

**ADDENDUM No. 4**  
**Issued May 15, 2024**

The Town of Manchester-By-The-Sea, Massachusetts is hereby issuing this said Addendum Number 4 for the above noted project.

**ADDENDUM 4**

**1.1 PROJECT INFORMATION**

- A. Project Name: Mill, Forest and School Street Utility Improvement Project.*
- B. Owner: Town of Manchester by the Sea*

**1.2 NOTICE TO BIDDERS**

- A. This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders and Conditions of the Contract. This Addendum serves to clarify, revise, and supersede information in the Contract Bid Documents, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.*
- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.*
- C. The date for receipt of bids is not changed by this Addendum. The time and location remain the same.*

**1.3 ATTACHMENTS**

- A. Revised plan set dated May 15, 2024*
- B. Revised 00 41 01 Bid Form*

**1.4 REVISIONS TO DIVISION 00 PROCUREMENT REQUIREMENTS AND CONTRACTING REQUIREMENTS**

- A. Revisions to Section 00 41 01 Bid Form – ~~Delete bid form and replace with Bid Form – Addenda~~*
- B. Revisions to Section 00 45 13 Bidder's Qualification – Item 5 a. Delete the following:*
  - A. Following is a list of **at least five (5) projects** Bidder's organization has completed **within the last ten (10) years which are similar** in type, character and magnitude to that required by the Contract. Projects similar in type, character and magnitude shall include:*
    - Installation of CLDI water main of at least 4,000 Linear Feet;
    - Contract municipal project value at a minimum of \$2,000,000.

*And replace with:*

- A. Following is a list of **at least five (5) projects** Bidder's organization has completed **within the last ten (10) years which are similar** in type, character and magnitude to that required by the Contract. Projects similar in type, character and magnitude shall include:*
  - Installation of CLDI water main of at least 4,000 Linear Feet;

- Contract municipal project value at a minimum of \$5,000,000.

**END OF SECTION**

**SECTION 00 41 01**

**BID FORM**

**ARTICLE 1 – DEFINED TERMS**

- 1.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions and Supplementary Conditions, if any.

**ARTICLE 2 – BID RECIPIENT**

- 1.01 This Bid is submitted to:

Manchester-By-The-Sea  
10 Central Street, Room 6  
Manchester-By-The-Sea, Massachusetts 01944  
ATTN: Charles Dam, Public Works Director

- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**ARTICLE 3 – BIDDER'S ACKNOWLEDGEMENTS**

- 1.01 Bidder accepts all the terms and conditions of the Bidding Documents including, without limitation:
- A. those dealing with disposition of Bid security;
  - B. those included in the Supplementary Instructions to Bidders;
  - C. insurance and bonding requirements (Payment Bond and Performance Bond each equal to 100% of the total Contract Price) set forth in the General Conditions and Supplementary Conditions, if any;
  - D. Contractor to fully comply with all provisions of MassDOT Standard Specifications for Highways and Bridges, including but not limited to Section 4:00 SCOPE OF WORK.
  - E. Contract Times as set forth in the Agreement; and
  - F. provisions for liquidated damages as set forth in the Agreement.
  - G. Bidder acknowledges no work can begin in MA Highway layout until final permit is received/approved.
- 1.02 This Bid will remain subject to acceptance for 30 business days after the Bid opening or for such longer period of time that Bidder may agree to in writing upon request of Owner.

1.03 Bidder acknowledges receipt of the following Addenda:

Addendum No.      Addendum Date

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1.04 Bidder acknowledges the representations and certifications included in Section 00 45 05 are made a condition of the Bid.

#### ARTICLE 4 – BASIS OF BID

4.01 Bidder will complete the Work under Work Authorizations in accordance with the Contract Documents for the following price(s) based on unit prices included in the following schedule. Bidder must complete all items. BID PRICES SHALL EXCLUDE SALES AND USE TAX.

#### Base Bid Price Form Mill, Forest and School Street Utilities Improvements

Item No.	Item Description with Unit or Lump Sum Price in Written Words	Estimated Quantity & Unit	Unit Bid Price (Figures)	Total Bid Item Price (Figures)
1	Mobilization/Demobilization @	1		
		LS		
	Dollars and _____ Cents PER LUMP SUM			
2a	4" Cement Lined Ductile Iron Pipe @	20		
		LF		
	Dollars and _____ Cents PER LINEAR FOOT			
2b	6" Cement Lined Ductile Iron Pipe @	120		
		LF		
	Dollars and _____ Cents PER LINEAR FOOT			
2c	8" Cement Lined Ductile Iron Pipe @	1500		
		LF		
	Dollars and _____ Cents PER LINEAR FOOT			



Item No.	Item Description with Unit or Lump Sum Price in Written Words	Estimated Quantity & Unit	Unit Bid Price (Figures)	Total Bid Item Price (Figures)
2d	12" Cement Lined Ductile Iron Pipe @	3100		
		LF		
	Dollars and _____ Cents PER LINEAR FOOT			
3	1" Copper Tubing @	850		
		LF		
	Dollars and _____ Cents PER LINEAR FOOT			
4	1" Corporation @	30		
		EA		
	Dollars and _____ Cents PER EACH			
5	1" Curb Stop & Box @	30		
		EA		
	Dollars and _____ Cents PER EACH			
6a	4" Gate Valve & Box @	1		
		EA		
	Dollars and _____ Cents PER EACH			
6b	6" Gate Valve & Box @	8		
		EA		
	Dollars and _____ Cents PER EACH			
6c	8" Gate Valve & Box @	6		
		EA		
	Dollars and _____ Cents PER EACH			
6d	12" Gate Valve & Box @	4		
		EA		
	Dollars and _____ Cents PER EACH			

Item No.	Item Description with Unit or Lump Sum Price in Written Words	Estimated Quantity & Unit	Unit Bid Price (Figures)	Total Bid Item Price (Figures)
7	Hydrants @	5		
		EA		
	Dollars and _____ Cents PER EACH			
8	Fittings @	4,300		
		LBS		
	Dollars and _____ Cents PER POUNDS			
9	Water Distribution Bypass @	1		
		LS		
	Dollars and _____ Cents PER LUMP SUM			
10a	4' Diameter Air Release Manhole @	1		
		EA		
	Dollars and _____ Cents PER EACH			
10b	4' Diameter Cleanout Manhole @	3		
		EA		
	Dollars and _____ Cents PER EACH			
11	Test Pits @	5		
		EA		
	Dollars and _____ Cents PER EACH			
12	12" SDR-35 PVC Drain Pipe @	100		
		LF		
	Dollars and _____ Cents PER EACH			
13	Sewer Frame & Cover @	4		
		EA		
	Dollars and _____ Cents PER EACH			

Item No.	Item Description with Unit or Lump Sum Price in Written Words	Estimated Quantity & Unit	Unit Bid Price (Figures)	Total Bid Item Price (Figures)
14a	4" C900 Force main @	3100		
		LF		
	Dollars and _____ Cents PER LINEAR FOOT			
14b	4" HDPE Welded Force main	280		
		LF		
	Dollars and _____ Cents PER LINEAR FOOT			
15	1.25" Force main (Service) @	200		
		LF		
	Dollars and _____ Cents PER EACH			
16	Sewer Corporation Valve and box @	9		
		EA		
	Dollars and _____ Cents PER EACH			
17	4" Gate Valve (Sewer)	3		
		EA		
	Dollars and _____ Cents PER EACH			
18	Connect to Existing Sewer Manhole @	1		
		EA		
	Dollars and _____ Cents PER EACH			
19a	Temporary Trench Pavement (4") @	950		
		TON		
	Dollars and _____ Cents PER TON			
19b	Misc. Hot Mix Asphalt @	60		
		TON		
	Dollars and _____ Cents PER TON			

Item No.	Item Description with Unit or Lump Sum Price in Written Words	Estimated Quantity & Unit	Unit Bid Price (Figures)	Total Bid Item Price (Figures)
20	Permanent Roadway Mill & Overlay Top Course – 2” @	20500		
		SY		
	Dollars and ____ Cents PER SQUARE YARD			
21a	Rock Removal @ One Hundred	250	\$100	\$25,000
		CY		
	Dollars and _00_ Cents PER CUBIC YARD			
21b	Rock Removal Adjusted @	250		
		CY		
	Dollars and ____ Cents PER CUBIC YARD			
22	Erosion Control @	1		
		LS		
	Dollars and ____ Cents PER LUMP SUM			
23	Concrete Encasement @	500		
		LF		
	Dollars and ____ Cents PER LINEAR FOOT			
24	Loam and Seed @	100		
		SY		
	Dollars and ____ Cents PER SQUARE YARD			
25	Project Closeout @	1		
		LS		
	Dollars and ____ Cents PER LUMP SUM			
26	Traffic Management @	1		
		LS		
	Dollars and ____ Cents PER LUMP SUM			

Item No.	Item Description with Unit or Lump Sum Price in Written Words	Estimated Quantity & Unit	Unit Bid Price (Figures)	Total Bid Item Price (Figures)
27	Owner's Allowance for Police Detail @ EIGHTY-SEVEN THOUSAND	1	\$87,000	\$87,000
		ALL		
	Dollars and _____ Cents PER ALLOWANCE			
28	Disposal of AC pipe @	700		
		LF		
	Dollars and _____ Cents PER Linear Foot			
29	MA Highway trenching	260		
		LF		
	Dollars and _____ Cents PER Linear Foot			

**TOTAL MILL, FOREST and SCHOOL STREET BASE BID PRICE (based on Unit Price Schedule Above):**

- 
- 4.02 Unit Prices have been computed in accordance with Paragraph 11.03.A of the General Conditions and Supplementary Conditions, if any.
- 4.03 Bidder acknowledges that estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for unit price items will be based on actual quantities determined and based on the unit prices included above, as provided in the General Conditions and Supplementary Conditions, if any.
- 4.04 Contract Price Adjustments:
- A. Owner's Contingency Allowance items will be processed per Article 11.02 of the General Conditions.
1. Base Prices for diesel fuel, gasoline, liquid asphalt, and portland cement in cast-in-place concrete to be used for Contract Price Adjustments are established in Section 00 73 73, SC-12.01 per MGL c30s38A.

**ARTICLE 5 – TIME OF COMPLETION**

- 5.01 Bidder agrees to the Contract Times (Substantial Completion and ready for final payment) as stated in the Agreement.

5.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 6 – ATTACHMENTS TO THIS BID**

6.01 The following documents are submitted with and made a condition of this Bid:

00 43 13 Bid Bond – Penal Sum Form

*OR*

Required Bid security in the form of 5% pf the Bidders Base Price

Supplements:

00 43 93 Bid Submittal Checklist

00 45 05 Bidder's Representations and Certifications including required submittals

00 45 13 Bidder's Qualifications

00 45 19 Non-collusion Affidavit

## ARTICLE 7 – BID SUBMITTAL

7.01 This Bid is submitted by: \_\_\_\_\_

Fill out **ONE** of the following sections A, B, C or D as appropriate.

### A. Corporation

Corporation Name: \_\_\_\_\_

State of incorporation: \_\_\_\_\_

Type: \_\_\_\_\_  
(General Business, Professional, Service, other)

By: \_\_\_\_\_  
(Signature – attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_  
(CORPORATE SEAL)

Attest: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone & Facsimile Nos: \_\_\_\_\_

Email address: \_\_\_\_\_

Date of qualification to do business as out-of-state corporation: \_\_\_\_\_

### B. Limited Liability Company (LLC)

LLC Name: \_\_\_\_\_

State in which organized: \_\_\_\_\_

By: \_\_\_\_\_  
(Signature – attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone & Facsimile Nos: \_\_\_\_\_

Email address: \_\_\_\_\_

**C. Joint Venture**

First Joint Venturer Name:

By: \_\_\_\_\_  
(Signature – attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone & Facsimile Nos: \_\_\_\_\_

Email address: \_\_\_\_\_

Second Joint Venturer Name:

By: \_\_\_\_\_  
(Signature – attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone & Facsimile Nos: \_\_\_\_\_

Email address: \_\_\_\_\_

(Each joint venturer must sign. The manner of signing for each individual, partnership, corporation, and limited liability company that is a party to the joint venture should be in the manner indicated above.)

Phone & Facsimile Nos: \_\_\_\_\_

Email address: \_\_\_\_\_



**D. An Individual**

Name (*typed or printed*): \_\_\_\_\_

By: \_\_\_\_\_  
(*Individual's signature*)

Doing Business As: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone & Facsimile Nos: \_\_\_\_\_

Email address: \_\_\_\_\_

SUBMITTED ON: \_\_\_\_\_

EIN/FEIN: \_\_\_\_\_

Communications concerning this Bid shall be addressed to:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone & Facsimile Nos: \_\_\_\_\_

Email address: \_\_\_\_\_

**END OF SECTION**



# UTILITY EXPANSION PLAN

MILL STREET, FOREST STREET, AND SCHOOL STREET  
MANCHESTER-BY-THE-SEA, MASSACHUSETTS 01944

FOR  
TOWN OF MANCHESTER-BY-THE-SEA

## PLAN INTENT

THIS PLAN IS INTENDED TO ACCOMPANY A NOTICE OF INTENT FILING WITH THE TOWN OF MANCHESTER-BY-THE-SEA CONSERVATION COMMISSION.

## SURVEY NOTES:

1) THE HORIZONTAL DATUM FOR THIS SURVEY IS THE MASSACHUSETTS COORDINATE SYSTEM, NAD 1983, MAINLAND ZONE. THE VERTICAL DATUM FOR THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). SAID DATUMS WERE ESTABLISHED VIA GPS OBSERVATIONS.

2) UNDERGROUND UTILITIES SHOWN HEREON ARE COMPILED FROM FIELD LOCATIONS OF STRUCTURES AND FROM AVAILABLE RECORD INFORMATION ON FILE AT THE TOWN ENGINEERING OFFICES, TOWN D.P.W., MASS HIGHWAY DEPT. AND UTILITY COMPANIES. OTHER UNDERGROUND UTILITIES MAY EXIST. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION, SIZE & ELEVATION OF ALL UTILITIES WITHIN THE AREA OF PROPOSED WORK AND TO CONTACT "DIG-SAFE" AT 811 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION OR CONSTRUCTION.

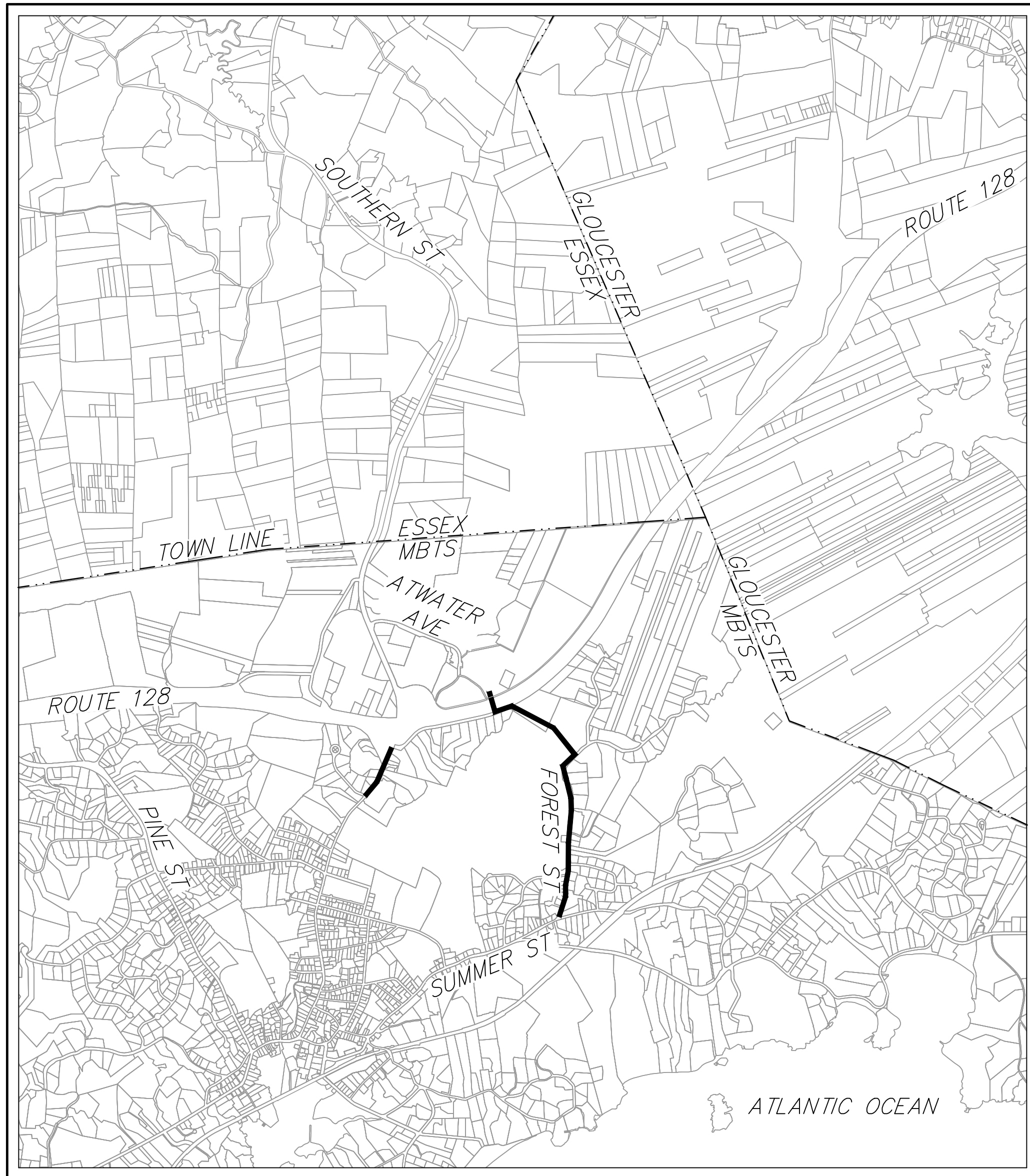
3) LIMITS OF BORDERING VEGETATED WETLANDS SHOWN HEREON WERE DELINEATED BY HANCOCK ASSOCIATES ON AND LOCATED BY FIELD SURVEY.

## GENERAL NOTES

- LOCATIONS OF EXISTING UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS SHOWN HEREON ARE APPROXIMATE ONLY. ALL UTILITIES/OBSTRUCTIONS/SYSTEMS MAY NOT BE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS, WHETHER OR NOT SHOWN HEREON.
- UNLESS OTHERWISE SHOWN, ALL NEW UTILITIES SHALL BE UNDERGROUND.
- CONTRACTOR SHALL FURNISH CONSTRUCTION LAYOUT OF BUILDING AND SITE IMPROVEMENTS. THIS WORK SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR.
- SAFETY MEASURES, CONSTRUCTION METHODS AND CONTROL OF WORK SHALL BE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION THAT ARE NOT DESIGNATED FOR DEMOLITION AND / OR REMOVAL HEREON. DAMAGED IMPROVEMENTS SHALL BE REPAIRED TO THE SATISFACTION OF THEIR RESPECTIVE OWNERS.
- ANY INTENDED REVISION OF THE HORIZONTAL AND/OR VERTICAL LOCATION OF IMPROVEMENTS TO BE CONSTRUCTED AS SHOWN HEREON SHALL BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO IMPLEMENTATION.
- RIM ELEVATIONS SHOWN FOR NEW STRUCTURES ARE APPROXIMATE AND ARE PROVIDED TO ASSIST CONTRACTOR WITH MATERIAL TAKEOFFS. FINISH RIM ELEVATIONS SHOULD MATCH PAVEMENT, GRADING OR LANDSCAPING, UNLESS SPECIFICALLY INDICATED OTHERWISE.
- WHERE EXISTING UTILITY LINES/STRUCTURES ARE TO BE CUT/BROKEN DOWN/ ABANDONED, LINES/STRUCTURES SHALL BE PLUGGED/CAPPED/FILLED IN ACCORDANCE WITH OWNER REQUIREMENTS.
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND RELATIVE ELEVATION OF BENCH MARKS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER.
- SILT FENCE SHOWN HEREON SHALL BE INSTALLED BEFORE EARTH DISTURBANCE OCCURS WITHIN BUFFER ZONE, AND SHALL SERVE AS THE LIMIT OF WORK.

## REGULATORY NOTES

- CONTRACTOR SHALL CONTACT DIG-SAFE FOR UNDERGROUND UTILITY MARKING AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK.
- CONTRACTOR SHALL MAKE HIMSELF AWARE OF ALL CONSTRUCTION REQUIREMENTS, CONDITIONS, AND LIMITATIONS IMPOSED BY PERMITS AND APPROVALS ISSUED BY REGULATORY AUTHORITIES PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL COORDINATE AND OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY REGULATORY AUTHORITIES.
- ALL WORK OUTSIDE OF BUILDING THAT IS LESS THAN 10 FEET FROM THE INSIDE FACE OF BUILDING FOUNDATIONS SHALL CONFORM WITH THE UNIFORM STATE PLUMBING CODE OF MASSACHUSETTS, 248 CMR 2.00.



