

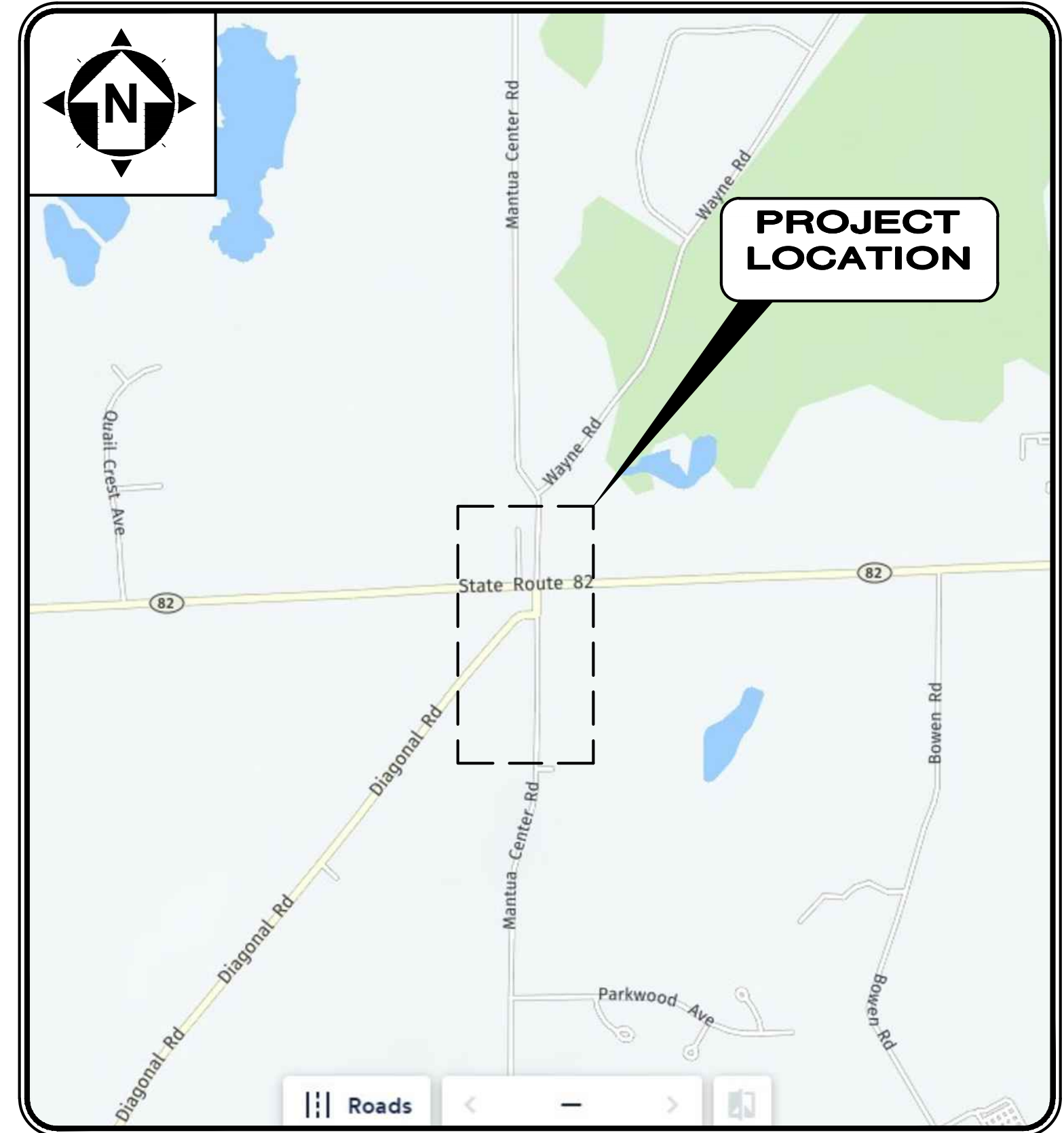
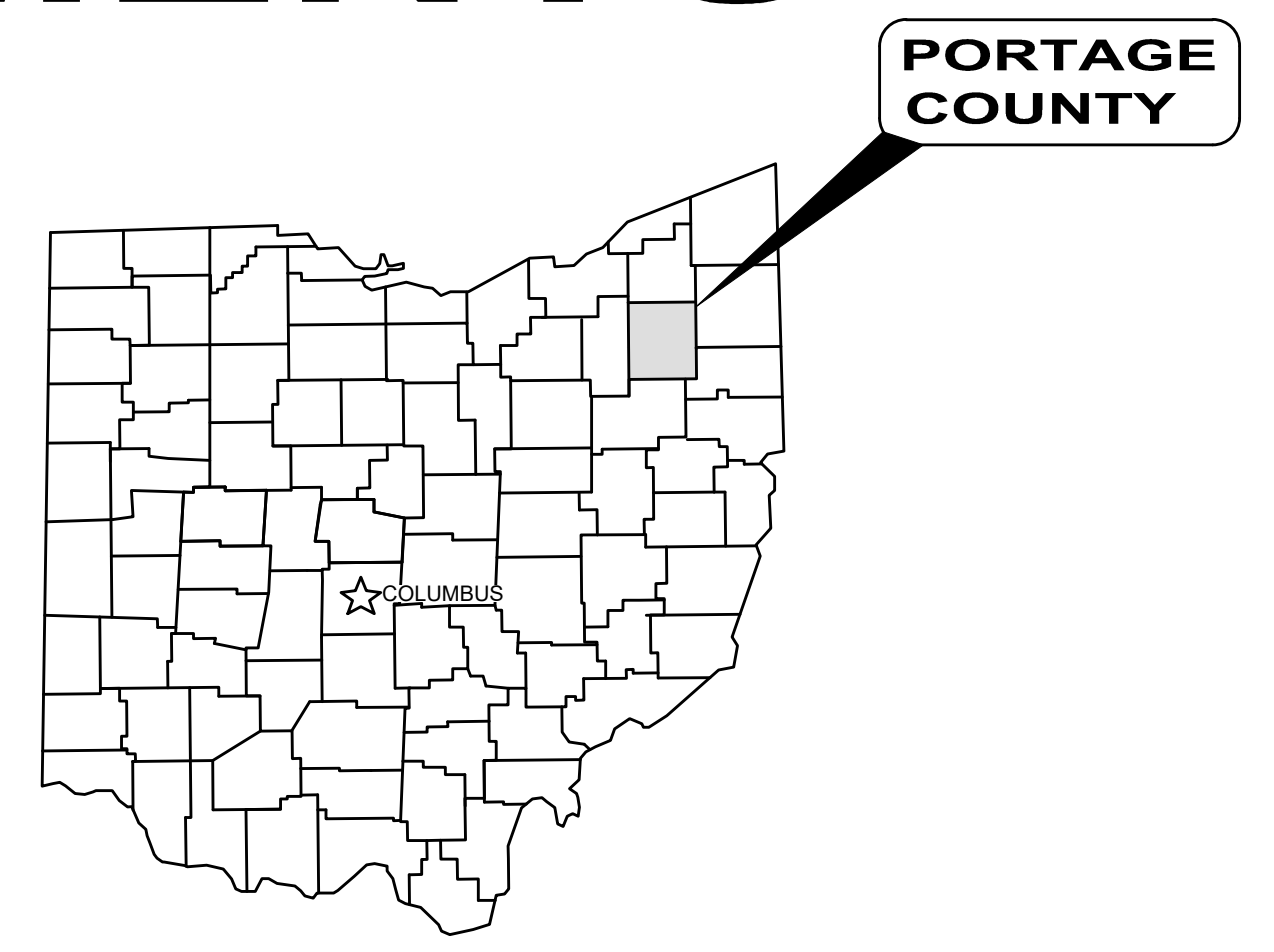
MANTUA TOWNSHIP

TOWNSHIP FACILITIES

SANITARY SEWER IMPROVEMENTS

PORTAGE COUNTY, OHIO

OCTOBER 2022



LOCATION MAP
NOT TO SCALE

MANTUA TOWNSHIP TRUSTEE BOARD:

JOHN FESTA
MATTHEW BENNER
SUSAN LILLEY
JULIA PEMBERTON

CHAIRMAN
VICE CHAIRMAN
BOARD MEMBER
FISCAL OFFICER

_____ TRUSTEE BOARD _____ DATE _____

PORTAGE COUNTY WATER DEPARTMENT:

DANIEL BLAKELY _____ DIRECTOR _____ DATE _____

ENGINEER:

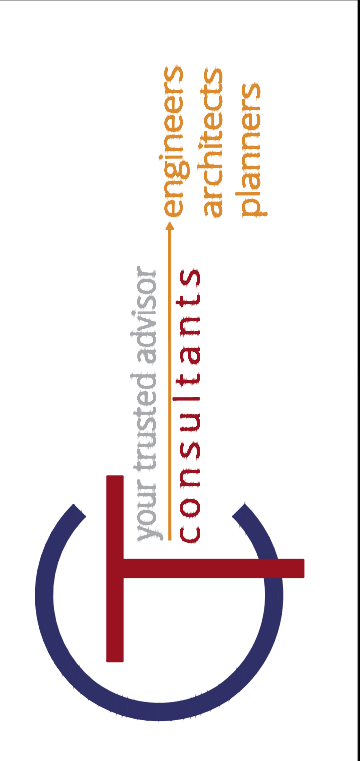
CT CONSULTANTS, INC.
3875 EMBASSY PARKWAY
SUITE 200
AKRON, OH 44333
330-375-0800 PHONE
330-665-0620 FAX

RYAN SCHUSTER _____ P.E. NO. 72755 _____ DATE _____

ENGINEER'S PROJECT No. 210772



- 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.



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MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
GENERAL
TITLE SHEET

PROJECT NO. 210772
DISCIPLINE GENERAL
SHEET NAME 00G-01
SHEET 1 OF 19

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INDEX EXPLANATION:

Sheet Number	Sheet Title	Sheet Name
1	TITLE	G-01
2	SHEET INDEX	G-02
3	GENERAL NOTES	G-03

SEQUENTIAL SHEET NUMBER IN SET DISCIPLINE IDENTIFIER LETTER SEQUENTIAL ORDER

DISCIPLINE INFORMATION:

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

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.

DRAWING CODED NOTE TYPES:

- CT CONTRACTUAL NOTES ARE DEPICTED WITH A HEXAGON, SQUARE, CIRCLE OR TRIANGLE. ALL OTHER EXISTING WRITTEN CALLOUTS SHOWN ON THE REUSED SCANNED PLANS FROM PREVIOUS CONTRACT DRAWINGS, (BACKGROUND IMAGES), SECTIONS & DETAILS ARE FOR EXISTING CONDITIONS AND REFERENCE ONLY. MANY OF THOSE NOTES FROM THE SCANNED DRAWINGS PERTAIN TO PREVIOUS WORK DONE. THESE BACKGROUND IMAGES ARE SHOWN IN GRAY.

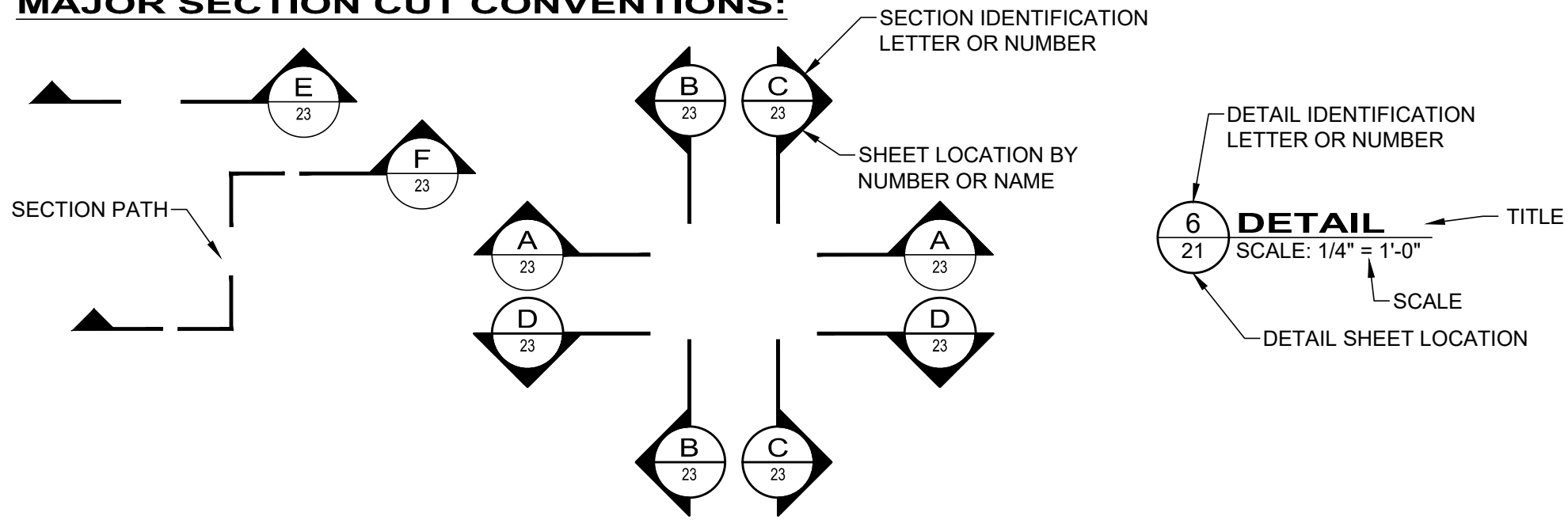
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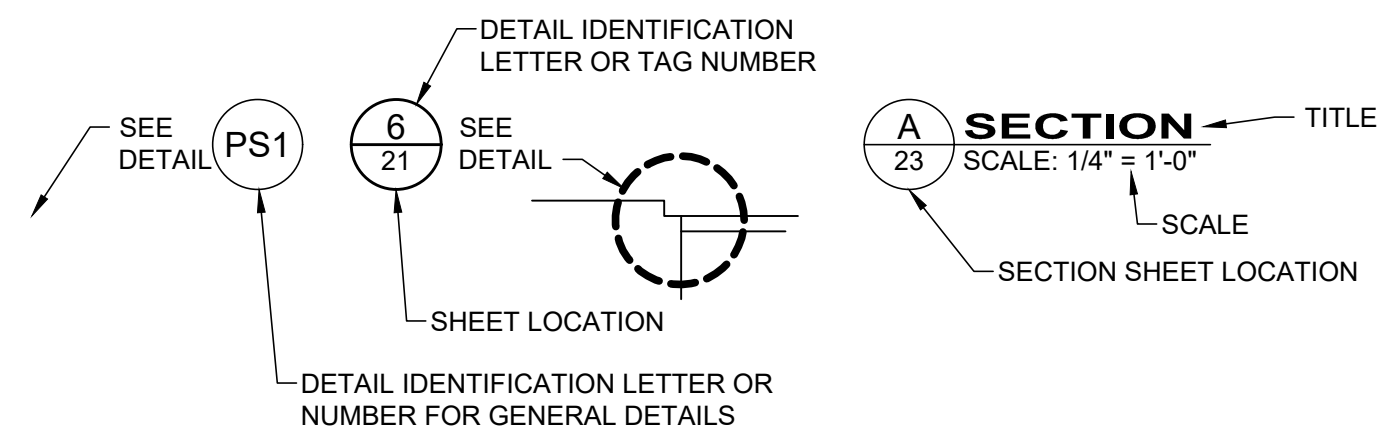
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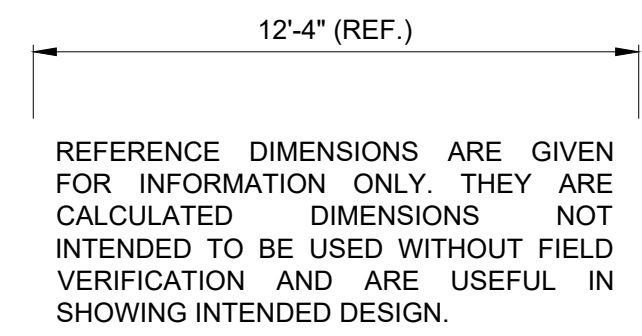
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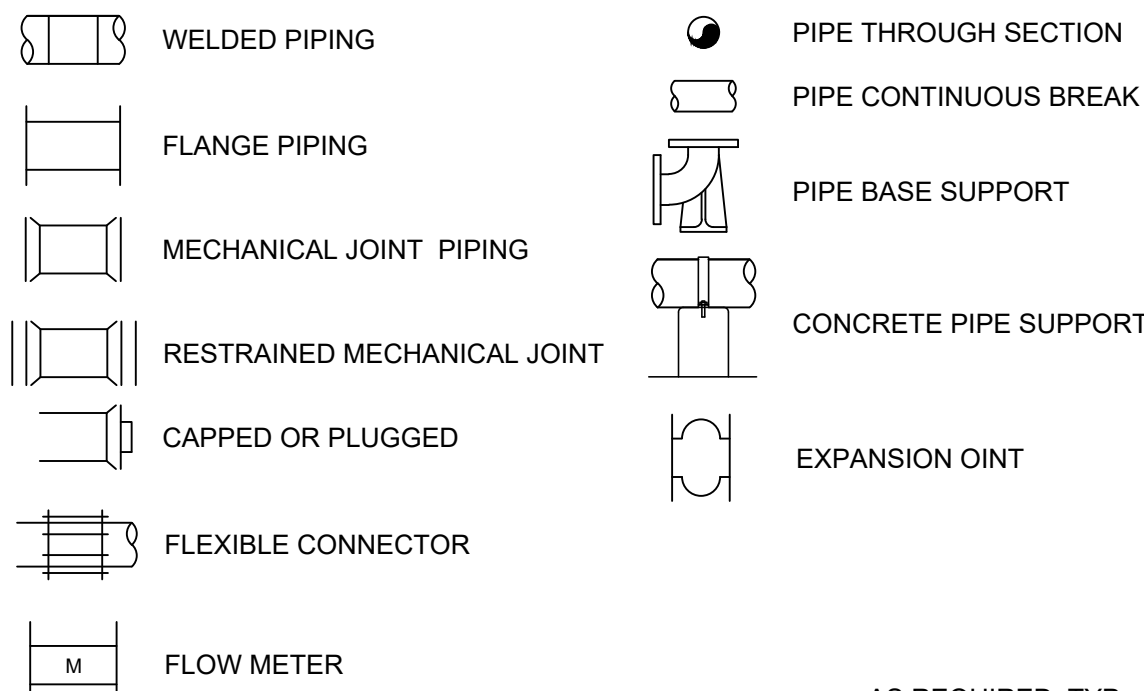
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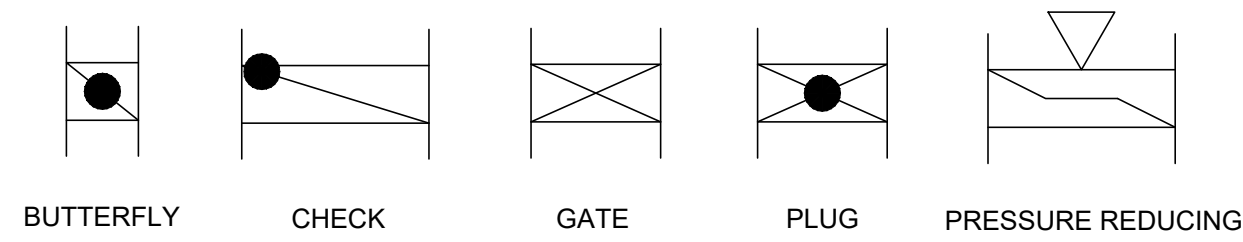
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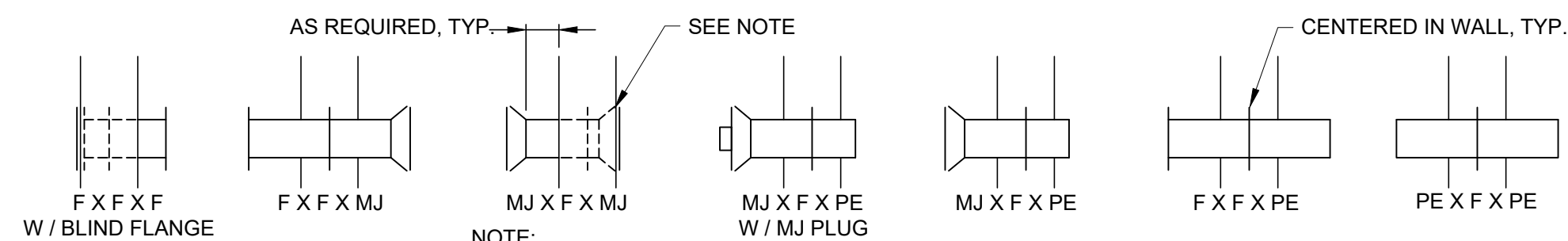
MISC PIPE SYMBOLOGY



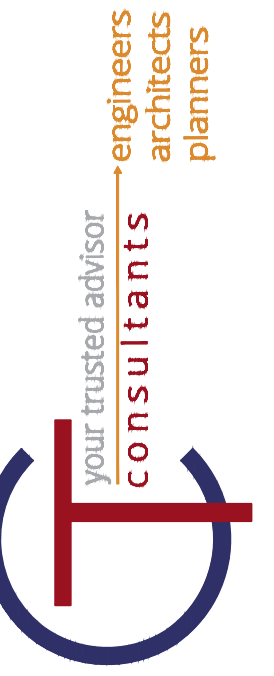
VALVE SYMBOLS



WALL CASTINGS



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SITE IMPROVEMENTS - 01 SERIES: CIVIL		
5	SURVEY CONTROL	01C-01
6	SITE LEGEND	01C-02
7	SITE PLAN	01C-03
8	PLAN & PROFILES MANTUA CENTER RD (STA 0+00 - 5+00)	01C-04
9	PLAN & PROFILE MANTUA CENTER RD (STA 5+00 - 9+00)	01C-05
10	PLAN & PROFILE MANTUA CENTER RD (STA 9+00 - 13+50)	01C-06
11	PLAN & PROFILE MANTUA CENTER RD (STA 13+50 - 17+80)	01C-07
12	PLAN & S.R. 82 (STA 0+00 - 3+37)	01C-08
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STANDARD DETAILS - SD SERIES: CIVIL		
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19	STANDARD DETAILS 3	SD-03



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MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
 PORTAGE COUNTY MANTUA TOWNSHIP, OHIO
GENERAL SHEET INDEX

PROJECT NO.	210772
DISCIPLINE	GENERAL
SHEET NAME	00G-02
SHEET	OF
2	19

GENERAL:

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, 901.09 AND 901.09.
2. PRICES BID PER FOOT FOR ALL PIPE IS COMPLETE IN PLACE REGARDLESS OF SOIL OR ROCK CONDITIONS.
3. 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.
4. THE SPECIFICATIONS AND STANDARD CONSTRUCTION DRAWINGS OF THE PORTAGE COUNTY WATER RESOURCES 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 PORTAGE COUNTY RULES AND REGULATIONS AND MUST BE INSPECTED BY THE PORTAGE COUNTY WATER RESOURCES DEPARTMENT (PCWR) OR AUTHORIZED REPRESENTATIVE. TWENTY-FOUR HOURS ADVANCE NOTICE OF WORK SHALL BE GIVEN FOR THE SCHEDULING OF AN INSPECTOR.
5. THE CONTRACTOR SHALL BASE HIS PROJECTED WORK SCHEDULES UPON THE FOLLOWING CRITERIA:
 - A. CONSTRUCTION HOURS SHALL BE FROM 8:00 AM TO 4:00 PM, MONDAY THROUGH FRIDAY - ONLY!
 - B. THE FOLLOWING GOVERNMENT HOLIDAYS SHALL BE OBSERVED BY THE CONTRACTOR:
 1. NEW YEARS DAY
 2. MARTIN LUTHER KING DAY
 3. PRESIDENT'S DAY
 4. MEMORIAL DAY
 5. INDEPENDENCE DAY
 6. LABOR DAY
 7. COLUMBUS DAY
 8. VETERAN'S DAY
 9. THANKSGIVING DAY
 10. THANKSGIVING DAY AFTER
 11. CHRISTMAS DAY

SOIL BORES:

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.

ROAD PERMITS:

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 CONFINE 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.

SANITARY SEWERS:

1. THE COST OF PLUMBING, REROUTING AND DIVERTING ALL WATER AND SEWAGE DURING CONSTRUCTION SHALL BE INCLUDED FOR PAYMENT IN THE VARIOUS SEWER PAY ITEMS.
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 NEEHAH 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 SUBJECTED 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. THE ALLOWABLE LEAKAGE PER 1000 FEET OF FORCE MAIN PER HOUR SHALL COMPLY WITH PORTAGE COUNTY STANDARDS SPECS SECTION 920.06.
10. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DAMAGE TO THE EXISTING SEWERAGE SYSTEM RESULTING FROM NON-COMFORMANCE WITH PCWR STANDARDS OR GENERAL NEGLIGENCE. ALL REPAIRS OR REPLACEMENTS MUST CONFORM TO PCWR 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 PCWR 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 FOUR FEET (4').
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 PCWR 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.

STORM SEWER:

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 AND DRIVEWAYS SHALL BE ODDT AND PCWR APPROVED PIPE SECTIONS. STORM SEWERS REPLACED WITHIN YARDS SHALL BE NON-PERFORATED HI-O CORRUGATED EXTERIOR, SMOOTH INTERIOR, STORM DRAINAGE PIPE BY HANCOR OR PCWR APPROVED EQUAL. ALL WORK SHALL BE PER ODDT ITEM 603 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.

TREE REMOVAL & PROTECTION:

RIGHT OF WAY:

ALL TREES, STUMPS, BRUSH, SHRUBS, AND BUSHES WHOSE TRUNK IS LOCATED WITHIN THE LIMITS OF ROADWAY RIGHT OF WAY SHALL BE CUT DOWN, REMOVED AND LEGALLY DISPOSED OF BY THE CONTRACTOR, REGARDLESS OF INSTALLATION METHODS; TO INCLUDE TRENCHLESS DRILLING CONSTRUCTION. TREE STUMPS OUTSIDE OF THE TRENCH EXCAVATION LIMITS AND WITHIN FIELD OR WOODED 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. TREES, STUMPS, BRUSH, SHRUBS, AND BUSHES SHALL BE REMOVED WITHIN THE RIGHT OF WAY REGARDLESS OF TRENCHLESS DRILLING CONSTRUCTION INSTALLATION METHODS USED BY THE CONTRACTOR. 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. 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.

EASEMENT:

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 ELEVATION. TREE STUMPS WITHIN LAWN YARD AREAS SHALL BE GROUND AND 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 HE 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.

ROADWAYS & DUST CONTROL:

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.

PROHIBITED CONSTRUCTION ACTIVITIES:

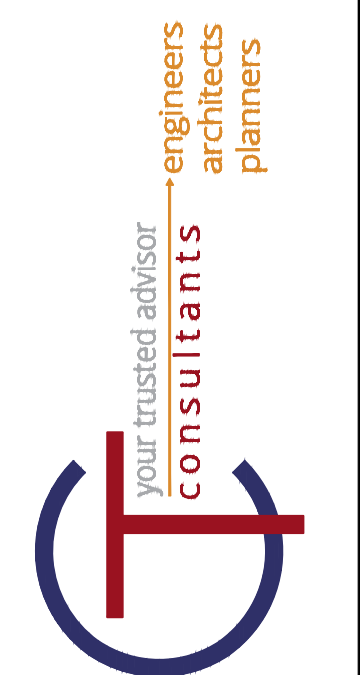
1. NO USING ANY SUBSTANCE OTHER THAN WATER TO CONTROL DUST.
2. NO OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AN OEPA OPEN BUILDING AIR PERMIT OR DISPOSING OF THE TREES AND STUMPS.
3. NO PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS 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.

UTILITY POLES:

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.

EXISTING UTILITY LINES:

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.



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MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
GENERAL
GENERAL NOTES

PROJECT NO.	
210772	
DISCIPLINE	
GENERAL	
SHEET NAME	
00G-03	
SHEET	OF
3	19

1. PROHIBITED CONSTRUCTION ACTIVITIES

- DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAINS, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER;
- LOCATING STOCKPILE STORAGE AREAS IN ENVIRONMENTALLY SENSITIVE AREAS;
- INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR OUTSIDE THE EASEMENT LIMITS;
- PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS, OR STORM SEWERS; ALL SUCH WATER WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE;
- DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE AND OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS, OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO;
- PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF ANY STREAM;
- DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA;
- DISPOSAL OF TREES, BRUSH, AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS;
- OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT;
- DISCHARGING INJURIOUS SILICA DUST CONCENTRATIONS INTO THE ATMOSPHERE RESULTING FROM BREAKING, CUTTING, CHIPPING, RILLING, BUFFING, GRINDING, POLISHING, SHAPING OR SURFACING CLOSER THAN 200 FEET TO PLACES OF RESIDENCES OR COMMERCIAL, PROFESSIONAL, QUASI-PUBLIC OR PUBLIC PLACES OF HUMAN OCCUPATION;
- STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED ON THE PLANS BY THE ENGINEER FOR SUCH PURPOSES;
- RUNNING WELL POINT OR PUMP DISCHARGE LINES THROUGH PRIVATE PROPERTY OR PUBLIC PROPERTY AND RIGHTS-OF-WAY WITHOUT THE WRITTEN PERMISSION OF THE PROPERTY OWNER AND THE CONSENT OF THE ENGINEER;
- OPERATIONS ENTAILING THE USE OF VIBRATORY HAMMERS OR COMPACTORS OUTSIDE THE HOURS OR 8:00 AM AND 5:00 P.M. OR OUTSIDE THE HOURS ALLOWED FOR CONSTRUCTION BY LOCAL ORDINANCES OR REGULATIONS; AND
- CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE OR BOULEVARD WITHOUT THE PRIOR CONSENT OF MUNICIPAL OFFICIALS AND THE ENGINEER, AND CLOSING CLEAR ACCESS:

- BY FIRE PROTECTION EQUIPMENT AND EMERGENCY VEHICLES;
- BY THE PUBLIC TO ANY COMMERCIAL OR PROFESSIONAL PLACE OF BUSINESS, QUASI-PUBLIC OR PUBLIC ESTABLISHMENT, OR PLACE OF RESIDENCE, OR
- BY VEHICLES TO DRIVEWAYS WITHOUT THE PROVISION OF ALTERNATIVE MEANS OF BUILDING INGRESS AND EGRESS.

