

# FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT

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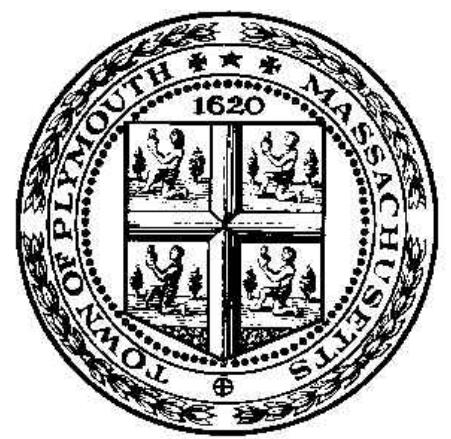
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11/06/2024

**TOWN OF PLYMOUTH, MA**  
**CONTRACT # 22431**

**NOVEMBER 2024**



**ENVIRONMENTAL**  
**PARTNERS**  
— An Apex Company —

## PLYMOUTH DEPARTMENT OF PUBLIC WORKS

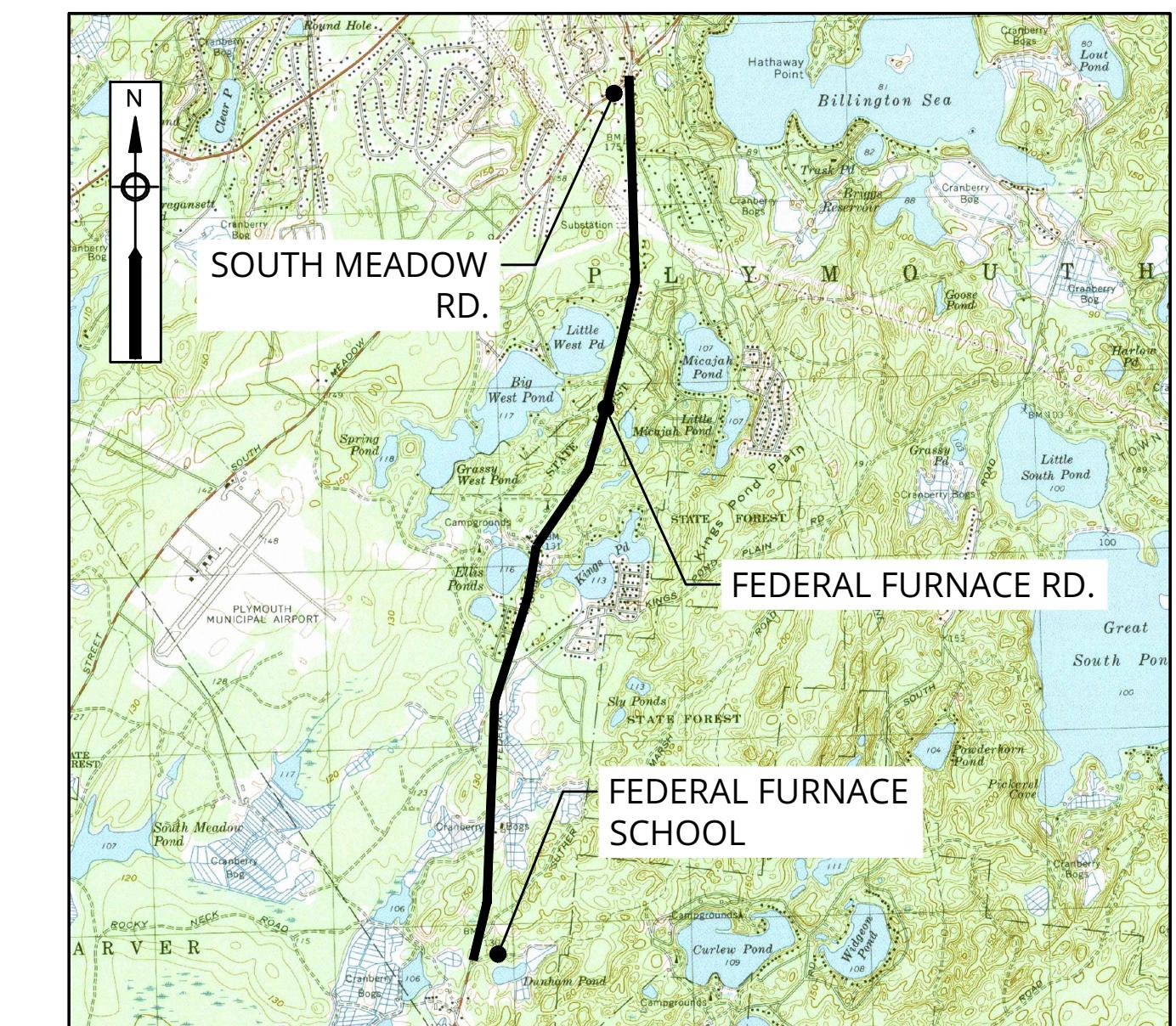
WILLIAM COYLE, PE - DIRECTOR

## PLYMOUTH WATER DIVISION

PETER GORDON - WATER DIVISION SUPERINTENDENT  
KENDRA MARTIN, PE - WATER & WASTEWATER ENGINEER

## PLYMOUTH SELECT BOARD

RICHARD J. QUINTAL, JR. - CHAIRMAN  
KEVIN CANTY - VICE CHAIRMAN  
DAVID M. GOLDEN JR. - SELECTMAN  
CHARLIE BLETZER - SELECTMAN  
JOHN MAHONEY JR. - SELECTMAN



