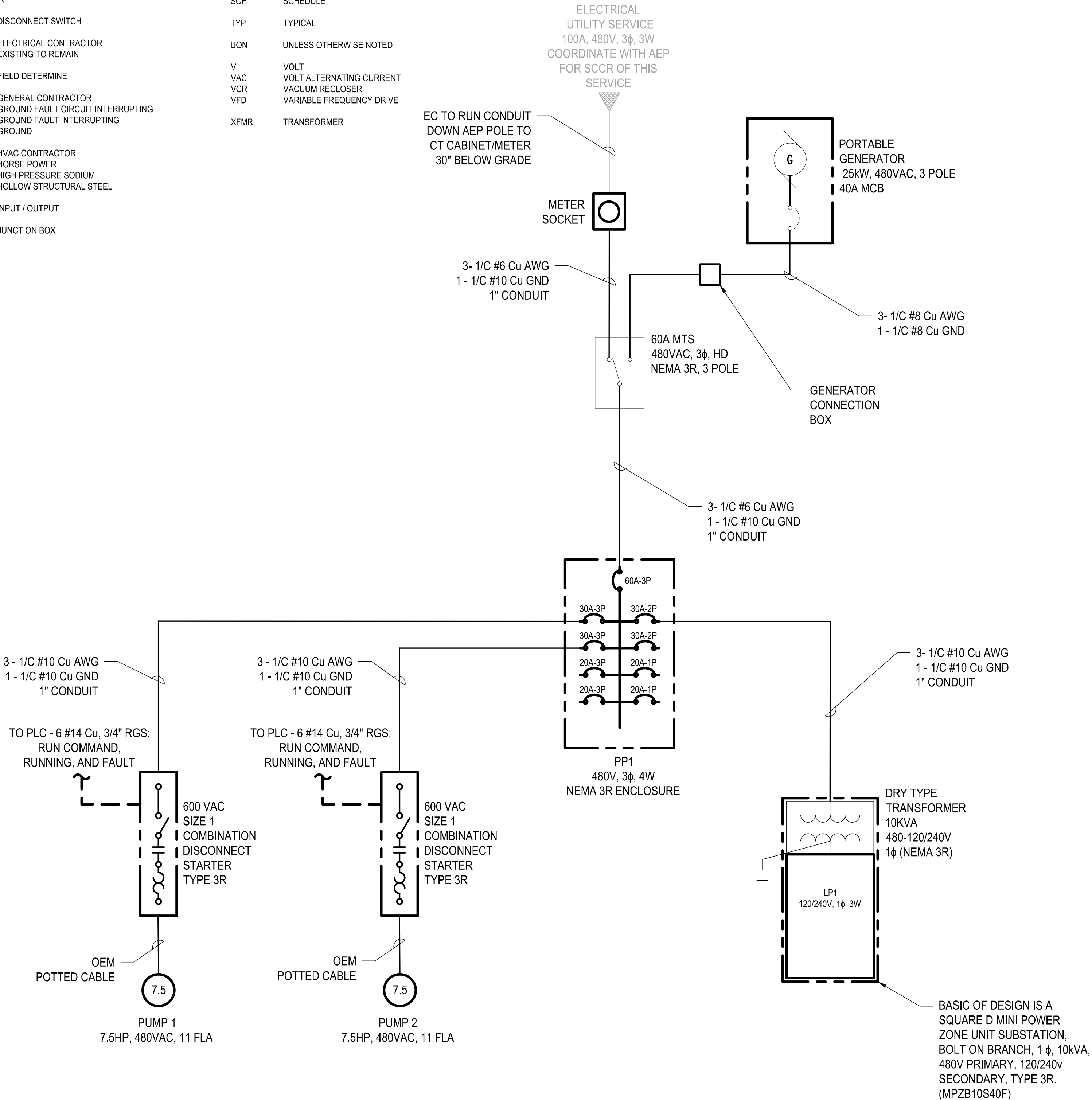
11.6 WIRE AND CABLE

- 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:
- | | 208/120VAC | 480/277VAC | 415/240VAC |
|---------|------------|------------|------------|
| PHASE A | BLACK | BROWN | 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 HI-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 DEPENDED 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 RATING OF BEING DUST TIGHT.
- 11.8 CONDUIT CONCRETE DUCT BANKS
- 11.8.a MATERIALS: ALL CONDUITS SHALL BE SCHEDULE 80 PVC UNLESS OTHERWISE NOTED. ALL CONCRETE SHALL BE 3000PSI MINIMUM AND DIED RED THROUGHOUT.
- 11.8.b ALL UNDERGROUND UTILITY CONDUITS SHALL HAVE 3000PSI CONCRETE ENCASUREMENT DIED RED THROUGHOUT. 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 WIRED 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 GROUNDINGS 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.f 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. TURNOVER 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) AS SHOWN 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 MANUFACTURERS 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:

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



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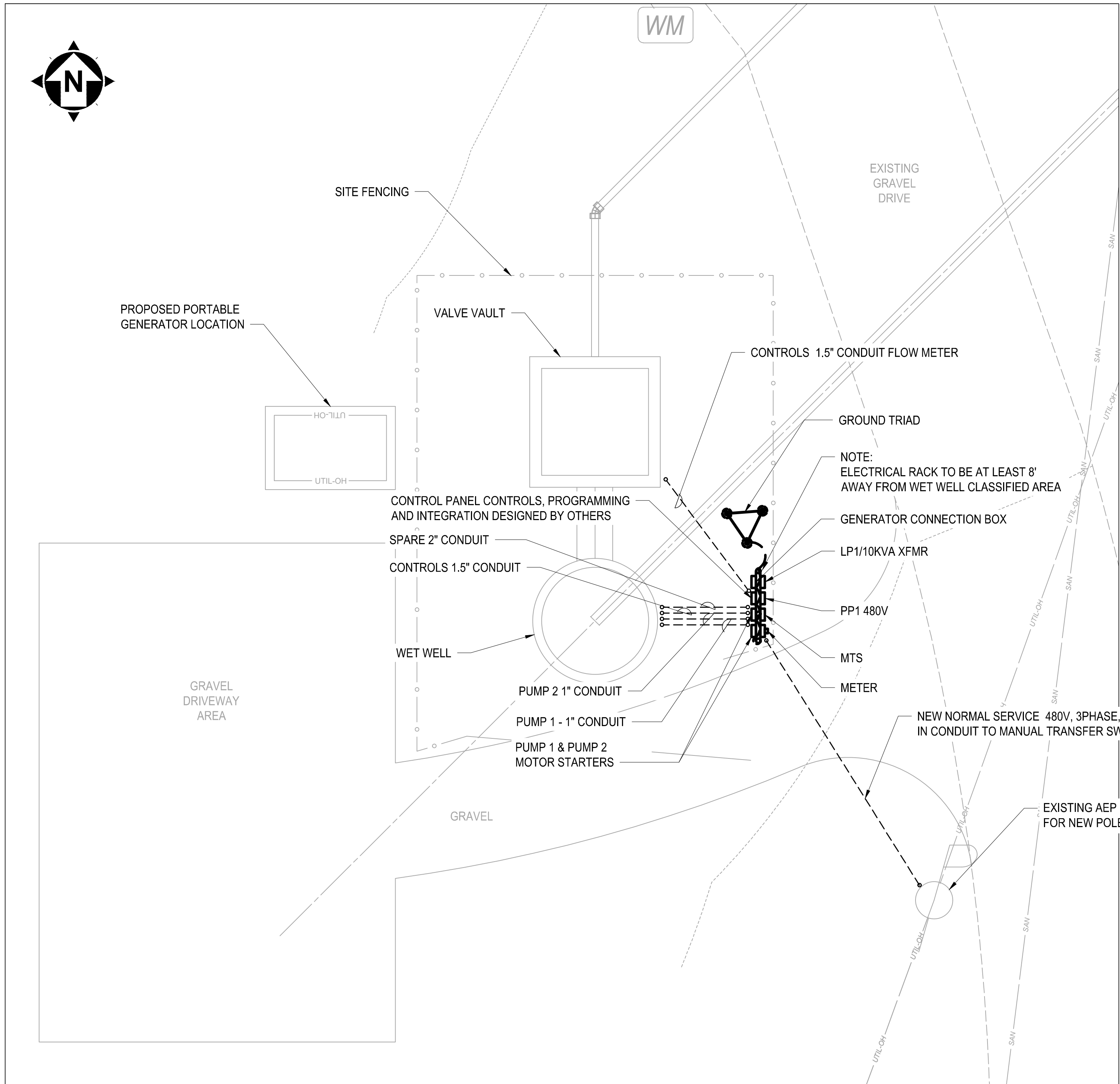
8150 STERLING COURT
MENTOR, OHIO 44060
(440) 951-9000

DATE	REVISION	NO	REVIEW	ISSUED FOR
			8/29/25	
			AS NOTED	
			CLZ	
			CLZ	
			TLD	

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONMENT
GUERNSEY COUNTY, OHIO

LIFT STATION - 10 SERIES
SINGLE LINE

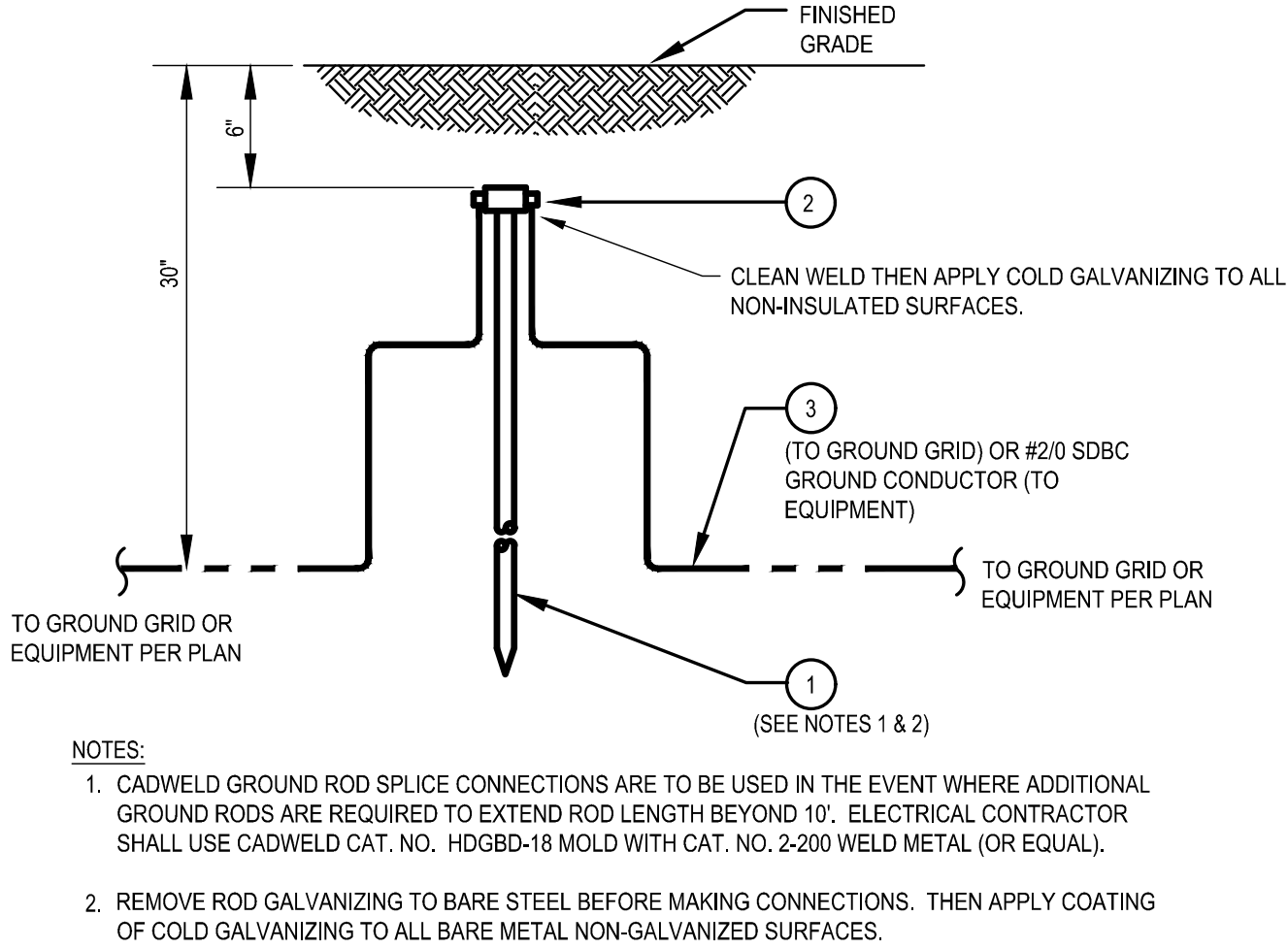
PROJECT NO.	241455
DISCIPLINE	ELECTRICAL
SHEET NAME	10E-02
SHEET	OF
16	23



ELECTRICAL SITE PLAN
SCALE: 1/4" = 1'-0"

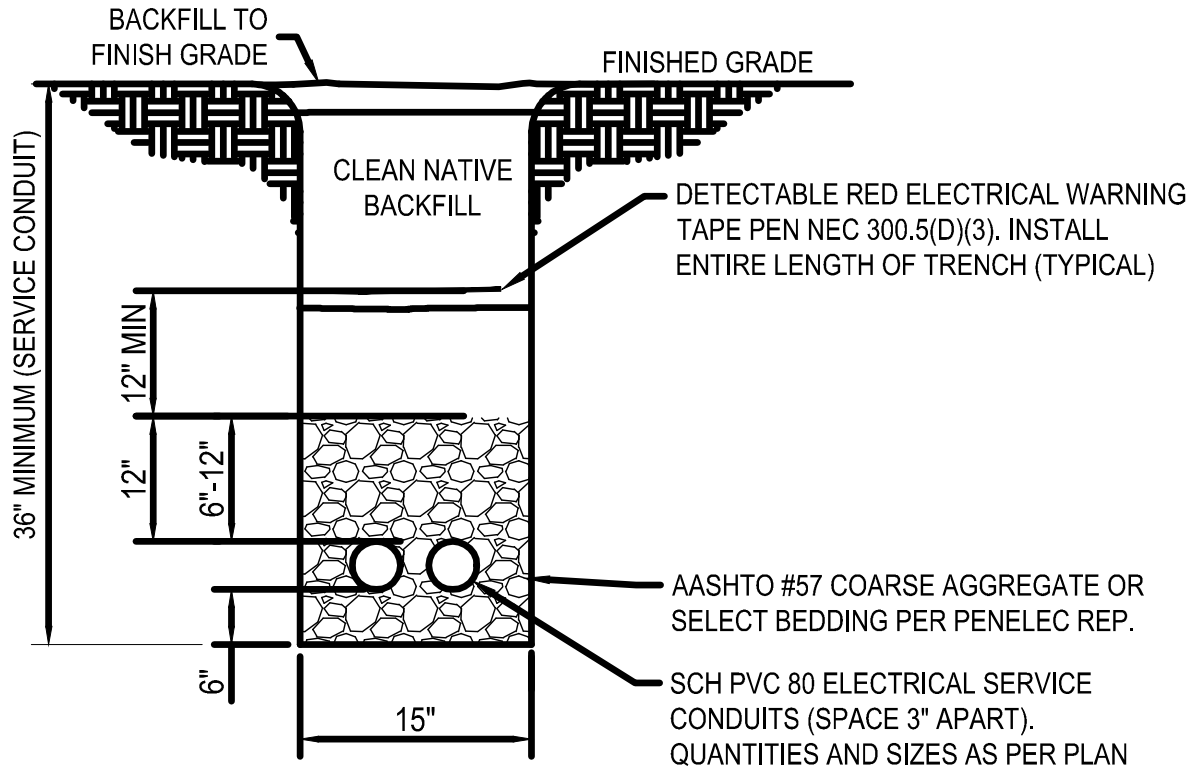
SYMBOL LEGEND

- BONDING POINT - EXOTHERMIC WELD UNLESS OTHERWISE NOTED
- 5/8" x 8" STEEL GROUND ROD WITH HOT-DIP ZINC GALVANIZATION
- GROUND ROD WITH ACCESS - INSPECTION WELL AND MECHANICAL CABLE ROD CONNECTOR. SEE ACCESS WELL DETAIL ON SHEET E-104.
- MAIN GROUNDING LOOP - 2/0 Cu INSULATED GROUND WIRE RATED FOR DIRECT BURY
- BRANCH GROUNDING - #2 Cu INSULATED GROUND WIRE RATED FOR DIRECT BURY (UNLESS NOTED OTHERWISE)
- A.F.F. ABOVE FINISHED FLOOR
- A.F.G. ABOVE FINISHED GRADE
- B.F.G. BELOW FINISHED GRADE



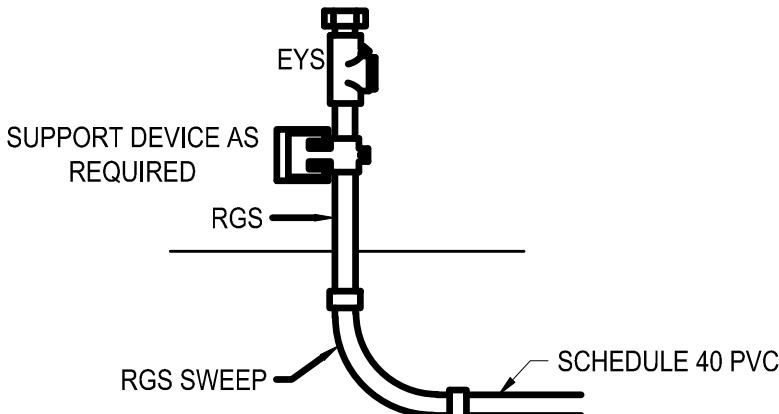
BILL OF MATERIAL		
ITEM	QTY.	DESCRIPTION
1	1	GROUND ROD, 3/4" DIA. X 8' LONG HOT DIPPED GALV. STEEL, GALVAN GR7510 OR EQUAL
2	1	CONNECTOR, CABLE TO GND. ROD, CADWELL OR EQUAL
3	A/R	GROUND WIRE, MAIN GRID AS INDICATED ON PLANS

GROUND ROD INSTALLATION



- NOTES:
- REFER TO PENELEC SPECIFICATIONS ON THIS SHEET FOR UTILITY EQUIPMENT SPECIFIC INFORMATION. COORDINATE TRENCHING WITH UTILITY COMPANY.
 - COMPACTION OF MATERIALS SHALL BE TO UTILITY REQUIREMENTS.

