ADDENDUM No. 1

RFP No. 26-07

Needham, Medford and Buckingham Water Main and Resurfacing

Due Date: February 5, 2026 by 2:00 p.m. (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any) and is appended thereto. **This Addendum includes a total of 77 pages.**

The Proposer is to acknowledge **receipt of this Addendum No. 1 by signing and submitting attachment B,** including all attachments in its Proposal by so indicating in the proposal that the addendum has been received. Proposals submitted without acknowledgement of receipt of this addendum may be considered non-conforming.

The following forms provided within the RFP Document should be included in submitted proposal:

- **Attachment B - General Declarations**
- **Attachment D - Prevailing Wage Declaration of Compliance**
- **Attachment E - Living Wage Declaration of Compliance**
- **Attachment G - Vendor Conflict of Interest Disclosure Form**
- **Attachment H - Non-Discrimination Declaration of Compliance**

Proposals that fail to provide these completed forms listed above upon proposal opening may be rejected as non-responsive and may not be considered for award.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the RFP documents which are outlined below are referenced to a page or Section in which they appear conspicuously. Offerors are to take note in their review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

REQUEST FOR PROPOSAL:

Replace the original six pages of section E. Schedule of Pricing/Cost – 20 Points provided in the RFP Document with the six pages provided in Addendum 1 (dated 01-23-26). There are some changes to the pay items and/or quantities:

Section/Page(s)	Change
Schedule of Prices	Quantity updates to reflect plan changes New pay items: - 02001.01 Tree, Rem, 6 In.-12 In. - 02001.02 Tree, Rem, 13 In.-19 In. - 07020.09 12 In. X 8 In. DIP Reducer

- 07120.00 Gate Box, Adjust
- 10001.01 Tree, Medium, B&B

Removed pay items:

- 08010.71.00 DS_Aggregate Base Conditioning

Quantity change:

- 02040.00 Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem
- 03030.01 Exploratory Excavation, SD-TD-1, (0-10' Deep)
- 04015.01 6 In., SDR 26 PVC Sanitary Service Lead, SD-TD-2
- 07011.02 8 In. 45° DIP Bend
- 07080.00 Excavate & Backfill For Water Service Tap And Lead
- 07140.01 Water Main Pipe, 4 In. Dia., Abandon
- 07140.05 Water Main Pipe, 12 In. Dia., Abandon
- 07150.01 Water Main Pipe, 4 In. Dia., Rem
- 07150.05 Water Main Pipe, 12 In. Dia., Rem
- 07170.01 Gate Valve in Box, 4 In. Dia., Rem
- 08001.00 Subbase, CIP
- 08010.03 Aggregate Base, 8 In., 21AA, CIP
- 08130.01 Conc, Sidewalk, 4 In.

CONSTRUCTION DRAWINGS:

Replace Plan Set in its entirety with the attached revised plan set. Informational corrections were made to several sheets along with changes to some of the pay items and/or quantities.

Section/Page(s)	**Change**
Sheet 2:	1. Added Note #29 - "Six inches of 21AA aggregate base stone to be used at all drive approach replacements" 2. Updated Quantity Table: a. Added Tree, Medium, B&B - 5 EA b. Added Gate Box, Adj - 5 EA
Sheet 15:	Added Tree, Rem, 6 In. - 12 In. - 1 EA
Sheet 16:	Added Tree, Rem, 12 In. - 19 In. - 1 EA
Sheets 19 and 20:	No longer showing tree symbol for the trees that will be removed.
Sheet 22:	Added missing 12 in. X 8 In. DIP Reducer - 1 EA
Sheets 23, 25, 27, 29, and 31:	Removed DS_ Aggregate Base Conditioning item from Quantity Boxes
Sheet 38:	Removed DS_ Aggregate Base Conditioning item from Quantity Box

Sheet 40: Added missing quantity (1440 Syd) for Aggregate Base, in., 21AA CIP to Quantity Box

1. Removed DS_ Aggregate Base Conditioning item from Quantity Boxes

Sheet 42: Removed DS_ Aggregate Base Conditioning item from Quantity Boxes

II. QUESTIONS AND ANSWERS

The following question has been received by the City. The response is being provided in accordance with the terms of the RFP. Bidders are directed to take note of the following questions and City responses in their review of the RFP as they affect work or details in other areas not specifically referenced here.

Question 1: What is the estimated cost of construction (for bonding purposes).
Answer 1: The Engineer's Estimate is approximately $4,900,000.00

Question 2: Can you provide an excel file version of the bid form for submission?
Answer 2: An MS Excel copy can be provided upon email request to ALoebach@a2gov.org

Question 3: Will this project be administered by a third-party engineering firm, or by the City PSAA?
Answer 3: Construction Engineering Services and inspection will be provided by Spalding DeDecker.

Question 4: Will the project construction staking be performed by a third-party engineering firm or by the City PSAA?
Answer 4: Construction staking will be performed by Spalding DeDecker.

Question 5: Do you know which material testing company will be utilized for this project?
Answer 5: Testing services will be provided by the testing consultant under contract with the City of Ann Arbor for the 2026 construction season (TBD). The City is currently reviewing RFPs for testing services.

Question 6: I did not see a pay item for HMA hand patching. Was this an omission?
Answer 6: Hand patching is included in the pay items for "HMA, 4EL", "HMA, 5EL" and "HMA, Approach" pay items.

Question 7: Can MDOT CLII limestone sand be used on the project?
Answer 7: Backfill must meet the requirements of MDOT Class II Granular Material.

Question 8: Does 6A stone used for the project (utility construction – not including aggregate used for CIP Portland cement concrete or HMA mixes) need to meet the specifications of MDOT Table 902-1 AND 902-2? (There is an available 6A limestone material available that meets the MDOT gradation but is not MDOT certified. Please confirm if the 6A material for this project is required to be MDOT certified or if a crushed limestone meeting the MDOT 6A gradation will be acceptable for this project).
Answer 8: Water main shall be backfilled according to the City of Ann Arbor Standard Detail SD-TD-1 (Utility Trench – Type I). 6A Crushed Limestone is specified to be used

only for sanitary sewer bedding for PVC sewer pipe (see Appendix A of the City of Ann Arbor Public Services Standard Specifications) and must meet the requirements of MDOT 6A.

Question 9: Please provide a MINIMUM length that will be paid for a short side water service transfer. The current method of payment for “Excavate and Backfill for Water Service Tap and Lead” is written such that short side transfers are impossible to price in a manner that is fair to the City and the Contractor. (See Article 11, Section OO, Item 12 – Last Sentence (Page 11-40)). Specification states the measurement for payment will be the distance from the new to existing water main. In locations where the proposed water main crosses the existing service the distance is zero. Confirm how payment and measurement of the water service tap and lead be paid for in this scenario?

Answer 9: The minimum length of service pipe paid for short services will be 5 feet. The quantities have been adjusted accordingly.

Question 10: Are the aggregate(s), pavement replacement(s) and / or turf restoration(s) as required for temporary line stop installation incidental to the line stop pay item or will they be paid for separately? See question 6 above regarding HMA hand patching as it may apply?

Answer 10: Work included in the pay item for Temporary Water Main Line Stop, if needed, is detailed in Article 11, section PP (Line Stops). Pavement, sidewalk or turf restoration will be paid for separately at the contract unit prices. Hand patching, if needed, is included with the HMA pay items in the contract.

Question 11: Please define the payment limits of “Machine Grading”. Typical plan cross sections indicate that this will be paid for from inside edge of sidewalk to inside edge of sidewalk. DS specification does not describe the actual limits (areas) that would be included in the payment measurement. Will "Machine Grading" be paid for in areas of driveway / sidewalk removal and replacement?

Answer 11: Machine Grading will include areas between the face of walk on both sides of the street as shown in the typical cross sections. Work shall be completed according to Article 11, section J of the City of Ann Arbor 2025 Standard Specifications for Construction. The supplemental Detailed Specification for Machine Grading states “Complete machine grading in accordance with section 205 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction **as shown on the plans**, and as described and specified herein.“

Question 12: Please indicate where "DS _ Aggregate Base Conditioning" will be paid. Typical plan cross sections and plan views do not indicate the limits of this pay item. In lanes of roads where utility installation is not proposed, will the additional aggregate required to make grade be paid for via "DS _ Aggregate Base Conditioning"? Typical plan cross sections show full depth aggregate replacement for the proposed road in all locations. Pay Items 08010.02 and 08010.03 are paid for by the square yard. My concern is that the non-utility side of the road will be low (based on existing HMA thicknesses) and the resulting stone grade will not be uniform. It will be nearly impossible to prove quantity on a SY measurement. Could this additional stone be paid for by the ton?

Answer 12: This pay item was inadvertently left in the quantity tables for Medford Road and has been deleted from the project. The item was originally intended to condition

the road base outside of the trench areas but we are now removing the existing base road and placing new 8-inch aggregate base for the full roadbed.

Question 13: Please clarify if ALL (proposed and existing structures) require external / interior chimney seals for ALL (sanitary, storm, water, etc.) structures. If not, please clarify which structures (both new and existing) will require chimney seals and of which type (interior / exterior). The standard details and specifications for Sanitary Manholes, Gate Wells, and Storm Manholes note external chimney seals. The structure cover adjust standard detail, SD-GU-5, does not note external chimney seals.

a. Are external chimney seals required for all existing sanitary manhole, storm manhole, and gate well adjustment items?
b. If external chimney seals are required on existing sanitary manholes, storm manholes, and gate wells structure adjustments are they incidental to the structure adjust item?
c. Please confirm external chimney seals are not required on inlet structures.

Answer 13: According to the City of Ann Arbor 2025 Standard Specifications for Construction:

a. Chimney seals are only required for new sanitary manholes and gate wells
b. Chimney seals are not required for structure adjustments
c. Chimney seals are not required for storm structures including inlets

Question 14: Please confirm that existing valve box adjustments, as may be necessary, will be paid for separately. (There is no current method of payment in the bid form.).

Answer 14: A pay item has been added for “Gate Box, Adjust”.

Question 15: Please clarify when / where “Subbase, CIP” will be utilized / paid.

Answer 15: “Subbase, CIP” is used under concrete sidewalks and ramps.

Question 16: Please clarify when / where “Aggregate Base, 6”, 21AA, CIP” will be utilized / paid.

Answer 16: “Aggregate Base, 6 In, 21AA, CIP” is used under driveway aprons.

Question 17: Please confirm how the aggregate base under the proposed sidewalk / driveways will be paid for. (See questions 15 and 16).

Answer 17: “Subbase, CIP” is paid as needed per cubic yard used under new sidewalk. “Aggregate Base, 6 In, 21AA, CIP” is pay per square yard for new driveway aprons and sidewalks across driveways. A general note has been added to Sheet 2 of the plans.

Question 18: Please confirm that “Storm Structure Covers” and “Storm Structure Cover, Adjust” will be paid separately, as required, for both proposed and existing structures.

Answer 18: “Sanitary Structure Cover”, “Sanitary Structure Cover, Adjust”, “Storm Structure Cover” and “Storm Structure Cover, Adjust” are paid for separately under their respective pay items for existing structure only. Per the City of Ann Arbor 2025 Standard Specifications for Construction Article 11, <u>frame & cover is included in the pay items for all new storm structures and gate wells</u>. Only new sanitary manhole frames and covers are paid separately.

Question 19: Water main restraints lengths are not shown in the plan profiles. Please confirm that typical restraint lengths will be required for this project (not all joints).

Answer 19: Water main is to be installed according to Article 10, section K of the City of Ann Arbor 2025 Standard Specifications for Construction.

Question 20: Plans include the following note:
"Exact depth of sanitary lead crossing is unknown. Contractor is to field verify leads and maintain clearance as directed by the Engineer".

a. How is the contractor to be paid for verifying lead depths?
b. Please provide the last sewer inspection report / video for review prior to the bid date

Answer 20: a. The existing sanitary sewers are approximately 11 feet deep so it is not anticipated that the contractor will encounter any sanitary leads crossing the proposed water main, however quantities under the pay items for "Exploratory Excavation, SD-TD-1, (0-10' Deep)" and "6 In., SDR 26 PVC Sanitary Service Lead, SD-TD-2" have been provided, if needed.
b. Sanitary sewer inspection reports cannot be provided at this time. The contractor can request them directly from the City of Ann Arbor Public Works Department.

Question 21: Will the two tree removals (12" and 14") be paid via the "DS _ Tree Trimming Allowance"? If not, can you please add the required pay items?

Answer 21: Pay items for "Tree, Rem, 6 In.–12 In." and "Tree, Rem, 13 In.–19 In." have been added to the project.

Question 22: Is there an engineers project cost estimate that you have that we can turn into our bonding company?

Answer 22: The Engineer's Estimate is approximately $4,900,000.00

Question 23: On sheet 21 at the Station 23+82, there is 4-inch Water Main, is the 4-inch connected to 4 inch existing water service or it is Cap for future use?

Answer 23: The 4" service appears to be stubbed off for future use and is shown to be reconnected on the plans but may be eliminated by the City.

Question 24: What is the Schedule for the joint Restraint for the 12-inch water main and 8-inch water main?

Answer 24: Water main is to be installed according to Article 10, section K of the City of Ann Arbor 2025 Standard Specifications for Construction.

Question 25: Who is providing the survey / layout for this project? Contractor Staking or Engineer / Owner?

Answer 25: Construction staking will be performed by Spalding DeDecker.

Question 26: Are there any Federal funds distributed to this project? I understand to pay the living / prevailing wages but curious about funding.

Answer 26: The project is funded by the City of Ann Arbor.

Question 27: Can a subcontractor who is currently suspended from MDOT still perform work on this project? I understand if a company is debarred or suspended they cannot submit a proposal as a prime but curious if a sub.

Answer 27: The certification language in RFP 26-07 pertains only to the entity submitting a response to the RFP. But the RFP requires a respondent to identify major

subcontractors, defined in Section I(U) on page 10, and major subcontractors may be taken into consideration when evaluating and scoring a response. See, Section III(A)(4), page 12.

Offerors are responsible for any conclusions that they may draw from the information contained in the Addendum.

E. Schedule of Pricing/Cost – 20 Points

Company:

Project: Needham-Medford-Buckingham Watermain Replacement Project

File #: 2025-2026 **RFP#: 26-07**

ITEM NUMBER	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
01000.00	General				
01000.00	General Conditions, Max. $200,000.00	LS	1.00	$	$
01001.00	Project Supervision, Max. $70,000.00	LS	1.00	$	$
01003.00	Project Clean-Up and Restoration	LS	1.00	$	$
01004.00	Digital Audio Visual Coverage	LS	1.00	$	$
01021.00	Erosion Control, Inlet Protection, Fabric Drop	Ea	35.00	$	$
01022.00	Erosion Control, Silt Fence	Ft	500.00	$	$
01030.00	Tree Protection Fence	Ft	300.00	$	$
01040.00	Minor Traffic Control, Max $90,000.00	LS	1.00	$	$
01041.00	Traffic Regulator Control	LS	1.00	$	$
01050.00	Sign, Type B, Temp, Prismatic, Furn & Oper	Sft	561.50	$	$
01051.00	Sign, Type B, Temp, Prismatic, Special, Furn & Oper	Sft	432.00	$	$
01052.00	Temporary "No Parking" Sign	Ea	200.00	$	$
01080.00	Plastic Drum, High Intensity, Lighted, Furn & Oper	Ea	200.00	$	$
01092.00	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn & Oper	Ea	40.00	$	$
01100.00	Pedestrian Type II Barricade, Temp, Furn & Oper	Ea	30.00	$	$
01101.00	Pedestrian Channelizer Device, Furn & Oper	Ea	20.00	$	$
01102.00	Temporary Pedestrian Ramp, Furn & Oper	Ea	4.00	$	$

Project: Needham-Medford-Buckingham Watermain Replacement Project

File #: 2025-2026 **RFP#: 26-07**

ITEM NUMBER	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
01103.00	Temporary Pedestrian Mat, Furn & Oper	Ft	100.00	$	$
02000.00	Removals				
02000.00	DS_Tree Trimming Allowance	Dlr	10,000.00	$	$ 10,000.00
02001.01	Tree, Rem, 6 In. - 12 In.	Ea	1.00	$	$
02001.02	Tree, Rem, 13 In. - 19 In.	Ea	1.00	$	$
02020.00	HMA, Any Thickness, Rem	Syd	12,907.00	$	$
02030.00	Curb, Gutter, and Curb and Gutter, Any Type, Rem	Ft	7,917.00	$	$
02040.00	Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	Sft	13,612.00	$	$
02050.00	Sign, Rem, Salv	Ea	40.00	$	$
03000.00	Earthwork				
03002.00	Machine Grading	Syd	21,110.00	$	$
03022.00	Subgrade Undercutting, Type III	Cyd	275.00	$	$
03030.01	Exploratory Excavation, SD-TD-1, (0-10' Deep)	Ea	25.00	$	$
04000.00	Sanitary Sewer				
04015.01	6 In., SDR 26 PVC Sanitary Service Lead, SD-TD-2	Ft	300.00	$	$
04060.00	Sanitary Structure Cover	Ea	2.00	$	$
04061.00	Sanitary Structure Cover, Adjust	Ea	2.00	$	$
06000.00	Storm and Drainage				
06001.01	12 In., CL IV RCP Storm Sewer, SD-TD-1	Ft	324.00	$	$
06020.00	Pipe Undercut & Backfill, Storm	Cyd	542.00	$	$
06070.01	Storm Single Inlet, 24 In. Dia., (0-8' deep)	Ea	11.00	$	$

Project: Needham-Medford-Buckingham Watermain Replacement Project

File #: 2025-2026 **RFP#: 26-07**

ITEM NUMBER	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
06120.03	Storm Sewer Pipe, 12 In. Dia., Rem	Ft	394.00	$	$
06150.00	Storm Sewer Drop Structure, Rem	Ea	11.00	$	$
06160.01	Storm Structure Cover	Ea	27.00	$	$
06160.02	Storm Structure Cover, Adjust	Ea	27.00	$	$
06181.02	Underdrain, Subbase, 6 In.	Ft	7,906.00	$	$
07000.00	Water Mains				
07001.01	4 In., PC 350 DIP w/polywrap, SD-TD-1	Ft	581.00	$	$
07001.02	6 In., PC 350 DIP w/polywrap, SD-TD-1	Ft	336.00	$	$
07001.03	8 In., PC 350 DIP w/polywrap, SD-TD-1	Ft	2,381.00	$	$
07001.05	12 In., PC 350 DIP w/polywrap, SD-TD-1	Ft	2,110.00	$	$
07010.72	DS_4 In. 22.5° DIP Bend	Ea	2.00	$	$
07010.73	DS_4 In. 45° DIP Bend	Ea	17.00	$	$
07010.02	6 In. 45° DIP Bend	Ea	18.00	$	$
07011.02	8 In. 45° DIP Bend	Ea	21.00	$	$
07011.03	8 In. 22.5° DIP Bend	Ea	3.00	$	$
07011.04	8 In. 11.25° DIP Bend	Ea	3.00	$	$
07013.02	12 In. 45° DIP Bend	Ea	14.00	$	$
07013.04	12 In. 11.25° DIP Bend	Ea	6.00	$	$
07020.03	8 In. X 6 In. DIP Reducer	Ea	12.00	$	$
07020.09	12 In. X 8 In. DIP Reducer	Ea	1.00	$	$

Project: Needham-Medford-Buckingham Watermain Replacement Project
File #: 2025-2026 **RFP#: 26-07**

ITEM NUMBER	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
07030.04	8 In. X 8 In. X 4 In. DIP Tee	Ea	5.00	$	$
07030.05	8 In. X 8 In. X 6 In. DIP Tee	Ea	1.00	$	$
07030.06	8 In. X 8 In. X 8 In. DIP Tee	Ea	7.00	$	$
07030.11	12 In. X 12 In. X 4 In. DIP Tee	Ea	13.00	$	$
07030.12	12 In. X 12 In. X 6 In. DIP Tee	Ea	2.00	$	$
07030.13	12 In. X 12 In. X 8 In. DIP Tee	Ea	10.00	$	$
07030.15	12 In. X 12 In. X 12 In. DIP Tee	Ea	1.00	$	$
07050.71	DS_Gate Valve In Box, 4 In.	Ea	9.00	$	$
07050.01	Gate Valve In Box, 6 In.	Ea	2.00	$	$
07050.02	Gate Valve In Box, 8 In.	Ea	1.00	$	$
07060.02	Gate Valve In Well, 8 In.	Ea	7.00	$	$
07060.04	Gate Valve In Well, 12 In.	Ea	6.00	$	$
07080.00	Excavate & Backfill For Water Service Tap And Lead	Ft	651.00	$	$
07090.00	Water Structure Cover	Ea	2.00	$	$
07091.00	Water Structure Cover, Adjust	Ea	2.00	$	$
07100.00	Fire Hydrant Assembly, Complete	Ea	14.00	$	$
07102.00	Fire Hydrant Assembly, Rem	Ea	8.00	$	$
07110.01	Sacrificial Anode, 17-pound	Ea	2.00	$	$
07110.02	Sacrificial Anode, 32-pound	Ea	3.00	$	$
07120.00	Gate Box, Adjust	Ea	5.00	$	$

Project: Needham-Medford-Buckingham Watermain Replacement Project

File #: 2025-2026 **RFP#: 26-07**

ITEM NUMBER	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
07130.01	Temporary Water Main Line Stop, 8 In. or less	Ea	2.00	$	$
07130.03	Temporary Water Main Line Stop, 12 In.	Ea	2.00	$	$
07131.00	Temporary Water Main Line Stop, Additional Rental Day	Ea	30.00	$	$
07140.01	Water Main Pipe, 4 In. Dia., Abandon	Ft	215.00	$	$
07140.02	Water Main Pipe, 6 In. Dia., Abandon	Ft	1,027.00	$	$
07140.03	Water Main Pipe, 8 In. Dia., Abandon	Ft	780.00	$	$
07140.05	Water Main Pipe, 12 In. Dia., Abandon	Ft	2,057.00	$	$
07150.01	Water Main Pipe, 4 In. Dia., Rem	Ft	175.00	$	$
07150.02	Water Main Pipe, 6 In. Dia., Rem	Ft	218.00	$	$
07150.03	Water Main Pipe, 8 In. Dia., Rem	Ft	175.00	$	$
07150.05	Water Main Pipe, 12 In. Dia., Rem	Ft	277.00	$	$
07160.03	Gate Valve in Box, 8 In. Dia., Abandon	Ea	1.00	$	$
07160.05	Gate Valve in Box, 12 In. Dia., Abandon	Ea	1.00	$	$
07170.01	Gate Valve in Box, 4 In. Dia., Rem	Ea	4.00	$	$
07170.02	Gate Valve in Box, 6 In. Dia., Rem	Ea	1.00	$	$
07170.03	Gate Valve in Box, 8 In. Dia., Rem	Ea	5.00	$	$
07170.05	Gate Valve in Box, 12 In. Dia., Rem	Ea	5.00	$	$
08000.00	Streets, Driveways, & Sidewalks				
08001.00	Subbase, CIP	Cyd	90.00	$	$
08010.02	Aggregate Base, 6 In., 21AA, CIP	Syd	923.00	$	$

Project: Needham-Medford-Buckingham Watermain Replacement Project

File #: 2025-2026 **RFP#: 26-07**

ITEM NUMBER	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
08010.03	Aggregate Base, 8 In., 21AA, CIP	Syd	14,949.00	$	$
08070.14	HMA, 4EL	Ton	1,446.00	$	$
08070.18	HMA, 5EL	Ton	1,446.00	$	$
08071.00	HMA Approach	Ton	26.00	$	$
08110.00	Conc, Curb or Curb & Gutter, All Types	Ft	6,761.00	$	$
08120.01	Conc, Driveway Opening, Type M	Ft	1,256.00	$	$
08130.01	Conc, Sidewalk, 4 In.	Sft	3,834.00	$	$
08131.01	Conc, Sidewalk, Drive Approach, or Ramp, 6 In.	Sft	6,386.00	$	$
08131.02	Conc, Sidewalk, Drive Approach, or Ramp, 8 In.	Sft	2,543.00	$	$
08150.00	Detectable Warning Surface	Ft	90.00	$	$
08200.07	Pavt Mrkg, Polyurea, 12 In., Crosswalk	Ft	608.00	$	$
08200.09	Pavt Mrkg, Polyurea, 24 In., Stop Bar	Ft	75.00	$	$
10000.00	Landscaping				
10001.01	Tree, Medium, B&B	Ea	5.00	$	$
10050.00	Underground Sprinkling System, Restore	Dlr	5,000.00	$	$ 5,000.00
10060.00	Turf Restoration	Syd	7,380.00	$	$

Total Estimated Cost **$** _____

CITY OF ANN ARBOR
ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM WATER MAIN & RESURFACING PROJECT

RFQ No. 26-07, File No. 2025-2026

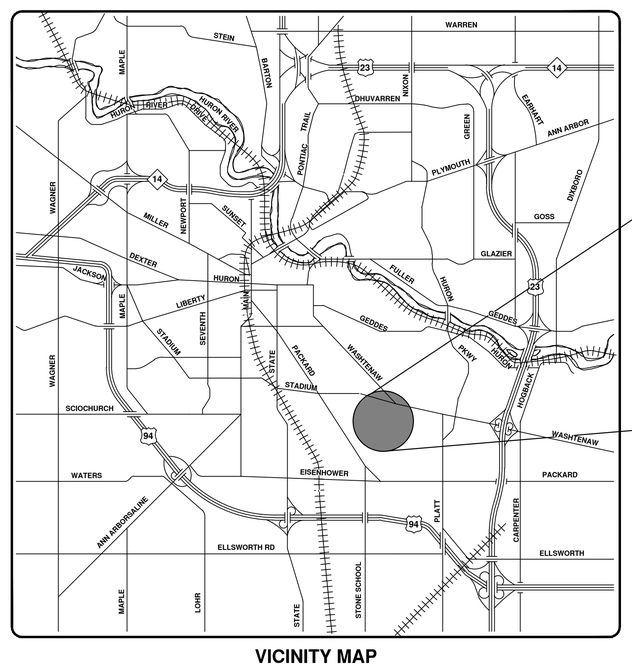
NOTES:

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, THE CONTRACTOR SHALL CALL 811 OR 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.

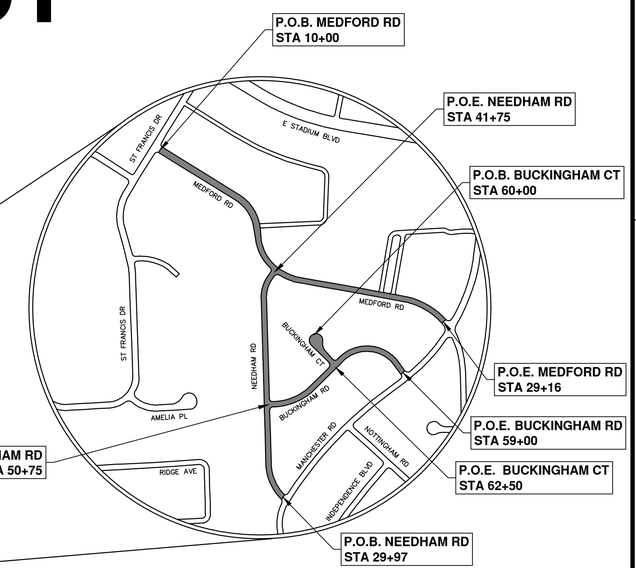
THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE 2025 EDITION OF THE CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, ITS DETAILS, WHICH ARE INCLUDED BY REFERENCE, THE 2020 EDITION OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD), AND THIS PROJECT'S CONTRACT DOCUMENTS. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTOR FROM THIS REQUIREMENT.

Sheet List Table



VICINITY MAP

NORTH



PREPARED UNDER THE SUPERVISION OF

STATE OF MICHIGAN ALAN P. LOEBACH License No. 6201043167 LICENSED PROFESSIONAL ENGINEER

01/ 09/ 2026
ALAN LOEBACH, P.E. — DATE
PROJECT MANAGER

CITY APPROVAL

STATE OF MICHIGAN JEREMY J. SCHROT License No. 6201059414 LICENSED PROFESSIONAL ENGINEER

01/ 09 / 2026
JEREMY SCHROT, P.E. — DATE
PROJECT MANAGER

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
P.O. BOX 8647
ANN ARBOR, MI 48107-8647
734-794-6410
www.a2gov.org

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

WATER MAIN REPLACEMENT AND ROADWAY RESURFACING
ON MEDFORD RD, NEEDHAM RD, BUCKINGHAM RD, AND BUCKINGHAM CT

SCALE

DRAWING No. 2025-2026-1

SHEET No. 1 OF 64

j:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_Cov.dwg – _a2 standard bw.stb – Plot Date: 1/22/2026 10:53:10 AM

CONSTRUCTION NOTES:

1. Driveways and entrances to buildings, real property, and the like shall not be blocked except for short durations and only when approved by the Engineer. Vehicular and pedestrian access shall be maintained at all times. It shall be the Contractor's responsibility to coordinate all necessary driveway closures with the property owner(s) and resident(s) in the areas of construction.

2. The location and depth of all existing utilities and service leads are to be field verified by the Contractor prior to construction.

3. Location and depth of utilities as depicted on the plans is approximate and shown according to the best information available. It is the Contractor's responsibility to excavate ahead and adjust depth of conflict utilities accordingly. Any damage to utilities is the Contractor's responsibility to avoid and/or repair as necessary.

4. The Contractor is to take special care to protect the existing water main and be responsible for maintaining consistent water service.

5. During non-working hours no trench shall remain open; any open trench shall be properly secured with protective fencing. This work shall be included in the item of work "General Conditions".

6. Trenches for new water services shall be excavated to MIOSHA and City of Ann Arbor Public Works requirements.

7. City of Ann Arbor Public Works will install the corporation and copper service lead(s) to transfer the connection(s). If an existing water service is found to be failing or is not copper, the lead will be replaced to the curb box by Public Works.

8. For the installation of corporations, or any other related activities, the Contractor shall not receive additional compensation for delays due to the scheduling of or coordination with the City of Ann Arbor Public Works.

9. The Contractor shall backfill trenches in accordance with Trench Detail specified on plans. This work shall be included in the item of work "Excavate and Backfill for Water Service Tap and Lead". All concrete removals and replacements required for this work will be paid for separately.

10. All ductile iron pipe and fittings shall be polyethylene wrapped per ANSI/AWWA C105/A21.5.

11. Cor-blu bolts to be used at all mechanical water main joints at hydrants and Megalug fittings

12. The Contractor shall construct, flush, and bacteriologically test the water main per Detailed Specification "Water Main Installation and Testing" and as approved by the Engineer. All chlorinated water shall be discharged directly into an approved sanitary sewer. The Contractor shall supply all necessary hoses, fittings and the like to accomplish this work.

13. Water main fittings, other than those specifically listed as separate pay items, which are required to complete the work, such as blow-off assemblies, concrete thrust blocks, solid sleeves and mechanical plugs, shall not be paid for separately, but shall be included in the pipe pay items.

14. "No Parking" signs shall be installed by the Contractor at locations as approved or directed by the Engineer. All signs shall be installed in accordance with the detailed specifications.

15. Postal delivery and refuse pickup service shall be maintained at all times by the Contractor.

16. All fittings, hydrants, valves and castings removed during construction are the property of the City of Ann Arbor. The Contractor within 48 hours shall deliver to City of Ann Arbor Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.

17. Where street curbs are undermined due to construction activities, they shall be removed and replaced as directed by the Engineer.

18. The Contractor shall be responsible for the continuous maintenance of the temporary road surface and soil erosion control measures within the construction area until the full completion of the project. This work shall be included in the item of work "General Conditions".

19. All curb, sidewalk, driveway approach removals shall be approved by Engineer before the work is done.

20. Sawed sewer pipe connections shall be coupled with a Fernco flexible coupling and a stainless steel shear ring.

21. The location of material stock piles and on-site staging areas to be approved by the Engineer.

22. For mainline paving, the width of the mat for each pass of the paver shall be not less than 10.5' or greater than 15', as directed by the Engineer. The Engineer will direct the layout of the longitudinal joints during construction.

23. All structures shall receive new castings as directed by the Engineer, as specified on the standard casting schedule. The existing castings are the property of the City of Ann Arbor. The Contractor shall deliver to City of Ann Arbor Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.

24. Payment for drainage structure sumps, where specified, shall be included in the payment for the various drainage structure sizes and or types.

25. Where sewer pipes of different sizes or materials are joined, Fernco flexible couplings with stainless steel shear rings shall be used. The Contractor's purchase price for these devices, including shipping, shall be paid as an extra. Prior to payment for this item, the Contractor shall submit receipts for the Engineer's review and approval. All other costs associated with the installation of these devices shall be included in the payment for the sewer.

26. Where sewer and water main are to be removed & replaced or added, all pipe shall be installed using Trench Detail detailed in the specifications or shown on Plans. Backfill for sewer and water construction shall be MDOT Granular Material, Class II, Modified.

27. Existing street name, guide, and regulatory signs, and mailboxes which conflict with the proposed construction shall be removed prior to construction, stored in a manner which will prevent damage, and re-set in locations as directed by the Engineer. This work will not be paid for separately, but shall be included in "Machine Grading, Modified"

28. In areas where edge drain cannot be installed in accordance with City of Ann Arbor Detail SD-TD-11, the edge drain shall be installed at the depth as indicated on the plans, or as directed by Engineer. In no case shall the edge drain be installed at a grade less than 0.50% or at a depth of less than 2' below top of proposed pavement.

29. Six inches of 21AA aggregate base stone to be used at all drive approach replacements.

TEMPORARY SEEDING:

1. SEED IN ACCORDANCE WITH PROJECT DRAWINGS AND SPECIFICATIONS.

2. ANY DISTURBED AREA NOT PAVED, SEEDED, MULCHED, SODDED OR BUILT UPON BY NOVEMBER 15TH OR JUNE 30TH IS TO BE TEMPORARILY STABILIZED PER SPECIFICATIONS.

****
ON SITE SOILS PER THE USDA SOIL SURVEY OF WASHTENAW COUNTY, MICHIGAN:
- MoB – GLYNWOOD LOAM, 2 TO 6 PERCENT SLOPES.
- MoC – MORLEY LOAM, 6 TO 12 PERCENT SLOPES.
- WawobB – WAWASEE LOAM, 2 TO 6 PERCENT SLOPES.

****

TOTAL AREA OF PROPOSED DISTURBANCE = 4.54 AC

1.29 AC – NEEDHAM RD

2.13 AC – MEDFORD RD

0.89 AC – BUCKINGHAM RD

0.23 AC – BUCKINGHAM CT

MISCELLANEOUS OR AS-NEEDED QUANTITIES

Item	Quantity	Unit
General Conditions, Max. $200,000.00	1	LS
Tree, Medium, B&B	5	Ea
Project Supervision, Max. $70,000.00	1	LS
Project Clean-Up and Restoration	1	LS
Digital Audio Visual Coverage	1	LS
Erosion Control, Inlet Protection, Fabric Drop	35	Ea
Erosion Control, Silt Fence	500	Ft
Tree Protection Fence	300	Ft
Minor Traffic Control, Max $90,000.00	1	LS
Traffic Regulator Control	1	LS
Sign, Type B, Temp, Prismatic, Furn & Oper	248	Sft
Sign, Type B, Temp, Prismatic, Special, Furn & Oper	244	Sft
Temporary "No Parking" Sign	100	Ea
Plastic Drum, High Intensity, Lighted, Furn & Oper	100	Ea
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn & Oper	25	Ea
Pedestrian Type II Barricade, Temp, Furn & Oper	20	Ea
Pedestrian Channelizer Device, Furn & Oper	20	Ea
Temporary Pedestrian Ramp, Furn & Oper	4	Ea
Temporary Pedestrian Mat, Furn & Oper	100	Ft
DS_Tree Trimming Allowance	10000	Dlr
Curb, Gutter, and Curb and Gutter, Any Type, Rem	100	Ft
Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	500	Sft
Subgrade Undercutting, Type III	275	Cyd
Exploratory Excavation, SD-TD-1, (0-10' Deep)	25	Ea
Exploratory Excavation, SD-TD-1, Additional Depth	125	Ft
6 In., SDR 26 PVC Sanitary Service Lead, SD-TD-2	300	Ft
Excavate & Backfill For Water Service Tap And Lead	50	Ft
DS_4 In. 45° DIP Bend	4	Ea
6 In. 45° DIP Bend	12	Ea
8 In. 45° DIP Bend	12	Ea
Sacrificial Anode, 17-pound	2	Ea
Sacrificial Anode, 32-pound	3	Ea
Gate Box, Adjust	5	Ea
Temporary Water Main Line Stop, 8 In. or less	2	Ea
Temporary Water Main Line Stop, 12 In.	2	Ea
Temporary Water Main Line Stop, Additional Rental Day	30	Ea
Conc, Curb or Curb & Gutter, All Types	100	Ft
Conc, Sidewalk, 4 In.	500	Sft
Underground Sprinkling System, Restore	5000	Dlr

CITY OF ANN ARBOR STANDARDS USED

DRAWING NO.	SHEET TITLE
SD-GU-1	STANDARD CASTING SCHEDULE
SD-GU-2	SPECIAL STRUCTURE COVER WATER
SD-GU-3	SPECIAL STRUCTURE COVER STORM
SD-GU-4	SPECIAL STRUCTURE COVER SANITARY
SD-GU-5	MANHOLE CASTING ADJUSTMENT
SD-GU-6	VALVE AND MONUMENT BOX ADJUST
SD-GU-7	MANHOLE AND VALVE/MONUMENT BOX LOWERING
SD-GU-8	STRUCTURE PLATE
SD-SN-4	SANITARY LEAD RELOCATION
SD-W-1	FIRE HYDRANT ASSEMBLY
SD-W-2	THRUST BLOCK
SD-W-3	PRECAST GATE WELL
SD-W-5	TAPPING SLEEVE AND VALVE IN WELL
SD-W-7	POLYETHYLENE ENCASEMENT
SD-ST-3	PRECAST SINGLE INLET
SD-CG-1	BARRIER CURB AND GUTTER
SD-DS-1	TYPE M DRIVE APPROACH
SD-DS-4	SIDEWALK AND CURB & GUTTER JOINTS
SD-DS-5	SIDEWALK CROSS SECTION
SD-SESC-1	INLET PROTECTION
SD-SESC-3	SILT FENCE
SD-SESC-4	MULCH BLANKET
SD-SESC-6	STANDARD SESC NOTES
SD-SESC-7	SEQUENCE OF SESC MEASURES
SD-M-1	TREE PROTECTION
SD-TD-1	UTILITY TRENCH - TYPE 1
SD-TD-3.1	UTILITY TRENCH SURFACE RESTORATION
SD-TD-4	TYPICAL EDGE DRAIN TRENCH
SD-TPR-1	DETOUR 1
SD-TPR-2	DETOUR 2
SD-TPR-3	BYPASS A
SD-TPR-4	BYPASS B
SD-TPR-5	BYPASS C
SD-TPR-6	TEMPORARY RAMPS
SD-TPR-7	WALKWAY DEVICES 1
SD-TPR-8	WALKWAY DEVICES 2

MDOT STANDARDS USED

DRAWING NO.	SHEET TITLE
R-28-K	CURB RAMP AND DETECTABLE WARNING DETAILS
R-29-J	DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK
R-83-C	UTILITY TRENCHES

BENCHMARK DESCRIPTIONS

DATUM: GPS-DERIVED NAVD'88

BENCHMARK#: 100
DESCRIPTION: ARROW ON A FIRE HYDRANT. LOCATED ON THE SOUTH SIDE OF MEDFORD ROAD ±130FT SOUTHEAST OF THE CENTERLINE OF SAINT FRANCIS DRIVE.
COORDINATES: N= 277290 E= 13299404 ELEV= 874.439

BENCHMARK#: 101
DESCRIPTION: SET BENCHTIE IN THE WEST FACE OF A UTILITY POLE. LOCATED ON THE EAST SIDE OF MEDFORD ROAD ±15FT NORTH OF THE CENTERLINE OF THE WEST ENTRANCE TO ANN ARBOR WOODS BUILDING #2101.
COORDINATES: N= 276931 E= 13299860 ELEV= 876.606

BENCHMARK#: 102
DESCRIPTION: SET BENCHTIE IN THE NORTH FACE OF A LIGHT POLE. LOCATED ON THE SOUTH SIDE OF MEDFORD ROAD IN FRONT OF BUILDING #2120.
COORDINATES: N= 276638 E= 13300191 ELEV= 865.414

BENCHMARK#: 103
DESCRIPTION: SET BENCHTIE IN THE NORTHEAST FACE OF A LIGHT POLE. LOCATED ON THE SOUTH SIDE OF MEDFORD ROAD IN FRONT OF BUILDING #2180.
COORDINATES: N= 276570 E= 13300582 ELEV= 856.892

BENCHMARK#: 110
DESCRIPTION: SET BENCHTIE IN THE NORTHWEST FACE OF A LIGHT POLE. LOCATED ON THE EAST SIDE OF MANCHESTER ROAD IN FRONT OF HOUSE #2301.
COORDINATES: N= 275540 E= 13300018 ELEV= 868.146

BENCHMARK#: 111
DESCRIPTION: SET BENCHTIE IN THE WEST FACE OF A LIGHT POLE. LOCATED ON THE EAST SIDE OF NEEDHAM ROAD IN FRONT OF HOUSE #2229.
COORDINATES: N= 275805 E= 13299916 ELEV= 864.272

BENCHMARK#: 112
DESCRIPTION: SET BENCHTIE IN THE WEST FACE OF A LIGHT POLE. LOCATED ON THE EAST SIDE OF NEEDHAM ROAD BETWEEN HOUSE #2119 AND #2125.
COORDINATES: N= 276344 E= 13299899 ELEV= 867.382

BENCHMARK#: 113
DESCRIPTION: SET BENCHTIE IN THE EAST FACE OF A LIGHT POLE. LOCATED AT THE SOUTHEAST CORNER OF MEDFORD ROAD AND NEEDHAM ROAD.
COORDINATES: N= 276705 E= 13299943 ELEV= 872.970

BENCHMARK#: 114
DESCRIPTION: SET BENCHTIE IN THE SOUTH FACE OF A LIGHT POLE. LOCATED AT THE NORTHWEST CORNER OF BUCKINGHAM ROAD AND BUCKINGHAM COURT.
COORDINATES: N= 276237 E= 13300210 ELEV= 865.607

BENCHMARK#: 115
DESCRIPTION: SET BENCHTIE IN THE SOUTH FACE OF A LIGHT POLE. LOCATED AT THE NORTHEAST CORNER OF MANCHESTER ROAD AND BUCKINGHAM ROAD.
COORDINATES: N= 276207 E= 13300619 ELEV= 873.492

PERMITS REQUIRED TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE BEGINNING OF CONSTRUCTION.

PERMIT	ISSUING AUTHORITY
LANE CLOSURE PERMIT*	CITY OF ANN ARBOR ENGINEERING
"NO PARKING" SIGNS PERMIT*	CITY OF ANN ARBOR ENGINEERING
GRADING/SOIL EROSION & SEDIMENTATION CONTROL PERMIT*	CITY OF ANN ARBOR CUSTOMER SERVICE
RIGHT-OF-WAY PERMIT*	CITY OF ANN ARBOR CUSTOMER SERVICE
* NO COST TO CONTRACTOR	

PERMITS REQUIRED TO BE OBTAINED BY THE CITY OF ANN ARBOR PRIOR TO THE BEGINNING OF CONSTRUCTION.

PERMIT	ISSUING AUTHORITY
EGLE WATER MAIN CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

CONTACT INFORMATION

PUBLIC UTILITIES	OWNER	CONTACT
WATER SANITARY STORM FORESTRY	CITY OF ANN ARBOR PUBLIC WORKS W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	(734) 794-6350
SIGNS SIGNALS STREET LIGHTS		MARK MORENO (734) 794-6361
PRIVATE UTILITIES	**OWNER**	**CONTACT**
GAS	DTE ENERGY 3150 E. MICHIGAN AVE, YPSILANTI TOWNSHIP, MI 48198	ROBERT CZAPIEWSKI (734) 544-7818
ELECTRIC	DTE ENERGY WESTERN WAYNE SERVICE CENTER 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	ANTHONY IGNASIAK (734) 397-4447
CABLE	COMCAST 27800 FRANKLIN ROAD SOUTHFIELD, MI 48034	RON SOUTHERLAND (313) 999-8300
PHONE	AT&T 550 S. MAPLE ROAD ANN ARBOR, MI 48103	MARC GOODELL (313) 405-0574
FIBER OPTIC	MCI 2800 N. GLENFILLE ROAD RICHARDSON, TX 75082	DEAN BOYERS (972) 729-6016
FIBER OPTIC	WINDSTREAM 1295 S LINDEN ROAD, SUITE B FLINT, MI 48532	GREG SERICH (810) 244-3500
STREET LIGHTING	DTE ENERGY 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	LANCE ALLEY (734) 397-4188

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
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ANN ARBOR, MI 48107-8647
734.794.6410
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

NOTE SHEET

SCALE : NTS

DRAWING No. 2025-2026-2

SHEET No. 2 OF 64

EXISTING LEGEND

- MANHOLE
- CATCH BASIN
- C.O. SEWER CLEAN OUT
- G GAS METER
- GAS SHUT OFF VALVE
- VALVE BOX
- GATE VALVE & WELL
- WATER SHUT OFF VALVE
- FIRE HYDRANT
- SB SPRINKLER VALVE BOX
- LAWN SPRINKLER HEAD
- UNVERIFIED MAPPED OBJECT
- E ELECTRIC RISER OR METER
- T TELEPHONE RISER
- C CABLE TV RISER
- AC AIR CONDITION UNIT
- UTILITY POLE
- UTILITY POLE W/ LAMP EXTENSION (ARROW INDICATES DIRECTION OF ARM)
- LIGHT POLE
- LIGHT POLE WITH LAMP EXTENSION
- TRAFFIC SIGNAL
- POLE W/ TRAFFIC SIGNAL (OVER ROAD)
- GUY WIRE
- GROUND LEVEL / DECORATIVE LIGHTING
- FLAG POLE
- METAL OR CONC. POST
- MAILBOX
- SIGN
- WATER FOUNTAIN
- PARKING METER
- BILLBOARD OR LARGE SIGN
- BASKETBALL HOOP
- BOULDER
- STATUE OR SCULPTURE
- BENCH — BENCH
- BIKE RACK — BIKE RACK
- DETECTABLE WARNING STRIP
- PICNIC TABLE
- SOCCER GOAL — SOCCER GOAL
- STUMP
- DS-S DOWNSPOUT INTO STORM DRAIN
- DS-G DOWNSPOUT TO GROUND
- CONIFEROUS TREE
- DECIDUOUS TREE
- DECIDUOUS SHRUB
- CONIFEROUS SHRUB
- SECTION CORNER
- SDA#10 TRAVERSE POINT
- 1 STRUCTURE NUMBER
- 10 SDA POINT No.
- +655.00 SPOT ELEVATION

TC	TOP OF CURB ELEVATION
GU	GUTTER ELEVATION
TP	TOP OF PAVEMENT ELEVATION
EM	EDGE OF METAL ELEVATION
TW	TOP OF WALK ELEVATION
T/WALL	TOP OF WALL ELEVATION
B/WALL	BOTTOM OF WALL ELEVATION
GR	GROUND ELEVATION
UG	UNDERGROUND
FO	FIBER OPTIC
CONC	CONCRETE
ASPH	ASPHALT
OVHG	OVERHANG
FF	FINISH FLOOR ELEVATION
DL	DOOR LEDGE ELEVATION
F.I.	FOUND IRON
F.I.P.	FOUND IRON PIPE
MON	FOUND MONUMENT
F.P.K.	FOUND P.K. NAIL
S.I.	SET IRON W/SDA CAP
S.P.K.	SET P.K. NAIL
S.P.K./TAG	SET P.K. NAIL W/SDA TAG
MAG/TAG	SET MAGNETIC NAIL W/SDA TAG
M	MEASURED
R	RECORD
C	CALCULATED
INV.	INVERT ELEVATION
CMP	CORRUGATED METAL PIPE

- G — GAS
- SN — SANITARY SEWER (SAN)
- ST — STORM SEWER (STM)
- WM — WATERMAIN (WM)
- OH — OVERHEAD WIRE
- CS — COMBINED SEWER
- STE — STEAM LINE
- O — OIL LINE
- F — UG FIBER (COMM.)
- E — UG ELECTRIC (ELEC.)
- T — UG PHONE (PH)
- C — UG CABLE (CBL)
- CHAIN LINK FENCE (CL)
- WOOD FENCE
- WOVEN WIRE FENCE (WW)
- GUARD RAIL
- EDGE OF BRUSH/WOODS
- CENTERLINE OF DITCH
- CULVERT
- 650 — MAJOR CONTOUR
- 651 — MINOR CONTOUR
- BOUNDARY LINES
- ROW LINES
- SECTION LINES
- PROPERTY LINES
- BUILDING
- ASPHALT
- CONCRETE
- GRAVEL/ DIRT/ MULCH
- BRICK / PAVERS
- WATER
- WATER W/ VEGETATION

EXISTING LEGEND

EX = EXISTING

FIRE HYDRANT	WATER MAIN
GATE VALVE IN BOX	WATER MAIN ABANDONED
GATE VALVE IN WELL	STORM SEWER
STOP BOX	STORM SEWER ABANDONED
WATER VAULT	SANITARY SEWER
WELL	SANITARY SEWER ABANDONED
CATCH BASIN (SQ)	GAS MAIN
CATCH BASIN (RD)	GAS MAIN (DEAD)
STORM MANHOLE	ELECTRICAL OVER HEAD
NON-CURB CATCH BASIN (SQ)	ELECTRICAL UNDER GROUND
END SECTION	ELECTRICAL DUCT BANK
SANITARY MANHOLE	TELEPHONE OVER HEAD
CLEAN-OUT	TELEPHONE UNDER GROUND
POST	TELEPHONE DUCT BANK
PEDESTRIAN SIGNAL	CABLE TV OVER HEAD
SIGN	CABLE TV UNDER GROUND
HAND HOLE	FIBER OPTIC
ORNAMENTAL LIGHT	FIBER OPTIC DUCT BANK
FLOOD LIGHT	BOUNDARY
UNKNOWN MANHOLE	BUILDING
TELEPHONE MANHOLE	CENTERLINE OF DITCH
TELEPHONE RISER	CENTERLINE/CROWN OF ROAD
GAS VALVE	CONTOUR MAJOR
GAS VENT	CONTOUR MINOR
GAS BOX	EDGE OF WATER
ELECTRICAL RISER	FLOODPLAIN
TRANSFORMER	FENCE
UTILITY POLE	GRAVEL
GUY ANCHOR	GUARDRAIL
GUY POLE	STONE WALL
MONITORING WELL	R.O.W.
MAILBOX	TREELINE
SOIL BORING	WETLAND
TRAVERSE POINT	EDGE OF BRUSH
BENCH MARK	HEDGE
IRON PIPE	
MON BOX	

- W — WATER MAIN
- ST — STORM SEWER
- SN — SANITARY SEWER
- g — GAS MAIN
- g (Dead) — GAS MAIN (DEAD)
- e duct bank — ELECTRICAL DUCT BANK
- oht — TELEPHONE OVER HEAD
- t — TELEPHONE UNDER GROUND
- t duct bank — TELEPHONE DUCT BANK
- ohtv — CABLE TV OVER HEAD
- tv — CABLE TV UNDER GROUND
- fo — FIBER OPTIC
- fo duct bank — FIBER OPTIC DUCT BANK
- 800 — CONTOUR MAJOR
- 799 — CONTOUR MINOR

- TREE (DECIDUOUS)
- TREE (CONIFEROUS)
- SHRUB (DECIDUOUS)
- STUMP
- C.R.Z. — TREE TO REMAIN & PROTECT (DECIDUOUS) CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREAST HEIGHT (INCHES) X 10
- C.R.Z. — TREE TO REMAIN & PROTECT (CONIFEROUS) CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREAST HEIGHT (INCHES) X 10

PROPOSED LEGEND

PROP = PROPOSED

HYDRANT (PLAN)	WATER MAIN
WATER GATE WELL	STORM SEWER
REDUCER	SANITARY SEWER
WATER GATE VALVE	FIBER OPTIC
WATER STOP BOX	ELECTRICAL
WATER VAULT	CENTERLINE OF DITCH
INLET	CENTERLINE OF ROAD
DOUBLE INLET	FENCE
INLET JUNCTION CHAMBER	GRAVEL
ROUND CATCH BASIN	SILT FENCE
STORM MANHOLE	PROTECTIVE FENCE
DRAIN ARROW	GUARDRAIL
FLARED END SECTION	LOT/UNIT
SANITARY MANHOLE	CURB
CLEAN-OUT	TEMPORARY GRADING PERMIT
BARREL	CONTOUR MAJOR
SIGN	CONTOUR MINOR
PUSH BUTTON	WATER EASMENT
HAND HOLE	STORM EASEMENT
	SANITARY EASEMENT
	R.O.W.
	LIMITS OF CONSTRUCTION
	LIMIT OF GRADING
	STONE WALL
	DETECTABLE WARNING
	ASPHALT
	CONCRETE
	SIDEWALK
	TREE (DECIDUOUS)
	TREE (CONIFEROUS)
	TREE TO BE REMOVED (DECIDUOUS)
	TREE TO BE REMOVED (CONIFEROUS)
	STUMP TO BE REMOVED

- W — WATER MAIN
- R — STORM SEWER
- S — SANITARY SEWER
- FO — FIBER OPTIC
- E — ELECTRICAL
- 800 — CONTOUR MAJOR
- 799 — CONTOUR MINOR

811 Know what's below. Call before you dig.

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5	—	—	—	—
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM WATER MAIN & RESURFACING PROJECT

LEGEND SHEET

SCALE : NTS

DRAWING No. 2025-2026-3

SANITARY SEWER STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	RIM ELEV.	SIZE, DIRECTION & INVERT ELEVATION
SAN-01	4' MH	875.38	8" SE 867.37 8" SW 867.77
SAN-02	4' MH	872.41	8" NW 865.61 8" SE 865.51 8" SW 866.01
SAN-03	4' MH	870.67	8" SW 863.57 8" NW 863.47 8" E 863.27
SAN-04	4' MH	870.07	8" W 860.08
SAN-05	4' MH	858.42	N.S.
SAN-06	4' MH	854.37	8" E 846.48 8" S 856.58 10" N 846.43
SAN-07	4' MH	855.97	8" E 848.77 8" W 848.77
SAN-08	4' MH	859.70	8" W 850.69 8" NE 850.79 8" SW 850.79
SAN-09	4' MH	865.69	8" SW 856.59 8" SE 856.59 8" NE 856.49
SAN-10	4' MH	868.43	8" SW 858.28 8" NE 858.38 6" NW 858.98 6" SE 858.98
SAN-11	4' MH	870.10	8" NE 860.05 6" NW 860.56 6" SE 860.46
SAN-12	4' MH	866.97	8" NE 856.75 8" S 856.50
SAN-13	4' MH	869.95	8" N 861.25 8" SE 861.30
SAN-14	4' MH	867.11	8" S 856.51 8" N 856.46
SAN-15	4' MH	862.72	8" S 851.12 8" N 850.82
SAN-16	4' MH	858.29	8" S 844.49 8" N 844.39 8" E 844.19
SAN-17	4' MH	857.44	8" N 844.84 8" S 844.64 8" W 846.74
SAN-18	4' MH	858.17	8" N 846.67 8" S 846.57
SAN-19	4' MH	872.82	8" S 862.37 4" NW 863.02
SAN-20	4' MH	877.38	8" N 867.93 6" W 868.33 6" E 868.33

