

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF
WEBSTER AVENUE OVER MBTA/BMRR
BRIDGE NO. S-17-016 (ATX)
IN THE CITY OF
SOMERVILLE
MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. HIP(NGB)-003S(987)X

SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

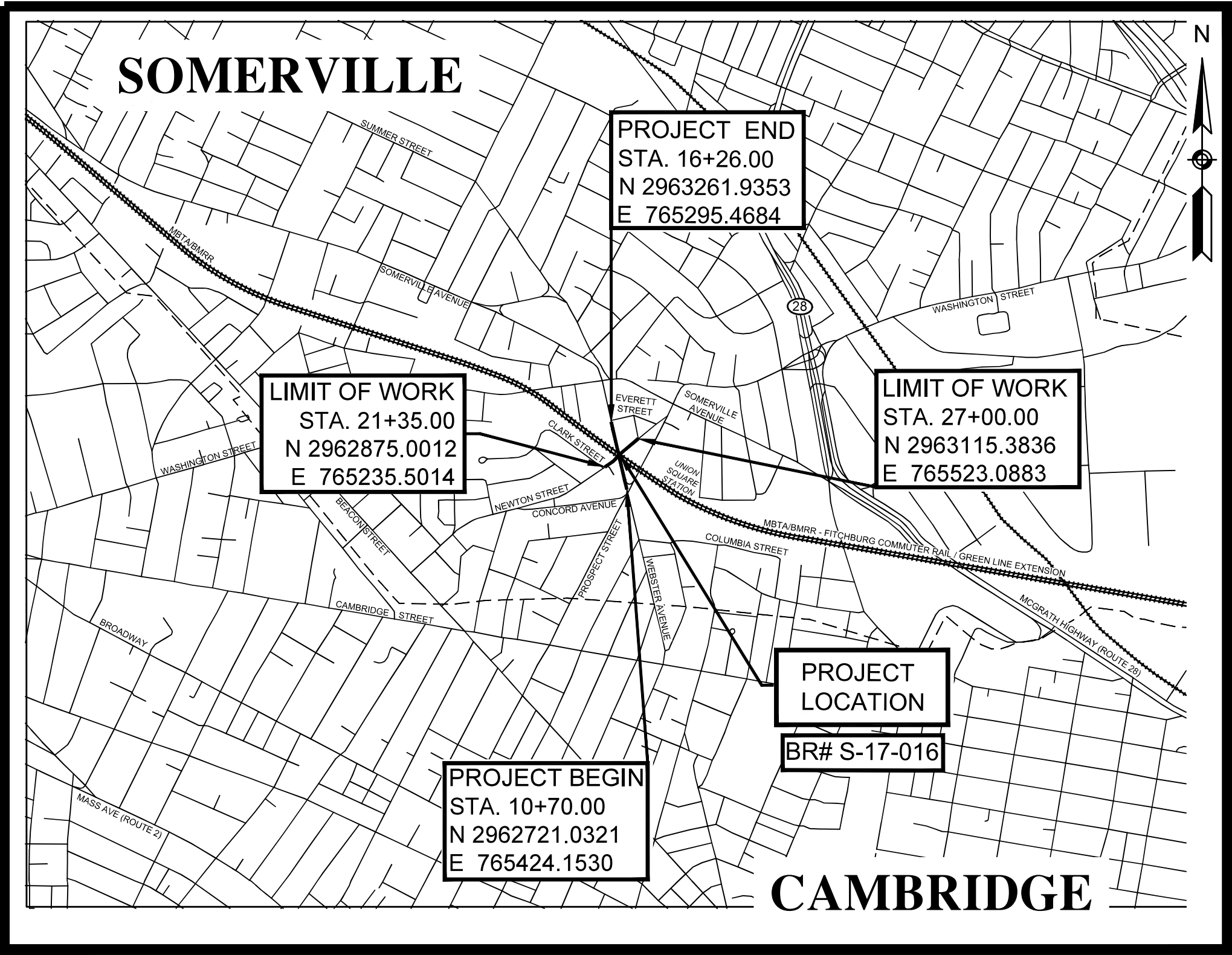
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	1	98
PROJECT FILE NO.		611940	

TITLE SHEET & INDEX

THESE PLANS ARE SUPPLEMENTED BY THE LATEST EDITIONS OF THE FOLLOWING PUBLICATIONS, AS IDENTIFIED IN THE CONTRACT SPECIAL PROVISIONS: THE MASSDOT CONSTRUCTION STANDARD DETAILS, THE MASSDOT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE MASSDOT STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, THE MASSDOT OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, AND THE ANSI AMERICAN STANDARD FOR NURSERY STOCK.

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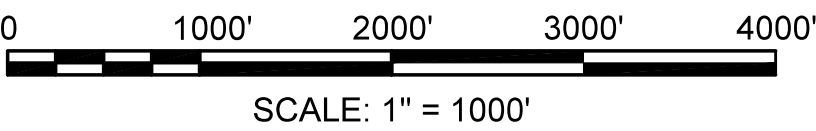


DESIGN DESIGNATION (WEBSTER AVENUE)

DESIGN SPEED	25 MPH
ADT (2023)	6,400
ADT (2043)	7,100
K	8%
D	56% SB, 44% NB
T (PEAK HOUR)	2.3%
T (AVERAGE DAY)	3.1%
DHV	520
DDHV	290
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

DESIGN DESIGNATION (NEWTON STREET - EASTBOUND)

DESIGN SPEED	25 MPH
AADT (2021)	4,123
AADT (2023)	4,164
AADT (2043)	4,601
K	10%
D	58%
FUNCTIONAL CLASSIFICATION	URBAN MAJOR COLLECTOR



LENGTH OF PROJECT = 556.00 FEET = 0.105 MILE

Rogers, Carol

Digitally signed by Rogers, Carol
Date: 2026.07.28 16:45:11 -0400

APPROVED

Digitally signed by Carrie Lovell
Date: 2026.07.29 10:38:28 -0400

07/29/2026

CHIEF ENGINEER DATE

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS (ON-THE-GROUND SURVEY DATA)
		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		GUARD RAIL - DOUBLE FACE - STEEL POSTS
		GUARD RAIL - DOUBLE FACE - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT CONTROL BARRIER
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT
		TREE PROTECTION

EXISTING	PROPOSED	DESCRIPTION
		CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE STOP LINE (12" WIDE)
		CROSSWALK (SEE DETAIL ON CONSTRUCTION DETAILS SHEET)
		SOLID WHITE LINE (6" WIDE)
		SOLID YELLOW LINE (6" WIDE)
		BROKEN WHITE LINE (6" WIDE, 10' LINE, 30' GAP)
		BROKEN YELLOW LINE (6" WIDE, 10' LINE, 30' GAP)
		DOTTED WHITE LINE (6" WIDE, 3' LINE, 9' GAP)
		DOTTED YELLOW LINE (6" WIDE, 3' LINE, 9' GAP)
		DOTTED WHITE LINE EXTENSION (6" WIDE, 2' LINE, 6' GAP)
		DOTTED YELLOW LINE EXTENSION (6" WIDE, 2' LINE, 6' GAP)
		DOUBLE WHITE LINE (6" WIDE)
		DOUBLE YELLOW LINE (6" WIDE)

GENERAL	
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
ALT	ALTERATION
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CPTS	CATHODIC PROTECTION TEST STATION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
EASE	EASEMENT
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
PERM	PERMANENT
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY

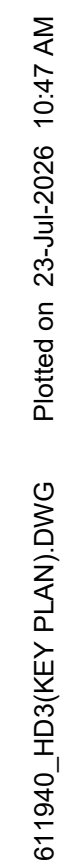
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ABBREVIATIONS (cont.)	
<u>GENERAL</u>	
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TELE	TELEPHONE
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TS	TEST STATION
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

CAB	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY UPRAISED HAND
FDW	FLASHING UPRAISED HAND
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR YELLOW
FYL	FLASHING YELLOW LEFT ARROW
FYR	FLASHING YELLOW RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALKING PERSON
Y	STEADY CIRCULAR YELLOW
YL	STEADY YELLOW LEFT ARROW

1. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH MASSDOT, MBTA, AND THE CITY OF SOMERVILLE STANDARD DETAILS AND SPECIFICATIONS.
2. TOPOGRAPHY DETAIL SHOWN HEREON IS A RESULT OF AN ON-THE-GROUND SURVEY PERFORMED BY CHA IN MAY OF 2021 AND MARCH OF 2022.
3. PROPERTY LINE INFORMATION SHOWN HERE IS COMPILED FROM VARIOUS SOURCES AND DOES NOT REPRESENT A PROPERTY LINE RETRACEMENT SURVEY.
4. VERTICAL DATUM, RIM, INVERT AND SPOT ELEVATIONS ARE PUBLISHED FOR DESIGN PURPOSES ONLY. VERTICAL BENCHMARKS SHOWN ON THE PLAN ARE TO REMAIN IN THE EVENT THAT BENCHMARKS (TBM'S), ESTABLISHED FOR THIS PROJECT AND PUBLISHED ON THIS SURVEY, ARE DESTROYED, NOT RECOVERABLE OR A DETERIORATED.
5. UNLESS OTHERWISE NOTED DEED AND PLAN REFERENCES ARE TO THE MIDDLESEX COUNTY REGISTRY OF DEEDS.
6. LOCATIONS AND DEPTHS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY, AND ARE NOT WARRANTED TO BE CORRECT. UNDERGROUND UTILITIES ARE TO BE VERIFIED BY FIELD ENGINEERING IN NOVEMBER 2023 AND DECEMBER 2025 TO VERIFY RECORD INFORMATION WHICH IS REFLECTED IN THESE PLANS. QUALITY LEVEL - A TEST PIT SHALL BE DRILLED AT EACH EXISTING UTILITY LOCATION TO VERIFY EXISTENCE, SERVICE, SIZE, INVERT ELEVATION, LOCATION, ETC. BY THE CONTRACTOR PRIOR TO NEW CONNECTIONS TO OR REPAIRS TO ANY EXISTING UTILITY COMMENCING ANY WORK. LOCATIONS COMPILED FROM UTILITY PLANS OF RECORD, DIG-SAFE FIELD MARKINGS AND, RIM AND INVERT INFORMATION HAVE BEEN OBTAINED FROM (1-888-344-7233) TO FIELD VERIFY LOCATION OF ALL UTILITIES. THE STATE, THE CITY OF SOMERVILLE, THE MBTA, AND THE MWRA ARE NOT MEMBERS OF DIGSAFE INC.
7. HORIZONTAL AND VERTICAL DATUMS REFERENCED FROM NAD OF '83 AND NAVD OF '88.
8. THE CONTRACTOR WILL COORDINATE ALL PRIVATE CASTINGS AND POLES THAT ARE TO BE ADJUSTED, RESET OR RELOCATED WITH THE APPROPRIATE UTILITY OWNERS, ADVISE THE PRIVATE UTILITY PURVEYORS AND ALLOW THEM ADEQUATE TIME TO COMPLETE THEIR WORK IN ADVANCE OF PERFORMING ANY PAVING OPERATIONS OR OTHER WORK.
9. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES AND STRUCTURES BEFORE BEGINNING ANY WORK. AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD CHANGES TO THE CLASS B TRENCH EXCAVATION.
10. 6' LENGTH GRANITE TRANSITION CURBS SHALL BE INSTALLED WHERE PROPOSED GRANITE CURB ENDS AND HMA BERM OR NO EDGE TREATMENT BEGINS.
11. THE CONTRACTOR SHALL CAUSE AS LITTLE INTERFERENCE AND INCONVENIENCE TO ABUTTERS AS POSSIBLE. THE CONTRACTOR SHALL MAINTAIN SAFE ACCESS TO ALL ADJACENT PROPERTIES AND TRAVELWAYS AT ALL TIMES.
12. FOR OTHER NOTES, REFER TO SPECIFIC PLANS AND DETAILS.

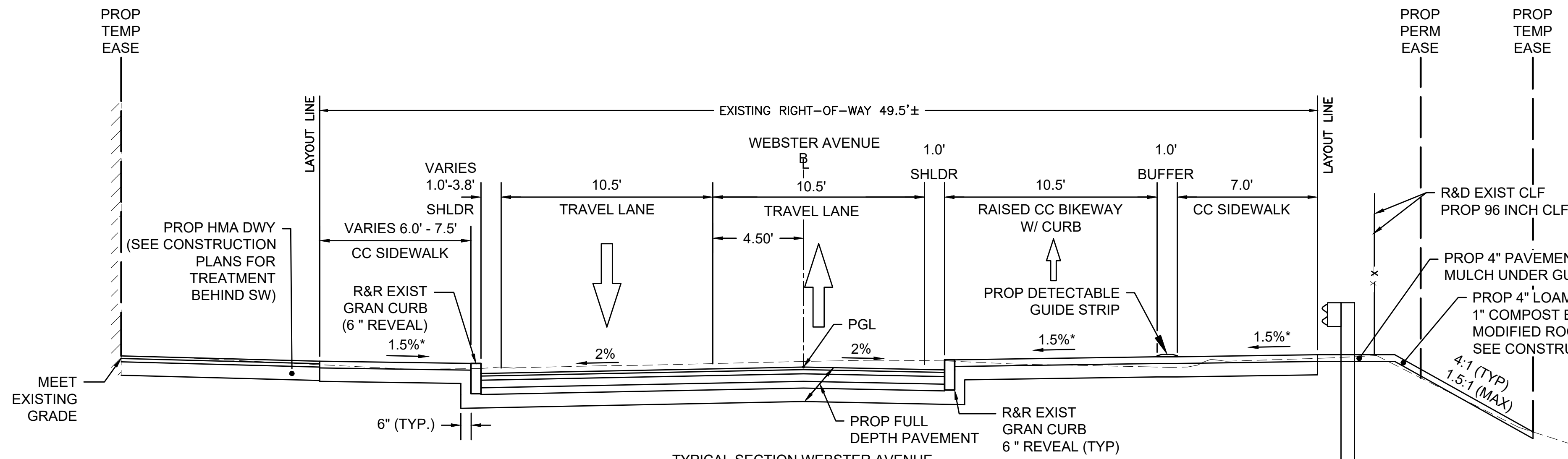
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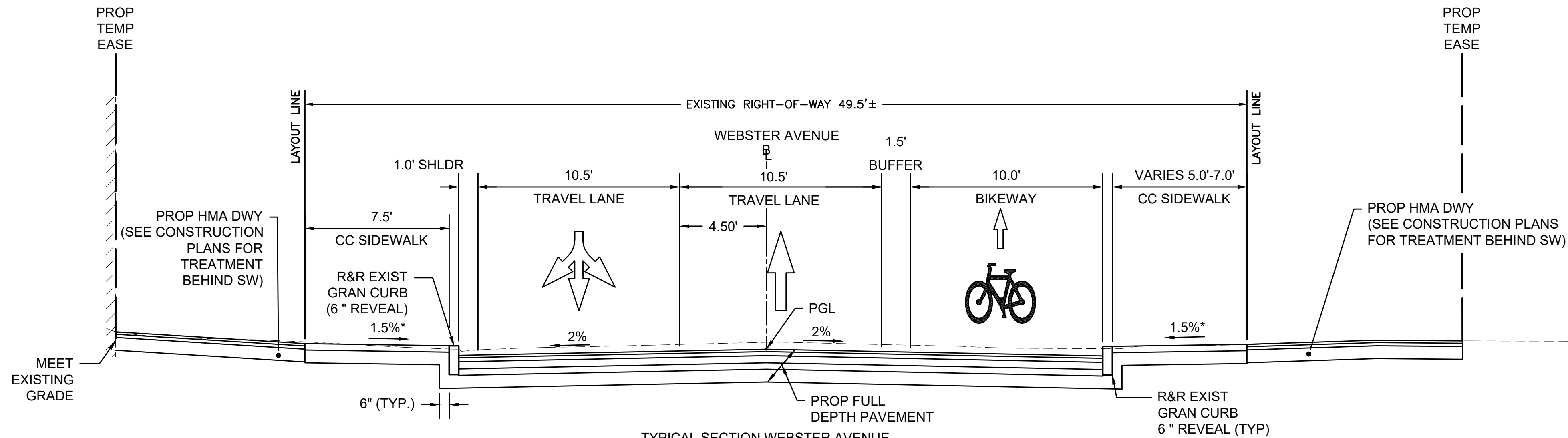
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

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MA	HIP(NGB)-003S(987)X	4	98
PROJECT FILE NO. 611940			

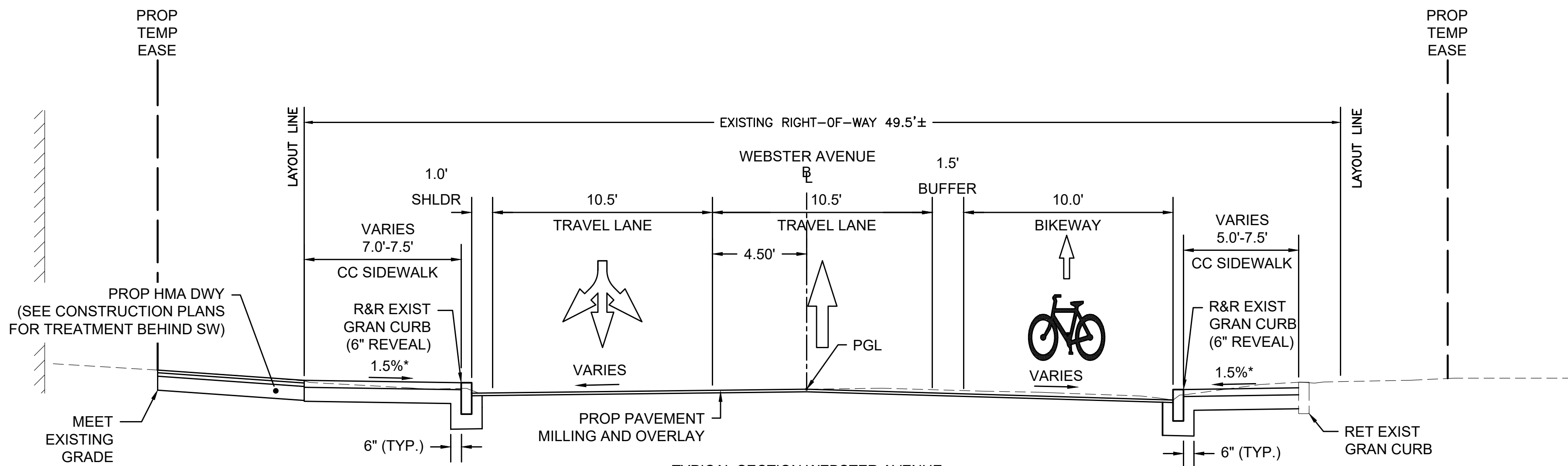
TYPICAL SECTIONS - 01
WEBSTER AVE



TYPICAL SECTION WEBSTER AVENUE
STA. 11+56.00 TO STA. 12+71.73
SCALE: 1" = 4'
* = TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION WEBSTER AVENUE
STA. 11+05.00 TO STA. 11+56.00
SCALE: 1" = 4'
* = TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION WEBSTER AVENUE
STA. 10+70.00 TO STA. 11+05.00
SCALE: 1" = 4'
* = TOLERANCE FOR CONSTRUCTION ±0.5%

PAVEMENT NOTES:

PROPOSED BRIDGE:

SURFACE: 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 - POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT OVER
INTERMEDIATE: 1 1/2" SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 - POLYMER (SPC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT OVER MEMBRANE WATER PROOFING

PROPOSED FULL DEPTH PAVEMENT:

SURFACE: 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 - POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT OVER
2 1/2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT OVER

BASE: 4 1/2" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER
8" GRAVEL BORROW - TYPE B

PROPOSED PAVEMENT MILLING AND OVERLAY:

SURFACE: 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 - POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT OVER
1 1/2" PAVEMENT MICROMILLING

PROPOSED CEMENT CONCRETE SIDEWALK/PEDESTRIAN CURB RAMP:

SURFACE: 4" CEMENT CONCRETE (AIR ENTRAINED 4000, 3/4", 610)

SUBBASE: 8" GRAVEL BORROW - TYPE B

PROPOSED CEMENT CONCRETE SIDEWALK AT DRIVEWAY:

SURFACE: 6" CEMENT CONCRETE (AIR ENTRAINED 4000, 3/4", 610)

SUBBASE: 8" GRAVEL BORROW - TYPE B

PROPOSED CEMENT CONCRETE DRIVEWAY:

SURFACE: 6" CEMENT CONCRETE (AIR ENTRAINED 4000, 3/4", 610)

SUBBASE: 8" GRAVEL BORROW - TYPE B

PROPOSED HOT MIX ASPHALT DRIVEWAYS & HMA RAISED BIKEWAY

4" HOT MIX ASPHALT PAVEMENT PLACED IN TWO LAYERS:
1 1/2" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
2 1/2" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
8" GRAVEL BORROW TYPE B

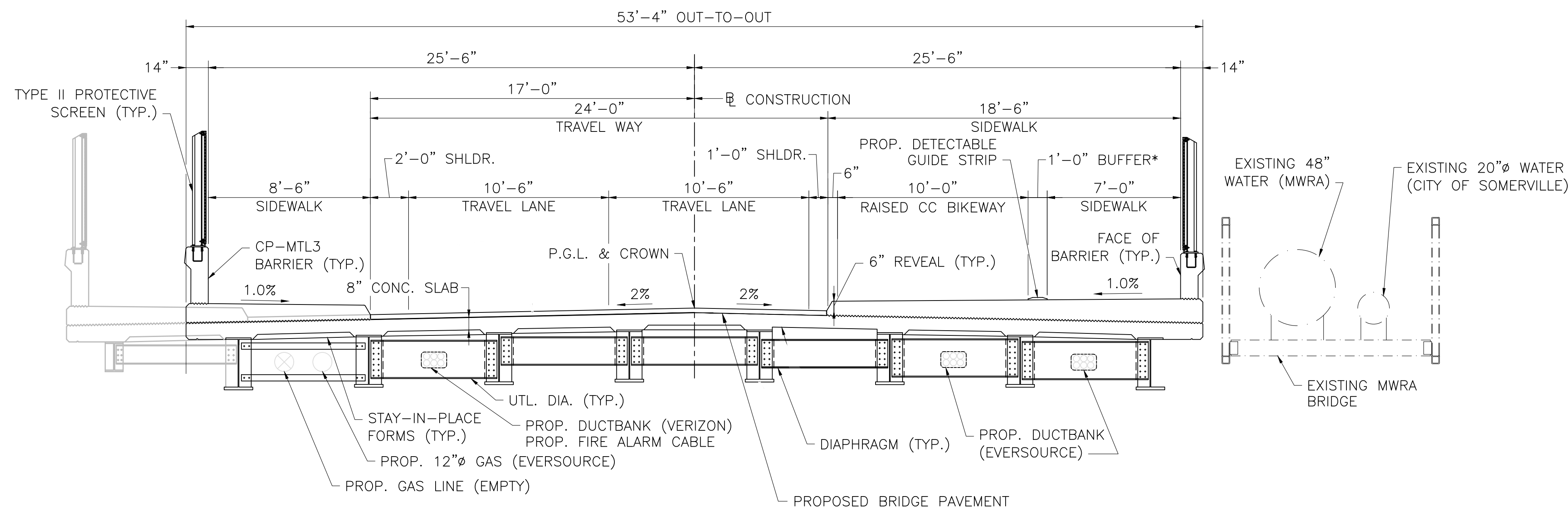
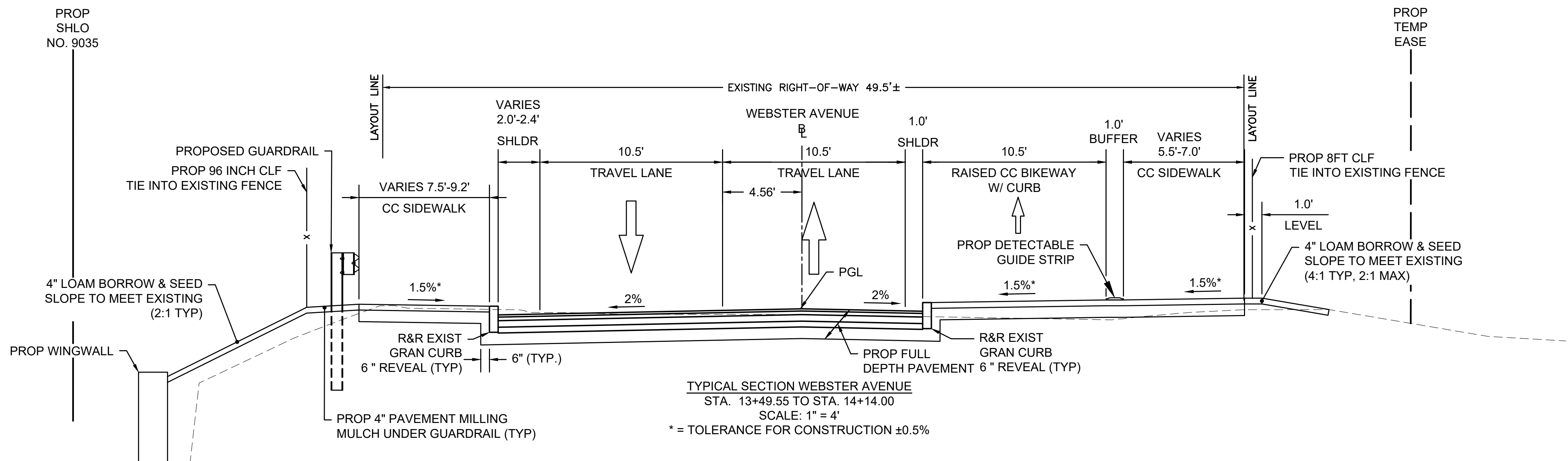
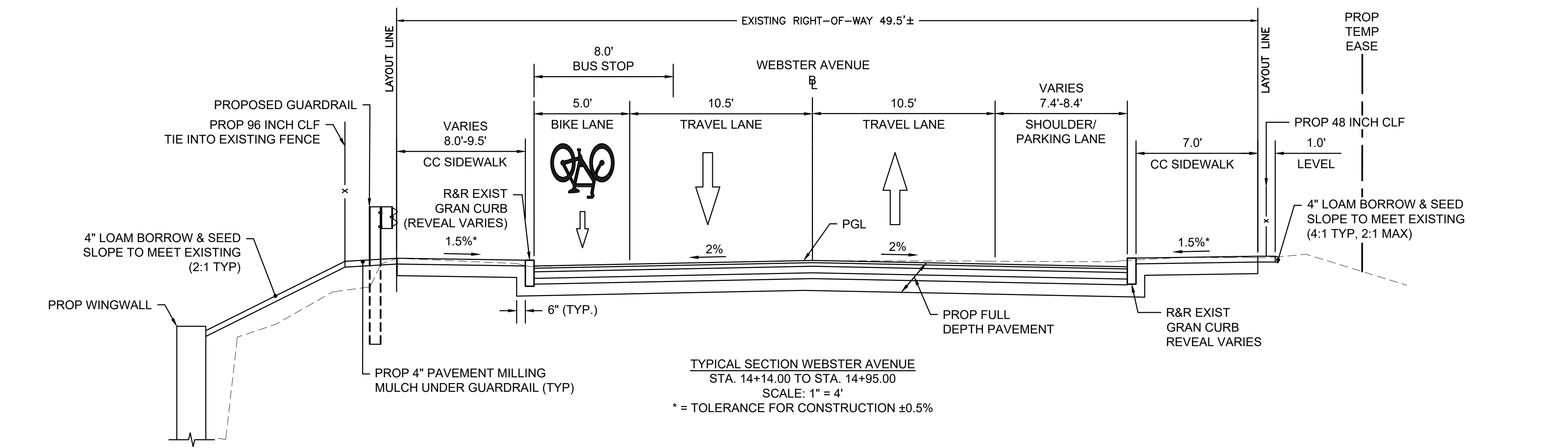
NOTES:

1. THE FINAL 1 1/2" SURFACE COURSE OF SUPERPAVE SHALL BE PLACED IN ONE CONTINUOUS OPERATION.
2. ALL HMA PAVING, HMA FOR PATCHING, ASPHALT EMULSION FOR TACK COAT, AND HMA JOINT SEALANT SHALL CONFORM WITH SECTION 450 HOT MIX ASPHALT PAVEMENT SPECIFICATIONS.
3. INSTALL VERTICAL CURB PER CONSTRUCTION STANDARD 501.0.1.

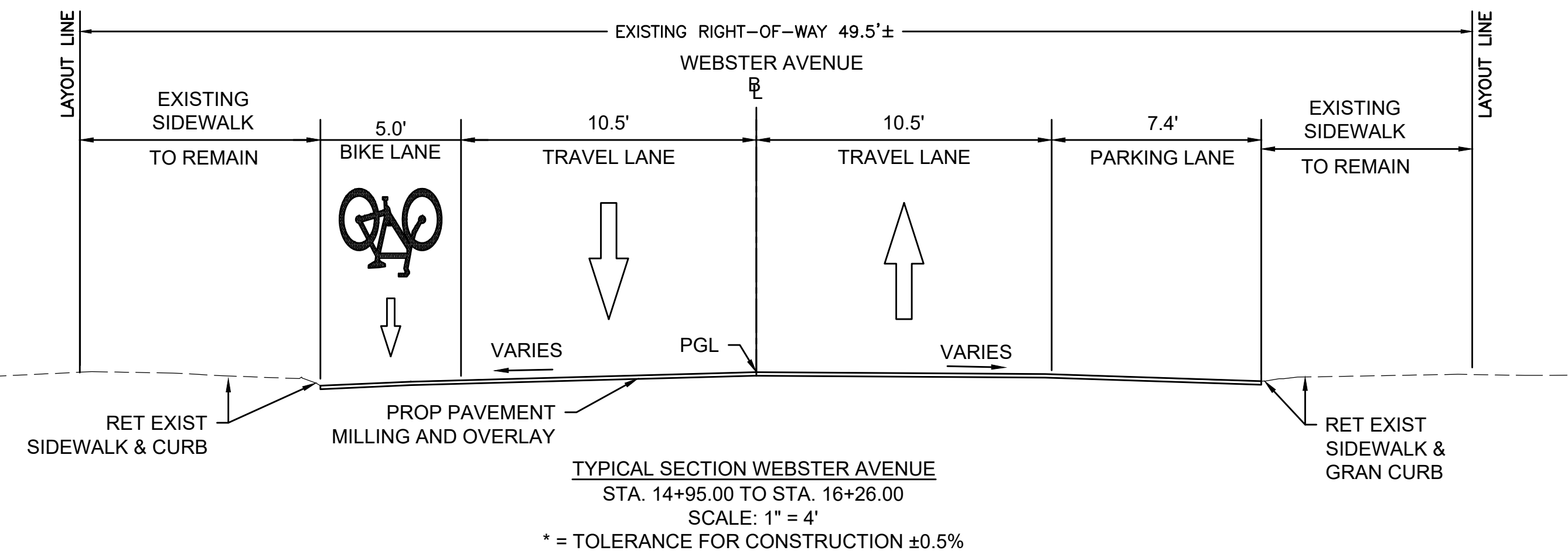
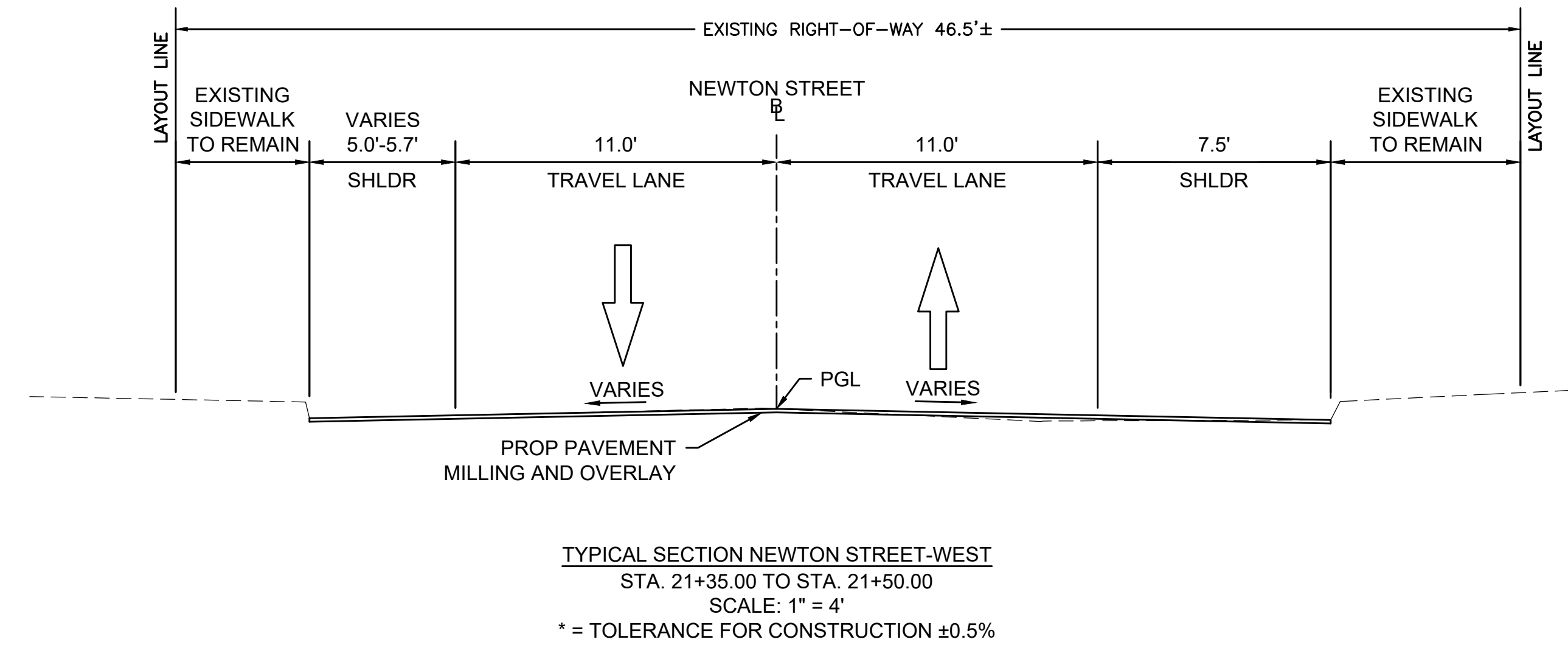
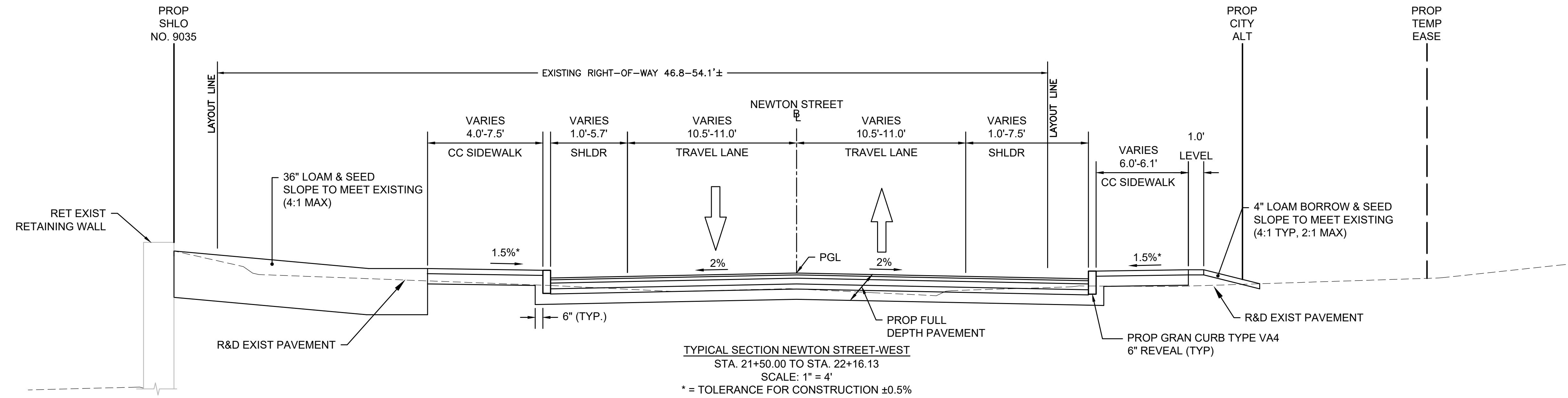
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TYPICAL SECTIONS - 02
WEBSTER AVE



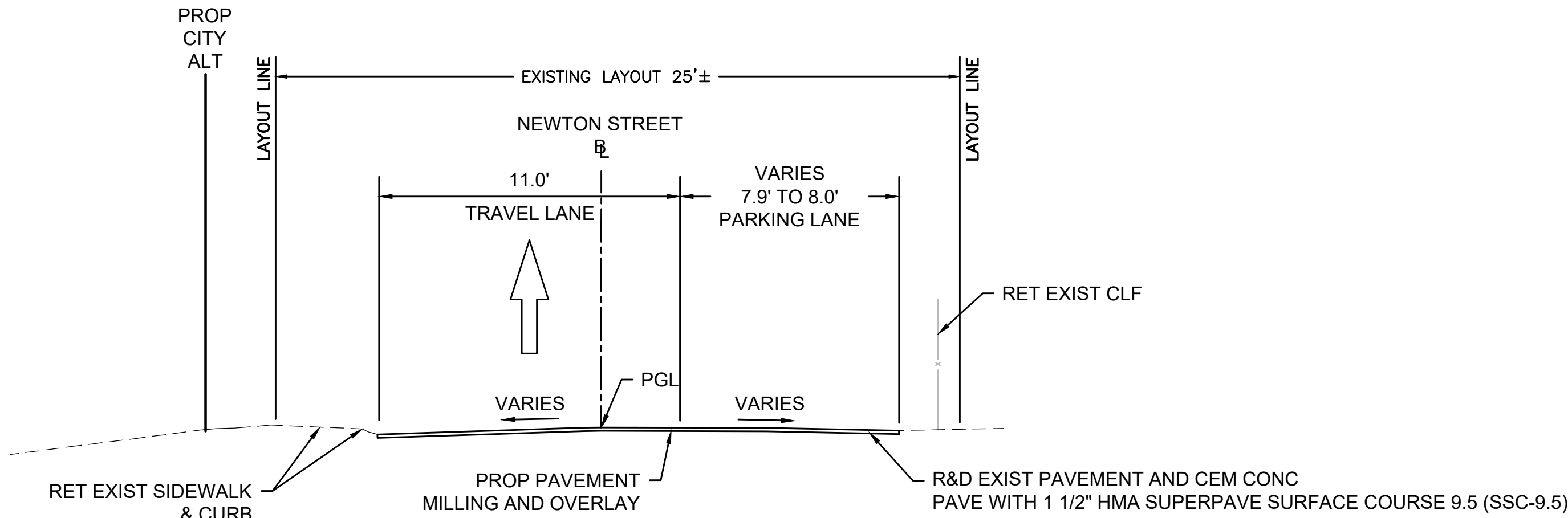
TYPICAL SECTION WEBSTER AVENUE BR. NO. S-17-016
STA. 12+71.73 TO STA. 13+49.55
SCALE: 1" = 4'



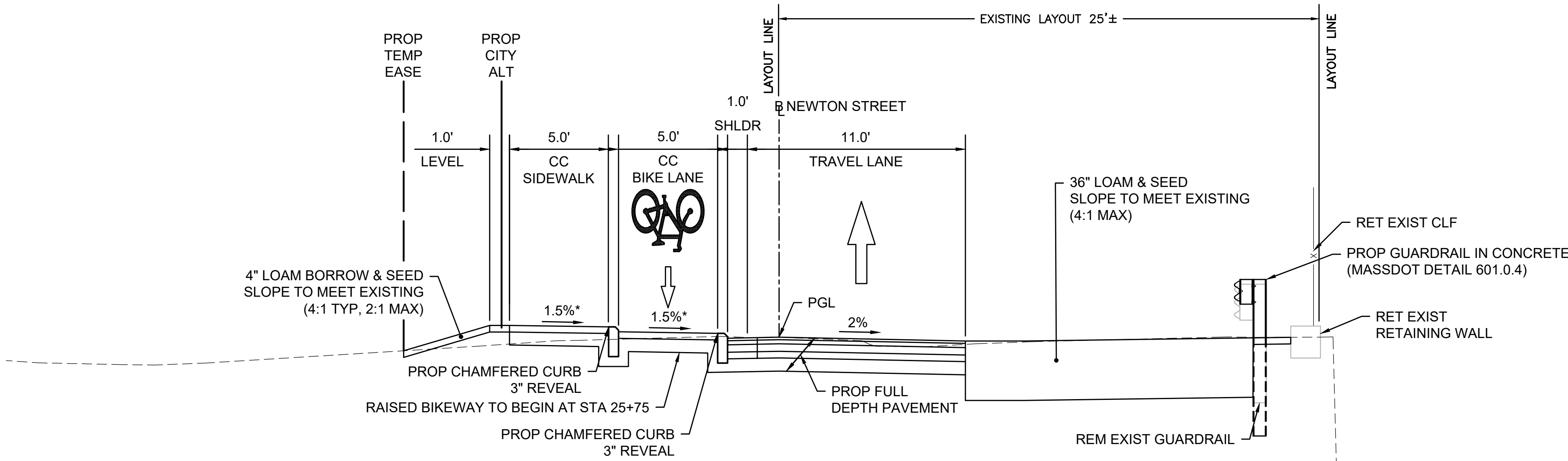
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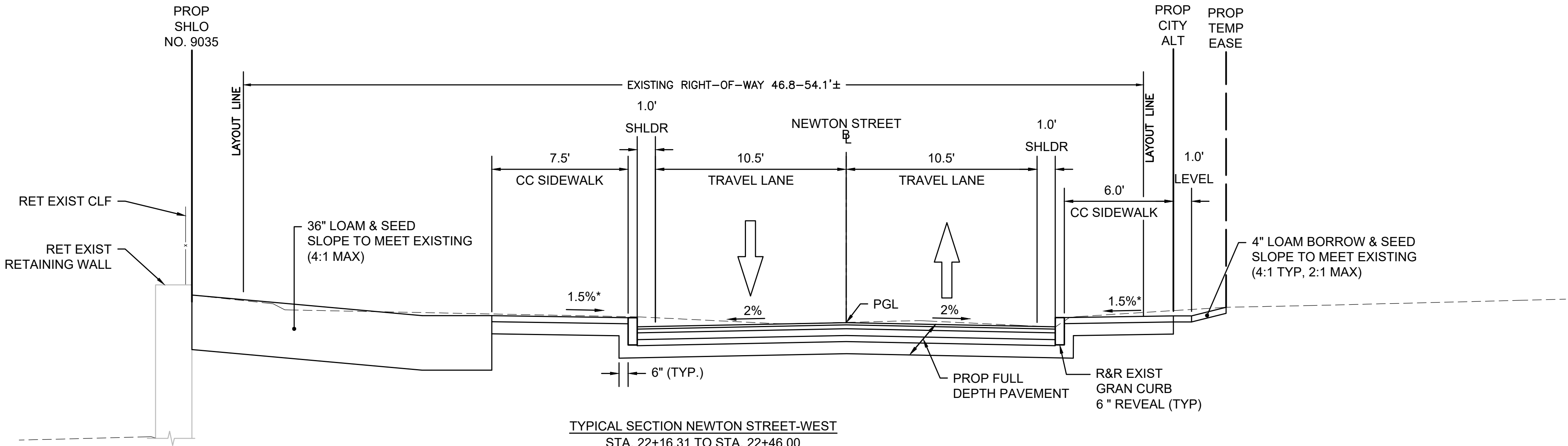
TYPICAL SECTIONS - 04
NEWTON STREET



TYPICAL SECTION NEWTON STREET-EAST
STA. 26+65.00 TO STA. 27+00.00
SCALE: 1" = 4'
* = TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION NEWTON STREET-EAST
STA. 25+28.00 TO STA. 26+65.00
SCALE: 1" = 4'
* = TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION NEWTON STREET-WEST
STA. 22+16.31 TO STA. 22+46.00
SCALE: 1" = 4'
* = TOLERANCE FOR CONSTRUCTION ±0.5%

WEBSTER AVENUE CONSTRUCTION BASELINE DATA			
DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
BEGIN PT STA 10+00.00	L = 645.80' N 13°22'56.22" W	2962652.9328	765440.3543
PT STA 16+45.80	L = 1.25' N 76°16'41.55" E	2963281.1999	765290.8852
PC STA 16+47.05	L = 85.61' N 13°22'50.96" W	2963281.4959	765292.0974
END STA 17+32.66		2963364.7818	765272.2854

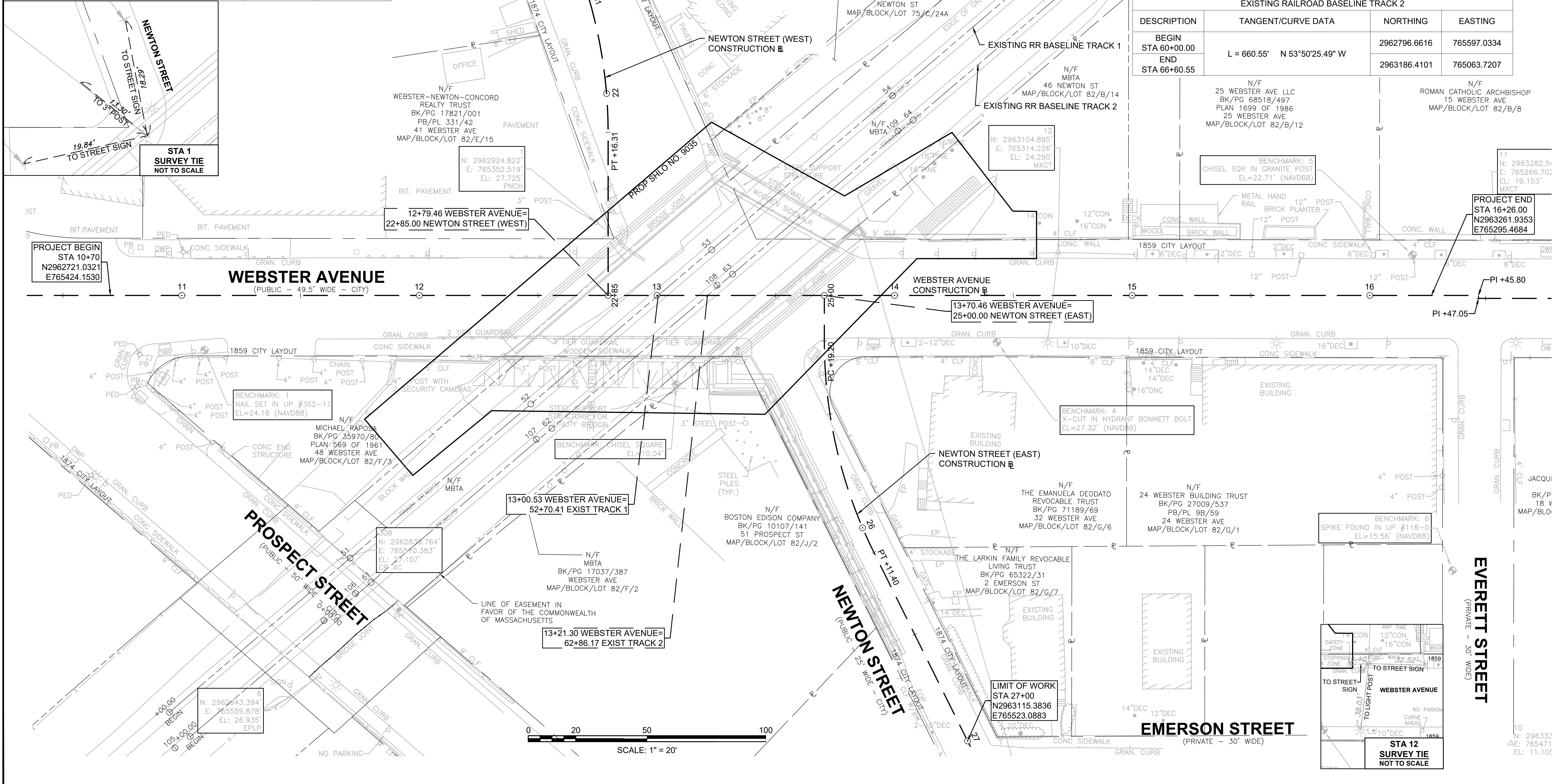
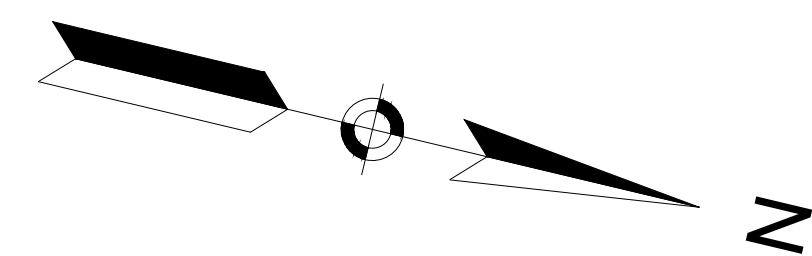
NEWTON STREET (EAST) CONSTRUCTION BASELINE DATA			
DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
BEGIN PT STA 25+00.00	L = 19.20' N 76°37'03.78" E	2963013.3303	765354.6132
PC STA 25+19.20	L = 92.20' R = 200.00' Δ = 26°24'45.17" T = 46.93'	2963017.7748	765373.2947
PT STA 26+11.40	L = 148.60' N 50°12'18.62" E	2963058.6760	765455.0134
END STA 27+60.00		2963153.7860	765569.1888

NEWTON STREET (WEST) CONSTRUCTION BASELINE DATA			
DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
BEGIN PT STA 20+00.00	L = 84.38' N 52°20'07.85" E	2962795.5497	765126.4637
PT STA 20+84.38	L = 61.93' N 56°33'48.31" E	2962847.1079	765193.2578
PC STA 21+46.31	L = 70.00' R = 200.00' Δ = 20°03'15.47" T = 35.36'	2962881.2342	765244.9411
PT STA 22+16.31	L = 68.69' N 76°37'03.78" E	2962908.9044	765308.8544
END STA 22+85.00		2962924.8014	765375.6748

EXISTING RAILROAD BASELINE TRACK 1			
DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
BEGIN STA 50+00.00	L = 664.14' N 53°50'25.49" W	2962785.7490	765589.1202
END STA 56+64.14		2963177.6131	765052.9126

EXISTING RAILROAD BASELINE TRACK 2			
DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
BEGIN STA 60+00.00	L = 660.55' N 53°50'25.49" W	2962796.6616	765597.0334
END STA 66+60.55		2963186.4101	765063.7207

SOMERVILLE WEBSTER AVENUE OVER MBTA/BMRR			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	8	98
PROJECT FILE NO. 611940			
CONSTRUCTION BASELINE TIES			



STA 12 SURVEY TIE NOT TO SCALE			
11	N: 2963282.5	E: 765266.70	EL: 19.153' MXCT
12	N: 2963104.895	E: 765314.226	EL: 24.290' MXCT
13	N: 2962838.764	E: 765570.383	EL: 27.107' CP XC
14	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
15	N: 2962924.822	E: 765352.519	EL: 27.725' PNCH
16	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
17	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
18	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
19	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
20	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
21	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
22	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
23	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
24	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
25	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
26	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
27	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
28	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
29	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
30	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
31	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
32	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
33	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
34	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
35	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
36	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
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50	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
51	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
52	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
53	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
54	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
55	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
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57	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
58	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
59	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
60	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
61	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
62	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
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69	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
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73	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
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84	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
85	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
86	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
87	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
88	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
89	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
90	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
91	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
92	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
93	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
94	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
95	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
96	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
97	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
98	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
99	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF
100	N: 2962843.394	E: 765559.878	EL: 26.935' EPLF

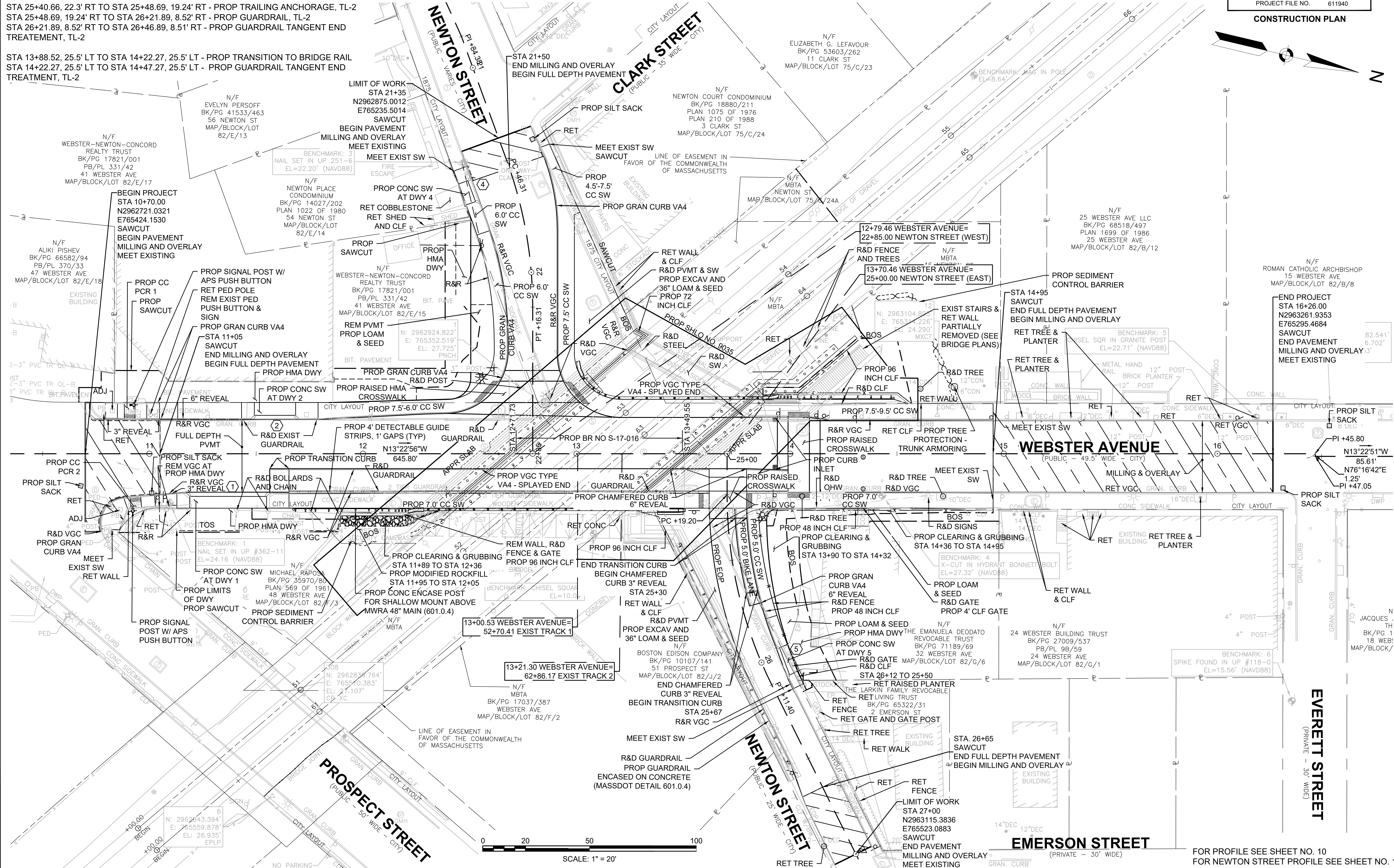
STA 11+68.16, 25.5' RT TO STA 11+93.39, 25.5' RT - PROP GUARDRAIL TANGENT END TREATMENT, TL-2
STA 11+93.39, 25.5' RT TO STA 12+27.14, 25.5' RT - PROP TRANSITION TO BRIDGE RAIL

STA 25+40.66, 22.3' RT TO STA 25+48.69, 19.24' RT - PROP TRAILING ANCHORAGE, TL-2
STA 25+48.69, 19.24' RT TO STA 26+21.89, 8.52' RT - PROP GUARDRAIL, TL-2
STA 26+21.89, 8.52' RT TO STA 26+46.89, 8.51' RT - PROP GUARDRAIL TANGENT END
TREATMENT, TL-2

WATER SUPPLY ALTERATIONS
SEE SHEET NOS. 13 & 26

**SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	9	98
PROJECT FILE NO.		611940	



FOR PROFILE SEE SHEET NO. 10
FOR NEWTON STREET PROFILE SEE SHEET NO. 11

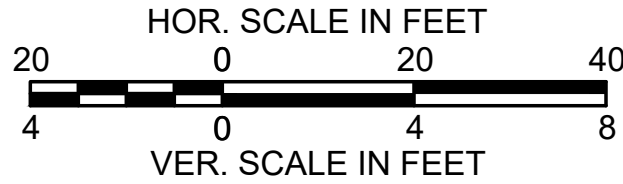
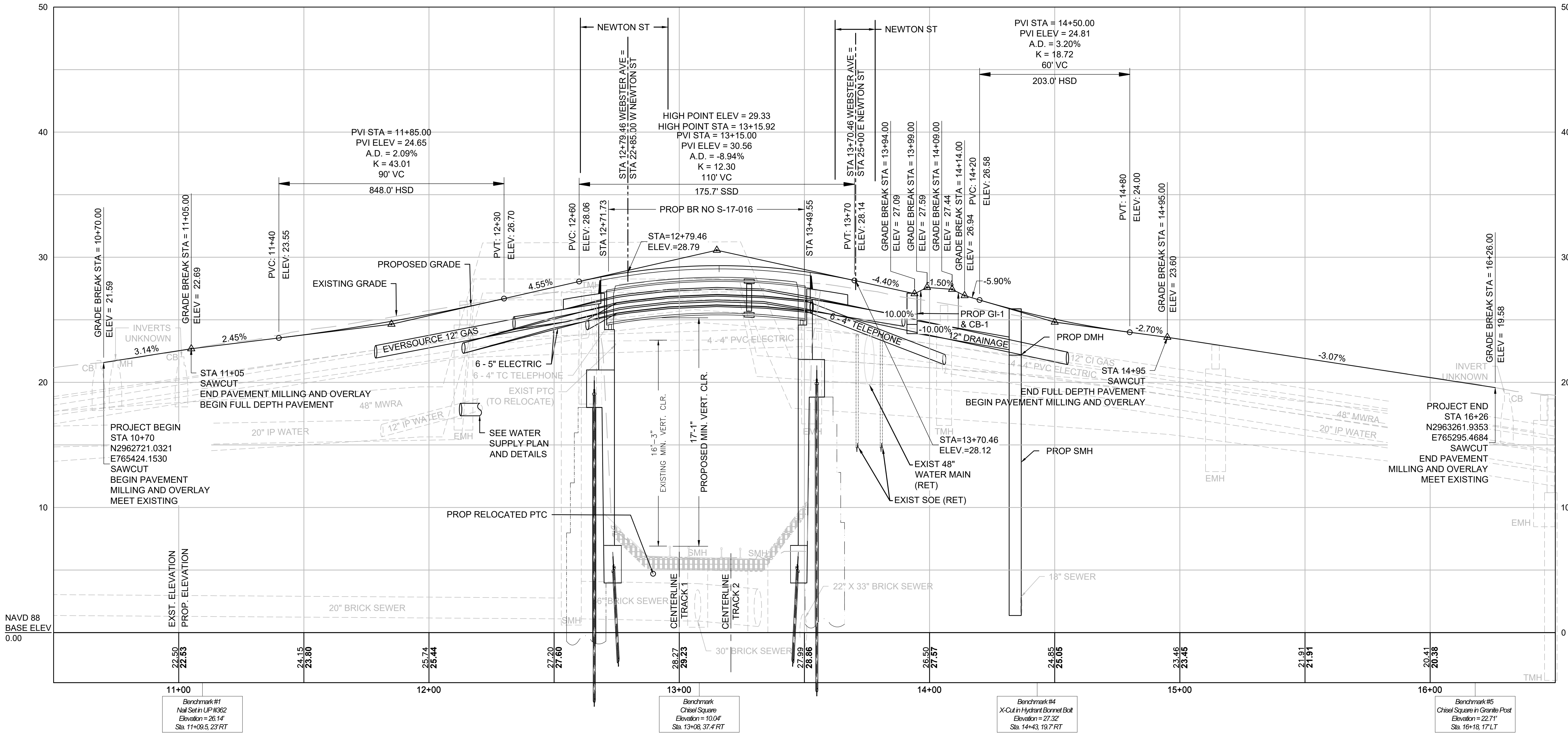
- NOTES:
1. EXISTING MWRA WATER PIPES ASSUMED TO BE 48"-60" BELOW EXISTING GRADE TO TOP OF PIPE BASED ON TEST PITS.
 2. EXISTING CoS WATER PIPES ASSUMED TO BE 44"-48" BELOW EXISTING GRADE TO TOP OF PIPE BASED ON TEST PITS.
 3. EXISTING ELECTRIC CONDUITS ASSUMED TO BE 15-24" BELOW EXISTING GRADE TO TOP OF CONDUIT BASED ON TEST PITS.
 4. EXISTING TELEPHONE CONDUITS ASSUMED TO BE 24"-48" BELOW EXISTING GRADE TO TOP OF CONDUIT BASED ON TEST PITS.
 5. EXISTING GAS PIPES ASSUMED TO BE 30" BELOW EXISTING GRADE TO TOP OF PIPE.

SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	10	98
PROJECT FILE NO.		611940	

PROFILES - 01
WEBSTER AVE

WEBSTER AVENUE

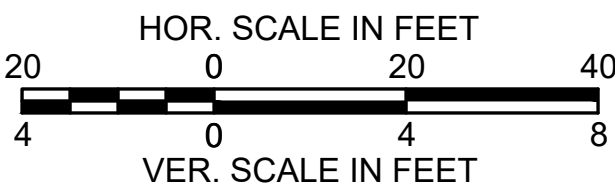
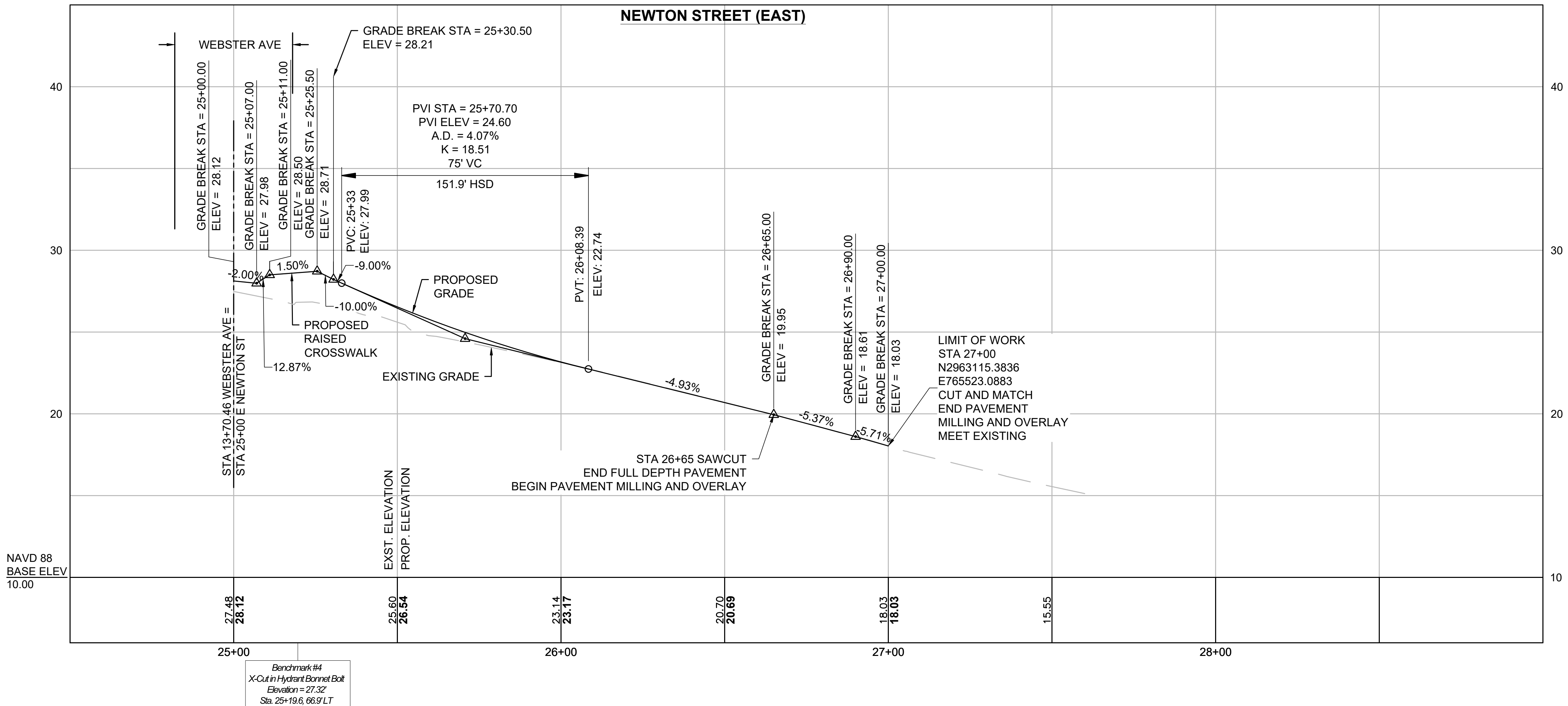
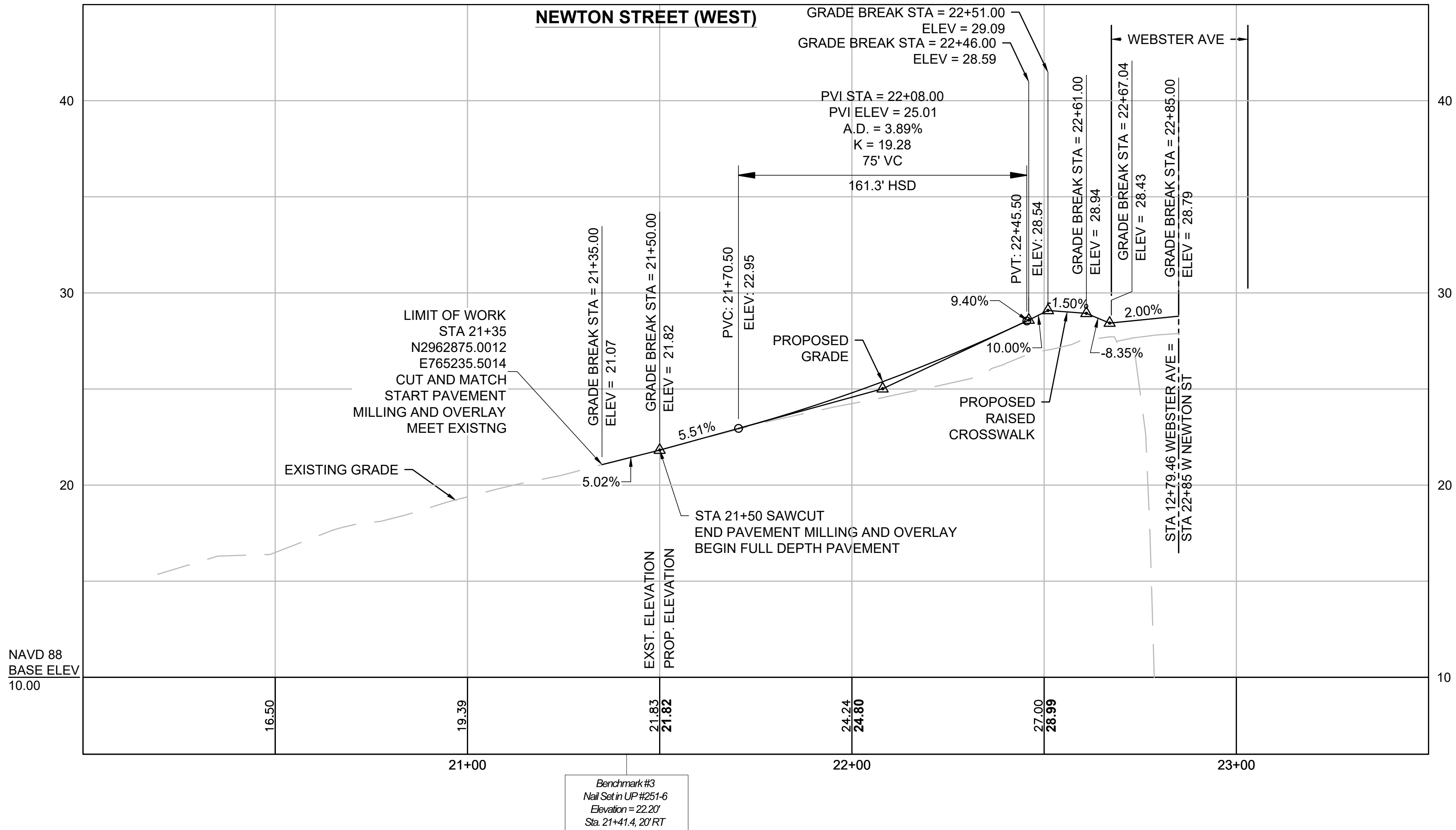


FOR CONSTRUCTION PLAN:
SEE SHEET NO. 9

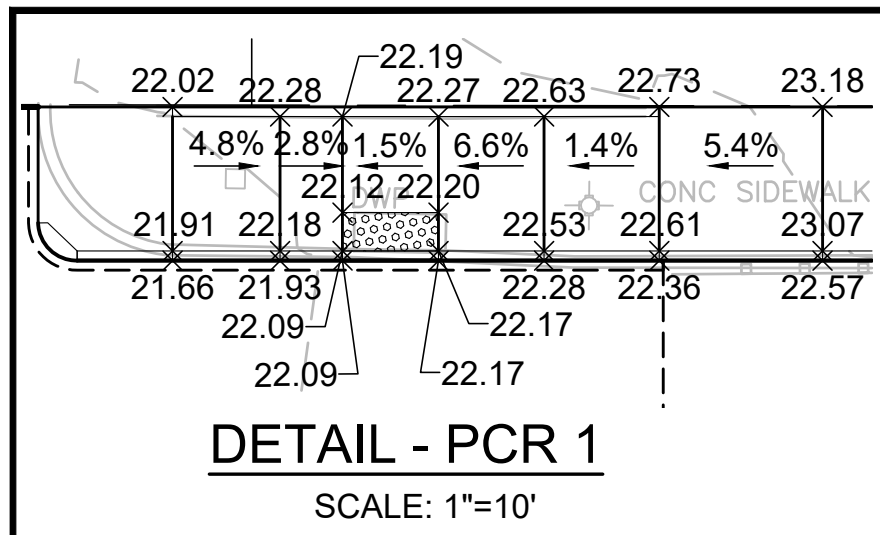
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	11	98
PROJECT FILE NO.		611940	

PROFILES - 02
NEWTON STREET



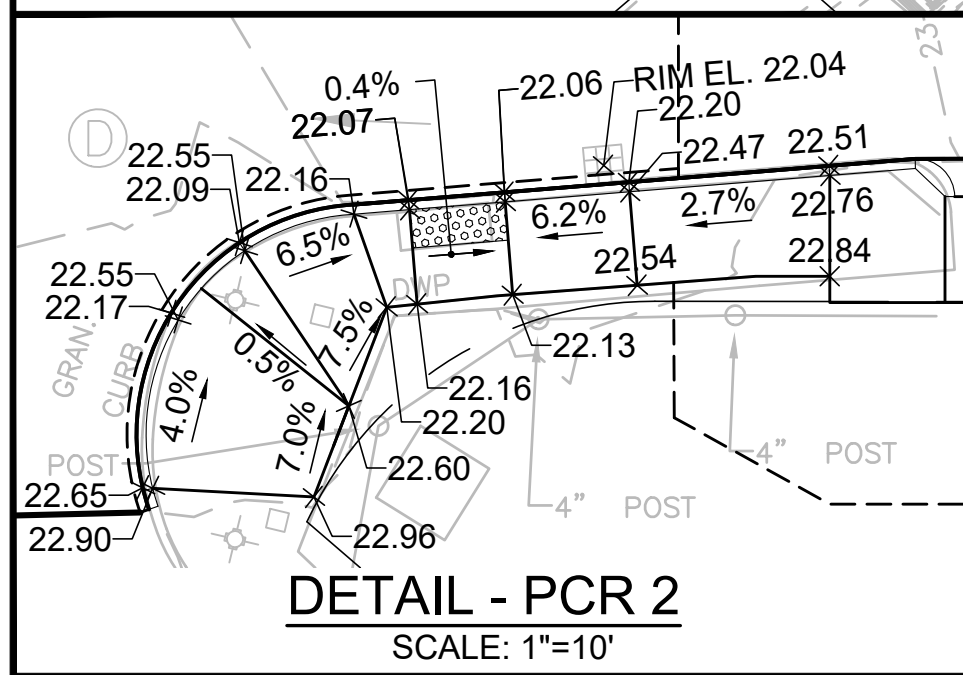
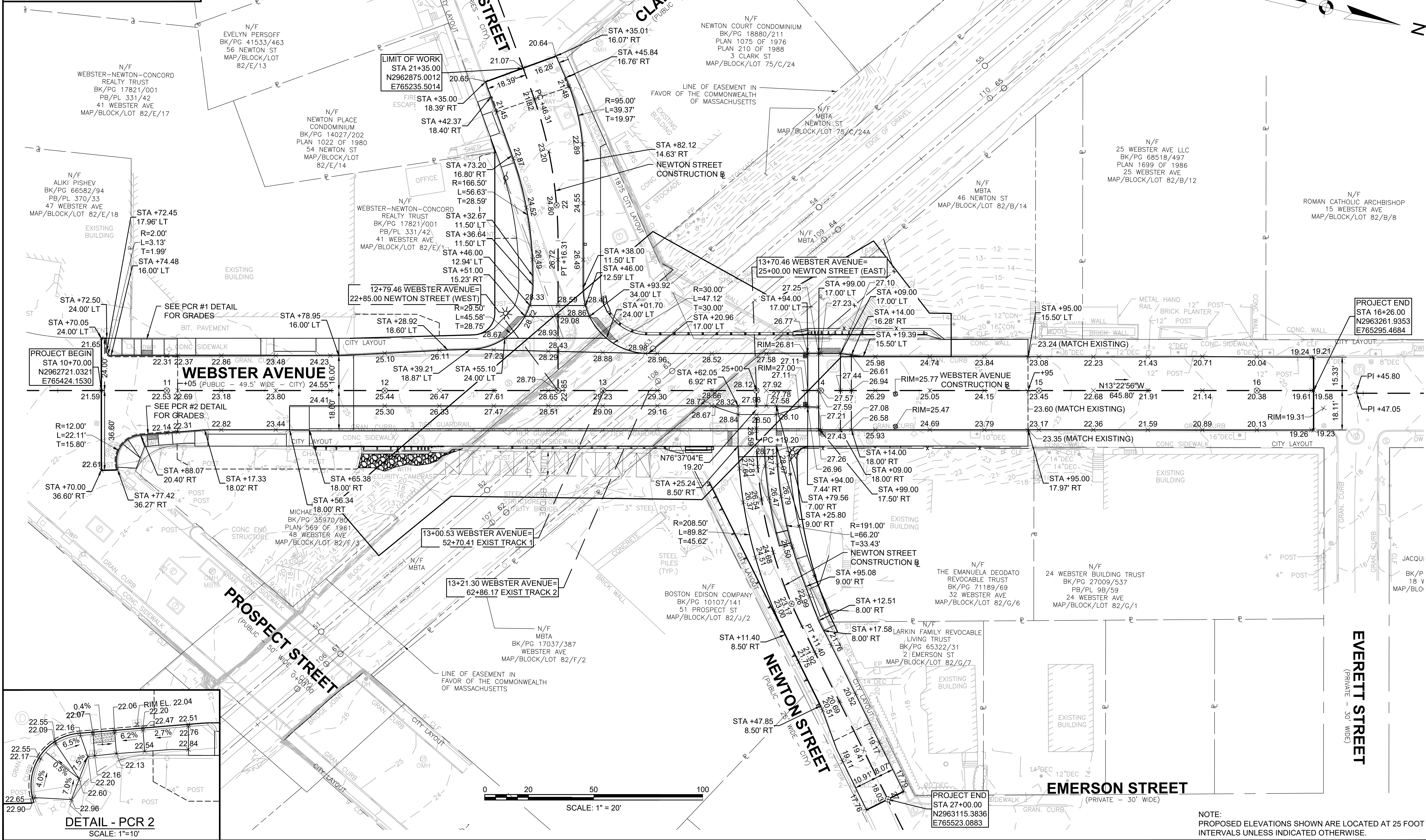
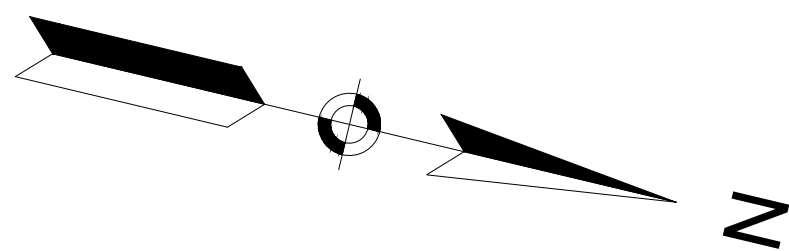
FOR CONSTRUCTION PLAN:
SEE SHEET NO. 9



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NG)-003S(987)X	12	98
PROJECT FILE NO. 611940			

CURB TIE & GRADING PLAN

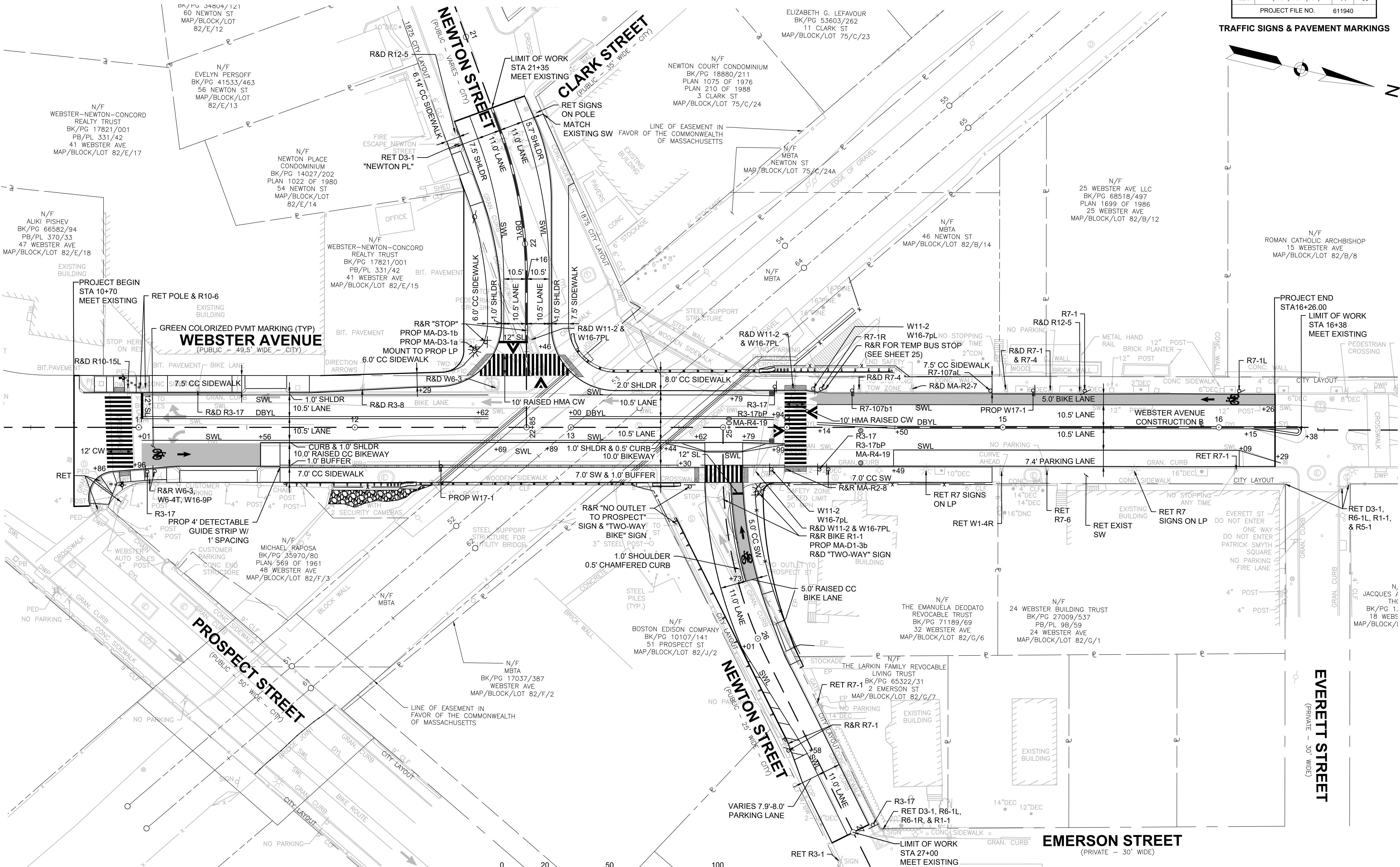
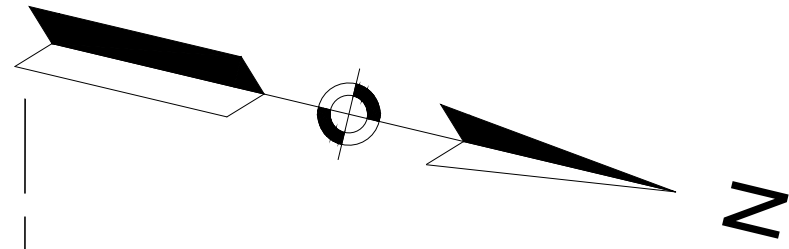


NOTE:
PROPOSED ELEVATIONS SHOWN ARE LOCATED AT 25 FOOT
INTERVALS UNLESS INDICATED OTHERWISE.

SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

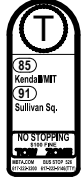
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	14	98
PROJECT FILE NO.		611940	

TRAFFIC SIGNS & PAVEMENT MARKINGS



SCALE: 1" = 20'

TRAFFIC SIGN SUMMARY

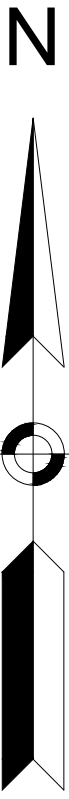
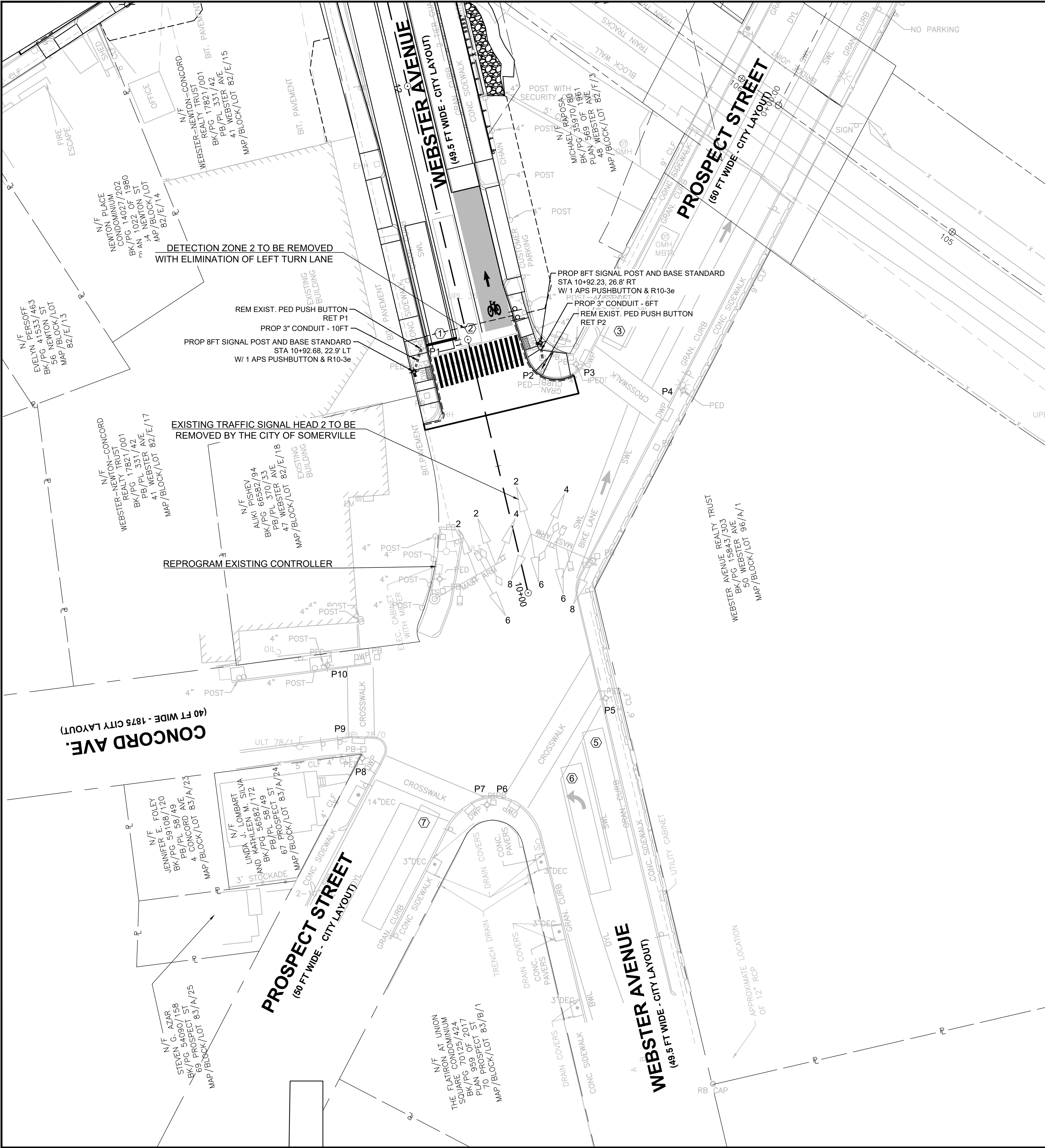
IDENTIFI- CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK- GROUND	LEGEND	BORDER			
R3-17	30"	24"		SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			4	WHITE	BLACK	BLACK	P-5 (4- REQ'D)	5.00	20.00
R3-17bP	30"	12"					2	WHITE	BLACK	BLACK	MOUNT W/ R3-17 (2)	2.50	5.00
MA-R4-19	30"	30"					2	WHITE	BLACK	BLACK	MOUNT W/ R3-17 (2)	6.25	12.50
R7-1	12"	18"					1	WHITE	RED	RED	P-5 (1 REQ'D)	1.50	1.50
R7-1L	12"	18"					1	WHITE	RED	RED	P-5 1 REQ'D)	1.50	1.50
R7-1R	12"	18"					1	WHITE	RED	RED	P-5 (1- REQ'D)	1.50	1.5
W11-2	30"	30"					2	FLOUR- ESCENT YELLOW/ GREEN	BLACK	BLACK	P-5 (2 REQ'D)	6.25	12.50
W16-7pL	24"	12"					2	FLOUR- ESCENT YELLOW/ GREEN	BLACK	BLACK	MOUNT W/ W11-2 (2)	2.00	4.00
W17-1	30"	30"		▼	▼	▼	2	YELLOW	BLACK	BLACK	P-5 (2 REQ'D)	6.25	12.50
R7-107aL**	12"	30"		SEE MBTA STANDARDS			1	WHITE	BLACK / RED	RED	P-5 (1- REQ'D)	SIGNS TO BE PROVIDED BY MBTA AND INSTALLED BY CONTRACTOR	
R7-107b1**	12"	30"		▼	▼	▼	1	WHITE	BLACK / RED	RED	P-5 (1- REQ'D)	▼	▼

SIGN NOTES:
1. R7 SERIES PARKING SIGNS SHALL BE MOUNTED 45 DEGREES TO THE CURB LINE
UNLESS OTHERWISE NOTED ON THE PLANS. INSTALLATION ANGLE OF MBTA BUS
STOP SIGNS SHALL BE PER MBTA STANDARDS.

STREET NAME SIGN SUMMARY

IDENTIFI- CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK- GROUND	LEGEND	BORDER			
MA-D3-1a	42"	12"		6D/4D	3" / 3"	N/A	2	BLUE	WHITE	WHITE	MOUNT TO PROP LP	3.50	7.00
MA-D3-1b	36"	12"		▼	▼	▼	4	BLUE	WHITE	WHITE	MOUNT WITH R1-1	3.00	12.00

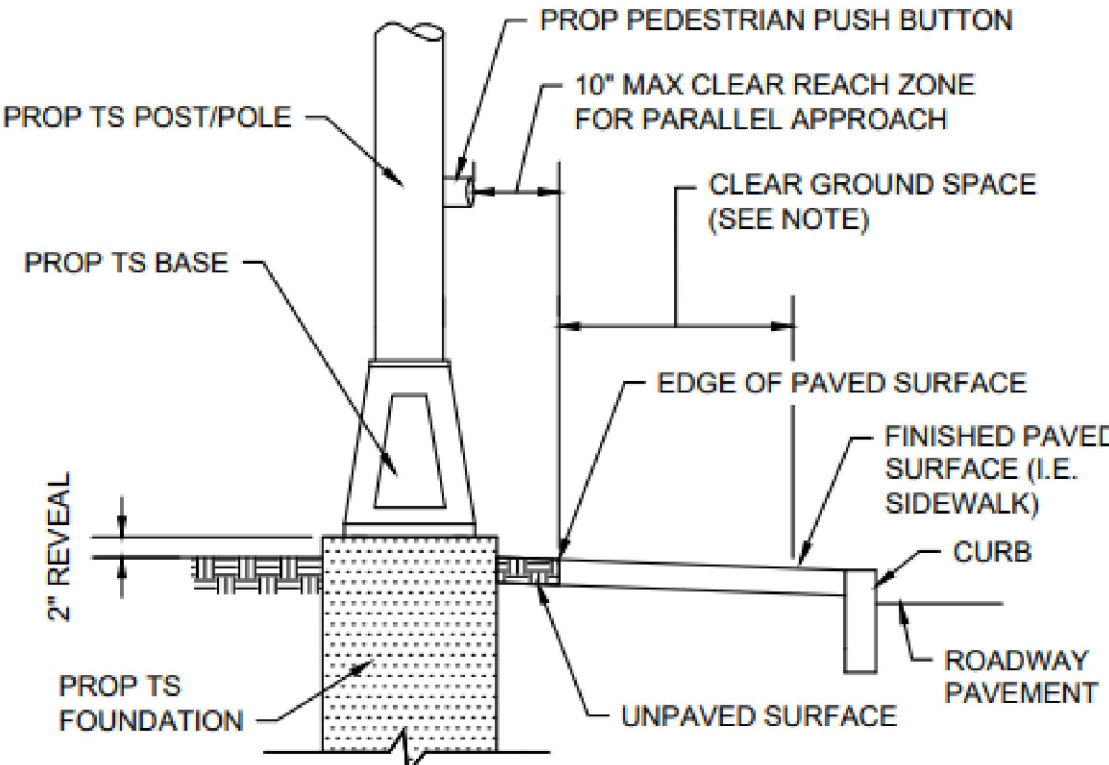
** SIGNS TO BE PROVIDED BY THE MBTA AND INSTALLED BY THE CONTRACTOR (SEE SPEC ITEM 874.8).
THE CONTRACTOR SHALL CONFIRM NUMBER OF SIGNS TO BE INSTALLED AND LOCATIONS WITH THE MBTA
PRIOR TO ORDERING SIGNS.



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	16	98
PROJECT FILE NO.		611940	

TRAFFIC SIGNAL PLAN
PROSPECT AVENUE & WEBSTER AVENUE



NOTE:
A CLEAR GROUND SPACE SHALL CONSIST OF A STABLE AND FIRM AREA, COMPLYING WITH 521 CMR 6.5 (FORWARD REACH) OR 521 CMR 6.6 (SIDE REACH) AND SHALL BE PROVIDED AT EACH OF THE PEDESTRIAN PUSH BUTTONS. WHERE A PARALLEL APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL BE WITHIN TEN INCHES (10") HORIZONTALLY OF AND CENTERED ON THE CLEAR GROUND SPACE. WHERE A FORWARD APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL ABUT AND BE CENTERED ON THE CLEAR GROUND SPACE.

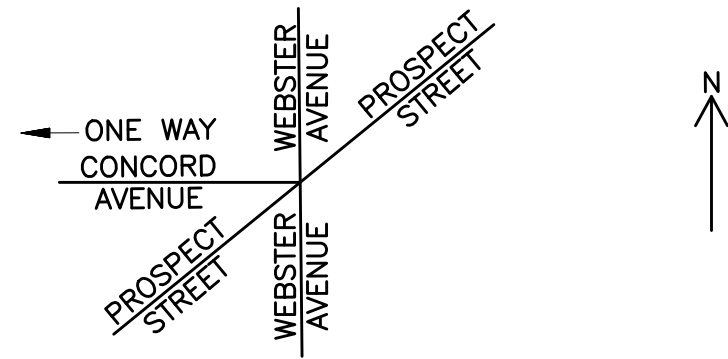
PEDESTRIAN PUSH BUTTON CLEAR ZONE
N.T.S.

NOTES:

- FOR INFORMATIONAL PURPOSES ONLY.
- REMOVE AND STORE EXISTING TRAFFIC SIGNAL HEAD 2, AS SHOWN ON THE PLANS. SIGNAL HEAD SHALL BECOME THE PROPERTY OF THE CITY OF SOMERVILLE.
- ALL OTHER EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL REMAIN IN PLACE.
- PUSHBUTTONS SHALL BE INSTALLED AT A HEIGHT OF 42" ABOVE FINISHED PAVED SURFACE.

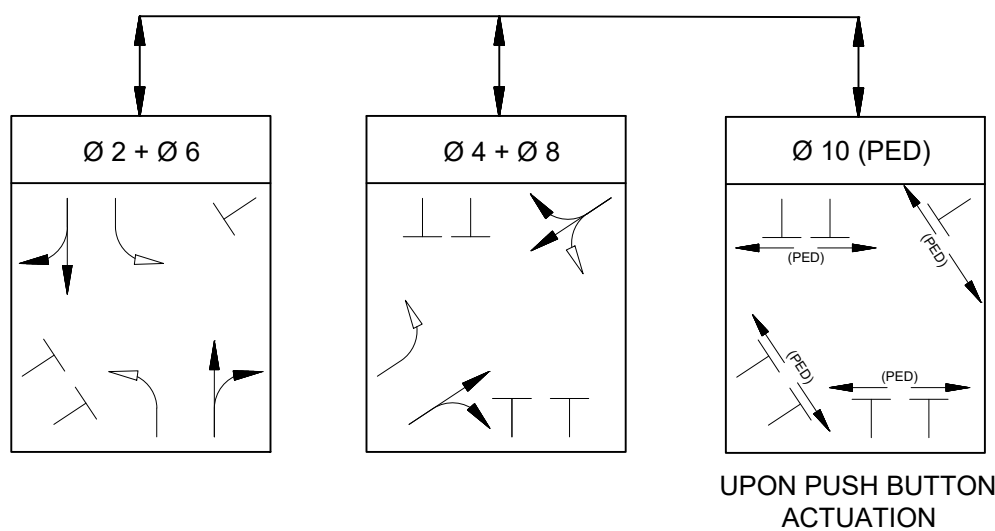
SYMBOL LEGEND

- EXISTING MAST ARM (LENGTH VARIES)
- EXISTING SIGNAL HEAD
- EXISTING VIDEO DETECTION CAMERA
- EXISTING OPTICOM DETECTOR
- EXISTING CONTROLLER CABINET
- DETECTION ZONE
- DETECTOR IDENTITY
- PULL BOX



PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8	PHASE 9	PHASE 10 (PED)
NOT USED		NOT USED		NOT USED		NOT USED		NOT USED	

EXISTING PHASING SEQUENCE

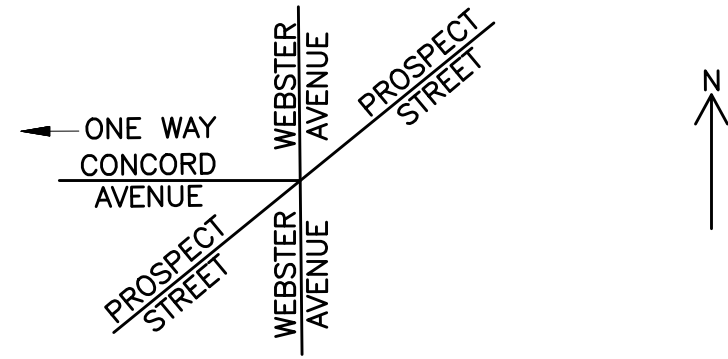


SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	17	98
PROJECT FILE NO.		611940	

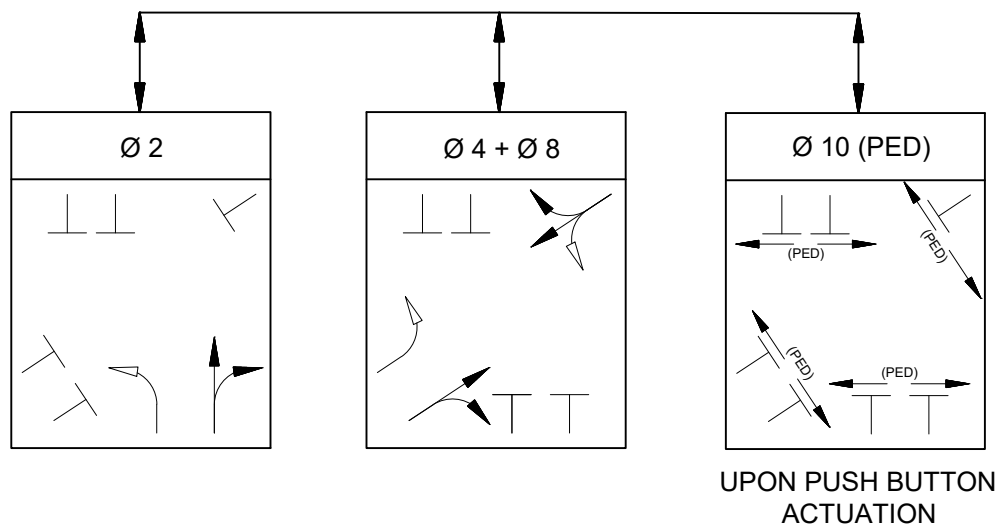
TEMPORARY TRAFFIC SIGNAL TIMING PLAN
PROSPECT AVENUE & WEBSTER AVENUE

MAJOR ITEMS REQUIRED		
PAY ITEM	QUANTITY	ITEM
804.3	20	3 INCH ELECTRICAL CONDUIT TYPE NM - PLASTIC -(UL)
816.91	1	TEMPORARY TRAFFIC SIGNAL RECONSTRUCTION LOCATION NO. 1
817.10	2	SIGNAL POST AND BASE STANDARD - 8 FOOT
819.855	2	APS PUSHBUTTON



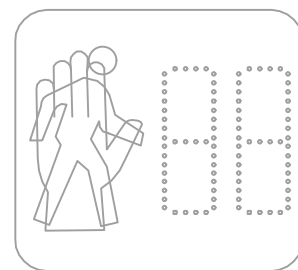
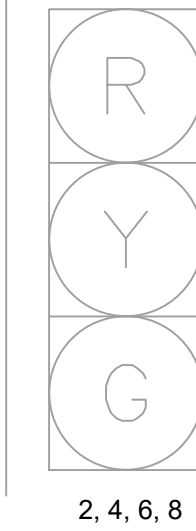
PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8	PHASE 9	PHASE 10 (PED)
NOT USED		NOT USED		NOT USED	NOT USED	NOT USED		NOT USED	

TEMPORARY PREFERENTIAL PHASING SEQUENCE

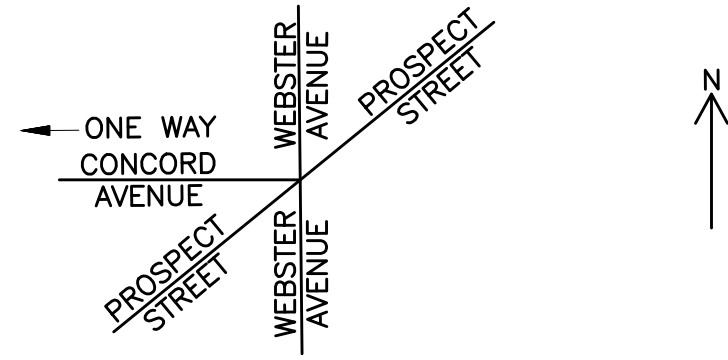


TEMPORARY DETOUR SEQUENCE AND TIMING FOR COORDINATED CONTROL (TO BE IMPLEMENTED BY CONTRACTOR DURING DETOUR)									
MINIMUM GREEN I (INITIAL)			8						-
MINIMUM GREEN II (INITIAL)			8						-
PASSAGE TIME (VEHICLE)			3						-
MAXIMUM I			16						-
MAXIMUM II			20						-
YELLOW CLEARANCE			4						-
RED CLEARANCE			4						-
PEDESTRIAN WALK									7
PEDESTRIAN CLEARANCE									13
RECALL			C-MAX						OFF
MEMORY			NON-LOCK						NON-LOCK
COORDINATION DATA			ON						OFF
TIMING PLAN	CYCLE LENGTH	OFFSET							
CYCLE I	120	-							
CYCLE II	120	-							

SIGNAL IDENTIFICATION

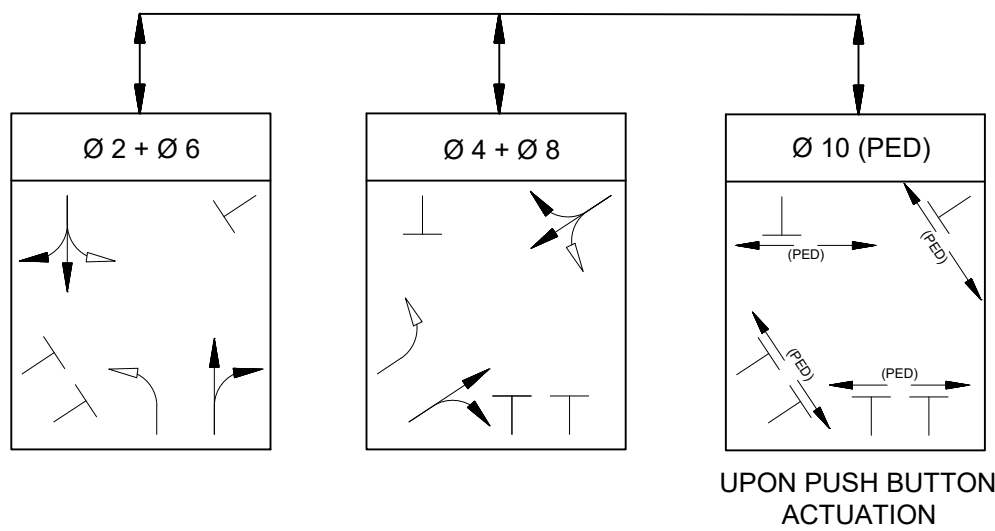


P1, P2, P3, P4,
P5, P6, P7, P8,
P9, P10



PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8	PHASE 9	PHASE 10 (PED)
NOT USED		NOT USED		NOT USED		NOT USED		NOT USED	

PROPOSED PHASING SEQUENCE



PROPOSED FINAL BUILD-CONDITION SEQUENCE AND TIMING FOR COORDINATED CONTROL (TO BE IMPLEMENTED BY CITY OF SOMERVILLE AFTER DETOUR)									
MINIMUM GREEN I (INITIAL)			8						-
MINIMUM GREEN II (INITIAL)			8						-
PASSAGE TIME (VEHICLE)			3						-
MAXIMUM I			24						-
MAXIMUM II			18						-
YELLOW CLEARANCE			4						-
RED CLEARANCE			4						-
PEDESTRIAN WALK									7
PEDESTRIAN CLEARANCE									13
RECALL			C-MAX						OFF
MEMORY			NON-LOCK						NON-LOCK
COORDINATION DATA			ON						OFF
TIMING PLAN	CYCLE LENGTH	OFFSET							
CYCLE I	120	-							
CYCLE II	120	-							

NOTES:

- FOR INFORMATIONAL PURPOSES ONLY.
- GREEN ARROW OR WALK INDICATIONS TO REMAIN ENERGIZED DURING CLEARANCE INTERVALS IF NEXT PHASE CALLS FOR SAME INDICATIONS.
MIN/MAX I: WEEKDAY AM PEAK HOUR (6:00 A.M. TO 10:00 A.M.)
MIN/MAX II: WEEKDAY PM PEAK HOUR (3:00 P.M. TO 7:00 P.M.)
- PROPOSED PHASING SEQUENCE ELIMINATES THE SOUTHBOUND LEFT-TURN LANE ASSOCIATED WITH PHASE 6. THE LEFT-TURN SHALL BE PERMITTED ONLY FROM A SHARED RIGHT-THRU-LEFT LANE. PROPOSED TIMING IS UNCHANGED FROM THE EXISTING TIMING.

TEMPORARY TRAFFIC CONTROL 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		
MA-R2-10a	48"	36"		SEE MASSDOT STANDARD SIGN BOOK			4	FLUOR- ESCENT ORANGE/ WHITE	BLACK	BLACK	12.00	48.00
MA-R2-10e	36"	48"		SEE MASSDOT STANDARD SIGN BOOK			4	FLUOR- ESCENT ORANGE/ WHITE	BLACK	BLACK	12.00	48.00
R3-17	30"	24"		①	①	①	2	WHITE	BLACK	BLACK	5.00	10.00
R3-17bp	30"	12"					2	WHITE	BLACK	BLACK	2.50	5.00
R4-7	24"	30"					2	WHITE	BLACK	BLACK	5.00	10.00
R4-11	30"	30"					2	WHITE	BLACK	BLACK	6.25	12.50
R9-9	24"	12"					8	WHITE	BLACK	BLACK	2.00	16.00
R9-11aL	24"	12"					1	WHITE	BLACK	BLACK	2.00	2.00
R9-11aR	24"	12"					1	WHITE	BLACK	BLACK	2.00	2.00
W1-4L	36"	36"					2	FLUOR- ESCENT ORANGE	BLACK	BLACK	9.00	18.00
W1-4R	36"	36"					2	FLUOR- ESCENT ORANGE	BLACK	BLACK	9.00	18.00
W5-1	36"	36"					2	FLUOR- ESCENT ORANGE	BLACK	BLACK	9.00	18.00
W20-1	36"	36"					4	FLUOR- ESCENT ORANGE	BLACK	BLACK	9.00	36.00
W20-4	36"	36"		↓	↓	↓	4	FLUOR- ESCENT ORANGE	BLACK	BLACK	9.00	36.00
MA-W21-5C	36"	36"		SEE MASSDOT STANDARD SIGN BOOK			2	FLUOR- ESCENT ORANGE	BLACK	BLACK	9.00	18.00
MA-W20-7b	36"	36"		↓	↓	↓	4	FLUOR- ESCENT ORANGE	BLACK	BLACK	9.00	36.00
MA-W30-8R	36"	36"		↓	↓	↓	2	FLUOR- ESCENT ORANGE	BLACK	BLACK	9.00	18.00

① SEE MUTCD 2009 EDITION AND 2012 SUPPLEMENT TO THE 2004 STANDARD HIGHWAY SIGNS

	REFLECTORIZED CONE		WORK ZONE		CONSTRUCTION SIGN
	REFLECTORIZED DRUM		TYPE III BARICADE	N.T.S.	NOT TO SCALE
	PROPOSED TRAFFIC FLOW		POLICE DETAIL		

GENERAL NOTES

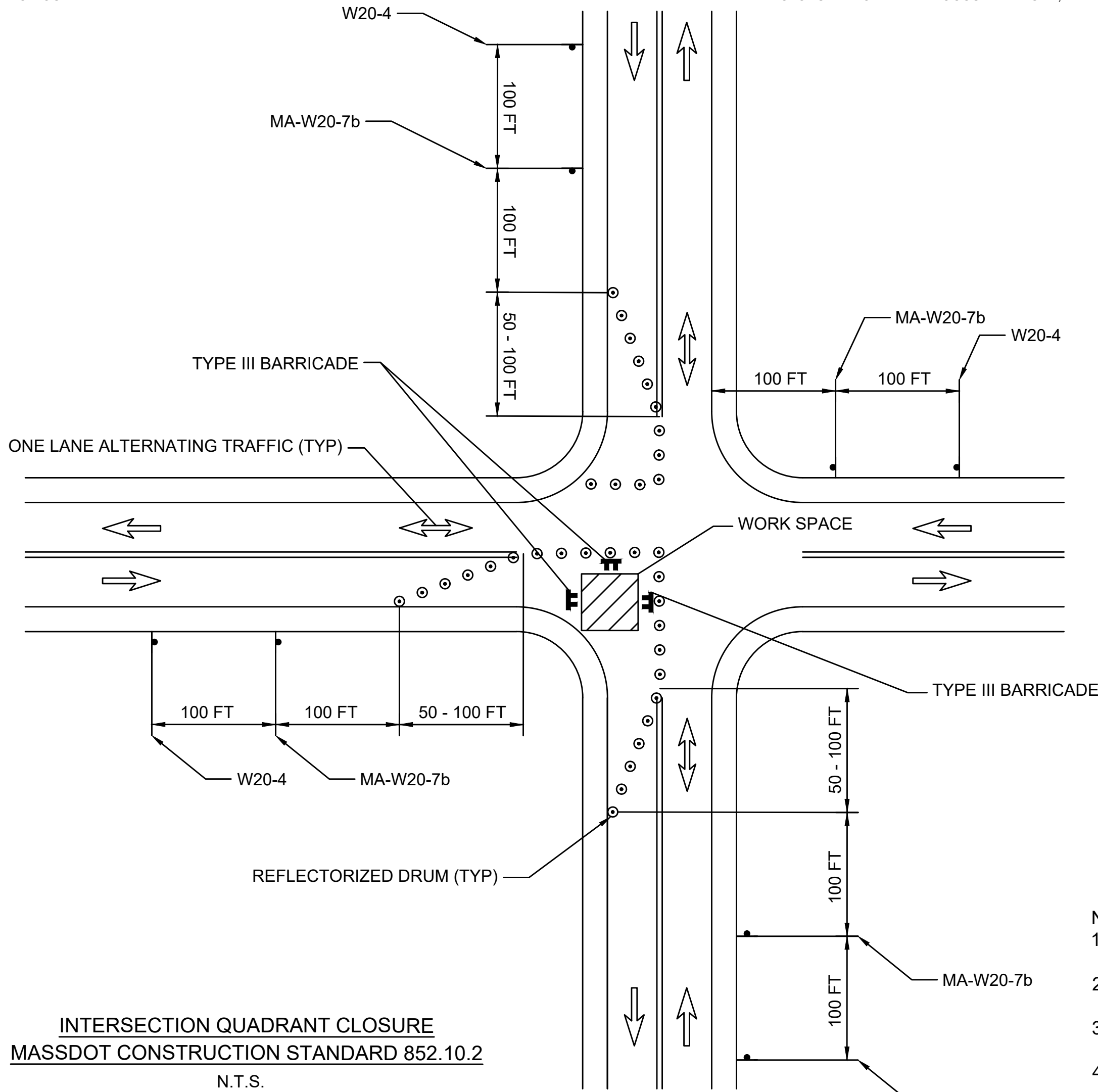
- ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES AND OTHER DEVICES SHALL CONFORM WITH PART 6 OF THE LATEST EDITION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.)
- ALL DRUMS SHALL BE SET @ 25' O.C. MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE RESIDENT ENGINEER.
- ALL DRUMS SHALL BE APPROPRIATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORK HOURS, TO MAINTAIN SUCH ACCESS.
- THE CONTRACTOR 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 EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF SOMERVILLE POLICE, FIRE, HIGHWAY DEPARTMENT, MASSDOT AND THE MBTA BUS OPERATIONS AT LEAST 48 HOURS IN ADVANCE OF LANE CLOSURES.
- GRADE SEPARATIONS IN EXCESS OF 2 INCHES DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS AND TEMPORARY RAMPING AS REQUIRED BY THE RESIDENT ENGINEER.
- EXCAVATION EDGES IN EXCESS OF 4 INCHES DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF GRAVEL OR SOIL COMPACTED TO A 4:1 SLOPE.
- 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED DURING CONSTRUCTION.
- NONESSENTIAL TEMPORARY CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.

SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

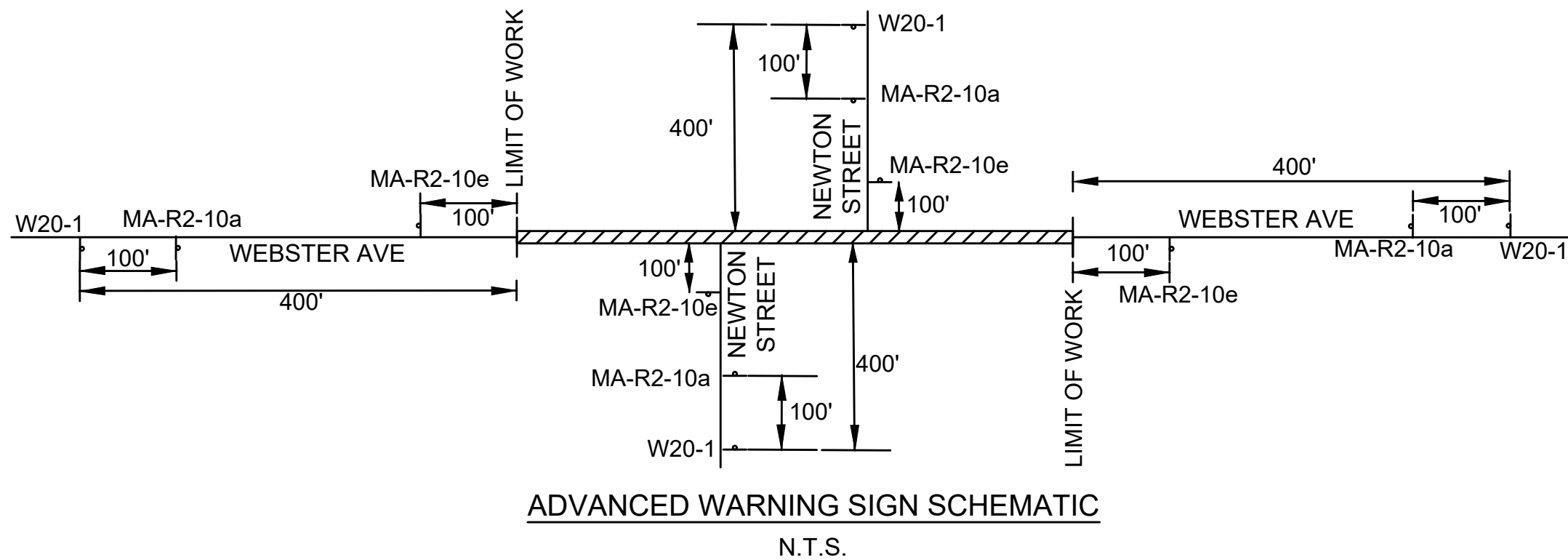
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	18	98
PROJECT FILE NO.		611940	

TEMPORARY TRAFFIC CONTROL PLANS - 01

- THE GENERAL SEQUENCE OF WORK IS DEPENDENT UPON THE REMOVAL AND RELOCATION OF THE EXISTING UTILITY POLES AND WIRES THAT ARE FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, BY THE UTILITY COMPANIES. THE CONTRACTOR SHALL SCHEDULE THE WORK IN EACH AREA TO COORDINATE WITH THE POLE RELOCATION WORK.
- SUPPORTS FOR ALL TRAFFIC MANAGEMENT SIGNS SHALL BE ANY TEMPORARY OR PERMANENT SIGN SUPPORT APPROVED BY THE ENGINEER.
- ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF MUTCD AND ALL APPLICABLE MASS. ARCHITECTURAL ACCESS BOARD (MAAB) AND AMERICANS W/ DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) REQUIREMENTS.
- ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF MUTCD AND ALL APPLICABLE MASS. ARCHITECTURAL ACCESS BOARD (MAAB) AND AMERICANS W/ DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) REQUIREMENTS.
- THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS WHEN USED FOR NIGHT WORK BETWEEN DUSK AND DAWN.
- THE CONTRACTOR SHALL WORK A NORMAL 8-HOUR DAY, 5-DAY WEEK, FROM 9:00AM TO 5:00PM. ANY LANE CLOSURE WORK SHALL OCCUR AT NIGHT, BETWEEN 9:00PM AND 5:00AM.



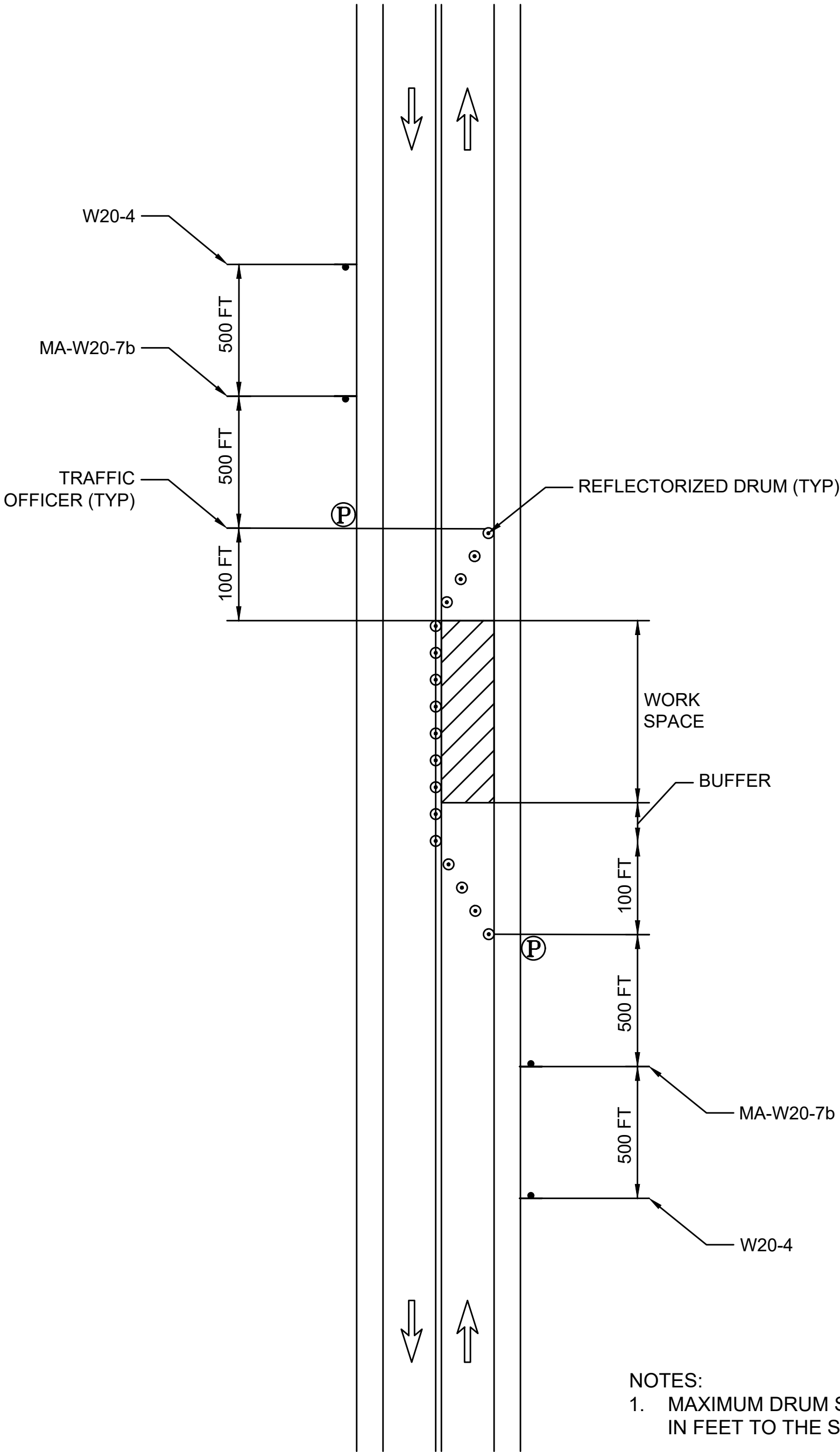
- NOTES:
- FLAGGING REQUIRED FOR ALL ALTERNATING ONE-LANE TRAFFIC.
 - PEDESTRIAN ACCESS MUST BE MAINTAINED AT ALL TIMES.
 - MAXIMUM DRUM SPACING IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH
 - MINIMUM LANE WIDTH IS TO BE 11 FEET MEASURED FROM THE EDGE OF DRUMS.



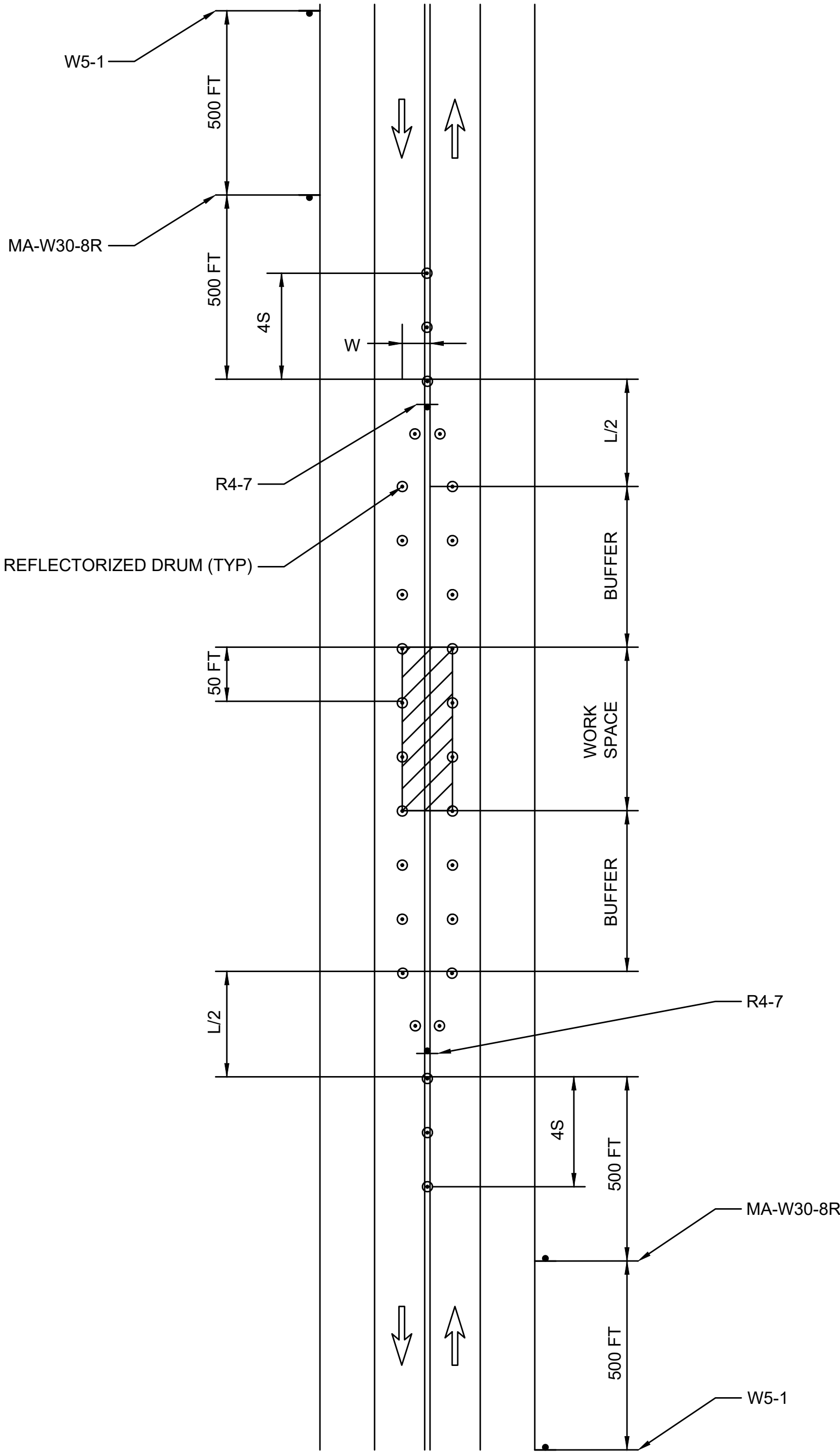
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	19	98
PROJECT FILE NO.		611940	

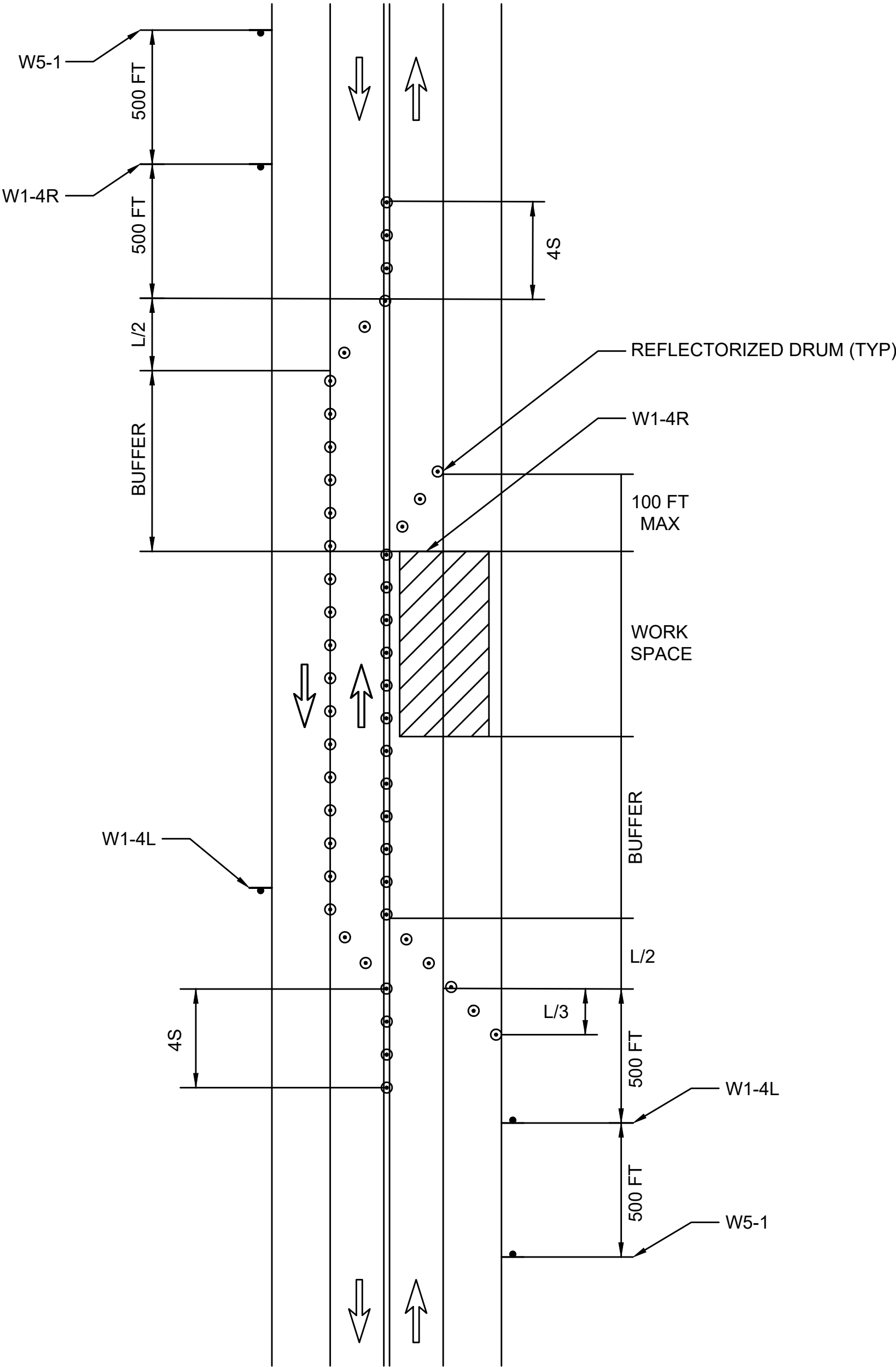
TEMPORARY TRAFFIC CONTROL PLANS - 02



ALTERNATING ONE-WAY (TRAFFIC OFFICER)
MASSDOT CONSTRUCTION STANDARD 852.4.4
N.T.S.



TWO LANE ROAD CENTER OF ROAD CLOSURE
MASSDOT CONSTRUCTION STANDARD 852.5.1
N.T.S.



TWO LANE ROAD HALF ROAD CLOSURE
MASSDOT CONSTRUCTION STANDARD 852.5.4
N.T.S.

- NOTES:
1. MAXIMUM DRUM SPACING IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.

- NOTES:
1. MAXIMUM DRUM SPACING IN A TAPER 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.

- NOTES:
1. MAXIMUM DRUM SPACING IN A TAPER 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.

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

TYPICAL TAPER LENGTHS (L) IN FEET

SPEED LIMIT (S) IN MPH	WIDTH OF OFFSET* (W) IN FEET						
	6	7	8	9	10	11	12
25	63	73	83	94	104	115	125
30	90	105	120	135	150	165	180
35	123	143	163	184	204	225	245
40	160	187	213	240	267	293	320

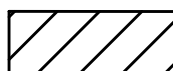
* MEASURED FROM CENTERLINE OF ROADWAY TO OUTSIDE EDGE OF DRUM

TYPICAL TAPER LENGTHS (L) IN FEET

SPEED LIMIT (S) IN MPH	WIDTH OF OFFSET* (W) IN FEET		
	6	7	8
25	63	73	83
30	90	105	120
35	123	143	163
40	160	187	213

NOTE: FOR SHOULDER WIDTHS NOT LISTED IN TABLE, USE $L = WS^2/60$

LEGEND

△ REFLECTORIZED CONE  WORK ZONE  CONSTRUCTION SIGN

○ REFLECTORIZED DRUM  TYPE III BARICADE N.T.S. NOT TO SCALE

➡ PROPOSED TRAFFIC FLOW  POLICE DETAIL

SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	20	98
PROJECT FILE NO.		611940	

TEMPORARY TRAFFIC CONTROL PLANS - 03

TYPICAL TAPER LENGTHS (L) IN FEET

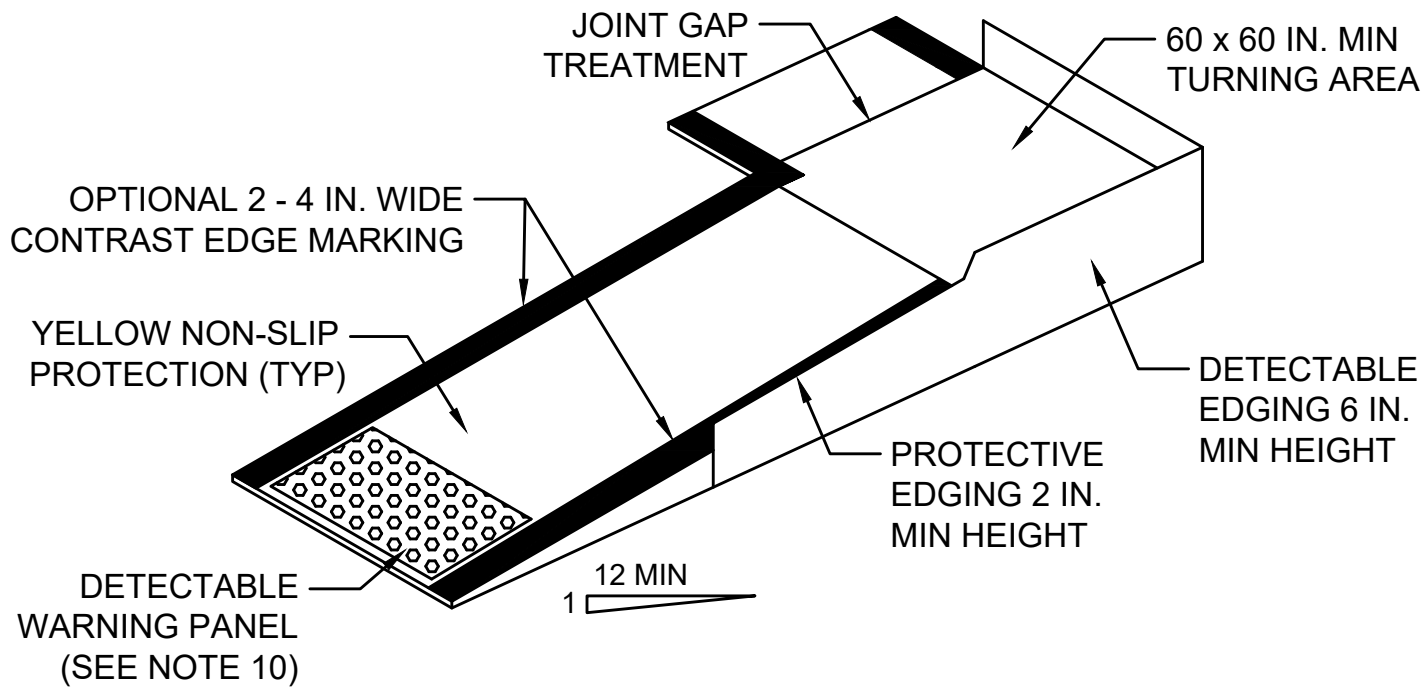
SPEED LIMIT (S) IN MPH	WIDTH OF OFFSET* (W) IN FEET		
	4	5	6
25	14	17	21
30	20	25	30
35	27	34	41
40	36	44	53

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

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

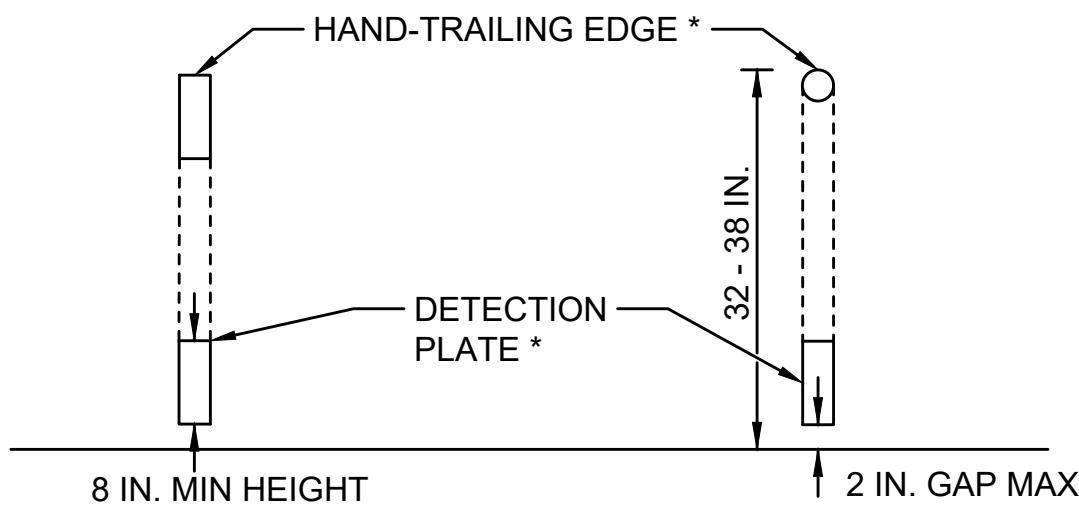
- NOTES:
- THIS DRAWING IS FOR USE WHERE THE WORK SPACE OCCUPIES A MARKED BIKE LANE BUT DOES NOT ENCROACH UPON THE AUTOMOBILE LANE. IF A WORK SPACE OCCUPIES BOTH A MARKED BIKE LANE AND AN AUTOMOBILE LANE, THEN THE SIGNS SHOWN IN THIS DRAWING SHOULD BE APPLIED IN CONJUNCTION WITH THE RELEVANT DRAWING FOR THE CLOSURE OF THE AUTOMOBILE LANE.
 - MAXIMUM DRUM SPACING IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.



- NOTES
- CURB RAMP SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE, AND NON-SLIP SURFACE.
 - PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMP OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
 - DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRACTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
 - THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRACTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
 - CURB RAMP AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
 - CLEAR SPACE OF 48X48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
 - WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
 - LATERAL JOINTS OR CAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
 - CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.
 - IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.

TEMPORARY CURB RAMP - PARALLEL TO CURB
MASSDOT CONSTRUCTION STANDARD 850.1.1

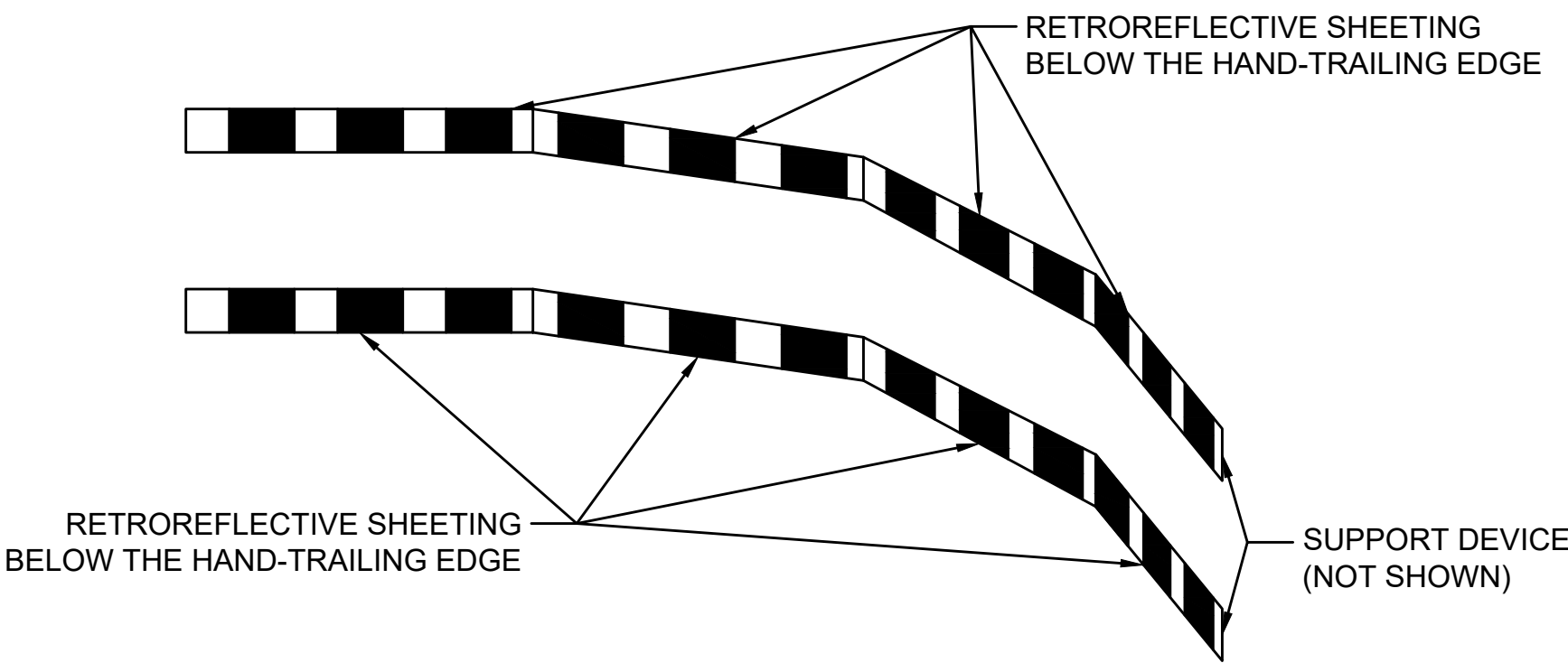
N.T.S.



CROSS SECTION VIEW

* THE HAND-TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH A LONG CANE CAN FOLLOW IT.