- NOTES:
- CONTRACTOR TO UTILIZE 25% OR 40% FILL SEAL-OFF FITTINGS WHERE SEAL-OFFS ARE NEEDED IN CLASSIFIED AREAS.



TYPICAL CONDUIT TRANSITION DETAIL
SCALE: NONE"



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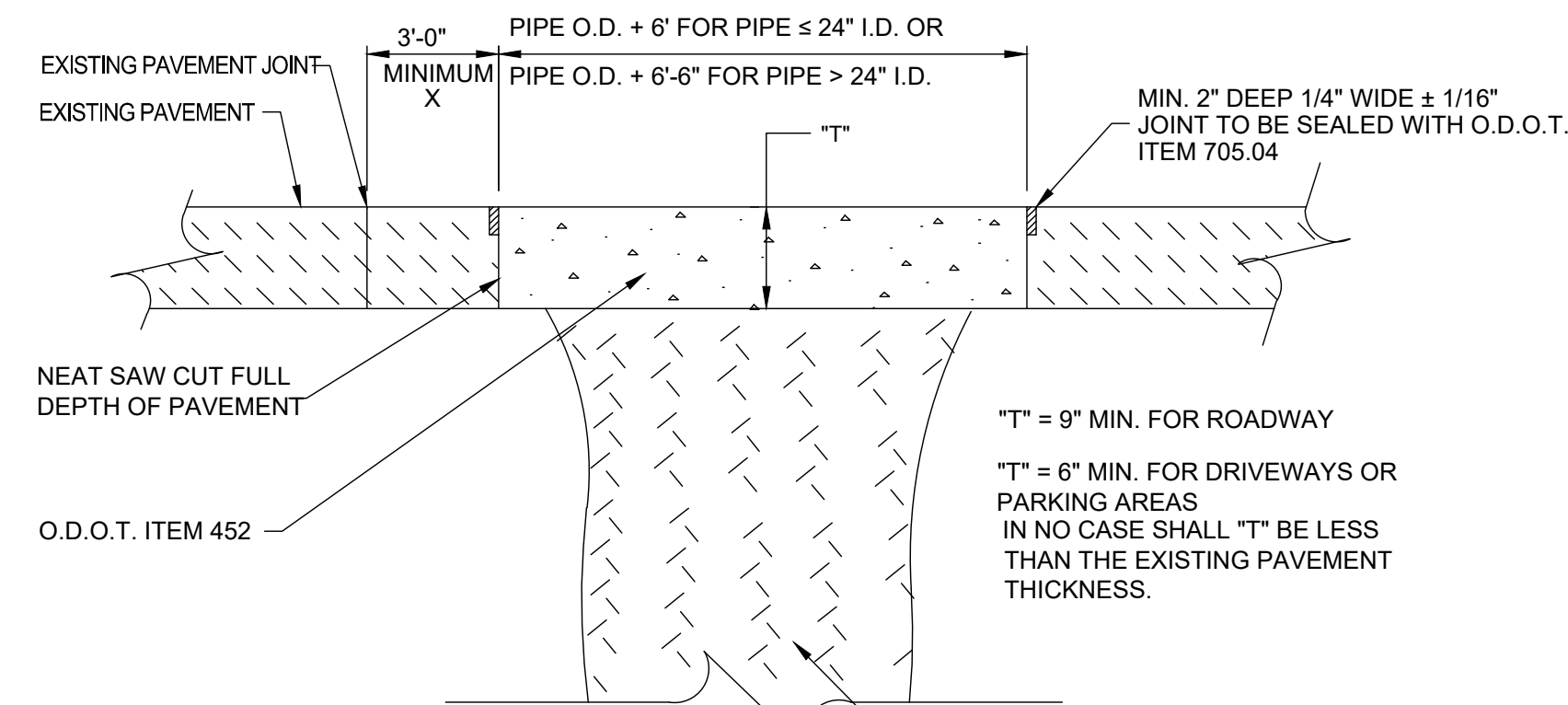
8150 STERLING COURT
MENTOR, OHIO 44060
(440) 951-9000

DATE	REVISION	NO	REVIEW	ISSUED FOR:
			8/29/25	
			AS NOTED	
			CJZ	
			CJZ	
			TLD	

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

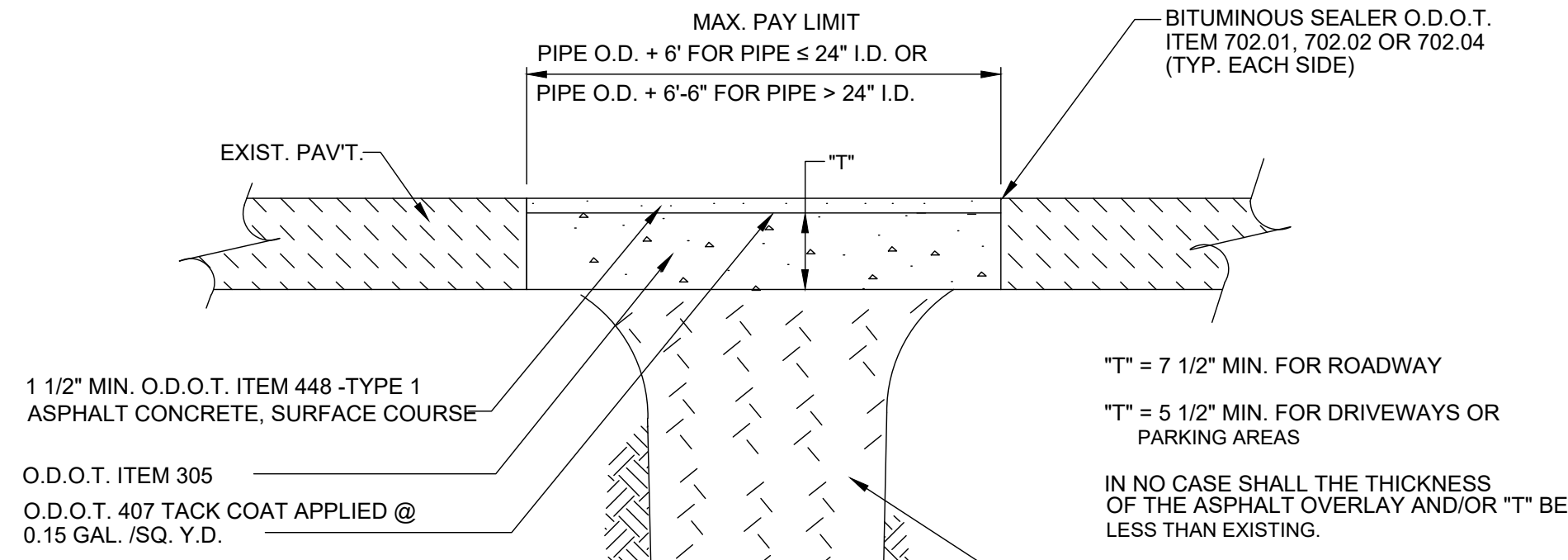
LIFT STATION - 10 SERIES
SITE PLAN

PROJECT NO.	
241455	
DISCIPLINE	
ELECTRICAL	
SHEET NAME	
10E-03	
SHEET	OF
17	23



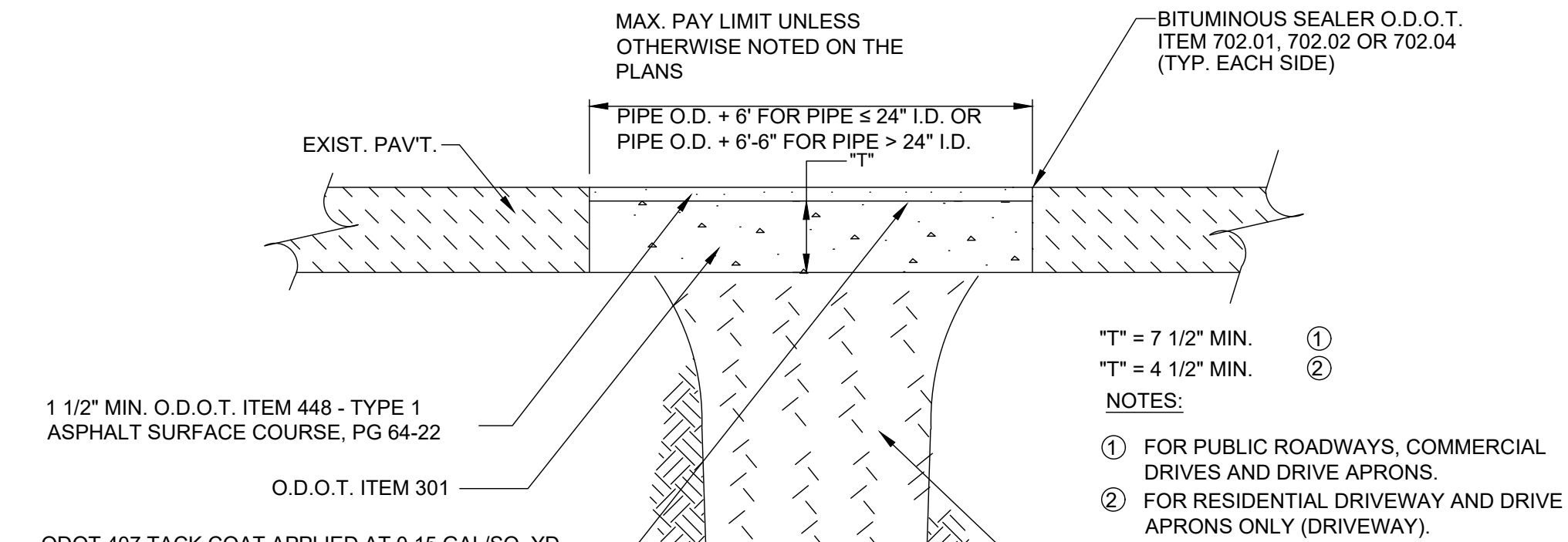
- NOTES:
- EXISTING SUBBASE MATERIAL (IF ANY) SHALL BE REPLACED, AS DIRECTED BY ENGINEER.
 - REPLACEMENT SHALL BE REINFORCED AS PER O.D.O.T. ITEM 709.10 OR 709.12 IF EXISTING PAVEMENT IS REINFORCED.
 - 5/8"Ø HOOKBOLT @ 30" O.C. MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.

**TYPE A PAVEMENT REPLACEMENT
(CONCRETE)**
NOT TO SCALE



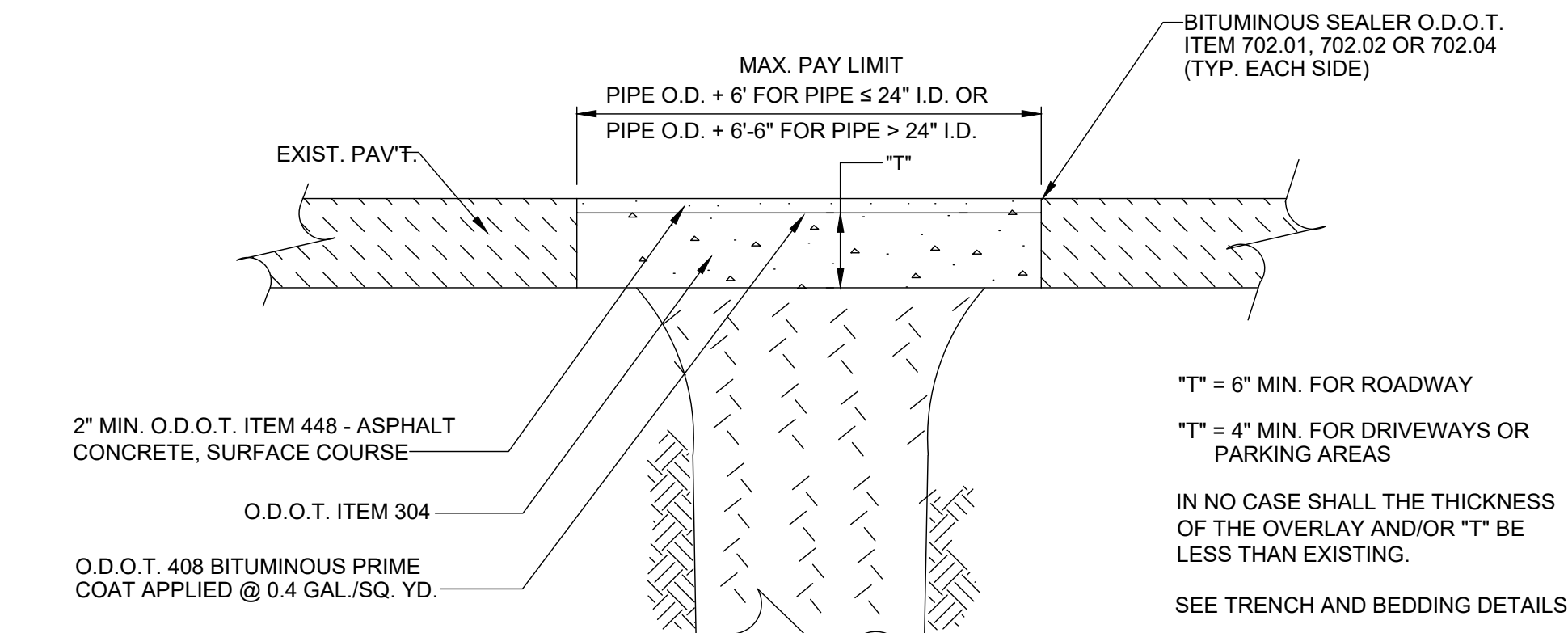
- NOTES:
- EXISTING SUBBASE MATERIAL (IF ANY) SHALL BE REPLACED, AS DIRECTED BY ENGINEER.
 - REPLACEMENT SHALL BE REINFORCED AS PER O.D.O.T. ITEM 709.10 OR 709.12 IF EXISTING PAVEMENT IS REINFORCED.
 - 5/8"Ø HOOKBOLT @ 30" O.C. MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.

**TYPE B PAVEMENT REPLACEMENT
(ASPHALT OVER CONCRETE)**
NOT TO SCALE



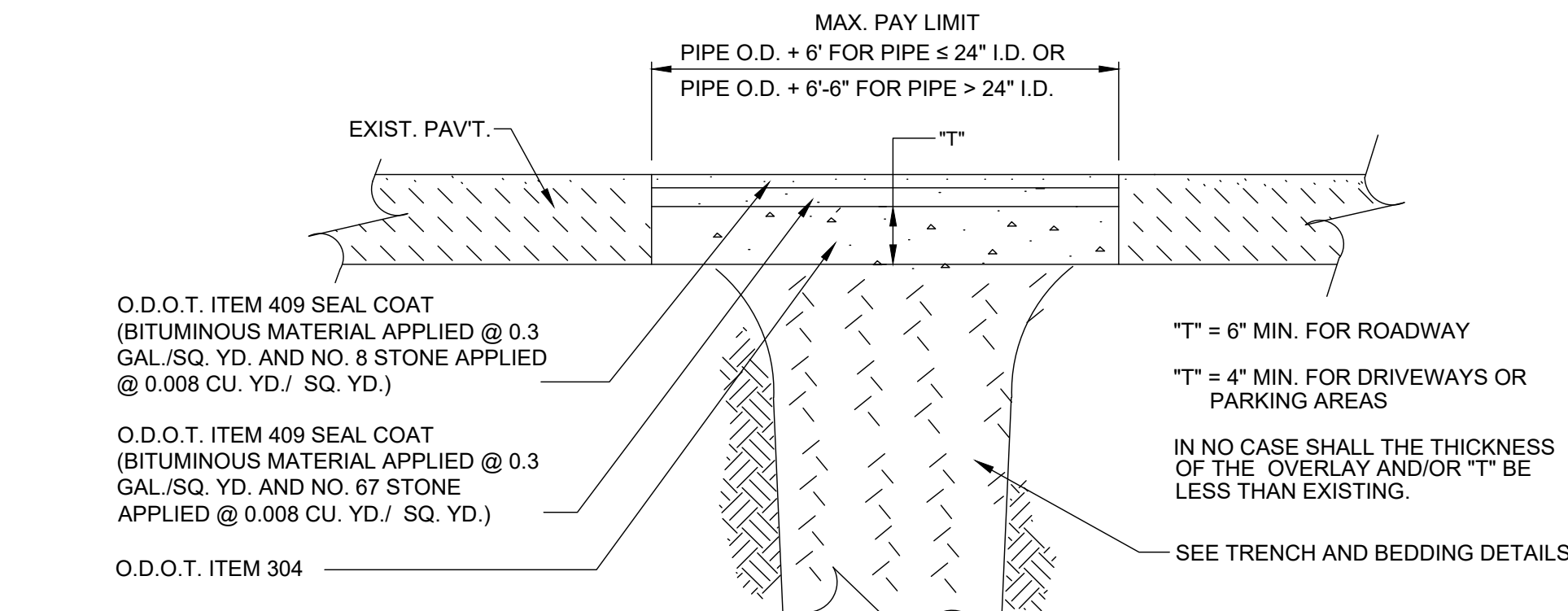
- NOTE:
- EXISTING SUBBASE MATERIAL (IF ANY) SHALL BE REPLACED, AS DIRECTED BY ENGINEER.

