City Of Portsmouth

Department of Public Works

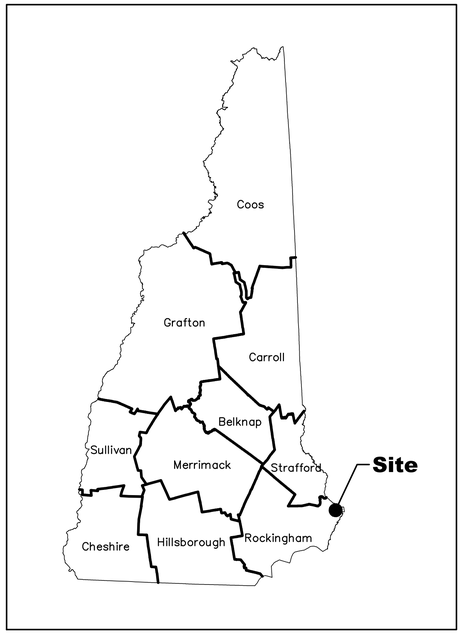
Elwyn Road

Drainage Improvements Project

Issued For Bid

July 2025

Sheet Index



Locus Plan

7/17/2025

Prepared For:

City of Portsmouth
680 Peverley Hill Road
Portsmouth, NH 03801

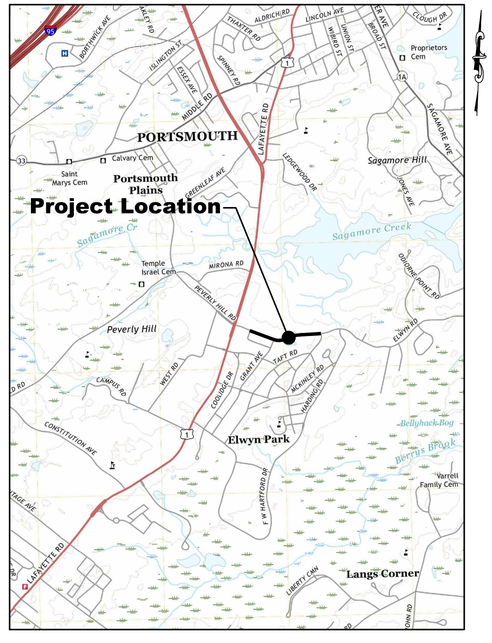
Prepared By:

CMA ENGINEERS

CIVIL/ENVIRONMENTAL/STRUCTURAL

Portsmouth, NH 603/431-6196 • Manchester, NH 603/627-0708 • Portland, ME 207/541-4223

cmaengineers.com



Project Location

General Construction Notes:

1. All work shall be in conformance with current City of Portsmouth and NHDOT Standard Specifications and details. For standard plans, see Department of Transportation Webstite at: https: //www.dot.nh.gov/doing-business-nhdot/contractors/standard-plans-road-construction

2. The Engineer shall be defined as the Resident Engineer/Owner's Representative, who is responsible for engineering supervision of the construction and acting directly, or through, their duly authorized representatives on behalf of the City of Portsmouth.

3. The Contractor shall provide staging areas as required for staging, processing, and stock pile area as necessary. The Contractor shall prepare the area as necessary and install all erosion control devices to meet NHDES-WT standards. The Contractor shall stockpile, handle and transport materials to preserve their quality and fitness for the work. Materials shall also be stored to facilitate inspection and may be subject to inspection and retesting before incorporation in the work. Private property shall not be used for storage purposes without written permission of the property owner and approval by the City. After completion of construction, the contractor shall return the staging area to preexisting conditions to the satisfaction of the property owner and the City.

4. The Contractor shall perform all required layout work with competent, qualified personnel in a manner consistent with the current survey/layout practices and acceptable to the Engineer. All this work is subject to checking, approval, and continuous observation by the Engineer. The Contractor shall provide the engineer with qualified persons to assist in this checking as needed and on request of the engineer. The Contractor shall perform all necessary layout work not specified above in order to construct all elements of the project as shown on the plans and specified in the contract. This work shall include, but shall not be limited to, stakeout necessary to establish lines and grades as earthwork operations progress; stakeout, layout and elevations as required for installing drain lines, sewer, water lines, and other items included in the work.

5. The Contractor is solely responsible for the accuracy of the work. The Engineer may check all or any portion of the layout, stake-out made by the Contractor. Any necessary correction to the work shall be made immediately by the contractor. Such checking by the engineer will not relieve the contractor of any responsibilities for the accuracy or completeness of the work. No claim will be considered because of alleged inaccuracies unless the contractor notifies the Engineer thereof in writing immediately upon discovery of the alleged inaccuracies and affords the Engineer opportunity to check or verify the control in question.

6. The Contractor shall be responsible for the preservation of all bench marks and control points. If any of the control points are disturbed by the Contractor during the construction, the Contractor shall replace them at no expense to the owner. Damaged or destroyed points, bench marks or stakes or any reference points damaged or made inaccessible by the progress of the construction shall be replaced or transferred by the Contractor, subject to verification by the engineer. Replacement of any layout points shall be performed by or under the direction of a NH licensed land surveyor.

7. Perform all work within the existing right-of-way or acquired temporary right of entry limits.

8. The Contractor shall protect private property and shall take all necessary measures and precautions to avoid damage to existing trees, shrubs, lawns, plantings, etc. This protection will include the trimming of trees prior to construction if necessary. The Contractor shall be responsible for repairs/replacement of all damaged items.

9. The Contractor shall be responsible for all methods and materials for construction of this project, including compliance with all applicable OSHA regulations. The Owner and Engineer will periodically review construction for compliance with the plans and specifications; such review does not imply approval of methods of construction.

10. All excavations shall be thoroughly secured (backfilled, no plates) on a daily basis by the Contractor at the completion of construction operations in the immediate area.

11. The Contractor shall set all manhole frames and covers, sewer cleanouts, catch basin grates, gas valve covers (adjusted by Unitil, Contractor to coordinate), and water valve covers to be flush with the base pavement grades, then raised to 1/4" below final pavement elevations prior to installation of the final wearing course.

12. Prior to the start of any new utility work, the Contractor shall verify all elevations of existing utilities in those areas. Notify the Engineer immediately of any discrepancies.

13. Pipe connections to replacement structures are subsidiary to the structure.

14. The Contractor shall be responsible for removal and relocation of all signs that conflict with the work (incidental to construction). Any signs damaged during construction shall be replaced at no additional cost to the Owner.

15. Final location of traffic signs and supports as shown in the plans shall be field-confirmed by the Contractor and accepted by the Engineer prior to installation.

16. Remove topsoil for its total depth within the limits of the slope lines. unless otherwise directed, stockpile topsoil and use it on this project as needed.

17. All disturbed areas not designated to be paved, landscaped, or otherwise shall have loam borrow placed and seeded. The loam borrow shall have a minimum depth of 6" and shall be placed flush with the top of adjacent curbing, edging, pavement millings, back of sidewalk or other paved edge.

18. The contractor shall be responsible for the site restoration and clean-up upon completion of the project.

Repair, Removal & Decommissioning of Existing Utilities:

1. For utilities that are to remain in service, the contractor shall repair existing utilities and structures damaged or removed by the contractor's operations.

2. The existing water mains shall be removed and properly disposed of when encountered within the new excavation limits. This work shall be incidental to utility excavation and installation.

3. Existing drainage pipes and structures within the excavation limits of the proposed utilities shall be removed. The work shall be incidental to the utility excavation and installation. The reminder of the existing drainage being replaced within or near the roadway pavement shall be filled and abandoned. **The contractor should assume pipes need to be accessed every 150' to effectively fill existing CMP pipes.**

4. Dispose of any remaining waste material in accordance with NHDES regulations. If asbestos pipe is encountered, work shall be conducted in accordance with ENV-A 1800 Asbestos Management and Control. If the AC pipe is broken or requires cutting or breaking, a licensed abatement contractor must complete this work and properly bag and dispose of the pipe materials. All disposal shall be done in accordance with env-a 1800 and ENV-SW 901. The contractor shall be responsible for removing and disposing asbestos cement pipe, including services connections, within the limits of trench excavation. The contractor shall maintain water service to users through the use of temporary bypass piping and valves

Existing Utility Notes:

1. The Contractor is responsible for the location, protection and repair (if damaged) of all existing utility mains and services. The locations of known gas, water, and sewer mains shown on these drawings are approximate. Existing gas, water, and sewer service laterals may not be shown and the Contractor should anticipate their existence. The Contractor should consider conflicts, hand excavation, and decrease in production when preparing their bid.

2. The Contractor shall verify all existing utility locations, public or private, shown or not shown, on these plans prior to construction. The engineer shall be notified in writing of any utilities found interfering with the proposed construction and appropriate remedial action shall be taken before proceeding with the work. The Contractor shall notify Dig-Safe at 1-888-DIG-SAFE at least 72 hours prior to beginning work to confirm the location of underground utilities.

3. Overhead utility lines are located throughout the project with crossings at various locations and running along the road throughout the project. The Contractor is advised that extreme caution will be required in the operation of equipment, especially cranes.

Disposal of Material:

1. Unsuitable materials and boulders/rock/stones as defined by the specifications which are not acceptable as fill material shall be removed from the site. Disposal is the Contractor's responsibility.

2. Unless requested by the City, all frames, covers, grates, valves and valve boxes, and curbing to be removed during the project shall become the property of the Contractor. All pavement, concrete and subgrade soils removed during construction to achieve proposed grades shall become the property of the Contractor. All sidewalk pavement, concrete or brick structures, drain manholes, drainage and water pipe to be removed/demolished shall become the property of the Contractor.

3. Removal of existing drainage and sanitary sewer structures and pipe shall be subsidiary to proposed work items when the existing drainage and sewer items are located within the trench limits of the proposed drainage and utility items as specified in Section 206 of the NHDOT standard specification.

Boring Notes:

1. Borings indicated thus B-1 were made by S.W. Cole Engineering, Inc. in December 2024. Blow counts shown are the number of blows required to drive a 2" O.D. standard split spoon sampler 6" using a 140 lb weight falling 30" or a 300 lb weight falling 16".

2. Borings are for design purposes showing conditions at boring points only, and do not necessarily indicate material to be encountered during construction.

3. Water levels indicate thus ▽ were measured at the time of exploration. The water levels encountered during construction may vary considerably due to prevailing climate, rainfall, or other factors.

4. The geotechnical investigation report has been prepared by S.W. Cole Engineering, Inc., and is provided as an attachment to the contract documents.

Dewatering Notes :

1. Control of surface water is a critical requirement of the work. All necessary actions shall be taken to minimize the effect of precipitation and runoff on the work. Upgradient runoff shall be diverted from active or completed work areas, and all work shall be graded and crowned to promote controlled runoff. The Contractor shall prevent surface water and subsurface or groundwater from flowing into excavations or onto any work and from flooding the project site and surrounding area.

2. Water shall not accumulate in excavations. All pipe shall be laid "in the dry." New pipe shall not be used to dewater excavations. Contractor shall remove water to prevent softening of subgrades and soil changes detrimental to stability of the subgrade. The Contractor shall dewater excavated areas as required to perform the work, and in such a manner as to preserve the undisturbed state of subgrade material.

3. The Contractor will be responsible for all costs associated with dewatering the construction site. The Contractor shall provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations. Discharge of dewater lines shall be directed through a dewatering filter bag, Ultratech International or equal, to remove sediment prior to discharge into existing drainage basin or stabilized drainage swale.

4. The Contractor shall prevent migration of sediment in accordance with the erosion control requirements of this Contract.

5. Discharge of dewater lines shall not accumulate on the ground surface and shall be diverted using existing natural or man-made drainage-ways to receive and dispense with surface water runoff.

6. Discharged water shall be free of sediment and contaminants (bacteria, hydrocarbons, etc.).

Traffic Management and Signing Notes:

1. The Contractor shall prepare a Traffic Control Plan (TCP) for the sequencing of the project and management of traffic in accordance with Section 619 of the NHDOT Specifications. Plan shall include locations of construction signage and the variable message boards. TCP shall be submitted to the CIty for approval as part of their flagging permit..

2. All traffic control devices shall conform with Sections 618 and 619 of the NHDOT Standard Specifications, the current editions of the MUTCD including all revisions, and the State of NH DOT Traffic Control Handbook.

3. The Contractor shall exercise caution and comply with all applicable traffic laws and regulations in the execution of work. The Contractor is to coordinate all work with the City of Portsmouth Public Works, Fire and Police Departments and Engineer at least 14 days prior to implementing any temporary road closures or temporary detours.

4. All costs for traffic control devices including placement, relocation, maintenance, and removal of signs shall be included in the Contractor's bid.

5. All permanent construction signing and warning devices shall be supplied, erected, maintained, and removed by the Contractor. Placement of permanent construction signs shall be coordinated with the Engineer and Public Works staff. The contractor shall bear all expense of maintaining the section of road undergoing improvement including all temporary approaches or crossings and intersections with trails, roads, streets, businesses, parking lots, residences, garages, farms, and other features as may be necessary.

6. Access to existing drives shall be maintained at all times. In the event that major work must be done at drives that precludes full access, the Contractor is to coordinate the work with the property owners and the Engineer 24 hours in advance to minimize inconveniences.

7. Unless otherwise approved, the Contractor shall maintain a minimum of 14-feet of roadway access at all times to accommodate through traffic and local emergency access. Emergency vehicles shall be given priority.

8. All excavations shall be fully backfilled and properly compacted at the end of each work day to ensure safe conditions for both vehicles and pedestrians. The use of steel plates to temporarily cover open excavations is permitted only outside of the traveled roadway and only with prior approval from the Owner. All steel plates must be of sufficient thickness and strength to safely support expected traffic loads.

9. Dust control operations shall be provided throughout the duration of the project and shall be paid under Item 619.11 – Calcium Chloride for Dust Control. Water is first priority for dust control.

Permit Notes :

1. The Contractor shall be responsible for obtaining all other construction permits, local and state, as well as from public utilities.

2. The Contractor shall obtain a project specific Stormwater Pollution Prevention Plan (SWPPP) as needed and be paid under Item 645.7 – Storm Water Pollution Prevention Plan, if needed as part of Bid Alt A.

Reference Plans:

1. City of Portsmouth, N.H., Elwyn Road Reconstruction, dated 04/1989, by Appledore Engineers, Inc.

2. Topographic & Right of Way Plan for portions of Elwyn Road, dated 01/2024, by Doucet Survey LLC.

Survey Notes:

1. The existng conditions are based on a field survey performed 01/2024 by Doucet Survey LLC. on site control established using survey grade GPS.
   Horizontal Datum: NAD 1983 (2011)
   Vertical Datum: NAVD 1988

2. The location of all undeground utilities shown hereon are approximate and are based upon the field location of all visible structures (i.e. catch basins, manholes, water gates, etc.) and information compiled from plans provided by utility companies and governmental agencies. All contractors should notify, in writing, said agencies prior to any excavation work and call dig-safe @ 1-888-DIG-SAFE.

3. Engineer or contractor to verify site benchmarks by leveling between 2 benchmarks prior to the setting or establishment of any grades/elevation. Discrepencies are to be reported to Doucet Survey LLC.

4. Survey Information within the bounds of the survey is displayed. outisde of the bounds of the survey, supplemental LIDAR data has been added to give approximate elevation data in areas adjacent to the survey's limits.

Water Main Notes:

1. All materials and workmanship shall be in conformance with the City of Portsmouth's Construction Standards and Details, NH DES Env-Wq 700, and NH DES Env-Dw 404. The more stringent regulation shall apply.

2. All water mains shall be Class 52 Cement Lined Ductile Iron Pipe; and pipe shall meet, or exceed, current AWWA C151 specifications for ductile iron water pipe.

3. Water mains and services shall have a minimum cover of 5'. Where top of water main is less than 5'-0" below finished grade, the Contractor shall install rigid insulation in conformance with the typical water trench detail.

4. All water main shall be encased in polyethylene encasement (polywrap) with 3 brass wedges at each non mechanical joint. See specification section 02080.

5. At pipe crossings, one full length of water pipe shall be located so both joints will be as far from the sewer/drain pipe as possible. Special structural supports for the water and sewer pipes may be required.

6. All materials coming in physical contact with drinking water must be certified to meet the ANSI/NSF Standard 61 by either the Underwriters Labs (UL) or the National Sanitation Foundation (NSF).

7. Disinfection and testing of water lines shall be done in accordance with City of Portsmouth and current AWWA standards.

8. All existing water mains and water services shall be removed and properly disposed of when encountered within the new excavation limits. This work shall be incidental to utility excavation and installation.

9. All existing water pipe outside of the new utility excavation limits shall be capped at all exposed ends and abandoned in place unless removal is required because of other interferences (incidental).

10. The contractor shall use restraint systems on all valves and fittings unless otherwise noted on the plans.

11. All gate valves shall have restrained mechanical joints and shall open right.

12. Existing curb box or and other castings disturbed or relocated by construction activities shall be adjusted to match final grade, unless otherwise directed by the Engineer (subsidiary).

13. Where water main is less than 6'-0" horizontally from a structure, the contractor shall install 2 inches of rigid insulation along the side wall of the water main trench a minimum of 10'-0" horizontally beyond the centerline of the structure in both directions to protect the water main from freezing (subsidiary).

14. Maintain a minimum of 10 feet horizontal distance between water main and sewer piping. Notify Engineers if any discrepancy.

Temporary Water Notes

1. If needed based on Contractor's means and methods, cost is subsidiary to the water main pay item.

2. The Contractor shall provide temporary potable water service to all existing service connections whose service is interrupted by construction activities. The Contractor shall submit the temporary water service design to the Engineer and the Owner for review and coordination with the Water Department prior to installation.

3. Temporary water service shall be chlorinated and tested for bacteria. Contractor shall coordinate with City of Portsmouth Public Works.

4. Disinfection and testing of of temporary water service shal be done onaccordance with City of Portsmouth and current AWWA standards.

5. The Contractor shall field-locate all affected services prior to connection to temporary water services and shall disinfect each temporary service connection prior to completing connection to user.

6. The Contractor shall be responsible for maintaining temporary water system and shall be available for 24-hour/day emergency repair service.

7. Contractor shall notify all affected residents a minimum of 48 hours prior to temporary disturbance of water service and comply with ENV-DW 503.12 Notice of Planned Outages.

8. Temporary water service shall be provided immediately upon disruption of existing water service.

9. Temporary water service shall not disrupt normal traffic flow.

10. The cost of repairing damage to a fire hydrant and related equipment or to the water system due to water hammer, or to careless or improper use of a fire hydrant or temporary water service equipment shall be paid for in full by the Contractor.

11. The Contractor shall maintain the temporary water supply without leaks and at the required pressures for the service area to meet potable water needs and fire supply service as follows:

    a. Static pressure shall be maintained at a minimum of 40 psi in the main as measured at the nearest tap or fire hydrant connection.

    b. Residual pressure must be maintained greater than 20 psi.

    c. Contractor shall fully decommission all temporary water service prior to freezing weather and restore permanent water supply and fire supply service within the project area before the winter shutdown period. The Contractor shall provide a minimum 48-hour notice to the Owner, and through the Engineer, to the property owners prior to decommissioning the temporary water service.

12. Once the project is complete, contractor is responsible for dismantling temporary water and reconnecting all shut offs and underground service lines to each home according to pre-construction conditions.

no.	revision	date	by
0	Issued for Bid	6/20/2025	PAC

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PHILIP A. CHAMPAGNE No. 12821 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

designed by: NJM | drawn by: CLM | approved by: PAC | scale:
date: July 2025 | project no: 1331 | checked by: PAC

City of Portsmouth
Department of Public Works
Elwyn Road
Drainage Improvements Project
General Notes

drawing no. N-1

sheet: 2 of 15

Pavement Marking Notes:

1. Placement and color of pavement marking lines, symbols, and words shall conform to the latest edition of MUTCD, Section 632 of NHDOT Standard Specifications Book Contract Supplemental Specifications, The State of New Hampshire Pavement Marking Standard Detail Sheets, and Standard Plan Sheets.

