

MAHONING COUNTY SANITARY ENGINEERS

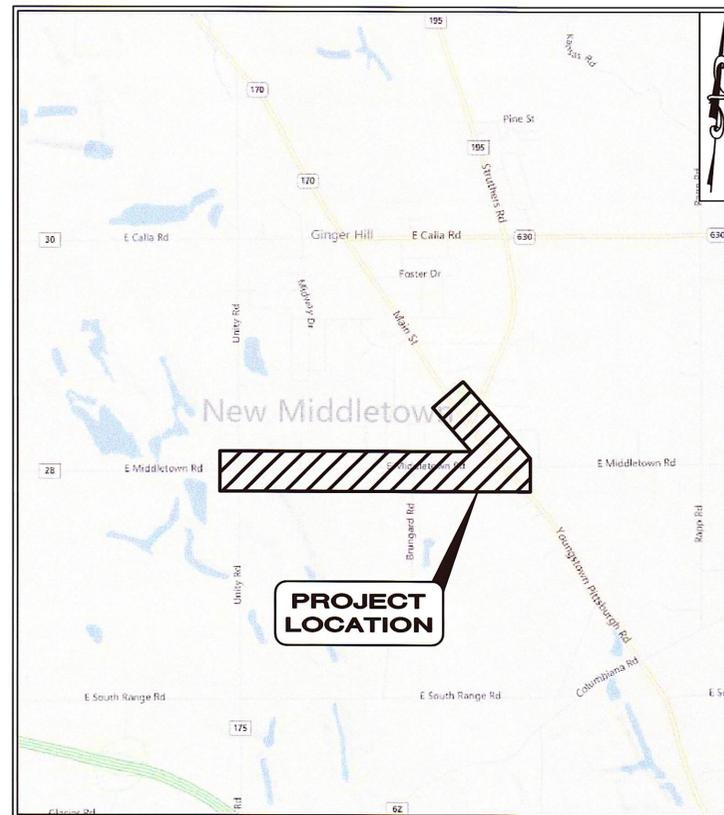
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN & GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT

IMPROVEMENT #504
MAHONING COUNTY METROPOLITAN SEWER DISTRICT

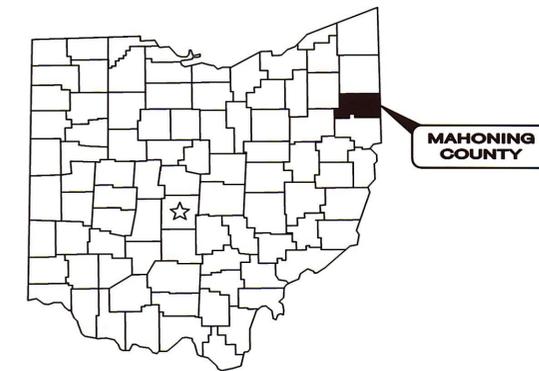
NEW MIDDLETOWN, OHIO

FEBRUARY, 2016

INDEX OF SHEETS		
DRAWING NAME	SHEET TITLE:	SHEET NUMBER
CS	COVER SHEET	1
GN	GENERAL NOTES	2
CD-1	CONSTRUCTION DETAILS 1	3
CD-2	CONSTRUCTION DETAILS 2	4
CD-3	CONSTRUCTION DETAILS 3	5
INDEX	INDEX OF PLANS	6
PS-1	PROPOSED PUMP STATION SITE PLAN	7
PS-2	PUMP STATION PLAN AND PROFILES	8
PP-1	PLAN AND PROFILE STA: 0+00 TO STA: 5+50	9
PP-2	PLAN AND PROFILE STA: 5+50 TO STA: 11+00	10
PP-3	PLAN AND PROFILE STA: 11+00 TO STA: 16+50	11
PP-4	PLAN AND PROFILE STA: 16+50 TO STA: 22+00	12
PP-5	PLAN AND PROFILE STA: 22+00 TO STA: 27+50	13
PP-6	PLAN AND PROFILE STA: 27+50 TO STA: 29+50	14
PP-7	PLAN AND PROFILE STA: 0+00 TO STA: 5+50	15
PP-8	PLAN AND PROFILE STA: 5+50 TO STA: 11+00	16
PP-9	PLAN AND PROFILE STA: 11+00 TO STA: 16+50	17
PP-10	PLAN AND PROFILE STA: 16+50 TO STA: 19+00	18
PP-11	PLAN AND PROFILE STA: 0+00 TO STA: 5+50	19
PP-12	PLAN AND PROFILE STA: 5+50 TO STA: 10+50	20
LP	LATERAL CONNECTION PLAN	21
ESC-1	EROSION & SEDIMENTATION CONTROL NOTES	22
ESC-2	EROSION & SEDIMENTATION CONTROL DETAILS	23
ESC-3	EROSION & SEDIMENTATION CONTROL PLAN	24
ESC-4	EROSION & SEDIMENTATION CONTROL PLAN	25
E-1	ELECTRICAL GENERAL NOTES & ABBREVIATIONS	26
E-2	ELECTRICAL SINGLE LINE DIAGRAM & DETAILS	27
E-3	ELECTRICAL SITE PLAN	28



LOCATION MAP
NOT TO SCALE



SANITARY SEWER

REVIEWED BY:

THE MAHONING COUNTY SANITARY ENGINEER
THIS ____ DAY OF _____, 2016

SIGNED PATRICK T. GINETTI, P.E., P.S.

APPROVED BY:

THE MAHONING COUNTY SANITARY ENGINEER
THIS ____ DAY OF _____, 2016

SIGNED PATRICK T. GINETTI, P.E., P.S.



ENGINEER'S JOB No. 14485

GENERAL NOTE:
ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.



CT Consultants
engineers | architects | planners
20 Federal Plaza West - Suite 303 - Youngstown, Ohio 44503
Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com



DATE	REVISION	NO.	PROJECT NO:	AS SHOWN	DATE:	DESIGN:	DRAWN:	CHECK:
			14485		2/1/16	PMT	PMT	IAC/SAS

**MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
COVER SHEET**

DRAWING NAME	
CS	
SHEET	OF
1	28

GENERAL NOTES:

1. ALL WORK CONTEMPLATED SHALL BE GOVERNED BY THE RULES AND REGULATIONS OF THE VILLAGE OF NEW MIDDLETOWN, OHIO, THE TOWNSHIP OF SPRINGFIELD, OHIO, AND THE MAHONING COUNTY SANITARY ENGINEER. ALL WORK UNDER THIS CONTRACT SHALL COMPLY WITH THE U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ACT. REFERENCE TO "THE ENGINEER" SHALL BE THE ENGINEER OF THIS PROJECT. WHERE THE PLANS AND SPECIFICATIONS DO NOT ENTIRELY COVER THE MATERIALS AND/OR WORKMANSHIP FOR THIS PROJECT, THE "STATE OF OHIO DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS", LATEST EDITION SHALL APPLY.

PRE-CONSTRUCTION CONFERENCE:

1. AT LEAST FIVE DAYS PRIOR TO THE START OF ACTUAL CONSTRUCTION WORK, A PRE-CONSTRUCTION CONFERENCE WILL BE HELD AT A TIME MUTUALLY AGREEABLE TO THE PARTICIPANTS. THE PROJECT ENGINEER, APPROPRIATE VILLAGE, TOWNSHIP, AND COUNTY OFFICIALS, THE CONTRACTOR, AND REPRESENTATIVES OF THE UTILITY COMPANIES SHALL ATTEND THE MEETING.

CONSTRUCTION OBSERVATION:

1. THE CONTRACTOR SHALL NOT COMMENCE WITH ANY FORM OF CONSTRUCTION WITHOUT CONTACTING CT CONSULTANTS, INC. (330) 746-1200 A MINIMUM OF 48 HOURS IN ADVANCE OF CONSTRUCTION ACTIVITY TO ARRANGE FOR OBSERVATION. IF ANY CHANGE IN WORK SCHEDULE BECOMES NECESSARY, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT CT CONSULTANTS, INC. TO AVOID UNNECESSARY OBSERVATION COSTS. IF NO NOTIFICATION IS MADE IN REGARDS TO CANCELLATION OF WORK, THE CONTRACTOR WILL BE CHARGED FOR THE TIME INCURRED.

HOURS OF CONSTRUCTION:

1. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED FROM 7:00 A.M. TO 7:00 P.M. MONDAY THROUGH FRIDAY, UNLESS OTHERWISE APPROVED BY THE CITY AND THE ENGINEER.

RECORD DRAWINGS:

1. THE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS DETAILING CONSTRUCTION IMPROVEMENTS; INTERNAL INSPECTION VIDEO/AUDIO VHS TAPES OR DVDS AND WRITTEN LOGS, INFILTRATION/EXFILTRATION TEST RESULTS AND MANDREL TEST RESULTS (FOR ALL FLEXIBLE CONDUITS - EXCLUDING LATERALS) FOR ALL CONNECTION AND INTERCEPTOR LINES (SANITARY SEWER LINES); HYDROSTATIC & PRESSURE TEST RESULTS FOR WATERLINES, FORCEMAINS & PRESSURE SEWERS AND DISINFECTION TEST RESULTS FOR ALL WATERLINES TO THE ENGINEER PRIOR TO THE SUBMISSION OF FINAL PAYMENT APPLICATION AND REQUEST TO INITIATE OPERATION OF THE SYSTEM.

2. THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS TO THE ENGINEER WITHIN 30 CALENDAR DAYS OF THE ISSUANCE OF THE CERTIFICATION OF SUBSTANTIAL COMPLETION OR PRIOR TO THE SUBMISSION OF THE FINAL PAYMENT APPLICATION, WHICH EVER OCCURS FIRST.

CONSTRUCTION AREA:

1. THE CONTRACTOR SHALL WORK WITHIN DESIGNATED STREET RIGHT-OF-WAYS, UTILITY EASEMENTS, AND CONSTRUCTION EASEMENTS WHILE CONSTRUCTING THIS PROJECT UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL MINIMIZE LAND AND PROPERTY DISTURBANCE WITHIN SAID RIGHT-OF-WAYS AND EASEMENTS.

PRESERVATION OF MONUMENTS:

1. THE CONTRACTOR SHALL PRESERVE ALL CORNERSTONES, IRON PINS, CONCRETE MONUMENTS, OR ANY OTHER TYPE OF LAND MONUMENT. THE CONTRACTOR SHALL HAVE ALL MONUMENTS IN THE PROXIMITY OF THE WORK REFERENCED. THE CONTRACTOR SHALL REPLACE DESTROYED OR DISTURBED LAND MONUMENTS AND SHALL FURNISH A CERTIFICATION BY A REGISTERED SURVEYOR THAT THE AND MONUMENTS HAVE BEEN RESTORED.

MAINTAINING TRAFFIC:

1. TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN SAFE LOCAL ACCESS, VEHICULAR AND PEDESTRIAN, TO ALL PROPERTIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL FURNISH, MAINTAIN AND SUBSEQUENTLY REMOVE ALL NECESSARY SAFEGUARDS SUCH AS BARRICADES, BARRIERS, TEMPORARY PAVEMENT LIGHTING, FLAGGERS, SIGNING AND OTHER TRAFFIC CONTROLS TO INSURE THE SAFETY OF PERSONS AND VEHICLES DURING CONSTRUCTION WITHIN THE PROJECT LIMITS.

2. MAINTAINING TRAFFIC SHALL BE IN ACCORDANCE WITH ODOT ITEM 614 AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

DISPOSAL OF EXCESS MATERIAL:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING A SITE FOR DISPOSAL OF ALL EXCAVATED MATERIAL THAT IS UNSUITABLE FOR USE AS BACKFILL AND ALL OTHER EXCAVATED MATERIALS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH THE LOCATION OF THE DISPOSAL SITE AND WRITTEN PERMISSION FOR USE OF THE SITE FROM THE PROPERTY OWNER. THE COST FOR SECURING AND MAINTAINING THE DISPOSAL SITE SHALL BE INCLUDED IN THE UNIT PRICES STIPULATED FOR THE VARIOUS ITEMS IN THE BID PROPOSAL.

PROPERTY LINES:

1. PROPERTY LINES AND EXISTING UTILITY EASEMENTS ARE SHOWN FOR GENERAL LOCATION ONLY AND ARE BASED ON TAX MAP LOCATION. INDIVIDUAL PROPERTY SURVEYS TO LOCATE PROPERTY LINES HAVE NOT BEEN COMPLETED FOR THIS PROJECT.

PROPERTY DAMAGE:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING STRUCTURES, SUBGRADE PIPING, OR PROPERTY, AND SHALL REPAIR OR REPLACE ALL DAMAGES AT HIS OWN EXPENSE.

INSTALLATION:

1. ALL PIPE LENGTHS AND SLOPES ON GRAVITY LINE SECTIONS ARE MEASURED FROM CENTER-OF-MANHOLE TO CENTER-OF-MANHOLE UNLESS OTHERWISE NOTED.

MATERIALS FOR THE SANITARY SEWER FORCE MAIN AND JOINTS:

1. ALL SANITARY SEWER FORCE MAIN SHALL BE PVC SDR 21 AND CLASS 52 DUCTILE IRON PIPE (UNLESS OTHERWISE NOTED). ALL FORCEMAIN FITTINGS SHALL BE RESTRAINED DIP.

MATERIAL SPECIFICATION: ASTM D-2241
JOINT SPECIFICATION: ASTM D-3139
BEDDING SPECIFICATION: ASTM D-2321

HYDROSTATIC PRESSURE TESTING:

1. HYDROSTATIC PRESSURE TESTING OF THE SANITARY FORCEMAIN WILL BE REQUIRED. HYDROSTATIC TEST FOR DUCTILE IRON FORCEMAINS SHALL CONFORM TO AWWA C600, AND AWWA C605 FOR PVC FORCEMAINS. MINIMUM TEST DURATION SHALL BE 2-HOURS AT 125% OPERATING PRESSURE AT HIGH POINT.

MATERIALS FOR THE GRAVITY SANITARY SEWER MAIN AND JOINTS:

1. THE GRAVITY SANITARY SEWER MAIN AND FITTINGS SHALL BE PVC SDR 35.

MATERIAL SPECIFICATION: ASTM D-3034
JOINT SPECIFICATION: ASTM D-3212
BEDDING SPECIFICATION: ASTM D-2321

2. ALL SANITARY SEWERS MUST HAVE PREMIUM WATER-TIGHT GASKETED JOINTS.

3. ALL MANHOLES ARE TO BE REINFORCED PRE-CAST CONCRETE. MATERIAL SPECIFICATION IS ASTM C-478. JOINT SPECIFICATION IS C-443.

4. CONTRACTOR SHALL ADJUST RIMS TO BE FLUSH WITH FINAL PAVEMENT GRADE AS NECESSARY IN NEWLY PAVED AREAS.

5. NEATLY PAINT FACE OF ALL PAVEMENT NOTCHES & MANHOLES WITH PG 64-22.

6. MANHOLE VACUUM TESTING MUST CONFORM TO ASTM C-1244.

GRAVITY LINE TESTING TESTING:

1. PRIOR TO PAVING OPERATIONS, ALL GRAVITY SANITARY SEWERS SHALL BE INTERNALLY TELEVISED, MANDREL TESTED, AND LOW-PRESSURE AIR TESTED.

DEFLECTION MANDREL TESTING:

1. ALL PVC PIPE SHALL BE TESTED FOR DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED NOT LESS THAN 30 DAYS AFTER FINAL FULL BACKFILL HAS BEEN REPLACED AND SOIL SETTLEMENT HAS OCCURRED. THE DEFLECTION TEST SHALL BE CONDUCTED TO DETERMINE COMPLIANCE WITH THE MAXIMUM ALLOWABLE DEFLECTION OF THE INSIDE DIAMETER OF THE PVC PIPE AS SET FORTH IN ASTM F-794.

2. THE ALLOWABLE DEFLECTION SHALL NOT EXCEED 5% OF THE MANUFACTURED MINIMUM INSIDE DIAMETER.

TELEVISION:

1. ALL NEWLY CONSTRUCTED SANITARY GRAVITY SEWERS WILL BE TELEVISED AND THE WRITTEN REPORT SUBMITTED TO THE COUNTY SANITARY ENGINEER FOR REVIEW.

DISTURBED PROPERTY:

1. ALL DISTURBED PROPERTY SHALL BE RESTORED TO ITS PRE-CONSTRUCTION CONDITION, AS NEAR AS POSSIBLE WITHIN 20 DAYS OF DISTURBANCE.

COSTS OF THE TESTING:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ALL TESTING.

SEPARATION OF SANITARY SEWER:

1. A TEN FOOT (10') HORIZONTAL SEPARATION AND AN EIGHTEEN INCH (18") MINIMUM VERTICAL SEPARATION (OUT-TO-OUT, SHALL BE MAINTAINED BETWEEN THE SANITARY SEWERS, STORM SEWERS, AND WATERLINE..

DUST CONTROL:

1. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT SUCH AS CALCIUM CHLORIDE, WATER, OR MOTORIZED DUST-FREE STREET SWEEPING DEVICE, AS APPROVED BY THE ENGINEER, TO MINIMIZE DUST GENERATED ON THE CONSTRUCTION SITE AND TO MAINTAIN ALL ROADWAYS BEING USED FOR ACCESS TO THE CONSTRUCTION SITE..

EARTHWORK OPERATIONS:

1. ALL STUMPS, TREES, UNSUITABLE EXCAVATED MATERIAL, AND OTHER CONSTRUCTION DEBRIS SHALL BE DISPOSED OF BY THE CONTRACTOR, AND INCLUDED IN THE BID PRICE.

2. A SUBSURFACE GEOTECHNICAL INVESTIGATION AND REPORT HAS BEEN COMPLETED BY THE OWNER'S GEOTECHNICAL ENGINEER THE OWNER WILL MAKE THE REPORT AVAILABLE TO THE CONTRACTOR FOR REFERENCE. THE CONTRACTOR IS STILL ENCOURAGED TO MAKE HIS OWN SUBSURFACE INVESTIGATION PRIOR TO CONSTRUCTION.

3. NO BACKFILLING OF ANY TRENCHES OR EXCAVATIONS WILL BE PERMITTED WITHOUT TAMPING EQUIPMENT BEING USED. FLOODING, JETTING OR PUDDLING OF BACKFILL WILL NOT BE PERMITTED.

4. SLAG PRODUCTS WILL NOT BE PERMITTED FOR USE AS PIPE BEDDING OR BACKFILL MATERIAL.

5. ALL EXCAVATION SHALL BE CONSIDERED UNCLASSIFIED. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ROCK OR SHALE EXCAVATION.

EXISTING UTILITIES:

1. THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THEIR ACCURACY AND COMPLETENESS ARE NOT GUARANTEED.

DOMINION EAST OHIO
320 SPRINGSIDE DR, SUITE 32
AKRON, OHIO 44333
(330) 664-2678
ATTN: KEVIN BACH

AQUA OHIO, INC.
6850 SOUTH AVENUE
BOARDMAN, OHIO 44512
(330) 726-8151

MAHONING COUNTY SANITARY ENGINEERS
761 INDUSTRIAL ROAD
YOUNGSTOWN, OHIO 44509
(330) 793-5514
ATTN: PATRICK GINNETTI, P.E., P.S.

AT&T OHIO
45 ERIEVIEW PLAZA, RM 1600
CLEVELAND, OH 44114
(216) 298-1513

OHIO EDISON COMPANY
730 SOUTH AVENUE
YOUNGSTOWN, OHIO 44502-2011
(330) 747-2071
ATTN: NANCY FRASCO

2. BEFORE ANY WORK IS STARTED THAT WILL INTERFERE WITH THE EXISTING UTILITIES, THE CONTRACTOR SHALL CALL THE "OHIO UTILITIES PROTECTION SERVICE", AT 1-800-362-2764, FORTY-EIGHT (48) HOURS IN ADVANCE OF THE WORK. NON-MEMBER UTILITIES MUST BE CONTACTED DIRECTLY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, AT NO ADDITIONAL EXPENSE TO THE OWNER, TO AVOID DAMAGE TO EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES DURING THE ENTIRE PROJECTS. IN THE EVENT OF DAMAGE TO EXISTING PUBLIC AND/OR PRIVATE UTILITIES, THE AGENCY CONCERNED SHALL BE NOTIFIED IMMEDIATELY AND ALL REPAIR WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE RESPECTIVE AGENCY AT NO ADDITIONAL EXPENSE TO THE OWNER, INCLUDING ANY INSPECTION FEES OR MAINTENANCE CREWS.

3. ALL UTILITY LINES CROSSING THE NEW SEWER TRENCH, I.E. STORM SEWERS, STORM LATERALS, SANITARY SEWERS, SANITARY LATERALS, WATER MAINS, WATER SERVICE CONNECTIONS, GAS MAINS, GAS SERVICE CONNECTIONS, UNDERGROUND OBT CONDUITS, CABLE TV AND ELECTRIC LINES SHALL BE PROTECTED AND SUPPORTED WITH HARDWOOD PLANKS, OR REMOVED AND REPLACED, RECONNECTED AND SUPPORTED ACROSS THE ENTIRE WIDTH OF THE TRENCH.

4. WHERE EXISTING POWER OR TELEPHONE POLES ARE IN CLOSE PROXIMITY TO WORK, THE CONTRACTOR SHALL COORDINATE HIS WORK EFFORTS WITH THOSE OF THE UTILITY COMPANIES SUCH THAT THEIR EXISTING FACILITIES CAN BE MAINTAINED AND PROTECTED DURING THE TIME WORK IS GOING ON ADJACENT TO THE POLE.

5. THE COST FOR ANY REQUIRED PROTECTION OR RELOCATION OF EXISTING POWER OR TELEPHONE POLES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

6. DELAYS TO THE CONTRACTOR AS A RESULT OF TIMING OF POLE RELOCATION OR PROTECTION SHALL NOT BE CONSIDERED COMPENSABLE DELAYS, AS IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE HIS WORK IN CONFORMANCE TO THE UTILITY COMPANY'S SCHEDULE.

RESTORATION:

1. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS CAUSED FROM CONSTRUCTION TO PRE-CONSTRUCTION CONDITIONS OR BETTER. FOR DISTURBED LAWN AREAS, THE CONTRACTOR SHALL INSTALL COMPACTED, SCREENED, IMPORTED TOPSOIL TO PROVIDE A SMOOTH TRANSITION FROM THE ROAD SURFACE TO THE NON-PAVED SURFACE. SEE STANDARD DETAILS AND THE FOLLOWING NOTES FOR REQUIRED SEED MIX.

GRASS RESTORATION:

1. ALL GRASS AREAS ARE TO BE RESTORED UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS.

SEEDING MIXTURE:

1. THE COMPOSITION OF SEED MIXTURE SHALL CONFORM TO THE PROJECT SPECIFICATIONS FOR SEEDING.

TRAFFIC MAINTENANCE:

1. MAINTAINING TRAFFIC/TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH ODOT ITEM 614 "THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES". AS A MINIMUM THE CONTRACTOR SHALL SUBMIT A CONTROL PLAN FOR REVIEW AND ACCEPTANCE BY THE ENGINEER PRIOR TO BEGINNING WORK.

2. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN SAFE LOCAL ACCESS, VEHICULAR AND PEDESTRIAN, TO ALL PROPERTIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL FURNISH, MAINTAIN AND SUBSEQUENTLY REMOVE ALL NECESSARY SAFEGUARDS SUCH AS BARRICADES, BARRIERS, TEMPORARY PAVEMENT, LIGHTING, FLAGGERS, SIGNING AND OTHER TRAFFIC CONTROLS TO INSURE THE SAFETY OF PERSONS AND VEHICLES DURING CONSTRUCTION WITHIN THE PROJECT LIMITS.

3. THE CONTRACTOR WILL FURNISH AND INSTALL TRAFFIC COMPACTED SURFACE WITH ODOT 304 INCLUDING NECESSARY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL. THE COST FOR MAINTAINING TRAFFIC, TRAFFIC COMPACTED SURFACE AND DUST CONTROL SHALL BE INCLUDED IN THE UNIT PRICES STIPULATED FOR THE VARIOUS ITEMS IN THE BID PROPOSAL.

4. THE CONTRACTOR SHALL POST 5 M.P.H. SPEED LIMIT SIGNS IN ALL WORK ZONES AND AS DIRECTED BY THE ENGINEER.

5. ACCESS MUST BE MAINTAINED FOR RESIDENCES, EMERGENCY VEHICLES AND PEDESTRIANS INCLUDING PERSONS WITH DISABILITIES, AT ALL TIMES.

6. AT ALL EXCAVATION LOCATIONS THE CONTRACTOR SHALL PROVIDE SUITABLE FLASHERS, BARRICADES, AND TRAFFIC CONTROL DEVICES AS DEEMED NECESSARY BY THE ENGINEER AND IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). SUCH TIME AS THE AREA IS COMPLETELY BACKFILLED.

