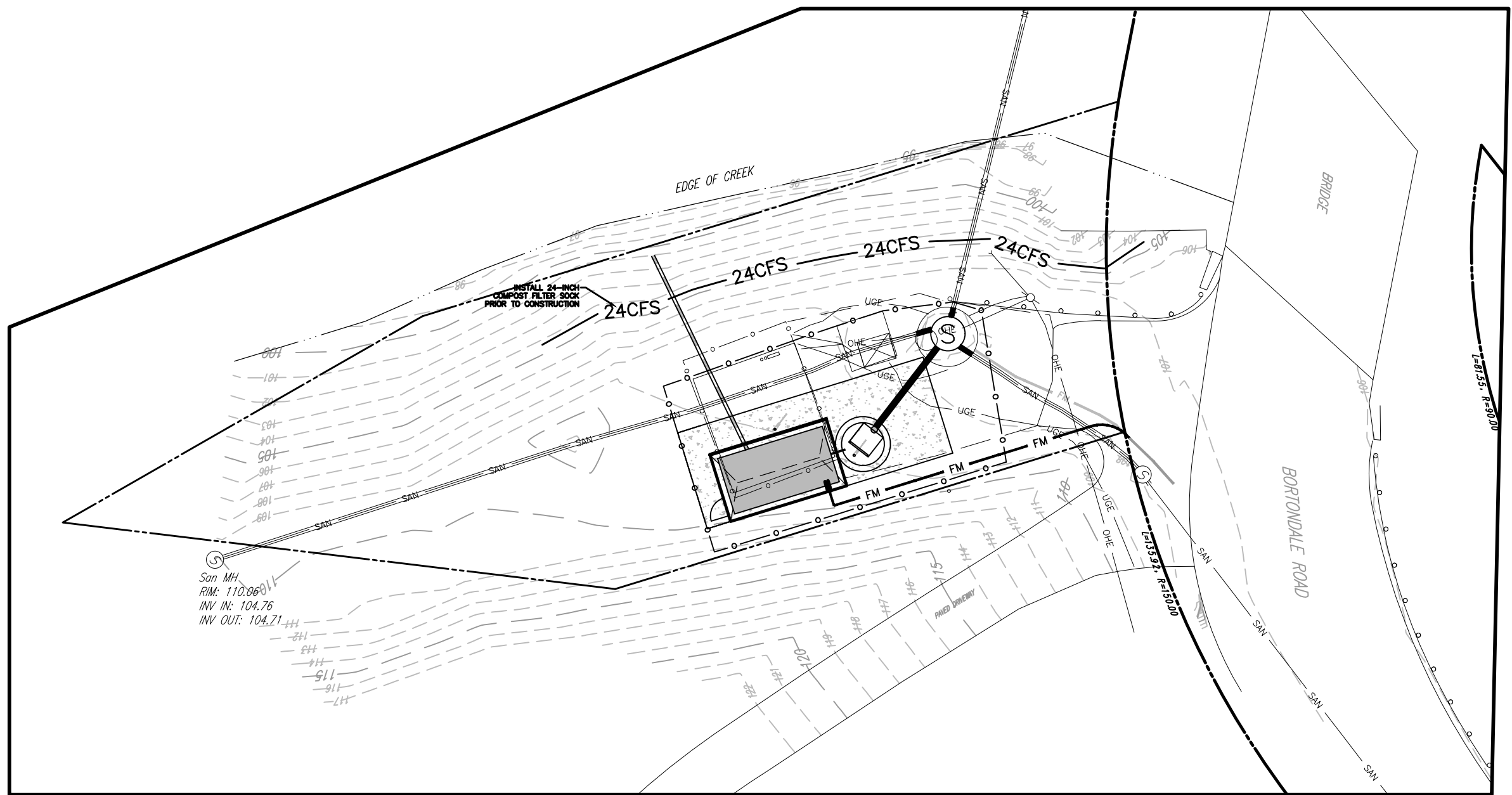
