TOWN OF NEEDHAM INVITATION FOR BIDS (IFB) IFB 22DPW163C

16" Water Main Replacement Central Avenue Addendum #1

Notice to All Prospective Bidders

Addendum #1 RELEASED (March 10, 2022)

The following changes are made to the bid documents for IFB 22DPW163C:

The following is a summary of the above referenced project Pre-Bid meeting held on a zoom meeting on March 3, 2022 at 1:00 PM. **Deadline for Questions for 1**st **Addenda 5:00 PM on March 4, 2022**;

Questions Due by 5:00 PM on March 14, 2022

Please note that some sections of the bid documents reference a 22DPW103C number which are part of this contract IFB 22DPW163C

I. Summary of Pre-Bid Meeting:

- The Contractor must fill in both the number of days for price being held firm and the number of days to complete work on page 3 of the Proposal. The number of days to complete the work is essential for awarding and determines when the Contractor will take over payment of police details and construction inspections per the Contract. The DPW Engineering Division in its contracts typically does not set contract end dates. It is up to the contractor to determine in their proposal the proper schedule to complete the project.
- The Contractor will be responsible for scheduling and canceling police details and setting up detours. Police details are a reimbursable expense. The Contractor will be required to coordinate with the police and submit a proposed schedule and traffic plan for the work prior to any closures.
- Hours of work shall be 7:00 am to 3:00 pm, Monday Friday, unless approved by the Town Engineer and the Needham Police Department. Off hours work must be requested at least 48 hours in advance.
- The Contractor must submit a list of their subcontractors who will be performing any paid item for Town approval before work on the project starts. The bonding and insurance companies must be notified immediately after the Town's acceptance of the subcontractor(s). The Contractor is solely responsible for all work, including the work of subcontractors.

- The Town Engineer must approve changes to the Contract in writing. A verbal approval will be given and logged into the field inspectors note book as paperwork is processed, as not to slow down the project. Any work that is performed outside of the Contract, without the Town Engineer's permission will not be paid. All change orders must be signed by both the Contractor and the Town Engineer prior to payment for work. Certified payroll is required with all requests for payment.
- The Town will not accept "standard" AIA Bonds. The acceptable performance and payment bonds are provided on page 21 and 69 through 72 for the Contractor's use. The Contractor may use a similarly worded bid bond that is provided in Section 2.
- Barrels, barricades, traffic cone, and signage are incidental to the work per the Contract. Item 9.20.2a is for MassDOT permit only (DOT permits require message and arrow boards not covered in the Contract). This is not a MassDOT permit project. Under the Town specification, traffic control devices and signage are incidental to the work. Barrels and barricades will be reflectorized and laminated with flashing lights that the Contractor shall provide. A minimum of 25 devices will be required per 250 lf of impacted roadway. The Engineering Division has some barrels that can be borrowed, if needed, but the Contractor will be responsible for them.
- Contractors are reminded to read Section 3 Article XLII Guaranty. The Town has additional requirements during the guarantee period that contractors need to be aware of.
- Contractors should not assume if there is a quantity for an item that it will be used. The town will expect you to perform the work at the price you bid for that item.
- Any item with quantities of zero may be left blank.
- Contractors are advised that they are required to manage their storage and staging locations so that the street has access for the residents and emergency vehicles. If the contractor negotiates staging or storage locations on private property an in writing agreement with the owner is required.
- The contractors are encouraged to visit the site.
- Contractors' bids are due Thursday, March 17, 2022 at 1 PM at PSAB, 500 Dedham Avenue, Needham, MA 02492, first floor admin office.

- Wellesley Municipal Light & Power will need to be coordinated with and they may need to assist at some point due to the proximity of the electrical conduit.
- Buffer zone wetland
- Coordinate the Central Avenue portion of the project during the summer because school is not in session.
- RTS to remain open and accessible throughout the project duration.
- Attached Stamped copies of the plan (no modifications from previous unstamped set)

Questions & Answer:

1. It is extremely difficult to get pipe, especially the larger pipe, are there any penalties for not meeting the projected contract schedule?

Answer: The Town has no penalties or rewards written into the contract. The contractor may be responsible to pay for the inspectional services and police details beyond the contract date. Due to the ongoing economic and supply issues, we are open to extensions provided that proper communications are made with the Town.

2. Is there a lay down area in the RTS?

Answer: There may be, but that will need to be coordinated with the RTS Supervisor, Greg Smith (781) 455-7584. Any lay down area agreement made will need to be in writing and a copy provided to the Engineering Division.

3. Is there an escalation clause on the ductile iron pipe?

Answer: There is no escalation clause for ductile iron pipe.

4. Is there an item for bituminous top course in this contract? Is permanent pavement required?

<u>Answer:</u> There is a payment item for bituminous top course. This information is contained in the bid package. Please see page 24 of the specifications Item 5.8.5d.

Revision to the Contract Specifications:

Addendum 1 was prepared in consultation with: David Kelly, Survey Party Chief Tom Ryder, Acting Town Engineer BETA-Inc.

Bidders are reminded that they must acknowledge receipt of any and all Addendums in section 2 on page 3.

The Town reserves the right to reject any and all bids as determined to be in the best interest of the Town and to waive minor informalities.

TOWN OF NEEDHAM, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS

CENTRAL AVE WATER MAIN REPLACEMENT CONTRACT NO. 22DPW103C

FEBRUARY 2022



SELECT BOARD

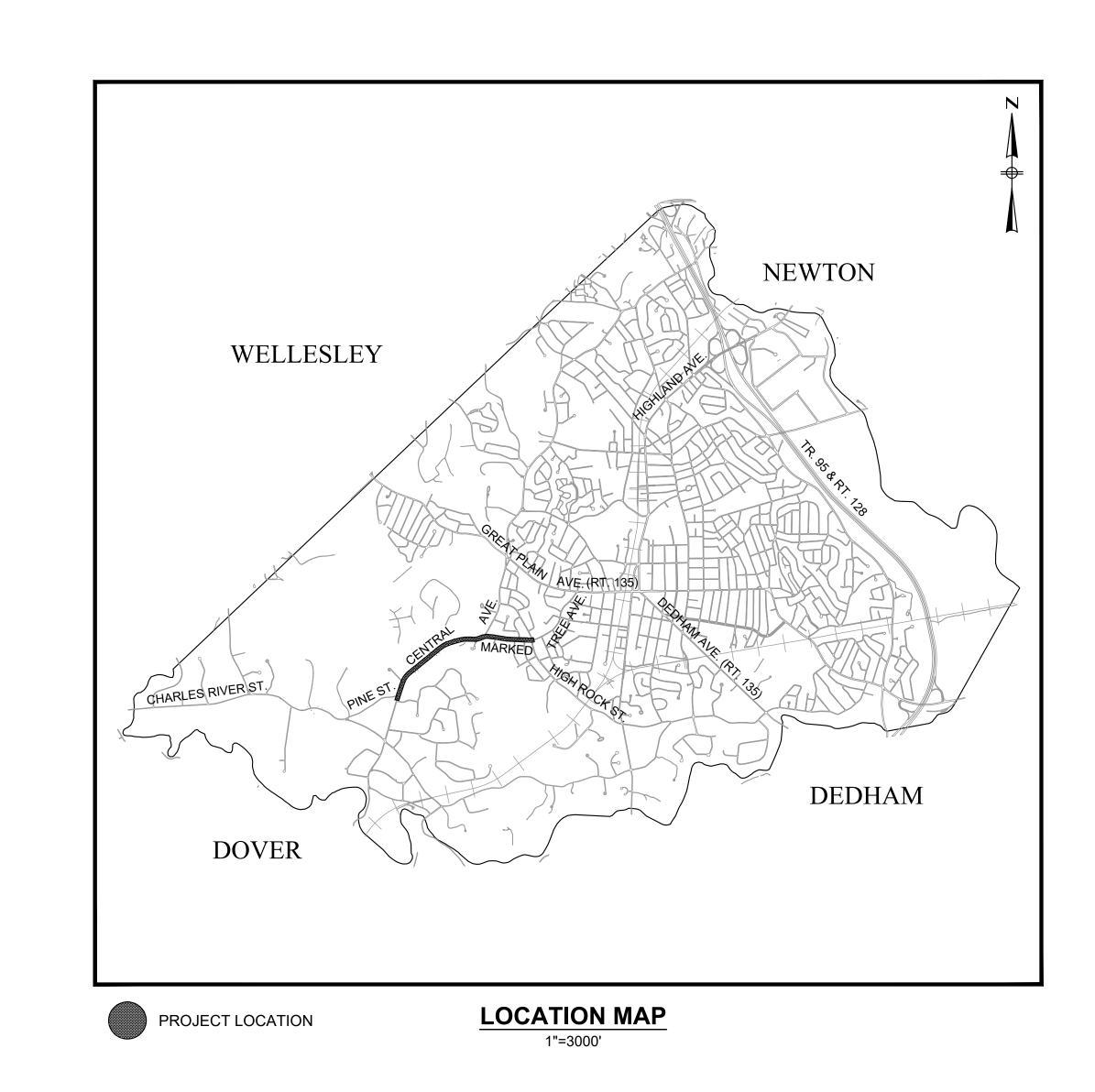
MATTHEW BORRELLI, CHAIR
MARIANNE B. COOLEY, VICE-CHAIR
MARCUS A. NELSON, CLERK
DANIEL P. MATTHEWS, MEMBER
KEVIN KEANE, MEMBER

TOWN MANAGER

KATE FITZPATRICK

DEPARTMENT OF PUBLIC WORKS

CARYS LUSTIG, DIRECTOR
ROBERT A. LEWIS, ASSISTANT DIRECTOR
THOMAS A. RYDER, P.E., ACTING TOWN ENGINEER



PLAN INDEX

SHEET NO.	DESCRIPTION
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2	LEGEND, ABBREVIATIONS & GENERAL NOTES
3-5	DETAILS I-III
6-7	TEMPORARY TRAFFIC CONTROL PLAN I-II
8	CENTRAL AVENUE
9	CENTRAL AVENUE AND MARKED TREE ROAD
10	MARKED TREE ROAD

PREPARED BY:





REGISTERED PROFESSIONAL

GENERAL SYMBOLS

EXISTING

□ CB

OEHH

o GG

o WG

o CS

HYD.

