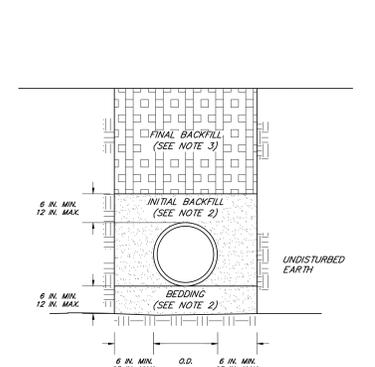


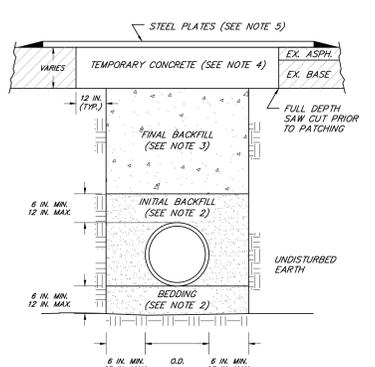
- NOTES:
- THIS DETAIL SHALL BE USED FOR ALL STORM SEWER AND SANITARY SEWER WITHIN PAVEMENT AND WHERE THE TRENCH IS LOCATED OUTSIDE THE 1:1 INFLUENCE LINE OF THE EDGE OF PAVEMENT OR ANY PERMANENT STRUCTURE.
 - BEDDING MATERIAL SHALL BE #8 TO #57 CRUSHED LIMESTONE AGGREGATE AND INITIAL BACKFILL MATERIAL SHALL BE #8 OR #9 CRUSHED LIMESTONE AGGREGATE 6" TO 12" ABOVE THE TOP OF THE PIPE.
 - FINAL BACKFILL MATERIAL SHALL BE ODOT 304 CRUSHED LIMESTONE AGGREGATE TO PAVEMENT SUBGRADE.
 - ASPHALT SURFACE COARSE SHALL BE ODOT ITEM 448 PG 64-22 AND ITS THICKNESS SHALL MATCH EX. ASPHALT SURFACE COARSE.
 - ASPHALT SURFACE FINE SHALL BE ODOT ITEM 448 PG 64-22 AND ITS THICKNESS SHALL MATCH EX. ASPHALT SURFACE FINE.
 - JOINT SEALER SHALL BE FILLED WITH HOT APPLIED JOINT SEALER IN ACCORDANCE WITH ODOT ITEM 409.02.
 - STEEL PLATES MUST BE ON-SITE AT ALL TIMES AND SHALL BE ADEQUATE SIZE AND THICKNESS TO SPAN THE OPEN TRENCH. IF PLATES ARE TO BE LEFT OVER NIGHT, ALL EDGES SHALL BE TEMPORARILY RAMPED WITH BITUMINOUS ASPHALT MATERIAL.

STORM & SANITARY SEWER WITHIN PAVEMENT TRENCH DETAIL



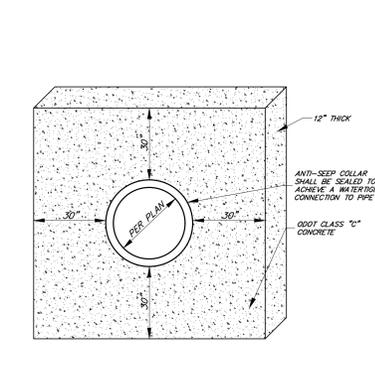
- NOTES:
- THIS DETAIL SHALL BE USED FOR ALL STORM SEWER AND SANITARY SEWER WITHIN PAVEMENT AND WHERE THE TRENCH IS LOCATED OUTSIDE THE 1:1 INFLUENCE LINE OF THE EDGE OF PAVEMENT OR ANY PERMANENT STRUCTURE.
 - BEDDING MATERIAL SHALL BE #8 TO #57 CRUSHED LIMESTONE AGGREGATE AND INITIAL BACKFILL MATERIAL SHALL BE #8 OR #9 CRUSHED LIMESTONE AGGREGATE 6" TO 12" ABOVE THE TOP OF THE PIPE.
 - FINAL BACKFILL MATERIAL SHALL BE SOIL COMPACTED TO 98% MAXIMUM DRY DENSITY.