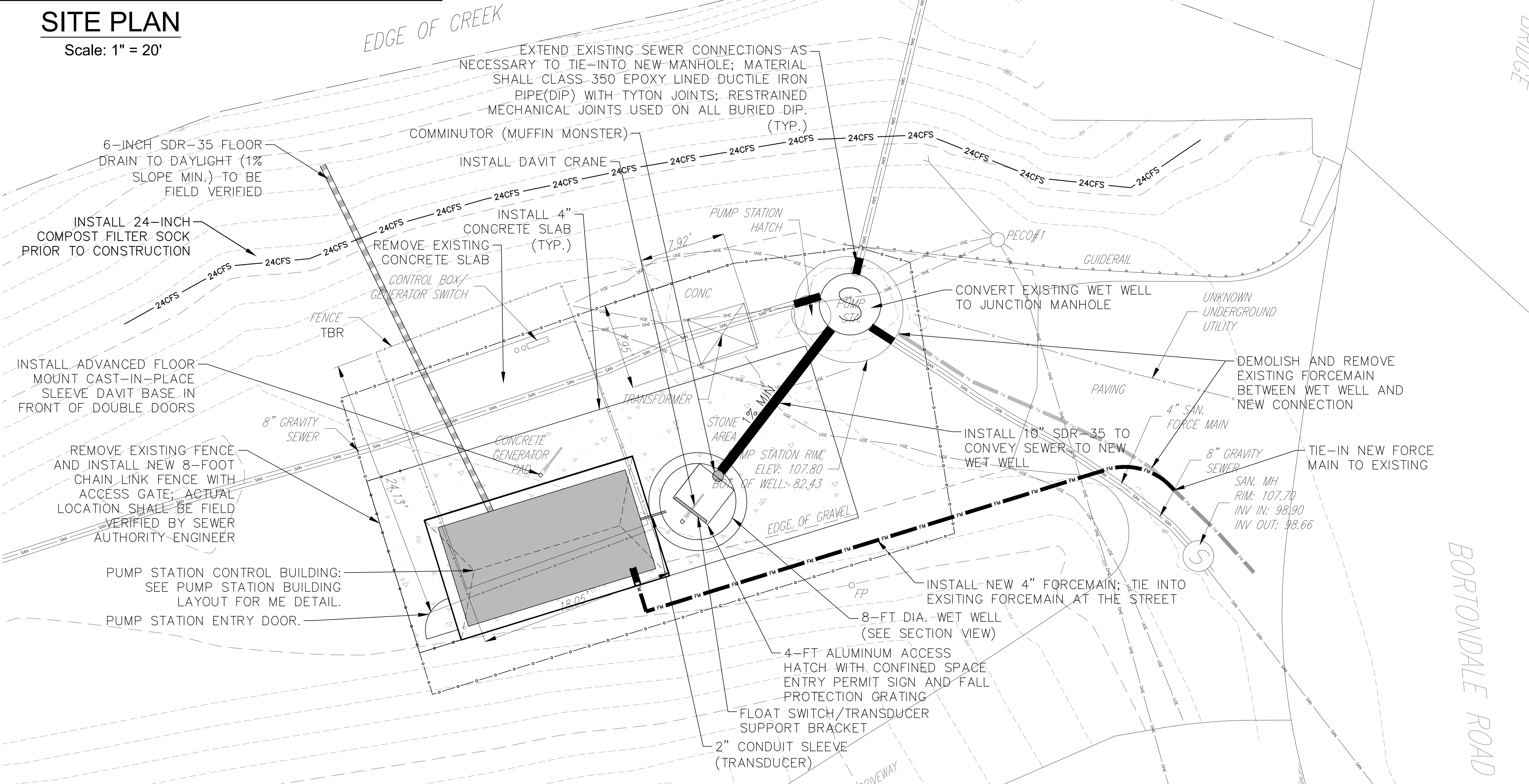