2. MITIGATIVE MEASURES

EROSION/SEDIMENT CONTROL:

- SITE CLEARING AND GRUBBING SHALL NOT COMMENCE UNTIL SUCH TIME THAT THE CONTRACTOR IS PREPARED TO START CONSTRUCTION. REMOVE ONLY THOSE TREES, SHRUBS, AND GRASSES THAT MUST BE REMOVED FOR CONSTRUCTION OF ACTUAL FACILITIES; PROTECT THE REST TO PRESERVE THEIR AESTHETIC, HABITAT, AND EROSION CONTROL VALUES.
- IMMEDIATELY FOLLOWING SITE AND ACCESS CLEARING, TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED. THEY WILL BE MAINTAINED IN EFFECTIVE OPERATING CONDITION DURING CONSTRUCTION UNTIL FINAL SEEDING AND SITE RESTORATION OCCURS.
- AT THE LIFT STATION CONSTRUCTION SITES INSTALL SEDIMENT BASINS AND DIVERSION DIKES BEFORE DISTURBING THE LAND THAT DRAINS INTO THEM.
- DIVERSION CHANNELS WILL BE CONSTRUCTED AROUND THE LIFT STATION SITE TO COLLECT RUNOFF AND PREVENT SILT AND OTHER ERODIBLE MATERIALS FROM ENTERING LOCAL DRAINAGE COURSES. DIVERSION CHANNELS WILL FLOW TO TEMPORARY SEDIMENT BASINS, AND ARE TO BE STABILIZED THROUGH SEEDING, RIP-RAPPING, OR LINING THEM WITH PLASTIC.
- EXISTING TOPSOIL WILL BE STOCKPILED AND REPLACED UPON FINAL GRADING OF THE CONSTRUCTION SITE.
- EXTENSIVE AREAS OF STOCKPILED TOPSOIL AT THE CONSTRUCTION SITE ARE TO BE PROTECTED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING OR COVERING SUCH AS WITH ANCHORED STRAW MULCH. SILT BARRIERS WILL BE INSTALLED DOWN GRADIENT OF THESE AREAS ON CONTOUR AND WITH THEIR ENDS UP SLOPE OF THE CONTOUR TO PREVENT SILT LADEN RUNOFF FROM ENTERING WATERWAYS OR STORM SEWERS. WITHIN 15 DAYS OF COMPLETION OF CONSTRUCTION, ANY REMAINING SOIL MUST EITHER BE REMOVED OR PERMANENTLY STABILIZED.
- SILT FENCES SHOULD BE TRENCHED SIX TO TWELVE INCHES DEEP, THE FABRIC LAID IN THE TRENCH, AND THE SOIL PROPERLY BACKFILLED INTO THE TRENCH TO PREVENT UNDERCUTTING.
- WHERE TRENCH EXCAVATION OCCURS PARALLEL TO ANY WATERWAY, A VEGETATED BARRIER SHOULD BE MAINTAINED BETWEEN THE STREAM AND THE CONSTRUCTION SITE. ALL TRENCH SPOILS WILL BE STOCKPILED ON THE SIDE OF THE TRENCH AWAY FROM THE WATERWAY, AND A LINE OF SILT BARRIERS WILL BE ESTABLISHED ALONG THE EDGE OF CONSTRUCTION ON THE CONTOUR BETWEEN THE TRENCH AND THE WATERWAY.
- NO MORE THAN 200 FEET OF TRENCH SHALL BE OPEN AT ANY GIVEN TIME. TRENCH OPENING AND LAYING OF PIPE SHOULD OCCUR SO AS TO MINIMIZE THE AMOUNT OF DISTURBED AREA. ALL TRENCHES ARE TO BE BACKFILLED AND COMPACTED IMMEDIATELY AFTER PIPE INSTALLATION. IMMEDIATELY FOLLOWING THE BACKFILLING OF THE TRENCH, THE GROUND SURFACE WILL BE ROUGH GRADED TO THE EXISTING CONTOURS TO ALLOW FOR PROPER DRAINAGE, AND WILL BE SEEDED AND/OR MULCHED IN STAGES TO PREVENT EROSION.
- ANY DISTURBED AREA THAT WILL NOT BE ACTIVELY UNDER CONSTRUCTION FOR A PERIOD OF 15 DAYS OR MORE WILL BE TEMPORARILY STABILIZED IMMEDIATELY BY SEEDING AND MULCHING OR BY ANCHORED STRAW MULCH.
- AS CONSTRUCTION IS COMPLETED, PERMANENTLY STABILIZE EACH DISTURBED AREA IN STAGES WITH PERENNIAL VEGETATION INSTALLED ACCORDING TO OHIO EPA (OR EQUIVALENT) STANDARDS AND SPECIFICATIONS. AFTER FINAL SOIL SETTLING OVER THE SANITARY SEWER, OUTFALL SEWER, AND FORCE MAIN ALIGNMENTS, THE CONTRACTOR SHALL BRING THE TRENCH BACK TO GRADE IF NECESSARY, PLACE TOPSOIL, AND FINE GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY ACTIVITIES ASSOCIATED WITH THE CONSTRUCTION OF THAT SECTION OF PIPE. FINAL GRADING WILL BE CONSISTENT WITH PRE-CONSTRUCTION TOPOGRAPHY FOR DRAINAGE AND AESTHETIC REASONS.
- BORING PITS (FOR JACK AND BORE LOCATIONS) SHALL BE SURROUNDED WITH SILT BARRIERS TO PREVENT EROSION OF THE EXCAVATED PIT MATERIAL. STORM SEWER INLETS WILL BE SURROUNDED WITH SILT BARRIERS TO PREVENT SILTATION.
- SLOPES EXCEEDING 15 PERCENT OR THAT TEND TO BE UNSTABLE REQUIRE SPECIAL TREATMENT SUCH AS WATER DIVERSION BERMS, SODDING, OR THE USE OF JUTE OR EXCELSIOR BLANKETS.
- WHEN BORROW MATERIAL IS OBTAINED FROM OTHER THAN COMMERCIALY OPERATED SOURCES, EROSION OF THE BORROW SITE WILL BE SO CONTROLLED BOTH DURING AND AFTER COMPLETION OF THE WORK THAT EROSION WILL BE MINIMIZED AND SEDIMENT WILL NOT ENTER STREAMS OR OTHER BODIES OF WATER. WASTE OR DISPOSAL AREAS AND CONSTRUCTION ROADS SHALL BE LOCATED AND CONSTRUCTED IN A MANNER THAT WILL KEEP SEDIMENT FROM ENTERING STREAMS. TEMPORARY EROSION CONTROL BARRIERS AND LIMITED SITE CLEARING WILL BE USED AS NEEDED.
- IF WORK IS SUSPENDED FOR ANY REASON, THE CONTRACTOR SHALL MAINTAIN THE SOIL EROSION AND SEDIMENTATION CONTROLS IN GOOD OPERATING CONDITION DURING THE SUSPENSION OF THE WORK. ALSO, WHEN SEASONAL CONDITIONS PERMIT AND THE SUSPENSION OF WORK IS EXPECTED TO EXCEED A PERIOD OF ONE MONTH, THE CONTRACTOR SHALL SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS LEFT EXPOSED WHEN THE WORK IS STOPPED.
- INSTALL THE ABOVE EROSION AND SEDIMENT CONTROL MEASURES, AS APPROPRIATE, REFERRING TO OHIO EPA, STORM WATER TECHNICAL ASSISTANCE, RAINWATER AND LAND DEVELOPMENT MANUAL STANDARDS AND SPECIFICATIONS (FORMERLY ODNR) OR EQUIVALENT FOR PARTICULAR TECHNIQUES. THESE MEASURES ARE TO BE MAINTAINED IN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
LINK:
[HTTP://EPA.OHIO.GOV/PORTALS/35/STORM/TECHNICALASSISTANCE/RLD11-6-14All.pdf](http://EPA.OHIO.GOV/PORTALS/35/STORM/TECHNICALASSISTANCE/RLD11-6-14All.pdf)

2. MITIGATIVE MEASURES (CONT.)

TRAFFIC CONTROL:

- AT LEAST ONE LANE OF TRAFFIC MUST BE MAINTAINED ALONG THE TRAVEL ROUTE TO THE CONSTRUCTION SITE.
- ACCESS MUST BE MAINTAINED FOR EMERGENCY VEHICLES AT ALL TIMES.
- NO TRENCH WILL BE LEFT OPEN AT THE END OF A WORK DAY, WHERE PRACTICAL; ANY OPEN TRENCH WILL BE PROPERLY IDENTIFIED AND BARRICADED FOR SAFETY PURPOSES.
- ANY CONSTRUCTION EQUIPMENT OR EXCAVATIONS NEAR ROADS MUST BE MARKED WITH LIGHTS, REFLECTORS, OIL LANTERNS, OR SMUDGE POTS.
- THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL NECESSARY BARRICADES, WARNING SIGNS, DANGER SIGNALS, FLAG PERSON(S), WATCHERS, AND ALL OTHER APPROPRIATE PRECAUTIONS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR SAFETY.
- PRIOR TO CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE, OR BOULEVARD, THE CONTRACTOR MUST HAVE CONSENT FROM LOCAL OFFICIALS AND THE ENGINEER.

AIR POLLUTION / NOISE CONTROL:

- CONSTRUCTION ACTIVITIES WILL BE LIMITED TO DAYTIME HOURS.
- CONSTRUCTION EQUIPMENT WILL BE PROVIDED WITH INTAKE SILENCERS AND MUFFLERS, AS REQUIRED BY SAFETY STANDARDS.
- ALL CONSTRUCTION VEHICLES SHOULD BE EQUIPPED WITH PROPER EMISSIONS CONTROL EQUIPMENT.
- PERIODICALLY CHECK EQUIPMENT AND MACHINERY FOR PROPER TUNING TO MINIMIZE EXHAUST EMISSIONS AND NOISE.
- UNPAVED AREAS WILL BE WET DOWN (AS NECESSARY) DURING CONSTRUCTION TO MINIMIZE DUST GENERATION.

TREE / VEGETATION PROTECTION:

- TREE REMOVAL WILL BE LIMITED TO THE TIME PERIOD BETWEEN OCTOBER 1 AND MARCH 31.
- TREE REMOVAL WILL BE LIMITED TO THAT NECESSARY FOR CONSTRUCTION AND WILL BE LIMITED FURTHER TO THE PERMANENT EASEMENT WHEREVER POSSIBLE.
- NO TREE REMOVAL WILL BE PERMITTED OUTSIDE THE TEMPORARY EASEMENT WITHOUT PERMISSION OF THE ENGINEER.
- TREES WHICH ARE NOT REMOVED WILL BE PROTECTED BY ENSURING THAT TREES TO BE REMOVED ARE FELLED SO AS NOT TO INJURE THE REMAINING TREES.
- PRIOR TO CLEARING, THE CONTRACTOR AND ENGINEER, SHALL WALK THE ACQUIRED EASEMENTS IN AN EFFORT TO DESIGNATE THE TREES THAT ARE TO BE SAVED. TREES TO BE SAVED WILL BE CLEARLY MARKED BY PAINT WITH THE LETTER "S". TREES TO BE PROTECTED BY AN APPROPRIATE BARRIER SHALL BE MARKED WITH AN "S" ENCLOSED IN A CIRCLE.

TREES MARKED FOR REMOVAL IN THE PLANS WILL BE INSPECTED BY COUNTY & THE ENGINEER BEFORE REMOVAL & WILL BE SAVED WHERE POSSIBLE.
- SOIL AND OTHER MATERIAL WILL NOT BE STORED NEXT TO OR WITHIN THE DRIP-LINE OF TREES.
- PRESERVATION OF LANDSCAPING SHOULD TAKE PRECEDENCE OVER REMOVAL. IF REMOVAL OR DAMAGE IS UNAVOIDABLE, EXISTING VEGETATION SHOULD BE REPAIRED OR REPLACED "IN-KIND" UNLESS THE HOMEOWNER SPECIFIES OTHERWISE.
- IF TREES/SHRUBS CANNOT BE REPLACED IN THE SAME LOCATION DUE TO INSTALLATION OF THE SEWER SYSTEM, RELOCATION SHOULD BE CONSIDERED.
- THE CONTRACTOR'S ARBORIST SHALL REPAIR ALL INJURIES TO BARK, TRUNKS, LIMBS, AND ROOTS OF REMAINING VEGETATION BY PROPERLY DRESSING, CUTTING, BRACING AND PAINTING, USING ONLY APPROVED TREE SURGERY METHODS, TOOLS, AND MATERIALS.
- SELECTIVE PRUNING OF TREE LIMBS PRIOR TO INITIATION OF CONSTRUCTION SHOULD ONLY BE USED WITHIN ESTABLISHED EASEMENTS WHERE REMOVAL IS NECESSARY FOR OPERATION OF EQUIPMENT.
- LIMIT THE USE OF RIP-RAP TO AREAS WHERE STREAM FLOW CONDITIONS PREEMPT VEGETATIVE STABILIZATION.

DEWATERING:

- ALL DEWATERING FLOWS ARE TO BE SETTLED IN SILTATION BASINS OR DIRECTED THROUGH FILTERING DEVICES BEFORE DISCHARGE TO STABILIZED SITES, SUCH AS STREAMS OR STORM SEWERS; NOT ONTO EXPOSED SOILS, STREAM BANKS, OR ANY OTHER SITE WHERE THE FLOW COULD CAUSE EROSION.
- SILT FROM CONSTRUCTION OPERATIONS SHALL NOT BE PERMITTED TO ENTER THE STORM SEWER SYSTEM. WHEN CONSTRUCTION OCCURS NEAR STORM SEWER INLETS, EROSION CONTROL MEASURES SUCH AS INLET FILTERS AND HAY BALES SHALL BE USED TO PREVENT SILT FROM ENTERING THE STORM SEWERS.
- CONVEY WATER FROM THE CONSTRUCTION SITE IN A CLOSED CONDUIT. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DRAINAGE DITCHES.

2. MITIGATIVE MEASURES (CONT.)

ARCHAEOLOGICAL / HISTORICAL RESOURCES:

- CONTRACTORS AND SUBCONTRACTORS ARE REQUIRED UNDER OHIO REVISED CODE SECTION 149.53 TO NOTIFY THE OHIO HISTORICAL SOCIETY AND THE OHIO HISTORIC SITE PRESERVATION BOARD OF ARCHAEOLOGICAL DISCOVERIES LOCATED IN THE PROJECT AREA, AND TO COOPERATE WITH THOSE ENTITIES IN ARCHAEOLOGICAL AND HISTORIC SURVEYS AND SALVAGE EFFORTS IF SUCH DISCOVERIES ARE UNCOVERED WITHIN THE PROJECT AREA.

CONTACT: STATE HISTORIC PRESERVATION OFFICE
PHONE: 1-614-298-2000



ISSUED FOR:	60%	NO	REVISION	DATE
ISSUE DATE:	11-10-22			
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MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
 PORTAGE COUNTY
MANTUA TOWNSHIP, OHIO
GENERAL
GENERAL NOTES

PROJECT NO.	210772
DISCIPLINE	GENERAL
SHEET NAME	00G-04
SHEET	OF
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PROJECT NO.
210772

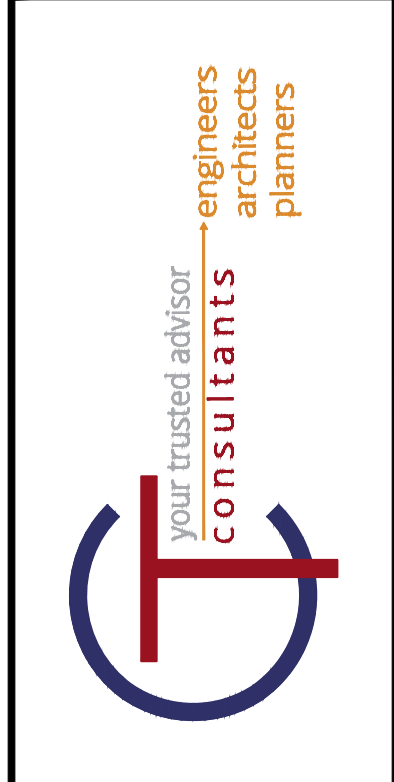
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GENERAL

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MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER
IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
SITE IMPROVEMENTS - 01 SERIES
SURVEY CONTROL

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EXISTING LINETYPES

Table of existing linetypes including Fence, Cable T.V., Communication, Electric, Fibre Optic, Gas, Sanitary, Storm, Telephone, Traffic, and Water lines.

EXISTING LINETYPES

Table of existing linetypes including Brush Line, Major/Minor Contour, County/Corporation/Annexation/Section/Township/Flood Plain/Wetland/Farm/Property/Lease/Right-of-Way/Survey Stationing, and Construction/Filter/Filter Sock fences.

EXISTING SYMBOLS

Table of existing symbols for Sanitary Manhole, Sanitary Cleanout, Sanitary Line Cap, Sanitary Line Paint Marking, Sanitary Structure Number, Sanitary Vent Pipe, Storm Manhole, Storm Manhole (Open Grate), Curb Inlet, 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 Valve, Gas Meter, Gas Regulator, Gas Vent Pipe, Gas Line Paint Marking, Gas Line Fixture, Gas Turbine, 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.

EXISTING SYMBOLS

Table of existing symbols for Telephone Pay Phone, Fibre Optic Cable Manhole, Fibre 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, Light/Cable TV, Pole, Electric/Telephone/Light, Pole, Electric/Telephone/Light, Pole, Light/Cable TV, 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, Light/Cable TV, Pole, Electric/Telephone/Light, Pole, Electric/Telephone/Cable TV, Pole, Light/Cable TV, Pole, Light-Overhead, Pole, Cable TV w/Light, Pole, Guy Wire, Post, Sign (Single Sided), Post, Sign (Double Sided), Pole, Telephone/Light, Pole, Telephone/Cable TV, Pole, Light/Cable TV, Pole, Cable TV w/Light, Pole, Flag, Guy Wire, Post, Sign (Single Sided), Post, Sign (Double Sided), Post, Sign (Dual Post), Post (General), Bollard, Delineator Post, Fence Post, Parking Count, Parking Bumper Block, Handicap Parking Symbol, Handicap Detectable Warning, Mailbox, Paperbox, Parking Meter, Street Sign, Traffic Control Manhole, Traffic Cont. Manhole (Adj), Traffic Control Box, Traffic Pull Box, Traffic Signal Pedestal, Inlet Protection, Straw Bale Check Dam, Tree (Deciduous), Tree (Evergreen), Bush, Abandoned, Adjust, Aggregate, Asbestos Pipe, Asphalt, Back to Back, Basement Floor Elevation, Between, Bottom of Curb Elevation, Bottom of Footing Elevation, Bottom of Wall Elevation, Building, Bulkhead, Cable Television, Cast Iron Pipe, Catch Basin, Centerline, Center to Center, Chain Link Fence, Chemical Stabilization, Concentric, Concrete, Connection, Control Joint, Copper Pipe, Corrugated Metal Pipe, Demolition, Depressed, Downspout, Drop Manhole, Ductile Iron Pipe, Dumpster, Eccentric, Abandoned, Adjust, Aggregate, Asbestos Pipe, Asphalt, Back to Back, Basement Floor Elevation, Between, Bottom of Curb Elevation, Bottom of Footing Elevation, Bottom of Wall Elevation, Building, Bulkhead, Cable Television, Cast Iron Pipe, Catch Basin, Centerline, Center to Center, Chain Link Fence, Chemical Stabilization, Concentric, Concrete, Connection, Control Joint, Copper Pipe, Corrugated Metal Pipe, Demolition, Depressed, Downspout, Drop Manhole, Ductile Iron Pipe, Dumpster, Eccentric.

EXISTING SYMBOLS

Table of existing symbols for Spike Found, Hub Found, Axle Found, Wood Post Found, Corner Stone Found, Aerial Target Found, GPS Control Found, Benchmark Found, Sanitary Manhole, Sanitary Manhole, Adjust, Sanitary Cleanout, Sanitary Line Cap, Sanitary Structure Number, Sanitary Vent Pipe, Storm Manhole (Solid Grate), Storm Manhole (Open Grate), Storm Manhole, Adjust, Curb Inlet, Curb Inlet (Double), Curb Inlet, Adjust, Catch Basin, Catch Basin (Solid), Catch Basin, Adjust, Catch Basin (Side Inlet), Drain, Downspout, Storm Cleanout, Storm Line Cap, Storm Headwall, Storm Structure Number, Rock Channel Protection, Surface Drainage Flow, Surface Drainage Flow, Storm Flood Routing Arrow, Fire Hydrant, 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 Valve, Gas Meter, Gas Regulator, Gas Vent Pipe, Gas Line Paint Marking, Gas Line Fixture, Gas Turbine, 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.

PROPOSED SYMBOLS

Table of proposed symbols for Sanitary Manhole, Sanitary Manhole, Adjust, Sanitary Cleanout, Sanitary Line Cap, Sanitary Structure Number, Sanitary Vent Pipe, Storm Manhole (Solid Grate), Storm Manhole (Open Grate), Storm Manhole, Adjust, Curb Inlet, Curb Inlet (Double), Curb Inlet, Adjust, Catch Basin, Catch Basin (Solid), Catch Basin, Adjust, Catch Basin (Side Inlet), Drain, Downspout, Storm Cleanout, Storm Line Cap, Storm Headwall, Storm Structure Number, Rock Channel Protection, Surface Drainage Flow, Surface Drainage Flow, Storm Flood Routing Arrow, Fire Hydrant, 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 Valve, Gas Meter, Gas Regulator, Gas Vent Pipe, Gas Line Paint Marking, Gas Line Fixture, Gas Turbine, 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.

ABBREVIATIONS

Table of abbreviations for Edge of Pavement Elevation, Electric, Enclosure, Existing, Face to Face, Finished Floor Elevation, Fire Hydrant, Foundation, Full Depth Reclamation, Future, Gas, Galvanized Pipe, Grade Break Elevation, Gravel, Ground Elevation, Gutter Elevation, Handicap (E.G. Accessible), High-Density Polyethylene Pipe, High Point Elevation, Horizontal, Install, Irrigation, Joint, Joint Filler, Junction, Knockout, Lateral, Low Point Elevation, Maintain, Material, Mounted, Miscellaneous, Not to Scale, Ornamental, Out to Out, Overhead, Oxygen Line, Parking, Pavement, Pedestal, Perforate, Pipe Invert Elevation, Polyvinyl Chloride Pipe, Preformed Joint Filler, Proposed, Pull Box, Railroad, Reinforced, Reinforced Concrete Pipe, Remove, Retaining Wall, Roof Leader, Salvage, Sanitary Sewer, Sanitary Service (Lateral), Service, Sleeve, Stabilization, Steam Pipe, Steel Pipe, Storm Sewer, Sump Pump, Telephone, Temporary, Thickened, Top of Curb Elevation, Top of Headwall Elevation, Top of Structure Elevation, Top of Wall Elevation, Trench Drain, Typical, Underdrain, Underground, Vertical, Vitrified Clay Pipe, Water Main, Window Elevation, Wire Mesh, Wood, Yard Hydrant.

ABBREVIATIONS

Table of abbreviations for Edge of Pavement Elevation, Electric, Enclosure, Existing, Face to Face, Finished Floor Elevation, Fire Hydrant, Foundation, Full Depth Reclamation, Future, Gas, Galvanized Pipe, Grade Break Elevation, Gravel, Ground Elevation, Gutter Elevation, Handicap (E.G. Accessible), High-Density Polyethylene Pipe, High Point Elevation, Horizontal, Install, Irrigation, Joint, Joint Filler, Junction, Knockout, Lateral, Low Point Elevation, Maintain, Material, Mounted, Miscellaneous, Not to Scale, Ornamental, Out to Out, Overhead, Oxygen Line, Parking, Pavement, Pedestal, Perforate, Pipe Invert Elevation, Polyvinyl Chloride Pipe, Preformed Joint Filler, Proposed, Pull Box, Railroad, Reinforced, Reinforced Concrete Pipe, Remove, Retaining Wall, Roof Leader, Salvage, Sanitary Sewer, Sanitary Service (Lateral), Service, Sleeve, Stabilization, Steam Pipe, Steel Pipe, Storm Sewer, Sump Pump, Telephone, Temporary, Thickened, Top of Curb Elevation, Top of Headwall Elevation, Top of Structure Elevation, Top of Wall Elevation, Trench Drain, Typical, Underdrain, Underground, Vertical, Vitrified Clay Pipe, Water Main, Window Elevation, Wire Mesh, Wood, Yard Hydrant.

PIPE END JOINTS

Table of pipe end joints including Bell, Compression, Flared, Grooved, Lug, Mechanical Joint, National Pipe Thread, Restrained Joint, Soldered, Slip Joint (Push On), Solvent Welded, Threaded, Welded.

PIPE MATERIAL:

Table of pipe materials including Brass, Black Steel, Bronze, Gray Cast Iron, Copper, Cast Iron, Carbon Steel Tubing, Ductile Iron Pipe, Diameter Ratio, Fiberglass Reinforced Plastic, Galvanized Steel, High-Density Polyethylene Pipe, Polyvinyl Chloride Pipe, Stainless Steel, Steel Pipe, Standard Diameter Ratio, Schedule.

VALVES:

Table of valves including Air Check Valve, Angle Valve, Air Release Valve, Air & Vacuum Valve, Ball Valve, Butterfly Valve, Backpressure Valve, Check Valve, Cone Valve, Gate Valve, Globe Valve, Knife Gate Valve, Knife Valve, Plug Drain Valve, Pressure Relief, Pressure Regulator, Pinch Valve, Plug Valve, Pressure Reducing Valve, Pressure Temperature Relief, Rate-of-Flow Controller, Solenoid Valve, Surge Valve, Telescoping Valve, Temperature Control Valve.

EQUIPMENT:

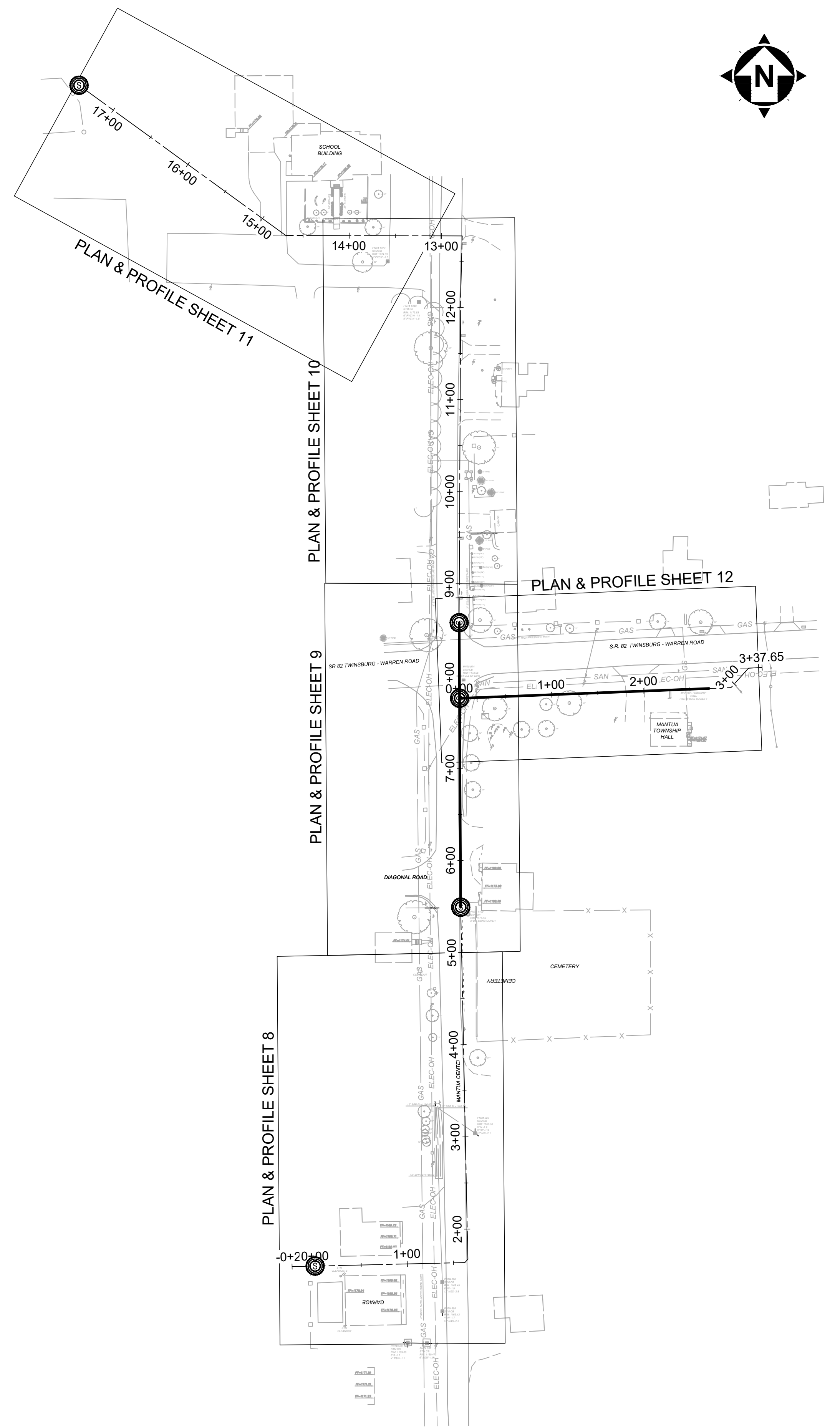
Table of equipment including Air Compressor, Aerator, Blower, Belt Filter Press, Classifier, Communitor, Compactor, Chemical Feeder, Conveyor, Centriguge, Calibration Cylinder, Chemical Feeder, Control Panel, Crane, Decanter, Drive, Disc Filter, Fan, Filter, Flow Meter, Gravity Belt Thickener, Grinder, Generator, Hose Bib, Motor, Mixer, Pump, Pump Station, Sampler, Screen, Bulkhead Gate, Slide Gate, Stop Plate, Stop Log, Aluminum, Stainless Steel, Cast Iron, Polymer, Bottom of Channel, Height, Width.

