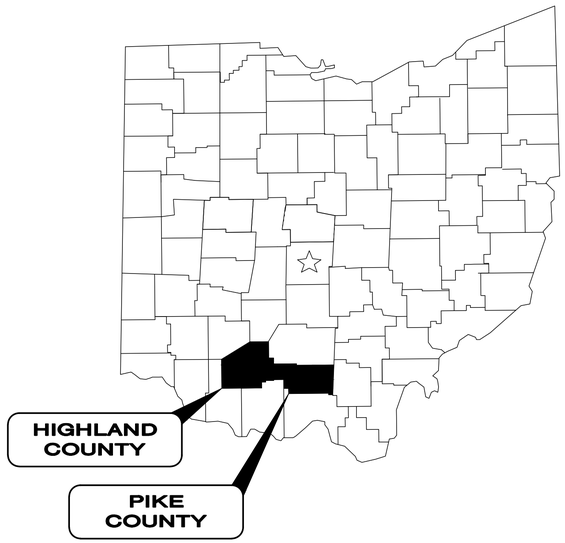
BID SET

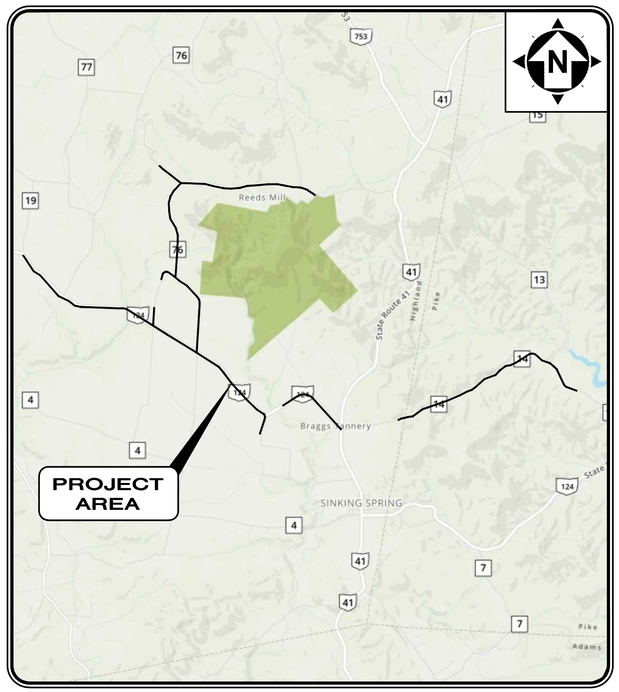
PIKE WATER INC.

HIGHLAND / PIKE WATERLINE EXTENSION

HIGHLAND & PIKE COUNTY, OHIO

JANUARY, 2019





LOCATION MAP
NOT TO SCALE

PIKE WATER APPROVALS:

TIM WILLIAMS, GENERAL MANAGER — DATE: 1-11-2019

ENGINEER/ARCHITECT:

CT CONSULTANTS, INC.
148 N. HIGH ST.
GAHANNA, OH 43230

(614) 471-7310 PHONE
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BARBARA R. ANDERSON — P.E. No. E-51761 — DATE: 1/17/2019

STATE OF OHIO
BARBARA RAE ANDERSON
51761
REGISTERED
PROFESSIONAL ENGINEER

OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

NOTE:

THE SURVEY SHOWN ON THESE PLANS WAS OBSERVED IN THE FIELD FOR CONSTRUCTION PURPOSES ONLY AND MAY NOT BE SUITABLE FOR PROPERTY LINE SURVEYS OR ANY OTHER PURPOSE.

your trusted advisor consultants — engineers architects planners

ENGINEER'S PROJECT No. 180735

your trusted advisor consultants — engineers architects planners

NO	REVISION	DATE
1	ALIGNMENT REVISIONS	4/3/20

ISSUED FOR: OEPA REVIEW
ISSUE DATE: 1/18/19
SCALE: AS SHOWN
DESIGNED BY: BRA
DRAWN BY: AGD
CHECKED BY: BRA

HIGHLAND/PIKE WATERLINE EXTENSION
HIGHLAND & PIKE COUNTY, OHIO

COVER SHEET

PROJECT NO. 180735
DISCIPLINE: GENERAL
SHEET NAME: 00G-01
SHEET 1 OF 25

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CONTRACTOR:
THE TERM CONTRACTOR IN THESE DOCUMENTS REFERS TO THE GENERAL CONTRACTOR, ALL SUB-CONTRACTORS, SUPPLIERS AND SERVICE SUPPLIERS PROVIDING SERVICES, MATERIAL OR LABOR DIRECTLY OR INDIRECTLY TO THIS PROJECT.

CERTIFICATION:
BY SUBMITTING A BID OR STARTING CONSTRUCTION THE CONTRACTOR CERTIFIES THAT:

THE CONTRACTOR HAS VISITED THE SITE AND IS SATISFIED THAT HE UNDERSTANDS ALL SITE CONDITIONS THAT MAY HAVE AN EFFECT ON THE BID PRICE AND CONSTRUCTION SCHEDULE.

THE CONTRACTOR FULLY UNDERSTANDS THE MAKE-UP, CONSTRUCTION, AND OPERATION OF ALL SYSTEMS AND EQUIPMENT HE IS CONSTRUCTING AND THAT HE HAS INCLUDED IN HIS PRICE ALL MATERIALS, SUPPLIES, ACCESSORIES, AND SERVICES NECESSARY TO MAKE THESE SYSTEMS COMPLETE AND OPERATIONAL WHETHER SUCH MATERIALS, SUPPLIES, AND SERVICES ARE EXPLICITLY SHOWN ON THE DRAWINGS OR INCLUDED IN THESE SPECIFICATIONS OR ONLY IMPLIED BY THE CLEAR INTENT OF THESE DOCUMENTS FOR THE CONTRACTORS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL SYSTEM AS PART OF THE SCOPE OF WORK UNDERTAKEN BY THIS CONTRACTOR.

RESPONSIBILITY:
THE OWNER DOES NOT SUPERVISE, NOR ARE THEY ENGAGED IN CONSTRUCTION. THE OWNER HAS NO CONTROL OVER OR CHARGE OF, AND THEREFORE IS NOT RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THESE ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY UNDER THE CONTRACT FOR CONSTRUCTION.

MSDS SHEETS:
MATERIAL SAFETY DATA SHEETS (MSDS'S) FOR ALL PRODUCTS AND/OR BUILDING MATERIALS THAT MAY CONTAIN HAZARDOUS OR TOXIC CHEMICALS SHALL BE MADE READILY AVAILABLE TO CONTRACTOR, EMPLOYEES AND OWNER'S PERSONNEL DURING CONSTRUCTION.

MAINTAINING TRAFFIC:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND CONTROLLING TRAFFIC ON ALL STREETS AND ROADS AFFECTED BY CONSTRUCTION AND SHALL, PRIOR TO ANY CONSTRUCTION, SUBMIT A CONSTRUCTION SCHEDULE TO THE OWNER FOR APPROVAL INDICATING DATES AND DURATION OF EACH PHASE OF CONSTRUCTION.

ALL CONSTRUCTION SIGNS AND TEMPORARY TRAFFIC CONTROL AND PROTECTION DEVICES SHALL BE ERECTED AND MAINTAINED IN ACCORDANCE WITH "OHIO DEPARTMENT OF TRANSPORTATION MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND O.D.O.T. ITEM 614 - MAINTAINING TRAFFIC.

MAINTENANCE OF TRAFFIC OPERATIONS MUST ADHERE TO ALL REGULATIONS AND/OR MANDATES BY THE APPROPRIATE MAINTAINING AUTHORITY OF THE ROADWAY.

COSTS FOR MAINTENANCE OF TRAFFIC SHALL BE INCLUDED IN THE LUMP SUM PAY ITEM - MAINTAINING TRAFFIC.

ROAD CLOSURES:
WHEN IT IS REQUIRED THAT THE STREET OR ROAD BE CLOSED TO THROUGH TRAFFIC, THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN, AND REMOVE SIGNS, BARRICADES, ETC., AS PER THE OMUTCD REQUIREMENTS. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN ADVANCE WARNING SIGNS, DETOUR SIGNS AND BARRICADES, ETC. ON ALL STREETS INCLUDING SIDE STREETS THAT ARE AFFECTED BY THE WORK.

CONTRACTOR SHALL SCHEDULE HIS WORK TO INSURE THAT EACH ROAD CLOSING IS NO LONGER THE SIX (6) HOURS AND OCCURS BETWEEN THE HOURS OF 9:00 A.M. TO 4:00 P.M. MONDAY THROUGH FRIDAY. THE CONTRACTOR SHALL MAKE SUITABLE PROVISIONS FOR ACCESS BY LOCAL RESIDENTS, SCHOOL BUSES, MAIL DELIVERY VEHICLES, POLICE, FIRE, AND EMERGENCY VEHICLES AT ALL TIMES. CONTRACTOR IS RESPONSIBLE TO NOTIFY SCHOOL SYSTEM, POLICE AND FIRE DEPARTMENT TWO DAYS PRIOR TO CLOSURE OR PARTIAL CLOSURE OF ANY STREET.

THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN DETOUR MARKING SIGNS ON TEMPORARY ROUTES.

IF IN THE OPINION OF THE ENGINEER, PROPER MAINTENANCE OF TRAFFIC FACILITIES AND PROPER PROVISION FOR TRAFFIC CONTROL ARE NOT BEING PROVIDED AND THE SAFETY OF THE PUBLIC IS THUS ENDANGERED, THE OWNER MAY TAKE THE NECESSARY STEPS TO PLACE THEM IN PROPER CONDITION AND THE COST OF SUCH SERVICES WILL BE BORNE BY THE CONTRACTOR.

NO DRIVEWAY IS TO BE CLOSED FOR MORE THAN FIVE (5) HOURS WITH THE TIME STARTING WHEN THE ENTRANCE IS CLOSED TO TRAFFIC. THE CONTRACTOR WILL BE RESPONSIBLE FOR NOTIFYING PROPERTY OWNERS, RESIDENTS, OR BUSINESS OPERATORS IN WRITING AT LEAST 24 HOURS BUT NOT MORE THAN 72 HOURS PRIOR TO CLOSURE. THE ENGINEER SHALL BE GIVEN A LIST OF THE BUSINESSES THAT WERE GIVEN NOTICES WITH THE DATE OF NOTICE INCLUDED. IF FOR ANY REASON THE FIVE (5) HOUR MAXIMUM LIMIT IS EXCEEDED ON ANY DRIVEWAY, THE CONTRACTOR WILL NOT BE PERMITTED TO CLOSE ANY FURTHER DRIVEWAYS UNTIL ALL CLOSED DRIVEWAYS ARE REOPENED. DRIVEWAYS SHALL NOT BE CLOSED DURING THE EVENING OR ON WEEKENDS.

CLOSURE OF STATE AND/OR COUNTY HIGHWAYS IS PROHIBITED WITHOUT PERMIT FROM THE GOVERNING HIGHWAY AUTHORITY.

TEMPORARY SURFACES:
TEMPORARY SURFACES WHERE EXCAVATIONS ARE LOCATED IN STREETS, DRIVES AND PARKING AREAS SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR AND SHALL BE FULLY MAINTAINED TO MINIMIZE INCONVENIENCE TO THE PUBLIC.

SAFETY TRENCH PROTECTION AND BACKFILLING:
THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENT, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR SHALL ALSO ABIDE BY ALL ORDINANCES OF THE MUNICIPALITY.

BACKFILLING SHALL FOLLOW IMMEDIATELY BEHIND CONSTRUCTION. ONLY THE MINIMUM LENGTH OF TRENCH REQUIRED FOR CONSTRUCTIONS SHALL BE OPEN AT ANY GIVEN TIME, AND NO EXCAVATIONS SHALL REMAIN OPEN OVERNIGHT OR BEYOND THE COMPLETION OF THE DAYS WORK.