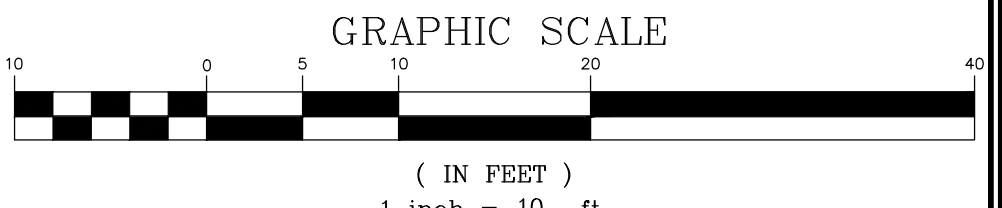
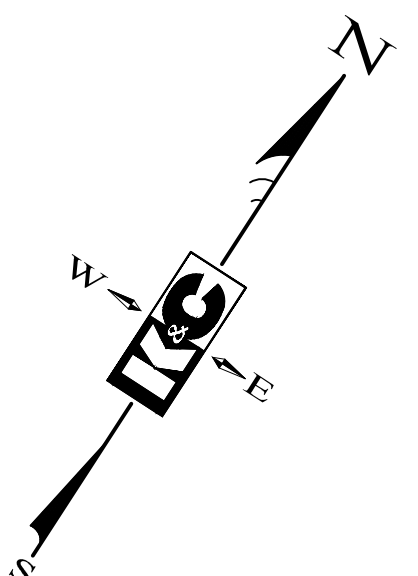
SITE PLAN