Logo for 'your trusted advisor' with text 'engineers', 'architects', 'planners'.

Logo for 'T' with text 'your trusted advisor', 'consultants', 'engineers', 'architects', 'planners'.

Table with columns for DATE, REVISION, NO, and ISSUED FOR.

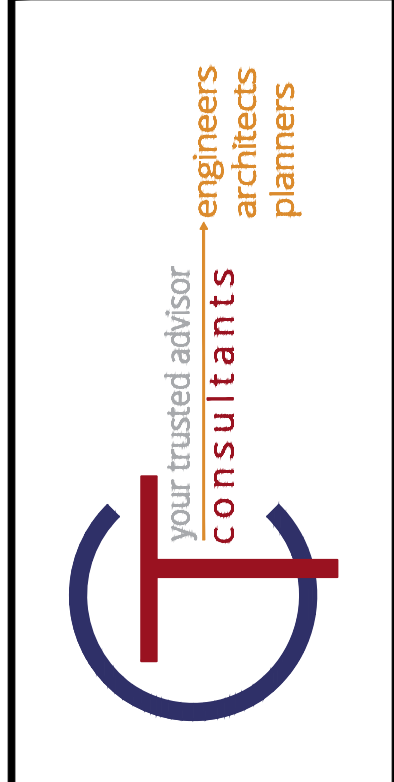
Project information: PROJECT NO. 210772, DISCIPLINE GENERAL, SHEET NAME 01C-02, SHEET 6 OF 19. Title: MANTUA TOWNSHIP TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS, MANTUA TOWNSHIP, OHIO, PORTAGE COUNTY, SITE IMPROVEMENTS - 01 SERIES, SITE LEGEND.

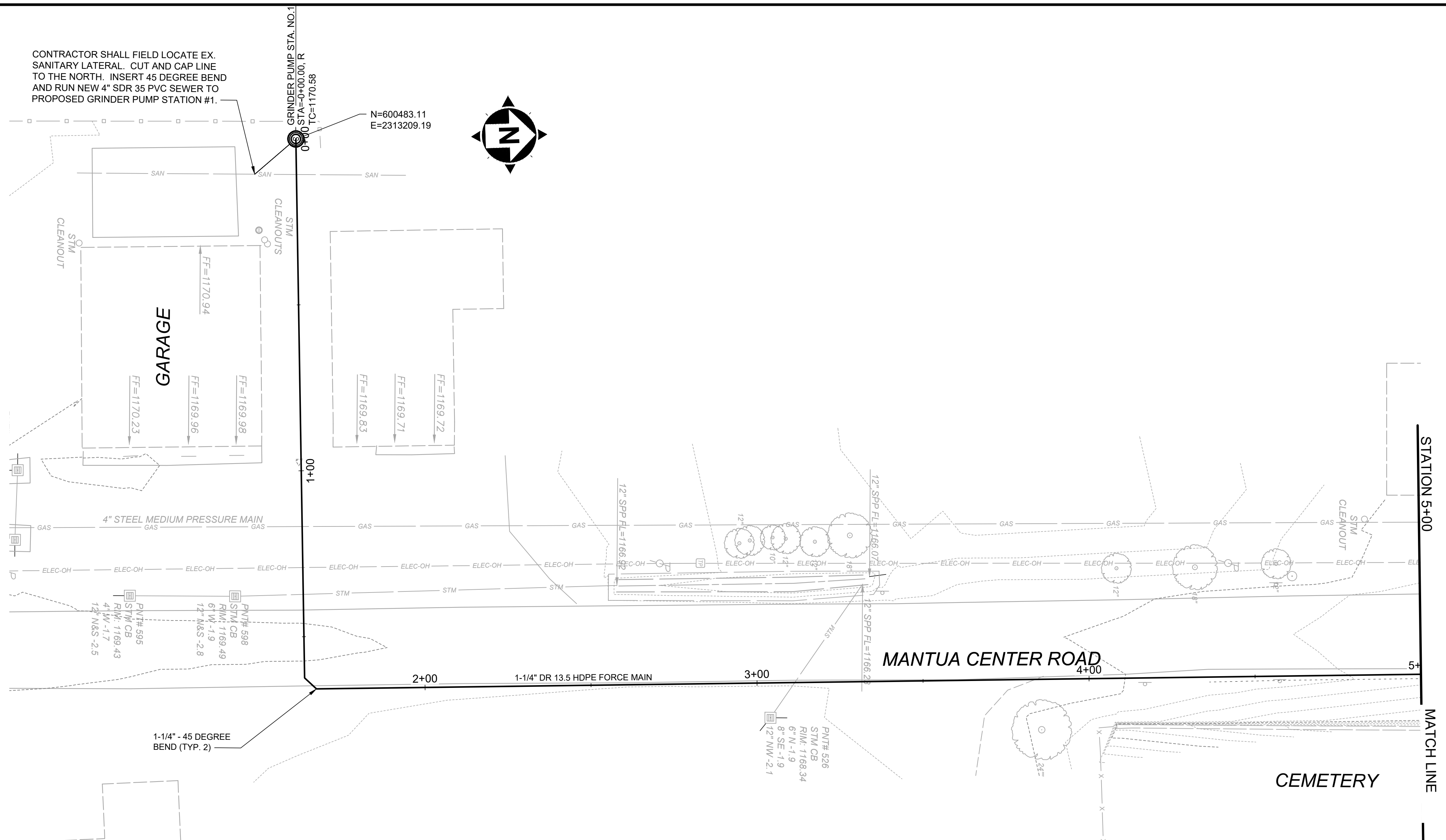


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DISCIPLINE		GENERAL	
SHEET NAME		01C-03	
SHEET	OF	7	19

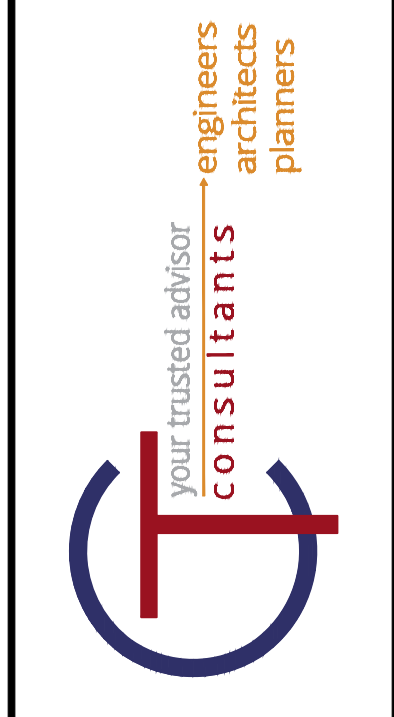
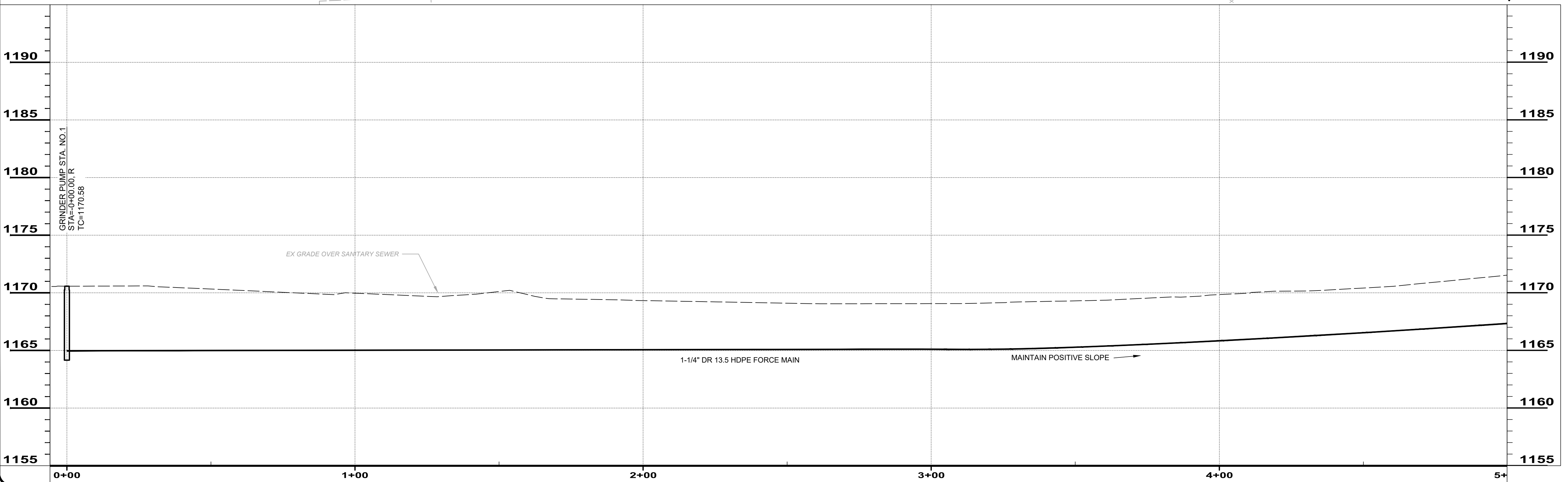
MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER
IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
SITE IMPROVEMENTS - 01 SERIES
SITE PLAN

ISSUED FOR:	NO	REVISION	DATE
60%			
ISSUE DATE:	11-10-22		
SCALE:	AS NOTED		
DESIGNED BY:	###		
DRAWN BY:	ELE		
CHECKED BY:	###		





CONTRACTOR SHALL FIELD LOCATE EX. SANITARY LATERAL. CUT AND CAP LINE TO THE NORTH. INSERT 45 DEGREE BEND AND RUN NEW 4\"/>

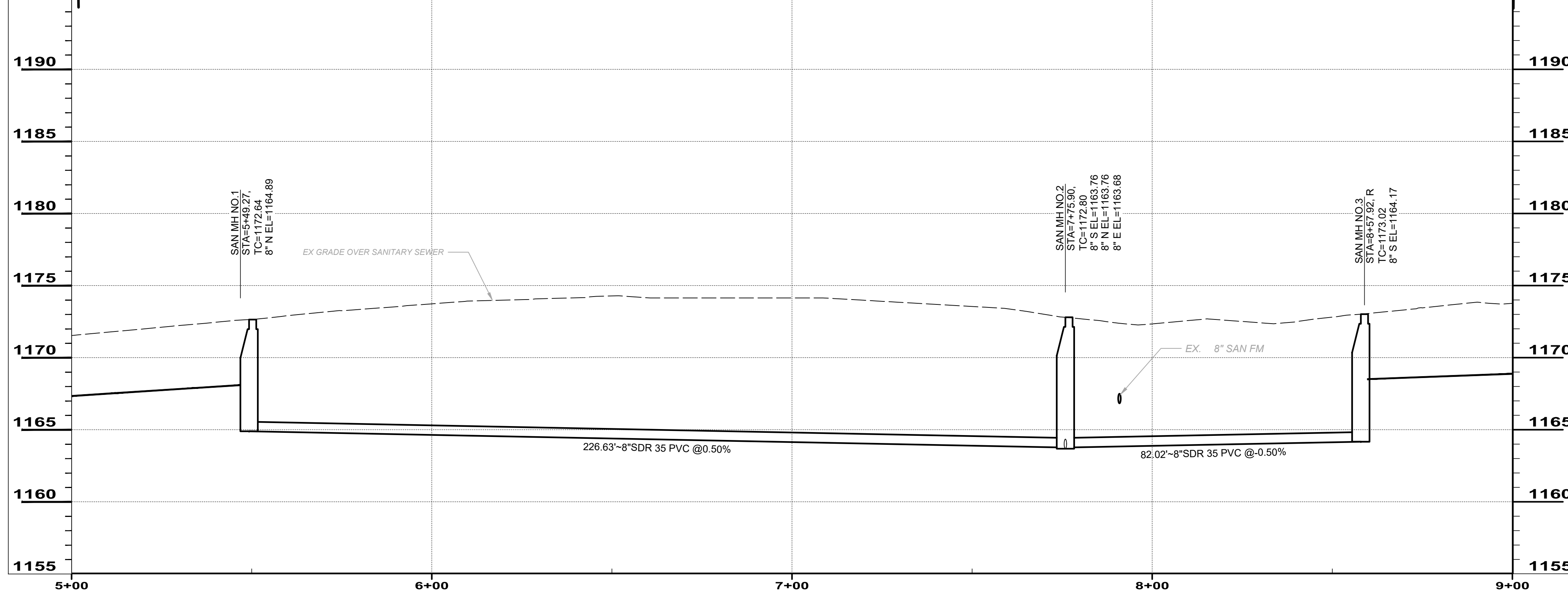
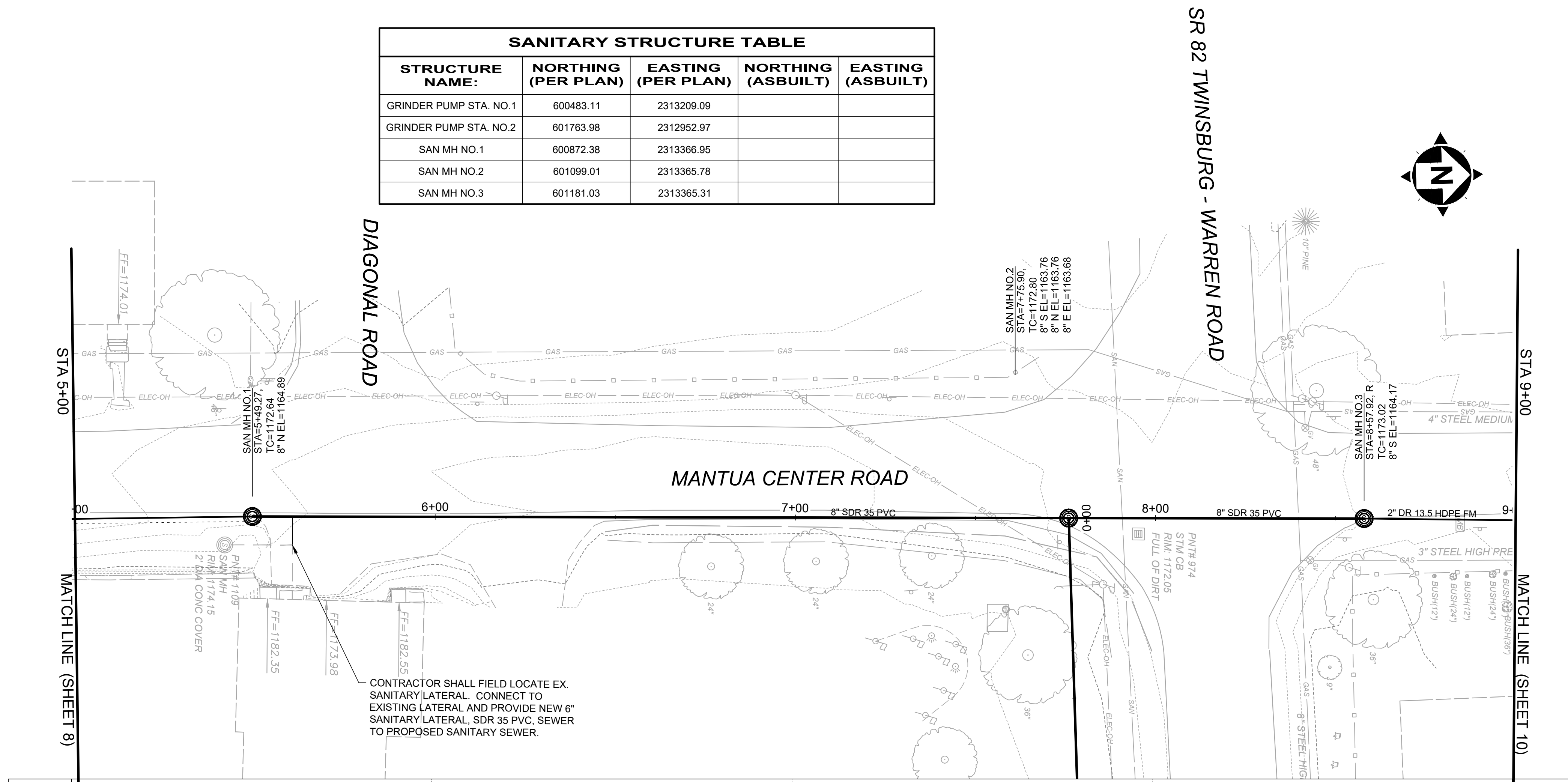


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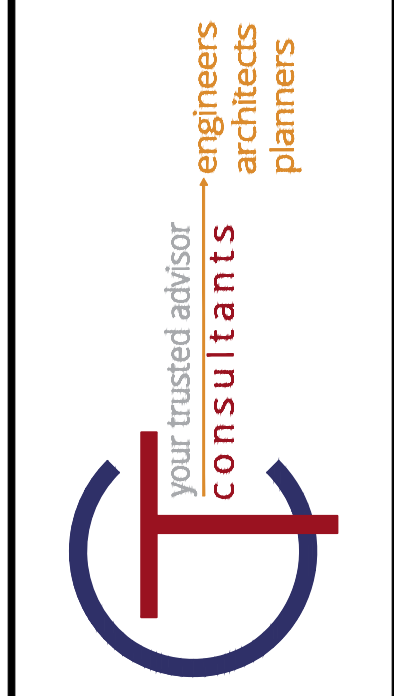
MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
SITE IMPROVEMENTS - 01 SERIES
 PLAN & PROFILES MANTUA CENTER RD (STA 0+00 - 5+00)

PROJECT NO.	210772
DISCIPLINE	CIVIL
SHEET NAME	01C-04
SHEET	8
OF	19

SANITARY STRUCTURE TABLE				
STRUCTURE NAME:	NORTHING (PER PLAN)	EASTING (PER PLAN)	NORTHING (ASBUILT)	EASTING (ASBUILT)
GRINDER PUMP STA. NO.1	600483.11	2313209.09		
GRINDER PUMP STA. NO.2	601763.98	2312952.97		
SAN MH NO.1	600872.38	2313366.95		
SAN MH NO.2	601099.01	2313365.78		
SAN MH NO.3	601181.03	2313365.31		



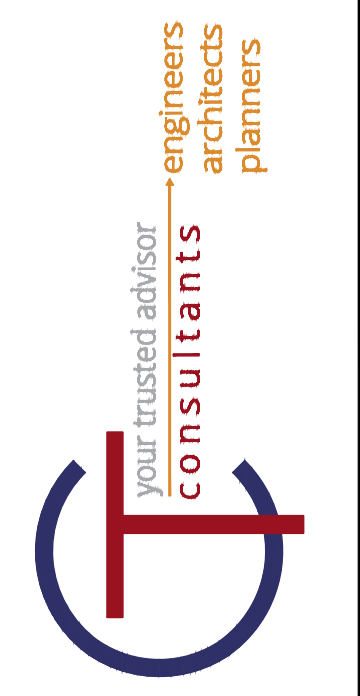
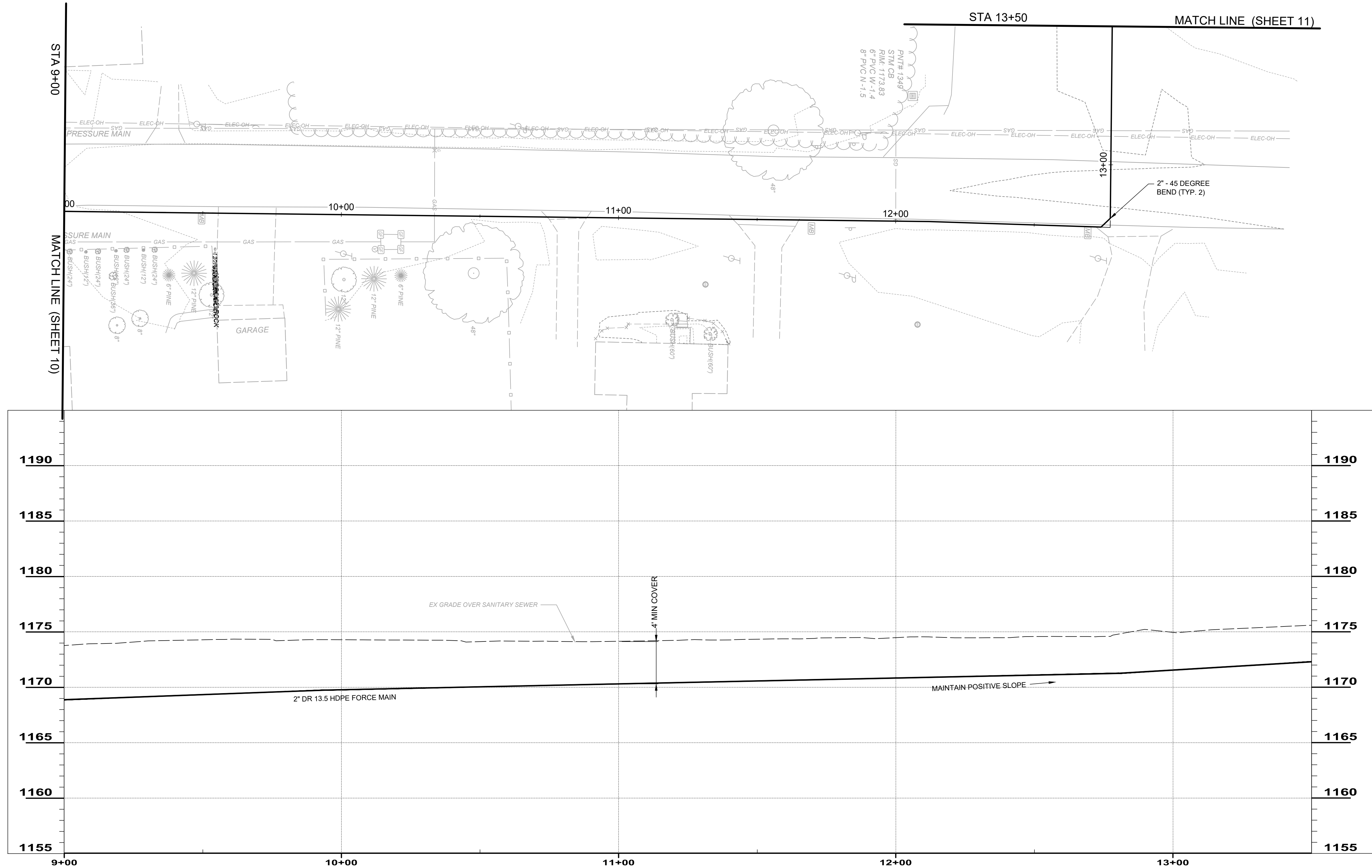
CONTRACTOR SHALL FIELD LOCATE EX. SANITARY LATERAL. CONNECT TO EXISTING LATERAL AND PROVIDE NEW 6\"/>



ISSUED FOR:	NO	REVISION	DATE
60%	11-10-22		
ISSUE DATE:	AS NOTED		
SCALE:	###		
DESIGNED BY:	ELE		
DRAWN BY:	###		
CHECKED BY:			

MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
SITE IMPROVEMENTS - 01 SERIES
 PLAN & PROFILE MANTUA CENTER RD (STA 5+00 - 9+00)

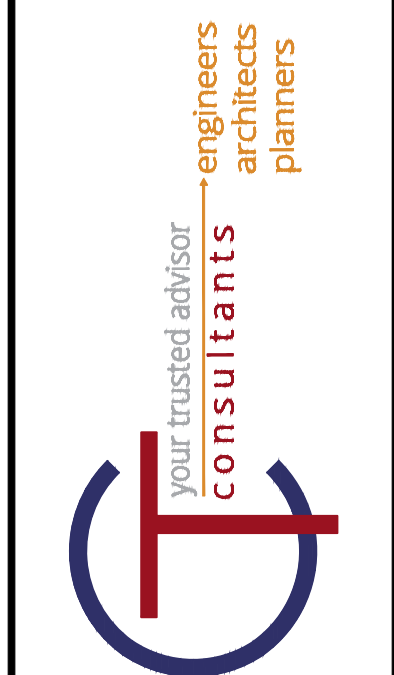
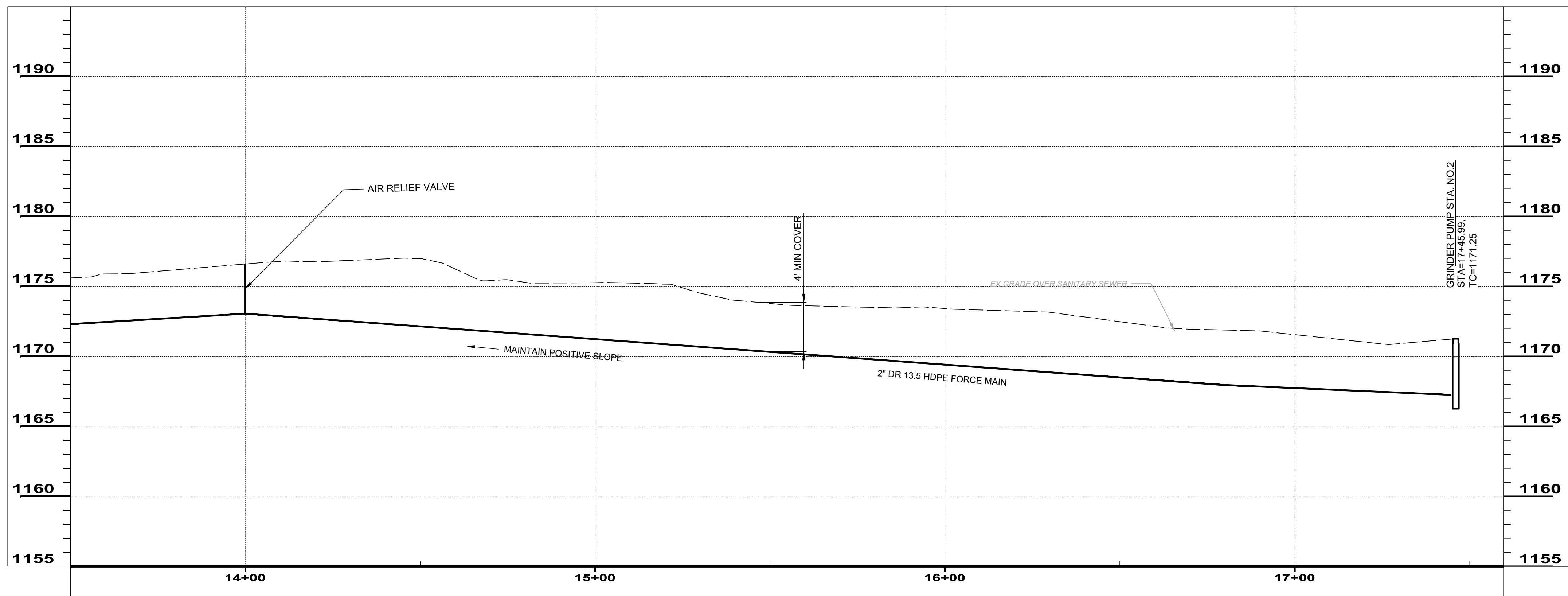
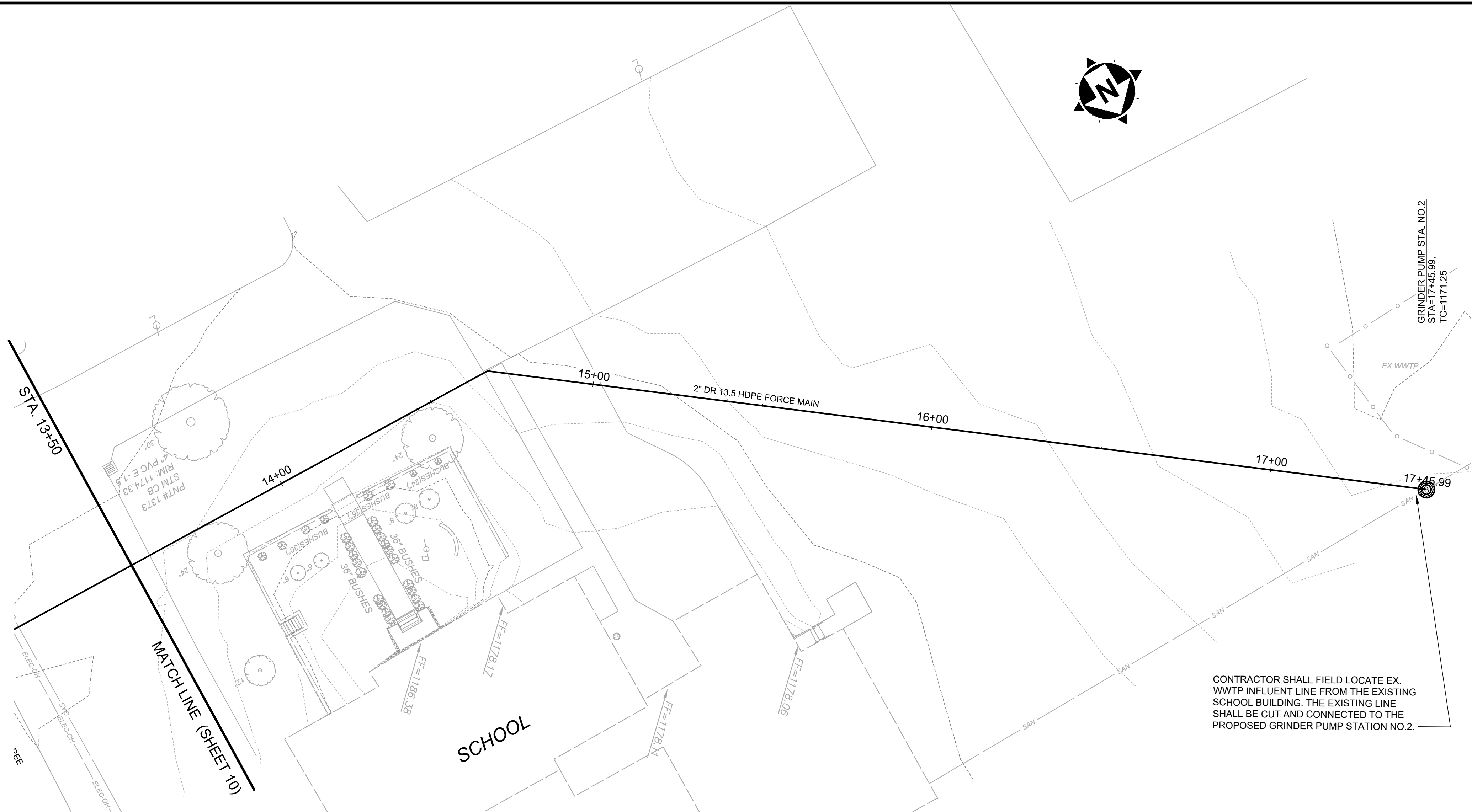
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DISCIPLINE	CIVIL
SHEET NAME	01C-05
SHEET	OF
9	19