* N.S. = NOT SURVEYED

SANITARY SEWER STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	RIM ELEV.	SIZE, DIRECTION & INVERT ELEVATION
SAN-21	4' MH	876.39	8" N 866.54 8" S 867.93 6" W 867.29 6" E 867.29
SAN-22	4' MH	872.72	8" S 865.08 8" NE 865.08 6" NW 865.73 6" SE 865.73
SAN-23	4' MH	856.91	8" W 843.21 8" E 843.11
SAN-24	4' MH	855.52	8" W 841.96 8" NE 841.46
SAN-25	4' MH	856.66	8" NE 846.56 8" SW 840.86 8" SE 840.76 8" NE 841.26
SAN-26	4' MH	861.05	8" SW 851.35
SAN-27	4' MH	864.33	8" NE 855.43 8" NW 855.84 4" SE 856.04 4" SW 856.04
SAN-28	4' MH	868.74	8" SE 858.64 8" NW 859.44
SAN-29	4' MH	865.50	8" SW 855.29 8" NE 855.19 6" NW 855.89 6" SE 858.79
SAN-30	4' MH	866.85	8" SW 854.85 8" E 854.75
SAN-31	4' MH	868.10	8" W 854.51 8" N 854.20 6" SE 854.73

EXISTING STORM SEWER STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	RIM ELEV.	SIZE, DIRECTION & INVERT ELEVATION
STM-1	4' Inlet Junction	875.72	15" NE 872.90
STM-2	4' MH	874.79	N.S. (FROM RECORD)
STM-3	4' Inlet Junction	868.85	12" NE 865.35
STM-4	4' Inlet Junction	868.88	12" S 865.50
STM-5	4' MH	869.37	15" W 861.57 12" N 864.07 12" SW 862.97 18" SE 861.77
STM-6	4' MH	867.50	18" NW 660.50 18" SE 860.70 18" N 860.50
STM-7	4' MH	866.18	12" NE 861.18 12" SW 861.28 18" NW 861.18 10" SE 861.18
STM-8	4' Inlet Junction	865.19	12" SW 862.23
STM-9	4' Inlet Junction	866.23	12" NE 862.75
STM-10	4' MH	865.33	12" SE 862.51 12" NW 862.72
STM-11	4' Inlet Junction	873.53	N.S. (FULL OF DEBRIS)
STM-12	4' Inlet Junction	870.54	12" NE 866.54 12" SE 866.44
STM-13	4' Inlet Junction	870.68	12" SW 866.75
STM-14	4' MH	870.73	12" S 866.43 12" NW 866.33 12" SE 865.93
STM-15	4' Inlet Junction	870.60	12" SE 866.48 12" N 866.43
STM-16	4' Inlet Junction	870.91	12" NW 866.71
STM-17	4' MH	870.60	12" NW 863.49 12" E 863.49
STM-18	4' MH	869.33	12" W 861.63 12" E 861.53
STM-19	4' MH	861.43	12" W 854.00 12" N 854.47 12" E 854.00
STM-20	4' Inlet Junction	860.54	12" N 854.44 12" S 854.44
STM-21	4' Inlet Junction	860.48	12" S 854.58
STM-22	4' MH	853.88	12" E 849.65 12" W 849.50 12" N 849.18
STM-23	4' Inlet Junction	853.08	12" N 849.81 12" W 849.72
STM-24	Double Inlet	853.56	12" S 850.05
STM-25	4' MH	865.69	12" S 859.54 12" NE 858.49 12" SE 858.54
STM-26	4' Inlet Junction	865.68	12" S 859.77 12" N 859.67
STM-27	4' Inlet Junction	865.34	12" N 860.24
STM-28	4' Inlet Junction	865.48	12" SW 862.08
STM-29	4' Inlet Junction	865.53	12" NE 861.98 12" S 860.08
STM-30	4' MH	866.18	12" NW 858.93 12" N 860.03 12" SE 858.98
STM-31	4' Inlet Junction	868.97	12" NW 863.91 6" SE 866.56
STM-32	4' Inlet Junction	868.66	12" SE 862.65 12" NW 862.60
STM-33	4' MH	868.74	12" SE 862.49 12" NE 862.39
STM-34	4' MH	867.68	12" NW 861.52 12" SW 860.62 12" NE 860.57
STM-35	4' Inlet Junction	867.60	12" NE 862.20 12" SE 862.15
STM-36	4' Inlet Junction	867.94	12" SW 862.79
STM-37	4' Inlet Junction	861.92	12" W 855.62 12" E 855.62

* N.S. = NOT SURVEYED

EXISTING STORM SEWER STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	RIM ELEV.	SIZE, DIRECTION & INVERT ELEVATION
STM-38	4' MH	862.55	12" W 854.85 12" N 853.95
STM-39	4' Inlet Junction	861.77	12" E 856.57
STM-40	4' Inlet Junction	857.59	12" E 852.89
STM-41	4' Inlet Junction	857.75	12" W 852.55 12" N 852.35
STM-42	4' MH	857.11	12" S 848.11 12" S 848.51 12" N 848.21 12" W 847.81
STM-43	4' MH	856.37	12" W 850.77 12" N 849.67 12" S 849.62
STM-44	4' Inlet Junction	856.08	12" W 850.96 12" E 850.91
STM-45	4' Inlet Junction	855.92	12" E 851.82
STM-46	4' MH	862.89	12" W 856.31 12" S 855.36
STM-47	4' Inlet Junction	861.85	12" W 856.52 12" E 856.52
STM-48	4' Inlet Junction	862.05	12" E 857.65
STM-49	4' MH	856.59	N.S.
STM-50	4' MH	855.47	N.S.
STM-51	4' Inlet Junction	854.65	30" NE 850.36 12" SE 850.51
STM-52	4' Inlet Junction	854.84	12" NW 850.64
STM-53	4' MH	856.17	30" SW 844.35 30" SE 844.15
STM-54	4' Inlet Junction	864.08	12" NE 858.88
STM-55	4' Inlet Junction	864.13	12" SW 859.13 12" E 858.93
STM-56	4' MH	864.43	12" W 858.83 12" NE 858.73 12" N 858.43
STM-57	4' Inlet Junction	864.41	12" SW 858.71 12" SE 858.81
STM-58	4' Inlet Junction	864.36	12" NW 858.84
STM-59	4' MH	866.12	N.S. (HEAVY ROOTS)
STM-60	4' MH	867.10	N.S. (HEAVY ROOTS)
STM-61	4' MH	867.67	12" S 864.00 12" N 857.20
STM-62	4' Inlet Junction	867.07	12" S 858.71 12" N 864.00
STM-63	4' Inlet Junction	867.08	12" N 859.10

EXISTING WATER STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE SIZE	RIM ELEV.
GV-01	12"	873.09
GV-02	12"	872.83
GV-03	12"	N.S. (FROM RECORD)
GV-04	12"	N.S. (FROM RECORD)
GV-05	4"	866.01
GV-06	12"	875.12
GV-07	8"	870.55
GV-08	8"	866.33
GV-09	4"	855.70
GV-10	8"	854.19
GV-11	6"	854.40
GV-12	4"	855.63
GV-13	4"	862.46
GV-14	6"	865.69
GV-15	6"	857.07
GV-16	4"	871.17
GV-17	12"	871.73
GV-18	6"	857.07
GV-19	6"	864.65
GV-20	6"	871.17
GV-21	4"	864.66

* N.S. = NOT SURVEYED

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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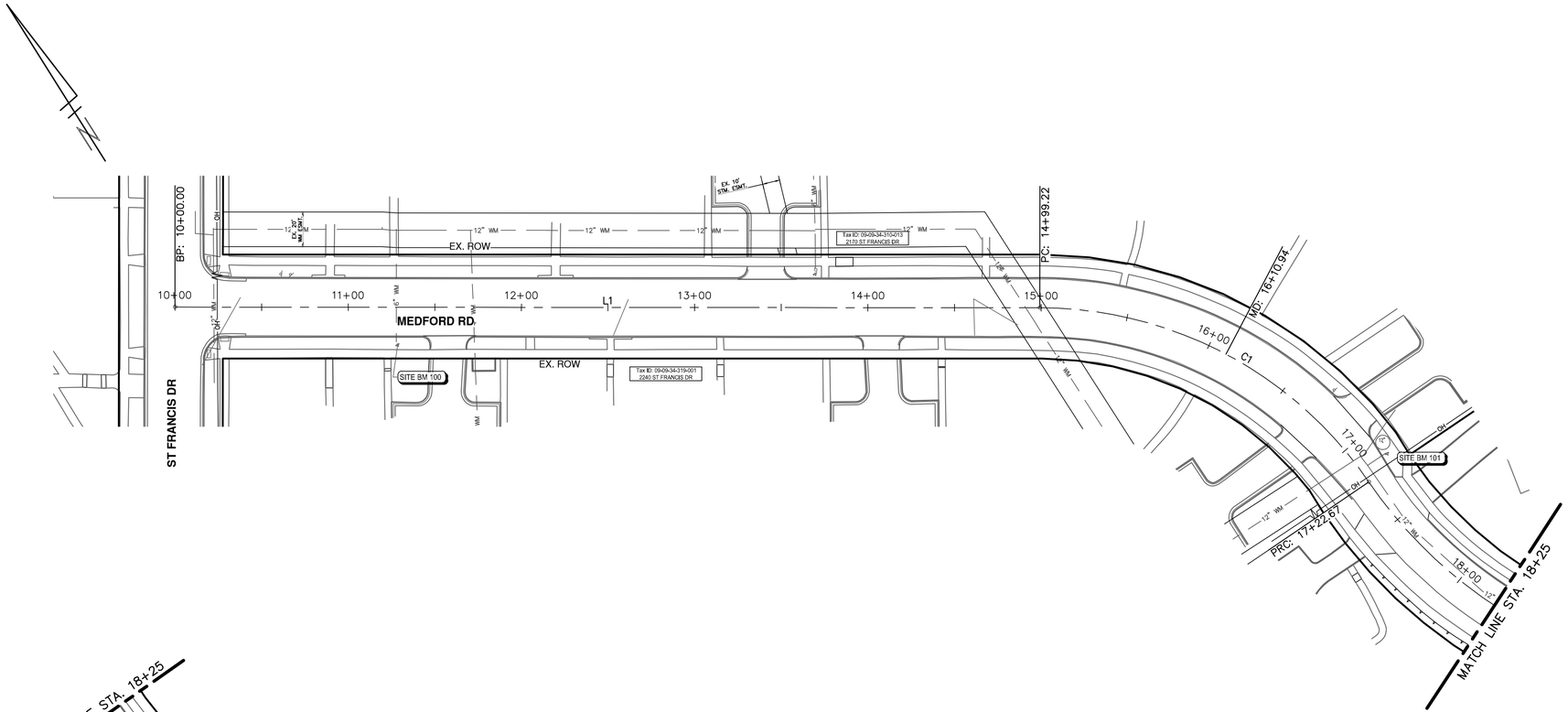
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

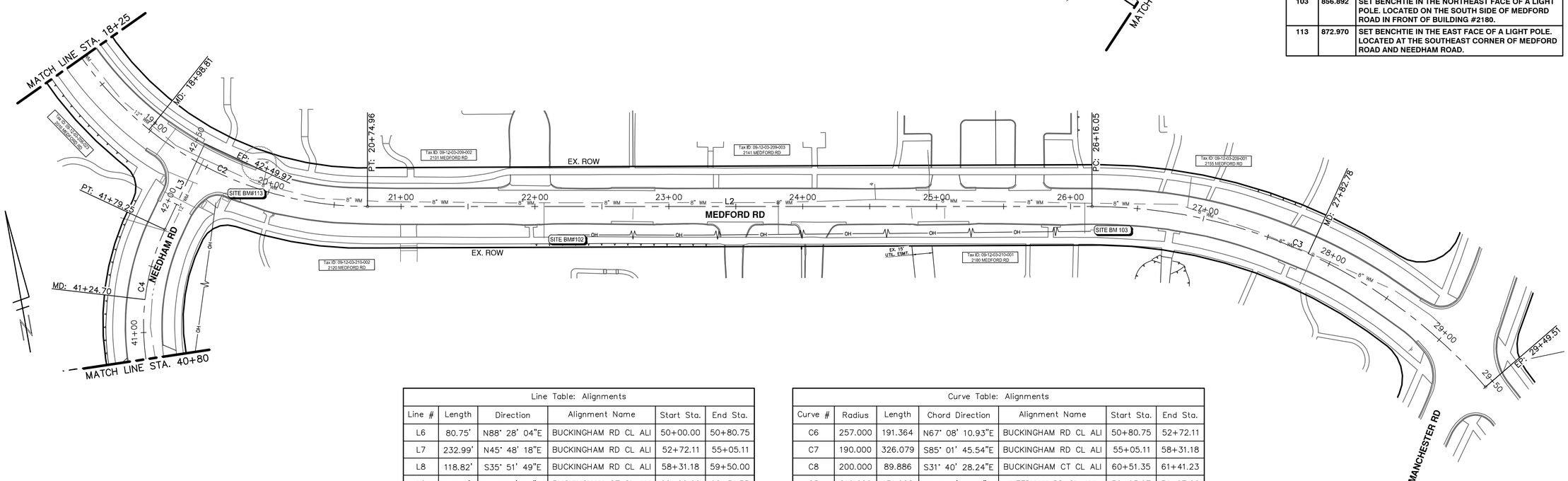
NEEDHAM, MEDFORD, & BUCKINGHAM WATER MAIN & RESURFACING PROJECT

EXISTING STRUCTURE TABLES

SCALE : NTS

DRAWING No. 2025-2026-4





BENCHMARKS

BM#	ELEV	DESCRIPTION
100	874.439	ARROW ON A FIRE HYDRANT. LOCATED ON THE SOUTH SIDE OF MEDFORD ROAD ±130FT SOUTHEAST OF THE CENTERLINE OF SAINT FRANCIS DRIVE.
101	876.606	SET BENCHTIE IN THE WEST FACE OF A UTILITY POLE. LOCATED ON THE EAST SIDE OF MEDFORD ROAD ±15FT NORTH OF THE CENTERLINE OF THE WEST ENTRANCE TO ANN ARBOR WOODS BUILDING #2101.
102	865.414	SET BENCHTIE IN THE NORTH FACE OF A LIGHT POLE. LOCATED ON THE SOUTH SIDE OF MEDFORD ROAD IN FRONT OF BUILDING #2120.
103	856.892	SET BENCHTIE IN THE NORTHEAST FACE OF A LIGHT POLE. LOCATED ON THE SOUTH SIDE OF MEDFORD ROAD IN FRONT OF BUILDING #2180.
113	872.970	SET BENCHTIE IN THE EAST FACE OF A LIGHT POLE. LOCATED AT THE SOUTHEAST CORNER OF MEDFORD ROAD AND NEEDHAM ROAD.

Line Table: Alignments

Line #	Length	Direction	Alignment Name	Start Sta.	End Sta.
L6	80.75'	N88° 28' 04"E	BUCKINGHAM RD CL ALI	50+00.00	50+80.75
L7	232.99'	N45° 48' 18"E	BUCKINGHAM RD CL ALI	52+72.11	55+05.11
L8	118.82'	S35° 51' 49"E	BUCKINGHAM RD CL ALI	58+31.18	59+50.00
L9	51.35'	S18° 47' 58"E	BUCKINGHAM CT CL ALI	60+00.00	60+51.35
L10	108.77'	S44° 32' 59"E	BUCKINGHAM CT CL ALI	61+41.23	62+50.00
L4	65.10'	N36° 09' 39"W	NEEDHAM RD CL ALI	29+99.97	30+65.07
L5	873.15'	N01° 38' 43"W	NEEDHAM RD CL ALI	31+97.00	40+70.15

Curve Table: Alignments

Curve #	Radius	Length	Chord Direction	Alignment Name	Start Sta.	End Sta.
C6	257.000	191.364	N67° 08' 10.93"E	BUCKINGHAM RD CL ALI	50+80.75	52+72.11
C7	190.000	326.079	S85° 01' 45.54"E	BUCKINGHAM RD CL ALI	55+05.11	58+31.18
C8	200.000	89.886	S31° 40' 28.24"E	BUCKINGHAM CT CL ALI	60+51.35	61+41.23
C5	219.000	131.928	N18° 54' 11.17"W	NEEDHAM RD CL ALI	30+65.07	31+97.00

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

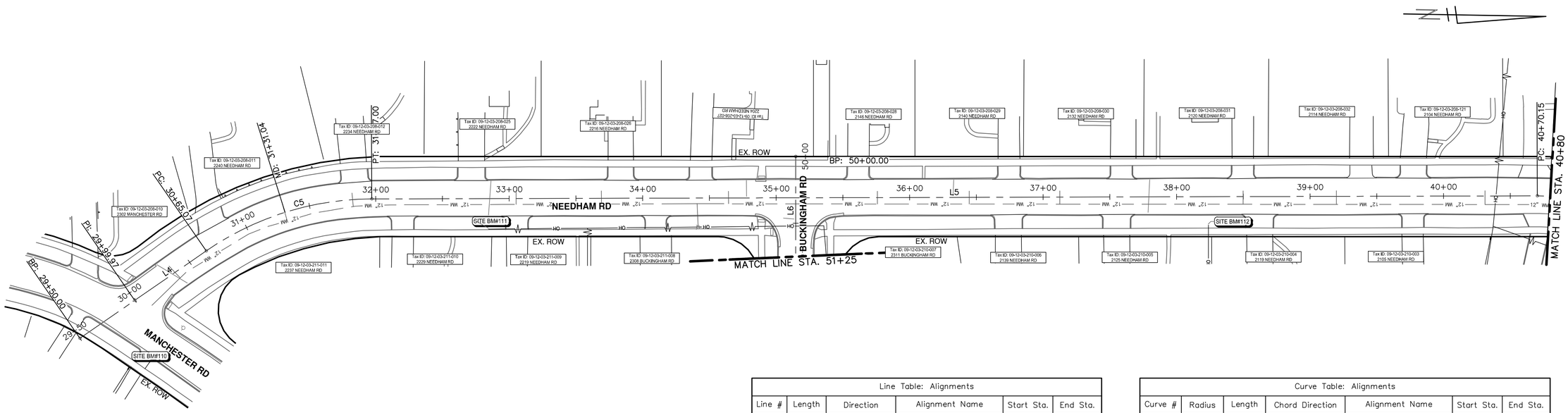
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

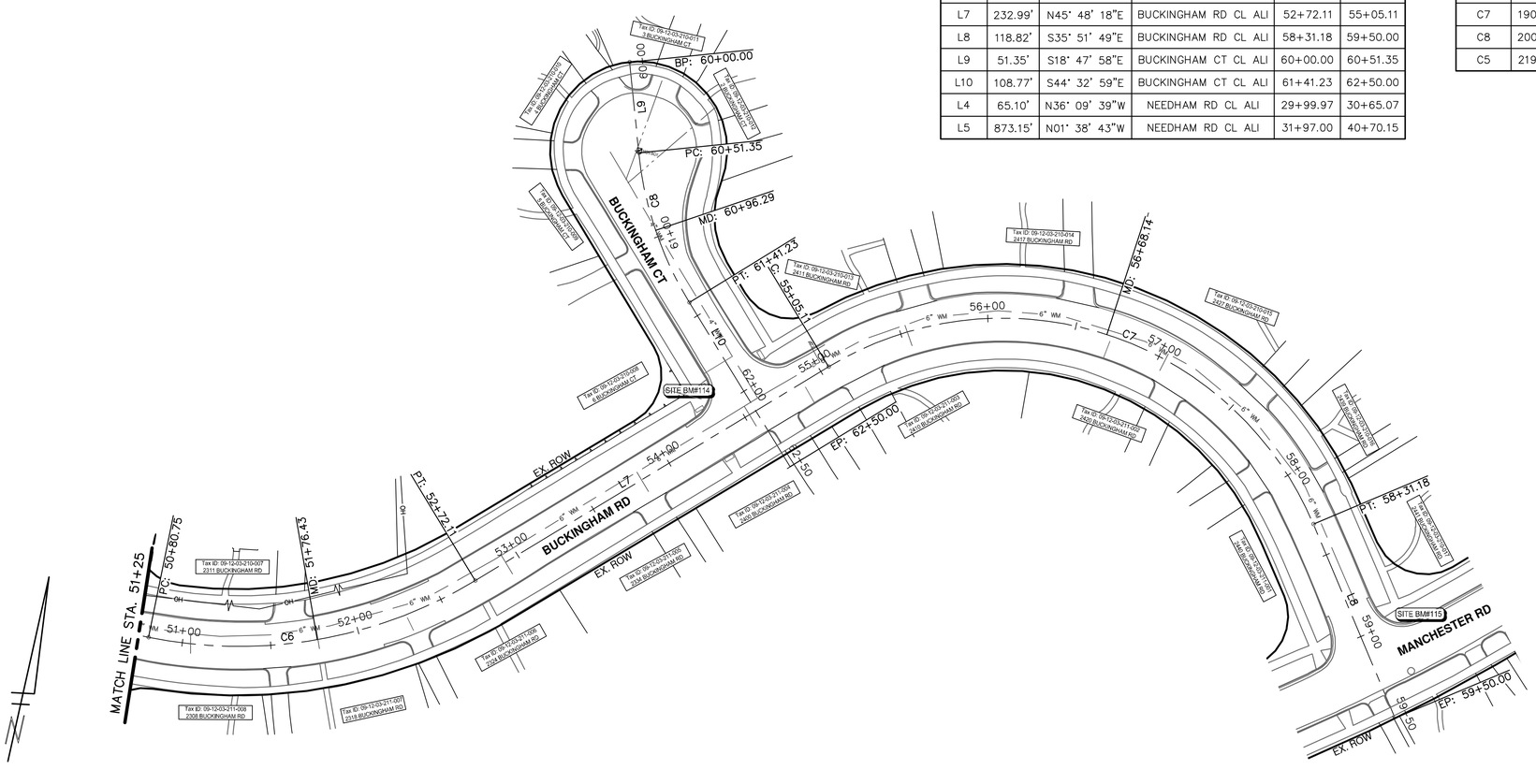
ALIGNMENT SHEET - 1

SCALE PLAN: 1" = 20'

DRAWING No. 2025-2026-5

J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\Source Drawings\Align–Corr\AA25001_Align.dwg Dwg Created: 10–Jul–25 – _a2 standard bw.stb – Plot Date: 22–Jan–26





Line Table: Alignments					
Line #	Length	Direction	Alignment Name	Start Sta.	End Sta.
L6	80.75'	N88° 28' 04"E	BUCKINGHAM RD CL ALI	50+00.00	50+80.75
L7	232.99'	N45° 48' 18"E	BUCKINGHAM RD CL ALI	52+72.11	55+05.11
L8	118.82'	S35° 51' 49"E	BUCKINGHAM RD CL ALI	58+31.18	59+50.00
L9	51.35'	S18° 47' 58"E	BUCKINGHAM CT CL ALI	60+00.00	60+51.35
L10	108.77'	S44° 32' 59"E	BUCKINGHAM CT CL ALI	61+41.23	62+50.00
L4	65.10'	N36° 09' 39"W	NEEDHAM RD CL ALI	29+99.97	30+65.07
L5	873.15'	N01° 38' 43"W	NEEDHAM RD CL ALI	31+97.00	40+70.15

Curve Table: Alignments						
Curve #	Radius	Length	Chord Direction	Alignment Name	Start Sta.	End Sta.
C6	257.000	191.364	N67° 08' 10.93"E	BUCKINGHAM RD CL ALI	50+80.75	52+72.11
C7	190.000	326.079	S85° 01' 45.54"E	BUCKINGHAM RD CL ALI	55+05.11	58+31.18
C8	200.000	89.886	S31° 40' 28.24"E	BUCKINGHAM CT CL ALI	60+51.35	61+41.23
C5	219.000	131.928	N18° 54' 11.17"W	NEEDHAM RD CL ALI	30+65.07	31+97.00

BENCHMARKS		
BM#	ELEV	DESCRIPTION
110	868.146	SET BENCHTIE IN THE NORTHWEST FACE OF A LIGHT POLE. LOCATED ON THE EAST SIDE OF MANCHESTER ROAD IN FRONT OF HOUSE #2301.
111	864.272	SET BENCHTIE IN THE WEST FACE OF A LIGHT POLE. LOCATED ON THE EAST SIDE OF NEEDHAM ROAD IN FRONT OF HOUSE #2229.
112	867.382	SET BENCHTIE IN THE WEST FACE OF A LIGHT POLE. LOCATED ON THE EAST SIDE OF NEEDHAM ROAD BETWEEN HOUSE #2119 AND #2125.
114	865.607	SET BENCHTIE IN THE SOUTH FACE OF A LIGHT POLE. LOCATED AT THE NORTHWEST CORNER OF BUCKINGHAM ROAD AND BUCKINGHAM COURT.
115	873.492	SET BENCHTIE IN THE SOUTH FACE OF A LIGHT POLE. LOCATED AT THE NORTHEAST CORNER OF MANCHESTER ROAD AND BUCKINGHAM ROAD.

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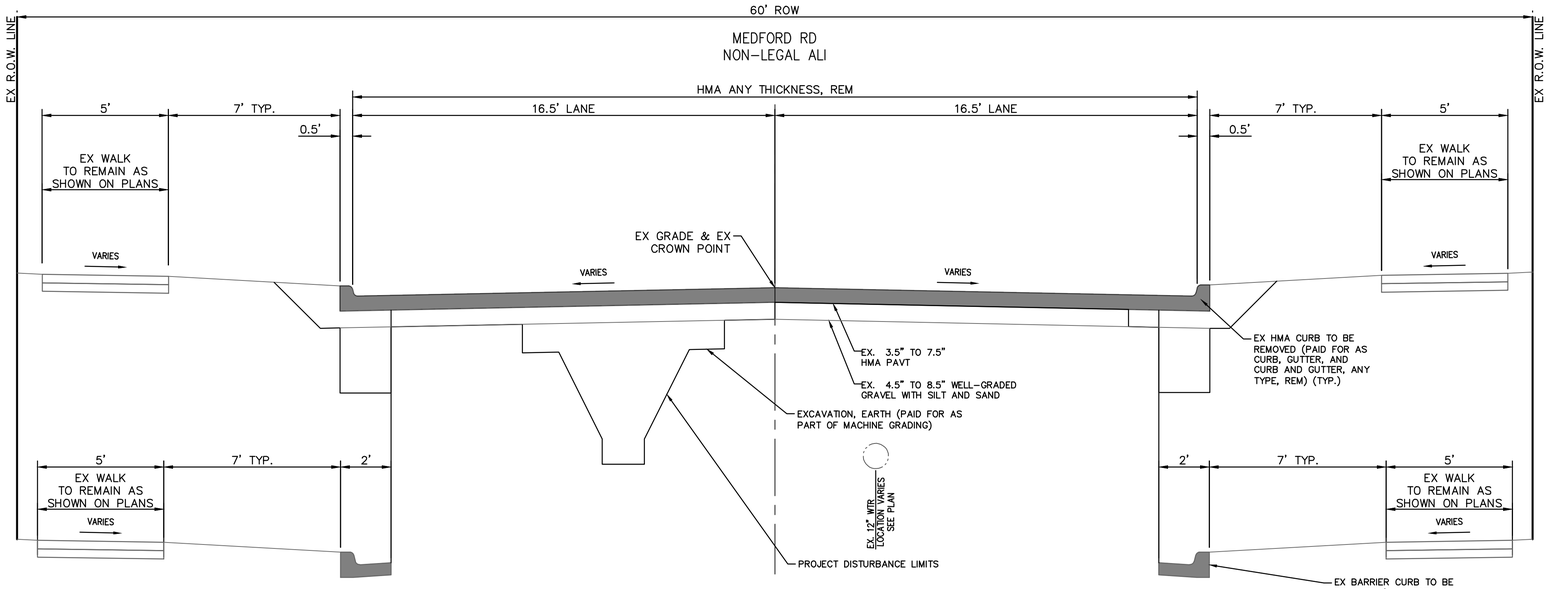
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

ALIGNMENT SHEET - 2

SCALE PLAN: 1" = 20'

DRAWING No. 2025-2026-6

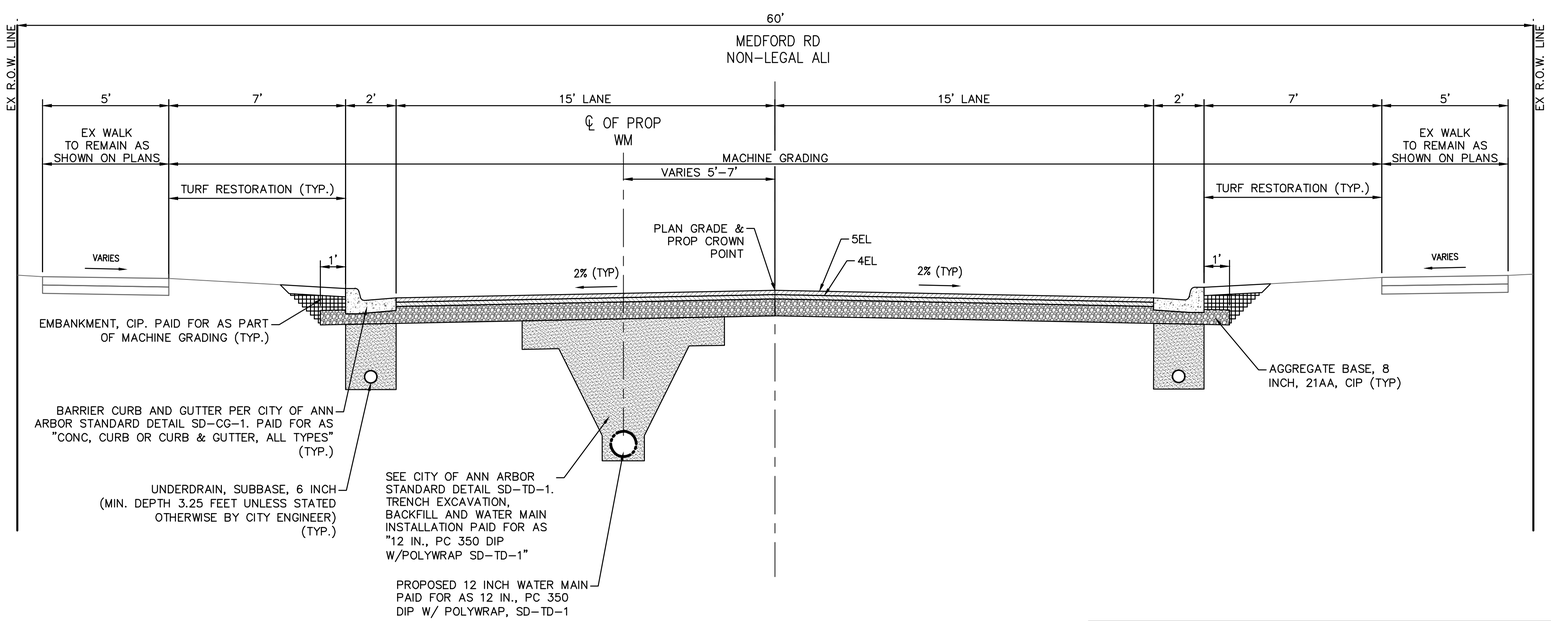


CURB AND GUTTER APPLIES TO:
STA 10+06 TO STA 10+41

EXISTING MEDFORD RD TYPICAL SECTION

SECTION APPLIES TO:
STA 10+06 TO STA 15+00

CURB AND GUTTER APPLIES TO:
STA 10+06 TO STA 10+41



PROPOSED MEDFORD RD TYPICAL SECTION

SECTION APPLIES TO:
STA 10+06 TO STA 15+00

HMA APPLICATION ESTIMATE

IDENT NO.	ITEM	RATE LBS PER SYD	PERFORMANCE GRADE	REMARKS
5EL	HMA, 5EL	220	58-28	MAINLINE TOP COURSE – AWI 220
4EL	HMA, 4EL	220	58-28	MAINLINE LEVELING COURSE
	* BOND COAT	0.05-0.15 GAL		

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

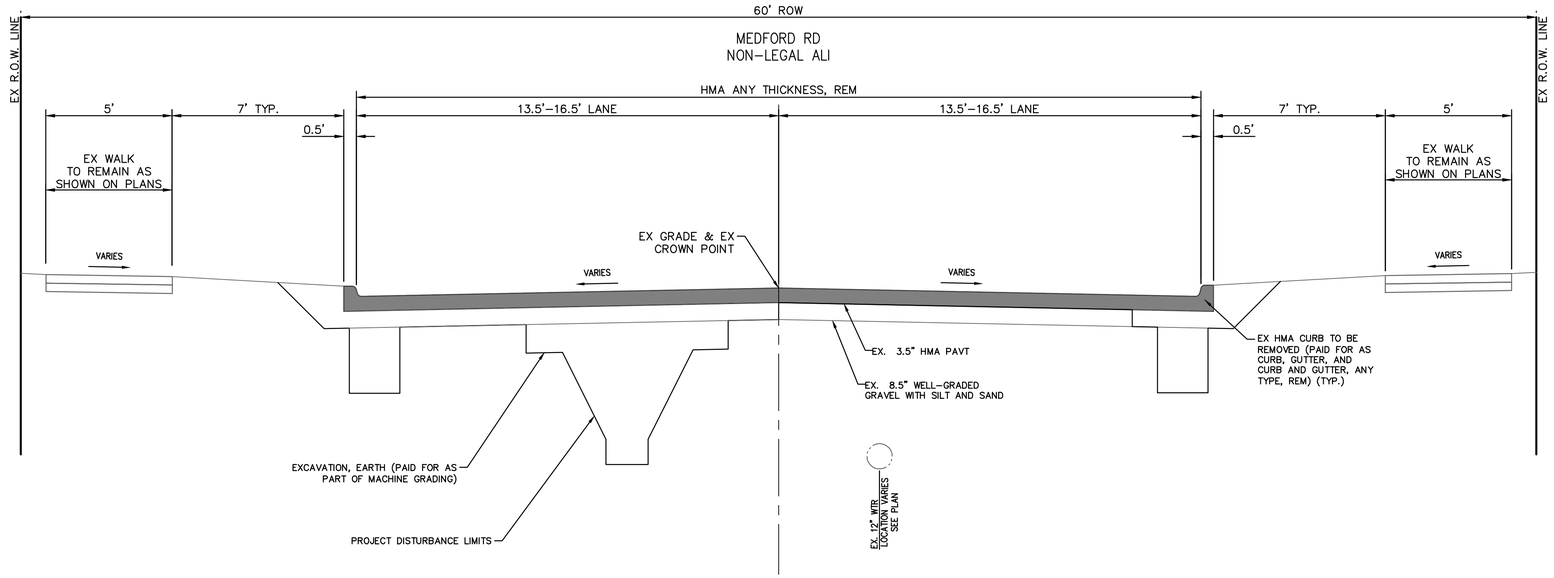
TYPICAL SECTION - 1

SCALE PLAN: NO SCALE

DRAWING No. 2025-2026-7

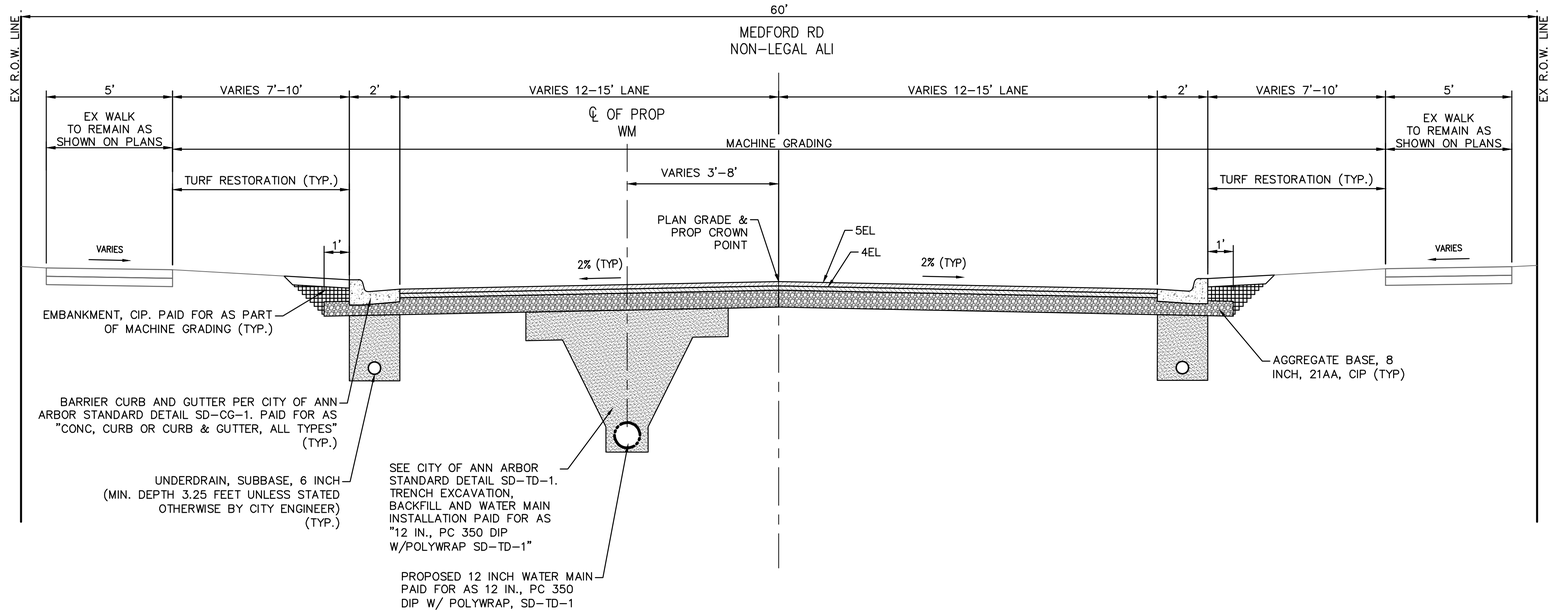
SHEET No. 7 OF 64

j:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_TYP.dwg Dwg Created: 21-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



EXISTING MEDFORD RD TYPICAL SECTION

SECTION APPLIES TO:
STA 15+00 TO STA 17+26



PROPOSED MEDFORD RD TYPICAL SECTION

SECTION APPLIES TO:
STA 15+00 TO STA 17+26

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
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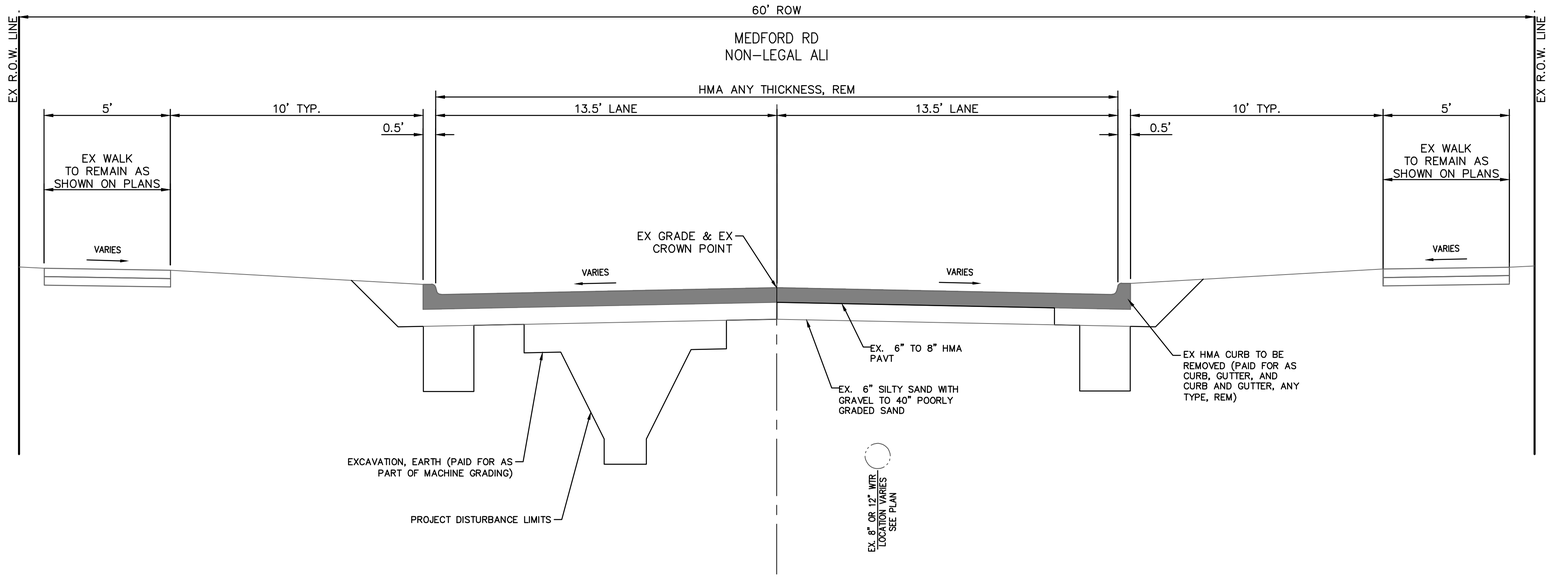
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

TYPICAL SECTION - 2

SCALE PLAN: NO SCALE

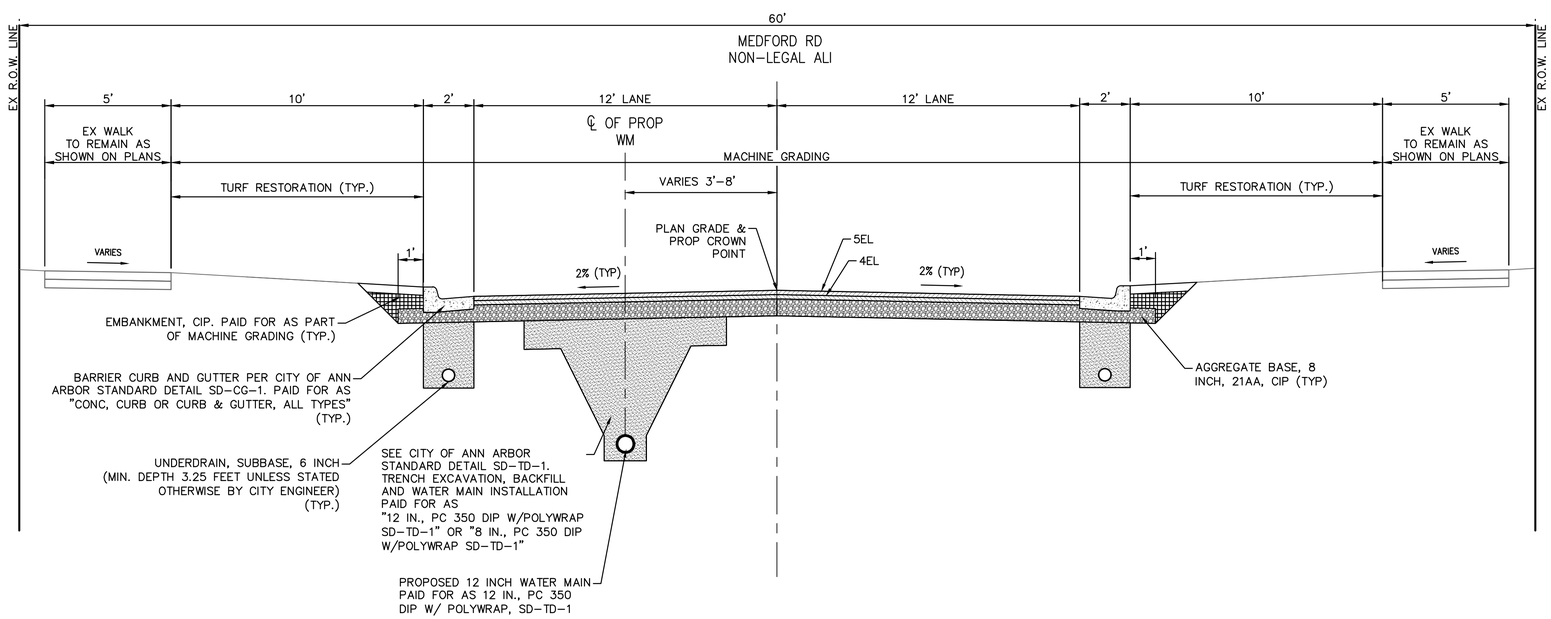
DRAWING No.
2025-2026-8

SHEET No.
8 OF 64



EXISTING MEDFORD RD TYPICAL SECTION

SECTION APPLIES TO:
STA 17+26 TO STA 28+72



PROPOSED MEDFORD RD TYPICAL SECTION

SECTION APPLIES TO:
STA 17+26 TO STA 28+72

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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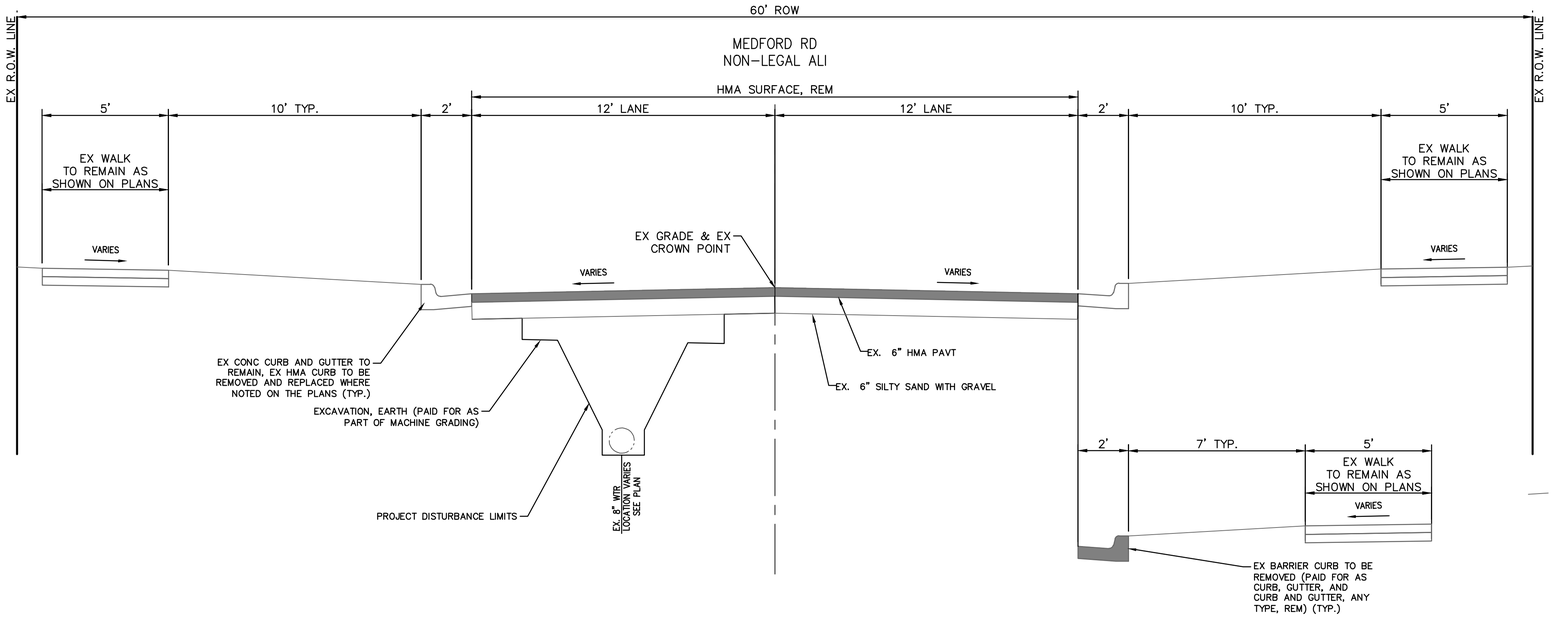
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

TYPICAL SECTION - 3

SCALE PLAN: NO SCALE

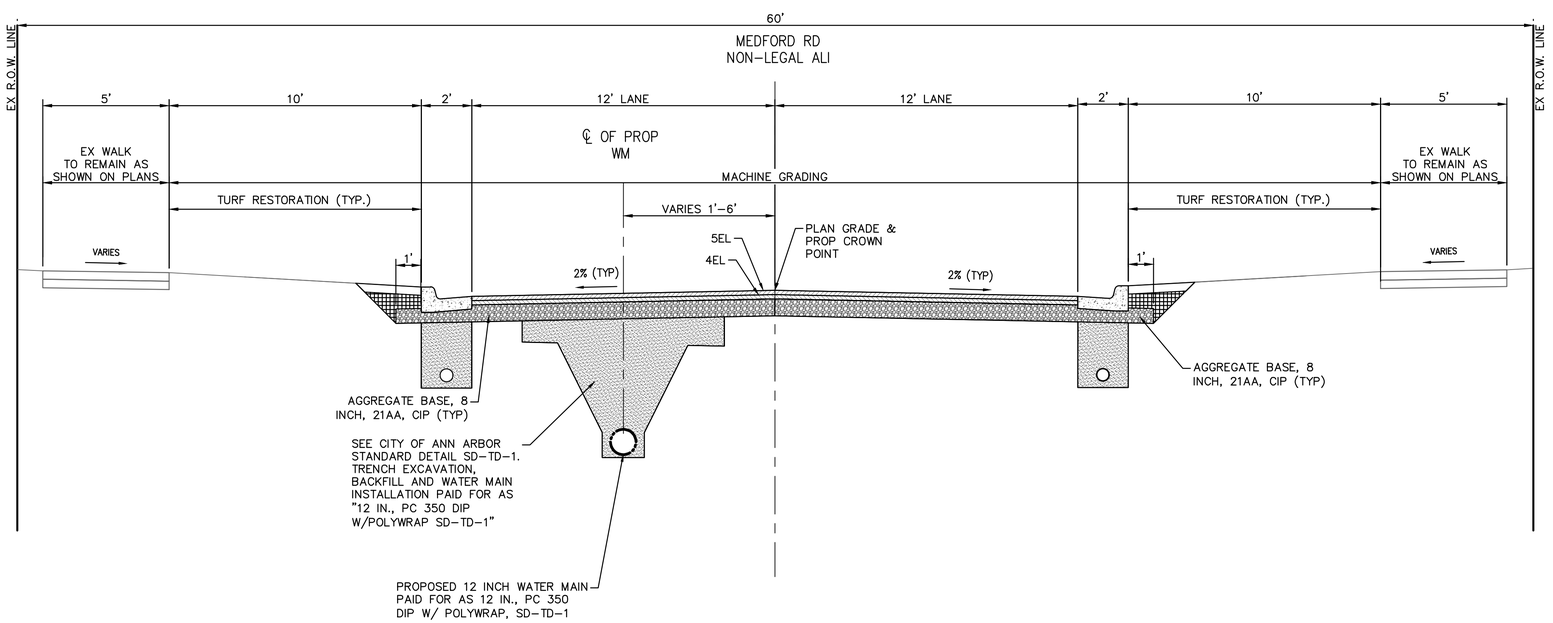
DRAWING No. 2025-2026-9

SHEET No. 9 OF 64



EXISTING MEDFORD RD TYPICAL SECTION

SECTION APPLIES TO:
STA 28+72 TO STA 29+16



PROPOSED MEDFORD RD TYPICAL SECTION

SECTION APPLIES TO:
STA 28+72 TO STA 29+16

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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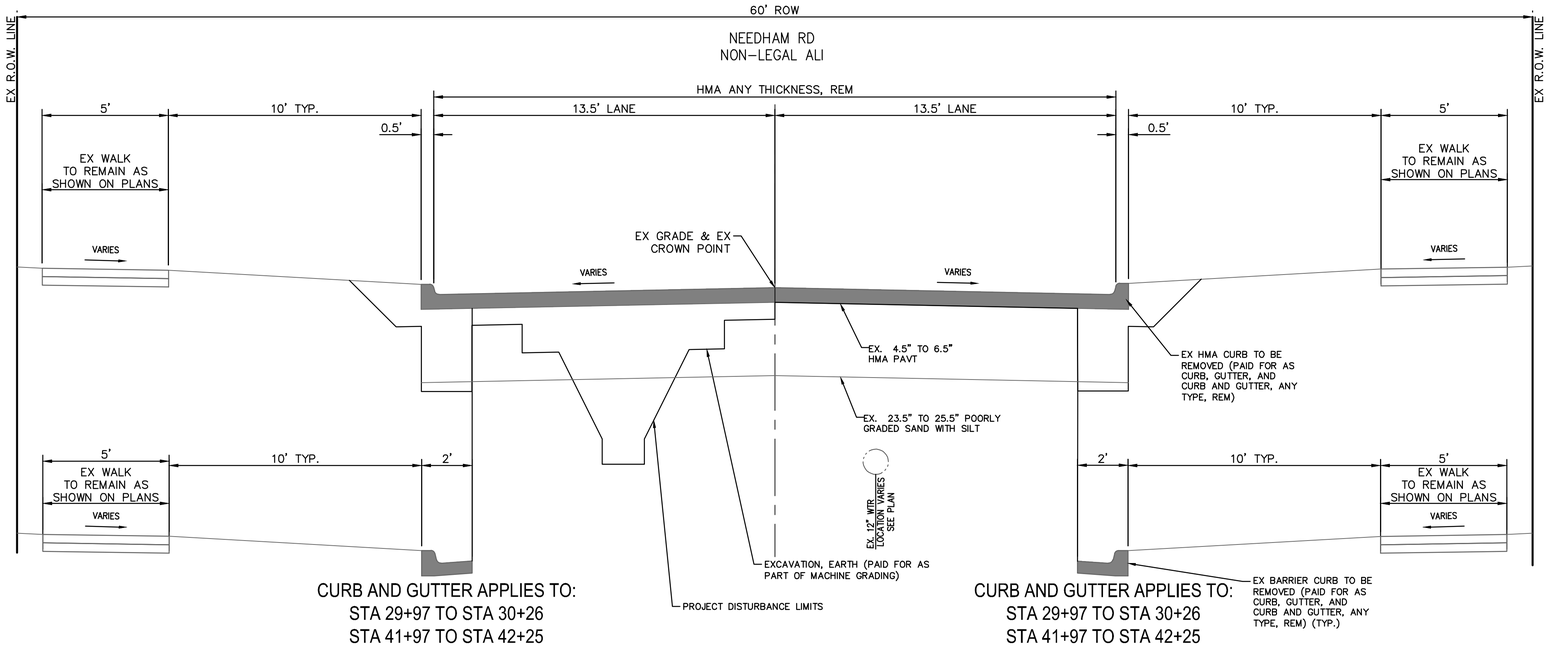
TYPICAL SECTION - 4

SCALE PLAN: NO SCALE

DRAWING No.
2025-2026-10

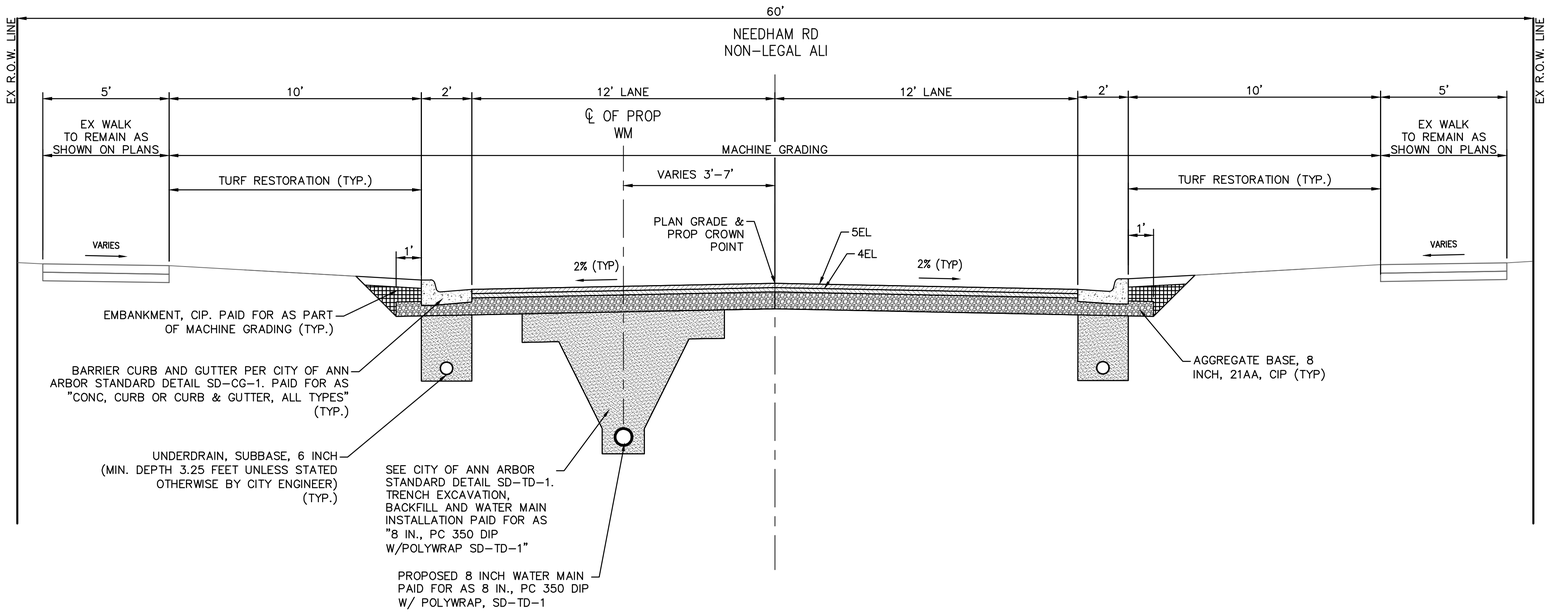
SHEET No.
10 OF 64

j:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_TYP.dwg Dwg Created: 21-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



