

HOWE TOWNSHIP SANITARY SEWER EXTENSION

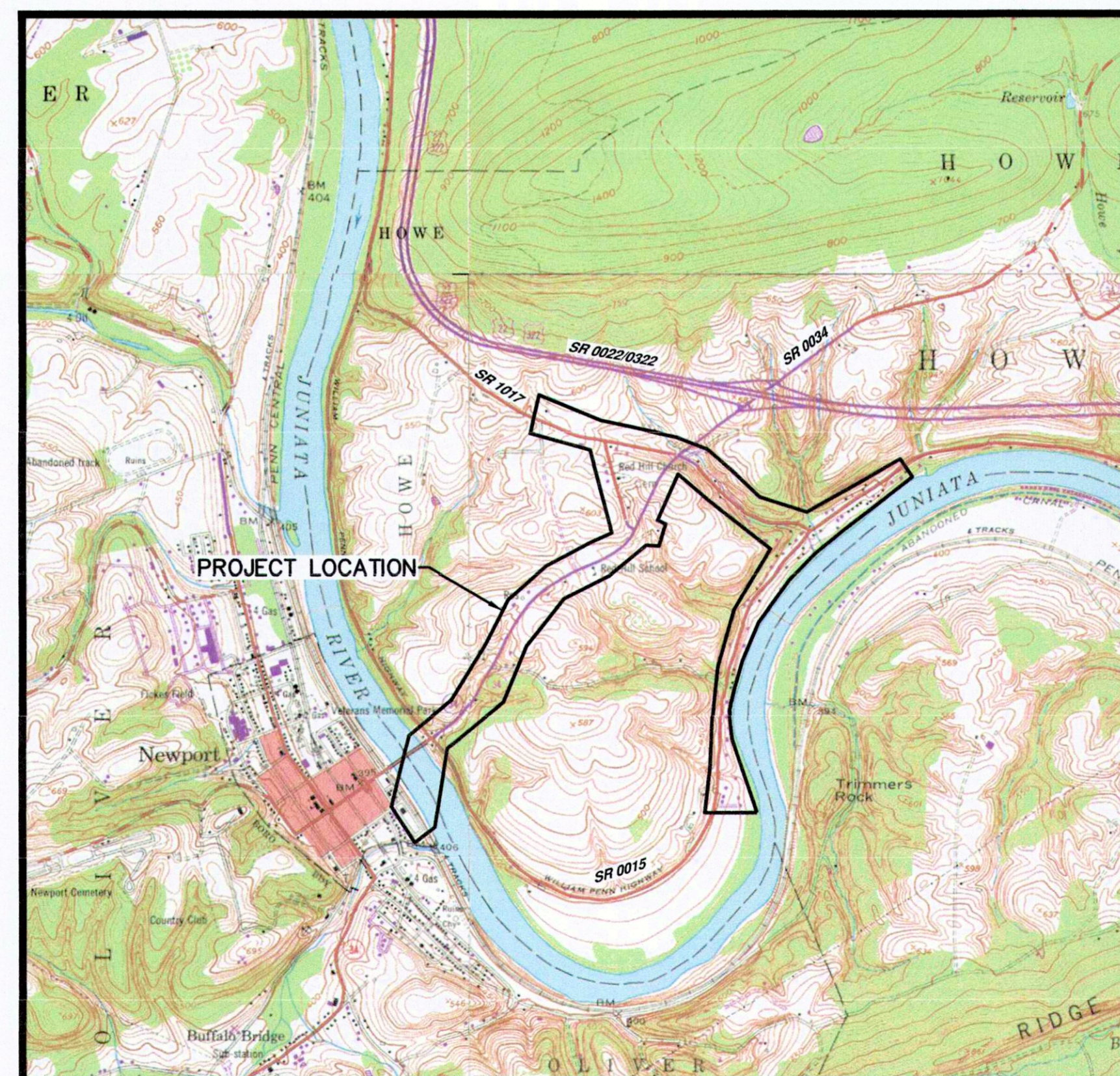
FOR

HOWE TOWNSHIP MUNICIPAL AUTHORITY

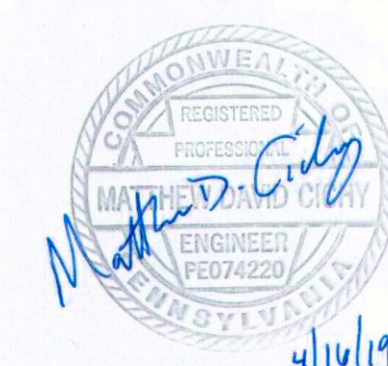
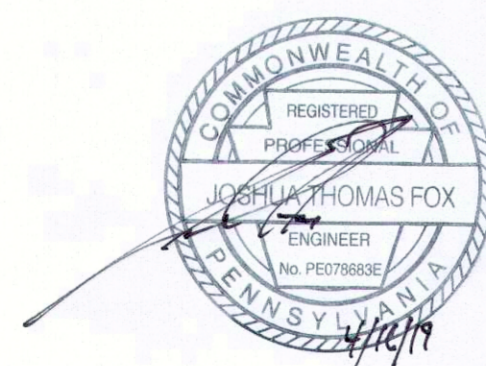
HOWE TOWNSHIP, PERRY COUNTY, PENNSYLVANIA

MARCH 2019

LIST OF CONTRACTS:
 16-1: GENERAL CONSTRUCTION
 16-2: ELECTRICAL CONSTRUCTION



LOCATION MAP
 SCALE: 1"=2000'



HRG
 Herbert, Rowland & Grubic, Inc.
 Engineering & Related Services
 AN EMPLOYEE-OWNED COMPANY

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GENERAL NOTES

- THE AREAS IN WHICH SANITARY SEWERS, LOW PRESSURE SEWERS, FORCE MAINS, GRINDER PUMPS, STRUCTURES AND APPURTENANCES ARE TO BE CONSTRUCTED UNDER THIS CONTRACT MAY CONTAIN EXISTING UNDERGROUND AND ABOVE GROUND UTILITIES AND STRUCTURES WHICH ARE NOT SHOWN ON THESE DRAWINGS. THE DATA PERTAINING TO SIZES, LOCATION AND DEPTH OF EXISTING UTILITIES THAT ARE SHOWN ON THESE DRAWINGS ARE FOR GENERAL INFORMATION AND GUIDANCE ONLY. THE EXACT LOCATION, DEPTH AND SIZE OF EXISTING UNDERGROUND UTILITIES WITHIN THE LIMITS OF THE WORK SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE CONDITIONS CONTAINED IN THE CONTRACT.
- THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN EXCAVATION FOR ALL UNDERGROUND PIPELINES AND FACILITIES TO PREVENT ACCIDENTAL DAMAGE TO EXISTING UTILITIES AND ADJACENT BUILDINGS AND STRUCTURES. THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXPOSED LINES, OR OTHER FACILITIES AND SHALL SUPPORT AND MAINTAIN THE SAFETY AND STRUCTURAL INTEGRITY OF ADJACENT BUILDINGS AND STRUCTURES WITHIN OR DIRECTLY ADJACENT TO THE RIGHT-OF-WAYS INDICATED. RESTORATION OF DAMAGED BUILDINGS, STRUCTURES, PIPING, CABLES, CONDUITS, WIRING AND APPURTENANCES SHALL BE AT NO COST TO THE OWNERS OF SAID BUILDINGS, STRUCTURES AND UTILITIES, OWNER OR THE ENGINEERS.
- IN THE EVENT OF DAMAGE TO UTILITIES, BUILDINGS OR STRUCTURES THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY, STRUCTURE OR BUILDING OWNER AND THE ENGINEER, AND BE PREPARED TO IMMEDIATELY MAKE COMPLETE RESTORATION AND REPAIR OF THE DAMAGED FACILITY TO THE SATISFACTION OF THE UTILITY, STRUCTURE OR BUILDING OWNER.
- THE CONTRACTOR IS NOTIFIED THAT OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) CLEARANCES MUST BE MAINTAINED TO OVERHEAD POWER LINES FROM ANY CONSTRUCTION EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF OSHA STANDARDS IN THIS REGARD.
- OSHA EXCAVATION STANDARDS SHALL APPLY TO THIS CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY OF TRENCH AND STRUCTURES.
- ALL PROPOSED LOW PRESSURE SEWER, LOW PRESSURE LATERALS, AND FORCE MAIN PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS. REFER TO SECTION 33 31 00 OF THE CONTRACT DOCUMENTS FOR PIPE REQUIREMENTS.
- CONTRACTOR SHALL ENDEAVOR TO MINIMIZE DAMAGE TO EXISTING STRUCTURES, MAILBOXES, GUIDERAILS, SHEDS, TREES, ETC. WHEN SUCH ITEMS CANNOT BE AVOIDED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPAIR OR REPLACE AT NO ADDITIONAL EXPENSE TO OWNER OR ENGINEER. THE MAIL SERVICE SHALL BE MAINTAINED AT ALL TIMES.
- NO TOPSOIL IS TO BE REMOVED FROM THE SITE. ALL TOPSOIL SHALL BE REPLACED TO THE ORIGINAL OR CONTRACT REQUIRED DEPTH, WHICHEVER IS GREATER. PRIOR TO EXCAVATION, CONTRACTOR TO RECORD AND DOCUMENT DEPTHS EVERY 50 L.F. ALONG PIPE CENTERLINE OUTSIDE OF EXISTING IMPERVIOUS AREAS. CONTRACTOR SHALL FURNISH AND SUPPLY ADDITIONAL TOPSOIL AS REQUIRED TO MEET CONTRACT REQUIRED DEPTH.
- ALL STRUCTURES, DRIVEWAYS AND DRAINAGE FACILITIES DISTURBED DURING THE WORK SHALL BE REPLACED IN KIND.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF ACT 287 (1974) AS AMENDED.
- ALL MANHOLES AND CLEANOUT LOCATIONS ARE SUBJECT TO FIELD ADJUSTMENT AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE EROSION AND SEDIMENTATION CONTROL REQUIREMENTS OF DEP AND THE PERRY COUNTY CONSERVATION DISTRICT.
- THE ACTUAL LOCATION AND DEPTHS OF NEW LOW PRESSURE LATERALS, SANITARY SEWER LATERALS, AND GRINDER PUMPS SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR, PROPERTY OWNER, AND OWNER (OR OWNER'S REPRESENTATIVE) BASED ON INFORMATION PROVIDED BY PROPERTY OWNER, AND IS TO BE DOCUMENTED ON THE RECORD DRAWINGS.
- LOW PRESSURE SEWER AND FORCE MAIN IS TO BE INSTALLED WITHOUT ANY INTERMEDIATE HIGH POINTS OTHER THAN THOSE SHOWN ON THE PROFILE WITHOUT PRIOR APPROVAL FROM THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL AIR RELEASE VALVES AT INTERMEDIATE HIGH POINTS AS A RESULT OF THEIR WORK WITH NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL CONDUCT HIS CONSTRUCTION, MAINTENANCE AND PROTECTION OF TRAFFIC WITHIN PENNDOT RIGHT-OF-WAY UNDER THE HIGHWAY OCCUPANCY PERMIT INCLUDED IN SECTION 00 31 46 OF THE PROJECT MANUAL.
- THE CONTRACTOR SHALL FIELD VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT THE PROJECT SITE.
- UNLESS OTHERWISE INDICATED, ALL FINISHED GRADES SHALL MATCH EXISTING GRADES.
- FABRICATED (MIN. 5 SEGMENTS) HDPE 90 DEGREE ELBOWS AND LONG RADIUS HDPE SWEEP ELBOWS SHALL BE PERMITTED FOR USE WITH THE HDPE FORCE MAIN PIPING. ALL OTHER 90 DEGREE FITTINGS SHALL NOT BE PERMITTED FOR FORCE MAIN INSTALLATION. 90 DEGREE FITTINGS OTHER THAN THOSE INDICATED ON THE DRAWINGS ARE NOT PERMITTED FOR LOW PRESSURE SEWER INSTALLATION.
- CONTRACTOR SHALL MAINTAIN A 6 FOOT MINIMUM HORIZONTAL DISTANCE BETWEEN THE SANITARY SEWER PIPE AND UTILITY POLES AND SUPPORT AS REQUIRED.
- CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS OF NORFOLK SOUTHERN'S NSCE-8 SPECIFICATIONS WITHIN NORFOLK SOUTHERN'S RIGHT-OF-WAY.
- PIPELINE AND CROSSING TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH LAST APPROVED AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION SPECIFICATIONS FOR PIPELINES CONVEYING FLAMMABLE AND NON-FLAMMABLE SUBSTANCES.
- BLASTING, IF REQUIRED, SHALL BE PERMITTED ONLY ON AUTHORIZATION OF THE OWNER. BLASTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- PROVIDE A MINIMUM OF 18" VERTICAL SEPARATION WHERE WATER MAINS AND STORM SEWERS CROSS ABOVE SANITARY SEWERS.
- DIRECTIONAL DRILL PIT LOCATIONS ARE SHOWN FOR HIGHWAY OCCUPANCY PERMITTING PURPOSES ONLY. ACTUAL LOCATIONS ARE TO BE DETERMINED IN THE FIELD BY CONTRACTOR. CONTRACTOR SHALL COORDINATE DIRECTIONAL DRILL PIT LOCATIONS WITHIN PENNDOT RIGHT-OF-WAY WITH PENNDOT INSPECTOR IN CHARGE.
- LOW PRESSURE LATERALS SHALL BE INSTALLED VIA DIRECTIONAL DRILL WHEN SAID LATERAL CROSSES PENNDOT STATE ROADS.
- THE CONTRACTOR IS NOTIFIED THAT NOT ALL OF THE WELL AND SEPTIC LOCATIONS ARE SHOWN ON THE CONTRACT DRAWINGS AS NOT ALL FACILITIES COULD BE LOCATED DURING DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE TO AVOID THE WELL AND SEPTIC SYSTEMS.
- THE SUBSURFACE UTILITY ENGINEERING QUALITY LEVEL FOR THE ENCLOSED CONTRACT DRAWINGS ARE QUALITY LEVEL C. QUALITY LEVEL A HAS BEEN OBTAINED FOR LOCATION OF SOME WATER MAINS IDENTIFIED BY THE TEST HOLE LOCATIONS IDENTIFIED ON THE CONTRACT DRAWINGS. QUALITY LEVEL B HAS BEEN OBTAINED FOR LOCATION OF SOME WATER AND STORM SEWER LINES AS IDENTIFIED ON THE CONTRACT DRAWINGS. QUALITY LEVELS ARE IN ACCORDANCE WITH THE ASCE STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA.
- DRIVEWAY CULVERTS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED TO MATCH EXISTING SLOPE AND INVERTS. PIPE MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.
- ALL PROPOSED GRAVITY SEWER MANHOLES ARE 4' INSIDE DIAMETER UNLESS NOTED OTHERWISE.
- CLAY DIKE SHALL BE INSTALLED AT THE MID-POINT OF EACH RUN AND WHERE DICTATED BY THE ENGINEER BASED ON FIELD CONDITIONS.

HOP GENERAL NOTES

- ALL HORIZONTAL MEASUREMENTS ARE U.S. STANDARD MEASUREMENTS, UNLESS OTHERWISE NOTED.
- THERE ARE NO NAVIGABLE STREAMS ON THIS PROJECT.
- DO NOT INTERFERE WITH THE OPERATION OF ANY FIRE HYDRANT, FIRE CALL BOX OR POLICE CALL BOX.
- RELOCATE OR REMOVE ALL SIGNS AS REQUIRED AND INSTALL IN ACCORDANCE WITH PUBLICATION 111.
- ALL PERMANENT SIGNS MUST BE FABRICATED BY AN APPROVED SIGN MANUFACTURER LISTED IN THE DEPARTMENT'S PUBLICATION 35, BULLETIN 15.
- THE CONTRACTOR SHALL CHECK AND VERIFY ALL FIELD DIMENSIONS, SITE CONDITIONS, AND UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
- SEAL ALL ASPHALT TO ASPHALT & ASPHALT TO CONCRETE JOINTS WITH PG 64-22.
- ALL INLETS WITHIN PAVED AREAS OR THAT MAY RECEIVE BICYCLE TRAFFIC MUST BE EQUIPPED WITH STRUCTURAL STEEL BICYCLE SAFE GRATES.
- ALL INLETS GRATES WITHIN PAVED AREAS SHALL BE SET FLUSH WITH THE ADJACENT PAVEMENT WEARING COURSE.
- DETAILS OTHER THAN THOSE INDICATED ARE ON THE FOLLOWING PENNDOT STANDARD DRAWINGS:
RC-22M 2/8/2019 (6 SHEETS)
RC-28M 2/8/2019 (2 SHEETS)
RC-30M 2/8/2019 (6 SHEETS)
RC-39M 9/15/2016 (30 SHEETS)
RC-64M 6/1/2010
RC-67M 6/10/2013 (14 SHEETS)
RC-72M 2/8/2019 (7 SHEETS)
TC-8600 6/13/2013 (13 SHEETS)

- THE PROPOSED PAVEMENT SECTION MUST BE AS INDICATED ON THE PLAN, OR MATCH EXISTING AS FOUND IN THE FIELD, WHICHEVER IS GREATER.
- THE CONTRACTOR SHALL CONSTRUCT ALL PROPOSED IMPROVEMENTS AS SHOWN HEREON IN ACCORDANCE WITH THE REQUIREMENTS OF THE ISSUED "HIGHWAY OCCUPANCY PERMIT" AND ANY DIRECTIVES FROM PENNDOT AND THE OWNER AND COMPLY WITH REQUESTS AND DIRECTIVES INCLUDING CORRECTION OF DEFECTIVE WORK AS REQUIRED TO OBTAIN FINAL APPROVAL OF THE WORK AND CLOSING OF THE PERMIT.
- THE PERMITTEE SHALL BE THE OWNERS OF AND HAVE PERPETUAL RESPONSIBILITY TO MAINTAIN ALL FACILITIES INSTALLED AS PART OF THIS HIGHWAY OCCUPANCY PERMIT.
- ALL PAVEMENT MARKINGS, OTHER THAN LONGITUDINAL LINES, (STOP BARS, GORE MARKINGS, CROSSWALKS, TURN ARROWS) SHALL BE CONSTRUCTED USING HOT THERMOPLASTIC MATERIAL.
- PAVEMENT MARKING PLACEMENT ON THE STATE HIGHWAY SHALL CONFORM TO TC-8600 DATED JUNE 13, 2013.
- ALL EXISTING PAVEMENT MARKINGS WHICH ARE NO LONGER APPROPRIATE SHALL BE ERADICATED BY THE CONTRACTOR. THE CONTRACTOR SHALL PLACE ALL REQUIRED NEW PAVEMENT MARKINGS.
- MATCH EXISTING PAVEMENT MARKINGS AT THE LIMITS OF DISTURBANCE.
- FOR PERMITS REQUIRING A STATE INSPECTOR, FOLLOWING THE PERMITTEE'S REQUEST, ALL WORK WITHIN THE RIGHT-OF-WAY MUST BE COMPLETED WITHOUT INTERRUPTIONS.
- ALL SANITARY SEWER FACILITIES THAT ARE TO BE CONSTRUCTED IN PENNDOT R.O.W. SHALL COMPLY WITH PENNDOT PUB. 408/2016 AND PUB. 72M STANDARDS FOR ROADWAY CONSTRUCTION.
- FOR PRECAST CONCRETE STRUCTURES WITHIN THE PENNDOT RIGHT-OF-WAY THE CONTRACTOR IS RESPONSIBLE TO NOTIFY PENNDOT MATERIALS AND TESTING DIVISION BY SUBMITTING A CS-430 FORM AND THE APPROVED SHOP DRAWINGS PRIOR TO FABRICATION.
- THE CONTRACTOR IS REQUIRED TO COMPLETE AND SUBMIT TO PENNDOT CS-6 FORM FOR COMPACTION OF ALL BACKFILL WITHIN PENNDOT RIGHT OF WAY.
- MILL AND OVERLAY LIMITS INDICATED ON THE PLAN ARE THE MINIMUM REQUIRED. ADDITIONAL MILL AND OVERLAY MAY BE REQUIRED AS DETERMINED IN THE FIELD BY THE PENNDOT INSPECTOR.

UTILITY LISTING

NEWPORT BOROUGH WATER AUTHORITY
PPL ELECTRIC UTILITIES CORPORATION
WINDSTREAM
AT&T
CENTURYLINK
COMCAST CABLE
HOWE TOWNSHIP
NEWPORT BOROUGH

WORK ZONE (WZTC) NOTES

- THIS WORK CONSISTS OF THE MAINTENANCE AND PROTECTION OF TRAFFIC AND THE PROTECTION OF THE PUBLIC WHEN APPROACHING AND DEPARTING THE CONSTRUCTION AREA AND WITHIN THE LIMITS OF CONSTRUCTION.
- FURNISH, ERECT, PLACE AND MAINTAIN TRAFFIC CONTROL SIGNS AND DEVICES. MAINTAIN TRAFFIC DURING HOURS OF CONSTRUCTION AND AT ALL OTHER TIMES CONSISTENT WITH THE METHODS INDICATED ON THESE DRAWINGS AND THE FOLLOWING:
PENNDOT PUBLICATION 35;
PENNDOT PUBLICATION 46;
PENNDOT PUBLICATION 72M;
PENNDOT PUBLICATION 111;
PENNDOT PUBLICATION 212;
PENNDOT PUBLICATION 213;
PENNDOT PUBLICATION 236;
PENNDOT PUBLICATION 408; AND
MUTCD, CURRENT EDITION.
- REMOVE THESE DEVICES IMMEDIATELY UPON COMPLETION OF THE WORK. PENNDOT WILL REMOVE ANY TRAFFIC CONTROL DEVICES ERECTED BY PENNDOT FORCES.
- PERMITTEE MUST ARRANGE FOR INSPECTION OF ALL TRAFFIC CONTROL DEVICES PRIOR TO START OF WORK.
- COVER OR REMOVE ALL CONFLICTING SIGNS AND ERADICATE ALL CONFLICTING PAVEMENT MARKINGS.
- MOUNT ALL LONG-TERM ADVANCE WARNING SIGNS ON TYPE III BARRICADES UNLESS OTHERWISE NOTED OR INSTRUCTED BY DISTRICT OFFICE.
- ALL SIGNS AND DEVICES TO BE MAINTAINED IN NEW OR LIKE NEW CONDITION.
- DRIVEWAYS WILL BE KEPT ACCESSIBLE AT ALL TIMES. LOCATE ALL SIGNS SO THAT SIGHT DISTANCES WILL NOT BE OBSTRUCTED AT DRIVEWAYS AND LOCAL ROADS.
- ALL CHANNELIZING DEVICES, BARRICADES, AND SIGNS SHALL HAVE TYPE III OR BETTER PRISMATIC RETROREFLECTIVE SHEETING. SHEETING SHALL BE APPROVED AND LISTED IN PENNDOT PUBLICATION 35 (BULLETIN 15).
- NO TRAFFIC RESTRICTIONS OR LANE CLOSURES ARE PERMITTED BETWEEN 6:00 AM AND 9:00 AM AND BETWEEN 3:00 PM AND 6:00 PM MONDAYS THROUGH FRIDAYS OR ON LEGAL HOLIDAYS AND WEEKENDS ASSOCIATED WITH LEGAL HOLIDAYS. ALL RESTRICTIONS AND CLOSURES ARE TO BE REMOVED BY NOON ON THE DAY PRIOR TO THE LEGAL HOLIDAY.
- PERMITTEE SHALL NOTIFY LOCAL EMERGENCY AUTHORITIES (E.G., POLICE, FIRE, MEDICAL), AFFECTED BUSINESSES, SCHOOL DISTRICT(S), THE GENERAL PUBLIC, THE DISTRICT PERMIT MANAGER AND THE DISTRICT APRAS COORDINATOR AT LEAST FOURTEEN DAYS PRIOR TO ANY SIGNIFICANT TRAFFIC IMPACTS (E.G., LATERAL WIDTH RESTRICTIONS LESS THAN 16 FEET, DETOURS)
- MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE PATA DRAWING (S) IN THE CURRENT PENNDOT PUBLICATION 213, "TEMPORARY TRAFFIC CONTROL GUIDELINES".
- DROPOFFS CREATED BY CONSTRUCTION OPERATIONS SHALL BE TREATED CONSISTENT WITH PUBLICATION 408, SECTION 901.3(J).
- REMOVE ALL SHORT-TERM WORK ZONE TRAFFIC CONTROL SIGNING UPON COMPLETION OF THAT DAY'S WORK PERIOD.
- RESTRICTING TRAFFIC FLOW WITHIN THE WORK AREA SHALL BE MINIMIZED TO PREVENT TRAFFIC CONGESTION AND UNSAFE TRAFFIC CONDITIONS.
- NOTIFY THE LOCAL MUNICIPALITY WHERE SIGNALIZED INTERSECTIONS FALL WITHIN THE WORK ZONE. DO NOT FLAG A SIGNALIZED INTERSECTION WITHOUT THE MUNICIPALITY PLACING THE SIGNAL ON FLASH.
- THE CONTRACTOR SHALL COMPLY WITH ACT 229 OF DECEMBER 2002 DURING CONSTRUCTION ACTIVITIES WITHIN PENNDOT'S RIGHT-OF-WAY.

SURVEY NOTES

- JUNIATA PARKWAY PUMP STATION SITE:
TAX PARCEL NUMBER: PART OF 080,047.02-029.000 UPI # 080,047.02-029.001
SOURCE OF TITLE: INSTRUMENT NUMBER 201901719
SUBJECT PROPERTY LINES ON THIS PLAN HAVE BEEN ESTABLISHED THROUGH FIELD BOUNDARY SURVEY BY HERBERT, ROWLAND AND GRUBIC, INC. ON FEBRUARY 05, 2015.
- WEST SHORTCUT ROAD PUMP STATION SITE:
TAX PARCEL NUMBER: 080,047.00-044.003
SOURCE OF TITLE: INSTRUMENT NO. 2009009617
SUBJECT PROPERTY LINES ON THIS PLAN HAVE BEEN ESTABLISHED THROUGH FIELD BOUNDARY SURVEY BY HERBERT, ROWLAND AND GRUBIC, INC. ON JANUARY 30 AND FEBRUARY 03, 2015 AND IS BASED ON THE FOLLOWING PLANS OF RECORD:
a. SUBDIVISION AND LAND DEVELOPMENT PLAN PLAN FOR NEWPORT PLAZA, PREPARED BY H. EDWARD BLACK AND ASSOCIATES, DATED FEBRUARY 23, 1995 AND RECORDED IN PLAN BOOK 42, PAGES 91 THRU 94.
b. OVERALL SUBDIVISION PLAN FOR THE NEWPORT HEALTH CENTER, PREPARED BY R. J. FISHER AND ASSOCIATES, INC., DATED APRIL 11, 2013; LAST REVISED APRIL 25, 2013 AND RECORDED IN PLAN BOOK 66, PAGE 09.
- HOWE PUMP STATION SITE:
TAX PARCEL NUMBER: 080,060.00-068.000
SOURCE OF TITLE: DEED BOOK 507, PAGE 195
SUBJECT PROPERTY LINES ON THIS PLAN HAVE BEEN ESTABLISHED THROUGH FIELD BOUNDARY SURVEY BY HERBERT, ROWLAND AND GRUBIC, INC. ON FEBRUARY 05, 2015.
- TOPOGRAPHY SHOWN HEREON WAS PROVIDED BY T3 GLOBAL STRATEGIES. SUPPLEMENTAL TOPOGRAPHY WAS PERFORMED BY HERBERT, ROWLAND AND GRUBIC, INC. DATED JULY 28, 2014 THROUGH FEBRUARY 5, 2015
- THIS SURVEY HORIZONTALLY REFERENCES NAD 83, PENNSYLVANIA STATE PLANE COORDINATES, SOUTH ZONE.
- THE VERTICAL DATUM OF SAID CONTOURS IS BASED ON NAVD 88, GEOD 12A.
- SITE BENCHMARK: RIM OF THE SANITARY SEWER MANHOLE LOCATED IN THE MACADAM DRIVE; APPROXIMATELY 50 FEET SOUTHWEST OF THE SOUTHWEST BUILDING CORNER OF THE NEWPORT COMMONS SHOPPING CENTER. ELEVATION = 531.35.
- THE LOCATIONS OF UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND FEATURES, FIELD OBSERVATIONS, SURVEY, AND RECORD DRAWINGS PROVIDED BY UTILITY COMPANIES. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION AND DEPTH OF ALL UTILITY LINES PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
- PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES IN COMPLIANCE WITH ACT 287 (AS AMENDED) TO VERIFY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES. A PA ONE CALL WAS PERFORMED PRIOR TO FIELD SURVEYING. SERIAL NO. 20141961299.

LEGEND AND ABBREVIATIONS

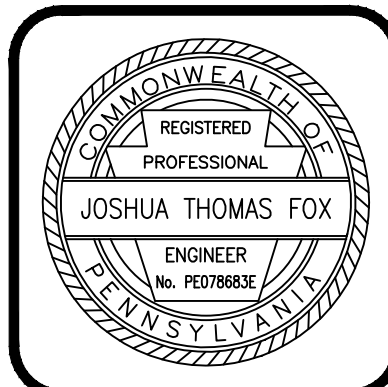
	Existing Above Ground Electric Line		Existing Guy Pole		PROPOSED SANITARY SEWER EASEMENT/ TEMPORARY CONSTRUCTION EASEMENT
	Existing Underground Electric Line		Existing Light Standard		DENOTES STRUCTURE TO BE SERVED BY SIMPLEX GRINDER PUMP
	Existing Electric - Direct Buried		Existing Guy Wire		DENOTES GRINDER PUMP LOCATED WITHIN THE 100-YEAR FLOOD PLAIN
	Existing Above Ground Electric and Telephone Line		Existing Electrical Box		DENOTES STRUCTURE TO BE SERVED BY DUPLEX GRINDER PUMP
	Existing Above Ground Electric and Cable TV Line		Existing Traffic Signal Pole		PROPOSED CLEANOUT / AIR VALVE CHAMBER
	Existing Above Ground Electric, Telephone and Cable TV Line		Control Box	ARVM	AIR RELEASE VALVE MANHOLE
	Existing Rail Road Sign		Existing Storm Sewer Line	BM	BENCHMARK
	Existing Rail Road Crossing Gate		Existing Sanitary Sewer Line	CI	CAST IRON
	Existing Rail Road Signal Light		Existing Sanitary Sewer Manhole	CMP	CORRUGATED METAL PIPE
	Existing Bollard		Existing Septic Tank	CO	CLEANOUT
	Existing Edge of Gravel		Existing Storm Sewer Inlet	CONC.	CONCRETE
	Existing Guide Rail		Existing Storm Sewer Manhole	CONT.	CONTINUOUS
	Existing Fence		Probe (passed)	DIP	DUCTILE IRON PIPE
	Angle Iron		Probe (failed)	DMH	DROP MANHOLE
	Axle		Perc (passed)	DN.	DOWN
	Drill Hole		Perc (failed)	ELEV.	ELEVATION
	Hub		Existing Water Line	HDPE	HIGH DENSITY POLYETHYLENE
	Monument		Existing Well	ICO	IN-LINE CLEANOUT
	Nail		Existing Water Valve	INV.	INVERT
	Iron Pipe		Existing Fire Hydrant	LPL	LOW PRESSURE LATERAL
	Iron Pin		Existing Water Meter	LPS	LOW PRESSURE SEWER
	PK Nail		Existing Water Spigot	MH	MANHOLE
	Existing Road Delineation Post		Existing Monitoring Well	O.C.	OFF CENTER MANHOLE
	Existing Flag Pole		Existing White Pavement Marking / Width	PVC	POLYVINYL CHLORIDE PIPE
	Existing Lamp Post		Existing Double Yellow Pavement Marking / Width	RCP	REINFORCED CONCRETE PIPE
	Existing Post		Rail Road Spike	R.O.W.	RIGHT-OF-WAY
	Existing Mailbox		Benchmark	SLOPP	SMOOTH LINED CORRUGATED PLASTIC PIPE
	Existing Above Ground Telephone Line		Stone Monument	STL	STEEL
	Existing Underground Telephone Line		Tree Monument	TCO	TERMINAL CLEANOUT
	Existing Telephone - Direct Buried		Railroad Track	TWP	TOWNSHIP
	Existing Above Ground Cable TV Line		Municipal Boundaries	TYP.	TYPICAL
	Existing Underground Cable TV Line		Property Line	VERT.	VERTICAL
	Existing Above Ground Telephone and Cable TV Line		Legal Right-of-Way Line	WT	WATERTIGHT FRAME & COVER
	Existing Above Ground Fiber Optic Line		Setback Line		GRAVEL DRIVEWAY PAVEMENT
	Existing Underground Fiber Optic Line		Zoning Boundaries		MIN-USE DRIVEWAY PAVEMENT
	Existing Conduit		Existing Easement		PAVEMENT OVERLAY
	Existing Cable TV Pedestal		Floodplain		MILL AND OVERLAY
	Existing Telephone Pedestal		Floodway		PAVED SHOULDER RESTORATION
	Existing Telephone Manhole		Existing Contour Major		PROPOSED SANITARY SEWER MANHOLE
	Existing Telephone Pole		Existing Contour Minor		PROPOSED SANITARY SEWER MAIN
	Existing Electrical Manhole		Existing Stream Line		PROPOSED FORCE MAIN
	Existing Electric Pole		Existing Ground Elevation		PROPOSED LOW PRESSURE SEWER
	Existing Private Utility Pole		Existing Ditch Or Swale		PROPOSED SANITARY SEWER LATERAL
	Existing Curb		Existing Shrub		PROPOSED LOW PRESSURE LATERAL
	Existing Edge of Road		Existing Coniferous Tree		PROPOSED REDUCER
	Existing Stone Wall		Existing Deciduous Tree		GEOTECHNICAL BORING LOCATION
	Existing Retaining Wall		Tree/Brush Line		TEST HOLE LOCATION
	Existing Field		Shrub Row		SITE CONTROL POINT
	Existing Sign		Wetland Flag		
	Existing Sign And Posts		Road Centerline		
	Existing One-Sided Billboard				
	Existing Two-Sided Billboard				
	Existing Fence Post				

PA ONE CALL
ACT 287, AS AMENDED



PENNSYLVANIA ACT 287 (1974) AS AMENDED, REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH. PA ONE CALL SERIAL NOS. 20190501662, 20190501676, 20190501689, 20190501702, 20190501722, 20190501760, 20190501778. HAVE BEEN ASSIGNED TO THIS PROJECT ON 02-19-19.

NO.	REVISION	DATE	BY



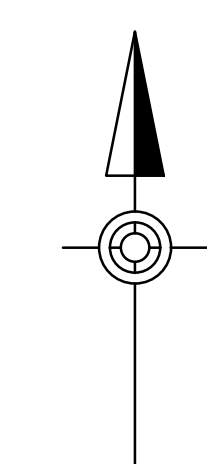
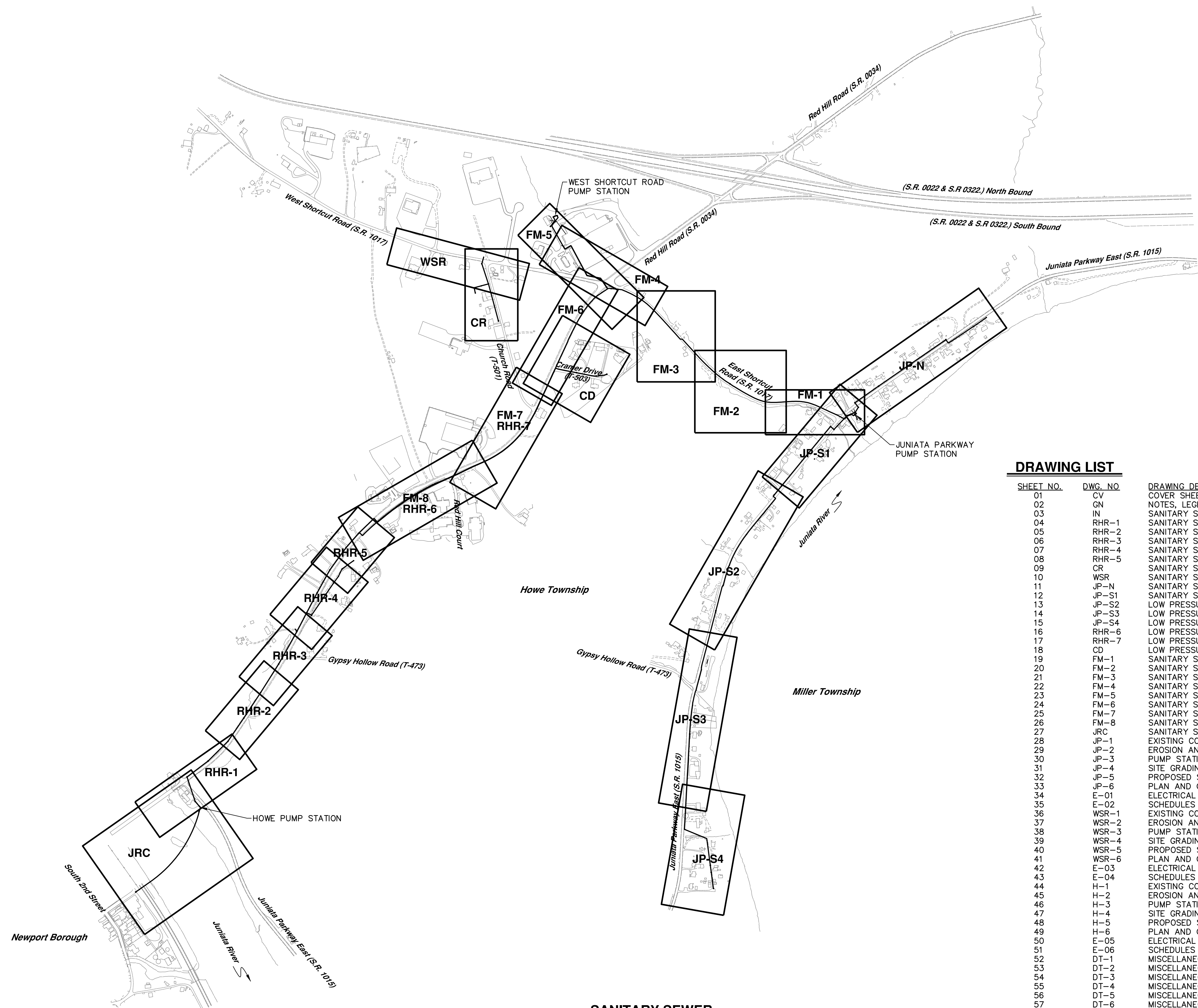
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www.hrg-inc.com

HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

NOTES, LEGEND AND ABBREVIATIONS, AND UTILITY LIST FOR HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- JTF/PFW
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

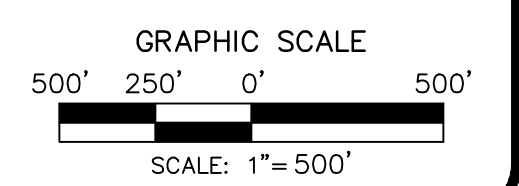
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SHEET NO. 2 OF 60
PROJECT 005100.0434



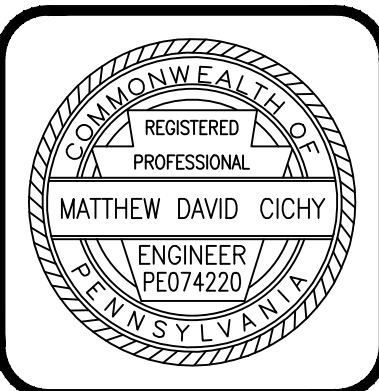
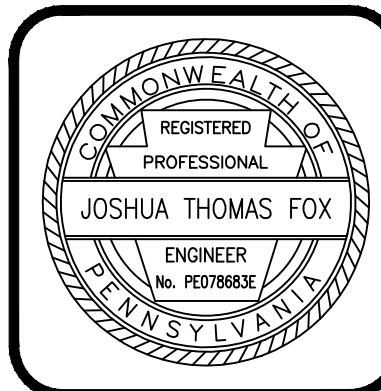
DRAWING LIST

SHEET NO.	DWG. NO.	DRAWING DESCRIPTION
01	CV	COVER SHEET
02	GN	NOTES, LEGEND AND ABBREVIATIONS AND UTILITY LIST
03	IN	SANITARY SEWER INDEX MAP & DRAWING LIST
04	RHR-1	SANITARY SEWER PLAN & PROFILE - RED HILL ROAD
05	RHR-2	SANITARY SEWER PLAN & PROFILE - RED HILL ROAD
06	RHR-3	SANITARY SEWER PLAN & PROFILE - RED HILL ROAD
07	RHR-4	SANITARY SEWER PLAN & PROFILE - RED HILL ROAD
08	RHR-5	SANITARY SEWER PLAN & PROFILE - RED HILL ROAD
09	CR	SANITARY SEWER PLAN & PROFILE - CHURCH ROAD
10	WSR	SANITARY SEWER PLAN & PROFILE - WEST SHORTCUT ROAD
11	JP-N	SANITARY SEWER PLAN & PROFILE - JUNIATA PARKWAY NORTH
12	JP-S1	SANITARY SEWER PLAN & PROFILE - JUNIATA PARKWAY SOUTH
13	JP-S2	LOW PRESSURE SANITARY SEWER PLAN & PROFILE - JUNIATA PARKWAY SOUTH
14	JP-S3	LOW PRESSURE SANITARY SEWER PLAN & PROFILE - JUNIATA PARKWAY SOUTH
15	JP-S4	LOW PRESSURE SANITARY SEWER PLAN & PROFILE - JUNIATA PARKWAY SOUTH
16	RHR-6	LOW PRESSURE SANITARY SEWER PLAN & PROFILE - RED HILL ROAD
17	RHR-7	LOW PRESSURE SANITARY SEWER PLAN & PROFILE - RED HILL ROAD
18	CD	LOW PRESSURE SANITARY SEWER PLAN & PROFILE - CRAMER DRIVE
19	FM-1	SANITARY SEWER PLAN & PROFILE - JUNIATA PARKWAY PUMP STATION FORCE MAIN
20	FM-2	SANITARY SEWER PLAN & PROFILE - JUNIATA PARKWAY PUMP STATION FORCE MAIN
21	FM-3	SANITARY SEWER PLAN & PROFILE - JUNIATA PARKWAY PUMP STATION FORCE MAIN
22	FM-4	SANITARY SEWER PLAN & PROFILE - JUNIATA PARKWAY PUMP STATION FORCE MAIN
23	FM-5	SANITARY SEWER PLAN & PROFILE - WEST SHORTCUT ROAD PUMP STATION FORCE MAIN
24	FM-6	SANITARY SEWER PLAN & PROFILE - WEST SHORTCUT ROAD PUMP STATION FORCE MAIN
25	FM-7	SANITARY SEWER PLAN & PROFILE - WEST SHORTCUT ROAD PUMP STATION FORCE MAIN
26	FM-8	SANITARY SEWER PLAN & PROFILE - WEST SHORTCUT ROAD PUMP STATION FORCE MAIN
27	JRC	SANITARY SEWER PLAN & PROFILE - JUNIATA RIVER AND NORFOLK SOUTHERN R.R. CROSSING
28	JP-1	EXISTING CONDITIONS AND DEMOLITION SITE PLAN - JUNIATA PARKWAY PUMP STATION
29	JP-2	EROSION AND SEDIMENTATION CONTROL SITE PLAN - JUNIATA PARKWAY PUMP STATION
30	JP-3	PUMP STATION SITE PREPARATION PLAN - JUNIATA PARKWAY PUMP STATION
31	JP-4	SITE GRADING AND SURFACING PLAN - JUNIATA PARKWAY PUMP STATION
32	JP-5	PROPOSED SITE PLAN - JUNIATA PARKWAY PUMP STATION
33	JP-6	PLAN AND CROSS SECTION - JUNIATA PARKWAY PUMP STATION
34	E-01	ELECTRICAL SITE PLAN AND SINGLE LINE DIAGRAM - JUNIATA PARKWAY PUMP STATION
35	E-02	SCHEDULES AND DETAILS - JUNIATA PARKWAY PUMP STATION
36	WSR-1	EXISTING CONDITIONS AND DEMOLITION SITE PLAN - WEST SHORTCUT ROAD PUMP STATION
37	WSR-2	EROSION AND SEDIMENTATION CONTROL SITE PLAN - WEST SHORTCUT ROAD PUMP STATION
38	WSR-3	PUMP STATION SITE PREPARATION PLAN - WEST SHORTCUT ROAD PUMP STATION
39	WSR-4	SITE GRADING AND SURFACING PLAN - WEST SHORTCUT ROAD PUMP STATION
40	WSR-5	PROPOSED SITE PLAN - WEST SHORTCUT ROAD PUMP STATION
41	WSR-6	PLAN AND CROSS SECTION - WEST SHORTCUT ROAD PUMP STATION
42	E-03	ELECTRICAL SITE PLAN AND SINGLE LINE DIAGRAM - WEST SHORTCUT ROAD PUMP STATION
43	E-04	SCHEDULES AND DETAILS - WEST SHORTCUT ROAD PUMP STATION
44	H-1	EXISTING CONDITIONS AND DEMOLITION SITE PLAN - HOWE PUMP STATION
45	H-2	EROSION AND SEDIMENTATION CONTROL SITE PLAN - HOWE PUMP STATION
46	H-3	PUMP STATION SITE PREPARATION PLAN - HOWE PUMP STATION
47	H-4	SITE GRADING AND SURFACING PLAN - HOWE PUMP STATION
48	H-5	PROPOSED SITE PLAN - HOWE PUMP STATION
49	H-6	PLAN AND CROSS SECTION - HOWE PUMP STATION
50	E-05	ELECTRICAL SITE PLAN AND SINGLE LINE DIAGRAM - HOWE PUMP STATION
51	E-06	SCHEDULES AND DETAILS - HOWE PUMP STATION
52	DT-1	MISCELLANEOUS CONSTRUCTION DETAILS
53	DT-2	MISCELLANEOUS CONSTRUCTION DETAILS
54	DT-3	MISCELLANEOUS CONSTRUCTION DETAILS
55	DT-4	MISCELLANEOUS CONSTRUCTION DETAILS
56	DT-5	MISCELLANEOUS CONSTRUCTION DETAILS
57	DT-6	MISCELLANEOUS CONSTRUCTION DETAILS
58	DT-7	RESTORATION DETAILS
59	DT-8	EROSION & SEDIMENT CONTROL DETAILS
60	DT-9	EROSION & SEDIMENT CONTROL DETAILS

SANITARY SEWER INDEX MAP
SCALE: 1" = 500'



NO.	REVISION	DATE	BY



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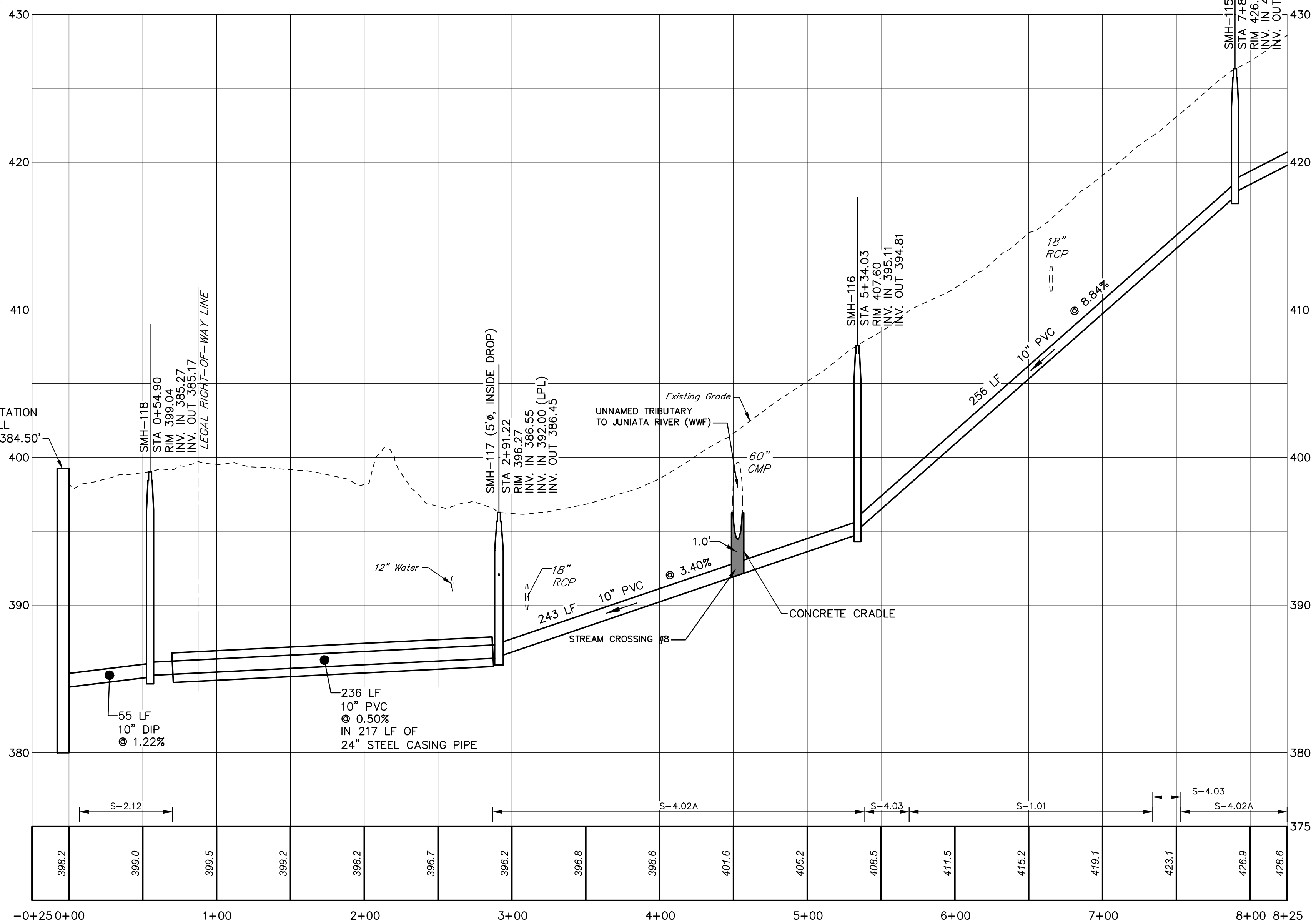
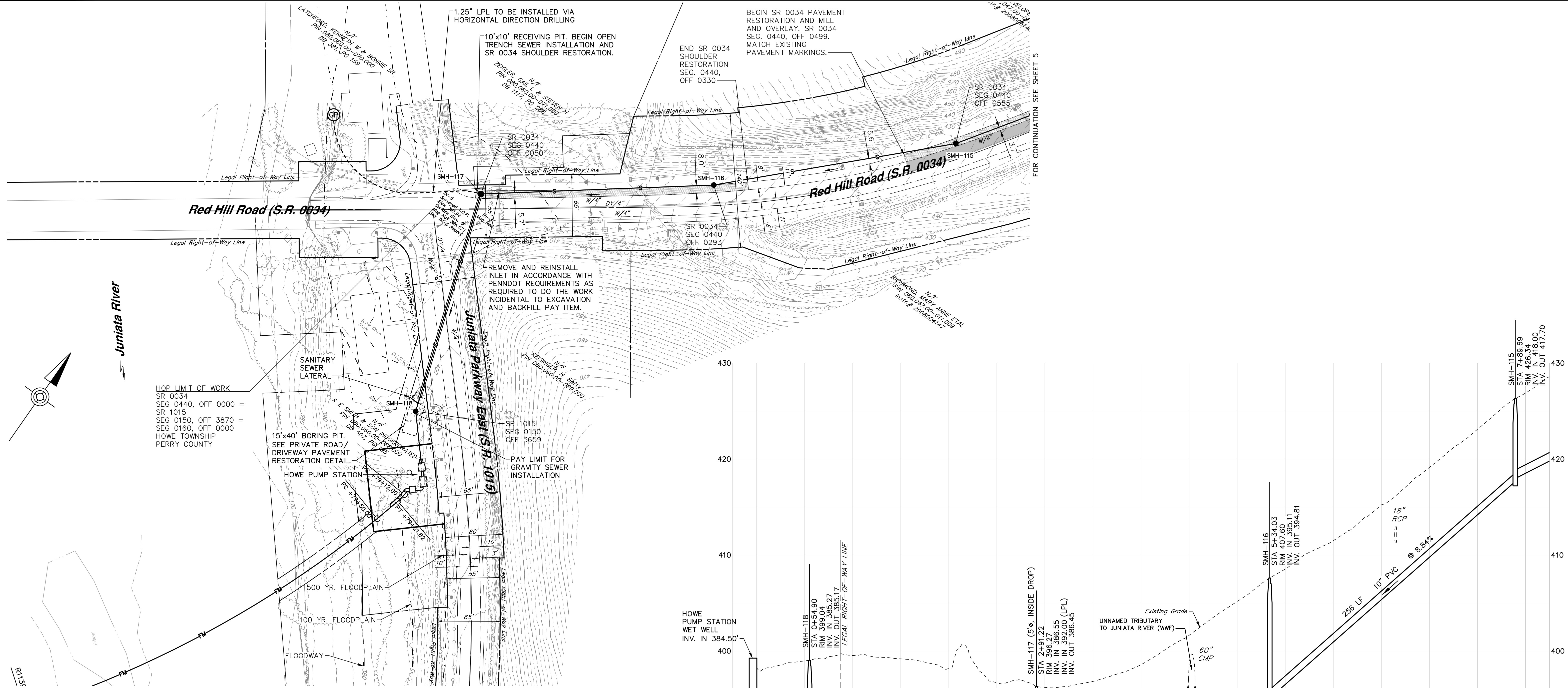
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www.hrg-inc.com

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NEWPORT, PA 17074

SANITARY SEWER INDEX MAP & DRAWING LIST
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- JTF
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO.
IN
SHEET NO.
3 OF 60
PROJECT 005100.0434

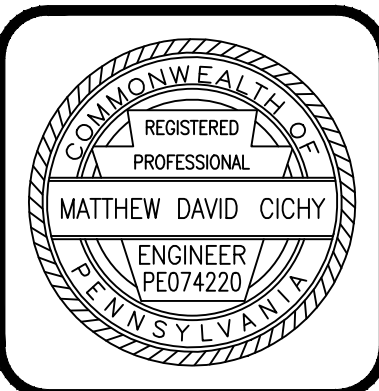
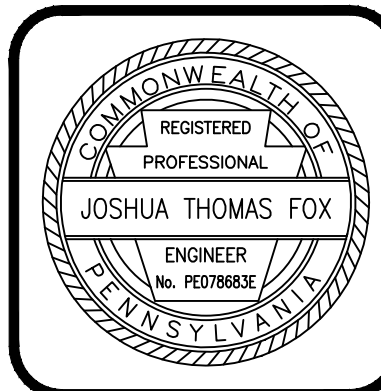


HOP LIMIT OF WORK
 SR 0034
 SEG 0440, OFF 0000 =
 SR 1015
 SEG 0150, OFF 3870 =
 SEG 0160, OFF 0000
 HOWE TOWNSHIP
 PERRY COUNTY

SANITARY SEWER PLAN
SCALE: 1" = 50'

PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'
SCALE IN FEET

NO.	REVISION	DATE	BY



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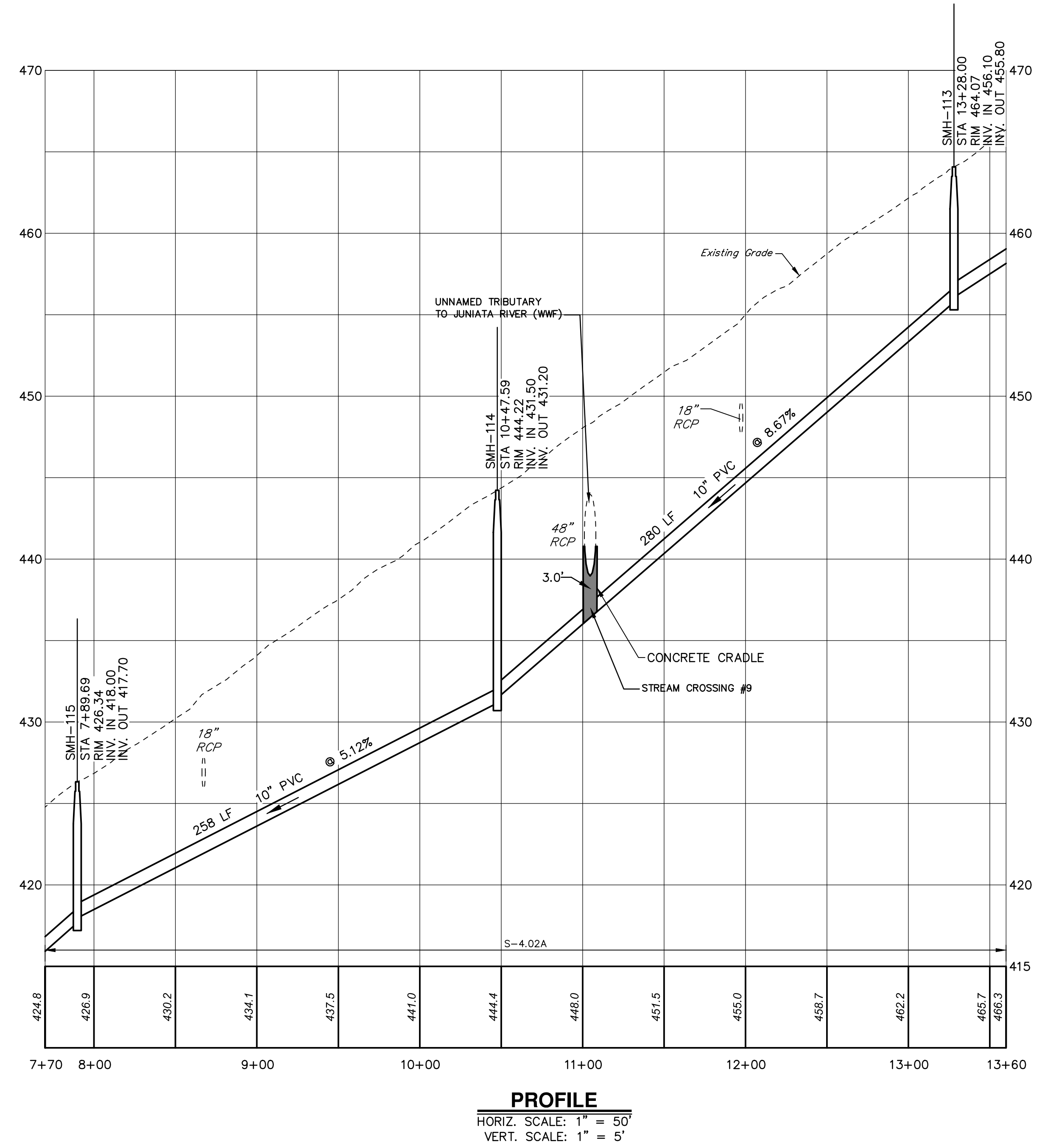
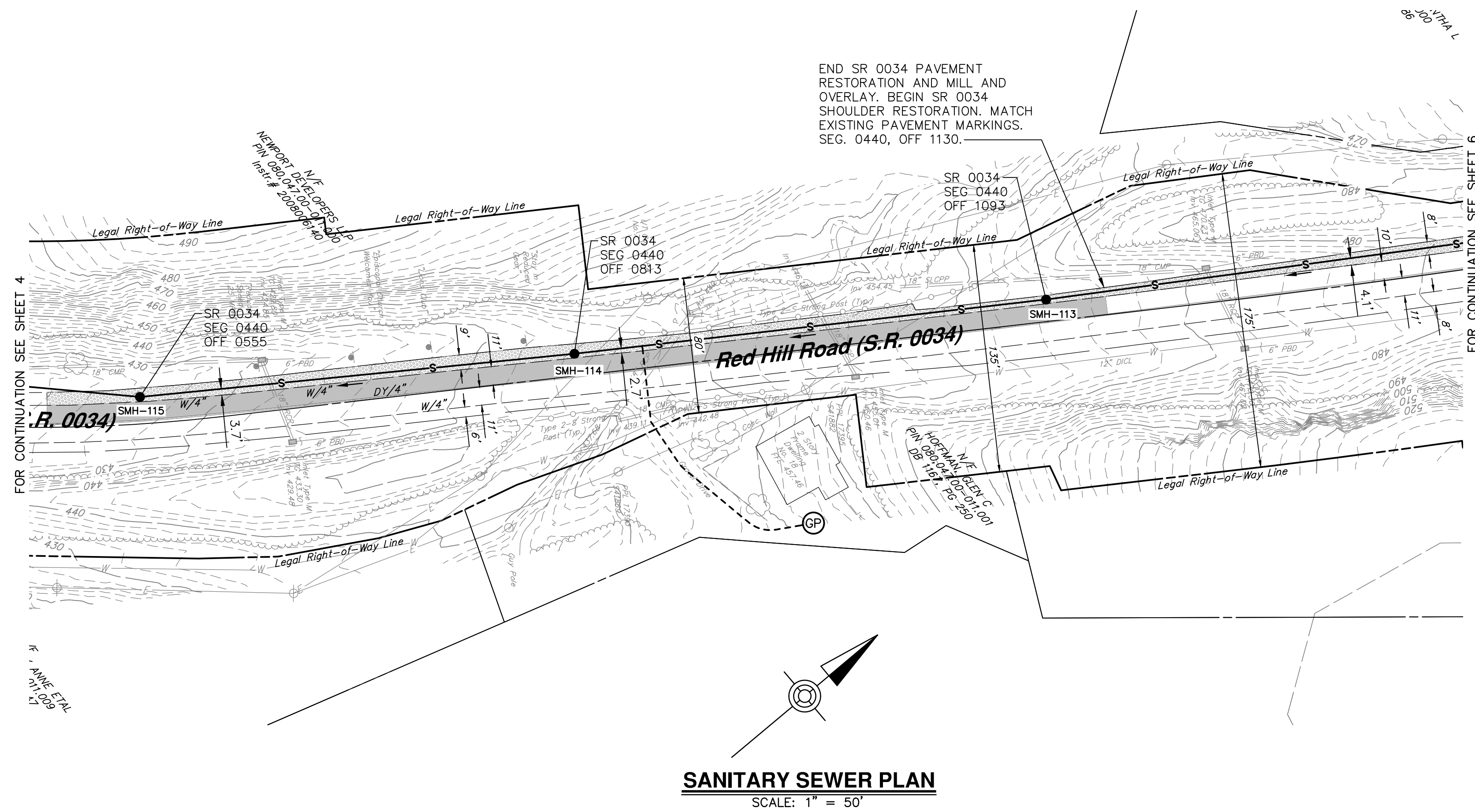
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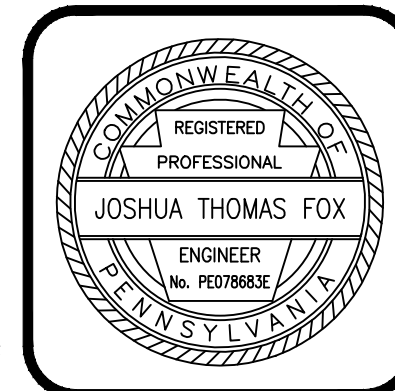
SANITARY SEWER PLAN & PROFILE
RED HILL ROAD (S.R. 0034)
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - JTF
CADD - RSF
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SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
RHR-1
SHEET NO.
4 OF 60
PROJECT 005100.0434



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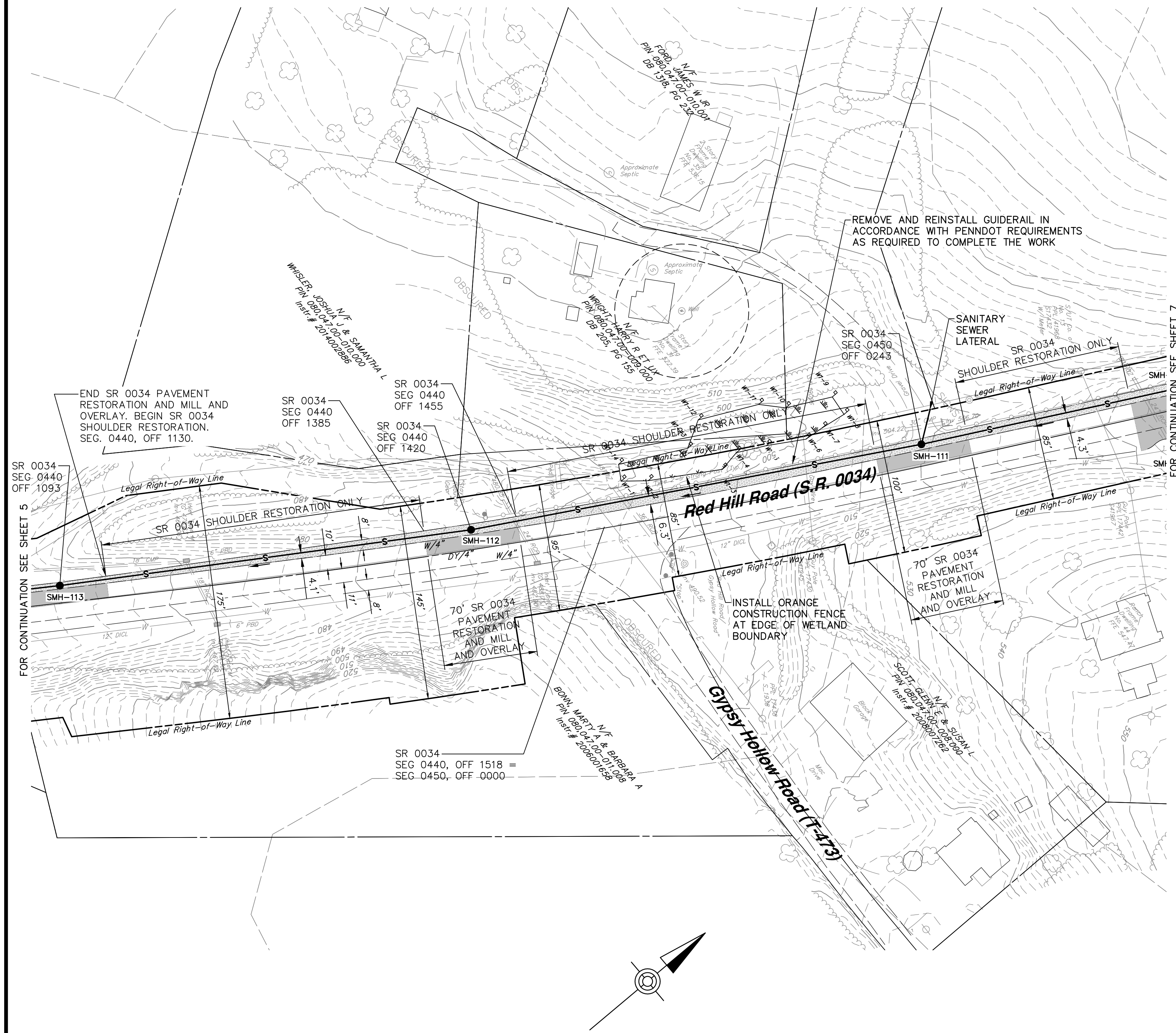
HOWE TOWNSHIP MUNICIPAL AUTHORITY
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NEWPORT, PA 17074

SANITARY SEWER PLAN & PROFILE
RED HILL ROAD (S.R. 0034)
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

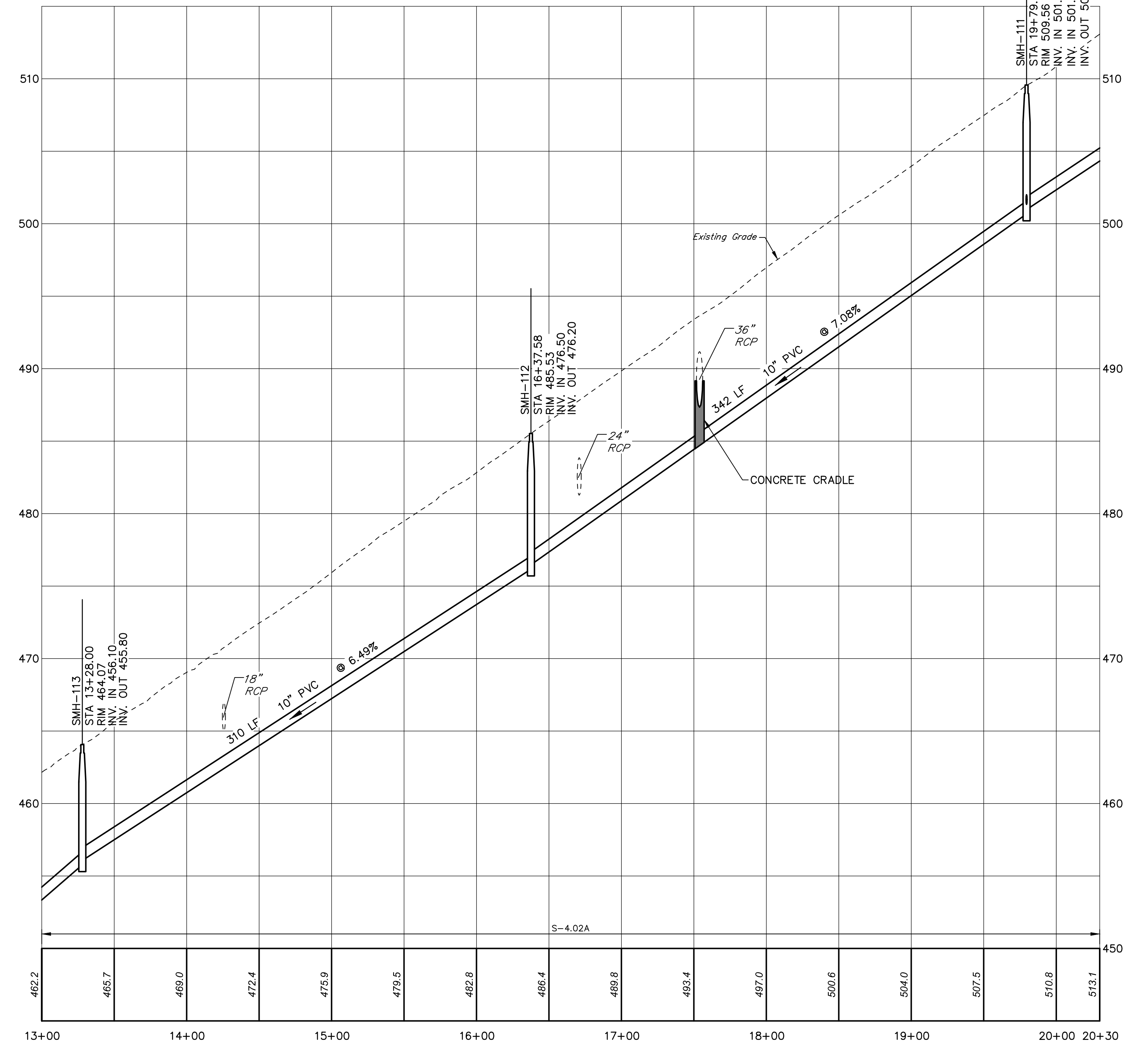
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

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DATE - MAR. 2019

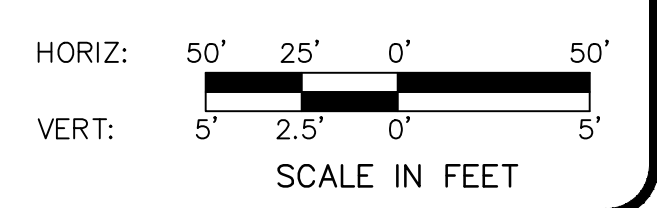
DRAWING NO.
RHR-2
SHEET NO.
5 OF 60
PROJECT 005100.0434



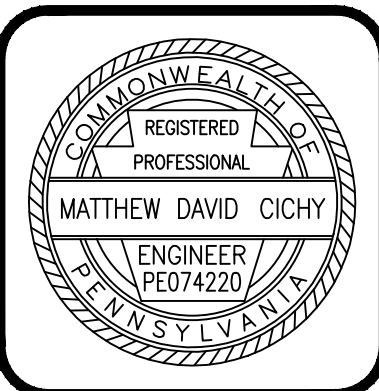
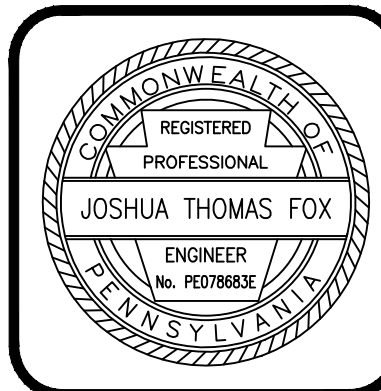
SANITARY SEWER PLAN
SCALE: 1" = 50'



PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'



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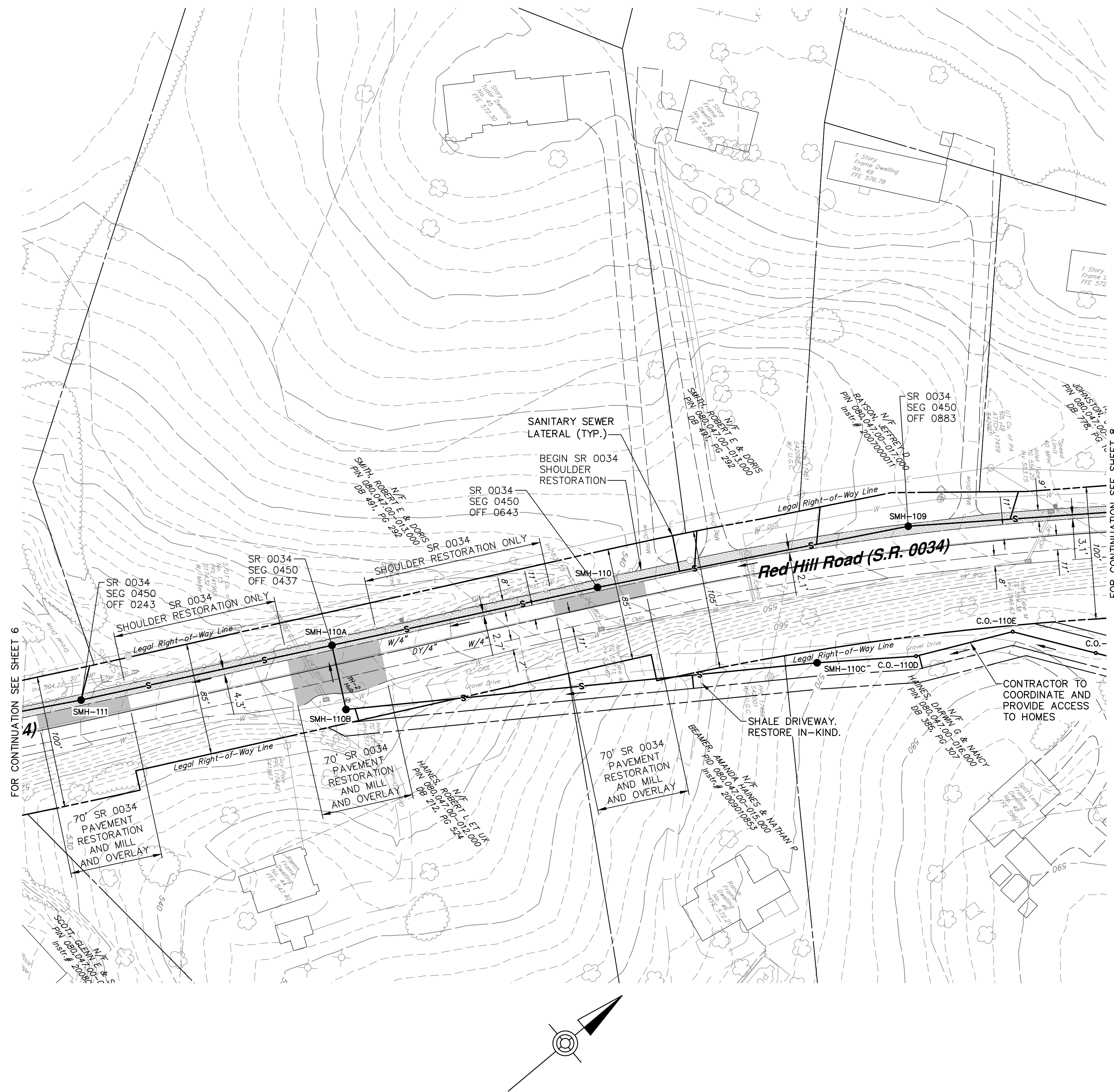
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SANITARY SEWER PLAN & PROFILE
RED HILL ROAD (S.R. 0034)
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

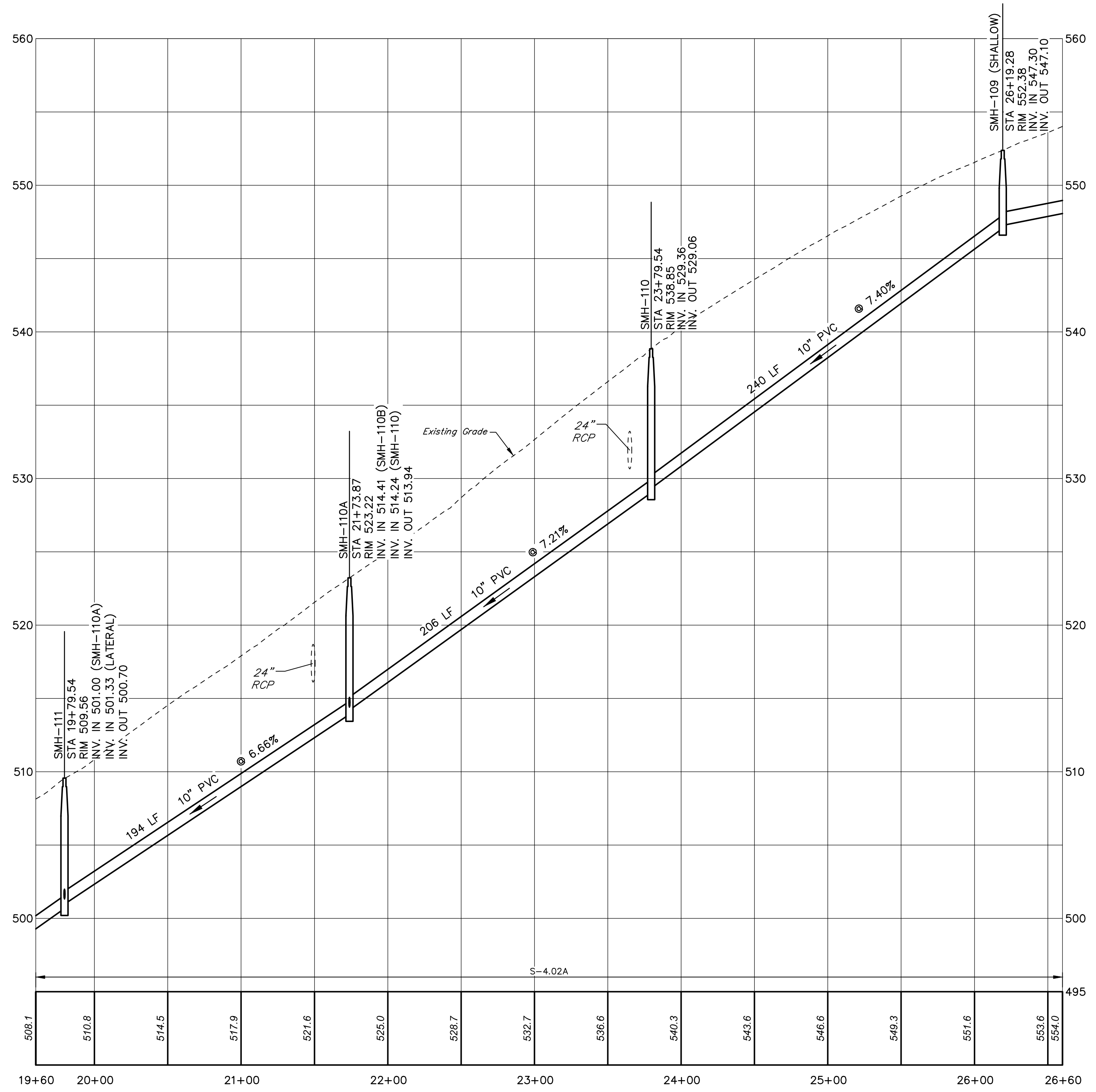
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SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
RHR-3
SHEET NO.
6 OF 60
PROJECT 005100.0434

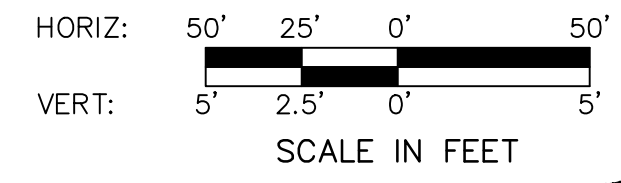


SANITARY SEWER PLAN
SCALE: 1" = 50'

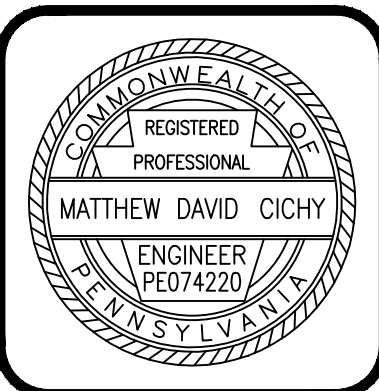
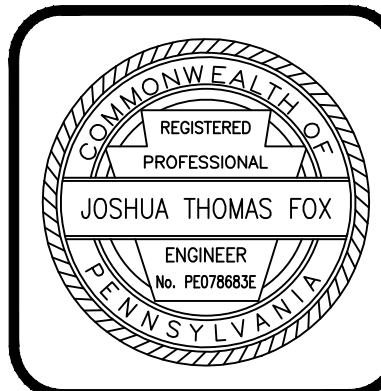
NOTE:
RESTORE PRIVATE DRIVES ACCORDING TO THE PRIVATE ROAD/DRIVEWAY PAVEMENT RESTORATION DETAIL.



PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'



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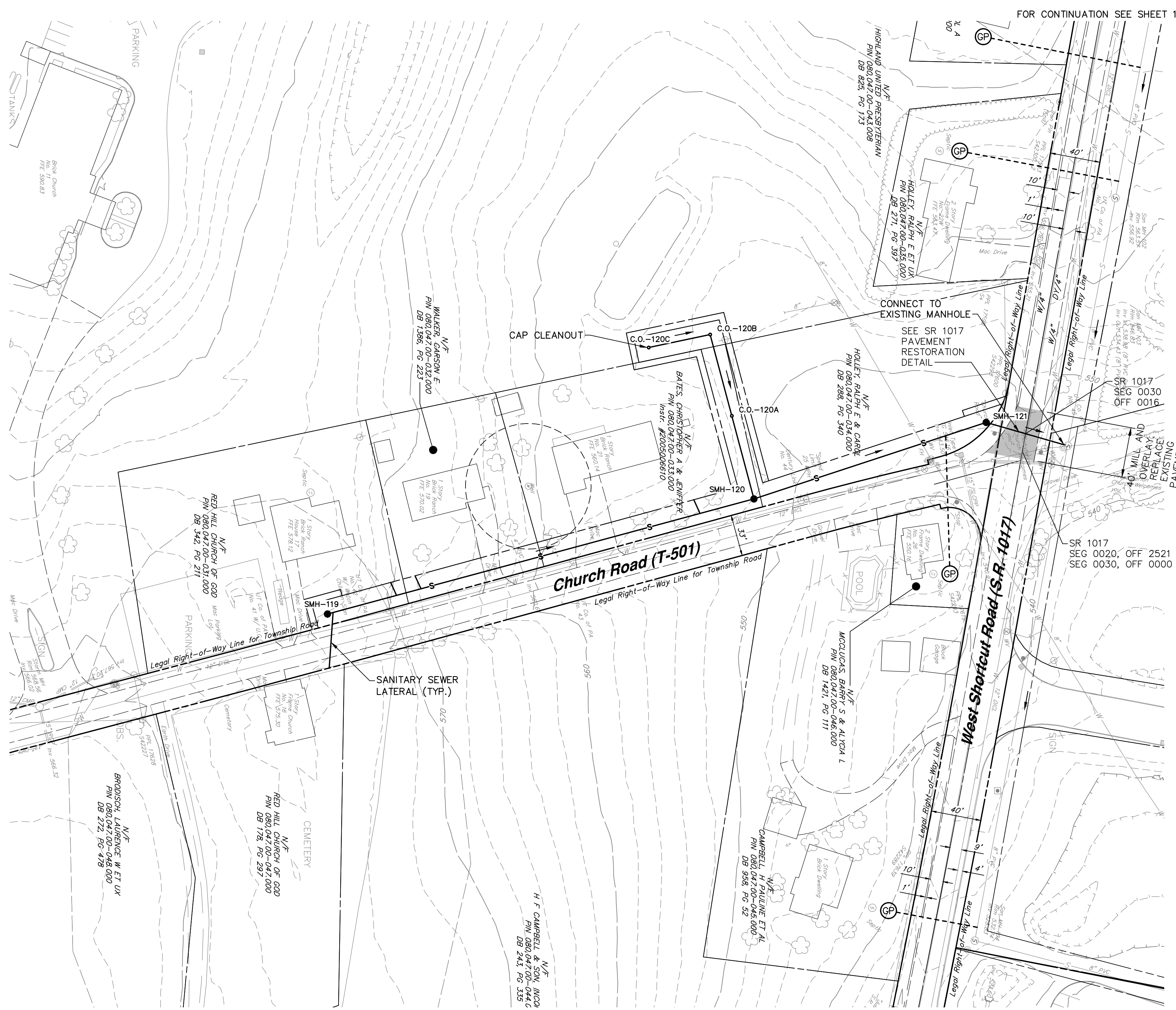
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SANITARY SEWER PLAN & PROFILE
RED HILL ROAD (S.R. 0034)
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

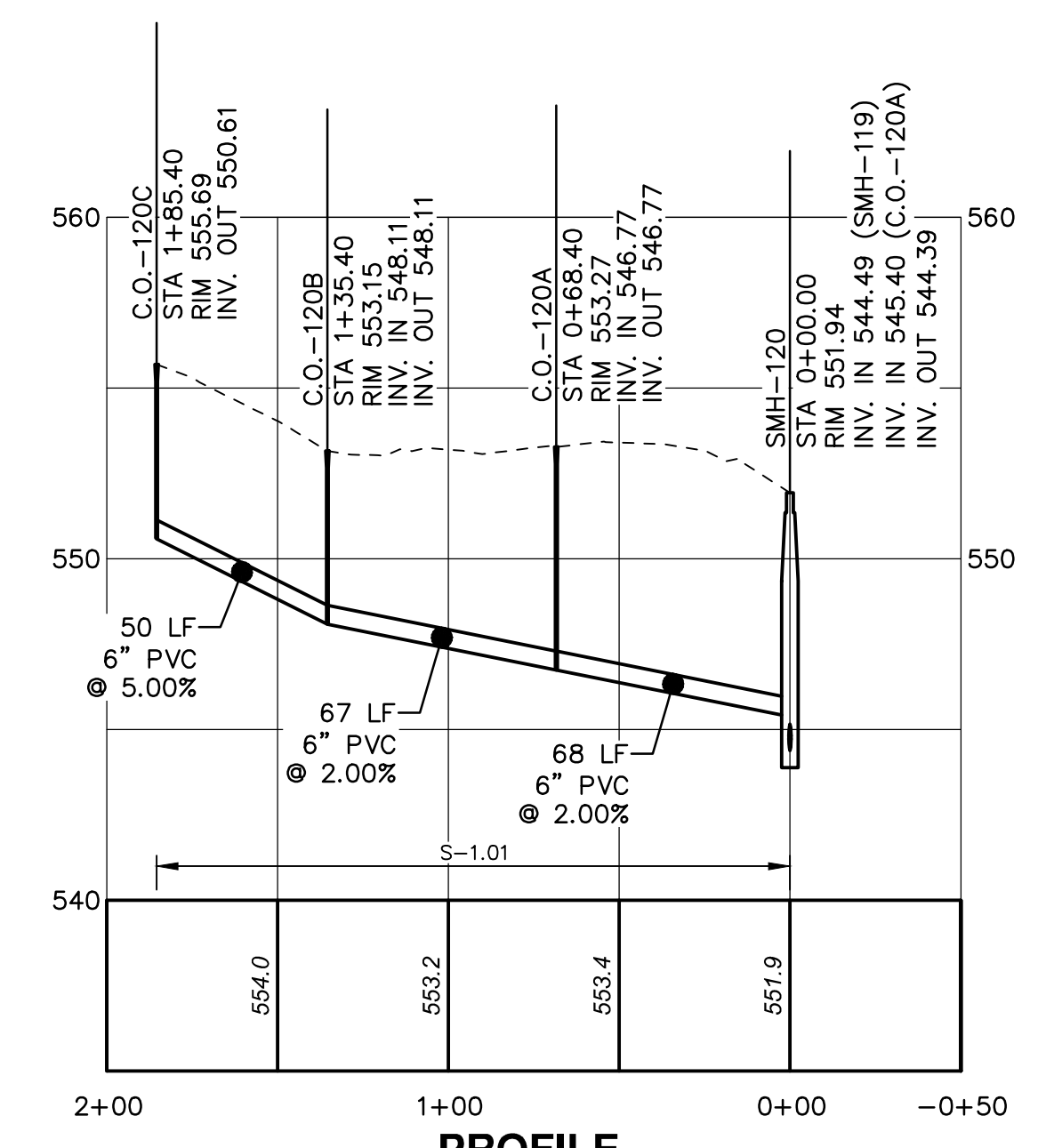
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CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
RHR-4
SHEET NO.
7 OF 60
PROJECT 005100.0434

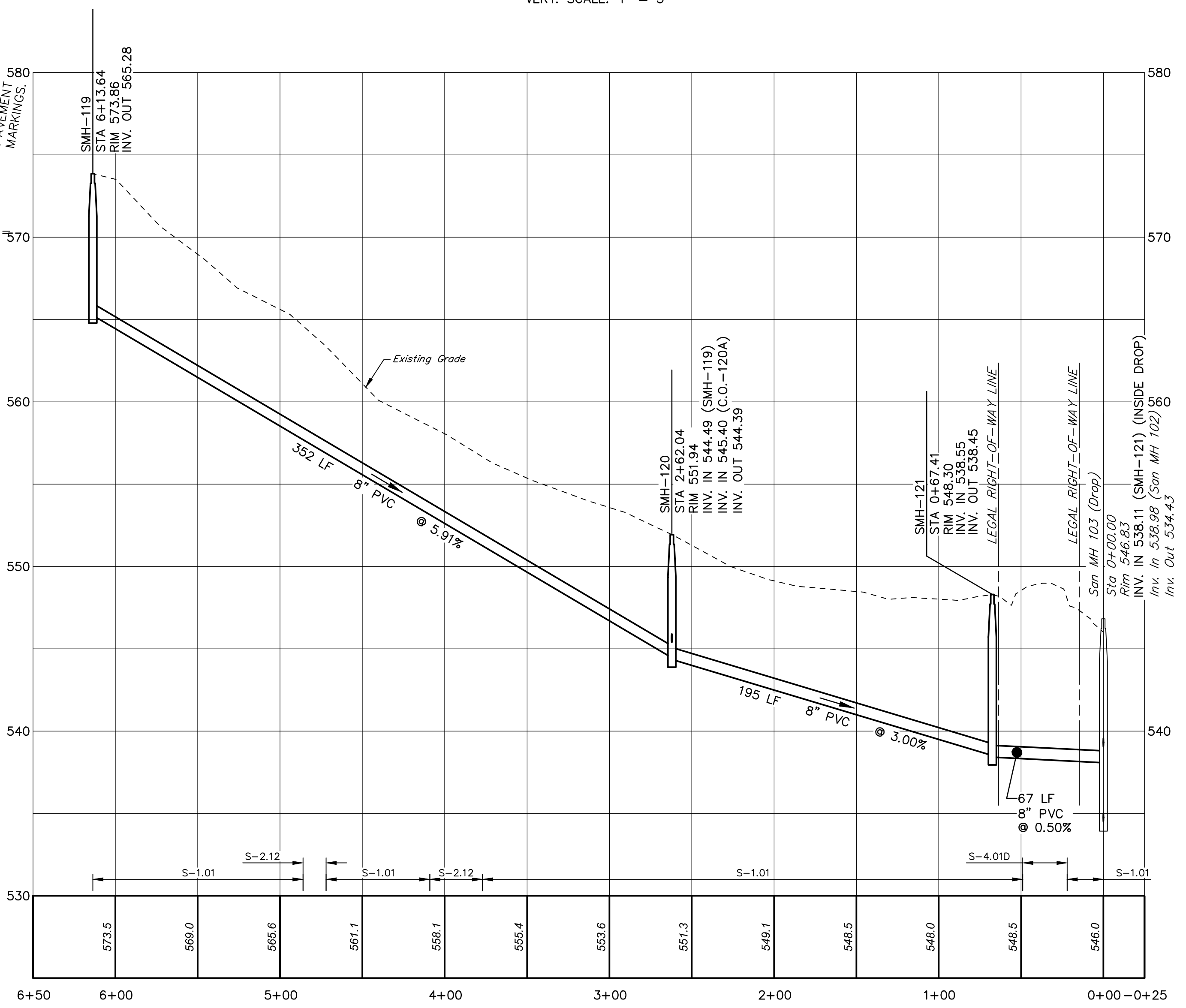


SANITARY SEWER PLAN
SCALE: 1" = 50'

NOTE:
EXISTING SAN MH-103 MANHOLE STEPS ARE LOCATED ON THE SOUTH SIDE OF THE MANHOLE. THE EXISTING EXISTING SHALL BE REMOVED AND NEW STEPS INSTALLED ON THE NORTH SIDE OF THE MANHOLE TO PERMIT INSTALLATION OF THE PROPOSED INSIDE DROP CONNECTION FOR THE SAN MH-103 TO SAN MH-121 SEWER MAIN. SUBMIT PROPOSED MANHOLE STEPS AND METHOD OF INSTALLATION TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. IN ADDITION, THE EXISTING MANHOLE CONE SECTION SHALL BE ROTATED TO MATCH THE NEW STEP LOCATION.



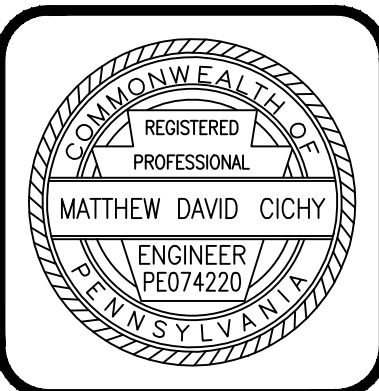
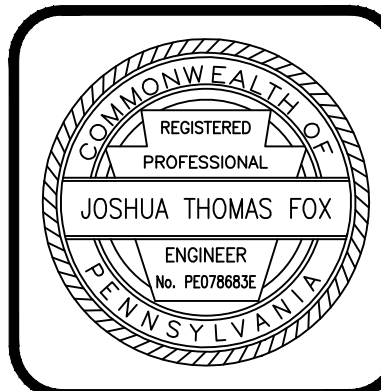
PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'



PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'

HORIZ: 50' 25' 0' 50'
VERT: 5' 2.5' 0' 5'
SCALE IN FEET

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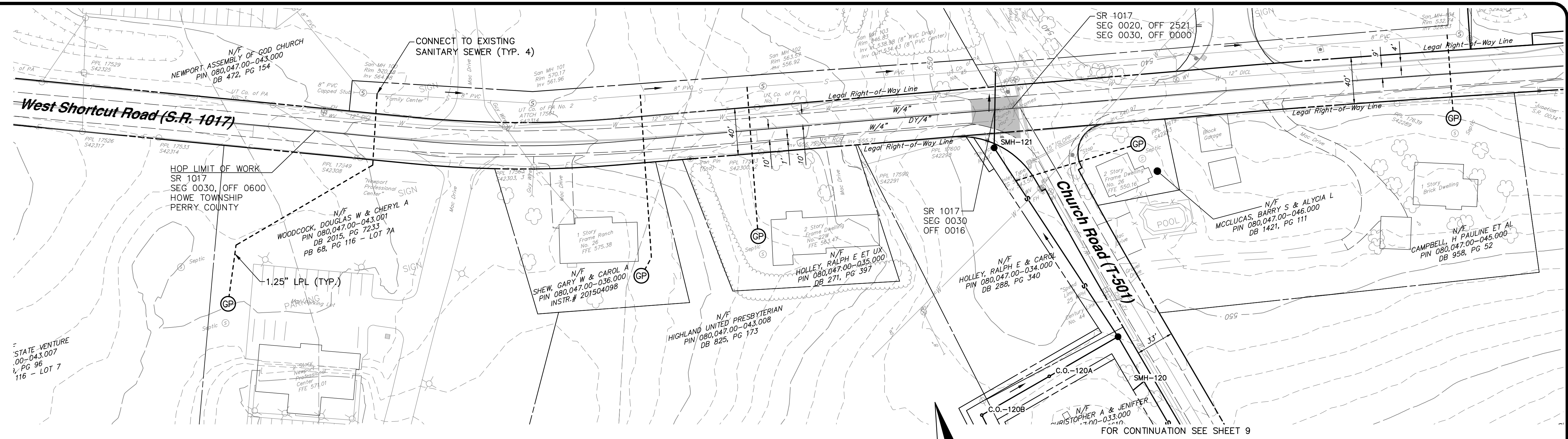
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SANITARY SEWER PLAN & PROFILE
CHURCH ROAD
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

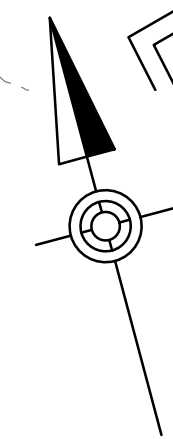
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SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO.
CR
SHEET NO.
9 OF 60
PROJECT 005100.0434

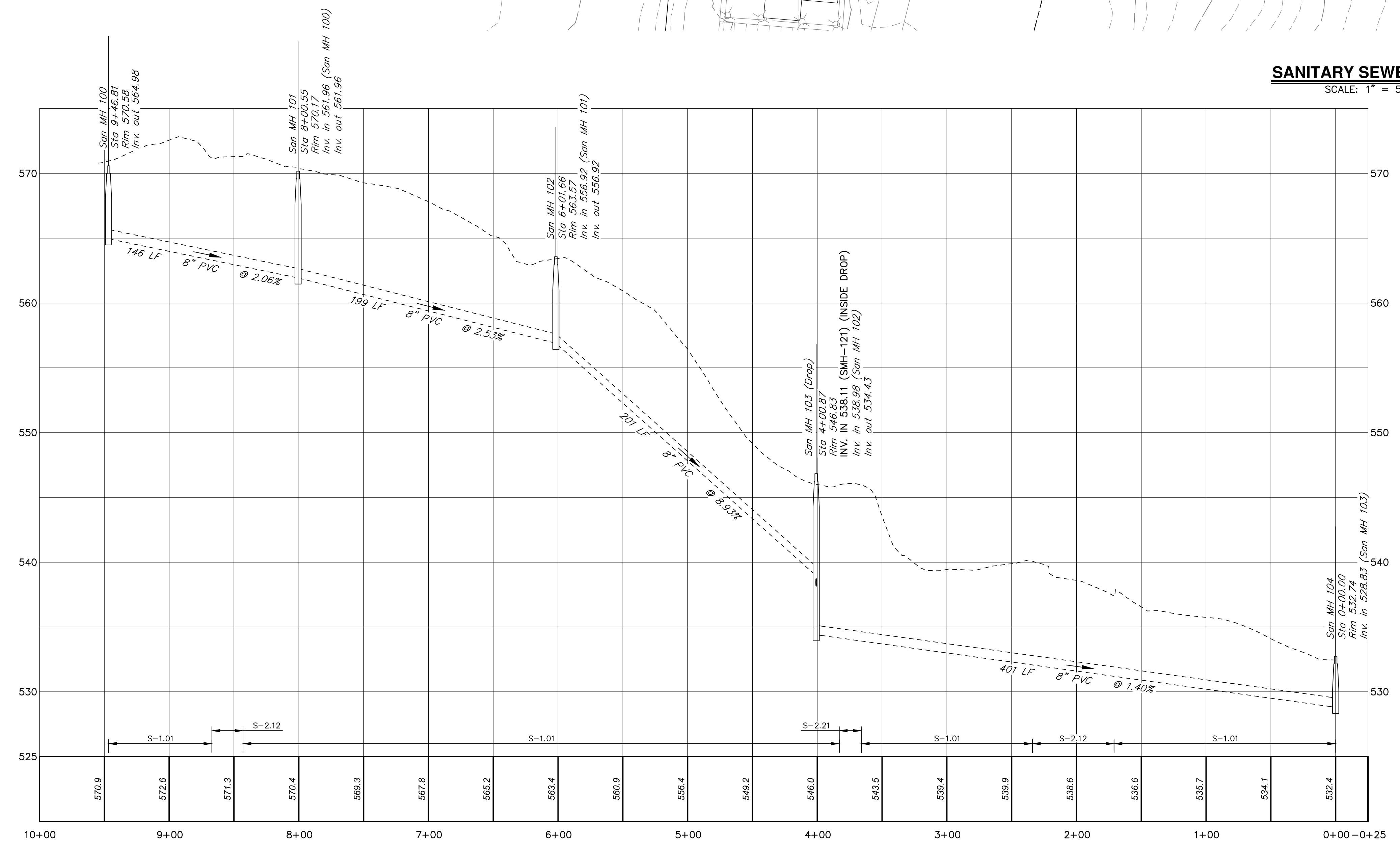


SANITARY SEWER PLAN

SCALE: 1" = 50'



FOR CONTINUATION SEE SHEET 9

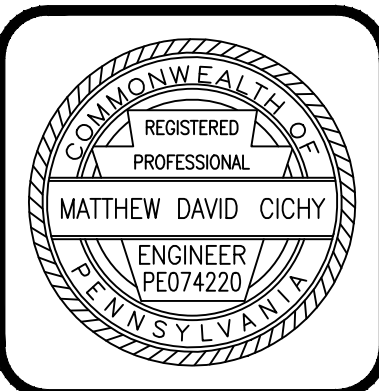
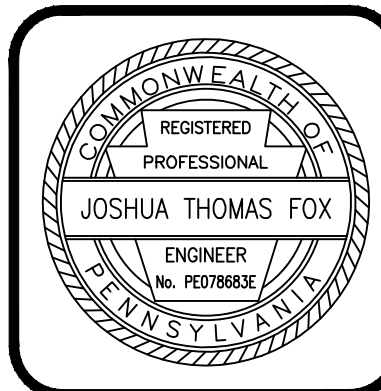


PROFILE

HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'

HORIZ: 50' 25' 0' 50'
VERT: 5' 2.5' 0' 5'
SCALE IN FEET

NO.	REVISION	DATE	BY



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SANITARY SEWER PLAN & PROFILE
WEST SHORTCUT ROAD
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

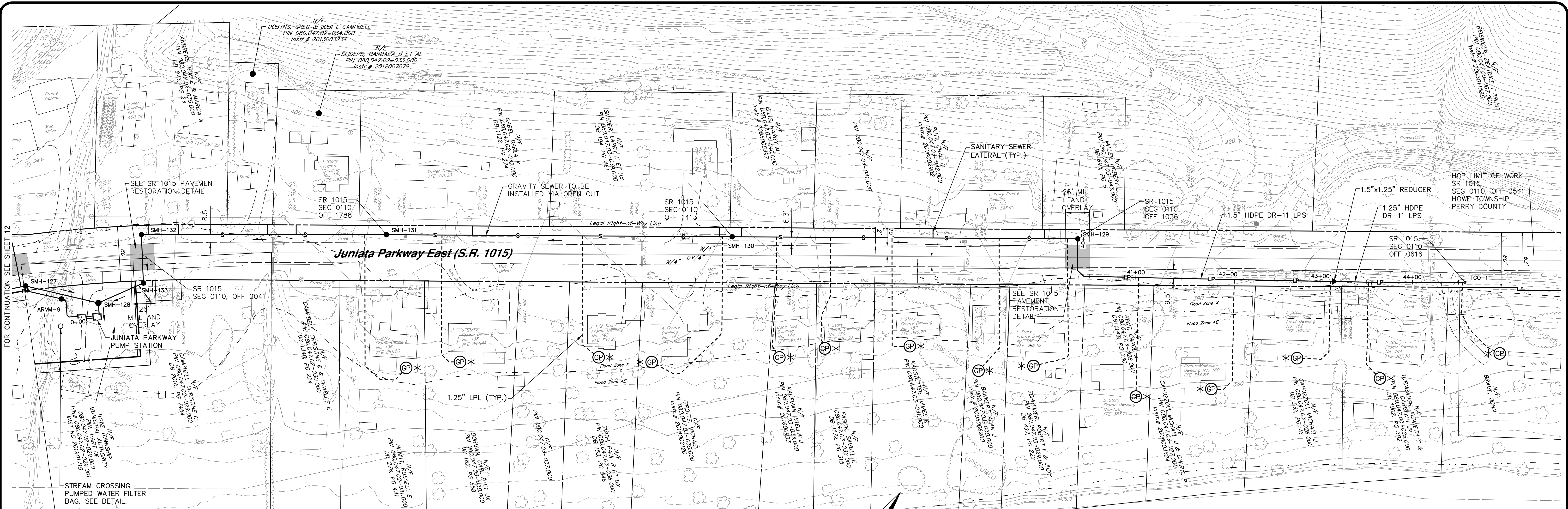
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

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SCALE - AS NOTED
DATE - MAR. 2019

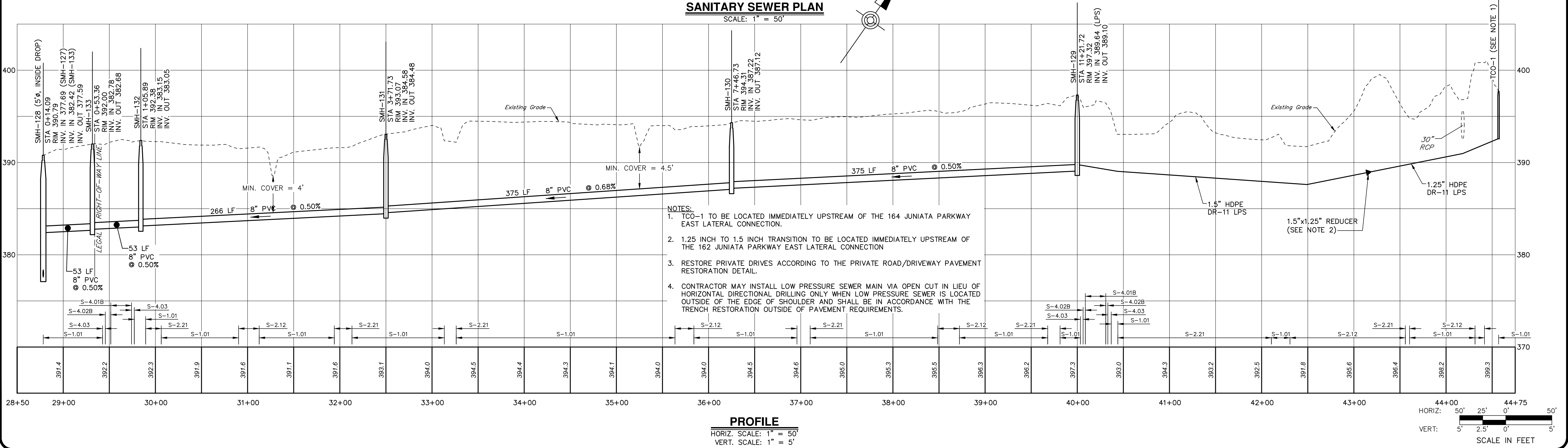
DRAWING NO.
WSR

SHEET NO.
10 OF 60

PROJECT 005100.0434



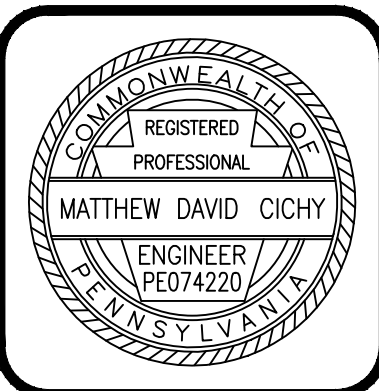
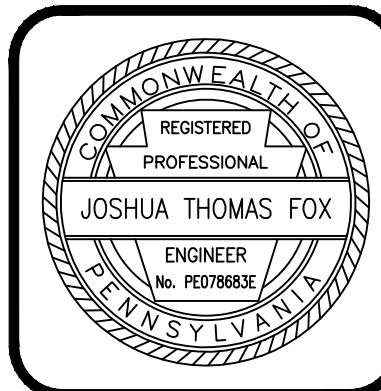
SANITARY SEWER PLAN
SCALE: 1" = 50'



- NOTES:**
- TCO-1 TO BE LOCATED IMMEDIATELY UPSTREAM OF THE 164 JUNIATA PARKWAY EAST LATERAL CONNECTION.
 - 1.25 INCH TO 1.5 INCH TRANSITION TO BE LOCATED IMMEDIATELY UPSTREAM OF THE 162 JUNIATA PARKWAY EAST LATERAL CONNECTION
 - RESTORE PRIVATE DRIVES ACCORDING TO THE PRIVATE ROAD/DRIVEWAY PAVEMENT RESTORATION DETAIL.
 - CONTRACTOR MAY INSTALL LOW PRESSURE SEWER MAIN VIA OPEN CUT IN LIEU OF HORIZONTAL DIRECTIONAL DRILLING ONLY WHEN LOW PRESSURE SEWER IS LOCATED OUTSIDE OF THE EDGE OF SHOULDER AND SHALL BE IN ACCORDANCE WITH THE TRENCH RESTORATION OUTSIDE OF PAVEMENT REQUIREMENTS.

PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'

NO.	REVISION	DATE	BY



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SANITARY SEWER PLAN & PROFILE
JUNIATA PARKWAY
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

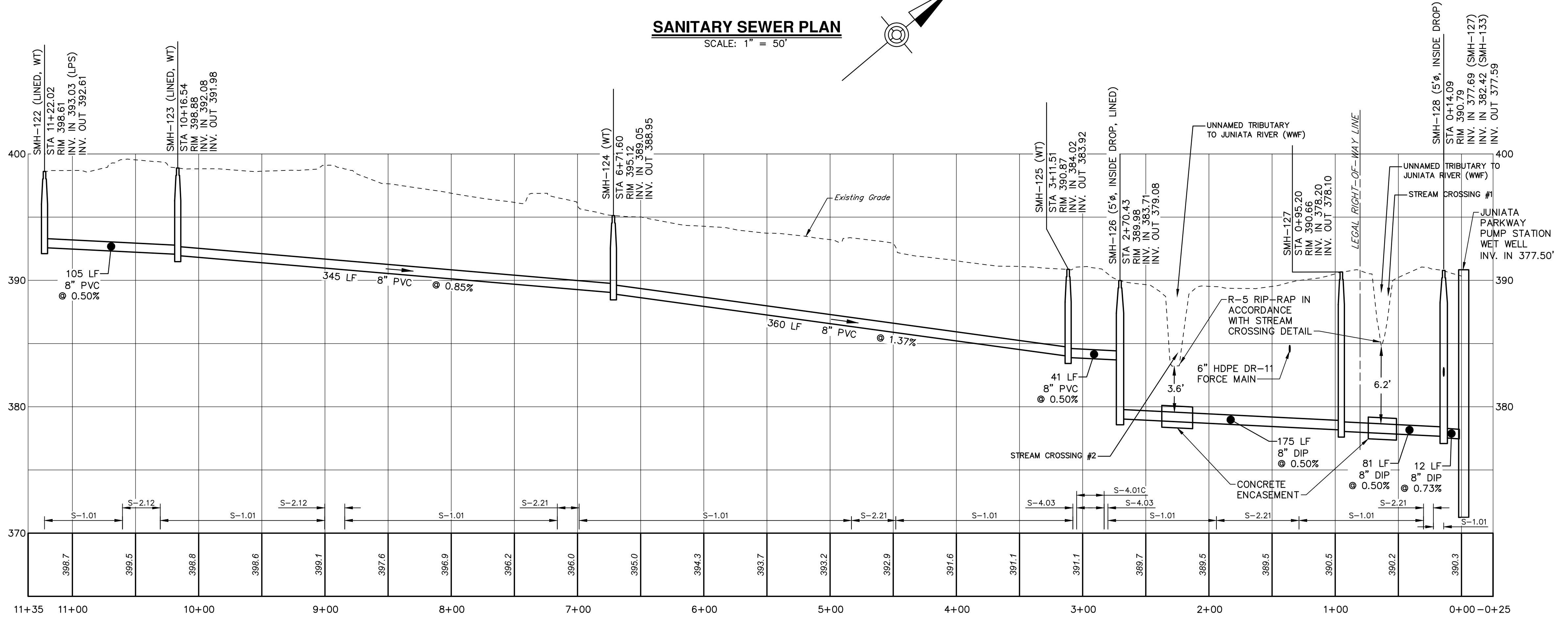
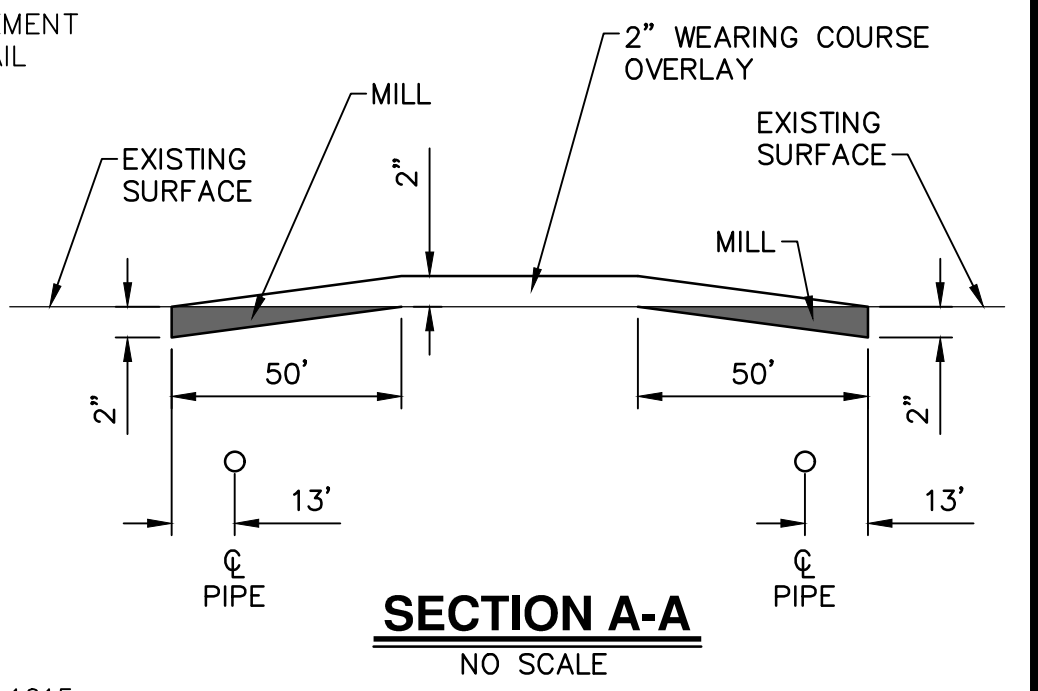
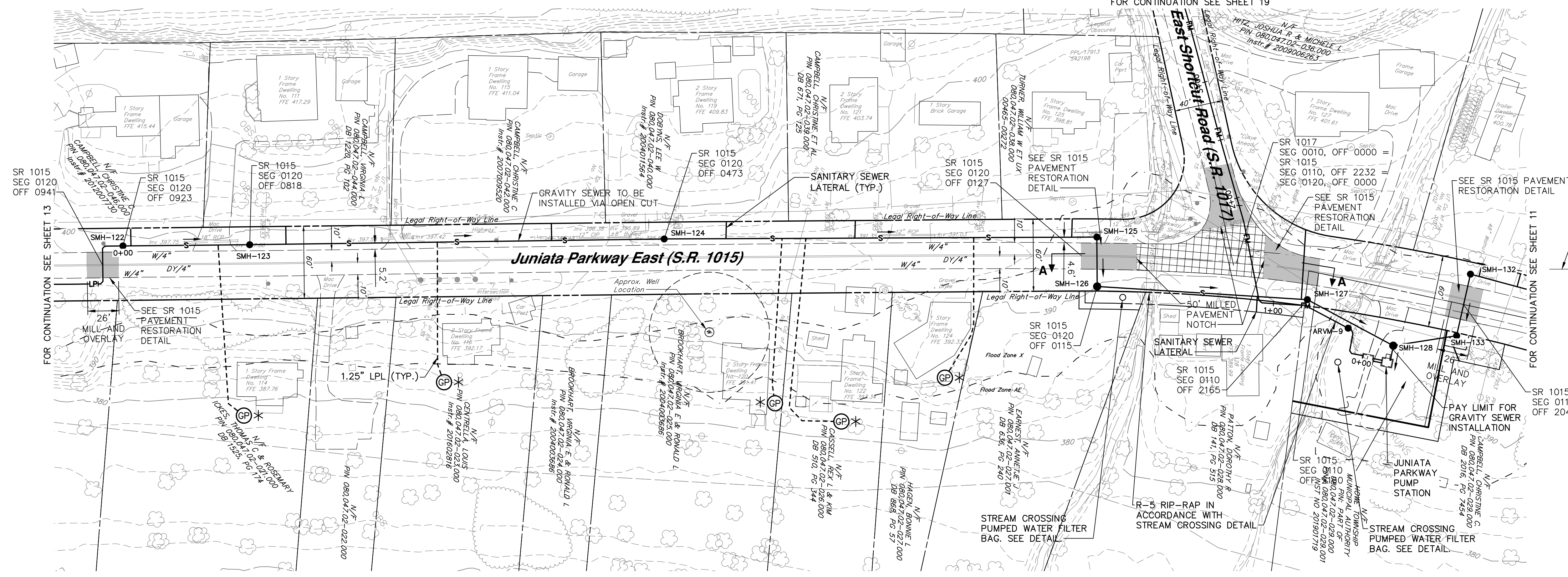
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- JTF
CADD- RSF
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SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO.
JP-N

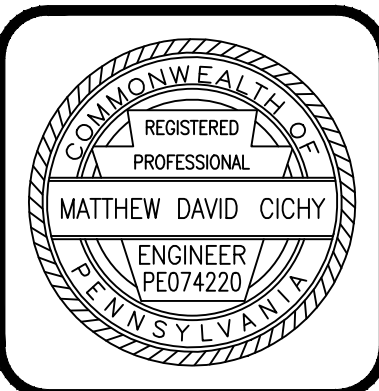
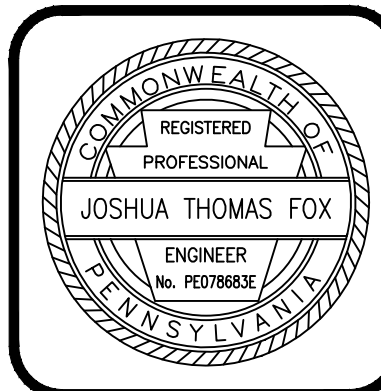
SHEET NO.
11 OF 60

PROJECT 005100.0434



- NOTES:
- RESTORE PRIVATE DRIVES ACCORDING TO THE PRIVATE ROAD/DRIVEWAY PAVEMENT RESTORATION DETAIL.
 - PROVIDE PIPE JOINT AT CENTER OF THE JUNIATA PARKWAY PUMP STATION WET WELL TO SMH-128 SEWER RUN.

NO.	REVISION	DATE	BY



HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrgh@hrgh-inc.com
www.hrg-inc.com

HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

SANITARY SEWER PLAN & PROFILE
JUNIATA PARKWAY
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

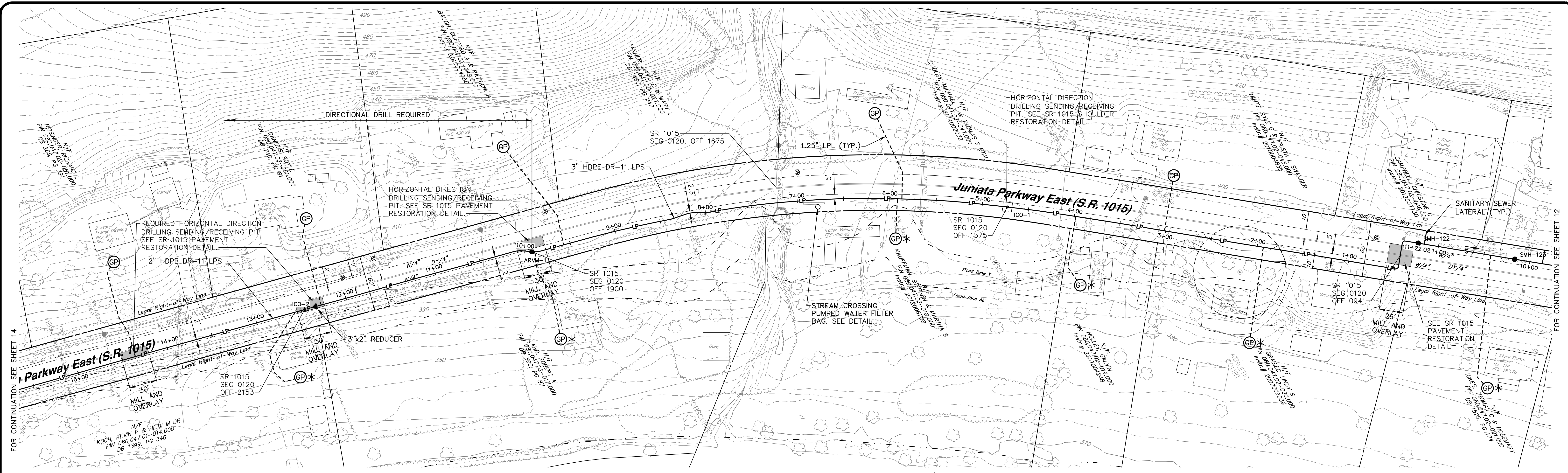
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - JTF
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
JP-S1

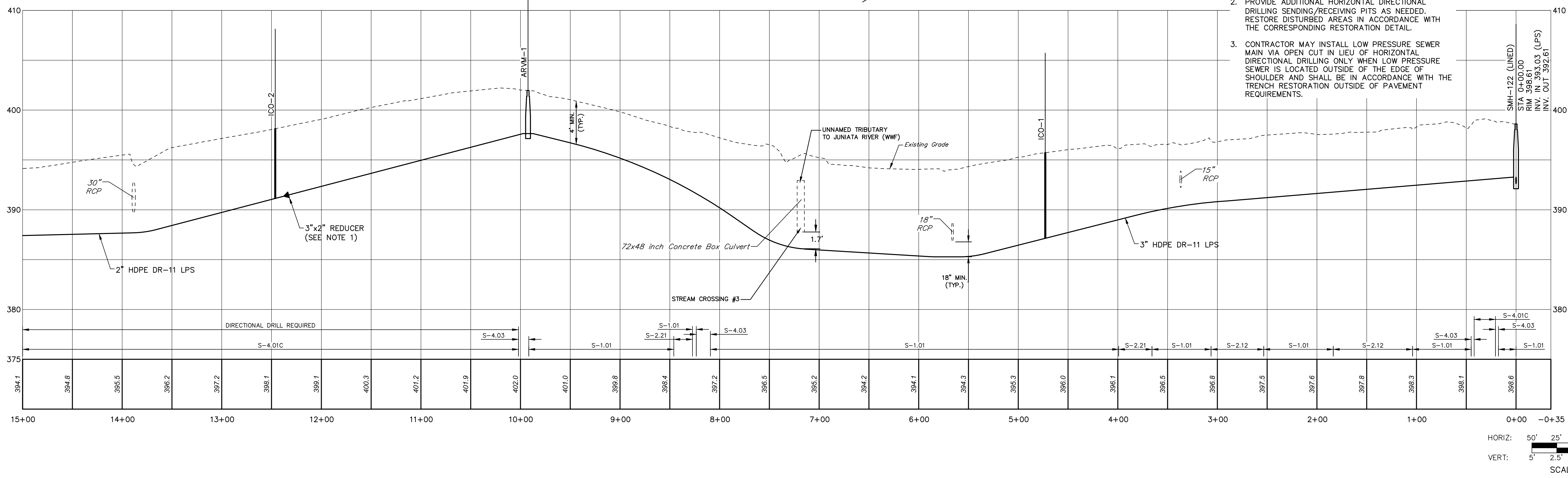
SHEET NO.
12 OF 60

PROJECT 005100.0434



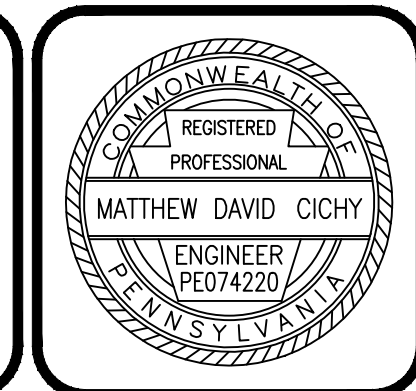
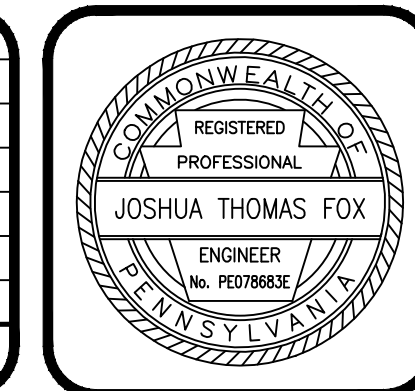
SANITARY SEWER PLAN
SCALE: 1" = 50'

- NOTES:**
- 2 INCH TO 3 INCH TRANSITION TO BE LOCATED IMMEDIATELY UPSTREAM OF THE 97 JUNIATA PARKWAY EAST (S.R. 1015) LATERAL CONNECTION.
 - PROVIDE ADDITIONAL HORIZONTAL DIRECTIONAL DRILLING SENDING/RECEIVING PITS AS NEEDED. RESTORE DISTURBED AREAS IN ACCORDANCE WITH THE CORRESPONDING RESTORATION DETAIL.
 - CONTRACTOR MAY INSTALL LOW PRESSURE SEWER MAIN VIA OPEN CUT IN LIEU OF HORIZONTAL DIRECTIONAL DRILLING ONLY WHEN LOW PRESSURE SEWER IS LOCATED OUTSIDE OF THE EDGE OF SHOULDER AND SHALL BE IN ACCORDANCE WITH THE TRENCH RESTORATION OUTSIDE OF PAVEMENT REQUIREMENTS.



HORIZ: 50' 25' 0' 50'
VERT: 5' 2.5' 0' 5'
SCALE IN FEET

NO.	REVISION	DATE	BY



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300 N. 4TH STREET
NEWPORT, PA 17074

LOW PRESSURE SANITARY SEWER PLAN & PROFILE
JUNIATA PARKWAY
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

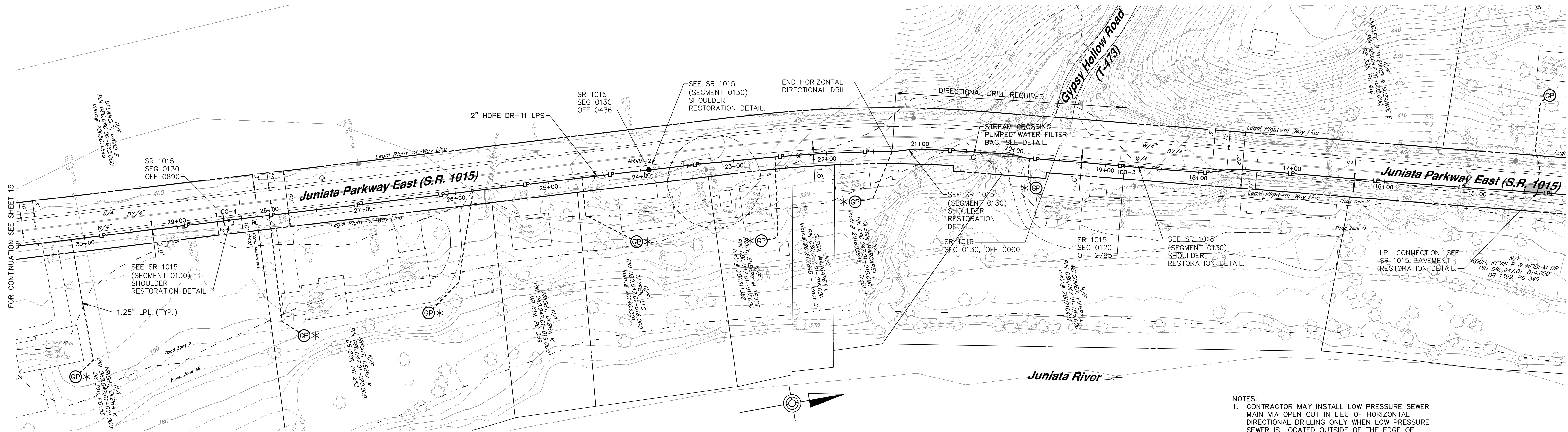
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - SAT
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
JP-S2

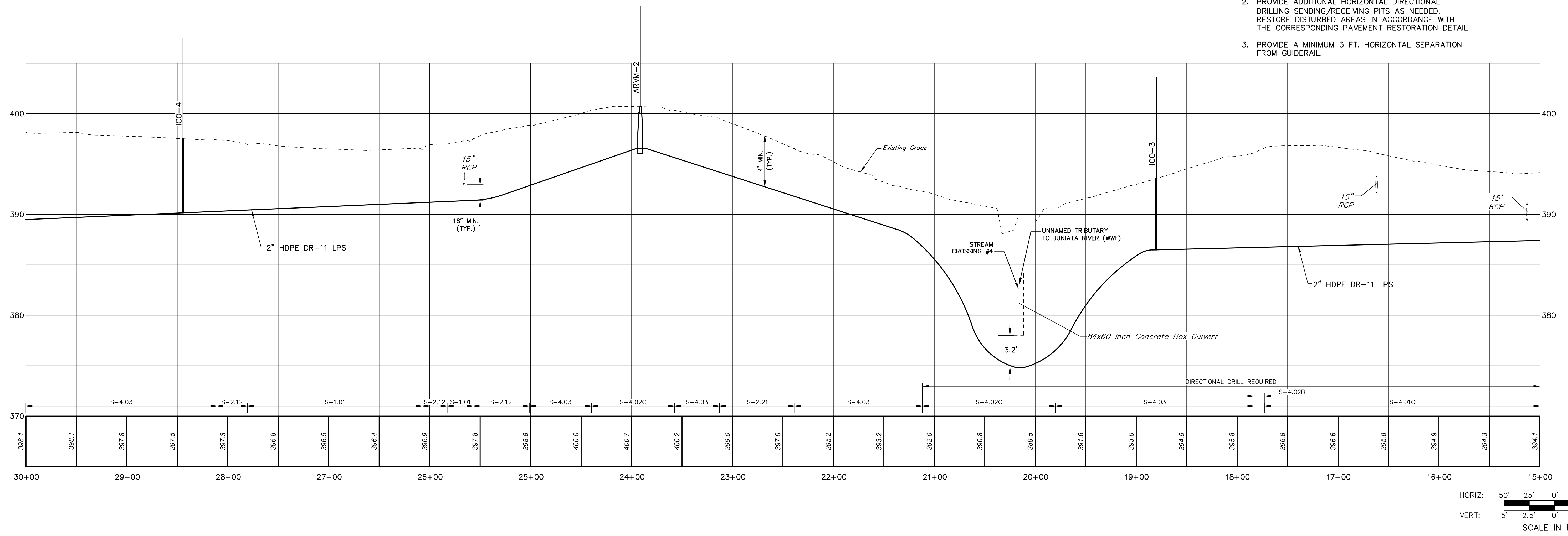
SHEET NO.
13 OF 60

PROJECT 005100.0434



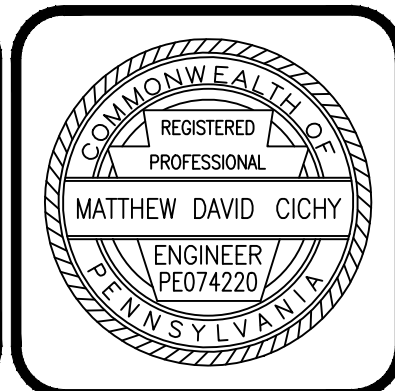
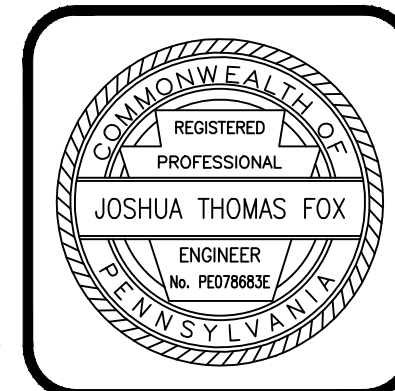
SANITARY SEWER PLAN
SCALE: 1" = 50'

- NOTES:**
- CONTRACTOR MAY INSTALL LOW PRESSURE SEWER MAIN VIA OPEN CUT IN LIEU OF HORIZONTAL DIRECTIONAL DRILLING ONLY WHEN LOW PRESSURE SEWER IS LOCATED OUTSIDE OF THE EDGE OF SHOULDER AND SHALL BE IN ACCORDANCE WITH THE TRENCH RESTORATION OUTSIDE OF PAVEMENT REQUIREMENTS.
 - PROVIDE ADDITIONAL HORIZONTAL DIRECTIONAL DRILLING SENDING/RECEIVING PITS AS NEEDED. RESTORE DISTURBED AREAS IN ACCORDANCE WITH THE CORRESPONDING PAVEMENT RESTORATION DETAIL.
 - PROVIDE A MINIMUM 3 FT. HORIZONTAL SEPARATION FROM GUIDERAIL.



HORIZ: 50' 25' 0' 50'
VERT: 5' 2.5' 0' 5'
SCALE IN FEET

NO.	REVISION	DATE	BY



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NEWPORT, PA 17074

LOW PRESSURE SANITARY SEWER PLAN & PROFILE
JUNIATA PARKWAY
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

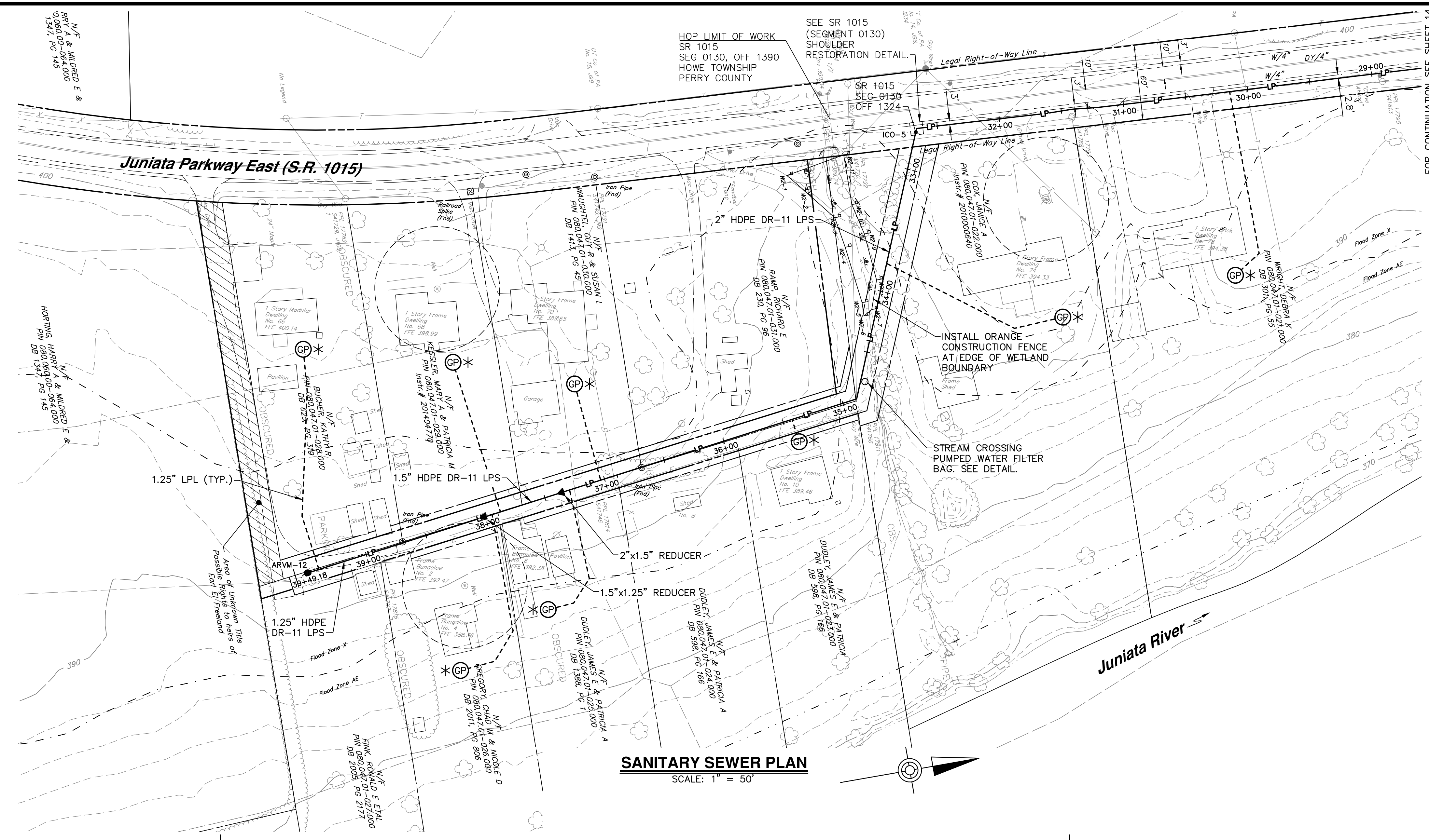
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- SAT
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO.
JP-S3

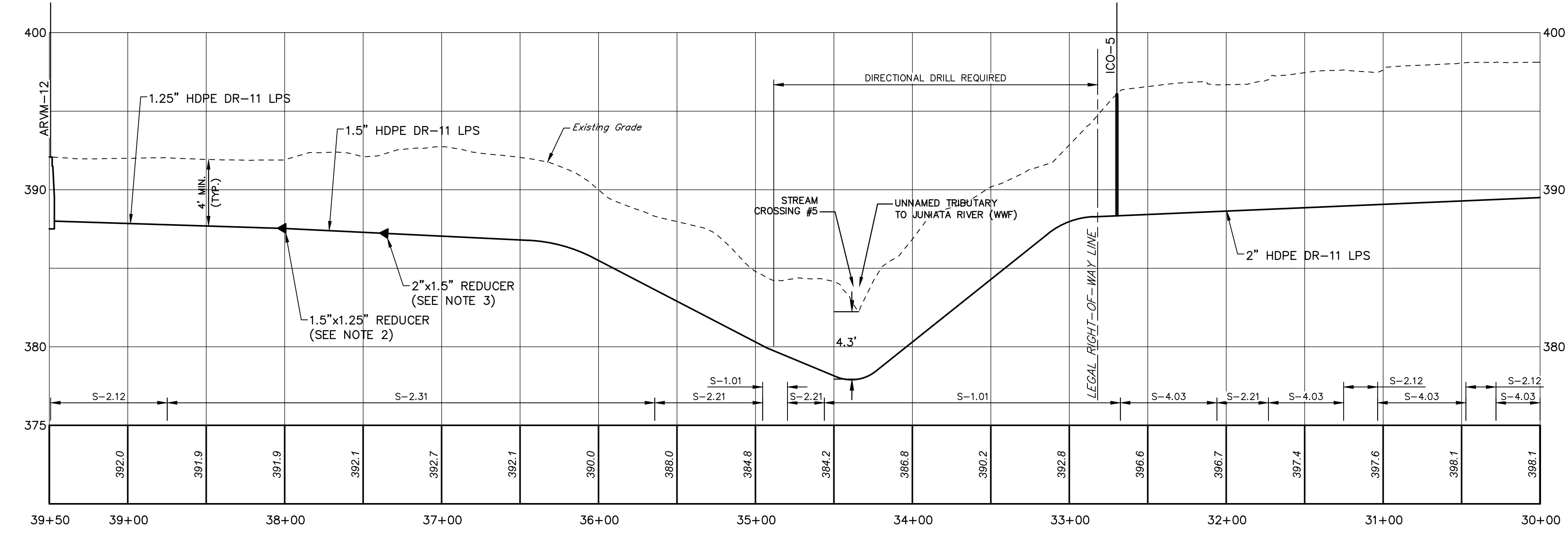
SHEET NO.
14 OF 60

PROJECT 005100.0434

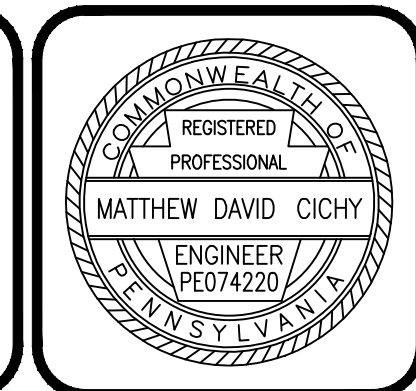
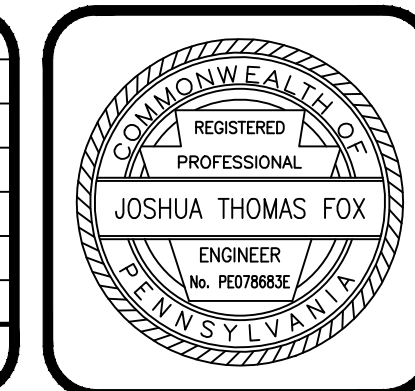


SANITARY SEWER PLAN
SCALE: 1" = 50'

- NOTES:**
1. ARVM-12 TO BE LOCATED IMMEDIATELY UPSTREAM OF THE 66 JUNIATA PARKWAY EAST LATERAL CONNECTION.
 2. 1.25 INCH TO 1.5 INCH TRANSITION TO BE LOCATED IMMEDIATELY UPSTREAM OF THE 4 SANDBAR LANE LATERAL CONNECTION.
 3. 1.5 INCH TO 2 INCH TRANSITION TO BE LOCATED IMMEDIATELY UPSTREAM OF THE 6 SANDBAR LANE LATERAL CONNECTION.
 4. PROVIDE ADDITIONAL HORIZONTAL DIRECTIONAL DRILLING SENDING/RECEIVING PITS AS NEEDED. RESTORE DISTURBED AREAS IN ACCORDANCE WITH THE CORRESPONDING PAVEMENT RESTORATION DETAIL.
 5. CONTRACTOR MAY INSTALL LOW PRESSURE SEWER MAIN VIA OPEN CUT IN LIEU OF HORIZONTAL DIRECTIONAL DRILLING ONLY WHEN LOW PRESSURE SEWER IS LOCATED OUTSIDE OF THE EDGE OF SHOULDER AND SHALL BE IN ACCORDANCE WITH THE TRENCH RESTORATION OUTSIDE OF PAVEMENT REQUIREMENTS.



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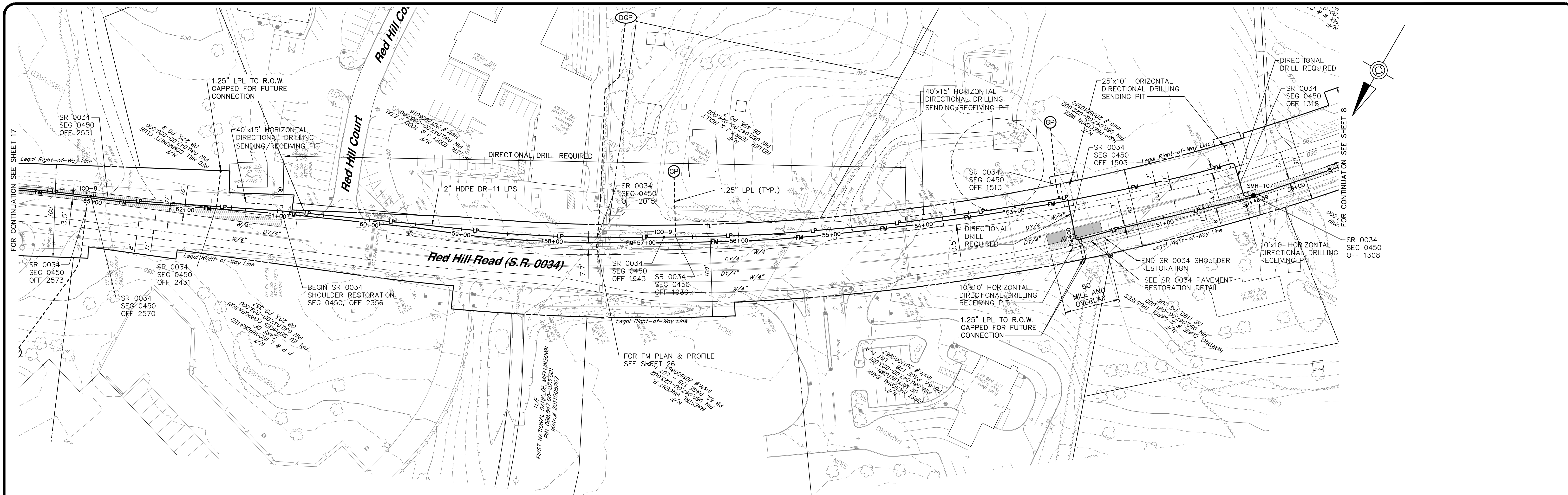
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NEWPORT, PA 17074

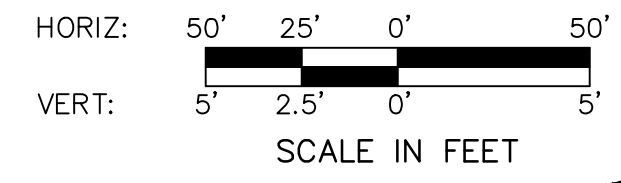
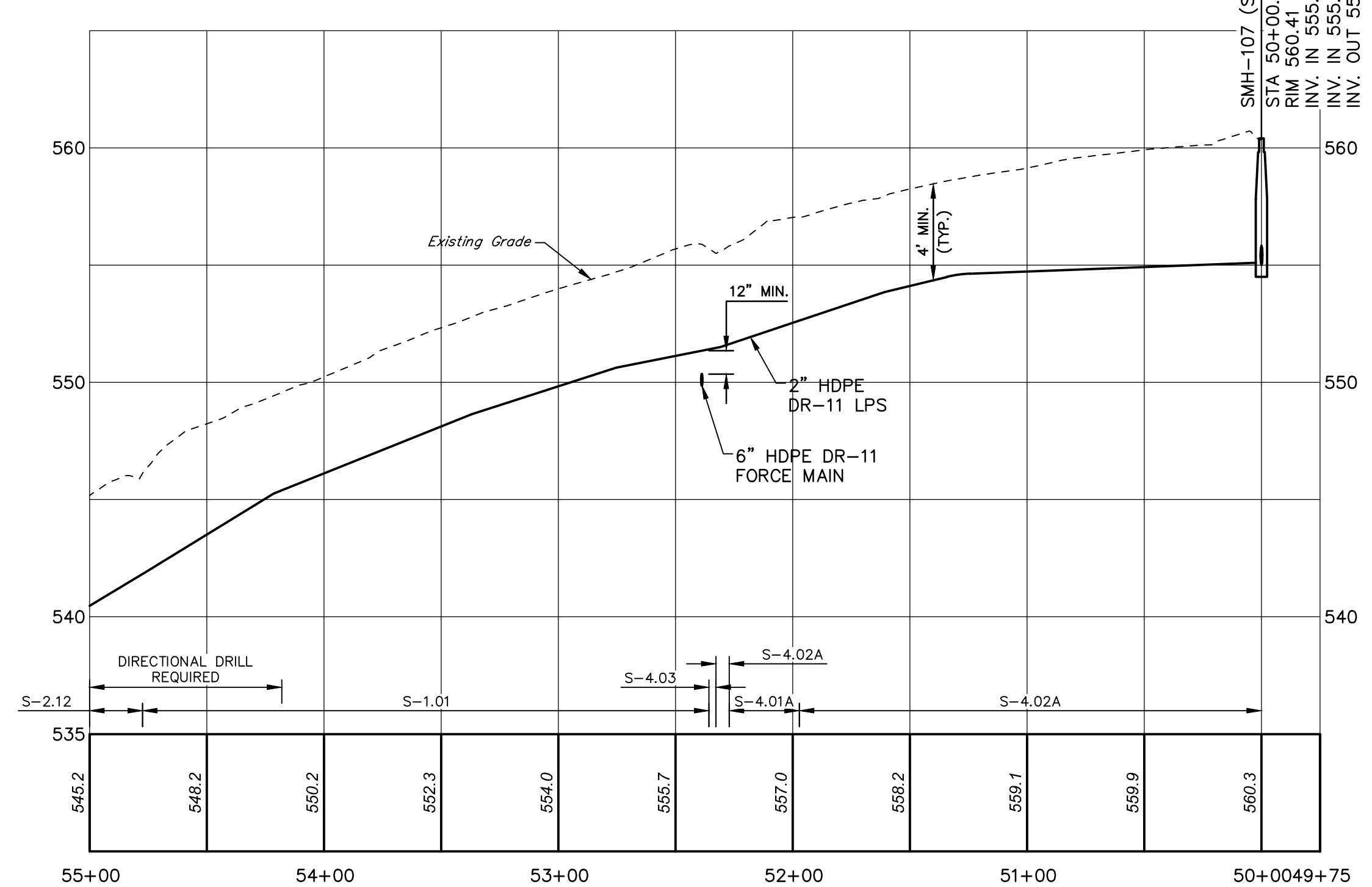
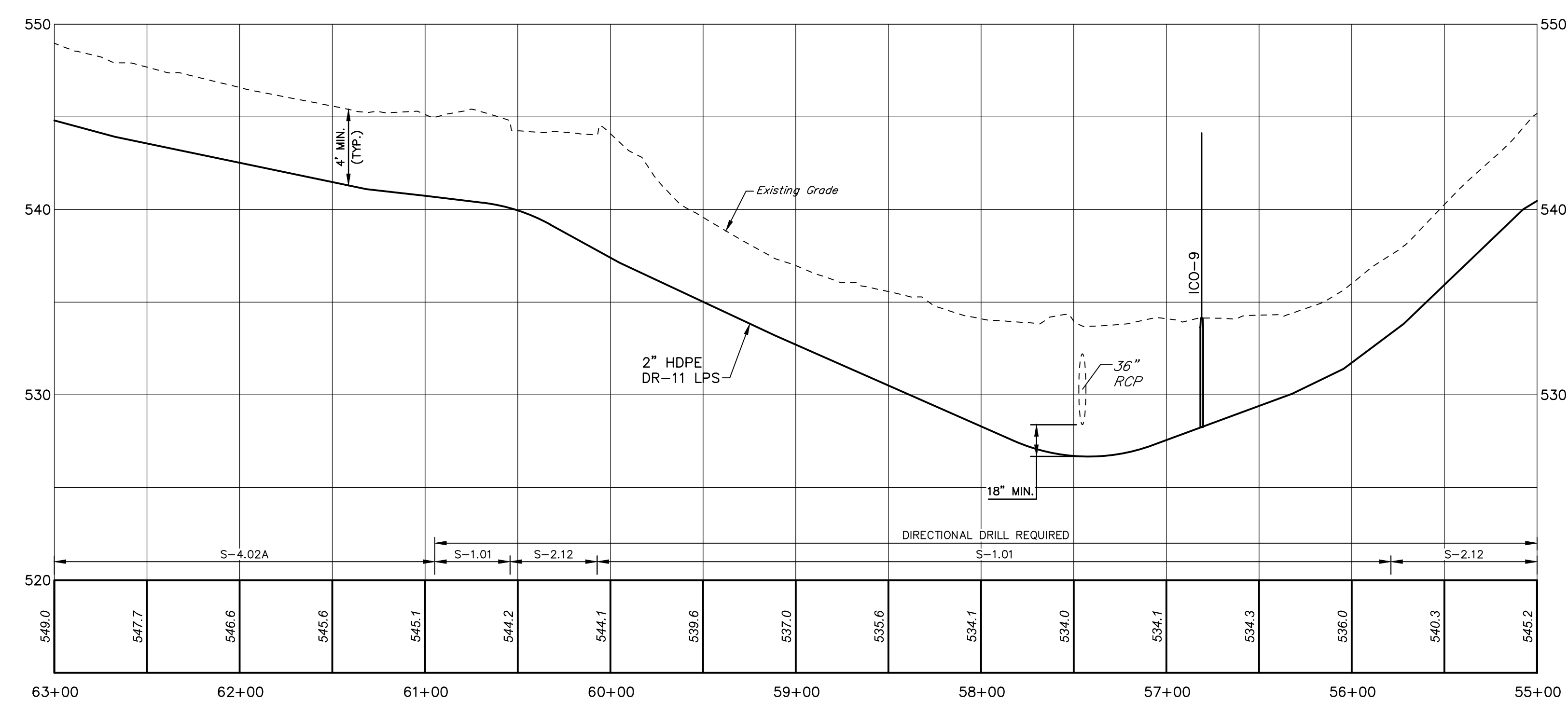
LOW PRESSURE SANITARY SEWER PLAN & PROFILE
JUNIATA PARKWAY
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- SAT
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

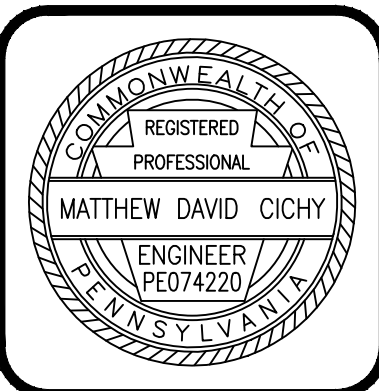
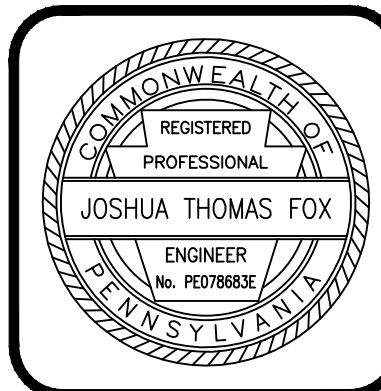
DRAWING NO.
JP-S4
SHEET NO.
15 OF 60
PROJECT 005100.0434



SANITARY SEWER PLAN
SCALE: 1" = 50'



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300 N. 4TH STREET
NEWPORT, PA 17074

LOW PRESSURE SANITARY SEWER PLAN & PROFILE
RED HILL ROAD
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

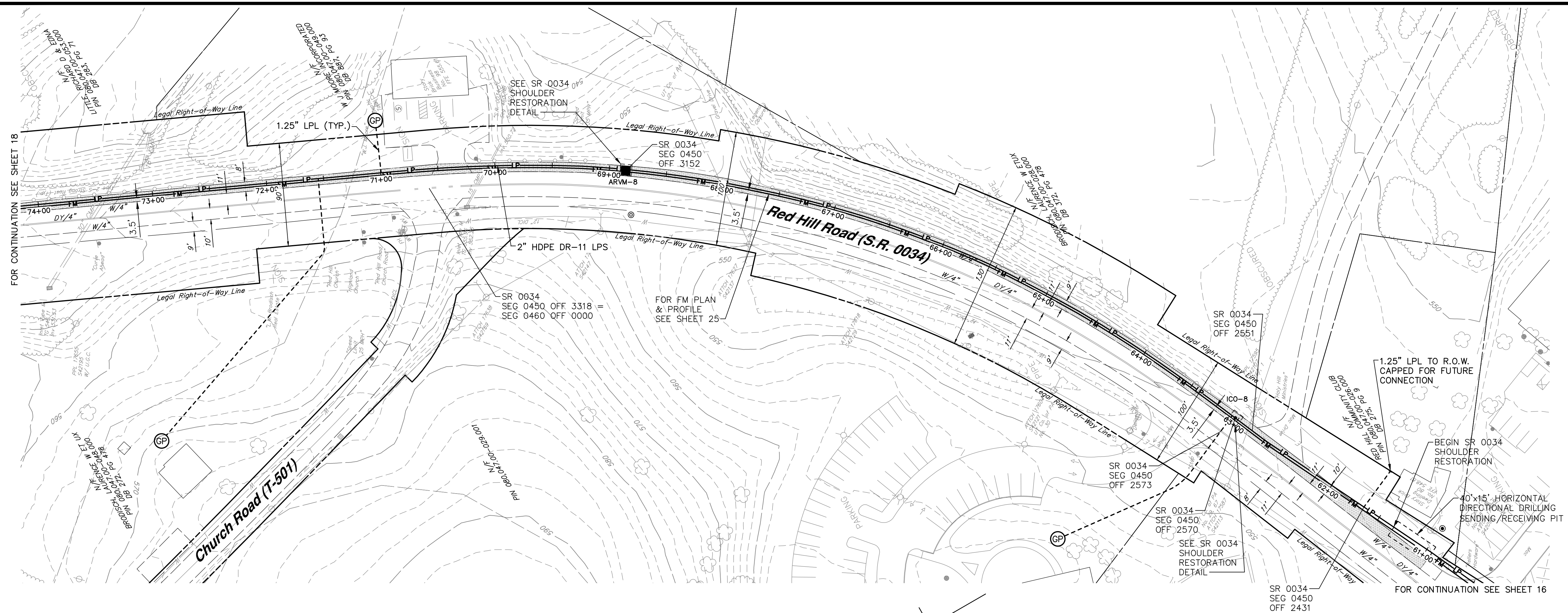
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- WGR
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

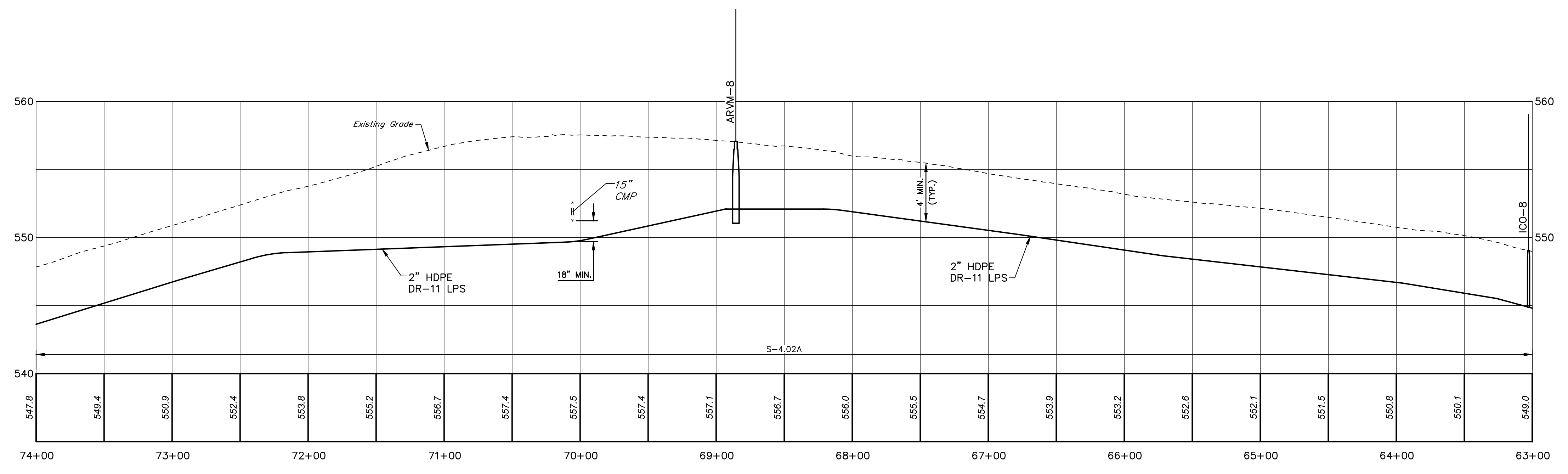
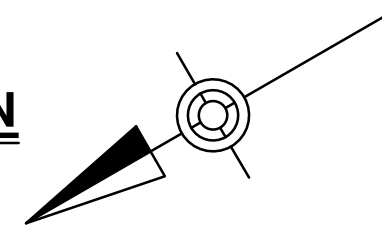
DRAWING NO.
RHR-6

SHEET NO.
16 OF 60

PROJECT 005100.0434



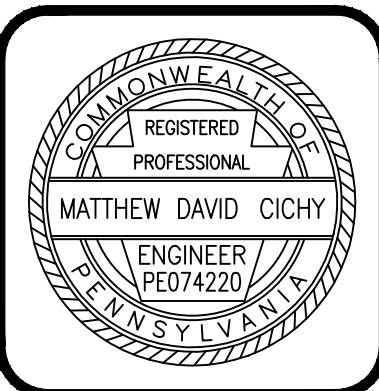
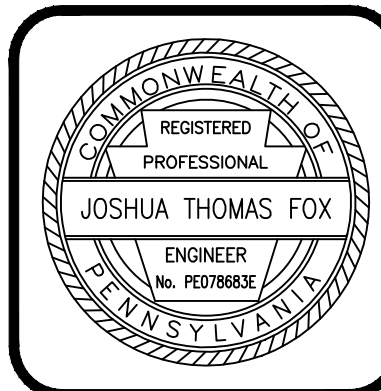
SANITARY SEWER PLAN
SCALE: 1" = 50'



PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'



NO.	REVISION	DATE	BY



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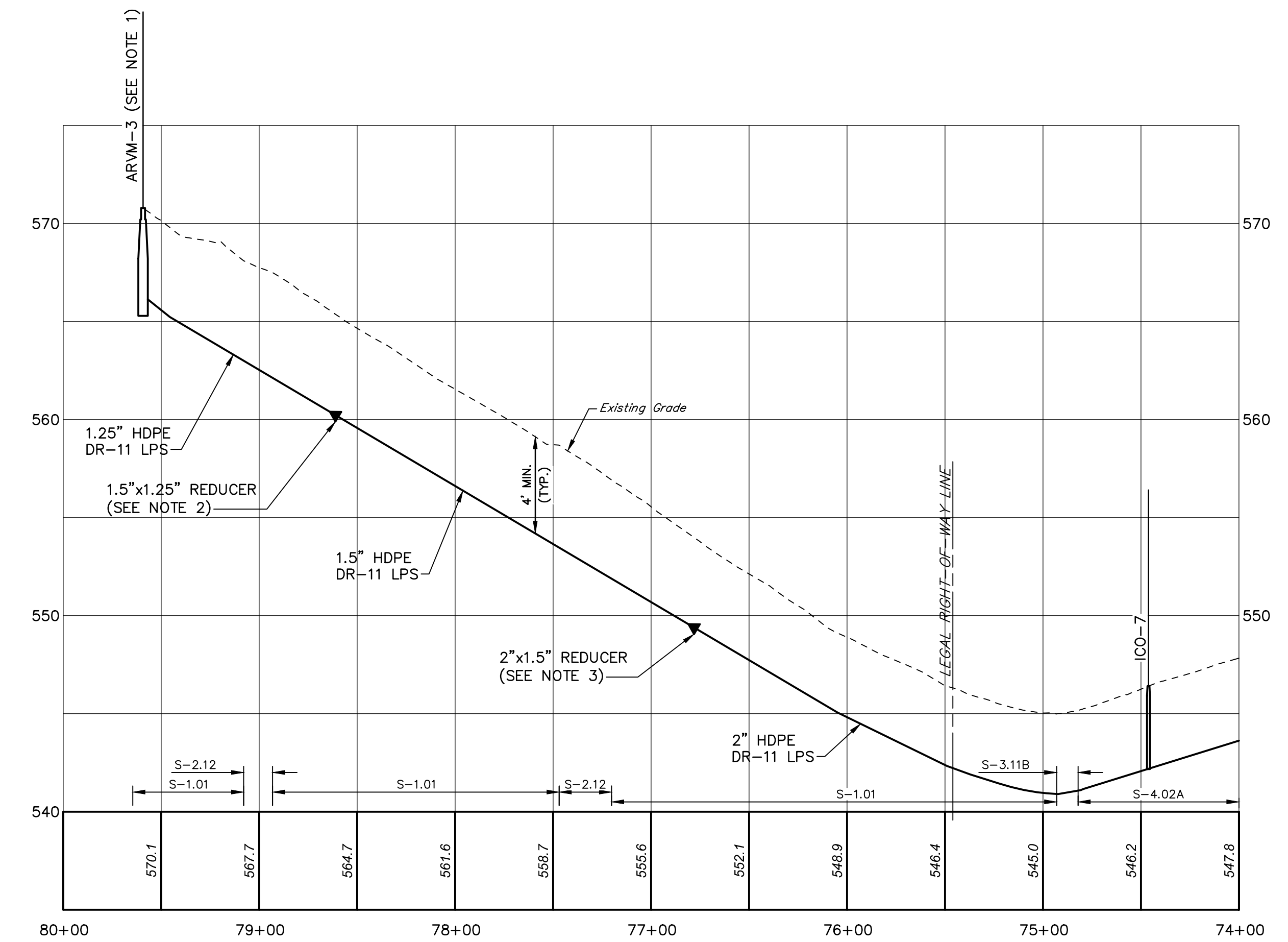
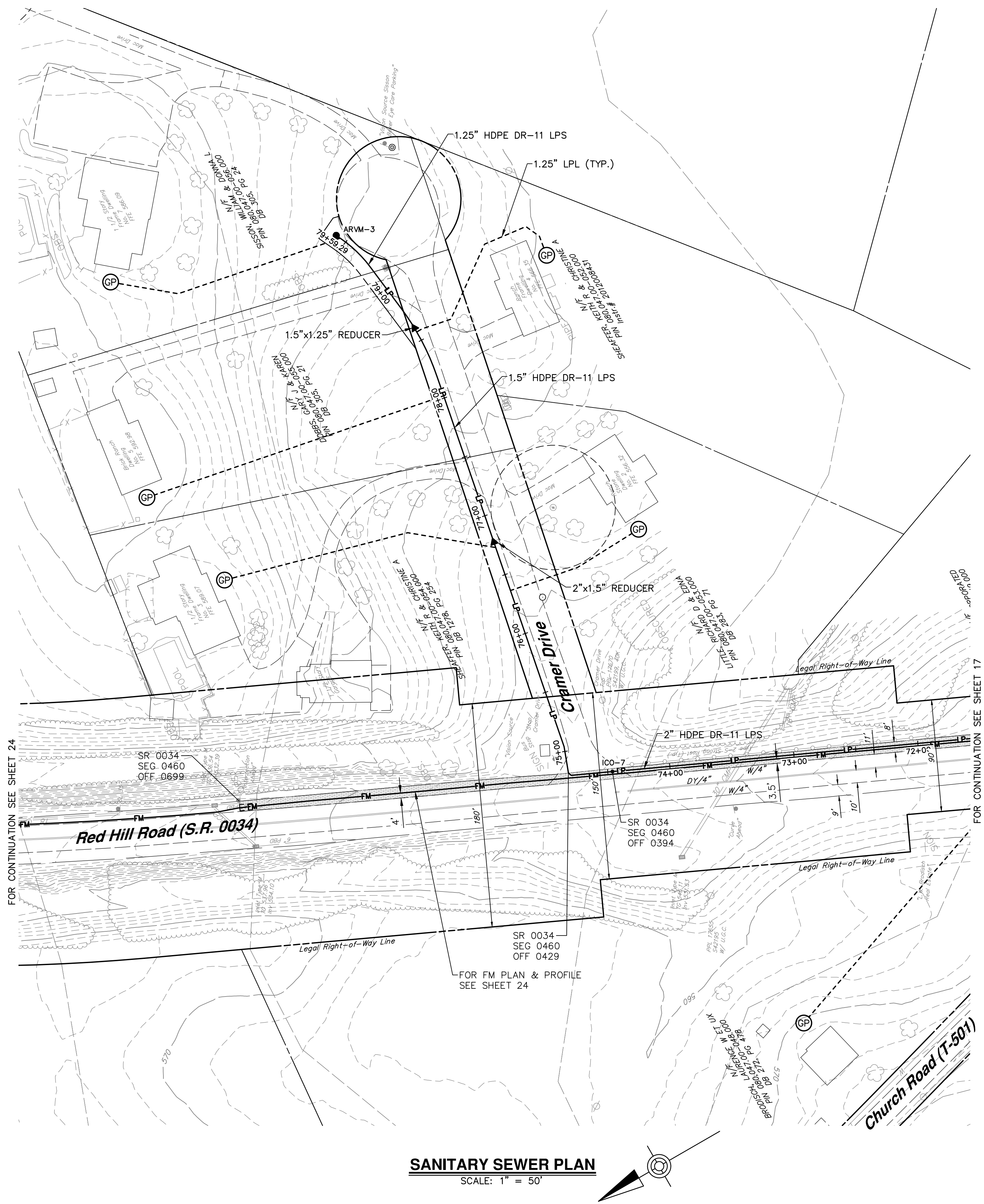
HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

LOW PRESSURE SANITARY SEWER PLAN & PROFILE
RED HILL ROAD
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

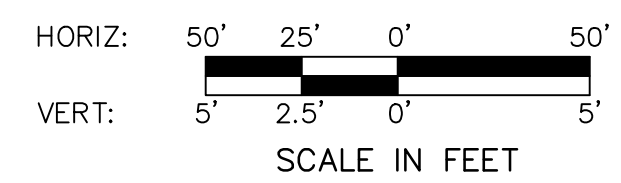
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - WGR
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

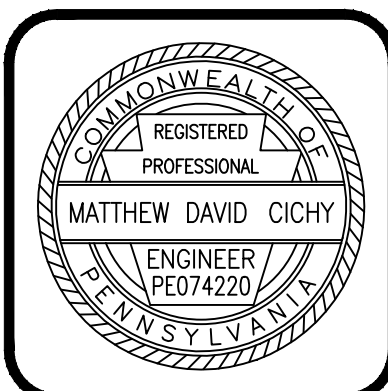
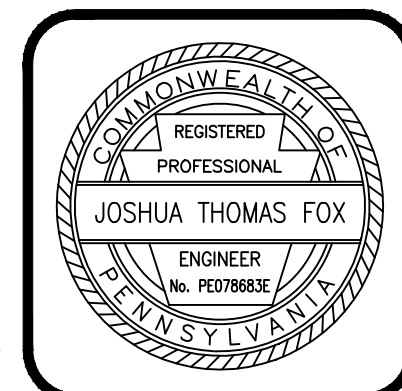
DRAWING NO.
RHR-7
SHEET NO.
17 OF 60
PROJECT 005100.0434



- NOTES:**
1. ARVM-3 TO BE LOCATED IMMEDIATELY UPSTREAM OF THE 7 CRAMER DRIVE LATERAL CONNECTION.
 2. 1.25 INCH TO 1.5 INCH TRANSITION SHALL BE LOCATED IMMEDIATELY UPSTREAM OF THE 4 CRAMER DRIVE LATERAL CONNECTION.
 3. 1.5 INCH TO 2 INCH TRANSITION SHALL BE LOCATED IMMEDIATELY UPSTREAM OF THE 3 CRAMER DRIVE LATERAL CONNECTION.
 4. CONTRACTOR MAY INSTALL LOW PRESSURE SEWER MAIN VIA OPEN CUT IN LIEU OF HORIZONTAL DIRECTIONAL DRILLING ONLY WHEN LOW PRESSURE SEWER IS LOCATED OUTSIDE OF THE EDGE OF SHOULDER AND SHALL BE IN ACCORDANCE WITH THE TRENCH RESTORATION OUTSIDE OF PAVEMENT REQUIREMENTS.



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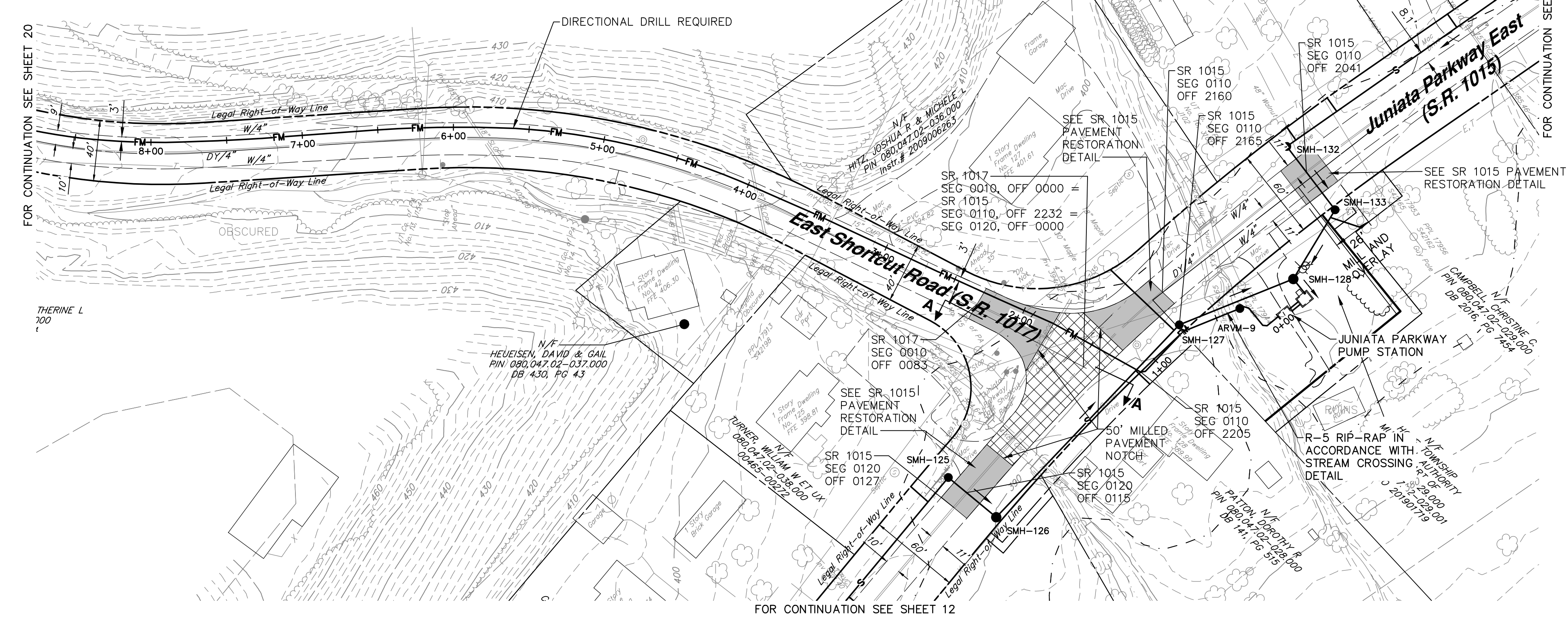
HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

LOW PRESSURE SANITARY SEWER PLAN & PROFILE
CRAMER DRIVE
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

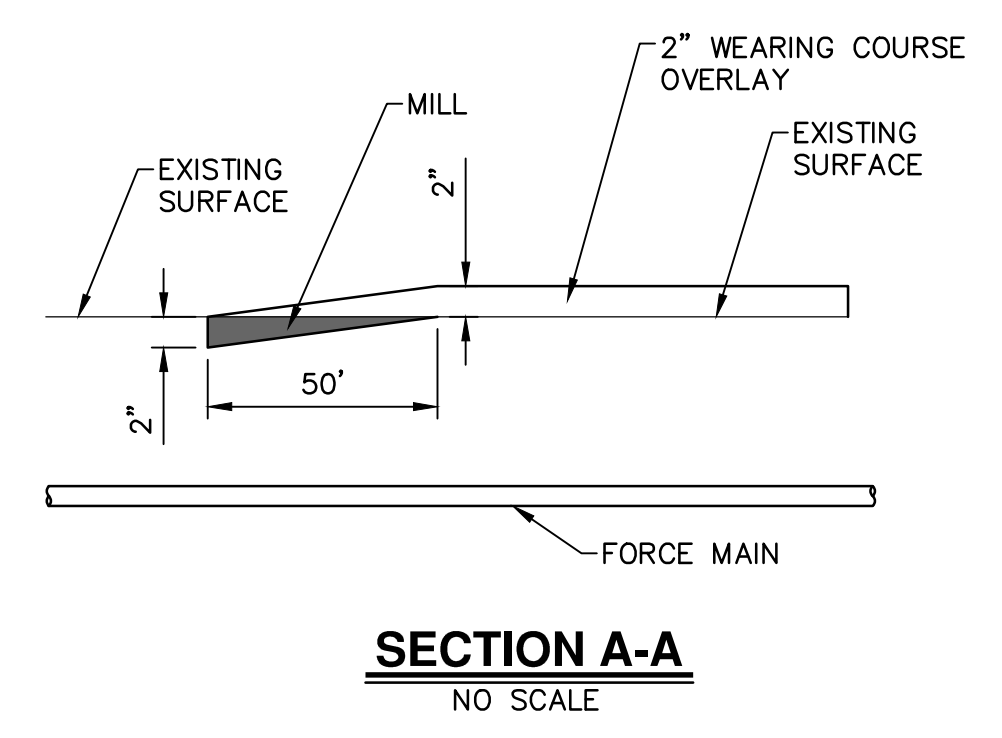
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

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DESIGN - WGR
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CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

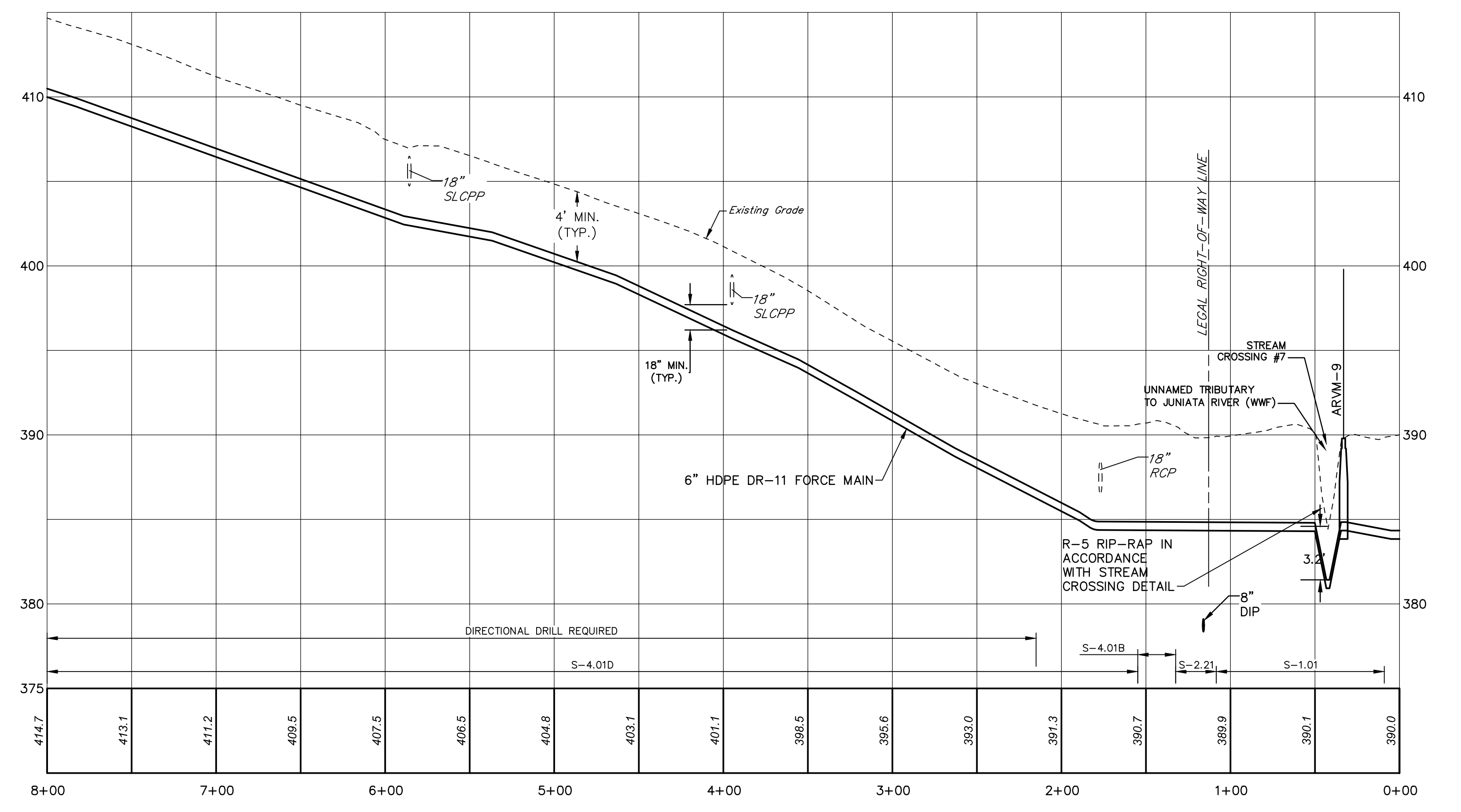
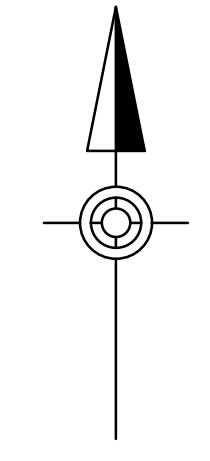
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SHEET NO.
18 OF 60
PROJECT 005100.0434



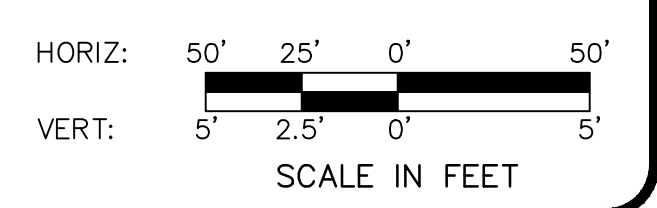
NOTES:
 1. PROVIDE ADDITIONAL HORIZONTAL DIRECTIONAL DRILLING SENDING/RECEIVING PITS AS NEEDED. RESTORE DISTURBED AREAS IN ACCORDANCE WITH THE CORRESPONDING PAVEMENT RESTORATION DETAIL.



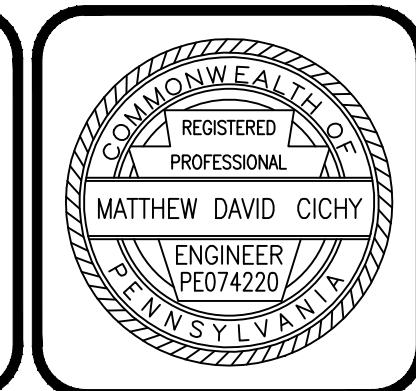
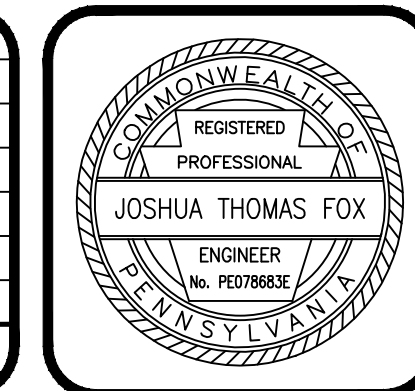
SANITARY SEWER PLAN
 SCALE: 1" = 50'



PROFILE
 HORIZ. SCALE: 1" = 50'
 VERT. SCALE: 1" = 5'



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HOWE TOWNSHIP MUNICIPAL AUTHORITY
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 NEWPORT, PA 17074

SANITARY SEWER PLAN & PROFILE
JUNIATA PARKWAY PUMP STATION FORCE MAIN
 FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
 DESIGN - WGR
 CADD - RSF
 CHECKED - MDC
 SCALE - AS NOTED
 DATE - MAR. 2019

DRAWING NO.
FM-1
 SHEET NO.
19 OF 60
 PROJECT 005100.0434

FOR CONTINUATION SEE SHEET 21

N/F
SCHREIBER, WILLIAM B & KATHERINE
PIN 080,047.00-059,000
DB 343, PG 421

HORIZONTAL DIRECTION
DRILLING SENDING/RECEIVING
PIT. SEE SR 1017 PAVEMENT
RESTORATION DETAIL

SR 1017
SEG 0010
OFF 1095

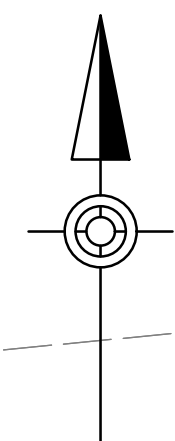
DIRECTIONAL DRILL REQUIRED
PUMPED WATER FILTER
BAG. SEE DETAIL.
30'
MILL AND
OVERLAY
ARVM-10

N/F
SCHREIBER, WILLIAM B & KATHERINE
PIN 080,047.00-059,000
DB 343, PG 421

N/F
ORTHEY, GEORGE F JR
PIN 080,047.00-068,000
Instr. # 2003001748

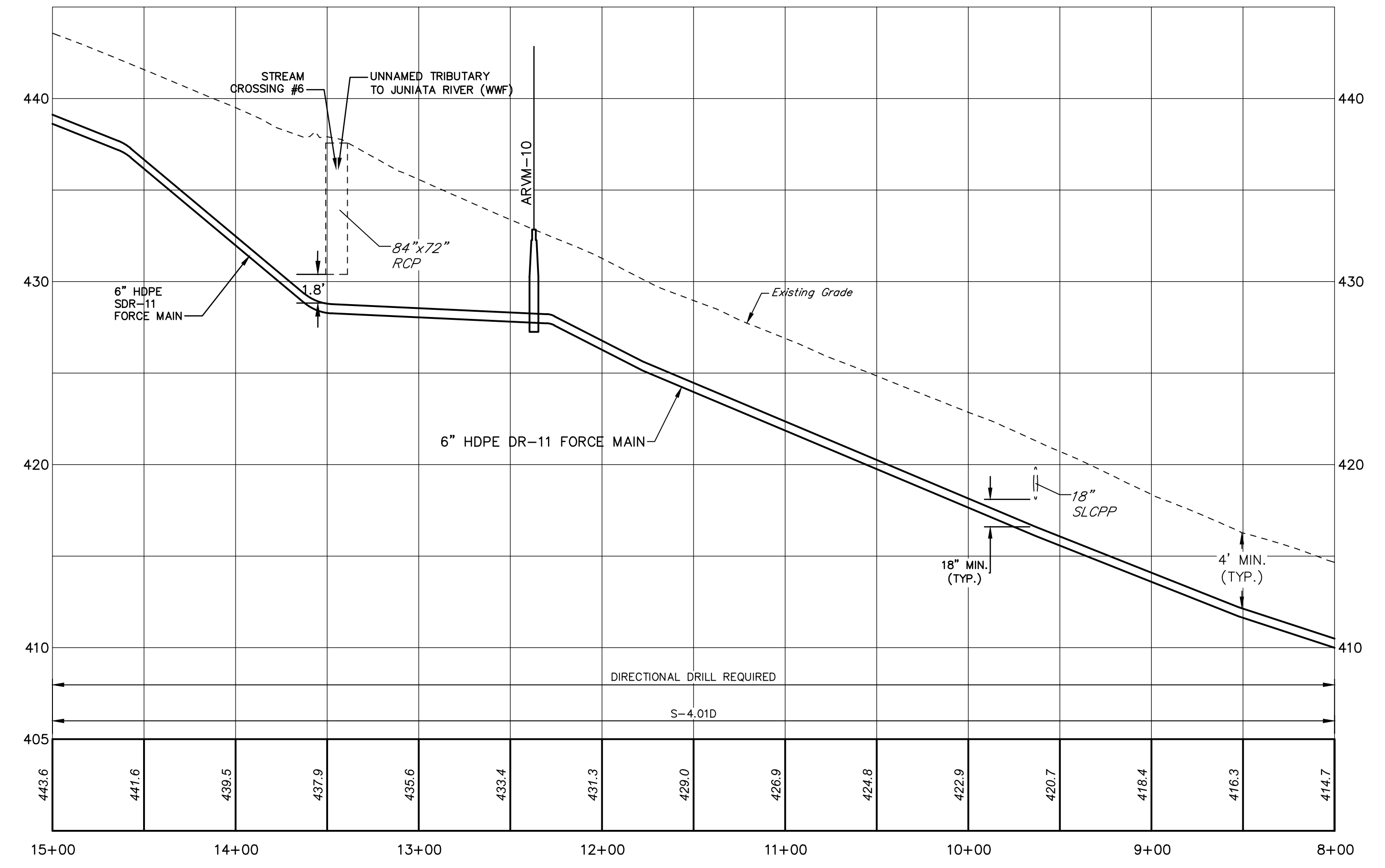
N/F
SCHREIBER, WILLIAM B & KATHERINE L
PIN 080,047.00-060,000
Instr. # 2008006544

SANITARY SEWER PLAN
SCALE: 1" = 50'



FOR CONTINUATION SEE SHEET 19

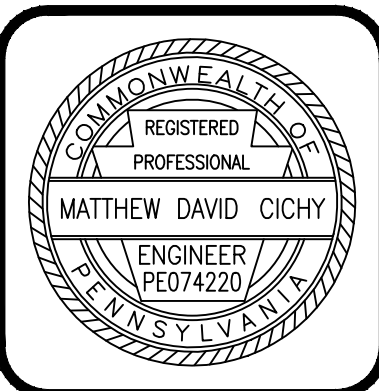
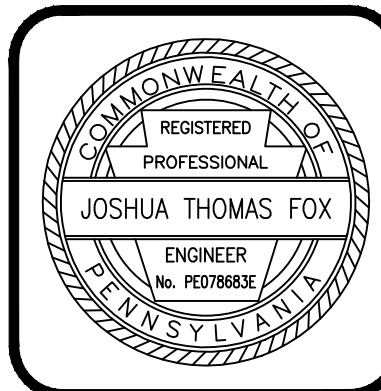
NOTES:
1. PROVIDE ADDITIONAL HORIZONTAL DIRECTIONAL
DRILLING SENDING/RECEIVING PITS AS NEEDED.
RESTORE DISTURBED AREAS IN ACCORDANCE WITH
THE CORRESPONDING PAVEMENT RESTORATION DETAIL.



PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'

HORIZ: 50' 25' 0' 50'
VERT: 5' 2.5' 0' 5'
SCALE IN FEET

NO.	REVISION	DATE	BY



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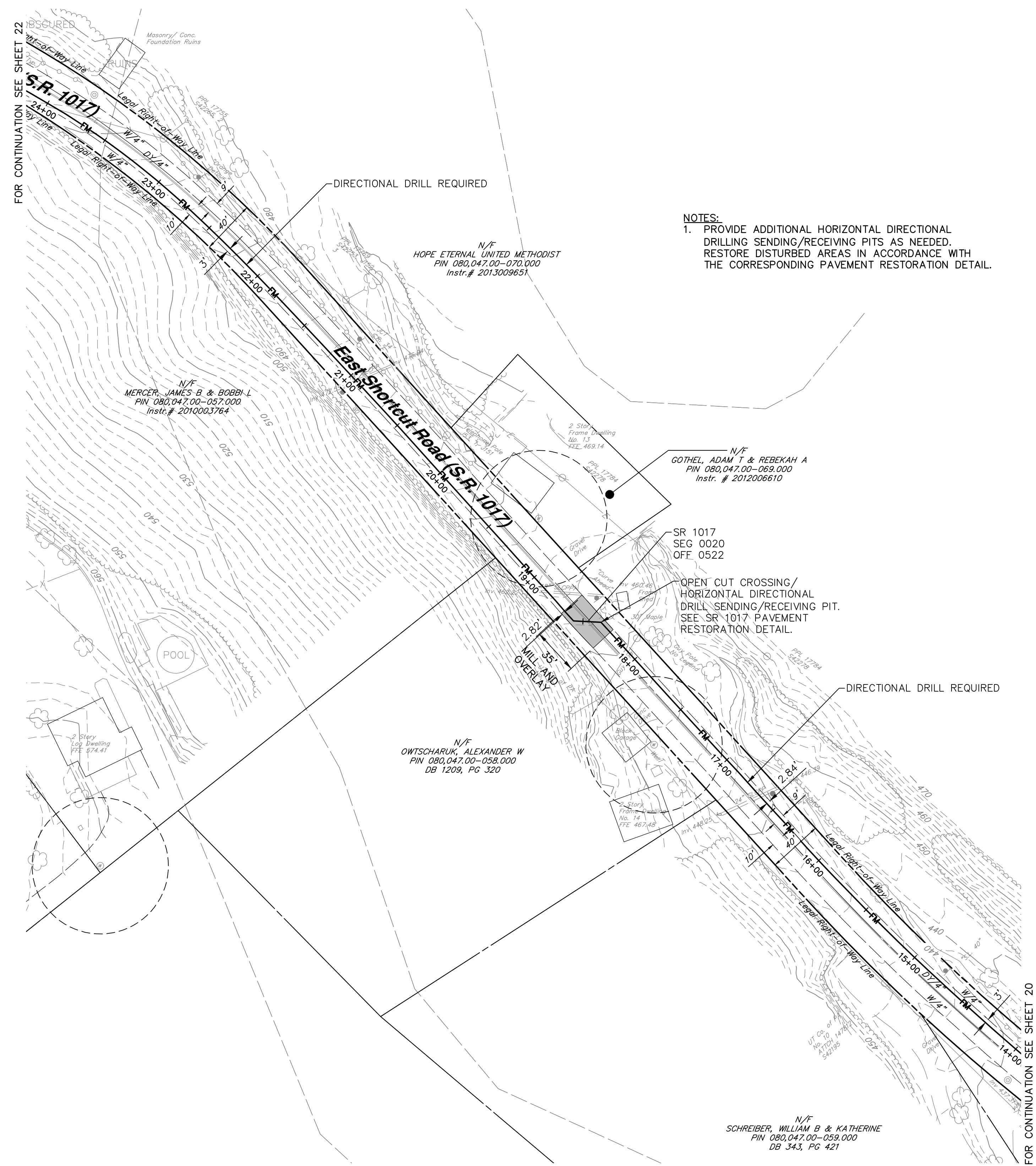
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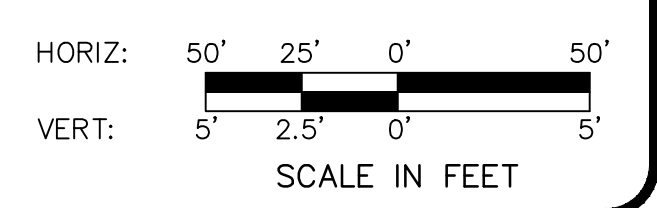
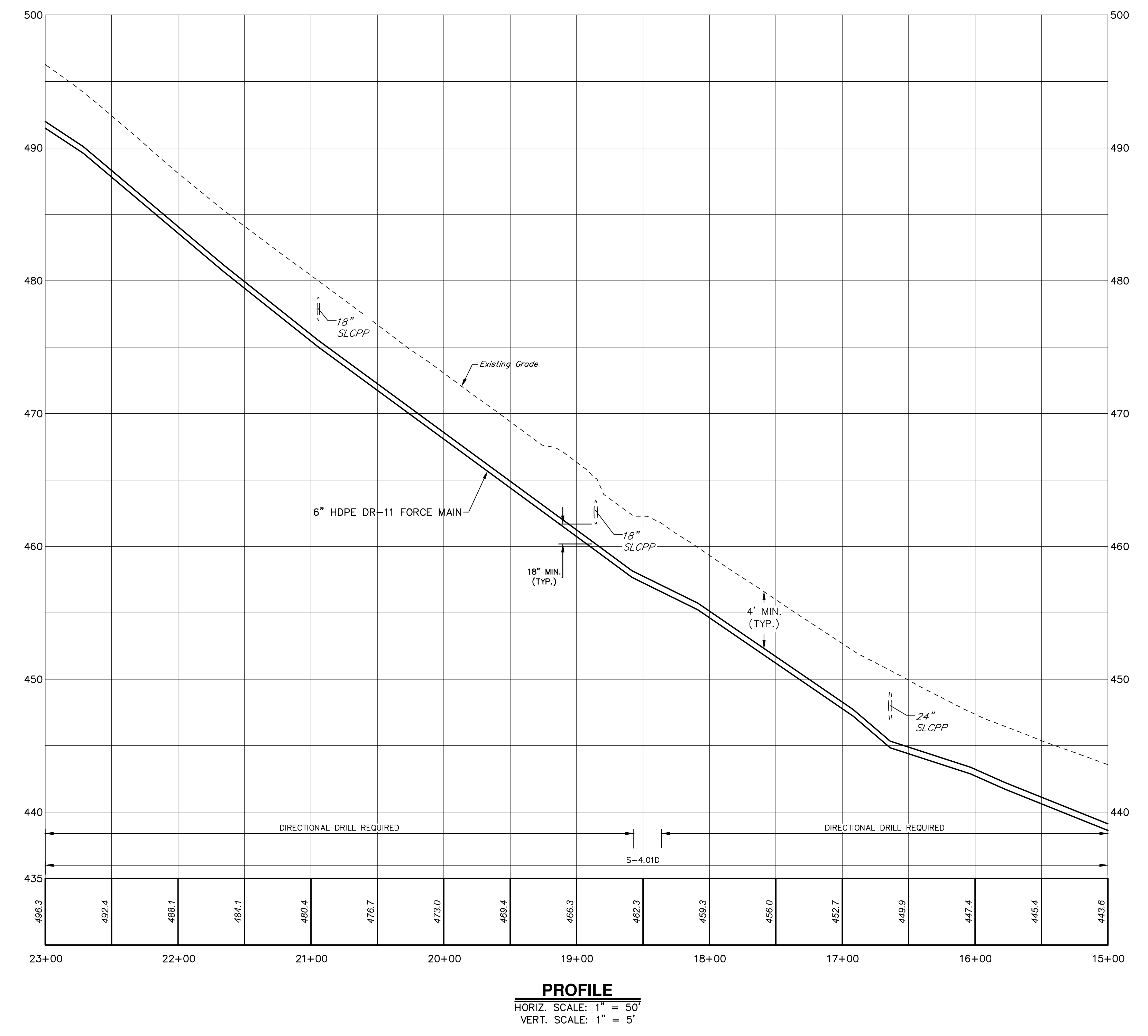
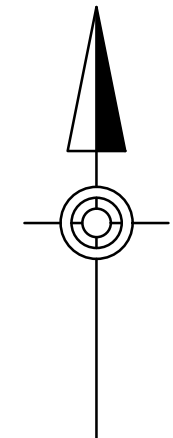
SANITARY SEWER PLAN & PROFILE
JUNIATA PARKWAY PUMP STATION FORCE MAIN
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - WGR
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

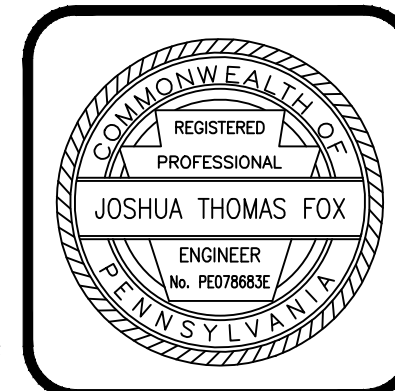
DRAWING NO.
FM-2
SHEET NO.
20 OF 60
PROJECT 005100.0434



SANITARY SEWER PLAN
SCALE: 1" = 50'



NO.	REVISION	DATE	BY



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Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrj@hrj-inc.com
www.hrg-inc.com

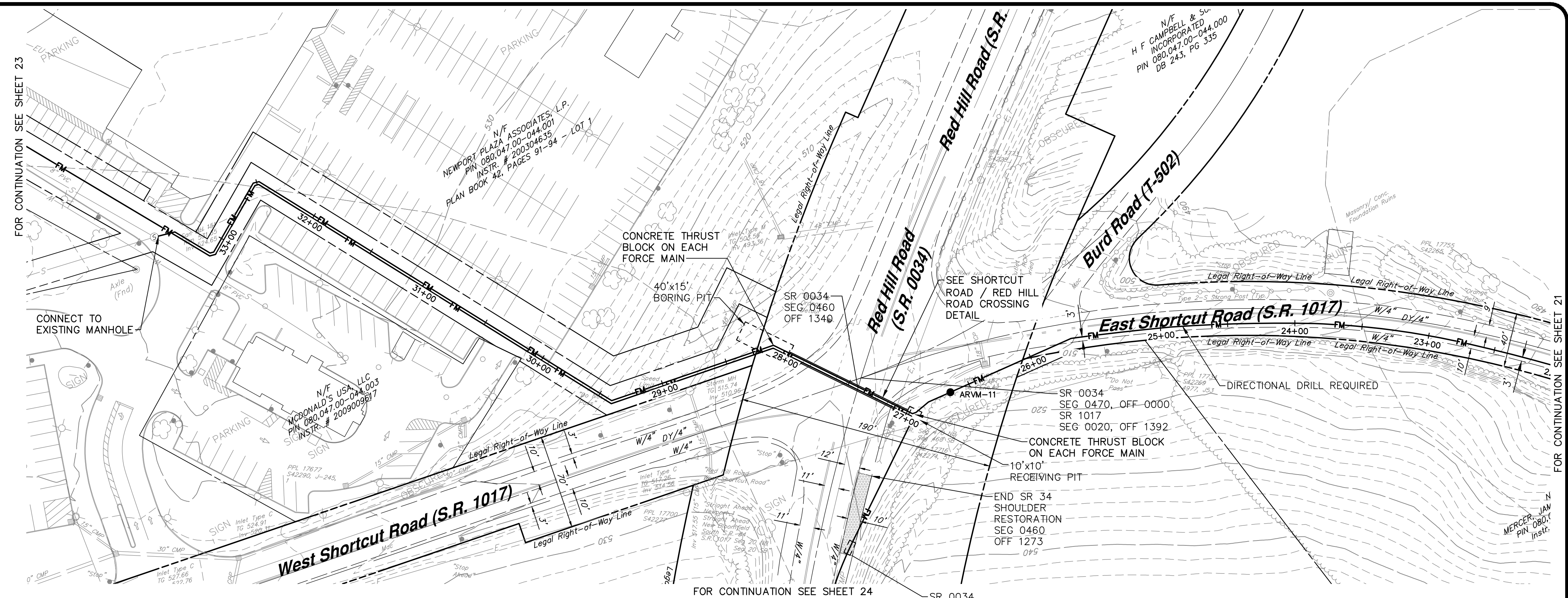
HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

SANITARY SEWER PLAN & PROFILE
JUNIATA PARKWAY PUMP STATION FORCE MAIN
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

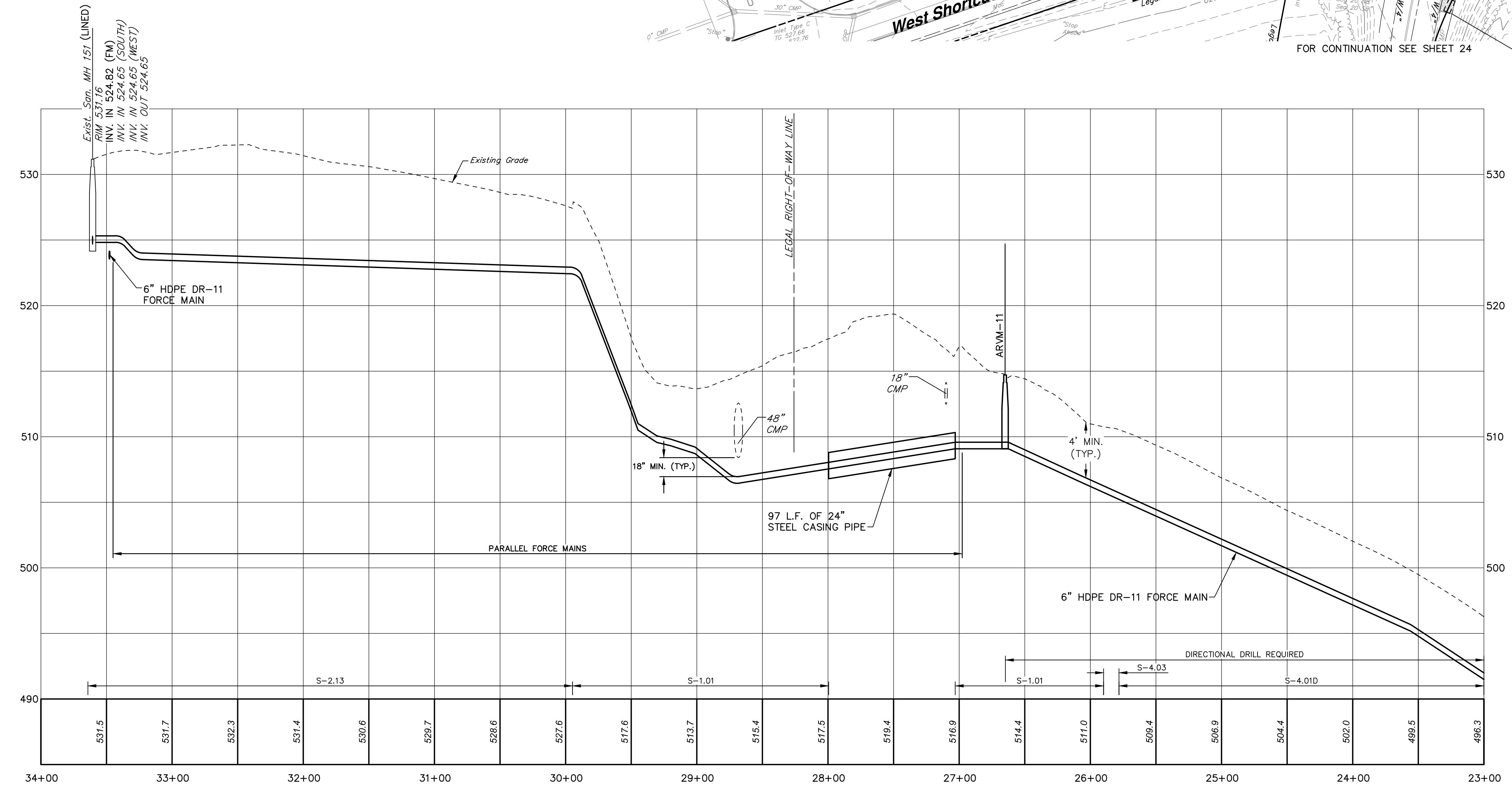
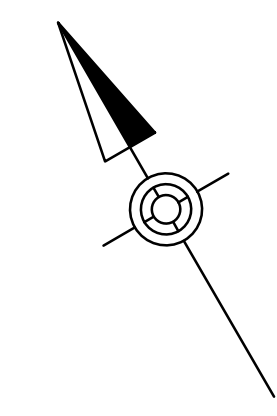
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - WGR
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
FM-3
SHEET NO.
21 OF 60
PROJECT 005100.0434



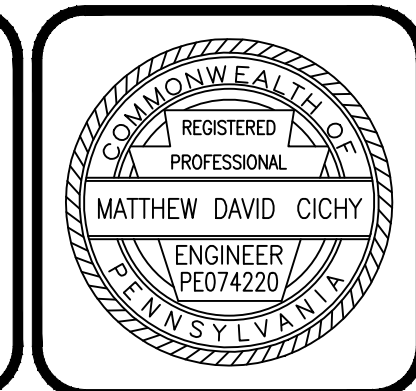
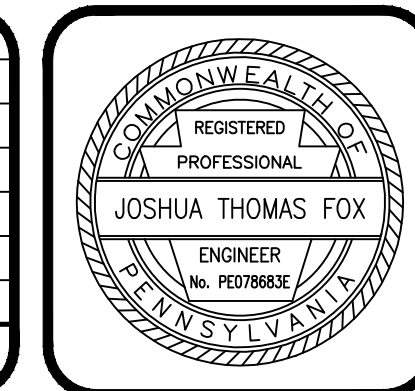
SANITARY SEWER PLAN
SCALE: 1" = 50'



PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'

HORIZ: 50' 25' 0' 50'
VERT: 5' 2.5' 0' 5'
SCALE IN FEET

NO.	REVISION	DATE	BY



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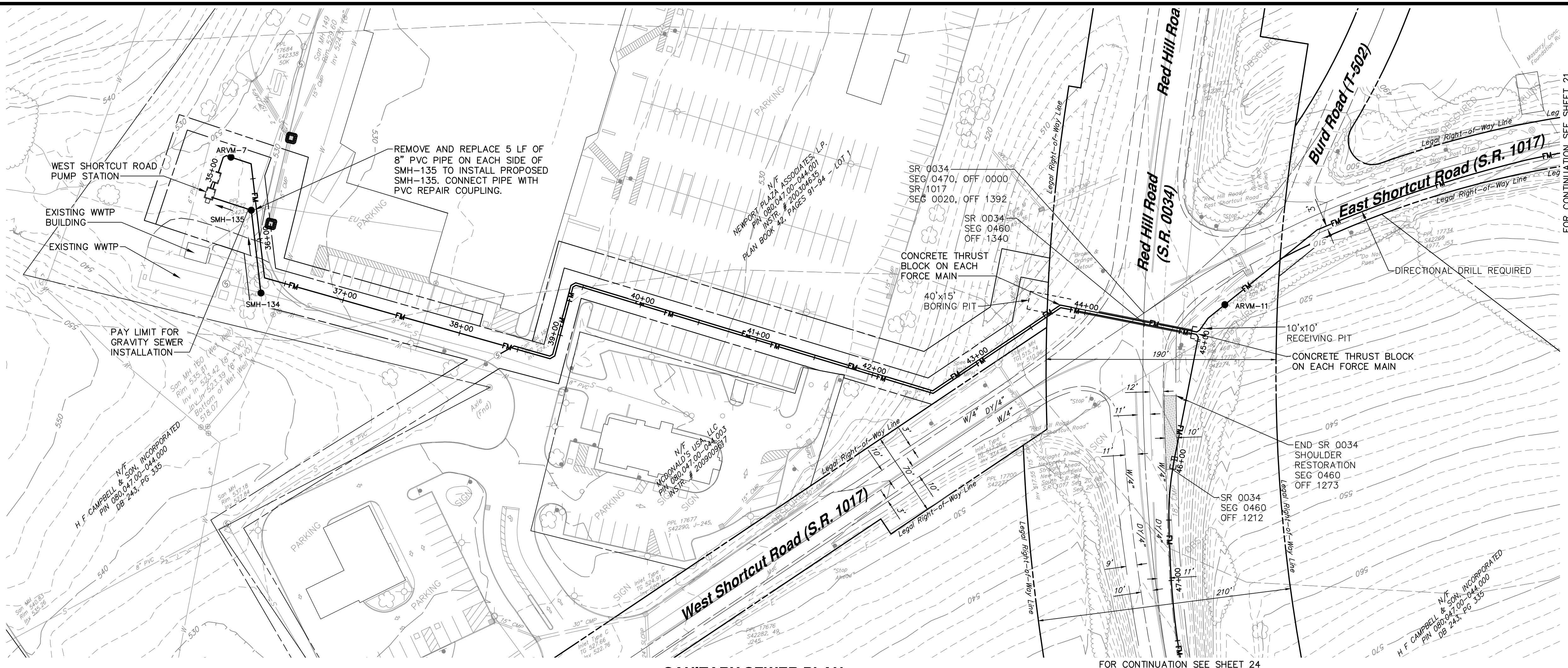
369 East Park Drive
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SANITARY SEWER PLAN & PROFILE
JUNIATA PARKWAY PUMP STATION FORCE MAIN
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

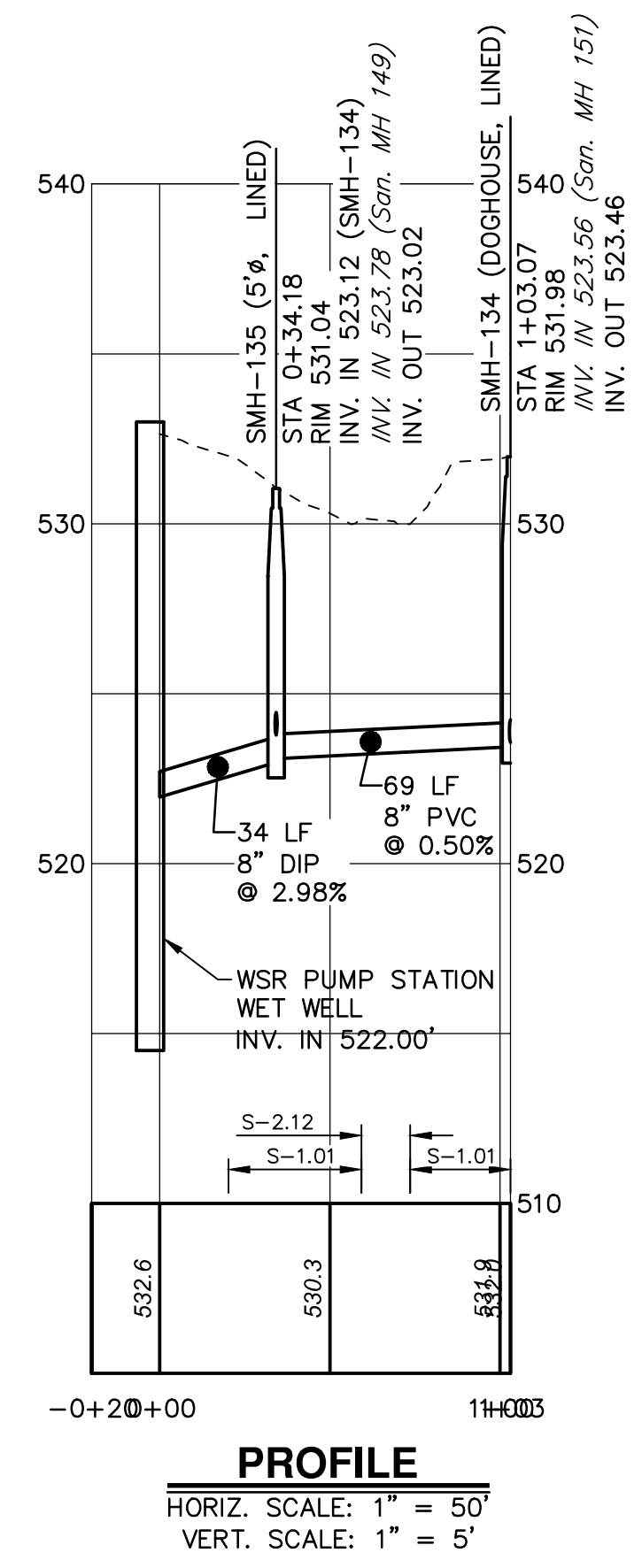
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DESIGN - WGR
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SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
FM-4
SHEET NO.
22 OF 60
PROJECT 005100.0434

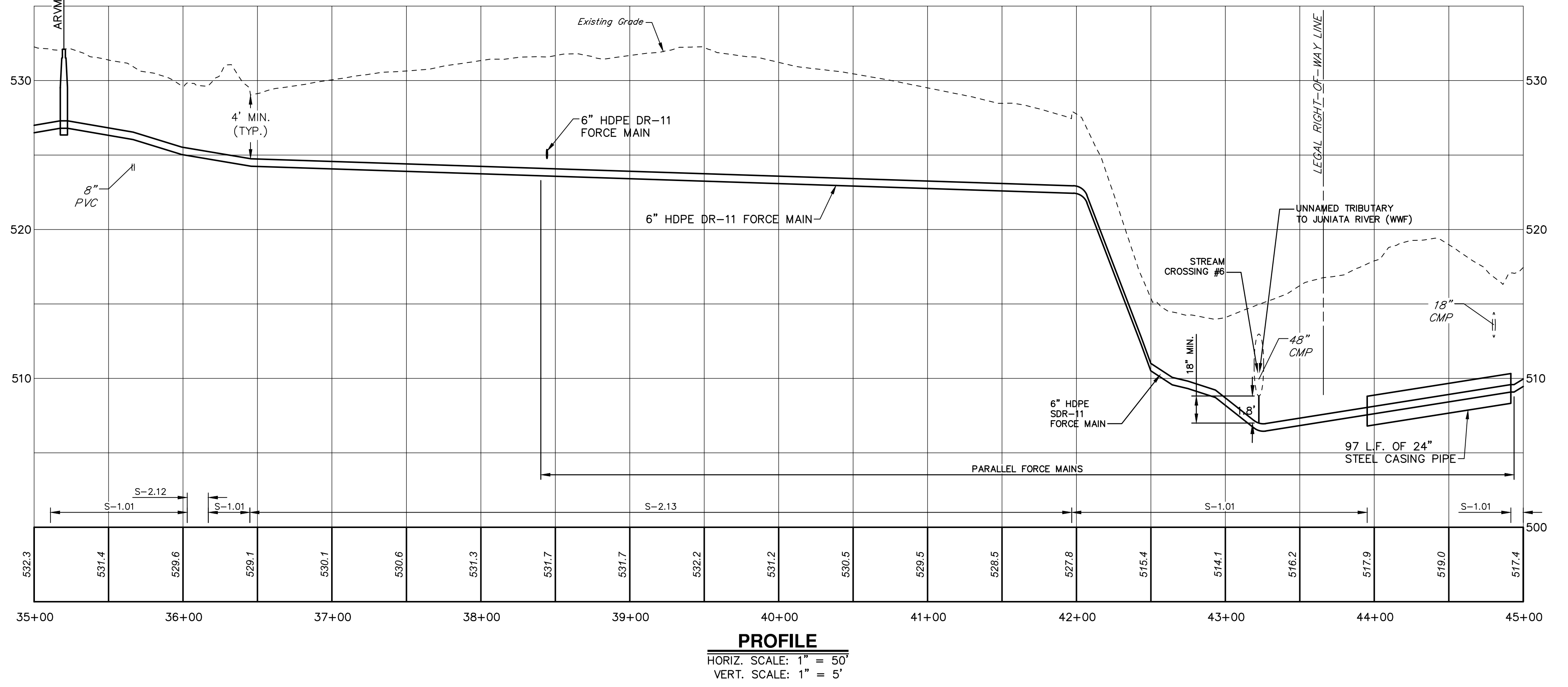


SANITARY SEWER PLAN
SCALE: 1" = 50'

- NOTES:**
- CONTRACTOR SHALL MAINTAIN EXISTING FLOW THROUGH PROPOSED MANHOLES SMH-134 AND SMH-135 TO EXISTING MANHOLE MH-150. AFTER SANITARY SEWER SYSTEM IS COMMISSIONED AND PLACED INTO OPERATION BY THE OWNER, CONTRACTOR SHALL PLUG THE EXISTING INVERT OUT PIPES WITH A MINIMUM OF THREE (3) L.F. OF CONCRETE AND SHAPE FLOW CHANNELS TO DIRECT FLOW TO THE WEST SHORTCUT ROAD PUMP STATION. LINE FLOW CHANNEL AFTER ABANDONING EXISTING INVERT OUT PIPES.