FOR CONSTRUCTION

## GENERAL NOTES:

1. BASE MAP INFORMATION IS BASED ON EXISTING CONDITION SURVEY PERFORMED BY ZENITH LAND SURVEYORS, LLC. (JANUARY 2023) AND RECORD INFORMATION PROVIDED BY THE TOWN. THE BASIS OF BEARING FOR ALL SURVEYS IS AN APPROXIMATED NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND THE HORIZONTAL DATUM USED IS THE NORTH AMERICAN VERTICAL DATUM OF 1983 (NAD83). IT IS NOTED THAT ADDITIONAL UTILITY PIPES AND STRUCTURES MAY EXIST.
2. IN AREAS WHERE CONSTRUCTION ACTIVITIES ARE ANTICIPATED TO OCCUR ADJACENT TO PRIVATE PROPERTY, PROPERTY LINE LOCATIONS ARE TO BE REVIEWED WITH THE TOWN OF PLYMOUTH PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
3. THE CONTRACTOR SHALL NOT STORE ANY APPARATUS, MATERIALS, SUPPLIES, OR EQUIPMENT ON DRAINAGE STRUCTURES, PRIVATE PROPERTY OR WITHIN 100 FEET OF WETLANDS, UNLESS DIRECTED TO DO SO BY THE CONTRACT DOCUMENTS.
4. NORTH DIRECTION SHOWN IS APPROXIMATE.
5. ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES. CONTRACTOR SHALL NOTIFY DIG SAFE AT LEAST 72 HOURS IN ADVANCE, EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO ANY EXCAVATION.
6. DO NOT SCALE DRAWINGS UNLESS OTHERWISE NOTED. WRITTEN DIMENSION AND STATIONING SHALL PREVAIL. REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
7. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
8. THE CONTRACTOR SHALL RESTORE ALL PUBLIC AND PRIVATE PROPERTY TO ITS PRE-CONSTRUCTION CONDITION AT NO ADDITIONAL COST TO THE OWNER.
9. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE. THE CONTRACTOR, AT NO ADDITIONAL COST TO THE TOWN, SHALL REPAIR ANY EXISTING SEWERS, STORM DRAIN LINES, IRRIGATION LINES, CULVERTS, OR OTHER UNDERGROUND UTILITIES DAMAGED DURING CONSTRUCTION.
10. IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTIFICATION TO THE RESPECTIVE UTILITY COMPANY. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.
11. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. INJURY TO ANY SUCH STRUCTURE CAUSED BY, OR RESULTING FROM, THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION, OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE RESPECTIVE UTILITY AND THE TOWN.
12. THE CONTRACTOR IS TO TAKE SPECIAL CARE NOT TO DAMAGE TREES, BUSHES, PLANTS, FLOWERS, STONEWALLS, FENCES, ETC. WITHIN THE CONSTRUCTION AREA UNLESS THEY ARE NOTED TO BE REMOVED. CONTRACTOR SHALL REPLACE AT NO COST TO OWNER, ALL DAMAGED ITEMS.
13. CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR, ALL CURBS, SIDEWALKS, PAVEMENT AND OTHER ITEMS DAMAGED BY HIS CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, AND TO THE SATISFACTION OF THE TOWN OF PLYMOUTH AND ENGINEER.
14. ANY TRAFFIC SIGNAL EQUIPMENT (LIGHTS, CONDUITS, LOOP DETECTORS) DISTURBED SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AS DIRECTED BY THE TOWN AT THE CONTRACTOR'S EXPENSE.
15. THE CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL DEVICES AS NECESSARY AND IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
16. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH AND MAINTAIN A TELEPHONE NUMBER WHERE THE CONTRACTOR CAN BE REACHED 24 HOURS A DAY, 7 DAYS A WEEK.
17. THE LOCATION AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO THE TOWN OF PLYMOUTH. THE CONTRACTOR SHALL LIMIT HIS ACTIVITIES TO THESE AREAS.
18. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR WORK IN ROADWAYS AND FOR BLASTING. THE CONTRACTOR IS RESPONSIBLE FOR CONFORMING TO ALL PERMITS AS AN INTEGRAL PART OF HIS WORK.
19. THE CONTRACTOR SHALL HANDLE GROUNDWATER, WHERE ENCOUNTERED, IN AN APPROVED MANNER. DURING ANY DEWATERING, THE CONTRACTOR SHALL USE STONE AROUND THE SUCTION END TO MINIMIZE DISCHARGE OF TRENCH MATERIALS. THE DISCHARGED WATER SHALL PASS THROUGH FILTER FABRIC.
20. CONTRACTOR SHALL HANDLE, STORE, REMOVE, TRANSPORT AND LEGALLY DISPOSE OF ANY ASBESTOS-CEMENT PIPE AS SHOWN ON THE PLANS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. ASBESTOS NOTIFICATION FORMS SHALL BE COMPLETED AND SUBMITTED TO THE APPROPRIATE AGENCY/AGENCIES AND COPIES SHALL BE PROVIDED TO THE ENGINEER. SEE THE APPENDIX OF THE CONTRACT SPECIFICATIONS.
21. UTILITY INVERT INFORMATION IS PRESENTED FOR THE CONTRACTOR'S USE. DRAINAGE INFORMATION IS BASED ON ELEVATION FROM EXISTING GRADE TO INVERT. INFORMATION PROVIDED DOES NOT RELIEVE CONTRACTOR FROM FIELD VERIFICATION OF ALL UTILITY CROSSINGS TO AVOID CONFLICTS AND MAKE REQUIRED CHANGES AND ADJUSTMENTS IN WATER MAIN DEPTH FOR PIPE INSTALLATION.
22. ALL EQUIPMENT SHALL BE REMOVED FROM THE PROJECT AREA AT THE COMPLETION OF EACH WORK DAY AND STORED IN THE DESIGNATED STAGING AREA OR OTHER APPROVED AREA NEAR BY.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING, SETTING UP, AND REMOVING ALL SIGNAGE, CONES, BARRICADES, BARRELS, AND OTHER TRAFFIC CONTROL DEVICES ON A DAILY BASIS.
24. THE CONTRACTOR SHALL SUBMIT TRAFFIC MANAGEMENT PLANS TO THE PLYMOUTH POLICE DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION.
25. MINIMUM COVER OVER THE PROPOSED WATER MAIN, SERVICES, AND APPURTENANCES SHALL BE 5'-0" UNLESS OTHERWISE NOTED OR DIRECTED BY ENGINEER. WHERE NECESSARY, NEW WATER MAINS SHALL BE INSTALLED AT A GREATER DEPTH TO CLEAR OBSTACLES SHOWN ON THE DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. MINIMUM CLEARANCES TO UTILITIES, AS SHOWN ON THE DRAWINGS, SHALL BE MAINTAINED.
26. EXCEPT WHERE OTHERWISE DIRECTED, 12" MINIMUM CLEARANCE SHALL BE PROVIDED BETWEEN THE NEW WATER UTILITY AND OTHER EXISTING UTILITIES WHERE THEY CROSS. WHERE NEW WATER UTILITY PASSES UNDER EXISTING UTILITIES, IT SHALL CROSS WITHOUT THE USE OF BENDS UNLESS OTHERWISE NOTED ON THE PLANS. TYPICAL EXISTING UTILITIES INCLUDE GAS, DRAINAGE, WATER, AND ELECTRIC.
27. WATER AND SANITARY SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET, WHEN A TEN (10) FOOT SEPARATION IS NOT POSSIBLE TO BE PROVIDED THERE MUST BE AT LEAST EIGHTEEN (18) INCHES OF VERTICAL SEPARATION. IT IS PREFERRED THAT WATER MAINS CROSS ABOVE SEWER LINES.
28. ALL HYDRANT BRANCHES SHALL HAVE VALVES AS SHOWN ON THE HYDRANT DETAIL.
29. THE CONTRACTOR SHALL STAKE OUT ALL HYDRANT LOCATIONS AT LEAST 3 DAYS IN ADVANCE OF INSTALLATION. LOCATION OF ALL HYDRANTS SHALL BE VERIFIED BY THE PLYMOUTH FIRE DEPARTMENT, ENGINEER, AND PLYMOUTH DPW PRIOR TO DIGGING FOR INSTALLATION.
30. TEST PITS TO LOCATE EXISTING UTILITIES MAY BE ORDERED BY THE ENGINEER TO DETERMINE WHETHER TO RAISE OR LOWER THE PROPOSED WATER MAIN TO CLEAR EXISTING UTILITIES OR MEET EXISTING WATER MAINS.
31. EXISTING SERVICES SHALL NOT BE CONNECTED TO THE PROPOSED WATER MAIN UNTIL SATISFACTORY PRESSURE TEST AND DISINFECTION RESULTS HAVE BEEN RECEIVED AND ACCEPTED BY THE OWNER AND ENGINEER.
32. EXISTING WATER MAINS OR SERVICES SHALL NOT BE ABANDONED WITHOUT THE APPROVAL OF THE OWNER.
33. WATER SERVICE SHALL NOT BE INTERRUPTED MORE THAN 4 HOURS WITHOUT PRIOR APPROVAL OF THE OWNER.
34. MINIMUM COVER OVER THE PROPOSED WATER MAIN AND APPURTENANCES SHALL BE 5'-0" UNLESS OTHERWISE NOTED OR DIRECTED BY ENGINEER.
35. ANY HYDRANT WHICH IS NOT IN SERVICE SHALL BE COVERED WITH A SECURELY FASTENED BURLAP BAG (OR EQUAL).
36. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES OR HYDRANTS WHICH HOLD WATER IN THE SYSTEM. THE OWNER WILL, ON 24 HOURS NOTICE FROM THE CONTRACTOR, OPEN AND/OR CLOSE ANY VALVES OR HYDRANTS REQUIRED FOR DRAINING OR ADMITTING WATER TO THE VARIOUS SECTIONS OF THE WATER MAINS.
37. SOME WATER SERVICE CONNECTIONS MAY NOT BE SHOWN ON THE DRAWINGS. THE OWNER WILL MARK THE LOCATION OF SUCH CONNECTIONS, PROVIDED THE CONTRACTOR GIVES THE OWNER AT LEAST ONE WEEK ADVANCE NOTICE.
38. OPEN TRENCHES ON LOCAL ROADS MUST BE BACKFILLED AT THE END OF THE WORKDAY OR COVERED AND SECURED WITH STEEL PLATES, RAMPED AS APPROVED BY THE ENGINEER AND OWNER.
39. THE CONTRACTOR IS REQUIRED TO NOTIFY AND COORDINATE WITH THE RESIDENTS FOR ALL WATER MAIN SHUTDOWNS 24 HOURS IN ADVANCE.
40. ALL EXISTING WATER SERVICES SHALL BE CONNECTED TO THE PROPOSED WATER MAIN. NEW SERVICE TO RUN FROM MAIN TO LOCATION OF EXISTING CURB STOPS (AT MINIMUM). REPLACE EXISTING CURB STOPS AND CONNECT TO EXISTING WATER SERVICES ON OWNER'S SIDE.
41. CONCRETE THRUST BLOCKS AND "MEGA-LUG" (OR APPROVED EQUAL) MECHANICAL RESTRAINTS ARE REQUIRED AT ALL TEES, BENDS, PLUGS, AND HYDRANTS.
42. WATER SERVICES SHALL BE INSULATED IN AREAS WHERE CONNECTION TO EXISTING WATER SERVICE IS LESS THAN 4 FEET DEEP.
43. VALVE DECOMMISSIONING - CLOSE VALVE, REMOVE AND LEGALLY DISPOSE OF GATE BOX, FILL HOLE, AND PAVE ACCORDING TO TYPICAL TRENCH DETAIL.
44. HYDRANT DECOMMISSIONING - CUT AND CAP HYDRANT RISER PIPE, REMOVE EXISTING HYDRANT ASSEMBLY, FILL HOLE AND PAVE ACCORDING TO TYPICAL TRENCH DETAIL OR RESTORE LANDSCAPING TO MATCH ADJACENT AREAS AT NO EXPENSE TO THE OWNER. LEGALLY DISPOSE OF HYDRANT ASSEMBLY AND APPURTENANCES.
45. SLEEVES, NIPPLES, AND ACCESSORIES NECESSARY FOR CONNECTIONS BETWEEN EXISTING AND NEW PIPES MAY NOT BE SHOWN IN DETAIL. FURNISH AND INSTALL ITEMS NECESSARY FOR CONNECTING TO EXISTING MAINS AND AS INDICATED ON THE CONTRACT DOCUMENTS.
46. CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL MATERIAL REMOVED FROM TRENCH DURING CUTTING AND CAPPING OF EXISTING WATER MAINS.
47. ALL HYDRANT LATERALS SHALL CROSS UNDER EXISTING UTILITIES AND WATER MAINS. HYDRANT EXTENSIONS SHALL BE INSTALLED, AS NECESSARY, AT NO ADDITIONAL COST TO THE OWNER.
48. PRIOR TO DEMOBILIZATION THE CONTRACTOR SHALL INSPECT EVERY VALVE, HYDRANT, AND CURB STOP WITH THE RESIDENT PROJECT REPRESENTATIVE PRESENT TO ENSURE PROPER OPERATION.
49. ALL WATER MAINS AND SERVICES SHALL BE COVERED WITH PRINTED, DETECTABLE WARNING TAPE INSTALLED APPROXIMATELY 17 INCHES BELOW GRADE.
50. TRENCHES MAY BE SAW CUT OR ZIPPED.
51. THE WORK AREA SHALL BE LEFT CLEAN AT THE END OF EACH WORK DAY, INCLUDING BUT NOT LIMITED TO MOTORIZED SWEEPING TO REMOVE LOOSE OIL, MATERIALS AND ALL OTHER DEBRIS ACCUMULATED ON PAVED SURFACES FROM CONSTRUCTION ACTIVITIES.
52. DUST CONTROL SHALL BE RESPONSIBILITY OF THE CONTRACTOR.
53. STEEL PLATES, UNLESS OTHERWISE APPROVED, MAY ONLY BE USED FOR 24-HOUR INCREMENTS AT THE SAME LOCATIONS. STEEL PLATES SHALL NOT BE USED DURING WEEKENDS OR HOLIDAYS.
54. THE OVERNIGHT STORAGE OF MATERIALS, SUPPLIES AND EQUIPMENT MUST BE APPROVED BY THE OWNER AND ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A "STAGING AREA" FOR PIPES, SUPPLIES, MATERIALS, AND EQUIPMENT.
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56. COMPACTION TESTING SHALL BE PERFORMED EVERY 200' FOR THE LENGTH OF THE PROJECT. ACCEPTABLE COMPACTION TEST RESULTS MUST BE REVIEWED AND APPROVED BY THE ENGINEER.

## WATER MAIN NOTES:

1. MINIMUM COVER OVER THE PROPOSED WATER MAIN, SERVICES, AND APPURTENANCES SHALL BE 5'-0" UNLESS OTHERWISE NOTED OR DIRECTED BY ENGINEER. WHERE NECESSARY, NEW WATER MAINS SHALL BE INSTALLED AT A GREATER DEPTH TO CLEAR OBSTACLES SHOWN ON THE DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. MINIMUM CLEARANCES TO UTILITIES, AS SHOWN ON THE DRAWINGS, SHALL BE MAINTAINED.
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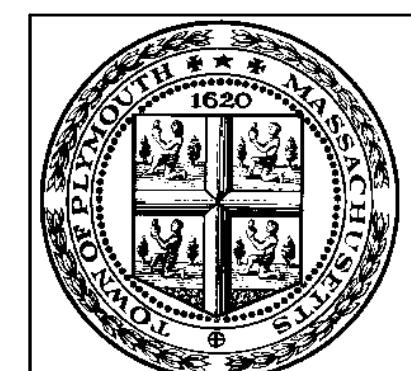
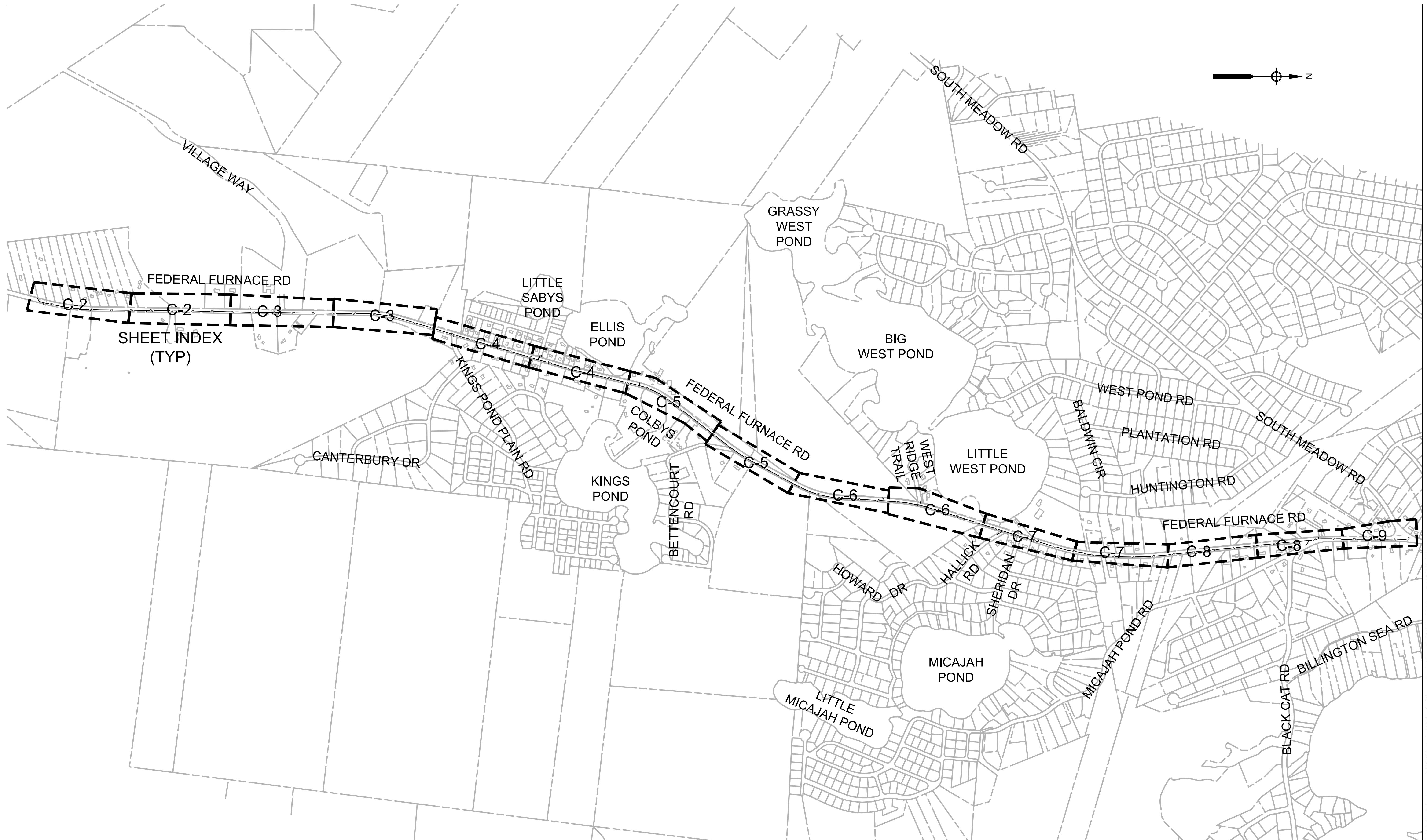
## CONSERVATION NOTES:

1. FILTER SOCK SHALL BE INSTALLED BY THE CONTRACTOR AND SHALL BE INSPECTED BY THE CONSERVATION ADMINISTRATOR PRIOR TO COMMENCEMENT OF EARTHWORK OPERATIONS. THE CONTRACTOR SHALL INSPECT EROSION CONTROLS IMMEDIATELY AFTER EACH STORM, AND REMOVE ACCUMULATED SEDIMENT AS REQUIRED. REPLACE DAMAGED EROSION CONTROL AS REQUIRED.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL SILT SACKS IN ALL CATCH BASINS ASSOCIATED WITH THE WORK AREA AND AS DIRECTED BY THE ENGINEER.
3. THE CONSERVATION OFFICE SHALL BE NOTIFIED AT LEAST FIVE BUSINESS DAYS PRIOR TO THE START OF THE WORK.
4. SILT SACKS AND OTHER EROSION AND SEDIMENT CONTROL MEASURES/DEVICES SHALL BE INSPECTED, CLEANED, REPLACED AND/OR REPAIRED AS NECESSARY, AND AFTER EACH SIGNIFICANT RAINFALL.
5. A MASSDEP SIGN NOT LESS THAN TWO SQUARE FEET OR MORE THAN THREE SQUARE FEET IN SIZE SHALL BE POSTED ON SITE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. THE SIGN SHALL BEAR THE WORDS "MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION" [OR, "MASSDEP"] "FILE NUMBER: SE57-3040". NO WORK IS TO COMMENCE UNTIL A DEP NUMBER SIGN IS DISPLAYED AT THE SITE.
6. UPON COMPLETION OF THE WORK DESCRIBED HEREIN, THE APPLICANT SHALL SUBMIT A REQUEST FOR CERTIFICATE OF COMPLIANCE (WPA FORM 8A) TO THE CONSERVATION COMMISSION.
7. THE CONTRACTOR SHALL STOCKPILE SUFFICIENT SOIL EROSION AND SEDIMENT CONTROL MATERIALS ONSITE TO REPAIR ANY DAMAGED SOIL EROSION AND SEDIMENT CONTROLS.
8. THE CONTRACTOR SHALL NOT DISCHARGE WATER FROM DEWATERING OPERATIONS DIRECTLY INTO A WETLAND, SURFACE WATER, OR ANY STORM SEWER.
9. GROUND WATER FROM DEWATERING OPERATIONS SHALL BE TREATED TO REDUCE THE AMOUNT OF SEDIMENT CONTAINED IN THE WATER TO ALLOWABLE LEVELS.
10. ALL DEWATERING DISCHARGES SHALL ALSO INCLUDE ENERGY DISSIPATION TO PREVENT SCOURING.
11. REFER TO ORDER OF CONDITIONS IN APPENDIX D OF SPECIFICATIONS FOR REQUIREMENTS. CONTRACTOR IS REQUIRED TO COMPLY WITH ALL THE CONDITIONS.
12. ANY FILL USED IN THE CONNECTION WITH THIS PROJECT SHALL BE CLEAN FILL. ANY FILL SHALL CONTAIN NO TRASH, REFUSE, RUBBISH, OR DEBRIS, INCLUDING BUT NOT LIMITED TO LUMBER, BRICKS, PLASTER, WIRE, LATH, PAPER, CARDBOARD, PIPE, TIRES, ASHES, REFRIGERATORS, MOTOR VEHICLES, OR PARTS OF ANY OF THE FOREGOING.
13. PRIOR TO START OF WORK, AND IF THE PROJECT INVOLVES WORK ADJACENT TO BORDERING VEGETATED WETLAND, THE BOUNDARY OF THE WETLAND IN THE VICINITY OF THE PROPOSED WORK AREA SHALL BE MARKED WITH WOODEN STAKES OR FLAGGING. ONCE IN PLACE, THE WETLAND BOUNDARY MARKERS SHALL BE MAINTAINED UNTIL A CERTIFICATE OF COMPLIANCE HAS BEEN ISSUED BY CONSERVATION COMMISSION.

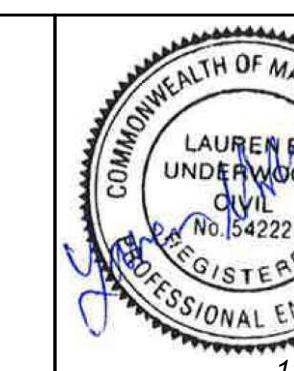
## LEGEND

EXISTING	PROPOSED
HYDRANT	POLYETHYLENE "V-BIO" ENCASED WATER MAIN
CATCH BASIN (CB)	HYDRANT
DRAIN MANHOLE (DMH)	GATE VALVE
ELECTRIC MANHOLE (EMH)	DI CAP / DISH PLUG
SEWER MANHOLE (SMH)	CURB STOP
TELECOM MANHOLE (TMH)	SOLID SLEEVE / COUPLING
MANHOLE	FILTER SOCK
WATER VALVE/GAS GATE	TEST PIT
WATER SHUTOFF	STATIONING
WATER METER PIT	
BLOW OFF	
SEWER CLEAN OUT	
GAS SHUTOFF	
SOLID SLEEVE	
CAPE COD BERM (CCB)	
BITUMINOUS CONCRETE CURB (BCC), CONCRETE BERM (CB), GRANITE CURB (GC)	
EDGE OF PAVEMENT	
5' MAJOR CONTOUR	
1' MINOR CONTOUR	
PROPERTY LINE	
TRAFFIC LOOP	
UNDERGROUND CABLE / TV LINE	
DRAIN LINE	
UNDERGROUND ELECTRIC LINE	
GAS MAIN	
SEWER MAIN	
SEWER FORCE MAIN	
UNDERGROUND TELEPHONE LINE	
WATER MAIN	
OVERHEAD WIRES	
STONE WALL	
METAL GUARD RAIL	
CONCRETE GUARD RAIL	
FENCE	
VEGETATION	
LANDSCAPED AREA	
UTILITY POLE (UP#)	
ELECTRICAL BOX	
CONIFEROUS TREE	
DECIDUOUS TREE	
BUSH/HURB	
BOULDER/ROCK	
MAILBOX (MB)	
SIGN	
CONCRETE BOLLARD	
LIGHT POLE	
HAND HOLE	
BOUND	
POST/PILLAR	
IRON ROD	
FLAGPOLE	
GEOPROBE LOCATION	

ABBREVIATIONS
AC ASBESTOS CEMENT
BS BARE STEEL
CC CONCRETE CYLINDER
CI CAST IRON
CIP CAST IN PLACE
CM CORRUGATED METAL
CP CORRUGATED PLASTIC
CS COATED STEEL



**ENVIRONMENTAL  
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11/06/2024

MARK DATE DESCRIPTION

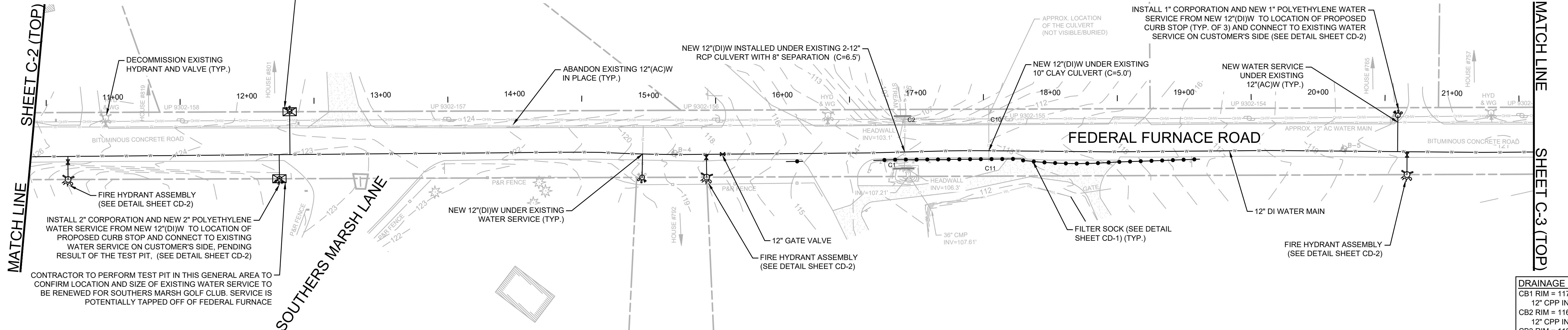
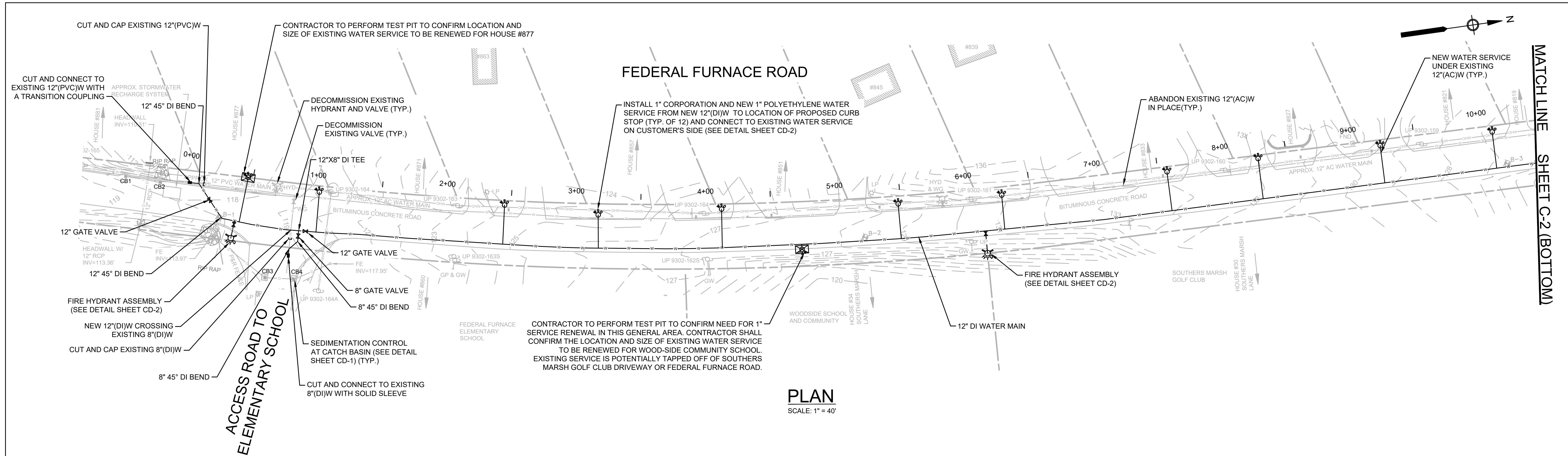
Scale	1" = 500'
Date	NOVEMBER 2024
Job No.	PLY003-0631071-22008575
Designed by	SBS
Drawn by	SBS
Checked by	RJA
Approved by	LEU