Retroreflective Paint Pavement Marking Key:

{}SSL()–{size in inches} single solid line (color)
{}DSL()–{size in inches} solid line (color)
(W) = white
(Y) = yellow

Standard Symbols and Words:
1. ↱ – Symbols ONLY – Words (Thermoplastic)
2. Stop Bars = 12" SSLW (W) (Thermoplastic)
   Route 1 Stop Bar = 18" SSLW (W) (Thermplastic)

GENERAL SYMBOLS:

EXISTING		PROPOSED
	UTILITY POLE & GUY WIRE	
	LIGHT POLE	
	SIGNS (TWO POSTS)	
	IRON PIPE/ROD FOUND	
	METAL POST	
	GRANITE BOUND FOUND	
	FIRE HYDRANT	
	WATER GATE VALVE	
	CURB STOP	
	VALVE ELECTRIC BOX	
	CATCH BASIN	
	DRAIN MANHOLE	
	WATER MANHOLE	
	SEWER MANHOLE	
	MANHOLE	
	INDIVIDUAL TREE	
	BEDROCK PROBE	
	BORING	
	WETLAND	
	WETLAND FLAG	
	WETLAND LINE	
	EDGE OF PAVEMENT	
	STOCKADE FENCE	
	SPOT ELEVATION	100.0'
ohe	OVERHEAD WIRES	
S	SEWER LINE	
D	DRAIN LINE	
W	WATER LINE/SERVICE UNDERGROUND	PW-8
	PROPERTY LINE	
	SHRUB LINE	
	TREE LINE	
	STONE WALL	
	GUARDRAIL	
100	MAJOR CONTOUR LINE	100
100	MINOR CONTOUR LINE	100
	EASEMENT LINE	
	ROAD CENTERLINE	
	BUILDINGS	
	BARK MULTCH	
	PAVEMENT	

EXISTING UNDERGROUND STRUCTURES INDEX

DRAINAGE STRUCTURES

CB 23964
RIM ELEV.=48.1
(23965) UNABLE TO MEAS. HOODED
(A) 12" HDPE INV.=45.0'

CB 23966
RIM ELEV.=47.2
(23965)12" HDPE INV.=44.4

CB 1104
RIM ELEV.=46.2'
(23966) 8" PVC INV.=44.0'
(5002) 15" CMP INV.=43.4'
SUMP ELEV.=41.6'

DMH 23966 (W/SMH LID)
RIM ELEV.=47.4'
(OUTFALL) 8" PVC INV.=44.9'
(1104) 8" PVC INV.=44.8'
SUMP ELEV.=41.9'

CB 23969
RIM ELEV.=47.1'
(OUTFALL) UNABLE TO MEAS. RECESSED
(23968) UNABLE TO MEAS. HOODED
WATER ELEV.=44.9'
SUMP ELEV.=41.5'

DMH 5002
RIM ELEV.=46.5'
(1104) UNABLE TO MEAS. RECESSED
(1105) 15" CMP INV.=43.7'
(25621) 12" PVC INV.=43.5'

CB 1105
RIM ELEV.=46.4'
(5002) 15" CMP UNABLE TO MEAS. RECESSED
(1854) 15" CMP INV.=43.6'
SUMP ELEV.=42.1'

CB 1854
RIM ELEV.=46.9'
(1105) 15" CMP INV.=43.6'
(1566) 15" CMP INV.=43.6'

CB 25621
RIM ELEV.=46.6'
(A) 12" PVC INV.=43.9'
(5002) 12" PVC INV.=43.9'
SUMP ELEV.=42.8'

CB 1856
RIM ELEV.=48.7'
(1855) 12" CMP UNABLE TO MEAS. RECESSED
(1902) 12" CMP INV.=43.4'
SUMP ELEV.=40.5'

CB 1566
RIM ELEV.=47.7'
(1854) 18" CMP INV.=44.1'
(A) 12" CMP INV.=44'
(1902) 24" CMP INV.=43.9'
SUMP ELEV.=41.3'

CB 1855
RIM ELEV.=48.9'
(1856) 12" CMP INV.=45'
SUMP ELEV.=43.1'

DMH 1902
RIM ELEV.=48.9'
(1566) 24" CMP INV.=42.5'
(1857) 24" CMP INV.=42.3'
(1856) 12" CMP INV.=42'

CB 1857
RIM ELEV.=43.8'
(1902) 24" CMP INV.=36.3'
(1096) 30" CMP INV.=36.2'

DMH 2142 (W/SMH LID)
RIM ELEV.=43.8'
(A) 12" CMP INV.=40.2'
(B) 12" CMP INV.=40.2'
SUMP ELEV.=39.7'

DMH 4934
RIM ELEV.=43.7'
(1096) 24" CMP INV.=33.5'
(2173) 24" CMP INV.=33.5'
SUMP ELEV.=33.3'

DMH 3009
RIM ELEV.=41.8'
(2173) 24" RCP INV.=32.1'
(1850) 24" RCP INV.=31.9'
SUMP ELEV.=31.7'

DMH 2173 (W/SMH LID)
RIM ELEV.=43.0'
(A) 12" RCP INV.=37.3'
(4934) 24" CMP INV.=32.7'
(3009) 24" CMP INV.=32.7'
SUMP ELEV.=32.7'

CB 1096
RIM ELEV.=44.1'
(1857) 30" CMP INV.=34.5'
(4934) 30" CMP INV.=34.2'
SUMP ELEV.=32'

CB 1849
RIM ELEV.=34.0'
(25880) 8" PVC INV.=30.0'
SUMP ELEV.=29.0'

DMH 1850
RIM ELEV.=33.8'
(3009) 24" RCP INV.=29.6'
(25880) 15" PVC INV.=29.1'
(OUTFALL) 30" RCP INV.=28.8'

CB 25880
RIM ELEV.=33.5'
(1849) 6" CIP INV.=29.8'
(A) 8" CIP INV.=29.2'
(1850) 15" PVC INV.=29.1'

CB 1098
RIM ELEV.=19.4'
(A) 6" CMP INV.=16.8'
(4935) 8" CIP INV.=16.6'
(3059) 8" PVC INV.=16.5'
SUMP ELEV.=15.8'

DMH 4935
RIM ELEV.=19.8'
(1098) 8" CIP INV.=16.4'
(A) 24" RCP INV.=16.4'
(OUTFALL) 24" RCP INV.=16.1'
SUMP ELEV.=14.3'

CB 1097
RIM ELEV.=19.6'
(A) 6" CMP INV.=17.7'
(B) 4" PVC INV.=17.6'
(C) 6" UNKN INV.=17.5'
SUMP ELEV.=15.3'

CB 23965
RIM ELEV.=48.6'
(23966) 12" HDPE UNABLE TO MEAS. HOODED
(A) 12" HDPE INV.=44.6'
(23964) 12" HDPE INV.=44.6'
SUMP ELEV.=41.6'

DMH 23968
RIM ELEV.=48.4'
(A) 8" HDPE INV.=44.4'
(23969) 8" HDPE INV.=44.1'
SUMP ELEV.=44.1'

CBR 3059
RIM ELEV.=22.5'
(A) 4" PVC INV.=19.5'
(B) 4" PVC INV.=19.3'
(C) 8" CIP INV.=17.4'
(1098) 8" CIP INV.=17.3'

SEWER STRUCTURES

SMH 175
RIM ELEV.=46.2'
(174) 8" PVC INV.=42.0'
(176) 8" PVC INV.=41.9'

SMH 174
RIM ELEV.=49.0'
(A) 8" PVC INV.=42.8'
(175) 8" PVC INV.=42.7'

SMH 176
RIM ELEV.=46.6'
(175) 8" PVC INV.=41.8'
(295) 8" PVC INV.=41.2'
(177) 8" PVC INV.=41.0'

SMH 177
RIM ELEV.=47.1'
(176) 8" PVC INV.=40.3'
(178) 8" PVC INV.=40.3'

SMH 295
RIM ELEV.=48.7'
(OUTSIDE SCOPE)

SMH 178
RIM ELEV.=48.8'
(177) 8" PVC INV.=39.6'
(179) 8" PVC INV.=39.5'

SMH 179
RIM ELEV.=47'
(178) 8" PVC INV.=38.9'
(180) 8" PVC INV.=38.8'

SMH 180
RIM ELEV.=45.5'
(179) 8" PVC INV.=38.2'
(181) 8" PVC INV.=38.2'

SMH 181
RIM ELEV.=43.8'
(180) 8" PVC INV.=37.8'
(182) 8" PVC INV.=37.7'

SMH 182
RIM ELEV.=41.9'
(181) 8" PVC INV.=34.5'
(181) 8" PVC INV.=36.7'
(183) 8" DIP INV.=34.5'
*TWO PIPES FROM SMH 2150

SMH 2189
RIM ELEV.=34.1'
(184) 12" DIP INV.=27.0'
(185) 12" DIP INV.=26.9'

SMH 2331
RIM ELEV.=35.0'
(A) 10" AC INV.=28.4'
(184) 10" AC INV.=28.3'

SMH 184
RIM ELEV.=34.2'
UNABLE TO OPEN

SMH 183
RIM ELEV.=35.2'
(182) 8" DIP INV.=27.9'
(182) 8" DIP INV.=30.2'
(184) 8" DIP INV.=27.8'
*TWO PIPES FROM SMH 182

SMH 186
RIM ELEV.=26.1'
(185) 12" DIP INV.=18.9'
(185) 12" DIP INV.=16.5'
(187) 12" DIP INV.=16.4'
*TWO PIPES FROM SMH 185

SMH 185
RIM ELEV.=33.8'
(2189) 12" DIP INV.=26.7'
(2189) 12" DIP INV.=21.6'
(186) 12" DIP INV.=21.5'
*TWO PIPES FROM SMH 2189

SMH 335
RIM ELEV.=20.7'
(334) 18" DIP INV.=11.6'
(A) 18" DIP INV.=11.6'

SMH 187
RIM ELEV.=20.9'
(186) 12" DIP INV.=16.0'
(186) 12" DIP INV.=13.1'
(A) 12" DIP INV.=12.7'
(334) 18" DIP INV.=12.3'

SMH 334
RIM ELEV.=20.6'
(187) 18" DIP INV.=12.0'
(335) 18" DIP INV.=11.9'

SMH 2807
RIM ELEV.=24.0'
(OUTSIDE OF SCOPE)

SMH 193
RIM ELEV.=21.8'
(2807) 8" PVC INV.=15.9'
(2824) 8" UNK INV.=15.1'
(A) 8" UNK INV.=15.0'

SMH 2824
RIM ELEV.=24.6'
(2825) 8" PVC INV.=18.8'
(193) 8" PVC INV.=18.7'

SMH 2825
RIM ELEV.=33.5'
(A) 8" PVC INV.=24.9'
(2824) 8" PVC INV.=25.5'

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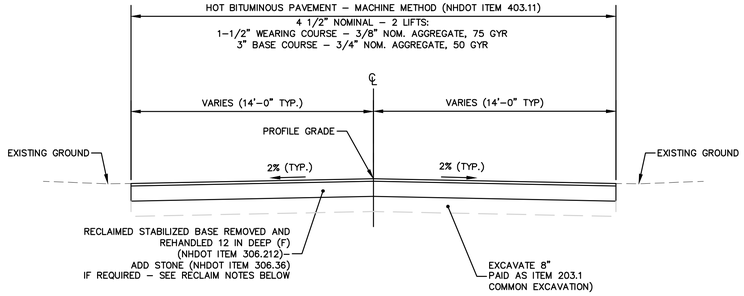
STATE OF NEW HAMPSHIRE – PHILIP A. CORBETT No. 12271 – LICENSED PROFESSIONAL ENGINEER

designed by: NJM
drawn by: CLM
approved by: PAC
date: July 2025
project no: 1331
checked by: PAC
scale:

City of Portsmouth
Department of Public Works
Elwyn Road
Drainage Improvements Project
General Notes
Legend

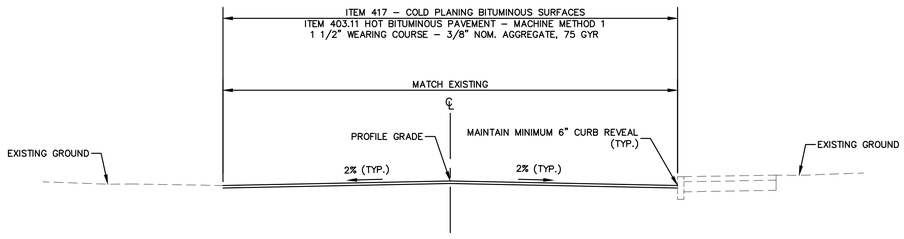
drawing no. N-2



ELWYN ROAD (BID ALTERNATE A)

Not to Scale

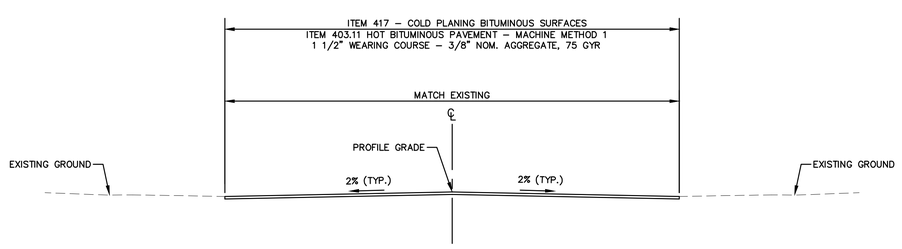
Sta 502+45 TO 524+00



ELWYN ROAD (BID ALTERNATE A)

Not to Scale

Sta 500+34 TO 502+45



GRANT AVE (BID ALTERNATE A)

Not to Scale

NOTES:
1. Asphalt emulsion for tack coat shall be applied at the rate of 0.07 gal/sy for milled surfaces and 0.05 gal/sy for smooth paved surfaces, subsidiary to paving.
2. Pavement joint adhesive required on longitudinal joints (all lifts), subsidiary to paving.
3. Bid Alternate A includes proposed pavement markings and symbols within the roadway stations.

RECLAIM NOTES (BID ALT A):
1. Reclaim sequencing:
   a. Reclaim Elwyn Road, within the limits shown in the plans, to a depth of 12" and remove reclaim material for additional subgrade excavation prior to returning the reclaim material to the roadway – Pay Item 306.212 Reclaimed Stabilized Base Removed and Rehandled 12 In Deep (F).
   b. Once reclaim material is removed, excavate 8" of subgrade material – Pay Item 203.1 Common Excavation (F). This excavation is the only excavation paid under Item 203.1; All other excavation for base bid work is incidental to the work. Additional reclaim material not needed for grading shall be the property of the Contractor. The existing roadbed shall be shaped and compacted prior to placing the reclaim material.
   c. The reclaimed material shall be tested by the Contractor to determine if additional 1.5"–2" stone is required to meet gradation specifications. Gradation testing shall be subsidiary. In the event additional stone is required, the contractor shall place stone over the reclaim material – Pay Item 306.36 Stone for Reclaimed Stabilized Base. Additional stone shall be blended with the reclaimed material using an approved reclaimer. The additional pass with the reclaimer to blend the material shall be subsidiary.
   d. All roadway and driveway sawcuts incidental to road work.
   e. Fine grading – Pay Item 214.

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PHILIP A. COMEAU No. 12271 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

designed by:	drawn by:	approved by:	scale:
NJM	CLM	PAC	
date:	project no:	checked by:	
July 2025	1331	PAC	

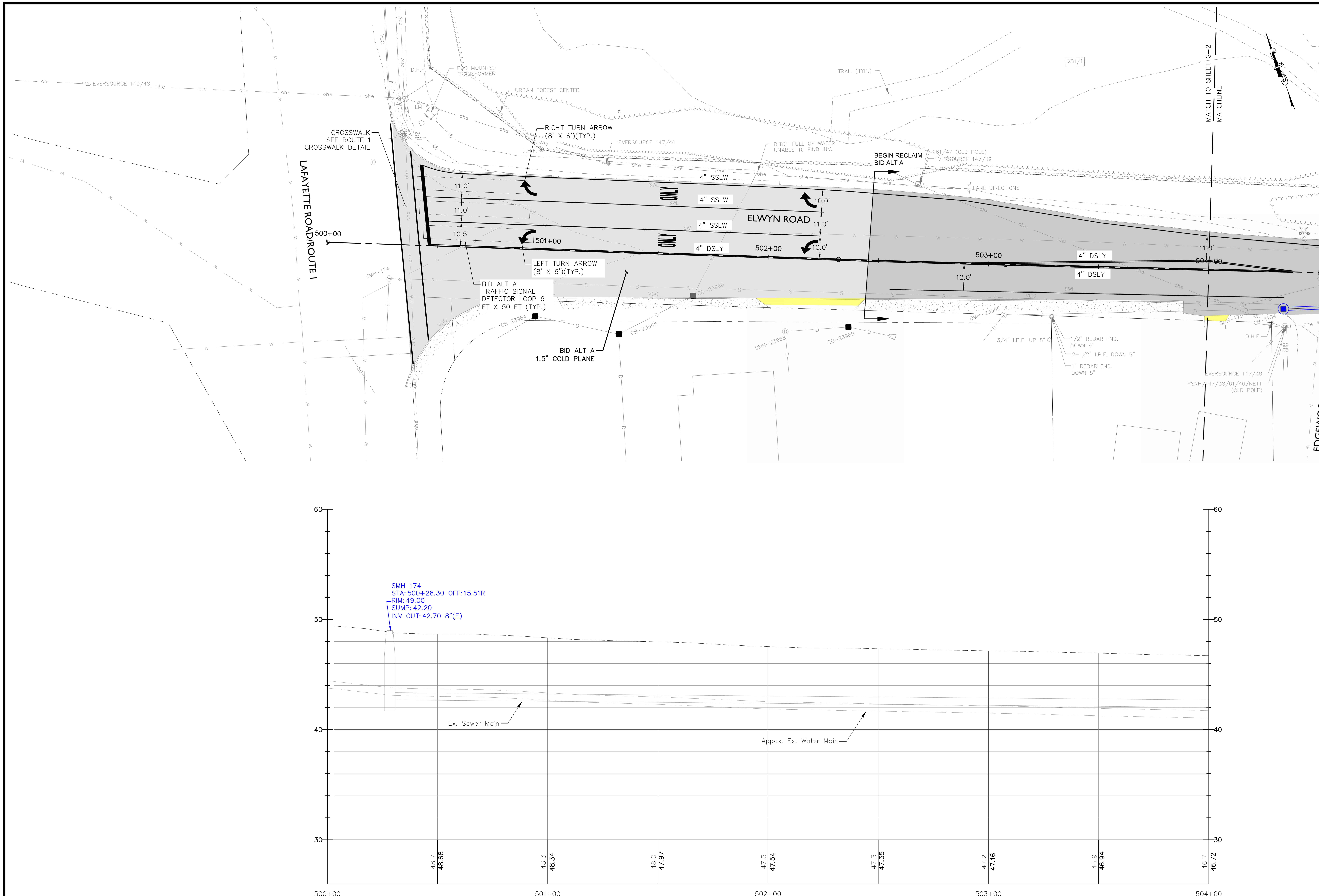
City of Portsmouth
Department of Public Works

Elwyn Road
Drainage Improvements Project

Typical Sections

drawing no.
TS-1

sheet: 4 of 15



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designed by: NJM
drawn by: CLM
approved by: PAC
date: July 2025
project no: 1331
checked by: PAC
scale: Scale: 1" = 20'H/4'V