STANDARD RETROREFLECTIVE LAYOUT FOR PEDESTRIAN CHANNELIZING DEVICES

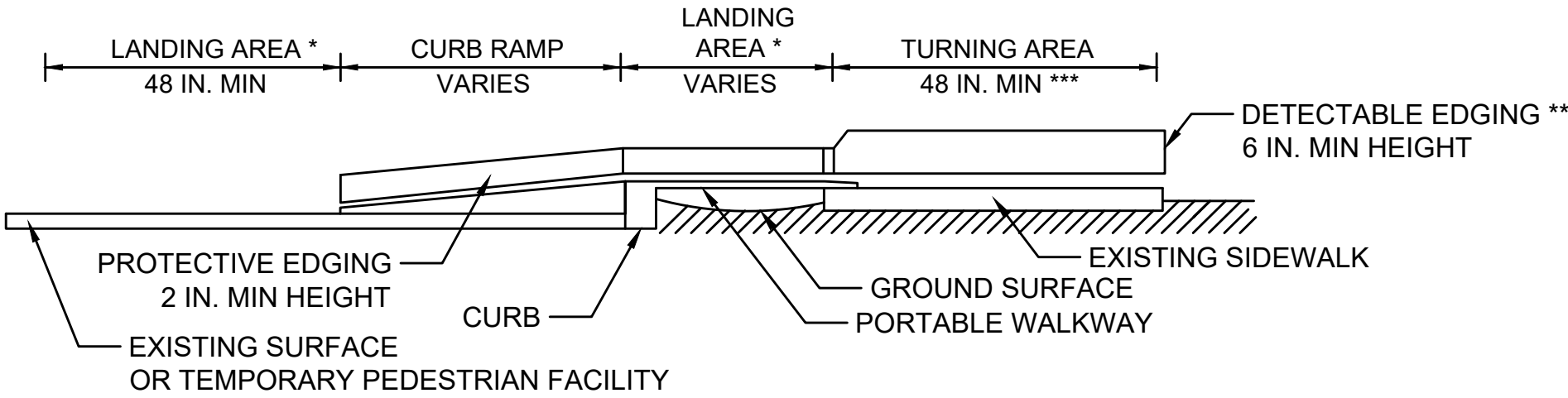
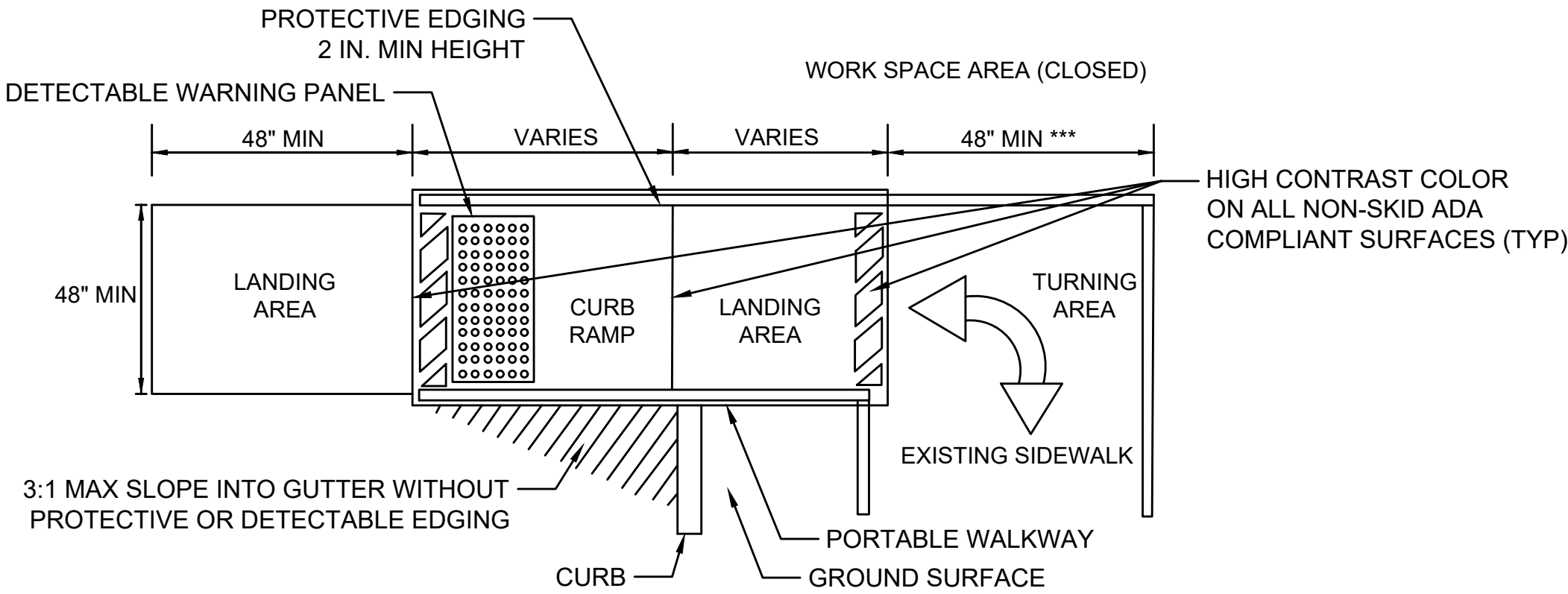


ISOMETRIC VIEW

- NOTES
- A MAXIMUM 2-INCH GAP BETWEEN THE BOTTOM OF THE CONTINUOUS DETECTION PLATE AND THE WALKWAY SURFACE MAY BE USED TO PROVIDE DRAINAGE.
 - HAND-TRAILING EDGE AND DETECTION PLATE ARE OPTIONAL FOR CONTINUOUS WALLS.
 - SUPPORT DEVICE FOR CONTINUOUS DETECTION PLATE AND CONTINUOUS HAND-TRAILING EDGE NOT SHOWN ON THE PLAN.
 - STRIPING ON SHEETING PANELS MAY BE EITHER VERTICAL OR AT A 45-DEGREE ANGLE.
 - RETROREFLECTIVE AREAS CAN BE DISTRIBUTED IN A MANNER THAT ENSURES VISIBILITY AND DETECTION WITHOUT NECESSITATING A SINGLE CONTINUOUS APPLICATION.

PEDESTRIAN CHANNELIZING DEVICE
MASSDOT CONSTRUCTION STANDARD 851.3.1

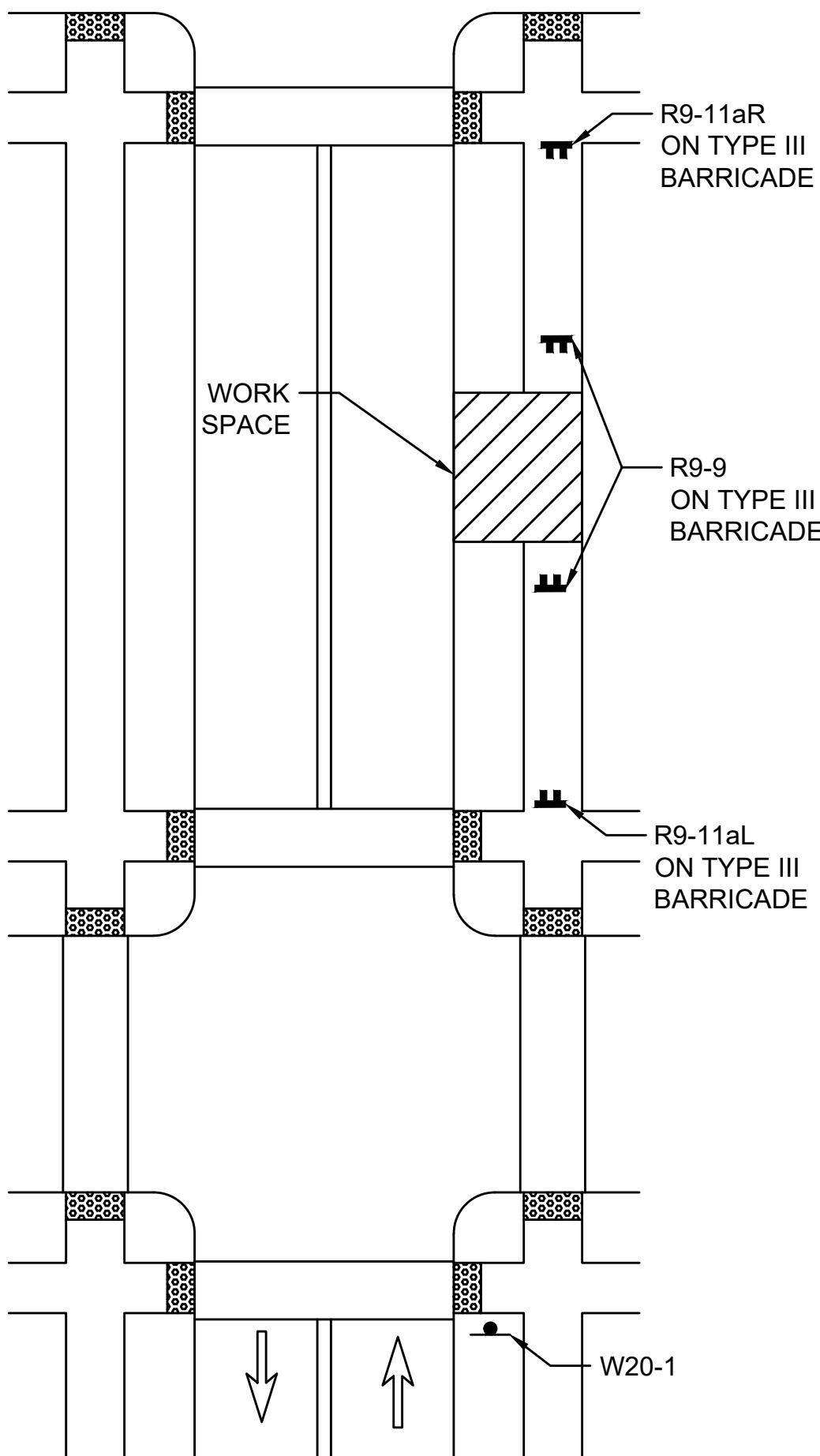
N.T.S.



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

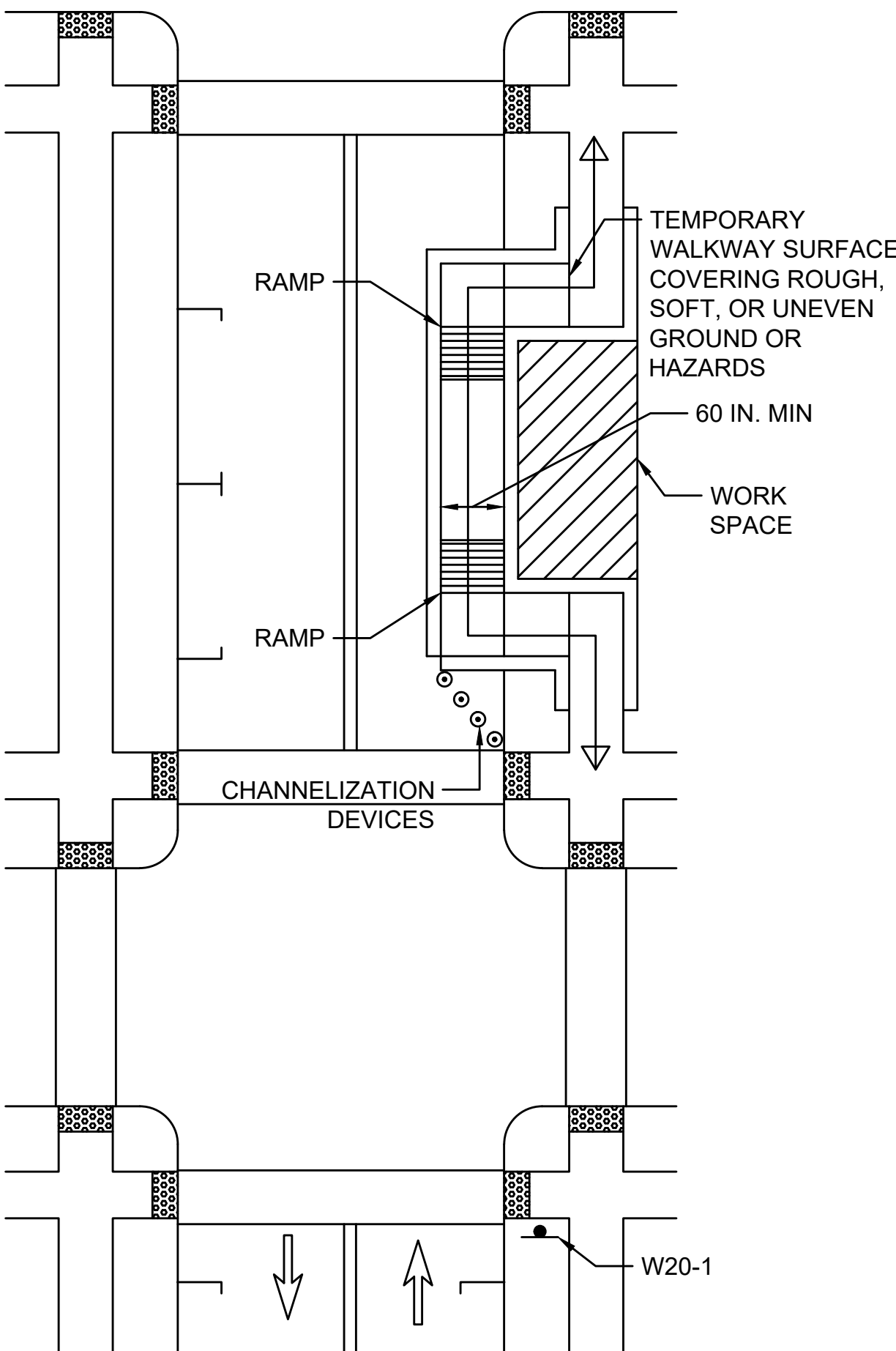
TEMPORARY CURB RAMP
MASSDOT CONSTRUCTION STANDARD 850.1.2

N.T.S.



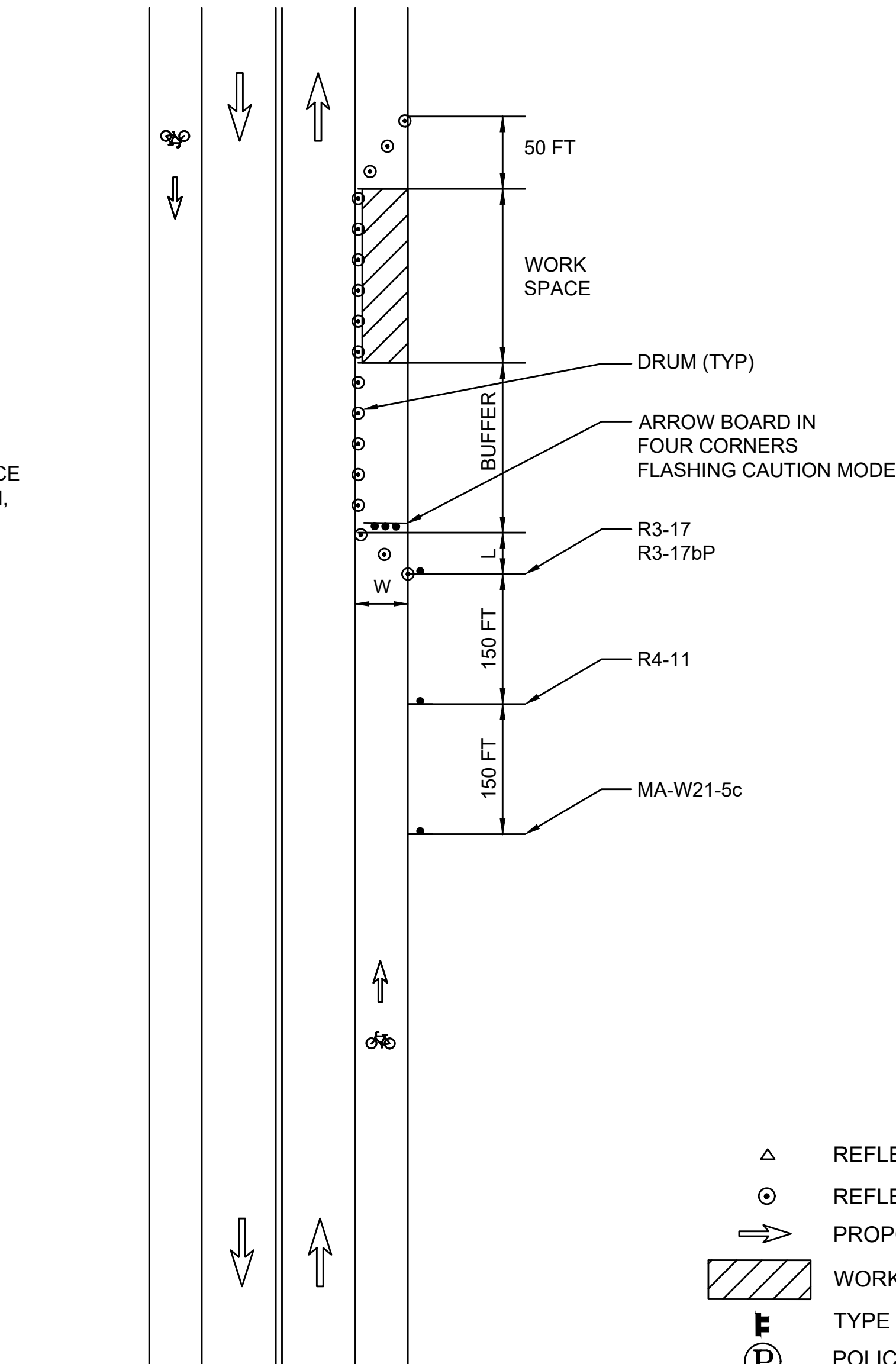
SIDEWALK DETOUR
MASSDOT CONSTRUCTION STANDARD 852.1.1

N.T.S.



SIDEWALK DIVERSION
MASSDOT CONSTRUCTION STANDARD 852.1.2

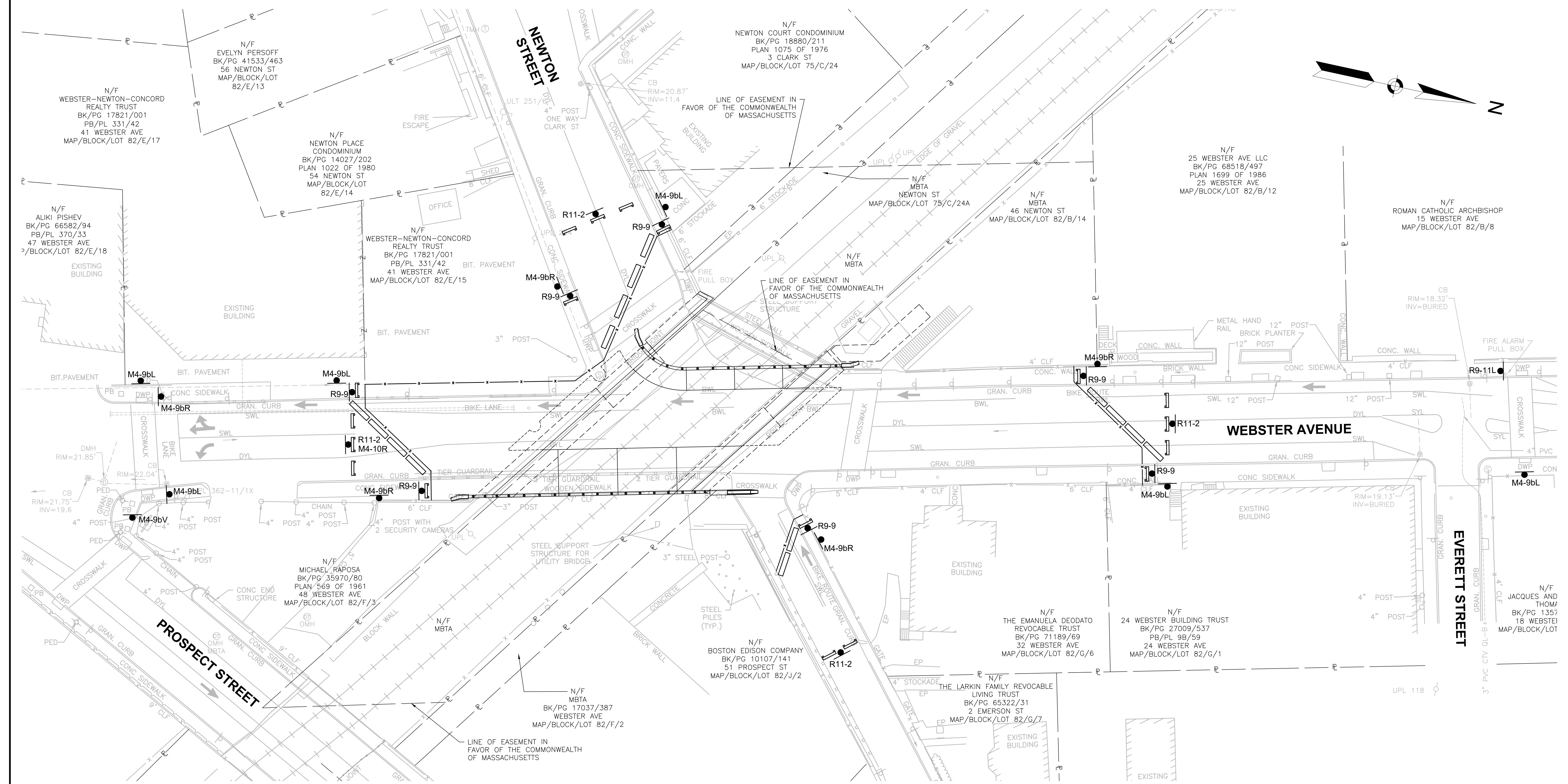
N.T.S.



BICYCLE LANE CLOSURE
MASSDOT CONSTRUCTION STANDARD 852.3.1

N.T.S.

- LEGEND
- REFLECTORIZED CONE
 - REFLECTORIZED DRUM
 - PROPOSED TRAFFIC FLOW
 - WORK ZONE
 - TYPE III BARICADE
 - POLICE DETAIL
 - CONSTRUCTION SIGN
 - N.T.S. NOT TO SCALE



BRIDGE CLOSURE PLAN

0 20 40 60 80

SCALE: 1" = 20'

NOTES

1. NEIGHBORING RESIDENCES SHALL HAVE ACCESS TO AND EGRESS FROM THEIR PROPERTIES DURING CONSTRUCTION.

2. THE CONTRACTOR IS RESPONSIBLE FOR SECURING AN AREA FOR MATERIAL STORAGE AND EQUIPMENT.

3. ALL SIGNS AND BARRICADES SHALL BE PLACED AND RELOCATED BY THE CONTRACTOR AS SHOWN ON THE PLANS OR AT THE DISCRETION OF THE ENGINEER. THE COST FOR SIGN RELOCATION SHALL BE INDICATED IN THE UNIT PRICE BID FOR MAINTENANCE AND MOVEMENT TRAFFIC PROTECTION.

LEGEND

TEMPORARY TRAFFIC SIGN

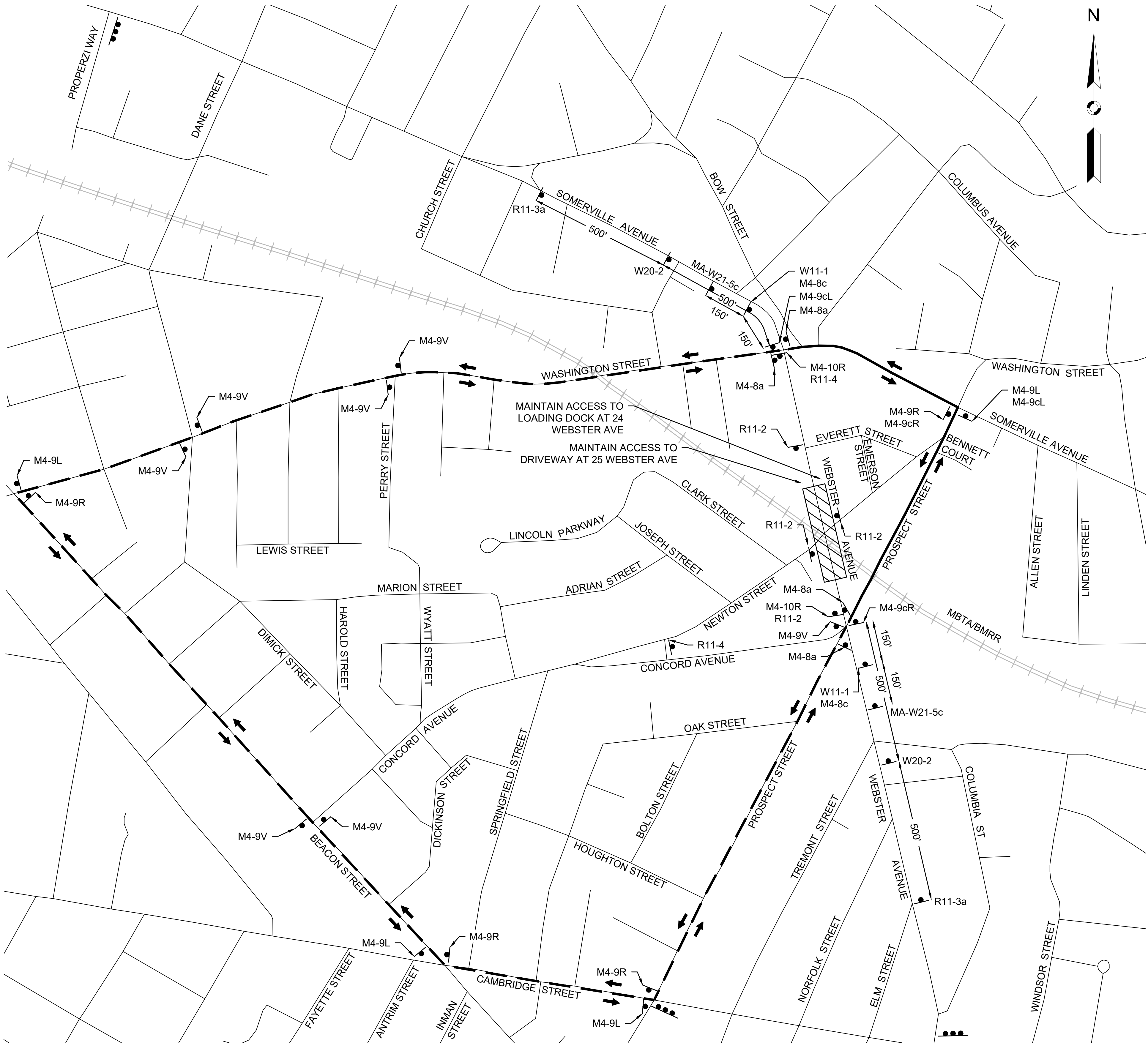
WORKZONE

TEMPORARY BARRIER

PORTABLE BREAKAWAY BARRICADE TYPE III

TEMPORARY FENCE

PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



LEGEND

TEMPORARY TRAFFIC SIGN

WORKZONE

TEMPORARY BARRIER

PORTABLE BREAKAWAY BARRICADE TYPE III

TEMPORARY FENCE

PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

VEHICLE DETOUR PLAN

0 200 400 600 800

SCALE: 1" = 200'

PROPOSED DETOUR LENGTHS

EASTERN DETOUR 1500 FEET

WESTERN DETOUR 9300 FEET VIA CAMBRIDGE STREET

SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	22	98
PROJECT FILE NO.		611940	

TEMPORARY TRAFFIC CONTROL PLANS - 05

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY FOR DETOUR

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (SF)	AREA (SF)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK-GROUND	LEGEND	BORDER		
M4-8a	24	18	END DETOUR	4D	3	NA	4	FLUORESCENT ORANGE	BLACK	BLACK	3.0	12.0
M4-8c	24	18	DETOUR AHEAD	4D	3	NA	2	FLUORESCENT ORANGE	BLACK	BLACK	3.0	6.0
M4-9cL	30	24	DETOUR	5D	NA	NA	2	FLUORESCENT ORANGE	BLACK	BLACK	5.0	10.0
M4-9cR	30	24	DETOUR	5D	NA	NA	2	FLUORESCENT ORANGE	BLACK	BLACK	5.0	10.0
M4-9L	30	24	DETOUR	5D	NA	NA	4	FLUORESCENT ORANGE	BLACK	BLACK	5.0	20.0
M4-9R	30	24	DETOUR	5D	NA	NA	4	FLUORESCENT ORANGE	BLACK	BLACK	5.0	20.0
M4-9V	30	24	DETOUR	5D	NA	NA	7	FLUORESCENT ORANGE	BLACK	BLACK	5.0	35.0
M4-10R	48	18	DETOUR	6D	NA	NA	2	FLUORESCENT ORANGE	BLACK	BLACK	6.0	12.0
MA-W21-5c	36	36	BIKE LANE CLOSED AHEAD	5C	3	NA	2	FLUORESCENT ORANGE	BLACK	BLACK	9.0	18.0
R11-2	48	30	ROAD CLOSED	8D	4	NA	4	WHITE	BLACK	BLACK	10.0	40.0
R11-3a	60	30	ROAD CLOSED XX FEET AHEAD LOCAL TRAFFIC ONLY	6C/5C/4C	3.375	NA	2	WHITE	BLACK	BLACK	12.5	25.0
R11-4	60	30	ROAD CLOSED TO THRU TRAFFIC	6C	2.5	NA	2	WHITE	BLACK	BLACK	12.5	25.0
W11-1	36	36	BIKE LANE	NA	NA	NA	2	FLUORESCENT ORANGE	BLACK	BLACK	9.0	18.0
W20-2	36	36	DETOUR AHEAD	6D	3.5	NA	2	FLUORESCENT ORANGE	BLACK	BLACK	9.0	18.0
TOTAL AREA OF SIGNS (SQUARE FEET)												269.0

PROPOSED POTABLE CHANGEABLE MESSAGE SIGNS:

MESSAGE #1

WEBSTER AVE TO BE CLOSED

MESSAGE #2

FOLLOW DETOUR

PRIOR TO DETOUR:

MESSAGE #1

WEBSTER AVENUE CLOSED

MESSAGE #2

FOLLOW DETOUR

DURING DETOUR:

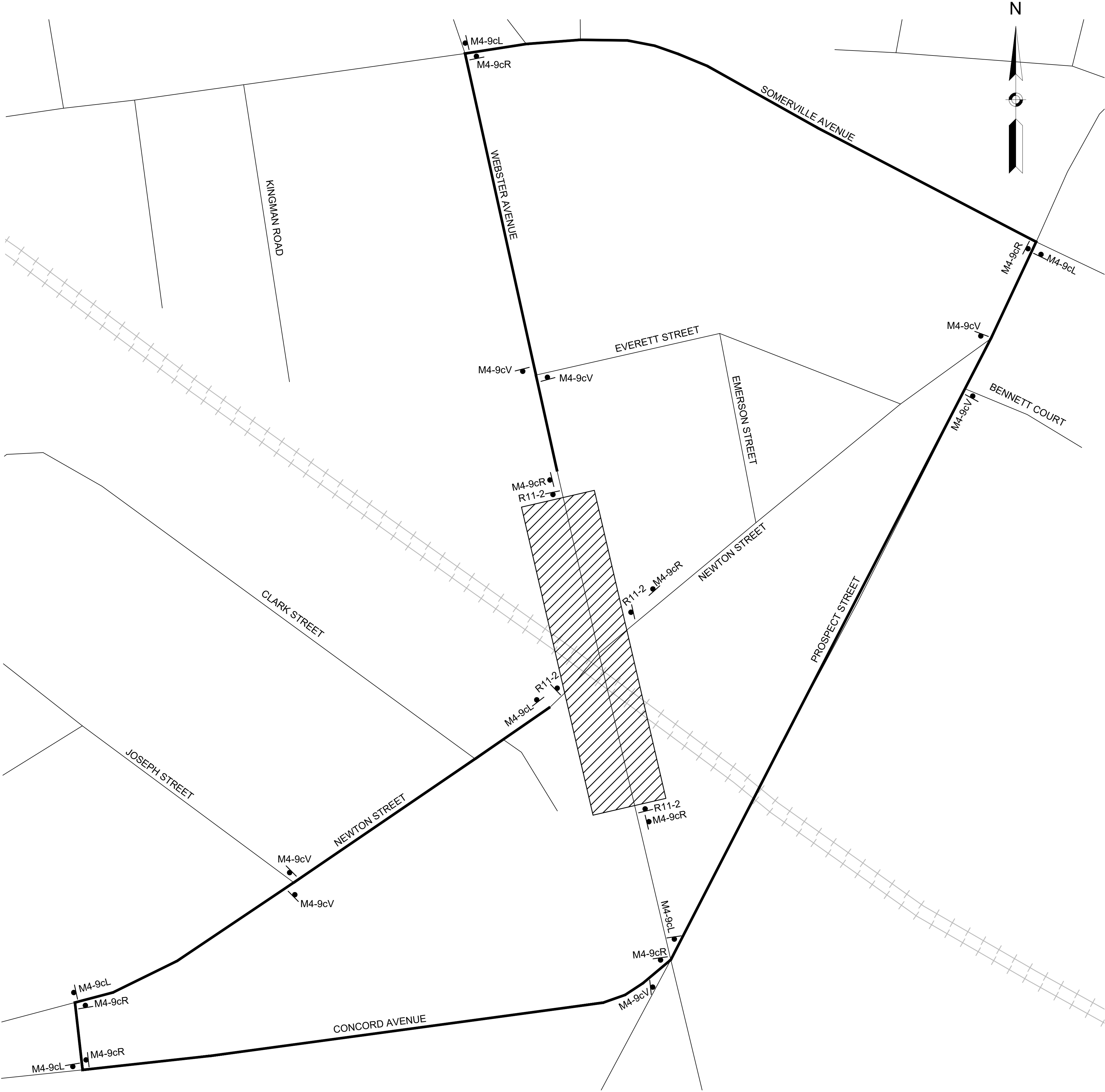
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	23	98
PROJECT FILE NO.		611940	

TEMPORARY TRAFFIC CONTROL SIGN
SUMMARY FOR BICYCLE DETOUR

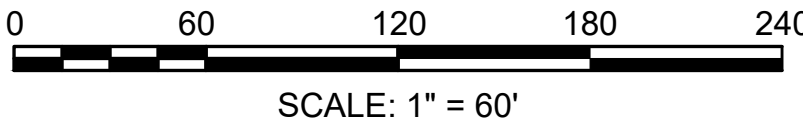
IDENTIFI- CATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (SF)	AREA (SF)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK- GROUND	LEGEND	BORDER		
M4-9cL	30	24		5D	NA	NA	6	FLUORE- SCENT ORANGE	BLACK	BLACK	5.0	30.0
M4-9cR	30	24		5D	NA	NA	8	FLUORE- SCENT ORANGE	BLACK	BLACK	5.0	40.0
M4-9cV	30	24		5D	NA	NA	7	FLUORE- SCENT ORANGE	BLACK	BLACK	5.0	35.0
R11-2	48	30		3D	1.75	NA	4	WHITE	BLACK	BLACK	2.0	8.0
TOTAL AREA OF SIGNS (SQUARE FEET)												113.0

LEGEND

- TEMPORARY TRAFFIC SIGN
- WORKZONE
- DETOUR ROUTE



BICYCLE DETOUR PLAN



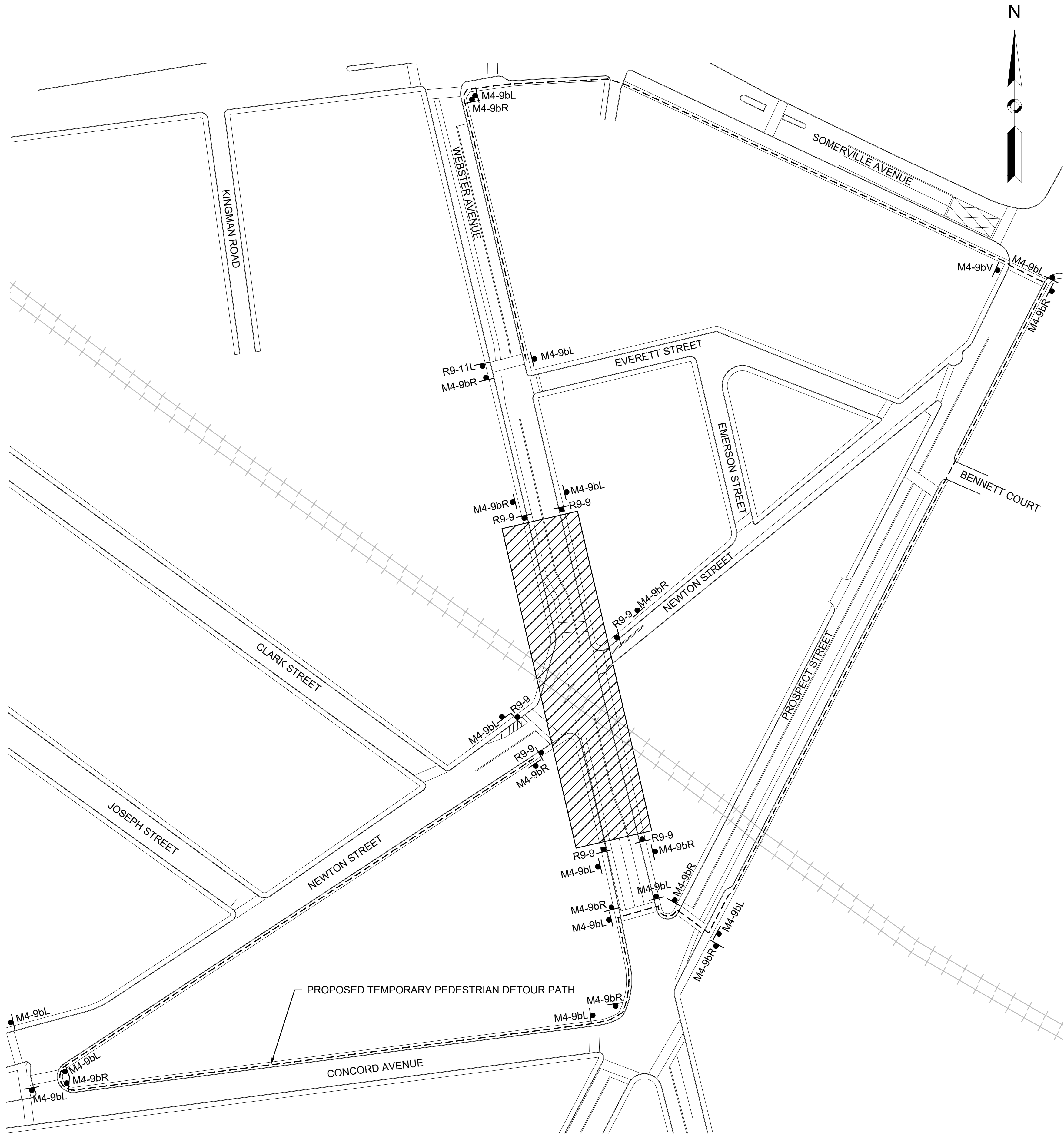
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PROJECT FILE NO.		611940	

TEMPORARY TRAFFIC CONTROL SIGN
SUMMARY FOR DETOUR

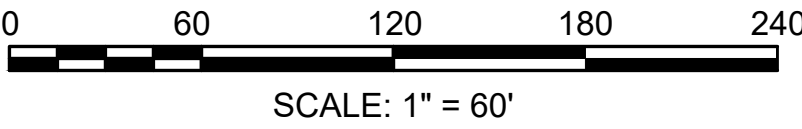
IDENTIFI- CATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (SF)	AREA (SF)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK- GROUND	LEGEND	BORDER		
M4-9bL	30	24		5D	NA	NA	13	FLUORE- SCENT ORANGE	BLACK	BLACK	5.0	65.0
M4-9bR	30	24		5D	NA	NA	12	FLUORE- SCENT ORANGE	BLACK	BLACK	5.0	60.0
M4-9bV	30	24		5D	NA	NA	1	FLUORE- SCENT ORANGE	BLACK	BLACK	5.0	5.0
R9-9	24	12		3D	1.75	NA	7	WHITE	BLACK	BLACK	2.0	14.0
R9-11L	24	18		1.5D	0.75	NA	1	WHITE	BLACK	BLACK	3.0	3.0
TOTAL AREA OF SIGNS (SQUARE FEET)												147.0

LEGEND

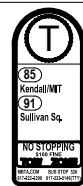
- TEMPORARY TRAFFIC SIGN
- WORKZONE
- DETOUR ROUTE



PEDESTRIAN DETOUR PLAN



TEMPORARY BUS STOP SIGN SUMMARY

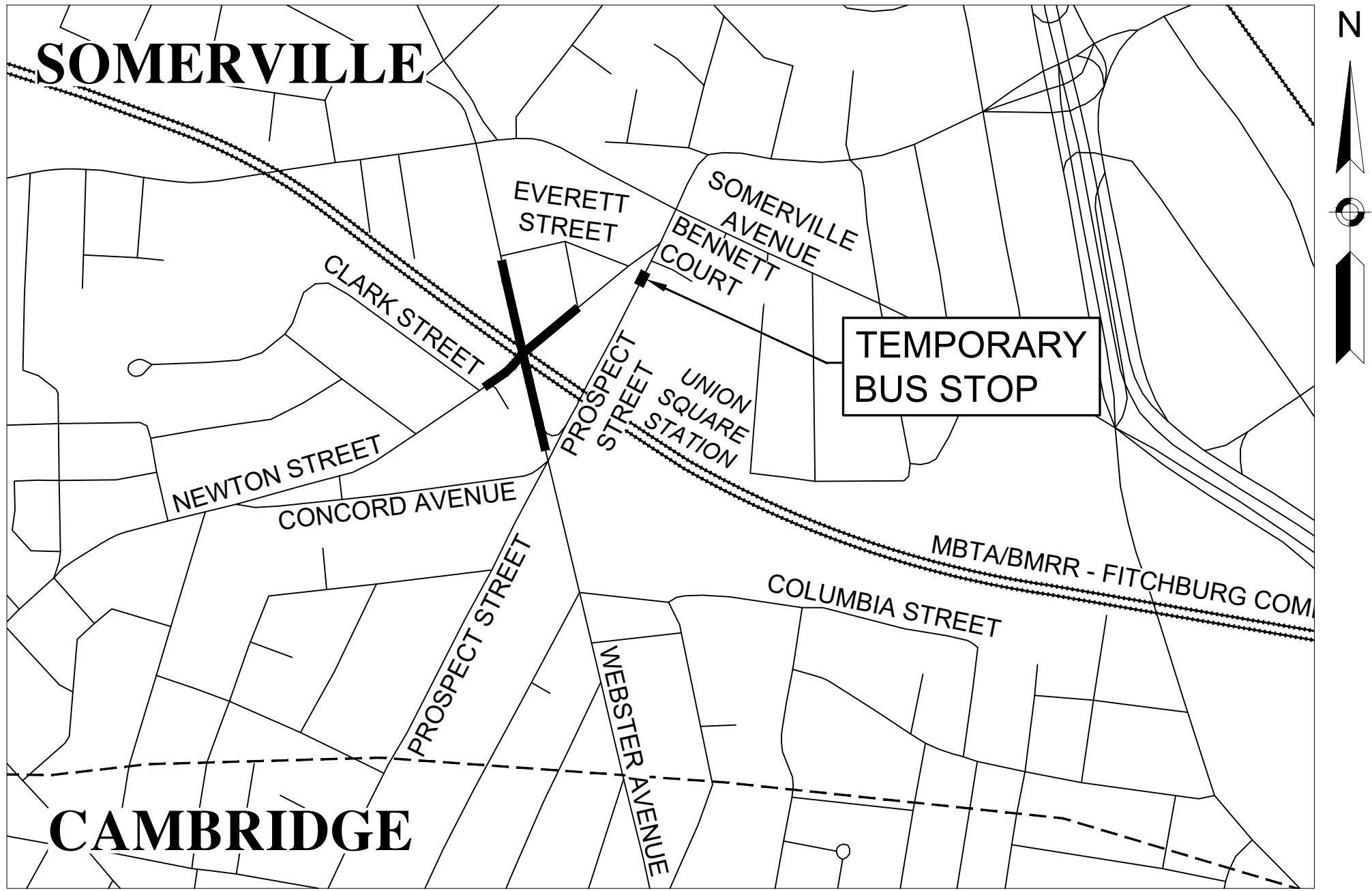
IDENTIFI- CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK- GROUND	LEGEND	BORDER			
R7-107b1	12"	30"		SEE MBTA STANDARDS			1	WHITE	BLACK / RED	RED	P-5 (1- REQ'D)		SIGNS TO BE INSTALLED BY CONTRACTOR

- SIGN NOTES:
- R7 SERIES PARKING SIGNS SHALL BE MOUNTED 45 DEGREES TO THE CURB LINE UNLESS OTHERWISE NOTED ON THE PLANS. INSTALLATION ANGLE OF MBTA BUS STOP SIGNS SHALL BE PER MBTA STANDARDS.

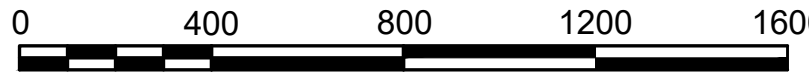
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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PROJECT FILE NO.		611940	

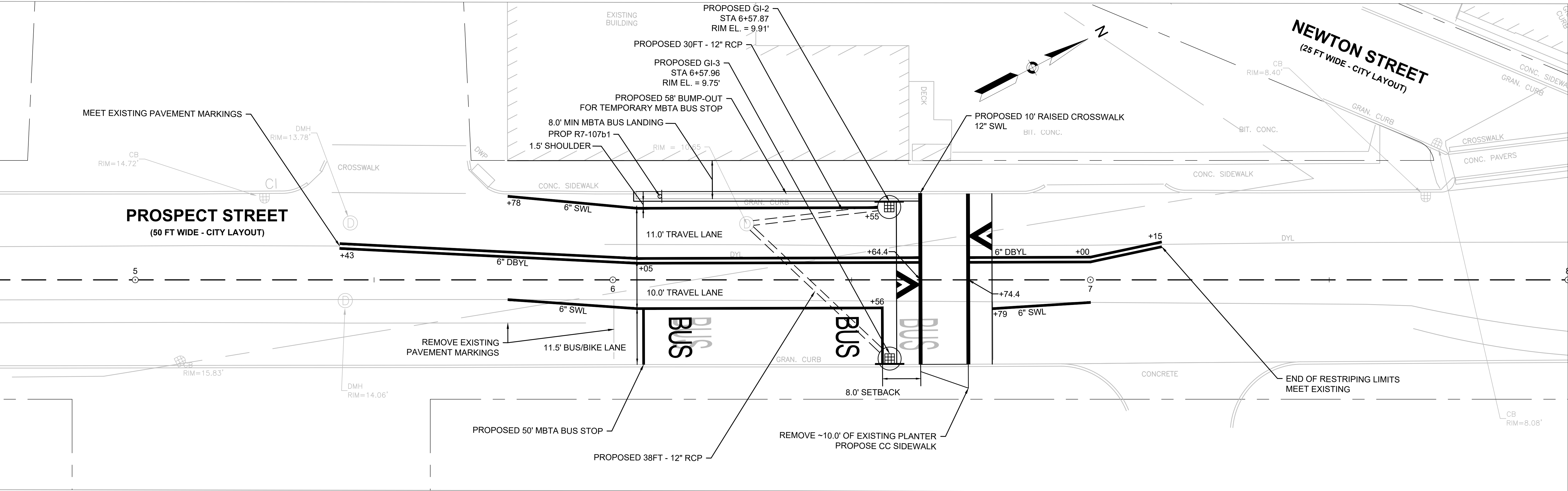
TEMPORARY TRAFFIC CONTROL PLAN - 08
TEMPORARY BUS STOP PLAN



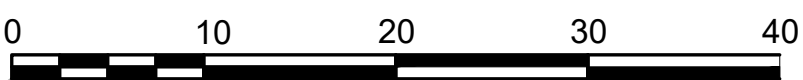
TEMPORARY BUS STOP LOCUS



SCALE: 1" = 400'



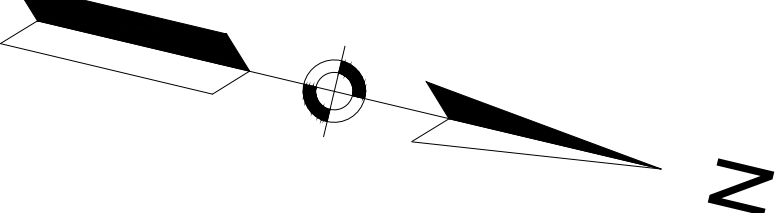
TEMPORARY BUS STOP LOCATION



SCALE: 1" = 10'

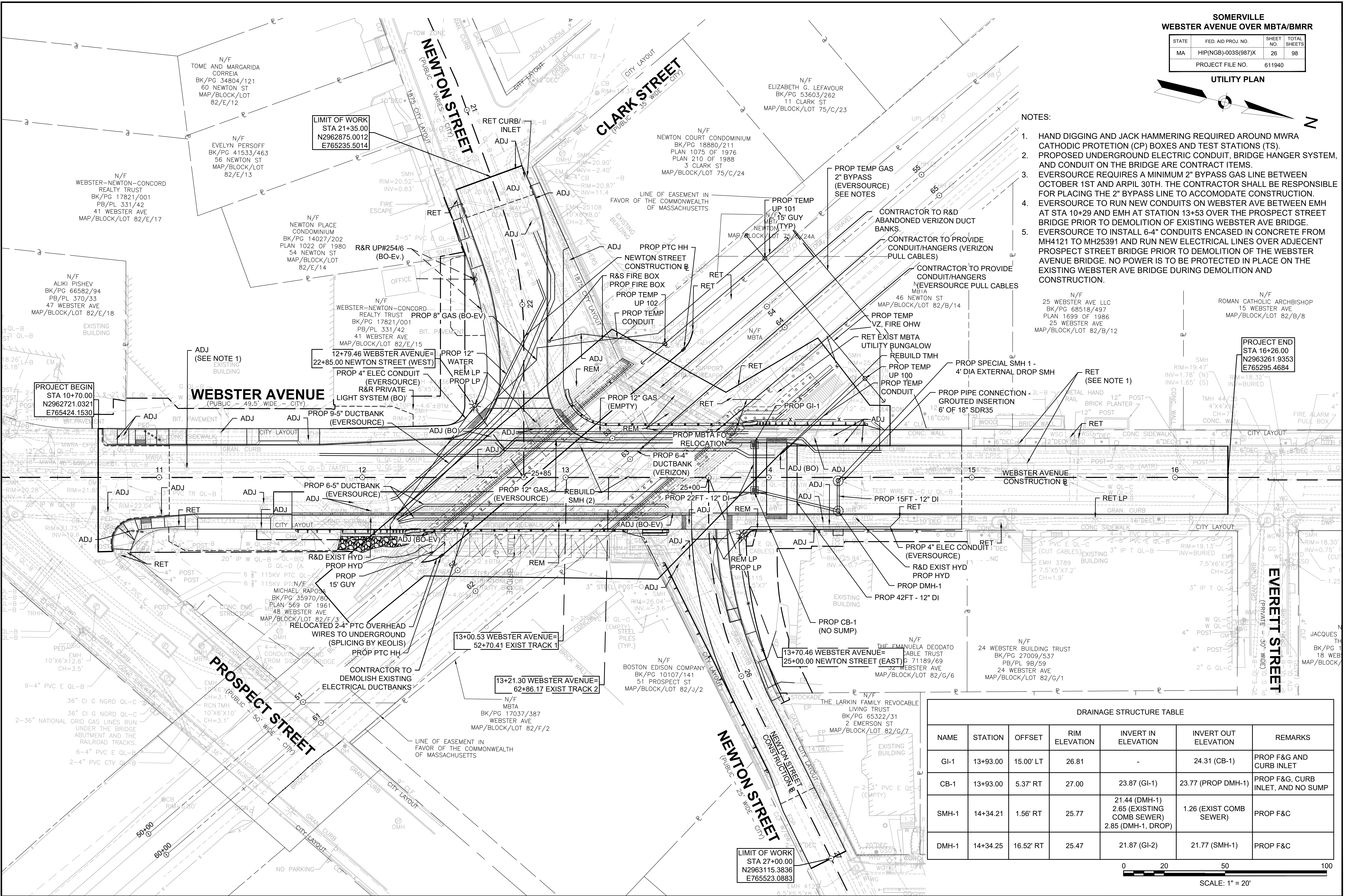
SOMERVILLE WEBSTER AVENUE OVER MBTA/BMRR			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	26	98
PROJECT FILE NO. 611940			

UTILITY PLAN



NOTES:

- HAND DIGGING AND JACK HAMMERING REQUIRED AROUND MWRA CATHODIC PROTETION (CP) BOXES AND TEST STATIONS (TS).
- PROPOSED UNDERGROUND ELECTRIC CONDUIT, BRIDGE HANGER SYSTEM, AND CONDUIT ON THE BRIDGE ARE CONTRACT ITEMS.
- EVERSOURCE REQUIRES A MINIMUM 2" BYPASS GAS LINE BETWEEN OCTOBER 1ST AND APRIL 30TH. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING THE 2" BYPASS LINE TO ACCOMODATE CONSTRUCTION.
- EVERSOURCE TO RUN NEW CONDUITS ON WEBSTER AVE BETWEEN EMH AT STA 10+29 AND EMH AT STATION 13+53 OVER THE PROSPECT STREET BRIDGE PRIOR TO DEMOLITION OF EXISTING WEBSTER AVE BRIDGE.
- EVERSOURCE TO INSTALL 6-4" CONDUITS ENCASED IN CONCRETE FROM MH4121 TO MH25391 AND RUN NEW ELECTRICAL LINES OVER ADJECENT PROSPECT STREET BRIDGE PRIOR TO DEMOLITION OF THE WEBSTER AVENUE BRIDGE. NO POWER IS TO BE PROTECTED IN PLACE ON THE EXISTING WEBSTER AVE BRIDGE DURING DEMOLITION AND CONSTRUCTION.



DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET	RIM ELEVATION	INVERT IN ELEVATION	INVERT OUT ELEVATION	REMARKS
GI-1	13+93.00	15.00' LT	26.81	-	24.31 (CB-1)	PROP F&G AND CURB INLET
CB-1	13+93.00	5.37' RT	27.00	23.87 (GI-1)	23.77 (PROP DMH-1)	PROP F&G, CURB INLET, AND NO SUMP
SMH-1	14+34.21	1.56' RT	25.77	21.44 (DMH-1) 2.65 (EXISTING COMB SEWER) 2.85 (DMH-1, DROP)	1.26 (EXIST COMB SEWER)	PROP F&C
DMH-1	14+34.25	16.52' RT	25.47	21.87 (GI-2)	21.77 (SMH-1)	PROP F&C

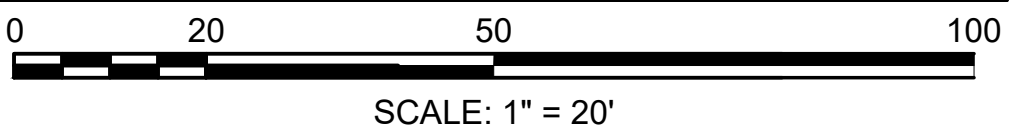


EXHIBIT A

MWRA WATER OPERATIONS SPECIAL TERMS AND CONDITIONS

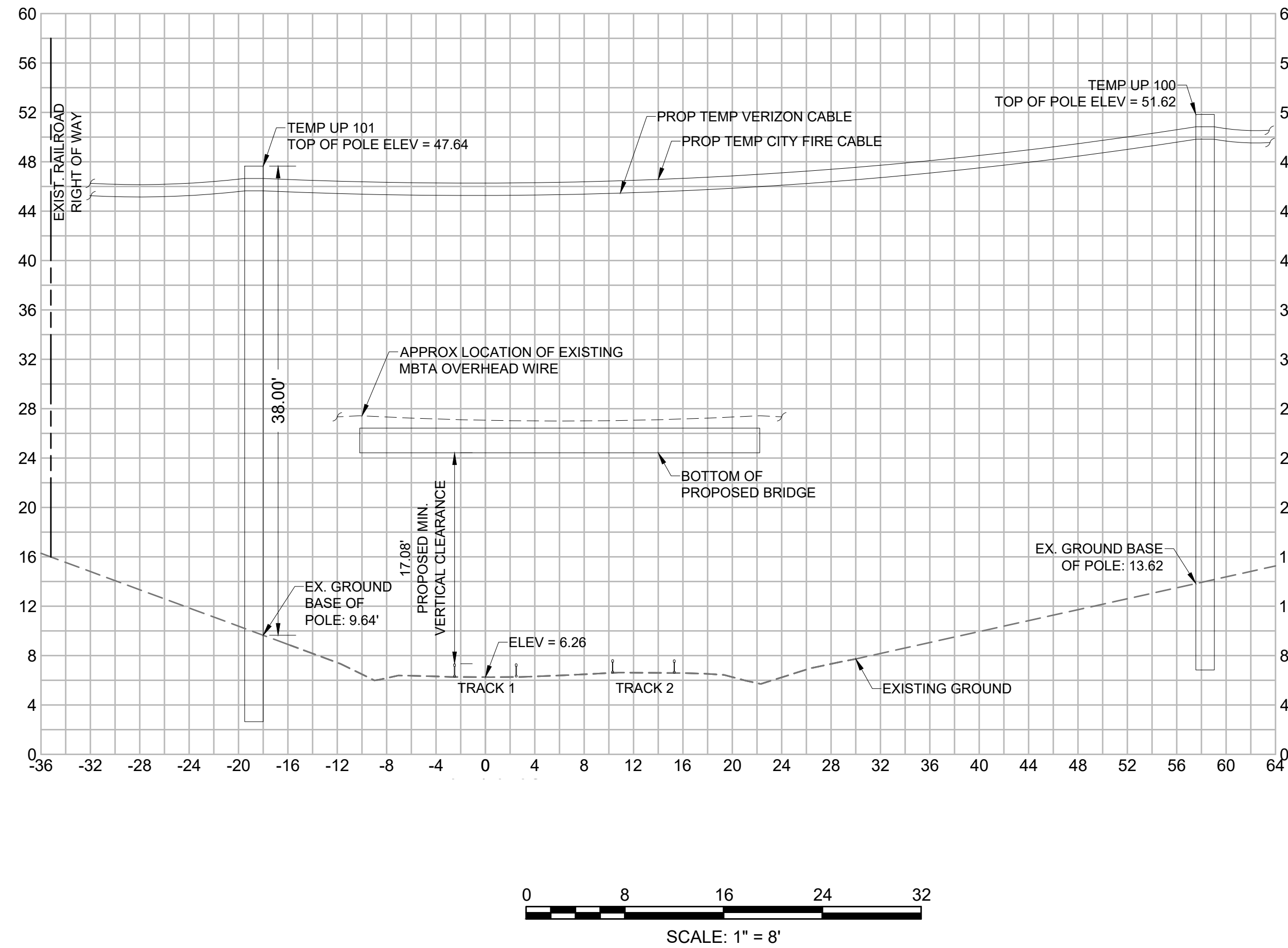
1. PRIOR TO ENTRY, PERMITTEE OR ITS DESIGNEE SHALL PROVIDE AT LEAST SEVENTY TWO (72) -HOURS PRIOR NOTICE TO THE MWRA'S INSPECTION DEPARTMENT, BY CALLING (617) 305-5833, LOCATED AT 2 GRIFFIN WAY, CHELSEA, MA 02150.
2. A MINIMUM VERTICAL CLEARANCE OF EIGHTEEN (18) INCHES SHALL BE MAINTAINED BETWEEN THE MWRA'S WATER MAINS AND OTHER UTILITY CROSSINGS UNLESS OTHERWISE NOTED. HOWEVER, WATER/GAS AND OTHER UTILITY SERVICE CROSSINGS WITH A PIPE SIZE DIAMETER OF TWO (2) INCHES OR LESS MAYBE PERMITTED TO CROSS ABOVE THE MWRA'S PIPELINE AT A REDUCED CLEARANCE SUBJECT TO MWRA'S REVIEW. (EXCEPT FOR SPECIAL PROVISIONS, I.E. CAPPED OR PLUGGED PIPES, THRUST BLOCKS AND OR BENDS, WHICH WOULD REQUIRE A GREATER CLEARANCE AND SEPARATION).
3. A MINIMUM OF THREE (3) FEET TO FIVE (5) FEET HORIZONTAL CLEARANCE IS REQUIRED BETWEEN ADJACENT UTILITIES AND THE SIDE (SPRING LINE) OF ANY MWRA WATER MAIN. (EXCEPT FOR SPECIAL PROVISIONS, I.E. CAPPED OR PLUGGED PIPES, **THRUST BLOCKS**, AND/OR PIPE BENDS, WHICH WOULD REQUIRE A GREATER CLEARANCE SEPARATION).
4. CROSSINGS OF MWRA WATER MAINS SHALL BE LOCATED A MINIMUM HORIZONTAL DISTANCE OF AT LEAST FOUR (4) FEET FROM ANY JOINTS OF THE MWRA'S WATER MAINS.
5. PROPOSED PIPE/UTILITY CROSSINGS OF THE MWRA'S WATER MAINS SHALL CROSS AT A NINETY (90) DEGREE ANGLE TO MINIMIZE INTERFERENCE.
6. FOR DISTANCES OVER FOUR (4) FEET OF THE MWRA'S WATER MAINS, WHICH ARE TO BE UNDERMINED, THE METHOD AND TYPE OF PIPE SUPPORT PLAN SHALL BE SUBMITTED AND STAMPED BY A PROFESSIONAL ENGINEER (P.E.) LICENSED IN MASSACHUSETTS FOR PRIOR APPROVAL BY THE MWRA.
7. FOR DISTANCES UNDER FOUR (4) FEET FROM THE MWRA'S WATER MAINS, WHICH ARE TO BE UNDERMINED, THE ON-SITE MWRA INSPECTOR SHALL REVIEW AND APPROVE THE PROPOSED SUPPORT OF THE WATER MAIN. UNDER NO CIRCUMSTANCES SHALL THE MWRA'S WATER MAIN BE LEFT IN AN UNSUPPORTED, UNDERMINED POSITION OVERNIGHT.
8. DURING CONSTRUCTION, APPROPRIATE SHEETING MEASURES MUST BE TAKEN TO PROTECT THE INTEGRITY OF THE MWRA'S WATER MAINS. THE SHEETING DESIGN MUST BE REVIEWED BY THE MWRA PRIOR TO THE START OF THE CONSTRUCTION. THE DESIGN SHALL BE STAMPED BY A PROFESSIONAL ENGINEER, LICENSED IN MASSACHUSETTS. THE USE OF A TRENCH BOX IS NOT PERMITTED IN THIS APPLICATION.
9. SUITABLE COMPACTION METHODS SHALL BE EMPLOYED IN RESTORING THE BEDS OF THE MWRA'S WATER MAINS AND BACKFILLING AROUND THE MWRA'S WATER MAINS SHALL BE PLACED IN MAXIMUM SIX (6) INCH LIFTS AND COMPACTED BY HAND VIBRATORY COMPACTORS.
10. THE MWRA'S WATER MAINS SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION. THE MWRA MAY REQUIRE A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS TO SUBMIT A CONSTRUCTION PLAN AND OR PIPELINE ANALYSIS THAT IS TO BE ATTACHED TO THIS PERMIT.
11. SCREENED GRAVEL SHALL BE UNIFORMLY GRADED WITH MAXIMUM SIZE OF A PARTICLE BETWEEN 3/8 INCH AND 3/4 INCH. SCREENED GRAVEL SHALL CONSIST OF CLEAN, HARD AND DURABLE PARTICLES FREE FROM AN EXCESS OF SOFT, ELONGATED AND DISINTEGRATED PIECES OR OTHER OBJECTIONABLE MATERIAL. CRUSHED ROCK OF SUITABLE SIZE AND GRADING MAYBE USED IN PLACE OF SCREENED GRAVEL AT THE OPTION OF THE MWRA INSPECTOR.
12. FOR TEST PIT EXCAVATIONS OR UNEARTHING OF THE MWRA'S WATER MAINS THE PERMITTEE SHALL EXCAVATE THE LAST TWO (2) FEET, BEFORE THE TOP OF PIPE, BY HAND OR USE A VACUUM BORING METHOD AND BACKFILL WITH APPROVED MATERIAL WITHIN AN FEE INTEREST, EASEMENT OR ROADWAY AREA.
13. THE PERMITTEE IS RESPONSIBLE TO ADJUST ANY OR ALL MWRA FRAMES AND COVERS TO GRADE WITHIN THEIR LIMITS OF WORK IN ACCORDANCE WITH THE PLANS REFERENCED IN THIS PERMIT. THE MWRA WILL PROVIDE THE PERMITTEE WITH NEW REPLACEMENT MWRA FRAMES AND COVERS (AT NO EXPENSE TO THE PERMITTEE) FOR ANY EXISTING FRAMES AND COVERS THAT HAVE BEEN DEEMED UNUSABLE BY MWRA PERSONNEL.
14. ALL MWRA MANHOLE OPENINGS THAT WERE COVERED DURING THE BINDER COURSE INSTALLATION SHALL BE MADE ACCESSIBLE WITHIN FORTY EIGHT (48) HOURS. MWRA MANHOLE FRAME AND COVERS SHALL NOT BE REMOVED FOR GRINDING AND OR PULVERIZING. PULVERIZING IS NOT ALLOWED OVER MWRA MANHOLE STRUCTURES.
15. THE PERMITTEE SHALL PROVIDE A LOGISTICS CONSTRUCTION SCHEDULE IN WRITING, ALONG WITH EMERGENCY CONTACT INFORMATION WHENEVER MWRA VALVES (MANHOLE COVERS) OR FACILITIES ARE COVERED OR OBSTRUCTED.
16. MWRA INSPECTION PERSONNEL MUST BE ON SITE WHENEVER EXCAVATION, CONSTRUCTION, HOISTING OR RIGGING OCCURS AROUND AN MWRA WATER MAIN.
17. NO CONSTRUCTION EQUIPMENT INCLUDING CRANES, BACKHOES, OR MATERIAL MAY BE PARKED, STATIONED, SET UP, OR STORED ON TOP OF THE MWRA'S WATER MAINS OR INFRASTRUCTURE.
18. REPLACEMENT (SHUTDOWN) OF THE MWRA'S WATER MAINS SHALL BE COORDINATED WITH THE MWRA. FOUR (4) WEEKS-ADVANCED NOTICE IN WRITING IS REQUIRED FOR SHUTDOWNS.
19. THE PERMITTEE OR ITS DESIGNEE SHALL CONTACT THE MWRA THREE (3) WEEKS IN ADVANCE OF WHEN AN MWRA WATER MAIN VALVE MUST BE OPERATED. ONLY MWRA PERSONNEL WILL OPERATE MWRA VALVES. THE PERMITTEE OR ITS DESIGNEE SHALL NOT OPERATE ANY MWRA WATER MAIN VALVES. MWRA VALVE OPERATIONS ARE LIMITED DURING PEAK DEMAND PERIODS AND MAY NOT BE AVAILABLE BETWEEN THE DATES OF MAY 15TH AND SEPTEMBER 15TH OF EACH CALENDAR YEAR.
20. THE PERMITTEE WILL BE RESPONSIBLE TO PROTECT AND CORRECT ANY DAMAGE(S) TO THE MWRA'S PROPERTY, WATER MAIN PIPELINES AND/OR ANY RELATED INFRASTRUCTURE AT NO COST TO THE MWRA.
21. AS-BUILT DRAWINGS SHALL BE FURNISHED TO THE MWRA UPON THE COMPLETION OF THE WORK AUTHORIZED BY THIS PERMIT. A PROFESSIONAL MASSACHUSETTS REGISTERED LAND SURVEYOR OR ENGINEER SHALL STAMP AS-BUILT DRAWINGS.

22. MWRA DETAIL RECORDS "FIELD SKETCHES" SHALL BE UPDATED (WITH ACCURATE FIELD TIES) BY THE PERMITTEE AND SHALL BE FURNISHED TO THE MWRA UPON THE COMPLETION OF THE WORK AUTHORIZED BY THIS PERMIT.
23. THE PERMITTEE UNDERSTANDS AND AGREES THAT THE MWRA AND ITS SUCCESSORS AND ASSIGNS ARE NOT RESPONSIBLE FOR ANY DAMAGE AND/OR CLAIMS FOR DAMAGES TO THE PERMITTEE'S STRUCTURES, CONDUITS, FACILITIES AND/OR PROPERTY PERMITTED PURSUANT TO THIS PERMIT AS A RESULT OF THE MWRA'S OPERATION, MAINTENANCE, REPAIR, AND/OR REPLACEMENT OF MWRA'S INFRASTRUCTURE, OR AS A RESULT OF THE FAILURE OF AN MWRA WATER MAIN, AND THAT THE PERMITTEE SHALL BE SOLELY RESPONSIBLE FOR REPLACING AND/OR REPAIRING SAID STRUCTURES AND FOR ANY COSTS RELATED THERETO, AS A RESULT OF MWRA'S ACTIVITIES, INCLUDING BUT NOT LIMITED TO, THE OPERATION, MAINTENANCE, REPAIR, AND/OR REPLACEMENT OF MWRA'S INFRASTRUCTURE, OR AS A RESULT OF THE FAILURE OF AN MWRA WATER MAIN. FURTHER, THE PERMITTEE SHALL HOLD THE MWRA AND ITS SUCCESSORS AND ASSIGNS HARMLESS FROM ANY DAMAGES AND/OR CLAIMS FOR DAMAGE TO THE PERMITTEE'S STRUCTURES, CONDUITS, FACILITIES AND/OR PROPERTY PERMITTED PURSUANT TO THIS PERMIT AS A RESULT OF THE MWRA'S OPERATION, MAINTENANCE, REPAIR, AND/OR REPLACEMENT OF MWRA PROPERTY, OR AS A RESULT OF THE FAILURE OF AN MWRA WATER MAIN.
24. THIS PERMIT ADDRESSES ONLY MWRA-OWNED AND OPERATED INFRASTRUCTURE. THE PERMITTEE IS REQUIRED TO OBTAIN ALL NEEDED SEPARATE APPROVALS FROM CITIES, TOWNS, STATE AGENCIES OR OTHER ENTITIES.
25. THE WORK AUTHORIZED BY THIS PERMIT AND LOCATION OF INSTALLED FACILITIES AND APPURTENANCES SHALL NOT DEVIATE FROM THE CONSTRUCTION PLAN THAT IS REFERENCED IN THIS PERMIT. NO FIELD CHANGES ARE ALLOWED WITHOUT PRIOR REVIEW AND WRITTEN APPROVAL BY THE MWRA 8(M) PERMIT PROJECT MANAGER. AN MWRA ON-SITE INSPECTOR SHALL REVIEW ALL FIELD CHANGES AND COORDINATE WITH THE PERMITTEE REGARDING SUBMITTING A CHANGE OF WORK PLAN TO THE MWRA FOR REVIEW AND COMMENT. IF MWRA FIELD INSPECTION INDICATES CHANGES UNDERTAKEN WITHOUT APPROVAL, THE PERMITTEE MAY BE ISSUED A CEASE AND DESIST ORDER AND BE REQUIRED TO CORRECT/RECONSTRUCT ANY COMPLETED WORK.
26. THE MWRA REQUIRES A CONSTRUCTION PLAN ALONG WITH AN ANALYSIS OF THE MWRA'S WATER MAIN PIPELINE (PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS). THE PIPELINE ANALYSIS SHALL TAKE INTO CONSIDERATION THE CONSTRUCTION EQUIPMENT, WHICH WOULD BE USED OVER THE MWRA'S WATER MAIN PIPELINE IN INSTANCES WHERE THE EXISTING ROADWAY SURFACE WILL BE COMPLETELY EXCAVATED AWAY REMOVING THE PROTECTION OF THE HS-20 SURFACE LOADING BARRIER. THIS PLAN AND SUPPORTING CALCULATIONS WILL NEED TO BE SUBMITTED TO THE MWRA FOR REVIEW. THIS INCLUDES OPEN CROSS-COUNTRY AREAS WHERE NO HS 20 ROADWAY LOADING EXISTS.
27. THE MWRA REQUIRES THE SUBMITTAL OF "CUT SHEETS AND OR SHOP DRAWINGS" FOR REVIEW OF ALL NEWLY PROPOSED MATERIALS THAT WILL COME UNDER THE OWNERSHIP OF THE MWRA.
28. WHERE PIPE JACKING IS REQUIRED FOR WORK THAT IS IN CLOSE PROXIMITY TO THE MWRA'S WATER MAINS, SUBMITTALS PREPARED BY A PROFESSIONAL ENGINEER AND REVIEWED BY THE MWRA ARE REQUIRED.
29. PERMITTEE SHALL NOT EXPOSE THE SPRING LINE OR UNDERMINE THE MWRA'S WATER MAIN PIPELINE. THE PERMITTEE OR ITS DESIGNEE SHALL CEASE EXCAVATION OPERATIONS AND SECURE THE OPEN TRENCH BY BACKFILLING THE OPEN TRENCH TO SECURE THE MWRA'S WATER MAIN PIPELINE WHENEVER THE SPRING LINE IS EXPOSED.
30. IN INSTANCES WHERE THE LAYOUT OF THE MWRA WATER MAINS ARE TO BE ACCURATE AND PRECISE BEYOND THE MWRA'S REGULAR MARK OUT SERVICES THE PERMITTEE, AT THE DIRECTION OF THE MWRA, SHALL HAVE A PROFESSIONAL LAND SURVEYOR LICENSED IN MASSACHUSETTS MARK OUT MWRA WATER MAINS USING FIELD SURVEY INSTRUMENTS.
31. DISINFECTION OF MWRA PIPELINES INCLUDES THE ENTIRE ISOLATED LENGTH OF MWRA'S PIPELINE(S). DISINFECTION IS THE RESPONSIBILITY OF THE APPLICANT INCLUDING INDEPENDENT LAB TESTING PROCEDURES IN ACCORDANCE WITH MWRA STANDARDS.

SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	27	98
PROJECT FILE NO.		611940	

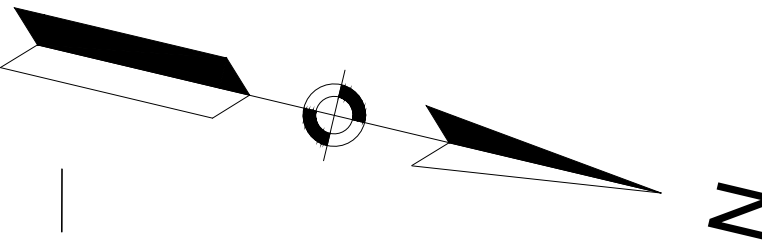
UTILITY NOTES



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

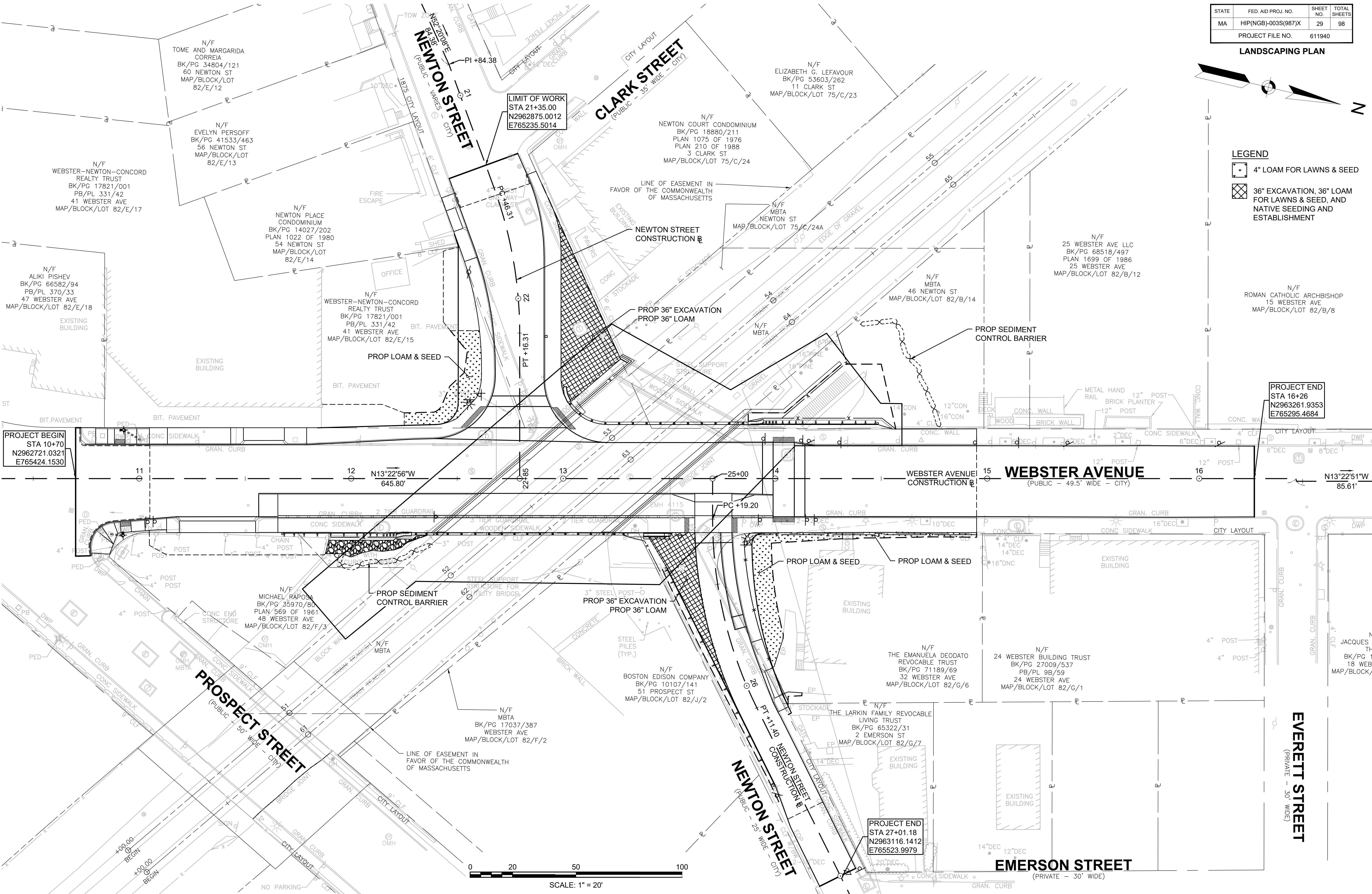
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MA	HIP(NGB)-003S(987)X	29	98
PROJECT FILE NO.		611940	

LANDSCAPING PLAN



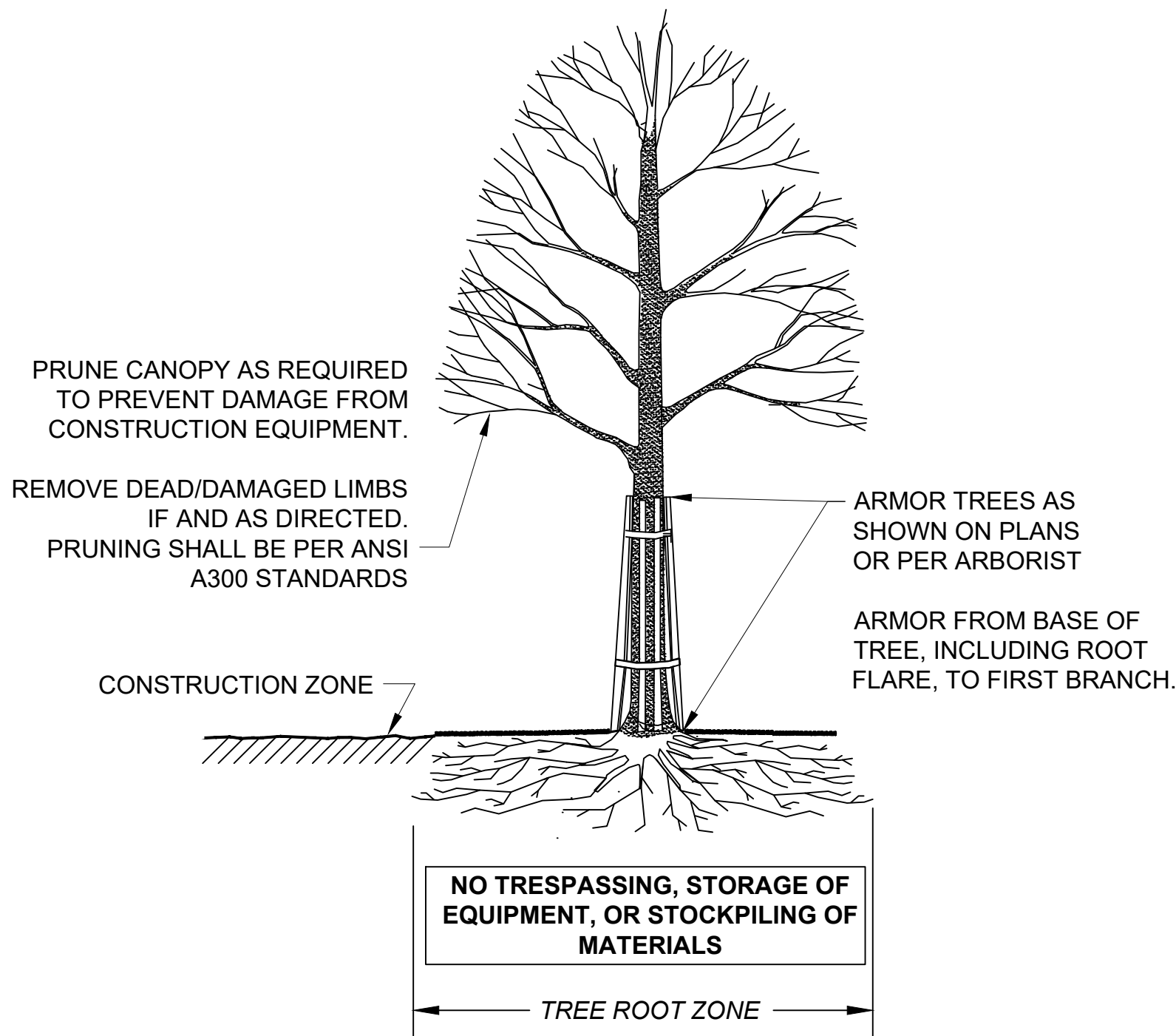
LEGEND

- 4" LOAM FOR LAWNS & SEED
- 36" EXCAVATION, 36" LOAM FOR LAWNS & SEED, AND NATIVE SEEDING AND ESTABLISHMENT



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	30	98
PROJECT FILE NO. 611940			

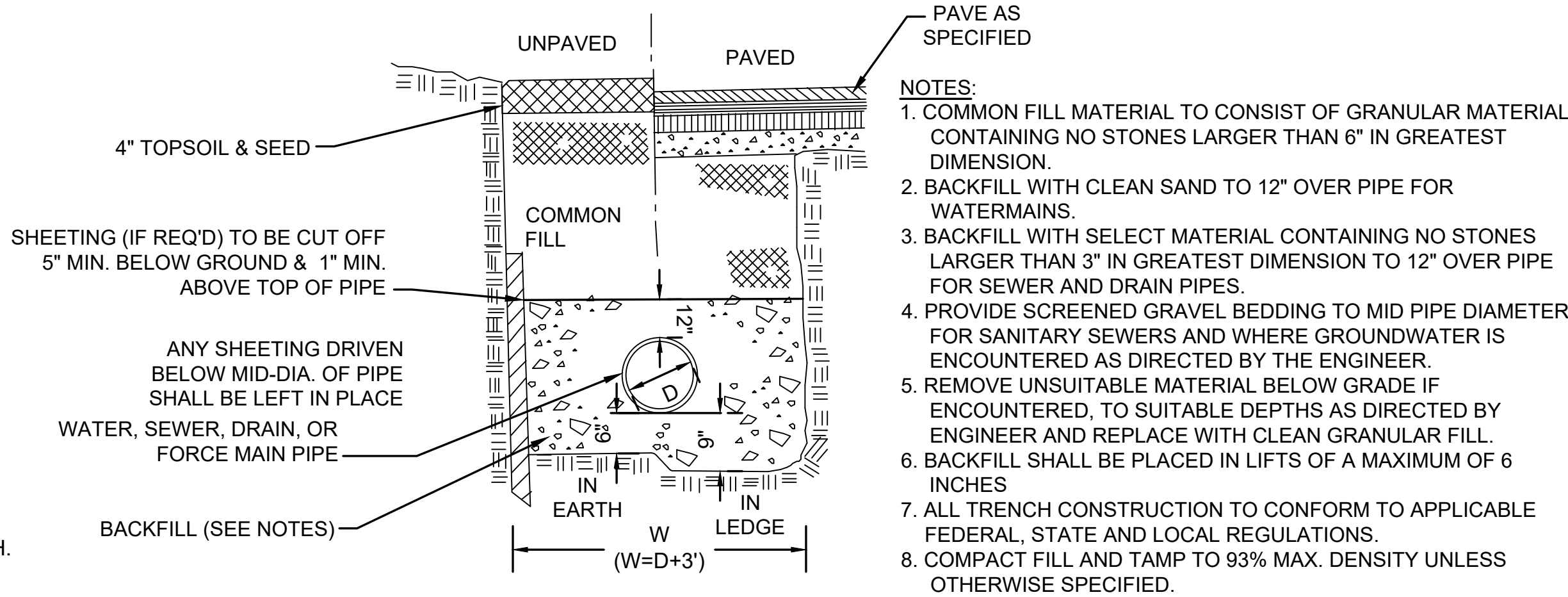
CONSTRUCTION DETAILS - 01



SECTION - TRUNK ARMORING & PRUNING

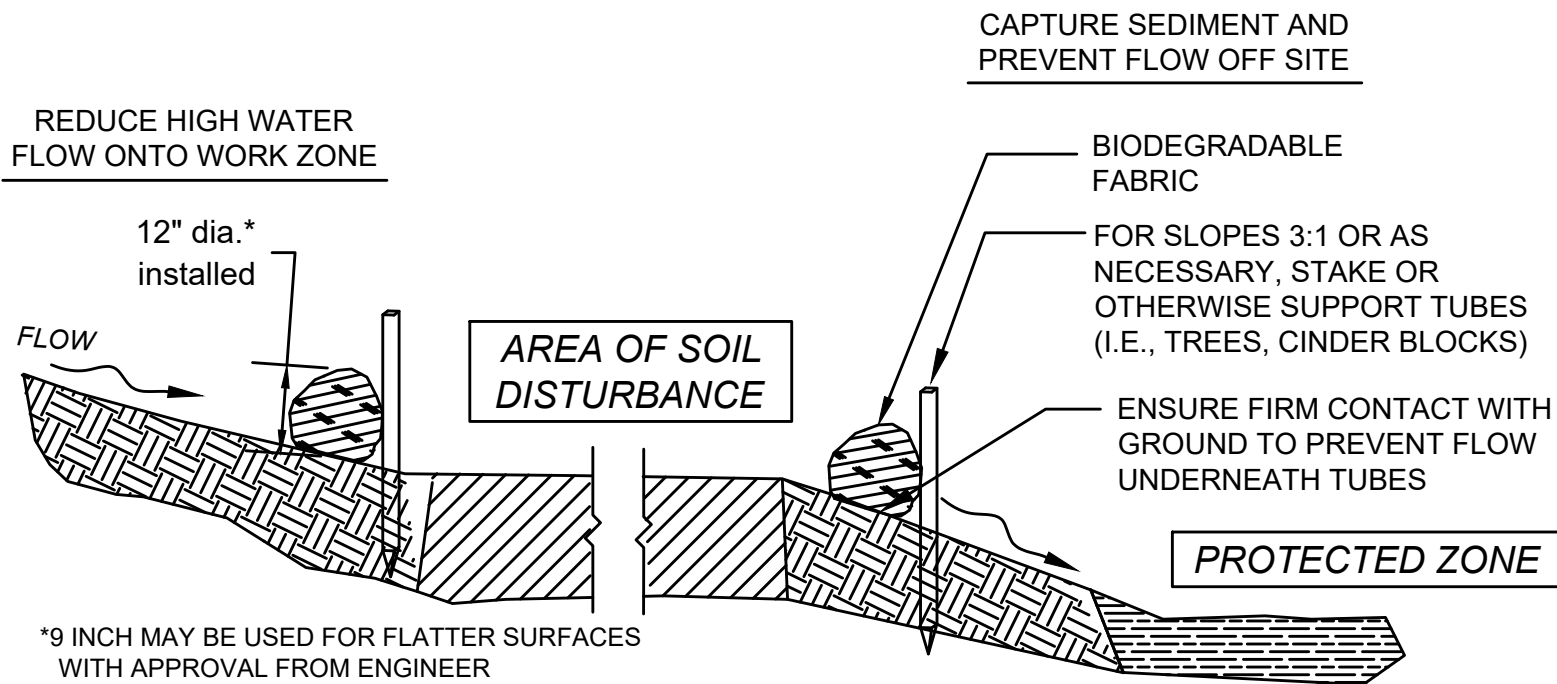
TREE PROTECTION - TRUNK

NOT TO SCALE



TYPICAL TRENCH SECTIONS

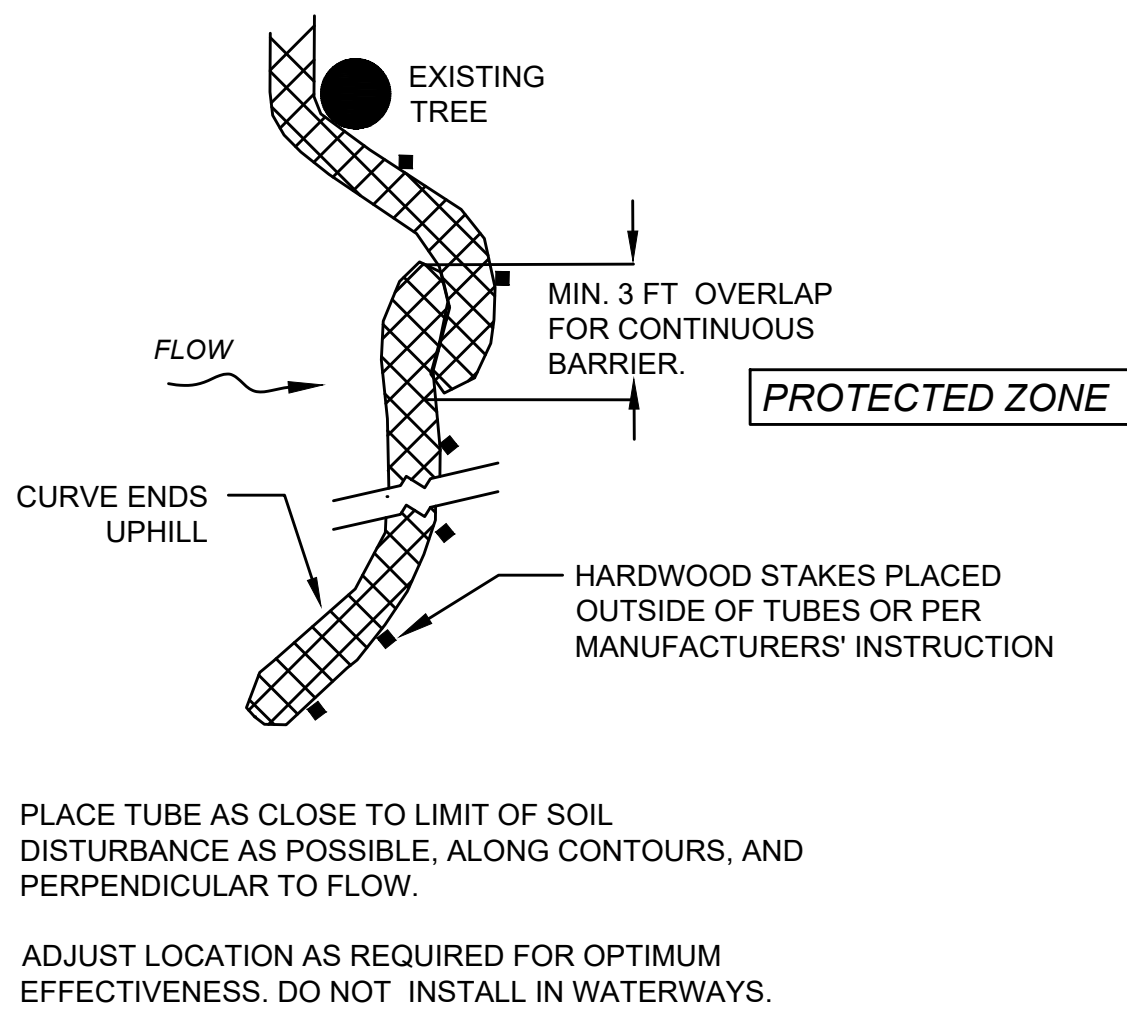
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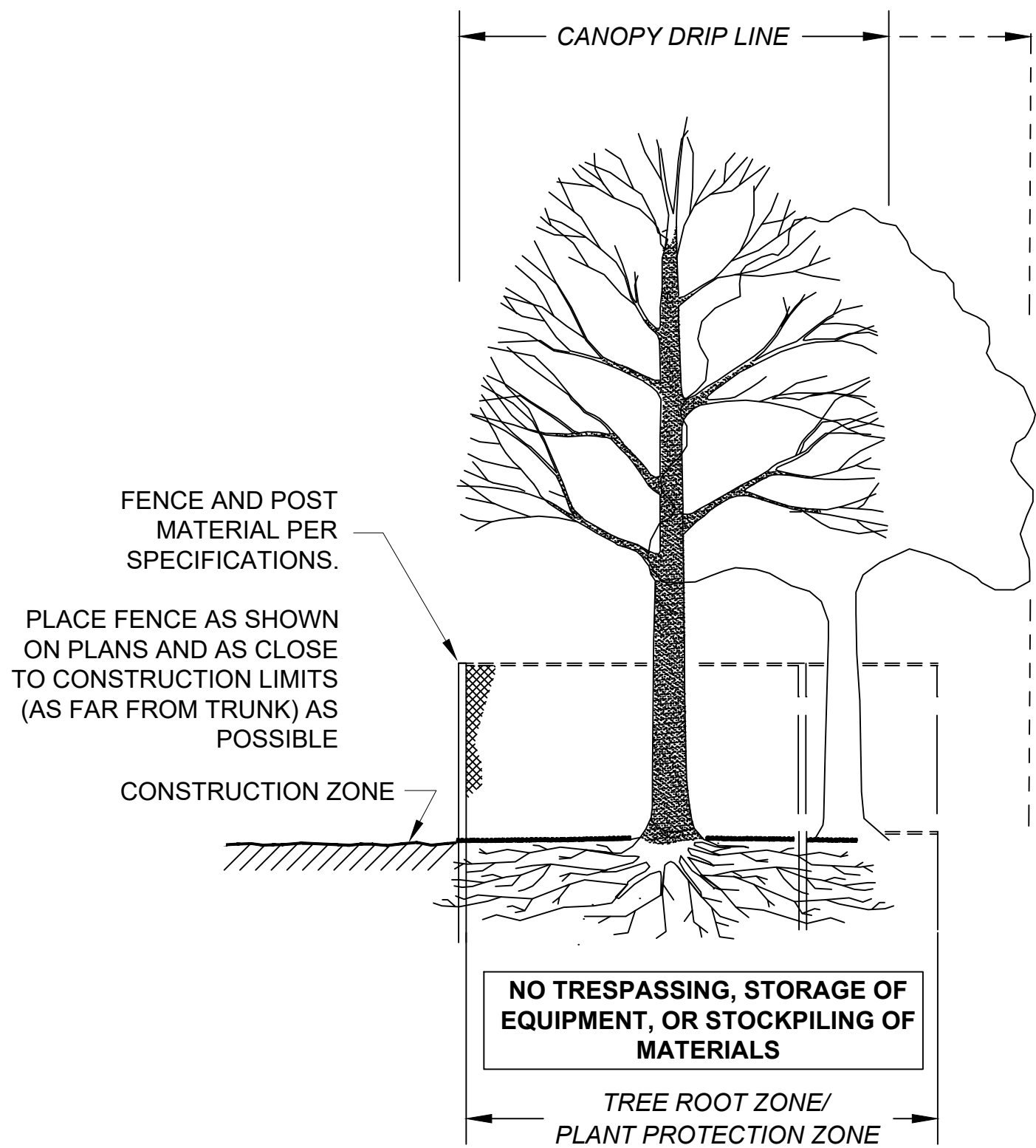
SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

NOT TO SCALE



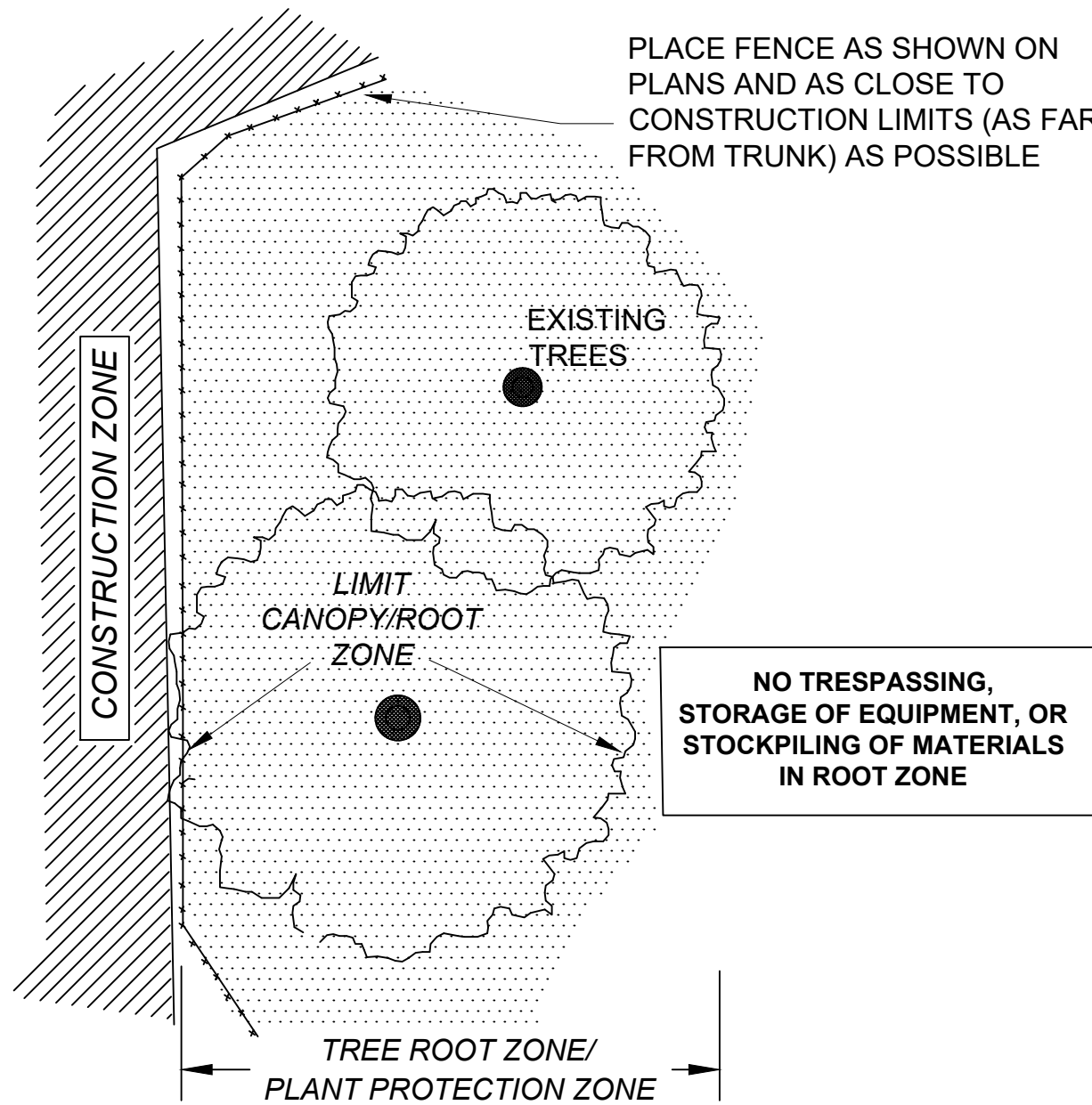
PLAN VIEW



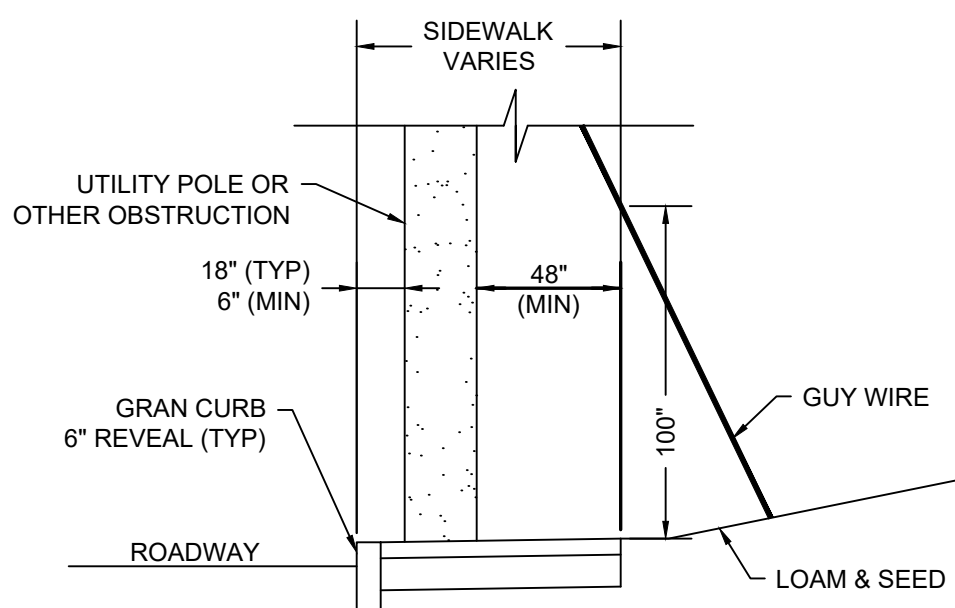
SECTION - FENCE PROTECTION OF ROOT ZONE

TREE PROTECTION - ROOT ZONE

NOT TO SCALE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

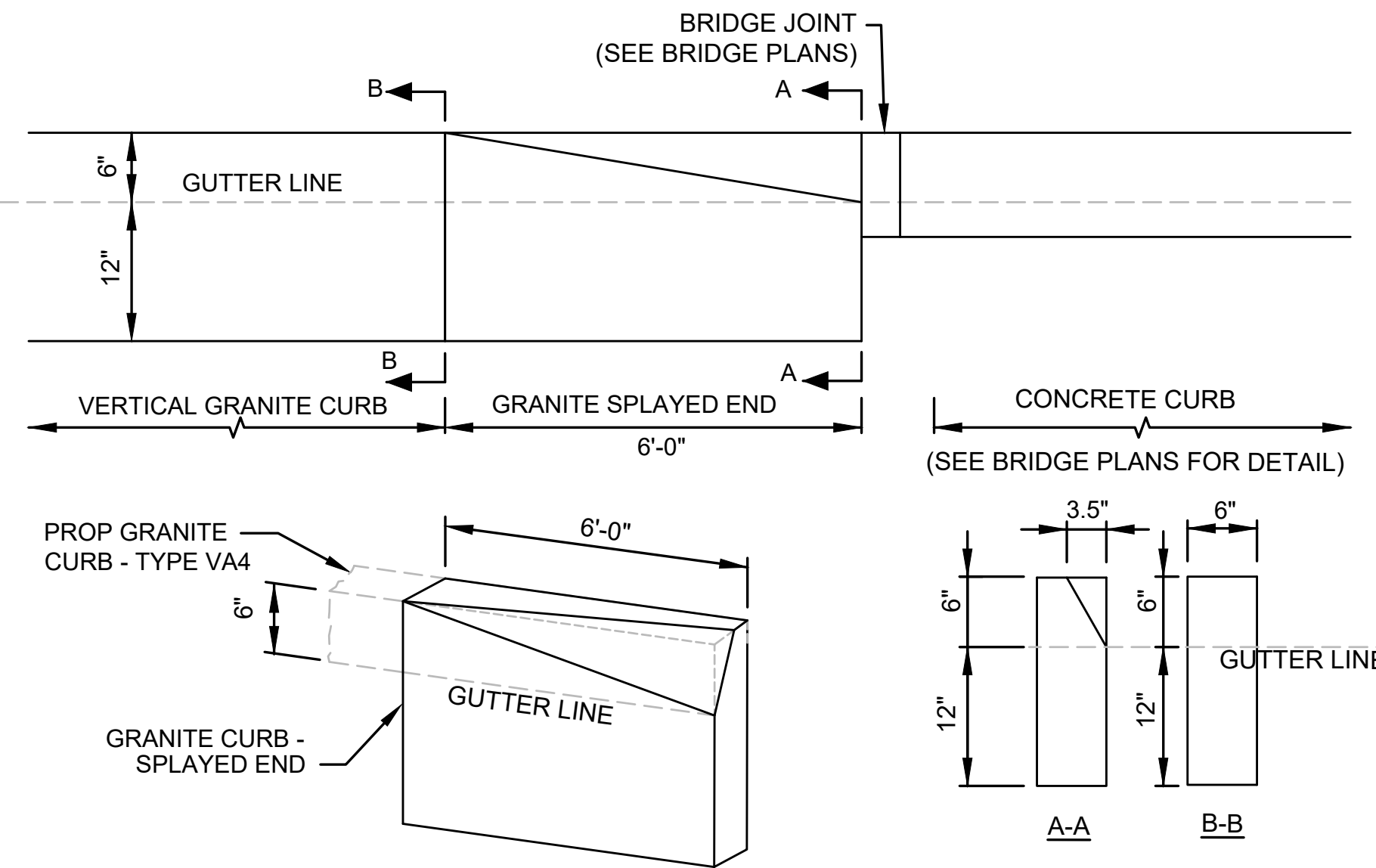


- NOTES:
1. MINIMUM CLEAR PATH ON ALL SIDEWALK SHALL BE 48" EXCLUDING THE SURFACE OF THE CURB.
 2. CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, POLES, TREES, ETC.) TO BE SET WITHIN SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 48".

CONTRACTOR SHALL NOTIFY ENGINEER OF ANY LOCATION WHICH CANNOT MEET CLEARANCE REQUIREMENTS.

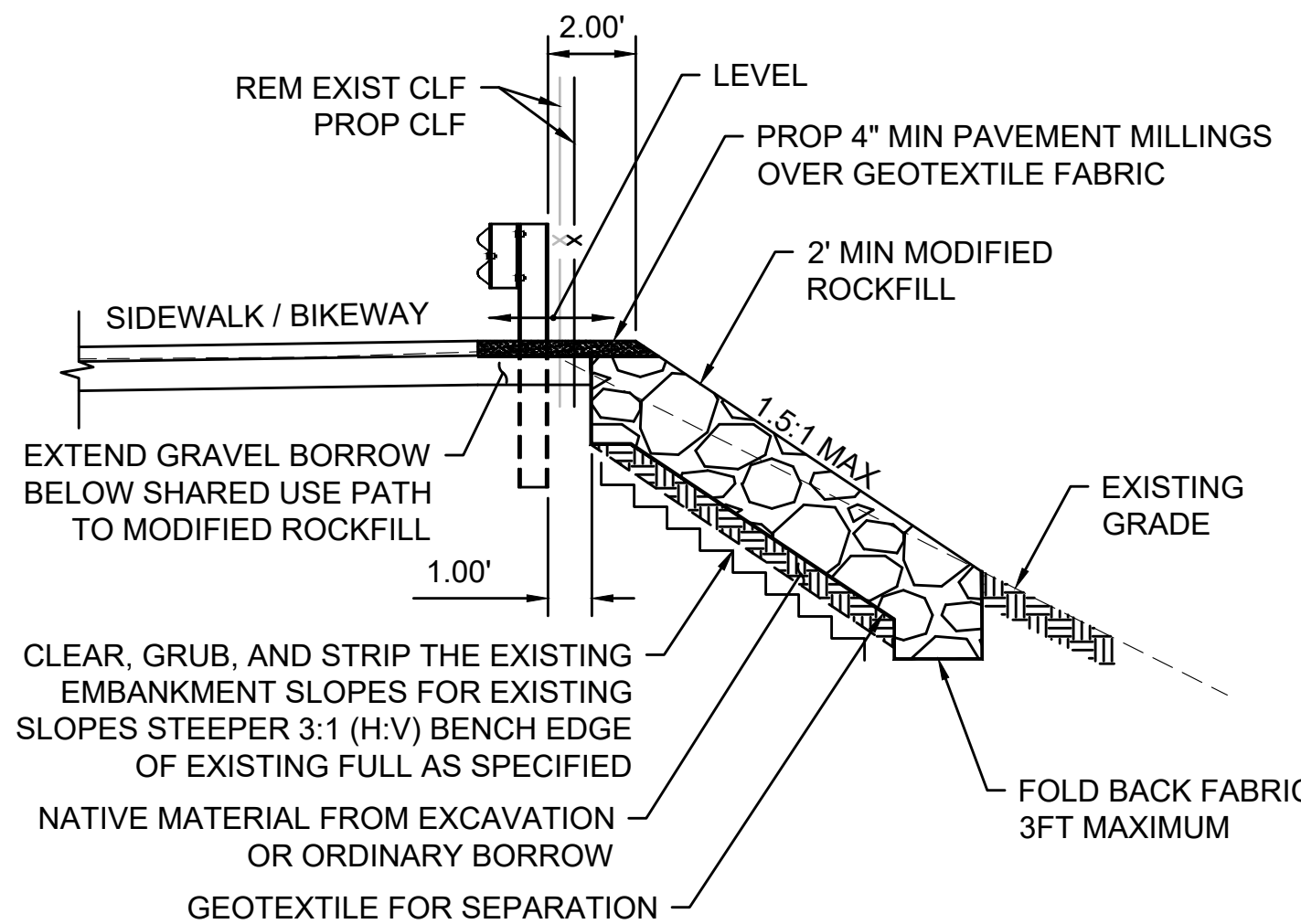
SIDEWALK CLEARANCE DETAIL

NOT TO SCALE



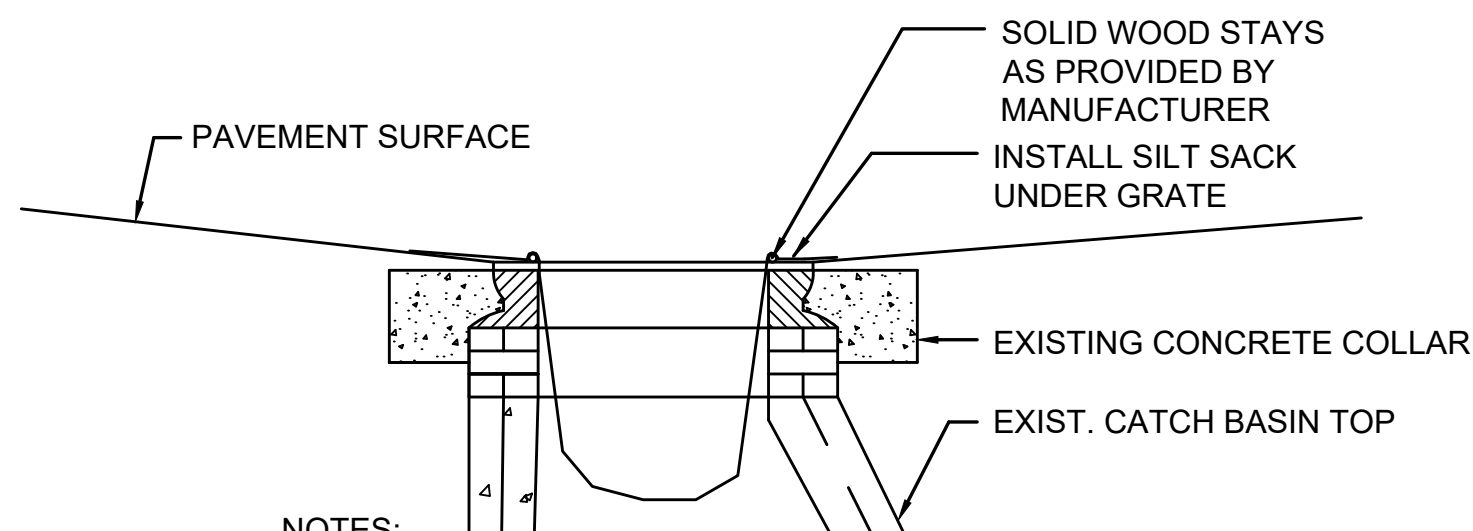
GRANITE CURB SPLAYED END
(TRANSITION FROM VERTICAL GRANITE CURB (VGC)
TO BRIDGE CURB)

NOT TO SCALE



MODIFIED ROCKFILL DETAIL

NOT TO SCALE



- NOTES:
1. REMOVE ACCUMULATED SEDIMENTS AS REQUIRED TO MAINTAIN DRAINAGE.
 2. INSPECT FABRIC EVERY WEEK DURING CONSTRUCTION.

SILT SACK

NOT TO SCALE

SECTION "B-B"

STANDARD MANHOLE FRAME AND COVER (SEE NOTE 1)

COAT WITH (2) COATS OF BITUMINOUS DAMPPROOFING

BUTYL RUBBER JOINT (TYP) PER SPECIFICATIONS

BACKFILL PER SUBSECTION 201 OF MASSDOT STANDARD SPECIFICATIONS

SEAL ALL INTERIOR AND EXTERIOR JOINTS AND HOLES WITH NON-SHRINK HYDRAULIC GROUT

WALL THICKNESS SEE NOTE 1

BRICK TABLE (SEE NOTE 1)

4000 PSI CONCRETE (SEE NOTE 1)

BOTTOM SLAB THICKNESS (SEE NOTE 1)

SET CASTING IN FULL BED OF MORTAR ALL AROUND TO 2" BELOW FINISHED GRADE. SEE MANHOLE FRAME AND COVER DETAIL

FINISHED GRADE

STANDARD PRECAST ECCENTRIC OR CONCENTRIC CONE SECTION OR FLAT TOP (AS REQUIRED)

STANDARD BARREL SECTION COMBINATIONS OF 1', 2' 3' OR 4' LENGTHS AS NEEDED TO BRING MANHOLE RIM TO REQUIRED ELEVATION

FLEXIBLE WATERTIGHT SLEEVE CAST OPENING IN STRUCTURE (TYP.)

FLOW

SEE DETAILED SECTION VIEW

UNDISTURBED MATERIAL

12" MIN. OF 3/4" CRUSHED STONE

MANHOLE DIAMETER SEE NOTE 1

MIN. 4"

30"

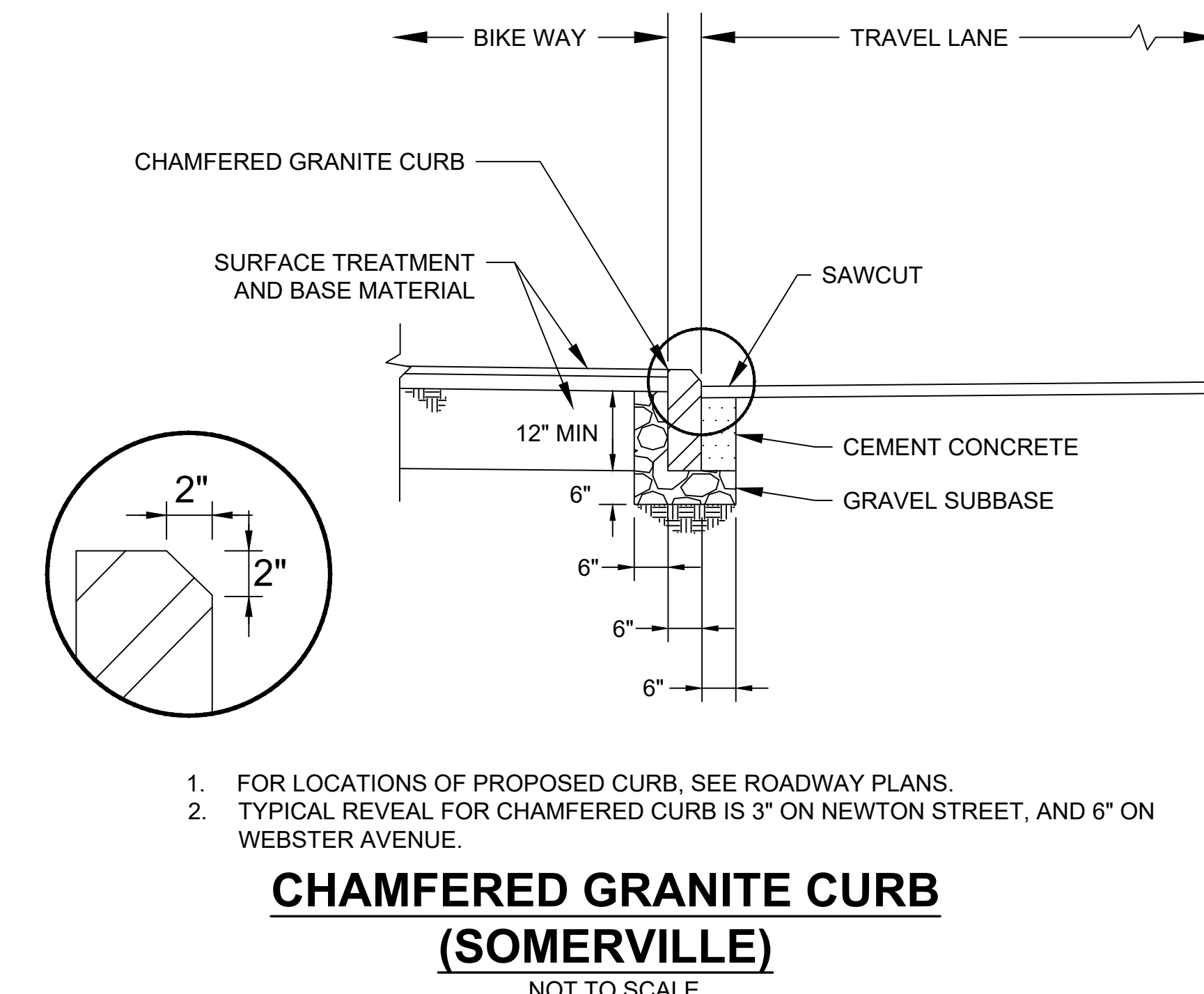
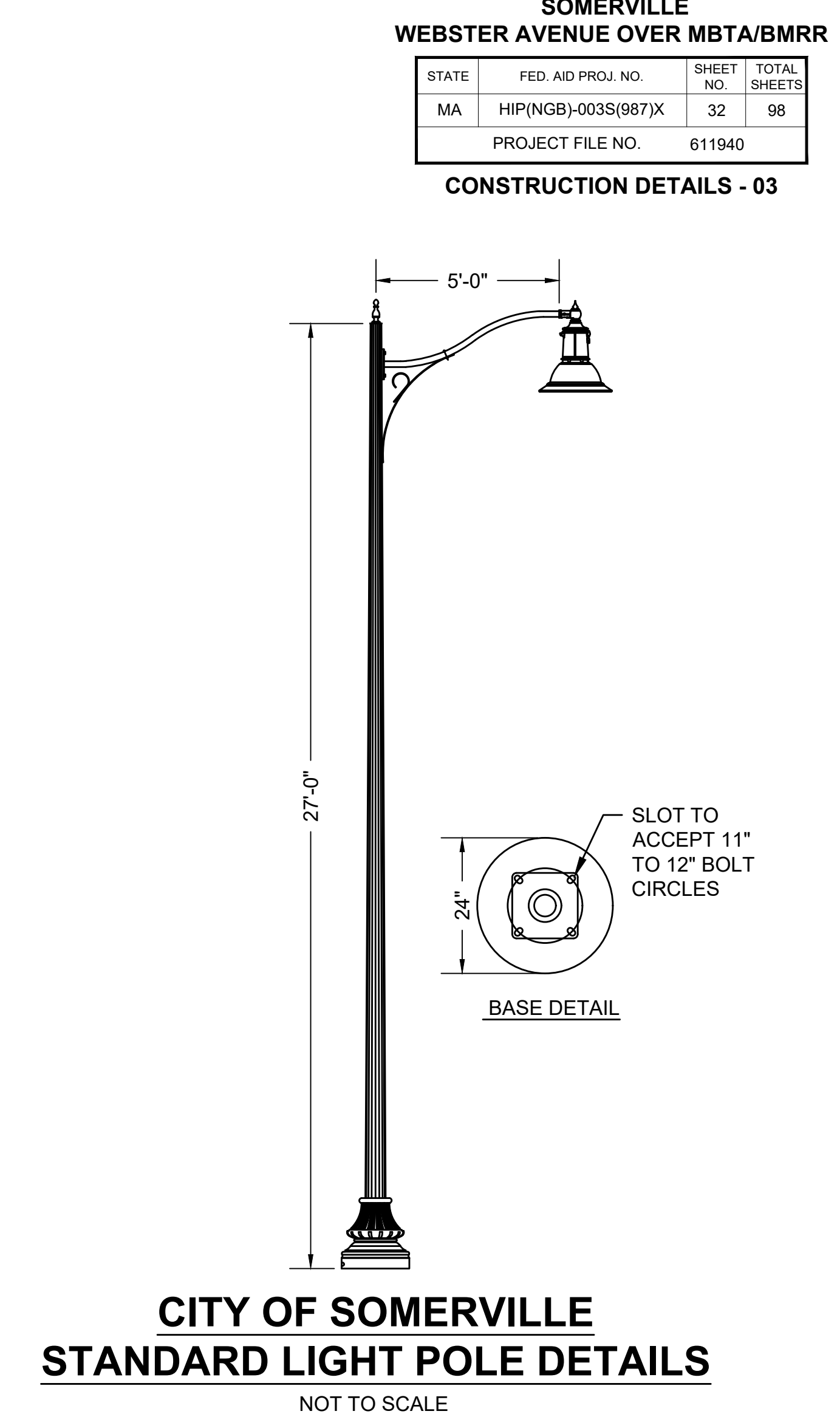
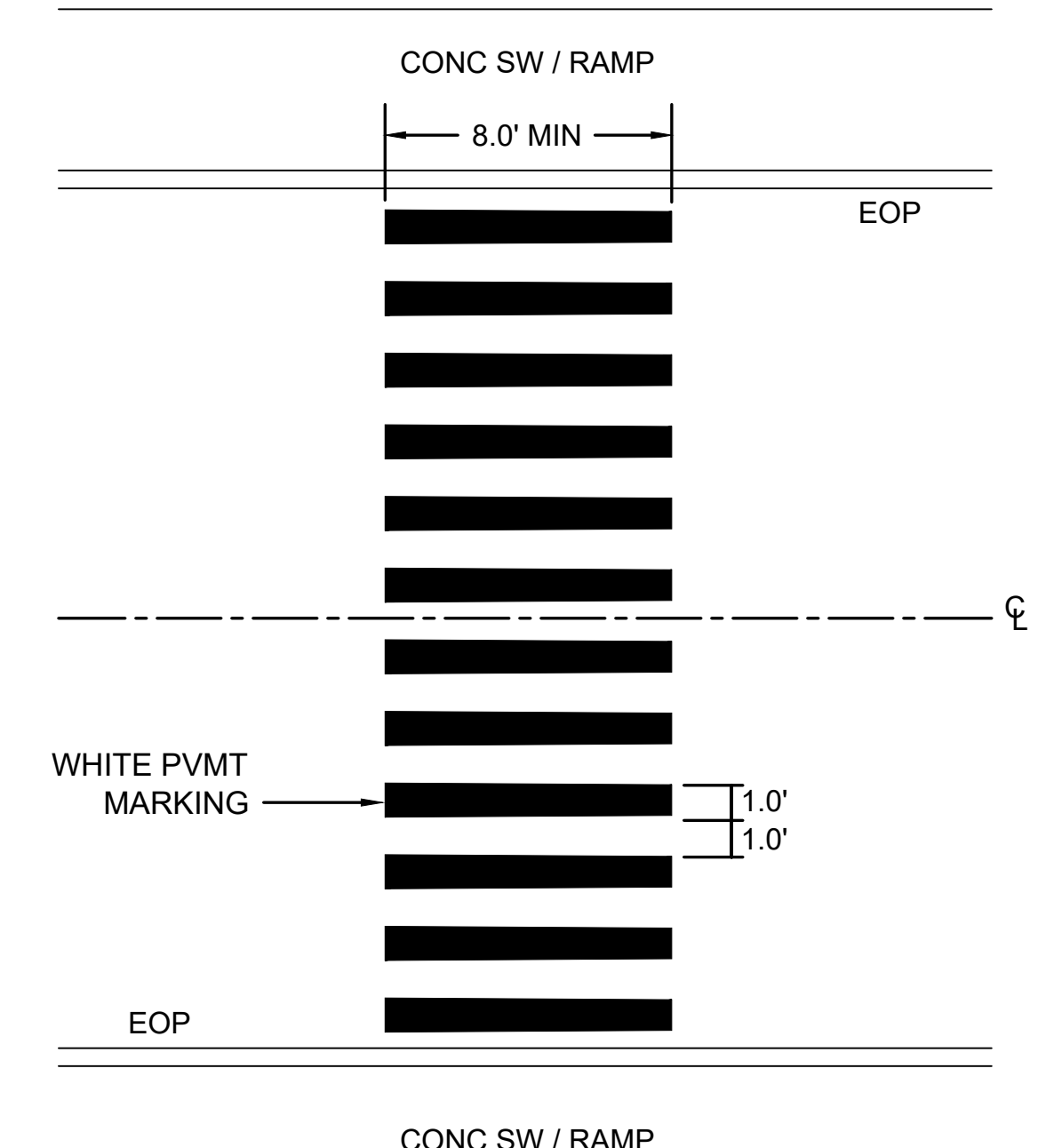
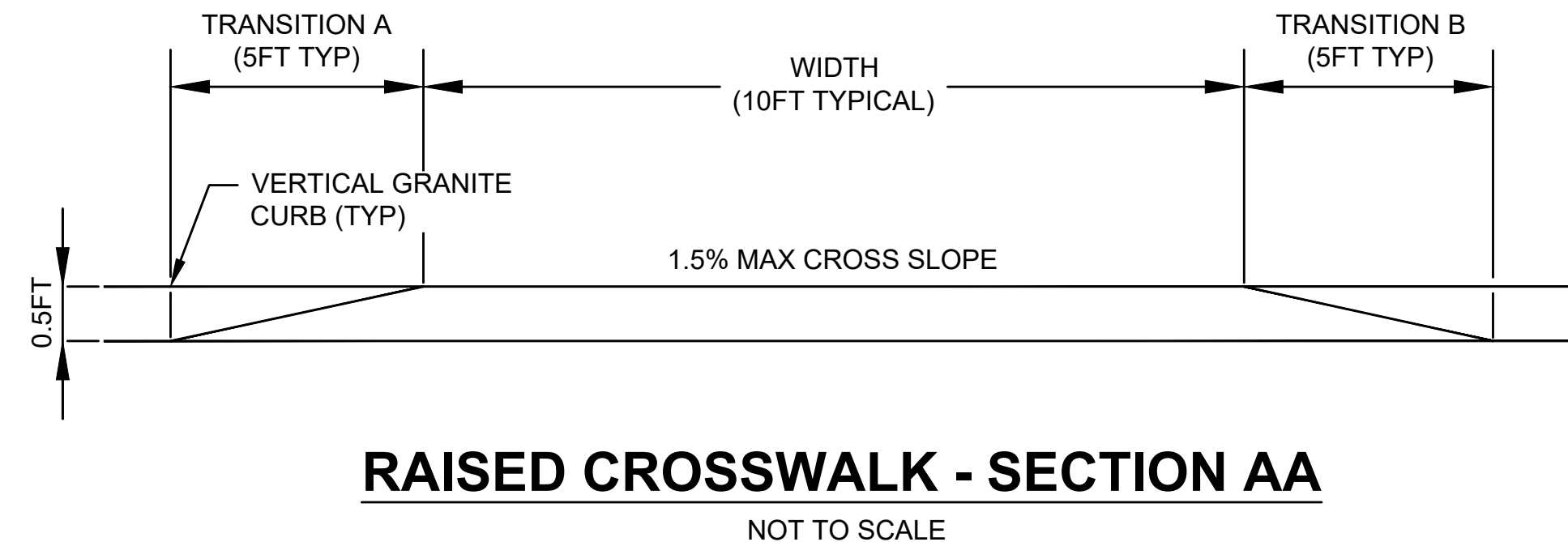
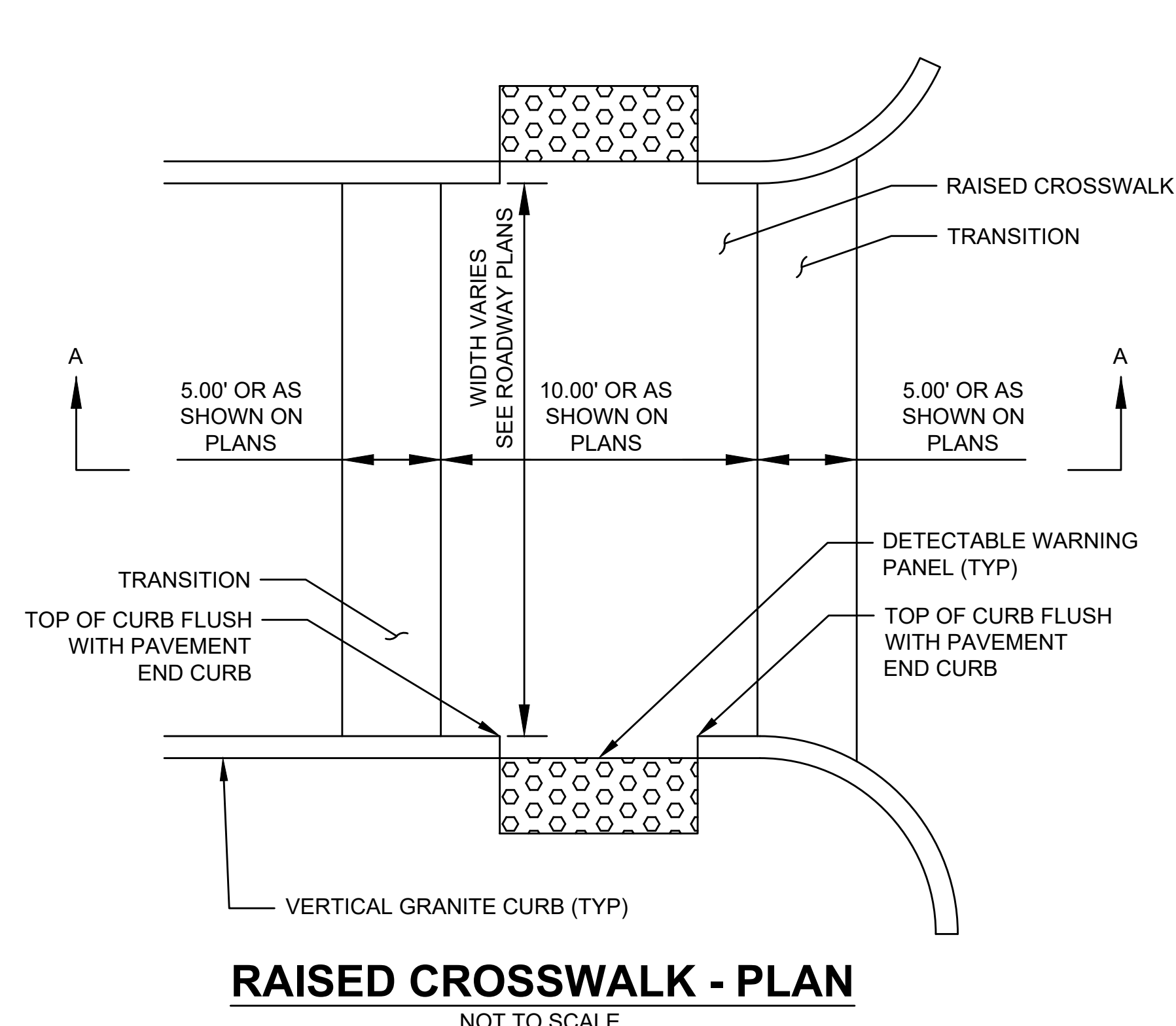
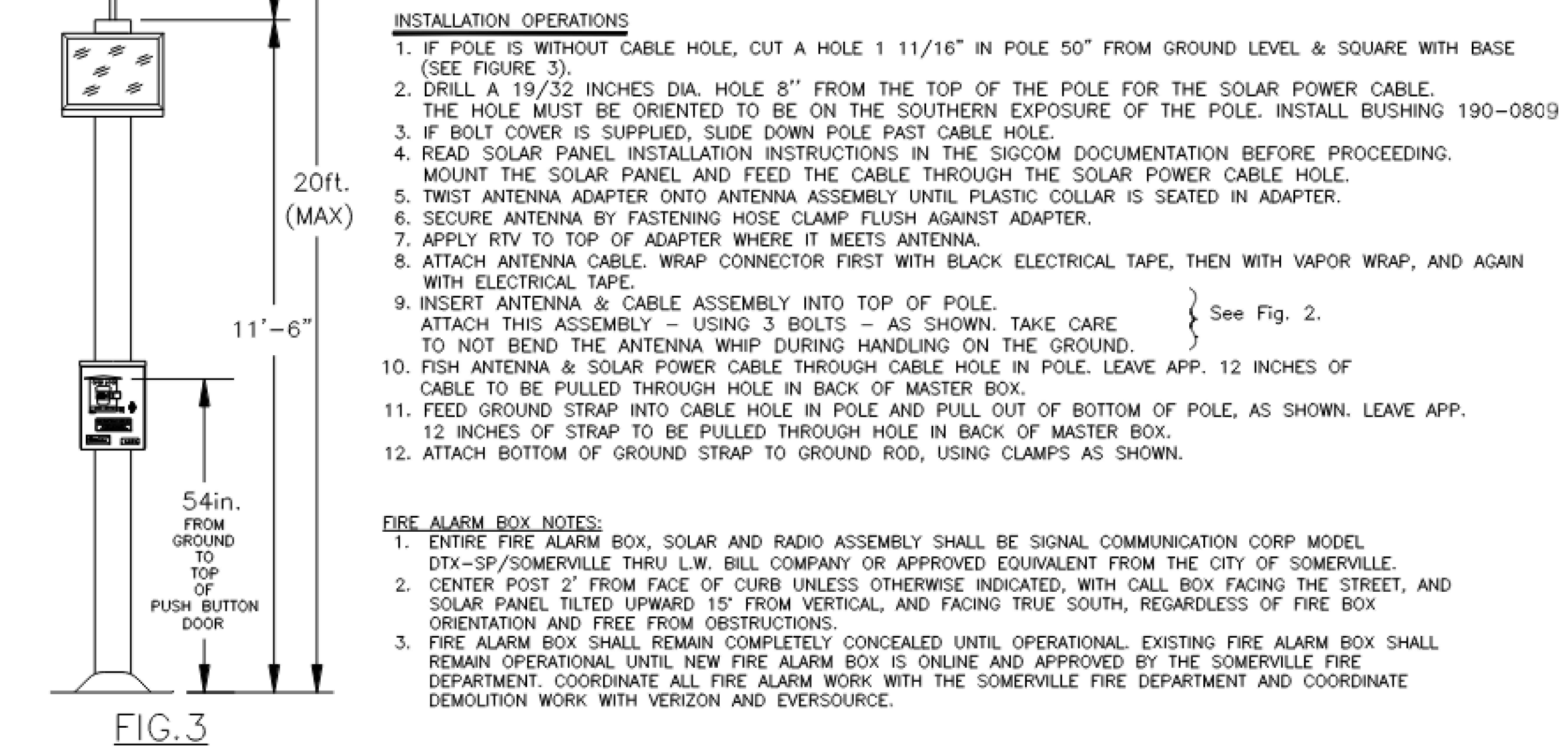
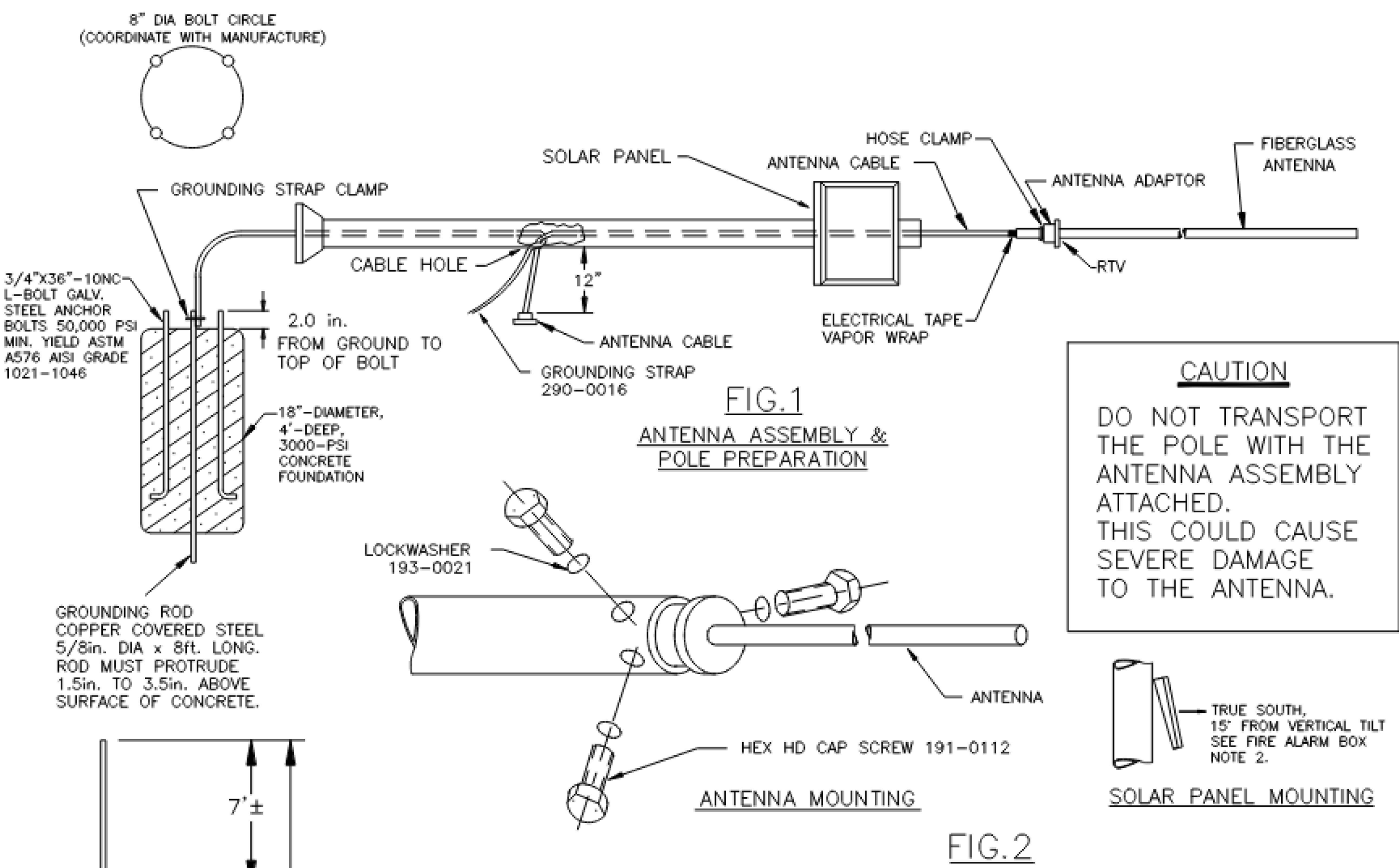
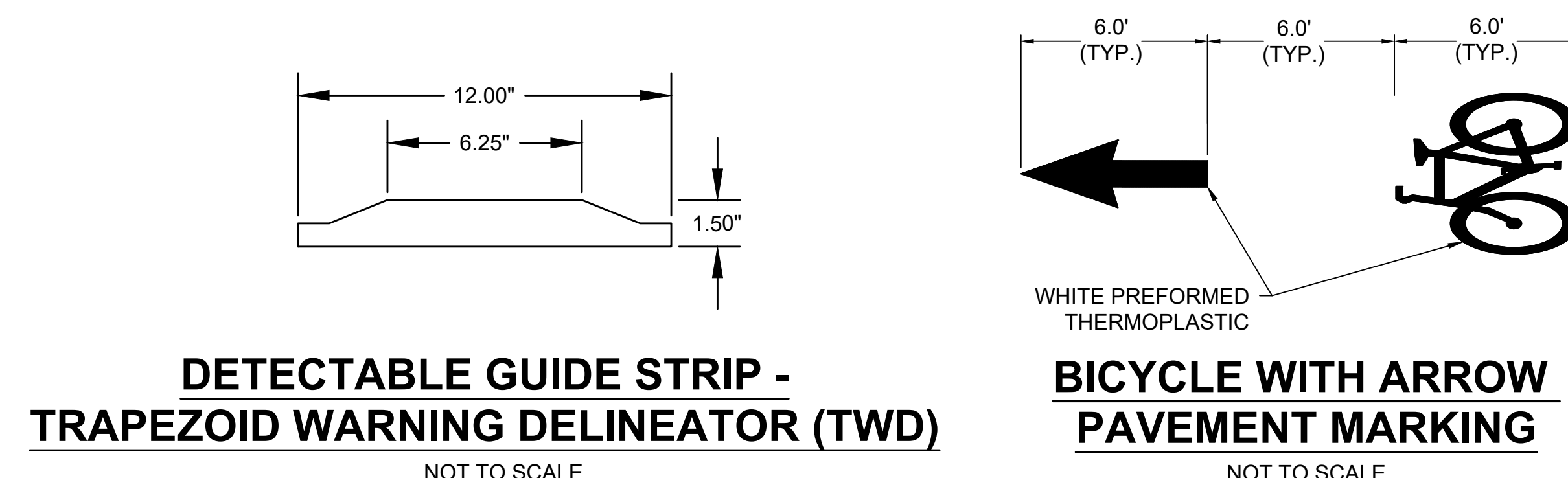
8"

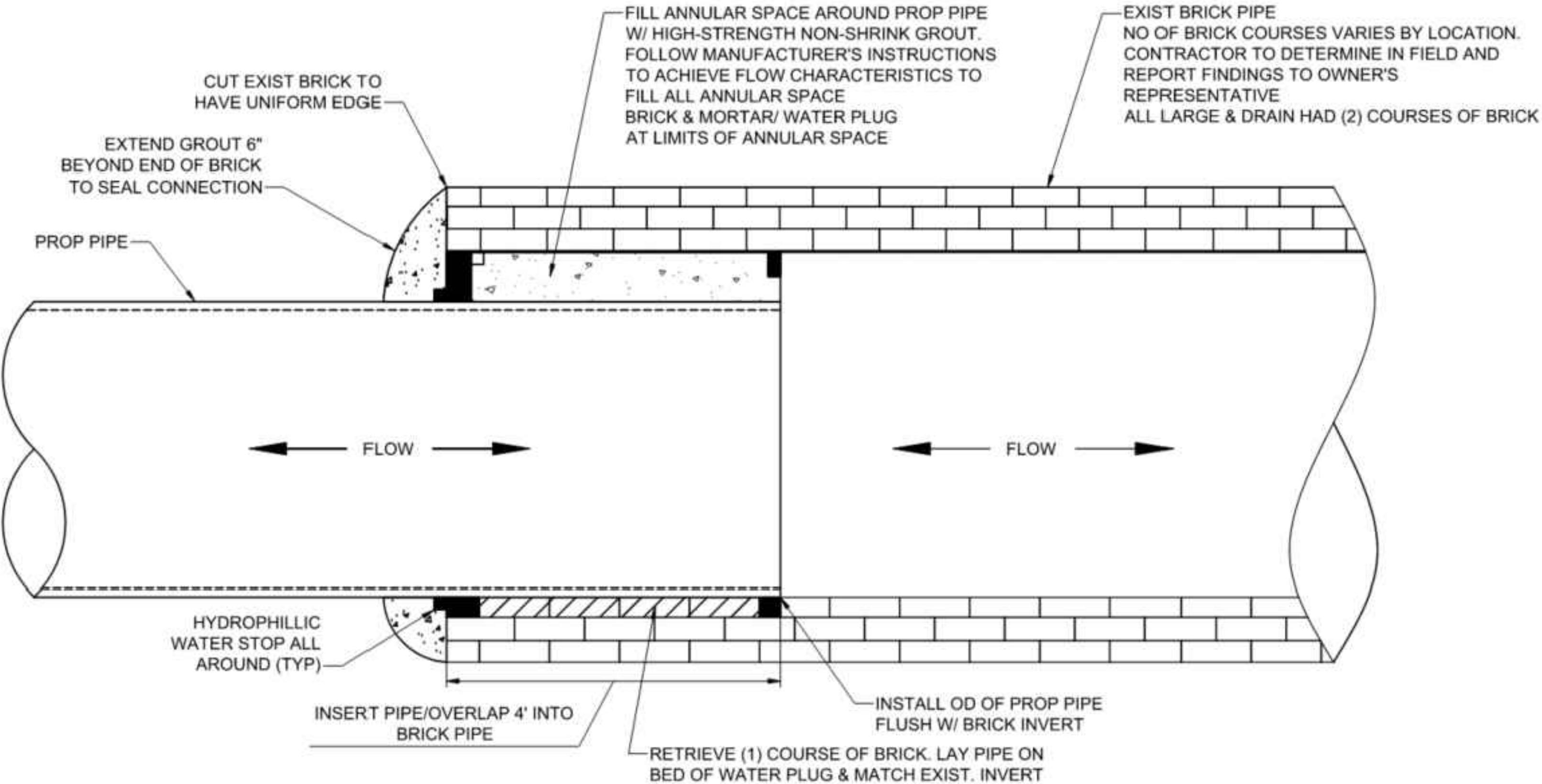
4"

6"

6"

NOTE:





CITY OF SOMERVILLE STANDARD PIPE CONNECTION GROUTED INSERTION

NOT TO SCALE

TABLE 1 : MANHOLE/CATCH BASIN DIMENSIONS				
MANHOLE/CATCH BASIN DIAMETER	SIDE WALL MIN. THICKNESS	BOTTOM SLAB MIN. THICKNESS	MAX PIPE DIAMETER * RCP DI/PVC	
4'	5"	6"	24"	30"
5'	6"	8"	36"	42"
6'	6"	8"	48"	54"
8'	8"	8"	66"	72"
10'	10"	10"	72"	84"

* MAY VARY DEPENDING ON SIZE AND LOCATION OF ADDITIONAL PENETRATIONS OR RELATIONSHIP OF PENETRATIONS IN MANHOLE

GENERAL MANHOLE NOTES:

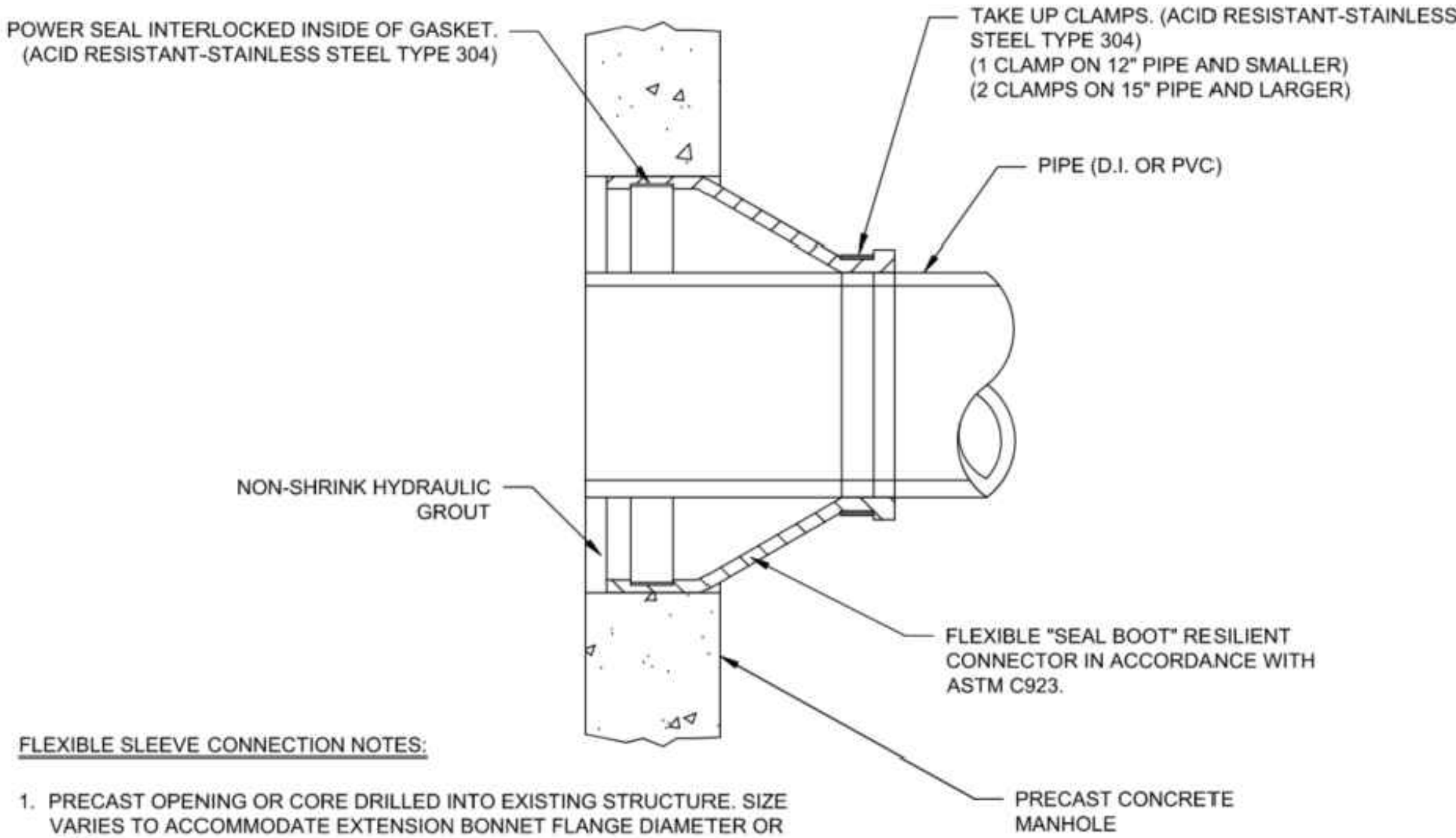
- INNER EDGE OF BRICK TABLE TO BE AT ELEVATION OF CROWN OF TOP OF PIPE. TABLE TO SLOPE AT 8.3% TO INSIDE OF MANHOLE BASE.
- SEWER OR DRAIN MANHOLE DIAMETER SHALL BE 4', 5', 6', 8', OR 10' AS SHOWN ON PLAN/PROFILE VIEWS.
- DESIGN PRECAST SECTIONS WITH FRAME AND COVER FOR AASHTO HS20 LOADINGS.
- FOR DESCRIPTION OF MATERIALS, SEE SPECIFICATIONS.
- OPENING IN TOP MANHOLE SECTION SHALL MATCH CASTING NOMINAL DIAMETER.
- MANHOLES LARGER THAN 4' IN DIAMETER AT THE BASE SHALL BE REDUCED IN DIAMETER TO 4' AT TOP RISER SECTION

GENERAL CATCH BASIN NOTES:

- FACE OF PIPE SHALL NOT PROJECT MORE THAN 4-INCHES FROM FACE OF WALL ALONG CENTERLINE OF PIPE.
- FOR DESCRIPTION OF MATERIAL AND CONSTRUCTION METHODS, SEE SPECIFICATIONS.
- DESIGN PRECAST SECTIONS WITH FRAME AND GRATE FOR AASHTO HS20 LOADING.
- GRATE OPENING CAN BE CENTERED OR OFFSET PERPENDICULAR TO THE CURB.