EXISTING NEEDHAM RD TYPICAL SECTION

SECTION APPLIES TO:
STA 29+97 TO STA 42+25



PROPOSED NEEDHAM RD TYPICAL SECTION

SECTION APPLIES TO:
STA 29+97 TO STA 42+25

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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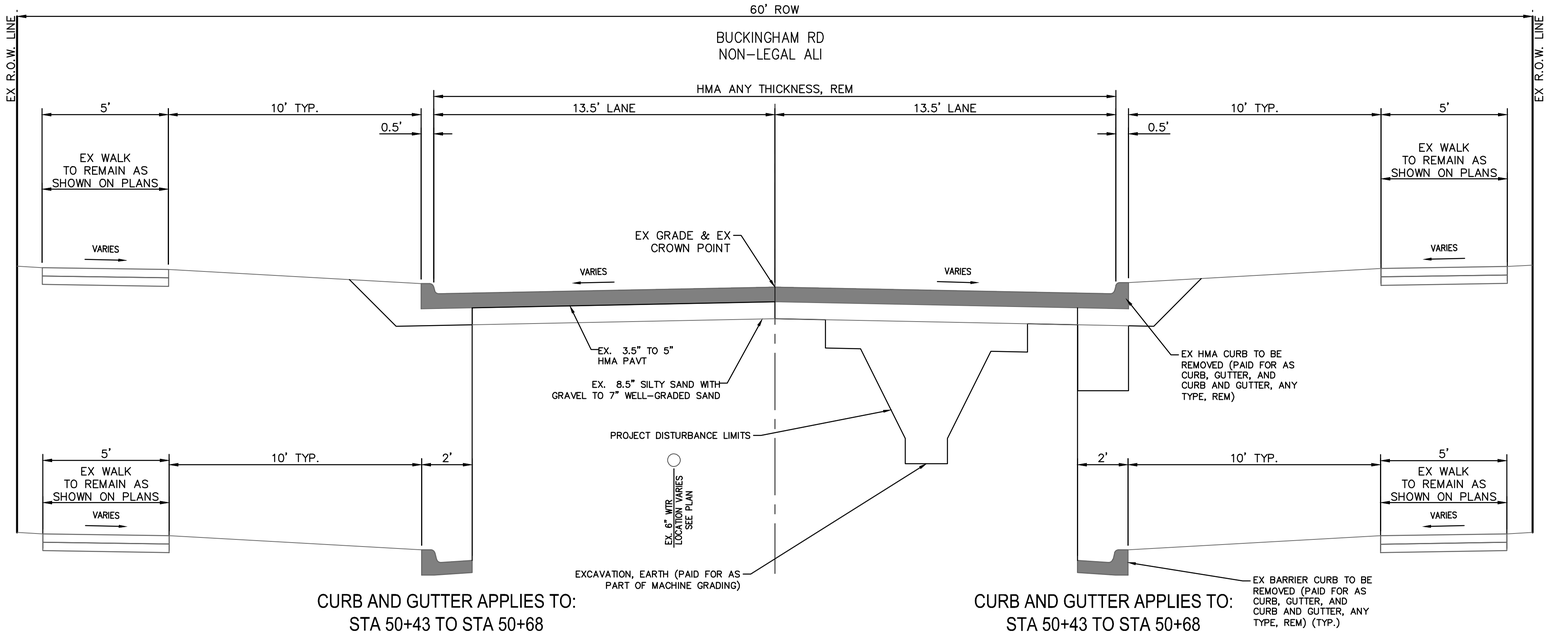
TYPICAL SECTION - 5

SCALE PLAN: NO SCALE

DRAWING No. 2025-2026-11

SHEET No. 11 OF 64

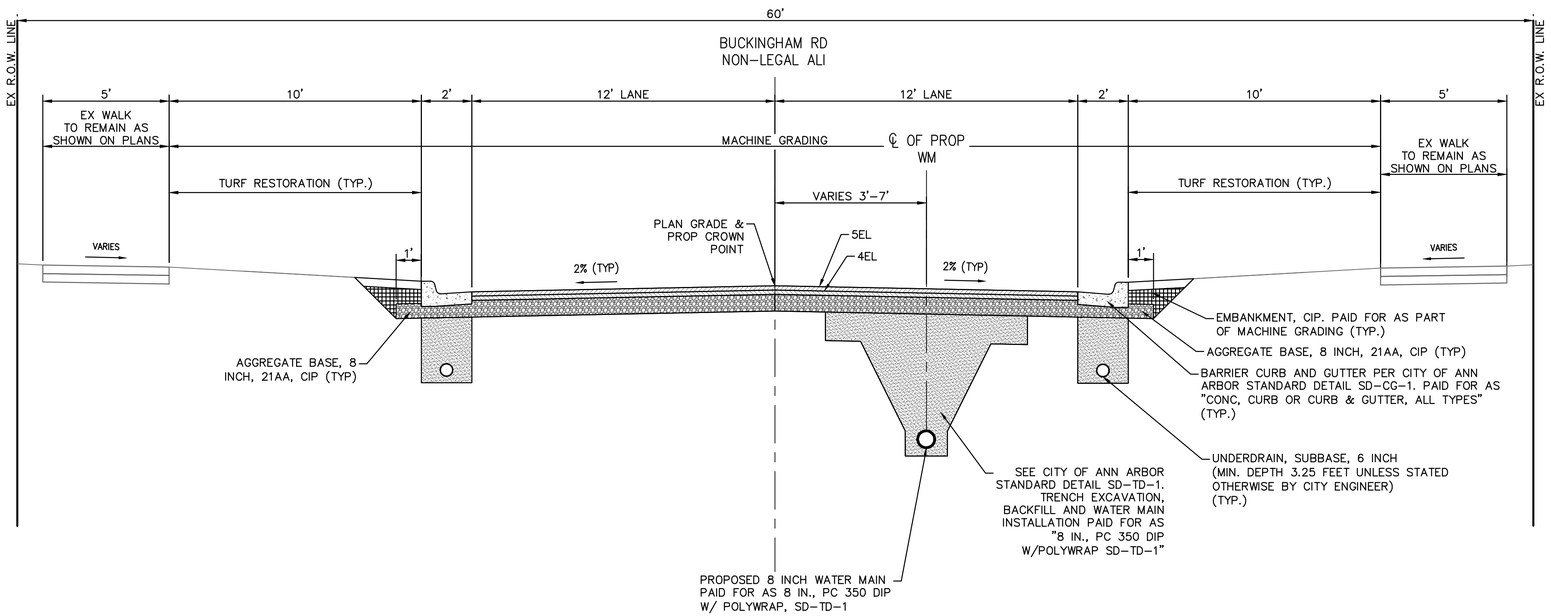


CURB AND GUTTER APPLIES TO:
STA 50+43 TO STA 50+68

CURB AND GUTTER APPLIES TO:
STA 50+43 TO STA 50+68

EXISTING BUCKINGHAM RD TYPICAL SECTION

SECTION APPLIES TO:
STA 50+68 TO STA 58+82



PROPOSED BUCKINGHAM RD TYPICAL SECTION

SECTION APPLIES TO:
STA 50+43 TO STA 58+82

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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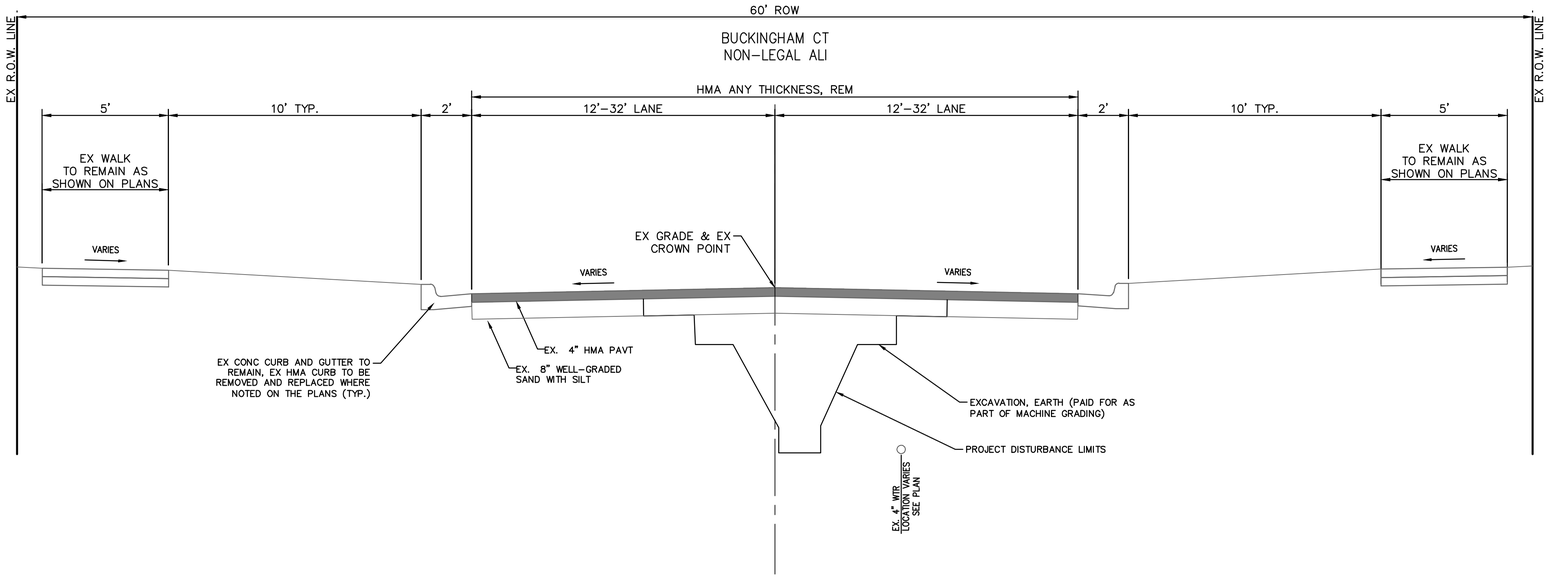
TYPICAL SECTION - 6

SCALE PLAN: NO SCALE

DRAWING No.
2025-2026-12

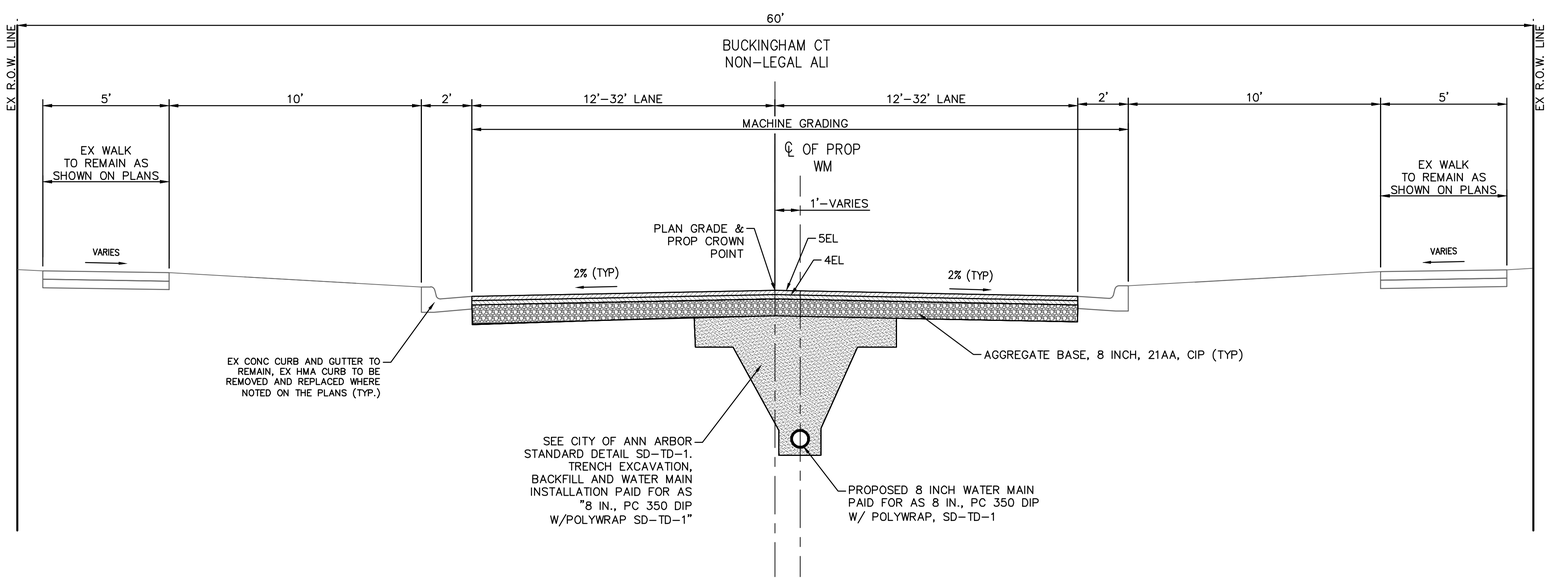
SHEET No.
12 OF 64

j:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_TYP.dwg Dwg Created: 21-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



EXISTING BUCKINGHAM CT TYPICAL SECTION

SECTION APPLIES TO:
STA 60+18 TO STA 61+75



PROPOSED BUCKINGHAM CT TYPICAL SECTION

SECTION APPLIES TO:
STA 60+18 TO STA 61+75

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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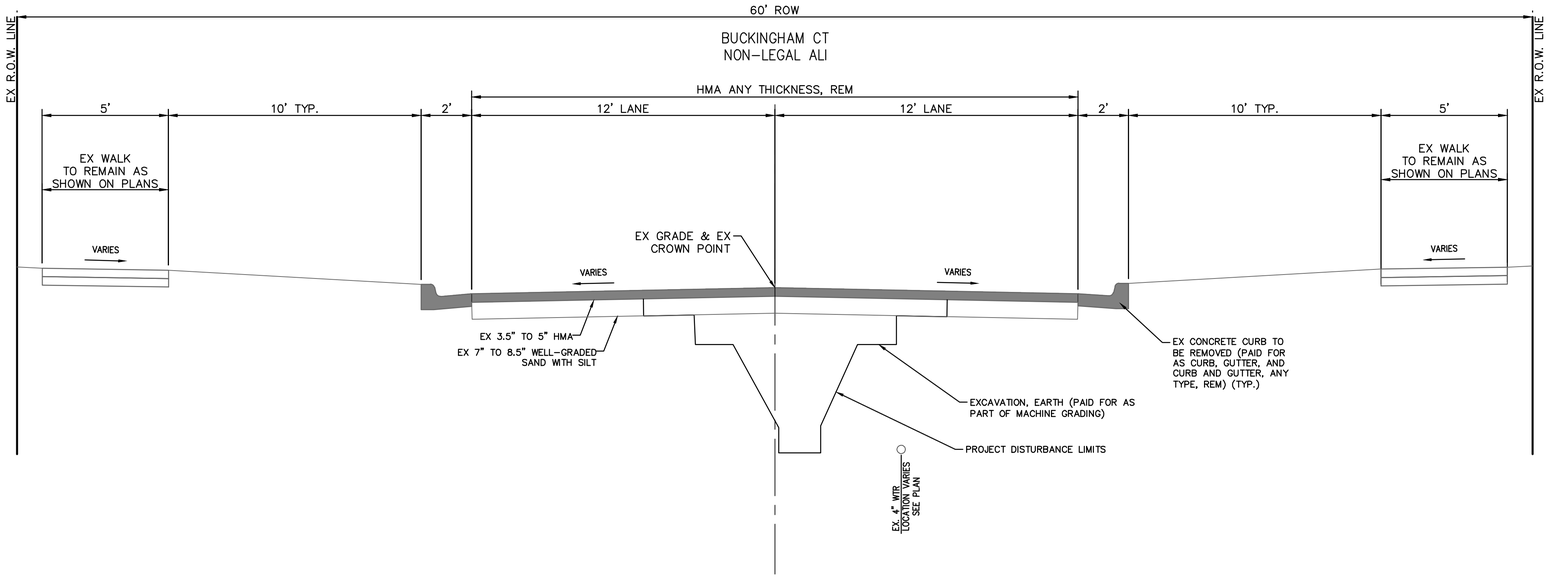
TYPICAL SECTION - 7

SCALE PLAN: NO SCALE

DRAWING No.
2025-2026-13

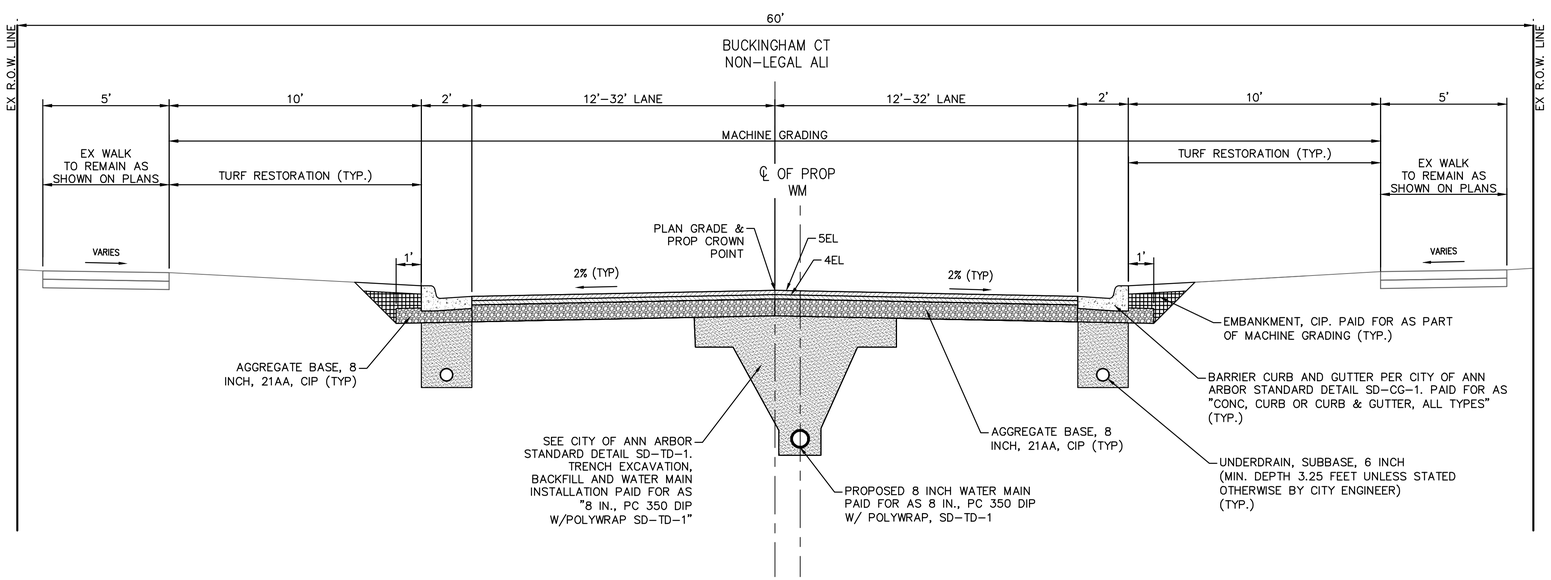
SHEET No.
13 OF 64

j:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_TYP.dwg Dwg Created: 21-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



EXISTING BUCKINGHAM CT TYPICAL SECTION

SECTION APPLIES TO:
STA 61+75 TO STA 62+01



PROPOSED BUCKINGHAM CT TYPICAL SECTION

SECTION APPLIES TO:
STA STA 61+75 TO STA 62+01

j:\AA\Design\aa25001 - nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_TYP.dwg Dwg Created: 21-Nov-25 - _a2 standard bw.stb - Plot Date: 22-Jan-26

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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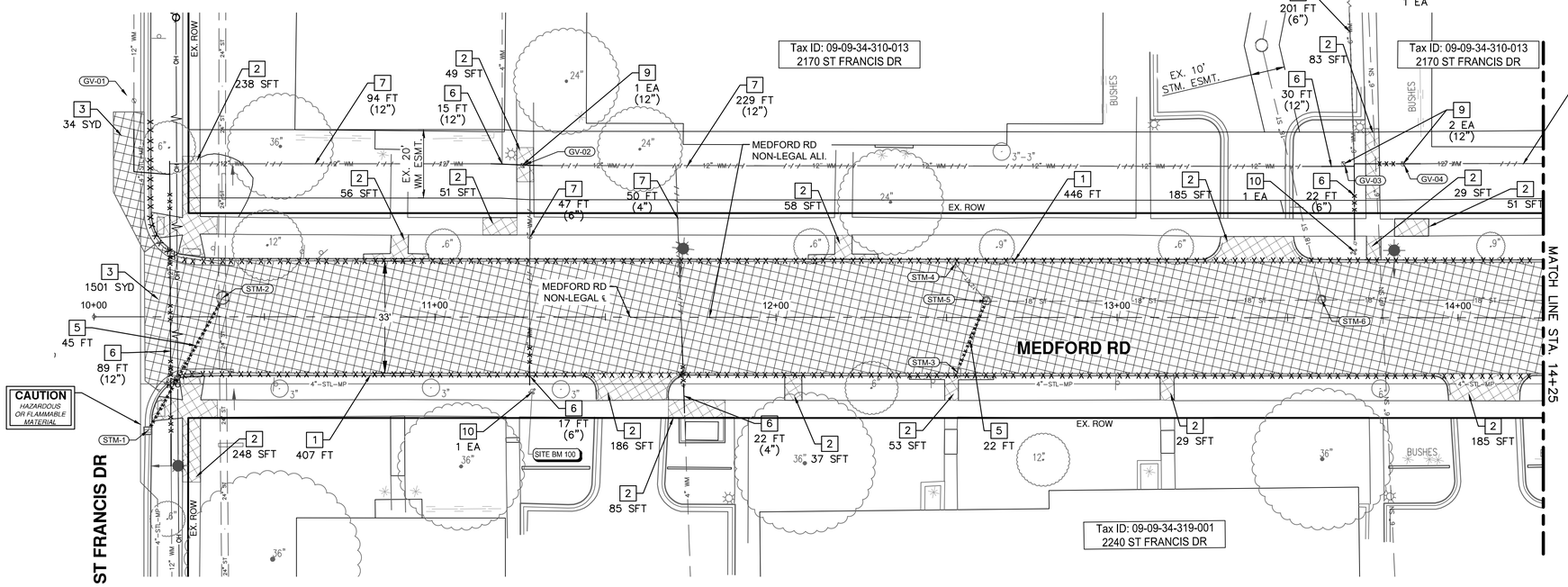
TYPICAL SECTION - 8

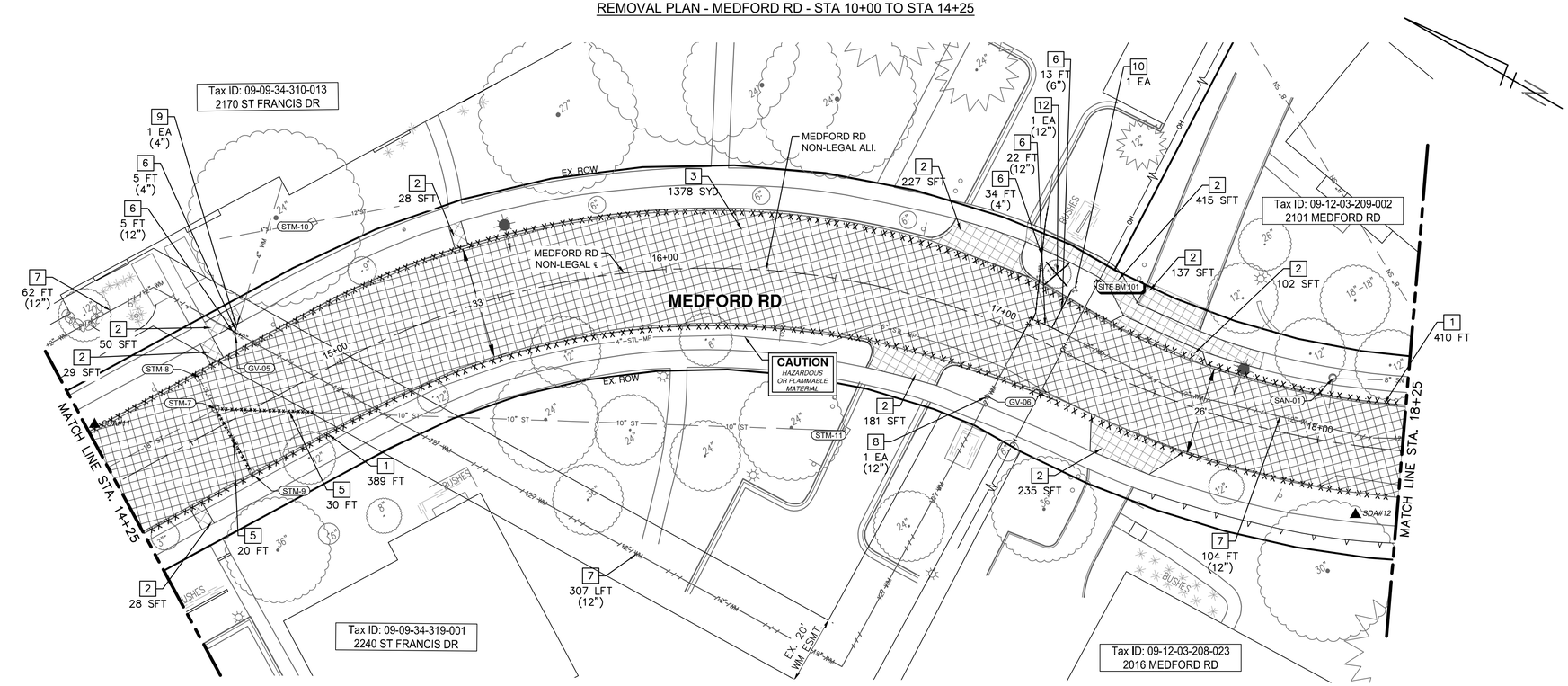
SCALE PLAN: NO SCALE

DRAWING No.
2025-2026-14

SHEET No.
14 OF 64



REMOVAL PLAN - MEDFORD RD - STA 10+00 TO STA 14+25



REMOVAL PLAN - MEDFORD RD - STA 14+25 TO STA 18+25

REMOVAL QUANTITIES – THIS SHEET

Item	Quantity	Unit
Tree, Rem, 6 In. – 12 In.	1	Ea
HMA, Any Thickness, Rem	2913	Syd
Curb, Gutter, and Curb and Gutter, Any Type, Rem	1652	Ft
Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	3155	Sft
Storm Sewer Pipe, 12 In. Dia., Rem	103	Ft
Fire Hydrant Assembly, Rem	4	Ea
Water Main Pipe, 4 In. Dia., Abandon	50	Ft
Water Main Pipe, 6 In. Dia., Abandon	248	Ft
Water Main Pipe, 12 In. Dia., Abandon	832	Ft
Water Main Pipe, 4 In. Dia., Rem	61	Ft
Water Main Pipe, 6 In. Dia., Rem	52	Ft
Water Main Pipe, 12 In. Dia., Rem	161	Ft
Gate Valve in Box, 12 In. Dia., Abandon	1	Ea
Gate Valve in Box, 4 In. Dia., Rem	1	Ea
Gate Valve in Box, 12 In. Dia., Rem	3	Ea

REMOVAL HATCH KEY

- HMA SURFACE, REM
- SIDEWALK AND RAMPS, REMOVE DRIVEWAY APPROACH, REMOVE
- CURB AND GUTTER, ANY TYPE OR SIZE, REM, MODIFIED
- STORM SEWER PIPE, ANY SIZE, REMOVE
- WATER MAIN PIPE, REM
- WATER MAIN PIPE, ABANDON

REMOVAL KEY

KEY	DESCRIPTION
1	CURB, CUTTER, AND CURB AND GUTTER, ANY TYPE, REM
2	SIDEWALK AND RAMPS, REMOVE* DRIVEWAY APPROACH, REMOVE*
3	HMA ANY THICKNESS, REM*
4	COLD MILLING HMA SURFACE
5	STORM SEWER PIPE, 12 IN. DIA., REM
6	WATER MAIN PIPE, _ IN. DIA., REM
7	WATER MAIN PIPE, _ IN. DIA., ABANDON
8	GATE VALVE IN BOX, _ IN. DIA., ABANDON
9	GATE VALVE IN BOX, _ IN. DIA., REM
10	FIRE HYDRANT ASSEMBLY, REM
11	STORM SEWER DROP STRUCTURE, REM
12	TREE, REM, _ INCH

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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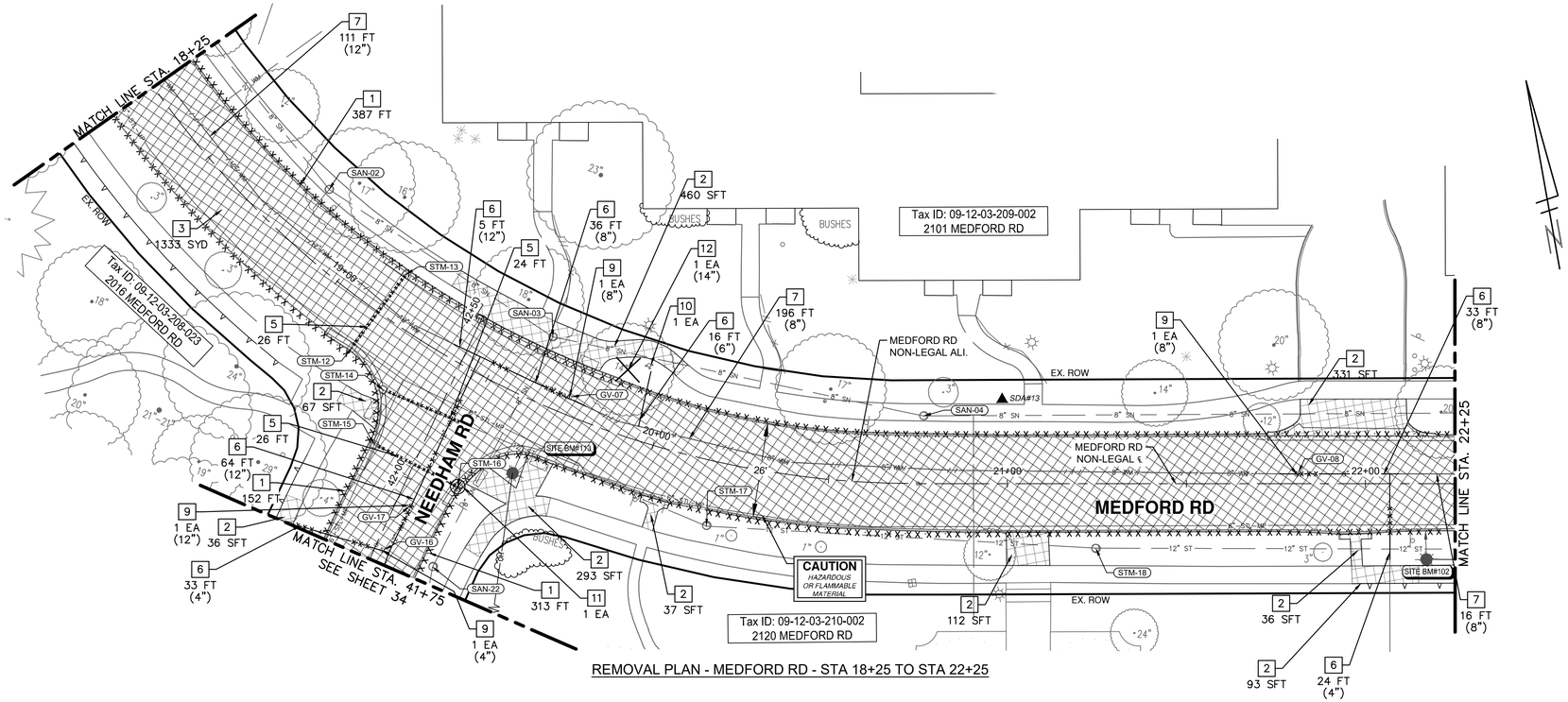
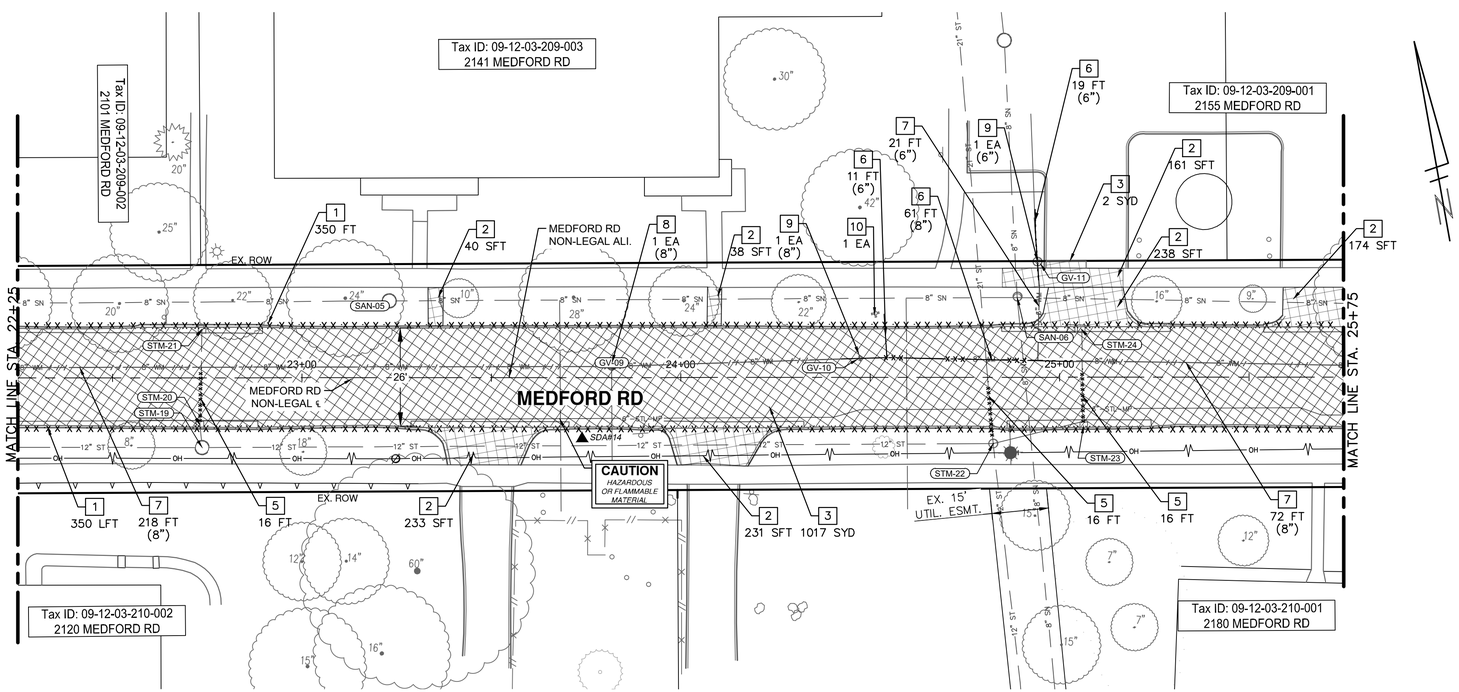
REMOVAL PLAN - MEDFORD RD STA 10+00 TO STA 18+25

SCALE PLAN: 1" = 20' PROFILE: N/A

DRAWING No. 2025-2026-15



REMOVAL PLAN - MEDFORD RD - STA 18+25 TO STA 22+25



REMOVAL PLAN - MEDFORD RD - STA 22+25 TO STA 25+75

REMOVAL QUANTITIES – THIS SHEET

Item	Quantity	Unit
Tree, Rem, 13 In. – 19 In.	1	Ea
HMA, Any Thickness, Rem	2352	Syd
Curb, Gutter, and Curb and Gutter, Any Type, Rem	1552	Ft
Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	2581	Sft
Storm Sewer Pipe, 12 In. Dia., Rem	124	Ft
Storm Sewer Drop Structure, Rem	1	Ea
Fire Hydrant Assembly, Rem	2	Ea
Water Main Pipe, 8 In. Dia., Abandon	502	Ft
Water Main Pipe, 12 In. Dia., Abandon	111	Ft
Water Main Pipe, 4 In. Dia., Rem	57	Ft
Water Main Pipe, 6 In. Dia., Rem	81	Ft
Water Main Pipe, 8 In. Dia., Rem	130	Ft
Water Main Pipe, 12 In. Dia., Rem	69	Ft
Gate Valve in Box, 8 In. Dia., Abandon	1	Ea
Gate Valve in Box, 4 In. Dia., Rem	1	Ea
Gate Valve in Box, 6 In. Dia., Rem	1	Ea
Gate Valve in Box, 8 In. Dia., Rem	3	Ea
Gate Valve in Box, 12 In. Dia., Rem	1	Ea

REMOVAL HATCH KEY

- HMA SURFACE, REM
- SIDEWALK AND RAMPS, REMOVE DRIVEWAY APPROACH, REMOVE
- CURB AND GUTTER, ANY TYPE OR SIZE, REM, MODIFIED
- STORM SEWER PIPE, ANY SIZE, REMOVE
- WATER MAIN PIPE, REM
- WATER MAIN PIPE, ABANDON

REMOVAL KEY

KEY	DESCRIPTION
1	CURB, CUTTER, AND CURB AND GUTTER, ANY TYPE, REM
2	SIDEWALK AND RAMPS, REMOVE* DRIVEWAY APPROACH, REMOVE*
3	HMA ANY THICKNESS, REM*
4	COLD MILLING HMA SURFACE
5	STORM SEWER PIPE, 12 IN. DIA., REM
6	WATER MAIN PIPE, _ IN. DIA., REM
7	WATER MAIN PIPE, _ IN. DIA., ABANDON
8	GATE VALVE IN BOX, _ IN. DIA., ABANDON
9	GATE VALVE IN BOX, _ IN. DIA., REM
10	FIRE HYDRANT ASSEMBLY, REM
11	STORM SEWER DROP STRUCTURE, REM
12	TREE, REM, _ INCH

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

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REV.	DATE	DRAWN	CHECKED
5 –	–	–	–
4 ADDENDUM 1	01/23/2026	AJ	AL
3 FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2 FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1 70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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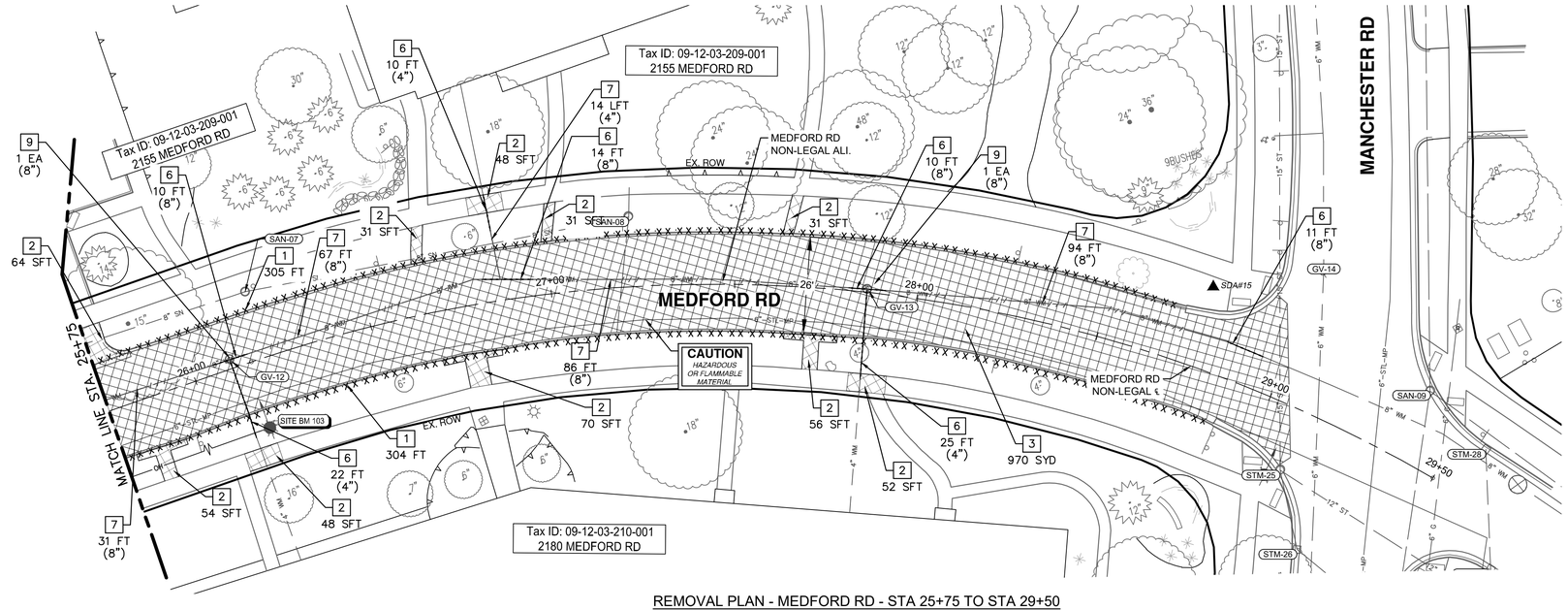
REMOVAL PLAN - MEDFORD RD STA 18+25 TO STA 25+75

SCALE PLAN: 1" = 20'
PROFILE: N/A
DRAWING No. 2025-2026-16



REMOVAL PLAN - MEDFORD RD - STA 25+75 TO STA 29+50

REMOVAL QUANTITIES – THIS SHEET

Item	Quantity	Unit
HMA, Any Thickness, Rem	970	Syd
Curb, Gutter, and Curb and Gutter, Any Type, Rem	609	Ft
Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	485	Sft
Water Main Pipe, 8 In. Dia., Abandon	278	Ft
Water Main Pipe, 4 In. Dia., Rem	57	Ft
Water Main Pipe, 8 In. Dia., Rem	45	Ft
Gate Valve in Box, 8 In. Dia., Rem	2	Ea

REMOVAL HATCH KEY

- HMA SURFACE, REM
- SIDEWALK AND RAMPS, REMOVE DRIVEWAY APPROACH, REMOVE
- CURB AND GUTTER, ANY TYPE OR SIZE, REM, MODIFIED
- STORM SEWER PIPE, ANY SIZE, REMOVE
- WATER MAIN PIPE, REM
- WATER MAIN PIPE, ABANDON

REMOVAL KEY

KEY	DESCRIPTION
1	CURB, CUTTER, AND CURB AND GUTTER, ANY TYPE, REM
2	SIDEWALK AND RAMPS, REMOVE* DRIVEWAY APPROACH, REMOVE*
3	HMA ANY THICKNESS, REM*
4	COLD MILLING HMA SURFACE
5	STORM SEWER PIPE, 12 IN. DIA., REM
6	WATER MAIN PIPE, _ IN. DIA., REM
7	WATER MAIN PIPE, _ IN. DIA., ABANDON
8	GATE VALVE IN BOX, _ IN. DIA., ABANDON
9	GATE VALVE IN BOX, _ IN. DIA., REM
10	FIRE HYDRANT ASSEMBLY, REM
11	STORM SEWER DROP STRUCTURE, REM
12	TREE, REM, _ INCH

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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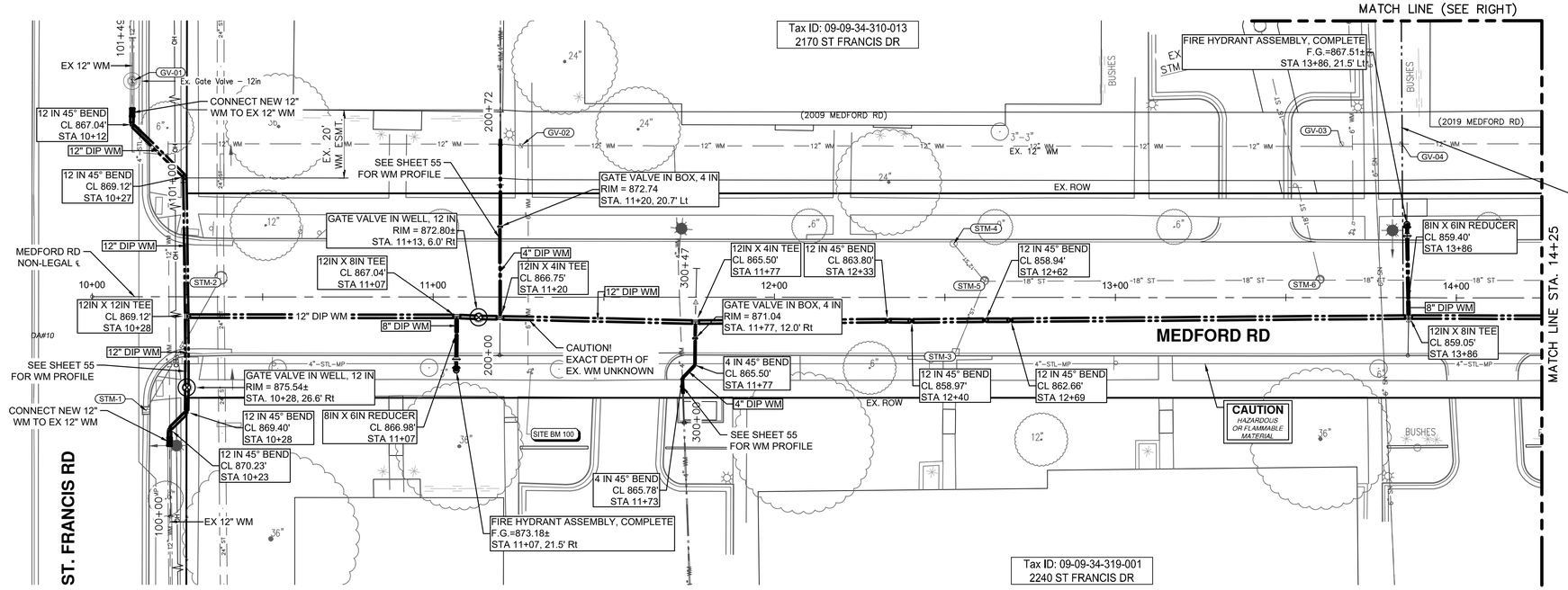
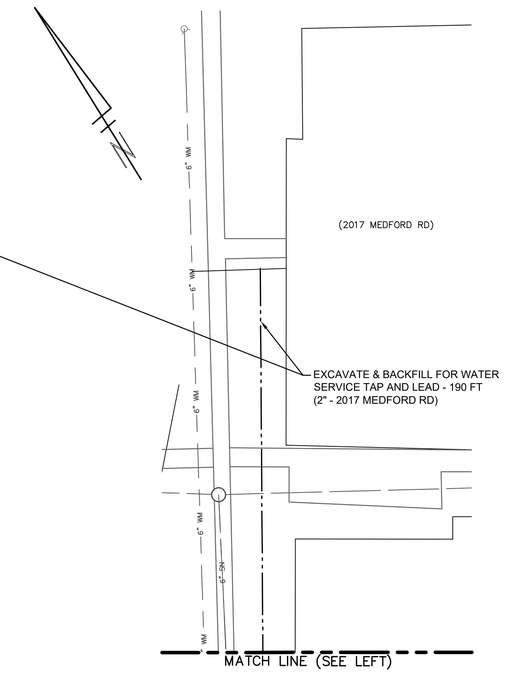
REMOVAL PLAN - MEDFORD RD STA 25+75 TO STA 29+16

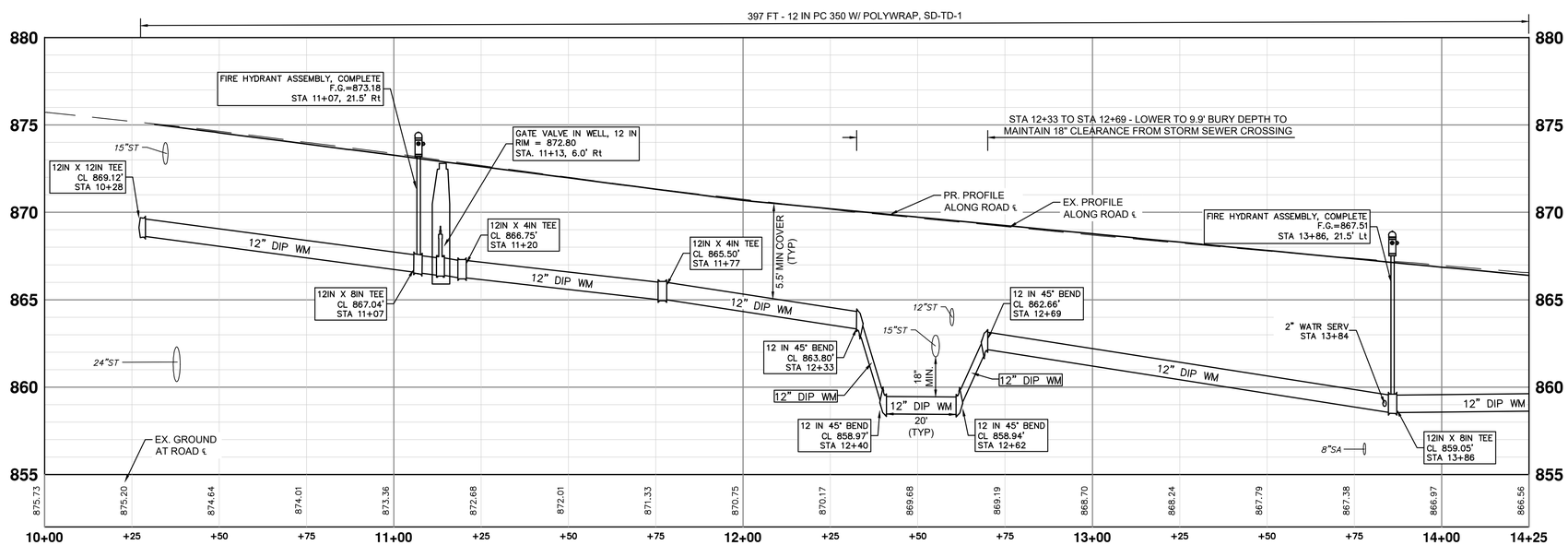
SCALE PLAN: 1" = 20' PROFILE: N/A

DRAWING No. 2025-2026-17



WATER MAIN CONSTRUCTION PLAN - MEDFORD RD - STA 10+00 TO STA 14+25





WATER MAIN CONSTRUCTION PROFILE - MEDFORD RD - STA 10+00 TO STA 14+25

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
4 In., PC 350 DIP w/polywrap, SD–TD–1	74	Ft
6 In., PC 350 DIP w/polywrap, SD–TD–1	32	Ft
8 In., PC 350 DIP w/polywrap, SD–TD–1	10	Ft
12 In., PC 350 DIP w/polywrap, SD–TD–1	518	Ft
DS_4 In. 45° DIP Bend	2	Ea
12 In. 45° DIP Bend	8	Ea
8 In. X 6 In. DIP Reducer	2	Ea
12 In. X 12 In. X 4 In. DIP Tee	2	Ea
12 In. X 12 In. X 8 In. DIP Tee	2	Ea
12 In. X 12 In. X 12 In. DIP Tee	1	Ea
DS_Gate Valve In Box, 4 In.	2	Ea
Gate Valve In Well, 12 In.	2	Ea
Excavate & Backfill For Water Service Tap And Lead	190	Ft
Fire Hydrant Assembly, Complete	2	Ea

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
2. WATER SERVICE RECONNECTIONS - CONTRACTOR SHALL EXCAVATE TRENCH AND CITY PERSONNEL SHALL INSTALL THE TAP (TYPICAL ALL SERVICES)

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

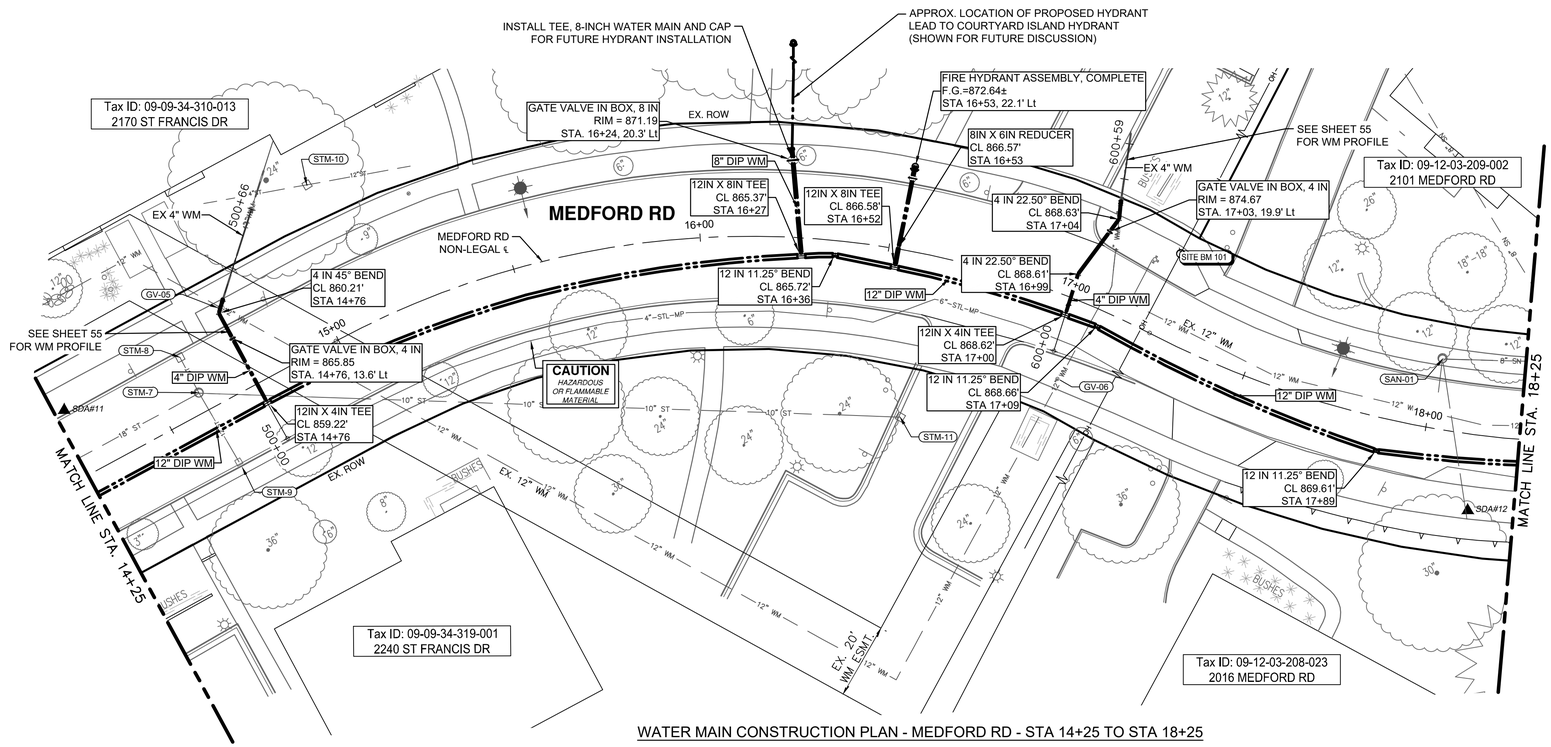
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