City of Portsmouth
Department of Public Works
Elwyn Road
Drainage Improvements Project
Plan & Profile

drawing no. G-1

sheet: 5 of 15

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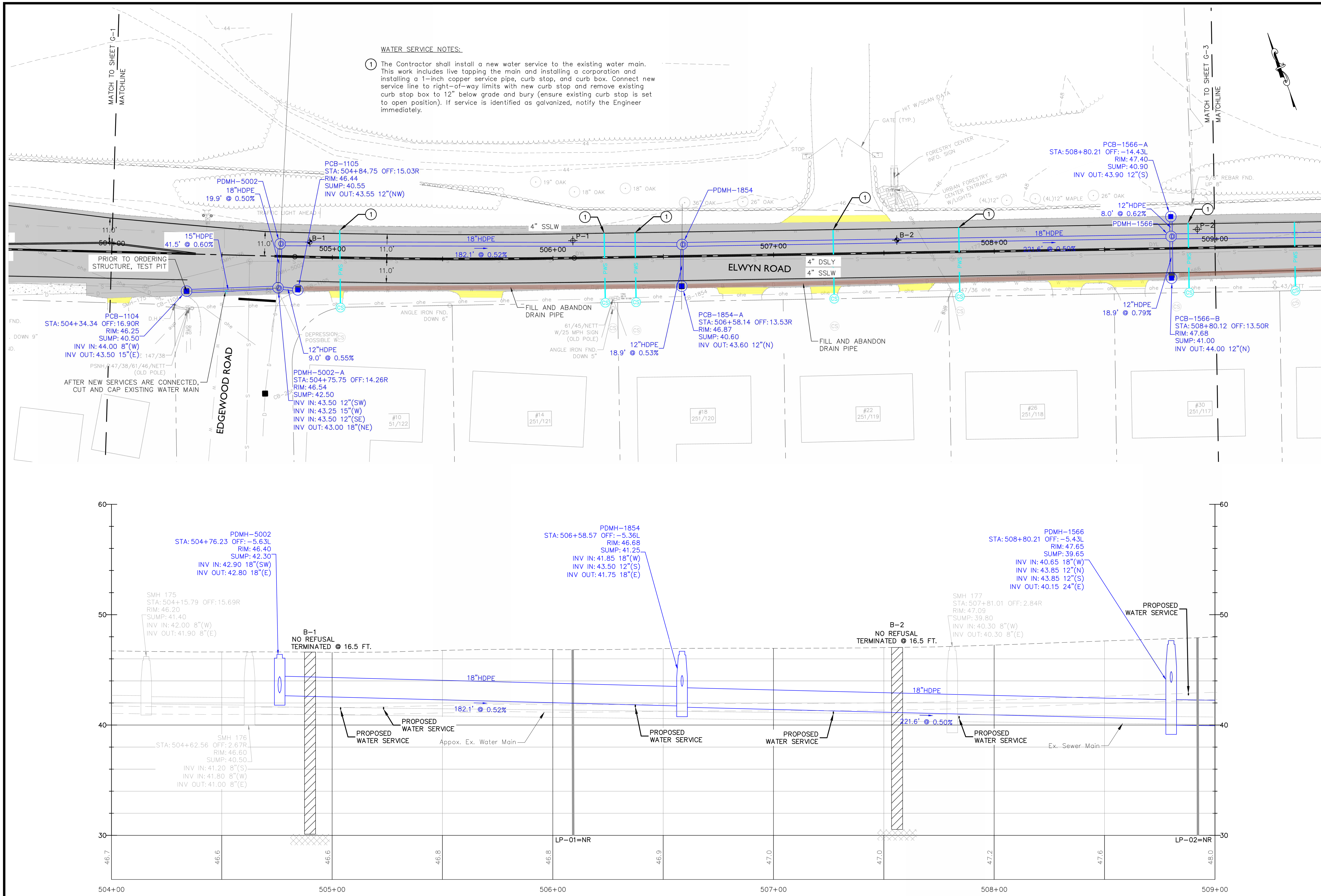
WATER SERVICE NOTES:
1 The Contractor shall install a new water service to the existing water main. This work includes live tapping the main and installing a corporation and installing a 1-inch copper service pipe, curb stop, and curb box. Connect new service line to right-of-way limits with new curb stop and remove existing curb stop box to 12" below grade and bury (ensure existing curb stop is set to open position). If service is identified as galvanized, notify the Engineer immediately.
MATCH TO SHEET G-1 MATCHLINE
MATCH TO SHEET G-3 MATCHLINE
ELWYN ROAD
EDGEWOOD ROAD
PCB-1105
STA: 504+84.75 OFF: 15.03R
RIM: 46.44
SUMP: 40.55
INV OUT: 43.55 12"(NW)
PDMH-5002
18"HDPE
19.9' @ 0.50%
15"HDPE
41.5' @ 0.60%
PRIOR TO ORDERING STRUCTURE, TEST PIT
PCB-1104
STA: 504+34.34 OFF: 16.90R
RIM: 46.25
SUMP: 40.50
INV IN: 44.00 8"(W)
INV OUT: 43.50 15"(E)
AFTER NEW SERVICES ARE CONNECTED, CUT AND CAP EXISTING WATER MAIN
12"HDPE
9.0' @ 0.55%
PDMH-5002-A
STA: 504+75.75 OFF: 14.26R
RIM: 46.54
SUMP: 42.50
INV IN: 43.50 12"(SW)
INV IN: 43.25 15"(W)
INV IN: 43.50 12"(SE)
INV OUT: 43.00 18"(NE)
18"HDPE
182.1' @ 0.52%
4" SSLW
4" DSLY
4" SSLW
B-1
B-2
P-1
P-2
PDMH-1854
FILL AND ABANDON DRAIN PIPE
12"HDPE
18.9' @ 0.53%
PCB-1854-A
STA: 506+58.14 OFF: 13.53R
RIM: 46.87
SUMP: 40.60
INV OUT: 43.60 12"(N)
FILL AND ABANDON DRAIN PIPE
18"HDPE
221.6' @ 0.50%
PCB-1566-A
STA: 508+80.21 OFF: -14.43L
RIM: 47.40
SUMP: 40.90
INV OUT: 43.90 12"(S)
12"HDPE
8.0' @ 0.62%
PDMH-1566
12"HDPE
18.9' @ 0.79%
PCB-1566-B
STA: 508+80.12 OFF: 13.50R
RIM: 47.68
SUMP: 41.00
INV OUT: 44.00 12"(N)
504+00
505+00
506+00
507+00
508+00
509+00
PDMH-5002
STA: 504+76.23 OFF: -5.63L
RIM: 46.40
SUMP: 42.30
INV IN: 42.90 18"(SW)
INV OUT: 42.80 18"(E)
SMH 175
STA: 504+15.79 OFF: 15.69R
RIM: 46.20
SUMP: 41.40
INV IN: 42.00 8"(W)
INV OUT: 41.90 8"(E)
SMH 176
STA: 504+62.56 OFF: 2.67R
RIM: 46.60
SUMP: 40.50
INV IN: 41.20 8"(S)
INV IN: 41.80 8"(W)
INV OUT: 41.00 8"(E)
B-1
NO REFUSAL
TERMINATED @ 16.5 FT.
PDMH-1854
STA: 506+58.57 OFF: -5.36L
RIM: 46.68
SUMP: 41.25
INV IN: 41.85 18"(W)
INV IN: 43.50 12"(S)
INV OUT: 41.75 18"(E)
B-2
NO REFUSAL
TERMINATED @ 16.5 FT.
SMH 177
STA: 507+81.01 OFF: 2.84R
RIM: 47.09
SUMP: 39.80
INV IN: 40.30 8"(W)
INV OUT: 40.30 8"(E)
PDMH-1566
STA: 508+80.21 OFF: -5.43L
RIM: 47.65
SUMP: 39.65
INV IN: 40.65 18"(W)
INV IN: 43.85 12"(N)
INV IN: 43.85 12"(S)
INV OUT: 40.15 24"(E)
PROPOSED WATER SERVICE
18"HDPE
182.1' @ 0.52%
221.6' @ 0.50%
Appox. Ex. Water Main
Ex. Sewer Main
LP-01=NR
LP-02=NR
60
50
40
30
46.7
46.6
46.6
46.8
46.8
46.9
47.0
47.0
47.2
47.6
48.0

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designed by: NJM
drawn by: CLM
approved by: PAC
date: July 2025
project no: 1331
checked by: PAC
scale: Scale: 1" = 20'H/4'V

City of Portsmouth
Department of Public Works
Elwyn Road
Drainage Improvements Project
Plan & Profile

drawing no. G-2
sheet: 6 of 15

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WATER SERVICE NOTES:

1. The Contractor shall install a new water service to the existing or new water main. This work includes live tapping the main and installing a corporation and installing a 1-inch copper service pipe, curb stop, and curb box. Connect new service line to right-of-way limits with new curb stop and remove existing curb stop box to 12" below grade and bury (ensure existing curb stop is set to open position). If service is identified cs galvanized, notify the Engineer immediately.

PCB-1566-A
STA: 508+80.21 OFF: -14.43L
RIM: 47.40
SUMP: 40.90
INV OUT: 43.90 12"(S)

12"HDPE
8.0' @ 0.62%

PDMH-1566

18"HDPE
221.6' @ 0.50%

12"HDPE
18.9' @ 0.79%

PCB-1566-B
STA: 508+80.12 OFF: 13.50R
RIM: 47.68
SUMP: 41.00
INV OUT: 44.00 12"(N)

508+00
509+00
510+00
511+00
512+00
513+00
514+00

B-2
B-3
P-2
P-3
B-4
LP-4

24"HDPE
242.7' @ 0.31%

24"HDPE
152.2' @ 0.33%

24"HDPE
157.9' @ 0.32%

PROPOSED 8" DUCTILE IRON WATER MAIN

PROPOSED 8" GATE VALVE SEE DETAIL

CONNECT TO PROPOSED 8" DUCTILE IRON WATER MAIN

PROPOSED 8" GATE VALVE SEE DETAIL

CUT AND CAP EXISTING 2" COPPER SERVICE PIPE

FILL AND ABANDON DRAIN PIPE

PDMH-1856
STA: 511+22.90 OFF: -4.09L
RIM: 48.60
SUMP: 38.80
INV IN: 39.40 24"(W)
INV IN: 44.50 12"(S)
INV OUT: 39.30 24"(E)

PCB-1855
STA: 510+93.41 OFF: 27.19R
RIM: 48.90
SUMP: 42.00
INV OUT: 45.00 12"(E)

PROPOSED 6" DUCTILE IRON WATER MAIN

MATCH TO SHEET G-6
MATCHLINE

PROPOSED FIRE HYDRANT SEE DETAIL

PROPOSED 6" GATE VALVE SEE DETAIL

REMOVE EXISTING DRAIN MANHOLE (ITEM 202.5)

12"HDPE
22.9' @ 0.87%

12"HDPE
29.5' @ 0.68%

PCB-1856-A
STA: 511+21.71 OFF: 18.79R
RIM: 48.71

GRANT AVE

ELWYN ROAD

MATCH TO SHEET G-2
MATCHLINE

MATCH TO SHEET G-4
MATCHLINE

REMOVE AND RESET MASONRY WALL TO PRE-CONSTRUCTION CONDITION (PAY ITEM 570.9)

LIMIT OF WALL RELOCATION

SELECTIVE TREE CLEARING & GRUBBING
TREES TO BE REMOVED SHALL BE FLAGGED AND REVIEWED AND APPROVED BY LANDOWNER AND CITY PRIOR TO CLEARING

CLEAR AND GRUB UNDERBRUSH AND TREES LESS THAN 4" DBH. TRIM BRANCHES TO PROVIDE A 10' CLEAR HEIGHT (PAY ITEM 201.1)

CLEAR AND GRUB (PAY ITEM 201.1)

REMOVE TREES
TREES TO BE REMOVED SHALL BE FLAGGED AND REVIEWED AND APPROVED BY LANDOWNER AND CITY PRIOR TO CLEARING

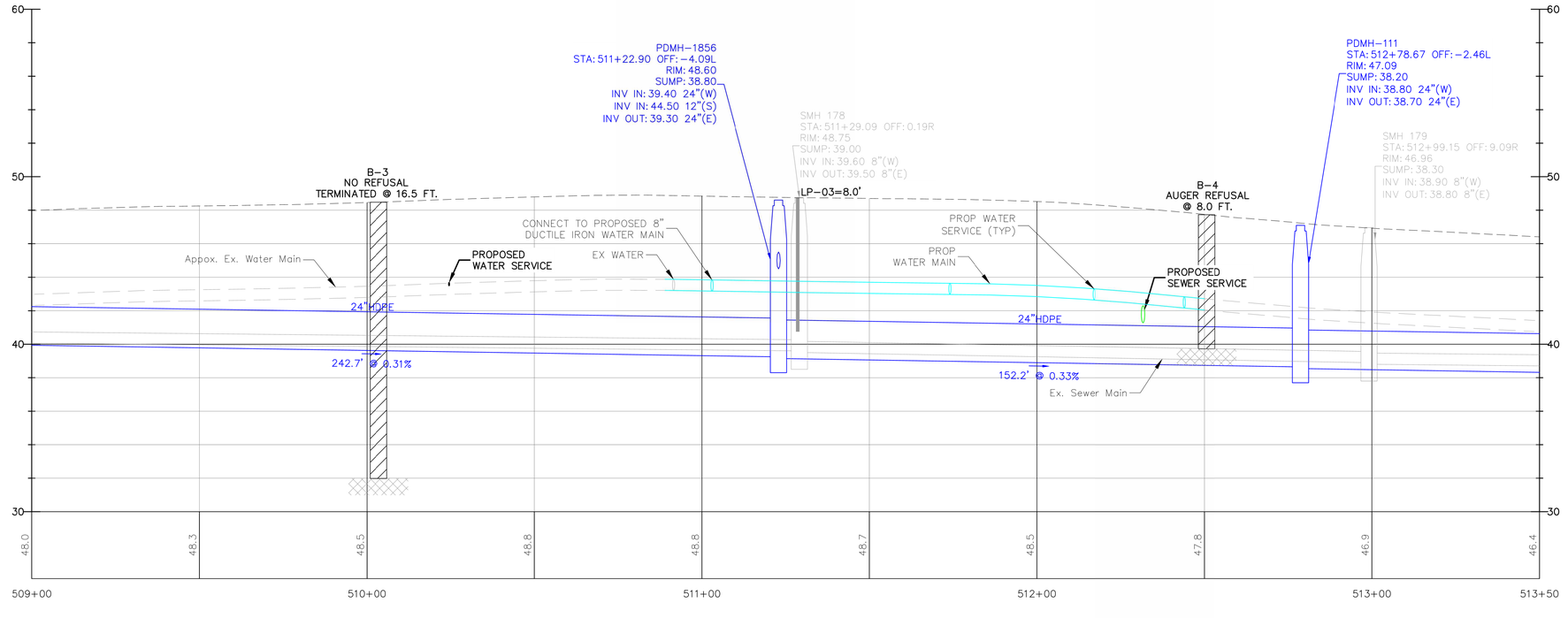
CONNECT TO EXISTING 8" DUCTILE IRON WATER MAIN

PDMH-111

PROPOSED 6" PVC SDR 35 SEWER SERVICE STUB OUT AND CAP

PROPOSED 8" GATE VALVE SEE DETAIL

STONE & MORTAR RET. WALL



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PHILIP A. COMER No. 12271 STATE OF NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER

designed by: NJM	drawn by: CLM	approved by: PAC	scale: 40' 20' 0 Scale: 1" = 20'H/4'V
date: July 2025	project no: 1331	checked by: PAC	

City of Portsmouth
Department of Public Works

Elwyn Road
Drainage Improvements Project

Plan & Profile

drawing no.
G-3

sheet: 7 of 15

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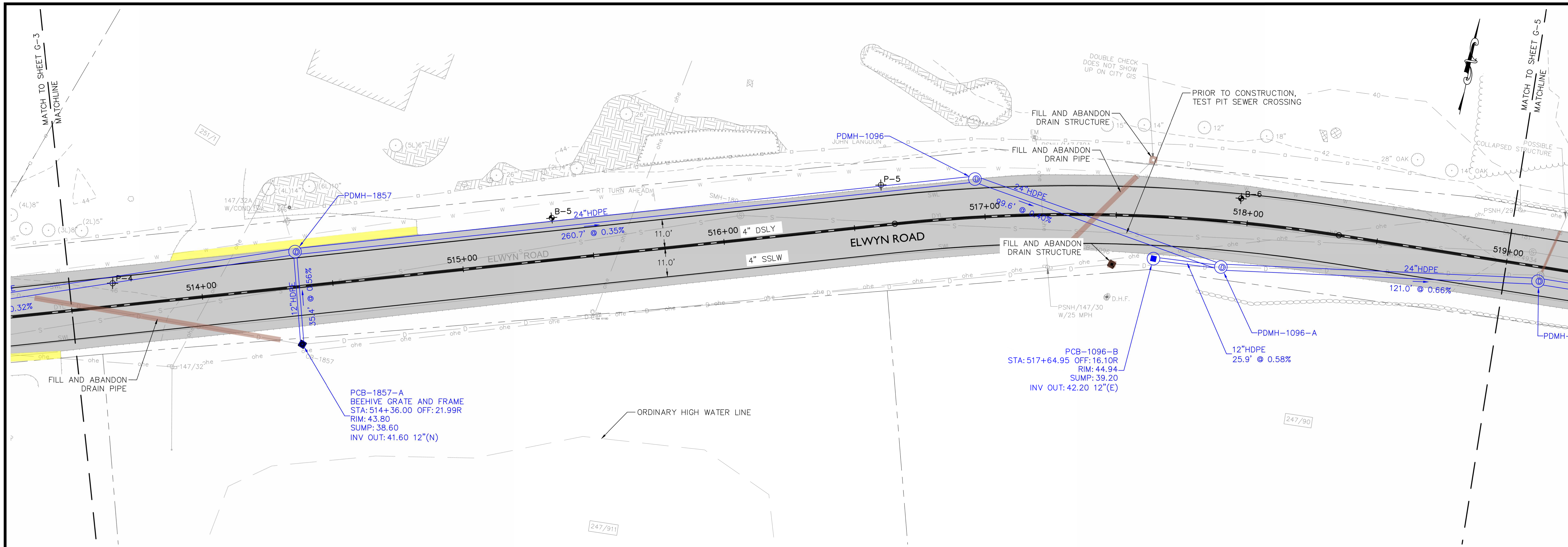