**TYPE C PAVEMENT REPLACEMENT
(ASPHALT)**
NOT TO SCALE



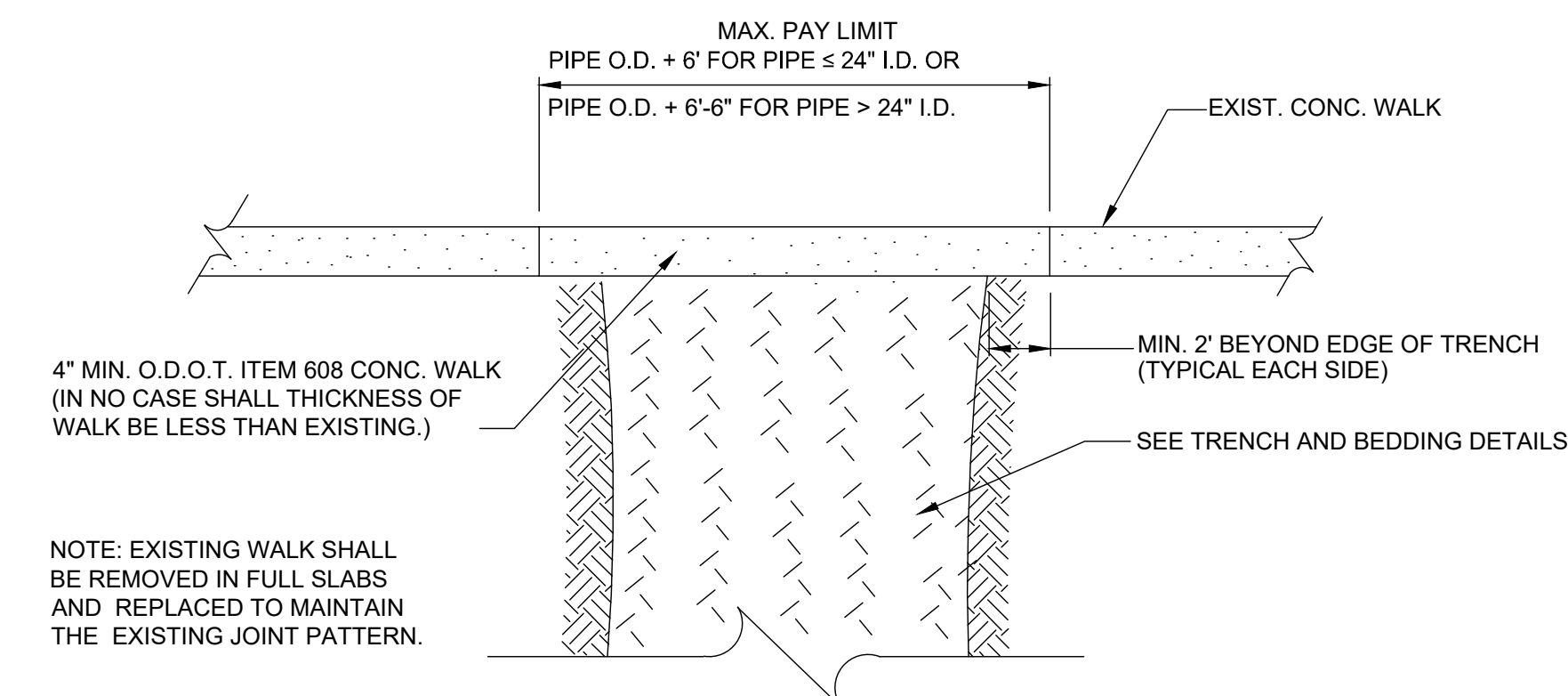
- NOTE:
- EXISTING SUBBASE MATERIAL (IF ANY) SHALL BE REPLACED, AS DIRECTED BY ENGINEER.

**TYPE D PAVEMENT REPLACEMENT
(ASPHALT OVER STONE BASE)**
NOT TO SCALE

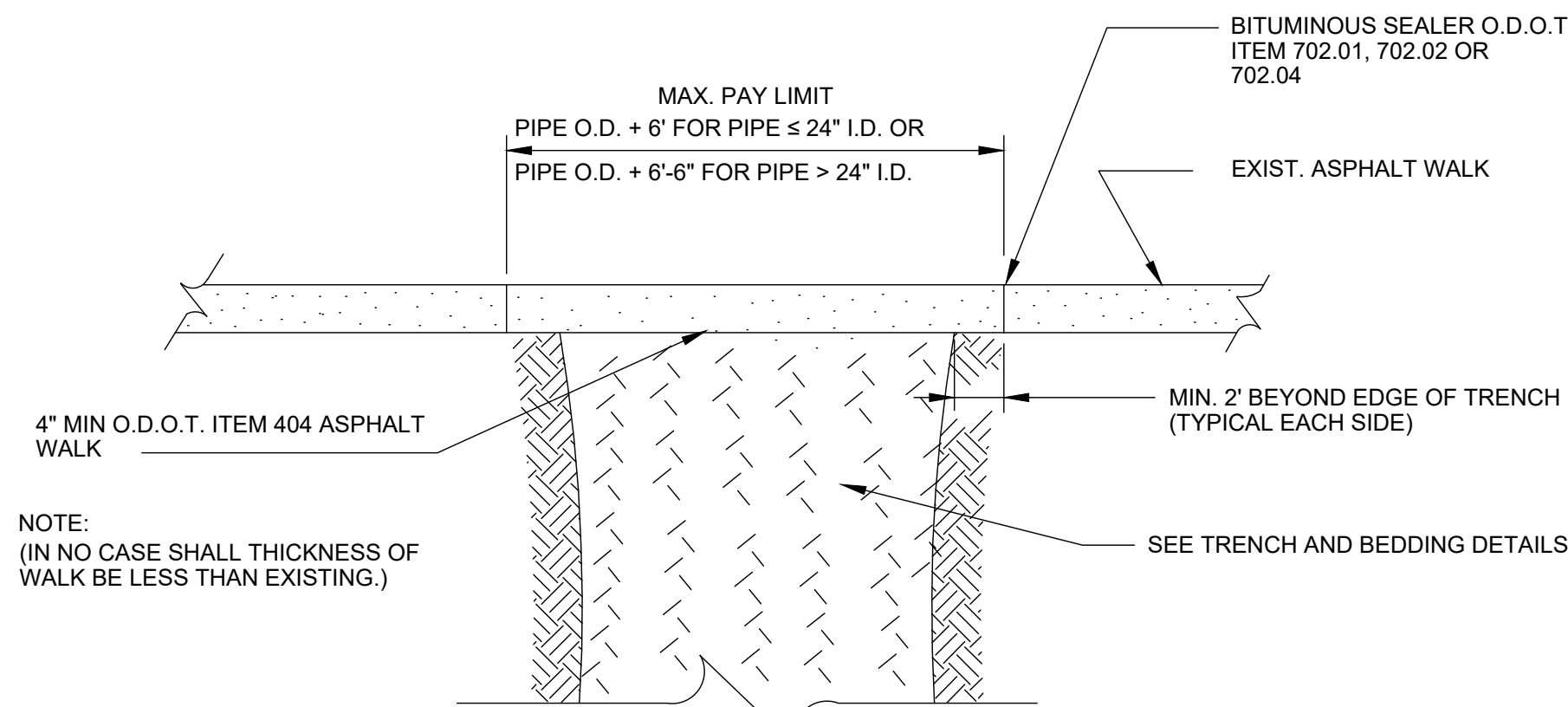


- NOTE:
- EXISTING SUBBASE MATERIAL (IF ANY) SHALL BE REPLACED, AS DIRECTED BY ENGINEER.

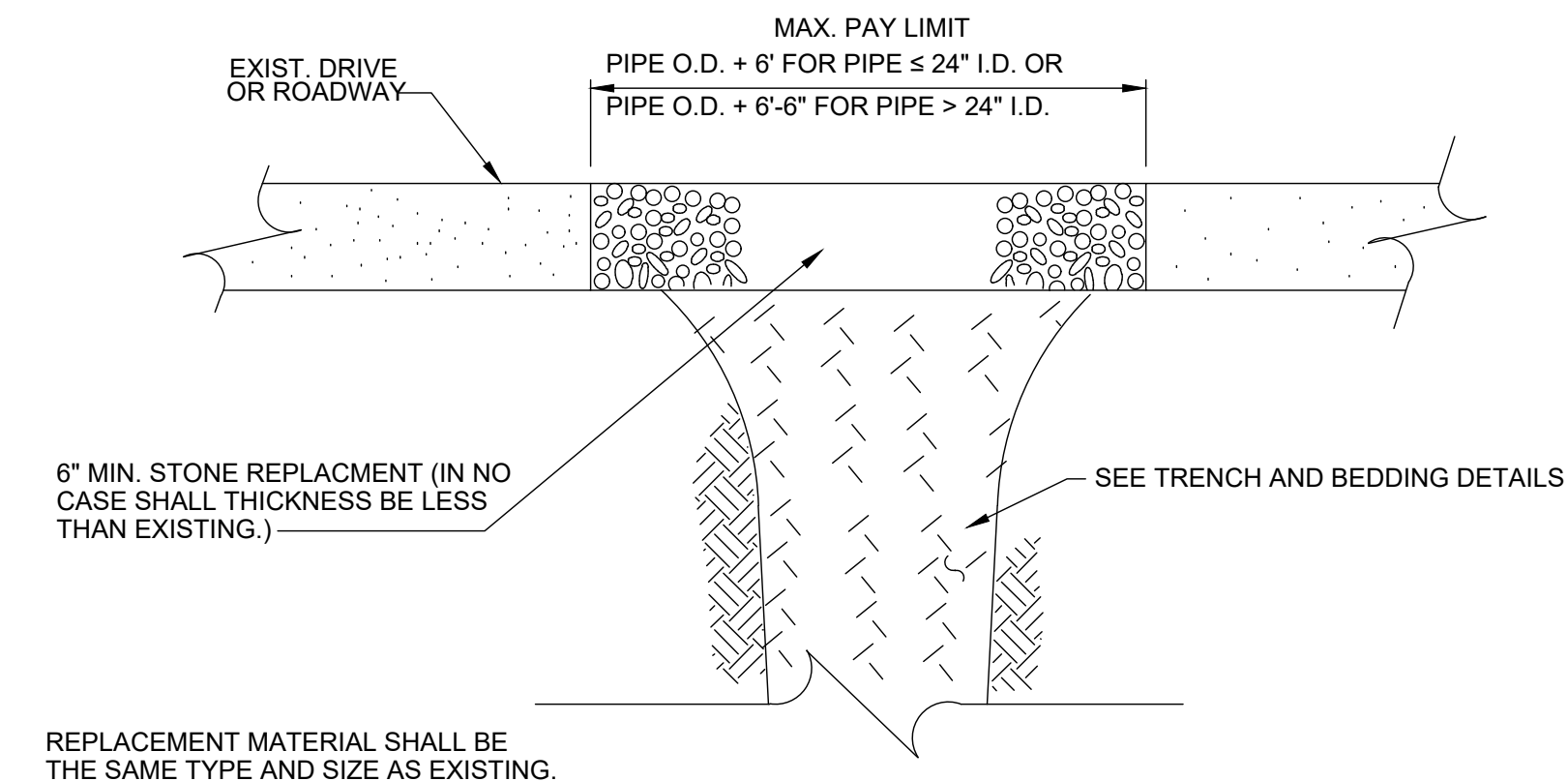
**TYPE E PAVEMENT REPLACEMENT
(SEAL COAT OVER STONE BASE)**
NOT TO SCALE



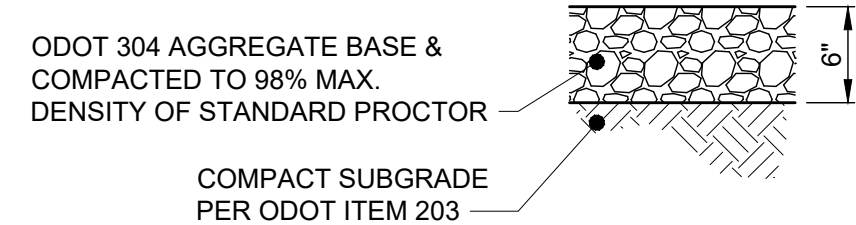
TYPE A WALK REPLACEMENT
NOT TO SCALE



TYPE B WALK REPLACEMENT
NOT TO SCALE



**TYPE F PAVEMENT REPLACEMENT
(STONE)**
NOT TO SCALE



GRAVEL DRIVEWAY DETAIL
SCALE: NONE

- CONSTRUCTION DETAILS NOTE:**
- THIS IS A STANDARD CONSTRUCTION DRAWING SHEET SHOWING COMMONLY USED GENERAL DETAILS. NOT ALL CONSTRUCTION DETAILS ON THIS DRAWING ARE NECESSARILY USED ON THIS PROJECT.

STATE OF OHIO
REGISTERED PROFESSIONAL ENGINEER
ROBERT L. McNUITT
E-68308

verdantas

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MENTOR, OHIO 44060
(440) 951-9000

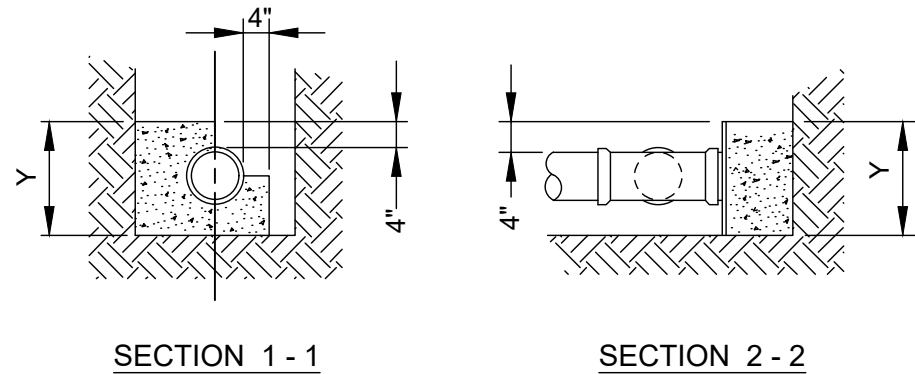
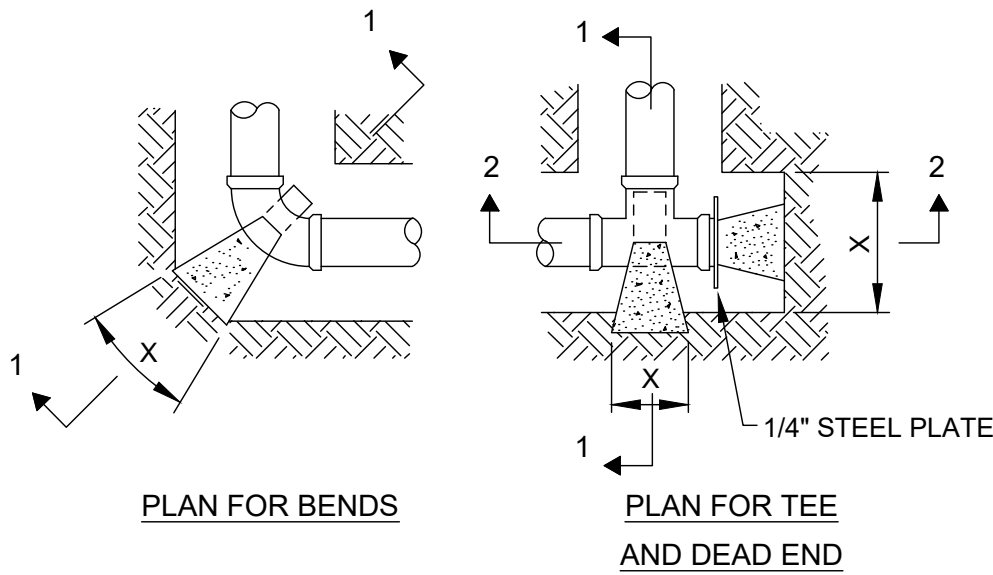
ISSUED FOR:	REVIEW	NO	REVISION	DATE
	8/29/25			
SCALE:	AS NOTED			
DESIGNED BY:	RLM			
DRAWN BY:	RLM			
CHECKED BY:	RLM			