## LOCUS MAP

SCALE: 1"=500'

## APPLICANT:

TOWN OF MANCHESTER-BY-THE-SEA  
10 CENTRAL STREET  
MANCHESTER-BY-THE-SEA, MASSACHUSETTS 01944

## SHEET INDEX

C0	.....	TITLE SHEET
C1	.....	INDEX PLAN
C2	.....	PLAN AND PROFILE (STA. 0+00 TO STA. 5+50) (MILL)
C3	.....	PLAN AND PROFILE (STA. 5+50 TO STA. 11+00) (MILL)
C4	.....	PLAN AND PROFILE (STA. 11+00 TO STA. 16+50) (MILL)
C5	.....	PLAN AND PROFILE (STA. 16+50 TO STA. 20+00) (MILL TO FOREST)
C6	.....	PLAN AND PROFILE (STA. 20+00 TO STA. 25+50) (FOREST)
C7	.....	PLAN AND PROFILE (STA. 25+50 TO STA. 31+00) (FOREST)
C8	.....	PLAN AND PROFILE (STA. 31+00 TO STA. 36+50) (FOREST)
C9	.....	PLAN AND PROFILE (STA. 36+50 TO STA. 42+00) (FOREST)
C10	.....	PLAN AND PROFILE (STA. 42+00 TO STA. 47+50) (FOREST)
C11	.....	PLAN AND PROFILE (STA. 47+50 TO STA. 48+66) (FOREST)
C12	.....	PLAN AND PROFILE (STA. 0+00 TO STA. 5+50) (SCHOOL)
C13	.....	PLAN AND PROFILE (STA. 5+50 TO STA. 11+00) (SCHOOL)
C14	.....	PLAN AND PROFILE (STA. 11+00 TO STA. 14+00) (SCHOOL)
C15	.....	DETAIL SHEET
C16	.....	DETAIL SHEET
AB1	.....	OAK ENGINEERING AS-BUILT PLAN
19	.....	TRAFFIC MANAGEMENT PLAN
20	.....	TRAFFIC MANAGEMENT PLAN
21	.....	TRAFFIC MANAGEMENT PLAN
22	.....	TRAFFIC MANAGEMENT PLAN

## PROJECT TEAM

CIVIL ENGINEERS  
LAND SURVEYORS  
WETLAND SCIENTISTS:  
HANCOCK ASSOCIATES  
185 CENTRE STREET  
DANVERS, MASSACHUSETTS 01923

MILL STREET  
FOREST STREET  
&  
SCHOOL STREET

Manchester-By-The-Sea, MA 01944

PREPARED FOR:

TOWN OF  
MANCHESTER-  
BY-THE-SEA

10 CENTRAL STREET  
MANCHESTER-BY-THE-SEA, MA 01944

HANCOCK  
ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923  
VOICE (978) 777-3050, FAX (978) 774-7816  
WWW.HANCOCKASSOCIATES.COM



2	TJS	MTC	5/14/24	ADDENDUM #4	
1	TJS	MTC	4/10/24	DPW COMMENTS	
NO.	BY	APP	DATE	ISSUE/REVISION	DESCRIPTION
DATE:			1/22/2024	DESIGN BY:	RT
SCALE:			AS SHOWN	DRAWN BY:	TJS
APPRVD. BY:			MTC	CHECK BY:	MTC

TITLE SHEET

PLOT DATE: May 15, 2024 8:20 am  
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770Utility	C0
LAYOUT: UTIL(Ts)	
SHEET: 1 OF 22	
PROJECT NO.:	25770





MILL STREET  
FOREST STREET  
&  
SCHOOL STREET

Manchester-By-The-Sea, MA 01944

PREPARED FOR:  
**TOWN OF  
MANCHESTER-  
BY-THE-SEA**

10 CENTRAL STREET  
MANCHESTER-BY-THE-SEA, MA 01944

**HANCOCK  
ASSOCIATES**

Civil Engineers

Land Surveyors

Wetland Scientists

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2	TJS	MTC	5/14/24	ADDENDUM #4	
1	TJS	MTC	4/10/24	DPW COMMENTS	
NO.	BY	APP	DATE	ISSUE/REVISION	DESCRIPTION
DATE:			1/22/2024	DESIGN BY:	RT
SCALE:			AS SHOWN	DRAWN BY:	TJS
APPRVD. BY:			MTC	CHECK BY:	MTC

INDEX  
PLAN

PLOT DATE: May 15, 2024 8:20 am  
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG:	25770Utility	<b>C1</b>
LAYOUT:	INDEX (C1)	
SHEET:	2 OF 22	
PROJECT NO.:		25770



MILL STREET  
FOREST STREET  
&  
SCHOOL STREET

Manchester-By-The-Sea, MA 01944

PREPARED FOR:  
TOWN OF  
MANCHESTER-  
BY-THE-SEA

10 CENTRAL STREET  
MANCHESTER-BY-THE-SEA, MA 01944

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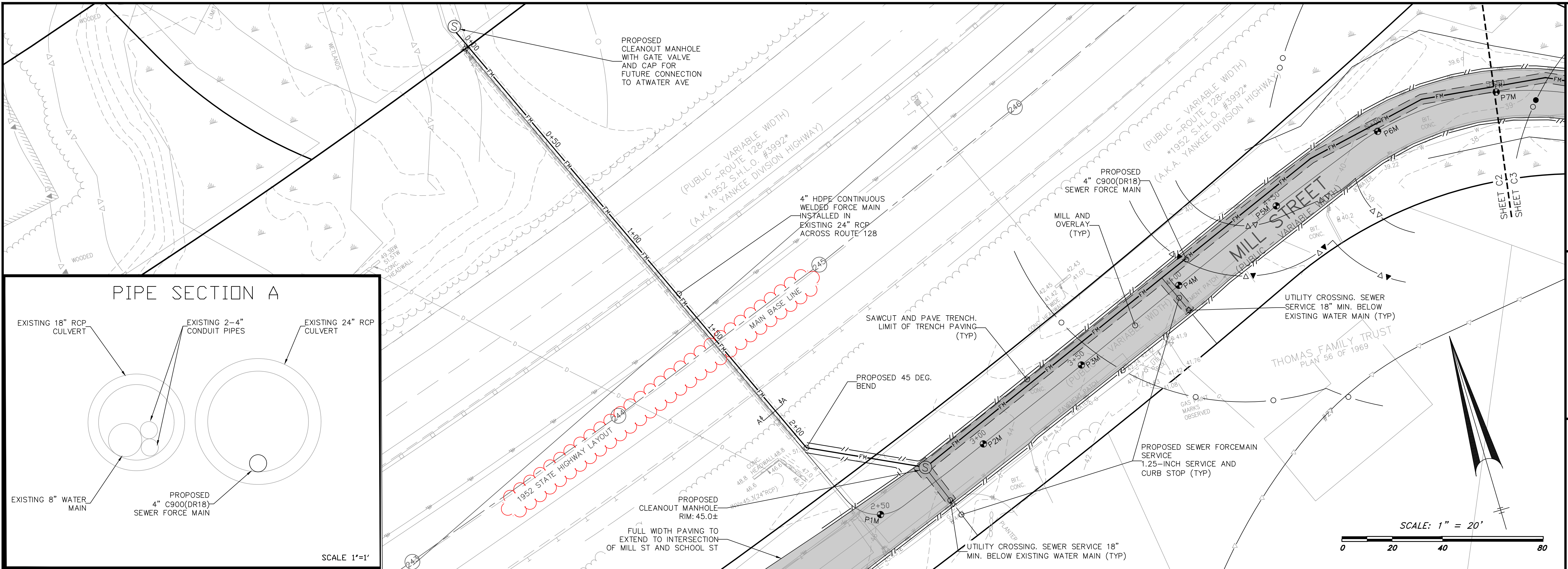


2	TJS	MTC	5/14/24	ADDENDUM #4
1	TJS	MTC	4/10/24	DPW COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE: 1/22/2024 DESIGN BY: RT				
SCALE: AS SHOWN DRAWN BY: TJS				
APPRVD. BY: MTC CHECK BY: MTC				

PLAN  
AND  
PROFILE  
(STA. 0+00 TO STA. 5+50)

PLOT DATE: May 15, 2024 8:21 am  
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770Utility	C2
LAYOUT: UTIL(C2)	
SHEET: 3 OF 22	
PROJECT NO.: 25770	



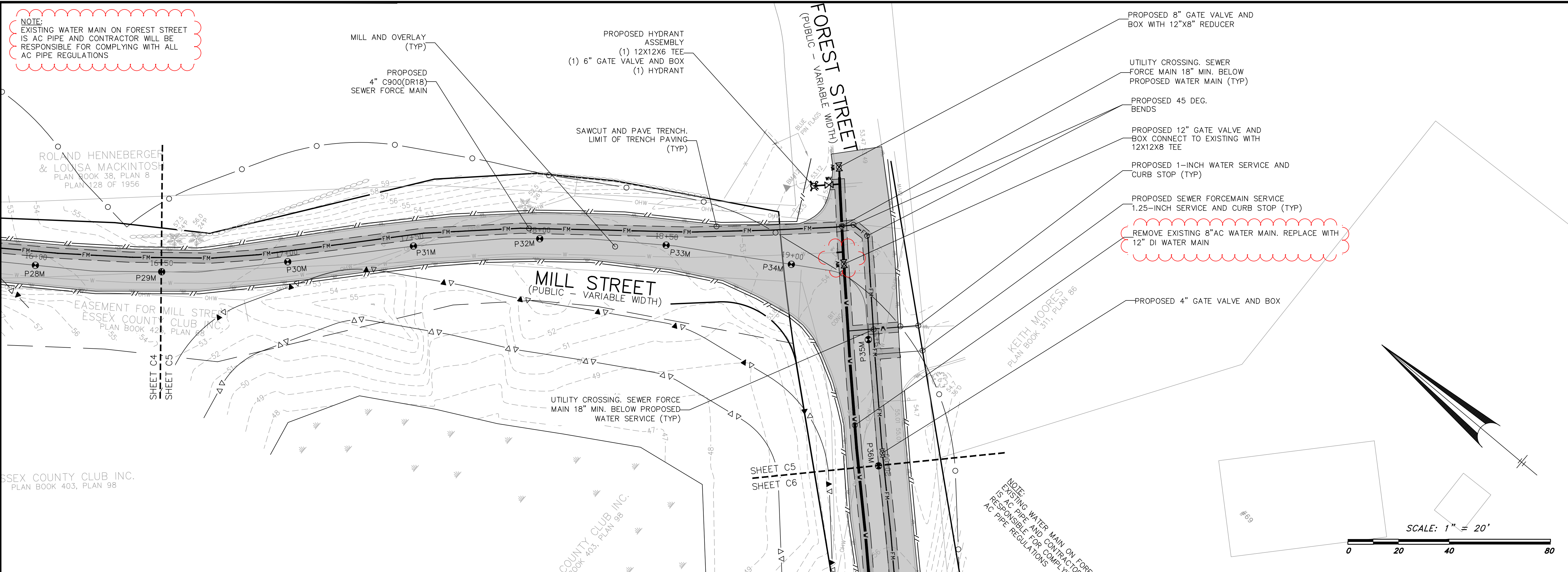












# MILL STREET FOREST STREET & SCHOOL STREET

Manchester-By-The-Sea, MA 01944

PREPARED FOR:  
**TOWN OF  
MANCHESTER-  
BY-THE-SEA**

10 CENTRAL STREET  
MANCHESTER-BY-THE-SEA, MA 01944

**HANCOCK  
ASSOCIATES**

Civil Engineers  
Land Surveyors  
Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923  
VOICE (978) 777-3050, FAX (978) 774-7816  
WWW.HANCOCKASSOCIATES.COM



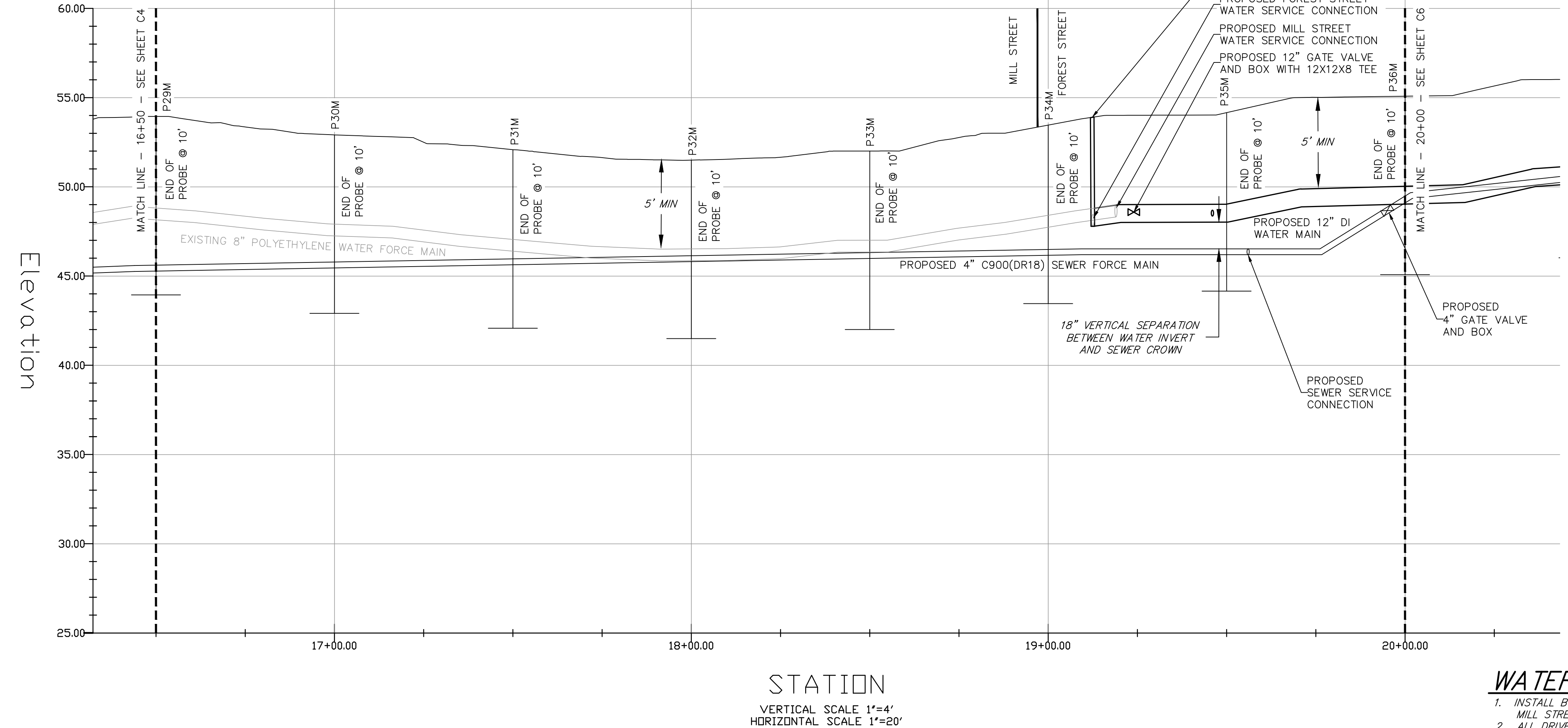
2	TJS	MTC	5/14/24	ADDENDUM #4
1	TJS	MTC	4/10/24	DPW COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/22/2024	DESIGN BY:	RT	
SCALE:	AS SHOWN	DRAWN BY:	TJS	
APPRVD. BY:	MTC	CHECK BY:	MTC	

## PLAN AND PROFILE (STA. 16+50 TO STA. 20+00)

PLOT DATE: May 15, 2024 8:23 am  
PLOT: F:\Gnd 30 Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770Utility	<b>C5</b>
LAYOUT: UTIL(C5)	
SHEET: 6 OF 22	
PROJECT NO.:	25770

## MILL AND FOREST STREET PROFILE



## WATER NOTES

1. INSTALL BYPASS WATER SYSTEM OF EAST SIDE OF FOREST STREET FROM MILL STREET TO ANCIENT COUNTY WAY.
2. ALL DRIVEWAY AND ROADWAY CROSSING ARE TO BE BELOW GRADE AND PAVED.







Manchester-By-The-Sea, MA 01944

10 CENTRAL STREET  
MANCHESTER-BY-THE-SEA, MA 01944

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# PLAN AND PROFILE

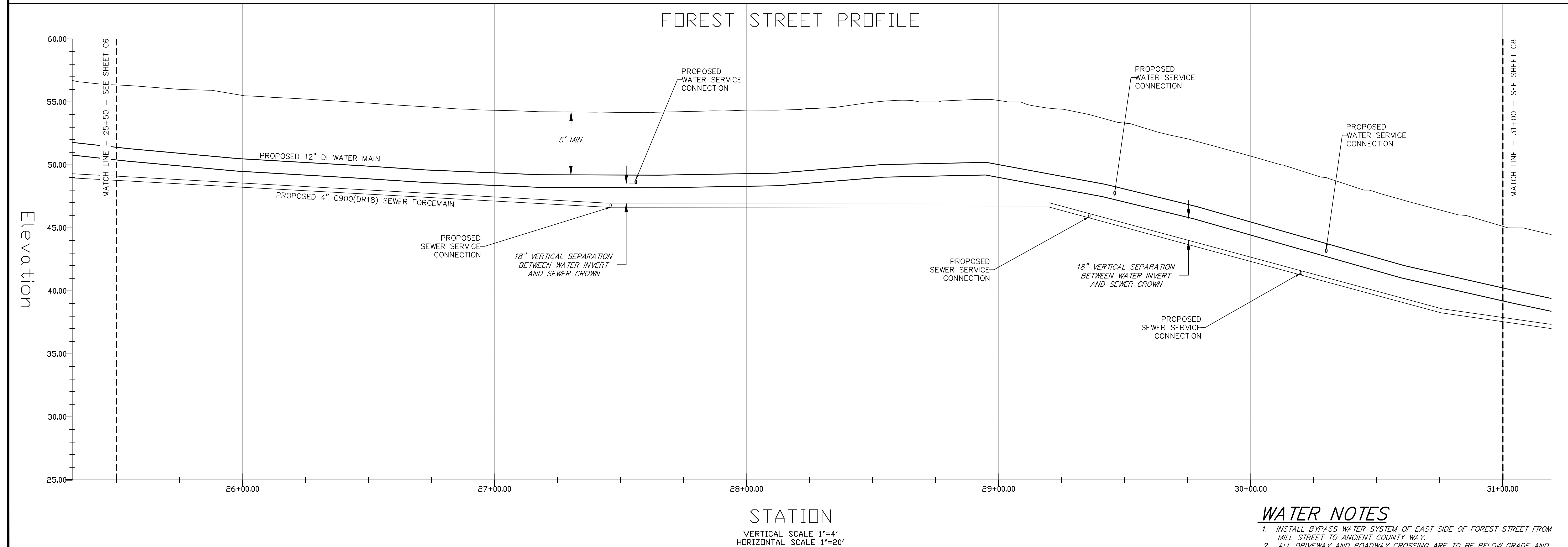
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PATH: F:\Civil 3D Projects\25770 - Cell Signalling - Manchester\Eng\DWG\

DWG: 25770utility	
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LAYOUT: UTIL(C7)