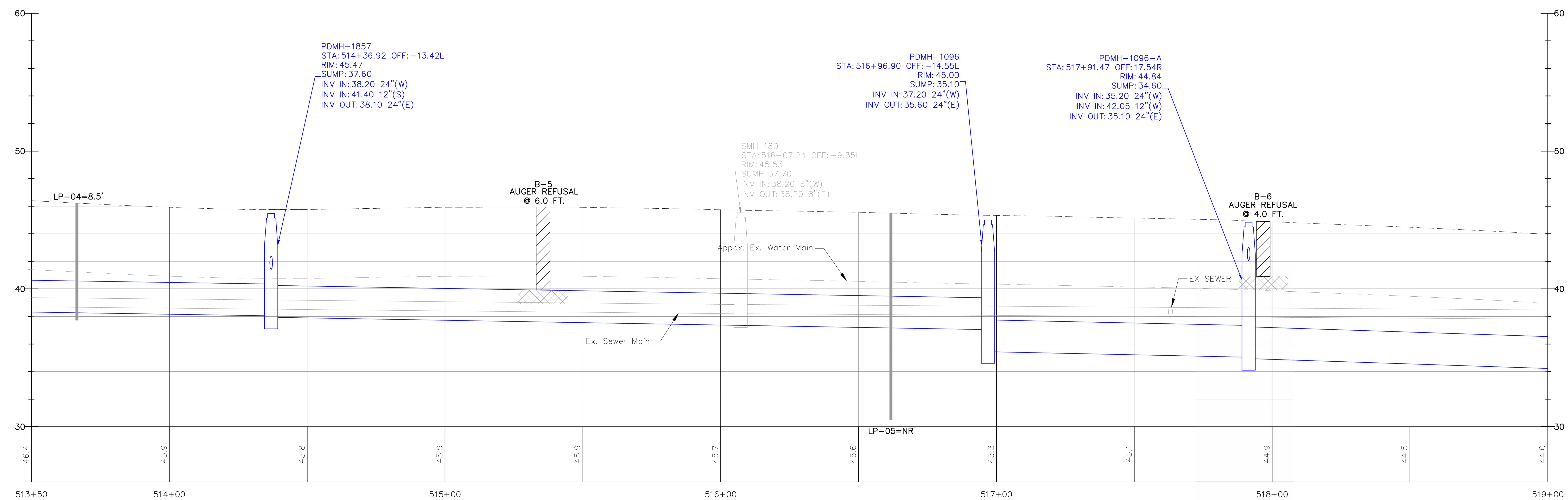

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scale: Scale: 1" = 20'H/4'V

City of Portsmouth
Department of Public Works
Elwyn Road
Drainage Improvements Project
Plan & Profile

drawing no. G-4

sheet: 8 of 15

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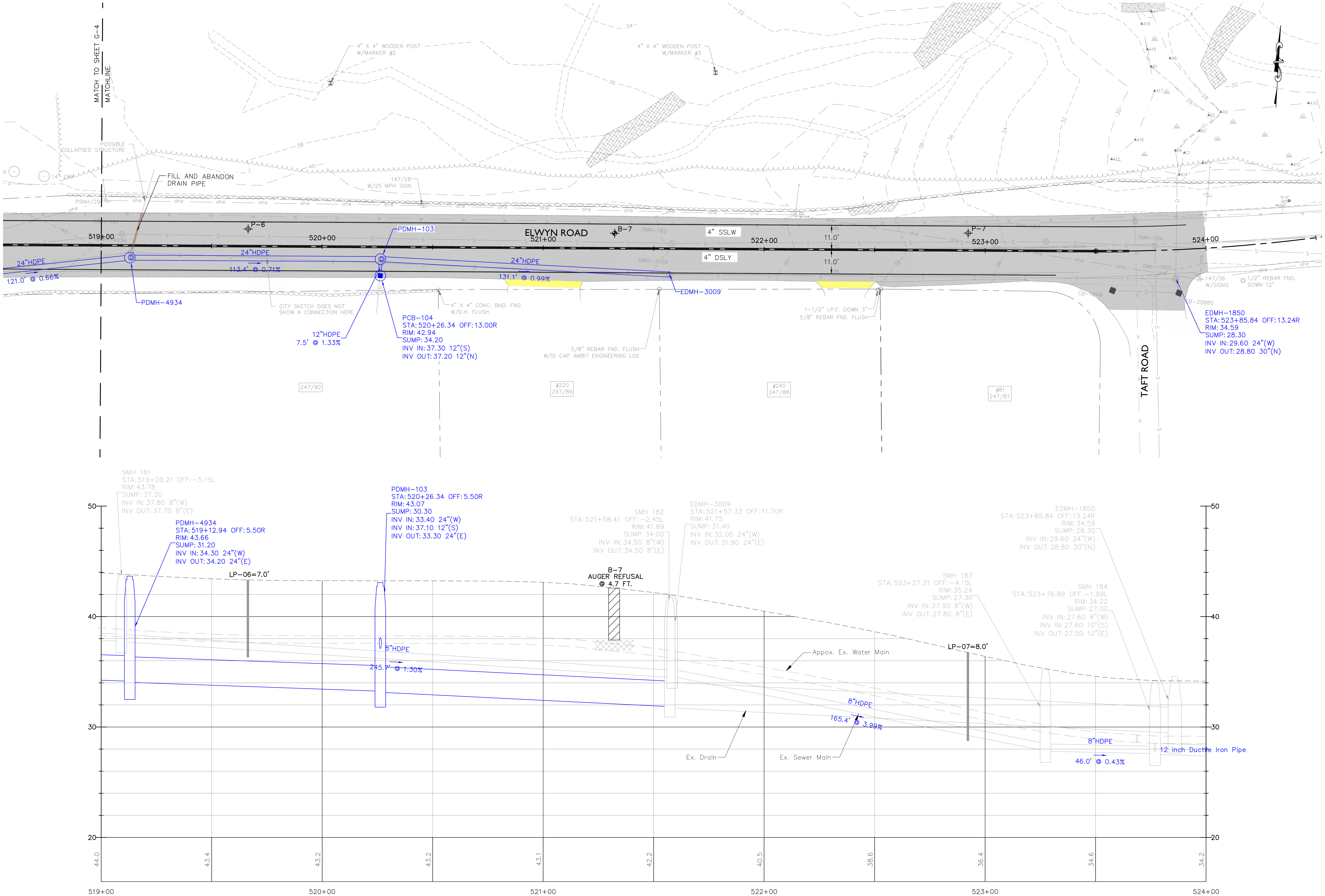

MATCH TO SHEET G-4
MATCHLINE
ELWYN ROAD
TAFT ROAD
FILL AND ABANDON DRAIN PIPE
POSSIBLE COLLAPSED STRUCTURE
4" x 4" WOODEN POST W/MARKER #2
4" x 4" WOODEN POST W/MARKER #3
147/28 W/25 MPH SIGN
4" SSLW
4" DSLY
11.0'
519+00
520+00
521+00
522+00
523+00
524+00
P-6
B-7
P-7
24"HDPE
121.0' @ 0.66%
113.4' @ 0.71%
131.1' @ 0.99%
PDMH-4934
PDMH-103
EDMH-3009
CITY SKETCH DOES NOT SHOW A CONNECTION HERE
4" x 4" CONC. BND. FND. W/D.H. FLUSH
1-1/2" I.P.F. DOWN 3"
5/8" REBAR FND. FLUSH
5/8" REBAR FND. FLUSH W/ID CAP AMBIT ENGINEERING LOS
12"HDPE
7.5' @ 1.33%
PCB-104
STA: 520+26.34 OFF: 13.00R
RIM: 42.94
SUMP: 34.20
INV IN: 37.30 12"(S)
INV OUT: 37.20 12"(N)
EDMH-1850
STA: 523+85.84 OFF: 13.24R
RIM: 34.59
SUMP: 28.30
INV IN: 29.60 24"(W)
INV OUT: 28.80 30"(N)
147/26 W/SIGNS
1/2" REBAR FND. DOWN 12"
CB-1849
CB-25880
247/90
#220 247/89
#240 247/88
#81 247/87
SMH 181
STA: 519+09.21 OFF: -5.15L
RIM: 43.78
SUMP: 37.20
INV IN: 37.80 8"(W)
INV OUT: 37.70 8"(E)
PDMH-4934
STA: 519+12.94 OFF: 5.50R
RIM: 43.66
SUMP: 31.20
INV IN: 34.30 24"(W)
INV OUT: 34.20 24"(E)
PDMH-103
STA: 520+26.34 OFF: 5.50R
RIM: 43.07
SUMP: 30.30
INV IN: 33.40 24"(W)
INV IN: 37.10 12"(S)
INV OUT: 33.30 24"(E)
SMH 182
STA: 521+58.41 OFF: -2.45L
RIM: 41.89
SUMP: 34.00
INV IN: 34.50 8"(W)
INV OUT: 34.50 8"(E)
EDMH-3009
STA: 521+57.33 OFF: 11.70R
RIM: 41.75
SUMP: 31.40
INV IN: 32.00 24"(W)
INV OUT: 31.90 24"(E)
EDMH-1850
STA: 523+85.84 OFF: 13.24R
RIM: 34.59
SUMP: 28.30
INV IN: 29.60 24"(W)
INV OUT: 28.80 30"(N)
SMH 183
STA: 523+27.31 OFF: -4.15L
RIM: 35.24
SUMP: 27.30
INV IN: 27.90 8"(W)
INV OUT: 27.80 8"(E)
SMH 184
STA: 523+76.89 OFF: -1.99L
RIM: 34.22
SUMP: 27.00
INV IN: 27.60 8"(W)
INV IN: 27.60 10"(S)
INV OUT: 27.50 12"(E)
LP-06=7.0'
B-7
AUGER REFUSAL
@ 4.7 FT.
LP-07=8.0'
8"HDPE
245.9' @ 1.30%
Appox. Ex. Water Main
8"HDPE
165.4' @ 3.99%
8"HDPE
46.0' @ 0.43%
12 inch Ductile Iron Pipe
Ex. Drain
Ex. Sewer Main
50
40
30
20
44.0
43.4
43.2
43.2
43.1
42.2
40.5
38.6
36.4
34.6
34.2

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STATE OF NEW HAMPSHIRE — PHILIP A. CORBETT — No. 12271 — LICENSED PROFESSIONAL ENGINEER

designed by: NJM
drawn by: CLM
approved by: PAC
date: July 2025
project no: 1331
checked by: PAC
scale: Scale: 1" = 20'H/4'V

City of Portsmouth
Department of Public Works
Elwyn Road
Drainage Improvements Project
Plan & Profile

drawing no. G-5

sheet: 9 of 15

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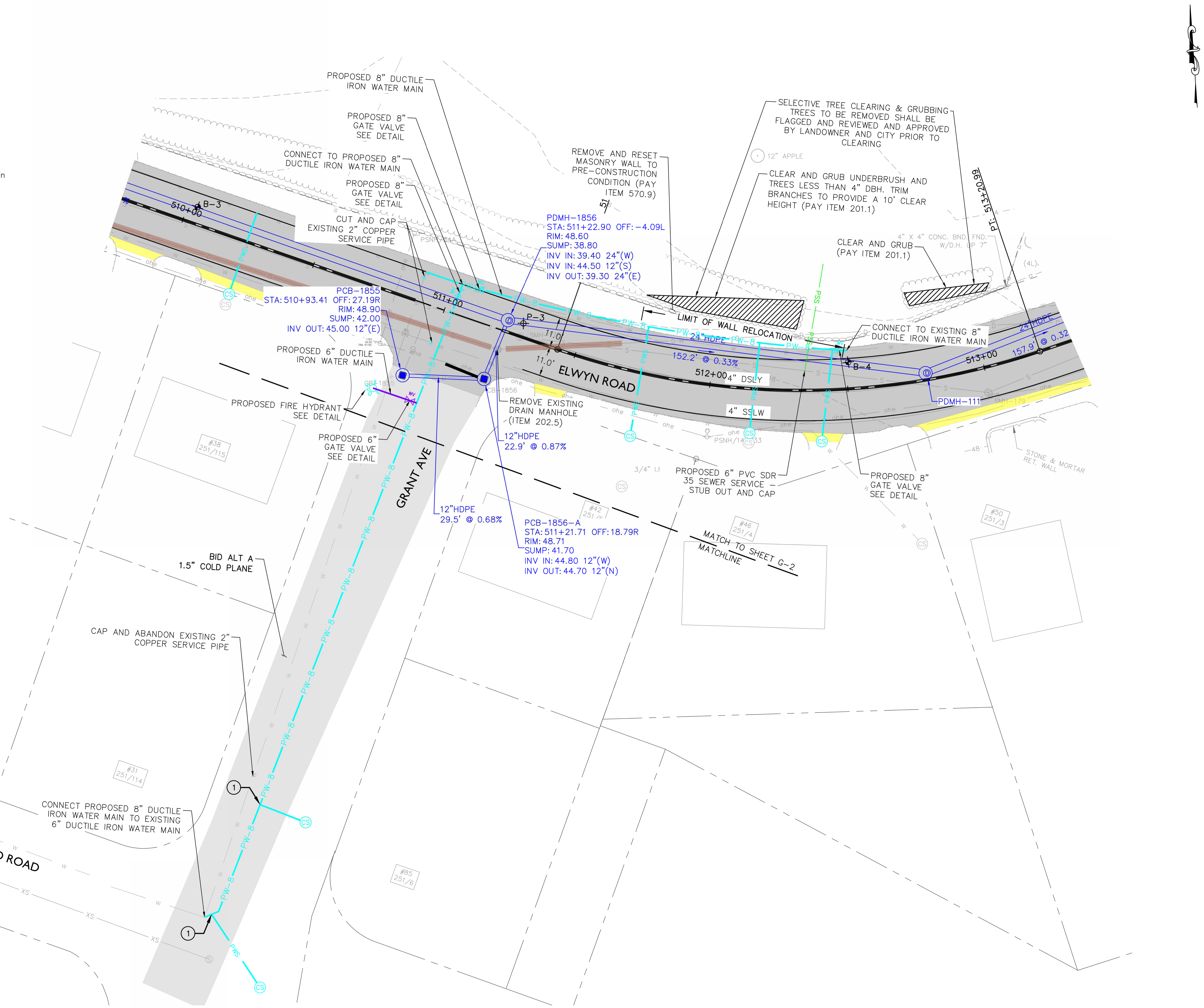
WATER SERVICE NOTES:

(1) The Contractor shall install a new water service to the new water main. This work includes live tapping the main and installing a corporation and installing a 1-inch copper service pipe, curb stop, and curb box. Connect new service line to right-of-way limits with new curb stop and remove existing curb stop box to 12" below grade and bury (ensure existing curb stop is set to open position). If service is identified as galvanized, notify the Engineer immediately.

UTILITY SEQUENCING NOTES:

1. The Contractor must maintain near-continuous water, sewer, and stormwater service throughout construction. If water service is interrupted for more than four hours, the Contractor shall, at their own expense, provide temporary water service until permanent service is restored.
2. Temporary water bypass systems and/or pumping may be required to maintain existing utility flows during construction.
3. New water mains must successfully pass both pressure and bacteriological testing before any potential cross-connection with the existing water system.



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designed by: NJM
drawn by: CLM
approved by: PAC
date: July 2025
project no: 1331
checked by: PAC
scale: Scale: 1" = 20'

City of Portsmouth
Department of Public Works

Elwyn Road
Drainage Improvements Project
Utility Plan

drawing no. G-6

sheet: 10 of 15

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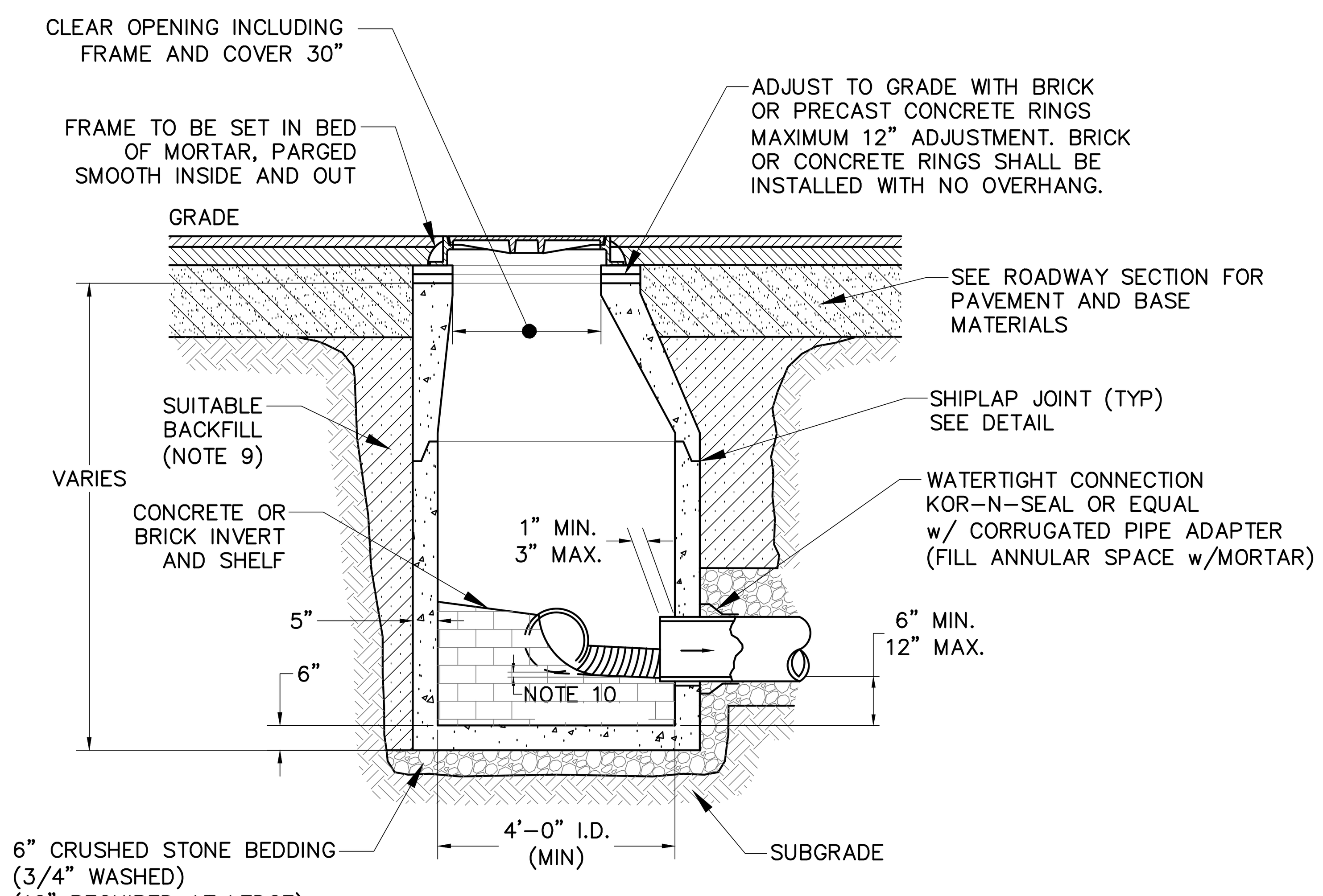
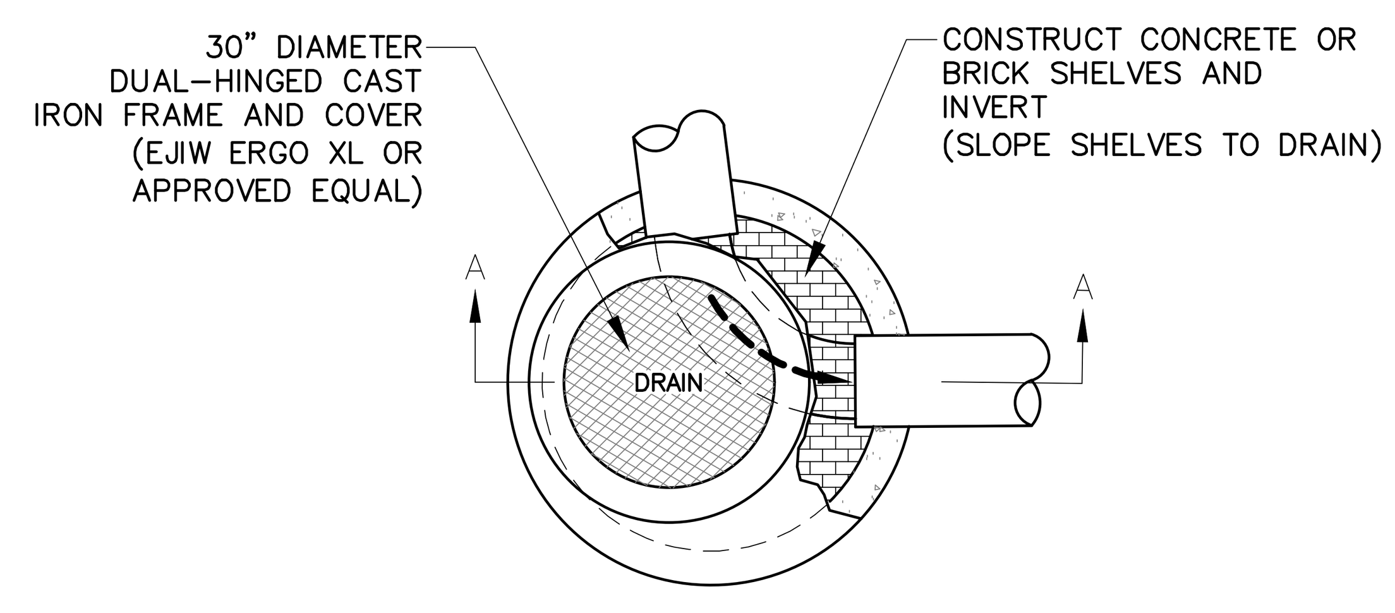
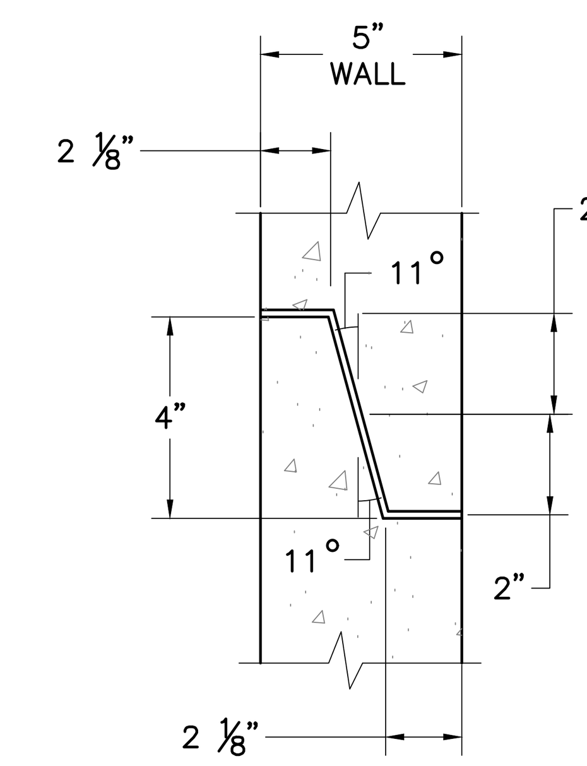