DEWATERING:
THE CONTRACTOR SHALL, AT ALL TIMES DURING CONSTRUCTION, PROVIDE PROPER AND SATISFACTORY MEANS AND DEVICES FOR THE REMOVAL OF ALL WATER ENTERING THE EXCAVATIONS AND SHALL REMOVE ALL SUCH WATER AS FAST AS IT MAY COLLECT IN SUCH A MANNER AS SHALL NOT INTERFERE WITH THE EXECUTION OF THE WORK. FLOWS SHOULD BE FILTERED BEFORE ENTERING STORM DRAINS OR STREAMS.

CHANGES TO WORK:
ANY MODIFICATIONS AND CHANGES TO THE WORK AS SHOWN ON THE DRAWINGS MUST HAVE THE PRIOR WRITTEN APPROVAL OF THE OWNER AND ENGINEER.

SITE INVESTIGATION:
THE CONTRACTOR SHALL INVESTIGATE THE SITE PRIOR TO BIDDING. THE CONTRACTOR SHALL EXAMINE IN THE FIELD THE ACCESS PROBLEMS, AVAILABLE WORK AREAS, WATER CONDITIONS, NEARBY STRUCTURES, TREES, GROUND CONDITIONS AND FILL MATERIALS. FIELD VISITS SHALL BE COORDINATED WITH THE OWNER.

SURVEY MONUMENTS:
ALL PROPERTY LINE MARKERS (IRON PINS, SPIKES, CONCRETE MONUMENTS, ETC.) THAT ARE LIABLE TO BE DISTURBED BY THE CONSTRUCTION OPERATIONS SHALL BE REFERENCED AND PROPERLY RESET AT THE CONTRACTOR'S EXPENSE FOLLOWING CONSTRUCTION UNDER THE SUPERVISION OF A PROFESSIONAL SURVEYOR REGISTERED IN THE STATE OF OHIO.

DISPOSAL OF WASTE CONSTRUCTION MATERIALS:
THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR THE DISPOSAL OF SURPLUS EXCAVATED MATERIAL AND WASTE CONSTRUCTION MATERIALS. TREES, LIMBS, BRUSH AND STUMPS REMOVED BY THE CONTRACTOR'S OPERATION SHALL BE REMOVED FROM THE CONSTRUCTION SITE AND DISPOSED OF BY THE CONTRACTOR FOLLOWING OEPA REGULATIONS.

ITEMS TO BE INCLUDED:
THE CONTRACTOR SHALL FURNISH ALL TOOLS, MATERIAL, LABOR AND INCIDENTALS AND APPURTENANCES TO COMPLETE IN EVERY DETAIL AND LEAVE IN WORKING ORDER ALL ITEMS OF WORK CALLED FOR AND/OR SHOWN IN THE DRAWINGS. MATERIAL OR WORK NOT SPECIFICALLY MENTIONED OR SHOWN IN THE DRAWINGS, BUT NECESSARY TO COMPLETE THE WORK SHALL BE FURNISHED,

DRAINAGE TILE:
FIELD DRAINAGE TILE, STORM DRAINS, UNDER DRAINS, DRIVE CULVERTS AND FIELD TILE MAY BE ENCOUNTERED DURING THE COURSE OF EXCAVATION UNDER THIS CONTRACT. THE CONTRACTOR SHALL REPAIR, REPLACE OR REROUTE THE AFFECTED TILE SO AS TO LEAVE THE DRAINAGE SYSTEM IN ORIGINAL CONDITION OR BETTER AND THE SYSTEM IN GOOD WORKING ORDER. THE COST OF WORK THIS SHALL BE INCLUDED IN THE RELATED BID ITEMS.

PERMITS:
UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL APPLICABLE PERMITS EXCEPT OHIO EPA PERMIT TO INSTALL FOR THE PROPOSED FACILITIES AND RIGHT OF WAY PERMITS FOR THE AREAS DESIGNATED ON THE DRAWINGS.

SURVEYS:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL DETAIL SURVEYS NEEDED FOR CONSTRUCTION.

ELEVATION DATUM:
ALL ELEVATIONS ARE BASED ON U.S.G.S. 1988 DATUM.

WORK LIMITS:
THE CONTRACTOR SHALL CONFINE HIS ACTIVITIES TO THE PROJECT SITE UNDER DEVELOPMENT, THE EXISTING RIGHTS-OF-WAY, OR CONSTRUCTION AND PERMANENT EASEMENTS AND SHALL NOT TRESPASS UPON OTHER PRIVATE PROPERTY WITHOUT WRITTEN CONSENT OF THE OWNER. EXISTING PROPERTY LINES AND RIGHTS OF WAY SHOWN ON THE DRAWINGS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY EXACT LOCATION IN ADVANCE OF CONSTRUCTION OPERATIONS.

EROSION CONTROL DEVICES AND MEASURES:
THE CONTRACTOR SHALL PROVIDE EROSION AND SEDIMENT CONTROL DEVICES AND MEASURES SO THAT THE SITE COMPLIES WITH THE REQUIREMENTS AND RECOMMENDATIONS OF THE OHIO DEPARTMENT OF NATURAL RESOURCES; RAINWATER AND LAND DEVELOPMENT MANUAL; OHIO STANDARDS FOR STORM WATER MANAGEMENT AND LAND DEVELOPMENT AND URBAN STREAM PROTECTION.

DUST CONTROL:
THE CONTRACTOR SHALL RESTRICT THE EMISSION OF ALL FUGITIVE DUST AND PARTICULATE, AIRBORNE OR OTHERWISE, THAT ARISES FROM HIS OPERATION AND ACTIVITIES RELATIVE TO THIS PROJECT. DUST CONTROL MEASURES SHALL BE IMPLEMENTED AND MAINTAINED PURSUANT TO THE APPLICABLE REQUIREMENTS OF THE OHIO ADMINISTRATIVE CODE (OAC) SECTION 3745-17-08 IN EFFECT AT THE TIME OF THE CONTRACT. SUCH MEASURES SHALL APPLY TO ACTIVITIES ON-SITE AS WELL AS OFF-SITE.

ROCK EXCAVATION AND DISPOSAL:
THE COST OF ALL ROCK REMOVAL AND DISPOSAL SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE VARIOUS PIPELINE ITEMS. BLASTING WILL NOT BE PERMITTED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.

ESTIMATED QUANTITIES:
ALL ITEMS OF WORK CALLED FOR ON THE PLAN FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED, SHALL BE PERFORMED BY THE CONTRACTOR AND THE COST OF THE SAME SHALL BE INCLUDED IN THE RELATED VARIOUS BID ITEMS FOR PAYMENT.

EXISTING WATER DISTRIBUTION SYSTEM:
UNLESS OTHERWISE INDICATED, THE EXISTING WATERLINES SHOWN ON THESE DRAWINGS ARE OWNED AND OPERATED BY PIKE WATER, INC.

OPERATION OF EXISTING VALVES:
OPERATION OF EXISTING VALVES SHALL ONLY BE DONE BY THE OWNER OR OWNER'S REPRESENTATIVE.

BACKING:
ALL BENDS, JOINT DEFLECTIONS AND FITTINGS SHALL BE BACKED WITH CONCRETE IN ACCORDANCE WITH THE SPECIFICATIONS AND BACKING DETAILS.

COVER:
WATER MAINS SHALL BE LAID WITH A MINIMUM OF 4'-0" COVER FROM FINISHED GRADE TO THE TOP OF THE WATER MAIN.

GRADE CONFLICT:
IN CASE OF CONFLICT IN GRADE BETWEEN WATER MAINS AND SEWERS, THE WATER MAINS SHALL BE LOWERED AT THE TIME OF CONSTRUCTION.

DEFLECTION:
UNLESS OTHERWISE APPROVED BY THE ENGINEER, WATER MAINS SHALL BE DEFLECTED AROUND STRUCTURES WITHOUT THE USE OF SPECIAL FITTINGS AND WITHOUT EXCEEDING THE MANUFACTURER'S ALLOWABLE DEFLECTION.

EXTENSION STEM:
IF THE TOP OF THE OPERATING NUT FOR ANY VALVE IS MORE THAN 36" BELOW THE FINISHED GRADE, AN EXTENSION STEM SHALL BE PROVIDED TO PLACE THE OPERATING NUT BETWEEN 24" AND 36" OF THE FINISHED GRADE.

GRANULAR BACKFILL:
EXCAVATION AT ALL STREETS, DRIVES, WALKS, PARKING AREAS AND OTHER ROADWAYS SHALL BE BACKFILLED AND COMPACTED WITH GRANULAR MATERIAL CONFORMING TO THESE DRAWINGS. ADDITIONAL GRANULAR MATERIAL SHALL BE STOCKPILED AT SELECT LOCATION (APPROVED BY OWNER) FOR USE WHEN SETTLEMENT OCCURS. ALL GRANULAR MATERIAL SHALL BE MECHANICALLY COMPACTED IN 8" LAYERS. THE COST OF ALL GRANULAR BACKFILL AND PLACEMENT SHALL BE INCLUDED IN THE BID PRICE OF THE RESPECTIVE WATERLINE ITEMS. SEPARATE PAYMENT WILL NOT BE MADE.

LEAKS:
ALL LEAKS ENCOUNTERED DURING TESTING AND CONSTRUCTION SHALL BE LOCATED AND REPAIRED AT THE CONTRACTOR'S EXPENSE.

MINIMUM PRESSURE:
THE NORMAL WORKING PRESSURE MAINTAINED AT SERVICE CONNECTIONS SHALL NOT BE LESS THAN 35 P.S.I.. SYSTEM OPERATION SHALL MAINTAIN A MINIMUM PRESSURE OF 20 P.S.I. AT GROUND LEVEL AT ALL POINTS IN THE DISTRIBUTION SYSTEM UNDER ALL CONDITIONS OF FLOW.

WATER SERVICE INTERRUPTIONS:
INTERRUPTION OF EXISTING WATER SERVICE IS PROHIBITED WITHOUT THE AUTHORIZATION OF THE OWNER AND ENGINEER. WATER SERVICE INTERRUPTIONS THAT ARE REQUIRED AS PART OF THIS PROJECT SHALL BE COORDINATED WITH THE OWNER AND ENGINEER AND A MINIMUM NOTICE OF 72 HOURS SHALL BE PROVIDED.

WATERLINE BREAKS:
IN THE EVENT THAT THE CONTRACTOR'S OPERATIONS CAUSE A BREAK IN THE EXISTING WATER MAINS OR SERVICE LINE, THE CONTRACTOR SHALL CEASE CONSTRUCTION OPERATIONS AND REPAIR THE BREAK AT HIS OWN COST. ONCE THE BREAK HAS BEEN REPAIRED TO SATISFACTION OF THE OWNER OR ENGINEER, CONSTRUCTION OPERATIONS MAY RESUME.

MATERIAL STANDARDS:
ALL MATERIALS UTILIZED IN THE CONSTRUCTION OF THIS PROJECT THAT WILL COME IN CONTACT WITH POTABLE WATER SHALL BE AWWA AND/OR NSF 60/61 APPROVED. PIPE AND MATERIALS INCORPORATED INTO THIS PROJECT SHALL ALSO CONFORM TO THE LATEST REVISION OF THE APPROPRIATE STANDARDS AS FOLLOWS:

PIPE:	AWWA C-900 AND ASTM D-2241
FITTINGS:	AWWA C-153
VALVES:	AWWA C-509
SERVICE LINE:	AWWA C-901
HYDRANTS (6"):	AWWA C-502
APPURTENANCES:	AWWA/NSF STANDARDS AS APPLICABLE

INDIVIDUAL BOOSTER PUMPS:
CONNECTION OF INDIVIDUAL BOOSTER PUMPS TO THE PROPOSED WATERLINE IS PROHIBITED.