THIS LINE IS ONE INCH  
LONG WHEN PLOTTED AT  
FULL SCALE ON A 22" X  
34" DRAWING

**FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT  
TOWN OF PLYMOUTH, MA**

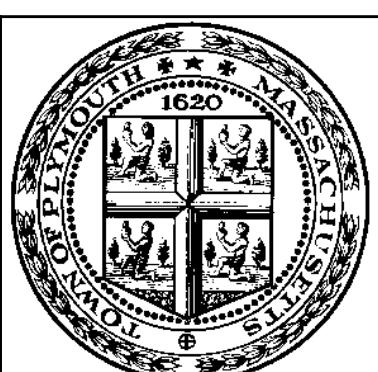
**LOCUS/KEY PLAN**

FOR CONSTRUCTION  
Sheet No.  
**C-1**



## NOTES

1. ALL EXISTING SERVICE LINES OFF THE EXISTING WATER MAIN SHALL BE ABANDONED IN PLACE AND EXISTING SERVICE BOXES SHALL BE REMOVED AND DISPOSED.
2. ALL CURB STOPS AND BOXES SHALL BE REPLACED AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.
3. ALL FITTINGS AND VALVES SHALL BE RESTRAINED WITH MEGALUG JOINT RESTRAINTS (OR APPROVED EQUAL) AND THRUST BLOCKS.
4. EXISTING VALVES, HYDRANTS, AND BLOW OFFS ON ABANDONED WATER MAINS SHALL BE DECOMMISSIONED AND THE GATE BOX SHALL BE REMOVED.
5. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY CROSSINGS TO AVOID CONFLICTS. DRAIN LINES SHOWN ON THESE PLANS ARE APPROXIMATE.



# ENVIRONMENTAL PARTNERS





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	Date	NC
	Job No.	PLY00
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	Drawn by	
	Checked by	
	Approved by	

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EMBER 2024	
631071-22008575	
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RJA	
LEU	

# FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT TOWN OF PLYMOUTH, MA

# FEDERAL FURNACE ROAD I - STA. 0+00 TO STA. 21+56

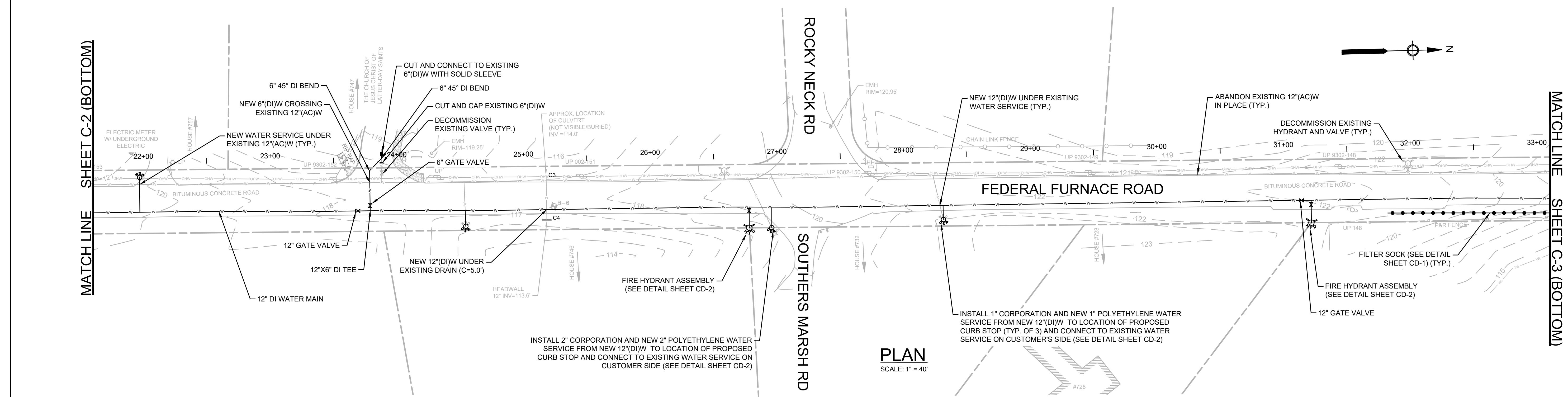
FOR CONSTRUCTION

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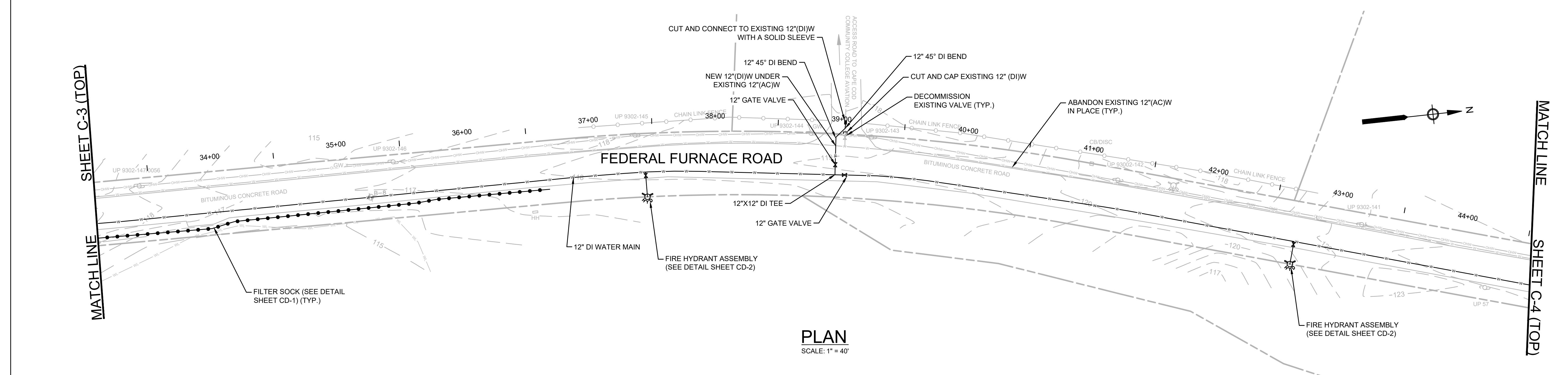
Sheet No.

**C-2**

MATCH LINE SHEET C-2 (BOTTOM)

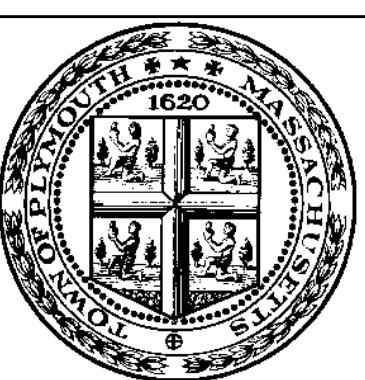


MATCH LINE SHEET C-3 (TOP)

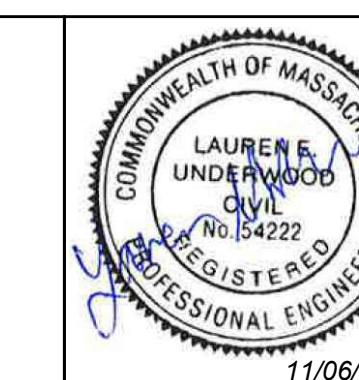


## NOTES:

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MARK DATE DESCRIPTION

Scale	AS NOTED
Date	NOVEMBER 2024
Job No.	PLY003-0631071-22008575
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Checked by	RJA
Approved by	LEU

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LONG WHEN PLOTTED AT  
FULL SCALE ON A 22" X  
34" DRAWING

**FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT  
TOWN OF PLYMOUTH, MA**

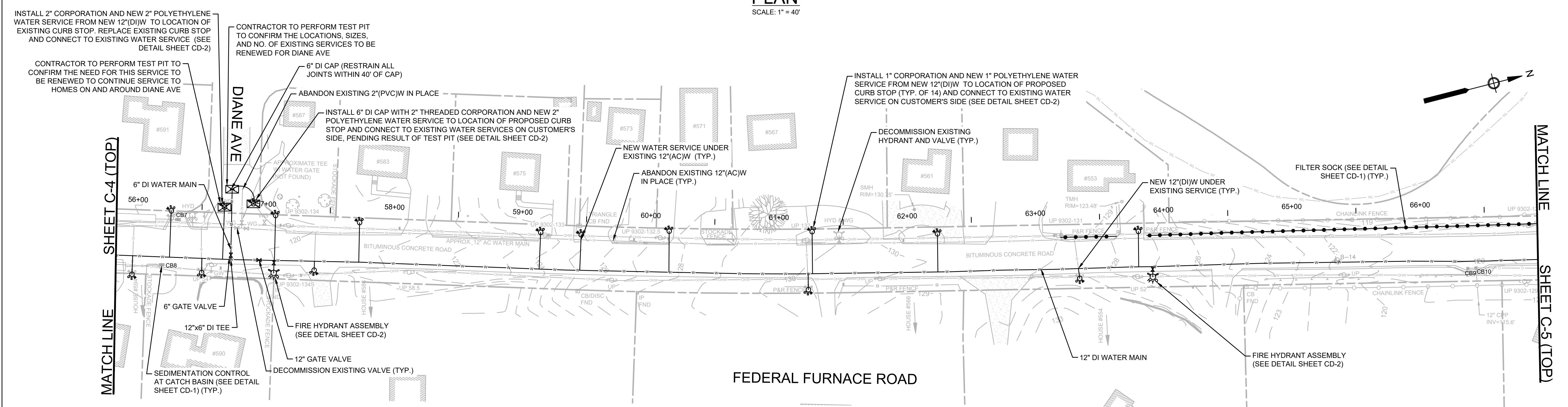
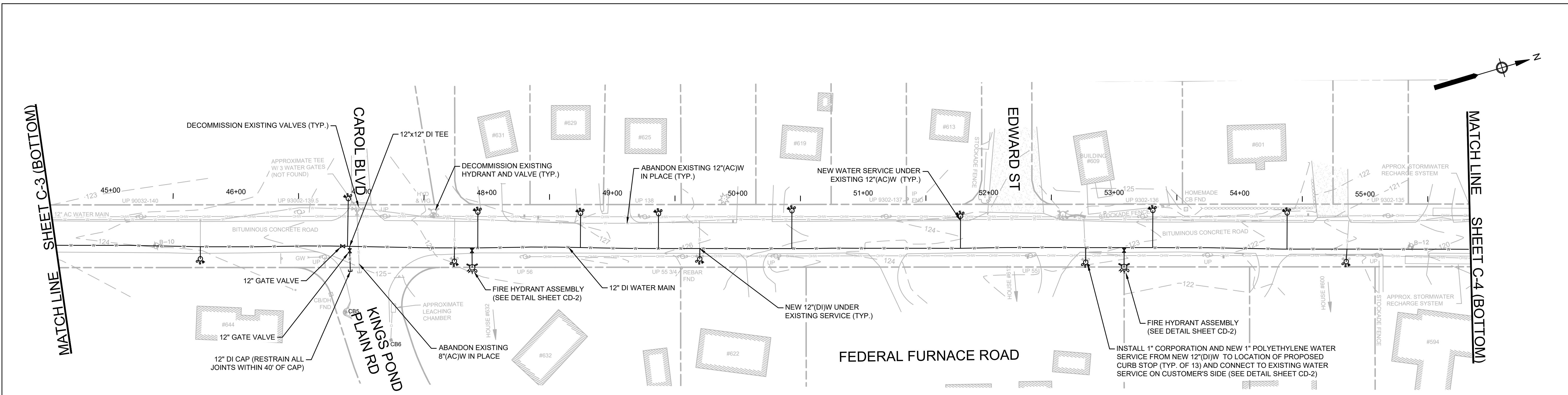
**FEDERAL FURNACE ROAD II - STA. 21+56 TO STA. 44+50**