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ISSUE DATE:	11-10-22		
SCALE:	AS NOTED		
DESIGNED BY:	###		
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CHECKED BY:	###		

MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER
IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
SITE IMPROVEMENTS - 01 SERIES
 PLAN & PROFILE MANTUA CENTER RD (STA 9+00 - 13+50)

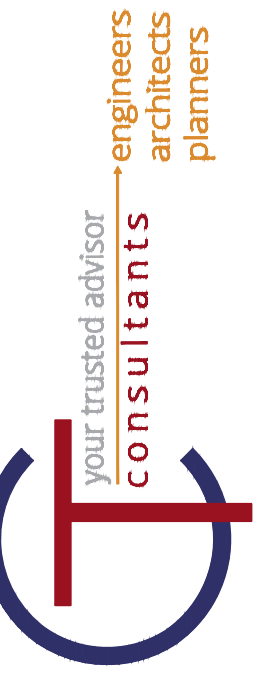
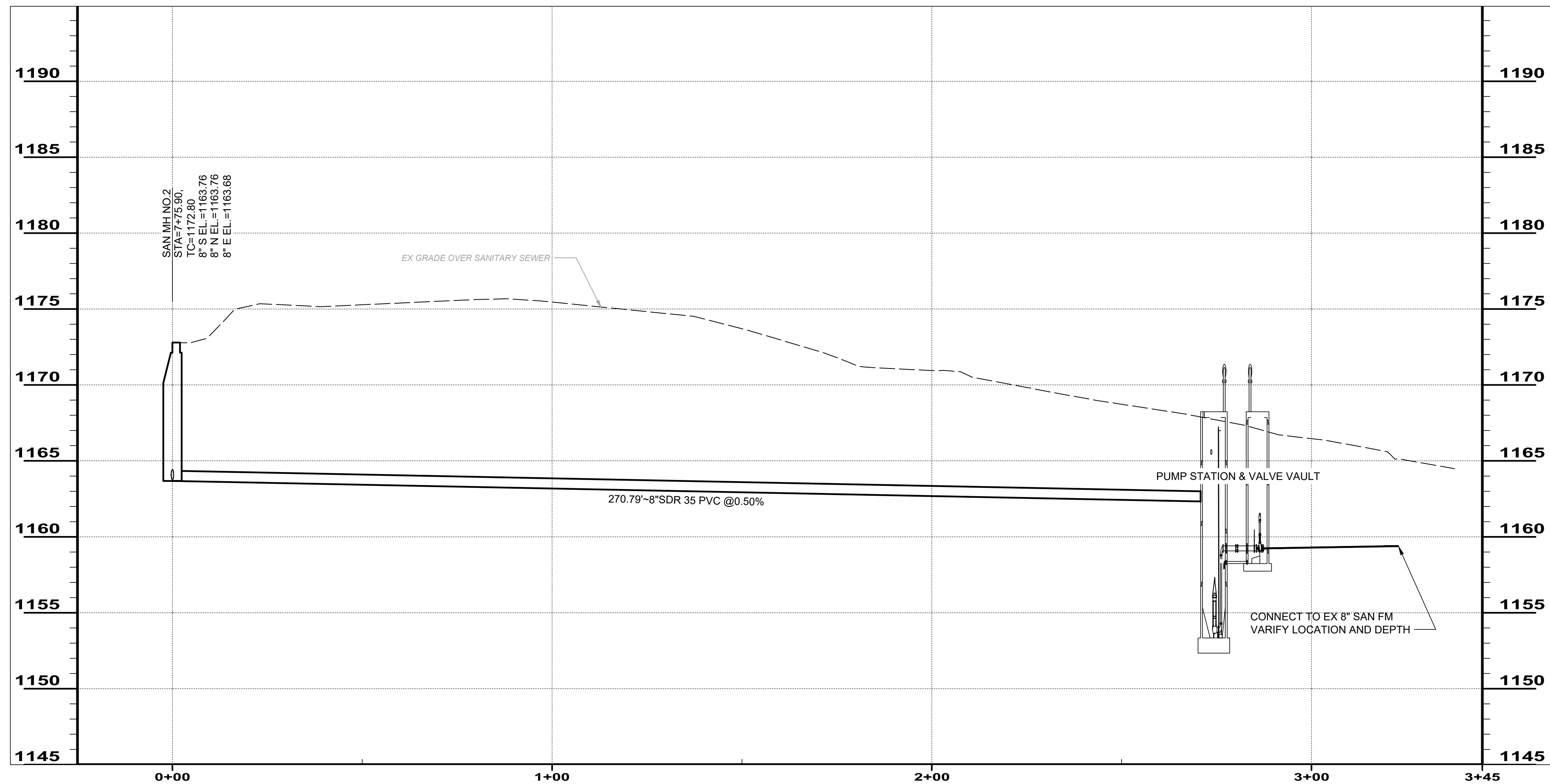
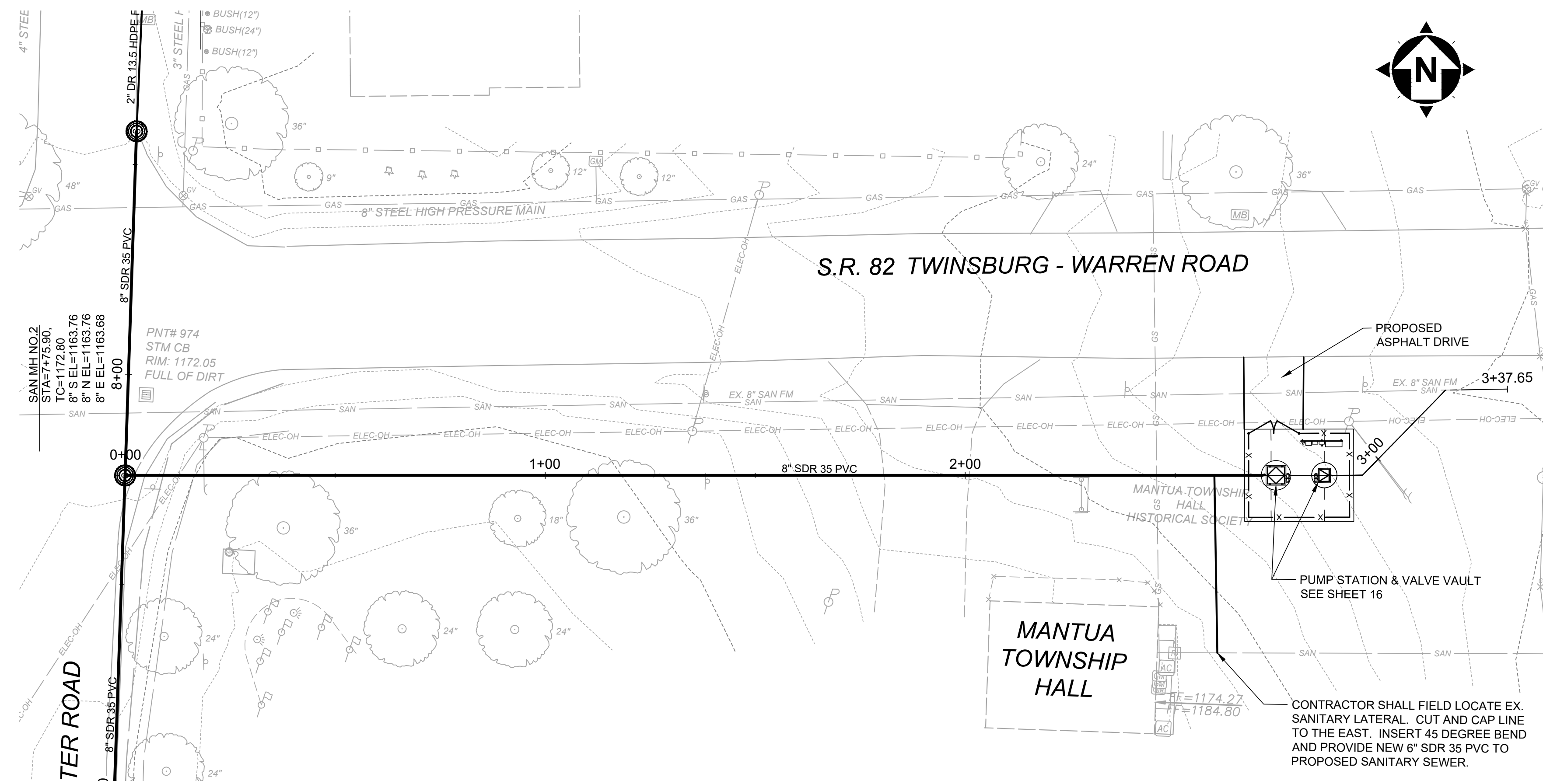
PROJECT NO.	210772
DISCIPLINE	GENERAL
SHEET NAME	01C-06
SHEET	OF
10	19



ISSUED FOR:	60%	NO	REVISION	DATE
ISSUE DATE:	11-10-22			
SCALE:	AS NOTED			
DESIGNED BY:	###			
DRAWN BY:	ELE			
CHECKED BY:	###			

MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
SITE IMPROVEMENTS - 01 SERIES
 PLAN & PROFILE MANTUA CENTER RD (STA 13+50 - 17+80)

PROJECT NO.	210772
DISCIPLINE	GENERAL
SHEET NAME	01C-07
SHEET	OF
11	19



NO	REVISION	DATE

ISSUED FOR: 60%

ISSUE DATE: 11-10-22

SCALE: AS NOTED

DESIGNED BY: ###

DRAWN BY: ELE

CHECKED BY: ###

MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER
IMPROVEMENTS
 PORTAGE COUNTY
MANTUA TOWNSHIP, OHIO
SITE IMPROVEMENTS - 01 SERIES
PLAN & S.R. 82 (STA 0+00 - 3+37)

PROJECT NO.	210772
DISCIPLINE	GENERAL
SHEET NAME	01C-08
SHEET	OF
12	19

ADMINISTRATIVE NOTES

1. AN OHIO EPA NPDES PERMIT IS REQUIRED WHERE CONSTRUCTION ACTIVITIES DISTURB 1 OR MORE ACRES OF LAND, OR SMALLER SITES LESS THAN 1 ACRE THAT ARE PART OF A LARGER COMMON DEVELOPMENT.

GENERAL NOTES

1. THIS SWP3 HAS BEEN PREPARED SHOWING THE ITEMS LISTED BELOW, BUT THE CONTRACTOR MAY NEED TO MOVE OR ADD ITEMS AS CONSTRUCTION PROGRESSES OR DURING THE VARIOUS STAGES OF CONSTRUCTION.

EROSION CONTROL NOTES

1. SPECIAL MEASURES SHALL BE TAKEN TO STABILIZE DRAINAGE CHANNELS AND STORM WATER OUTFALLS.

TMDLS AND BMPs SELECTED

1. APPLICABLE TMDLS FOR THE SITE: (X) PHOSPHORUS () AMMONIA (X) HABITAT (X) NITROGEN (X) BACTERIA () FLOW () SEDIMENT/TOTAL SUSPEND SOLIDS

OTHER WASTE CONTROL NOTES

1. SOIL STOCKPILES SHALL BE RINGED WITH SILT FENCE ALONG THE BOTTOM FOOTPRINT. IF THE STOCKPILE WILL BE INACTIVE FOR 14 DAYS OR MORE, THE SURFACE SHALL BE SEEDED OR STABILIZED WITHIN 7 DAYS OF LAST DISTURBANCE.

SEDIMENT CONTROL NOTES

1. INLET PROTECTION AND SEDIMENT BARRIERS MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING.

EROSION CONTROL TIMETABLE

Table with columns for months (A, S, O, N, D, J, F, M, A, M, J, J, A, S, O, N, D) and rows for Stabilization, Temp. Seeding, Perm. Seeding, Sodding, Mulching, and Paving. Includes irrigation needed indicator.

MAINTENANCE REQUIREMENTS

1. BMPs SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL UPSLOPE AREAS THEY CONTROL ARE STABILIZED.

SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES

1. HOLD A PRE-CONSTRUCTION MEETING TO DISCUSS OHIO EPA NPDES PERMIT REQUIREMENTS.

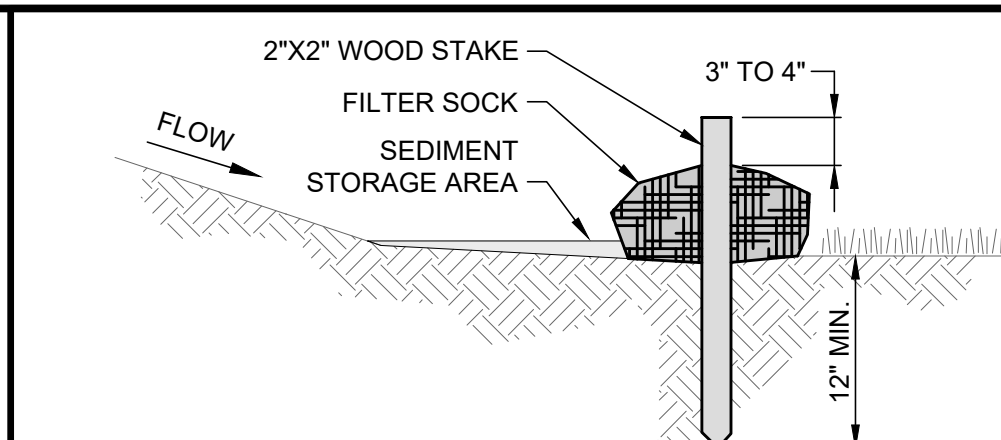
PERMIT CLOSURE REQUIREMENTS

1. FINAL STABILIZATION REQUIRES THE CONTRACTOR TO REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROLS FROM THE SITE AND ALL SEDIMENT TRAPPED BY THOSE CONTROLS BE PERMANENTLY STABILIZED.



Table with columns: DATE, NO, REVISION, ISSUED FOR, ISSUE DATE, SCALE, DESIGNED BY, DRAWN BY, CHECKED BY. Includes '60%' and 'AS NOTED'.

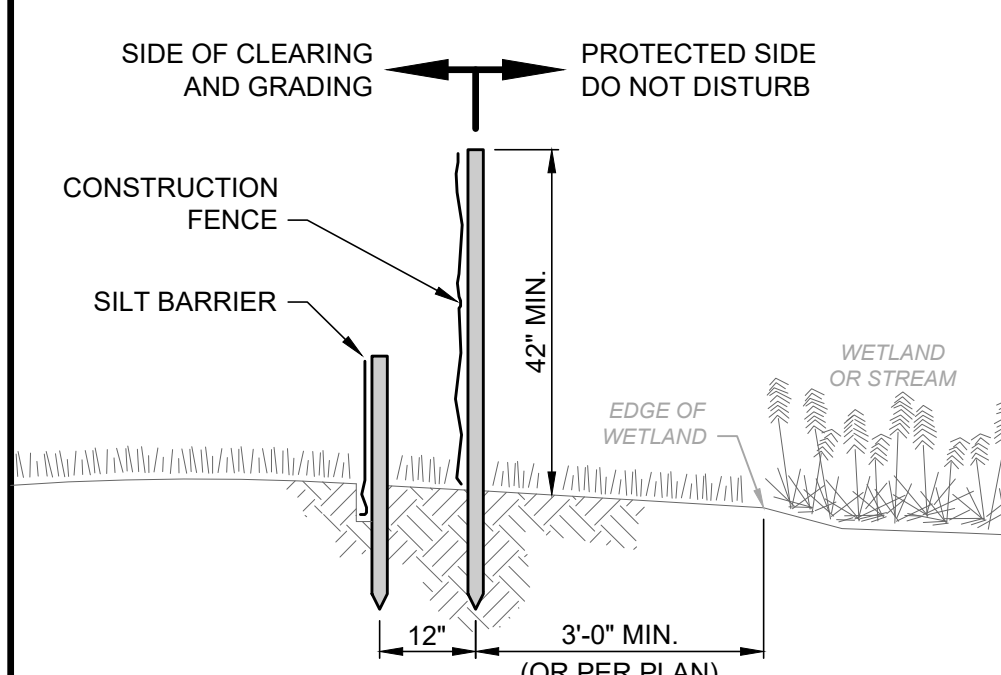
MANTUA TOWNSHIP TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS MANTUA TOWNSHIP, OHIO PORTAGE COUNTY SITE IMPROVEMENTS - 01 SERIES SWPPP NOTES & DETAILS PROJECT NO. 210772 DISCIPLINE CIVIL SHEET NAME SWP-01 SHEET 13 OF 19



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

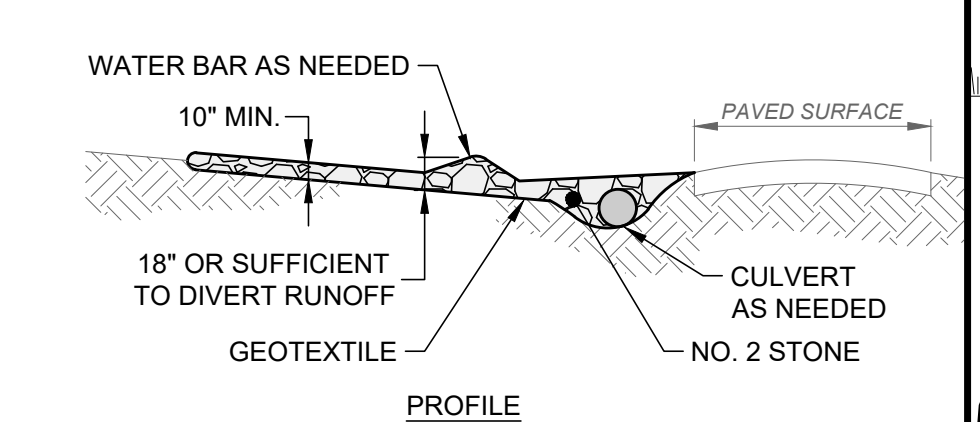
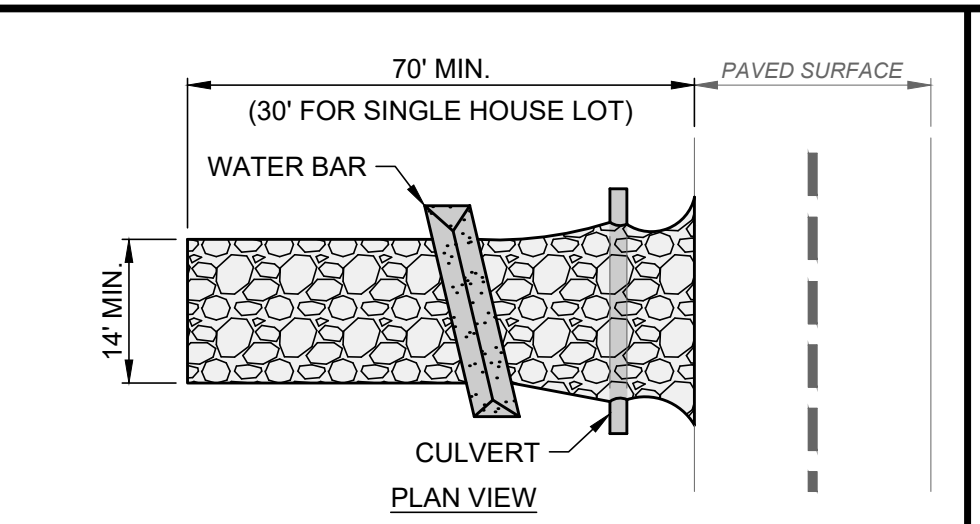
MAX. SLOPE LENGTH ABOVE FILTER SOCK					
SLOPE	RATIO (H:V)	8"	12"	18"	24"
0% - 2%	0 - 50:1	125'	250'	300'	350'
2% - 10%	50:1 - 10:1	100'	125'	200'	250'
10% - 20%	10:1 - 5:1	75'	100'	150'	200'
20% - 50%	5:1 - 2:1	N/A	50'	75'	100'
≥ 50%	≥ 2:1	N/A	25'	50'	75'

FILTER SOCK DETAIL
SCALE: NONE



- NOTES:
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY BARRIERS AROUND NON-IMPACTED WETLANDS AND STREAMS TO PREVENT DISTURBANCE OR CONSTRUCTION ACTIVITIES WITHIN THE PROTECTED AREAS AND, UPON COMPLETION OF THE PROJECT, BE REMOVED.
 - CONSTRUCTION FENCE SHALL BE HIGH VISIBILITY, ORANGE COLOR, HIGH DENSITY POLYETHYLENE GRID SECURED TO STEEL POSTS LOCATED ON MAXIMUM 10' CENTERS.
 - THE FOLLOWING ACTIVITIES ARE PROHIBITED WITHIN OR THROUGH NON-IMPACTED WETLANDS AND STREAMS:
 - EXCAVATION OR OTHER DIGGING
 - IMPONDMENT OF WATER
 - STORAGE OF CONSTRUCTION MATERIALS, DEBRIS OR EXCAVATED MATERIAL
 - OPERATING OR PARKING VEHICLES OR EQUIPMENT
 - FOOT TRAFFIC
 - ATTACHMENT OF SIGNS TO OR WRAPPING MATERIALS AROUND TREES
 - ANYTHING THAT WOULD DISTURB THE GROUND

WETLAND BARRIER DETAIL
SCALE: NONE



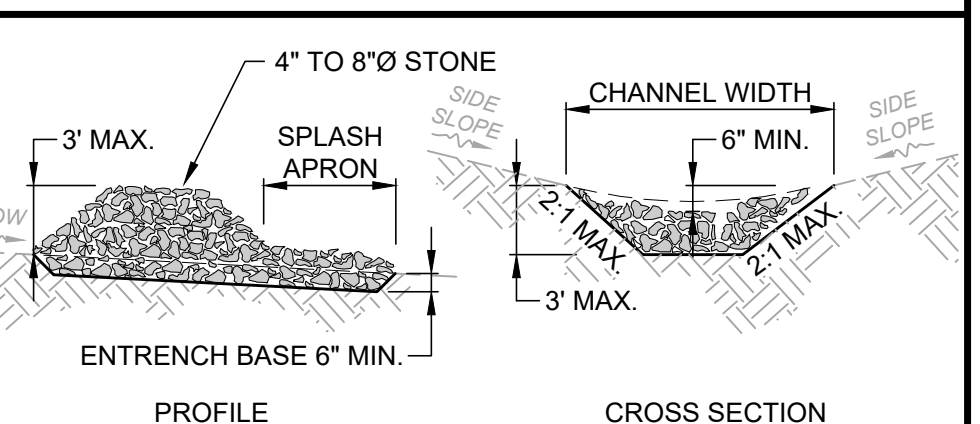
NOTES:

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

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

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

CONSTRUCTION ENTRANCE
SCALE: NONE

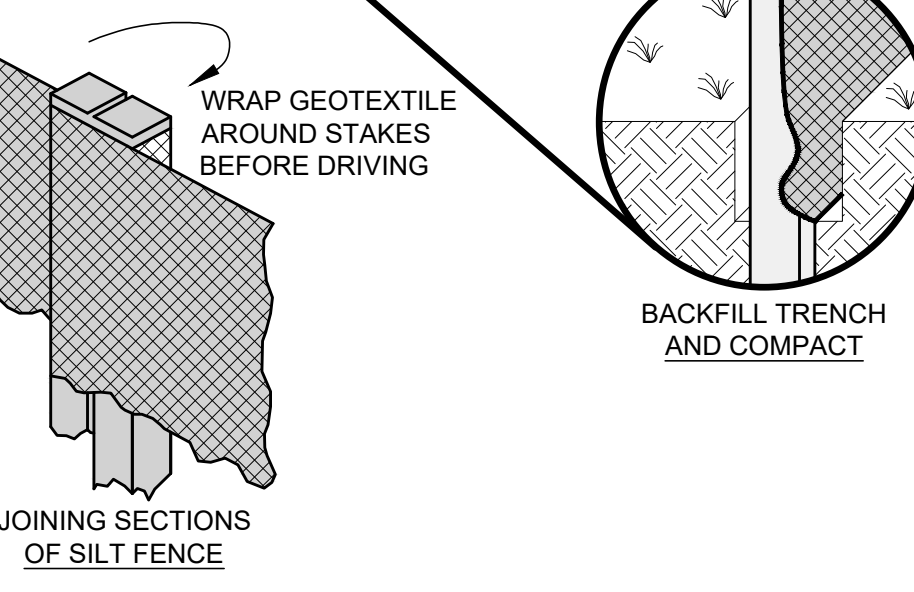
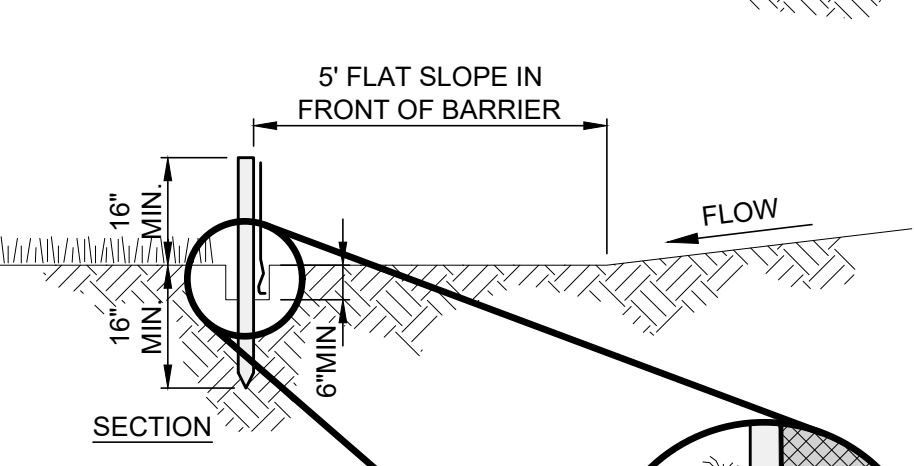
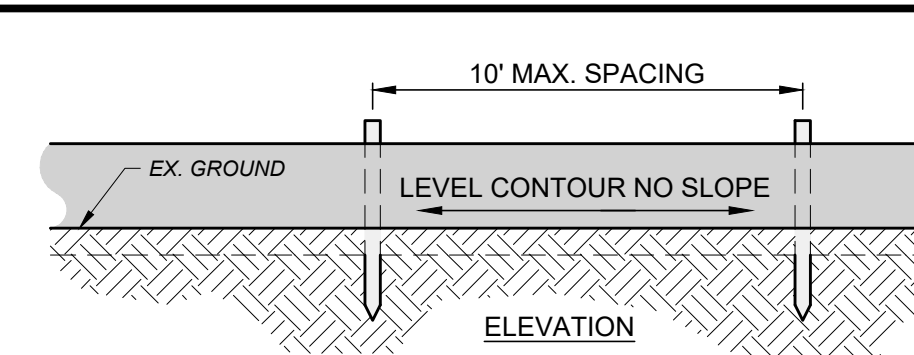


- NOTES:
- STONE MUST COVER THE FULL CHANNEL WIDTH.
 - ODOT TYPE 'D' STONE IS ACCEPTABLE, BUT MUST BE UNDERLAIN WITH NO. 3 OR 4 STONE OR FILTER FABRIC.
 - THE MIDPOINT OF THE CHECK DAM SHALL BE A MINIMUM OF 6" LOWER THAN THE SIDES TO DIRECT WATER ACROSS THE CENTER AND AWAY FROM CHANNEL SIDES.
 - SPACE CHECK DAMS SO TOE OF UPSTREAM DAM IS AT SAME ELEVATION AS TOP OF DOWNSTREAM DAM, OR AS FOLLOWS:

CHECK DAM HEIGHT	CHANNEL SLOPE			
	< 5%	5% - 10%	10% - 15%	15% - 20%
1 FT.	65 FT.	30 FT.	20 FT.	15 FT.
2 FT.	130 FT.	65 FT.	40 FT.	30 FT.
3 FT.	200 FT.	100 FT.	65 FT.	50 FT.

- IF CHECK DAMS TO REMAIN IN USE FOR EXTENDED PERIOD OF TIME, INSTALL SPLASH APRON 6" MINIMUM THICK WITH LENGTH 2 TIMES CHECK DAM HEIGHT.