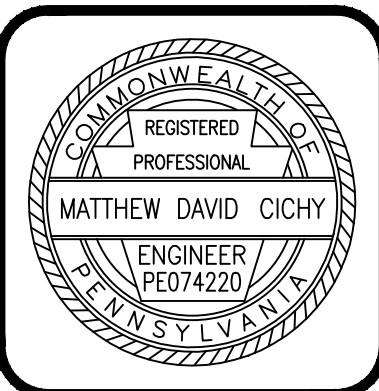
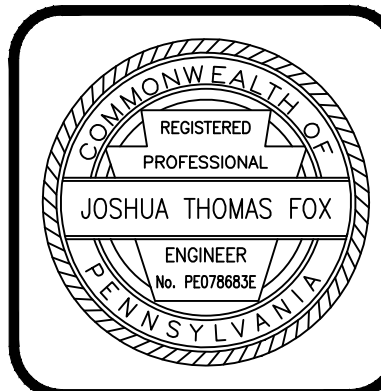


PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'



PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'

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SANITARY SEWER PLAN & PROFILE
WEST SHORTCUT ROAD PUMP STATION FORCE MAIN
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

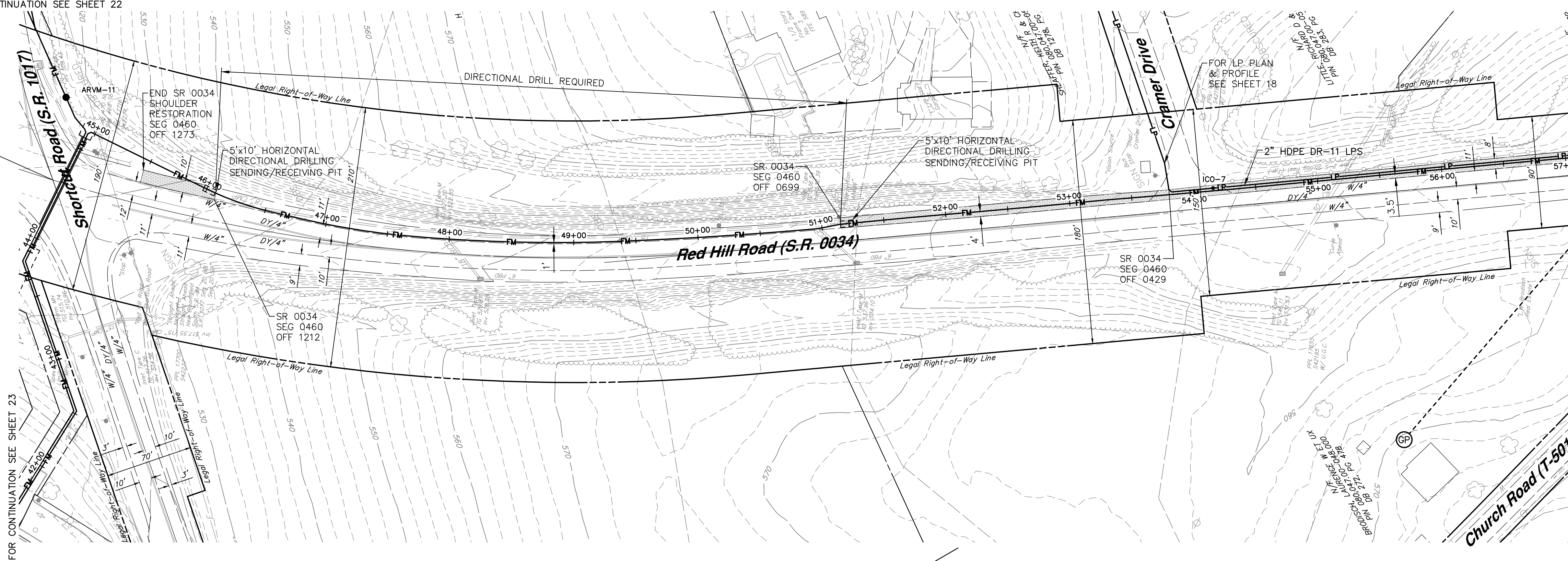
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SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
FM-5
SHEET NO.
23 OF 60
PROJECT 005100.0434

FOR CONTINUATION SEE SHEET 22

SR 0034
SEG 0470, OFF 0000
SR 1017
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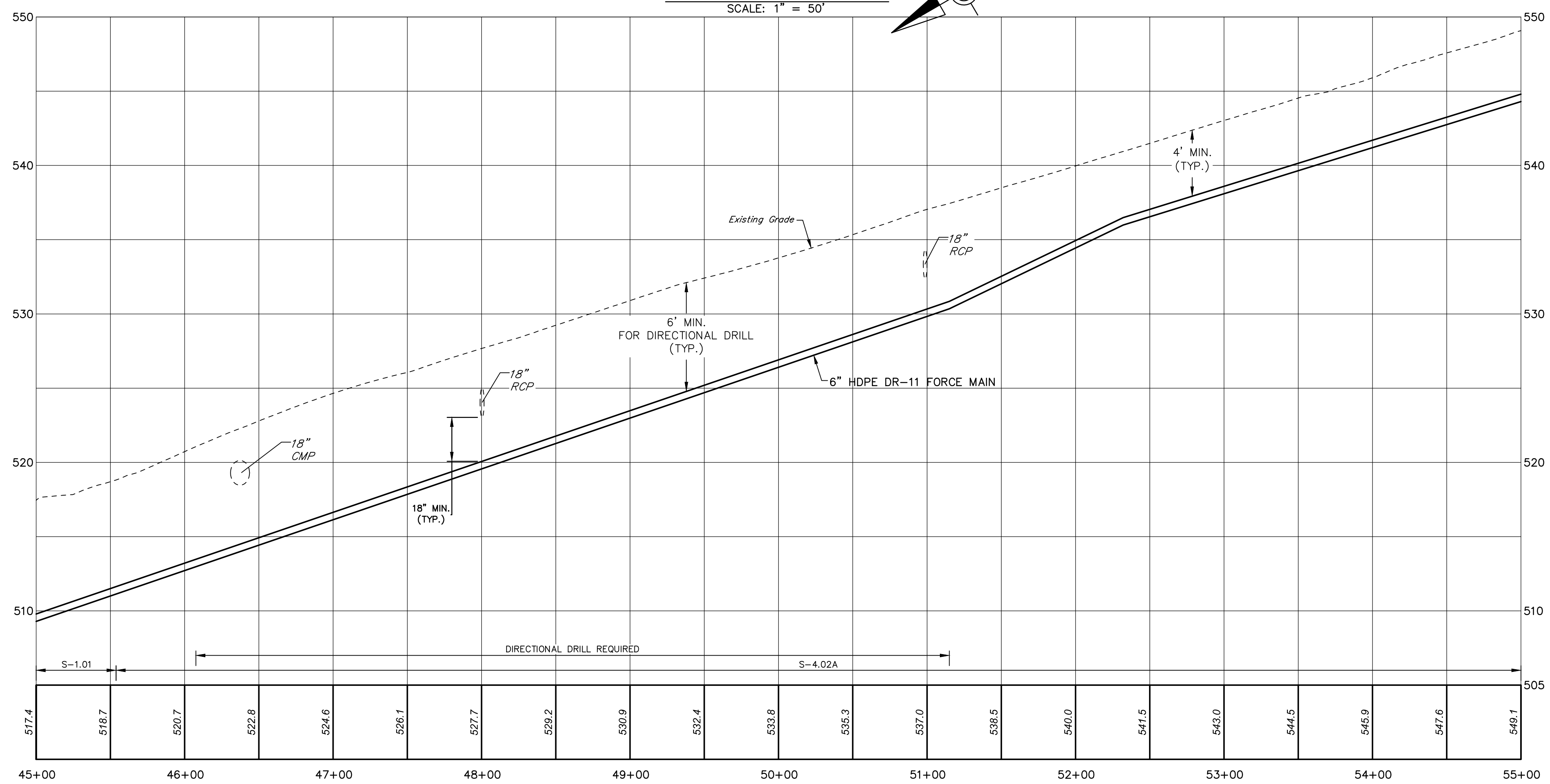
FOR CONTINUATION SEE SHEET 23



FOR CONTINUATION SEE SHEET 25

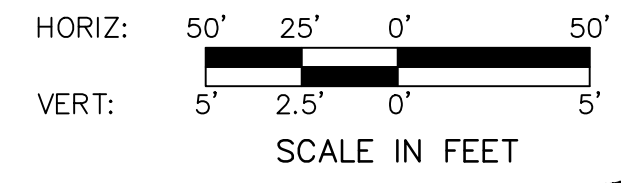
SANITARY SEWER PLAN

SCALE: 1" = 50'

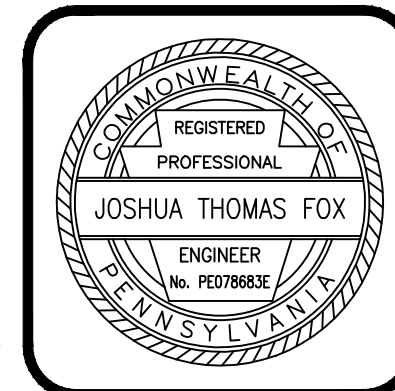


PROFILE

HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'



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SANITARY SEWER PLAN & PROFILE
WEST SHORTCUT ROAD PUMP STATION FORCE MAIN
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

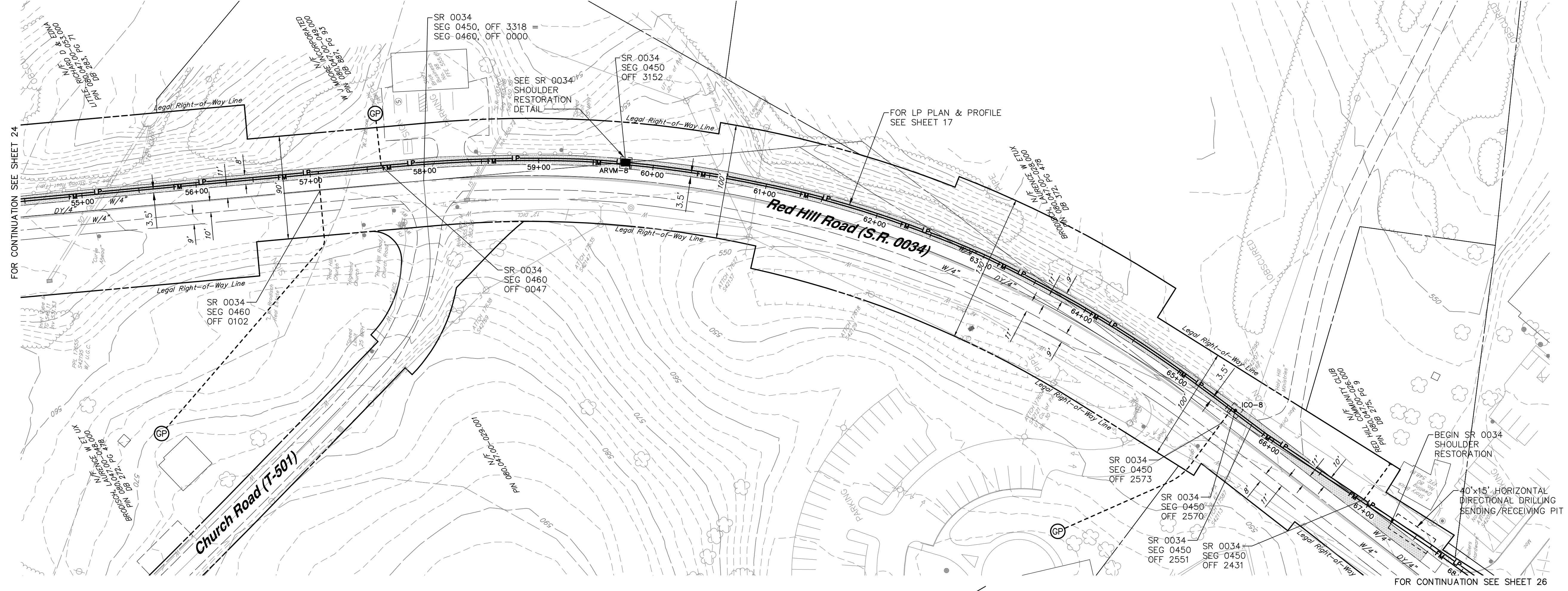
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

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DESIGN - WGR
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CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

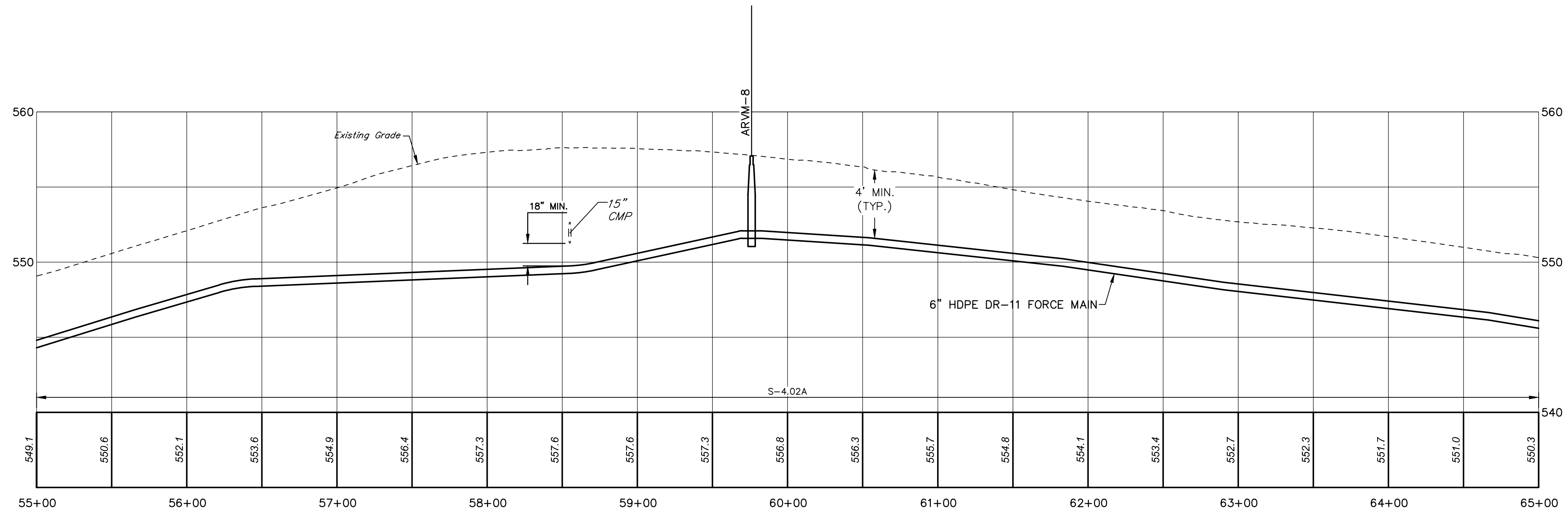
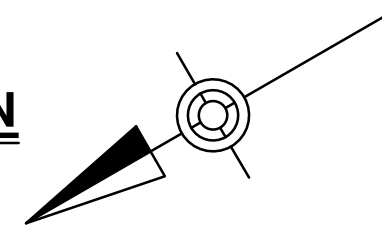
DRAWING NO.
FM-6

SHEET NO.
24 OF 60

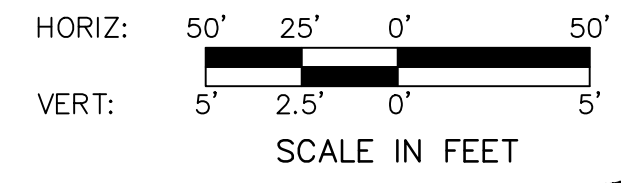
PROJECT 005100.0434



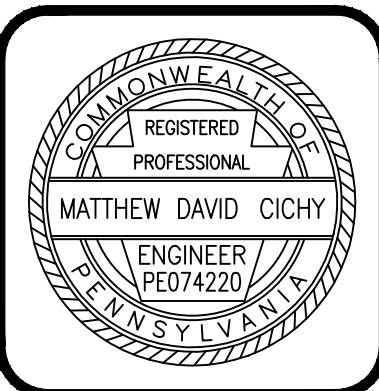
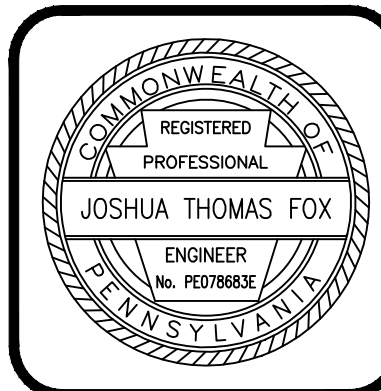
SANITARY SEWER PLAN
SCALE: 1" = 50'



PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'



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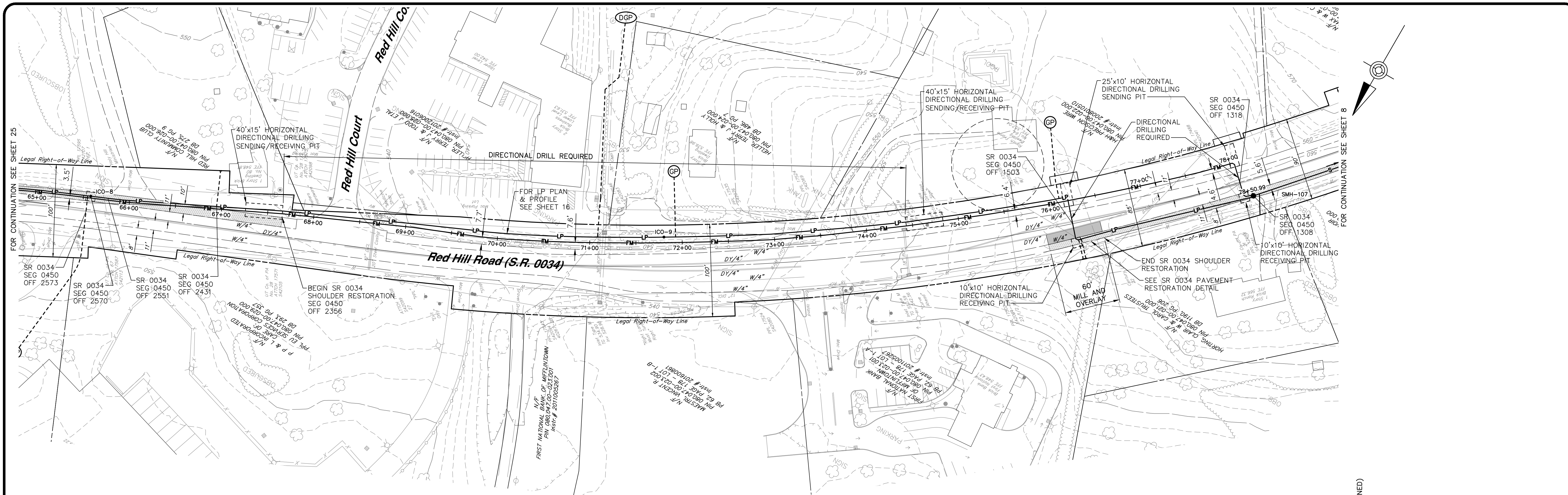
HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

SANITARY SEWER PLAN & PROFILE
WEST SHORTCUT ROAD PUMP STATION FORCE MAIN
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

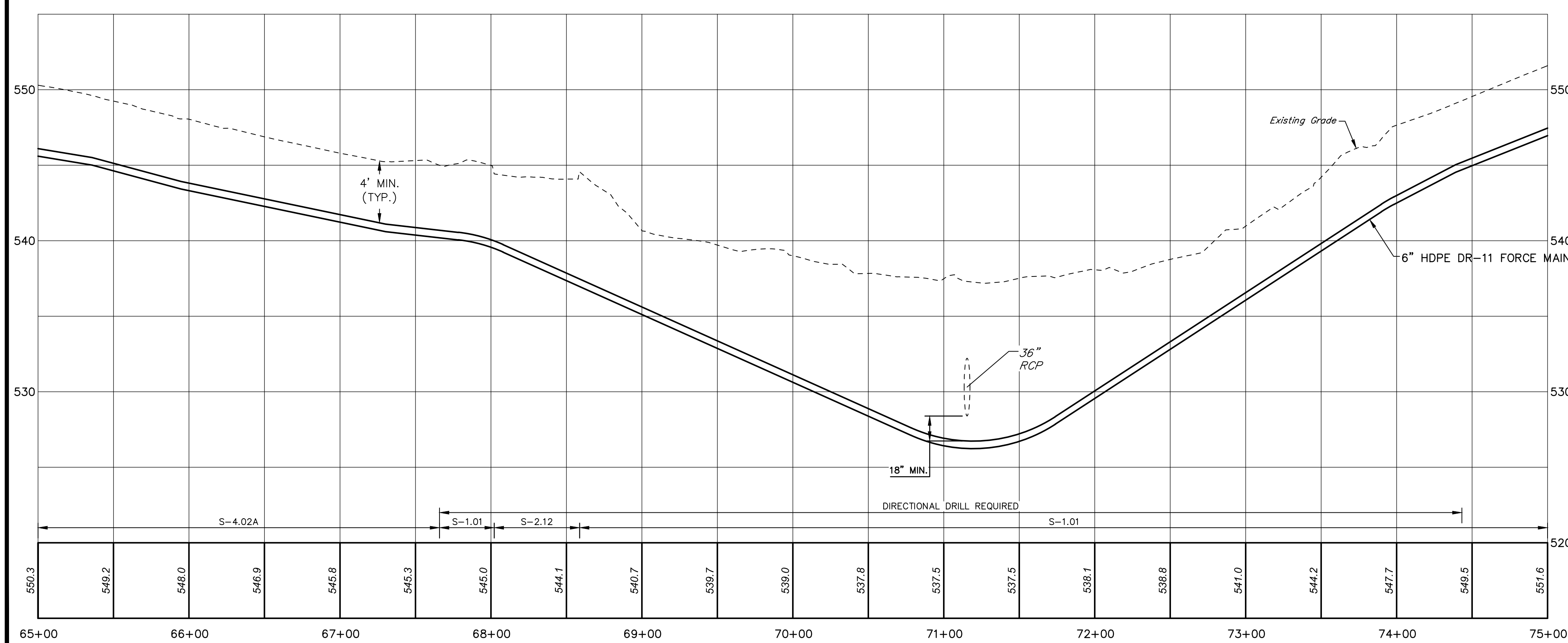
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

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DESIGN - WGR
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CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

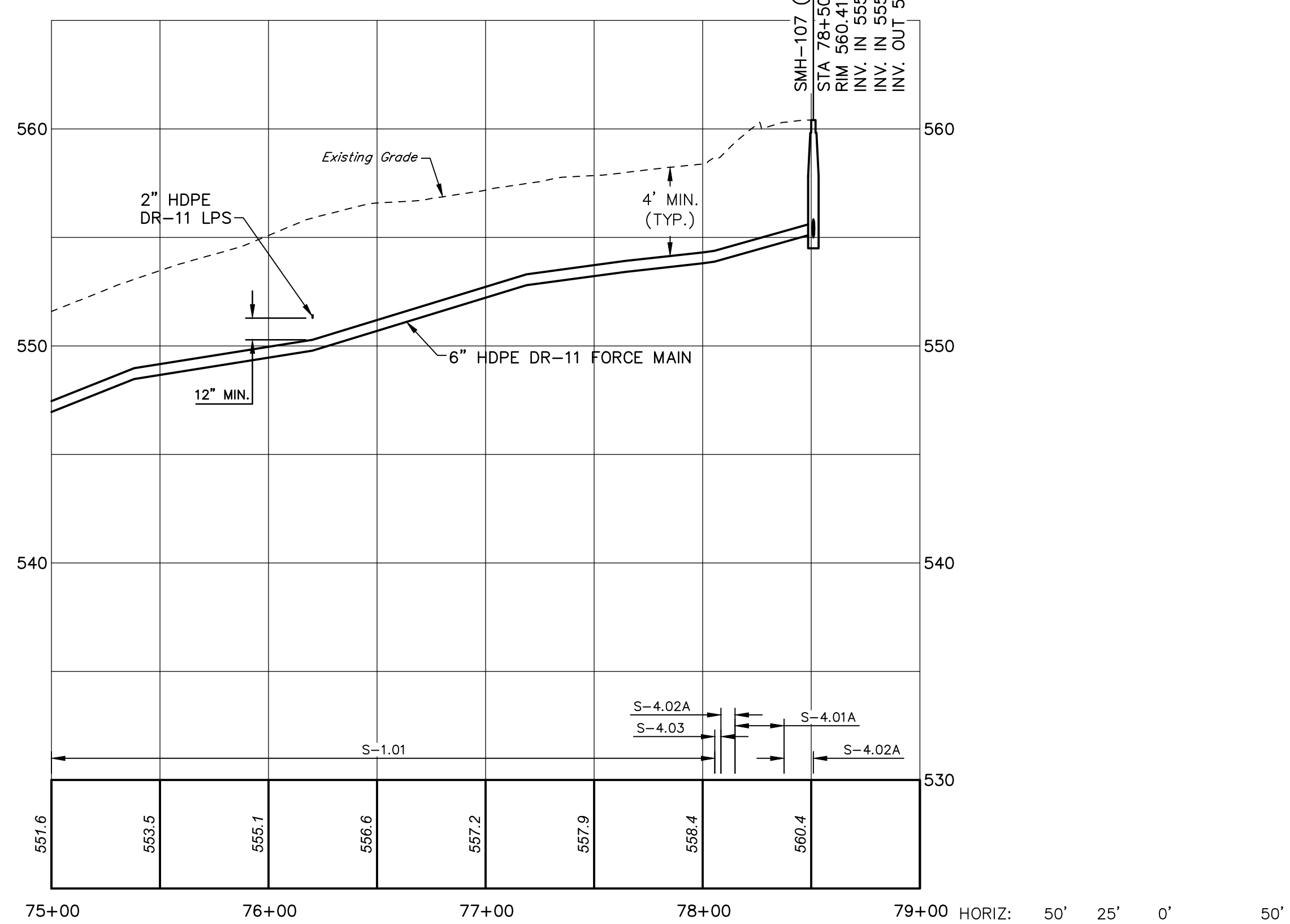
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FM-7
SHEET NO.
25 OF 60
PROJECT 005100.0434



SANITARY SEWER PLAN
SCALE: 1" = 50'

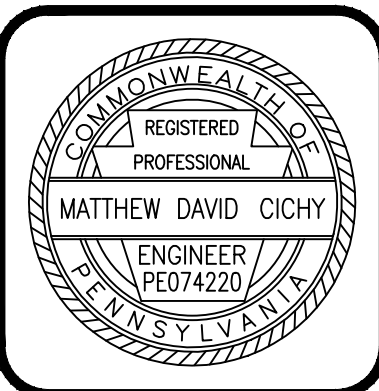
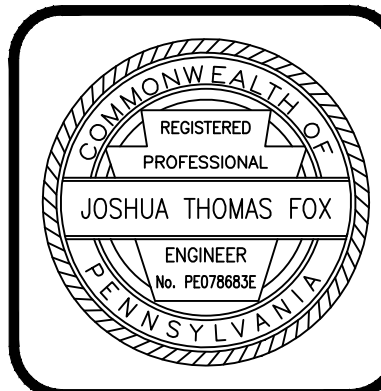


PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'



HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'
SCALE IN FEET

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300 N. 4TH STREET
NEWPORT, PA 17074

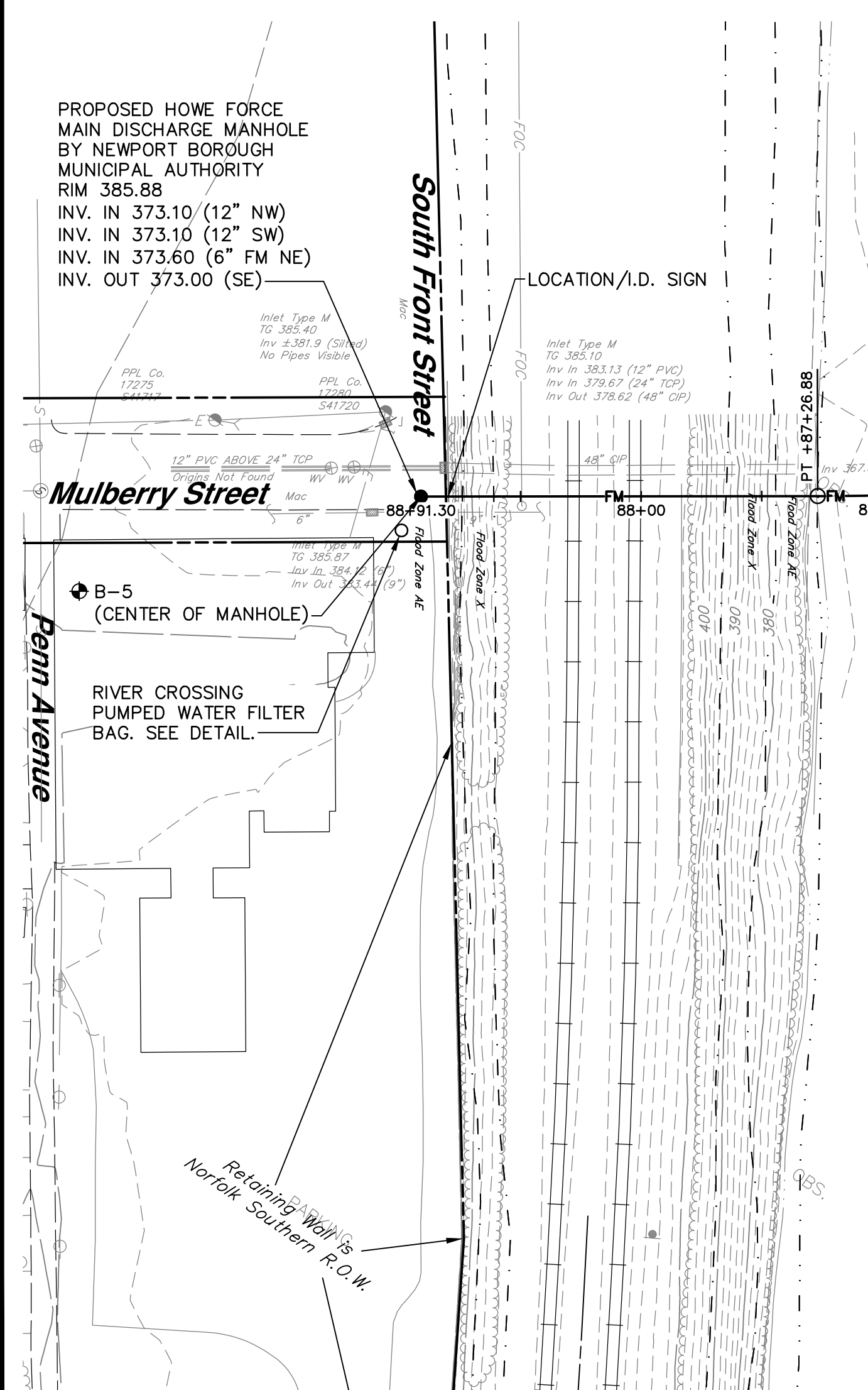
SANITARY SEWER PLAN & PROFILE
WEST SHORTCUT ROAD PUMP STATION FORCE MAIN
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - WGR
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CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

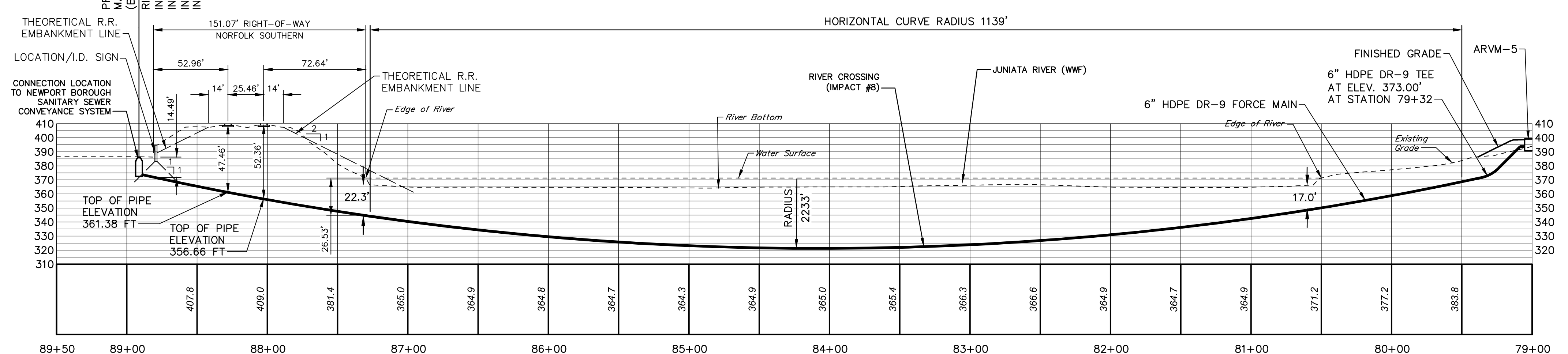
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FM-8
SHEET NO.
26 OF 60
PROJECT 005100.0434

NOTES:

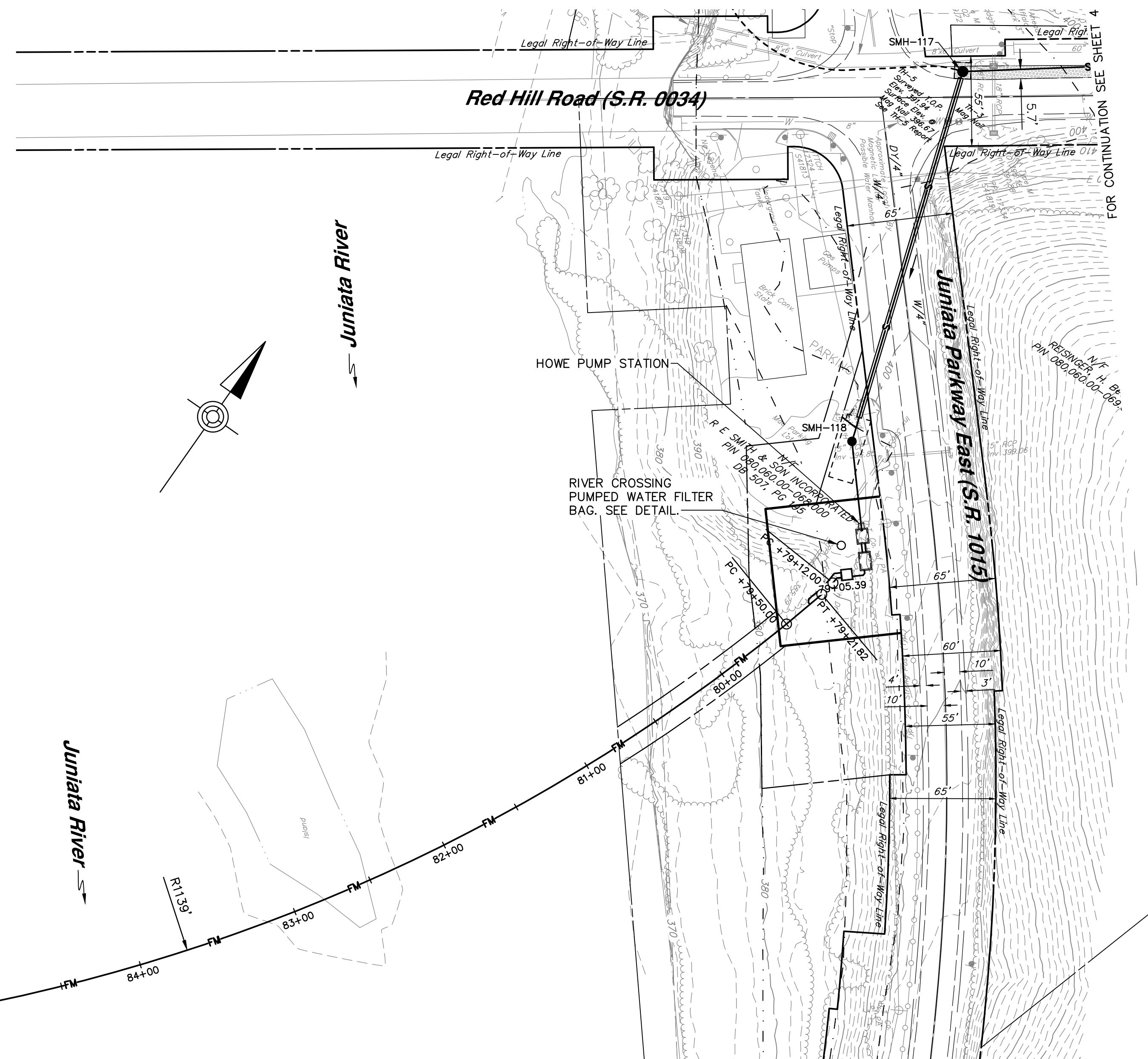
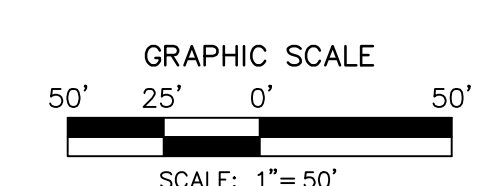
- REFER TO SECTION 01 31 13 OF THE PROJECT MANUAL FOR THE SEQUENCE OF CONSTRUCTION REGARDING THE INSTALLATION OF AND CONNECTION TO THE PROPOSED HOWE FORCE MAIN DISCHARGE MANHOLE.
- NO HDD OPERATIONS CAN BE UNDERTAKEN BETWEEN MAY 1 AND JUNE 12.
- CONTRACTOR SHALL PROVIDE PENNSYLVANIA FISH AND BOAT COMMISSION DIVISION OF ENVIRONMENTAL SERVICES CONTENT OF DRILLING MUD FORMULATION A MINIMUM OF 14 DAYS PRIOR TO THE START OF WORK.
- CONTRACTOR SHALL HAVE A CONTINGENCY PLAN ON-SITE FOR INADEQUATE RETURNS OR DRILLING FLUID. A VACUUM TRUCK IS REQUIRED TO BE ON-SITE OR ON-CALL (WITHIN 3 HOURS) TO PREVENT DOWNSTREAM MITIGATION OF DRILLING FLUIDS IN THE EVENT OF AN INADEQUATE RETURN.
- CONTRACTOR SHALL CONTACT DANIEL RYAN, PENNSYLVANIA FISH AND BOAT COMMISSION AT DANIRYAN@PA.GOV PRIOR TO THE START OF WORK FOR THE CROSSING.
- THE PENNSYLVANIA FISH AND BOAT COMMISSION BUREAU OF LAW ENFORCEMENT (717-486-7087) AND PA DEP EMERGENCY RESPONSE PROGRAM (866-825-0208) MUST BE CONTACTED IMMEDIATELY IN THE EVENT OF AN INADEQUATE RETURN.
- RESTORATION FOR SOUTH FRONT STREET SHALL COMPLY WITH NEWPORT BOROUGH (S-3.11C) PAVEMENT RESTORATION DETAIL.



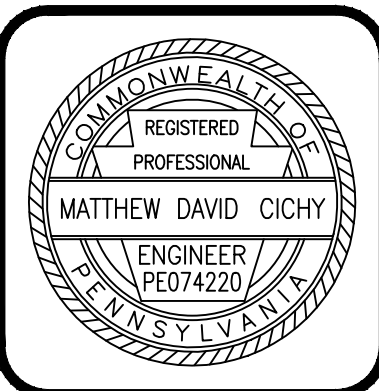
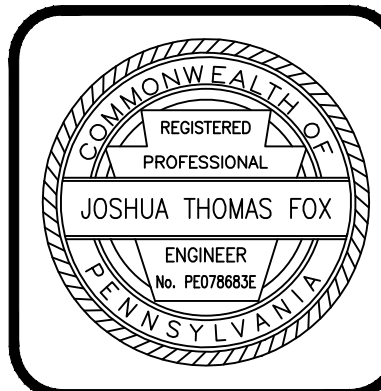
SANITARY SEWER PLAN
SCALE: 1" = 50'



PROFILE
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 50'



NO.	REVISION	DATE	BY



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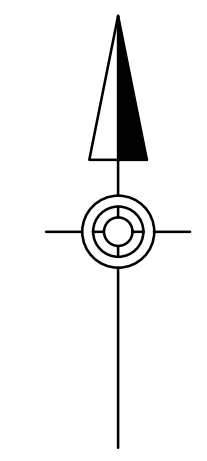
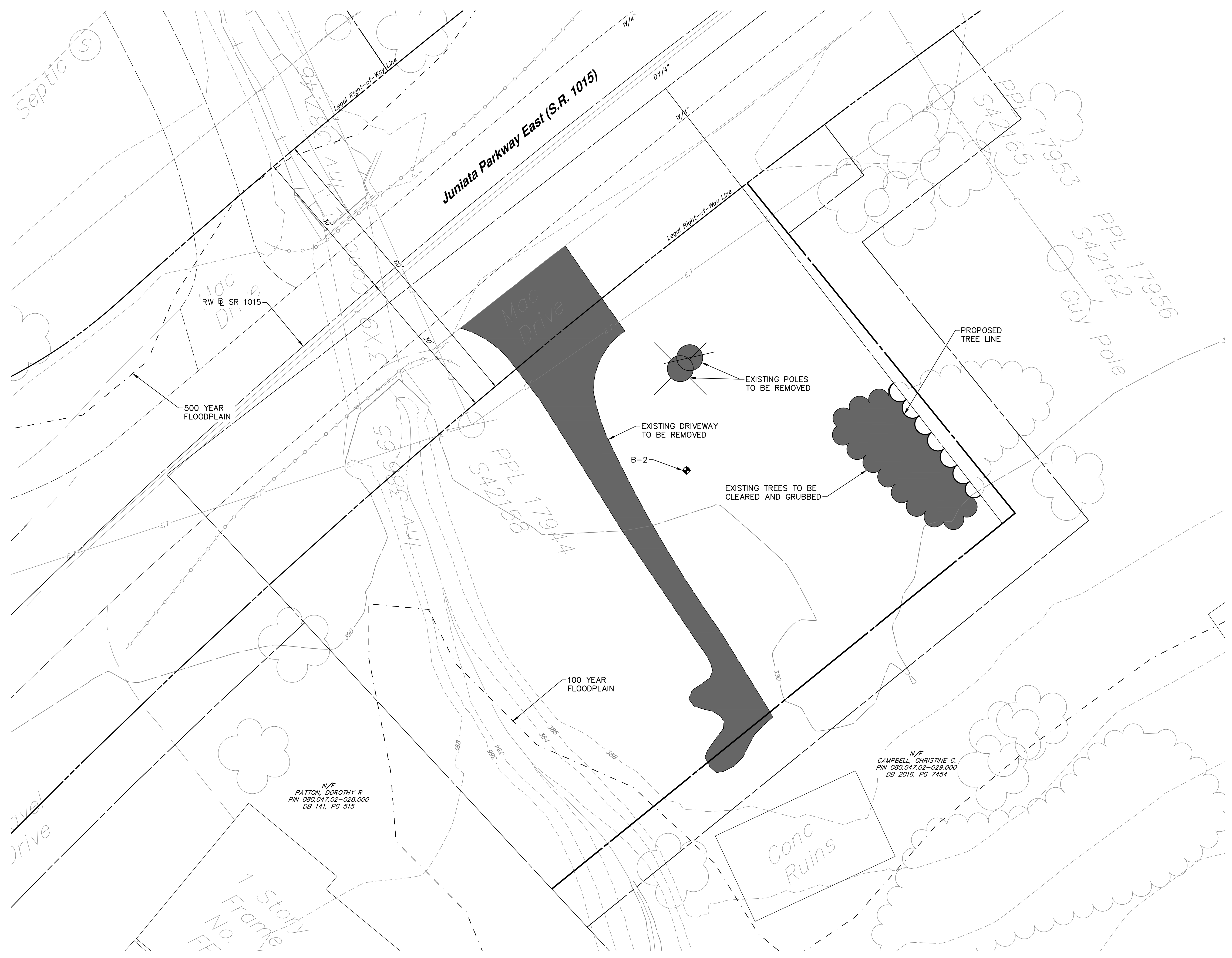
HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

SANITARY SEWER PLAN & PROFILE
JUNIATA RIVER & NORFOLK SOUTHERN R.R. CROSSING
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

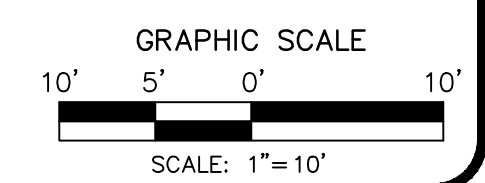
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SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
JRC
SHEET NO.
27 OF 60
PROJECT 005100.0434

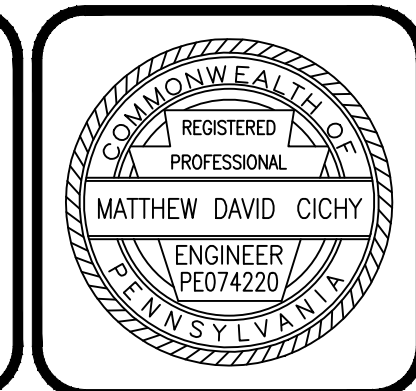
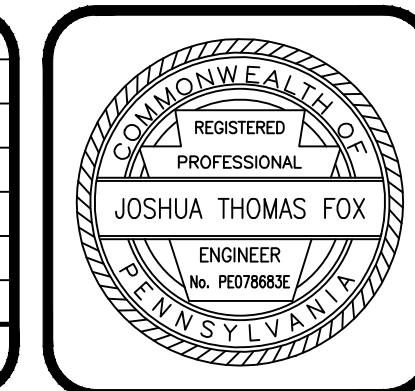


LEGEND
 ■ EXISTING TO BE DEMOLISHED

PUMP STATION PLAN
 SCALE: 1" = 10'



NO.	REVISION	DATE	BY



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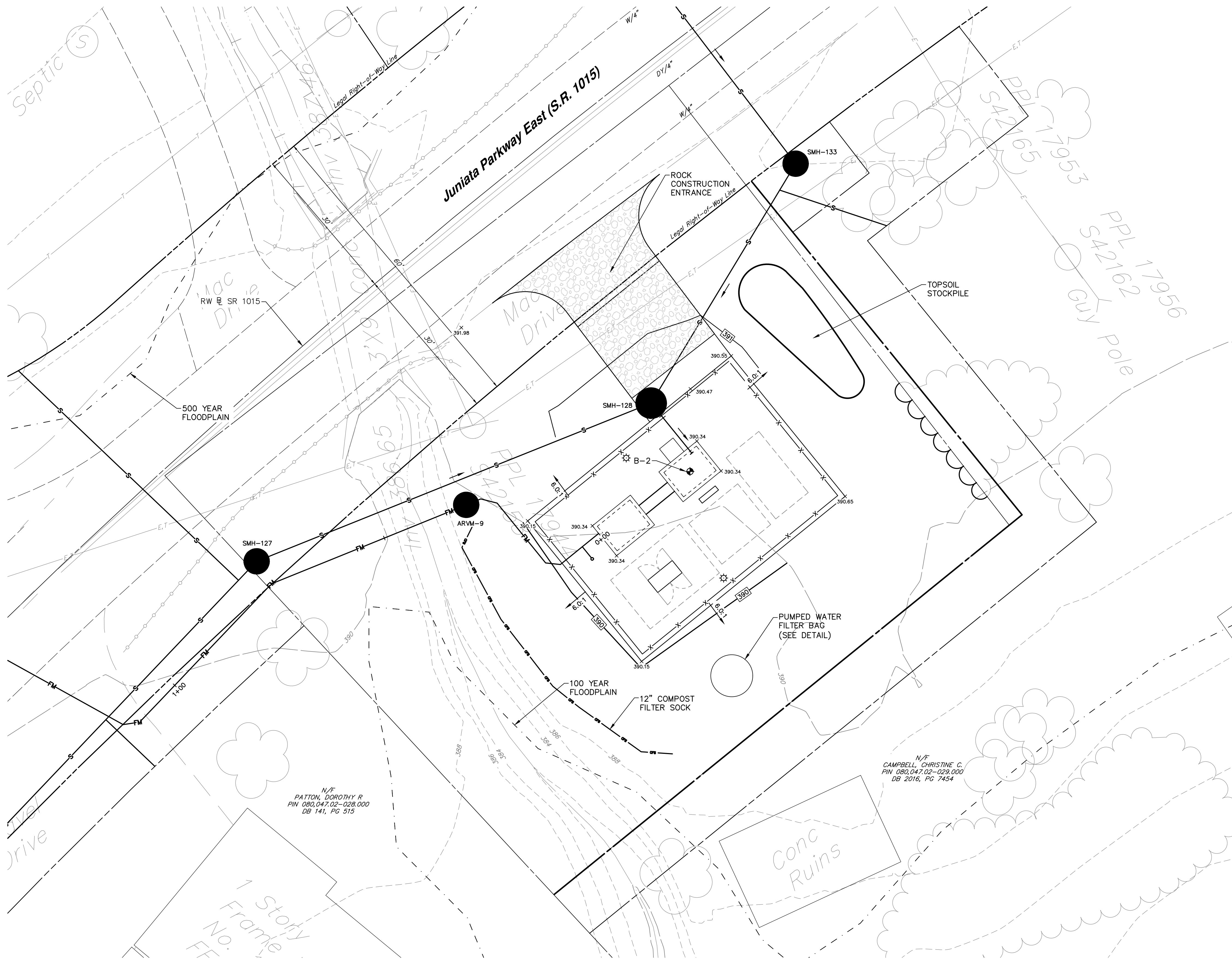
369 East Park Drive
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 hrg@hrg-inc.com
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 NEWPORT, PA 17074

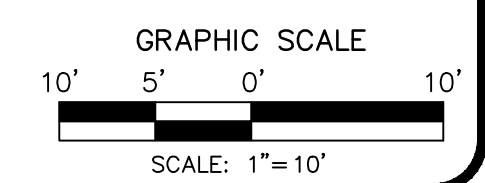
EXISTING CONDITIONS AND DEMOLITION SITE PLAN
JUNIATA PARKWAY PUMP STATION
 FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
 HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - WGR
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

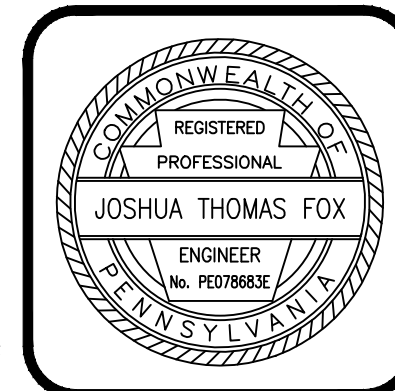
DRAWING NO.
JP-1
 SHEET NO.
28 OF 60
 PROJECT 005100.0434



PUMP STATION PLAN
SCALE: 1" = 10'



NO.	REVISION	DATE	BY



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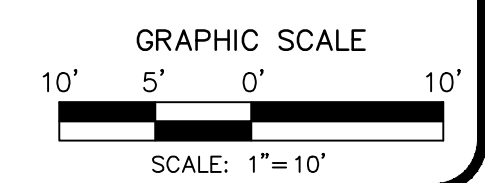
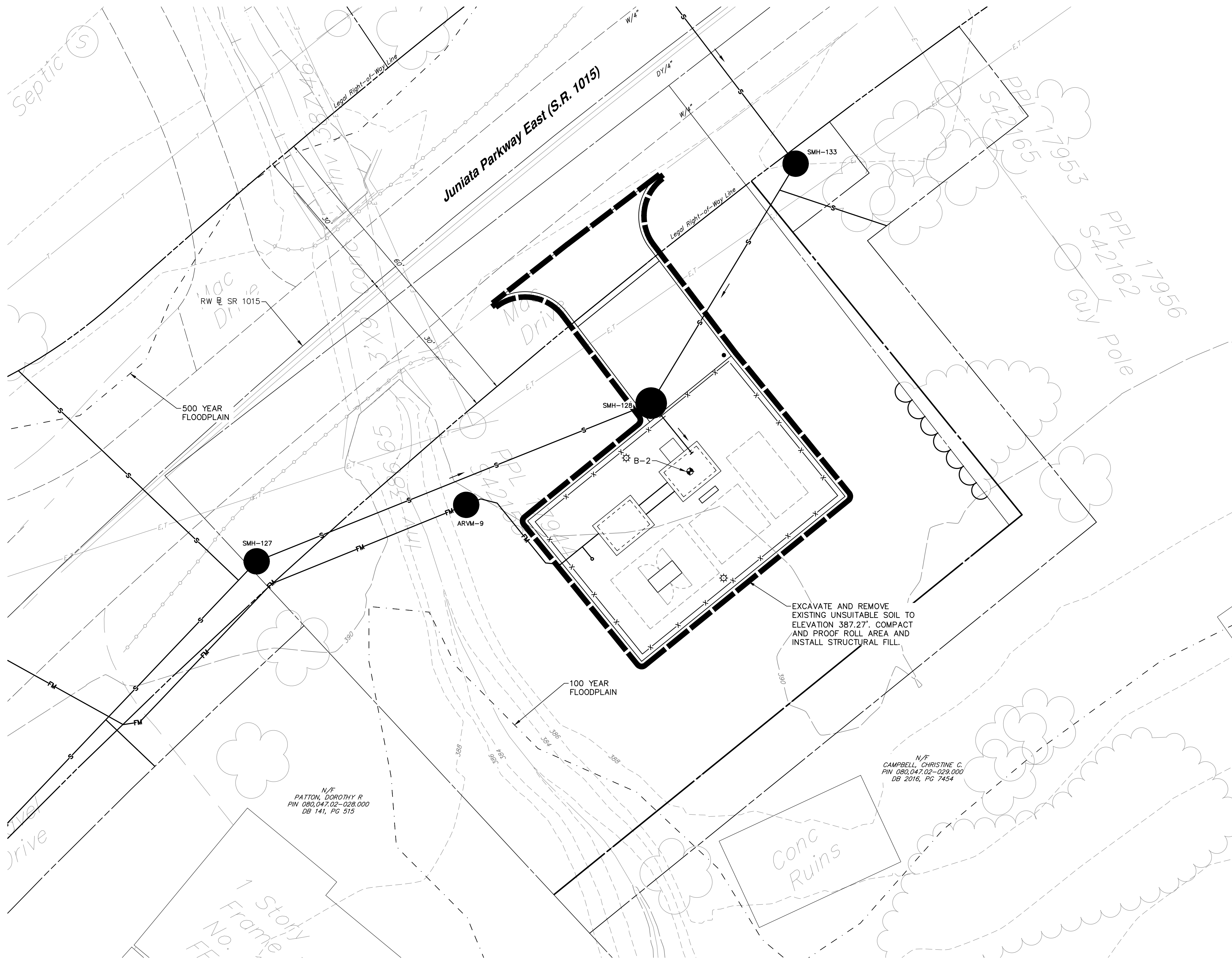
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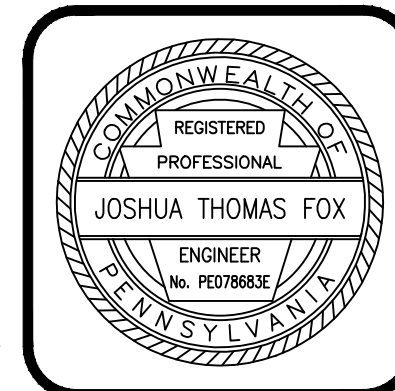
EROSION AND SEDIMENTATION CONTROL SITE PLAN
JUNIATA PARKWAY PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - CAL
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
JP-2
SHEET NO.
29 OF 60
PROJECT 005100.0434



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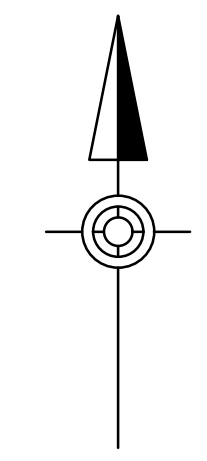
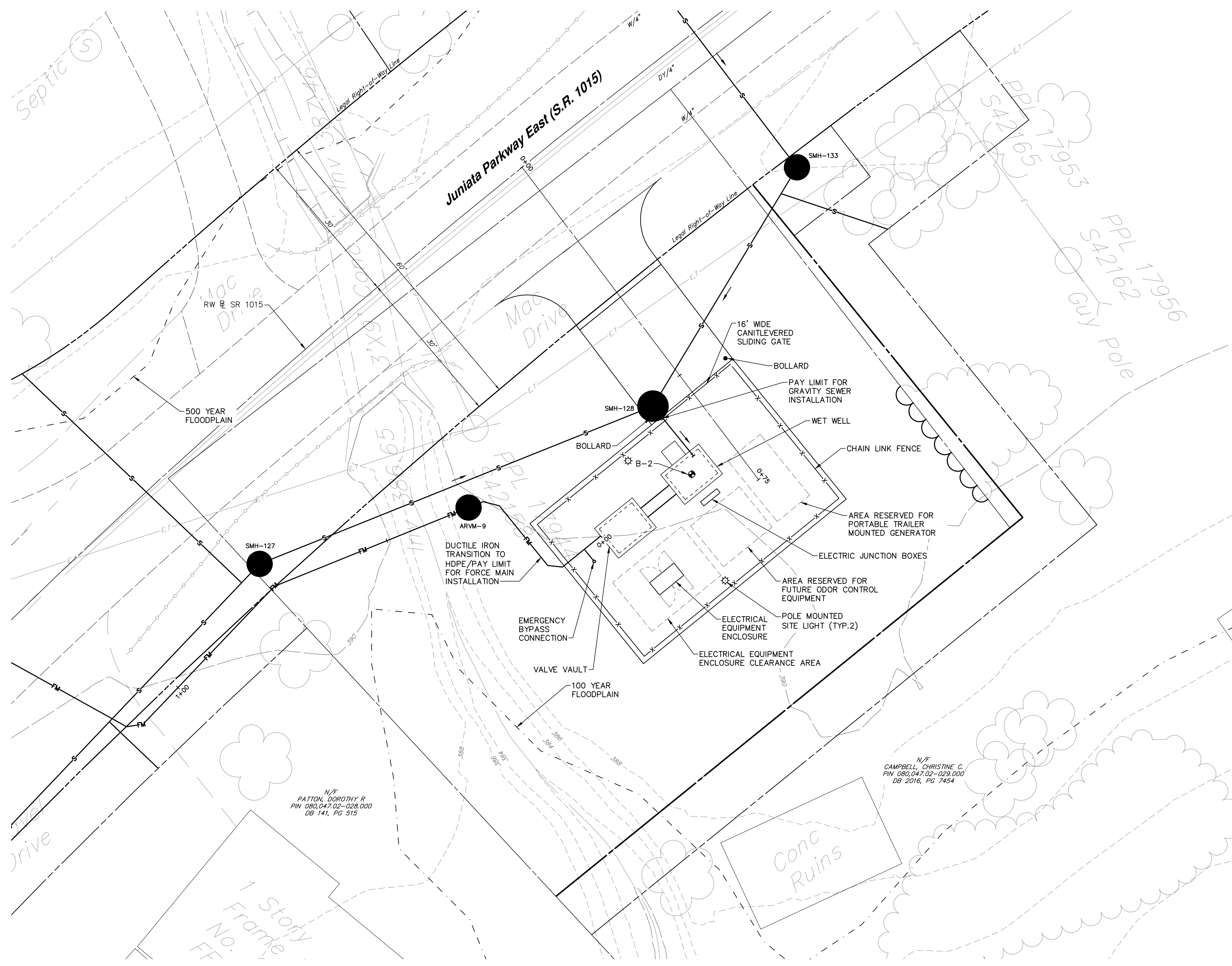
PUMP STATION SITE PREPARATION PLAN
JUNIATA PARKWAY PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

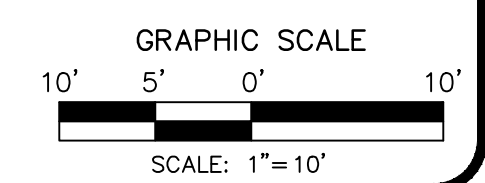
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DRAWING NO.
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SHEET NO.
30 OF 60
PROJECT 005100.0434

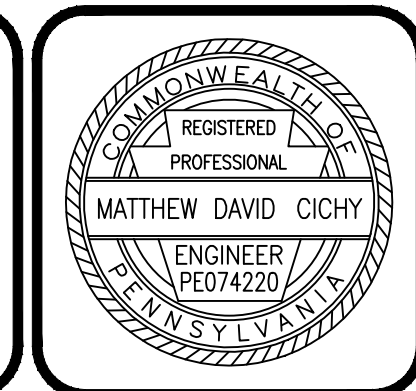
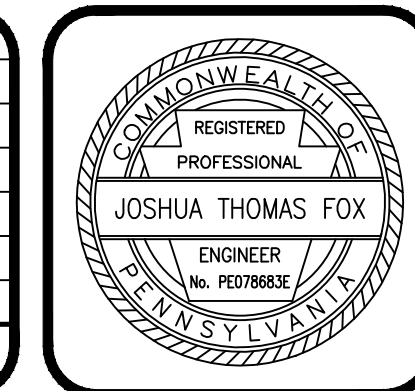
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PUMP STATION PLAN
SCALE: 1" = 10'



NO.	REVISION	DATE	BY



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Fax (717) 564-1158
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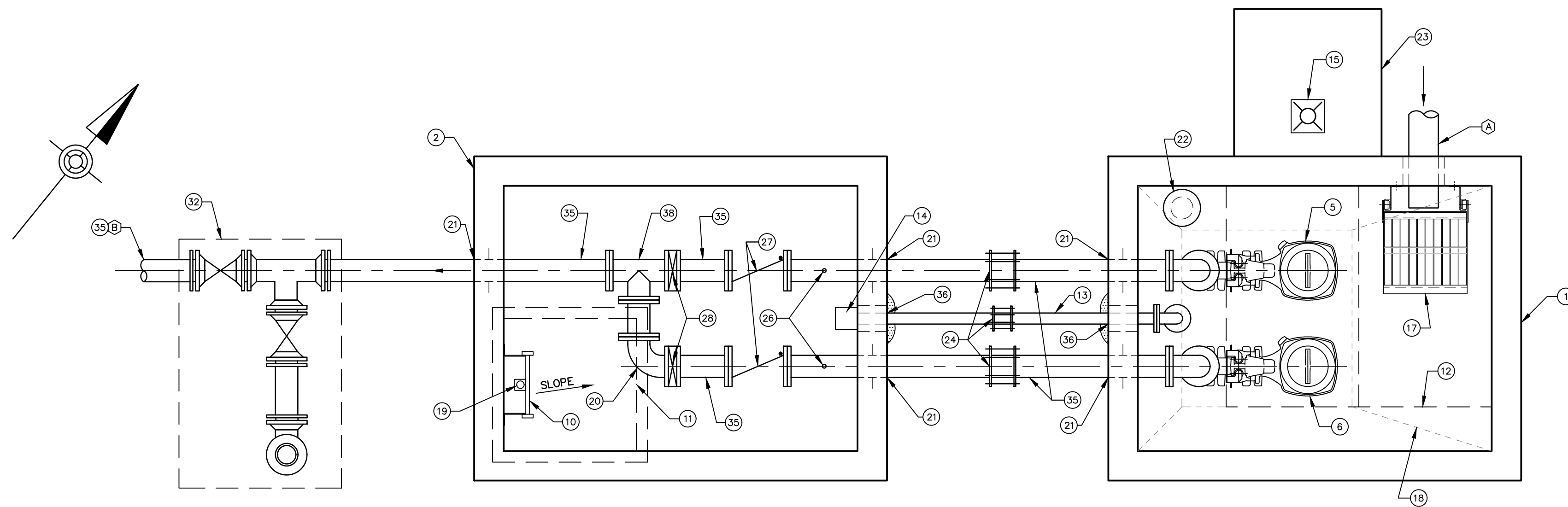
HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

PROPOSED SITE PLAN
JUNIATA PARKWAY PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

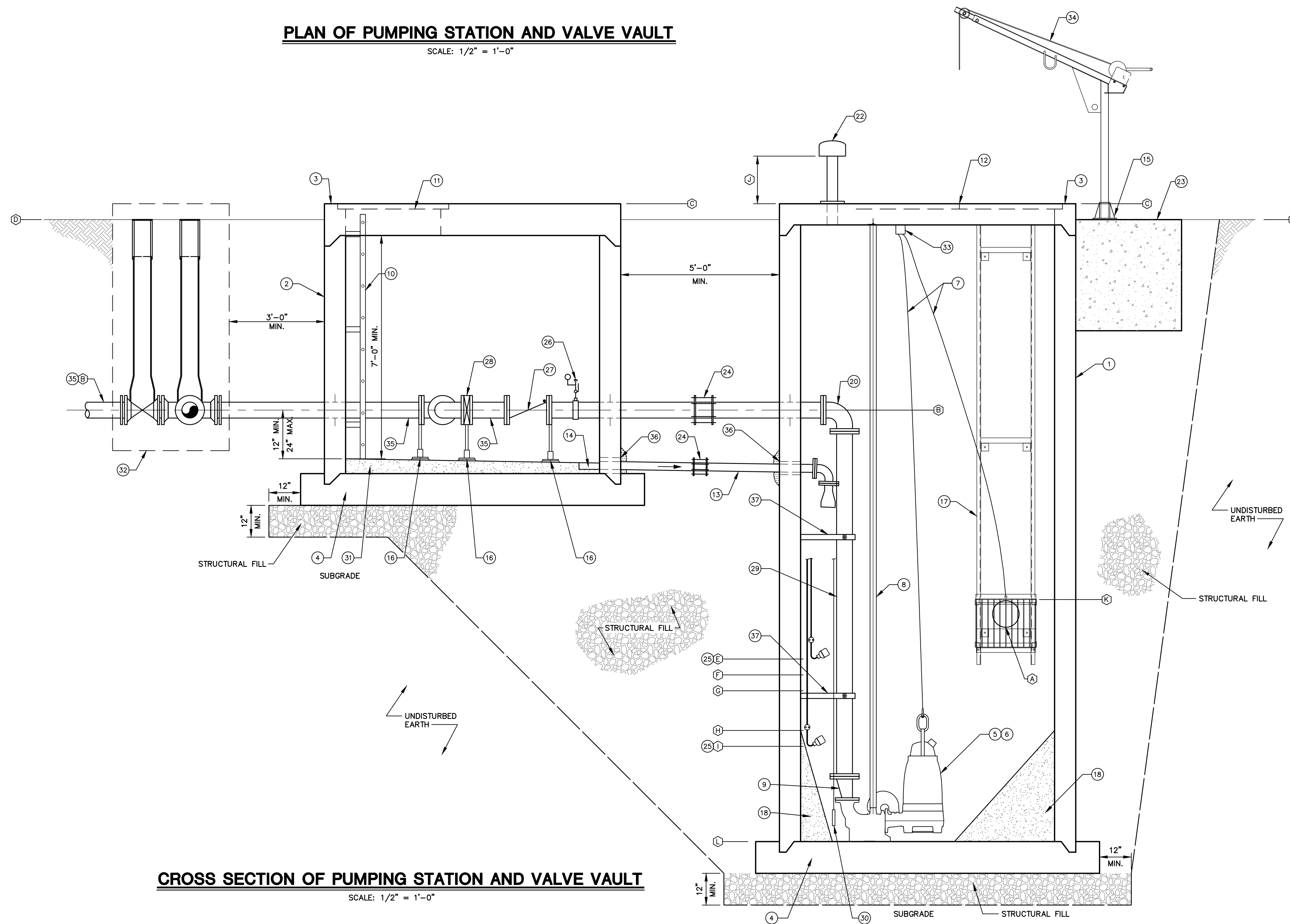
PROJ. MGR. - JTF
DESIGN - WGR
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
JP-5
SHEET NO.
32 OF 60
PROJECT 005100.0434



PLAN OF PUMPING STATION AND VALVE VAULT

SCALE: 1/2" = 1'-0"



CROSS SECTION OF PUMPING STATION AND VALVE VAULT

SCALE: 1/2" = 1'-0"

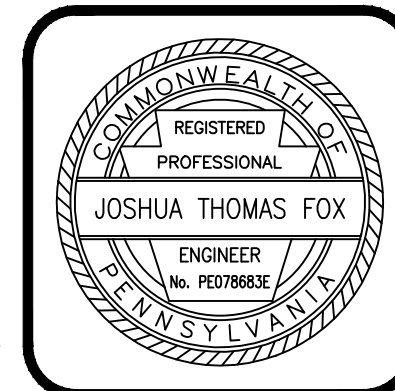
DESIGN SCHEDULE		
DESIGNATION	DESCRIPTION	JUNIATA PARKWAY PUMP STATION
(A)	8"Ø DIP INFLUENT SEWER INVERT ELEV	377.50'
(B)	6"Ø PUMP HEADER/DISCHARGE FORCE MAIN C/L ELEV	384.34'
(C)	TOP OF CHAMBERS	390.84'
(D)	FINISH GRADE	390.34'
(E)	HIGH WATER ALARM FLOAT ELEV	376.50'
(F)	LAG PUMP ON TRANSDUCER ELEV	376.00'
(G)	LEAD PUMP ON TRANSDUCER ELEV	375.50'
(H)	BOTH PUMPS OFF TRANSDUCER ELEV	374.25'
(I)	LOW WATER ALARM FLOAT ELEV	373.75'
(J)	VENT SCREEN HEIGHT TO BOTTOM OF CAP	18"
(K)	TOP OF TRASH BASKET	378.37'
(L)	WET WELL BOTTOM ELEV	370.75' (1)

(1) WET WELL BOTTOM ELEVATION IS BASED ON A PUMP HEIGHT OF 42" FROM THE WET WELL BOTTOM. IF SELECTED PUMP HEIGHT IS GREATER THAN DESIGNED CONDITION, REVISE WET WELL BOTTOM ELEVATION TO ACCOUNT FOR ADDITIONAL PUMP HEIGHT.

KEY NOTES

- 1 6"x8" (MINIMUM INSIDE DIMENSION) PRECAST CONCRETE WET WELL
- 2 6"x8" (MINIMUM INSIDE DIMENSION) PRECAST CONCRETE VALVE VAULT
- 3 PRECAST CONCRETE TOP
- 4 PRECAST CONCRETE INTEGRAL BASE SLAB
- 5 PUMP NO. 1
- 6 PUMP NO. 2
- 7 304 S.S. 1/4 INCH x 36 FEET WIRE ROPE WITH S.S. SWIVEL HOOK AND SWAGED BALL FITTING. ATTACH TO PUMPS/TRASH BASKET
- 8 STAINLESS STEEL PUMP GUIDE RAILS
- 9 6"x4" DIP ECCENTRIC REDUCER
- 10 ALUMINUM OR FRP LADDER
- 11 36"x36" SINGLE LEAF ALUMINUM HATCH WITH FLUSH TYPE HANDLE AND LOCK. LOCK TO BE PAD LOCKABLE.
- 12 72"x60" DOUBLE LEAF ALUMINUM HATCH WITH FLUSH TYPE HANDLE AND LOCK. LOCK TO BE PAD LOCKABLE.
- 13 3" DI DRAIN WITH MINIMUM 1.00% SLOPE TO WET WELL AND DUCKBILL CHECK VALVE.
- 14 4" DEEP x 6" SQ. SUMP - CONTRACTOR SHALL SLOPE FLOOR TOWARDS DRAIN
- 15 DAVIT CRANE PEDESTAL BASE (ROTATED IN CROSS SECTION VIEW FOR CLARITY)
- 16 S.S. PIPE SUPPORT
- 17 S.S. TRASH BASKET AND S.S. GUIDERAILS, MOUNTING BRACKETS AND SPACERS PER MANUFACTURER'S RECOMMENDATIONS.
- 18 CONCRETE FILLET UP TO PUMP OFF ELEVATION
- 19 ALUMINUM LADDER SAFETY POST
- 20 6" DI 90° BEND
- 21 6" DI RESTRAINED WALL SLEEVE
- 22 4" PVC FLANGE BASE VENT W/ BIRD SCREEN AND CARBON CARTRIDGE
- 23 DAVIT CRANE FOUNDATION (ROTATED IN CROSS SECTION VIEW FOR CLARITY)
- 24 FLEXIBLE COUPLING
- 25 FLOAT SWITCH
- 26 1" TAP WITH SADDLE, S.S. BALL VALVE, 1" Ø S.S. PIPE, 1" ISOLATION RING WITH PRESSURE GAUGE AND CAP. MOUNT GAUGE IN VERTICAL POSITION.
- 27 6" CHECK VALVE WITH OIL CUSHION DEVICE
- 28 6" KNIFE GATE VALVE
- 29 6" DIP PUMP HEADER PIPE
- 30 SUBMERSIBLE PRESSURE TRANSDUCER WITH WEIGHT
- 31 CONCRETE GROUT FILL SLOPED TO SUMP
- 32 EMERGENCY BYPASS CONNECTION (SEE DETAIL)
- 33 WIRE ROPE KEEPER
- 34 PORTABLE DAVIT CRANE (ROTATED IN CROSS SECTION VIEW FOR CLARITY)
- 35 6"Ø DIP DISCHARGE PIPE
- 36 LINK SEAL W/ GROUT COVER
- 37 WALL MOUNTED S.S. PIPE SUPPORT
- 38 6" DI TEE

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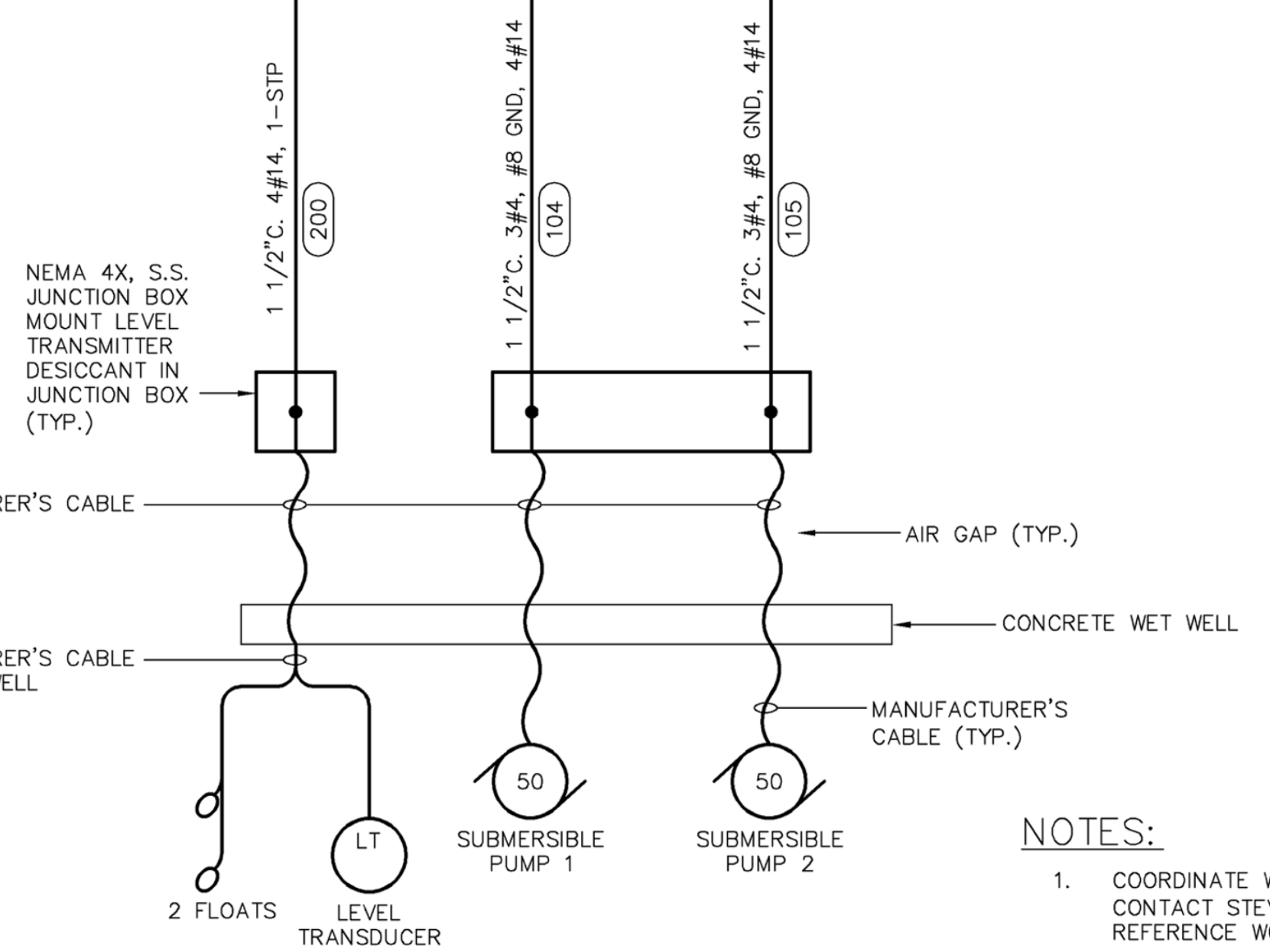
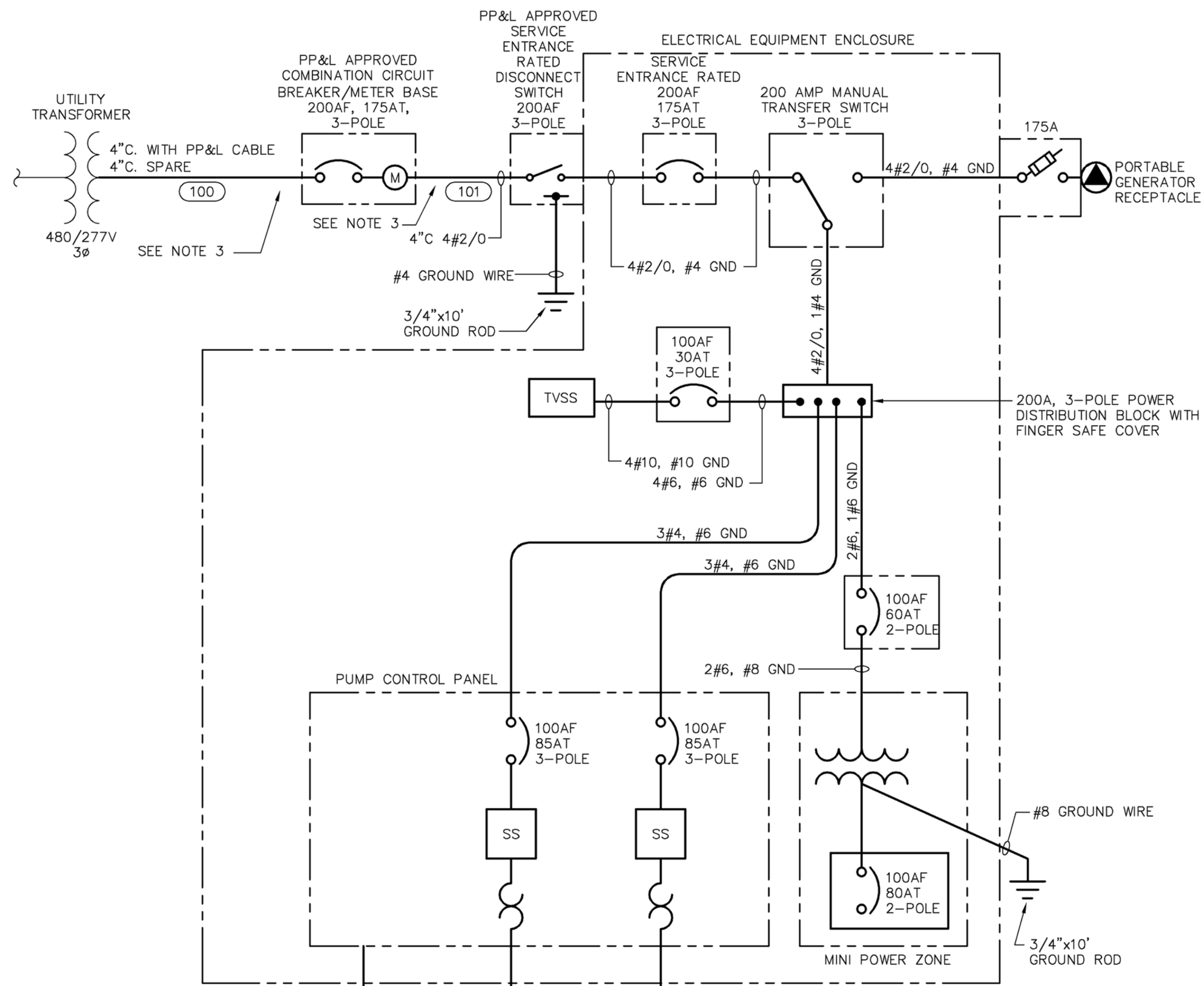
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HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

PLAN AND CROSS SECTION
JUNIATA PARKWAY PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- WGR
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO.
JP-6
SHEET NO.
33 OF 60
PROJECT 005100.0434

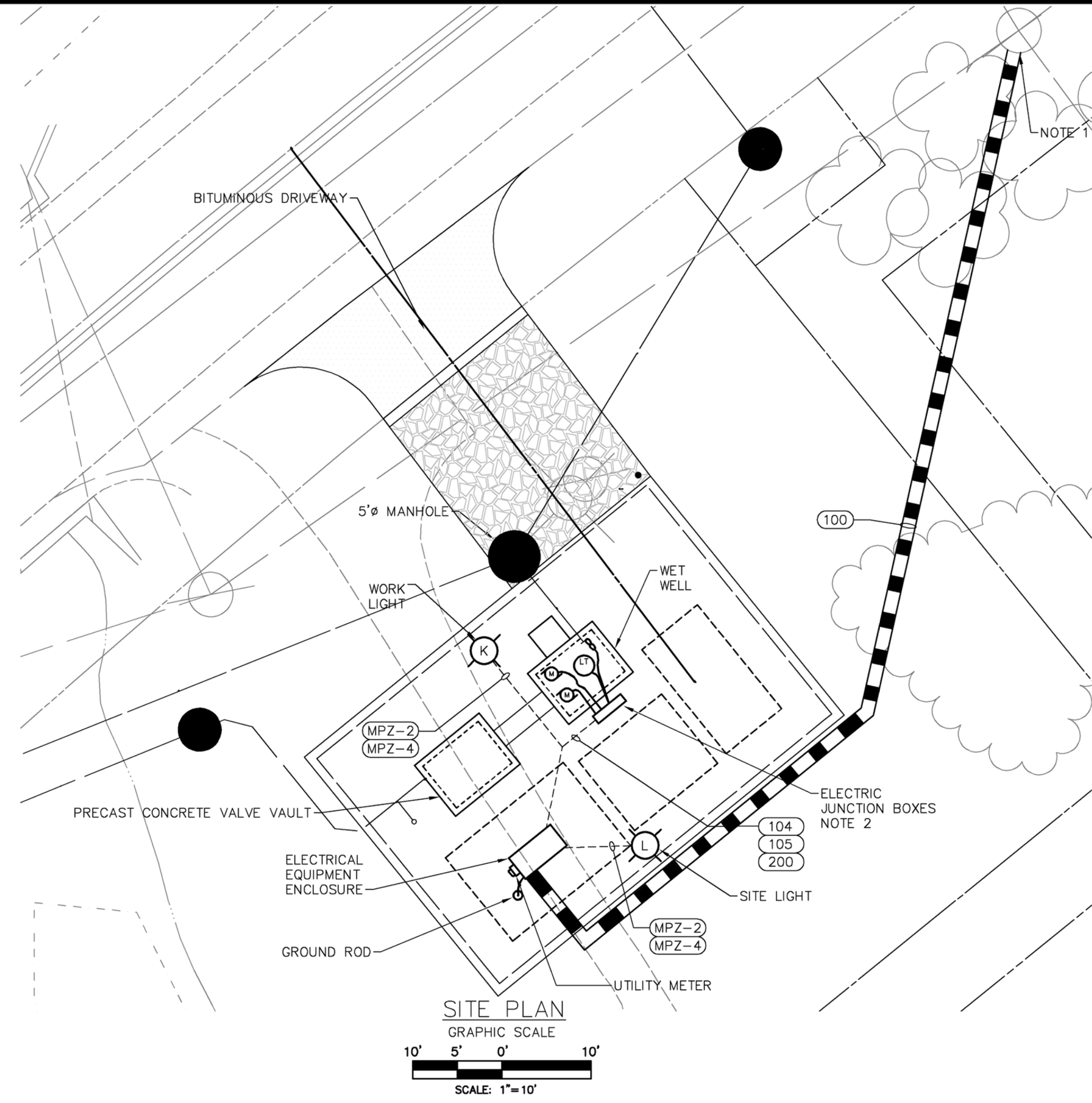


SINGLE LINE DIAGRAM
N.T.S.

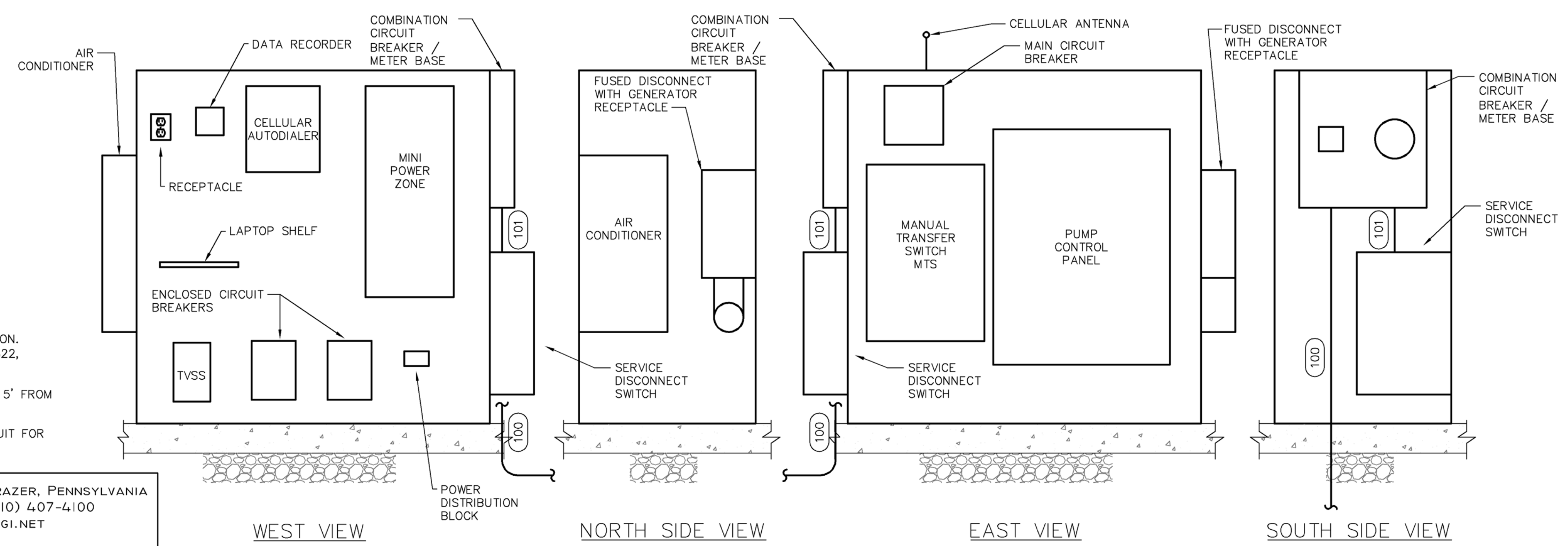
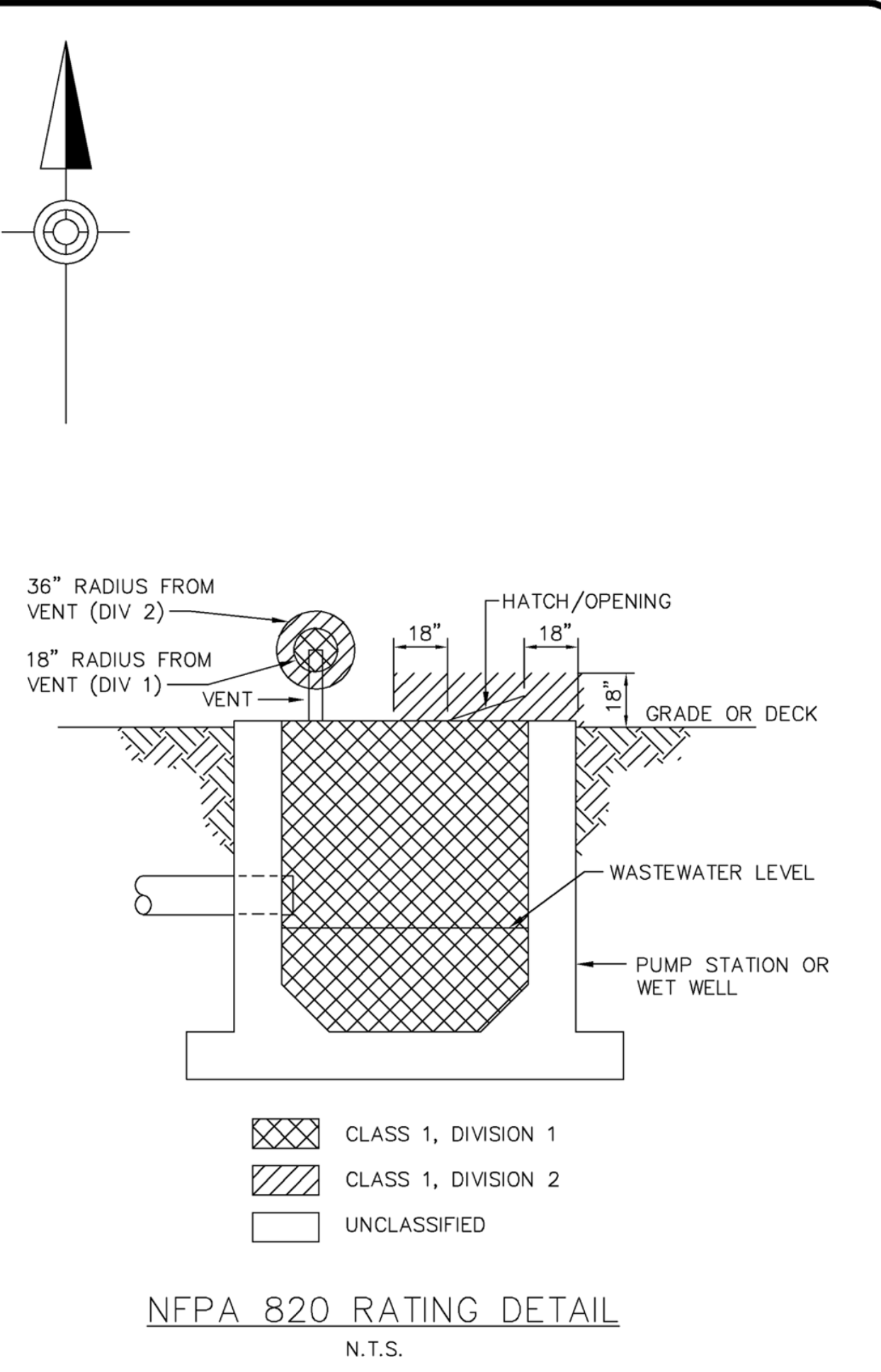
LEGEND:

—	EXISTING
—	NEW
- - -	UNDERGROUND CONDUIT
▬▬▬	UNDERGROUND DUCTBANK

- NOTES:**
- COORDINATE WITH PP&L FOR SERVICE CONNECTION. CONTACT STEVEN SIELFERT PHONE (717)257-5822, REFERENCE WORK ORDER NUMBER 58030013.
 - JUNCTION BOXES SHALL BE LOCATED AT LEAST 5' FROM ANY VENT.
 - PROVIDE PVC COATED GALVANIZED STEEL CONDUIT FOR ELECTRICAL SERVICE ENTRANCE.



SITE PLAN
GRAPHIC SCALE
SCALE: 1"=10'



ELECTRICAL EQUIPMENT ENCLOSURE SECTION
SCALE: N.T.S.

Keystone
ENGINEERING GROUP

FRAZER, PENNSYLVANIA
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REGISTERED PROFESSIONAL ENGINEER
PHILIP L. SCHWARTZ
ENGINEER
39998-E

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HOWE TOWNSHIP MUNICIPAL AUTHORITY
319 N. 4TH STREET
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ELECTRICAL SITE PLAN AND SINGLE LINE DIAGRAM
JUNIATA PARKWAY PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

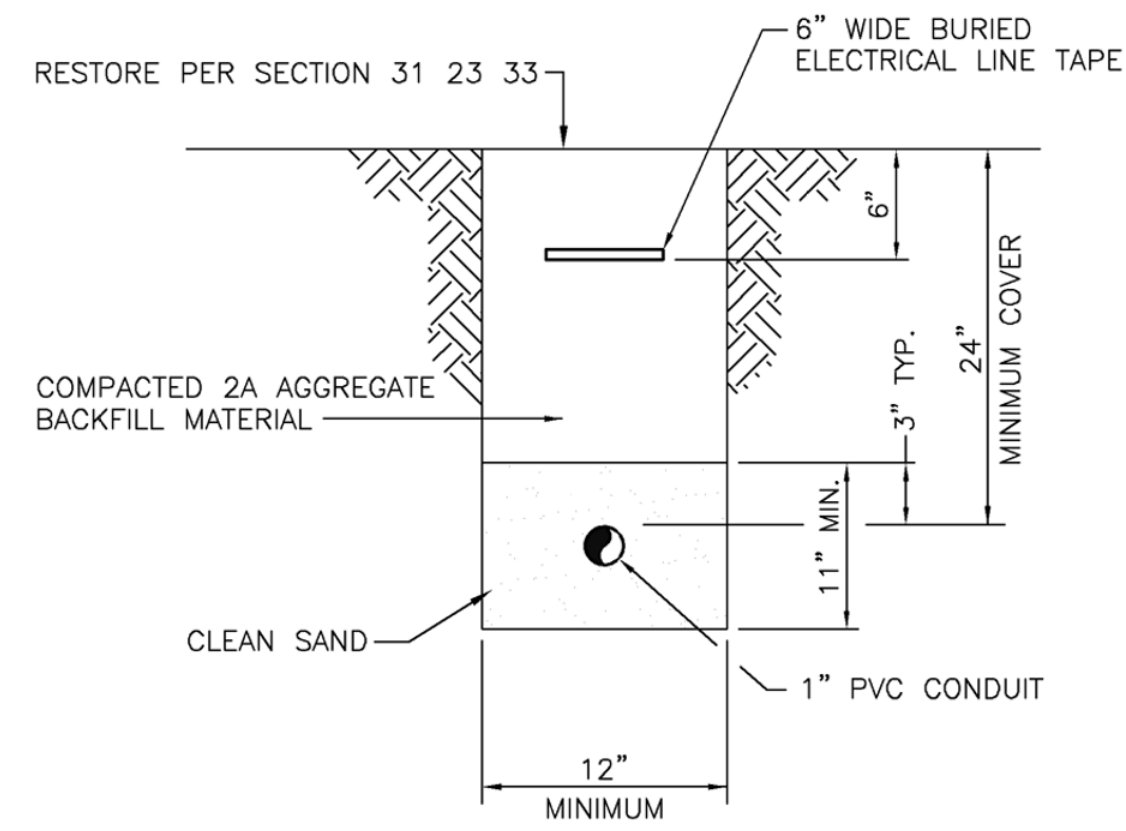
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - RH
CADD - CJB/KDR
CHECKED - PLS
SCALE - AS NOTED
DATE - FEBRUARY 2019

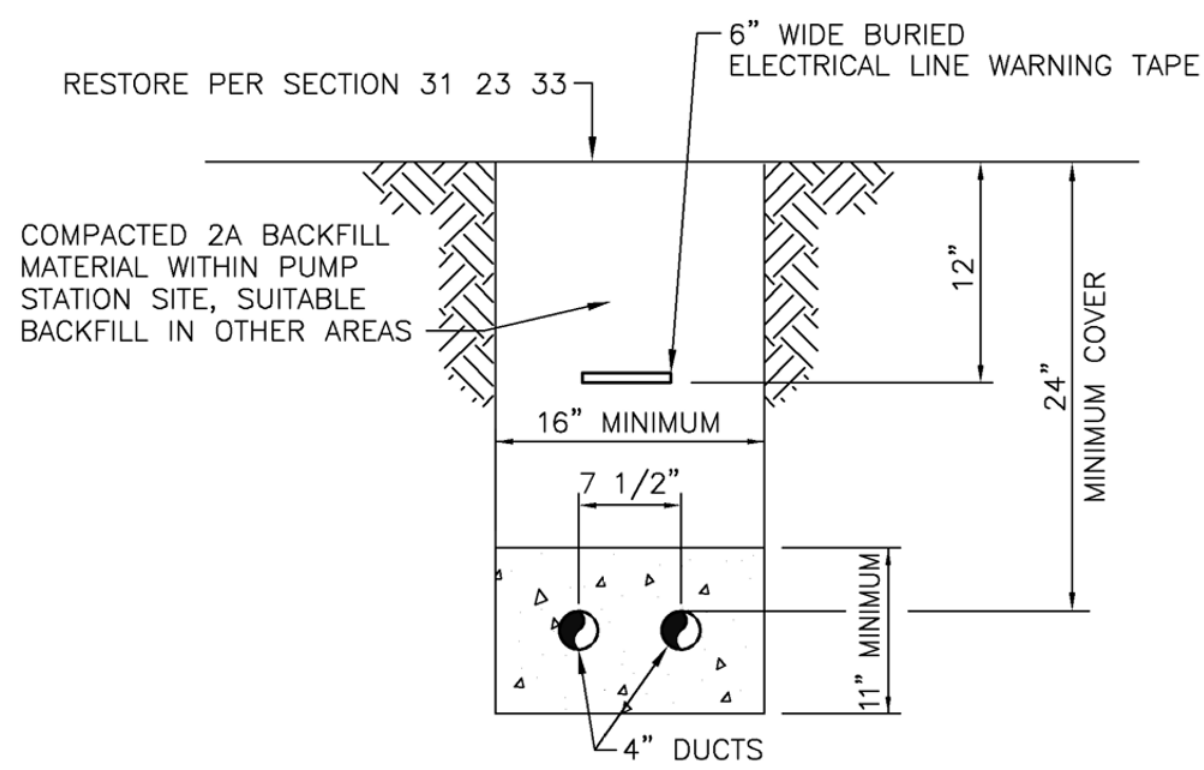
DRAWING NO.
E-01

SHEET NO.
34 OF 60

PROJECT 005100.0434



ELECTRICAL CONDUIT TRENCH DETAIL
SCALE: N.T.S.



CONCRETE ENCASED ELECTRICAL DUCTBANK DETAIL
N.T.S.

SERVICE ENTRANCE NOTES:

CONTRACTOR RESPONSIBILITIES:

- C1. PROVIDE THE TRENCHING, DUCTBANK AND BACKFILLING, PER PP&L REQUIREMENTS AND SPECIFICATIONS.
- C2. PROVIDE (2) 4" SCHEDULE 40 ELECTRICAL GRADE CONDUITS IN DUCTBANK. 1/4" NYLON PULL ROPE IS TO BE INSTALLED IN CONDUIT. 90 DEGREE PVC COATED CONDUIT WITH SWEEP BENDS AT EACH END.
- C3. INSTALL SERVICE ENTRANCE CIRCUIT BREAKER AS PER ELECTRIC UTILITY REQUIREMENTS.
- C4. PROVIDE AND INSTALL METER BASE PER ELECTRIC UTILITY REQUIREMENTS.
- C5. PROVIDE CONDUCTORS BETWEEN SERVICE CIRCUIT BREAKING AND METER BASE.
- C5. PROVIDE AND INSTALL LABELS PER PP&L REQUIREMENTS AND SPECIFICATIONS.