SERVICE CONNECTIONS:
THE SERVICE CONNECTION LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE FOR REFERENCE ONLY. THE EXACT LOCATION OF SERVICE CONNECTIONS SHALL BE DETERMINED IN THE FIELD, PRIOR TO CONSTRUCTION, AND SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER OR HIS REPRESENTATIVE.

SUBSURFACE CONDITIONS:
IT IS THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN INVESTIGATIONS OF SUBSURFACE CONDITIONS PRIOR TO SUBMITTING HIS BID PROPOSAL.

THE CONTRACTOR SHALL, AT ALL TIMES DURING CONSTRUCTION, PROVIDE PROPER AND SATISFACTORY MEANS AND DEVICES FOR THE REMOVAL OF ALL WATER ENTERING THE EXCAVATIONS AND SHALL REMOVE ALL SUCH WATER AS FAST AS IT MAY COLLECT IN SUCH A MANNER AS SHALL NOT INTERFERE WITH THE PROSECUTION OF THE WORK.

FITTINGS REQUIRED FOR CONSTRUCTION:
THE CONTRACTOR SHALL FURNISH ALL FITTINGS REQUIRED, WHETHER SHOWN ON THE DRAWINGS OR NOT, NECESSARY TO ACHIEVE THE DESIRED HORIZONTAL/VERTICAL ALIGNMENT AND COMPLETE CONSTRUCTION. COST FOR THE REQUIRED FITTINGS SHALL BE INCLUDED IN THE VARIOUS WATERLINE ITEMS BID.

EXCESS EXCAVATION MATERIAL:
THE REMOVAL AND DISPOSAL OF ALL EXCAVATED MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH THE OWNER A COPY OF WRITTEN PERMISSION FROM THE PROPERTY OWNER PRIOR TO DISPOSING OF ANY WASTE MATERIAL.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE RESTORATION FOR ALL WASTE AREAS USED IN THE COURSE OF THIS CONTRACT. THE RESTORATION WORK SHALL INCLUDE CLEANUP, SHAPING AND GRADING AND ESTABLISHMENT OF VEGETATIVE COVER BY SEEDING AND MULCHING IN ACCORDANCE WITH O.D.O.T. ITEM 659. THE FINAL GRADING OF WASTE AREAS SHALL BE PROPERLY SLOPED TO PROVIDE DRAINAGE RUNOFF. ALL ROCKS, BOULDERS, CONCRETE CHUNKS, BROKEN PIPES, ETC. SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF IN A LICENSED FACILITY.

EQUIPMENT MOVEMENT:
NO NON RUBBER-TIRED VEHICLES SHALL BE MOVED ON ANY STREETS. EXCEPTIONS MAY BE GRANTED BY THE OWNER WHERE SHORT DISTANCES AND SPECIAL CIRCUMSTANCES ARE INVOLVED AND PROTECTION IS PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY PAVEMENT DAMAGED AS A RESULT OF THE CONTRACTOR'S ACTIVITIES, WITH NO EXCEPTIONS.

WATER FOR CONSTRUCTION:
WATER USED FOR FILLING, FLUSHING, AND TESTING WILL BE COORDINATED WITH AND SUPPLIED BY THE OWNER. IF THE CONTRACTOR REQUESTS WATER FROM A HYDRANT, THE CONTRACTOR MUST COORDINATE THAT WITH THE OWNER AND PROVIDE THE REQUIRED BACKFLOW PREVENTION DEVICE. THE OWNER SHALL PROVIDE A QUANTITY OF WATER THAT IS DEEMED REASONABLE FOR COMPLETION OF THE WORK AND MAY ADJUST THE POINT WHERE WATER IS MADE AVAILABLE AT THEIR DISCRETION.

SERVICE LINE INSTALLATION:
ALL NEW SERVICE LINES TO BE INSTALLED UNDER EXISTING PAVEMENT, CURBS AND SIDEWALK SHALL BE BORED. OPEN TRENCHING FOR SERVICE LINES IN UNPAVED AREAS IS ACCEPTABLE.

WATERLINE TESTING:
THE CONTRACTOR SHALL THOROUGHLY CLEAN, FLUSH, AND TEST THE WATER MAINS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS PRIOR TO ACCEPTANCE AND PLACEMENT INTO SERVICE. ALL COSTS ASSOCIATED WITH THE PRESSURE AND DISINFECTION TESTING SHALL BE BORNE BY THE CONTRACTOR. TESTING LAB MUST BE ON OHIO EPA APPROVED LIST.

THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT, MATERIALS, TAPS, AND LABOR NECESSARY FOR CONDUCTING TESTING.

PRESSURE TESTING SHALL BE IN ACCORDANCE WITH A.W.W.A. C-600 AND AWWA C-605 FOR DUCTILE IRON AND PVC MAINS RESPECTIVELY.

DISINFECTION SHALL BE IN ACCORDANCE WITH A.W.W.A. C-651.

FINAL GRADING AND RESTORATION:
ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND ELEVATION. ALL UNPAVED AREAS SHALL BE SEEDED AND MULCHED.

ALL SIGNS, MAILBOXES, FENCES, GUARDRAILS, ROADSIDE DITCHES, OR OTHER PHYSICAL FEATURES DISTURBED OR DAMAGED DURING WORK UNDER THIS CONTRACT SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR. THE COST OF ALL SUCH WORK SHALL BE INCLUDED IN BID FOR VARIOUS ITEMS.

TREES, SHRUBS AND THE OTHER PLANTINGS DISTURBED OR DESTROYED IN EASEMENT AREAS OR WORK AREAS WHICH ARE OUTSIDE ROAD RIGHT-OF-WAY SHALL BE REPLACED AS NECESSARY IN LIKE KIND. THE OWNER SHALL BE GIVEN NOTICE OF INTENT TO REMOVE TREES IN THE RIGHT-OF-WAY A MINIMUM OF 48 HOURS BEFORE REMOVAL. NO TREES SHALL BE REMOVED OR DISTURBED WITHOUT PRIOR CONSENT OF THE ENGINEER AND OWNER,

ALL DISTURBED AREAS NOT SUBJECT TO TRAFFIC SHALL BE ROUGH GRADED WITHIN SEVEN DAYS OF PIPE INSTALLATION AND FINISH GRADED, SEEDED AND MULCHED WITHIN ONE MONTH OF PIPE INSTALLATION. TRENCH IN THESE AREAS MAY BE MOUNDED TO 12" HIGH OVER EXCAVATED AREAS AFTER ROUGH GRADING TO ACCOUNT FOR SETTLEMENT, FINISH GRADING SHALL BE BROUGHT TO ORIGINAL GRADE.

EXISTING SERVICE LINES
EXISTING WATER SERVICES MAY NOT BE SHOWN. CONTRACTOR SHALL COORDINATE EXCAVATION PROCEDURES TO IDENTIFY LOCATION OF THESE FACILITIES AND TO LIMIT DAMAGE. REPAIR OF DAMAGED FACILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SERVICE SIZE:
UNLESS OTHERWISE DESIGNATED WATER SERVICES SHALL INCORPORATE 3/4" SERVICE LINE.

EXPOSURE OF UTILITY CROSSINGS:
CONTRACTOR SHALL CAREFULLY REVIEW DRAWINGS FOR LOCATIONS WHERE THE PROPOSED WATERLINE CROSSES EXISTING UNDERGROUND FACILITIES. CROSSING LOCATIONS SHALL BE EXPOSED BY CONTRACTOR IN ADVANCE OF PIPE INSTALLATION ACTIVITIES TO AVOID GRADE CONFLICT AND POTENTIAL DELAY.

FEDERAL ENVIRONMENTAL REQUIREMENTS:
WHEN CONSTRUCTING A PROJECT INVOLVING TRENCHING AND/OR OTHER RELATED EARTH EXCAVATIONS, CONTRACTOR SHALL COMPLY WITH THE FOLLOWING ENVIRONMENTAL CONSTRAINTS:

WETLANDS - WHEN DISPOSING OF EXCESS, SPOIL, OR OTHER CONSTRUCTION MATERIALS ON PUBLIC OR PRIVATE PROPERTY, CONTRACTOR SHALL NOT FILL IN OR OTHERWISE CONVERT WETLANDS.

FLOODPLAINS - WHEN DISPOSING OF EXCESS, SPOIL, OR OTHER CONSTRUCTION MATERIALS ON PUBLIC OR PRIVATE PROPERTY, CONTRACTOR SHALL NOT FILL IN OR OTHERWISE CONVERT 100 YEAR FLOODPLAIN AREAS DELINEATED ON THE LATEST FEDERAL EMERGENCY MANAGEMENT AGENCY FLOODPLAIN MAPS, OR OTHER APPROPRIATE MAPS, I.E., ALLUVIAL SOILS ON NRCS SOIL SURVEY MAPS.

HISTORIC PRESERVATION - ANY EXCAVATION BY CONTRACTOR THAT UNCOVERS AN HISTORICAL OR ARCHAEOLOGICAL ARTIFACT SHALL BE IMMEDIATELY REPORTED TO OWNER AND A REPRESENTATIVE OF AGENCY. CONSTRUCTION SHALL BE TEMPORARILY HALTED PENDING THE NOTIFICATION PROCESS AND FURTHER DIRECTIONS ISSUED BY AGENCY AFTER CONSULTATION WITH THE STATE HISTORIC PRESERVATION OFFICER (SHPO).

ENDANGERED SPECIES - CONTRACTOR SHALL COMPLY WITH THE ENDANGERED SPECIES ACT, WHICH PROVIDES FOR THE PROTECTION OF ENDANGERED AND/OR THREATENED SPECIES AND CRITICAL HABITAT. SHOULD ANY EVIDENCE OF THE PRESENCE OF ENDANGERED AND/OR THREATENED SPECIES OR THEIR CRITICAL HABITAT BE BROUGHT TO THE ATTENTION OF CONTRACTOR, CONTRACTOR WILL IMMEDIATELY REPORT THIS EVIDENCE TO OWNER AND A REPRESENTATIVE OF AGENCY. CONSTRUCTION SHALL BE TEMPORARILY HALTED PENDING THE NOTIFICATION PROCESS AND FURTHER DIRECTIONS ISSUED BY AGENCY AFTER CONSULTATION WITH THE U.S. FISH AND WILDLIFE SERVICE.

MITIGATION MEASURES - IF THE PROJECT HAD AN ENVIRONMENTAL REPORT, ENVIRONMENTAL ASSESSMENT, OR ENVIRONMENTAL IMPACT STATEMENT TO MEET THE REQUIREMENTS OF THE NATIONAL ENVIRONMENTAL POLICY ACT, COMPLIANCE WITH THE MITIGATION MEASURES, IF ANY, IN THAT DOCUMENT ARE HEREBY INCLUDED AS A CONDITION OF THIS CONTRACT. THESE MITIGATION MEASURES INCLUDE BUT MAY NOT BE LIMITED TO, THE FOLLOWING:

CONSTRUCTION - CONSTRUCTION SPECIFICATIONS AND OTHER CONTRACT PROVISIONS WILL REQUIRE: (1) LIMITING NORMAL CONSTRUCTION TO DAYLIGHT HOURS TO MINIMIZE DISTURBANCE FROM NOISE AND LIGHTS, (2) CONTROL OF UNNECESSARY NOISE, (3) DUST CONTROL, (4) TEMPORARY SILTATION CONTROL, INCLUDING MINIMIZING DISTURBED AREAS AND USING PROMPT TEMPORARY SEEDING WHEN NEEDED AND THE USE OF SILT FENCES, (5) RESTORATION OF DISTURBED PIPELINE AREAS TO PRE-CONSTRUCTION CONDITIONS, (6) ROAD SURFACES WILL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, AND (7) LINES CROSSING UNDER COUNTY HIGHWAYS WILL BE BORED.