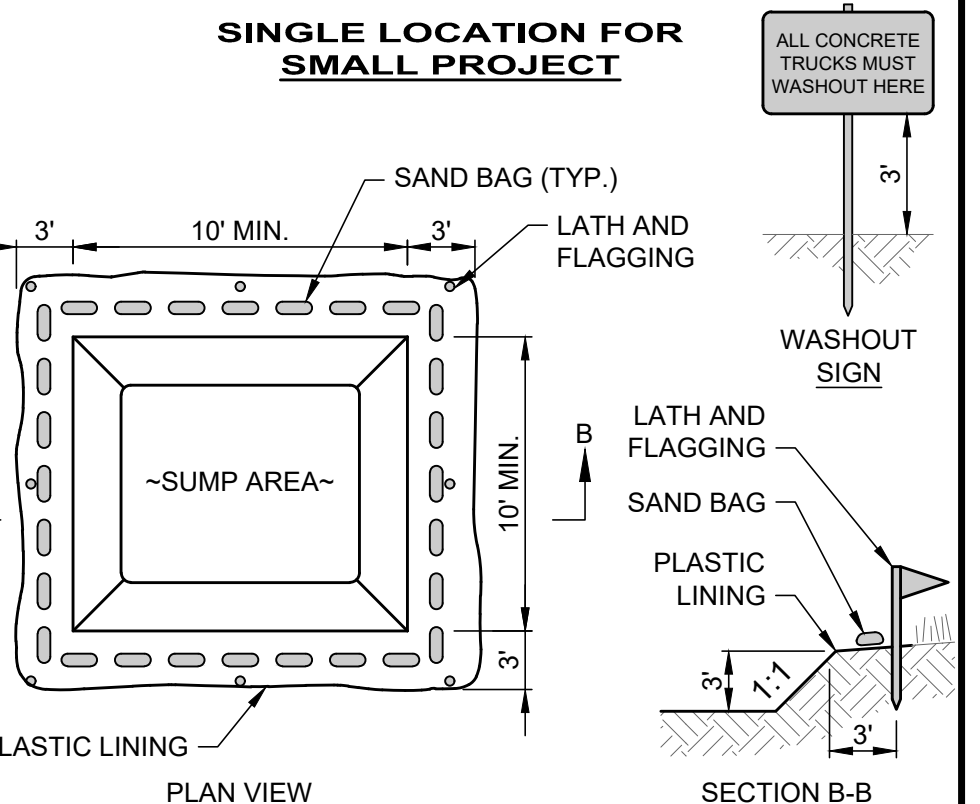
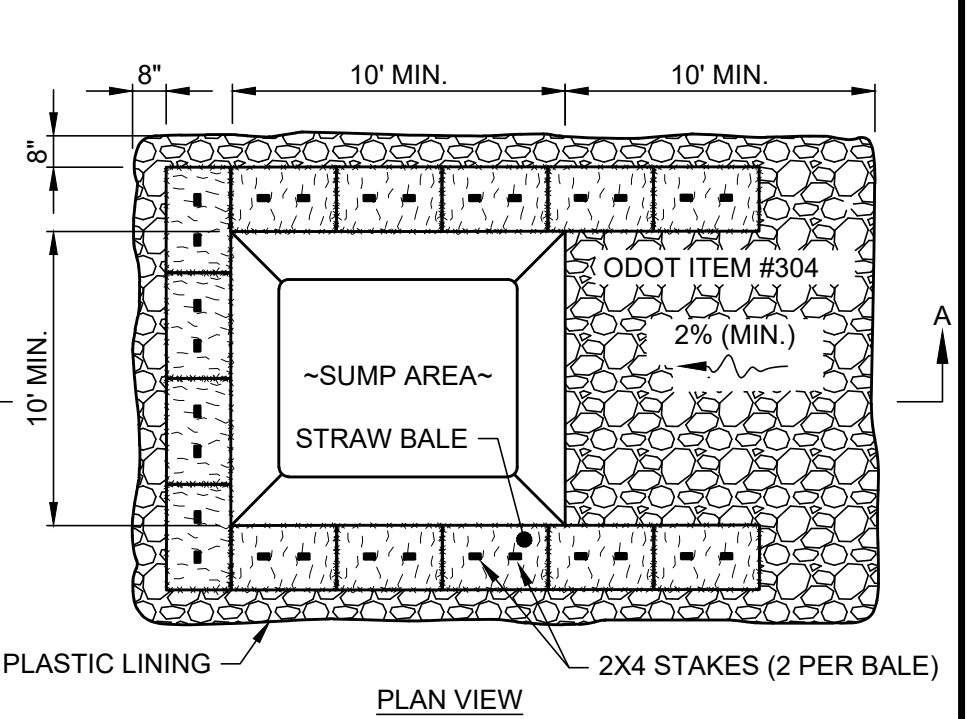
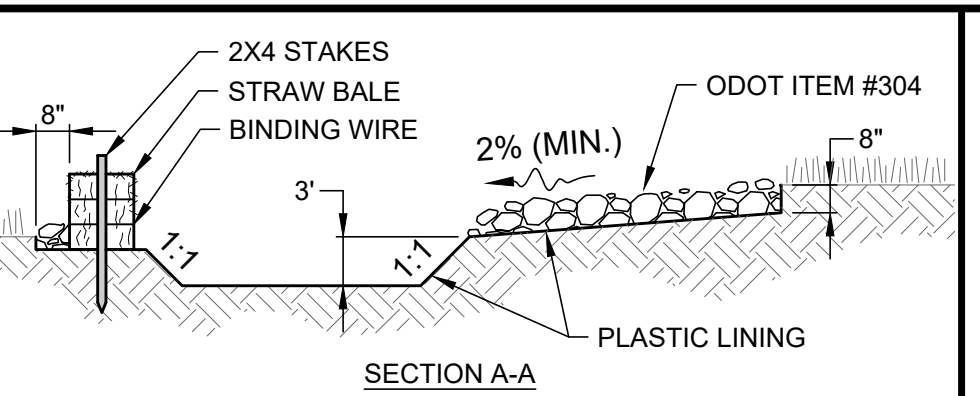
CHECK DAM DETAIL
SCALE: NONE



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

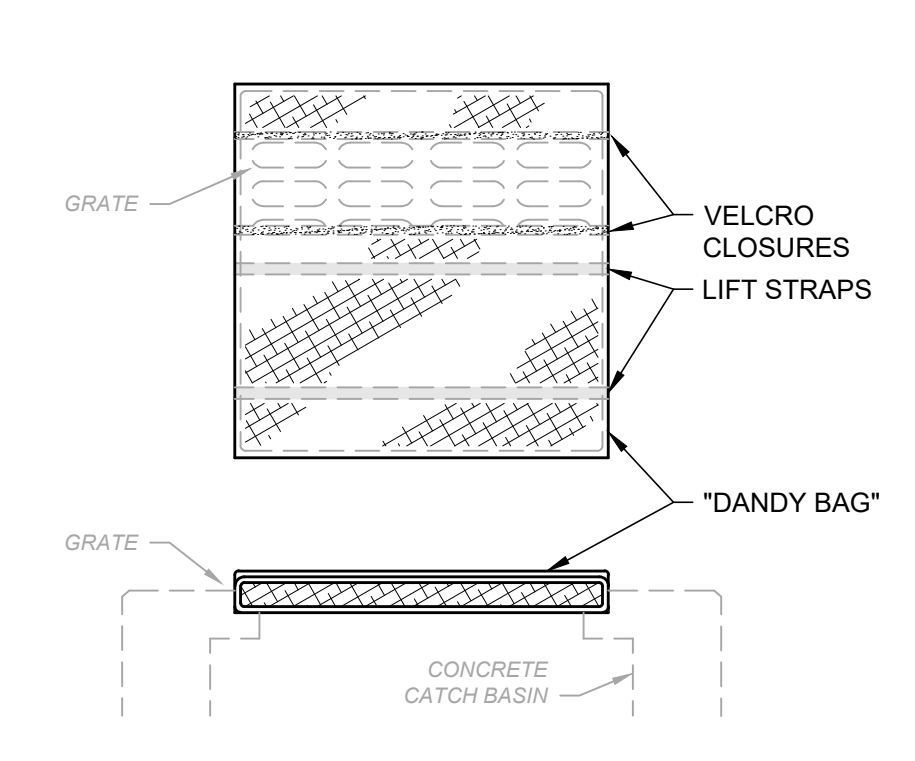
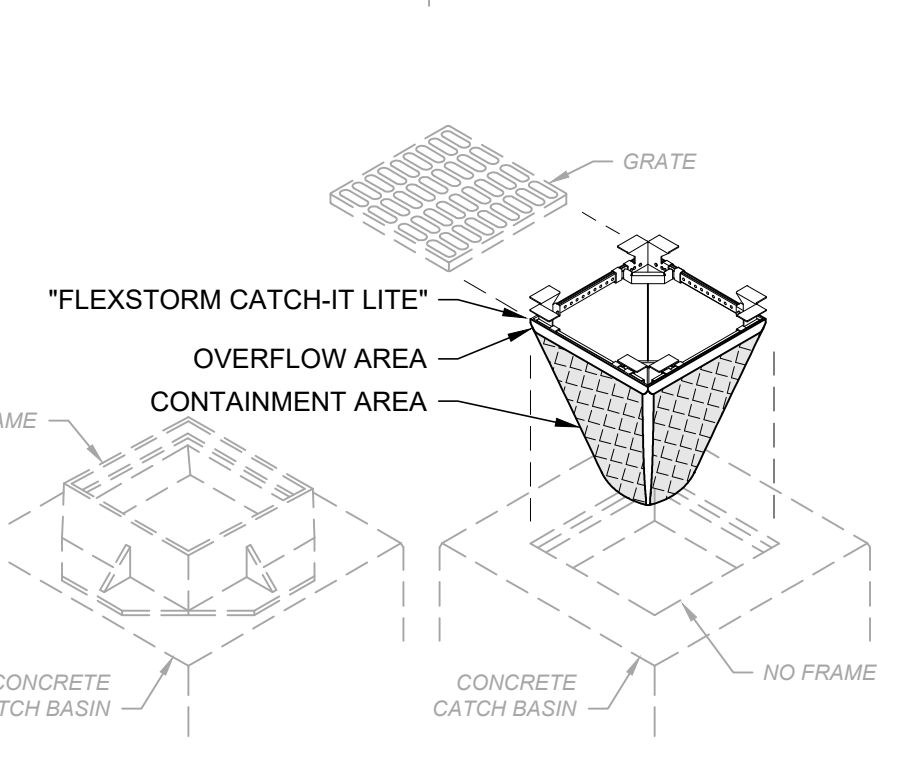
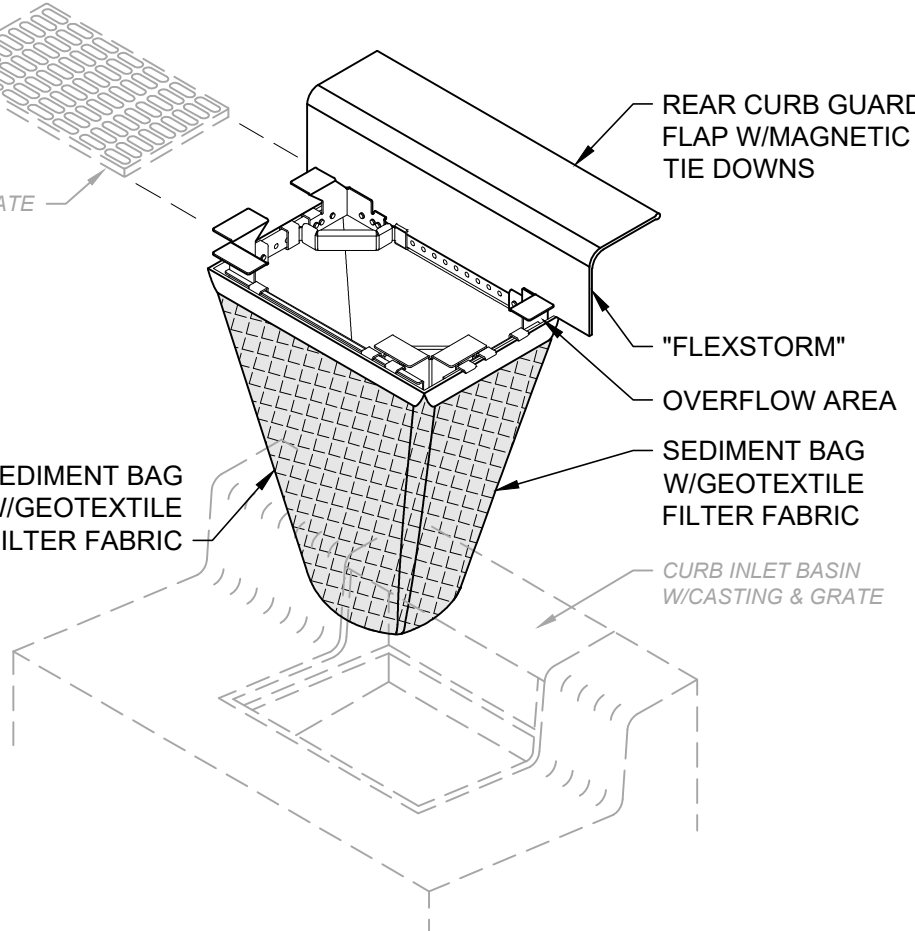
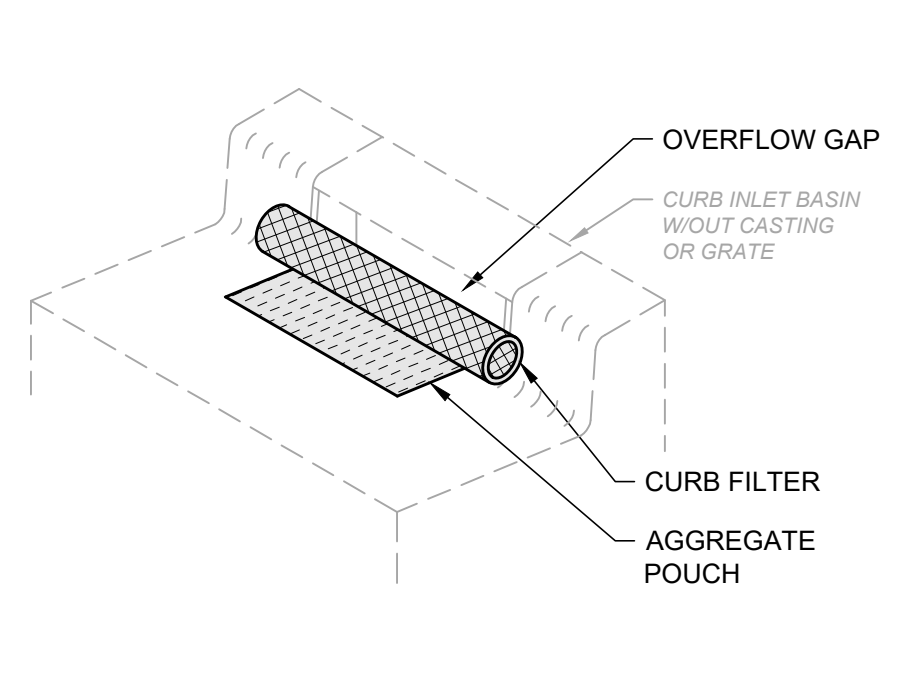
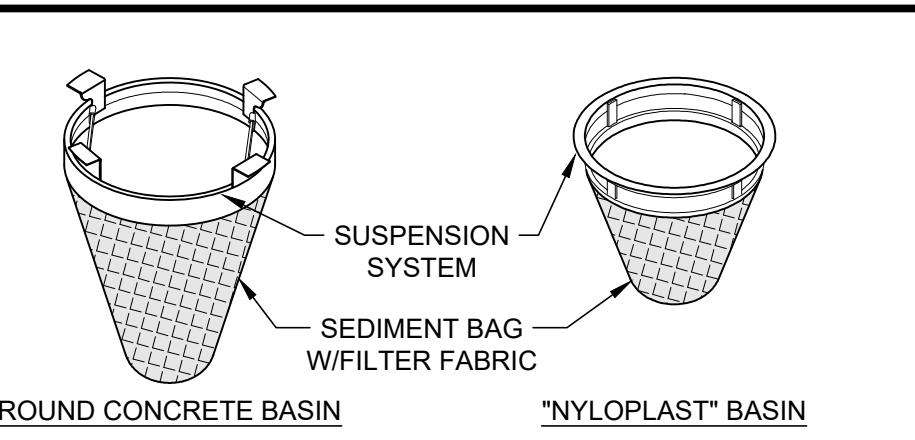
- NOTES:
- PRESERVE VEGETATION FOR 5 FEET OR AS MUCH AS POSSIBLE UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE RE-ESTABLISHED WITHIN 7 DAYS FROM SILT FENCE INSTALLATION.
 - THE MAXIMUM DRAINAGE AREA PER 100 FEET OF SILT FENCE IS DEPENDENT ON THE SLOPE, BUT NO MORE THAN 1/2 ACRE.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

SILT FENCE
SCALE: NONE



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

CONCRETE WASHOUT AREA DETAIL
SCALE: NONE



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

INLET PROTECTION DETAIL
SCALE: NONE



your trusted advisor
consultants
engineers
architects
planners

DATE	REVISION	NO	ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
			60%	11-10-22	AS NOTED	###	ELE	###

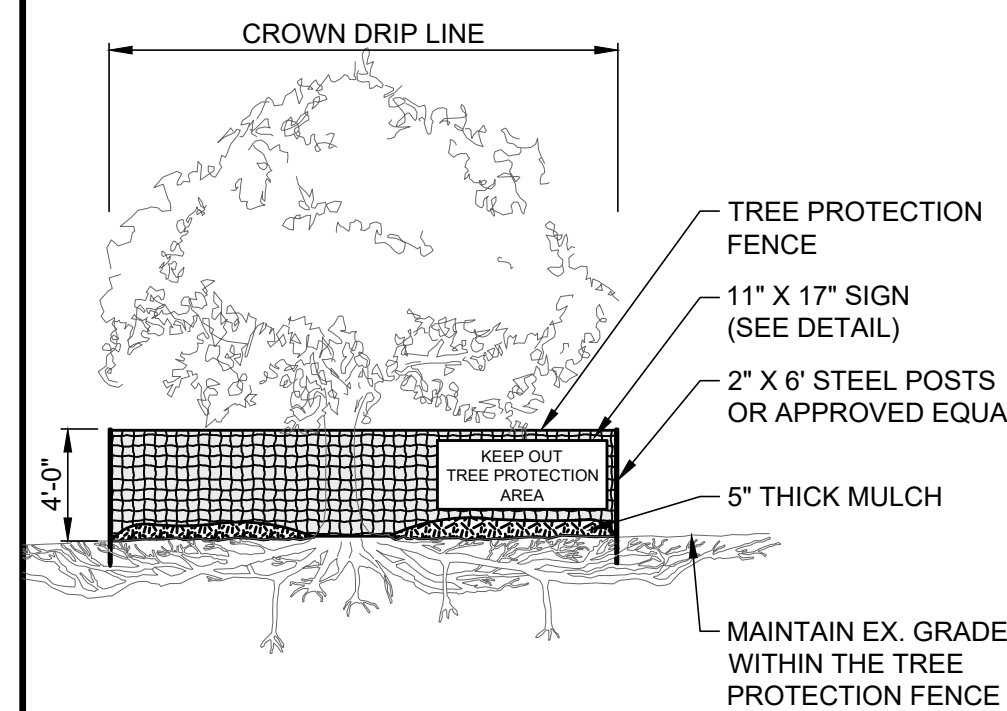
MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
PORTAGE COUNTY
MANTUA TOWNSHIP, OHIO
SITE IMPROVEMENTS - 01 SERIES
SWPPP DETAILS 1

PROJECT NO.	210772
DISCIPLINE	CIVIL
SHEET NAME	SWP-02
SHEET	OF
14	19

NOTES:

- MULCH SHALL CONSIST OF ONE OF THE FOLLOWING:
 - UNROTTED SMALL GRAIN STRAW SPREAD UNIFORMLY AT 2 TONS/AC. (2 TO 3 BALES).
 - WOOD-CELLULOSE FIBER (I.E. HYDROSEEDING) APPLIED AT 1 TON/AC.
 - ROLLED EROSION CONTROL PRODUCT OR MULCH MATTING APPLIED PER MANUFACTURER RECOMMENDATION.
 - WOOD MULCH OR CHIPS APPLIED AT 6 TONS/AC.
- MULCH SHALL BE ANCHORED IMMEDIATELY BY ONE OF THE FOLLOWING METHODS:
 - PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL USING A DISK, CRIMPER OR SIMILAR TOOL. DO NOT FINELY CHOP STRAW TO BE MECHANICALLY ANCHORED, BUT LEAVE LONGER THAN 6".
 - NETTING PER MANUFACTURER RECOMMENDATION IN AREAS OF CONCENTRATED RUNOFF OR ON CRITICAL SLOPES.
 - SYNTHETIC BINDERS AT MANUFACTURER RATE.
 - WOOD-CELLULOSE FIBER BINDER AT A NET DRY WEIGHT OF 750 LB/AC., MIXED WITH WATER, AND CONTAIN 50 LB/100 GAL. MAX. OF WOOD CELLULOSE FIBER.

MULCHING DETAIL



NOTES:

- TREE PROTECTION FENCE MUST BE INSTALLED PRIOR TO BEGINNING CLEARING OPERATIONS AND REMAIN UNTIL FINAL GRADING HAS BEEN COMPLETED.
- FENCE MUST BE PLACED BEYOND THE DRIP LINE OR CANOPY OF TREES (SEE PLANS FOR GENERAL FENCE ALIGNMENT).
- FENCE SHALL BE ORANGE COLOR, HIGH DENSITY POLYETHYLENE FENCING WITH 3.5" X 1.5" OPENINGS.
- STEEL POSTS SHALL BE INSTALLED AT 8' O.C. MIN.
- SIGN SHALL BE LAMINATED IN PLASTIC AND SPACED EVERY 50' ALONG THE FENCE.
- NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING, INCLUDING FENCE INSTALLATION AND REMOVAL.

TREE PROTECTION DETAIL

SCALE: NONE

NOTES:

- SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN 48 HOURS. SOD NOT TRANSPANTED WITHIN THIS PERIOD SHALL BE INSPECTED AND APPROVED PRIOR TO INSTALLATION.
- SOD SHALL BE KEPT MOIST AND COVERED DURING HAULING AND PREPARATION FOR PLACEMENT.
- SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" ± 1/4", EXCLUDING TOP GROWTH AND THATCH.
- AREAS SHALL BE GRADED AND TOPSOIL SPREAD AS NEEDED.
- THE SEEDBED SHALL BE PREPARED BY APPLYING AGRICULTURAL GROUND LIMESTONE OR FERTILIZER AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, APPLY LIME AT 100 LB/1,000 S.F. OR FERTILIZER AT 12 LB/1,000 S.F. OF 10-10-10 OR 12-12-12 ANALYSIS. LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO A DEPTH OF 3".
- BEFORE LAYING SOD, THE SURFACE SHALL BE FINE GRADED AND CLEARED OF DEBRIS, STONES AND CLODS LARGER THAN 3" DIAMETER. KNOCK DOWN HIGH SPOTS AND FILL IN LOW SPOTS SO SOIL IS LEVEL AND 1" BELOW THE GRADE OF ANY PAVED SURFACE, SUCH AS CURBS, WALKS AND PAVEMENT.
- DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURES, THE SOIL SHALL BE LIGHTLY IRRIGATED PRIOR TO LAYING SOD.
- DO NOT PLACE SOD ON FROZEN SOIL.
- THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED IN A BRICK-LIKE PATTERN. ENSURE SOD IS NOT STRETCHED OR OVERLAPPED, AND JOINTS ARE BUTTED TIGHT.
- ON SLOPING AREAS WHERE EROSION MAY BE A PROBLEM, SOD SHALL BE LAID WITH THE LONG EDGE PARALLEL TO THE CONTOUR, WITH STAGGERED JOINTS AND BE SECURED WITH PEGS OR STAPLES.
- AS SODDING IS COMPLETED IN ANY ONE SECTION, ROLL OR TAMP THE SOD TO ENSURE SOLID CONTACT OF ROOTS WITH THE SOIL. WATER IMMEDIATELY AFTER ROLLING OR TAMPING UNTIL THE SOD AND SURFACE BELOW ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN 8 HOURS.
- IN THE ABSENCE OF ADEQUATE RAINFALL DURING THE FIRST WEEK, WATER DAILY OR AS NECESSARY TO MAINTAIN MOIST SOIL. AFTER THE FIRST WEEK, WATER SOD AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE AND ENSURE ESTABLISHMENT.
- DO NOT MOW UNTIL SOD IS FIRMLY ROOTED.

SODDING DETAIL

NOTES:

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

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

TEMPORARY SEEDING DETAIL

NOTES:

- SUBSOILING SHALL OCCUR WHEN SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING IS NOT PERMITTED ON SLIP-PRONE AREAS.
- DISTURBED AREAS SHALL BE GRADED AND TOPSOIL SPREAD.
- THE SEED BED SHALL BE PREPARED BY APPLYING AGRICULTURAL GROUND LIMESTONE OR FERTILIZER AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS. LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO A DEPTH OF 3".
- APPLY SEED UNIFORMLY ON FIRM, MOIST SEED BED BETWEEN MARCH 1 AND MAY 31 OR AUGUST 1 AND SEPTEMBER 30. TILLAGE FOR SEEDBED PREPARATION SHALL OCCUR WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. SEEDING SHOULD NOT BE APPLIED BETWEEN OCTOBER 1 AND NOVEMBER 20 BECAUSE SEEDS MAY GERMINATE, BUT WILL NOT SURVIVE THE WINTER. IF SEEDING MUST OCCUR, INCREASE THE SEEDING RATE BY 50% AND ANCHOR. APPLY ADDITIONAL MULCH AND IRRIGATION AS REQUIRED TO ENSURE GERMINATION.
- MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
- SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY OR HOT WEATHER OR ON ADVERSE SITE CONDITIONS. AVOID EXCESSIVE IRRIGATION TO PREVENT EROSION AND DAMAGE FROM RUNOFF.
- SEEDING SHALL NOT BE CONSIDERED ESTABLISHED FOR AT LEAST 1 FULL YEAR FROM THE TIME OF SEEDING. DURING THIS PERIOD INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.
- ADEQUATE PERMANENT VEGETATION SHALL BE GROUND COVER DENSE ENOUGH TO COVER 80% OF THE SOIL SURFACE BASED ON VISUAL INSPECTION.

