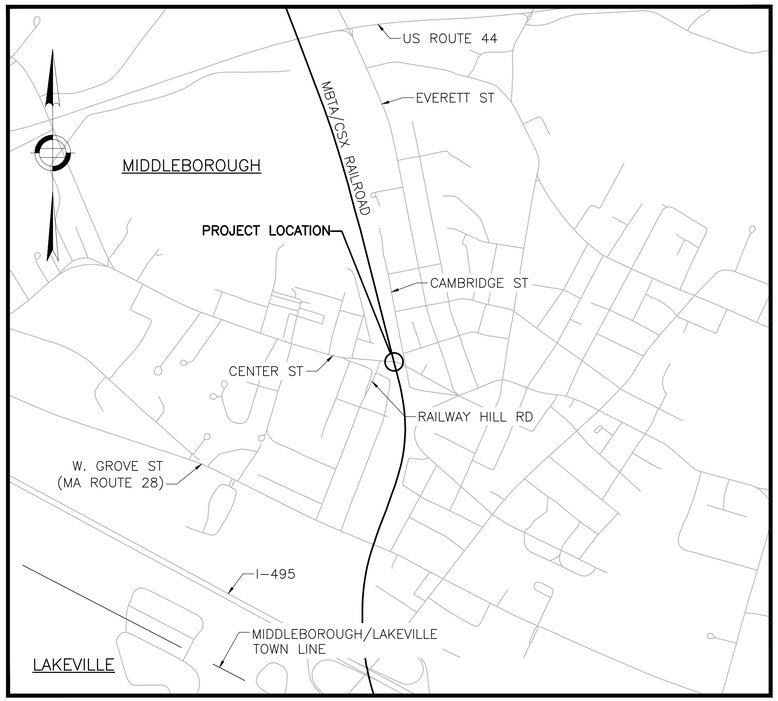
TOWN OF MIDDLEBOROUGH, MASSACHUSETTS

CONTRACT DRAWINGS FOR

CENTER STREET UTILITY BRIDGE OVER MBTA/CSX RAILROAD AND WATER SYSTEM IMPROVEMENTS

OCTOBER 2026

CONTRACT DRAWINGS



LOCUS MAP

SCALE: 1" = 1000'

DRAWING LIST	
SHEET NUMBER	SHEET TITLE
1	TITLE SHEET
2	GENERAL NOTES
3	GENERAL PLAN
4	BRIDGE GENERAL PLAN
5	UTILITY BRIDGE SOUTH ELEVATION
6	UTILITY BRIDGE FRAMING PLAN
7	BEAM DETAILS I
8	BEAM DETAILS II
9	SW WINGWALL MODIFICATIONS
10	SE WINGWALL MODIFICATIONS
11	WATER MAIN DETAILS I
12	WATER MAIN DETAILS II
13	EROSION CONTROL DETAILS
14	TEMP. TRAFFIC CONTROL NOTES
15	TEMP. TRAFFIC CONTROL DETAILS
16	TTCP – STAGE 1
17	TTCP – STAGE 2A
18	TTCP – STAGE 2B
19	DETOUR PLAN
20	CONSTRUCTION SIGN SUMMARY

COMMONWEALTH OF MASSACHUSETTS
LAWRENCE P. MCGILLICUDDY
CIVIL
No. 50018
REGISTERED PROFESSIONAL ENGINEER
10/16/2026

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

PREPARED BY:

benesch

24 FEDERAL STREET, 6TH FLOOR
BOSTON, MA 02110

TITLE SHEET.DWG Plotted on 22-Oct-2026 8:44 AM

STRUCTURAL GENERAL NOTES:

DESIGN:
IN ACCORDANCE WITH THE 2024 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN SPECIFICATIONS, 10TH EDITION WITH CURRENT INTERIM SPECIFICATIONS THROUGH 2025.

SCALES:
SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZED PRINTS (A3).

DIMENSIONS:
DIMENSIONS, ANGLES, AND ELEVATIONS GIVEN FOR STRUCTURE ARE BASED ON THE BEST AVAILABLE INFORMATION SUPPLEMENTED BY LIMITED FIELD MEASUREMENTS AND ARE NOT GUARANTEED TO BE CORRECT. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS, ANGLES, AND ELEVATIONS. NECESSARY FOR THE COMPLETION OF ALL WORK, BY FIELD MEASUREMENTS AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING FIELD CONDITIONS BY FIELD MEASUREMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF AND SHALL NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE HAVE BEEN MADE AND SUBMITTED SHOP DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER. SHOP DRAWINGS SHALL STATE THE EXISTING DIMENSIONS, ANGLES, ELEVATIONS, AND CONDITIONS HAVE BEEN FIELD VERIFIED BY THE CONTRACTOR.

REINFORCEMENT:
REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 GRADE 60. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS	#6 BARS
1. NONE	16"	19"	23"
2. 12" OF CONCRETE BELOW BAR	20"	25"	30"
3. EPOXY COATED BARS, COVER $<3D_B$, OR CLEAR SPACING $<6d_b$	23"	29"	34"
4. COATED BARS, ALL OTHER CASES	18"	23"	27"
5. CONDITION 2. AND 3.	26"	32"	39"
6. CONDITION 2. AND 4.	24"	30"	36"

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

EPOXY COATED BARS:
ALL REINFORCING BARS AND SUPPORTING DEVICES SHALL BE EPOXY COATED UNLESS NOTED OTHERWISE.

CONCRETE:
ALL CAST-IN-PLACE CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE UNLESS NOTED OTHERWISE.

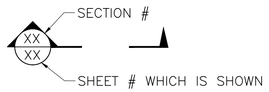
STRUCTURAL STEEL:
ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M270 (ASTM A709) GRADE 50 EXCEPT AS OTHERWISE NOTED. STRUCTURAL STEEL USED AS MAIN LOAD CARRYING MEMBERS SHALL MEET THE LONGITUDINAL REQUIRED V-NOTCH TESTING. THE MAIN LOAD CARRYING MEMBERS ARE BEAMS 1 AND 2.

WELDING:
ALL WELDING AND THE PREPARATION AND ASSEMBLY OF MATERIAL FOR WELDING SHALL CONFORM TO THE STANDARD SPECIFICATION FOR HIGHWAYS AND BRIDGES, THE BRIDGE WELDING CODE (ANSI/AASHTO/AWS D1.5) AND ALL INTERIM REVISIONS PUBLISHED BY AASHTO AS OF BID OPENING DATE.

BOLTS:
ALL BOLTS SHALL BE $\frac{7}{8}$" DIAMETER (UNLESS OTHERWISE NOTED) AND SHALL CONFORM TO ASTM F3125 GRADE A325, THREADS EXCLUDED FROM SHEAR PLANE. HARDENED WASHERS SHALL BE PLACED UNDER THE TURNED ELEMENT. NUTS SHALL BE AS LISTED IN ASTM F3125 AS RECOMMENDED OR SUITABLE FOR THE BOLT. ALL BOLTS SHALL BE MECHANICALLY GALVANIZED. ALL CONNECTIONS SHALL BE CONSIDERED SLIP-CRITICAL WITH CLASS B FAYING SURFACES.

EXISTING CONDITIONS:
THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS REQUIRED FOR THE PROPER PERFORMANCE OF THE WORK. FIELD CONDITIONS MAY EXIST WHICH DEVIATE FROM THE TYPICAL AND THEORETICAL DIMENSIONS SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FABRICATION AND FIT OF THE WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL OF ALL EXISTING MATERIALS WHICH ARE TO BE REMOVED FROM THE STRUCTURE AS SHOWN ON THE PLANS.

SECTION MARK:


TEMPORARY SHIELDING
AT NO TIME SHALL THE CONTRACTOR DROP WASTE, DEBRIS, OR OTHER MATERIALS ONTO THE RAILROAD TRACKS BELOW. CONTRACTOR SHALL TAKE PROTECTIVE MEASURES SUCH AS PLATFORMS, NETS, SCREENS OR OTHER MEASURES TO PREVENT MATERIAL FROM DROPPING ONTO THE TRACKS BELOW.

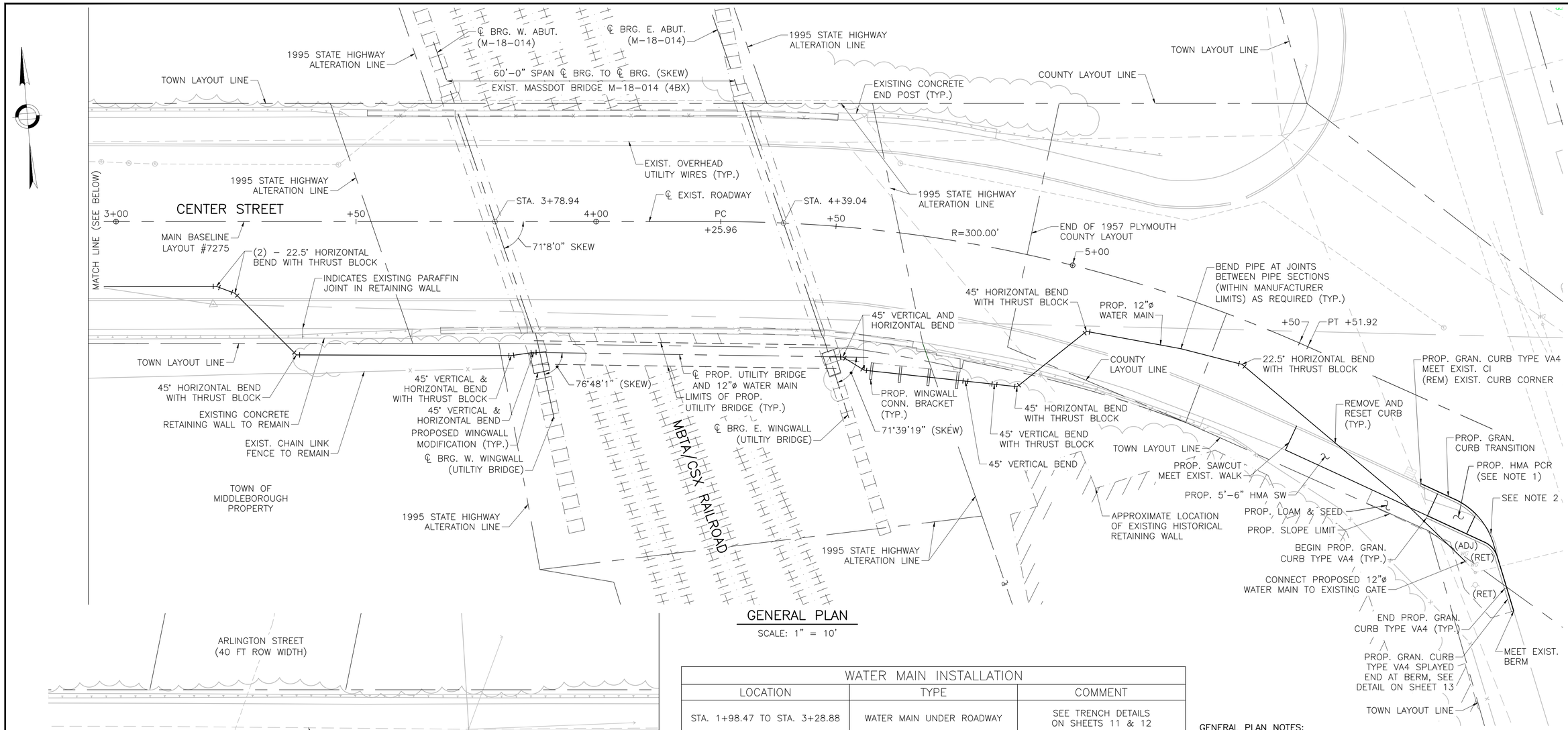
WATER MAIN GENERAL NOTES:

1. WATER MAIN SHALL BE RESTRAINED JOINT DUCTILE IRON PUSH-ON PIPE CLASS 52 MANUFACTURED BY US PIPE AND FOUNDRY OR APPROVED EQUAL.
2. ALL FITTINGS SHALL BE MECHANICAL JOINT AND RESTRAINED WITH MECHANICAL RETAINER GLAND OR A CONCRETE POURED THRUST BLOCK. ABOVE GRADE FITTINGS TO BE COVERED WITH A REMOVABLE INSULATED COVER.
3. DUCTILE IRON PIPE SHALL BE CLASS 52 CEMENT LINED AND FURNISHED IN NOMINAL 18-FOOT LENGTHS. EACH SECTION OF PIPE ON THE UTILITY BRIDGE SHALL HAVE A SUPPORT LOCATED APPROXIMATELY 2' BEHIND THE BELL END OF THE PIPE.
4. UTILITY PIPE ABOVE GROUND AND ALSO WITH LESS THAN 5'-6" OF COVER SHALL BE INSULATED AND SHALL HAVE A JACKET OF H.D.P.E.
5. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE CONNECTION. CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. TEST PITS SHALL BE USED AS REQUIRED.
6. ANY UNDERGROUND STRUCTURES, CABLES, AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATIONS SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES, CABLES, AND PIPELINES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNERS OF THE STRUCTURES, CABLES, AND PIPELINES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF THE NEW WATER MAIN. LAYOUT SHALL BE REVIEWED AND ACCEPTED BY THE OWNER AND ENGINEER. THE NEW WATER MAIN MUST BE LOCATED WITHIN THE RIGHTS-OF-WAY SHOWN ON THE DRAWINGS.
8. MINIMUM DEPTH OF COVER SHALL BE 5'-6" UNLESS SHOWN OTHERWISE ON THE DRAWINGS. THE NEW MAIN SHALL GENERALLY FOLLOW THE GROUND CONTOUR, HOWEVER, ABRUPT CHANGES IN GRADE SHALL BE AVOIDED.
9. IF MINIMUM COVER CANNOT BE ATTAINED DUE TO CONFLICTS THE PIPE SHALL BE INSULATED AS SHOWN ON THE PLANS.
10. ALL BENDS AND PLUGS SHALL BE RESTRAINED BY USING CONCRETE THRUST BLOCKS AND GRIP-RINGS OR OTHER METHOD AS SHOWN ON THE DRAWINGS.
11. TEST PRESSURES FOR THE COMBINATION PRESSURE AND LEAKAGE TESTS SHALL BE 1.5 TIMES THE WORKING PRESSURE OR 150 PSI, WHICHEVER IS GREATER. TEST DURATION SHALL BE TWO HOURS.
12. CONNECTIONS TO EXISTING WATER MAIN SHALL BE COORDINATED WITH THE OWNER.
13. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED. AT NO ADDITIONAL COST TO THE OWNER THE CONTRACTOR SHALL REPAIR OR COORDINATE WITH THE RESPECTIVE UTILITY ON DAMAGE TO EXISTING UTILITIES.
14. WATER MAIN SHALL BE LAID A MINIMUM OF TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWER MAIN.
15. THE BOTTOM (INVERT) OF THE WATER MAIN SHALL BE AT LEAST EIGHTEEN (18) INCHES ABOVE THE ELEVATION OF THE TOP (CROWN) OF ANY EXISTING OR PROPOSED SEWER MAIN.