CITY OF SOMERVILLE STANDARD MANHOLE AND CATCH BASIN GENERAL NOTES

NOT TO SCALE



FLEXIBLE SLEEVE CONNECTION NOTES:

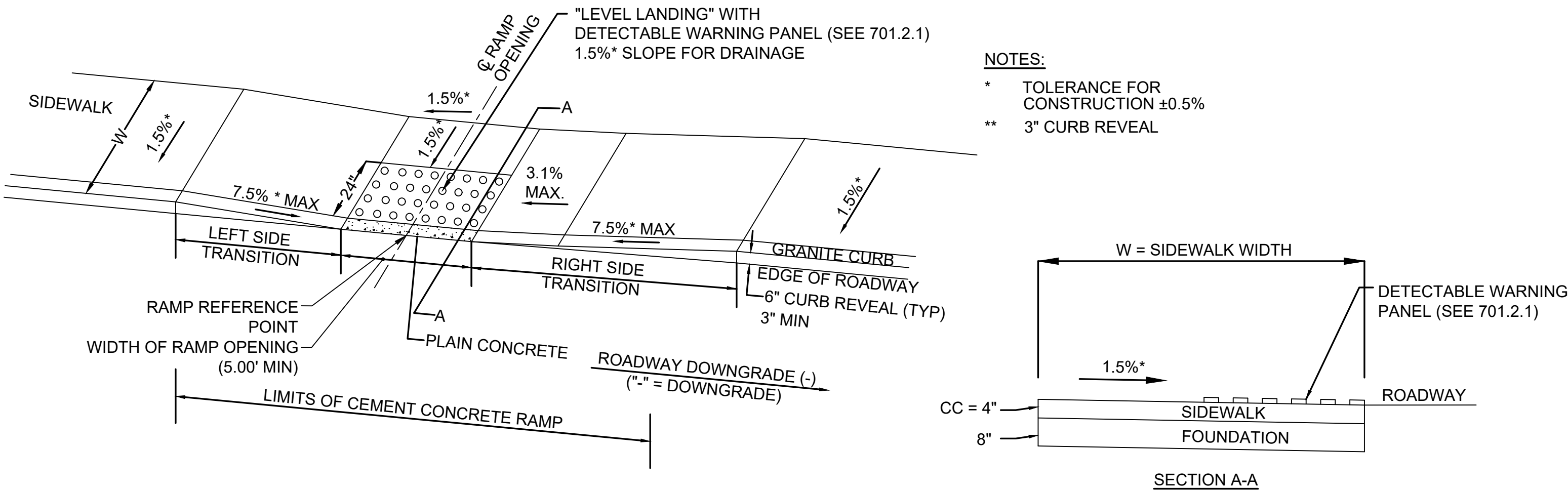
- PRECAST OPENING OR CORE DRILLED INTO EXISTING STRUCTURE. SIZE VARIES TO ACCOMMODATE EXTENSION BONNET FLANGE DIAMETER OR PIPE.
- IF PRECAST OPENING, CONTRACTOR TO COORDINATE WITH PRECASTER TO CAST SLEEVES INTO THE MANHOLE WALL.
- ALL CATCH BASINS TO BE ORDERED BLANK AND PIPE CONNECTIONS TO BE CORE DRILLED IN FIELD.

CITY OF SOMERVILLE STANDARD MANHOLE/ CATCH BASIN SLEEVE

NOT TO SCALE

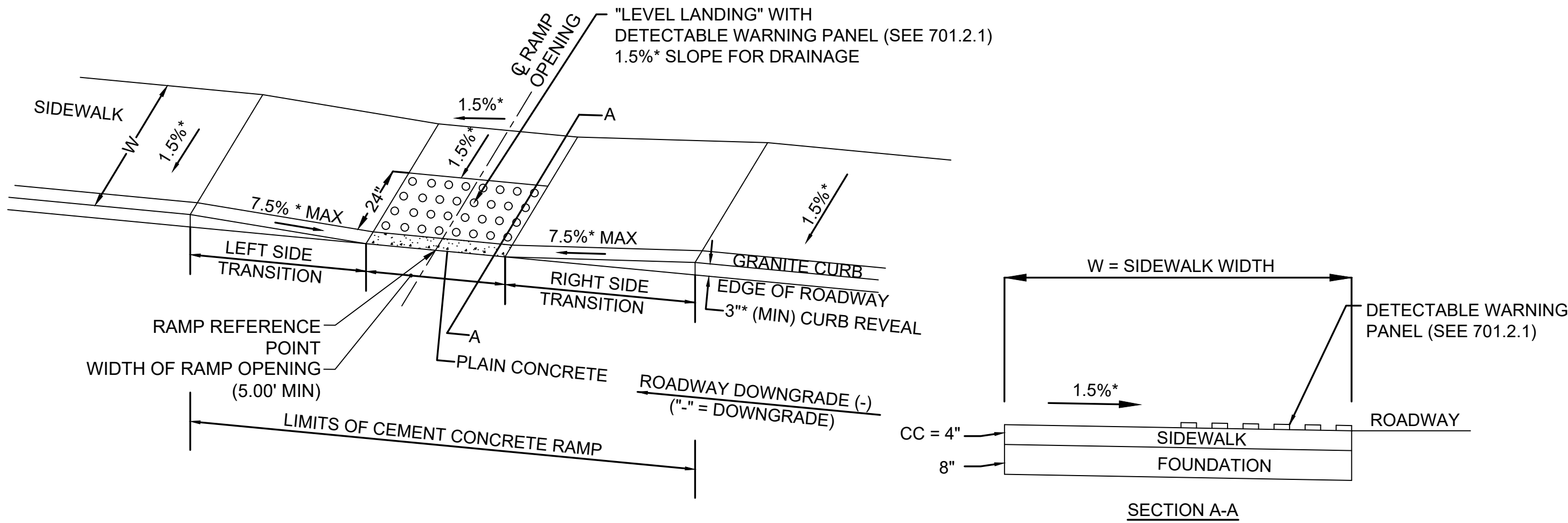
GENERAL PEDESTRIAN CURB RAMP NOTES:

1. ALL PEDESTRIAN CURB RAMPS SHALL CONFORM TO THE REQUIREMENTS OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (AAB), THE AMERICAN WITH DISABILITIES ACT (ADA) AND THE LATEST MASSDOT HIGHWAY DIVISION PEDESTRIAN CURB RAMP STANDARDS.
2. PROPOSED PEDESTRIAN CURB RAMP SLOPES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THE POURING OF CONCRETE, AND BE ADJUSTED, IF NECESSARY, TO CONFORM TO THE LATEST ADAAG/ PROWAG/ MAAB STANDARDS, AS DIRECTED BY THE ENGINEER.
3. ALL PROPOSED CURB FOR PEDESTRIAN CURB RAMP TRANSITIONS SHALL BE CUT AND TRANSITIONED AS NECESSARY TO PROVIDE THE CORRECT TRANSITION LENGTHS FOR EACH PEDESTRIAN RAMP, AS SHOWN ON THE PEDESTRIAN CURB RAMP DETAILS OR AS DIRECTED BY THE ENGINEER. ANY EXISTING CURB INLETS IN AREAS OF NEW PEDESTRIAN CURB RAMP TRANSITIONS SHALL BE REMOVED AND REPLACED WITH APPROPRIATE TRANSITION CURB AS DIRECTED BY THE ENGINEER.
4. IN NO CASE, EXCEPT FOR MAXIMUM LENGTH HIGH SIDE TRANSITIONS (SLOPES GREATER THAN 4%) SHALL ANY TRANSITION SLOPE OF ANY PEDESTRIAN CURB RAMP EXCEED 7.5%*.
5. WHEN PLACEMENT OF THE PROPOSED PEDESTRIAN CURB RAMP IS SUCH THAT IT IS UNAVOIDABLE FOR EXISTING STRUCTURES, THAT CANNOT BE MOVED OR RESET, TO BE WITHIN THE PEDESTRIAN CURB RAMP, EXTREME CARE SHALL BE TAKEN SUCH THAT THE EXISTING STRUCTURE IS WITHIN THE RAMP TRANSITIONS ONLY, IF POSSIBLE, WHEN THE NEW PEDESTRIAN CURB RAMP IS PLACED AND THAT A FOUR FOOT WIDE (MIN) CLEAR PATH OF TRAVEL EXISTS BETWEEN THE EXISTING STRUCTURE AND EITHER THE CURBLINE OR THE BACK OF THE SIDEWALK, AS DIRECTED BY THE ENGINEER.
6. IN RARE INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER EXISTING "SURFACE" TYPE STRUCTURE WHICH CANNOT BE REMOVED OR RESET, IS WITHIN THE ACTUAL PEDESTRIAN CURB RAMP PATH, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACE OF THE STRUCTURE COVER SHALL BE FLUSH WITH THE NEW RAMP SURFACE AND SHALL MATCH THE SLOPE OF THE NEW PEDESTRIAN CURB RAMP EXACTLY, AS DIRECTED BY THE ENGINEER.
7. ALL PEDESTRIAN CURB RAMPS WITHIN THE PROJECT LIMITS SHALL HAVE RED DETECTABLE WARNING PANELS INSTALLED IN ACCORDANCE WITH MASSDOT STANDARD DRAWING 701.2.1 UNLESS OTHERWISE NOTED.



**PEDESTRIAN CURB RAMP IN CONSTRAINED CONDITION
WITH DETECTABLE WARNING PANELS**
NOT TO SCALE

PCR #	ALIGNMENT	RAMP REFERENCE POINT		WIDTH OF SIDEWALK (W)	WIDTH OF RAMP OPENING MIN 5.0'	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
		STATION	OFFSET				LEFT	RIGHT
2	WEBSTER AVE	10+93.54	19.96' RT	5.40'	5.00'	3.14%	6'-6" **	6'-10"



**PEDESTRIAN CURB RAMP IN CONSTRAINED
CONDITION WITH DETECTABLE WARNING PANELS
(3" CURB REVEAL)**
REFER TO MASSDOT STD. DTL. 701.2.2
NOT TO SCALE

PCR #	ALIGNMENT	RAMP REFERENCE POINT		WIDTH OF SIDEWALK (W)	WIDTH OF RAMP MIN 5.0'	DEPTH OF LEVEL LANDING MIN 4.0'	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
		STATION	OFFSET					LEFT	RIGHT
1	WEBSTER AVE	10+90.79	16.00' LT	7.5'	5.0'	4.0'	- 2.63%	3'-3" **	5'-6" **

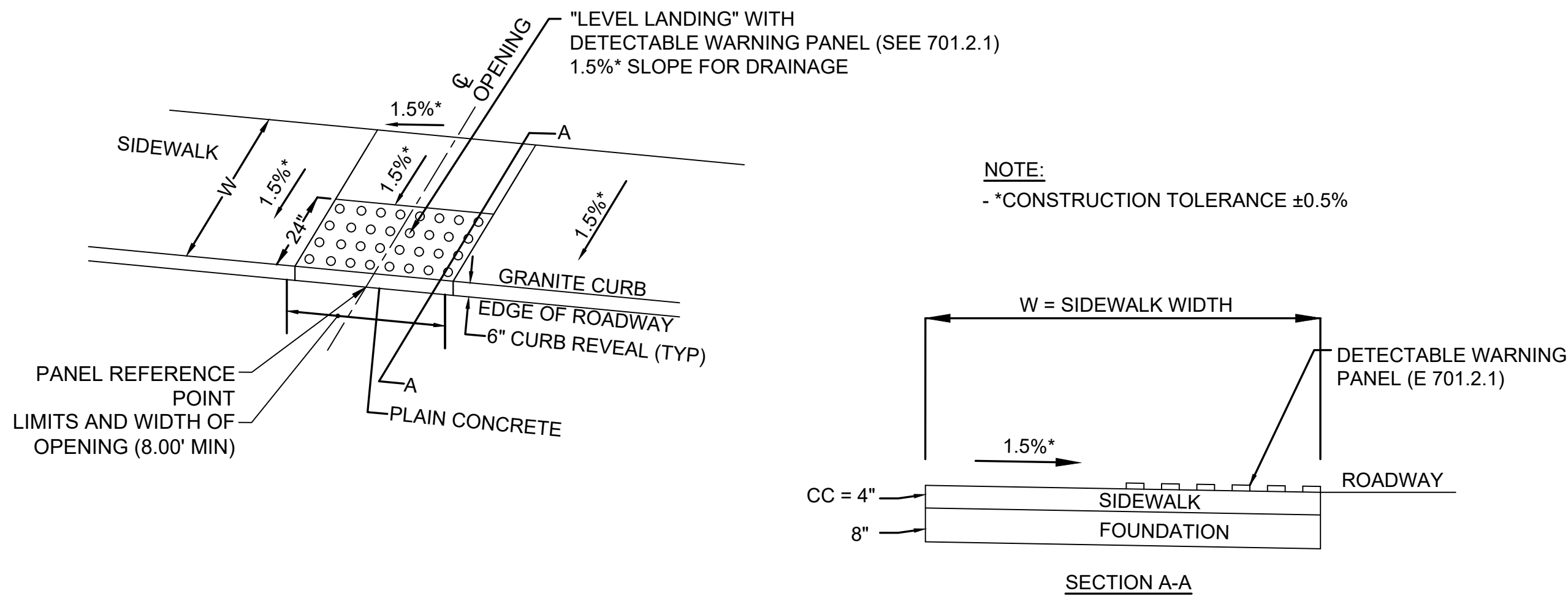
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	34	98
PROJECT FILE NO.		611940	

PEDESTRIAN CURB RAMP AND
DRIVEWAY DETAILS - 01

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	35	98
PROJECT FILE NO.		611940	

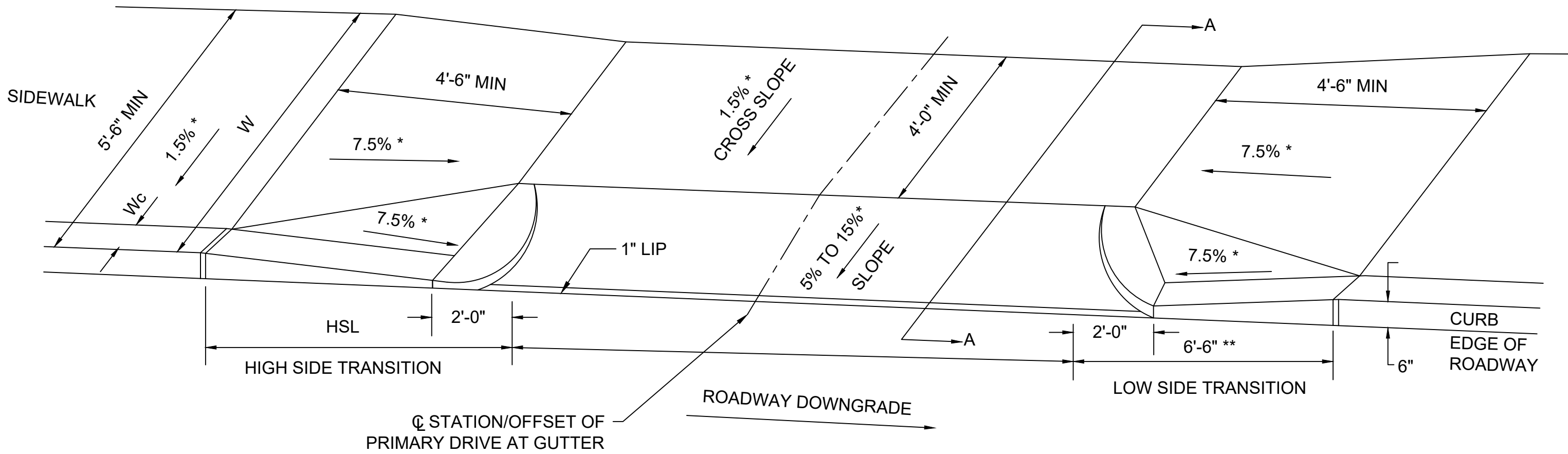
PEDESTRIAN CURB RAMP AND
DRIVEWAY DETAILS - 02



DETECTABLE WARNING PANELS AT
RAISED CROSSWALKS

NOT TO SCALE

ALIGNMENT	PANEL REFERENCE POINT		WIDTH OF SIDEWALK (W)	WIDTH OF THE OPENING MIN 8.0'
	STATION	OFFSET		
WEBSTER AVE	14+04.00	17.00' LT	8.0'	10.0'
WEBSTER AVE	14+04.00	18.00' RT	7.0'	10.0'
NEWTON ST W	22+56.74	19.41' RT	7.5'	13.3'
NEWTON ST W	22+57.33	18.56' LT	6.0'	13.4'
NEWTON ST E	25+21.89	8.42' RT	7.0'	5.00'
NEWTON ST E	25+22.13	9.08' LT	7.0'	5.00'

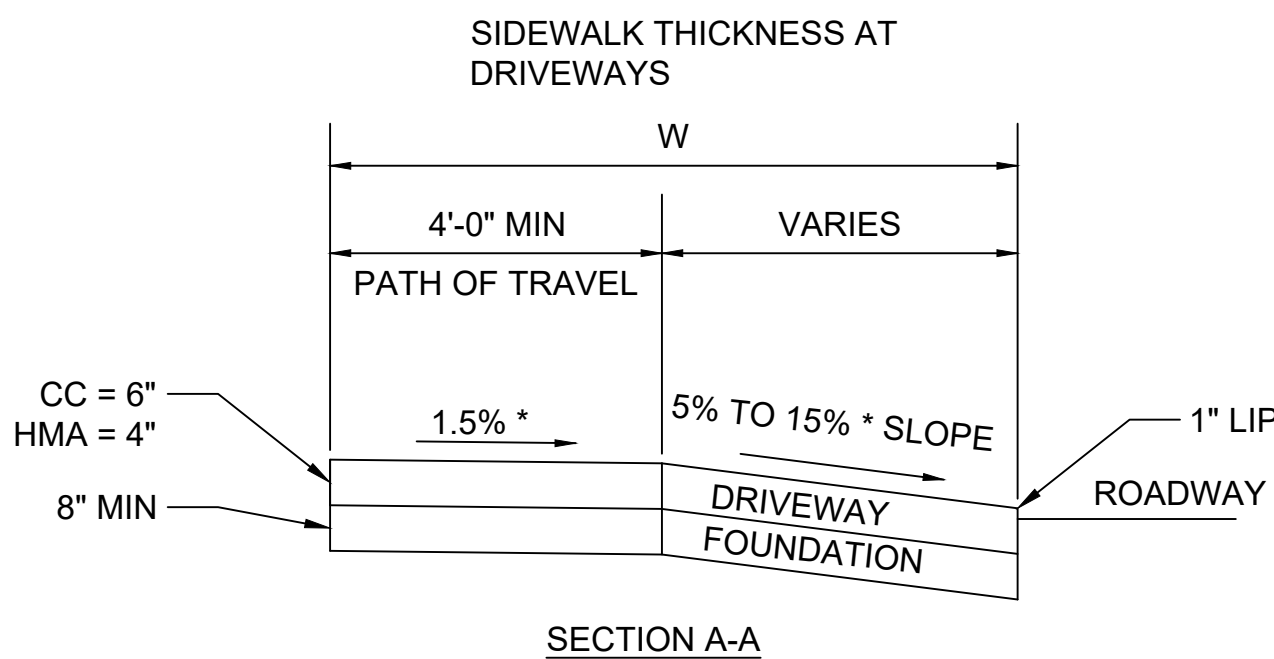


LEGEND

- HSL = HIGH SIDE TRANSITION LENGTH (701.2.8)
HMA = HOT MIX ASPHALT
W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
Wc = CURB WIDTH
* = TOLERANCE FOR CONSTRUCTION ± 0.5%
** = TRANSITION LENGTH SHOWN IS MINIMUM

NOTES

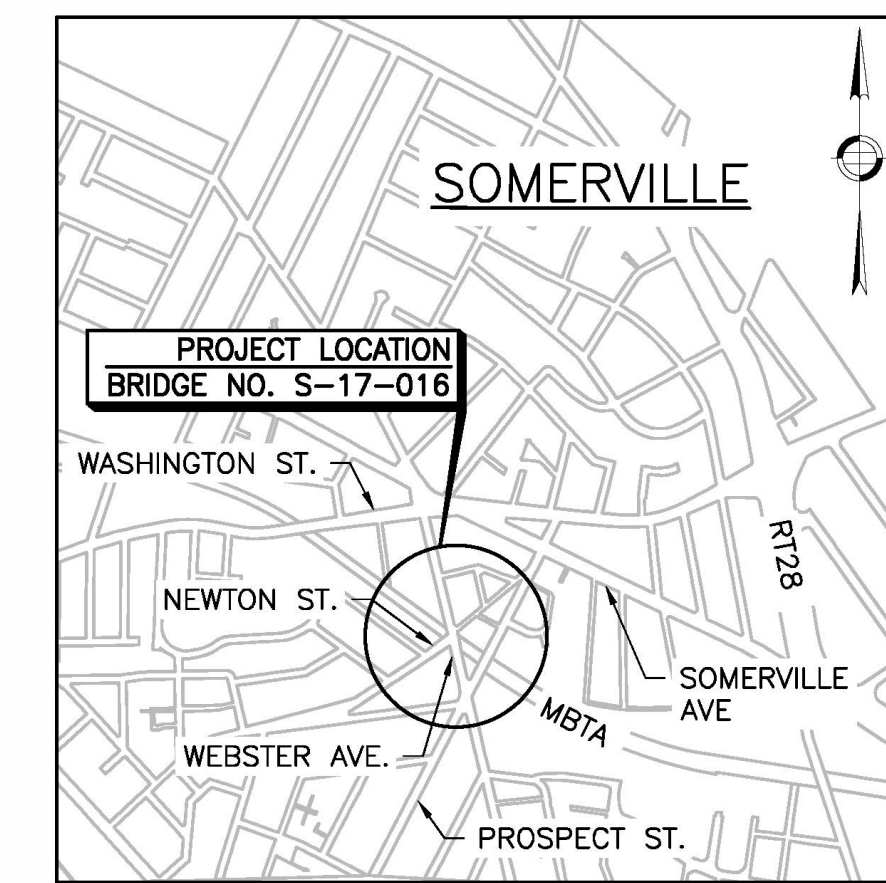
1. USABLE SIDEWALK WIDTH = W - Wc
2. PEDESTRIAN PATH OF TRAVEL SHALL BE NO LESS THAN 4'-0" WIDE AND FREE OF VERTICAL OBSTERUCTIONS FOR A MAXIMUM LENGTH OF 200'-0".
3. ALL SLOPE VALUES LISTED HERE ARE MAXIMUM VALUES WITH A CONSTRUCTION TOLERANCE OF ±0.5%.



SIDEWALK THROUGH DRIVEWAYS WITH CURB RETURNS 2' CURB CORNERS
MASSDOT CONSTRUCTION STANDARD 701.1.2

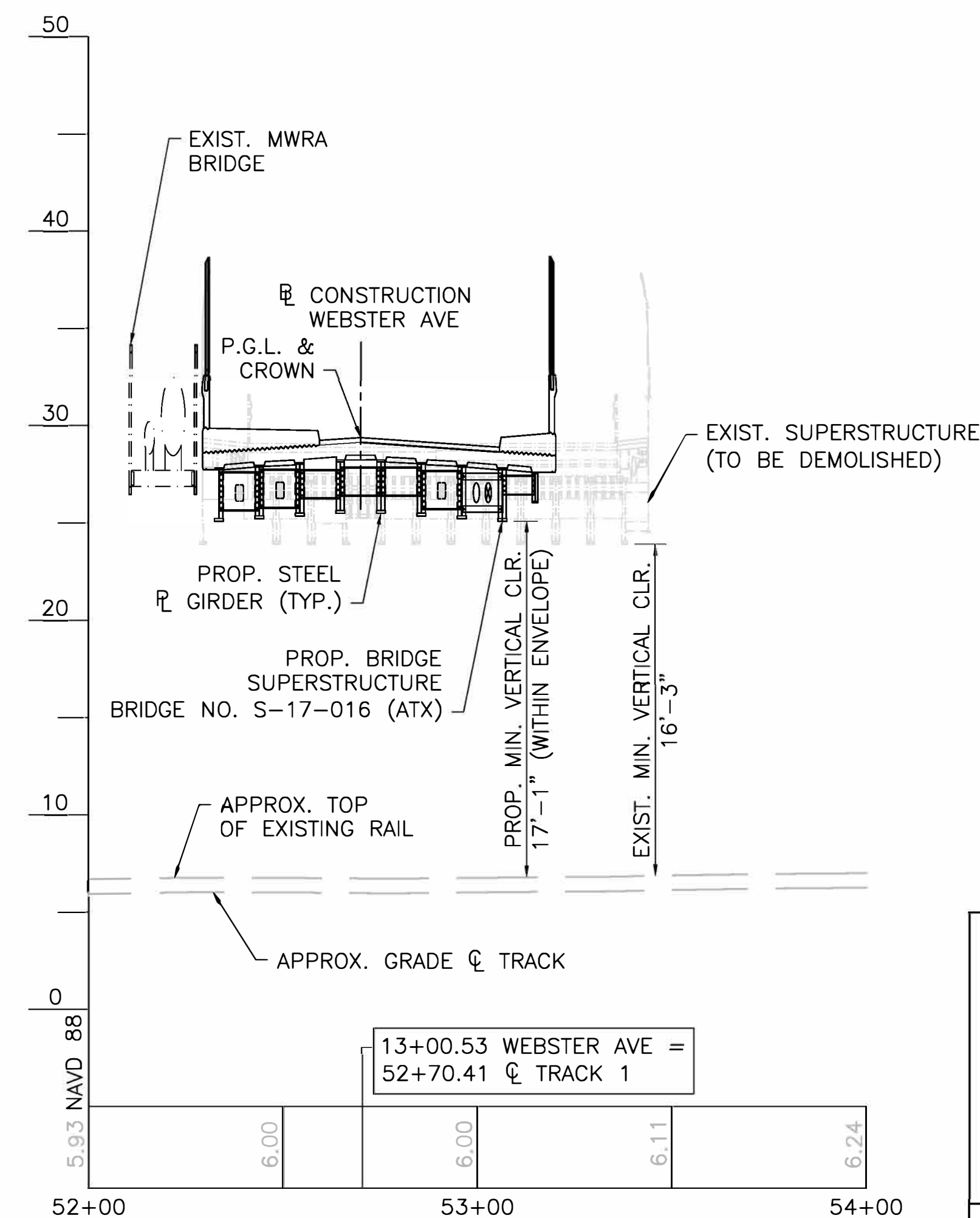
NOT TO SCALE

DWY #	ALIGNMENT	DWY REFERENCE POINT @		WIDTH OF SIDEWALK (W)	DEPTH OF LEVEL LANDING (MIN 4.00')	WIDTH OF DRIVEWAY RAMP OPENING	ROADWAY GUTTER	TRANSITION LENGTH	
		STATION	OFFSET					LEFT	RIGHT
1	WEBSTER AVE	11+36.84	18.01' RT	7.50'	5.50'	35.00'	- 2.45%	11'-0"	6'-6"
2	WEBSTER AVE	11+58.80	16.00' LT	8.00'	6.00'	18.30'	3.04%	6'-6"	11'-0"
4	NEWTON ST W	21+55.30	18.29' RT	6.50'	4.60'	9.50'	- 5.51%	15'-0"	6'-6"
5	NEWTON ST E	26+03.84	8.68' LT	5.50'	4.00'	12.59'	5.03%	15'-0"	6'-6"



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 Sullivan, Michael Digitally signed by Sullivan, Michael Date: 2026.08.10 17:23:00 -04'00'	SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
 141 Longwater Drive - Suite 104 Norwell, MA 02061 781.982.5400 - www.glacorporation.com	Alexander K. Bardow, P.E. Digitally signed by Alexander K. Bardow, P.E. Date: 2026.08.17 16:46:45 -04'00'	 PROPOSED BRIDGE SOMERVILLE WEBSTER AVE OVER MBTA/BMRR MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION 10 PARK PLAZA BOSTON, MASS <i>Carrie Swaine</i> Digitally signed by Carrie Swaine, P.E. Date: 2026.08.17 16:14:28 -04'00' STATE BRIDGE ENGINEER

GENERAL NOTES

DESIGN:

IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2024, FOR HL-93 LOADING.

MASSDOT BENCH MARK:

#1 NAIL IN U.P., STA 11+09.50, 23’ RT, ELEV. 26.14’
#4 X-CUT IN HYDRANT BONNET BOLT, STA. 14+43.00, 19.7’ RT, ELEV. 27.32’

DATE:

TO BE PLACED ON THE INSIDE FACE OF THE NORTHWEST AND SOUTHEAST HIGHWAY GUARDRAIL TRANSITIONS. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. THE DATE USED SHALL BE THE LATEST YEAR OF CONTRACT COMPLETION AS OF THE DATE THE FIRST HIGHWAY GUARDRAIL TRANSITION IS CONSTRUCTED. BOTH HIGHWAY GUARDRAIL TRANSITION SHALL FEATURE THE SAME DATE.

MASSDOT SURVEY NOTEBOOK:

SURVEY PERFORMED BY CHA CONSULTING, INC. FROM MAY 12, 2021 TO MAY 20, 2021. FIELD NOTES ARE RECORDED IN MASSDOT FIELD NOTEBOOK 41693.

SCALES:

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

FOUNDATIONS:

FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIAL:

ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 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"	17"	21"
2. 12" OF CONCRETE BELOW BAR	18"	22"	27"
3. EPOXY COATED BARS, COVER <3db OR CLEAR SPACING <6db	21"	26"	31"
4. COATED BARS, ALL OTHER CASES	17"	21"	25"
5. CONDITION 2 & 3.	23"	29"	35"
6. CONDITION 2 & 4.	21"	27"	32"

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS. REINFORCING STEEL FOR APPROACH SLABS MAY BE UNCOATED. ALL OTHER PROPOSED REINFORCING STEEL SHALL BE EPOXY COATED, UNLESS NOTED OTHERWISE. EPOXY COATED REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A775.

MEMBRANE WATERPROOFING:

ALL MEMBRANE WATERPROOFING USED ON BRIDGE DECKS SHALL BE MEMBRANE WATERPROOFING FOR BRIDGE DECKS – SPRAY APPLIED.

CONCRETE:

UNLESS OTHERWISE SPECIFIED, ALL CONCRETE SHALL BE 5000 $\frac{3}{4}$ " HP CONCRETE,

ALL CIP AND PRECAST CONCRETE POURS SHOWN ON THESE CONSTRUCTION DRAWINGS WHERE ALL VOLUMETRIC DIMENSIONS ARE 4 FEET OR GREATER SHALL BE CONSIDERED TO BE MASS CONCRETE PLACEMENTS AND SHALL REQUIRE A HEAT OF HYDRATION ANALYSIS AND THERMAL CONTROL PLAN, AS SPECIFIED IN THE MASSDOT STANDARD SPECIFICATIONS.

STRUCTURAL STEEL

ALL STRUCTURAL STEEL SHALL BE AASHTO M 270 GRADE 50W, PAINTED BEAM ENDS UNLESS OTHERWISE NOTED. ROUND BEARING STIFFENERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE C.

EXISTING CONDITION:

EXISTING DIMENSIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND VERIFY ALL PRESENT DIMENSIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY & ACCURACY THEREOF, AND SHALL NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL HE/SHE HAS MADE THE REQUIRED MEASUREMENTS, AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.

EXISTING PLANS:

PLANS FOR THE EXISTING BRIDGE ARE AVAILABLE THROUGH THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION PLANS AND RECORDS ROOM IN BOSTON.

GEOTECHNICAL REPORT:

REFER TO GEOTECHNICAL REPORT FOR BRIDGE NO. S-17-016 (3GF) DATED MAY 19, 2026 BY LAMSON ENGINEERING CORPORATION.

RAILROAD TEMPORARY PROTECTIVE SHIELDING:

TEMPORARY PROTECTIVE SHIELDING IS REQUIRED TO PREVENT ANY CONSTRUCTION OR DEMOLITION DEBRIS,INCLUDING LEAD CONTAMINATED MATERIAL, FROM ENTERING THE RAILROAD RIGHT-OF-WAY OR FALLING TO AREAS BELOW THE BRIDGE. THE CONTRACTOR SHALL PROVIDE PLATFORMS, NETS, SCREENS, OR OTHER PROTECTIVE DEVICES AS REQUIRED TO CONTAIN ALL MATERIAL. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, APPROVALS, AND SCHEDULING FLAGGING PERSONNEL WITH MBTA PRIOR TO COMMENCING ANY WORK ON OR ABOVE RAILROAD PROPERTY. IF THE ENGINEER DETERMINES THAT ADEQUATE PROTECTION IS NOT IN PLACE, WORK SHALL BE SUSPENDED UNTIL COMPLIANCE IS ACHIEVED AT NO ADDITIONAL COST. REFER TO SPECIAL PROVISIONS FOR ADDITIONAL SHIELDING REQUIREMENTS.

UTILITIES:

CONTRACTOR SHALL LOCATE AND PROTECT FROM DAMAGE OR RELOCATE, AS NECESSARY, ALL EXISTING UTILITIES. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE RESPECTIVE UTILITY OWNERS FOR ALL UTILITIES THAT ARE TO BE TEMPORARILY OR PERMANENTLY RELOCATED FOR THE BRIDGE REHABILITATION WORK.

THE LOCATION OF ALL EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL UTILITIES.

SEE HIGHWAY PLANS FOR MORE INFORMATION REGARDING UTILITIES.

DRILL AND GROUT REINFORCEMENT

WHERE NOTED, HOLE FOR BARS SHALL BE DRILLED, CLEANED AND PREPARED PER CHOSEN GROUT MANUFACTURER.

DRILL HOLE DIAMETER FOR GROUTED BARS SHALL BE 1" LARGER THAN BAR DIAMETER OR PER GROUT MANUFACTURES RECOMMENDATIONS, GROUT SHALL BE HIGH STRENGTH NON-SHRINK GROUT CAPABLE OF DEVELOPING 5000 PSI WITHIN 3 DAYS AND SHALL BE SELECTED FROM THE MASSDOT QUALIFIED MATERIALS LIST (QCML)

DRILL AND GROUT REINFORCEMENT

ANTI-GRAFFITI COATING SHALL BE APPLIED TO ALL EXISTING AND PROPOSED CONCRETE. SEE SPECIAL PROVISIONS.

ESTIMATED QUANTITIES:

(NOT GUARANTEED)

ITEM NO.	ITEM	UNIT	QUANTITY
114.1	DEMOLITION OF BRIDGE SUPERSTRUCTURE NO. S-17-016 (3GF)	LS	1
127.1	REINFORCED CONCRETE EXCAVATION	CY	500
140.	BRIDGE EXCAVATION	CY	1160
151.2	GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	CY	195
160.3	CONTROLLED LOW-STRENGTH MATERIAL (>300 PSI)	CY	2
450.601	SUPERPAVE BRIDGE SURFACE COURSE – 9.5 (SSC-B – 9.5-P)	TON	21
450.701	SUPERPAVE BRIDGE PROTECTIVE COURSE – 9.5 (SPC-B – 9.5-P)	TON	21
458.71	LIGHTWEIGHT FOAMED GLASS AGGREGATE	CY	145
698.3	GEOTEXTILE FABRIC FOR SEPERATION	SY	55
945.10	DRILLED MICROPILES	FT	9390
945.20	CORING THROUGH ABUTMENTS	FT	690
948.60	MICROPILE VERIFICATION LOAD TEST	EA	1
948.61	MICROPILE PROOF LOAD TEST	EA	3
953.1	TEMPORARY SUPPORT OF EXCAVATION OF BRIDGE NO. S-17-016	LS	1
964.11	ANTI-GRAFFITI COATING	SF	6650
992.33	TEMPORARY UTILITY SUPPORT STRUCTURE	LS	1
994.01	TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. S-17-016 (3GF)	LS	1
995.01	BRIDGE STRUCTURE, NO. S-17-016 (ATX)	LS	1

SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	37	98
PROJECT FILE NO.		611940	

GENERAL NOTES & ESTIMATE QUANTITIES

TRAFFIC DATA		
	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2043	
AVERAGE DAILY TRAFFIC – PRESENT	6400	
AVERAGE DAILY TRAFFIC – DESIGN YEAR	7100	
DESIGN HOURLY VOLUME	520	
DIRECTIONAL DISTRIBUTION	56% SB	
TRUCK PERCENTAGE – AVERAGE DAY	3.1%	
TRUCK PERCENTAGE – PEAK HOUR	2.3%	
DESIGN SPEED	25 MPH	
DIRECTIONAL DESIGN HOURLY VOLUME	290	

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	2500 YR
DESIGN SPECTRA	
As	0.263
SDs	0.413
SD1	0.200
SITE CLASS	E
SEISMIC DESIGN CATEGORY (SDC)	B

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	38	98
PROJECT FILE NO.		611940	

BORING LOGS I

BORING B-1
VERT. SCALE: 1" = 6'-0"

massDOT Massachusetts Department of Transportation		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101			Boring No. B-1		Page 1/3
Boring Log					Scale 1" = 6'		
City/Town: Somerville		Bridge No.: S-17-016		Project File No: 611940		Contract No.:	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 10/23/23 9:30 AM		Date & Time Completed: 10/27/23 3:00 PM		Total Hours: 29	
Groundwater Depth: 25' 6"		Date & Time: 10/27/23 11:30 AM					
Coordinates: N 2962917.4153 E 785326.8971		Ground Elevation (Feet): 26		Inspector's Name: Edward Mahoney			
Drilling Company: New England Boring Contractors		Driller's Name: Ken Smith		Helper's Name: Rick Larhette			
Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot		Recovery (Inches)	Field Description		Strata Changes
S-1	0'-6" 6'-12" 12'-6"				4" OF ASPHALT 2" of SUBBASE (Pavement saw was used) CONCRETE - Jack hammer was used Hand dug - Dry, brown, FINE TO COARSE SAND, some fine to medium gravel, trace of coarse gravel, trace of cobbles		6' 12'
S-2	6'-8"	1	2	2	3	8"	Dry, loose, brown-black, FINE SAND, some coarse sand, some fine to medium gravel
S-3	9'-11"	6	3	2	3	5"	Wet, loose, brown, FINE TO COARSE SAND, some fine to medium gravel
S-4	14'-16"	12	7	8	11	4"	Wet, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel
S-5	19'-21"	15	15	9	8	7"	Wet, medium dense, light brown, FINE TO COARSE SAND, some fine gravel, trace of inorganic silt
S-6	24'-26"	6	9	12	14	24"	Wet, very stiff, light brown, INORGANIC SILT, some clay
S-7	29'-31"	4	5	6	8	8"	Wet, stiff, light brown, INORGANIC SILT, some clay
S-8	34'-36"	12	13	15	18	5"	Wet, medium dense, black-brown, FINE TO COARSE GRAVEL, some inorganic silt
Notes: Traffic set up provided by Patriot Traffic. *-NEBC Helpers-Kellon Moore & Will Sevigny 45' of 4" casing broke off - left in hole.					Arrow Board:- Signs:- Cones:-	Protective Device Stand:- Well Depth:- Stick Up Pipe:- Type of Drill Rig: GTS Truck	Box:- Solid Pipe:- Screen Pipe:- Hammer Weight: 140 Fall: 30" Casing Types: Drive Spin Size: 4" 3" Depth: 90' 106' Sampler Type: SS Size: 1 3/8" ID Automatic Hammer Weight: 140 Safety Hammer Weight: Donut Hammer Weight: Fall: 30" Core Barrel Type: NX Size: 2.15"
Penetration Resistance (N) Guide:							
Cohesionless Soils (Sands, Gravels)				Cohesive Soils (sils, Clays)			
Relative Density	Penetration Resistance		Consistency	Penetration Resistance			
Very Loose	0 - 4		Very Soft	0 - 2			
Loose	4 - 10		Soft	2 - 4			
Medium Dense	10 - 30		Medium Stiff	4 - 8			
Dense	30 - 50		Stiff	8 - 15			
Very Dense	Over 50		Very Stiff	15 - 30			
N=Sum of Second and Third 6" Blow Counts			Hard	Over 30			
Terms Used for Second Entry of Descriptions: and=40-50%, some=10-40%, trace=10% or less							

ABUT. B.O.F.
(BACK MICROPILES)
EL. 18.00±

ABUT. B.O.F.
(FRONT MICROPILES)
EL. 3.97±

OBSERVED DATE
10/27/23

BORING B-1 CONTINUED
VERT. SCALE: 1" = 6'-0"

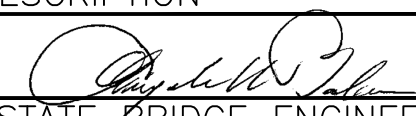
massDOT Massachusetts Department of Transportation		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-1	Page 2/3
City/Town: Somerville		Bridge No.: S-17-016		Project File No.: 611940	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 10/23/23 9:30 AM		Total Hours: 29	
Groundwater Depth: 25' 6"		Date & Time: 10/27/23 11:30 AM		Date & Time Completed: 10/27/23 3:00 PM	
Coordinates: N 2962917.4153 E 785326.8971		Ground Elevation (Feet): 26		Inspector's Name: Edward Mahoney	
Drilling Company: New England Boring Contractors		Driller's Name: Ken Smith		Helper's Name: Rick Larhette	
Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery (Inches)	Field Description	
S-9	39'-41"	9 9 9 8	11"	Wet, medium dense, black, FINE TO COARSE GRAVEL, trace of coarse sand	
S-10	44'-46"	4 7 7 11	14"	Wet, medium dense, black-gray, FINE TO COARSE SAND, trace of fine gravel, trace of inorganic silt	
S-11	49'-51"	WOH 1 2 3	24"	Wet, soft, light brown-gray, CLAY	
S-12	54'-56"	WOH 2 2 3	24"	Wet, soft, light brown-gray, CLAY	
S-13	59'-61"	WOR WOR 2 1	24"	Wet, very soft, light brown-gray, CLAY	
S-14	64'-66"	WOR WOR WOR WOH	24"	Wet, very soft, light brown-gray, CLAY	
US-1	70'-72"		0"	No Recovery	
S-15	72'-74"	8 8 8 5	19"	Wet, medium dense, gray, FINE SAND, some inorganic silt, some fine to medium gravel, trace of coarse gravel	
S-16	79'-81"	28 21 22 28	14"	Wet, dense, gray-brown, FINE SAND, some fine to medium gravel, trace of inorganic silt	
S-17	84'-86"	14 15 16 19	10"	Wet, dense, gray-black, FINE SAND, some fine to medium gravel, trace of inorganic silt, trace of coarse gravel	
S-18	89'-90"6" 90'-98"6"	52 72 61	14"	Top of Weathered Bedrock Wet, very dense, light brown-gray, WEATHERED ARGILLITE Rollerbit through Weathered Argillite	

BORING B-1 CONTINUED
VERT. SCALE: 1" = 6'-0"

massDOT Massachusetts Department of Transportation		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-1	Page 3/3
City/Town: Somerville		Bridge No.: S-17-016		Project File No.: 611940	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 10/23/23 9:30 AM		Total Hours: 29	
Groundwater Depth: 25' 6"		Date & Time: 10/27/23 11:30 AM		Date & Time Completed: 10/27/23 3:00 PM	
Coordinates: N 2962917.4153 E 785326.8971		Ground Elevation (Feet): 26		Inspector's Name: Edward Mahoney	
Drilling Company: New England Boring Contractors		Driller's Name: Ken Smith		Helper's Name: Rick Larhette	
Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery (Inches)	Field Description	
S-19	99'-99"2" 99"2"-106'	99/2	2"	Wet, very dense, gray, WEATHERED ARGILLITE Rollerbit to 106' Installed 3" casing to 106'	
C-1	106'-111'	2 2 2 2 2	39"	Soft, gray, highly fractured, ARGILLITE Recovery: 39'/60"= 65% RQD: 0'/60"= 0%	
C-2	111'-114'	3 3 5	25"	Soft, gray, highly fractured, ARGILLITE Recovery: 25'/39"= 69% RQD: 0'/36"= 0%	
C-3	114'-116'	3 6	15"	Soft, gray, highly fractured, ARGILLITE Recovery: 15'/24"= 63% RQD: 0'/60"= 0%	
C-4	116'-121'	2 3 3 4 3	43"	Soft, gray, highly fractured, ARGILLITE Recovery: 43'/60"= 72% RQD: 10'/60"= 17% Water table was taking before grouting hole. 45' of 4" casing broke off - left in hole.	
Bottom of Exploration @ 121'				EST. DRILLED MICROPILE TIP EL. -98.30	

BORING NOTES:

1. LOCATION OF BORINGS SHOWN ON THE PLAN THUS: 
2. BORINGS ARE TAKEN FOR THE PURPOSE OF DESIGN AND SHOW CONDITIONS AT THE BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
3. GROUND WATER LEVELS SHOWN ON THE BORING LOGS WERE OBSERVED AT THE TIME OF TAKING BORINGS AND DO NOT NECESSARILY SHOW THE TRUE GROUND WATER LEVEL.
4. FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1 3/8" I.D. SPLIT SPOON SAMPLER 6" WITH A 140 POUND WEIGHT FALLING 30".
5. BORING SAMPLES ARE STORED AT A STORAGE FACILITY LOCATED ON ROUTE 114 (219 WINTHROP AVE.) IN LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA. 02116-3973.
6. BORING B1 WAS MADE IN OCTOBER 2023, BORINGS B2 THROUGH B4 WERE MADE IN NOVEMBER 2023.
7. BORINGS WERE MADE BY NEW ENGLAND BORING CONTRACTORS, 40 FORDWAY STREET, DERRY, NH 03038.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY: 	
STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	39	98
PROJECT FILE NO.		611940	

BORING LOGS II

BORING B-2

VERT. SCALE: 1" = 6'-0"

		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-2		Page 1/3	
City/Town: Somerville		Bridge No.: S-17-016		Project File No.: 611940		Contract No.:	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 10/31/23 9:30 AM		Total Hours: 32		Date & Time Completed: 11/7/23 11:00 AM	
Groundwater Depth: 32'5"		Date & Time: 11/7/23 9:30 AM		Ground Elevation (Feet): 26.7		Inspector's Name: Edward Mahoney	
Coordinates: N 2962882.964 E 765326.8971		Driller's Name: Ken Smith		Helper's Name: Rick Larhette			
Drilling Company: New England Boring Contractors							
Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot		Recovery (Inches)	Field Description		Strata Changes
S-1	0'-1'5" 1'5'-6"				0" to 3.5" OF ASPHALT (Jack hammer was used) 3.5" to 5.5" Train track off to side. 5.5" to 11" concrete (Jack hammer used) 11" to 13" Train track off to side 13" to 17" Train track timber off to side Hand dug - Dry, brown, FINE TO COARSE SAND, some fine to medium gravel, trace of coarse gravel, trace of cobbles Wet, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel		1'5"
S-2	6'-8"	8	9 13 17	6"	Wet, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel		
S-3	9'-11"	14	15 9 7	8"	Wet, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel		
S-4	14'-16"	2	1 2 4	4"	Wet, very loose, brown, FINE TO COARSE SAND, trace of fine to medium gravel		
S-5	19'-21"	4	4 4 5	12"	Wet, loose, brown, FINE SAND, some coarse sand, trace of fine to medium gravel, trace of inorganic silt		
S-6	24'-26"	12	6 7 8	18"	Wet, stiff, gray, CLAY		23'
S-7	29'-31"	3	3 5 5	21"	Wet, stiff, gray, CLAY		
S-8	34'-36"	1	1 2 2	24"	Wet, soft, gray, CLAY		
Notes: Traffic set up provided by Patriot Traffic. *NEBC 10/31/23 Driller-Mark D'Ambrosio 10/27/23 Wally Walsh - Vac Truck.				Arrow Board:- Signs:- Cones:-		Protective Device Stand:- Box:- Well Depth:- Solid Pipe:- Stick Up Pipe:- Screen Pipe:-	
Penetration Resistance (N) Guide:				Type of Drill Rig: GT8 Truck			
Cohesionless Soils (Sands, Gravels)				Cohesive Soils (silts, Clays)			
Relative Density		Penetration Resistance		Consistency		Penetration Resistance	
Very Loose		0 - 4		Very Soft		0 - 2	
Loose		4 - 10		Soft		2 - 4	
Medium Dense		10 - 30		Medium Stiff		4 - 8	
Dense		30 - 50		Stiff		8 - 15	
Very Dense		Over 50		Very Stiff		15 - 30	
N=Sum of Second and Third 6" Blow Counts				Hard		Over 30	
Terms Used for Second Entry of Descriptions: and=40-50%, some=10-40%, trace=10% or less				Core Barrel Type: NX Size: 2.15"			

ABUT. B.O.F.
(BACK MICROPILES)
EL. 18.00±

ABUT. B.O.F.
(FRONT MICROPILES)
EL. 3.97±

OBSERVED DATE
11/07/23

BORING B-2 CONTINUED

VERT. SCALE: 1" = 6'-0"

		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-2		Page 2/3	
City/Town: Somerville		Bridge No.: S-17-016		Project File No.: 611940		Contract No.:	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 10/31/23 9:30 AM		Total Hours: 32		Date & Time Completed: 11/7/23 11:00 AM	
Groundwater Depth: 32'5"		Date & Time: 11/7/23 9:30 AM		Ground Elevation (Feet): 26.7		Inspector's Name: Edward Mahoney	
Coordinates: N 2962882.964 E 765326.8971		Driller's Name: Ken Smith		Helper's Name: Rick Larhette			
Drilling Company: New England Boring Contractors							
Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot		Recovery (Inches)	Field Description		Strata Changes
S-9	39'-41"	WOH	WOH 1 3	24"	Wet, very soft, gray, CLAY		
US-1	44'-46"			24"			
S-10	46'-48"	WOH	WOH 1 4	24"	Wet, very soft, gray, CLAY		
S-11	49'-51"	WOR	WOR WOR 3	24"	Wet, very soft, gray, CLAY		
S-12	54'-56"	WOR	WOR WOH WOH	24"	Wet, very soft, gray, CLAY		
S-13	59'-61"	WOR	WOR WOR WOR	12"	Wet, very soft, gray, CLAY		
S-14	64'-66"	WOR	WOR WOR WOR	24"	Wet, very soft, gray, CLAY		
S-15	69'-706"	WOR	WOR 5	18"	Wet, medium stiff, gray, CLAY		706"
15B	706'-71"		10	6"	Wet, gray, CLAY, some fine sand, trace of fine to medium gravel		72"
S-16	74'-76"	10	18 27 33	11"	Wet, dense, gray, FINE SAND AND INORGANIC SILT, some fine to medium gravel, some clay		
S-17	79'-81"	10	15 15 19	15"	Wet, dense, gray, FINE SAND AND INORGANIC SILT, some fine to medium gravel, some clay		
S-18	84'-86"	11	22 24 31	12"	Wet, dense, gray, FINE SAND AND INORGANIC SILT, some fine to medium gravel, some clay		
S-19	89'-91"	13	17 23 33	18"	Wet, dense, gray, FINE SAND AND INORGANIC SILT, some fine gravel, some clay		

BORING B-2 CONTINUED

VERT. SCALE: 1" = 6'-0"

		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-2		Page 3/3	
City/Town: Somerville		Bridge No.: S-17-016		Project File No.: 611940		Contract No.:	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 10/31/23 9:30 AM		Total Hours: 32		Date & Time Completed: 11/7/23 11:00 AM	
Groundwater Depth: 32'5"		Date & Time: 11/7/23 9:30 AM		Ground Elevation (Feet): 26.7		Inspector's Name: Edward Mahoney	
Coordinates: N 2962882.964 E 765326.8971		Driller's Name: Ken Smith		Helper's Name: Rick Larhette			
Drilling Company: New England Boring Contractors							
Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot		Recovery (Inches)	Field Description		Strata Changes
S-20	94'-96"	18	37 38 66	20"	Wet, very dense, gray, FINE SAND, some inorganic silt, trace of clay, (Possible Weathered Argillite)		94'
S-21	99'-999"	25	99/3	9"	Top of Weathered Bedrock Wet, very dense, gray, WEATHERED ARGILLITE, trace of inorganic silt		99'
C-1	106'-111"	3	2 2 2.5 2	33"	Soft, gray, highly fractured, ARGILLITE Recovery: 33"/60"= 55% RQD - 0"/60"= 0%		106'
C-2	111'-116"	1.5	1.5 1.5 1.5 2	52"	Soft, gray, highly fractured, ARGILLITE Recovery: 52"/60"= 87% RQD - 12"/60"= 20%		
					Water table was taking before grouting hole. Bottom of Exploration @ 116'		116'

EST. DRILLED
MICROPILE TIP
EL. -98.30

NOTES:

1. FOR BORING NOTES SEE SHEET 3.

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	40	98
PROJECT FILE NO.		611940	

BORING LOGS III

BORING B-3

VERT. SCALE: 1" = 6'-0"

		LAMSON ENGINEERING COPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-3		Page 1/3	
City/Town: Somerville		Bridge No.: S-17-016		Project File No: 611940		Contract No.:	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 11/14/23 8:00 AM		Total Hours: 35			
Groundwater Depth: 26'		Date & Time: 11/17/23 9:15 am		Date & Time Completed: 11/20/23 12:00 PM			
Coordinates: N 2963022.75 E 765398.93		Ground Elevation (Feet): 26.4		Inspector's Name: James Gu			
Drilling Company: New England Boring Contractors		Driller's Name: Ken Smith		Helper's Name: Rick Larhette			
Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot		Recovery (inches)	Field Description		Strata Changes
	0'-17" 17'-76"				7" OF ASPHALT (Jack hammer was used) 12" of ROCK BASE Vac - Dry, brown, FINE TO COARSE SAND, some fine to medium gravel, trace of coarse gravel, trace of cobbles		17"
S-1	8'-10'	6	4 3 3	2"	Wet, loose, brown, FINE TO COARSE SAND, some fine gravel, trace inorganic silt		
S-2	14'-16'	8	5 5 6	0"	No Recovery		
S-3	19'-21'	11	7 9 11	5"	Wet, medium dense, brown, FINE TO COARSE SAND, some fine gravel, trace of inorganic silt		
S-4	24'-26'	14	6 8 7	4"	Wet, medium dense, brown, FINE TO COARSE SAND and fine to coarse gravel, trace of inorganic silt		27'
S-5	29'-31'	25	22 18 22	7"	Wet, dense, brown, FINE TO COARSE GRAVEL, some fine to coarse sand		
S-6	34'-36'	WOH	3 3 6	24"	Wet, medium stiff, gray, CLAY		33'
Notes: Traffic set up provided by Patriot Traffic. Two police officers N. Moreira and C. O'Leary 11/14/23 Wally Walsh - Vac truck				Arrow Board:- Signs:- Cones:-		Protective Device Stand:- Box:- Well Depth:- Solid Pipe:- Stick Up Pipe:- Screen Pipe:-	
Penetration Resistance (N) Guide:				Type of Drill Rig: GT8 Truck			
Cohesiveness Soils (Sands, Gravels)		Cohesive Soils (sills, Clays)		Hammer Weight: 140		Fall: 30"	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance	Casing Types: Drive	Spin		
Very Loose	0 - 4	Very Soft	0 - 2	Size: 4"	3"		
Loose	4 - 10	Soft	2 - 4	Depth: 55'	106'		
Medium Dense	10 - 30	Medium Stiff	4 - 8	Sampler Type: SS	Size: 1 3/8" ID		
Dense	30 - 50	Stiff	8 - 15	Automatic Hammer Weight: 140			
Very Dense	Over 50	Very Stiff	15 - 30	Safety Hammer Weight: Donut Hammer Weight: Fall: 30"			
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30	Core Barrel Type: NX	Size: 2.15"		
Terms Used for Second Entry of Descriptions: and=40-50%, some=10-40%, trace=10% or less							

ABUT. B.O.F.
(BACK MICROPILES)
EL. 18.00±

ABUT. B.O.F.
(FRONT MICROPILES)
EL. 3.97±

DATE OBSERVED
11/17/23

BORING B-3 CONTINUED

VERT. SCALE: 1" = 6'-0"

		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-3		Page 2/3	
City/Town: Somerville		Bridge No.: S-17-016		Project File No: 611940		Contract No.:	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 11/14/23 8:00 AM		Total Hours: 35			
Groundwater Depth: 26'		Date & Time: 11/17/23 9:15 am		Date & Time Completed: 11/20/23 12:00 PM			
Coordinates: N 2963022.75 E 765398.93		Ground Elevation (Feet): 26.4		Inspector's Name: James Gu			
Drilling Company: New England Boring Contractors		Driller's Name: Ken Smith		Helper's Name: Rick Larhette			
Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot		Recovery (inches)	Field Description		Strata Changes
S-7	39'-41'	WOH	1 2 5	24"	Wet, soft, gray, CLAY		
S-8	44'-46'	1	1 1 2	24"	Wet, very soft, gray, CLAY, fine to coarse gravel		
					Driller went through the depth accidentally, likely due to very soft clay with weight of rod condition (easily penetration materials.)		
S-9	59'-61'	WOR	WOR WOR WOR	24"	Wet, very soft, gray, CLAY		
S-10	64'-66'	WOH	1 1 1	24"	Wet, very soft, gray, CLAY		
S-11	69'-71'	9	17 28 48	16"	Wet, hard, gray, CLAY, some fine to coarse gravel, trace fine to coarse sand, trace inorganic silt		
S-12	74'-76'	13	20 23 36	5"	Wet, hard, gray, CLAY, some fine to coarse gravel, trace fine to coarse sand, trace inorganic silt		
S-13	79'-79"9"	18	99/3	8"	Wet, hard, gray, CLAY and fine to coarse gravel, trace fine to coarse sand		
S-14	84'-86'	16	22 38 82	6"	Wet, hard, gray, CLAY, some fine to coarse gravel, trace inorganic silt		
S-15	89'-89'11"	31	99/5	5"	Top of Weathered Bedrock Wet, very dense, gray, WEATHERED ARGILITE, trace fine to medium gravel		89'

BORING B-3 CONTINUED

VERT. SCALE: 1" = 6'-0"

		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-3		Page 3/3	
City/Town: Somerville		Bridge No.: S-17-016		Project File No: 611940		Contract No.:	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 11/14/23 8:00 AM		Total Hours: 35			
Groundwater Depth: 26'		Date & Time: 11/17/23 9:15 am		Date & Time Completed: 11/20/23 12:00 PM			
Coordinates: N 2963022.75 E 765398.93		Ground Elevation (Feet): 26.4		Inspector's Name: James Gu			
Drilling Company: New England Boring Contractors		Driller's Name: Ken Smith		Helper's Name: Rick Larhette			
Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot		Recovery (inches)	Field Description		Strata Changes
S-16	94'-96'	31	46 76/3	12"	Wet, very dense, gray, WEATHERED ARGILITE		
S-17	99'-99'4"	99/4		4"	Wet, very dense, gray, WEATHERED ARGILITE		
S-18	104'-106'	99/4		4"	Wet, very dense, gray, WEATHERED ARGILITE		
C-1	106'-111'	3	2.5 2.5 3.5 3	60"	Soft, highly fractured, gray, WEATHERED ARGILITE Recovery- 60"/80"= 100% RQD- 13"/60"= 22%		106'
C-2	111'-116'	2	2 2 2 2 2	60"	Hard, slight core breaks, gray, ARGILITE Recovery- 60"/80"= 100% RQD- 57"/80"= 95%		
					Water table was taking before grouting hole. Bottom of Exploration @ 116'		116'

EST. DRILLED
MICROPILE TIP
EL. -98.30

NOTES:

1. FOR BORING NOTES SEE SHEET 3.

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	41	98
PROJECT FILE NO.		611940	

BORING LOGS IV

BORING B-4

VERT. SCALE: 1" = 6'-0"

		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-4		Page 1/3	
City/Town: Somerville		Bridge No.: S-17-016		Project File No: 611940		Contract No.:	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 11/7/23 12:00 AM		Date & Time Completed: 11/13/23 2:00 pm		Total Hours: 34	
Groundwater Depth: 28'2"		Date & Time: 11/13/23 9:30 AM		Ground Elevation (Feet): 26.7		Inspector's Name: Alicia Mahoney	
Coordinates: N 2962882.9644E 765326.8971		Driller's Name: Ken Smith		Helper's Name: Rick Larhette			
Drilling Company: New England Boring Contractors		Blow Counts per 6 Inches		Recovery (Inches)		Strata Changes	
Sample Number	Depth Range (Feet)	Coring Times Minute Per Foot		Field Description			
	0'-1' 1'-16" 18'-8"			0' to 12" OF ASPHALT AND SUBBASE (Jack hammer was used) CONCRETE VAC - Dry, brown, FINE TO COARSE SAND, some fine to medium gravel, trace of coarse gravel, trace of cobbles		1'6"	
S-1	6'-10'	9	7 5 6	7"	Wet, medium dense, dark brown, FINE TO COARSE SAND, some fine to medium gravel		
S-2	12'-14'	5	5 7 7	0"	NO RECOVERY		
S-3	19'-21'	16	18 19 24	9"	Wet, dense, dark brown, FINE TO COARSE SAND, some fine to medium gravel		
S-4	24'-26'	10	17 6 6	7"	Wet, medium dense, dark brown, FINE TO COARSE SAND, some fine to medium gravel		
S-5	29'-31'	9	9 9 9	10"	Wet, medium dense, dark brown, FINE TO COARSE SAND		
S-6	34'-36'	16	17 12 13	7"	Wet, medium dense, dark brown, FINE TO COARSE SAND, some fine to medium gravel		
Notes: Traffic set up provided by Patriot Traffic. 11/17/232 Wally Walsh - Vac truck.				Arrow Board:- Signs:- Cones:-		Protective Device Stand:- Box:- Well Depth:- Solid Pipe:- Stick Up Pipe:- Screen Pipe:-	
Penetration Resistance (N) Guide:				Type of Drill Rig: GT8 Truck			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (silts, Clays)		Hammer Weight: 140 Fall: 30"			
Relative Density	Penetration Resistance	Consistency	Penetration Resistance	Casing Types: Drive Spin	Size: 4" 3"		
Very Loose	0 - 4	Very Soft	0 - 2	Depth: 106' 75'	Sampler Type: SS Size: 1 3/8" ID		
Loose	4 - 10	Soft	2 - 4	Automatic Hammer Weight: 140	Safety Hammer Weight: Fall: 30"		
Medium Dense	10 - 30	Medium Stiff	4 - 8	Donut Hammer Weight: Core Barrel Type: NX Size: 2.15"			
Dense	30 - 50	Stiff	8 - 15				
Very Dense	Over 50	Very Stiff	15 - 30				
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30				
Terms Used for Second Entry of Descriptions: and=40-50%, some=10-40%, trace=10% or less							

ABUT. B.O.F.
(BACK MICROPILES)
EL. 18.00±

ABUT. B.O.F.
(FRONT MICROPILES)
EL. 3.97±

OBSERVED DATE
11/13/23

BORING B-4 CONTINUED

VERT. SCALE: 1" = 6'-0"

		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-4		Page 2/3	
City/Town: Somerville		Bridge No.: S-17-016		Project File No: 611940		Contract No.:	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 11/7/23 12:00 AM		Date & Time Completed: 11/13/23 2:00 pm		Total Hours: 34	
Groundwater Depth: 28'2"		Date & Time: 11/13/23 9:30 AM		Ground Elevation (Feet): 26.7		Inspector's Name: Alicia Mahoney	
Coordinates: N 2962882.9644E 765326.8971		Driller's Name: Ken Smith		Helper's Name: Rick Larhette			
Drilling Company: New England Boring Contractors		Blow Counts per 6 Inches		Recovery (Inches)		Strata Changes	
Sample Number	Depth Range (Feet)	Coring Times Minute Per Foot		Field Description			
S-7	39'-41'	12	15 20 23	6"	Wet, dense, gray-black, FINE TO COARSE GRAVEL	37'	
S-8	44'-46'	6	7 10 9	24"	Wet, very stiff, gray, CLAY	44'	
S-9	49'-51'	4	10 10 11	9"	Wet, very stiff, gray, CLAY Rollerbit to 54' BOULDER		
S-10	54'-56'	4	5 11 15	6"	Wet, very stiff, gray, CLAY, trace of fine gravel		
S-11	59'-61'	2	2 1 2	24"	Wet, soft, gray, CLAY		
S-12	64'-66'	WOR	2 2 1	24"	Wet, soft, gray, CLAY		
S-13	69'-71'	1	4 5 9	8"	Wet, stiff, gray, CLAY, trace fine to medium gravel		
S-14	74'-74'3"	99/3		1"	Wet, very dense, black, FINE TO MEDIUM GRAVEL Rollerbit to 79'	73'	
S-15	79'-81'	10	28 52 50	10"	Wet, hard, gray, CLAY, some fine sand, trace fine to medium gravel	79'	
S-16	84'-86'	41	29 36 74	15"	Top of Weathered Bedrock Wet, very dense, gray-green, WEATHERED ARGILITE, some clay, trace of fine to medium gravel	84'	
S-17	89'-89'4"	99/4		4"	Wet, very dense, gray-green, WEATHERED ARGILITE, trace of fine gravel		

BORING B-4 CONTINUED

VERT. SCALE: 1" = 6'-0"