SECTION A–A



PLAN VIEW



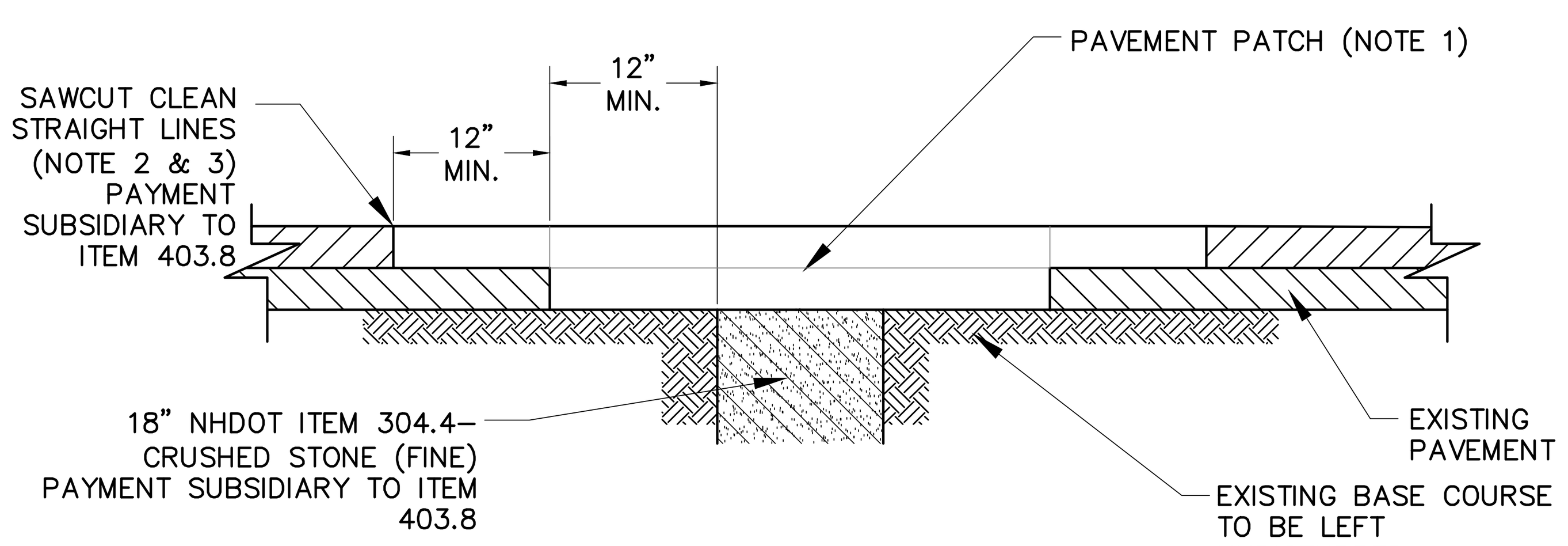
SHIPLAP DETAIL

NOTES:

1. SUMP BASE, BARRELS AND TOP (CONE OR FLAT) SECTIONS SHALL BE PRECAST REINFORCED CONCRETE (4,000psi AT 28-DAY).
2. ECCENTRIC CONE TOPS ARE REQUIRED. FLAT TOPS REQUIRE ENGINEER APPROVAL.
3. STRUCTURE SHALL BE DESIGNED FOR HS-20 LOAD RATING.
4. IN THE EVENT THAT SHIPLAP JOINTS OCCUR BELOW INVERT OUT PIPE, THE HORIZONTAL JOINT SHALL BE SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF ELASTOMERIC (KENT SEAL OR EQUAL) OR MASTIC SEALANT.
5. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
6. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
7. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
8. LADDER RUNGS SHALL BE OMITTED.
9. SUITABLE MATERIAL FOR BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT OR CLAY, EXCAVATED LEDGE MATERIAL, AND ANY OTHER ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER. BACKFILL MATERIAL PLACED AROUND THE STRUCTURE SHALL BE COMPACTED IN 6" LIFTS WITH A JUMPING JACK STYLE COMPACTOR.
10. THERE SHALL BE A 0.10' (MIN.) ELEVATION DIFFERENCE BETWEEN THE INVERT IN AND INVERT OUT.

Drain Manhole

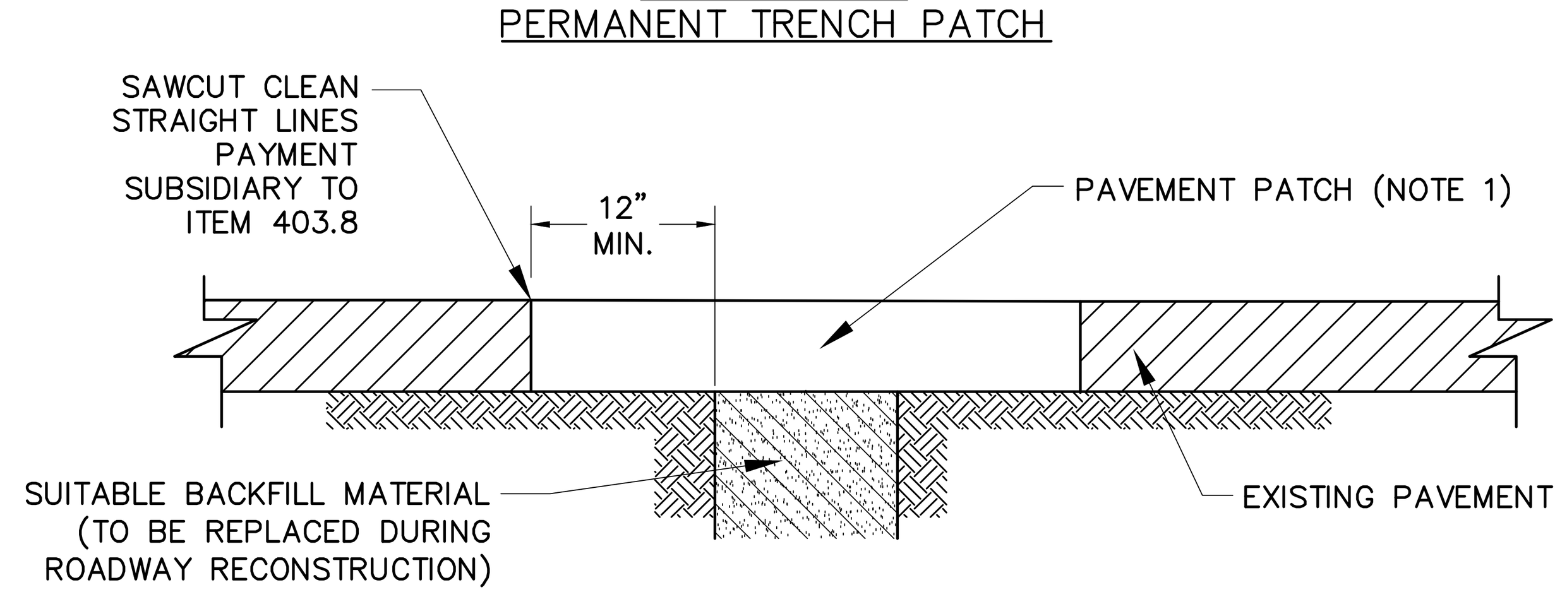
Not to Scale



SECTION VIEW
PERMANENT TRENCH PATCH

NOTES (PERMANENT):

1. PERMANENT PAVEMENT PATCH SHALL BE 3/4" BINDER FOR THE FULL THICKNESS. THICKNESS SHALL BE 4", PLACED AND COMPACTED IN TWO LIFTS. THICKNESS MUST BE APPROVED BY THE ENGINEER.
2. PERMANENT PAVEMENT PATCH SHALL BE MILLED 1.5" AFTER SUFFICIENT TIME FOR ANY SETTLEMENT. MILL AREA SHALL EXTEND 12" BEYOND THE BINDER EDGE. **A SECOND MOBILIZATION IS REQUIRED AFTER AT LEAST ONE WINTER SEASON TO COMPLETE THIS WORK.**
3. PERMANENT PAVEMENT PATCH REQUIRES RUBBER JOINT SEALANT ON ALL JOINTS AFTER WEARING COURSE HAS BEEN PLACED (SUBSIDIARY TO THE TRENCH PATCH PAY ITEM).
4. EXTENT OF PAVING MAY EXTEND BEYOND DIMENSIONS SHOWN IN THE DETAIL AS DIRECTED BY THE ENGINEER.
5. SAWCUTTING PAVEMENT IS SUBSIDIARY TO THE TRENCH PATCH PAY ITEM.



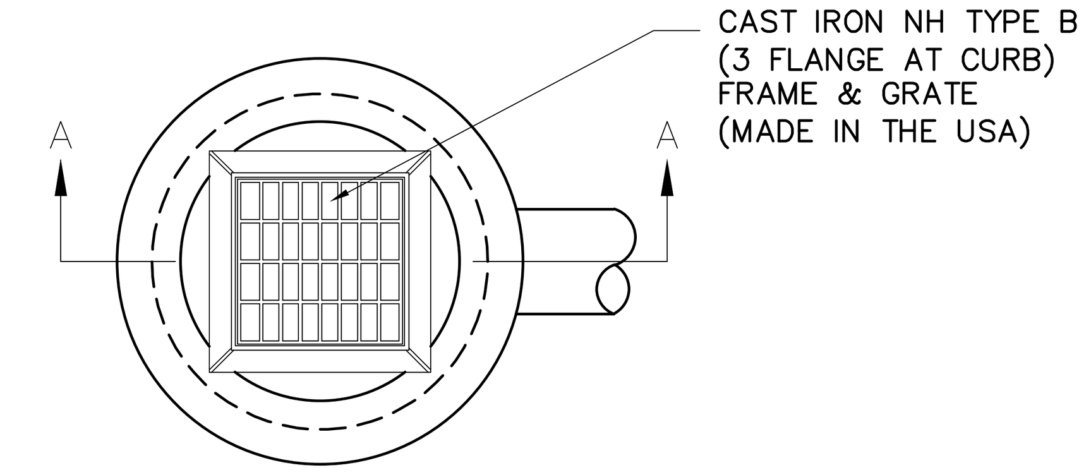
SECTION VIEW
TEMPORARY TRENCH PATCH

NOTES (TEMPORARY):

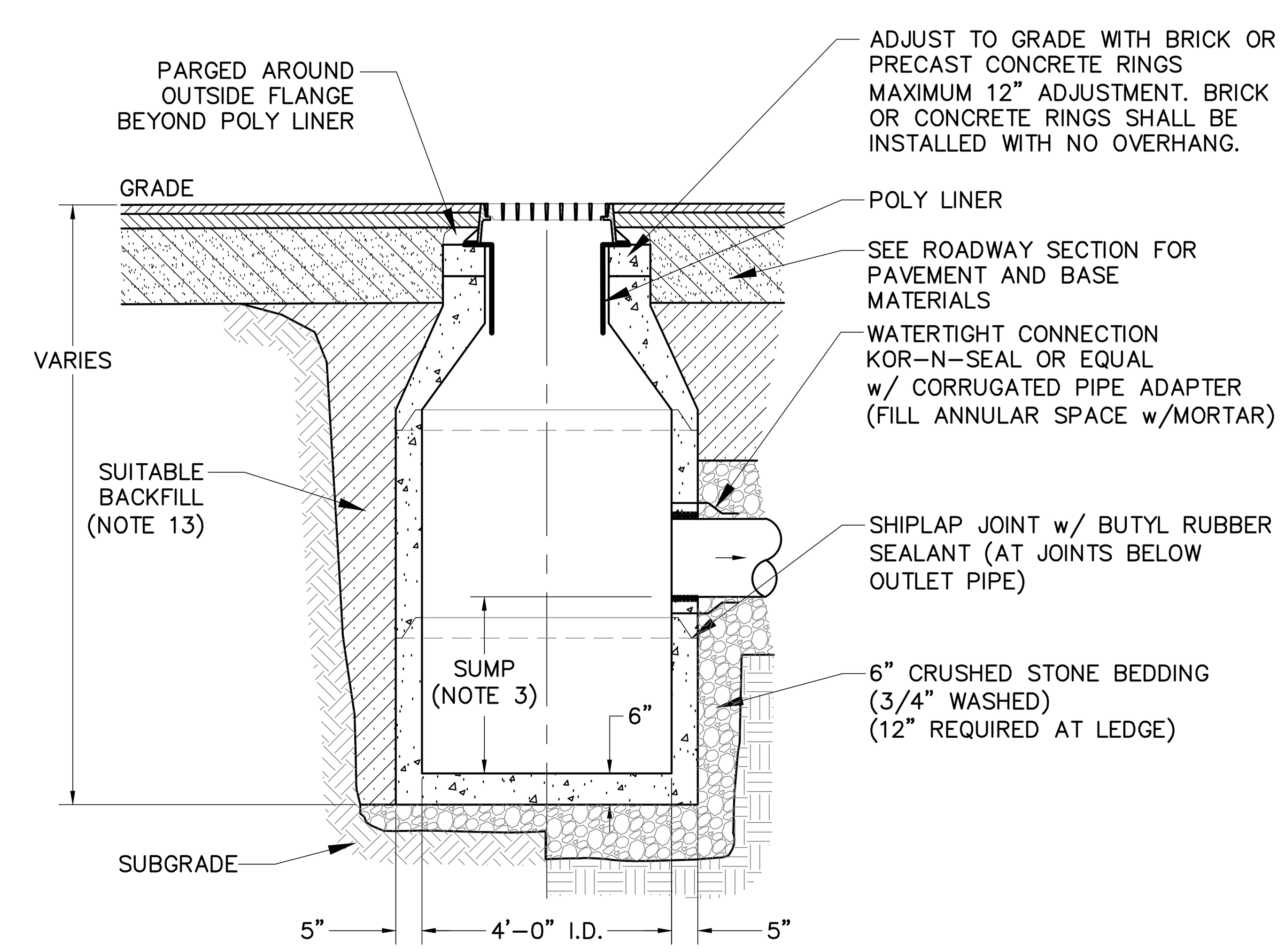
1. TEMPORARY PAVEMENT PATCH SHALL BE 3/4" BINDER OR 1/2" WEARING (2" THK MIN.).
2. TEMPORARY PAVEMENT PATCHES SHALL BE MAINTAINED REGULARLY. CONTRACTOR SHALL REPLACE TEMPORARY PAVEMENT PATCHES AT THE DISCRETION OF THE ENGINEER.
3. SAWCUTTING PAVEMENT IS SUBSIDIARY TO THE TRENCH PATCH PAY ITEM.

Utility Trench Patch

Not to Scale



PLAN VIEW



SECTION A–A

NOTES:

1. SUMP BASE, BARRELS AND TOP (CONE OR FLAT) SECTIONS SHALL BE PRECAST REINFORCED CONCRETE (4,000psi AT 28-DAY).
2. ECCENTRIC CONE TOPS ARE REQUIRED. FLAT TOPS REQUIRE ENGINEER APPROVAL.
3. SUMP SHALL BE 4' (MIN) OR AS APPROVED BY THE ENGINEER.
4. STRUCTURE SHALL BE DESIGNED FOR HS-20 LOAD RATING.
5. PIPES IN STRUCTURE SHALL BE WITHIN THE SUMP BASE PORTION OF THE CATCHBASIN.
6. IN THE EVENT THAT SHIPLAP JOINTS OCCUR BELOW INVERT OUT PIPE, THE HORIZONTAL JOINT SHALL BE SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF ELASTOMERIC (KENT SEAL OR EQUAL) OR MASTIC SEALANT.
7. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
8. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
9. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
10. POLY LINER TOP SHALL BE CUT TO EXTEND A MAXIMUM OF 1" BEYOND THE CAST IRON FRAME FLANGE.
11. POLY LINER SHALL BE SET IN BED OF MORTAR. CAST IRON FRAME SHALL BE SET ON POLY LINER WITH TWO COMPLETE BEADS OF SILICONE CAULKING.
12. FRAME SHALL BE PARGED ON THE OUTSIDE FLANGE, BEYOND THE POLY LINER, TO THE CONCRETE STRUCTURE.
13. SUITABLE MATERIAL FOR BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT OR CLAY, EXCAVATED LEDGE MATERIAL, AND ANY OTHER ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER. BACKFILL MATERIAL PLACED AROUND THE STRUCTURE SHALL BE COMPACTED IN 6" LIFTS WITH A JUMPING JACK STYLE COMPACTOR.