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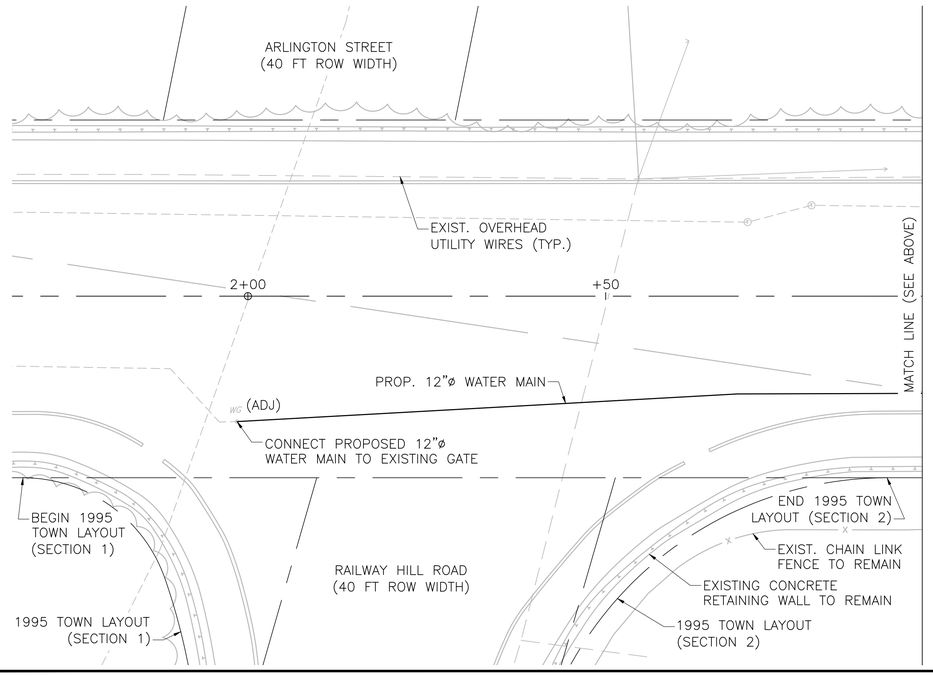
CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
GENERAL NOTES
SHEET 2 OF 20 SHEETS

TITLE SHEET.DWG Plotted on 16-Oct-2026 9:31 AM



GENERAL PLAN

SCALE: 1" = 10'



WATER MAIN INSTALLATION		
LOCATION	TYPE	COMMENT
STA. 1+98.47 TO STA. 3+28.88	WATER MAIN UNDER ROADWAY	SEE TRENCH DETAILS ON SHEETS 11 & 12
STA. 3+28.88 TO STA. 3+34.81	WATER MAIN UNDER CONCRETE RETAINING WALL	WATER MAIN CASED UNDER RETAINING WALL
STA. 3+34.81 TO STA. 3+82.34	WATER MAIN ADJACENT TO CONCRETE RETAINING WALL	MAIN IN SHALLOW DEPTH TRENCH PARALLEL TO RETAINING WALL
STA. 3+82.34 TO STA. 3+88.26	WATER MAIN TRANSITION FROM SHALLOW TRENCH TO ON BRIDGE	
STA. 3+88.26 TO STA. 4+48.64	WATER MAIN ON BRIDGE	
STA. 4+48.64 TO STA. 4+77.17	WATER MAIN TRANSITION FROM BRIDGE TO WALL BRACKETS	
STA. 4+77.17 TO STA. 4+93.77	WATER MAIN TRANSITION FROM WALL BRACKETS TO ADJACENT TO CONCRETE RETAINING WALL	MAIN IN SHALLOW DEPTH TRENCH PARALLEL TO RETAINING WALL
STA. 4+93.77 TO STA. 4+97.96	WATER MAIN UNDER CONCRETE RETAINING WALL	WATER MAIN CASED UNDER RETAINING WALL
STA. 4+97.96 TO STA. 5+87.84	WATER MAIN UNDER ROADWAY	SEE TRENCH DETAILS ON SHEETS 11 & 12

GENERAL PLAN NOTES:

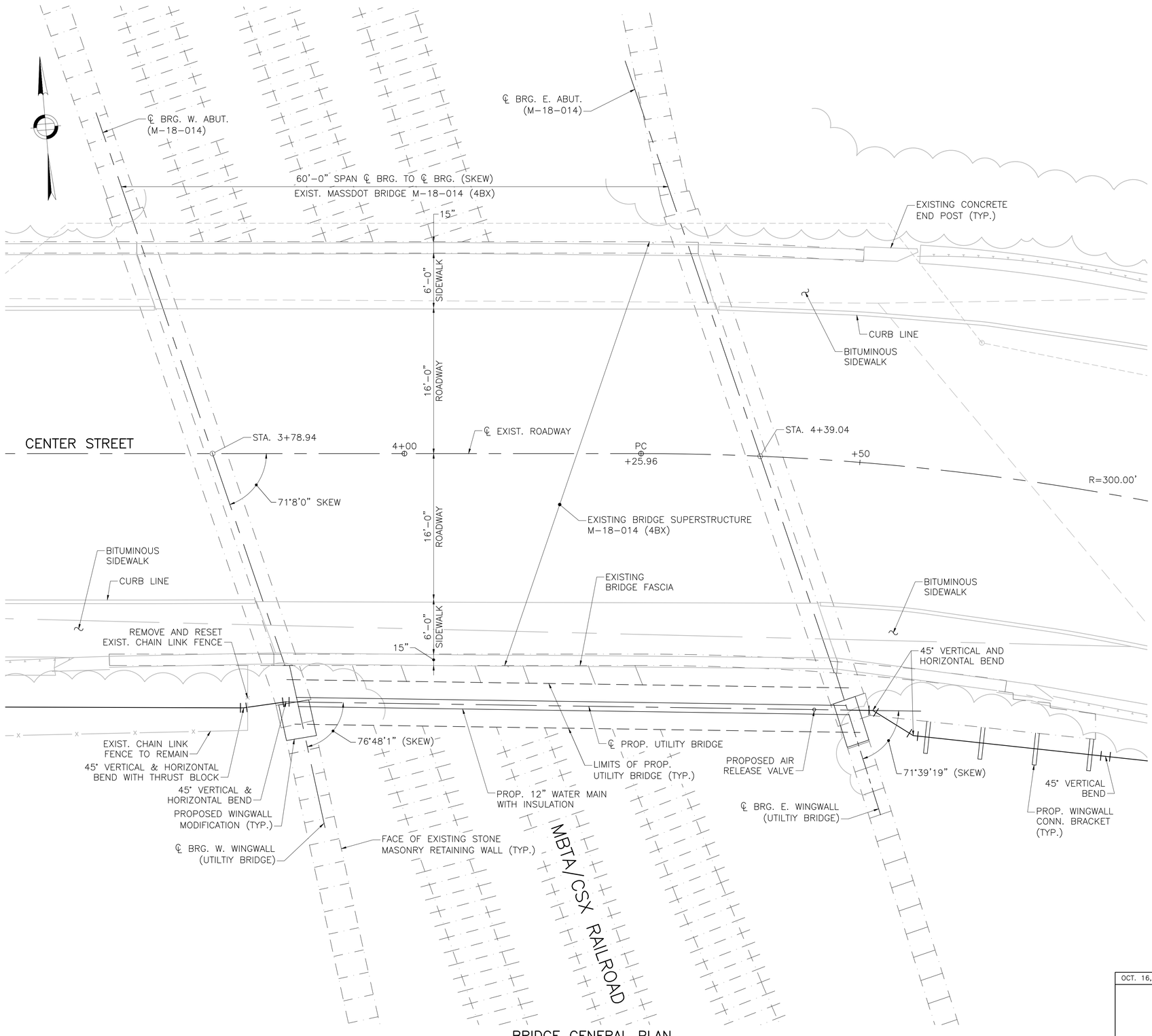
1. HOT MIX ASPHALT PEDESTRIAN CURB RAMP TO HAVE A LONGITUDINAL LENGTH OF 9'-0" AT A MAXIMUM SLOPE OF 7.5%. CROSS SLOPE TO BE MAXIMUM OF 1.5%. SLOPES ALLOW FOR CONSTRUCTION TOLERANCE OF 0.5%. MINIMUM WIDTH AT RAMP OPENING IS 4'-0". GRANITE CURB REVEAL TO BE 0'-6" AT FRONT OF SIDEWALK, WITH CURB TRANSITION AT ROADWAY SIDE OF RAMP. CURB REVEAL AT THE BACK OF RAMP TO BE 0'-6".
2. PROPOSED CURB LINE AND RAMP OPENING TO APPROXIMATELY FOLLOW EXISTING EDGE OF ROAD.
3. THE 1995 STATE HIGHWAY ALTERATION LINES, TOWN LAYOUT LINES, COUNTY LAYOUT LINES, AND MAIN BASELINE FOR LAYOUT #7275 ARE APPROXIMATELY SHOWN ON THE GENERAL PLAN AND ARE FOR INFORMATION ONLY.

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CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
GENERAL PLAN
SHEET 3 OF 20 SHEETS

GENERAL PLAN.DWG Plotted on 16-Oct-2026 9:31 AM

GENERAL PLAN.DWG Plotted on 16-Oct-2026 9:31 AM



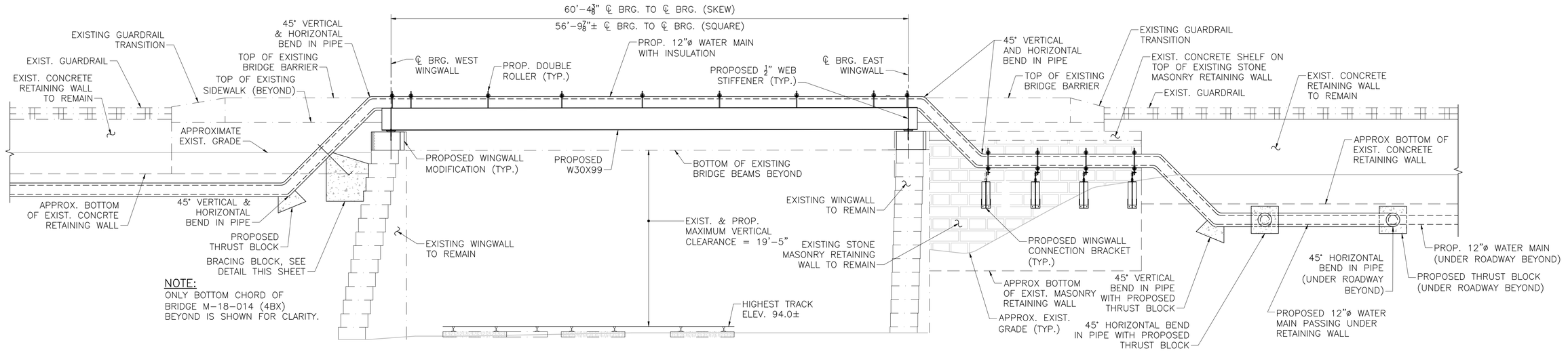
BRIDGE GENERAL PLAN

SCALE: $\frac{3}{16}$" = 1'-0"

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

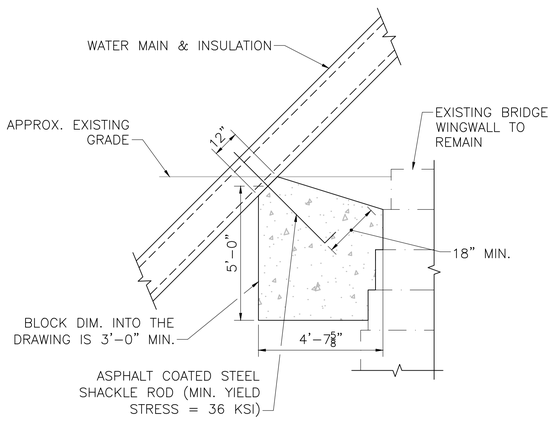
CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
BRIDGE GENERAL PLAN
SHEET 4 OF 20 SHEETS

GENERAL PLAN.DWG Plotted on 16-Oct-2026 9:31 AM



UTILITY BRIDGE SOUTH ELEVATION

SCALE: $\frac{3}{16}$" = 1'-0"