ELECTRICAL NOTES:

1. THE CONTRACTOR SHALL PERFORM ALL DEMOLITION OF EXISTING ELECTRICAL SYSTEMS AS DIRECTED BY THE CONTRACT DOCUMENTS.

2. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY EXISTING ELECTRICAL CONDITIONS. ONCE THE EXISTING ELECTRICAL CONDITIONS ARE FIELD VERIFIED, THE CONTRACTOR SHALL REVIEW ALL CIVIL, STRUCTURAL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC... CONTRACT DOCUMENTS FOR CONFLICTS THAT WILL REQUIRE REMOVAL, MODIFICATION OR RELOCATION OF EXISTING EQUIPMENT. THE CONTRACTOR SHALL INCLUDE IN HIS BIDS THE COST ASSOCIATED WITH THIS WORK.

3. DISCONNECT EXISTING EQUIPMENT IN PUMP STATION THAT IS TO BE REMOVED UNDER OTHER SECTIONS. REMOVE DATA AND PHONE CABLENG SYSTEM AS DIRECTED BY PROJECT MANAGER. NO CABLES SHALL BE REMOVED OR CUT WITHOUT APPROVAL FROM PROJECT MANAGER. ANY EXISTING CABLES TO REMAIN SHALL BE SUPPORTED FROM STRUCTURE BEFORE CEILING REMOVAL.

4. PATCH ALL SURFACES TO MATCH SURROUNDING SURFACES.

5. THE COUNTY SANITARY ENGINEER RESERVES THE RIGHT OF SALVAGE FOR ALL EXISTING ELECTRICAL EQUIPMENT PRIOR TO DEMOLITION, THE CONTRACTOR SHALL REVIEW ALL MATERIALS AND DELIVER TO THE OWNER THOSE REQUIRED IN THEIR EXISTING CONDITION. ALL OTHER MATERIAL SHALL BE REMOVED BY THIS CONTRACTOR.

6. ALL CIRCUITS WHICH ARE REQUIRED TO REMAIN ACTIVE SHALL BE MAINTAINED OR REWORKED AS REQUIRED. ANY EXISTING CIRCUITS OR CABLENG SYSTEMS SERVING AREAS NOT AFFECTED BY DEMOLITION SHALL BE MAINTAINED. ALL CIRCUITS SHALL BE VERIFIED WITH EXISTING DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO BEGINNING DEMOLITION.

7. THE CONTRACTOR SHALL FURNISH AT HIS OWN EXPENSE ALL ELECTRICAL POWER AND TEMPORARY ELECTRIC LINES WHICH MAY BE REQUIRED FOR THE PROJECT.

SANITARY SEWER NOTES:

1. ALL SANITARY SEWER MATERIALS AND CONSTRUCTION ITEMS (MANHOLES, MAINLINE REGULATIONS AND THE SANITARY ENGINEER'S STANDARDS. COPIES ARE AVAILABLE REGULATIONS AND THE SANITARY ENGINEER'S STANDARDS. COPIES ARE AVAILABLE ON REQUEST.

2. ROOF DRAINS, FOUNDATION DRAINS, AND ANY OTHER CLEAR-WATER DRAINS SHALL NOT BE CONNECTED TO THE SANITARY SEWER SYSTEM.

3. LATERAL SEWER PIPE MUST HAVE A BELL OR SPIGOT AT THE END.

4. CONTRACTORS MUST CONDUCT INFILTRATION/EXFILTRATION TESTS IN ACCORDANCE WITH OHIO EPA REGULATIONS AND IN THE PRESENCE OF A DESIGNATED REPRESENTATIVE OF THE SANITARY ENGINEER. CONTRACTOR IS TO CHOOSE THE METHOD OF CONDUCTING THE LEAKAGE TESTS AND MUST RECEIVE APPROVAL PRIOR TO STARTING CONSTRUCTION.

5. GRANULAR BACKFILL SHALL BE USED OVER MAINS AND LATERALS WITHIN PAVEMENT LIMITS AND WITHIN 5 FEET OF PAVEMENT EDGE.

6. GRANULAR BEDDING SHALL BE USED PER SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

7. BUILDERS AND CONTRACTORS MUST HOLD TO THE GRADES AND ELEVATIONS ESTABLISHED BY THE ENGINEER.

8. OHIO EPA SANITARY SEWER GUIDELINES REQUIRE THAT ALL MANHOLES BE CONSTRUCTED TO PERMANENT GRADE ADJUSTMENTS BY USE OF CAST-IN-PLACE OR PRECAST ADJUSTING COLLARS (ASTM C-32) AND JOINT SPEC. C-443

9. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A FLEXIBLE, WATERTIGHT GASKET, OR ANY WATERTIGHT CONNECTION ARRANGEMENT THAT ALLOWS FOR DIFFERENTIAL SETTLEMENT TO TAKE PLACE BETWEEN THE PIPE AND THE MANHOLE WALL.

10. LATERALS SHALL BE INSTALLED AT A MINIMUM 2.0% GRADE (1/4 IN/FT) PER COUNTY STANDARDS. MINIMUM LATERAL PIPE SIZE SHALL BE 6 INCH DIAMETER.

11. INFILTRATION SHALL NOT EXCEED THE OHIO EPA LIMIT OF 100 GALLONS PER INCH OF PIPE DIAMETER PER MILE OF SEWER PER DAY.

12. ALL LATERALS MUST BE RUN TO STREET PROPERTY LINE OR A MINIMUM OF 13 FEET.

13. CONTRACTORS MUST OBTAIN PERMITS TO WORK IN OR THROUGH RIGHT-OF WAYS.

14. SANITARY SEWER MUST BE 10 FEET HORIZONTALLY (MEASURED EDGE TO EDGE) FROM WATER LINES, AND MUST MAINTAIN A MINIMUM 18 INCH VERTICAL CLEARANCE AT ANY WATERLINE CROSSING.

15. LOCATION AND LENGTHS OF ALL LATERALS SHALL BE GIVEN ON ALL CUT SHEETS AND DRAWINGS.

16. THE CONTRACTOR SHALL NOTIFY THE SANITARY ENGINEER AND THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.

17. PVC PIPE ASTM D 3034, JOINT SPEC. D-3212, BEDDING CLASS 1 D-2321.

18. ABS TRUSS PIPE SPEC. ASTM D 2680, UNDERGROUND INSTALLATION OF TRUSS PIPE SPEC. ASTM D 2680 APPENDIX XI, PIPE RESIN COMPOUND SPEC. ABS CELL CLASSIFICATION 1-0-2-2-3 (PER ASTM D 3965).

19. ALL SANITARY MANHOLES WITH ELEVATION DROPS OF 24 INCHES OR MORE SHALL BE CONSIDERED DROP MANHOLES AND LABELED AS SUCH ON PLAN WITH CORRESPONDING DETAIL. IN ACCORDANCE WITH GLUMRB 34.2.

20. ALL LINES MUST BE TESTED FOLLOWING THE GLUMRB 33.85 DEFLECTION TESTING.

21. NO CONSTRUCTION IS PERMITTED UNTIL WRITTEN AUTHORIZATION HAS BEEN RECEIVED FROM THE E.P.A.

22. SANITARY SEWER MUST BE 4 FEET HORIZONTALLY O.D. FROM STORM SEWERS AND MUST MAINTAIN A MINIMUM 1' VERTICAL CLEARANCE AT ANY STORM SEWER CROSSINGS.

23. DEFLECTION TESTING SHALL BE PERFORMED ON ALL FLEXIBLE PIPE IN ACCORDANCE WITH THE TEN STATES STANDARDS, SECTION 33.85 AND ASTM D-2412. NO PIPE SHALL EXCEED THE MAXIMUM ALLOWABLE DEFLECTION OF 5 PERCENT.

24. AIR TESTING SHALL BE PERFORMED ON ALL SANITARY PIPE IN ACCORDANCE WITH THE LOCAL REGULATORY AGENCY AND THE TEN STATES STANDARDS, SECTION 33.94 AND ASTM F-1417.

25. ALL MANHOLE SECTIONS SHALL BE VISUALLY EXAMINED FOR CRACKS OR DAMAGE THAT WOULD COMPROMISE THE WATER TIGHTNESS OF THAT SECTION. ANY DAMAGED SECTION SHOULD BE RETURNED TO THE MANUFACTURER. TESTING SHALL CONFORM TO 10 STATES STANDARDS SECTION 34.7 AND ASTM C-1244.

MANHOLE NOTES:

1. ALL PRECAST CONCRETE SHALL BE REINFORCED IN ACCORDANCE WITH THE LATEST REVISIONS OF A.S.T.M. DESIGNATION C478.

2. ALL PRECAST CONCRETE SECTIONS SHALL BE MANUFACTURED AND FURNISHED AS SOLID SECTION WITHOUT LIFT HOLES OF ANY KIND.

3. INTERIOR - THOROSEAL INSIDE OF SANITARY MANHOLES, FULL DEPTH (ANY COLOR BUT GREY). ALL JOINTS AND CONNECTIONS TO BE WATER PLUGGED.

4. ALL PRECAST CONCRETE SANITARY SEWER STRUCTURES, OTHER THAN STORM SEWER CATCH BASIN STRUCTURES, SHALL BE PRECAST USING A CONCRETE ADMIXTURE SUCH AS XYPEX CRYSTALLINE ADMIXTURE OR AN APPROVED EQUAL WHICH WILL ACT AS A WATERPROOF AGENT AND HYDROGEN SULFIDE INHIBITOR.

5. COMBINATION VALVES SHALL BE GA INDUSTRIES FIGURE 942 WITH 2" DIA. NPT INLETS AND OUTLETS, THE STANDARD ORIFICE SIZE IS 1/8".

6. INSTALL A 1 1/2" DIA. SCH. 80 PVC AIR DISCHARGE PIPE FROM COMBO VALVE OUTLET PORT DIRECTED TO FLOOR.

7. ALL EXPOSED PIPING, VALVES AND FITTINGS INSIDE EACH MH SHALL BE PAINTED IN ACCORDANCE WITH PUMP STATION GENERAL NOTES ON SHEET 12.

8. FRAME AND COVER SHALL BE OF HEAVY DESIGN (475 LBS MIN. TOTAL WEIGHT) WHEN THE MANHOLE IS PLACED WITHIN THE LIMITS OF THE PAVEMENT OR SHOULDER, OTHERWISE THE LIGHT DESIGN (275 LBS MIN.) MAY BE USED. BEARING AREAS SHALL BE FINISHED SMOOTH AND FITTED SO AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE COVER IN THE FRAME. EACH COVER SHALL SEAT IN THE FRAME WITHOUT ROCKING AND SHALL BE MARKED AS A MATCHED FRAME AND COVER BEFORE DELIVERY TO THE PROJECT. THE BASE OF THE FRAME SHALL BE SET IN A FULL BED OF PORTLAND CEMENT MORTAR AND SO ADJUSTED TO CONFORM TO THE FINISHED PAVEMENT OR SHOULDER ELEVATION AND SLOPE. CASTINGS MEET IN ITEM 604 REQUIREMENTS AND DESIGNED ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN HEREON SHALL BE PROVIDED.

9. STEPS SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF SPECIFICATION 604. ALL STEPS SHALL HAVE A DEPRESSED THREAD OF A 1/2"

10. MIN. CLEAT HEIGHT AT THE ENDS. STEPS INSTALLED IN FRESH CONCRETE SHALL BE EMBEDDED TO MINIMUM DEPTH OF 4". STEPS INSTALLED IN MORTAR JOINTS SHALL BE EMBEDDED TO A MINIMUM DEPTH OF 7". FRICTION-FIT STEPS MEETING TO REQUIREMENTS OF 711.31 WITH A 1/2" DIAMETER REBAR MAY BE USED IN PRECAST MANHOLES. THE RECEIVING HOLES FOR FRICTION-FIT STEPS SHALL NOT PENETRATE THE MANHOLE WALL. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO TEST LOAD MAXIMUM OF ONE STEP PER MANHOLE TO A PROOF LOAD OF 400 LBS. IN DIRECT PULL. THE EQUIPMENT AND METHOD USED SHALL MEET THE APPROVAL OF THE ENGINEER. IF THE SELECTED STEP FAILS THE PULLOUT TEST, THE REMAINING STEPS IN THAT MANHOLE SHALL ALSO BE TESTED. ALL STEPS NOT PASSING THE PULLOUT TEST SHALL BE REMOVED AND A NEW STEP INSTALLED AND TESTED TO THE SATISFACTION OF THE ENGINEER. COST OF TESTING SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE MANHOLE.

11. DROP PIPE, WHEN SPECIFIED ON THE PLANS, SHALL BE CONSTRUCTED AS SHOWN.

12. SANITARY SEWER COVERS SHALL BE WITHOUT THE PICK AND VENT HOLES SHOWN HEREON AND SHALL INCLUDE A SEALING GASKET AFFIXED TO

13. THE BEARING SURFACE. BOLT-DOWN COVERS SHALL NOT BE USED UNLESS SPECIFIED IN THE PLANS.



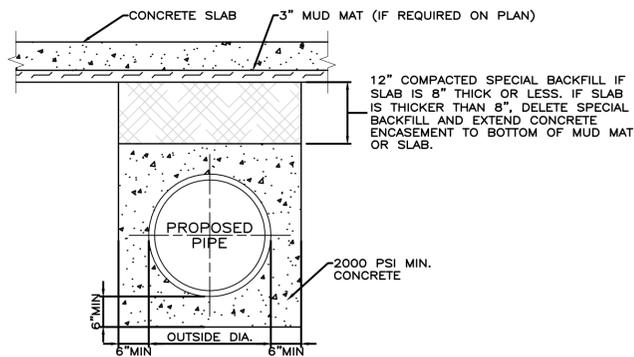
CT Consultants
engineers | architects | planners
20 Federal Plaza West, Suite 303 - Youngstown, Ohio 44503
Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com



PROJECT NO.	NO.	REVISION	DATE
14485	1	PTI RESPONSE # 1	11/13
SCALE:	AS SHOWN		
DATE:	1/28/16		
DESIGN:	RBS		
DRAWN:	PMT		
CHECK:	IA@CSAS		

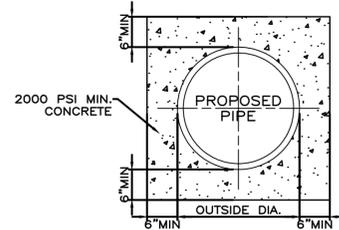
MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
GENERAL NOTES

DRAWING NAME	
GN	
SHEET	OF
2	28



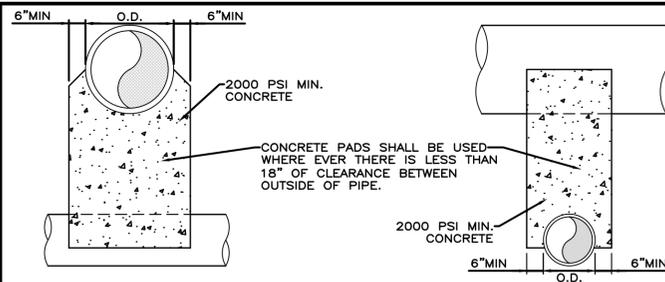
TYPICAL PIPE ENCASEMENT UNDER STRUCTURES

N.T.S.



TYPICAL PIPE ENCASEMENT

N.T.S.

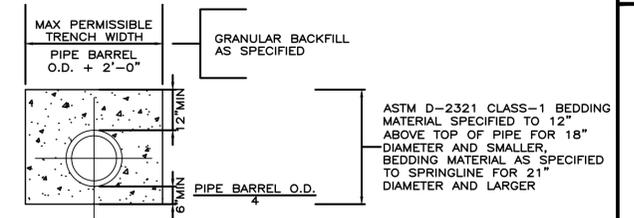


NOTE:

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, WHERE TWO PIPES (SEWER & WATER) CROSS EACH OTHER, A CONCRETE PAD AND CRADLE SEPARATOR SHALL BE PLACED BETWEEN THEM AS INDICATED ABOVE. WHERE PERMISSION IS GRANTED TO OMIT THE CONCRETE PADS, GRANULAR BACKFILL SHALL BE TAMPED IN 6" LAYERS AROUND BOTH PIPES. SUCH TAMPED BACKFILL SHALL BE CONTINUOUS FROM THE CRADLE OF THE LOWER PIPE TO THE TOP OF THE UPPER PIPE AND AT THE BOTTOM SHALL EXTEND IN BOTH DIRECTIONS, FOR THE FULL WIDTH OF THE TRENCH.

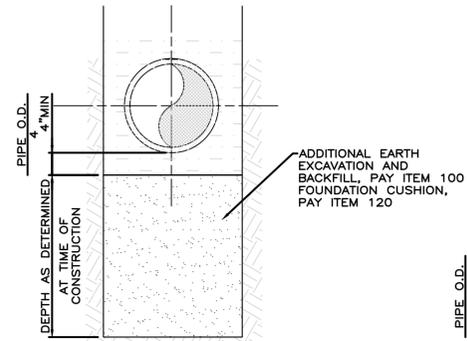
PIPE CROSSING DETAIL

N.T.S.



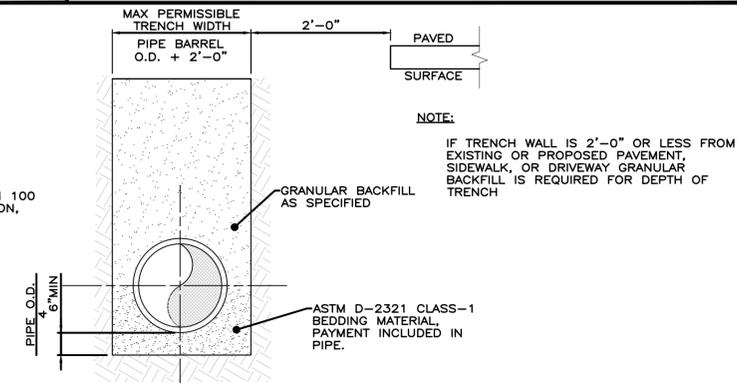
STANDARD BEDDING AND TRENCH DETAIL

N.T.S.



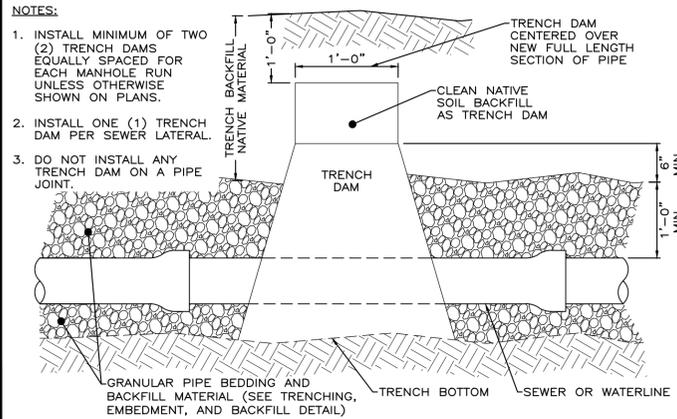
EARTH EXCAVATION

EXCAVATION MEASUREMENT AND PAYMENT LIMITS



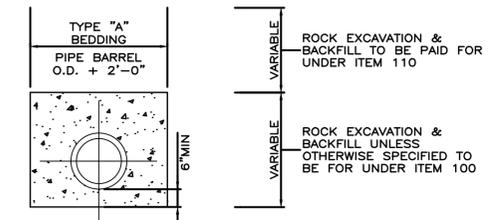
STANDARD BEDDING AND TRENCH DETAIL

N.T.S.



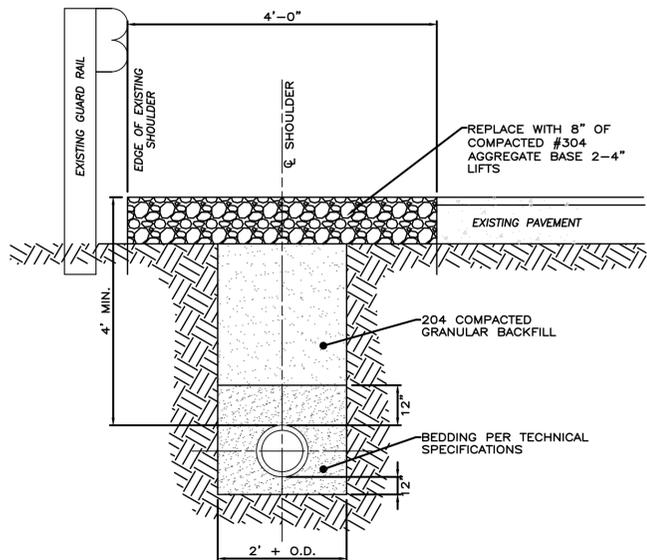
TRENCH DAM DETAIL

N.T.S.



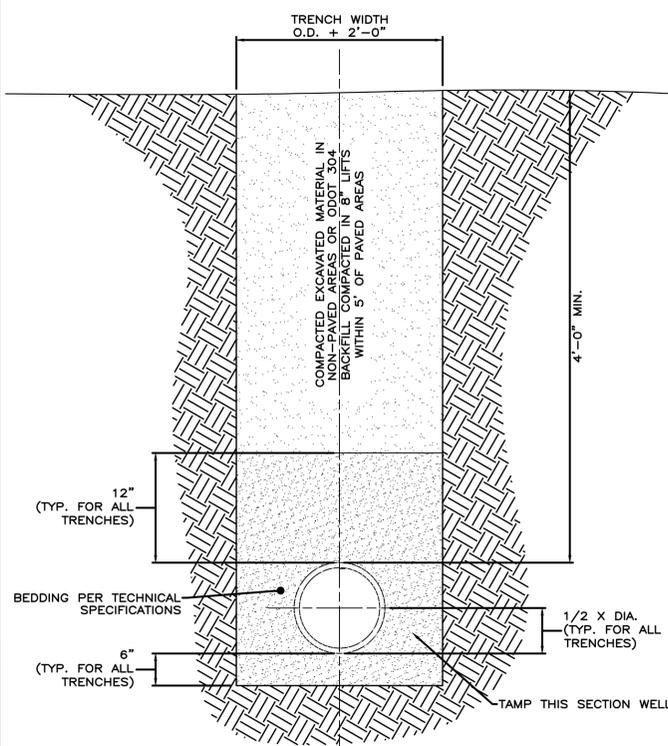
ROCK EXCAVATION

N.T.S.



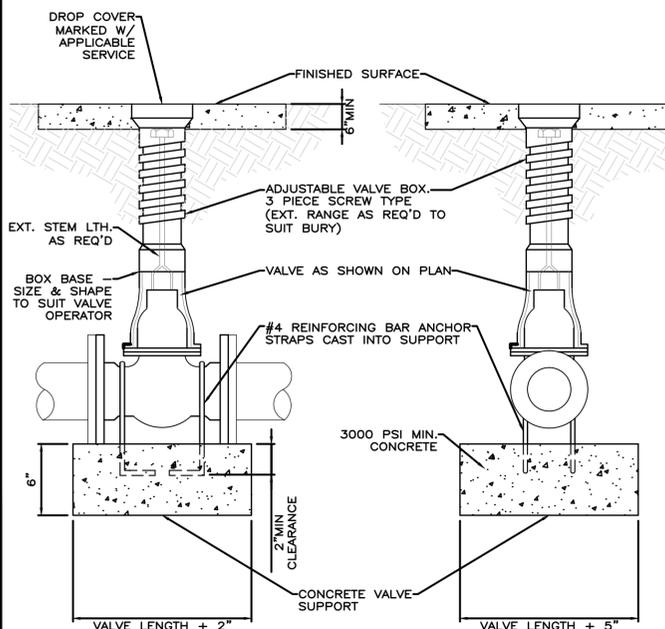
GRAVEL SHOULDER REPLACEMENT DETAIL

N.T.S.



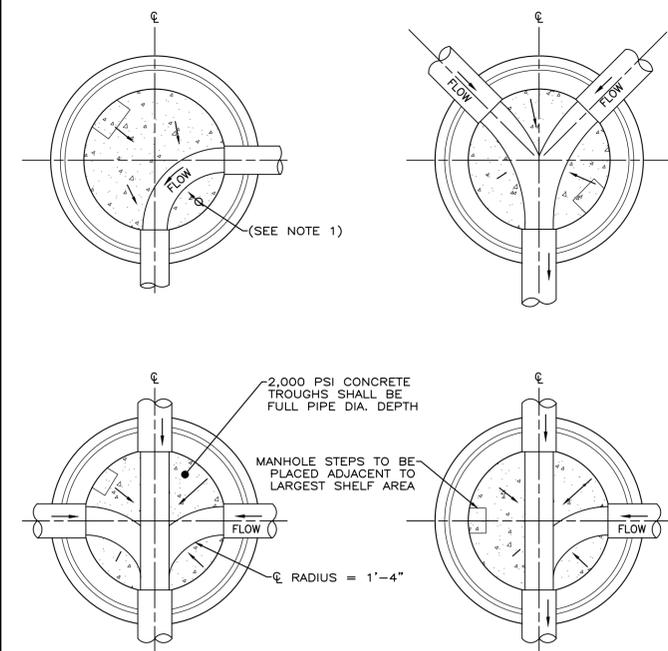
TYPICAL TRENCH DETAIL

N.T.S.



TYPICAL VALVE AND VALVE BOX SETTING

N.T.S.



NOTES:

1. ALL BENCHES SHALL SLOPE A MINIMUM OF 2" PER FOOT TOWARD THE FLOW CHANNEL.
2. CONTRACTOR HAS THE OPTION OF PROVIDING PRECAST CHANNELS.
3. NEW TROUGHS FOR EXISTING MANHOLES SHALL BE 2'-0" THICK WITH STEEL REINFORCEMENT.