		LAMSON ENGINEERING CORPORATION 437 Cherry Street, #109, Newton, Massachusetts 02465 Phone: (617) 558-0101		Boring No. B-4		Page 3/3	
City/Town: Somerville		Bridge No.: S-17-016		Project File No: 611940		Contract No.:	
Location: Webster Avenue over MBTA/B&M RR		Date & Time Started: 11/7/23 12:00 AM		Date & Time Completed: 11/13/23 2:00 pm		Total Hours: 34	
Groundwater Depth: 28'2"		Date & Time: 11/13/23 9:30 AM		Ground Elevation (Feet): 26.7		Inspector's Name: Alicia Mahoney	
Coordinates: N 2962882.9644E 765326.8971		Driller's Name: Ken Smith		Helper's Name: Rick Larhette			
Drilling Company: New England Boring Contractors		Blow Counts per 6 Inches		Recovery (Inches)		Strata Changes	
Sample Number	Depth Range (Feet)	Coring Times Minute Per Foot		Field Description			
S-18	99'-100'	62	95	12"	Wet, very dense, gray-green, WEATHERED ARGILITE, trace of fine gravel Rollerbit to 106'	100'	
C-1	106'-111'	2	3 3 4 4	44"	soft, gray-black, highly fractured, WEATHERED ARGILITE Recovery: 44'/60"= 73% RQD: 0'/60"= 0%	106'	
C-2	111'-116'	1.5	1.5 1.5 2 3	37"	soft, gray-black, highly fractured, WEATHERED ARGILITE Recovery: 37'/60"= 62% RQD: 4.5'/60"= 7.5%		
C-3	116'-121'	1	1 2 2 1.5	36"	soft, gray-black, highly fractured, WEATHERED ARGILITE Recovery: 36'/60"= 60% RQD: 8.5'/60"= 14% Water table was taking before grouting hole. Bottom of Exploration @ 121'	121'	

EST. DRILLED
MICROPILE TIP
EL. -98.30

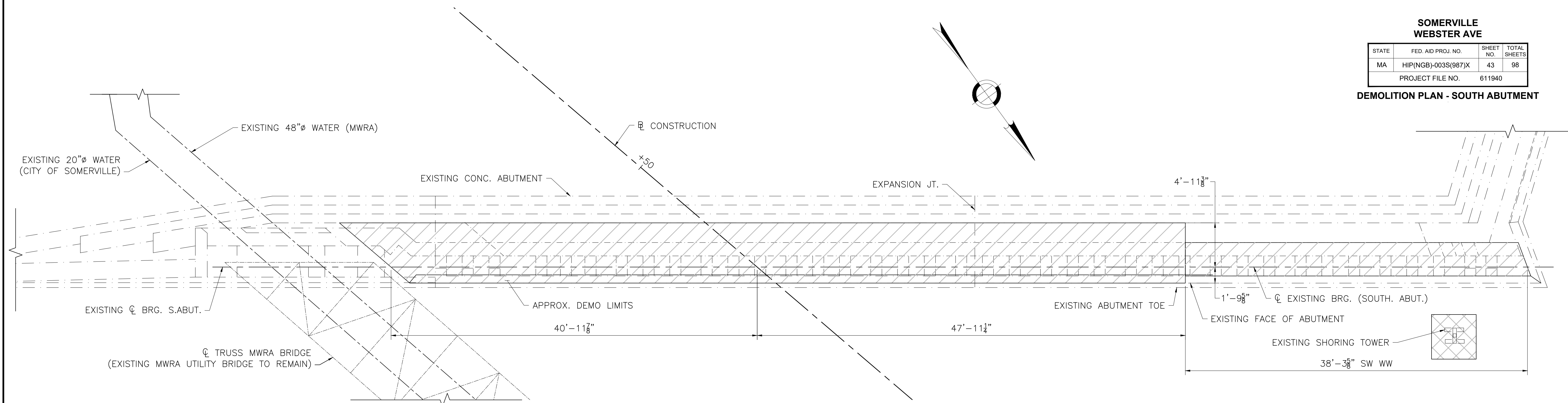
NOTES:

1. FOR BORING NOTES SEE SHEET 3.

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE WEBSTER AVE			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	43	98
PROJECT FILE NO.		611940	

DEMOLITION PLAN - SOUTH ABUTMENT

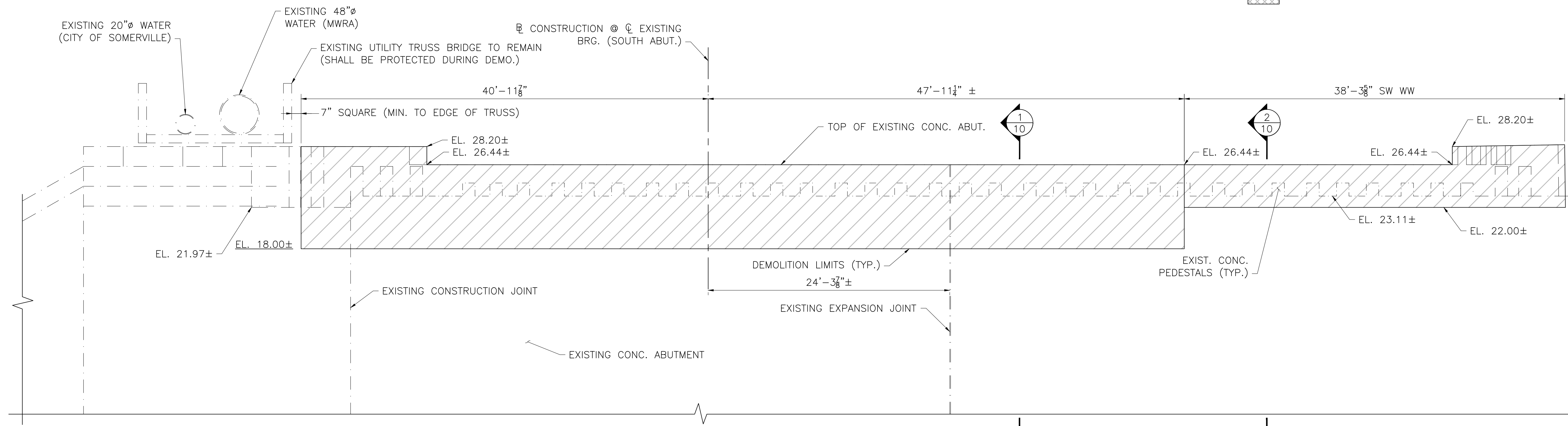


SOUTH ABUTMENT DEMO PLAN

SCALE: 3/16" = 1'-0"

LEGEND:

- EXISTING ABUTMENT CAP DEMOLITION
- EXISTING SHORING TOWER DEMOLITION



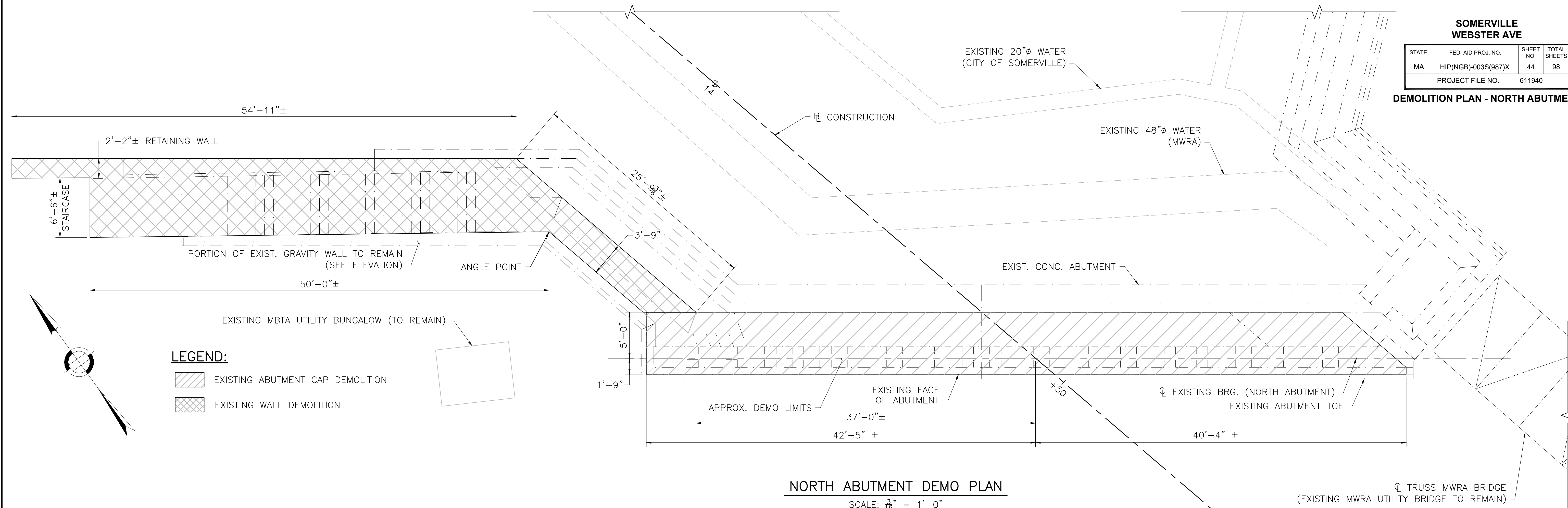
SOUTH ABUTMENT DEMO ELEVATION

SCALE: 3/16" = 1'-0"

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

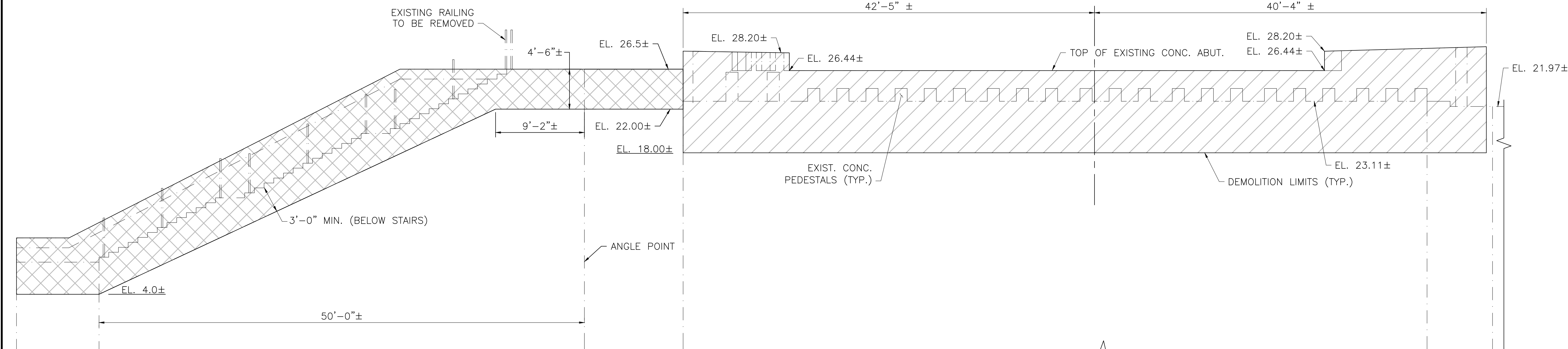
SOMERVILLE WEBSTER AVE			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	44	98
PROJECT FILE NO.		611940	

DEMOLITION PLAN - NORTH ABUTMENT



NORTH ABUTMENT DEMO PLAN

SCALE: 3/16" = 1'-0"



NORTH ABUTMENT DEMO ELEVATION

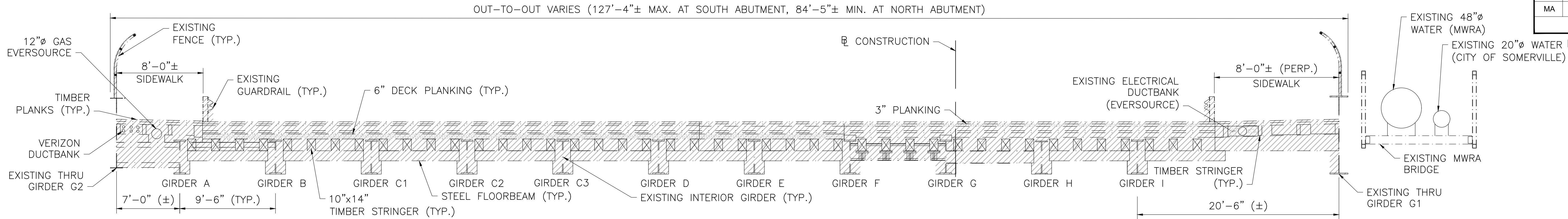
SCALE: 3/16" = 1'-0"

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	45	98
PROJECT FILE NO.		611940	

DEMOLITION DETAILS



EXISTING BRIDGE DEMOLITION

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

NOTES:

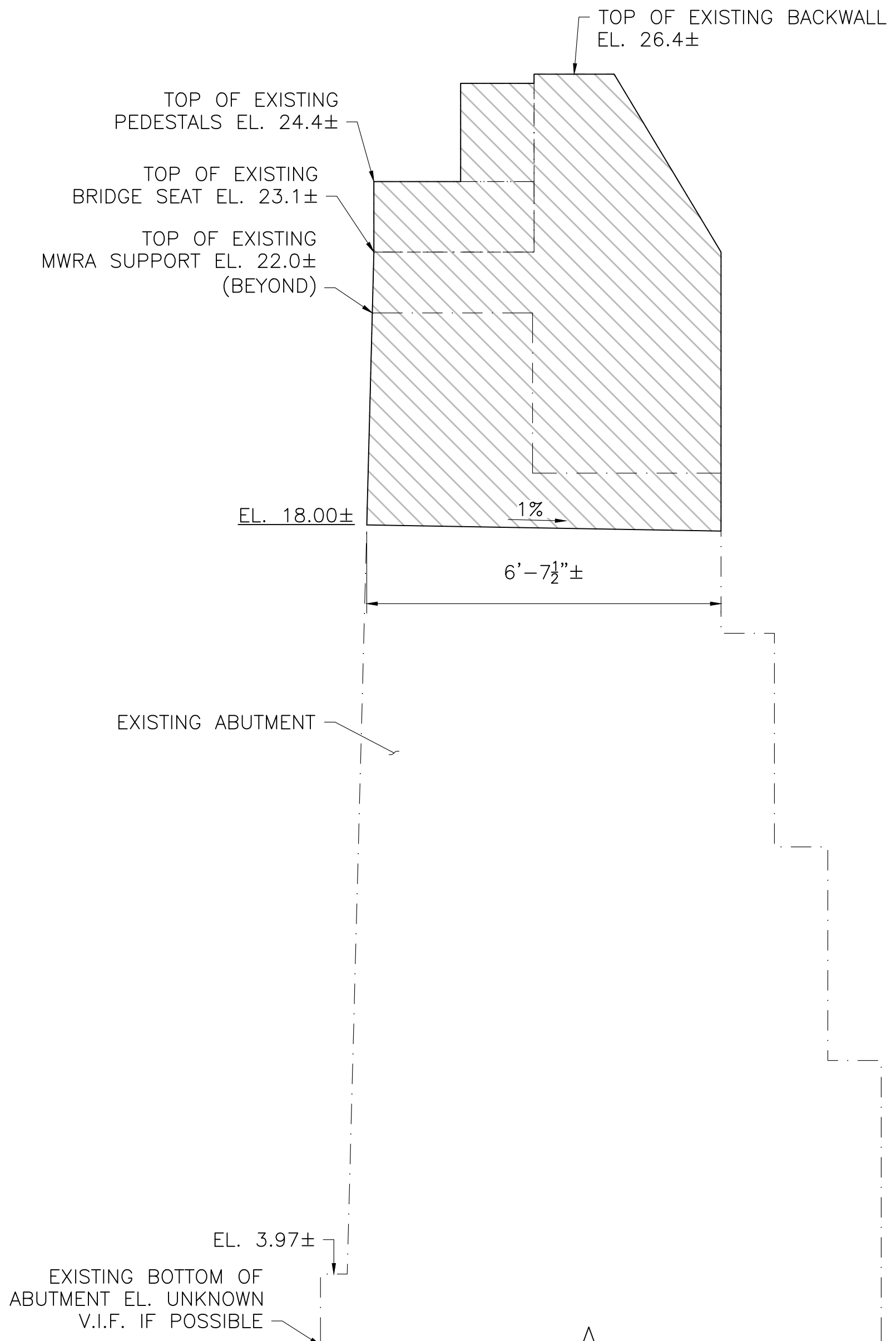
- EXISTING CROSS SECTION DRAWN AT 3'-6" FROM SOUTH ABUTMENT ϕ OF BEARING.

DEMOLITION NOTES:

- TEMPORARY PROTECTIVE SHIELDING REQUIRED PRIOR TO ANY DEMOLITION ACTIVITIES OVER OR IMMEDIATELY ADJACENT TO THE MBTA PROPERTY. SEE SPECIAL PROVISIONS.
- TRUSS CARRYING THE MWRA WATERMAIN AND ITS SUPPORTING STRUCTURE TO REMAIN. CONTRACTOR SHALL USE CARE DURING DEMOLITION ACTIVITIES PROVIDING PROTECTION OF THE UTILITY AND ITS SUPPORT STRUCTURE.
- ALL UTILITIES SHOWN ARE APPROXIMATE AND LOCATIONS SHALL BE VERIFIED. PRIOR TO THE START OF DEMOLITION THE CONTRACTOR SHALL HAVE WRITTEN VERIFICATION FROM UTILITY COMPANIES AND CITY OF SOMERVILLE THAT ALL UTILITIES HAVE BEEN REMOVED OR ABANDONED IN PLACE AND THAT THE CONTACTED ORGANIZATION HAS NO ACTIVE UTILITIES ON THE EXISTING STRUCTURE OR WITHIN THE BAY IN THE VICINITY OF THE BRIDGE.
- DEMOLITION OF EXISTING SUPERSTRUCTURE TO BE PERFORMED UNDER ITEM NO. 114.1 - DEMOLITION OF SUPERSTRUCTURE BRIDGE NO. S-17-016 (3GF). SEE SPECIAL PROVISIONS.
- DEMOLITION OF PORTIONS OF THE SUBSTRUCTURE AND ANY MASONRY OR EXISTING CONCRETE SHALL BE PERFORMED UNDER ITEM 127.1 - REINFORCED CONCRETE EXCAVATION.
- TEMPORARY SHORING BENEATH THE BRIDGE SHALL BE REMOVED AND PROVIDED TO MASSDOT DISTRICT 4 FOR POSSIBLE REUSE. ABANDONED WORK PLATFORMS ADJACENT TO THE MWRA BRIDGE SHALL BE REMOVED AND DISCARDED BY THE CONTRACTOR. SEE SPECIAL PROVISIONS.
- AT THE SOUTHWEST CORNER BEYOND LIMITS OF PROPOSED ABUTMENT EXISTING BACKWALL, BRIDGE SEAT AND PORTION OF EXISTING GRAVITY ABUTMENT SHALL BE DEMOLISHED DOWN TO THE ELEVATION OF THE EXISTING WALL SUPPORTING THE MWRA BRIDGE ON THE SOUTHEAST SIDE.

LEGEND:

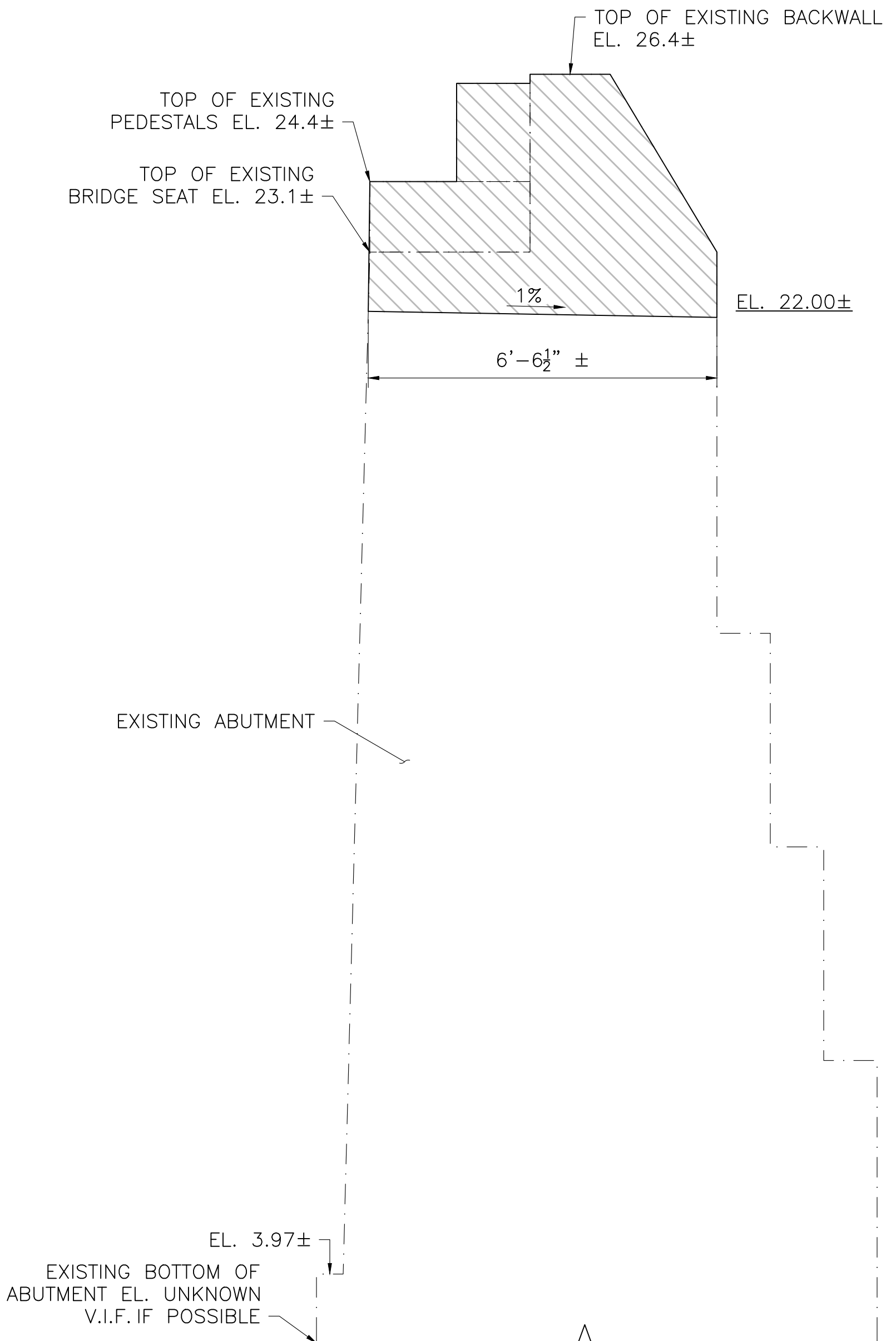
LIMITATIONS OF DEMOLITION



TYPICAL ABUTMENT DEMO SECTION 1

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

8&9



SOUTHWEST CAP DEMO SECTION 2

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

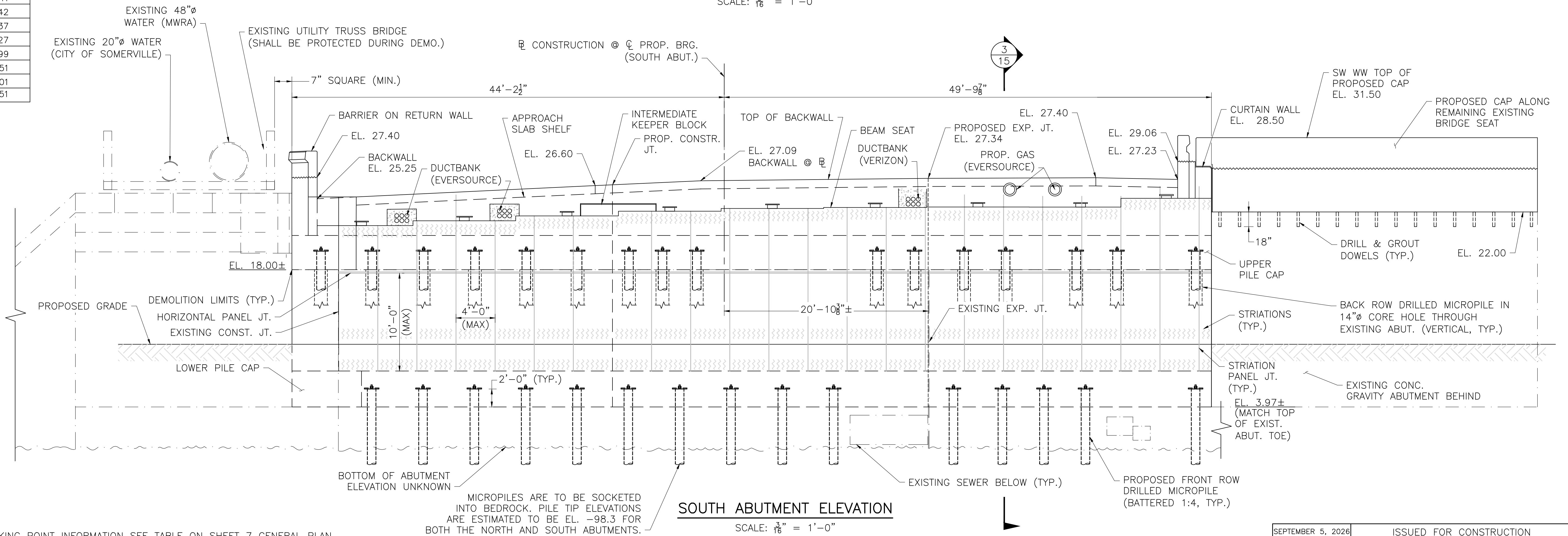
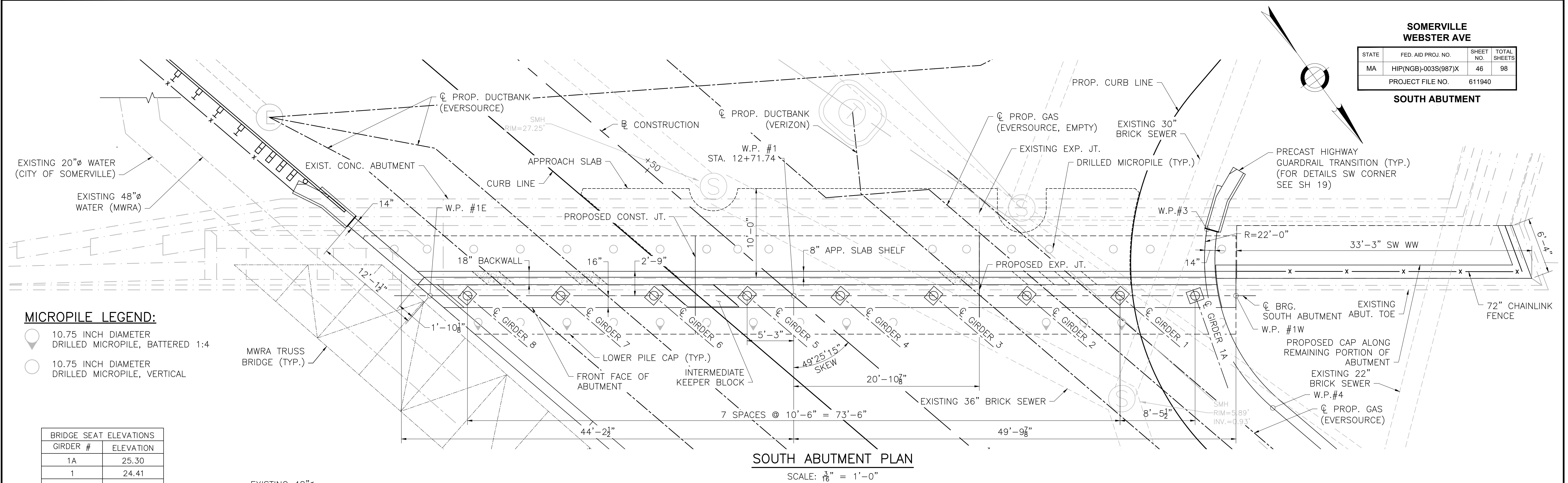
8

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	46	98
PROJECT FILE NO.		611940	

SOUTH ABUTMENT



NOTES:

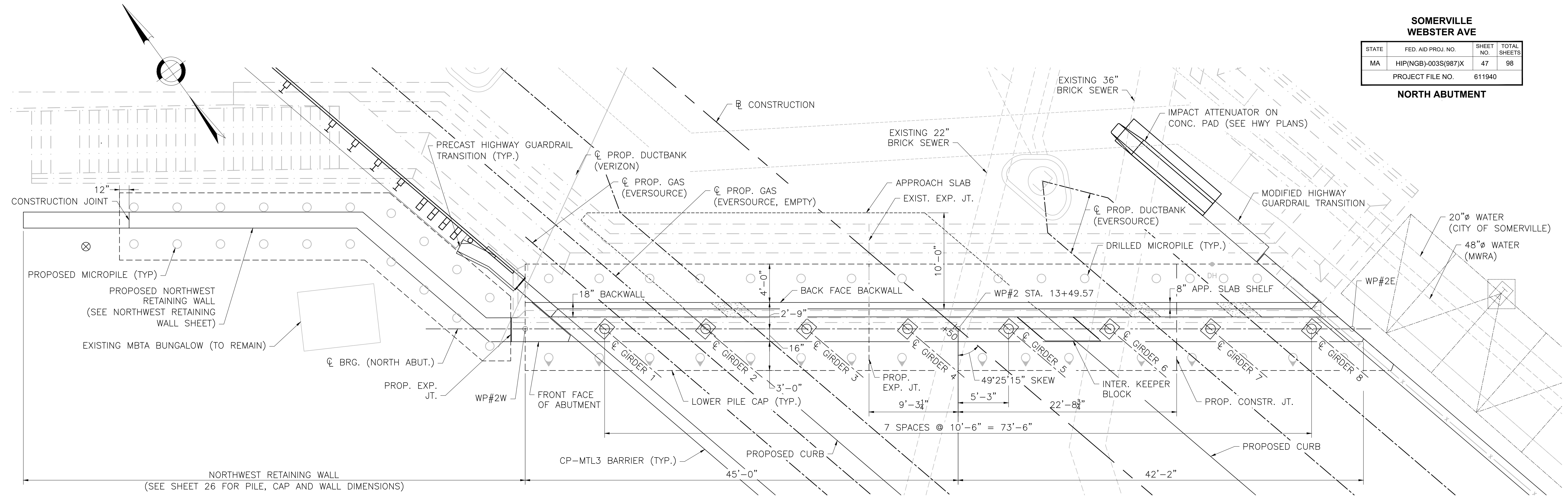
- FOR WORKING POINT INFORMATION SEE TABLE ON SHEET 7 GENERAL PLAN.
- CONTRACTOR TO LOCATE AND DIMENSION ALL UTILITY VOIDS PRIOR TO SHOP DRAWING SUBMITTALS.

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	47	98
PROJECT FILE NO.		611940	

NORTH ABUTMENT



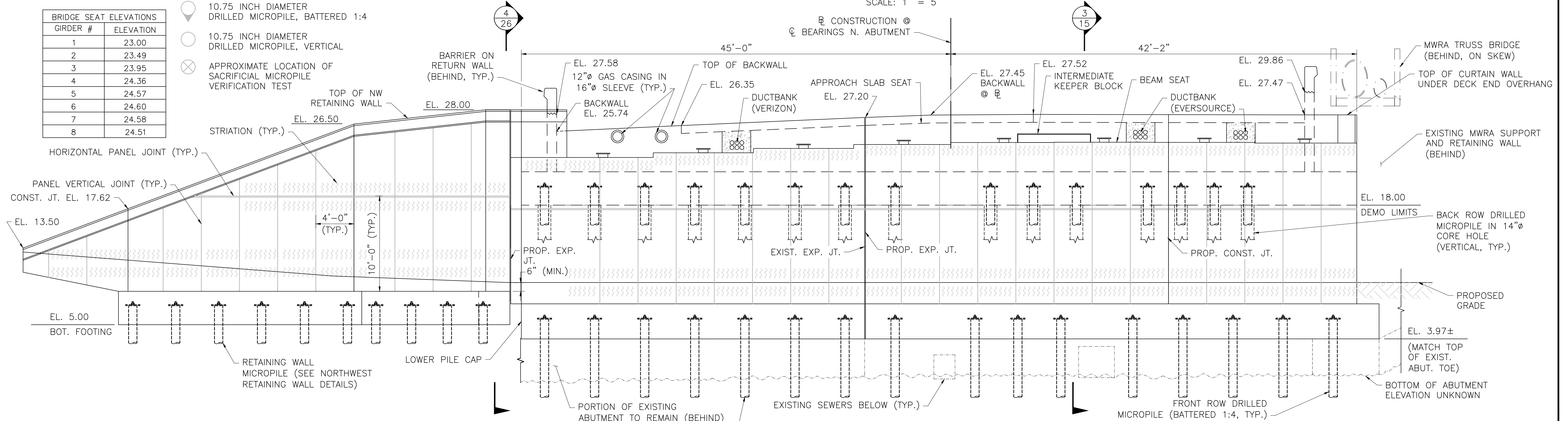
NORTH ABUTMENT PLAN

SCALE: 1" = 5'

MICROPILE LEGEND:

- 10.75 INCH DIAMETER DRILLED MICROPILE, BATTERED 1:4
- 10.75 INCH DIAMETER DRILLED MICROPILE, VERTICAL
- APPROXIMATE LOCATION OF SACRIFICIAL MICROPILE VERIFICATION TEST

BRIDGE SEAT ELEVATIONS	
GIRDER #	ELEVATION
1	23.00
2	23.49
3	23.95
4	24.36
5	24.57
6	24.60
7	24.58
8	24.51



NORTH ABUTMENT ELEVATION

SCALE: 1" = 5'

NOTES:

- FOR WORKING POINT INFORMATION SEE TABLE ON SHEET 7 GENERAL PLAN.
- CONTRACTOR TO LOCATE AND DIMENSION ALL UTILITY VOIDS PRIOR TO SHOP DRAWING SUBMITTALS.

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE WEBSTER AVE

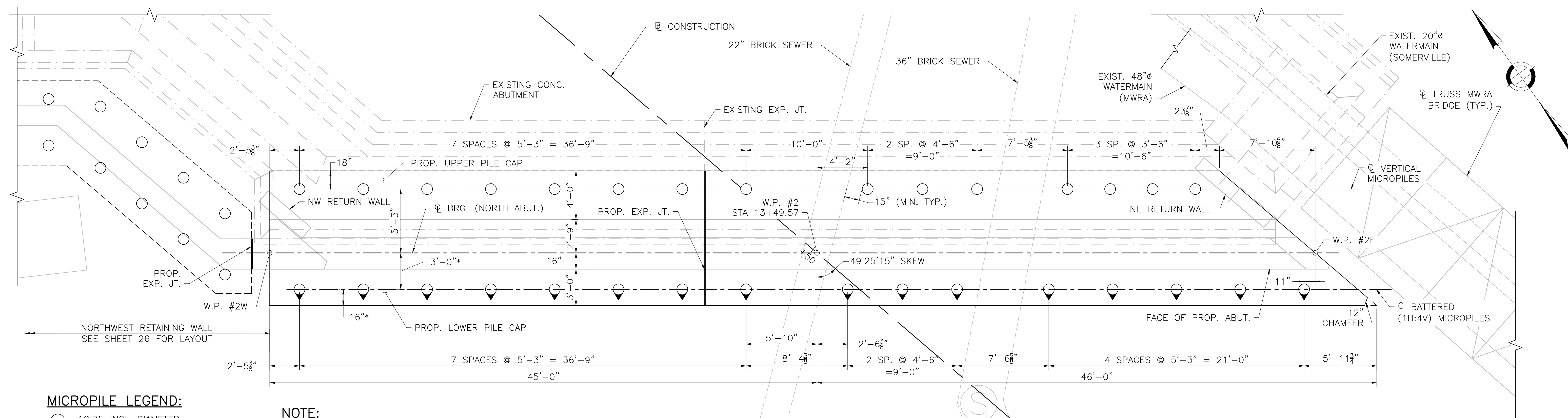
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	48	98
PROJECT FILE NO.		611940	

PILE LAYOUT PLANS

SOUTH ABUTMENT PILE LAYOUT

SCALE: 1" = 1'-0"

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



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

 10.75 INCH DIAMETER
DRILLED MICROPILE,
BATTERED 1:4

 10.75 INCH DIAMETER
DRILLED MICROPILE,
VERTICAL

NOTE: SEE NORTHWEST RETAINING WALL
PLAN SHEET 26 FOR APPROXIMATE
LOCATION OF SACRIFICIAL MICROPILE
VERIFICATION TEST.

* = MEASUREMENT TAKEN TO CENTERLINE OF MICROPILE BOTTOM
AT THE INTERFACE OF BOTTOM OF CAP
(SEE TYPICAL ABUTMENT SECTION SHEET 15)

FOR WORKING POINT INFORMATION SEE TABLE ON SHEET 7 GENERAL PLAN.

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	 STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

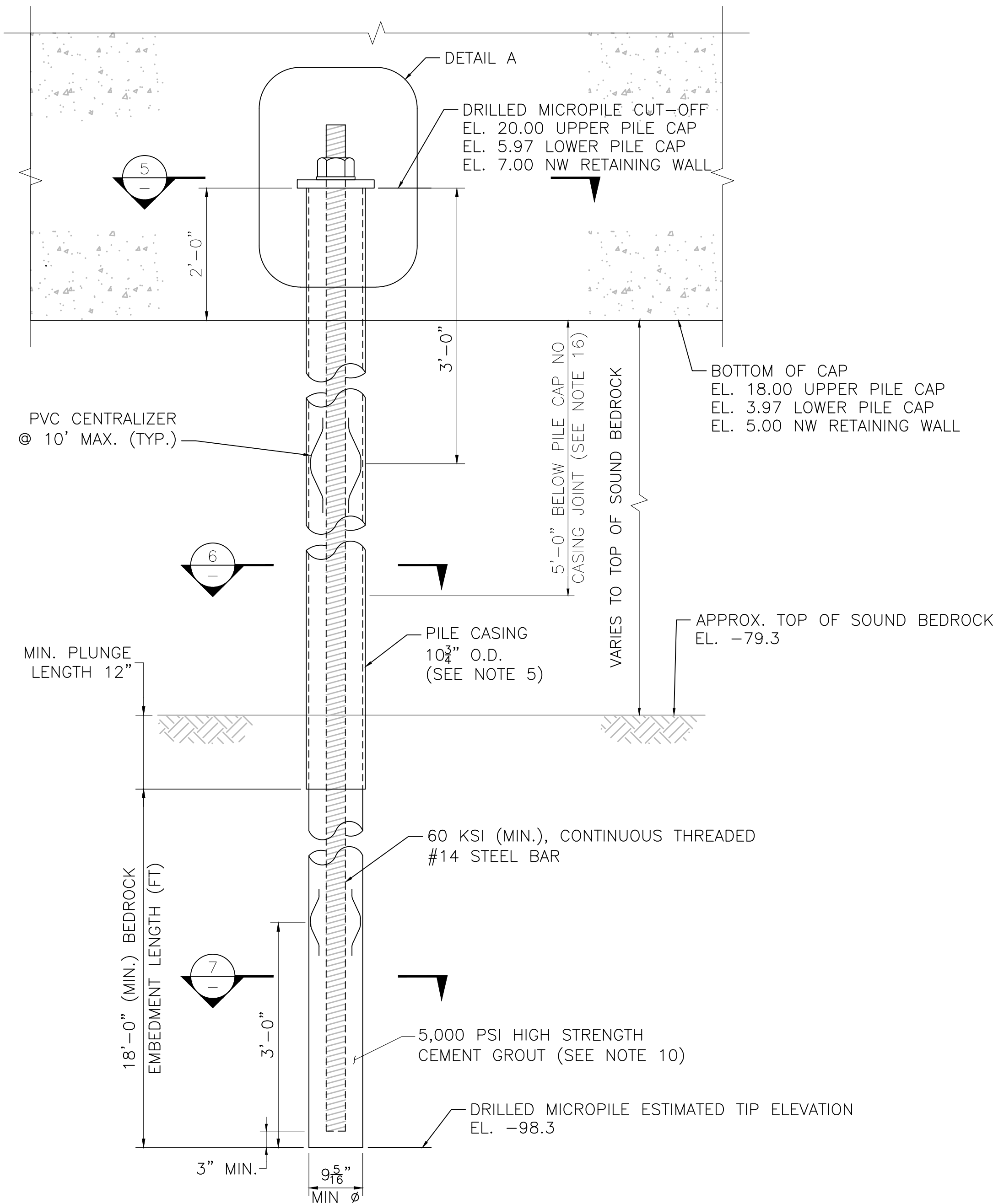
SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	49	98
PROJECT FILE NO.		611940	

MICROPILE DETAILS

MICROPILE NOTES:

- FACTORED AXIAL DESIGN LOAD PER MICROPILE PER AASHTO LRFD BRIDGE DESIGN SPECIFICATION.
STRENGTH 1 LIMIT STATE
FACTORED COMPRESSIVE AXIAL LOAD = 247 KIPS (ABUTMENT PILES)
FACTORED COMPRESSIVE AXIAL LOAD = 105 KIPS (RETAINING WALL PILES)
FACTORED TENSILE AXIAL LOAD = 32 KIPS (RETAINING WALL PILES)
- THE FACTORED STRUCTURAL PILE COMPRESSIVE RESISTANCE IS 264 KIPS (UNCASED) AND IS THE PRODUCT OF THE NOMINAL STRUCTURAL RESISTANCE OF 352 KIPS AND A RESISTANCE FACTOR OF 0.75. THE FACTORED STRUCTURAL PILE TENSILE RESISTANCE IS 108 KIPS (UNCASED) AND IS THE PRODUCT OF THE NOMINAL STRUCTURAL RESISTANCE OF 135 KIPS AND A RESISTANCE FACTOR OF 0.80.
- THE FACTORED GEOTECHNICAL PILE COMPRESSION RESISTANCE IS 260 KIPS AND IS THE PRODUCT OF THE NOMINAL GEOTECHNICAL RESISTANCE OF 473 KIPS AND A RESISTANCE FACTOR OF 0.55. THE FACTORED UPLIFT RESISTANCE IS 130 KIPS AND IS THE PRODUCT OF THE NOMINAL UPLIFT RESISTANCE OF 237 KIPS AND A RESISTANCE FACTOR OF 0.55.
- ESTIMATED PILE TIP ELEVATION IS -98.3 FEET FOR SOUTH ABUTMENT, NORTH ABUTMENT, AND RETAINING WALL.
- STEEL CASING SHALL BE PRIME STEEL AND MEET THE REQUIREMENTS OF API 5L PSL1 GRADE 52 KSI WITH SR 15 SUPPLEMENTAL REQUIREMENTS.
- THREADED STEEL BAR SHALL BE CONTINUOUSLY THREADED FOR THE ENTIRE BAR LENGTH CONFORMING TO AASHTO M31, HAVING A MINIMUM YIELD STRENGTH OF 60 KSI. THREADED HOLLOW BARS MAY ALSO BE USED WITH THE APPROVAL OF THE ENGINEER.
- NUT AND BAR COUPLING SHALL BE PROVIDED FROM THE SAME MANUFACTURER AS THE THREADED STEEL BAR.
- BAR COUPLING SHALL BE FULLY ENGAGED ON THE THREADED STEEL BAR AND SHALL NOT BE LOCATED IN THE TOP THIRD OF THE MICROPILE LENGTH.
- ANCHOR PLATE SHALL MEET THE REQUIREMENTS OF AASHTO M270 GRADE 50.
- GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI AND CEMENT SHALL CONFORM TO AASHTO M85 TYPE I OR II, SHOULD BE THE PRODUCT OF ONE MANUFACTURER.
- GROUT SHALL BE PLACED USING TREMIE METHODS.
- THE CONTRACTOR SHALL SUBMIT A MICROPILE SCHEDULE, MICROPILE INSTALLATION, AND MICROPILE TESTING PLAN FOR REVIEW AND APPROVAL BY THE ENGINEER.
- SEE SPECIAL PROVISION ITEM 945.10 DRILLED MICROPILES, ITEM 948.60 MICROPILE VERIFICATION LOAD TEST, AND ITEM 948.61 MICROPILE PROOF LOAD TEST FOR ADDITIONAL MICROPILE SPECIFICATIONS.
- THREE MICROPILE PROOF LOAD TESTS SHALL BE PERFORMED ON THREE PRODUCTION PILES, ONE AT THE SOUTH ABUTMENT, ONE AT THE NORTH ABUTMENT, AND ONE AT THE NORTHWEST WINGWALL. MICROPILES USED FOR PROOF TESTS SHALL BE DETERMINED BY THE ENGINEER AND CONTRACTOR AFTER ALL PILES ARE INSTALLED.
- ONE MICROPILE VERIFICATION TEST SHALL BE PERFORMED ON ONE SACRIFICIAL PILE, AT THE NORTHWEST RETAINING WALL. SEE NORTHWEST RETAINING WALL PLAN FOR APPROXIMATE LOCATION. THE VERIFICATION TEST SHALL BE PERFORMED PRIOR TO CONSTRUCTION OF PRODUCTION MICROPILES. THE VERIFICATION TEST LOCATION IS APPROXIMATE AS SHOWN. CONTRACTOR TO SELECT THE EXACT LOCATION OF THE VERIFICATION TEST MICROPILE WITH APPROVAL BY THE ENGINEER.
- MICROPILE STEEL CASING JOINT MAY NOT BE WITHIN 5'-0" OF THE BOTTOM OF PROPOSED LOWER CAP FOR THE FRONT BATTERED ROW OF MICROPILES AND WITHIN 5'-0" FROM THE BOTTOM OF CORE THROUGH EXISTING GRAVITY ABUTMENT FOR THE BACK VERTICAL ROW OF MICROPILES.

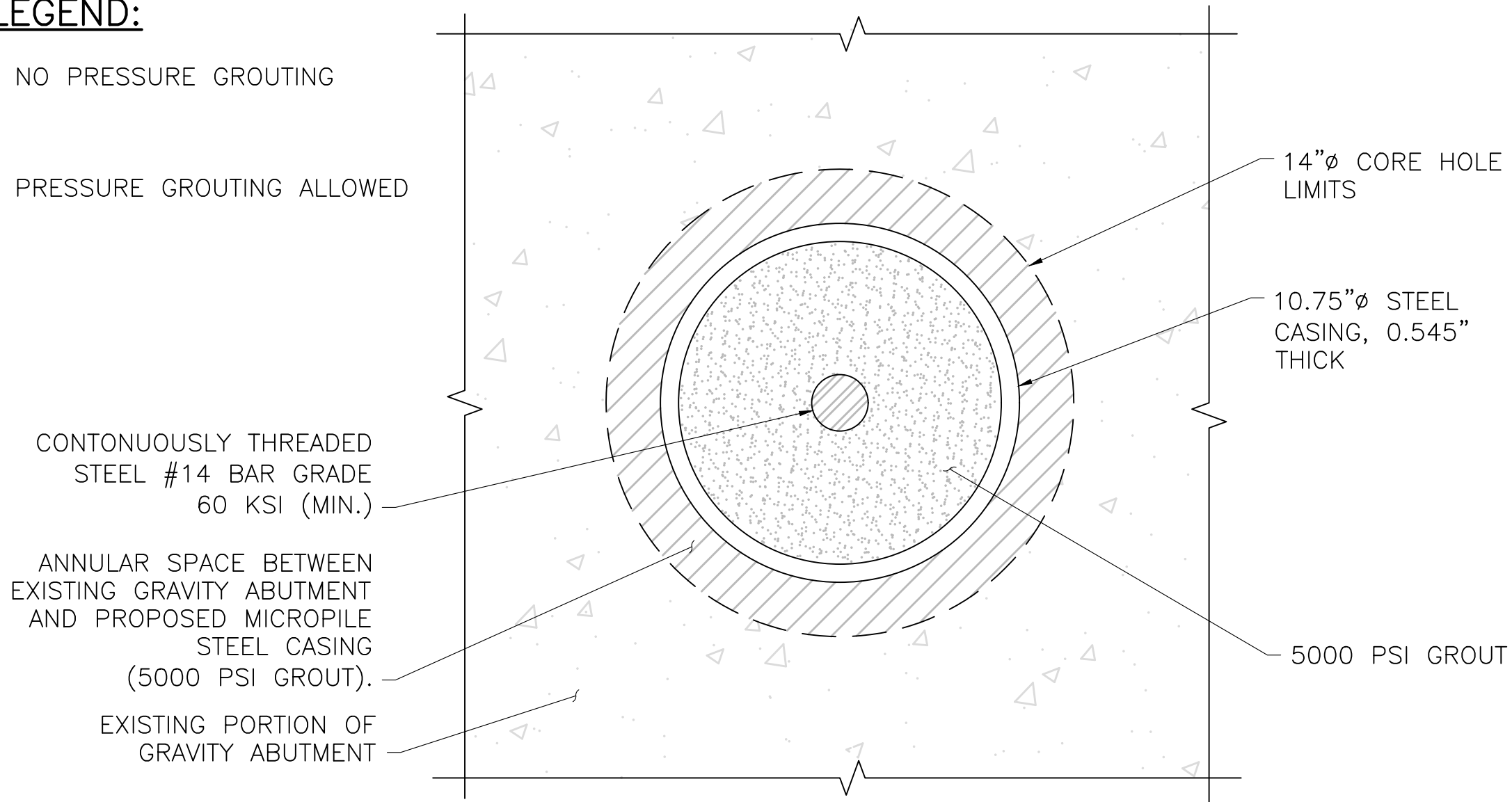


MICROPILE VERTICAL SECTION

NOT TO SCALE

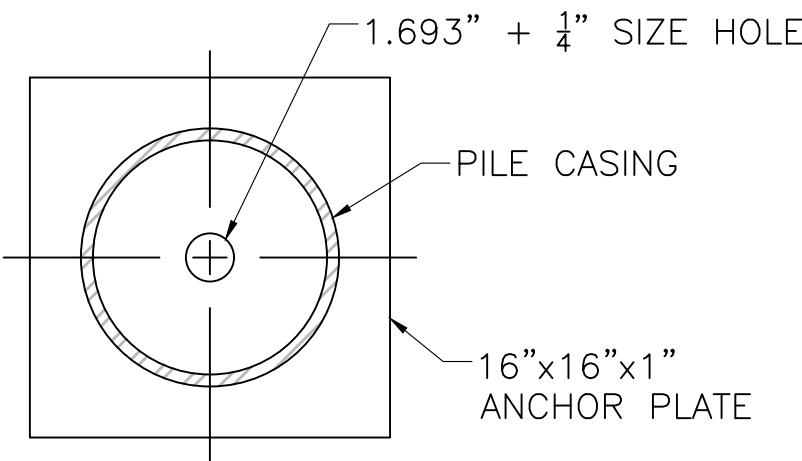
GROUT LEGEND:

- = NO PRESSURE GROUTING
- = PRESSURE GROUTING ALLOWED



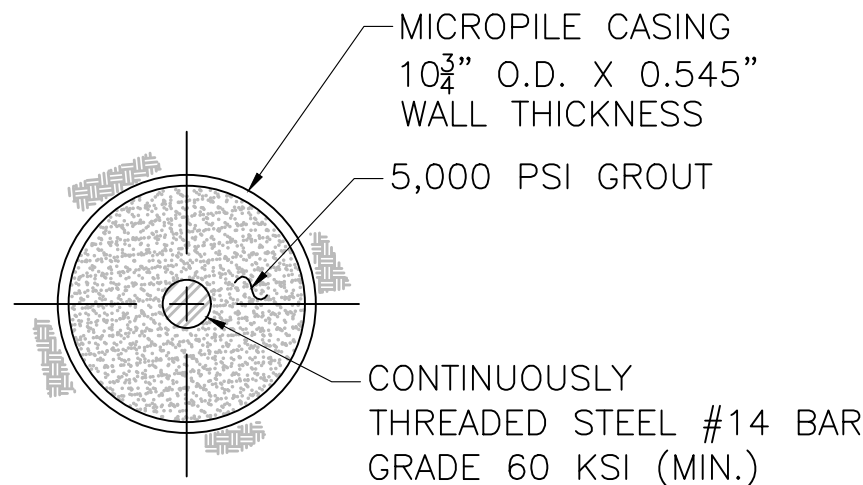
MICROPILE SECTION THROUGH ABUTMENT CORE

SCALE: 3" = 1'-0"



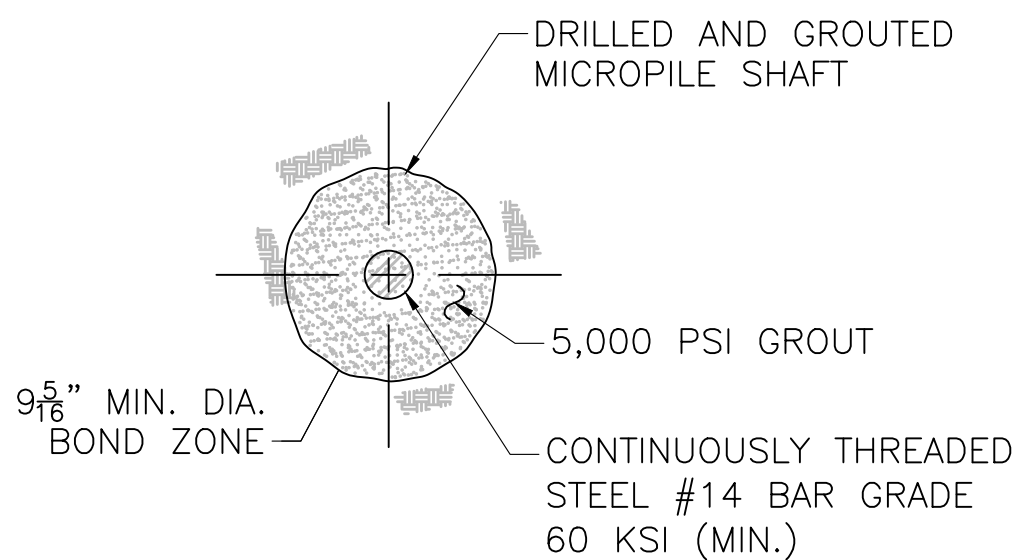
SECTION 5

SCALE: 1 1/2" = 1'-0"



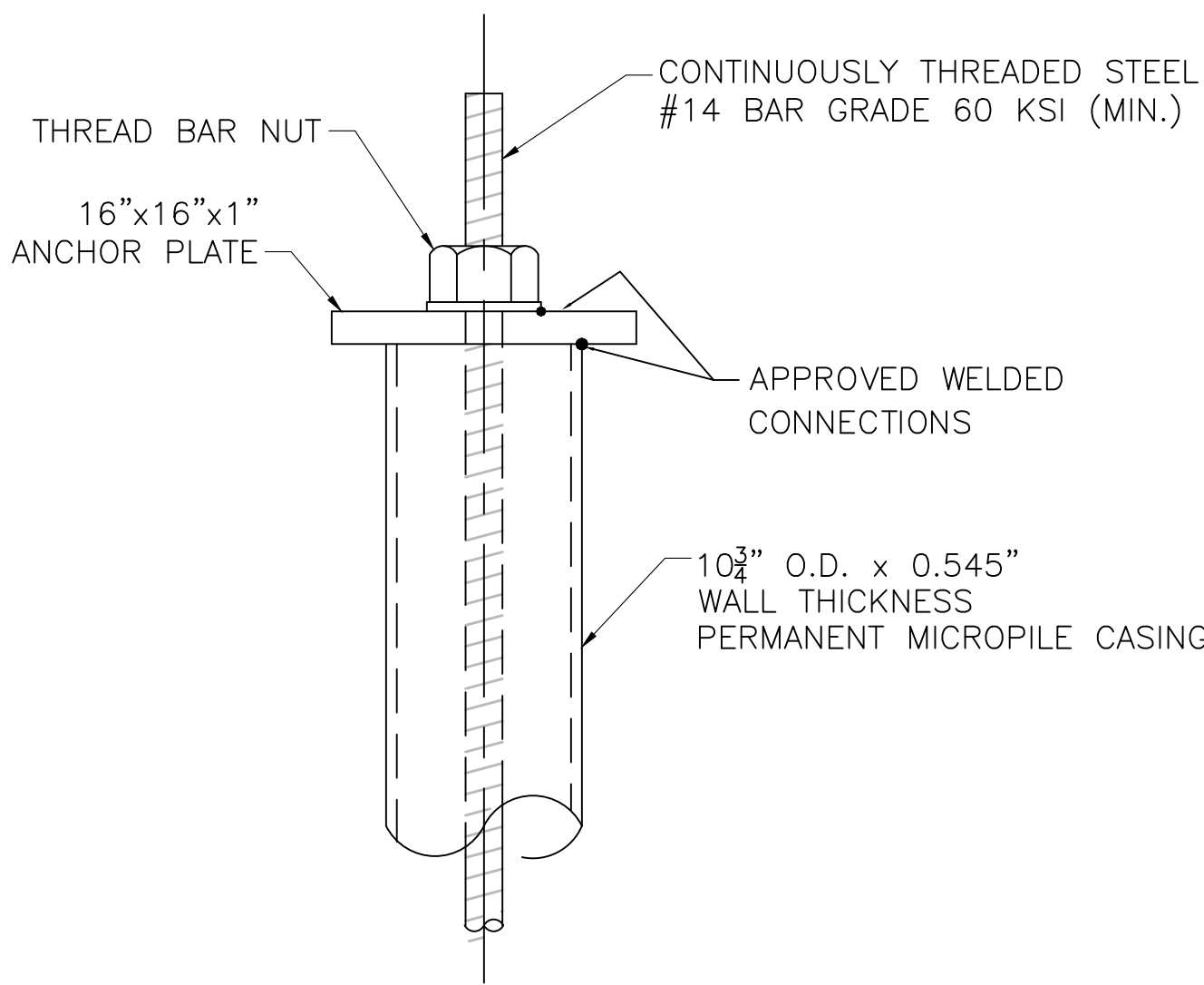
SECTION 6

SCALE: 1 1/2" = 1'-0"



SECTION 7

SCALE: 1 1/2" = 1'-0"



DETAIL A

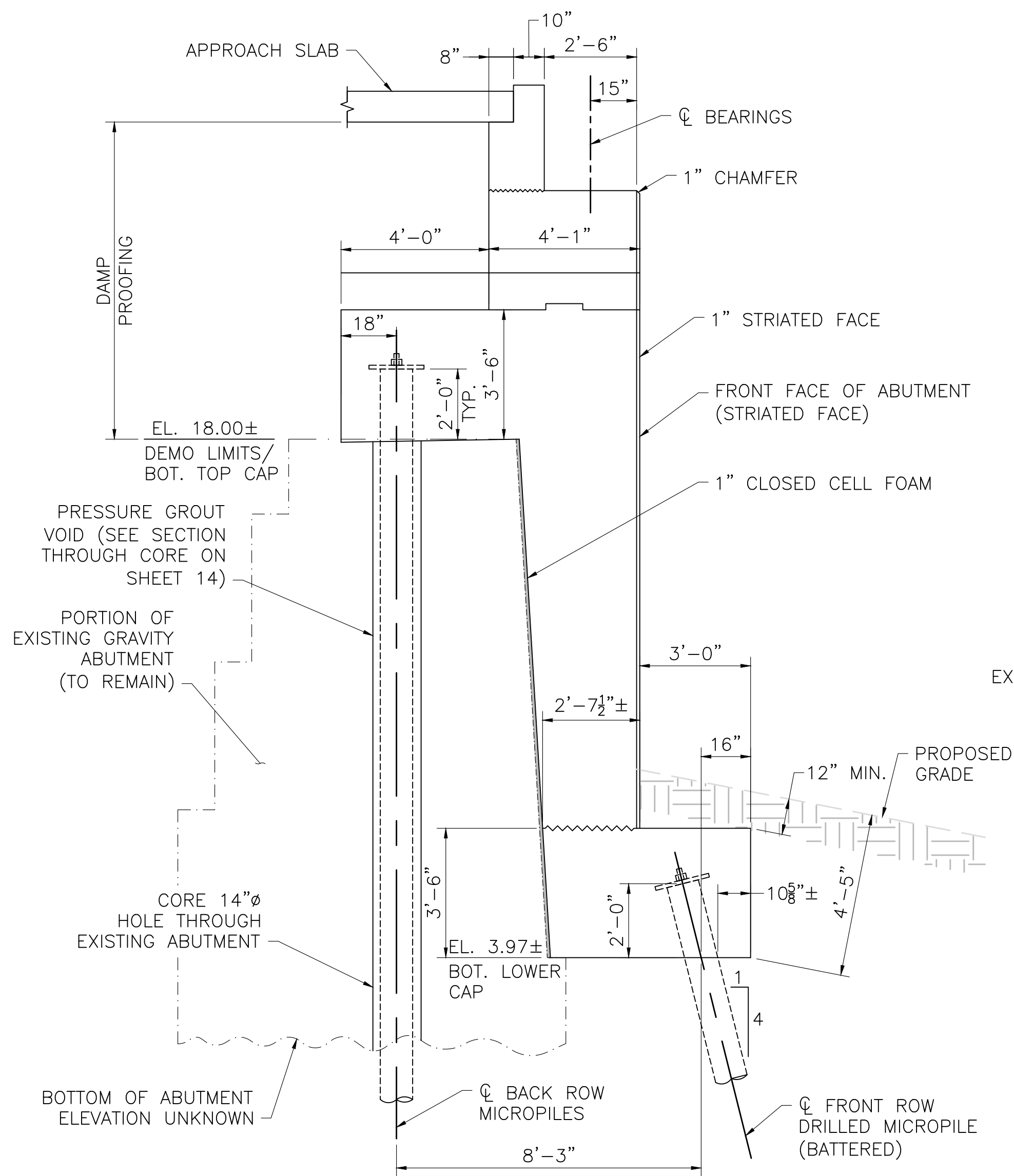
NOT TO SCALE

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
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AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
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**SOMERVILLE
WEBSTER AVE**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	50	98
PROJECT FILE NO.		611940	

ABUTMENT DETAILS I

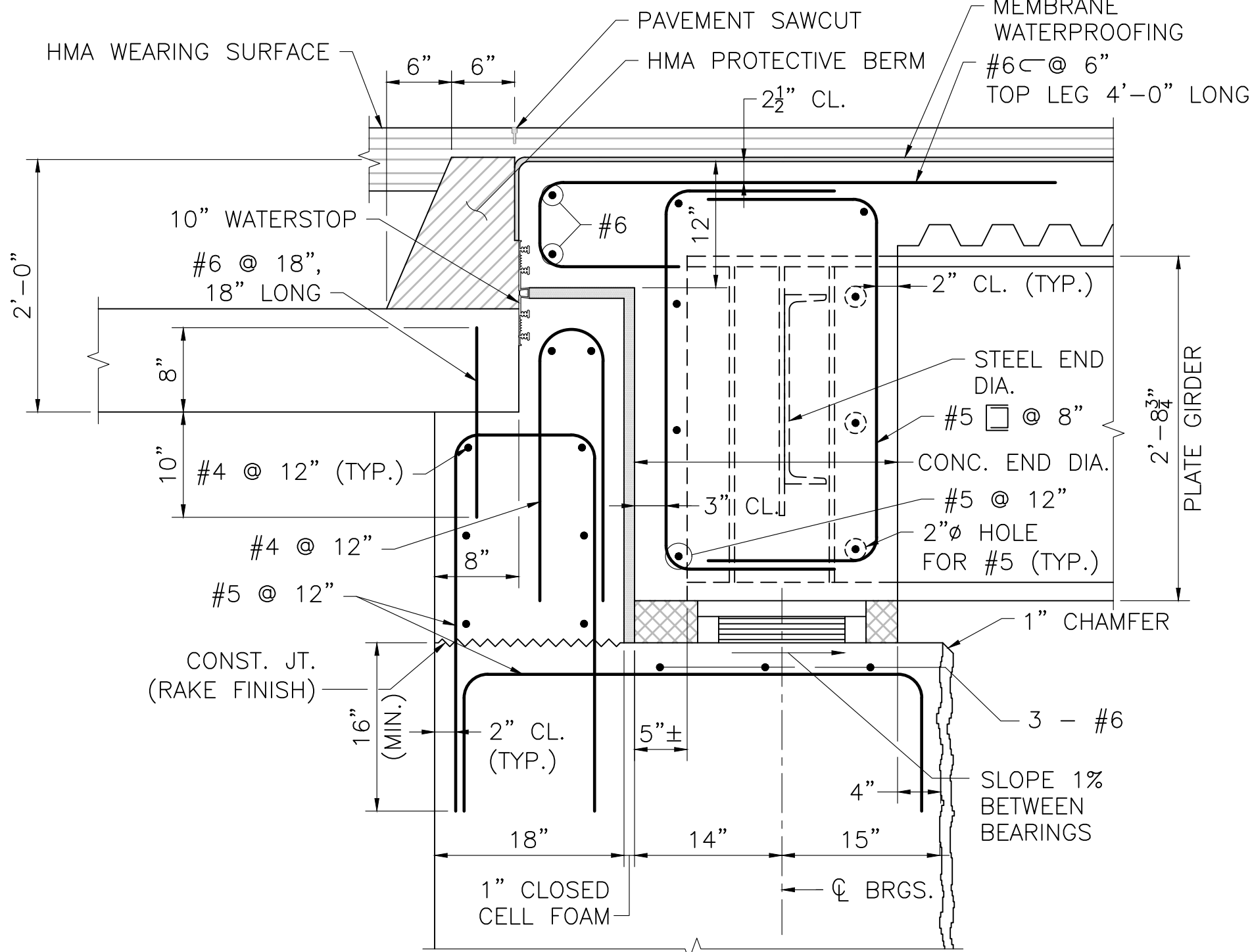


TYPICAL ABUTMENT SECTION 3

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

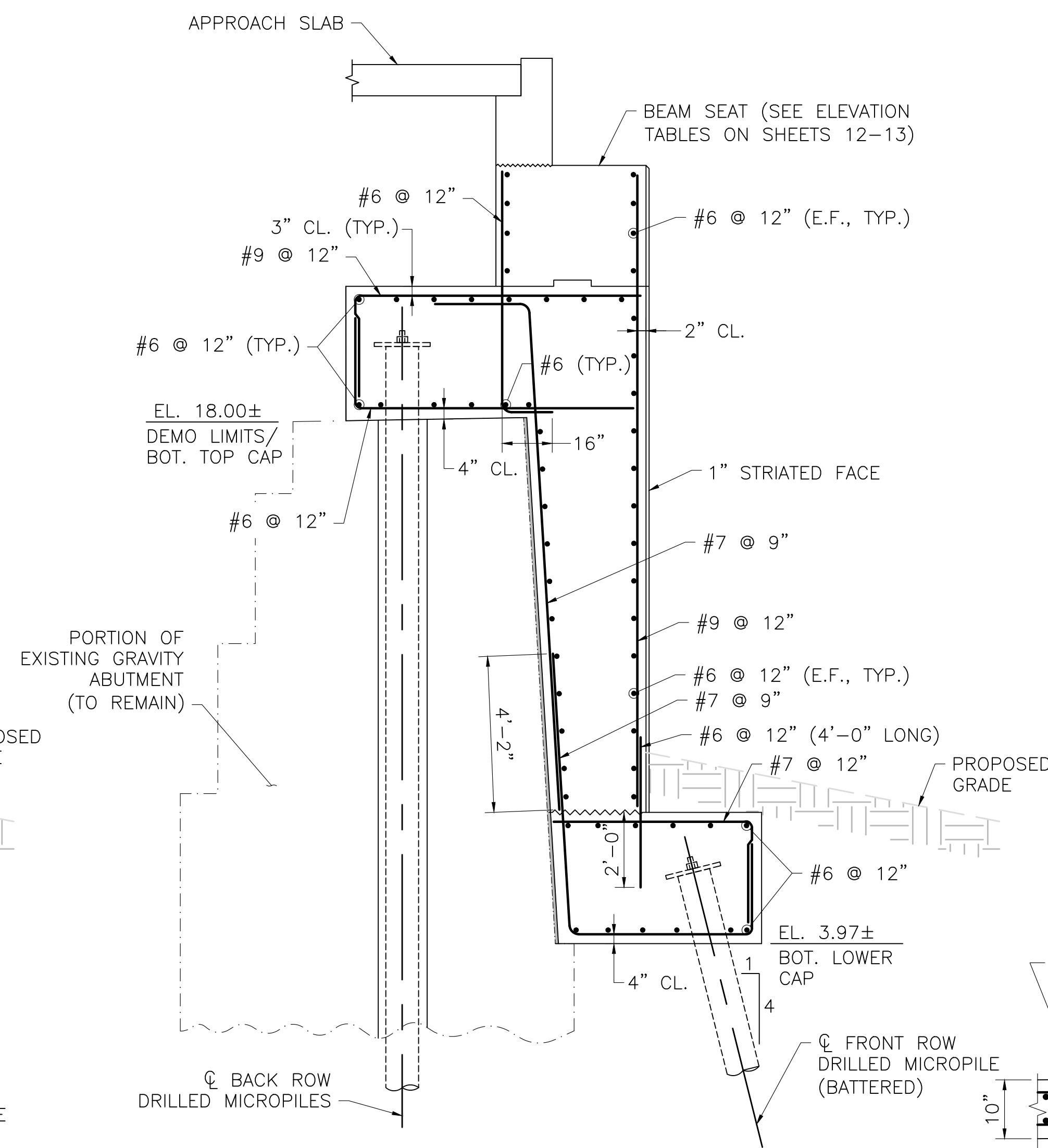
NOTE:

UTILITIES NOT SHOWN IN TYPICAL ABUTMENT SECTIONS FOR CLARITY.