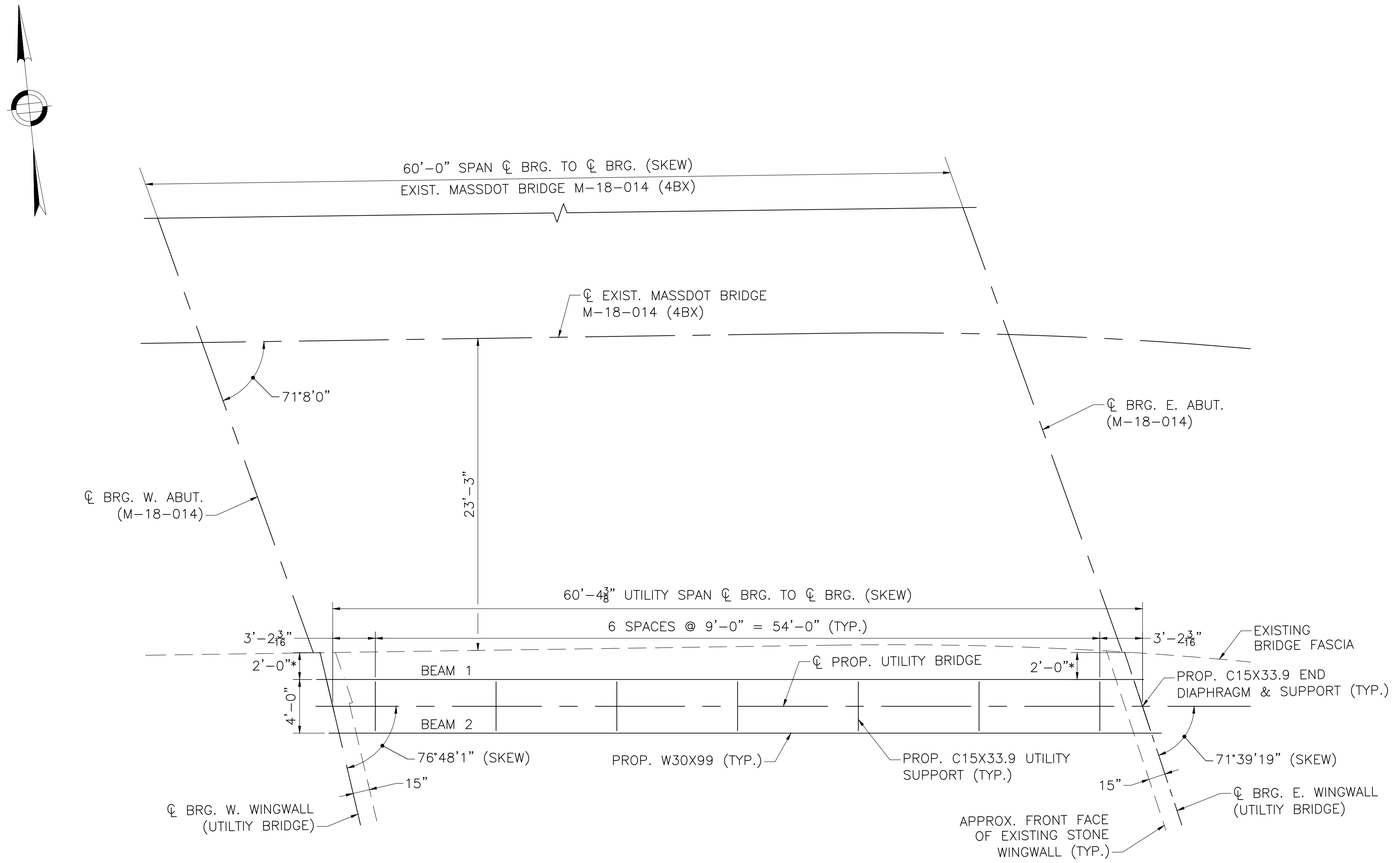


BRACING BLOCK DETAIL

SCALE: $\frac{3}{8}$" = 1'-0"

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
UTILITY BRIDGE SOUTH ELEVATION
SHEET 5 OF 20 SHEETS



* LOCATE BEAM 1 BEARING 2'-0" PERPENDICULAR FROM THE EXISTING BRIDGE FASCIA

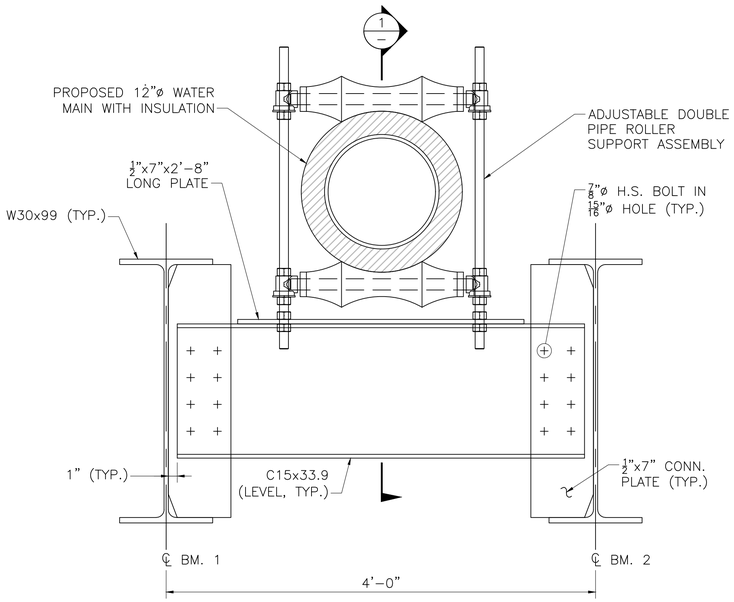
UTILITY BRIDGE FRAMING PLAN

SCALE: $\frac{3}{16}$" = 1'-0"

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

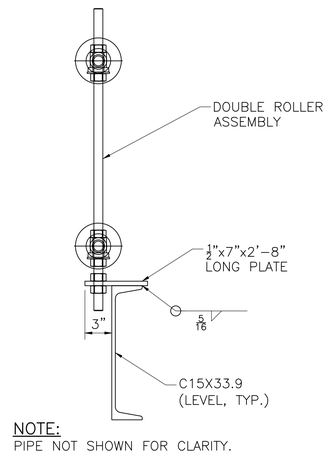
CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
UTILITY BRIDGE FRAMING PLAN
SHEET 6 OF 20 SHEETS

FRAMING PLAN.DWG Plotted on 16-Oct-2026 9:31 AM



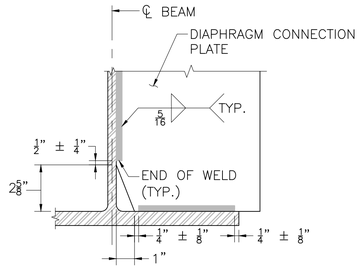
NOTE:
CONN. PLATES TO BE INSTALLED ON BOTH FACES OF BEAM AT BEARINGS.

UTILITY BRIDGE TYPICAL SECTION
SCALE: 1½" = 1'-0"

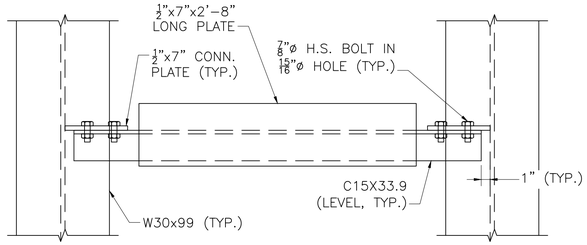


NOTE:
PIPE NOT SHOWN FOR CLARITY.

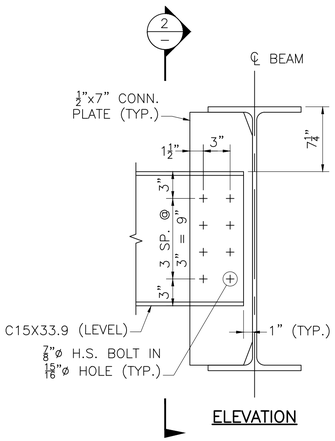
SECTION 1 / –
SCALE: 1½" = 1'-0"



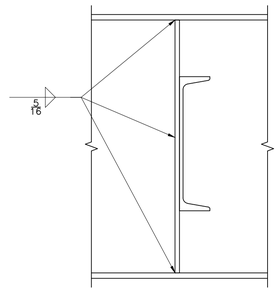
CLIP DETAIL
NOT TO SCALE



TYPICAL PLAN VIEW
SCALE: 1½" = 1'-0"

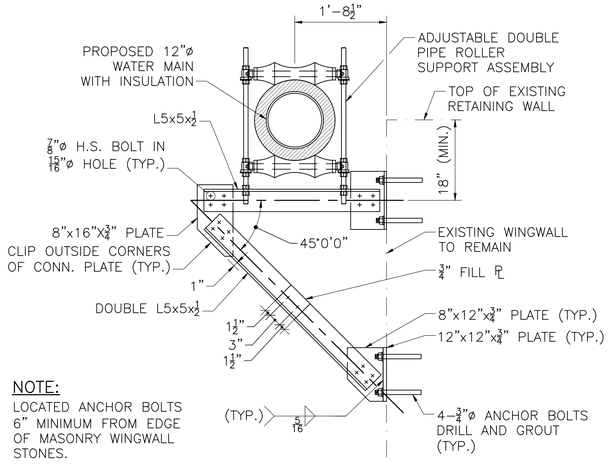


ELEVATION



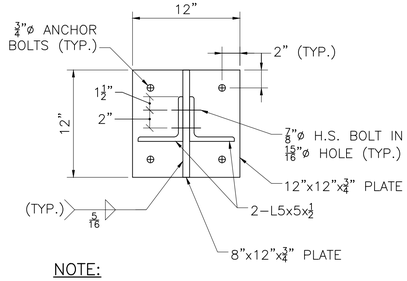
SECTION 2 / –

DIAPHRAGM CONNECTION PLATE DETAILS
SCALE: 1½" = 1'-0"



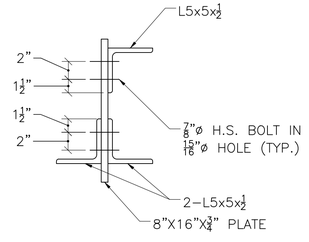
NOTE:
LOCATED ANCHOR BOLTS 6" MINIMUM FROM EDGE OF MASONRY WINGWALL STONES.

WINGWALL UTILITY SUPPORT BRACKET (EAST APPROACH)
SCALE: ¾" = 1'-0"



NOTE:
DOUBLE ANGLE CONN. AT BASE SHOWN. SINGLE ANGLE CONN. AT TOP SIMILAR.

CONNECTION AT WINGWALL DETAIL
SCALE: 1½" = 1'-0"

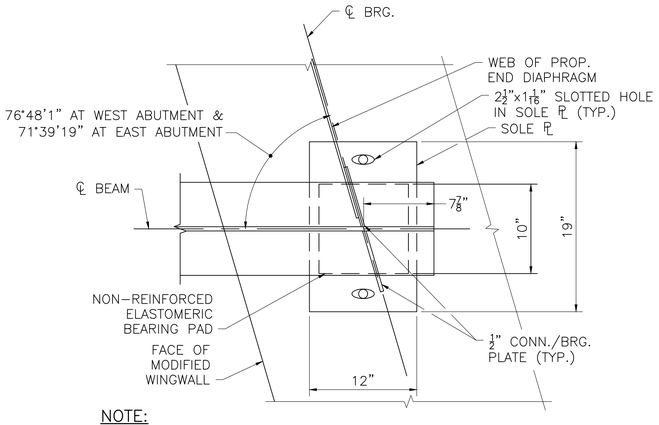


DOUBLE TO SINGLE ANGLE CONNECTION DETAIL
SCALE: 1½" = 1'-0"

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CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
BEAM DETAILS I
SHEET 7 OF 20 SHEETS

BEAM DETAILS.DWG Plotted on 16-Oct-2026 9:31 AM

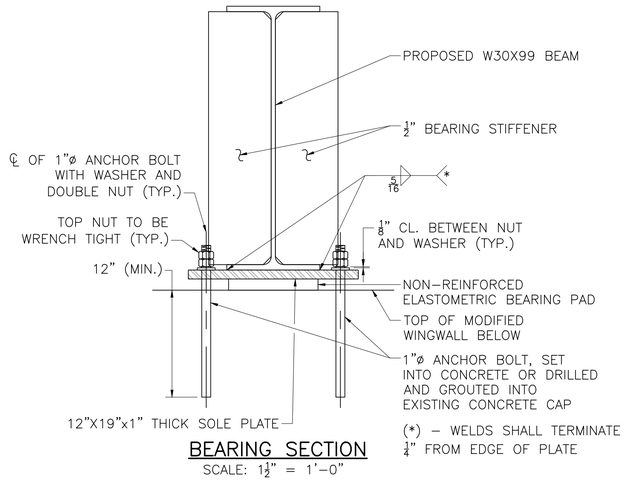


NOTE:

EAST BEARING SHOWN, WEST BEARING SIMIALR

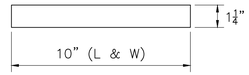
BEARING PLAN

SCALE: 1½" = 1'-0"



BEARING SECTION

SCALE: 1½" = 1'-0"



NOTES:

1. THIS BEARING IS DESIGNED USING AASHTO METHOD A.
2. ELASTOMER SHALL HAVE A SHEAR MODULUS OF 0.160 KSI.
3. THERE IS NO REINFORCEMENT IN THIS BEARING.
4. THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD IS 6.82 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 0.07 KSI.
5. THE 25 YEAR CREEP STRAIN SHALL BE LIMITED TO 35%.

ELASTOMERIC BEARING PAD

SCALE: 3" = 1'-0"

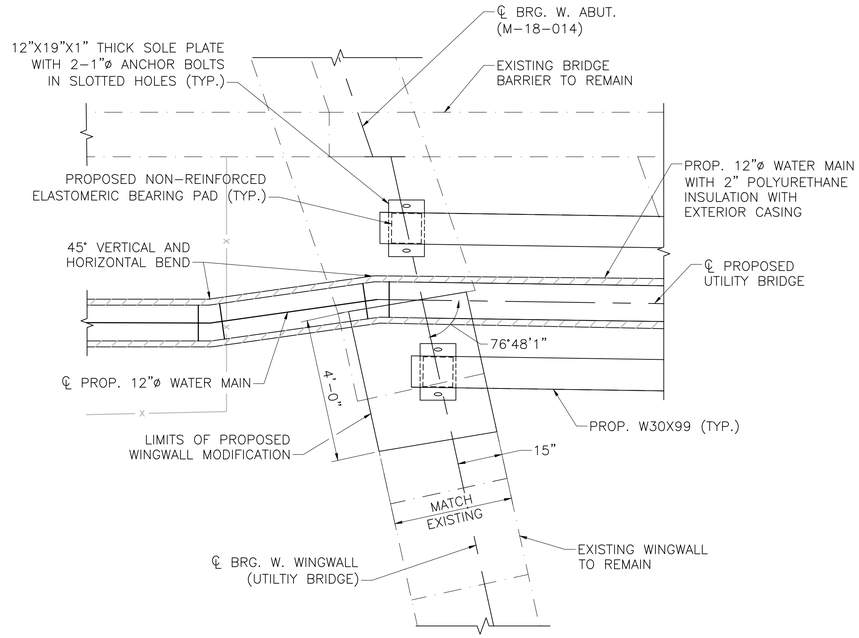
BEARING NOTES:

1. STEEL SOLE PLATE SHALL CONFORM TO AASHTO M 270 GRADE 36 AND SHALL BE HOT-DIP GALVANIZED.
2. CENTER THE ELASTOMERIC PAD UNDER THE SOLE PLATE DURING BEAM ERECTION.
3. BEAMS SHALL BE ERECTED WHEN THE AMBIENT TEMPERATURE IS BETWEEN 50 °F AND 77 °F. IF BEAMS ARE ERECTED AT OTHER AMBIENT TEMPERATURES, THEY WILL HAVE TO BE JACKED AND THE ELASTOMERIC BEARINGS RECENTERED WHEN THE TEMPERATURE RETURNS TO THAT RANGE.
4. ANCHOR BOLTS, NUTS, AND WASHERS SHALL CONFORM TO ASTM F 1554 GRADE 105 AND SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M 232.