FLOODPLAIN - CONSTRUCTION WITHIN FLOODPLAIN AREAS WILL HAVE TO BE APPROVED BY THE LOCAL FLOODPLAIN MANAGEMENT COORDINATOR AND COMPLY WITH ALL LOCAL FLOODPLAIN MANAGEMENT REGULATIONS.

CULTURAL RESOURCES/VISUAL AESTHETICS - CONTRACTOR SHALL AVOID DISRUPTION TO ANY EXISTING CEMETERIES ADJACENT TO THE PROJECT CORRIDOR.

BIOLOGICAL RESOURCES - NO TREES THAT ARE SUITABLE HABITAT FOR THE INDIANA BAT CAN BE TAKEN DOWN BETWEEN APRIL 1ST AND SEPTEMBER 30TH.

WATER QUALITY - IMPACTS TO WATER QUALITY DUE TO RUNOFF AND EROSION WILL BE MITIGATED THROUGH COMPLIANCE WITH THE OHIO DEPARTMENT OF NATURAL RESOURCE'S MANUAL OF RAINWATER AND LAND DEVELOPMENT.

INDIANA BAT HABITAT - IF SUITABLE INDIANA BAT HABITAT OCCURS WITHIN THE PROJECT AREA, THESE TREES MUST BE CONSERVED. IF SUITABLE HABITAT OCCURS ON THE PROJECT AREA AND TREES MUST BE CUT, CUTTING MUST OCCUR BETWEEN OCTOBER 1 AND MARCH 31. IF SUITABLE HABITAT MUST BE CUT DURING THE SUMMER MONTHS, A NET SURVEY MUST BE CONDUCTED BETWEEN JUNE 15 AND JULY 31, PRIOR TO CUTTING. NET SURVEYS SHALL INCORPORATE EITHER TWO NET SITES PER SQUARE KILOMETER OF PROJECT AREA WITH EACH NET SITE CONTAINING A MINIMUM OF TWO NETS USED FOR TWO CONSECUTIVE NIGHTS, OR ONE NET SITE PER KILOMETER OF STREAM WITHIN THE PROJECT LIMITS WITH EACH NET SITE CONTAINING A MINIMUM OF TWO NETS USED FOR TWO CONSECUTIVE NIGHTS.

UNDERGROUND UTILITIES:
THE INFORMATION SHOWN CONCERNING EXISTING UTILITIES IS NOT REPRESENTED, WARRANTED OR GUARANTEED TO BE COMPLETE OR ACCURATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PHYSICALLY LOCATE AND VERIFY, IN THE FIELD, ALL UTILITY LOCATIONS AND ELEVATIONS, PRIOR TO THE BEGINNING OF HIS CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL SUPPORT, PROTECT, AND RESTORE ALL EXISTING UTILITIES AND THEIR ASSOCIATED ITEMS.

THE IDENTITY AND LOCATION OF THE EXISTING UNDERGROUND UTILITY FACILITIES KNOWN TO BE LOCATED IN THE CONSTRUCTION AREA HAVE BEEN SHOWN ON THE DRAWINGS AS ACCURATELY AS PROVIDED BY THE OWNER OF THE UTILITY. THE OWNER AND/OR ENGINEER ASSUME NO RESPONSIBILITY AS TO THE ACCURACY OR THE DEPTHS OF THE UNDERGROUND FACILITIES SHOWN ON THESE DRAWINGS.

THE CONTRACTOR SHALL NOTIFY ALL UTILITY OWNERS, IN ACCORDANCE WITH SECTION 153.64, OHIO REVISED CODE, AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO THE BEGINNING OF ANY WORK, COORDINATE HIS WORK WITH THEM, AND KEEP THE UTILITY OWNERS APPRAISED OF HIS SCHEDULE AND REQUIREMENTS UNTIL ALL WORK IS COMPLETED. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH EVIDENCE OF HAVING NOTIFIED THE UTILITIES AND PROVIDING THEM WITH HIS WORK SCHEDULE PRIOR TO BEGINNING ANY WORK. NOTICE SHALL BE GIVEN TO THE OHIO UTILITIES PROTECTION SERVICE AND TO THE OIL AND GAS PRODUCERS UNDERGROUND PROTECTION SERVICE.

THE FOLLOWING IS A PARTIAL LIST OF UTILITY REGISTRATION SERVICES AND UTILITY OWNERS WHO MUST BE NOTIFIED. THE CONTRACTOR SHALL COMPLY WITH THE REGULATIONS SET FORTH BY THE RESPECTIVE PUBLIC SERVICE CORPORATIONS AS LISTED:

OHIO UTILITIES PROTECTION SERVICE
4740 BELMONT AVE
YOUNGSTOWN, OH 44505
(800) 362-2764

HORIZON CHILICOTHE TELEPHONE
PO BOX 480
CHILICOTHE, OH 45601
(740) 772-8331

OHIO OIL AND GAS PRODUCERS
UNDERGROUND PROTECTION SERVICE
PO BOX 535
GRANVILLE OH, 43023
(800) 925-0988

PIKE WATER, INC.
ATTN: TIM WILLIAMS
2277 BOSWELL RUN RD
PIKETON, OH 45661
(740) 947-2524

SOUTH CENTRAL POWER
110 DANVILLE PIKE ROAD
HILLSBORO, OH 45133
(800) 282-5064

SPECTRUM CABLE
32 ENTERPRISE DR.
CHILICOTHE, OH 45601
(740) 253-0534

FRONTIER COMMUNICATIONS
1315 ALBERT ST.
PORTSMOUTH, OH 45662
(800) 354-0521

INTERFACE WITH EXISTING UTILITIES:
THE CONTRACTOR SHALL MAINTAIN AND PROTECT ALL PUBLIC OR PRIVATE UTILITY FACILITIES DURING CONSTRUCTION. SHOULD IT BECOME NECESSARY TO MOVE, ADJUST, OR TEMPORARILY RELOCATE ANY SUCH FACILITY, THE WORK SHALL BE DONE BY THE OWNER OF THE UTILITY FACILITY. ANY DAMAGE TO UTILITY FACILITIES BY THE CONTRACTOR OR HIS SUBCONTRACTORS WILL BE REPAIRED BY THE OWNER OF SAID UTILITY, AND THE COST OF SAID REPAIRS WILL BE PAID BY THE CONTRACTOR, THE CONTRACTOR SHALL SEND PROOF OF PAYMENT TO THE UTILITY FOR THE REPAIR TO THE OWNER, PRIOR TO FINAL PAYMENT.

IT IS UNDERSTOOD AND AGREED THAT THE CONTRACTOR HAS CONSIDERED IN HIS BID ALL OF THE PERMANENT AND TEMPORARY UTILITY APPURTENANCES IN THEIR PRESENT OR RELOCATED POSITIONS AND THAT NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY DELAYS. INCONVENIENCE, OR DAMAGE SUSTAINED BY HIM DUE TO ANY INTERFERENCE FROM THE SAID UTILITY APPURTENANCES OR THE OPERATION OF MOVING THEM.

CONTRACTOR SHALL ENSURE ALL POWER POLES, ELECTRICAL SERVICES AND ANY OTHER UTILITIES ARE SUPPORTED AS NECESSARY WHILE CONSTRUCTION THE PROPOSED IMPROVEMENTS. COST FOR THIS WORK SHALL BE INCLUDED IN THE VARIOUS BID ITEMS FOR PAYMENT.

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planners

NO	REVISION	DATE
1	ALIGNMENT REVISIONS	4/3/20

ISSUED FOR: OEPA REVIEW
ISSUE DATE: 1/18/19
SCALE: AS SHOWN
DESIGNED BY: BRA
DRAWN BY: AGD
CHECKED BY: BRA

HIGHLAND/PIKE WATERLINE EXTENSION
HIGHLAND & PIKE COUNTY, OHIO

GENERAL NOTES

PROJECT NO.
180735
DISCIPLINE
GENERAL
SHEET NAME
00G-02
SHEET 2 OF 25

SHEET INDEX

SHEET NUMBER	SHEET TITLE	SHEET NAME
GENERAL - 00 SERIES: GENERAL		
1	COVER SHEET	00G-01
2	GENERAL NOTES	00G-02
3	SHEET INDEX	00G-03
GENERAL - 00 SERIES: CIVIL		
4	CONSTRUCTION DETAILS - 1	00C-01
5	CONSTRUCTION DETAILS - 2	00C-02
6	CONSTRUCTION DETAILS - 3	00C-03
WATERLINE PLANS - 01 SERIES: CIVIL		
7	LINE A	01C-01
8	LINE A	01C-02
9	LINE C	01C-03
10	LINE D	01C-04
11	LINE D	01C-05
12	LINE D	01C-06
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16	LINE D-3	01C-10
17	LINE D-3	01C-11
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HYDRAULIC PROFILES - 02 SERIES: CIVIL		
19	LINE A	02C-01
20	LINE A & LINE C	02C-02
21	LINE D	02C-03
22	LINE D (CONT.)	02C-04
23	LINE D (CONT. 2)	02C-05
24	LINE D-1, LINE D-2 & LINE D-4	02C-06
25	LINE D-3	02C-07

NOTES:

1. THIS PROJECT DOES NOT INCORPORATE A LINE B.
2. LOCATIONS SHOWN FOR EXISTING WATERLINE ARE APPROXIMATE.

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NO	REVISION	DATE
1	ALIGNMENT REVISIONS	4/3/20

ISSUED FOR: OEPA REVIEW
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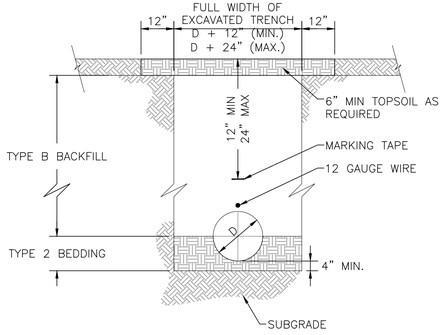
HIGHLAND/PIKE WATERLINE EXTENSION

HIGHLAND & PIKE COUNTY, OHIO

SHEET INDEX

PROJECT NO.
180735
DISCIPLINE
GENERAL
SHEET NAME
00G-03
SHEET 3 OF 25



BACKFILL:

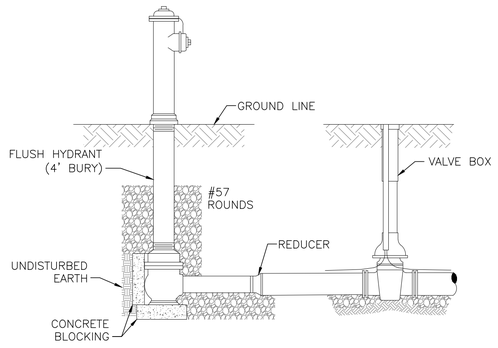
1. TYPE A, SHALL BE COMPACTED GRANULAR MATERIAL AS SPECIFIED IN ODOT CMS ITEM 304.
2. TYPE B SHALL BE NATURAL SOIL FREE FROM STONES LARGER THAN 2 INCHES ACROSS THEIR GREATEST DIMENSION, TOPSOIL, VEGETATION, DEBRIS, RUBBISH OR FROZEN MATERIAL.
3. TYPE C SHALL BE LOW STRENGTH MORTAR BACKFILL, TYPE 1 AS SPECIFIED IN ODOT CMS ITEM 613.