POWER UTILITY RESPONSIBILITIES:

- U1. PROVIDE AND INSTALL METER IN CONTRACTOR SUPPLIED METER BASE.
- U2. PROVIDE AND INSTALL AND CONNECT ALL PRIMARY CONDUCTORS.

120/240 V. 1 PHASE 60HZ 3 WIRE MINI POWER PANEL MPZ SCHEDULE										
SERVICE	C/B	KWATTS	NO.	A	B	N	NO.	KWATTS	C/B	SERVICE
ELECTRICAL ENCLOSURE AC	20A		1				2	20A		POLE LIGHT
ELECTRICAL ENCLOSURE HEATER	20A		3				4	20A		POLE RECEPTACLES
AUTO DIALER	20A		5				6	20A		PANEL RECEPTACLE
DATA RECORDER	20A		7				8	20A		SPARE
SPARE	20A		9				10	20A		SPARE

PANEL MTD: SURFACE		TYPE: MPZ	
MANUFACTURER: SQUARE 'D'	MAIN LUGS:	PANEL LOADING SCHEDULE	
MAIN BREAKER: 80A	FEEDER ENTRY:	PHASE	WATTS (KW)
FEEDER SIZE:	ENCLOSURE:	A	1.34
BRANCH BREAKERS		B	2.00
NO.	POLES	AMPS.	CONNECTED LOAD
			3.34
			SPARE
			2.00
			TOTAL LOAD
			5.34

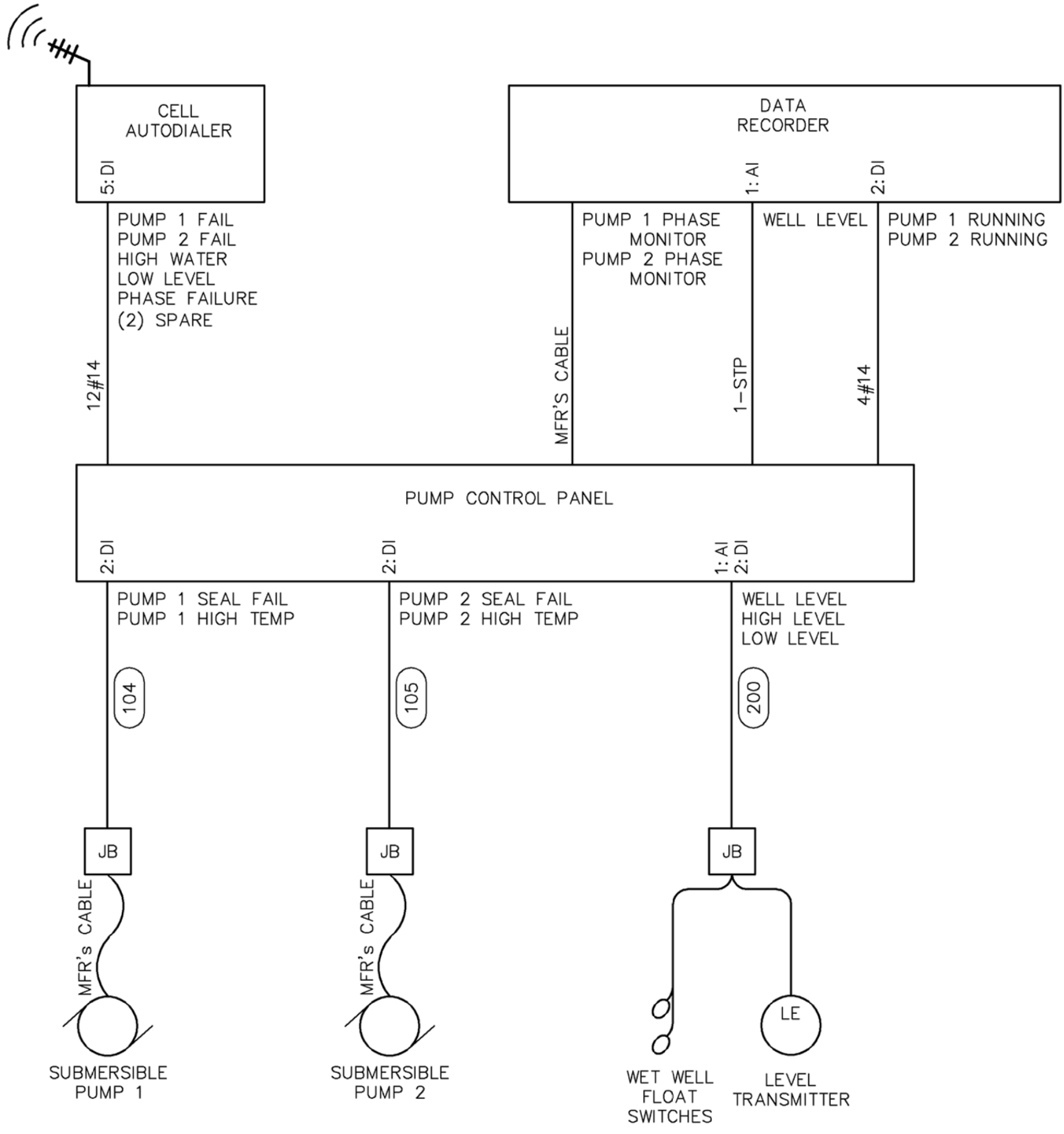
SEE NOTE 1
SEE NOTE 1
SEE NOTE 1
SEE NOTE 1

SEE NOTE 2
SEE NOTE 2
SEE NOTE 2

NOTES:

- 1. PROVIDE 2#12 AND #12 GND TO CONNECT TO DEVICE.
- 2. FOR EACH LIGHT PROVIDE 1' C 4#12 AND #12 GND TO POLE. TWO CONDUCTORS FOR LIGHT CIRCUIT AND TWO CONDUCTORS FOR THE POLE RECEPTACLE.

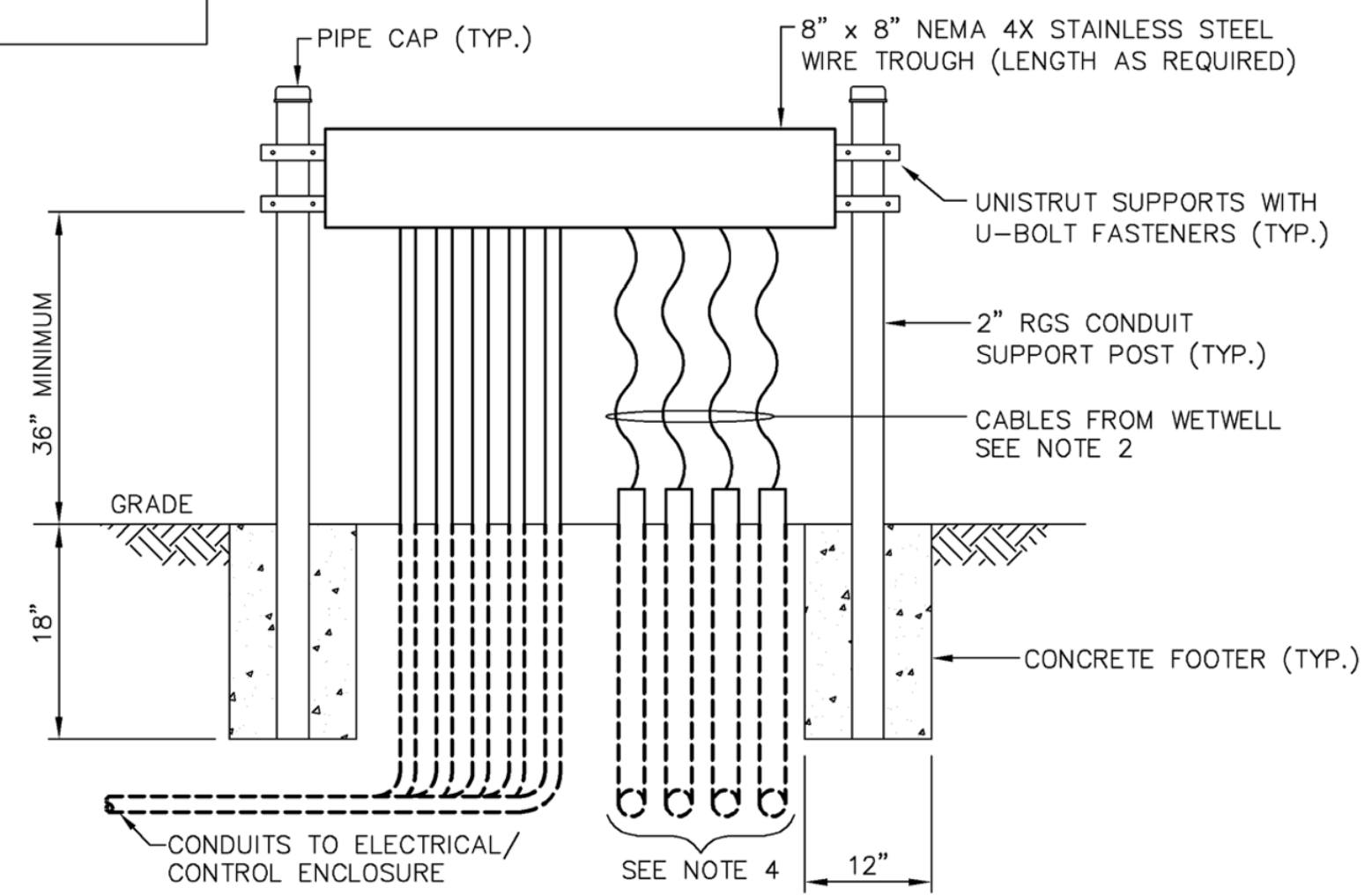
LOAD CENTER PANEL
SCALE: N.T.S.



INTERCONNECTION DIAGRAM
SCALE: N.T.S.

TYPE	MANUFACTURER AND SERIES	DESCRIPTION	VOLTS	REMARKS
L	SPAULDING CIMARRON SERIES SERIES: CR1 SPAULDING SERIES: ALUMINUM POLE	POLE MOUNTED AREA LIGHT, DIE-CAST ALUMINUM HOUSING, ARM MOUNT, 30 LEDS, UNIVERSAL VOLTAGE, 4K CCT, TYPE IV DISTRIBUTION, 700 mA DRIVE CURRENT DARK BRONZE, PROGRAMMABLE PHOTOCELL CONTROL SQUARE STRAIGHT HEAVY ALUMINUM POLE, 18" HEIGHT, 4" SHAFT, SINGLE ALUMINUM MOUNTING, 20A GFCI RECEPTACLE AND COVER, DARK BRONZE	120V.	LIGHT SWITCH IN SERIES WITH PROGRAMMABLE PHOTOCELL CONTROL ON POLE
K	SPAULDING CIMARRON SERIES SERIES: CR1 SPAULDING SERIES: ALUMINUM POLE	POLE MOUNTED AREA LIGHT, DIE-CAST ALUMINUM HOUSING, ARM MOUNT, 30 LEDS, UNIVERSAL VOLTAGE, 4K CCT, TYPE IV DISTRIBUTION, 700 mA DRIVE CURRENT DARK BRONZE. SQUARE STRAIGHT HEAVY ALUMINUM POLE, 18" HEIGHT, 4" SHAFT, SINGLE ALUMINUM MOUNTING, 20A GFCI RECEPTACLE AND COVER, DARK BRONZE	120V.	LIGHT SWITCH CONTROL ON POLE

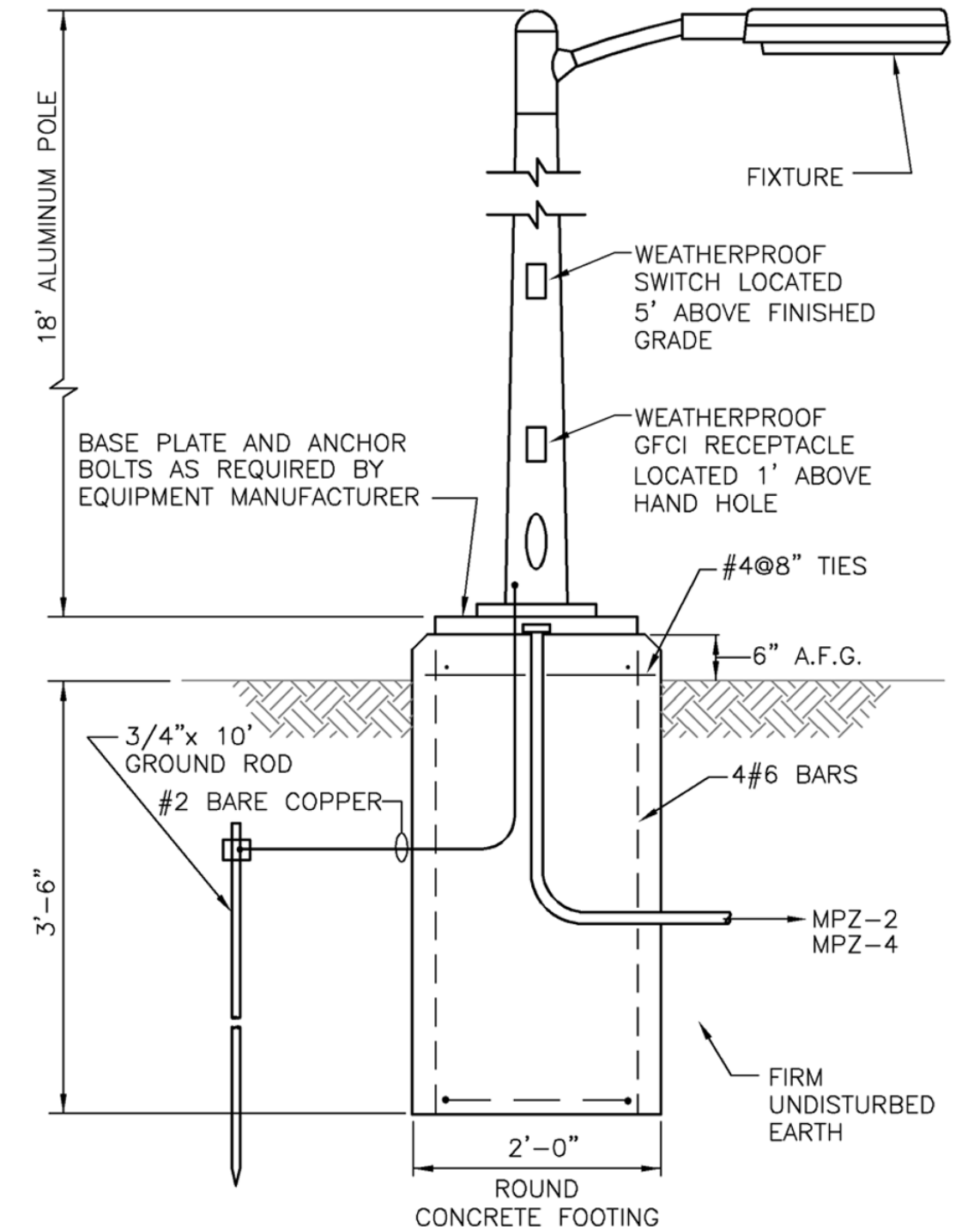
LIGHTING FIXTURE SCHEDULE
SCALE: N.T.S.



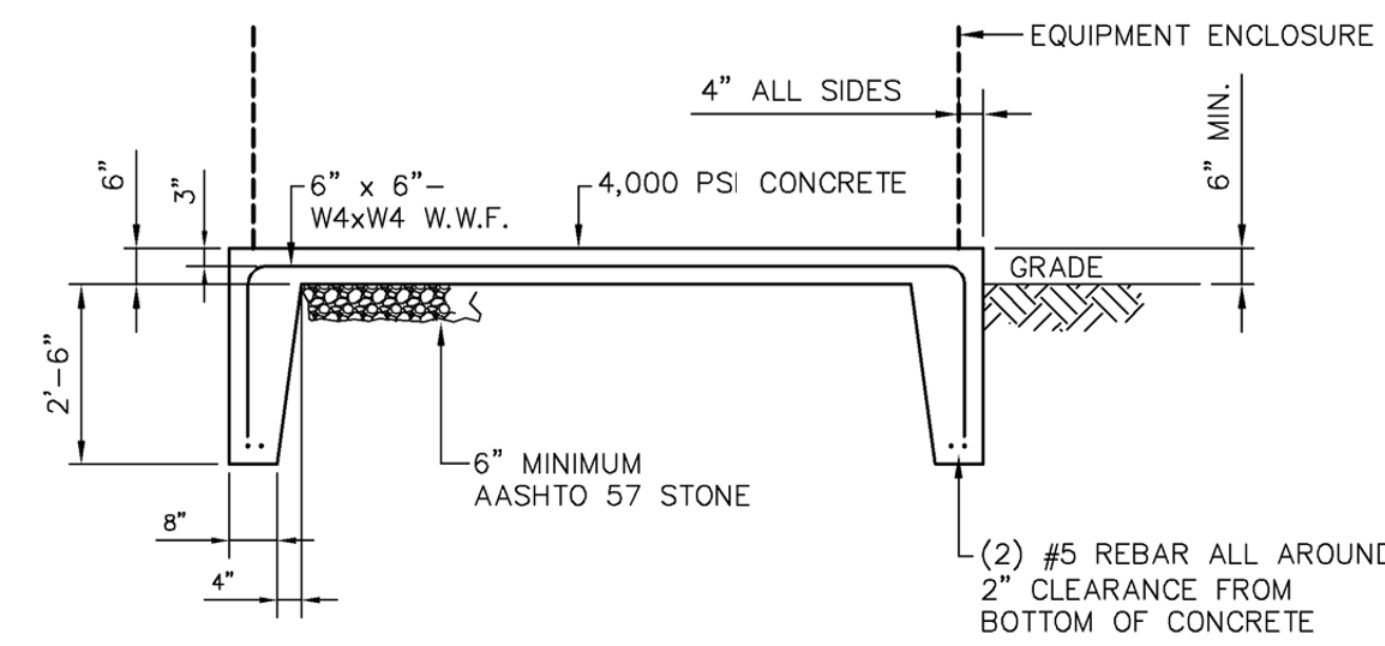
NOTES:

- 1. CONDUITS ARE TO BE CONTINUOUS WITH NO COUPLINGS OR FITTINGS BETWEEN THE WIRE TROUGH TO BELOW GRADE.
- 2. ENCLOSE AREA OF EXPOSED CABLES WITH TYPE 316 16 GAUGE MINIMUM PERFORATED STAINLESS STEEL ASSEMBLY WITH 1/4" DIAMETER HOLES ON 3/8" STAGGERED CENTERS. FRAME WITH SUPPORT STEEL ANGLES WITH ONE SIDE REMOVABLE FOR ACCESS TO THE CABLES. FINISH ALL EDGES SMOOTH. AREA SHALL BE COMPLETELY ENCLOSED TO PREVENT INFILTRATION OF DEBRIS AND RODENTS.
- 3. COORDINATE INSTALLATION TO ASSURE WIRING TROUGH IS LOCATED OUT OF RATED AREA. REFERENCE NFPA DETAIL ON DRAWING E-01.
- 4. PROVIDE FOUR 2" CONDUITS FROM THE TERMINATION ASSEMBLY TO THE WETWELL. SEAL PENETRATIONS INTO WETWELL WITH LINK SEAL.

TERMINATION ASSEMBLY DETAIL
N.T.S.



LIGHT STANDARD DETAIL
SCALE: N.T.S.



PAD DETAIL
N.T.S.

TYPICAL FOR ELECTRICAL EQUIPMENT ENCLOSURE

LEGEND:
— EXISTING
— NEW

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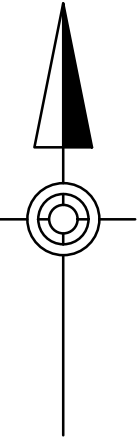
HOWE TOWNSHIP MUNICIPAL AUTHORITY
319 N. 4TH STREET
NEWPORT, PA 17074

SCHEDULES AND DETAILS
JUNIATA PARKWAY PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF	DRAWING NO. E-02
DESIGN- RH	SHEET NO. 35 OF 60
CADD- CJB/KDR	PROJECT 005100.0434
CHECKED-PLS	
SCALE- AS NOTED	
DATE-FEBRUARY 2019	

NO.	REVISION	DATE	BY

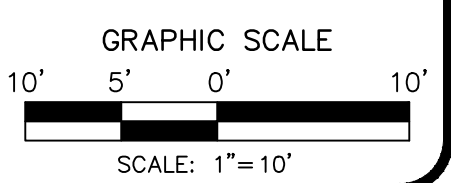


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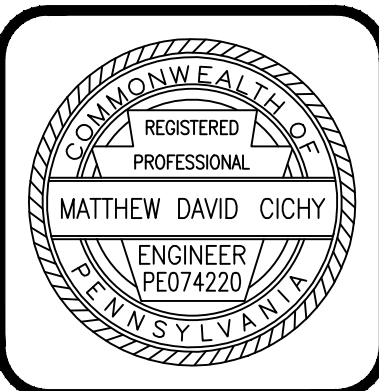
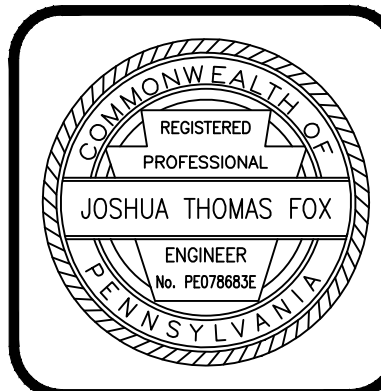
EXISTING TO BE DEMOLISHED



PUMP STATION PLAN
SCALE: 1" = 10'



NO.	REVISION	DATE	BY



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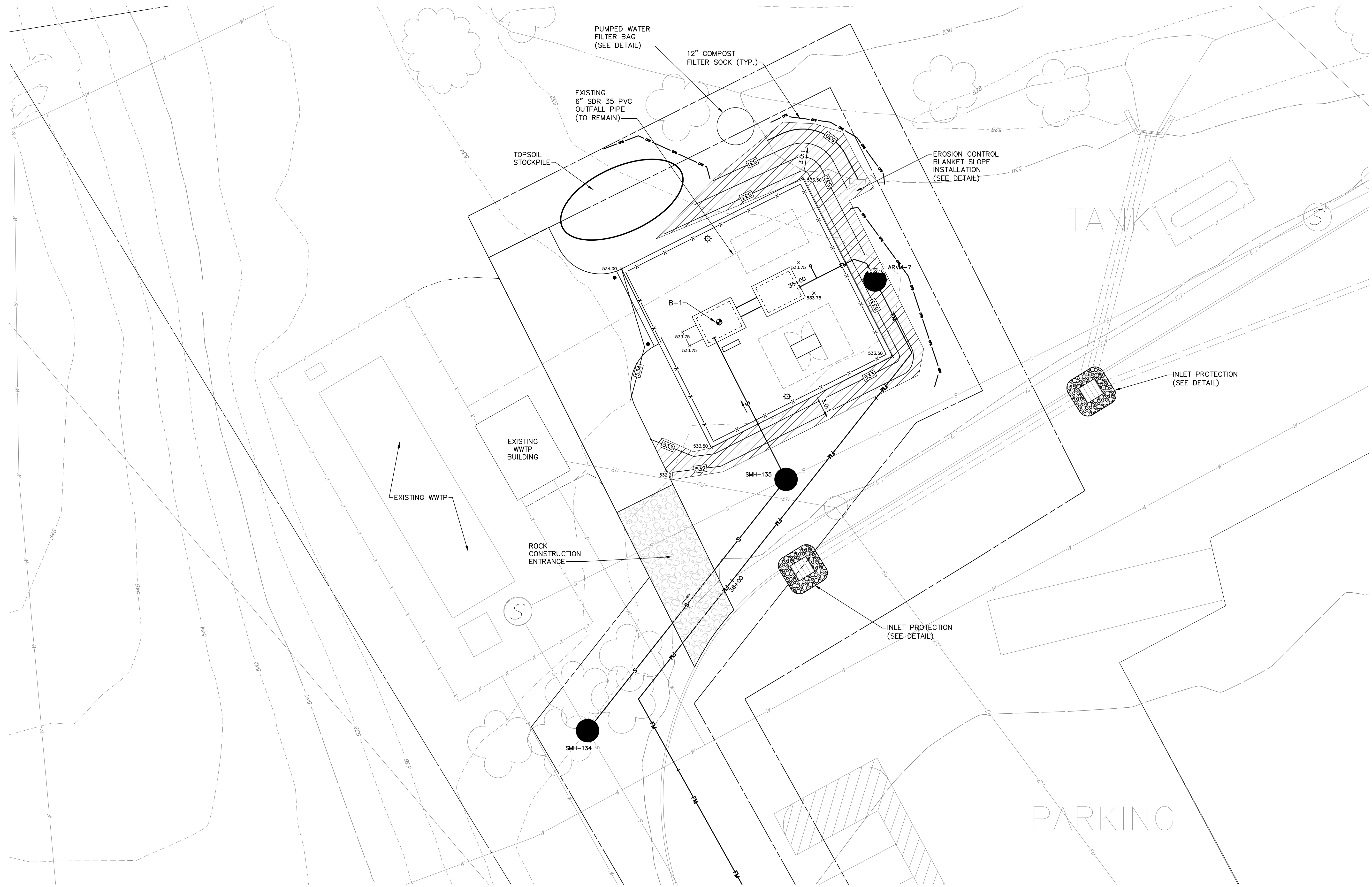
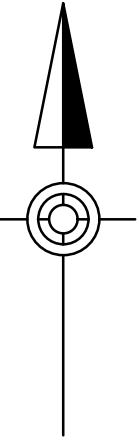
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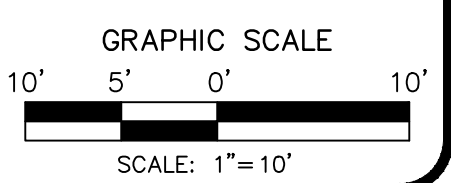
EXISTING CONDITIONS AND DEMOLITION SITE PLAN
WEST SHORTCUT ROAD PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - WGR
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

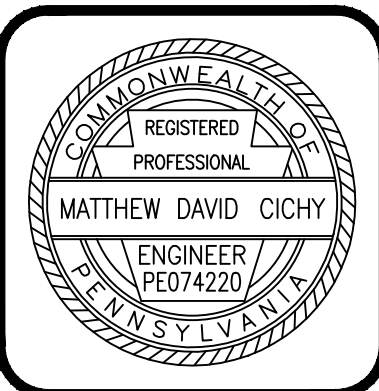
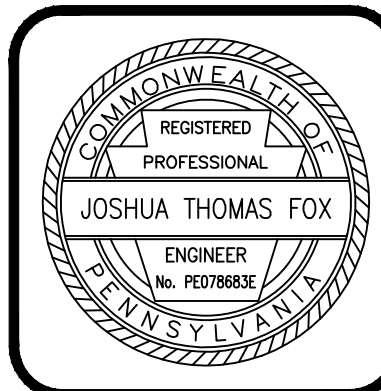
DRAWING NO.
WSR-1
SHEET NO.
36 OF 60
PROJECT 005100.0434



PUMP STATION PLAN
SCALE: 1" = 10'



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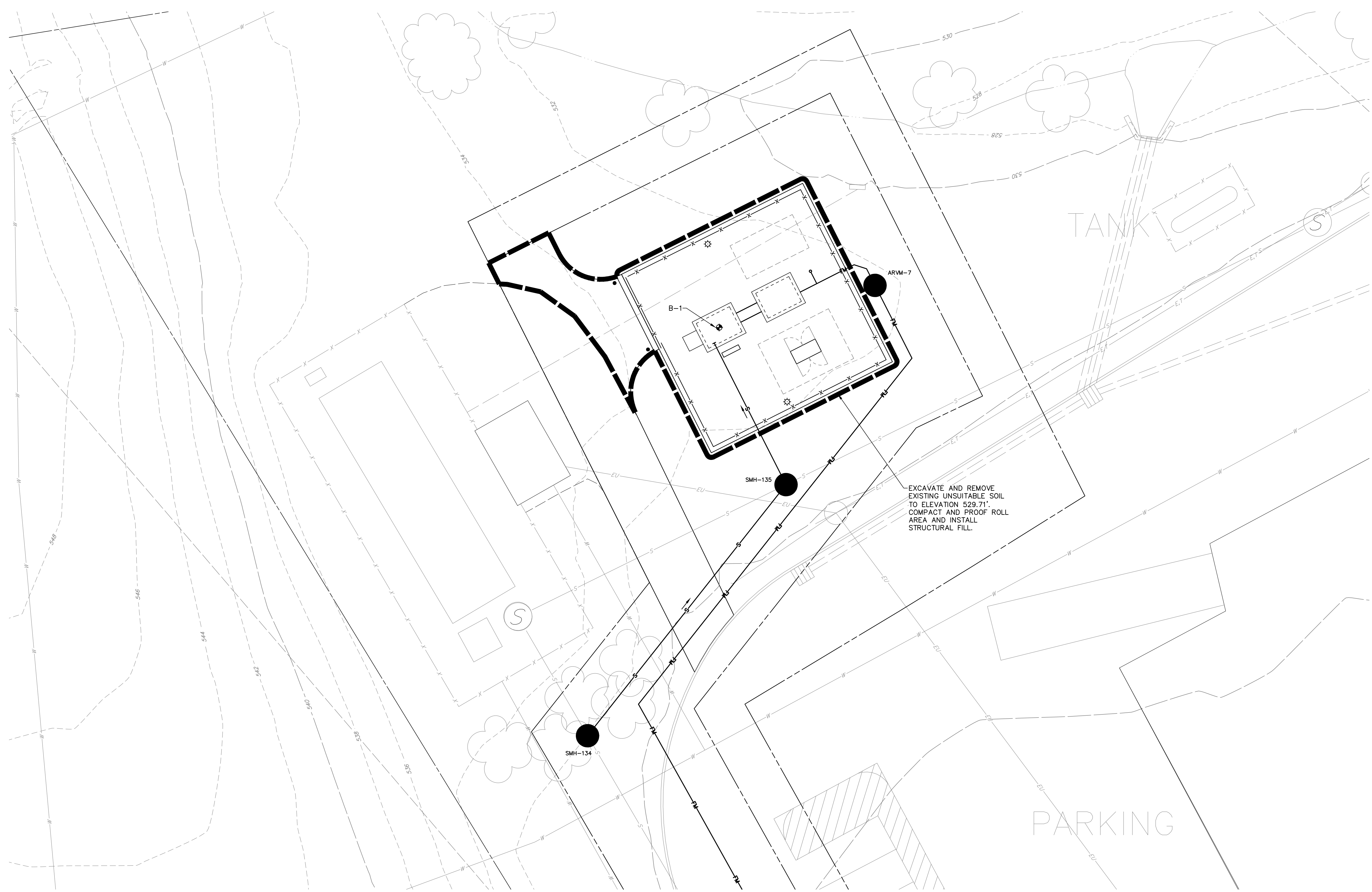
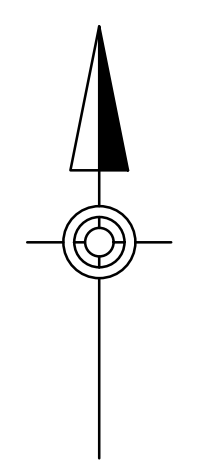
EROSION AND SEDIMENTATION CONTROL SITE PLAN
WEST SHORTCUT ROAD PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- WGR
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

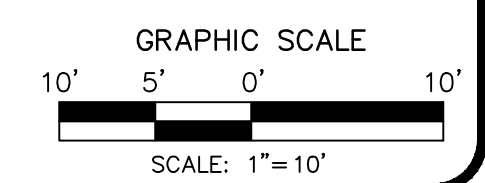
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WSR-2
SHEET NO.
37 OF 60
PROJECT 005100.0434

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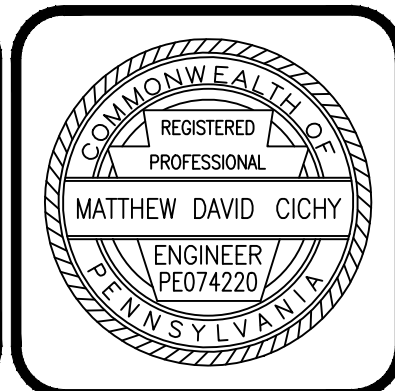
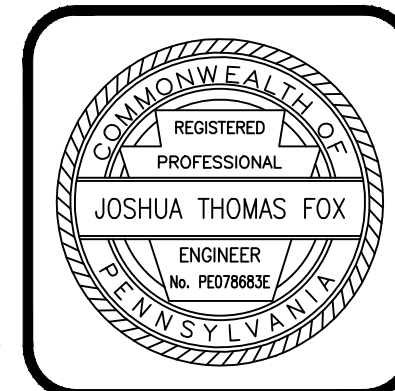


EXCAVATE AND REMOVE EXISTING UNSUITABLE SOIL TO ELEVATION 529.71'. COMPACT AND PROOF ROLL AREA AND INSTALL STRUCTURAL FILL.

PUMP STATION PLAN
SCALE: 1" = 10'



NO.	REVISION	DATE	BY



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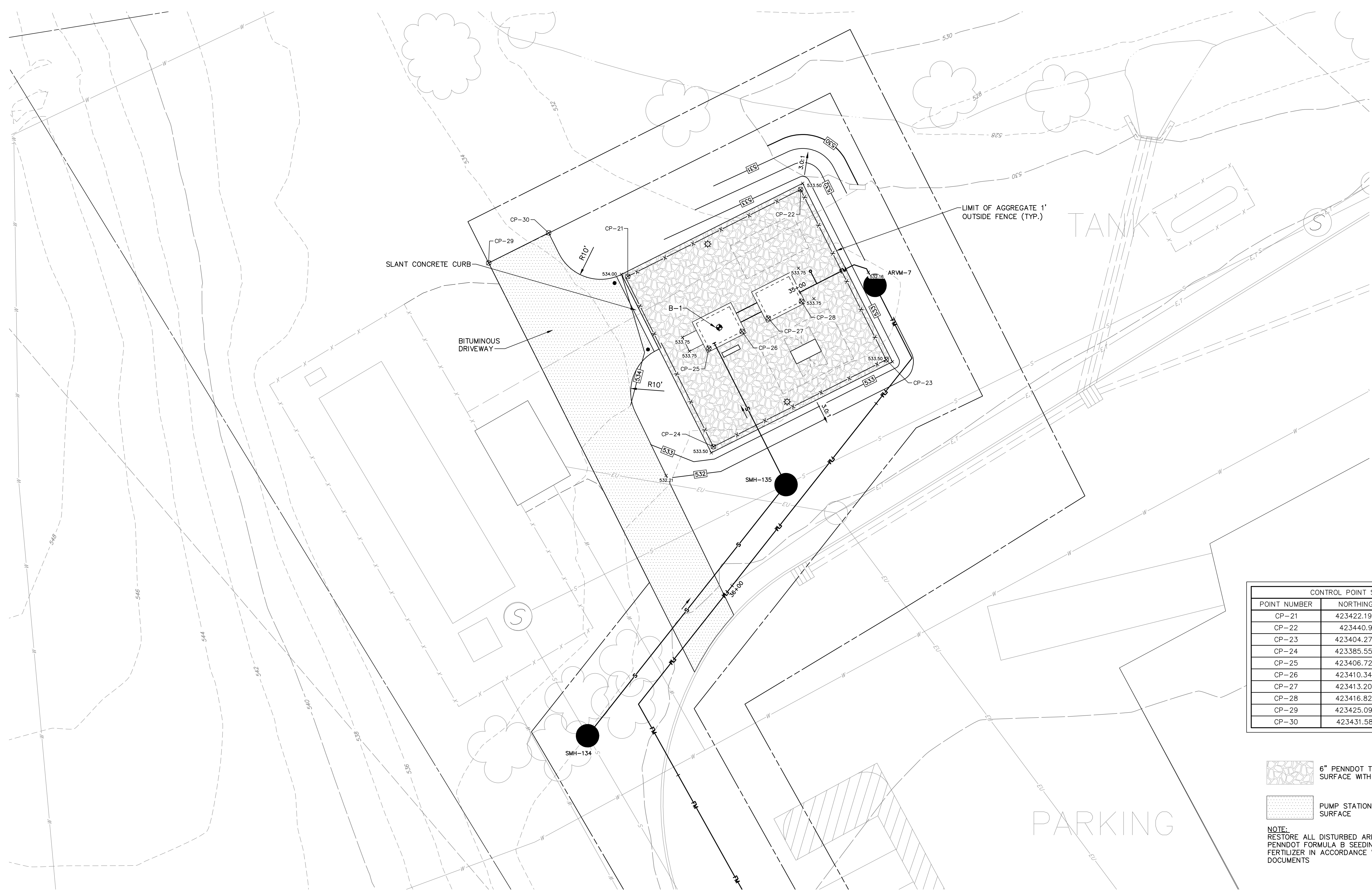
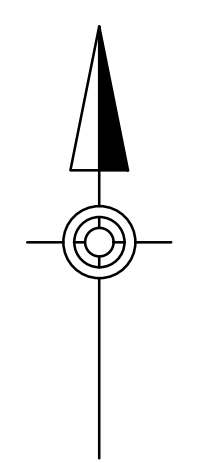
PUMP STATION SITE PREPARATION PLAN
WEST SHORTCUT ROAD PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - WGR
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CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
WSR-3
SHEET NO.
38 OF 60
PROJECT 005100.0434

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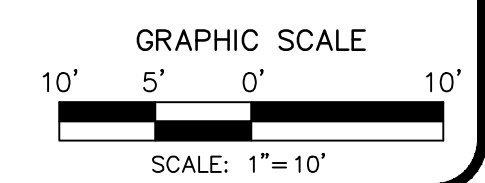


CONTROL POINT SCHEDULE		
POINT NUMBER	NORTHING	EASTING
CP-21	423422.195	2145226.111
CP-22	423440.9	2145263.296
CP-23	423404.273	2145281.719
CP-24	423385.557	2145244.54
CP-25	423406.725	2145243.567
CP-26	423410.343	2145250.702
CP-27	423413.208	2145256.35
CP-28	423416.826	2145263.485
CP-29	423425.099	2145196.192
CP-30	423431.581	2145209.078

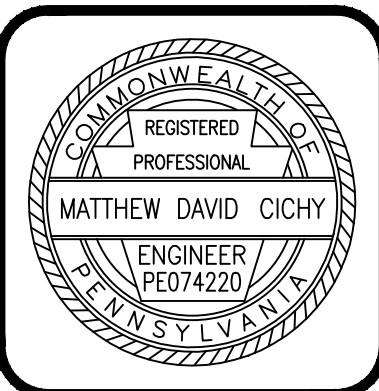
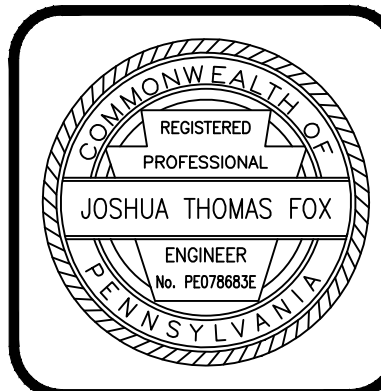
- 6" PENNDOT TYPE 2A AGGREGATE SURFACE WITH GEOTEXTILE FABRIC
- PUMP STATION PAVEMENT SURFACE

NOTE:
RESTORE ALL DISTURBED AREA WITH TOPSOIL, PENNDOT FORMULA B SEEDING, MULCH AND FERTILIZER IN ACCORDANCE WITH CONTRACT DOCUMENTS

PUMP STATION PLAN
SCALE: 1" = 10'



NO.	REVISION	DATE	BY



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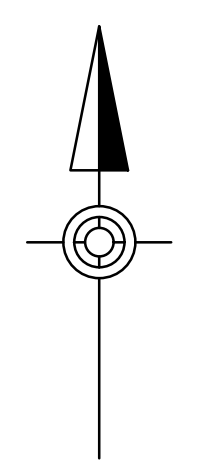
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NEWPORT, PA 17074

PUMP STATION GRADING AND SURFACING SITE PLAN
WEST SHORTCUT ROAD PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

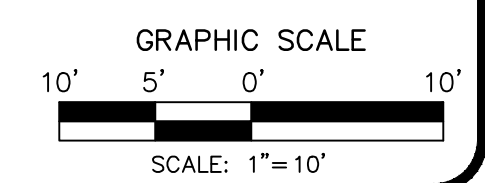
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DESIGN- WGR
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO.
WSR-4
SHEET NO.
39 OF 60
PROJECT 005100.0434

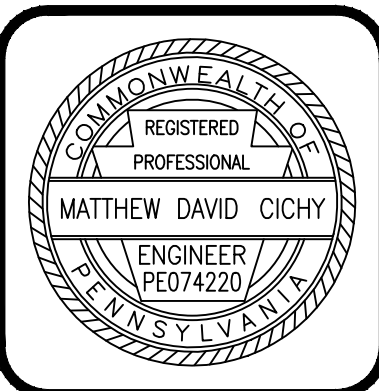
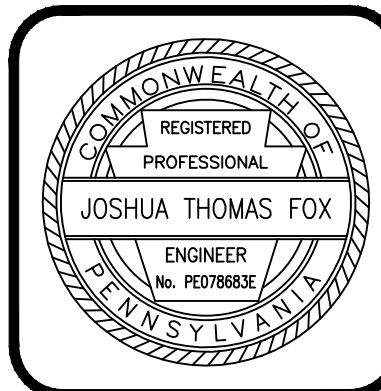


PUMP STATION PLAN
SCALE: 1" = 10'

NOTE:
SEE NOTE 1 ON DRAWING NO. FM-5
REGARDING MAINTENANCE OF FLOW
THROUGH PROPOSED MANHOLES
SMH-134 AND SMH-135.



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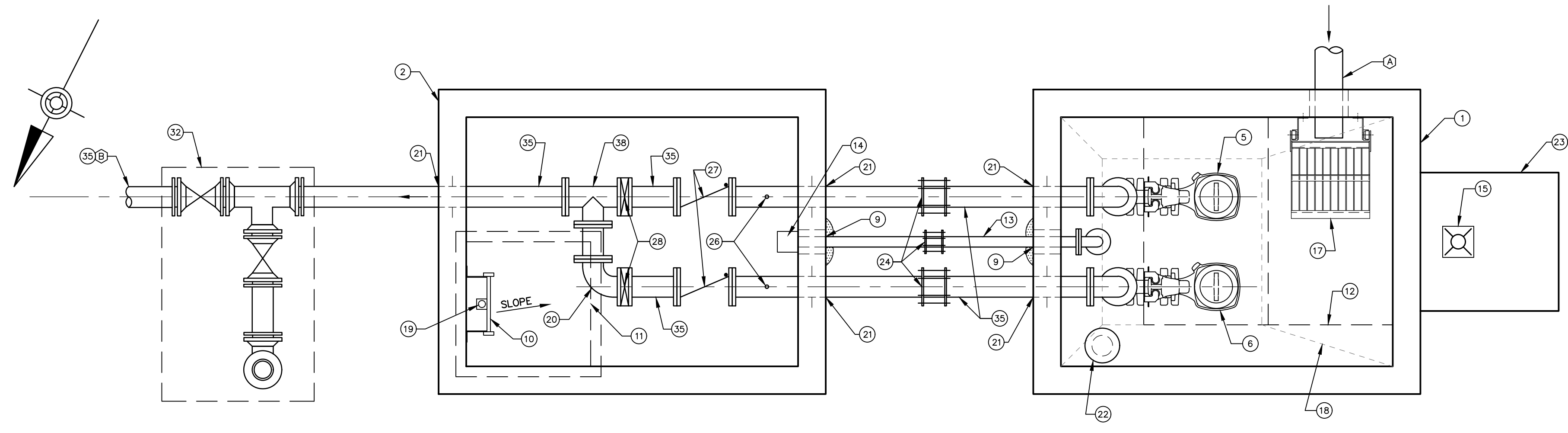
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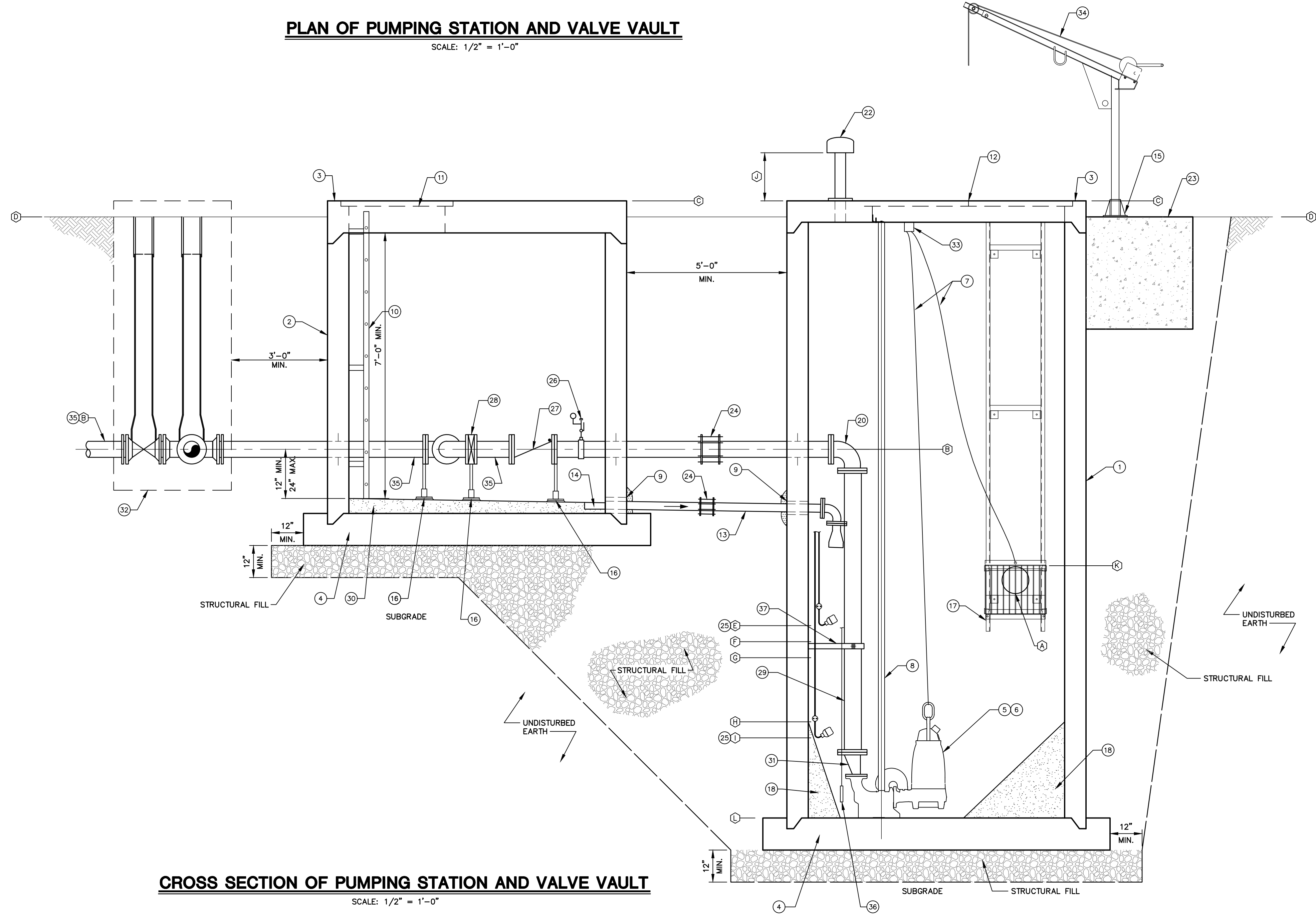
SITE PLAN
WEST SHORTCUT ROAD PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- WGR
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SCALE- AS NOTED
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DRAWING NO.
WSR-5
SHEET NO.
40 OF 60
PROJECT 005100.0434



PLAN OF PUMPING STATION AND VALVE VAULT
SCALE: 1/2" = 1'-0"



CROSS SECTION OF PUMPING STATION AND VALVE VAULT
SCALE: 1/2" = 1'-0"

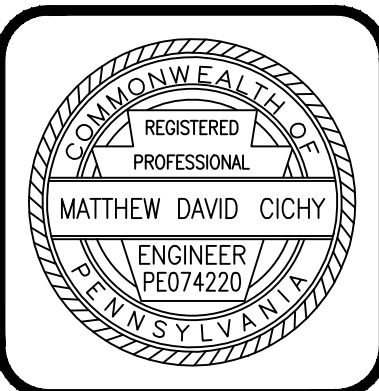
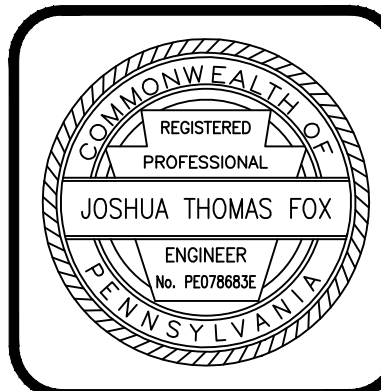
DESIGN SCHEDULE		
DESIGNATION	DESCRIPTION	WEST SHORTCUT ROAD PUMP STATION
(A)	8"Ø DIP INFLUENT SEWER INVERT ELEV	522.00'
(B)	6"Ø PUMP HEADER/DISCHARGE FORCE MAIN C/L ELEV	526.50'
(C)	TOP OF CHAMBERS	534.25'
(D)	FINISH GRADE	533.75'
(E)	HIGH WATER ALARM FLOAT ELEV	521.00'
(F)	LAG PUMP ON TRANSDUCER ELEV	520.50'
(G)	LEAD PUMP ON TRANSDUCER ELEV	520.00'
(H)	BOTH PUMPS OFF TRANSDUCER ELEV	518.00'
(I)	LOW WATER ALARM FLOAT ELEV	517.50'
(J)	VENT SCREEN HEIGHT TO BOTTOM OF CAP	18"
(K)	TOP OF TRASH BASKET	522.87'
(L)	WET WELL BOTTOM ELEV	515.00' (1)

(1) WET WELL BOTTOM ELEVATION IS BASED ON A PUMP HEIGHT OF 36" FROM THE WET WELL BOTTOM. IF SELECTED PUMP HEIGHT IS GREATER THAN DESIGNED CONDITION, REVISE WET WELL BOTTOM ELEVATION TO ACCOUNT FOR ADDITIONAL PUMP HEIGHT.

KEY NOTES

- 1 6"x8" (MINIMUM INSIDE DIMENSION) PRECAST CONCRETE WET WELL
- 2 6"x8" (MINIMUM INSIDE DIMENSION) PRECAST CONCRETE VALVE VAULT
- 3 PRECAST CONCRETE TOP
- 4 PRECAST CONCRETE INTEGRAL BASE SLAB
- 5 PUMP NO. 1
- 6 PUMP NO. 2
- 7 304 S.S. 1/4 INCH x 36 FEET WIRE ROPE WITH S.S. SWIVEL HOOK AND SWAGED BALL FITTING. ATTACH TO PUMPS/TRASH BASKET
- 8 STAINLESS STEEL PUMP GUIDE RAILS
- 9 LINK SEAL W/ GROUT COVER
- 10 ALUMINUM OR FRP LADDER
- 11 36"x36" SINGLE LEAF ALUMINUM HATCH WITH FLUSH TYPE HANDLE AND LOCK. LOCK TO BE PAD LOCKABLE.
- 12 72"x60" DOUBLE LEAF ALUMINUM HATCH WITH FLUSH TYPE HANDLE AND LOCK. LOCK TO BE PAD LOCKABLE.
- 13 3" DI DRAIN WITH MINIMUM 1.00% SLOPE TO WET WELL AND DUCKBILL CHECK VALVE.
- 14 4" DEEP x 6" SQ. SUMP - CONTRACTOR SHALL SLOPE FLOOR TOWARDS DRAIN
- 15 DAVIT CRANE PEDESTAL BASE
- 16 S.S. PIPE SUPPORT
- 17 S.S. TRASH BASKET AND S.S. GUIDERAILS, MOUNTING BRACKETS AND SPACERS PER MANUFACTURER'S RECOMMENDATIONS.
- 18 CONCRETE FILLET UP TO PUMP OFF ELEVATION
- 19 ALUMINUM LADDER SAFETY POST
- 20 6" DI 90° BEND
- 21 6" DI RESTRAINED WALL SLEEVE
- 22 4" PVC FLANGE BASE VENT W/ BIRD SCREEN AND CARBON CARTRIDGE.
- 23 DAVIT CRANE FOUNDATION
- 24 FLEXIBLE COUPLING
- 25 FLOAT SWITCH
- 26 1" TAP WITH SADDLE, S.S. BALL VALVE, 1" Ø S.S. PIPE, 1" ISOLATION RING WITH PRESSURE GAUGE AND CAP. MOUNT GAUGE IN VERTICAL POSITION.
- 27 6" CHECK VALVE WITH OIL CUSHION DEVICE
- 28 6" KNIFE GATE VALVE
- 29 6" DIP PUMP HEADER PIPE
- 30 CONCRETE GROUT FILL SLOPED TO SUMP
- 31 6"x4" DIP ECCENTRIC REDUCER
- 32 EMERGENCY BYPASS CONNECTION (SEE DETAIL)
- 33 WIRE ROPE KEEPER
- 34 PORTABLE DAVIT CRANE
- 35 6"Ø DIP DISCHARGE PIPE
- 36 SUBMERSIBLE PRESSURE TRANSDUCER WITH WEIGHT
- 37 WALL MOUNTED S.S. PIPE SUPPORT
- 38 6" DI TEE

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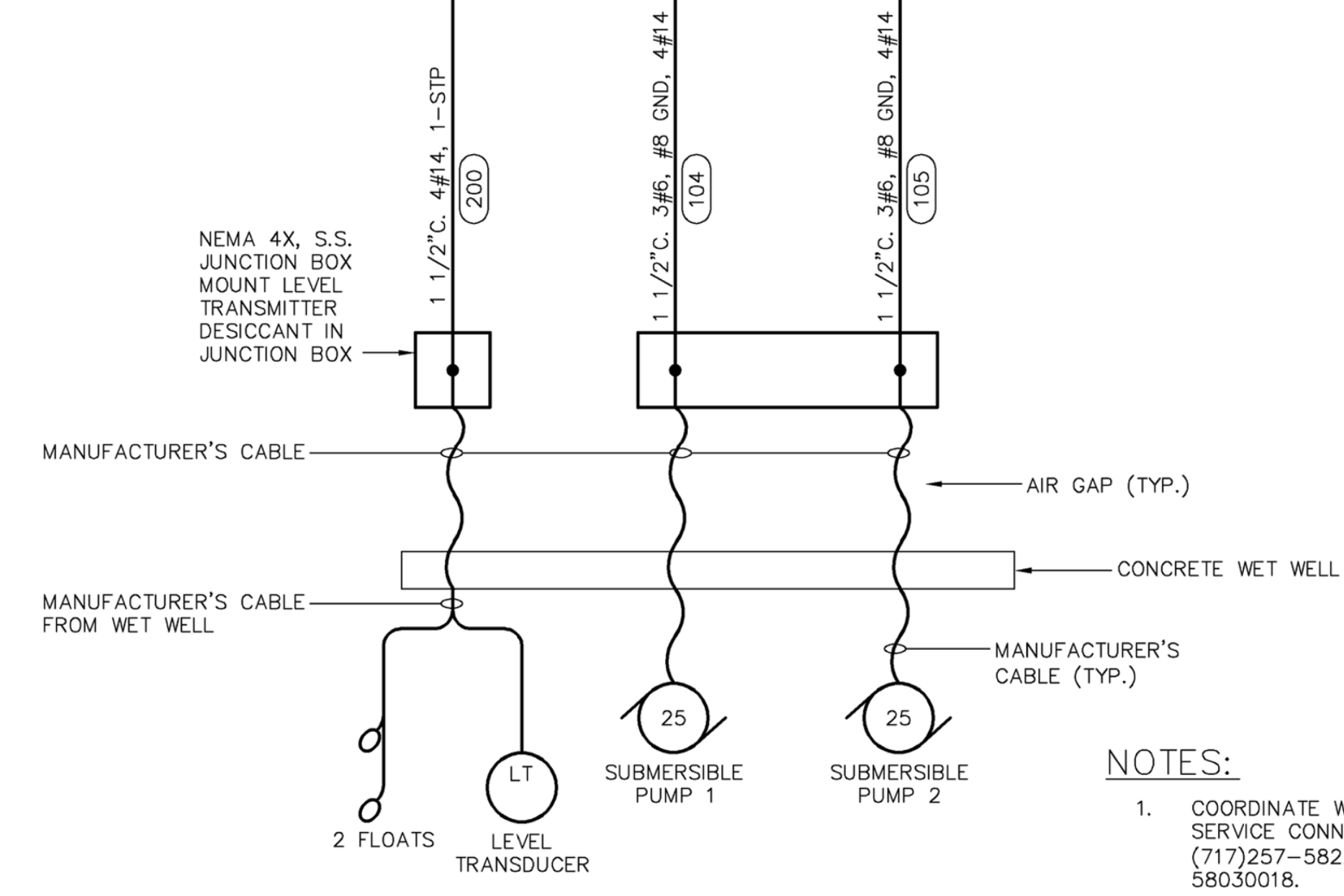
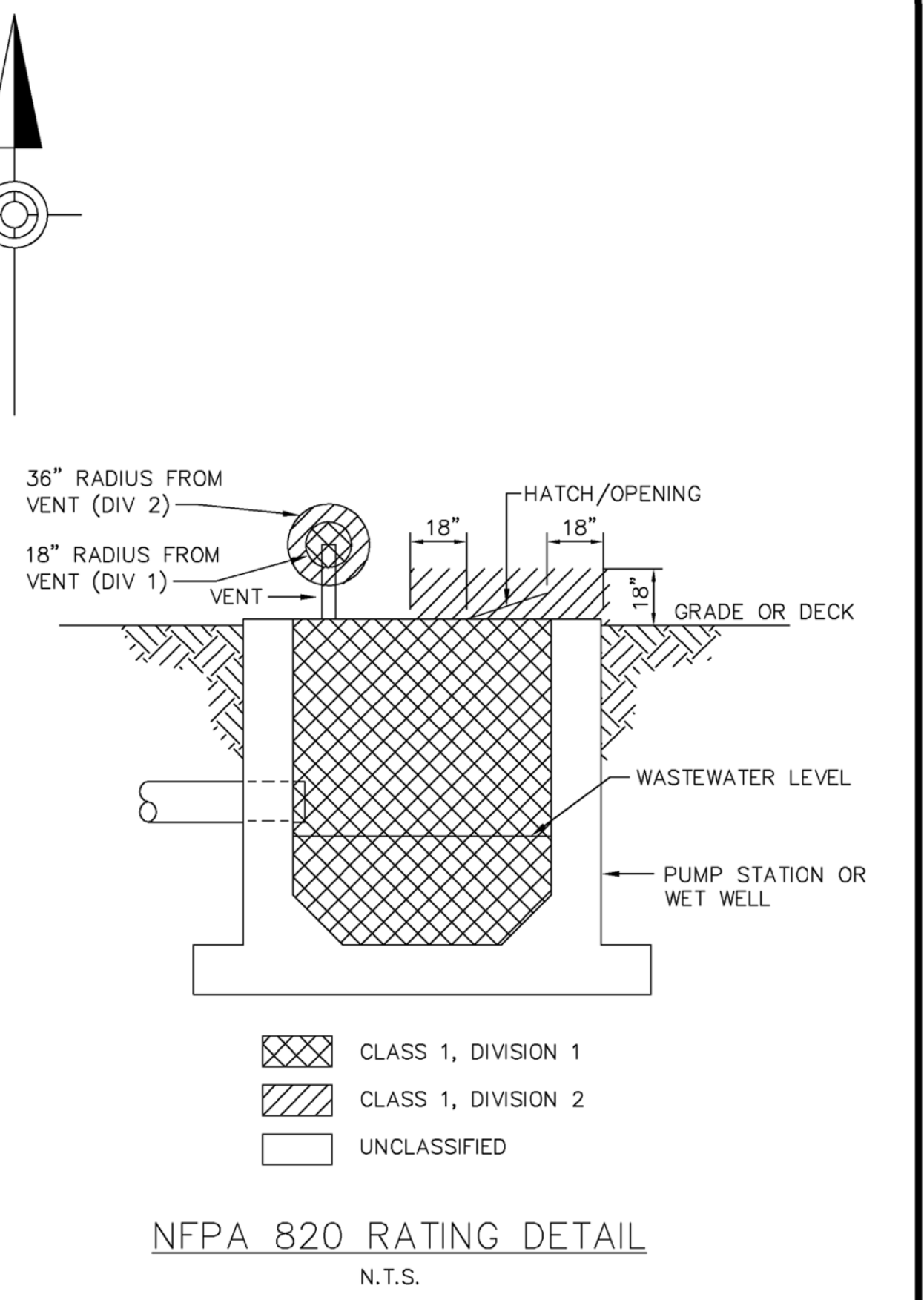
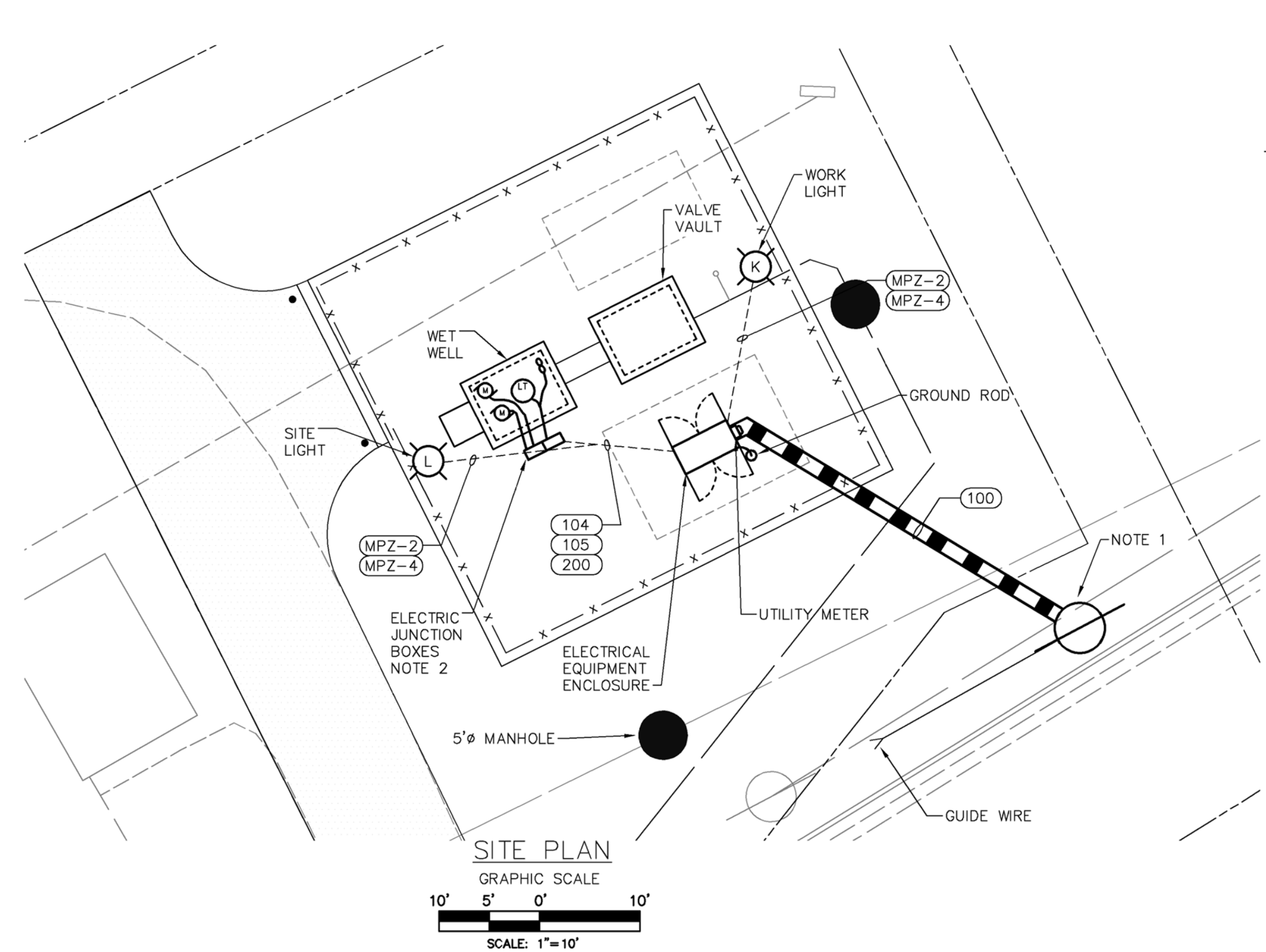
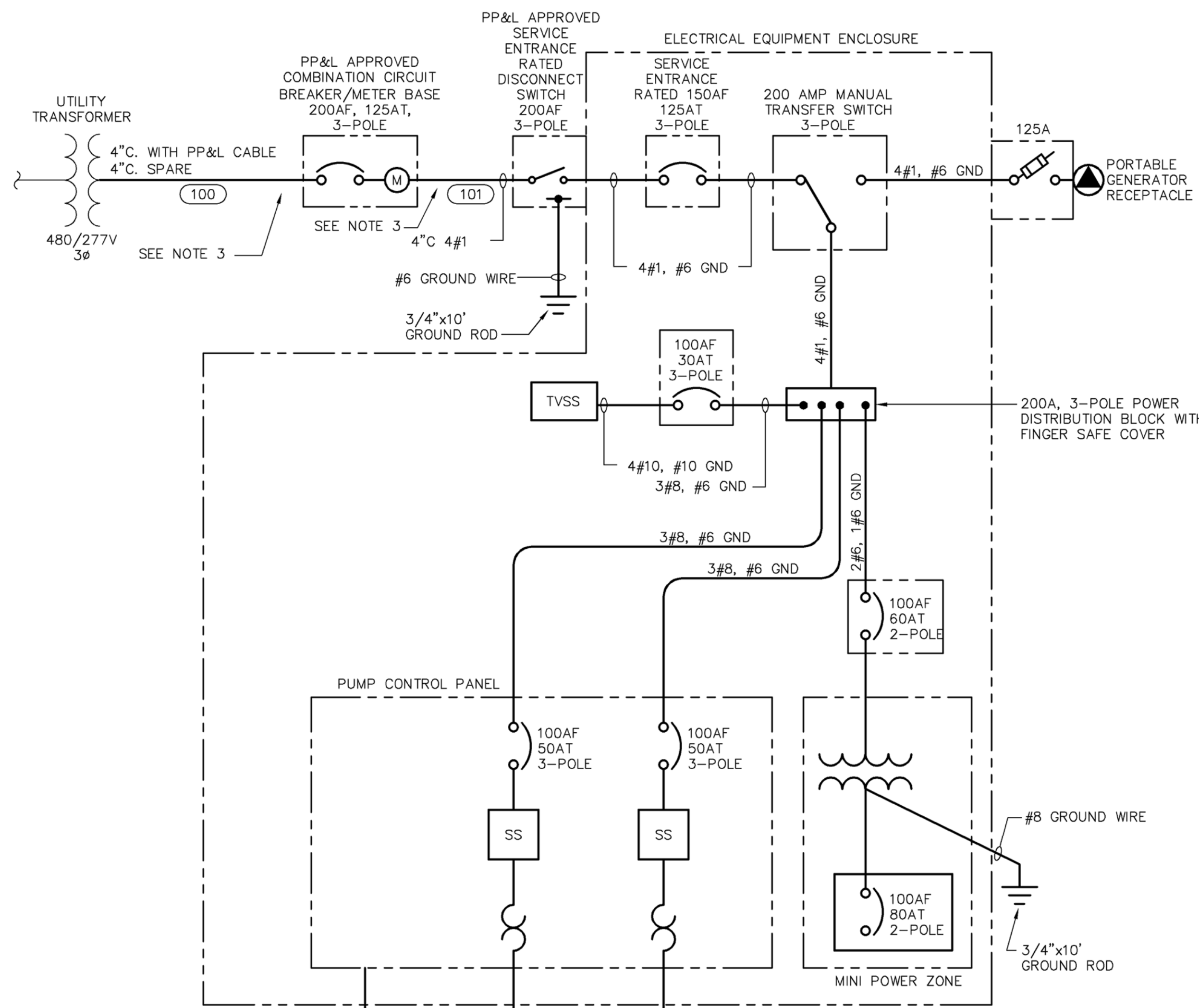
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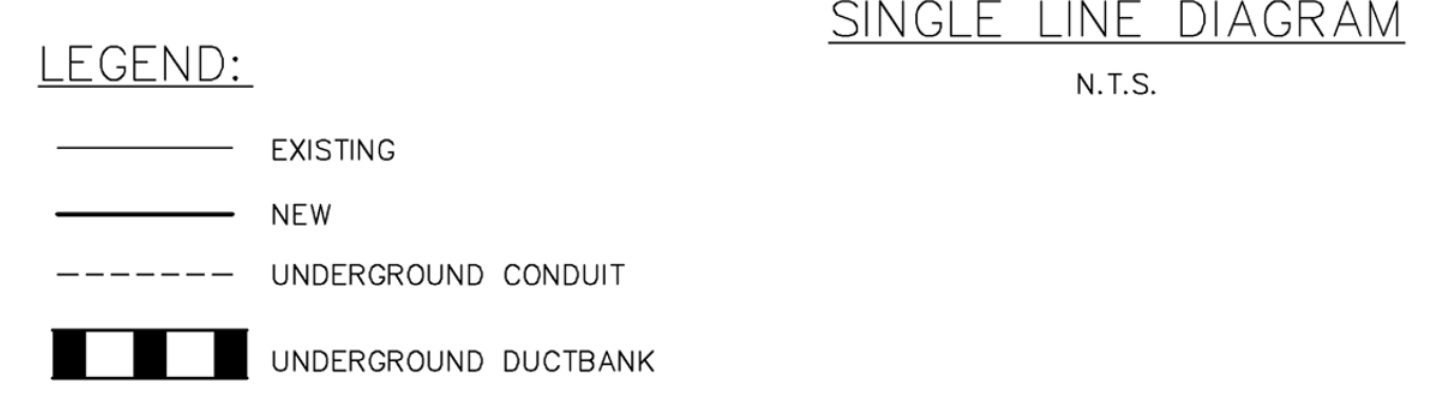
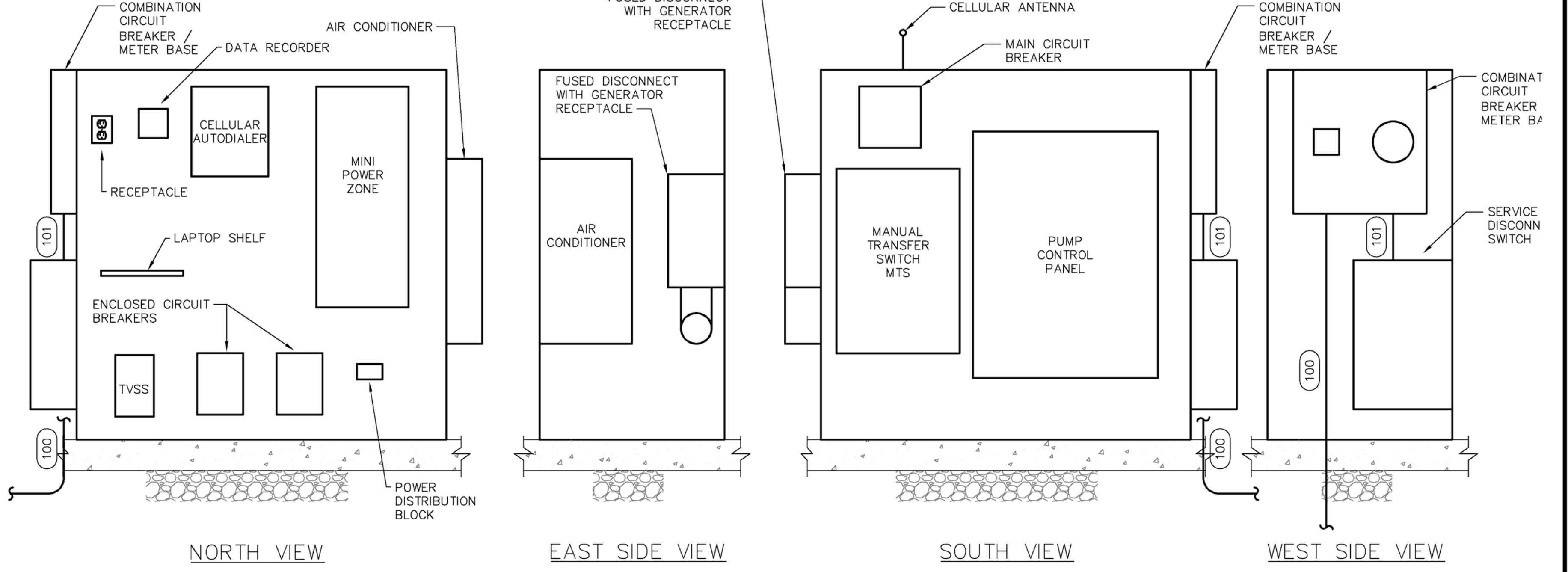
PLAN AND CROSS SECTION
WEST SHORTCUT ROAD PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- WGR
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO.
WSR-6
SHEET NO.
41 OF 60
PROJECT 005100.0434



- NOTES:
- COORDINATE WITH PP&L TO FOR POLE LOCATION AND SERVICE CONNECTION. CONTACT STEVEN SIELFERT PHONE (717)257-5822, REFERENCE WORK ORDER NUMBER 58030018.
 - JUNCTION BOXES SHALL BE LOCATED AT LEAST 5' FROM ANY VENT.
 - PROVIDE PVC COATED GALVANIZED STEEL CONDUIT FOR ELECTRICAL SERVICE ENTRANCE.



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Keystone
ENGINEERING GROUP

NO.	REVISION	DATE	BY

REGISTERED PROFESSIONAL ENGINEER
PHILIP L. SCHWARTZ
ENGINEER 39998-E

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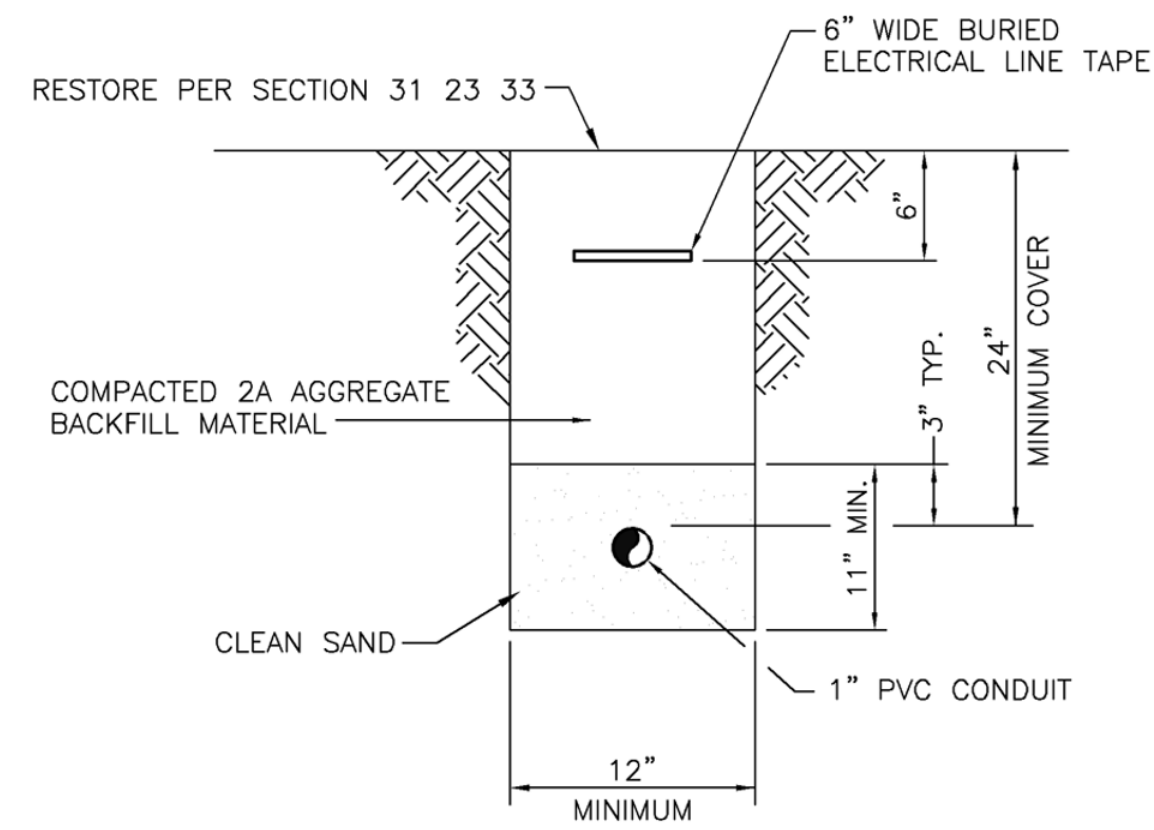
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ELECTRICAL SITE PLAN AND SINGLE LINE DIAGRAM
WEST SHORTCUT ROAD PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

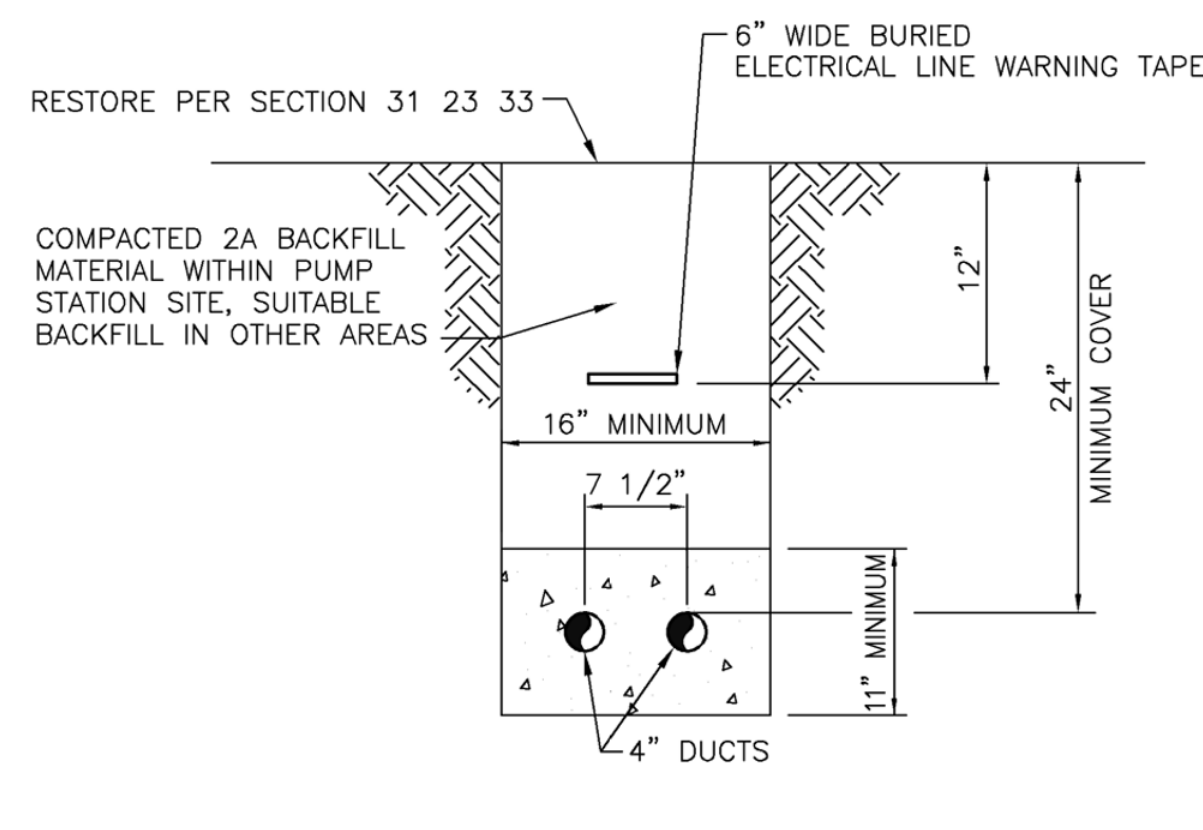
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PROJ. MGR. - JTF
DESIGN- RH
CADD- CJB/KDR
CHECKED-PLS
SCALE- AS NOTED
DATE-FEBRUARY 2019

DRAWING NO.
E-03
SHEET NO.
42 OF 60
PROJECT 005100.0434



ELECTRICAL CONDUIT TRENCH DETAIL
SCALE: N.T.S.



CONCRETE ENCASED ELECTRICAL DUCTBANK DETAIL
N.T.S.

SERVICE ENTRANCE NOTES:

CONTRACTOR RESPONSIBILITIES:

- C1. PROVIDE THE TRENCHING, DUCTBANK AND BACKFILLING, PER PP&L REQUIREMENTS AND SPECIFICATIONS.
- C2. PROVIDE (2) 4" SCHEDULE 40 ELECTRICAL GRADE CONDUITS IN DUCTBANK. 1/4" NYLON PULL ROPE IS TO BE INSTALLED IN CONDUIT. 90 DEGREE PVC COATED CONDUIT WITH SWEEP BENDS AT EACH END.
- C3. INSTALL SERVICE ENTRANCE CIRCUIT BREAKER AS PER ELECTRIC UTILITY REQUIREMENTS.
- C4. PROVIDE AND INSTALL METER BASE PER ELECTRIC UTILITY REQUIREMENTS.
- C5. PROVIDE CONDUCTORS BETWEEN SERVICE CIRCUIT BREAKING AND METER BASE.
- C5. PROVIDE AND INSTALL LABELS PER PP&L REQUIREMENTS AND SPECIFICATIONS.

POWER UTILITY RESPONSIBILITIES:

- U1. PROVIDE AND INSTALL METER IN CONTRACTOR SUPPLIED METER BASE.
- U2. PROVIDE AND INSTALL AND CONNECT ALL PRIMARY CONDUCTORS.

120/240 V. 1 PHASE 60HZ 3 WIRE MINI POWER PANEL MPZ SCHEDULE										
SERVICE	C/B	KWATTS	NO.	A	B	N	NO.	KWATTS	C/B	SERVICE
ELECTRICAL ENCLOSURE AC	20A		1				2	20A		POLE LIGHTS
ELECTRICAL ENCLOSURE HEATER	20A		3				4	20A		POLE RECEPTACLES
AUTO DIALER	20A		5				6	20A		PANEL RECEPTACLE
DATA RECORDER	20A		7				8	20A		SPARE
SPARE	20A		9				10	20A		SPARE

SEE NOTE 1
SEE NOTE 1
SEE NOTE 1
SEE NOTE 1

SEE NOTE 2
SEE NOTE 2
SEE NOTE 1

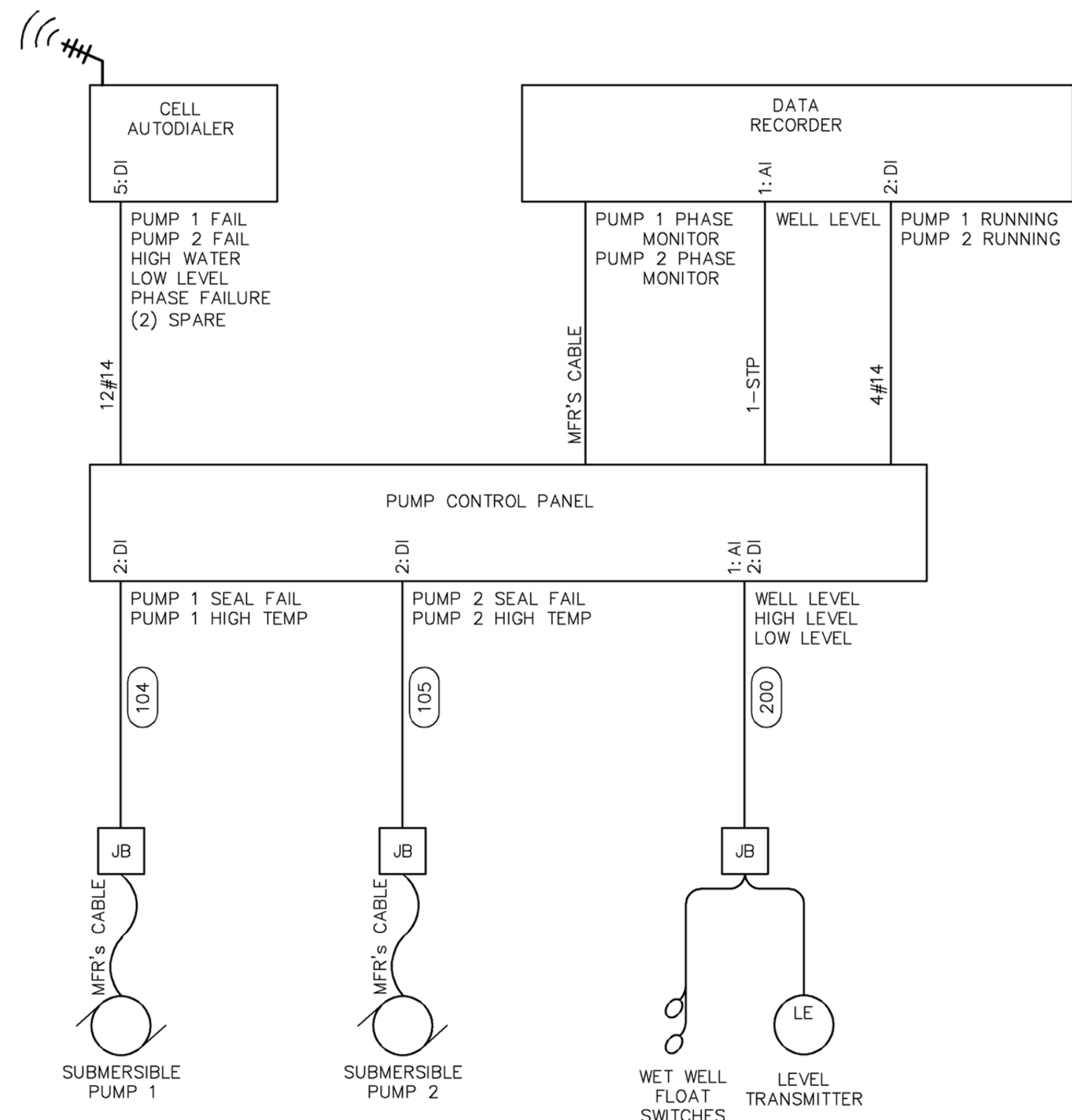
PANEL MTD: SURFACE TYPE: MPZ
MANUFACTURER: SQUARE 'D' MAIN LUGS: _____
MAIN BREAKER: 80A FEEDER ENTRY: _____
FEEDER SIZE: _____ ENCLOSURE: _____
BRANCH BREAKERS: _____ GUTTERS: TOP _____ BOTTOM _____
NO. POLES AMPS. SIDES _____

PANEL LOADING SCHEDULE	
PHASE	WATTS (KW)
A	1.34
B	2.00
CONNECTED LOAD	3.34
SPARE	2.00
TOTAL LOAD	5.34

NOTES:

1. PROVIDE 2#12 AND #12 GND TO CONNECT TO DEVICE.
2. FOR EACH LIGHT PROVIDE 1'C 4#12 AND #12 GND TO POLE. TWO CONDUCTORS FOR LIGHT CIRCUIT AND TWO CONDUCTORS FOR THE POLE RECEPTACLE.

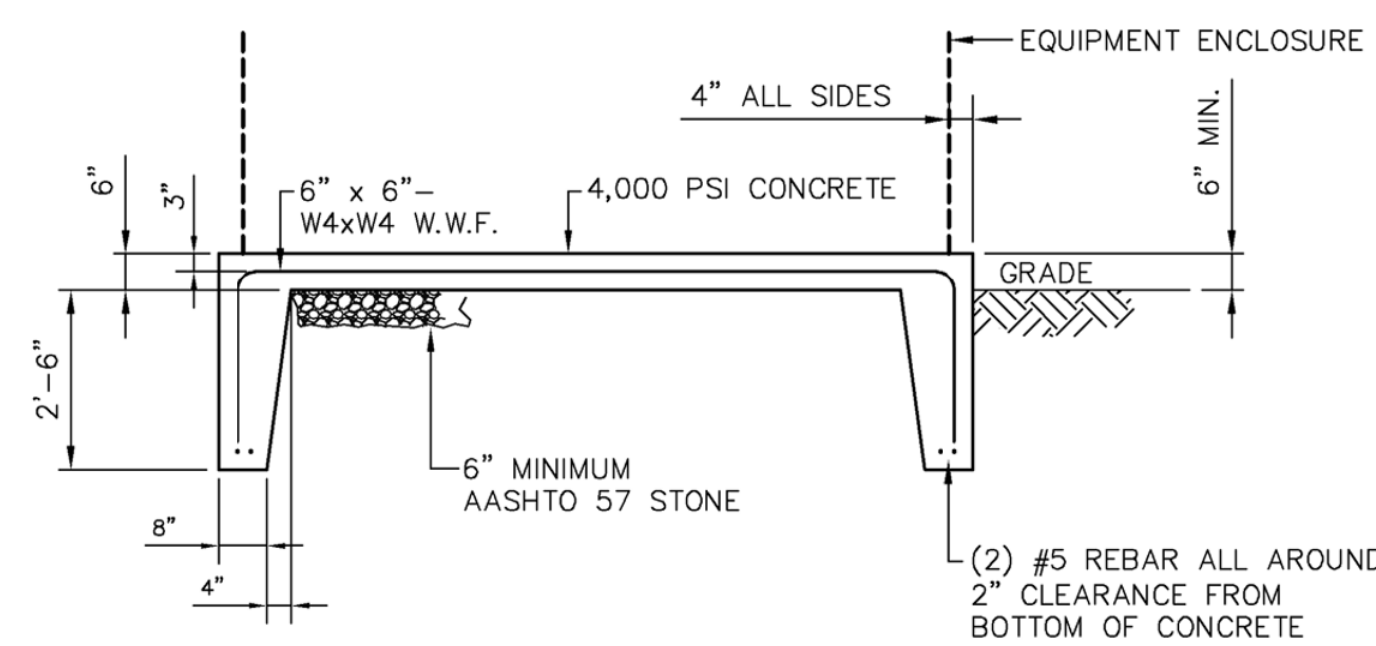
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SCALE: N.T.S.



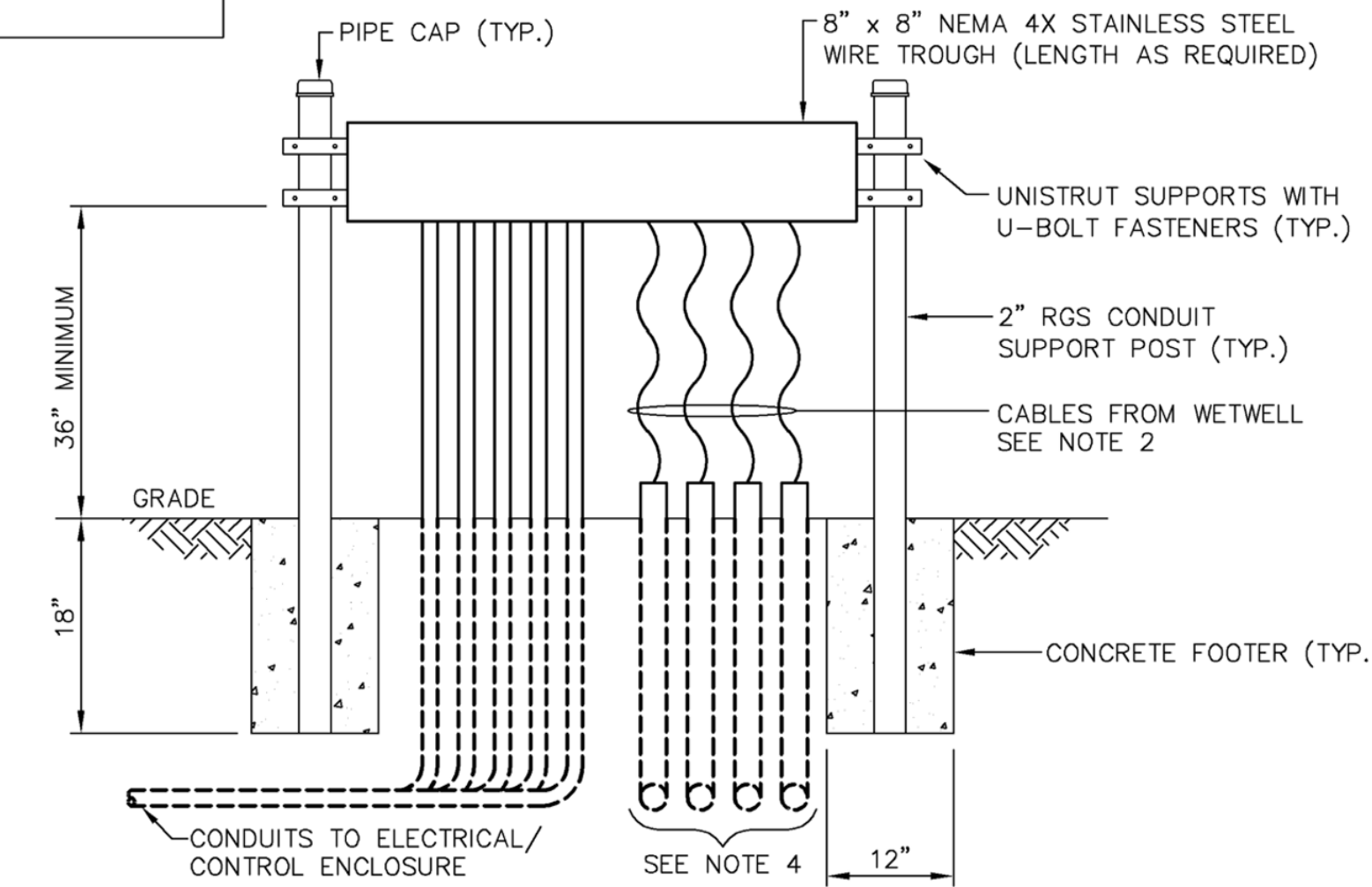
INTERCONNECTION DIAGRAM
SCALE: N.T.S.

TYPE	MANUFACTURER AND SERIES	DESCRIPTION	VOLTS	REMARKS
L	SPAULDING CIMARRON SERIES SERIES: CR1	POLE MOUNTED AREA LIGHT, DIE-CAST ALUMINUM HOUSING, ARM MOUNT, 30 LEDS, UNIVERSAL VOLTAGE, 4K CCT, TYPE IV DISTRIBUTION, 700 mA DRIVE CURRENT DARK BRONZE, PROGRAMMABLE PHOTOCELL CONTROL	120V.	LIGHT SWITCH IN SERIES WITH PROGRAMMABLE PHOTOCELL CONTROL ON POLE
	SPAULDING SERIES: ALUMINUM POLE	SQUARE STRAIGHT HEAVY ALUMINUM POLE, 18' HEIGHT, 4" SHAFT, SINGLE ALUMINUM MOUNTING, 20A GFCI RECEPTACLE AND COVER, DARK BRONZE		
K	SPAULDING CIMARRON SERIES SERIES: CR1	POLE MOUNTED AREA LIGHT, DIE-CAST ALUMINUM HOUSING, ARM MOUNT, 30 LEDS, UNIVERSAL VOLTAGE, 4K CCT, TYPE IV DISTRIBUTION, 700 mA DRIVE CURRENT DARK BRONZE.	120V.	LIGHT SWITCH CONTROL ON POLE
	SPAULDING SERIES: ALUMINUM POLE	SQUARE STRAIGHT HEAVY ALUMINUM POLE, 18' HEIGHT, 4" SHAFT, SINGLE ALUMINUM MOUNTING, 20A GFCI RECEPTACLE AND COVER, DARK BRONZE		

LIGHTING FIXTURE SCHEDULE
SCALE: N.T.S.

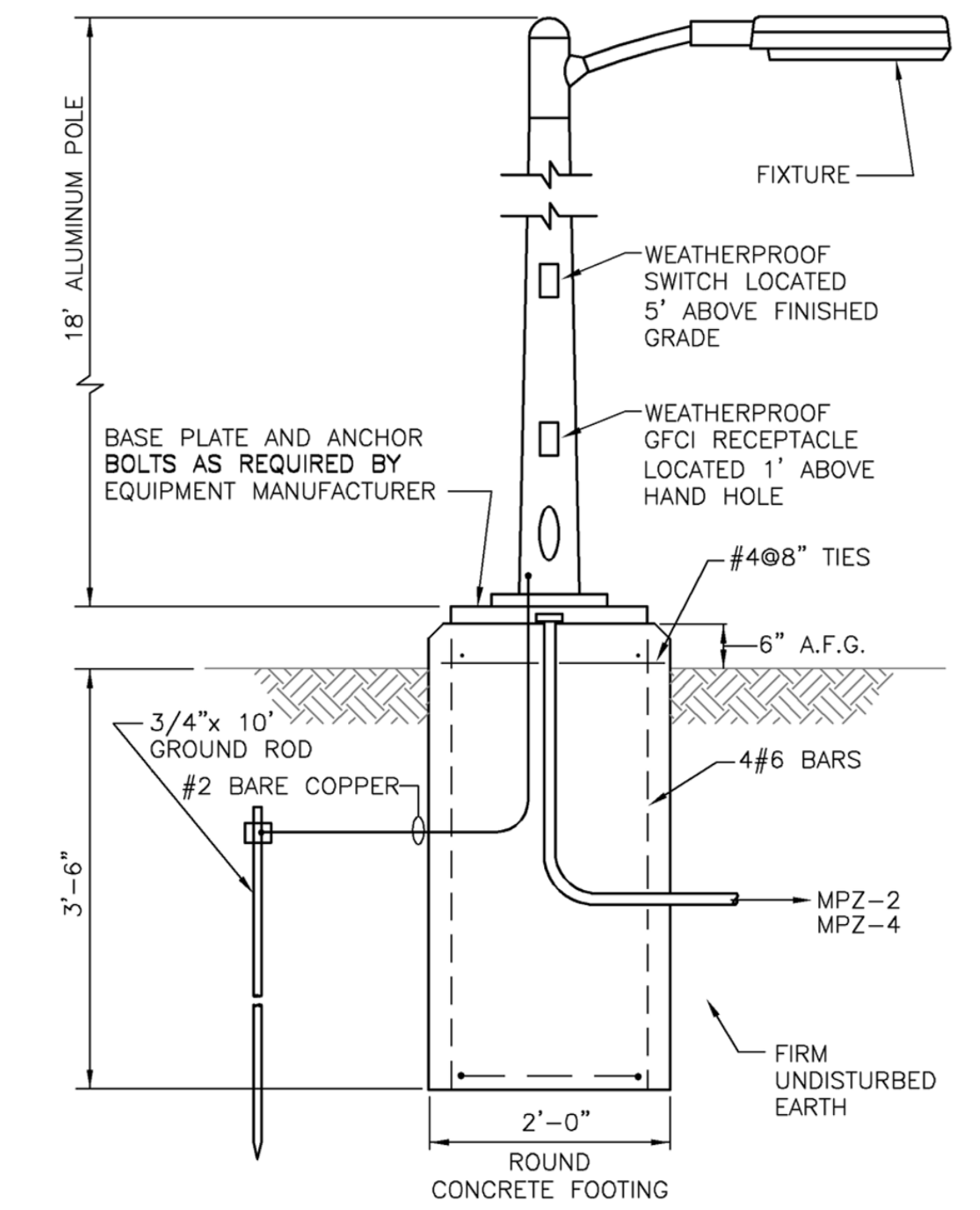


PAD DETAIL
N.T.S.
TYPICAL FOR ELECTRICAL EQUIPMENT ENCLOSURE



- NOTES:
1. CONDUITS ARE TO BE CONTINUOUS WITH NO COUPLINGS OR FITTINGS BETWEEN THE WIRE TROUGH TO BELOW GRADE.
 2. ENCLOSE AREA OF EXPOSED CABLES WITH TYPE 316 16 GAUGE MINIMUM PERFORATED STAINLESS STEEL ASSEMBLY WITH 1/4" DIAMETER HOLES ON 3/8" STAGGERED CENTERS. FRAME WITH SUPPORT STEEL ANGLES WITH ONE SIDE REMOVABLE FOR ACCESS TO THE CABLES. FINISH ALL EDGES SMOOTH. AREA SHALL BE COMPLETELY ENCLOSED TO PREVENT INFILTRATION OF DEBRIS AND RODENTS.
 3. COORDINATE INSTALLATION TO ASSURE WIRING TROUGH IS LOCATED OUT OF RATED AREA. REFERENCE NFPA DETAIL ON DRAWING E-03.
 4. PROVIDE FOUR 2" CONDUITS FROM THE TERMINATION ASSEMBLY TO THE WETWELL. SEAL PENETRATIONS INTO WETWELL WITH LINK SEAL.

TERMINATION ASSEMBLY DETAIL
N.T.S.



LIGHT STANDARD DETAIL
SCALE: N.T.S.