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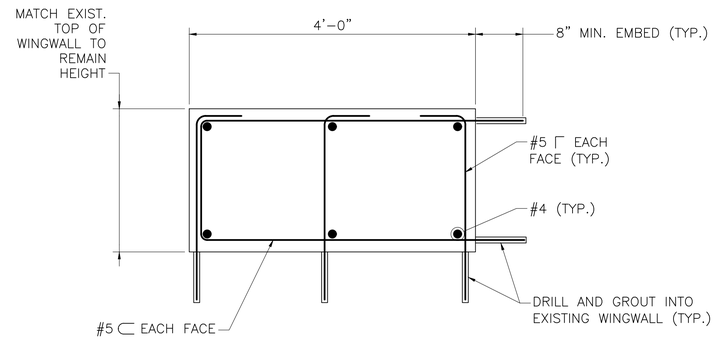
CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
BEAM DETAILS II
SHEET 8 OF 20 SHEETS

BEAM DETAILS.DWG Plotted on 16-Oct-2026 9:31 AM



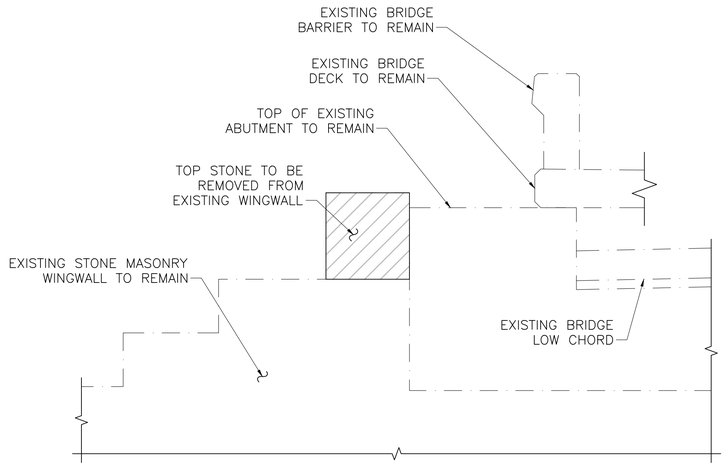
PROPOSED SOUTHWEST WINGWALL MODIFICATION PLAN

SCALE: $\frac{1}{2}$" = 1'-0"



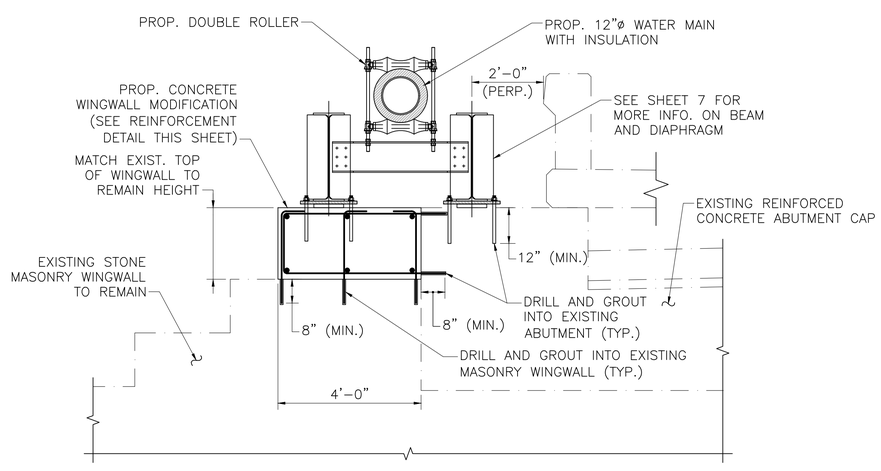
PROPOSED SOUTHWEST WINGWALL REINFORCEMENT

SCALE: 1" = 1'-0"



SOUTHWEST WINGWALL DEMOLITION ELEVATION

SCALE: $\frac{1}{2}$" = 1'-0"



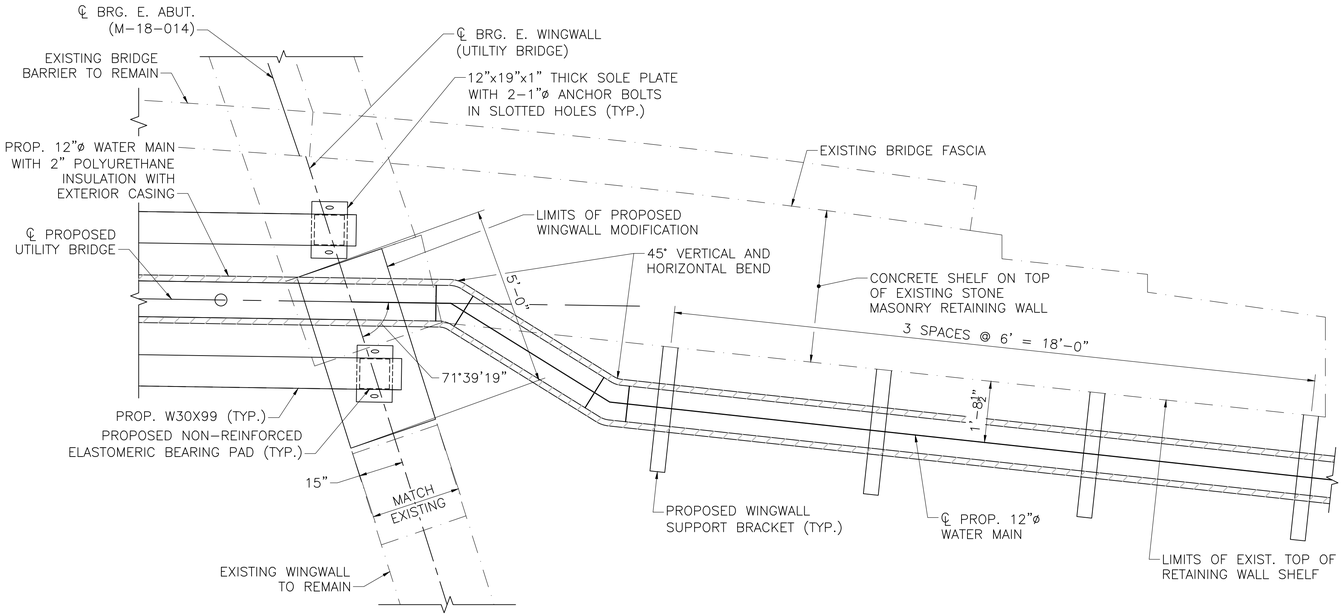
PROPOSED SOUTHWEST WINGWALL MODIFICATION ELEVATION

SCALE: $\frac{1}{2}$" = 1'-0"

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

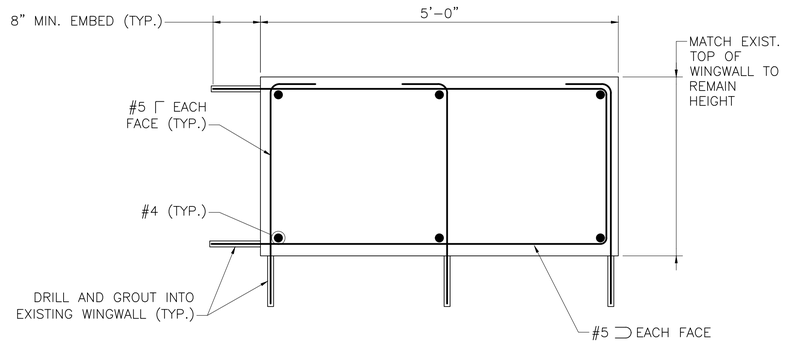
CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
SW WINGWALL MODIFICATIONS
SHEET 9 OF 20 SHEETS

SUBSTRUCTURE.DWG Plotted on 16-Oct-2026 9:32 AM



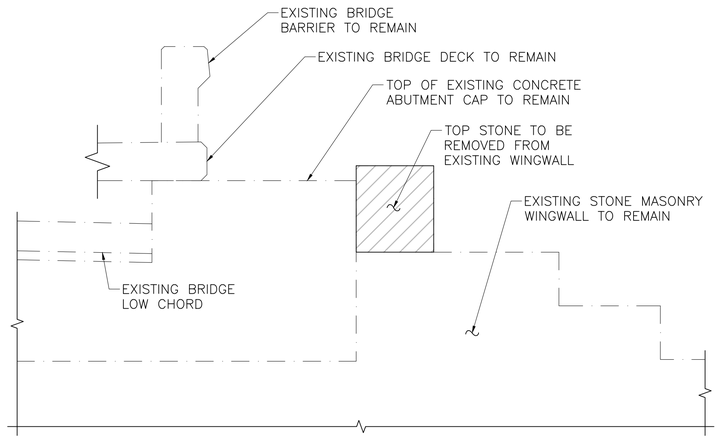
PROPOSED SOUTHEAST WINGWALL MODIFICATION PLAN

SCALE: ½" = 1'-0"



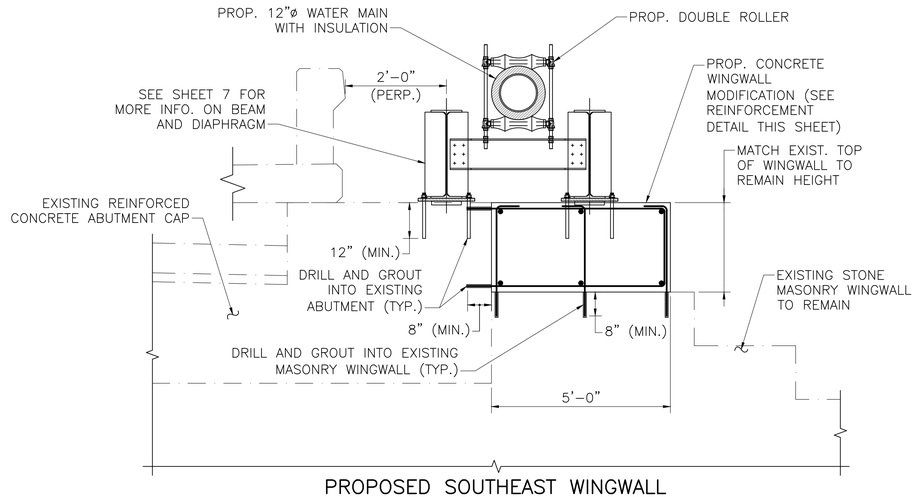
PROPOSED SOUTHEAST WINGWALL REINFORCEMENT

SCALE: 1" = 1'-0"



SOUTHEAST WINGWALL DEMOLITION ELEVATION

SCALE: ½" = 1'-0"



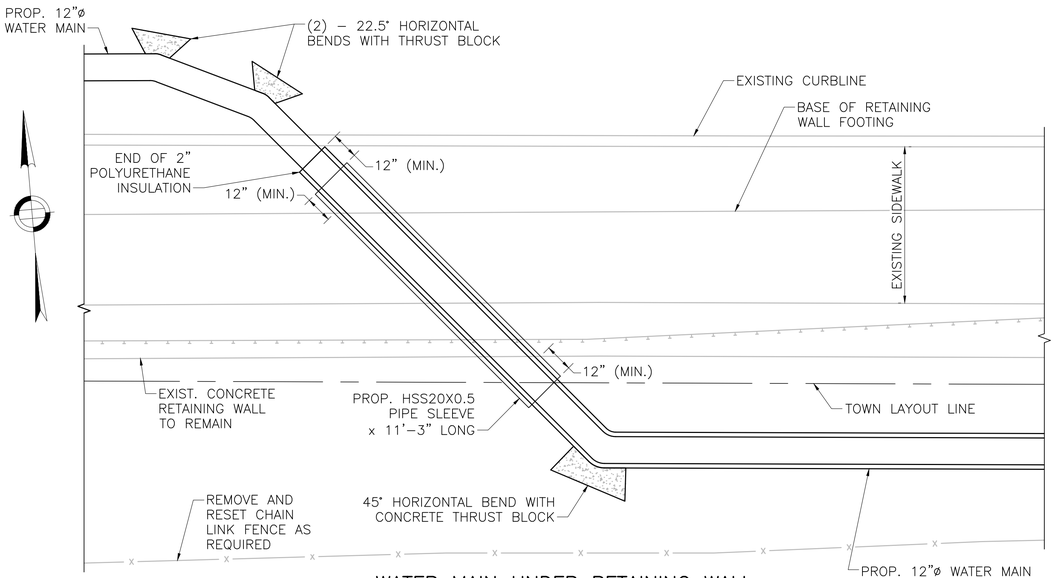
PROPOSED SOUTHEAST WINGWALL MODIFICATION ELEVATION

SCALE: ½" = 1'-0"

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

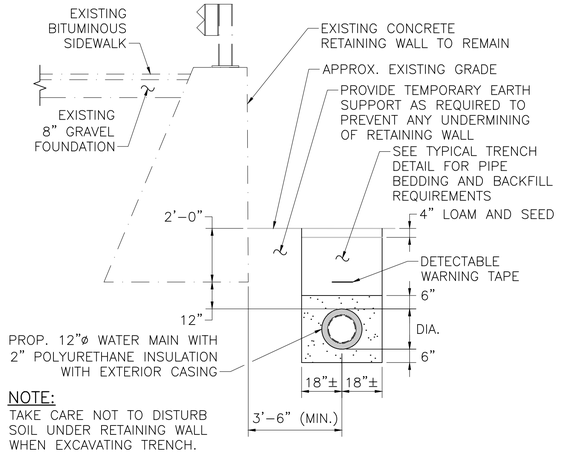
CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
SE WINGWALL MODIFICATIONS
SHEET 10 OF 20 SHEETS

SUBSTRUCTURE.DWG Plotted on 16-Oct-2026 9:32 AM



WATER MAIN UNDER RETAINING WALL PLAN VIEW (WEST APPROACH)

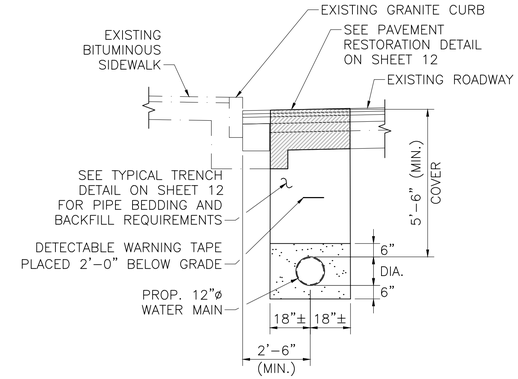
SCALE: 3/8" = 1'–0"



NOTE:
TAKE CARE NOT TO DISTURB SOIL UNDER RETAINING WALL WHEN EXCAVATING TRENCH.