BEDDING:

1. TYPE 1–GRANULAR MATERIAL No. 57,6,67,68 OR 7 PER ODOT CMS TABLE 703.01–1.
2. TYPE 2–NATIVE SOIL FREE FROM STONES LARGER THAN 2 INCHES ACROSS THEIR GREATEST DIMENSIONS, TOP SOIL, VEGETATION, DEBRIS OR FROZEN MATERIAL.
3. TYPE 3–CONCRETE BEDDING, CLASS QC1 CONCRETE PER ODOT CMS 499.

TRENCH DETAIL FOR WATERLINE INSTALLED IN NON–PAVED AREAS

NOT TO SCALE

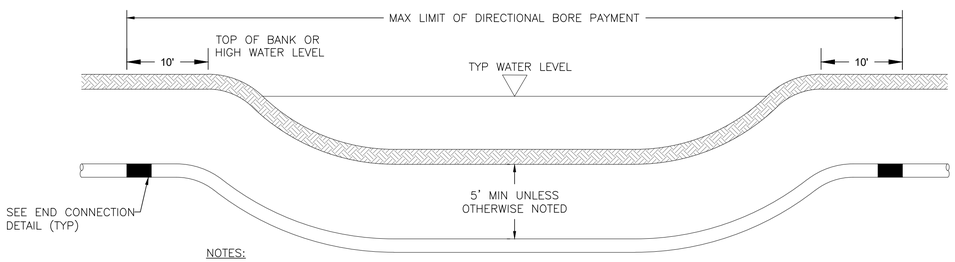


NOTES:

1. HYDRANTS SHALL BE SET IN 4 CUBIC FEET OF CRUSHED STONE TO ALLOW FOR PROPER DRAINAGE OF THE HYDRANT. RECOMMENDATIONS OF THE AWWA SHOULD BE FOLLOWED WHEN INSTALLING THE HYDRANT.
2. POST HYDRANTS SHALL BE ECLIPSE #2 POST HYDRANTS OR APPROVED EQUAL.
3. 2" FLUSH HYDRANTS SHALL PROVIDE JOINT RESTRAINTS BETWEEN HYDRANT AND VALVE.
4. VALVE SIZE SHALL BE SIZED AS NOTED ON DRAWINGS.
5. 2" FLUSH HYDRANTS SHALL NOT BE UTILIZED ON WATERLINES LARGER THAN 4" IN DIAMETER.

2" FLUSH HYDRANT

NOT TO SCALE

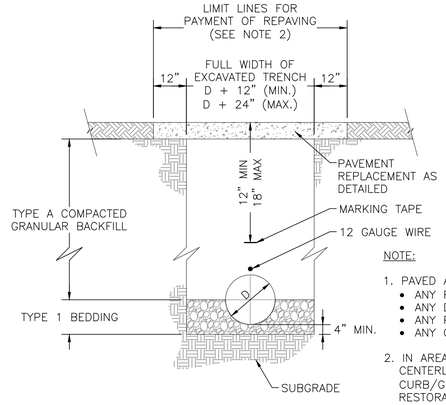


NOTES:

1. WHERE DIRECTIONAL BORE INCORPORATES RESTRAINED JOINT PVC PIPE, OMIT PE/MJ ADAPTER.
2. DIRECTIONAL BORE SHALL INCORPORATE TWO INSULATED NO 12 GAUGE, SOLID, COPPER WIRES INSTALLED WITH THE PIPE FOR LOCATING PURPOSES. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. WHERE NOTED, INSTALLATION SHALL INCORPORATE A CASING PIPE AND CARRIER PIPE. THE CASING PIPE SHALL BE INSTALLED VIA DIRECTIONAL DRILL PROCEDURES AND THE CARRIER PIPE SHALL BE PULLED BACK THROUGH THE CASING PIPE.

HORIZONTAL DIRECTIONAL DRILLING @ STREAM CROSSING

NOT TO SCALE



NOTE:

1. PAVED AREAS INCLUDE:
   - ANY ROAD (ASPHALT, CONCRETE, GRAVEL)
   - ANY DRIVEWAY
   - ANY PARKING LOT
   - ANY OTHER AREA SUBJECT TO TRAFFIC
2. IN AREAS WHERE DISTANCE BETWEEN CENTERLINE OF PIPE AND FACE OF CURB/GUTTER EXCEEDS "D"+2', PAVEMENT RESTORATION QUANTITIES SHALL BE COORDINATED WITH THE ENGINEER TO ALLOW SURFACE REPAIR TO EXTEND TO THE FACE OF CURB/GUTTER.

TRENCH DETAIL FOR WATERLINE INSTALLED UNDER OR WITHIN 5' OF PAVED AREAS

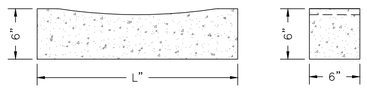
NOT TO SCALE

	SIZE	L	V
GATE VALVES	3"	15	0.31
	4"	16	0.33
	6"	17	0.36
	8"	20	0.42
	12"	24	0.50
BUTTERFLY VALVES	14"	28	0.58
	16"	30	0.63
	20"	36	0.75
	24"	42	0.88
	30"	48	1.00

V = VOLUME OF CONCRETE IN CUBIC FEET

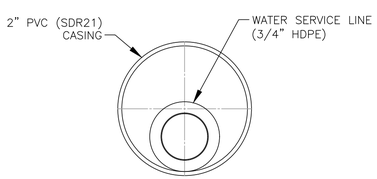
NOTES:

1. CONCRETE FOR SUPPORTS SHALL BE ODOT CLASS "QC1".
2. BACKING SHALL BE DESIGNED FOR 300 PSF SOIL BEARING.
3. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
4. PROVIDE CLEARANCE FOR REMOVAL BOLTS.



CONCRETE VALVE SUPPORTS

NOT TO SCALE

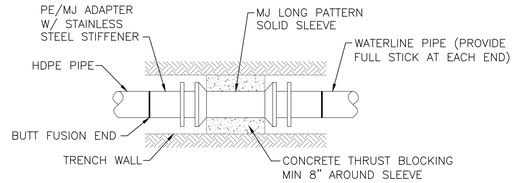


CASING PIPE SECTION FOR WATER SERVICE LINE ROADWAY BORE

NOT TO SCALE

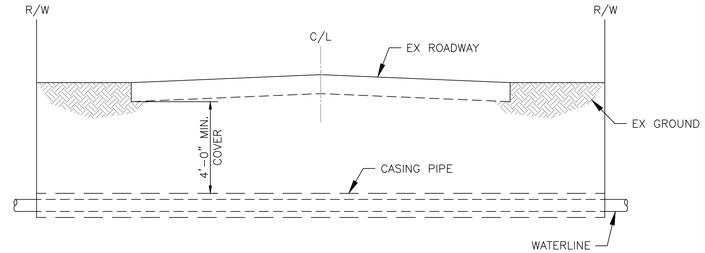
NOTES:

1. CASING PIPE SHALL BE INSTALLED VIA BORE & JACK METHODS.
2. TYPE K COPPER SERVICE LINE SHALL BE SUBSTITUTED FOR HDPE SERVICE LINE WHERE PRESSURE EXCEEDS 200 PSI.



END CONNECTION DETAIL – HDPE

NOT TO SCALE



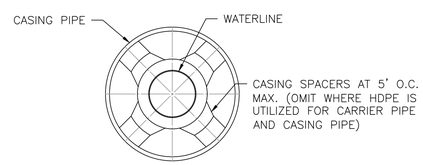
ROADWAY CROSSING DETAIL

NOT TO SCALE

NOTES:

1. ROAD CROSSINGS SHALL BE INSTALLED WITH CASING PIPE AT ALL LOCATIONS. CONTRACTOR SHALL INCORPORATE CARRIER PIPE AND CASING PIPE MATERIALS AS OUTLINED ON DRAWINGS.
2. WATERLINE INSTALLED WITHIN & 5'–0" OF EITHER SIDE OF ROAD BORE CASING SHALL UTILIZE RESTRAINED JOINTS.
3. CASING PIPE SHALL BE STEEL PIPE IN ACCORDANCE WITH ODOT CMS ITEM 748.06 OR PVC (SDR 21)
4. CARRIER PIPE INSTALLATION SHALL INCORPORATE ONE INSULATED NO 12 GAUGE, SOLID, COPPER WIRE INSTALLED WITH THE PIPE FOR LOCATING PURPOSES. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. END CONNECTION DETAIL SHALL APPLY TO WATERLINE INSTALLATIONS UTILIZING HDPE CARRIER PIPE.
6. UNLESS OTHERWISE NOTED, CASING DIAMETERS STATED WITHIN THE DRAWINGS INDICATE THOSE APPLICABLE TO STEEL OR PVC CASING. CASING DIAMETERS WHEN UTILIZING HDPE CASING SHALL BE ADJUSTED TO MAINTAIN A MINIMUM 2" INTERNAL CLEARANCE WITH THE CARRIER PIPE.

CASING PIPE SCHEDULE													
CARRIER PIPE DIA	2"		3"		4"		6"		8"		10"	12"	14"
CASING PIPE DIA (STEEL/PVC)	4"		6"		8"		14"		16"		18"	20"	24"



CASING PIPE SECTION FOR WATERLINE ROADWAY BORE

NOT TO SCALE

NOTES:

1. WHERE INDICATED CASING PIPE SHALL BE INSTALLED VIA DIRECTIONAL BORE METHODS.
2. CASING PIPE SHALL BE SIZED TO PROVIDE A MINIMUM 2" CLEARANCE BETWEEN INTERNAL DIAMETER AND THE CARRIER PIPE OUTSIDE DIAMETER.
3. STEEL/PVC CASING PIPE SHALL BE SIZED AS SHOWN IN CASING PIPE SCHEDULE.

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NO	REVISION	DATE
1	ALIGNMENT REVISIONS	4/3/20

ISSUED FOR: OEPA REVIEW
ISSUE DATE: 1/18/19
SCALE: AS SHOWN
DESIGNED BY: BRA
DRAWN BY: AGD
CHECKED BY: BRA

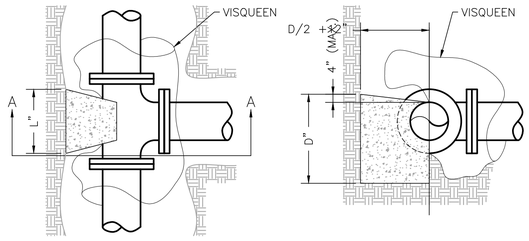
HIGHLAND/PIKE
WATERLINE EXTENSION
HIGHLAND & PIKE COUNTY, OHIO

CONSTRUCTION DETAILS - 1

PROJECT NO.
180735
DISCIPLINE
CIVIL
SHEET NAME
00C-01
SHEET 4 OF 25

RUN	BRANCH												BRANCH											
	3"			4"			6"			8"			12"			16"			20"			24"		
	L	D	V	L	D	V	L	D	V	L	D	V	L	D	V	L	D	V	L	D	V	L	D	V
3"	12	5	0.5																					
4"	10	6	0.5	11	8	0.8																		
6"	9	7	0.5	11	8	0.8	18	12	1.9															
8"	8	8	0.5	10	9	0.7	18	12	1.9	23	16	3.5												
12"	6	12	0.6	8	12	0.8	18	12	1.9	23	16	3.5	38	22	8.7									
16"	6	16	0.8	6	16	0.8	14	16	2.0	20	18	3.3	36	23	8.7	49	30	13.6						
20"	6	20	1.0	6	20	1.0	11	20	1.9	18	20	3.3	35	24	8.7	46	32	13.6	60	38	26.5			
24"	6	24	1.2	6	24	1.2	9	24	1.9	15	24	3.3	30	28	8.7	42	36	14.0	54	42	26.3	68	48	45.4

V = VOLUME OF CONCRETE IN CUBIC FEET



PLAN VIEW SECTION A–A

NOTES:

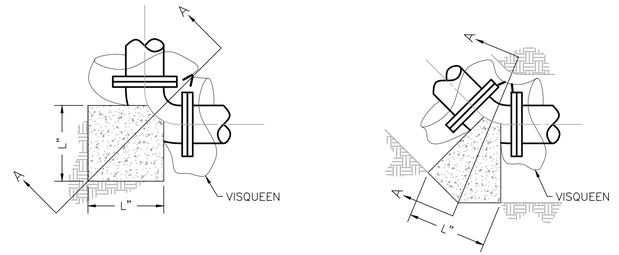
1. CONCRETE FOR BACKING SHALL BE ODOT CLASS "QC1".
2. BACKING SHALL BE DESIGNED FOR 3000 PSF SOIL BEARING.
3. REINFORCING STEEL SHALL BE USED AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
4. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
5. PROVIDE CLEARANCE FOR REMOVAL OF BOLTS.
6. VISQUEEN SHALL BE PLACED IN A MANNER SUCH THAT CONCRETE BLOCKING DOES NOT HAVE DIRECT CONTACT WITH TEE AND/OR FITTINGS.