LEGEND:
— EXISTING
— NEW

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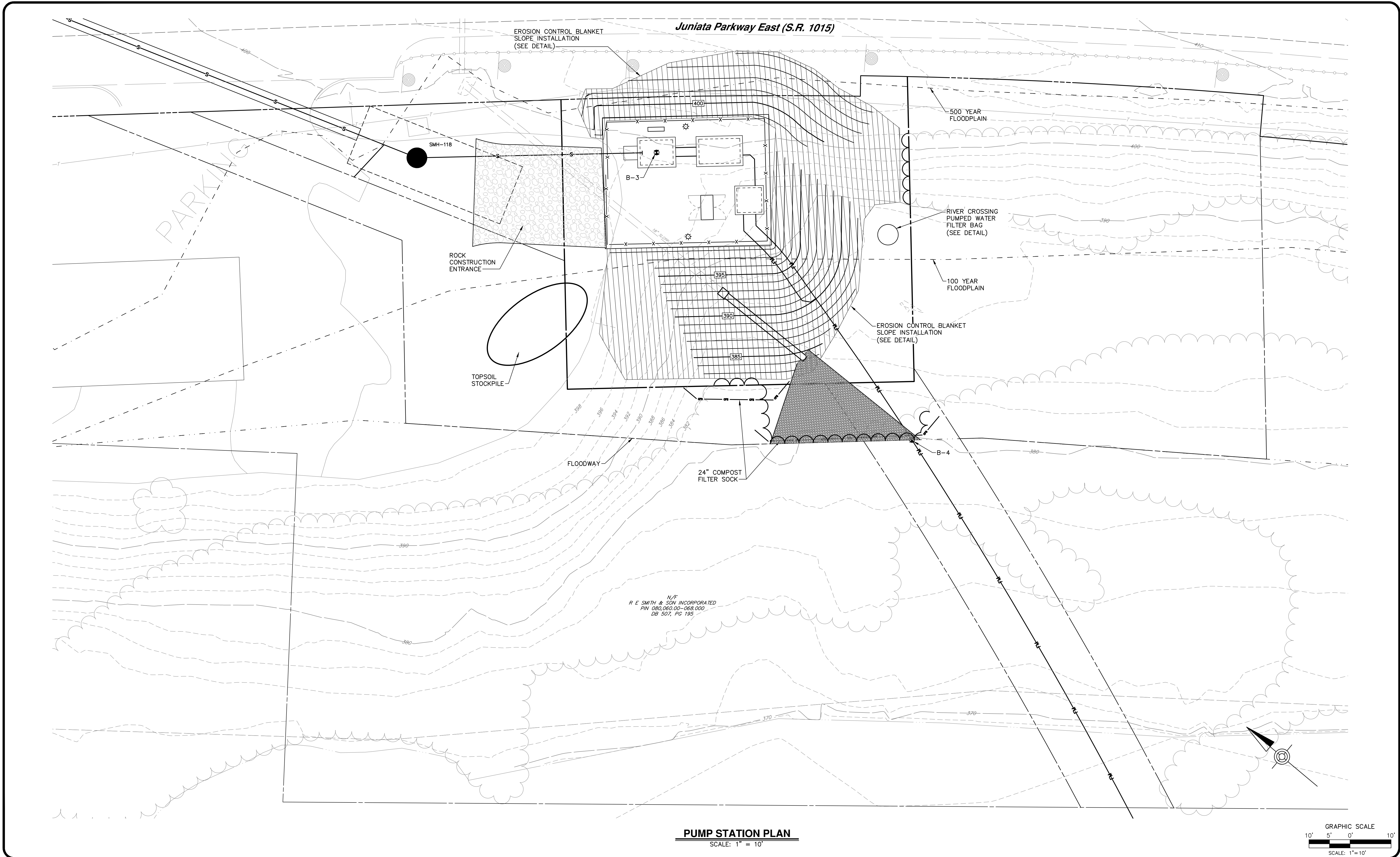
SCHEDULES AND DETAILS
WEST SHORTCUT ROAD PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - RH
CADD - CJB/KDR
CHECKED - PLS
SCALE - AS NOTED
DATE - FEBRUARY 2019

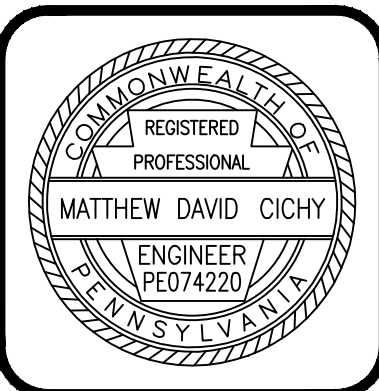
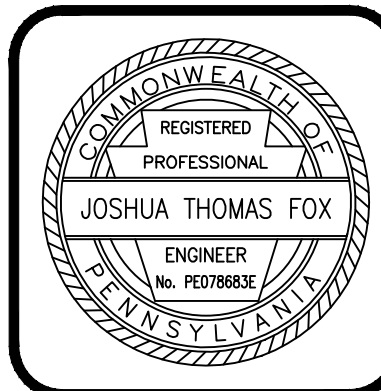
DRAWING NO.
E-04
SHEET NO.
43 OF 60
PROJECT 005100.0434

NO.	REVISION	DATE	BY



PUMP STATION PLAN
SCALE: 1" = 10'

NO.	REVISION	DATE	BY



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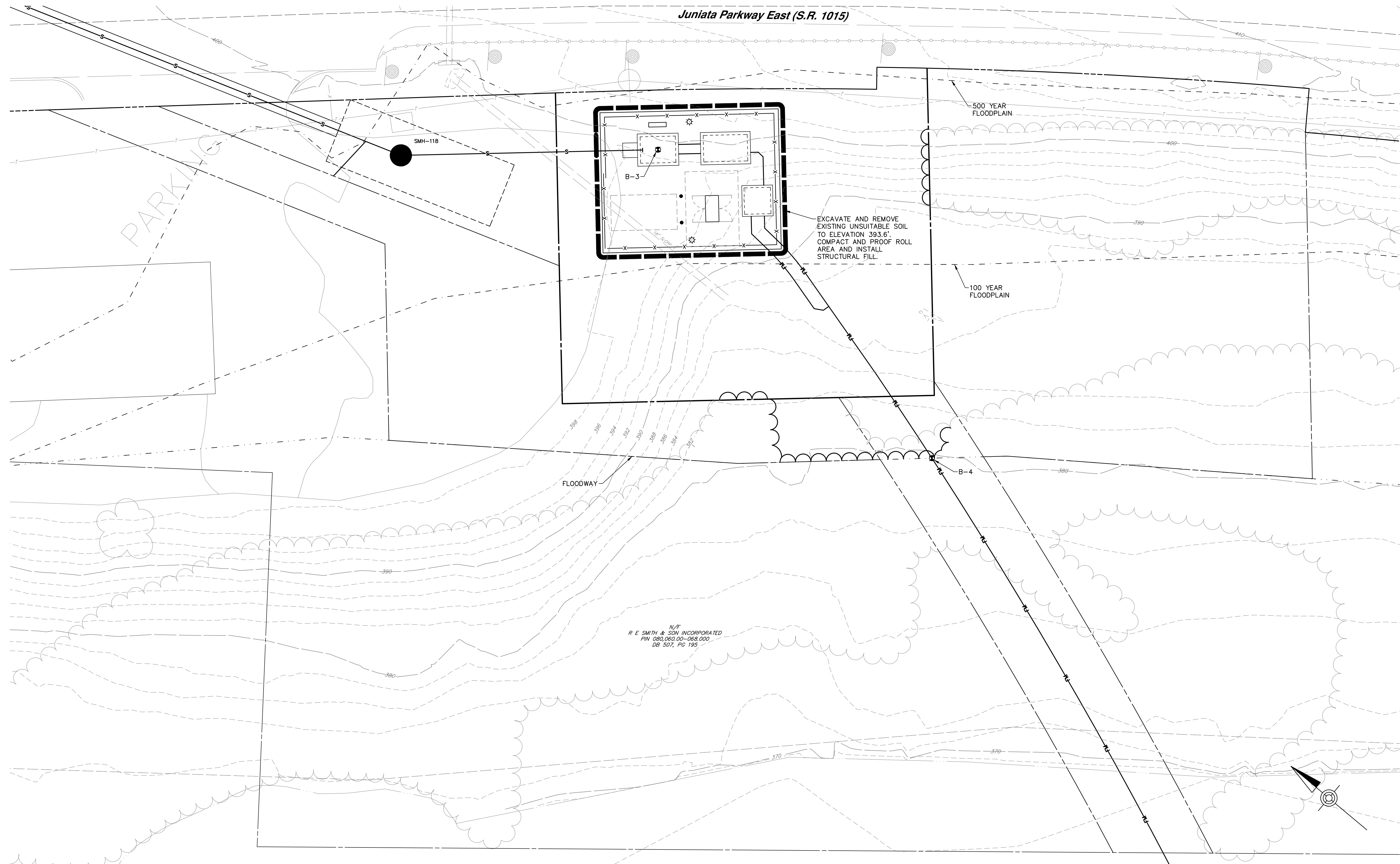
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EROSION AND SEDIMENTATION CONTROL SITE PLAN
HOWE PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- CAL
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

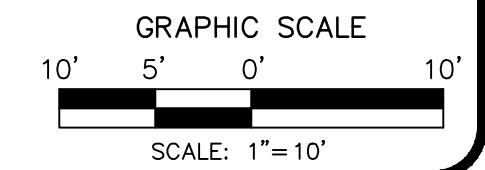
DRAWING NO. H-2
SHEET NO. 45 OF 60
PROJECT 005100.0434

Juniata Parkway East (S.R. 1015)



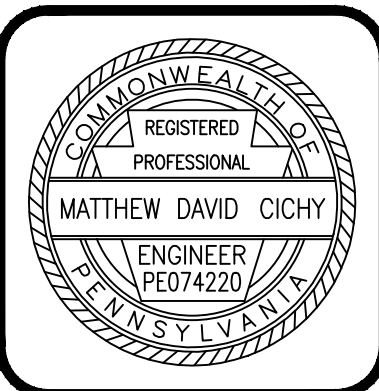
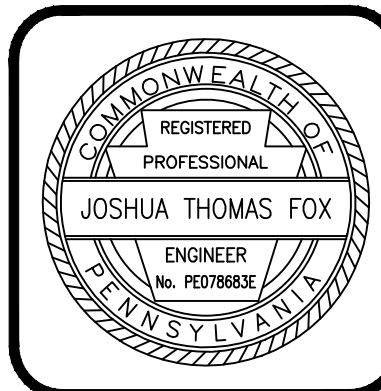
PUMP STATION PLAN

SCALE: 1" = 10'



N/F
R E SMITH & SON INCORPORATED
PW 080.002.00-068.000
DB 507, PG 195

NO.	REVISION	DATE	BY



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PUMP STATION SITE PREPARATION PLAN
HOWE PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

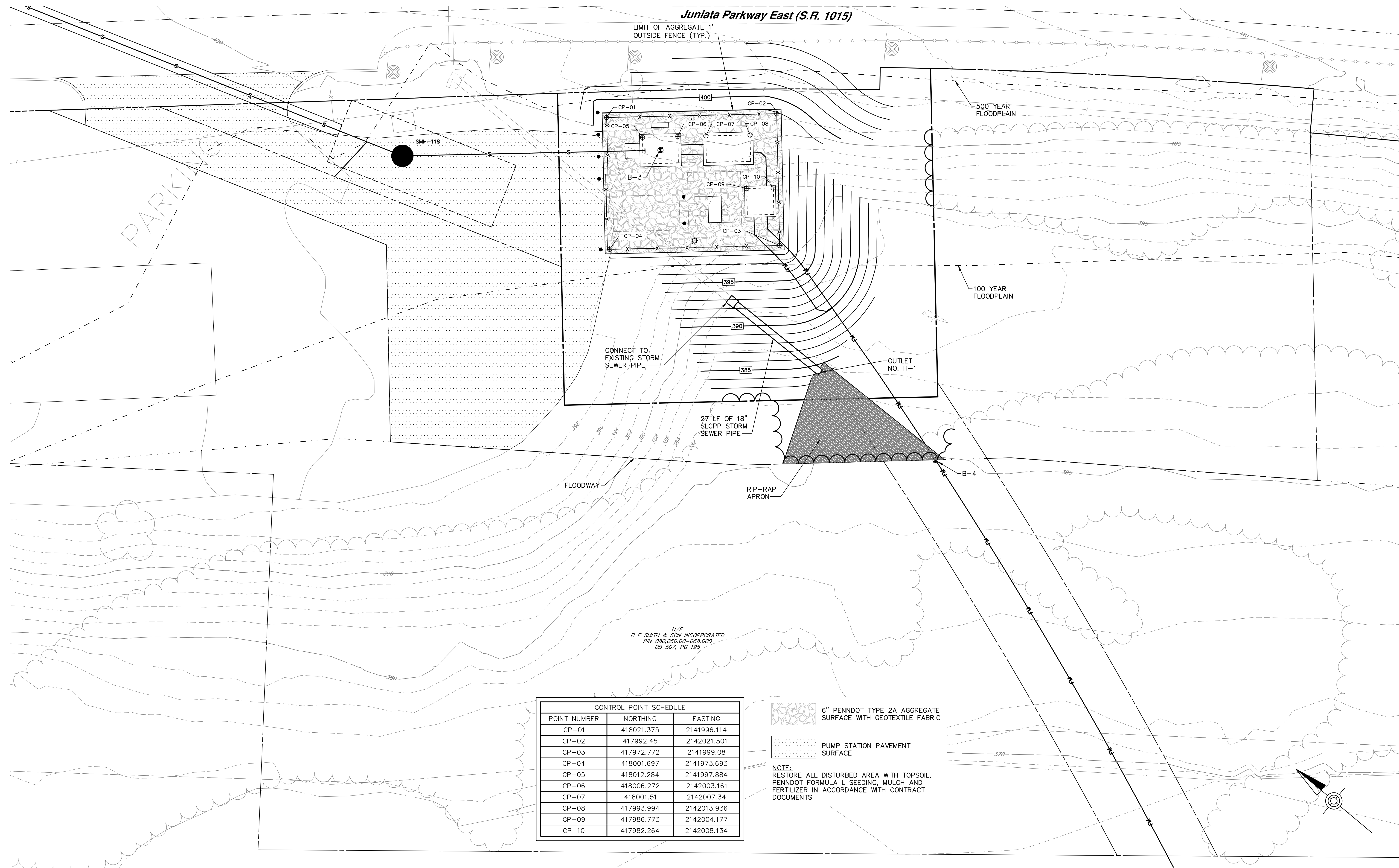
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PROJ. MGR. - JTF
DESIGN - WGR
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
H-3
SHEET NO.
46 OF 60
PROJECT 005100.0434

Juniata Parkway East (S.R. 1015)

LIMIT OF AGGREGATE 1' OUTSIDE FENCE (TYP.)



CONNECT TO EXISTING SEWER PIPE

27 LF OF 18" SLCPP STORM SEWER PIPE

OUTLET NO. H-1

FLOODWAY

RIP-RAP APRON

B-4

R/E SMITH & SON INCORPORATED
P/W 080,082,00-068,000
DB 507, PG 195

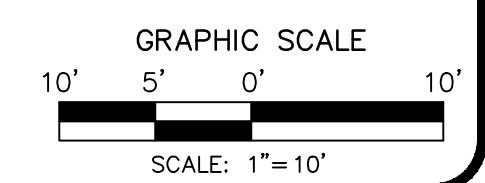
CONTROL POINT SCHEDULE		
POINT NUMBER	NORTHING	EASTING
CP-01	418021.375	2141996.114
CP-02	417992.45	2142021.501
CP-03	417972.772	2141999.08
CP-04	418001.697	2141973.693
CP-05	418012.284	2141997.884
CP-06	418006.272	2142003.161
CP-07	418001.51	2142007.34
CP-08	417993.994	2142013.936
CP-09	417986.773	2142004.177
CP-10	417982.264	2142008.134

6" PENNDOT TYPE 2A AGGREGATE SURFACE WITH GEOTEXTILE FABRIC

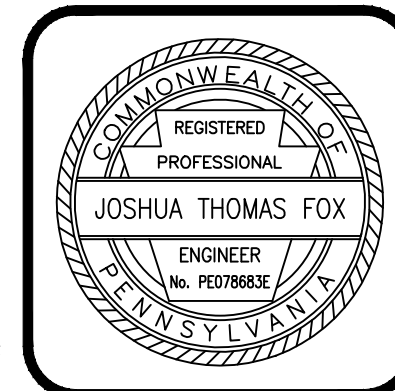
PUMP STATION PAVEMENT SURFACE

NOTE: RESTORE ALL DISTURBED AREA WITH TOPSOIL, PENNDOT FORMULA L SEEDING, MULCH AND FERTILIZER IN ACCORDANCE WITH CONTRACT DOCUMENTS

PUMP STATION PLAN
SCALE: 1" = 10'



NO.	REVISION	DATE	BY



HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 544-1121
Fax (717) 544-1158
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www.hrg-inc.com

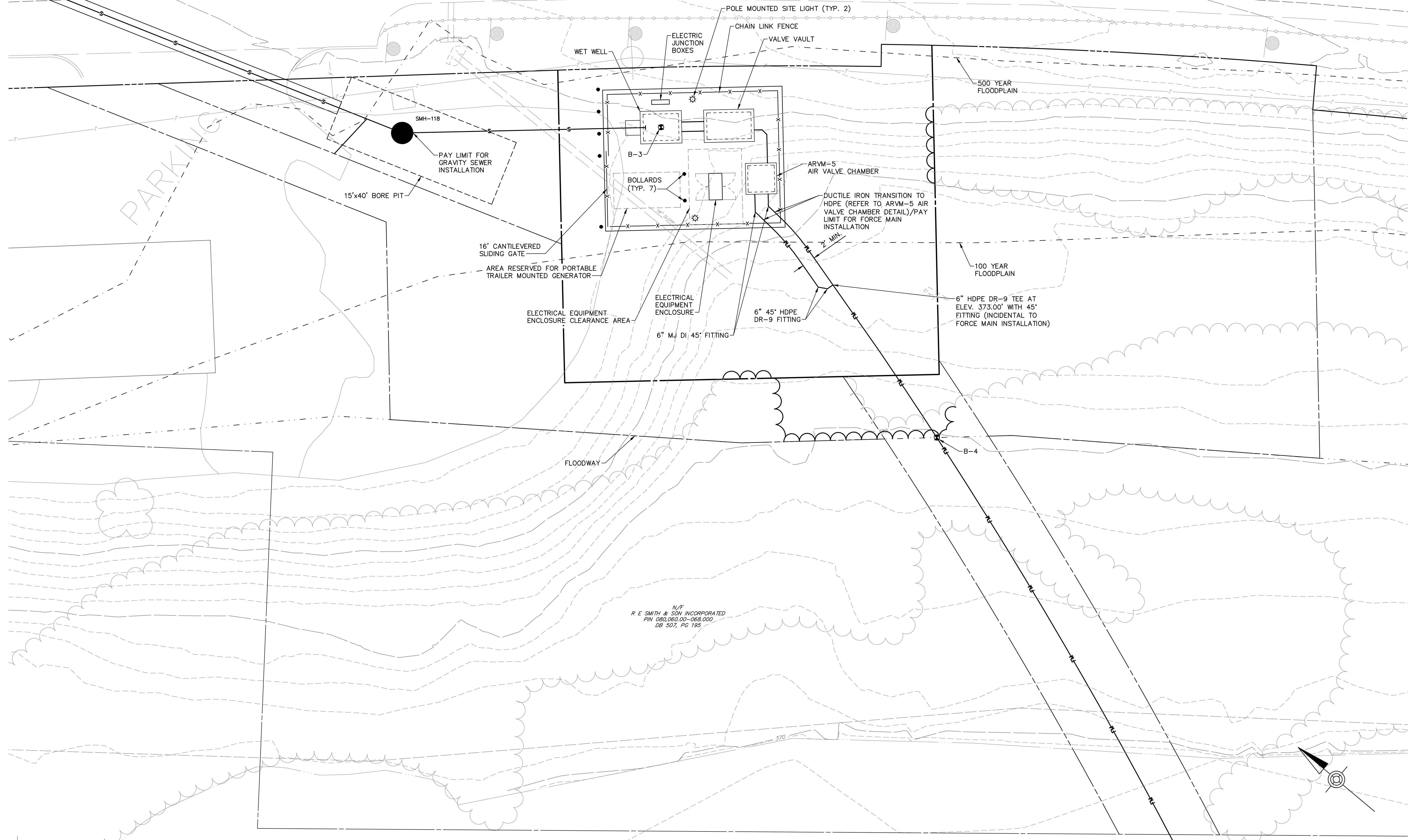
HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

SITE GRADING AND SURFACING PLAN
HOWE PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

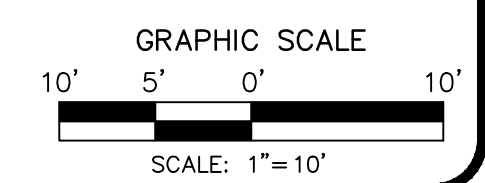
PROJ. MGR. - JTF
DESIGN- WGR
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO.
H-4
SHEET NO.
47 OF 60
PROJECT 005100.0434

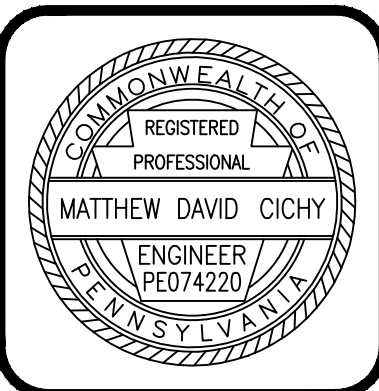
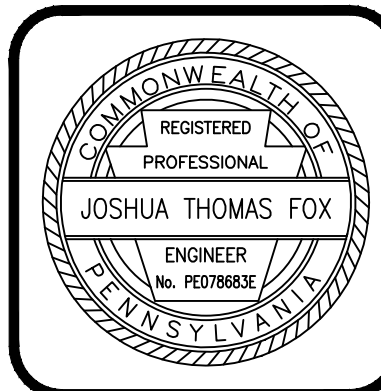
Juniata Parkway East (S.R. 1015)



PUMP STATION PLAN
SCALE: 1" = 10'



NO.	REVISION	DATE	BY



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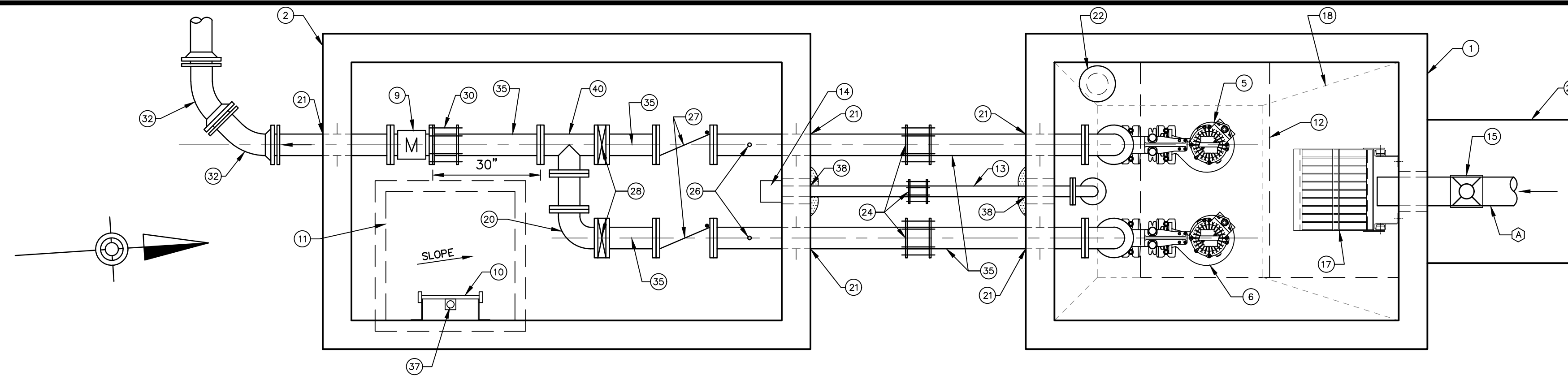
HOWE TOWNSHIP MUNICIPAL AUTHORITY
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NEWPORT, PA 17074

PROPOSED SITE PLAN
HOWE PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

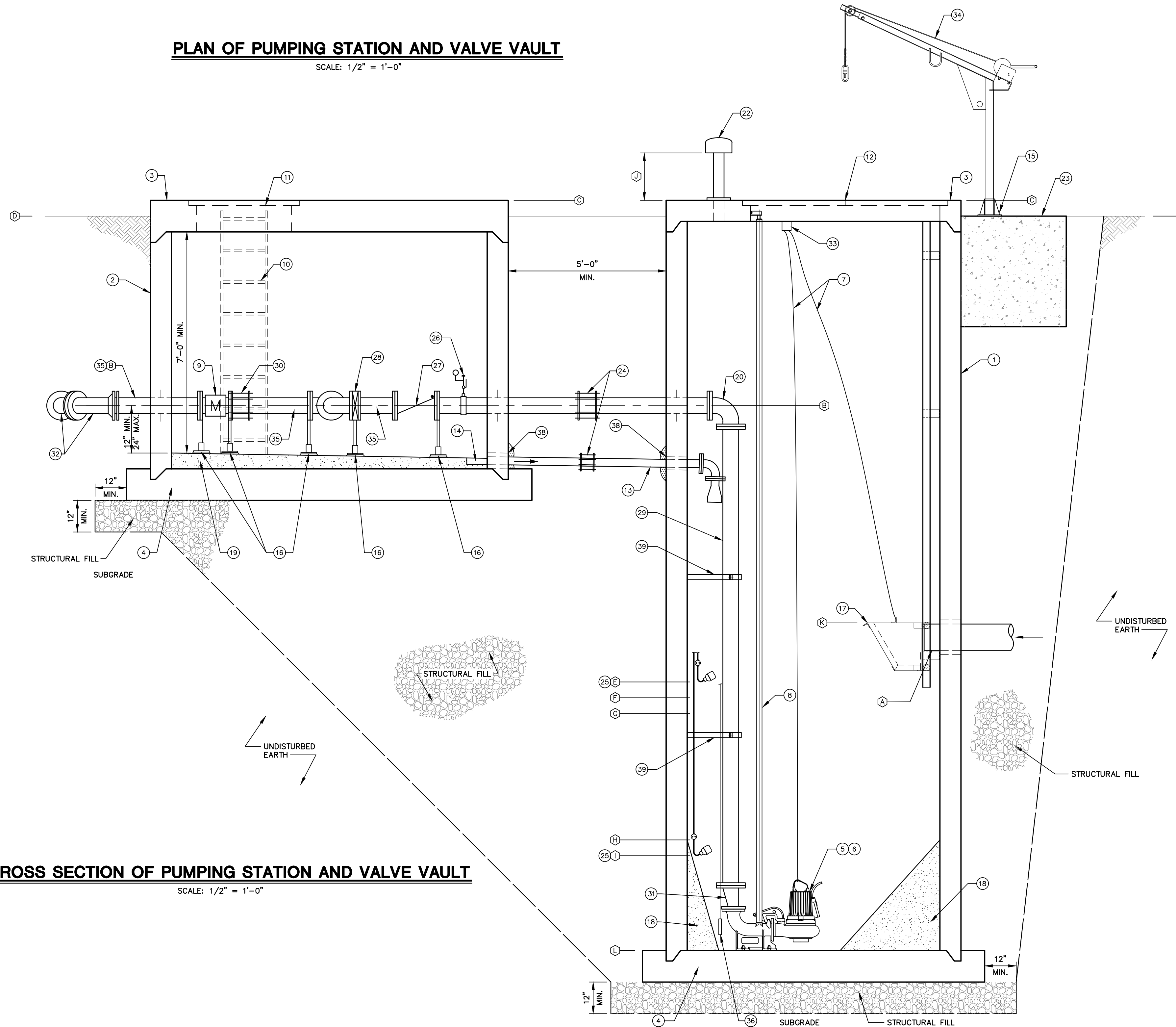
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DESIGN - WGR
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
H-5
SHEET NO.
48 OF 60
PROJECT 005100.0434



PLAN OF PUMPING STATION AND VALVE VAULT

SCALE: 1/2" = 1'-0"



CROSS SECTION OF PUMPING STATION AND VALVE VAULT

SCALE: 1/2" = 1'-0"

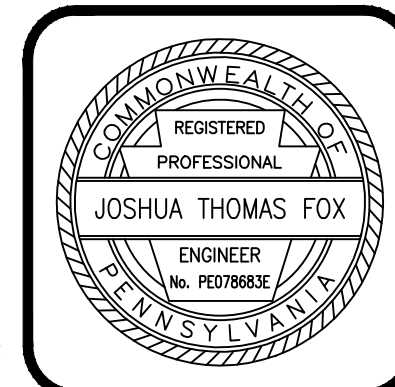
DESIGN SCHEDULE		
DESIGNATION	DESCRIPTION	HOWE PUMP STATION
(A)	10"Ø DIP INFLUENT SEWER INVERT ELEV	384.50'
(B)	6"Ø PUMP HEADER/DISCHARGE FORCE MAIN C/L ELEV	392.75'
(C)	TOP OF CHAMBERS	399.25'
(D)	FINISH GRADE	398.75'
(E)	HIGH WATER ALARM FLOAT ELEV	383.50'
(F)	LAG PUMP ON TRANSDUCER ELEV	383.00'
(G)	LEAD PUMP ON TRANSDUCER ELEV	382.50'
(H)	BOTH PUMPS OFF TRANSDUCER ELEV	378.50'
(I)	LOW WATER ALARM FLOAT ELEV	378.00'
(J)	VENT SCREEN HEIGHT TO BOTTOM OF CAP	18"
(K)	TOP OF TRASH BASKET	386.95'
(L)	WET WELL BOTTOM ELEV	375.00' (1)

(1) WET WELL BOTTOM ELEVATION IS BASED ON A PUMP HEIGHT OF 42" FROM THE WET WELL BOTTOM. IF SELECTED PUMP HEIGHT IS GREATER THAN DESIGNED CONDITION, REVISE WET WELL BOTTOM ELEVATION TO ACCOUNT FOR ADDITIONAL PUMP HEIGHT.

KEY NOTES

- 1 6'x8' (MINIMUM INSIDE DIMENSION) PRECAST CONCRETE WET WELL
- 2 10'x6' (MINIMUM INSIDE DIMENSION) PRECAST CONCRETE VALVE VAULT
- 3 PRECAST CONCRETE TOP
- 4 PRECAST CONCRETE INTEGRAL BASE SLAB
- 5 PUMP NO. 1
- 6 PUMP NO. 2
- 7 304 S.S. 1/4 INCH x 36 FEET WIRE ROPE WITH S.S. SWIVEL HOOK AND SWAGED BALL FITTING. ATTACH TO PUMPS/TRASH BASKET
- 8 STAINLESS STEEL PUMP GUIDE RAILS
- 9 6" ELECTRO-MAGNETIC FLOW METER
- 10 ALUMINUM OR FRP LADDER
- 11 36"x36" SINGLE LEAF ALUMINUM HATCH WITH FLUSH TYPE HANDLE AND LOCK. LOCK TO BE PAD LOCKABLE.
- 12 72"x60" DOUBLE LEAF ALUMINUM HATCH WITH FLUSH TYPE HANDLE AND LOCK. LOCK TO BE PAD LOCKABLE.
- 13 3" DI DRAIN WITH MINIMUM 1.00% SLOPE TO WET WELL AND DUCKBILL CHECK VALVE.
- 14 4" DEEP x 6" SQ. SUMP - CONTRACTOR SHALL SLOPE FLOOR TOWARDS DRAIN
- 15 DAVIT CRANE PEDESTAL BASE
- 16 S.S. PIPE SUPPORT
- 17 S.S. TRASH BASKET AND S.S. GUIDERAILS, MOUNTING BRACKETS AND SPACERS PER MANUFACTURER'S RECOMMENDATIONS.
- 18 CONCRETE FILLET UP TO PUMP OFF ELEVATION
- 19 CONCRETE FILL SLOPED TO SUMP
- 20 6" DI 90° BEND
- 21 6" DI RESTRAINED WALL SLEEVE
- 22 4" PVC FLANGE BASE VENT W/ BIRD SCREEN AND CARBON CARTRIDGE.
- 23 DAVIT CRANE FOUNDATION
- 24 FLEXIBLE COUPLING
- 25 FLOAT SWITCH
- 26 1" TAP WITH SADDLE, S.S. BALL VALVE, 1" Ø S.S. PIPE, 1" ISOLATION RING WITH PRESSURE GAUGE AND CAP. MOUNT GAUGE IN VERTICAL POSITION.
- 27 6" CHECK VALVE
- 28 6" KNIFE GATE VALVE
- 29 6" DIP PUMP HEADER PIPE
- 30 RESTRAINED FLANGE ADAPTER
- 31 6"x4" DIP ECCENTRIC REDUCER
- 32 6" DI 45° MJxPE FITTING
- 33 WIRE ROPE KEEPER
- 34 PORTABLE DAVIT CRANE
- 35 6"Ø DIP DISCHARGE PIPE
- 36 SUBMERSIBLE PRESSURE TRANSDUCER WITH WEIGHT
- 37 ALUMINUM LADDER SAFETY POST
- 38 LINK SEAL W/ GROUT COVER
- 39 WALL MOUNTED S.S. PIPE SUPPORT
- 40 6" DI TEE

NO.	REVISION	DATE	BY



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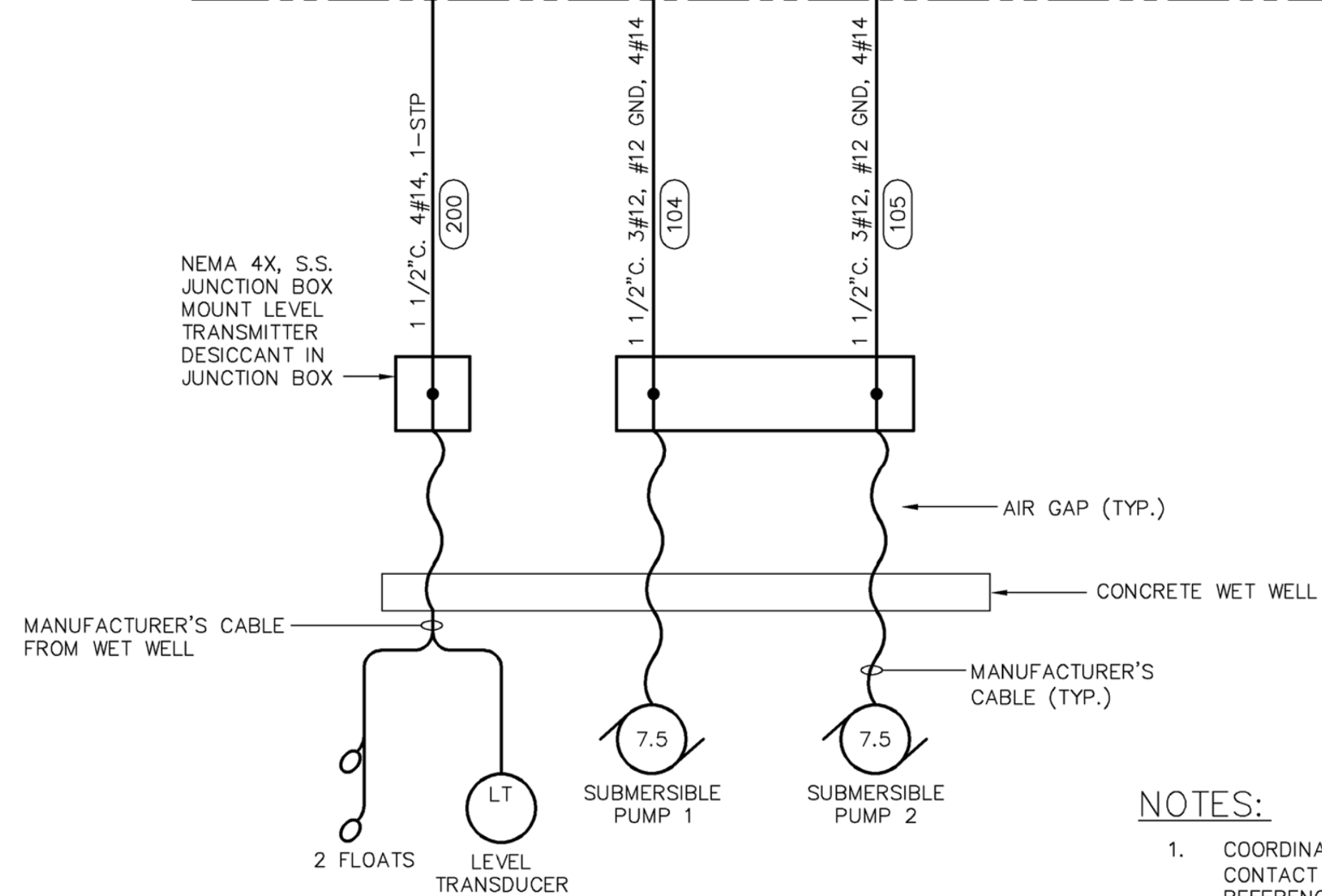
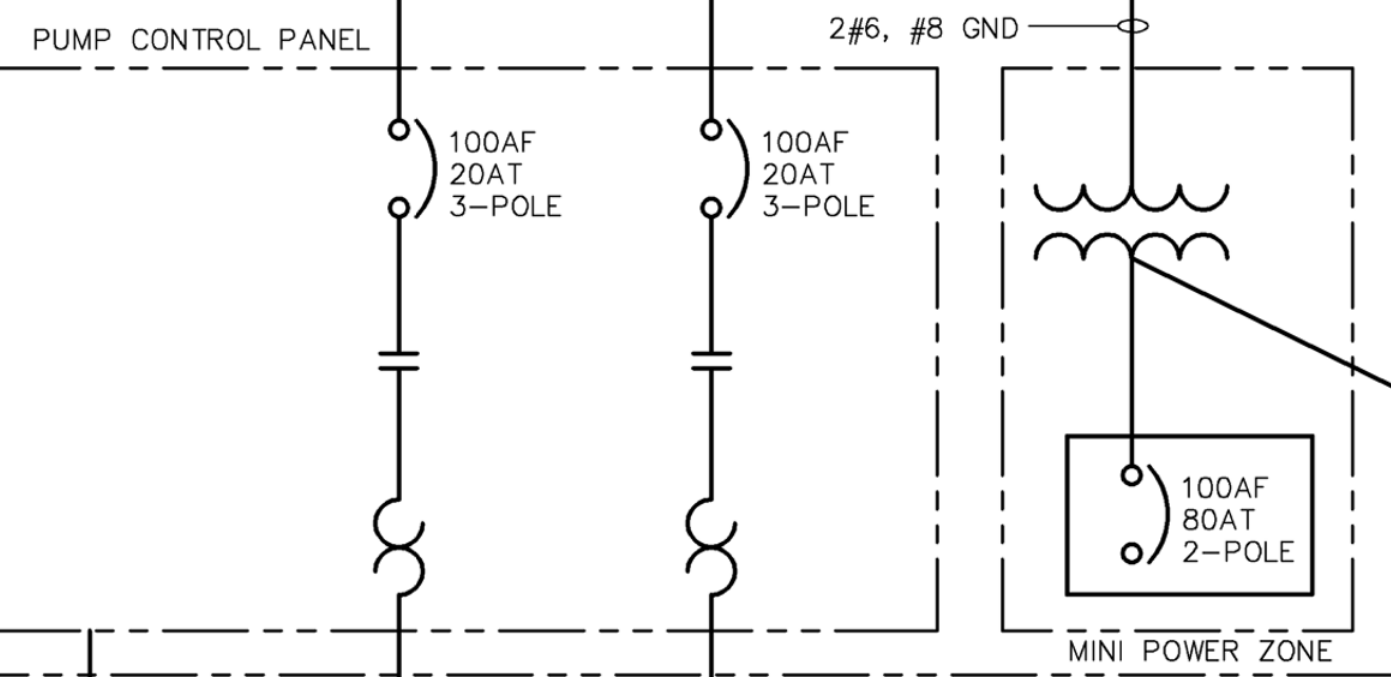
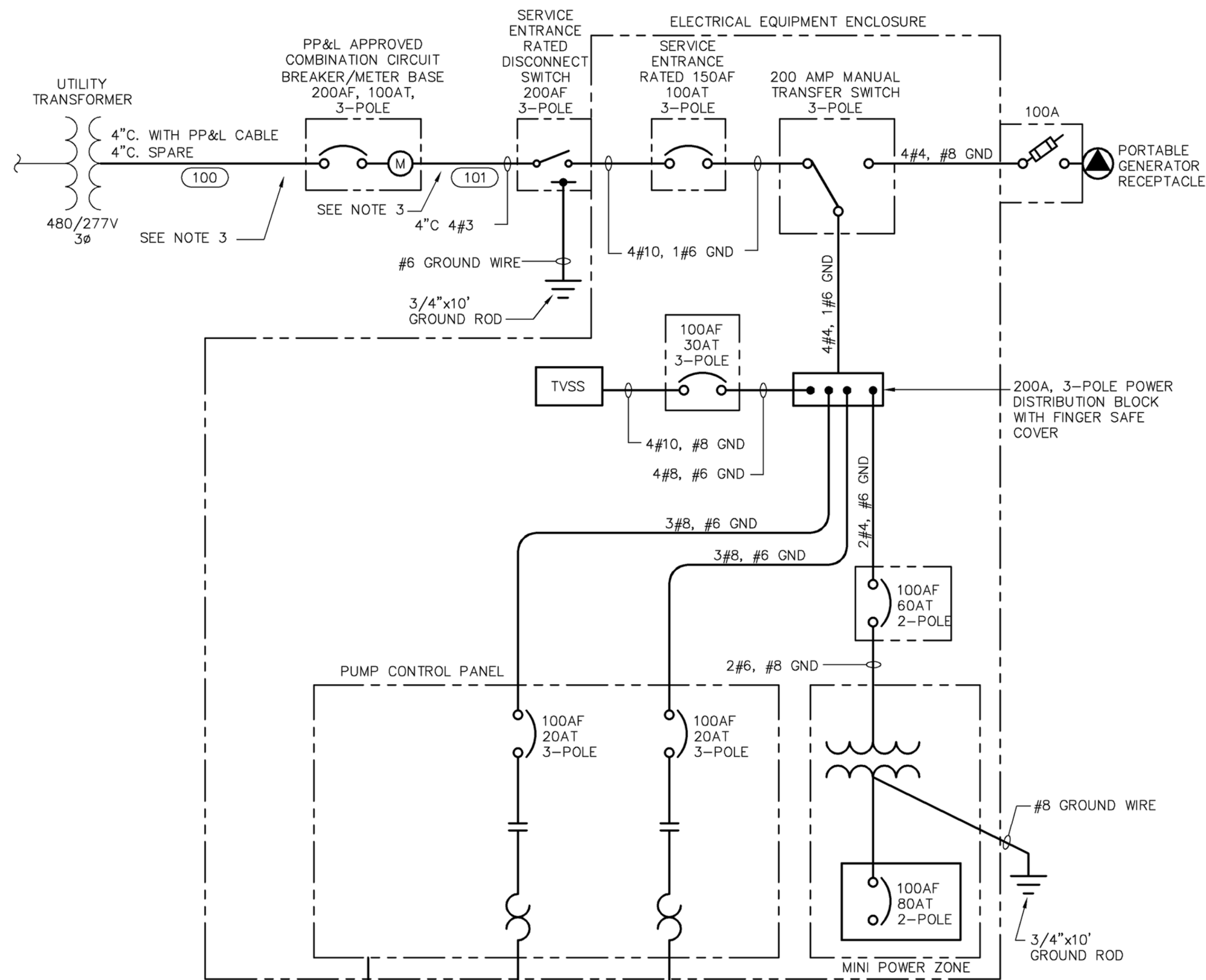
HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

**PLAN AND CROSS SECTION
HOWE PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION**

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- WGR
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO. H-6
SHEET NO. 49 OF 60
PROJECT 005100.0434

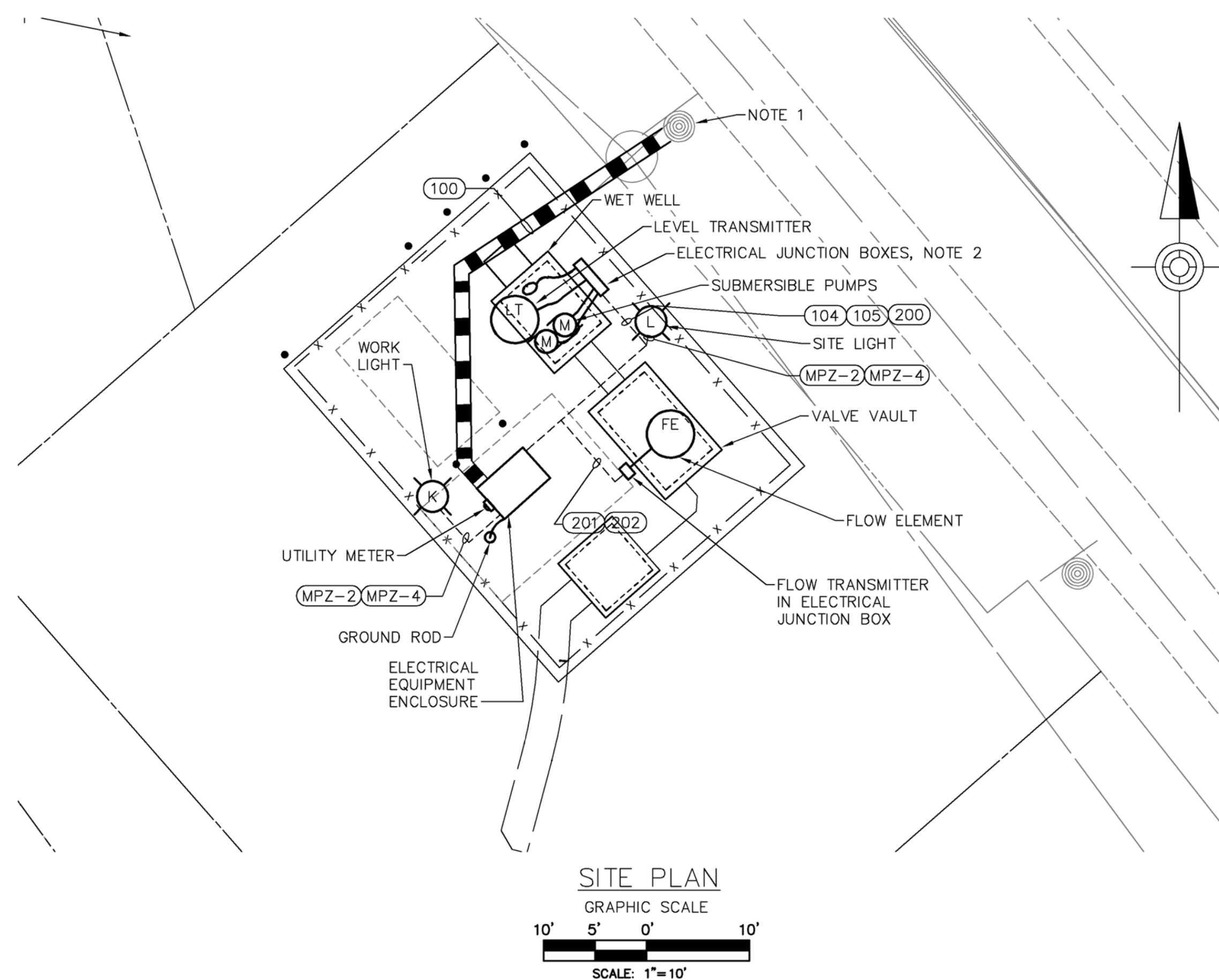


SINGLE LINE DIAGRAM
N.T.S.

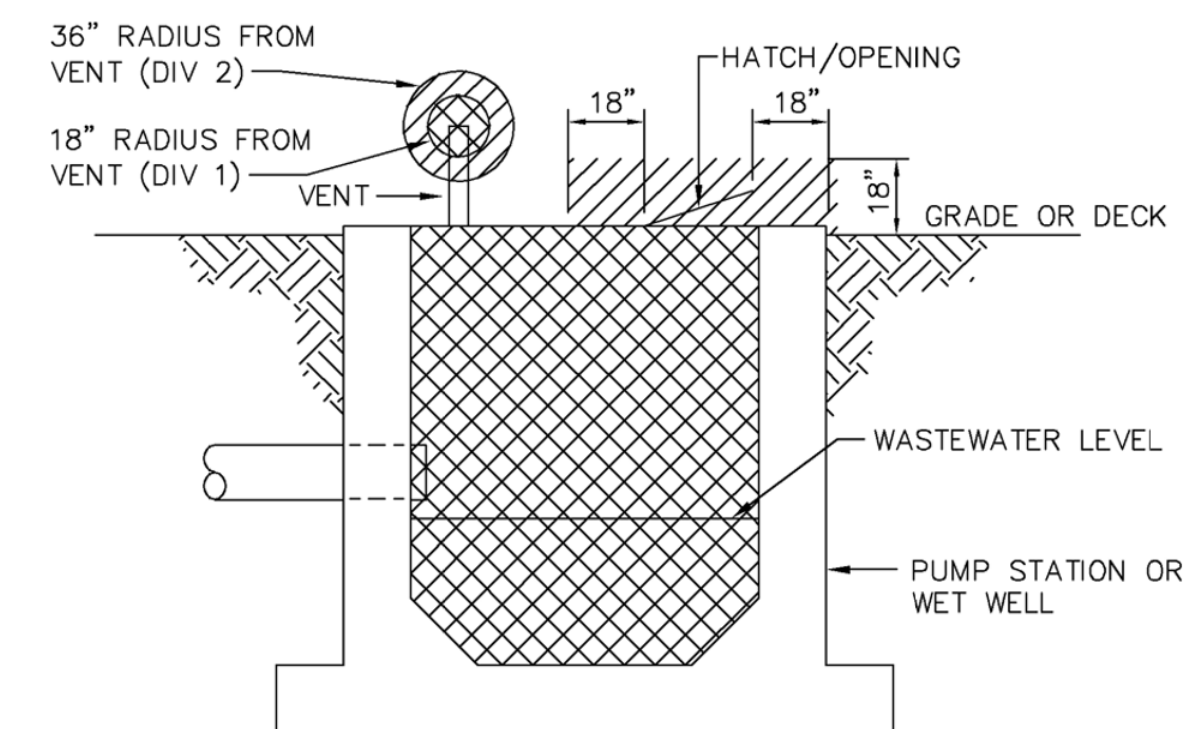
LEGEND:

—	EXISTING
—	NEW
- - -	UNDERGROUND CONDUIT
▬▬▬	UNDERGROUND DUCTBANK

- NOTES:**
- COORDINATE WITH PP&L FOR SERVICE CONNECTION. CONTACT STEVEN SELFERT PHONE (717)257-5822. REFERENCE WORK ORDER NUMBER 58030030.
 - JUNCTION BOXES SHALL BE LOCATED AT LEAST 5' FROM ANY VENT.
 - PROVIDE PVC COATED GALVANIZED STEEL CONDUIT FOR ELECTRICAL SERVICE ENTRANCE.

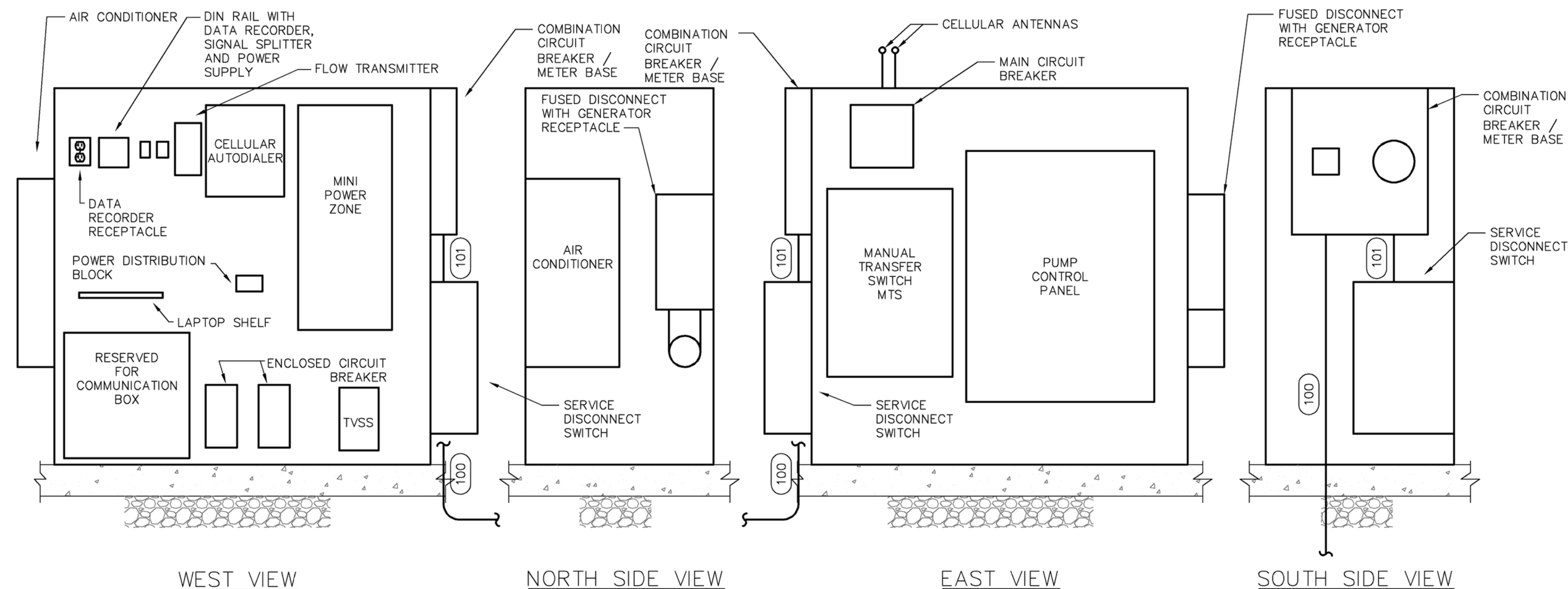


SITE PLAN
GRAPHIC SCALE
SCALE: 1"=10'



▨	CLASS 1, DIVISION 1
▧	CLASS 1, DIVISION 2
□	UNCLASSIFIED

NFPA 820 RATING DETAIL
N.T.S.



ELECTRICAL EQUIPMENT ENCLOSURE SECTION
SCALE: N.T.S.

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ELECTRICAL SITE PLAN AND SINGLE LINE DIAGRAM
HOWE PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- RH
CADD- CJB/KDR
CHECKED-PLS
SCALE- AS NOTED
DATE-FEBRUARY 2019

DRAWING NO.
E-05
SHEET NO.
50 OF 60
PROJECT 005100.0434

NO.	REVISION	DATE	BY

SERVICE ENTRANCE NOTES:

CONTRACTOR RESPONSIBILITIES:

- C1. PROVIDE THE TRENCHING, DUCTBANK AND BACKFILLING, PER PP&L REQUIREMENTS AND SPECIFICATIONS.
- C2. PROVIDE (2) 4" SCHEDULE 40 ELECTRICAL GRADE CONDUITS IN DUCTBANK. 1/4" NYLON PULL ROPE IS TO BE INSTALLED IN CONDUIT. 90 DEGREE PVC COATED CONDUIT WITH SWEEP BENDS AT EACH END.
- C3. INSTALL SERVICE ENTRANCE CIRCUIT BREAKER AS PER ELECTRIC UTILITY REQUIREMENTS.
- C4. PROVIDE AND INSTALL METER BASE PER ELECTRIC UTILITY REQUIREMENTS.
- C5. PROVIDE CONDUCTORS BETWEEN SERVICE CIRCUIT BREAKING AND METER BASE.
- C5. PROVIDE AND INSTALL LABELS PER PP&L REQUIREMENTS AND SPECIFICATIONS.

POWER UTILITY RESPONSIBILITIES:

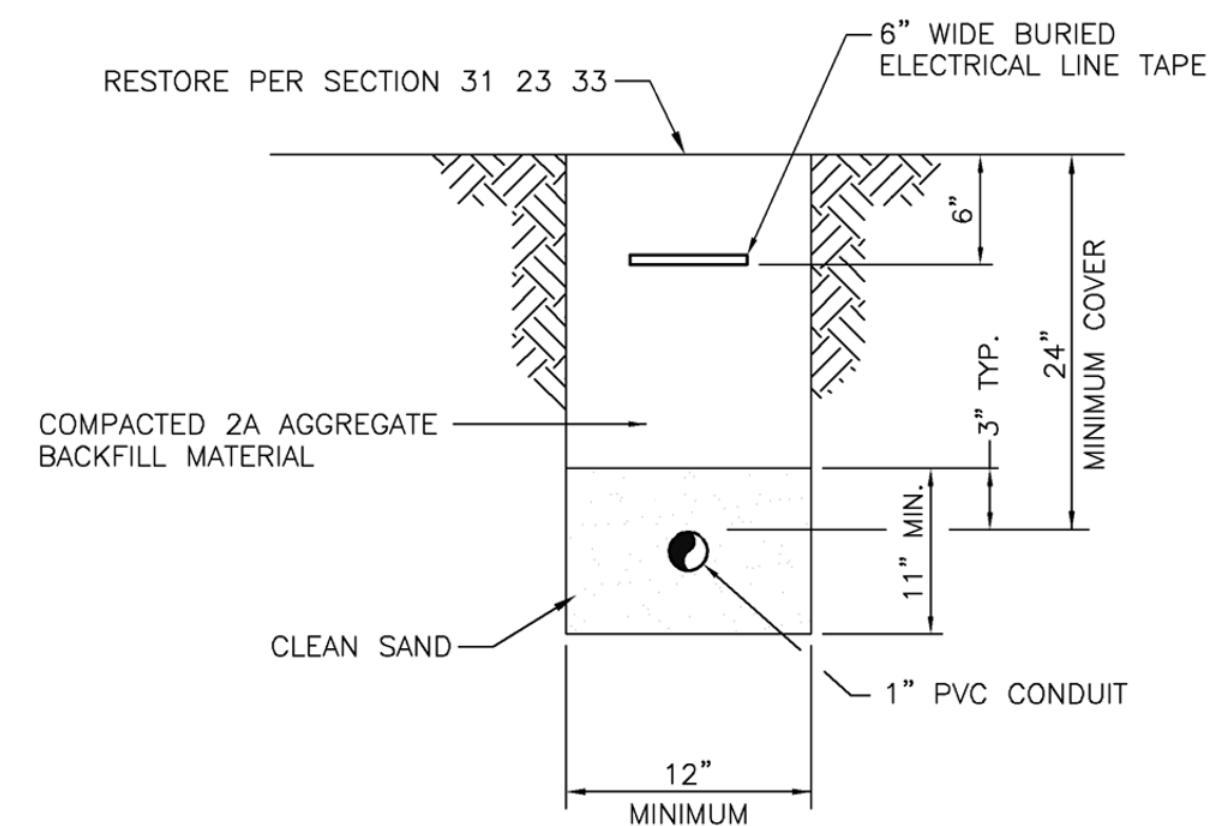
- U1. PROVIDE AND INSTALL METER IN CONTRACTOR SUPPLIED METER BASE.
- U2. PROVIDE AND INSTALL AND CONNECT ALL PRIMARY CONDUCTORS.

120/240 V. 1 PHASE 60HZ 3 WIRE MINI POWER PANEL MPZ SCHEDULE										
SERVICE	C/B	KWATTS	SIZE	A	B	N	SIZE	KWATTS	C/B	SERVICE
ELECTRICAL ENCLOSURE AC	20A		1					2	20A	POLE LIGHTS
ELECTRICAL ENCLOSURE HEATER	20A		3					4	20A	POLE RECEPTACLES
AUTO DIALER	20A		5					6	20A	PANEL RECEPTACLE
FLOW TRANSMITTER	20A		7					8	20A	COMMUNICATIONS BOX
POWER SUPPLY	20A		9					10	20A	DATA RECORDER

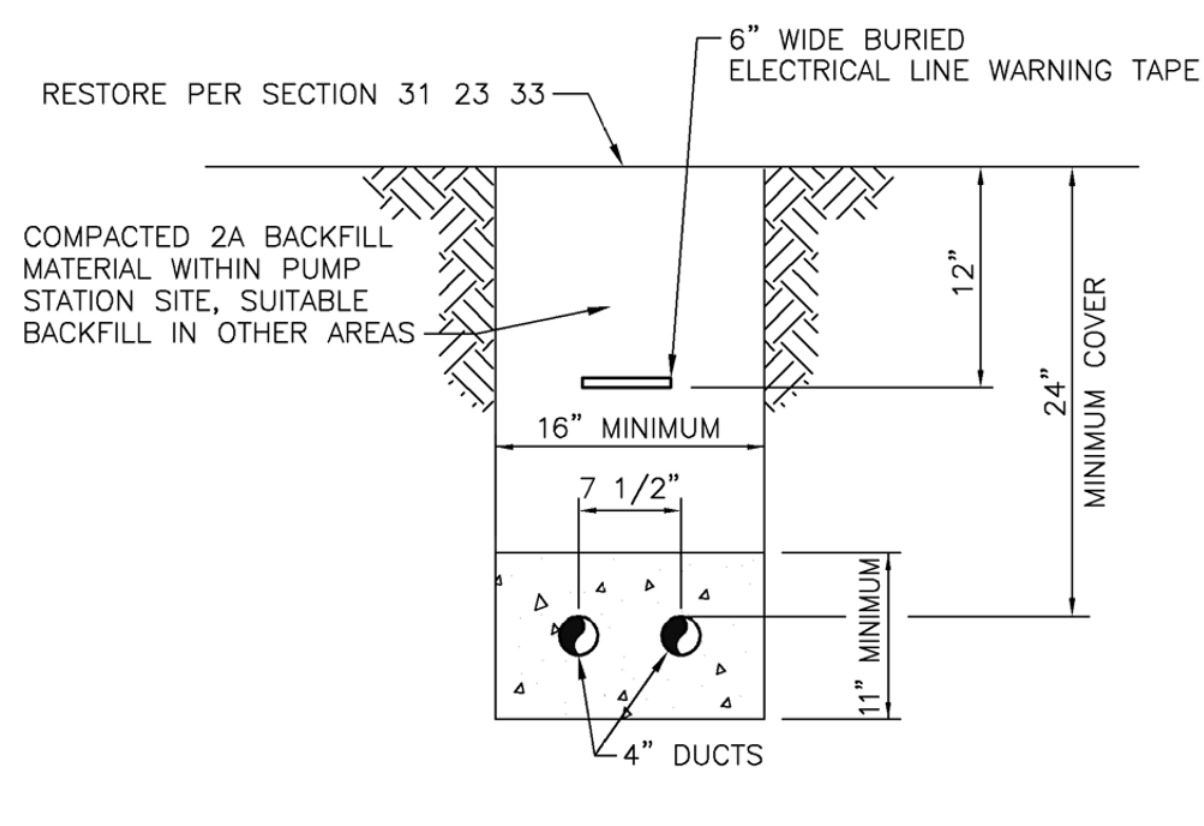
PANEL MTD: SURFACE		TYPE: MPZ	
MANUFACTURER: SQUARE 'D'	MAIN LUGS: _____	PANEL LOADING SCHEDULE	
MAIN BREAKER: 80A	FEEDER ENTRY: _____	PHASE	WATTS (KW)
FEEDER SIZE: _____	ENCLOSURE: _____	A	1.34
BRANCH BREAKERS		B	2.00
NO.	POLES	AMPS.	CONNECTED LOAD
			SPARE
			TOTAL LOAD
			5.34

SEE NOTE 1
SEE NOTE 1
SEE NOTE 1
SEE NOTE 3
SEE NOTE 1

SEE NOTE 2
SEE NOTE 2
SEE NOTE 1
SEE NOTE 1
SEE NOTE 1



ELECTRICAL CONDUIT TRENCH DETAIL
SCALE: N.T.S.



CONCRETE ENCASED ELECTRICAL DUCTBANK DETAIL
N.T.S.

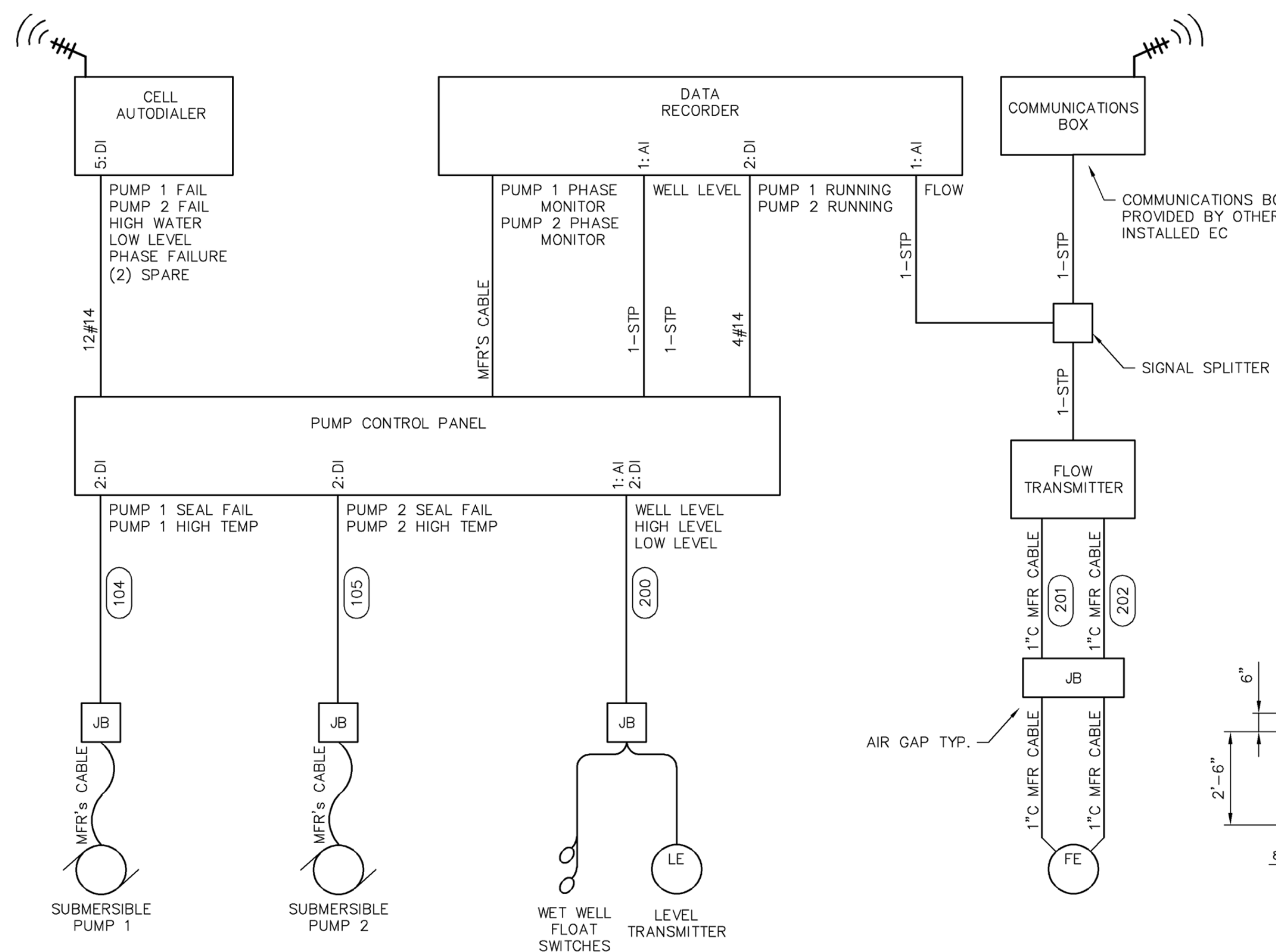
TYPE	MANUFACTURER AND SERIES	DESCRIPTION	VOLTS	REMARKS
L	SPAULDING CIMARRON SERIES SERIES: CR1 SPAULDING SERIES: ALUMINUM POLE	POLE MOUNTED AREA LIGHT, DIE-CAST ALUMINUM HOUSING, ARM MOUNT, 30 LEDS, UNIVERSAL VOLTAGE, 4K CCT, TYPE IV DISTRIBUTION, 700 mA DRIVE CURRENT DARK BRONZE, PROGRAMMABLE PHOTOCELL CONTROL SQUARE STRAIGHT HEAVY ALUMINUM POLE, 18' HEIGHT, 4" SHAFT, SINGLE ALUMINUM MOUNTING, 20A GFCI RECEPTACLE AND COVER, DARK BRONZE	120V.	LIGHT SWITCH IN SERIES WITH PROGRAMMABLE PHOTOCELL CONTROL ON POLE
K	SPAULDING CIMARRON SERIES SERIES: CR1 SPAULDING SERIES: ALUMINUM POLE	POLE MOUNTED AREA LIGHT, DIE-CAST ALUMINUM HOUSING, ARM MOUNT, 30 LEDS, UNIVERSAL VOLTAGE, 4K CCT, TYPE IV DISTRIBUTION, 700 mA DRIVE CURRENT DARK BRONZE. SQUARE STRAIGHT HEAVY ALUMINUM POLE, 18' HEIGHT, 4" SHAFT, SINGLE ALUMINUM MOUNTING, 20A GFCI RECEPTACLE AND COVER, DARK BRONZE	120V.	LIGHT SWITCH CONTROL ON POLE

LIGHTING FIXTURE SCHEDULE
SCALE: N.T.S.

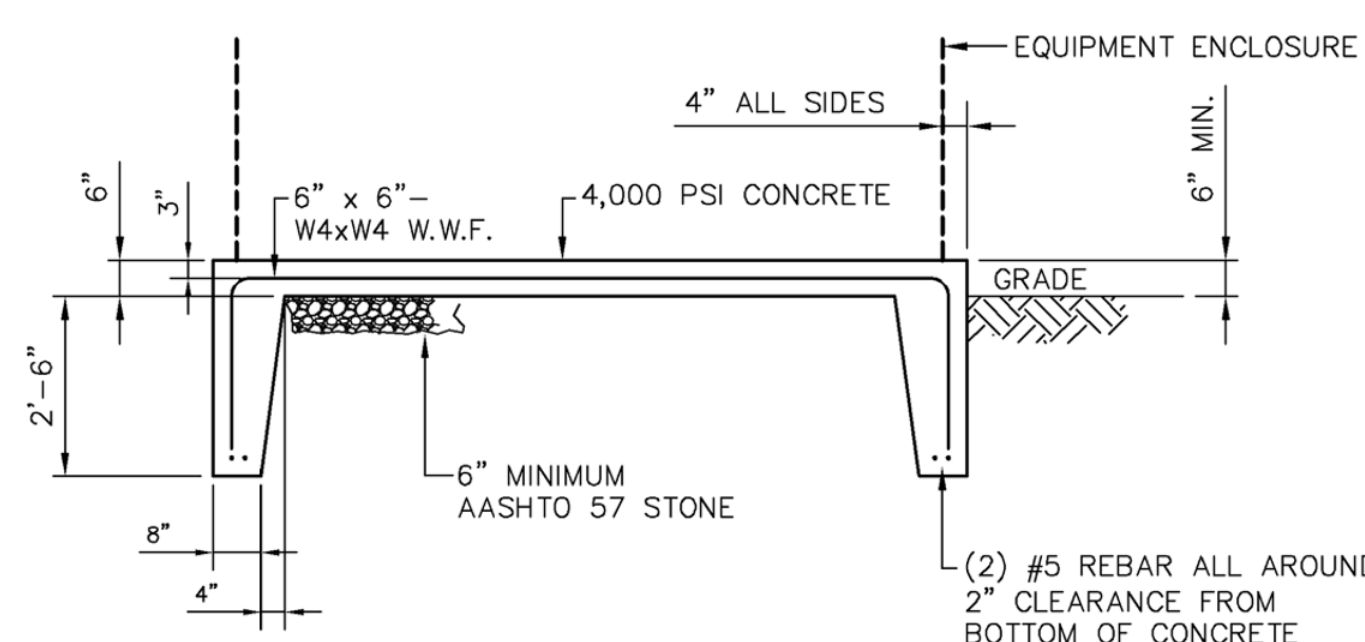
NOTES:

- 1. PROVIDE 2#12 AND #12 GND TO CONNECT TO DEVICE.
- 2. FOR EACH LIGHT PROVIDE 1" 4#12 AND #12 GND TO POLE. TWO CONDUCTORS FOR LIGHT CIRCUIT AND TWO CONDUCTORS FOR THE POLE RECEPTACLE.
- 3. PROVIDE 1" 2#12 AND #12 GND TO CONNECT TO DEVICE.

LOAD CENTER PANEL
SCALE: N.T.S.

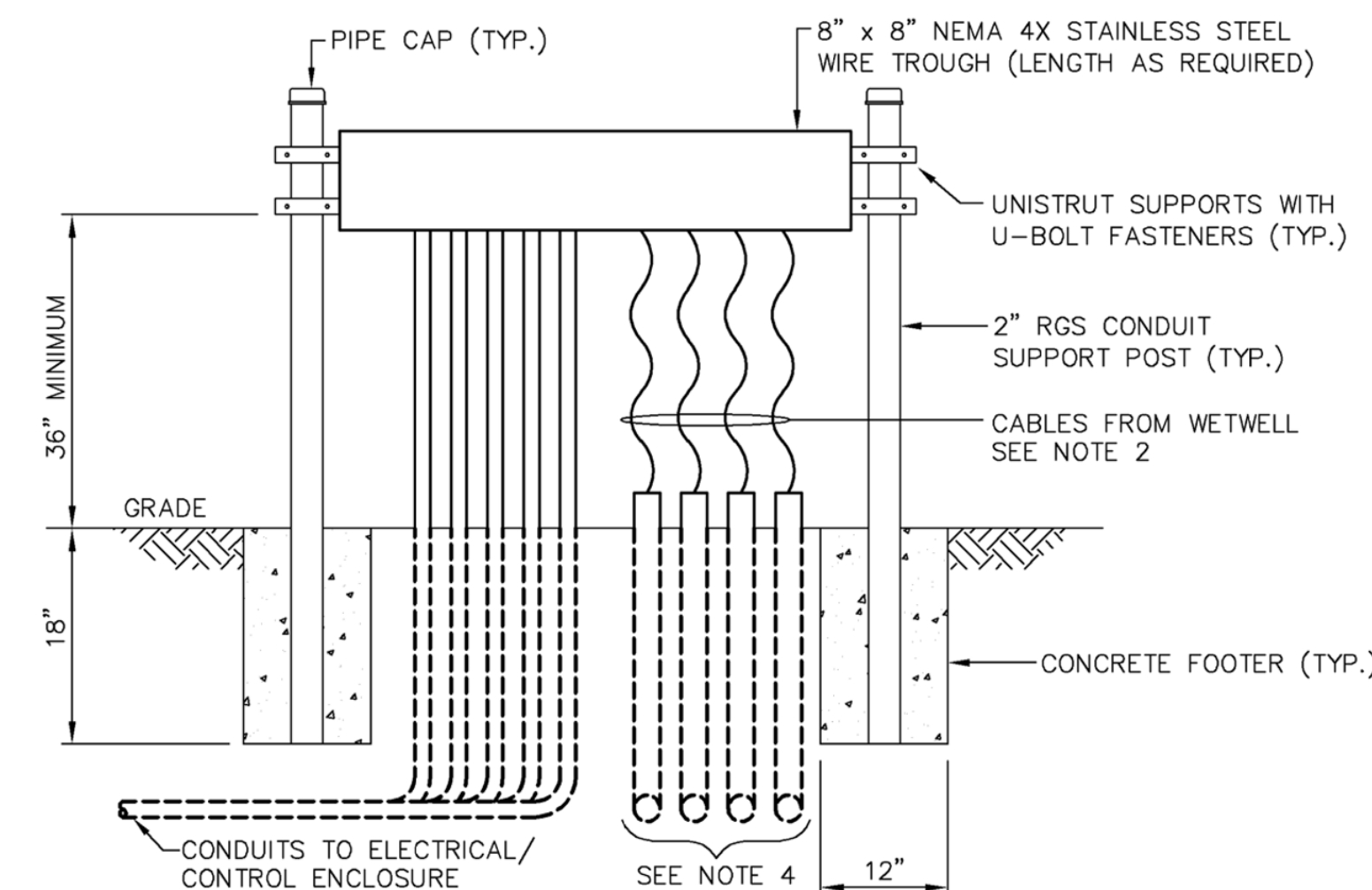


INTERCONNECTION DIAGRAM
SCALE: N.T.S.



PAD DETAIL
N.T.S.

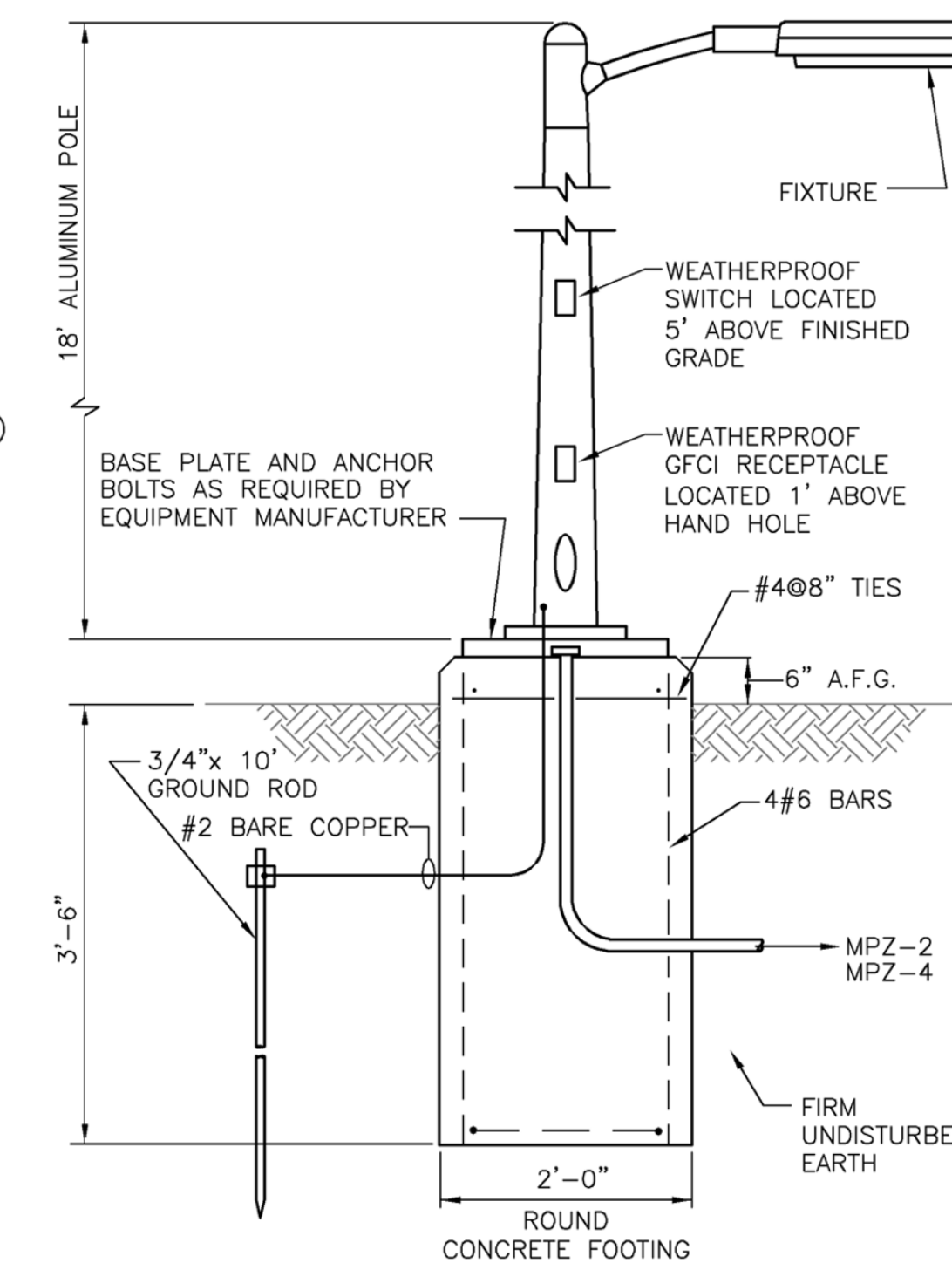
TYPICAL FOR ELECTRICAL EQUIPMENT ENCLOSURE



NOTES:

- 1. CONDUITS ARE TO BE CONTINUOUS WITH NO COUPLINGS OR FITTINGS BETWEEN THE WIRE TROUGH TO BELOW GRADE.
- 2. ENCLOSE AREA OF EXPOSED CABLES WITH TYPE 316 16 GAUGE MINIMUM PERFORATED STAINLESS STEEL ASSEMBLY WITH 1/4" DIAMETER HOLES ON 3/8" STAGGERED CENTERS. FRAME WITH SUPPORT STEEL ANGLES WITH ONE SIDE REMOVABLE FOR ACCESS TO THE CABLES. FINISH ALL EDGES SMOOTH. AREA SHALL BE COMPLETELY ENCLOSED TO PREVENT INFILTRATION OF DEBRIS AND RODENTS.
- 3. COORDINATE INSTALLATION TO ASSURE WIRING TROUGH IS LOCATED OUT OF RATED AREA. REFERENCE NFPA DETAIL ON DRAWING E-05.
- 4. PROVIDE FOUR 2" CONDUITS FROM THE TERMINATION ASSEMBLY TO THE WETWELL. SEAL PENETRATIONS INTO WETWELL WITH LINK SEAL.

TERMINATION ASSEMBLY DETAIL
N.T.S.



LIGHT STANDARD DETAIL
SCALE: N.T.S.

LEGEND:

- EXISTING
- NEW

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KEGI.NET

REGISTERED PROFESSIONAL
PHILIP L. SCHWARTZ
ENGINEER
39998-E

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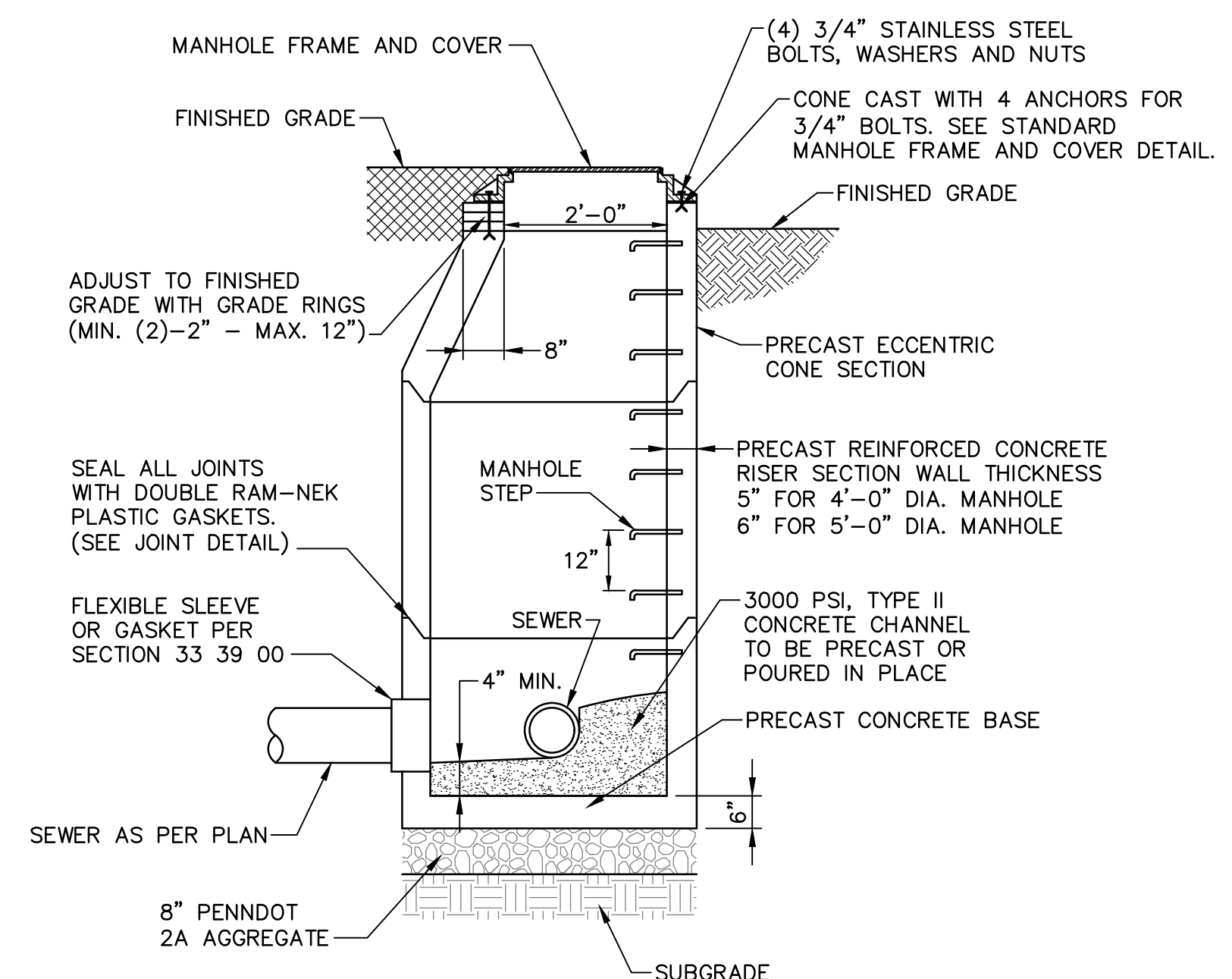
HOWE TOWNSHIP MUNICIPAL AUTHORITY
319 N. 4TH STREET
NEWPORT, PA 17074

SCHEDULES AND DETAILS
HOWE PUMP STATION
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - RH
CADD - CJB/KDR
CHECKED - PLS
SCALE - AS NOTED
DATE - FEBRUARY 2019

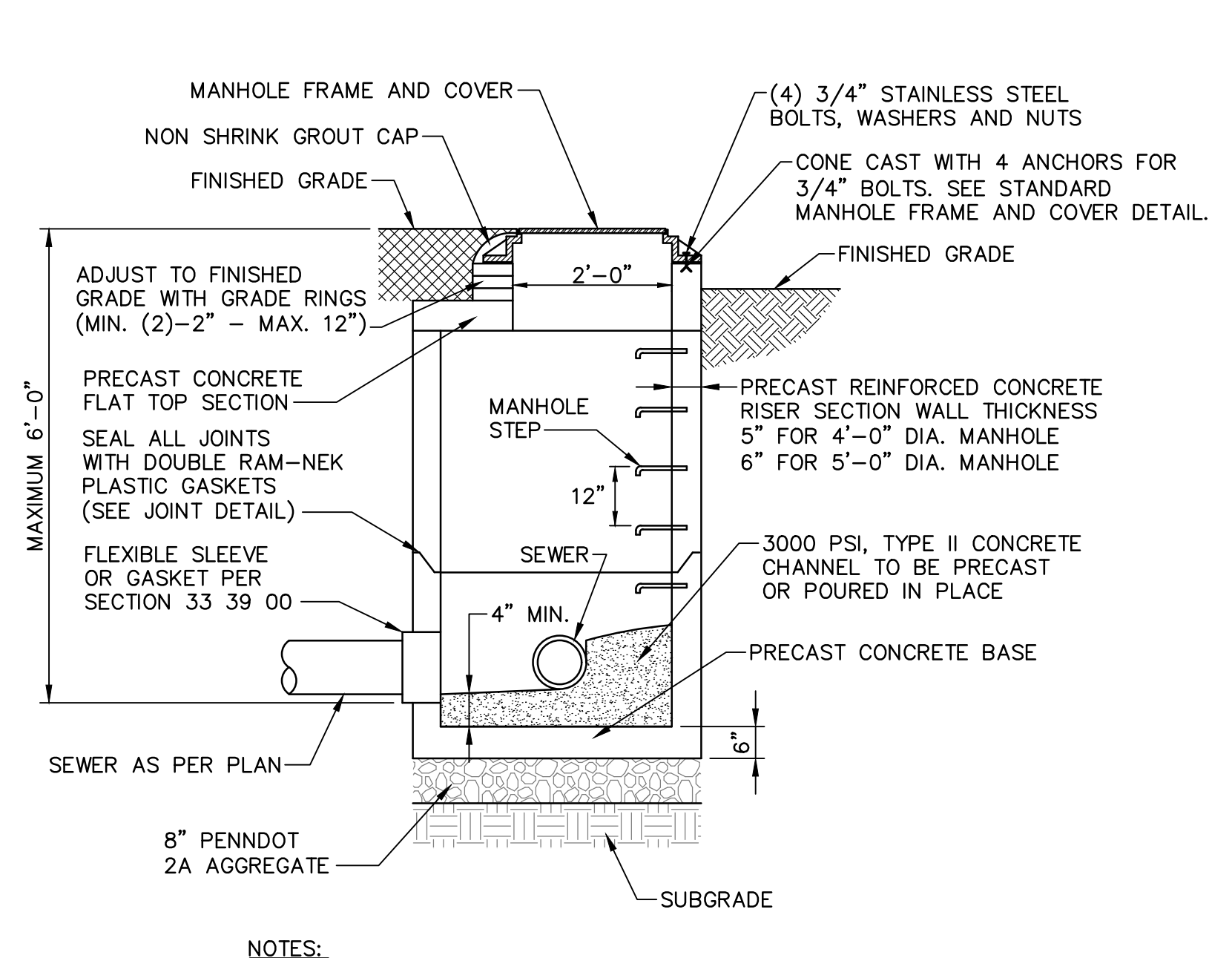
DRAWING NO.
E-06
SHEET NO.
51 OF 60
PROJECT 005100.0434

NO.	REVISION	DATE	BY



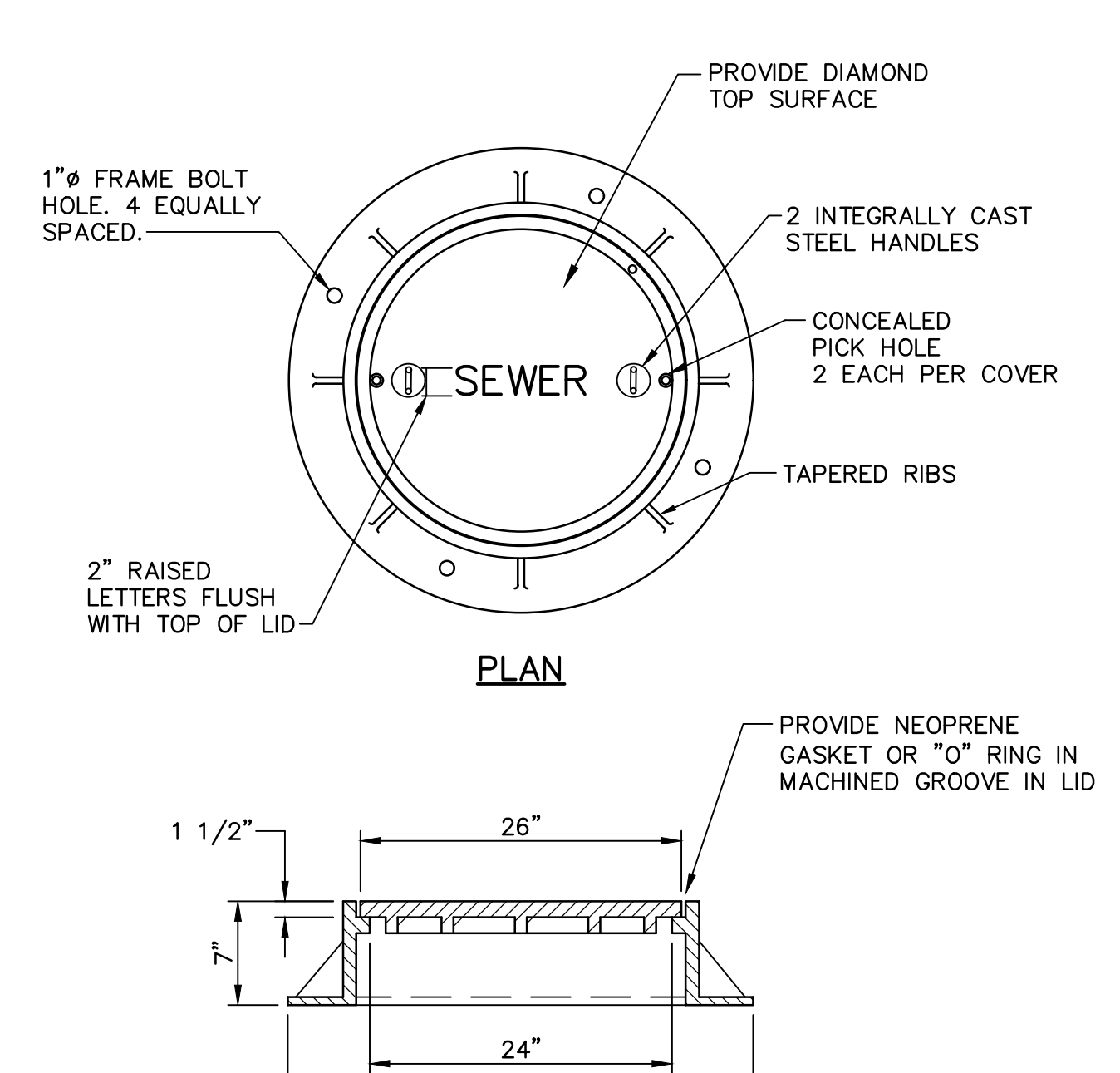
- NOTES:**
1. THE ENTIRE OUTER SURFACE OF THE MANHOLE SHALL BE COATED WITH 2 COATS COAL TAR EPOXY.
 2. MANHOLE FRAME AND COVER SHOULD BE 1/4" BELOW FINAL GRADE OF PAVEMENT.
 3. 100% COMPACTION OF MANHOLE BACKFILL REQUIRED.
 4. FLOW CHANNEL BENCH HEIGHT TO MATCH CROWN OF PIPE.

SANITARY SEWER MANHOLE DETAIL
NOT TO SCALE



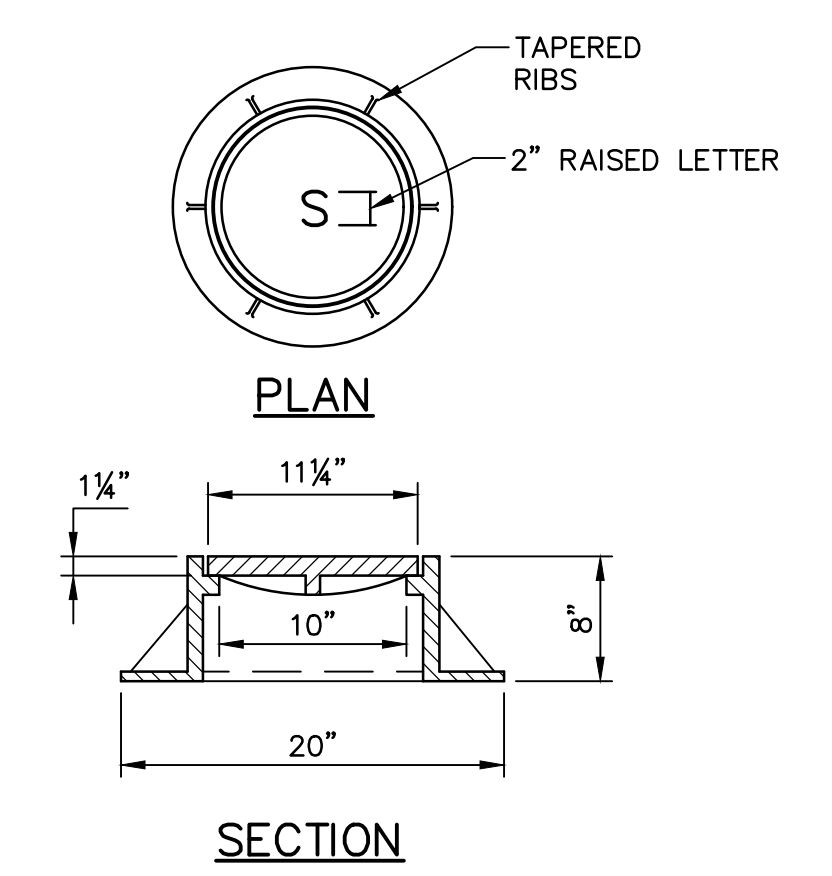
- NOTES:**
1. THE ENTIRE OUTER SURFACE OF THE MANHOLE SHALL BE COATED WITH 2 COATS COAL TAR EPOXY.
 2. MANHOLE FRAME AND COVER SHOULD BE 1/4" BELOW FINAL GRADE OF PAVEMENT.
 3. 100% COMPACTION OF MANHOLE BACKFILL REQUIRED.
 4. FLOW CHANNEL BENCH HEIGHT TO MATCH CROWN OF PIPE.

SHALLOW SANITARY SEWER MANHOLE DETAIL
NOT TO SCALE



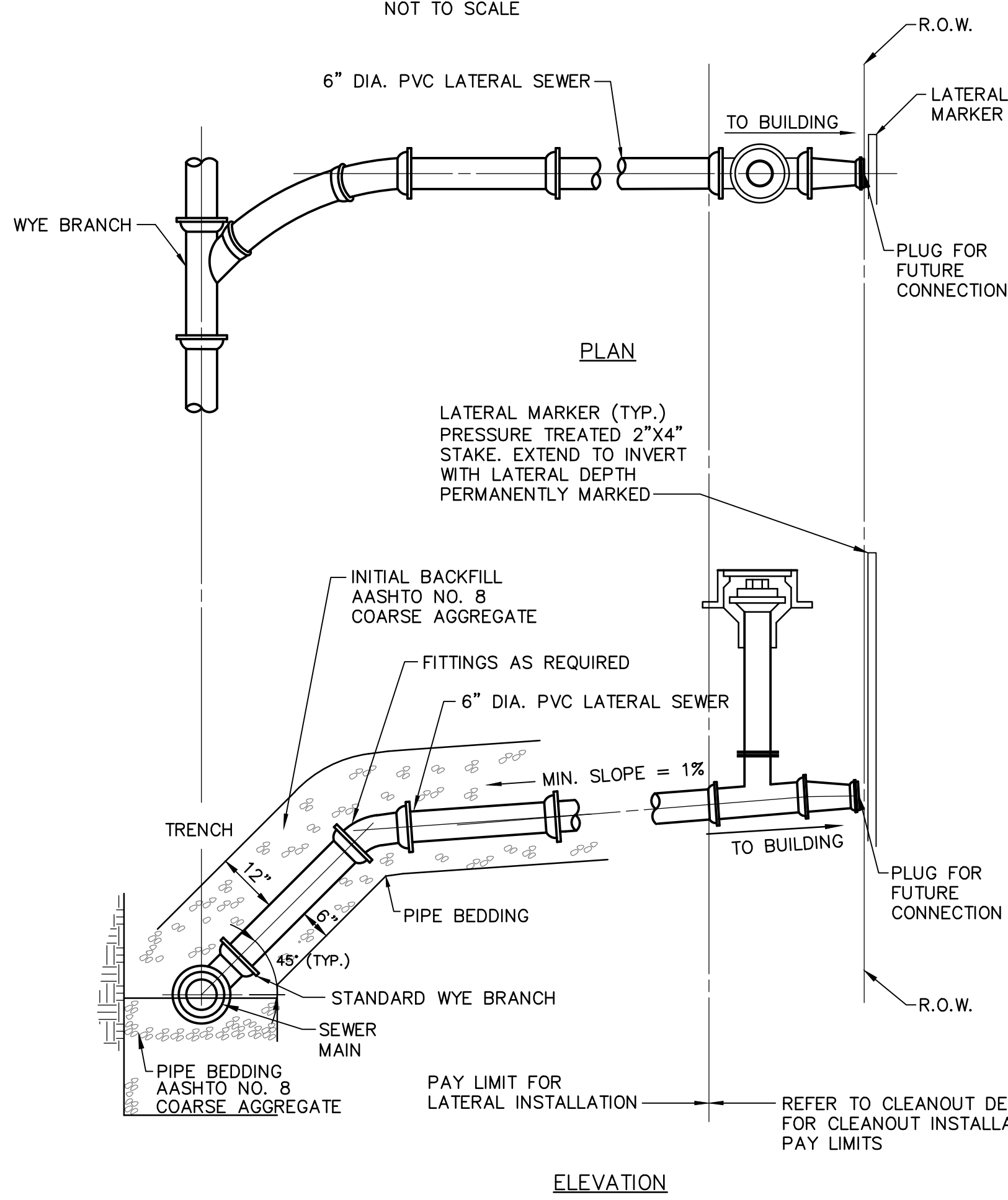
- NOTES:**
1. BEARING SURFACES OF FRAME AND COVER SHALL BE MACHINED.

STANDARD MANHOLE FRAME AND COVER
NOT TO SCALE



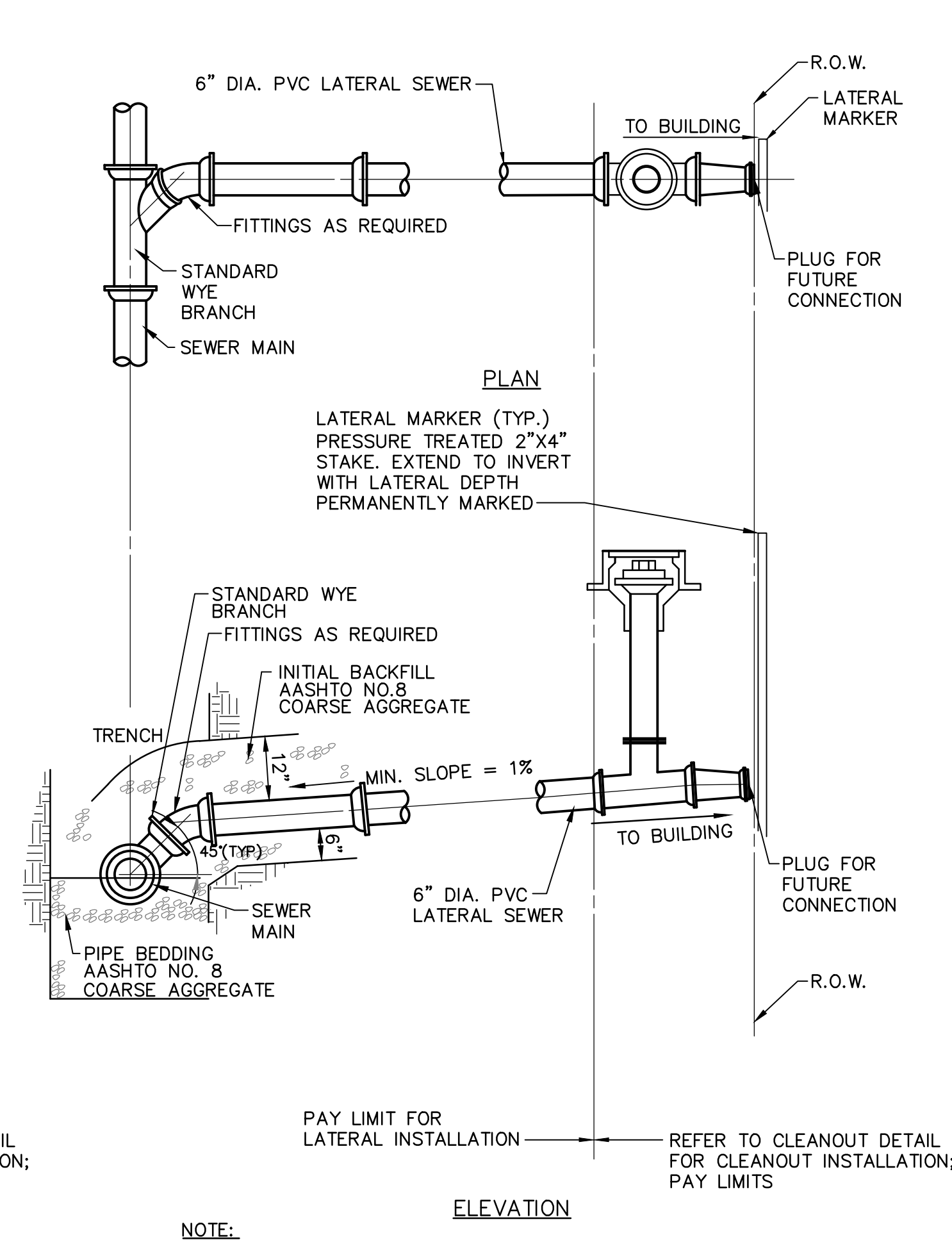
- NOTES:**
1. LABEL COVER "S" OR "SEWER"

STANDARD CLEANOUT FRAME AND COVER
NOT TO SCALE



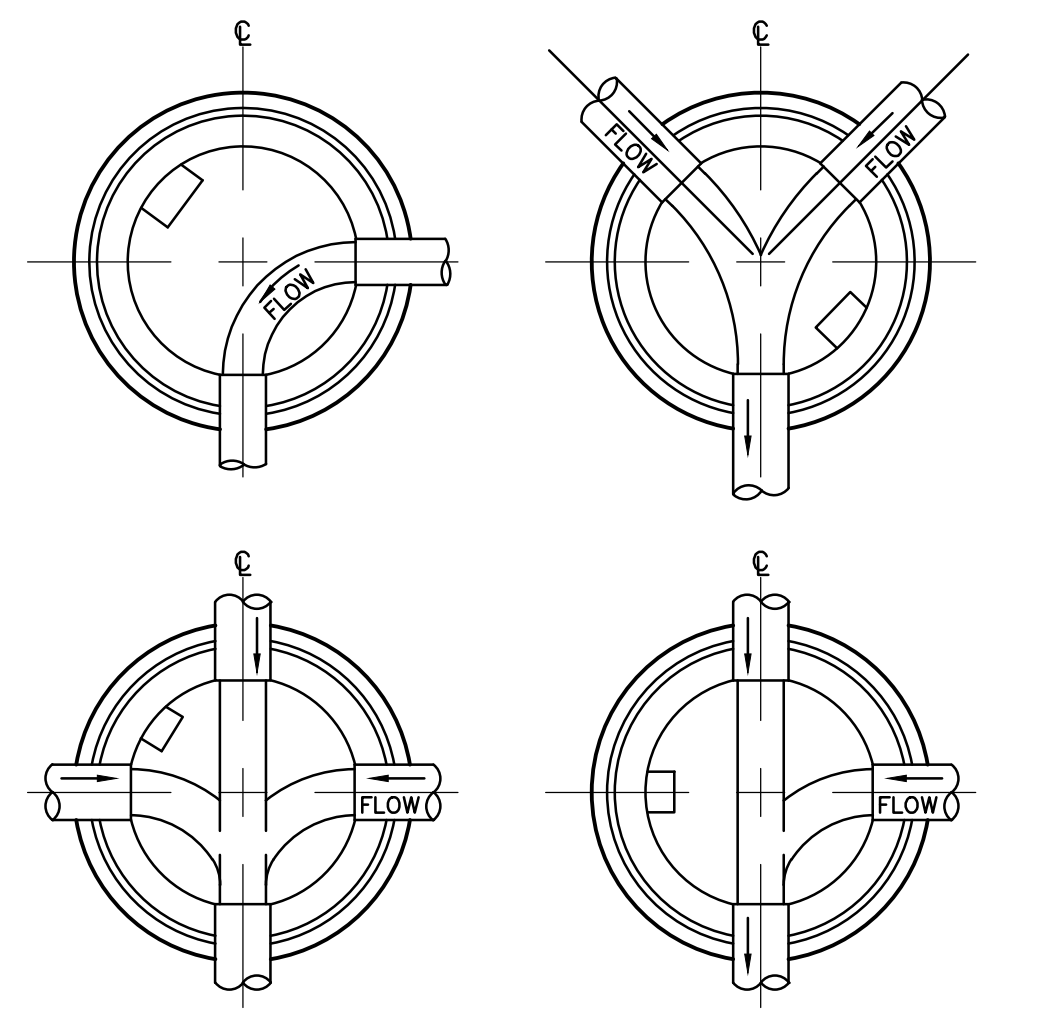
NOTE:
METHOD OF LATERAL INSTALLATION (STANDARD OR SLOPED RISER) TO BE DETERMINED IN THE FIELD BASED ON DEPTH NEEDED FOR SERVICE CONNECTION

SLOPED RISER LATERAL DETAIL
NOT TO SCALE



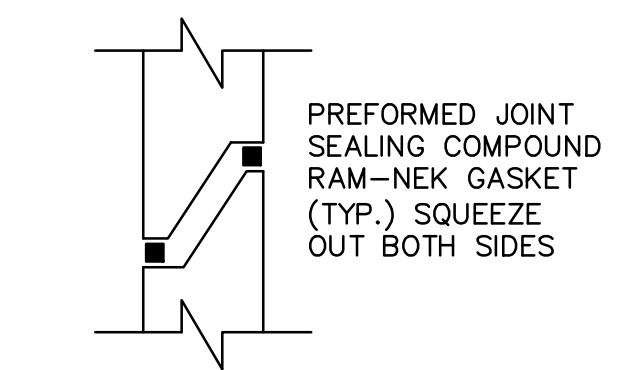
NOTE:
METHOD OF LATERAL INSTALLATION (STANDARD OR SLOPED RISER) TO BE DETERMINED IN THE FIELD BASED ON DEPTH NEEDED FOR SERVICE CONNECTION

STANDARD LATERAL DETAIL
NOT TO SCALE

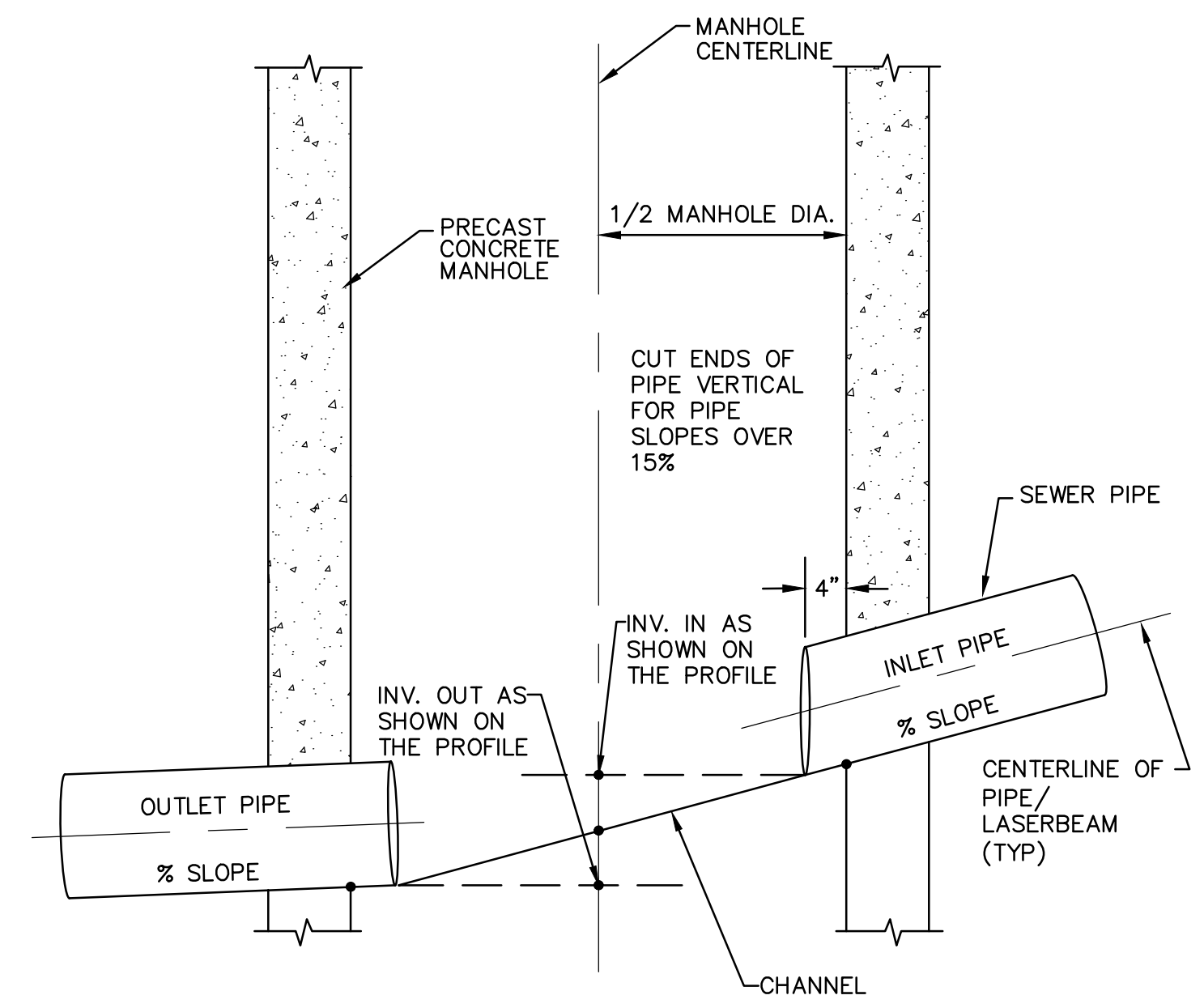


- NOTES:**
1. ALL BENCHES FOR NEW MANHOLES SHALL SLOPE A MINIMUM OF 2" PER FOOT TOWARD FLOW CHANNEL.
 2. FOR EXISTING MANHOLES, RECONSTRUCT CHANNELS TO PERMIT UNOBSTRUCTED FLOWS TO THE OUTLET PIPE. LAYOUT OF THE RECONSTRUCTED FLOW CHANNELS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 33 39 00 AND THIS DETAIL.