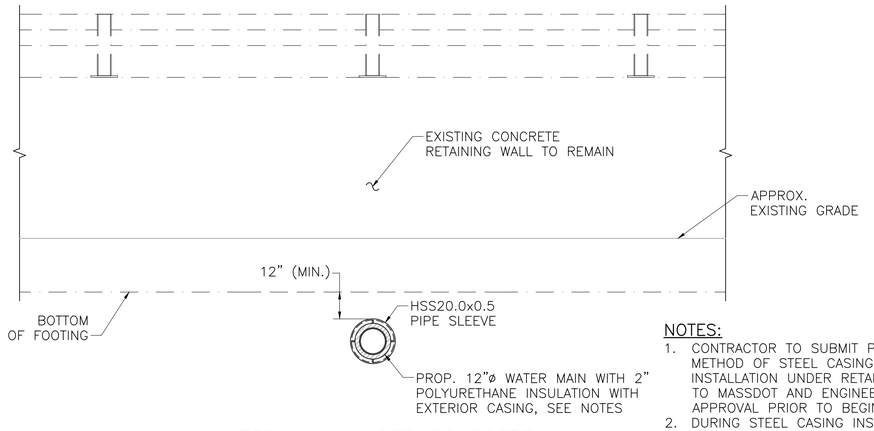
WATER MAIN ADJACENT TO RETAINING WALL SECTION (EXTERIOR OF WALL)

SCALE: 3/8" = 1'–0"



WATER MAIN ADJACENT TO EXISTING CURB SECTION (ROADWAY SIDE)

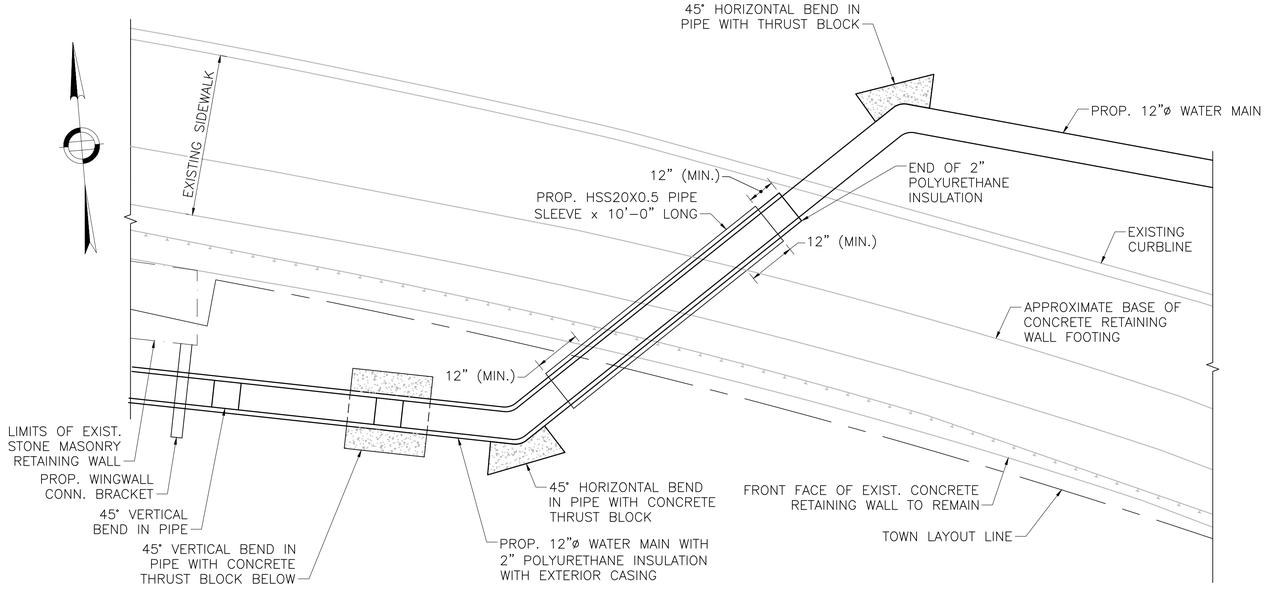
SCALE: 3/8" = 1'–0"



WATER MAIN UNDER CONCRETE RETAINING WALL ELEVATION

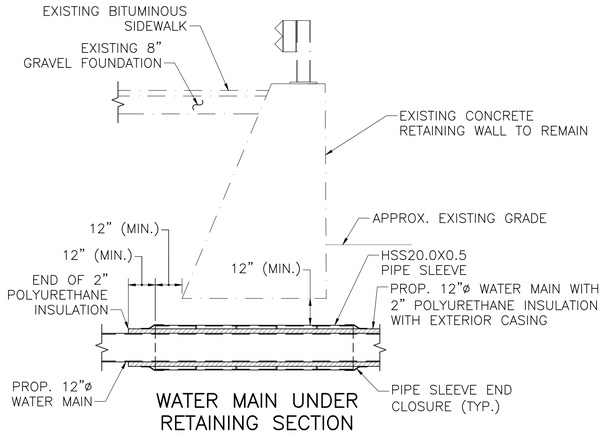
SCALE: 3/8" = 1'–0"

NOTES:
1. CONTRACTOR TO SUBMIT PROPOSED METHOD OF STEEL CASING INSTALLATION UNDER RETAINING WALL TO MASSDOT AND ENGINEER FOR APPROVAL PRIOR TO BEGINNING WORK.
2. DURING STEEL CASING INSTALLATION, MONITOR EXISTING RETAINING WALL FOR ANY SETTLEMENT. PROVIDE TEMPORARY SUPPORT OR SOIL RETENTION DEVICES AS NECESSARY TO AVOID SETTLEMENT.
3. IF NECESSARY IN CONTRACTORS APPROVED MEANS AND METHODS OF PIPE INSTALLATION, BACKFILL ANY EXCAVATION UNDER RETAINING WALL WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM).



WATER MAIN UNDER WINGWALL PLAN VIEW (EAST APPROACH)

SCALE: 3/8" = 1'–0"



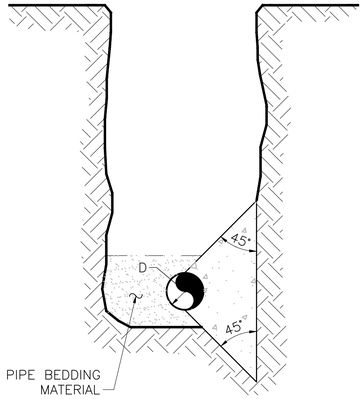
WATER MAIN UNDER RETAINING SECTION

SCALE: 3/8" = 1'–0"

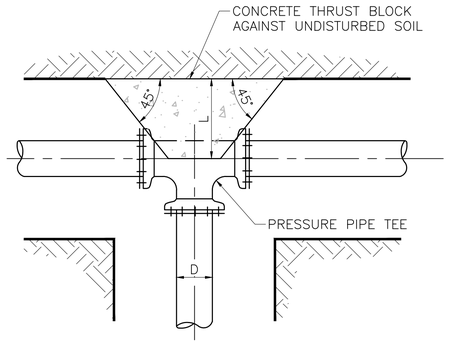
OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
WATER MAIN DETAILS I
SHEET 11 OF 20 SHEETS

PIPE DETAILS.DWG Plotted on 16-Oct-2026 9:32 AM



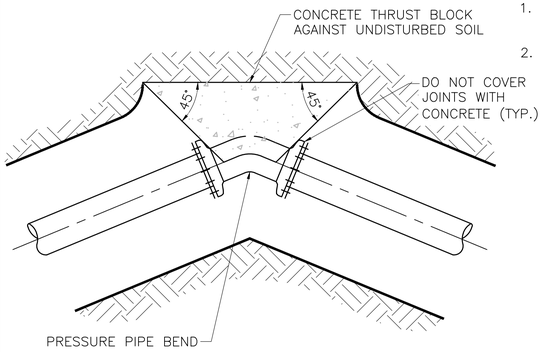
SECTION



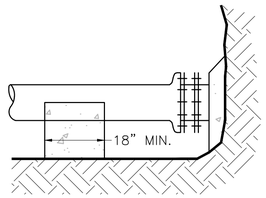
PLAN AT TEE

NOTES:

1. CONCRETE THRUST RESTRAINT SHALL BE USED WHERE INDICATED AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.
2. CONTRACTOR SHALL BE USE CARE TO AVOID PLACEMENT OF CONCRETE ON THE FITTING JOINTS.



PLAN AT BEND



SECTION AT CAP OR PLUG

MINIMUM BEARING AREAS AGAINST UNDISTURBED MATERIAL (SQ FT)				
SIZE OF PIPE (INCHES)	90° BENDS, TEES, CAPS & PLUGS	45° BENDS & WYES	22.5° BENDS	11.25° BENDS
6, 8	5	4	2	2
10, 12	12	9	5	2

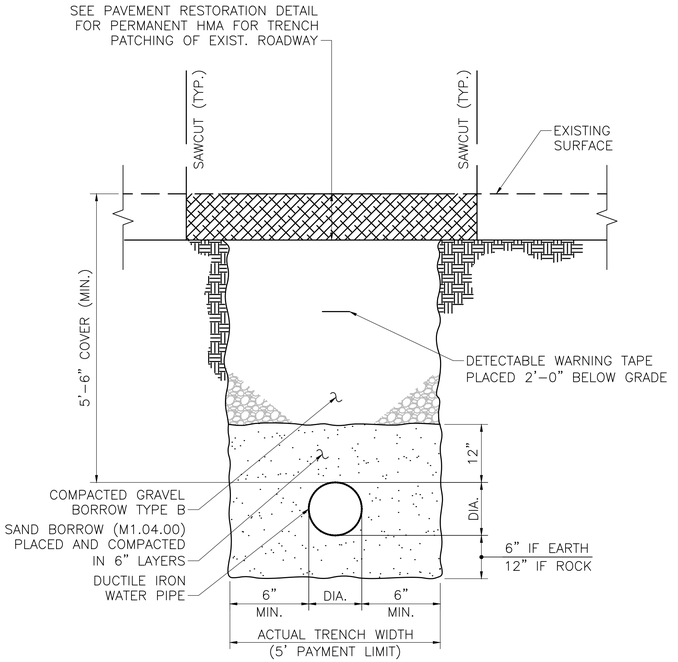
CONCRETE THRUST RESTRAINT DETAILS

NOT TO SCALE

REQUIRED LENGTH OF RESTRAINED JOINTS FROM FITTINGS (INCHES)						
SIZE OF PIPE	90° BEND	45° BENDS OR WYE BRANCH	22.5° BEND	11.25° BEND	PLUG, CAP OR IN-LINE VALVE	TEE (BRANCH)
6	25 (30.5)	10.5 (12.5)	5 (6)	2.5 (3)	43 (64)	34 (51)
8	33 (40)	13.5 (16.5)	6.5 (8)	3 (4)	55 (82)	47 (70)
10	40 (48.5)	16.5 (20)	8 (9.5)	4 (5)	67 (100)	58 (87)
12	47 (56.5)	19.5 (23.5)	9.5 (11.5)	4.5 (5.5)	79 (118)	70 (105)
16	59.5 (72)	24.5 (30)	12 (14.5)	6 (7)	101 (152)	92 (139)
20	72 (86.5)	30 (36)	14.5 (17)	7 (8.5)	123 (184)	114 (171)
24	84 (100)	35 (41)	16.5 (20)	8 (10)	144 (216)	134 (202)
30	100 (120)	41 (50)	20 (24)	10 (12)	174 (261)	165 (247)

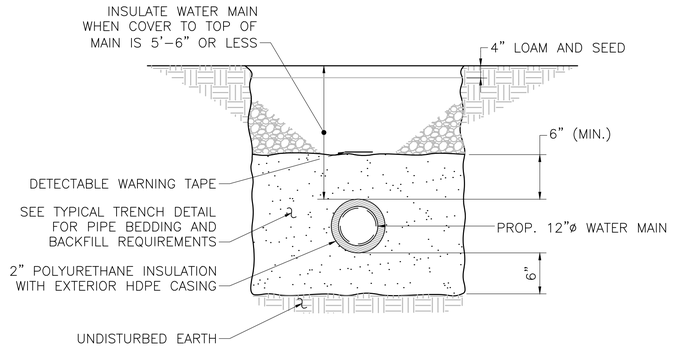
NOTES:

1. RESTRAINED LENGTHS LISTED IN PARENTHESES ARE FOR PIPE WRAPPED IN POLYETHYLENE. THE OTHER ASSOCIATED LENGTHS ARE FOR PLAIN, UNWRAPPED DUCTILE IRON WATER PIPE.
2. THE CONTRACTOR SHALL USE THIS TABLE IN CONJUNCTION WITH THE APPROPRIATE PIPE SPECIFICATION SECTION.