~ UP

12" RCP

8"VCP

4" HP

8" CI

____T___

0 0 0 0 0 0

BND

SHLO (Date of Layout)

● 24" PINE

 \square MB

PROPOSED

(D) DMH

—► 16" DI

CURB OR BERM (TYPE AS NOTED)

CATCH BASIN (OR GUTTER INLET, LEACHING BASIN,

DROP INLET, CATCH BASIN CURB INLET)

ELECTRIC HANDHOLE (NUMBER AS NOTED)

EDGE OF PAVEMENT

ELECTRIC MANHOLE

SEWER MANHOLE

GAS GATE

WATER GATE

CURB STOP

SOLID SLEEVE

BEND AND TEE

HYDRANT

END CAP

REDUCER

UTILITY POLE

ELECTRIC DUCT

OVERHEAD WIRE

PROPERTY LINE

SURVEY LINE

WHEELCHAIR RAMP

HEDGE/SHRUBS

MAIL BOX

UTILITY POLE w/ LIGHT

DRAIN PIPE (SIZE AS NOTED)

GAS MAIN (SIZE AS NOTED)

WATER MAIN (SIZE AS NOTED)

RETAINING WALL (TYPE NOTED)

EASEMENT LINE (TYPE NOTED)

TREE (SIZE AND TYPE AS NOTED)

FENCE (SIZE AND TYPE AS NOTED)

EDGE OF RIVER/STREAM LINE

100-FT. RIVER FRONT LIMIT

200-FT. RIVER FRONT LIMIT

TEST PIT

SAW CUT LINE

2" TEMPORARY BYPASS

4" TEMPORARY BYPASS

100-FT. WETLAND BUFFER LIMIT

WOODED AREA / LIMIT OF CLEARING

EROSION CONTROL BARRIER/COMPOST FILTER TUBE

EDGE OF WETLAND W/ FLAGGED NUMBER

CONSTRUCTION BASELINE

STATE HIGHWAY LAYOUT LINE (SHLO)

TELEPHONE DUCT (SIZE AS NOTED)

WOOD GUARD RAIL STEEL BEAM GUARD,

WOOD OR STEEL POSTS (TYPE AS NOTED)

STEEL GUARD RAIL, STEEL POSTS (TYPE NOTED)

HIGHWAY/PROPERTY BOUND (TYPE AS NOTED)

CITY, TOWN OR COUNTY LAYOUT LINE (R.O.W.)

CITY, TOWN, COUNTY OR STATE BOUNDARY LINE

RAILROAD OR STREET RAILWAY TRACKS WITH SIDELINES

SEWER MAIN (SIZE AS NOTED)

DRAINAGE MANHOLE

TELEPHONE MANHOLE

ABBREVIATIONS

UTILITIES

CORRUGATED METAL PIPE

CORRUGATED PLASTIC PIPE

CORRUGATED STEEL PIPE

CATCH BASIN

CONDUIT

COPPER PIPE

DUCTILE IRON PIPE

FRAME AND COVER

FRAME AND GRATE

GALVANIZED IRON PIPE

DROP INLET

FORCE MAIN

GAS GATE

HEADWALL

HYDRANT

MANHOLE

LIGHT POLE

SUBDRAIN

OVER HEAD WIRES

PAVED WATER WAY

SEWER MANHOLE

UTILITY POLE w/ LIGHT

VITRIFIED CLAY PIPE

WROUGHT IRON PIPE

TRAFFIC SIGNAL

UTILITY POLE

WATER GATE

POLY-VINYL-CHLORIDE PIPE

REINFORCED CONCRETE PIPE

(CLASS III UNLESS NOTED)

TAPPING SLEEVE, VALVE AND BOX

UTILITY POLE w/ TRANSFORMER

WATER METER/WATER MAIN

GUTTER INLET

CIT

CMP

CPP

CSP

DIP

F&C

F&G

FM

GG

HDW

OHW

PVC

RCP

TS

TSV&B

UPL

UPT

WG

CAST IRON PIPE

CHANGE IN TYPE

GENERAL NOTES

THE LOCATION OF SUBSURFACE UTILITIES SHOWN IS APPROXIMATE AND NOT GUARANTEED TO BE COMPLETE OR ACCURATE. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITY LINES AND STRUCTURES PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR MUST NOTIFY DIGSAFE THE DEPARTMENT OF PUBLIC WORKS PRIOR TO ANY EXCAVATION, DEMOLITION OR EXPLOSION WORK IN PUBLIC OR PRIVATE WAYS OR UTILITY COMPANY RIGHT OF WAY OR EASEMENT. FOR WATER AND SEWER WORK, NOTIFY NEEDHAM DEPARTMENT OF PUBLIC WORKS AT 781-455-7550, AT LEAST 72 HOURS IN ADVANCE OF THE NEED FOR MARKOUTS.

2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK. THE LOCATION. ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR THE RESOLUTION OF THE CONFLICT.

3. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CABLE TV, FIRE ALARM AND ANY OTHER PUBLIC OR PRIVATE UTILITIES BY THE UTILITY COMPANIES. ALL UTILITY CASTING AND FIRE ALARM BOXES SHALL BE ADJUSTED TO FINISH GRADE BY THEIR RESPECTIVE OWNERS. ONLY THE NEEDHAM DEPARTMENT OF PUBLIC WORKS SHALL OPERATE GATE VALVES AND HYDRANTS ON LIVE WATER MAINS FOR SHUT DOWNS OR TURN-ONS. THE CONTRACTOR SHALL NOTIFY THE NEEDHAM WATER DEPT. 48 HOURS IN ADVANCE OF THE NEED FOR VALVES OR HYDRANTS TO BE

4. TREES WITHIN THE LIMITS OF EXCAVATION, GRADING OR PAVING SHALL NOT BE REMOVED UNLESS APPROVED BY THE ENGINEER

5. THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R) AS DIRECTED BY THE OWNER/ENGINEER.

PRIOR TO THE START OF ANY CONSTRUCTION THE CONTRACTOR SHALL CONDUCT TEST PITS AT LOCATIONS WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING AND STRUCTURES AND TO FIELD VERIFY THE EXACT SIZE, MATERIAL, LOCATION, INVERT ELEVATION AND ALIGNMENT (VERTICAL AND HORIZONTAL) OF EXISTING UNDERGROUND PIPES AND STRUCTURES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN PROPOSED PIPING AND EXISTING PIPING PRIOR TO STARTING INSTALLATION OF THE PROPOSED PIPING.

EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE PROTECTED AND SUPPORTED AT ALL TIMES BY THE CONTRACTOR. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS TO INTERFERE AS LITTLE AS POSSIBLE WITH EXISTING UTILITIES. PAYMENT FOR PROVIDING SAID PROTECTIONS AND SUPPORTS SHALL BE CONSIDERED A PART OF AND PAID FOR UNDER THE APPROPRIATE PIPE ITEMS UNLESS OTHERWISE INDICATED AND/OR DIRECTED BY THE OWNER. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION BY REASON OF DELAY AND/OR INCONVENIENCE IN ADAPTING HIS OPERATIONS ACCORDINGLY

8. WHERE EXISTING MATERIALS ARE ENCOUNTERED THAT, IN THE OPINION OF THE OWNER/ENGINEER, ARE UNSUITABLE FOR BEDDING, BACK FILLING OR OTHER INTENDED USE, SUCH MATERIALS SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SUITABLE CRUSHED STONE AND/OR SELECTED BORROW, AS DIRECTED BY THE OWNER OR THE ENGINEER AND PAID FOR UNDER THE APPROPRIATE BID ITEMS. EXCAVATION MATERIAL TO BE DISPOSED OF SHALL NOT BE STOCKPILED IN THE STREET. ARRANGEMENTS SHALL BE MADE TO DISPOSE OF UNSUITABLE MATERIAL ON A DAILY BASIS.

9. BASE PLANS AND TOPOGRAPHY WERE OBTAINED FROM MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEMS (GIS) MAPPING OBTAINED FROM THE TOWN OF NEEDHAM.

ALL ELEVATIONS REFER TO NAVD 88 DATUM. CONTRACTOR TO LOCATE AND PROTECT CONTROL AND REFERENCE POINTS.

11. THE CONTRACTOR SHALL NOTIFY IN ADVANCE ALL THOSE WHO WILL BE AFFECTED BY THE WORK. THE CONTRACTOR, AT NO ADDITIONAL COST TO THE OWNER, SHALL PURCHASE A GENERAL NEWSPAPER NOTICE, TO BE APPROVED BY THE OWNER AND ENGINEER, THAT SHALL BE ISSUED BY THE CONTRACTOR IN THE NEEDHAM TIMES 7-DAYS PRIOR TO THE START OF WORK. BEFORE CONSTRUCTION STARTS IN ANY STREET AND BEFORE NOTICEABLE CHANGES IN WATER OR SEWER SERVICE OCCUR, EACH CONSUMER SHALL BE DIRECTLY INFORMED OF THE WORK BY A NOTICE APPROVED BY THE ENGINEER AND DELIVERED TO THE BUILDING BY THE CONTRACTOR STATING HOW THEY WILL BE AFFECTED AND THE EXPECTED DURATION OF THE WORK. NOTICE WILL BE NO LATER THAN 48 HOURS BEFORE COMMENCEMENT OF WORK.

12. WHERE NECESSARY TO REMOVE CURBS, CATCH BASINS, OR DRAINS TO COMPLETE THE WORK, THE CONTRACTOR SHALL REPLACE THEM TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

13. ANY EXISTING PIPE OR UTILITY DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE OWNER.

14. CONTRACTOR SHALL INSTALL, MAINTAIN, AND REMOVE EROSION CONTROL AROUND ALL CATCH BASINS ALONG PROJECT ROUTE, THE COST OF WHICH SHALL BE

CONSIDERED A PART OF AND PAID FOR UNDER THE APPROPRIATE BID ITEM(S).

15. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT OR SEDIMENT LADEN WATER FROM ENTERING CATCH BASINS,

DRAINAGE SYSTEMS, SEWER SYSTEMS OR WATER BODIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ANY SEDIMENTS THAT ENTER THE SYSTEM.

16. THE CONTRACTOR SHALL COORDINATE THE REQUIRED TRAFFIC CONTROL WITH THE TOWN OF NEEDHAM POLICE AND FIRE DEPARTMENT PRIOR TO THE START OF CONSTRUCTION. DURING THE SCHOOL YEAR THE CONTRACTOR SHALL COORDINATE TRAFFIC CONTROL WITH THE SCHOOL DEPARTMENT.

17. THE CONTRACTOR SHALL SUBMIT A TRAFFIC MANAGEMENT PLAN ACCEPTABLE TO THE NEEDHAM POLICE, FIRE AND PUBLIC WORKS DEPARTMENTS PRIOR TO CONSTRUCTION.

18. THE CONTRACTOR SHALL IMMEDIATELY FILL ALL POT HOLES THAT OCCUR DURING CONSTRUCTION.

19. ALL FRAMES, GRATES, COVERS, GATE BOXES, ETC. SHALL BE ADJUSTED TO GRADE ACCORDINGLY, THE COST OF WHICH SHALL BE CONSIDERED A PART OF AND PAID FOR UNDER THE CASTING ADJUSTMENTS BID ITEMS IN SECTION 9.

20. INVERTS AND DIRECTIONS OF PIPES AND CONDUITS ARE SHOWN FOR THE PURPOSE OF INDICATING THE BASIC PARAMETERS USED DURING THE DESIGN. HOWEVER, MINOR CHANGES IN HORIZONTAL AND VERTICAL LOCATIONS MAY BE REQUIRED DURING CONSTRUCTION AS FIELD CONDITIONS WARRANT. FINAL LOCATIONS OF OTHER PIPES AND/OR CONDUITS SHALL BE DETERMINED IN THE FIELD. ANY CHANGES SHALL BE APPROVED BY THE ENGINEER.