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

STANDARD DETAILS - SD SERIES
CONSTRUCTION DETAILS - 1

PROJECT NO.	
241455	
DISCIPLINE	
DETAILS	
SHEET NAME	
SD-C-01	
SHEET	OF
19	23

SIZING SCHEDULE				BEARING FACE (X Y) IN SQ. FT. CONCRETE VOLUME IN CU. YD.			
PIPE SIZE	22 1/2° BEND SOIL BEARING CAPACITY			45° BEND SOIL BEARING CAPACITY			
	1000 P.S.F.	3000 P.S.F.	5000 P.S.F.	1000 P.S.F.	3000 P.S.F.	5000 P.S.F.	
4	1.40 0.14	0.46 0.09	0.26 0.06	2.70 0.12	0.90 0.06	0.54 0.06	
6	2.80 1.15	0.93 0.10	0.56 0.07	5.50 0.15	1.83 0.10	1.10 0.07	
8	4.80 0.20	1.60 0.13	0.96 0.09	9.60 0.23	3.20 0.15	1.92 0.09	
10	7.90 0.53	2.63 0.34	1.96 0.22	15.70 0.34	5.23 0.20	3.14 0.13	
12	11.30 0.62	3.76 0.40	2.26 0.26	22.30 0.75	7.43 0.49	4.46 0.32	
14	15.30 0.74	5.10 0.48	3.06 0.31	30.20 0.98	10.06 0.64	6.04 0.42	
16	19.80 1.17	6.60 0.76	3.96 0.49	39.10 1.21	13.03 0.79	7.82 0.51	
	90° BEND SOIL BEARING CAPACITY			TEE OR DEAD END SOIL BEARING CAPACITY			
	1000 P.S.F.	3000 P.S.F.	5000 P.S.F.	1000 P.S.F.	3000 P.S.F.	5000 P.S.F.	
4	4.90 0.14	1.63 0.09	0.96 0.06	3.50 0.12	1.16 0.06	0.70 0.06	
6	10.20 0.22	3.40 0.14	2.04 0.09	7.20 0.17	2.40 0.11	1.44 0.07	
8	17.70 0.35	5.54 0.23	3.54 0.15	12.50 0.25	4.16 0.16	2.50 0.14	
10	28.90 0.54	9.60 0.35	5.76 0.23	20.40 0.38	6.80 0.25	4.06 0.16	
12	41.10 1.31	13.70 0.85	8.22 0.55	29.10 0.97	9.70 0.63	5.82 0.42	
14	55.80 1.70	18.60 1.11	11.16 0.72	39.50 1.22	13.16 0.79	7.90 0.51	
16	72.20 2.14	24.06 1.39	14.44 0.90	51.10 1.54	17.03 1.00	10.22 0.65	



ALL CONCRETE BLOCKING MUST HAVE ITS ENTIRE FACE (X & Y) BEARING SURFACE AGAINST UNDISTURBED SOIL AND ALL VERTICAL NON-BEARING SURFACES SHALL BE FORMED SO AS TO KEEP CONCRETE FROM JOINTS. BLOCKING DESIGN BASED ON COMBINED WORKING PRESSURE PLUS WATER HAMMER OF 240 PSI AND FOR BEARING CAPACITY FOR SAND - 1000 PSF, SAND AND GRAVEL - 3000 PSF, SHALE - 5000 PSF.

THRUST BLOCKING DETAIL
NOT TO SCALE

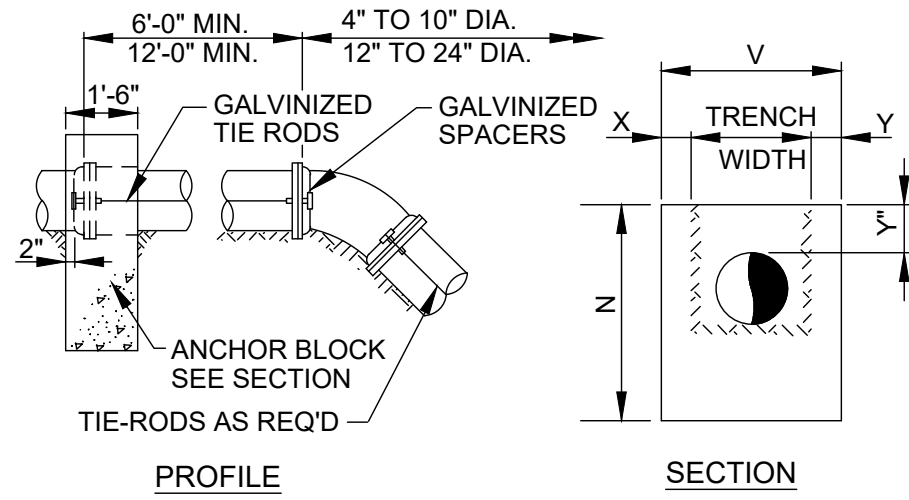


TABLE OF DIMENSIONS - OVER BENDS

PIPE SIZE	11 1/4°, 22 1/2°, & 45° BENDS					TIE RODS NO. & SIZE
	X	V	Y	N	C.Y.	
4"	1'-0"	4'-3"	1'-0"	2'-4"	.55	2-3/4" DIA.
6"	1'-0"	4'-6"	1'-0"	2'-6"	.61	2-3/4" DIA.
8"	1'-0"	4'-8"	1'-0"	2'-8"	.67	2-3/4" DIA.
10"	1'-0"	4'-10"	1'-0"	2'-10"	.72	4-3/4" DIA.
12"	1'-0"	5'-0"	1'-0"	3'-0"	.78	4-3/4" DIA.
14"	1'-0"	5'-2"	1'-0"	3'-3"	.87	6-3/4" DIA.
16"	1'-0"	5'-4"	1'-0"	4'-4"	1.09	8-3/4" DIA.
18"	1'-0"	5'-6"	1'-0"	4'-7"	1.34	8-3/4" DIA.

- NOTES:
1. TABLE PORTION FOR NO. AND SIZE OF TIE RODS IS APPLICABLE TO ALL TIE-IN PIPING REQUIRING SUCH REINFORCEMENT.
 2. USE OF ANCHOR BLOCKS AND OR THRUST BLOCKS NEEDED ONLY IF A TIE-RODDED EXTENSION PIECE EQUALS OR EXCEEDS A STANDARD PIPE LENGTH.

OVER & SAG BEND THRUST BLOCKING DETAILS
NOT TO SCALE

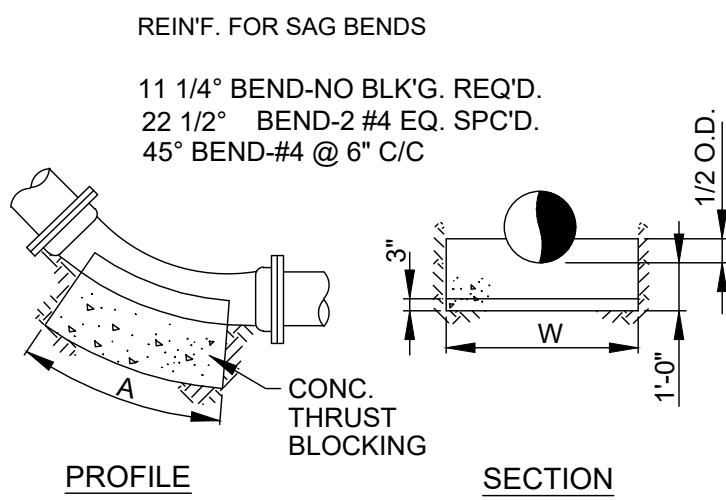
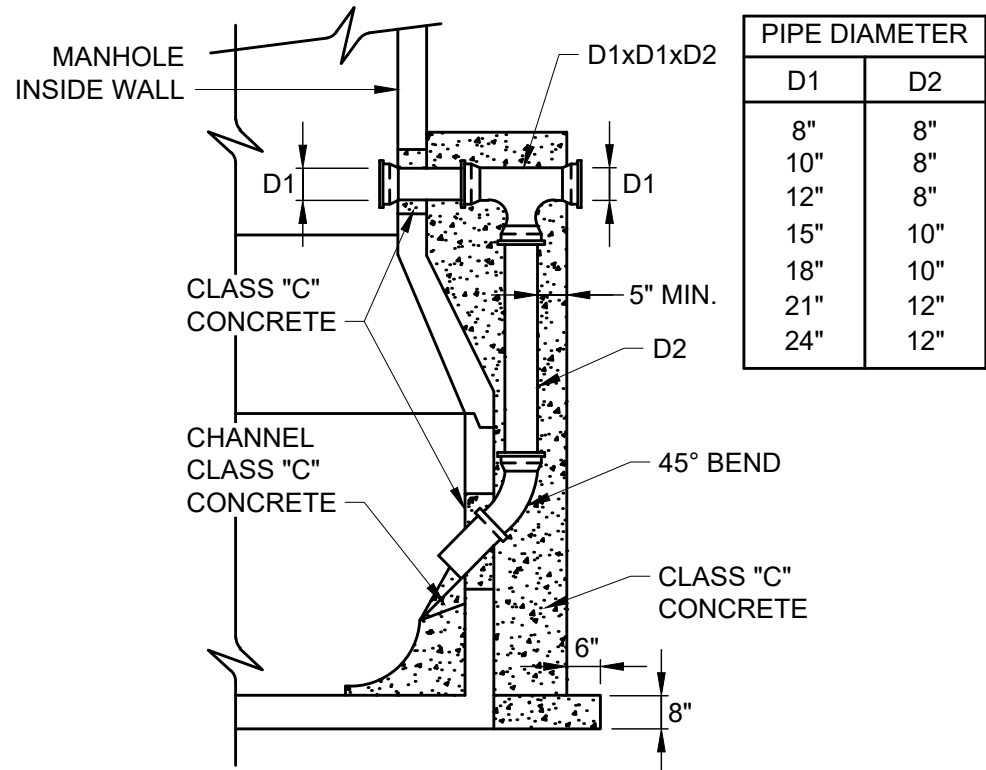
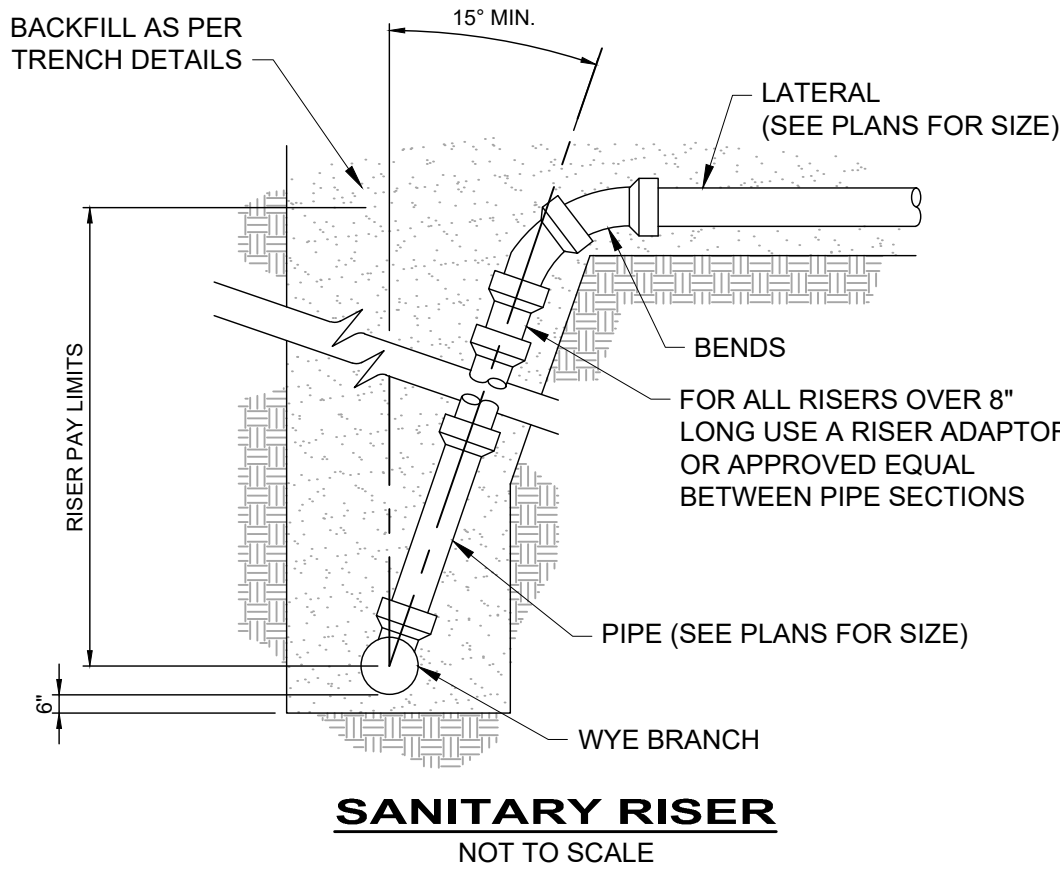
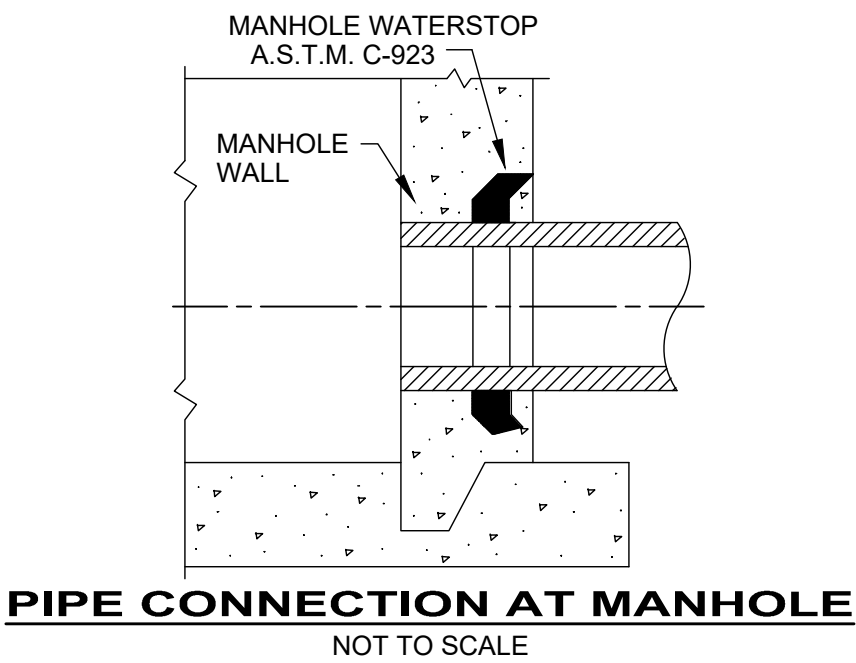