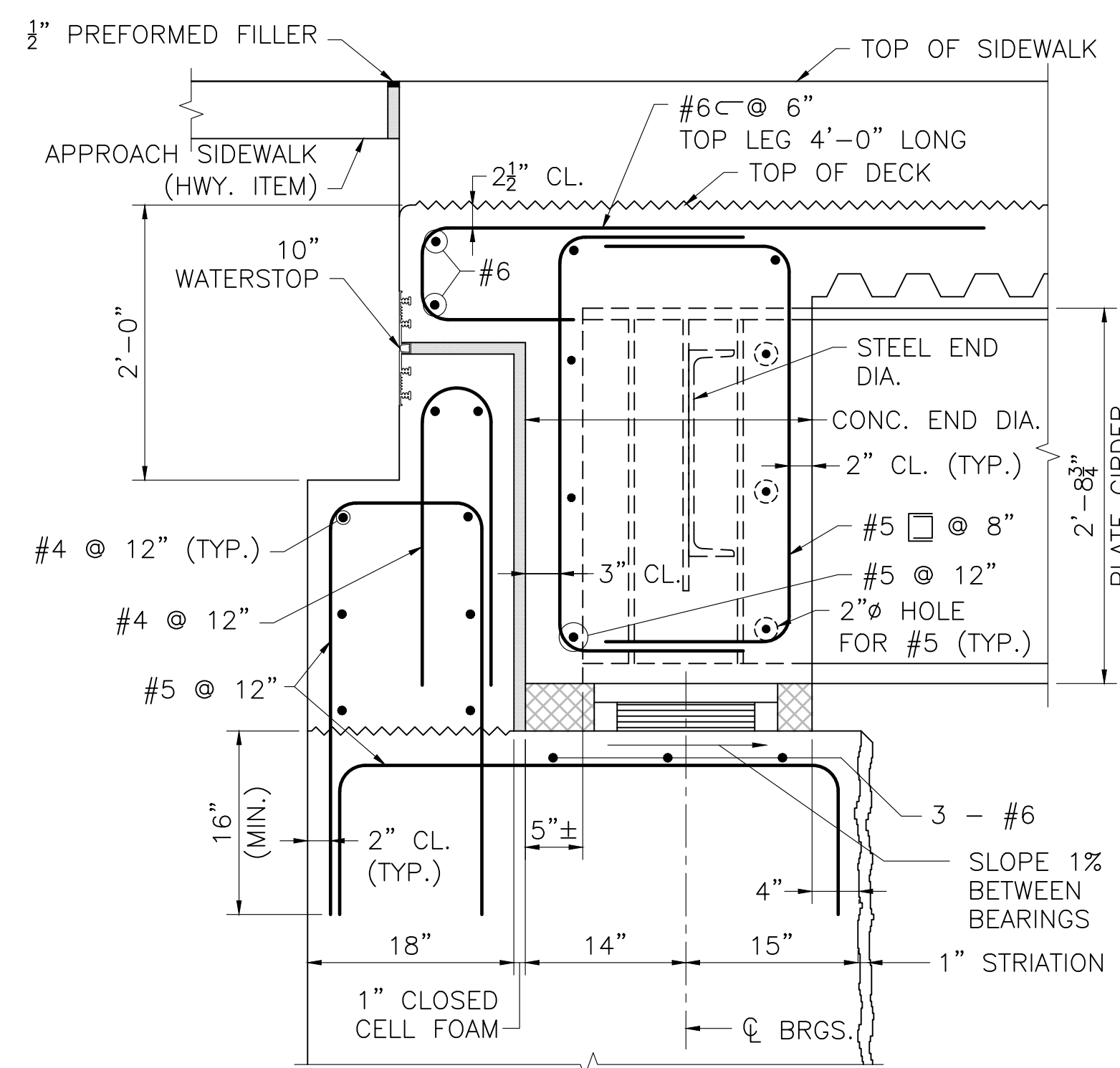
TYPICAL ABUTMENT ROADWAY SECTION

SCALE: 1" = 1'-0"



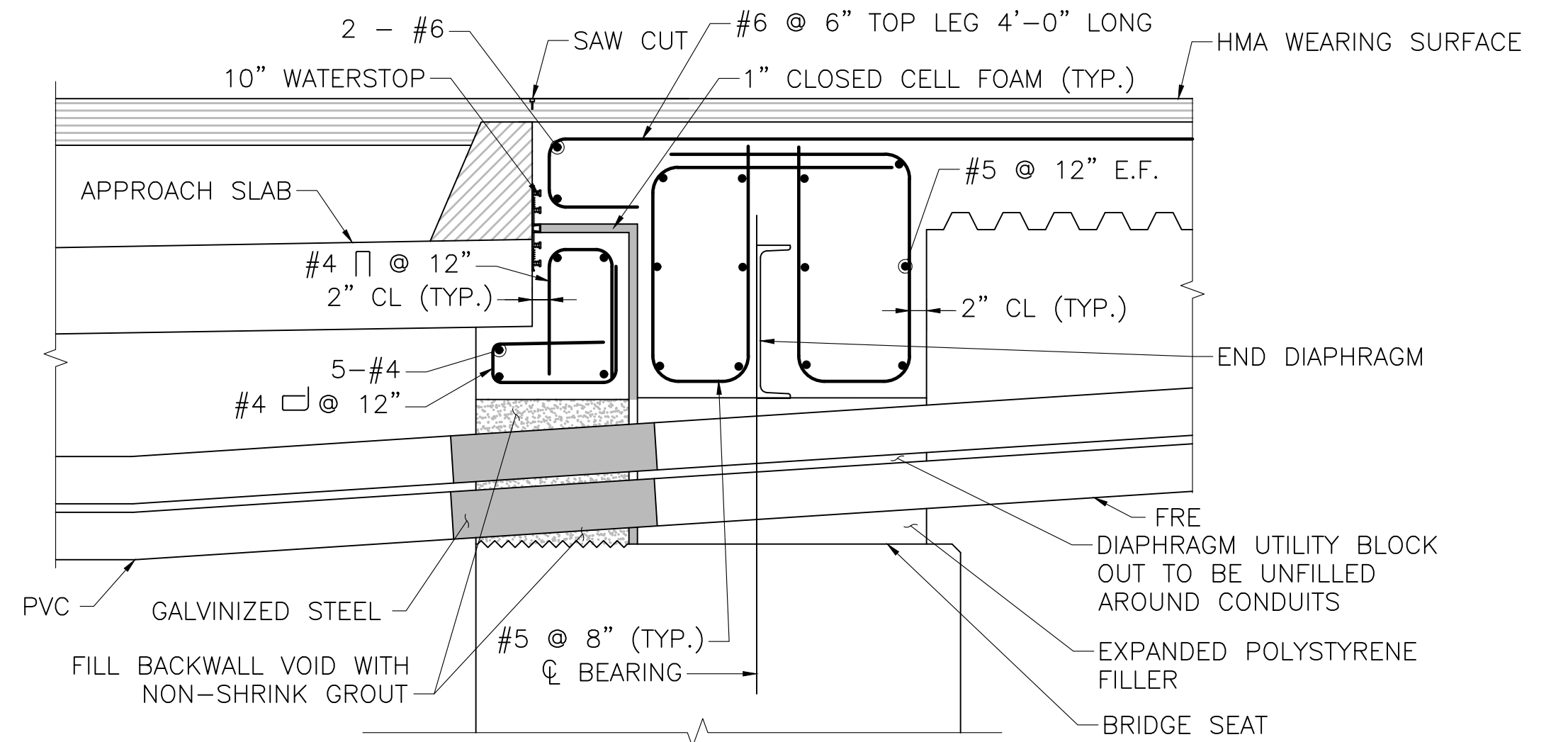
TYPICAL ABUTMENT REINFORCEMENT SECTION

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



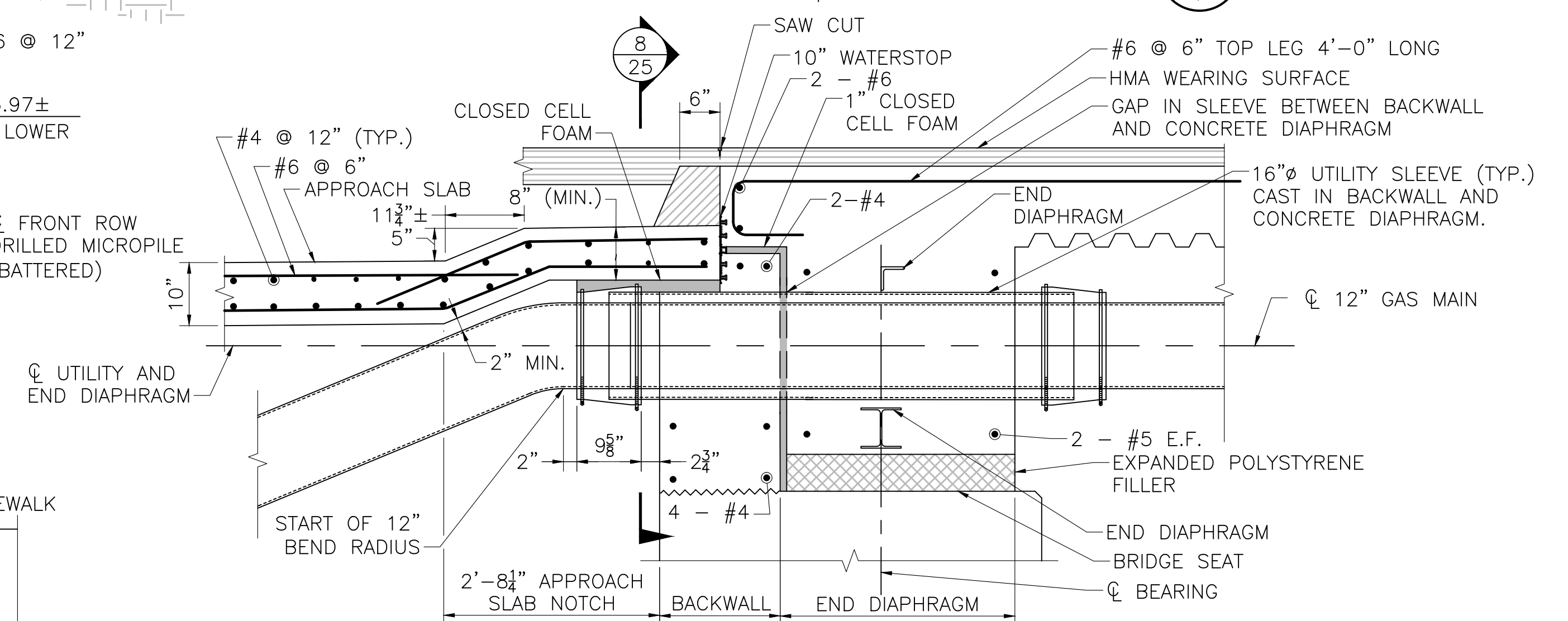
TYPICAL ABUTMENT SIDEWALK SECTION

SCALE: 1" = 1'-0"



END SECTION: ELECTRICAL CONDUITS 9

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



END SECTION: GAS MAINS 10

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

ROADWAY/SIDEWALK SECTION NOTES:

- ALL REINFORCEMENT SHOWN IN THIS DETAIL SHALL BE COATED EXCEPT FOR THE APPROACH SLAB REINFORCEMENT.
- TOP OF BACKWALL SHALL BE TROWELED SMOOTH PARALLEL TO THE PROFILE GRADE.
- ALL INTERMEDIATE KEEPER BLOCKS SHALL BE PLACED AFTER THE BEAMS ARE ERECTED.
- THE BACKWALL, KEEPER BLOCK, AND CURTAIN WALL CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE END DIAPHRAGM CONCRETE.
- PRIOR TO PLACING THE END DIAPHRAGM CONCRETE, CLOSED CELL FOAM OF THE SPECIFIED THICKNESSES SHALL BE ATTACHED WITH ADHESIVE TO ALL SURFACES OF THE BACKWALL, KEEPER BLOCKS, AND CURTAIN WALLS AS SHOWN ON THE PLANS. EXPANDED POLYSTYRENE FILLER SHALL BE PLACED UNDER THE BEAM BOTTOM FLANGE AND THE BOTTOM OF THE END DIAPHRAGM SHALL BE FORMED AS SPECIFIED. THE CONTRACTOR SHALL INSURE THAT ALL ABUTMENT CONCRETE IS PROPERLY LINED. END DIAPHRAGM CONCRETE MUST NOT COME IN DIRECT CONTACT WITH ABUTMENT CONCRETE.
- HMA PROTECTIVE BERM TO BE SUPERPAVE BRIDGE PROTECTIVE COURSE (SPC-B-12.5), PLACED IN 2" LAYERS AND COMPACTED WITH A MECHANICAL HAND-GUIDED TAMPER WITHIN 12 HOURS AFTER PLACING MEMBRANE WATERPROOFING.

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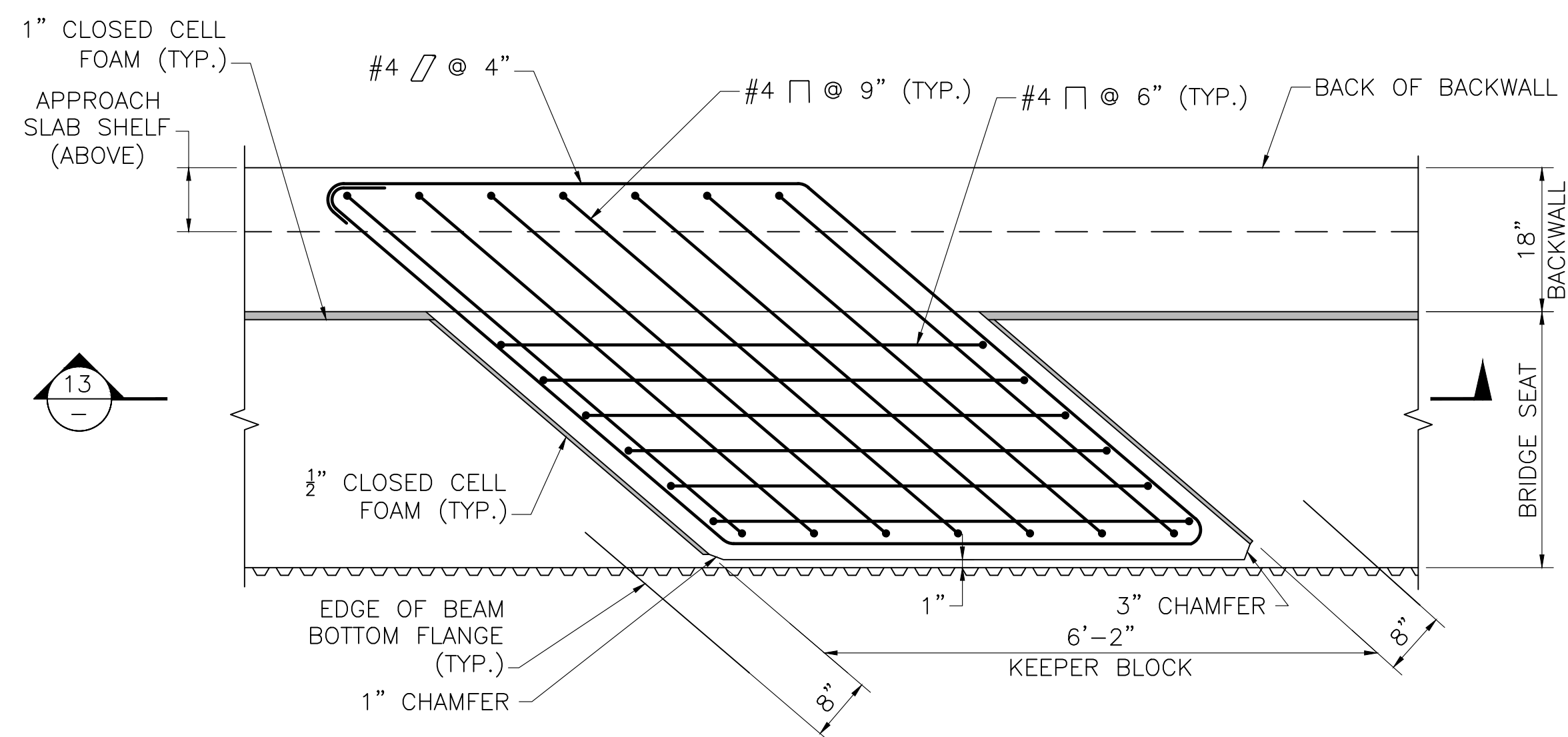
SHEET 15 OF 44 SHEETS BRIDGE NO. S-17-016 (ATX)

62546.180_BR15(ABUTMENT DETAILS)DWG
Plotted on 23-Jul-2026 5:27 PM
24-July-2026
Final Structural Submission (SF)

SOMERVILLE
WEBSTER AVE

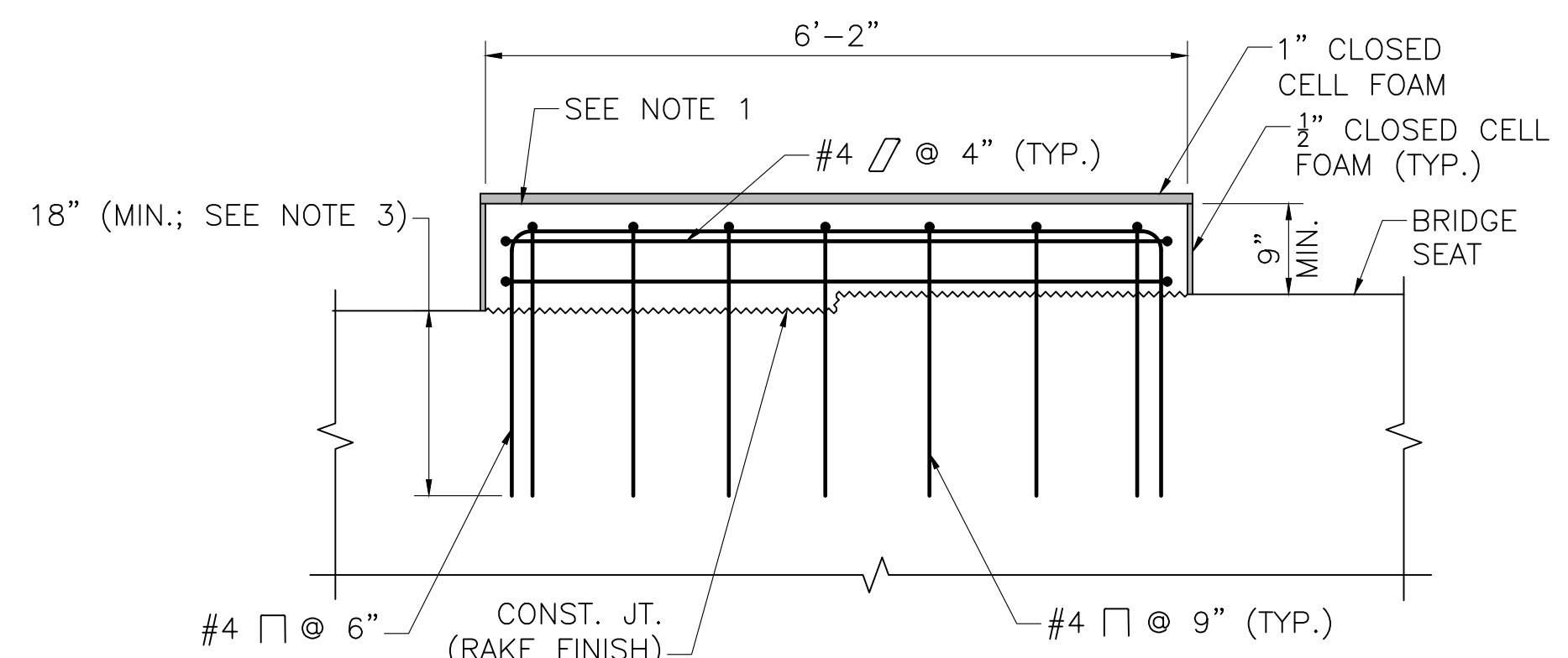
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	51	98
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ABUTMENT DETAILS II



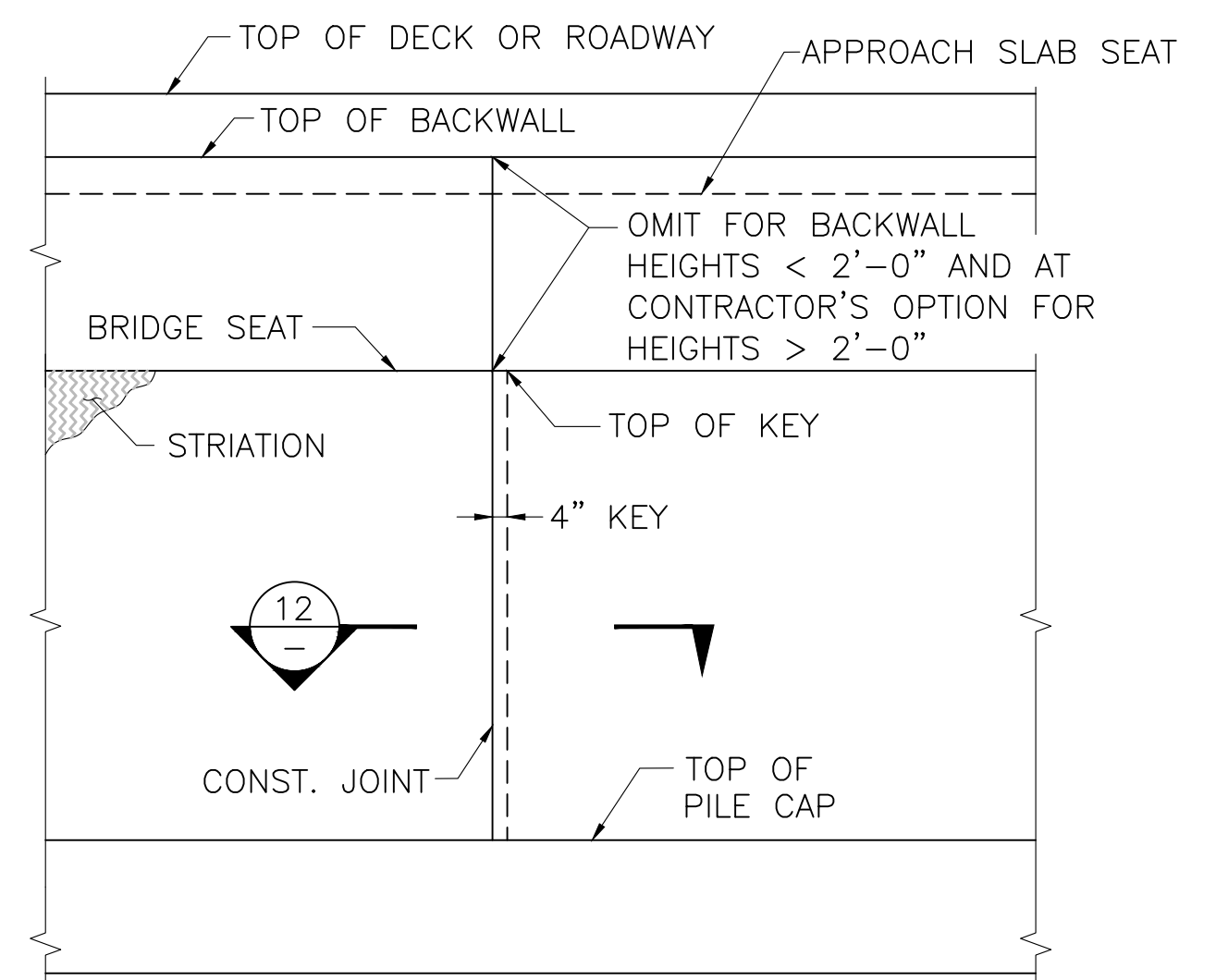
INTERMEDIATE KEEPER BLOCK DETAIL

SCALE: 3/4" = 1'-0"



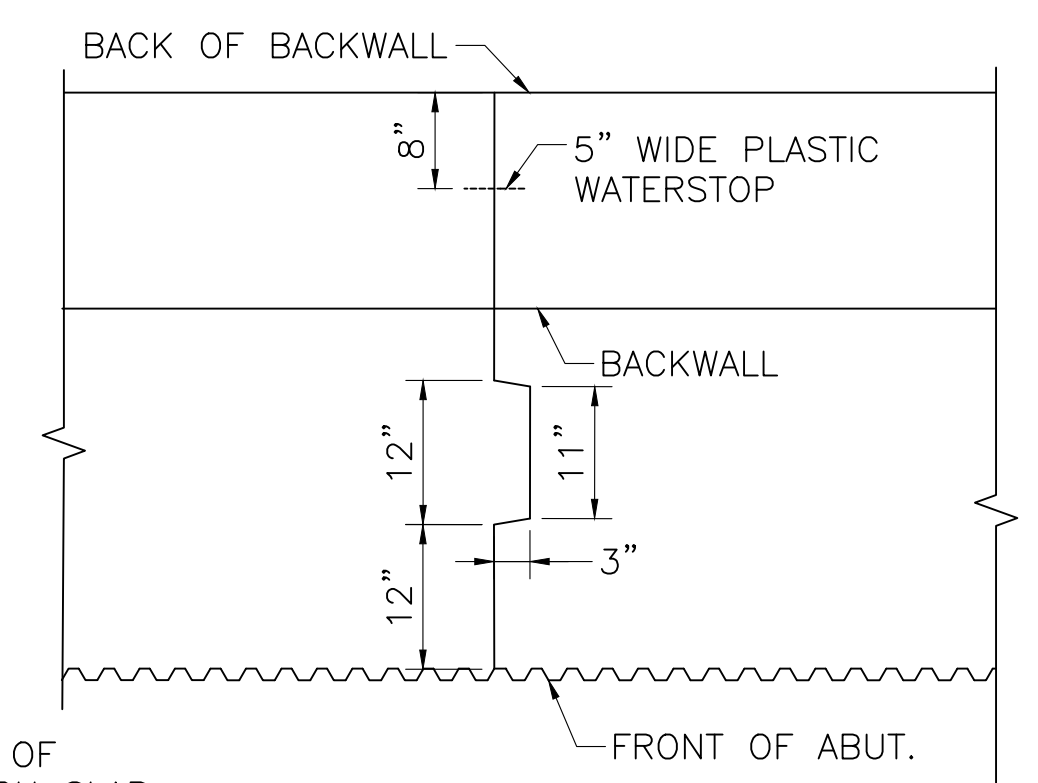
EXPANSION JOINT 11

SCALE: 3/4" = 1'-0"



ABUTMENT ELEVATION CONSTRUCTION JOINT

NOT TO SCALE



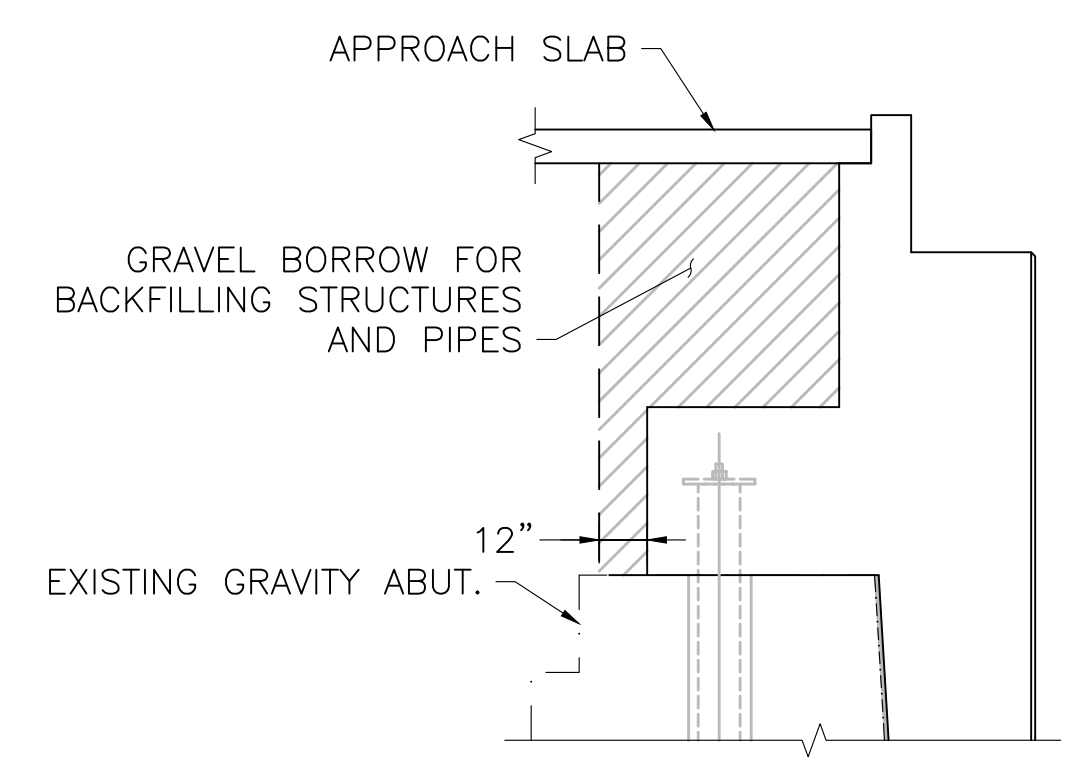
CONSTRUCTION JOINT 12

SCALE: 3/4" = 1'-0"

- NOTE:
1. TOP OF KEEPER BLOCK SHALL BE TROWELED SMOOTH PARALLEL TO PROFILE GRADE.
 2. ABUTMENT REINFORCEMENT BELOW CONSTRUCTION JOINT HAS BEEN OMITTED FOR CLARITY.
 3. BEND BARS AS NEEDED TO PROVIDE 18" MIN. DEVELOPMENT INTO BRIDGE SEAT.

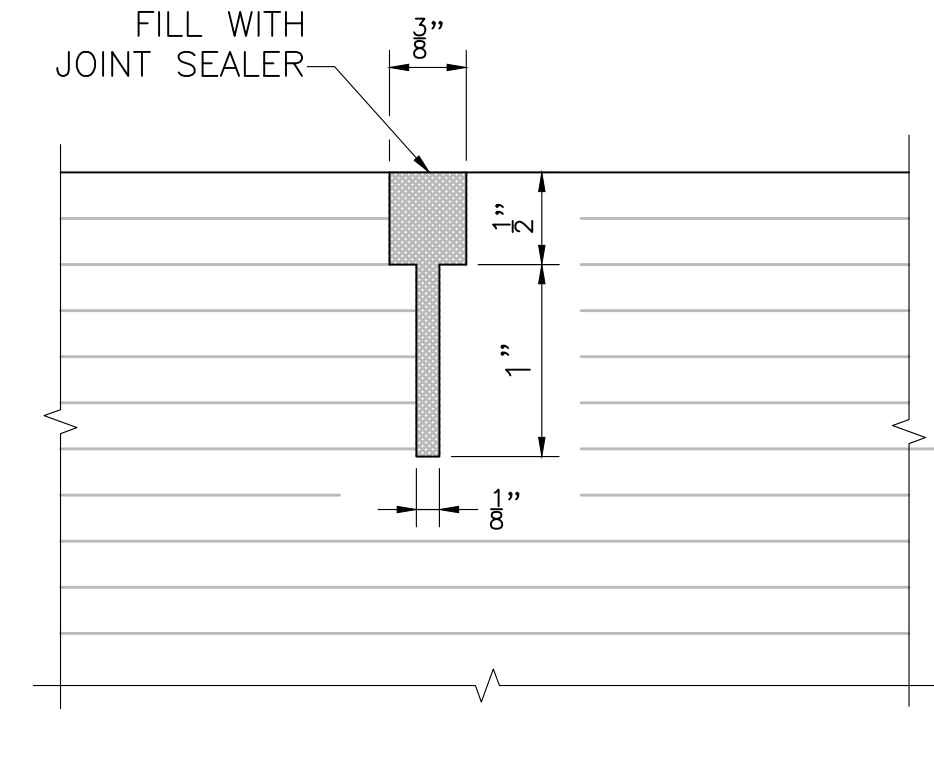
INTERMEDIATE KEEPER BLOCK 13

SCALE: 3/4" = 1'-0"



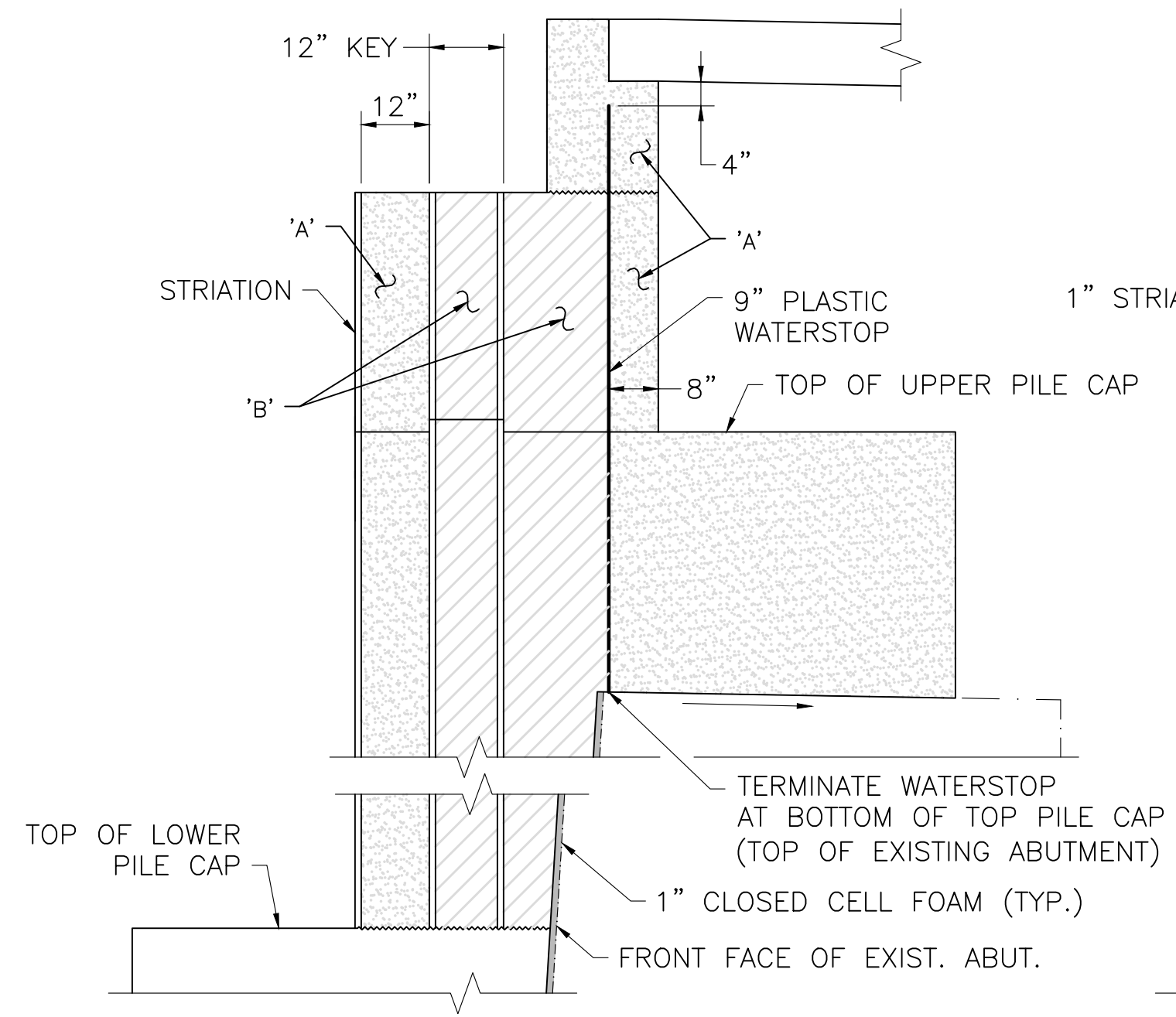
LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES

NOT TO SCALE



PAVEMENT SAWCUT DETAIL

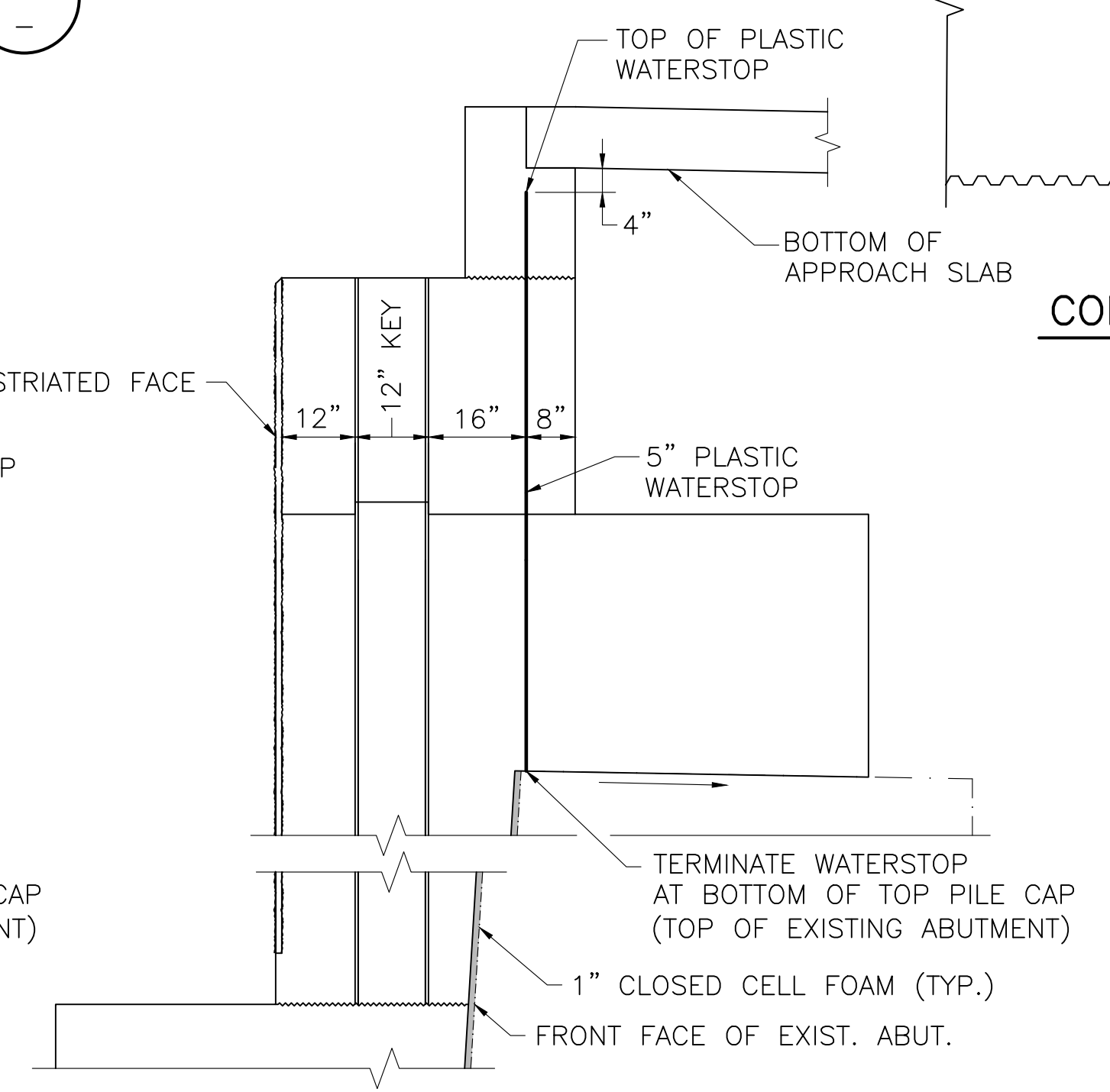
SCALE: 1" = 1'-0"



ABUTMENT SECTION EXPANSION JOINT

SCALE: 1/2" = 1'-0"

- NOTES:
- LONGITUDINAL REINFORCEMENT SHALL END 2" CLEAR OF EXPANSION JOINT.
- 'A' - PREFORMED FULLER (IN ACCORDANCE WITH M9.14.0)
- 'B' - PREFORMED FILLER (IN ACCORDANCE WITH M3.05.5)
- FILLER MATERIAL SHALL BE FASTENED SECURELY TO ONE SIDE OF JOINT.



- NOTE:
- REINFORCEMENT SHALL BE CONTINUOUS THRU CONSTRUCTION JOINTS.

ABUTMENT SECTION CONSTRUCTION JOINT

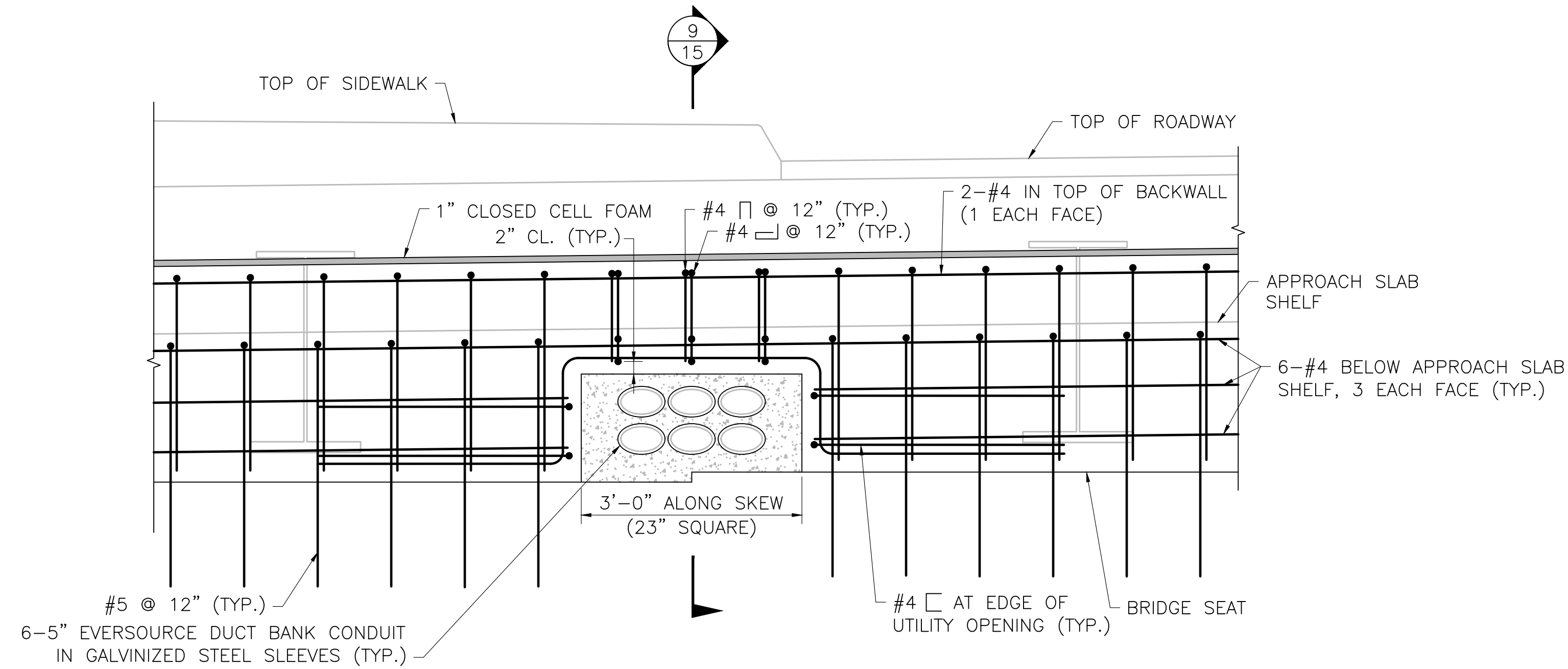
SCALE: 1/2" = 1'-0"

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SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	52	98
PROJECT FILE NO.		611940	

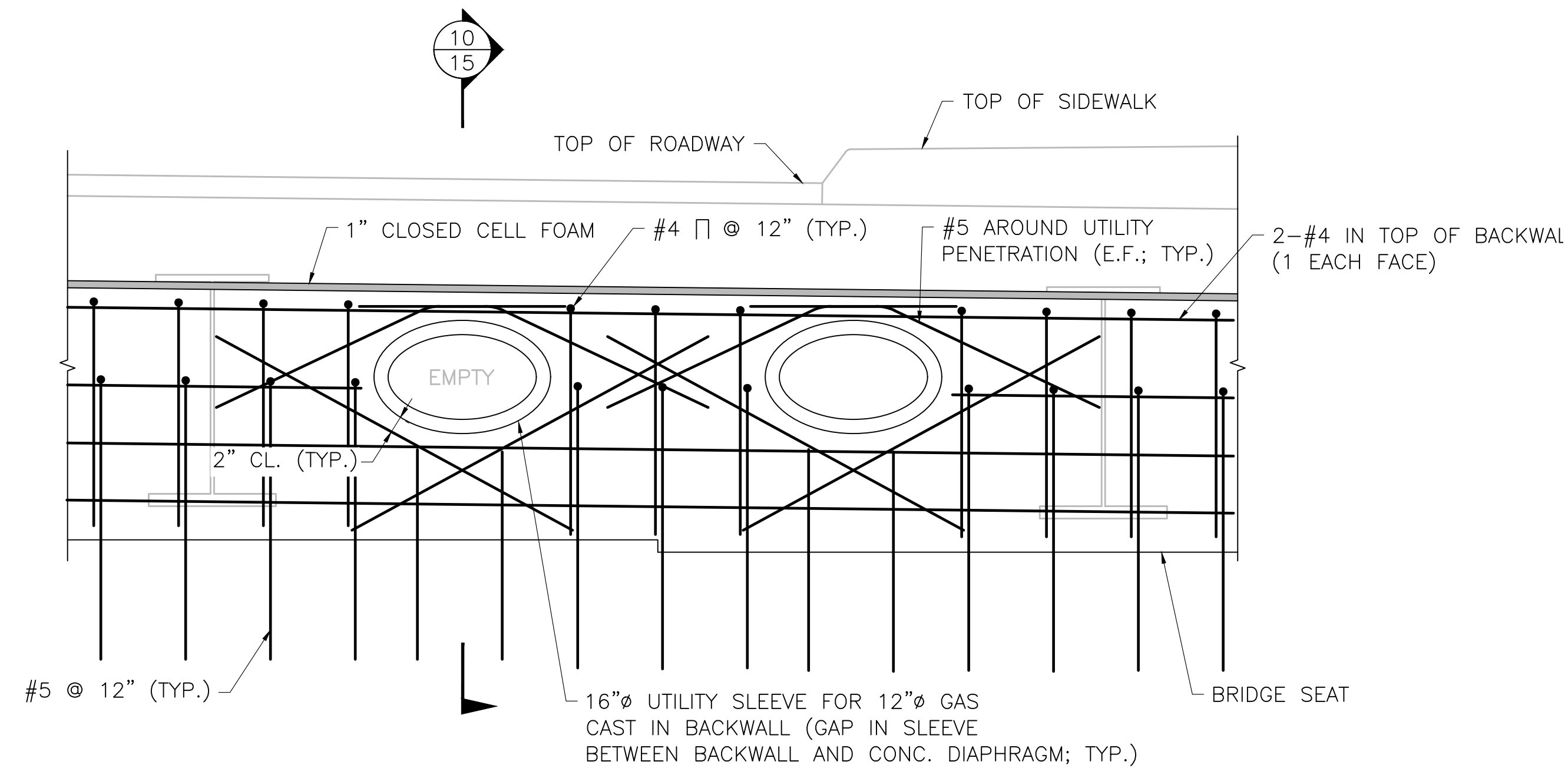
ABUTMENT DETAILS III



BACKWALL VERTICAL SECTION AT ELECTRICAL CONDUITS

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

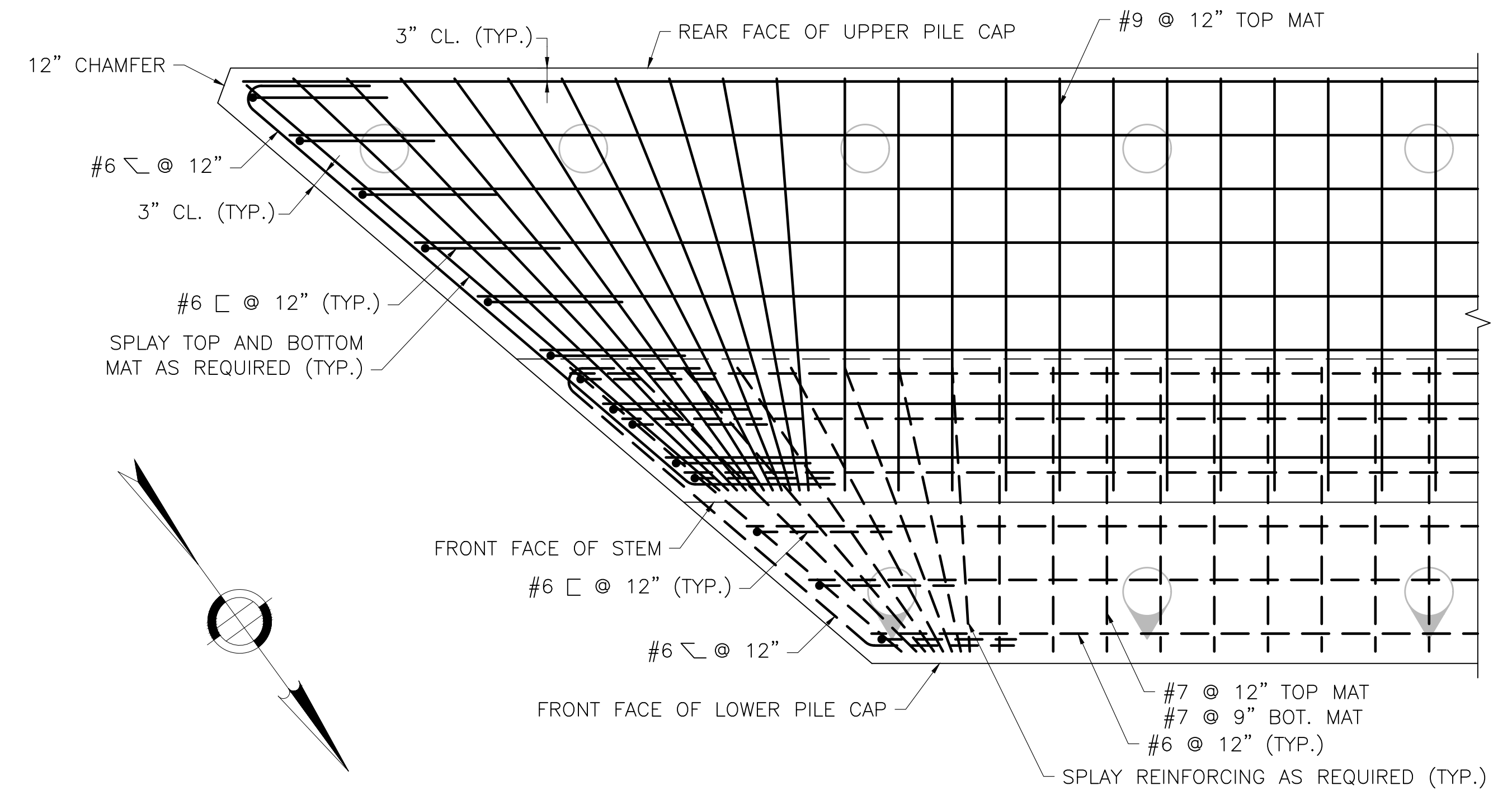
NOTE: SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR.



BACKWALL VERTICAL SECTION AT GAS MAINS

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

NOTE: SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR.

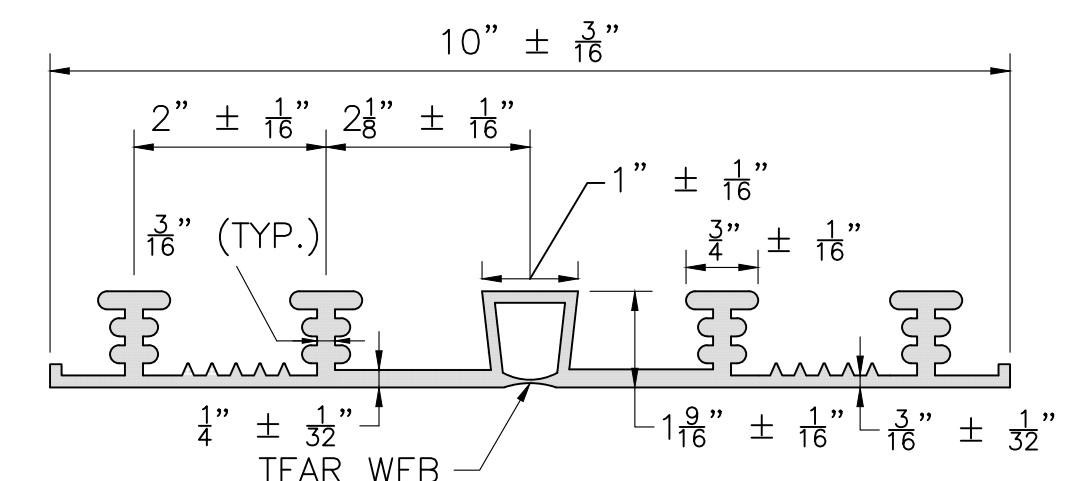


PILE CAP REINFORCING PLAN AT SOUTHEAST CORNER

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

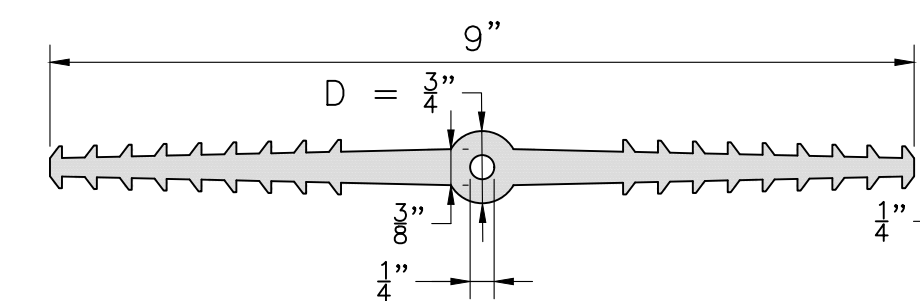
NOTES:

- SOUTHEAST CORNER SHOWN, NORTHEAST SIMILAR AND/OR OPPOSITE HAND.
- TOP MAT FOR UPPER AND LOWER PILE CAP SHOWN. BOTTOM MAT SIMILAR WITH BARS PLACED AROUND MICROPILES.
- SEE TYPICAL ABUTMENT REINFORCEMENT SECTION FOR THE ADDITIONAL REINFORCING NOT SHOWN.



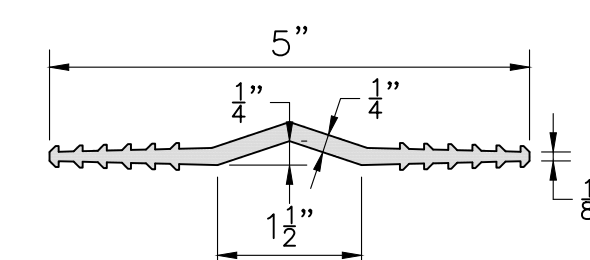
10" WATERSTOP

SCALE: 6" = 1' -0"



9" WATERSTOP

SCALE: 6" = 1' -0"



5" WATERSTOP

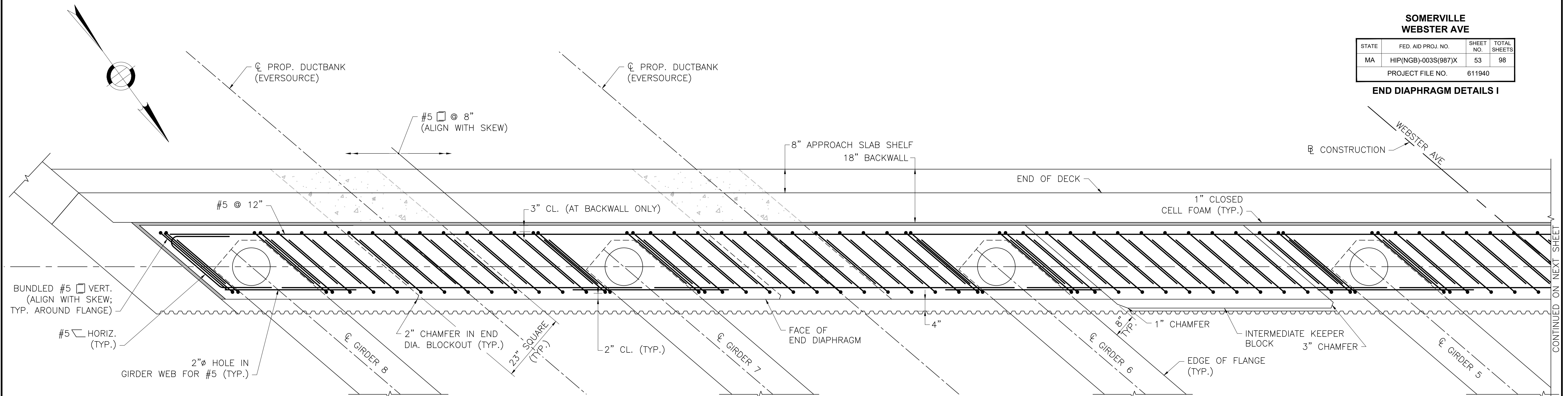
SCALE: 6" = 1' -0"

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SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	53	98
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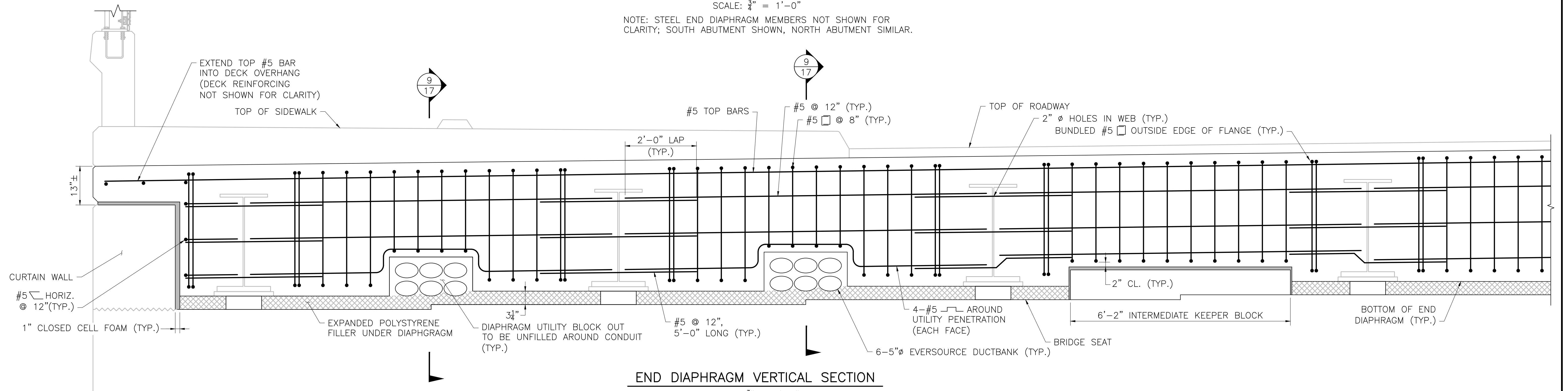
END DIAPHRAGM DETAILS I



END DIAPHRAGM HORIZONTAL SECTION

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

NOTE: STEEL END DIAPHRAGM MEMBERS NOT SHOWN FOR CLARITY; SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR.



END DIAPHRAGM VERTICAL SECTION

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

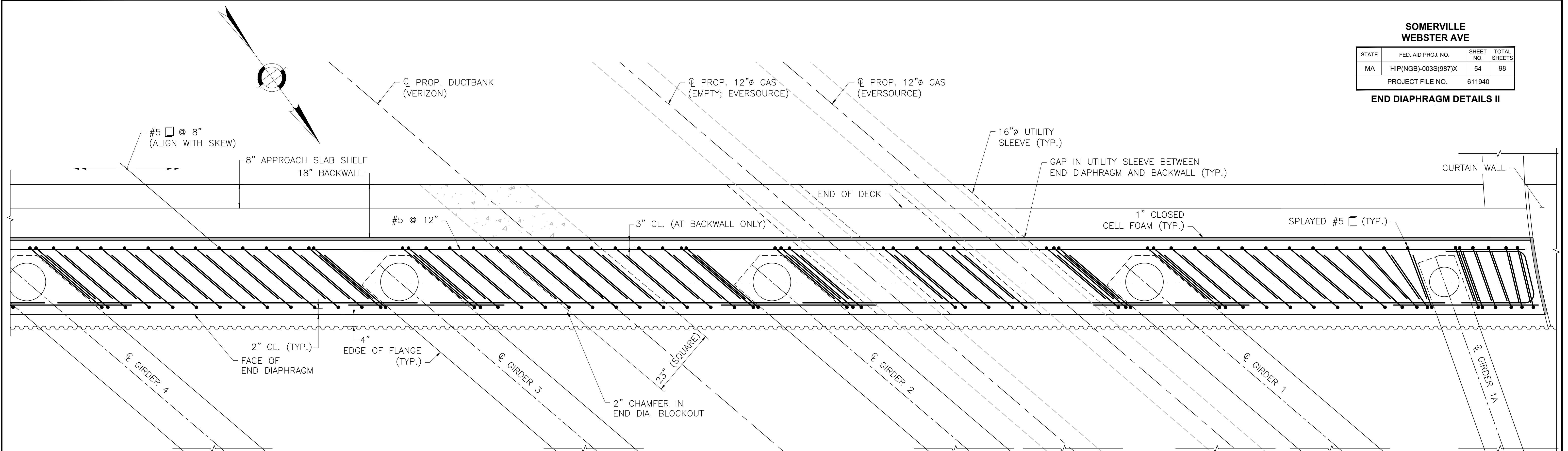
NOTE: STEEL END DIAPHRAGM MEMBERS NOT SHOWN FOR CLARITY; SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR.

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SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	54	98
PROJECT FILE NO.		611940	

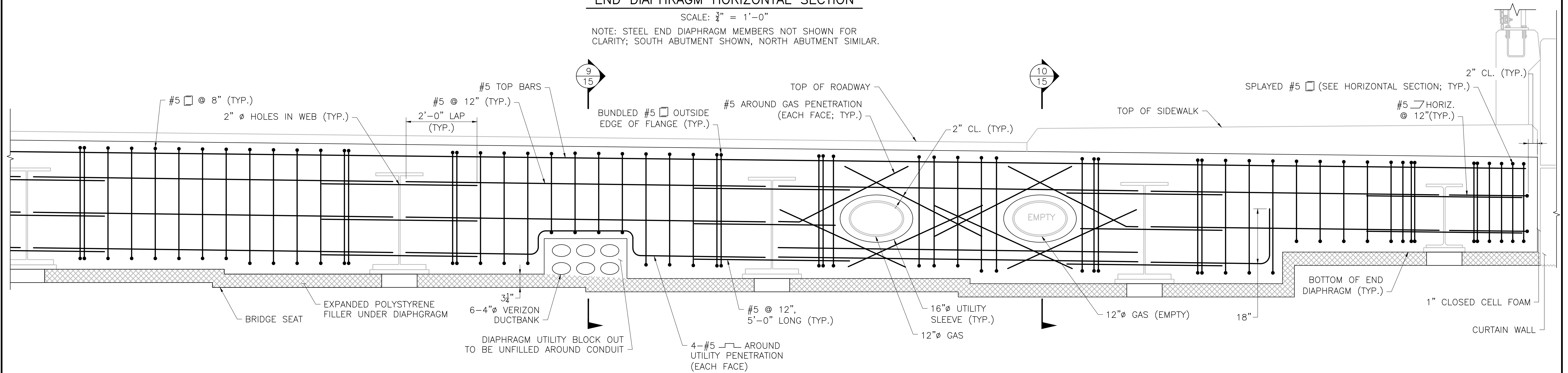
END DIAPHRAGM DETAILS II



END DIAPHRAGM HORIZONTAL SECTION

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

NOTE: STEEL END DIAPHRAGM MEMBERS NOT SHOWN FOR CLARITY; SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR.

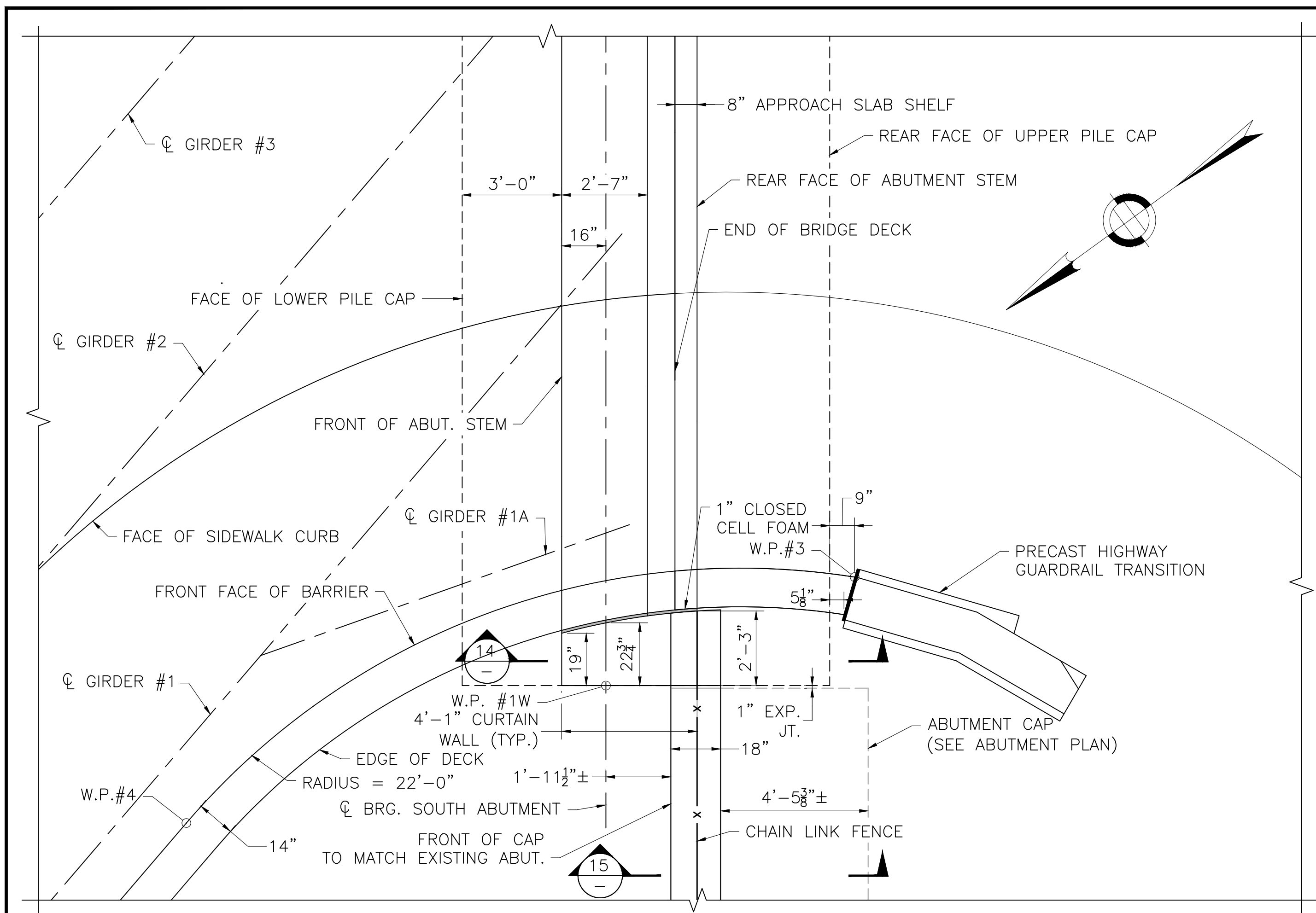


END DIAPHRAGM VERTICAL SECTION

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

NOTE: STEEL END DIAPHRAGM MEMBERS NOT SHOWN FOR CLARITY; SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR.

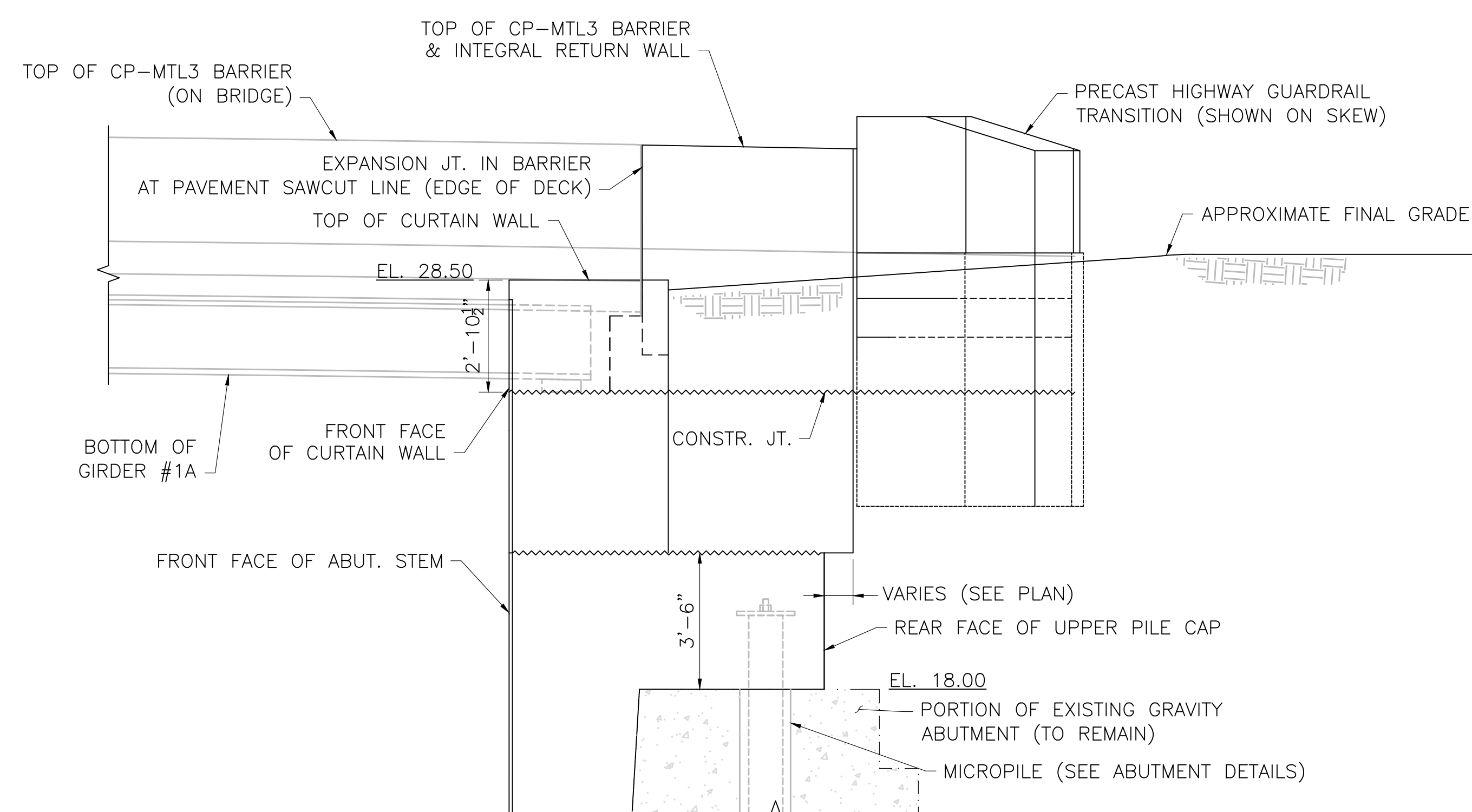
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SOUTHWEST CORNER PLAN

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

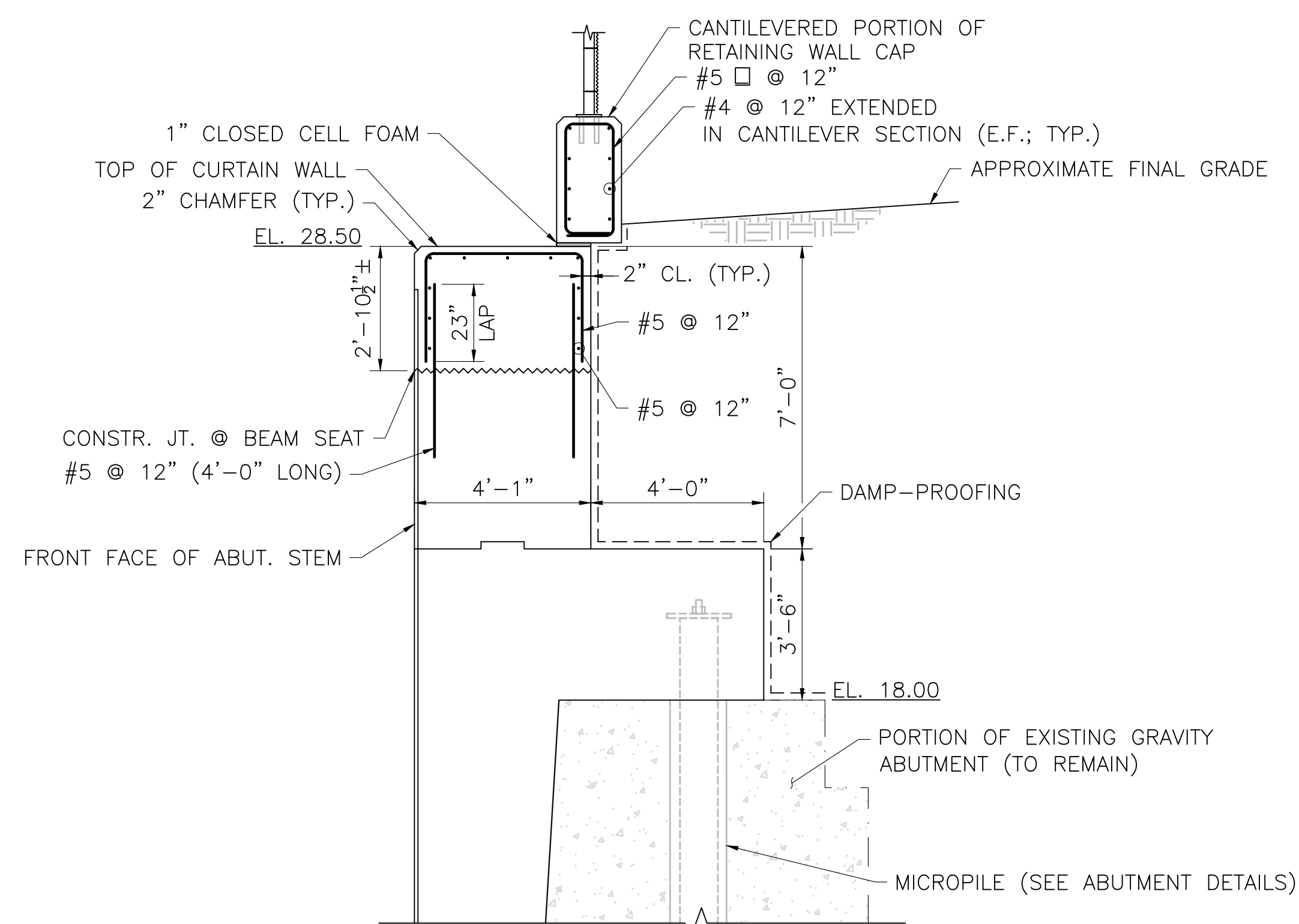
NOTE: PROTECTIVE SCREEN AND POSTS NOT SHOWN FOR CLARITY.
FOR WORKING POINT INFORMATION SEE TABLE ON SHEET 7 GENERAL PLAN.