21. ALL GRASSED AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS SHALL BE LOAMED AND SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS. RESTORATION SHALL BE EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION AS DETERMINED BY THE OWNER/ENGINEER. PAYMENT SHALL BE CONSIDERED PART OF AND PAID FOR UNDER THE PIPE ITEMS AS APPLICABLE UNLESS OTHERWISE INDICATED.

22. ALL CURBING AND SIDEWALKS DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE REPLACED AND RESTORED, IN KIND, AS DIRECTED BY THE OWNER OR THE ENGINEER. PAYMENT SHALL BE CONSIDERED PART OF AND PAID FOR UNDER THE PIPE ITEMS AS APPLICABLE UNLESS OTHERWISE INDICATED.

23. ALL SIDEWALKS AND WHEELCHAIR RAMP AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IN CONFORMANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS AND THE ARCHITECTURAL ACCESS BOARD (AAB) REQUIREMENTS AT THE CONTRACTOR'S EXPENSE.

24. THE CONTRACTOR SHALL REMOVE AND RESET ALL SIGNS, TRAFFIC LOOPS AND ROADWAY MARKINGS DISTURBED DURING CONSTRUCTION IN CONFORMANCE WITH THE MASSACHUSETTS STANDARD SPECIFICATIONS AND CONSTRUCTION STANDARDS AT NO ADDITIONAL COST TO THE OWNER.

25. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.

26. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF WORK SCHEDULE PRIOR TO CONSTRUCTION IN ACCORDANCE WITH SPECIFICATION SECTION 3 ARTICLE IV.

27. CONTRACTOR TO MAINTAIN EXISTING WATER, SANITARY AND STORM DRAINAGE FLOWS DURING CONSTRUCTION

28. REPAVEMENT OF SETTLED AREAS AND PAVEMENT CROWN RESTORATION WITHIN THE TRENCH LIMITS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

29. SHEETING SHALL BE USED WHERE SHOWN ON THE DRAWINGS OR WHERE DIRECTED BY THE ENGINEER. SHEETING SHALL BE LEFT IN PLACE BELOW A LINE OF 1'-0" ABOVE THE TOP OF THE PIPE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

30. STREET SIDELINES AND LOT LINES OF ABUTTING PROPERTIES WERE COMPILED FROM THE TOWN OF NEEDHAM ASSESSOR'S MAPS AND ARE APPROXIMATE.

31. PROPERTY LINES WERE OBTAINED FROM THE TOWN GIS MAPPING FROM APRIL, 2014.

SUBCONSULTANT

32. ALL OPEN TRENCHES SHALL BE BACKFILLED COMPLETELY AT THE END OF EACH DAY. STEEL PLATES MAY BE ALLOWED IF APPROVED BY THE ENGINEER

33. TRENCHES SHALL BE MAINTAINED DAILY BY SWEEPING AND APPLICATION OF CALCIUM CHLORIDE TO CONTROL DUST AS DIRECTED BY THE ENGINEER.

34. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN ALL ROADWAY ACCESS PERMITS AND APPROVALS FROM THE TOWN OF NEEDHAM FOR WORK IN

35. UTILITY RECORD DRAWINGS FOR WELLESLEY MUNICIPAL LIGHT, EVERSOURCE (PREVIOUSLY NSTAR) GAS, EVERSOURCE (PREVIOUSLY NSTAR) ELECTRIC, VERIZON, RCN, COMCAST AND WATER AND SEWER WERE OBTAINED IN 2018.

36. CONTRACTOR SHALL PERFORM ALL TEST PITS IDENTIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER AT THE BEGINNING OF CONSTRUCTION. CONTRACTOR TO NOTIFY WELLESLEY MUNICIPAL LIGHT PRIOR TO PERFORMING TEST PITS. NO WORK, INCLUDING THE INSTALLATION OF TEMPORARY WATER BYPASS PIPE. SHALL COMMENCE UNTIL ALL THE TEST PITS ARE PERFORMED AND RESULTING UTILITY INFORMATION IS PROVIDED TO THE ENGINEER.

WATER NOTES

1. MINIMUM PIPE COVER SHALL BE 5'-0".

OWNERS TO ATTACH AN ADDITIONAL HOSE.

2. EXCEPT WHERE OTHERWISE NOTED 12" MINIMUM CLEARANCE SHALL BE PROVIDED BETWEEN THE EXTERIOR OF THE WATER MAINS AND OTHER UTILITIES. SEE NOTE 4 FOR SEWER CLEARANCES.

3. AT CONNECTIONS BETWEEN EXISTING AND NEW WATER PIPES, BENDS AND EXTENSIONS NECESSARY FOR CONNECTIONS ARE NOT SHOWN. THE CONTRACTOR SHALL PROVIDE AND INSTALL THESE ITEMS AS NECESSARY AND INCLUDE THE COST UNDER THE APPROPRIATE BID ITEMS.

WATER MAINS SHALL MAINTAIN A HORIZONTAL CLEARANCE OF 10-FEET FROM THE CENTER OF THE PIPE TO THE CENTER OF THE SEWER. A VERTICAL CLEARANCE OF AT LEAST 18-INCHES BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER AT PIPE CROSSINGS, AND THE SECTIONS OF WATER MAIN PIPE SHALL BE CENTERED OVER THE SEWER SO THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM THE SEWER. IF IT IS NOT PRACTICAL TO MAINTAIN THE VERTICAL CLEARANCE, THE CONTRACTOR SHALL ENCASE THE SEWER IN CONCRETE.

5. CONTRACTOR SHALL ENCASE THAT PORTION OF THE NEW D.I. WATER MAINS AND ASSOCIATED SERVICES WHICH CROSS 18 INCHES OR LESS BELOW EXISTING SANITARY SEWERS AND SERVICES. CONCRETE ENCASEMENT OF WATER MAIN AND SERVICES SHALL EXTEND 10 FT. IN EACH DIRECTION FROM CENTERLINE CROSSING.

6. THE CONTRACTOR SHALL NOTIFY THE NEEDHAM FIRE DEPARTMENT ON A DAILY BASIS OF THE CURRENT LOCATION OF THE NEW WATER MAIN CONSTRUCTION WORK THROUGHOUT THE CONTRACT AT 781-455-7580. NOTIFY THE NEEDHAM WATER AND SEWER DIVISION AT 781-455-7546 FOR EMERGENCY WATER MAIN WORK.

7. WHERE NEW WATER MAIN PASSES WITHIN 3-FEET OF A CATCH BASIN, DRAIN OR DRAIN MANHOLE THE CONTRACTOR SHALL INSULATE THE WATER MAIN FOR A DISTANCE OF 5-FEET ON BOTH SIDES OF THE STRUCTURE.

8. ALL TEMPORARY SERVICE SILL COCKS WILL REQUIRE SEPARATELY VALVED WYE FITTINGS ALLOWING THE BUILDING

NEW HYDRANTS ARE SHOWN SCHEMATICALLY AND SHALL NOT BE PLACED ON PRIVATE PROPERTY. NEW AND EXISTING HYDRANTS CONNECTED TO A WATER MAIN WHICH IS NOT FULLY FUNCTIONAL SHALL BE BAGGED IMMEDIATELY.

10. TOWN OF NEEDHAM PUBLIC WORKS DEPARTMENT SHALL ASSIST CONTRACTOR IN LOCATING BURIED GATE VALVES AND HOUSE SERVICES NOT SHOWN ON DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE NEEDHAM WATER DEPT. 24 HOURS PRIOR TO THE NEED FOR LOCATION MARK-OUTS.

11. TEMPORARY HYDRANTS ARE TO BE COMPATIBLE WITH EQUIPMENT USED BY THE NEEDHAM FIRE DEPARTMENT. THE CONTRACTOR SHALL COORDINATE THIS REQUIREMENT WITH THE NEEDHAM FIRE CHIEF. THE WATER AND SEWER DEPARTMENT AND THE PUBLIC WORKS DIRECTOR.

12. NEW HYDRANTS SHALL BE MUELLER COMPANY SUPER CENTURIAN 200 MODEL A-423 OR APPROVED EQUAL AND OPEN TO THE RIGHT. EXACT LOCATIONS OF NEW HYDRANTS, HYDRANT VALVES, VALVES, FITTINGS, ETC. SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. NEW HYDRANTS SHALL BE PAINTED YELLOW WITH WHITE BONNET AND SHALL BE OUTFITTED WITH A 5' FIBERGLASS RED/WHITE REFLECTIVE MARKER WITH A RED MINI FLAG. NEW VALVES SHALL OPEN TO THE RIGHT

13. REPLACE THE SECTION OF EXISTING LEAD SERVICE CONNECTIONS FROM THE WATER MAIN TO THE INSIDE OF THE HOUSE WHEN ENCOUNTERED IN THE FIELD WITH NEW 1" TYPE "K" COPPER TUBING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE HOMEOWNER.

ALL WATER SERVICE CONNECTIONS WILL BE 1" TYPE "K" COPPER TUBING, UNLESS OTHERWISE NOTED.

15. NEW CURB STOPS SHOULD BE PLACED WITHIN THE GRASS PLOT IF POSSIBLE. CONNECTION TO THE EXISTING SERVICE SHALL BE MADE WITHIN THE PUBLIC RIGHT OF WAY AS CLOSE AS POSSIBLE TO THE PROPERTY LINE.

16. CONTRACTOR TO PROVIDE TEMPORARY BYPASS WATER SERVICE DURING CONSTRUCTION TO BE PAID UNDER TEMPORARY BYPASS ITEM. CONTRACTOR TO PRESENT TEMPORARY WATER MAIN LAYOUT PLANS AND SCHEDULE OF VALVES TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK. TEMPORARY BYPASS SHALL INCLUDE TEMPORARY HYDRANTS AT ALL EXISTING HYDRANT LOCATIONS.

17. BENDS AND FITTINGS ARE SHOWN SCHEMATICALLY ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE VARIOUS SIZES, ANGLES AND SUCH ADDITIONAL BENDS AS NECESSARY TO COMPLETE WORK.

18. WHEN ABANDONING EXISTING TEES AND GATES, THEY SHALL BE LEFT IN THE OPEN POSITION. UPPER BOX SECTION TO BE REMOVED AND BOTTOM BOX SECTION FILLED WITH CONCRETE.

19. DUCTILE-IRON PIPE SHALL BE DOUBLE CEMENT LINED PUSH-ON TYPE JOINT CLASS 52. JOINT RESTRAINT FOR DUCTILE-IRON PIPE SHALL BE THRUST BLOCKS AND RESTRAINING GLANDS.

20. THE NEW WATER PIPELINE, VALVE AND HYDRANT LOCATIONS ARE APPROXIMATE. FINAL LOCATION SHALL BE DETERMINED AT THE TIME OF CONSTRUCTION. THE APPROXIMATE LOCATION OF THE PROPOSED PIPELINE IS INDICATED ON THE DRAWINGS. HOWEVER, THE FINAL LOCATION WILL BE GOVERNED BY THE ACTUAL LOCATION OF UNDERGROUND UTILITIES, OR OTHER CONTROLLING FACTORS.

