TOWN OF UXBRIDGE, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS IRONSTONE ROAD BRIDGE PRESERVATION

MAY 2022

BOARD OF SELECTMEN

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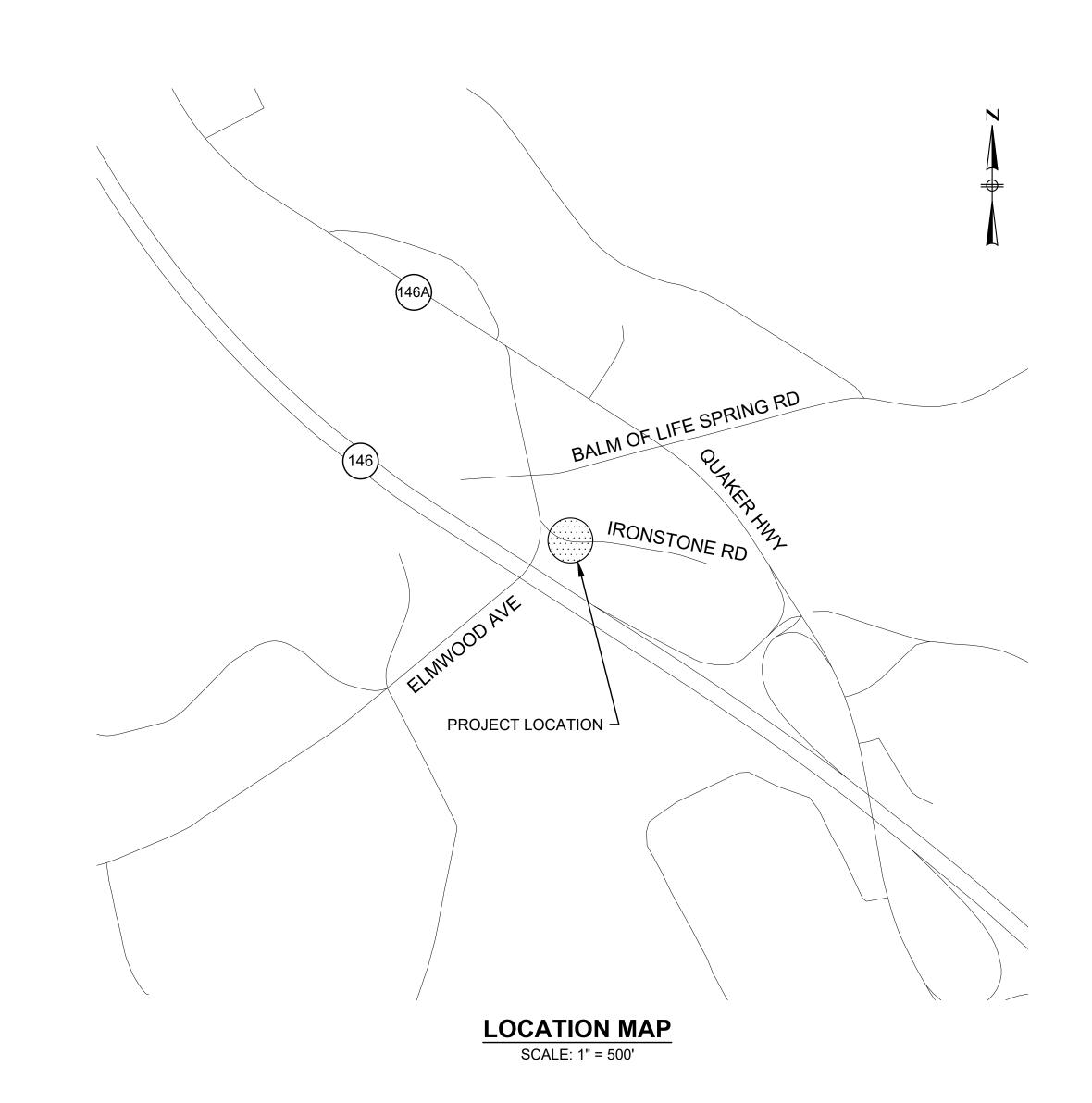
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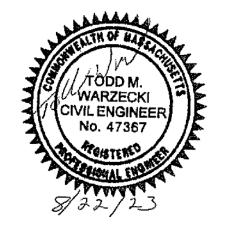


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PREPARED BY:





LEGEND

GENERAL SYMBOLS

EXISTING	PROPOSED	
		CURB OR BERM (TYPE AS NOTED)
		EDGE OF PAVEMENT
□СВ	ВСВ	CATCH BASIN (OR GUTTER INLET, LEACHING BASIN, DROP INLET, CATCH BASIN CURB INLET)
ОЕНН	ОЕНН	ELECTRIC HANDHOLE (NUMBER AS NOTED)
E	ОЕМН	ELECTRIC MANHOLE
\bigcirc	ОТМН	TELEPHONE MANHOLE
(W)	O WMH	WATER MANHOLE
S	S SMH	SEWER MANHOLE
(1)	© DMH	DRAINAGE MANHOLE
o GG	o GG	GAS GATE
∘ WG	o WG	WATER GATE
o CS	o cs	CURB STOP
HYD. ♠	◆ HYD	HYDRANT
F FA	■ FAB	FIRE ALARM BOX
o PM	0	PARKING METER
₩ LP	←√ ∰	STREET LIGHT POLE
₩ UP	-⊕- UP	UTILITY POLE
GUPL GUPL	- ∳- UPL	UTILITY POLE w/ LIGHT
		SIGN
O— GUY	O— GUY	GUY POLE
12" RCP — — —D— — — 8" VCP	10'-12" RCP	DRAIN PIPE (SIZE AS NOTED)
	10'-8" PVC	SEWER MAIN (SIZE AS NOTED)
——— E ———	10'-8" PVC	ELECTRIC DUCT
4" HP	10'-4" HP	GAS MAIN (SIZE AS NOTED)
	10'-8" DI	WATER MAIN (SIZE AS NOTED)
T	10-6 FVC	TELEPHONE DUCT (SIZE AS NOTED)
ЕОН	— — — — OHW— — — —	OVERHEAD WIRE
□МВ	□ мв	MAIL BOX
	0 0 0 0 0 0 0 ·	WOOD GUARD RAIL STEEL BEAM GUARD, WOOD OR STEEL POSTS (TYPE AS NOTED)
<u> </u>		STEEL GUARD RAIL, STEEL POSTS (TYPE NOTED)
		STONE WALL
		RETAINING WALL (TYPE NOTED)
o BND	□BND	HIGHWAY/PROPERTY BOUND (TYPE AS NOTED)
SHLO (Date of Layout)		STATE HIGHWAY LAYOUT LINE (SHLO)
		CITY, TOWN OR COUNTY LAYOUT LINE (R.O.W.)
Boundary Name		CITY, TOWN, COUNTY OR STATE BOUNDARY LINE
— e — —	_	PROPERTY LINE
		EASEMENT LINE (TYPE NOTED)
	<u> </u>	CONSTRUCTION BASELINE
N00°00'00"E		SURVEY LINE
		RAILROAD OR STREET RAILWAY TRACKS WITH SIDELINES
		WHEELCHAIR RAMP
• 24" PINE	+	TREE (SIZE AND TYPE AS NOTED)
	_	HEDGE/SHRUBS
— × WF-1 × — × —	x x x	FENCE (SIZE AND TYPE AS NOTED)
		EDGE OF WETLAND W/ FLAGGED NUMBER
_ · ·		EDGE OF RIVER/STREAM LINE
		100-FT. WETLAND BUFFER LIMIT
		100-FT. RIVER FRONT LIMIT
		200-FT. RIVER FRONT LIMIT
		WOODED AREA / LIMIT OF CLEARING
× 00.0	x 00.00	SPOT GRADE
		SAW CUT LINE
	■ TP-1	TEST PIT
	⊕ B-1	BORING

ABBREVIATIONS

SHOULDER

TEMPORARY

TOP OF SLOPE

TOP OF WALL

STATION

TYPICAL

VARIABLE

VERTICAL

VERTICAL GRANITE CURB

WHEELCHAIR RAMP

ABAN

ADJ

ALT

APPROX

BD OR BND

BLDG

ВО

BOS

BOW

BSW

CC

CEM

CLF

CONC

CONST

CONT

DWY

EP, EOP

ESMT

EXIST

FDN

GRAN

GC

HOR

PCC

PERM

PROP

PVMT

R&R

REM

REMOD

RET

SHLD

STA

TEMP

VAR

VERT

VGC

WCR

AAADUST	GENERAL		TRAFFIC SIGNAL SYSTEMS
ATTENDATION G	ABANDON	R	STEADY CIRCULAR RED
APPROXIMATE	ADJUST	Υ	STEADY CIRCULAR AMBER
PY	ALTERATION	G	STEADY CIRCULAR GREEN
ACT ASHINO YELLOW LET ARROW STEADY PRIOR ARROW STEADY SAMER RIGHT ARROW STEADY SAMER LETT ARROW STEADY SA	APPROXIMATE	FR	FLASHING CIRCULAR RED
MILMINOUS SCHM	BASELINE	FY	FLASHING CIRCULAR AMBER
Intumous Curbs		←FY	FLASHING YELLOW LEFT ARROW
DOUND			STEADY RED RIGHT ARROW
STEADY CREEN RIGHT HARROW STEADY FOR LEFT ARROW STEADY FOR LEFT ARROW STEADY FOR LEFT ARROW STEADY AMERICAN ARROW STEADY CREEN LEFT ARROW STEADY CONTINUENCE (PASHING LINAR WHITE CONCRETE LINE			STEADY AMBER RIGHT ARROW
BY OTHERS BOTTOM OF SLOPE BOTTOM OF PAUL BACK OF SIDEMALK CONCRETE CONGRETE CONGRETE CONSTRUCTION BACK OF BASHING DON'T WALK (R ASHING INAND). PORTLAND ORANGE CREATIT CONSTRUCTION BACK OF BASHING DON'T WALK (R ASHING INAND). PORTLAND ORANGE CATCH BASHING INDOM IN INFO CONTROL IN INFO CO			
BOTTOM OF SAUPLE BACK OF SIDEWALK BACK O		←R	
BATCA OF SIDEWALK 146 STEADY WALK (PERSON WALKING)-LUNAR WHITE			
BACK OF SIDEWALK CONCRETE CURB DW STEADY MALK (PERSON WALKING) - LUNAR WHITE CONCRETE CONSTRUCTION CONCRETE CONSTRUCTION CONTINUOUS CONTINUOU			
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CHAINLINK FENCE CONCRETE CONSTRUCTION CONTINUOUS COSTINUOUS COMPOUND CURVATURE COSTINUOUS C			·
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POINT OF VERTICAL TANGENCY PERMANENT UPL UTILITY POLE W/ LIGHT PROFILE GRADE LINE PROPOSED VCP VITRIFIED CLAY PIPE POINT OF VERTICAL CURVATURE WG WATER GATE PAVEMENT RADIUS OF CURVATURE REMOVE AND DISCARD REMOVE AND STACK REMOVE REMOVE AND STACK REMOVE REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	POINT OF VERTICAL CURVATURE	SMH	SEWER MANHOLE
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PROFILE GRADE LINE PROPOSED VCP VITRIFIED CLAY PIPE POINT OF VERTICAL CURVATURE WG WATER GATE PAVEMENT RADIUS OF CURVATURE REMOVE AND DISCARD REMOVE AND STACK REMOVE REMOVE AND STACK REMOVE REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	POINT OF VERTICAL TANGENCY	UP	UTILITY POLE
PROPOSED VCP VITRIFIED CLAY PIPE POINT OF VERTICAL CURVATURE WG WATER GATE PAVEMENT WM WATER METER/WATER MAIN RADIUS OF CURVATURE REMOVE AND DISCARD REMOVE AND RESET REMOVE AND STACK REMOVE REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	PERMANENT	UPL	UTILITY POLE w/ LIGHT
POINT OF VERTICAL CURVATURE PAVEMENT WG WATER GATE WM WATER METERWATER MAIN RADIUS OF CURVATURE REMOVE AND DISCARD REMOVE AND STACK REMOVE AND STACK REMOVE REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	PROFILE GRADE LINE	UPT	UTILITY POLE w/ TRANSFORMER
PAVEMENT WM WATER METER/WATER MAIN RADIUS OF CURVATURE REMOVE AND DISCARD REMOVE AND RESET REMOVE AND STACK REMOVE REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	PROPOSED	VCP	VITRIFIED CLAY PIPE
RADIUS OF CURVATURE REMOVE AND DISCARD REMOVE AND STACK REMOVE REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	POINT OF VERTICAL CURVATURE	WG	WATER GATE
RADIUS OF CURVATURE REMOVE AND DISCARD REMOVE AND RESET REMOVE AND STACK REMOVE REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND	PAVEMENT	WM	WATER METER/WATER MAIN
REMOVE AND RESET REMOVE AND STACK REMOVE REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	RADIUS OF CURVATURE		
REMOVE AND STACK REMOVE REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	REMOVE AND DISCARD		
REMOVE REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	REMOVE AND RESET		
REMODEL RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	REMOVE AND STACK		
RETAIN RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	REMOVE		
RAILROAD RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	REMODEL		
RIGHT SOUTH BOUND OR STONE BOUND SIDEWALK	RETAIN		
SOUTH BOUND OR STONE BOUND SIDEWALK	RAILROAD		
SOUTH BOUND OR STONE BOUND SIDEWALK	RIGHT		
	SOUTH BOUND OR STONE BOUND		
	SIDEWALK		

TRAFFIC SIGNAL SYMBOLS

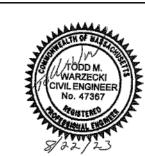
EXISTING PROPOSED CONTROL CABINET GROUND MOUNTED WITH FOUNDATION CONTROL CABINET POLE MOUNTED CONTROLLER PHASE MAST ARM, SHAFT & BASE (ARM LENGTH AS NOTED) VEHICULAR SIGNAL HEAD (ALPHA-NUMERIC DESIGNATION AS NOTED) VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED VEHICULAR SIGNAL HEAD (REMOVED & RESET) \longrightarrow FLASHING BEACON PEDESTRIAN SIGNAL HEAD PEDESTRIAN SIGNAL HEAD, OPTICALLY PROGRAMMED \square HH PULL BOX 12"x12" OR HANDHOLE LOOP DETECTOR PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE PRE-EMPTION DETECTOR PRE-EMPTION CONFIRMATION STROBE SIGNAL CONDUIT (SINGLE RUN) SIGNAL CONDUIT (DOUBLE RUN) SIGNAL POST & BASE)__M_[M MAGNETIC DETECTOR SCHOOL ZONE SPEED LIMIT SIGN MICROWAVE OR ULTRASONIC DETECTOR VIDEO DETECTION CAMERA VIDEO DETECTION ZONE

PAVEMENT MARKINGS AND SIGNING SYMBOLS

PROPOSED

CROSSWALK, 2 - 12" WHITE LINES (8" WIDTH) STOP LINE - 12" WHITE LINE 4' BEHIND CW (TYP.) SOLID WHITE EDGE LINE - 4" SOLID WHITE CHANNELIZING LINES - 12" (SPACING NOTED) SOLID WHITE GORE LINE 12" @ 33°, (SPACING NOTED) SOLID WHITE LANE LINE - 4" SOLID WHITE PARKING LINE - 4" BROKEN WHITE LANE LINE - 4" DOTTED WHITE LANE EXTENSION LINE - 4" (2' LINE & 6' GAP) DOTTED YELLOW LANE EXTENSION LINE - 4" (2' LINE & 6' GAP) BROKEN YELLOW CENTERLINE - 4" DOUBLE YELLOW CENTERLINE - 2 - 4" LINES SOLID YELLOW EDGE LINE - 4" SOLID YELLOW GORE LINE 12" @ 33°, (SPACING NOTED) SOLID YELLOW LANE LINE - 4" SOLID YELLOW CYCLE TRACK EDGE LINE - 4" DOTTED YELLOW CYCLE TRACK CENTERLINE - 4" (3' LINE & 9' GAP) SCHOOL ZONE - WHITE HANDICAP SYMBOL - WHITE PAVEMENT ARROW - WHITE LEGEND "ONLY" - WHITE

)								
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EROSION CONTROL BARRIER/COMPOST FILTER TUBES



SUBCONSULTANT

NONE

INLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

SCALE

Ironstone Road Bridge Improvements **Uxbridge, Massachusetts**

7545 BETA JOB NO. ISSUE DATE ___ SHEET NO.

LEGEND AND ABBREVIATIONS

HIGHWAY GUARD DETAILS

TRANSITION TO NCHRP 350 GUARDRAIL STA 0+38.5 TO 0+72 LT TRANSITION TO THRIE BEAM STA 0+72 TO 0+78 LT BRIDGE THRIE BEAM GUARDRAIL 0+78 TO 1+17 LT TRANSITION TO THRIE BEAM STA 1+17 TO 1+23 LT GUARDRAIL - TL-2 (SINGLE FACED) 1+23 TO 1+42.5 LT GUARDRAIL TANGENT END TREATMENT, TL-2 STA 1+42.5 TO 1+67.5 LT

GUARDRAIL TANGENT END TREATMENT, TL-2 STA 0+25 TO 0+50 RT GUARDRAIL - TL-2 (SINGLE FACED) 0+50 TO 0+73 RT TRANSITION TO THRIE BEAM STA 0+73 TO 0+79 RT BRIDGE THRIE BEAM GUARDRAIL STA 0+79 TO 1+16 RT TRANSITION TO THRIE BEAM STA 1+16 TO 1+22 RT TRAILING ANCHORAGE STA 1+22 TO 1+30 RT

PAVEMENT NOTES

FULL DEPTH PAVEMENT

SURFACE COURSE: 1-3/4" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER

ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

INTERMEDIATE 1-3/4" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER COURSE: ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

BASE COURSE: 3-1/2" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER SUB-BASE: 4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER

8" GRAVEL BORROW TYPE b (M1.03.01)

PROJECT TACK COAT NOTES

TACK COAT: ASPHALT EMULSION FOR TACK COAT, GRADE RS-1

SHALL BE PLACED AT A RATE OF:

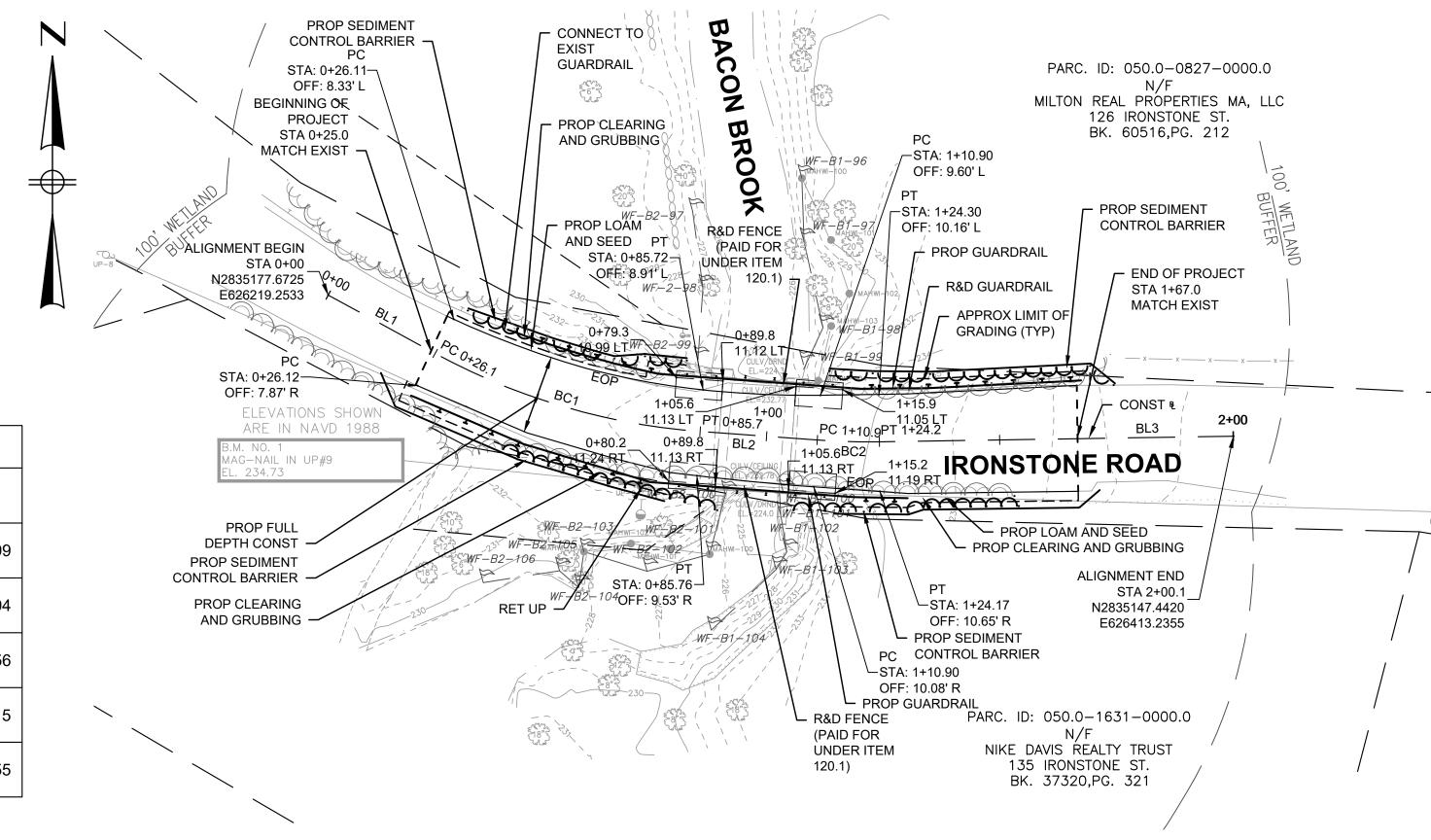
0.07 GALLONS PER SQUARE YARD OVER MILLED SURFACES 0.07 GALLONS PER SQUARE YARD OVER CEMENT CONCRETE

0.05 GALLONS PER SQUARE YARD OVER SMOOTH TIGHT

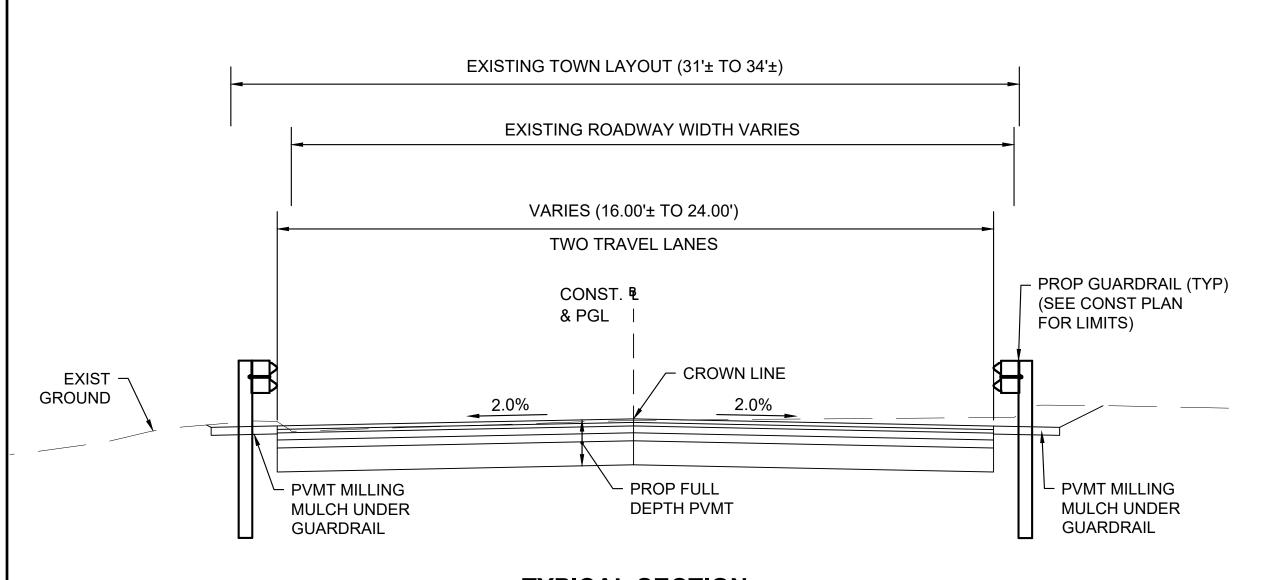
PAVEMENTS

PRIOR TO PAVING AN OVERLAY

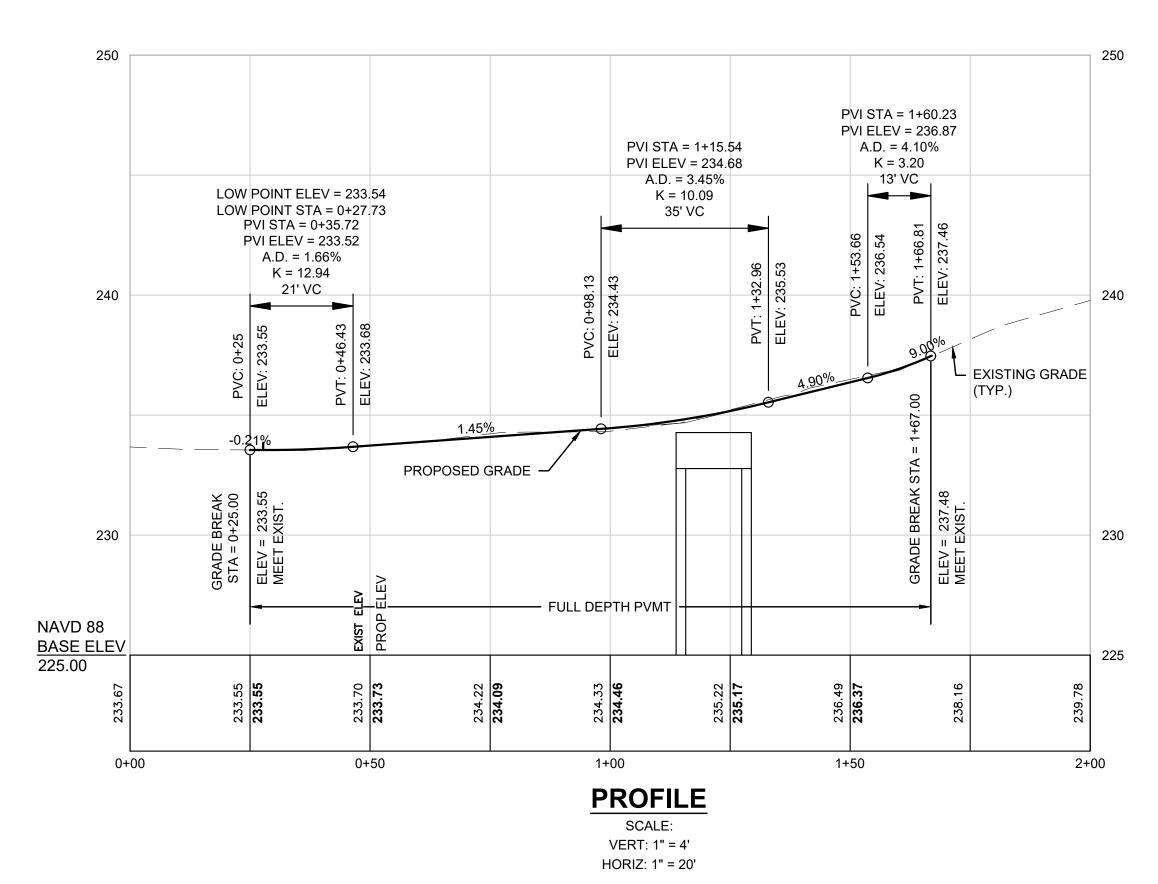
		IRO	NSTONE RO	AD CL CONSTRUCTION	BASELINE [DATA		
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
BL1	0+00.00	2835177.6725	626219.2533		S61°24'17"E 26.11'	0+26.11	2835165.1750	626242.1799
BC1	0+26.11	2835165.1750	626242.1799	R=140.00 [°] Δ=24°24'07" L=59.63' T=30.27'		0+85.74	2835148.4728	626298.9494
BL3	0+85.74	2835148.4728	626298.9494		S85°48'24"E 25.16'	1+10.90	2835146.6327	626324.0456
BC2	1+10.90	2835146.6327	626324.0456	R=150.00 [°] Δ= 5°05'38" L=13.34' T=6.67'		1+24.24	2835146.2497	626337.3715
BL2	1+24.24	2835146.2497	626337.3715		N89°05'58"E 75.87'	2+00.11	2835147.4420	626413.2355



PLAN SCALE: 1" = 20'



TYPICAL SECTION IRONSTONE ROAD STA 0+25± TO STA 1+67± NOT TO SCALE



TITLE

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SUBCONSULTANT

SCALE **AS SHOWN**

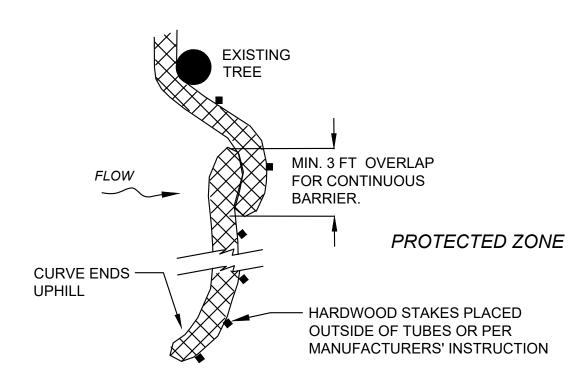
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Ironstone Road Bridge Improvements Uxbridge, Massachusetts CONSTRUCTION PLAN AND PROFILE

ISSUE DATE _ SHEET NO.

BETA JOB NO.

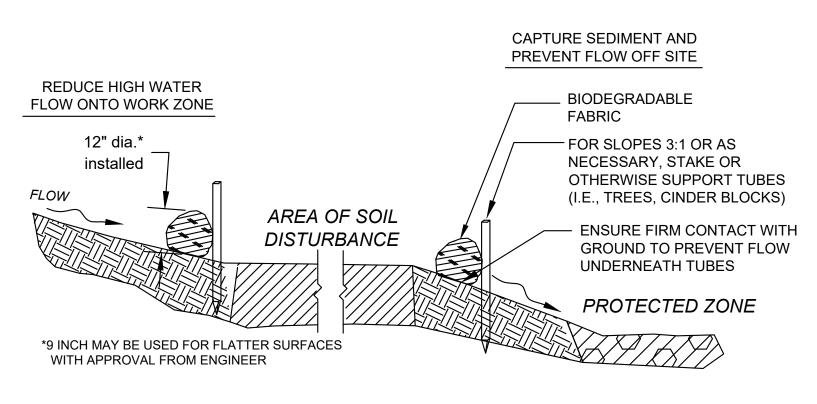
7545



PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

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

PLAN VIEW



SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

NOT TO SCALE



SECTION

WHERE SPECIFIED ON CONSTRUCTION

PLANS OR AS REQUIRED

PLAN VIEW

5' MIN.

OVERLAP

PROTECTED ZONE

18" MIN.

— 1" X 1" X 4' HARDWOOD STAKES

SECURE TUBE OR PER

STAKE A MIN. OF EVERY 5 FEET TO

PROTECTED ZONE

MANUFACTURERS' INSTRUCTION

9" MIN.