TYPICAL MANHOLE CHANNELS

N.T.S.



ICT Consultants
engineers | architects | planners
20 Federal Plaza West, Suite 303 - Youngstown, Ohio 44503
Phone: 330.746.1200 - Fax: 330.746.1400 - www.ictconsultants.com



DATE	REVISION	NO.

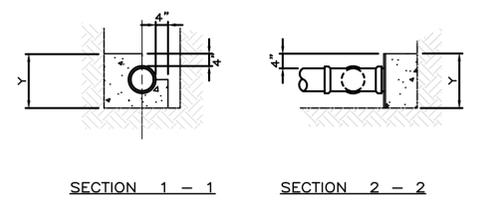
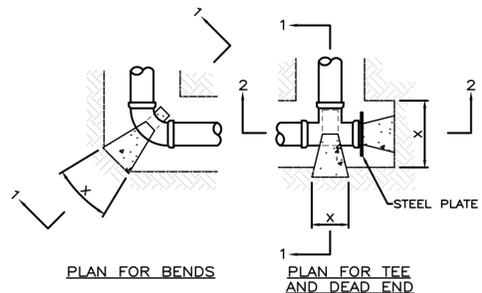
PROJECT NO: **14485**
SCALE: AS SHOWN
DATE: 1/28/16
DESIGN: PWT
DRAWN: PWT
CHECK: IAG/SAS

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO

CONSTRUCTION DETAILS 1

DRAWING NAME	
CD-1	
SHEET	OF
3	28

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

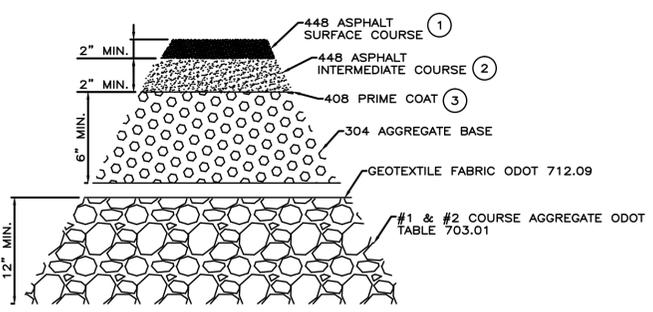


NOTES:

1. 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

N.T.S.



GENERAL NOTES:

ALL ITEMS CITED IN DETAILS REFER TO ODOT CONSTRUCTION AND MATERIALS SPECIFICATIONS LATEST EDITION (JANUARY 1, 2013)

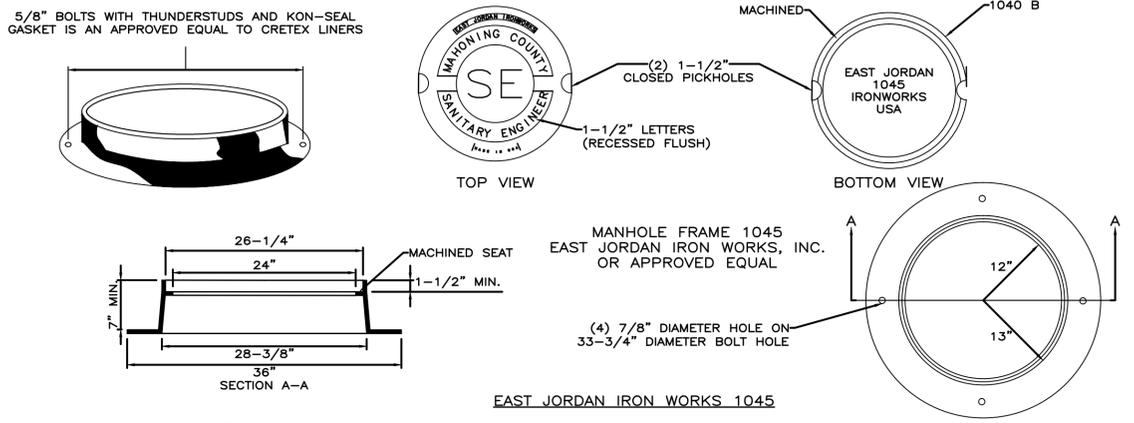
① 2" 448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22, SEAL ALL JOINTS

② 2" 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22

③ 408 PRIME COAT TO BE APPLIED AT A RATE OF 0.40 GAL/SY

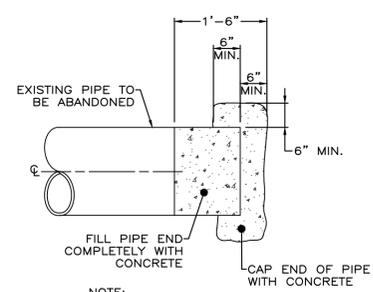
ASPHALT DRIVE CROSS SECTION (PUMP STATION)

N.T.S.



STANDARD/HEAVY DUTY FRAME & COVER

N.T.S.

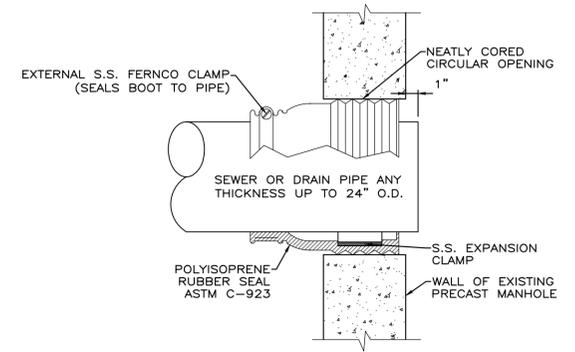


PIPE CAP DETAIL

N.T.S.

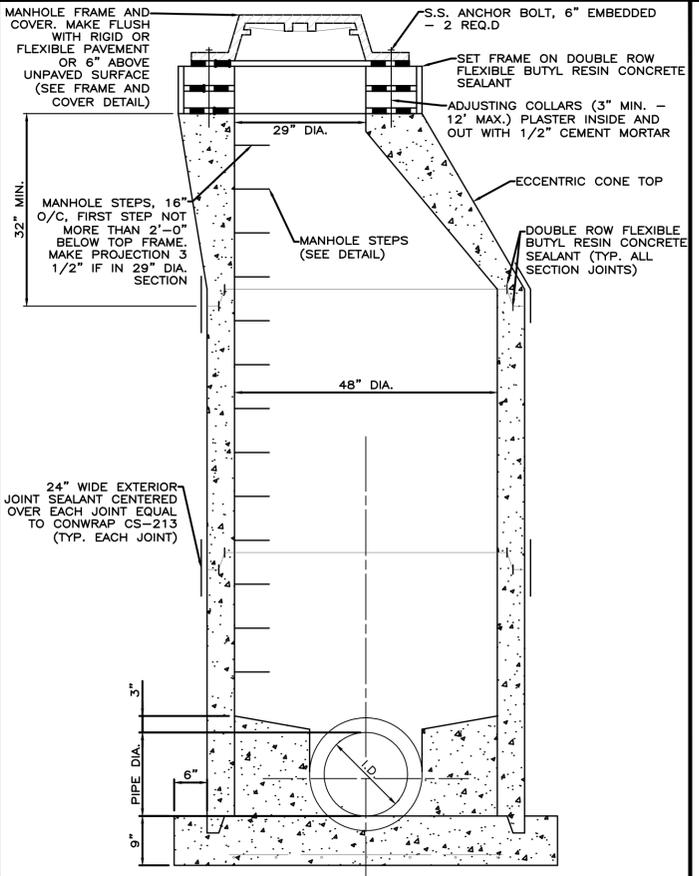
NOTE:

ALL ABANDONED IN PLACE PIPING SHALL HAVE ENDS CAPPED.



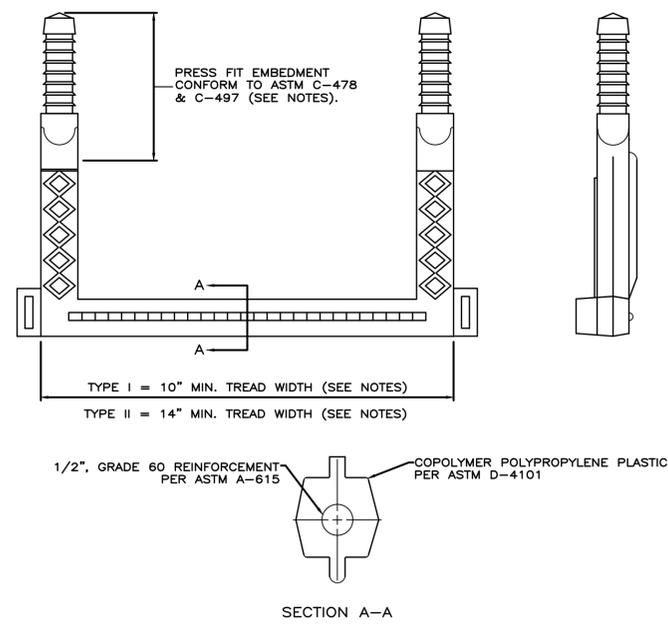
PIPE CONNECTION TO EXISTING MANHOLE DETAIL

N.T.S.



STANDARD TYPE "A" ECCENTRIC MANHOLE (24" ID AND LESS)

N.T.S.



NOTES:

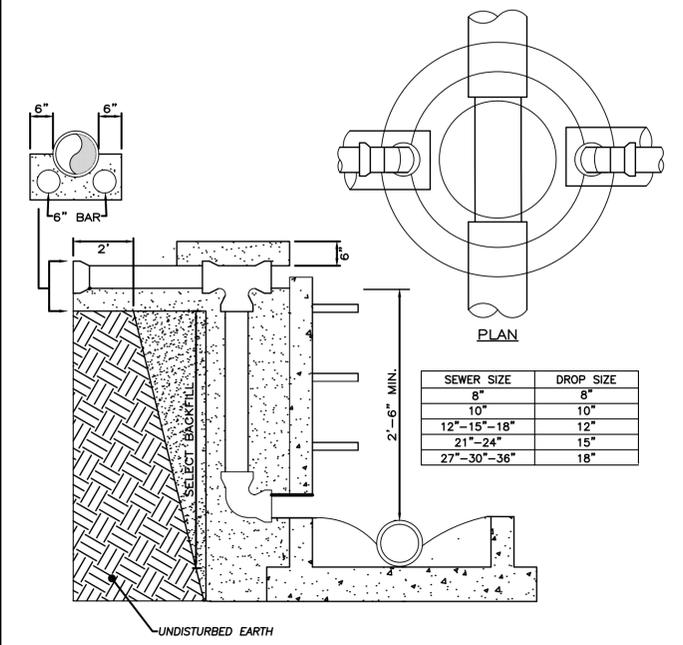
1. USE TYPE I STEP FOR MANHOLES OR CIRCULAR STRUCTURES OF 5'-0" DIA. OR LESS - USE 16" C/C SPACING.

2. USE TYPE II STEP FOR FLAT WALL STRUCTURES SUCH AS VAULTS, WELLS, ETC. OR CIRCULAR STRUCTURES OVER 5'-0" DIA. - USE 12" C/C SPACING.

3. MOUNTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH MFR'S RECOMMENDATIONS.

TYPICAL MANHOLE STEP DETAIL

N.T.S.



DROP ATTACHMENT

N.T.S.



CT Consultants
engineers | architects | planners

20 Federal Plaza West, Suite 303 - Youngstown, Ohio 44503
Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com

DATE	REVISION	NO.

PROJECT NO: **14485**

SCALE: AS SHOWN

DATE: 1/28/16

DESIGN: PMT

DRAWN: PMT

CHECK: IAG/SAS

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN & GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO

CONSTRUCTION DETAILS 2

DRAWING NAME	
CD-2	
SHEET	OF
4	28

H:\2014\14485\DWG\PLAN SET\CD_CD-14485_CD.DWG - 2/1/2016 2:17:10 PM - TATE



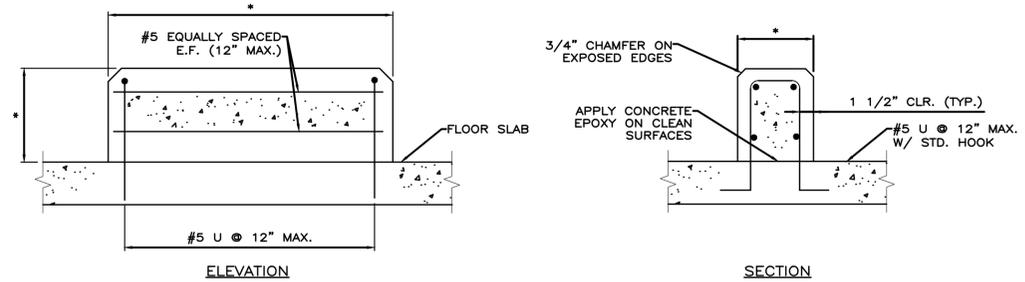
CT Consultants
 engineers | architects | planners
 20 Federal Plaza West, Suite 303 - Youngstown, Ohio 44503
 Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com

PROJECT NO:	14485	DATE:	1/28/16	DESIGN:	PMT	DRAWN:	PMT	CHECK:	IAG/SAS
SCALE:	AS SHOWN								
NO.		REVISION							
		DATE							

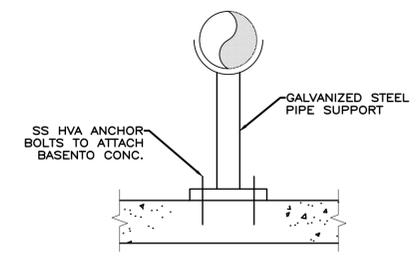
MAHONING COUNTY SANITARY ENGINEER
 EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
 & GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
 NEW MIDDLETOWN, OHIO

CONSTRUCTION DETAILS 3

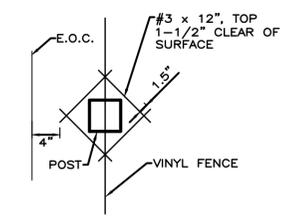
DRAWING NAME	
CD-3	
SHEET	OF
5	28



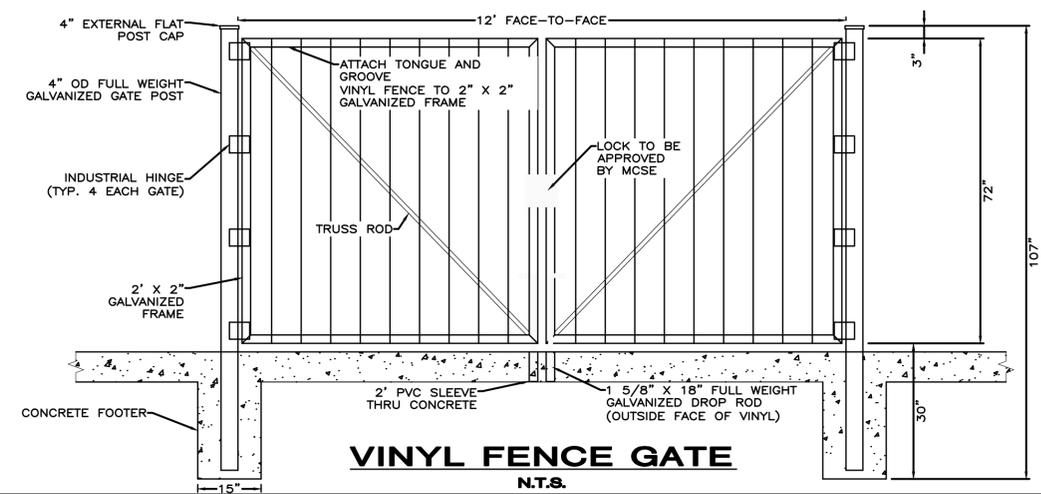
EQUIPMENT OR PIPING SUPPORT
 N.T.S.
 * REFER TO PLAN AND DETAILS



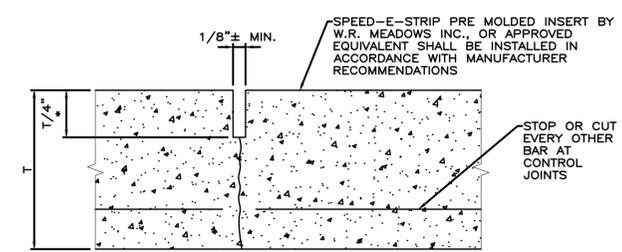
CRADLE PIPING SUPPORT DETAIL
 N.T.S.



PAD REBAR AT POSTS
 N.T.S.

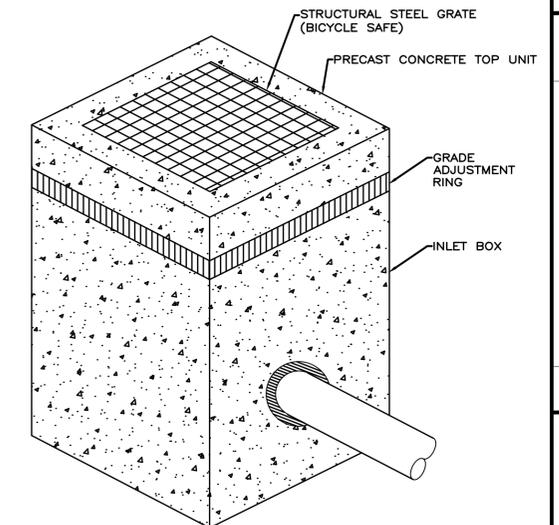


VINYL FENCE GATE
 N.T.S.

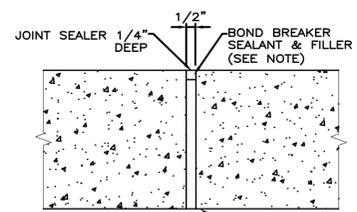


NOTES:
 1. THE "SOFF-CUT" MACHINE BY SOFF-CUT INTERNATIONAL MAY BE USED TO CUT CONTROL JOINTS WITHIN APPROXIMATELY 2 HOURS AFTER FINAL FINISHING. THE DEPTH OF CUT SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
 2. IF CONTROL JOINTS ARE SAW CUT PER NOTE #1 THEY SHALL IF CONTROL JOINTS ARE SAW CUT PER NOTE #1 THEY SHALL FILLED WITH A JOINT SEALANT.
 * T/4 FOR PRE MOLDED INSERTS ONLY (6\"/>

CONTROL JOINT TYPE "C.J."
 N.T.S.

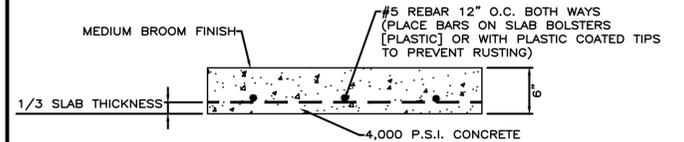


ISOMETRIC VIEW



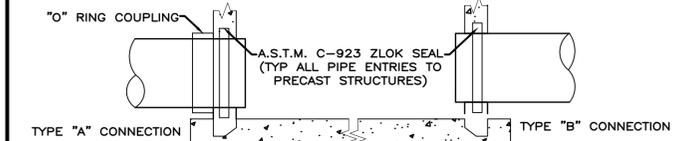
NOTES:
 APPLY BOND BREAKER SUCH AS FOIL OR POLYETHYLENE TAPE BETWEEN FILLER MATERIAL AND JOINT SEALER ONLY. SEALER SHALL ADHERE TO BOTH CONCRETE SURFACES ONLY.

TYPE "A" JOINT
 N.T.S.

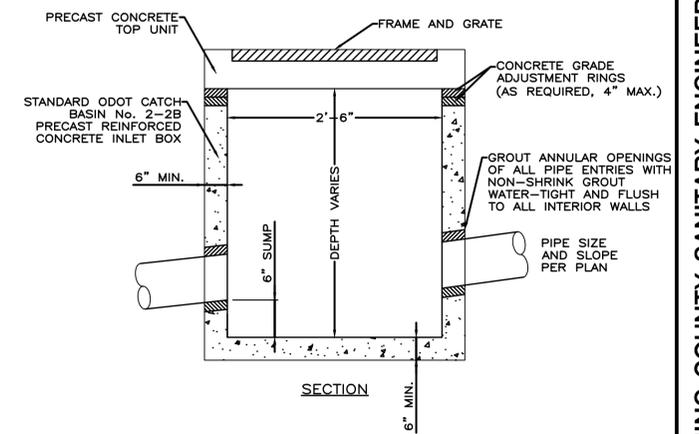


CONCRETE PAD CROSS SECTION (PUMP STATION)
 N.T.S.

NOTES:
 THE CONTRACTOR MAY USE EITHER TYPE "A" CONNECTION OR TYPE "B" CONNECTION, OR BOTH.

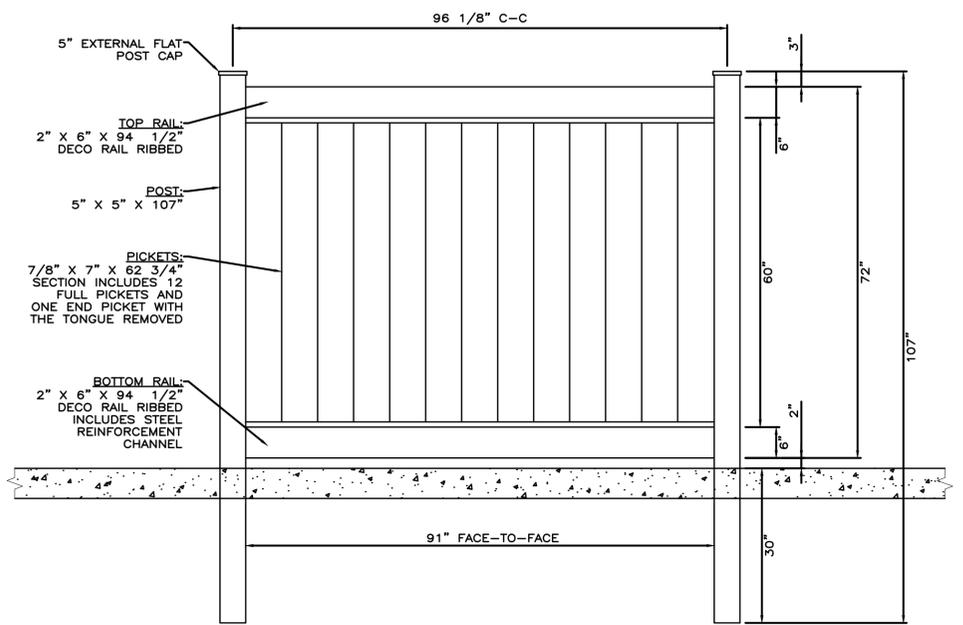


PIPE CONNECTION AT MANHOLES
 N.T.S.



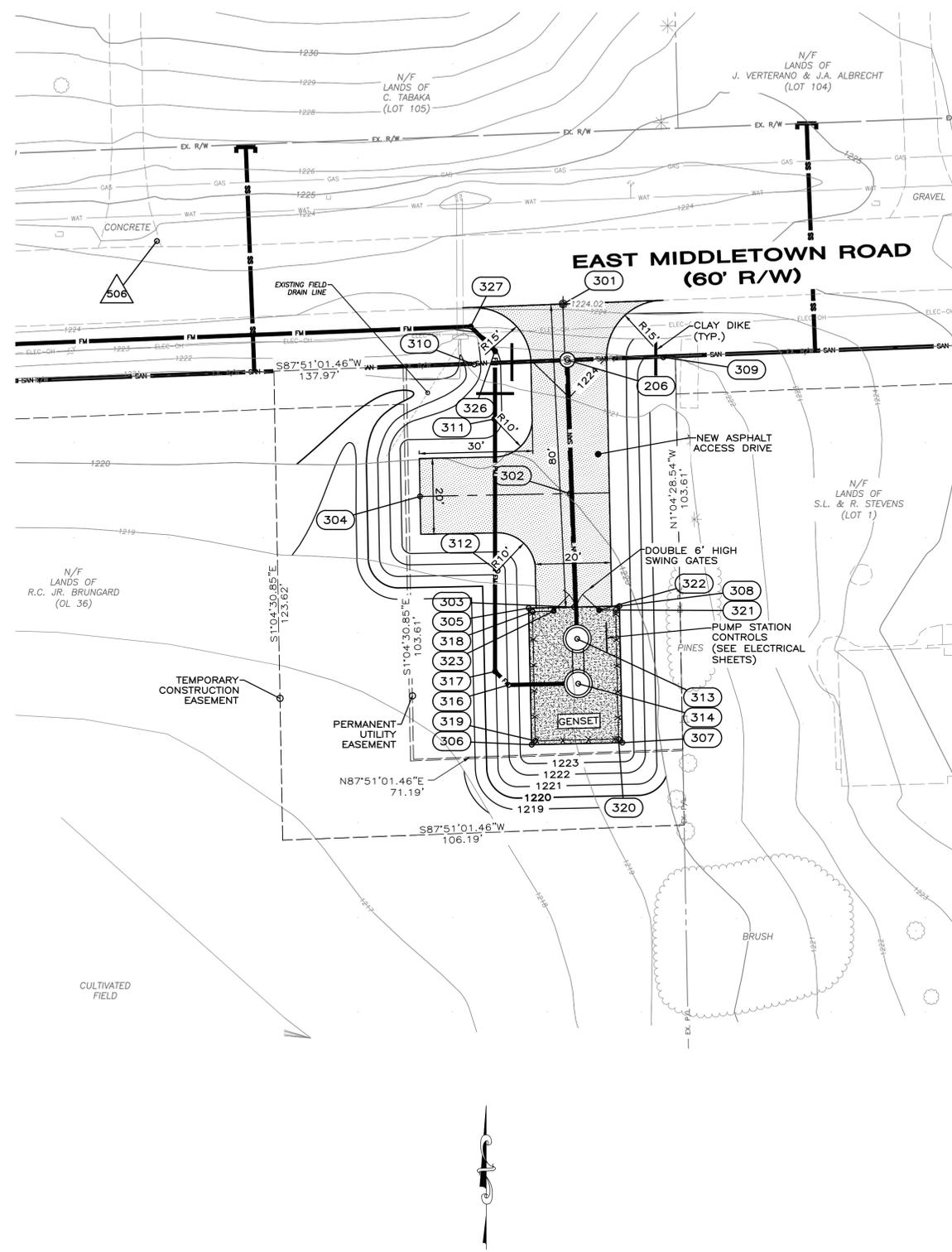
NOTES:
 1. CONSTRUCT IN ACCORDANCE WITH ODOT 2013 CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 706.13, AND HYDRAULIC STANDARD CONSTRUCTION DRAWING CB-1.1 (CATCH BASIN NO. 2-2B).
 2. NO PIPES SHALL ENTER INLET BOX AT CORNERS.