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

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

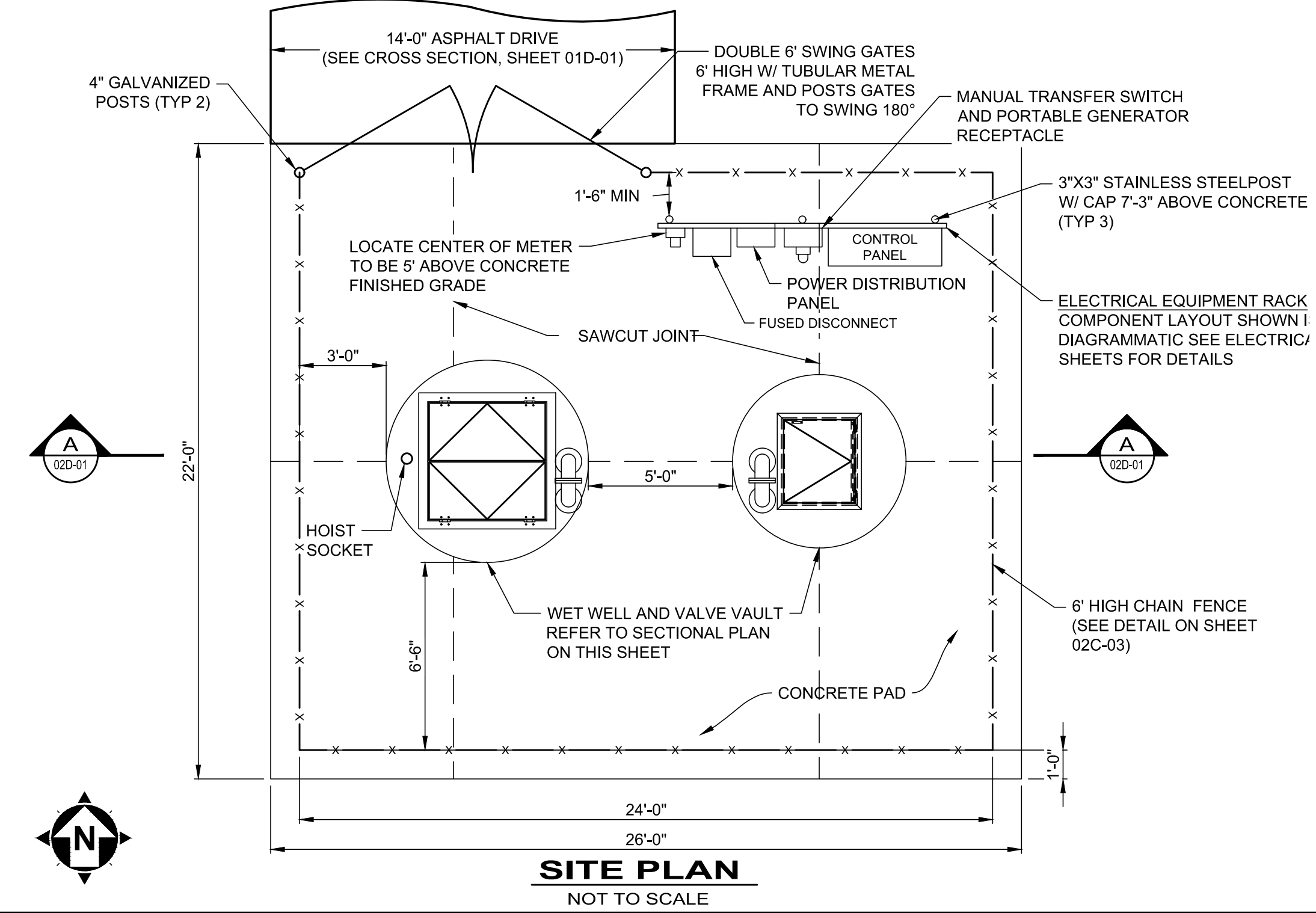
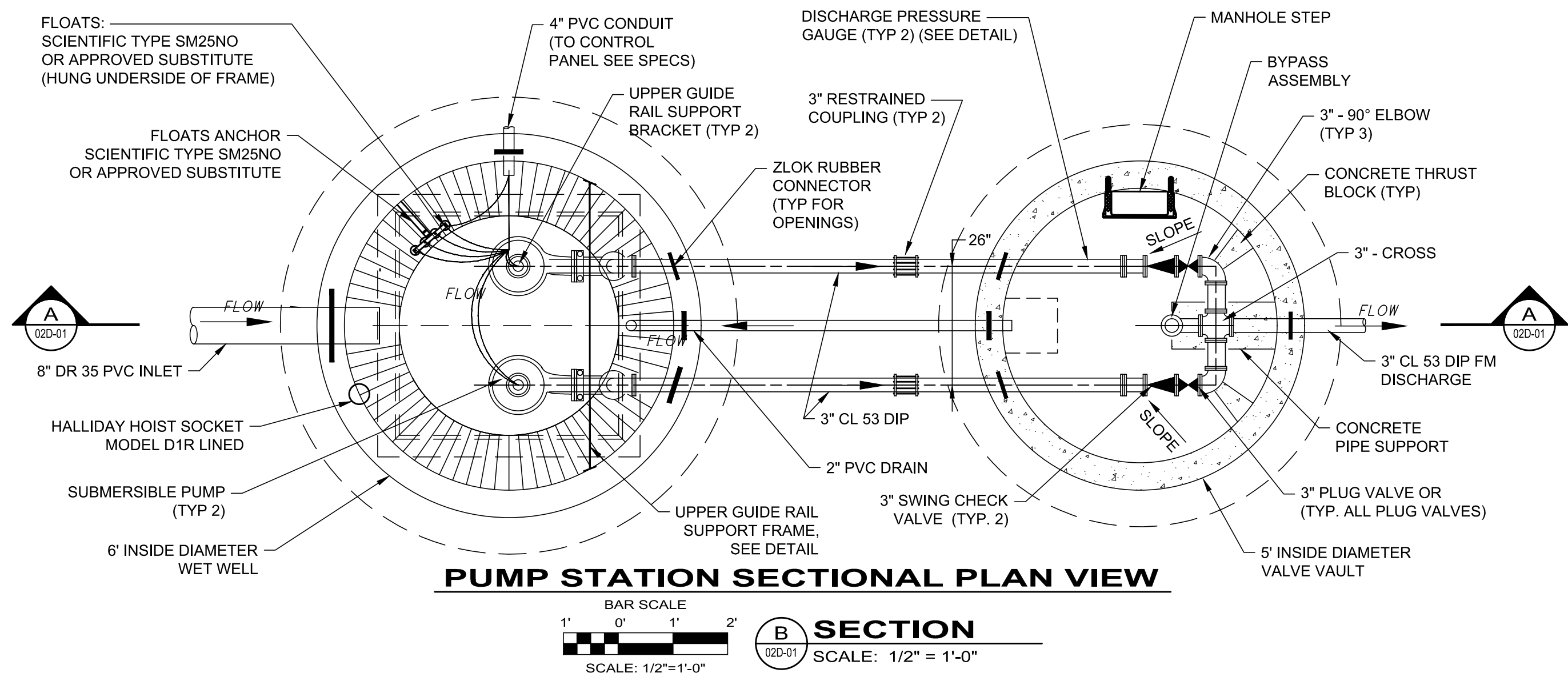
PERMANENT SEEDING DETAIL



DATE	REVISION	NO	ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
			60%	11-10-22	AS NOTED	###	ELE	###

MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
SITE IMPROVEMENTS - 01 SERIES
SWPPP DETAILS 2

PROJECT NO.	210772
DISCIPLINE	CIVIL
SHEET NAME	SWP-03
SHEET	OF
15	19

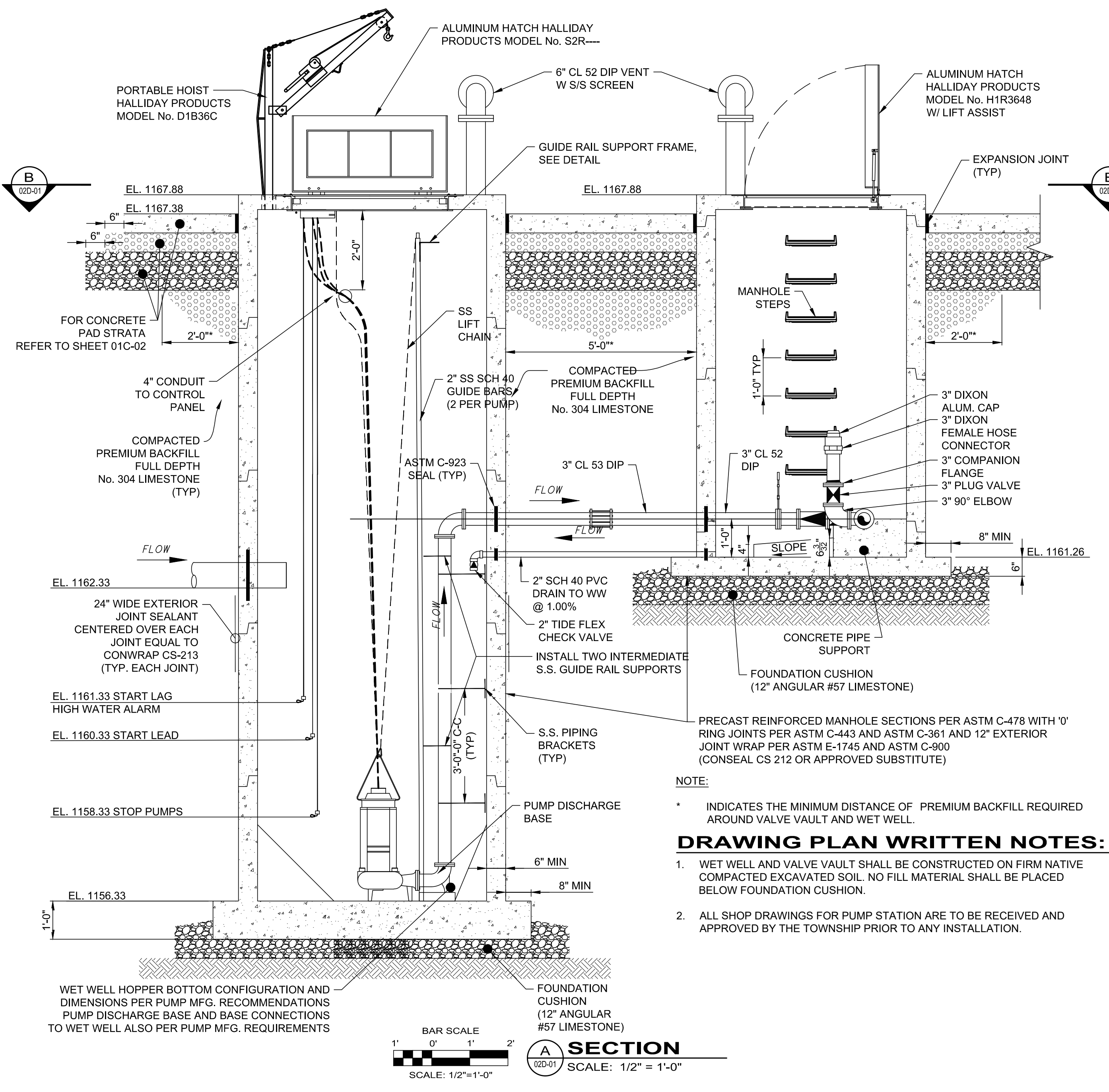
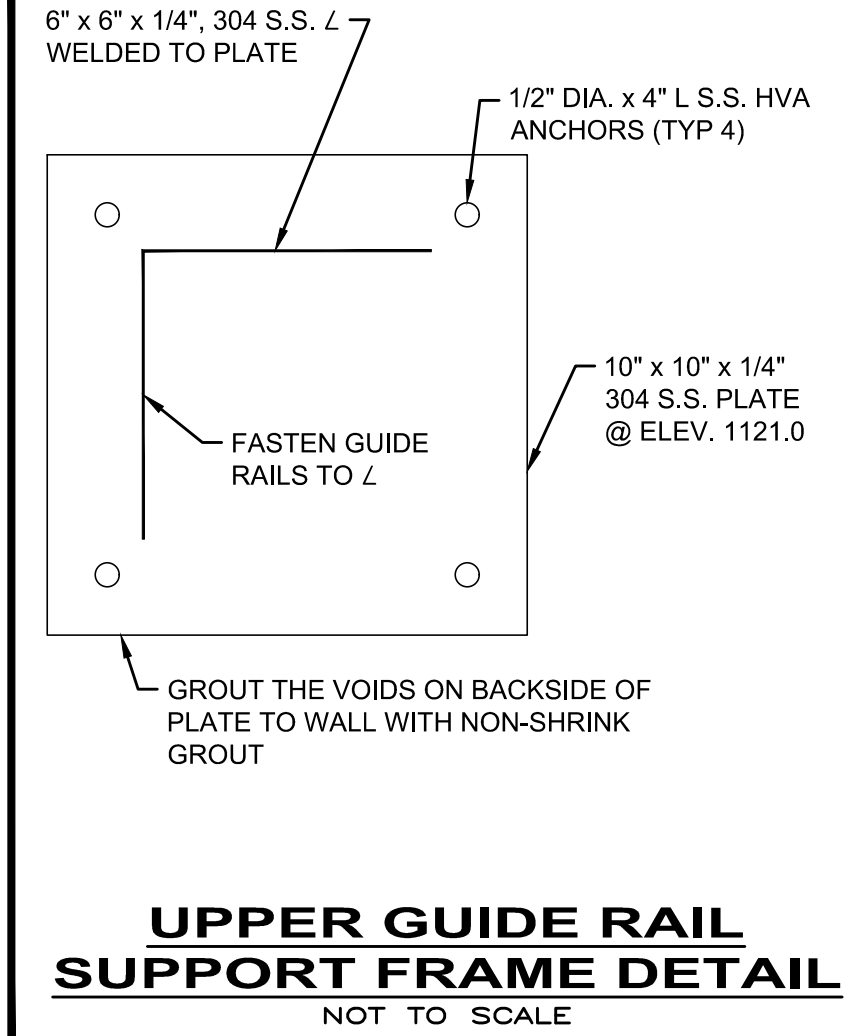
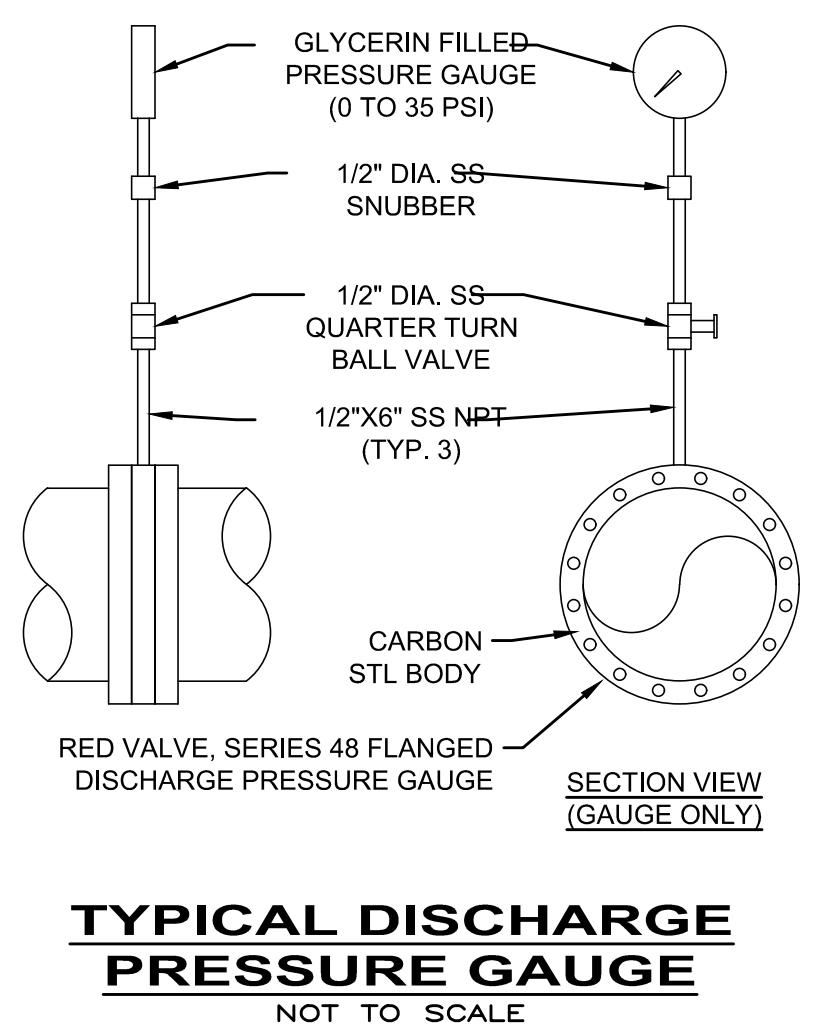


PUMP STATION NOTES:

1. OPENINGS IN RISER SECTIONS OF PRECAST CONCRETE MANHOLE AND VAULTS SHALL HAVE A S.T.M. SPEC. C-923 OR MODULAR MECHANICAL TYPE SEAL OF INTERLOCKING SYNTHETIC RUBBER LINKS (LINKSEAL OR APPROVED EQUIVALENT), WATERTIGHT PIPE SEALS.
2. JOINT SEAL BETWEEN PRECAST MANHOLE SECTIONS SHALL COMPLY WITH A.S.T.M. C-443 OR LATEST EDITION. FOLLOW SAME TONGUE AND GROOVE DETAIL AS ON MANHOLE DETAIL. ALSO FOLLOW SAME EXTERNAL JOINT DETAIL AS ON MANHOLE DETAIL.
3. PRECAST STEEL REINFORCED CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. C-478. FOR BOTH THE PUMP STATION WET WELL AND THE VALVE VAULT.
4. SEAL LIFT HOLES WITH APPROVED NON-SHRINK GROUT AND COAT WITH BITUMASTIC SEALANT.
5. ALL PUMP STATION WET WELL AND VALVE VAULT PIPING TO BE FLANGED DUCTILE IRON PIPE CL. 53.
6. PREP AND PAINT ALL EXPOSED PIPING, VALVES AND FERROUS METAL ITEMS IN WET WELL AND VALVE PIT WITH 1 COAT (3.5 MIL) OMNITHANE PRIMER AND 1 FINISH COAT OF (4 MIL) SERIES N89 HI-BUILD EPOXOLINE II. THE INTERIOR WALLS AND CEILING OF THE PRECAST CONCRETE VALVE VAULT SHALL BE PAINTED COLOR WHITE WITH THE PRODUCT THOROSEAL OR APPROVED EQUAL.
7. SEE ELECTRICAL SHEETS FOR WATER LEVEL DETECTOR MOUNTING AND ELECTRICAL WIRING (OR APPROVED EQUAL).
8. DISCHARGE PRESSURE GAUGES SHALL BE INSTALLED UPSTREAM OF CHECK VALVE.
9. LIFT HOIST WILL BE PROVIDED AND INSTALLED BY CONTRACTOR FOR USE OF PICKING UP DEBRIS BASKET.
10. EACH PUMP SHALL BE EQUIPPED WITH A STAINLESS STEEL LIFTING CHAIN AND BAIL EXTENDING FROM THE PUMP TO THE TOP OF THE WET WELL WITH AN EXTRA 5-L.F. OF CHAIN. CHAIN SHALL BE ABLE TO CONNECT TO A S.S. CLASP AT THE TOP OF THE WET WELL SO THAT OPERATIONS STAFF CAN UNCLASP CHAIN AND HOOK TO A JIB CRANE. DESIGN OF CHAIN SHALL BE COMMENSURATE WITH PUMP LOAD AND FACTOR OF SAFETY OF 3.
11. CONCRETE MIX DESIGN IN CONTACT WITH WASTEWATER MUST BE IN ACCORDANCE WITH ACI 350R AND SUCH CONCRETE SHALL UTILIZE TYPE II CEMENT. XYPEX ADMIX C-1000 SHALL BE USED FOR CONCRETE WATERPROOFING.
12. ALL EXPANSION JOINTS AND CONTROL JOINTS SHALL BE SEALED WITH SIKAFLEX-1C SL.
13. CONCRETE PAD TO HAVE A MEDIUM BROOM FINISH.

SANITARY PUMP STATION PUMP DATA

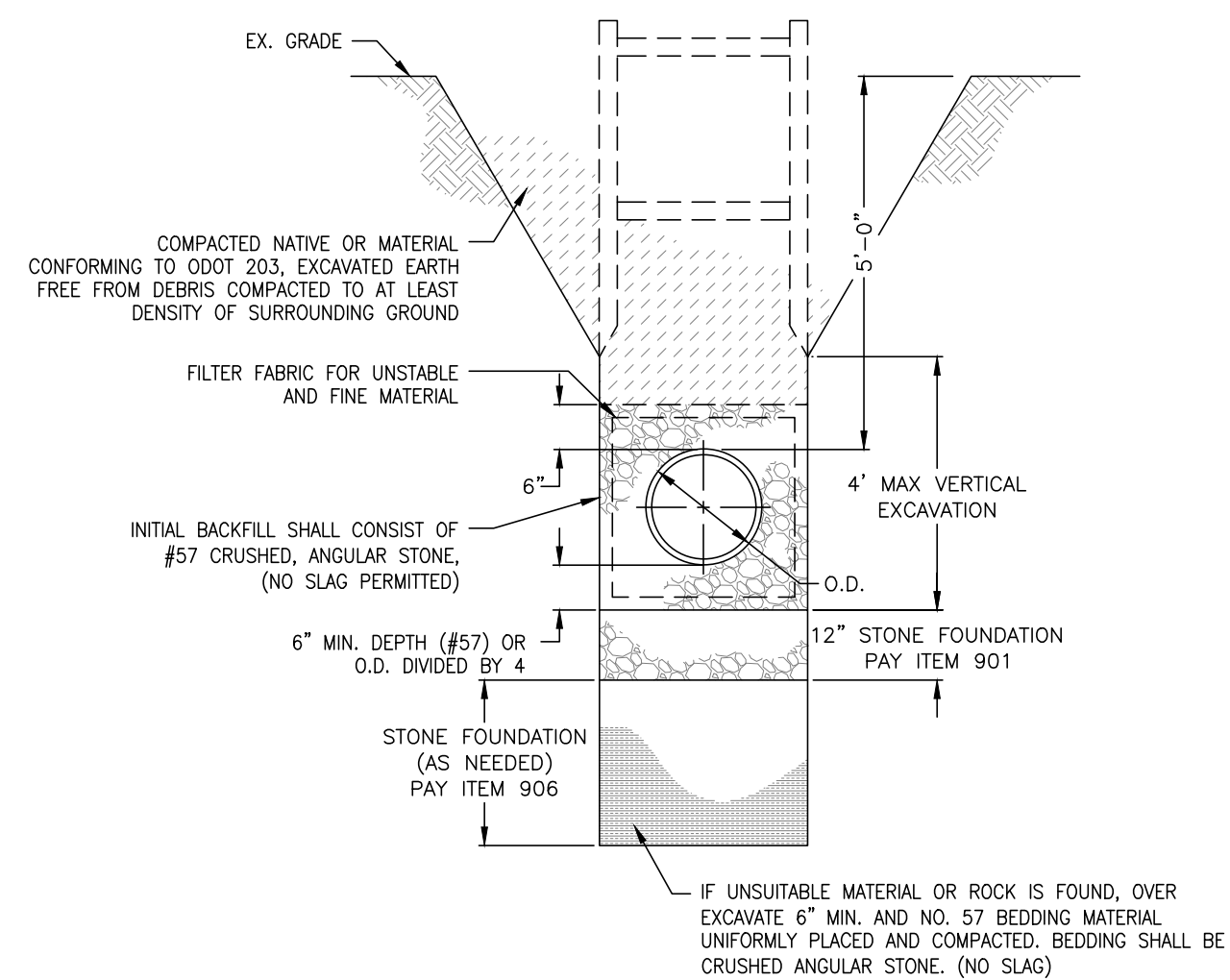
TYPE OF PUMP:	SUBMERSIBLE EXPLOSION-PROOF
ARRANGEMENT:	DUPLEX
PUMPED FLUID:	RAW SEWAGE
ENCLOSURE:	NEMA TEFC
LIQUID TEMPERATURE:	UP TO 140° F
DESIGN CAPACITY, EACH:	50 GPM
T.D.H.:	43 FT
MIN. NAMEPLATE H.P.:	5 H.P.
MOTOR SPEED:	1750 RPM
POWER REQUIREMENTS:	480 VOLT, 3 PHASE, 60 HZ
DISCHARGE SIZE:	3 INCH



DATE	
REVISION	
NO	
ISSUED FOR:	60%
ISSUE DATE:	11-10-22
SCALE:	AS NOTED
DESIGNED BY:	###
DRAWN BY:	ELE
CHECKED BY:	###

MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
PUMP STATION - 10 SERIES
PUMP STATION PLAN SECTIONS & DETAILS

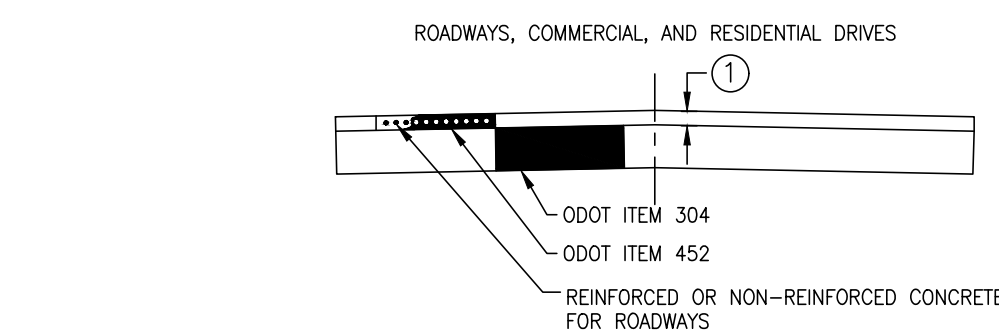
PROJECT NO.	210772
DISCIPLINE	PROCESS
SHEET NAME	10D-01
SHEET	16
OF	19



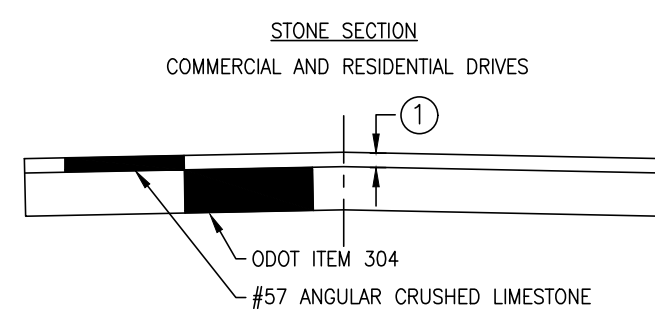
- NOTES:**
- REFER TO OSHA REQUIREMENTS FOR TRENCH EXCAVATION SAFETY.
 - PROVIDE FILTER FABRIC WHEN VERY FINE OR UNSTABLE MATERIAL IS ENCOUNTERED
 - REFERENCES TO ODOT SHALL MEAN OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, LATEST EDITION.



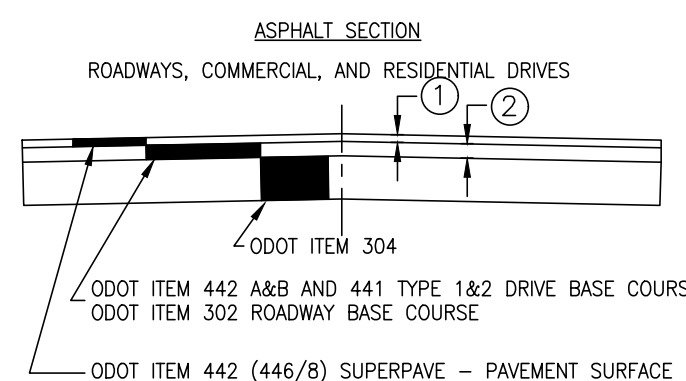
PORTAGE COUNTY WATER RESOURCES		
TYPICAL TRENCH	04-01-2022 APPROVED DATE	SM-1



- ① ROADWAY AND COMMERCIAL DRIVES - 8" THICK CONCRETE
RESIDENTIAL DRIVE - 6" THICK CONCRETE



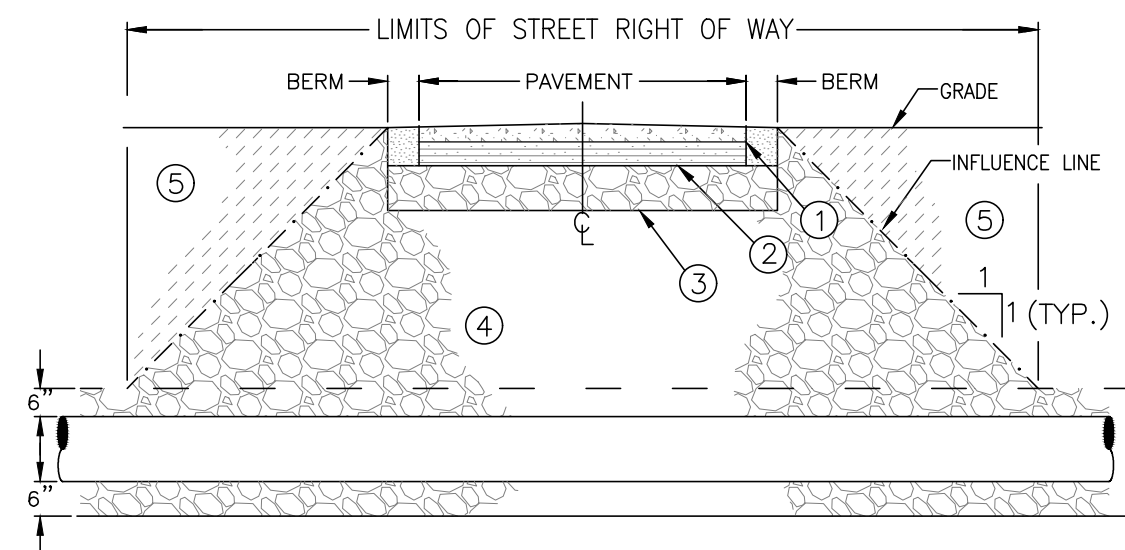
- ① COMMERCIAL DRIVES - 8" THICK CRUSHED LIMESTONE
RESIDENTIAL DRIVE - 6" THICK CRUSHED LIMESTONE



- ① COMMERCIAL & RESIDENTIAL DRIVES - 2.5" THICK SURFACE COURSE
ROADWAY - 1.5" THICK SURFACE COURSE
- ② RESIDENTIAL DRIVE - 3.5" THICK PAVEMENT BASE COURSE, COMMERCIAL DRIVE - 5.5" THICK PAVEMENT BASE COURSE, ROADWAY - 8" THICK PAVEMENT BASE COURSE



PORTAGE COUNTY WATER RESOURCES		
PAVEMENT REPLACEMENT SECTIONS	04-01-2022 APPROVED DATE	SM-4



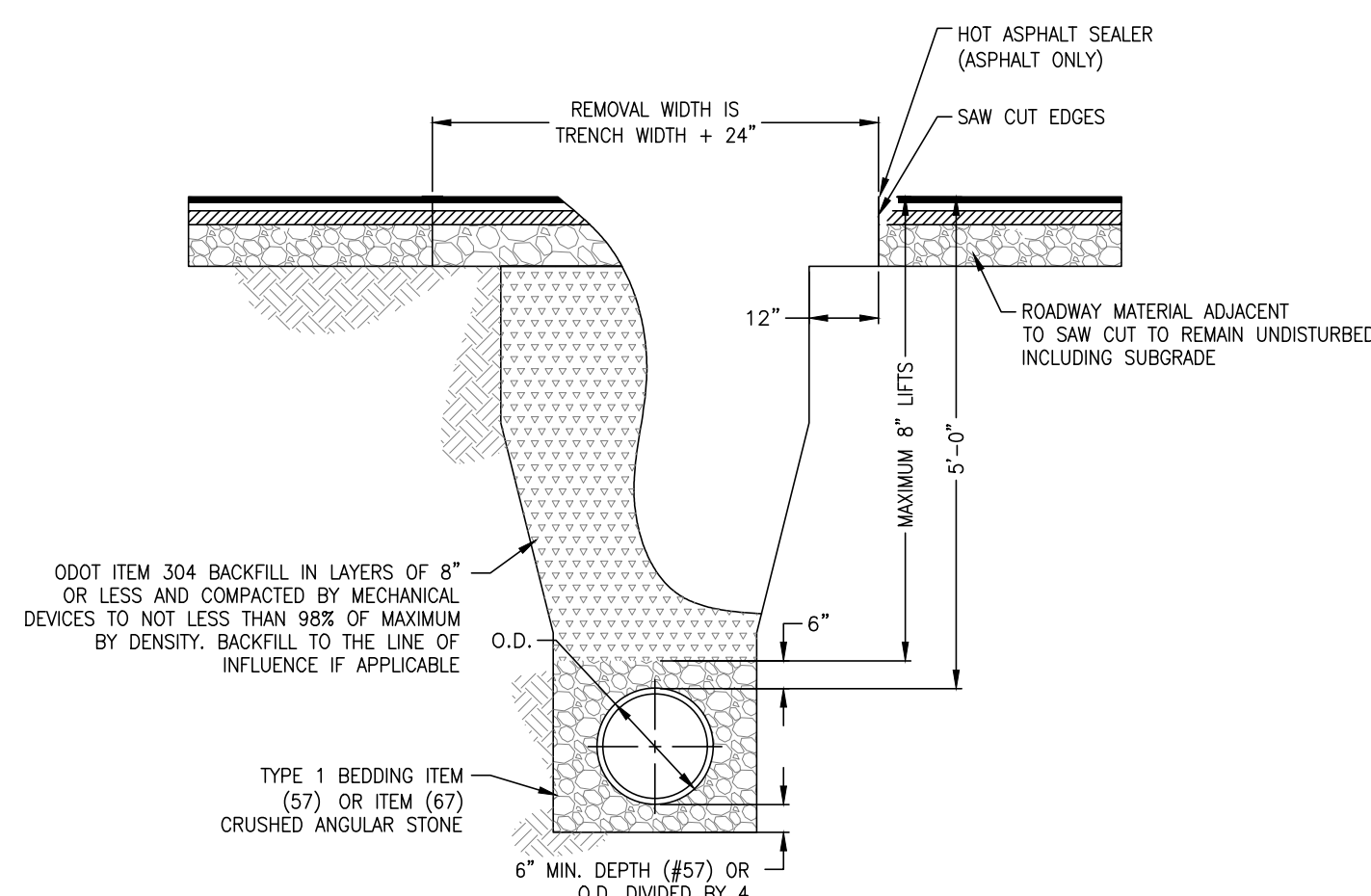
- CONCRETE**
- ODOT ITEM 452 NONREINFORCED OR ODOT ITEM 451 REINFORCED CONCRETE PAVEMENT (8" THICK)
- ASPHALT**
- ODOT ITEM 448 - ASPHALT CONCRETE (1-1/2" THICK) PAVEMENT SURFACE COURSE
 - ODOT ITEM 301 - (8" THICK) PAVEMENT BASE COURSE
 - ALL PAVEMENT TRENCH SECTIONS REQUIRE ODOT 304 CRUSHED AGGREGATE
 - BACKFILL, ODOT 304 LIMESTONE REQUIRED UNDER PAVEMENTS, DRIVEWAYS, ETC. IN LAYERS NOT EXCEEDING 8" LOOSE DEPTH AND COMPACTED BY MECHANICAL DEVICES TO NOT LESS THAN 98% OF STANDARD DENSITY.
 - BACKFILL OUTSIDE INFLUENCE LINE, CONFORMING TO ODOT 203, EXCAVATED EARTH FREE FROM DEBRIS, COMPACTED TO AT LEAST DENSITY OF SURROUNDING GROUND.