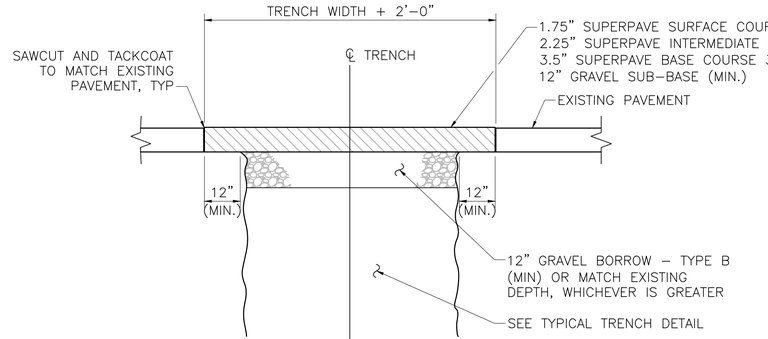
TYPICAL WATER MAIN TRENCH DETAIL

NOT TO SCALE



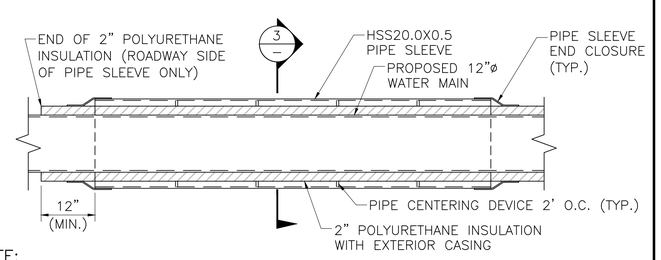
SHALLOW WATER MAIN TRENCH DETAIL

NOT TO SCALE



PAVEMENT RESTORATION DETAIL

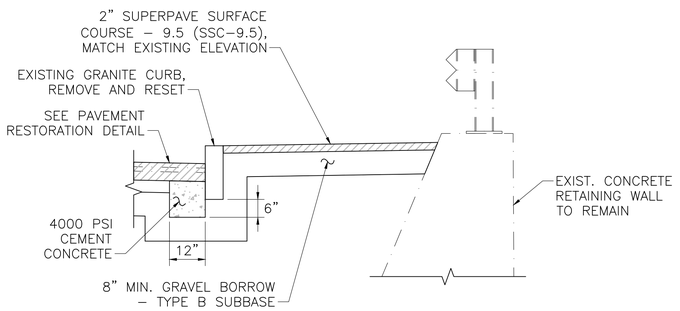
NOT TO SCALE



NOTE:
KEEP SPACE BETWEEN SLEEVE AND PIPE VOID (UNLESS NOTED OTHERWISE)

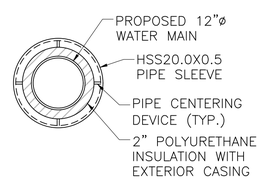
PROPOSED WATER MAIN THRU PIPE SLEEVE DETAIL

SCALE: $\frac{3}{4}$" = 1'-0"



SIDEWALK RESTORATION DETAIL

SCALE: $\frac{1}{2}$" = 1'-0"



SECTION 3 / -

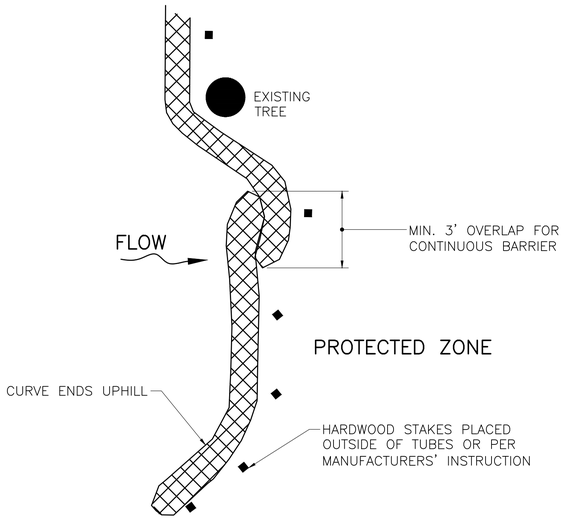
SCALE: $\frac{3}{4}$" = 1'-0"

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
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WATER MAIN DETAILS II

SHEET 12 OF 20 SHEETS

PIPE DETAILS.DWG Plotted on 16-Oct-2026 9:32 AM



PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

PLACE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE

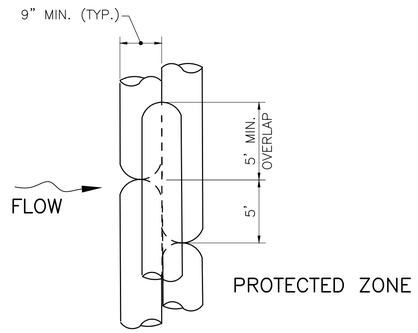
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

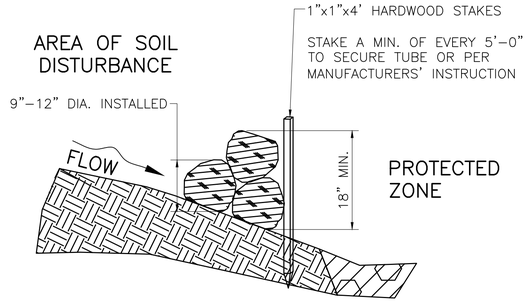
PLAN VIEW

COMPOST FILTER TUBES

NOT TO SCALE



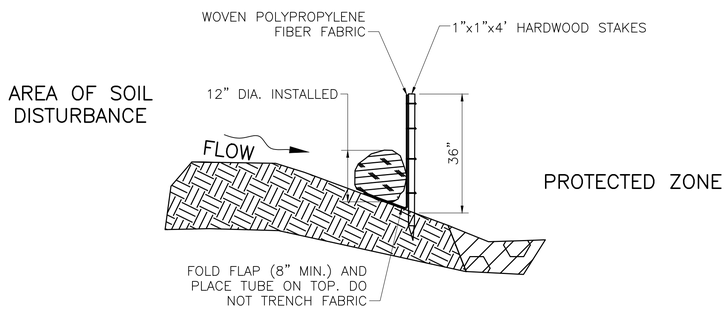
PLAN VIEW



SECTION

COMPOST FILTER TUBE BERM (SLOPES 2:1 OR STEEPER)

NOT TO SCALE



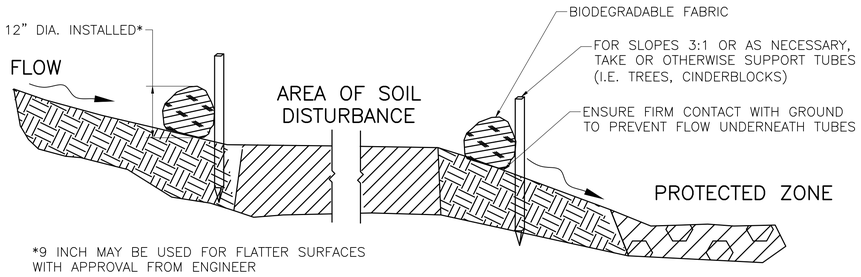
SECTION

COMPOST FILTER TUBE & SILT FENCE

NOT TO SCALE

REDUCE HIGH WATER FLOW INTO WORK ZONE

CAPTURE SEDIMENT AND PREVENT FLOW OFF SITE

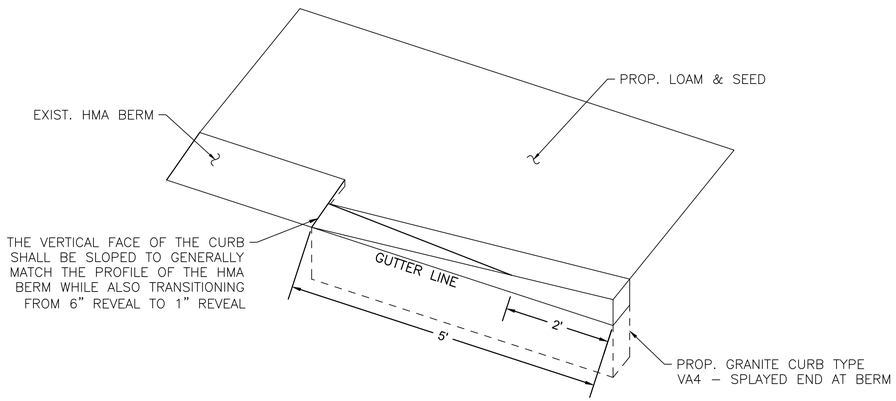


*9 INCH MAY BE USED FOR FLATTER SURFACES WITH APPROVAL FROM ENGINEER

SECTION

SEDIMENT BARRIER – COMPOST FILTER TUBES

NOT TO SCALE



5' GRANITE CURB TYPE VA4 – SPLAYED END AT BERM

NOT TO SCALE

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
EROSION CONTROL DETAILS
SHEET 13 OF 20 SHEETS

PIPE DETAILS.DWG Plotted on 16-Oct-2026 9:32 AM

GENERAL TTCP NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
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, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS 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 LIGHTING.
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 BARRIER.
12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
13. POLICE DETAILS WILL BE PROVIDED TO GUIDE BOTH PEDESTRIANS AND VEHICLES THROUGH THE WORK ZONE AT ALL TIMES DURING CONSTRUCTION.

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED* (mph)	DISTANCE (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

*POSTED SPEED, OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

THESE VALUES MAY BE USED TO DETERMINE THE LENGTH OF LONGITUDINAL BUFFER SPACES.

THE DISTANCES IN THE ABOVE CHART REPRESENT THE MINIMAL VALUES FOR BUFFER SPACING.

Source: Table 6C-2 MUTCD LATEST EDITION

CONVENTIONAL ROADWAY- A STREET OR HIGHWAY OTHER THAN A LOW-VOLUME ROAD, EXPRESSWAY, OR FREEWAY.

EXPRESSWAY- A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.

FREEWAY- A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS.

LOW-VOLUME ROAD- A FACILITY LYING OUTSIDE OF BUILT-UP AREAS OF CITIES, TOWNS, AND COMMUNITIES, AND IT SHALL HAVE A TRAFFIC VOLUME OF LESS THAN 400 AADT. IT SHALL NOT BE A FREEWAY, EXPRESSWAY, INTERCHANGE RAMP, FREEWAY SERVICE ROAD OR A ROAD ON A DESIGNATED STATE HIGHWAY SYSTEM.

Source: MUTCD LATEST EDITION

THE IDEAL CAPACITY OF A MAJOR HIGHWAY IS GENERALLY CONSIDERED TO BE 1900 PASSENGER CARS PER HOUR PER LANE (PCPHPL). IN WORK ZONES ON A MULTI-LANE DIVIDED HIGHWAY, THE FOLLOWING VOLUME GUIDELINES HAVE BEEN SUGGESTED:

MEASURED AVERAGE WORK ZONE CAPACITIES

NUMBER OF LANES		NUMBER OF STUDIES	AVERAGE CAPACITY	
NORMAL (EXISTING)	OPEN (TO TRAFFIC)		VPH	VPHPL
3	1	7	1,170	1,170
2	1	8	1,340	1,340
5	2	8	2,740	1,370
4	2	4	2,960	1,480
3	2	9	2,980	1,490
4	3	4	4,560	1,520

Source: Dudek, C., Notes on Work Zone Capacity and Level of Service. Texas Transportation Institute, Texas A&M University, College Station, Texas (1984)

BY OBTAINING HOURLY TRAFFIC COUNTS FOR A PARTICULAR ROADWAY (WITH A MINIMUM OF A 48-HOUR AUTOMATIC TRAFFIC RECORDER (ATR) COUNT), THIS WILL HELP TO DETERMINE AT WHAT TIMES OF THE DAY OR NIGHT A CERTAIN NUMBER OF LANES MAY BE CLOSED.

SUGGESTED WORK ZONE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS	350	350	350
MOST OTHER ROADWAYS	500	500	500
FREEWAYS AND EXPRESSWAYS	1,000	1,500	2,640

DISTANCES ARE SHOWN IN FEET. THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS SHOWN IN THE DETAIL/ TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTCP SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (i.e. THE W20-1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL SIGNS (i.e. "RIGHT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT SIGN PLACEMENT BUT ARE USED IN RARE OCCASIONS.

THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY-TO-DAY) WORK ZONE SIGNS AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

MA-R2-10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

MA-R2-10a, MA-R2-10e, AND W20-1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

Based on: Table 6C-1 MUTCD LATEST EDITION

FORMULAS FOR DETERMINING TAPER LENGTHS

SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

Source: Table 6C-4 MUTCD LATEST EDITION

WHERE: L = TAPER LENGTH IN FEET

W = WIDTH OF OFFSET IN FEET

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

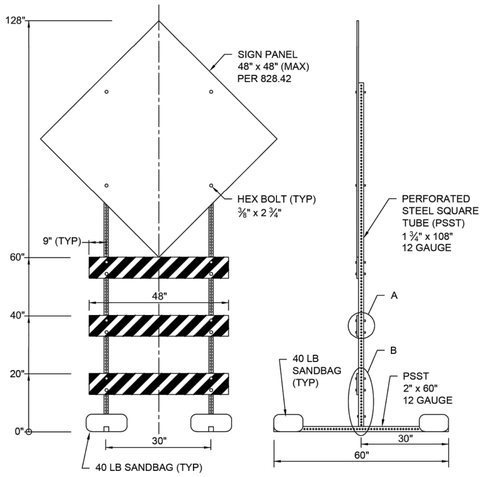
TYPE OF TAPER	TAPER LENGTH (L)*
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN. 100 FT MAX.
DOWNSTREAM TAPER	50 FT MIN. 100 FT MAX. PER LANE

Source: Table 6C-3 MUTCD LATEST EDITION

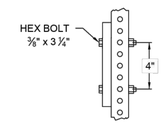
OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
TEMP. TRAFFIC CONTROL NOTES
SHEET 14 OF 20 SHEETS

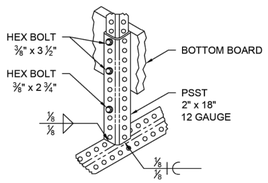
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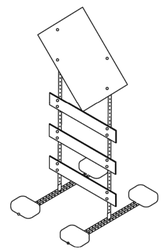
ELEVATION VIEWS



DETAIL A



DETAIL B
(REAR VIEW SHOWN FOR CLARITY)

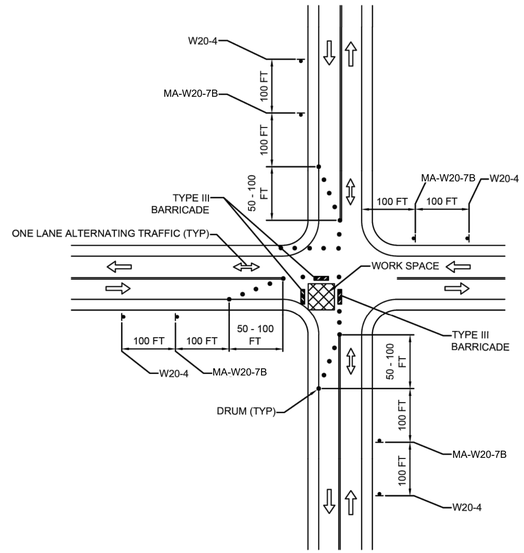


ISOMETRIC VIEW

NOTES:

1. SEE DRAWING WZ-2 FOR ALL OTHER MATERIAL AND DIMENSIONAL DETAILS.
2. ALL BOLTS SHALL BE GRADE 5, WITH TWO F844 WASHERS AND ONE HEX NUT ON EACH BOLT.