Scale: 1" = 20'



SITE PLAN

Scale: 1" = 5'



PROJECT SERIAL No.: 20201000560

BEFORE YOU DIG ANYWHERE

PA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE IN DESIGN STAGE.

PENNSYLVANIA ONE CALL SYSTEM, INC.

STOP! CALL 1-800-242-1776 (TOLL FREE)

PA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE IN DESIGN STAGE.

PENNSYLVANIA ONE CALL SYSTEM, INC.

ALL TRENCHING, SHEETING AND SHORING SHALL BE IN STRICT ACCORDANCE WITH OSHA STANDARDS.

ORIGINAL PLANS BEAR REGISTRATION SEAL IN RED INK	
K & C	
KELLY & CLOSE ENGINEERS	
CONSULTING ENGINEERS & SURVEYORS	
The Summit at Brandywine	
1786 Wilmington Pike/Suite 300	
Wilmington, DE 19804	
TEL: 302.436.1111	
FAX: 302.436.9376	
BY	
DATE	
DESCRIPTION	
DATE	DESCRIPTION
JUNE 22, 2021	AS NOTED
drawn by	M.J.B.
checked by	J.P.K.
drawn name	F-She
project no.	UPTSA-111

UPPER PROVIDENCE TOWNSHIP

BORTONDALE PUMP STATION IMPROVEMENTS

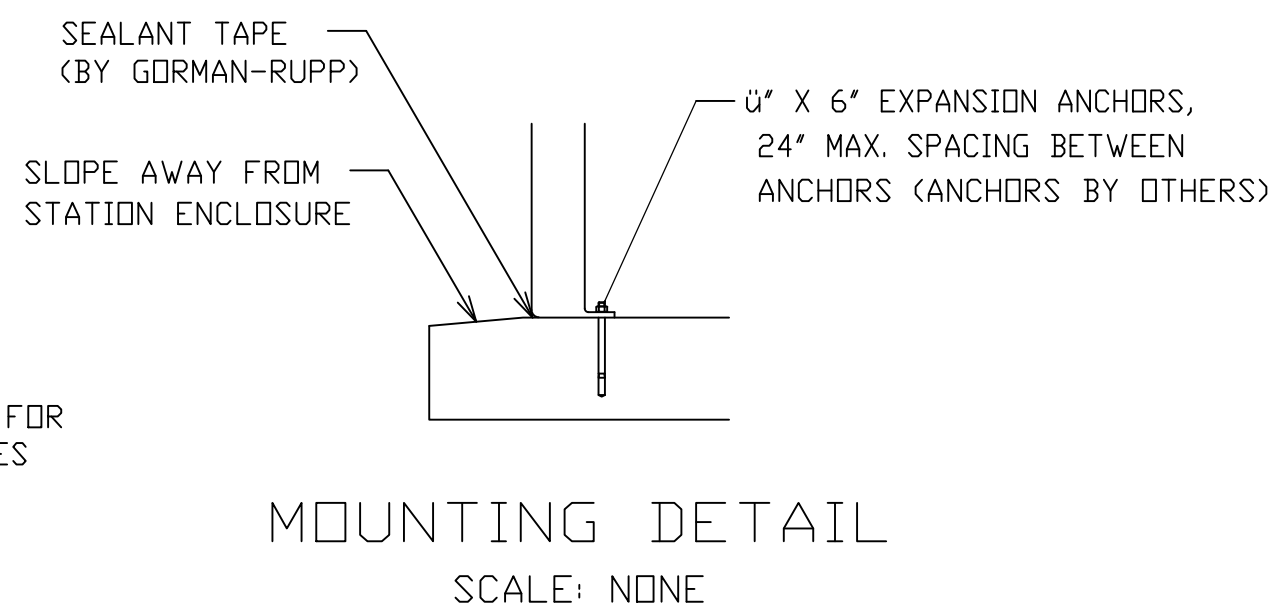
UPPER PROVIDENCE TOWNSHIP
DELAWARE COUNTY, PENNSYLVANIA

OVERALL SITE PLAN

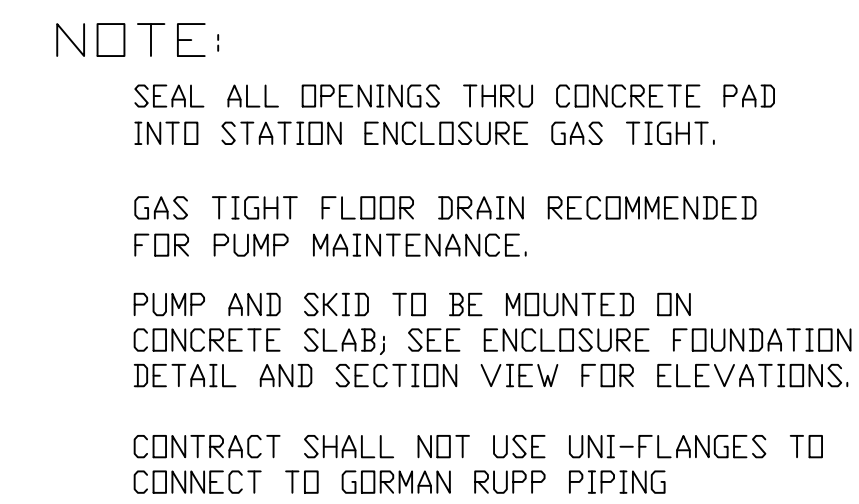
SHEET 1

of 5

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⌀ 120 VOLT, 15 AMP DUPLEX GFI RECEPTACLE
Ⓢ 3-WAY LIGHT SWITCH



VS3-B, 4" X 4" X 4"
WITH 12'-0" X 20' FIBERGLASS
ENCLOSURE

		603150.S01.DGN	
		THE GORMAN-RUPP CO. MANFIELD, OHIO ST. THOMAS, ONTARIO	
NAME DUPLX BASE MOUNTED VS3-B PUMP UNIT, WITH FIBERGLASS ENCLOSURE			
DRN.	PKW	CHK.	APP.
		BW	BW
DATE 4-18-21			SERIAL NO.
60-3150			

SURVEY NOTES:

1. THIS PLAN REPRESENTS AN ACTUAL FIELD SURVEY PERFORMED BY KELLY AND CLOSE CONSULTING ENGINEERS AND SURVEYORS IN DECEMBER 2020. THE LIMIT OF THE FIELD SURVEY IS SHOWN ON THIS PLAN.
2. VERTICAL DATUM/ELEVATIONS ARE BASED ON NGVD 88 DATUM. THE VALUES WERE DERIVED FROM GPS OBSERVATIONS SUPPLEMENTED WITH CLOSE LOOP GROUND TRAVERSE METHODS.
3. PLAN REFERENCES:

A. PLAN TITLED BORTONDALE PUMP STATION, PREPARED BY MEDIA ENGINEERING ASSOCIATES DATED AUGUST 1, 1983 AND LAST REVISED 12/11/1985.