FOR CONSTRUCTION  
Sheet No.  
**C-3**

MATCH LINE SHEET C-3 (BOTTOM)

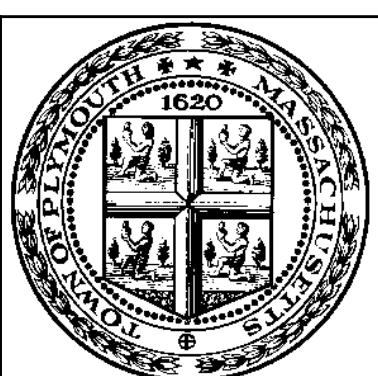
MATCH LINE SHEET C-4 (TOP)

**DRAINAGE STRUCTURES**  
C3 HEADWALL  
12" INV. = 114.0'  
C4 HEADWALL  
12" INV. = 113.6'



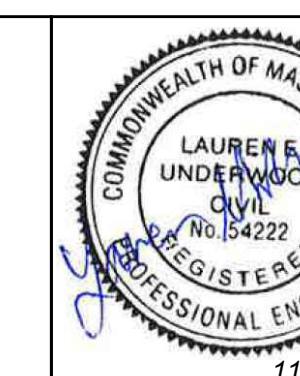
**NOTE**

1. ALL EXISTING SERVICE LINES OFF THE EXISTING WATER MAIN SHALL BE ABANDONED IN PLACE AND EXISTING SERVICE BOXES SHALL BE REMOVED AND DISPOSED OF.
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# ENVIRONMENTAL PARTNERS

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106/20

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Date	NOV
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631071-22008575	
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SBS	
RJA	
LEU	

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ED AT  
22" X

# FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT TOWN OF PLYMOUTH, MA

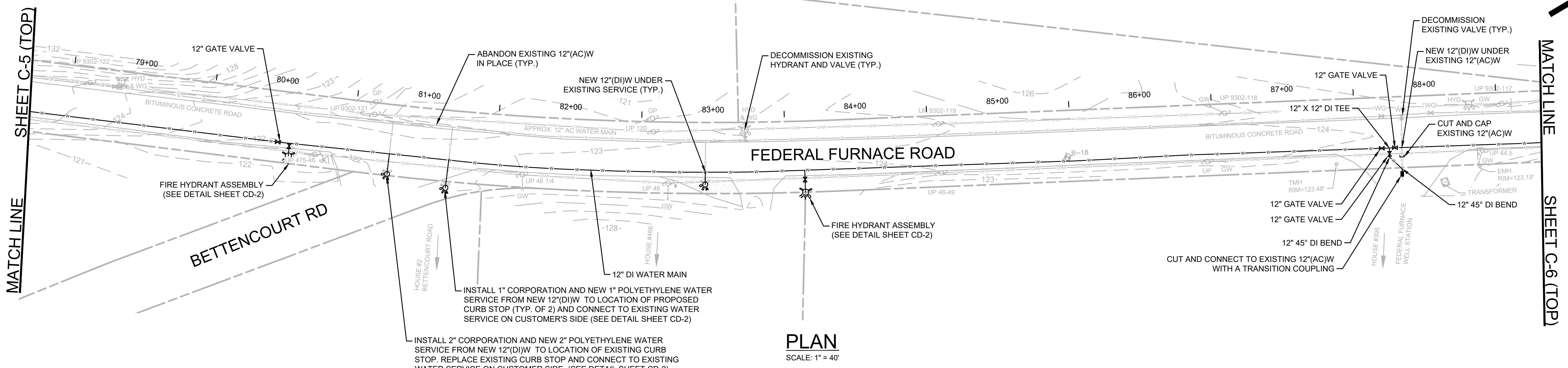
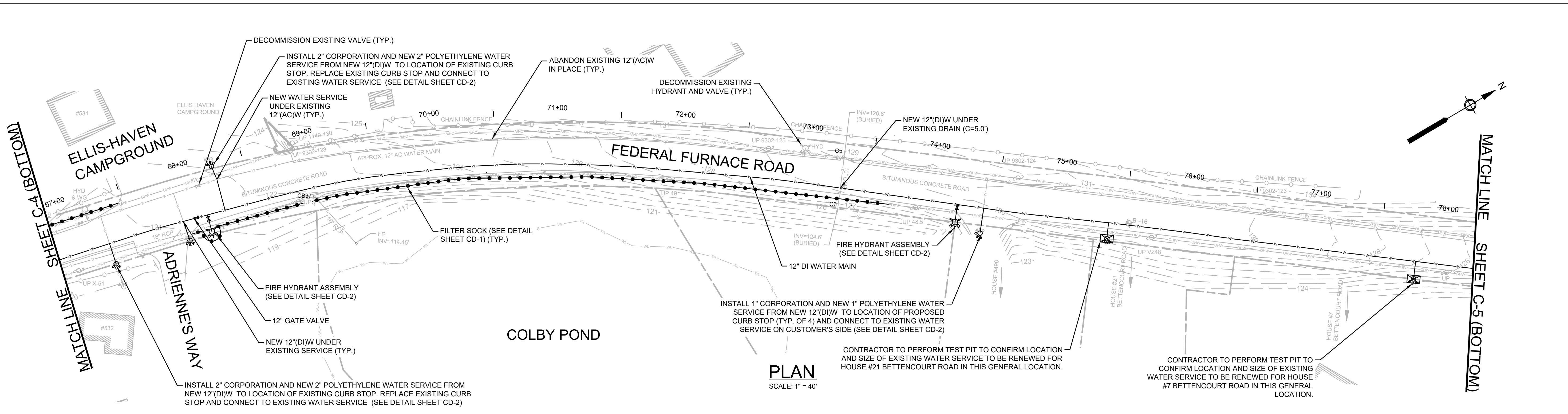
# FEDERAL FURNACE ROAD III - STA. 44+50 TO STA. 66+90

FOR CONSTRUCTION

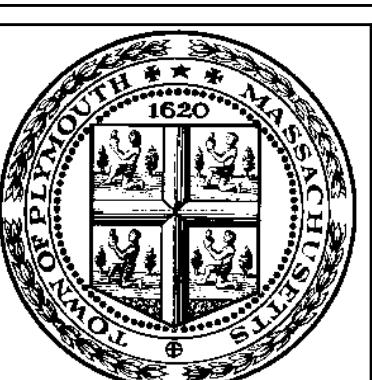
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Sheet No.

**C-4**



NOTES:		
1.	ALL EXISTING SERVICE LINES OFF THE EXISTING WATER MAIN SHALL BE ABANDONED IN PLACE AND EXISTING SERVICE BOXES SHALL BE REMOVED AND DISPOSED.	
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11/06/2024

MARK DATE DESCRIPTION

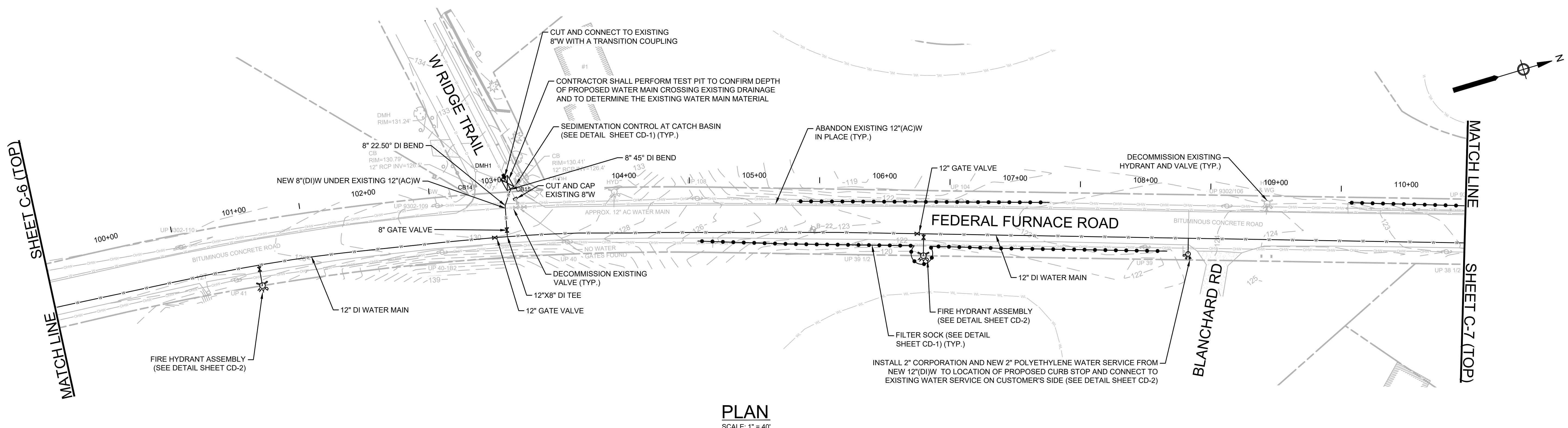
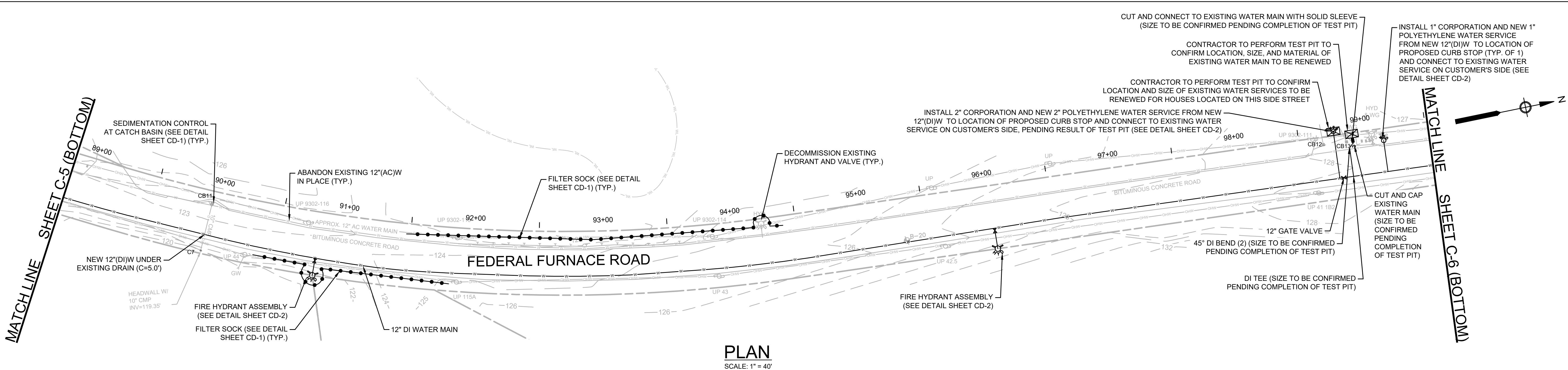
Scale	AS NOTED
Date	NOVEMBER 2024
Job No.	PLY003-0631071-22008575
Designed by	SBS/CED
Drawn by	SBS
Checked by	RJA
Approved by	LEU

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FULL SCALE ON A 22" X  
34" DRAWING

**FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT  
TOWN OF PLYMOUTH, MA**

**FEDERAL FURNACE ROAD IV - STA. 66+90 TO STA. 88+80**

FOR CONSTRUCTION  
Sheet No. **C-5**



## NOTES

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RAINAGE STRUCTURES

B14 RIM = 130.79'  
12" RCP INV. = 126.5'  
B15 RIM = 130.41'  
12" RCP INV. = 126.4'  
MH1 RIM = 131.24'  
7 HEADWALL  
10" CMP INV. = 119.3'