TYP.

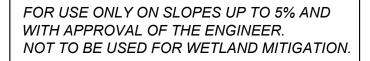
9-12" DIA.

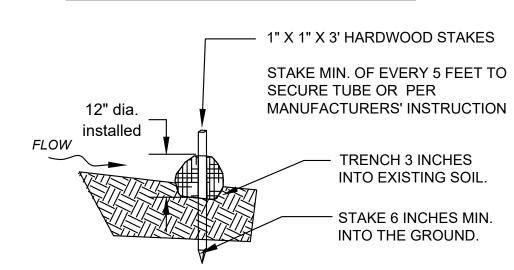
INSTALLED

AREA OF SOIL

DISTURBANCE

FLOW

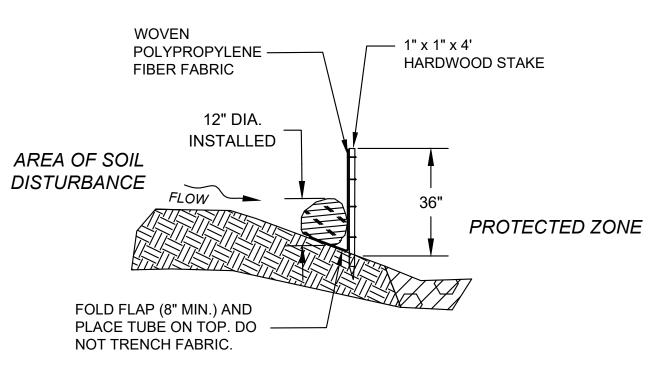




SECTION

12 INCH STRAW WATTLE

NOT TO SCALE

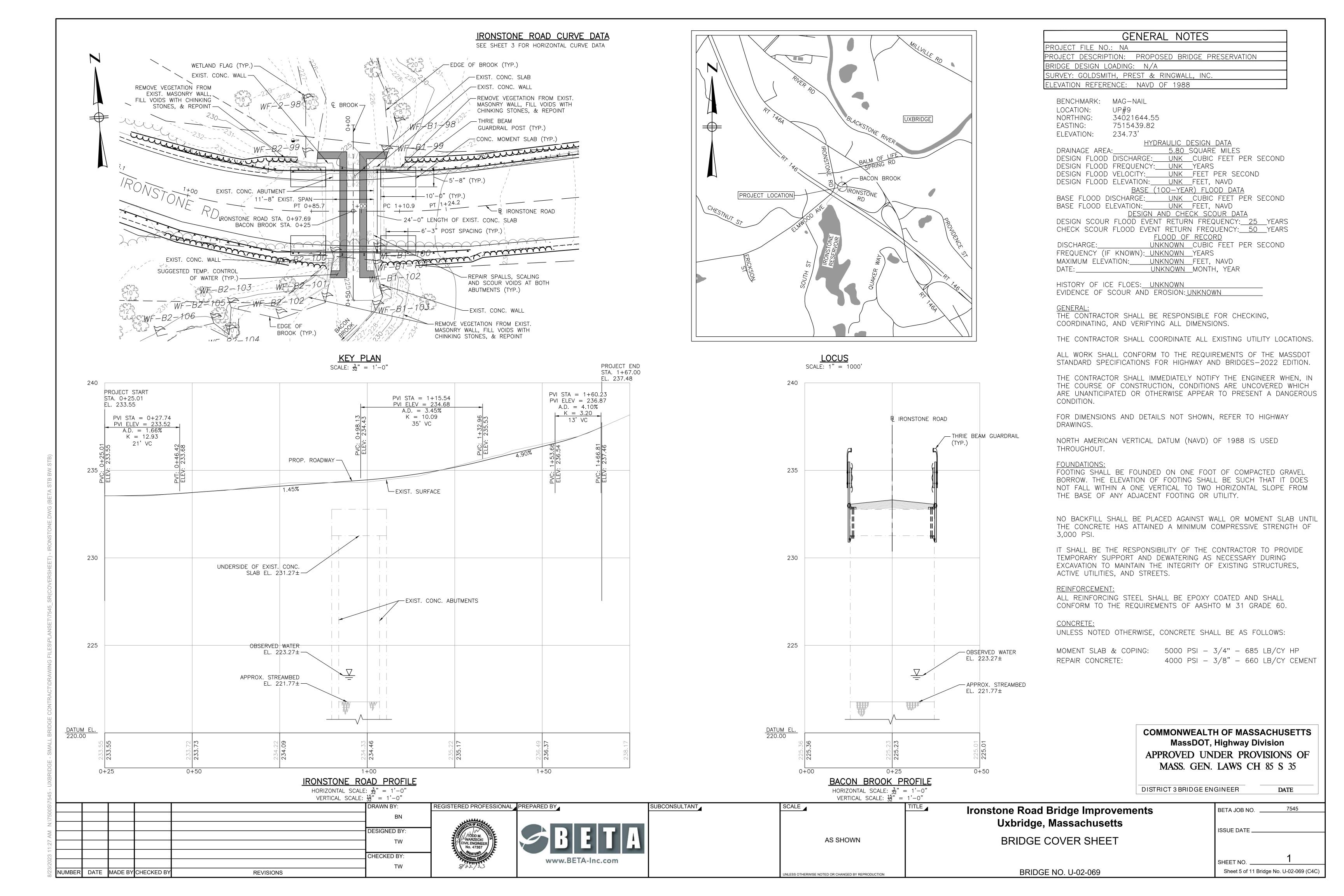


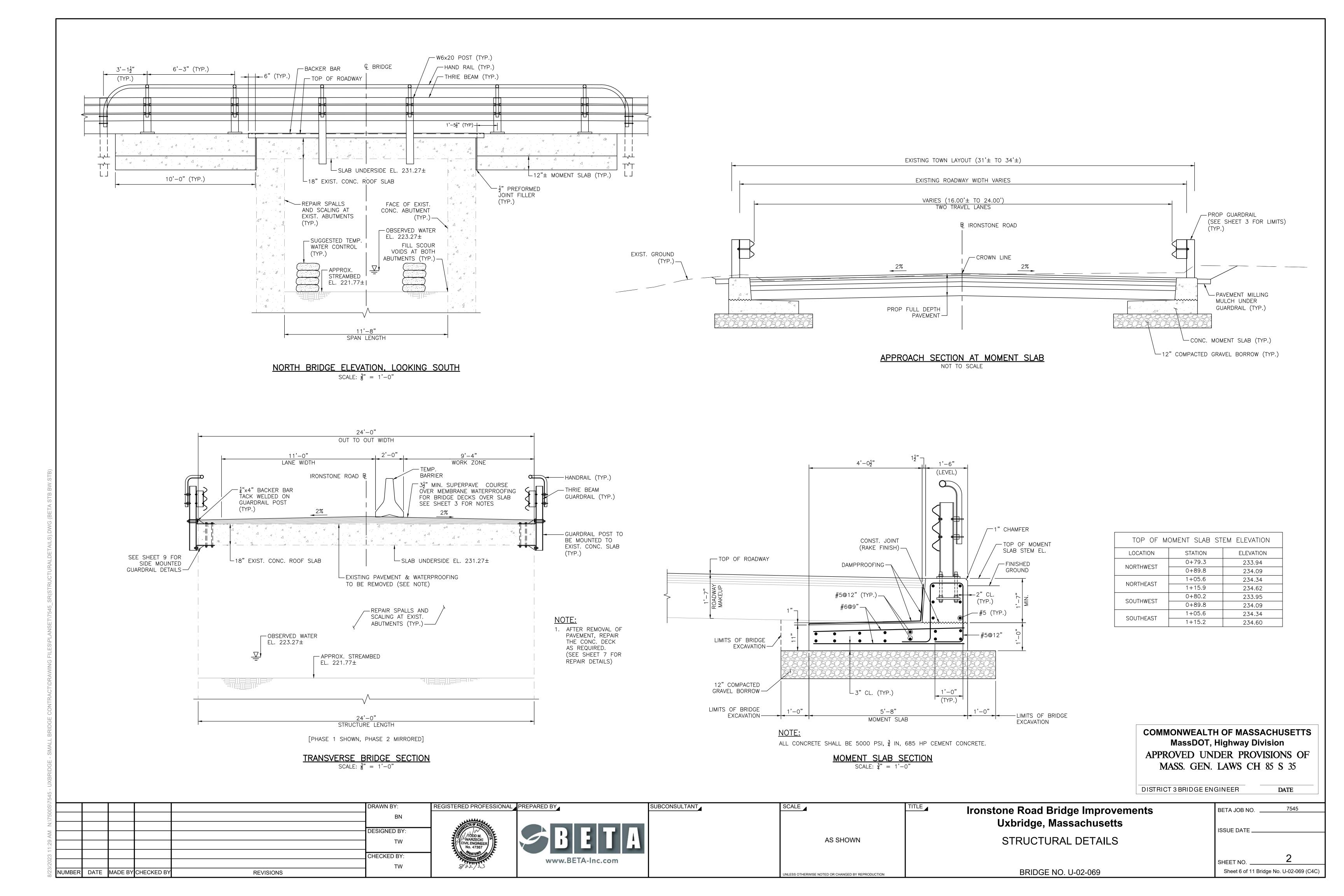
SECTION

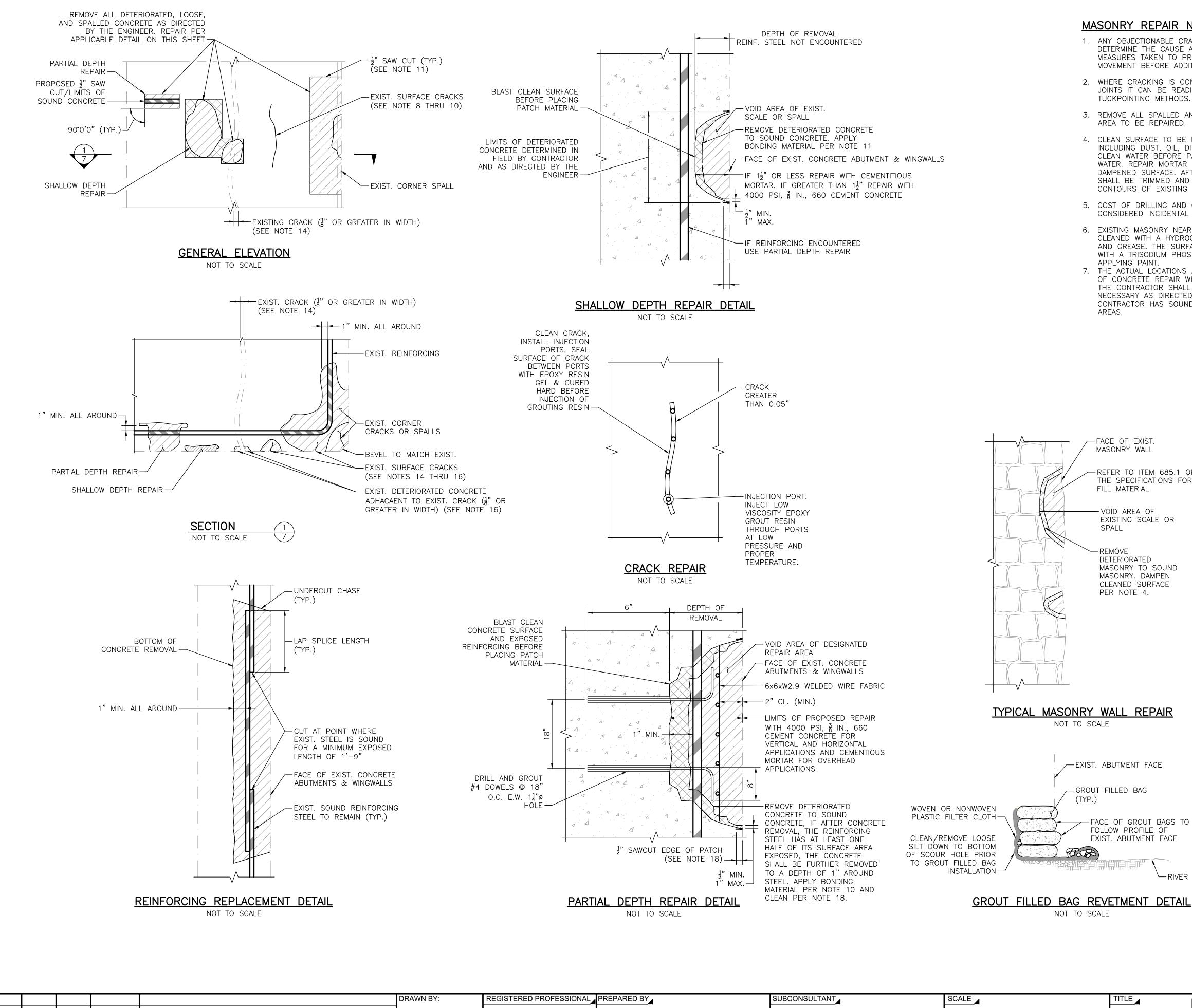
COMPOST FILTER TUBE & SILT FENCE

NOT TO SCALE

008/754	DRAWN BY:	REGISTERED PROFESSIONAL PREPARED BY	SUBCONSULTANT	SCALE	TITLE ✓ Ironstone Road Bridge Improvements	BETA JOB NO7545
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12 PM	DESIGNED BY:	MODD M. WARZECKI CIVIL ENGINEER No. 47367		NONE	CONSTRUCTION DETAILS	ISSUE DATE
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NUMBER DATE MADE BY CHECKED BY REVISIONS	IW	8/22/23		UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION	BRIDGE NO. U-02-069	







MASONRY REPAIR NOTES:

-FACE OF EXIST.

MASONRY WALL

FILL MATERIAL

SPALL

─REMOVE

-VOID AREA OF

DETERIORATED

EXISTING SCALE OR

MASONRY TO SOUND MASONRY. DAMPEN

CLEANED SURFACE PER NOTE 4.

FACE OF GROUT BAGS TO

-RIVER BED

FOLLOW PROFILE OF

EXIST. ABUTMENT FACE

-REFER TO ITEM 685.1 OF

THE SPECIFICATIONS FOR

- 1. ANY OBJECTIONABLE CRACK SHOULD BE ANALYZED TO DETERMINE THE CAUSE AND ANY PREVIOUS CORRECTIVE MEASURES TAKEN TO PREVENT OR ACCOMMODATE THE MOVEMENT BEFORE ADDITIONAL REPAIRS ARE MADE.
- 2. WHERE CRACKING IS CONFINED PRIMARILY TO MORTAR JOINTS IT CAN BE READILY REPAIRED BY CONVENTIONAL TUCKPOINTING METHODS.
- 3. REMOVE ALL SPALLED AND UNSOUND MASONRY FROM AREA TO BE REPAIRED.
- 4. CLEAN SURFACE TO BE FREE OF ALL MATERIALS INCLUDING DUST, OIL, DIRT AND GREASE. DAMPEN WITH CLEAN WATER BEFORE PATCHING AND REMOVE STANDING WATER. REPAIR MORTAR SHALL BE TROWEL APPLIED TO DAMPENED SURFACE. AFTER INITIAL SET, THE MATERIAL SHALL BE TRIMMED AND SHAPED TO MATCH THE CONTOURS OF EXISTING PATCH AREA.
- 5. COST OF DRILLING AND GROUTING DOWELS SHALL BE CONSIDERED INCIDENTAL TO MASONRY REHABILITATION.
- 6. EXISTING MASONRY NEAR REPAIR LOCATIONS SHALL BE CLEANED WITH A HYDROCARBON SOLVENT TO REMOVE OIL AND GREASE. THE SURFACE SHALL THEN BE CLEANED WITH A TRISODIUM PHOSPHATE SOLUTION PRIOR TO APPLYING PAINT.
- 7. THE ACTUAL LOCATIONS AND EXTENT OF VARIOUS TYPES OF CONCRETE REPAIR WILL BE DETERMINED IN THE FIELD. THE CONTRACTOR SHALL REPAIR ALL AREAS DETERMINED NECESSARY AS DIRECTED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT ALL REPAIR

CONCRETE REPAIR NOTES:

- 8. AREAS REQUIRING REPAIRS THAT ARE GREATER THAN 11/2" DEEP SHALL BE REPAIRED USING 4000 PSI, 3/8 IN., 660 CEMENT CONCRETE. AREAS LESS THAN 11/2" DEEP SHALL BE REPAIRED USING CEMENTITIOUS MORTAR FOR PATCHING.
- 9. IF DURING REMOVAL OF DETERIORATED CONCRETE, THE CONTRACTOR DAMAGES EXISTING REINFORCEMENT TO THE EXTENT REQUIRING REPLACEMENT, ANY ADDITIONAL CONCRETE REMOVAL, PATCHING MATERIAL, CLEANING EXISTING REINFORCING STEEL, AND FURNISHING AND INSTALLING REPLACEMENT REINFORCING STEEL SHALL BE AT THE CONTRACTOR'S EXPENSE, AND INSTALLED ACCORDING TO REINFORCING REPLACEMENT DETAIL ON THIS SHEET.
- 10. REINFORCEMENT, INCLUDING WELDED WIRE FABRIC, USED TO REPLACE EXISTING DETERIORATED REINFORCING STEEL (SECTION LOSS OF 15% OR MORE OF THE ORIGINAL CROSS SECTION, AS DETERMINED BY THE ENGINEER) SHALL BE EPOXY COATED. COST OF REPLACEMENT SHALL BE INCLUDED UNDER ITEM 910.1.
- 11. IMMEDIATELY PRIOR TO PLACING NEW CONCRETE OR MORTAR AGAINST EXISTING CONCRETE, CLEAN EXISTING SURFACES BY ABRASIVE BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER CONTAINING NO DETERGENTS OR BOND INHIBITING CHEMICALS AND APPLY APPROVED BONDING COMPOUND IMMEDIATELY PRIOR TO PLACING CONCRETE.
- 12. ALL EXISTING SURFACES THAT WILL HAVE NEW CONCRETE CAST AGAINST IT MUST BE ROUGHENED TO A MINIMUM AMPLITUDE OF 1/4 INCH.
- 13. CONCRETE REPAIR WORK INCLUDES REMOVING ALL DETERIORATED, LOOSE, SPALLED, POPCORNED AND MAP CRACKED CONCRETE. CONCRETE WHICH HAS SPALLED OR OTHERWISE DETERIORATED ADJACENT TO SURFACE CRACK SHALL BE REPAIRED.
- 14. CRACKS THAT ARE .05" OR GREATER IN WIDTH SHALL BE REPAIRED BY EPOXY INJECTION CRACK REPAIR.
- 15. CRACKS THAT ARE LESS THAN .05" IN WIDTH SHALL NOT BE REPAIRED UNLESS DIRECTED BY THE ENGINEER.
- 16. WHERE PATCHING AND EPOXY INJECTION WORK ARE ADJACENT, EPOXY INJECTION SHALL BE PERFORMED BEFORE PATCHING.
- 17. ALL DETERIORATED AREAS SHALL BE DELINEATED BY A 1/2" SAWCUT. THE COST OF SAWCUTTING SHALL BE INCLUDED UNDER ITEM 127.12.
- 18. ALL EXPOSED STEEL SHALL BE THOROUGHLY BLAST CLEANED TO A WHITE METAL FINISH AND COATED WITH EPOXY IN ACCORDANCE WITH AASHTO M284 (ASTM D3963). BLAST CLEANING AND EPOXY SHALL BE INCLUDED IN THE RESPECTIVE CONCRETE REPAIR ITEM.
- 19. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH. NO ADDITIONAL MATERIAL SHALL BE ADDED TO CONCRETE.

LEGEND:

DETERIORATED CONCRETE TO BE REMOVED.

REINFORCING STEEL.

ADDITIONAL CONCRETE TO BE REMOVED.

COMMONWEALTH OF MASSACHUSETTS MassDOT, Highway Division APPROVED UNDER PROVISIONS OF

MASS. GEN. LAWS CH 85 S 35

DISTRICT 3 BRIDGE ENGINEER

DATE

S00C		DRAWN BY:	REGISTERED PROFESSIONAL	PREPARED BY	SUBCONSULTANT	SCALE	Ironstone Road Bridge Improvements	BETA JOB NO.	7545
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NOTES: 1. ALL STEEL CONNECTING BOLTS AND FASTENERS FOR POSTS AND ¾"ø U−BOLT W/ COMMONWEALTH OF MASSACHUSETTS RAILING SHALL CONFORM TO ASTM A307 AND SHALL BE NUT, WASHER, AND MassDOT, Highway Division GALVANIZED IN ACCORDANCE WITH AASHTO M232. ALL ANCHOR . LOCK WASHER— RODS SHALL CONFORM TO F1554 GRADE 105 AND SHALL BE W6 POST APPROVED UNDER PROVISIONS OF GALVANIZED IN ACCORDANCE WITH AASHTO M232. (TYP.)-MASS. GEN. LAWS CH 85 S 35 2. RAIL POSTS AND ANCHOR PLATES SHALL BE SEATED ON MOULDED 17" MAX. (TYP.) FABRIC BEARING PADS MEETING M9.16.2 AND HAVING THE SAME DIMENSIONS AS THE PLATE. ADDITIONAL PADS OR HALF PADS MAY DISTRICT 3 BRIDGE ENGINEER DATE BE USED IN SHIMMING FOR ALIGNMENT. POST HEIGHTS SHOWN WILL £ 2⅓"ø PIPE & W6− INCREASE BY THE THICKNESS OF THE PAD. - 2½"ø STANDARD 3. RAIL POSTS SHALL BE SET PERPENDICULAR TO ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION, EXCEPT THAT THE RAIL POSTS SHALL BE ALIGNED BY THE USE OF SHIMS SO THAT IN THE FINAL ADJUSTMENT NO PART SHALL DEVIATE MORE THAN ONE INCH FROM TRUE HORIZONTAL ALIGNMENT. THE SHIMS SHALL BE 3"x1\frac{1}{2}" END SADDLE DETAIL AND PLACED BETWEEN THE POST AND THE THRIE BEAM RAIL. THE THICKNESS OF THE SHIMS SHALL BE DETERMINED BY THE SCALE: 3'' = 1'-0''CONTRACTOR AND VERIFIED BY THE ENGINEER BEFORE ORDERING MATERIAL FOR THIS WORK. 4. MINIMUM LENGTH OF THE THRIE BEAM SECTIONS IS EQUAL TO ONE © RAIL POST (W6x20) POST SPACE. C HAND RAIL 5. THRIE BEAM GUARD RAIL STEEL SHALL BE GALVANIZED AND CONFORM TO THE AASHTO M180, CLASS B, TYPE IV AND SHALL BE 10 GAGE THICK. USE OF 12 GAGE THICK THRIE BEAM IS Q W POST EXPRESSLY FORBIDDEN. 6'-3" POST SPACING, $3'-1\frac{1}{2}"$ -2.5" Ø STANDARD PIPE 6. POSTS, ANCHOR PLATES, BASE PLATES SHALL BE FABRICATED FROM STEEL CONFORMING TO AASHTO M270M GR. 250 STEEL AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111. FACE OF FACE OF THRIE BEAM — 2" Ø STANDARD PIPE — 7. SPECIAL DRILLING OF THE THRIE BEAM MAY BE REQUIRED AT THE SPLICES. (ALL DRILLING DETAILS ARE TO BE SHOWN ON THE SHOP DRAWINGS.) §" GUARDRAIL BOLT -13"ø HOLE (TYP.) $(L = 1\frac{1}{2})$, NUT, WASHER 8. HAND RAIL STEEL SHALL CONFORM TO ASTM A53 GR. B OR A501 € POST AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111. R = 5'-10"-BASE PLATE DETAIL ─ FASCIA 9. PLACE A REFLECTORIZED WASHER IN THE UPPER VALLEY OF THRIE END OF WINGWALL -SCALE: $1\frac{1}{2}$ " = 1'-0" BEAM EVERY THIRD POST. PLAN VIEW 10. HAND RAIL SHALL BE SPLICED OVER JOINTS IN COPING. \$\Pm\$ W6 POST $-\mathbb{Q} \frac{3}{4}$ "x2\frac{1}{2}" SLOTS (REGULAR SPLICE) AND 4"x34" SLOTS (EXPANSION 11" --- 11" SEE DETAIL A -12<u>1</u>" LAP SPLICE AT POST) TOP OF WEARING $| - | 13\frac{1}{2}$ SURFACE $-2\frac{3}{4}$ " (AT EXP. SPLICES) R = 24" 3"ø HOLES (TYP.) $\frac{15}{16}$ "x1 $\frac{1}{8}$ " SLOTS @ STD. SPLICES & $\frac{15}{16}$ "x2 $\frac{1}{2}$ " SLOTS @ EXP. SPLICES— TPAVEMENT DEPTH TOP OF ROADWAY & DIRECTION OF TRAFFIC MOMENT SLAB 1¼"ø ANCHOR AT SPLICES BETWEEN

POSTS ELIMINATE THIS
SLOT OR PROVIDE
BUTTON HEAD BOLT ROD — $\frac{3}{4}$ "x2 $\frac{1}{2}$ " SLOTS @ STD. SPLICES - CONST. JT. (RAKE FINISH) & ¾"x3¾" SLOTS @ EXP. SPLICES— -Q $\frac{15}{6}$ "x1 $\frac{1}{8}$ " SLOTS (REG. SPLICES) AND $\frac{15}{16}$ "x2 $\frac{1}{2}$ " SLOTS (EXP. **ELEVATION** 1'-6" 18 HOLES → (LEVEL) RAIL POST DETAIL (FRONT VIEW) THRIE BEAM SECTION ANCHOR ROD DETAIL HAND RAIL END DETAIL -2" (AT REGULAR SPLICES) SCALE: $\frac{3}{8}$ " = 1'-0" SCALE: $1\frac{1}{2}$ " = 1'-0" NOT TO SCALE SCALE: $1\frac{1}{2}$ " = 1'-0" THRIE BEAM RAIL SPLICE SCALE: $1\frac{1}{2}$ " = 1'-0" 15 ° R. (TYP.) ___ NEUTRAL AXIS--THRIE BEAM HEAVY HEX $-1\frac{1}{8}$ "ø HOLES FOR $1\frac{1}{4}$ "ø ANCHOR RODS (TYP.) - 1 MOULDED
FABRIC BEARING
PAD (M9.16.2) 2"ø STANDARD PIPE-¾"Ø U−BOLT W/ NUT, WASHER AND LOCK WASHER--/ -W6 POST 16" TOLERANCE -* PERMISSIBLE SEMI-CIRCULAR NOTCHES IN ENDS OF $-\frac{13^{\circ}}{4}$ (TYP.) WEB CENTERED ON AXIS OF POST TO FACILITATE 3"Ø HOLE / 1'-8" GALVANIZING (TYPICAL TOP AND BOTTOM OF POST) **ELEVATION** <u>PLAN</u> $\underline{\text{DETAIL A}}$ SCALE: $1\frac{1}{2}$ " = 1'-0" ANCHOR PLATE DETAIL SADDLE DETAILS SECTION THRU THRIE BEAM RAIL SCALE: 3'' = 1'-0''SCALE: 3" = 1'-0"SCALE: $1\frac{1}{2}$ " = 1'-0" SCALE DRAWN BY: REGISTERED PROFESSIONAL PREPARED BY SUBCONSULTANT **Ironstone Road Bridge Improvements**

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DESIGNED BY

CHECKED BY:

REVISIONS

DATE MADE BY CHECKED BY

TW

TW

Uxbridge, Massachusetts

BRIDGE NO. U-02-069

AS SHOWN

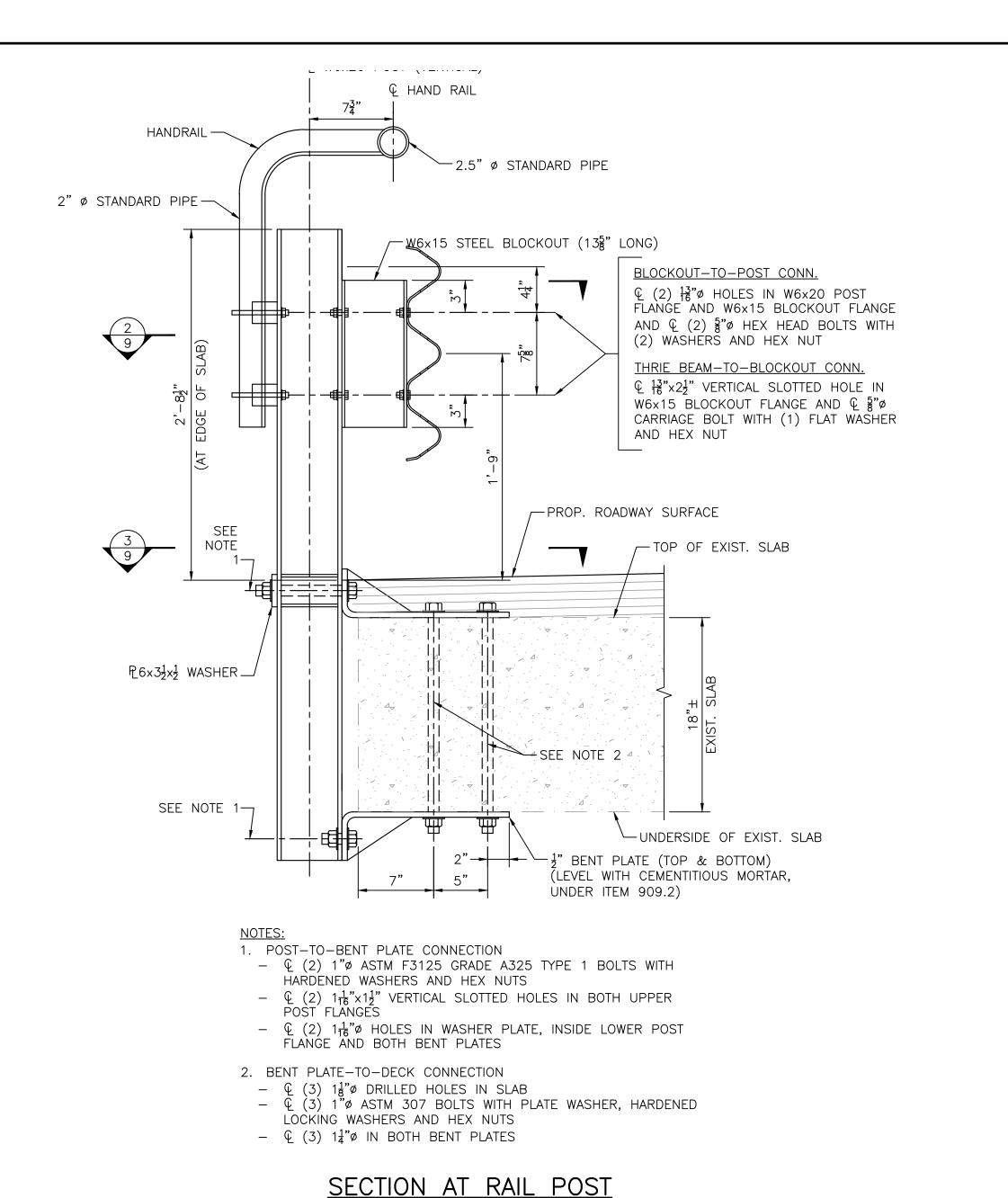
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ISSUE DATE _ THRIE BEAM DETAILS (1 OF 2)

7545

Sheet 8 of 11 Bridge No. U-02-069 (C4C)

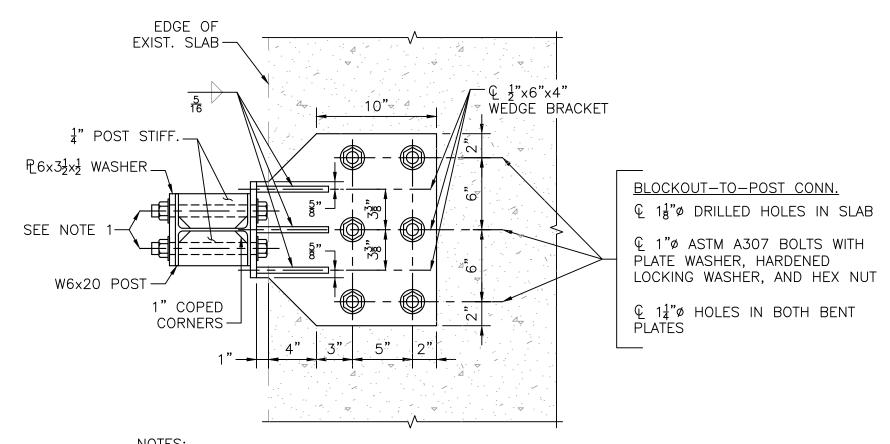
BETA JOB NO. .