TABLE OF DIMENSIONS - SAG BENDS

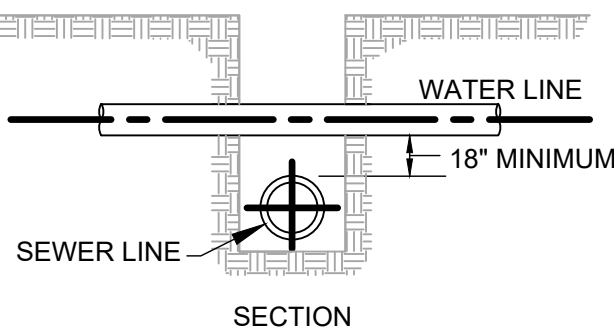
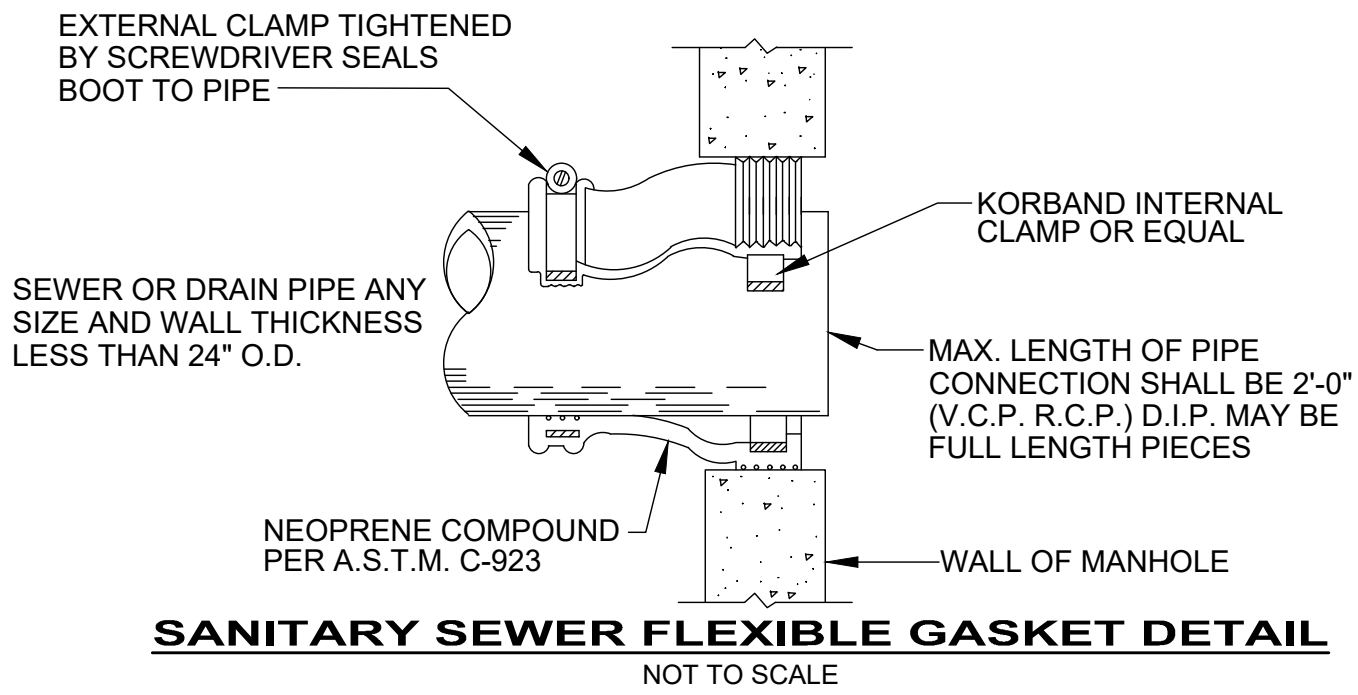
PIPE SIZE	22 1/2° BEND			45° BEND		
	A	W	C.Y.	A	W	C.Y.
4"	—	—	—	—	—	—
6"	—	—	—	0'-8"	1'-8"	0.05
8"	0'-8"	1'-4"	0.04	0'-9"	2'-8"	0.10
10"	0'-8"	2'-0"	0.06	1'-2"	2'-10"	0.16
12"	0'-8"	2'-4"	0.08	1'-7"	3'-0"	0.24
14"	0'-8"	2'-9"	0.09	1'-8"	3'-2"	0.28
16"	0'-9"	3'-4"	0.14	2'-3"	3'-4"	0.41
18"	1'-0"	3'-6"	0.20	2'-9"	3'-6"	0.54

3. BLOCKING DESIGN BASED ON COMBINED WORKING PRESSURE OF WATER HAMMER AND SOIL BEARING AT 3000 P.S.I.



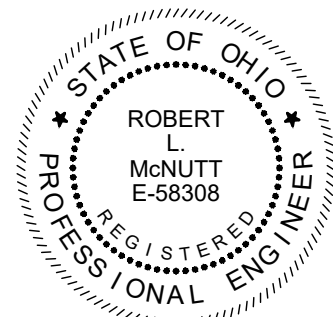
- NOTES:
1. DROP IS REQUIRED WHEN INVERT DIFFERENTIAL IS 24 INCHES OR GREATER.
 2. HEIGHT OF DROP PIPE IS TO BE AS SHOWN ON THE DRAWINGS OR WILL BE DETERMINED AT THE TIME OF CONSTRUCTION.
 3. ALL WORK AND MATERIALS REQUIRED TO CONSTRUCT THE DROP SHOULD BE INCLUDED FOR PAYMENT UNDER THE PAY ITEMS ESTABLISHED FOR MANHOLES, AND/OR PIPE SEWERS COMPLETE IN PLACE.
 4. MATERIALS FOR THE TEE, DROP PIPE AND BEND SHALL BE C.I., DIP, OR PVC.
 5. PIPE REQUIRE A 5" THICK (MINIMUM) CLASS "C" CONCRETE ENCASEMENT ON THREE SIDES OF PIPE AND TIED TO MANHOLE WALL WITH 5/8"-U" RODS X 6" LONG @ 12".

OUTSIDE DROP PIPE FOR MANHOLES
SCALE: NONE



- NOTES:
1. IF JOINT ON WATER MAIN IS WITHIN LIMITS OF SEWER TRENCH, INSTALL MECHANICAL BELL JOINT CLAMP
 2. IF CLEARANCE IS LESS THAN 18", ENCASE SEWER PIPE 6 FT. EACH SIDE OF WATER MAIN. COST SHALL BE INCLUDED IN THE UNIT PRICES BID FOR ALL ITEMS IN THE PROPOSAL.
 3. IN NO CASE SHALL THE SEWER PIPE CONTACT ANY WATER MAIN, SERVICE LINE OR APPURTENANCE.

VERTICAL WATER MAIN CLEARANCE
NOT TO SCALE



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MENTOR, OHIO 44060
(440) 951-9000

ISSUED FOR:	REVIEW	NO	REVISION	DATE
8/2/25	AS NOTED			
SCALE:	RLM			
DESIGNED BY:	RLM			
DRAWN BY:	RLM			
CHECKED BY:	RLM			

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

STANDARD DETAILS - SD SERIES
CONSTRUCTION DETAILS - 2

PROJECT NO.

241455

DISCIPLINE

DETAILS

SHEET NAME

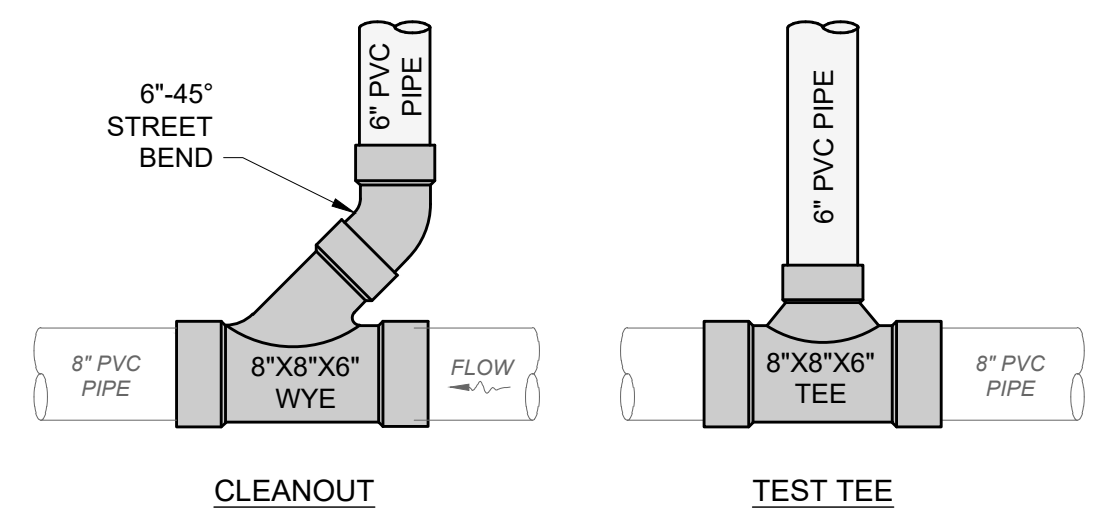
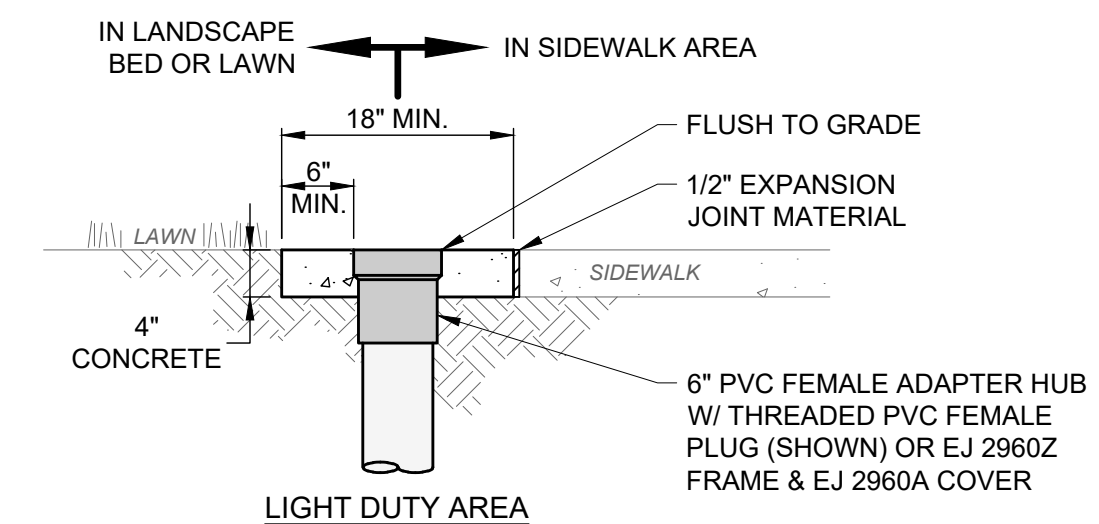
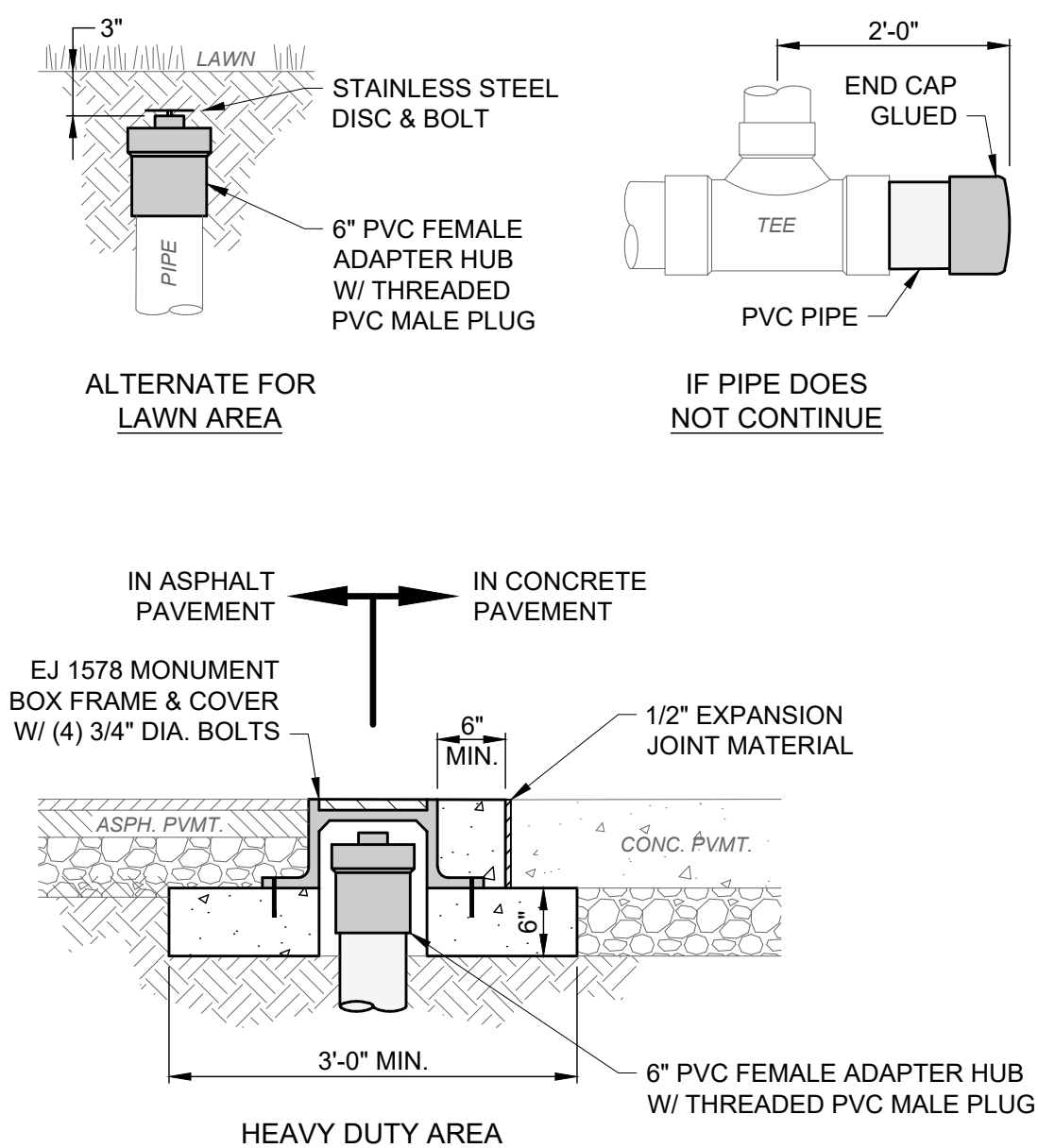
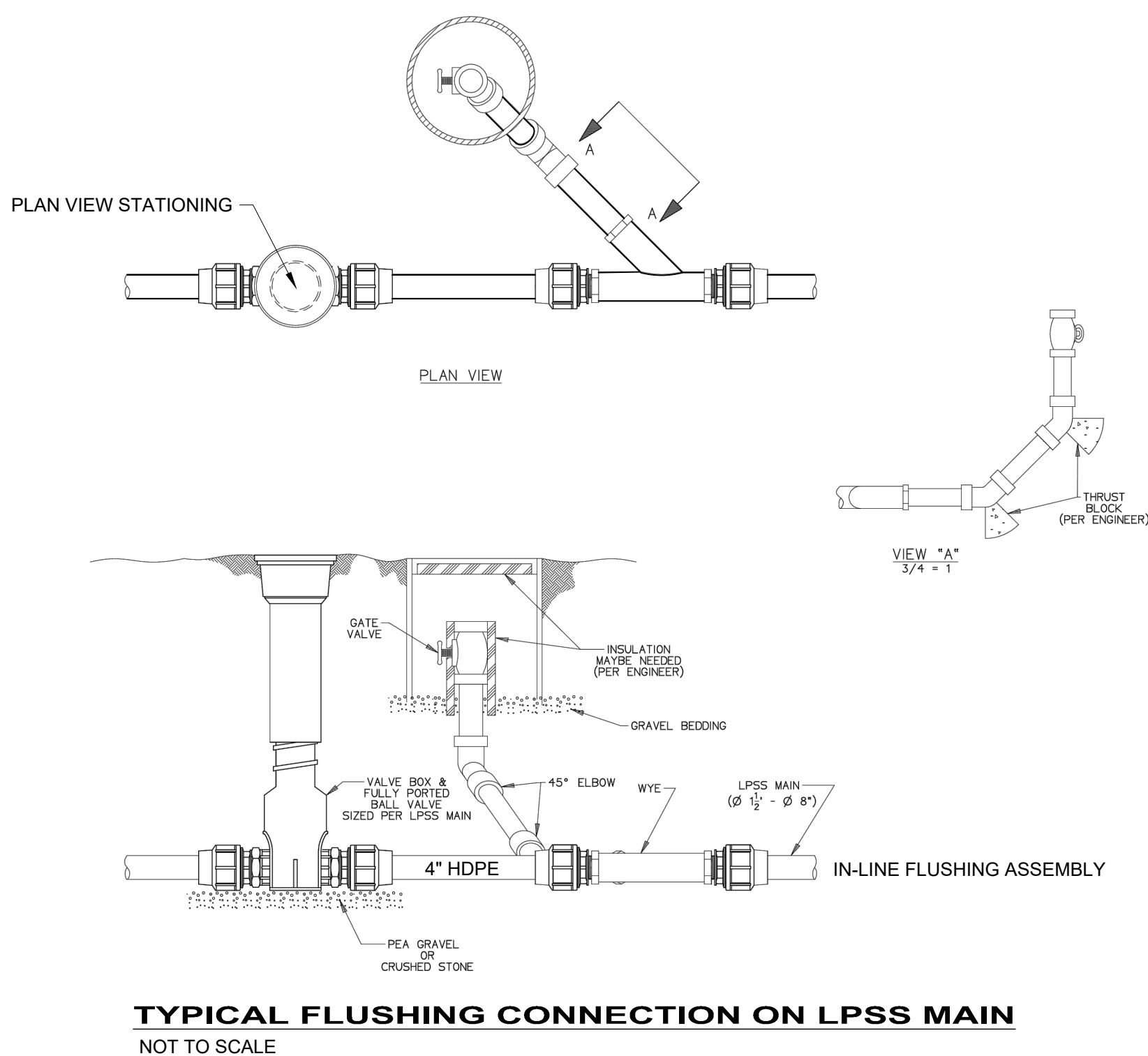
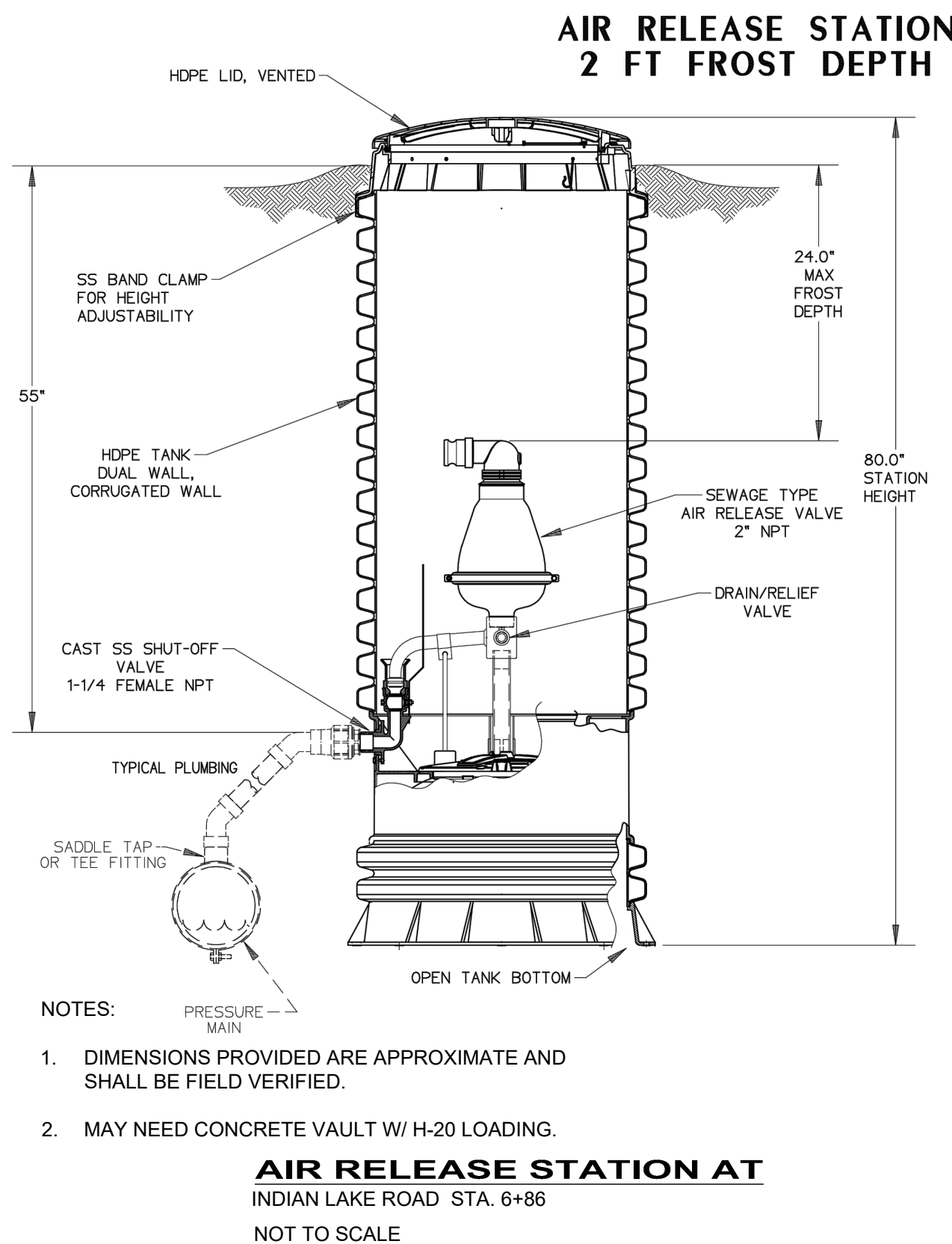
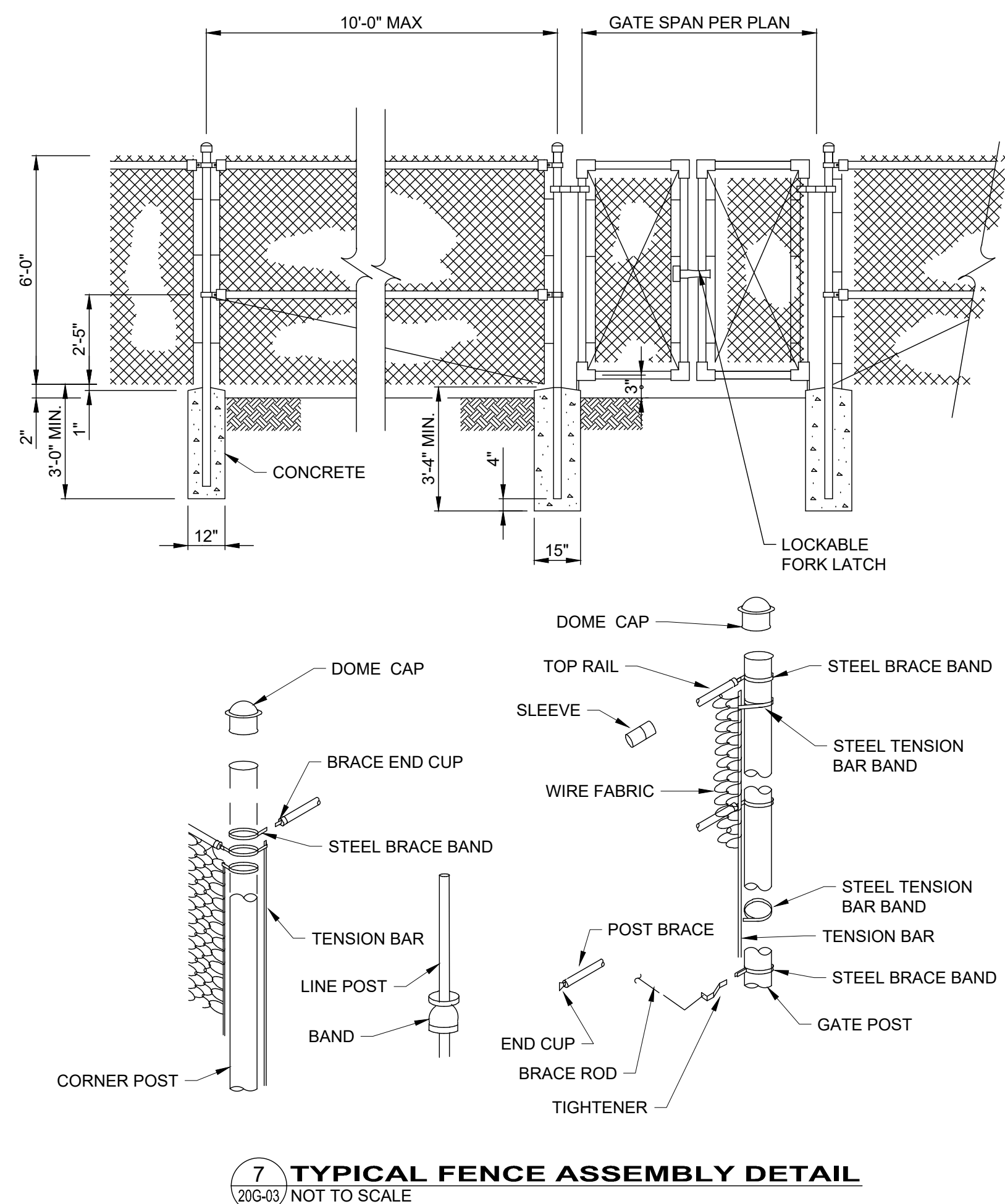
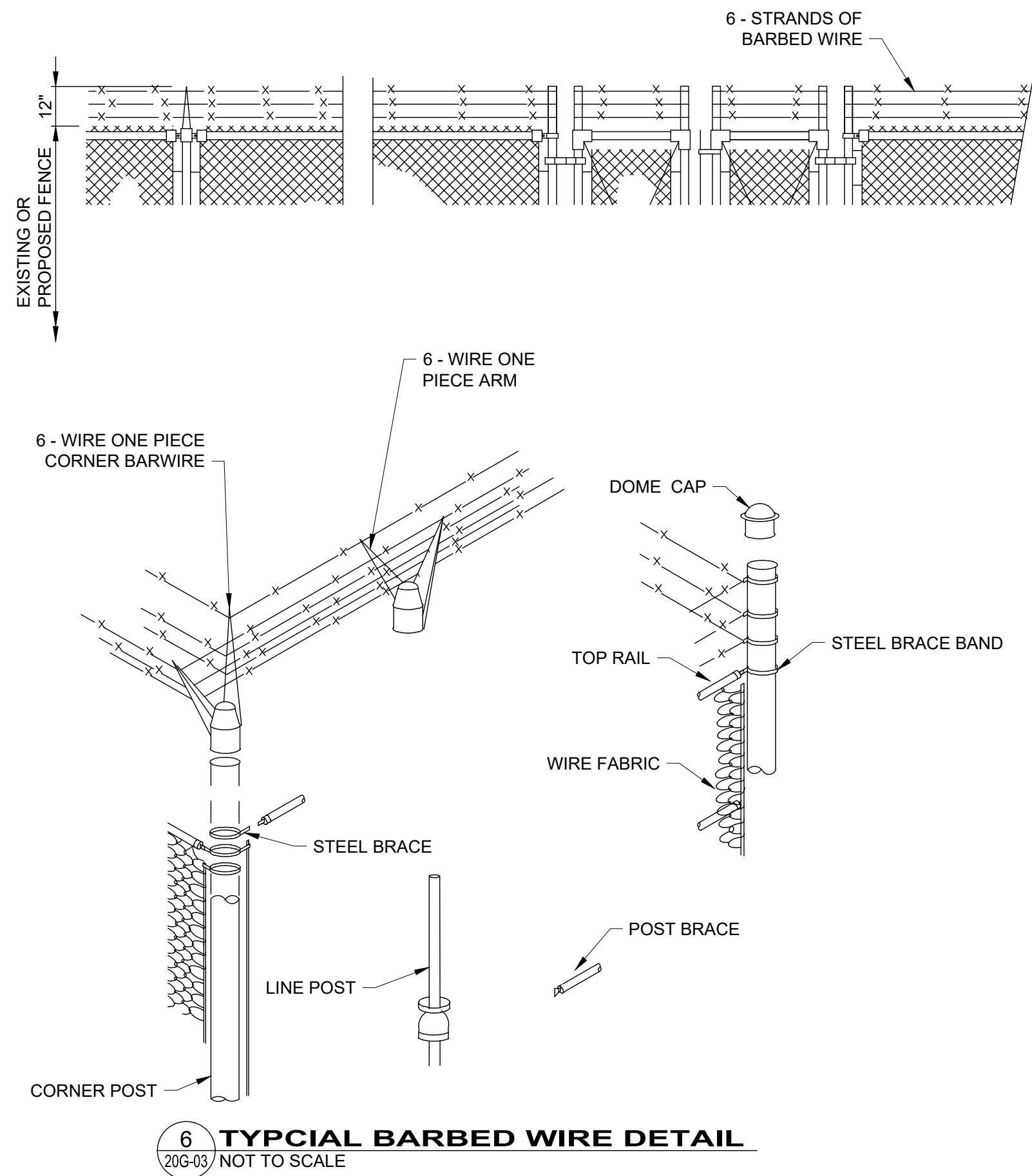
SD-C-02