21. ALL HYDRANT BRANCHES SHALL HAVE ANCHOR TEES.

22. DURING BYPASSING THE EXISTING WATER MAIN SHALL BE SHUTDOWN THROUGHOUT CONSTRUCTION AND SHALL BE REMOVED IN CONJUNCTION WITH THE INSTALLATION OF NEW WATER MAIN. BYPASS SHALL BE CONNECTED TO ALL WATER SERVICES AND FIRE SERVICES. ALL TEMPORARY BYPASS PIPING REQUIRES TRENCHING AT STREET CROSSINGS. FOR BIDDING PURPOSES IT SHALL BE ASSUMED THAT BYPASS PIPE WILL BE USED.

23. THE CONTRACTOR SHALL DISCHARGE ALL GROUNDWATER INTO HAYBALE TRAPS TO PREVENT SILTATION OF THE

24. HYDRANT STEAMER CAPS SHALL BE LOCATED AT THE BACK OF SIDEWALK, LOCATED AT BERM OR EQUIVALENT, BUT NOT LOCATED ON PRIVATE PROPERTY.

25. NEW WATER MAIN TO BE INSTALLED UNDER EXISTING WATER MAIN WHENEVER POSSIBLE

26. FIRE SERVICES SHALL BE A MINIMUM SIZE OF 4" CL52 DI PIPE OR EQUAL TO THE EXISTING SIZE.

27. THE CONTRACTOR SHALL USE BOTH MEGALUGS AND THRUST BLOCKS FOR HYDRANTS, FITTINGS AND VALVES DURING WATER MAIN INSTALLATION.

28. ALL EXISTING FIRE HYDRANTS AND GATE VALVES REMOVED, SHALL BE DELIVERED TO WATER AND SEWER DEPARTMENT AT THE DISCRETION OF THE WATER AND SEWER SUPERINTENDENT OR HIS DESIGNEE, OTHERWISE PROPERLY DISPOSE OF THOSE MATERIALS.

29. THE CONTRACTOR SHALL PAVE TRENCHES A MINIMUM OF ONCE PER WEEK. TRENCHES SHALL NOT BE LEFT UNPAVED OVER WEEKENDS OR OBSERVED HOLIDAYS.

30. THE ENDS OF THE NEW PIPE SHALL BE PLUGGED DURING CONSTRUCTION TO PREVENT GROUNDWATER FROM

31. THE CONTRACTOR SHALL USE A QUALIFIED INDEPENDENT COMPANY TO PERFORM ALL PRESSURE TESTING, SAMPLING, AND LAB ANALYSIS.

32. EXCAVATED DIRT SHALL NOT BE LEFT ON SITE OVERNIGHT

33. CULVERTS AND DITCHES SHALL BE KEPT CLEAR AND RUNNING FREE THROUGHOUT THE PROJECT.

34. ALL WATER MAINS WHICH ARE CUT AND PLUGGED AND ARE ADJACENT TO EXISTING WATER MAINS TO REMAIN IN SERVICE SHALL HAVE A CONCRETE THRUST BLOCK INSTALLED BETWEEN THE EXISTING WATER MAIN REMAINING IN SERVICE AND THE EXISTING WATER MAIN TO BE ABANDONED.

35. CONTRACTOR SHALL LOCATE ALL SANITARY SERVICE CONNECTIONS FOR 300-FT MINIMUM IN ADVANCE OF INSTALLING WATER MAIN TO MITIGATE POTENTIAL CONFLICTS.

36. ALL NEW PIPELINES SHALL BE PRESSURE TESTED, AND DISINFECTED PRIOR TO TRANSFER OF EXISTING SERVICES. ONCE NEW SERVICES ARE ESTABLISHED, CUT AND PLUG ANY ABANDONED LINES.

37. THE CONTRACTOR SHALL COORDINATE ACTIVATION OF THE NEW WATER MAINS WITH THE NEEDHAM WATER AND SEWER DEPARTMENT.

TEMPORARY BYPASS (SIZE AS NOTED) DRAWN BY: REGISTERED PROFESSIONAL DPR DESIGNED BY DPR CHECKED BY: MRH DATE MADE BY CHECKED BY REVISIONS

TP-1

03/04/2022 ANDREW J. CIVIL ENGINEER No. 46470



PREPARED BY

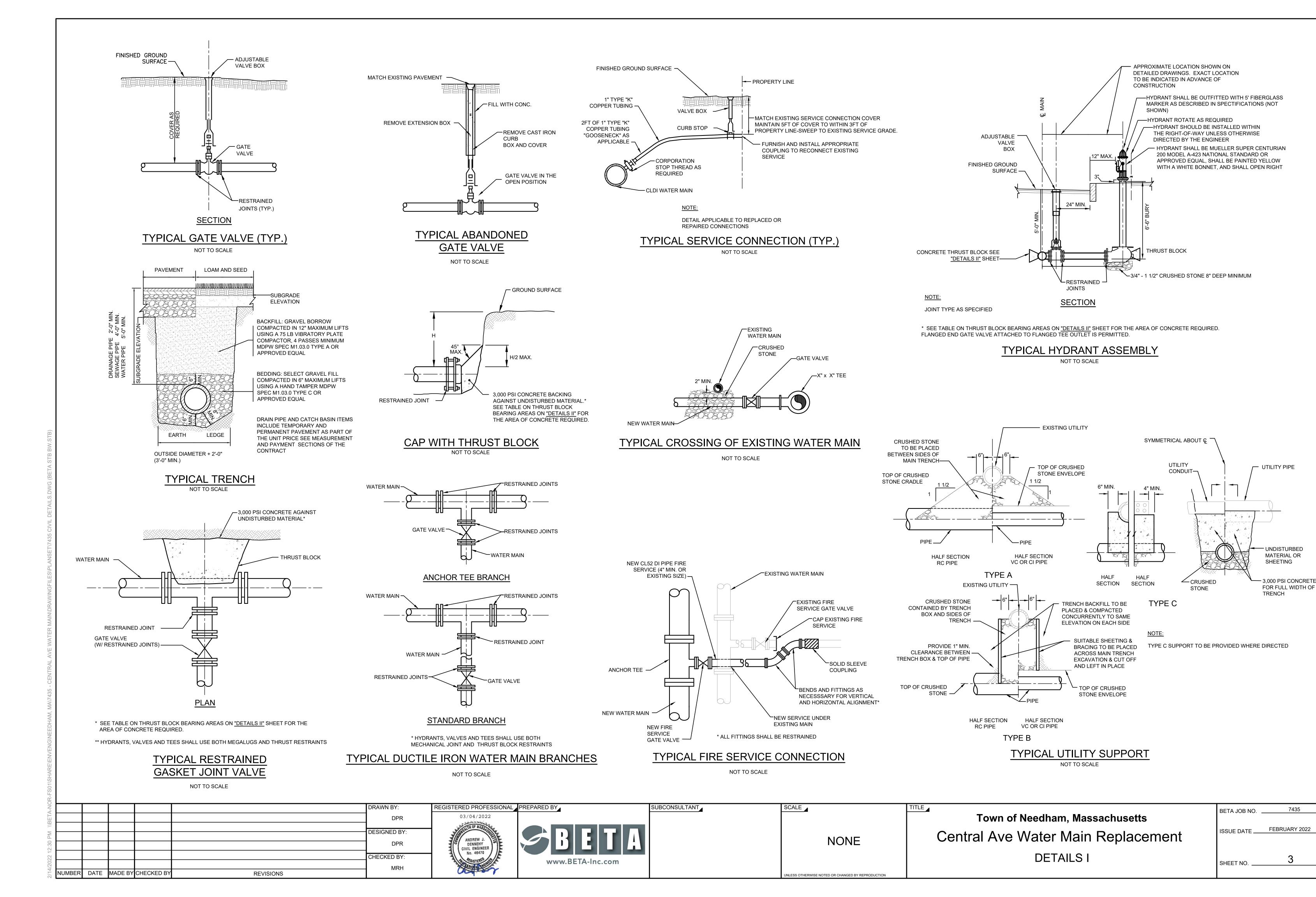
Town of Needham, Massachusetts Central Ave Water Main Replacement LEGEND, ABBREVIATIONS & GENERAL NOTES

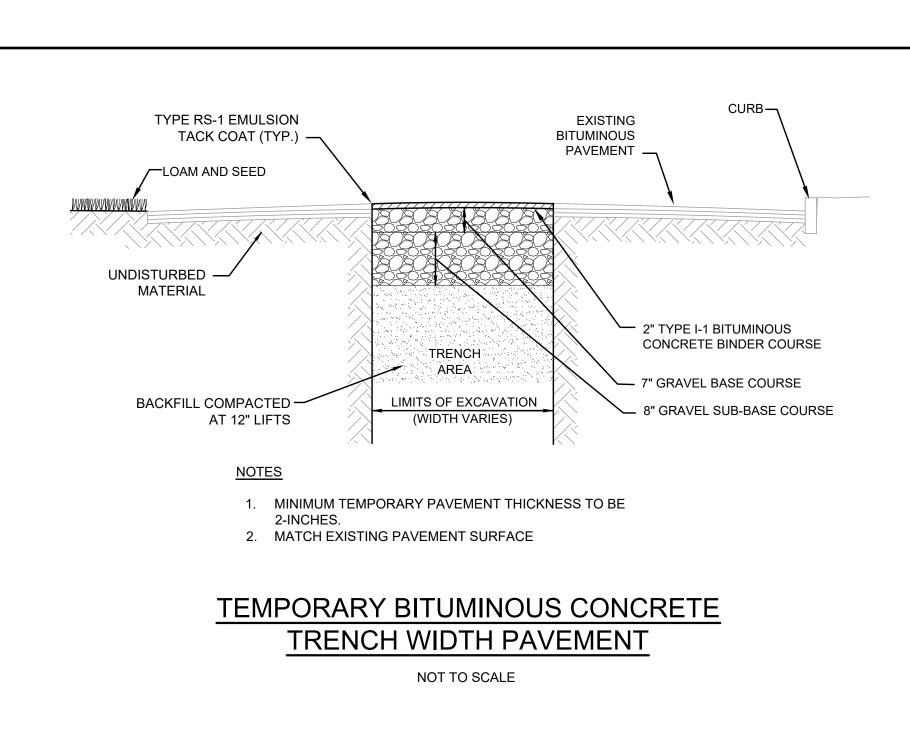
7435 BETA JOB NO. FEBRUARY 2022 ISSUE DATE _

SHEET NO.

NI ESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

NONE





- 3" BITUMINOUS TYPE I-1

EXISTING

- REMOVE 3" OF GRAVEL BASE COURSE

4" OF GRAVEL BASE COURSE TO REMAIN

UNDISTURBED

MATERIAL

__ LOAMED

& SEEDED

BINDER COURSE

TYPE RS-1 EMULSION -

UNDISTURBED

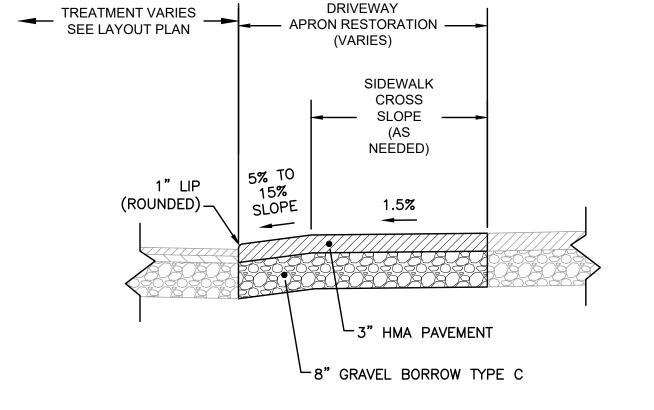
MATERIAL

(TACK COAT) (TYP.)