STORM & SANITARY SEWER OUTSIDE PAVEMENT TRENCH DETAIL



- NOTES:
- THIS DETAIL SHALL BE USED FOR TEMPORARY RESTORATION FOR ALL STORM SEWER AND SANITARY SEWER WITHIN PAVEMENT AND WHERE THE TRENCH IS LOCATED WITHIN THE 1:1 INFLUENCE LINE OF THE EDGE OF PAVEMENT OR ANY PERMANENT STRUCTURE. WHEN HOT MIX ASPHALT IS NOT AVAILABLE.
 - BEDDING MATERIAL SHALL BE #8 TO #57 CRUSHED LIMESTONE AGGREGATE AND INITIAL BACKFILL MATERIAL SHALL BE #8 OR #9 CRUSHED LIMESTONE AGGREGATE 6" TO 12" ABOVE THE TOP OF THE PIPE.
 - FINAL BACKFILL MATERIAL SHALL BE ODOT 617 LOW STRENGTH MORTAR TO PAVEMENT SUBGRADE.
 - TEMPORARILY INSTALL CLASS C CONCRETE TO A THICKNESS TO MATCH THE EXISTING PAVEMENT THICKNESS. MINIMUM THICKNESS SHALL BE 4" FOR 12" DIA. PIPE.
 - STEEL PLATES MUST BE ON-SITE AT ALL TIMES AND SHALL BE ADEQUATE SIZE AND THICKNESS TO SPAN THE OPEN TRENCH. IF PLATES ARE TO BE LEFT OVER NIGHT, ALL EDGES SHALL BE TEMPORARILY RAMPED WITH BITUMINOUS ASPHALT MATERIAL.

TEMPORARY STORM & SANITARY SEWER WITHIN PAVEMENT TRENCH DETAIL



- NOTES:
- ANTI-SEEP COLLAR SHALL BE OF ADEQUATE SIZE TO PREVENT STORMWATER FROM TRAVELING THROUGH THE PIPE TRENCH MATERIAL.
 - CONCRETE MATERIALS SHALL BE PER QHD DEPARTMENT OF TRANSPORTATION REQUIREMENTS.