Catch Basin

Not to Scale

no.	revision	date	by
0	Issued for Bid	6/20/2025	PAC

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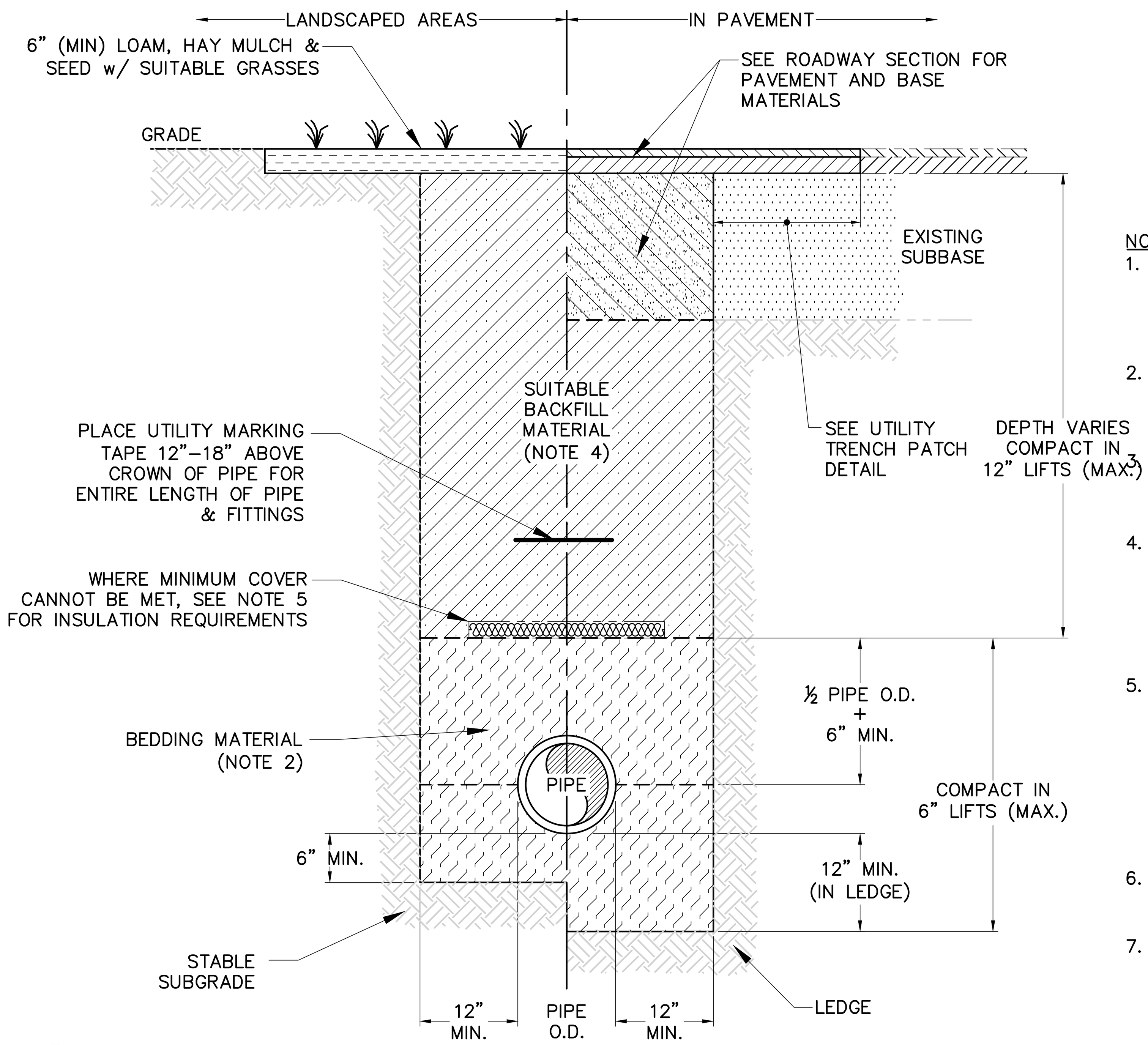
designed by: NJM
drawn by: CLM
approved by: PAC
date: July 2025
project no: 1331
checked by: PAC
scale:

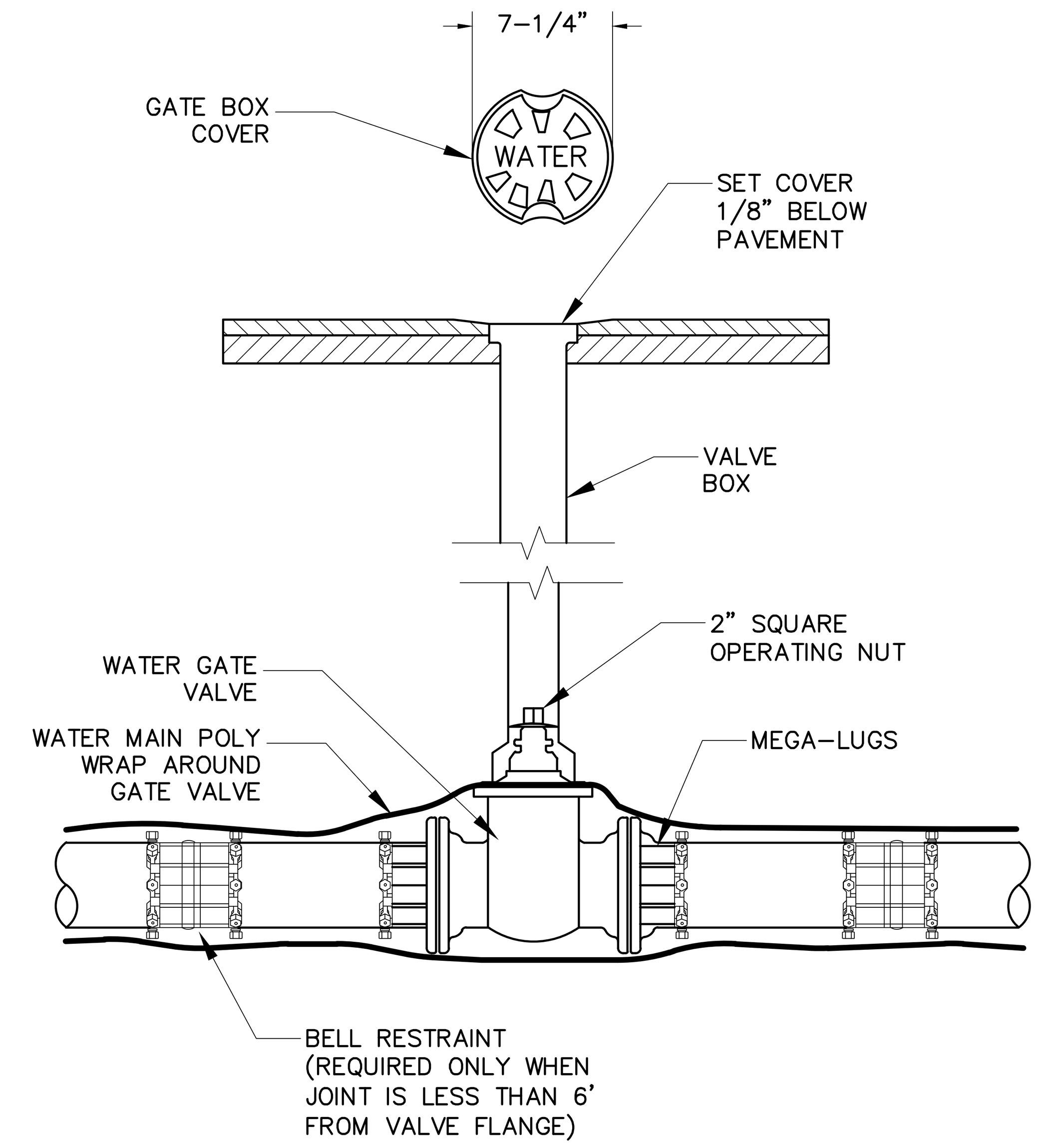
City of Portsmouth
Department of Public Works
Elwyn Road
Drainage Improvements Project
Stormwater Details

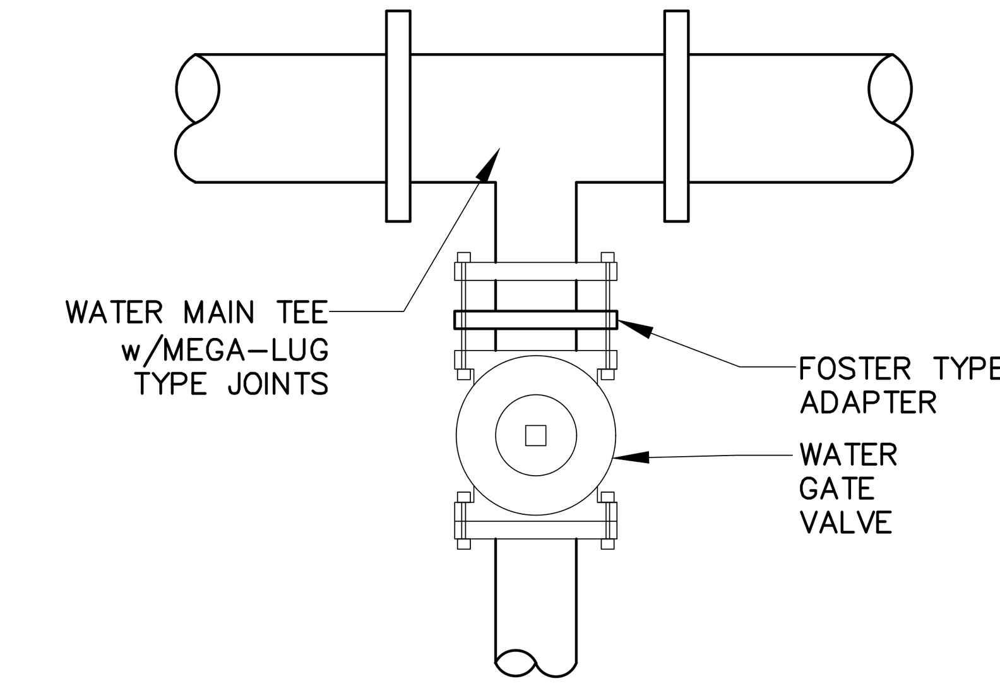
drawing no.
D-1



NOTES:
1. PIPE AND FITTING MATERIALS (UNLESS OTHERWISE INDICATED ON THE PLANS):
   WATER – CLASS 52 DUCTILE IRON
   SEWER – PVC SDR35
   DRAIN – HIGH DENSITY POLYETHYLENE (HDPE)
2. BEDDING MATERIAL (FULL WIDTH OF TRENCH):
   WATER – SAND (NHDOT 304.1)
   SEWER – 3/4" WASHED CRUSHED STONE
   DRAIN – 3/4" WASHED CRUSHED STONE
3. SAND SHALL NOT BE DIRECTLY PLACED ON CRUSHED STONE. IN THE EVENT FINELY GRADED BACKFILL OR SAND IS USED ABOVE STONE, GEOTEXTILE FABRIC SHALL BE PLACED TO SEPARATE.
4. SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT OR CLAY, EXCAVATED LEDGE MATERIAL, AND ANY OTHER ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.
5. DEPTH OF COVER SHALL BE:
   WATER – 5' MIN. & 7' MAX. (<5' REQ. RIGID INS.)
   SEWER – AS INDICATED ON PLANS (<6' REQ. RIGID INS.)
   DRAIN – AS INDICATED ON PLANS
   2" RIGID FOAM INSULATION SHALL BE PLACED ON TOP OF BEDDING MATERIAL. BEDDING MATERIAL SHALL BE MADE SMOOTH TO ALLOW FOAM BOARD TO SIT WITHOUT VOIDS BENEATH. FOAM SHALL BE INSTALLED THE FULL WIDTH OF THE TRENCH, NOT TO EXCEED 4' WIDE.
6. DUCTILE IRON WATER MAIN SHALL BE POLY WRAPPED AND HAVE THREE BRASS WEDGES (FOR CONTINUITY AND TRACING) AT ALL NON MECHANICAL CONNECTIONS.
7. ALL PIPES GREATER THAN 12" DIA. WITH STONE BEDDING, BEDDING SHALL BE WRAPPED IN GEOTEXTILE FABRIC. GEOTEXTILE FABRIC SHALL BE MIRAFI 140N OR APPROVED EQUAL. FABRIC SHALL BE WRAPPED COMPLETELY AROUND STONE w/12" (MIN) OVERLAP AT SEAMS.

General Utility Trench
Not to Scale





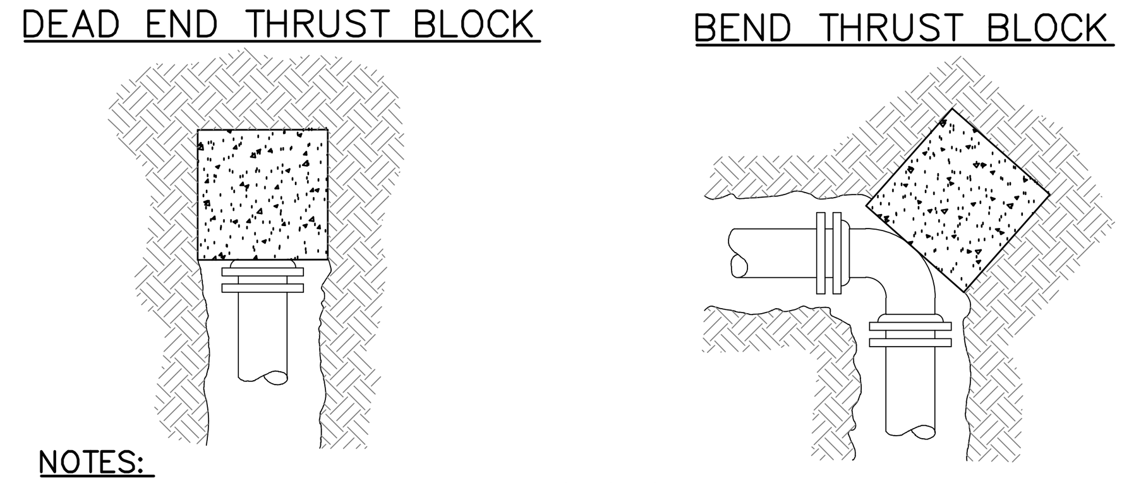
GATE VALVE AT TEE

NOTES:
1. WATER GATE VALVES SHALL OPEN RIGHT (CITY OF PORTSMOUTH) AND OPEN LEFT (PEASE TRADEPORT).
2. VALVE BOXES SHALL BE HEAVY PATTERN CAST IRON, TWO PIECE, SLIP TYPE, 5-INCH DIAMETER SHAFT WITH EXTENSIONS PIECES TO ALLOW FOR SUFFICIENT COVER.
3. THE UPPER SECTION OF THE BOX SHALL BE TOP-FLANGE TYPE TO PREVENT SETTLEMENT.
4. THE LOWER SECTION OF THE BOX SHALL BE BELLED-TYPE TO ENCLOSE THE OPERATING NUT OF THE VALVE.
5. THE COVER SHALL BE CAST IRON WITH THE WORD "WATER" PLAINLY CAST.
6. WHEN A PROJECT REQUIRES GATE BOX TOP TO TEMPORARILY BE SET TO BINDER DEPTH, THEN RAISED TO FINAL GRADE, RISER RINGS ARE NOT PERMITTED. CONTRACTOR SHALL RAISE THE ENTIRE TOP SECTION OF THE VALVE BOX TO FINAL GRADE. ASPHALT MATCHING THE THICKNESS OF THE BINDER SHALL BE PLACED AND COMPACTED BENEATH THE GATE BOX TOP FLANGE.
7. WHEN RISER RINGS ARE THE ONLY OPTION, ONLY FLANGED RISERS WILL BE PERMITTED.
8. WHEN FOSTER ADAPTOR CONNECTION IS NOT POSSIBLE, VALVES SHALL BE ANCHORED BACK TO MECHANICAL JOINTS WITH THREADED RODS.

Water Gate Valve
Not to Scale

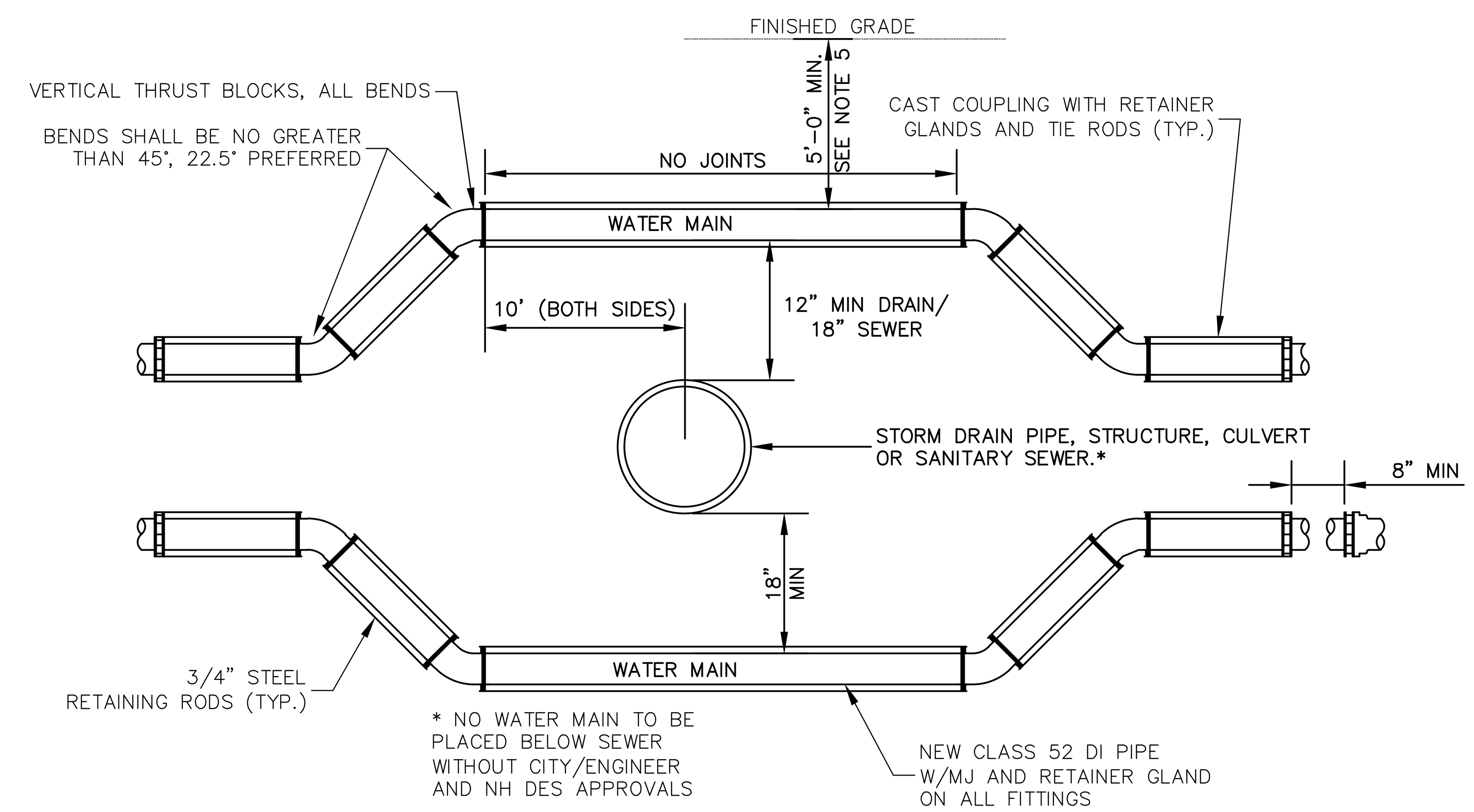
DEAD END THRUST BLOCK

BEND THRUST BLOCK



NOTES:
1. THRUST BLOCKS SHALL BE 2'x2'x2' PRECAST CONCRETE BLOCKS.
2. THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED MATERIAL.
3. JOINTS SHALL NOT BE IN CONTACT WITH THRUST BLOCK.
4. WHERE M.J. PIPE IS USED, M.J. PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKS WITH APPROVAL FROM ENGINEER.
5. THRUST BLOCKS ARE REQUIRED AT ALL TAPPING SADDLES, TEES, BENDS, AND FIRE HYDRANTS.