SHEET: 8 OF 22	
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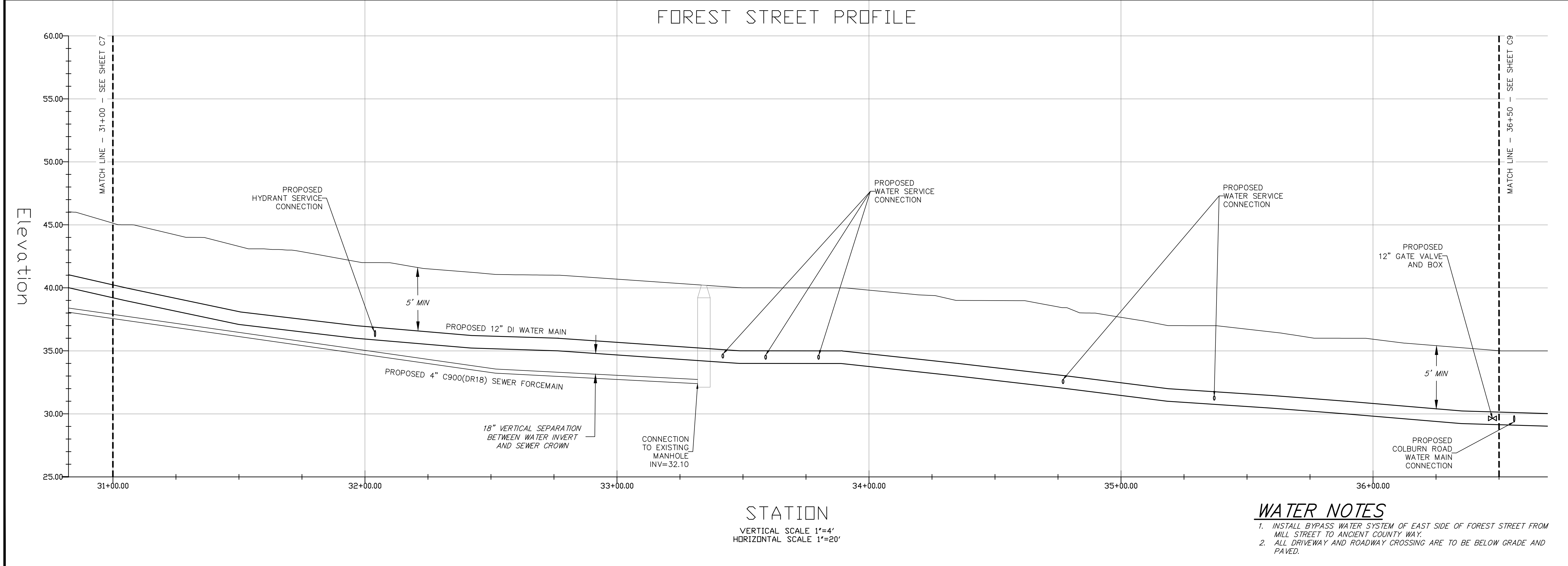
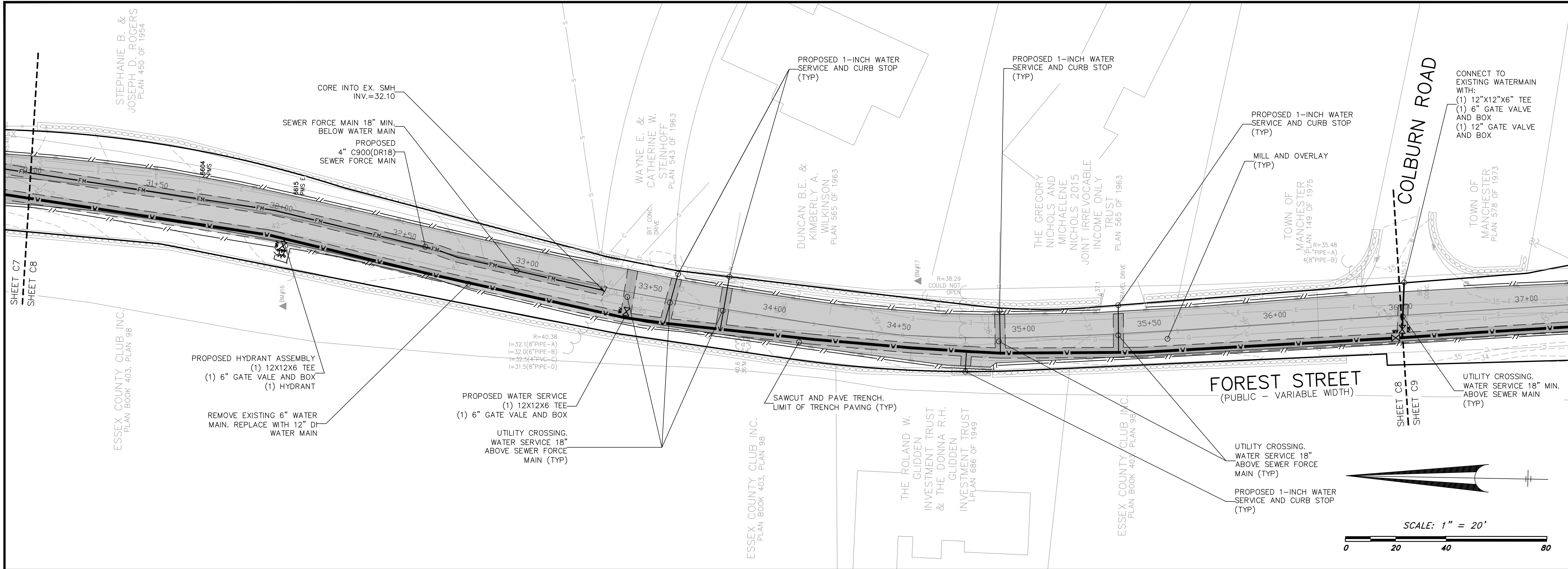
PROJECT NO.:	25770
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1. INSTALL BYPASS WATER SYSTEM OF EAST SIDE OF FOREST STREET FROM MILL STREET TO ANCIENT COUNTY WAY.
2. ALL DRIVEWAY AND ROADWAY CROSSING ARE TO BE BELOW GRADE AND PAVED.

C7





MILL STREET  
FOREST STREET  
&  
SCHOOL STREET

Manchester-By-The-Sea, MA 01944

PREPARED FOR:

TOWN OF  
MANCHESTER-  
BY-THE-SEA

10 CENTRAL STREET  
MANCHESTER-BY-THE-SEA, MA 01944

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5/14/2024

2	TJS	MTC	5/14/24	ADDENDUM #4
1	TJS	MTC	4/10/24	DPW COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION

DATE: 1/22/2024 DESIGN BY: RT  
SCALE: AS SHOWN DRAWN BY: TJS  
APPRVD. BY: MTC CHECK BY: MTC

PLAN  
AND  
PROFILE  
(STA. 31+00 TO STA. 36+50)

PLST DATE: May 15, 2024 8:25 am  
PLOT: P:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770Utility	C8
LAYOUT: UTIL(CB)	
SHEET: 9 OF 22	

PROJECT NO.: 25770

WATER NOTES

1. INSTALL BYPASS WATER SYSTEM OF EAST SIDE OF FOREST STREET FROM MILL STREET TO ANCIENT COUNTY WAY.
2. ALL DRIVEWAY AND ROADWAY CROSSING ARE TO BE BELOW GRADE AND PAVED.



PROPOSED 1-INCH WATER  
SERVICE AND CURB STOP  
(TYP)

REMOVE AND REPLACE  
STRUCTURE AND 12"-  
DRAIN PIPE (TYP)

CONNECT TO  
EXISTING WATERMAIN  
WITH:  
(1) 12"X12"X6" TEE  
(1) 6" GATE VALVE  
AND BOX  
(1) 12" GATE VALVE  
AND BOX

UTILITY CROSSING.  
DRAIN INV=32.41  
(TYP)

UTILITY CROSSING. WATER  
SERVICE 18" MIN. ABOVE  
SEWER MAIN (TYP)

CHRISTOPHER J.  
MICHELLE ROSE  
PLAN BOOK 101,  
PLAN 48

LEDGEWOOD ROAD

(PUBLIC - 40' WIDE)  
\*1985 COUNTY L.O.#3214\*

CONNECT TO EXISTING WATERMAIN WITH:

- (1) 12"X12"X6" TEE
- (1) 6" GATE VALVE AND BOX
- (1) 12" GATE VALVE AND BOX

PROPOSED HYDRANT  
ASSEMBLY  
(1) 12X12X6 TEE  
(1) 6" GATE VALE AND BOX  
(1) HYDRANT

PROPOSED 1-INCH  
—WATER SERVICE AND  
CURB STOP (TYP)

PROPOSED 1-INCH WATER  
—SERVICE AND CURB STOP  
(TYP)

UTILITY CROSSING.  
WATER SERVICE 18" MIN  
ABOVE SEWER MAIN  
(TYP)

ALEXANDER J. &  
NATASHA LAMB  
1964

MILL STREET  
FOREST STREET  
&  
SCHOOL STREET

Manchester-By-The-Sea, MA 01944

PREPARED FOR:

TOWN OF  
MANCHESTER-  
BY-THE-SEA

10 CENTRAL STREET  
MANCHESTER-BY-THE-SEA, MA 01944

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1	TJS	MTC	4/10/24	DPW COMMENTS
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:	1/22/2024			DESIGN BY: F
SCALE:	AS SHOWN			DRAWN BY: T
APPRVD. BY:	MTC			CHECK BY: M

# PLAN AND PROFILE (STA. 36+50 TO STA. 42+00)

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PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG

DWG: 25770utility

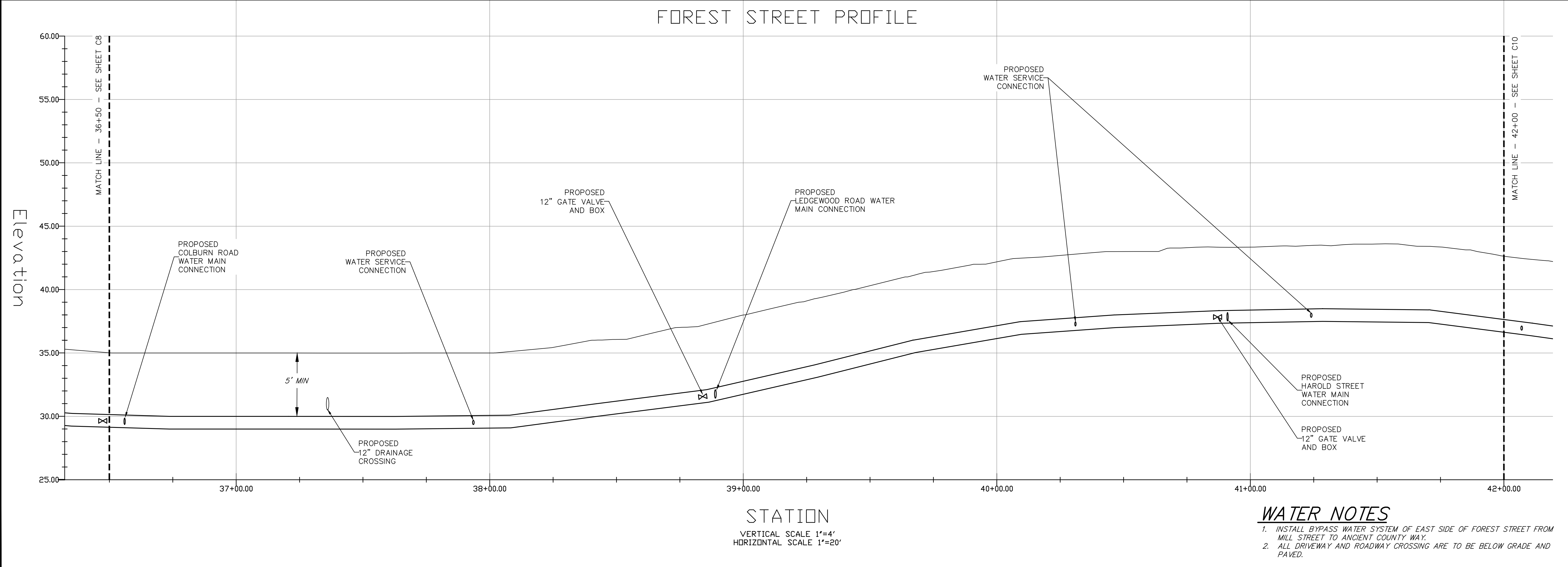
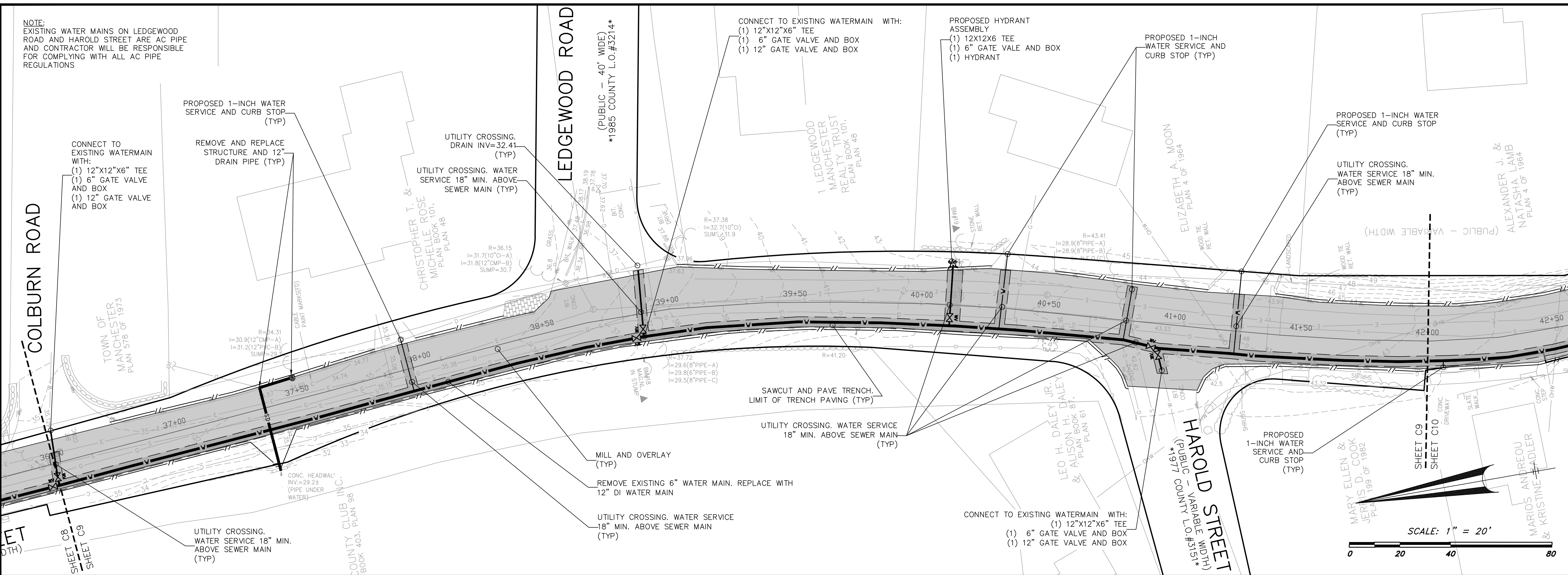
LAYOUT: UTIL(C9,

SHEET: 10 OF 2

PROJECT NO.

C9

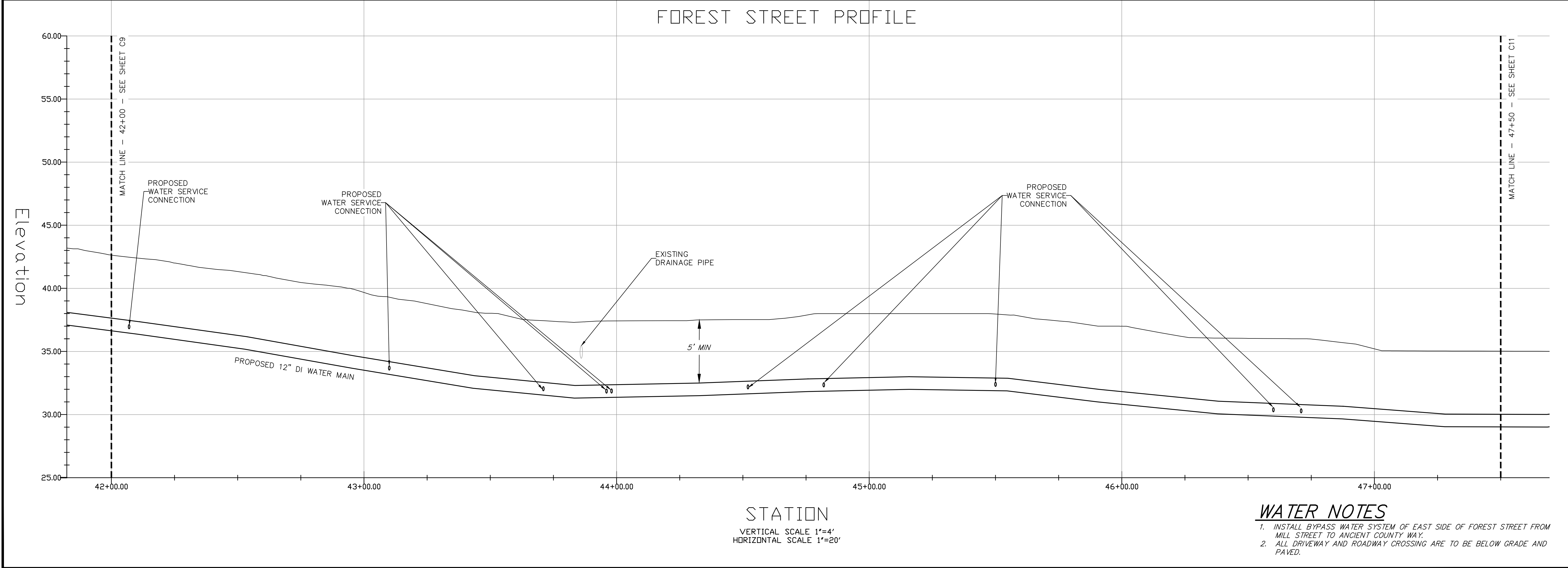
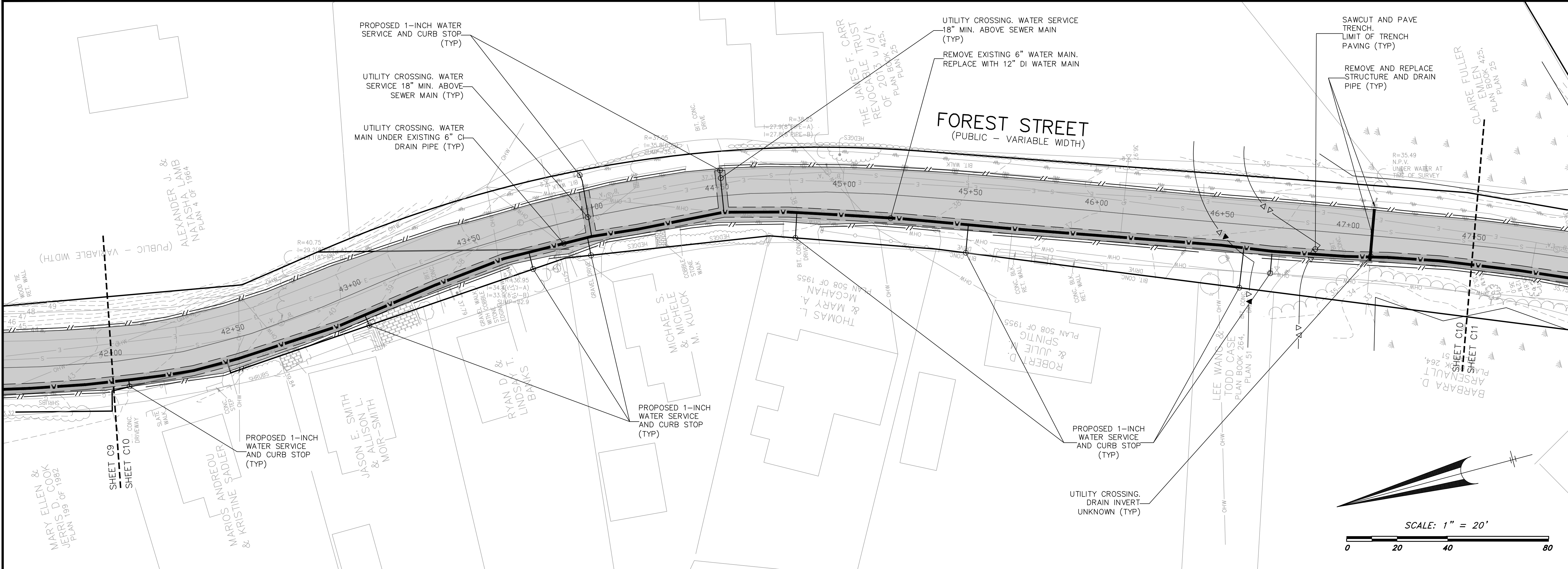
25770



WATER NOTES

1. INSTALL BYPASS WATER SYSTEM OF EAST SIDE OF FOREST STREET FROM MILL STREET TO ANCIENT COUNTY WAY.
2. ALL DRIVEWAY AND ROADWAY CROSSING ARE TO BE BELOW GRADE AND PAVED.





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FOREST STREET  
&  
SCHOOL STREET

Manchester-By-The-Sea, MA 01944

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DATE:		1/22/2024		DESIGN BY: RT
SCALE:		AS SHOWN		DRAWN BY: TJS
APPRVD. BY:		MTC		CHECK BY: MTC

PLAN  
AND  
PROFILE  
(STA. 42+00 TO STA. 47+50)

1. INSTALL BYPASS WATER SYSTEM OF EAST SIDE OF FOREST STREET FROM MILL STREET TO ANCIENT COUNTY WAY.  
2. ALL DRIVEWAY AND ROADWAY CROSSING ARE TO BE BELOW GRADE AND PAVED.