STORM SEWER INLET BOX DETAIL
 N.T.S.

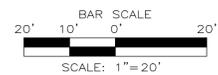


VINYL FENCE SECTION
 N.T.S.

H:\2014\14485\DWG\PLAN SETS\CAD_14485_CD.DWG - 2/1/2016 2:17:15 PM - TATE



PROPOSED PUMP STATION SITE PLAN



PUMP STATION COORDINATE DATA

Point #	Elevation	Northing	Easting	Description
206	1224.00	476621.81	2505205.38	MH 5
301	1224.02	476636.60	2505204.21	CL DRIVE
302	1223.75	476586.65	2505206.06	CL DRIVE
303	1223.50	476556.72	2505207.16	CL DRIVE
304	1223.50	476585.90	2505166.48	CL DRIVE
305	1223.25	476556.46	2505195.16	CONC PAD
306	1223.00	476520.47	2505195.95	CONC PAD
307	1223.00	476520.99	2505219.94	CONC PAD
308	1223.25	476556.98	2505219.16	CONC PAD
309	1222.03	476622.57	2505230.77	CENTER OF RADIUS
310	1221.23	476620.67	2505180.78	CENTER OF RADIUS
311	1220.49	476606.28	2505186.10	CENTER OF RADIUS
312	1219.11	476566.29	2505186.94	CENTER OF RADIUS
313	1223.50	476548.35	2505208.01	W.WELL
314	1223.50	476536.52	2505208.26	VALVE VAULT
316	1212.03	476536.20	2505189.86	45° BEND CL FLOW
317	1212.03	476539.77	2505186.29	45° BEND CL FLOW
318	1223.25	476555.48	2505196.18	FENCE
319	1223.00	476521.49	2505196.92	FENCE
320	1223.00	476521.97	2505218.94	FENCE
321	1223.25	476555.96	2505218.18	FENCE
322	1223.25	476555.90	2505213.75	FENCE
323	1223.25	476555.64	2505201.75	FENCE
324	1212.04	476624.24	2505186.29	45° BEND CL FLOW
325	1212.04	476630.65	2505179.87	45° BEND CL FLOW

NOTES:

- APPROXIMATE LOCATION OF EXISTING FIELD DRAIN LINE. THE CONTRACTOR SHALL NOT DISTURB FIELD DRAIN LINE, IF THIS LINE IS DAMAGED THE CONTRACTOR IS RESPONSIBLE FOR REPLACING FIELD DRAIN LINE IN KIND.

H:\2014\14485\DWG\PLAN SETS\CAD_14485_PS-1.DWG - 2/8/2016 10:23:22 AM - TXE



PROJECT NO:	NO.	REVISION	DATE
14485	AS SHOWN		
	2/8/16		
SCALE:			
DATE:			
DESIGN:			
DRAWN:			
CHECK:			

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
PROPOSED PUMP STATION
SITE PLAN

DRAWING NAME	
PS-1	
SHEET	OF
7	28



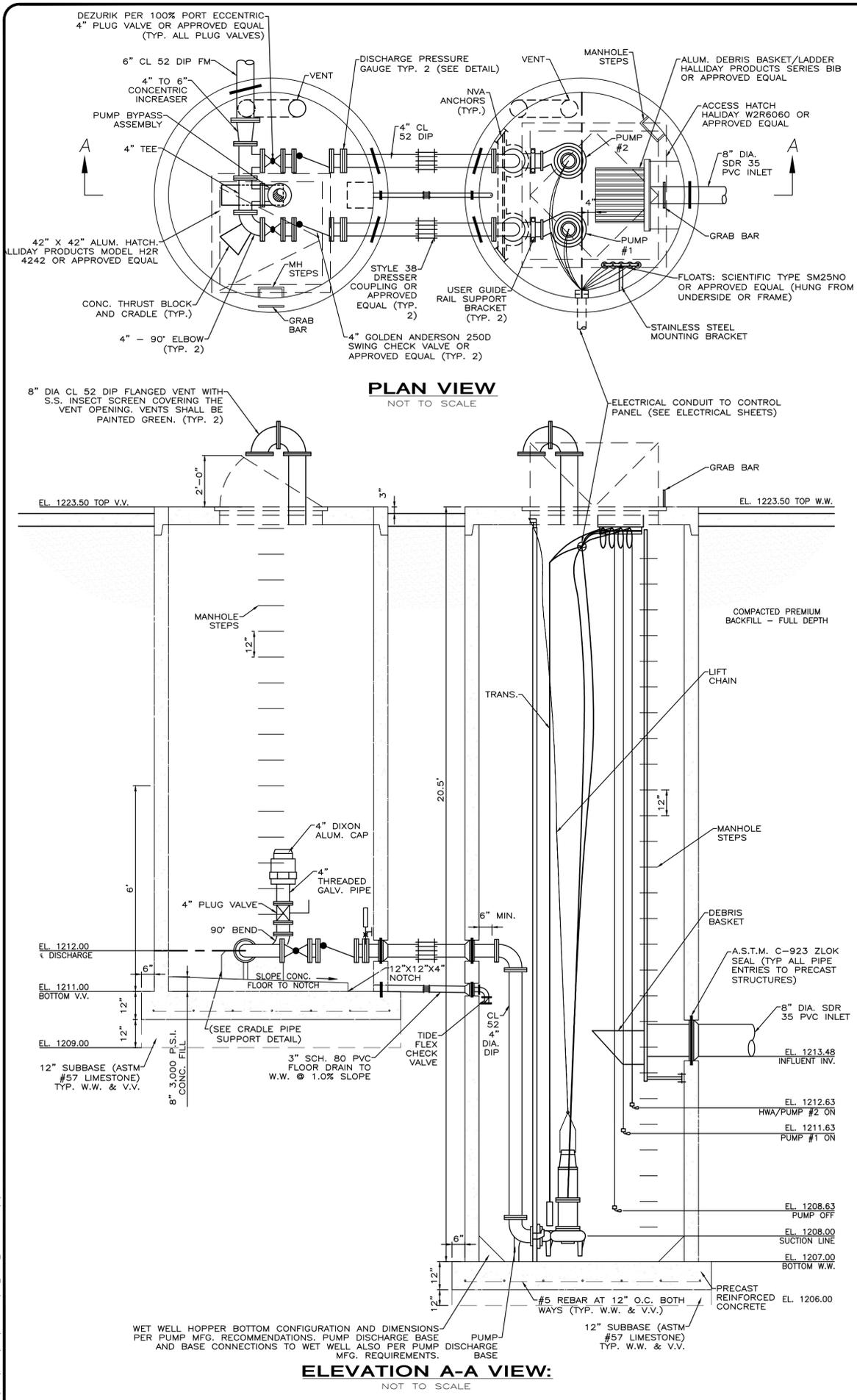
CT Consultants
 engineers | architects | planners
 20 Federal Plaza West, Suite 303 - Youngstown, Ohio 45503
 Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com

NO.	REVISION	DATE

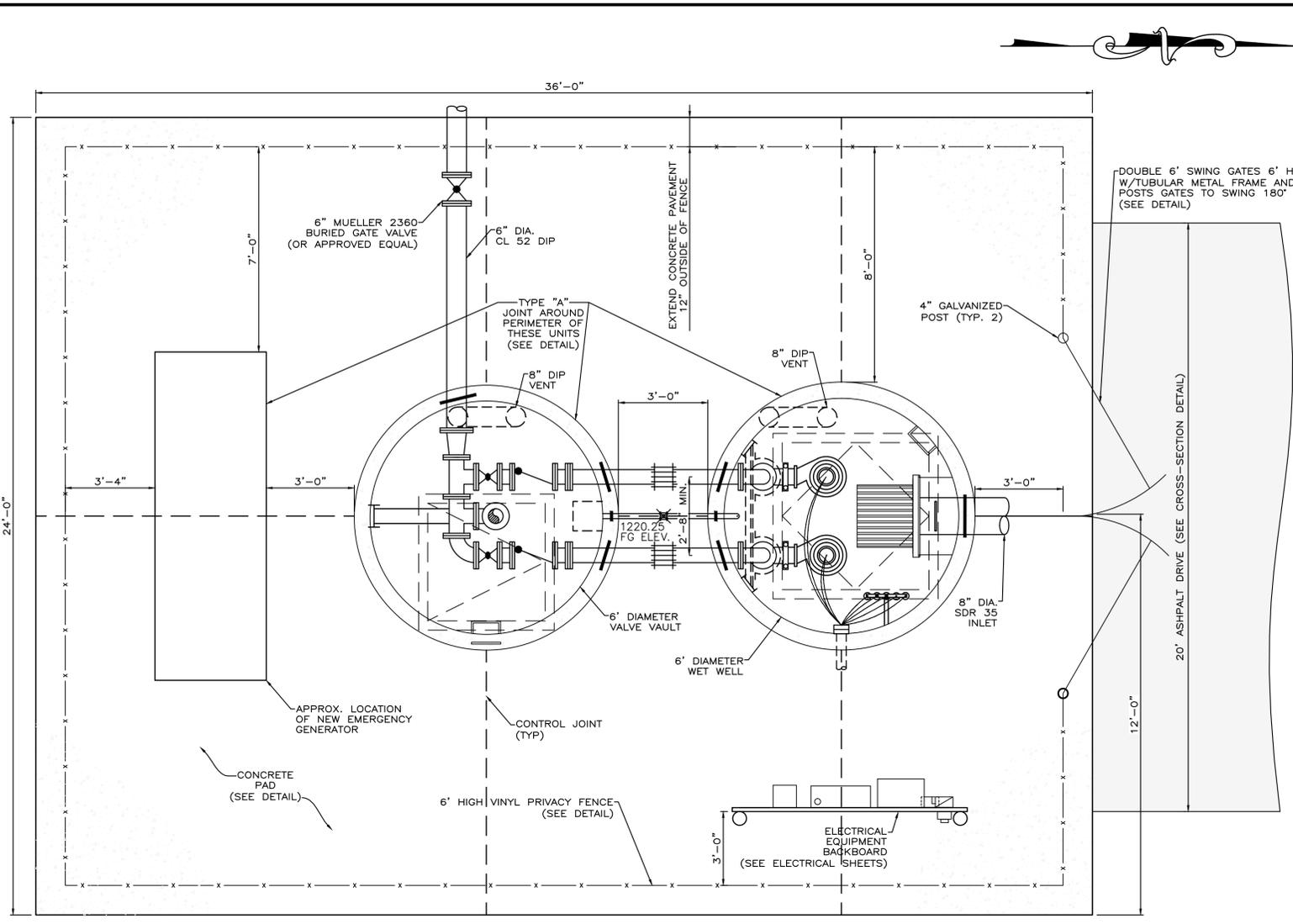
PROJECT NO:	14485
SCALE:	AS SHOWN
DATE:	1/28/16
DESIGN:	PMT
DRAWN:	PMT
CHECK:	IAG/SAS

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
PUMP STATION
PLAN AND PROFILE

DRAWING NAME	
PS-2	
SHEET	OF
8	28



ELEVATION A-A VIEW:
 NOT TO SCALE

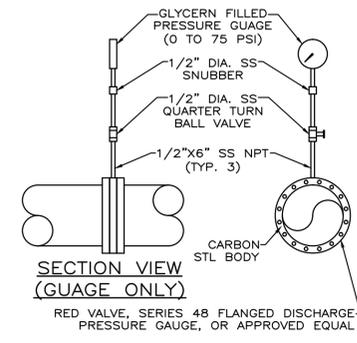


PUMP STATION SITE PLAN
 NOT TO SCALE

PUMP STATION NOTES:

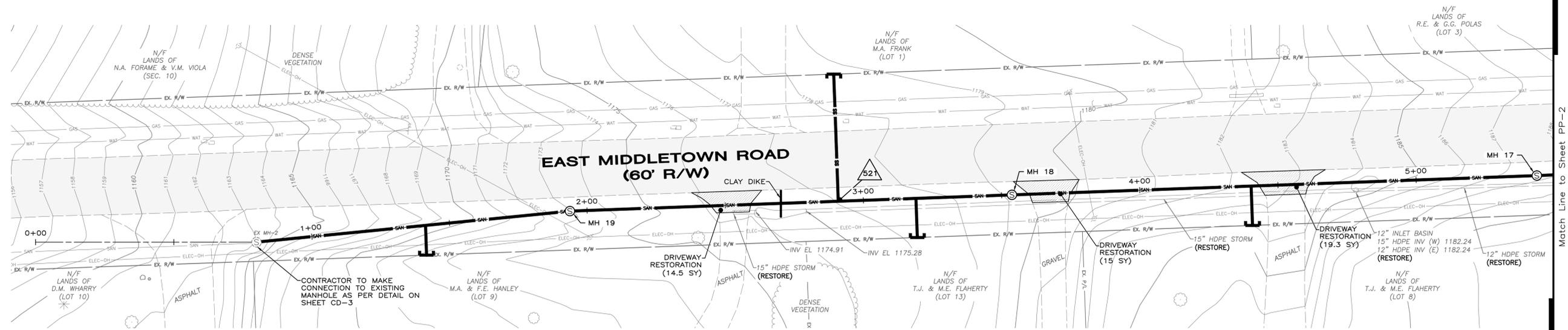
- OPENINGS IN RISER SECTIONS FOR PREFABRICATED FLEXIBLE CONNECTIONS MEETING A.S.T.M. SPEC. C-923 OR MODULAR MECHANICAL TYPE SEAL OF INTERLOCKING SYNTHETIC RUBBER LINKS (LINKSEAL OR APPROVED EQUIVALENT)
- JOINT SEAL BETWEEN MANHOLE SECTIONS SHALL COMPLY WITH A.S.T.M. C-443 OR LATEST EDITION. FOLLOW SAME TONGUE AND GROOVE DETAIL AS ON MANHOLE DETAIL. ALSO FOLLOW SAME EXTERNAL JOINT DETAIL AS ON MANHOLE DETAIL.
- 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.
- SEAL LIFT HOLES WITH APPROVED NON-SHRINK GROUT AND COAT WITH BITUMASTIC SEALANT.
- ALL PUMP STATION WET WELL AND VALVE VAULT PIPING TO BE FLANGED DUCTILE IRON PIPE CL. 52.
- 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 N69 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.
- SEE ELECTRICAL SHEETS FOR WATER LEVEL DETECTOR MOUNTING AND ELECTRICAL WIRING (OR APPROVED EQUAL).
- DISCHARGE PRESSURE GAUGES (2) SHALL READ FROM 0 TO 75 PSI. DISCHARGE PRESSURE GAUGES SHALL BE INSTALLED UPSTREAM OF CHECK VALVE.
- LIFT HOIST WILL BE PROVIDED BY OWNER.
- 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-LF. 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 (CRANE PROVIDED BY OWNER). DESIGN OF CHAIN SHALL BE COMMENSURATE WITH PUMP LOAD AND FACTOR OF SAFETY OF 3.
- CONCRETE MIX DESIGN IN CONTACT WITH WASTEWATER MUST BE IN ACCORDANCE WITH ACI 350R AND SUCH CONCRETE SHALL UTILIZE TYPE II CEMENT. XYPEX ADMX C-1000 SHALL BE USED FOR CONCRETE WATERPROOFING.

SANITARY PUMP STATION PUMP DATA	
TYPE OF PUMP:	SUBMERSIBLE EXPLOSION-PROOF (VORTEX)
ARRANGEMENT:	DUPLEX
PUMPED FLUID:	RAW SEWAGE
ENCLOSURE:	NEMA TEFC
LIQUID TEMPERATURE:	UP TO 140° F
DESIGN CAPACITY, EACH:	300 GPM (CURRENT DUTY POINT)
T.D.H.:	58.6 FT. (CURRENT DUTY POINT)
IMPELLER DIAMETER:	8.75 IN. (CURRENT DUTY POINT)
MIN. NAMEPLATE H.P.:	15 H.P.
MOTOR SPEED:	1,750 RPM
MODEL:	MYERS 4RC/RXC, OR APPROVED EQUAL
POWER REQUIREMENTS:	460 VOLT, 3 PHASE, 60 HZ
DISCHARGE SIZE:	4"

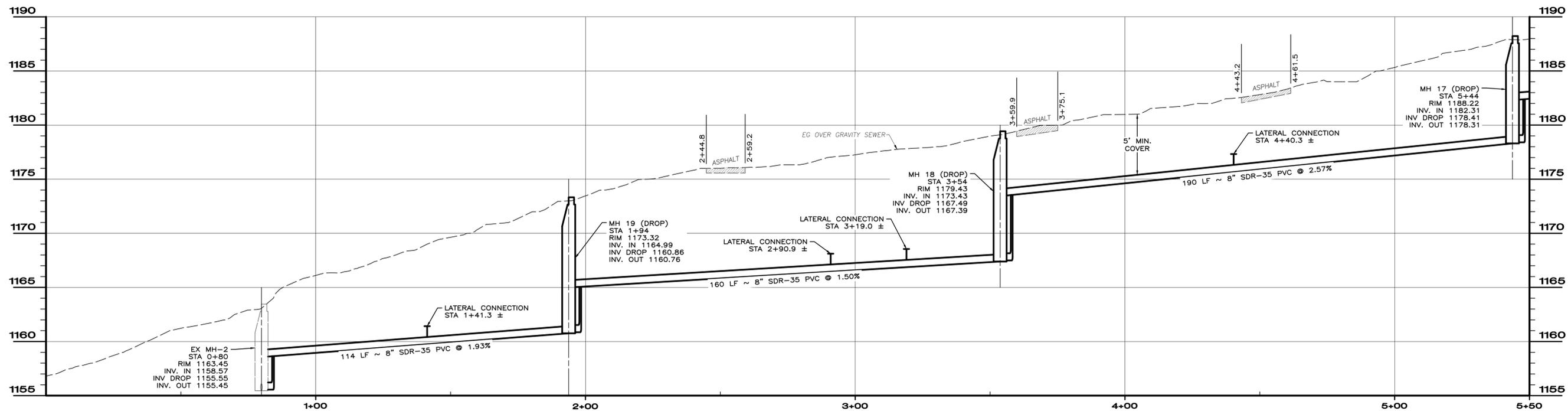
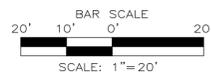


TYPICAL DISCHARGE PRESSURE GAUGE
 NOT TO SCALE

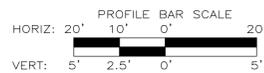
H:\2014\14485\DWG\PLAN SET\PLAN SET\PS-2.DWG - 2/1/2016 2:18:19 PM - XAE



PLAN STA 0+00 TO STA 5+50



PROFILE STA 0+00 TO STA 5+50



CT Consultants
 engineers | architects | planners
 20 Federal Plaza West, Suite 301 - Youngstown, Ohio 44503
 Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com

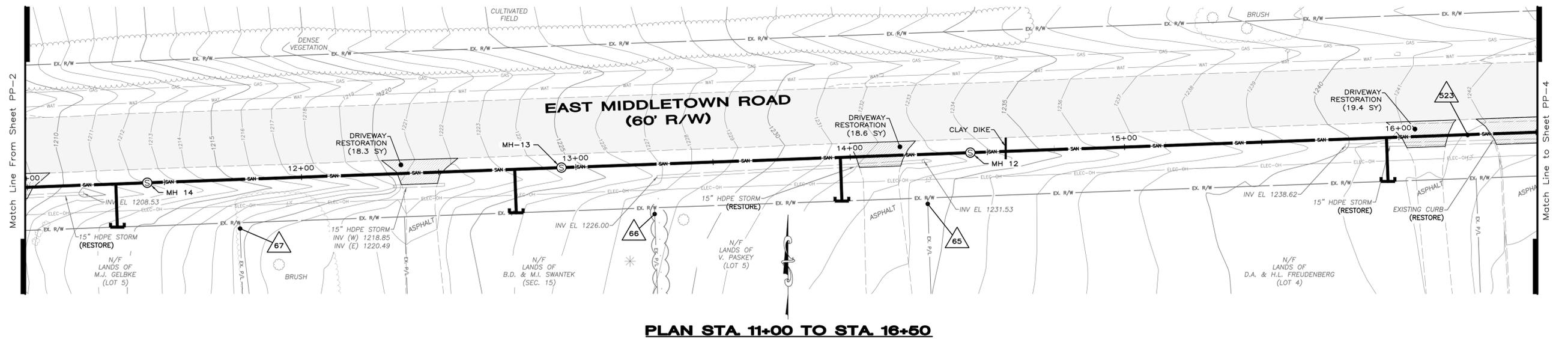
NO.	REVISION	DATE

PROJECT NO:	14485
SCALE:	AS SHOWN
DATE:	1/28/16
DESIGN:	PMT
DRAWN:	PMT
CHECK:	IAG/SAS

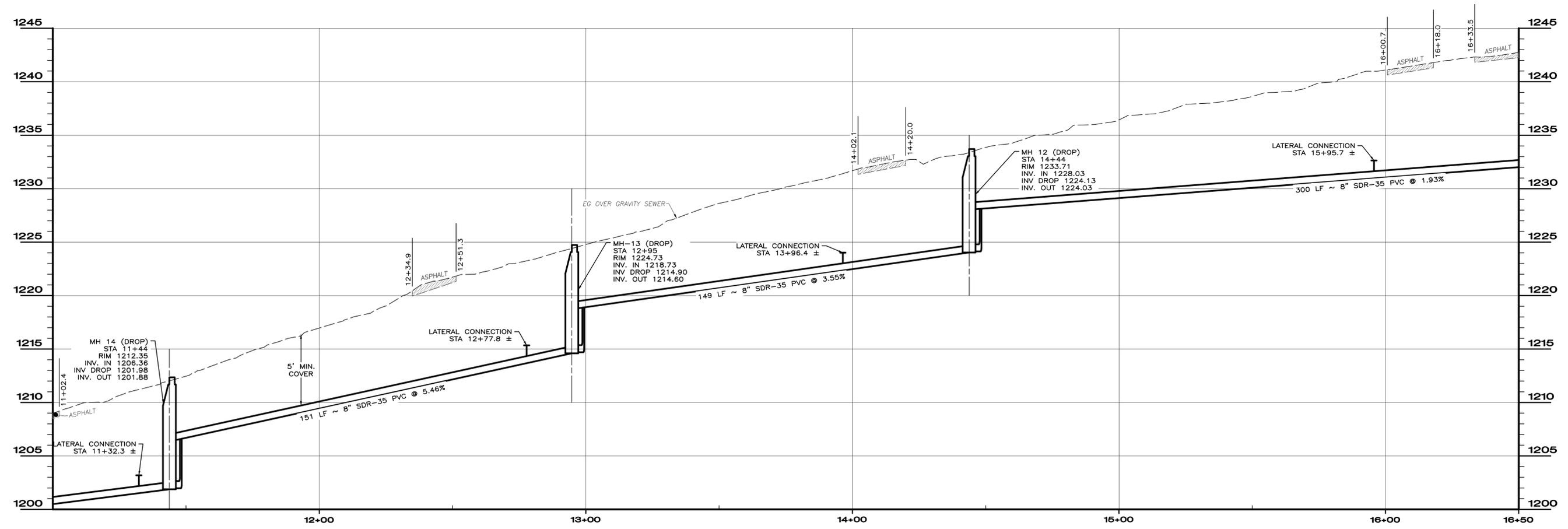
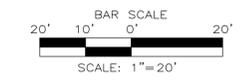
MAHONING COUNTY SANITARY ENGINEER
 EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
 & GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
 NEW MIDDLETOWN, OHIO
PLAN & PROFILE
STA: 0+00 TO STA: 5+50

DRAWING NAME	
PP-1	
SHEET	OF
9	28

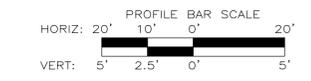
H:\2014\14485\DWG\PLAN SETS\CAD_14485_PP.DWG - 2/1/2016 2:18:56 PM - DATE