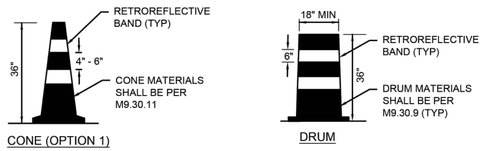
TYPE III BARRICADE WITH SIGN



INTERSECTION
QUADRANT CLOSURE

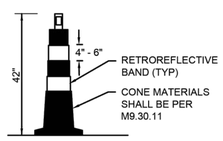
NOTES:

1. FLAGGING REQUIRED FOR ALL ALTERNATING ONE-LANE TRAFFIC.
2. PEDESTRIAN ACCESS MUST BE MAINTAINED AT ALL TIMES.
3. MAXIMUM DRUM SPACING IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
4. MINIMUM LANE WIDTH IS TO BE 11 FEET MEASURED FROM THE EDGE OF DRUMS.

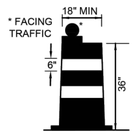


CONE (OPTION 1)

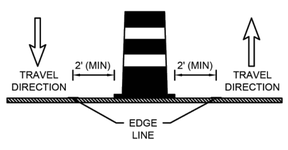
DRUM



CONE (OPTION 2)



DRUM WITH SEQUENTIALLY
FLASHING WARNING LIGHT



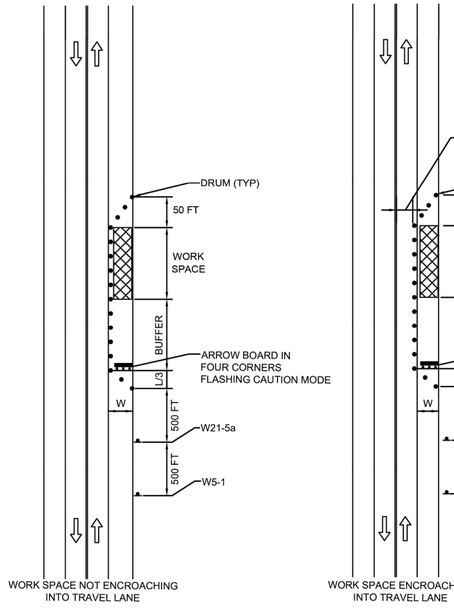
CHANNELIZING DEVICE PLACEMENT WITH
TRAFFIC CARRIED ON BOTH SIDES

NOTES:

1. CONES OR DRUMS SHALL BE OFFSET AT LEAST 2' FROM THE EDGE LINE (MEASURED FROM THE CENTER OF MARKING TO EDGE OF CONE/DRUM WEIGHT).
2. CONES MAY BE USED FOR ALL DAYTIME OPERATIONS. FOR NIGHT WORK, DRUMS SHOULD BE USED TO FORM THE TAPER(S) AND CONES CAN BE USED ALONG THE TANGENT SECTION OF THE WORK SETUP.

GENERAL TTCP NOTE:

POLICE DETAILS WILL BE PROVIDED TO GUIDE BOTH PEDESTRIANS AND VEHICLES THROUGH THE WORK ZONE AT ALL TIMES DURING CONSTRUCTION.



TWO LANE ROAD
SHOULDER CLOSURE

TYPICAL TAPER LENGTHS (L) IN FEET

SPEED LIMIT (S) IN MPH	WIDTH OF OFFSET (W_L OR W_S) IN FEET		
	10	11	12
25	104	115	125
30	150	165	180
35	204	225	245
40	267	293	320

NOTE: FOR SHOULDER WIDTHS NOT LISTED IN TABLE, USE $L=\frac{WS^2/60}{3}$

MINIMUM LENGTH OF LONGITUDINAL BUFFER IS EQUAL TO THE STOPPING SIGHT DISTANCE AT THE POSTED SPEED LIMIT AND CAN BE DETERMINED FROM THE FOLLOWING TABLE:

STOPPING SIGHT DISTANCE	
SPEED (MPH)	DISTANCE (FT)
25	155
30	200
35	250
40	305

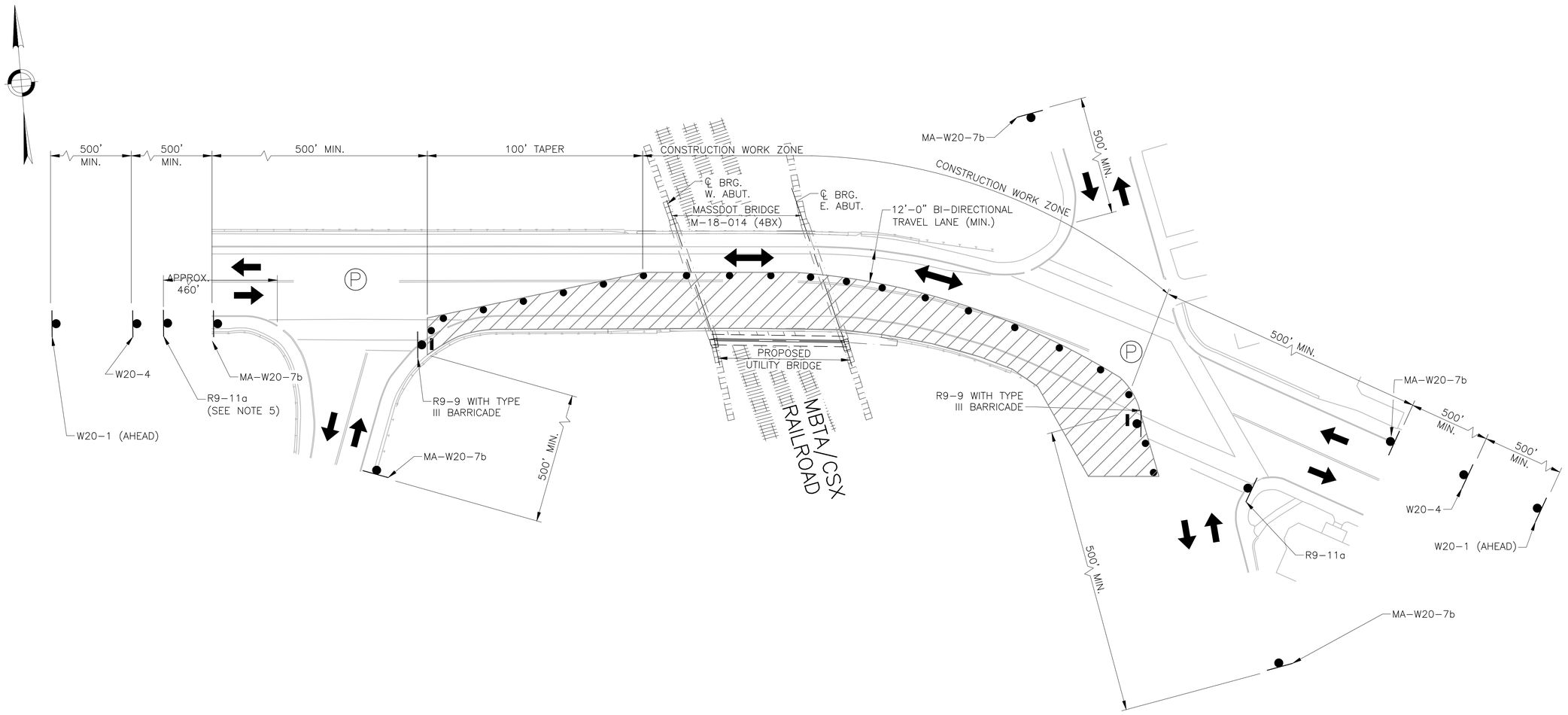
NOTES:

1. MAXIMUM DRUM SPACING IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
2. MINIMUM LANE WIDTH IS TO BE 11 FEET MEASURED FROM THE EDGE OF DRUMS.

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
TEMP. TRAFFIC CONTROL DETAILS
SHEET 15 OF 20 SHEETS

TTCP.DWG Plotted on 16-Oct-2026 9:33 AM



TEMPORARY TRAFFIC CONTROL PLAN – STAGE 1

SCALE: 1" = 25'

TTCP LEGEND:

- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAVEL
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- SIGN

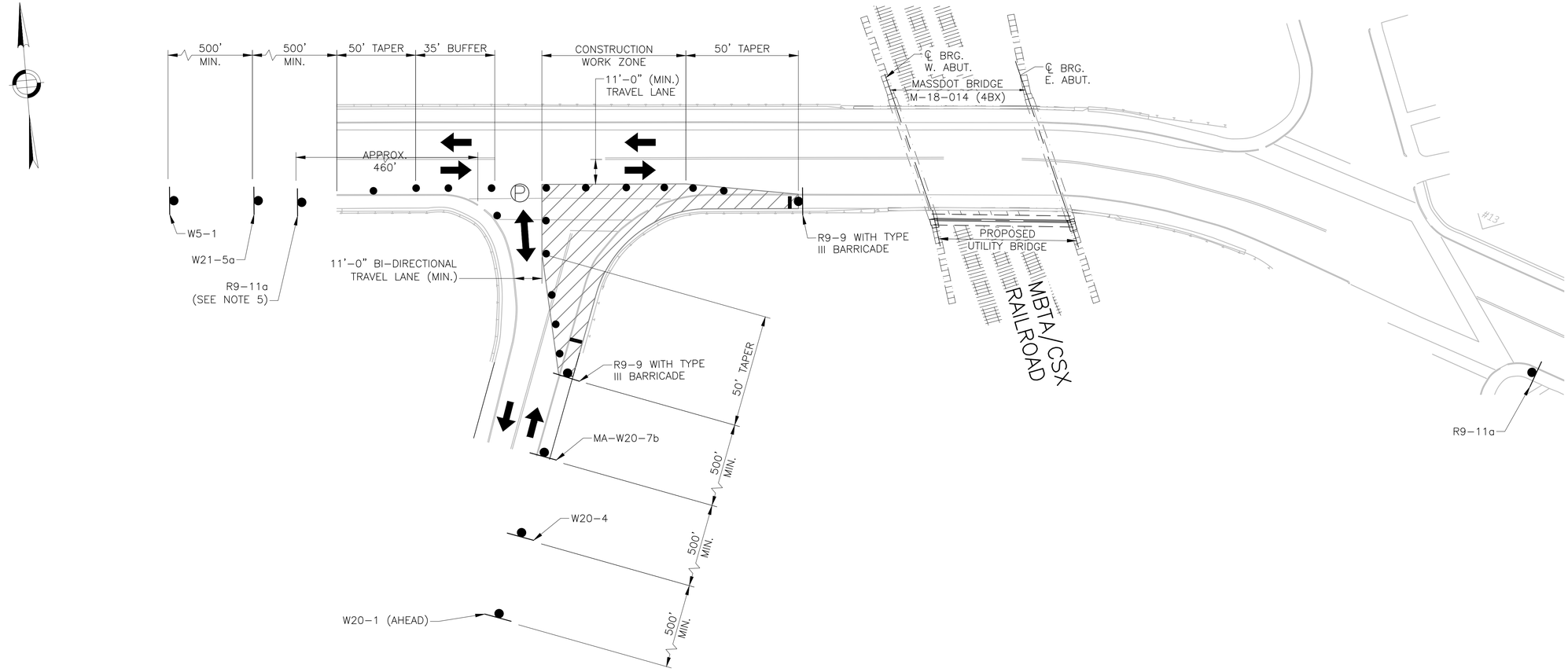
NOTES:

1. ALL PROPOSED SIGNS SHALL FOLLOW SIGN DIMENSIONS, TEXT DIMENSIONS, AND COLORS OF THE LATEST EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD) AND THE MASSACHUSETTS AMENDMENTS TO THE MUTCD.
2. SEE SHEET 14 FOR TEMPORARY TRAFFIC CONTROL NOTES.
3. ADVANCE WARNING SIGNS SHALL BE PLACED AT THE MINIMUM SPACING SHOWN UNLESS SUFFICIENT AREA IS NOT AVAILABLE. IF THE MINIMUM SPACING OF SIGNS IS TO BE EXCEEDED, THE SIGNS SHALL BE PLACED AS CLOSE AS PRACTICAL TO THE MINIMUM.
4. THIS SETUP MAY NOT BE LEFT IN PLACE AT END OF SHIFT. ALL SIGNS SHALL BE REMOVED OR CONVERTED AT END OF SHIFT. STEEL PLATES SHALL BE UTILIZED TO COVER TRENCHES AS DIRECTED BY ENGINEER. W8-24 SIGN SHALL BE PROVIDED AS DIRECTED BY ENGINEER.
5. R9-11a TO BE LOCATED AT SOUTHERN END OF EXISTING CROSSWALK AT THE INTERSECTION OF CENTER ST & LANE ST.
6. POLICE DETAILS WILL BE PROVIDED TO GUIDE BOTH PEDESTRIANS AND VEHICLES THROUGH THE WORK ZONE AT ALL TIMES DURING CONSTRUCTION.