ANTI-SEEP COLLAR DETAIL

- GENERAL WATERLINE INSTALLATION NOTES
- CONTRACTOR TO PROVIDE LINE AND GRADE STAKES AT 100' INTERVALS FOR WATER MAIN AND FOR EACH FITTING AND APPURTENANCE. A COPY OF CUT SHEET SHALL BE PROVIDED TO FIELD INSPECTOR PRIOR TO INSTALLATION.
 - WATER WORK SHALL NOT BEGIN UNTIL AREAS OF WATERLINE CONSTRUCTION ARE ROUGH GRADED (WITHIN 1FT. OF FINISHED GRADE) AND ALL AREAS ARE COMPLETED AND COMPACTED.
 - NO WATER SERVICE CONNECTIONS TO ANY BUILDINGS SHALL BE PERMITTED PRIOR TO FINAL ACCEPTANCE BY AQUA OHIO INC. WHICH SHALL INCLUDE APPROVED RESTRICTION OF ALL PUNCH LIST ITEMS. ONCE PUNCH LIST ITEMS ARE COMPLETED, THE BUILDER SHALL BE RESPONSIBLE FOR GRADE ADJUSTMENTS TO WATER FACILITIES AT TIME OF BUILDING CONSTRUCTION AND DURING FINAL SITE GRADING.
 - A MINIMUM OF 3 FEET HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN UTILITY CONDUIT CROSSINGS AND WATERLINE APPURTENANCES, I.E. HYDRANTS, VALVES, TEES, ETC.
 - WATER LINE MATERIALS AND INSTALLATION PROCEDURES SHALL MEET OR EXCEED ALL APPLICABLE A.W.W.A. STANDARDS INCLUDING BUT NOT LIMITED TO THE MOST RECENT VERSIONS OF C600 AND C651.
 - WATERLINE MATERIAL AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH AQUA OHIO SPECIFICATIONS. CLASS 50 D.I.P. POLYETHYLENE FITTINGS CLASS 50 (C600) SHALL BE POLYETHYLENE AND 1" P.P. HDPE TUBING WITH COMPRESSION FITTINGS FOR DOMESTIC SERVICES OR 2" HDPE SDR 9 POLYETHYLENE 3048 PIPE AROUND CUL-DE-SAC. IF POLYETHYLENE IS USED, A 1/2 GAUGE WIRE AND METALLIC CAUTION TAPE MUST BE USED.
 - ALL PIPE AND APPURTENANCES INSTALLED ON A DEPRESSURED WATER MAIN ARE TO BE WIPED CLEAN AND ALL INTERIOR SURFACES SATURATED WITH A MINIMUM 1% CHLORINE SOLUTION.
 - ALL MECHANICAL JOINTS ARE TO BE RESTRAINED USING METALLOG OR "FORD" EQUIVALENT. FIRE LINE ISSUES TO INCLUDE BUT NOT LIMITED TO: 1. ALL VALVES TO BE RESTRAINED WITH METALLOG OR "FORD" EQUIVALENT. 2. ALL VALVES TO BE 304 STAINLESS STEEL.
 - A RESTRAINT CASKET (FIELD LOCK OR APPROVED EQUAL) SHALL BE UTILIZED ON PUSH ON JOINTS AS REQUIRED BY AQUA OHIO STANDARDS.
 - ALL DUCTILE IRON PIPE AND FITTINGS TO BE POLYWRAPPED AND TAPED AS PER DUCTILE IRON PIPE RESEARCH ASSOCIATION RECOMMENDATIONS.
 - DUCTILE IRON IN CASING SHALL BE CLASS 52, POLYWRAPPED AND ALL PUSH ON JOINTS SHALL BE EQUIPPED WITH RESTRAINT CASSETS (FIELD LOCK OR APPROVED EQUAL) AND STAINLESS STEEL CASING SPACERS ARE REQUIRED.
 - ALL THRUST BLOCKING WILL BE SOLID CONCRETE BLOCKS WITH OAK WEDGES OR POURED CONCRETE, PER AQUA STANDARDS DRAWING.
 - ALL VALVES ARE OPEN RIGHT AND ALL MAIN LINE VALVES ARE TO BE PLACED ON A MINIMUM OF ONE 4" SOLID CONCRETE BLOCK. ALL VALVES TO HAVE 45° MINSTONE UP TO OPERATING END OF VALVE.
 - ALL FIRE HYDRANTS TO HAVE A MINIMUM OF 1/2 CUBIC YARD OF #57 LIMESTONE #1 ABOVE DRAIN HOLE OR EQUIVALENT SIZE BANK RUN GRAVEL. PLASTIC SHALL BE PLACED OVER STONE PRIOR TO BACKFILL. ALL VALVES TO BE TURNED WITH 4 1/2" HOZIELE FACING STRIKE AND MEETING FIRE ADJUSTMENT SPECIFICATIONS.
 - ALL VALVE BOX COVERS ARE TO BE PAINTED BLUE. CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENTS TO VALVE BOXES, CURB BOXES, AND FIRE HYDRANTS WITH RESPECT TO FINAL GRADING. ALL VALVE BOXES IN NEW OR PROPOSED PAVEMENT SHALL BE SCRIP TYPE.
 - WATERLINE WILL NOT BE ACCEPTED OR PLACED IN SERVICE UNTIL CONTRACTOR CONDUCTS AND OBTAINS SATISFACTORY RESULTS OF PRESSURE AND CHLORINE TESTS. BACTERIA TEST WILL THEN BE CONDUCTED BY AQUA OHIO. ALL VALVES, HYDRANTS, AND CURB BOXES ARE TO BE AT PROPER GRADE PRIOR TO ACCEPTANCE.
 - THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO ENSURE SAFETY OF THE PUBLIC ON AND SURROUNDING THE SITE DURING CONSTRUCTION.
 - THE LOCATION OF EXISTING UTILITIES AND STRUCTURES, BOTH ABOVE GROUND AND UNDERGROUND ARE SHOWN ON THE PLANS FROM DATA AVAILABLE AT THE TIME OF THE SURVEY AND ARE NOT NECESSARILY COMPLETE AND/OR CORRECT. THE EXACT LOCATION AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES IS THE RESPONSIBILITY OF THE CONTRACTOR. DURING CONSTRUCTION, THE CONTRACTOR SHALL USE DUE DILIGENCE IN PROTECTING FROM DAMAGE ALL EXISTING UTILITIES AND STRUCTURES WHETHER SHOWN ON PLANS OR NOT. IF DAMAGE IS CAUSED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR RESTORATION OF SAME IN ACCORDANCE WITH THE DIRECTIONS OF THE OWNER. THE CONTRACTOR SHALL CONTACT OHIO UTILITIES PROTECTION SERVICE, AT 1-800-362-2764, TWO WORKING DAYS PRIOR TO START OF CONSTRUCTION AS REQUIRED BY OHIO LAW.
 - THE WATERLINE SHALL BE INSTALLED AT 4" OF COVER FROM EXISTING/PROPOSED GRADE TO TOP OF THE WATERLINE. THE 4" SHALL BE MAINTAINED UNLESS OTHERWISE NOTED.
 - A MINIMUM 10" HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN ALL STORM AND SANITARY SEWERS AND WATERLINE OUT TO OUT.
 - A MINIMUM 18" VERTICAL SEPARATION MUST BE MAINTAINED BETWEEN ALL STORM AND SANITARY SEWERS AND WATERLINE, OUT TO OUT.
 - DRIVEWAY RESTORATION SHALL BE AS FOLLOWS: CONCRETE DRIVEWAYS WILL BE REPLACED FROM THE NEAREST EXISTING JOINT TO THE STREET. FULL SLAB REPLACEMENT. ASPHALT DRIVEWAYS WILL BE REPLACED FROM THE FAREST TRENCH CUT LINE TO THE STREET. REPAIRING ONLY THE TRENCH WIDTH CUT ACROSS A DRIVEWAY ONLY IS NOT ACCEPTABLE.
 - THE CONTRACTOR SHALL VISIT THE SITE TO PERSONALLY ASCERTAIN THE NATURE OF THE WORK INVOLVED AND THOROUGHLY BECOME FAMILIAR WITH THE SITE PRIOR TO THE SUBMISSION OF HIS OR HER BID.
 - THE CONTRACTOR SHALL CAREFULLY LAYOUT THE WATERLINE AND ALL RELATED FACILITIES TO ENSURE THAT THEY ARE LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY AND/OR ACQUIRED EASEMENTS AS INDICATED.
 - THE CONTRACTOR IS RESPONSIBLE FOR RESTORING THE SITE (YARDS, DITCHES, DRIVEWAYS, ETC.) TO ITS ORIGINAL OR BETTER CONDITION UPON COMPLETION OF THE WATERLINE INSTALLATION.
 - THE CONTRACTOR MAY DEFLECT THE WATERLINE AS PER MANUFACTURERS SPECS WITH PERMISSION FROM AQUA AS NECESSARY TO MAINTAIN MINIMUM HORIZONTAL AND VERTICAL SEPARATION DISTANCES.
 - THE CONTRACTOR SHALL CAREFULLY PRESERVE BENCHMARKS, PROPERTY CORNERS, REFERENCE POINTS, AND STAKES. ANY BENCHMARK, PROPERTY CORNER, OR SURVEY MARKER DAMAGED OR DISTURBED BY THE CONTRACTOR SHALL BE RESET BY AN OHIO REGISTERED PROFESSIONAL SURVEYOR AT THE CONTRACTORS EXPENSE.
 - ALL MAJ. BOLL. TRAFFIC CONTROL SIGNS AND ADVERTISING SIGNS ENCOUNTERED DURING CONSTRUCTION SHALL BE REPLACED IMMEDIATELY AFTER THE WATER MAIN HAS BEEN INSTALLED AND BACKFILLED. TEMPORARY SIGNS TO BE USED AS NEEDED.
 - WATER SERVICE LINE CONNECTIONS ARE NOT TO BE INSTALLED UNTIL PRESSURE TEST AND BACTERIA TESTS HAVE BEEN APPROVED.
 - THE NORMAL WORKING PRESSURE IN WATER LINES SHALL NOT BE LESS THAN 35 PSI.

DESIGNED: M. BRADLEY DATE: JANUARY 2021
DRAWN: M. BRADLEY DATE: JANUARY 2021

N.T.S.

AQUA
An Essential Utilities Company

PREPARED BY:
SERVICE CENTER - ENGINEERING DEPT.
6450 SOUTH AVE., BOARDMAN OHIO 44012

TYPICAL WATER LINE DETAILS
AQUA OHIO, INC.

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NO.	DATE	DESCRIPTION
1	04/13/21	BULLETIN 1
2	06/23/21	BULLETIN 2
3	08/24/21	ADDENDUM 1
4	09/30/21	PLAN REVISION & EOP
5	10/29/21	ISSUE FOR BIDDING

PROJECT NO	2203-2
DRAWN BY	
CHECKED BY	
DATE	01-12-2023