WATER MAIN PLAN & PROFILE - MEDFORD RD STA 10+00 TO STA 14+25

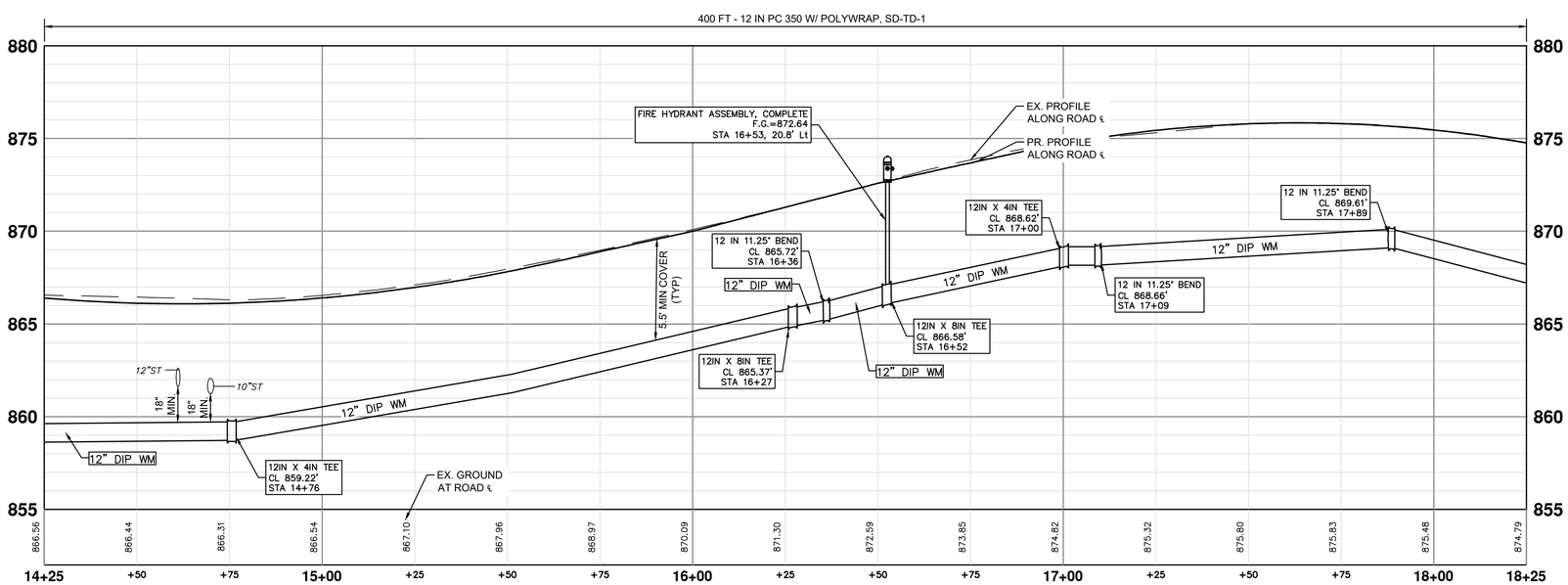
SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-18

SHEET No. 18 OF 64



WATER MAIN CONSTRUCTION PLAN - MEDFORD RD - STA 14+25 TO STA 18+25



WATER MAIN CONSTRUCTION PROFILE - MEDFORD RD - STA 14+25 TO STA 18+25

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
4 In., PC 350 DIP w/polywrap, SD–TD–1	73	Ft
6 In., PC 350 DIP w/polywrap, SD–TD–1	21	Ft
8 In., PC 350 DIP w/polywrap, SD–TD–1	32	Ft
12 In., PC 350 DIP w/polywrap, SD–TD–1	400	Ft
8 In. X 6 In. DIP Reducer	1	Ea
DS_4 In. 22.5° DIP Bend	2	Ea
DS_4 In. 45° DIP Bend	1	Ea
12 In. 11.25° DIP Bend	3	Ea
12 In. X 12 In. X 4 In. DIP Tee	2	Ea
12 In. X 12 In. X 8 In. DIP Tee	2	Ea
DS_Gate Valve In Box, 4 In.	2	Ea
Gate Valve In Box, 8 In.	1	Ea
Fire Hydrant Assembly, Complete	1	Ea

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
2. WATER SERVICE RECONNECTIONS - CONTRACTOR SHALL EXCAVATE TRENCH AND CITY PERSONNEL SHALL INSTALL THE TAP (TYPICAL ALL SERVICES)

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

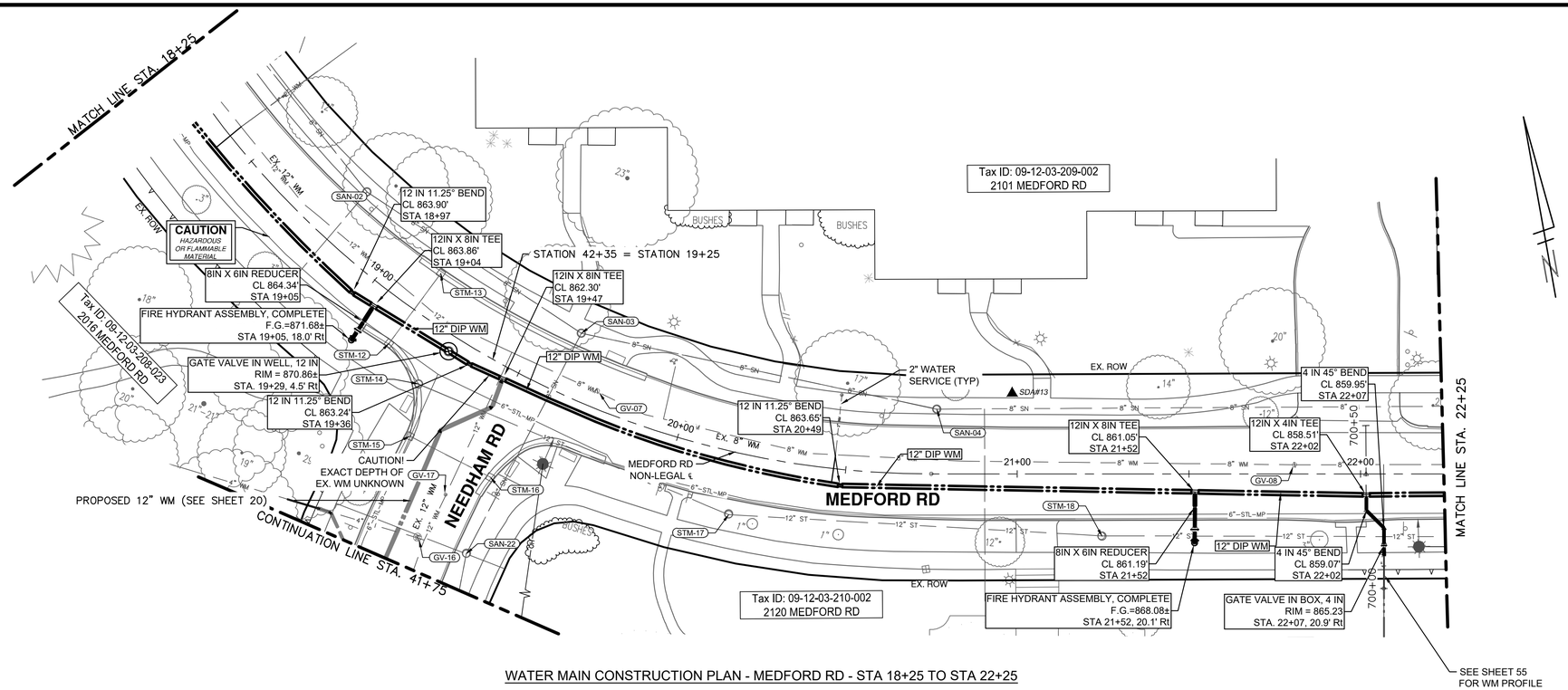
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

WATER MAIN PLAN & PROFILE - MEDFORD RD STA 14+25 TO STA 18+25

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-19

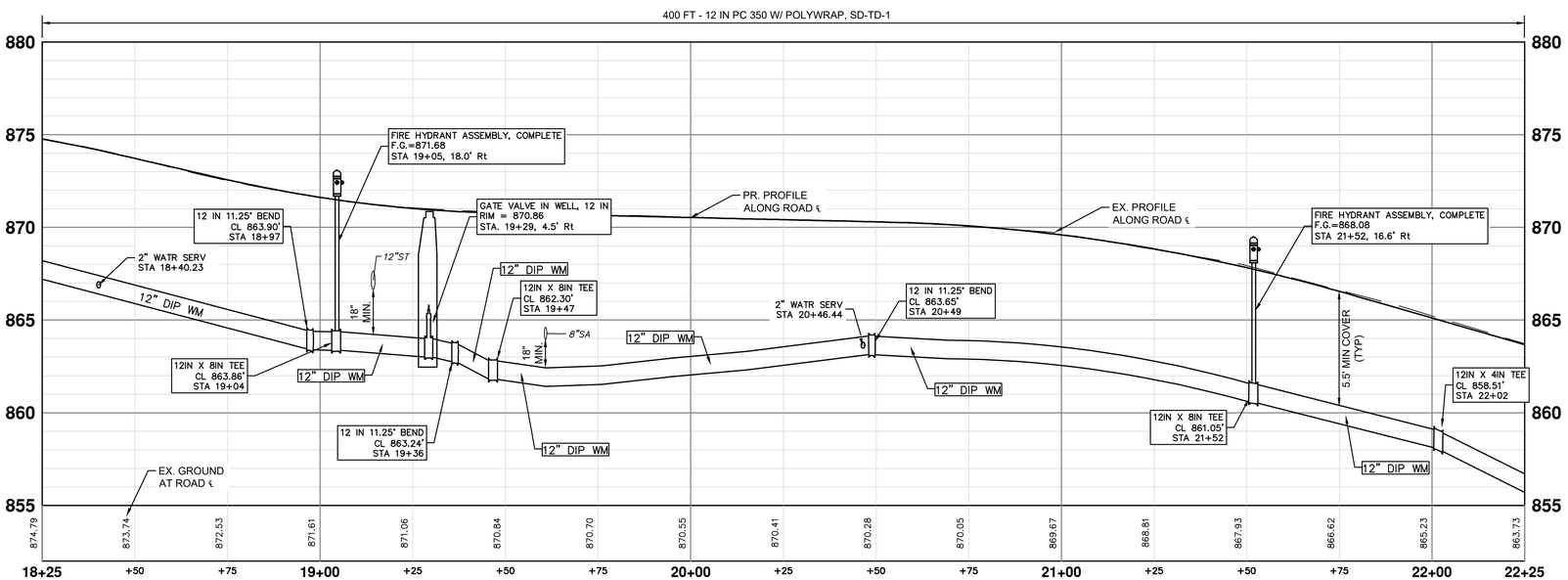
SHEET No.



WATER MAIN CONSTRUCTION PLAN - MEDFORD RD - STA 18+25 TO STA 22+25

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
4 In., PC 350 DIP w/polywrap, SD-TD-1	13	Ft
6 In., PC 350 DIP w/polywrap, SD-TD-1	14	Ft
8 In., PC 350 DIP w/polywrap, SD-TD-1	10	Ft
12 In., PC 350 DIP w/polywrap, SD-TD-1	404	Ft
DS_4 In. 45° DIP Bend	2	Ea
12 In. 11.25° DIP Bend	3	Ea
8 In. X 6 In. DIP Reducer	2	Ea
12 In. X 12 In. X 4 In. DIP Tee	1	Ea
12 In. X 12 In. X 8 In. DIP Tee	3	Ea
DS_Gate Valve In Box, 4 In.	1	Ea
Gate Valve In Well, 12 In.	1	Ea
Excavate & Backfill For Water Service Tap And Lead	19	Ft
Fire Hydrant Assembly, Complete	2	Ea



WATER MAIN CONSTRUCTION PROFILE - MEDFORD RD - STA 18+25 TO STA 22+25

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
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3. EXACT DEPTH OF SANITARY LEAD CROSSINGS IS UNKNOWN. CONTRACTOR TO FIELD VERIFY LEADS AND MAINTAIN CLEARANCE AS DIRECTED BY CITY ENGINEER. (TYP)

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–			
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

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WATER MAIN & RESURFACING PROJECT

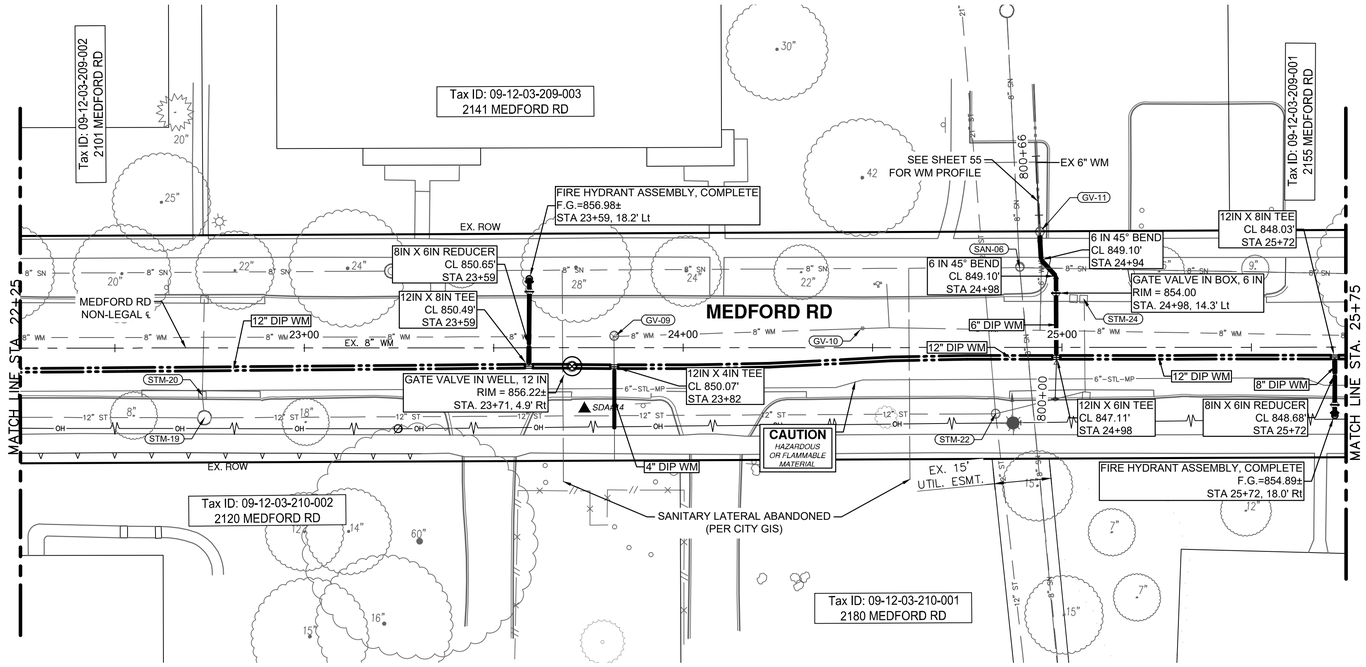
WATER MAIN PLAN & PROFILE - MEDFORD RD STA 18+25 TO STA 22+25

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

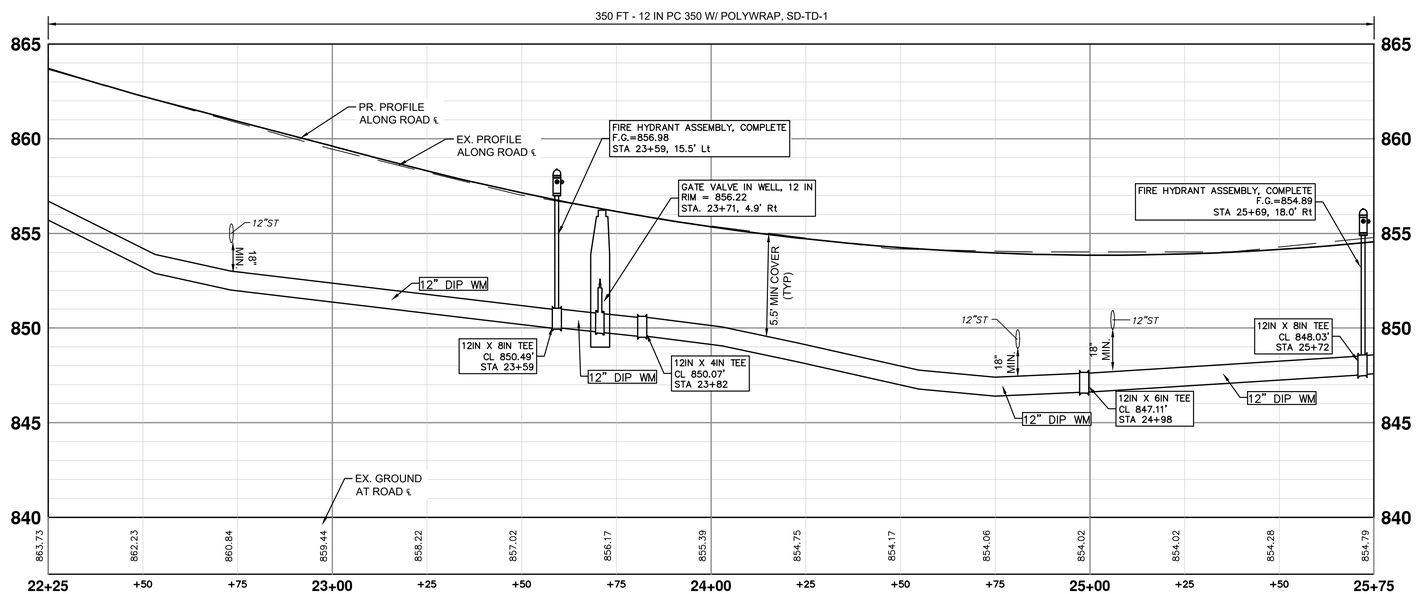
DRAWING No. 2025-2026-20

SHEET No. 20 OF 64

j:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_Watr_MEDFORD.dwg Dwg Created: 22-Dec-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



WATER MAIN CONSTRUCTION PLAN - MEDFORD RD - STA 22+25 TO STA 25+75



WATER MAIN CONSTRUCTION PROFILE - MEDFORD RD - STA 22+25 TO STA 25+75

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
4 In., PC 350 DIP w/polywrap, SD–TD–1	16	Ft
6 In., PC 350 DIP w/polywrap, SD–TD–1	64	Ft
8 In., PC 350 DIP w/polywrap, SD–TD–1	10	Ft
12 In., PC 350 DIP w/polywrap, SD–TD–1	350	Ft
6 In. 45° DIP Bend	2	Ea
8 In. X 6 In. DIP Reducer	2	Ea
12 In. X 12 In. X 4 In. DIP Tee	1	Ea
12 In. X 12 In. X 6 In. DIP Tee	1	Ea
12 In. X 12 In. X 8 In. DIP Tee	2	Ea
Gate Valve In Box, 6 In.	1	Ea
Gate Valve In Well, 12 In.	1	Ea
Fire Hydrant Assembly, Complete	2	Ea

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

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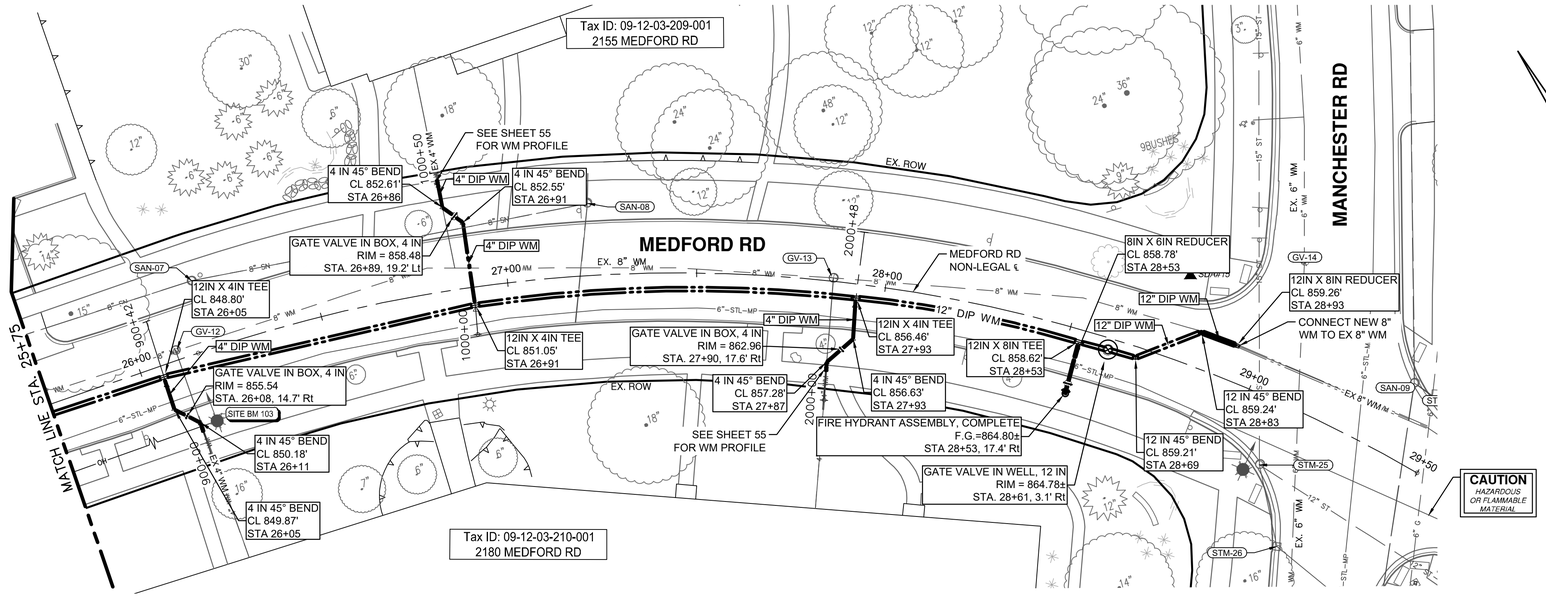
WATER MAIN & RESURFACING PROJECT

WATER MAIN PLAN & PROFILE - MEDFORD RD STA 22+25 TO STA 25+75

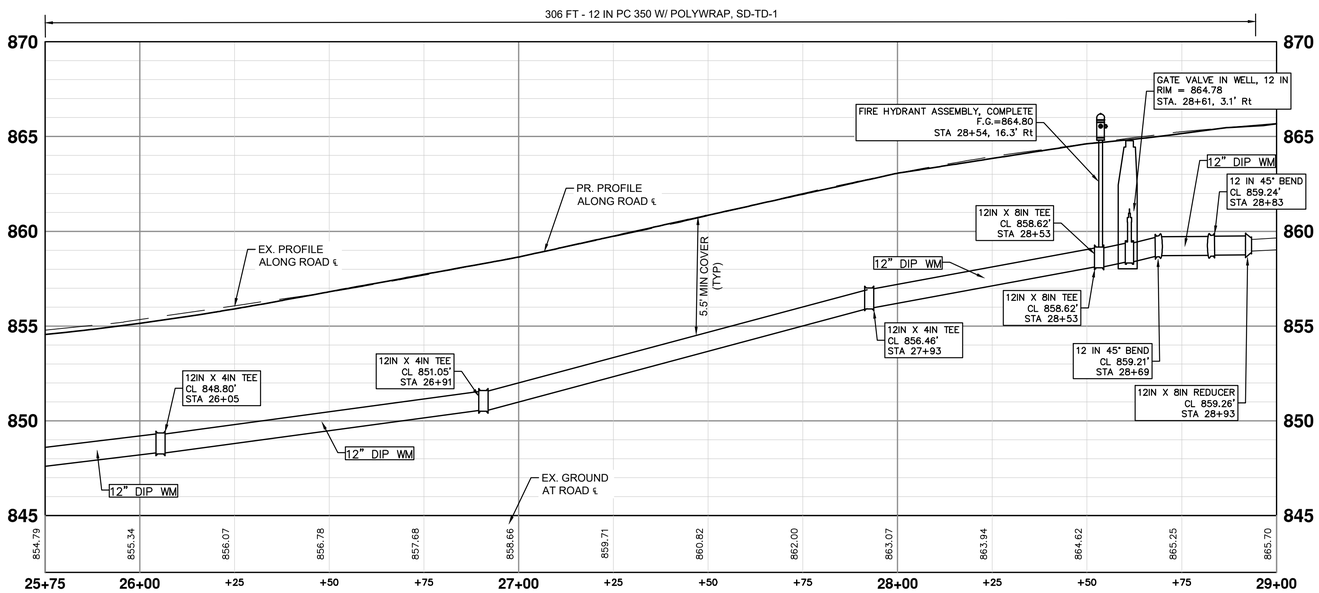
SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-21

SHEET No. 21 OF 64



WATER MAIN CONSTRUCTION PLAN - MEDFORD RD - STA 25+75 TO STA 29+00



WATER MAIN CONSTRUCTION PROFILE - MEDFORD RD - STA 25+75 TO STA 29+00

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
4 In., PC 350 DIP w/polywrap, SD–TD–1	77	Ft
6 In., PC 350 DIP w/polywrap, SD–TD–1	10	Ft
8 In., PC 350 DIP w/polywrap, SD–TD–1	5	Ft
12 In., PC 350 DIP w/polywrap, SD–TD–1	306	Ft
DS_4 In. 45° DIP Bend	6	Ea
12 In. 45° DIP Bend	2	Ea
12 In. X 8 In. DIP Reducer	1	Ea
12 In. X 12 In. X 4 In. DIP Tee	3	Ea
12 In. X 12 In. X 8 In. DIP Tee	1	Ea
DS_Gate Valve In Box, 4 In.	3	Ea
Gate Valve In Well, 12 In.	1	Ea
Fire Hydrant Assembly, Complete	1	Ea

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

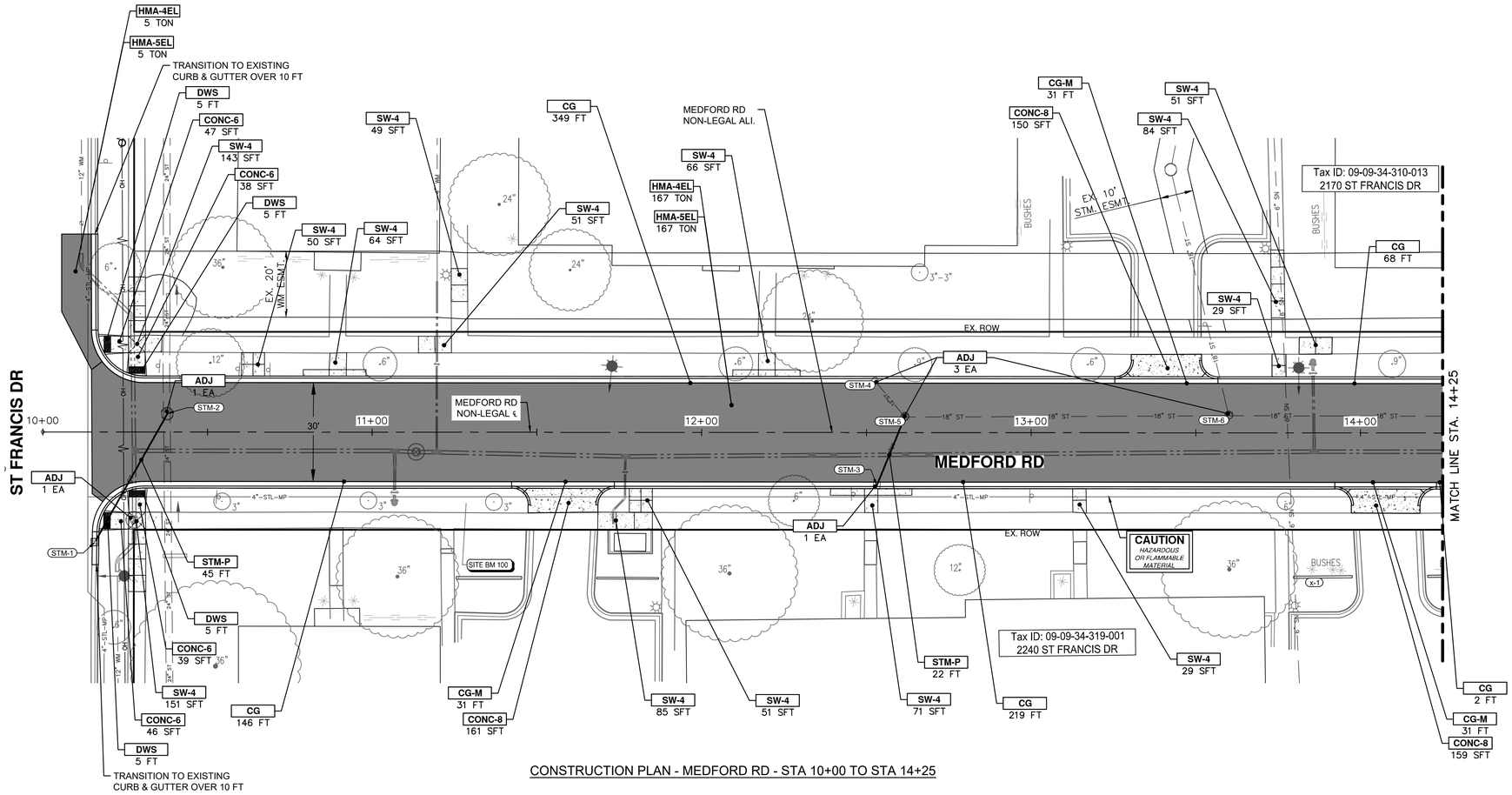
WATER MAIN PLAN & PROFILE - MEDFORD RD STA 25+75 TO STA 29+16

SCALE PLAN: 1" = 20'
PROFILE: 1" = 4'

DRAWING No.
2025-2026-22

SHEET No.
22 OF 64

j:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_Watr_MEDFORD.dwg Dwg Created: 22–Dec–25 – _a2 standard bw.stb – Plot Date: 22–Jan–26



CONSTRUCTION PLAN - MEDFORD RD - STA 10+00 TO STA 14+25

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	2186	Syd
12 In., CL IV RCP Storm Sewer, SD–TD–1	67	Ft
Pipe Undercut & Backfill, Storm	105	Cyd
Storm Structure Cover	5	Ea
Storm Structure Cover, Adjust	5	Ea
Underdrain, Subbase, 6 In.	877	Ft
Subbase, CIP	24	Cyd
Aggregate Base, 6 In., 21AA, CIP	60	Syd
Aggregate Base, 8 In., 21AA, CIP	1674	Syd
HMA, 4EL	172	Ton
HMA, 5EL	172	Ton
Conc, Curb or Curb & Gutter, All Types	784	Ft
Conc, Driveway Opening, Type M	93	Ft
Conc, Sidewalk, 4 In.	1074	Sft
Conc, Sidewalk, Drive Approach, or Ramp, 6 In.	170	Sft
Conc, Sidewalk, Drive Approach, or Ramp, 8 In.	470	Sft
Detectable Warning Surface	20	Ft
Turf Restoration	730	Syd

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5 –		–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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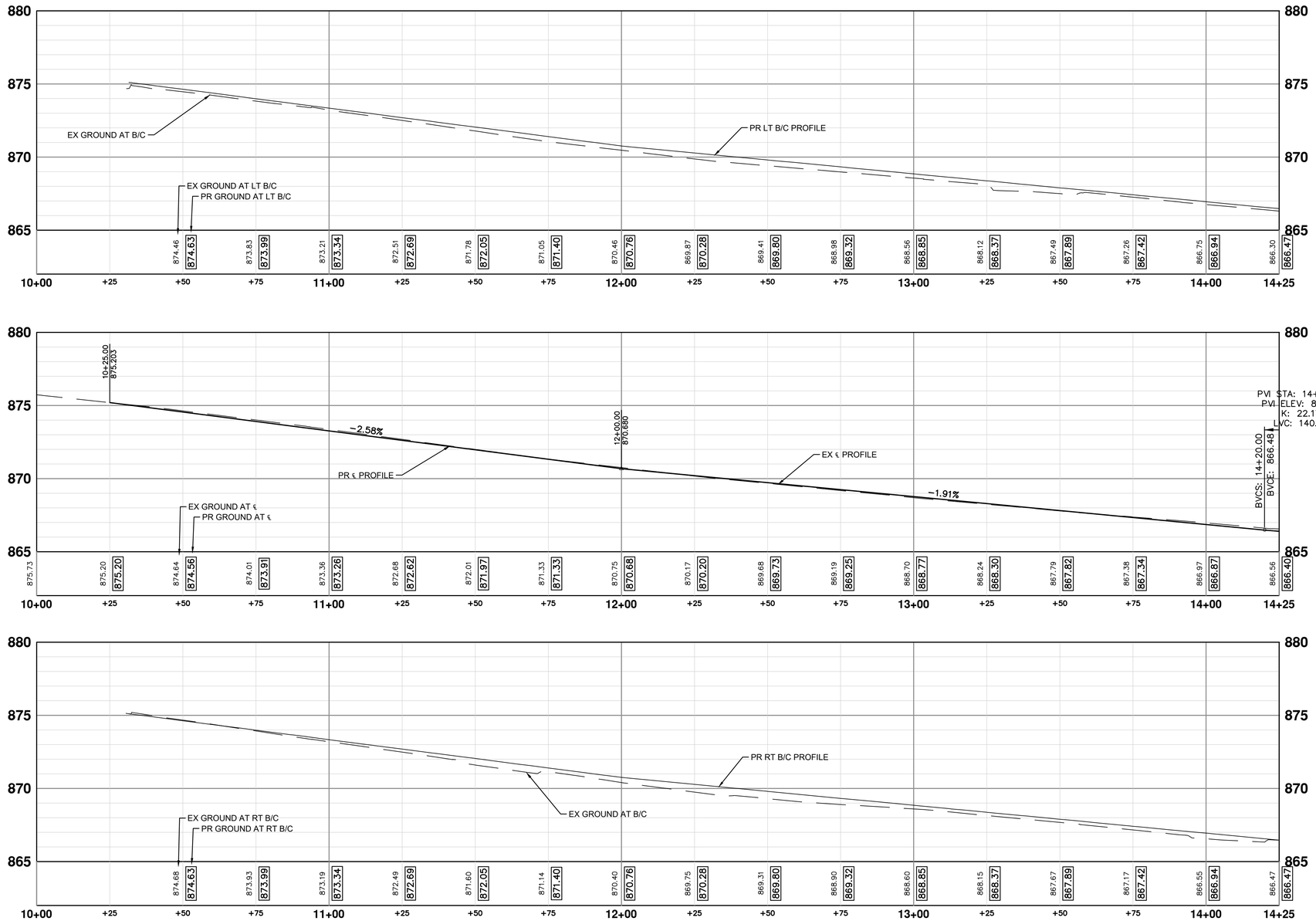
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

CONSTRUCTION PLAN - MEDFORD RD STA 10+00 TO 14+25

SCALE PLAN: 1" = 20' PROFILE: N/A

DRAWING No. 2025-2026-23



CONSTRUCTION PROFILE - MEDFORD RD - STA 10+00 TO STA 14+25

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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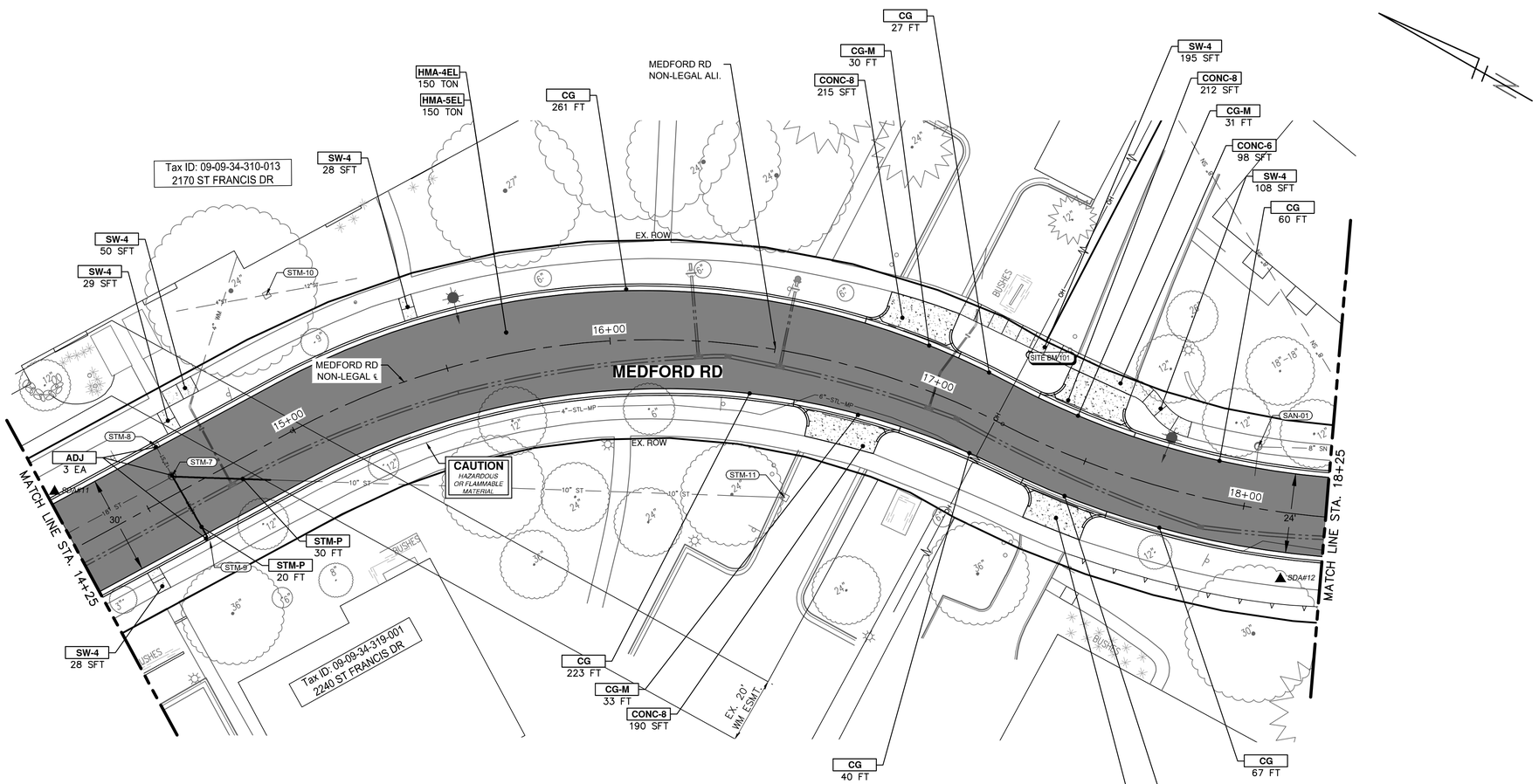
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

CONSTRUCTION PROFILE - MEDFORD RD STA 10+00 TO 14+25

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-24



CONSTRUCTION PLAN - MEDFORD RD - STA 14+25 TO STA 18+25

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	2092	Syd
12 In., CL IV RCP Storm Sewer, SD–TD–1	30	Ft
Pipe Undercut & Backfill, Storm	79	Cyd
Storm Structure Cover	3	Ea
Storm Structure Cover, Adjust	3	Ea
Underdrain, Subbase, 6 In.	799	Ft
Subbase, CIP	11	Cyd
Aggregate Base, 6 In., 21AA, CIP	99	Syd
Aggregate Base, 8 In., 21AA, CIP	1502	Syd
HMA, 4EL	150	Ton
HMA, 5EL	150	Ton
Conc, Curb or Curb & Gutter, All Types	678	Ft
Conc, Driveway Opening, Type M	121	Ft
Conc, Sidewalk, 4 In.	438	Sft
Conc, Sidewalk, Drive Approach, or Ramp, 8 In.	881	Sft
Turf Restoration	860	Syd

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

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REV.	DATE	DRAWN	CHECKED
5 –		–	–
4	01/23/2026	AJ	AL
3	01/09/2026	AJ/RD	AL/JS
2	12/08/2025	AJ/RD/SL	AL/JS
1	07/08/2025	AJ/ML/RD	AL/CH
REV.	DESCRIPTION	DRAWN	CHECKED

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NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

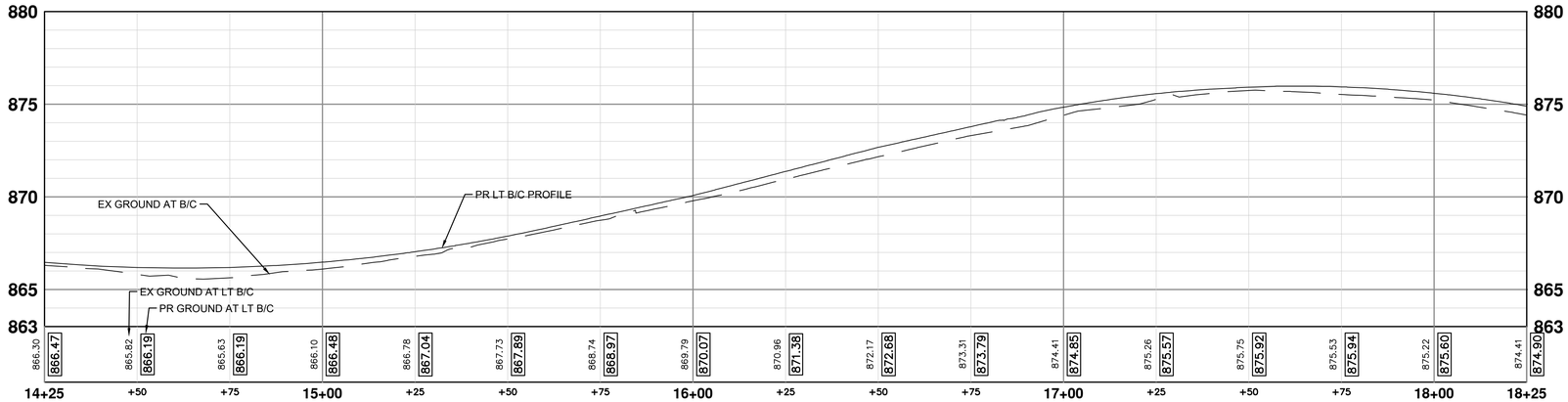
CONSTRUCTION PLAN - MEDFORD RD STA 14+25 TO 18+25

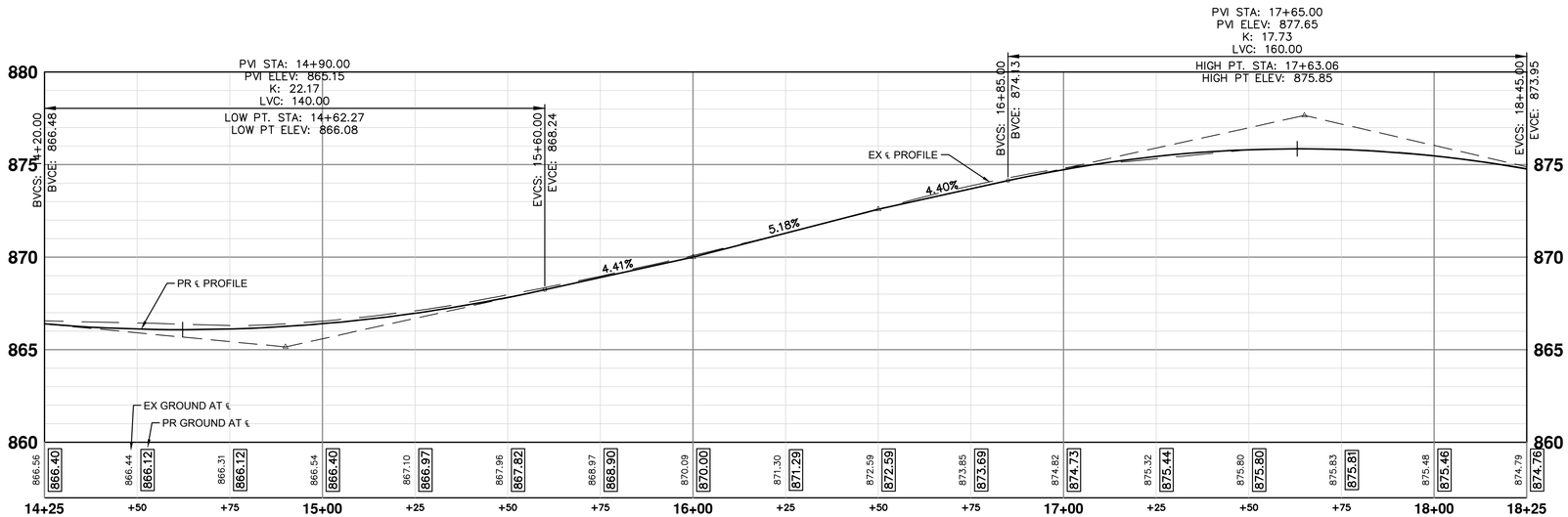
SCALE PLAN: 1" = 20' PROFILE: N/A

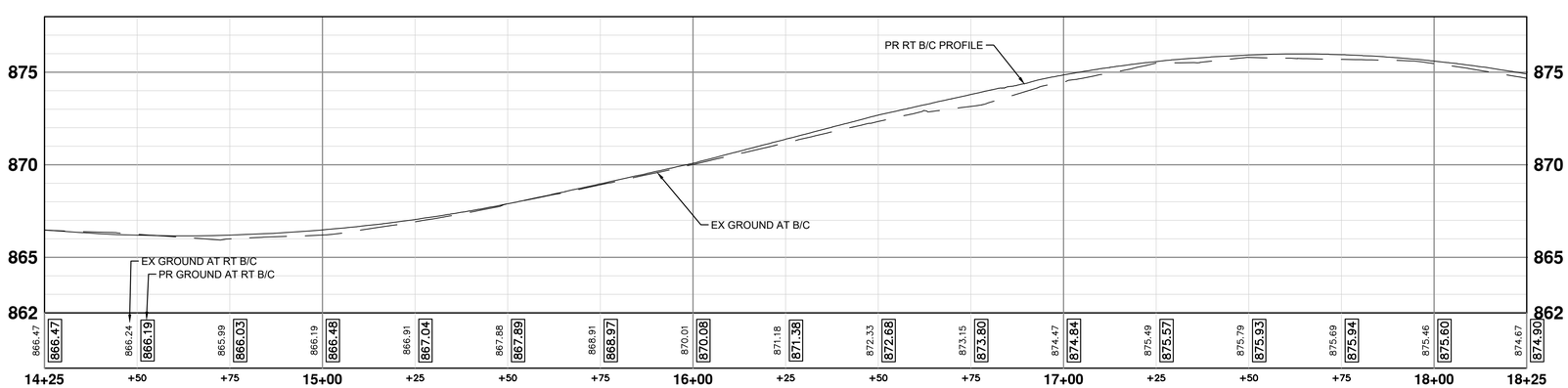
DRAWING No. 2025-2026-25

SHEET No. 25 OF 64

J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_PPrd_MEDFORD.dwg Dwg Created: 25-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26







CONSTRUCTION PROFILE - MEDFORD RD - STA 14+25 TO STA 18+25

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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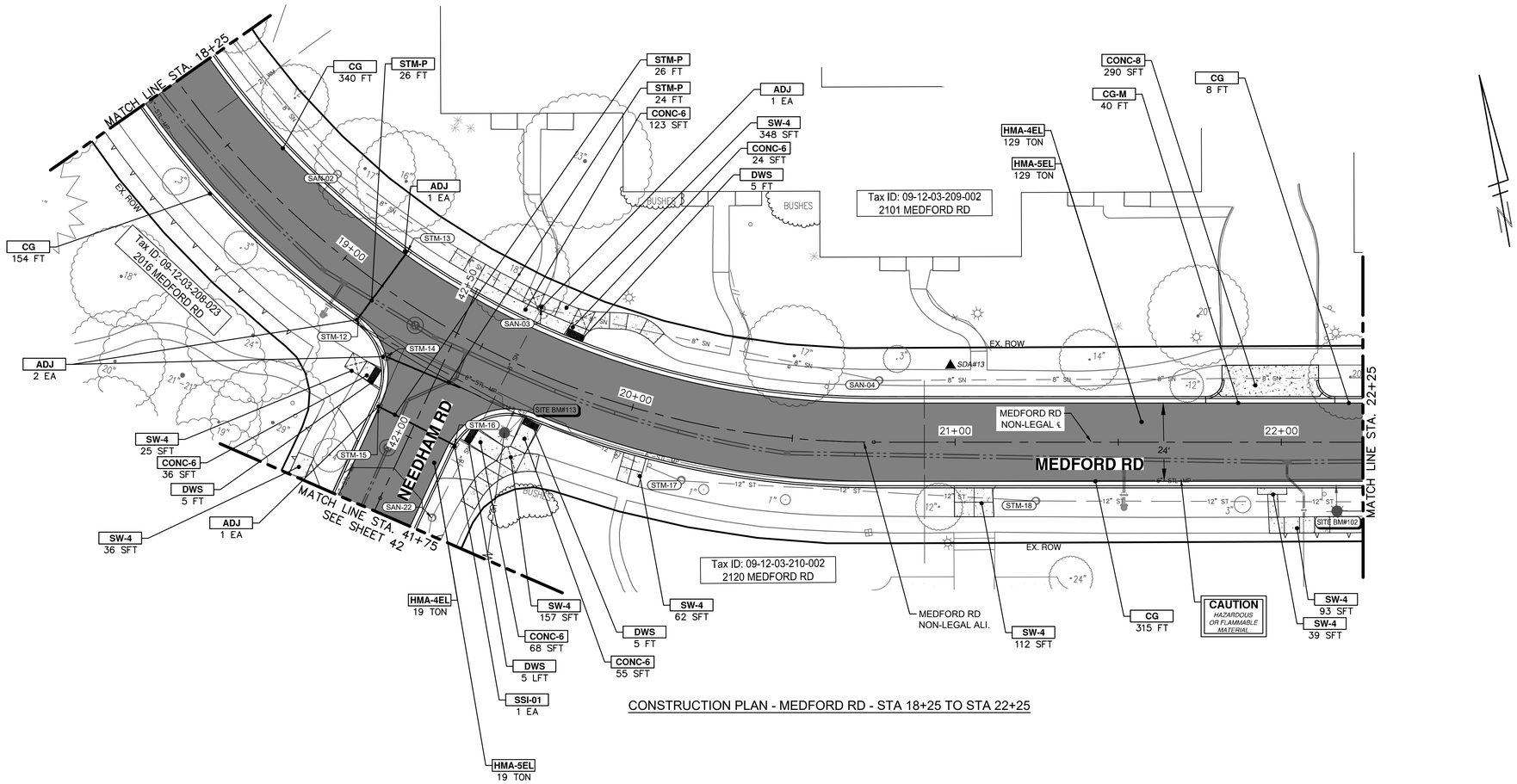
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

CONSTRUCTION PROFILE - MEDFORD RD STA 14+25 TO 18+25

SCALE PLAN: 1" = 20'
PROFILE: 1" = 4'

DRAWING No.
2025-2026-26

SHEET No.