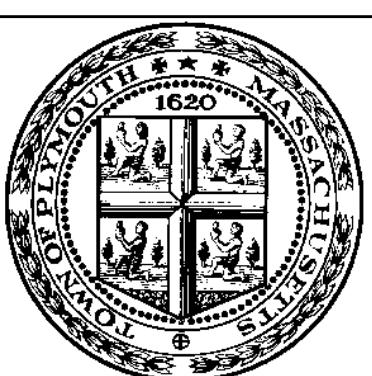
DRAIN

CB11 F  
INV

CB12 F  
TO

CB13 F  
TO

**IMAGE STRUCTURES**  
IM = 121.69'  
= 121.69'  
IM = 128.02'  
P OF HOOD = 126.0'  
IM = 127.99'  
P OF HOOD = 126.1'



# ENVIRONMENTAL PARTNERS

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Scale	
Date	11/11/11
Job No.	PL12345
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Drawn by	
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Approved by	

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SBS	
RJA	

# FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT TOWN OF PLYMOUTH, MA

## FEDERAL FURNACE ROAD V - STA. 88+80 TO STA. 110+40

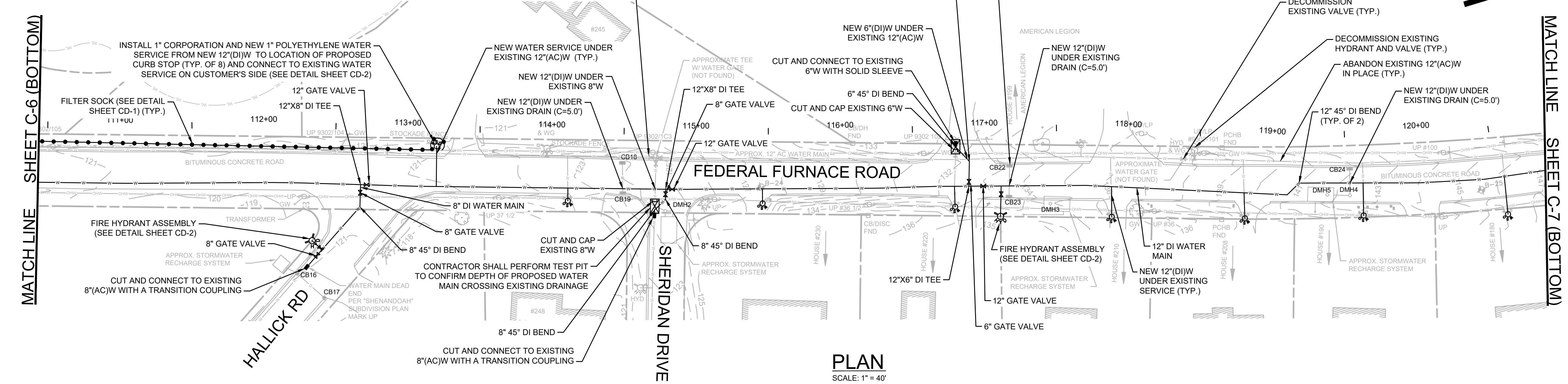
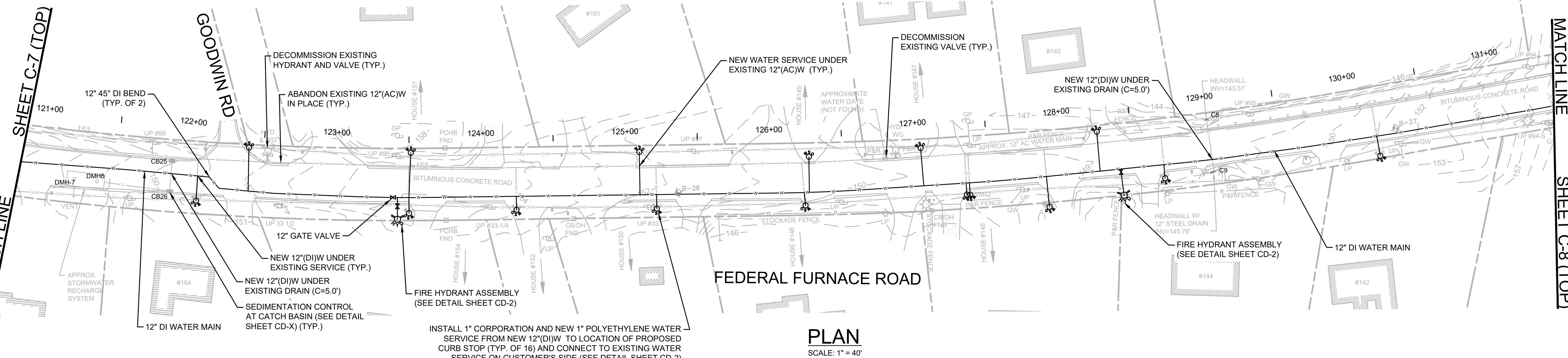
FOR CONSTRUCTION

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Sheet No.

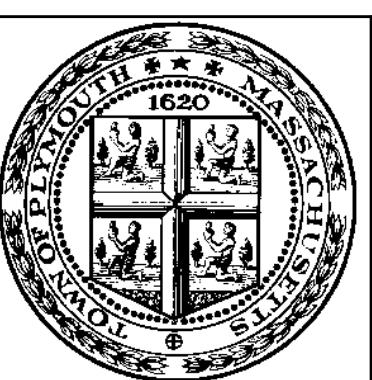
**C-6**

Drawing file: I:\Plummouth 196\Water System



**NOTES:**

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11/06/2024

MARK DATE DESCRIPTION

Scale **AS NOTED**  
Date **NOVEMBER 2024**  
Job No. **PLY003-0631071-22008575**  
Designed by **SBS/CED**  
Drawn by **SBS**  
Checked by **RJA**  
Approved by **LEU**

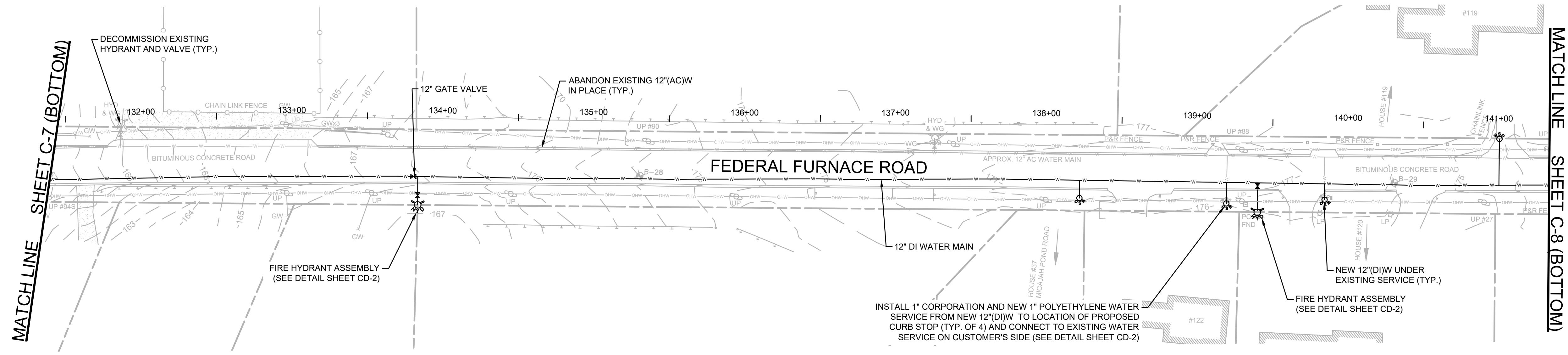
THIS LINE IS ONE INCH  
LONG WHEN PLOTTED AT  
FULL SCALE ON A 22" X  
34" DRAWING

**FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT  
TOWN OF PLYMOUTH, MA**

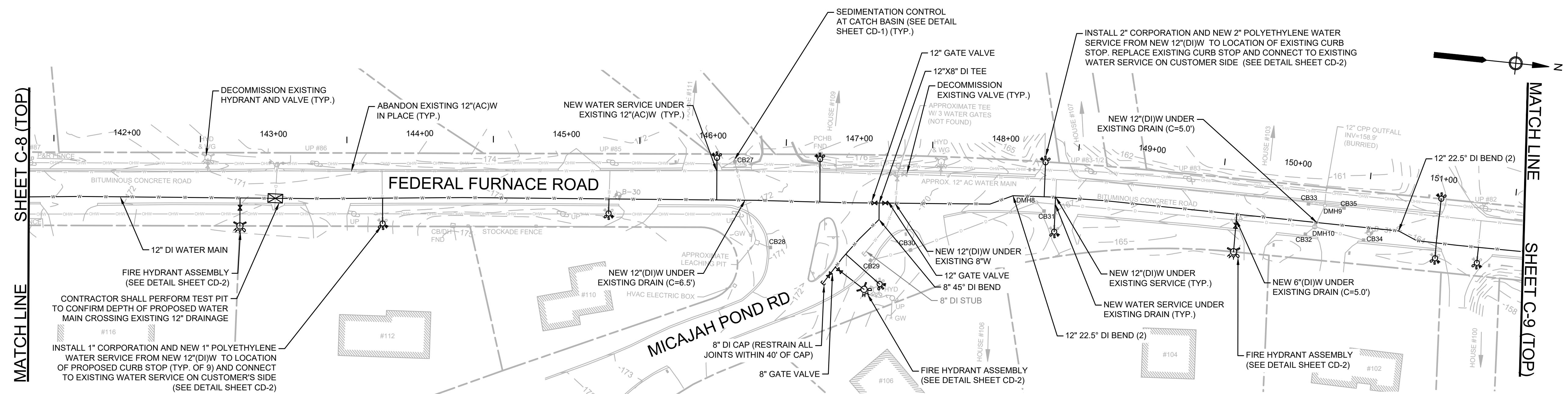
**FEDERAL FURNACE ROAD VI - STA. 110+40 TO STA. 131+45**

**FOR CONSTRUCTION**  
Sheet No. **C-7**

<b>DRAINAGE STRUCTURES</b>	
CB25 RIM = 120.92'	CB22 RIM = 133.00' (DOUBLE)
12" CPP INV.(NE) = 118.0'	12" CPP INV. = 130.4'
12" CPP INV.(SW) = 117.9'	CB23 RIM = 133.32' (DOUBLE)
CB17 RIM = 121.04'	12" CPP INV.(W) = 129.6'
12" VCP INV. = 118.1'	12" CPP INV.(N) = 129.5'
CB26 RIM = 150.21' (DOUBLE)	DMH3 RIM = 134.93'
12" CPP INV.(W) = 147.0'	CB24 RIM = 141.84' (DOUBLE)
CB26 RIM = 150.21' (DOUBLE)	CB18 RIM = 123.80' (DOUBLE)
12" CPP INV.(W) = 146.8'	CB19 RIM = 123.49' (DOUBLE)
12" CPP INV.(S) = 145.6'	DMH4 RIM = 139.0'
DMH6 RIM = 148.69'	10" CPP INV. = 121.2'
DMH7 RIM = 148.23'	DMH5 RIM = 142.33'
C8 HEADWALL INV. = 143.51'	DMH2 RIM = 124.54'
C9 HEADWALL INV. = 143.76'	CB20 RIM = 121.24'
12" STEEL INV. = 145.76'	12" RCP INV. = 117.0'
	CB21 RIM = 121.06'
	12" RCP INV. = 116.6'



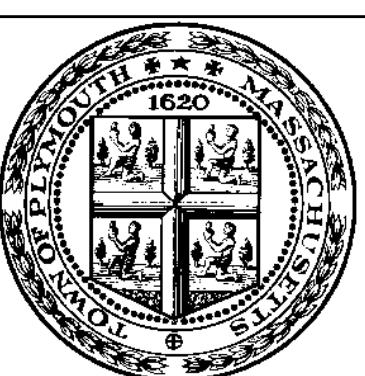
PLAN  
SCALE: 1" = 40'