B. PLAN TITLED BORTONDALE PUMP STATION, PREPARED BY BRADFORD ENGINEERING INC., DATED MAY 1, 1992 NO REVISIONS.
4. THIS SURVEY IS NOT PREPARED WITH THE BENEFIT OF A TITLE REPORT.
5. UTILITY LOCATIONS ARE LOCATED TO THE BEST OF OUR ABILITY BASED ON PENNSYLVANIA ONE CALL AND LOCATIONS OF PHYSICAL SURFACE FEATURES. NOT GUARANTEED AS TO THEIR EXACT LOCATION, OR THE EXISTENCE OF OTHERS, THAT ARE NOT SHOWN.
6. THIS PROPERTY IS SUBJECT TO RESTRICTIONS, EASEMENTS, AND DOCUMENTS OF RECORD.

PROJECT NOTES:

1. PUMP STATION AND APPURTENANCES INSTALLED BY GORMAN RUPP (OR APPROVED EQUAL).
2. PRESSURE TRANSDUCER AND DUPLEX PUMP CONTROLLER OPERATES MAIN PUMPS.
3. FLOATS ARE REDUNDANT TO BACKUP THE PRESSURE TRANSDUCER.
4. DUCTILE IRON PIPE (DIP) IS CLASS 350 EPOXY LINED WITH TYTON JOINTS.
5. RESTRAINED MECHANICAL JOINTS USED ON ALL BURIED DIP.
6. ALL METAL COMPONENTS WITHIN WET WELLS CONSTRUCTED OF #304 STAINLESS STEEL.
7. THE PUMP STATION AND MANHOLE 100 HAVE A XYPEX ADDITIVE MIXED WITH THE CONCRETE TO LIMIT DETERIORATION.
8. ALL PRECAST STRUCTURES ARE DESIGNED FOR FULLY SATURATED CONDITIONS WITH H20 LOAD RATING AND ENGINEER SEALED CALCULATIONS.
9. SEE GORMAN RUPP (OR APPROVED EQUAL) SHOP DRAWINGS FOR FULL EQUIPMENT DETAILS

NOTES:

1. THE STATION WILL BE COMPRISED OF A FACTORY BUILT DUPLEX PUMP STAION, STAINLESS STEEL PIPE RAILS, PRESSURE LEVEL SENSING TRANSDUCER & CONTROLS, RUN TIME METERS FOR EACH PUMP, EMERGENCY AND REDUNDANT HIGH LEVEL FLOAT, AN EMERGENCY SKID MOUNTED SUCTION PUMP, MAGNETIC FLOW METER, AND AN EQUIPMENT BUILDING TO CONTAIN THE PUMP CONTROLLER(S), TELEPHONE DIALER, BREAKER BOXES, PHONE INTERFACE, MAGNETIC FLOW METER COMMAND CENTER, CHART RECORDER, ETC.
2. A TELEMTRY CIRCUIT CONNECTED TO THE TELEPHONE DIALER WILL BE INSTALLED. SEE ELECTRICAL ENGINEER DESIGN
3. THE PROPOSED PIPING AND VALVES INSIDE THE WET WELL AND DRY VALVE BOX ARE DUCTILE IRON EPOXY LINED INTERIOR WITH BITUMINOUS COATED EXTERIOR 6 INCH NOMINAL DIAMETER. THE 6 INCH DIP PIPE WILL EXTEND TO THE EXISTING FORCE MAIN (4" DIP). CONTRACTOR MUST FIELD VERIFY THE DIAMETER OF THE EXISTING FORCE MAIN(S) AND THE MATERIAL OF THE FORCE MAIN PRIOR TO START OF WORK AND PROCUREMENT OF EQUIPMENT.
4. THE EMERGENCY PUMPS IS EXISTING; FURTHER INFORMATION TO THE EMERGENCY PUMP WILL BE MADE AVAILABLE UPON REQUEST. PUMPS SHALL BE PERMANENTLY MOUNTED TO CONCRETE PADS IN CRITICALLY SILENCED ENCLOSURE.
5. PUMP EQUIPMENT GORMAN RUPP (OR APPROVED EQUAL).
6. EMERGENCY PUMP BY GODWIN PUMPS ###-###-#### - KBX GOLDEN
7. CONSTRUCTION CONTRACTOR MUST CALL THE PA ONE CALL SYSTEM AT 1-800-242-1776 AT LEAST THREE (3) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
8. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL EQUIPMENT AND UTILITIES (EXISTING AND PROPOSED) PRIOR TO THE START OF WORK ON THE PUMP STATION. SHOP DRAWINGS SHALL BE PROVIDED WHICH INDICATE THE NECESSARY CHANGES. ALL UTILITIES ON SITE SHALL BE SOFT DIG TO VERIFY DEPTHS.
9. REFER TO THE ATTACHED DESIGN ENGINEERS REPORT AND SPECIFICATIONS REPORT FOR ADDITIONAL DESIGN INFORMATION.
10. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE UTILITIES OR OTHER PHYSICAL FEATURES SHOWN ON THE PLAN NOR DOES THE ENGINEER GUARANTEE THAT ALL UTILITIES ARE SHOWN ON THE PLAN.
11. THE MINIMUM DEPTH OF COVER OF ALL SANITARY SEWERS AND FORCE MAINS SHALL BE 4 FEET TO PIPE CROWN OR AS PER DESIGN WHERE APPROVED BY MUNICIPALITY.
12. BACKFILL USING NATURAL SOILS THAT CONTAIN LESS THAN 20% COARSE FRAGMENTS NO LARGER THAN 2 INCHES IN SIZE IN ANY DIMENSION. BACKFILL TO BE COMPACTED IN 8 INCH LIFTS TO A MINIMUM PROCTOR DENSITY OF 95 USING A PLATE COMPACTOR OR RAM-X, ONLY AFTER A MINIMUM OF 12" OF COVER HAS BEEN PLACED OVER THE PIPE CROWN.
13. SURFACE WATER MUST BE DIVERTED AWAY FROM MANHOLE AND WET WELL.