SAWCUT EXISTING

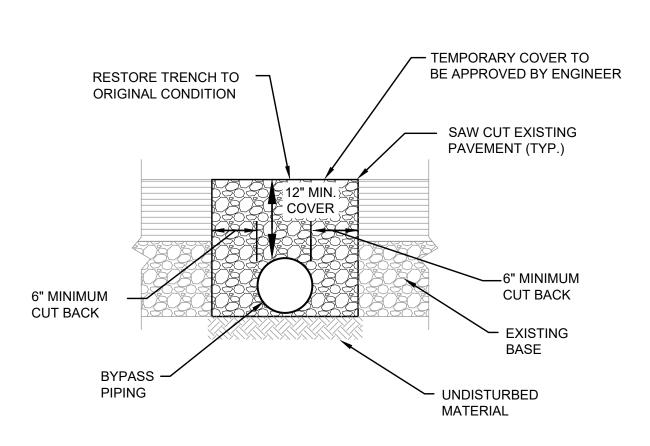
12" MINIMUM CUT BACK (TYP.)

PAVEMENT —



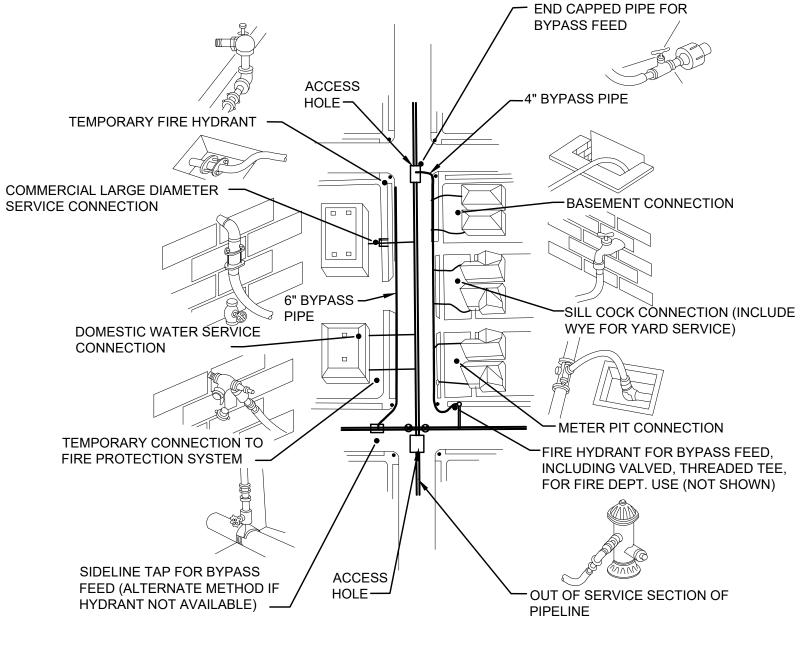
DRIVEWAY APRON AND SIDEWALK RESTORATION

NOT TO SCALE



BYPASS PIPING TRENCH

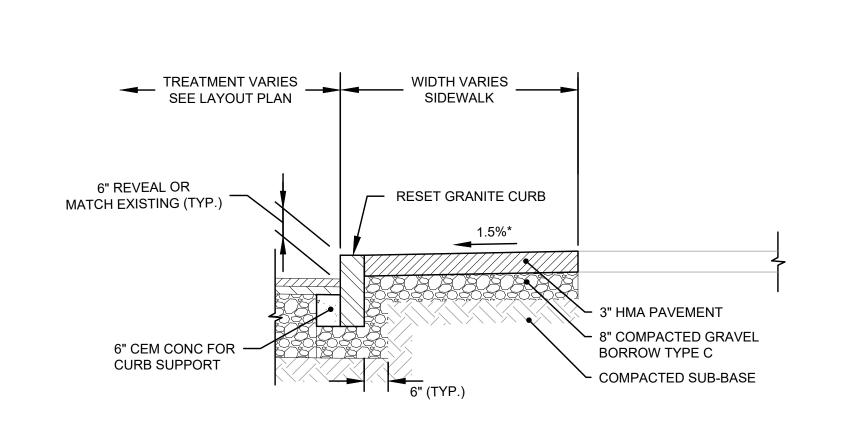
NOT TO SCALE



ALL MATERIALS IN CONTACT WITH POTABLE WATER SHALL BE NSF 61 APPROVED.

TYPICAL BYPASS PIPING (IF NECESSARY)

NOT TO SCALE

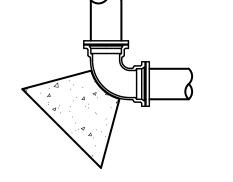


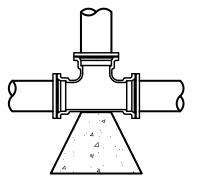
RESET VERTICAL GRANITE CURB

NOT TO SCALE

TOLERANCE FOR CONSTRUCTION ±0.5%. MATCH EXISTING IF NECESSARY



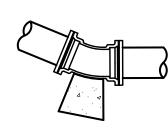




90° BEND MJ X MJ

TEE MJ X MJ X MJ

21.7



SIZE 1 1/4° | 22 1/2° TEE 0.5 0.9 4.7 1.8 13.2 9.3 1.8

MINIMUM SURFACE AREA (S.F.) OF

22 1/2° BEND MJ X MJ

NOTE: PIPE FITTINGS SHALL BE AS MANUFACTURED BY U.S. PIPE SPEC. U501, U503, U505, U507, U509 OR APPROVED EQUAL CONCRETE SHALL BE 3000 PSI

11 1/4° BEND MJ X MJ

PORTLAND TYPE II CEMENT CONCRETE MEETING MDPW SPEC M4.02.00 et seq. AND SHALL BE PLACED SO AS TO NOT INTERFERE WITH THE JOINTS OF THE FITTING

THRUST BLOCK BEARING AREA TABLE FOR WATER MAIN

6.0

NOT TO SCALE

LENGTH OF RESTRAINED LINE (FT)*

END	90°	45°	22.5°	8X6
	BEND	BEND	BEND	RED.
54 FT	57 FT	17 FT	4 FT	22 FT

6 & 8-INCH

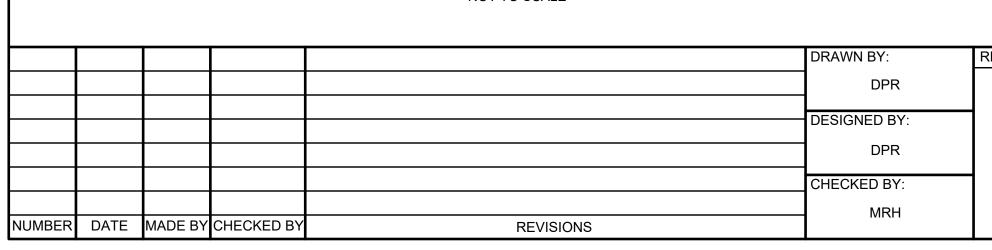
		12-INCH		
END	90° BEND	45° BEND	22.5° BEND	12X8 RED.
82 FT	82 FT	24 FT	6 FT	62 FT

16-INCH									
END	90° BEND	45° BEND	22.5° BEND	16X12 RED.					
112 FT	112 FT	33 FT	9 FT	63 FT					

*EACH SIDE OF JOINT

RESTRAINED JOINT LENGTHS FOR DI CL52 WATER MAIN

NOT TO SCALE



REGISTERED PROFESSIONAL PREPARED BY A 03/04/2022 DENNEHY CIVIL ENGINEER No. 46470

www.BETA-Inc.com

PROP. HOT MIX ASPHALT MODIFIED CAPE COD BERM

> SCALE NONE

> > NLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

Town of Needham, Massachusetts Central Ave Water Main Replacement **DETAILS II**

7435 BETA JOB NO. FEBRUARY 2022 ISSUE DATE __ SHEET NO.

└─2" BITUMINOUS CONCRETE TOP COURSE EXISTING PAVEMENT

HMA BERM MODIFIED CAPE COD TYPE

SUBCONSULTANT

NOT TO SCALE

BACKFILL COMPACTED LIMITS OF EXCAVATION IN 12" LIFTS 1. MINIMUM PAVEMENT THICKNESS TO BE 3 INCHES. PERMANENT BITUMINOUS CONCRETE TRENCH WIDTH PAVEMENT NOT TO SCALE TRAVEL LANES ___2" TYPE I-1 BITUMINOUS CONCRETE TOP COURSE TYPE RS-1 **EMULSION** -TACK COAT -EXISTING LOAM AND HMA BERM CROSS SLOPE VARIES SEED MATCH EXISTING PAVEMENT UNDISTURBED MATERIAL

AREA

NOTES 1. CONTRACTOR TO MAINTAIN EXISTING CROSS SECTIONAL SLOPE.

WITH A 2" MINIMUM DEPTH OF CUT.

TRENCH

AREA

LIMITS OF EXCAVATION

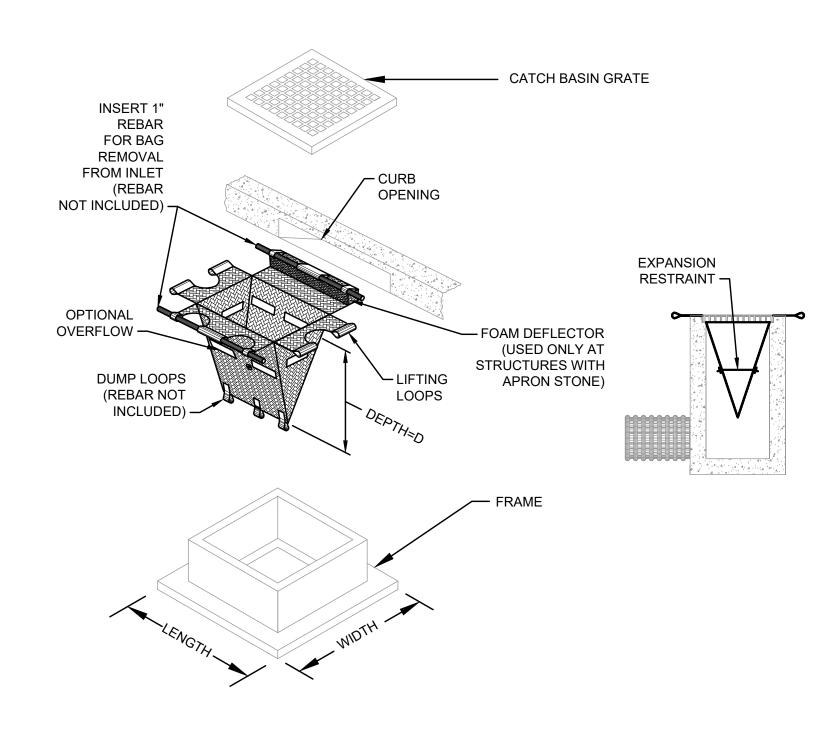
2. CUT BACK DISTANCES SHALL BE AS DIRECTED BY THE ENGINEER, HOWEVER UNDER NO CIRCUMSTANCES LESS THAN THE MINIMUM INDICATED. 3. PRIOR TO INSTALLING 2 INCH TOP COURSE, PAVEMENT SHALL BE COLD PLANED