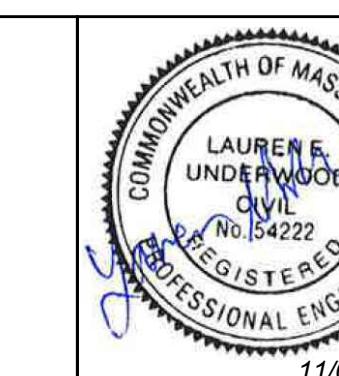
PLAN  
SCALE: 1" = 40'

NOTES:

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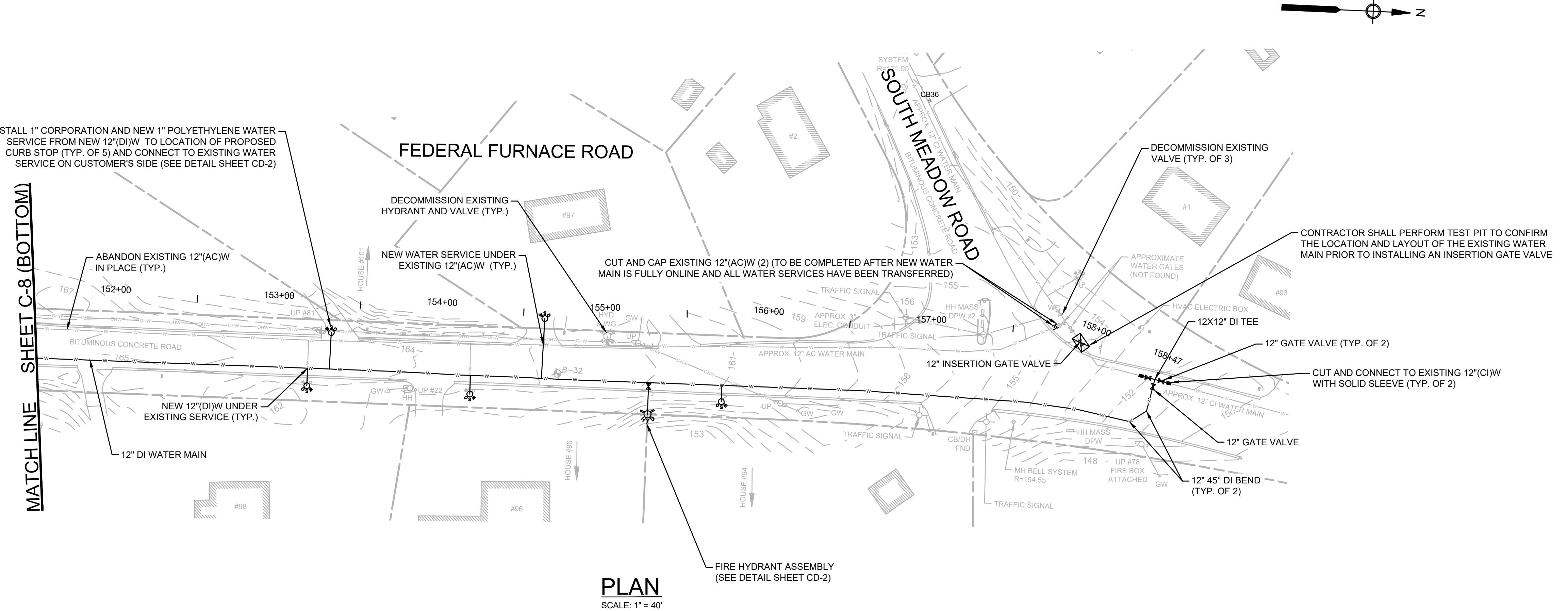
AS NOTED  
NOVEMBER 2024  
PLY003-0631071-22008575  
SBS/CED  
SBS  
RJA  
LEU

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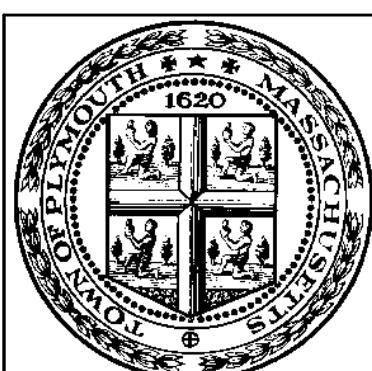
**FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT  
TOWN OF PLYMOUTH, MA**

**FEDERAL FURNACE ROAD VII - STA. 131+45 TO STA. 151+60**

FOR CONSTRUCTION  
Sheet No.  
**C-8**



NOTES:					
1.	CONTRACTOR SHALL CONFIRM THE INSIDE DIAMETER (I.D.) AND OUTSIDE DIAMETER (O.D.) OF THE EXISTING PIPES FOR THE INSERTION GATE VALVE INSTALLATION.				
2.	ALL EXISTING SERVICE LINES OFF THE EXISTING WATER MAIN SHALL BE ABANDONED IN PLACE AND EXISTING SERVICE BOXES SHALL BE REMOVED AND DISPOSED.				
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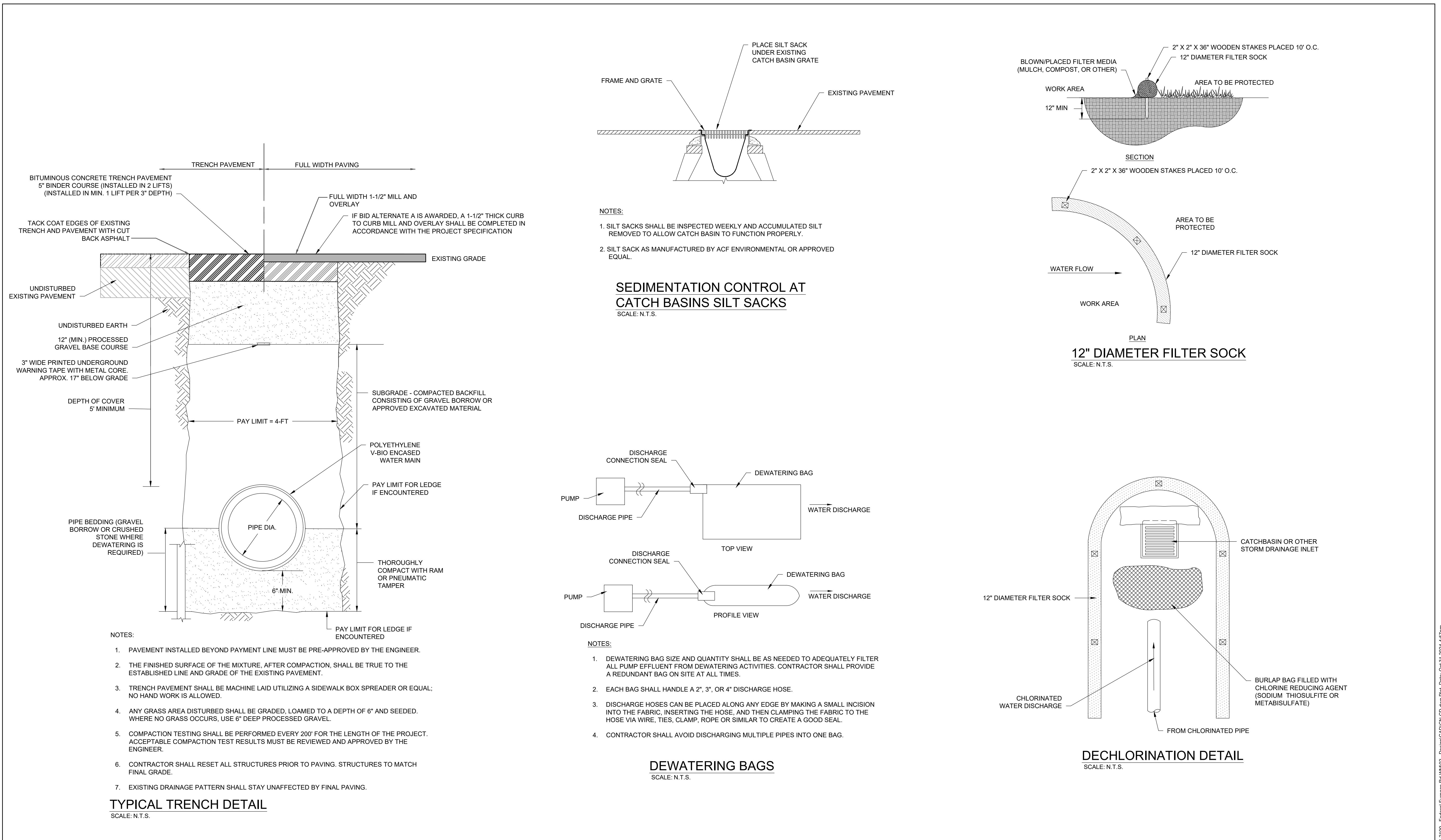
Scale	AS NOTED
Date	NOVEMBER 2024
Job No.	PLY003-0631071-22008575
Designed by	SBS/CED
Drawn by	SBS
Checked by	RJA
Approved by	LEU

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LONG WHEN PLOTTED AT  
FULL SCALE ON A 22" X  
34" DRAWING

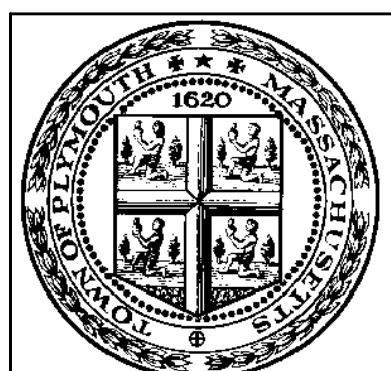
**FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT  
TOWN OF PLYMOUTH, MA**

**FEDERAL FURNACE ROAD VIII - STA. 151+60 TO STA. 158+47**

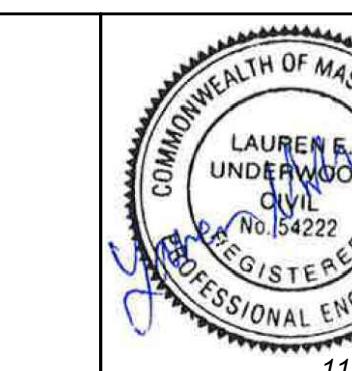
FOR CONSTRUCTION  
Sheet No.  
**C-9**



			Scale	N.T.S.		FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT TOWN OF PLYMOUTH, MA		FOR CONSTRUCTION
			Date	NOVEMBER 2024				Sheet No.
			Job No.	PLY003-0631071-22008575 <th></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th> <th>CD-1</th>				CD-1
MARK	DATE	DESCRIPTION	Designed by	SBS/CED				
			Drawn by	SBS				
			Checked by	RJA				
			Approved by	LEU				
			THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING		CONSTRUCTION DETAILS I			



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## GENERAL TRAFFIC MANAGEMENT NOTES:

- ONE LANE OF TRAVEL WILL BE MAINTAINED IN CONSTRUCTION LOCATIONS WHERE ADEQUATE WIDTH CAN BE PROVIDED FOR VEHICULAR ACCESS. (SEE TYPICAL LANE CLOSURE DETAIL.)
- AT THE END OF EACH CONSTRUCTION DAY NO TRAFFIC CONTROL DEVICES SHALL REMAIN IN THE ROADWAY; ROADWAYS WILL BE PATCHED OR PLATED AND OPEN TO TRAVEL AT THE END OF EACH WORK DAY.
- THE CONTRACTOR MUST MAINTAIN ACCESS AND EGRESS AT ALL TIMES TO ALL PROPERTIES AND ROADWAYS ABUTTING THE WORK ZONE UNLESS OTHERWISE APPROVED BY THE OWNER AND/OR ENGINEER.
- ALL DISTANCES MAY BE ADJUSTED TO FIT FIELD CONDITIONS, AS DIRECTED BY THE OWNER AND OR ENGINEER. MINIMUM DISTANCES HOWEVER SHOULD BE MAINTAINED WHERE INDICATED.
- MINIMUM LANE WIDTHS CONSIST OF THE CLEARANCE BETWEEN CHANNELIZING DEVICES SUCH AS DRUMS AND SHALL BE PROVIDED AT ALL TIMES.
- EXISTING PEDESTRIAN WALKWAYS WILL REMAIN OPEN AND CLEAR OF DEBRIS. IN LOCATIONS WHERE EXISTING PEDESTRIAN WALKWAYS HAVE BEEN IMPACTED BY CONSTRUCTION, THE ENTIRE WIDTH OF THE PEDESTRIAN WALKWAY IS TO BE RECONSTRUCTED IN KIND WITH A MINIMUM WIDTH OF 5 FEET EXCLUDING CURBING.
- MAXIMUM SPACING OF CHANNELIZING DEVICES IS EQUAL (IN FEET) TO THE SPEED LIMIT (MPH).
- CHANNELIZATION WILL BE ACCOMPLISHED THROUGH THE USE OF REFLECTORIZED PLASTIC DRUMS. PLASTIC DRUMS WITH ANY FORM OF LIGHTING DEVICE MOUNTED ON THEM MUST PASS THE CRITERIA AS SET FORTH IN NCHRP 350 "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES."
- FLASHING WARNING LIGHTS AND/OR FLAGS MAY BE USED ON ADVANCE WARNING SIGNS AS DIRECTED BY THE OWNER AND/OR ENGINEER. FLAGS SHALL BE A MINIMUM OF 16" X 16".
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORT.
- ALL TEMPORARY TRAFFIC CONTROL DEVICES AND ADVANCE WARNING SIGNS SHALL BE REMOVED IMMEDIATELY WHEN NO LONGER NEEDED.
- PAVEMENT MARKINGS CONFLICTING WITH TRAFFIC PATTERNS SHALL BE REMOVED FROM THE TRAVEL PATH WITHIN THE LIMITS OF PROPOSED TEMPORARY PAVEMENT MARKINGS AS REQUIRED. UPON COMPLETION OF THE STAGE OF CONSTRUCTION, TEMPORARY MARKINGS SHALL BE REMOVED AND PERMANENT PAVEMENT MARKINGS SHALL BE INSTALLED IN THEIR ORIGINAL LOCATION.
- WRITTEN PERMISSION MUST BE OBTAINED FROM THE PLYMOUTH POLICE DEPARTMENT BEFORE THE CLOSING OF ANY ROADS WITHIN THE LIMITS OF THE PROJECT AREA.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING, SETTING UP, AND REMOVING ALL SIGNAGE, CONES, BARRICADES, BARRELS, AND OTHER TRAFFIC CONTROL DEVICES ON A DAILY BASIS.
- THE CONTRACTOR SHALL SUBMIT A TRAFFIC MANAGEMENT PLAN TO THE PLYMOUTH POLICE DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION.

## SIGN SUMMARY

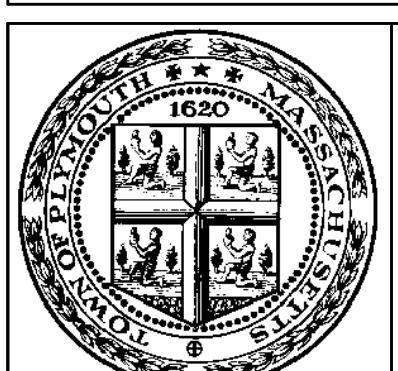
IDENTIFICATION NUMBER	SIZE OF SIGN (IN)		TEXT	TEXT DIMENSIONS (IN)			BACK-GROUND	COLOR	LEGEND	BORDER	UNIT AREA/EACH (S.F.)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.					
G20-2	36	18	END ROAD WORK	(1)	(1)	(1)	ORANGE	BLACK	BLACK	4.50	
R2-10a	48	36	WORK ZONES SPEEDING FINES DOUBLED	(2)	(2)	(2)	WHITE	BLACK	BLACK	12.00	
W5-1	36	36	ROAD NARROWS	(1)	(1)	(1)	ORANGE	BLACK	BLACK	9.00	
W13-1	24	24	XX MPH	(1)	(1)	(1)	ORANGE	BLACK	BLACK	4.00	
W20-1	36	36	ROAD WORK AHEAD	(1)	(1)	(1)	ORANGE	BLACK	BLACK	9.00	
W20-3	36	36	ROAD CLOSED XX FT	(1)	(1)	(1)	ORANGE	BLACK	BLACK	9.00	
W20-4	36	36	ONE LANE ROAD XX FT	(1)	(1)	(1)	ORANGE	BLACK	BLACK	9.00	
W20-7b	36	36	POLICE DETAIL AHEAD	(1)	(1)	(1)	ORANGE	BLACK	BLACK	9.00	
M4-9L	30	24	DETOUR	(1)	(1)	(1)	ORANGE	BLACK	BLACK	9.00	
M4-9R	30	24	DETOUR	(1)	(1)	(1)	ORANGE	BLACK	BLACK	9.00	

1

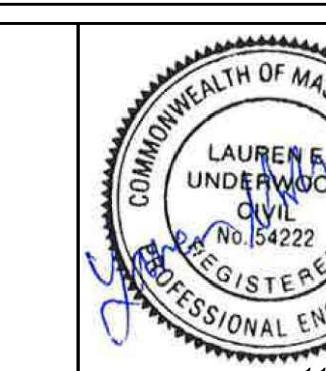
SEE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" BY FEDERAL HIGHWAY ADMINISTRATION (LATEST EDITIONS) FOR SPECIFICATIONS ON TEXT DIMENSION AND COLOR. (SEE ALSO THE "MASSACHUSETTS AMENDMENTS TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", AND "GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS" (LATEST EDITIONS) BY THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION).

2

SEE "STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS" AND "STANDARD HIGHWAY SIGNS" BY THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (LATEST EDITIONS) FOR SPECIFICATIONS ON TEXT DIMENSION AND COLOR.



**ENVIRONMENTAL  
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11/06/2024

MARK DATE DESCRIPTION

Scale N.T.S  
Date NOVEMBER 2024  
Job No. PLY003-0631071-22008575

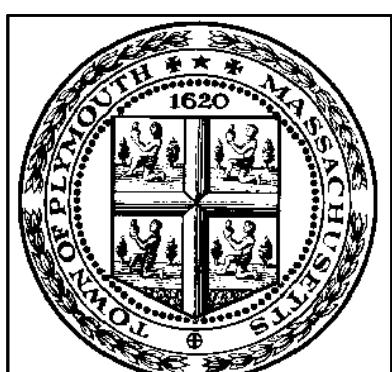
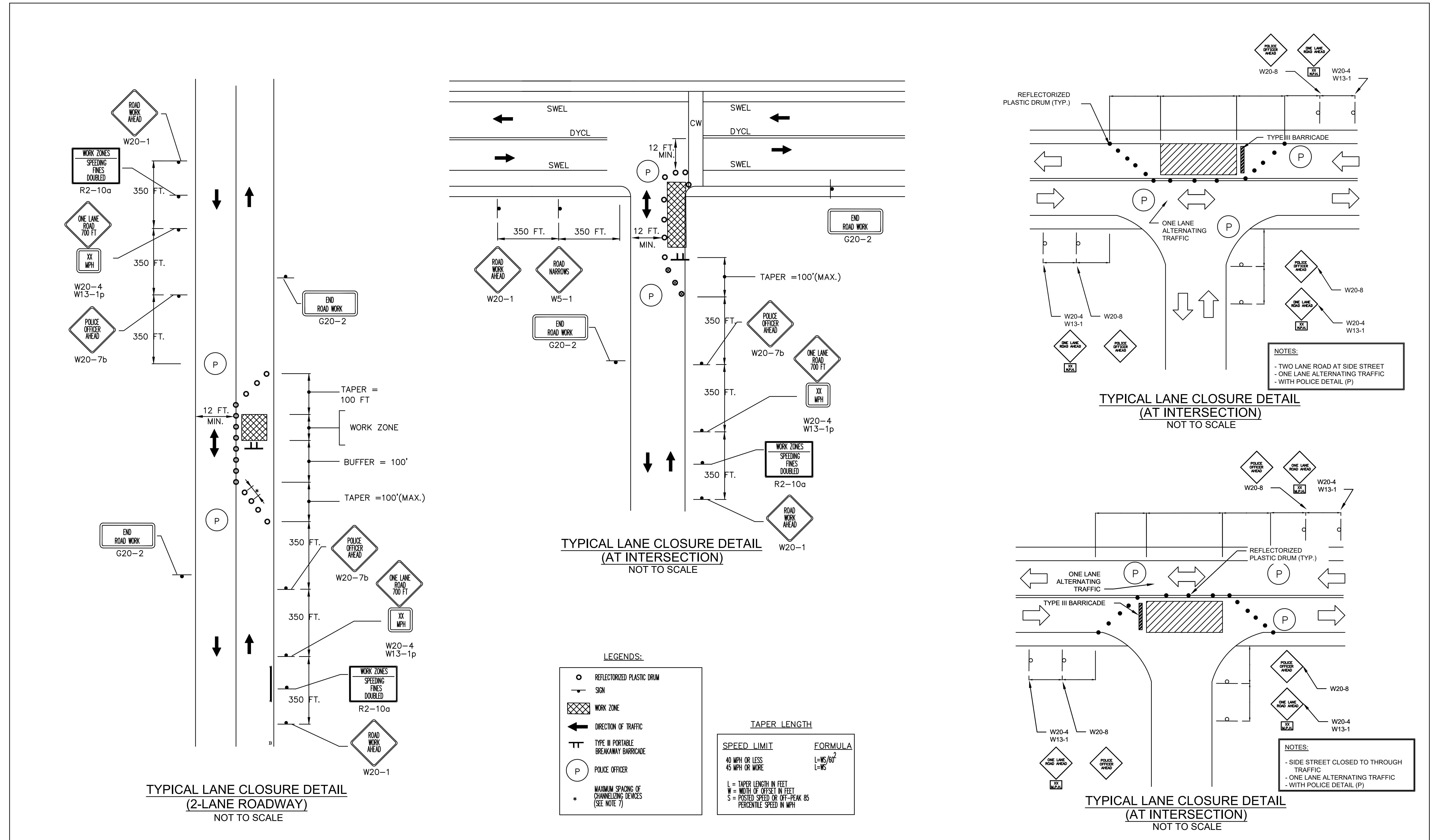
Designed by SBS/CED  
Drawn by SBS  
Checked by RJA  
Approved by LEU

THIS LINE IS ONE INCH  
LONG WHEN PLOTTED AT  
FULL SCALE ON A 22" X  
34" DRAWING

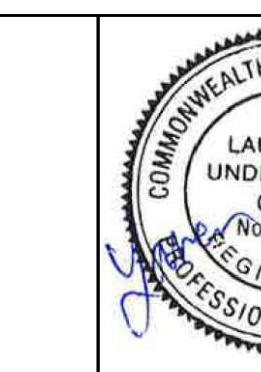
**FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT  
TOWN OF PLYMOUTH, MA**

**TRAFFIC MANAGEMENT PLAN I**

FOR CONSTRUCTION  
Sheet No.  
**TMP-1**



**ENVIRONMENTAL  
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11/06/2024

MARK DATE DESCRIPTION

Scale	N.T.S.
Date	NOVEMBER 2024
Job No.	PLY003-0631071-22008575
Designed by	SBS/CED
Drawn by	SBS
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34" DRAWING

**FEDERAL FURNACE ROAD WATER MAIN REPLACEMENT  
TOWN OF PLYMOUTH, MA**

**TRAFFIC MANAGEMENT PLAN II**

FOR CONSTRUCTION  
Sheet No.  
**TMP-2**