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

─W6x20 POST T € TWO §"Ø CARRIAGE BOLTS WITH FLAT WASHER AND HEX NUT – 1¾"(MAX.) BEAM RAIL $-1\frac{3}{4}$ " (MAX.) W6x15 STEEL BLOCKOUT --Ç TWO §"Ø HEAD HEX BOLTS WITH TWO WASHERS AND HEX NUT

> SECTION 2 SCALE: 3'' = 1'-0''



1. POST-TO-BENT PLATE CONNECTION - € (2) 1"ø ASTM F3125 GRADE A325 TYPE 1 BOLTS WITH

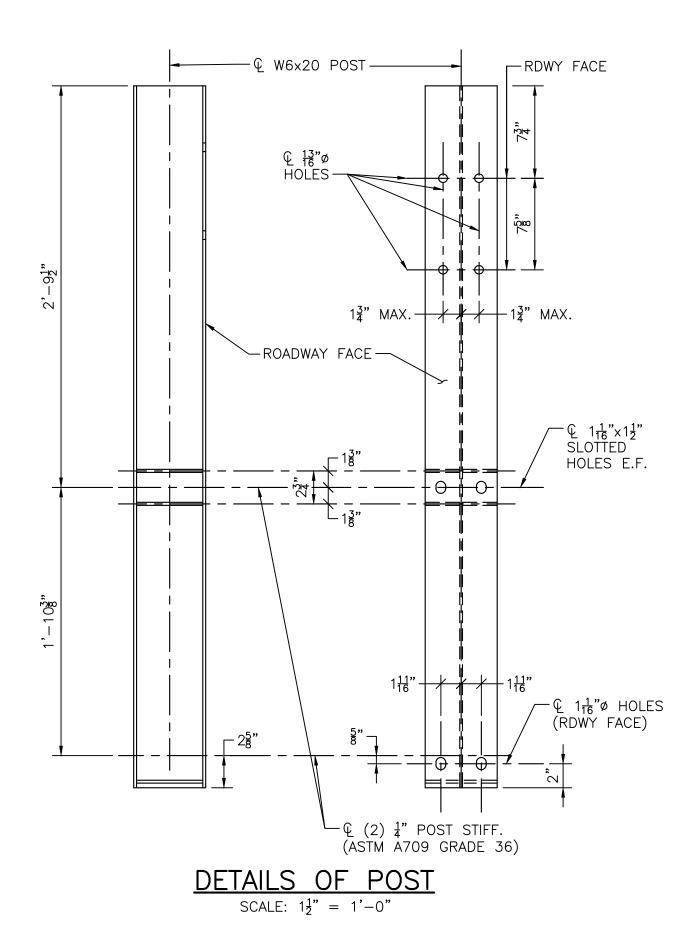
HARDENED WASHERS AND HEX NUTS - (£ 116"x12" VERTICAL SLOTTED HOLE IN BOTH UPPER POST FLANGES

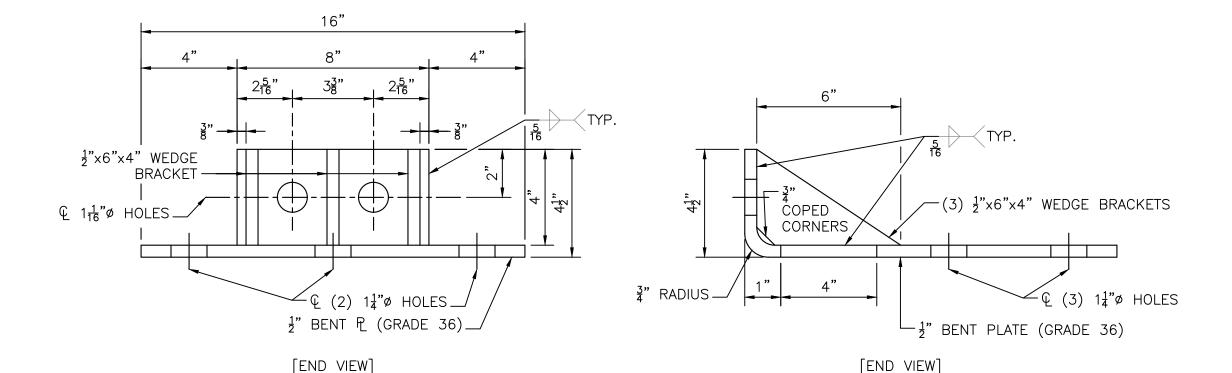
Q 1¹/₁₆"ø hole in washer plate, inside lower post flange, and both bent plates

SECTION 3 SCALE: $1\frac{1}{2}$ " = 1'-0"

GENERAL NOTE:

- 1. REFER TO SHEET 8 FOR HAND RAIL DETAILS NOT SHOWN HERE.
- 2. RAILING SYSTEM IN ACCORDANCE WITH MISSOURI HIGHWAY & TRANSPORTATION COMMISSION (MoDOT) STATE SYSTEM 3 -SIDE MOUNTED STANDARD THRIE BEAM RAIL DETAILS, AND MEETS NCHRP 350 TL-3 BRIDGE RAILING REQUIREMENTS.



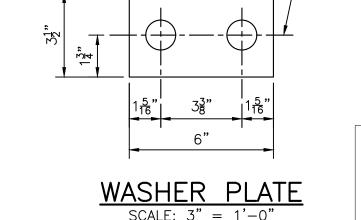


BENT PLATE AND WEDGE BRACKET

‡" POST STIFFENER (ASTM A709 GRADE 36)-1" (TYP.)-

POST STIFFENERS

SCALE: 3'' = 1'-0''



COMMONWEALTH OF MASSACHUSETTS MassDOT, Highway Division APPROVED UNDER PROVISIONS OF MASS. GEN. LAWS CH 85 S 35

DISTRICT 3 BRIDGE ENGINEER DATE

DRAWN BY: DESIGNED BY TW CHECKED BY: TW DATE MADE BY CHECKED BY **REVISIONS**

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SCALE SUBCONSULTANT **AS SHOWN**

Uxbridge, Massachusetts THRIE BEAM DETAILS (2 OF 2)

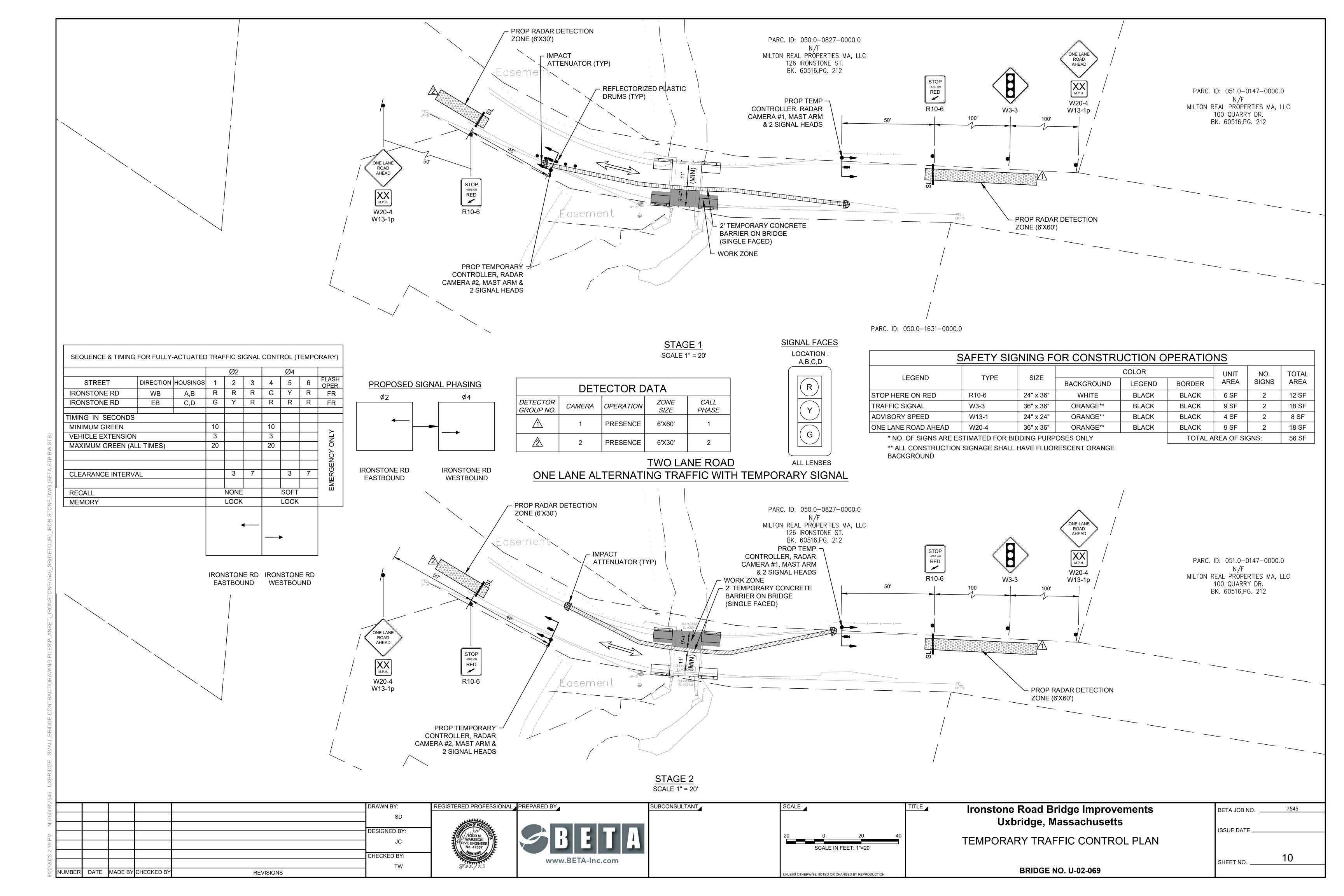
7545 BETA JOB NO. . ISSUE DATE __

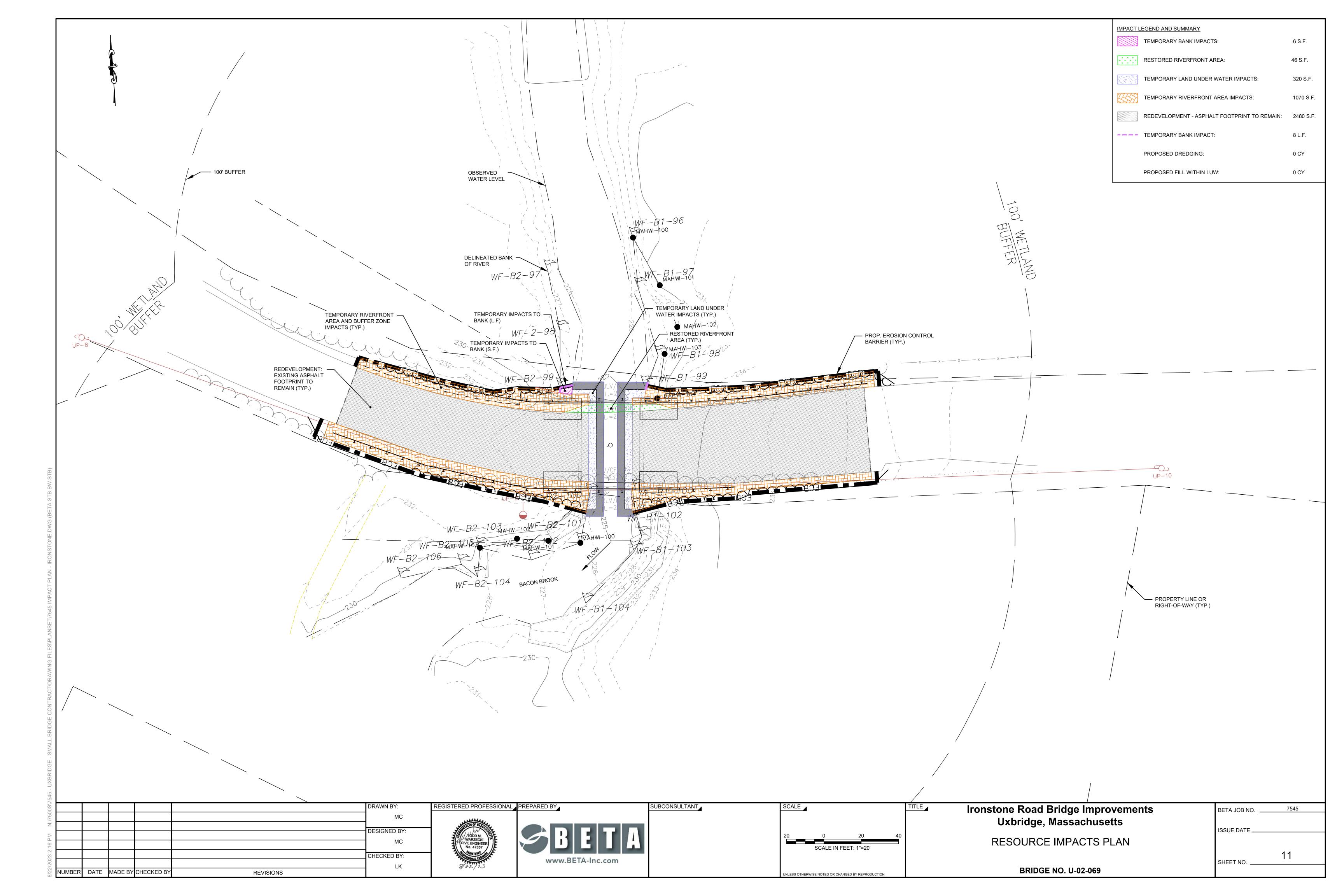
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BRIDGE NO. U-02-069

Ironstone Road Bridge Improvements

Sheet 9 of 11 Bridge No. U-02-069 (C4C)





TOWN OF UXBRIDGE, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS CARNEY STREET BRIDGE PRESERVATION

MAY 2022

BOARD OF SELECTMEN

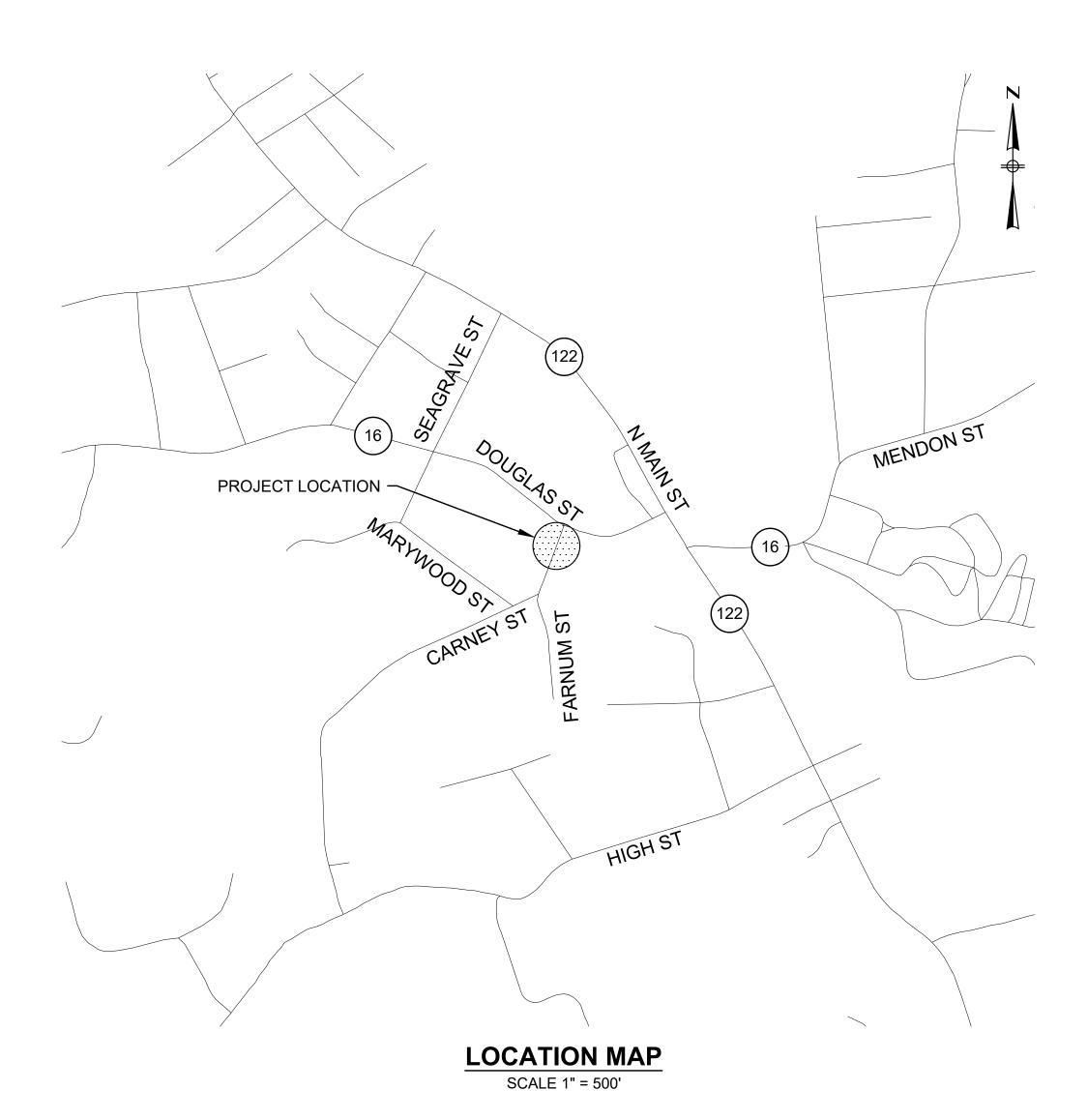
BRIAN BUTLER
JEFF SHAW
STEPHEN MANDILE
SUSAN FRANZ
BRIAN PLASKO

TOWN MANAGER

STEVEN SETTE

DEPARTMENT OF PUBLIC WORKS

BENN S. SHERMAN, PE, DIRECTOR
PAUL HUTNUK, PE, CIVIL ENGINEER



PLAN INDEX

HEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES & LEGEND
3	CONSTRUCTION PLAN AND PROFI
4	CONSTRUCTION DETAILS
5	BRIDGE COVER SHEET
6	STRUCTURAL DETAILS
7	CONCRETE REPAIR DETAILS
8	THRIE BEAM DETAILS (1 OF 2)
9	THRIE BEAM DETAILS (2 OF 2)
10-11	DETOUR PLAN
12	RESOURCE IMPACT PLAN

PREPARED BY:



ISSUE DATE: APRIL 5, 2022



LEGEND

ABBREVIATIONS

GENERAL

ABANDON

ALTERATION

APPROXIMATE

BITUMINOUS BERM **BITUMINOUS CURB**

BOTTOM OF SLOPE BOTTOM OF WALL BACK OF SIDEWALK

CONCRETE CURB

CHAIN LINK FENCE

CONSTRUCTION

EDGE OF PAVEMENT

CONTINUOUS

DRIVEWAY

ELEVATION

EASEMENT

EXISTING

GRANITE

FOUNDATION

HORIZONTAL IRON PIPE JUNCTION LOW POINT MAIL BOX

GRANITE CURB

MASSACHUSETTS HIGHWAY BOUND

POINT OF COMPOUND CURVATURE

POINT OF REVERSE CURVATURE

POINT OF VERTICAL CURVATURE POINT OF VERTICAL INTERSECTION POINT OF VERTICAL TANGENCY

POINT OF VERTICAL CURVATURE

SOUTH BOUND OR STONE BOUND

RADIUS OF CURVATURE REMOVE AND DISCARD

REMOVE AND RESET REMOVE AND STACK

POINT OF CURVATURE

POINT OF INTERSECTION POINT OF TANGENCY

PERMANENT

PROPOSED

PAVEMENT

REMOVE

REMODEL

RETAIN

RIGHT

SHEET

STATION

RAILROAD

SIDEWALK

SHOULDER

TEMPORARY

TOP OF SLOPE

TOP OF WALL

TYPICAL

VARIABLE

BASELINE

BOUND

BUILDING BY OTHERS

CEMENT

CONCRETE

ADJUST

GENERAL SYMBOLS

EVICTING	DDODOGED		ABAN
<u>EXISTING</u>	<u>PROPOSED</u>	CURR OR REPM/TVRE AC NOTER)	ADJ
		CURB OR BERM (TYPE AS NOTED)	ALT APPROX
		EDGE OF PAVEMENT	₽.
СВ	⊞ СВ	CATCH BASIN (OR GUTTER INLET, LEACHING BASIN, DROP INLET, CATCH BASIN CURB INLET)	BB BC
OEHH	ОЕНН	ELECTRIC HANDHOLE (NUMBER AS NOTED)	BD OR BND
Ē	O EMH	ELECTRIC MANHOLE	BLDG
\bigcirc	ОТМН	TELEPHONE MANHOLE	ВО
(W)	O WMH	WATER MANHOLE	BOS BOW
\$	S SMH	SEWER MANHOLE	BSW
(D)	D DMH	DRAINAGE MANHOLE	CC
o GG	o GG	GAS GATE	CEM
		WATER GATE	CLF CONC
o WG	o WG	CURB STOP	CONST
∘CS HYD.	• CS		CONT
P	◆ HYD	HYDRANT	DWY
E FA	■ FAB	FIRE ALARM BOX	EP, EOP EL
o PM	0	PARKING METER	ESMT
-∳-LP	←√-∭	STREET LIGHT POLE	EXIST
€ NP	-⊕ - UP	UTILITY POLE	FDN
JUPL	- UPL	UTILITY POLE w/ LIGHT	GRAN GC
0	•	SIGN	HOR
O— GUY	● – GUY	GUY POLE	IP
12" RCP — — — — — — —	10'-12" RCP	DRAIN PIPE (SIZE AS NOTED)	JCT
8" VCP — — — — — — —	10'-8" PVC	SEWER MAIN (SIZE AS NOTED)	LP MB
—— Е ——	10'-8" PVC	ELECTRIC DUCT	МНВ
4" HP	10'-4" HP	GAS MAIN (SIZE AS NOTED)	OC
8" CI	10'-8" DI	WATER MAIN (SIZE AS NOTED)	PCC PC
	10'-8" PVC	TELEPHONE DUCT (SIZE AS NOTED)	PRC
EOH	OUW	OVERHEAD WIRE	PI
	— — — — — — — — — — — — — — — — — — —		PT
□ MB	□ мв	MAIL BOX	PVC PVI
	0 0 0 0 0 0 0 ·	WOOD GUARD RAIL STEEL BEAM GUARD, WOOD OR STEEL POSTS (TYPE AS NOTED)	PVT
		STEEL GUARD RAIL, STEEL POSTS (TYPE NOTED)	PERM
	· · · · · · · · · · · · · · · · · · ·	STONE WALL	PGL
		RETAINING WALL (TYPE NOTED)	PROP PVC
O BND	■BND	HIGHWAY/PROPERTY BOUND (TYPE AS NOTED)	PVMT
SHLO (Date of Layout)		STATE HIGHWAY LAYOUT LINE (SHLO)	R
		CITY, TOWN OR COUNTY LAYOUT LINE (R.O.W.)	R&D R&R
Boundary Name		CITY, TOWN, COUNTY OR STATE BOUNDARY LINE	R&S
		PROPERTY LINE	REM
<u> </u>			REMOD
	2+00	EASEMENT LINE (TYPE NOTED)	RET RR
N00°00'00"E		CONSTRUCTION BASELINE	RT
000.00'		SURVEY LINE	SB
		RAILROAD OR STREET RAILWAY TRACKS WITH SIDELINES	SW
		WHEELCHAIR RAMP	SHT SHLD
• 24" PINE	(+)	TREE (SIZE AND TYPE AS NOTED)	STA
		HEDGE/SHRUBS	TEMP
× × × ×	x x x	FENCE (SIZE AND TYPE AS NOTED)	TOS TOW
		EDGE OF WETLAND W/ FLAGGED NUMBER	TYP
· · ·		EDGE OF RIVER/STREAM LINE	VAR
		100-FT. WETLAND BUFFER LIMIT	VERT
· · ·		100-FT. RIVER FRONT LIMIT	VGC WCR
		200-FT. RIVER FRONT LIMIT	WCK
	, , , , , , , , , , , , , , , , , , , ,	WOODED AREA / LIMIT OF CLEARING	
× 00.0	x 00.00	SPOT GRADE	
X 00.0		SAW CUT LINE	
		TEST PIT	
	■ 1P-1 ♣ B-1		
	Ф 6-1	BORING	

<u> </u>	<u>10</u>
	TDAFFIC CIONIAL OVOTEMO
	TRAFFIC SIGNAL SYSTEMS
R	STEADY CIRCULAR RED
Υ	STEADY CIRCULAR AMBER
G	STEADY CIRCULAR GREEN
FR	FLASHING CIRCULAR RED
FY	FLASHING CIRCULAR AMBER
←FY	FLASHING YELLOW LEFT ARROW
$R \rightarrow$	STEADY RED RIGHT ARROW
$Y \rightarrow$	STEADY AMBER RIGHT ARROW
$G\!\!\to\!$	STEADY GREEN RIGHT ARROW
←R	STEADY RED LEFT ARROW
←Y	STEADY AMBER LEFT ARROW
←G	STEADY GREEN LEFT ARROW
W	STEADY WALK (PERSON WALKING) - LUNAR WHITE
DW	STEADY DON'T WALK (HAND) - PORTLAND ORANGE
FDW	FLASHING DON'T WALK (FLASHING HAND) - PORTLAND ORANGE
	<u>UTILITIES</u>
СВ	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CI	CURB INLET
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
С	CONDUIT
CPP	CORRUGATED PLASTIC PIPE
CSP	CORRUGATED STEEL PIPE
DI	DUCTILE IRON PIPE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FM	FORCE MAIN
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GG	GAS GATE
HYD	HYDRANT
INV	INVERT ELEVATION
LP	LIGHT POLE
MH	MANHOLE
PVC	POLY-VINYL-CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE (CLASS III UNLESS NOTED)
SD	SUBDRAIN
SMH	SEWER MANHOLE
TS	TRAFFIC SIGNAL
UP	UTILITY POLE
UPL	UTILITY POLE w/ LIGHT

UTILITY POLE w/ TRANSFORMER

WATER METER/WATER MAIN

VITRIFIED CLAY PIPE

WATER GATE

TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSE	<u>D</u>
	\blacksquare	CONTROL CABINET GROUND MOUNTED WITH FOUNDATION
		CONTROL CABINET POLE MOUNTED
	Ø2	CONTROLLER PHASE
	MA-1	MAST ARM, SHAFT & BASE (ARM LENGTH AS NOTED)
\rightarrow	-	VEHICULAR SIGNAL HEAD (ALPHA-NUMERIC DESIGNATION AS NOTED)
$\longrightarrow \triangleright$		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
	\rightarrow	VEHICULAR SIGNAL HEAD (REMOVED & RESET)
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD
	→	PEDESTRIAN SIGNAL HEAD, OPTICALLY PROGRAMMED
□НН	×	PULL BOX 12"x12" OR HANDHOLE
		LOOP DETECTOR
\oplus	<u>•</u>	PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	-∢	PRE-EMPTION DETECTOR
	-•	PRE-EMPTION CONFIRMATION STROBE
	=========	SIGNAL CONDUIT (SINGLE RUN)
	=========	SIGNAL CONDUIT (DOUBLE RUN)
	•	SIGNAL POST & BASE
)M	M	MAGNETIC DETECTOR
	←	SCHOOL ZONE SPEED LIMIT SIGN
	 ■))	MICROWAVE OR ULTRASONIC DETECTOR
	-	VIDEO DETECTION CAMERA
	***************************************	VIDEO DETECTION ZONE

PAVEMENT MARKINGS AND SIGNING SYMBOLS

PROPOSED

CROSSWALK, 2 - 12" WHITE LINES (8" WIDTH) STOP LINE - 12" WHITE LINE 4' BEHIND CW (TYP.) SOLID WHITE EDGE LINE - 4" SOLID WHITE CHANNELIZING LINES - 12" (SPACING NOTED) SOLID WHITE GORE LINE 12" @ 33°, (SPACING NOTED) SOLID WHITE LANE LINE - 4" SOLID WHITE PARKING LINE - 4" BROKEN WHITE LANE LINE - 4" DOTTED WHITE LANE EXTENSION LINE - 4" (2' LINE & 6' GAP) DOTTED YELLOW LANE EXTENSION LINE - 4" (2' LINE & 6' GAP) BROKEN YELLOW CENTERLINE - 4" DOUBLE YELLOW CENTERLINE - 2 - 4" LINES SOLID YELLOW EDGE LINE - 4" SOLID YELLOW GORE LINE 12" @ 33°, (SPACING NOTED) SOLID YELLOW LANE LINE - 4" SYCTEL SOLID YELLOW CYCLE TRACK EDGE LINE - 4" DYCTCL DOTTED YELLOW CYCLE TRACK CENTERLINE - 4" (3' LINE & 9' GAP) SCHOOL ZONE - WHITE HANDICAP SYMBOL - WHITE PAVEMENT ARROW - WHITE LEGEND "ONLY" - WHITE

VERT	VERTICAL
VGC	VERTICAL GRANITE CURB
WCR	WHEELCHAIR RAMP

SUBCONSULTANT

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EROSION CONTROL BARRIER/COMPOST FILTER TUBES



SCALE NONE

INLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

Carney Street Bridge Improvements Uxbridge, Massachusetts

BRIDGE NO. U-02-070

7545 BETA JOB NO. _ ISSUE DATE ___ LEGEND AND ABBREVIATIONS SHEET NO.

HIGHWAY GUARD DETAILS

TRAILING ANCHORAGE STA 0+33 TO 0+42.5 LT
GUARDRAIL - TL-2 (SINGLE FACED) 0+42.5 TO 57.5 LT
TRANSITION TO THRIE BEAM STA 0+57.5 TO 0+63.5 LT
BRIDGE THRIE BEAM GUARDRAIL 0+63.5 TO 1+01 LT
TRANSITION TO THRIE BEAM STA 1+01 TO 1+07 LT
GUARDRAIL TANGENT END TREATMENT, TL-3 STA 1+07 TO 1+31 LT