TYPICAL MANHOLE CHANNELS DETAIL
NOT TO SCALE

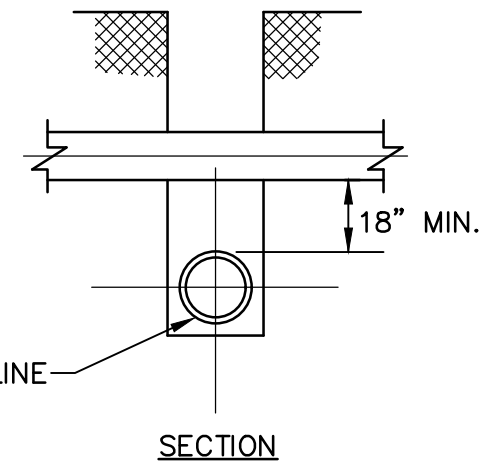


JOINT DETAIL
NOT TO SCALE



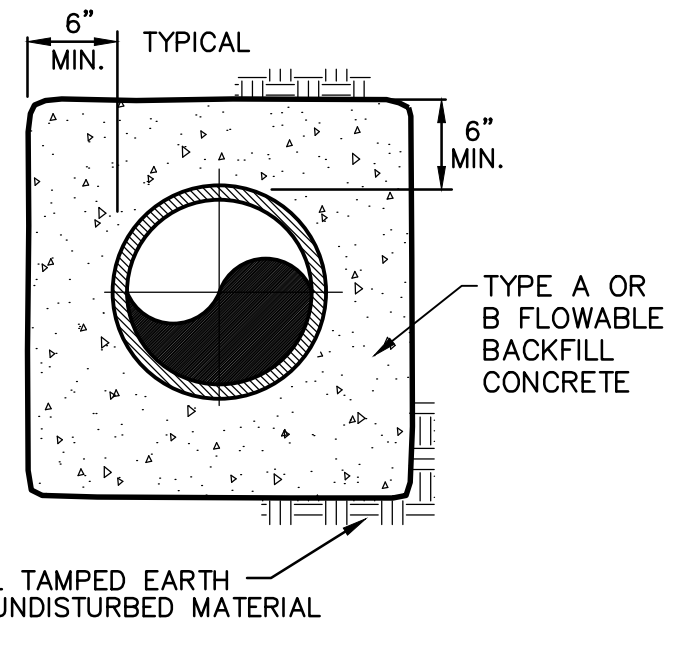
- NOTES:**
1. INLET & OUTLET INVERT ELEVATIONS ARE TO THE CENTER OF THE MANHOLE.
 2. PROFILE DISTANCE AND SLOPE ARE FROM CENTERLINE OF MANHOLE. SLOPE TO BE ADJUSTED AS REQUIRED IN FIELD TO MAINTAIN CENTERLINE INVERT IN AND OUT.
 3. FOR EXISTING MANHOLES, WHEN EX INV IS NOT SPECIFIED AS OUT OR IN, ELEVATION IS AT CENTER OF MANHOLE.

MANHOLE INVERT DETAIL
NOT TO SCALE



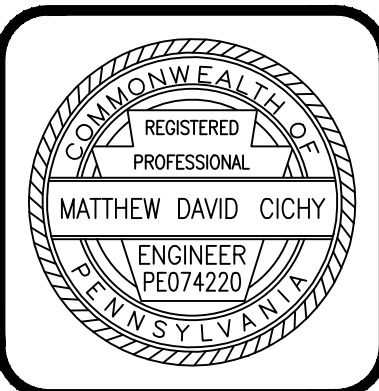
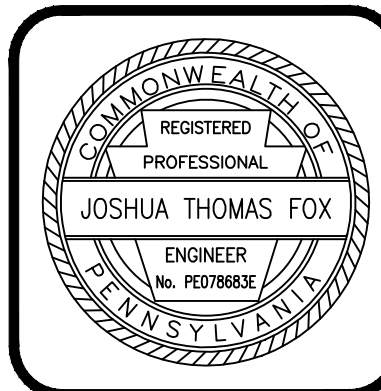
- NOTES:**
1. IF JOINT ON WATER MAIN IS WITHIN LIMITS OF SANITARY SEWER TRENCH INSTALL MECHANICAL BELL JOINT CLAMP.
 2. IF CLEARANCE IS LESS THAN 18", CONCRETE ENCASE SANITARY SEWER PIPE 10 FT. EACH SIDE OF WATER MAIN. TO BE PAID AT UNIT PRICE BID PER CUBIC YARD OF CONCRETE.
 3. IN NO CASE SHALL THE SANITARY SEWER PIPE CONTACT ANY WATER MAIN, SERVICE LINE OR APPURTENANCE.

VERTICAL WATER MAIN CLEARANCE
NOT TO SCALE



CONCRETE ENCASEMENT DETAIL
NOT TO SCALE

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300 N. 4TH STREET
NEWPORT, PA 17074

MISCELLANEOUS CONSTRUCTION DETAILS

FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

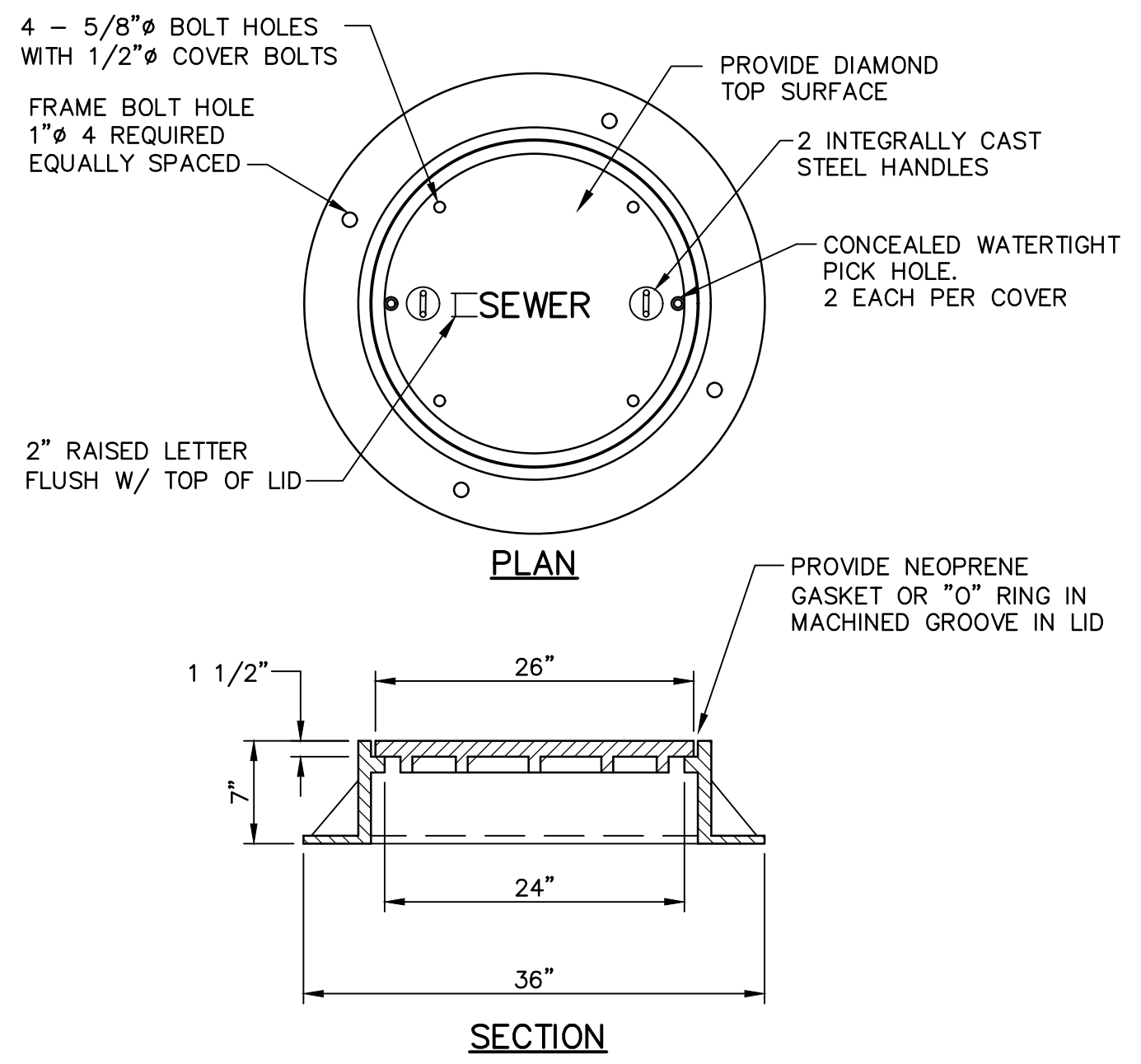
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - SAT
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
DT-1

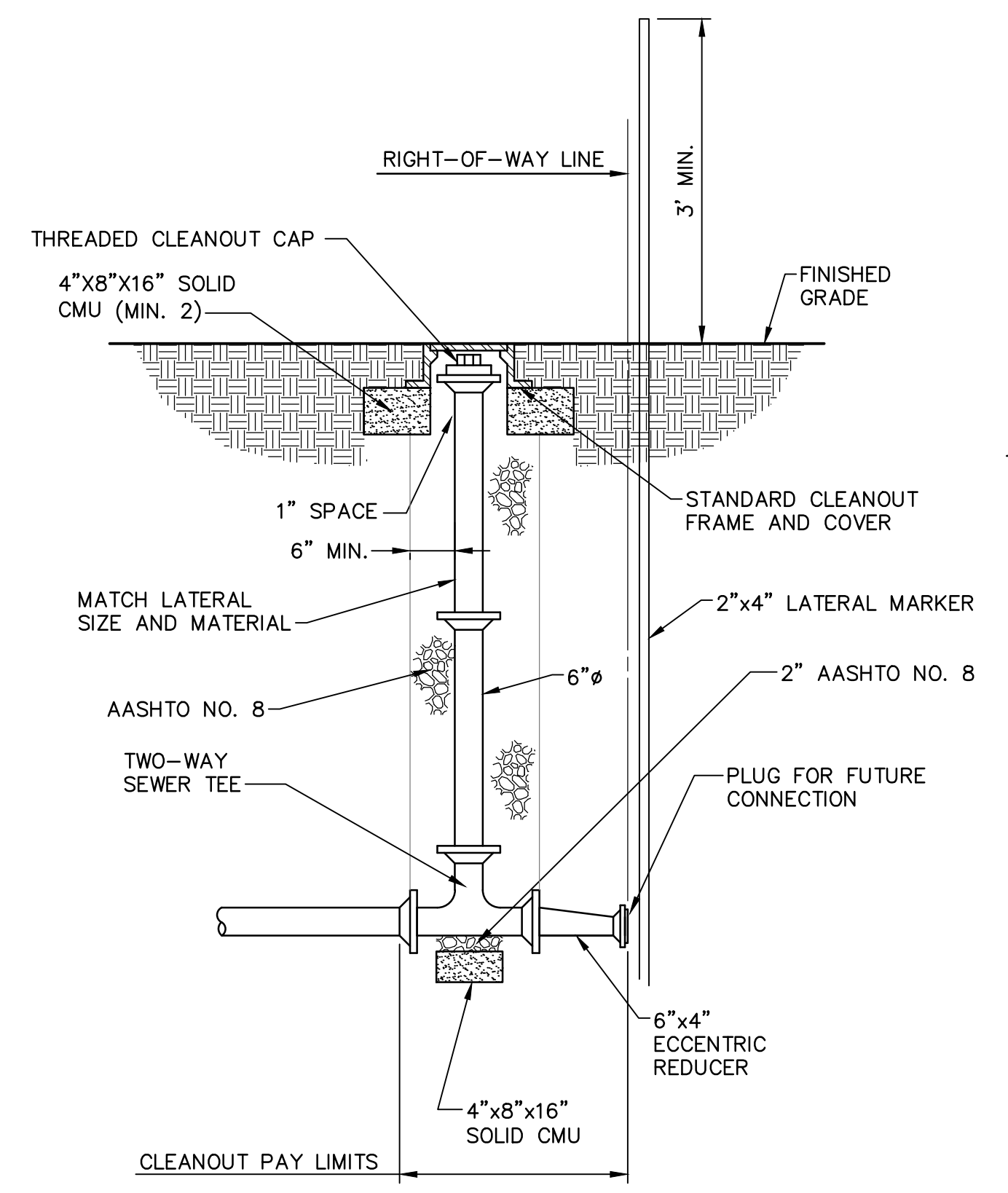
SHEET NO.
52 OF 60

PROJECT 005100.0434



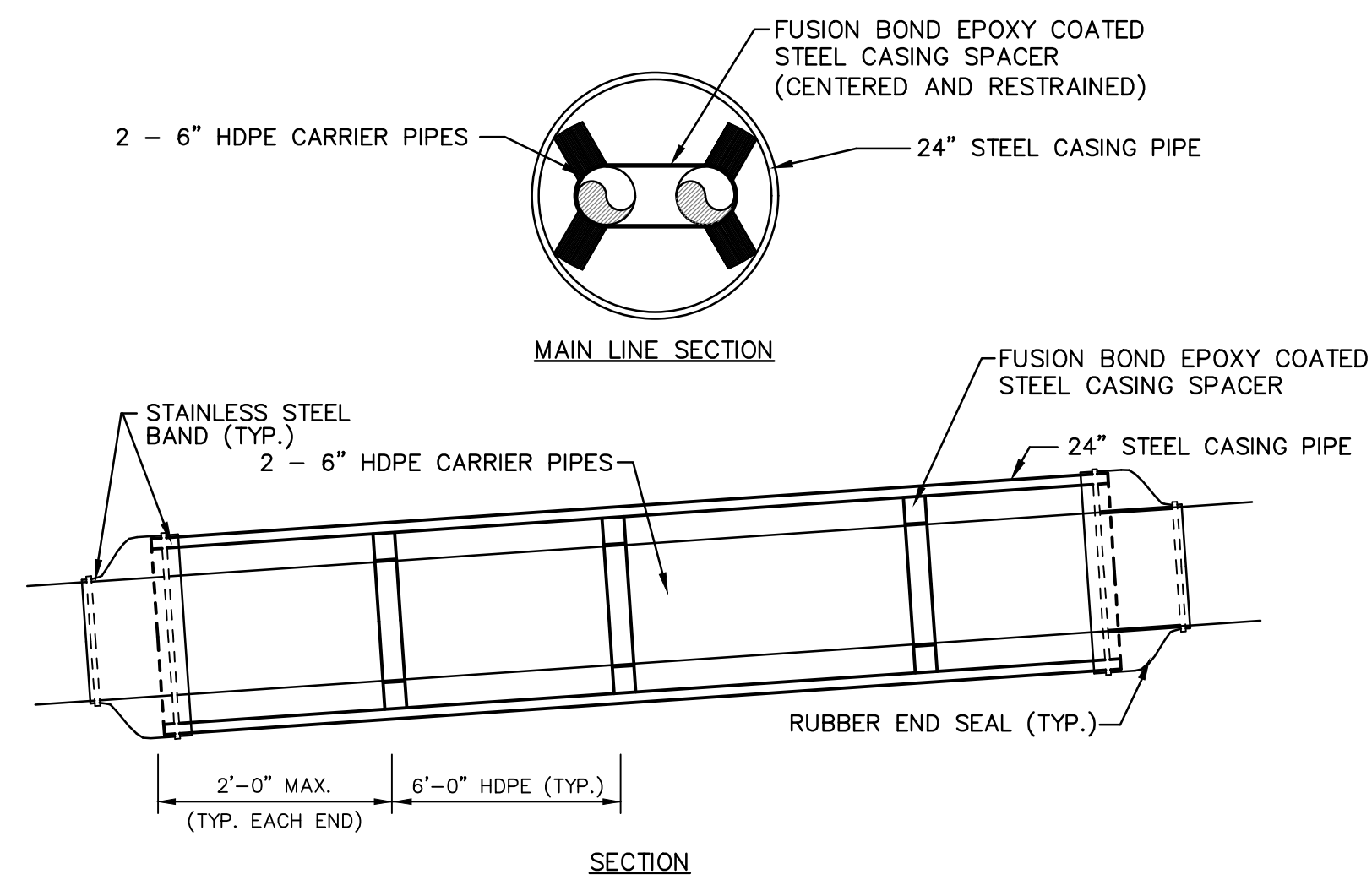
NOTES:
1. BEARING SURFACES OF FRAME AND COVER SHALL BE MACHINED.

WATERTIGHT MANHOLE FRAME AND COVER
NOT TO SCALE



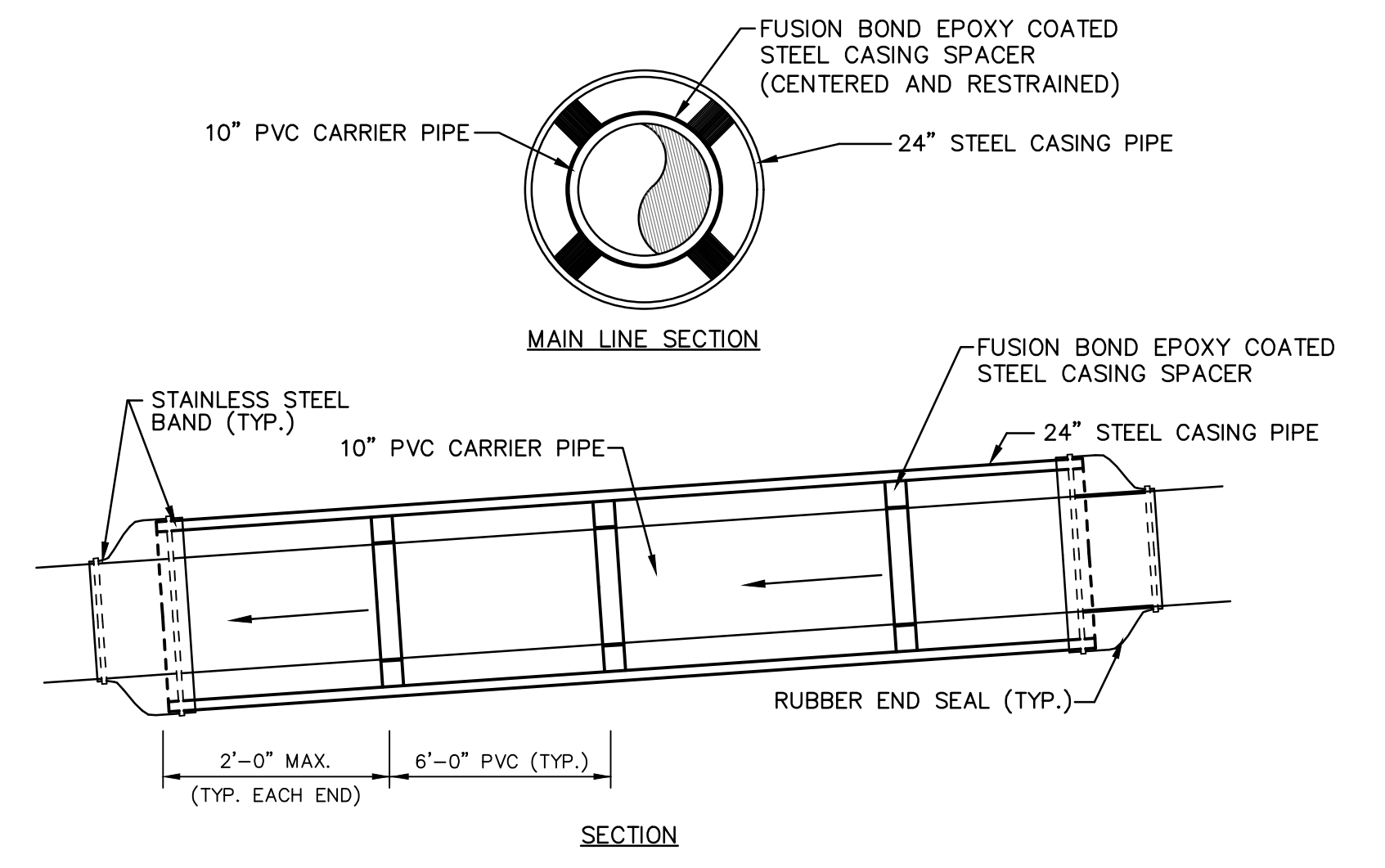
NOTES:
1. PERMANENTLY NOTE DEPTH OF LATERAL ON THE LATERAL MARKER.

CLEANOUT DETAIL
NOT TO SCALE



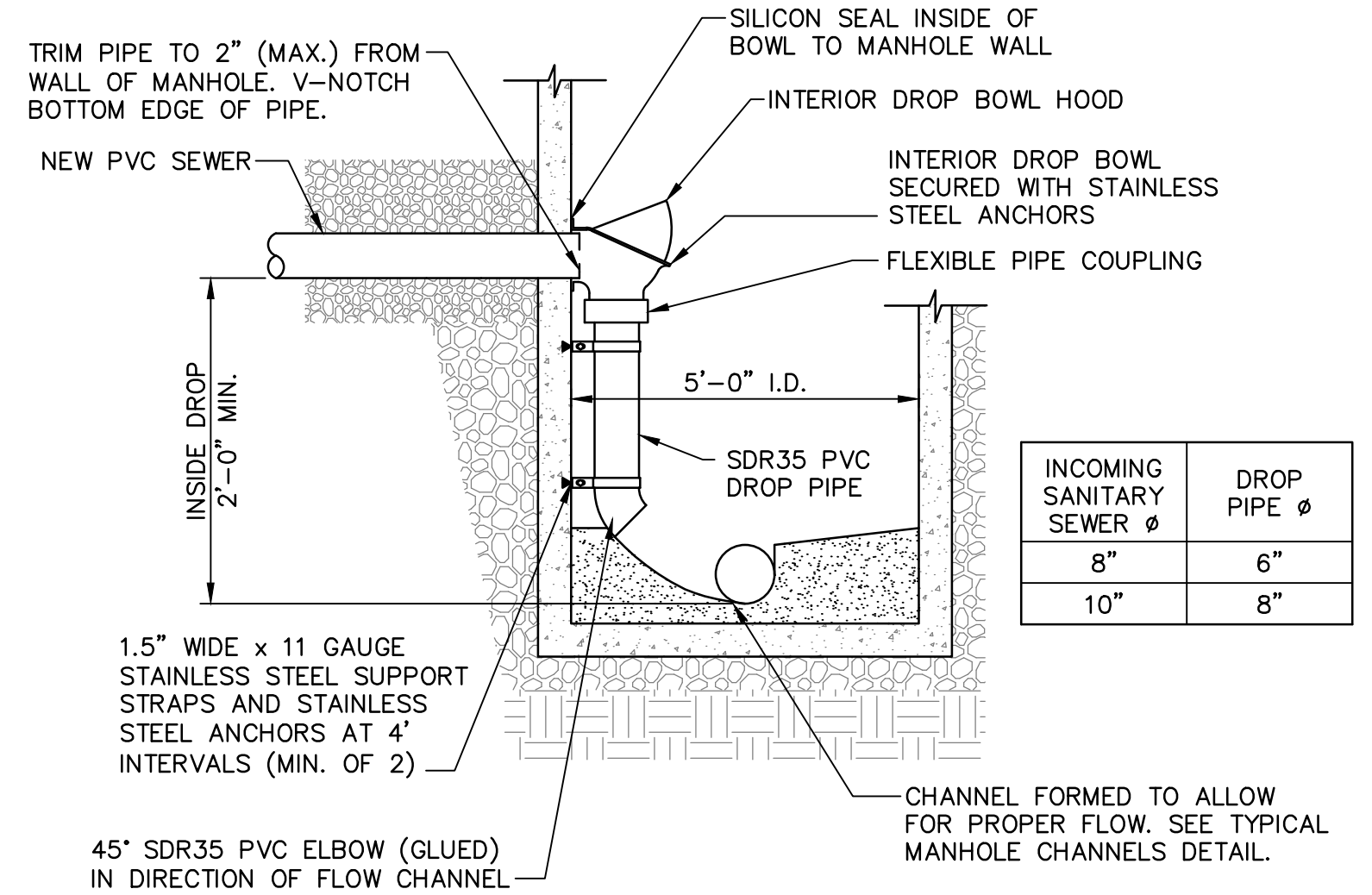
DUAL MAIN LINE ONLY	
CARRIER PIPES	CASING PIPE
2 - 6"	24"

SHORTCUT ROAD / RED HILL ROAD CROSSING
NOT TO SCALE



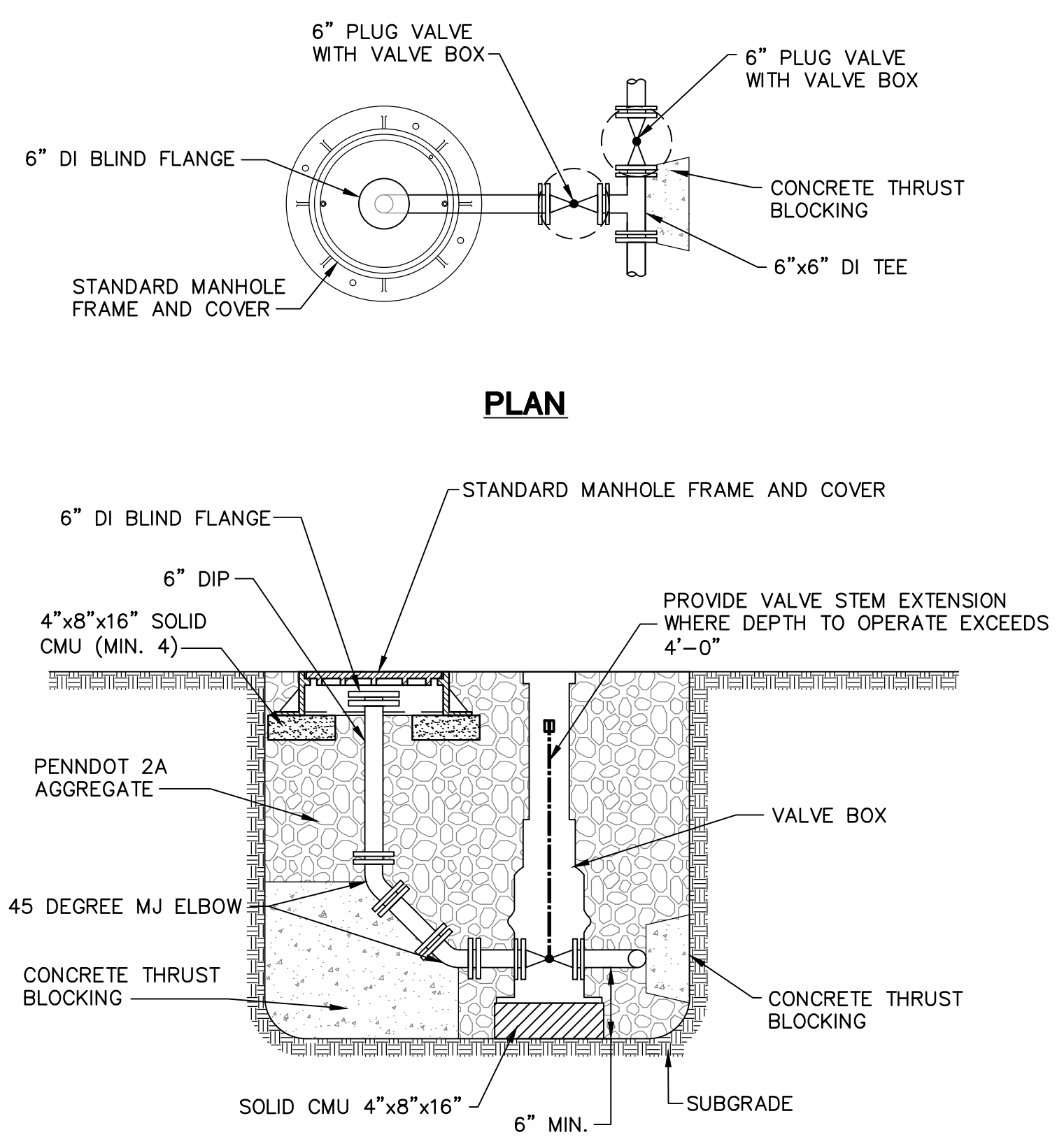
SINGLE MAIN LINE ONLY	
CARRIER PIPE	CASING PIPE
10"	24"

JUNIATA PARKWAY / RED HILL ROAD CROSSING
NOT TO SCALE

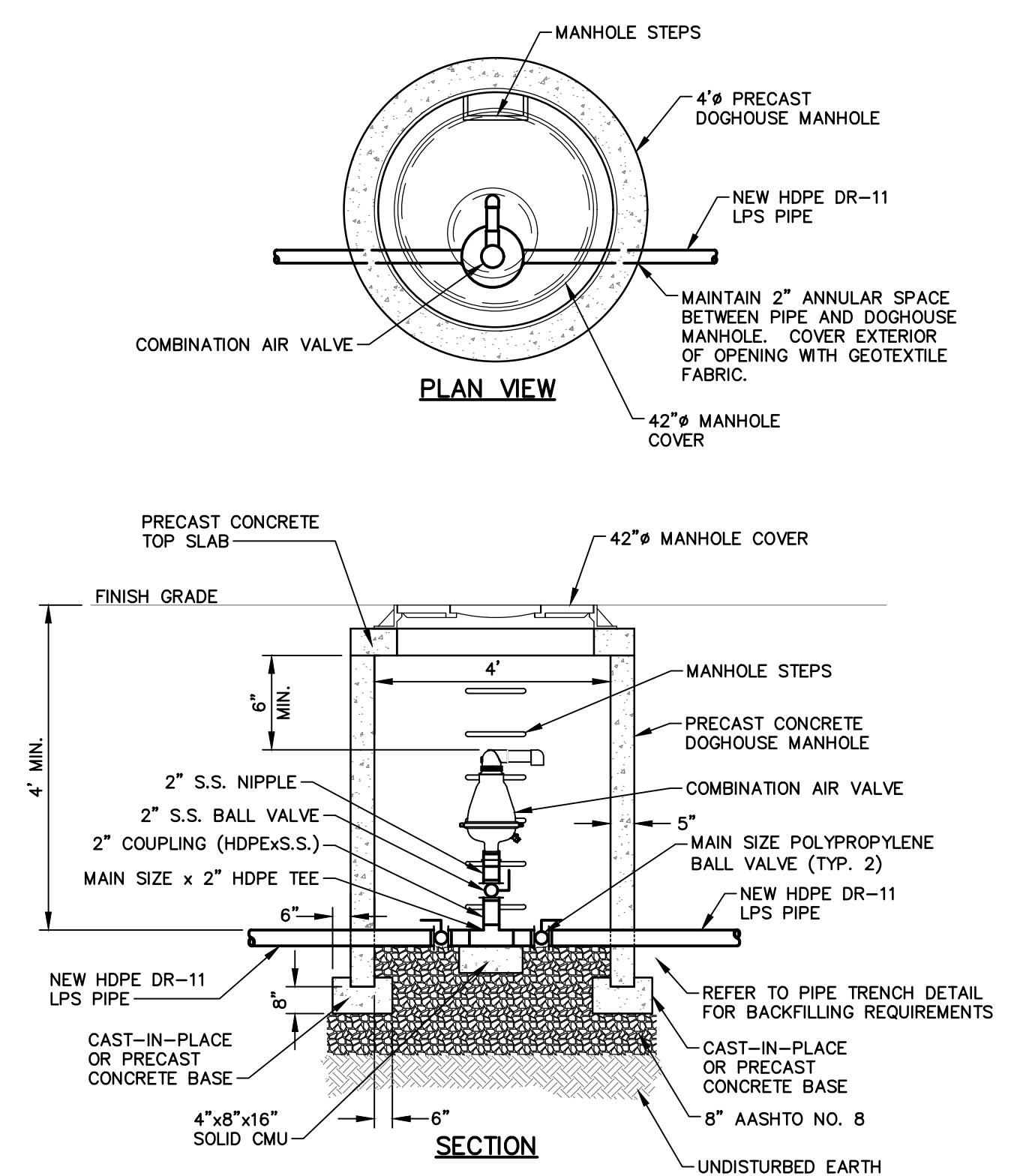


- NOTES:
1. SEE SANITARY SEWER MANHOLE DETAIL FOR ADDITIONAL INFORMATION.
2. INSTALL MANHOLE STEPS IN LOCATION THAT DOES NOT CONFLICT WITH DROP CONNECTION.
3. INTERIOR DROP MANHOLE FOR EXISTING SANITARY MANHOLE SHALL ALSO BE IN ACCORDANCE WITH CONNECTION TO EXISTING MANHOLE DETAIL.

INTERIOR DROP MANHOLE
NOT TO SCALE

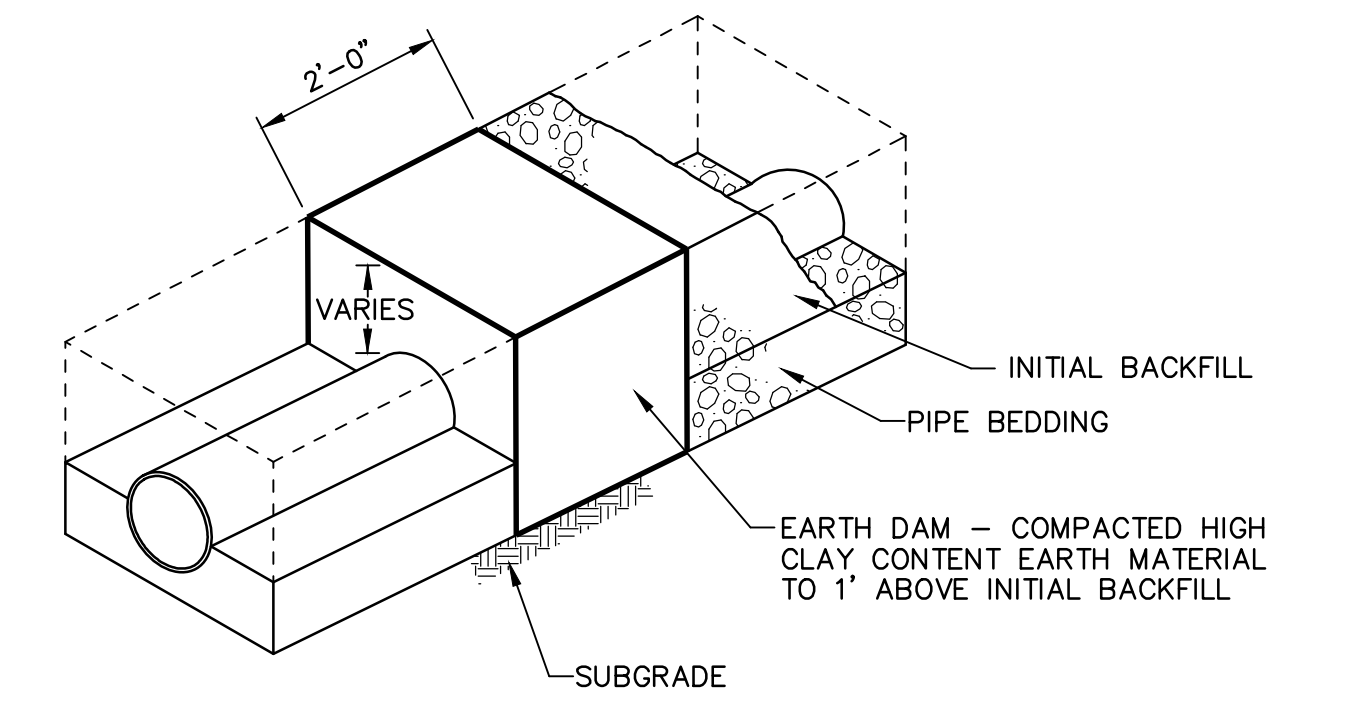


EMERGENCY BYPASS PUMPING CONNECTION
NOT TO SCALE

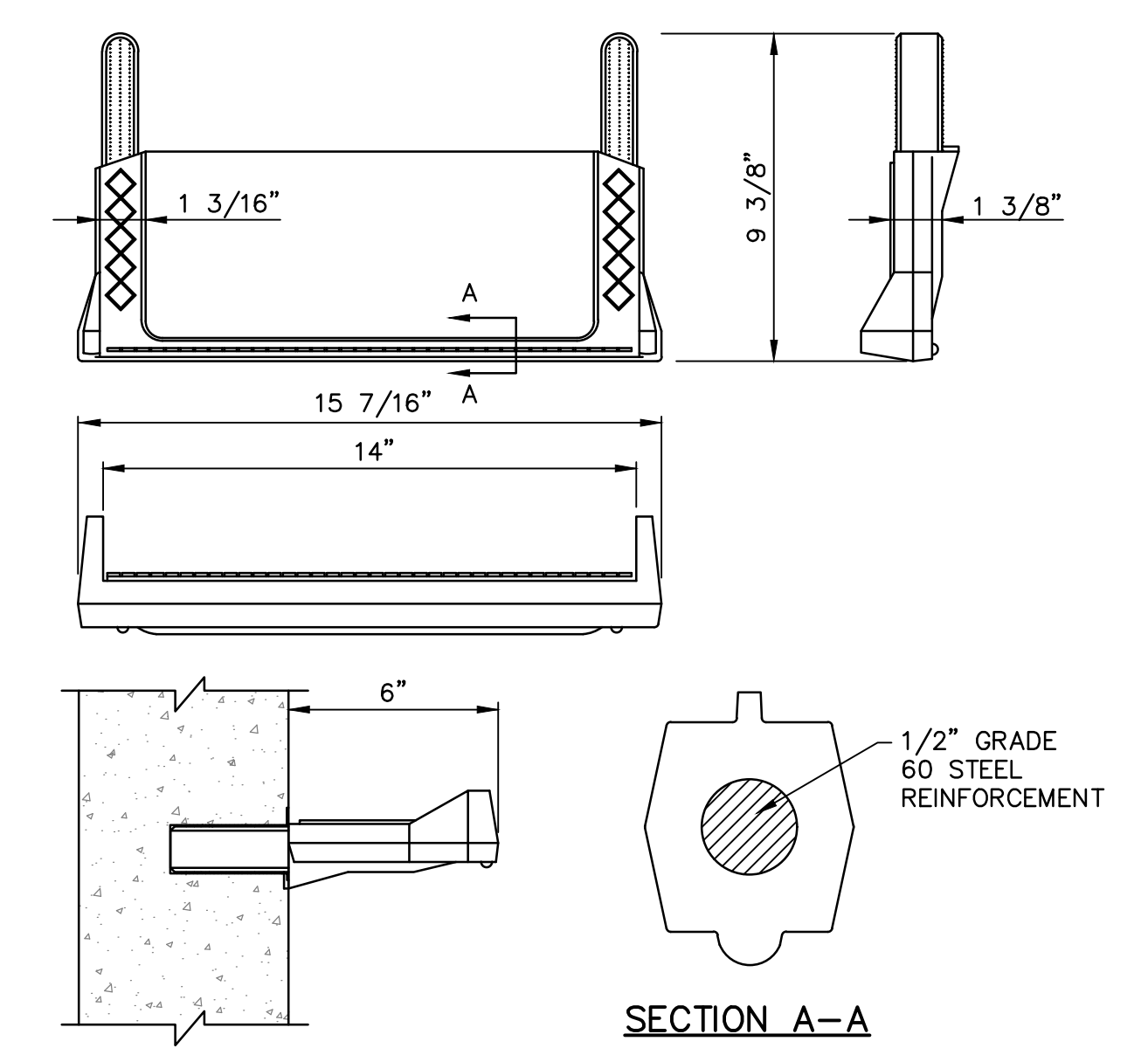


- NOTES:
1. ALL PIPING, FITTINGS AND VALVES SHOWN ARE FOR 2" COMBINATION AIR VALVE INSTALLATION.
2. CONTRACTOR SHALL USE DOGHOUSE MANHOLES FOR ALL NEW COMBINATION AIR VALVE INSTALLATIONS.
3. CONTRACTOR TO COORDINATE THE DEPTH OF THE LOW PRESSURE SEWERS AT THE AIR RELEASE VALVE MANHOLE TO ENSURE CLEARANCES ARE MET AND THE LOCATION IS AT THE HIGH POINT.
4. CONTRACTOR TO PROVIDE CLAMPS/BRACES AS NECESSARY TO SUPPORT CAV ASSEMBLY. ATTACH CLAMPS/BRACES TO MANHOLE AS NECESSARY.
5. SEE PENNDOT PUBLICATIONS 72M, RC-39M FOR ADDITIONAL DETAILS.
6. COAT THE INSIDE OF STRUCTURE IN ACCORDANCE WITH SECTION 09 91 00.

AIR RELEASE VALVE MANHOLE - LOW PRESSURE
NOT TO SCALE

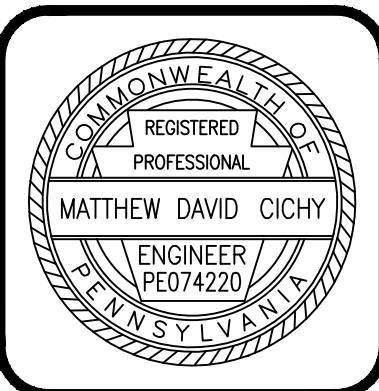
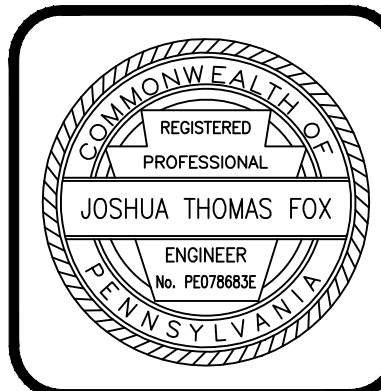


CLAY DIKE DETAIL
NOT TO SCALE



COPOLYMER POLYPROPYLENE PLASTIC MANHOLE STEP
NOT TO SCALE

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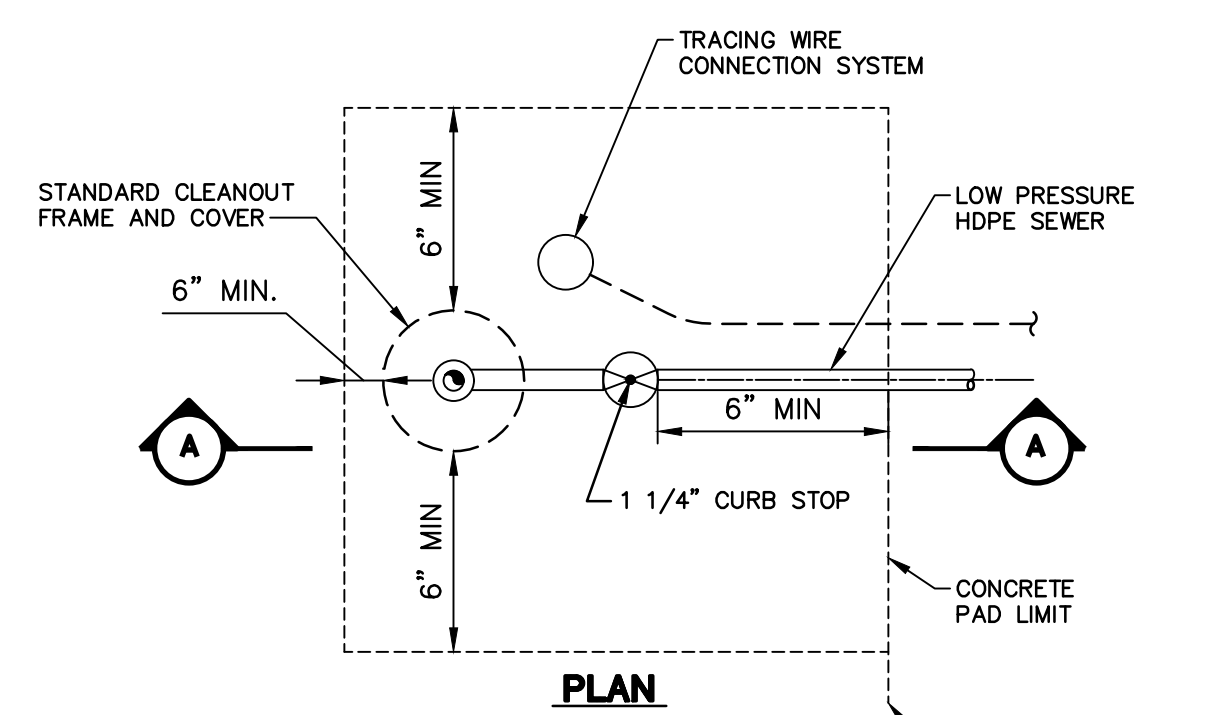
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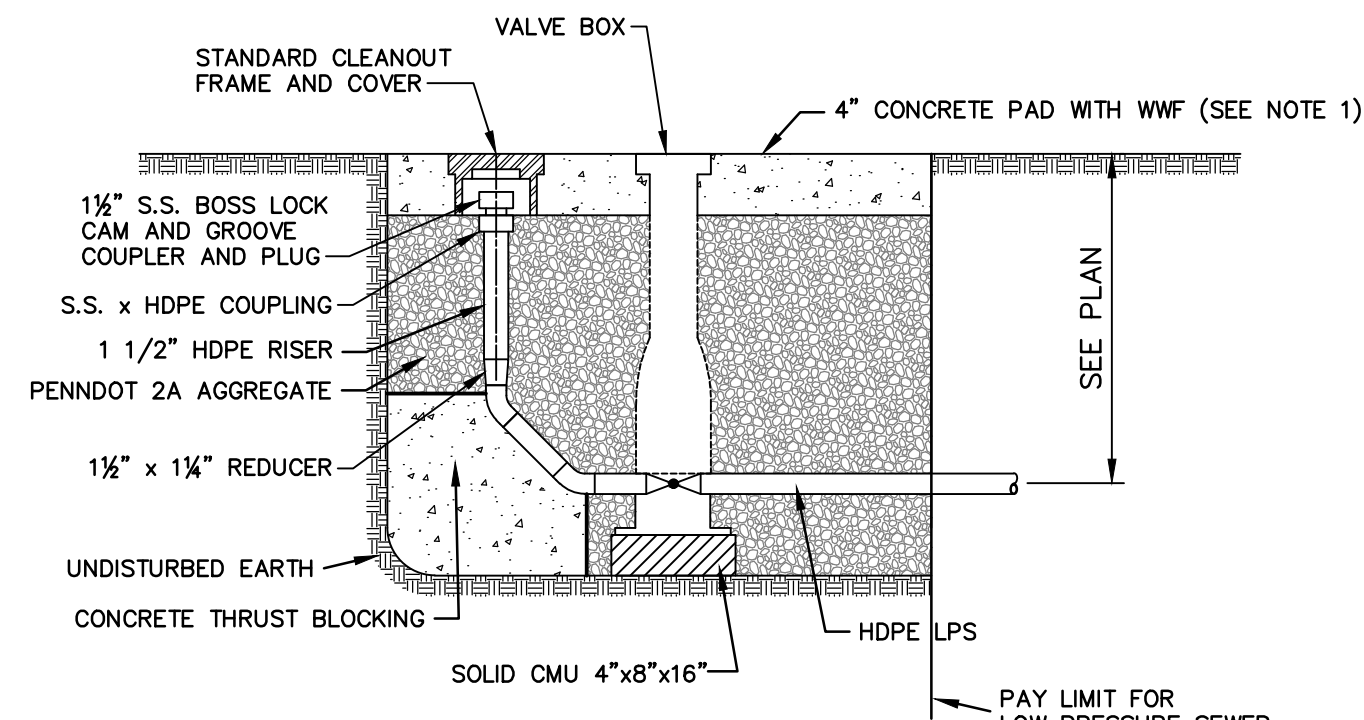
MISCELLANEOUS CONSTRUCTION DETAILS
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- SAT
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CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO. DT-2
SHEET NO. 53 OF 60
PROJECT 005100.0434



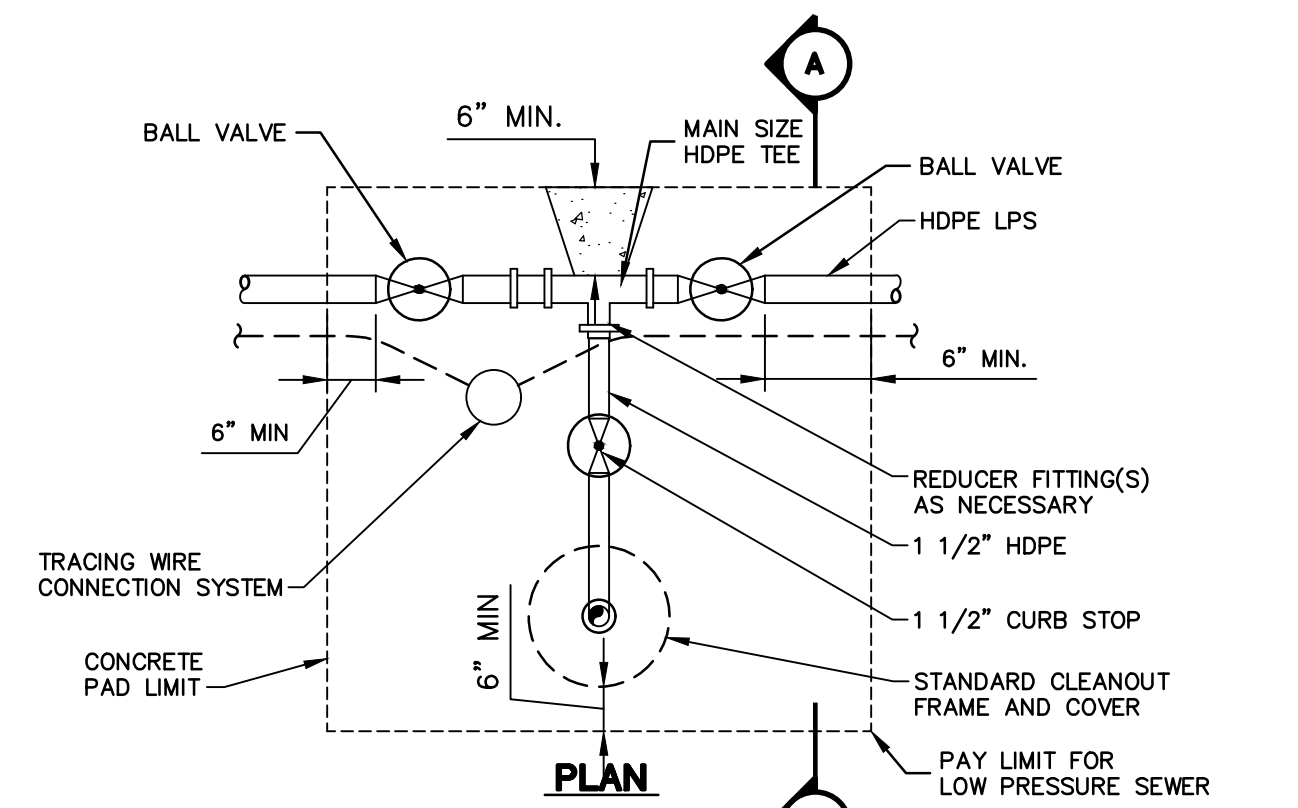
PLAN



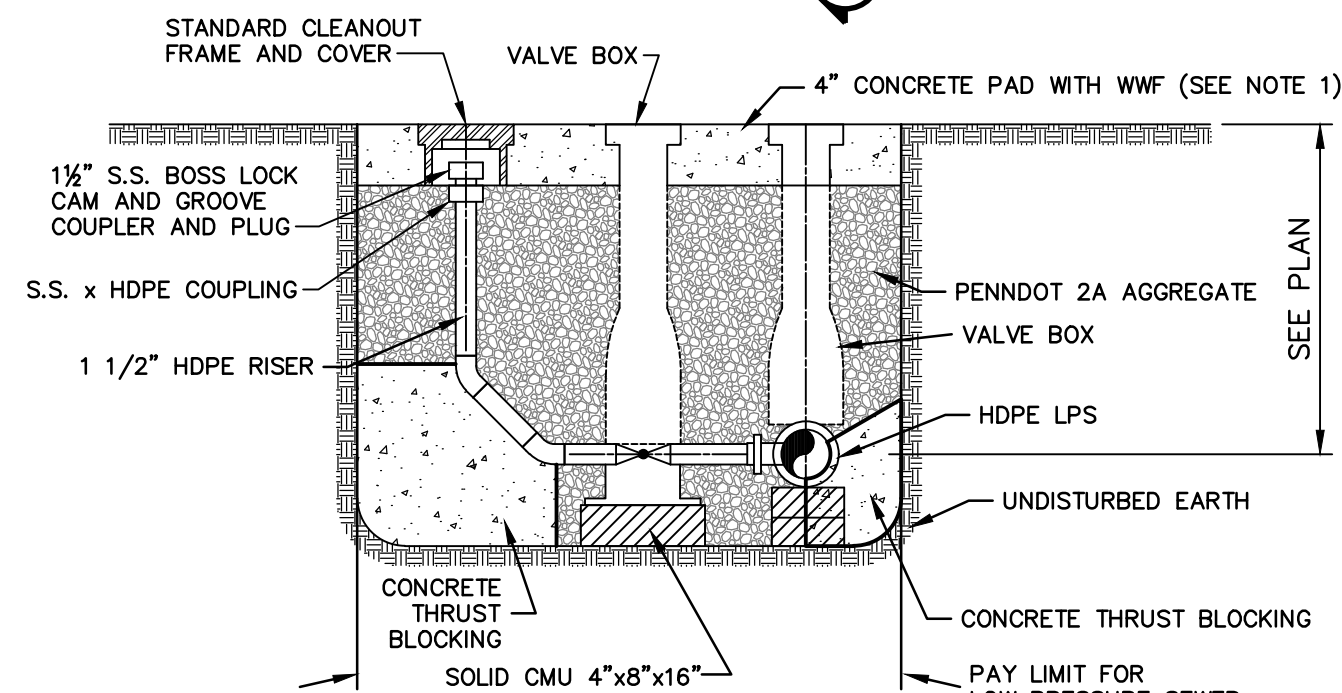
SECTION 'A-A'

NOTES:
1. WHERE CLEANOUT IS INSTALLED IN PAVED AREAS, DELETE CONCRETE PAD AND RESTORE PAVEMENT IN ACCORDANCE WITH THE APPROPRIATE PAVEMENT RESTORATION DETAIL.

TCO TERMINAL CLEANOUT
NOT TO SCALE



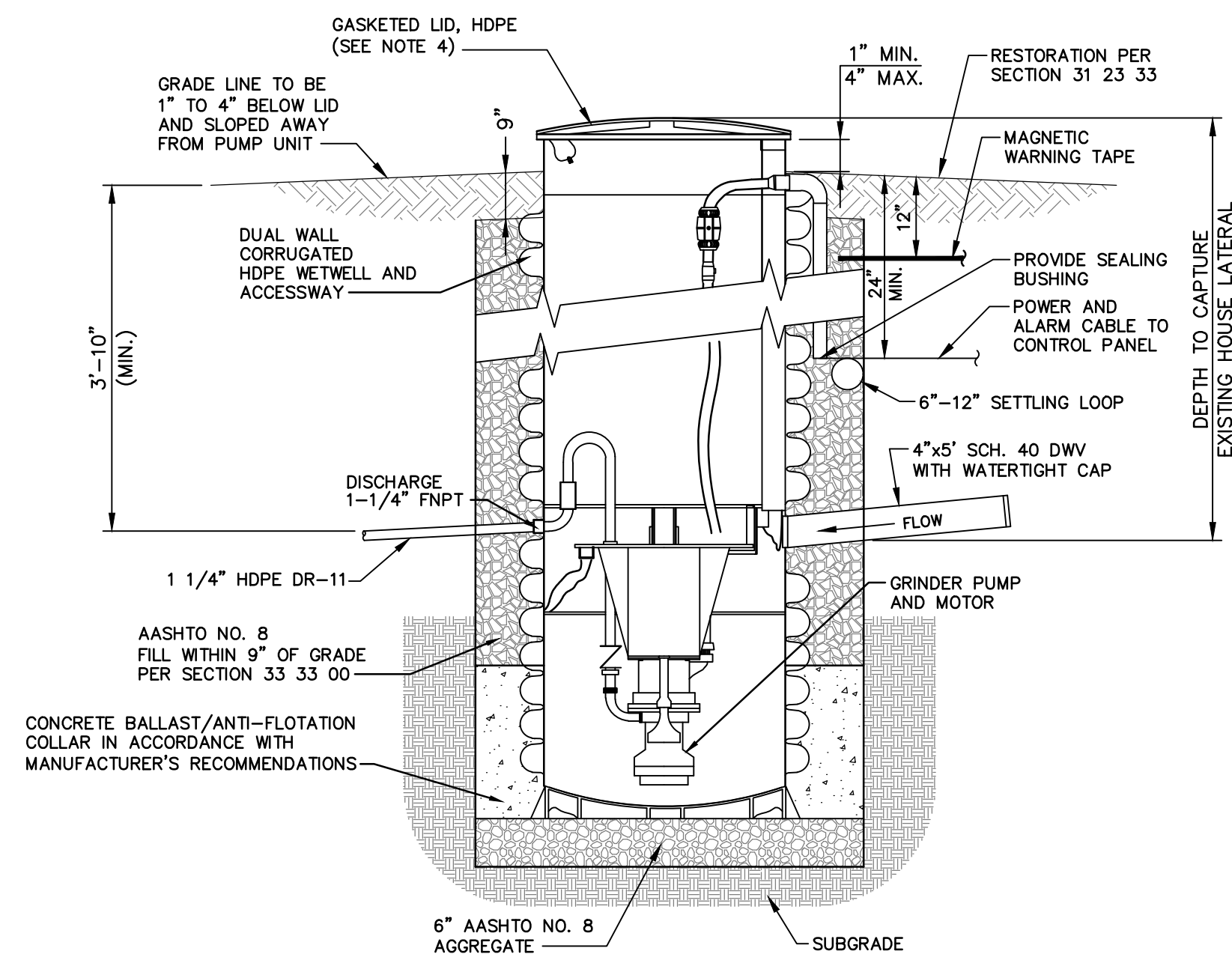
PLAN



SECTION 'A-A'

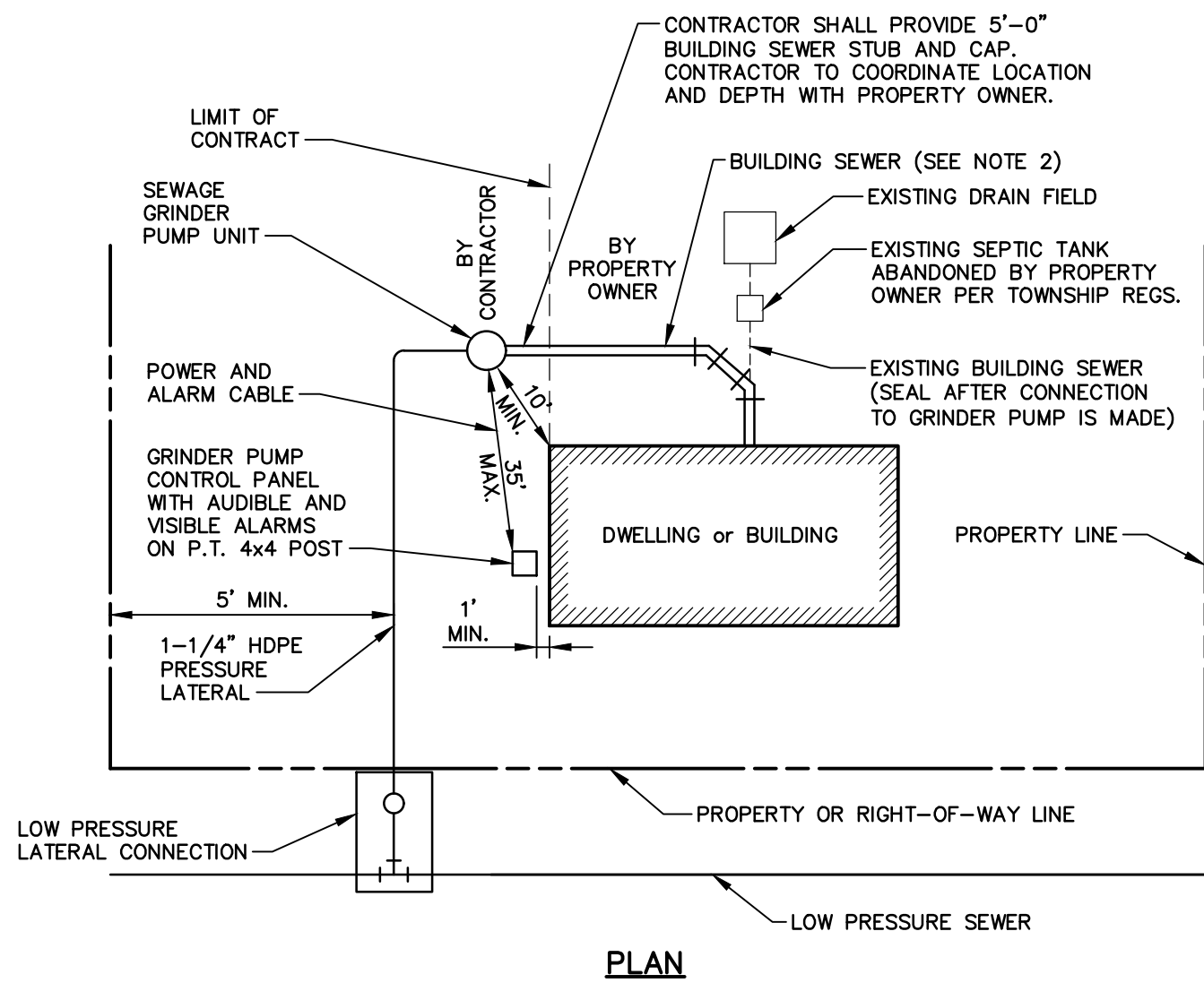
NOTES:
1. WHERE CLEANOUT IS INSTALLED IN PAVED AREAS, DELETE CONCRETE PAD AND RESTORE PAVEMENT IN ACCORDANCE WITH CONTRACT DOCUMENTS.

ICO IN-LINE CLEANOUT
NOT TO SCALE



NOTES:
1. FIELD JOINT REQUIRED FOR MODELS TALLER THAN 93"
2. CONCRETE BALLAST SHALL NOT EXTEND ABOVE BOTTOM OF INFLUENT SEWER PIPE.
3. CONTRACTOR TO COORDINATE DEPTH OF EXISTING HOUSE LATERAL SUCH THAT DEP. GUIDELINES AND INTERNATIONAL PLUMBING CODES ARE MET.
4. ALL GRINDER PUMPS LOCATED WITHIN THE 100 YEAR FLOOD PLAIN SHALL BE EQUIPPED WITH A WATERTIGHT LID AND EXTEND PVC VENT ABOVE 100 YEAR FLOODPLAIN AS REQUIRED BY MANUFACTURER.
5. PROVIDE 2"x4" LATERAL MARKER WITH LATERAL DEPTH PERMANENTLY MARKED AT END OF LATERAL.

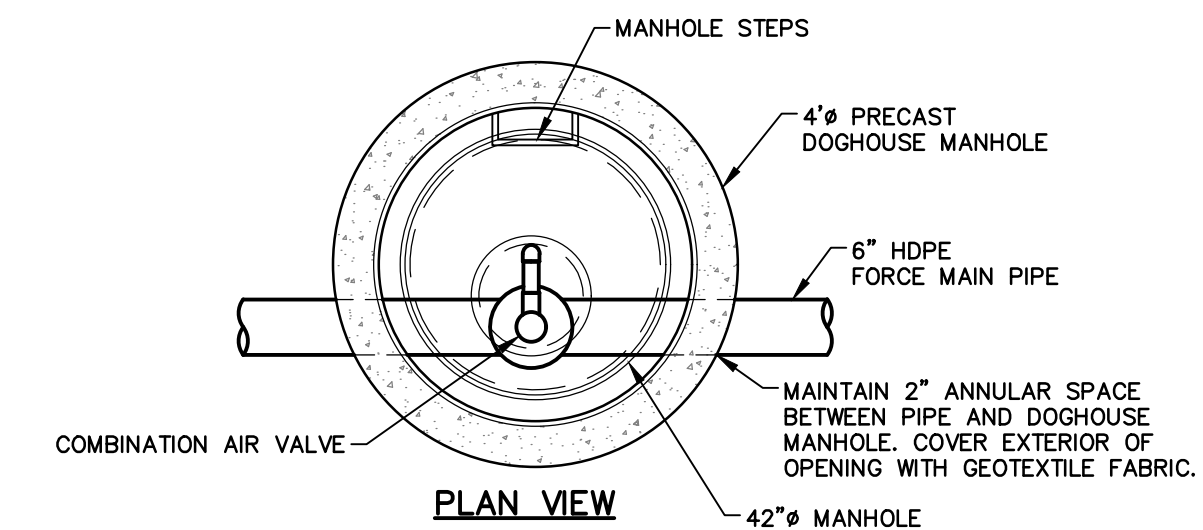
GP TYPICAL GRINDER PUMP UNIT
NOT TO SCALE



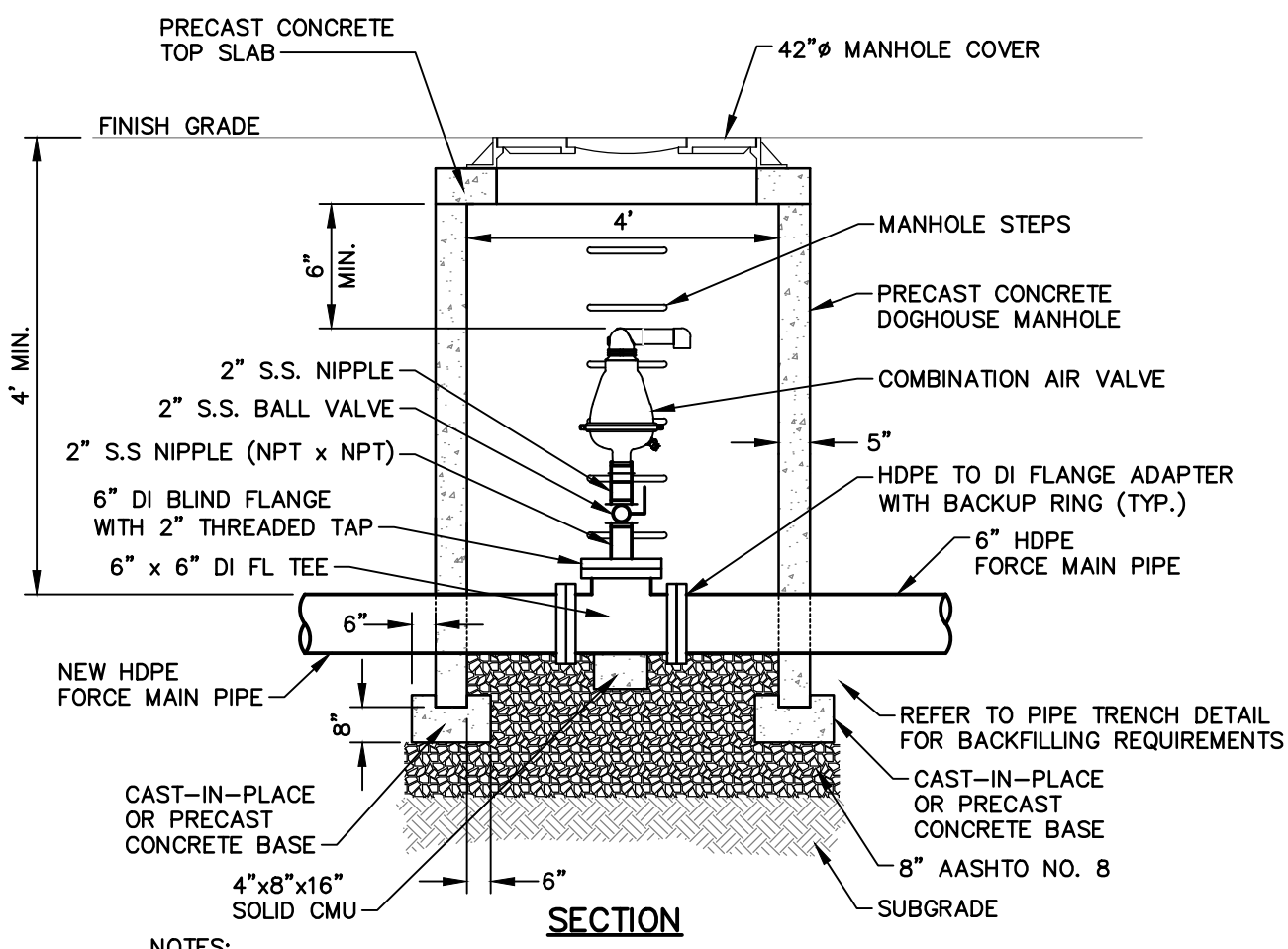
PLAN

NOTES:
1. GRINDER PUMP MUST BE LOCATED A MINIMUM OF 10 FT. FROM STRUCTURE.
2. BUILDING SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH DEP GUIDELINES, TOWNSHIP RULES AND REGS., AND INTERNATIONAL PLUMBING CODES.
3. CONTRACTOR TO COORDINATE LOCATION OF GRINDER PUMP UNIT AND CONTROL PANEL WITH PROPERTY OWNER. FOR MAINTENANCE PURPOSES, THE GRINDER PUMP CONTROL PANEL SHALL BE VISIBLE FROM PUBLIC ROAD.
4. DISTANCE BETWEEN DWELLING AND PRESSURE LATERAL SHALL BE 5' MINIMUM, OR AS REQUIRED BY LOCAL CODES, ORDINANCES, RULES AND REGULATIONS OF GOVERNING SERVICE AUTHORITY.

GPI GRINDER PUMP INSTALLATION SCHEMATIC
NOT TO SCALE



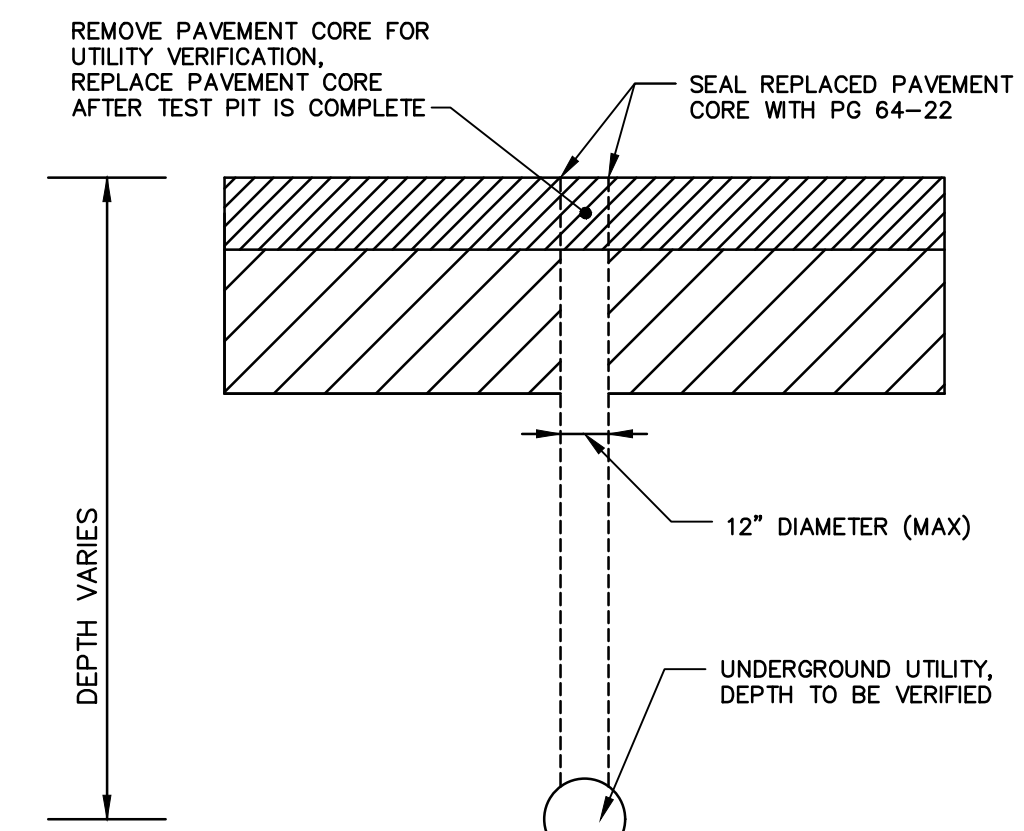
PLAN VIEW



SECTION

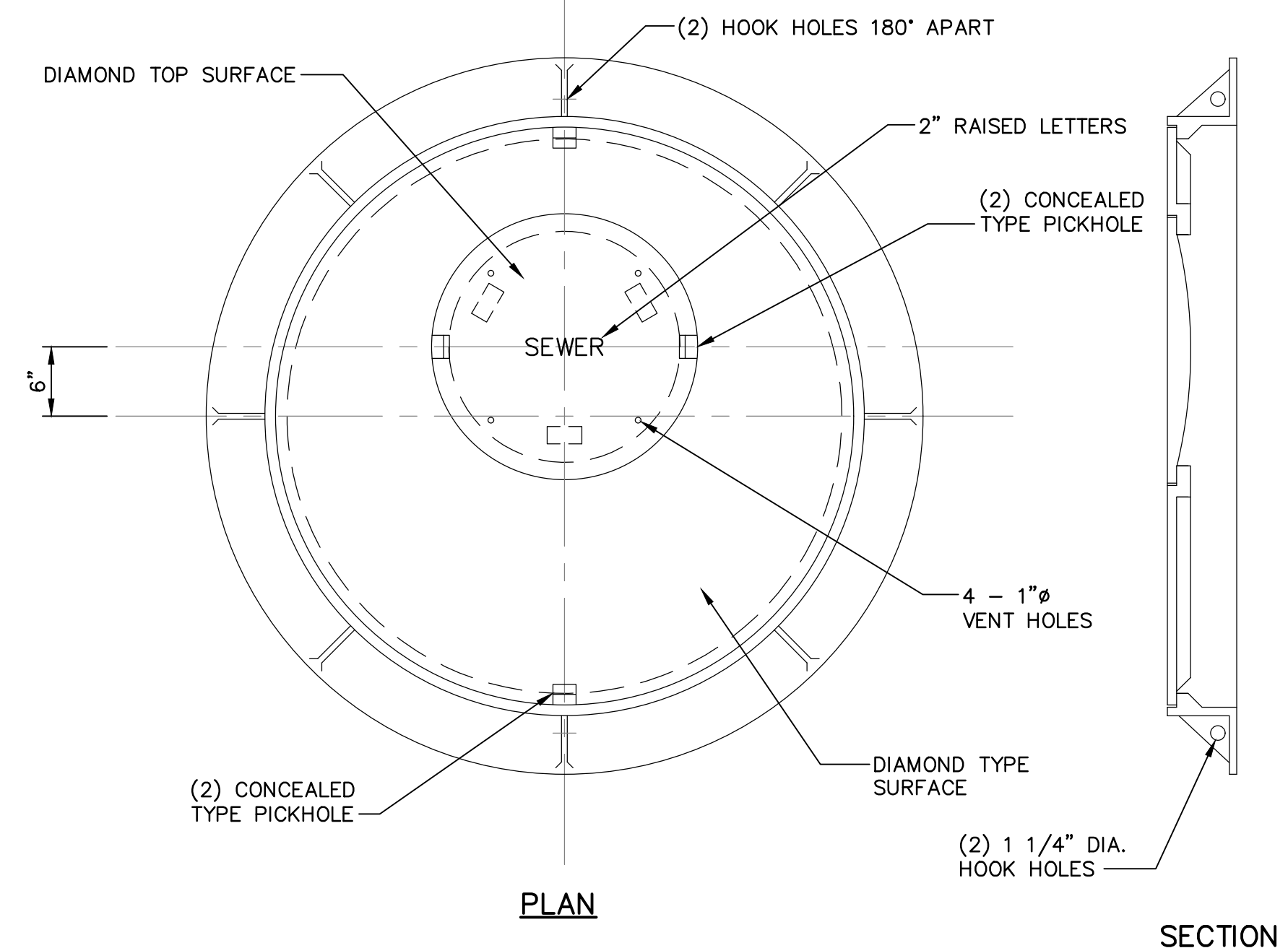
NOTES:
1. ALL PIPING, FITTINGS AND VALVES SHOWN ARE FOR 2" COMBINATION AIR VALVE INSTALLATION.
2. CONTRACTOR SHALL USE DOGHOUSE MANHOLES FOR ALL NEW COMBINATION AIR VALVE INSTALLATIONS.
3. CONTRACTOR TO COORDINATE THE DEPTH OF THE FORCE MAIN AT THE AIR RELEASE VALVE MANHOLE TO ENSURE CLEARANCES ARE MET AND THE LOCATION IS AT THE HIGH POINT.
4. CONTRACTOR TO PROVIDE CLAMPS/BRACES AS NECESSARY TO SUPPORT CAV ASSEMBLY. ATTACH CLAMPS/BRACES TO MANHOLE AS NECESSARY.
5. SEE PENNDOT PUBLICATIONS 72M, RC-39M FOR ADDITIONAL DETAILS.
6. COAT THE INSIDE OF STRUCTURE IN ACCORDANCE WITH SECTION 09 91 00.

ARFM AIR RELEASE VALVE MANHOLE - FORCE MAIN
NOT TO SCALE



TH2 MUNICIPAL/PRIVATE TEST HOLE EXCAVATION/RESTORATION DETAIL
NOT TO SCALE

NOTE:
1. CONTRACTOR TO UTILIZE THIS DETAIL FOR TEST HOLES USED WITHIN MUNICIPAL/PRIVATE RIGHT-OF-WAY TO LOCATE EXISTING UNDERGROUND UTILITIES.
2. VACUUM EXCAVATE TO LOCATE UTILITY, BACKFILL AND COMPACT WITH SUITABLE MATERIAL.
3. FILL BORE HOLE TO SURFACE IF NOT WITHIN PAVEMENT.



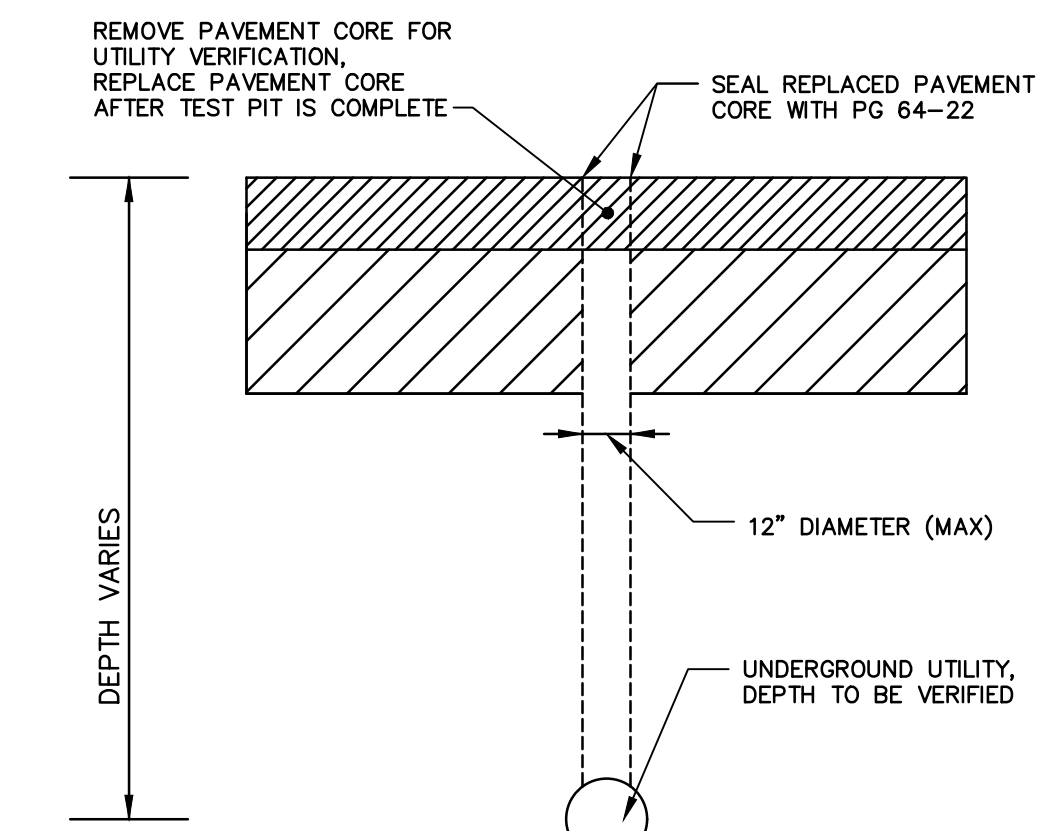
PLAN

SECTION

SECTION

NOTES:
1. BEARING SURFACES OF FRAME AND COVER SHALL BE MACHINED.

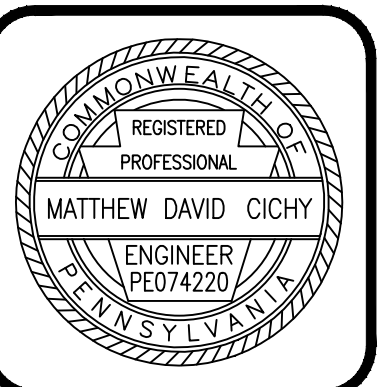
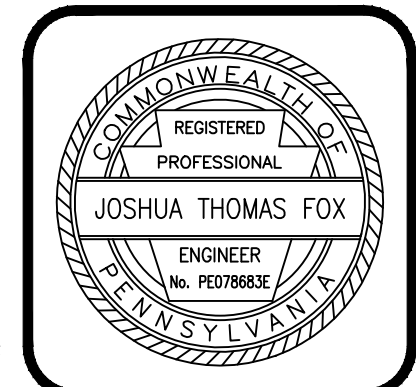
FC 42' MANHOLE FRAME AND COVER
NOT TO SCALE



TH1 PENNDOT TEST HOLE EXCAVATION/RESTORATION DETAIL
NOT TO SCALE

NOTE:
1. CONTRACTOR TO UTILIZE THIS DETAIL FOR TEST HOLES USED WITHIN PENNDOT RIGHT-OF-WAY TO LOCATE EXISTING UNDERGROUND UTILITIES PER CHAPTER 459.8.(9)(b)
2. VACUUM EXCAVATE TO LOCATE UTILITY, REPLACE EXCAVATED MATERIAL WITH FLOWABLE BACKFILL
3. FILL BORE HOLE TO SURFACE IF NOT WITHIN PAVEMENT.

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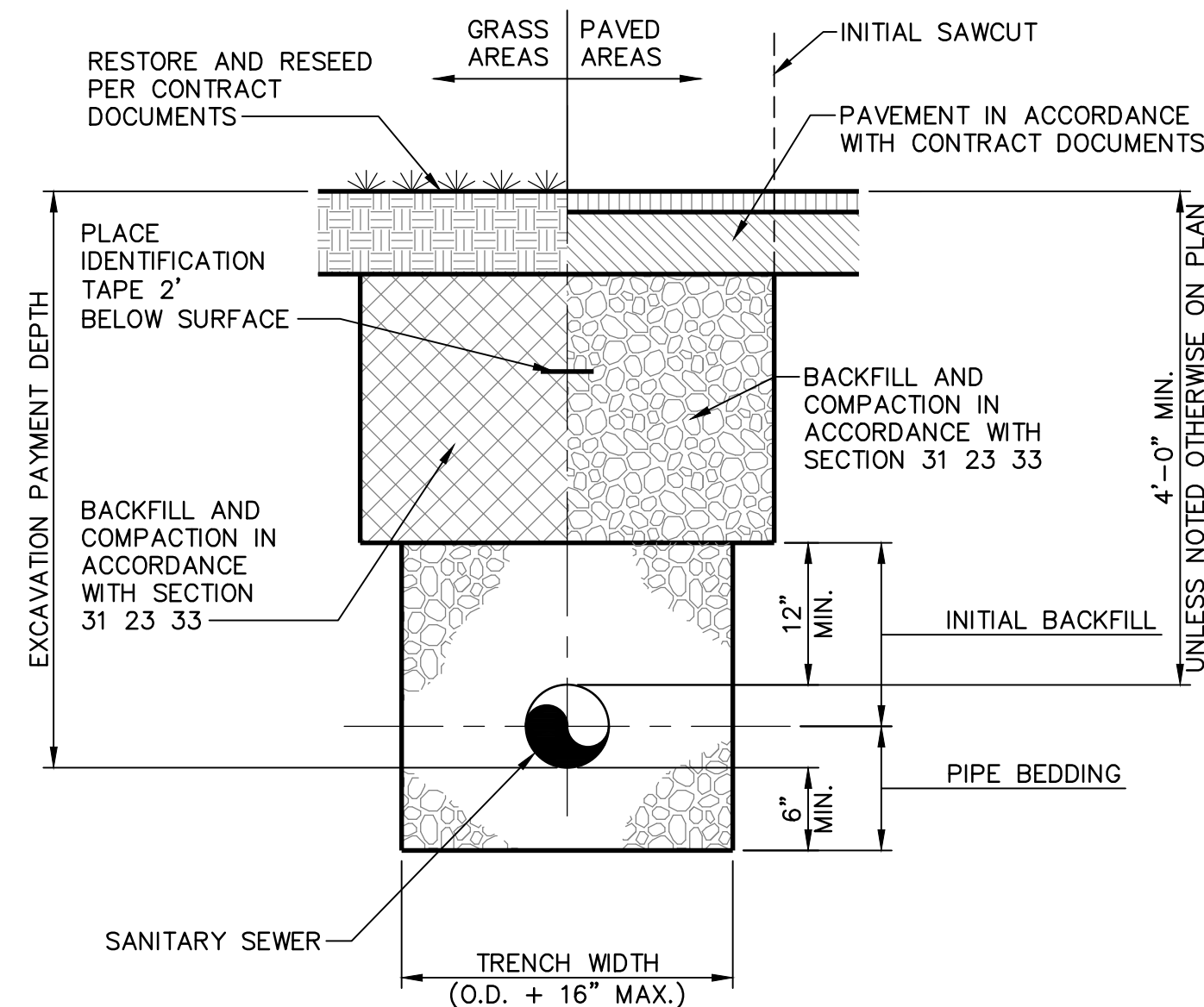
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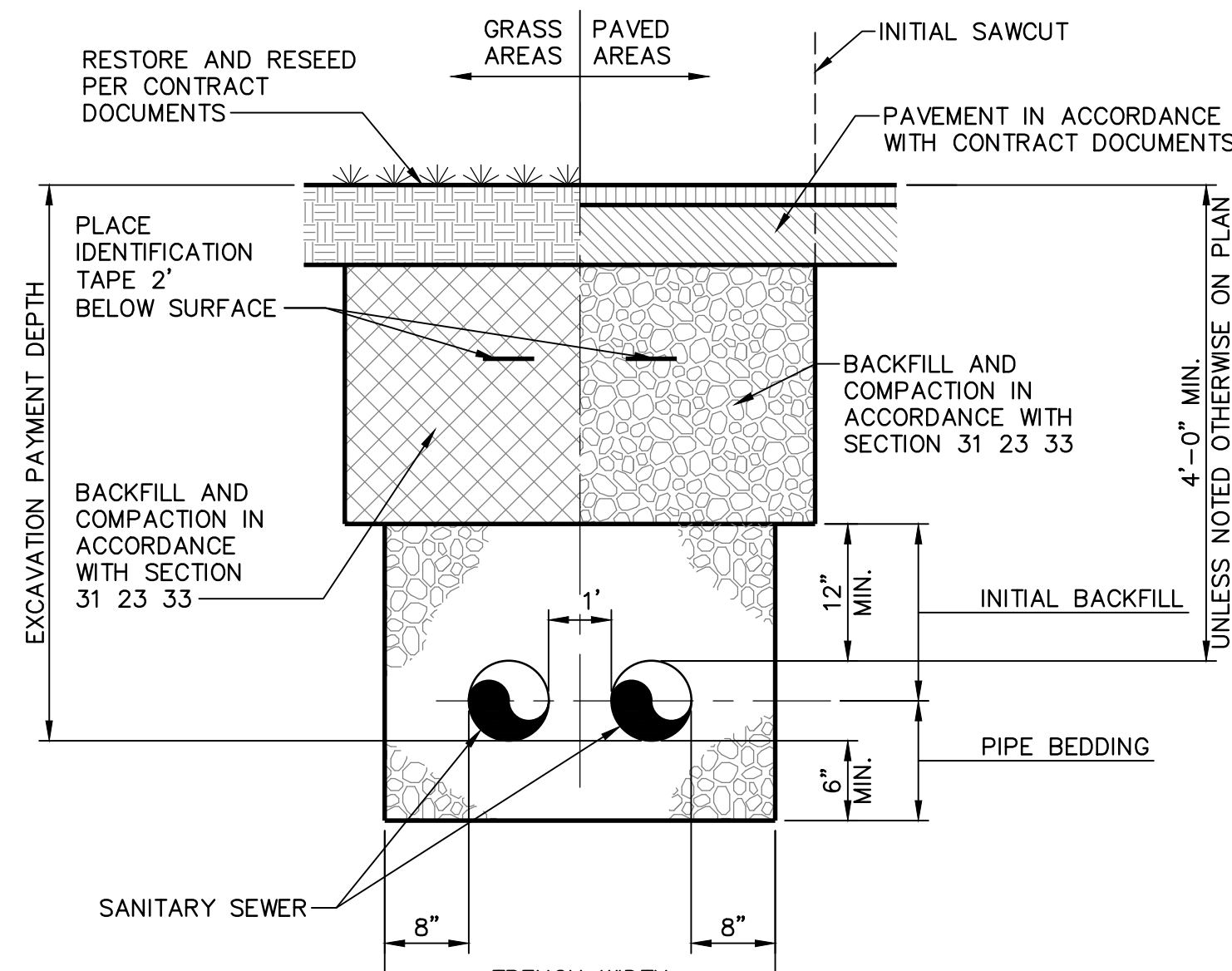
MISCELLANEOUS CONSTRUCTION DETAILS
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- SAT
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

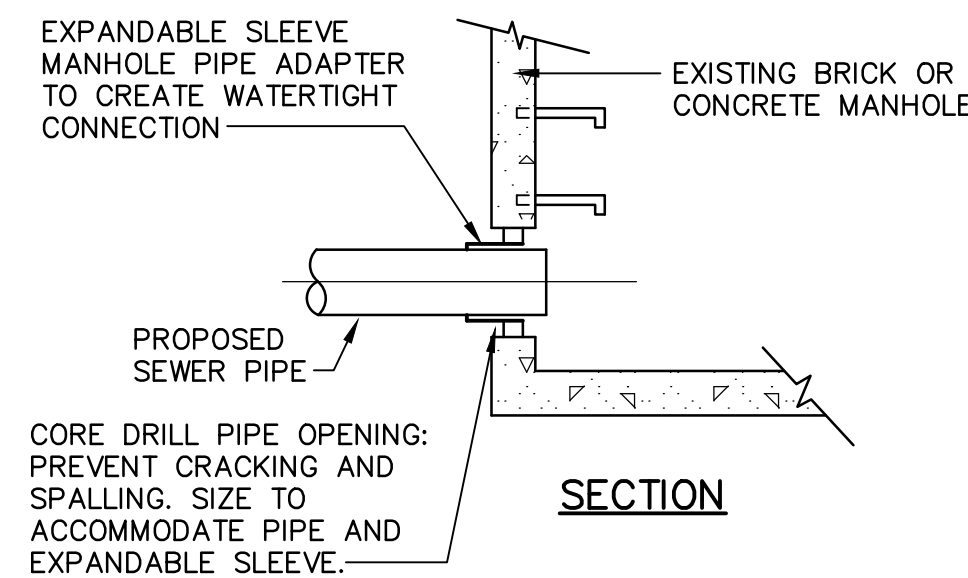
DRAWING NO. DT-3
SHEET NO. 54 OF 60
PROJECT 005100.0434



PIPE TRENCH DETAIL
NOT TO SCALE

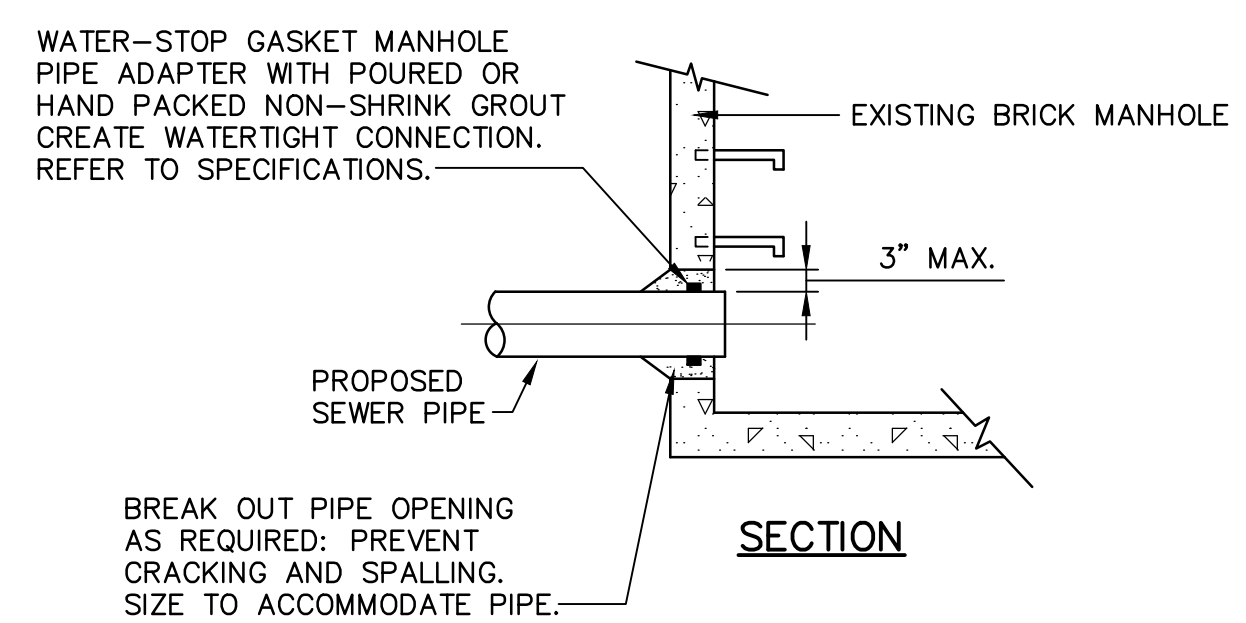


DUAL PIPE TRENCH DETAIL
NOT TO SCALE



- NOTES:**
- AFTER CONNECTION OF PIPE TO MANHOLE, REMOVE CONCRETE CHANNEL AS REQUIRED AND RECONSTRUCT CHANNEL TO CONDUCT ALL FLOWS THROUGH EXISTING MANHOLE.
 - KEEP GROUNDWATER, SURFACE WATER AND DEBRIS FROM ENTERING EXISTING FACILITIES.
 - MAINTAIN EXISTING FLOW DURING CONSTRUCTION.

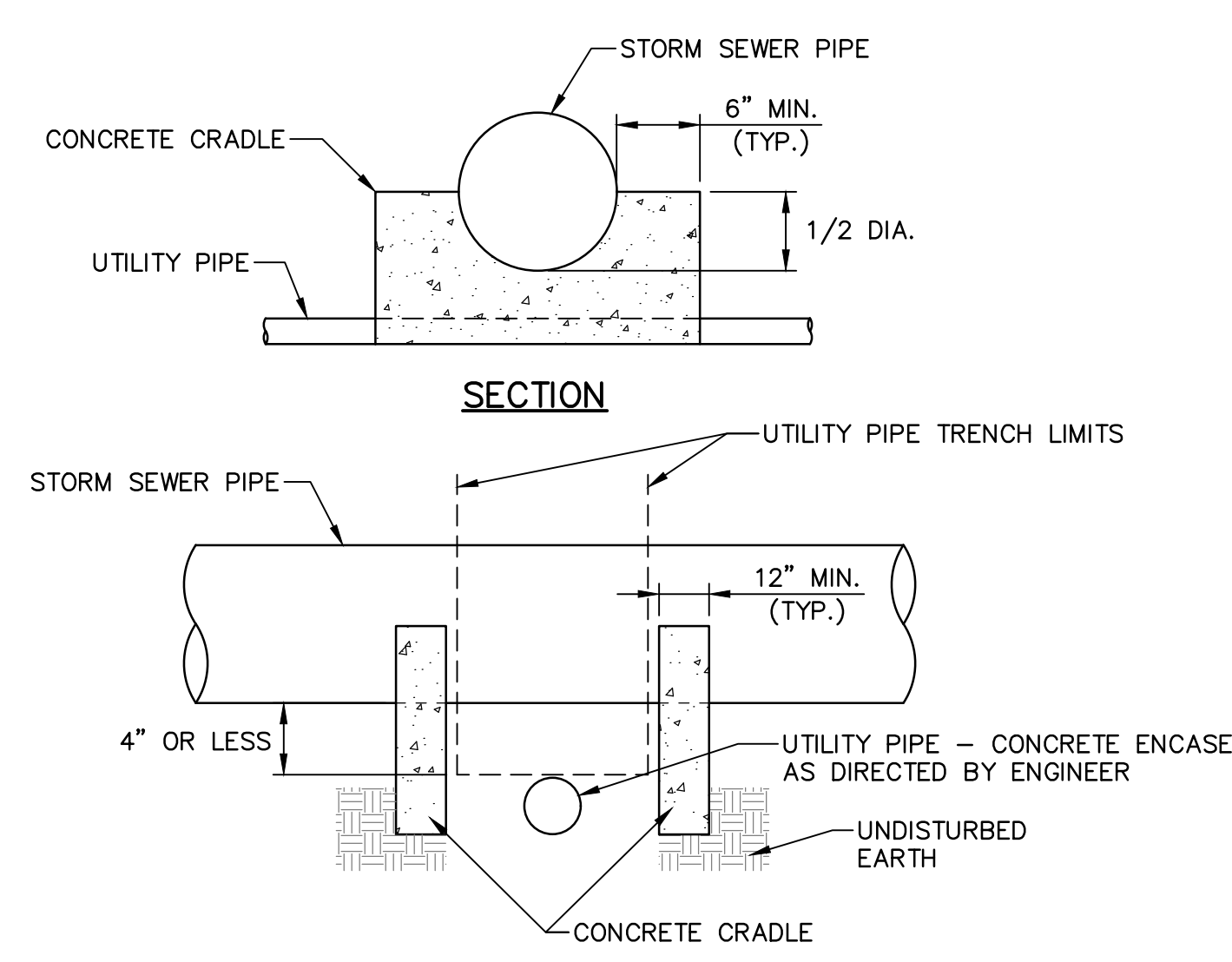
CORE DRILLED HOLE



- NOTES:**
- KEEP GROUNDWATER, SURFACE WATER AND DEBRIS FROM ENTERING EXISTING FACILITIES.
 - MAINTAIN EXISTING FLOW DURING CONSTRUCTION.
 - BREAKOUT EXISTING CONCRETE/BRICK BENCH AS REQUIRED AND FORM NEW CHANNEL WITH NON-SHRINK GROUT TO ALLOW FOR PROPER FLOW. SEE TYPICAL MANHOLE CHANNEL DETAIL.

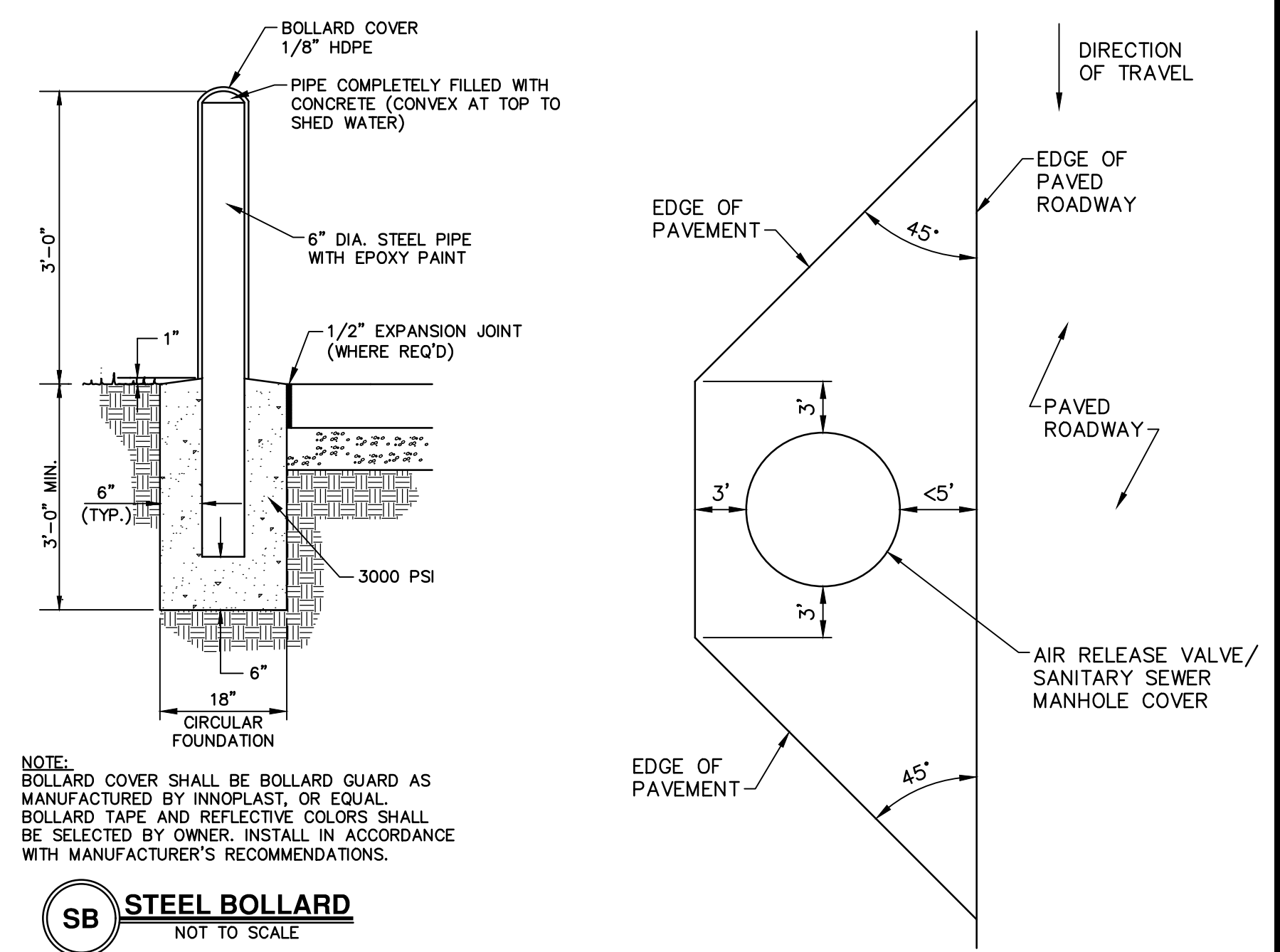
CAST-IN-PLACE HOLE

CEM CONNECTION TO EXISTING MANHOLE DETAIL
NOT TO SCALE



- NOTES:**
- UTILITY PIPES INCLUDE BUT NOT LIMITED TO WATER, SANITARY SEWER, AND GAS MAINS.
 - PROVIDE CONCRETE CRADLE WHEN CLEARANCE BETWEEN STORM SEWER PIPE AND UTILITY PIPE IS 4 INCHES OR LESS.