PLAN STA. 11+00 TO STA. 16+50

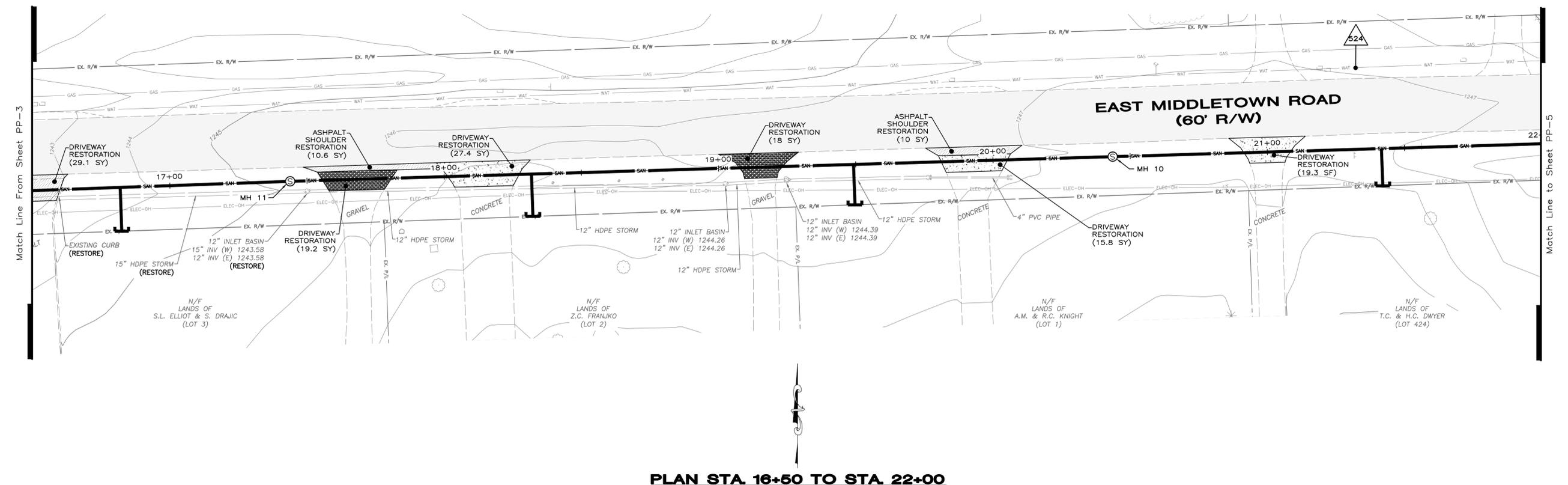


PROFILE STA. 11+00 TO STA. 16+50

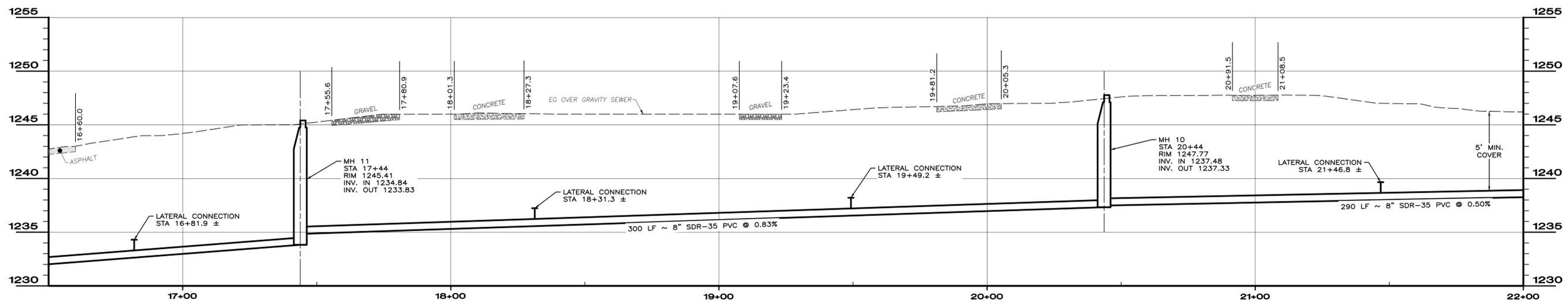
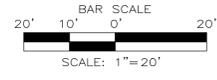


H:\2014\14485\DWG\PLAN SETS\CAD_14485_PP.DWG - 2/1/2016 2:19:16 PM - DATE

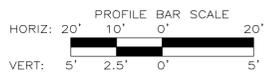
PROJECT NO.	DATE
14485	
SCALE: AS SHOWN	
DATE: 1/28/16	
DESIGN: PWT	
DRAWN: PWT	
CHECK: IAG/SAS	
REVISION NO.	
MAHoning COUNTY SANITARY ENGINEER EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN & GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT NEW MIDDLETOWN, OHIO PLAN & PROFILE STA: 11+00 TO STA: 16+50	
DRAWING NAME	
PP-3	
SHEET	OF
11	28



PLAN STA. 16+50 TO STA. 22+00



PROFILE STA. 16+50 TO STA. 22+00

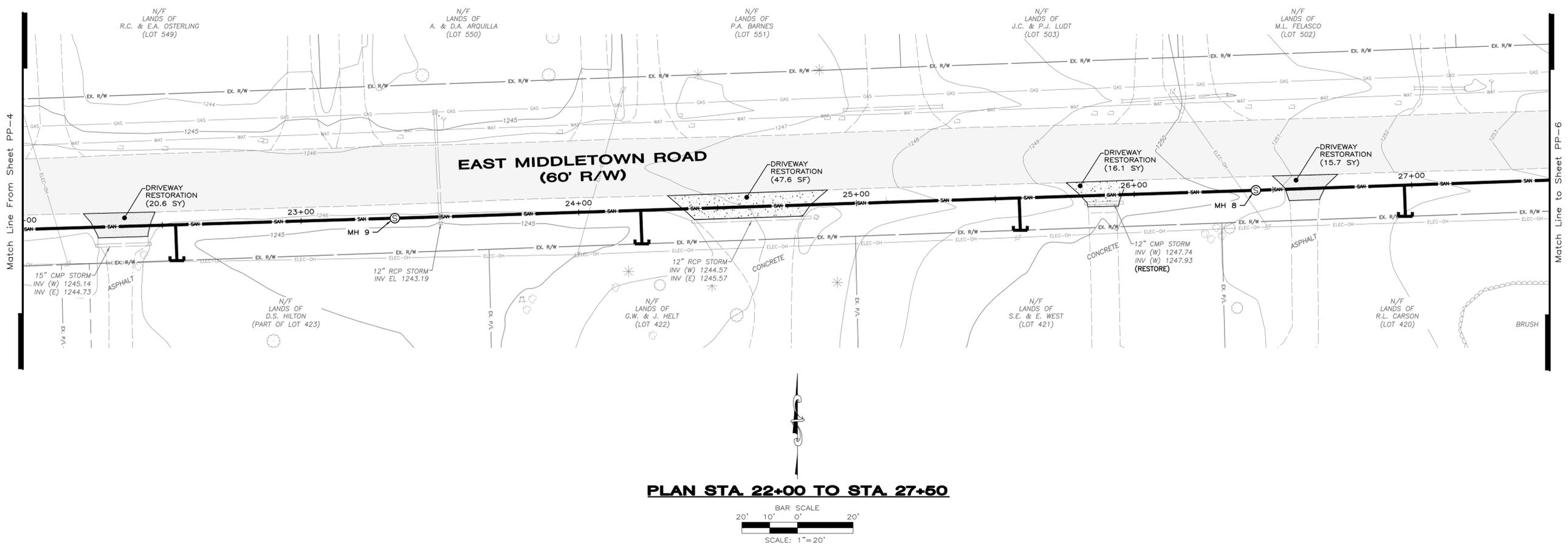


PROJECT NO.	NO.	REVISION	DATE
14485	AS SHOWN		
	DATE: 1/28/16		
DESIGN: PMT			
DRAWN: PMT			
CHECK: IAG/SAS			

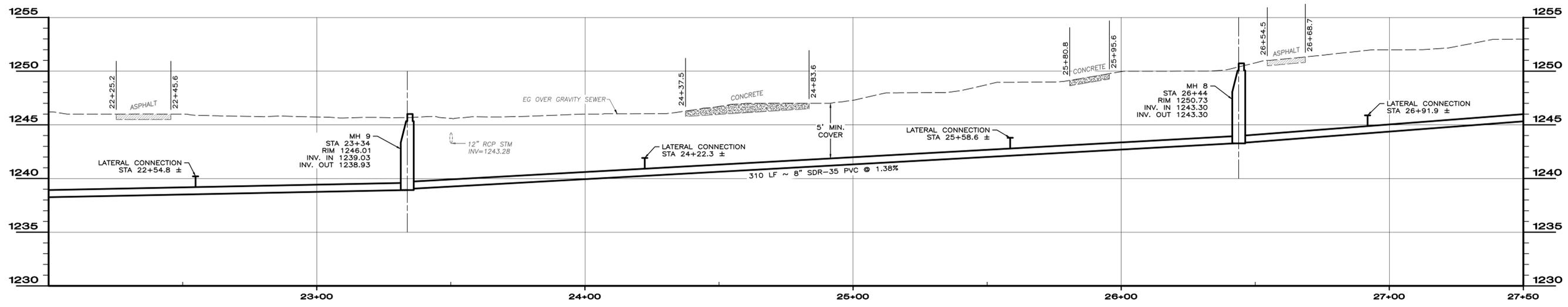
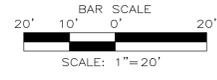
MAHONING COUNTY SANITARY ENGINEER
 EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
 & GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
 NEW MIDDLETOWN, OHIO
PLAN & PROFILE
STA: 16+50 TO STA: 22+00

DRAWING NAME	
PP-4	
SHEET	OF
12	28

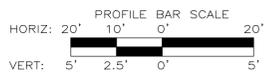
H:\2014\14485\DWG\PLAN_SETS\CAD_14485_PP.DWG - 2/1/2016 2:19:26 PM - TATE



PLAN STA. 22+00 TO STA. 27+50



PROFILE STA. 22+00 TO STA. 27+50



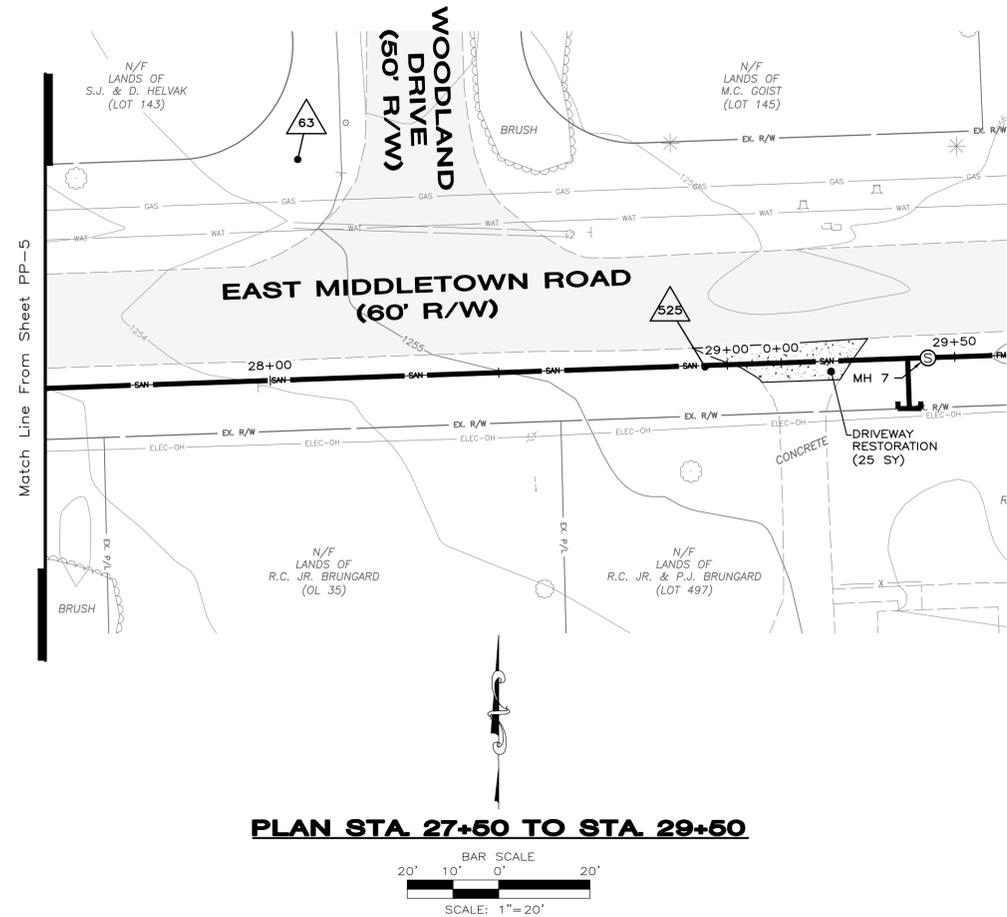
NO.	REVISION	DATE

PROJECT NO:	14485
SCALE:	AS SHOWN
DATE:	1/28/16
DESIGN:	PMT
DRAWN:	PMT
CHECK:	IAG/SAS

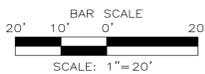
MAHoning COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
PLAN & PROFILE
STA: 22+00 TO STA: 27+50

DRAWING NAME	
PP-5	
SHEET	OF
13	28

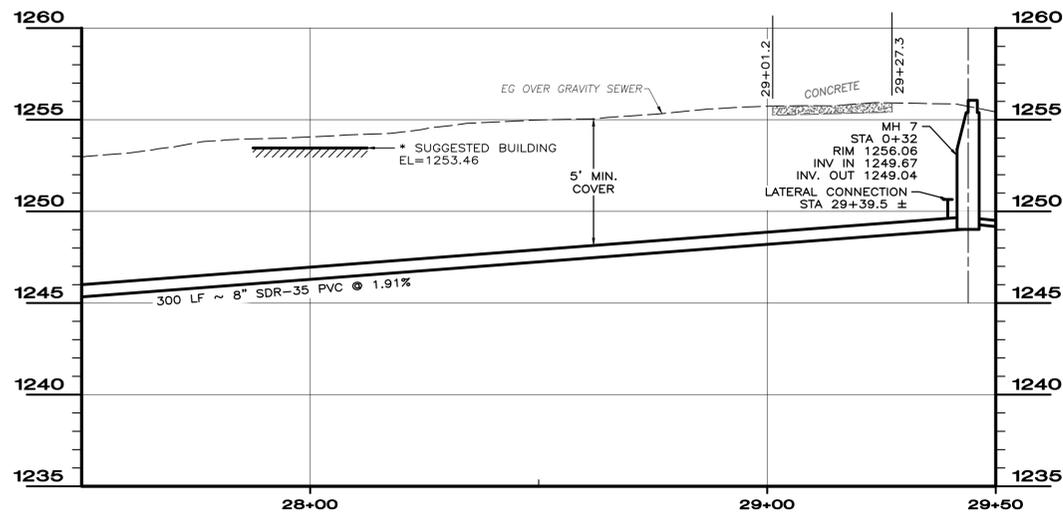
H:\2014\14485\DWG\PLAN SETS\CAD_14485_PP-5.DWG - 2/1/2016 2:19:36 PM - TATE



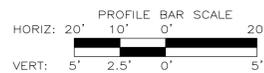
PLAN STA. 27+50 TO STA. 29+50



NOTE:
CONTRACTOR SHALL UTILIZE THE "DOUBLE DITCH"
CONSTRUCTION METHOD ACROSS ALL CROP AND
PASTURE LANDS



PROFILE STA. 27+50 TO STA. 29+50



- RECOMMENDED BUILDING ELEVATION
- MINIMUM SETBACK DISTANCE OF 150' FROM SANITARY SEWER
- MIN. LATERAL SLOPE OF 1/4" / FOOT
- 1' TURN-UP AT MAIN
- 2' TURN-UP UNDERNEATH BUILDING



PROJECT NO:	NO.	REVISION	DATE
14485	AS SHOWN		
	DATE: 6/9/17		
DESIGN:	PMT		
DRAWN:	PMT		
CHECK:	IAG/SAS		

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
PLAN & PROFILE
STA: 27+50 TO STA: 29+50

DRAWING NAME	
PP-6	
SHEET	OF
14	28

H:\2014\14485\DWG\PLAN_SEWERS\CD-14485_PP.DWG - 6/9/2017 3:51:18 PM - DATE



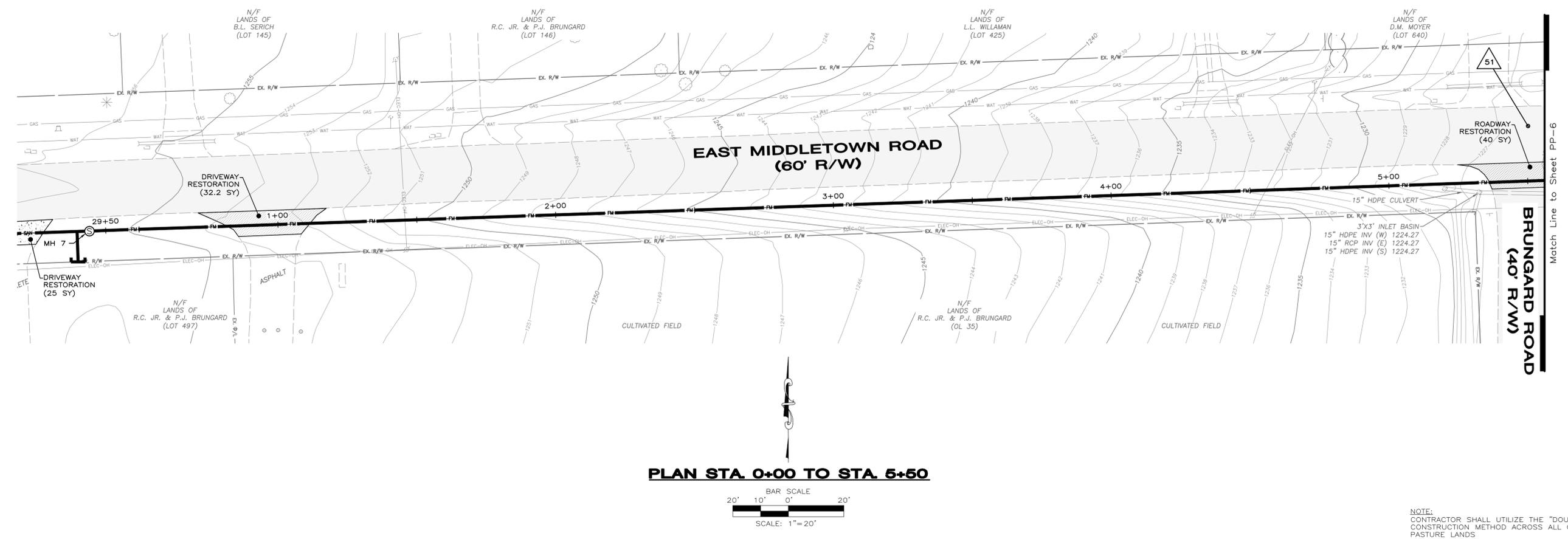
CT Consultants
 engineers | architects | planners
 20 Federal Plaza West, Suite 301, Youngstown, Ohio 44503
 Phone: 330.746.1200 • Fax: 330.746.1400 • www.ctconsultants.com

NO.	REVISION	DATE

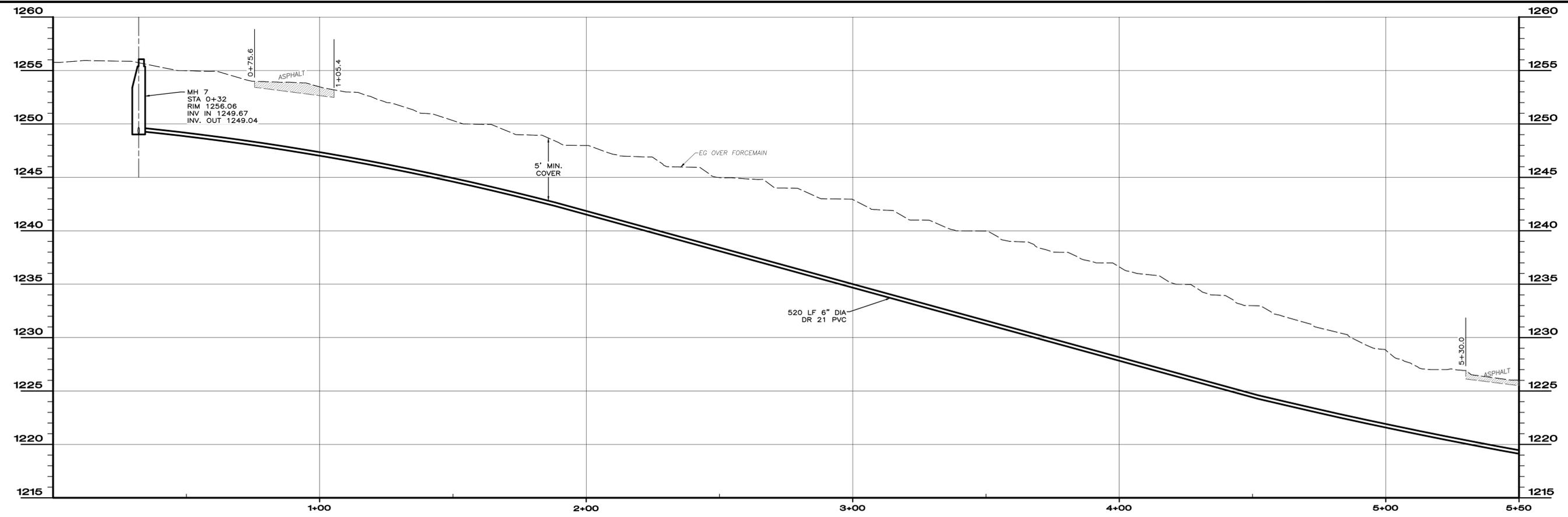
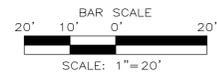
PROJECT NO: 14485
 SCALE: AS SHOWN
 DATE: 6/9/17
 DESIGN: PNT
 DRAWN: PNT
 CHECK: IAG/SAS

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
PLAN & PROFILE
STA: 0+00 TO STA: 5+50

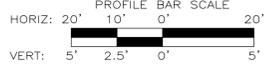
DRAWING NAME	
PP-7	
SHEET	OF
15	28



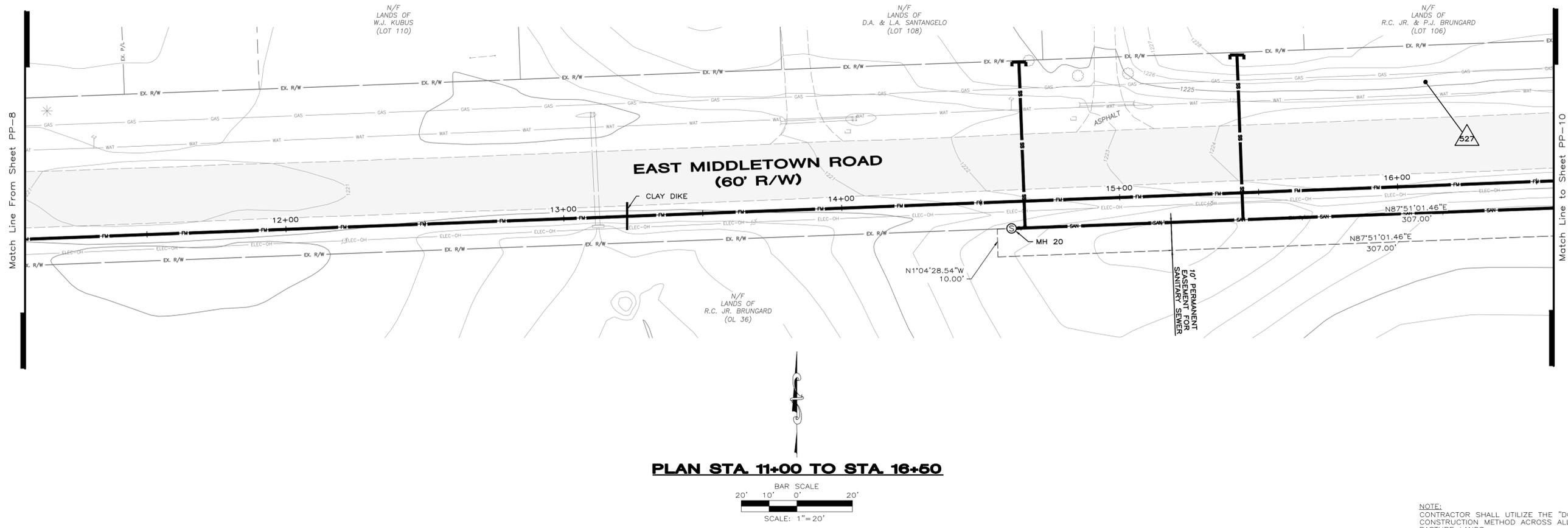
PLAN STA 0+00 TO STA 5+50



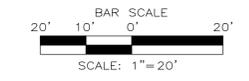
PROFILE STA 0+00 TO STA 5+50



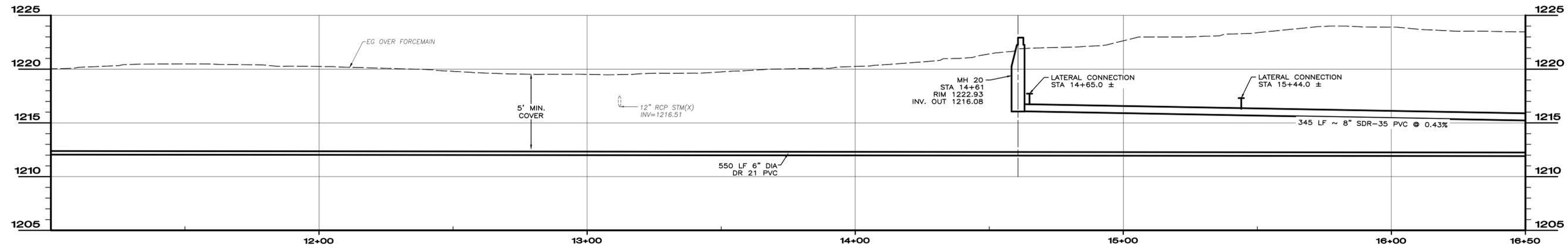
H:\2014\14485\WORK\PLAN SETS\CAD\14485_PP.DWG - 6/9/2017 3:51:42 PM - TATE