GUARDRAIL TANGENT END TREATMENT, TL-2 STA 0+20.5 TO 0+44 RT TRANSITION TO THRIE BEAM STA 0+44 TO 0+50 RT BRIDGE THRIE BEAM GUARDRAIL 0+50 TO 0+88 RT THRIE BEAM TRAILING ANCHORAGE STA 0+88 TO 0+93 RT

PAVEMENT NOTES

FULL DEPTH PAVEMENT

SURFACE COURSE: 1-3/4" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

INTERMEDIATE 1-3/4" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER

COURSE: ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

BASE COURSE: 3-1/2" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER

SUB-BASE:

4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER
8" GRAVEL BORROW TYPE b (M1.03.01)

PROJECT TACK COAT NOTES

TACK COAT: ASPHALT EMULSION FOR TACK COAT, GRADE RS-1

SHALL BE PLACED AT A RATE OF:
0.07 GALLONS PER SQUARE YARD OVER MILLED SURFACES

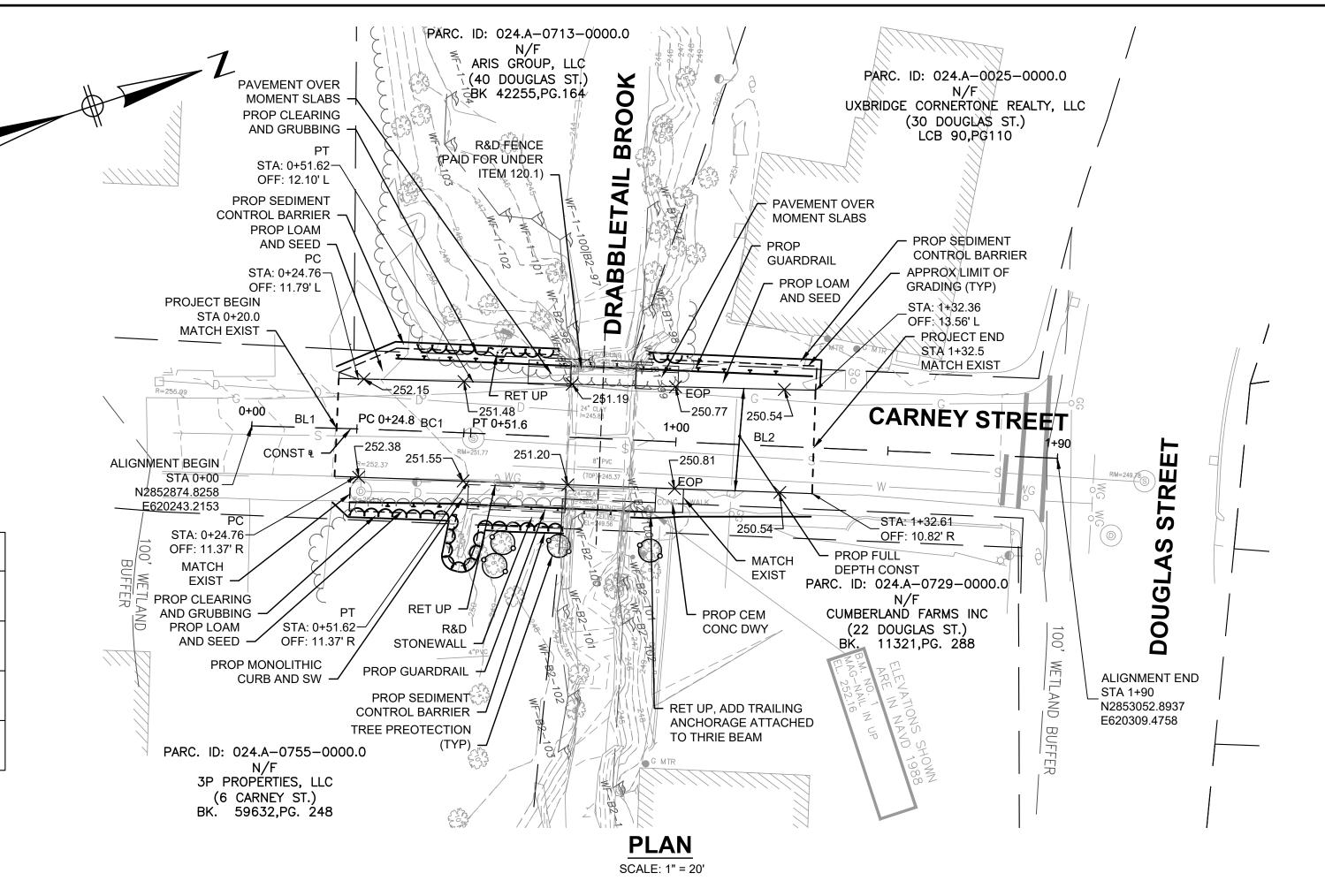
0.07 GALLONS PER SQUARE YARD OVER CEMENT CONCRETE BASE COURSE

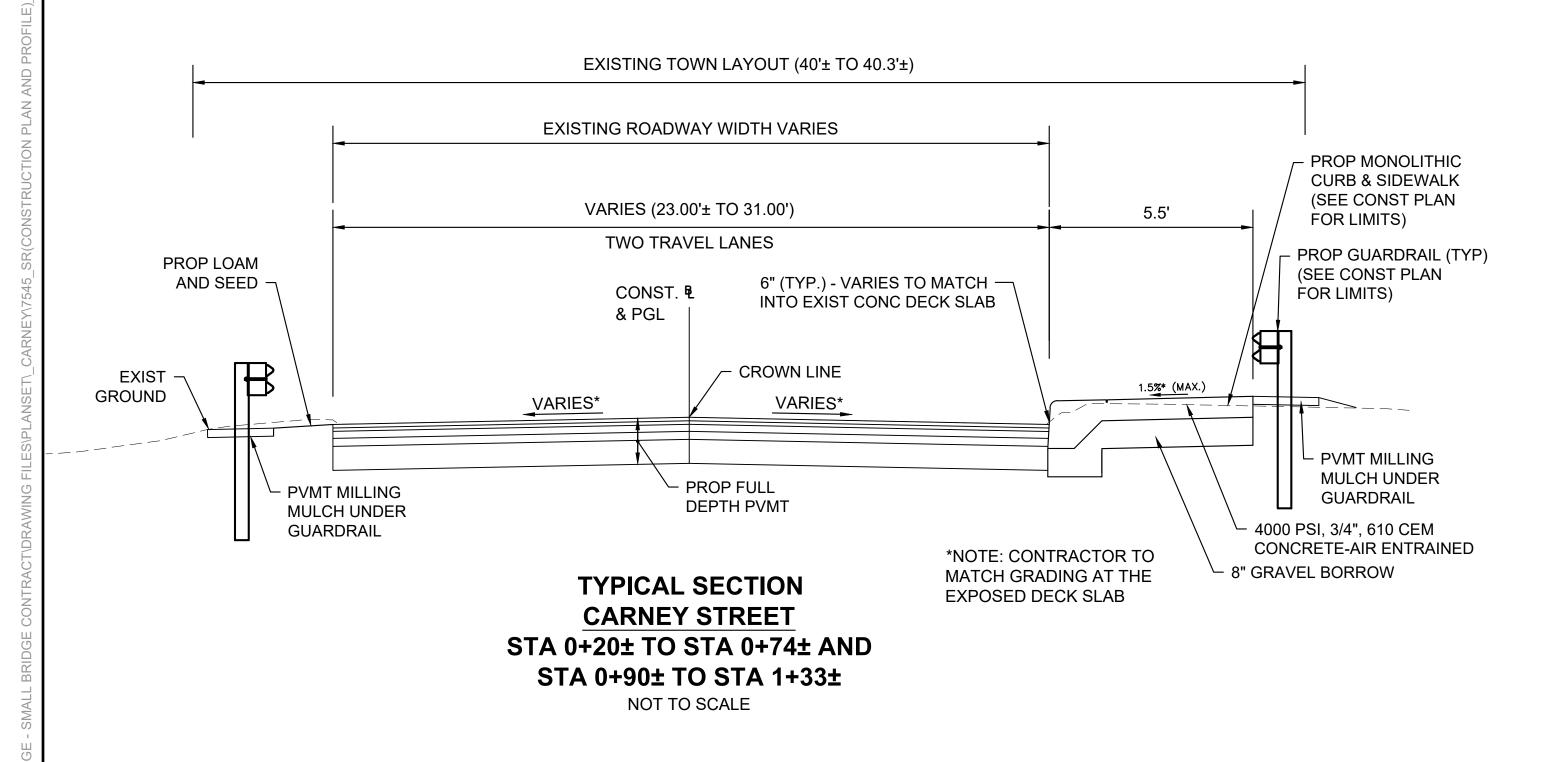
0.05 GALLONS PER SQUARE YARD OVER SMOOTH TIGHT

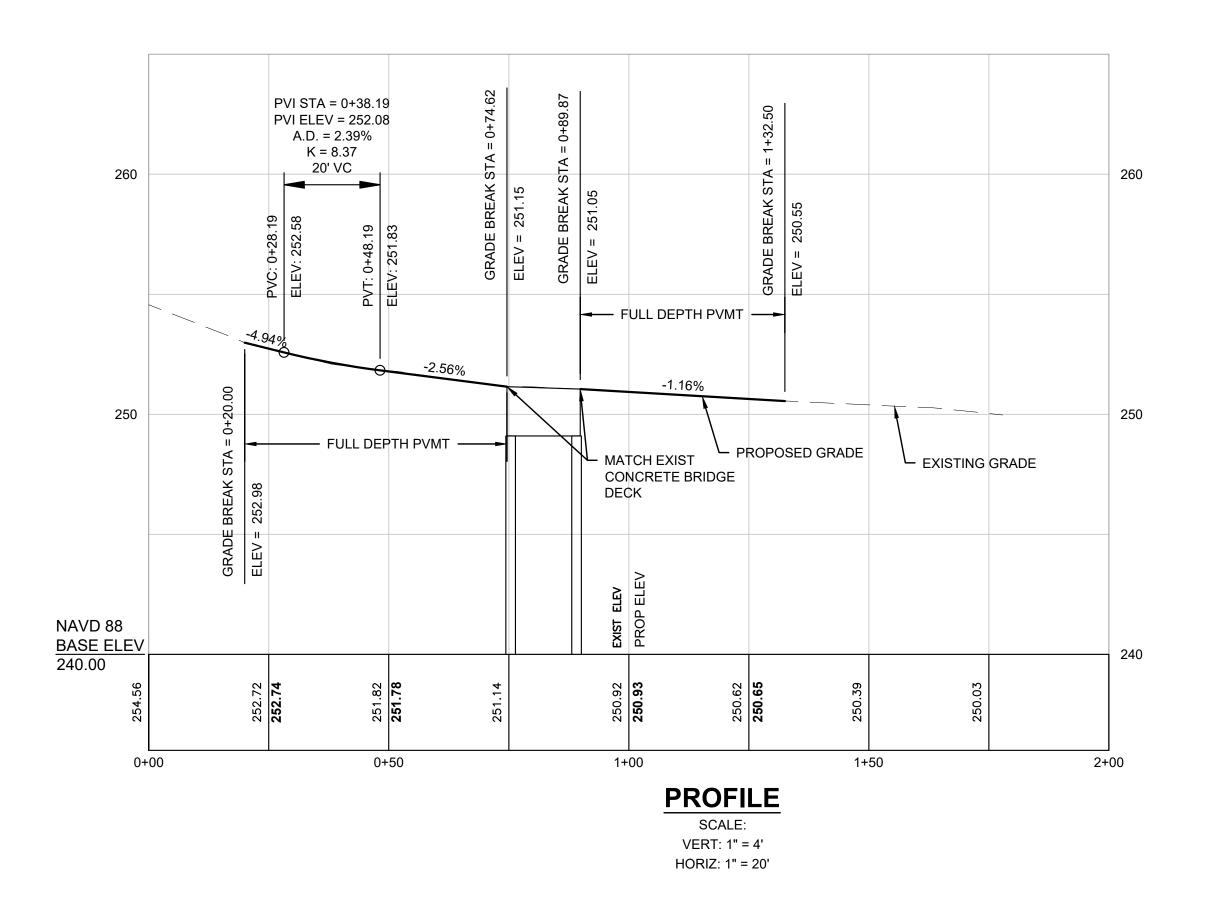
PAVEMENTS

PRIOR TO PAVING AN OVERLAY

	CARNEY STREET CL CONSTRUCTION BASELINE DATA										
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING			
BL1	0+00.00	2852874.8258	620243.2153		N19°47'45"E 24.76'	0+24.76	2852898.1238	620251.6012			
BC1	0+24.76	2852898.1238	620251.6012	R=2000.00 [°] Δ=0°46'10" L=26.86' T=13.43'		0+51.62	2852923.3313	620260.8661			
BL2	0+51.62	2852923.3313	620260.8661		N20°33'55"E 138.38'	1+90.00	2853052.8937	620309.4758			







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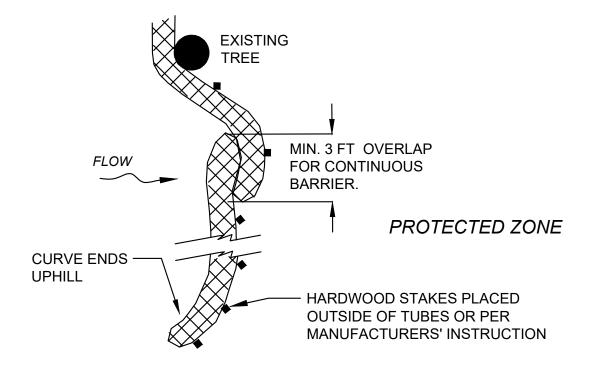
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Carney Street Bridge Improvements
Uxbridge, Massachusetts
CONSTRUCTION PLAN AND PROFILE

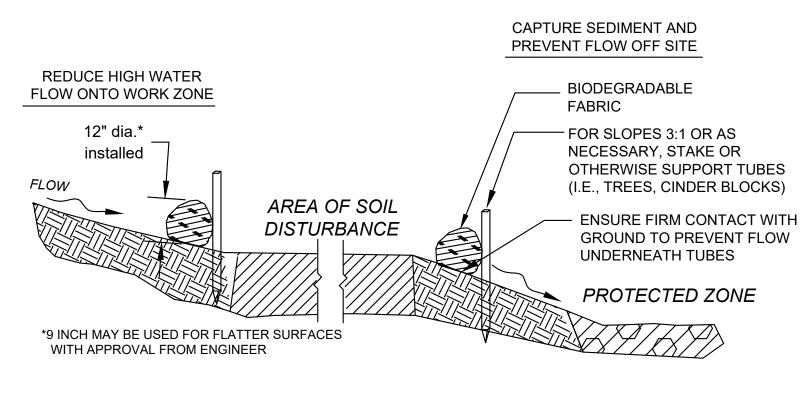
MONOLITHIC CURB & SIDEWALK DETAIL



PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

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

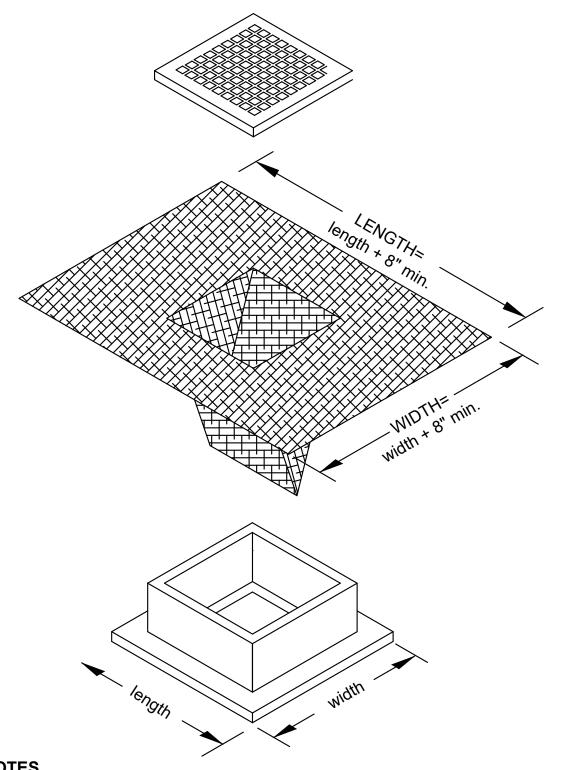
PLAN VIEW



SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

NOT TO SCALE



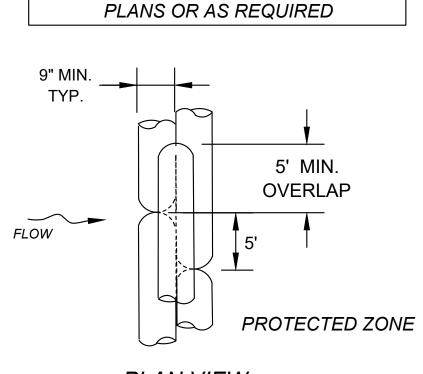
NOTES

- 1. LENGTH AND WIDTH OF POLYPROPYLENE FABRIC MUST EXCEED EXISTING CATCH BASIN FRAME DIMENSIONS BY A MINIMUM OF 8".
- 2. REMOVE CATCH BASIN GRATE AND INSTALL POLYPROPYLENE FABRIC OVER CATCH BASIN FRAME. REPLACE CATCH BASIN GRATE TO SECURE POLYPROPYLENE FABRIC IN PLACE.

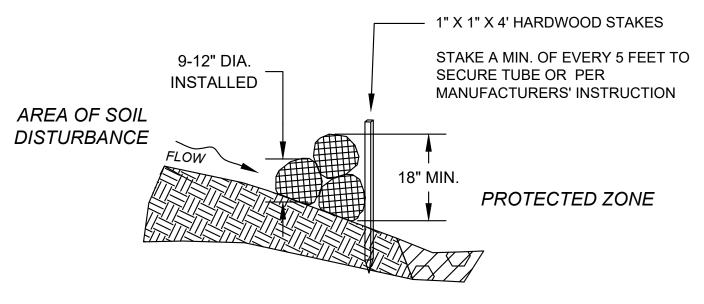
SILT SACK

NOT TO SCALE

WHERE SPECIFIED ON CONSTRUCTION



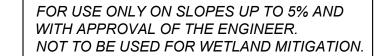
PLAN VIEW

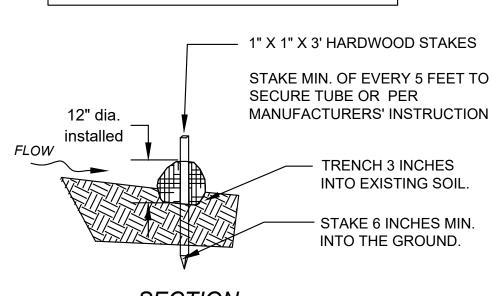


SECTION

COMPOST FILTER TUBES STACKED

NOT TO SCALE

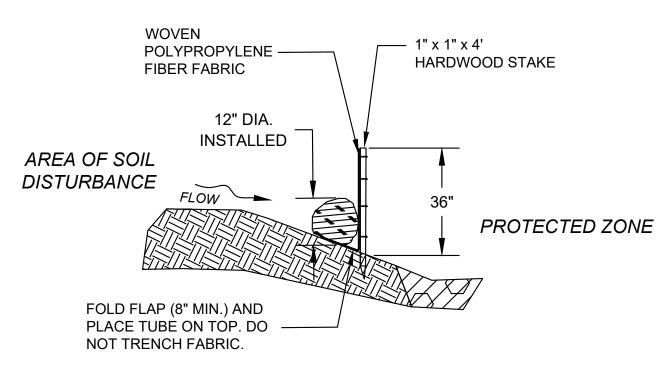




SECTION

12 INCH STRAW WATTLE

NOT TO SCALE



SECTION

COMPOST FILTER TUBE & SILT FENCE

NOT TO SCALE

~							
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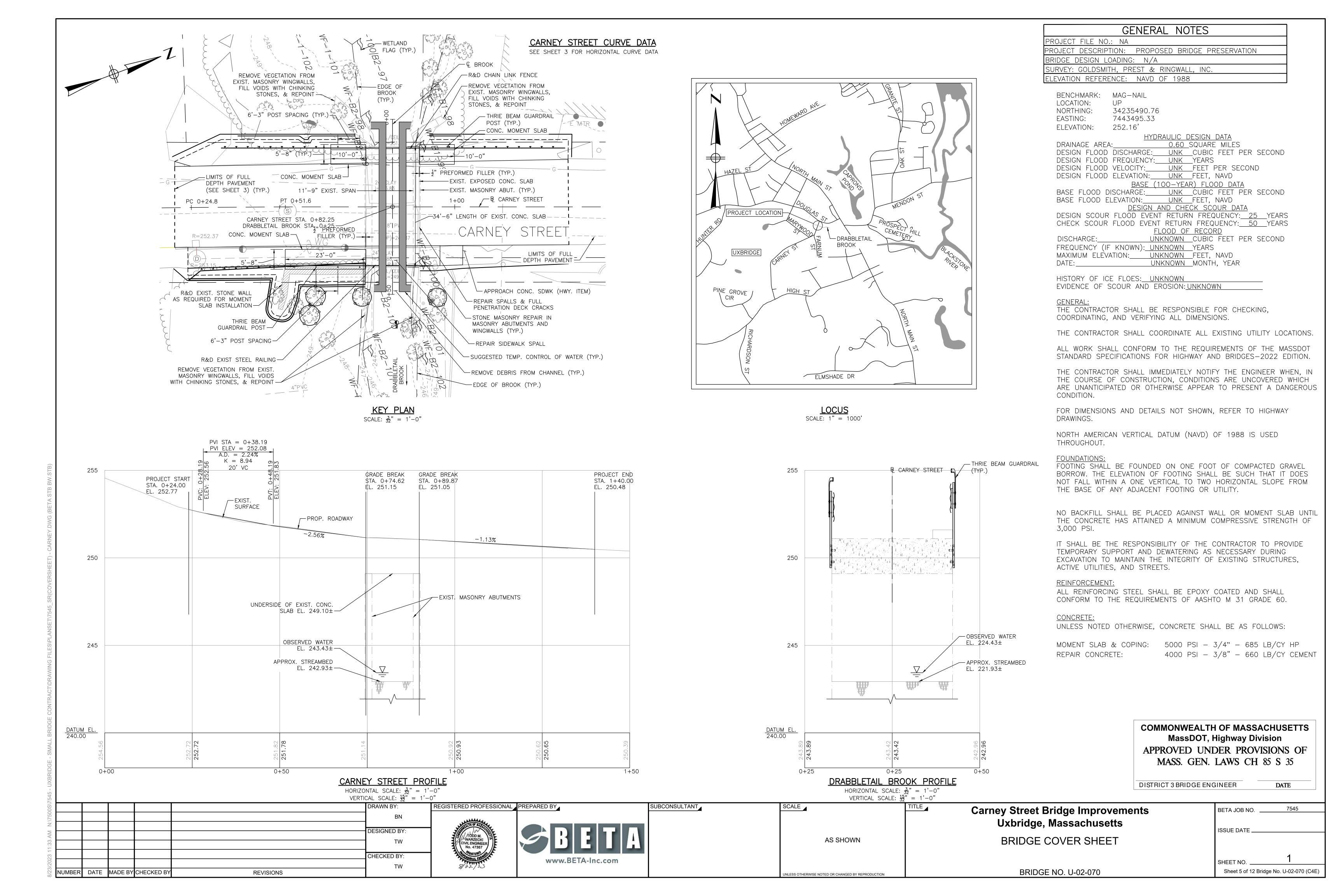
SCALE

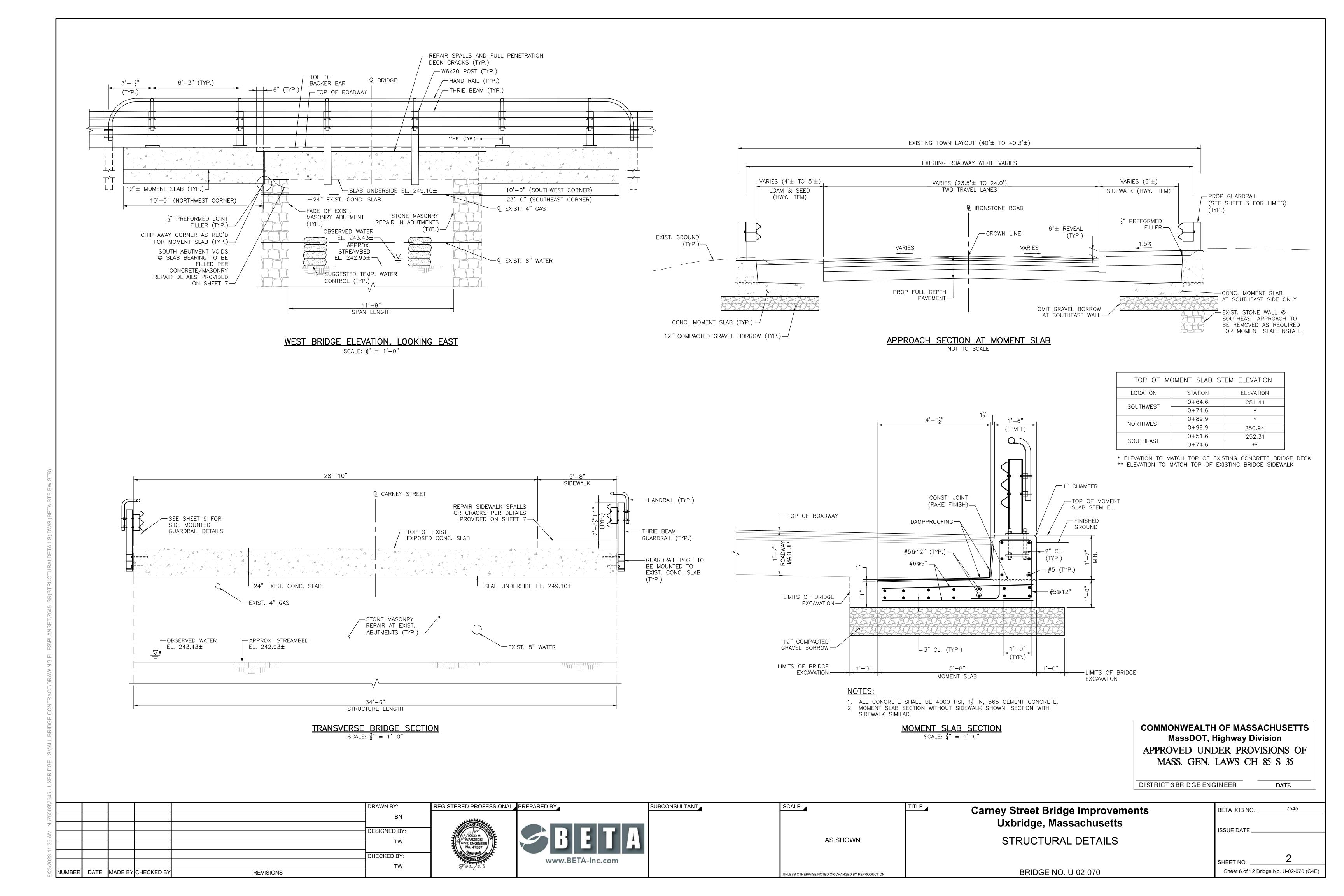
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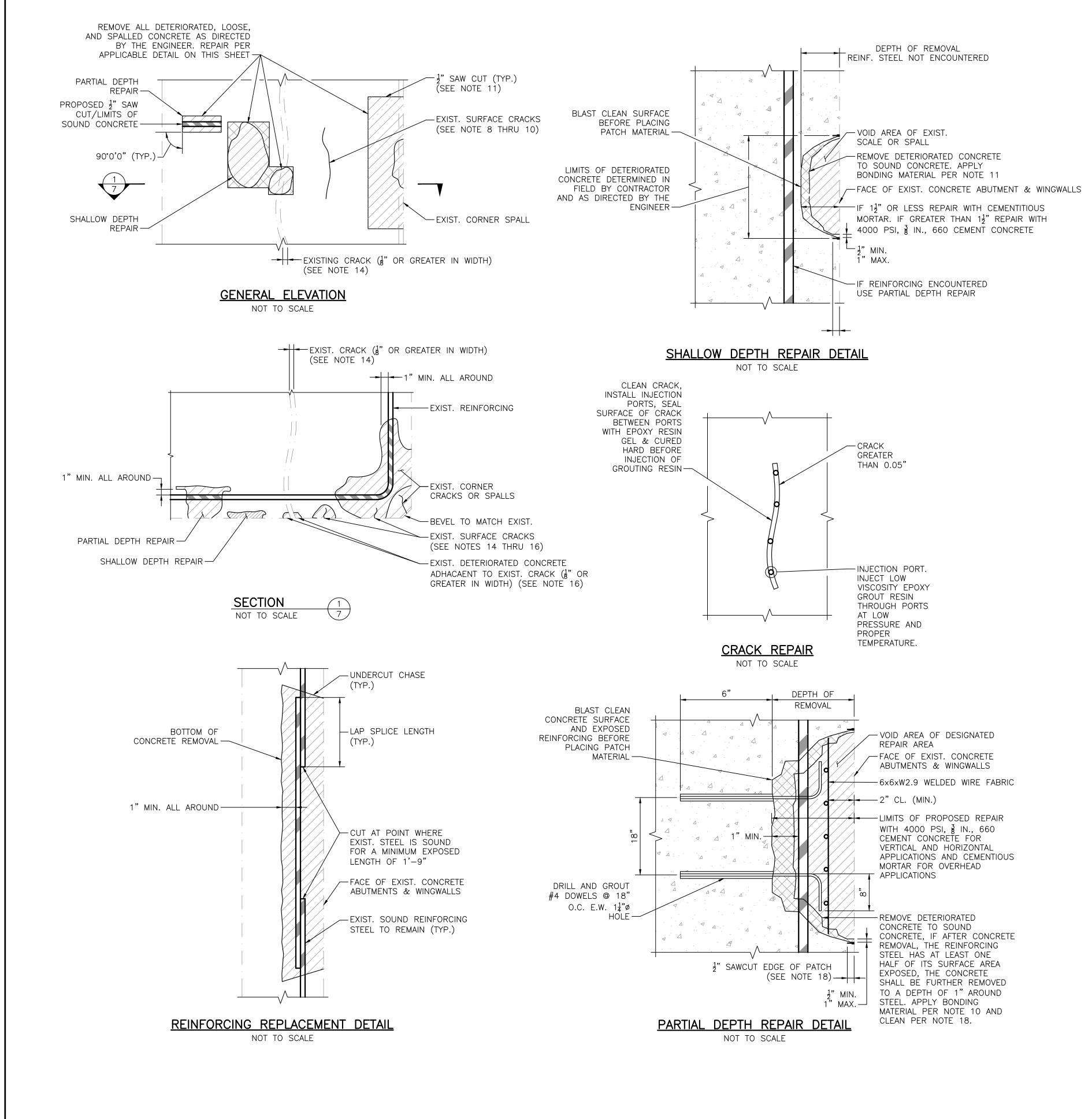
Carney Street Bridge Improvements
Uxbridge, Massachusetts
CONSTRUCTION DETAILS

BETA JOB NO. 7545

ISSUE DATE _______4







MASONRY REPAIR NOTES:

-FACE OF EXIST.