PROJECT NO.: 25770

DWG: 25770Utility  
LAYOUT: UTIL(C10)  
SHEET: 11 OF 22

C10



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1	TJS	MTC	4/10/24	DPW COMMENTS	
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION	
DATE:	1/22/2024			DESIGN BY:	RT
SCALE:	AS SHOWN			DRAWN BY:	TJS
APPRVD. BY:	MTC			CHECK BY:	MTC

# PLAN AND PROFILE (STA. 47+50 TO STA. 48+66)

PLOT DATE: May 15, 2024 9:26 am  
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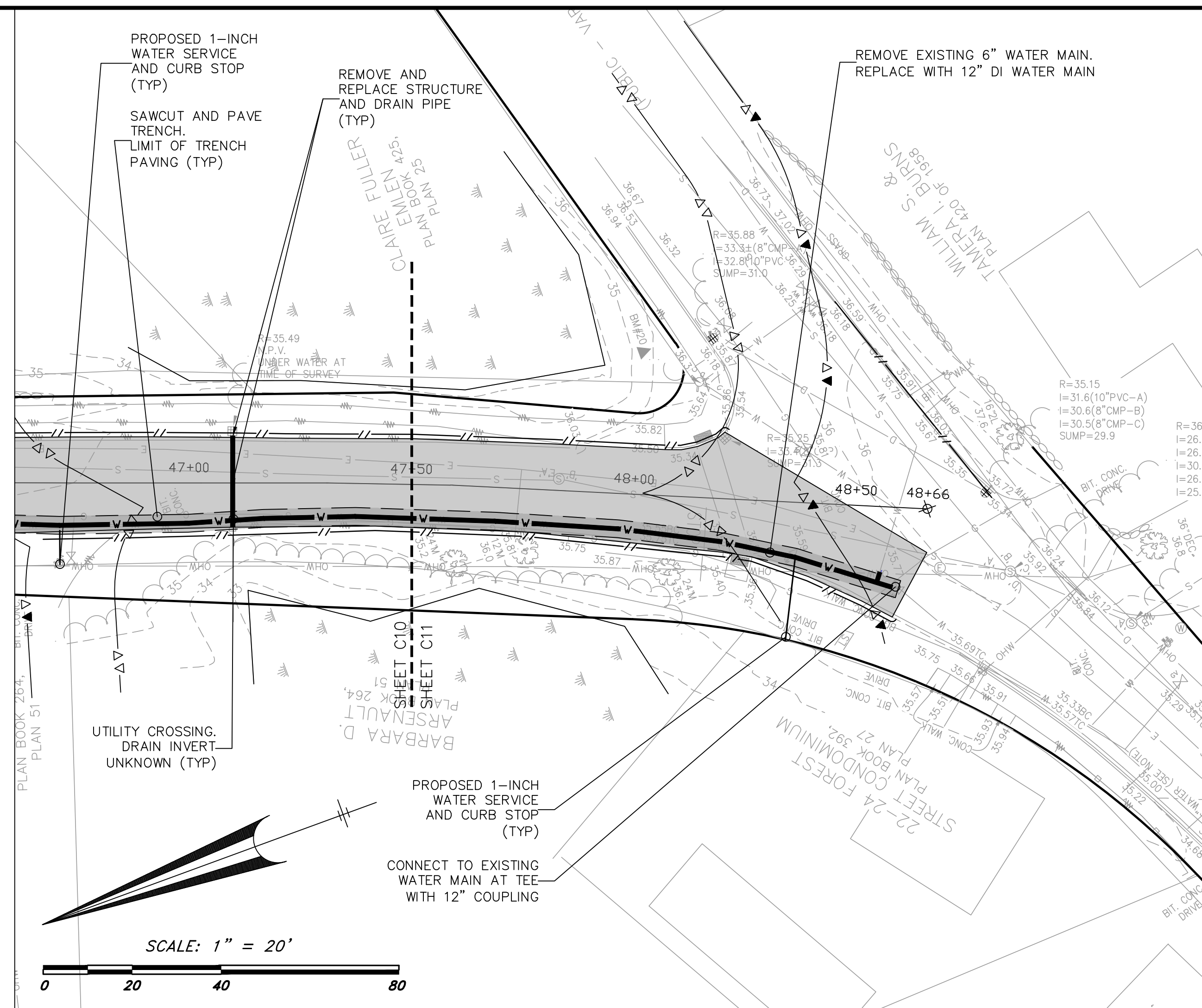
DWG: 25770utility

LAYOUT: UTIL(C1

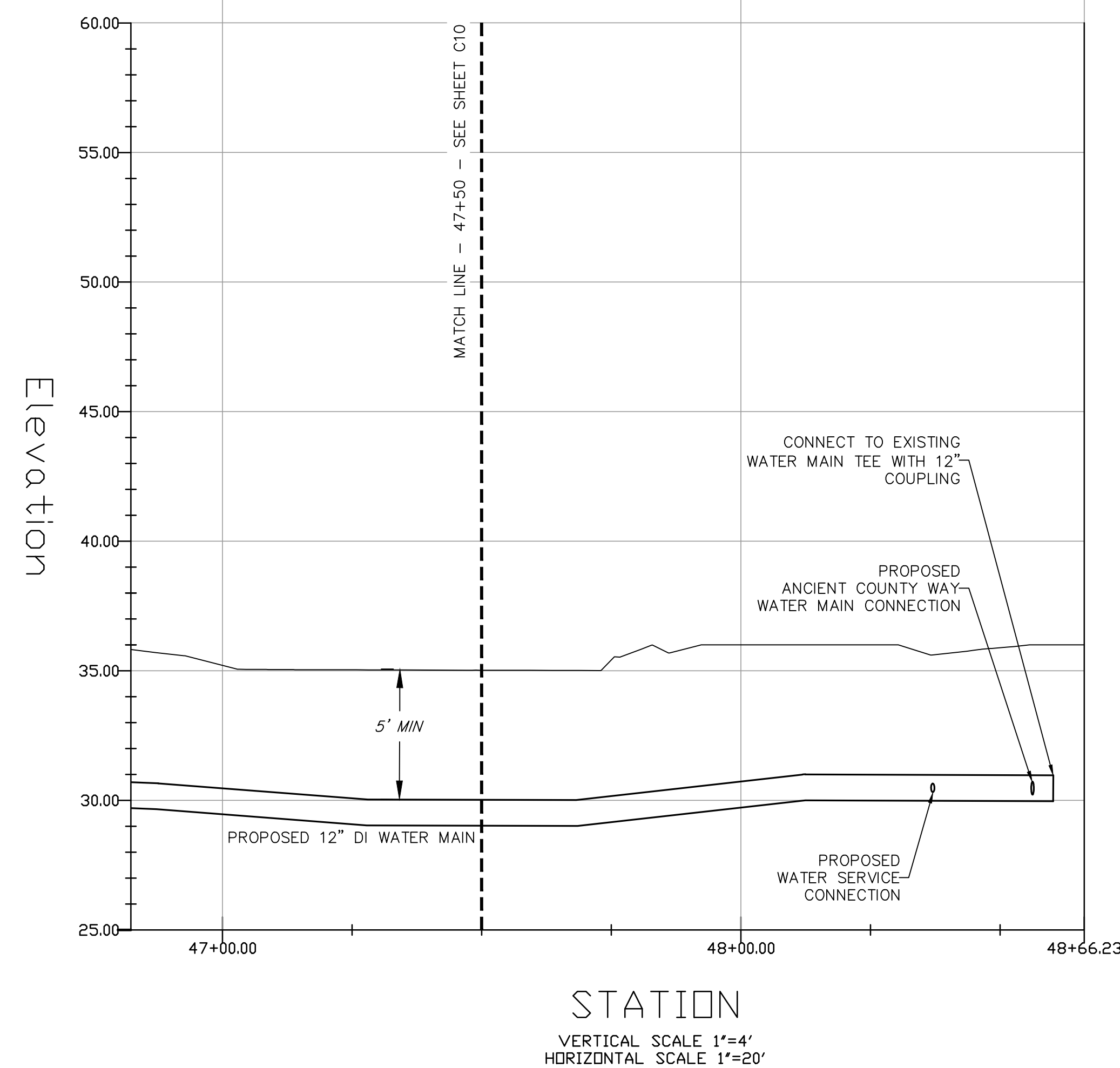
SHEET: 12 OF

PROJECT NO.

25770



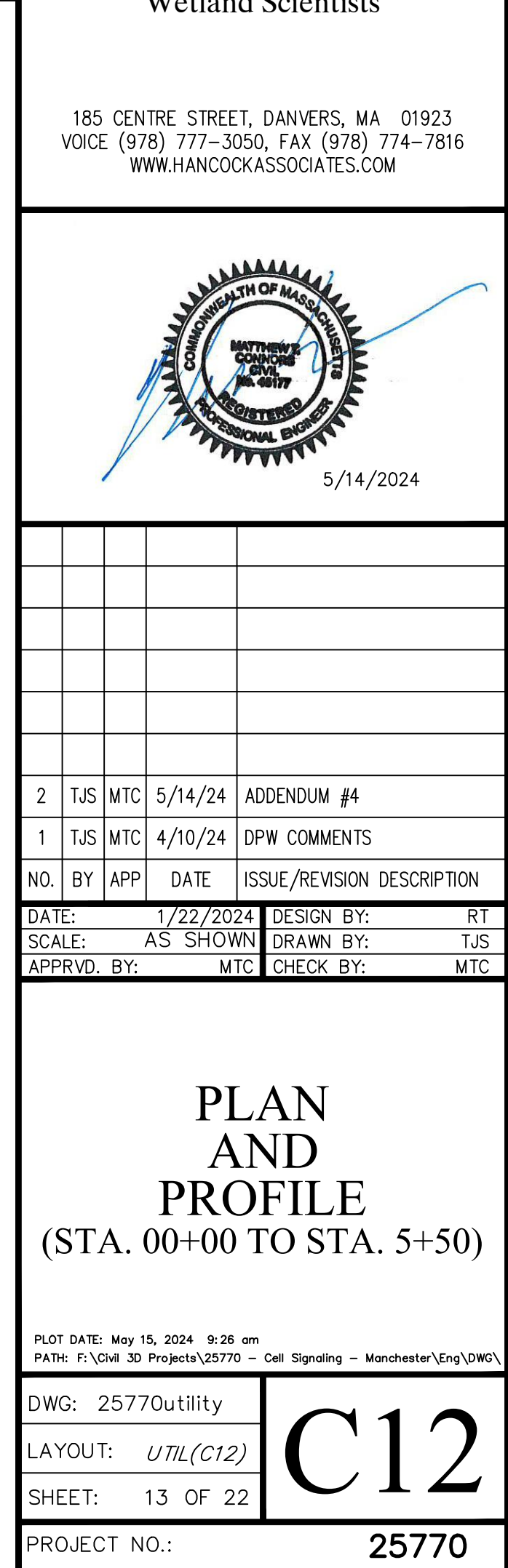
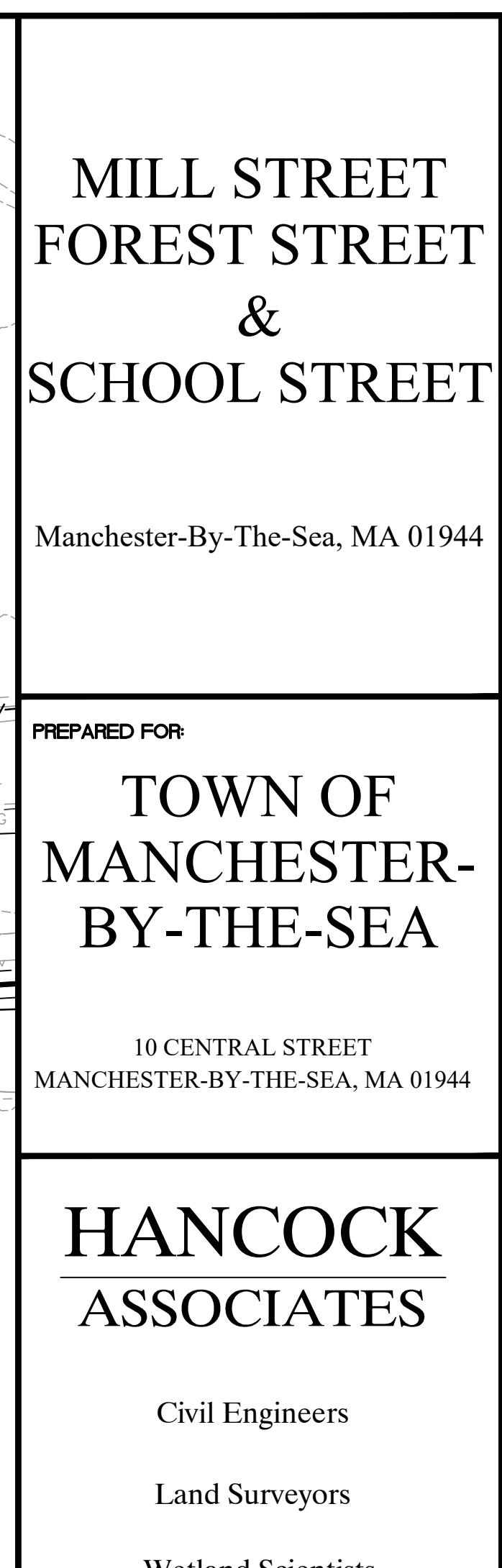
## FOREST STREET PROFILE



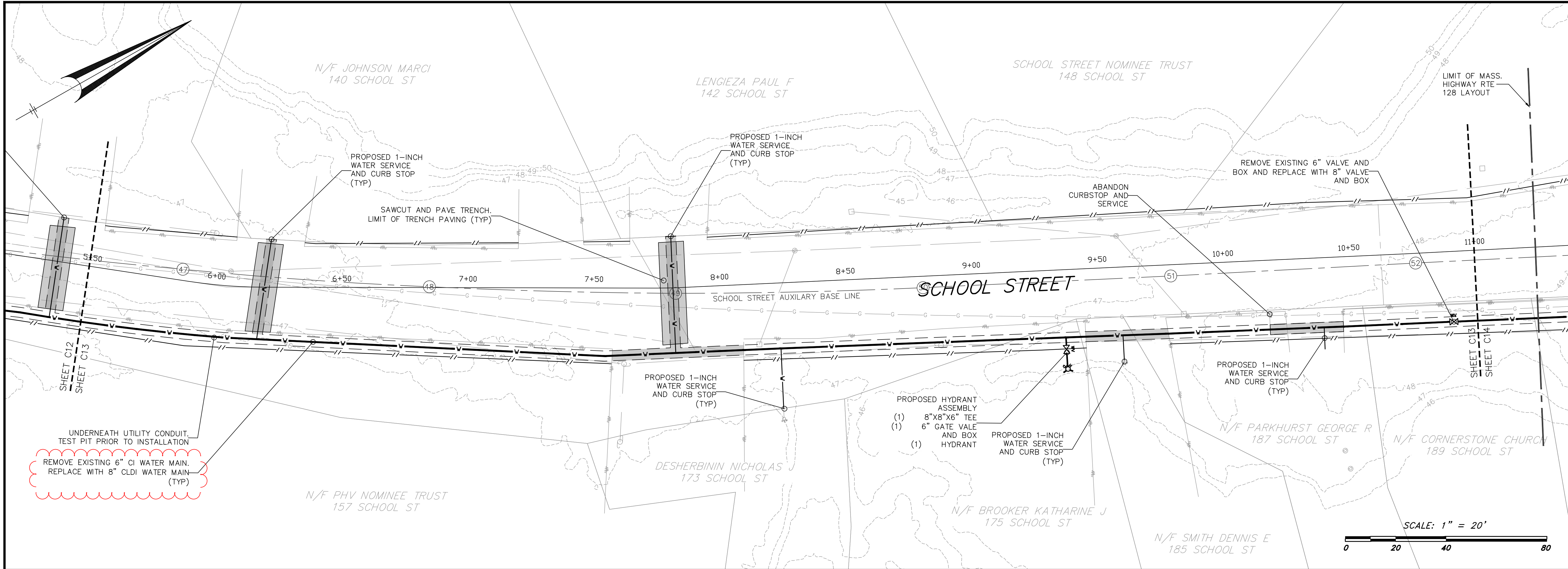
## WATER NOTES

1. INSTALL BYPASS WATER SYSTEM OF EAST SIDE OF FOREST STREET FROM MILL STREET TO ANCIENT COUNTY WAY.
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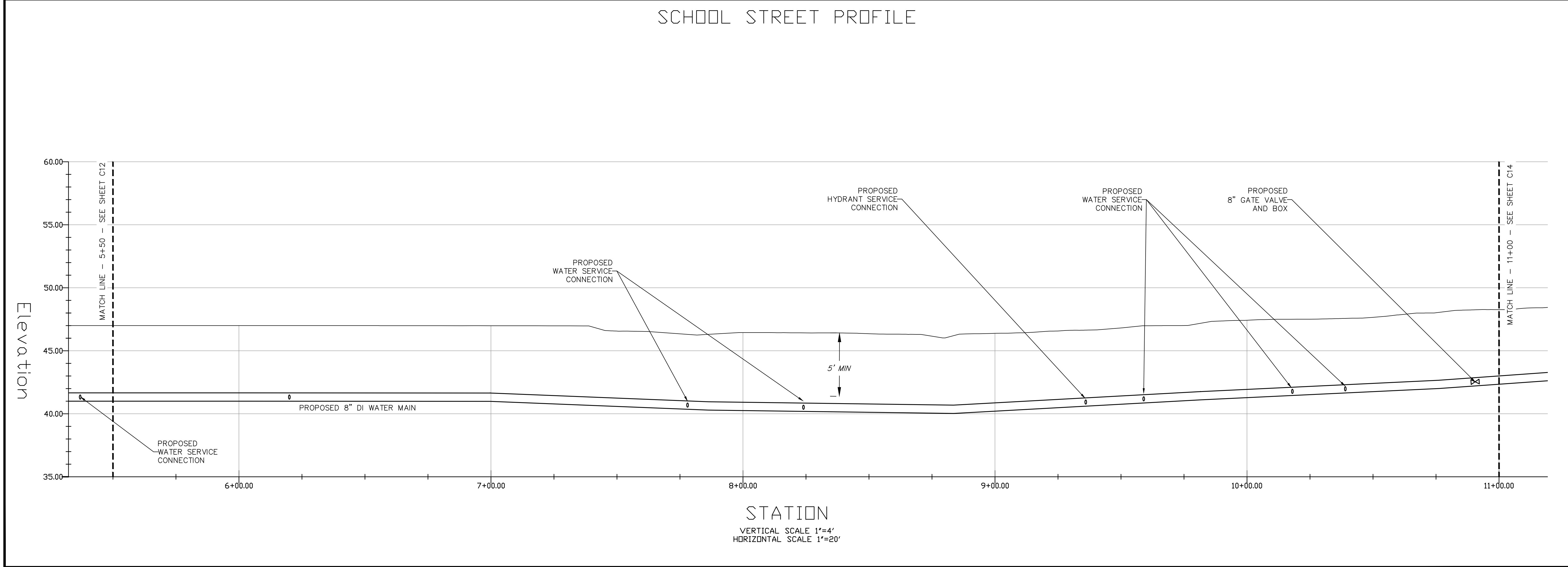








SCHOOL STREET PROFILE



MILL STREET  
FOREST STREET  
&  
SCHOOL STREET

Manchester-By-The-Sea, MA 01944

PREPARED FOR:

TOWN OF  
MANCHESTER-  
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10 CENTRAL STREET  
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1	TJS	MTC	4/10/24	DPW COMMENTS	

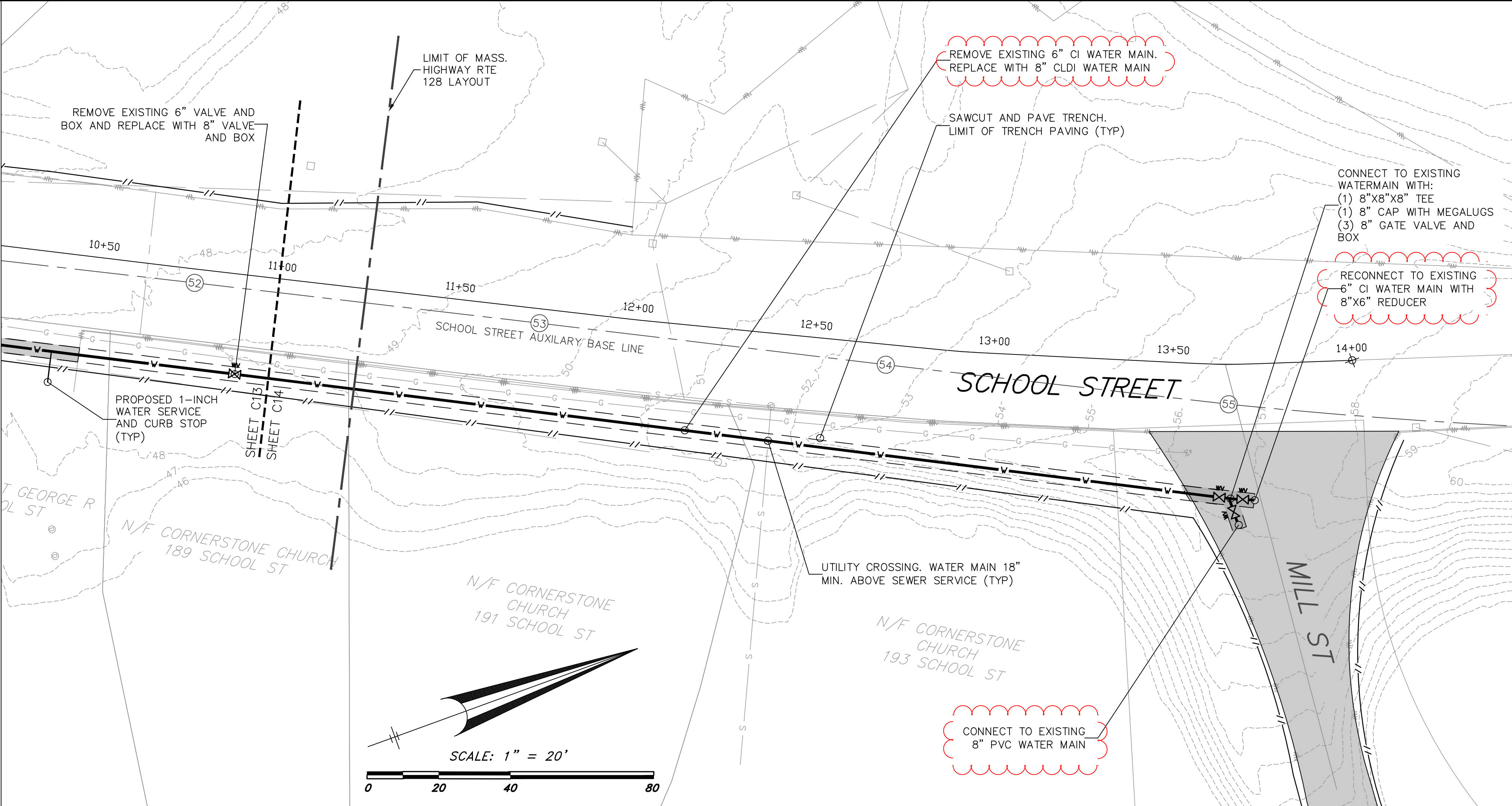
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APPRVD. BY: MTC CHECK BY: MTC