SHEET

20

OF

23



NOTES:
1. CONCRETE SHALL BE ODOT ITEM 499, CLASS QC-1.
2. THIS DETAIL SHOWS A 6" CLEANOUT AND TEST TEE FOR REFERENCE ONLY. USE 4" CLEANOUT OR TEST TEE FOR 4" PIPE; 6" CLEANOUT OR TEST TEE FOR 6" PIPE AND LARGER; OR AS PER PLAN. NOT ALL ITEMS SHOWN MAY APPLY.

STORM & SANITARY
CLEANOUT & TEST TEE DETAIL
SCALE: NONE

verdantas
8150 STERLING COURT
MENTOR, OHIO 44060
(440) 951-9000

NO	REVISION	DATE

REVIEW	ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
		8/29/25	AS NOTED	RLM	RLM	RLM

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONMENT
GUERNSEY COUNTY, OHIO

STANDARD DETAILS - SD SERIES
CONSTRUCTION DETAILS - 4

PROJECT NO.	
241455	
DISCIPLINE	
DETAILS	
SHEET NAME	
SD-C-04	
SHEET	OF
22	23

GENERAL NOTES TO CONTRACTOR:

1. ALL MATERIALS DISPOSED OF OFF-SITE MUST BE DISPOSED OF IN AN ENVIRONMENTALLY SOUND FASHION. DISPOSING OF DEBRIS ON PRIVATE PROPERTY AND/OR ON AN UNAPPROVED LANDFILL IS NOT ACCEPTABLE.
2. PROVIDE SOIL EROSION BARRIERS AS REQUIRED FOR CONSTRUCTION, AS SPECIFIED AND AS DETAILED IN THESE PLANS.
3. ALL Dewatering flows are to be kept free of silt, sediment, debris and other pollutants through appropriate means (settling basins, filters, etc.). See environmental guidelines and requirements for additional storage, testing, and disposal requirements prior to discharging/releasing dewatering flows.
4. ONLY WATER WILL BE USED FOR DUST CONTROL. NO SEPARATE PAYMENT WILL BE MADE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. EROSION CONTROL SHALL CONSIST OF TEMPORARY CONTROL MEASURES AS DETAILED ON THE PLANS OR ORDERED BY THE GOVERNING AGENCY DURING THE LIFE OF THE CONTRACT TO CONTROL SOIL EROSION AND SEDIMENTATION THROUGH USE OF EROSION CONTROL BEST MANAGEMENT PRACTICES (BMP'S).
2. TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS, THE LOCATION AND SIZE OF WHICH ARE DETAILED ON THE PLANS, SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORK OPERATIONS. CONDITIONS THAT DEVELOP DURING CONSTRUCTION THAT WERE NOT FORESEEN DURING DESIGN STAGE THAT REQUIRE ADDITIONAL OR MODIFIED TEMPORARY OR PERMANENT BMP'S SHALL BE APPROVED BY THE ENGINEER.
3. SEDIMENT PONDS, SEDIMENT TRAPS, AND PERIMETER SEDIMENT CONTROLS SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING. THEY SHALL CONTINUE TO FUNCTION UNTIL DISTURBED AREAS ARE RE-ESTABLISHED. NO SEDIMENT CONTROLS SHALL BE PLACED IN A STREAM.
4. TRENCH DEWATERING OR DEWATERING GROUND WATER WHICH CONTAINS SEDIMENT SHALL PASS THROUGH AN EFFECTIVE SEDIMENT CONTROL DEVICE. THIS MAY INCLUDE DEWATERING INTO SUMP PIT, FILTER BAG, OR EXISTING VEGETATED UPSLOPE AREA. SEDIMENT LADEN WATER SHALL NOT BE DISCHARGED TO STREAMS OR THE STORM SEWER SYSTEM. SEE ENVIRONMENTAL GUIDELINES AND REQUIREMENTS FOR ADDITIONAL STORAGE, TESTING, AND DISPOSAL REQUIREMENTS PRIOR TO DISCHARGING/RELEASING DEWATERING FLOWS.
5. CEMENT WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. ALL WASH WATER SHALL BE COLLECTED IN AN APPROVED, DESIGNATED CONTAINER PROVIDED BY THE CONTRACTOR, AND PLACED IN THE DESIGNATED LOCATIONS.
6. CONTAINERS SHALL BE PROVIDED FOR COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS TO BE USED ON-SITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.
7. THESE NOTES AND DRAWINGS ARE INTENDED TO SERVE AS BASIC GUIDELINES. ALL EROSION CONTROL PRACTICES SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE ODNr RAINWATER AND LAND DEVELOPMENT MANUAL.
8. ADDITIONAL EROSION CONTROL BMP'S MAY BE MANDATED BY THE GOVERNING AGENCY AT ANY TIME DURING THIS PROJECT AS UNFORESEEN SITUATIONS MAY ARISE THAT WARRANT FURTHER EROSION AND SEDIMENT CONTROL PRACTICES.

PROHIBITED CONSTRUCTION ACTIVITIES:

THE CONTRACTOR SHALL NOT USE CONSTRUCTION METHODS, ACTIVITIES, OR OPERATIONS THAT MAY NEGATIVELY IMPACT THE NATURAL ENVIRONMENT OR THE PUBLIC HEALTH AND SAFETY. PROHIBITED CONSTRUCTION METHODS, ACTIVITIES, OR OPERATIONS INCLUDE BUT ARE NOT LIMITED TO:

1. DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOOD PLAINS, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER.
2. INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR OUTSIDE THE EASEMENT LIMITS.
3. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS, OR STORM SEWERS.
4. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE AND OTHER HARMFUL WASTE INTO OR ALONGSIDE RIVERS, STREAMS, IMPOUNDMENTS OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO.
5. PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF A STREAM.
6. REMOVAL OF TREES AND BUSHES, OR DAMAGING VEGETATION OUTSIDE THE LIMITS OF THE CONSTRUCTION AREA.
7. DISPOSAL OF TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS.
8. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED BY THE ENGINEER FOR SAID PURPOSES.