- NOTES:**
- PAVEMENT REPAIR AND BACKFILL REQUIREMENTS SUBJECT TO ROADWAY JURISDICTIONAL REQUIREMENTS.



PORTAGE COUNTY WATER RESOURCES		
ROAD CROSSING (OPEN CUT) UNDER PAVEMENT WITHOUT CASING	04-01-2022 APPROVED DATE	SM-2

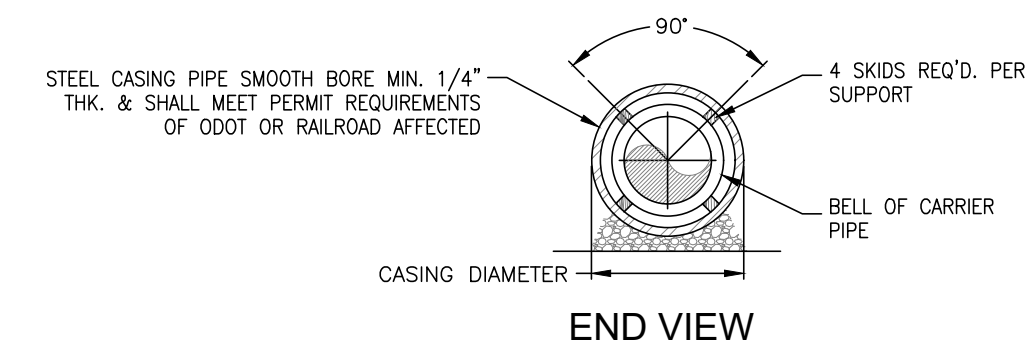
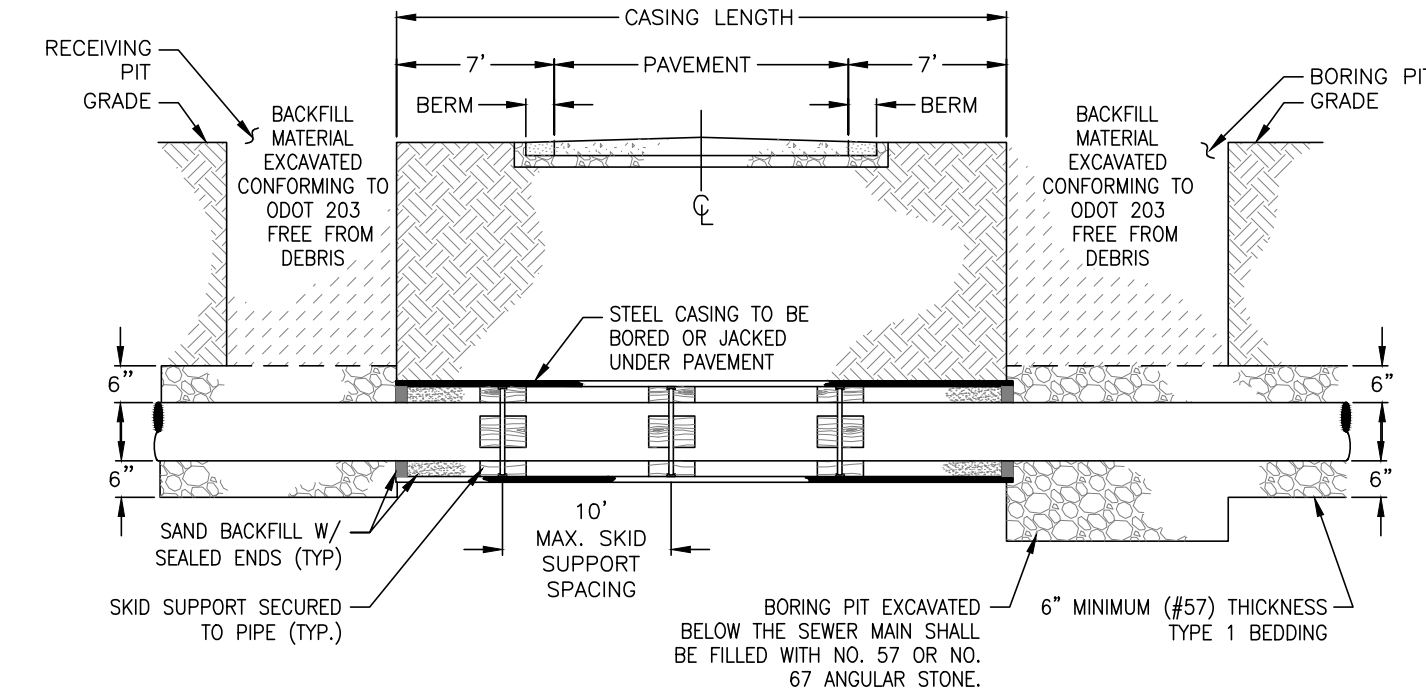
CONCRETE SECTION



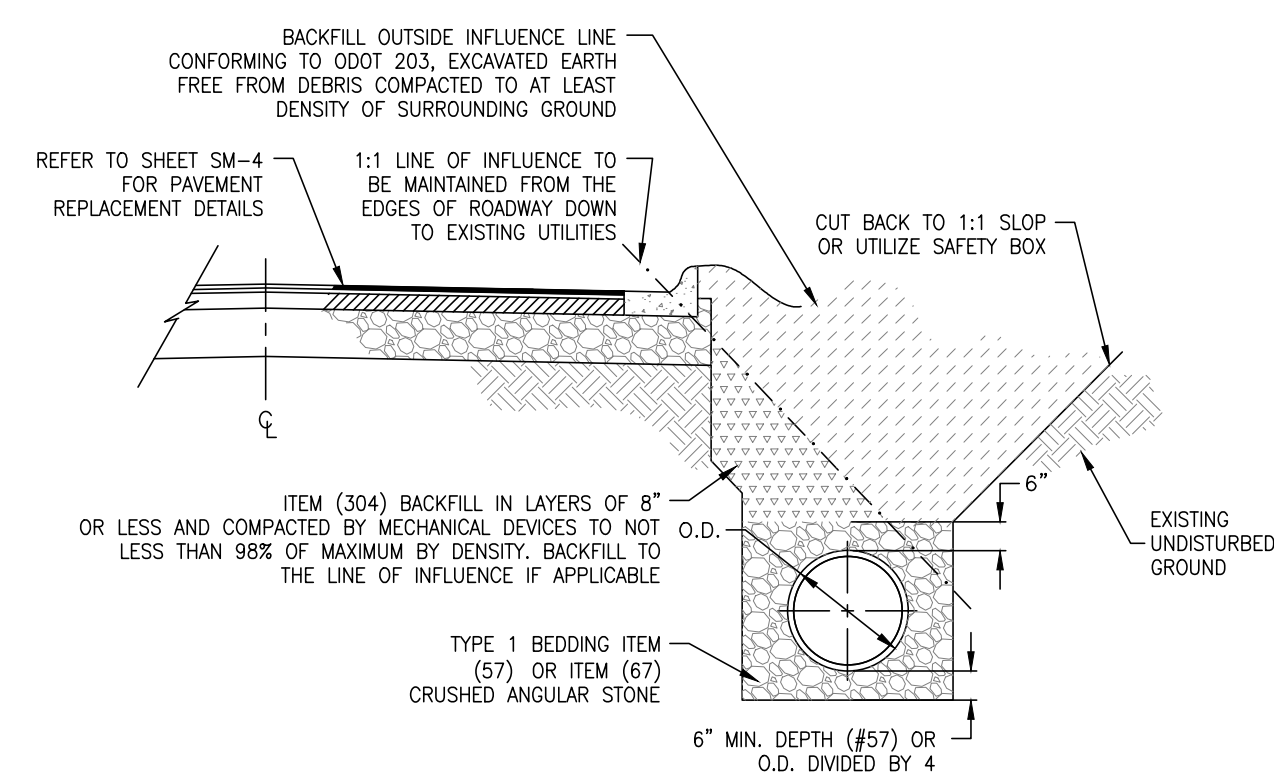
- NOTES:**
- NEWLY INSTALLED ROADWAY NEEDS TO MEET EXISTING ROADWAY OR FALL WITHIN TABLE MINIMUM OR CITY REQUIREMENTS. REFER TO SHEET SM-4 FOR ROADWAY DETAILS



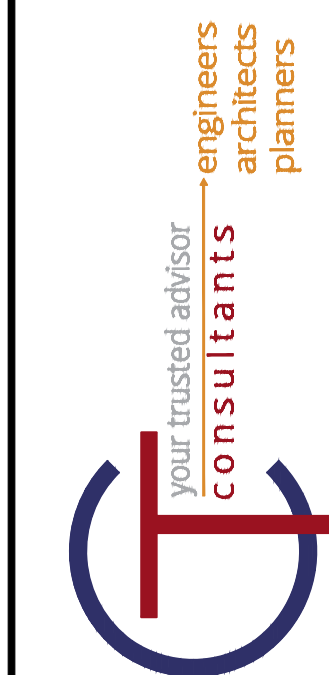
PORTAGE COUNTY WATER RESOURCES		
PAVEMENT TRENCH SECTION	04-01-2022 APPROVED DATE	SM-5



PORTAGE COUNTY WATER RESOURCES		
BORED CROSSING WITH CASING	04-01-2022 APPROVED DATE	SM-3



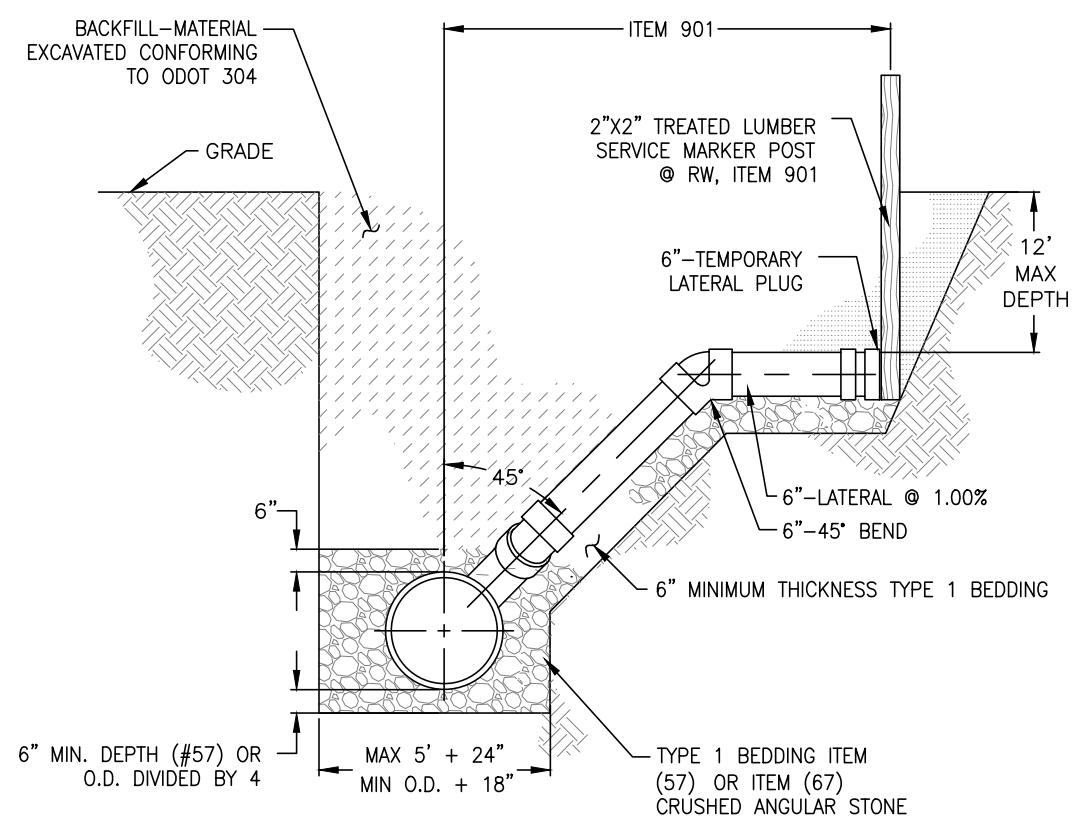
PORTAGE COUNTY WATER RESOURCES		
UTILITY ADJACENT TO PAVED SURFACES WITHIN 45' INFLUENCE LINE	04-01-2022 APPROVED DATE	SM-6



DATE	REVISION	NO	ISSUED FOR:	60%
			11-10-22	AS NOTED
			SCALE:	###
			DESIGNED BY:	ELE
			DRAWN BY:	###
			CHECKED BY:	

MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
 PORTAGE COUNTY
 MANTUA TOWNSHIP, OHIO
STANDARD DETAILS - SD SERIES
STANDARD DETAILS 1

PROJECT NO.	210772
DISCIPLINE	CIVIL
SHEET NAME	SD-01
SHEET	17
OF	19

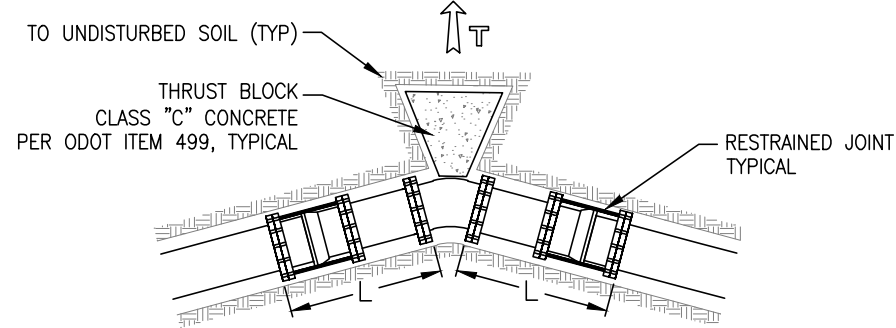


- NOTES:
1. END OF LATERAL SHALL BE MARKED WITH TREATED LUMBER, SHALL HAVE A 12" MAX DEPTH AND SHALL BE EXTENDED PAST THE R/W AS NEEDED TO NOT EXCEED THE 12" MAX DEPTH
 2. LIVE TAP SADDLE TO BE APPROVED BY PCWR.

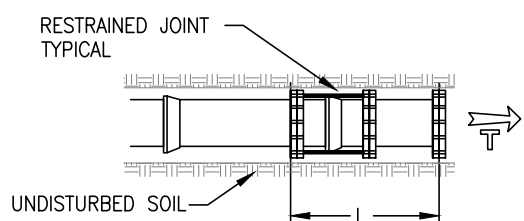


PORTAGE COUNTY WATER RESOURCES			
LATERAL RISER	04-01-2022	SM-7	
	APPROVED DATE		

THRUST BLOCKING BEARING AREA (S.F.) REQUIRED FOR 200 PSI WATER PRESSURE BASED ON 2000 PSF SOIL						
NOM. PIPE DIA. (IN.)	DEAD END	90° BEND	45° BEND	22½° BEND	11¼° BEND	
6"	3.7	5.3	2.9	1.5	0.7	
8"	6.4	9.1	4.9	2.5	1.3	
10"	9.7	13.7	7.4	3.8	1.9	
12"	13.7	19.4	10.5	5.3	2.7	
16"	23.8	33.6	18.2	9.3	4.7	



HORIZONTAL BEND RESTRAINT LENGTH



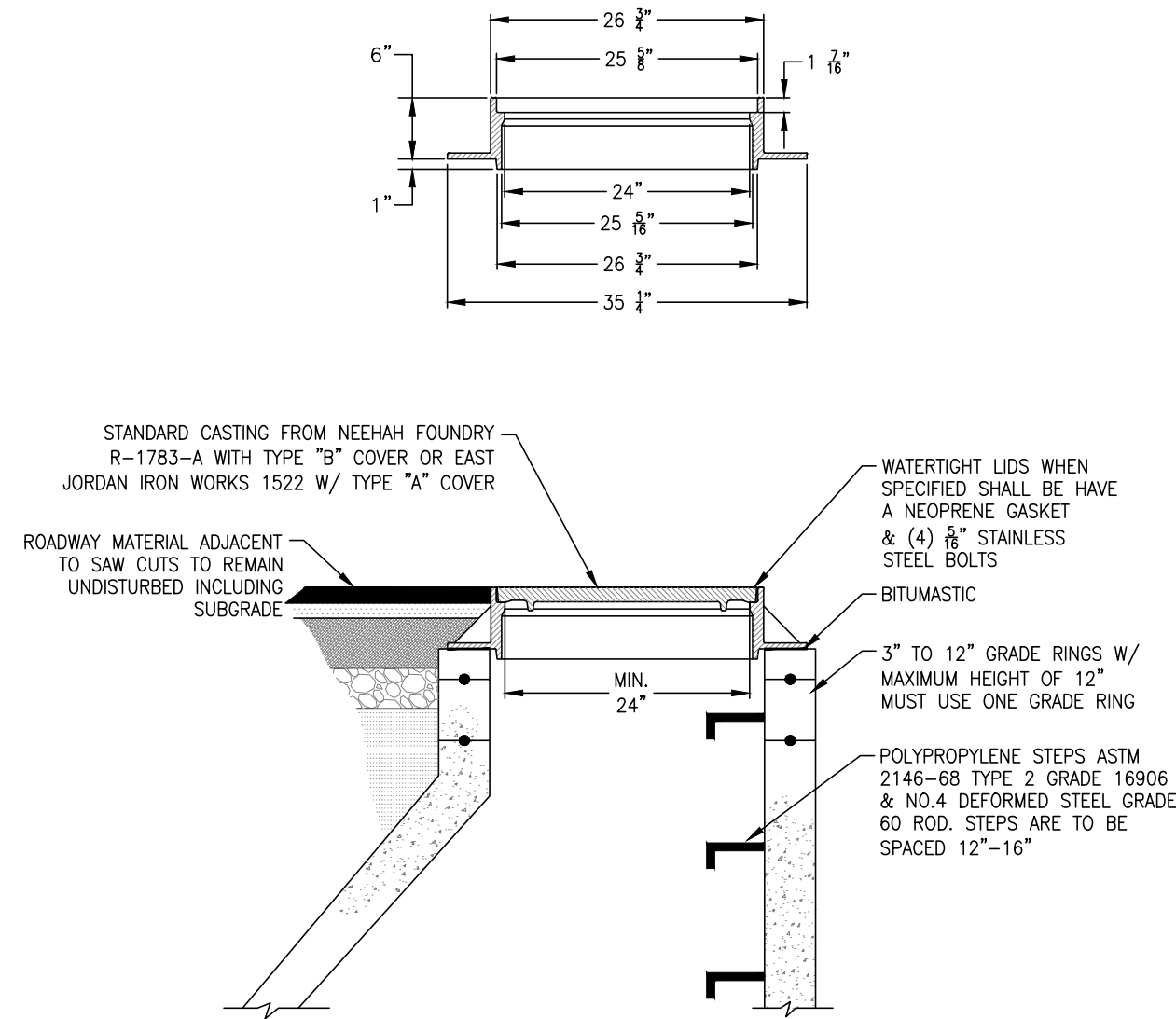
DEAD END OR VALVE RESTRAINT LENGTH

HORIZONTAL BEND SIZE	1 1/2"	2"	3"	4"	5"	6"	8"	10"	12"	16"
6"	2'	3'	5'	12'	6'	36'				
8"	2'	4'	7'	16'	17'	47'				
10"	2'	4'	8'	19'	26'	57'				
12"	3'	5'	10'	22'	36'	67'				
16"	3'	6'	12'	28'	55'	87'				

- NOTES:
1. SEE DETAIL WM-1 FOR AGGREGATE BEDDING SPECIFICATIONS
 2. ALL CAST IRON WATER MAIN SHALL BE WRAPPED IN POLYETHYLENE.



PORTAGE COUNTY WATER RESOURCES			
THRUST BLOCKING 1	04-01-2022	WM-9	
	APPROVED DATE		

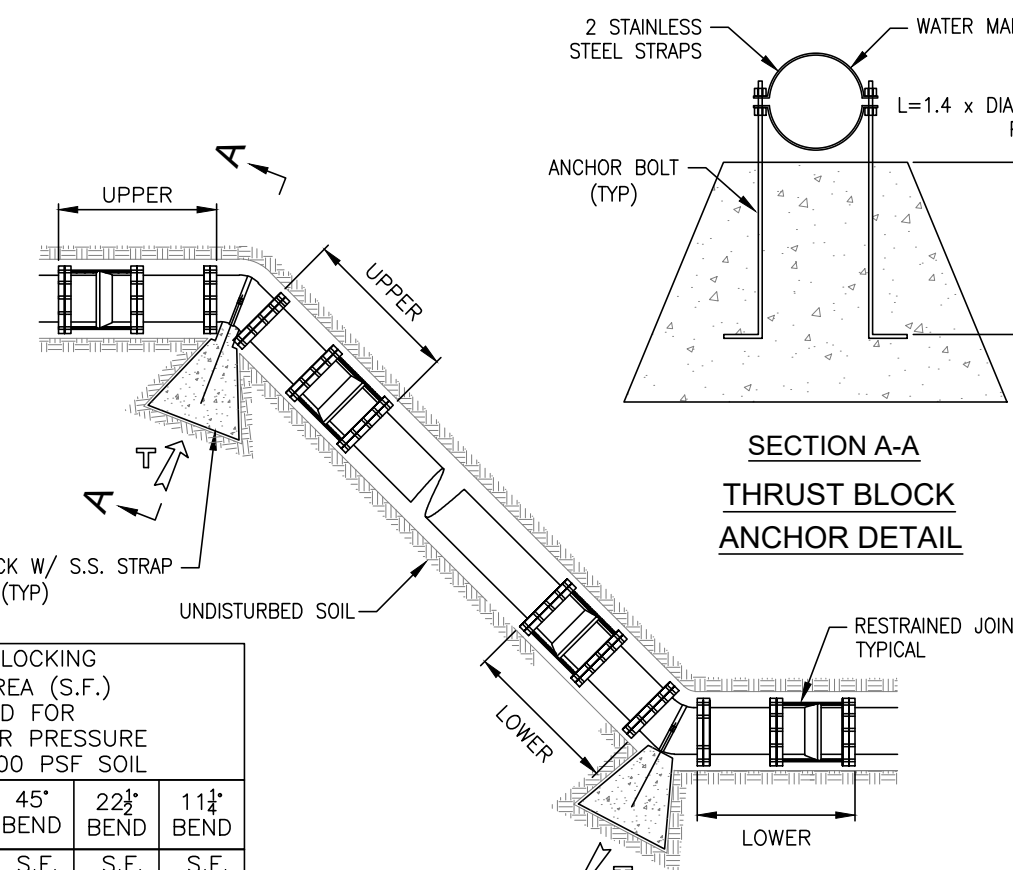


- NOTES:
1. REFER TO SM-4 FOR SPECIFICATION ON PARTICULAR ROADWAY TYPE
 2. ALL RISERS, CONES, GRADE RINGS AND FLAT SLABS PER ASTM C478-CONCRETE TYPE II, CONFORMING TO ITEM 604, SECTION 706.13 UNLESS OTHERWISE SPECIFIED



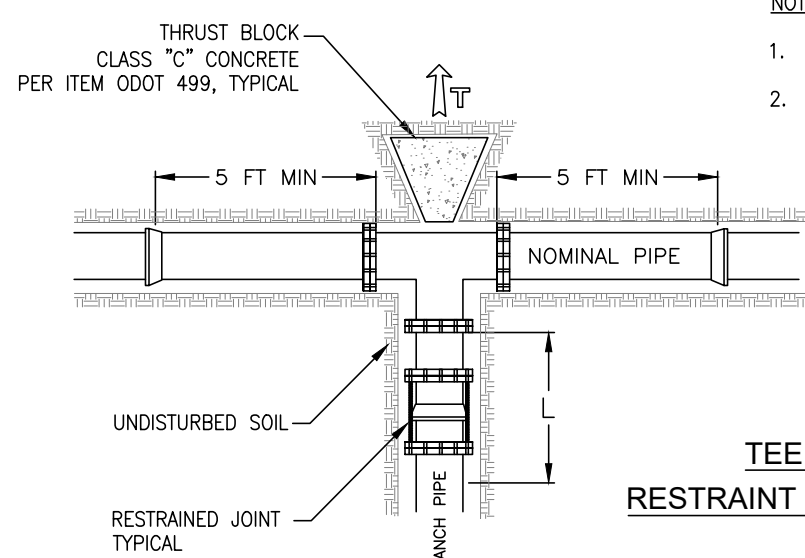
PORTAGE COUNTY WATER RESOURCES			
IRON CASTING & GRADE RINGS	04-01-2022	SM-9	
	APPROVED DATE		

RESTRAINED JOINT DIMENSIONS		
PIPES SIZE	VERTICAL OFFSET	
	UPPER	LOWER
6"	15"	5"
8"	20"	7"
10"	24"	8"
12"	28"	10"
16"	36"	12"



THRUST BLOCK ANCHOR DETAIL

THRUST BLOCKING BEARING AREA (S.F.) REQUIRED FOR 200 PSI WATER PRESSURE BASED ON 2000 PSF SOIL						
NOM. PIPE DIA. (IN.)	DEAD END	90° BEND	45° BEND	22½° BEND	11¼° BEND	
6"	3.7	5.3	2.9	1.5	0.7	
8"	6.4	9.1	4.9	2.5	1.3	
10"	9.7	13.7	7.4	3.8	1.9	
12"	13.7	19.4	10.5	5.3	2.7	
16"	23.8	33.6	18.2	9.3	4.7	



TEE RESTRAINT LENGTH

- NOTES:
1. SEE DETAIL WM-1 FOR AGGREGATE BEDDING SPECIFICATIONS
 2. ALL CAST IRON WATER MAIN SHALL BE WRAPPED IN POLYETHYLENE.