CONSTRUCTION PLAN - MEDFORD RD - STA 18+25 TO STA 22+25

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	2047	Syd
Sanitary Structure Cover	1	Ea
Sanitary Structure Cover, Adjust	1	Ea
12 In., CL IV RCP Storm Sewer, SD–TD–1	76	Ft
Pipe Undercut & Backfill, Storm	120	Cyd
Storm Single Inlet, 24 In. Dia., (0–8' deep)	1	Ea
Storm Structure Cover	4	Ea
Storm Structure Cover, Adjust	4	Ea
Underdrain, Subbase, 6 In.	857	Ft
Subbase, CIP	21	Cyd
Aggregate Base, 6 In., 21AA, CIP	37	Syd
Aggregate Base, 8 In., 21AA, CIP	1771	Syd
HMA, 4EL	148	Ton
HMA, 5EL	148	Ton
Conc, Curb or Curb & Gutter, All Types	817	Ft
Conc, Driveway Opening, Type M	40	Ft
Conc, Sidewalk, 4 In.	872	Sft
Conc, Sidewalk, Drive Approach, or Ramp, 6 In.	306	Sft
Conc, Sidewalk, Drive Approach, or Ramp, 8 In.	290	Sft
Detectable Warning Surface	20	Ft
Turf Restoration	590	Syd

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

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REV.	DATE	DRAWN	CHECKED
5 –	–	–	–
4 ADDENDUM 1	01/23/2026	AJ	AL
3 FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2 FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1 70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

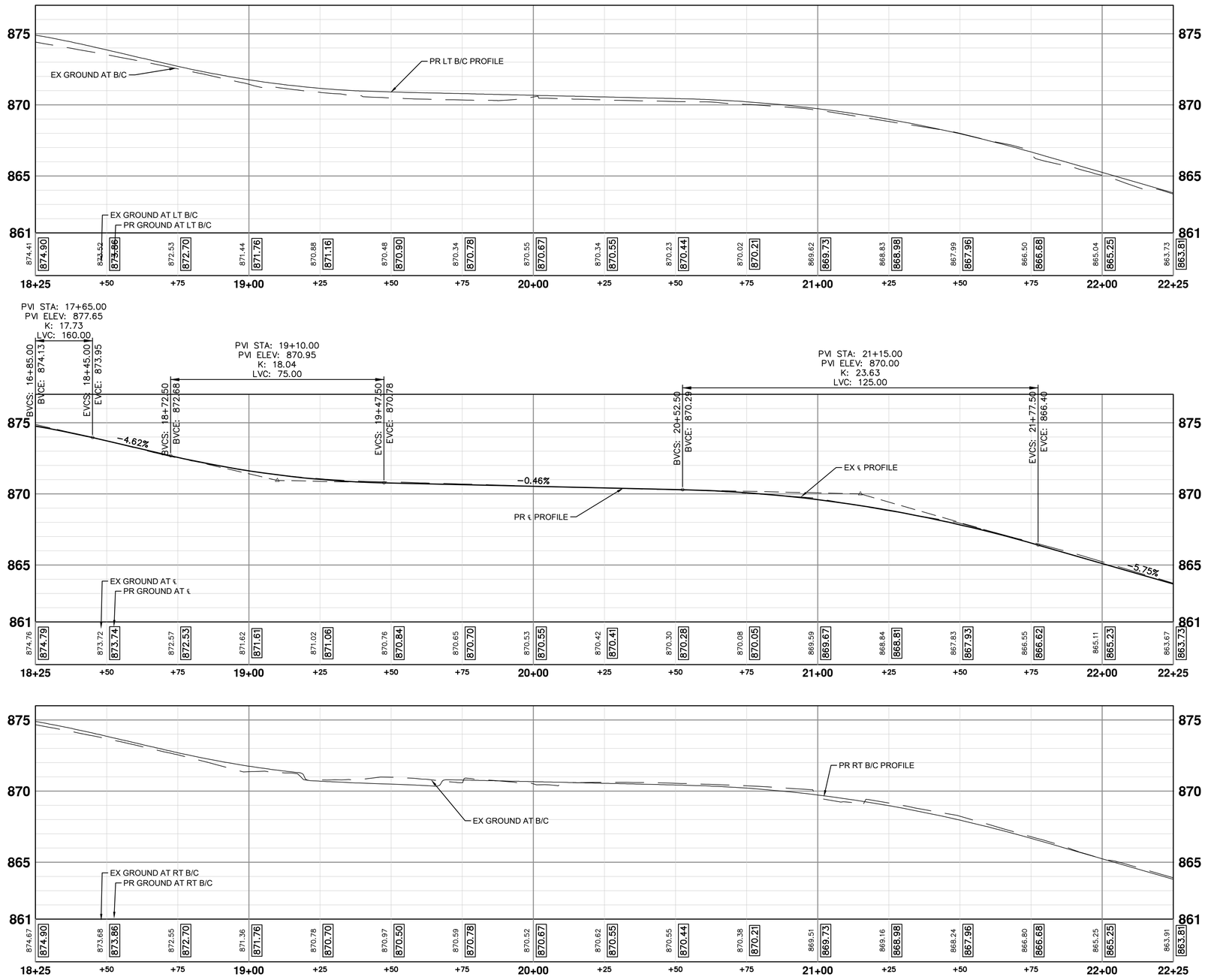
NEEDHAM, MEDFORD, & BUCKINGHAM WATER MAIN & RESURFACING PROJECT

CONSTRUCTION PLAN - MEDFORD RD STA 18+25 TO 22+25

SCALE PLAN: 1" = 20' PROFILE: N/A

DRAWING No. 2025-2026-27

SHEET No. 27 OF 64



CONSTRUCTION PLAN - MEDFORD RD - STA 18+25 TO STA 22+25

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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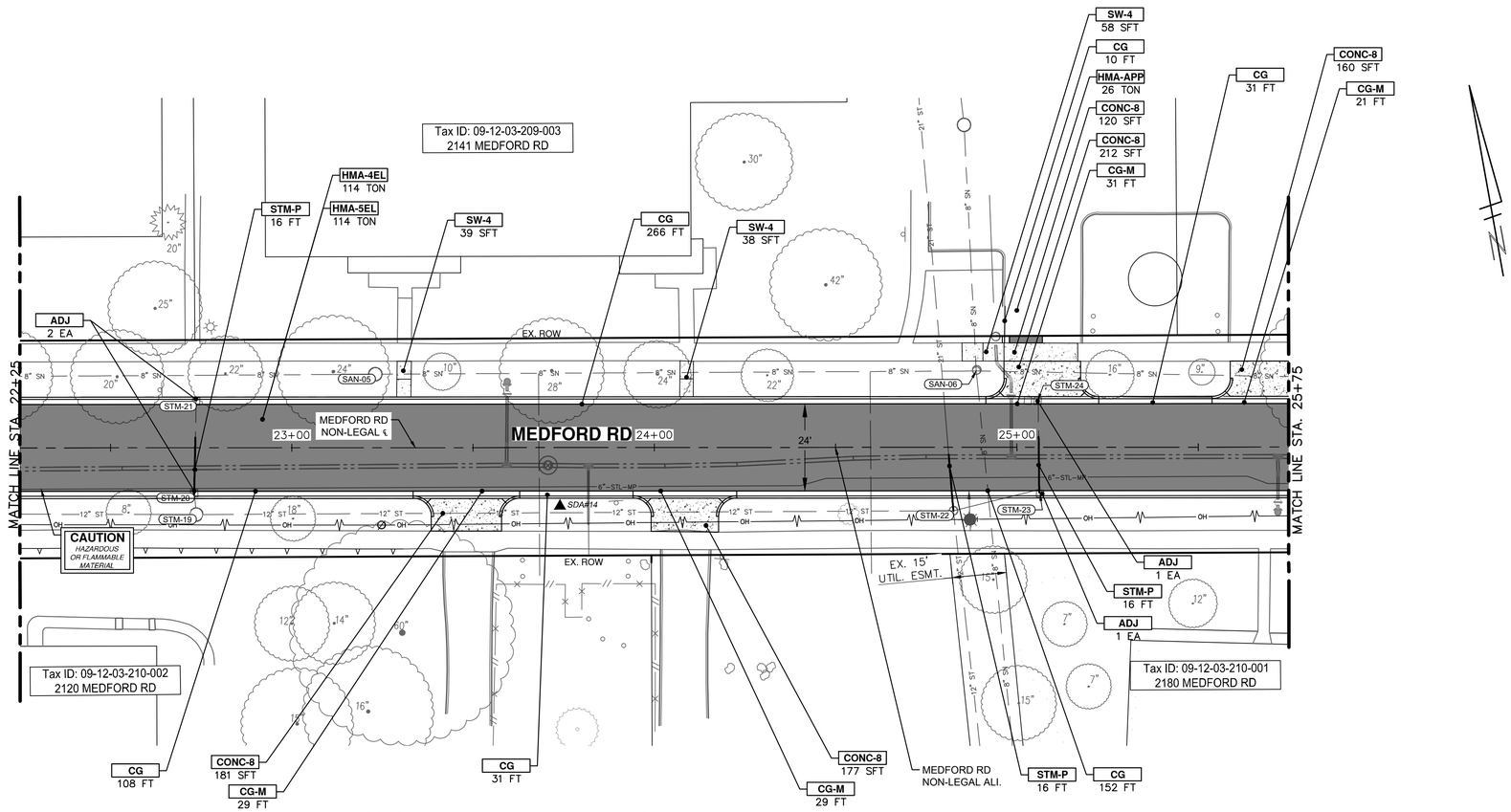
CONSTRUCTION PROFILE - MEDFORD RD STA 18+25 TO 22+25

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-28



CONSTRUCTION PLAN - MEDFORD RD - STA 22+25 TO STA 25+75

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	1866	Syd
12 In., CL IV RCP Storm Sewer, SD–TD–1	16	Ft
Pipe Undercut & Backfill, Storm	25	Cyd
Storm Structure Cover	4	Ea
Storm Structure Cover, Adjust	4	Ea
Underdrain, Subbase, 6 In.	698	Ft
Aggregate Base, 6 In., 21AA, CIP	108	Syd
Aggregate Base, 8 In., 21AA, CIP	1167	Syd
HMA Approach	26	Ton
HMA, 4EL	114	Ton
HMA, 5EL	114	Ton
Conc, Curb or Curb & Gutter, All Types	588	Ft
Conc, Driveway Opening, Type M	110	Ft
Conc, Sidewalk, 4 In.	135	Sft
Conc, Sidewalk, Drive Approach, or Ramp, 8 In.	850	Sft
Turf Restoration	780	Syd

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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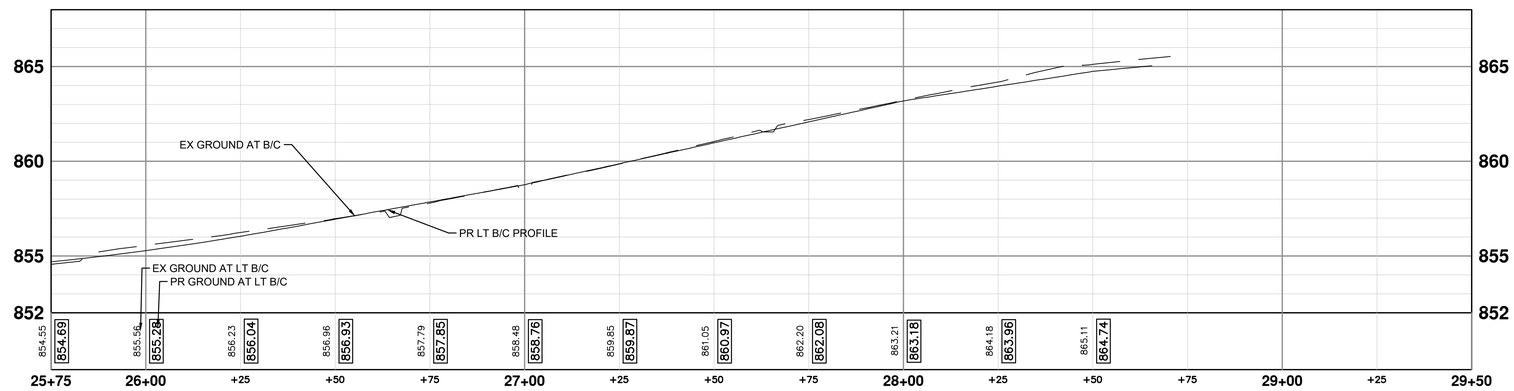
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

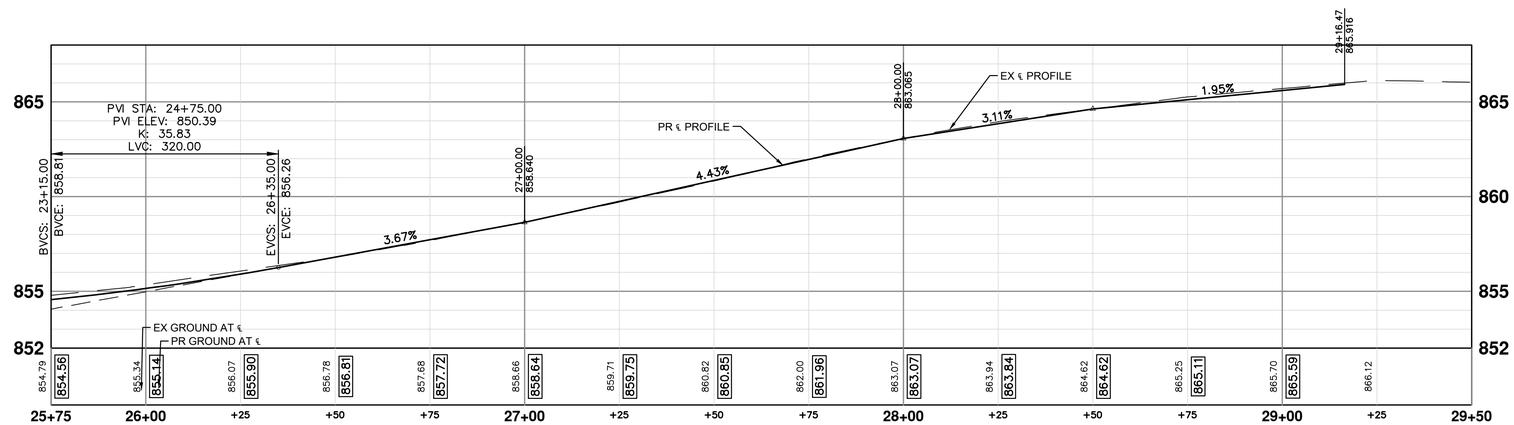
CONSTRUCTION PLAN - MEDFORD RD STA 22+25 TO 25+75

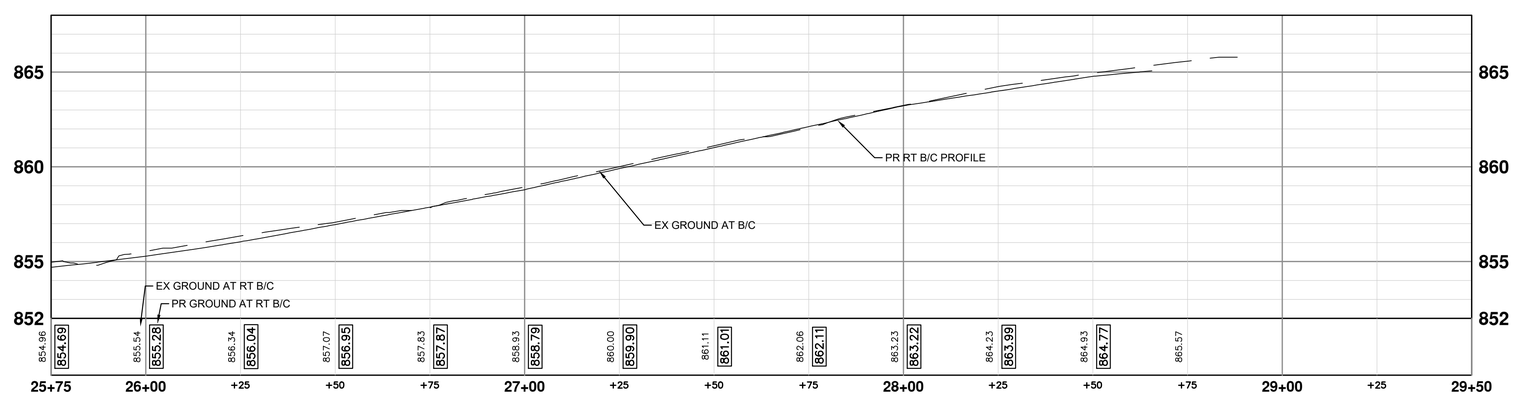
SCALE PLAN: 1" = 20' PROFILE: N/A

DRAWING No. 2025-2026-29

SHEET No.







CONSTRUCTION PLAN - MEDFORD RD - STA 25+75 TO STA 29+50

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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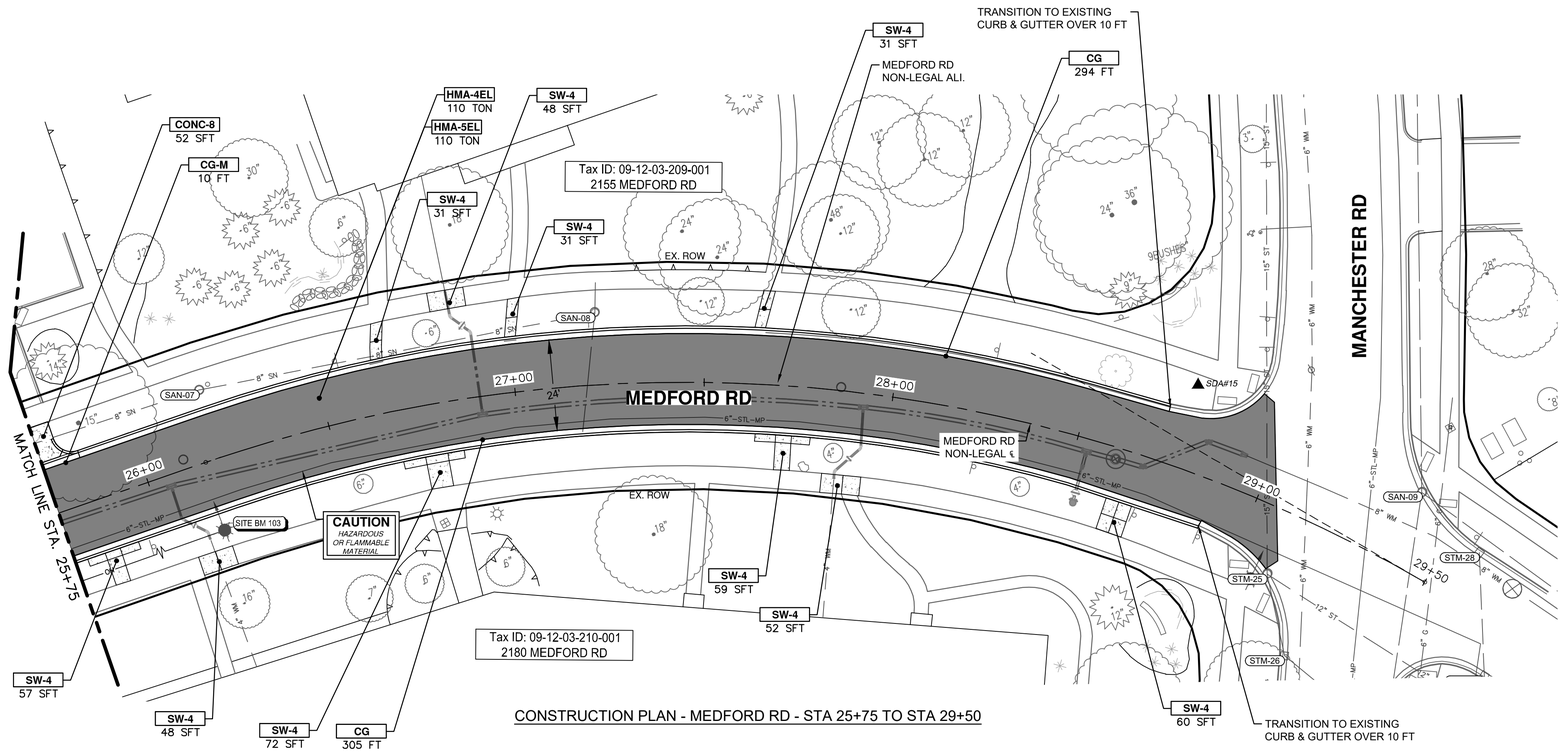
CONSTRUCTION PROFILE - MEDFORD RD STA 22+25 TO 25+75

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-30

SHEET No. 30 OF 64

J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_PPrd_MEDFORD.dwg Dwg Created: 25-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



CONSTRUCTION PLAN - MEDFORD RD - STA 25+75 TO STA 29+50

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	1760	Syd
Underdrain, Subbase, 6 In.	609	Ft
Subbase, CIP	10	Cyd
Aggregate Base, 6 In., 21AA, CIP	7	Syd
Aggregate Base, 8 In., 21AA, CIP	1109	Syd
HMA, 4EL	110	Ton
HMA, 5EL	110	Ton
Conc, Curb or Curb & Gutter, All Types	599	Ft
Conc, Driveway Opening, Type M	10	Ft
Conc, Sidewalk, 4 In.	489	Sft
Conc, Sidewalk, Drive Approach, or Ramp, 8 In.	52	Sft
Turf Restoration	740	Syd

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

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REV.	DATE	DRAWN	CHECKED
5 –	–	–	–
4 ADDENDUM 1	01/23/2026	AJ	AL
3 FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2 FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1 70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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NEEDHAM, MEDFORD, & BUCKINGHAM
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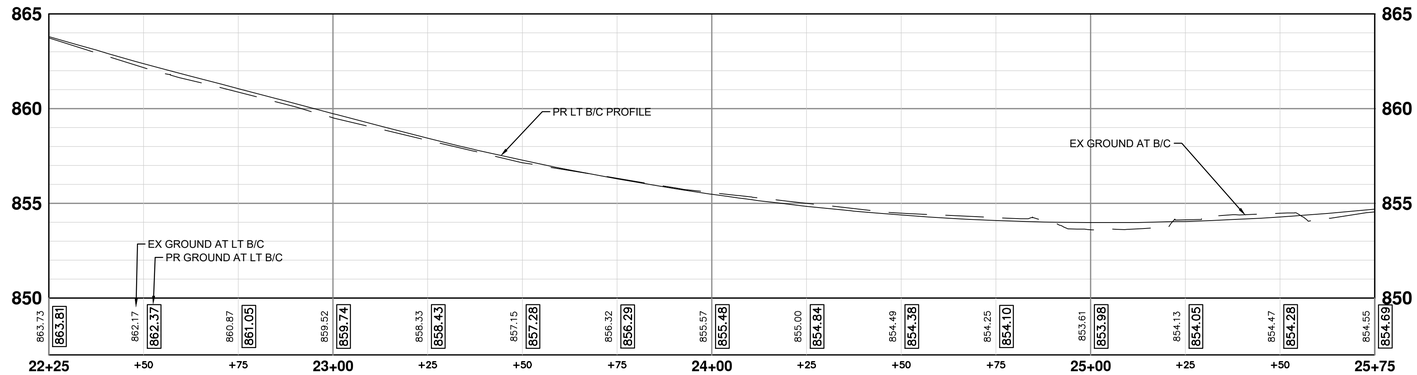
CONSTRUCTION PLAN - MEDFORD RD STA 25+75 TO 29+16

SCALE PLAN: 1" = 20' PROFILE: N/A

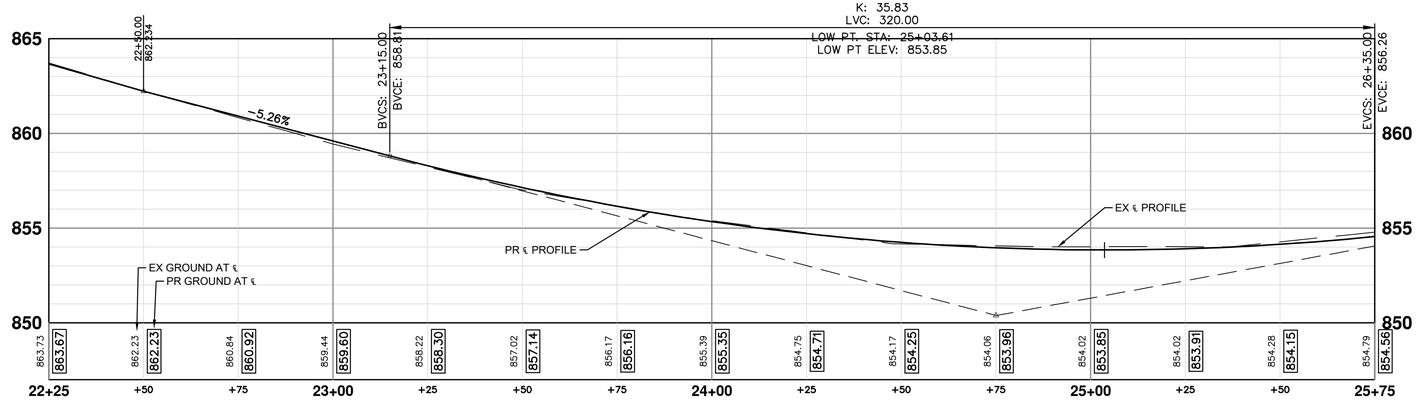
DRAWING No. 2025-2026-31

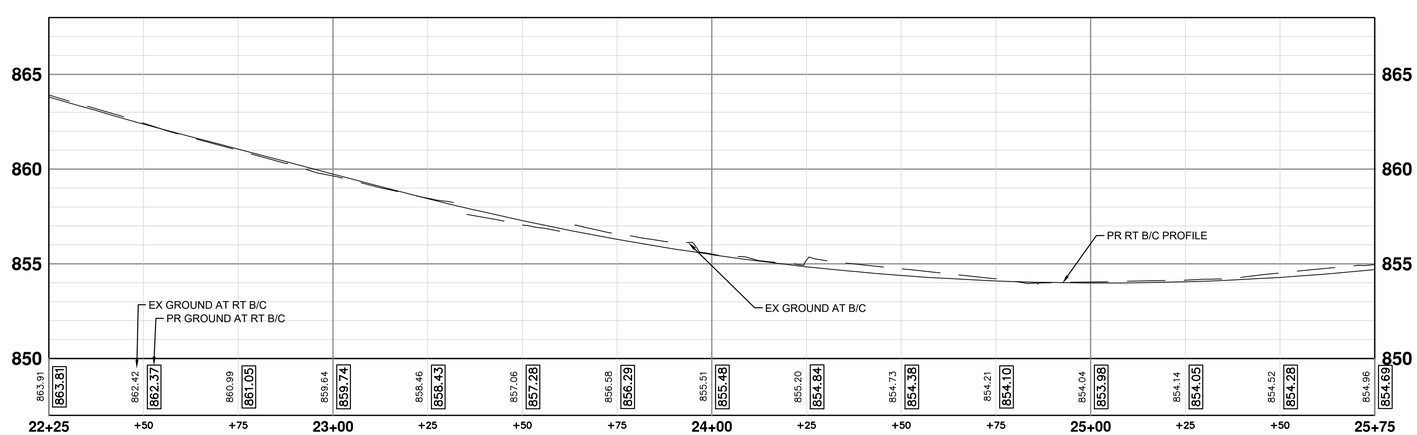
SHEET No. 31 OF 64

J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_PPrd_MEDFORD.dwg Dwg Created: 25-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



PVI STA: 24+75.00
PVI ELEV: 850.39
K: 35.83
LVC: 320.00
LOW PT. STA: 25+03.61
LOW PT ELEV: 853.85





CONSTRUCTION PLAN - MEDFORD RD - STA 22+25 TO STA 25+75

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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NEEDHAM, MEDFORD, & BUCKINGHAM
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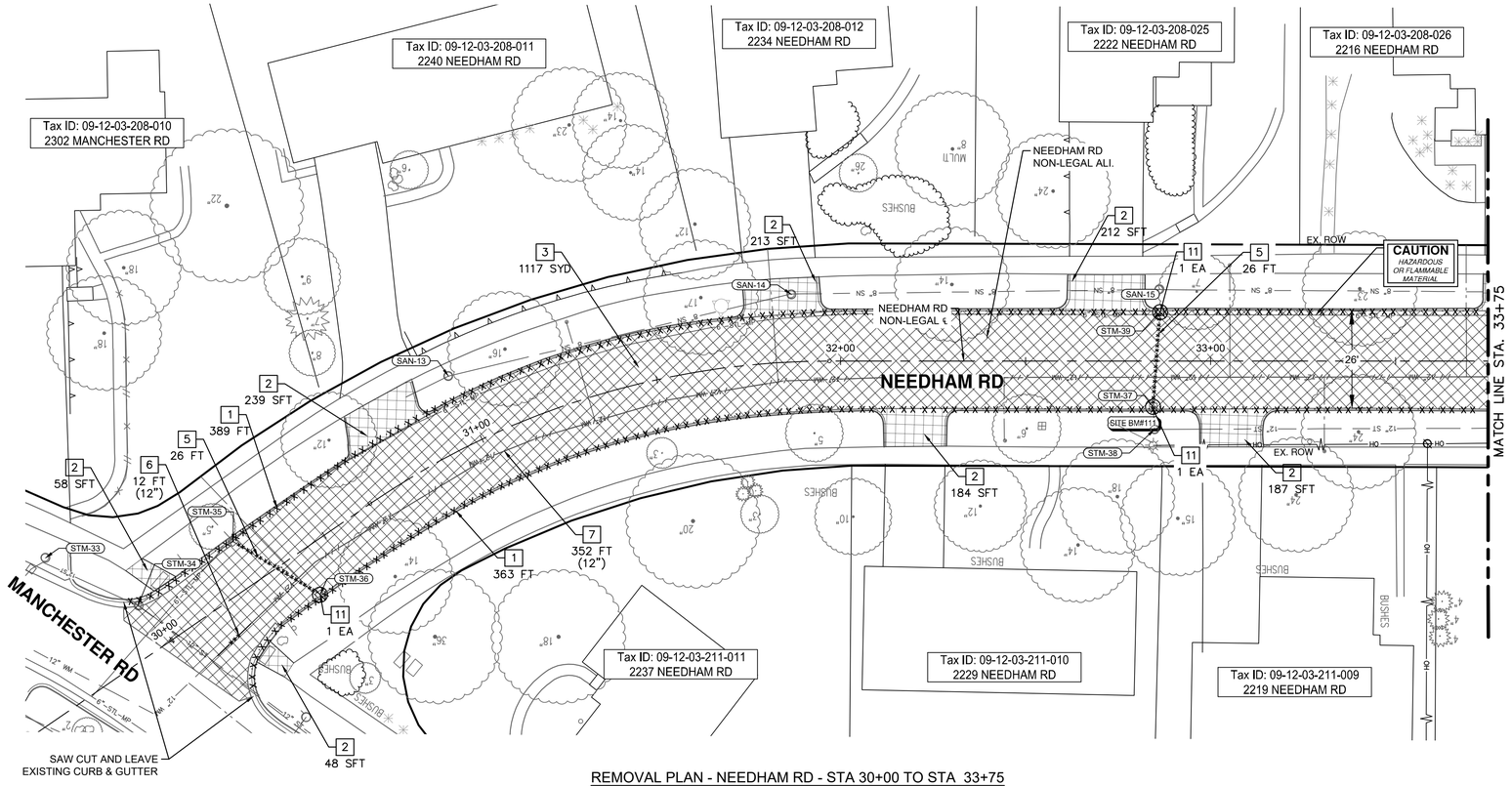
CONSTRUCTION PROFILE - MEDFORD RD STA 25+75 TO 29+16

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

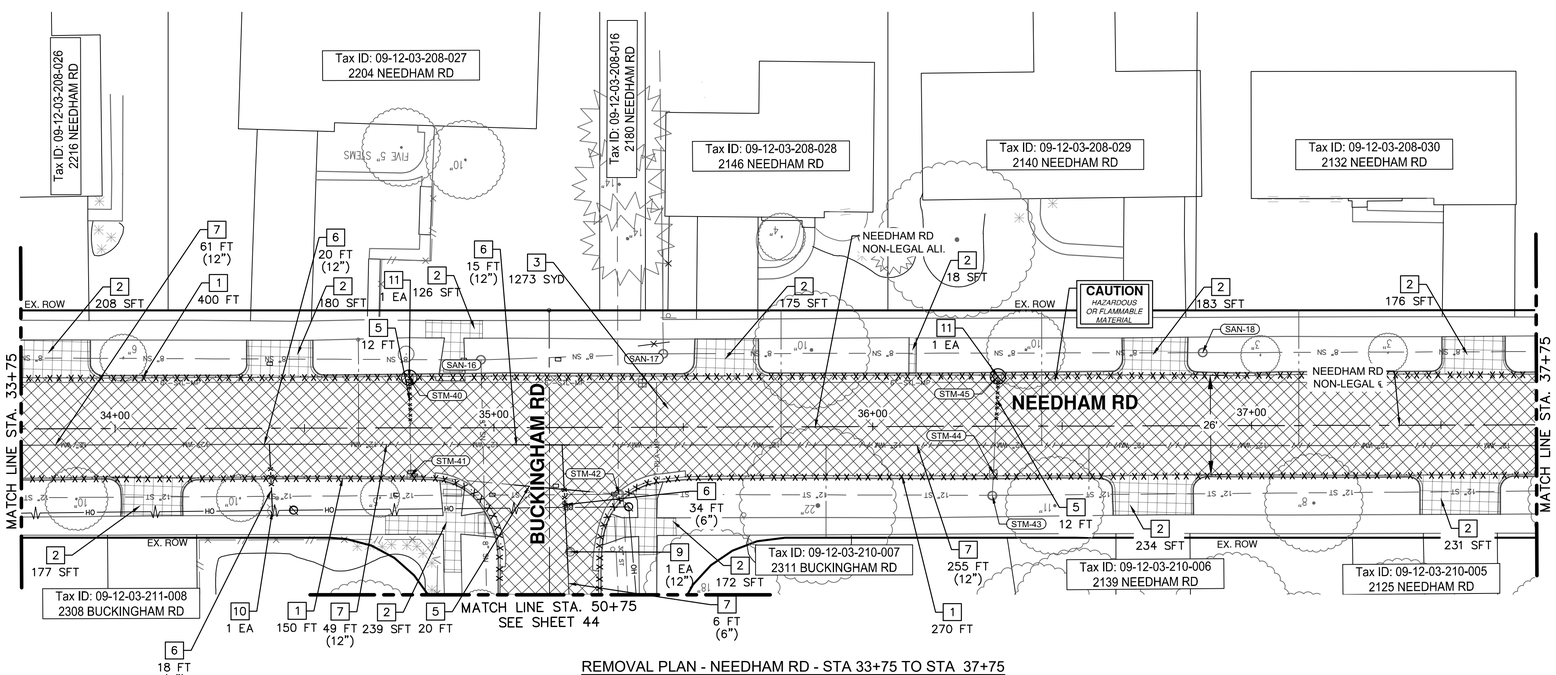
DRAWING No. 2025-2026-32

SHEET No. 32 OF 64

J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_PPrd_MEDFORD.dwg Dwg Created: 25-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



REMOVAL PLAN - NEEDHAM RD - STA 30+00 TO STA 33+75



REMOVAL PLAN - NEEDHAM RD - STA 33+75 TO STA 37+75

REMOVAL QUANTITIES – THIS SHEET

Item	Quantity	Unit
HMA, Any Thickness, Rem	2390	Syd
Curb, Gutter, and Curb and Gutter, Any Type, Rem	1572	Ft
Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	3260	Sft
Storm Sewer Pipe, 12 In. Dia., Rem	96	Ft
Storm Sewer Drop Structure, Rem	5	Ea
Fire Hydrant Assembly, Rem	1	Ea
Water Main Pipe, 6 In. Dia., Abandon	6	Ft
Water Main Pipe, 12 In. Dia., Abandon	717	Ft
Water Main Pipe, 6 In. Dia., Rem	52	Ft
Water Main Pipe, 12 In. Dia., Rem	47	Ft
Gate Valve in Box, 12 In. Dia., Rem	1	Ea

REMOVAL HATCH KEY

- HMA SURFACE, REM
- SIDEWALK AND RAMPS, REMOVE DRIVEWAY APPROACH, REMOVE
- CURB AND GUTTER, ANY TYPE OR SIZE, REM, MODIFIED
- STORM SEWER PIPE, ANY SIZE, REMOVE
- WATER MAIN PIPE, REM
- WATER MAIN PIPE, ABANDON

REMOVAL KEY

KEY	DESCRIPTION
1	CURB, CUTTER, AND CURB AND GUTTER, ANY TYPE, REM
2	SIDEWALK AND RAMPS, REMOVE* DRIVEWAY APPROACH, REMOVE*
3	HMA ANY THICKNESS, REM*
4	COLD MILLING HMA SURFACE
5	STORM SEWER PIPE, 12 IN. DIA., REM
6	WATER MAIN PIPE, _ IN. DIA., REM
7	WATER MAIN PIPE, _ IN. DIA., ABANDON
8	GATE VALVE IN BOX, _ IN. DIA., ABANDON
9	GATE VALVE IN BOX, _ IN. DIA., REM
10	FIRE HYDRANT ASSEMBLY, REM
11	STORM SEWER DROP STRUCTURE, REM
12	TREE, REM, _ INCH

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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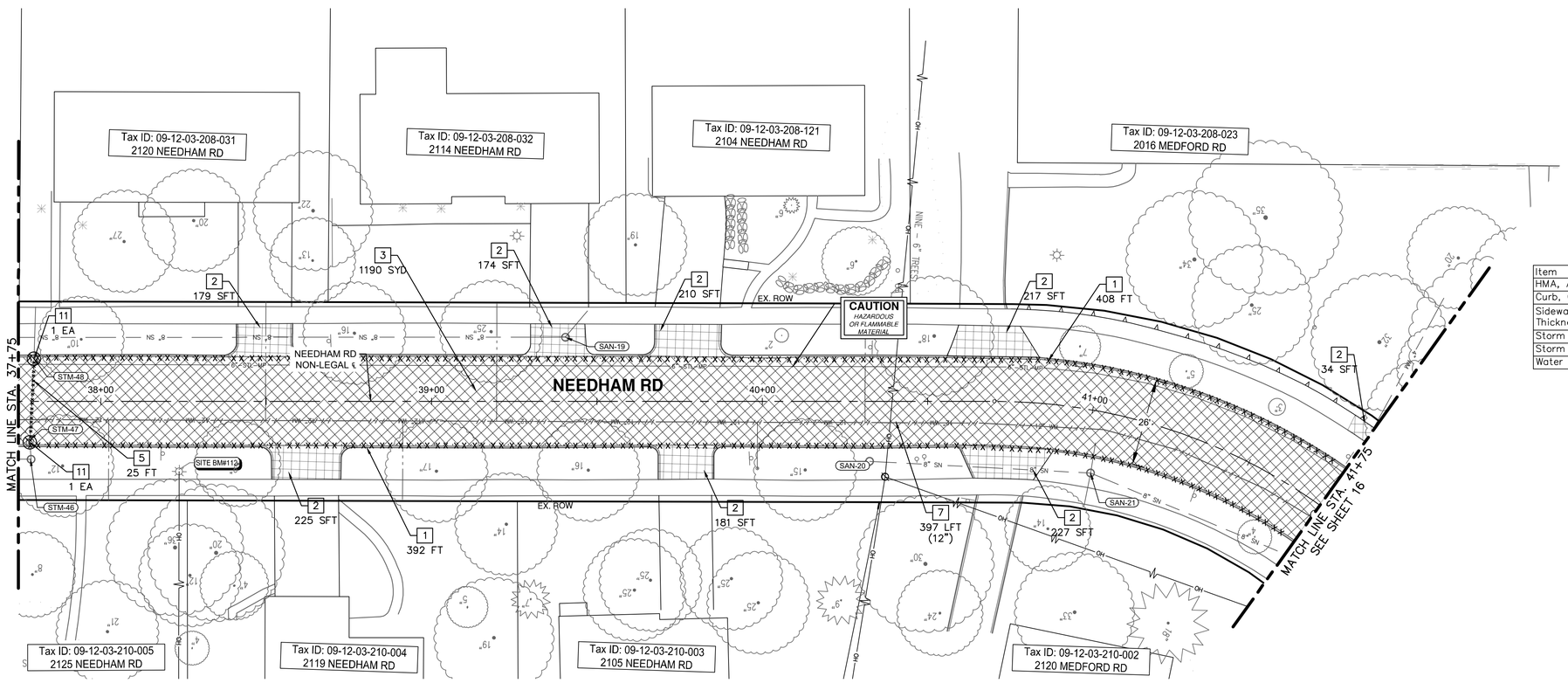
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

REMOVAL PLAN - NEEDHAM RD - STA 29+97 TO STA 37+75

SCALE PLAN: 1" = 20'
PROFILE: N/A
DRAWING No. 2025-2026-33



REMOVAL PLAN - NEEDHAM RD - STA 37+75 TO STA 41+75

REMOVAL QUANTITIES – THIS SHEET

Item	Quantity	Unit
HMA, Any Thickness, Rem	1190	Syd
Curb, Gutter, and Curb and Gutter, Any Type, Rem	800	Ft
Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	1447	Sft
Storm Sewer Pipe, 12 In. Dia., Rem	25	Ft
Storm Sewer Drop Structure, Rem	2	Ea
Water Main Pipe, 12 In. Dia., Abandon	397	Ft

REMOVAL HATCH KEY

- HMA SURFACE, REM
- SIDEWALK AND RAMPS, REMOVE DRIVEWAY APPROACH, REMOVE
- CURB AND GUTTER, ANY TYPE OR SIZE, REM, MODIFIED
- STORM SEWER PIPE, ANY SIZE, REMOVE
- WATER MAIN PIPE, REM
- WATER MAIN PIPE, ABANDON

REMOVAL KEY

KEY	DESCRIPTION
1	CURB, CUTTER, AND CURB AND GUTTER, ANY TYPE, REM
2	SIDEWALK AND RAMPS, REMOVE* DRIVEWAY APPROACH, REMOVE*
3	HMA ANY THICKNESS, REM*
4	COLD MILLING HMA SURFACE
5	STORM SEWER PIPE, 12 IN. DIA., REM
6	WATER MAIN PIPE, _ IN. DIA., REM
7	WATER MAIN PIPE, _ IN. DIA., ABANDON
8	GATE VALVE IN BOX, _ IN. DIA., ABANDON
9	GATE VALVE IN BOX, _ IN. DIA., REM
10	FIRE HYDRANT ASSEMBLY, REM
11	STORM SEWER DROP STRUCTURE, REM
12	TREE, REM, _ INCH

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

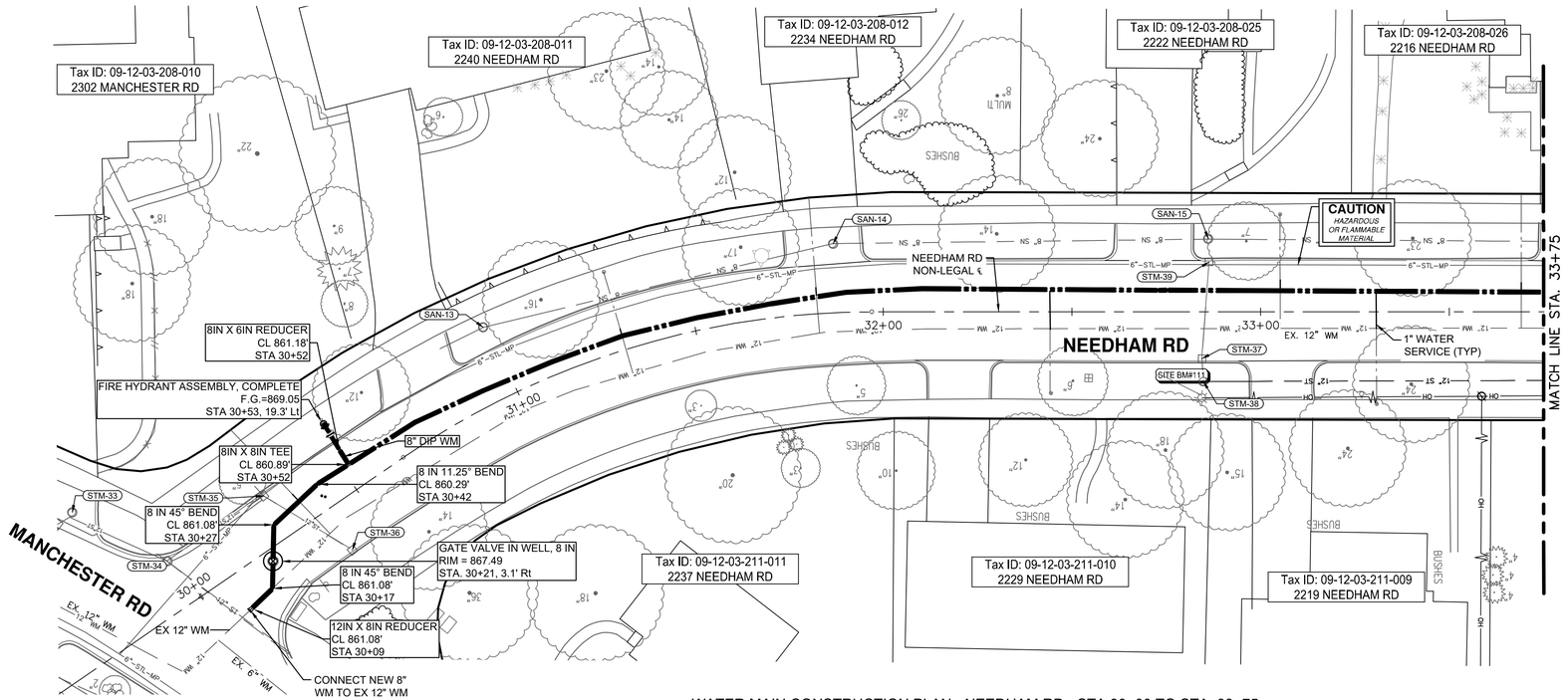
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

REMOVAL PLAN - NEEDHAM RD - STA 37+75 TO STA 41+75

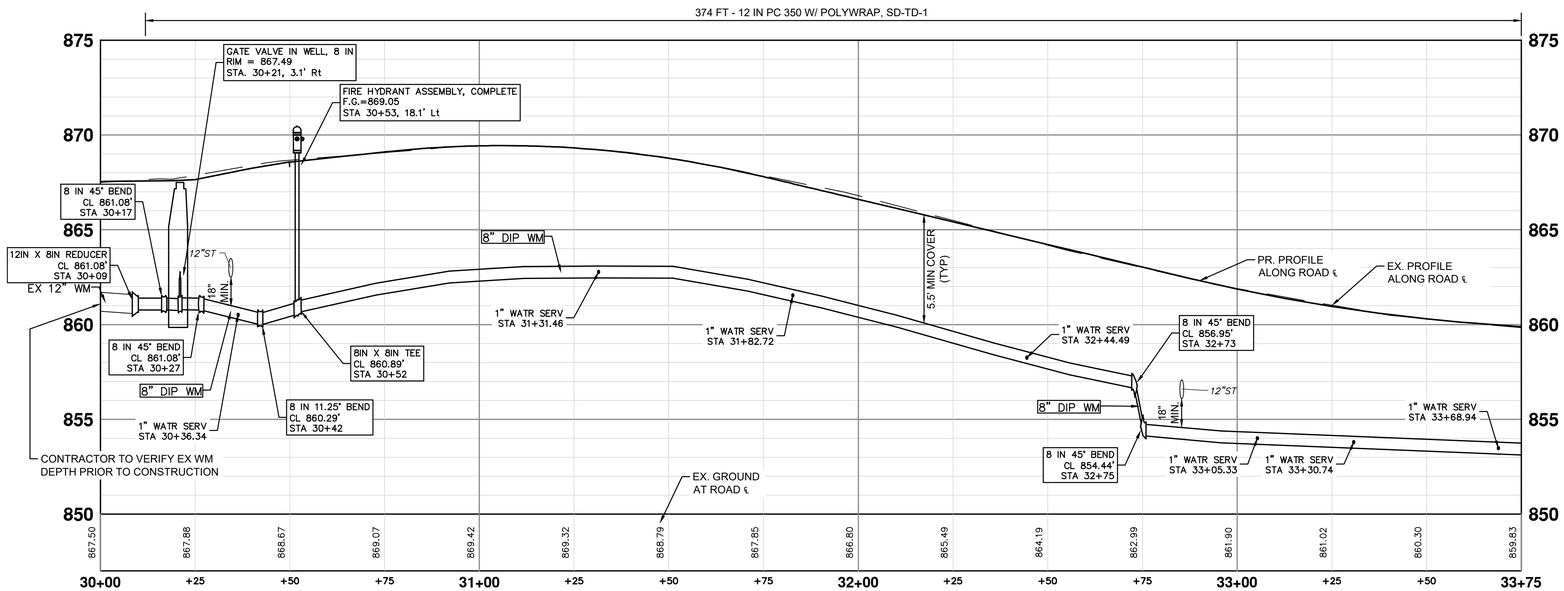
SCALE PLAN: 1" = 20' PROFILE: N/A

DRAWING No. 2025-2026-34

SHEET No. 34 OF 64



WATER MAIN CONSTRUCTION PLAN - NEEDHAM RD - STA 30+00 TO STA 33+75



WATER MAIN CONSTRUCTION PROFILE - NEEDHAM RD - STA 30+00 TO STA 33+75

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
6 In., PC 350 DIP w/polywrap, SD-TD-1	7	Ft
8 In., PC 350 DIP w/polywrap, SD-TD-1	383	Ft
8 In. 11.25° DIP Bend	1	Ea
8 In. 45° DIP Bend	4	Ea
8 In. X 6 In. DIP Reducer	1	Ea
8 In. X 8 In. X 8 In. DIP Tee	1	Ea
Gate Valve In Well, 8 In.	1	Ea
Excavate & Backfill For Water Service Tap And Lead	49	Ft
Fire Hydrant Assembly, Complete	1	Ea

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
2. WATER SERVICE RECONNECTIONS - CONTRACTOR SHALL EXCAVATE TRENCH AND CITY PERSONNEL SHALL INSTALL THE TAP (TYPICAL ALL SERVICES)
3. EXACT DEPTH OF SANITARY LEAD CROSSINGS IS UNKNOWN. CONTRACTOR TO FIELD VERIFY LEADS AND MAINTAIN CLEARANCE AS DIRECTED BY CITY ENGINEER. (TYP)

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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WATER MAIN & RESURFACING PROJECT

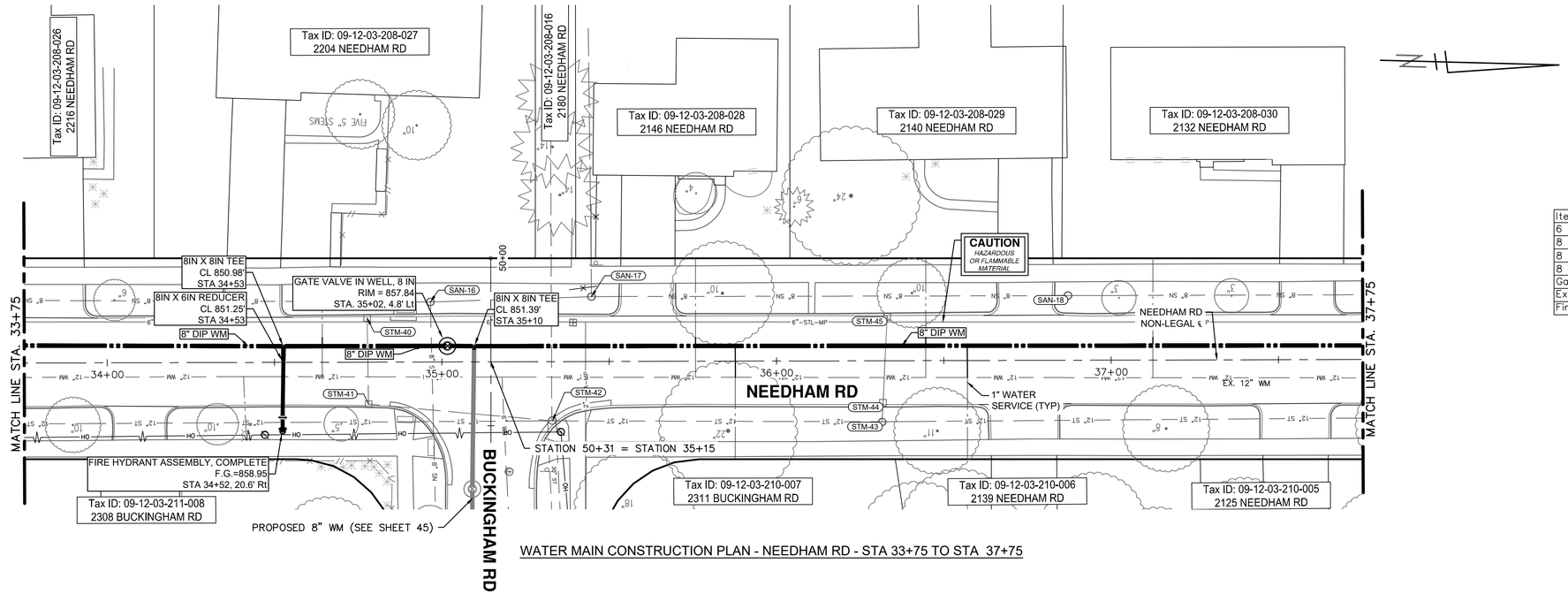
WATER MAIN PLAN & PROFILE - NEEDHAM RD STA 29+97 TO 33+75

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-35

SHEET No.