PLAN  
AND  
PROFILE  
(STA. 5+50 TO STA. 11+00)

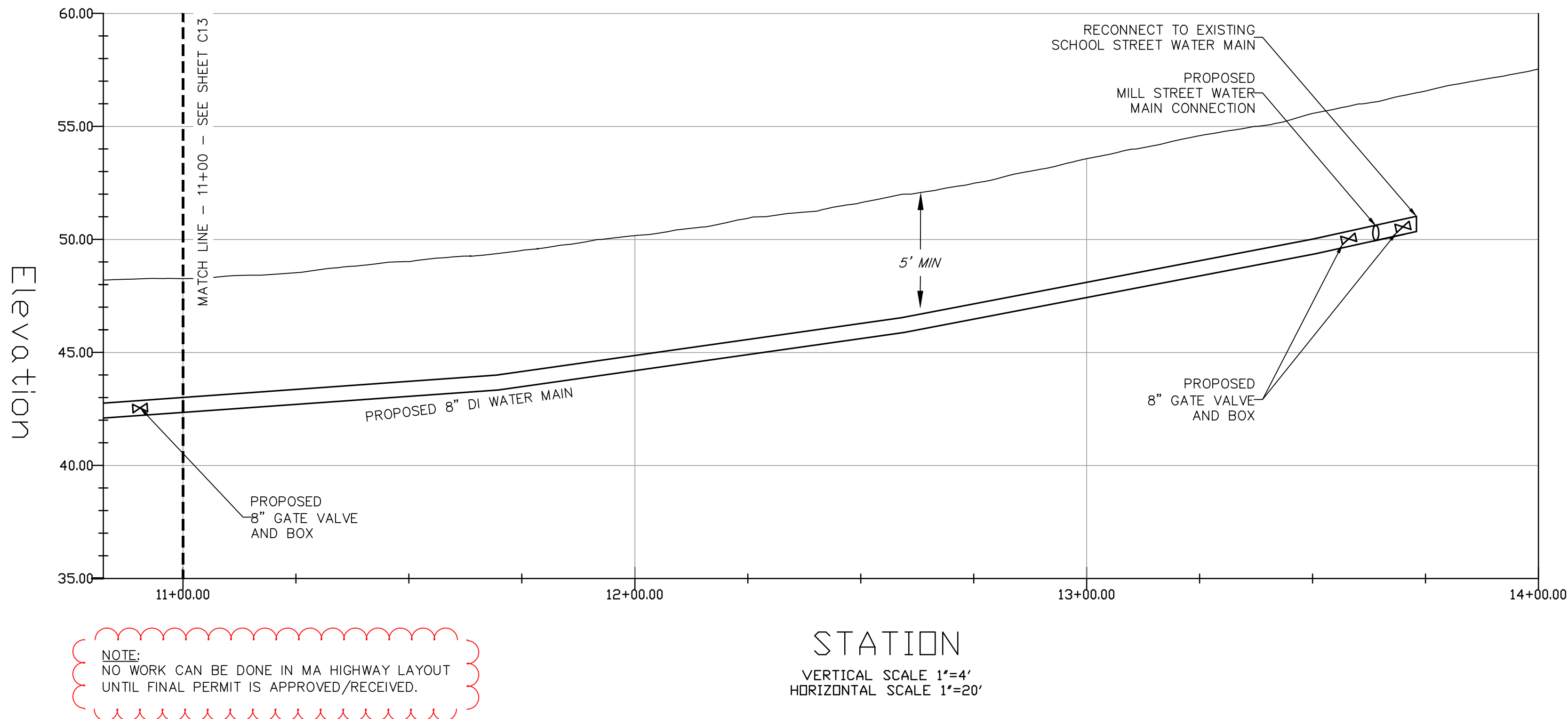
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DWG: 25770Utility	C13
LAYOUT: UTIL(C13)	
SHEET: 14 OF 22	
PROJECT NO.: 25770	





SCHOOL STREET PROFILE



NOTE:  
NO WORK CAN BE DONE IN MA HIGHWAY LAYOUT  
UNTIL FINAL PERMIT IS APPROVED/RECEIVED.

MILL STREET  
FOREST STREET  
&  
SCHOOL STREET

Manchester-By-The-Sea, MA 01944

PREPARED FOR:  
TOWN OF  
MANCHESTER-  
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10 CENTRAL STREET  
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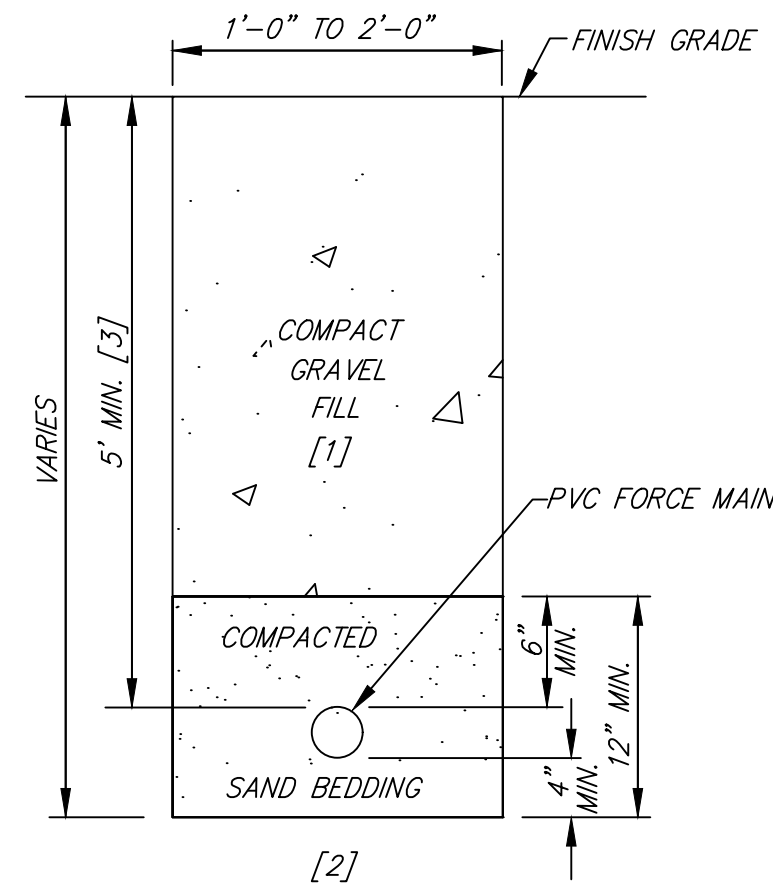
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APPRVD. BY:	MTC	CHECK BY:	MTC	

PLAN  
AND  
PROFILE  
(STA. 11+00 TO STA. 14+00)

PLOT DATE: May 15, 2024 8:28 am  
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

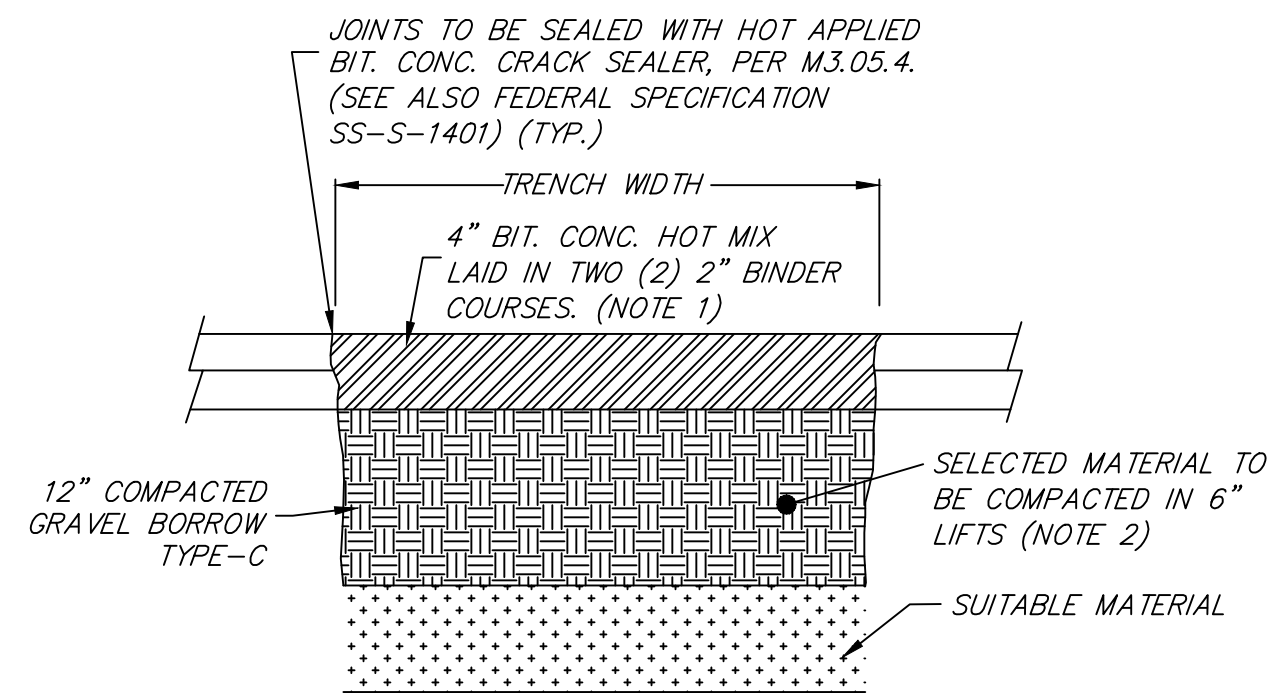
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LAYOUT:	UTIL(C14)	
SHEET:	15 OF 22	
PROJECT NO.:	25770	





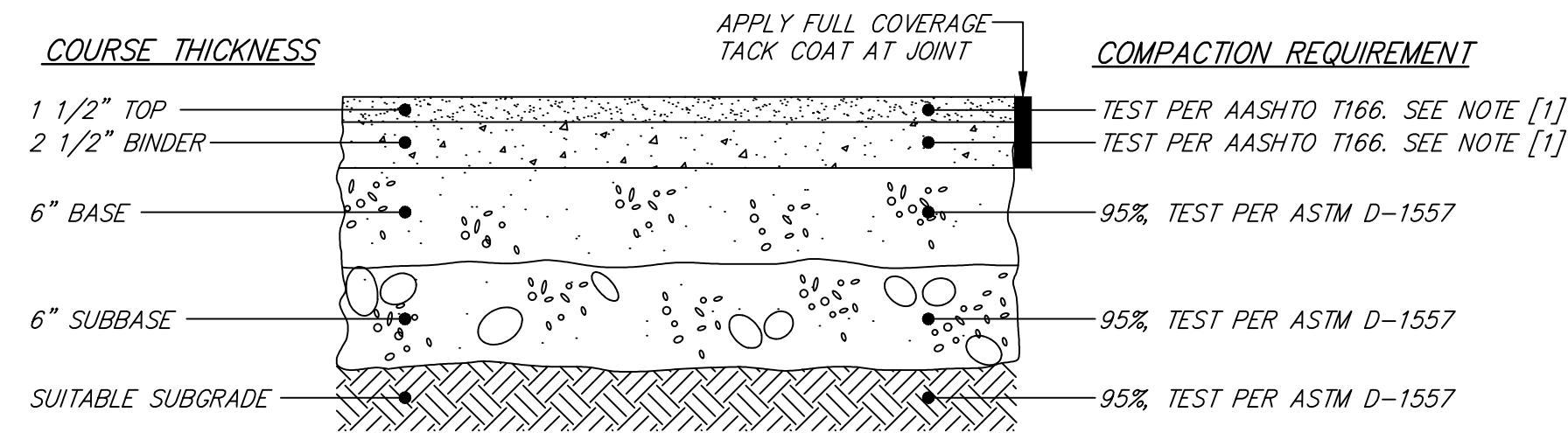
- [1] WHERE UNDER OR ADJACENT AREA TO BE PAVED, COMPACT BACKFILL TO 95% PER ASTM D-1557.
- [2] UNDISTURBED SOIL OR SUBGRADE COMPACTED TO 95% PER ASTM D-1557.
- [3] UNLESS OTHERWISE AUTHORIZED BY TOWN ENGINEER

**1** **FORCE MAIN TRENCH**  
TYPICAL CROSS SECTION  
NOT TO SCALE



- NOTES:
- PAVING COURSES SHALL MEET THE SPECIFICATIONS OF MASSDOT CLASS 1 BITUMINOUS CONCRETE PAVEMENT (M3.11.00) FOR 3/4" BINDER COURSE.
  - COMPACTION EQUIPMENT SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS TO OBTAIN THE COMPACTION STANDARDS DESCRIBED IN THE CONSTRUCTION NOTES, UNLESS OTHERWISE APPROVED BY THE TOWN ENGINEER. IN PROXIMITY TO STRUCTURES, A JUMPING JACK COMPACTOR SHALL BE REQUIRED.
  - TRENCHES SHALL BE PAVED USING THIS TEMPORARY PATCH DETAIL AT THE END OF THE EACH WORK WEEK (FRIDAY).

**2** **TEMPORARY TRENCH PAVING**  
TYPICAL SECTION  
NOT TO SCALE



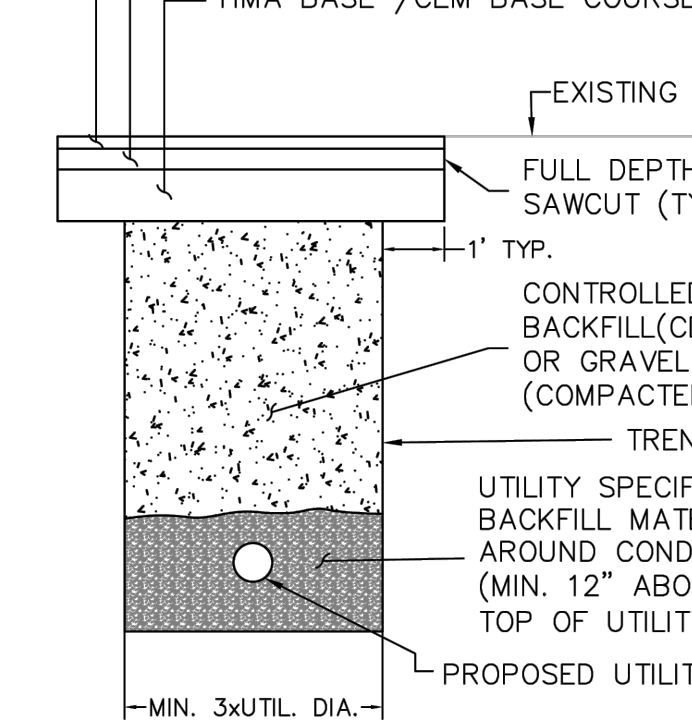
- NOTES:
- [1] COMPACT TO TEST AVERAGE OF 95%  $\pm$  2.5%

MATERIAL	SPECIFICATION	MAXIMUM AGGREGATE OR PARTICLE SIZE (IN.)
TOP - BITUMINOUS CONCRETE	MHD M3.11.03 CLASS 1, TYPE I-1	1/2
BINDER- BITUMINOUS CONCRETE	MHD M3.11.03 CLASS 1, TYPE I-1	1
BASE - DENSE GRADED CRUSHED STONE	MHD M2.01.7	1 1/2
SUBBASE - GRAVEL BORROW	MHD M1.03.0 TYPE C	2

**3** **BITUMINOUS CONCRETE PAVEMENT**  
TYPICAL CROSS SECTION  
NOT TO SCALE

#### TRENCH SECTION N.T.S.

FOR SPECIFICATION REFERENCE SEE NOTE 1



- ALL TRENCH PATCHES IN THE ROADWAY SHALL MATCH EXISTING PAVEMENT MATERIALS AND LAYER THICKNESSES. ALL HOT MIX ASPHALT SHALL BE IN ACCORDANCE WITH SUBSECTION 450 HOT MIX ASPHALT PAVEMENT. HMA SURFACE COURSE SHALL RESURFACE (MILL AND OVERLAY) TRAVEL LANE FULL WIDTH WITH JOINTS OUTSIDE OF TRAVEL LANE AND WHEEL PATHS AND AS DIRECTED BY THE ENGINEER.
- MATERIAL WHICH MEETS THE SPECIFICATION FOR GRAVEL BORROW, PLACED AND COMPACTED IN LAYERS PER STANDARD SPECIFICATIONS, MAY BE USED IN PLACE OF THE CDF WITH APPROVAL FROM THE DISTRICT HIGHWAY DIRECTOR.
- THE VERTICAL SAWCUT FACE AND HORIZONTAL SURFACES SHALL BE TREATED WITH ASPHALT EMULSION FOR TACK COAT. THE LANE WIDTH RESURFACING SHALL BE TREATED WITH ASPHALT EMULSION FOR TACK COAT AND COLD JOINTS IN THE SURFACE COURSE SHALL BE SEALED WITH HMA JOINT SEALANT. TACK SHALL BE APPLIED BETWEEN .07 AND .09 GAL PER SY.
- YELLOW METAL FOIL MARKING TAPE SHALL BE PLACED 18" OVER THE CONDUIT (METAL MARKING TAPE/WIRE SHOULD BE USED FOR NON-METALLIC CONDUIT.)
- FOR ROADS WITH AN EXISTING CEMENT CONCRETE BASE, A REINFORCED, HIGH EARLY STRENGTH CEMENT CONCRETE BASE SHALL BE CAST IN PLACE TO MEET THE EXISTING PAVEMENT. SPECIFIC JOINT DETAILS WITH THE EXISTING PAVEMENT SHALL BE APPROVED DEPENDENT ON THE EXISTING SITE CONDITIONS. STEEL PLATES SHALL BE USED FOR TRENCHES IN THE TRAVELED LANE AND AS NEEDED.
- ALL TRENCH DIMENSIONS SHALL BE IN ACCORDANCE WITH SUB-SECTION 140.80 OF THE MASSDOT STANDARDS AND SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
- NO WORK CAN BE DONE IN MA HIGHWAY LAYOUT UNTIL FINAL PERMIT IS APPROVED/RECEIVED.

**4** **MASSDOT PIPE TRENCH**  
TYPICAL CROSS SECTION  
NOT TO SCALE

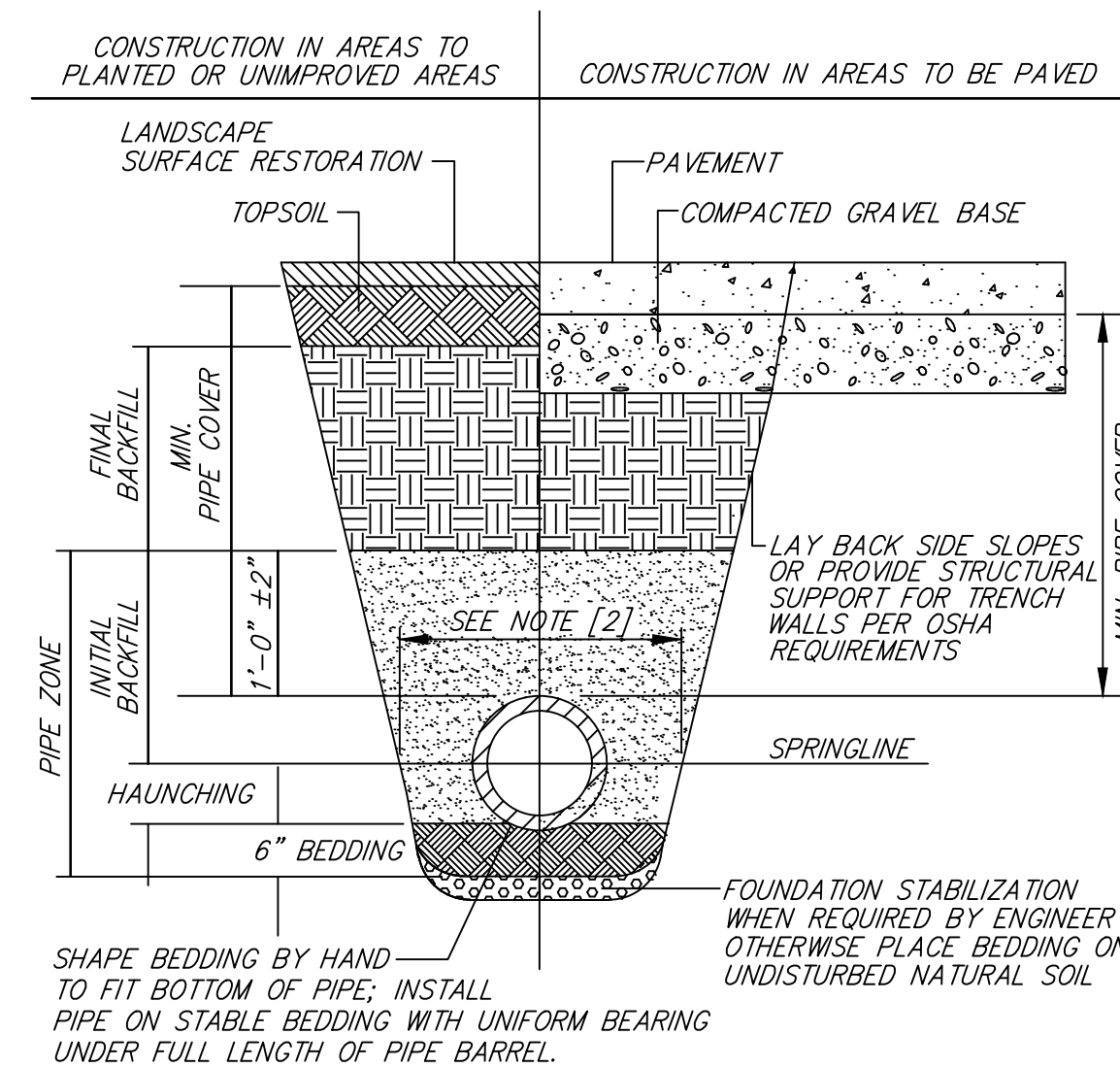
#### PAVEMENT NOTES\*

PAVEMENT MIX DEPTH SHALL BE A MINIMUM OF 7.5 INCHES OR MATCH THE DEPTH OF THE EXISTING HMA, WHICHEVER IS GREATER.