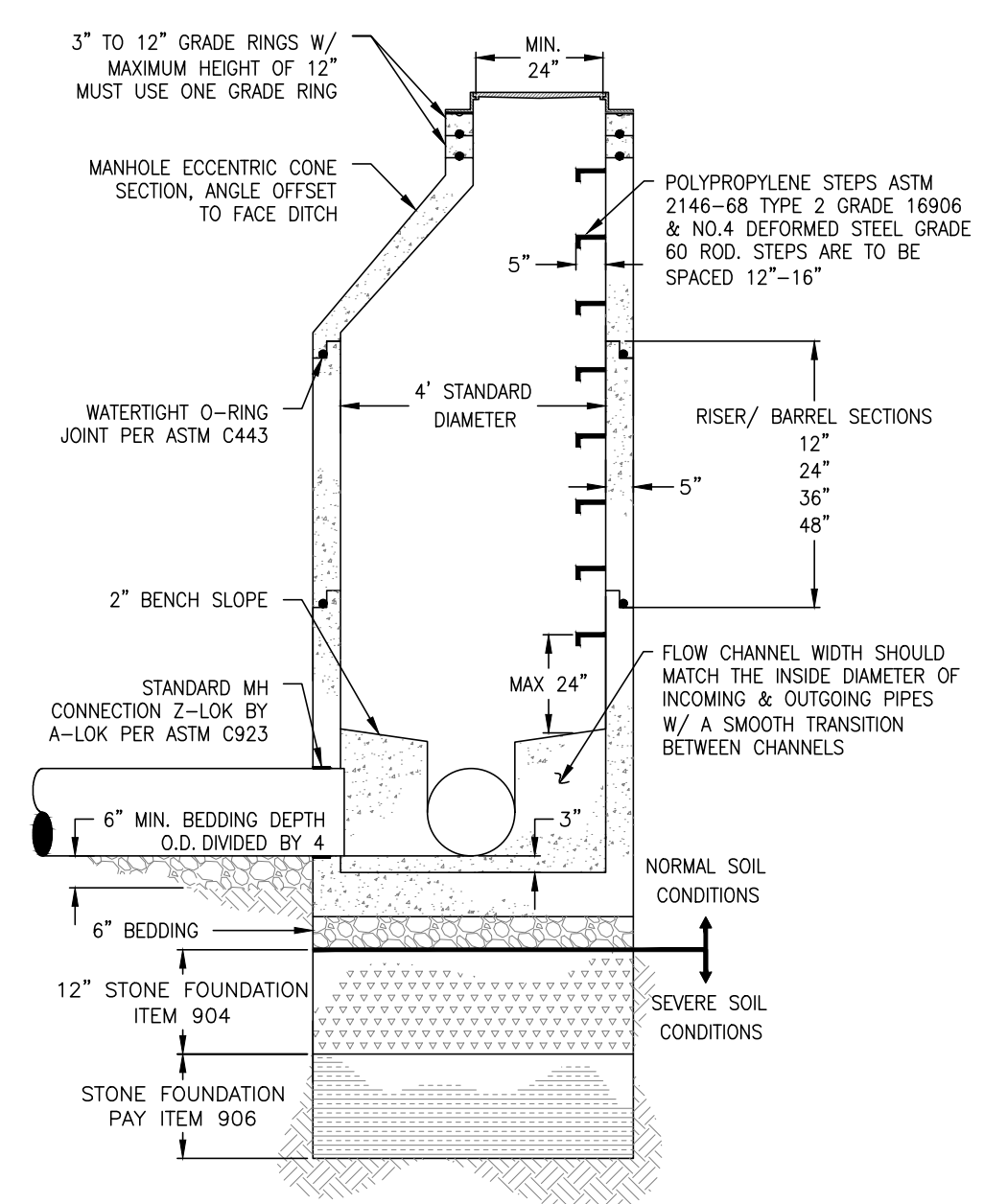
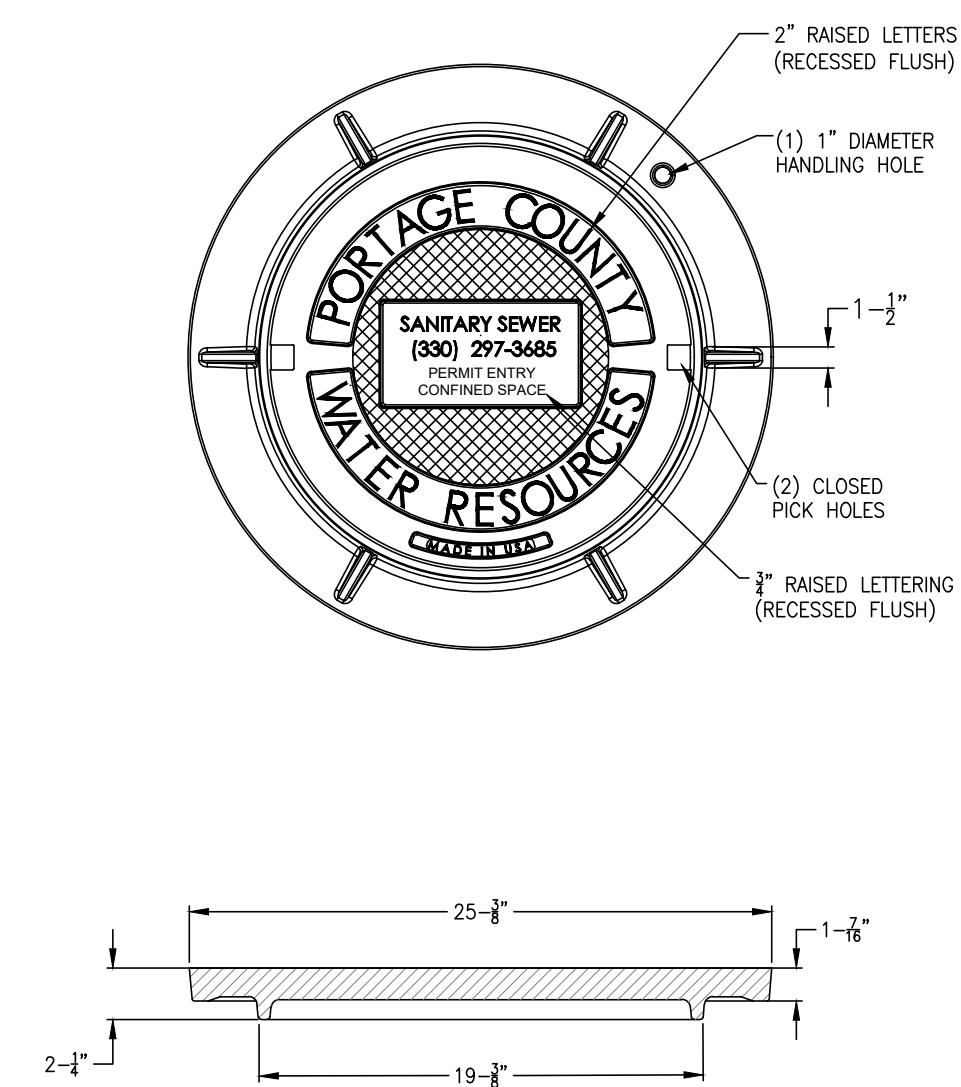
*TEE/NOMINAL PIPE SIZE					
BRANCH PIPE SIZE	6"	8"	10"	12"	16"
6"	6'	1'	1'	1'	1'
8"	24'	17'	9'	1'	1'
10"	26'	20'	6'		
12"	36'	25'			
16"	55'				



PORTAGE COUNTY WATER RESOURCES			
THRUST BLOCKING 2	04-01-2022	WM-10	
	APPROVED DATE		



PORTAGE COUNTY WATER RESOURCES			
CASTING & LETTERING	04-01-2022	SM-10	
	APPROVED DATE		



- NOTES:
1. MANHOLE SHALL BE AIR TESTED IN ACCORDANCE WITH ASTM C1244
 2. THE 12" STONE FOUNDATION IS AS DIRECTED BY FIELD ENGINEER AND INCLUDED WITH 904 BID PRICE.
 3. ALL RISERS, CONES, GRADE RINGS AND FLAT SLABS PER ASTM C478-CONCRETE TYPE II, CONFORMING TO ITEM 604, SECTION 706.13 UNLESS OTHERWISE SPECIFIED



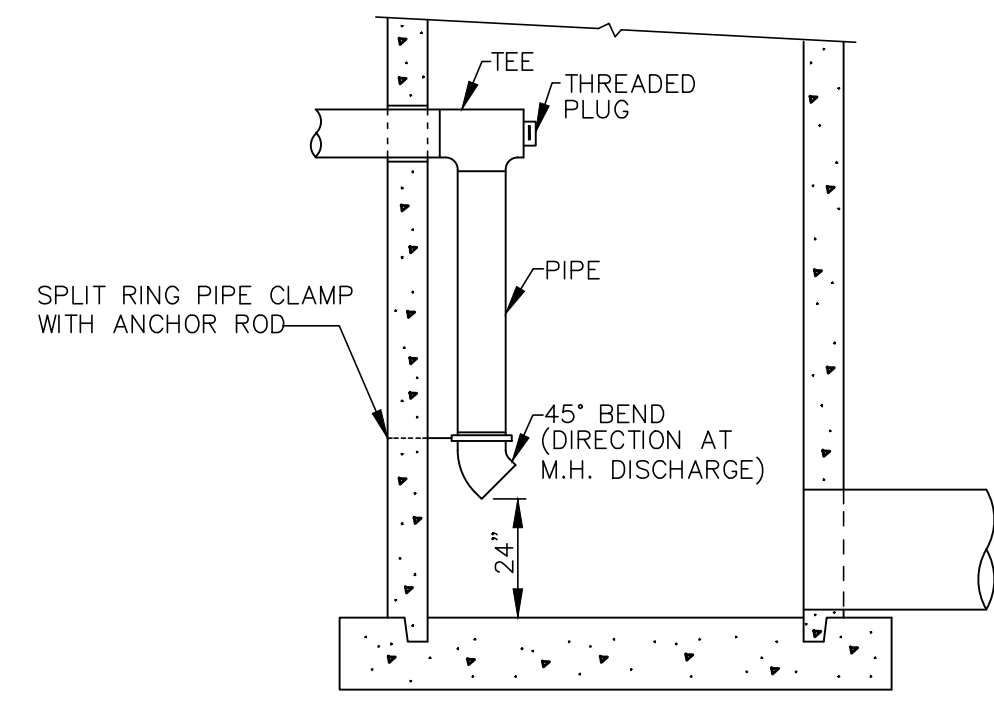
PORTAGE COUNTY WATER RESOURCES			
STANDARD MANHOLE	04-01-2022	SM-11	
	APPROVED DATE		



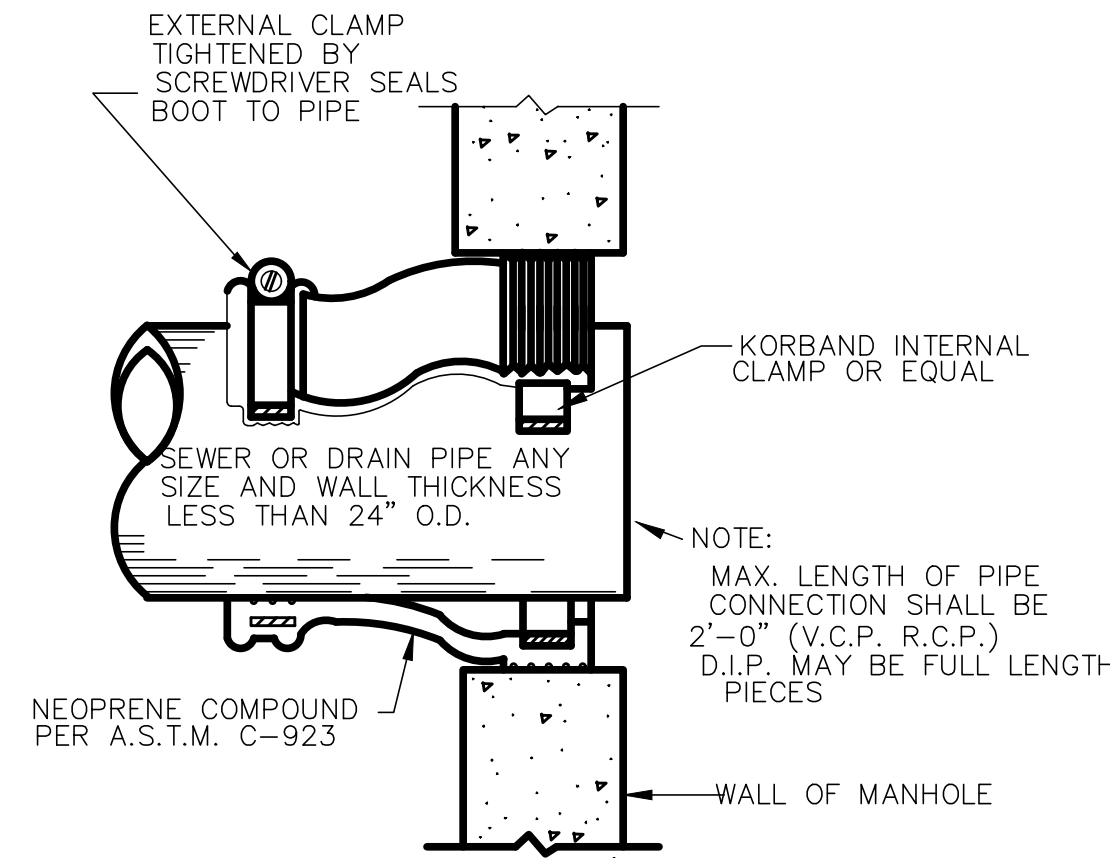
DATE	REVISION	NO	ISSUED FOR:	60%	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
					11-10-22	AS NOTED	###	ELE	###

MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
PORTAGE COUNTY
MANTUA TOWNSHIP, OHIO
STANDARD DETAILS - SD SERIES
STANDARD DETAILS 2

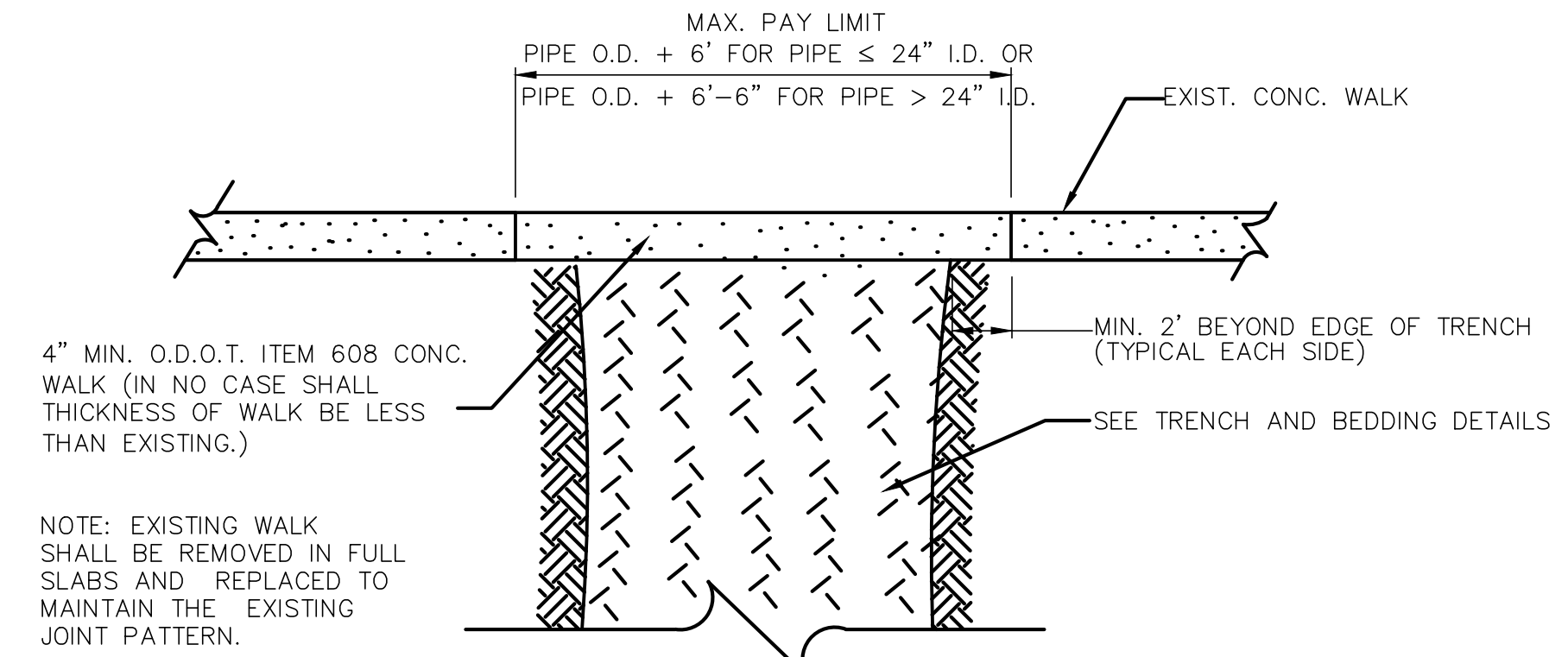
PROJECT NO.	210772
DISCIPLINE	CIVIL
SHEET NAME	SD-02
SHEET	18
OF	19



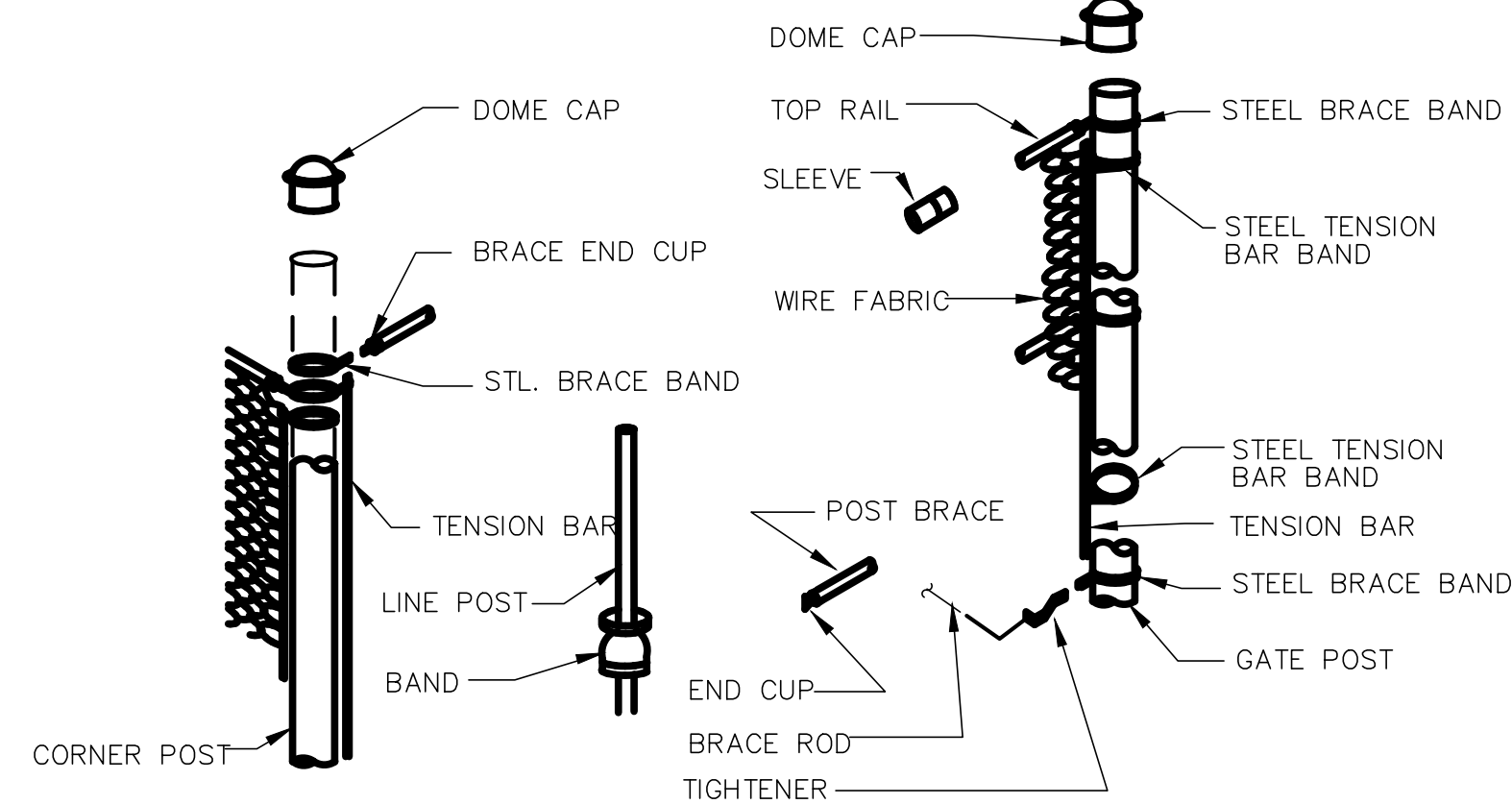
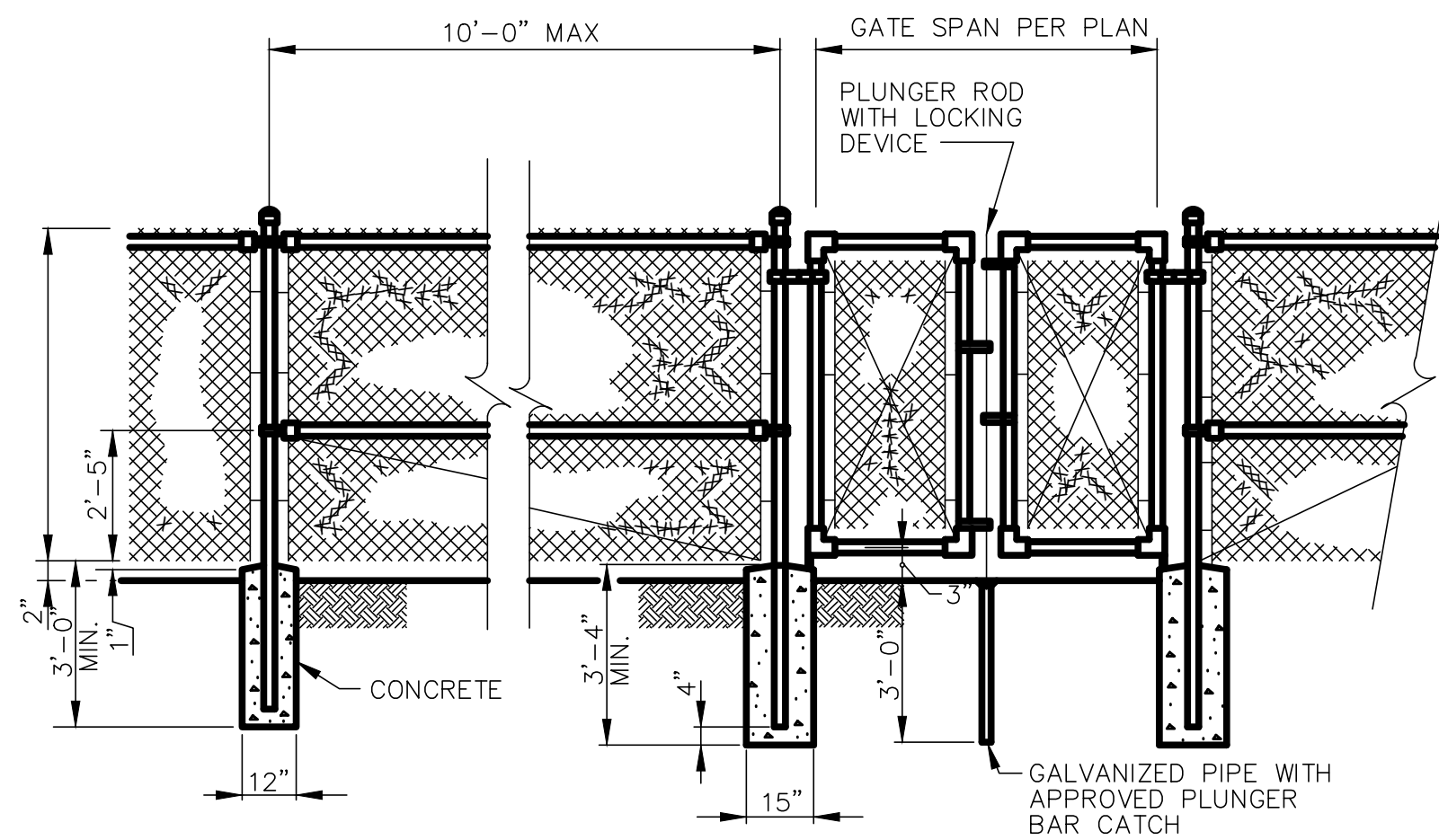
F.M. CONNECTION TO MANHOLE
1/89 (N.T.S.) SD-3-23



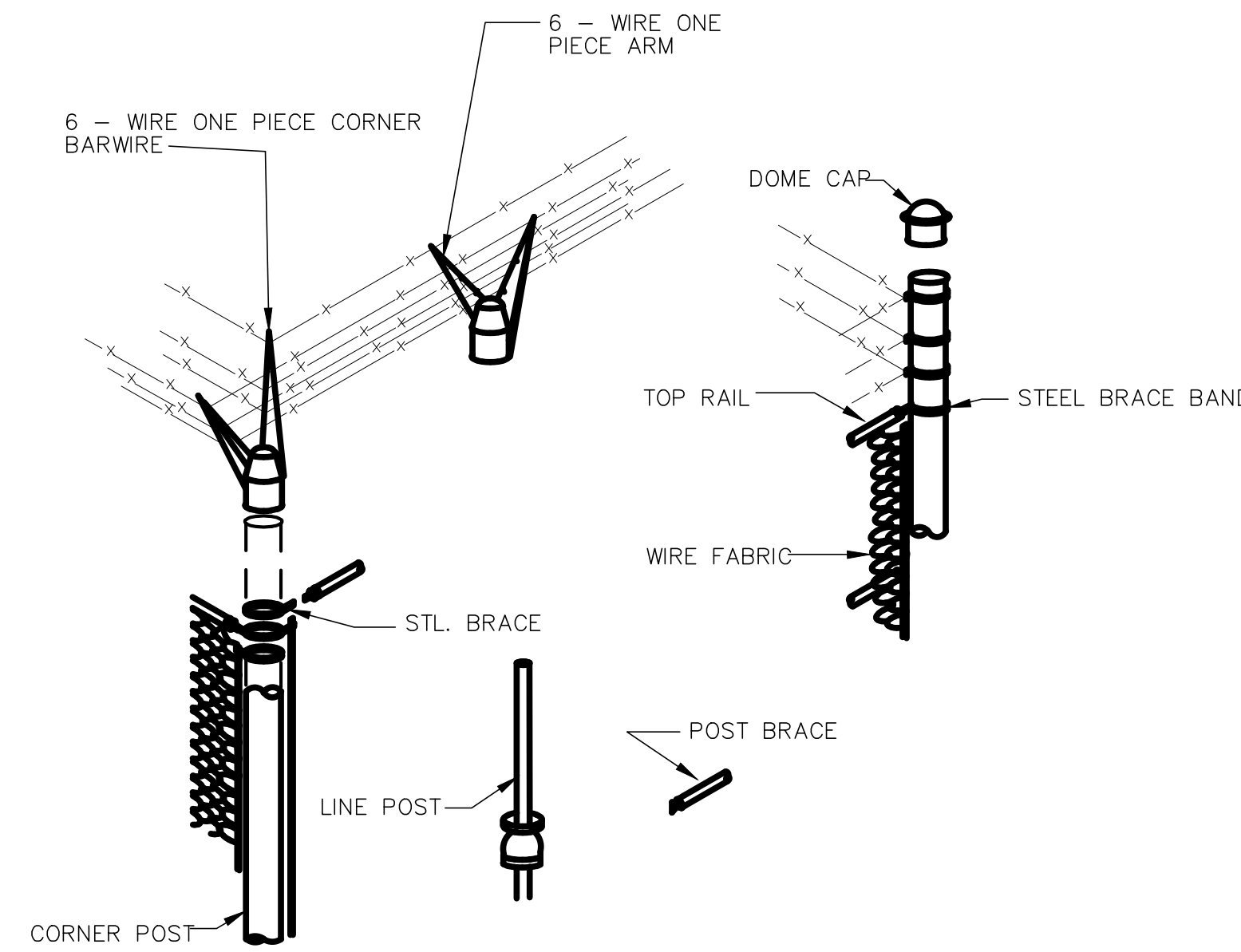
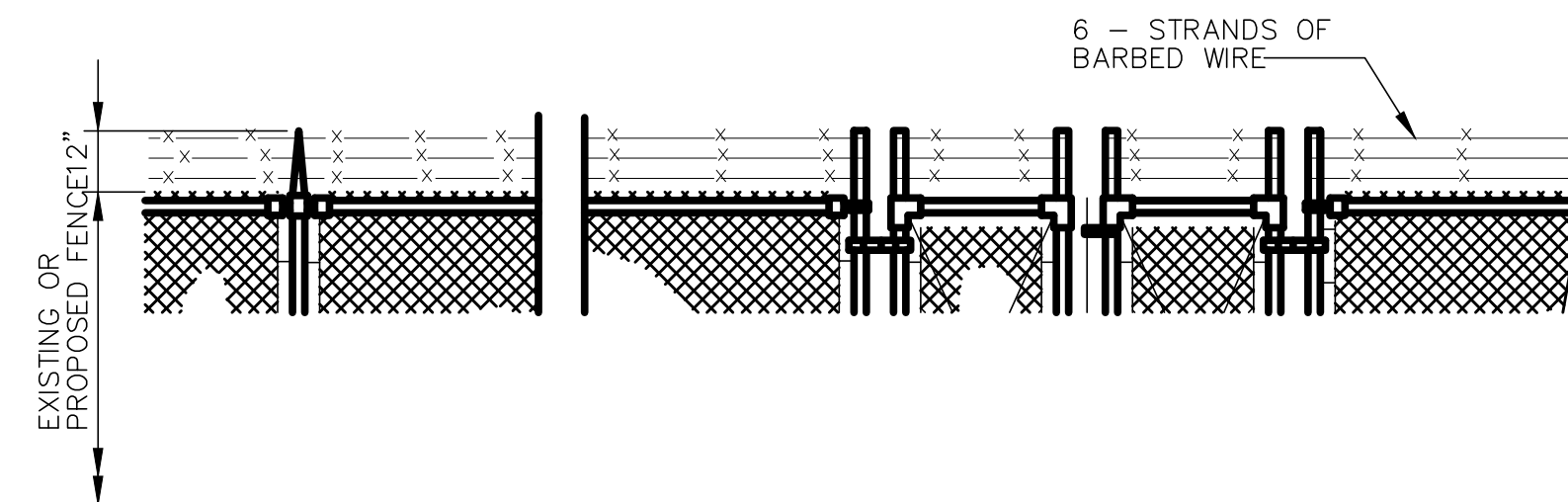
SANITARY SEWER FLEXIBLE GASKET DETAIL
6/90 (LAKE COUNTY SANITARY ENGINEER ONLY) SD-3-25



TYPE A WALK REPLACEMENT
12/88 SD-5-7



TYPICAL FENCE ASSEMBLY
11/88 SD-6-6



BARBED WIRE DETAIL
11/88 SD-6-7



ISSUED FOR:	NO.	REVISION	DATE
60%			
ISSUE DATE:			
SCALE:			
DESIGNED BY:			
DRAWN BY:			
CHECKED BY:			

MANTUA TOWNSHIP
TOWNSHIP FACILITIES SANITARY SEWER IMPROVEMENTS
PORTAGE COUNTY
MANTUA TOWNSHIP, OHIO
STANDARD DETAILS - SD SERIES
STANDARD DETAILS 3

PROJECT NO.	210772
DISCIPLINE	CIVIL
SHEET NAME	SD-03
SHEET	OF
19	19