EROSION/SEDIMENT/DUST CONTROL PRACTICES:

1. STOCKPILED TOPSOIL AND EXCAVATED MATERIAL IS TO BE PROTECTED THROUGH THE USE OF TEMPORARY SEEDING OR COVERED WITH ANCHORED STRAW MULCH.
2. FINAL GRADING WILL BE CONSISTENT WITH PRE-CONSTRUCTION TOPOGRAPHY TO MAINTAIN DRAINAGE AND AESTHETICS.
3. REMOVE ONLY THOSE TREES, SHRUBS, AND GRASSES THAT MUST BE REMOVED TO PERMIT ACTUAL CONSTRUCTION; PROTECT THE REMAINING TO PRESERVE THEIR AESTHETIC AND EROSION CONTROL VALUE.
4. DISTURBED LAND SHALL BE TEMPORARILY STABILIZED BY SEEDING AND/OR MULCHING.
5. BACKFILL TRENCHES IMMEDIATELY AFTER EXCAVATION. SEED AND MULCH TRENCHES WITHIN TWO WEEKS AFTER TRENCHES ARE BACKFILLED.
6. SILT FROM CONSTRUCTION OPERATIONS SHALL NOT BE PERMITTED TO ENTER THE STORM DRAIN SYSTEM. FOR CONSTRUCTION OCCURRING NEAR STORM DRAIN INLETS, EROSION CONTROL MEASURES, SUCH AS SILT FENCES, ROCK CHECKS, SEDIMENT BASINS, ETC., SHALL BE USED TO PREVENT SILT FROM ENTERING THE STORM DRAIN.

CONTAMINATED SOILS:

1. IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT LICENSED SANITARY LAND FILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY. (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). NOTE THAT STORM WATER RUN OFF ASSOCIATED WITH CONTAMINATED SOILS ARE NOT AUTHORIZED UNDER OHIO EPA'S GENERAL STORM WATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
2. OPEN BURNING IS NOT ALLOWED.

SPILL CONTROL AND CLEANUP:

1. ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS THAT ARE CLEARLY LABELED. PREFERABLY, THE CONTAINERS WILL BE STORED IN A COVERED TRUCK OR TRAILER THAT PROVIDES SECONDARY CONTAINMENT FOR THE PRODUCTS.
2. BULK STORAGE TANKS HAVING A CAPACITY OF GREATER THAN 55 GALLONS WILL BE PROVIDED WITH SECONDARY CONTAINMENT.
3. PERSONNEL ON-SITE WILL BE MADE AWARE OF CLEANUP PROCEDURES AND THE LOCATION OF SPILL CLEANUP EQUIPMENT.
4. ALL SPILLS WILL BE CLEANED UP USING APPROPRIATE ABSORBENT MATERIALS AND EXCAVATION AS NECESSARY. CLEANUP WASTE WILL BE CHARACTERIZED AND DISPOSED OF ACCORDINGLY.

CLEARING AND GRADING:

1. LIMITS OF CLEARING AND GRADING SHALL BE CLEARLY MARKED ON SITE WITH SIGNAGE, FLAGGING AND/OR CONSTRUCTION FENCING.
2. THE CONTRACTOR SHALL LIMIT THE SURFACE AREA OF ERODIBLE EARTH MATERIAL EXPOSED BY EXCAVATION, BORROW, AND FILL OPERATIONS AND PROVIDE IMMEDIATE PERMANENT OR TEMPORARY CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT STREAMS OR OTHER WATER COURSES, LAKES, PONDS, WETLANDS OR OTHER AREAS OF WATER IMPOUNDMENT.

OFF-SITE TRACKING:

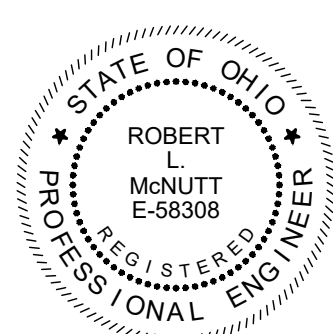
1. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL INGRESS AND EGRESS LOCATIONS TO ELIMINATE OFF-SITE VEHICLE TRACKING OF SEDIMENTS. SEDIMENTS SHALL BE REMOVED FROM ROADWAYS AT LEAST DAILY, OR MORE OFTEN IF REQUESTED BY THE OWNER.

TEMPORARY SEEDING:

1. SEDIMENT CONTROL SHALL BE ACCOMPLISHED BY SEEDING AND STRAW MULCHING ALL DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF EXCAVATION OR FILL AND FINISH GRADING IN ACCORDANCE WITH SPECIFICATIONS OF THE ODN RAINWATER AND LAND DEVELOPMENT MANUAL.
2. ALL DETENTION PONDS, RETENTION PONDS, WATER QUALITY STRUCTURES, SEDIMENT PONDS, SEDIMENT TRAPS, EARTHEN DIVERSIONS OR EMBANKMENTS SHALL BE SEEDED AND STRAW MULCHED WITHIN SEVEN (7) DAYS OF COMPLETED CONSTRUCTION.
3. DISTURBED AREAS THAT WILL REMAIN INACTIVE FOR A PERIOD OF TWENTY-ONE (21) DAYS OR LONGER SHALL BE STABILIZED WITH SEEDING AND STRAW MULCHING, OR OTHER APPROPRIATE MEANS, WITHIN SEVEN (7) DAYS AFTER EARTH MOVING CEASES. PERMANENT SOILS STABILIZATION SHALL BE INSTALLED WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.
4. STABILIZE AREAS WITHIN FIFTY (50) FEET OF ANY STREAM OR WETLAND WITHIN TWO (2) DAYS ON ALL INACTIVE DISTURBED AREAS THAT WILL REMAIN INACTIVE FOR FOURTEEN (14) DAYS OR LONGER.
5. SEEDED AREAS SHALL BE INSPECTED AND WHERE THE SEED HAS NOT PRODUCED 80% COVER SHALL BE RESEEDED AS NECESSARY BY THE CONTRACTOR. AREAS SHALL BE STABILIZED WITH STRAW MULCH WHEN SUB-CONDITIONS PROHIBIT SEEDING.
6. STRAW MULCHING SHALL BE APPLIED AT A RATE OF 90 POUNDS PER 1,000 SQ.FT. OF DISTURBED AREA OR TWO (2) TONS PER ACRE. ALL HYDROSEEDING MUST BE WOOD CELLULOSE FIBER AND APPLIED AT 2,000 LBS/AC OR 46 POUNDS PER 1,000 SQ.FT.

PERMANENT SEEDING:

1. PERMANENT SEEDING SHALL BE AS PER SEEDING CHART ON SHEET ESC-2.



8150 STERLING COURT
MENTOR, OHIO 44060
(440) 951-9000

ISSUED FOR:	REVIEW	NO	REVISION	DATE
ISSUE DATE:	8/29/25			
SCALE:	AS NOTED			
DESIGNED BY:	RLM			
DRAWN BY:	RLM			
CHECKED BY:	RLM			

VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
PHASE I - ROLLING HILLS WWTP ABANDONEMENT
GUERNSEY COUNTY, OHIO

EROSION CONTROL - EC SERIES

EROSION CONTROL - 1

PROJECT NO.	
241455	
DISCIPLINE	
CIVIL	
SHEET NAME	
EC-01	
SHEET	OF
23	23

SEEDING DATES	SPECIES	LB./1000 FT2	LB./ACRE
MARCH 1 TO AUGUST 15	OATS	3	128 (4 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYEGRASS	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	55
	PERENNIAL RYEGRASS	3.25	142
	CREeping RED FESCUE	0.4	17
	KENTUCKY BLUEGRASS	0.4	17
	OATS	3	128 (3 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
AUGUST 16TH TO NOVEMBER	RYE	3	112 (2 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	WHEAT	3	120 (2 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYE	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	40
	PERENNIAL RYEGRASS	3.25	40
	CREeping RED FESCUE	0.4	40
	KENTUCKY BLUEGRASS	0.4	40
NOVEMBER 1 TO FEB. 29 USE MULCH ONLY OR DORMANT SEEDING			
NOTE: OTHER APPROVED SPECIES MAY BE SUBSTITUTED.			

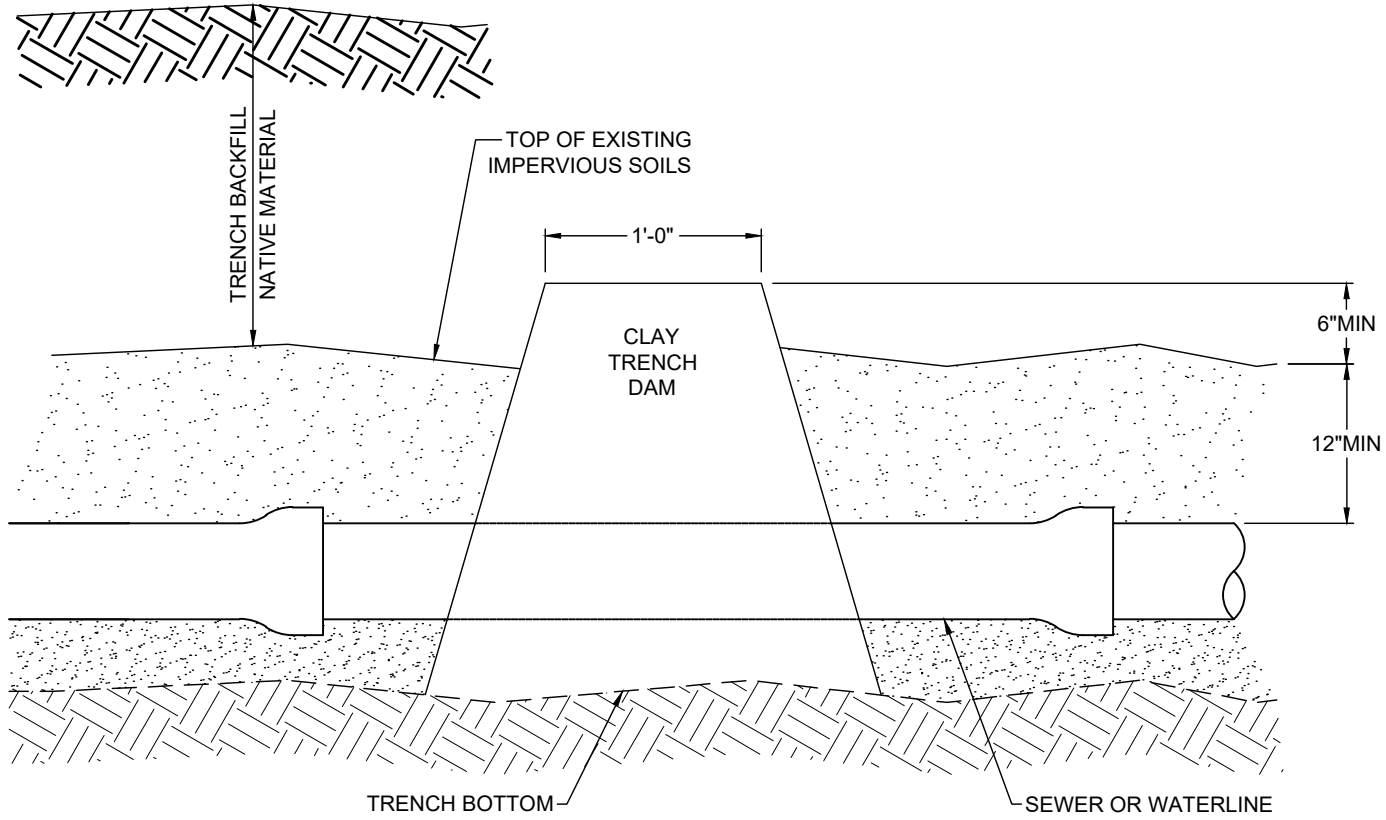
TEMPORARY SEEDING CHART

	SEEDING RATE		
	LBS./ACRE	LBS./1,000 SQ. FEET	Notes:
GENERAL USE			
CREEPING RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	20-40 10-20 20-40	1/2-1 1/4-1/2 1/2-1	FOR CLOSE MOWING & FOR WATERWAYS WITH < 2.0 FT/SEC VELOCITY
TALL FESCUE TURF-TYPE (DWARF) FESCUE	40-50 90	1-1 1/4 2 1/4	
STEEP BANKS OR CUT SLOPES			
TALL FESCUE	40-50	1-1 1/4	
CROWN VETCH TALL FESCUE	10-20 20-30	1/4-1/2 1/2-3/4	DO NOT SEED LATER THAN AUGUST
FLAT PEA TALL FESCUE	20-25 20-30	1/2-3/4 1/2-3/4	
ROAD DITCHES AND SWALES			DO NOT SEED LATER THAN AUGUST
TALL FESCUE	40-50	1-1 1/4	
TURF-TYPE (DWARF) FESCUE KENTUCKY BLUEGRASS	90 5	2 1/4 0.1	
LAWNS			
KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	100-120	2 2	FOR SHADED AREAS
KENTUCKY BLUEGRASS CREEPING RED FESCUE	100-120	2 1-1/2	

NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED.

NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED.

PERMANENT SEEDING CHART

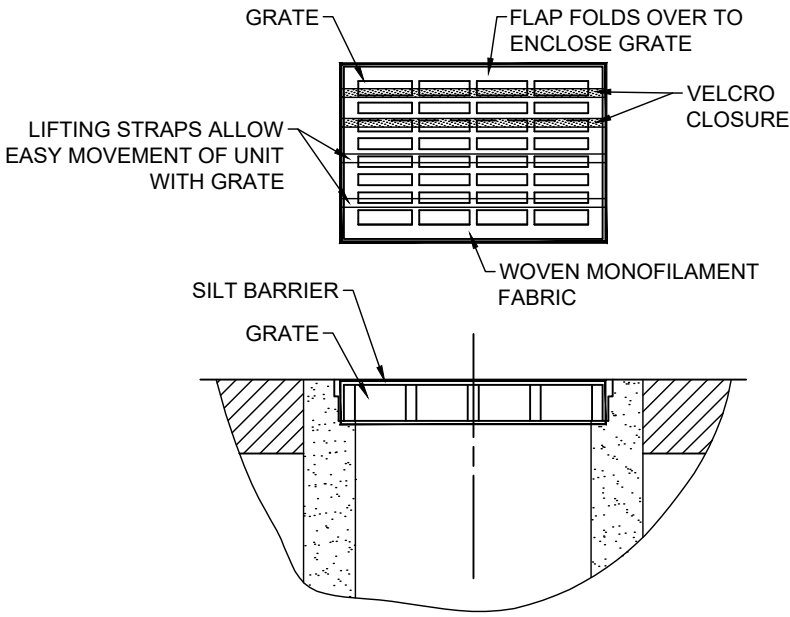


TRENCH DAM DETAIL

NOT TO SCALE

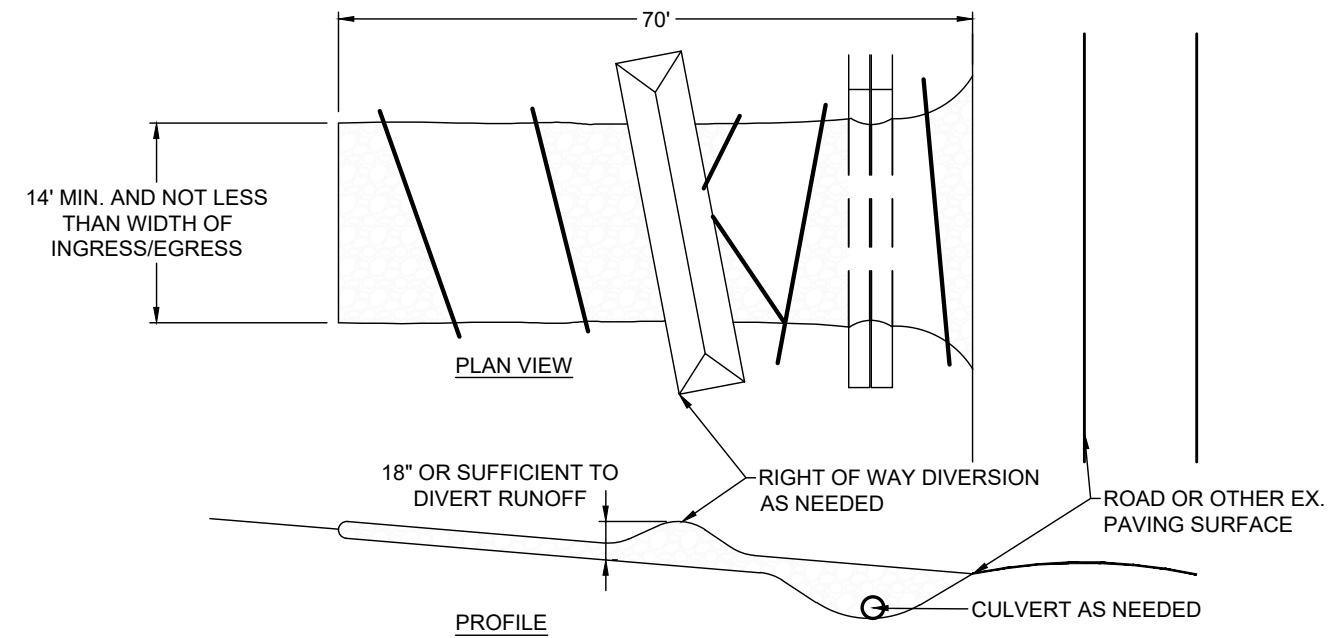
NOTES:

1. GEOTEXTILE SHALL HAVE AN EQUIVALENT OPENING OF 20-40 SIEVE AND BE RESISTANT TO SUNLIGHT.
2. MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT. REMOVE SEDIMENT THAT HAS ACCUMULATED WITHIN THE CONTAINMENT AREA OF THE SILT BARRIER AS NEEDED.
3. TO INSTALL CATCH BASIN INLET SILT BARRIER: THE EMPTY SILT BARRIER SHOULD BE PLACED OVER THE GRATE AS THE GRATE STANDS ON END. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE. HOLDING THE LIFTING DEVICES (DO NOT RELY ON LIFTING DEVICES TO SUPPORT THE ENTIRE WEIGHT OF THE GRATE). PLACE THE GRATE INTO ITS FRAME.