ITEM 451. HMA FOR PATCHING - PERMANENT TRENCH PATCH IN THE ROADWAY SHALL MATCH EXISTING PAVEMENT THICKNESS LAYER THICKNESS AND MATERIALS.

ALL SUPERPAVE HMA FOR TRENCH PATCHES SHALL BE 75 GYRATION MIXTURE.

\*TRENCHES ON FREEWAYS SHALL REQUIRE A PAVEMENT DESIGN BE SUBMITTED FOR APPROVAL



SHAPE BEDDING BY HAND TO FIT BOTTOM OF PIPE; INSTALL PIPE ON STABLE BEDDING WITH UNIFORM BEARING UNDER FULL LENGTH OF PIPE BARREL.

#### FOUNDATION, BEDDING, & BACKFILL MATERIALS

PIPE MATERIAL	HDP, PVC	RC, DI
FOUNDATION STABILIZATION	[6]	[6]
BEDDING	[1]	[1]
HAUNCHING	[1]	[1]
INITIAL BACKFILL	[1]	[1]
FINAL BACKFILL	[4]	[4]
MIN. PIPE COVER	[5]	[5]

- NOTES:
- [1] PLACE 3/4"  $\pm$  GRADED GRANULAR BACKFILL AT OPTIMUM MOISTURE IN HORIZONTAL, 8"-DEEP, LOOSE LAYERS; COMPACT TO 95% PER ASTM D-1557.
- [2] MINIMUM WIDTH OF TRENCH MEASURED AT THE SPRINGLINE OF THE PIPE, INCLUDING ANY NECESSARY SHEATHING:

PIPE I.D.	WIDTH
LESS THAN 21"	O.D. + 12"
21" TO 42"	O.D. + 24"
GREATER THAN 42"	O.D. + 30"

- [3] INSTALL PIPE IN CENTER OF TRENCH.

- [4] IN PLANTED OR UNIMPROVED AREAS, USE ON-SITE EXCAVATED MATERIAL FOR FINAL BACKFILL. COMPACT TO 95% PER ASTM D-1557. IN PAVED AREAS, OBTAIN ENGINEER APPROVAL OF ON-SITE EXCAVATED MATERIALS FOR USE AS FINAL BACKFILL.

- [5] MINIMUM COVER OVER TOP OF PIPE:

PIPE MATERIAL	HDP, PVC	RC, DI
WATER	5'-0"	5'-0"
SEWER	4'-0"	4'-0"
DRAIN	1'-6"	1'-0"

- [6] FOR FOUNDATION STABILIZATION, USE 2"  $\pm$  CRUSHED STONE.

**5** **PIPE TRENCH**  
TYPICAL CROSS SECTION  
NOT TO SCALE

## MILL STREET FOREST STREET & SCHOOL STREET

Manchester-By-The-Sea, MA 01944

PREPARED FOR:

## TOWN OF MANCHESTER- BY-THE-SEA

10 CENTRAL STREET  
MANCHESTER-BY-THE-SEA, MA 01944

## HANCOCK ASSOCIATES

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Land Surveyors

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SCALE:	AS SHOWN	DRAWN BY:	TJS		
APPRVD. BY:	MTC	CHECK BY:	MTC		

## SITE DETAILS

PLOT DATE: May 15, 2024 8:28 am  
PATH: F:\Civil 3D Projects\25770 - Cell Signaling - Manchester\Eng\DWG\

DWG: 25770Utility

LAYOUT: DET(C15)

SHEET: 16 OF 22

PROJECT NO.:

25770

**C15**



MILL STREET  
FOREST STREET  
&  
SCHOOL STREET

Manchester-By-The-Sea, MA 01944

TOWN OF  
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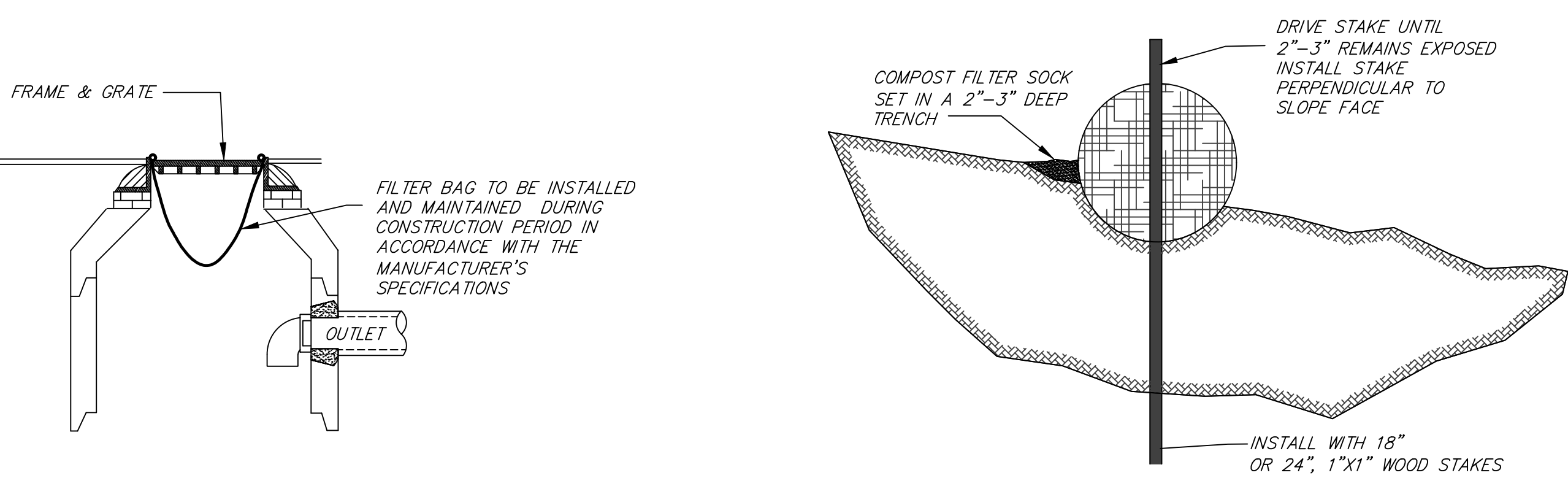


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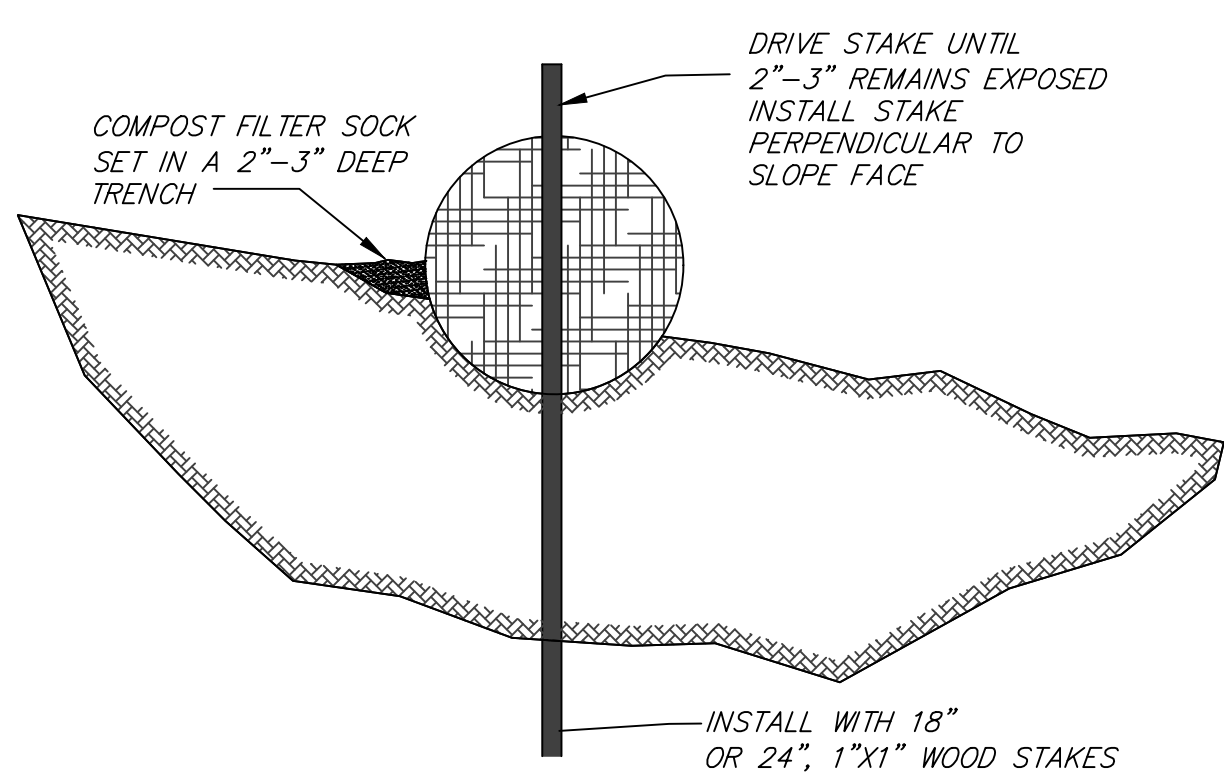
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DETAILS

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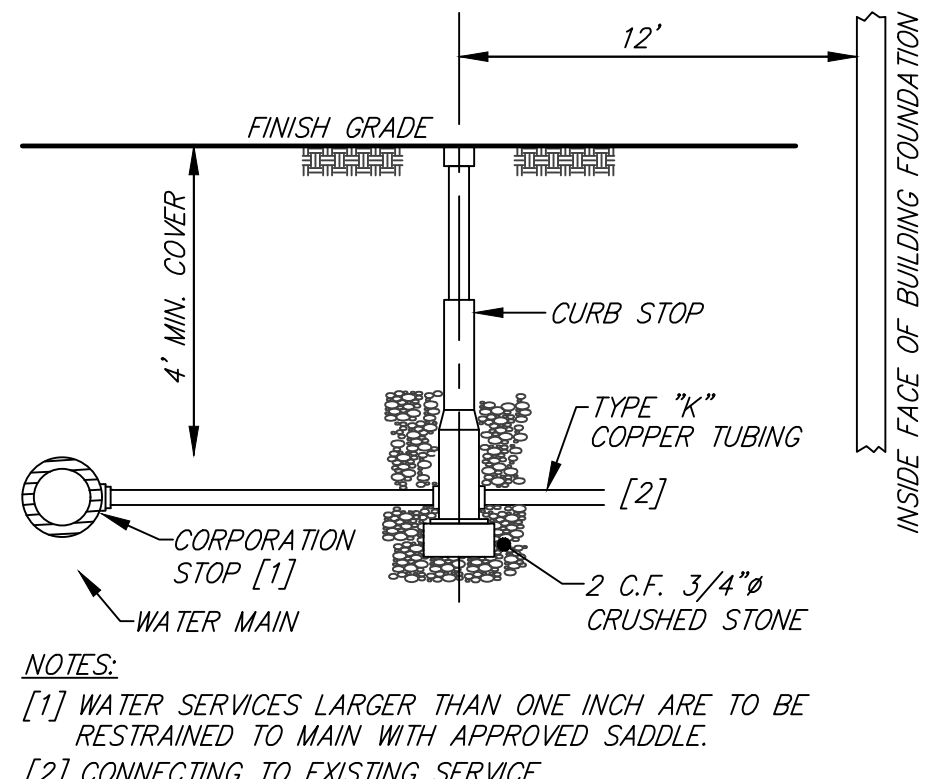
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LAYOUT: DET(C16)	
SHEET: 17 OF 22	
PROJECT NO.: 25770	



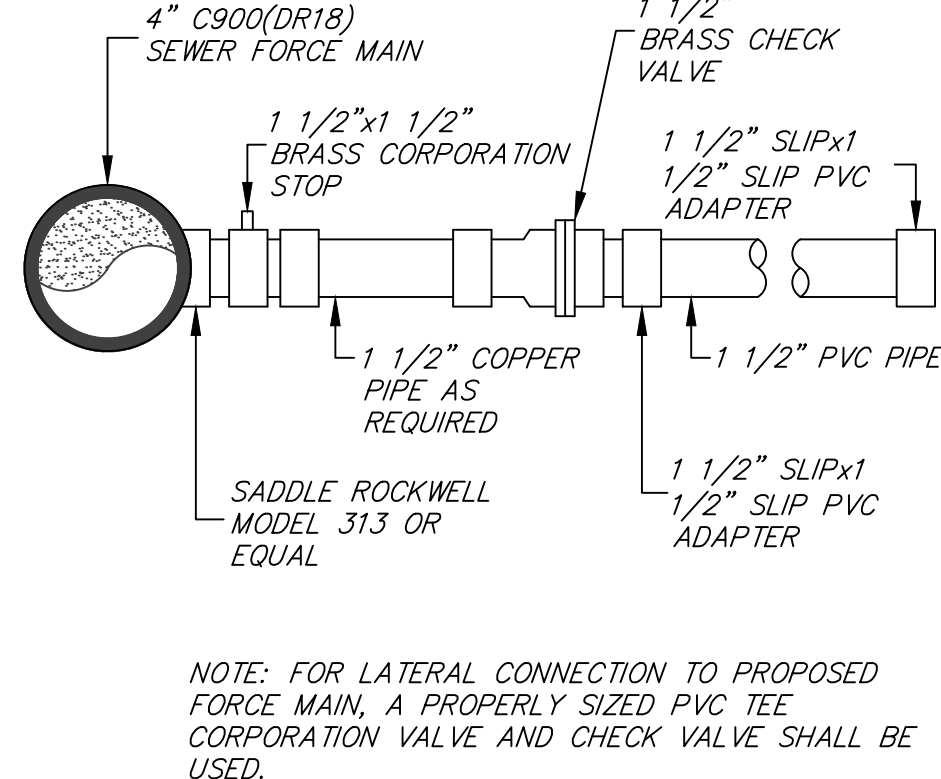
1 CATCH BASIN FILTER BAG  
TYPICAL CROSS SECTION - NOT TO SCALE



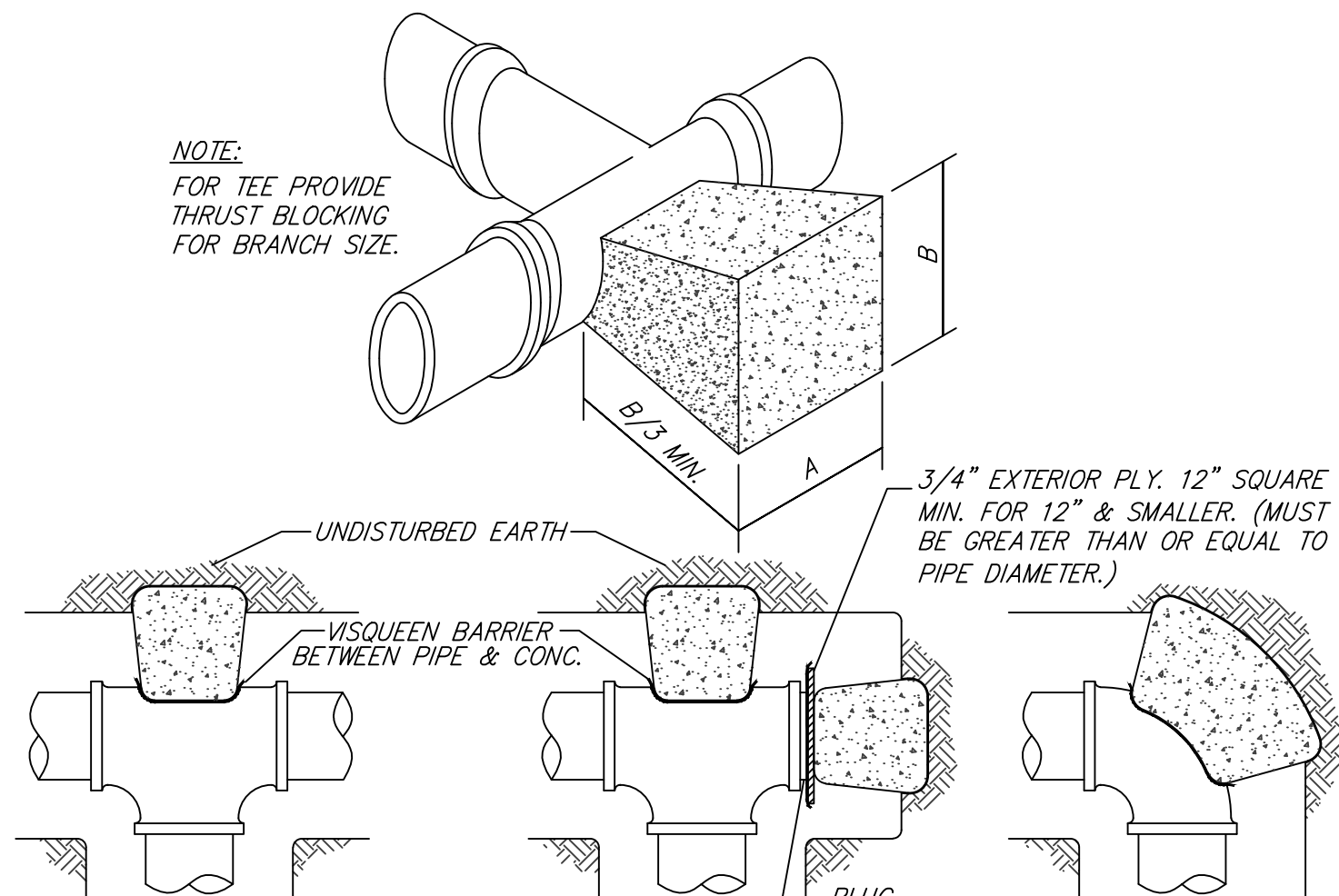
2 EROSION CONTROL INSTALLATION  
NOT TO SCALE



3 WATER SERVICE  
TYPICAL PROFILE  
NOT TO SCALE



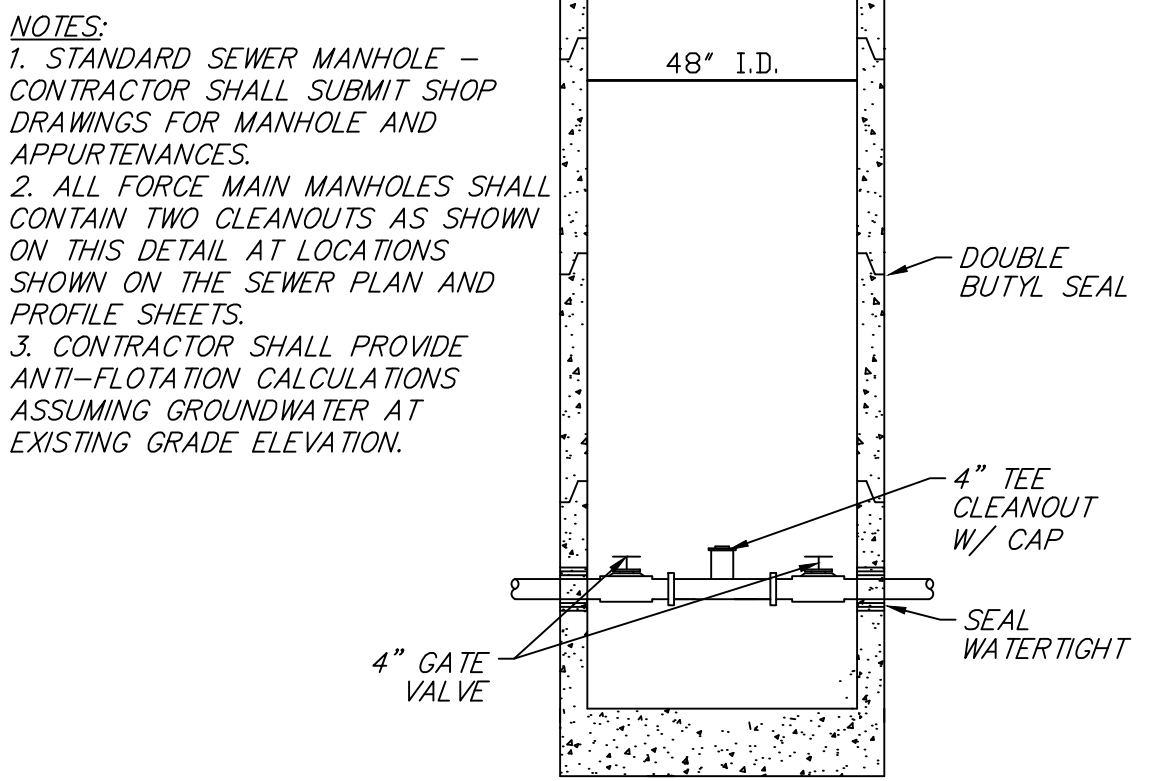
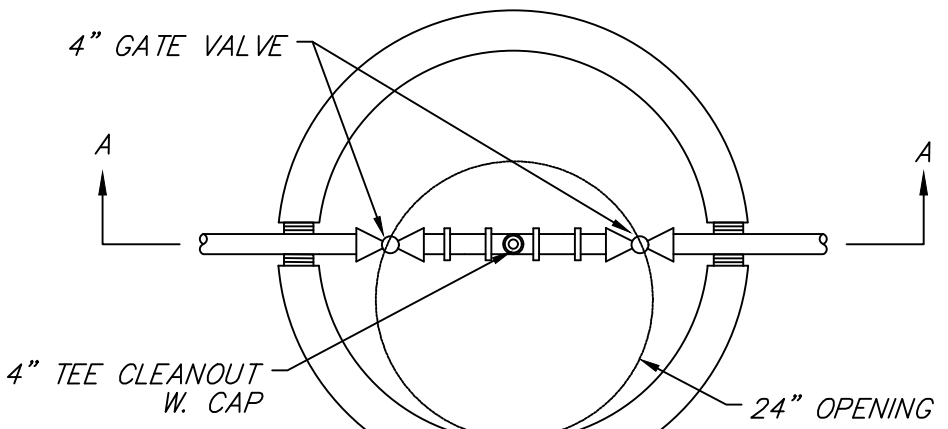
4 CONNECTION TO FORCE MAIN  
TYPICAL CROSS SECTION  
NOT TO SCALE