MASONRY WALL

FILL MATERIAL

SPALL

TYPICAL MASONRY WALL REPAIR

NOT TO SCALE

-VOID AREA OF

DETERIORATED

EXISTING SCALE OR

MASONRY TO SOUND MASONRY. DAMPEN

CLEANED SURFACE PER NOTE 4.

-REFER TO ITEM 685.1 OF

THE SPECIFICATIONS FOR

- 1. ANY OBJECTIONABLE CRACK SHOULD BE ANALYZED TO DETERMINE THE CAUSE AND ANY PREVIOUS CORRECTIVE MEASURES TAKEN TO PREVENT OR ACCOMMODATE THE MOVEMENT BEFORE ADDITIONAL REPAIRS ARE MADE.
- 2. WHERE CRACKING IS CONFINED PRIMARILY TO MORTAR JOINTS IT CAN BE READILY REPAIRED BY CONVENTIONAL TUCKPOINTING METHODS.
- 3. REMOVE ALL SPALLED AND UNSOUND MASONRY FROM AREA TO BE REPAIRED.
- 4. CLEAN SURFACE TO BE FREE OF ALL MATERIALS INCLUDING DUST, OIL, DIRT AND GREASE. DAMPEN WITH CLEAN WATER BEFORE PATCHING AND REMOVE STANDING WATER. REPAIR MORTAR SHALL BE TROWEL APPLIED TO DAMPENED SURFACE. AFTER INITIAL SET, THE MATERIAL SHALL BE TRIMMED AND SHAPED TO MATCH THE CONTOURS OF EXISTING PATCH AREA.
- 5. COST OF DRILLING AND GROUTING DOWELS SHALL BE CONSIDERED INCIDENTAL TO MASONRY REHABILITATION.
- 6. EXISTING MASONRY NEAR REPAIR LOCATIONS SHALL BE CLEANED WITH A HYDROCARBON SOLVENT TO REMOVE OIL AND GREASE. THE SURFACE SHALL THEN BE CLEANED WITH A TRISODIUM PHOSPHATE SOLUTION PRIOR TO APPLYING PAINT.
- 7. THE ACTUAL LOCATIONS AND EXTENT OF VARIOUS TYPES OF CONCRETE REPAIR WILL BE DETERMINED IN THE FIELD. THE CONTRACTOR SHALL REPAIR ALL AREAS DETERMINED NECESSARY AS DIRECTED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT ALL REPAIR AREAS.

CONCRETE REPAIR NOTES:

- 8. AREAS REQUIRING REPAIRS THAT ARE GREATER THAN 1½"

 DEEP SHALL BE REPAIRED USING 4000 PSI, ¾ IN., 660

 CEMENT CONCRETE. AREAS LESS THAN 1½" DEEP SHALL

 BE REPAIRED USING CEMENTITIOUS MORTAR FOR PATCHING.
- 9. IF DURING REMOVAL OF DETERIORATED CONCRETE, THE CONTRACTOR DAMAGES EXISTING REINFORCEMENT TO THE EXTENT REQUIRING REPLACEMENT, ANY ADDITIONAL CONCRETE REMOVAL, PATCHING MATERIAL, CLEANING EXISTING REINFORCING STEEL, AND FURNISHING AND INSTALLING REPLACEMENT REINFORCING STEEL SHALL BE AT THE CONTRACTOR'S EXPENSE, AND INSTALLED ACCORDING TO REINFORCING REPLACEMENT DETAIL ON THIS SHEET.
- 10. REINFORCEMENT, INCLUDING WELDED WIRE FABRIC, USED TO REPLACE EXISTING DETERIORATED REINFORCING STEEL (SECTION LOSS OF 15% OR MORE OF THE ORIGINAL CROSS SECTION, AS DETERMINED BY THE ENGINEER) SHALL BE EPOXY COATED. COST OF REPLACEMENT SHALL BE INCLUDED UNDER ITEM 910.1.
- 11. IMMEDIATELY PRIOR TO PLACING NEW CONCRETE OR MORTAR AGAINST EXISTING CONCRETE, CLEAN EXISTING SURFACES BY ABRASIVE BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER CONTAINING NO DETERGENTS OR BOND INHIBITING CHEMICALS AND APPLY APPROVED BONDING COMPOUND IMMEDIATELY PRIOR TO PLACING CONCRETE.
- 12. ALL EXISTING SURFACES THAT WILL HAVE NEW CONCRETE CAST AGAINST IT MUST BE ROUGHENED TO A MINIMUM AMPLITUDE OF ¼ INCH.
- 13. CONCRETE REPAIR WORK INCLUDES REMOVING ALL DETERIORATED, LOOSE, SPALLED, POPCORNED AND MAP CRACKED CONCRETE. CONCRETE WHICH HAS SPALLED OR OTHERWISE DETERIORATED ADJACENT TO SURFACE CRACK SHALL BE REPAIRED.
- 14. CRACKS THAT ARE .05" OR GREATER IN WIDTH SHALL BE REPAIRED BY EPOXY INJECTION CRACK REPAIR.
- 15. CRACKS THAT ARE LESS THAN .05" IN WIDTH SHALL NOT BE REPAIRED UNLESS DIRECTED BY THE ENGINEER.
- 16. WHERE PATCHING AND EPOXY INJECTION WORK ARE ADJACENT, EPOXY INJECTION SHALL BE PERFORMED BEFORE PATCHING.
- 17. ALL DETERIORATED AREAS SHALL BE DELINEATED BY A ½" SAWCUT. THE COST OF SAWCUTTING SHALL BE INCLUDED UNDER ITEM 127.12.
- 18. ALL EXPOSED STEEL SHALL BE THOROUGHLY BLAST CLEANED TO A WHITE METAL FINISH AND COATED WITH EPOXY IN ACCORDANCE WITH AASHTO M284 (ASTM D3963). BLAST CLEANING AND EPOXY SHALL BE INCLUDED IN THE RESPECTIVE CONCRETE REPAIR ITEM.
- 19. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH. NO ADDITIONAL MATERIAL SHALL BE ADDED TO CONCRETE.

LEGEND:

DETERIORATED CONCRETE TO BE REMOVED.

REINFORCING STEEL.

ADDITIONAL CONCRETE TO BE REMOVED.

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
APPROVED UNDER PROVISIONS OF
MASS. GEN. LAWS CH 85 S 35

DISTRICT 3 BRIDGE ENGINEER	DATE

REGISTERED PROFESSIONAL PREPARED BY DRAWN BY: SUBCONSULTANT SCALE _ **Carney Street Bridge Improvements** 7545 BETA JOB NO. **Uxbridge, Massachusetts** ISSUE DATE __ DESIGNED BY **CONCRETE & MASONRY REPAIR DETAILS AS SHOWN** TW CHECKED BY: www.BETA-Inc.com SHEET NO. TW BRIDGE NO. U-02-070 Sheet 7 of 12 Bridge No. U-02-070 (C4E DATE MADE BY CHECKED BY **REVISIONS** ILESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

NOTES: 1. ALL STEEL CONNECTING BOLTS AND FASTENERS FOR POSTS AND ¾"ø U−BOLT W/ COMMONWEALTH OF MASSACHUSETTS RAILING SHALL CONFORM TO ASTM A307 AND SHALL BE NUT, WASHER, AND MassDOT, Highway Division GALVANIZED IN ACCORDANCE WITH AASHTO M232. ALL ANCHOR . LOCK WASHER— RODS SHALL CONFORM TO F1554 GRADE 105 AND SHALL BE W6 POST APPROVED UNDER PROVISIONS OF GALVANIZED IN ACCORDANCE WITH AASHTO M232. (TYP.)-MASS. GEN. LAWS CH 85 S 35 2. RAIL POSTS AND ANCHOR PLATES SHALL BE SEATED ON MOULDED 17" MAX. (TYP.) FABRIC BEARING PADS MEETING M9.16.2 AND HAVING THE SAME DIMENSIONS AS THE PLATE. ADDITIONAL PADS OR HALF PADS MAY DISTRICT 3 BRIDGE ENGINEER DATE BE USED IN SHIMMING FOR ALIGNMENT. POST HEIGHTS SHOWN WILL £ 2⅓"ø PIPE & W6− INCREASE BY THE THICKNESS OF THE PAD. - 2½"ø STANDARD 3. RAIL POSTS SHALL BE SET PERPENDICULAR TO ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION, EXCEPT THAT THE RAIL POSTS SHALL BE ALIGNED BY THE USE OF SHIMS SO THAT IN THE FINAL ADJUSTMENT NO PART SHALL DEVIATE MORE THAN ONE INCH FROM TRUE HORIZONTAL ALIGNMENT. THE SHIMS SHALL BE 3"x1\frac{1}{2}" END SADDLE DETAIL AND PLACED BETWEEN THE POST AND THE THRIE BEAM RAIL. THE THICKNESS OF THE SHIMS SHALL BE DETERMINED BY THE SCALE: 3'' = 1'-0''CONTRACTOR AND VERIFIED BY THE ENGINEER BEFORE ORDERING MATERIAL FOR THIS WORK. 4. MINIMUM LENGTH OF THE THRIE BEAM SECTIONS IS EQUAL TO ONE © RAIL POST (W6x20) POST SPACE. C HAND RAIL 5. THRIE BEAM GUARD RAIL STEEL SHALL BE GALVANIZED AND CONFORM TO THE AASHTO M180, CLASS B, TYPE IV AND SHALL BE 10 GAGE THICK. USE OF 12 GAGE THICK THRIE BEAM IS Q W POST EXPRESSLY FORBIDDEN. 6'-3" POST SPACING, $3'-1\frac{1}{2}"$ -2.5" Ø STANDARD PIPE 6. POSTS, ANCHOR PLATES, BASE PLATES SHALL BE FABRICATED FROM STEEL CONFORMING TO AASHTO M270M GR. 250 STEEL AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111. FACE OF FACE OF THRIE BEAM — 2" Ø STANDARD PIPE — 7. SPECIAL DRILLING OF THE THRIE BEAM MAY BE REQUIRED AT THE SPLICES. (ALL DRILLING DETAILS ARE TO BE SHOWN ON THE SHOP DRAWINGS.) §" GUARDRAIL BOLT -13"ø HOLE (TYP.) $(L = 1\frac{1}{2})$, NUT, WASHER 8. HAND RAIL STEEL SHALL CONFORM TO ASTM A53 GR. B OR A501 € POST AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111. R = 5'-10"-BASE PLATE DETAIL ─ FASCIA 9. PLACE A REFLECTORIZED WASHER IN THE UPPER VALLEY OF THRIE END OF WINGWALL -SCALE: $1\frac{1}{2}$ " = 1'-0" BEAM EVERY THIRD POST. PLAN VIEW 10. HAND RAIL SHALL BE SPLICED OVER JOINTS IN COPING. \$\Pm\$ W6 POST $-\mathbb{Q} \frac{3}{4}$ "x2\frac{1}{2}" SLOTS (REGULAR SPLICE) AND $\frac{3}{4}$ " x $3\frac{3}{4}$ " SLOTS (EXPANSION 11" --- 11" SEE DETAIL A -12<u>1</u>" LAP SPLICE AT POST) TOP OF WEARING $| - | 13\frac{1}{2}$ SURFACE $-2\frac{3}{4}$ " (AT EXP. SPLICES) R = 24" 3"ø HOLES (TYP.) $\frac{15}{16}$ "x1 $\frac{1}{8}$ " SLOTS @ STD. SPLICES & $\frac{15}{16}$ "x2 $\frac{1}{2}$ " SLOTS @ EXP. SPLICES— - PAVEMENT DEPTH TOP OF ROADWAY & MOMENT SLAB 1¼"ø ANCHOR AT SPLICES BETWEEN

POSTS ELIMINATE THIS
SLOT OR PROVIDE
BUTTON HEAD BOLT ROD — $\frac{3}{4}$ "x2 $\frac{1}{2}$ " SLOTS @ STD. SPLICES - CONST. JT. (RAKE FINISH) & ¾"x3¾" SLOTS @ EXP. SPLICES— -Q $\frac{15}{6}$ "x1 $\frac{1}{8}$ " SLOTS (REG. SPLICES) AND $\frac{15}{16}$ "x2 $\frac{1}{2}$ " SLOTS (EXP. **ELEVATION** 1∛ HOLES → (LEVEL) RAIL POST DETAIL (FRONT VIEW) THRIE BEAM SECTION ANCHOR ROD DETAIL HAND RAIL END DETAIL -2" (AT REGULAR SPLICES) SCALE: $\frac{3}{8}$ " = 1'-0" SCALE: $1\frac{1}{2}$ " = 1'-0" NOT TO SCALE SCALE: $1\frac{1}{2}$ " = 1'-0" THRIE BEAM RAIL SPLICE SCALE: $1\frac{1}{2}$ " = 1'-0" NEUTRAL AXIS--THRIE BEAM HEAVY HEX $-1\frac{1}{8}$ "ø HOLES FOR $1\frac{1}{4}$ "ø ANCHOR RODS (TYP.) - 1 MOULDED
FABRIC BEARING
PAD (M9.16.2) 2"ø STANDARD PIPE-¾"Ø U−BOLT W/ NUT, WASHER AND LOCK WASHER--/ -W6 POST 16" TOLERANCE -* PERMISSIBLE SEMI-CIRCULAR NOTCHES IN ENDS OF $-1\frac{3}{4}$ " (TYP.) WEB CENTERED ON AXIS OF POST TO FACILITATE 3"Ø HOLE / 1'-8" GALVANIZING (TYPICAL TOP AND BOTTOM OF POST) **ELEVATION** <u>PLAN</u> $\underline{\text{DETAIL A}}$ SCALE: $1\frac{1}{2}$ " = 1'-0" ANCHOR PLATE DETAIL SADDLE DETAILS SECTION THRU THRIE BEAM RAIL SCALE: 3'' = 1'-0''SCALE: 3" = 1'-0"SCALE: $1\frac{1}{2}$ " = 1'-0" SCALE DRAWN BY: REGISTERED PROFESSIONAL PREPARED BY SUBCONSULTANT **Carney Street Bridge Improvements Uxbridge, Massachusetts** DESIGNED BY

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REVISIONS

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7545 BETA JOB NO. . ISSUE DATE _

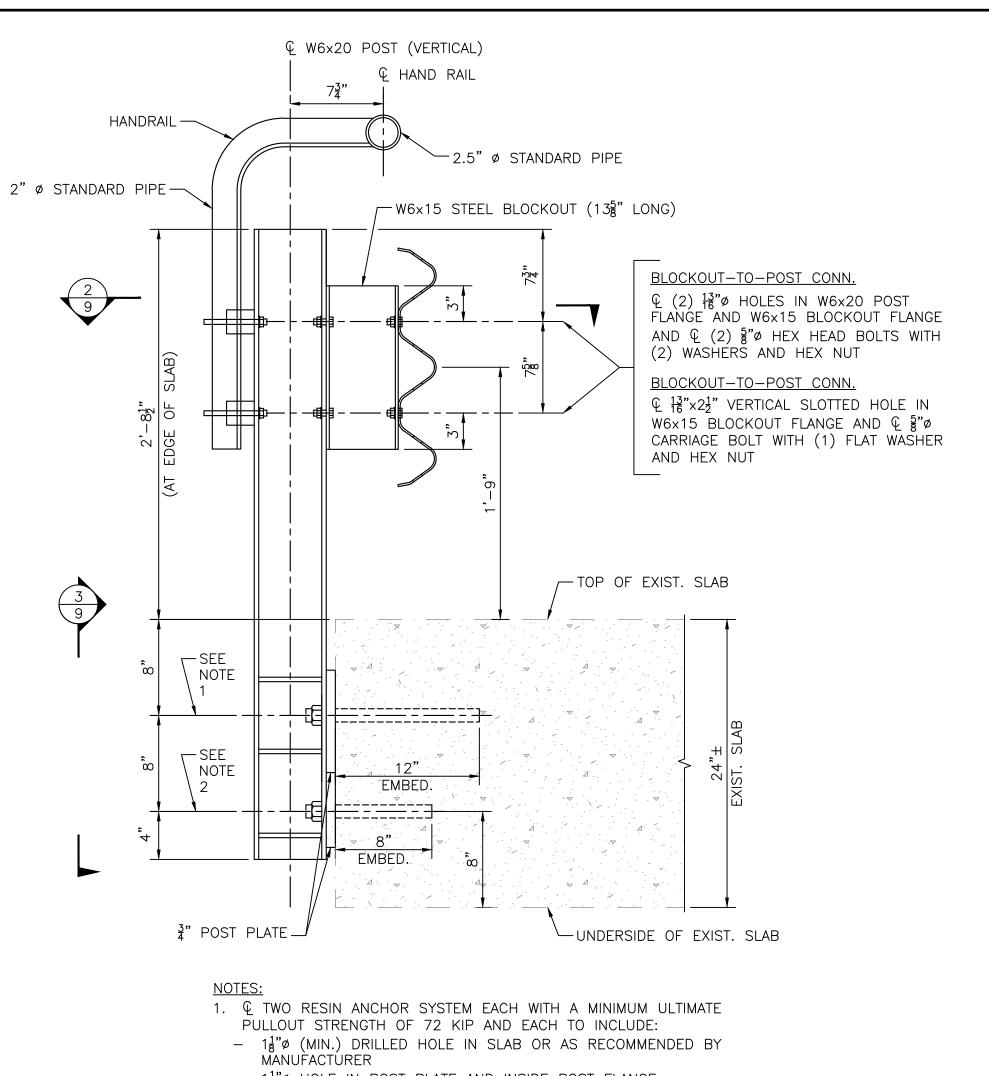
AS SHOWN

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THRIE BEAM DETAILS (1 OF 2)

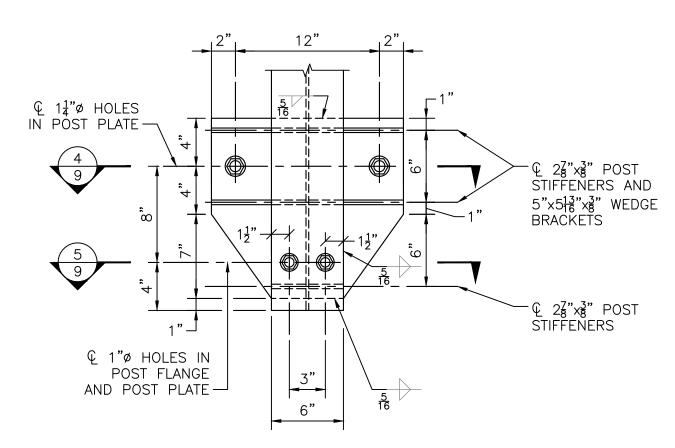
BRIDGE NO. U-02-070

Sheet 8 of 12 Bridge No. U-02-070 (C4E)



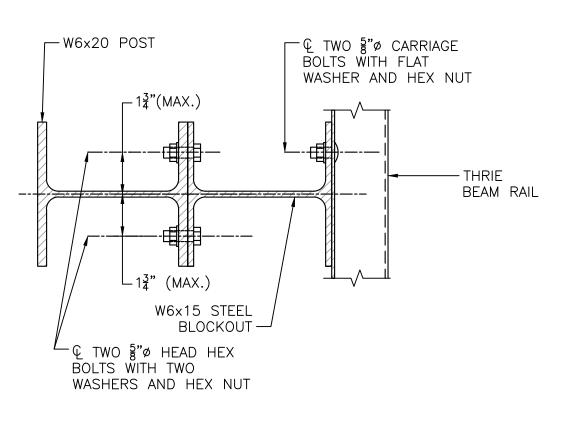
- 1¼"Ø HOLE IN POST PLATE AND INSIDE POST FLANGE - 1"Ø ASTM A449 TYPE 1 THREADED ROD SNUG TIGHT AND
- EMBEDDED 12 INCHES IN SLAB - HEX NUT AND 2½ HARDENED LOCKING WASHER
- 2. Q TWO RESIN ANCHOR SYSTEM EACH WITH A MINIMUM ULTIMATE
- PULLOUT STRENGTH OF 20.4 KIP AND EACH TO INCLUDE: $-\frac{7}{8}$ ° (MIN.) DRILLED HOLE IN SLAB OR AS RECOMMENDED BY
- 1"Ø HOLE IN POST PLATE AND INSIDE POST FLANGE - 3"ø ASTM A449 TYPE 1 THREADED ROD SNUG TIGHT AND
- EMBEDDED 8 INCHES IN SLAB - HEX NUT AND HARDENED LOCKING WASHER

SECTION AT RAIL POST SCALE: $1\frac{1}{2}$ " = 1'-0"

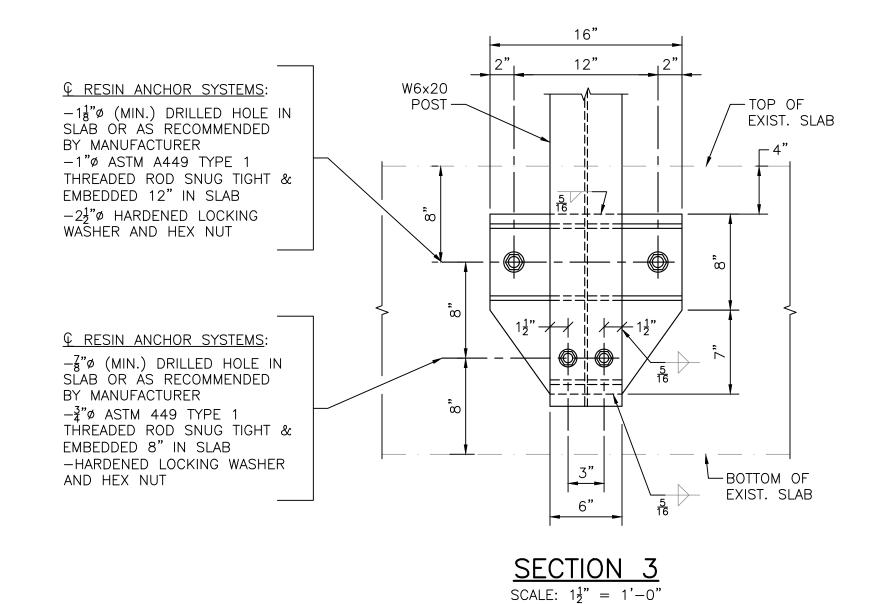


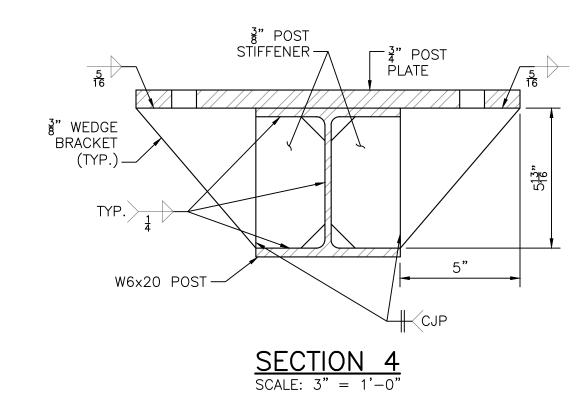
POST PLATE DETAIL SCALE: $1\frac{1}{2}$ " = 1'-0"

REVISIONS



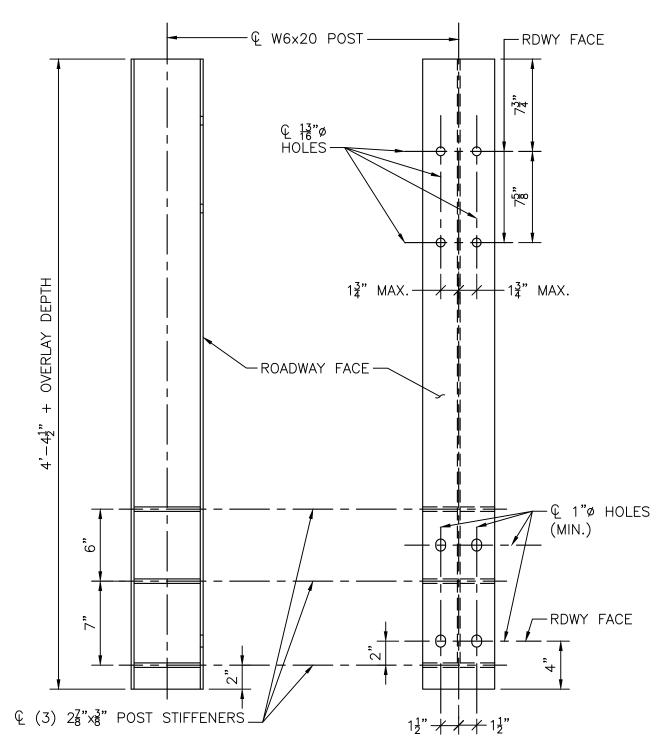
SECTION 2 SCALE: 3'' = 1'-0''



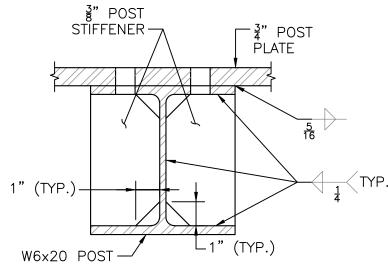


GENERAL NOTE:

- 1. REFER TO SHEET 8 FOR HAND RAIL DETAILS NOT SHOWN HERE.
- 2. RAILING SYSTEM IN ACCORDANCE WITH MISSOURI HIGHWAY & TRANSPORTATION COMMISSION (MoDOT) STATE SYSTEM 3 -SIDE MOUNTED STANDARD THRIE BEAM RAIL DETAILS, AND MEETS NCHRP 350 TL-3 BRIDGE RAILING REQUIREMENTS.



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



COMMONWEALTH OF MASSACHUSETTS MassDOT, Highway Division APPROVED UNDER PROVISIONS OF MASS. GEN. LAWS CH 85 S 35

DISTRICT 3 BRIDGE ENGINEER DATE

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SCALE SUBCONSULTANT

Carney Street Bridge Improvements Uxbridge, Massachusetts

THRIE BEAM DETAILS (2 OF 2)

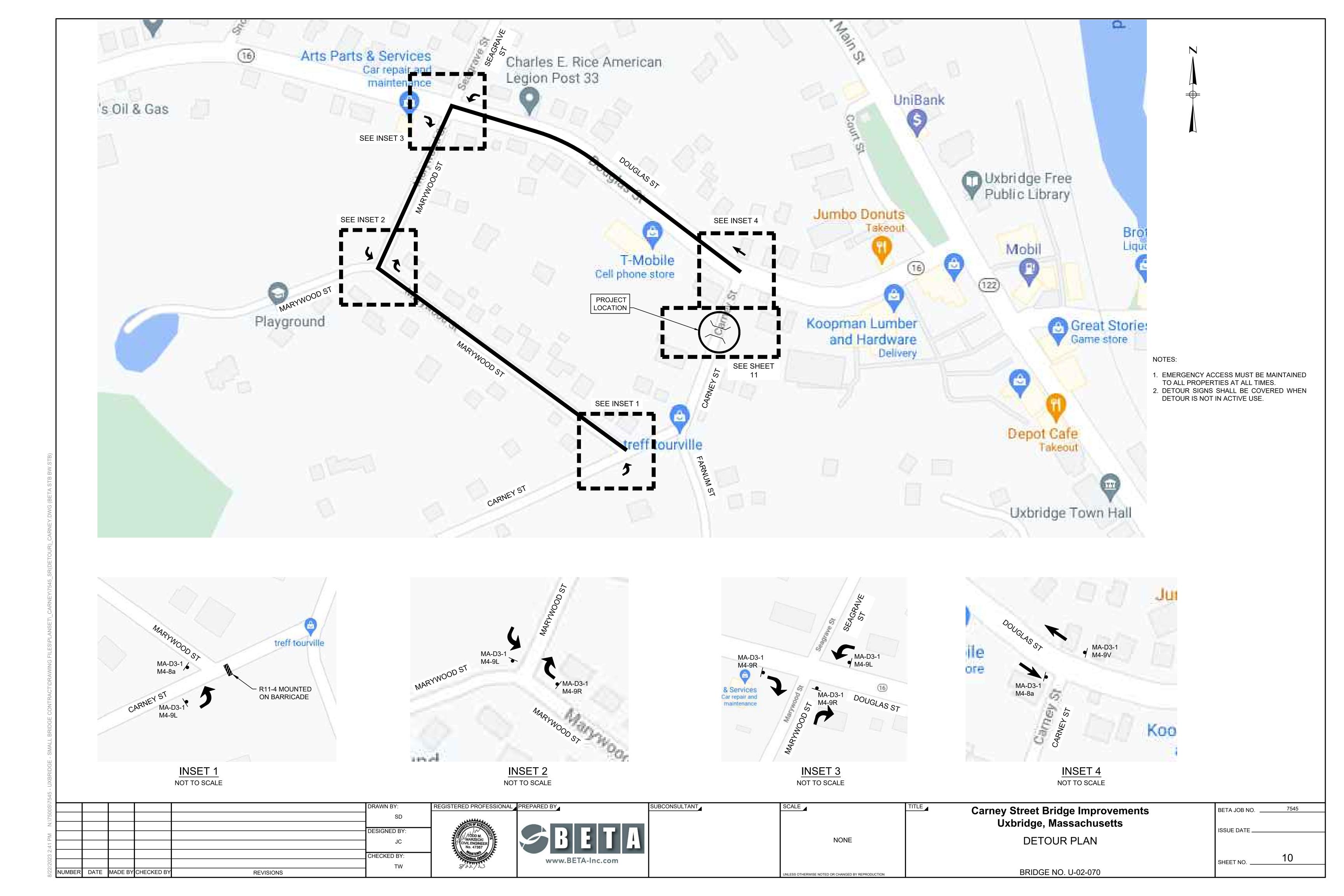
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BRIDGE NO. U-02-070

Sheet 9 of 12 Bridge No. U-02-070 (C4E)