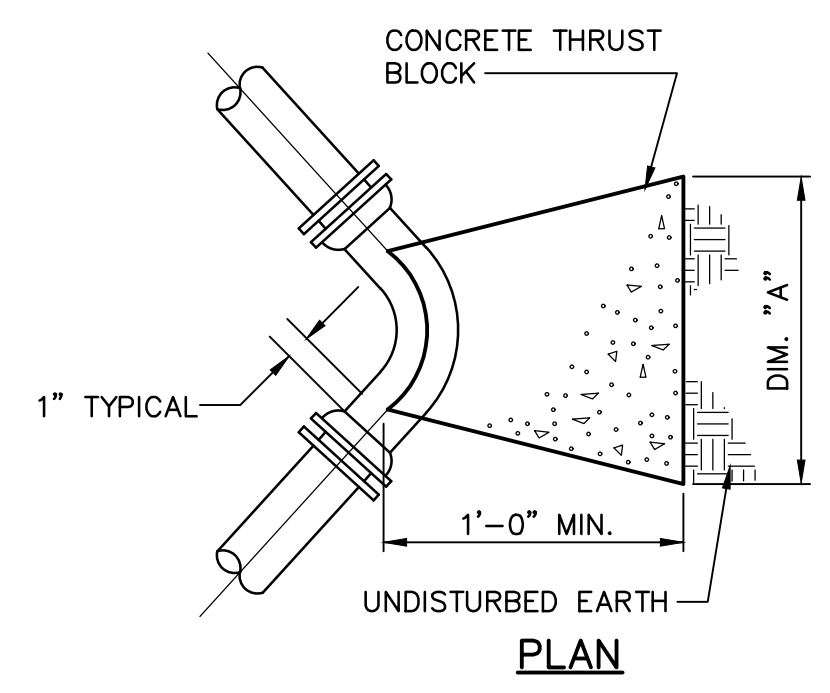
CC CONCRETE CRADLE DETAIL
NOT TO SCALE



SB STEEL BOLLARD
NOT TO SCALE

- NOTES:**
- FLOW GUARD PAVING SHALL BE ADDED TO AIR RELEASE VALVE/SANITARY SEWER MANHOLES LOCATED WITHIN 5' OF THE PENNDOT PAVED ROADWAY OR SHOULDER.
 - FLOW GUARD PAVING SHALL CONSIST OF SUBBASE (TYPE 2A) 6" DEPTH AND SUPERPAVE ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, P684-22, 0.3 TO <3 MILLION ESALS, 12.5 MM MIX, 2" DEPTH, SRL L

PG FLOW GUARD PAVING
NOT TO SCALE

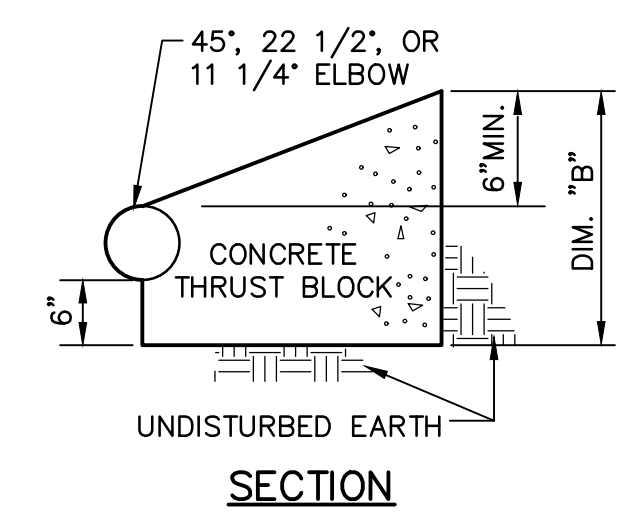


- NOTES:**
- THRUST BLOCKS ARE NOT REQUIRED WHEN FUSED HDPE PIPE IS UTILIZED, WITH THE EXCEPTION OF ALL TERMINAL AND INLINE CLEANOUTS WHICH MUST HAVE THRUST BLOCKS.

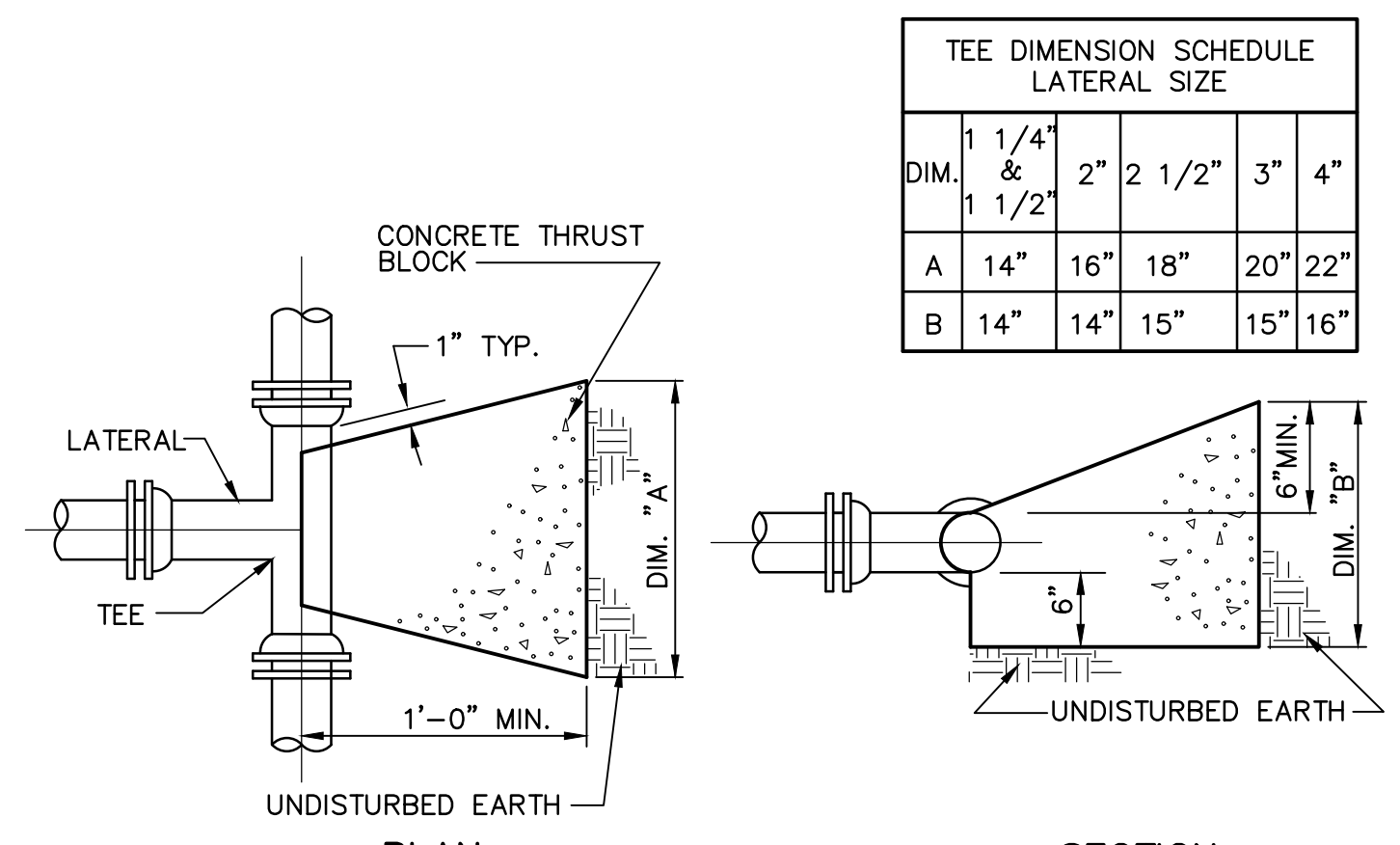
TB1 HORIZONTAL THRUST BLOCK DETAILS
NOT TO SCALE

ELBOW DIMENSION SCHEDULE											
DIM.	6"-45°	4"-45°	3"-45°	2 1/2"-45°	2"-45°	1 1/4"-45° & 1 1/2"-45°	4"-22 1/2°	3"-22 1/2°	2 1/2"-22 1/2°	4"-11 1/4°	3"-11 1/4°
A	36	24	18	16	14	12	18	16	14	16	12
B	24	16	15	15	14	14	16	15	15	16	14

A & B DIMENSIONS ARE IN INCHES

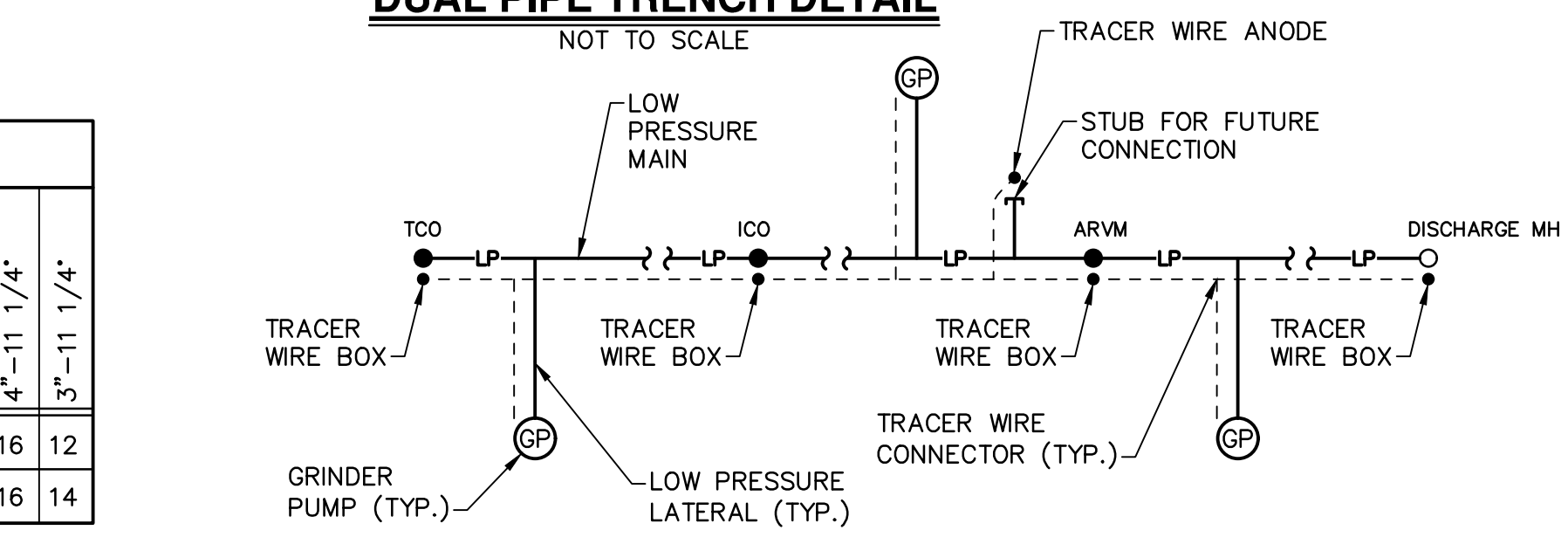


SECTION

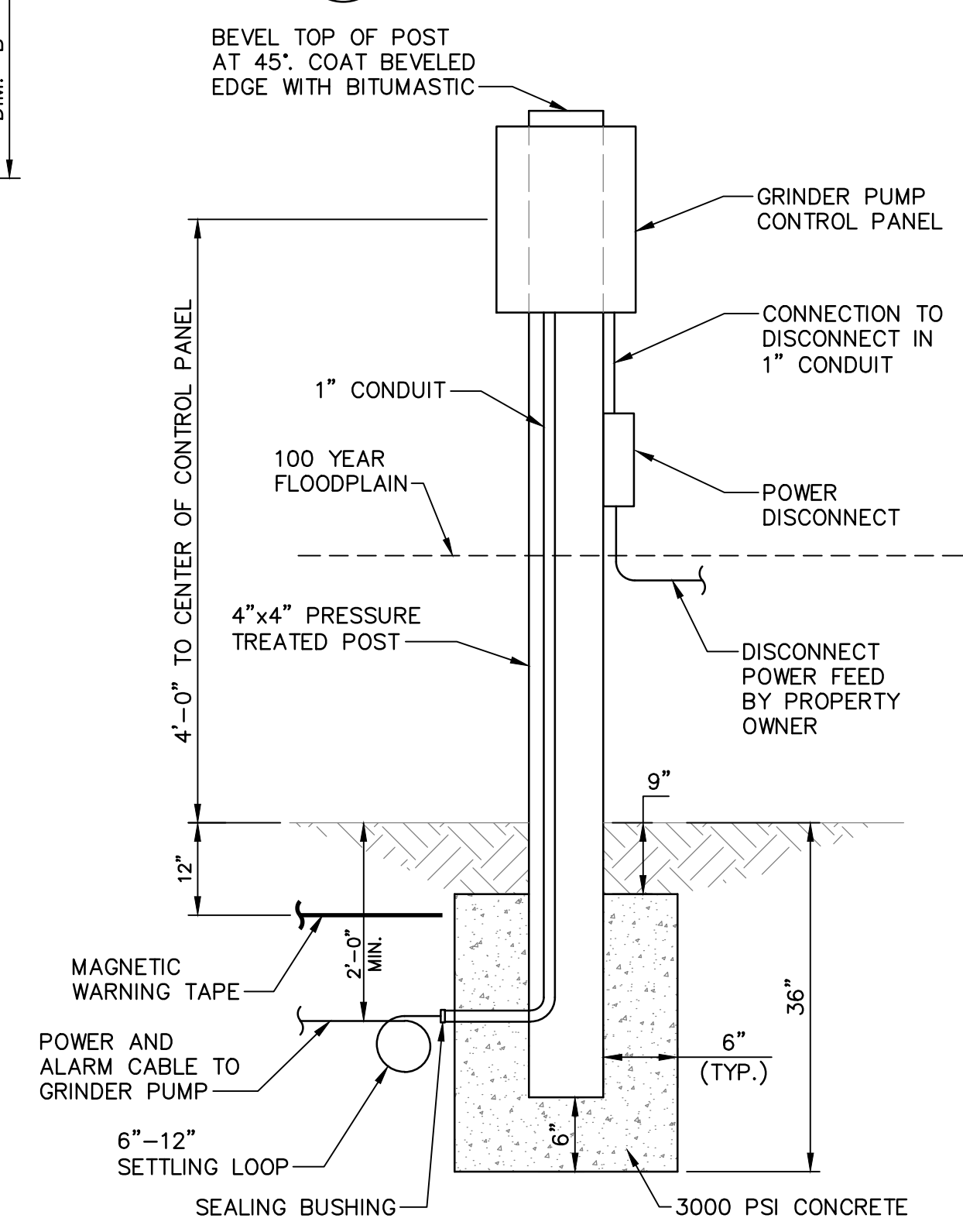


- NOTES:**
- THRUST BLOCKS ARE NOT REQUIRED WHEN FUSED HDPE PIPE IS UTILIZED, WITH THE EXCEPTION OF ALL TERMINAL AND INLINE CLEANOUTS WHICH MUST HAVE THRUST BLOCKS.

TB2 HORIZONTAL THRUST BLOCK DETAILS (LOW PRESSURE SEWERS)
NOT TO SCALE

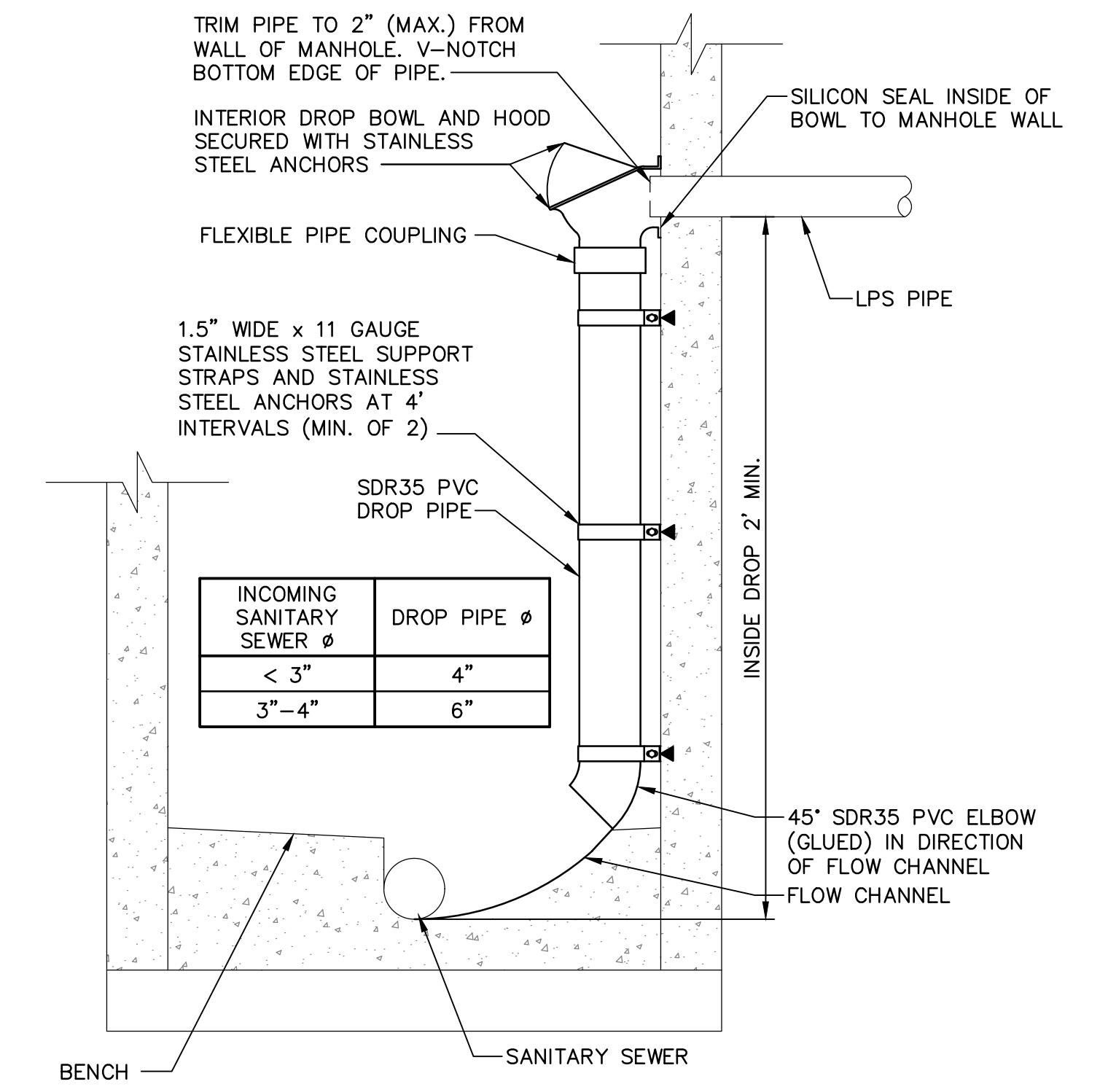


TW TRACER WIRE SCHEMATIC - LOW PRESSURE
NOT TO SCALE



- NOTES:**
- THE POWER AND ALARM CABLE OF GRINDER PUMPS LOCATED WITHIN THE 100 YEAR FLOOD PLAIN SHALL BE PLACED IN 1" PVC CONDUIT THE ENTIRE WAY BETWEEN THE GRINDER PUMP AND THE CONTROL PANEL

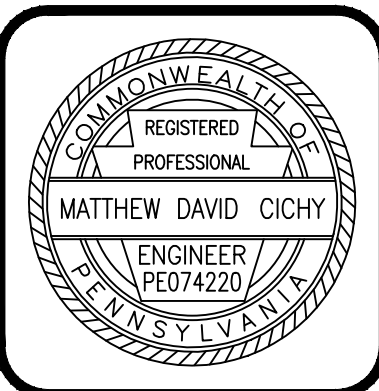
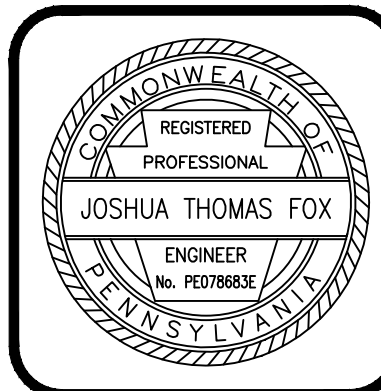
CP GRINDER PUMP CONTROL PANEL
NOT TO SCALE



- NOTES:**
- REFER TO SPECIFICATIONS FOR DROP SANITARY BOWL AND HOOD, STAINLESS STEEL STRAP AND ANCHOR, AND FLEXIBLE PIPE COUPLING REQUIREMENTS.

MLP LOW PRESSURE SEWER DISCHARGE MANHOLE
NOT TO SCALE

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300 N. 4TH STREET
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MISCELLANEOUS CONSTRUCTION DETAILS

FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

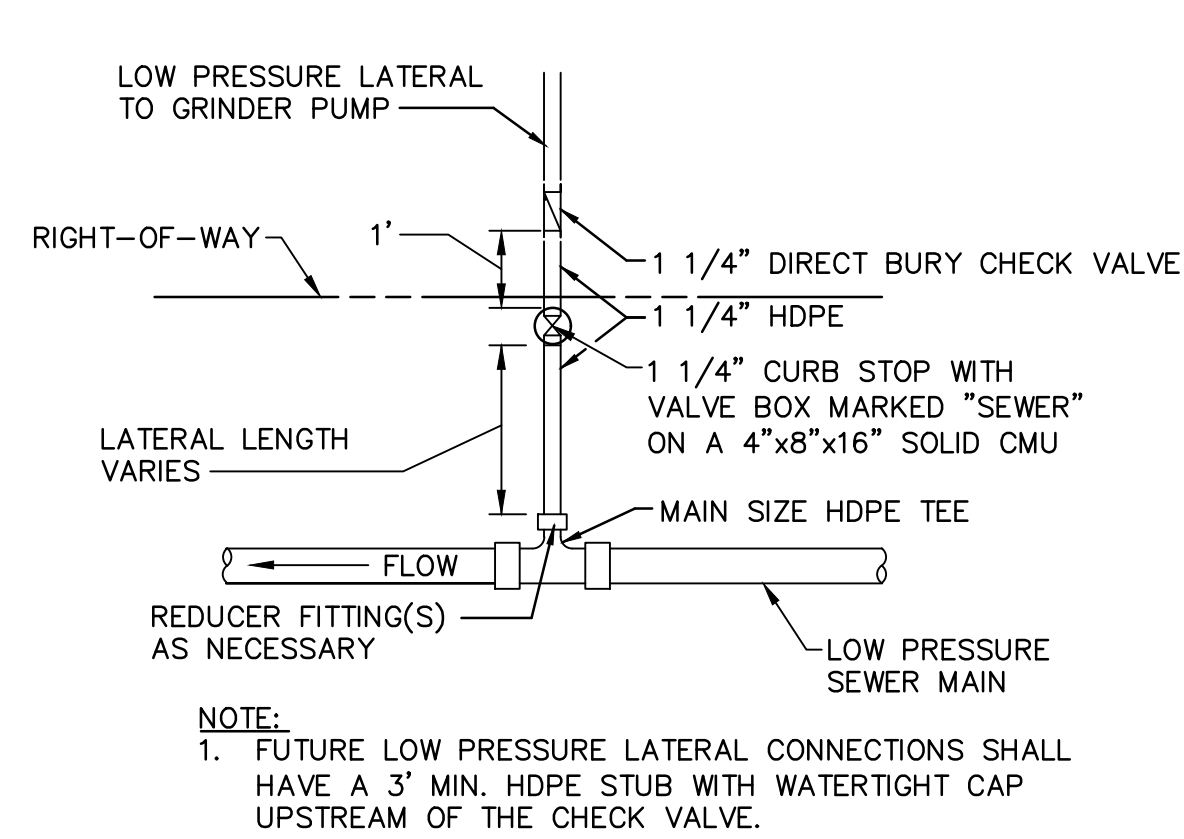
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SCALE- AS NOTED
DATE- MAR. 2019

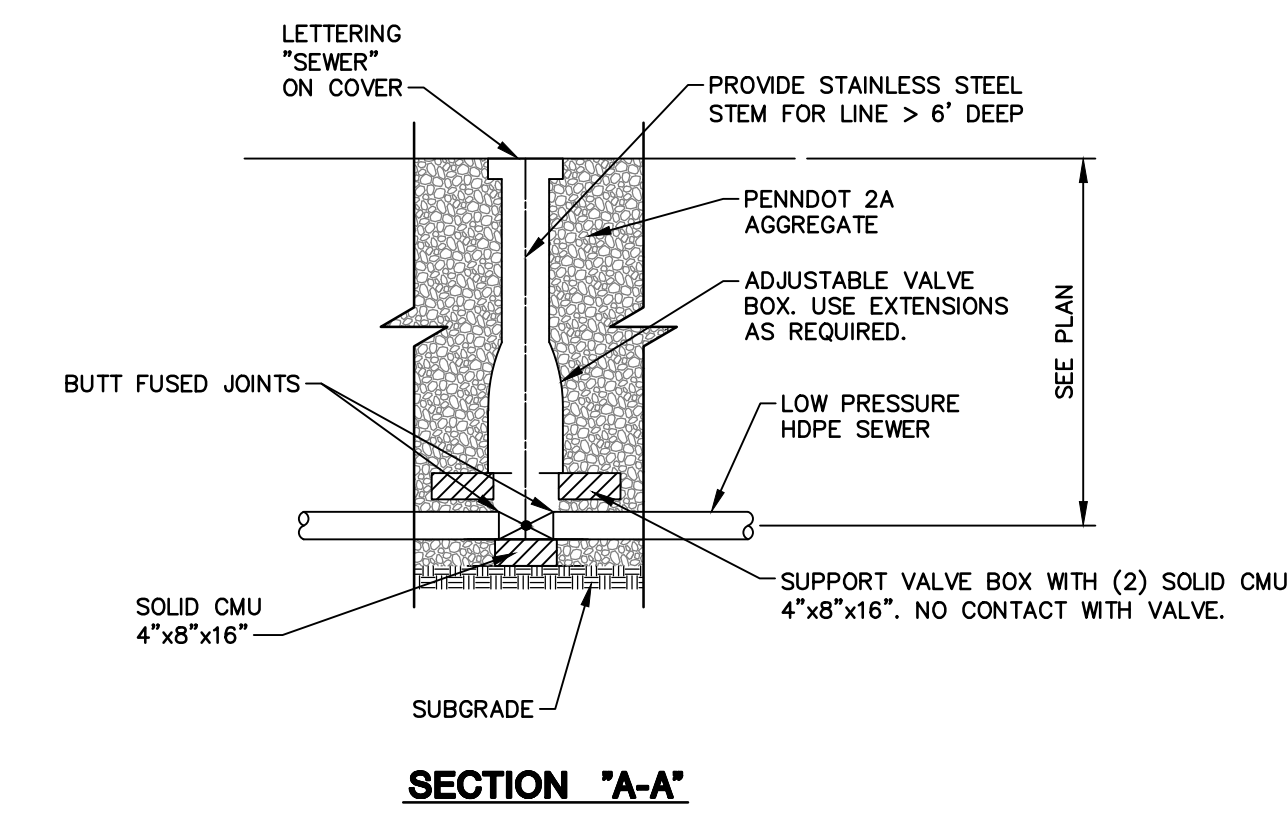
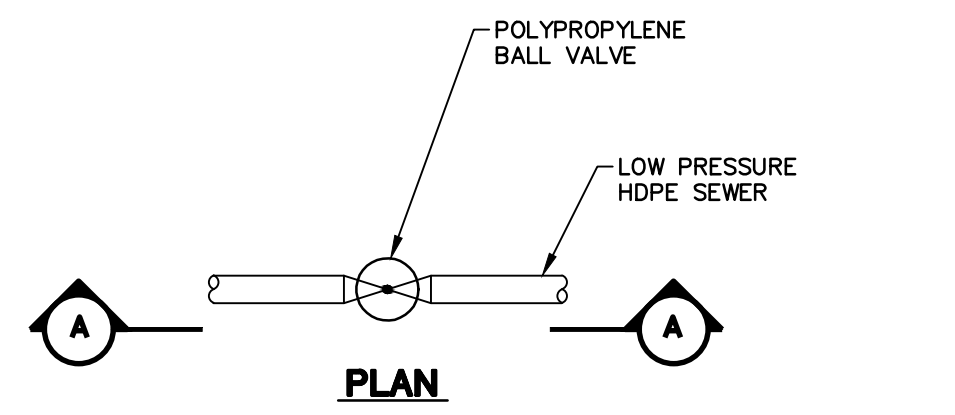
DRAWING NO.
DT-4

SHEET NO.
55 OF 60

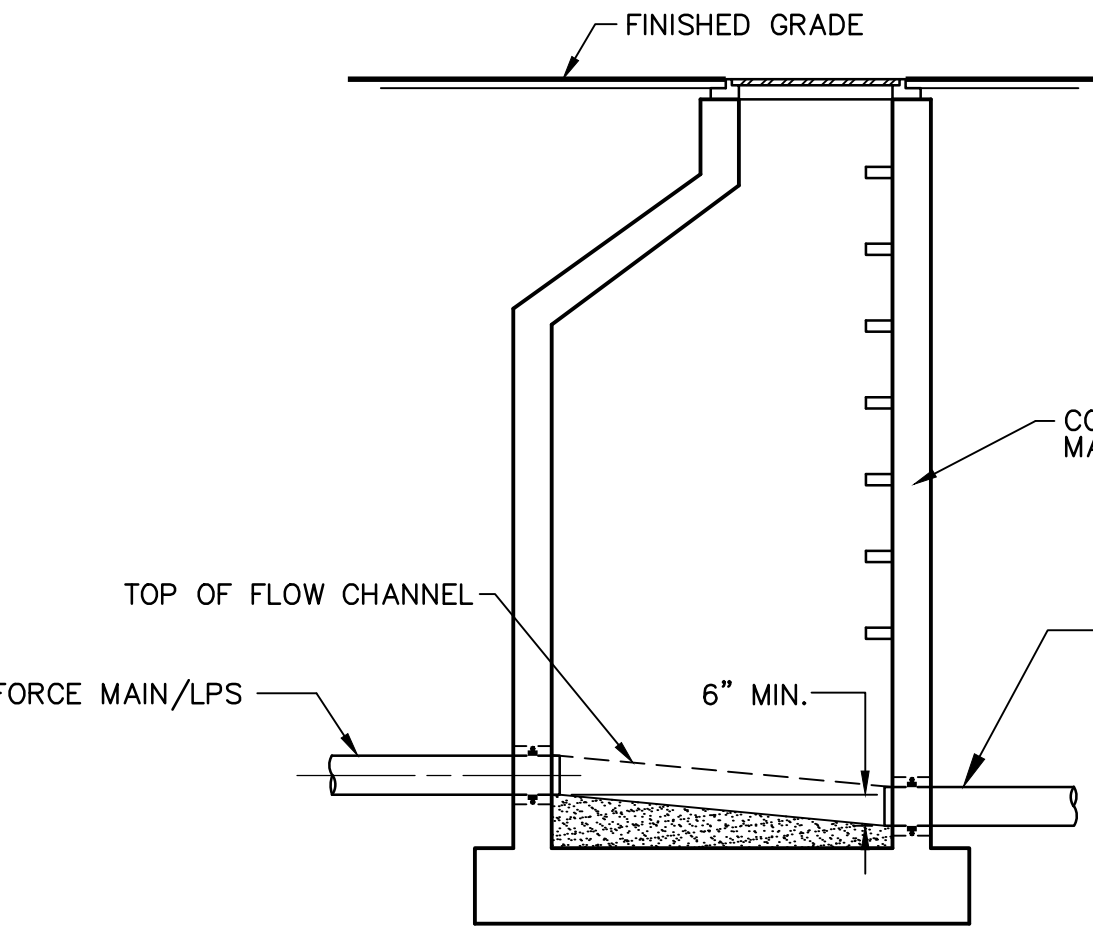
PROJECT 005100.0434



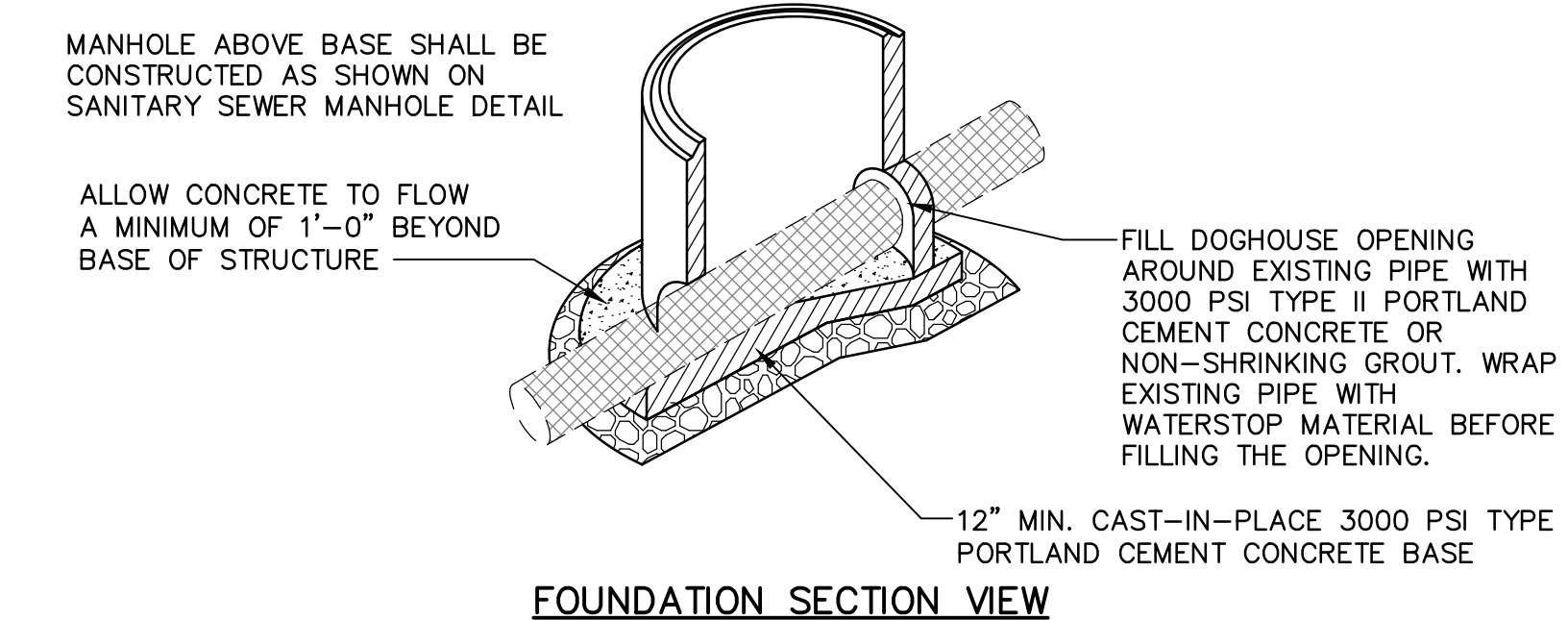
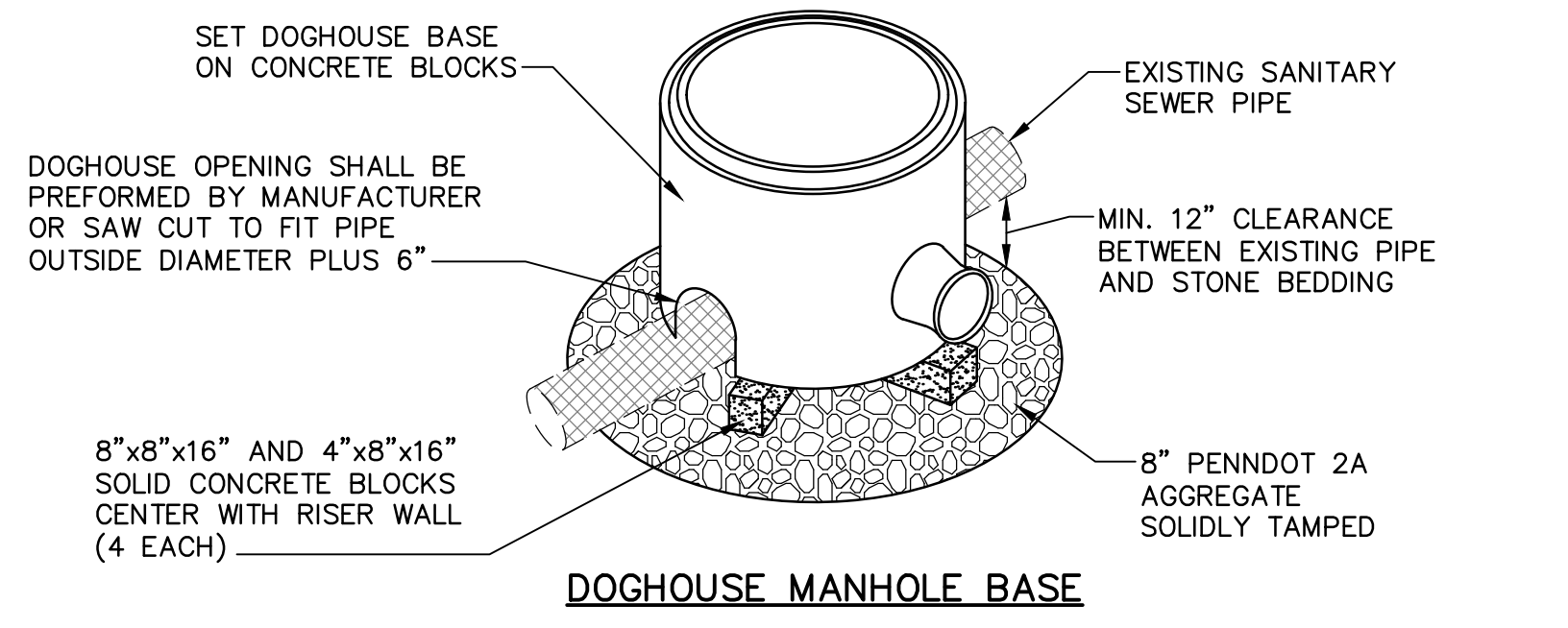
PLC LOW PRESSURE LATERAL CONNECTION
NOT TO SCALE



BVA BALL VALVE ASSEMBLY - LOW PRESSURE SEWER
NOT TO SCALE



PM FORCE MAIN/LPS DISCHARGE MANHOLE DETAIL
NOT TO SCALE



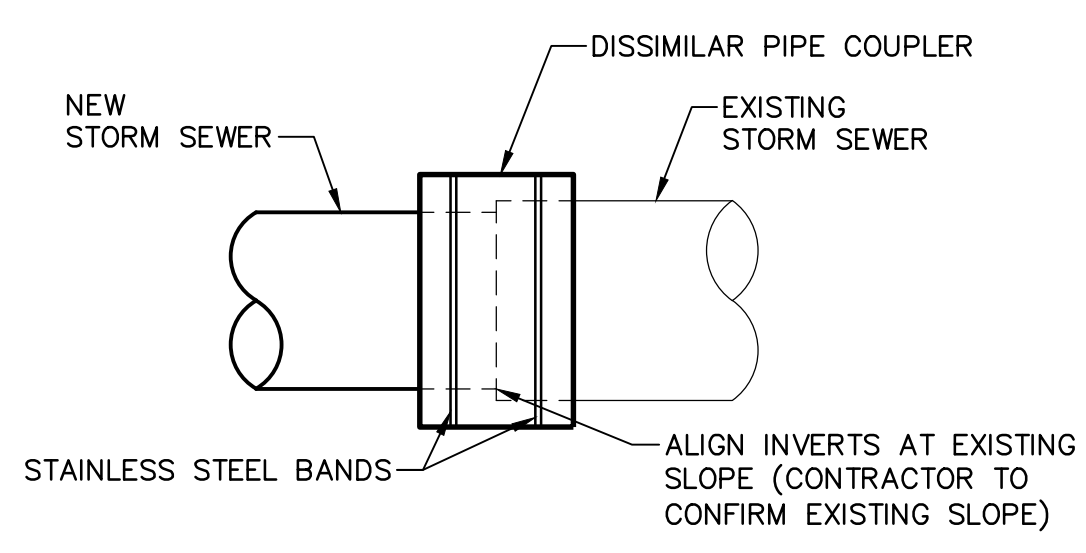
- NOTES:**
- CONSTRUCT A FORMED INVERT FROM EXISTING SEWER PIPE TO ALLOW FLOW TO THE NEW SEWER LINE.
 - POUR FLOW CHANNEL. BENCH HEIGHT TO MATCH CROWN OF PIPE.
 - CUT AND REMOVE THE TOP HALF OF EXISTING PIPE TO WITHIN 6 inch OF THE MANHOLE WALLS AFTER THE INVERT AND SHELF HAVE BEEN FORMED, AND THE MANHOLE HAS BEEN FULLY TESTED IN ACCORDANCE WITH THE SPECIFICATIONS.
 - PRECAST CONCRETE MANHOLE BASES SHALL BE FABRICATED IN ACCORDANCE WITH SECTION 33 05 13.

DH DOGHOUSE SANITARY MANHOLE BASE
NOT TO SCALE

HOME TOWNSHIP
MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

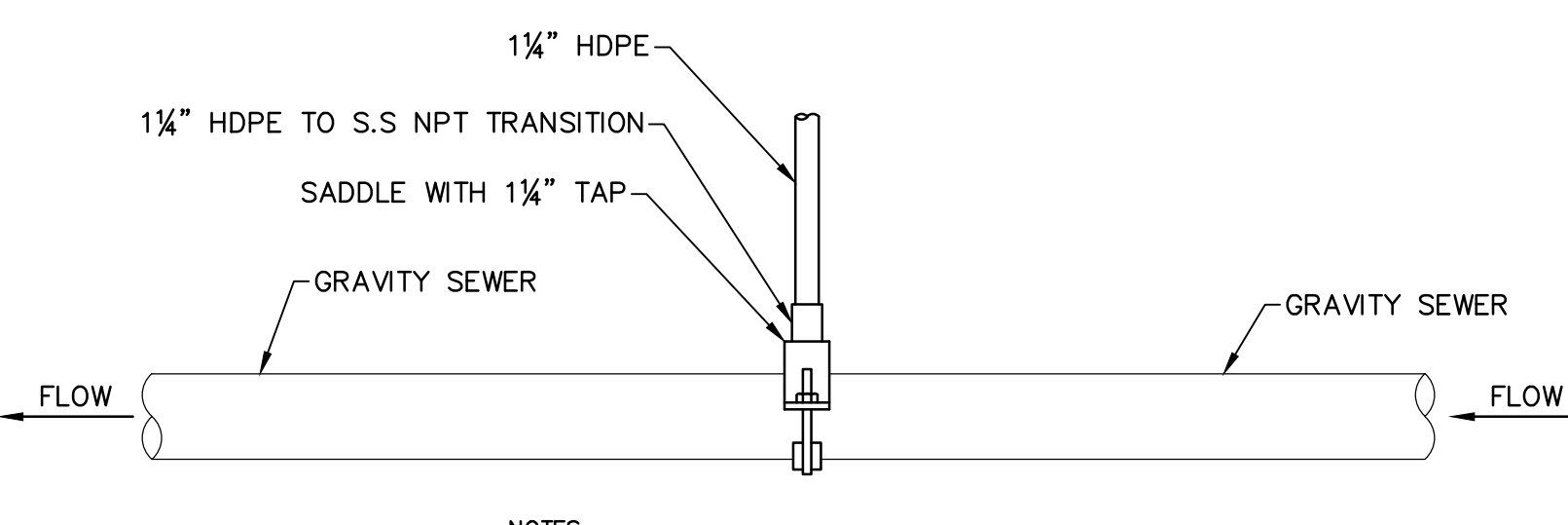
Sanitary Sewer Pipeline
6" Force Main Pipe
Depth - X FT
Pressure - 11.3 PSI

In Event of Pipeline Rupture
Call
(717) 444-3045

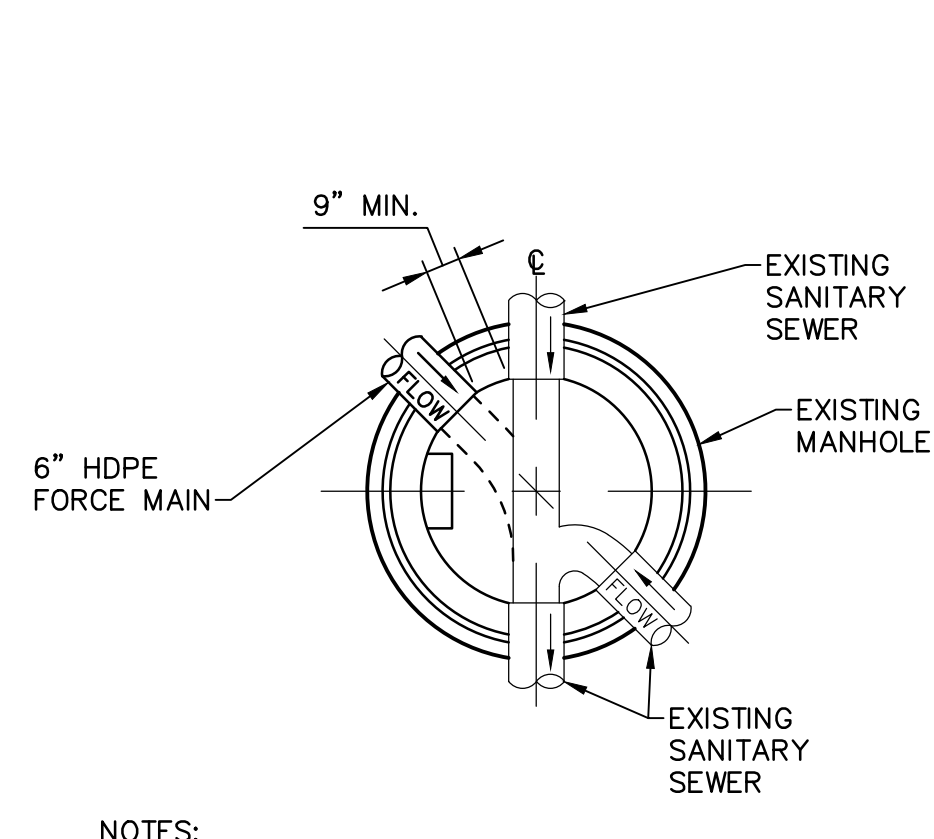


CONNECTION TO EXISTING STORM SEWER DETAIL
NOT TO SCALE

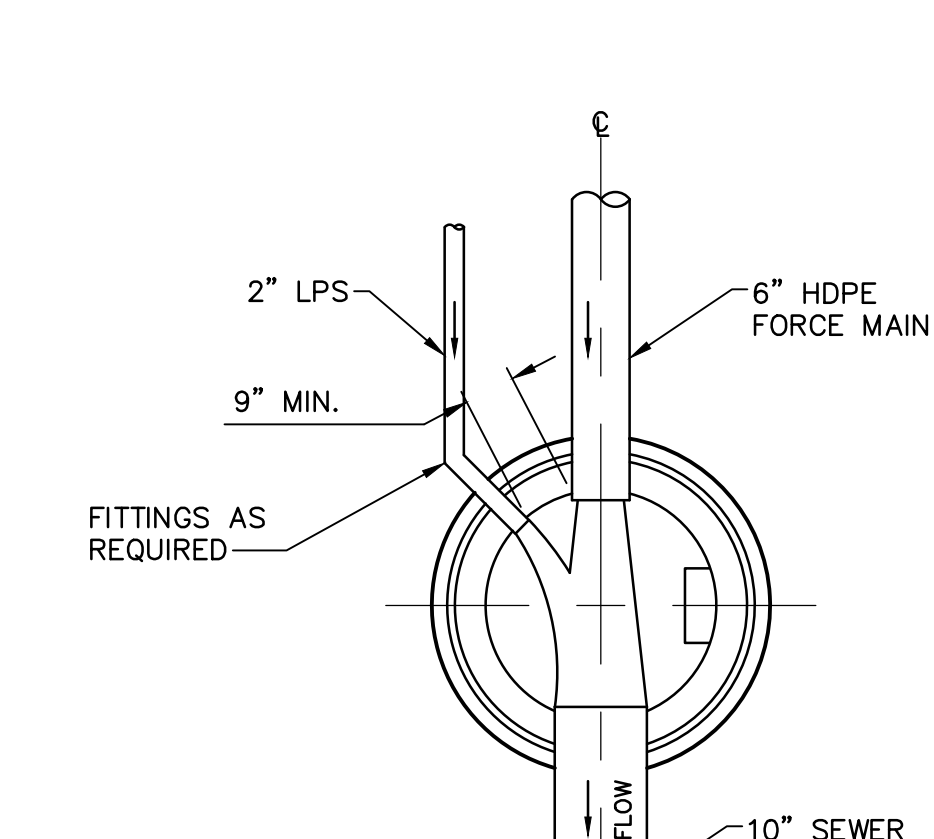
LOCATION/I.D. SIGN
NOT TO SCALE



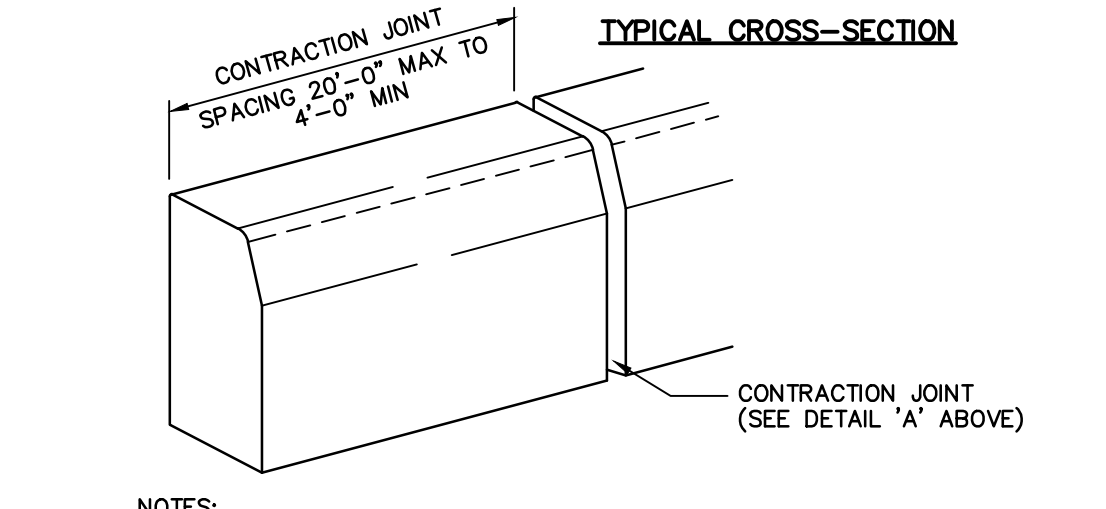
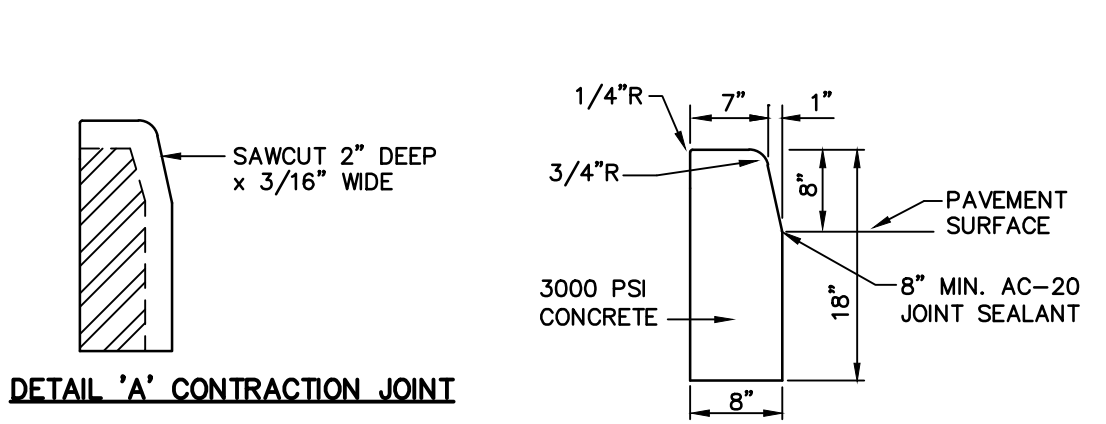
LPL CONNECTION TO GRAVITY SEWER DETAIL
NOT TO SCALE



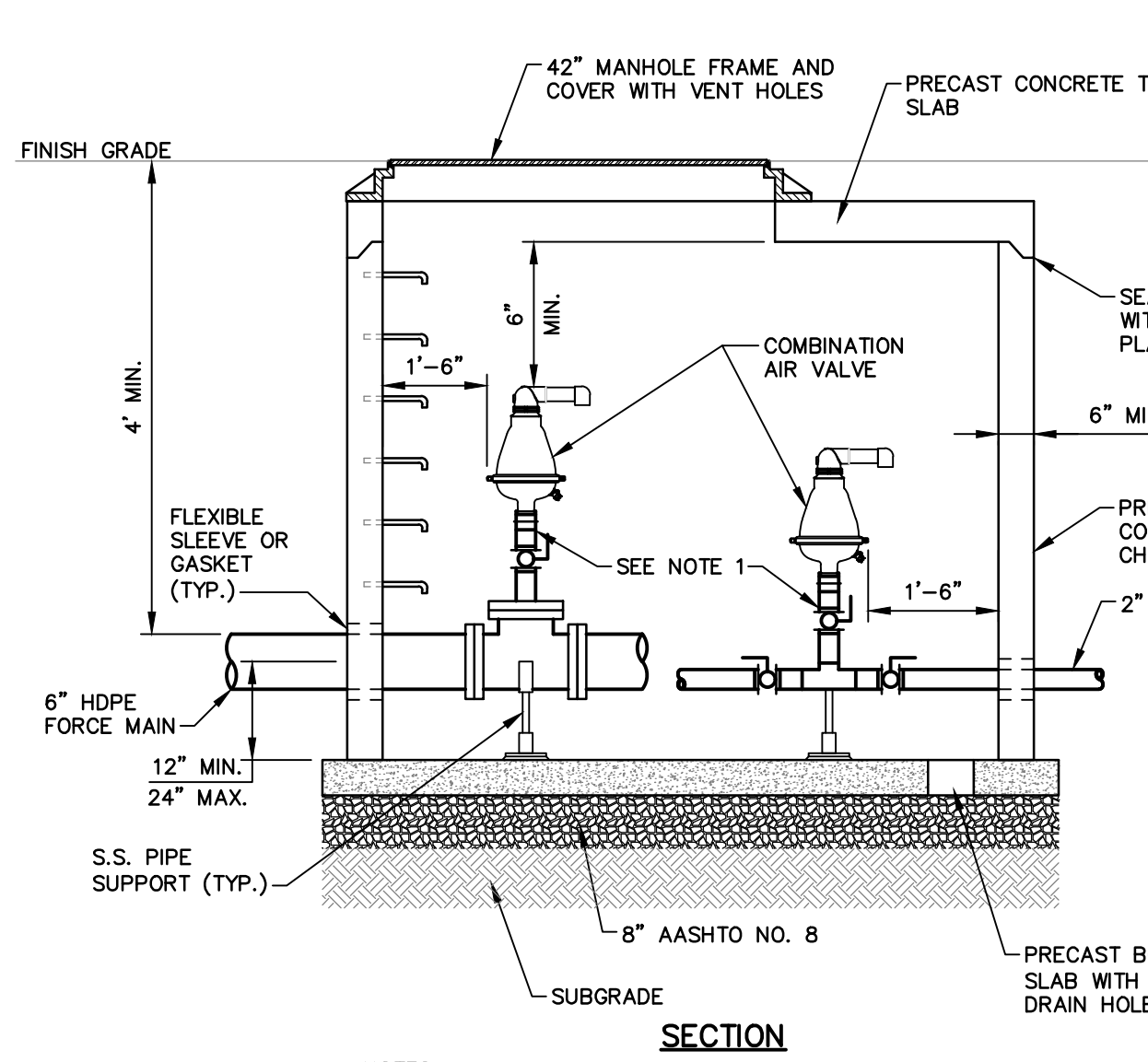
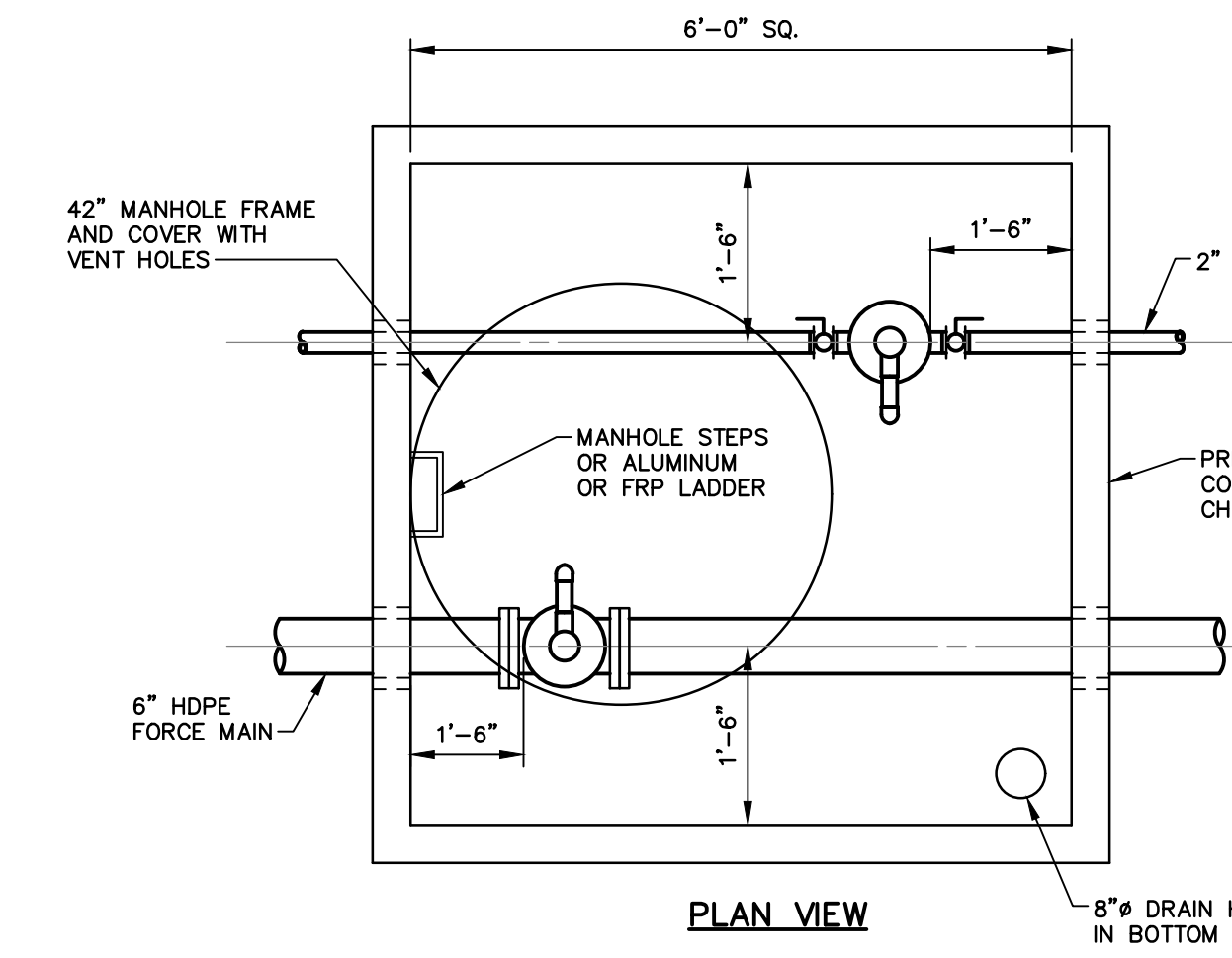
DM1 DISCHARGE MANHOLE (San MH 151)
NOT TO SCALE



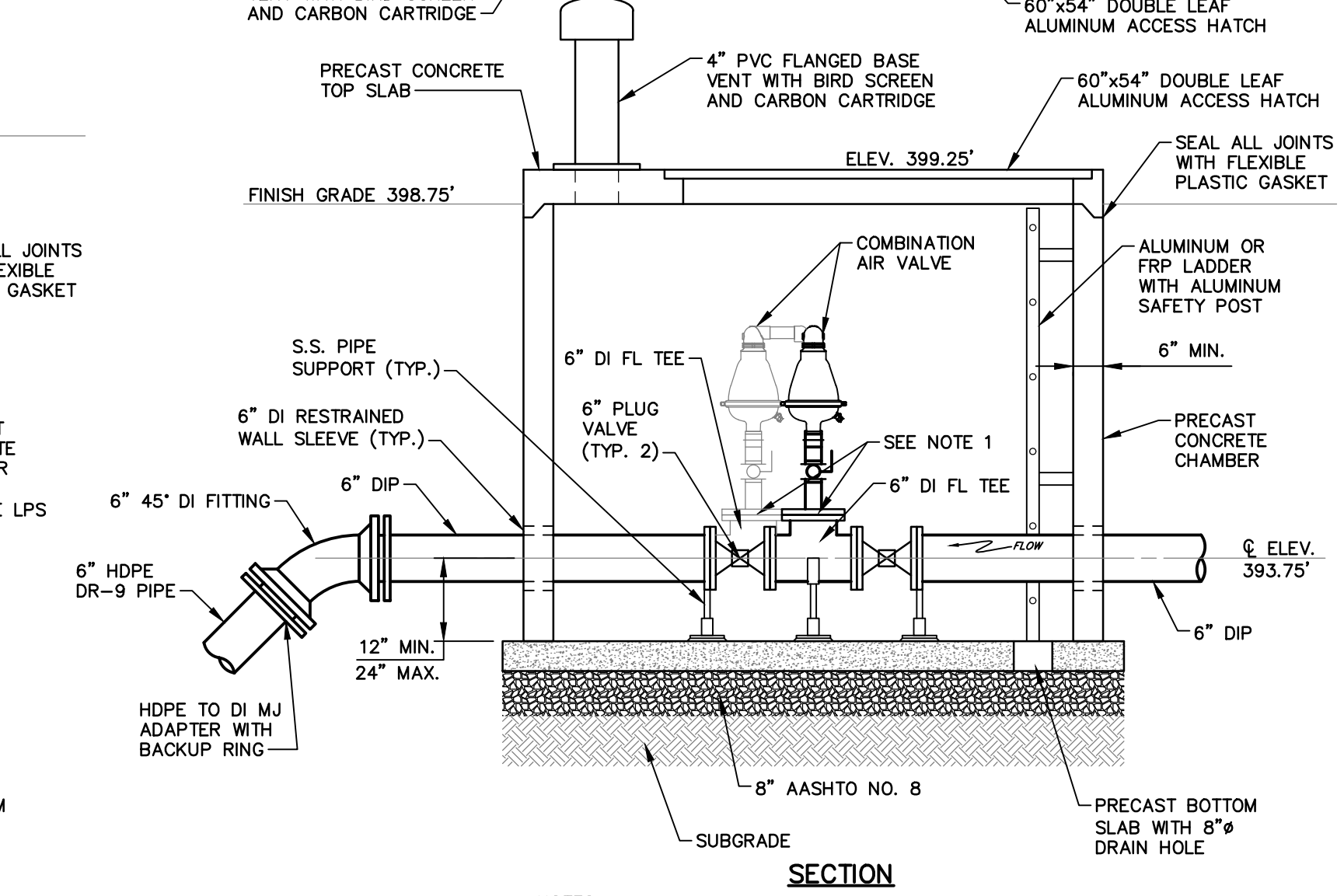
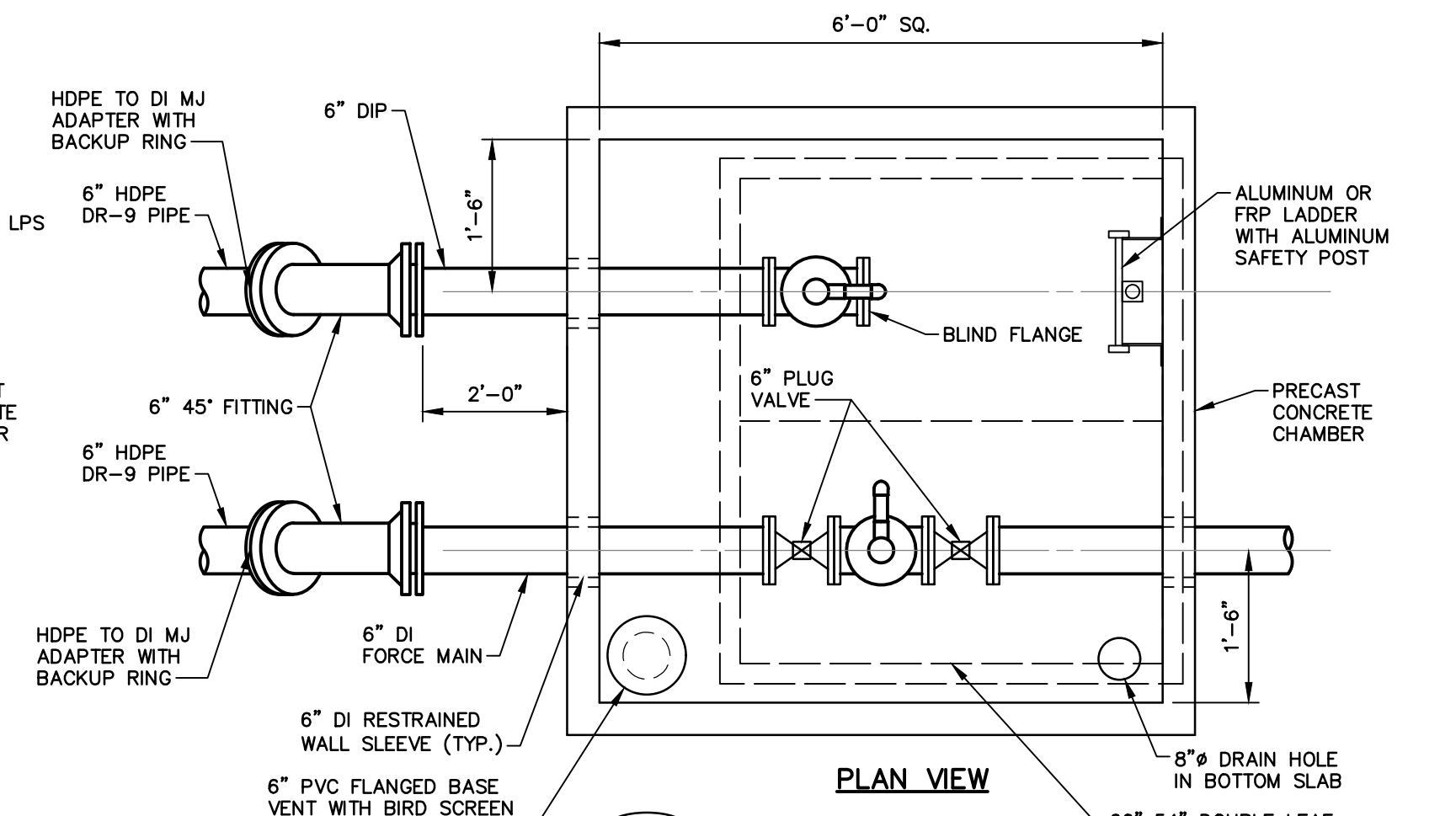
DM2 DISCHARGE MANHOLE (SMH-107)
NOT TO SCALE



CC CONCRETE CURB DETAIL
NOT TO SCALE

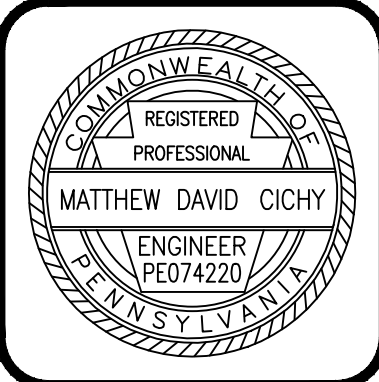
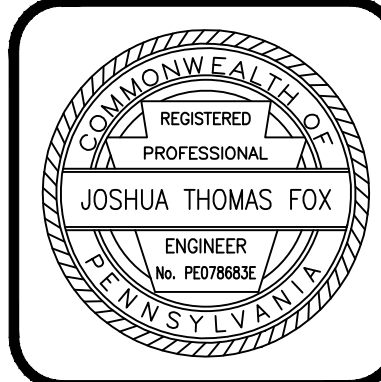


ARVM-8 AIR VALVE CHAMBER
NOT TO SCALE



ARVM-5 AIR VALVE CHAMBER
NOT TO SCALE

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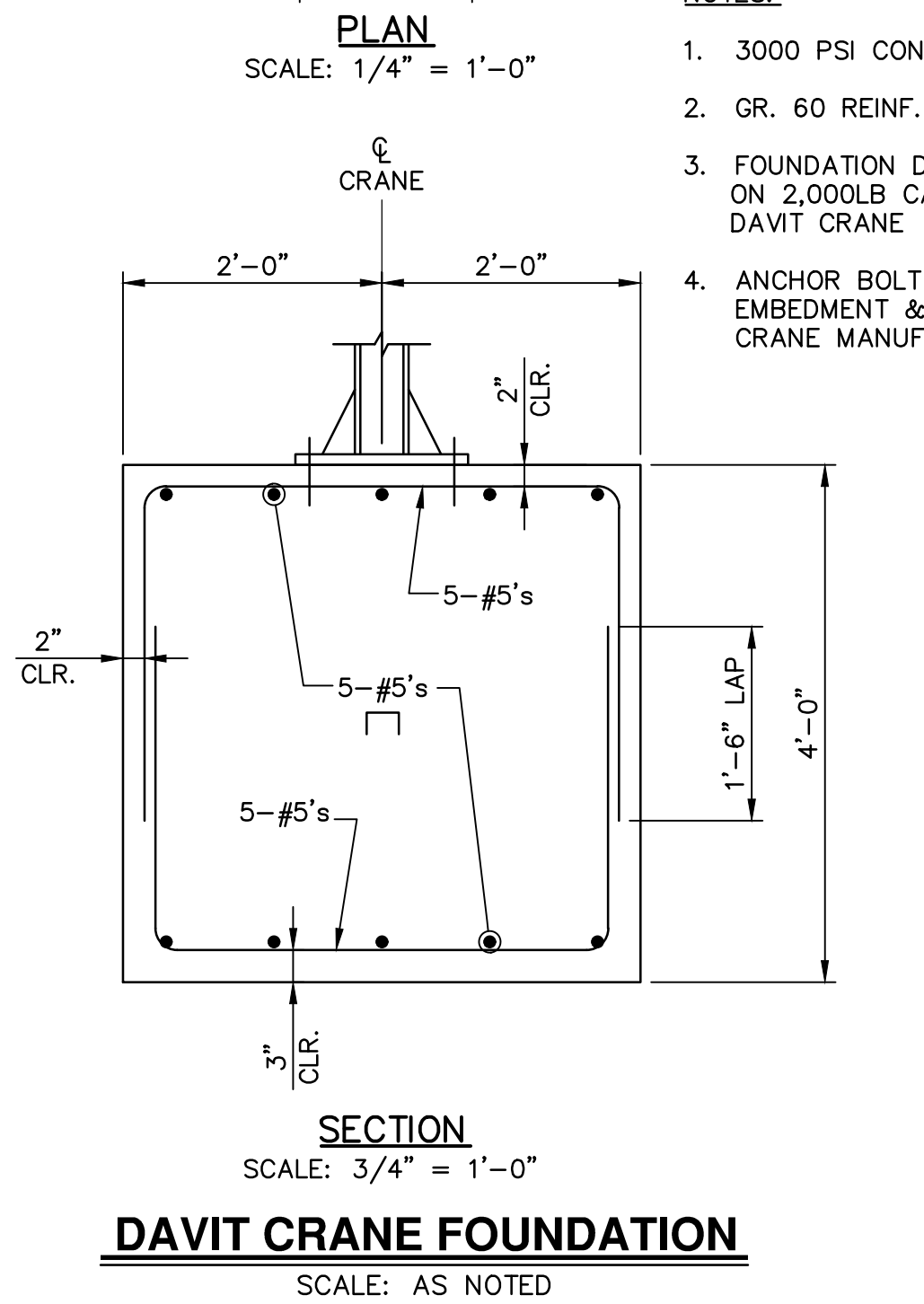
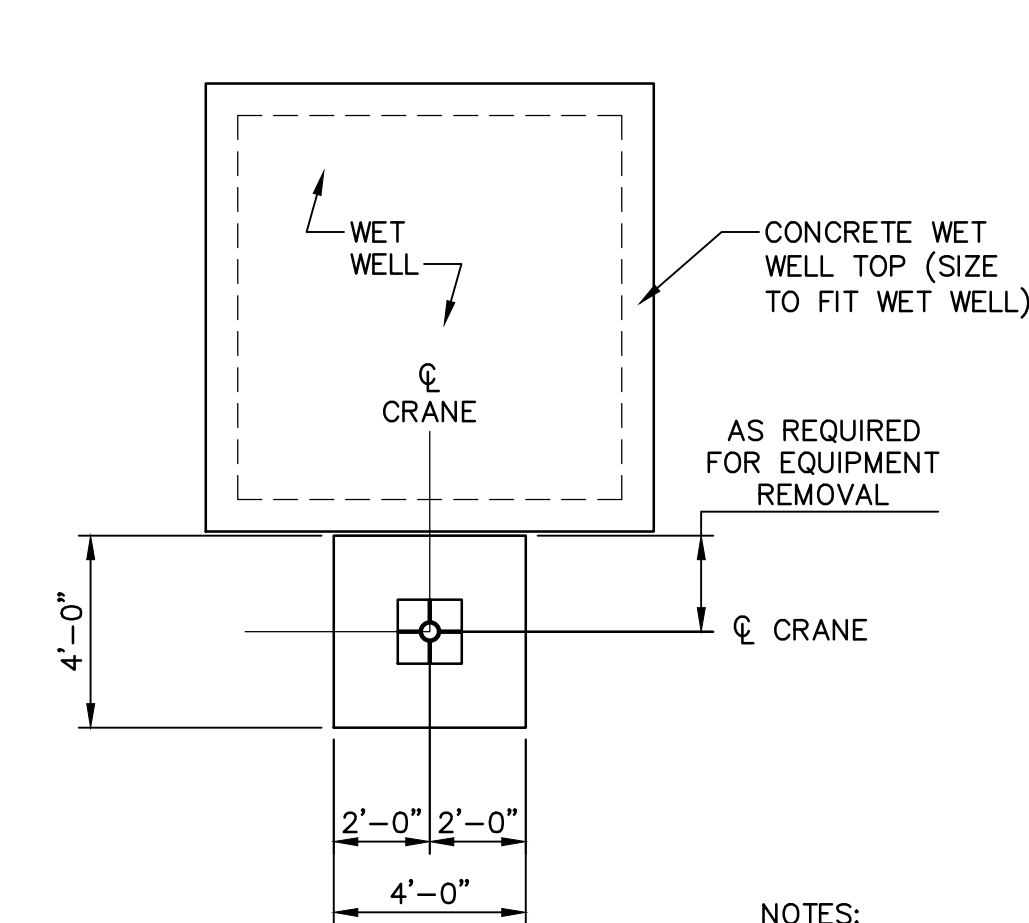
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hr@hr-ginc.com
www.hr-ginc.com

HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

MISCELLANEOUS CONSTRUCTION DETAILS
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

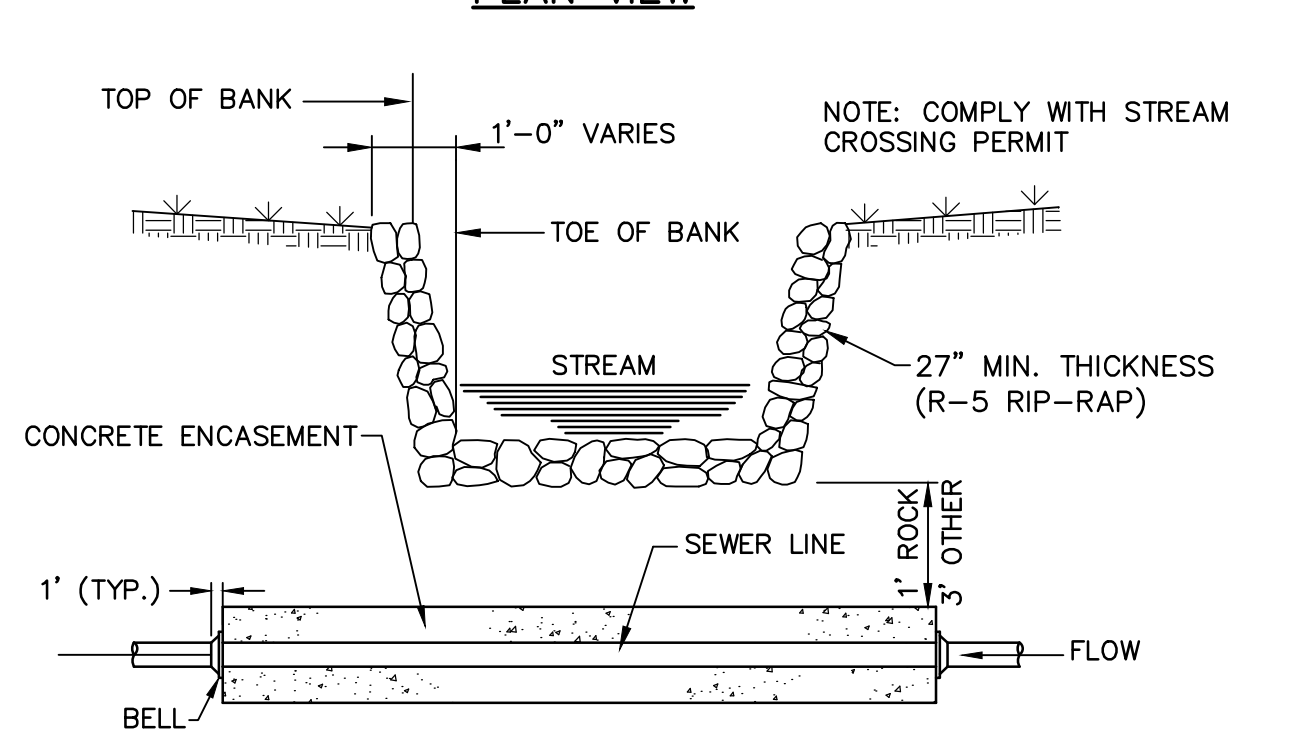
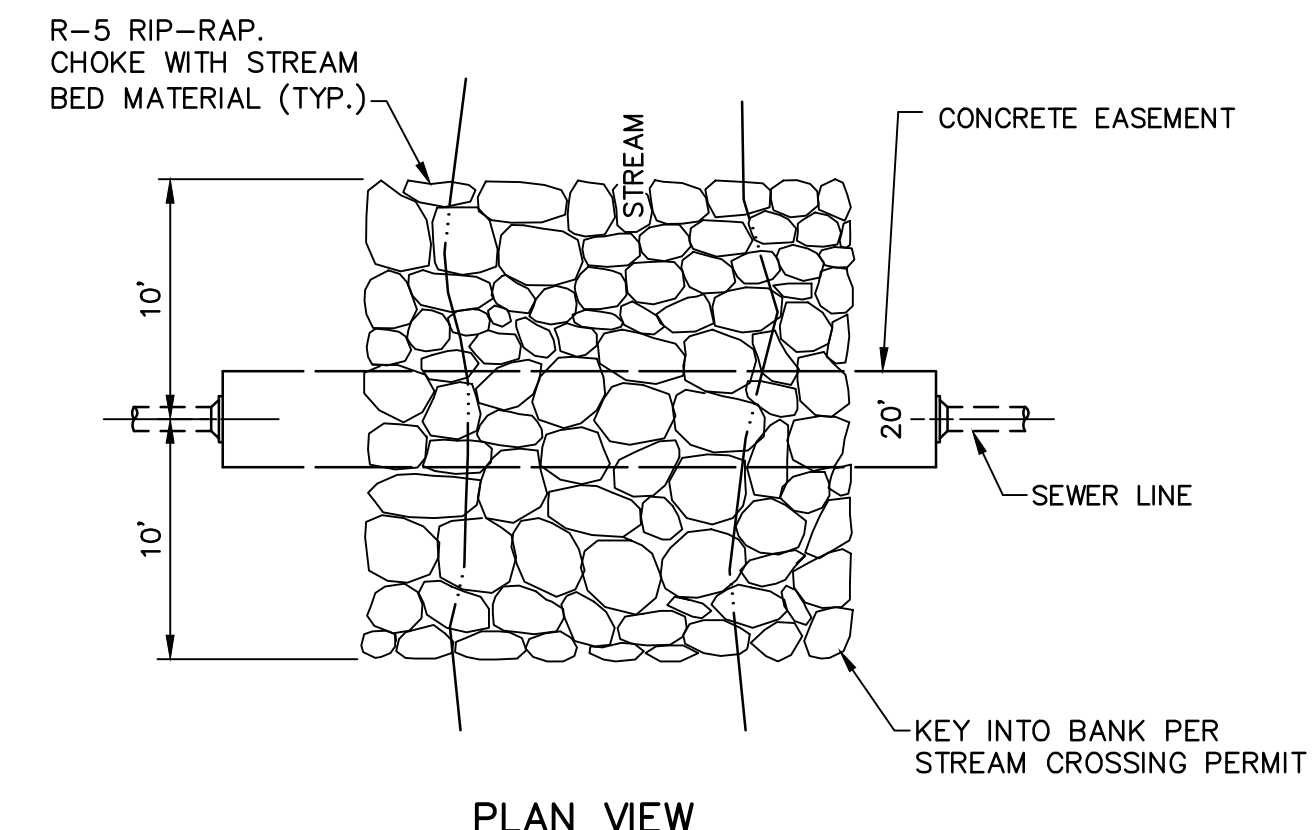
PROJ. MGR. - JTF
DESIGN - SAT
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO. DT-5
SHEET NO. 56 OF 60
PROJECT 005100.0434

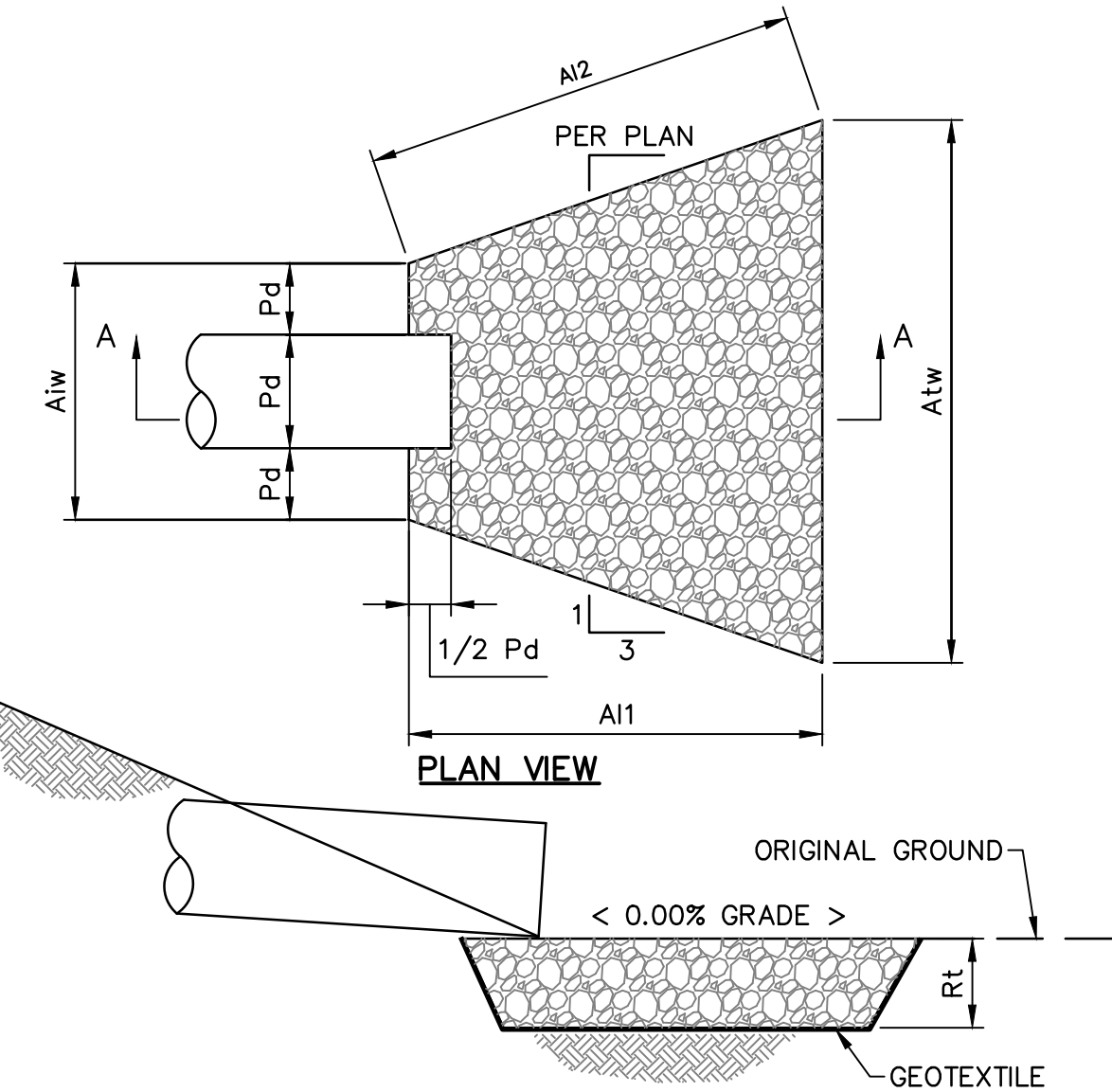


- NOTES:**
- 3000 PSI CONCRETE
 - GR. 60 REINF.
 - FOUNDATION DESIGN BASED ON 2,000LB CAPACITY DAVIT CRANE
 - ANCHOR BOLT SIZE, EMBEDMENT & LENGTH PER CRANE MANUFACTURER

DAVIT CRANE FOUNDATION
SCALE: AS NOTED



STREAM CROSSING DETAIL
NOT TO SCALE

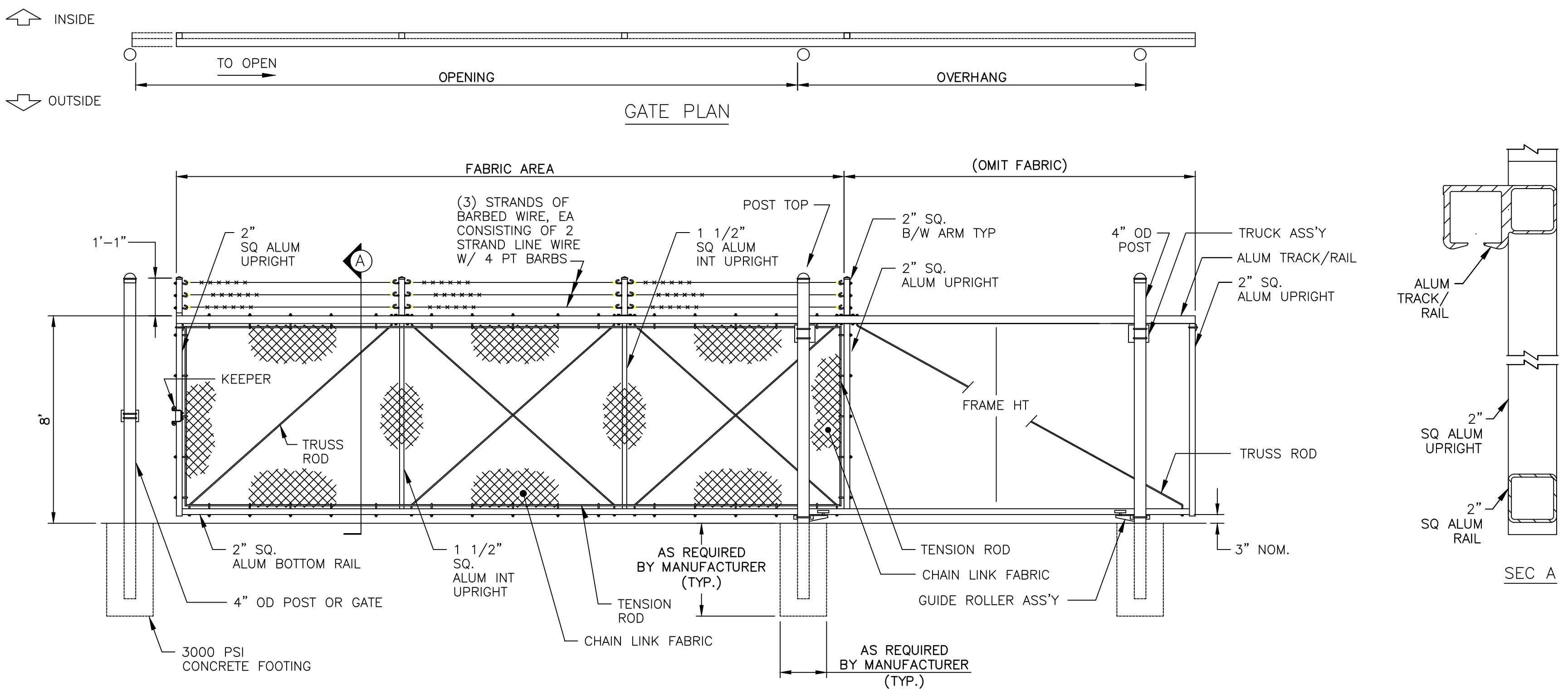


SECTION A-A

OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP		APRON			
		SIZE R-	THICK. Rt (IN)	LENGTH A1t (FT)	LENGTH A2t (FT)	INITIAL WIDTH A1w (FT)	TERMINAL WIDTH A2w (FT)
H-1	18	R-5	27	19.4	35.0	4.5	36.5

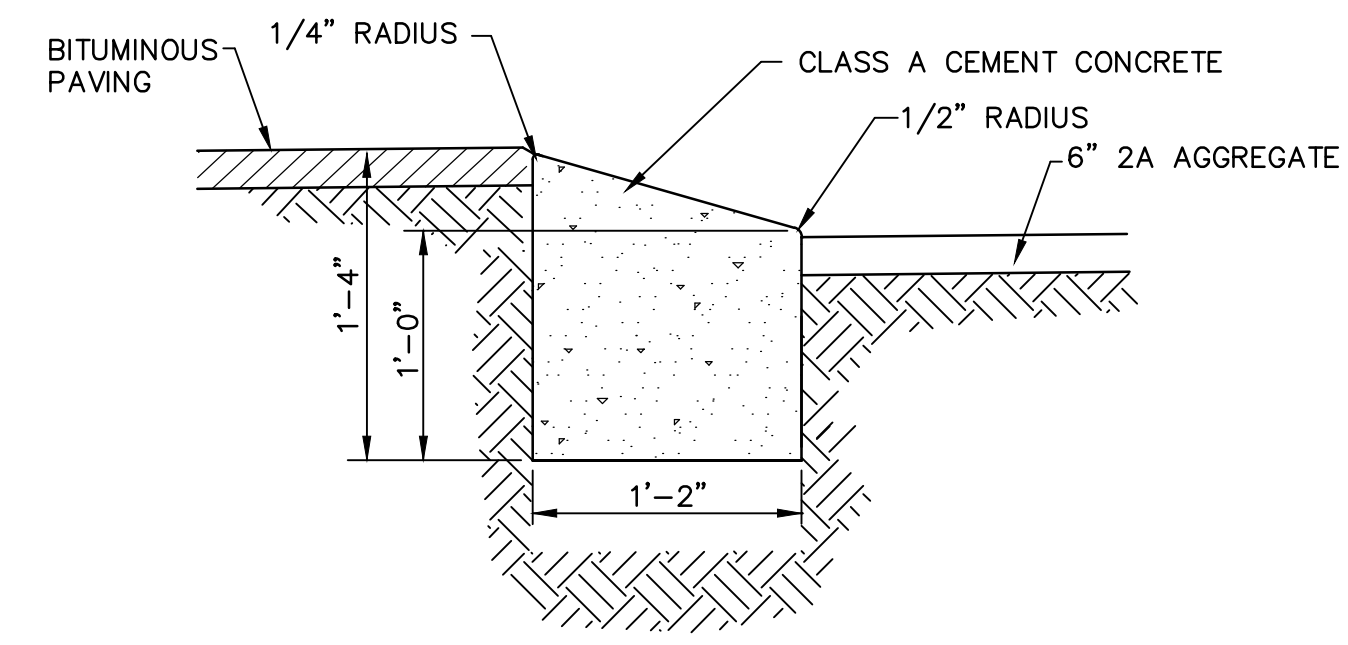
- NOTES:**
- ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
- ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.
- EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

STANDARD CONSTRUCTION DETAIL #9-2
RIPRAP APRON AT PIPE OUTLET
NO FLARED ENDWALL
NOT TO SCALE

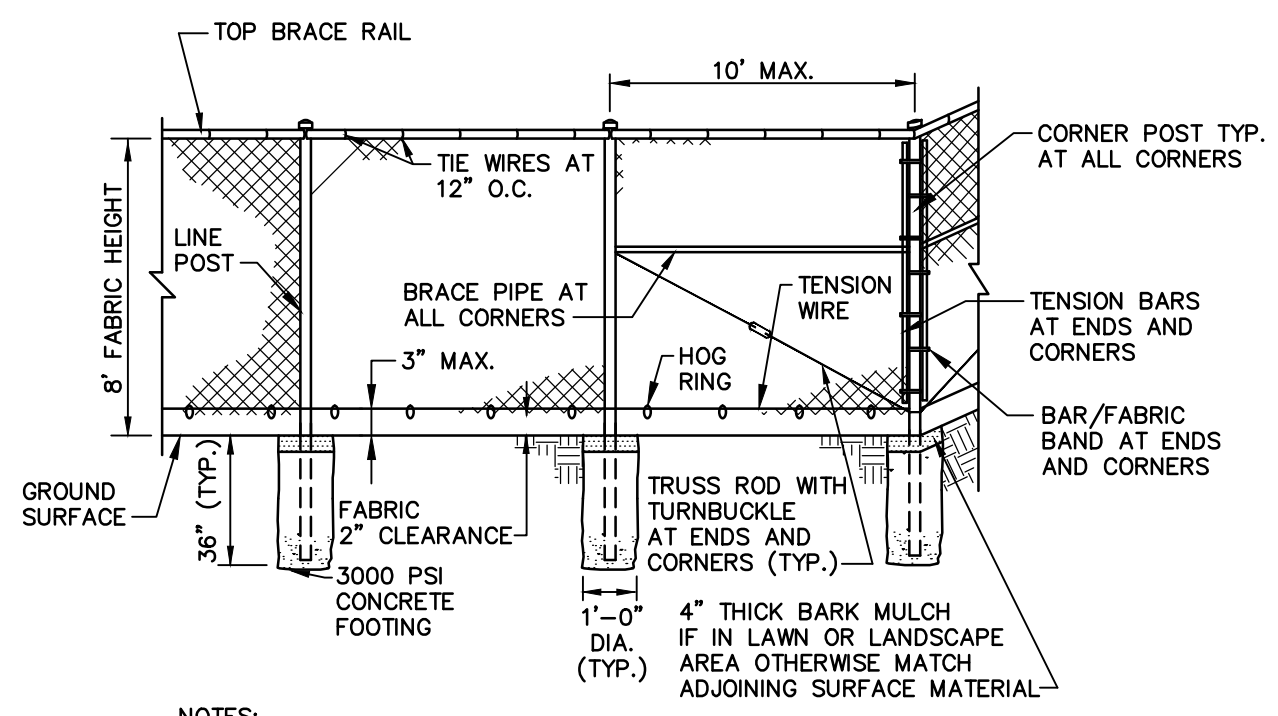


GATE ELEVATION - (3) BAYS SHOWN

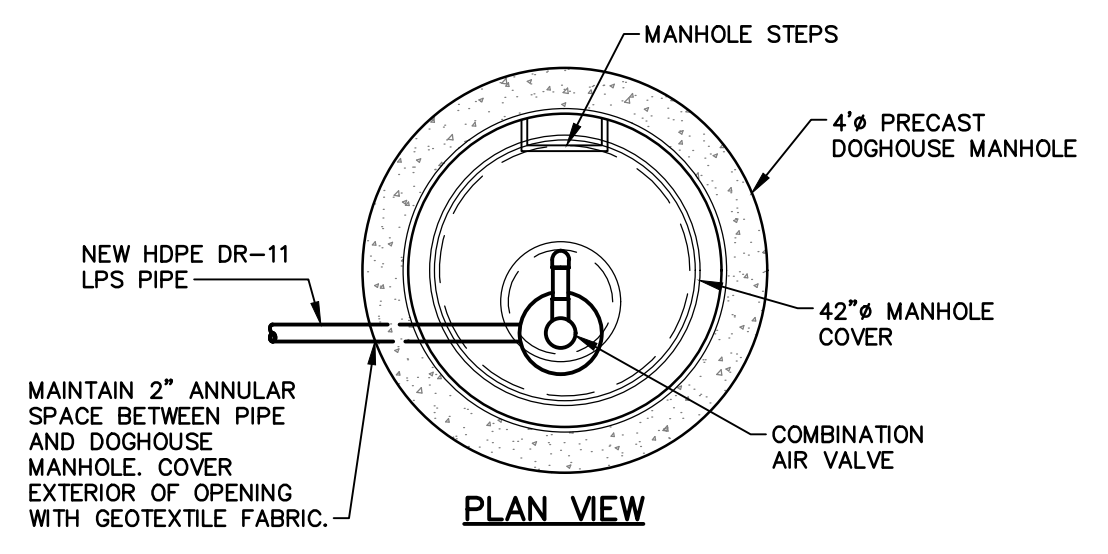
CANTILEVERED SLIDING GATE
NOT TO SCALE



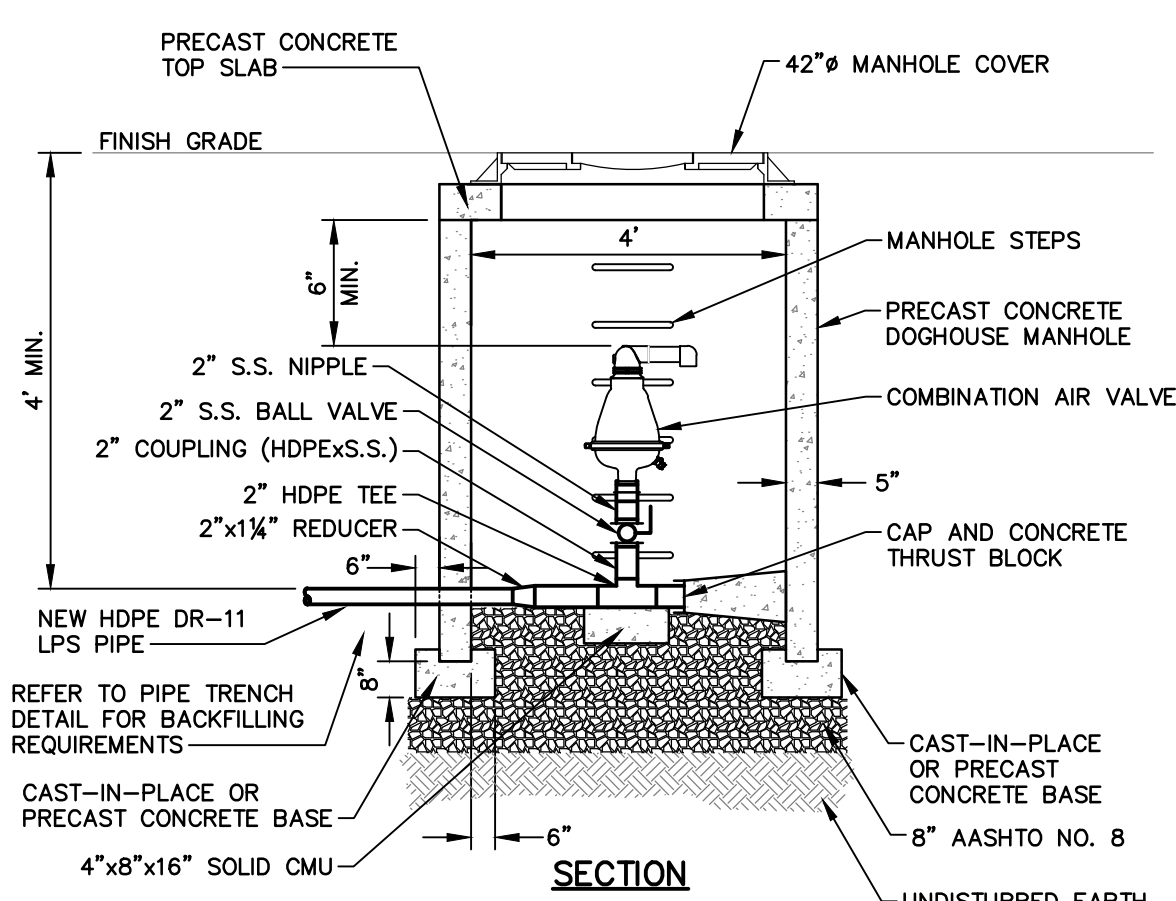
SLANT CURB DETAIL
NOT TO SCALE



CHAIN LINK FENCE DETAIL
NOT TO SCALE



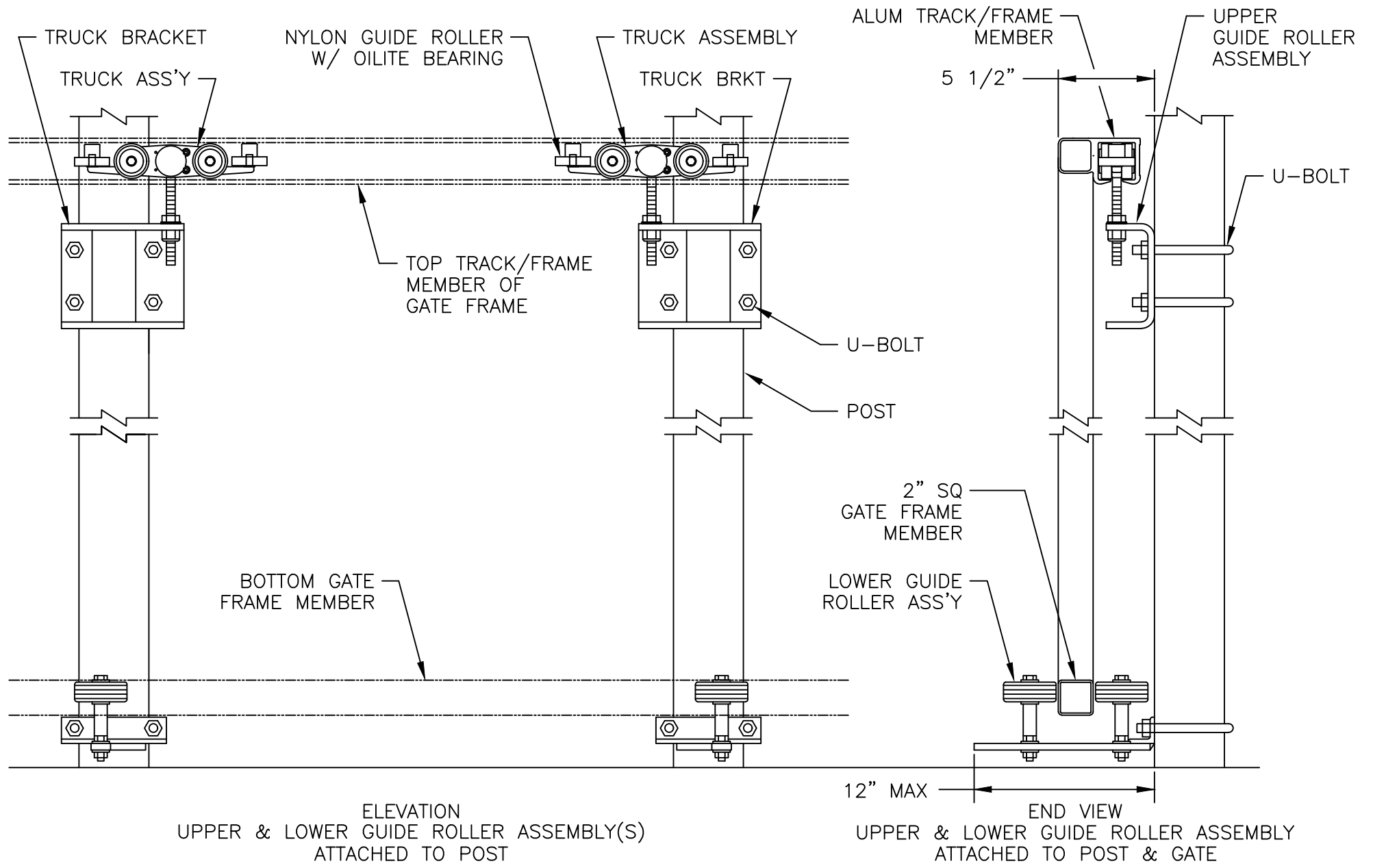
PLAN VIEW



SECTION

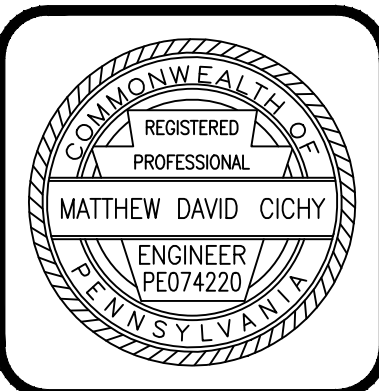
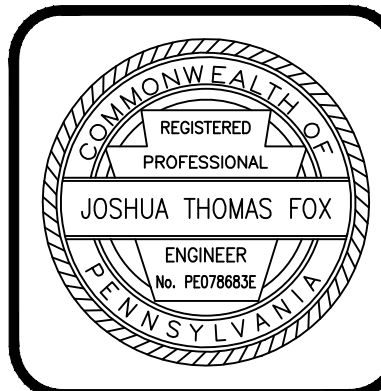
- NOTES:**
- ALL PIPING, FITTINGS AND VALVES SHOWN ARE FOR 2" COMBINATION AIR VALVE INSTALLATION.
 - CONTRACTOR SHALL USE DOGHOUSE MANHOLES FOR ALL NEW COMBINATION AIR VALVE INSTALLATIONS.
 - CONTRACTOR TO COORDINATE THE DEPTH OF THE LOW PRESSURE SEWERS AT THE AIR RELEASE VALVE MANHOLE TO ENSURE CLEARANCES ARE MET AND THE LOCATION IS AT THE HIGH POINT.
 - CONTRACTOR TO PROVIDE CLAMPS/BRASES AS NECESSARY TO SUPPORT CAV ASSEMBLY. ATTACH CLAMPS/BRASES TO MANHOLE AS NECESSARY.
 - SEE PENNDOT PUBLICATIONS 72M, RC-39M FOR ADDITIONAL DETAILS.
 - PROVIDE 2"x1 1/2" S.S. REDUCER AND 1 1/2" S.S. BOSS LOCK CAM AND GROOVE COUPLER TO BE USED AS A CLEANOUT CONNECTION FOR EACH TERMINAL AIR RELEASE VALVE MANHOLE. REDUCER TO FIT 2" S.S. NIPPLE.
 - COAT THE INSIDE OF STRUCTURE IN ACCORDANCE WITH SECTION 09 91 00.