BACKING FOR TEES

NOT TO SCALE

PIPE SIZE	DEGREE OF BEND											
	11 1/4°			22 1/2°			45°			90°		
	L	D	V	L	D	V	L	D	V	L	D	V
3"	4	3	0.1	6	4	0.2	10	4	0.3	10	4	0.3
4"	5	4	0.2	9	5	0.4	14	5	0.6	14	5	0.6
6"	8	6	0.5	12	7	0.7	20	8	1.4	18	9	1.7
8"	9	8	0.7	16	9	1.4	24	12	2.7	25	11	4.0
12"	14	12	1.8	24	14	3.6	36	18	6.8	32	18	10.7
16"	18	16	3.4	32	18	6.7	36	32	13.4	41	26	25.4
20"	25	20	6.4	30	30	11.5	49	36	20.5	50	32	46.5
24"	27	24	9.0	39	34	18.4	60	42	35.0	58	40	77.7

V = VOLUME OF CONCRETE IN CUBIC FEET

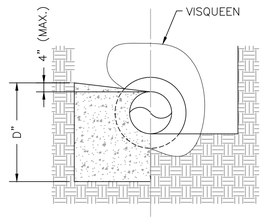


90° BENDS BENDS LESS THAN 90°

PLAN VIEWS

NOTES:

1. CONCRETE FOR BACKING SHALL BE ODOT CLASS "QC1".
2. BACKING SHALL BE DESIGNED FOR 3000 PSF SOIL BEARING.
3. REINFORCING STEEL SHALL BE USED AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
4. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
5. PROVIDE CLEARANCE FOR REMOVAL OF BOLTS.
6. VISQUEEN SHALL BE PLACED IN A MANNER SUCH THAT CONCRETE BLOCKING DOES NOT HAVE DIRECT CONTACT WITH TEE AND OR FITTINGS.



SECTION A–A

BACKING FOR BENDS

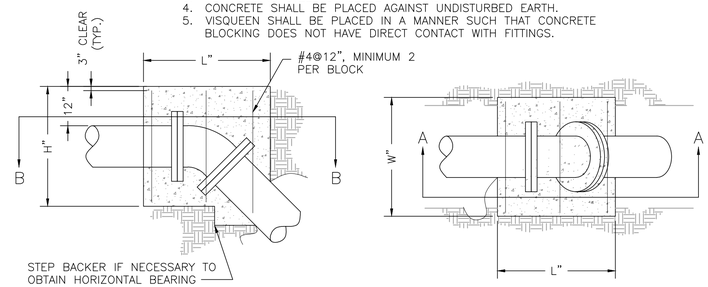
NOT TO SCALE

PIPE SIZE	DEGREE OF BEND															
	11 1/4°				22 1/2°				45°				90°			
	L	W	H	V	L	W	H	V	L	W	H	V	L	W	H	V
3"	12	18	12	1.5	13	25	16	3.0	18	30	19	5.9	25	30	24	10.4
4"	12	24	16	2.6	16	30	18	5.0	22	36	24	11.0	27	48	25	18.7
6"	12	48	18	6.0	15	43	36	13.4	30	55	24	22.9	37	54	36	41.6
8"	12	63	24	10.5	18	57	34	20.2	36	57	33	39.2	47	60	46	75.0
12"	20	54	36	22.6	37	62	37	49.0	48	62	51	87.9	66	66	66	166.4
16"	31	65	38	44.3	60	65	39	88.1	65	65	65	159.2	72	96	72	288.0
20"	45	70	40	72.8	56	70	60	136.2	72	76	78	247.0	86	108	84	451.8
24"	41	72	54	92.3	67	74	69	198.0	88	84	84	359.1	96	120	96	640.0

V = VOLUME OF CONCRETE IN CUBIC FEET

NOTES:

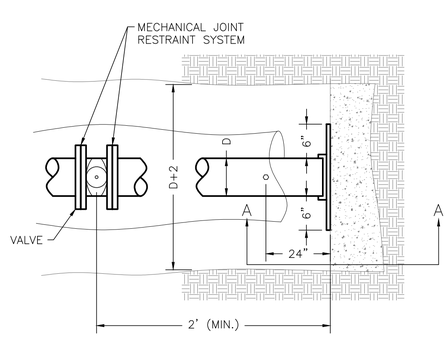
1. CONCRETE FOR BACKING SHALL BE ODOT CLASS "QC1".
2. BACKING SHALL BE DESIGNED FOR 3000 PSF SOIL BEARING.
3. REINFORCING STEEL SHALL BE USED AS SHOWN.
4. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
5. VISQUEEN SHALL BE PLACED IN A MANNER SUCH THAT CONCRETE BLOCKING DOES NOT HAVE DIRECT CONTACT WITH FITTINGS.



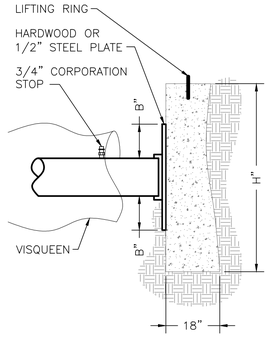
SECTION A–A SECTION B–B

BACKING FOR VERTICAL BENDS

NOT TO SCALE



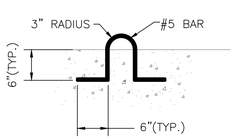
PLAN VIEW



SECTION A–A

NOTES:

1. CONCRETE FOR BACKING SHALL BE ODOT CLASS "QC1".
2. BACKING SHALL BE DESIGNED FOR 3000 PSF SOIL BEARING.
3. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
4. PROVIDE CLEARANCE FOR REMOVAL OF BOLTS.
5. VISQUEEN SHALL BE PLACED IN A MANNER SUCH THAT CONCRETE BLOCKING DOES NOT HAVE DIRECT CONTACT WITH TEE AND OR FITTINGS.
6. END OF PIPE SHALL BE CAPPED OR PLUGGED.
7. STEEL PLATE SHALL BE GREASED WHERE IN CONTACT WITH CONCRETE BACKING.
8. PLUG POLES SHALL BE INSTALLED AT ALL END–OF–LINE STUBS AT THE THRUST BLOCK.



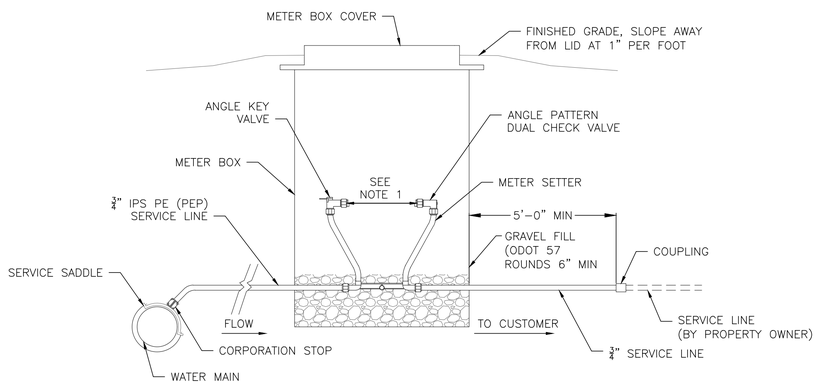
LIFTING RING DETAIL

SIZE OF PIPE	H	B	L (PVC)	L (DIP)	V
6"	8	1	20	18	2.52
8"	12	1	20	18	4.00
12"	23	3	20	18	8.64
16"	37	3	20	18	15.39

V = VOLUME OF CONCRETE IN CUBIC FEET.

THRUST BLOCK

NOT TO SCALE

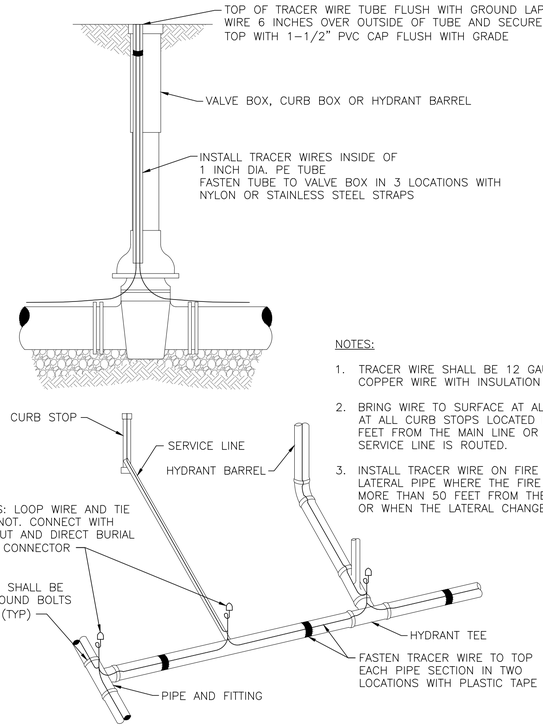


NOTES:

1. STANDARD METERS SHALL BE 5/8" X 3/4" SERVICE METERS AS OUTLINED WITHIN SPECIFICATIONS.
2. CONTRACTOR SHALL PROVIDE INSERT STIFFENERS AT ALL POINTS OF CONNECTION OF PE SERVICE LINE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. WHERE DESIGNATED, METER SETTERS SHALL BE SUPPLIED IN A TANDEM CONFIGURATION, INSTALLATION OF THIS TYPE SHALL BE SUPPLIED WITH INDIVIDUAL PRESSURE REDUCING VALVES, S–BARS AND NECESSARY UNIONS AND APPURTENANCES FOR A COMPLETE INSTALLATION.
4. 3/4" IPS PE (PEP) SERVICE LINE SHALL BE UTILIZED.

METER INSTALLATION

NOT TO SCALE



NOTES:

1. TRACER WIRE SHALL BE 12 GAUGE SOLID COPPER WIRE WITH INSULATION JACKET.
2. BRING WIRE TO SURFACE AT ALL VALVES AND AT ALL CURB STOPS LOCATED MORE THAN 50 FEET FROM THE MAIN LINE OR WHEN THE SERVICE LINE IS ROUTED.
3. INSTALL TRACER WIRE ON FIRE HYDRANT LATERAL PIPE WHERE THE FIRE HYDRANT IS MORE THAN 50 FEET FROM THE MAIN LINE, OR WHEN THE LATERAL CHANGES DIRECTION.