INLET PROTECTION FOR CATCH BASIN IN ROADWAY

NOT TO SCALE



NOTES:

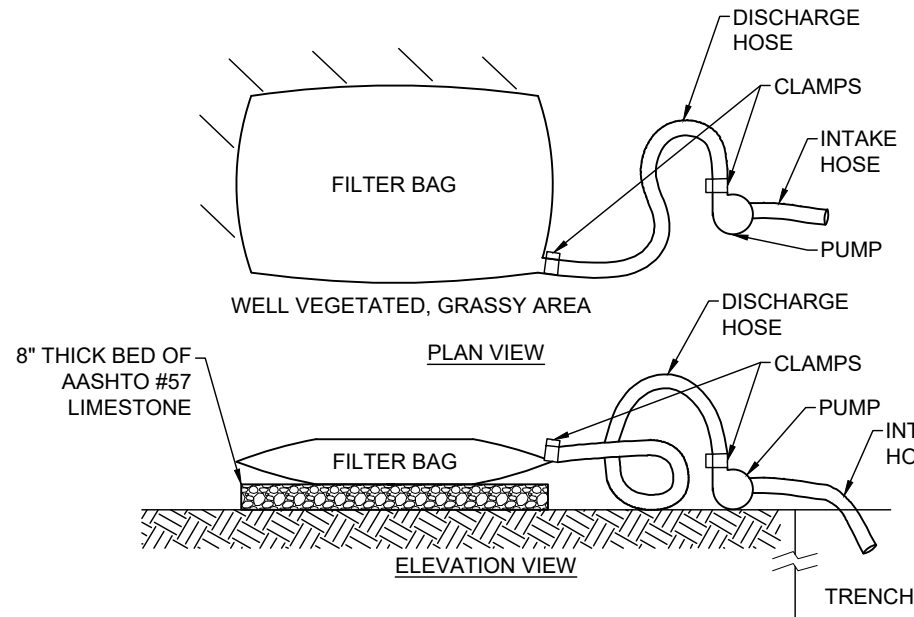
1. STONE SIZE - ODOT #2 (1.5 - 2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FEET (EXCEPTION: APPLY 30 FEET MINIMUM TO SINGLE RESIDENCE LOTS).
3. THICKNESS - THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
4. WIDTH - THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE - A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-ROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:

GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE	
MINIMUM TENSILE STRENGTH	200 LBS
MINIMUM PUNCTURE STRENGTH	80 PSI
MINIMUM TEAR STRENGTH	50 LBS
MINIMUM BURST STRENGTH	320 PSI
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EOS < 0.6 mm
PERMITTIVITY	1x10-3 cm/sec

6. TIMING - THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
7. CULVERT - A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
8. WATER BAR - A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCES AND OUT ONTO PAVED SURFACES.
9. MAINTENANCE - TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
10. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
11. REMOVAL - THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

CONSTRUCTION ENTRANCE

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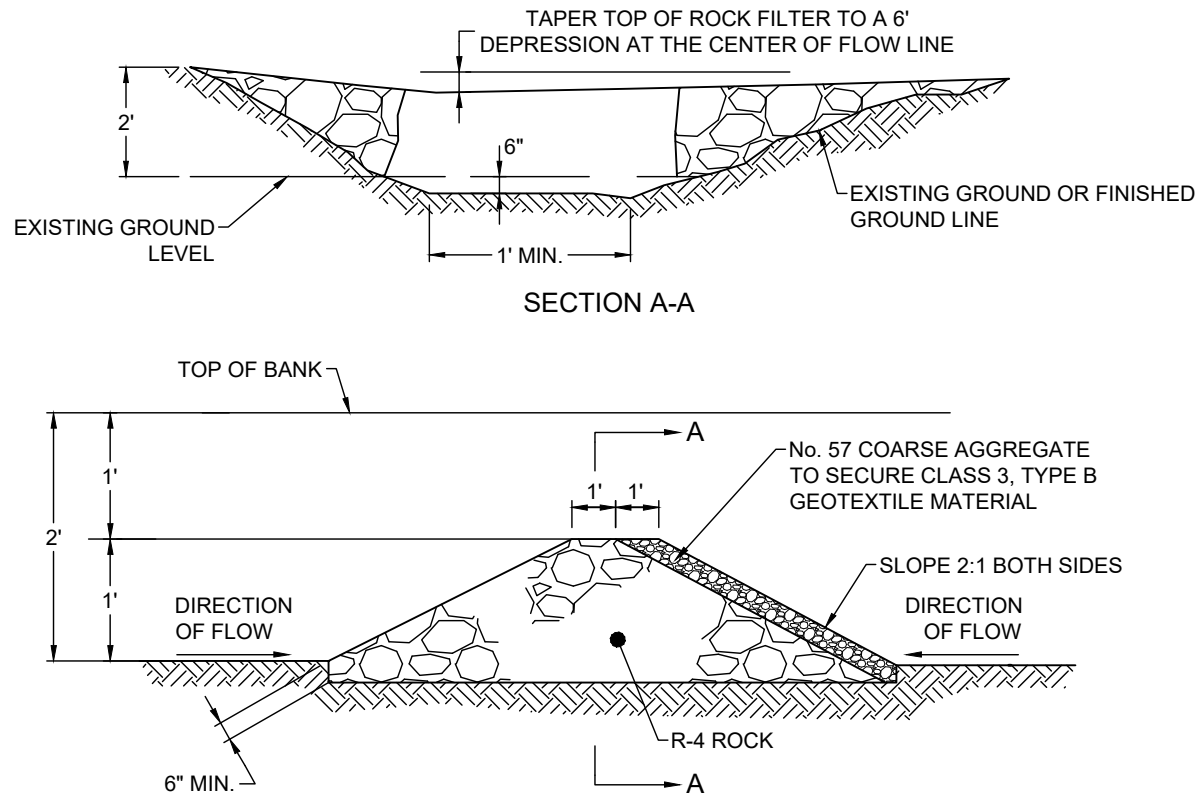


PUMPED WATER FILTER BAG DETAIL

NOT TO SCALE

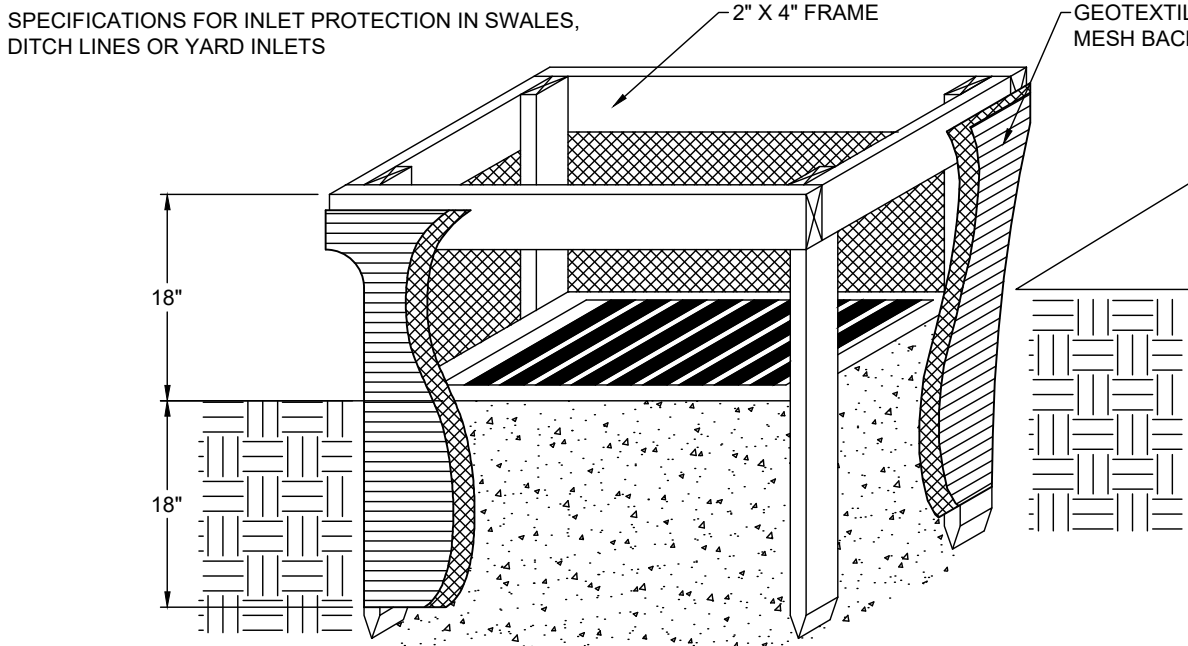
NOTES:

1. USE FILTER BAGS MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS, CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.
2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. REPLACE FILTER BAGS WHEN THEY BECOME 1/2 FULL. KEEP SPARE BAGS AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
3. PLACE BAGS IN WELL-VEGETATED (GRASSY) AREAS, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, PROVIDE A GEOTEXTILE FLOW PATH. DO NOT PLACE BAGS ON SLOPES GREATER THAN 5%.
4. INSERT PUMP DISCHARGE HOSE INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.
5. THE PUMPING RATE SHOULD BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
6. INSPECT FILTER BAGS DAILY. IF ANY PROBLEM IS DETECTED, CEASE PUMPING IMMEDIATELY AND DO NOT RESUME UNTIL THE PROBLEM IS CORRECTED.



ROCK FILTER DETAIL

NOT TO SCALE

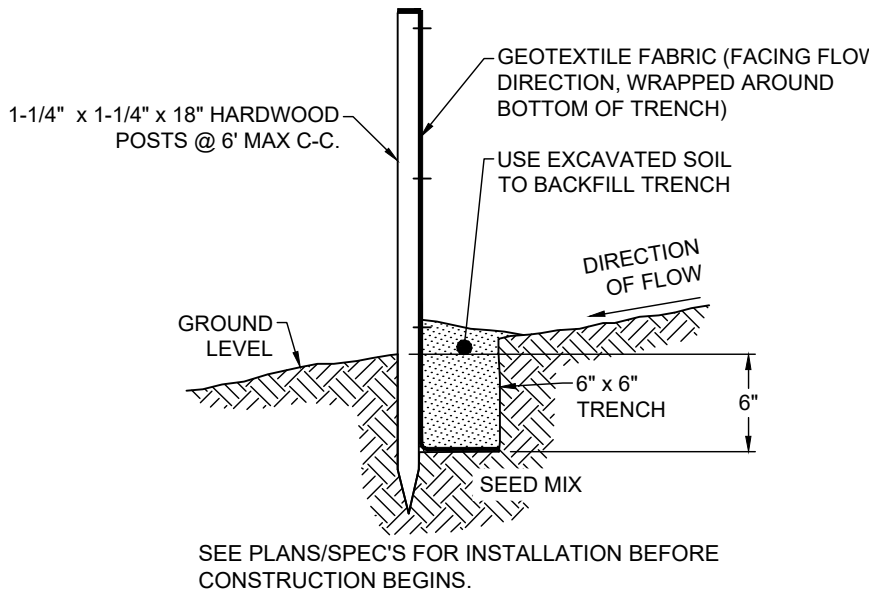


SPECIFICATIONS FOR INLET PROTECTION IN SWALES, DITCH LINES OR YARD INLETS

1. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL.
2. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH AT LEAST 18 INCHES.
3. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2-BY-4-INCH CONSTRUCTION-GRADE LUMBER. THE 2-BY-4-INCH POSTS SHALL BE DRIVEN 1 FOOT INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP PORTION OF 2-BY-4-INCH FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.
4. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.
5. GEOTEXTILE SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20-40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18 INCHES BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
6. BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6 INCH LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.
7. A COMPACTED EARTH DIKE OR A CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IF THE INLET IS NOT IN A DEPRESSION AND IF RUNOFF BYPASSING THE INLET WILL NOT FLOW TO A SETTLING POND. THE TOP OF EARTH DIKES SHALL BE AT LEAST 6 INCHES HIGHER THAN THE TOP OF THE FRAME.

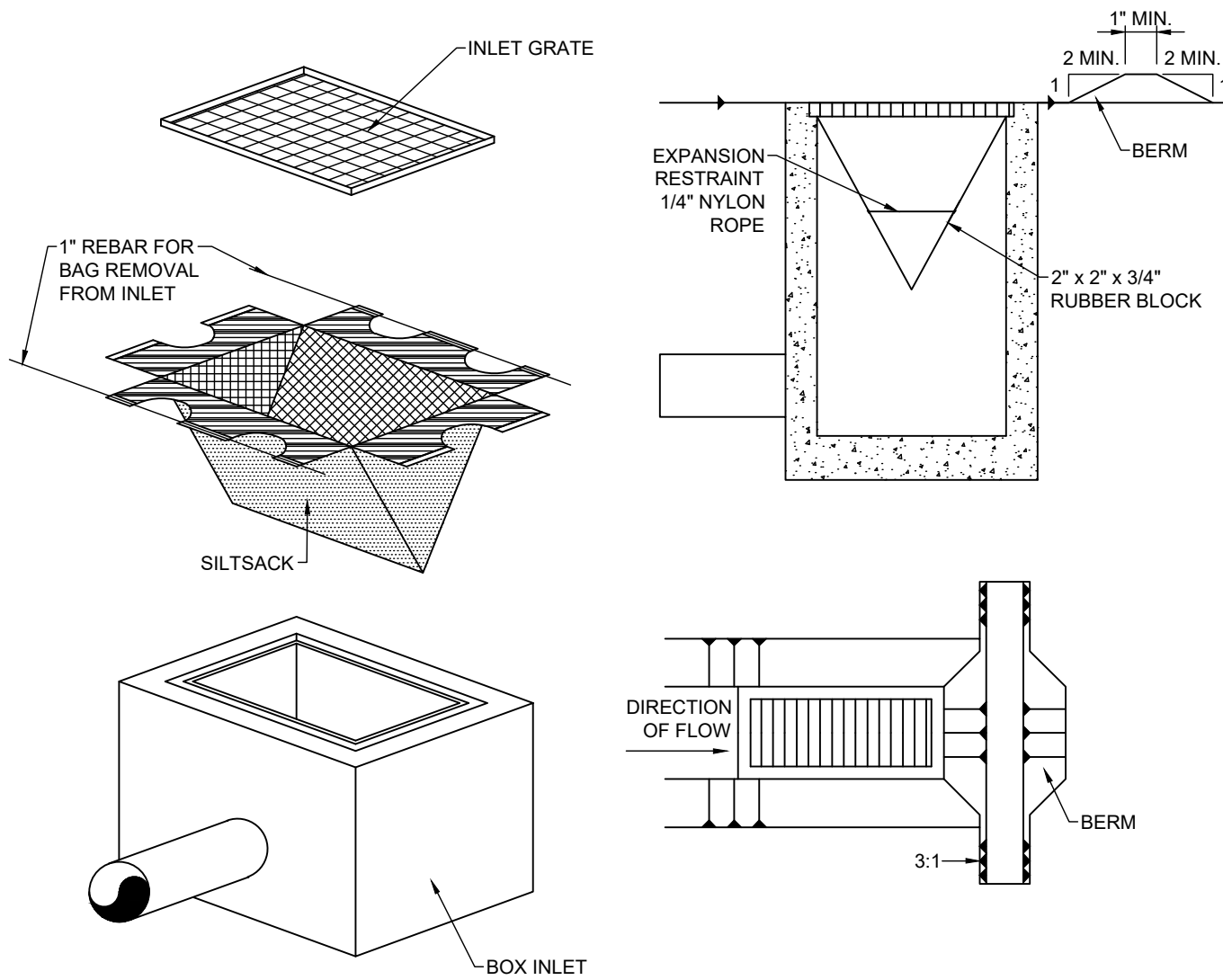
INLET PROTECTION

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SILT FENCE DETAIL

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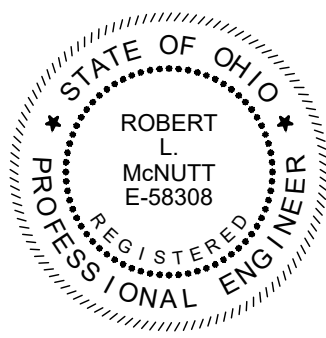


NOTES:

1. MAXIMUM DRAINAGE AREA =1/2 ACRE.
2. INLET PROTECTION IS NOT REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP.
3. BERMS REQUIRED FOR ALL INSTALLATIONS.
 - 3.1. EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED.
 - 3.2. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED.
 - 3.3. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.

SILT SACK DETAIL

NOT TO SCALE



verdantas

8150 STERLING COURT
MENTOR, OHIO 44060
(440) 951-9000

DATE	REVISION	NO	REVIEW	ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
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VILLAGE OF BYESVILLE
S.R. 821 SANITARY SEWER IMPROVEMENTS
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EROSION CONTROL - EC SERIES
EROSION CONTROL - 2

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