TERMINAL AIR RELEASE VALVE MANHOLE - LOW PRESSURE
NOT TO SCALE



CANTILEVERED SLIDING GATE DETAILS
NOT TO SCALE

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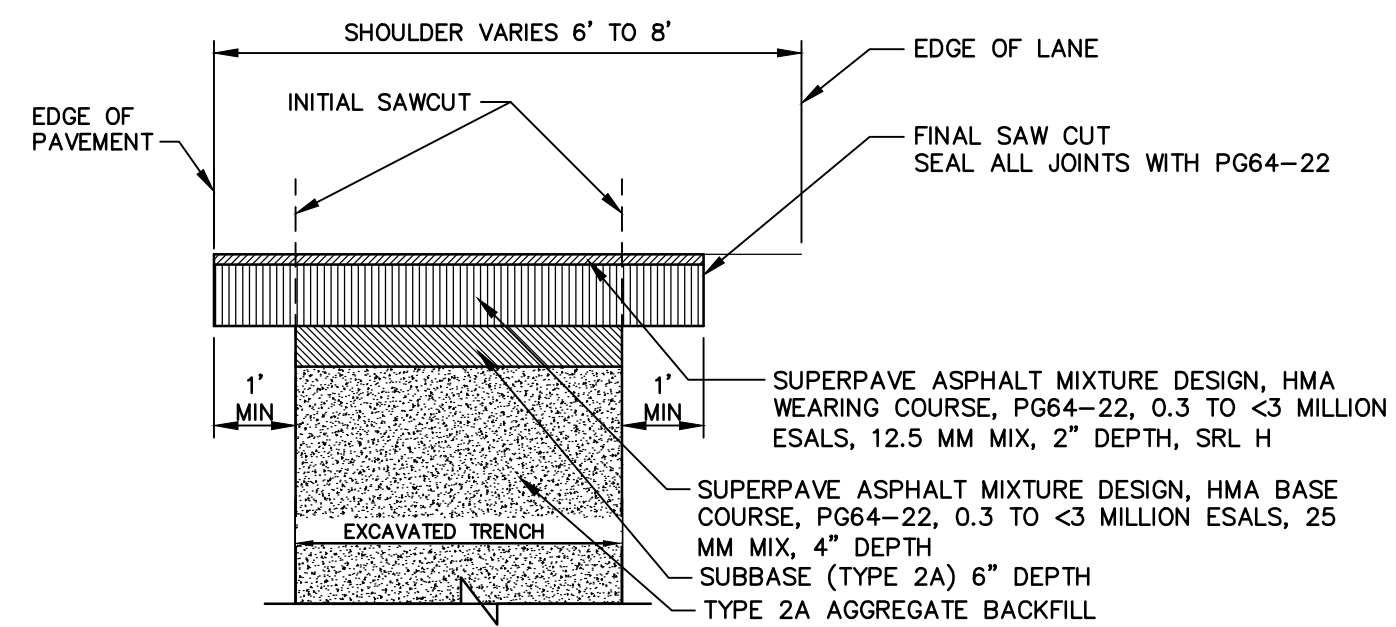
369 East Park Drive
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NEWPORT, PA 17074

MISCELLANEOUS CONSTRUCTION DETAILS
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN- SAT
CADD- RSF
CHECKED- MDC
SCALE- AS NOTED
DATE- MAR. 2019

DRAWING NO.
DT-6
SHEET NO.
57 OF 60
PROJECT 005100.0434

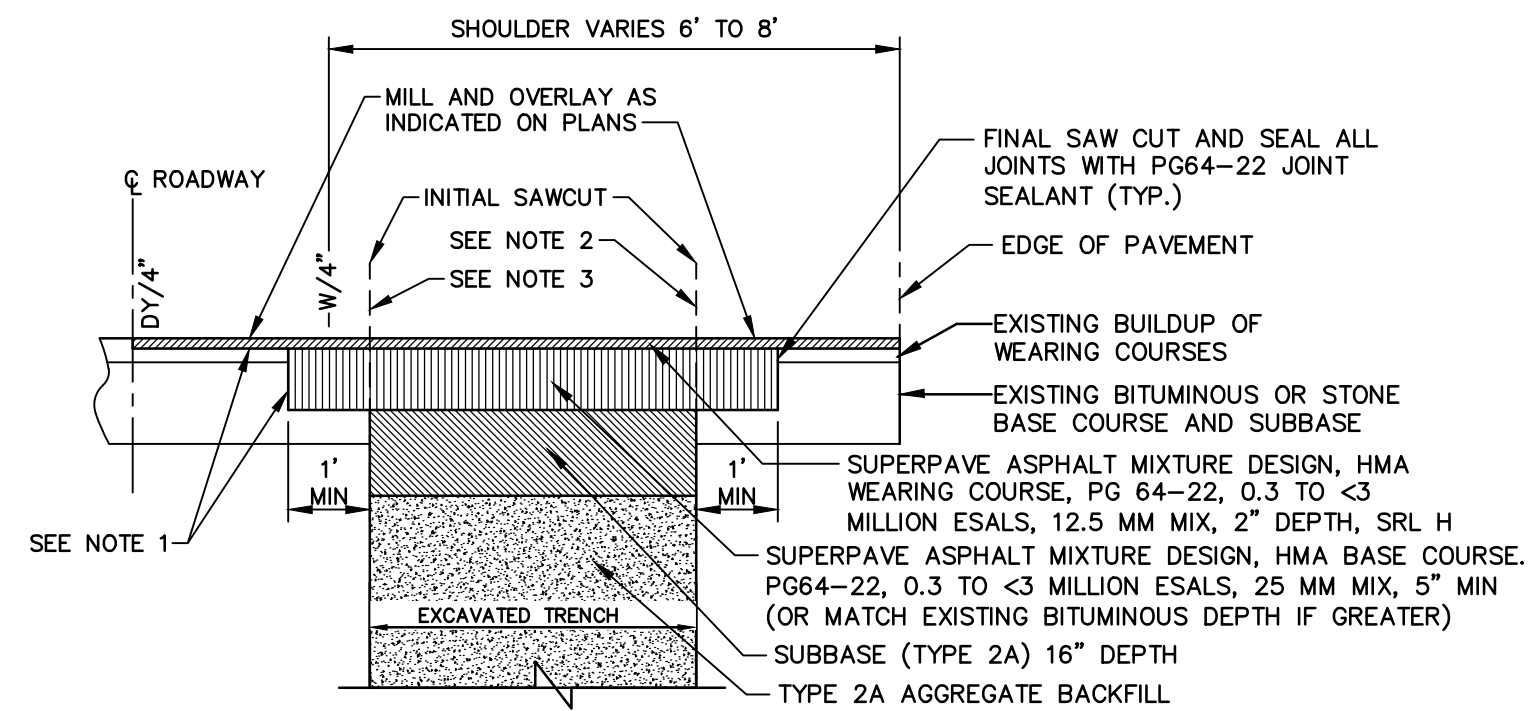


- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)
 2. IF THE INITIAL SAWCUT IS WITHIN 3' OF THE CURB, EDGE OF PAVEMENT, OR EXISTING PAVEMENT JOINT, THE ENTIRE AREA WILL BE REPLACED.
 3. INSTALL RUMBLE STRIPS IN ACCORDANCE WITH RC-22M AND RC-25M.

S.R. 0034 SHOULDER RESTORATION (S-4.02A)

NOT TO SCALE

S.R. 0034 SEG 0440 OFF 0000 TO SEG 0470 OFF 0000

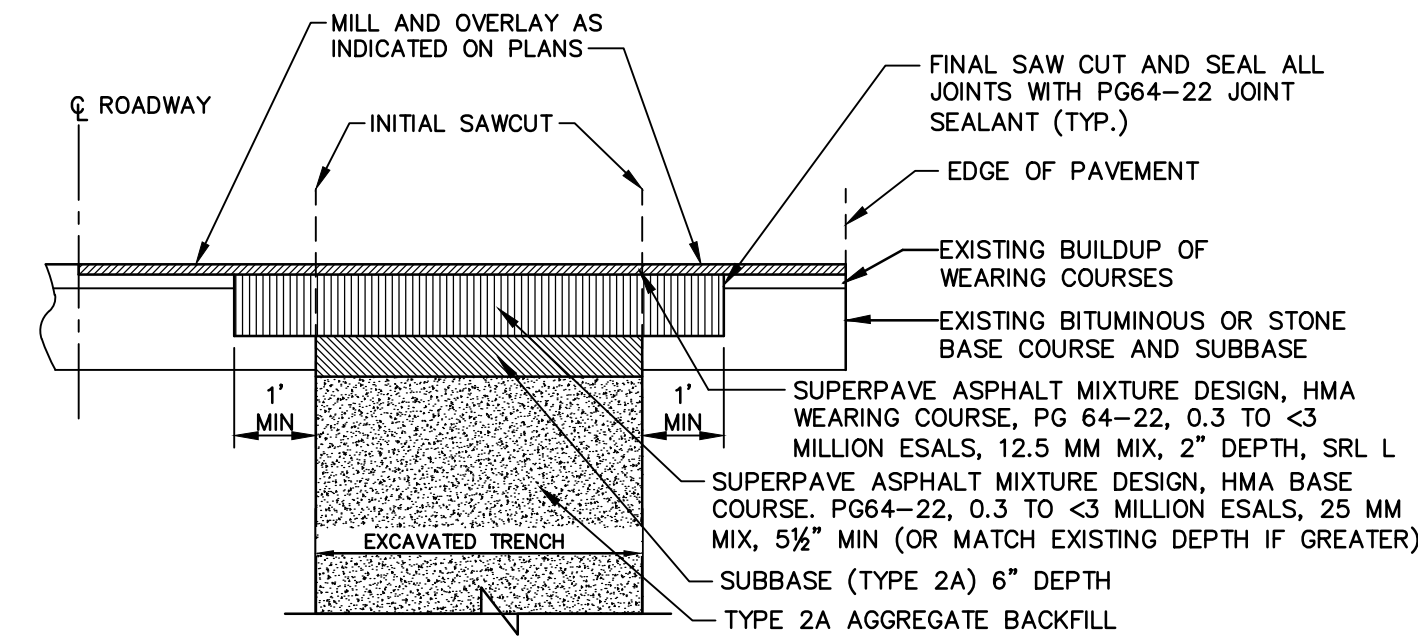


- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)
 2. IF THE INITIAL SAWCUT IS WITHIN 3' OF THE CURB, EDGE OF PAVEMENT, OR EXISTING PAVEMENT JOINT, THE ENTIRE AREA WILL BE REPLACED.
 3. WHEN THE INITIAL SAWCUT IS WITHIN THE SHOULDER AND IS GREATER THAN 1' FROM THE WHITE EDGELINE REFER TO THE S.R. 0034 SHOULDER RESTORATION DETAIL.

S.R. 0034 PAVEMENT RESTORATION (S-4.01A)

NOT TO SCALE

S.R. 0034 SEG 0440 OFF 0000 TO SEG 0470 OFF 0000

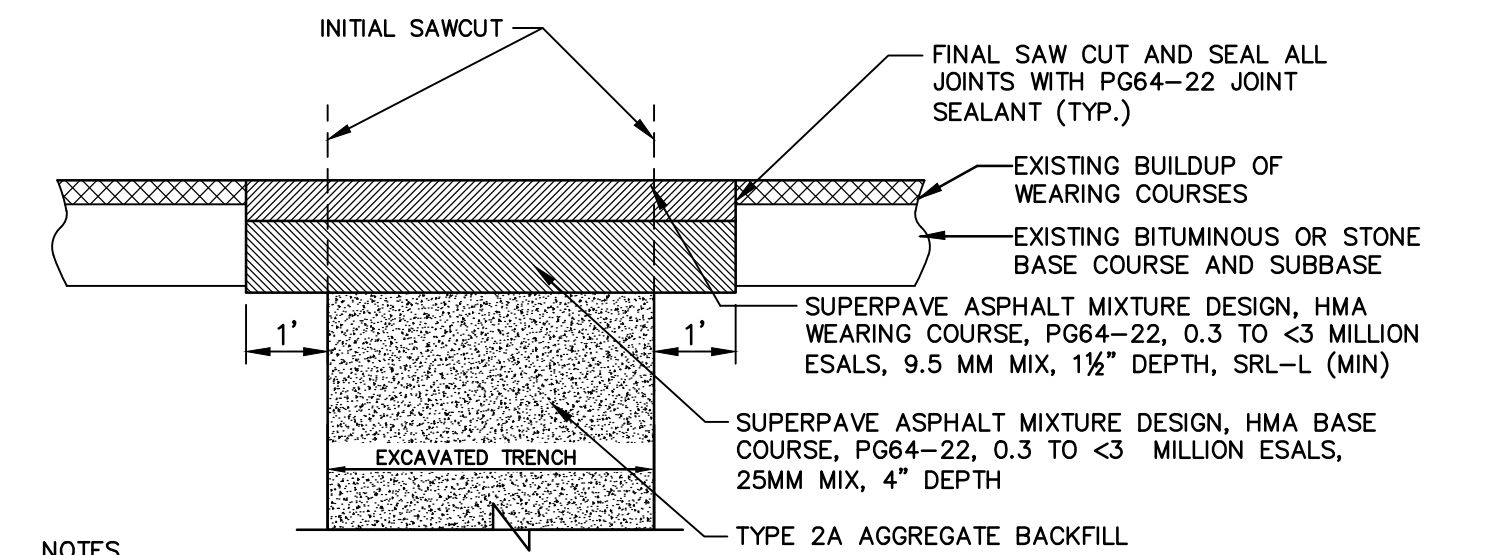


- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)
 2. IF THE INITIAL SAWCUT IS WITHIN 3' OF THE CURB, EDGE OF PAVEMENT, OR EXISTING PAVEMENT JOINT, THE ENTIRE AREA WILL BE REPLACED.

S.R. 1017 PAVEMENT RESTORATION (S-4.01D)

NOT TO SCALE

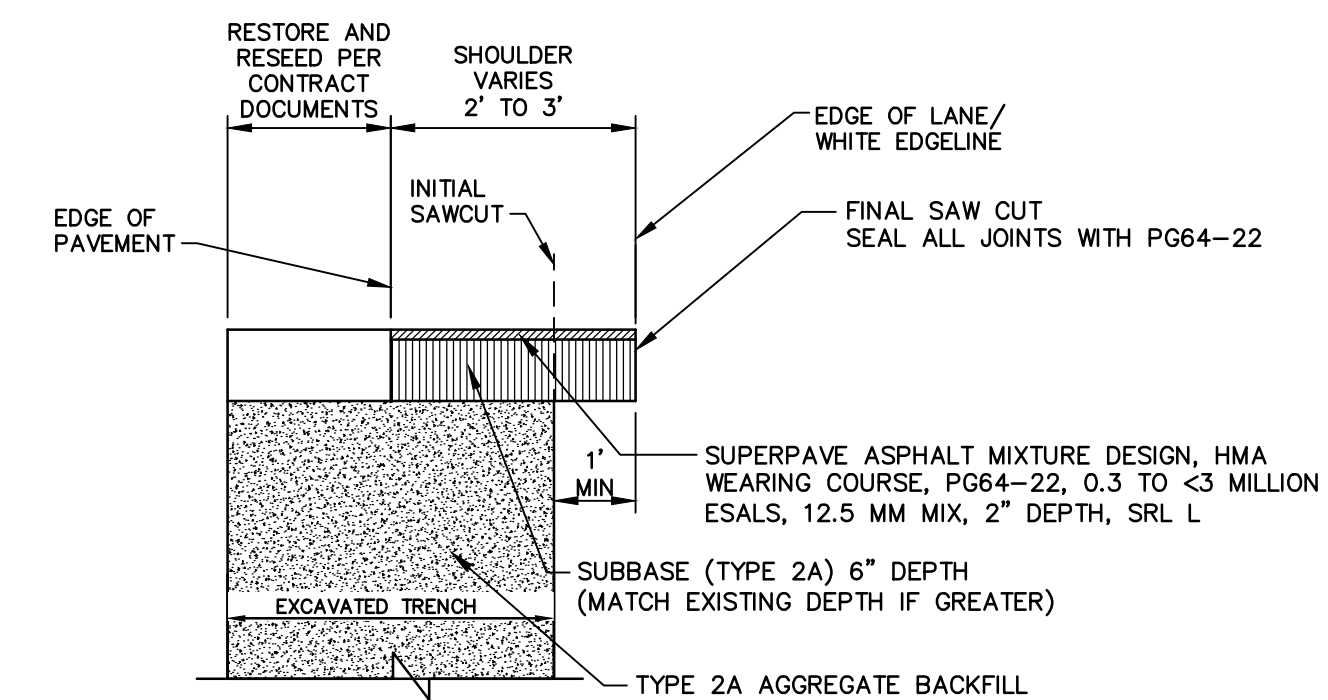
S.R. 1017 SEG 0010 OFF 0000 TO SEG 0020 OFF 1392



- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)
 2. IF THE INITIAL SAWCUT IS WITHIN 3' OF THE CURB, EDGE OF PAVEMENT, OR EXISTING PAVEMENT JOINT, THE ENTIRE AREA WILL BE REPLACED.

NEWPORT BOROUGH (S-3.11C) / NEWPORT PLAZA (S-2.13) PAVEMENT RESTORATION

NOT TO SCALE

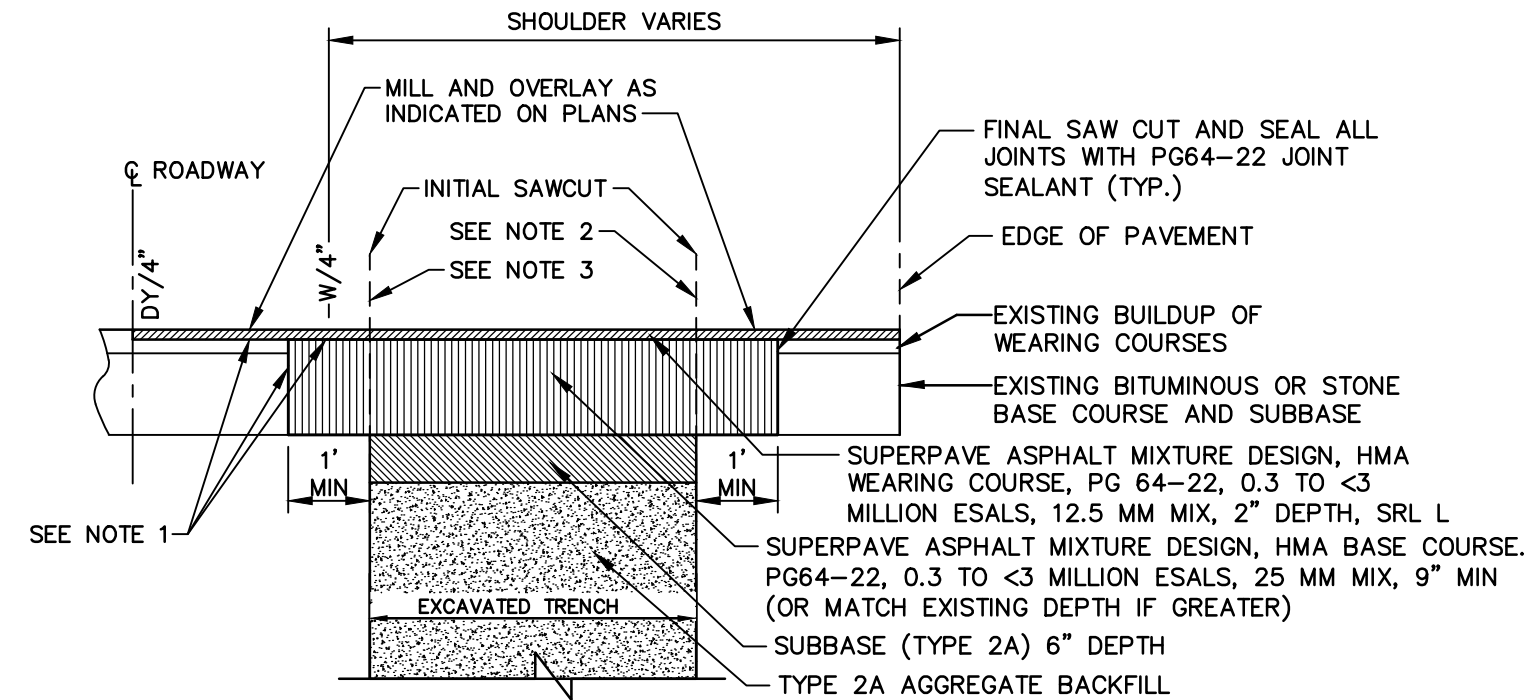


- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)

S.R. 1015 SHOULDER RESTORATION (S-4.02B)

NOT TO SCALE

S.R. 1015 SEG 0110 OFF 0828 TO SEG 0120 OFF 2866

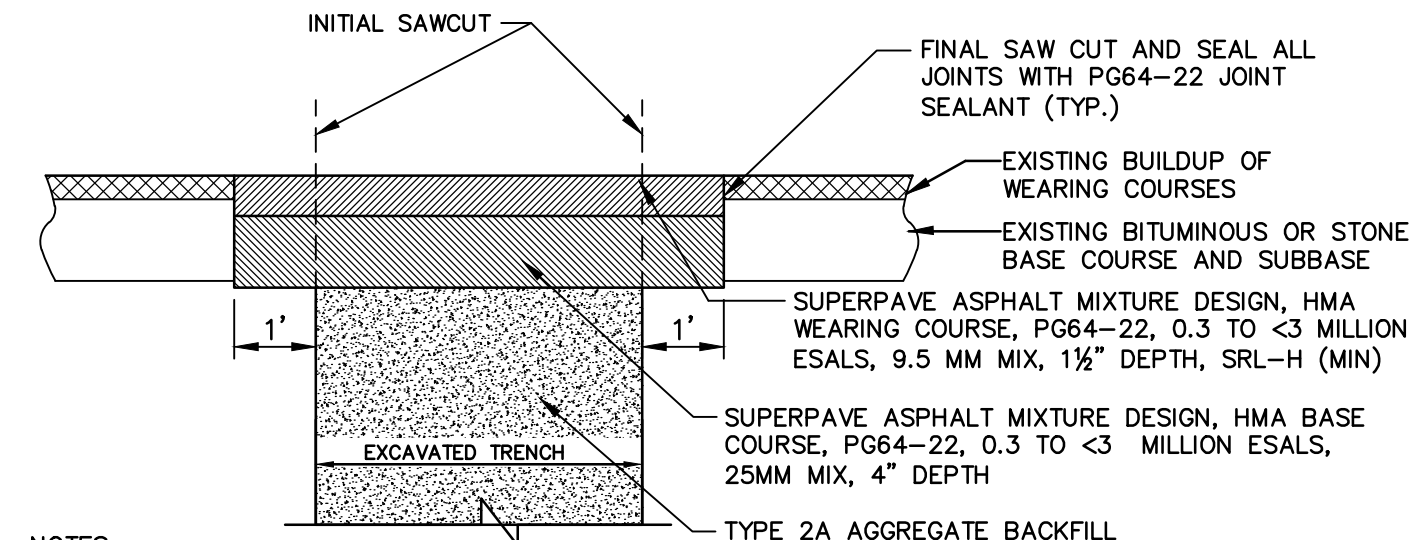


- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)
 2. IF THE INITIAL SAWCUT IS WITHIN 3' OF THE CURB, EDGE OF PAVEMENT, OR EXISTING PAVEMENT JOINT, THE ENTIRE AREA WILL BE REPLACED.
 3. WHEN THE INITIAL SAWCUT IS WITHIN THE SHOULDER AND IS GREATER THAN 1' FROM THE WHITE EDGELINE REFER TO THE S.R. 1015 SHOULDER RESTORATION DETAIL.

S.R. 1015 PAVEMENT RESTORATION (S-4.01B)

NOT TO SCALE

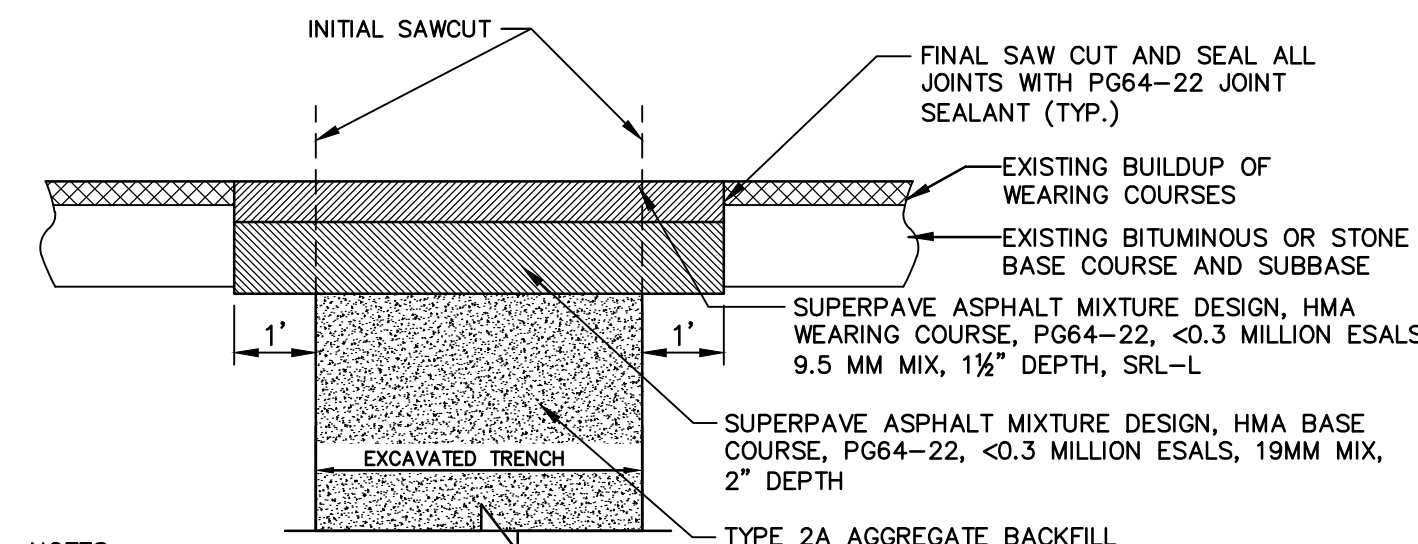
S.R. 1015 SEG 0110 OFF 0828 TO SEG 0110 OFF 2232



- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)
 2. IF THE INITIAL SAWCUT IS WITHIN 3' OF THE CURB, EDGE OF PAVEMENT, OR EXISTING PAVEMENT JOINT, THE ENTIRE AREA WILL BE REPLACED.

CRAMER DRIVE PAVEMENT RESTORATION (S-3.11A)

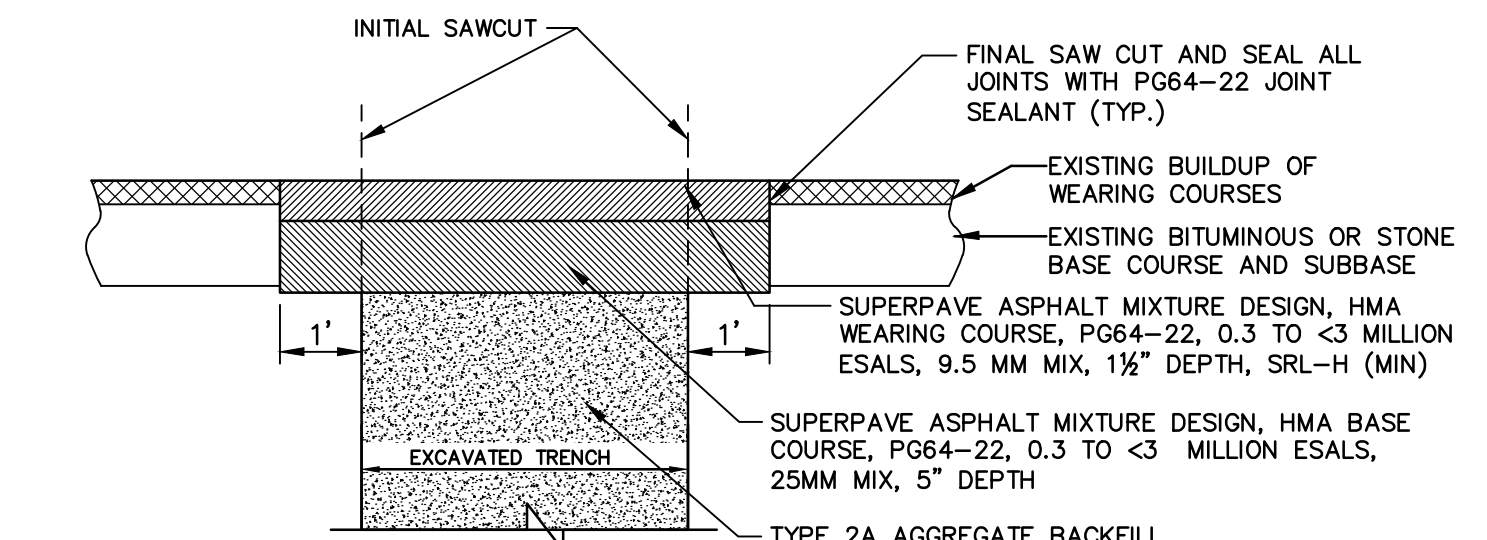
NOT TO SCALE



- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)
 2. IF THE INITIAL SAWCUT IS WITHIN 3' OF THE CURB, EDGE OF PAVEMENT, OR EXISTING PAVEMENT JOINT, THE ENTIRE AREA WILL BE REPLACED.
 3. IF EXISTING DRIVEWAY IS GRAVEL RESTORE WITH 2A SUBBASE TO MATCH EXISTING DEPTH.

PRIVATE ROAD/DRIVEWAY PAVEMENT RESTORATION (S-2.11/S-2.12)

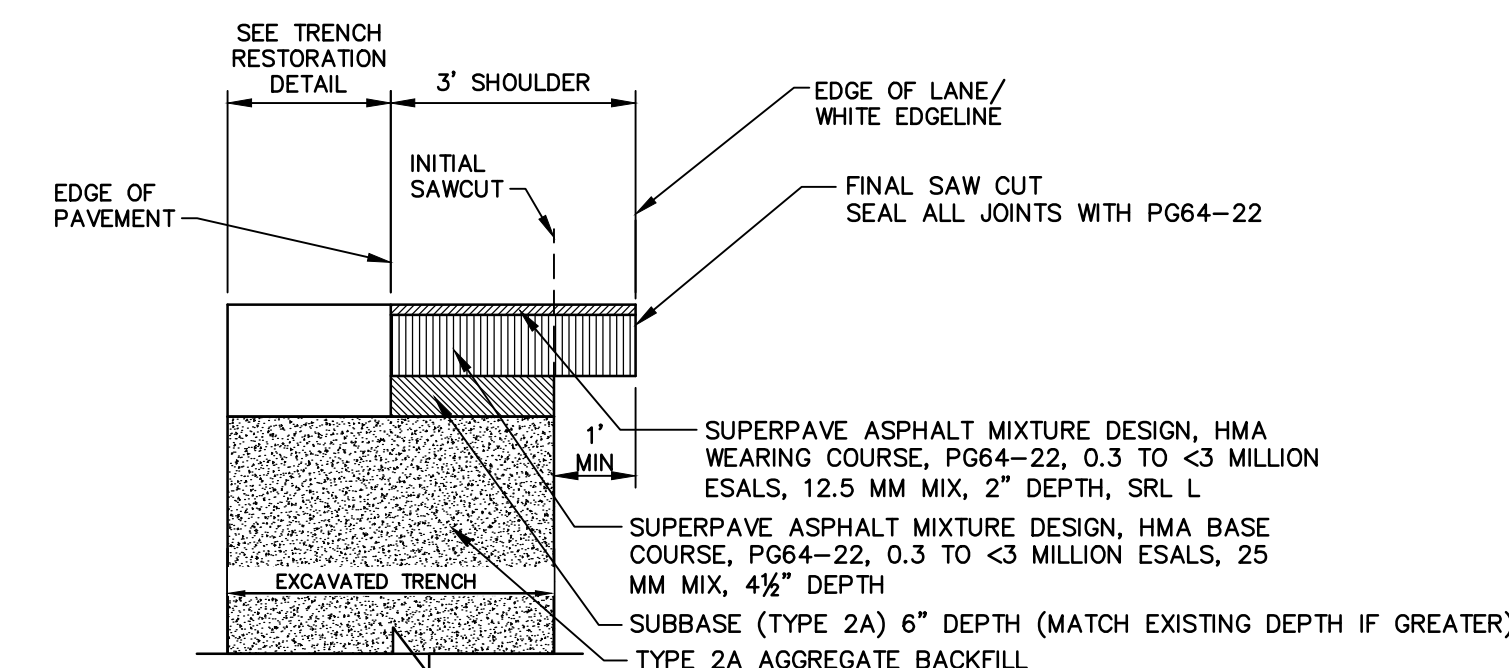
NOT TO SCALE



- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)
 2. IF THE INITIAL SAWCUT IS WITHIN 3' OF THE CURB, EDGE OF PAVEMENT, OR EXISTING PAVEMENT JOINT, THE ENTIRE AREA WILL BE REPLACED.

CHURCH ROAD PAVEMENT RESTORATION (S-3.11B)

NOT TO SCALE

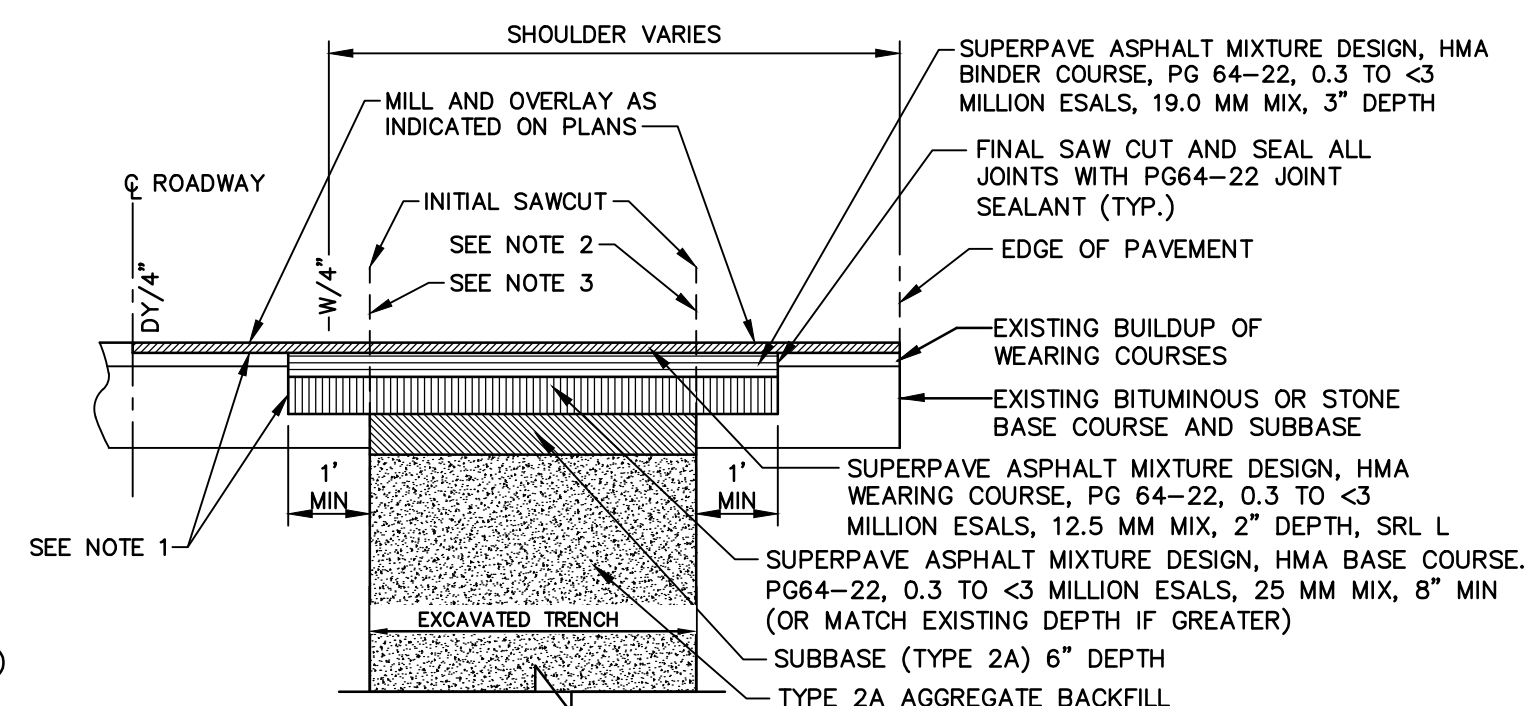


- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)

S.R. 1015 SHOULDER RESTORATION (S-4.02C)

NOT TO SCALE

S.R. 1015 SEG 0130 OFF 0000 TO SEG 0130 OFF 1390

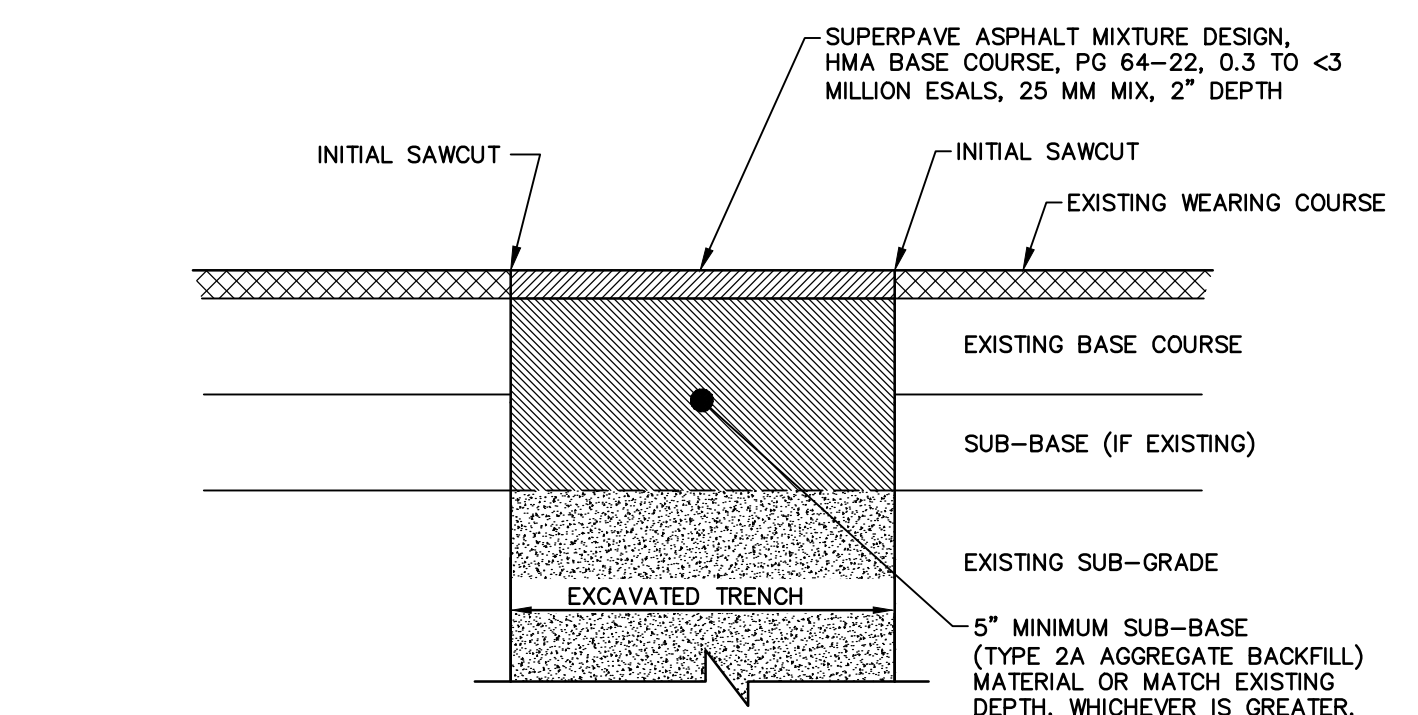


- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)
 2. IF THE INITIAL SAWCUT IS WITHIN 3' OF THE CURB, EDGE OF PAVEMENT, OR EXISTING PAVEMENT JOINT, THE ENTIRE AREA WILL BE REPLACED.
 3. WHEN THE INITIAL SAWCUT IS WITHIN THE SHOULDER AND IS GREATER THAN 1' FROM THE WHITE EDGELINE REFER TO THE S.R. 1015 SHOULDER RESTORATION DETAIL.

S.R. 1015 PAVEMENT RESTORATION (S-4.01C)

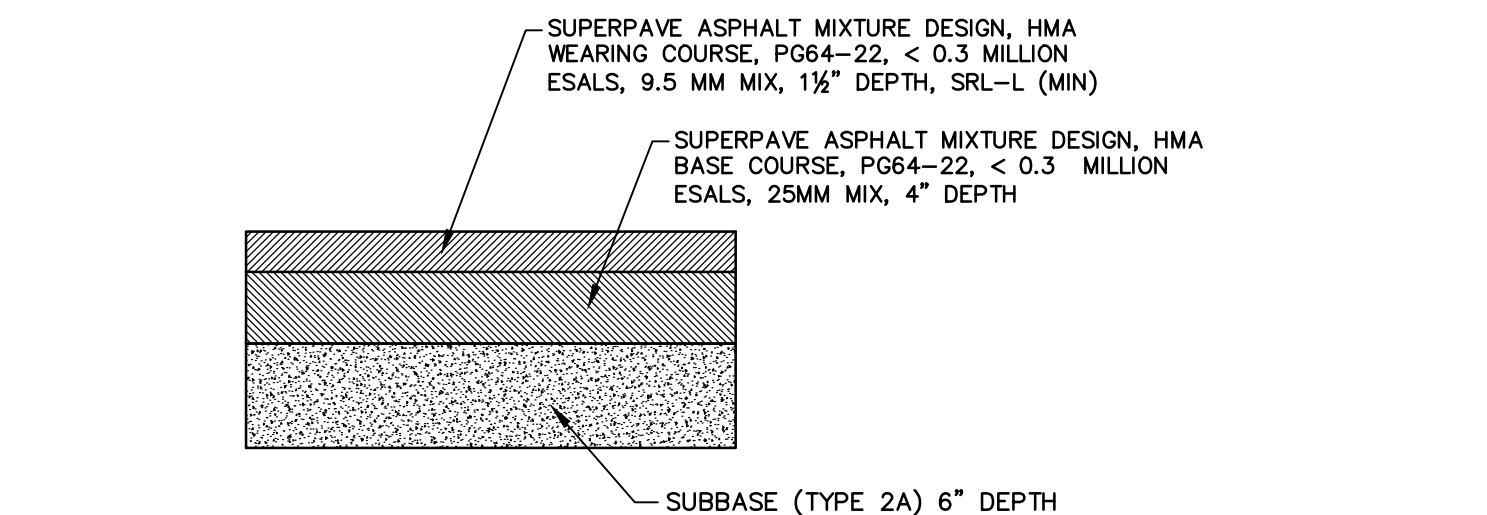
NOT TO SCALE

S.R. 1015 SEG 0120 OFF 0000 TO SEG 0120 OFF 2866



TEMPORARY PAVEMENT RESTORATION

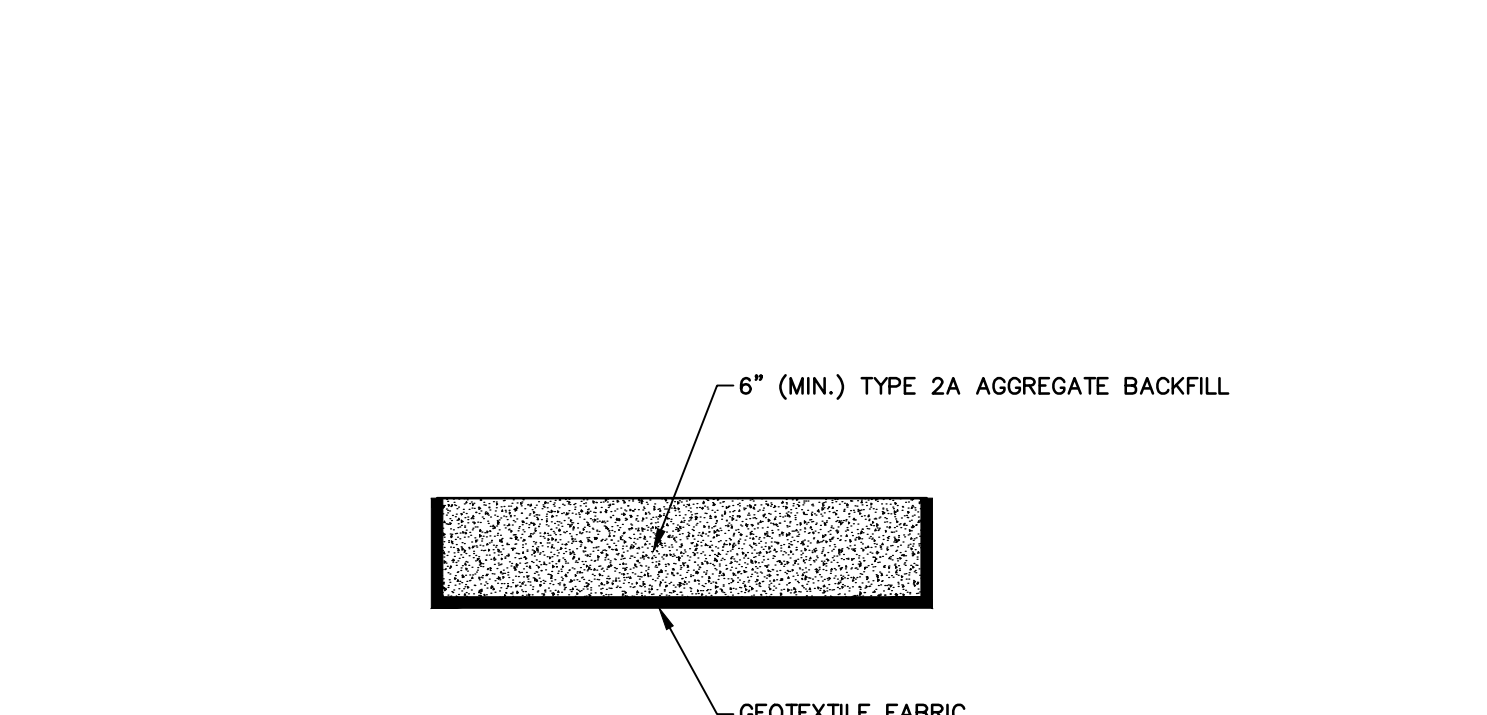
NOT TO SCALE



- NOTES**
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 409.3(g)

PUMP STATION PAVEMENT

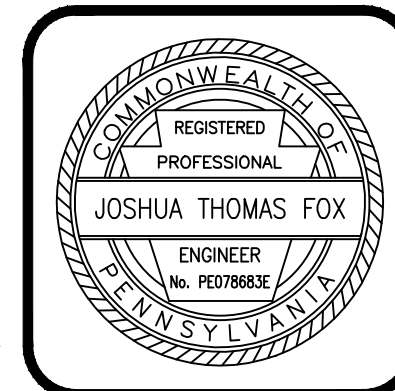
NOT TO SCALE



PUMP STATION AGGREGATE SURFACE

NOT TO SCALE

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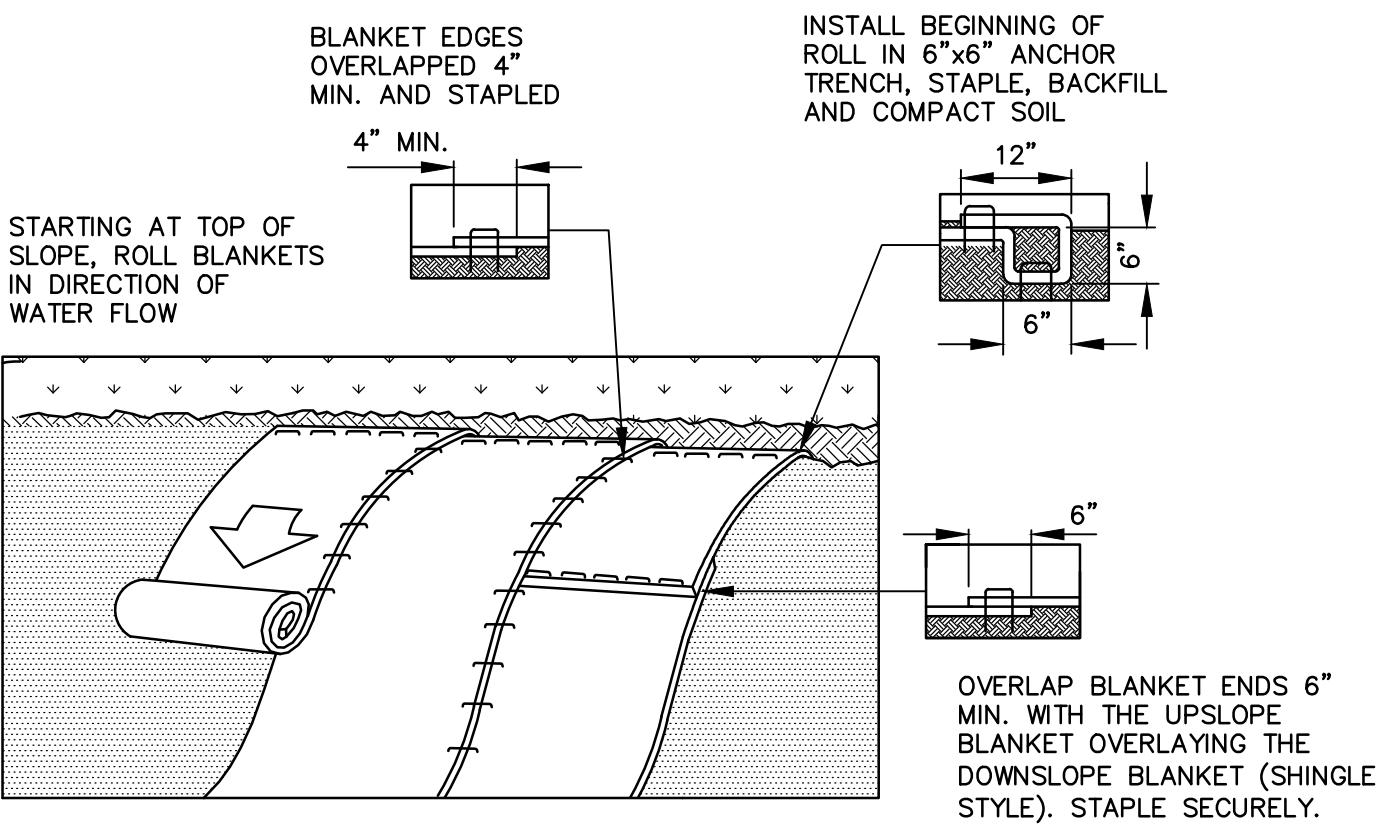
369 East Park Drive
Harrisburg, PA 17111
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Fax (717) 544-1158
hrg@hrg-inc.com
www.hrg-inc.com

HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

RESTORATION DETAILS
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

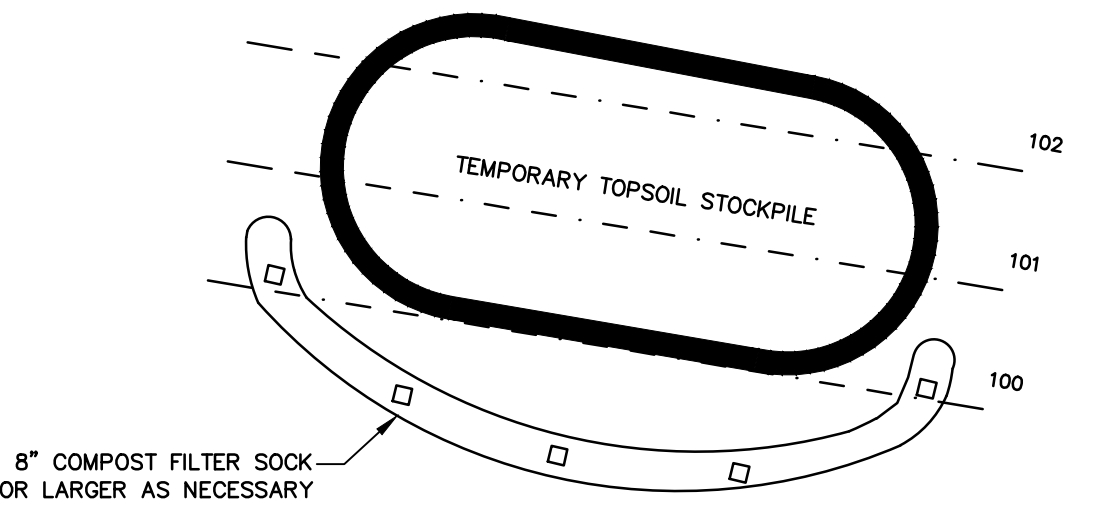
PROJ. MGR. - JTF
DESIGN - JTF
CADD - RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO. DT-7
SHEET NO. 58 OF 60
PROJECT 005100.0434



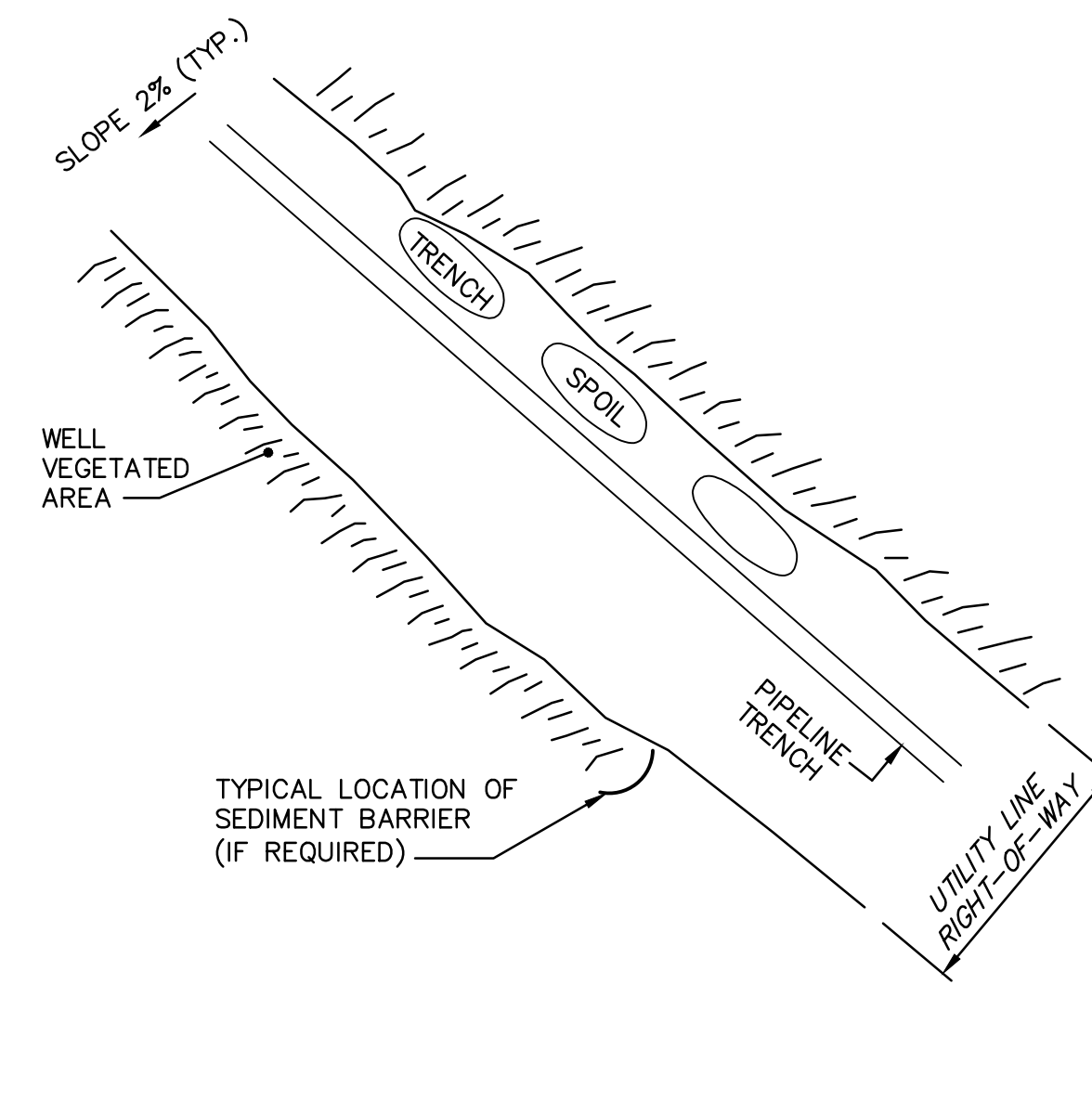
- NOTES:**
- REFER TO MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS AND STAPLING PATTERN FOR STEEPNESS AND LENGTH OF SLOPE BEING BLANKETED.
 - PREPARE SEED BED (INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED) PRIOR TO INSTALLATION OF BLANKET.
 - SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
 - PROVIDE ANCHOR TRENCH AT TOP OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
 - BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL THROUGHOUT BLANKET.
 - BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 5 CALENDAR DAYS.

EROSION CONTROL BLANKET SLOPE INSTALLATION
NOT TO SCALE

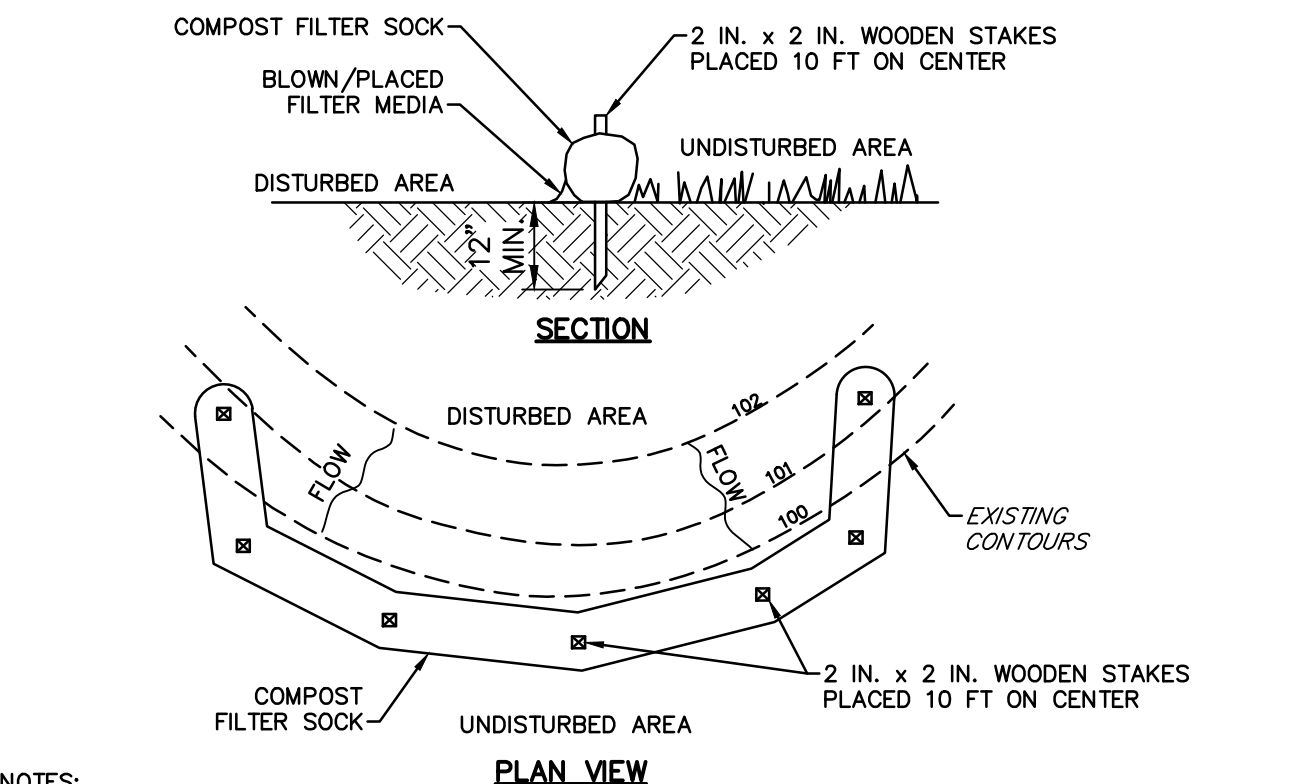


- NOTES:**
- THE TOPSOIL STOCKPILE SHALL NOT EXCEED 35- FEET IN HEIGHT WITH SIDE SLOPES OF 2:1 OR FLATTER. FILTER SOCK SHALL BE PLACED ON THE DOWN-SLOPE SIDE(S) IMMEDIATELY UPON THE INITIATION OF STORAGE. UPON COMPLETION OF CONSTRUCTION, THE TOPSOIL SHALL BE GRADED TO A SAFE CONFIGURATION AND PERMANENTLY SEEDING AND MULCHED.
 - IF TOPSOIL MUST BE REMOVED FROM THE PROJECT SITE, THE CONTRACTOR MUST CONTACT THE CONSERVATION DISTRICT WITHIN THE COUNTY THEY PLAN TO WASTE OR STOCKPILE EXCAVATED MATERIAL IN ORDER TO ENSURE THAT AN APPROVED E&S PLAN IS IN PLACE AND THE SITE IS PERMITTED.
 - THE TEMPORARY TOPSOIL STOCKPILE SHALL BE IMMEDIATELY SEEDING AS PER TEMPORARY SEEDING SCHEDULE.

TEMPORARY TOPSOIL STOCKPILE
NOT TO SCALE

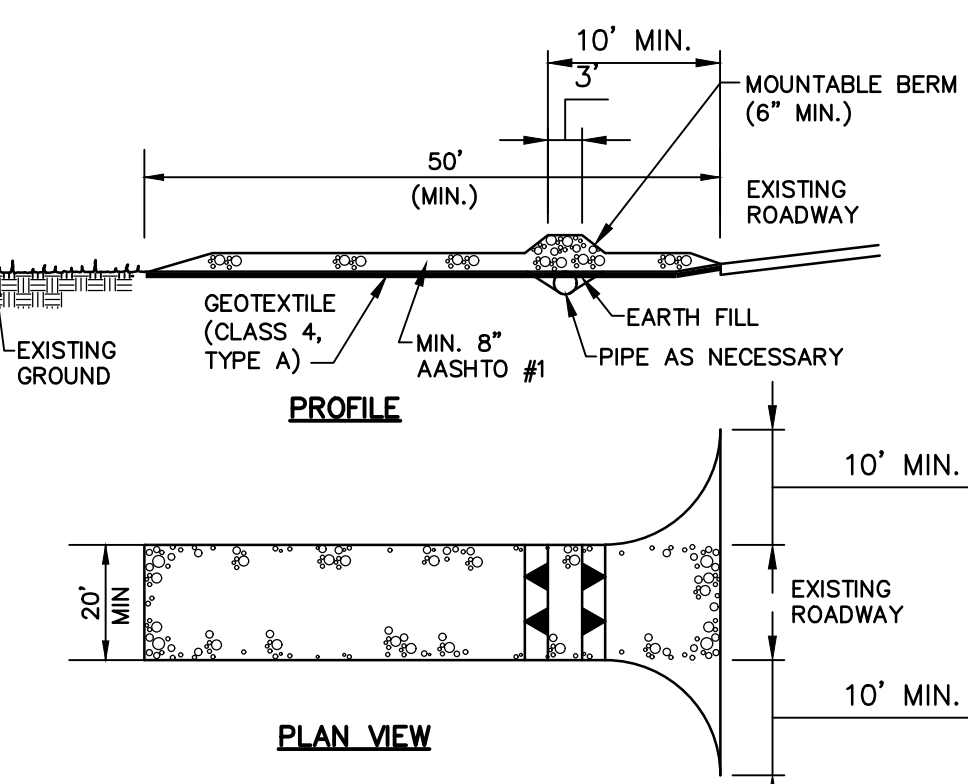


TRENCH EXCAVATION DETAIL
NOT TO SCALE



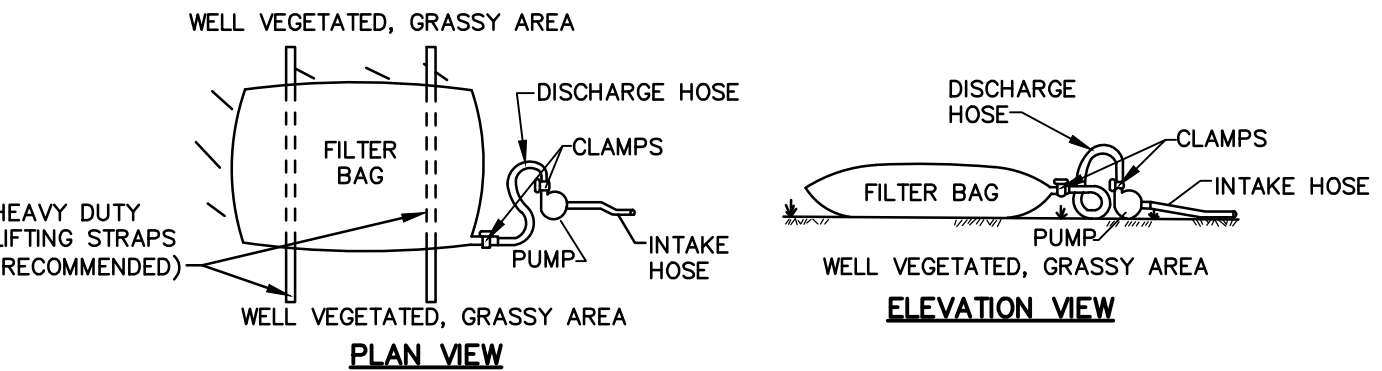
- NOTES:**
- SOCK FABRIC SHALL MEET STANDARDS OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF THE PA DEP EROSION CONTROL MANUAL.
 - COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
 - TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
 - ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
 - COMPOST FILTER 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.
 - BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - 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.

COMPOST FILTER SOCK
NOT TO SCALE



- NOTES:**
- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
 - RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
 - MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY THE MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
 - MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50' INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL A WASH RACK, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE



- NOTES:**
- LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED 'V' TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS MAY BE MADE FROM WOVEN GEOTEXTILES THAT MEET DEF SPECIFICATIONS.
 - A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY IS REQUIRED FOR DISPOSAL PURPOSES. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
 - BAGS SHALL BE LOCATED IN WELL VEGETATED (GRASSY) AREAS, AND DISCHARGED ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%. CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
 - NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHOULD BE INSTALLED BELOW BAGS LOCATED WITHIN 50 FEET OF RECEIVING STREAM OR WHERE GRASSY AREA IS NOT AVAILABLE. A COMPOST BERM OR COMPOST FILTER SOCK SHALL BE PLACED BELOW ANY BAG DISCHARGING TO A SPECIAL PROTECTION SURFACE WATER.
 - THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
 - THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
 - FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

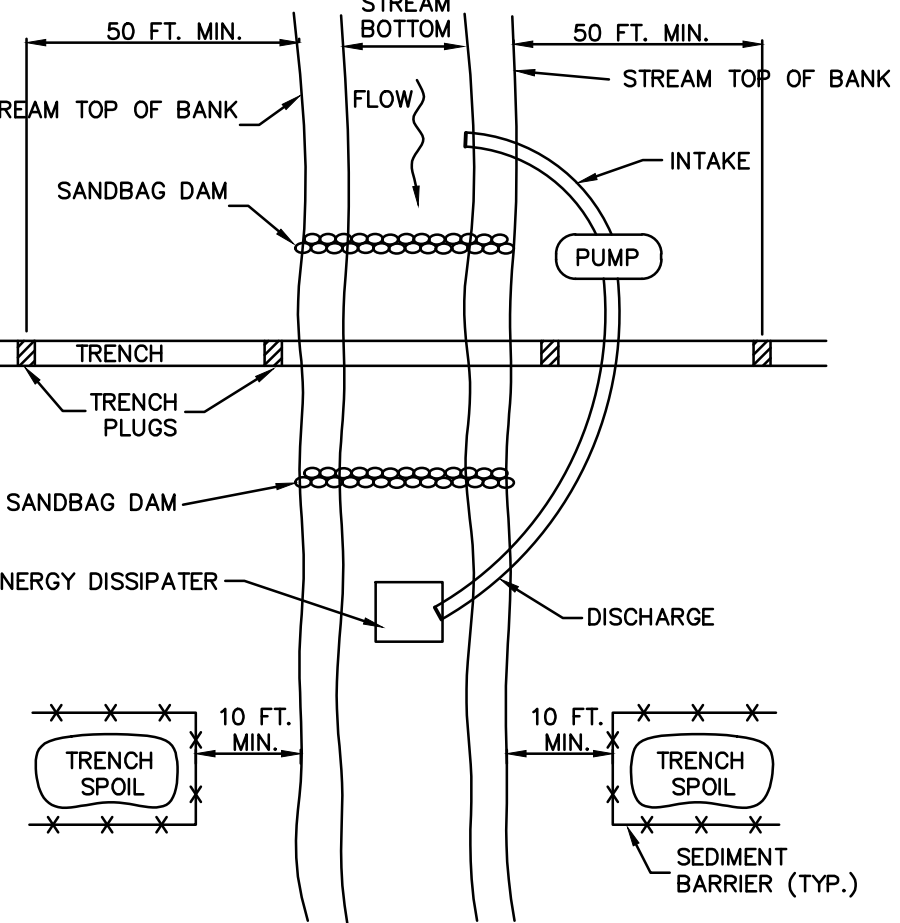
PUMPED WATER FILTER BAG
NOT TO SCALE

LIMITATIONS OF SOILS PERTAINING TO EARTHMOVING PROJECTS

Map Symbol	Soil Name	Cut Banks Cave	Corrosive to Concrete or Steel	Draught	Easily Erodeable	Flooding	Depth to Saturated Zone / Seasonal High Water Table	Hydric / Hydric Inclusions	Low Strength / Landslide Prone	Slow Percolation	Piping	Poor Source of Topsoil	Frost Action	Shrink - Swell	Potential Sinkhole	Ponding	Waterless
AbB	Albrights Silt Loam, 3 to 8 percent slopes	X	C/S	X	X		X	X	X	X	X	X	X				X
AbC	Albrights Silt Loam, 8 to 15 percent slopes	X	C/S	X	X		X	X	X	X	X	X	X				X
AgA	Allegheny Silt Loam, 0 to 3 percent slopes	X	C/S	X	X		X	X	X	X	X	X	X				X
CaB	Calvin Shaly Silt Loam, 3 to 8 percent slopes	X	C	X	X		X	X	X	X	X	X	X				X
CaC	Calvin Shaly Silt Loam, 8 to 15 percent slopes	X	C	X	X		X	X	X	X	X	X	X				X
CbB	Calvin-Berks Shaly Silt Loam, 3 to 8 percent slopes	X	C	X	X		X	X	X	X	X	X	X				X
CbC	Calvin-Berks Shaly Silt Loam, 8 to 15 percent slopes	X	C	X	X		X	X	X	X	X	X	X				X
Knd	Klinesville Vary Shaly Silt Loam, 15 to 25 percent slopes	X	C/S	X	X		X	X	X	X	X	X	X				X
Mnb	Munongahela Silt Loam, 3 to 8 percent slopes	X	C/S	X	X		X	X	X	X	X	X	X				X
WkF	Weikert and Klinesville Vary Shaly Silt Loams, 25 to 75 percent slopes	X	C/S	X	X		X	X	X	X	X	X	X				X

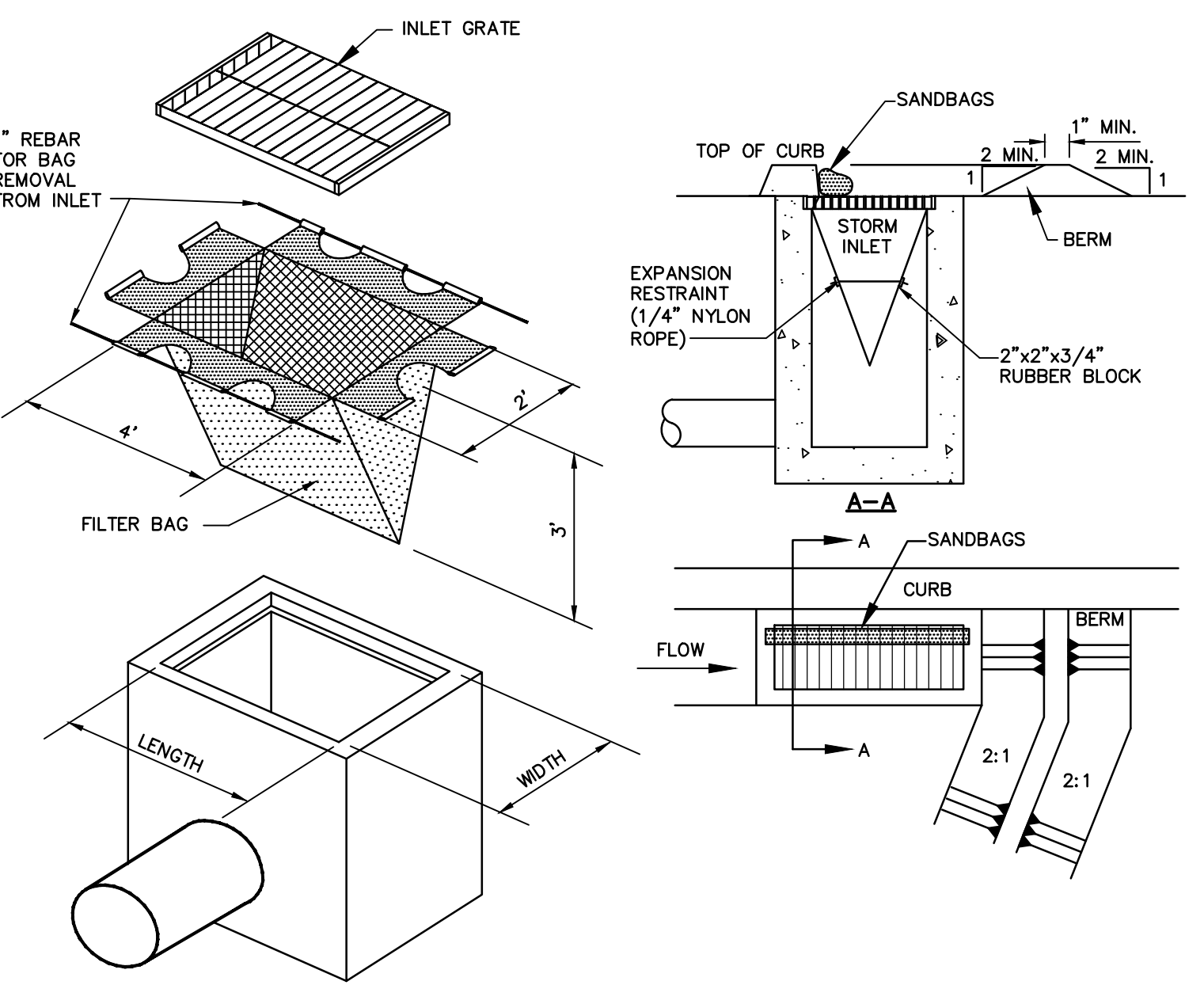
RESOLUTION TO SOILS LIMITATIONS

LIMITATION	RESOLUTION
EASILY ERODIBLE	TO MINIMIZE EROSION OF SOILS PROVIDE THE FOLLOWING EROSION CONTROL BMP'S: PROVIDE DIVERSION BERMS/SWALES TO ALLOW UPSTREAM RUNOFF TO BYPASS DISTURBED AREA UTILIZE TRACKING SLOPES, GROOVING OR SURFACE ROUGHENING TO REDUCE RUNOFF VELOCITY Y PROVIDE PROTECTIVE LININGS AND SEEDING AND MULCHING IN CHANNELS PROVIDE EROSION CONTROL BLANKETS ON ALL SLOPES THAT ARE STEEPER THAN 3:1 UTILIZE LEVEL SPREADERS, BENCHES, ROCK FILTERS
CORROSIVE TO CONCRETE OR STEEL	PREVENTATIVE COATINGS SHALL BE USED TO PROTECT CONCRETE AND STEEL FROM CORROSION
SEASONAL HIGH WATER TABLE / WETNESS/PONDING /SLOW PERCOLATION /HYDRIC/FLOODING	UTILIZE PUMPED WATER FILTER BAGS TO DEWATER DISTURBED AREAS
LOW STRENGTH	AVOID USING LOW STRENGTH SOILS FOR ROADWAY CONSTRUCTION. FOR CUT/FILL SLOPES, FLATTEN SLOPES, AVOID OVERLOADING, MAINTAIN LATERAL SUPPORT AND PREVENT SATURATION OF SOILS
POOR TOPSOIL / DROUGHTY/WETNESS	PERFORM SOIL TESTS TO DETERMINE THE REQUIRED SOIL AMENDMENTS AND APPLICATION RATES. IDENTIFY SOILS ON-SITE THAT ARE ADEQUATE SOURCES OF TOPSOIL AND STOCKPILE THESE SOILS FOR USE DURING RESTORATION
BEDROCK	IF BEDROCK IS ENCOUNTERED, IT SHALL BE REMOVED BY MECHANICAL METHODS OR BLASTING. BLASTING SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
SHRINK/SWELL/FROST ACTION	SOILS THAT HAVE A HIGH POTENTIAL TO SWELL, SHRINK OR HEAVE MAY CAUSE DAMAGE TO ROADWAYS OR BUILDING PADS WHERE FOUNDATIONS ARE CRITICAL. REMOVE AND REPLACE SOILS WITH SUITABLE MATERIAL AS REQUIRED.



- NOTES:**
- GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP-OF-BANK UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION.
 - BYPASS PUMP INTAKE SHALL BE MAINTAINED A SUFFICIENT DISTANCE FROM THE BOTTOM TO PREVENT PUMPING OF CHANNEL BOTTOM MATERIALS.
 - TRENCH PLUGS SHALL BE INSTALLED WITHIN THE TRENCH ON BOTH SIDES OF THE STREAM CHANNEL (STANDARD CONSTRUCTION DETAIL #13-4).
 - WATER ACCUMULATING WITHIN THE WORK AREA SHALL BE PUMPED TO A PUMPED WATER FILTER BAG OR SEDIMENT TRAP PRIOR TO DISCHARGING INTO ANY SURFACE WATER.
 - HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM THE TOP OF STREAMBANK.
 - ALL EXCESS EXCAVATED MATERIAL SHALL BE IMMEDIATELY REMOVED FROM THE STREAM CROSSING AREA.
 - ALL DISTURBED AREAS WITHIN 50 FEET OF TOP-OF-BANK SHALL BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE FOR MINOR STREAMS OR 48 HOURS OF INITIAL DISTURBANCE FOR MAJOR STREAMS UNLESS OTHERWISE AUTHORIZED.
 - APPROPRIATE STREAMBANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.

STANDARD CONSTRUCTION DETAIL #13-2
TYPICAL UTILITY LINE STREAM CROSSING
WITH PUMP BYPASS
NOT TO SCALE



- NOTES:**
- MAXIMUM DRAINAGE AREA=1/2 ACRE
 - INLET PROTECTION IS NOT REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS REQUIRED FOR ALL INSTALLATIONS.
 - EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
 - MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
 - AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS. A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM PERFORATION TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
 - INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN 1/2 FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.
 - DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

CONTRACTOR IS TO ENSURE INLET PROTECTION IS FUNCTIONING PROPERLY AND NO PONDING ON THE ROADWAY IS OCCURRING. INLET PROTECTION IS TO BE REMOVED IMMEDIATELY ONCE THE TRIBUTARY AREA IS STABILIZED.

FILTER BAG INLET PROTECTION FOR TYPE C INLET
NOT TO SCALE

Material and Performance Specification Sheet

North American Green
14649 Highway 41 North
Evanston, IN 47725
800-772-2949
FAX: 812-867-0247
www.nasgreen.com

S75 Erosion Control Blanket

The short-term single net erosion control blanket shall be a machine-produced mat of 100% agricultural straw with a functional longevity of up to 12 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the straw evenly distributed over the entire area of the mat. The blanket shall be covered on the top side with a lightweight photodegradable polypropylene netting having an approximate 0.50 x 0.50 (1.27 x 1.27 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread.

The S75 shall meet requirements established by the Erosion Control Technology Council (ECTC) Specification and the US Department of Transportation, Federal Highway Administration's (FHWA) Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, PP-03 Section 713.17 as a type 2 C Short-term Single Net Erosion Control Blanket.

The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

Matrix	100% Straw Fiber	0.5 lbs/yd ² (0.27 kg/m ²)
Nettings	Top side only, lightweight photodegradable	1.5 lb/1000 RP (0.73 kg/100 m ²) approx. weight
Thread	degradable	

S75 is available in the following standard roll sizes:

Width	4.0 ft (1.2 m)	6.67 ft (2.03 m)	16 ft (4.87 m)
Length	155 ft (47.14 m)	100 ft (30.92 m)	108 ft (32.92 m)
Weight ± 10%	30 lbs (13.6 kg)	40 lbs (18.14 kg)	96 lbs (43.54 kg)
Area	60 yd ² (50.16 m ²)	80 yd ² (68.9 m ²)	182 yd ² (165.5 m ²)

Index Value Properties:

Property	Test Method	Typical
Thickness	ASTM D525	0.37 in (8.4 mm)
Resiliency	ECTC Guidelines	78.8%
Water Absorbency	ASTM D1117	426%
Mass/Unit Area	ASTM 6475	11.87 oz/yd ² (407 g/m ²)
Swail	ECTC Guidelines	15%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	6.31 oz-in
Light Penetration	ECTC Guidelines	7.3%
Tensile Strength - MD	ASTM D6818	130.8 lb/ft (1.94 kN/m)
Elongation - MD	ASTM D6818	24.4%
Tensile Strength - TD	ASTM D6818	85.2 lb/ft (1.26 kN/m)
Elongation - TD	ASTM D6818	26.8%

Performance Design Values:

Property	Test Method	Typical
Maximum Permissible Shear Stress	Unvegetated Shear Stress	1.55 lb/ft ² (74 Pa)
Unvegetated Velocity		3.00 ft/s (1.52 m/s)

Slope Design Data: C Factors

Slope Length (L)	≤ 31'	31' - 21'	≥ 21'
Slope Gradient (S)	≤ 2:1 (6 m)	0.025	NA
	20-50 ft	0.11	NA
	≥ 50 ft (15.2 m)	0.19	NA

Bench Scale Testing (NTPPE):

Test Method	Parameters	Results
ECTC Method 2 Rainfall	50 mm (2 in)/hr for 30 min	SLR ²⁴ = 8.80
	100 mm (4 in)/hr for 30 min	SLR ²⁴ = 8.16
	150 mm (6 in)/hr for 30 min	SLR ²⁴ = 7.81
ECTC Method 3 Shear Resistance	Shear at 0.50 inch soil loss	1.80 lb/ft ²
	Top Soil, Fescue, 21 day incubation	228% improvement of biomass

Roughness Coefficients - Unveg.

Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.055
0.50 - 2.0 ft	0.055 - 0.021
≥ 2.0 ft (0.60 m)	0.021

*Bench Scale Tests should not be used for design purposes.
**SLR Soil Loss Ratio = Soil loss with Bare Soil/Soil Loss with RECP (soil loss is based on regression analysis)
Updated: 3/09

NO.	REVISION	DATE	BY

COMMONWEALTH OF PENNSYLVANIA
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COMMONWEALTH OF PENNSYLVANIA
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HOWE TOWNSHIP MUNICIPAL AUTHORITY

300 N. 4TH STREET
NEWPORT, PA 17074

EROSION & SEDIMENT CONTROL DETAILS

FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION

HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - CAL
CADD - MRV/RSF
CHECKED - MDC
SCALE - AS NOTED
DATE - MAR. 2019

DRAWING NO.
DT-8
SHEET NO.
59 OF 60
PROJECT 005100.0434

GENERAL NOTES

- 1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN...
2. AT LEAST SEVEN (7) DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES...
3. AT LEAST THREE (3) DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES...
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN...
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL...
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE...
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN...
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN...
9. IMMEDIATELY DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION...
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS...
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT...
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL...
13. ALL PUMPING OF WATER FROM ANY WORK AREAS SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN...
14. VEHICLES AND EQUIPMENT MAY NEVER ENTER DIRECTLY NOR EXIT DIRECTLY ONTO PUBLIC STREETS...
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY...
16. A LOG SHOWING DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE...
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE...
18. ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN...
19. AREAS TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES...
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS...
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS...
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS...
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS...
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES...
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD...
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE...
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREAS OR SUBAREA OF THE PROJECT...
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% VEGETATIVE COVER...
29. E&S BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED...
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS...
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED...
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS...
33. FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE...
34. CONCRETE WASH WATER SHALL BE HANDLED IN A MANNER DESCRIBED ON THE PLAN...
35. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER AND WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN.

PRE-CONSTRUCTION SEQUENCE

- 1. ALL APPLICABLE PERMITS AND APPROVALS REQUIRED FOR THIS PROJECT SHALL BE SECURED PRIOR TO THE START OF CONSTRUCTION...
2. CONTRACTOR SHALL NOTIFY THE PA ONE-CALL SYSTEM AT 1-800-242-1776 FOR BURIED UTILITIES AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES...
3. CONTRACTOR SHALL CONTACT THE PERRY COUNTY CONSERVATION DISTRICT (PCOD) TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE AT LEAST SEVEN (7) DAYS PRIOR TO PLANNED EARTH DISTURBANCE ACTIVITIES...
4. ALTERNATIVES TO THE STAGING OR SPECIFICATIONS GIVEN IN THIS E&S CONTROL PLAN MUST FIRST BE APPROVED BY THE PCOD PRIOR TO IMPLEMENTATION...
5. NON-DESIGNATED WASTE/BORROW AREAS MUST HAVE AN APPROVED E&S CONTROL PLAN...
6. RESPONSIBILITY FOR IMPLEMENTING THE E&S CONTROLS SHALL BE DESIGNATED TO AT LEAST ONE INDIVIDUAL WHO WILL BE PRESENT AT THE PROJECT SITE DAILY...
7. LIMITS OF TREE CLEARING AND LIMITS OF DISTURBANCE SHOULD BE FIELD MARKED PRIOR TO CONSTRUCTION.

PUMP STATION CONSTRUCTION SEQUENCE

- 1. LOCATE AND DELINEATE WETLAND BOUNDARIES AT THE LOCATIONS SHOWN ON THE PLAN...
2. INSTALL ROCK CONSTRUCTION ENTRANCE, AS SHOWN ON THE E&S CONTROL PLAN AND IN ACCORDANCE WITH THE STANDARD DETAIL...
2. INSTALL ALL COMPOST FILTER SOCK AT THE LOCATIONS SHOWN ON THE E&S CONTROL PLAN AND IN ACCORDANCE WITH THE STANDARD DETAIL...
3. CLEAR, GRUB, AND STRIP TOPSOIL AS APPLICABLE WITHIN THE LIMIT OF DISTURBANCE AS ILLUSTRATED ON THE E&S CONTROL PLAN...
4. THE TOPSOIL SHALL BE STRIPPED AND STOCKPILED AT THE LOCATIONS SHOWN ON THE E&S CONTROL PLAN AND IN ACCORDANCE WITH THE STANDARD DETAIL...
5. CONSTRUCT THE PROPOSED PUMP STATION, CONNECT PROPOSED UTILITY INFRASTRUCTURE TO THE PUMP STATION STRUCTURE...

NOTES:

- * NON CONSTRUCTION VEHICLES ARE PERMITTED TO LEAVE THE SITE OTHER THAN OVER THE ROCK CONSTRUCTION ENTRANCE...
* WHERE DUST OR WIND EROSION IS A PROBLEM, THE UNSTABLE SURFACE(S) SHALL BE SPRINKLED WITH WATER OR OTHER SUITABLE DUST SUPPRESSOR...
* EARTH MOVING ACTIVITIES SHALL BE LIMITED DURING RAINSTORMS AND SPRING THAW...
* UPON REACHING FINAL GRADE, SPREAD TOPSOIL, SEED, MULCH, FERTILIZE, AND INSTALL EROSION CONTROL BLANKETS ON ALL SLOPES THAT ARE 3:1 OR STEEPER AS SHOWN ON THE E&S CONTROL PLAN...
* EARTH MOVING ACTIVITIES SHALL BE LIMITED DURING RAINSTORMS AND SPRING THAW.

- 6. UPON COMPLETION OF THE PUMP STATION, INSTALL GRAVEL PARKING AREA, GRAVEL ACCESS DRIVE, PERIMETER FENCING, AND OTHER SITE APPURTENANCES AS APPLICABLE...
7. ROUGH GRADE THE ENTIRE SITE TO THE ELEVATIONS SHOWN ON THE E&S CONTROL PLAN...
8. SPREAD ANY SEDIMENT ACCUMULATED IN E&S CONTROLS ONSITE, SPREAD TOPSOIL, SEED, AND MULCH ANY REMAINING DISTURBED AREAS...
9. WHEN THE ENGINEER, MUNICIPAL/STATE OFFICIAL, OR COUNTY REPRESENTATIVE DETERMINES THAT E&S CONTROL MEASURES ARE NECESSARY THAT WERE NOT FORESEEN IN THE DESIGN STAGE...
10. UPON FINAL STABILIZATION (MINIMUM 70% UNIFORM PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION), ALL TEMPORARY E&S CONTROLS MAY BE REMOVED...

NOTES:

- * UPON REACHING FINAL GRADE, SPREAD TOPSOIL, SEED, MULCH, FERTILIZE, AND INSTALL EROSION CONTROL BLANKETS ON ALL SLOPES THAT ARE 3:1 OR STEEPER AS SHOWN ON THE E&S CONTROL PLAN...
* ALL EARTHMOVING ACTIVITIES SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE THE AMOUNT OF DISTURBED LAND...
* EARTH MOVING ACTIVITIES SHALL BE LIMITED DURING RAINSTORMS AND SPRING THAW...
* SPREAD ANY SEDIMENT ACCUMULATED IN E&S CONTROLS ONSITE, SPREAD TOPSOIL, SEED, AND MULCH ANY REMAINING DISTURBED AREAS...
* WHEN THE ENGINEER, MUNICIPAL/STATE OFFICIAL, OR COUNTY REPRESENTATIVE DETERMINES THAT E&S CONTROL MEASURES ARE NECESSARY THAT WERE NOT FORESEEN IN THE DESIGN STAGE...
* UPON FINAL STABILIZATION (MINIMUM 70% UNIFORM PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION), ALL TEMPORARY E&S CONTROLS MAY BE REMOVED...

LOW PRESSURE SEWER FORCEMAIN CONSTRUCTION SEQUENCE

- 1. LOCATE AND DELINEATE WETLAND BOUNDARIES AT THE LOCATIONS SHOWN ON THE PLAN...
2. INSTALL EROSION AND SEDIMENT CONTROLS SUCH AS COMPOST FILTER SOCK, INLET PROTECTION, AND CONSTRUCTION ENTRANCES DOWNSLOPE OF THE PROPOSED CONSTRUCTION ACTIVITY...
3. PERFORM EXCAVATION, HORIZONTAL DIRECTIONAL DRILLING, INSTALLATION OF CLEANOUTS, VALVES, MANHOLES, AND OTHER APPURTENANCES AS IDENTIFIED ON THE PLAN...
4. COMPLETE PERMANENT RESTORATION AS SOON AS POSSIBLE FOLLOWING EXCAVATION...
5. STABILIZE ANY REMAINING DISTURBED SOIL WHICH SHALL REMAIN EXPOSED FOR MORE THAN THREE (3) DAYS ACCORDING TO THE TEMPORARY SEEDING SCHEDULE...
6. AFTER ALL AREAS ARE AT LEAST 70% PERMANENTLY STABILIZED, TEMPORARY CONTROL MEASURES SHALL BE REMOVED AFTER PCOD APPROVAL.

GRAVITY SEWER MAIN AND LATERAL CONSTRUCTION SEQUENCE

- 1. LOCATE AND DELINEATE WETLAND BOUNDARIES AT THE LOCATIONS SHOWN ON THE PLAN...
2. INSTALL EROSION AND SEDIMENT CONTROLS SUCH AS COMPOST FILTER SOCK, INLET PROTECTION, AND CONSTRUCTION ENTRANCES DOWNSLOPE OF THE PROPOSED CONSTRUCTION ACTIVITY...
3. EXCAVATE TRENCH, INSTALL SANITARY SEWER INFRASTRUCTURE, COMPACT, AND BACKFILL TRENCH...
4. COMPLETE PERMANENT RESTORATION AS SOON AS POSSIBLE FOLLOWING EXCAVATION...
5. STABILIZE ANY REMAINING DISTURBED SOIL WHICH SHALL REMAIN EXPOSED FOR MORE THAN THREE (3) DAYS ACCORDING TO THE TEMPORARY SEEDING SCHEDULE...
6. AFTER ALL AREAS ARE AT LEAST 70% PERMANENTLY STABILIZED, TEMPORARY CONTROL MEASURES SHALL BE REMOVED AFTER PCOD APPROVAL.

MAINTENANCE FOR TEMPORARY CONTROL MEASURES

ALL E&S CONTROLS AND MUST BE PROPERLY MAINTAINED UNTIL THE PROJECT SITE HAS BEEN STABILIZED. ALL MAINTENANCE SHALL BE IN CONFORMANCE WITH THE PA DEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL DATED MARCH, 2012.

GENERAL MAINTENANCE SHALL INCLUDE:

- 1. INSPECTION OF ALL E&S CONTROLS AND BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS...
2. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR AND REPLACEMENT SHALL BE PERFORMED IMMEDIATELY...
3. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF INSPECTIONS AND REPAIR/REPLACEMENT OF BMPs...
4. SEDIMENT REMOVED FROM E&S CONTROLS DURING MAINTENANCE ARE TO BE SPREAD, PERMANENTLY SEEDED, AND MULCHED.

SPECIFIC MAINTENANCE SHALL INCLUDE:

- 1. ROCK CONSTRUCTION ENTRANCE - THICKNESS OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK AS NEEDED...
2. COMPOST FILTER SOCKS - SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH ONE-HALF THE ABOVE GROUND HEIGHT OF THE BARRIER...
3. EROSION CONTROL BLANKET - THE EROSION CONTROL BLANKET SHALL BE CHECKED FOR TORN OR LOOSE STAPLED AREAS...
4. VEGETATIVE STABILIZATION - VEGETATIVE STABILIZATION SHALL BE PERIODICALLY INSPECTED FOR PROPER GROWTH...

OPERATIONS AND MAINTENANCE REPORT

THE CONTRACTOR SHALL PREPARE A WRITTEN REPORT OR LOG BOOK DETAILING INSPECTION ACTIVITIES IN ACCORDANCE WITH PERMIT REGULATIONS. THIS REPORT SHALL BE PROVIDED UPON REQUEST TO AUTHORITIES HAVING JURISDICTION.

SEEDING SCHEDULE

Table with columns: APPLICATION, SPECIES, %PURE LIVE SEED, APPLICATION RATE, FERTILIZER, LINING RATE, SEEDING DATE. Rows include Temporary (PennDOT Formula E), Permanent (PennDOT Formula B), and Permanent (PennDOT Formula L).

- 1. FERTILIZER SHALL BE APPLIED IN ACCORDANCE WITH A SOIL TEST...
A. 10-20-20 ANALYSIS COMMERCIAL FERTILIZER AT 140 LBS./1000 S.Y. AND 38-0-0 UREA FORM FERTILIZER AT 50 LBS./1000 S.Y. OR
B. 32-0-0 TO 38-0-0 SULFUR COATED UREA FERTILIZER AT 59-50 LBS./1000 S.Y. OR
C. 31-0-0 IBDU FERTILIZER AT 61 LBS./1000 S.Y.
2. SPECIFICATION ITEMS OBTAINED USING PENNDOT PUBLICATION NO. 408.
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW APPLIED AT A RATE OF 6000 LBS./AC. (1240 LBS./1000 S.Y.), MULCH TO BE ANCHORED WITH WOOD CELLULOSE FIBER AT 750 LBS./AC. OR EQUIVALENT.
4. ALL AREAS RECEIVING SEEDING SHALL HAVE A MINIMUM OF 6" OF ORGANIC TOPSOIL.
* PERENNIAL RYEGRASS: A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT.
** KENTUCKY BLUEGRASS: A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 25% OF THE TOTAL BLUEGRASS COMPONENT.

RECYCLING AND DISPOSAL OF MATERIALS

- 1. CONSTRUCTION WASTES (INCLUDING BUT NOT LIMITED TO EXCESS SOILS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC.) ARE TO BE DISPOSED OF OR RECYCLED AT APPROPRIATE, PERMITTED FACILITIES...
2. THE CONTRACTOR MUST USE ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT THE FILL MATERIAL ASSOCIATED WITH THIS PROJECT QUALIFIES AS CLEAN FILL MATERIAL...
3. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATABASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP...
4. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK, OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES...

PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLAN

NOTE: A COPY OF THIS PLAN MUST BE KEPT AT THE CONSTRUCTION SITE AT ALL TIMES.

THE PURPOSE OF THIS PLAN IS TO ADDRESS OTHER ASPECTS OF POLLUTION CONTROL OTHER THAN EROSION AND SEDIMENTATION POLLUTION CONTROL COVERED IN THE EROSION AND SEDIMENT CONTROL PLAN. THIS PLAN WILL COVER SOLID WASTE DISPOSAL, SANITARY FACILITIES, WATER SOURCES, CONCRETE WASTE, FUEL TANKS, HAZARDOUS WASTE AND SPILL REPORTING.

- 1. SOLID WASTE DISPOSAL
NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, ARE ALLOWED TO BE DISCHARGED FROM THE SITE WITH STORMWATER. ALL SOLID WASTE, INCLUDING DISPOSABLE MATERIALS INCIDENTAL TO THE MAJOR CONSTRUCTION ACTIVITIES, MUST BE COLLECTED AND PLACED IN CONTAINERS...
2. SANITARY FACILITIES
ALL PERSONNEL INVOLVED WITH CONSTRUCTION ACTIVITIES MUST COMPLY WITH STATE AND LOCAL SANITARY OR SEPTIC SYSTEM REGULATIONS...
3. WATER SOURCES
NON-STORM WATER COMPONENTS OF SITE DISCHARGE MUST BE CLEAN WATER...
4. CONCRETE WASTE FROM CONCRETE READY-MIX TRUCKS
DISCHARGE OF EXCESS OR SPECIALLY DESIGNATED DIKED AREAS PREPARED TO PREVENT CONTACT BETWEEN THE CONCRETE AND/OR WASH WATER...
5. FUEL TANKS
TEMPORARY ON-SITE FUEL TANKS FOR CONSTRUCTION VEHICLES SHALL MEET ALL STATE AND FEDERAL REGULATIONS...
6. HAZARDOUS WASTE MANAGEMENT AND SPILL REPORTING PLAN
ANY HAZARDOUS OR POTENTIALLY HAZARDOUS WASTE THAT IS BROUGHT ONTO THE CONSTRUCTION SITE MUST BE HANDLED PROPERLY...

ANY HAZARDOUS OR POTENTIALLY HAZARDOUS WASTE THAT IS BROUGHT ONTO THE CONSTRUCTION SITE MUST BE HANDLED PROPERLY IN ORDER TO REDUCE THE POTENTIAL FOR STORM WATER POLLUTION. ALL MATERIALS USED ON THIS CONSTRUCTION SITE MUST BE PROPERLY STORED, HANDLED AND DISPENSED FOLLOWING ANY APPLICABLE LABEL DIRECTIONS.

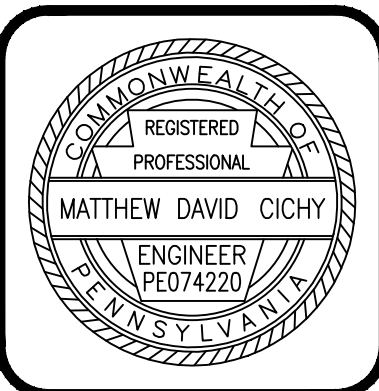
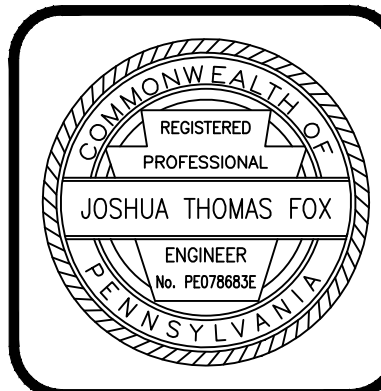
SHOULD AN ACCIDENTAL SPILL OCCUR, IMMEDIATE ACTION MUST BE UNDERTAKEN BY THE GENERAL CONTRACTOR TO CONTAIN AND REMOVE THE SPILLED MATERIAL. ALL HAZARDOUS MATERIALS MUST BE DISPOSED OF BY THE CONTRACTOR IN THE MANNER SPECIFIED BY LOCAL, STATE, AND FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS.

ANY SPILLS OF HAZARDOUS MATERIALS IN QUANTITIES IN EXCESS OF REPORTABLE QUANTITIES AS DEFINED BY EPA OR THE STATE AGENCY REGULATIONS, MUST BE IMMEDIATELY REPORTED TO THE EPA NATIONAL RESPONSE CENTER (1-800-424-8802) AND THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (1-570-826-2511).

IN ORDER TO MINIMIZE THE POTENTIAL FOR A SPILL OF HAZARDOUS MATERIALS TO COME IN CONTACT WITH STORM WATER, THE FOLLOWING STEPS MUST BE IMPLEMENTED:

- a. ALL MATERIALS WITH HAZARDOUS PROPERTIES (SUCH AS PESTICIDES, PETROLEUM PRODUCTS, FERTILIZERS, DETERGENTS, CONSTRUCTION CHEMICALS, ACIDS, PAINTS, PAINT SOLVENTS, CLEANING SOLVENTS, ADDITIVES FOR SOIL STABILIZATION, CONCRETE, CONCRETE CURING COMPOUNDS AND ADDITIVES, ETC.) MUST BE STORED IN A SECURE LOCATION, UNDER COVER, WHEN NOT IN USE...
b. THE MINIMUM PRACTICAL QUANTITY OF ALL SUCH MATERIALS MUST BE KEPT ON THE JOB SITE AND SCHEDULED FOR DELIVERY AS CLOSE TO TIME OF USE AS PRACTICAL...
c. A SPILL CONTROL AND CONTAINMENT KIT (CONTAINING FOR EXAMPLE, ABSORBENT SUCH AS KITTY LITTER OR SAWDUST, ACID NEUTRALIZING AGENT, BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, PLASTIC AND METAL TRASH CONTAINERS, ETC.) MUST BE PROVIDED AT THE STORAGE SITE...
d. ALL OF THE PRODUCT IN A CONTAINER MUST BE USED BEFORE THE CONTAINER IS DISPOSED OF...
e. ALL PRODUCTS MUST BE STORED IN AND USED FROM THE ORIGINAL CONTAINER WITH THE ORIGINAL PRODUCT LABEL...
f. ALL PRODUCTS MUST BE USED IN STRICT COMPLIANCE WITH INSTRUCTIONS ON THE PRODUCT LABEL...
g. THE DISPOSAL OF EXCESS OR USED PRODUCTS MUST BE IN STRICT COMPLIANCE WITH INSTRUCTIONS ON THE PRODUCT LABEL.

Table with columns: NO., REVISION, DATE, BY.



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HOWE TOWNSHIP MUNICIPAL AUTHORITY
300 N. 4TH STREET
NEWPORT, PA 17074

EROSION & SEDIMENT CONTROL DETAILS
FOR
HOWE TOWNSHIP SANITARY SEWER EXTENSION
HOWE TOWNSHIP PERRY COUNTY PENNSYLVANIA

Table with columns: PROJ. MGR., DESIGN, CADD, CHECKED, SCALE, DATE.

DRAWING NO. DT-9
SHEET NO. 60 OF 60
PROJECT 005100.0434