TRACER WIRE DETAIL

NOT TO SCALE

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NO	REVISION	DATE
1	ALIGNMENT REVISIONS	4/3/20

ISSUED FOR:	OEPA REVIEW
ISSUE DATE:	1/18/19
SCALE:	AS SHOWN
DESIGNED BY:	BRA
DRAWN BY:	AGD
CHECKED BY:	BRA

HIGHLAND/PIKE WATERLINE EXTENSION
HIGHLAND & PIKE COUNTY, OHIO

CONSTRUCTION DETAILS - 2

PROJECT NO.	180735
DISCIPLINE	CIVIL
SHEET NAME	00C-02
SHEET	5
OF	25

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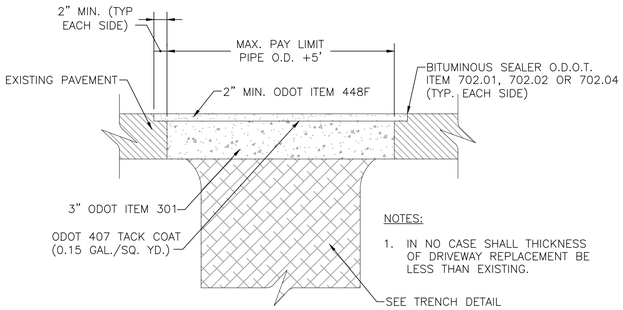
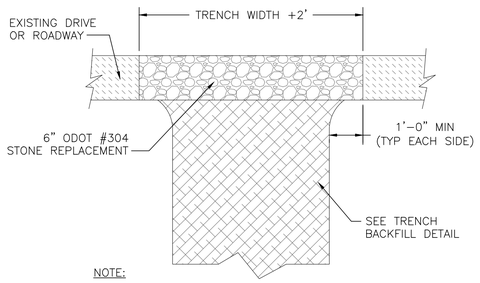
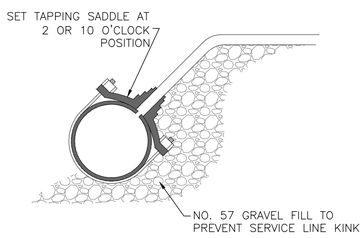


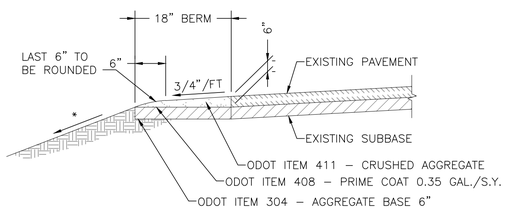
ASPHALT DRIVE REPLACEMENT
NOT TO SCALE



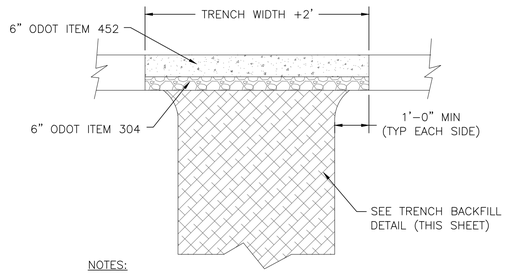
GRAVEL DRIVE REPLACEMENT
NOT TO SCALE



TAP DETAIL
NOT TO SCALE



TYPICAL BERM REPLACEMENT
NOT TO SCALE



CONCRETE DRIVE REPLACEMENT
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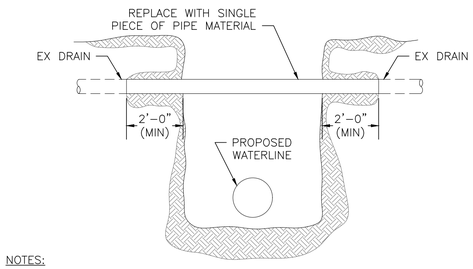
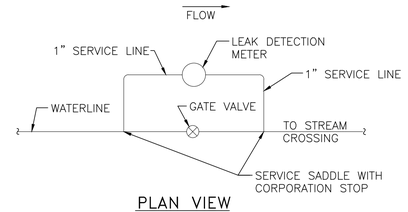
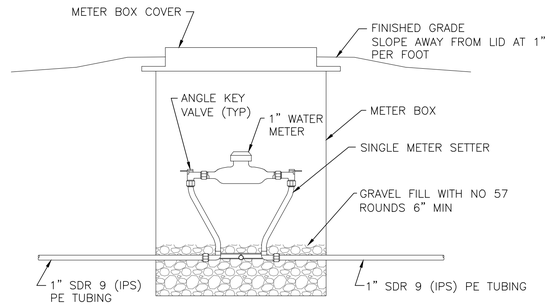


DRAIN TILE AND UNDERDRAIN REPLACEMENT
NOT TO SCALE

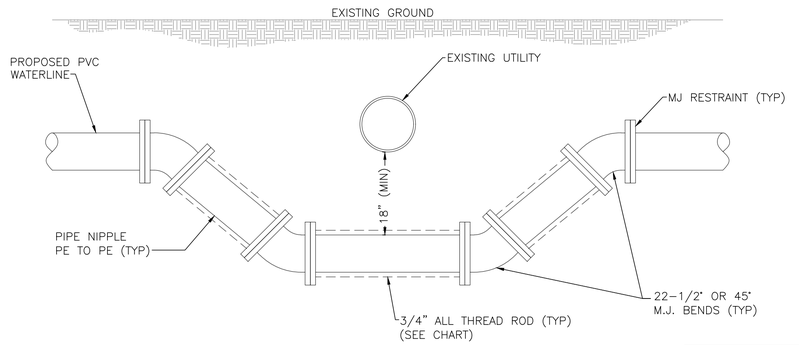


PLAN VIEW



ELEVATION VIEW

LEAK DETECTION METER
NOT TO SCALE



PIPE DIAMETER	NO OF RODS
4" & 6"	2
8"	3
10" & UP	4

TYPICAL WATERLINE GRADE ADJUSTMENT
NOT TO SCALE

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NO	REVISION	DATE
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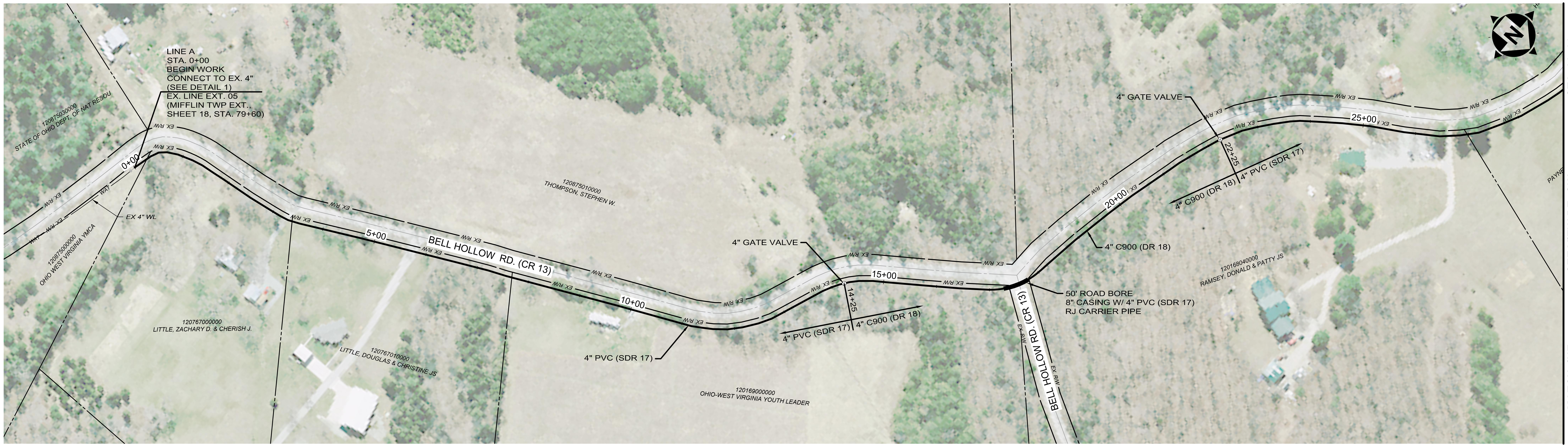
DESIGNED BY:	BRA
DRAWN BY:	AGD
CHECKED BY:	BRA

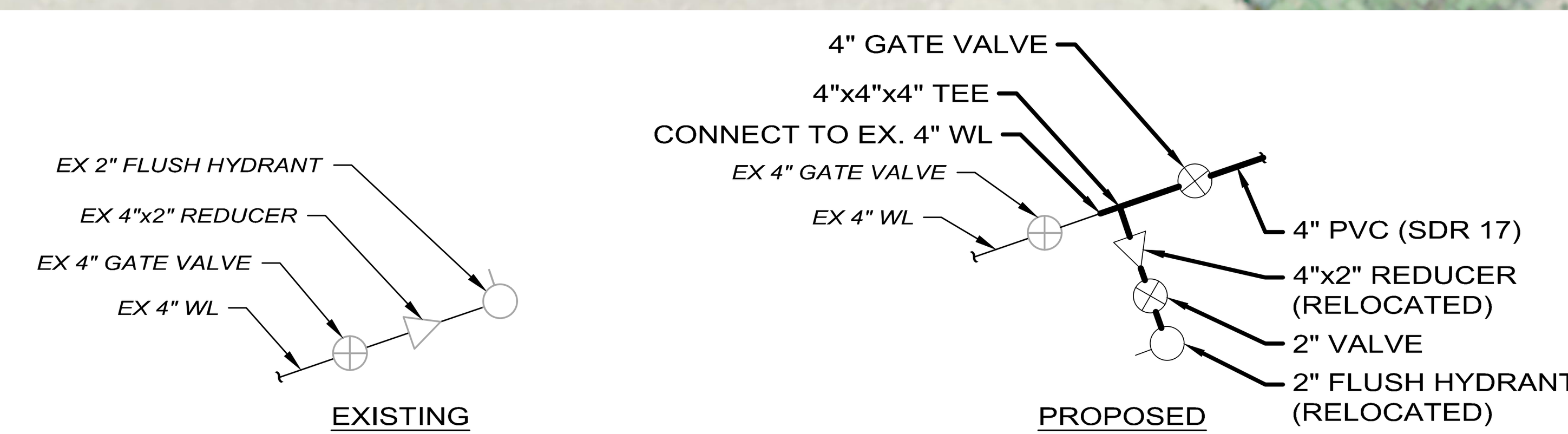
HIGHLAND/PIKE WATERLINE EXTENSION
HIGHLAND & PIKE COUNTY, OHIO

CONSTRUCTION DETAILS - 3

PROJECT NO.	180735
DISCIPLINE	CIVIL
SHEET NAME	00C-03
SHEET	6
OF	25



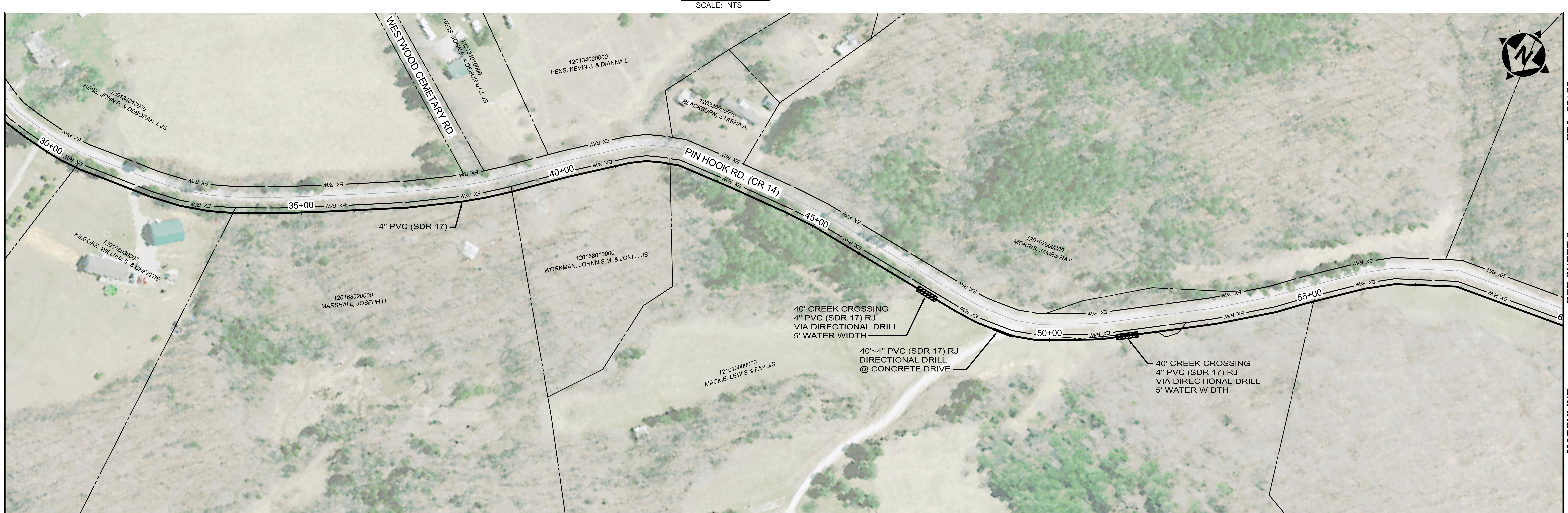
STA. 29+00
SEE VIEW BELOW
MATCHLINE



DETAIL 1
SCALE: NTS

BAR SCALE
100' 50' 0' 100'
SCALE: 1"= 100'