14. ALL ELECTRICAL WORK SHALL BE COMPLETED BY A LICENSED ELECTRICIAN. ALL WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE NEC, STATE, AND LOCAL STANDARDS. A THIRD PARTY ELECTRICAL INSPECTION WITH WRITTEN CERTIFICATION SHALL BE PROVIDED PRIOR TO START-UP OF PUMP STATIONS.
15. EACH PUMP, ALARM, ETC. SHALL HAVE SEPARATE BREAKERS AT THE MAIN UTILITY BOX.
16. ALL ELECTRICAL CONDUIT TO BE INSTALLED IN PROPERLY SIZED CONDUIT BURIED AT LEAST 36 INCHES BELOW FINISHED GRADE OR AS REQUIRED BY REGULATION.
17. ELECTRICAL EMERGENCY SHUTOFF SWITCH TO BE MOUNTED WITHIN 50 FEET OF THE PUMP STATION, NEXT TO THE VISUAL/AUDIBLE ALARM.
18. VISUAL ALARM TO BE AT LEAST A 2" DIAMETER RED GLOBE WITH MINIMUM 80 db HORN.
19. TANK ALARM TO BE MOUNTED OUTDOORS AND AN ADDITIONAL VISUAL/AUDIBLE ALARM TO BE MOUNTED INDOORS AT EQUIPMENT BUILDING.
20. ALL REMOVED TOPSOIL OR ORGANIC RICH MATERIAL WILL BE STOCKPILED SEPARATELY FROM ANY OTHER FILL.
21. ALL PIPING TO BE CLASS 52 EPOXY LINED DUCTILE IRON PIPE FOR THE P PUMP STATION OR MODIFIED WHERE NOTED. OTHER PIPE USE REQUIRES RECALCULATION OF FRICTION LOSSES AND APPROVAL BY PUMP MANUFACTURER AND DESIGN ENGINEER.
22. RESTRAINED MECHANICAL JOINTS SHALL BE USED BELOW GRADE ON ALL DIP. FLANGED DIP SHALL BE USED WITHIN TANKS. CONCRETE THRUST BLOCKS MUST BE INSTALLED AT EACH HORIZONTAL AND VERTICAL CHANGE OF DIRECTION (EXCEPT 11.25° BENDS) OF THE DIP FORCE MAIN OR IF SOFT SOILS PRECLUDE THE USE OF THE RESTRAINED MECHANICAL JOINT. SEE PLAN VIEW ON SHEET NO. 2 FOR LOCATIONS OF THE THRUST BLOCKS.
23. CLAY DIKES TO BE PLACED AS SHOWN ON SITE PLAN. DIKES SHALL BE CONSTRUCTED WHILE INSTALLING THE FORCE MAIN TO RESTRICT GROUNDWATER FLOW THROUGH THE STONE BEDDING. ONCE IN PLACE, THE CLAY SHALL BE COMPLETELY HYDRATED TO THE FLOODING POINT WITH CLEAR WATER THEN IMMEDIATELY BACKFILLED. CLAY TO BE PURE BENTONITE SHUR-PLUG 3/4" CHIPS.
24. PUMP STATION TO BE WRAPPED WITH 4" PERFORATED SCHEDULE 40 PVC TO ACT AS A PERIMETER DRAIN. PIPING SHALL BE SURROUNDED IN CLEAN #57 STONE AND EXTENDED TO DAYLIGHT FOR DISCHARGE.
25. CONCRETE ANTI-FLOATATION COLLARS SHALL BE POURED AROUND TANKS PER CALCULATIONS. GROUNDWATER ASSUMED AT GRADE FOR WORST CASE CONDITION. DEPTH OF GROUNDWATER HAS NOT BEEN DETERMINED AT THIS TIME. IN ADDITION, THE TANK MANUFACTURERS SHALL PROVIDE SEALED CALCULATIONS FOR FULLY SATURATED SOIL CONDITIONS PROVING THEIR TANKS WILL NOT FLOAT. CALCULATIONS SHALL BE PROVIDED TO THE UPPER PROVIDENCE TOWNSHIP SEWER AUTHORITY ENGINEER FOR REVIEW PRIOR TO PROCUREMENT.