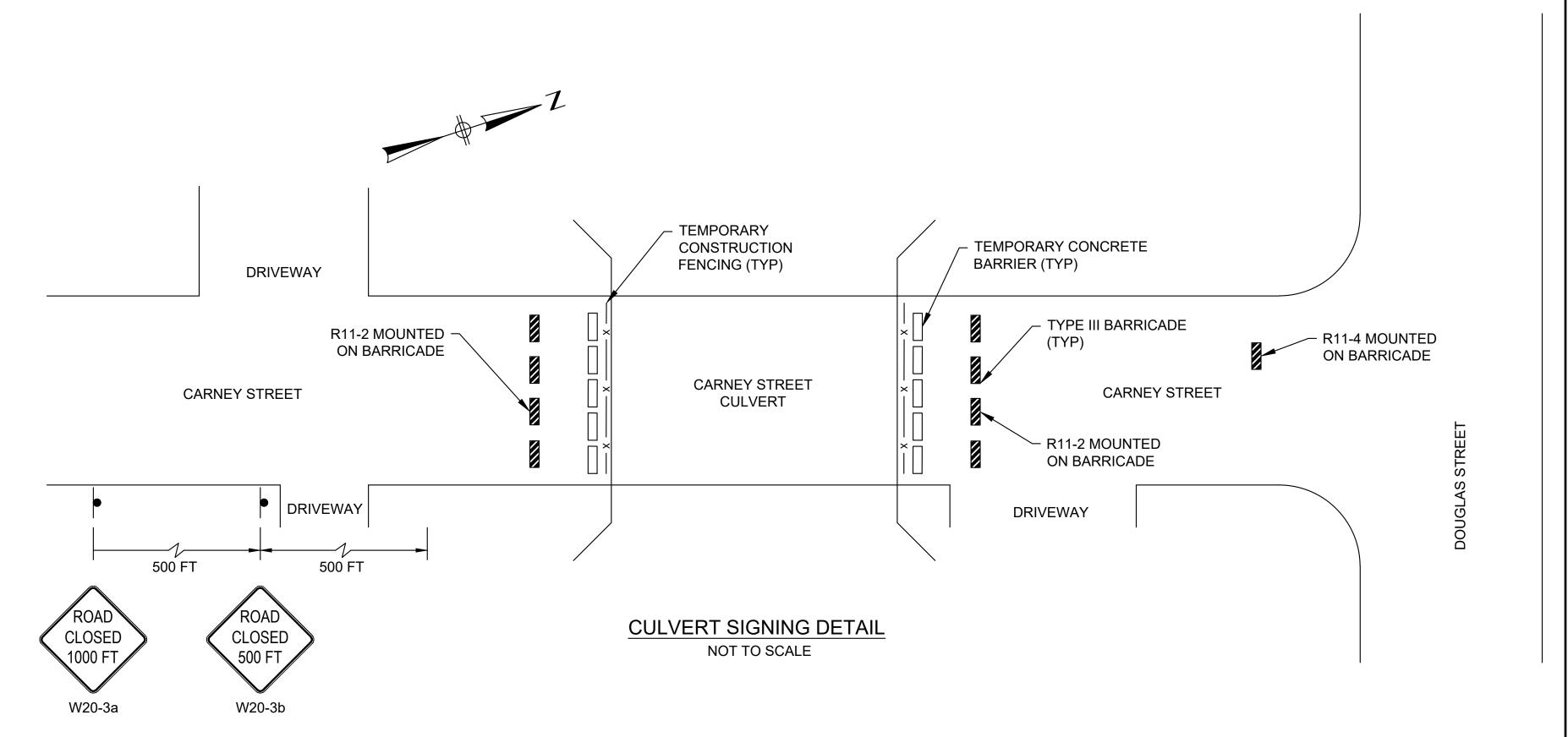


CONSTRUCTION SIGN SUMMARY

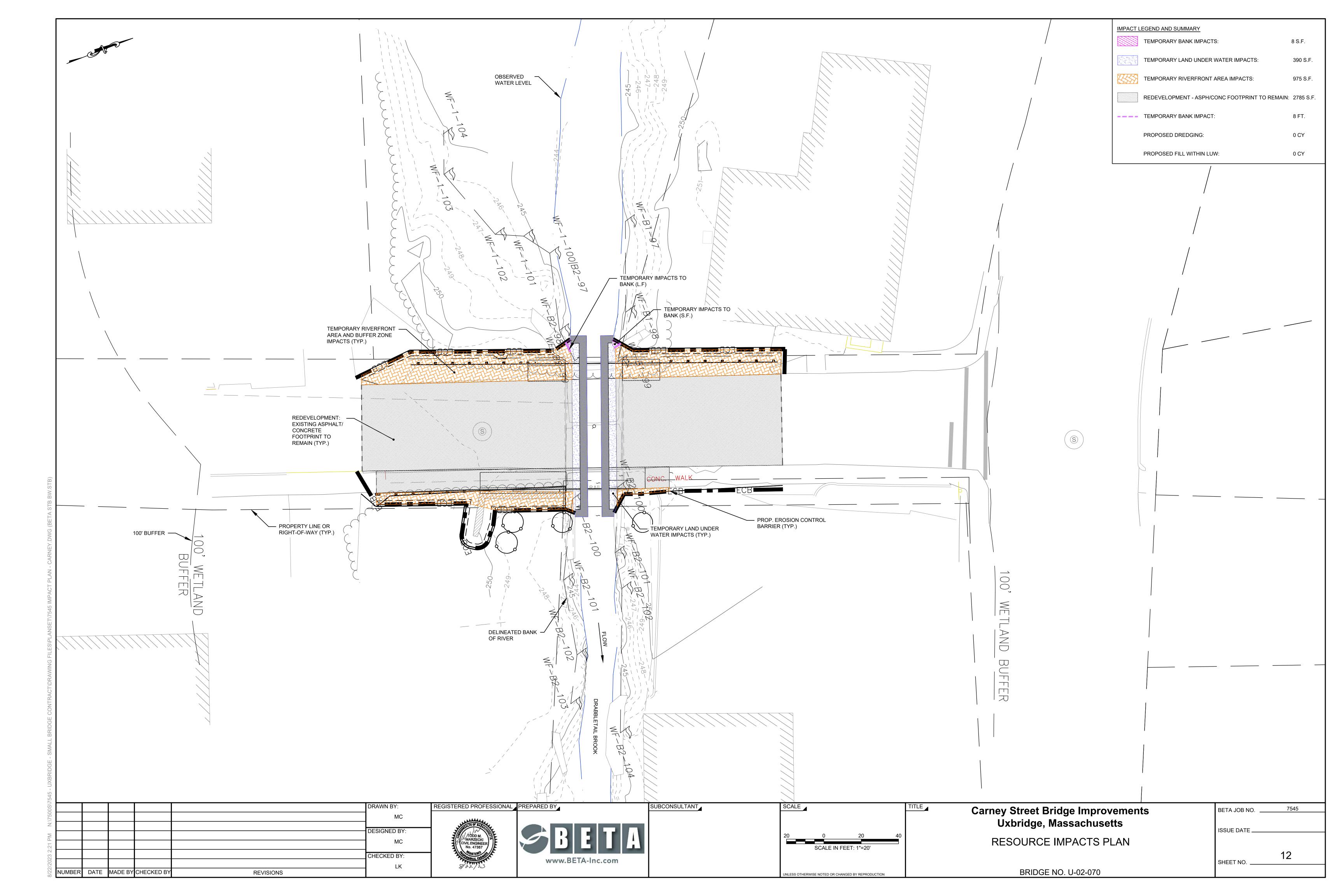
* NO. OF SIGNS ARE ESTIMATED FOR BIDDING PURPOSES ONLY

** ALL CONSTRUCTION SIGNAGE SHALL HAVE FLUORESCENT ORANGE BACKGROUND

IDENTIFI- CATION	SIZE O	F SIGN	TEXT			NUMBER COLOR OF SIGNS			POST SIZE AND	UNIT AREA IN	AREA IN SQUARE						
NUMBER	WIDTH	HEIGHT	TEXT	LETTER HEIGHT	VERTI SPAC			REQUIRED	BACK- GROUND	LEGEND	BORDER	NUMBER REQUIRED	SQUARE FEET	FEET			
R11-2	48 in	30 in	ROAD			\		2	WHITE	BLACK	BLACK	MOUNT ON BARRICADE	10.0	20.0			
R11-4	60 in	30 in	ROAD CLOSED TO THRU TRAFFIC					2	WHITE	BLACK	BLACK	MOUNT ON BARRICADE	12.5	25.0			
W20-3a	36 in	36 in	ROAD CLOSED 1000 FT	9UUC HHS				1	**ORANGE	BLACK	BLACK	P-5 1	9.0	9.0			
W20-3b	36 in	36 in	ROAD CLOSED 500 FT				RDS	KDS	1	**ORANGE	BLACK	BLACK	P-5 1	9.0	9.0		
M4-8a	24 in	18 in	END DETOUR		2009					က	2	**ORANGE	BLACK	BLACK	P-5 2	3.0	6.0
M4-9L	30 in	24 in	DETOUR		SEE	SEE MUTCD S					3	**ORANGE	BLACK	BLACK	MOUNT 1 W/ MA-D3-1 MOUNT 2 W/MA-D3-2	5.0	15.0
M4-9R	30 in	24 in	DETOUR						Ĭ N	3	**ORANGE	BLACK	BLACK	MOUNT 1 W/ MA-D3-1 MOUNT 1 W/MA-D3-2	5.0	15.0	
M4-9V	30 in	24 in	DETOUR					1	**ORANGE	BLACK	BLACK	MOUNT W/ MA-D3-2	5.0	5.0			
MA-D3-1	42 in	12 in	Carney st	6/4D	3.2 3.7			9	**ORANGE	BLACK	BLACK	P-5 9	3.5	31.5			



DRAWN BY:	REGISTERED PROFESSI	PREPARED BY	SUBCONSULTANT	FALE _	Carney Street Bridge Improvements Uxbridge, Massachusetts	BETA JOB NO.	7545
DESIGNED I	Y: // TÖDD M. WARZECKI CIVIL ENGINEER No. 47367	B E T A		NONE	DETOUR PLAN	ISSUE DATE	
CHECKED E	S 22/23	www.BETA-Inc.com	'			SHEET NO	11
NUMBER DATE MADE BY CHECKED BY REVISIONS			UNL	ESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION	BRIDGE NO. U-02-070		



TOWN OF UXBRIDGE, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS ALDRICH STREET BRIDGE PRESERVATION

MAY 2022

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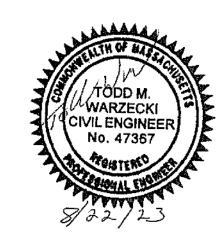
PLAN INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES & LEGEND
3	CONSTRUCTION PLAN AND PRO
4	CONSTRUCTION DETAILS
5	BRIDGE COVER SHEET
6	STRUCTURAL DETAILS
7	CONCRETE REPAIR DETAILS
8	THRIE BEAM DETAILS
9-10	DETOUR PLAN
11	RESOURCE IMPACT PLAN

PREPARED BY:



ISSUE DATE: APRIL 5, 2022



LEGEND

GENERAL SYMBOLS

PROPOSED **EXISTING** CURB OR BERM (TYPE AS NOTED) EDGE OF PAVEMENT CATCH BASIN (OR GUTTER INLET, LEACHING BASIN, □СВ **⊞** CB DROP INLET, CATCH BASIN CURB INLET) ELECTRIC HANDHOLE (NUMBER AS NOTED) OEHHOEHH O EMH ELECTRIC MANHOLE TELEPHONE MANHOLE O TMH WATER MANHOLE O WMH S SMH SEWER MANHOLE DMH DRAINAGE MANHOLE GAS GATE o GG o GG WATER GATE o WG O WG o CS CURB STOP o cs HYD. HYDRANT F FA FIRE ALARM BOX PARKING METER o PM **●√★** STREET LIGHT POLE ÷ LP € NP UTILITY POLE UTILITY POLE w/ LIGHT SIGN O— GUY **⊕**— GUY **GUY POLE** 12" RCP 10'-12" RCP DRAIN PIPE (SIZE AS NOTED) 8" VCP 10'-8" PVC SEWER MAIN (SIZE AS NOTED) 10'-8" PVC — ELECTRIC DUCT ____ 4" HP 10'-4" HP GAS MAIN (SIZE AS NOTED) 8" CI 10'-8" DI WATER MAIN (SIZE AS NOTED) — — — W— — — — 10'-8" PVC — — — — — — — — — TELEPHONE DUCT (SIZE AS NOTED) — — — OHW— — — OVERHEAD WIRE MAIL BOX \square MB WOOD GUARD RAIL STEEL BEAM GUARD, o o o o o o · WOOD OR STEEL POSTS (TYPE AS NOTED) STEEL GUARD RAIL, STEEL POSTS (TYPE NOTED) STONE WALL RETAINING WALL (TYPE NOTED) BND HIGHWAY/PROPERTY BOUND (TYPE AS NOTED) SHLO (Date of Layout) STATE HIGHWAY LAYOUT LINE (SHLO) ———— — CITY, TOWN OR COUNTY LAYOUT LINE (R.O.W.) CITY, TOWN, COUNTY OR STATE BOUNDARY LINE EASEMENT LINE (TYPE NOTED) 2+00 — CONSTRUCTION BASELINE SURVEY LINE RAILROAD OR STREET RAILWAY TRACKS WITH SIDELINES WHEELCHAIR RAMP TREE (SIZE AND TYPE AS NOTED) ● 24" PINE _____ HEDGE/SHRUBS — X — X — X — FENCE (SIZE AND TYPE AS NOTED) EDGE OF WETLAND W/ FLAGGED NUMBER EDGE OF RIVER/STREAM LINE 100-FT. WETLAND BUFFER LIMIT 100-FT. RIVER FRONT LIMIT 200-FT. RIVER FRONT LIMIT WOODED AREA / LIMIT OF CLEARING SPOT GRADE × 00.0 SAW CUT LINE

BORING

EROSION CONTROL BARRIER/COMPOST FILTER TUBES

ABBREVIATIONS

GENERAL

ABANDON

ALTERATION

APPROXIMATE

BITUMINOUS BERM

BITUMINOUS CURB

BOTTOM OF SLOPE

BOTTOM OF WALL

CONCRETE CURB

CHAIN LINK FENCE

CONSTRUCTION

EDGE OF PAVEMENT

CONTINUOUS

DRIVEWAY

ELEVATION

EASEMENT

EXISTING

GRANITE

FOUNDATION

GRANITE CURB

HORIZONTAL IRON PIPE

JUNCTION

LOW POINT

ON CENTER

PERMANENT

PROPOSED

PAVEMENT

REMOVE

REMODEL

RETAIN

RAILROAD

SIDEWALK

SHOULDER

TEMPORARY

TOP OF SLOPE

TOP OF WALL

STATION

TYPICAL

VARIABLE

VERTICAL

VERTICAL GRANITE CURB

WHEELCHAIR RAMP

SHEET

POINT OF CURVATURE

POINT OF INTERSECTION

POINT OF TANGENCY

PROFILE GRADE LINE

RADIUS OF CURVATURE

REMOVE AND DISCARD

REMOVE AND RESET REMOVE AND STACK

MASSACHUSETTS HIGHWAY BOUND

POINT OF COMPOUND CURVATURE

POINT OF REVERSE CURVATURE

POINT OF VERTICAL CURVATURE
POINT OF VERTICAL INTERSECTION

POINT OF VERTICAL TANGENCY

POINT OF VERTICAL CURVATURE

SOUTH BOUND OR STONE BOUND

MAIL BOX

BACK OF SIDEWALK

BASELINE

BOUND

BUILDING

CEMENT

CONCRETE

BY OTHERS

ADJUST

ABAN

ADJ

ALT

APPROX

BD OR BND

BLDG

ВО

BOS

BOW

BSW

CC

CEM

CLF

CONC

CONST

CONT

DWY

EP, EOP

ESMT

EXIST

FDN

GRAN

GC

HOR

PVT

PERM

PROP

PVMT

REM

REMOD

RET

STA

VAR

VERT

VGC

WCR

	TRAFFIC SIGNAL SYSTEMS
R	STEADY CIRCULAR RED
Υ	STEADY CIRCULAR AMBER
G	STEADY CIRCULAR GREEN
FR	FLASHING CIRCULAR RED
FY	FLASHING CIRCULAR AMBER
←FY	FLASHING YELLOW LEFT ARROW
$R \rightarrow$	STEADY RED RIGHT ARROW
$Y \rightarrow$	STEADY AMBER RIGHT ARROW
$G_{\!\to}$	STEADY GREEN RIGHT ARROW
←R	STEADY RED LEFT ARROW
←Y	STEADY AMBER LEFT ARROW
←G	STEADY GREEN LEFT ARROW
W	STEADY WALK (PERSON WALKING) - LUNAR WHITE
DW	STEADY DON'T WALK (HAND) - PORTLAND ORANGE
FDW	FLASHING DON'T WALK (FLASHING HAND) - PORTLAND ORANGE
	UTILITIES
СВ	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CI	CURB INLET
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
С	CONDUIT
CPP	CORRUGATED PLASTIC PIPE
CSP	CORRUGATED STEEL PIPE
DI	DUCTILE IRON PIPE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FM	FORCE MAIN
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GG	GAS GATE
HYD	HYDRANT
INV	INVERT ELEVATION
LP	LIGHT POLE
MH	MANHOLE
PVC	POLY-VINYL-CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE (CLASS III UNLESS NOTED)
SD	SUBDRAIN
SMH	SEWER MANHOLE
TS	TRAFFIC SIGNAL
UP	UTILITY POLE
UPL	UTILITY POLE w/ LIGHT
UPT	UTILITY POLE w/ TRANSFORMER
VCP	VITRIFIED CLAY PIPE
WG	WATER METER MATER MAIN
WM	WATER METER/WATER MAIN

TRAFFIC SIGNAL SYMBOLS

EXISTING	<u>PROPOSE</u>	<u>D</u>
	\blacksquare	CONTROL CABINET GROUND MOUNTED WITH FOUNDATION
	Å	CONTROL CABINET POLE MOUNTED
	Ø2	CONTROLLER PHASE
	MA-1	MAST ARM, SHAFT & BASE (ARM LENGTH AS NOTED)
\longrightarrow	-	VEHICULAR SIGNAL HEAD (ALPHA-NUMERIC DESIGNATION AS NOTED)
$\longrightarrow \triangleright$	→→	VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
	→>	VEHICULAR SIGNAL HEAD (REMOVED & RESET)
	→	FLASHING BEACON
	— —	PEDESTRIAN SIGNAL HEAD
	→	PEDESTRIAN SIGNAL HEAD, OPTICALLY PROGRAMMED
□НН	×	PULL BOX 12"x12" OR HANDHOLE
		LOOP DETECTOR
\oplus	<u>•</u>	PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	- 	PRE-EMPTION DETECTOR
	- €	PRE-EMPTION CONFIRMATION STROBE
	====================================	SIGNAL CONDUIT (SINGLE RUN)
	=========	SIGNAL CONDUIT (DOUBLE RUN)
	•	SIGNAL POST & BASE
) <u>M</u> (M	MAGNETIC DETECTOR
	+	SCHOOL ZONE SPEED LIMIT SIGN
	→■))	MICROWAVE OR ULTRASONIC DETECTOR
	-	VIDEO DETECTION CAMERA
	***************************************	VIDEO DETECTION ZONE

PAVEMENT MARKINGS AND SIGNING SYMBOLS

PROPOSED

CROSSWALK, 2 - 12" WHITE LINES (8" WIDTH) STOP LINE - 12" WHITE LINE 4' BEHIND CW (TYP.) SOLID WHITE EDGE LINE - 4" SOLID WHITE CHANNELIZING LINES - 12" (SPACING NOTED) SOLID WHITE GORE LINE 12" @ 33°, (SPACING NOTED) SOLID WHITE LANE LINE - 4" SOLID WHITE PARKING LINE - 4" BROKEN WHITE LANE LINE - 4" DOTTED WHITE LANE EXTENSION LINE - 4" (2' LINE & 6' GAP) DOTTED YELLOW LANE EXTENSION LINE - 4" (2' LINE & 6' GAP) BROKEN YELLOW CENTERLINE - 4" DOUBLE YELLOW CENTERLINE - 2 - 4" LINES SOLID YELLOW EDGE LINE - 4" SOLID YELLOW GORE LINE 12" @ 33°, (SPACING NOTED) SOLID YELLOW LANE LINE - 4" SOLID YELLOW CYCLE TRACK EDGE LINE - 4" DOTTED YELLOW CYCLE TRACK CENTERLINE - 4" (3' LINE & 9' GAP) SCHOOL ZONE - WHITE HANDICAP SYMBOL - WHITE PAVEMENT ARROW - WHITE LEGEND "ONLY" - WHITE

7.04							
0						DRAWN BY:	REG
06/						SD	
Ż						DESIGNED BY:	\mathbf{I}
ī						BB	
7:7							
723,						CHECKED BY:	1
7/7						TW	
Z/Z	NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS		





SUBCONSULTANT

NONE

INLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

Aldrich Street Bridge Improvements Uxbridge, Massachusetts

BRIDGE NO. U-02-038

LEGEND AND ABBREVIATIONS

HIGHWAY GUARD DETAILS

TRAILING ANCHORAGE STA -0+05 TO 0+04.5 LT GUARDRAIL - TL-3 (SINGLE FACED) 0+04.5 TO 0+62 LT TRANSITION TO THRIE BEAM STA 0+62 TO 0+68 LT BRIDGE THRIE BEAM GUARDRAIL 0+68 TO 1+07 LT TRANSITION TO THRIE BEAM STA 1+07 TO 1+13 LT GUARDRAIL - TL-3 (SINGLE FACED) 1+13 TO 2+00.5 LT TRAILING ANCHORAGE STA 2+00.5 TO 2+10 LT

TRAILING ANCHORAGE STA 0+01 TO 0+10.5 RT GUARDRAIL - TL-3 (SINGLE FACED) 0+10.5 TO 0+73 RT TRANSITION TO THRIE BEAM STA 0+73 TO 0+79 RT BRIDGE THRIE BEAM GUARDRAIL STA 0+79 TO 0+96 RT TRANSITION TO THRIE BEAM STA 0+96 TO 1+02 RT GUARDRAIL - TL-3 (SINGLE FACED) 1+02 TO 1+60.5 RT TRAILING ANCHORAGE STA 1+60.5 TO 1+70 RT

BL2

0+92.61

FULL DEPTH PAVEMENT

PAVEMENT NOTES

SURFACE COURSE: 1-3/4" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

INTERMEDIATE 1-3/4" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER COURSE: ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

BASE COURSE: 3-1/2" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER

4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER SUB-BASE: 8" GRAVEL BORROW TYPE b (M1.03.01)

PROJECT TACK COAT NOTES

TACK COAT: ASPHALT EMULSION FOR TACK COAT, GRADE RS-1

SHALL BE PLACED AT A RATE OF:

0.07 GALLONS PER SQUARE YARD OVER MILLED SURFACES 0.07 GALLONS PER SQUARE YARD OVER CEMENT CONCRETE BASE COURSE

N55°21'10"E

137.39'

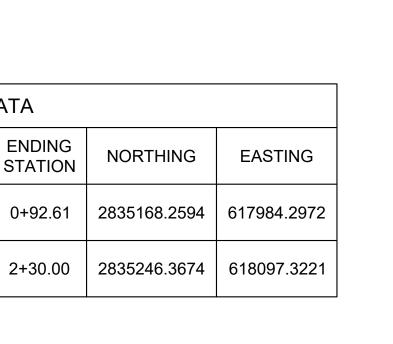
0.05 GALLONS PER SQUARE YARD OVER SMOOTH TIGHT

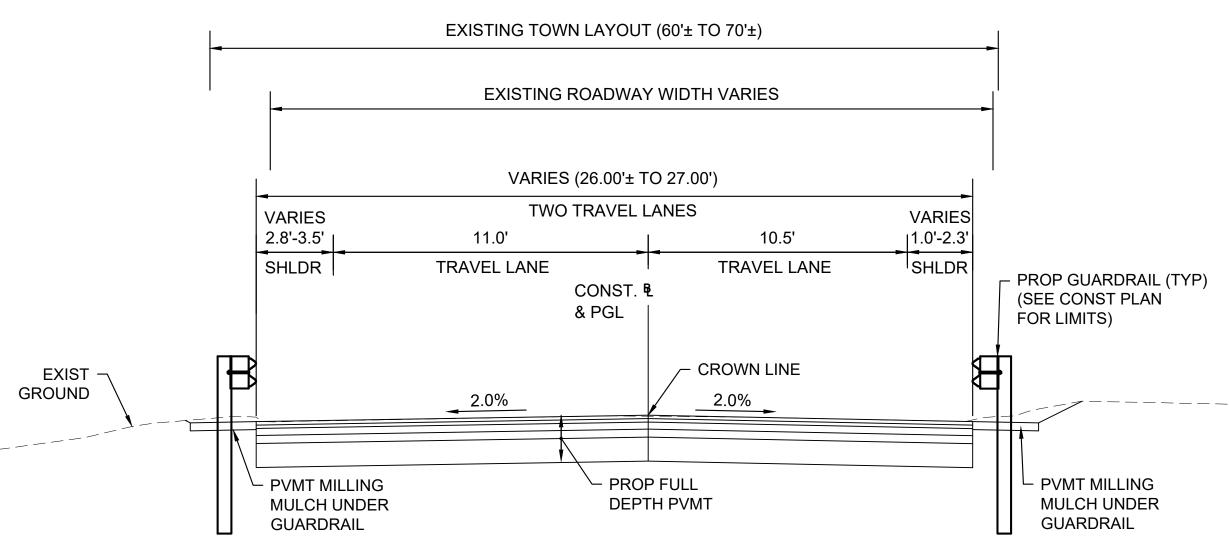
PAVEMENTS

PRIOR TO PAVING AN OVERLAY

ALDRICH STREET CL CONSTRUCTION BASELINE DATA										
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING		
BC1	0+35.01	2835136.8950	617935.9948	R=1000.00' Δ=3°18'01"		0+92.61	2835168.2594	617984.2972		

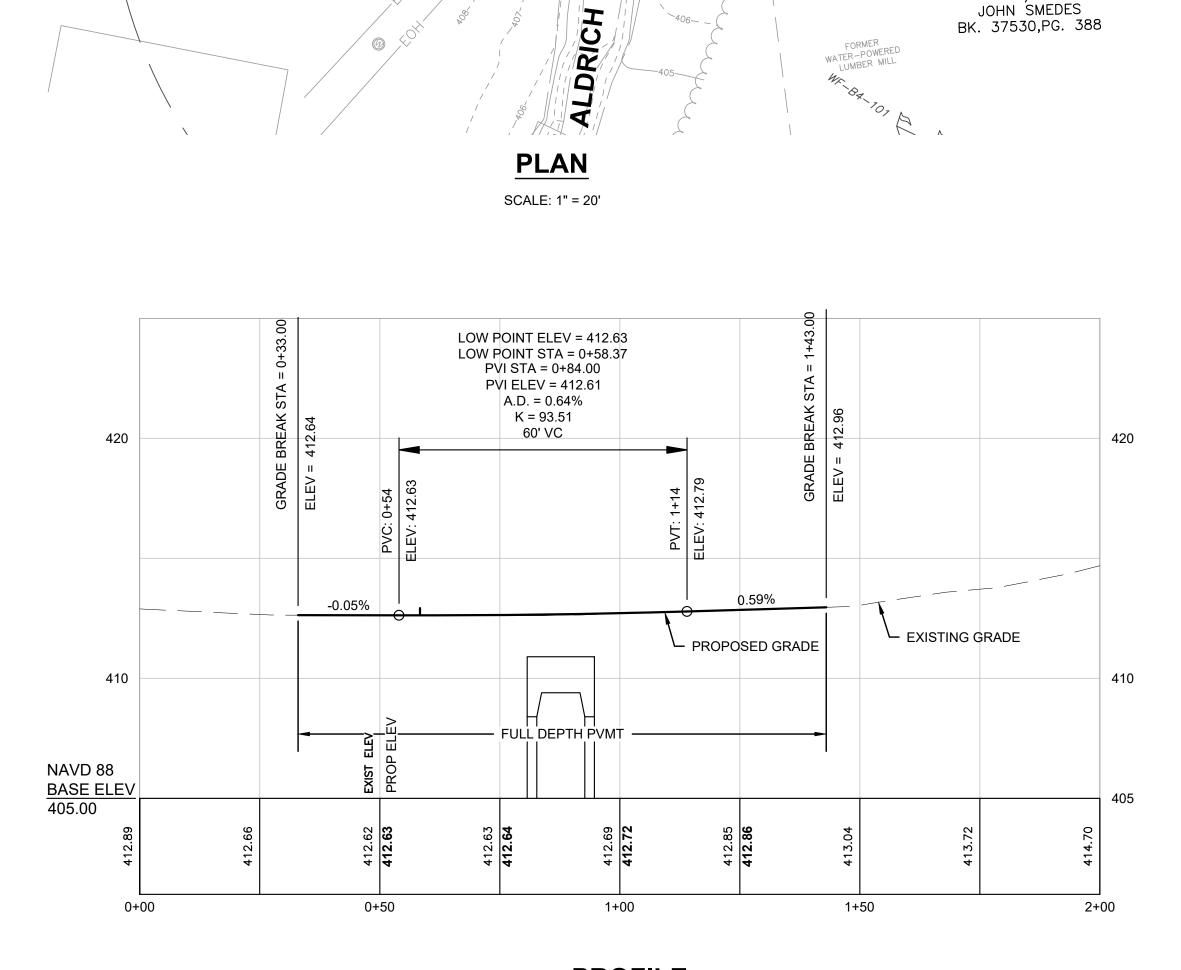
L=57.60' T=28.81'





2835168.2594 | 617984.2972

TYPICAL SECTION ALDRICH STREET STA 0+33± TO STA 1+43± NOT TO SCALE



BRO

PROP GUARDRAIL -

408.5±

----STA: 0+92.61

OFF: 14.87' Ĺ

FOP

─STA: 0+92.61

ें _OFF: 11.41' R

1+00

PT 0+92.6

POND

REMOVE EXIST. JERSEY (7/27/21)

ALDRICH

BARRIER & DELIVER TO

UXBRIDGE DPW

PROP SEDIMENT

IPC 0+35.0

CONTROL BARRIER

PROP MODIFIED

ROCKFILL

PARC. ID: 049.0-0442-0000.0

(355 ALDRICH ST.)

N/F

LUIS PEREIRA

BK. 60515,PG. 307

2+30

ALIGNMENT END

N2835246.3674

E618097.3221

STA 2+30

PROP SEDIMENT

CONTROL BARRIER

- PROP TREE

(TYP)

STA: 1+42.92

OFF: 14.37' L

PROP FULL

DEPTH CONST

APPROX LIMIT OF

GRADING (TYP)

GUARDRAIL -

RET WALL

PROTECTION

STA 1+43.0

SEED

ALDRICH STREET

PROP LOAM AND

- PROP SEDIMENT

CONTROL BARRIER

PARC. ID: 049.0-1212-0000.0

(364 ALDRICH ST.) N/F

JOHN SMEDES BK. 37530,PG. 388

STA: 1+42.63

OFF: 11.69' R

(ROUTE 98)

MATCH EXIST

- PROP LOAM AND I

PROP CLEARING

AND GRUBBING

END OF PROJECT

PROFILE SCALE: VERT: 1" = 4'

HORIZ: 1" = 20'

08\754	DRAWN BY:	REGISTERED PROFESSIONAL PREPARED BY	SUBCONSULTANT	Aldrich Street Bridge Improvements	BETA JOB NO.	7545
N:\750	SD SD	THE CONTROL OF THE CO		Uxbridge, Massachusetts		
M L	DESIGNED BY:	TODD M. WARZECKI CIVIL ENGINEER	AS SHOWN	CONSTRUCTION PLAN AND PROFILE	ISSUE DATE	
)23 2:2	CHECKED BY:	Www.BETA-Inc.co	rom.		CHEET NO	3
8/22/20	UMBER DATE MADE BY CHECKED BY REVISIONS	8/22/23	UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION	BRIDGE NO. U-02-038	SHEET NO	

PARC. ID: 049.0-0395-0000.0

(371 ALDRICH ST.)