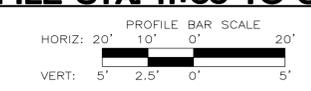
PLAN STA. 11+00 TO STA. 16+50



NOTE:
CONTRACTOR SHALL UTILIZE THE "DOUBLE DITCH"
CONSTRUCTION METHOD ACROSS ALL CROP AND
PASTURE LANDS



PROFILE STA. 11+00 TO STA. 16+50

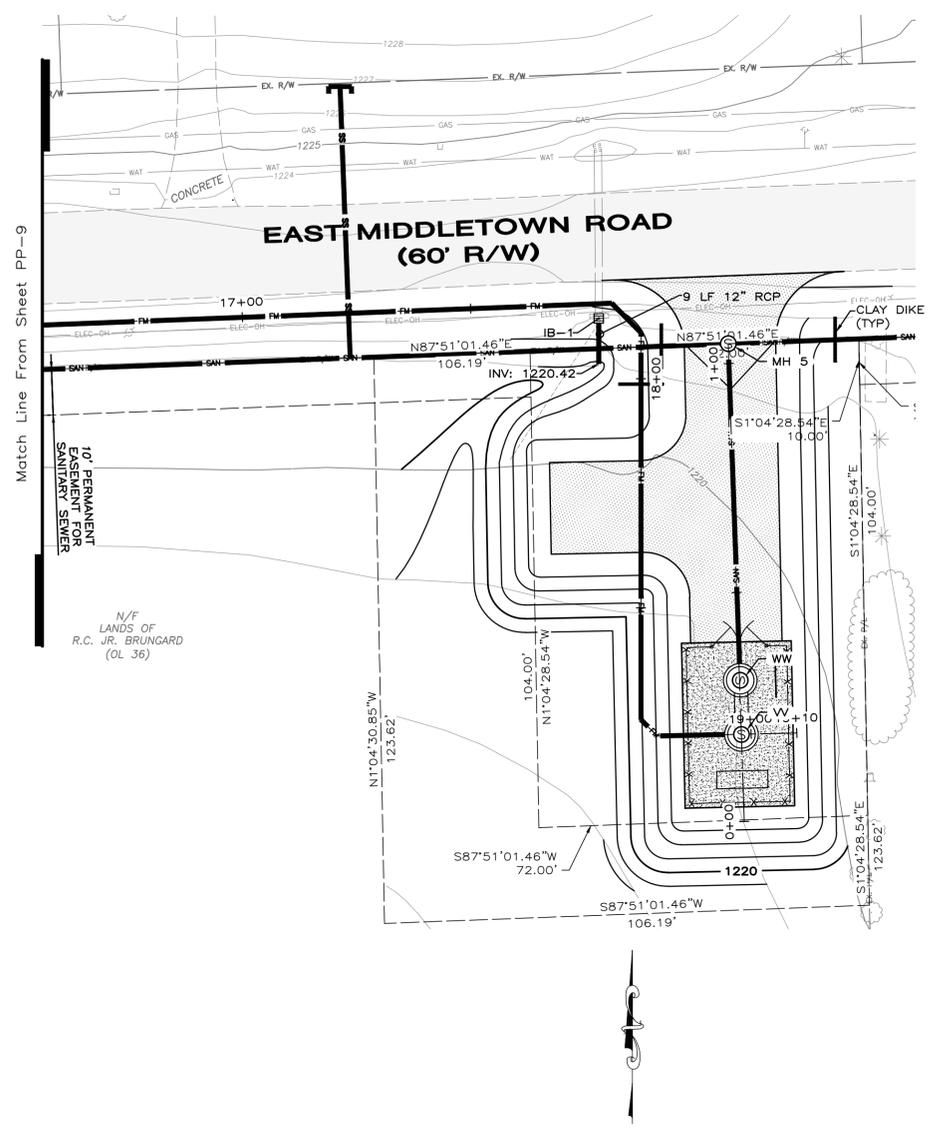


PROJECT NO:	NO.	REVISION	DATE
14485	AS SHOWN		
	DATE: 6/9/17		
DESIGN:	PMT		
DRAWN:	PMT		
CHECK:	IAG/SAS		

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
PLAN & PROFILE
STA: 11+00 TO STA: 16+50

DRAWING NAME	
PP-9	
SHEET	OF
17	28

H:\2014\14485\DWG\PLAN_SEWERS\CAD_14485_PP.DWG - 6/9/2017 3:52:27 PM - DATE

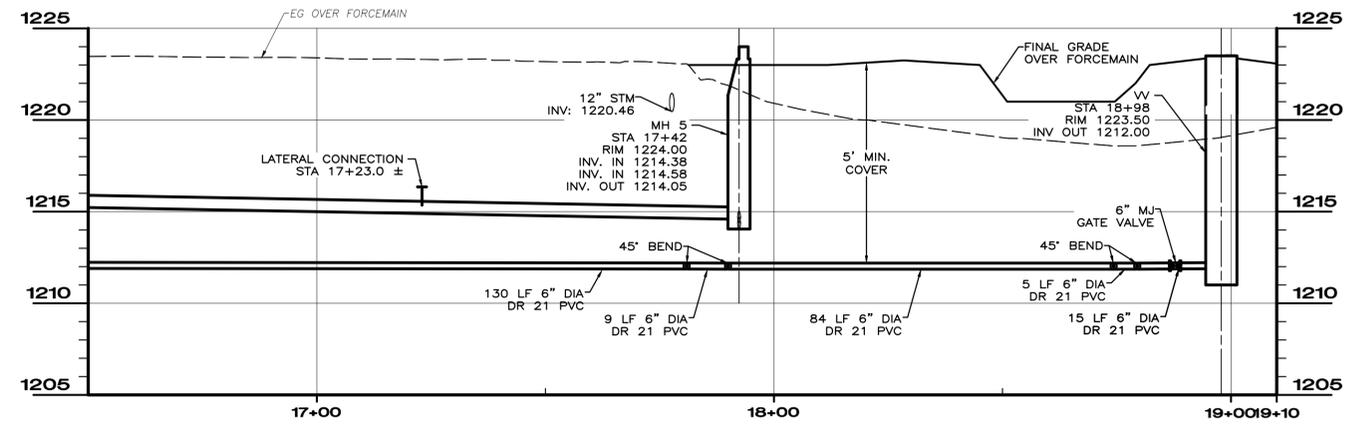


PLAN STA. 16+50 TO STA. 19+00

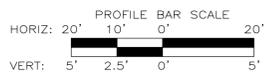


IB-1:
 RIM: 1222.90
 12" INV N: 1220.51
 12" INV S: 1220.51
 SUMP EL: 1220.00

- NOTES:**
- CONTRACTOR SHALL UTILIZE THE "DOUBLE DITCH" CONSTRUCTION METHOD ACROSS ALL CROP AND PASTURE LANDS
 - CONTRACTOR TO REMOVE EXISTING CONCRETE HEADWALL AND INSTALL IB-1 AND CONNECT ALL STORMWATER CONDUITS.



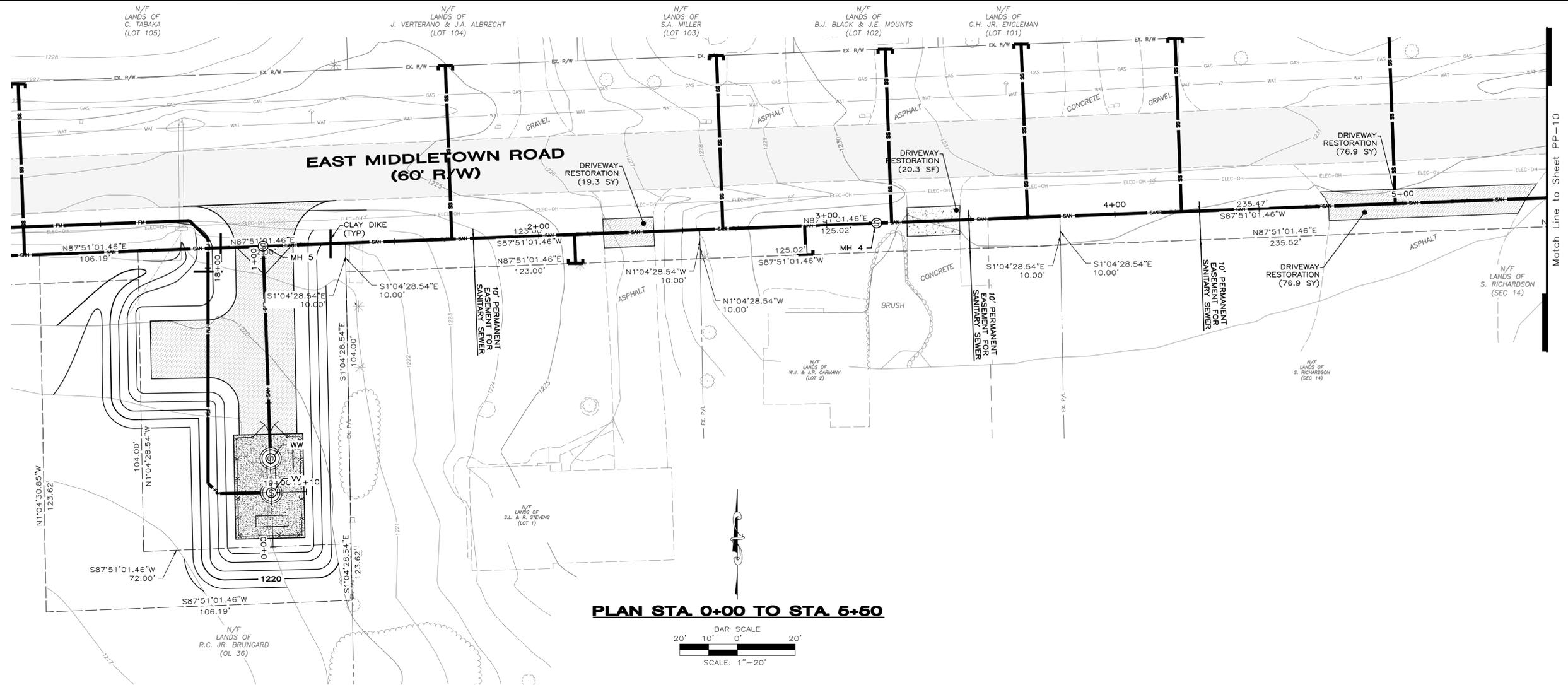
PROFILE STA. 16+50 TO STA. 19+00



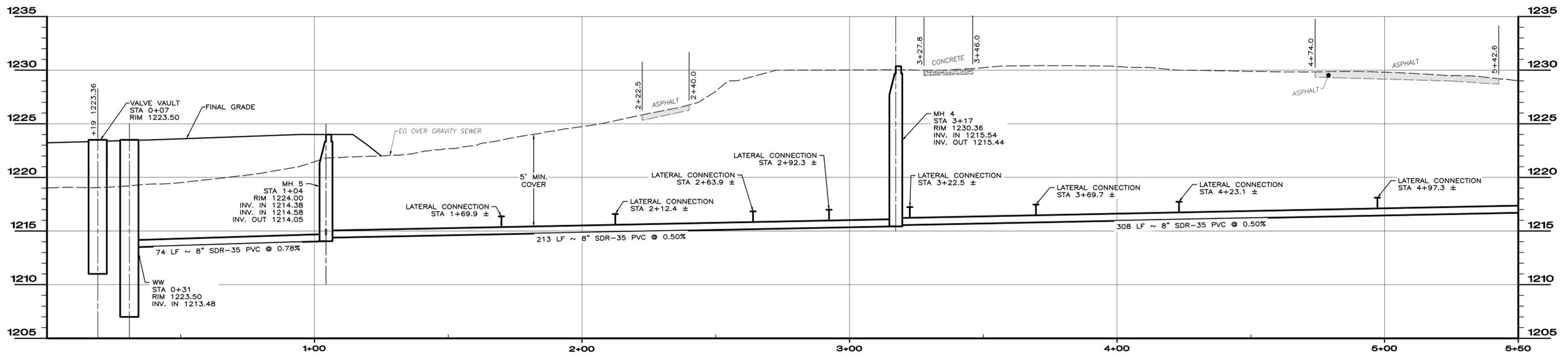
PROJECT NO:	NO.	REVISION	DATE
14485			

MAHONING COUNTY SANITARY ENGINEER
 EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
 & GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
 NEW MIDDLETOWN, OHIO
PLAN & PROFILE
STA: 16+50 TO STA: 19+00

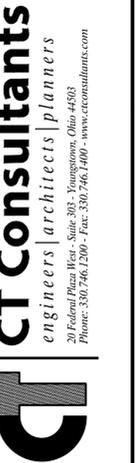
DRAWING NAME	
PP-10	
SHEET	OF
18	28



PLAN STA 0+00 TO STA 5+50



PROFILE STA 0+00 TO STA 5+50



NO.	REVISION	DATE

PROJECT NO:	14485
SCALE:	AS SHOWN
DATE:	1/28/16
DESIGN:	PMT
DRAWN:	PMT
CHECK:	IAG/SAS

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
PLAN & PROFILE
STA: 0+00 TO STA: 5+50

DRAWING NAME	
PP-11	
SHEET	OF
19	28

H:\2014\14485\DWG\PLAN_SETS\CAD_14485_PP.DWG - 2/1/2016 2:26:36 PM - TATE

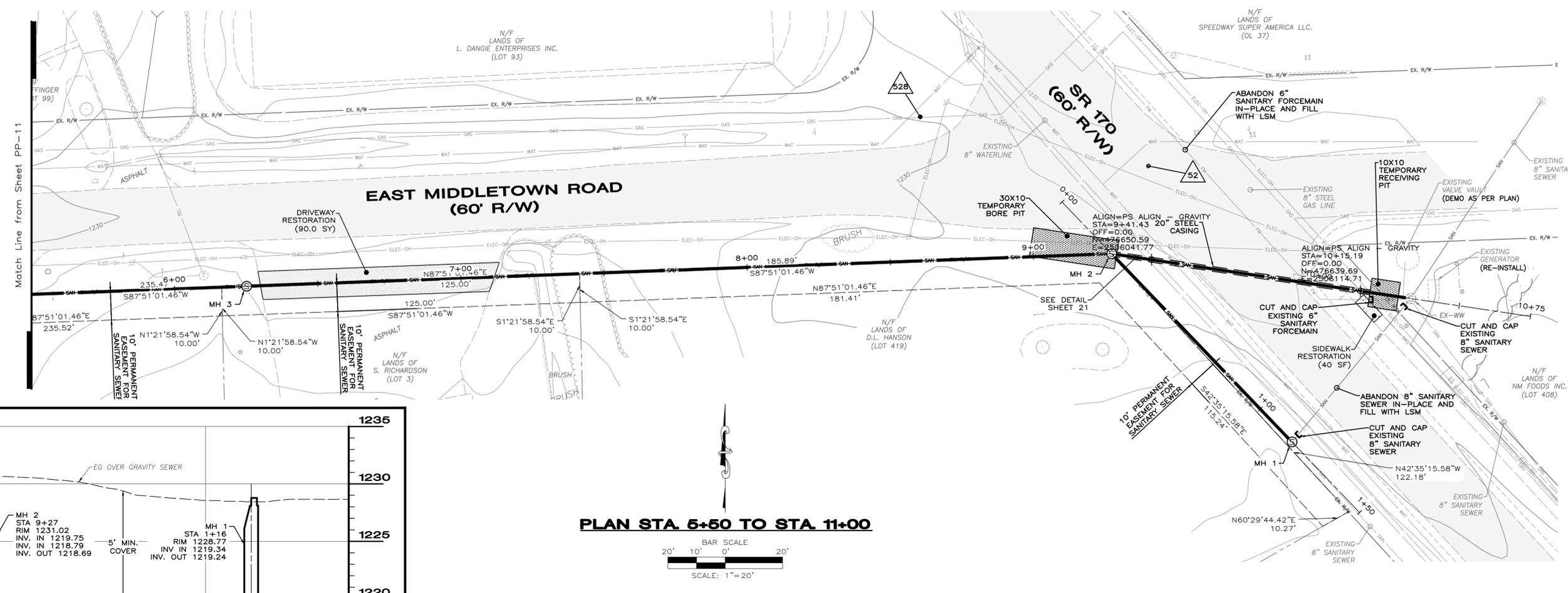


CT Consultants
 engineers | architects | planners
 20 Federal Plaza West, Suite 301 - Youngstown, Ohio 44503
 Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com

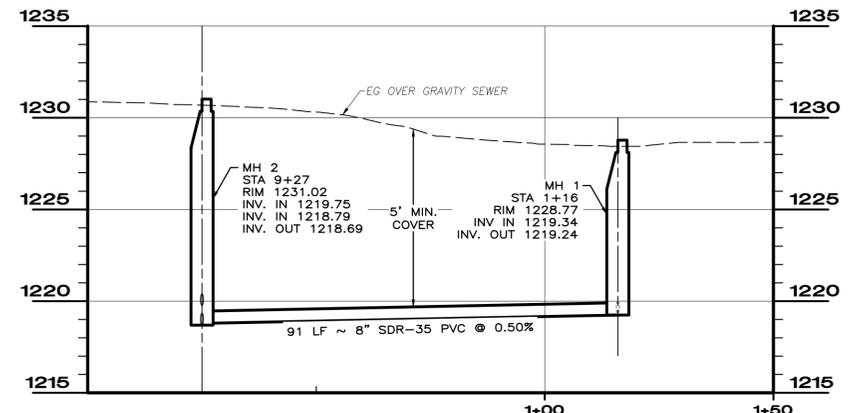
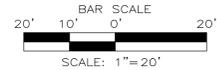
PROJECT NO.	NO.	REVISION	DATE
14485	AS SHOWN		
	1/28/16		
DESIGN:		PMT	
DRAWN:		PMT	
CHECK:		IAG/SAS	

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
PLAN & PROFILE
STA: 5+50 TO STA: 10+50

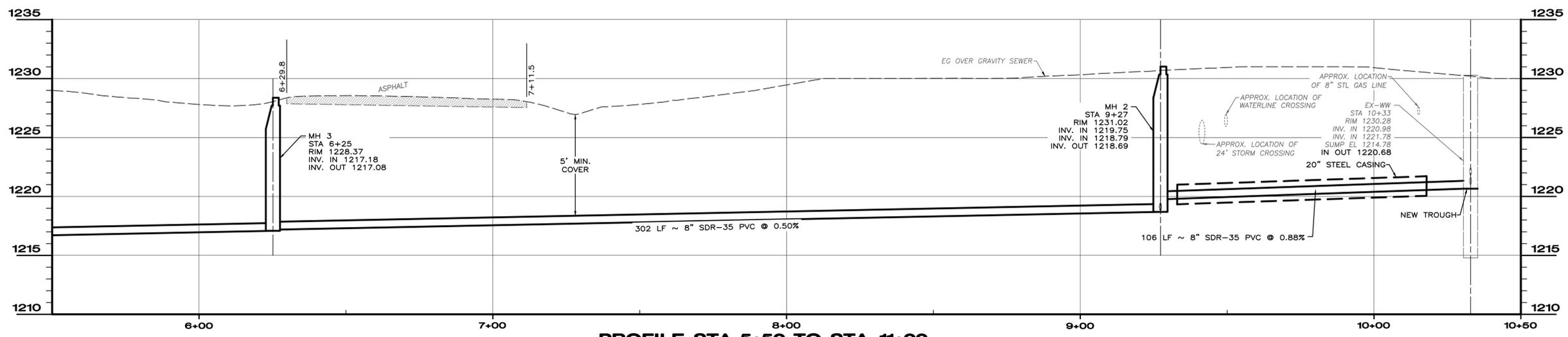
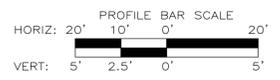
DRAWING NAME	
PP-12	
SHEET	OF
20	28



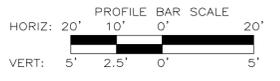
PLAN STA. 5+50 TO STA. 11+00



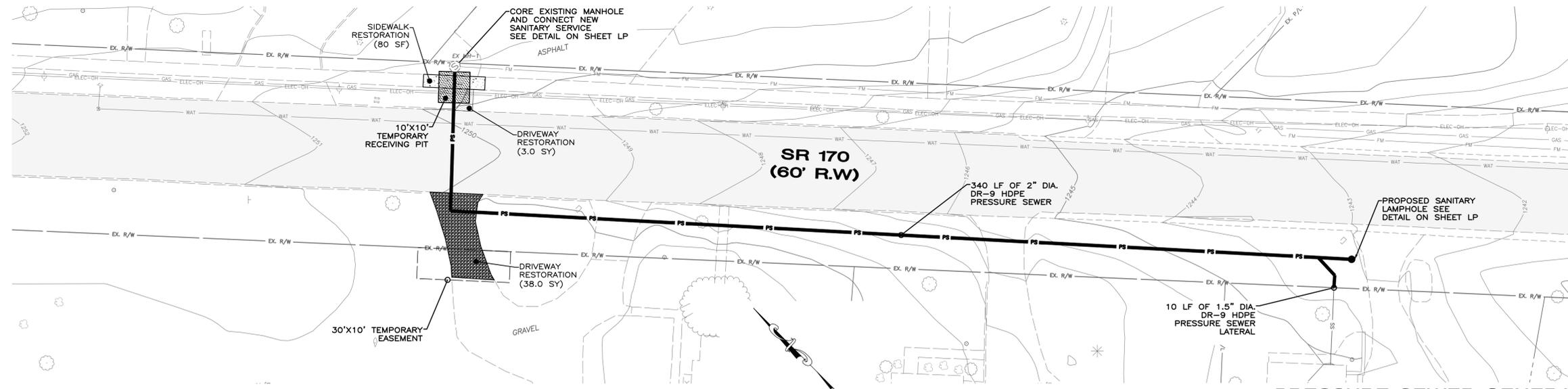
PROFILE STA 0+00 TO STA. 1+50



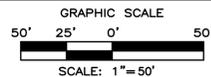
PROFILE STA 5+50 TO STA. 11+00



H:\2014\14485\DWG\PLAN SETS\CAD_14485_PP.DWG - 2/9/2016 10:28:36 AM - TAKE

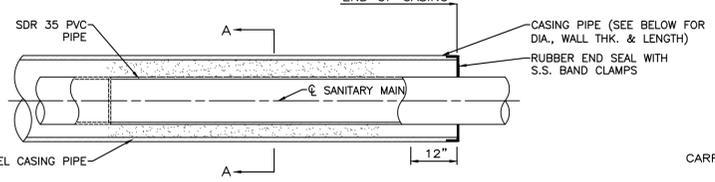
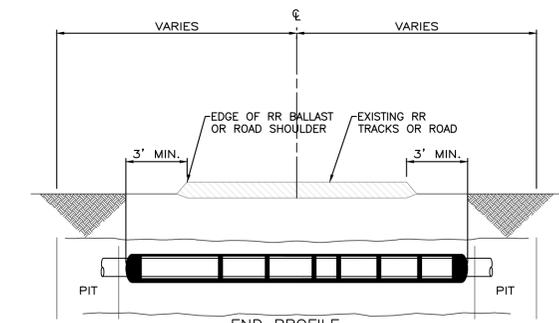


LATERAL CONNECTION PLAN



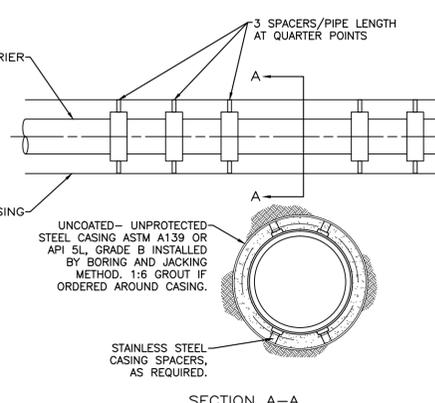
PRESSURE SEWER GENERAL NOTES:

- PRESSURE SEWER IS TO BE AT A MINIMUM OF FOUR FEET BENEATH FINAL FINISHED GRADE.
- TEN FEET OF SEPARATION SHALL BE MAINTAINED BETWEEN WATERLINE AND PRESSURE SEWER IN THE HORIZONTAL AND AT LEAST EIGHTEEN INCHES IN THE VERTICAL.
- PRESSURE SEWER LATERAL SHALL BE CONNECTED BY WYE FITTING AND CONNECTED VIA CORP STOP AT THE R/W LINE.
- ALL PIPING WITHIN EXISTING MANHOLE 1 SHALL BE SCH-40 PVC.
- DETECTOR TAPE SHALL BE 12 AWG STEEL-COPPER COMPOSITE WIRE WITH 45 MIL HIGH DENSITY POLYETHYLENE EXTERIOR COATING. 21% IACS CONDUCTIVITY TRACER WIRE SHALL BE ATTACHED TO THE PULLING EYE AND CROWN OF PVC PIPE WITH DUCT TAPE AT 24" ON CENTER AND HAVE A MINIMUM OF TWO FULL WRAPS AROUND THE PIPE.
- PRESSURE SEWER ROAD CROSSING SHALL BE HORIZONTAL DIRECTIONAL DRILLED.