COLD PLANING AND OVERLAY

NOT TO SCALE

EROSION CONTROL BARRIER COMPOSITE FILTER TUBE

NOT TO SCALE

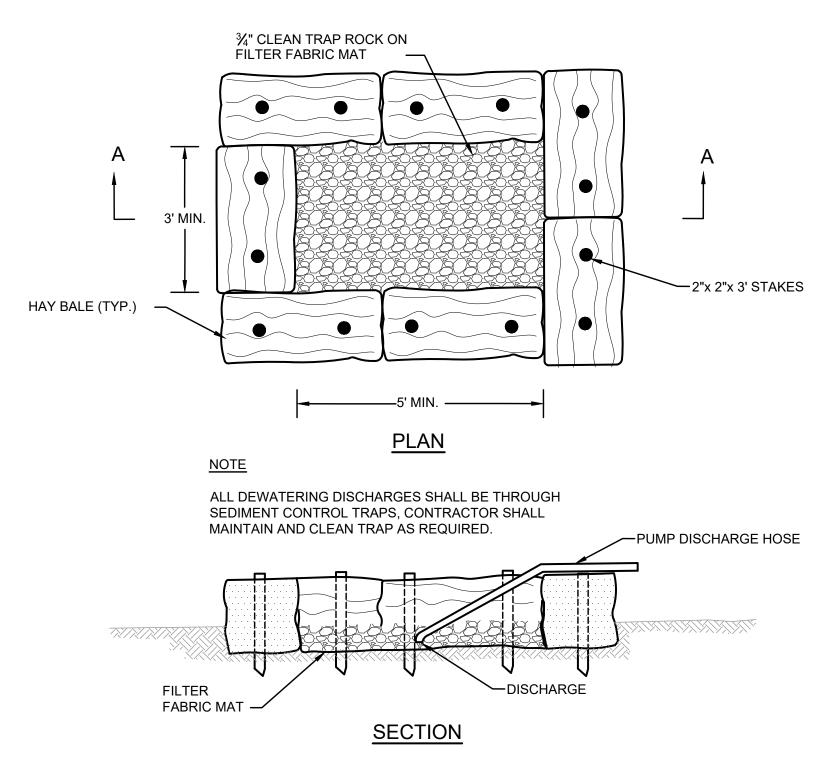


NOTES

- 1. CONTRACTOR SHALL MAINTAIN ALL SILT SACK SEDIMENT CONTROL DEVICE INSTALLATIONS AND REPLACE WHEN SATURATED WITH SEDIMENT BASED ON MANUFACTURER RECOMMENDATIONS. SILT SACK SHALL BE INSPECTED AFTER EVERY RAIN EVENT BUT NO LONGER THAN EVERY TWO WEEKS.
- 2. SILT SACK SHALL BE DOUBLE NEEDLE SEWN POLYPROPLYENE GEOTEXTILE FABRIC AND RATED FOR HIGH FLOW UNLESS OTHERWISE DIRECTED.
- 3. CONTRACTOR SHALL PROVIDE CURB OPENING DEFLECTOR AT ALL CATCH BASINS AS NECESSARY.

SEDIMENT CONTROL DEVICE (SILT SACK) (WITH OPTIONAL CURB DEFLECTOR)

NOT TO SCALE



SEDIMENT CONTROL TRAP

NOT TO SCALE

DRAWN BY:

DPR

DESIGNED BY:

DPR

CHECKED BY:

MRH

MADE BY CHECKED BY

REVISIONS



REGISTERED PROFESSIONAL PREPARED BY

SUBCONSULTANT

SCALE

Town of Needham, Massachusetts
Central Ave Water Main Replacement
DETAILS III

BETA JOB NO. 7435

ISSUE DATE FEBRUARY 2022

SHEET NO. 5

- 2. ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
- 3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- 4. TEMPORARY CONSTRUCTION SIGNING, 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.
- 5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, AND REFLECTORIZED PLASTIC DRUMS WITH LIGHTING DEVICES MOUNTED ON THEM, 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).
- 6. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
- 7. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
- 8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
- 9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
- 10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
- 11. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
- 12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
- 13. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL NOT COVERED IN THE PLAN SHALL REFER TO MASSDOT "STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TRAFFIC MANAGEMENT PLANS".
- 14. COORDINATE ALL TRAFFIC CONTROL PATTERNS, DETOURS, LANE CLOSURES, ETC. WITH NEEDHAM POLICE DEPARTMENT, NEEDHAM FIRE DEPARTMENT, AND NEEDHAM SCHOOL DEPARTMENT.
- 15. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE INSTALLED IN LOCATIONS APPROVED BY THE OWNER. SIGN MESSAGE(S) SHALL BE PROVIDED BY THE OWNER. THE CONTRACTOR SHALL RELOCATE THE PCMS AND REVISE THE SIGN MESSAGE(S) AS OFTEN AS REQUIRED BY THE OWNER FOR THE DURATION OF THE PROJECT.
- 16. ACCESS TO NEEDHAM RECYCLING AND TRANSFER STATION MUST REMAIN OPEN AT ALL TIMES.