N/F

GEORGE HENDERSON

BK. 61790,PG. 338

ELEVATIONS SHOWN

ARE IN NAVD 1988

AG-NAIL IN UP #54

413.54

PROP CLEARING

ALIGNMENT BEGIN

STA -0+10 N2835113.4790

BEGINNING OF

PROJECT STA 0+33.0

MATCH EXIST

E617897.5531

AND'GRUBBING -

PROP LOAM AND

SEED 🦳

CONST F

-0+10 0+00 STA: 0+34.67

OFF: 13.79' L

STA: 0+35.33

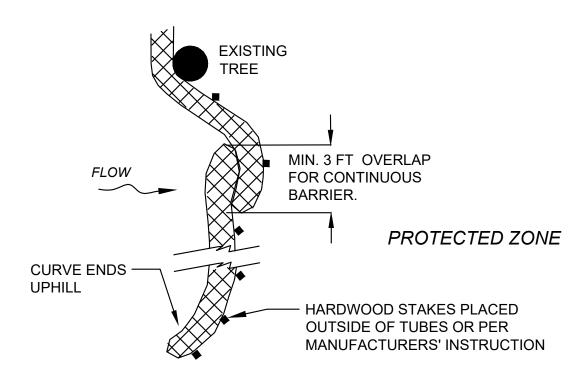
PROP SEDIMENT

PROP GUARDRAIL

CONTROL BARRIER -

__GUARDRAIL

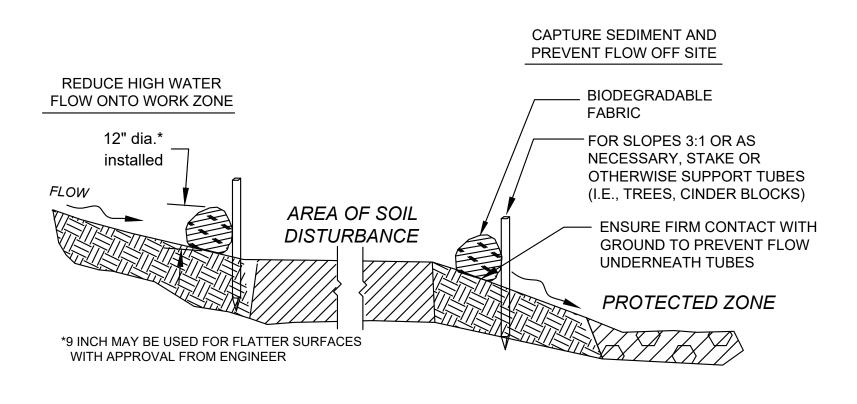
OFF: 12.73' R



PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

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

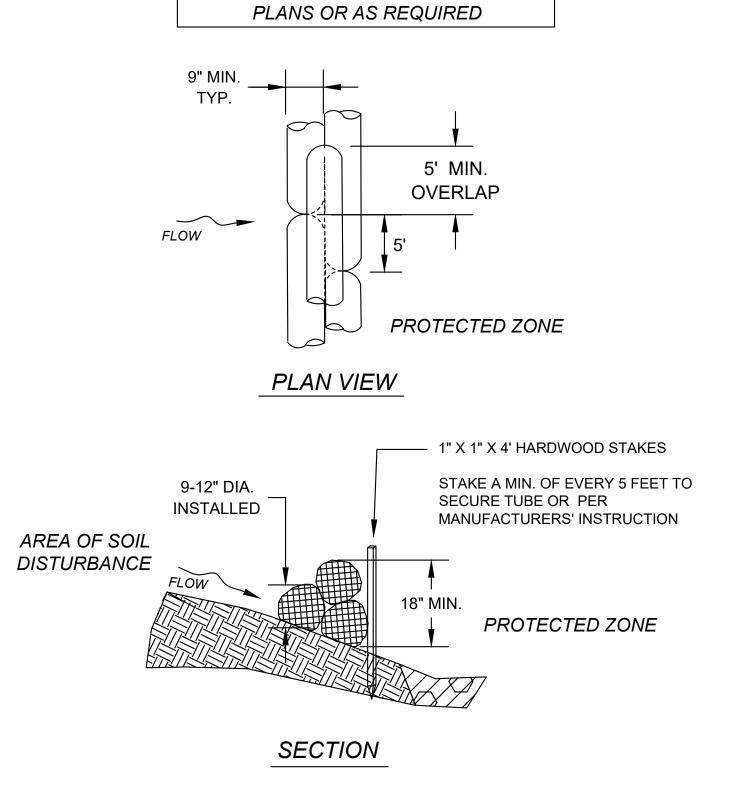
PLAN VIEW



SEDIMENT BARRIER - COMPOST FILTER TUBE

SECTION

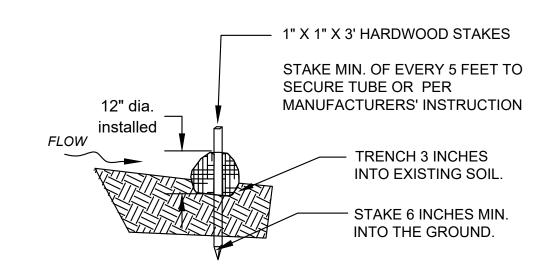
NOT TO SCALE



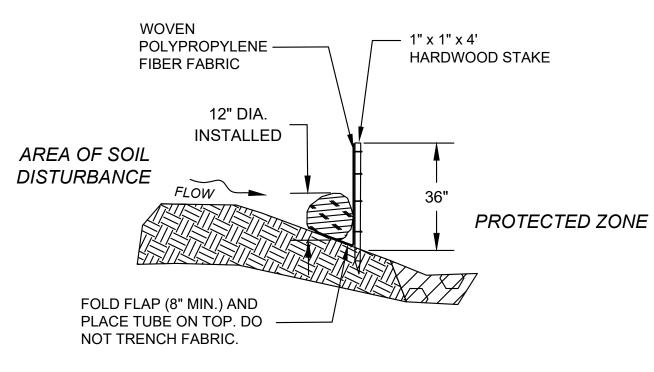
WHERE SPECIFIED ON CONSTRUCTION

COMPOST FILTER TUBES STACKED NOT TO SCALE

FOR USE ONLY ON SLOPES UP TO 5% AND WITH APPROVAL OF THE ENGINEER. NOT TO BE USED FOR WETLAND MITIGATION.



SECTION 12 INCH STRAW WATTLE NOT TO SCALE



SECTION

COMPOST FILTER TUBE & SILT FENCE

NOT TO SCALE

5008\75						DRAWN BY:	REGISTERED PROFESSION
						SD	, 5 5 4 4 6 d .
Ž						DESIGNED BY:	JAN STREET
P						ВВ	TODD M. WARZECKI
2:21							No. 47367
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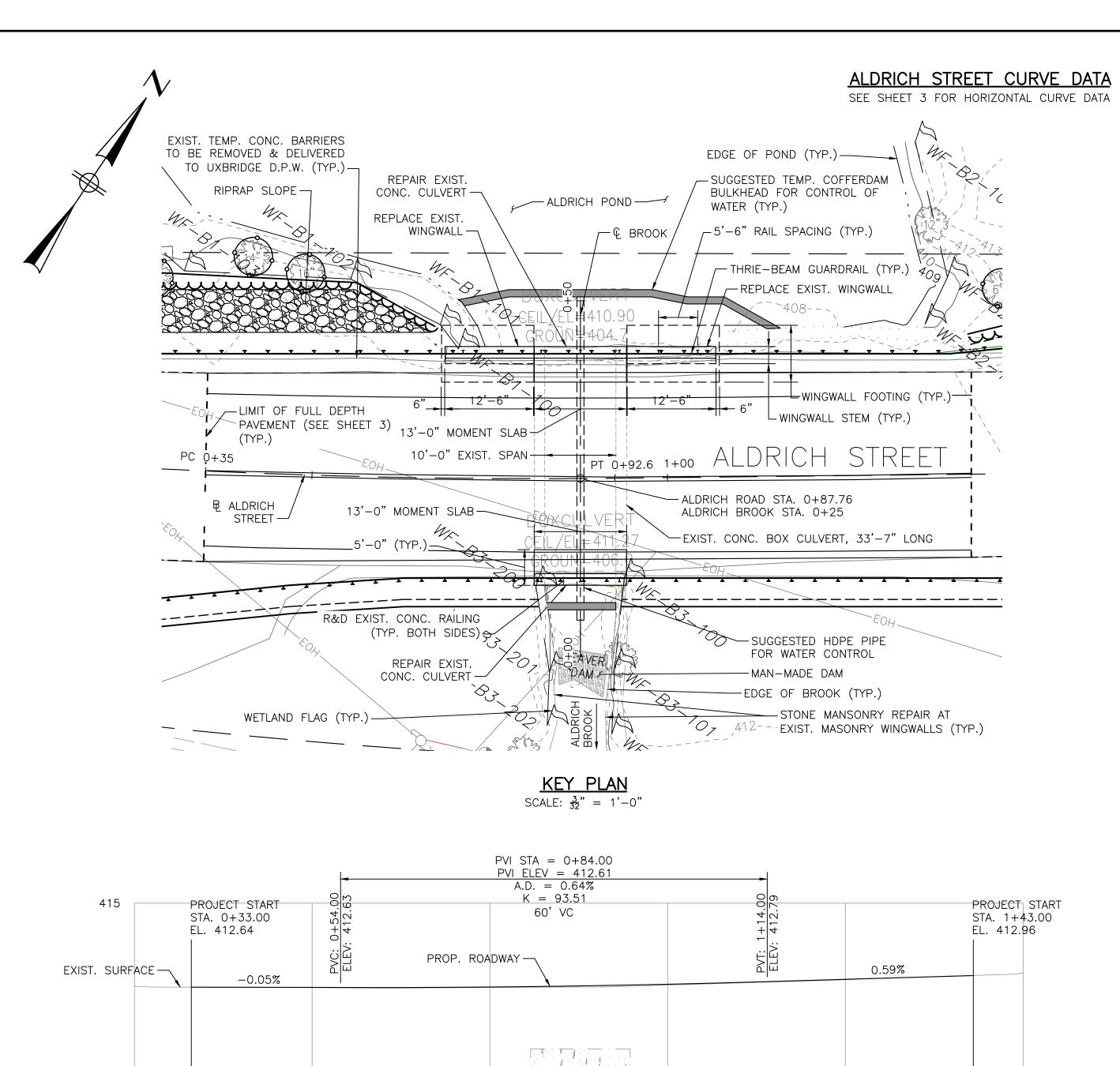
SCALE NONE

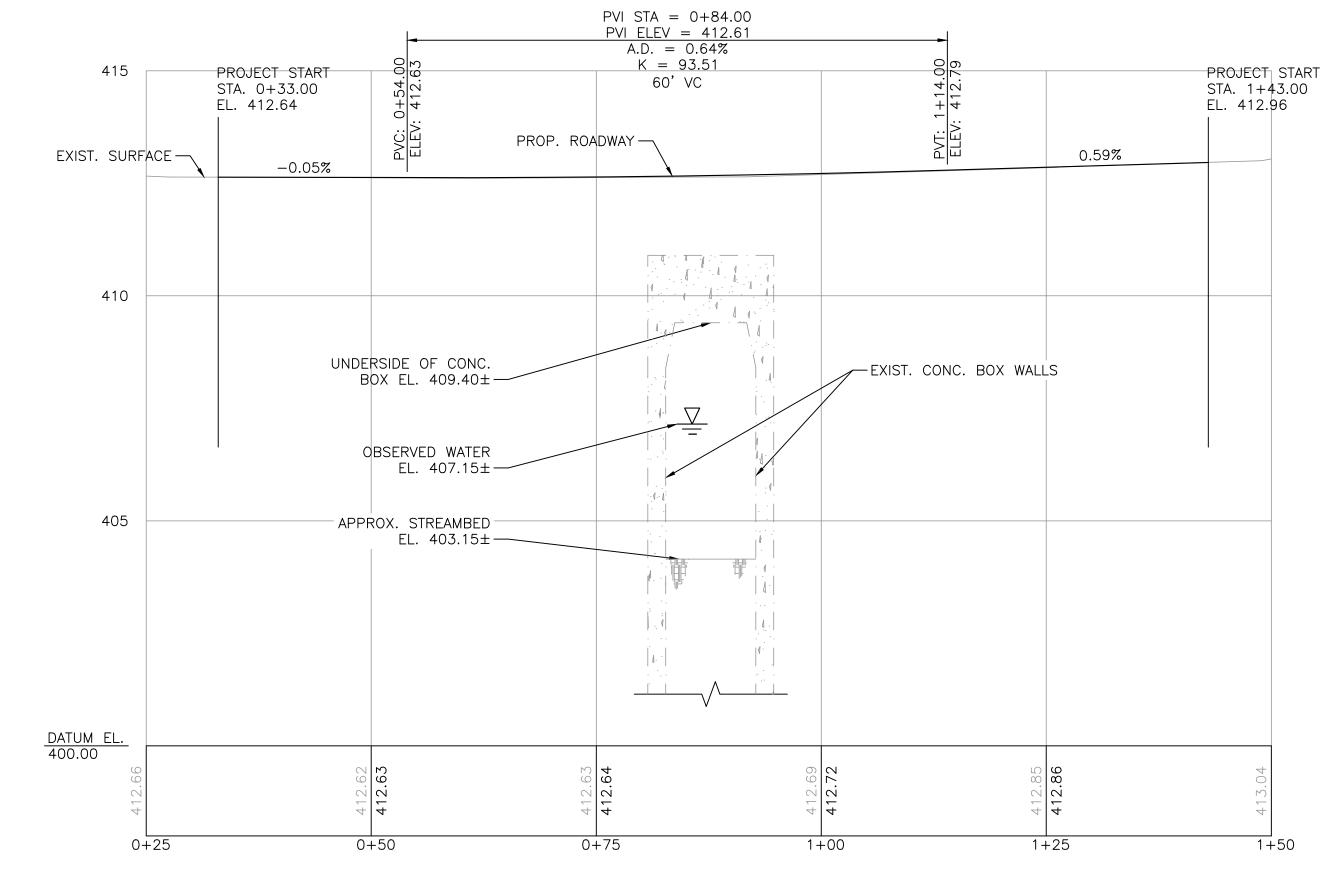
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Aldrich Street Bridge Improvements Uxbridge, Massachusetts CONSTRUCTION DETAILS

BRIDGE NO. U-02-038

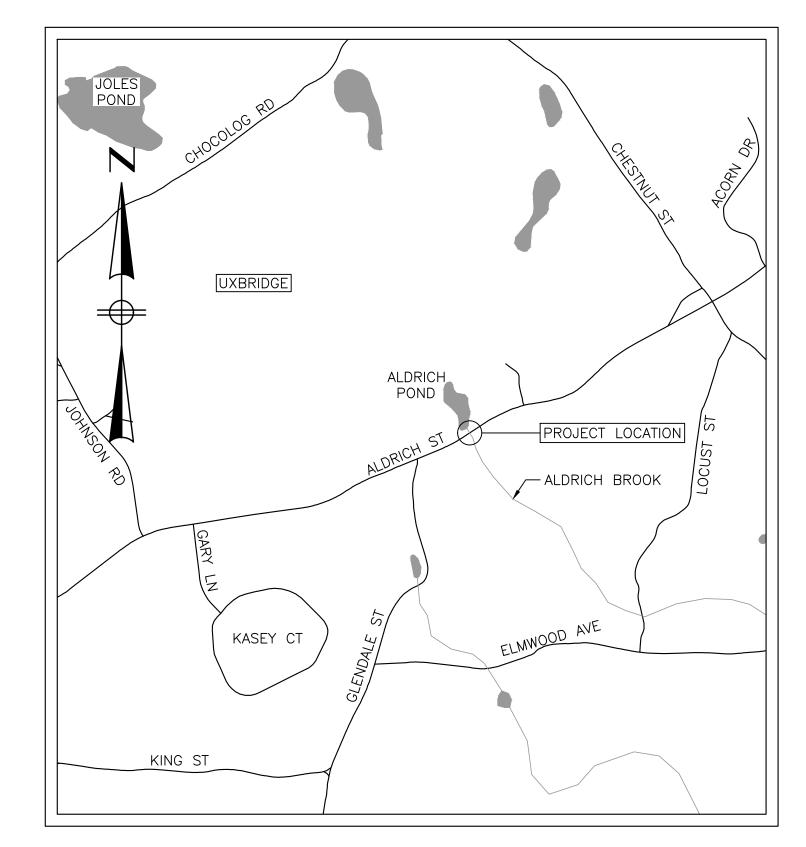
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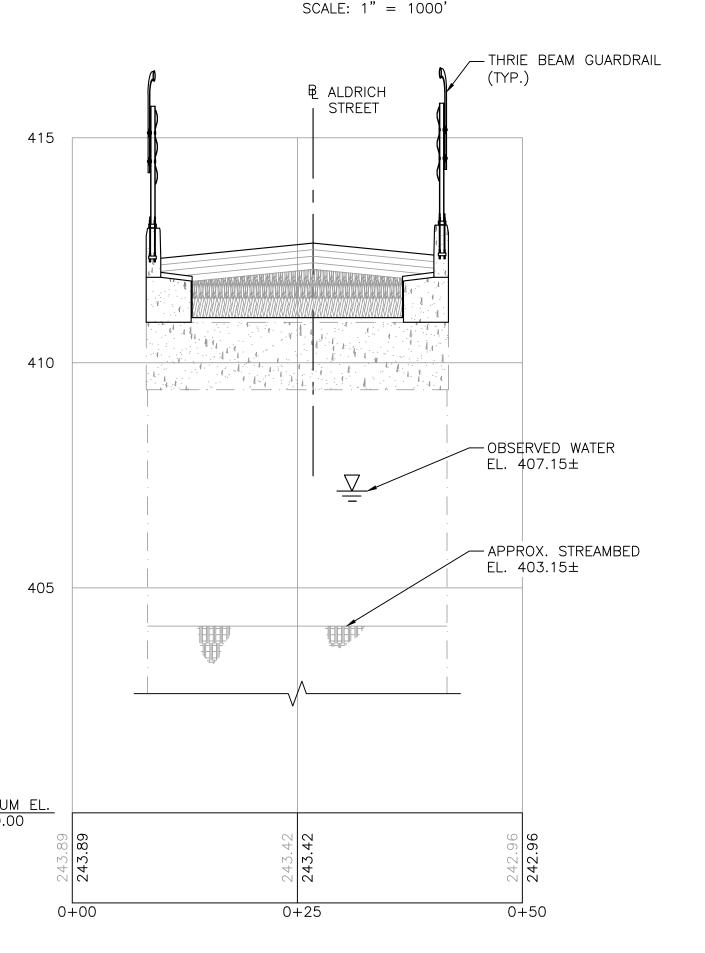


ALDRICH STREET PROFILE

HORIZONTAL SCALE: $\frac{3}{32}$ " = 1'-0" VERTICAL SCALE: $\frac{15}{32}$ " = 1'-0"



<u>LOCUS</u>



ALDRICH BROOK PROFILE HORIZONTAL SCALE: $\frac{3}{32}$ " = 1'-0" VERTICAL SCALE: $\frac{15}{32}$ " = 1'-0"

GENERAL NOTES PROJECT FILE NO .: NA PROJECT DESCRIPTION: PROPOSED BRIDGE PRESERVATION BRIDGE DESIGN LOADING: HL-93 SURVEY: GOLDSMITH, PREST & RINGWALL, INC.

BENCHMARK: MAG-NAIL LOCATION: UP #54 2835131.87 NORTHING: 617892.66 EASTING: 413.54' ELEVATION:

ELEVATION REFERENCE: NAVD OF 1988

HYDRAULIC DESIGN DATA

<u>UNK</u>FEET, NAVD

DRAINAGE AREA: 0.67 SQUARE MILES DESIGN FLOOD DISCHARGE: UNK CUBIC FEET PER SECOND DESIGN FLOOD FREQUENCY:_ UNK YEARS DESIGN FLOOD VELOCITY: <u>UNK</u>FEET PER SECOND DESIGN FLOOD ELEVATION: UNK FEET, NAVD BASE (100-YEAR) FLOOD DATA BASE FLOOD DISCHARGE: <u>UNK</u> CUBIC FEET PER SECOND

DESIGN AND CHECK SCOUR DATA DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY: 25 YEARS CHECK SCOUR FLOOD EVENT RETURN FREQUENCY: 50 YEARS FLOOD OF RECORD

DISCHARGE: <u>UNKNOWN</u> CUBIC FEET PER SECOND FREQUENCY (IF KNOWN): UNKNOWN YEARS MAXIMUM ELEVATION: <u>UNKNOWN</u> FEET, NAVD

UNKNOWN MONTH, YEAR

EVIDENCE OF SCOUR AND EROSION: UNKNOWN

HISTORY OF ICE FLOES: UNKNOWN

BASE FLOOD ELEVATION:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING, COORDINATING, AND VERIFYING ALL DIMENSIONS.

THE CONTRACTOR SHALL COORDINATE ALL EXISTING UTILITY LOCATIONS.

ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGES-2022 EDITION.

THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER WHEN, IN THE COURSE OF CONSTRUCTION, CONDITIONS ARE UNCOVERED WHICH ARE UNANTICIPATED OR OTHERWISE APPEAR TO PRESENT A DANGEROUS CONDITION.

FOR DIMENSIONS AND DETAILS NOT SHOWN, REFER TO HIGHWAY DRAWINGS.

NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

FOUNDATIONS:

FOOTING SHALL BE FOUNDED ON ONE FOOT OF COMPACTED GRAVEL BORROW. THE ELEVATION OF FOOTING SHALL BE SUCH THAT IT DOES NOT FALL WITHIN A ONE VERTICAL TO TWO HORIZONTAL SLOPE FROM THE BASE OF ANY ADJACENT FOOTING OR UTILITY.

NO BACKFILL SHALL BE PLACED AGAINST WALL OR MOMENT SLAB UNTIL THE CONCRETE HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE TEMPORARY SUPPORT AND DEWATERING AS NECESSARY DURING EXCAVATION TO MAINTAIN THE INTEGRITY OF EXISTING STRUCTURES, ACTIVE UTILITIES, AND STREETS.

REINFORCEMENT:

ALL REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60.

CONCRETE:

UNLESS NOTED OTHERWISE, CONCRETE SHALL BE AS FOLLOWS:

5000 PSI - 3/4" - 685 LB/CY HP MOMENT SLAB & COPING: WALL STEM & FOOTING: 4000 PSI - 1½" - 565 LB/CY HP REPAIR CONCRETE: 4000 PSI - 3/8" - 660 LB/CY CEMENT

> COMMONWEALTH OF MASSACHUSETTS MassDOT, Highway Division APPROVED UNDER PROVISIONS OF MASS. GEN. LAWS CH 85 S 35

DISTRICT 3 BRIDGE ENGINEER

DATE

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					DRAWN BY:	REGISTERED PROFESSIONAL	PREPARED BY
					BN	, babaaa	
					DESIGNED BY:	A SECULIA OF MILES	
					TW	TÖDD M. WARZECKI	
						No. 47367	
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NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS		,	

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SUBCONSULTANT

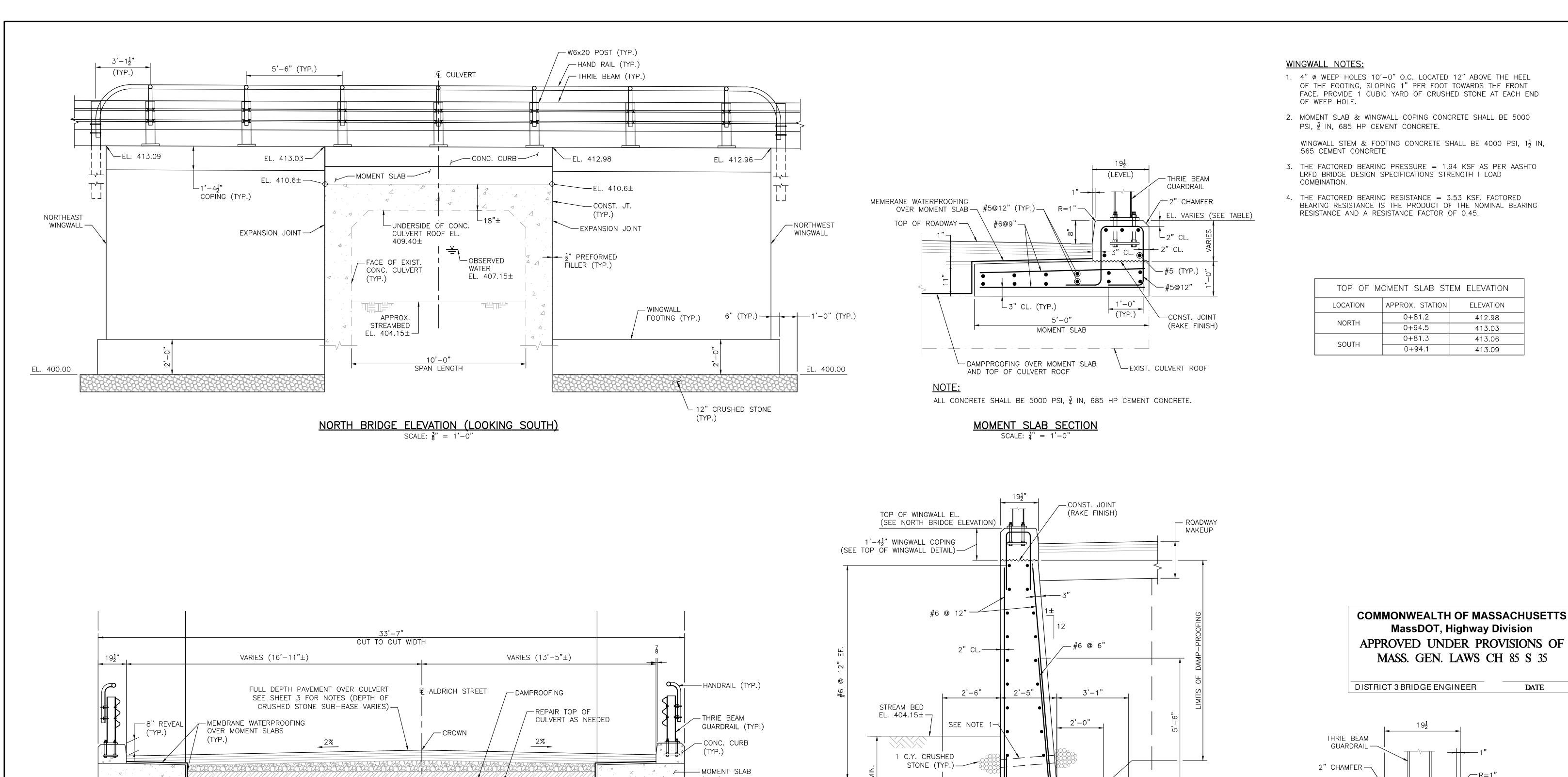
SCALE **AS SHOWN**

Aldrich Street Bridge Improvements Uxbridge, Massachusetts BRIDGE COVER SHEET

7545 BETA JOB NO. ISSUE DATE _

Sheet 5 of 11 Bridge No. U-02-038 (6X9)

ILESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION



MASS. GEN. LAWS CH 85 S 35 DISTRICT 3 BRIDGE ENGINEER EL. 400.00 LIMITS OF BACKFILLING STRUCTURES CONST. JOINT AND PIPES (RAKE FINISH) * CONSTRUCTION JOINT WITH 12"x2" KEY

TOP OF WINGWALL DETAIL

TRANSVERSE BRIDGE SECTION

SCALE: \(\frac{3}{8}\)" = 1'-0" DRAWN BY: DESIGNED BY TW CHECKED BY: TW DATE MADE BY CHECKED BY **REVISIONS**

OBSERVED WATER EL. 407.15±

- UNDERSIDE OF EXIST. CONC. ROOF EL. 409.40±

APPROX. STREAMBED EL. 404.15±

REGISTERED PROFESSIONAL PREPARED BY

-EXIST. CONC.

BOX CULVERT-

www.BETA-Inc.com

2" OVERHANG

SUBCONSULTANT

SCALE **AS SHOWN**

NLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

└3" CL. (TYP.)

─#6 @ 12"

#5 @ 12" T&B

8'-0"

TYPICAL WINGWALL SECTION

2"-6" LONG.

12" CRUSHED STONE

Aldrich Street Bridge Improvements Uxbridge, Massachusetts STRUCTURAL DETAILS

7545 BETA JOB NO. . ISSUE DATE _

−#6 @ 12" E.F.

DATE

— TOP OF ROADWAY

ELEVATION

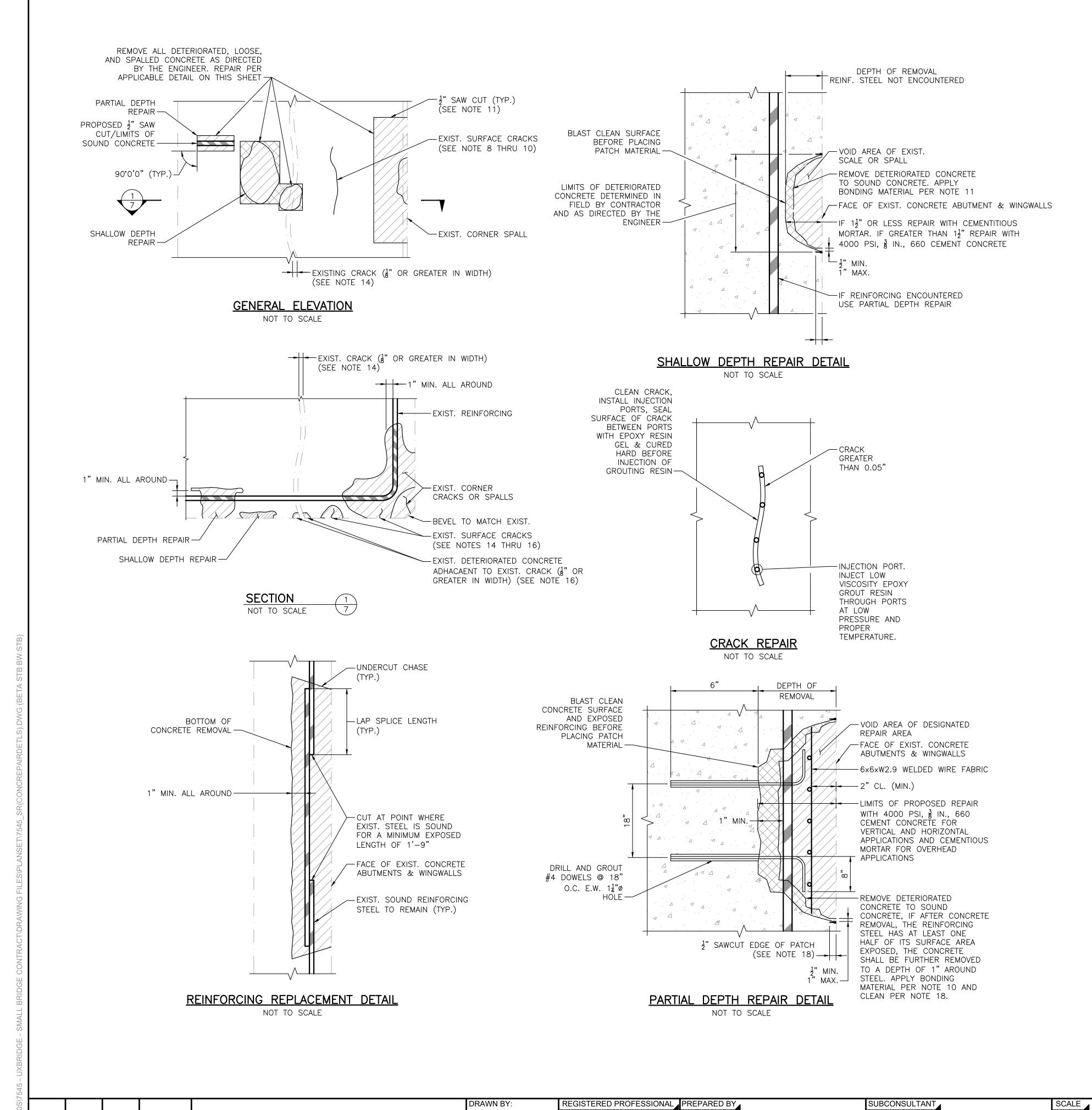
412.98

413.03

413.06

413.09

BRIDGE NO. U-02-038 Sheet 6 of 11 Bridge No. U-02-038 (6X9)



MASONRY REPAIR NOTES:

-FACE OF EXIST.