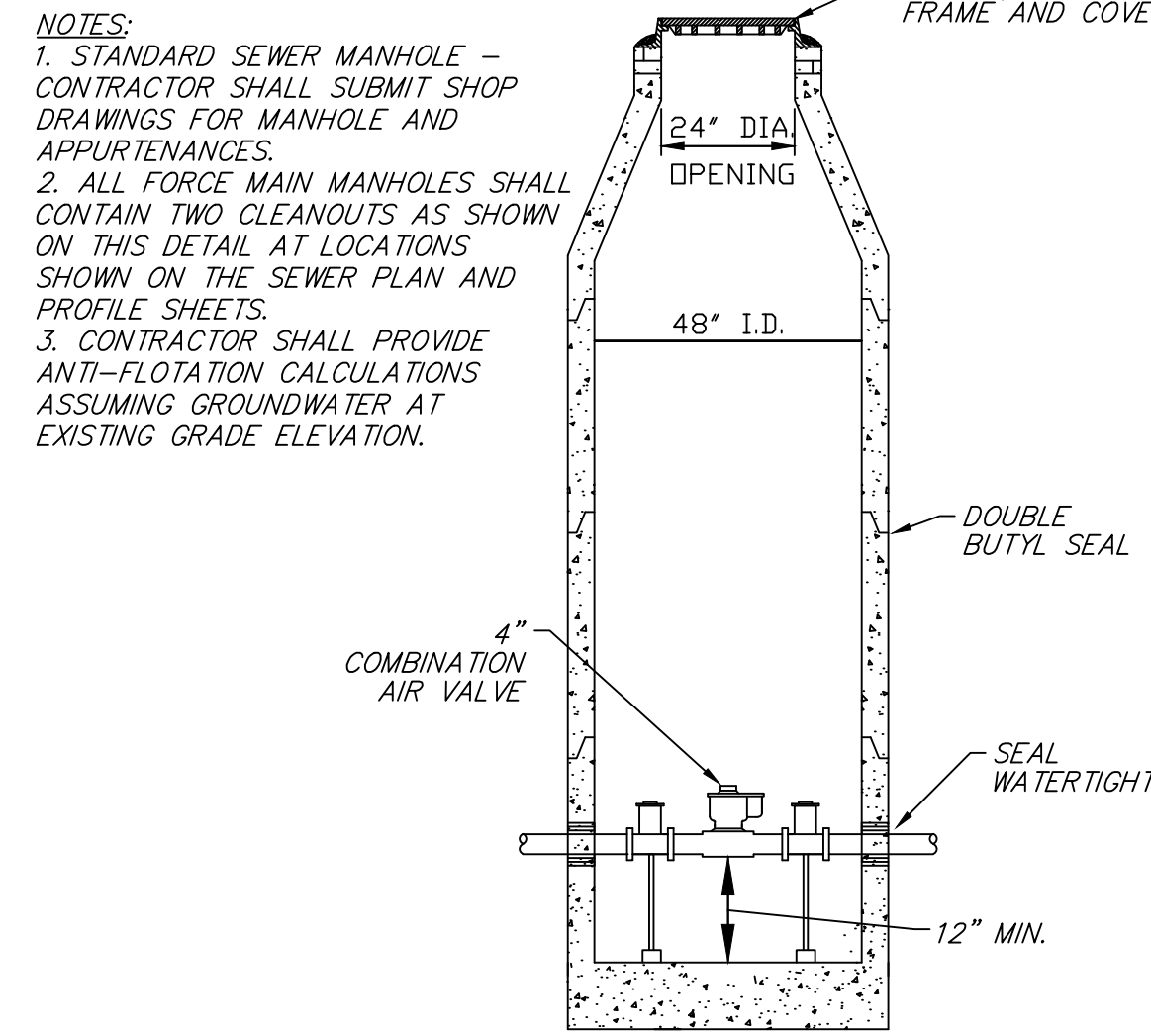
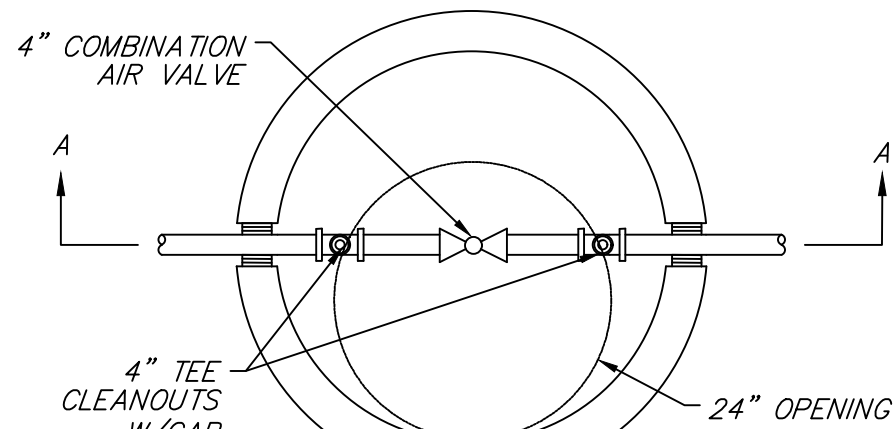
DIMENSION FOR THRUST BLOCKING									
FITTING SIZES	TEES & PLUGS		90° BENDS		45° BENDS & WYES		22½° & 11¼° BENDS		
	A	B	A	B	A	B	A	B	
4"	1'-6"	1'-6"	1'-6"	1'-9"	1'-3"	0'-6"	1'-0"	0'-6"	
6"	2'-0"	1'-0"	2'-0"	2'-0"	1'-3"	1'-6"	1'-0"	1'-5"	
8"	2'-0"	1'-6"	2'-3"	2'-3"	1'-8"	1'-8"	1'-0"	1'-3"	
10"	2'-6"	2'-3"	2'-9"	2'-10"	2'-3"	1'-10"	1'-3"	2'-0"	
12"	3'-0"	2'-9"	3'-6"	3'-3"	2'-6"	2'-4"	2'-0"	1'-6"	

- THIS TABLE IS BASED ON 200 P.S.I. MAIN PRESSURE AND 2000 P.S.F. SOIL-BEARING PRESSURE. ADJUST BEARING AREAS IN ACCORDANCE WITH SOIL CONDITIONS AND PRESSURES ENCOUNTERED.
- USE VISQUEEN BARRIER BETWEEN PIPE AND CONCRETE AS SHOWN IN DETAIL ABOVE.
- CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
- BLOCKING SIZE/FREQUENCY SHALL BE INCREASED IF REQUIRED BY ENGINEER.
- THRUST BLOCKS ARE REQUIRED AT ALL SEWER FORCE MAIN AND WATER MAIN BENDS.

5 THRUST BLOCK SCHEDULE  
NOT TO SCALE



6 SEWER FORCE MAIN CLEANOUT MANHOLE  
NOT TO SCALE



7 SEWER FORCE MAIN AIR RELEASE VALVE MANHOLE  
NOT TO SCALE



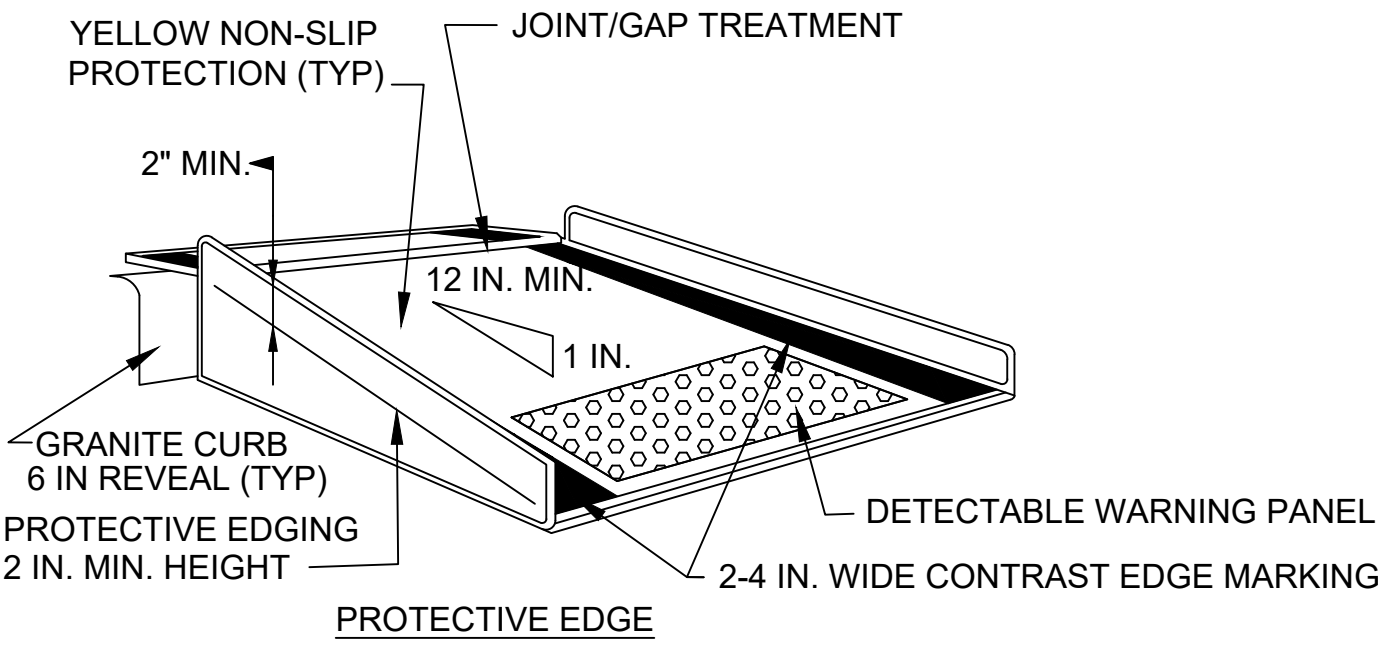
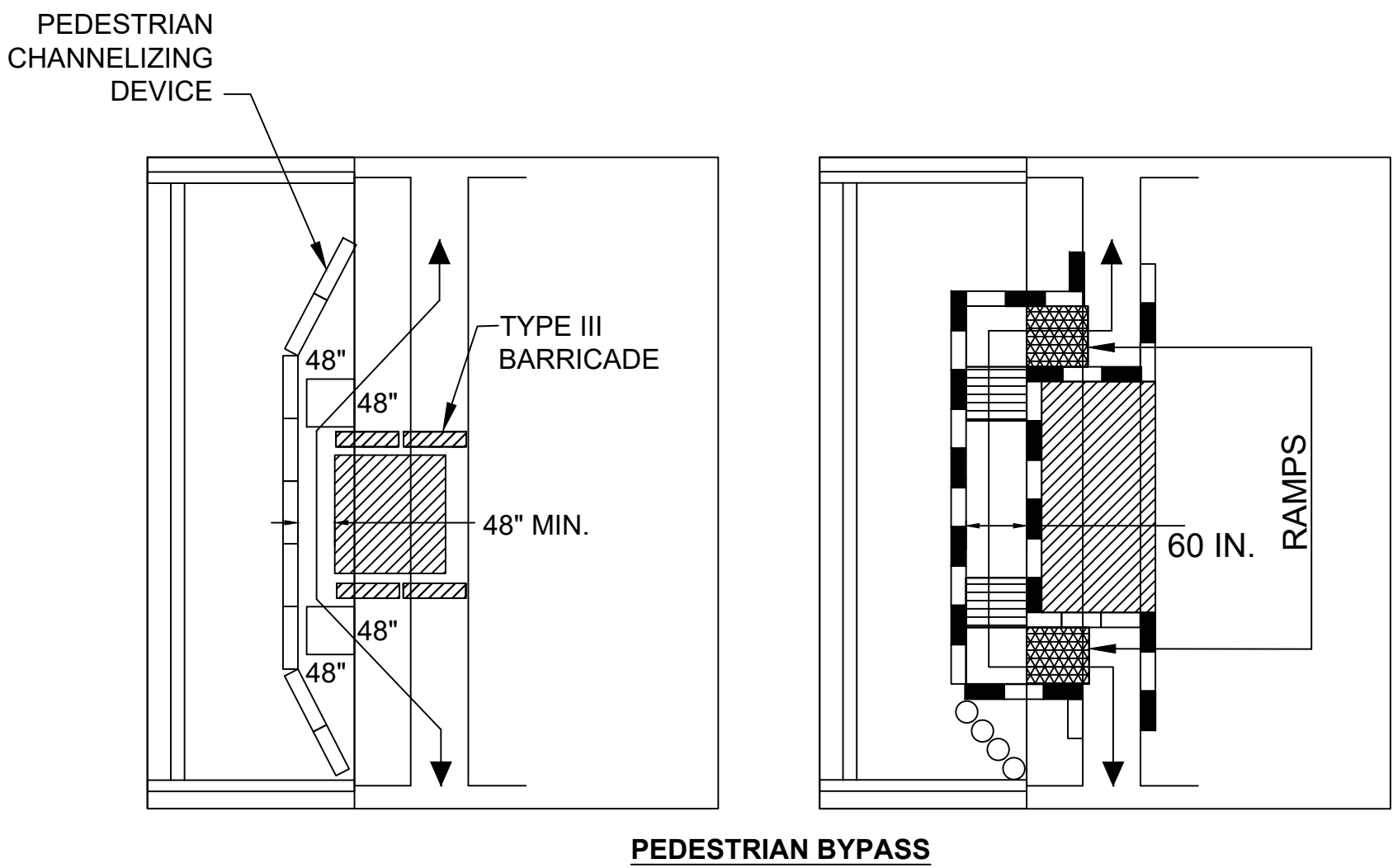


TEMPORARY PEDESTRIAN CONTROL NOTES:

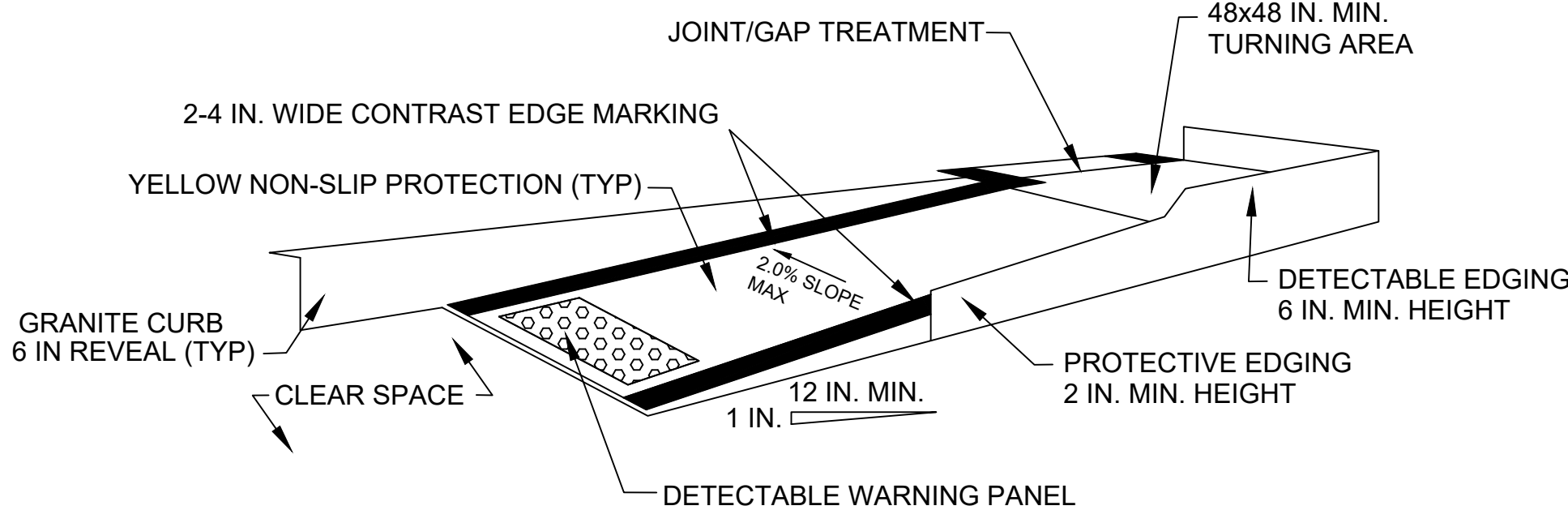
- PEDESTRIAN DETOUR ROUTES MUST BE ADA/AAB COMPLIANT.
- WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
- A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (SEE PEDESTRIAN TYPICAL DETAILS).
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
- THE PROTECTIVE REQUIREMENTS OF A TTC SITUATION HAVE PRIORITY IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN THIS SITUATION SHOULD BE BASED ON ENGINEERING JUDGEMENT.
- FOR LONG TERM SIDEWALK CLOSURES (AT A MINIMUM OVERNIGHT) A FORM OF SPEECH MESSAGING FOR PEDESTRIANS WITH VISUAL DISABILITIES SHALL BE PROVIDED. AUDIBLE INFORMATION DEVICES SUCH AS DETECTABLE BARRIERS OR BARRICADES AND OTHER PASSIVE PEDESTRIAN ACTIVATION (MOTION ACTIVATED) DEVICES SHOULD BE CONSIDERED FOR THESE CASES. THESE AUDIBLE DEVICES CAN BE MOUNTABLE OR STAND ALONE.