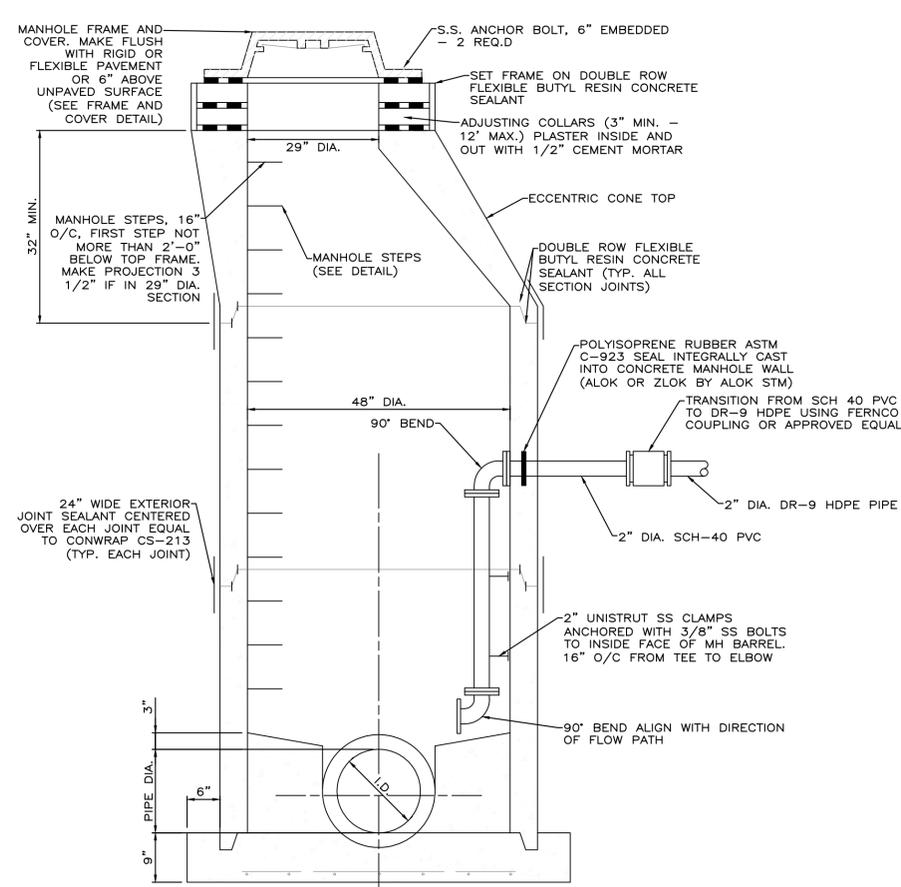


BORING MATERIALS SPECIFICATIONS 12" SANITARY MAIN		
DESCRIPTION	CASING PIPE	CARRIER PIPE
SIZE	20" O.D.	11.78" NOMINAL I.D.
WALL THICKNESS	3/8"	0.360" MIN.
BELL DIAMETER	N/A	13.94"
MATERIAL	STEEL	SDR 35 PVC
MIN. TEST PRESSURE	N/A	5 PSI
MAX. OPERATING PRESSURE	N/A	10 PSI
JOINT TYPE	WELDED	PVC PER ASTM D3034
EXTERNAL COATING	NONE	NONE
CATHODIC PROTECTION	AS REQUIRED	NONE

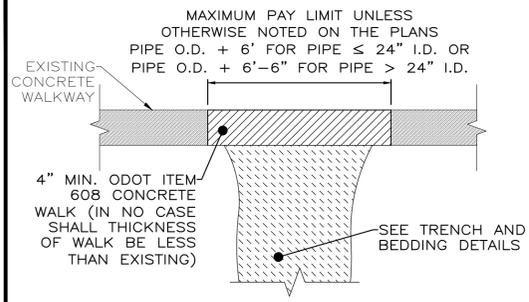
BORING MATERIALS SPECIFICATIONS 8" SANITARY MAIN		
DESCRIPTION	CASING PIPE	CARRIER PIPE
SIZE	20" O.D.	7.92" NOMINAL I.D.
WALL THICKNESS	3/8"	0.240" MIN.
BELL DIAMETER	N/A	9.36"
MATERIAL	STEEL	SDR 35 PVC
MIN. TEST PRESSURE	N/A	5 PSI
MAX. OPERATING PRESSURE	N/A	10 PSI
JOINT TYPE	WELDED	PVC PER ASTM D3034
EXTERNAL COATING	NONE	NONE
CATHODIC PROTECTION	AS REQUIRED	NONE



TYPICAL BORING INSTALLATION
NOT TO SCALE

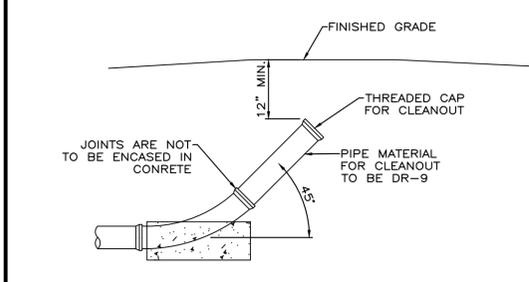


DROP MANHOLE (PRESSURE SEWER)
NOT TO SCALE

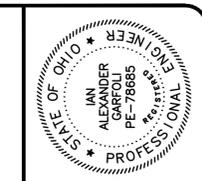


TYPE A WALK REPLACEMENT
NOT TO SCALE

NOTE:
1. EXISTING WALK SHALL BE REMOVED IN FULL SLABS AND REPLACED TO MAINTAIN THE EXISTING JOINT PATTERN.



LAMPHOLE DETAIL
NOT TO SCALE



CT Consultants
engineers | architects | planners
20 Federal Plaza West, Suite 301 - Youngstown, Ohio 44503
Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com

PROJECT NO:	14485
SCALE:	AS SHOWN
DATE:	1/28/16
DESIGN:	PMT
DRAWN:	PMT
CHECK:	IAG/SAS

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN & GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO

LATERAL CONNECTION PLAN

DRAWING NAME
LP

SHEET **21** OF **28**

H:\2014\14485\DWG\PLAN SETS\CAD_14485_LP.DWG - 2/1/2016 2:26:59 PM - TATE

EROSION AND SEDIMENTATION CONTROL NOTES:

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 ODNR 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 RESEDED 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 1000 SQ.FT. OF DISTURBED AREA OR TWO (2) TONS PER ACRE. ALL HYDROSEEDING MUST BE WOOD CELLULOSE FIBER AND APPLIED AT 2000 LBS/AC OR 46 POUNDS PER 1000 SQ.FT.

PERMANENT SEEDING:

1. PERMANENT SEEDING SHALL BE AS PER SEEDING CHART ON THIS SHEET.

EROSION AND SEDIMENTATION CONTROL LEGEND:

- SILT FENCE SF
- INLET PROTECTION
- SPOILS PILE
- SOILS TYPE
- SPOILS BOUNDARY

COMPOST SILT SOCK CHECK DAM/FENCE STATIONING				
TYPE	ALIGNMENT	ROAD	STATIONING	SLOPE
SILT SOCK CHECK DAMS	SAN	EAST MIDDLETOWN ROAD	0+00 TO 2+50	<10%
SILT SOCK CHECK DAMS	SAN	EAST MIDDLETOWN ROAD	2+50 TO 7+50	<5%
SILT SOCK CHECK DAMS	SAN	EAST MIDDLETOWN ROAD	7+50 TO 16+00	<10%
SILT SOCK FENCE	SAN	EAST MIDDLETOWN ROAD	16+00 TO 29+00	<2%
SILT SOCK CHECK DAMS	FM	EAST MIDDLETOWN ROAD	0+00 TO 6+00	<10%
SILT SOCK CHECK DAMS	FM	EAST MIDDLETOWN ROAD	6+00 TO 8+50	<2%
SILT SOCK FENCE	FM	EAST MIDDLETOWN ROAD	8+50 TO 19+00	<2%
SILT SOCK FENCE	SAN	EAST MIDDLETOWN ROAD	0+00 TO 9+50	<2%
SILT SOCK FENCE	SAN	SR 170	0+25 TO 1+50	<2%



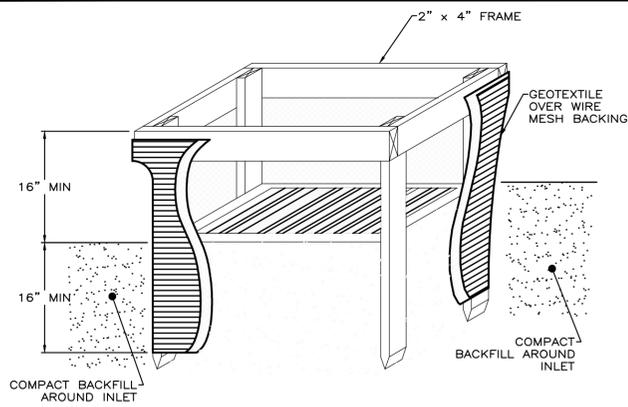
CT Consultants
engineers | architects | planners
 20 Federal Plaza West, Suite 303 - Youngstown, Ohio 44503
 Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com

PROJECT NO:	NO.	REVISION	DATE
14485	AS SHOWN		
	DATE:	1/28/16	
DESIGN:	PMT		
DRAWN:	PMT		
CHECK:	IAG/SAS		

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
EROSION & SEDIMENTATION
CONTROL NOTES

DRAWING NAME	
ESC-1	
SHEET	OF
22	28

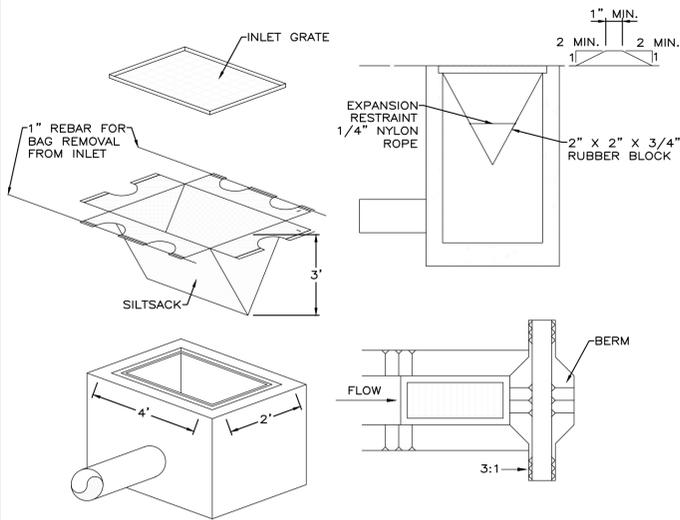
H:\2014\14485\DWG\PLAN SETS\CAD_14485_ESC.DWG - 2/7/2016 2:21:29 PM - TAE



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 16 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 18 INCHES 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.

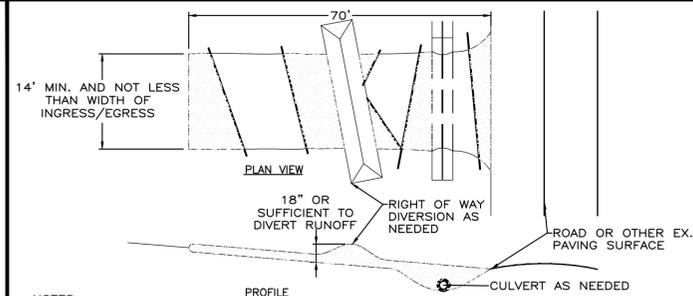
INLET PROTECTION DETAIL
NOT TO SCALE



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.
4. EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.

SILTSACK
NOT TO SCALE

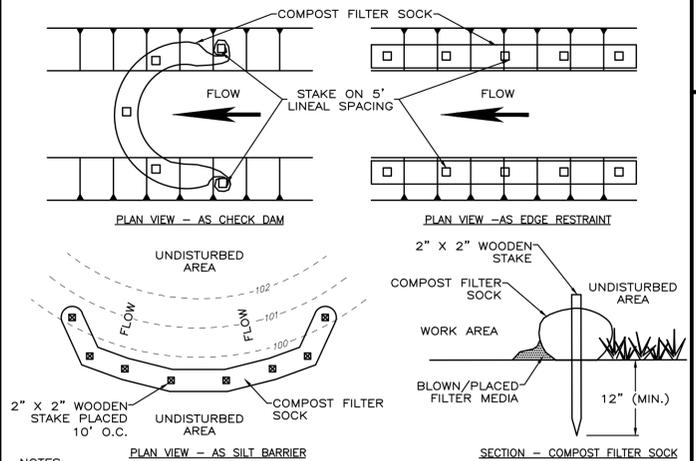


NOTES:

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
NOT TO SCALE



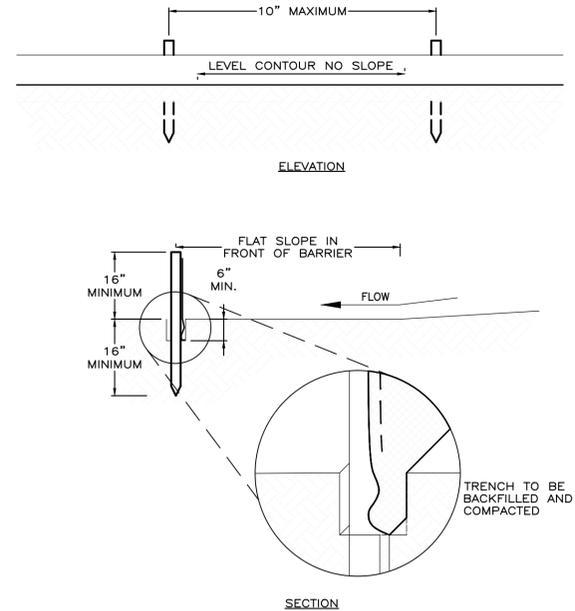
NOTES:

1. THIS PROJECT REQUIRES THE USE OF 8" DIA. COMPOST FILTER SOCK.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8' UP SLOPE AT 45° TO THE MAIN SOCK ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN IN THE OHIO RAINWATER AND LAND DEVELOPMENT MANUAL.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCK.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED IN THE OHIO RAINWATER AND LAND DEVELOPMENT MANUAL.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. SOCK FABRIC AND COMPOST SHALL MEET THE STANDARDS OF THE LATEST VERSION OF THE OHIO RAINWATER AND LAND DEVELOPMENT MANUAL.
7. BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
8. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.
9. SOCKS MAY BE LEFT IN PLACE OR REMOVED. IN THE FORMER CASE, THE SOCK MATERIAL SHALL BE CUT OPEN AND THEN MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK
NOT TO SCALE

FABRIC-SILT FENCE NOTES:

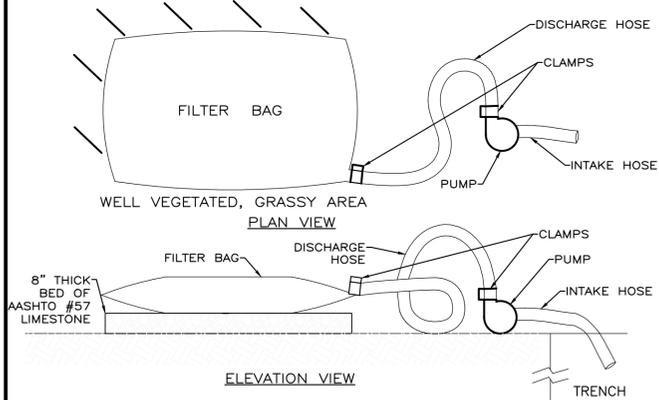
1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.
4. WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICE WHICH WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8 INCHES OF CLOTH ARE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6-INCH-DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED.
9. SEAMS BETWEEN SECTION OF SILT FENCE SHALL BE OVERLAPPED WITH THE END STAKES OF EACH SECTION WRAPPED TOGETHER BEFORE DRIVING INTO THE GROUND.
10. MAINTENANCE - SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY 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, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE:
 - A. THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED.
 - B. ACCUMULATED SEDIMENT SHALL BE REMOVED, OR
 - C. OTHER PRACTICES SHALL BE INSTALLED.
11. SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE SILT FENCE.
12. SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.
13. CRITERIA FOR SILT FENCE MATERIALS
 - A. FENCE POSTS - THE LENGTH SHALL BE A MINIMUM OF 32 INCHES LONG. WOOD POSTS WILL BE 2 X 2 INCH HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS, SPLITS AND OTHER VISIBLE IMPERFECTIONS THAT WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FEET. POSTS SHALL BE DRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.
 - B. SILT FENCE FABRIC - SEE CHART BELOW.



JOINING SECTIONS OF SILT FENCE

FABRIC SILT FENCE DETAIL
NOT TO SCALE

MINIMUM CRITERIA FOR SILT FENCE FABRIC (ODOT, 2003)		
FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LBS	ASTM D 4632
MAXIMUM ELONGATION AT 60 LBS	50%	ASTM D 4632
MINIMUM PUNCTURE STRENGTH	50 LBS	ASTM D 4833
MINIMUM TEAR STRENGTH	40 PSI	ASTM D 4533
APPARENT OPENING SIZE	≤ 0.84 mm	ASTM D 4751
MINIMUM PERMITTIVITY	1x10-2 sec-1	ASTM D 4491
UV EXPOSURE STRENGTH RETENTION	70%	ASTM G 4355



PUMPED WATER FILTER BAG 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 SHALL 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.

PUMPED WATER FILTER BAG DETAIL
NOT TO SCALE

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
August 16th to November	Perennial Ryegrass	1	40
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1.25	55
	Perennial Ryegrass	3.25	142
November 1 to Feb. 29	Creeping Red Fescue	0.4	17
	Kentucky Bluegrass	0.4	17
	Annual Ryegrass	1.25	55
August 16th to November	Oats	3	128 (3 Bushel)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
November 1 to Feb. 29	Rye	3	112 (2 Bushel)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
August 16th to November	Wheat	3	120 (2 Bushel)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
November 1 to Feb. 29	Perennial Rye	1	40
	Tall Fescue	1	40
	Annual Ryegrass	1	40
August 16th to November	Annual Ryegrass	1.25	40
	Perennial Ryegrass	3.25	40
	Creeping Red Fescue	0.4	40
	Kentucky Bluegrass	0.4	40
	Creeping Red Fescue	0.4	40

TEMPORARY SEEDING CHART

Species	Seeding Rate		Notes:
	Lbs./acre	Lbs./1,000 Sq. Feet	
General Use			
Creeping Red Fescue	20-40	1/2-1	For close mowing & for waterways with <2.0 ft/sec velocity
Domestic Ryegrass	10-20	1/4-1/2	
Kentucky Bluegrass	20-40	1/2-1	For shaded areas
Tall Fescue	40-50	1-1 1/4	
Turf-type (dwarf) Fescue	90	2 1/4	Steep Banks or Cut Slopes
Tall Fescue	40-50	1-1 1/4	
Crown Vetch	10-20	1/4-1/2	Do not seed later than August
Tall Fescue	20-30	1/2-3/4	
Flat Pea	20-25	1/2-3/4	Do not seed later than August
Tall Fescue	20-30	1/2-3/4	
Road Ditches and Swales			
Tall Fescue	40-50	1-1 1/4	For shaded areas
Turf-type (Dwarf) Fescue	90	2 1/4	
Kentucky Bluegrass	90	0.1	Lawns
Perennial Ryegrass	90	0.1	
Kentucky Bluegrass	100-120	2	For shaded areas
Perennial Ryegrass	100-120	2	
Kentucky Bluegrass	100-120	2	For shaded areas
Creeping Red Fescue	100-120	1-1/2	

PERMANENT SEEDING CHART



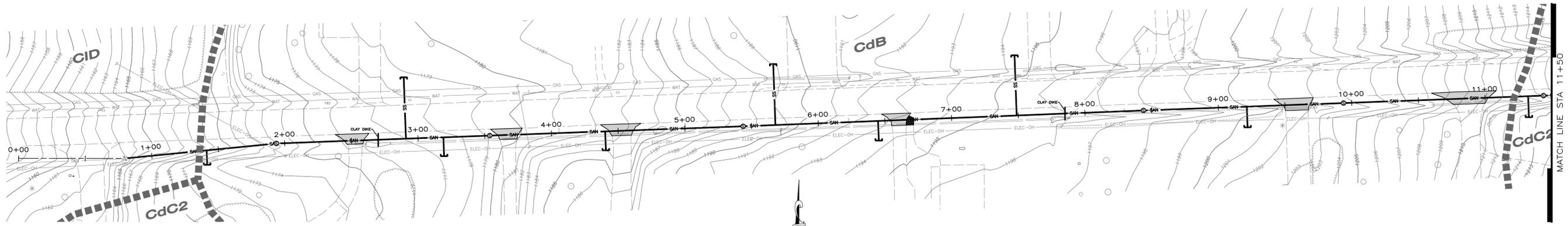
CT Consultants
engineers | architects | planners



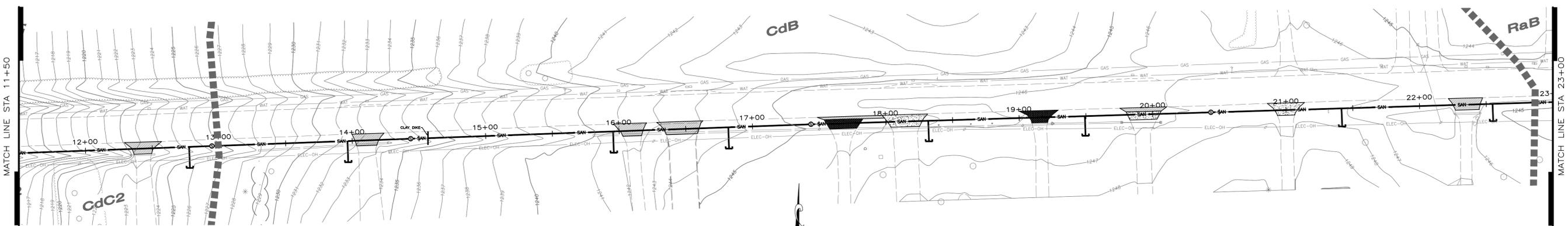
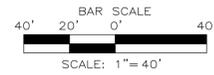
PROJECT NO:	DATE	REVISION
14485 <td></td> <td></td>		
SCALE: AS SHOWN		
DATE: 1/28/16		
DESIGN: PWT		
DRAWN: PWT		
CHECK: IAG/SAS		

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN & GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
EROSION & SEDIMENTATION CONTROL DETAILS

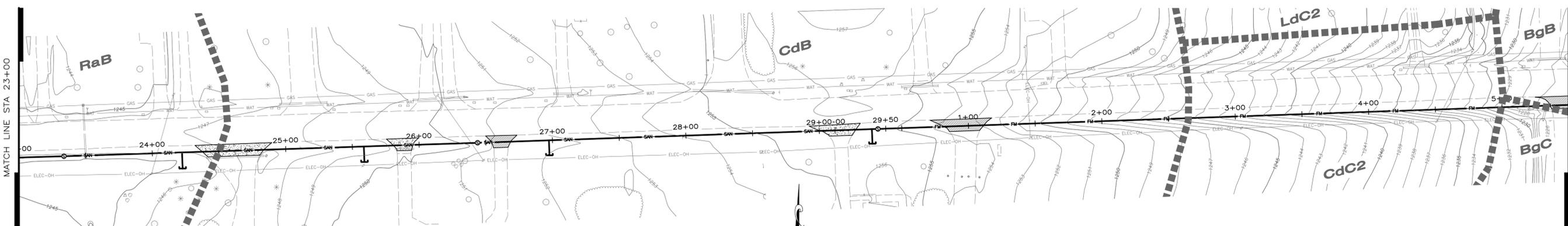
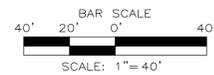
DRAWING NAME	
ESC-2	
SHEET	OF
23	28



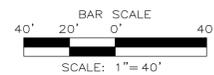
PLAN STA 0+00 TO STA 11+50



PLAN STA 11+50 TO STA 23+00



PLAN STA 23+00 TO STA 5+50



CT Consultants
 engineers | architects | planners
 20 Federal Plaza West, Suite 303 - Youngstown, Ohio 44503
 Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com