MASONRY WALL

FILL MATERIAL

SPALL

TYPICAL MASONRY WALL REPAIR

NOT TO SCALE

-VOID AREA OF

DETERIORATED

EXISTING SCALE OR

MASONRY TO SOUND MASONRY. DAMPEN

CLEANED SURFACE PER NOTE 4.

-REFER TO ITEM 685.1 OF

THE SPECIFICATIONS FOR

- 1. ANY OBJECTIONABLE CRACK SHOULD BE ANALYZED TO DETERMINE THE CAUSE AND ANY PREVIOUS CORRECTIVE MEASURES TAKEN TO PREVENT OR ACCOMMODATE THE MOVEMENT BEFORE ADDITIONAL REPAIRS ARE MADE.
- 2. WHERE CRACKING IS CONFINED PRIMARILY TO MORTAR JOINTS IT CAN BE READILY REPAIRED BY CONVENTIONAL TUCKPOINTING METHODS.
- 3. REMOVE ALL SPALLED AND UNSOUND MASONRY FROM AREA TO BE REPAIRED.
- 4. CLEAN SURFACE TO BE FREE OF ALL MATERIALS INCLUDING DUST, OIL, DIRT AND GREASE. DAMPEN WITH CLEAN WATER BEFORE PATCHING AND REMOVE STANDING WATER. REPAIR MORTAR SHALL BE TROWEL APPLIED TO DAMPENED SURFACE. AFTER INITIAL SET, THE MATERIAL SHALL BE TRIMMED AND SHAPED TO MATCH THE CONTOURS OF EXISTING PATCH AREA.
- 5. COST OF DRILLING AND GROUTING DOWELS SHALL BE CONSIDERED INCIDENTAL TO MASONRY REHABILITATION.
- 6. EXISTING MASONRY NEAR REPAIR LOCATIONS SHALL BE CLEANED WITH A HYDROCARBON SOLVENT TO REMOVE OIL AND GREASE. THE SURFACE SHALL THEN BE CLEANED WITH A TRISODIUM PHOSPHATE SOLUTION PRIOR TO APPLYING PAINT.
- 7. THE ACTUAL LOCATIONS AND EXTENT OF VARIOUS TYPES OF CONCRETE REPAIR WILL BE DETERMINED IN THE FIELD. THE CONTRACTOR SHALL REPAIR ALL AREAS DETERMINED NECESSARY AS DIRECTED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT ALL REPAIR

CONCRETE REPAIR NOTES:

- 8. AREAS REQUIRING REPAIRS THAT ARE GREATER THAN 11/2" DEEP SHALL BE REPAIRED USING 4000 PSI, 3/8 IN., 660 CEMENT CONCRETE. AREAS LESS THAN 11/2" DEEP SHALL BE REPAIRED USING CEMENTITIOUS MORTAR FOR PATCHING.
- 9. IF DURING REMOVAL OF DETERIORATED CONCRETE, THE CONTRACTOR DAMAGES EXISTING REINFORCEMENT TO THE EXTENT REQUIRING REPLACEMENT, ANY ADDITIONAL CONCRETE REMOVAL, PATCHING MATERIAL, CLEANING EXISTING REINFORCING STEEL, AND FURNISHING AND INSTALLING REPLACEMENT REINFORCING STEEL SHALL BE AT THE CONTRACTOR'S EXPENSE, AND INSTALLED ACCORDING TO REINFORCING REPLACEMENT DETAIL ON THIS SHEET.
- 10. REINFORCEMENT, INCLUDING WELDED WIRE FABRIC, USED TO REPLACE EXISTING DETERIORATED REINFORCING STEEL (SECTION LOSS OF 15% OR MORE OF THE ORIGINAL CROSS SECTION, AS DETERMINED BY THE ENGINEER) SHALL BE EPOXY COATED. COST OF REPLACEMENT SHALL BE INCLUDED UNDER ITEM 910.1.
- 11. IMMEDIATELY PRIOR TO PLACING NEW CONCRETE OR MORTAR AGAINST EXISTING CONCRETE, CLEAN EXISTING SURFACES BY ABRASIVE BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER CONTAINING NO DETERGENTS OR BOND INHIBITING CHEMICALS AND APPLY APPROVED BONDING COMPOUND IMMEDIATELY PRIOR TO PLACING CONCRETE.
- 12. ALL EXISTING SURFACES THAT WILL HAVE NEW CONCRETE CAST AGAINST IT MUST BE ROUGHENED TO A MINIMUM AMPLITUDE OF 1/4 INCH.
- 13. CONCRETE REPAIR WORK INCLUDES REMOVING ALL DETERIORATED, LOOSE, SPALLED, POPCORNED AND MAP CRACKED CONCRETE. CONCRETE WHICH HAS SPALLED OR OTHERWISE DETERIORATED ADJACENT TO SURFACE CRACK SHALL BE REPAIRED.
- 14. CRACKS THAT ARE .05" OR GREATER IN WIDTH SHALL BE REPAIRED BY EPOXY INJECTION CRACK REPAIR.
- 15. CRACKS THAT ARE LESS THAN .05" IN WIDTH SHALL NOT BE REPAIRED UNLESS DIRECTED BY THE ENGINEER.
- 16. WHERE PATCHING AND EPOXY INJECTION WORK ARE ADJACENT, EPOXY INJECTION SHALL BE PERFORMED BEFORE PATCHING.
- 17. ALL DETERIORATED AREAS SHALL BE DELINEATED BY A 1/2" SAWCUT. THE COST OF SAWCUTTING SHALL BE INCLUDED UNDER ITEM 127.12.
- 18. ALL EXPOSED STEEL SHALL BE THOROUGHLY BLAST CLEANED TO A WHITE METAL FINISH AND COATED WITH EPOXY IN ACCORDANCE WITH AASHTO M284 (ASTM D3963). BLAST CLEANING AND EPOXY SHALL BE INCLUDED IN THE RESPECTIVE CONCRETE REPAIR ITEM.
- 19. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH. NO ADDITIONAL MATERIAL SHALL BE ADDED TO CONCRETE.

LEGEND:

DETERIORATED CONCRETE TO BE REMOVED.

REINFORCING STEEL.

ADDITIONAL CONCRETE TO BE REMOVED.

COMMONWEALTH OF MASSACHUSETTS MassDOT, Highway Division APPROVED UNDER PROVISIONS OF MASS. GEN. LAWS CH 85 S 35

DISTRICT 3 BRIDGE ENGINEER

7545 BETA JOB NO.

DESIGNED BY TW CHECKED BY: www.BETA-Inc.com TW

REVISIONS

DATE MADE BY CHECKED BY

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Aldrich Street Bridge Improvements Uxbridge, Massachusetts

CONCRETE & MASONRY REPAIR DETAILS

ISSUE DATE __

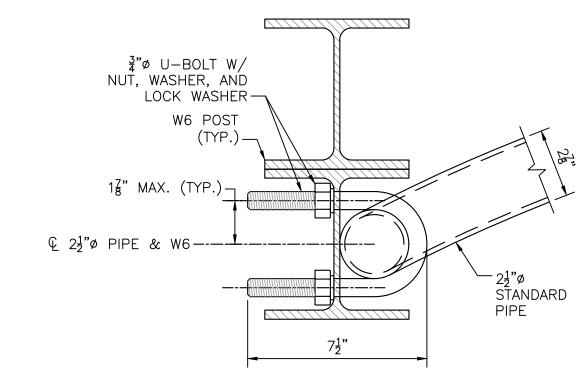
DATE

BRIDGE NO. U-02-038

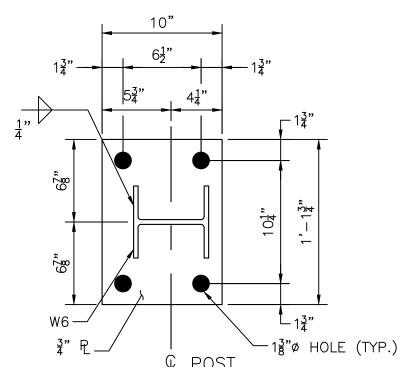
SHEET NO. Sheet 7 of 11 Bridge No. U-02-038 (6X9) COMMONWEALTH OF MASSACHUSETTS MassDOT, Highway Division APPROVED UNDER PROVISIONS OF MASS. GEN. LAWS CH 85 S 35

DISTRICT 3 BRIDGE ENGINEER

DATE



END SADDLE DETAIL SCALE: 3'' = 1'-0''



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

3"ø HOLES (TYP.)

\$\Pm\$ W6 POST

11" --- 11"

RAIL POST DETAIL (FRONT VIEW)

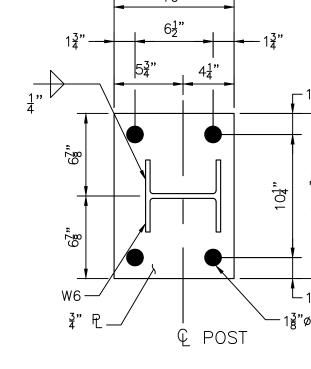
SCALE: $1\frac{1}{2}$ " = 1'-0"

1∛ HOLES →

1¼"ø ANCHOR

ROD —

NOT TO SCALE



AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

NOTES:

9. PLACE A REFLECTORIZED WASHER IN THE UPPER VALLEY OF THRIE BEAM EVERY THIRD POST.

1. ALL STEEL CONNECTING BOLTS AND FASTENERS FOR POSTS AND

GALVANIZED IN ACCORDANCE WITH AASHTO M232. ALL ANCHOR

2. RAIL POSTS AND ANCHOR PLATES SHALL BE SEATED ON MOULDED

3. RAIL POSTS SHALL BE SET PERPENDICULAR TO ROADWAY PROFILE

THICKNESS OF THE SHIMS SHALL BE DETERMINED BY THE

5. THRIE BEAM GUARD RAIL STEEL SHALL BE GALVANIZED AND

10 GAGE THICK. USE OF 12 GAGE THICK THRIE BEAM IS

BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

FABRIC BEARING PADS MEETING M9.16.2 AND HAVING THE SAME DIMENSIONS AS THE PLATE. ADDITIONAL PADS OR HALF PADS MAY

BE USED IN SHIMMING FOR ALIGNMENT. POST HEIGHTS SHOWN WILL

GRADE AND VERTICALLY IN CROSS SECTION, EXCEPT THAT THE RAIL POSTS SHALL BE ALIGNED BY THE USE OF SHIMS SO THAT IN THE FINAL ADJUSTMENT NO PART SHALL DEVIATE MORE THAN ONE INCH FROM TRUE HORIZONTAL ALIGNMENT. THE SHIMS SHALL BE 3"x1\frac{1}{2}"

AND PLACED BETWEEN THE POST AND THE THRIE BEAM RAIL. THE

CONTRACTOR AND VERIFIED BY THE ENGINEER BEFORE ORDERING

4. MINIMUM LENGTH OF THE THRIE BEAM SECTIONS IS EQUAL TO ONE

6. POSTS, ANCHOR PLATES, BASE PLATES SHALL BE FABRICATED FROM STEEL CONFORMING TO AASHTO M270M GR. 250 STEEL AND SHALL

7. SPECIAL DRILLING OF THE THRIE BEAM MAY BE REQUIRED AT THE

8. HAND RAIL STEEL SHALL CONFORM TO ASTM A53 GR. B OR A501

SPLICES. (ALL DRILLING DETAILS ARE TO BE SHOWN ON THE SHOP

CONFORM TO THE AASHTO M180, CLASS B, TYPE IV AND SHALL BE

RODS SHALL CONFORM TO F1554 GRADE 105 AND SHALL BE

RAILING SHALL CONFORM TO ASTM A307 AND SHALL BE

GALVANIZED IN ACCORDANCE WITH AASHTO M232.

INCREASE BY THE THICKNESS OF THE PAD.

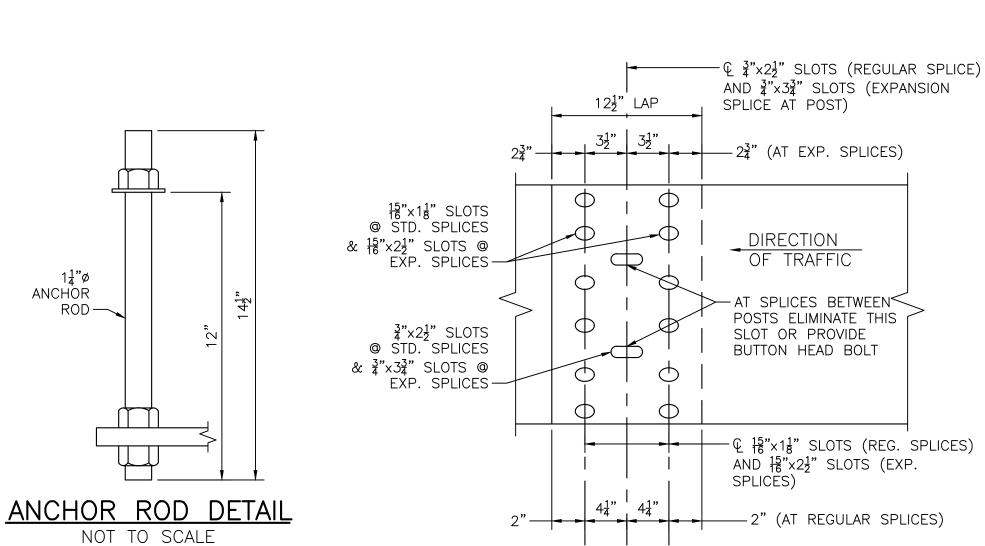
MATERIAL FOR THIS WORK.

EXPRESSLY FORBIDDEN.

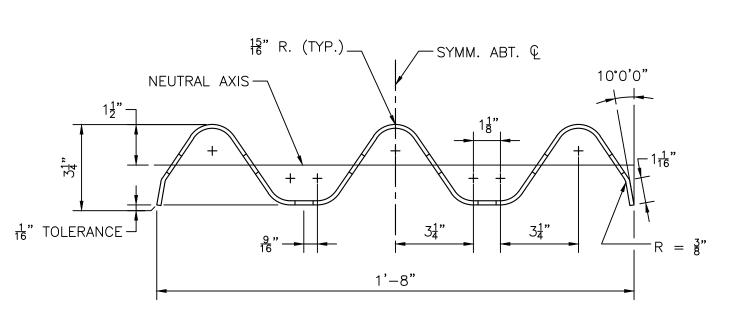
POST SPACE.

DRAWINGS.)

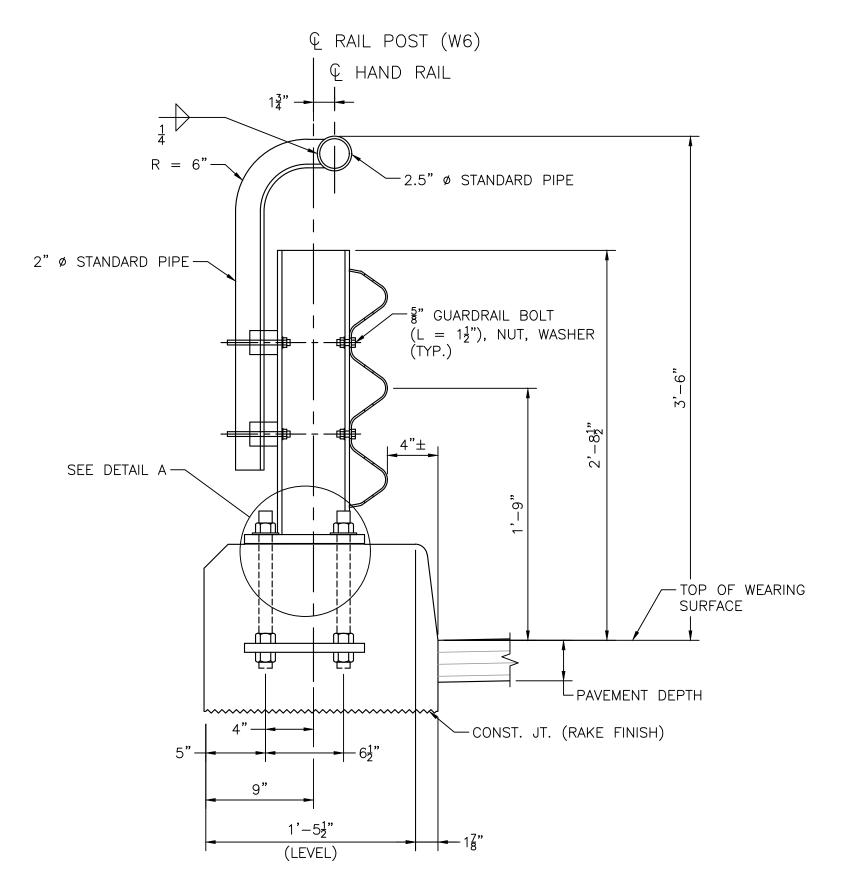
10. HAND RAIL SHALL BE SPLICED OVER JOINTS IN COPING.



THRIE BEAM RAIL SPLICE SCALE: $1\frac{1}{2}$ " = 1'-0"



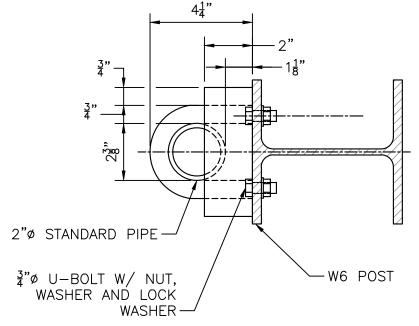
SECTION THRU THRIE BEAM RAIL SCALE: 3'' = 1'-0''



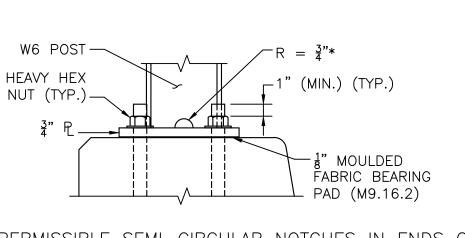
NOTE: TOP OF MOMENT SLAB SHOWN, TOP OF WINGWALL SIMILAR.

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

ELEVATION



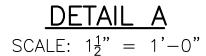
<u>PLAN</u>



TOP OF ROADWAY

@ CURB

* PERMISSIBLE SEMI-CIRCULAR NOTCHES IN ENDS OF WEB CENTERED ON AXIS OF POST TO FACILITATE GALVANIZING (TYPICAL TOP AND BOTTOM OF POST)



Q W POST

─ FASCIA

PLAN VIEW

 $| - | 13\frac{1}{2}$

ELEVATION

HAND RAIL END DETAIL

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

6'-3" POST SPACING, $3'-1\frac{1}{2}"$

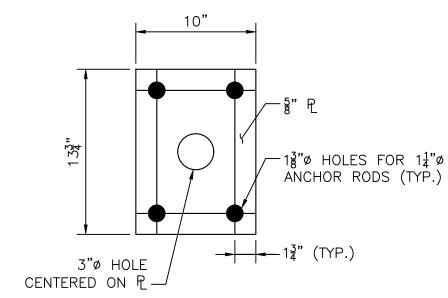
R = 5'-10"-

END OF WINGWALL -

R = 24"

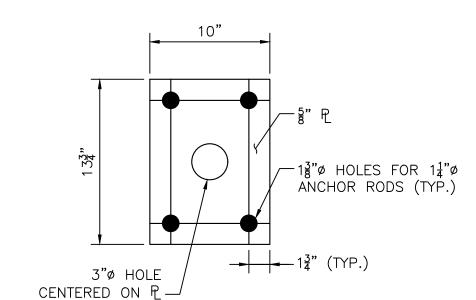
FACE OF

THRIE BEAM —



ANCHOR PLATE DETAIL SCALE: 1

SADDLE DETAILS SCALE: 3" = 1'-0"



	L DLIAIL	
$ \frac{1}{2}$ " =	1'-0"	

DRAWN BY: REGISTERED PROFESSIONAL PREPARED BY DESIGNED BY TW CHECKED BY: TW DATE MADE BY CHECKED BY **REVISIONS**

-THRIE BEAM



B	3	T	A
www.BI	ETA-In	c.com	

AS SHOWN

SCALE

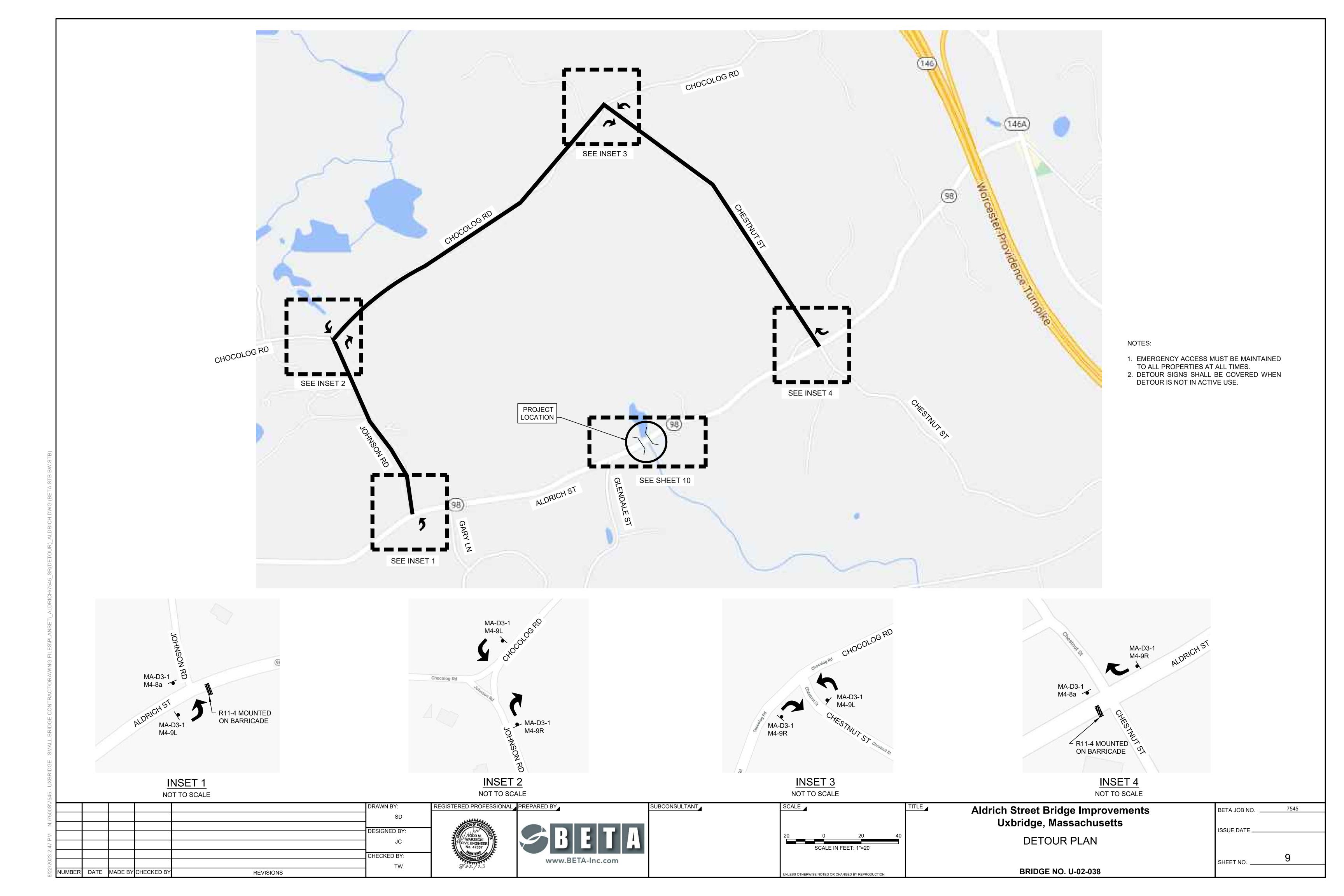
Aldrich Street Bridge Improvements Uxbridge, Massachusetts THRIE BEAM DETAILS

7545 BETA JOB NO. . ISSUE DATE __ Sheet 8 of 11 Bridge No. U-02-038 (6X9)

SUBCONSULTANT

BRIDGE NO. U-02-038

ILESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

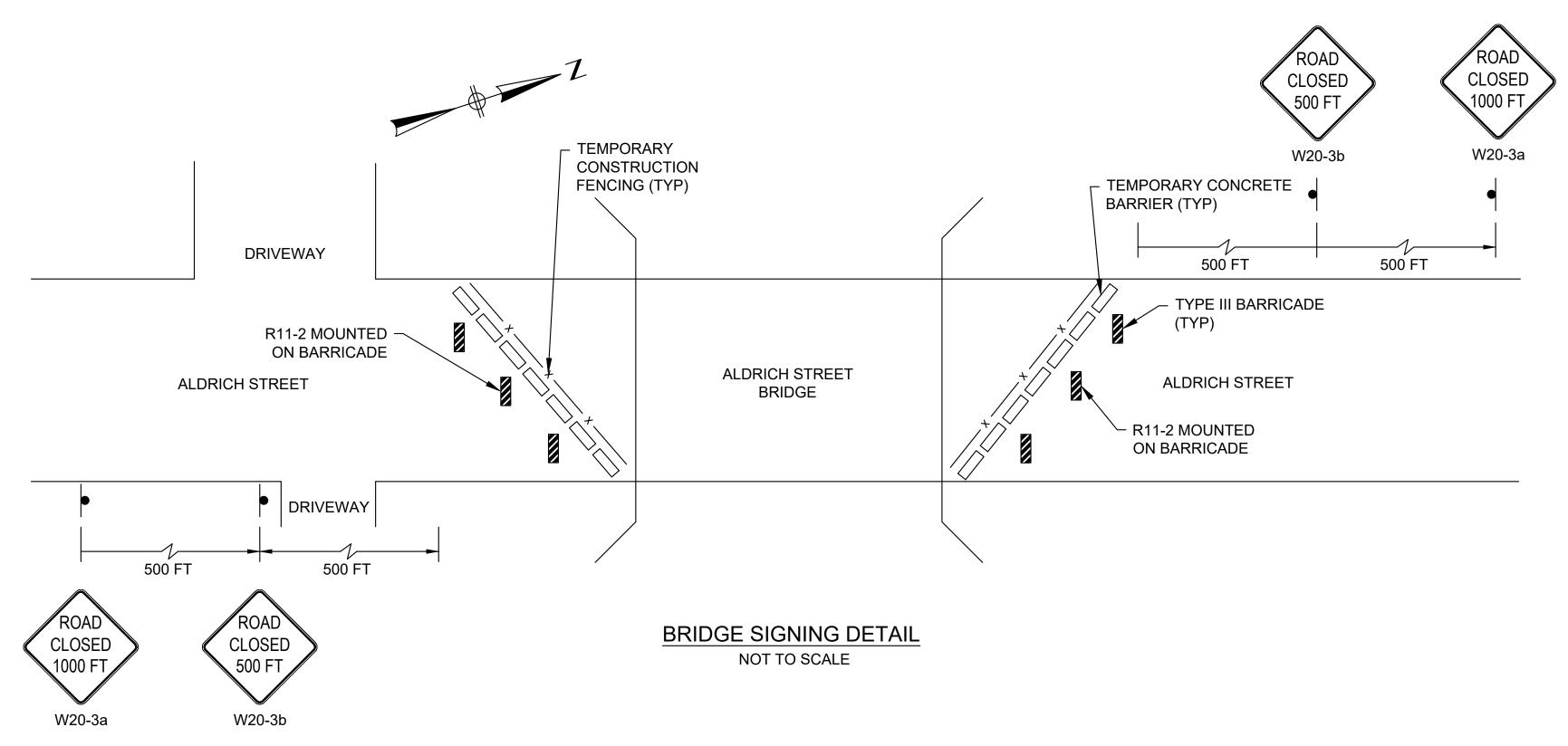


CONSTRUCTION SIGN SUMMARY

* NO. OF SIGNS ARE ESTIMATED FOR BIDDING PURPOSES ONLY

** ALL CONSTRUCTION SIGNAGE SHALL HAVE FLUORESCENT ORANGE BACKGROUND

IDENTIFI- CATION	SIZE OF SIGN		IGN TEXT		DIMENSIONS (in)		NUMBER OF SIGNS		COLOR			UNIT AREA IN	AREA IN SQUARE
NUMBER	WIDTH	HEIGHT	TEXT		VERTIC SPACIN		REQUIRED	BACK- GROUND	LEGEND	BORDER	NUMBER REQUIRED	SQUARE FEET	FEET
R11-2	48 in	30 in	ROAD		A		2	WHITE	BLACK	BLACK	MOUNT ON BARRICADE	10.0	20.0
R11-4	60 in	30 in	ROAD CLOSED TO THRU TRAFFIC			MUTCD STANDARDS	2	WHITE	BLACK	BLACK	MOUNT ON BARRICADE	12.5	25.0
W20-3a	36 in	36 in	ROAD CLOSED 1000 FT				2	**ORANGE	BLACK	BLACK	P-5 2	9.0	18.0
W20-3b	36 in	36 in	ROAD CLOSED 500 FT				2	**ORANGE	BLACK	BLACK	P-5 2	9.0	18.0
M4-8a	24 in	18 in	END DETOUR				2	**ORANGE	BLACK	BLACK	P-5 2	3.0	6.0
M4-9L	30 in	24 in	DETOUR	SEE			3	**ORANGE	BLACK	BLACK	MOUNT W/ MA-D3-1	5.0	15.0
M4-9R	30 in	24 in	DETOUR			⊃ ∑	3	**ORANGE	BLACK	BLACK	MOUNT W/MA-D3-1	5.0	15.0
M4-9V	30 in	24 in	DETOUR		•		0	**ORANGE	BLACK	BLACK	MOUNT W/ MA-D3-2	5.0	0
MA-D3-1	x in	12 in	Aldrich st	6/4D	3		3	**ORANGE	BLACK	BLACK	P-5 3	x	x



Aldrich Street Bridge Improvements Uxbridge, Massachusetts

DETOUR PLAN

BRIDGE NO. U-02-038

7545

BETA JOB NO. ___

ISSUE DATE ___

SHEET NO.