DIRECTION OF TRAFFIC

IMPACT ATTENUATOR

MEDIAN BARRIER WITH WARNING LIGHTS

PORTABLE CHANGEABLE MESSAGE SIGN

TRUCK MOUNTED ATTENUATOR

TRAFFIC OR PEDESTRIAN SIGNAL

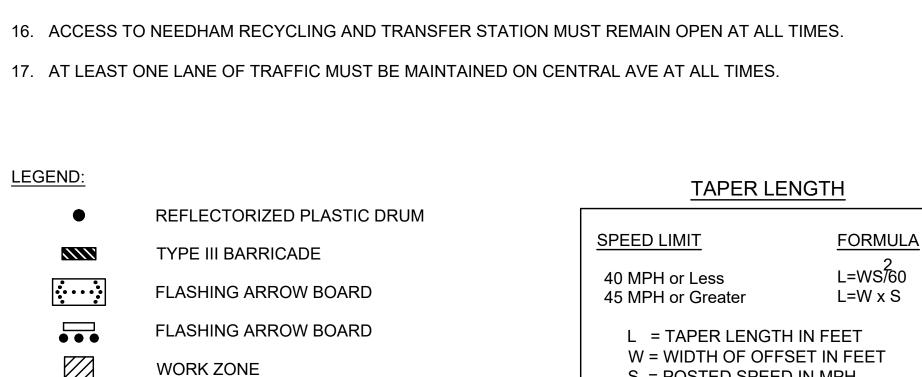
MEDIAN BARRIER

WORK VEHICLE

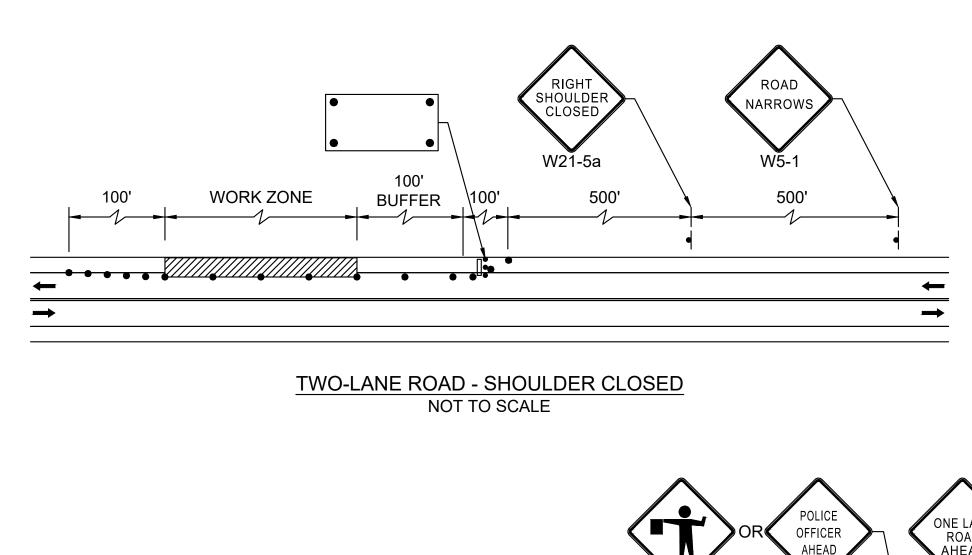
POLICE DETAIL

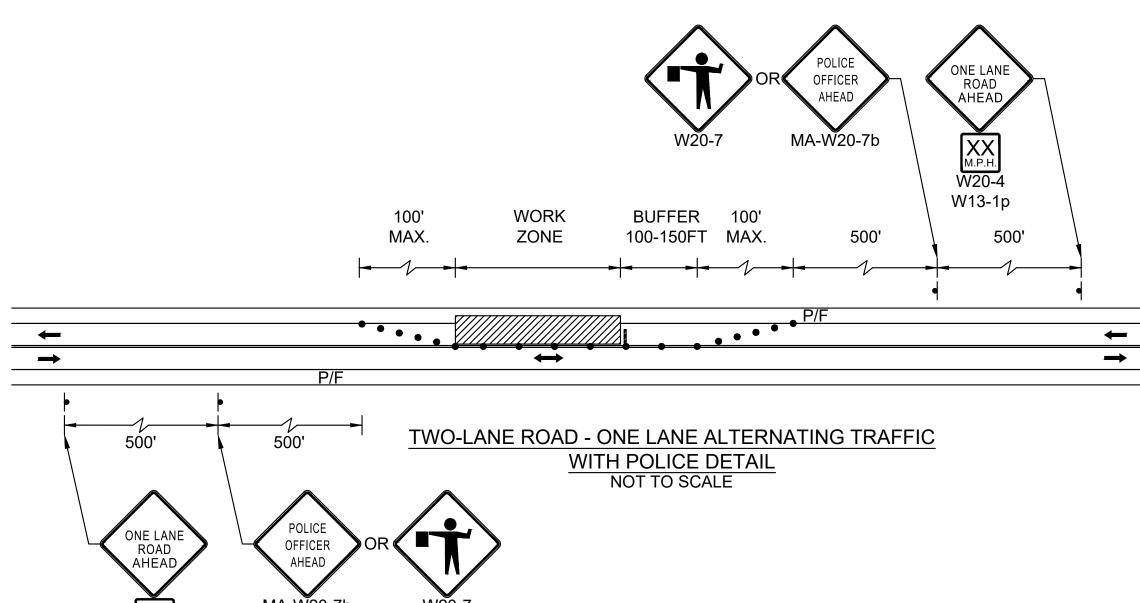
FLAGGER

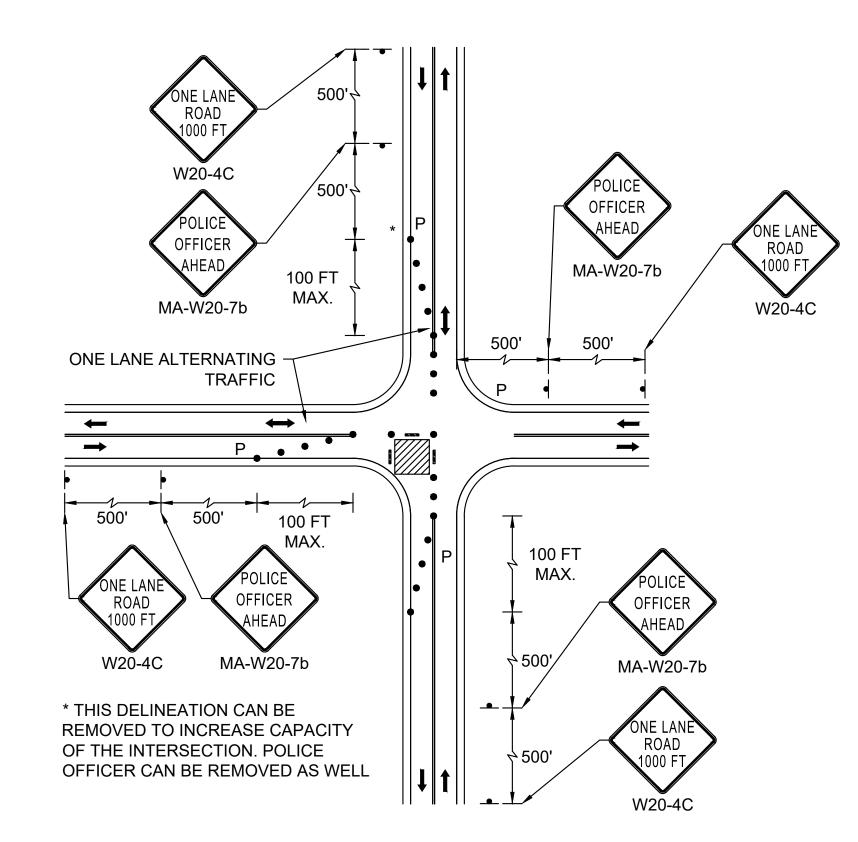
SIGN



S = POSTED SPEED IN MPH







INTERSECTION WITH LANE CLOSURE NOT TO SCALE

SAFETY SIGNING FOR CONSTRUCTION OPERATIONS									
LEGEND	TYPE	SIZE	COLOR			UNIT	NO.	TOTAL	
LEGEND	ITPE	SIZE	BACKGROUND**	LEGEND	BORDER	AREA	SIGNS*	AREA	
ROAD NARROWS	W5-1	36" x 36"	ORANGE	BLACK	BLACK	9 SF	2	18 SF	
ADVISORY SPEED	W13-1	24" x 30"	ORANGE	BLACK	BLACK	5 SF	2	10 SF	
ONE LANE ROAD AHEAD	W20-4	36" x 36"	ORANGE	BLACK	BLACK	9 SF	2	18 SF	
ONE LANE ROAD 1000 FT	W20-4C	36" x 36"	ORANGE	BLACK	BLACK	9 SF	4	36 SF	
FLAGGER	W20-7	36" x 36"	ORANGE	BLACK	BLACK	9 SF	2	18 SF	
POLICE OFFICER AHEAD	MA-W20-7b	36" x 36"	ORANGE	BLACK	BLACK	9 SF	4	36 SF	
RIGHT SHOULDER CLOSED	W21-5aR	36" x 36"	ORANGE	BLACK	BLACK	9 SF	2	18 SF	
* NO. OF SIGNS ARE ESTIMA	* NO. OF SIGNS ARE ESTIMATED FOR BIDDING PURPOSES ONLY								

** ALL CONSTRUCTION SIGNAGE SHALL HAVE FLUORESCENT	ORANGE BACKGROUND
THE CONCINCION CICIA CE CITALE IN THE LEGAL COLLAR	OTA HACE DI CONCINCIALI

					DRAWN BY:
					DPR
					DECIONED DV
					DESIGNED BY:
					DPR
					CHECKED BY:
					MRH
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	WII W I



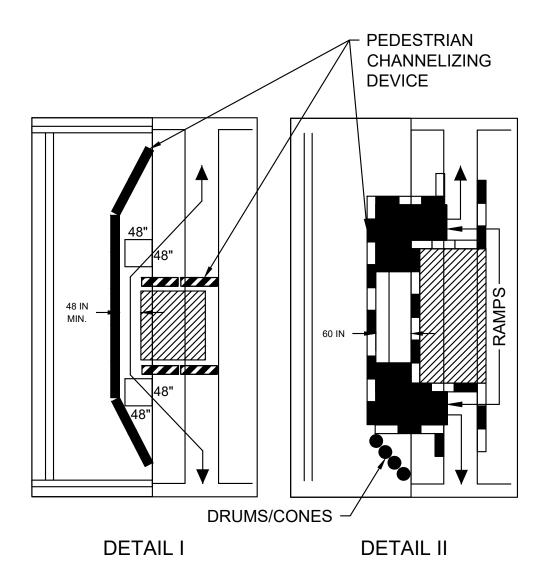


SCALE NONE

NI ESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

Town of Needham, Massachusetts Central Ave Water Main Replacement TEMPORARY TRAFFIC CONTROL PLAN I

7435 BETA JOB NO. FEBRUARY 2022 SHEET NO.



NOTES:

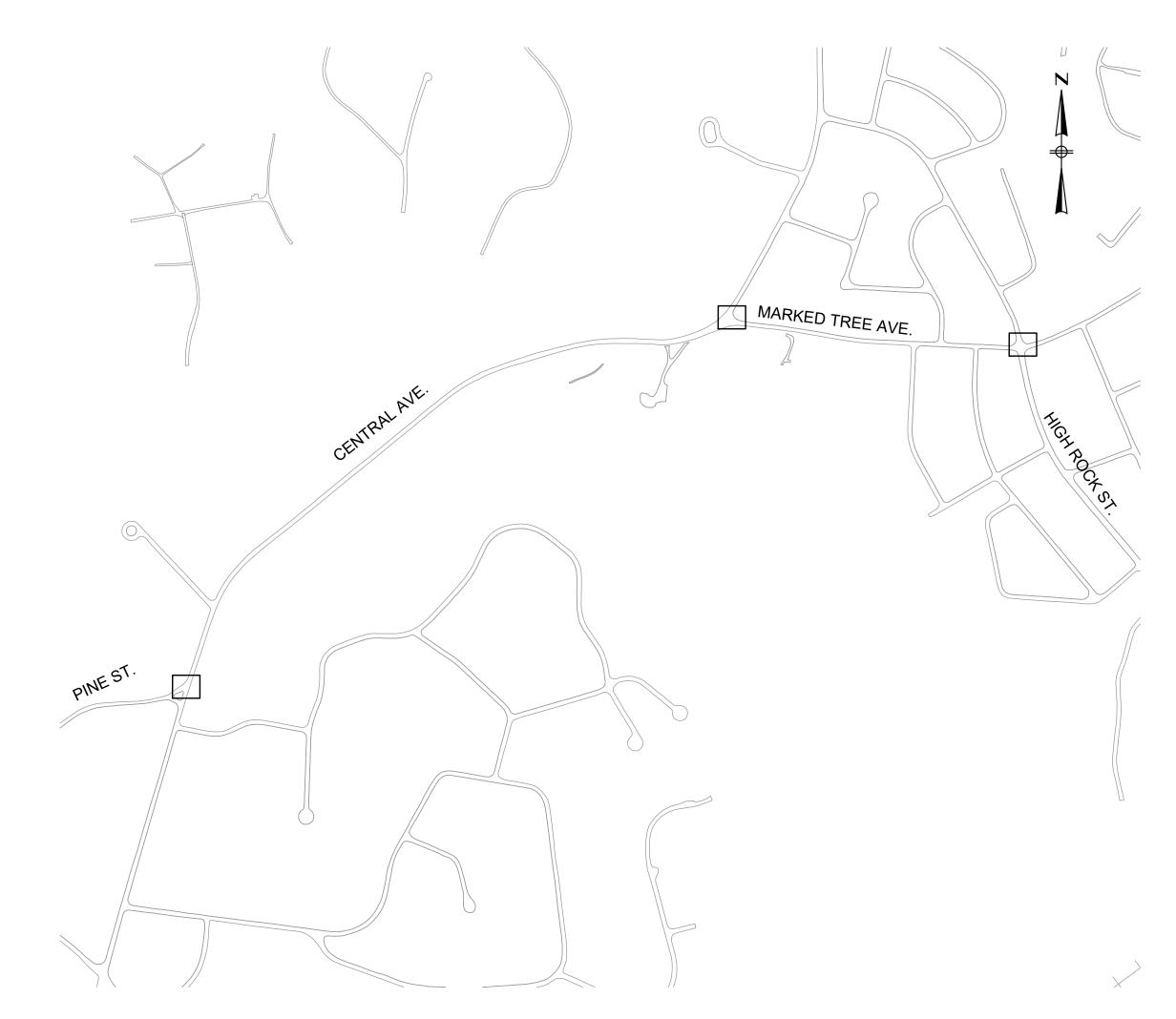
- DETAIL I IS CONSIDERED AN EXAMPLE OF A SHORT TERM CLOSURE AND PEDESTRIAN ASSISTANCE (PERSONEL) TO NAVIGATE AROUND THE CLOSURE/WORK AREA COULD BE CONSIDERED AS AN OPTION IN PLACE OF PROVIDING ADA/AAB DEVICES. DETAIL II IS CONSIDERED AN EXAMPLE OF A LONG TERM CLOSURE THAT WOULD REQUIRE ADDITIONAL ADA/AAB COMPLIANT DEVICES. IF A SIDEWALK CLOSURE OR RESTRICTION LASTS FOR MORE THAN ONE (1) WORK SHIFT THEN ADA/AAB COMPLIANCE SHALL BE FOLLOWED.
- 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
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (SEE FIGURES).
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
- THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THE SIDEWALK EXEEDS 200 FEET THEN A 5 FOOT BE 5 FOOT PASSING ZONE SHALL BE PROVIDED.
- THE PROTECTIVE REQUIREMENTS OF A TTC WORK ZONE MAY HAVE AN IMPACT IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN PROVIDING PEDESTRIAN DELINEATION SHOULD BE BASED ON ENGINEERING JUDGMENT.
- CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN; VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE. THESE DETAILS ARE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DETERMINED BY THE ENGINEER.
- AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MIDBLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.
- EXISTING AUDIBLE DEVICES NO LONGER APPLICABLE DUE TO CONSTRUCTION SHALL BE DISABLED.

REVISIONS

AUDIBLE DEVICES:

DATE MADE BY CHECKED BY

• 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.