J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_Watr_NEEDHAM.dwg Dwg Created: 6-Jan-26 – _a2 standard bw.stb – Plot Date: 22-Jan-26



WATER MAIN CONSTRUCTION PLAN - NEEDHAM RD - STA 33+75 TO STA 37+75

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
6 In., PC 350 DIP w/polywrap, SD-TD-1	21	Ft
8 In., PC 350 DIP w/polywrap, SD-TD-1	405	Ft
8 In. X 6 In. DIP Reducer	1	Ea
8 In. X 8 In. X 8 In. DIP Tee	2	Ea
Gate Valve In Well, 8 In.	1	Ea
Excavate & Backfill For Water Service Tap And Lead	38	Ft
Fire Hydrant Assembly, Complete	1	Ea

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
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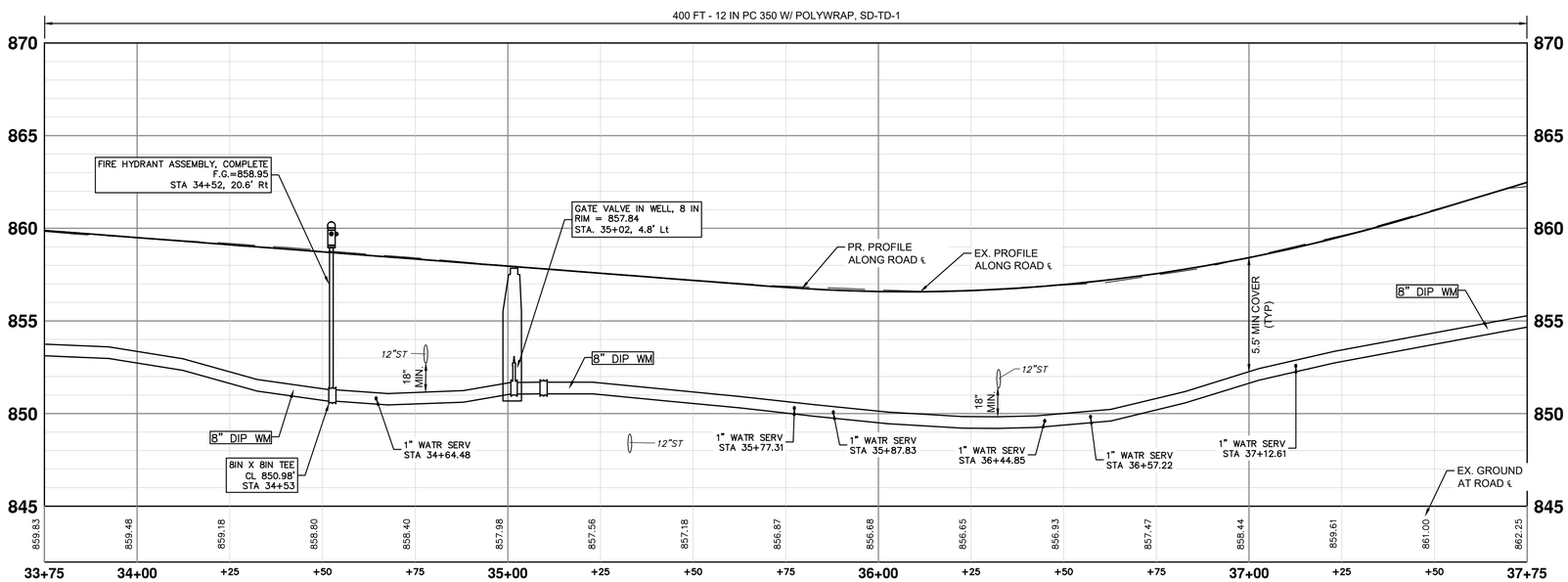
3. EXACT DEPTH OF SANITARY LEAD CROSSINGS IS UNKNOWN. CONTRACTOR TO FIELD VERIFY LEADS AND MAINTAIN CLEARANCE AS DIRECTED BY CITY ENGINEER. (TYP)



WATER MAIN CONSTRUCTION PROFILE - NEEDHAM RD - STA 33+75 TO STA 37+75

REV.	DATE	DRAWN	CHECKED
5 –	–	–	–
4 ADDENDUM 1	01/23/2026	AJ	AL
3 FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2 FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1 70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

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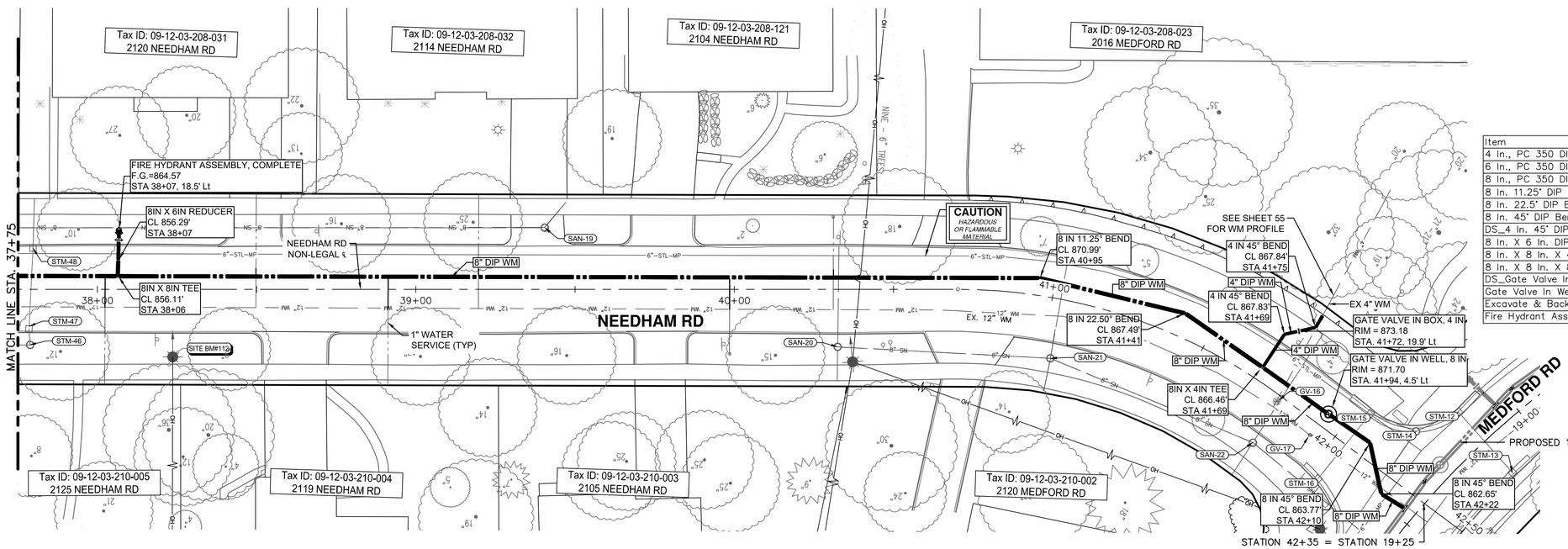
WATER MAIN & RESURFACING PROJECT

WATER MAIN PLAN & PROFILE - NEEDHAM RD STA 33+75 TO 37+75

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-36



WATER MAIN CONSTRUCTION PLAN - NEEDHAM RD - STA 37+75 TO STA 42+50

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
4 In., PC 350 DIP w/polywrap, SD-TD-1	32	Ft
6 In., PC 350 DIP w/polywrap, SD-TD-1	10	Ft
8 In., PC 350 DIP w/polywrap, SD-TD-1	469	Ft
8 In. 11.25° DIP Bend	1	Ea
8 In. 22.5° DIP Bend	1	Ea
8 In. 45° DIP Bend	2	Ea
DS_4 In. 45° DIP Bend	2	Ea
8 In. X 6 In. DIP Reducer	1	Ea
8 In. X 8 In. X 4 In. DIP Tee	1	Ea
8 In. X 8 In. X 8 In. DIP Tee	1	Ea
DS_Gate Valve In Box, 4 In.	1	Ea
Gate Valve In Well, 8 In.	1	Ea
Excavate & Backfill For Water Service Tap And Lead	42	Ft
Fire Hydrant Assembly, Complete	1	Ea

NOTES

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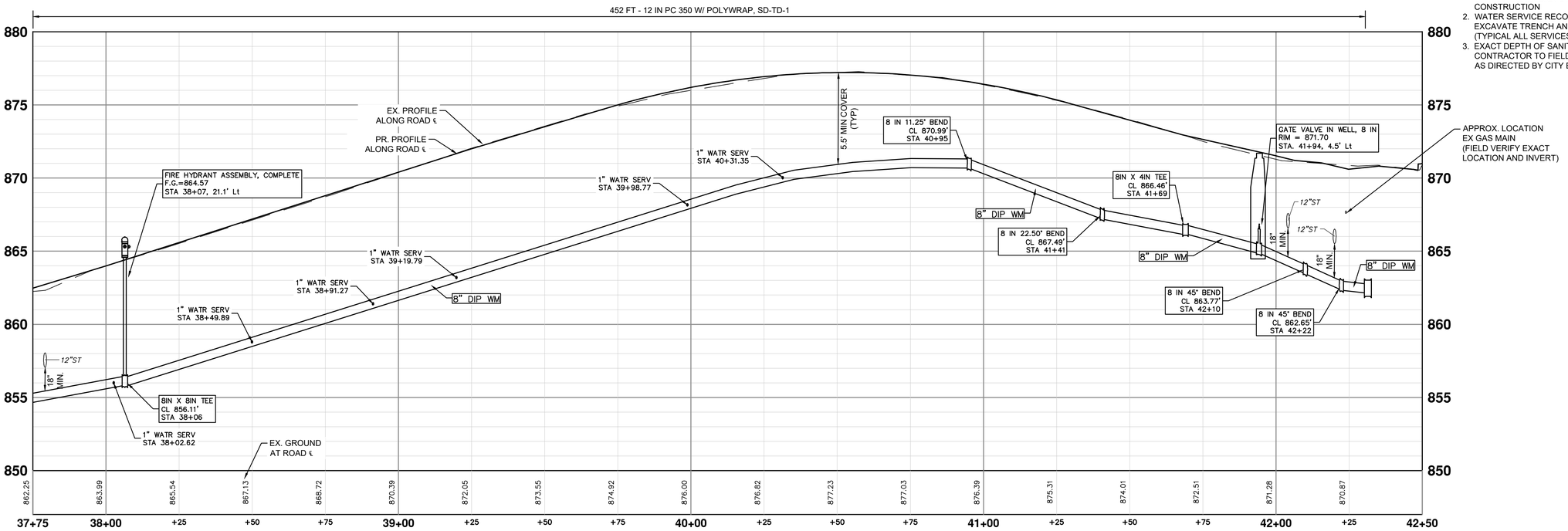
3. EXACT DEPTH OF SANITARY LEAD CROSSINGS IS UNKNOWN. CONTRACTOR TO FIELD VERIFY LEADS AND MAINTAIN CLEARANCE AS DIRECTED BY CITY ENGINEER. (TYP)



WATER MAIN CONSTRUCTION PROFILE - NEEDHAM RD - STA 37+75 TO STA 42+50

811 Know what's below. Call before you dig.

REV.	DATE	DRAWN	CHECKED
5 –	–	–	–
4 ADDENDUM 1	01/23/2026	AJ	AL
3 FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2 FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1 70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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WATER MAIN & RESURFACING PROJECT

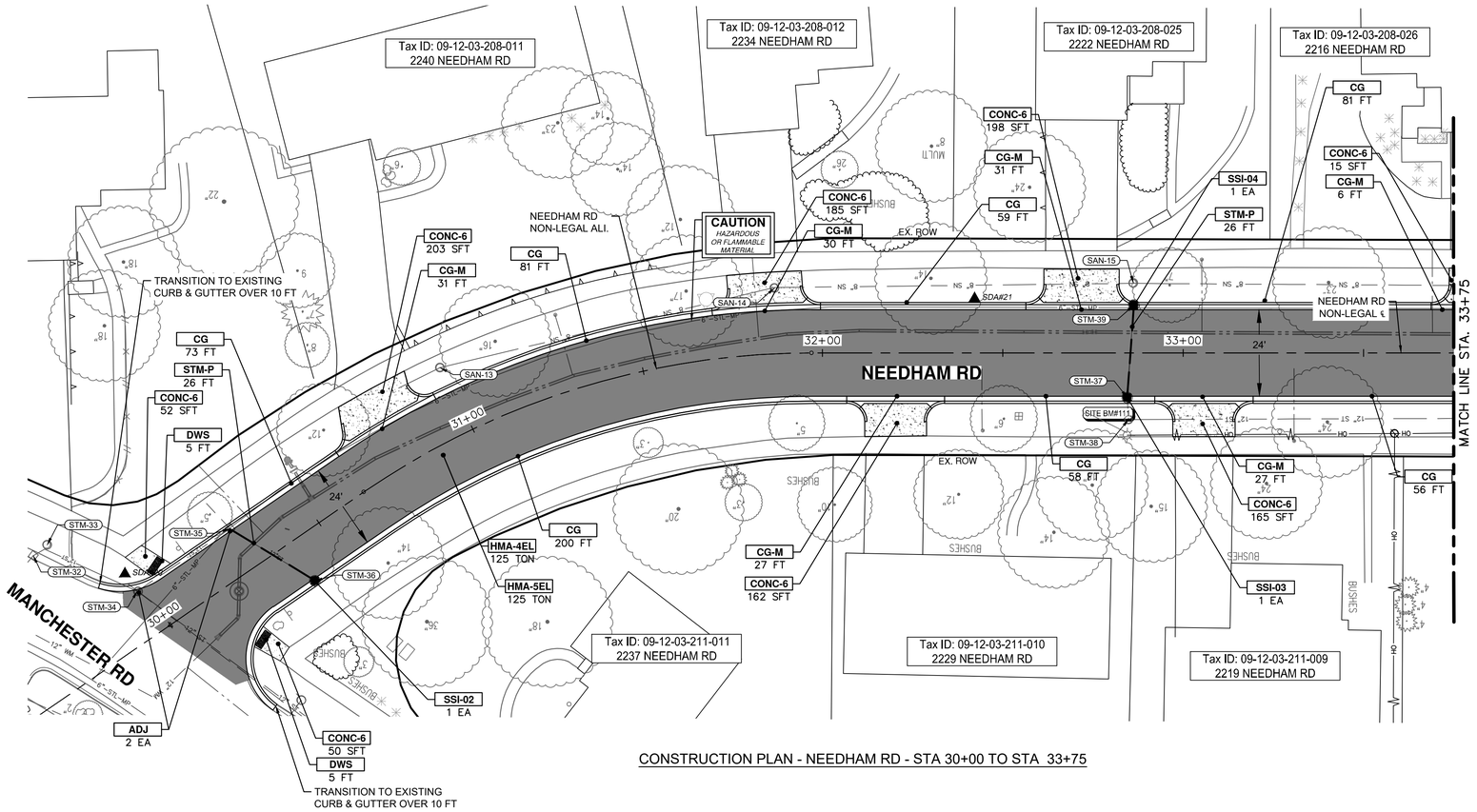
WATER MAIN PLAN & PROFILE - NEEDHAM RD STA 37+75 TO 42+50

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-37

SHEET No. 37 OF 64

J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_Watr_NEEDHAM.dwg Dwg Created: 6-Jan-26 – _a2 standard bw.stb – Plot Date: 22-Jan-26



CONSTRUCTION PLAN - NEEDHAM RD - STA 30+00 TO STA 33+75

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	2016	Syd
12 In., CL IV RCP Storm Sewer, SD–TD–1	52	Ft
Pipe Undercut & Backfill, Storm	82	Cyd
Storm Single Inlet, 24 In. Dia., (0–8' deep)	3	Ea
Storm Structure Cover	2	Ea
Storm Structure Cover, Adjust	2	Ea
Underdrain, Subbase, 6 In.	765	Ft
Water Structure Cover	1	Ea
Water Structure Cover, Adjust	1	Ea
Subbase, CIP	2	Cyd
Aggregate Base, 6 In., 21AA, CIP	119	Syd
Aggregate Base, 8 In., 21AA, CIP	1269	Syd
HMA, 4EL	125	Ton
HMA, 5EL	125	Ton
Conc, Curb or Curb & Gutter, All Types	613	Ft
Conc, Driveway Opening, Type M	152	Ft
Conc, Sidewalk, Drive Approach, or Ramp, 6 In.	1030	Sft
Detectable Warning Surface	10	Ft
Turf Restoration	840	Syd

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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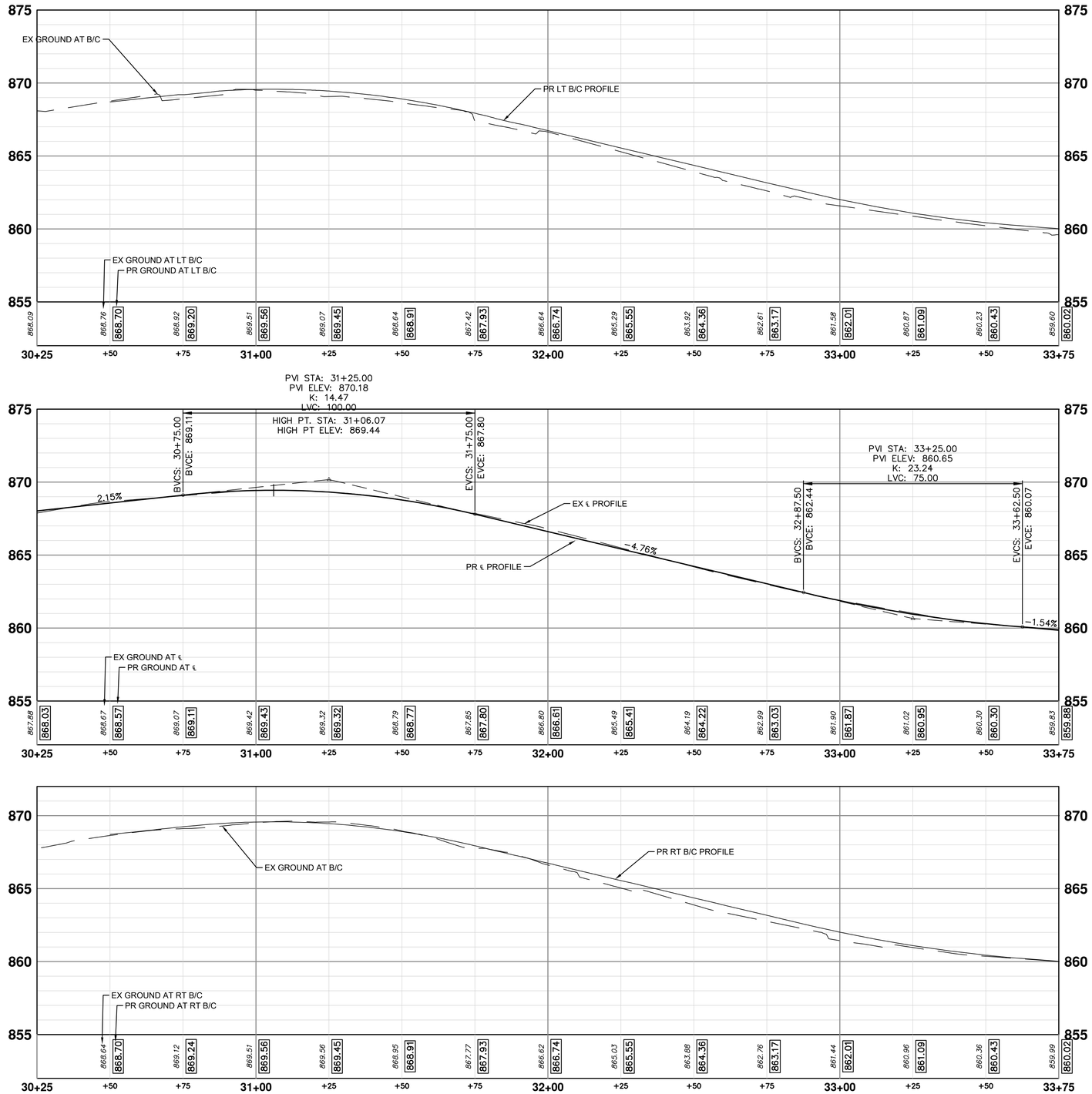
CONSTRUCTION PLAN - NEEDHAM RD STA 29+97 TO 33+75

SCALE PLAN: 1" = 20'
PROFILE: N/A
DRAWING No. 2025-2026-38



CONSTRUCTION PROFILE - NEEDHAM RD - STA 30+00 TO STA 33+75

811 Know what's below. Call before you dig.

REV.	DATE	DRAWN	CHECKED
5 –	–	–	–
4 ADDENDUM 1	01/23/2026	AJ	AL
3 FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2 FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1 70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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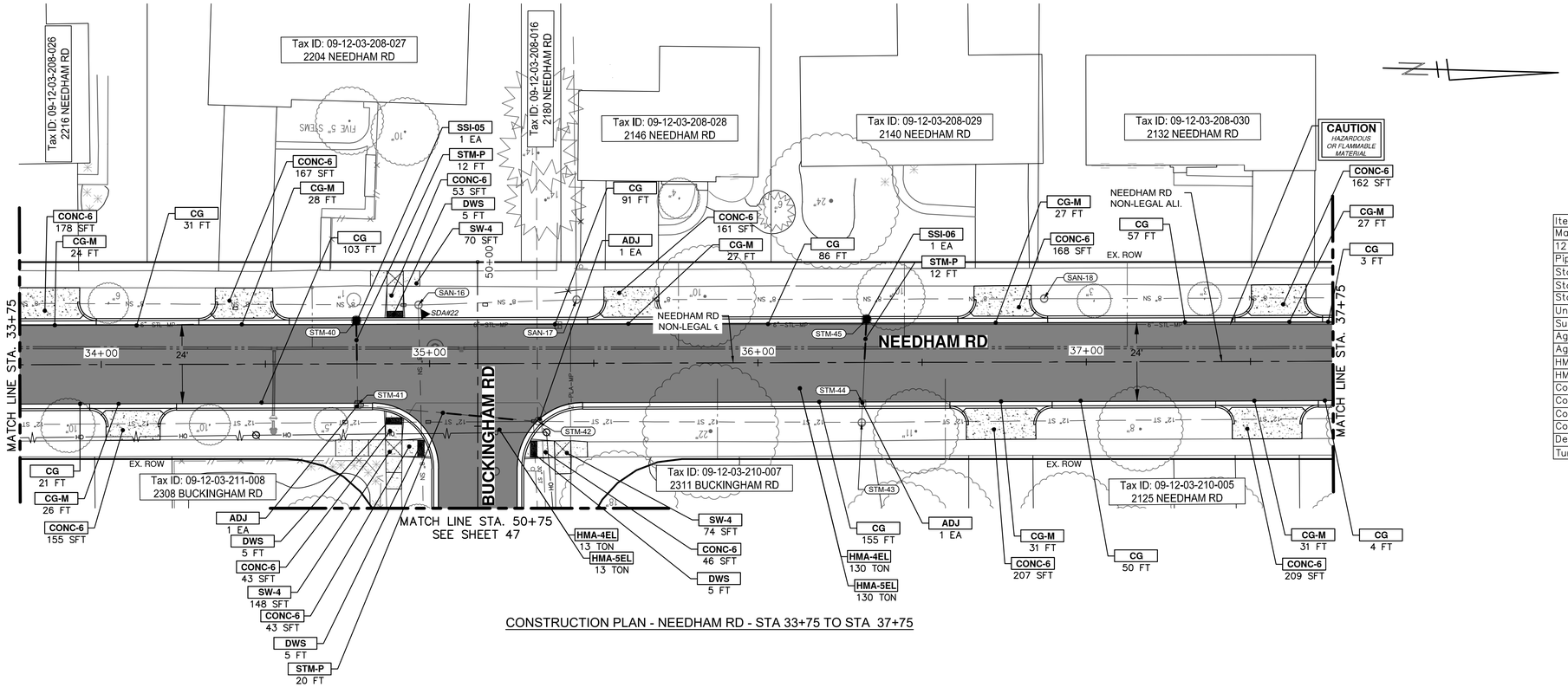
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

CONSTRUCTION PROFILE - NEEDHAM RD STA 29+97 TO 33+75

SCALE PLAN: 1" = 20' PROFILE: 1"=4'

DRAWING No.
2025-2026-39



CONSTRUCTION PLAN - NEEDHAM RD - STA 33+75 TO STA 37+75

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	2304	Syd
12 In., CL IV RCP Storm Sewer, SD–TD–1	12	Ft
Pipe Undercut & Backfill, Storm	19	Cyd
Storm Single Inlet, 24 In. Dia., (0–8' deep)	2	Ea
Storm Structure Cover	3	Ea
Storm Structure Cover, Adjust	3	Ea
Underdrain, Subbase, 6 In.	822	Ft
Subbase, CIP	8	Cyd
Aggregate Base, 6 In., 21AA, CIP	180	Syd
Aggregate Base, 8 In., 21AA, CIP	1440	Syd
HMA, 4EL	143	Ton
HMA, 5EL	143	Ton
Conc, Curb or Curb & Gutter, All Types	601	Ft
Conc, Driveway Opening, Type M	221	Ft
Conc, Sidewalk, 4 In.	292	Sft
Conc, Sidewalk, Drive Approach, or Ramp, 6 In.	1592	Sft
Detectable Warning Surface	20	Ft
Turf Restoration	580	Syd

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

811 Know what's below. Call before you dig.

REV.	DATE	DRAWN	CHECKED
5 –		–	–
4 ADDENDUM 1	01/23/2026	AJ	AL
3 FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2 FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
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WATER MAIN & RESURFACING PROJECT

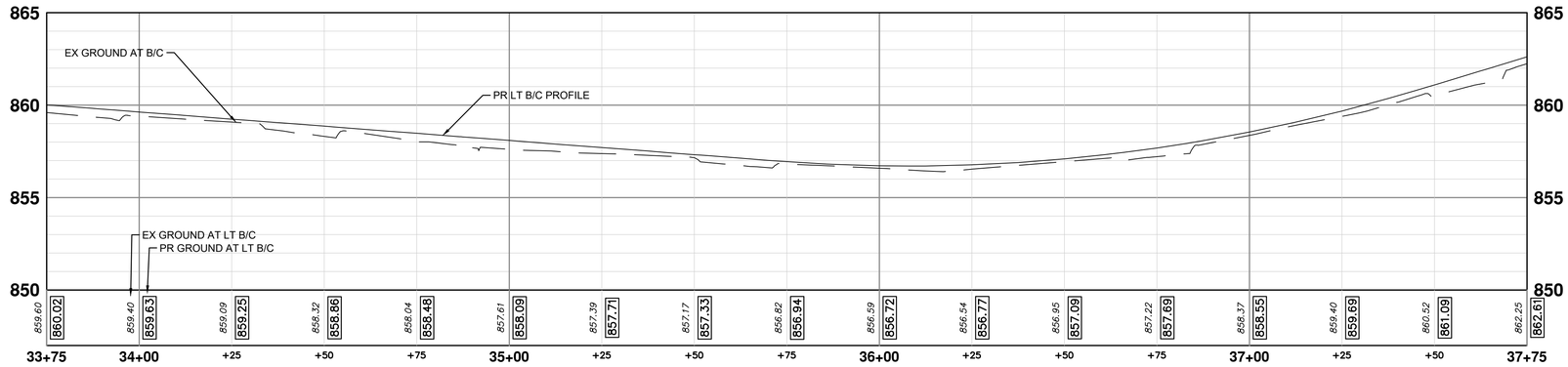
CONSTRUCTION PLAN - NEEDHAM RD STA 33+75 TO 37+75

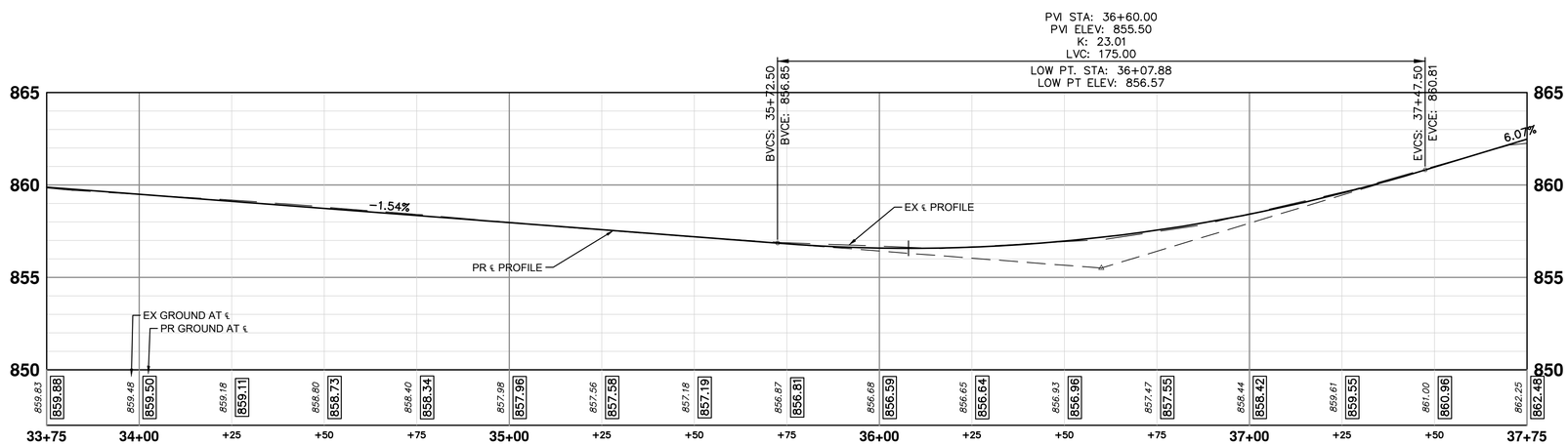
SCALE PLAN: 1" = 20' PROFILE: N/A

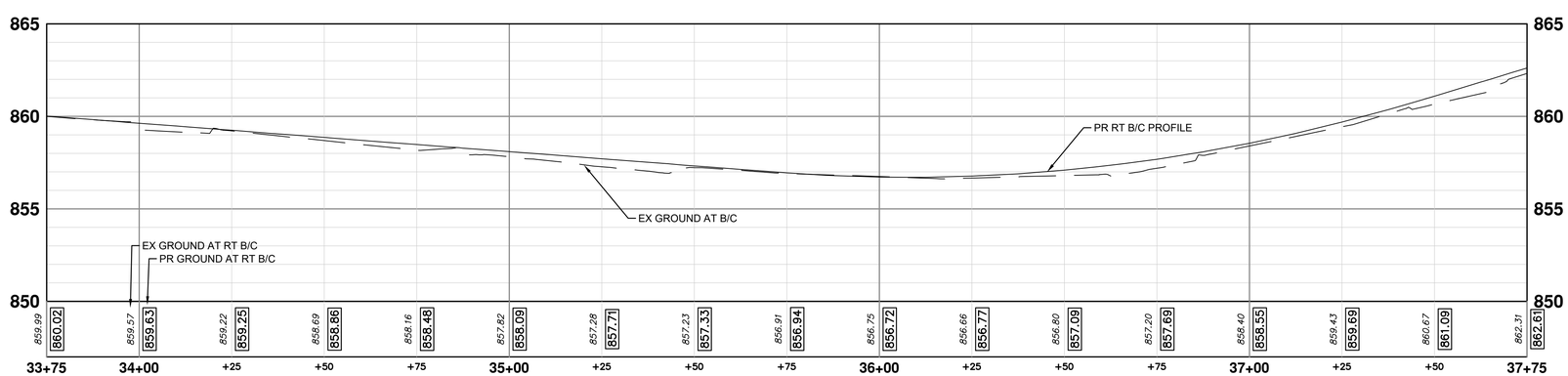
DRAWING No. 2025-2026-40

SHEET No. 40 OF 64

j:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_PPrd_NEEDHAM.dwg Dwg Created: 25-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26







CONSTRUCTION PLAN - NEEDHAM RD - STA 33+75 TO STA 37+75

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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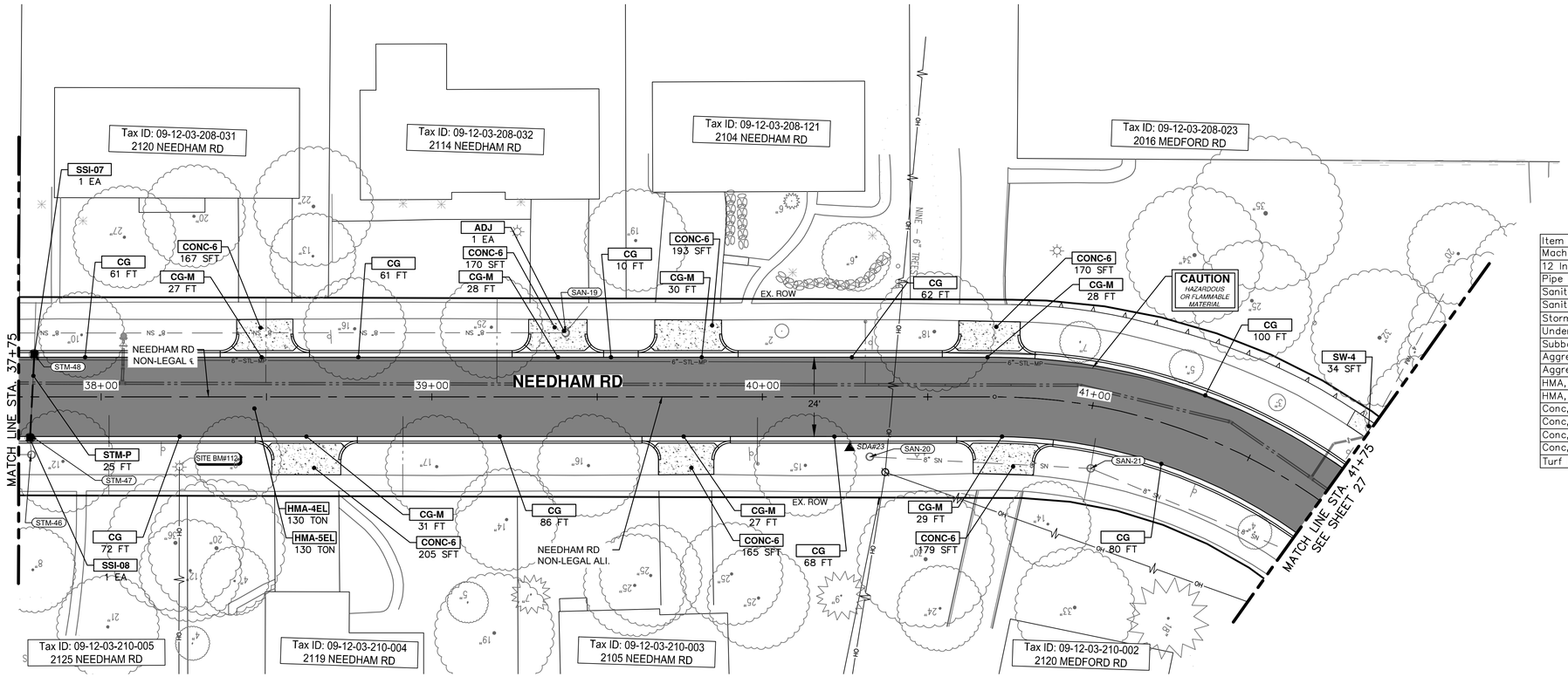
CONSTRUCTION PROFILE - NEEDHAM RD STA 33+75 TO 37+75

SCALE PLAN: 1" = 20' PROFILE: 1"=4'

DRAWING No. 2025-2026-41

SHEET No. 41 OF 64

j:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_PPrd_NEEDHAM.dwg Dwg Created: 25-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



CONSTRUCTION PLAN - NEEDHAM RD - STA 37+75 TO STA 41+75

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	2134	Syd
12 In., CL IV RCP Storm Sewer, SD–TD–1	25	Ft
Pipe Undercut & Backfill, Storm	39	Cyd
Sanitary Structure Cover	1	Ea
Sanitary Structure Cover, Adjust	1	Ea
Storm Single Inlet, 24 In. Dia., (0–8' deep)	2	Ea
Underdrain, Subbase, 6 In.	800	Ft
Subbase, CIP	1	Cyd
Aggregate Base, 6 In., 21AA, CIP	160	Syd
Aggregate Base, 8 In., 21AA, CIP	1334	Syd
HMA, 4EL	130	Ton
HMA, 5EL	130	Ton
Conc, Curb or Curb & Gutter, All Types	600	Ft
Conc, Driveway Opening, Type M	200	Ft
Conc, Sidewalk, 4 In.	34	Sft
Conc, Sidewalk, Drive Approach, or Ramp, 6 In.	1249	Sft
Turf Restoration	540	Syd

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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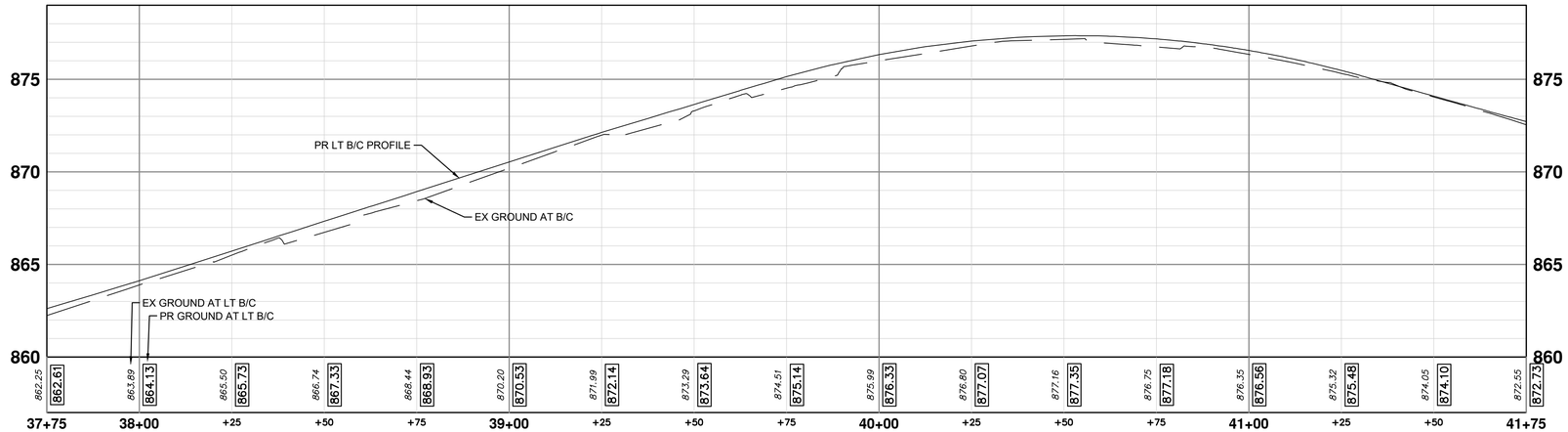
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

CONSTRUCTION PLAN - NEEDHAM RD STA 37+75 TO 41+75

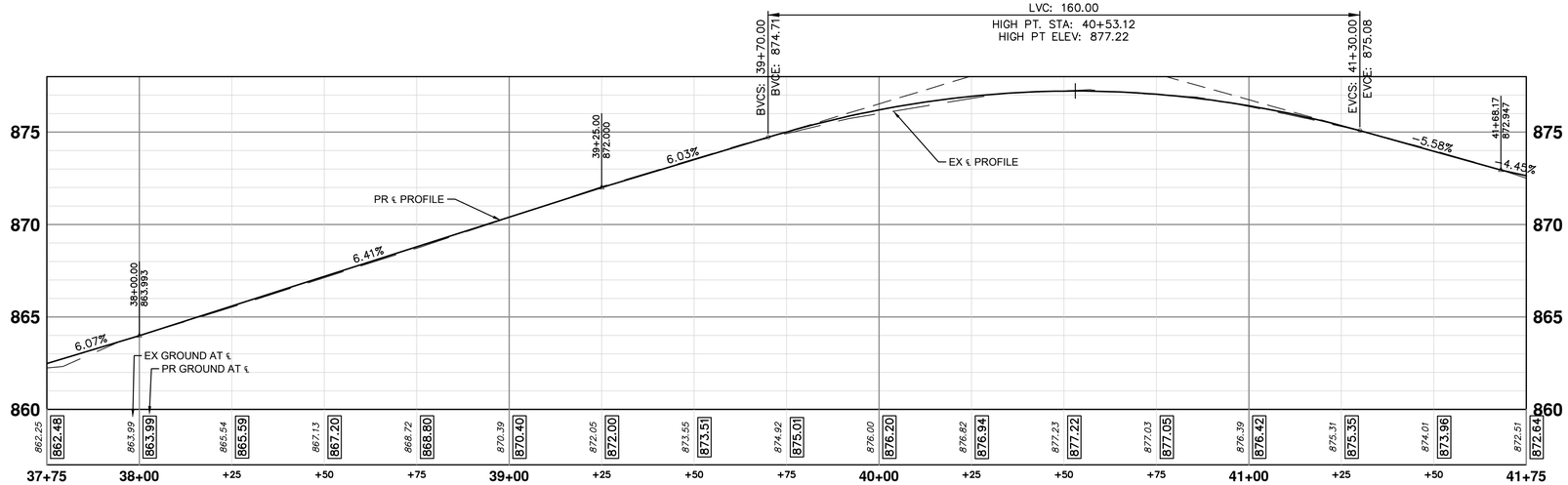
SCALE PLAN: 1" = 20' PROFILE: N/A

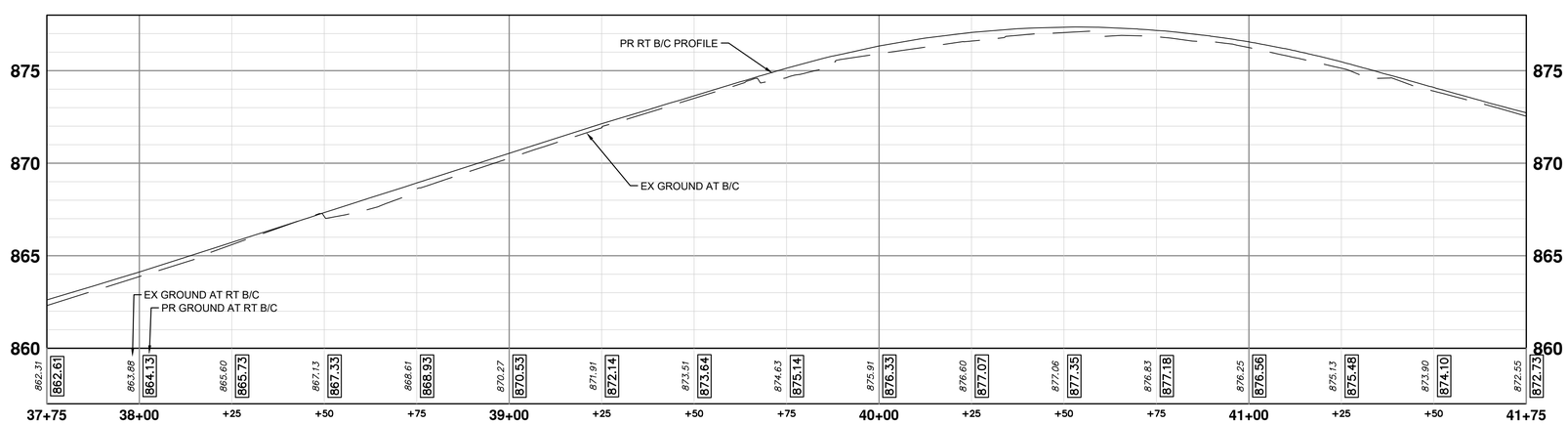
DRAWING No. 2025-2026-42



PVI STA: 40+50.00
PVI ELEV: 879.54
K: 13.78
LVC: 160.00

HIGH PT. STA: 40+53.12
HIGH PT ELEV: 877.22





CONSTRUCTION PROFILE - NEEDHAM RD - STA 37+75 TO STA 41+75

REV.	DATE	DRAWN	CHECKED
5 –	–	–	–
4 ADDENDUM 1	01/23/2026	AJ	AL
3 FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2 FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1 70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

Know what's below. Call before you dig.

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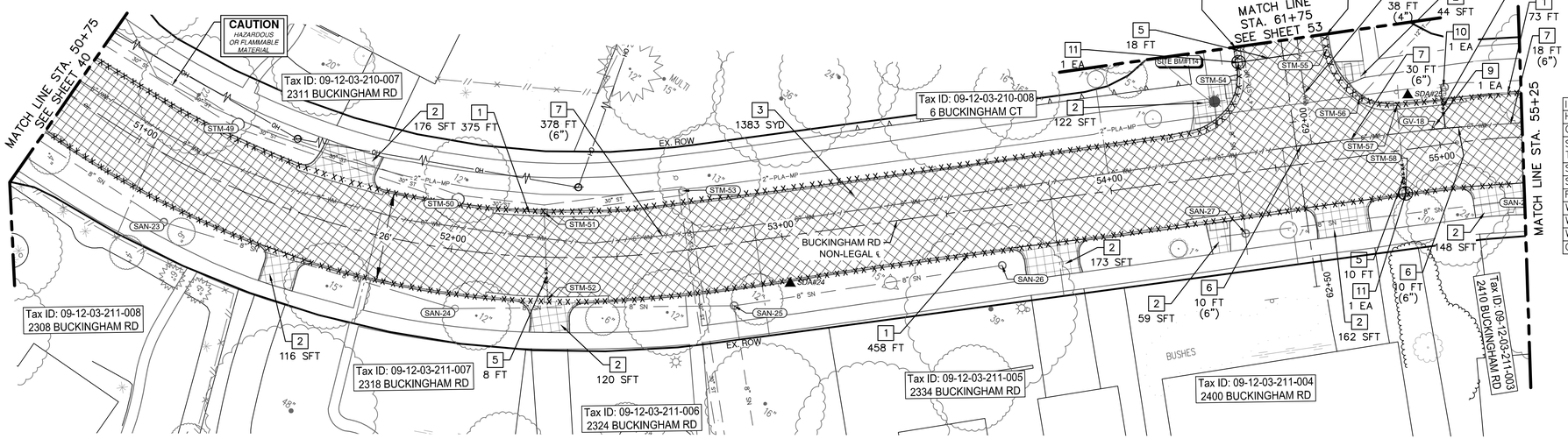
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

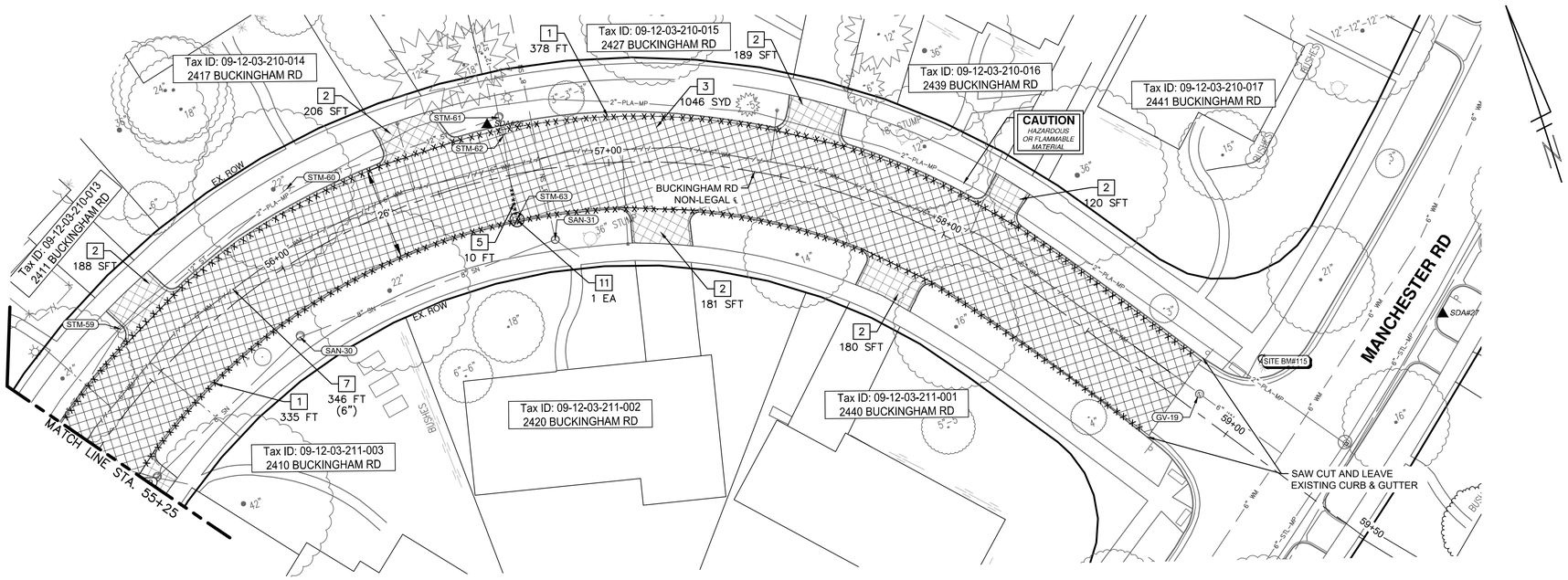
CONSTRUCTION PROFILE - NEEDHAM RD STA 37+75 TO 41+75

SCALE PLAN: 1" = 20' PROFILE: 1"=4'

DRAWING No. 2025-2026-43



REMOVAL PLAN - BUCKINGHAM RD - STA 50+75 TO STA 55+25



REMOVAL PLAN - BUCKINGHAM RD - STA 55+25 TO STA 59+00

REMOVAL QUANTITIES – THIS SHEET

Item	Quantity	Unit
HMA, Any Thickness, Rem	2429	Syd
Curb, Gutter, and Curb and Gutter, Any Type, Rem	1619	Ft
Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	2184	Sft
Storm Sewer Pipe, 12 In. Dia., Rem	46	Ft
Storm Sewer Drop Structure, Rem	3	Ea
Fire Hydrant Assembly, Rem	1	Ea
Water Main Pipe, 4 In. Dia., Abandon	40	Ft
Water Main Pipe, 6 In. Dia., Abandon	773	Ft
Water Main Pipe, 6 In. Dia., Rem	33	Ft
Gate Valve in Box, 4 In. Dia., Rem	1	Ea

REMOVAL HATCH KEY

- HMA SURFACE, REM
- SIDEWALK AND RAMPS, REMOVE DRIVEWAY APPROACH, REMOVE
- CURB AND GUTTER, ANY TYPE OR SIZE, REM, MODIFIED
- STORM SEWER PIPE, ANY SIZE, REMOVE
- WATER MAIN PIPE, REM
- WATER MAIN PIPE, ABANDON

REMOVAL KEY

KEY	DESCRIPTION
1	CURB, CUTTER, AND CURB AND GUTTER, ANY TYPE, REM
2	SIDEWALK AND RAMPS, REMOVE* DRIVEWAY APPROACH, REMOVE*
3	HMA ANY THICKNESS, REM*
4	COLD MILLING HMA SURFACE
5	STORM SEWER PIPE, 12 IN. DIA., REM
6	WATER MAIN PIPE, _ IN. DIA., REM
7	WATER MAIN PIPE, _ IN. DIA., ABANDON
8	GATE VALVE IN BOX, _ IN. DIA., ABANDON
9	GATE VALVE IN BOX, _ IN. DIA., REM
10	FIRE HYDRANT ASSEMBLY, REM
11	STORM SEWER DROP STRUCTURE, REM
12	TREE, REM, _ INCH

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5 –		–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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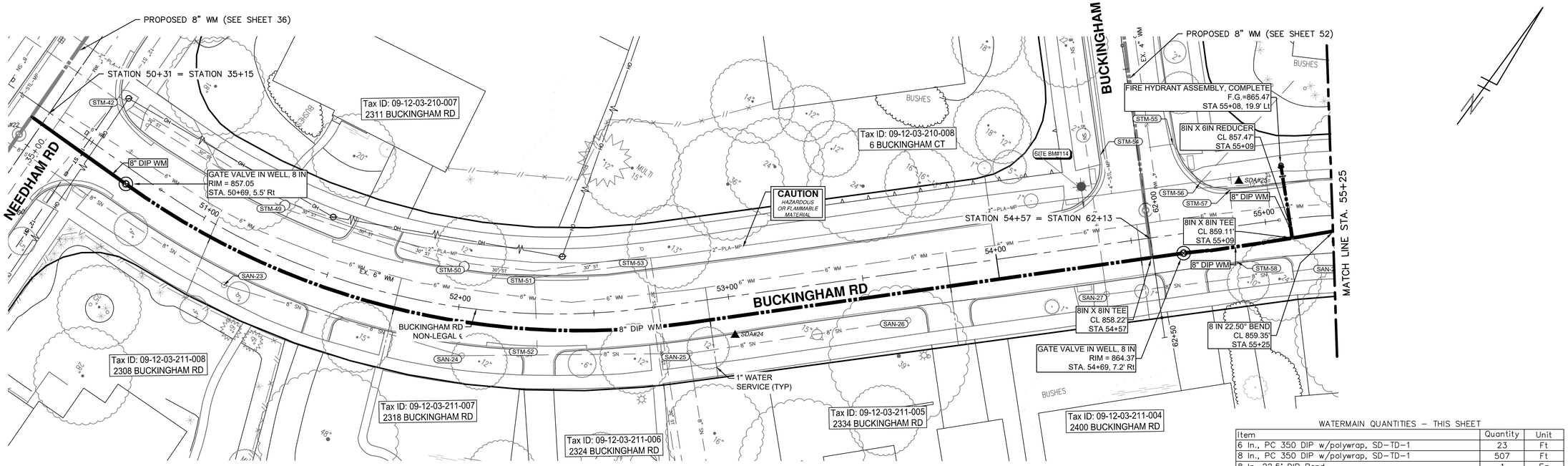
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

REMOVAL PLAN - BUCKINGHAM RD - STA 50+75 TO STA 59+00

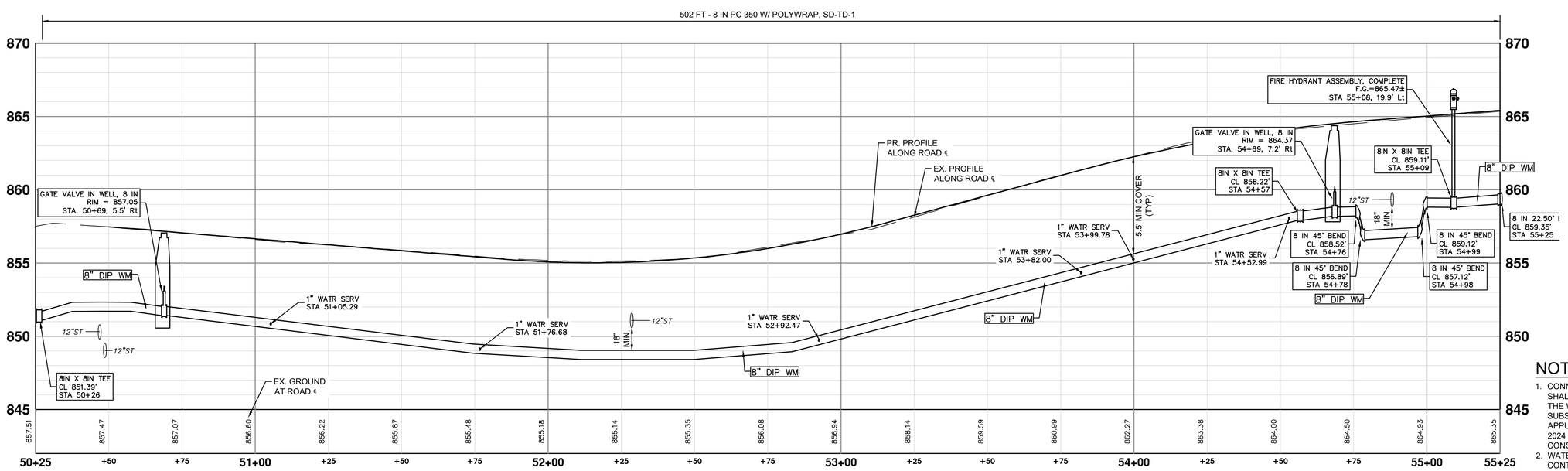
SCALE PLAN: 1" = 20'
PROFILE: N/A
DRAWING No. 2025-2026-44



WATER MAIN CONSTRUCTION PLAN - BUCKINGHAM RD - STA 50+25 TO STA 55+25

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
6 In., PC 350 DIP w/polywrap, SD-TD-1	23	Ft
8 In., PC 350 DIP w/polywrap, SD-TD-1	507	Ft
8 In. 22.5° DIP Bend	1	Ea
8 In. X 6 In. DIP Reducer	1	Ea
8 In. X 8 In. X 8 In. DIP Tee	2	Ea
Gate Valve In Well, 8 In.	2	Ea
Excavate & Backfill For Water Service Tap And Lead	36	Ft
Fire Hydrant Assembly, Complete	1	Ea



WATER MAIN CONSTRUCTION PROFILE - BUCKINGHAM RD - STA 50+25 TO STA 55+25

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
2. WATER SERVICE RECONNECTIONS - CONTRACTOR SHALL EXCAVATE TRENCH AND CITY PERSONNEL SHALL INSTALL THE TAP (TYPICAL ALL SERVICES)
3. EXACT DEPTH OF SANITARY LEAD CROSSINGS IS UNKNOWN. CONTRACTOR TO FIELD VERIFY LEADS AND MAINTAIN CLEARANCE AS DIRECTED BY CITY ENGINEER. (TYP)

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

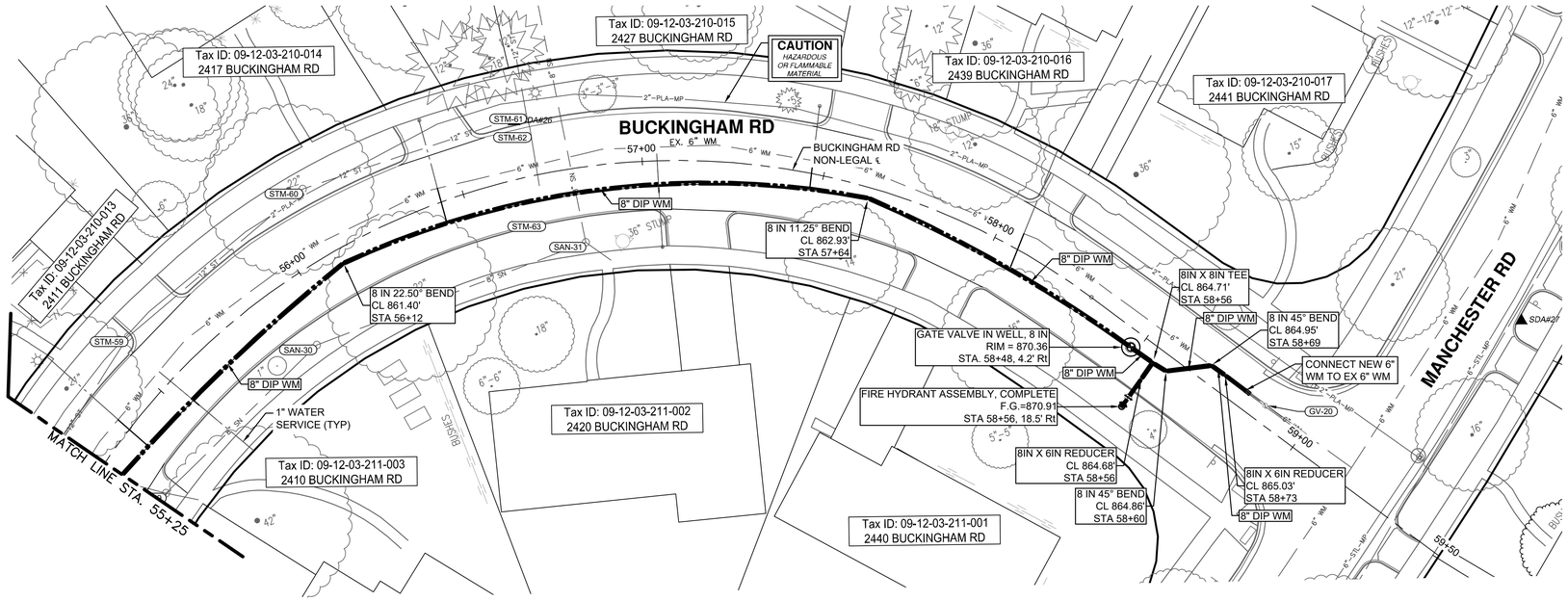
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

WATER MAIN PLAN & PROFILE - BUCKINGHAM RD STA 50+27 TO 55+25

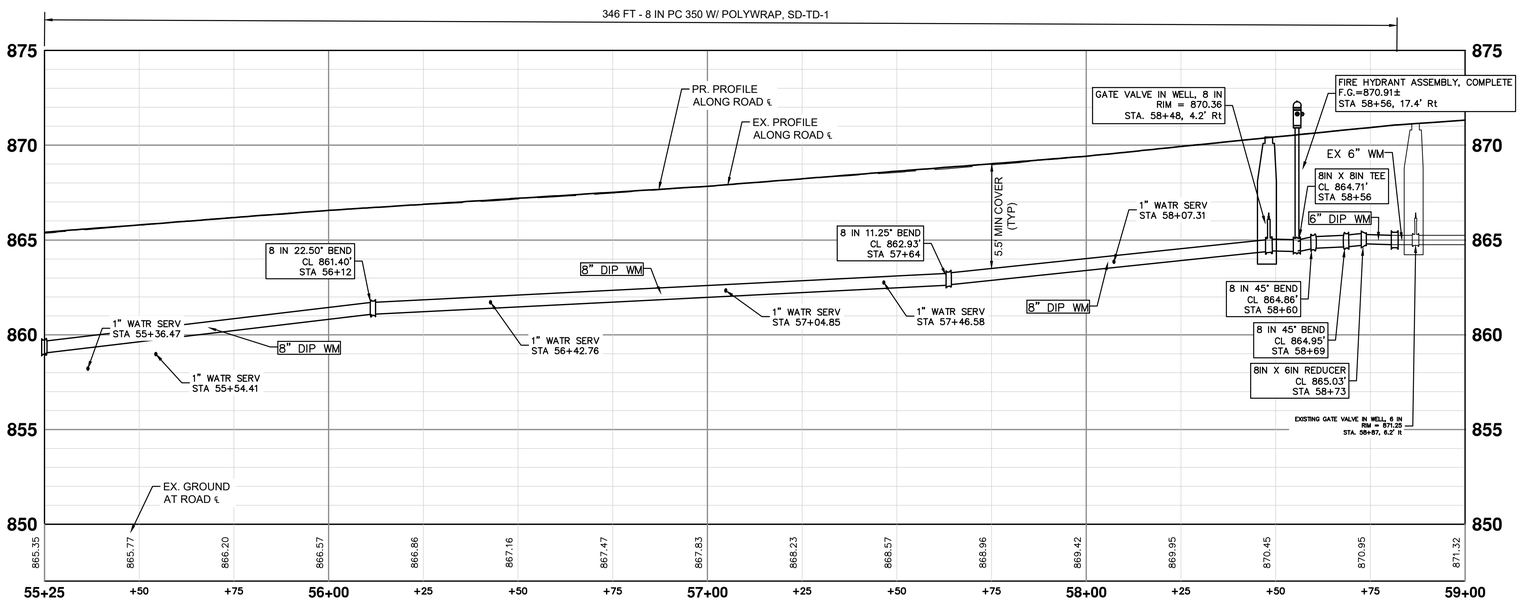
SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-45

SHEET No.