TYPICAL PEDESTRIAN DEVICE NOTES:

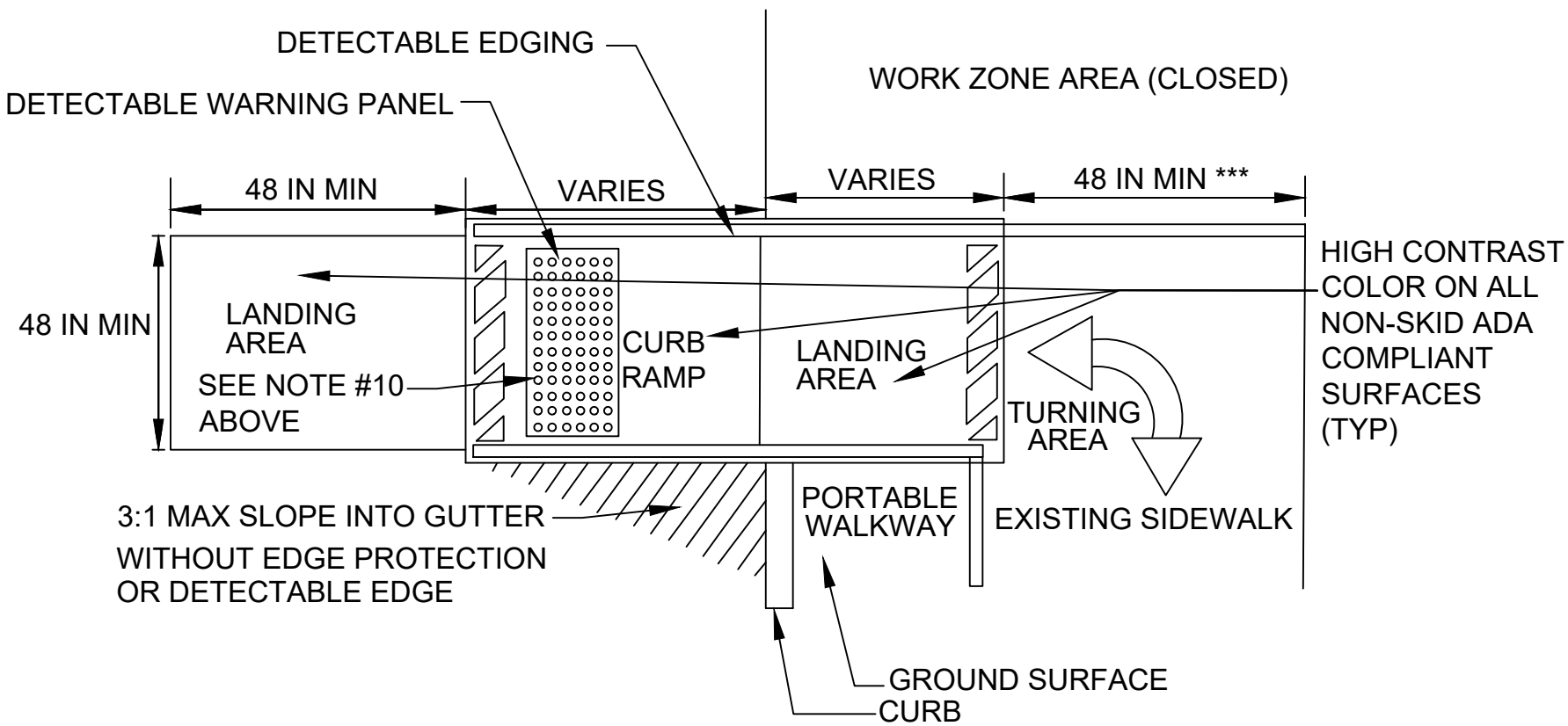
- PEDESTRIAN CURB RAMPS SHALL BE 48 INCH MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
- PROTECTIVE EDGING WITH A 2 INCH MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 INCHES OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 INCHES OR MORE.
- PROTECTABLE EDGING WITH 6 INCH MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
- CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
- CLEAR SPACE OF 48x48 INCH MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
- LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 INCHES WIDTH.
- CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 INCHES LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 INCHES AND 0.5 INCHES HEIGHT.
- IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



TEMPORARY CURB RAMP-PERPENDICULAR TO CURB



TEMPORARY CURB RAMP PARALLEL TO CURB



- \* -LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.
- \*\* -DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.
- \*\*\* -60 INCH IF AN OBSTRUCTION IS AT BACK OF SIDEWALK

TEMPORARY CURB RAMP-TYPE 2

MANCHESTER  
SCHOOL STREET SEWER  
TEMPORARY TRAFFIC CONTROL PLANS  
SHEET - 1 OF 4

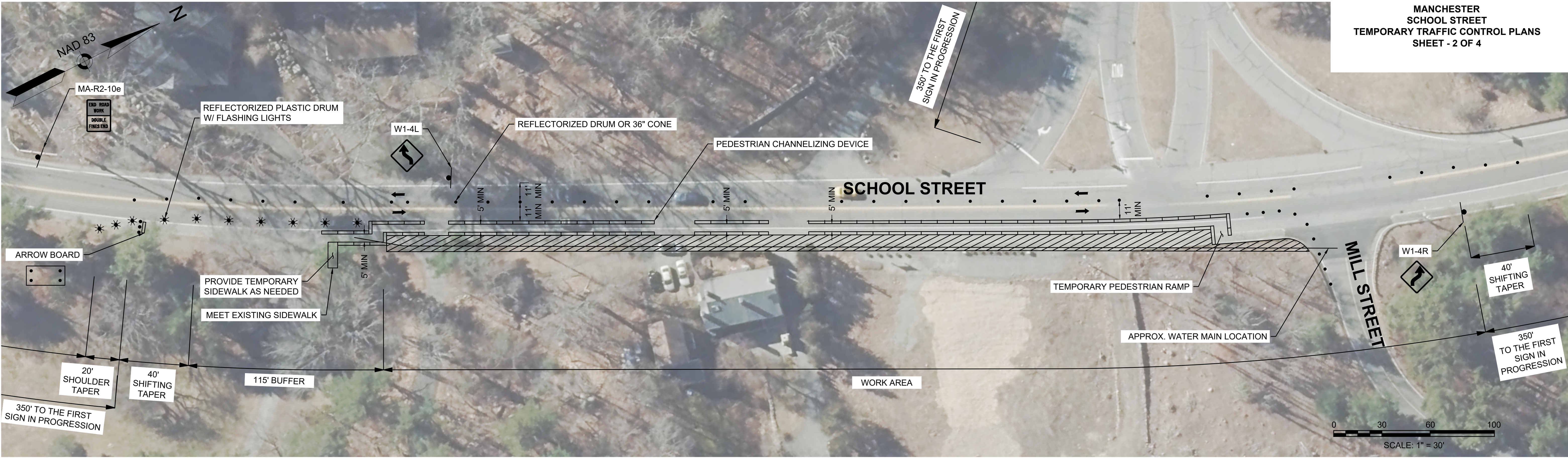
GENERAL NOTES:

- ALL WORKZONES ARE ESTABLISHED FOR 24-HOURS A DAY. TEMPORARY CONSTRUCTION SIGNAGE, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
- ABUTTERS SHALL BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS TO THEIR BUSINESS, RESIDENCE, AND/OR PROPERTY.
- TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES, AND OTHER DEVICES SHALL CONFORM WITH THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (M.U.T.C.D.) AND THE MASSACHUSETTS AMENDMENTS TO THE MUTCD.
- ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D. TEMPORARY CONSTRUCTION SIGNING.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS AT THE DISCRETION OF THE ENGINEER. ALL SIGNS SHALL BE PLACED WITHIN THE EXISTING RIGHT OF WAY.
- SIGN DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
- SIGNS AND SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)".
- ALL DRUMS AND/OR CONES SHALL BE SET @ 20' O.C. MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
- MINIMUM LANE WIDTH TO BE 11 FEET. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUM AND/OR CONE..
- THE FIRST TEN (10) PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE-A SEQUENTIAL FLASHING LIGHTS WHEN USED FOR THE NIGHT WORK BETWEEN DUSK AND DAWN.

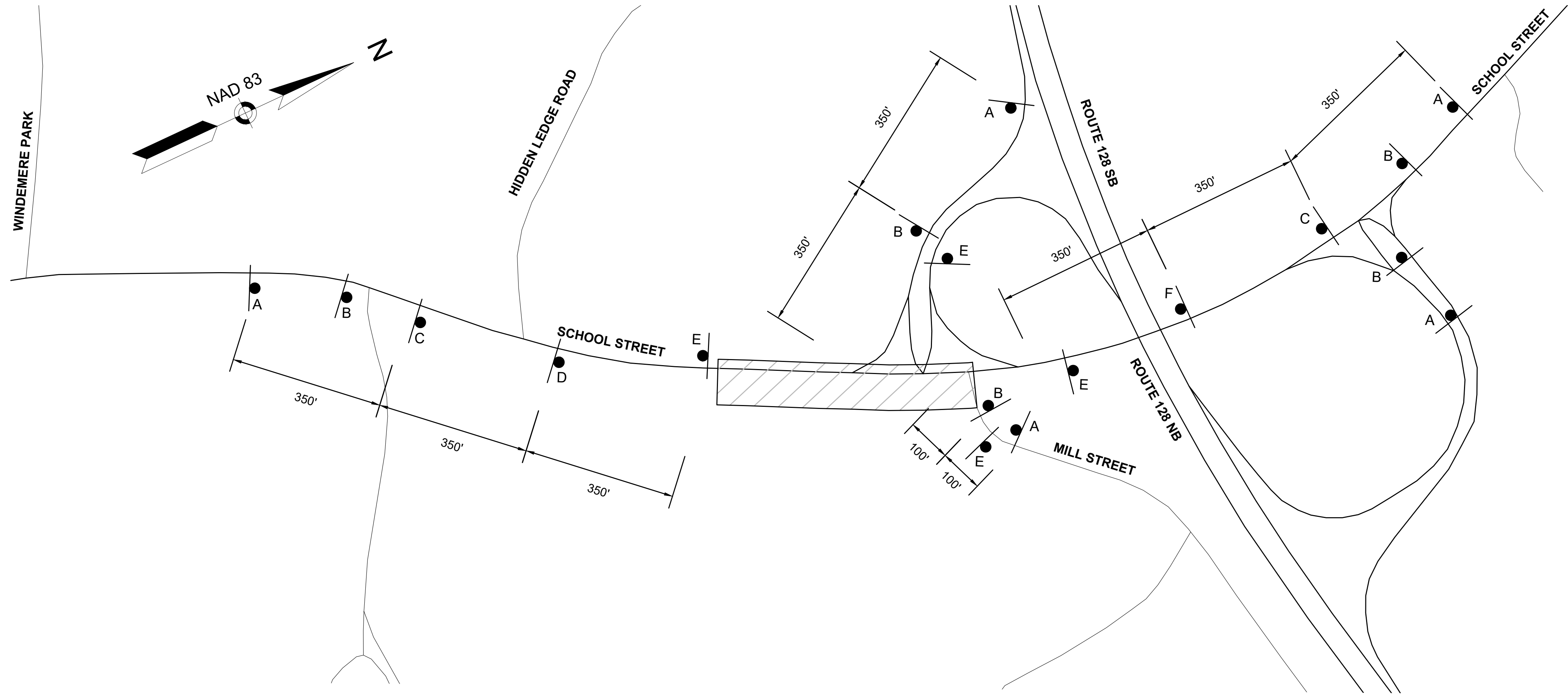
02-07-2024	PERMIT SUBMITTAL	-
DATE	DESCRIPTION	REV #
<div><div><div><div><div><div><span></span></div><div><b>TEC</b></div></div></div><div><div>The Engineering Corp</div></div></div></div><div>TEC, Inc. 282 Merrimack Street, 2nd Floor Lawrence, MA 01843</div></div>		
DESIGNED BY GMR	CHECKED BY SWG	DATE 02/07/2024
DRAWN BY GMR	APPROVED BY SWG	PROJECT NO. T1199



MANCHESTER  
SCHOOL STREET  
TEMPORARY TRAFFIC CONTROL PLANS  
SHEET - 2 OF 4



PHASE 1 - SCHOOL STREET EASTSIDE SHOULDER CLOSURE WITH WORK SPACE ENCROACHING INTO TRAVEL LANE  
SCALE: 1" = 30'



ADVANCED SIGN SCHEMATIC FOR PHASE 1  
SCALE: 1" = 150'

**TEMPORARY TRAFFIC CONTROL LEGEND**

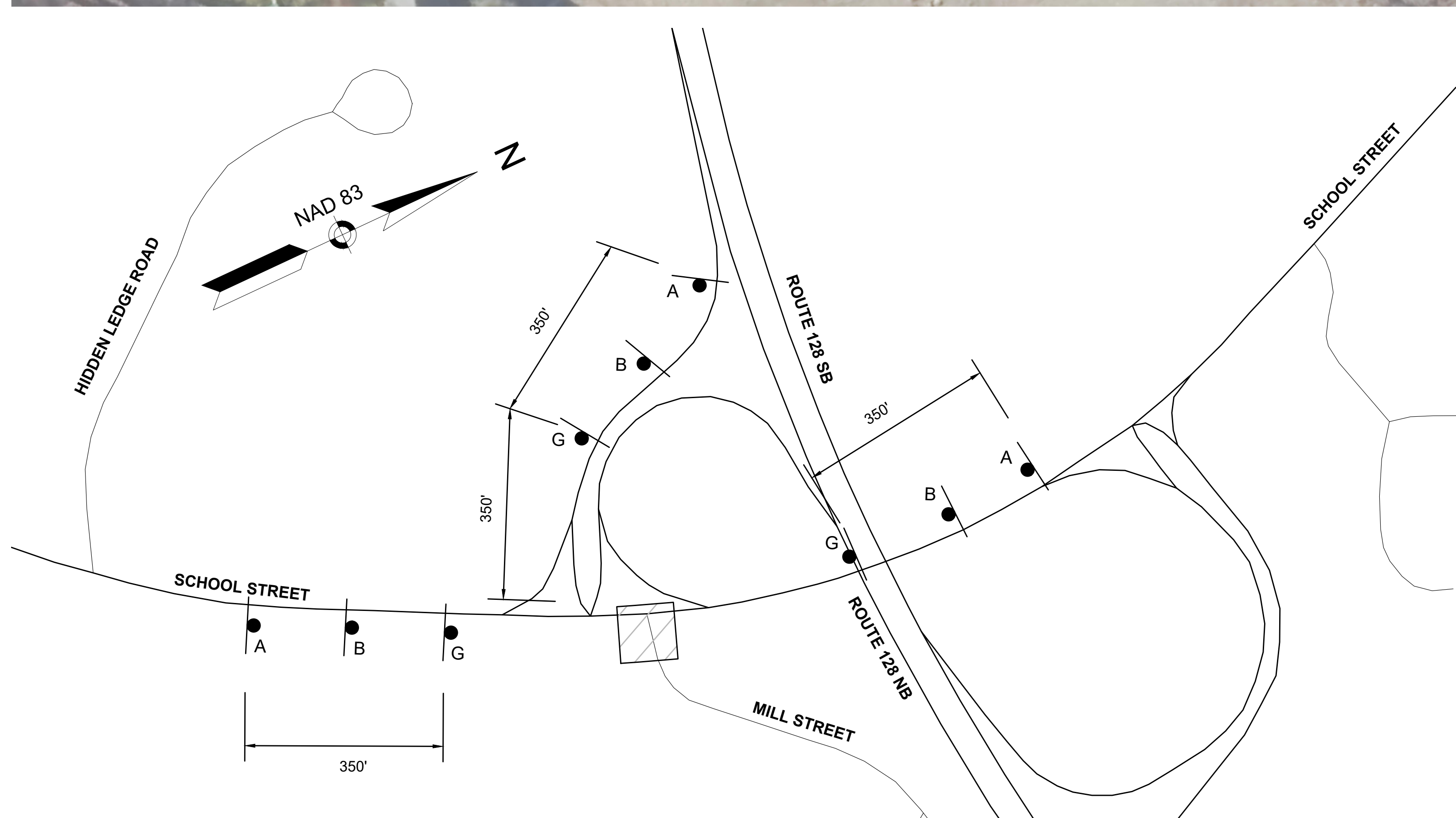
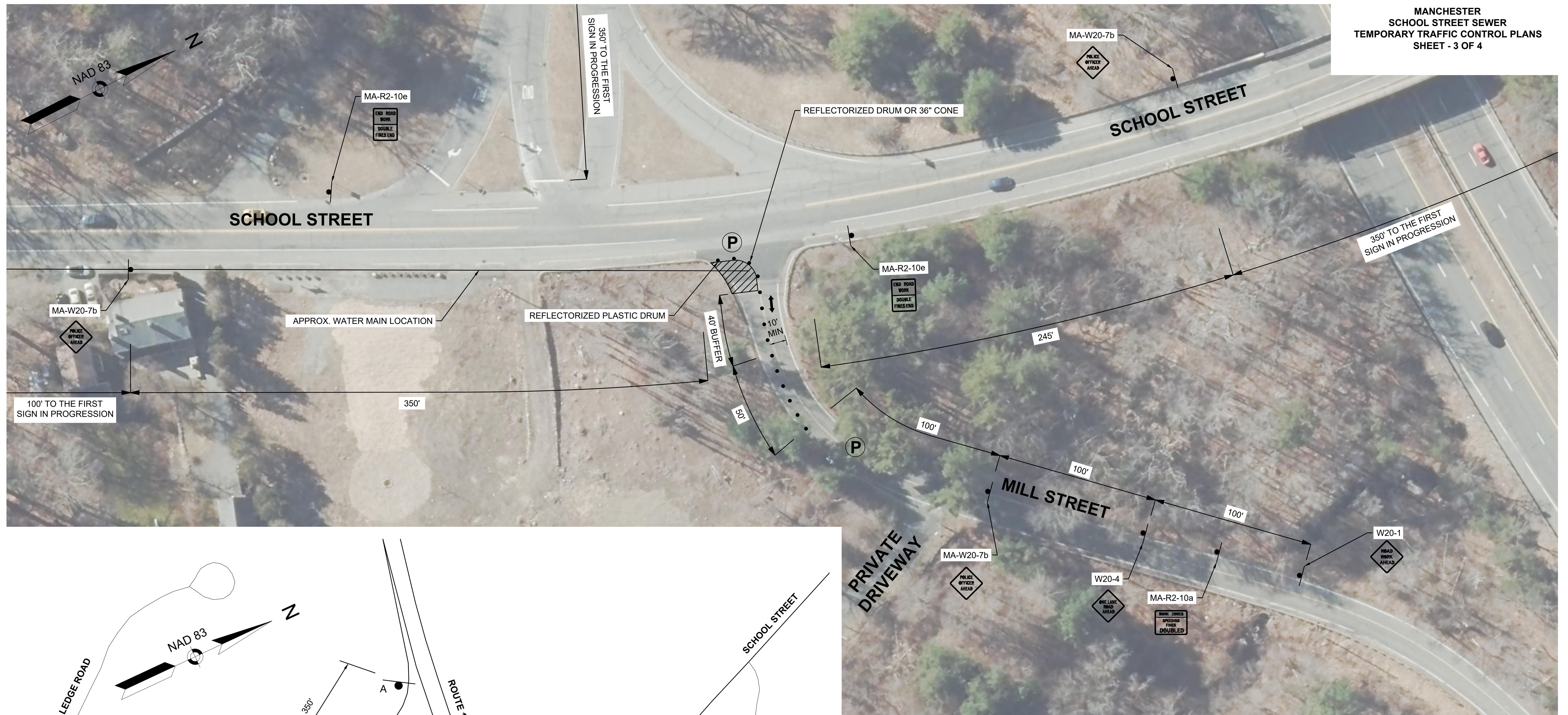
- WORK ZONE
- SIGN
- ARROW BOARD
- RETROFLECTORIZED PLASTIC DRUM OR 36" CONE
- RETROFLECTORIZED PLASTIC DRUM W/ SEQUENTIAL FLASHING LIGHTS
- PEDESTRIAN CHANNELIZING DEVICE

**LEGEND:**

A ROAD WORK AHEAD W20-1	B WORK ZONES SPEEDING FINES DOUBLED MA-R2-10a	C ROAD NARROWS W5-1
D W1-4L	E END ROAD WORK DOUBLE FINES END MA-R2-10a	F W1-4R



MANCHESTER  
SCHOOL STREET SEWER  
TEMPORARY TRAFFIC CONTROL PLANS  
SHEET - 3 OF 4



ADVANCED SIGN SCHEMATIC FOR PHASE 2  
SCALE: 1" = 300'

PHASE 2 - MILL STREET SOUTH LANE CLOSURE  
SCALE: 1" = 30'

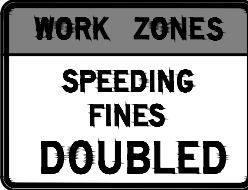
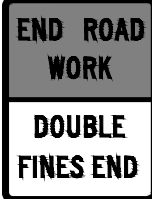


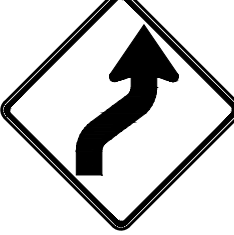



LEGEND:

- A  
ROAD  
WORK  
AHEAD  
W20-1
- B  
WORK ZONES  
SPEEDING  
FINES  
DOUBLED  
MA-R2-10a
- G  
POLICE  
OFFICER  
AHEAD  
MA-W20-7b

TEMPORARY TRAFFIC CONTROL LEGEND

- WORK ZONE
- SIGN
- RETROFLECTORIZED PLASTIC DRUM OR 36" CONE
- POLICE DETAIL



TRAFFIC SIGN SUMMARY													
IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		LEGEND	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			NUMBER OF SUPPORTS REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACKGR OUND	LEGEND	BORDER			
MA-R2-10a	48	36			①		5	FLOUR. ORANGE/ WHITE	BLACK	BLACK	5	12.00	60.00
MA-R2-10e	36	48					4	FLOUR. ORANGE/ WHITE	BLACK	BLACK	4	12.00	48.00
MA-W20-7b	36	36					3	FLOUR. ORANGE	BLACK	BLACK	3	9.00	27.00
W1-4L	36	36			②		2	FLOUR. ORANGE	BLACK	BLACK	2	9.00	18.00
W1-4R	36	36					2	FLOUR. ORANGE	BLACK	BLACK	2	9.00	18.00
W5-1	36	36					2	FLOUR. ORANGE	BLACK	BLACK	2	9.00	18.00
W20-1	36	36					5	FLOUR. ORANGE	BLACK	BLACK	5	9.00	45.00
W20-4	36	36					1	FLOUR. ORANGE	BLACK	BLACK	1	9.00	9.00

NOTES:

- ①. MASSDOT STANDARD SIGN
- ②. CONTRACTOR TO FURNISH SIGNS CONSISTENT WITH 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. SEE MANUAL FOR TEXT AND LEGEND DIMENSIONS.