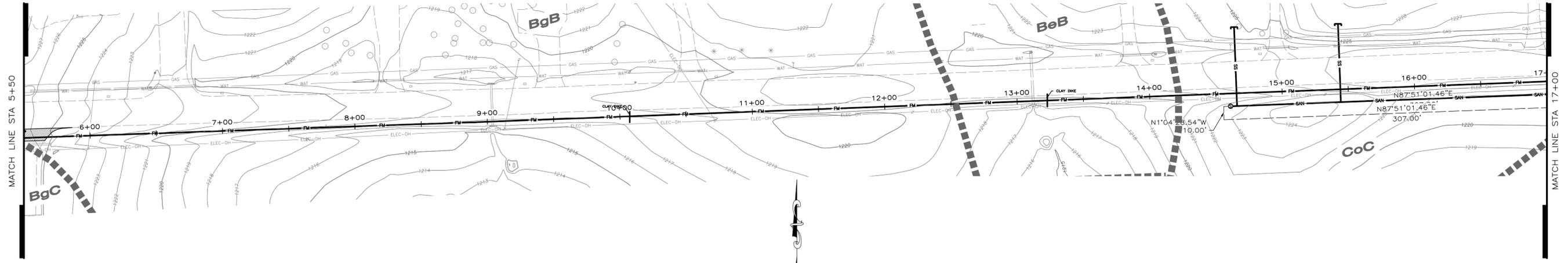
PROJECT NO:	NO.	REVISION	DATE
14485	AS SHOWN		
	DATE: 1/28/16		
	DESIGN: PWT		
	DRAWN: PWT		
CHECK: IAG/SAS			

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
EROSION & SEDIMENTATION
CONTROL PLAN

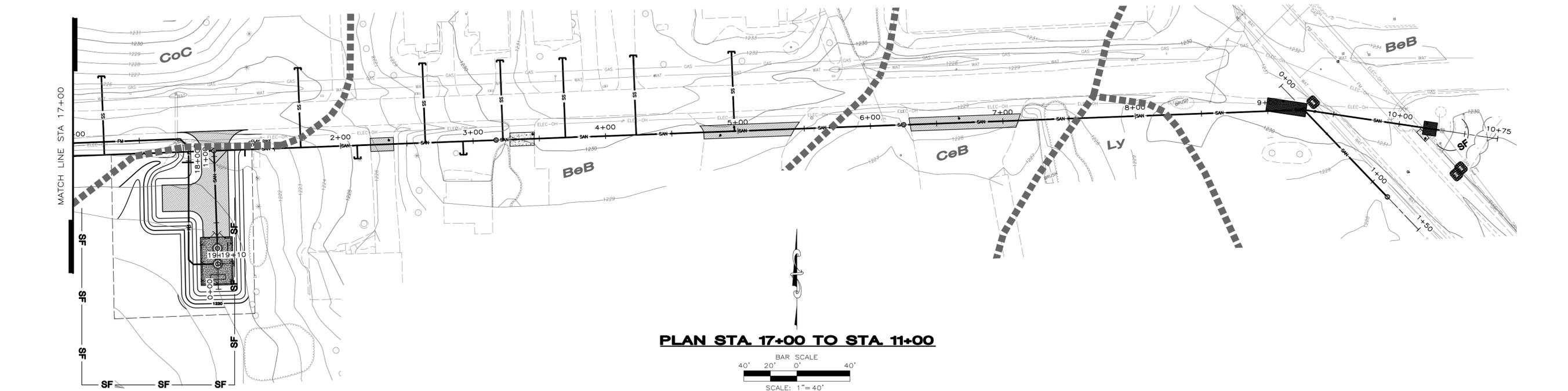
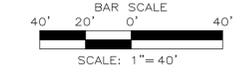
DRAWING NAME	
ESC-3	
SHEET	OF
24	28

H:\2014\14485\DWG\PLAN_SETS\CID_14485_ESC.DWG - 3/7/2016 2:22:29 PM - TAE

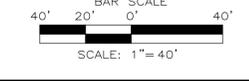
H:\2014\14485\DWG\PLAN SETS\CID_14485_ESC.DWG - 3/7/2016 2:22:39 PM - TAE



PLAN STA. 5+50 TO STA. 17+00



PLAN STA. 17+00 TO STA. 11+00



CT Consultants
engineers | architects | planners
 20 Federal Plaza West, Suite 303 - Youngstown, Ohio 45503
 Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com

PROJECT NO:	NO.	REVISION	DATE
14485	AS SHOWN		
	DATE: 1/28/16		
DESIGN:	PMT		
DRAWN:	PMT		
CHECK:	IAG/SAS		

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO

EROSION & SEDIMENTATION CONTROL PLAN

DRAWING NAME
ESC-4

SHEET **25** OF **28**

LIGHTING SWITCHES & RECEPTACLES:

MARK	ITEM	AMPS	VOLTS	PHASE	DESCRIPTION
	RECEPTACLE	20	125	1	3 WIRE GROUNDING DUPLEX TYPE
	RECEPTACLE- GROUND FAULT CIRCUIT INTERRUPTER	20	125	1	3 WIRE GROUNDING, DUPLEX TYPE, NEMA REF: RECEPT 5-20R PLUG 5-20P
	RECEPTACLE- WET LOCATION	20	125	1	3 WIRE GROUNDING, DUPLEX TYPE, COMPLETE W/COVER & RECEPTACLE
	RECEPTACLE- GROUND FAULT CIRCUIT INTERRUPTER WET LOCATION	20	125	1	3 WIRE GROUNDING, DUPLEX TYPE, COMPLETE W/COVER & RECEPTACLE
	RECEPTACLE- HAZARDOUS LOCATION	20	125	1	3 WIRE GROUNDING TYPE RECEPTACLE W/ COVER, ADAPTER PLATE, CLASS 1 DIV 1&2
	TELEPHONE JACK				MODULAR PHONE JACK TYPE, COMPLETE W/COVER
	WALL SWITCH	20	120 / 277	1	SINGLE POLE TOGGLE SWITCH & PLATE
	WALL SWITCH	20	120 / 277	1	THREE WAY TOGGLE SWITCH & PLATE
	WALL SWITCH	20	120 / 277	1	FOUR WAY TOGGLE SWITCH & PLATE
	MANUAL START SWITCH *	20	120	1	TWO POLE - GENERAL PURPOSE SWITCH
	MANUAL START SWITCH *	20	120	1	TWO POLE SWITCH W/ PILOT LIGHT
	ROTARY DISCONNECT SWITCH	30 MIN	480	3	THREE POLE SWITCH HOUSING AS INDICATED

* PROVIDE ENCLOSURE W/ NEMA RATING AS REQ'D.
NEMA 1 - OFFICE & LAB AREAS
NEMA 4X - OUTSIDE/CORROSIVE AREAS
NEMA 7 - HAZARDOUS AREAS
NEMA 12 - INSIDE

INDICATES PILOT LIGHT ON
SWITCH COVER
 INDICATES AN EXPLOSION
PROOF SWITCH
 INDICATES A WEATHER
PROOF SWITCH COVER

GENERAL NOTES:

- ALL LIGHTING AND RECEPTACLE WIRING TO BE #12 XHHW WITH EQUIPMENT GROUND IN 3/4" C UNLESS OTHERWISE NOTED.
- DO NOT MOUNT ANY LIGHT FIXTURE DIRECTLY OVER PIPING OR EQUIPMENT THAT WILL INTERFERE WITH NORMAL LIGHTING DISTRIBUTION.
- SIZE JB 'S AS REQUIRED PER NEC. PROVIDE BARRIER TYPE TERMINAL STRIPS, AND ALL WIRING TO BE IN CONDUIT.
- SIZE PULL BOXES AS REQUIRED PER NEC.
- PROVIDE SEPARATE PB 'S FOR CONTROL AND POWER.
- MOTOR OVERLOAD SETTING SHALL BE FIELD SELECTED PER MOTOR NAME PLATE CURRENT AND INSTALLED ACCORDINGLY.
- WATERTIGHT CONNECTIONS - HEAT SHRINK INSULATION RAYCHEM, THOMAS BETTS, OR EQUAL.
- LOCAL CONTROLS AT EQUIPMENT SHALL BE MOUNTED MAXIMUM 60" ABOVE FINISHED FLOOR, MAXIMUM DISTANCE 10FT. FROM EQUIPMENT.
- MANUFACTURERS AND CATALOG NUMBERS SHOWN IN THE LIGHT FIXTURE SCHEDULE ARE PROVIDED TO INDICATE DESIRED LIGHT FIXTURE CHARACTERISTICS. IT IS THE INTENT OF THE DOCUMENTS TO ALLOW ALTERNATE MANUFACTURERS TO PROVIDE LIGHTING PRODUCTS FOR THE PROJECT, AS LONG AS PROPOSED ALTERNATES PROVIDE THE SAME GENERAL DESIGN AND LIGHTING CHARACTERISTICS AS NOTED IN THE LIGHT FIXTURE DESCRIPTION.
- DISTANCES SHOWN ARE THE MAXIMUM DISTANCE ALLOWABLE FOR A 2% VOLTAGE DROP. VOLTAGE IS BASED ON THREE SINGLE CONDUCTORS IN STEEL CONDUIT, 0.8 POWER FACTOR. DISTANCES MAY CHANGE FOR NON-MAGNETIC CONDUIT, CAPACITORS AT MOTOR, ETC.

LIGHTING FIXTURE SCHEDULE:

'1A' ENCLOSED & GASKETED FLOODLIGHT FIXTURE, 500 WATT QUARTZ LAMP, 120V, MOUNT 10'-0" ABOVE FINISHED GRADE - LITHONIA NO. TQ500120LPM12, GRAINGER NO. 3GB49 OR APPROVED EQUAL

ELECTRICAL ABBREVIATIONS:

A	AMPS	NEC	NATIONAL ELECTRICAL CODE
AF	AMPERE FRAME	NEMA	NATIONAL ELECTRICAL MFR ASSOC.
AI	ANALOG INPUT (PLC)	NEUT	NEUTRAL
AL	ALUMINUM	NFDS	NON-FUSED DISCONNECT SWITCH
AM	AMMETER	OCSS	OPEN/CLOSE SELECTOR SWITCH
AO	ANALOG OUTPUT (PLC)	OL	OVERLOAD
AP	ALARM PANEL	OOSS	ON/OFF SELECTOR SWITCH
AT	AMPERE TRIP	OT	OVER TORQUE SWITCH
AWG	AMERICAN WIRE GAUGE	P	POLE
C	CONDUIT	PB	PUSHBUTTON
CAP	CAPACITOR	PBC	PULLBOX-CONTROL
CB	CIRCUIT BREAKER	PBM	PULLBOX-METERING
CJB	CONTROL JUNCTION BOX	PBP	PULLBOX-POWER
CP	CONTROL PANEL	PC	PHOTO CONTROL
CPT	CONTROL POWER TRANSFORMER	PF	POWER FACTOR
CR	CORROSION RESISTANT	PH	PHASE
CS	CONTROL STATION	PLC	PROGRAMMABLE LOGIC CONTROLLER
CT	CURRENT TRANSFORMER	PJB	POWER JUNCTION BOX
CU	COPPER	PP	POWER PANEL
DB	DUCT BANK	PRI	PRIMARY
DI	DIGITAL INPUT (PLC)	PS	PRESSURE SWITCH
DO	DIGITAL OUTPUT (PLC)	PT	POTENTIAL TRANSFORMER
EAG	ELECTRICALLY ACTIVATED GATE	R	RELAY
EAV	ELECTRICALLY ACTIVATED VALVE	RCP	REINFORCED CONCRETE PIPE
EF	EXHAUST FAN	RL	RUN LIGHT
ESPB	EMERGENCY STOP PUSHBUTTON (MAINTAINED)	SCP	SURGE CONTROL PANEL
ETT	ELAPSED TIME TOTALIZER	SCR	SILICON-CONTROLLED RECTIFIER
EWD	ELEMENTARY WIRING DIAGRAM	SEC	SECONDARY
FDS	FUSED DISCONNECT SWITCH	SF	SUPPLY FAN
FLA	FULL LOAD AMPERES	SHLD	SHIELDED
FS	FLOW SWITCH	SP	SHEAR PIN SWITCH
FVC	FULL VOLTAGE CONTACTOR	SPD	SURGE PROTECTIVE DEVICE
FVNR-1	FULL VOLTAGE NON-REVERSING STARTER SIZE 1	SPK	SPEAKER
GFI	GROUND FAULT INTERRUPTER	SS	SELECTOR SWITCH OR STAINLESS STEEL
GND	GROUND	SSOR	SOLID STATE OVERLOAD RELAY
GFR	GROUND FAULT RELAY	SSPB	START/STOP PUSHBUTTON
HOA	HAND/OFF/AUTO SELECTOR SWITCH	SSS	SOLID STATE STARTER
HP	HORSEPOWER	STD	STANDARD
HT	HIGH TORQUE SWITCH	STRTR	STARTER
HTR	HEATER	SV	SOLENOID VALVE
Hz	HERTZ	SW	SWITCH
IAW	IN ACCORDANCE WITH	T	TELEPHONE
ICP	INSTRUMENTATION & CONTROL PANEL	TB	TERMINAL BOARD
IPP	INSTRUMENT POWER PANEL	TC	TIME CLOCK
JB	JUNCTION BOX	TD	TRENCH DUCT
JBC	JUNCTION BOX-CONTROL	TEB	TELEPHONE EQUIPMENT BACKBOARD
JBM	JUNCTION BOX-METERING	TEMP	TEMPERATURE
JBP	JUNCTION BOX-POWER	TOR	THERMAL OVERLOAD RELAY
KCM	KILO (1000) CIRCULAR MILL	TR	TIMING RELAY
KVA	KILOVOLT AMPERES	TRANS	TRANSFORMER
KVAR	KILOVOLT AMPERES-REACTIVE	TSTAT	THERMOSTAT
KW	KILOWATT	TVSS	TRANSIENT VOLTAGE SUPPRESSOR
LA	LIGHTING ARRESTOR	UH	UNIT HEATER
LGT	LIGHT	UPS	UNINTERRUPTIBLE POWER SUPPLY
LOR	LOCAL/OFF/REMOTE SELECTOR SWITCH	V	VOLTS
LP	LIGHTING PANEL	VC	VOLUME CONTROL
LS	LEVEL SWITCH	VED	VARIABLE FREQUENCY DRIVE
MCC	MOTOR CONTROL CENTER	VM	VOLT METER
MCP	MOTOR CIRCUIT PROTECTOR	X/P	EXPLOSION PROOF
MDP	MAIN DISTRIBUTION PANEL	ZS	LIMIT SWITCH
MJB	METERING JUNCTION BOX		



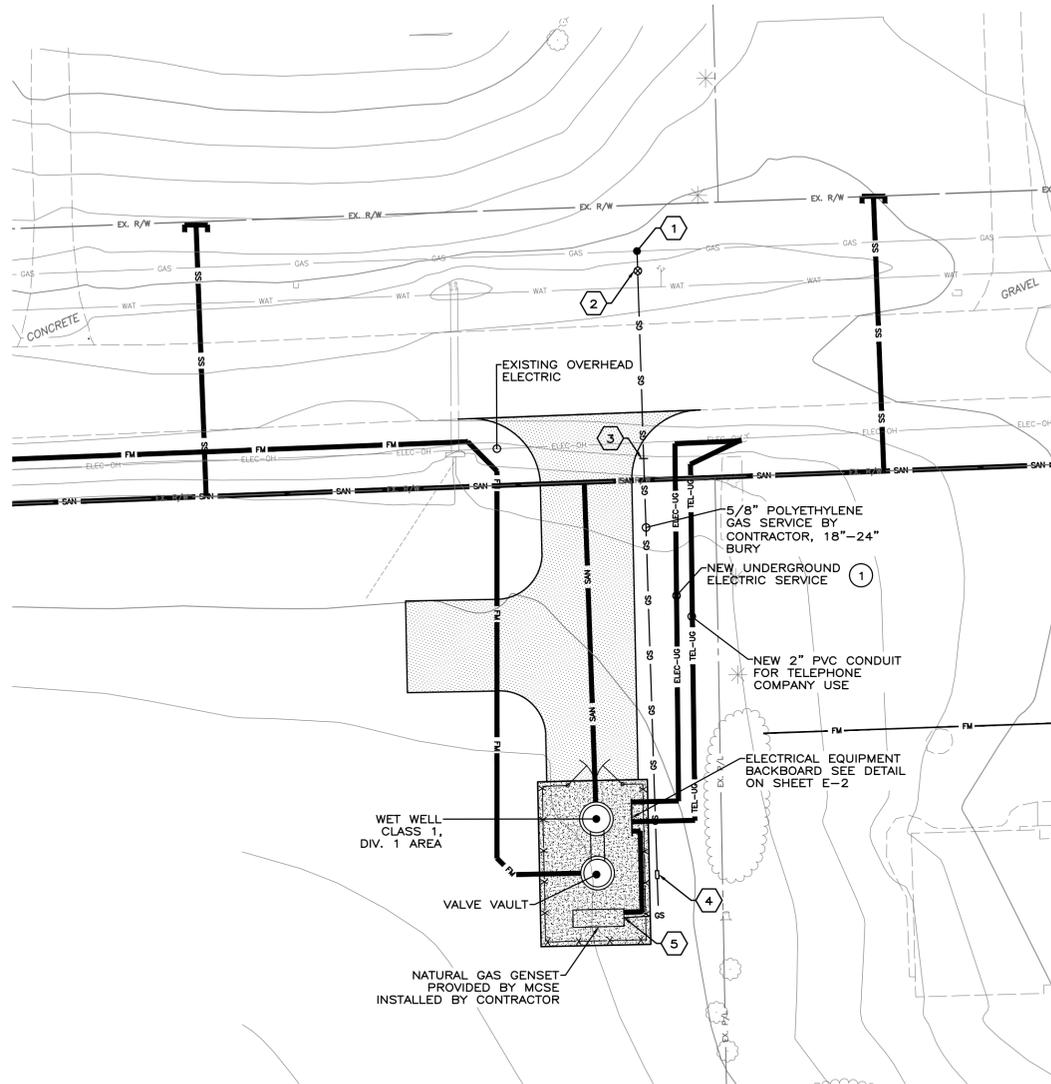
CT Consultants
engineers | architects | planners
20 Federal Plaza West, Suite 303 - Youngstown, Ohio 44503
Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com



PROJECT NO:	NO.	REVISION	DATE
14485	AS SHOWN		
	DATE:	2/1/16	
DESIGN:	NSS		
DRAWN:	PMT		
CHECK:	NSS		

MAHONING COUNTY SANITARY ENGINEER
EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
& GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
NEW MIDDLETOWN, OHIO
ELECTRICAL GENERAL
NOTES & ABBREVIATIONS

DRAWING NAME	
E-1	
SHEET	OF
26	28



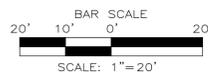
NOTES:

- MAHONING COUNTY TO COORDINATE WITH FIRST ENERGY FOR NEW 480/277V., 3 ϕ SERVICE, AND NEW METER BASE.
- WHEN PULLING POWER AND CONTROL CONDUCTORS TO THE WET WELL, IN ADDITION TO THE REQUIRED LENGTH OF CONDUCTORS, LEAVE A 5 FT. COIL OF SLACK IN CONDUCTORS AT TOP OF WET WELL. SUPPORT ALL CABLES USING STRAIN RELIEF GRIPS.
- REFER TO FEEDER SCHEDULE ON SHEET E-3 FOR CONDUIT AND CONDUCTOR SIZING.

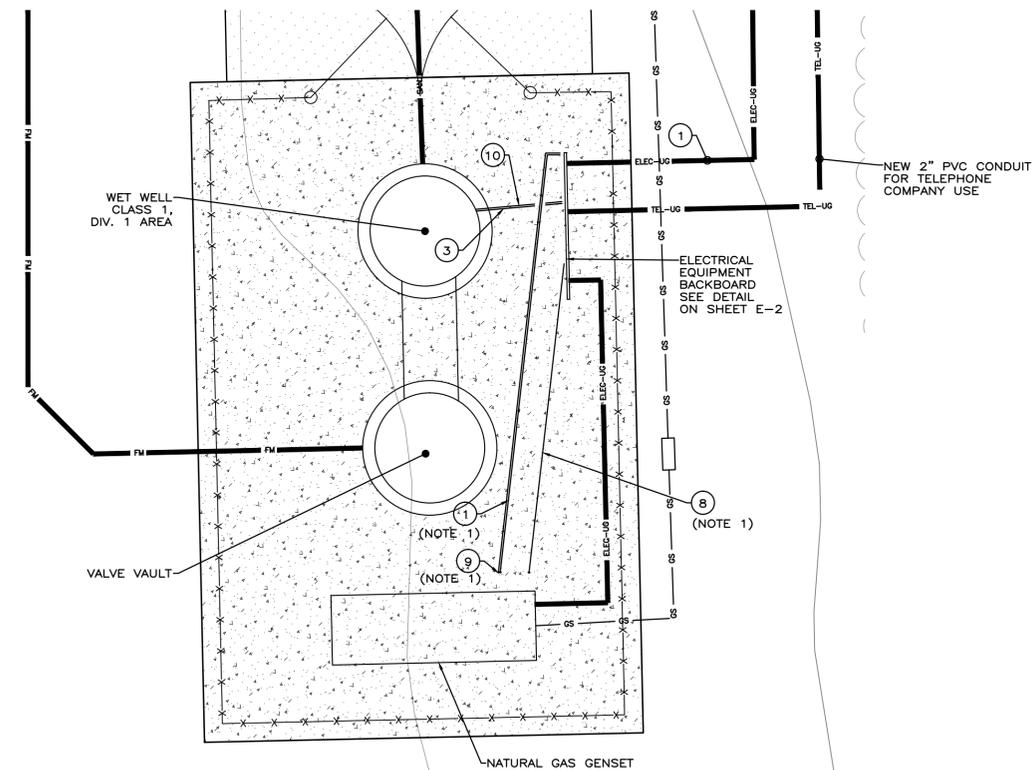
GAS CONNECTION NOTES:

- CONNECTION TO EXISTING GAS LINE BY GAS COMPANY
- CURB VALVE BY GAS COMPANY
- TIE-IN COUPLING BY GAS COMPANY, FIELD VERIFY
- GAS METER MANIFOLD WITH GAS METER AS PER GAS COMPANY, INSTALLED BY GAS COMPANY
- PROVIDE GAS VALVE AND UNION AT GENERATOR GAS CONNECTION. SOLENOID VALVE, SECONDARY REGULATOR, CARBURETOR, AND FLEX CONNECTION SHALL BE SUPPLIED BY GENERATOR SUPPLIER AND INSTALLED BY CONTRACTOR.

PUMP STATION ELECTRICAL PLAN



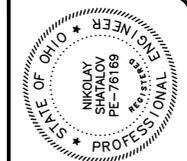
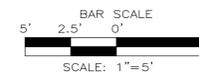
NO.	CONDUIT		CONDUCTORS				REMARKS
	QTY. / SIZE	RATING	QTY. / SIZE	NEUTRAL	GROUND		
1	1 / 1"	100A.	4 / 3	-	#8	INCOMING SERVICE / EMERG. GEN. SERVICE	
2	1 / 1"	60A.	3 / 6	-	#8	PUMP CONTROL PANEL FEED	
3	1 / 1"	40A.	6 / 8	-	#10	PUMPS P-1 & P-2 FEEDS	
4	1 / 3/4"	30A.	3 / 10	-	#10	TAP TO SPD	
5	1 / 3/4"	30A.	2 / 8	-	#10	LOAD CENTER FEED	
6	1 / 3/4"	20A.	2 / 12	2#12	#12	AUTODIALER CIRCUITS	
8	1 / 1"	20A.	2 / 12	2#12	#12	GEN. HTR. & BATTERY CHARGER CIRCUITS	
9	1 / 1"	CONTROL	1 / 14	#14	#14	GENERATOR "START" COMMAND	
10	1 / 2"	CONTROL	8 / 14	8#14	#14	WET WELL LEVEL, PUMPS TEMP. CONTROLS	



NOTES:

- EXACT LOCATION OF CONDUIT STUB UP TO BE DETERMINED IN FIELD.
- REFER TO FEEDER SCHEDULE ON THIS SHEET.

PUMP STATION ENLARGED ELECTRICAL PLAN



CT Consultants
 engineers | architects | planners
 20 Federal Plaza West, Suite 301 - Youngstown, Ohio 44503
 Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com



PROJECT NO:	DATE
14485	
SCALE: AS SHOWN	
DATE: 2/8/16	
DESIGN: NSS	
DRAWN: PMT	
CHECK: NSS	

MAHONING COUNTY SANITARY ENGINEER
 EAST MIDDLETOWN ROAD PUMP STATION, FORCEMAIN
 & GRAVITY SANITARY SEWER IMPROVEMENTS PROJECT
 NEW MIDDLETOWN, OHIO
ELECTRICAL SITE PLAN

DRAWING NAME	
E-3	
SHEET	OF
28	28

H:\2014\14485\DWG\PLAN_SEWERS\ELECTRICAL\3D_14485_EL-PL-DWG - 2/8/2016 9:56:44 AM - TAKE