PORTABLE CHANGEABLE MESSAGE SIGNS

DRAWN BY:

DESIGNED BY

CHECKED BY:

DPR

MRH

REGISTERED PROFESSIONAL PREPARED BY 03/04/2022 ANDREW J.
DENNEHY
CIVIL ENGINEER
No. 46470



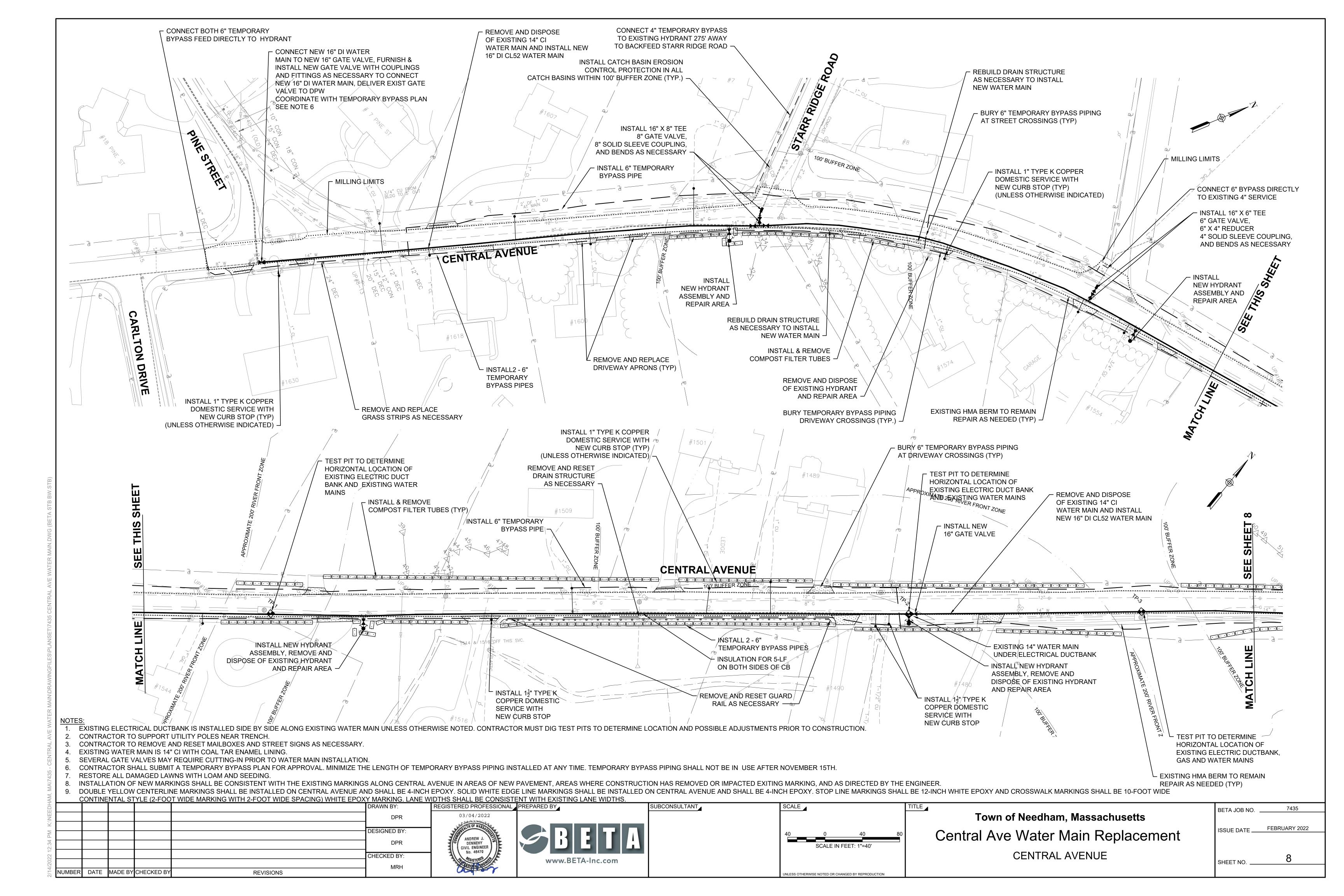
SUBCONSULTANT

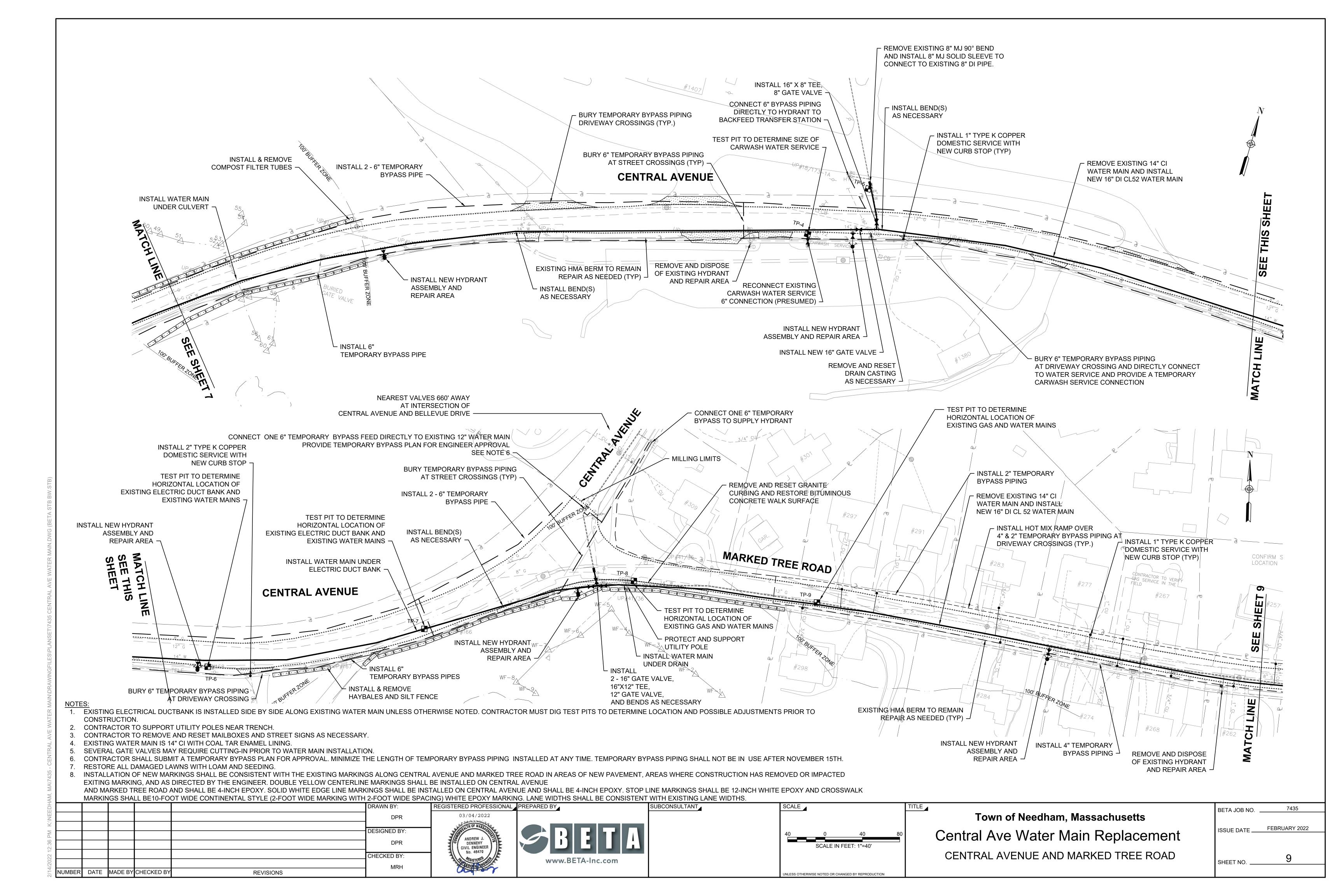
SCALE

Town of Needham, Massachusetts Central Ave Water Main Replacement TEMPORARY TRAFFIC CONTROL PLAN II

7435 BETA JOB NO. FEBRUARY 2022

AS NOTED





NOTES:

- EXISTING ELECTRICAL DUCTBANK IS INSTALLED SIDE BY SIDE ALONG EXISTING WATER MAIN UNLESS OTHERWISE NOTED. EXISTING
 ELECTRICAL DUCTBANK IS INSTALLED SIDE BY SIDE ALONG EXISTING WATER MAIN UNLESS OTHERWISE NOTED. CONTRACTOR MUST
 DIG TEST PITS TO DETERMINE LOCATION AND POSSIBLE ADJUSTMENTS PRIOR TO CONSTRUCTION.
- 2. CONTRACTOR TO SUPPORT UTILITY POLES NEAR TRENCH.
- 3. CONTRACTOR TO REMOVE AND RESET MAILBOXES AND STREET SIGNS AS NECESSARY.
- 4. EXISTING WATER MAIN IS 14" CI WITH COAL TAR ENAMEL LINING.
- 5. SEVERAL GATE VALVES MAY REQUIRE CUTTING-IN PRIOR TO WATER MAIN INSTALLATION.
- 6. CONTRACTOR SHALL SUBMIT A TEMPORARY BYPASS PLAN FOR APPROVAL. MINIMIZE THE LENGTH OF TEMPORARY BYPASS PIPING INSTALLED AT ANY TIME. TEMPORARY BYPASS PIPING SHALL NOT BE IN USE AFTER NOVEMBER 15TH.
- 7. RESTORE ALL DAMAGED LAWNS WITH LOAM AND SEEDING.
- 8. INSTALLATION OF NEW MARKINGS SHALL BE CONSISTENT WITH THE EXISTING MARKINGS ALONG MARKED TREE ROAD IN AREAS OF
- NEW PAVEMENT, AREAS WHERE CONSTRUCTION HAS REMOVED OR IMPACTED EXITING MARKING, AND AS DIRECTED BY THE ENGINEER.

 9. DOUBLE YELLOW CENTERLINE MARKINGS SHALL BE INSTALLED ON MARKED TREE ROAD AND SHALL BE 4-INCH EPOXY. SOLID WHITE EDGE LINE MARKINGS SHALL BE INSTALLED ON CENTRAL AVENUE AND SHALL BE 4-INCH EPOXY. STOP LINE MARKINGS SHALL BE 12-INCH WHITE EPOXY AND CROSSWALK MARKINGS SHALL BE 10-FOOT WIDE CONTINENTAL STYLE (2-FOOT WIDE MARKING WITH

2-FOOT WIDE SPACING) WHITE EPOXY MARKING. LANE WIDTHS SHALL BE CONSISTENT WITH EXISTING LANE WIDTHS.

H A H	DRAWN BY:	REGISTERED PROFESSIONAL	PREPARED BY	SUBCONSULTANT	SCALE	TITLE		BETA JOB NO	7435
	DPR	03/04/2022					Town of Needham, Massachusetts		
	DESIGNED BY:	A SHOULD WAS STOLED	AD ETA		40 0 40	80	Central Ave Water Main Replacement	ISSUE DATE	FEBRUARY 2022
5:36	DPR	DENNEHY CIVIL ENGINEER			SCALE IN FEET: 1"=40'		· · · · · · · · · · · · · · · · · · ·		
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CHECKED BY:	No. 46470	www.BETA-Inc.com				MARKED TREE ROAD	SHEET NO	10
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