26. ALL HATCHES AND COVERS SHALL BE OF WATER-TIGHT CONFIGURATION; ALL HATCHES TO BE LOCKED TO PREVENT UNAUTHORIZED ACCESS.
27. ALL FASTENERS SHALL BE TYPE 304 STAINLESS STEEL UNLESS OTHERWISE NOTED OR APPROVED.
28. ALL METAL COMPONENTS WITHIN WET WELL SHALL BE STAINLESS STEEL.
29. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL SANITARY SEWER FACILITIES AND SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE TOWNSHIP AND TOWNSHIP ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
30. CONTRACTOR MUST COMPLY WITH ALL ORDINANCES AND INSTALLATION REQUIREMENTS OF THE LOCAL MUNICIPALITY, STATE, FEDERAL, & ALL OTHER APPLICABLE AUTHORITIES
31. CONTRACTOR SHALL COMPLETELY AND CONTINUALLY VENT THE WET WELL OF THE PUMP STATION AND CONTINUALLY MONITOR THE AIR QUALITY IF WORKERS ARE IN THE STRUCTURE. ALL WORKERS MUST BE OSHA 40 HOUR TRAINED FOR CONFINED SPACE ENTRY FOR ACCESS INTO THE STATIONS, VALVE BOXES AND MANHOLES AS NECESSARY.
32. CONTRACTOR SHALL PROVIDE TRAINING IN THE OPERATION OF THE NEW EQUIPMENT AND PROVIDE TWO SETS OF AN OPERATION AND MAINTENANCE MANUAL FOR ALL NEW EQUIPMENT INSTALLED.
33. LIQUID LEVEL CONTROLS SHALL NOT BE LOCATED SO AS TO BE AFFECTED BY FLOWS ENTERING THE STATION. LOCATION OF FLOATS AND THE TRANSDUCER ARE GENERAL AND CAN BE RELOCATED AS NECESSARY.
34. CONTRACTOR IS RESPONSIBLE FOR SECURING ALL STATE AND LOCAL PERMITS AS NECESSARY TO BEGIN CONSTRUCTION. THE MUNICIPALITY MUST BE NOTIFIED AT LEAST 3 DAYS IN ADVANCE OF THE BEGINNING OF CONSTRUCTION. CONTRACTOR IS NOT RESPONSIBLE FOR SECURING THE PADEP WATER QUALITY PERMIT AS IT PERTAINS TO THIS DESIGN. THE CONTRACTOR SHALL ALSO CONTACT THE PADEP AT LEAST 3 WORKING DAYS PRIOR TO BEGINNING OF CONSTRUCTION.
35. THE INSTALLED LOCATION OF COMPONENTS MAY AFFECT THE SYSTEM DESIGN. ANY DEVIATIONS MUST BE CHECKED AND APPROVED FOR ACCURACY PRIOR TO CONSTRUCTION.
36. INSTALLER TO PAY PARTICULAR ATTENTION TO SHEETING AND SHORING REQUIREMENTS OF OSHA AND ANY OTHER FEDERAL, STATE, COUNTY, TOWNSHIP, OR LOCAL REGULATIONS & REQUIREMENTS IF ANY EXCAVATION IS REQUIRED.
37. SEE ELECTRICAL DESIGN BY FX BONNES, INC.
38. ALL EXPOSED PIPING FROM THE EMERGENCY PUMP MUST BE SLOPED TOWARD THE WET WELL IN ORDER TO DRAIN VIA GRAVITY TO AVOID FREEZING. ALL EXPOSED PIPING MUST BE ADEQUATELY SUPPORTED. VERTICAL AND HORIZONTAL THRUST BLOCKS MUST BE INSTALLED ON THE DISCHARGE PIPING OF THE EMERGENCY PUMP. ANY PIPE CROSSING WITH LESS THAN SIX (6) INCHES OF VERTICAL SEPARATION WILL REQUIRE CONCRETE ENCASEMENT PER DETAIL. IF PIPE CANNOT BE ADEQUATELY SLOPED, HEAT TRACE TAPE AND INSULATION WILL BE REQUIRED ON ALL EXPOSED PIPING.
39. THE "C" FACTOR OF 120 USED FOR THE EXISTING FORCE MAIN IS BEING USED IN LIEU OF FIELD INFORMATION. A LOWER FACTOR DUE TO TUBERCULATION, PITTING, OR DIFFERENT PIPE INTERNAL DIMENSION OF THE EXISTING FORCE MAIN WILL RESULT IN HIGHER FRICTION LOSSES. THE DESIGN ENGINEERS ARE NOT RESPONSIBLE FOR THE CONDITION OF THE EXISTING BURIED FORCE MAIN AND APPURTENANCES.
40. CONTRACTOR SHALL PROVIDE A HEALTH AND SAFETY PLAN FOR THIS PROJECT WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, INITIAL JOB-SITE SAFETY MEETING, PHONE NUMBERS FOR THE NEAREST FIRE, POLICE AND AMBULANCE PERSONNEL (OTHER THAN 911), PRINTED MAPS WITH A HIGHLIGHTED ROUTE TO THE NEAREST HOSPITAL, AND OTHER DETAILS AS NECESSARY
41. A MINIMUM VERTICAL SEPARATION OF 18-INCHES SHALL BE MAINTAINED BETWEEN ALL SANITARY SEWER AND UTILITY CROSSINGS. IF 18-INCHES VERTICAL CLEARANCE CANNOT BE MET, A MINIMUM 10-FEET OF CONCRETE ENCASEMENT SHALL BE INSTALLED AROUND THE SANITARY SEWER PIPE CENTERED ON THE UTILITY CROSSING. ADDITIONALLY, IN NO CASE SHALL MINIMUM VERTICAL CLEARANCE BE LESS THAN 6-INCHES.

NOTES

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of 5