WATER MAIN CONSTRUCTION PLAN - BUCKINGHAM RD - STA 55+25 TO STA 59+00



WATER MAIN CONSTRUCTION PROFILE - BUCKINGHAM RD - STA 55+25 TO STA 59+00

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
6 In., PC 350 DIP w/polywrap, SD-TD-1	18	Ft
8 In., PC 350 DIP w/polywrap, SD-TD-1	347	Ft
8 In. 11.25° DIP Bend	1	Ea
8 In. 22.5° DIP Bend	1	Ea
8 In. 45° DIP Bend	2	Ea
8 In. X 6 In. DIP Reducer	1	Ea
8 In. X 8 In. X 8 In. DIP Tee	1	Ea
Gate Valve In Well, 8 In.	1	Ea
Excavate & Backfill For Water Service Tap And Lead	49	Ft
Fire Hydrant Assembly, Complete	1	Ea

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

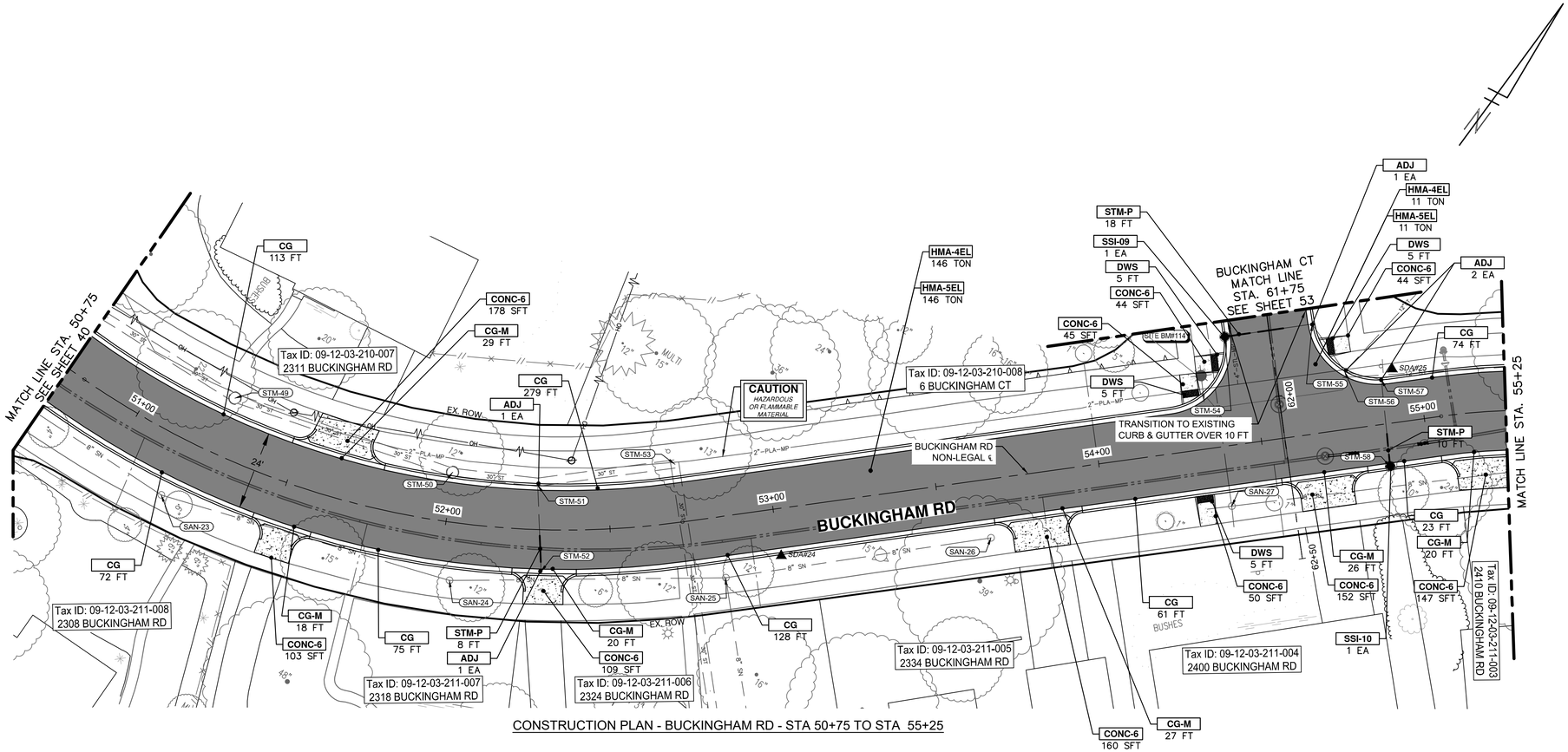
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

WATER MAIN PLAN & PROFILE - BUCKINGHAM RD STA 55+25 TO 59+00

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-46

SHEET No. 46 OF 64



CONSTRUCTION PLAN - BUCKINGHAM RD - STA 50+75 TO STA 55+25

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	2400	Syd
12 In., CL IV RCP Storm Sewer, SD–TD–1	36	Ft
Pipe Undercut & Backfill, Storm	57	Cyd
Storm Single Inlet, 24 In. Dia., (0–8' deep)	2	Ea
Storm Structure Cover	5	Ea
Storm Structure Cover, Adjust	5	Ea
Underdrain, Subbase, 6 In.	965	Ft
Subbase, CIP	13	Cyd
Aggregate Base, 6 In., 21AA, CIP	25	Syd
Aggregate Base, 8 In., 21AA, CIP	1782	Syd
HMA, 4EL	157	Ton
HMA, 5EL	157	Ton
Conc, Curb or Curb & Gutter, All Types	825	Ft
Conc, Driveway Opening, Type M	140	Ft
Conc, Sidewalk, Drive Approach, or Ramp, 6 In.	1032	Sft
Detectable Warning Surface	20	Ft
Turf Restoration	1000	Syd

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

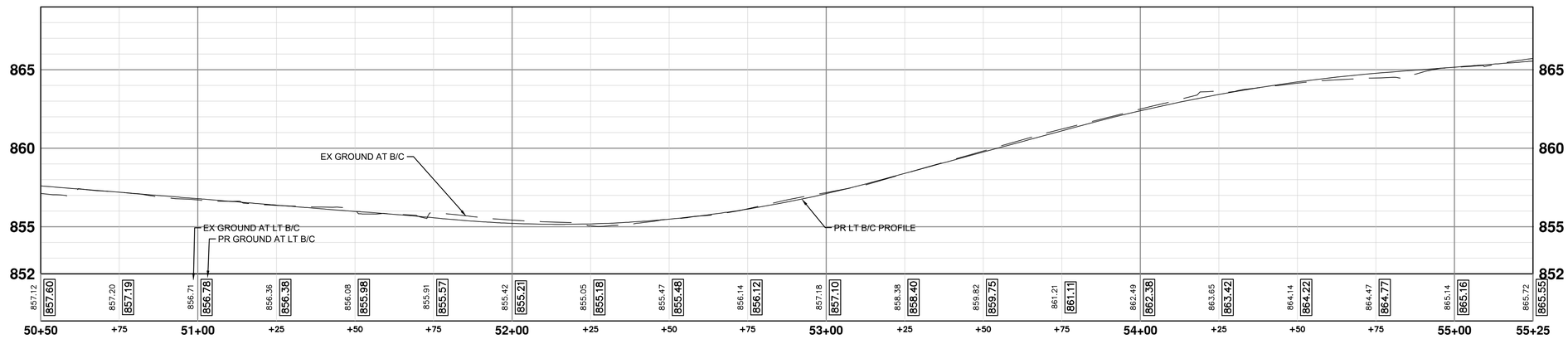
CONSTRUCTION PLAN - BUCKINGHAM RD STA 50+75 TO 55+25

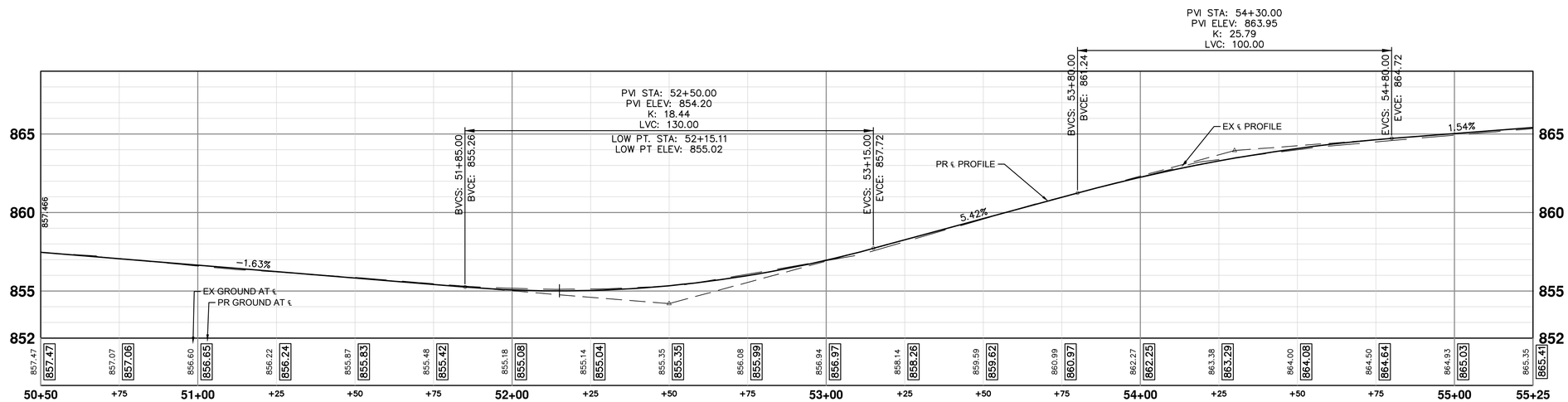
SCALE PLAN: 1" = 20' PROFILE: N/A

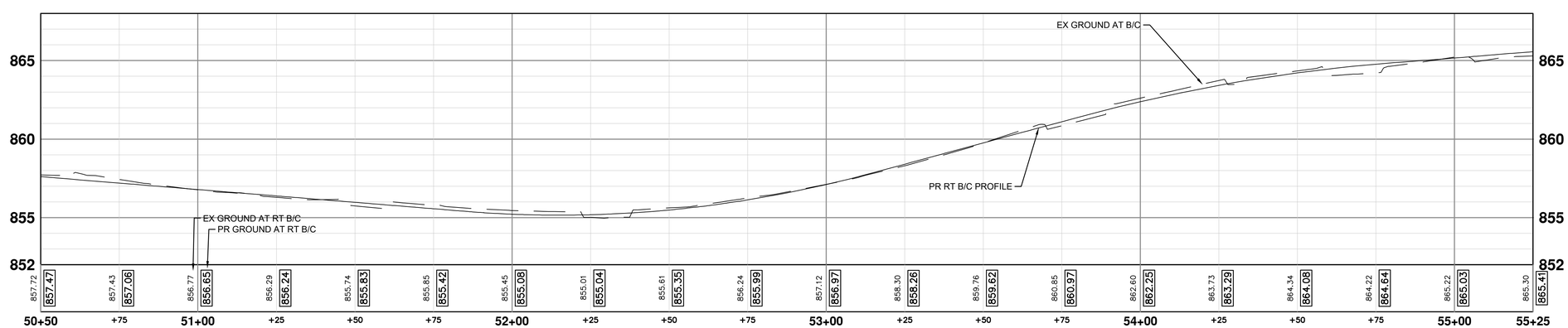
DRAWING No. 2025-2026-47

SHEET No.

J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_PPrd_BUCKINGHAM.dwg Dwg Created: 25-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26







CONSTRUCTION PROFILE - BUCKINGHAM RD - STA 50+75 TO STA 55+25

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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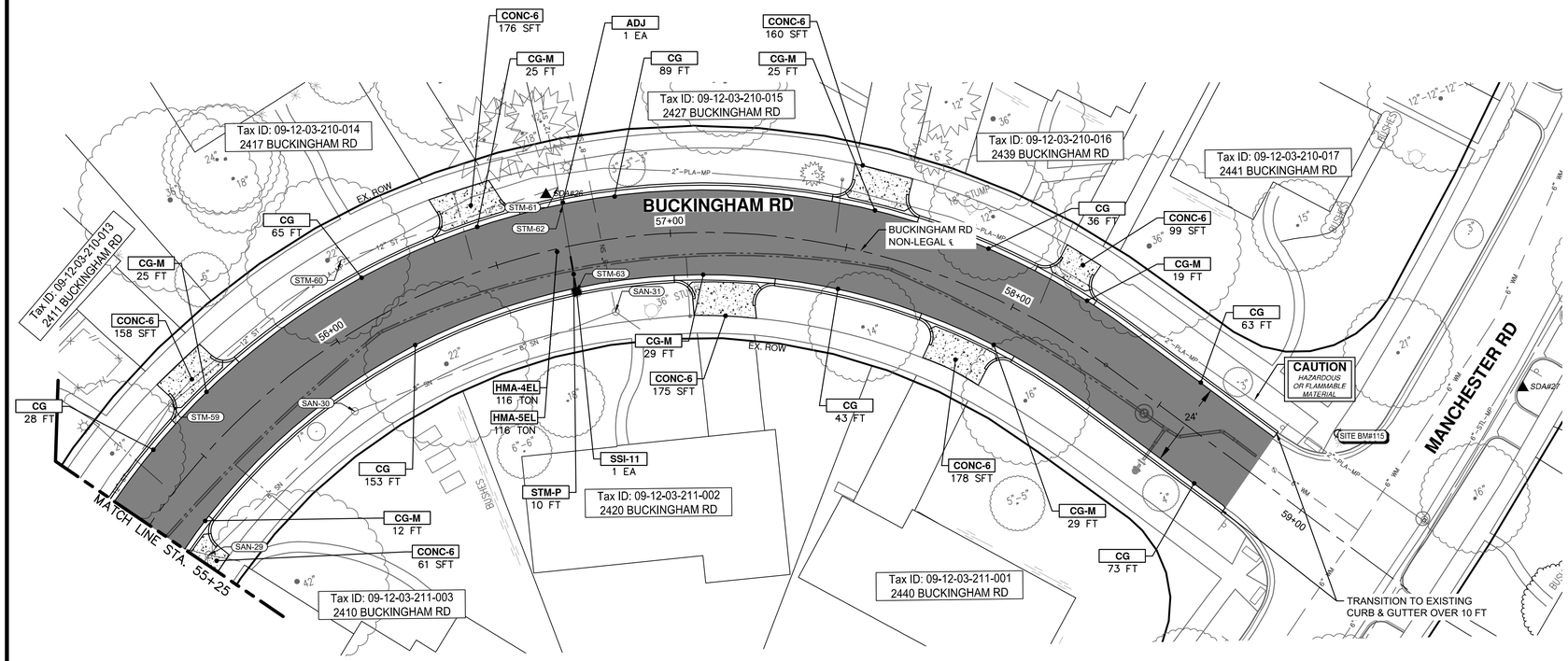
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

CONSTRUCTION PROFILE - BUCKINGHAM RD STA 50+75 TO 55+25

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-48



CONSTRUCTION PLAN - BUCKINGHAM RD - STA 55+25 TO STA 59+00

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	1638	Syd
12 In., CL IV RCP Storm Sewer, SD–TD–1	10	Ft
Pipe Undercut & Backfill, Storm	16	Cyd
Storm Single Inlet, 24 In. Dia., (0–8' deep)	1	Ea
Storm Structure Cover	1	Ea
Storm Structure Cover, Adjust	1	Ea
Underdrain, Subbase, 6 In.	714	Ft
Water Structure Cover	1	Ea
Water Structure Cover, Adjust	1	Ea
Aggregate Base, 6 In., 21AA, CIP	128	Syd
Aggregate Base, 8 In., 21AA, CIP	1152	Syd
HMA, 4EL	116	Ton
HMA, 5EL	116	Ton
Conc, Curb or Curb & Gutter, All Types	550	Ft
Conc, Driveway Opening, Type M	164	Ft
Conc, Sidewalk, Drive Approach, or Ramp, 6 In.	1007	Sft
Turf Restoration	690	Syd

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

811 Know what's below. Call before you dig.

REV.	DATE	DRAWN	CHECKED
5 –	–	–	–
4 ADDENDUM 1	01/23/2026	AJ	AL
3 FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
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1 70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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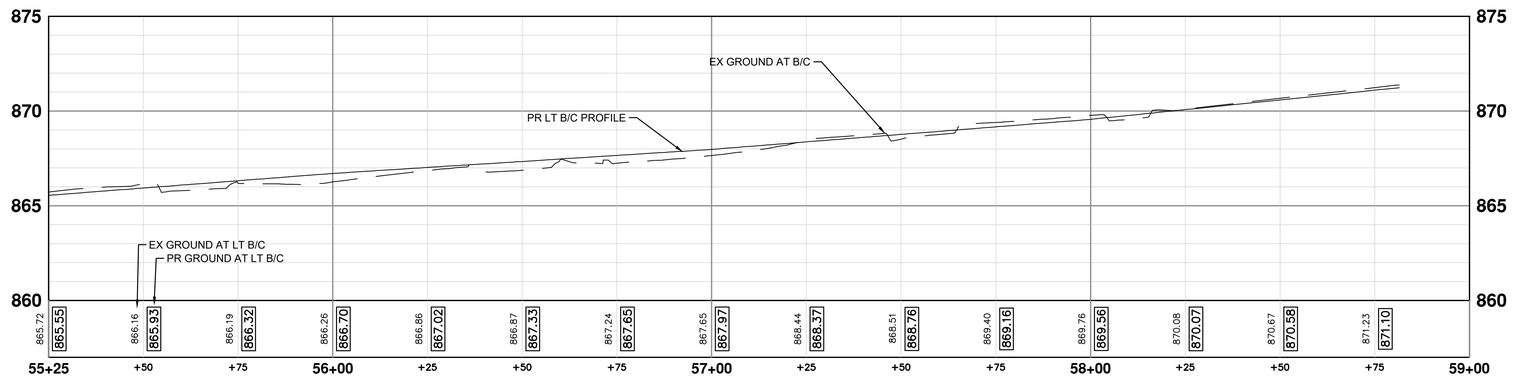
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

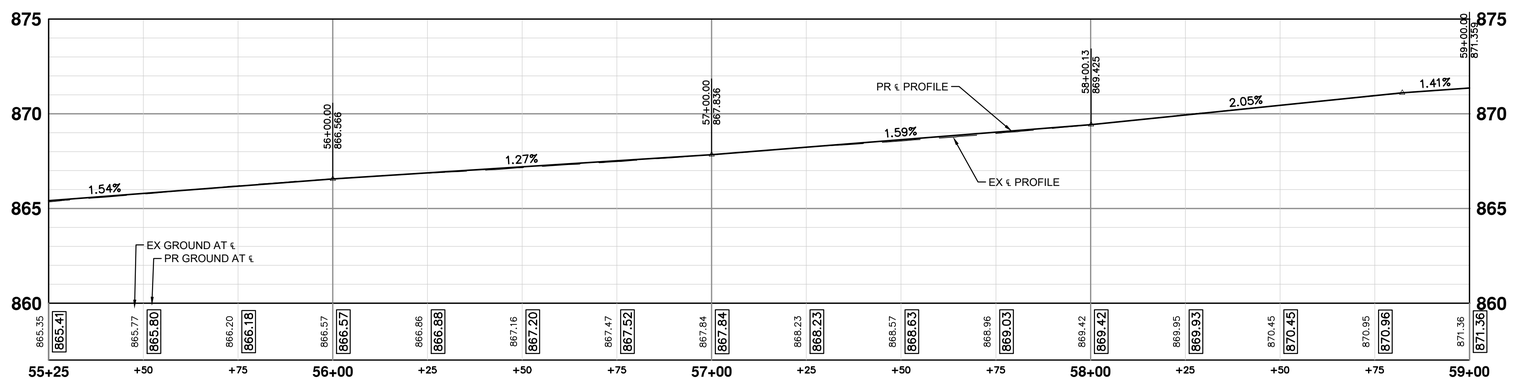
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

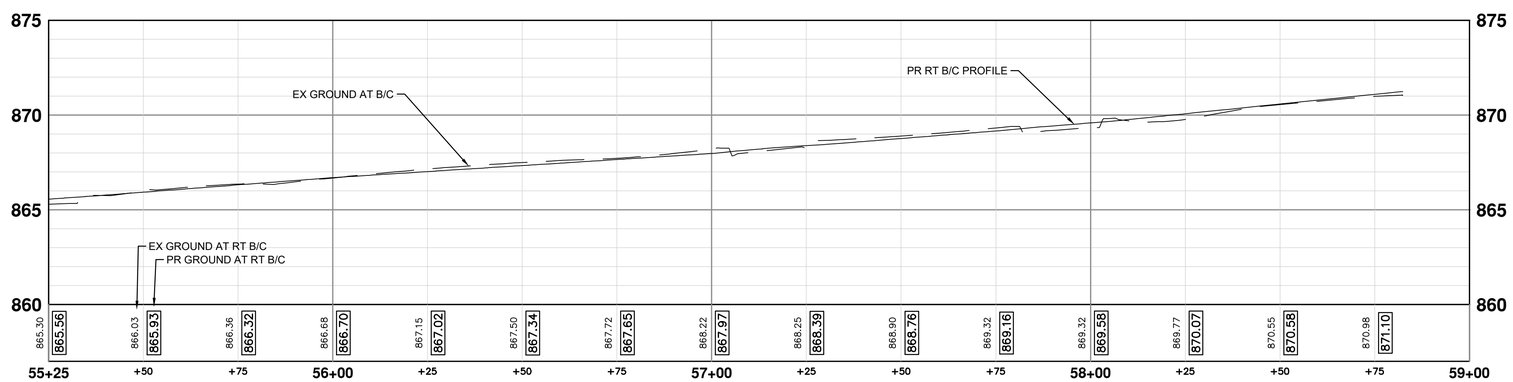
CONSTRUCTION PLAN - BUCKINGHAM RD STA 55+25 TO 59+00

SCALE PLAN: 1" = 20' PROFILE: N/A

DRAWING No. 2025-2026-49







CONSTRUCTION PLAN - BUCKINGHAM RD - STA 55+25 TO STA 59+00

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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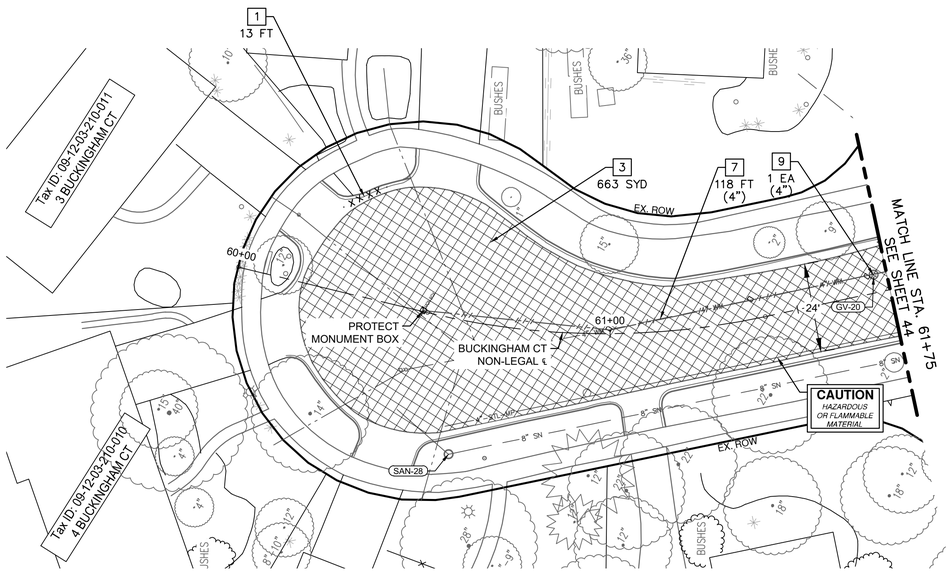
WATER MAIN & RESURFACING PROJECT

CONSTRUCTION PROFILE - BUCKINGHAM RD STA 55+25 TO 59+00

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No.
2025-2026-50



REMOVAL PLAN - BUCKINGHAM CT - STA 60+00 TO STA 61+75

REMOVAL QUANTITIES – THIS SHEET

Item	Quantity	Unit
HMA, Any Thickness, Rem	663	Syd
Curb, Gutter, and Curb and Gutter, Any Type, Rem	13	Ft
Water Main Pipe, 4 In. Dia., Abandon	125	Ft
Gate Valve in Box, 4 In. Dia., Rem	1	Ea

REMOVAL HATCH KEY

- HMA SURFACE, REM
- SIDEWALK AND RAMPS, REMOVE DRIVEWAY APPROACH, REMOVE
- CURB AND GUTTER, ANY TYPE OR SIZE, REM, MODIFIED
- STORM SEWER PIPE, ANY SIZE, REMOVE
- WATER MAIN PIPE, REM
- WATER MAIN PIPE, ABANDON

REMOVAL KEY

KEY	DESCRIPTION
1	CURB, CUTTER, AND CURB AND GUTTER, ANY TYPE, REM
2	SIDEWALK AND RAMPS, REMOVE* DRIVEWAY APPROACH, REMOVE*
3	HMA ANY THICKNESS, REM*
4	COLD MILLING HMA SURFACE
5	STORM SEWER PIPE, 12 IN. DIA., REM
6	WATER MAIN PIPE, _ IN. DIA., REM
7	WATER MAIN PIPE, _ IN. DIA., ABANDON
8	GATE VALVE IN BOX, _ IN. DIA., ABANDON
9	GATE VALVE IN BOX, _ IN. DIA., REM
10	FIRE HYDRANT ASSEMBLY, REM
11	STORM SEWER DROP STRUCTURE, REM
12	TREE, REM, _ INCH

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 20' PROFILE: N/A

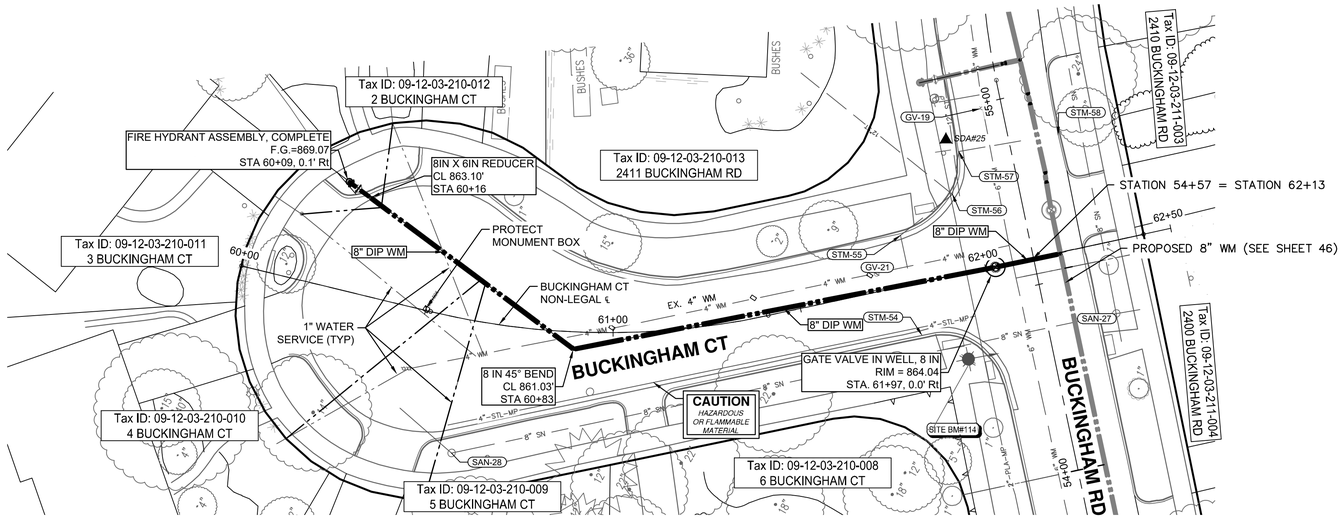
DRAWING No. 2025-2026-51

SHEET No. 51 OF 64

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

REMOVAL PLAN - BUCKINGHAM CT - STA 60+00 TO STA 61+75

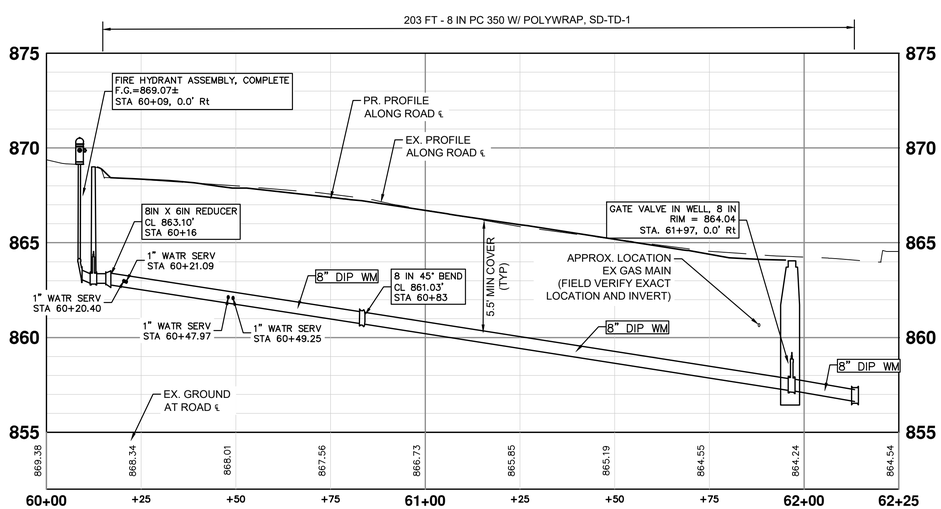
J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_REM_BUCKINGHAM.dwg Dwg Created: 19-Nov-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



WATER MAIN CONSTRUCTION PLAN - BUCKINGHAM CT - STA 60+00 TO STA 62+50

WATERMAIN QUANTITIES – THIS SHEET

Item	Quantity	Unit
8 In., PC 350 DIP w/polywrap, SD-TD-1	203	Ft
8 In. 45° DIP Bend	1	Ea
Gate Valve In Well, 8 In.	1	Ea
Excavate & Backfill For Water Service Tap And Lead	178	Ft
Fire Hydrant Assembly, Complete	1	Ea



WATER MAIN CONSTRUCTION PROFILE - BUCKINGHAM CT - STA 60+00 TO STA 62+25

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
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3. EXACT DEPTH OF SANITARY LEAD CROSSINGS IS UNKNOWN. CONTRACTOR TO FIELD VERIFY LEADS AND MAINTAIN CLEARANCE AS DIRECTED BY CITY ENGINEER. (TYP)

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5 –		–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
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1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

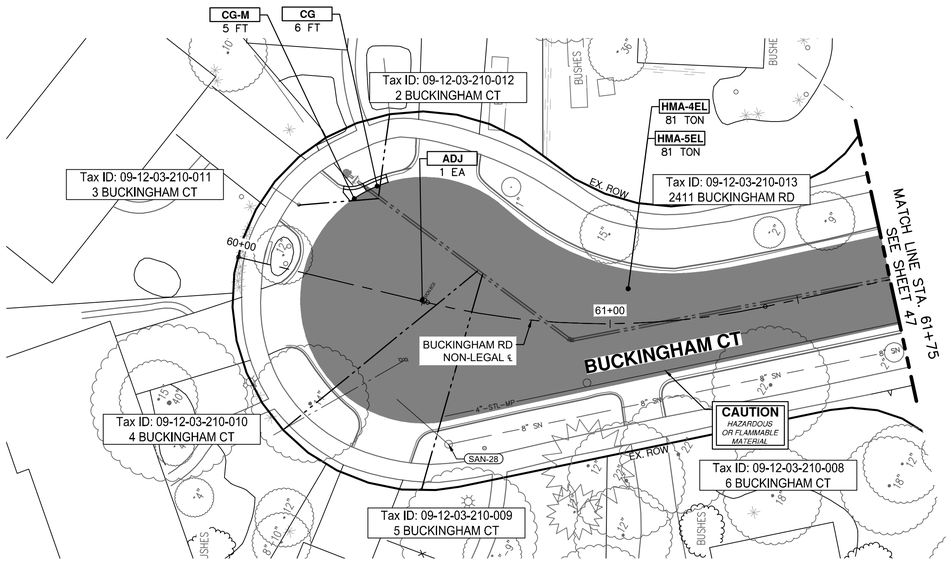
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

WATER MAIN PLAN & PROFILE BUCKINGHAM CT 60+00 TO 62+50

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-52

SHEET No.



CONSTRUCTION PLAN - BUCKINGHAM CT - STA 60+00 TO STA 61+75

CONSTRUCTION QUANTITIES – THIS SHEET

Item	Quantity	Unit
Machine Grading	667	Syd
Aggregate Base, 8 In., 21AA, CIP	749	Syd
HMA, 4EL	81	Ton
HMA, 5EL	81	Ton
Conc, Curb or Curb & Gutter, All Types	6	Ft
Conc, Driveway Opening, Type M	5	Ft
Turf Restoration	30	Syd
Monument Box, Adjust	1	Ea

PAVING HATCHING KEY

- PROPOSED HMA
- PROPOSED CONCRETE
- PROPOSED CURB AND GUTTER

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA–APP	HMA APPROACH
HMA–4EL	HMA, 4EL
HMA–5EL	HMA, 5EL
CG	CONC, CURB OR CURB & GUTTER, ALL TYPES AGGREGATE BASE, 8 IN. 21AA, CIP
CG–M	CON, DRIVEWAY OPENING, TYPE M AGGREGATE BASE, 8 IN. 21AA, CIP
SW–4	CONC, SIDEWALK, 4 IN. AGGREGATE BASE, 6 INCH, LIMESTONE
CONC–6	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
CONC–8	CONC, SIDEWALK, DRIVE APPROACH OR RAMP, 8 IN. AGGREGATE BASE, 6 IN. 21AA, CIP
DWS	DETECTABLE WARNING SURFACE
STM–P	12 IN., CL IV RCP STORM SEWER, SD–TD–1 PIPE UNDERCUT & BACKFILL, STORM
SSI–#	STORM SINGLE INLET, 24 IN. DIA., (0–8' DEEP)
ADJ	STRUCTURE COVER ADJUST

811 Know what's below. Call before you dig.

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

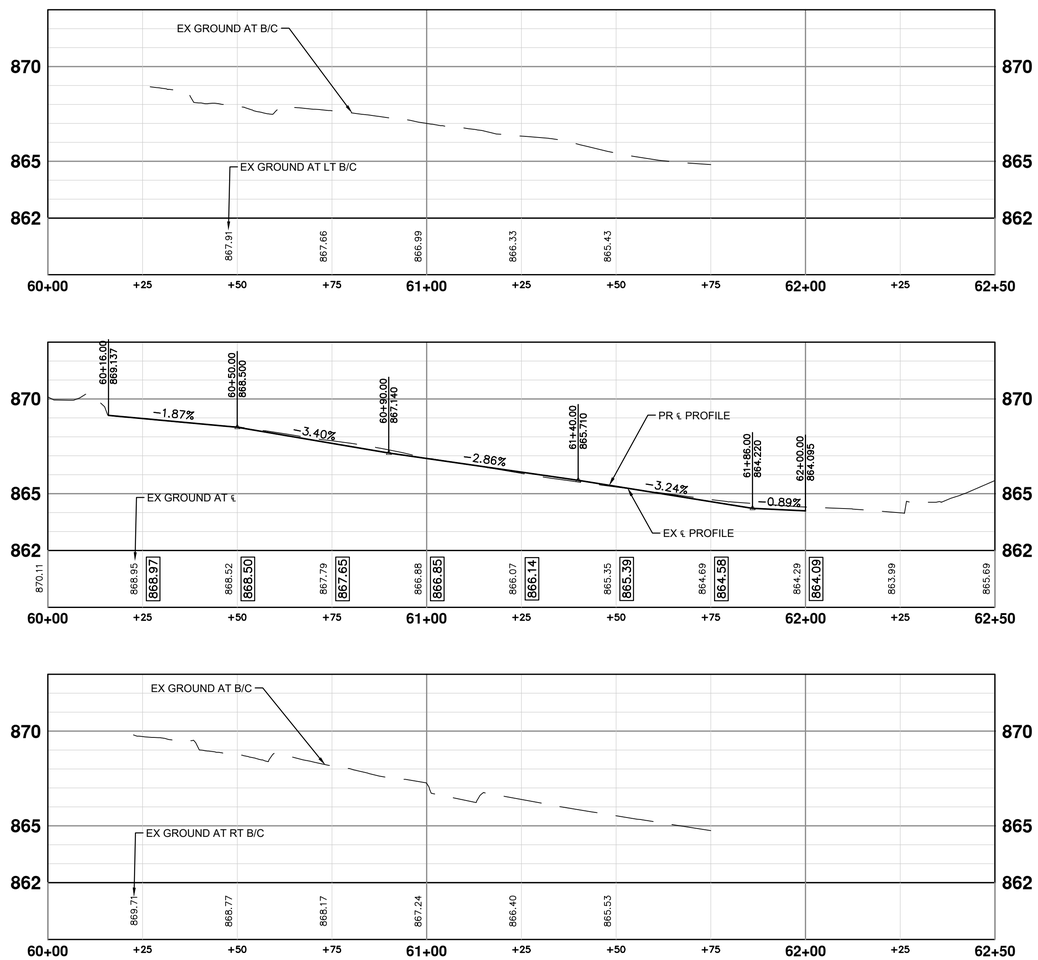
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

CONSTRUCTION PLAN - BUCKINGHAM CT - STA 60+00 TO STA 61+75

SCALE PLAN: 1" = 20' PROFILE: N/A

DRAWING No. 2025-2026-53

SHEET No. 53 OF 64



CONSTRUCTION PLAN - BUCKINGHAM CT - STA 60+00 TO STA 61+75

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
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2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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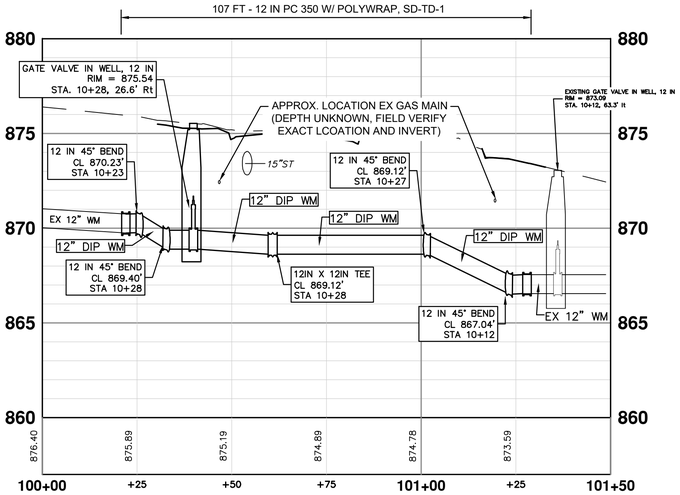
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

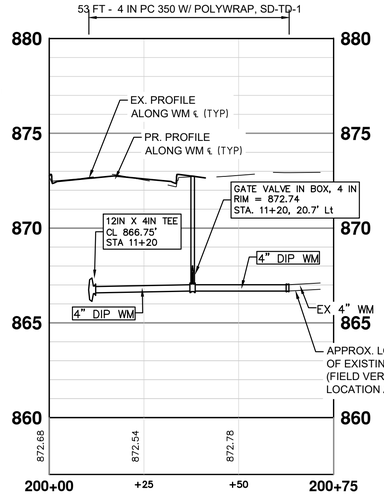
CONSTRUCTION PROFILE - BUCKINGHAM CT - STA 60+00 TO STA 61+75

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

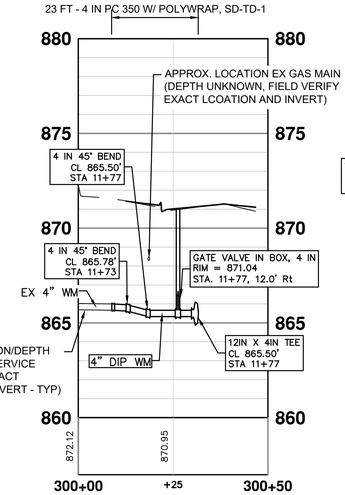
DRAWING No.
2025-2026-54



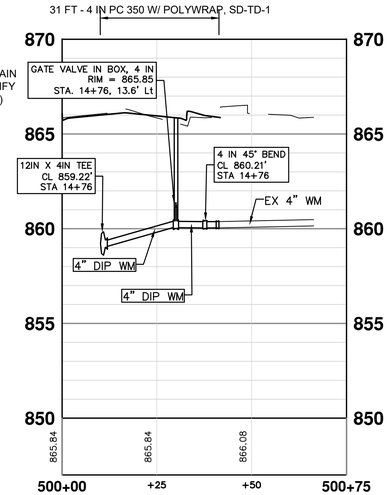
WATER MAIN CONNECTION PROFILE
STATION 10+28
(MEDFORD/ST. FRANCIS INTERSECTION)



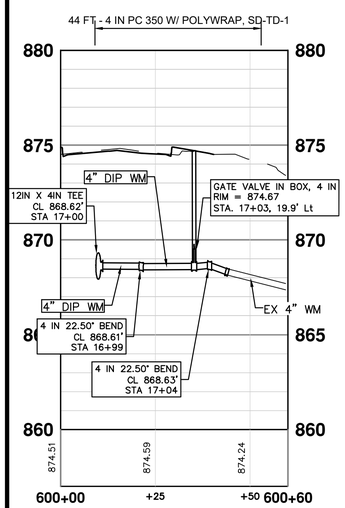
WATER MAIN CONNECTION PROFILE
STATION 11+20



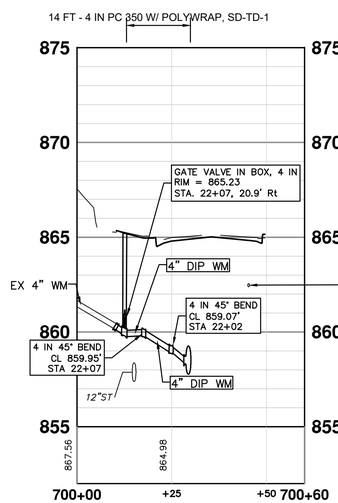
WATER MAIN CONNECTION PROFILE
STATION 11+77



WATER MAIN CONNECTION PROFILE
STATION 14+76

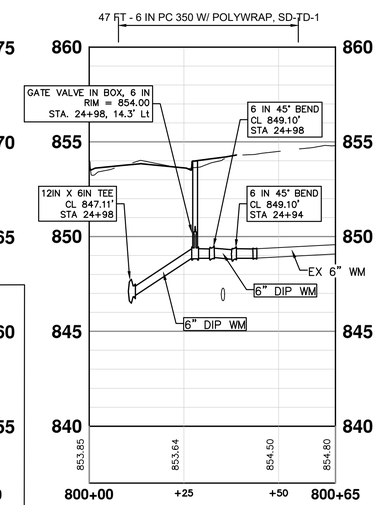


WATER MAIN CONNECTION PROFILE
STATION 17+00

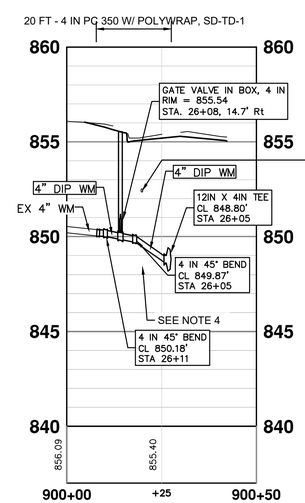


WATER MAIN CONNECTION PROFILE
STATION 22+02

APPROX. LOCATION EX GAS MAIN
(DEPTH UNKNOWN, FIELD VERIFY
EXACT LOCATION AND INVERT - TYP)

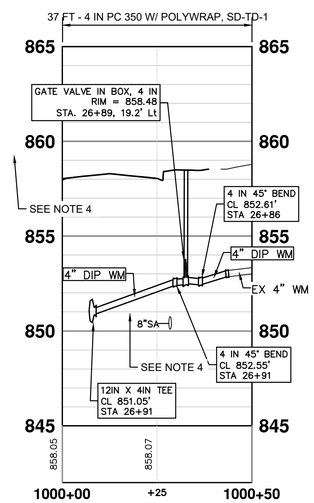


WATER MAIN CONNECTION PROFILE
STATION 24+98



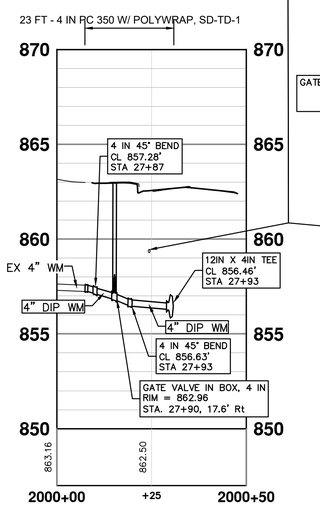
WATER MAIN CONNECTION PROFILE
STATION 26+05

APPROX. LOCATION EX GAS MAIN
(DEPTH UNKNOWN, FIELD VERIFY
EXACT LOCATION AND INVERT - TYP)

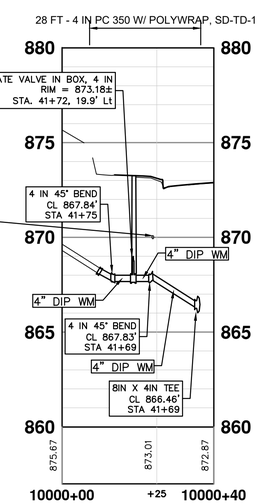


WATER MAIN CONNECTION PROFILE
STATION 26+91

APPROX. LOCATION EX GAS MAIN
(DEPTH UNKNOWN, FIELD VERIFY
EXACT LOCATION AND INVERT - TYP)



WATER MAIN CONNECTION PROFILE
STATION 27+93



WATER MAIN CONNECTION PROFILE
STATION 41+69

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
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3. EXACT DEPTH OF SANITARY LEAD CROSSINGS IS UNKNOWN. CONTRACTOR TO FIELD VERIFY LEADS AND MAINTAIN CLEARANCE AS DIRECTED BY CITY ENGINEER. (TYP)
4. EXACT DEPTH OF EXISTING WATER MAIN IS UNKNOWN. ADDITIONAL BENDS HAVE BEEN PROVIDED TO BE USED AS-NEEDED TO INSTALL THE PROPOSED WATER MAIN.
4. ALL GAS AND TELECOM LINES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXACT LOCATION AND DEPTH PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

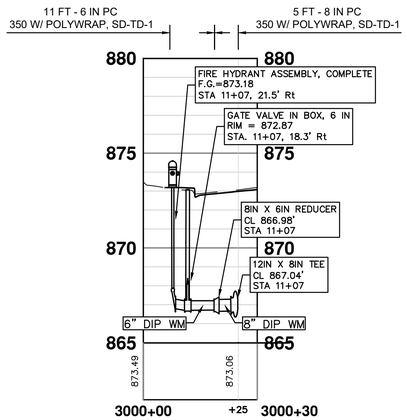
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

WATER MAIN TIE-IN PROFILES

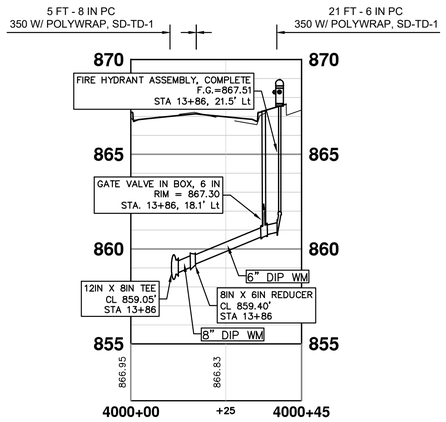
SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-55

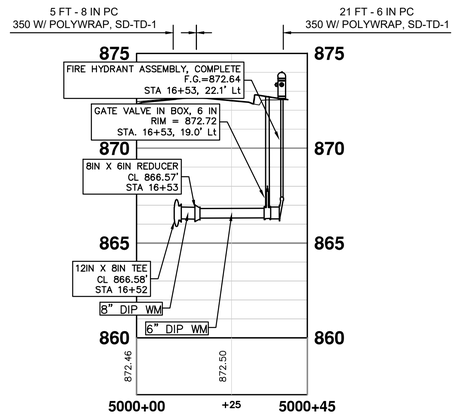
SHEET No. 55 OF 64



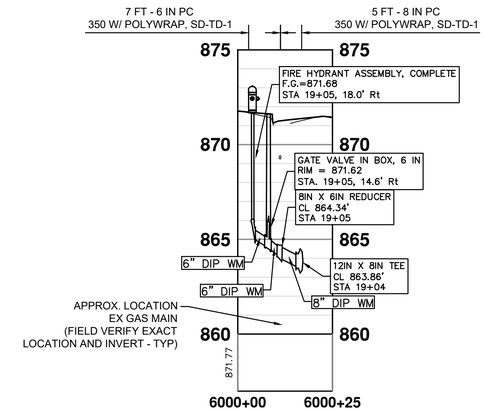
HYDRANT 1 - PROFILE
STATION 11+07



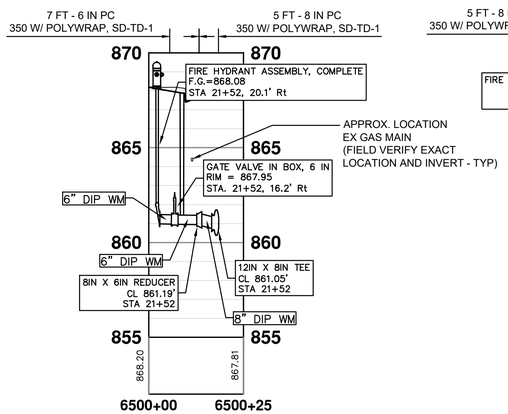
HYDRANT 2 - PROFILE
STATION 13+94



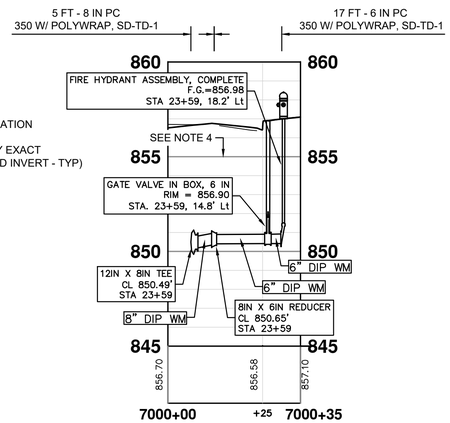
HYDRANT3 - PROFILE
STATION 16+52



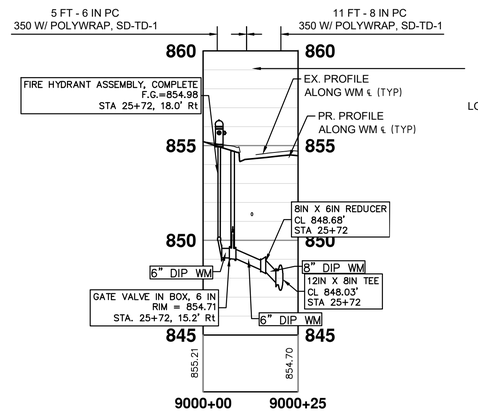
HYDRANT 4 - PROFILE
STATION 19+04



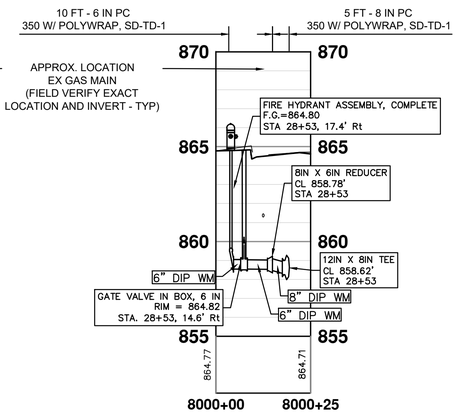
HYDRANT 5 - PROFILE
STATION 21+52



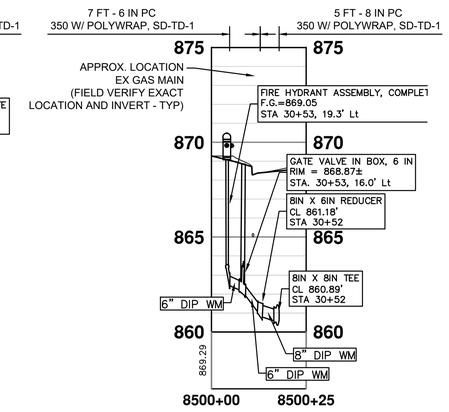
HYDRANT 6 - PROFILE
STATION 23+59



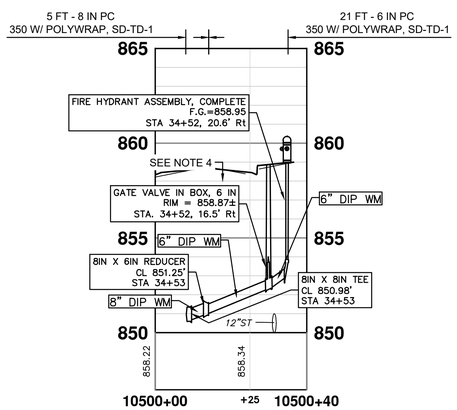
HYDRANT 7 - PROFILE
STATION 25+72



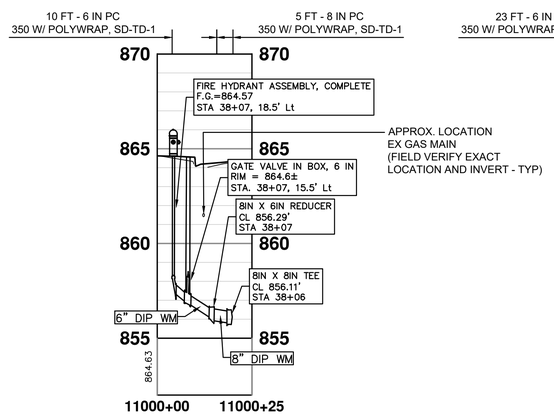
HYDRANT 8 - PROFILE
STATION 28+54



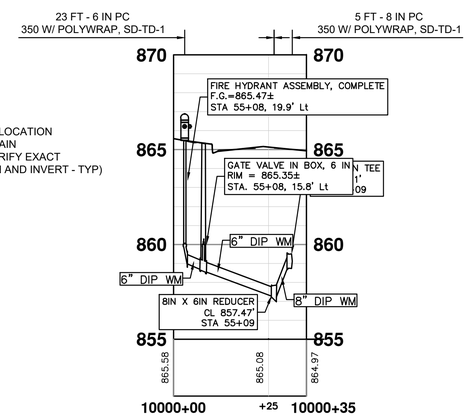
HYDRANT 9 - PROFILE
STATION 30+52



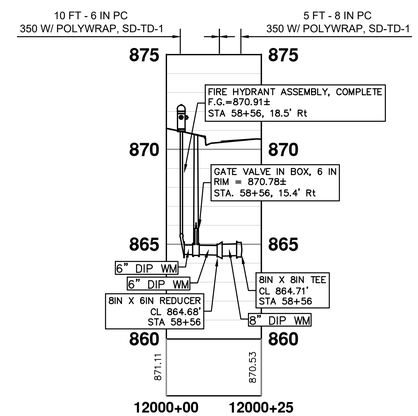
HYDRANT 10 - PROFILE
STATION 34+53



HYDRANT 11 - PROFILE
STATION 38+06



HYDRANT 12 - PROFILE
STATION 55+10



HYDRANT 13 - PROFILE
STATION 58+56

NOTES

1. CONNECTIONS TO EXISTING WATER MAINS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE WATER MAIN PER ARTICLE 11, SUBSECTION 00 (WATER MAIN AND APPURTENANCES) OF THE CITY OF ANN ARBOR 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION
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1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