Thrust Blocks
Not to Scale



Water/Utility Crossing
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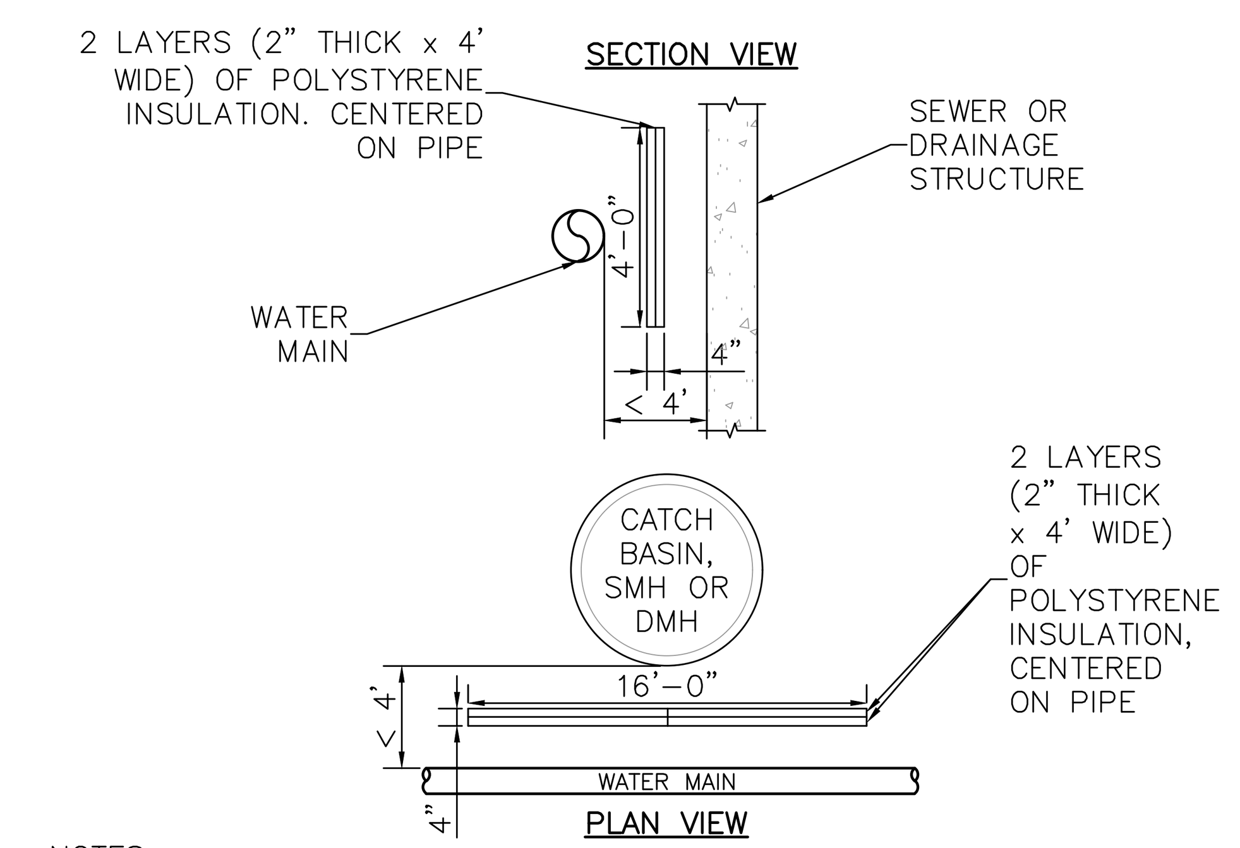
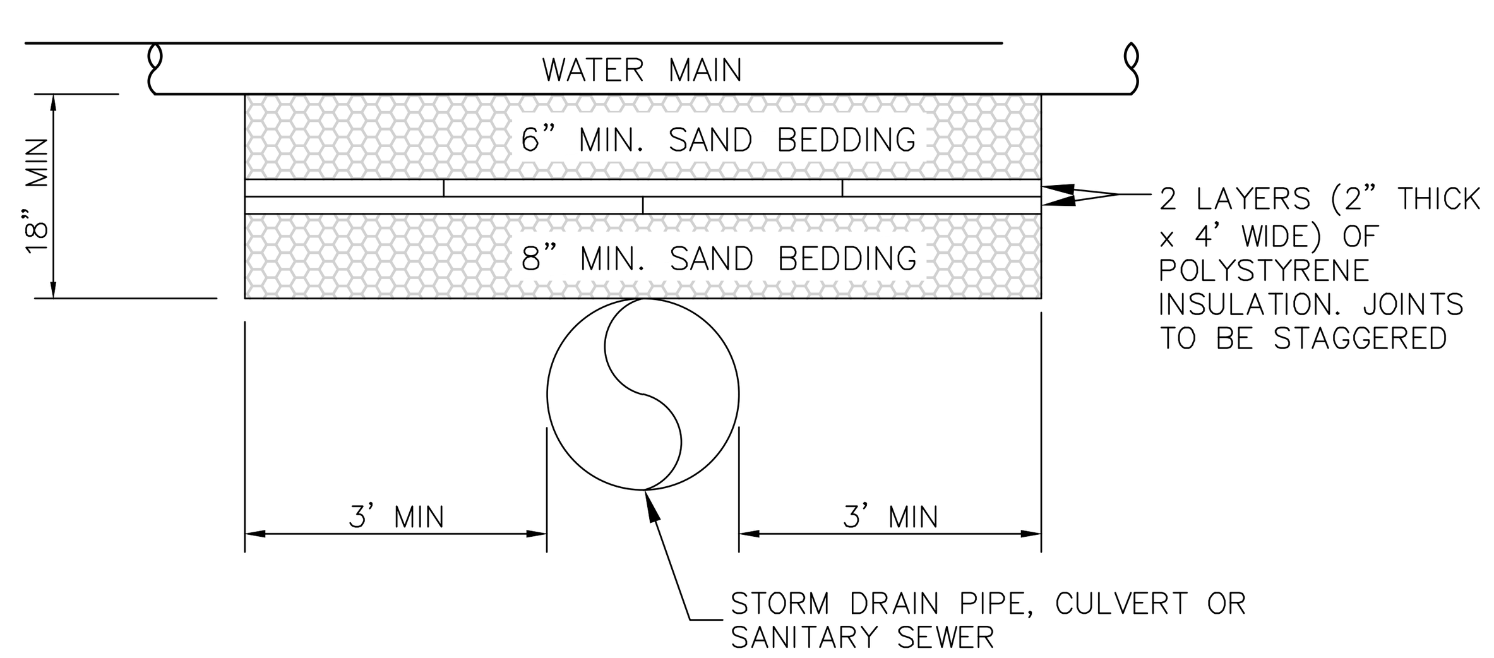


NOTES:
1. MAINS SHALL NOT BE LESS THAN 10' FROM STRUCTURE EXCEPT WHERE INDICATED ON PLANS.
2. WATER MAIN JOINTS SHALL BE EQUALLY SPACED ON CENTER OF STRUCTURE TO MAINTAIN SANITARY PROTECTION OF WATER MAIN.



WATER MAIN INSTALLATION NOTES:
1. INSULATION TO BE USED WHERE VERTICAL PIPE SEPARATION IS 24" OR LESS.
2. INSTALL VERTICAL MJ BENDS WITH RESTRAINED JOINT FITTINGS OR SWEEP PIPE WITHIN THE SPECIFICATION LIMITS IF NECESSARY TO ADJUST WATER MAIN PROFILE TO GAIN MINIMUM VERTICAL SEPARATION ABOVE SEWER.
3. 2" OF INSULATION TO BE USED AROUND WATER SERVICE CONNECTIONS WHERE PIPE CROSSINGS OCCUR.
4. WHERE WATER MAIN CROSSES SEWER AT 45° TO 90° PROVIDE MAXIMUM SPACING OF PIPE JOINTS FROM CROSSING LOCATION FOR BOTH WATER MAIN AND SEWER PIPE.
5. IF LESS THAN 5' OF COVER, SEE INSULATION NOTE IN THE "TYPICAL WATER MAIN TRENCH DETAIL", THIS SHEET.

Water/Utility Crossing
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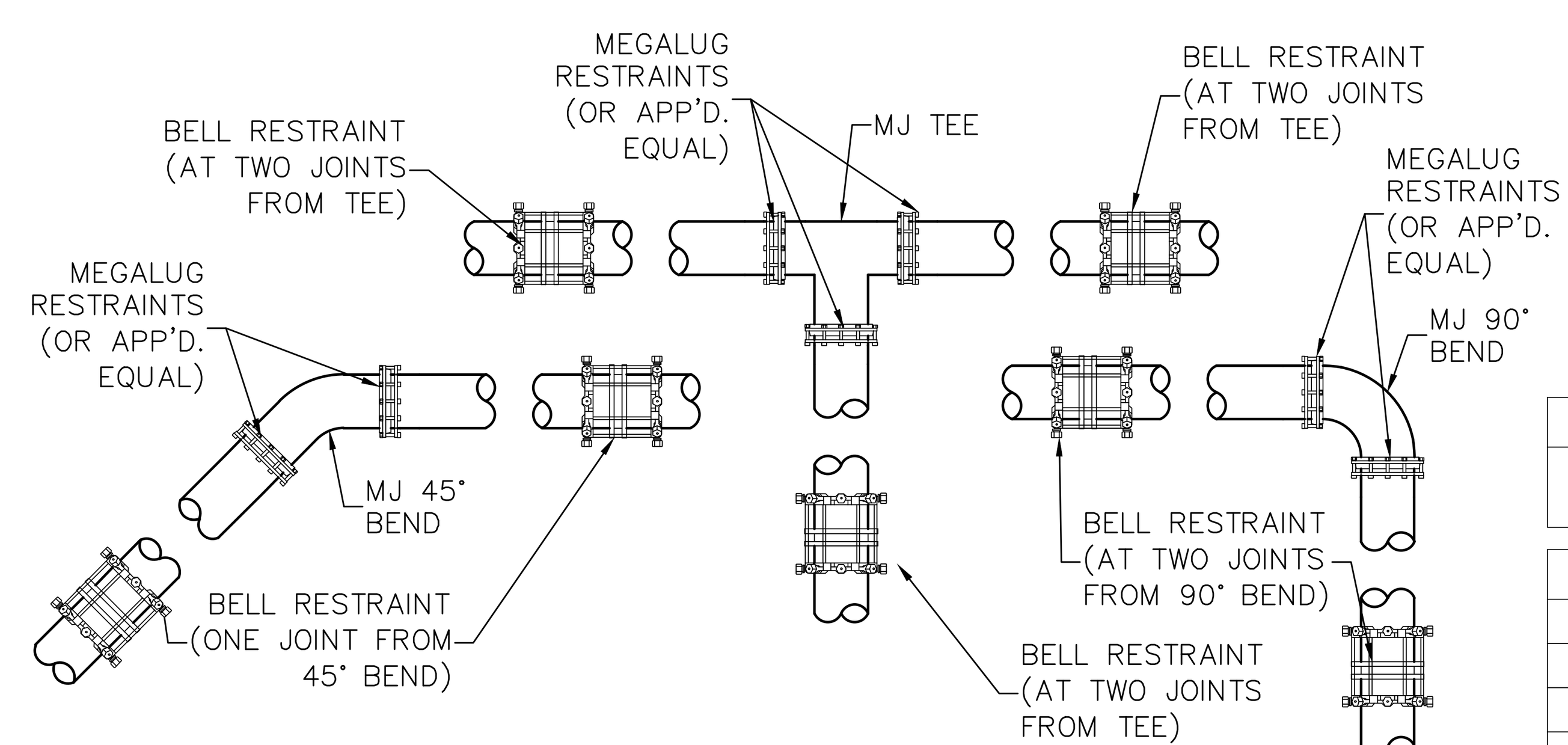

NOTES:
1. ALL BENDS AND TEES SHALL BE DUCTILE IRON FITTINGS.
2. JOINT RESTRAINT IS REQUIRED AT ALL FITTINGS PER THE ABOVE TABLE.
3. MEGALUG RESTRAINTS SHALL ONLY BE UTILIZED IF THRUST BLOCKS ARE INFEASIBLE.

VALVE	RESTRAINED JOINTS
IN LINE VALVES	BELL RESTRT'S REQUIRED 1 JOINT EACH SIDE/VALVE

FITTING	RESTRAINED JOINTS
22.5° BEND	1 EACH SIDE
45° BEND	1 EACH SIDE
90° BEND	2 EACH SIDE
TEE	1 EA SIDE/RUN 2 ON BRANCH

Joint Restraint Detail
Not to Scale

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designed by: NJM
drawn by: CLM
approved by: PAC
date: July 2025
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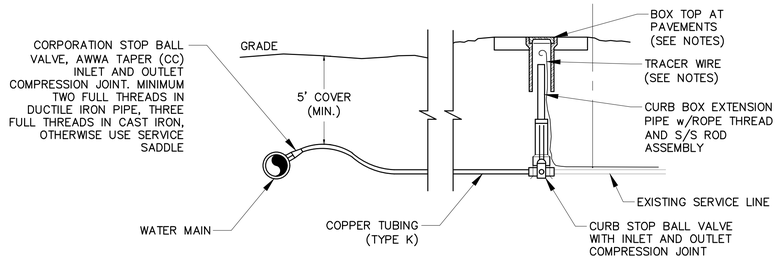
checked by: PAC
scale:

City of Portsmouth
Department of Public Works
Elwyn Road
Drainage Improvements Project
Water Details

drawing no. D-2

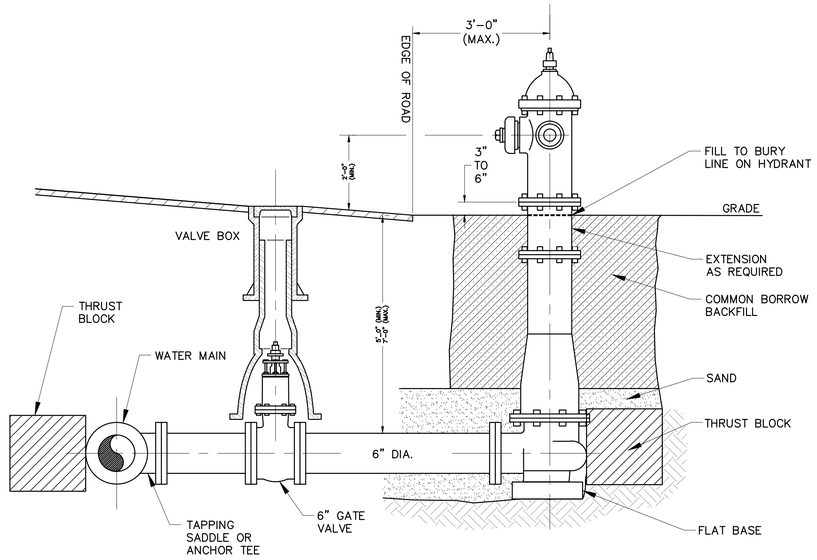


NOTES:

1. SERVICE SIZE SHALL BE EQUAL TO EXISTING, OR 1"ø MINIMUM, WHICHEVER IS LARGER.
2. PROVIDE NEW LINE USING CONTINUOUS LENGTHS OF COPPER. NO COUPLING ALLOWED IN ROADWAY WITHOUT APPROVAL OF ENGINEER.
3. TAPS TO BE MADE AT APPROXIMATELY 2:00 AND 10:00.
4. PROVIDE FOR SERVICE LINE CONTRACTION AND EXPANSION BY INSTALLING "S" IN SERVICE LINE NEAR MAIN.
5. 2" RIGID FOAM INSULATION REQUIRED OVER SECTIONS OF SERVICE PIPES WITH LESS THAN 4' OF COVER.
6. REMOVE EXISTING CURB STOP AND REPLACE.
7. CONNECT CURB STOP TO EXISTING SERVICE LINE AT PROPERTY LINE, BACK SIDE OF SIDEWALK, OR AT LOCATION APPROVED BY THE ENGINEER AFTER PRESSURE TESTING AND DISINFECTION.
8. SERVICE CONNECTIONS OF 1-1/4" AND LARGER SHALL USE A SERVICES SADDLE.
9. CONTRACTOR SHALL COORDINATE SERVICE INSTALLATIONS WITH HOMEOWNERS TO ALLOW ADEQUATE ADVANCED NOTICE OF WATER SERVICE INTERUPTIONS.
10. CONTRACTOR SHALL NOTIFY THE CITY PUBLIC WORKS IMMEDIATELY IN THE EVENT GALVANIZED STEEL PIPE IS ENCOUNTERED. CONTRACTOR SHALL TAKE PHOTOS OF THE CURB STOP CLEARLY IDENTIFYING THE PIPES THAT ARE GALVANIZED STEEL.
11. CURB BOX TOPS INSTALLATION SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
    - IN GRASS – STANDARD HAYES TOP.
    - IN SIDEWALK AND DRIVEWAYS – OPERATING PIPE SHALL EXTEND TO APPROXIMATELY 2"–3" BELOW FINISHED GRADE AND COVERED WITH A PLASTIC CAP. A BUFFALO BOX TOP (24" DEPTH) SHALL BE PLACED OVER THE OPERATING PIPE AND BROUGHT TO FINISHED SIDEWALK GRADE.
    - IN ROADWAY – OPERATING PIPE SHALL EXTEND TO APPROXIMATELY 2"–3" BELOW FINISHED GRADE AND COVERED WITH A PLASTIC CAP. A GATE BOX TOP (24" DEPTH) SHALL BE PLACED OVER THE OPERATING PIPE AND BROUGHT TO FINISHED ROADWAY GRADE.
12. TRACER WIRE ON PRIVATE PROPERTY SIDE SHALL BE BROUGHT TO GRADE AND LEFT IN BOX WHEN PRIVATE SIDE IS PLASTIC. TRACER WIRE SHALL NOT PLACED IN THE OPERATING ROD PIPE.
13. ROD ASSEMBLY: OPERATING ROD AND COTTER PINS SHALL BE STAINLESS STEEL.

Water Service Connection

Not to Scale

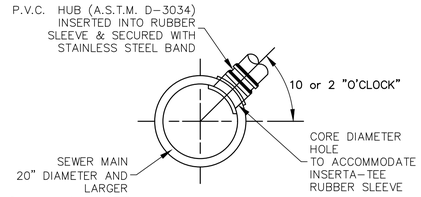


NOTES:

1. HYDRANT TO BE KENNEDY TYPE K–81 (NO EQUAL). COORDINATE WITH CITY OF PORTSMOUTH WATER AND FIRE DEPARTMENT.
2. HYDRANT SHALL OPEN RIGHT (CITY OF PORTSMOUTH) AND OPEN LEFT (PEASE TRADEPORT).
3. HYDRANT SHALL BE PAINTED IN ACCORDANCE WITH CITY OF PORTSMOUTH STANDARDS.
4. AREA AROUND HYDRANT SHALL BE GRADED TO ALLOW SURFACE WATER TO DRAIN AWAY.
5. CONTRACTOR SHALL INSTALL AN INDICATOR ATTACHED TO THE HYDRANT IN ACCORDANCE TO CITY OF PORTSMOUTH STANDARDS.
6. HYDRANT ASSEMBLY SHALL BE POLY WRAPPED FROM MAIN TO HYDRANT AT GROUND LEVEL, 6" (MIN.) OF SAND FOR BEDDING AND COVER, WARNING TAPE 18" ABOVE PIPE.
7. DRAIN HOLES ARE NOT PERMITTED.

Fire Hydrant

Not to Scale



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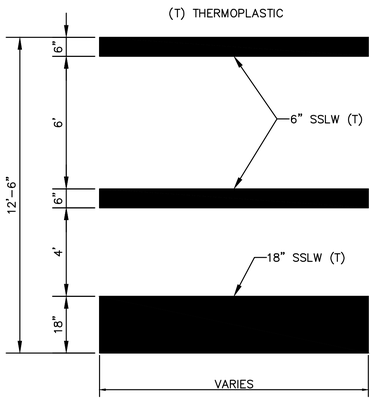

Route 1 Crosswalk Detail

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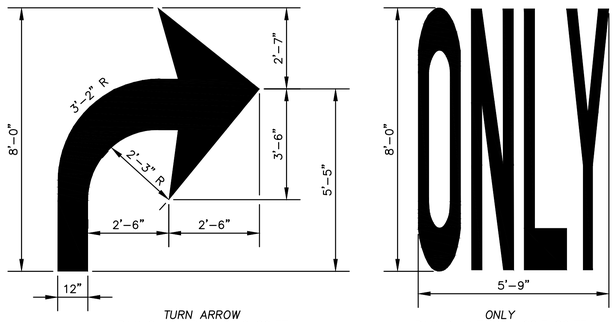
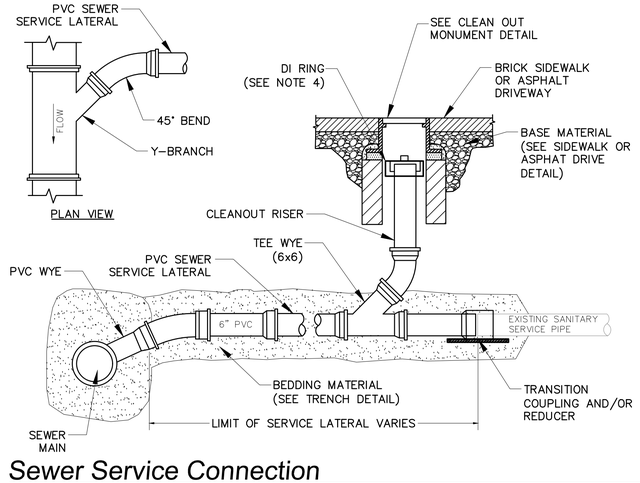


NOTES:

1. MULTI–WORD MESSAGES SHALL READ "UP"; THAT IS, THE FIRST WORD SHALL BE NEAREST THE APPROACHING DRIVER.
2. THE WORD "ONLY" SHALL NOT BE USED WITH THROUGH OR COMBINATION ARROWS, AND SHALL NOT BE USED ADJACENT TO A BROKEN LANE LINE. A WORD/SYMBOL SHALL PRECEDE THE WORD "ONLY"
3. PERFORMED WORDS AND SYMBOLS SHALL BE PRE–CUT BY THE MANUFACTURER.
4. ALL STOP BARS, WORDS, SYMBOLS, AND ARROWS SHALL BE THERMOPLASTIC.