STA. 29+00
SEE VIEW ABOVE
MATCHLINE



STA. 60+00
SEE SHEET 8
MATCHLINE

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1	ALIGNMENT REVISIONS	4/3/20

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DESIGNED BY:	BRA
DRAWN BY:	AGD
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HIGHLAND/PIKE WATERLINE EXTENSION
HIGHLAND & PIKE COUNTY, OHIO

LINE A

PROJECT NO.	180735
DISCIPLINE	CIVIL
SHEET NAME	01C-01
SHEET 7	OF 25

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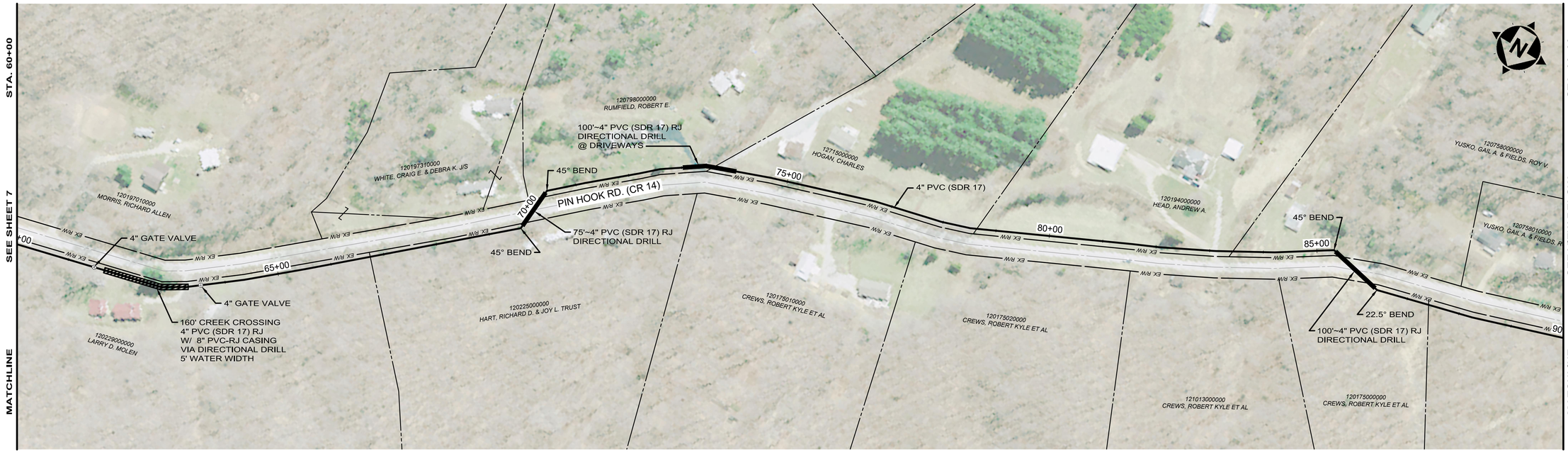
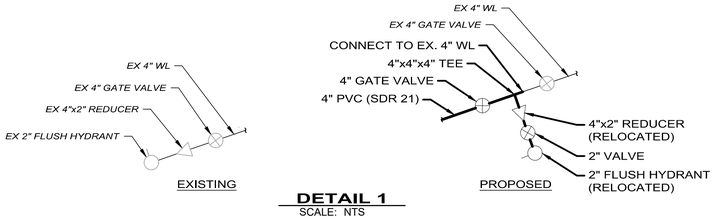
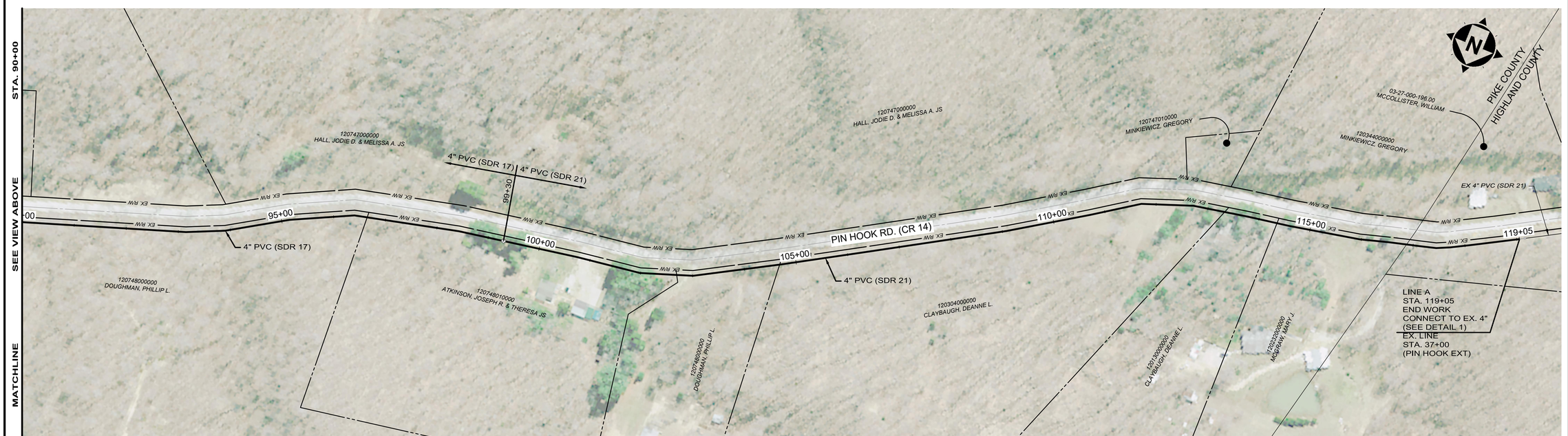




DETAIL 1
SCALE: NTS

BAR SCALE
100' 50' 0' 100'
SCALE: 1"= 100'



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NO	REVISION	DATE
1	ALIGNMENT REVISIONS	4/3/20

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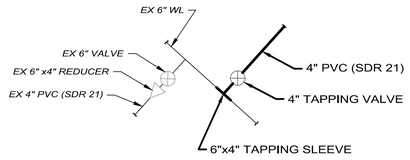
ISSUE DATE: 1/16/19
SCALE: AS SHOWN
DESIGNED BY: XXX
DRAWN BY: AGD
CHECKED BY: BRA

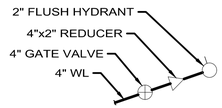
HIGHLAND/PIKE WATERLINE EXTENSION
HIGHLAND & PIKE COUNTY, OHIO

LINE A

PROJECT NO.
180735
DISCIPLINE
CIVIL
SHEET NAME
01C-02
SHEET 8 OF 25



DETAIL 1
SCALE: NTS

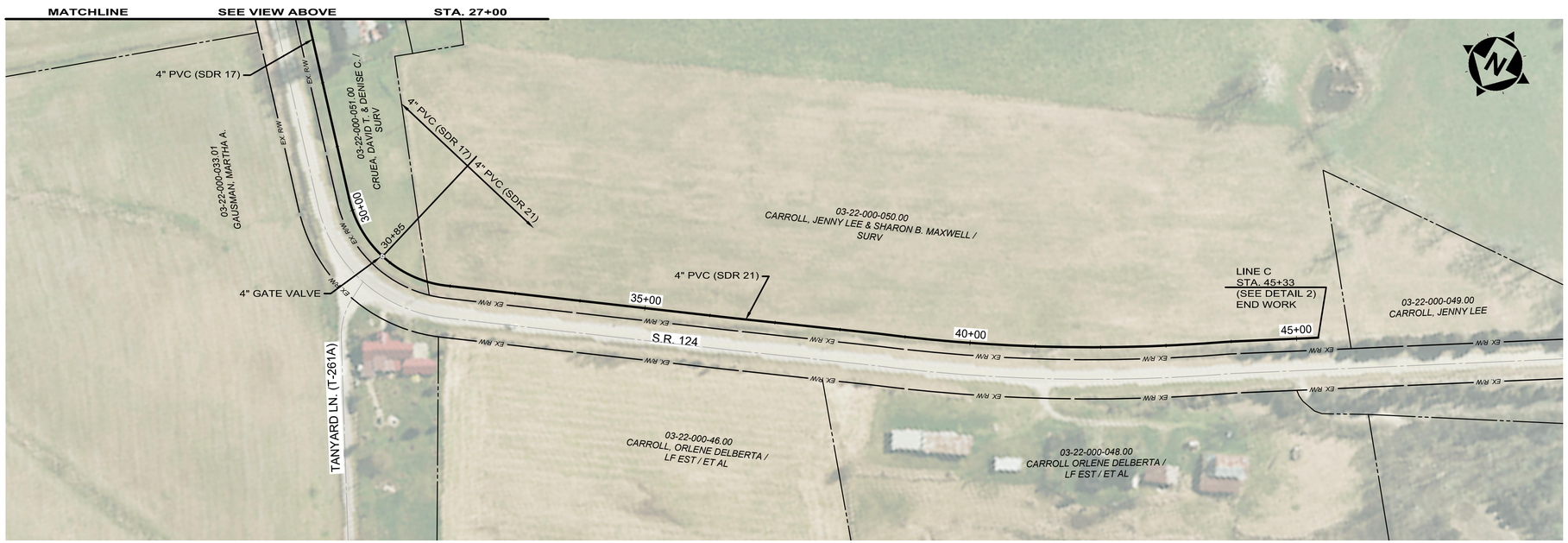


DETAIL 2
SCALE: NTS

NOTES:

1. CONTRACTOR SHALL SUPPLEMENT CORRIDOR BASED EROSION CONTROL ACTIVITIES IN THE AREA OF LINE C, STA. 0+00 TO STA. 6+00 TO ADDRESS THE CROSS-COUNTRY NATURE OF THE PROPOSED ALIGNMENT. THESE ACTIVITIES SHALL EXTEND TO INCLUDE SITE ACCESS ROUTES, MATERIAL STORAGE, TRENCH SPOIL AREAS, ETC.

BAR SCALE
100' 50' 0' 100'
SCALE: 1"= 100'



NO	REVISION	DATE
1	ALIGNMENT REVISIONS	4/3/20

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ISSUE DATE: 1/16/19
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HIGHLAND/PIKE WATERLINE EXTENSION
HIGHLAND & PIKE COUNTY, OHIO

LINE C

PROJECT NO.
180735
DISCIPLINE
CIVIL
SHEET NAME
01C-03
SHEET 9 OF 25

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