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
TTCP – STAGE 1

TTCP.DWG Plotted on 16-Oct-2026 9:33 AM



TEMPORARY TRAFFIC CONTROL PLAN – STAGE 2A

SCALE: 1" = 25'

TTCP LEGEND:

- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAVEL
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- SIGN

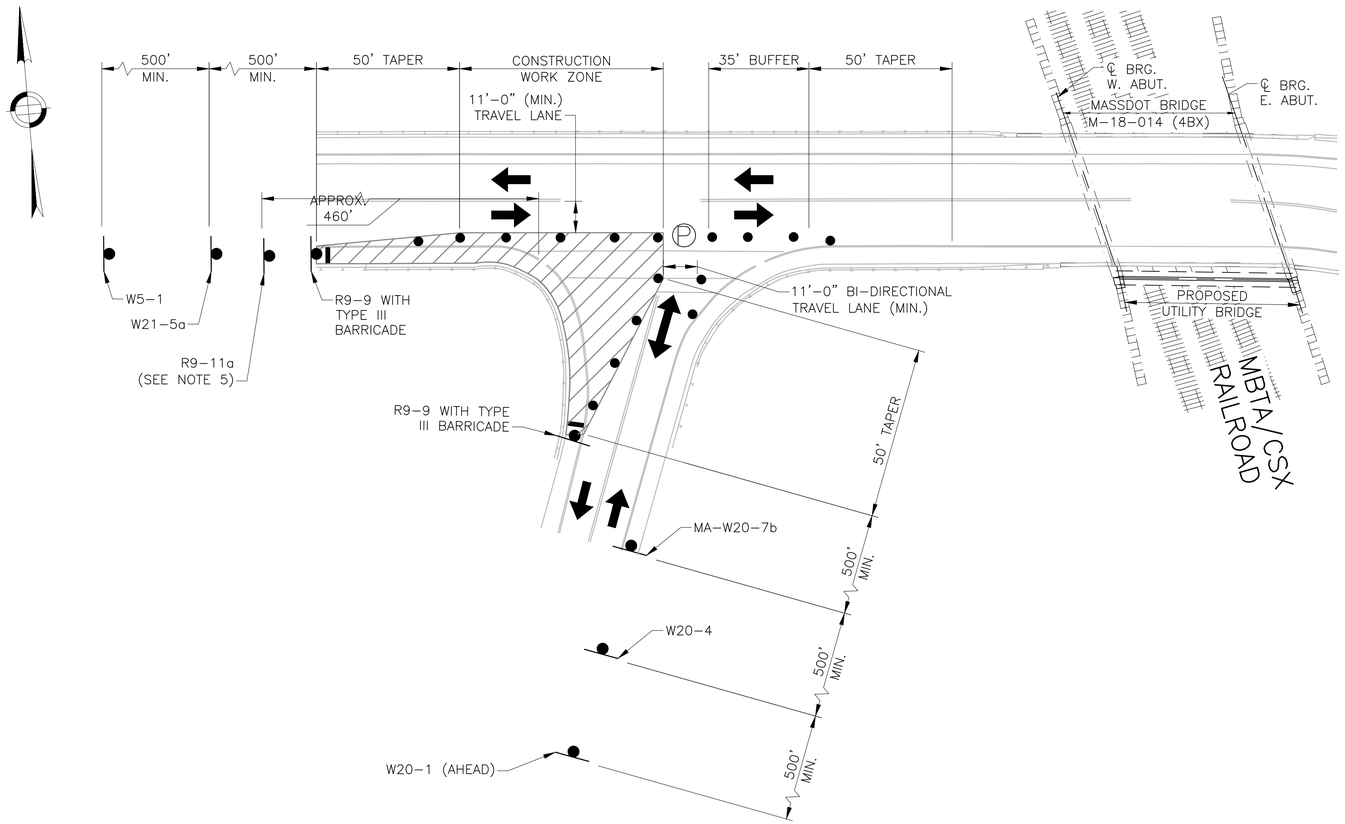
NOTES:

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6. POLICE DETAILS WILL BE PROVIDED TO GUIDE BOTH PEDESTRIANS AND VEHICLES THROUGH THE WORK ZONE AT ALL TIMES DURING CONSTRUCTION.

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
TTCP – STAGE 2A

TTCP.DWG Plotted on 16-Oct-2026 9:33 AM



TEMPORARY TRAFFIC CONTROL PLAN – STAGE 2B

SCALE: 1" = 25'

TTCP LEGEND:

- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAVEL
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- SIGN

NOTES:

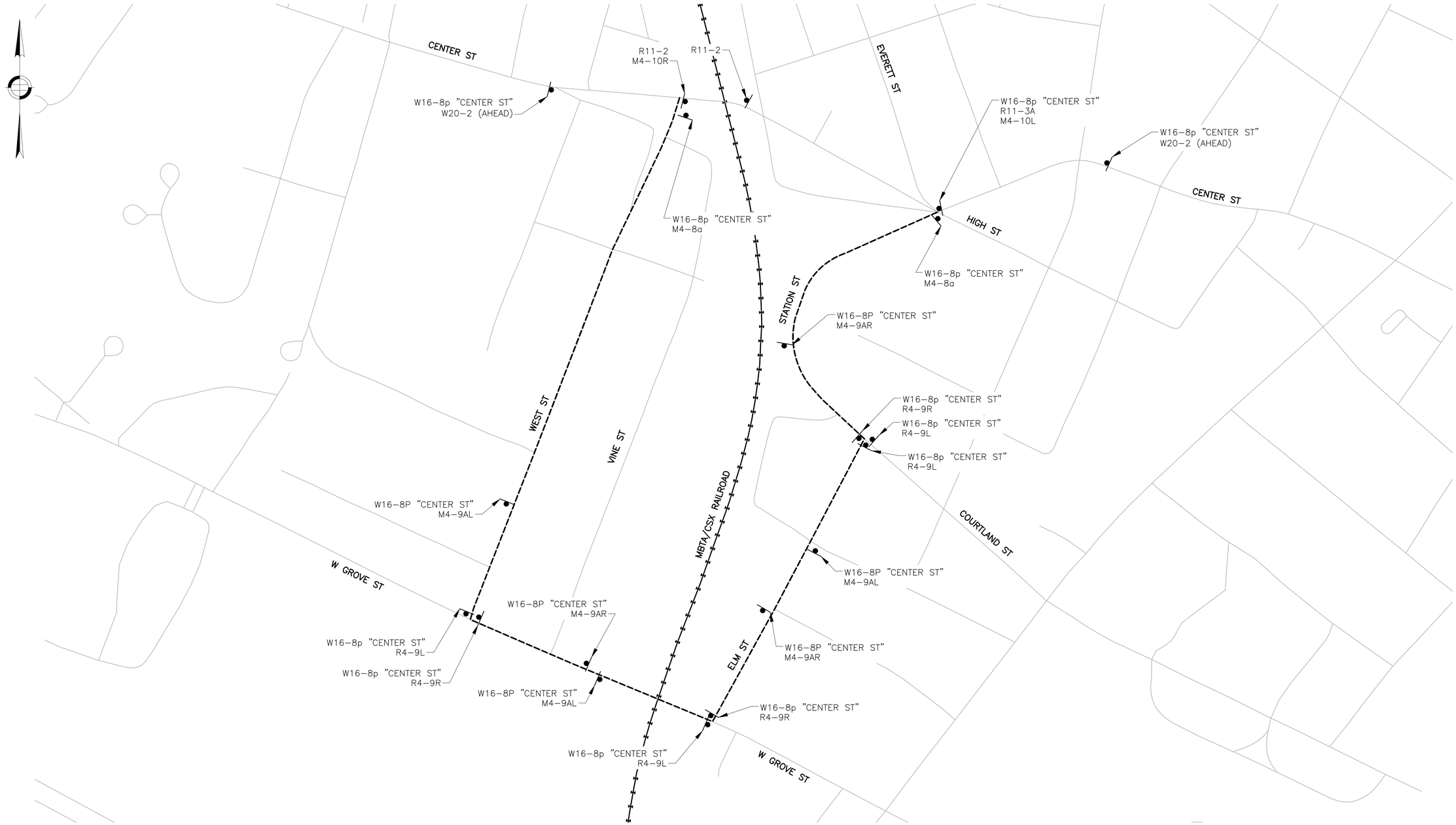
1. ALL PROPOSED SIGNS SHALL FOLLOW SIGN DIMENSIONS, TEXT DIMENSIONS, AND COLORS OF THE LATEST EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD) AND THE MASSACHUSETTS AMENDMENTS TO THE MUTCD.
2. SEE SHEET 14 FOR TEMPORARY TRAFFIC CONTROL NOTES.
3. ADVANCE WARNING SIGNS SHALL BE PLACED AT THE MINIMUM SPACING SHOWN UNLESS SUFFICIENT AREA IS NOT AVAILABLE. IF THE MINIMUM SPACING OF SIGNS IS TO BE EXCEEDED, THE SIGNS SHALL BE PLACED AS CLOSE AS PRACTICAL TO THE MINIMUM.
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OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
TTCP – STAGE 2B

TTCP.DWG Plotted on 16-Oct-2026 9:33 AM

DETOUR.DWG Plotted on 16-Oct-2026 9:33 AM



DETOUR PLAN

SCALE: 1" = 200'

NOTES:

1. DETOUR OF CENTER ST MAY BE REQUIRED FOR SHORT TERM DURATIONS DURING CRANE PICKS. THE ROUTE SHOWN ON THIS SHEET IS A SUGGESTION. CONTRACTOR SHALL COORDINATE FINAL DETOUR ROUTE AND SIGNAGE WITH TOWN OF MIDDLEBOROUGH TOWN ENGINEER AND POLICE DEPARTMENT PRIOR TO IMPLEMENTATION.
2. POLICE DETAILS WILL BE PROVIDED TO GUIDE BOTH PEDESTRIANS AND VEHICLES THROUGH THE WORK ZONE AT ALL TIMES DURING CONSTRUCTION.

---------- SUGGESTED DETOUR ROUTE

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
DETOUR PLAN

SHEET 19 OF 20 SHEETS

CONSTRUCTION SIGN SUMMARY

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (S.F)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER		
W16-8p	36"	36"	SEE DETAIL (THIS SHEET)	MASSDOT STANDARD			18	FLUOR. ORANGE	BLACK	BLACK	1.66	18.33
MA-W20-7b	36"	36"	POLICE OFFICER AHEAD				5	FLUOR. ORANGE	BLACK	BLACK	9.00	45.00
W5-1	36"	36"	ROAD NARROWS				1	FLUOR. ORANGE	BLACK	BLACK	9.00	9.00
W8-24	36"	36"	STEEL PLATE AHEAD				1	FLUOR. ORANGE	BLACK	BLACK	9.00	9.00
W20-1 (AHEAD)	36"	36"	ROAD WORK AHEAD				2	FLUOR. ORANGE	BLACK	BLACK	9.00	18.00
W20-2 (AHEAD)	36"	36"	DETOUR AHEAD				2	FLUOR. ORANGE	BLACK	BLACK	9.00	18.00
W20-4	36"	36"	ONE LANE ROAD AHEAD				2	FLUOR. ORANGE	BLACK	BLACK	9.00	18.00
W21-5a	36"	36"	RIGHT SHOULDER CLOSED				1	FLUOR. ORANGE	BLACK	BLACK	9.00	9.00
R4-9L	30"	24"	DETOUR ←				3	FLUOR. ORANGE	BLACK	BLACK	5.00	15.00
R4-9R	30"	24"	DETOUR →				3	FLUOR. ORANGE	BLACK	BLACK	5.00	20.00
R9-9	24"	12"	SIDEWALK CLOSED				2	WHITE	BLACK	BLACK	2.00	4.00
R9-11aL	24"	12"	SIDEWALK CLOSED ← CROSS HERE	MUTCD			1	WHITE	BLACK	BLACK	2.00	2.00
R9-11aR	24"	12"	SIDEWALK CLOSED → CROSS HERE				1	WHITE	BLACK	BLACK	2.00	2.00
R11-2	48"	30"	ROAD CLOSED				2	WHITE	BLACK	BLACK	10.00	20.00
R11-3A	60"	30"	ROAD CLOSED 1/4 MILE AHEAD LOCAL TRAFFIC ONLY				1	WHITE	BLACK	BLACK	12.50	12.50
M4-8a	24"	18"	END DETOUR				2	FLUOR. ORANGE	BLACK	BLACK	3.00	6.00
M4-9AL	30"	24"	DETOUR ↰				3	FLUOR. ORANGE	BLACK	BLACK	5.00	10.00
M4-9AR	30"	24"	DETOUR ↱				3	FLUOR. ORANGE	BLACK	BLACK	5.00	10.00
M4-10L	48"	18"	← DETOUR				1	FLUOR. ORANGE	BLACK	BLACK	6.00	6.00
M4-10R	48"	18"	DETOUR →				1	FLUOR. ORANGE	BLACK	BLACK	6.00	6.00

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (S.F)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER		
MA-R2-10a	48"	36"	WORK ZONE SPEEDING FINES DOUBLED	MASSDOT STANDARD			3	FLUOR. ORANGE\ WHITE	BLACK	BLACK	12.00	36.00
MA-R2-10e	36"	48"	END ROAD WORK DOUBLE FINES END				3	FLUOR. ORANGE\ WHITE	BLACK	BLACK	12.00	36.00



1.00" Radius, 0.38" Border, 0.38" Indent, Black on Orange;
"Center St", D 2K;

W16-8p (CENTER ST)
SCALE: NTS

OCT. 16, 2026	ISSUED FOR CONSTRUCTION

CENTER STREET UTILITY BRIDGE
OVER MBTA/CSX RR
CONSTRUCTION SIGN SUMMARY

SHEET 20 OF 20 SHEETS

TTCP.DWG Plotted on 16-Oct-2026 9:33 AM