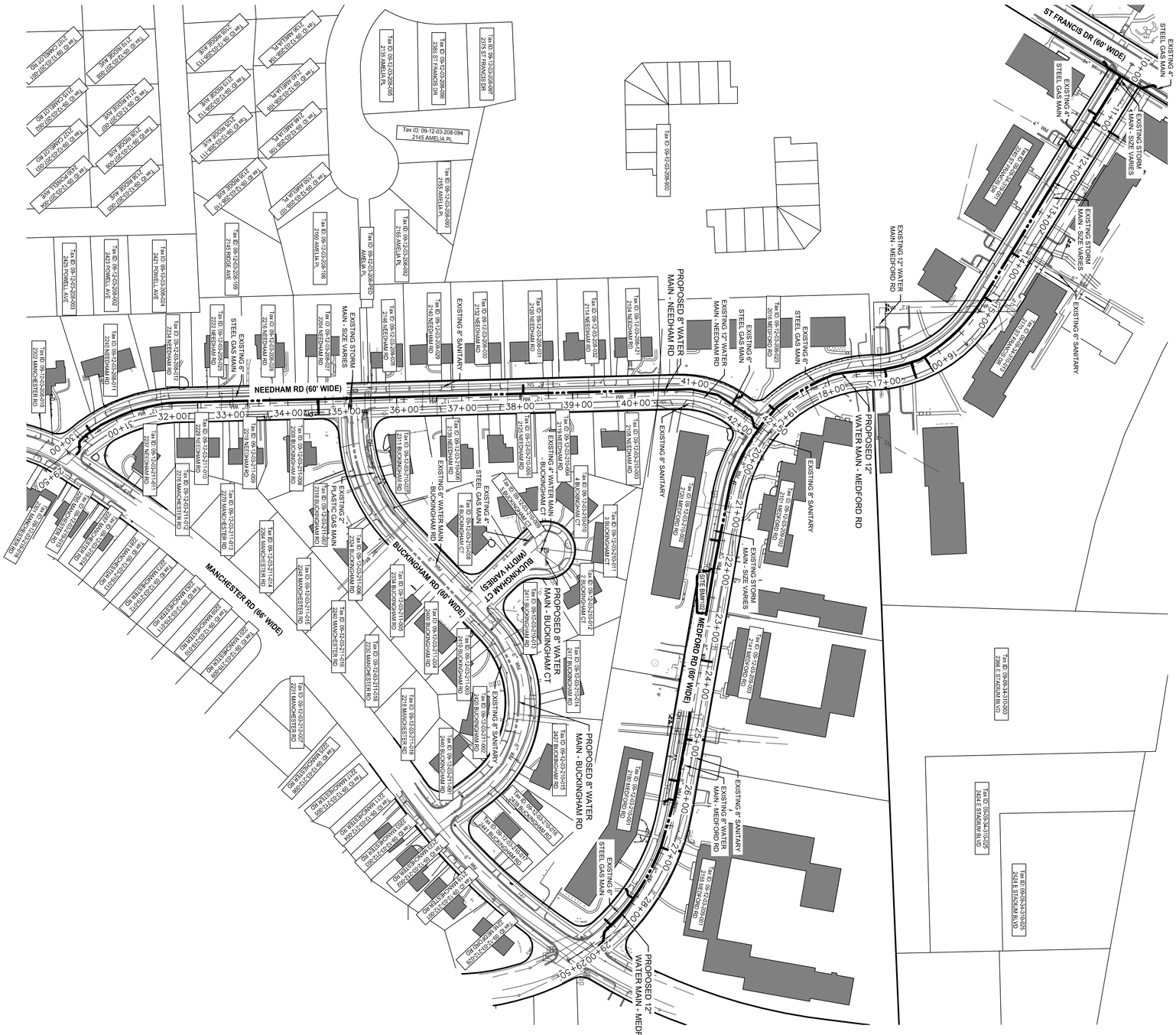
HYDRANT PROFILES

SCALE PLAN: 1" = 20' PROFILE: 1" = 4'

DRAWING No. 2025-2026-56

SHEET No. 56 OF 64

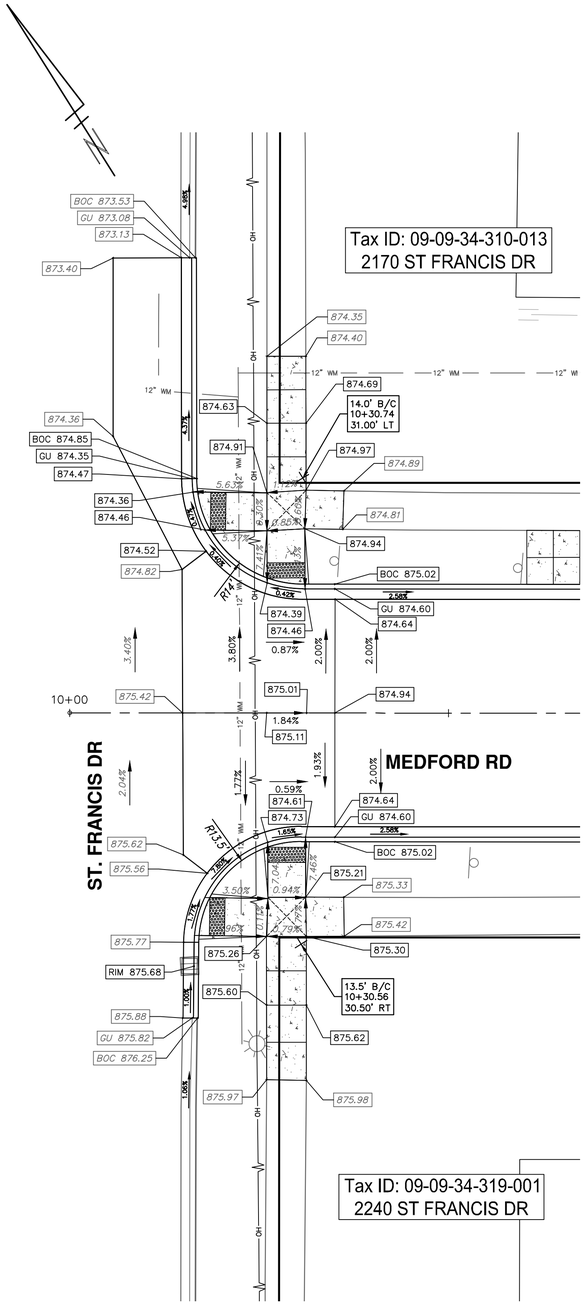
J:\AA\Design\aa25001 - nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_Watr_NEEDHAM.dwg Dwg Created: 6-Jan-26 - _a2 standard bw.stb - Plot Date: 22-Jan-26



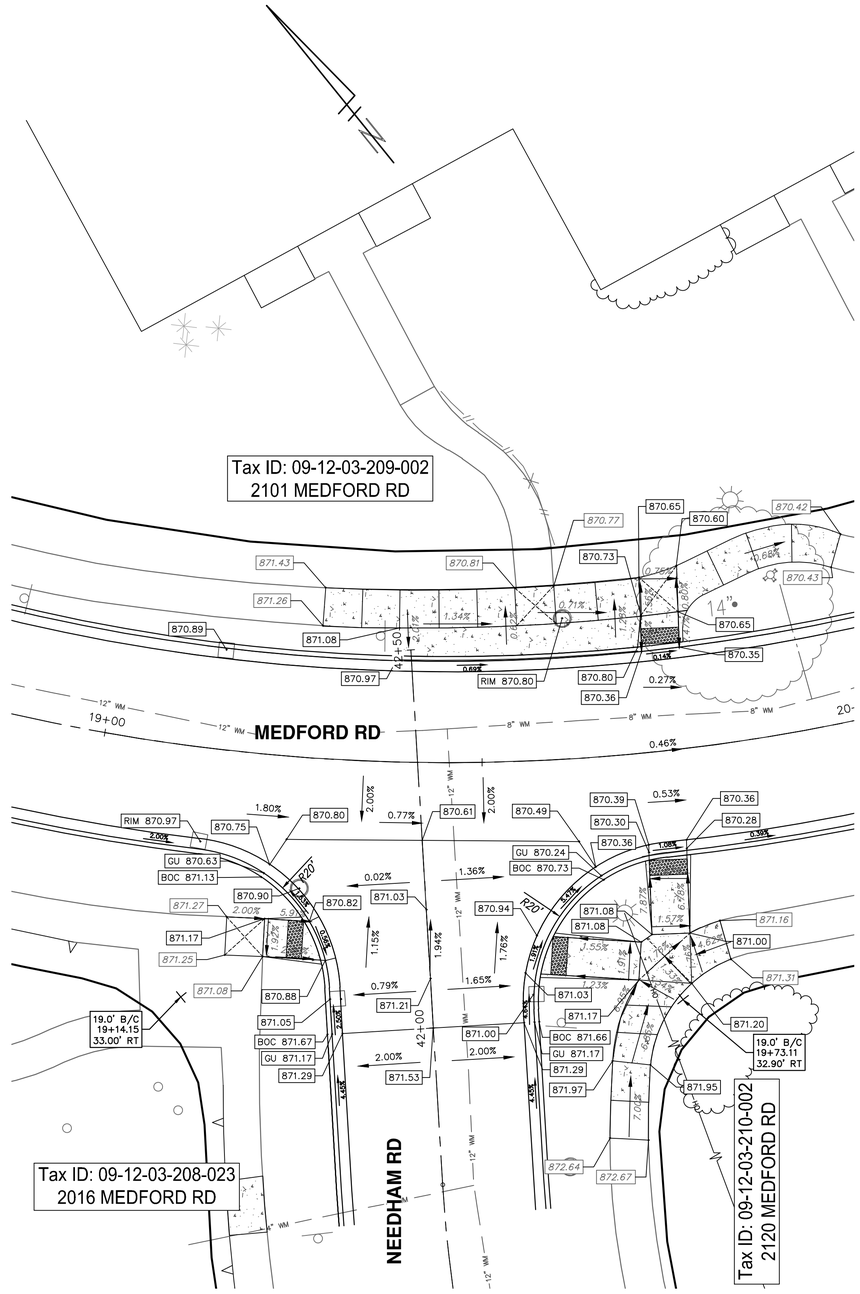
SHEET No.	CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING		CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET P.O. BOX 8647 ANN ARBOR, MI 48107-8647 734-794-6410 www.a2gov.org
57 OF 64	SCALE PLAN: 1" = 100'	NEEDHAM, MEDFORD, & BUCKINGHAM WATER MAIN & RESURFACING PROJECT	
	DRAWING No. 2025-2026-57	OVERALL UTILITY PLAN	

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	--	--	--	--
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

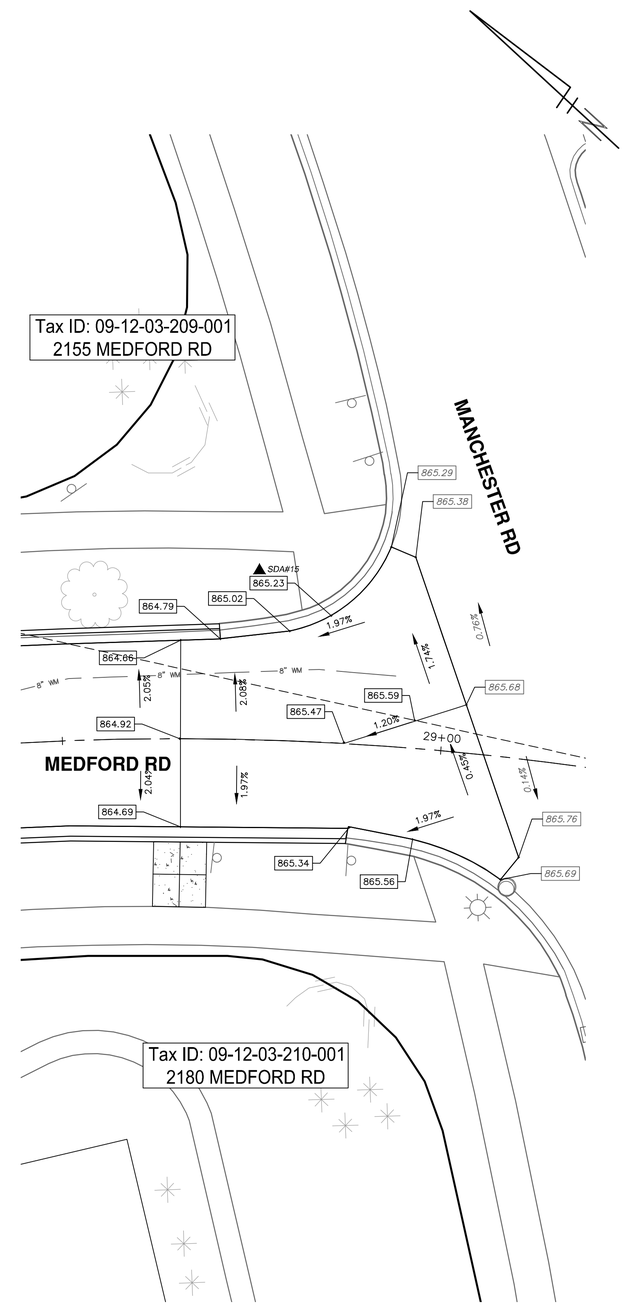
811 Know what's below. Call before you dig.



DETAIL GRADING - MEDFORD RD AT ST FRANCIS DR



DETAIL GRADING - MEDFORD RD AT NEEDHAM RD



DETAIL GRADING - MEDFORD RD AT MANCHESTER RD

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

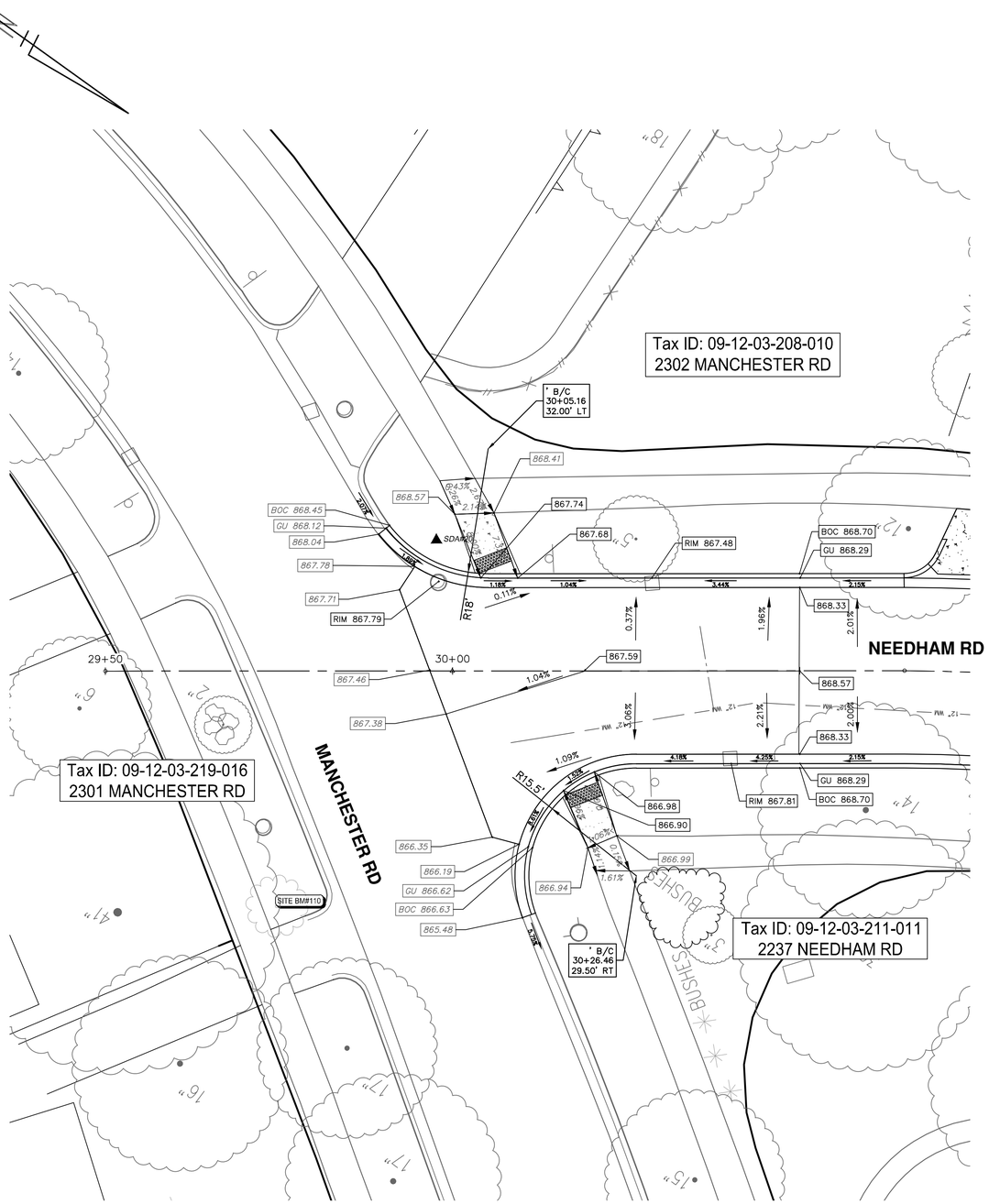
DETAIL GRADING - MEDFORD RD

SCALE PLAN: 1" = 10' PROFILE: N/A

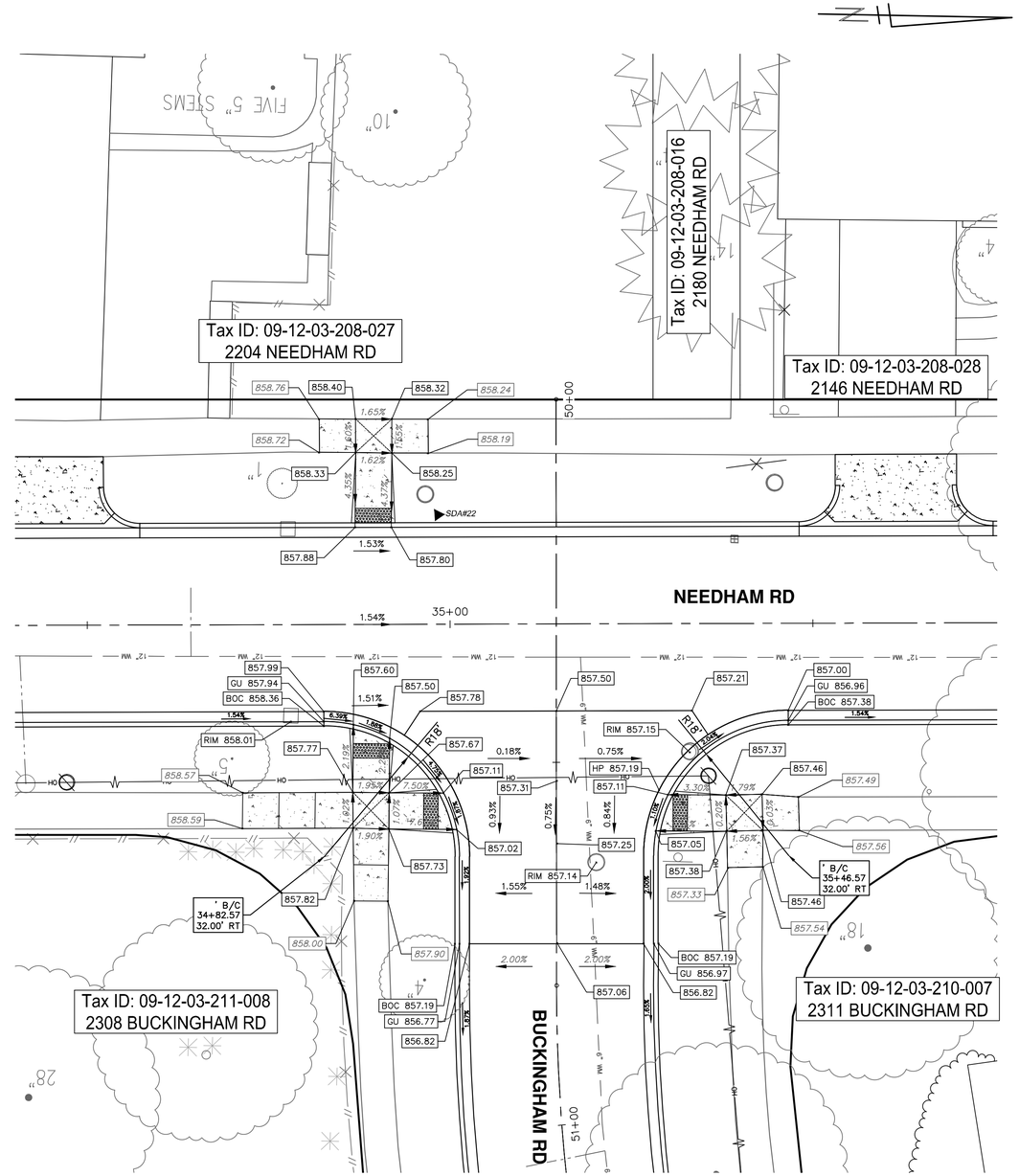
DRAWING No. 2025-2026-58

SHEET No. 58 OF 64

J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_GRD_MEDFORDRD.dwg Dwg Created: 8-Dec-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



DETAIL GRADING - NEEDHAMN RD AT MANCHESTER RD



DETAIL GRADING - NEEDHAMN RD AT BUCKINGHAM RD

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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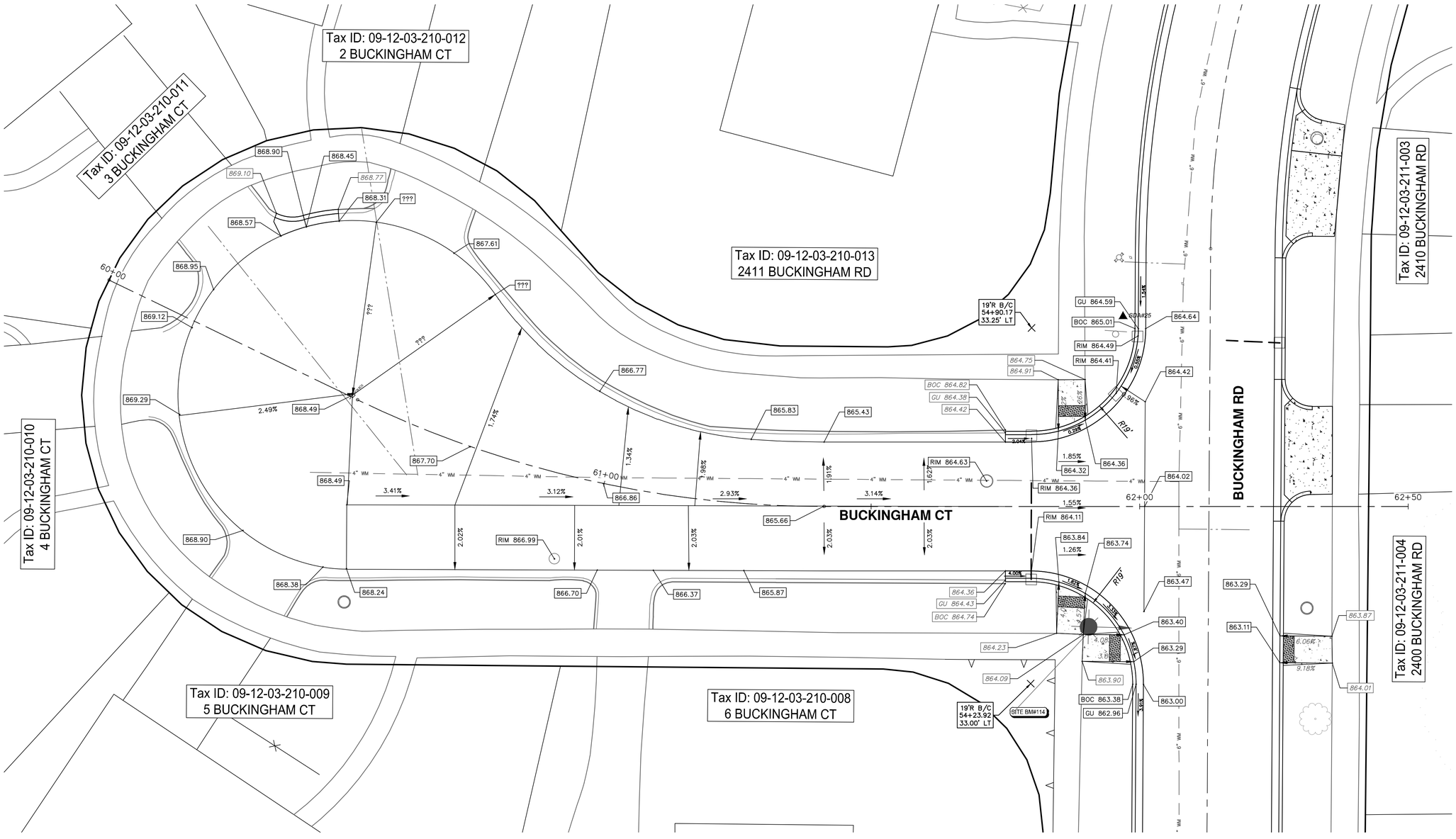
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

DETAIL GRADING - NEEDHAM RD

SCALE PLAN: 1" = 10'
PROFILE: NA
DRAWING No. 2025-2026-59

J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_GRD_NEEDHAMRD.dwg Dwg Created: 5-Dec-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26



DETAIL GRADING - BUCKINGHAM CT

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

DETAIL GRADING - BUCKINGHAM CT

SCALE PLAN: 1" = 10'
PROFILE: N/A

DRAWING No.
2025-2026-60

SHEET No.
60 OF 64

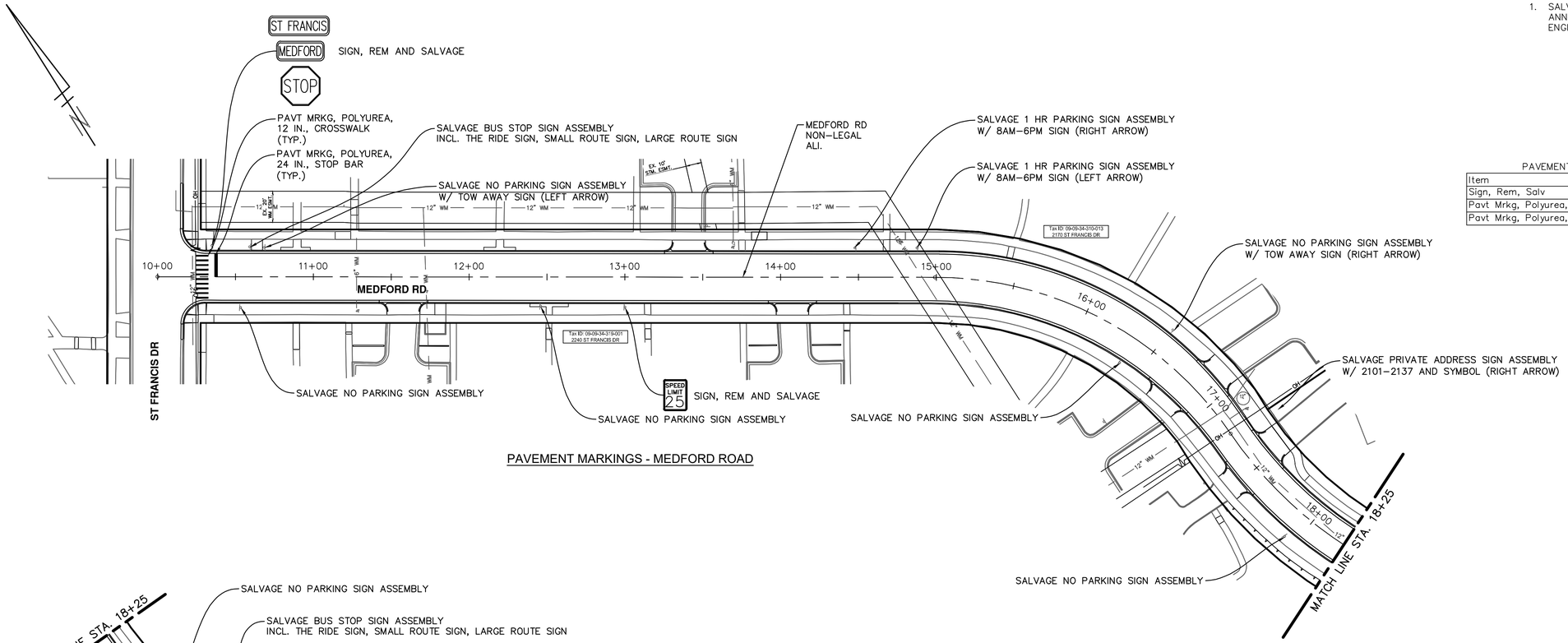
J:\AA\Design\aa25001 – nmb watermain & resurfacing\ann arbor cads\plan production\AA25001_GRD_BUCKINGHAMCT.dwg Dwg Created: 5-Dec-25 – _a2 standard bw.stb – Plot Date: 22-Jan-26

NOTES

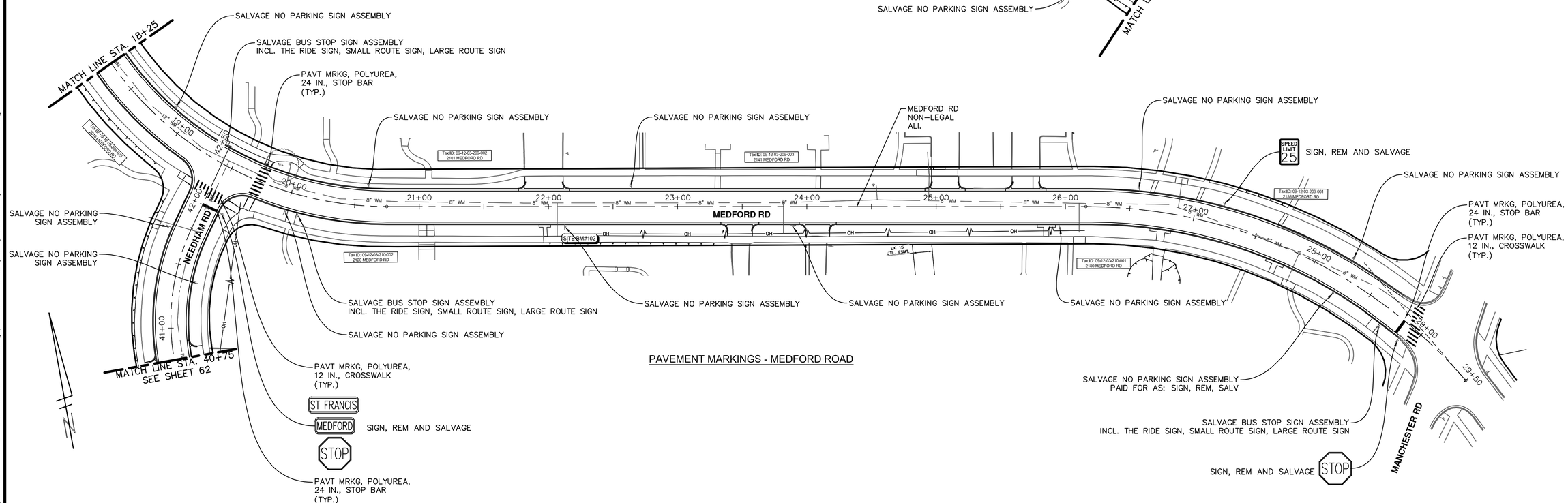
1. SALVAGED SIGNS TO BE REINSTALLED BY THE CITY OF ANN ARBOR UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PAVEMENT MARKING QUANTITIES – THIS SHEET

Item	Quantity	Unit
Sign, Rem, Salv	30	Ea
Pavt Mrkg, Polyurea, 12 In., Crosswalk	284	Ft
Pavt Mrkg, Polyurea, 24 In., Stop Bar	39	Ft



PAVEMENT MARKINGS - MEDFORD ROAD



PAVEMENT MARKINGS - MEDFORD ROAD

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

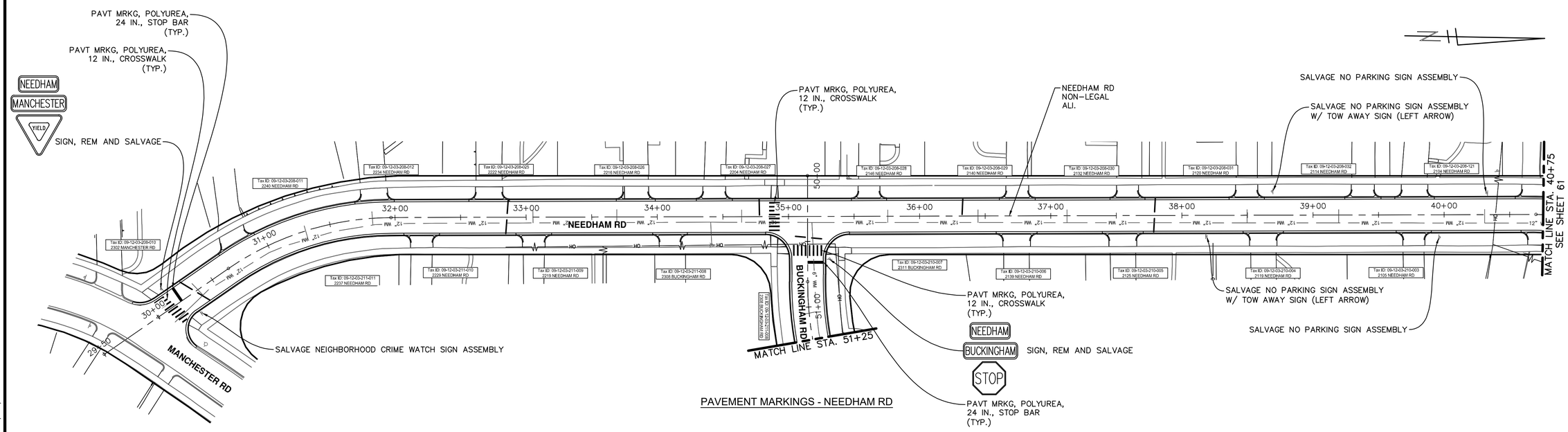
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

PAVEMENT MARKINGS - 1

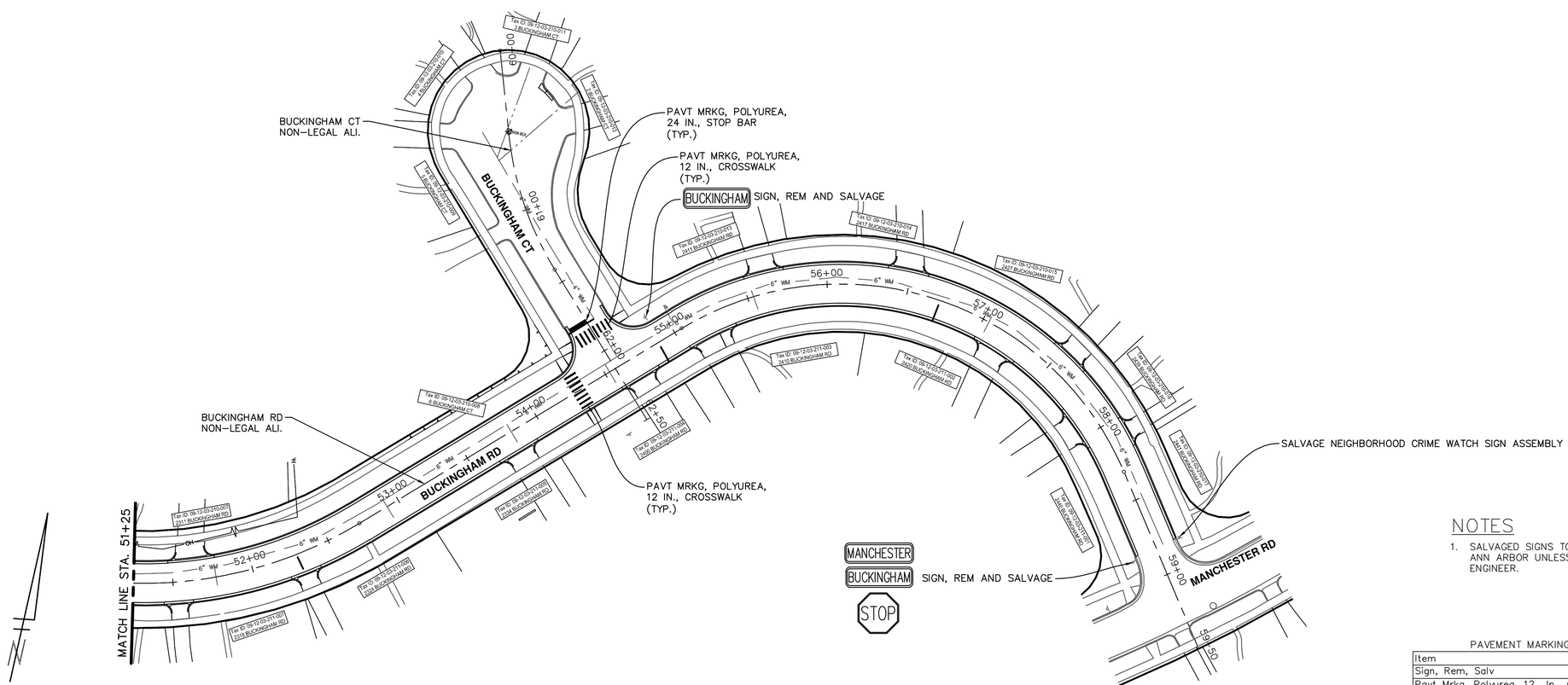
SCALE : 1" = 40'

DRAWING No.
2025-2026-61

SHEET No.
61 OF 64



PAVEMENT MARKINGS - NEEDHAM RD



PAVEMENT MARKINGS - BUCKINGHAM RD

NOTES

1. SALVAGED SIGNS TO BE REINSTALLED BY THE CITY OF ANN ARBOR UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PAVEMENT MARKING QUANTITIES – THIS SHEET

Item	Quantity	Unit
Sign, Rem, Salv	10	Ea
Pavt Mrkg, Polyurea, 12 In., Crosswalk	324	Ft
Pavt Mrkg, Polyurea, 24 In., Stop Bar	36	Ft

811 Know what's below. Call before you dig.

REV.	DATE	DRAWN	CHECKED
5 –	–	–	–
4 ADDENDUM 1	01/23/2026	AJ	AL
3 FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2 FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1 70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

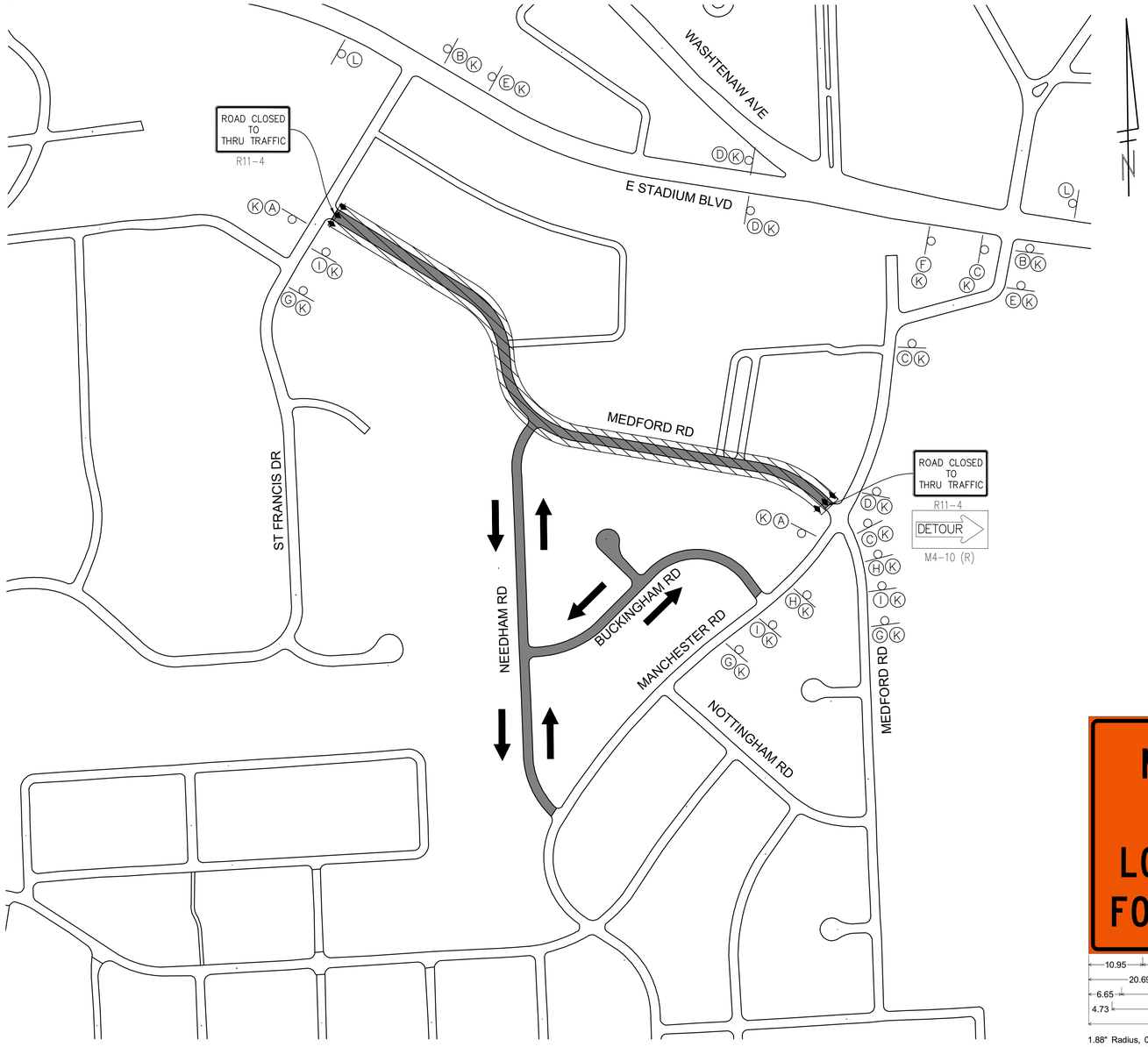
NEEDHAM, MEDFORD, & BUCKINGHAM
WATER MAIN & RESURFACING PROJECT

PAVEMENT MARKINGS - 2

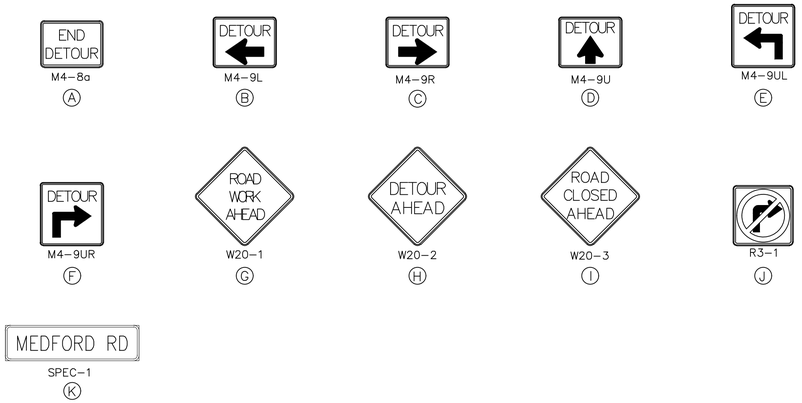
SCALE : 1" = 40'

DRAWING No. 2025-2026-62

SHEET No. 62 OF 64



DETOUR PLAN

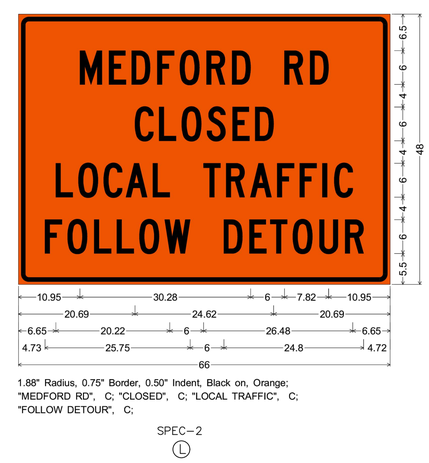


MAINTENANCE OF TRAFFIC QUANTITIES – THIS SHEET

Item	Quantity	Unit
Sign, Type B, Temp, Prismatic, Furn & Oper	159.0	Sft
Sign, Type B, Temp, Prismatic, Special, Furn & Oper	76.0	Sft
Temporary "No Parking" Sign	50	Ea
Plastic Drum, High Intensity, Lighted, Furn & Oper	50	Ea
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn & Oper	6	Ea
Pedestrian Type II Barricade, Temp, Furn & Oper	10	Ea

SIGN, TYPE B, TEMP PRISMATIC, FURN & OPER – THIS SHEET

SYMBOL	MMUTCO DESIGNATION	DESCRIPTION	SIZE (IN)	QTY
A	M4–8a	END DETOUR	24x18	2
B	M4–9L	DETOUR LEFT	24x30	2
C	M4–9R	DETOUR RIGHT	24x30	2
D	M4–9U	DETOUR UP	24x30	3
E	M4–9UL	DETOUR (AHEAD LEFT)	24x30	2
F	M4–9UR	DETOUR (AHEAD RIGHT)	24x30	1
G	W20–1	ROAD WORK AHEAD	36x36	3
H	W20–2	DETOUR AHEAD	36x36	2
I	W20–3	ROAD CLOSED AHEAD	36x36	3
○	R11–4	ROAD CLOSED TO THRU TRAFFIC	60x30	2
	M4–10 (L)	DETOUR LEFT ARROW	48x18	1



1.88" Radius, 0.75" Border, 0.50" Indent, Black on, Orange;
"MEDFORD RD", C; "CLOSED", C; "LOCAL TRAFFIC", C;
"FOLLOW DETOUR", C;

SPEC–2
L

SIGN, TYPE B, TEMP PRISMATIC, FURN & OPER SPECIAL– THIS SHEET

SYMBOL	MMUTCO DESIGNATION	DESCRIPTION	SIZE (IN)	QTY
K	D3–2	MEDFORD RD	48x12	19
○ L	SPEC–2	MEDFORD RD CLOSED LOCAL TRAFFIC FOLLOW DETOUR	48x66	2

NOTES

1. DETOUR EASTBOUND AND WESTBOUND TRAFFIC FOR MEDFORD ROAD.
2. CITY TO COORDINATE WITH SCHOOL DISTRICT TRANSIT COMPANIES, INCLUDING THE RIDE (ROUTE 64), FOR DETOUR OF SCHOOL BUS ROUTE FROM MEDFORD ROAD.
3. CONTRACTOR TO COORDINATE ADDITIONAL TEMPORARY LANE CLOSURES DURING WATER MAIN CONNECTIONS AT INTERSECTIONS ALONG ST FRANCIS DR AND MANCHESTER ROAD.
4. LEAD-IN PLACED AT 100' SPACING.
5. ADJUST ALL SIGNS AS NECESSARY TO FIT FIELD CONDITIONS.

LEGEND

TYPE III BARRICADE (3 EA)

SIGN

WORK ZONE

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

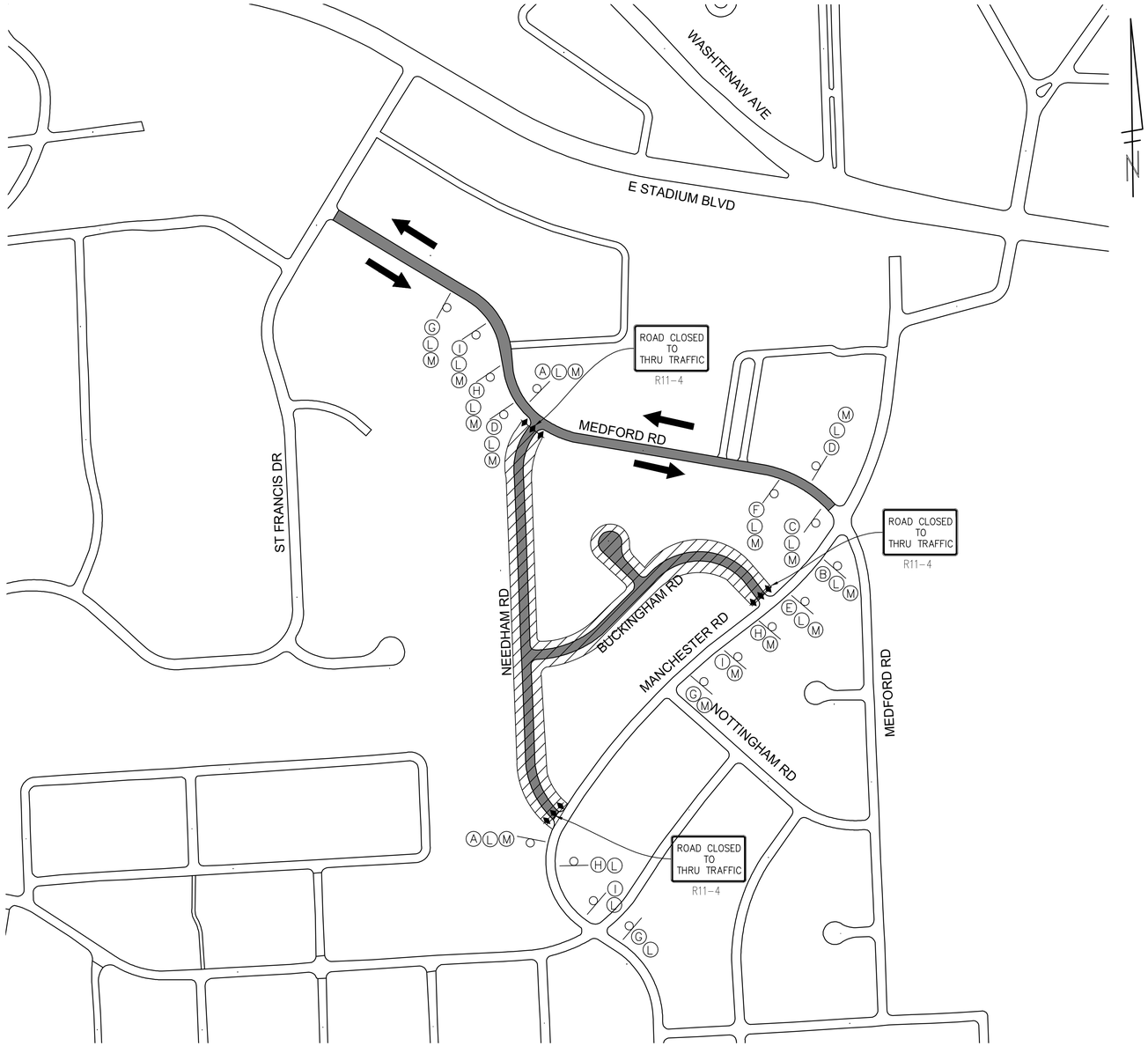
NEEDHAM, MEDFORD, & BUCKINGHAM WATER MAIN & RESURFACING PROJECT

DETOUR PLAN - PHASE 1

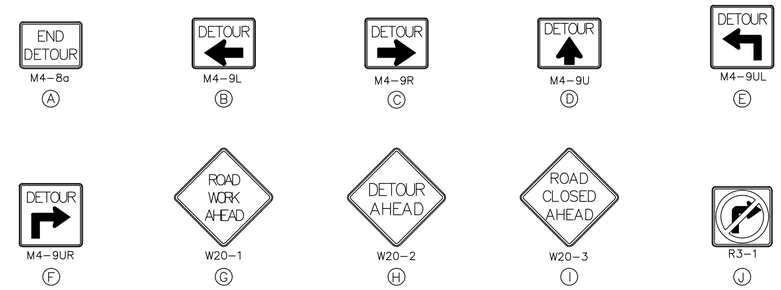
SCALE : 1" = 200'

DRAWING No. 2025-2026-63

SHEET No. 63 OF 64



DETOUR PLAN



MAINTENANCE OF TRAFFIC QUANTITIES – THIS SHEET

Item	Quantity	Unit
Sign, Type B, Temp, Prismatic, Furn & Oper	154.5	Sft
Sign, Type B, Temp, Prismatic, Special, Furn & Oper	112.0	Sft
Temporary "No Parking" Sign	50	Ea
Plastic Drum, High Intensity, Lighted, Furn & Oper	50	Ea
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn & Oper	9	Ea
Pedestrian Type II Barricade, Temp, Furn & Oper		Ea
Pedestrian Channelizer Device, Furn & Oper		Ea
Temporary Pedestrian Ramp, Furn & Oper		Ea
Temporary Pedestrian Mat, Furn & Oper		Ft

SIGN, TYPE B, TEMP PRISMATIC, FURN & OPER – THIS SHEET

SYMBOL	MMUTCO DESIGNATION	DESCRIPTION	SIZE (IN)	QTY
A	M4-8a	END DETOUR	24x18	2
B	M4-9L	DETOUR LEFT	24x30	1
C	M4-9R	DETOUR RIGHT	24x30	1
D	M4-9U	DETOUR UP	24x30	2
E	M4-9UL	DETOUR (AHEAD LEFT)	24x30	1
F	M4-9UR	DETOUR (AHEAD RIGHT)	24x30	1
G	W20-1	ROAD WORK AHEAD	36x36	3
H	W20-2	DETOUR AHEAD	36x36	3
I	W20-3	ROAD CLOSED AHEAD	36x36	3
J	R3-1	NO RIGHT TURN	36x36	0
	R11-4	ROAD CLOSED TO THRU TRAFFIC	60x30	3

SIGN, TYPE B, TEMP PRISMATIC, FURN & OPER SPECIAL– THIS SHEET

SYMBOL	MMUTCO DESIGNATION	DESCRIPTION	SIZE (IN)	QTY
L	D3-2	MEDFORD RD	48x12	14
M	D3-2	BUCKINGHAM RD	48x12	14

NOTES

1. DETOUR EASTBOUND AND WESTBOUND TRAFFIC FOR MEDFORD ROAD.
2. CITY TO COORDINATE WITH SCHOOL DISTRICT TRANSIT COMPANIES, INCLUDING THE RIDE (ROUTE 64), FOR DETOUR OF SCHOOL BUS ROUTE FROM MEDFORD ROAD.
3. CONTRACTOR TO COORDINATE ADDITIONAL TEMPORARY LANE CLOSURES DURING WATER MAIN CONNECTIONS AT INTERSECTIONS ALONG ST FRANCIS DR AND MANCHESTER ROAD.
4. LEAD-IN PLACED AT 100' SPACING.
5. ADJUST ALL SIGNS AS NECESSARY TO FIT FIELD CONDITIONS.

LEGEND

TYPE III BARRICADE (3 EA)

SIGN

WORK ZONE

811 Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5	–	–	–	–
4	ADDENDUM 1	01/23/2026	AJ	AL
3	FINAL PLAN SUBMITTAL	01/09/2026	AJ/RD	AL/JS
2	FINAL REVIEW SUBMITTAL	12/08/2025	AJ/RD/SL	AL/JS
1	70% SUBMITTAL	07/08/2025	AJ/ML/RD	AL/CH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

NEEDHAM, MEDFORD, & BUCKINGHAM WATER MAIN & RESURFACING PROJECT

DETOUR PLAN - PHASE 2

SCALE : 1" = 200'

DRAWING No. 2025-2026-64

SHEET No. 64 OF 64