Pavement Marking Detail

Not to Scale



NOTES:

1. SEWER SERVICE LATERAL SHALL SLOPE AT A MINIMUM OF 1/4" PER FOOT.
2. WARNING TAPE SHALL BE PLACED 12" ABOVE SERVICE LATERAL.
3. 10" DIA. CAST IRON MONUMENT BOX SHALL BE INSTALLED WHEN CLEANOUT IS AT PAVED (ASPHALT, CONCRETE OR BRICK) SURFACE.
4. WHEN CLEANOUT IS PLACED IN LAWN AREA, IT SHALL BE CAPPED 6" BELOW GRADE. A 6" LENGTH OF 8" DIA. DI PIPE SHALL BE PLACED AROUND CLEANOUT WHEN CLEANOUT IS BURIED AND NO DI COVER USED.
5. COVER / BARREL BLOCK TRANSITION SHALL BE PARGED AND SEALED WITH MORTAR.
6. CLEANOUT TO BE USED TO PLUG & TEST ALL NEW LATERALS.
7. EXISTING SEWER LATERALS AT AREAS WHERE NO NEW SEWER MAIN IS TO BE INSTALLED THAT IS DAMAGED DUE TO OTHER PIPE INSTALLATION SHALL BE REPAIRED AT NO ADDITIONAL COST.
8. PVC TO PVC REPAIRS SHALL BE DONE WITH PVC GASKETED REPAIR COUPLINGS.
9. RUBBER BOOT CONNECTIONS (FERNCO) ONLY ALLOWED WHEN A GASKETED COUPLING IS NOT MANUFACTURED FOR THE APPLICATION. RUBBER BOOT CONNECTIONS REQUIRE A 16x8x2 SOLID PAVER BLOCK PLACED UNDER THE BOOT, CENTERED ON THE JOINT.

Sewer Service Connection

Not to Scale

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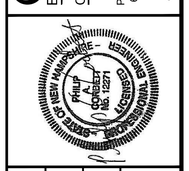

designed by: NJM | drawn by: CLM | approved by: PAC | scale:

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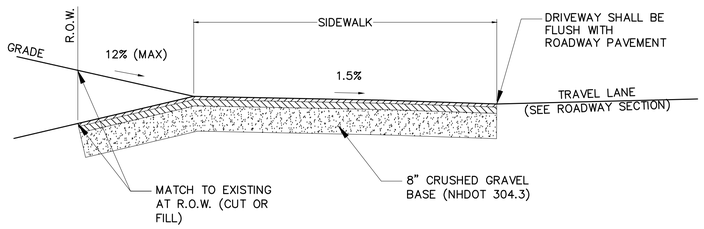
City of Portsmouth
Department of Public Works

Elwyn Road
Drainage Improvements Project

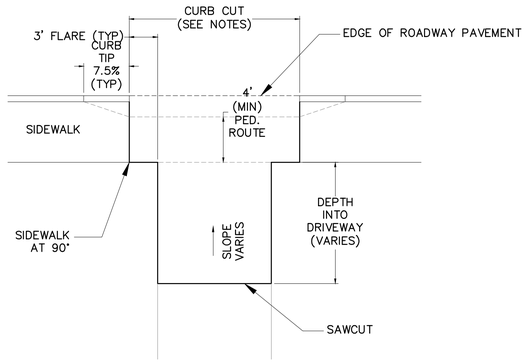
Water & Roadway Details

drawing no. D-3

sheet: 13 of 15



SECTION VIEW



PLAN VIEW

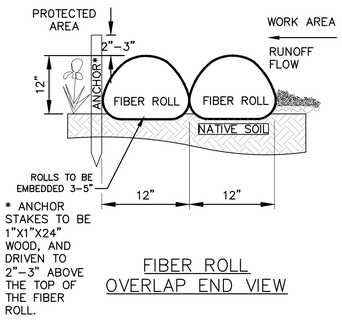
NOTES:
1. CONTRACTOR SHALL PROOF-ROLL SUBGRADE (WITNESSED BY ENGINEER) TO DETERMINE IF SUBBASE MATERIALS ARE ACCEPTABLE.
2. CONTRACTOR SHALL COMPACT BASE MATERIALS TO 95% PROCTOR. JUMPING JACK SHALL BE USED AROUND STRUCTURES AND ANY VERTICAL FACE.
3. PAVEMENT THICKNESS:
   1.0" WEARING (3/8" 75 GYR)
   2.0" BINDER (1/2" 50 GYR)
4. FOR UNPAVED DRIVEWAYS, PAVED APRON SHALL EXTEND TO 1' BEYOND BACK OF SIDEWALK OR 4' FROM EDGE OF ROADWAY WHERE THERE IS NO SIDEWALK.
5. PEDESTRIAN ACCESS ROUTE THROUGH DRIVEWAY APRON SHALL HAVE SLOPE (1.0%-1.5%).
6. CURB CUT SHALL MATCH EXISTING WIDTH. NEW CURB CUTS SHALL HAVE A MAXIMUM WIDTH OF 24'.
7. LAYOUT OF CURB CUT, SLOPES AND LAYOUT OF DRIVEWAY APRON SHALL BE REVIEWED BY THE ENGINEER FOR APPROVAL PRIOR TO PLACING PAVEMENT.
8. FLARES SHALL BE 3' (TYP) ON RESIDENTIAL STREETS AND MAY BE EXTENDED TO 5' ON HIGHER TRAFFIC ROADWAYS. ENGINEER TO APPROVE FLARES WIDER THAN 3'.

Typical Driveway (Sidewalk at Curb)

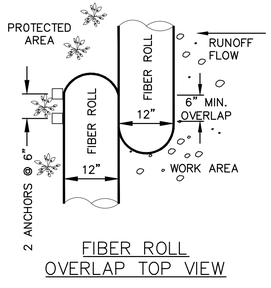
Not to Scale

EROSION CONTROL NOTES:

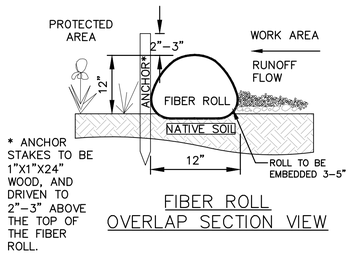
1. PERIMETER CONTROLS TO BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
2. PRIOR TO CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NECESSARY. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. LAND SHOULD NOT BE LEFT EXPOSED DURING THE WINTER MONTHS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL REMEDIAL WORK REQUIRED TO REPAIR AREAS WHICH ARE DAMAGED BY EROSION.
3. CATCH BASIN INSERTS, MIRAFI DANDY SACK OR EQUAL, SHALL BE INSTALLED AND MAINTAINED AT CATCH BASINS UNTIL PAVEMENT IS INSTALLED. SEDIMENT AND DEBRIS SHALL BE REMOVED FOLLOWING EACH STORM EVENT.
4. HAY BALE BARRIERS SHALL BE INSTALLED AND MAINTAINED AT DRAIN INLETS AND OUTLETS (NOT PLACED CLOSER THAN 25-FEET) AND ALONG LIMITS OF WORK WHERE NECESSARY. ADDITIONAL HAY BALES SHALL BE ADDED AS REQUIRED BY THE ENGINEER. HAY BALES WILL BE STAKED AND MAINTAINED PRIOR TO AND DURING CONSTRUCTION UNTIL DISTURBED AREAS HAVE ESTABLISHED A HEALTHY STAND OF GRASS. BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS AND SHALL BE DRY WHEN PLACED.
5. ALL DISTURBED AREAS AND SIDE SLOPES WHICH ARE FINISH GRADED WITH NO FURTHER CONSTRUCTION TO TAKE PLACE SHALL BE SEEDED AND MULCHED. ALL DISTURBED AREAS OUTSIDE LIMITS OF BUILDING, AND PAVEMENT SHALL BE STABILIZED WITH LOAM AND SEED. ALL SEED, LIME AND FERTILIZER PROGRAMS SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS.
6. ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, OR LONGER THAN TWO WEEKS AND WHICH WILL BE RE-GRADED LATER DURING CONSTRUCTION, SHALL BE TEMPORARILY SEEDED AND MACHINE STRAW MULCHED AT A RATE OF 1.5 TONS/ACRE.
7. AVOID USE OF UNDISTURBED AREAS WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL TRAVEL THE ROADBEDS OF EXISTING AND FUTURE ROADS AND SHALL BE LIMITED TO WITHIN THE LIMITS OF CONSTRUCTION NOTED ON THE PLANS.
8. IF SILT FENCES ARE TO BE USED, THEY SHALL BE MINIMUM OF 36 INCHES HIGH WITH THE BOTTOM OF THE CLOTH KEYED INTO THE GROUND (SEE DETAIL). POSTS SHALL BE OF WOOD OR STEEL. SILT FENCE SHALL BE INSTALLED AND MAINTAINED AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. ADDITIONAL SILT FENCE MAY BE ADDED AS REQUIRED BY THE ENGINEER PRIOR TO ANY ON-SITE GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. IT SHOULD BE MAINTAINED DURING AND AFTER DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER AND FROM LAND UNDERGOING DEVELOPMENT. WHERE POSSIBLE NATURAL DRAINAGE WAYS SHOULD BE UTILIZED AND LEFT OPEN TO REMOVE CLEAN EXCESS SURFACE WATER. THE SILT FENCE IS TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
9. EROSION CONTROL DEVICES SHOWN REPRESENT MINIMUM MEASURES REQUIRED FOR EROSION CONTROL. THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PREVENT TRANSPORTATION OF SEDIMENT BEYOND THE WORK AREA.
10. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED AND ACCUMULATED SEDIMENT DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
11. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
13. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY 0.5" OF RAINFALL.
14. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   - BASE COURSE STONE HAS BEEN INSTALLED IN AREAS TO BE PAVED
   - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
   - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
   - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
15. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
16. TEMPORARY SEEDING (IF USED) SHALL BE PERENNIAL RYE GRASS, SPREAD 0.7LB/1000 SQ. FT.
17. WINTER CONSTRUCTION NOTES
   - ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS;
   - ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
   - AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.
18. AFTER CONSTRUCTION IS COMPLETE, THE CONTRACTOR SHALL REMOVE THE STABILIZED CONSTRUCTION ENTRANCE AND REPLACE WITH THE IMPROVED GRAVEL SECTION PER THE NOTES AND DETAIL.



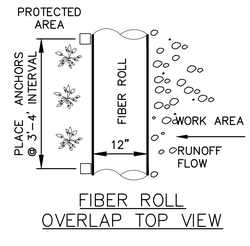
FIBER ROLL
OVERLAP END VIEW



FIBER ROLL
OVERLAP TOP VIEW



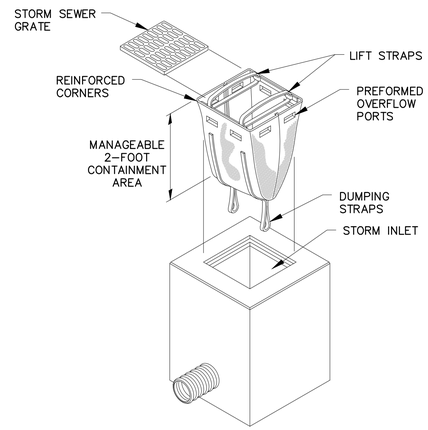
FIBER ROLL
OVERLAP SECTION VIEW



FIBER ROLL
OVERLAP TOP VIEW

Erosion Control Fiber Roll

Not to Scale



"Silt Sack" Sediment Control Device for Inlet Protection

Not to Scale

no.	revision	date	by
0	Issued for Bid	6/9/2025	PAC

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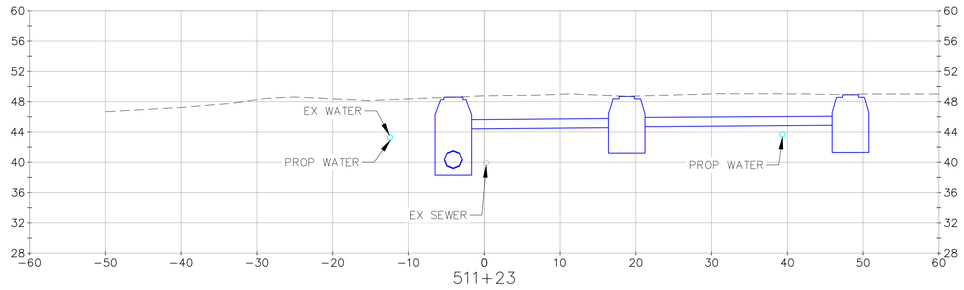
PROFESSIONAL ENGINEER — STATE OF NEW HAMPSHIRE — PHILIP A. CROCKER — No. 12271

designed by: NJM | drawn by: CLM | approved by: PAC | scale:
date: July 2025 | project no: 1331 | checked by: PAC

City of Portsmouth
Department of Public Works
Elwyn Road
Drainage Improvements Project
Roadway & Erosion Control Details

drawing no. D-4

sheet: 14 of 15



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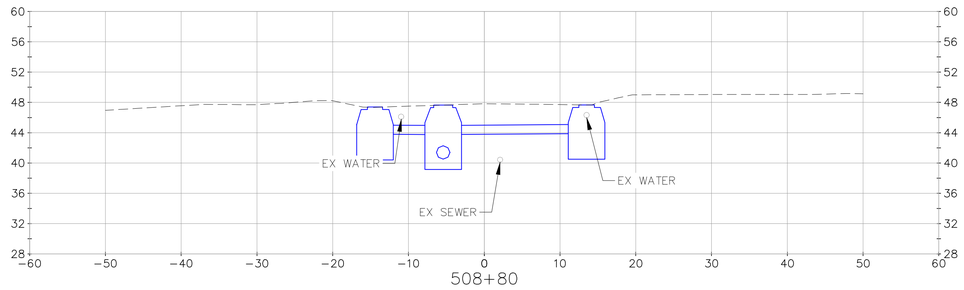

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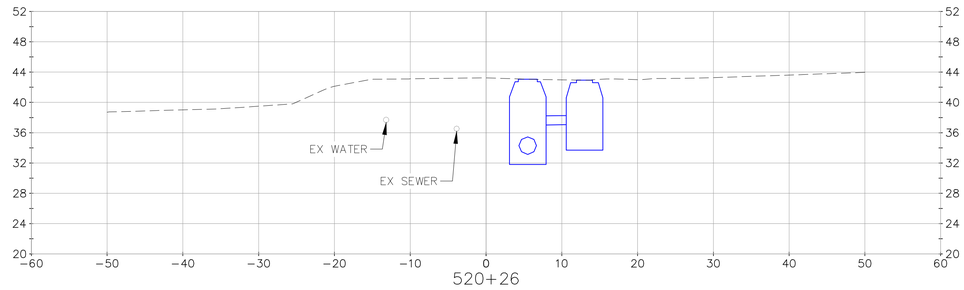

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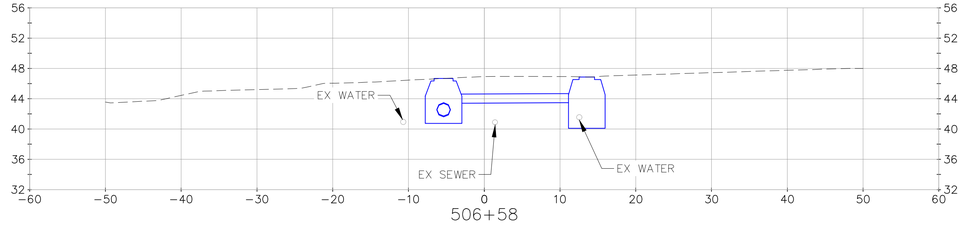

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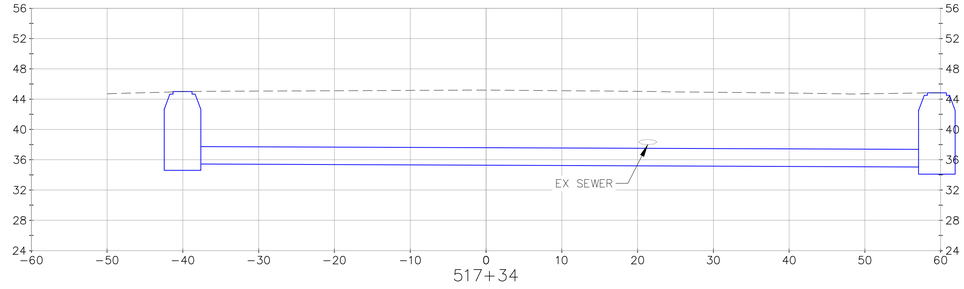

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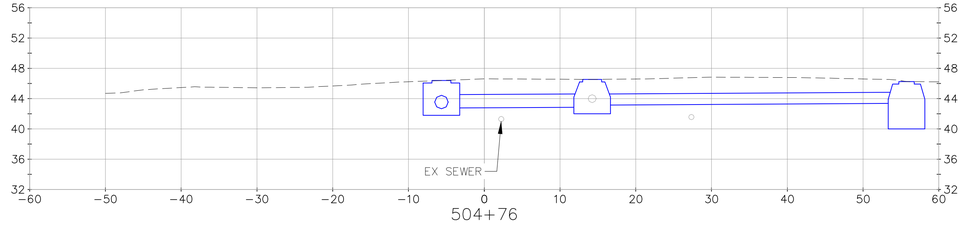

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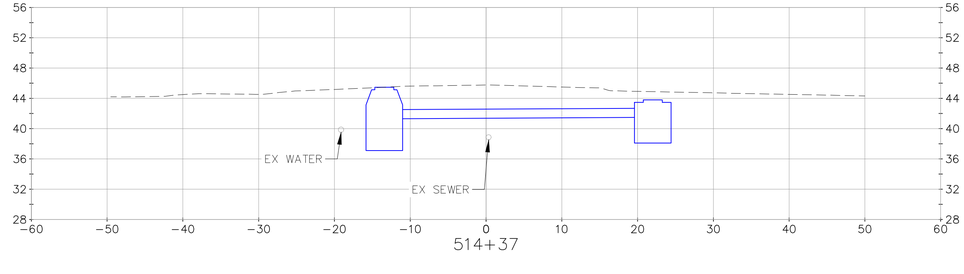

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designed by: NJM	drawn by: CLM	approved by: PAC	scale: 10' 0 Scale: 1" = 10' 20'
date: July 2025	project no: 1331	checked by: PAC	

City of Portsmouth
Department of Public Works

Elwyn Road
Drainage Improvements Project

Cross Sections

drawing no.
XS-1

sheet: 15 of 15