SOUTHWEST CORNER ELEVATION

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

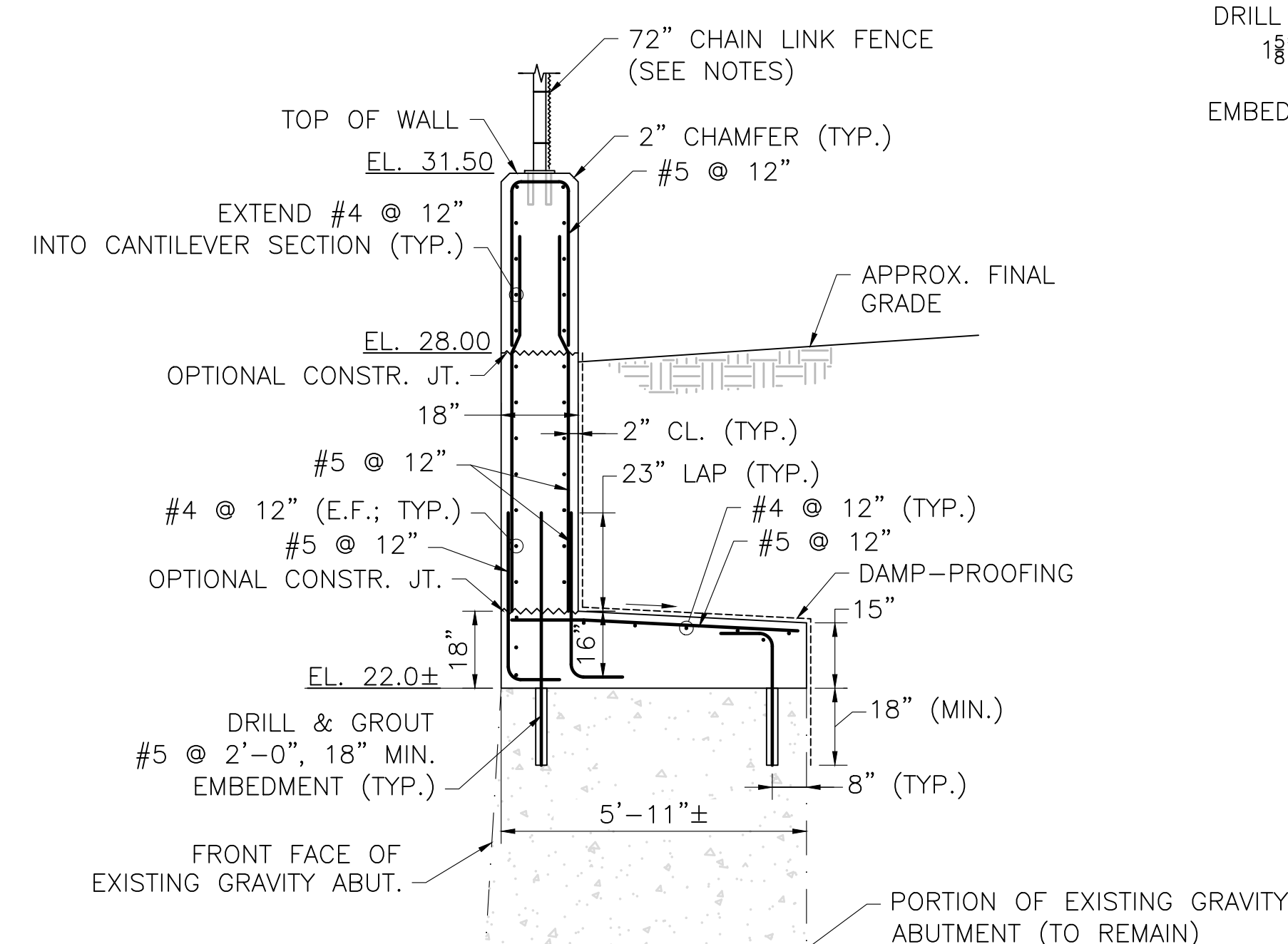
NOTE: PROTECTIVE SCREEN, POSTS, AND CANTILEVER
RETAINING WALL CAP NOT SHOWN FOR CLARITY



NOTE: STEM AND PILE CAP REINFORCEMENT NOT SHOWN FOR CLARITY
SEE REINFORCEMENT SECTION ON SHEET 15

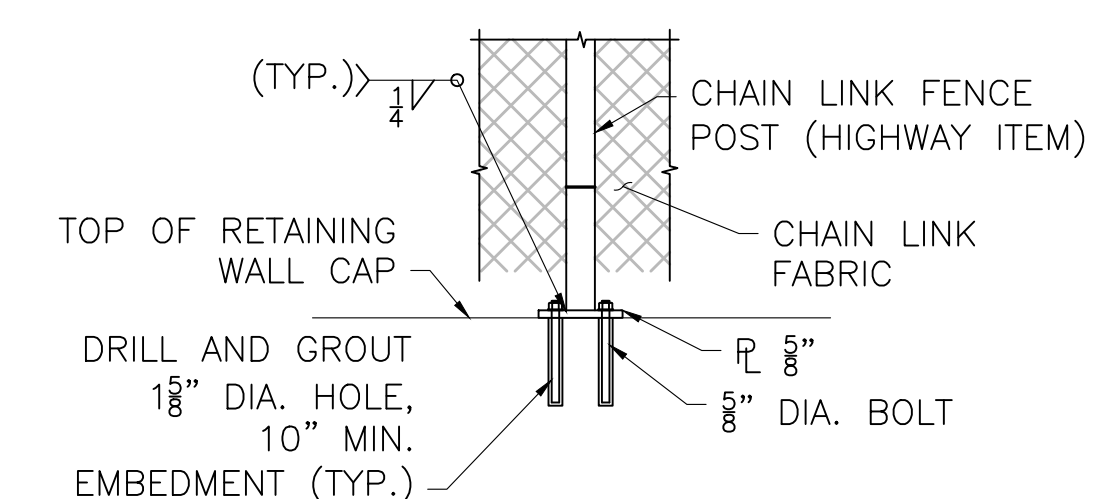
SECTION 14

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



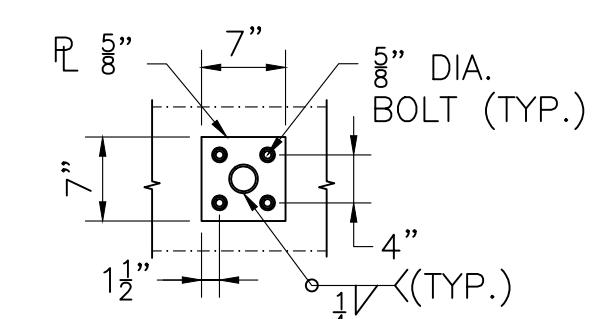
SECTION 15

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



FENCE POST ELEVATION

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



FENCE POST PLAN

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

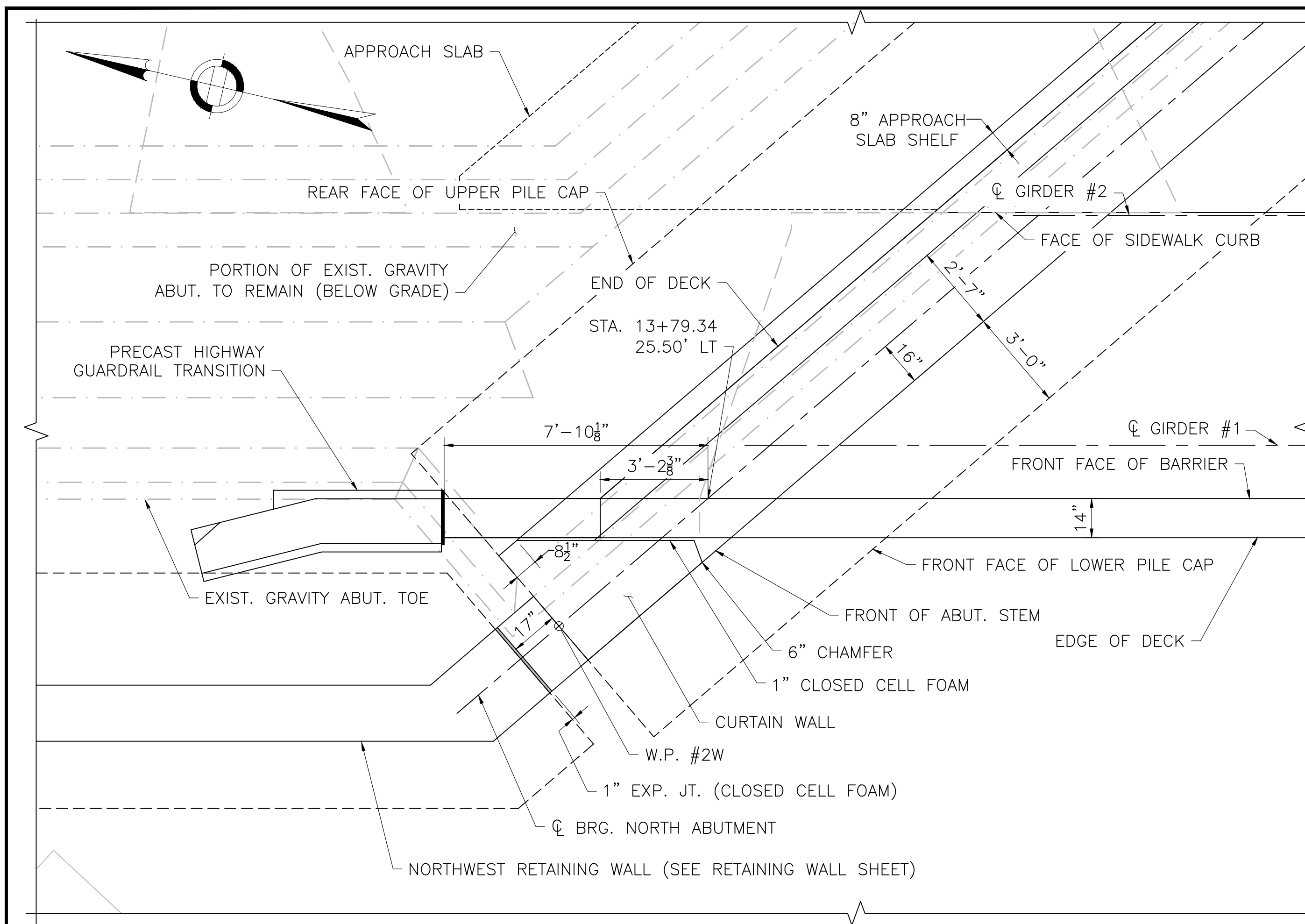
SOMERVILLE WEBSTER AVE			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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PROJECT FILE NO.		611940	

SOUTH ABUTMENT CORNER PLANS

NOTES:

- FENCE SHALL BE 72 INCH CHAIN LINK FENCE (PTR) VINYL COATED.
- FENCE POSTS AND BASE PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
- POST AND PLATE FABRICATION SHALL BE INCLUDED IN THE COST OF 72 INCH CHAIN LINK FENCE.
- TOP OF FENCE TO BE PARALLEL WITH TOP OF WALLS. POSTS SHALL BE PLUMB.
- REFER TO MASSDOT CONSTRUCTION STANDARD DETAILS E 645.0.1 FOR CHAIN LINK FENCE (PIPE TOP RAIL) DETAILS.

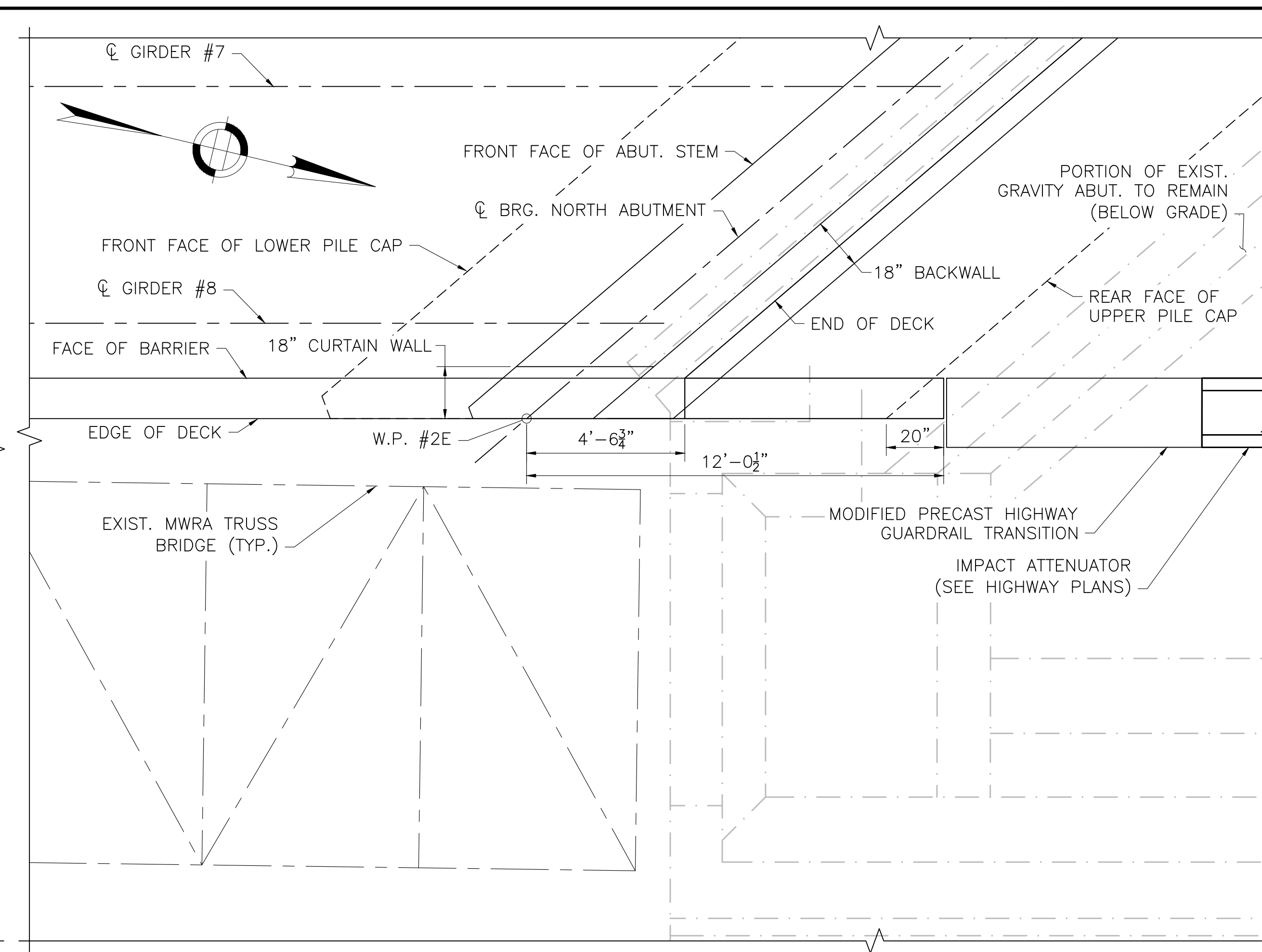
SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
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NORTHWEST CORNER PLAN

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

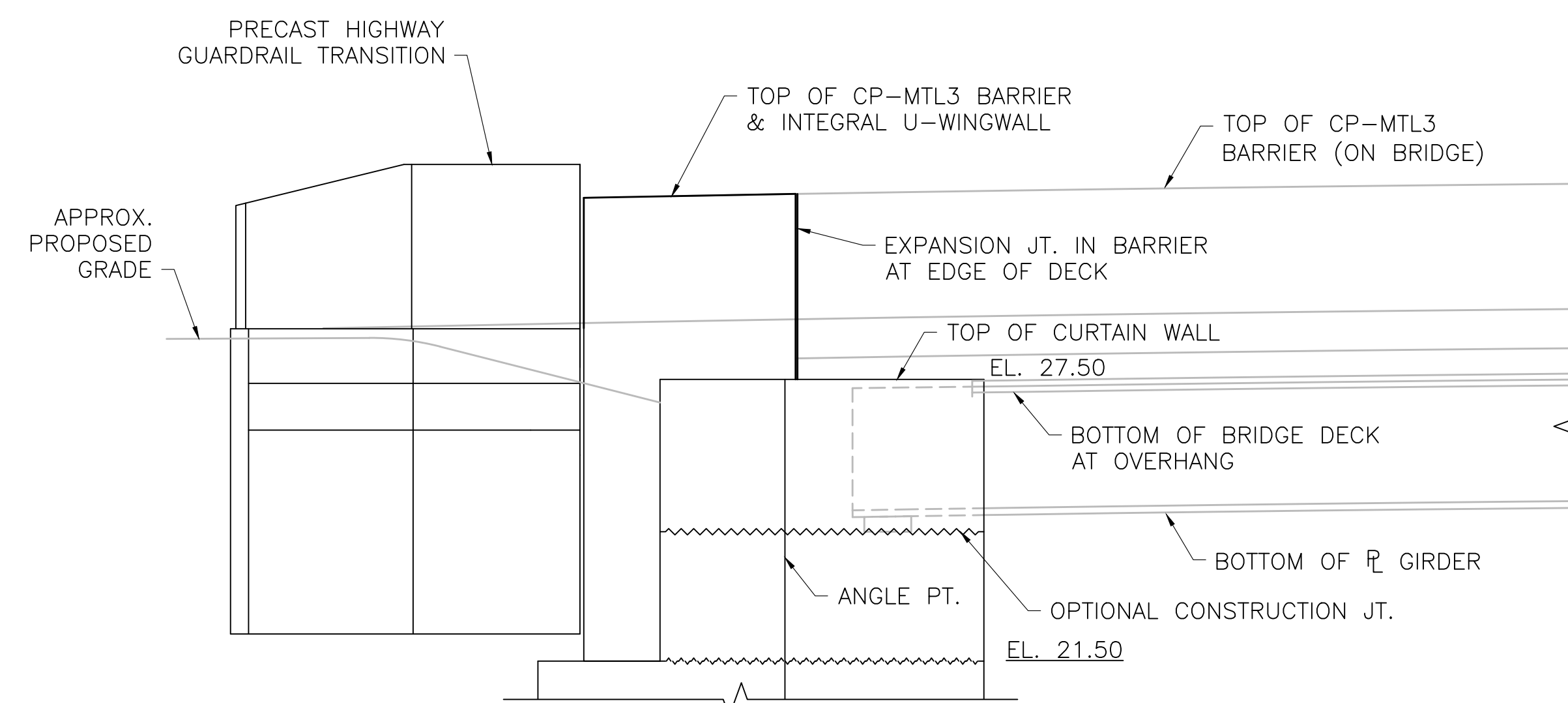
NOTE: PROTECTIVE SCREEN AND POSTS NOT SHOWN FOR CLARITY



NORTHEAST CORNER PLAN

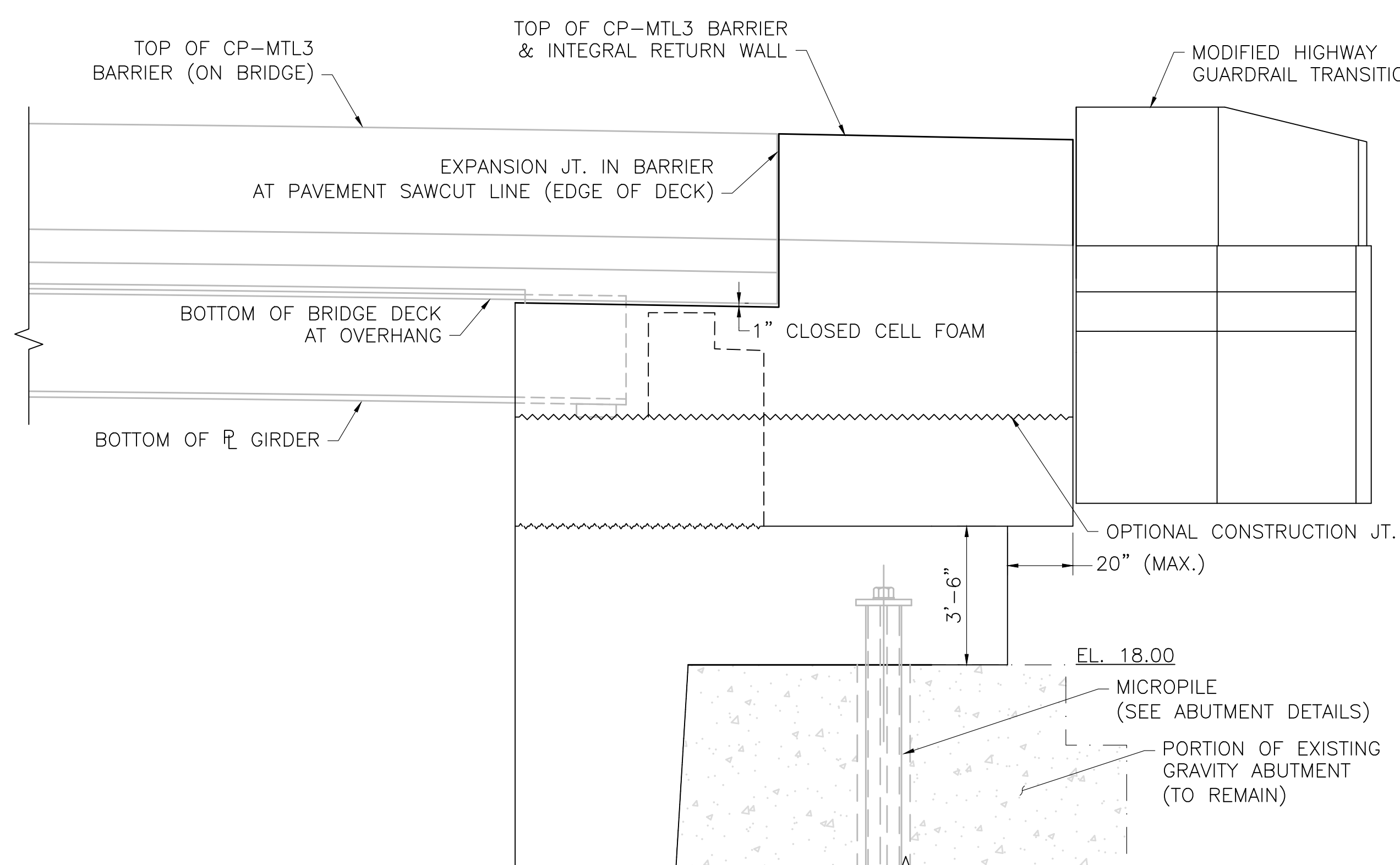
SCALE: $\frac{3}{8}" = 1'-0"$

NOTE: PROTECTIVE SCREEN AND POSTS NOT SHOWN FOR CLARITY.
NORTHEAST SHOWN, SOUTHEAST SIMILAR.



NORTHWEST CORNER ELEVATION

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



NORTHEAST CORNER ELEVATION

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

NOTE: PROTECTIVE SCREEN AND POSTS NOT SHOWN FOR CLARITY.
NORTHEAST SHOWN, SOUTHEAST SIMILAR.

SOMERVILLE WEBSTER AVE			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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NORTH ABUTMENT CORNER PLANS

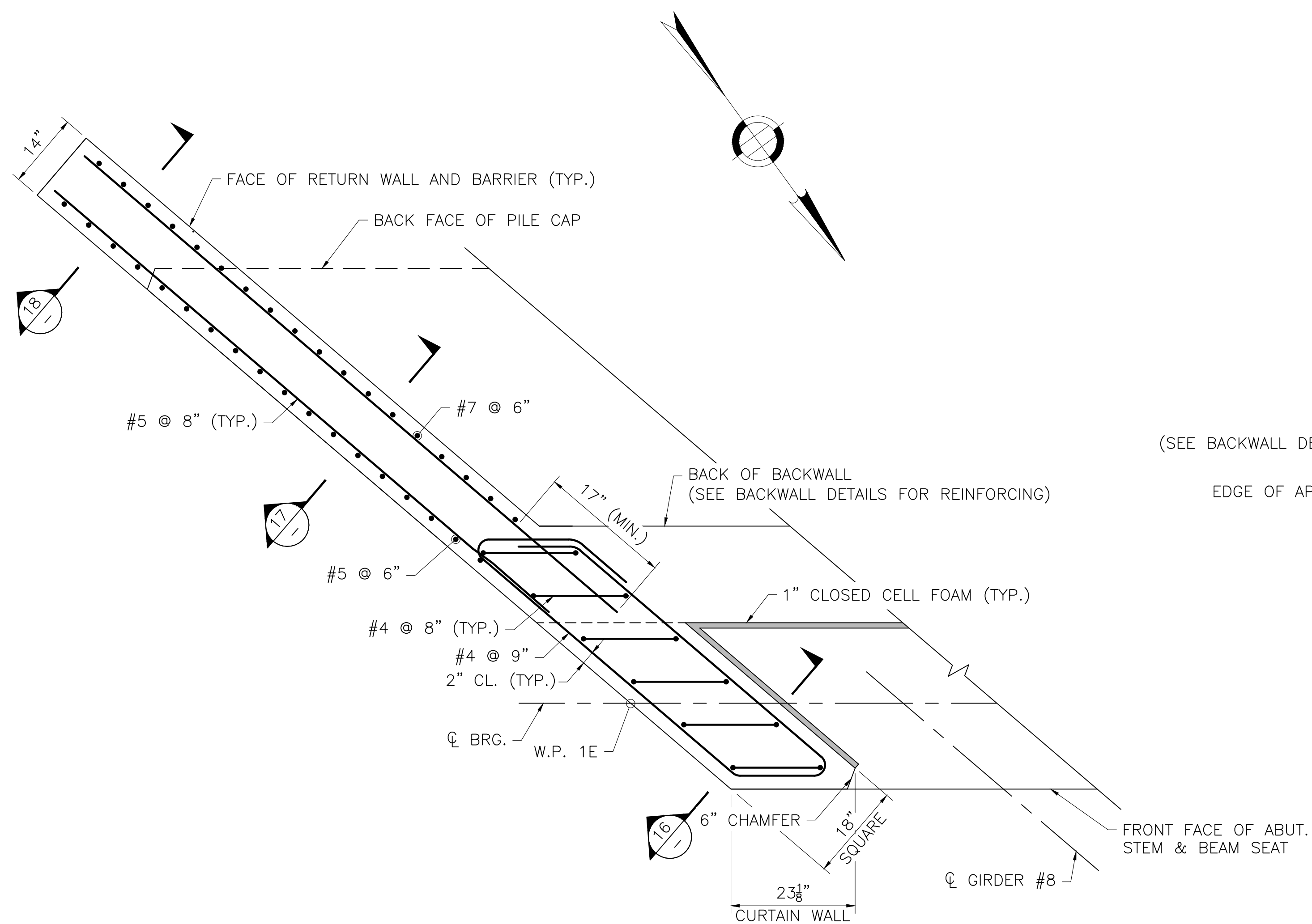
SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
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SHEET 21 OF 44 SHEETS BRIDGE NO. S-17-016 (ATX)

SOMERVILLE
WEBSTER AVE

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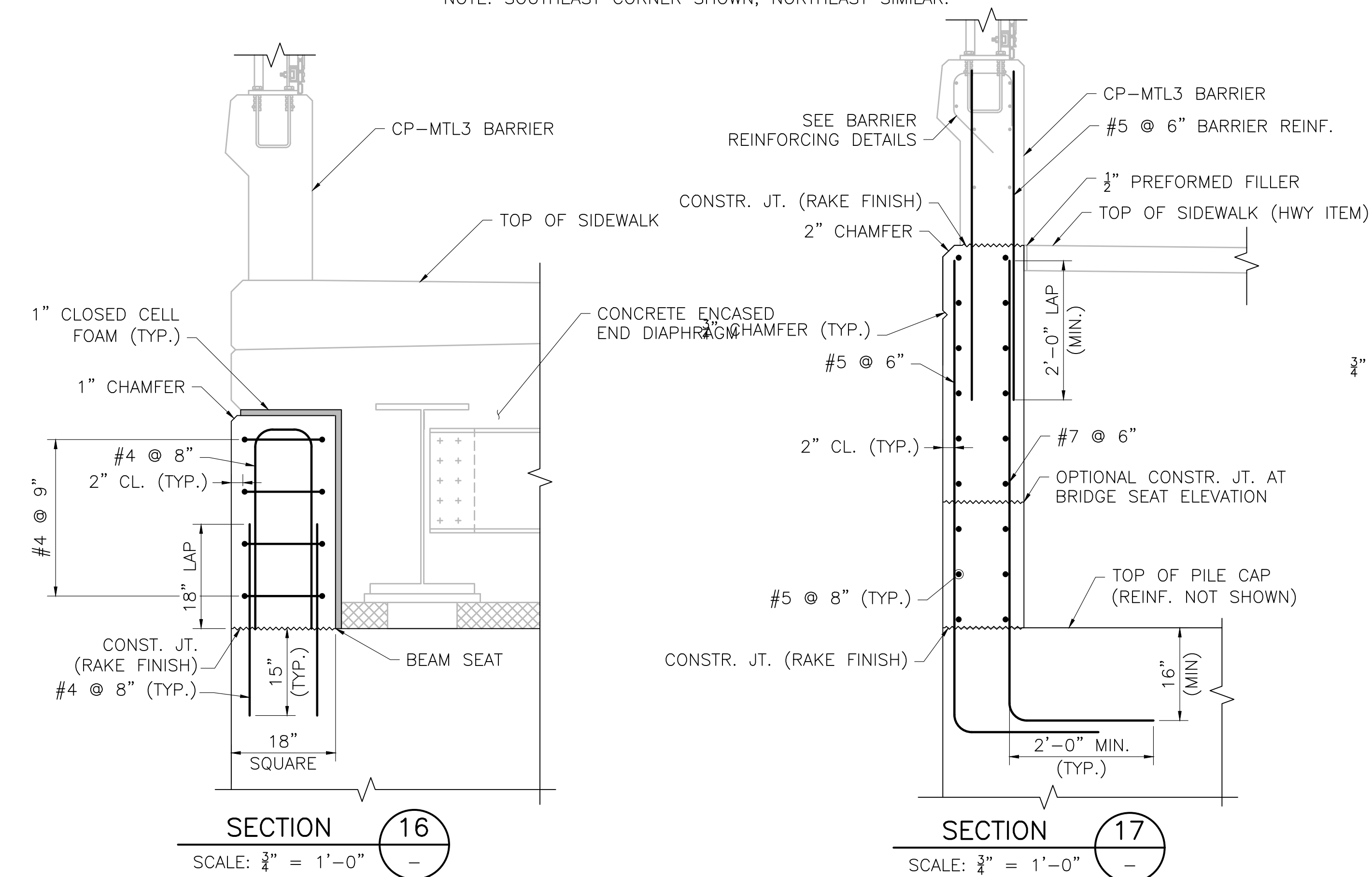
CURTAIN WALL DETAILS I



TYPICAL EAST CURTAIN WALL HORIZONTAL SECTION

SCALE: 3/4" = 1'-0"

NOTE: SOUTHEAST CORNER SHOWN, NORTHEAST SIMILAR.

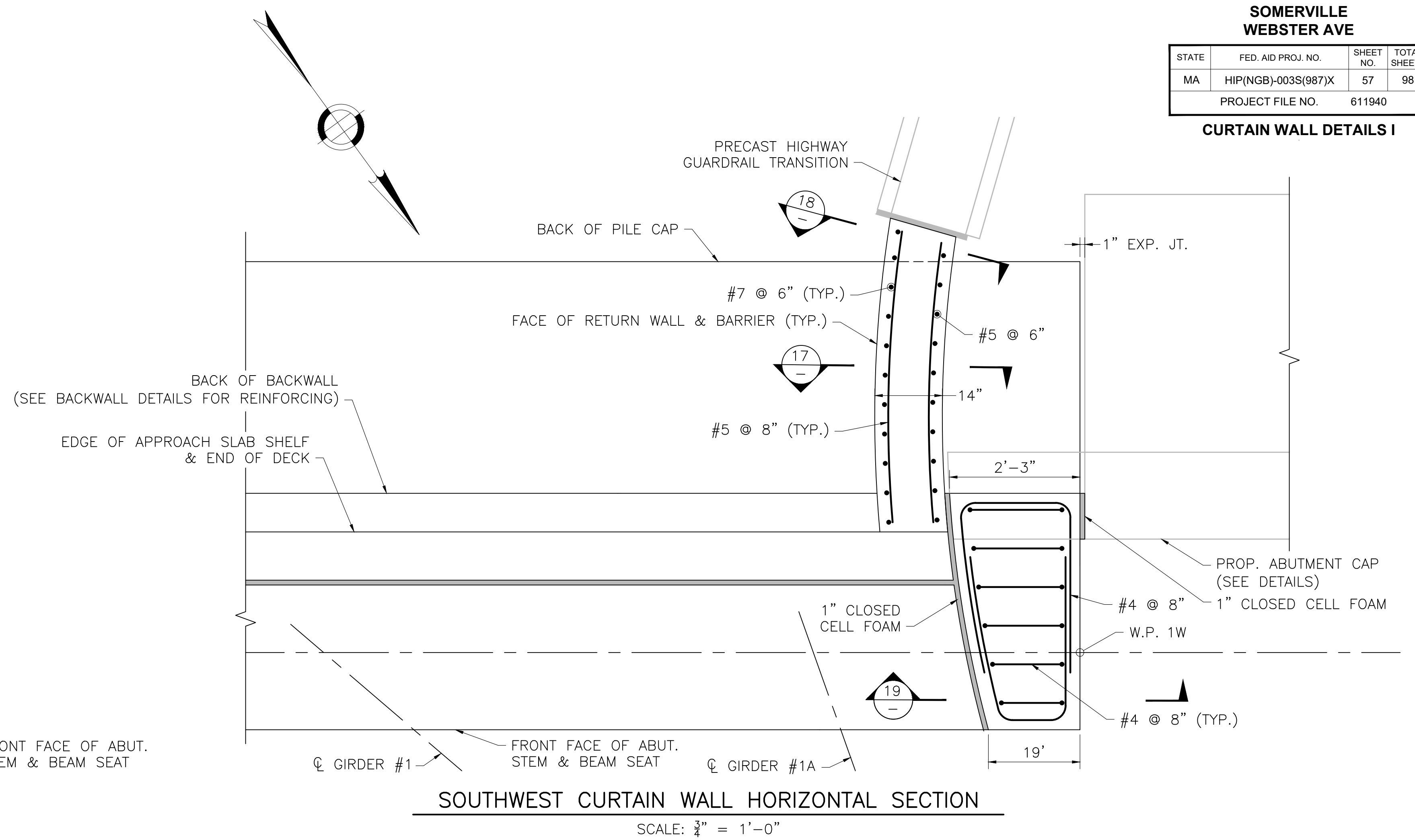


SECTION 16

SCALE: 3/4" = 1'-0"

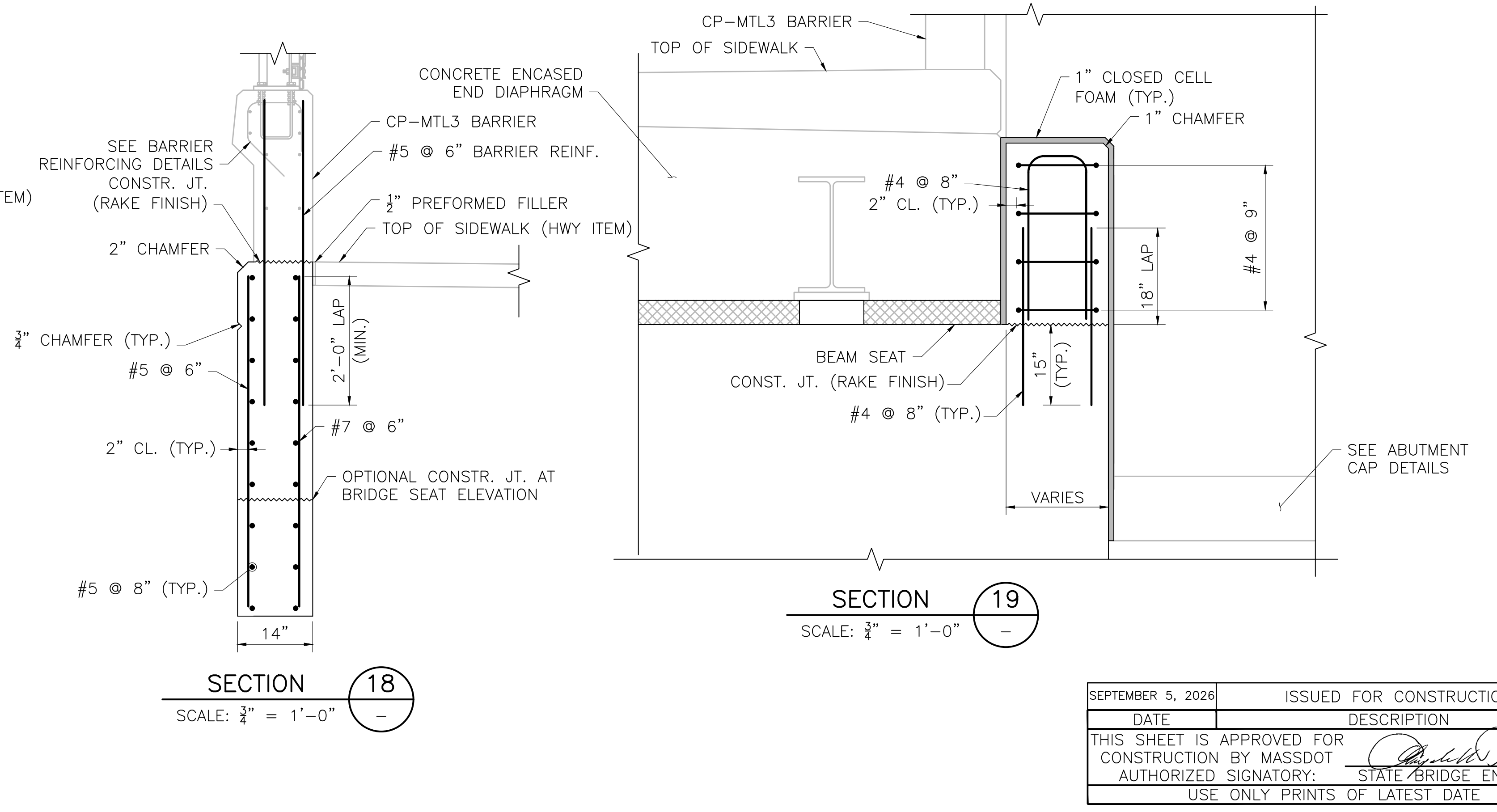
SECTION 17

SCALE: 3/4" = 1'-0"



SOUTHWEST CURTAIN WALL HORIZONTAL SECTION

SCALE: 3/4" = 1'-0"



SECTION 18

SCALE: 3/4" = 1'-0"

SECTION 19

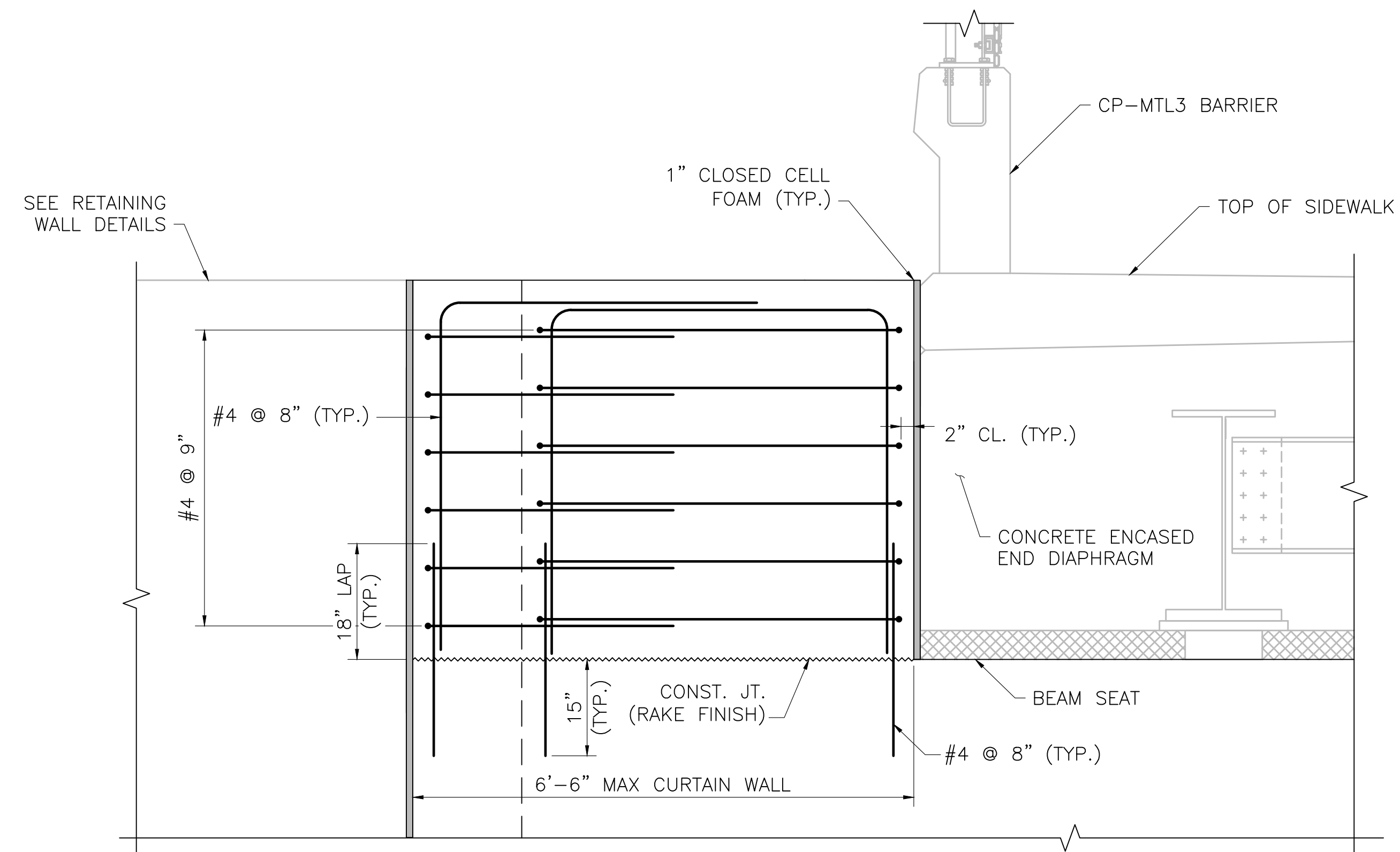
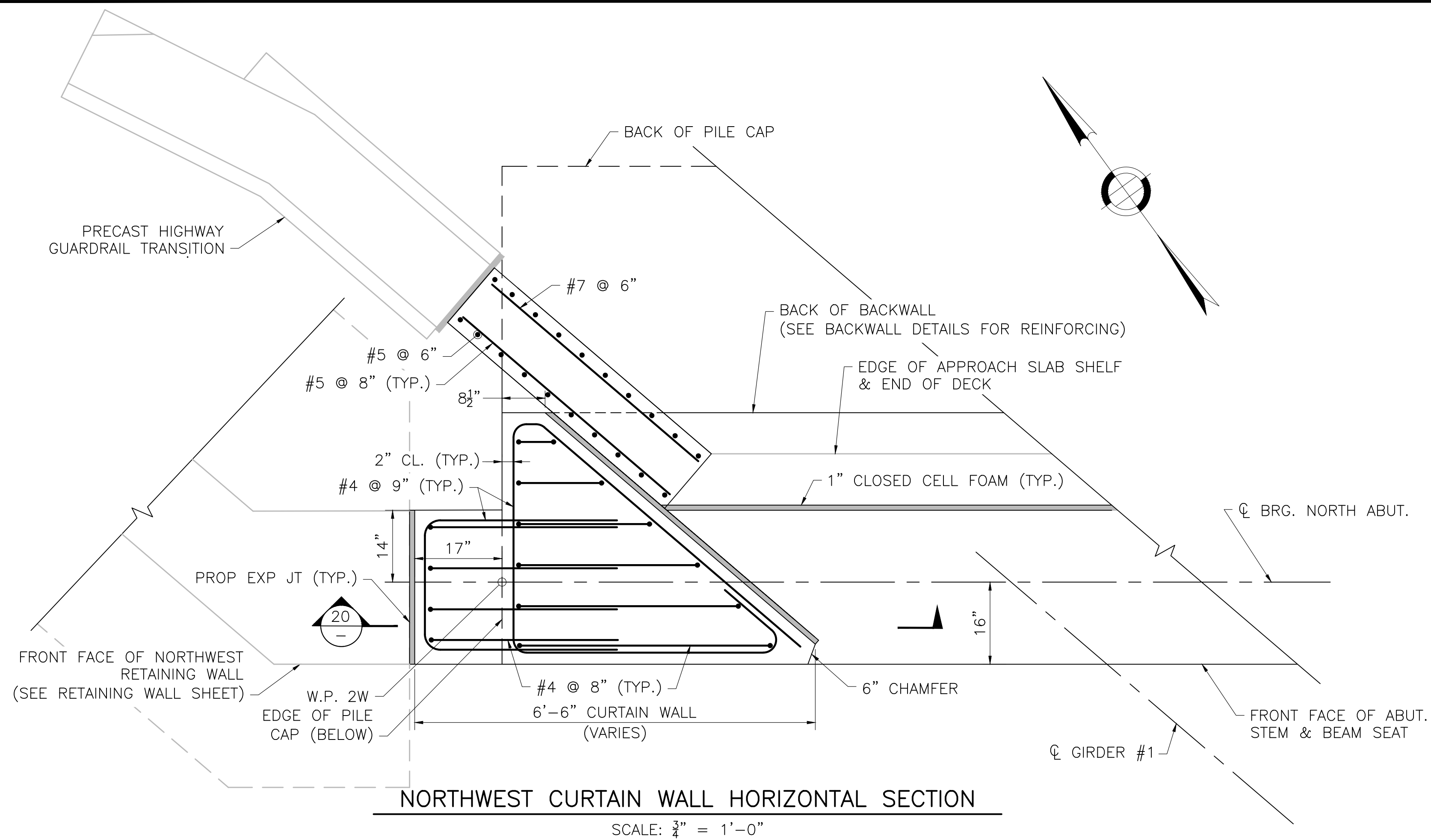
SCALE: 3/4" = 1'-0"

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SOMERVILLE
WEBSTER AVE

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PROJECT FILE NO.		611940	

CURTAIN WALL DETAILS II

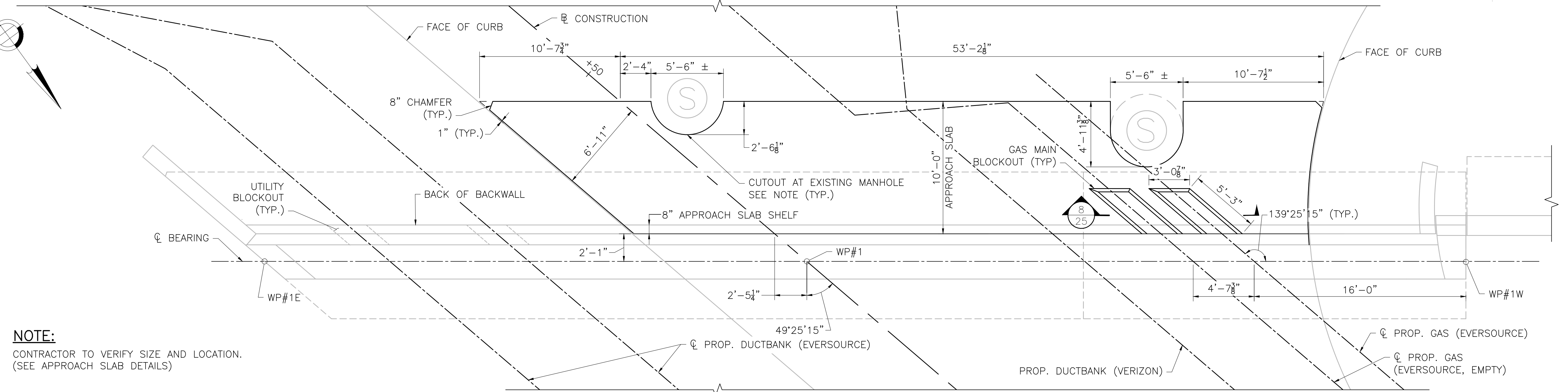


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SOMERVILLE
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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	59	98
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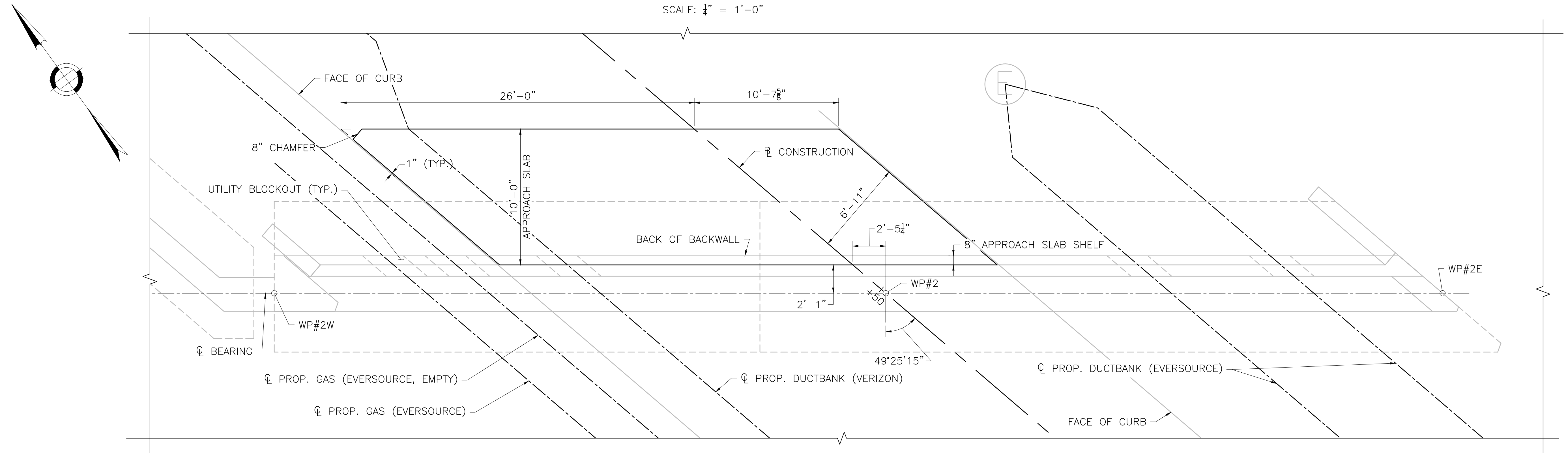
APPROACH SLAB PLAN



NOTE:
CONTRACTOR TO VERIFY SIZE AND LOCATION.
(SEE APPROACH SLAB DETAILS)

SOUTH APPROACH SLAB PLAN

SCALE: 1/4" = 1'-0"



NORTH APPROACH SLAB PLAN

SCALE: 1/4" = 1'-0"

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LIMITS OF DAMP-PROOFING

2" CL.

2% SLOPE

10"

3" CL.

10"

#6 @ 6" (SEE NOTE)

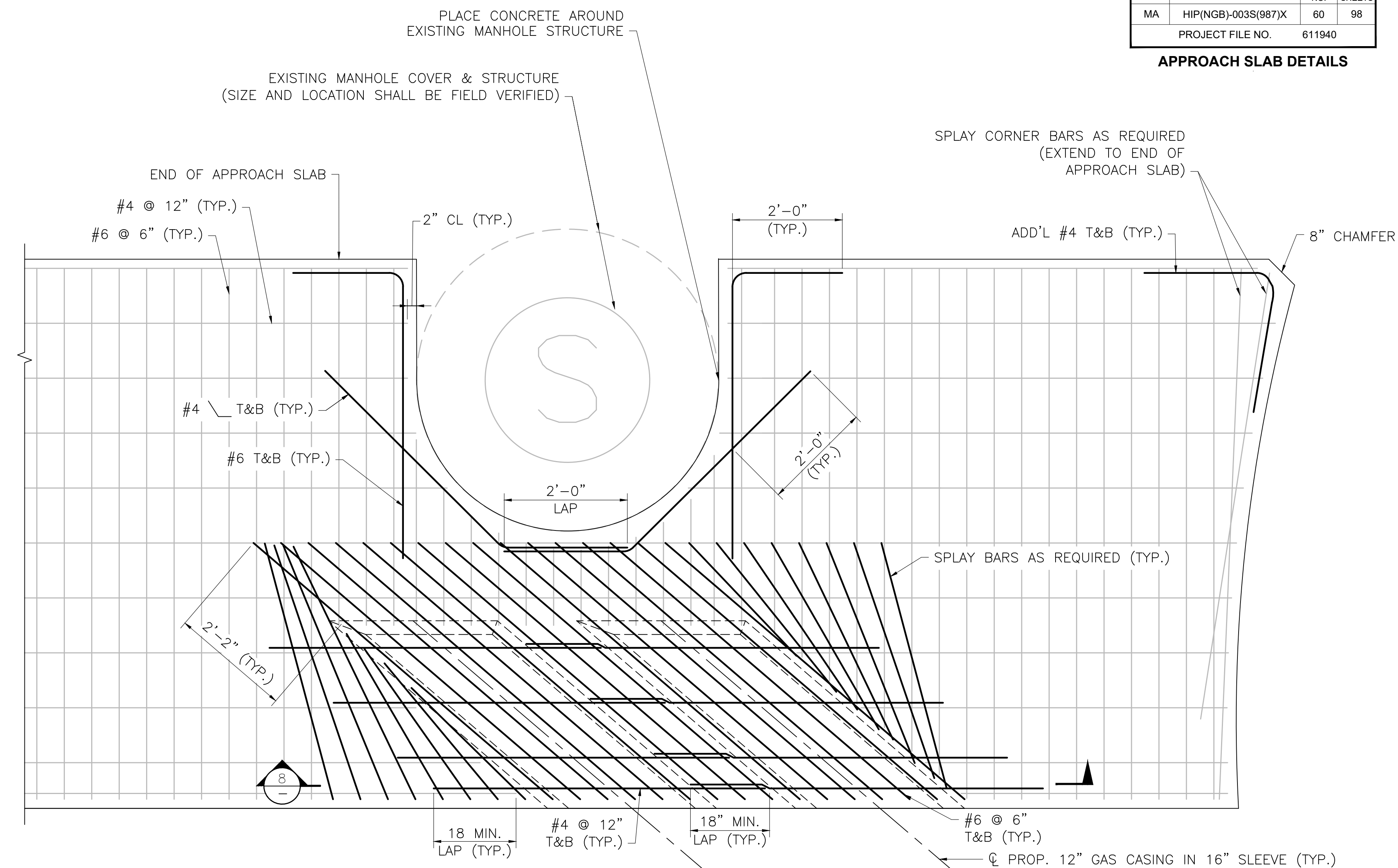
#4 @ 12" (SEE NOTE)

#6 @ 18"

NOTE:

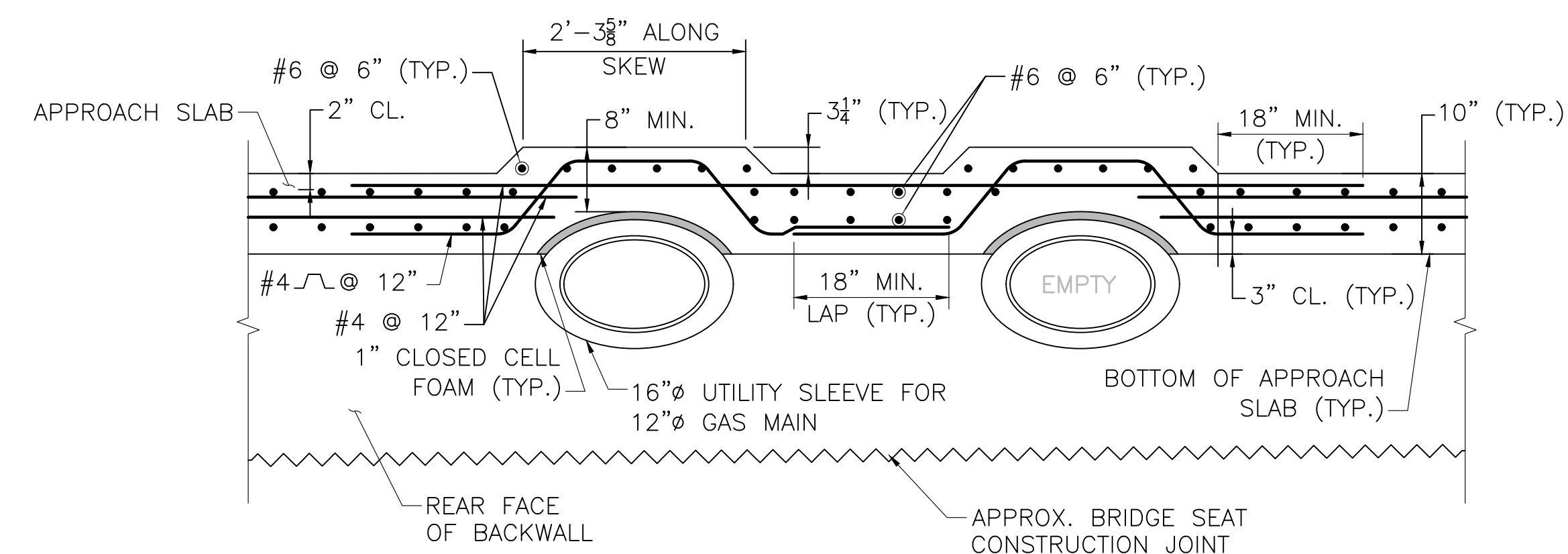
PLACE LONGITUDINAL REINFORCEMENT PERPENDICULAR TO ABUTMENT.
PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
ALL REINFORCEMENT SHALL NOT BE COATED.

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



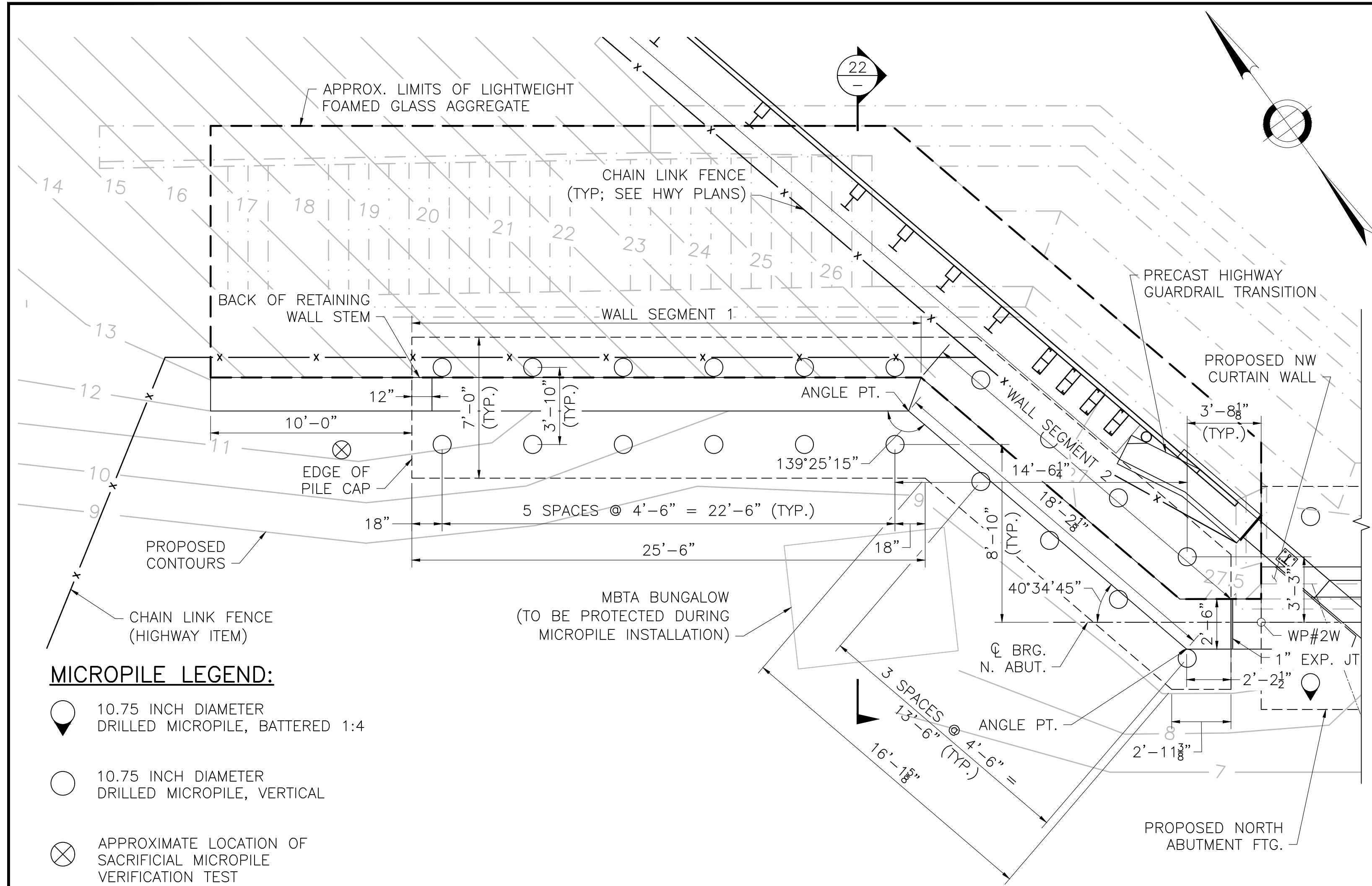
SCALE: $\frac{3}{4}" = 1'-0"$

NOTE: SOUTHWEST LOCATION SHOWN, OTHER MANHOLE CUTOUT SIMILAR.



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

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MICROPILE LEGEND:

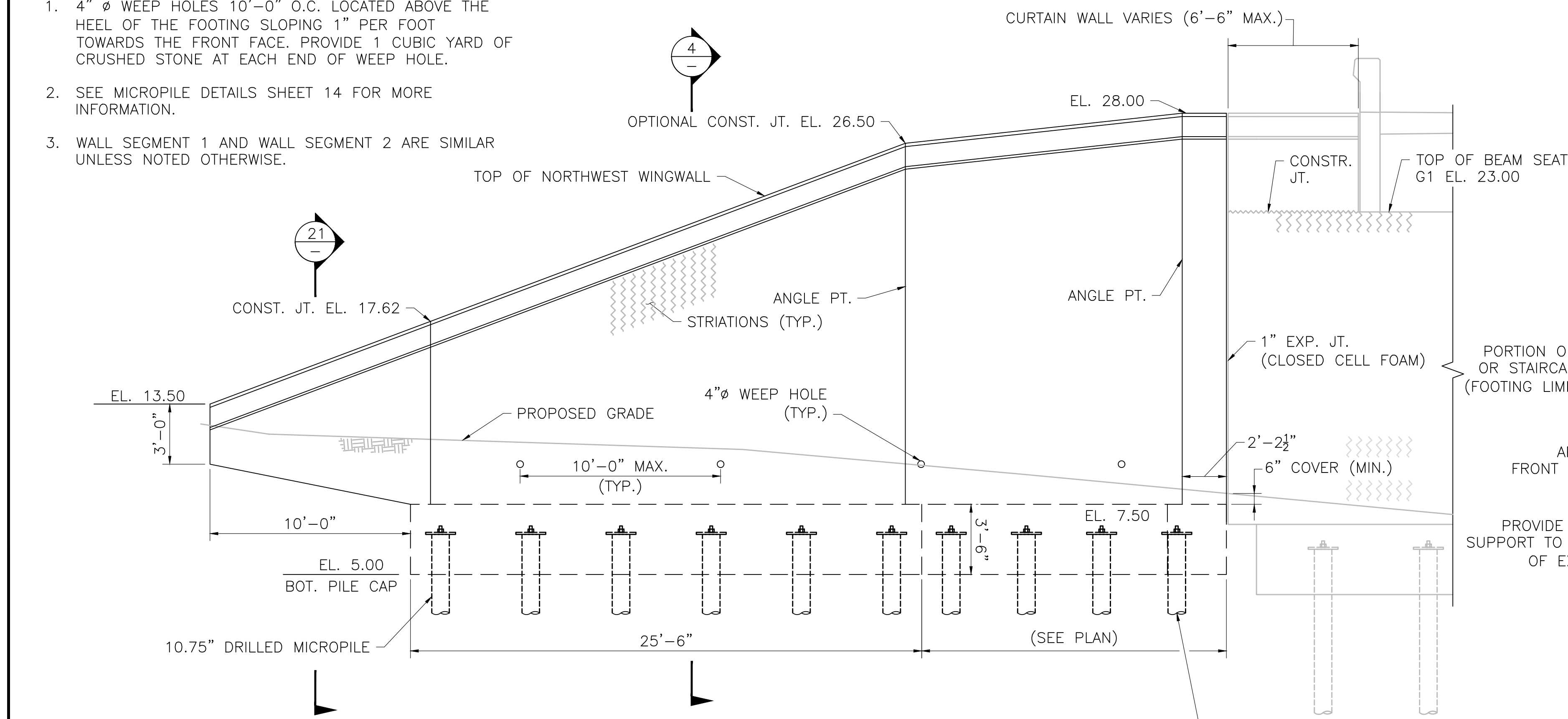
- 10.75 INCH DIAMETER DRILLED MICROPILE, BATTERED 1:4
- 10.75 INCH DIAMETER DRILLED MICROPILE, VERTICAL
- APPROXIMATE LOCATION OF SACRIFICIAL MICROPILE VERIFICATION TEST

RETAINING WALL NOTES:

- 4" ϕ WEEP HOLES 10'-0" O.C. LOCATED ABOVE THE HEEL OF THE FOOTING SLOPING 1" PER FOOT TOWARDS THE FRONT FACE. PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
- SEE MICROPILE DETAILS SHEET 14 FOR MORE INFORMATION.
- WALL SEGMENT 1 AND WALL SEGMENT 2 ARE SIMILAR UNLESS NOTED OTHERWISE.

NORTHWEST RETAINING WALL PLAN

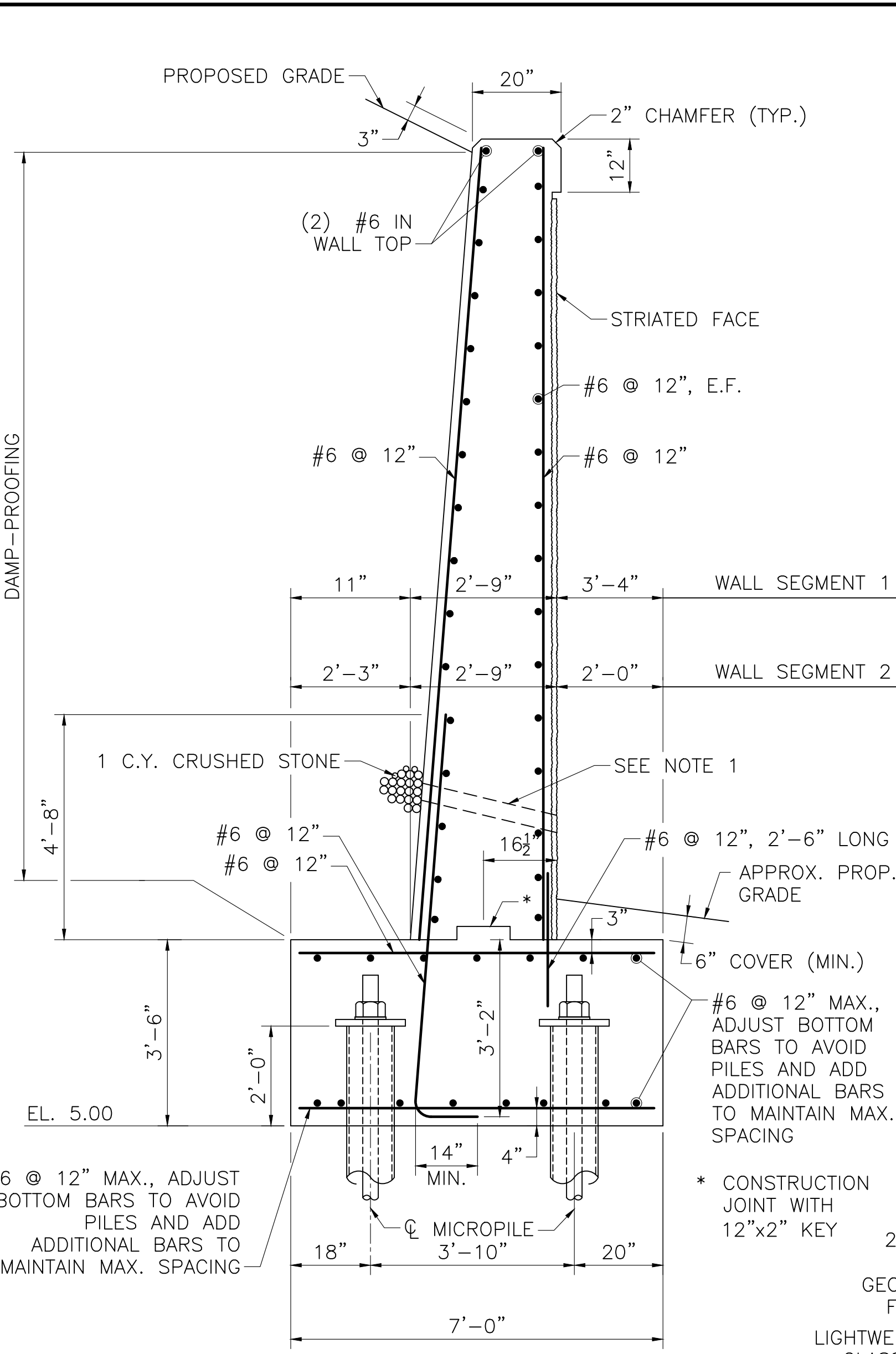
SCALE: 1/4" = 1'-0"



NORTHWEST RETAINING WALL ELEVATION

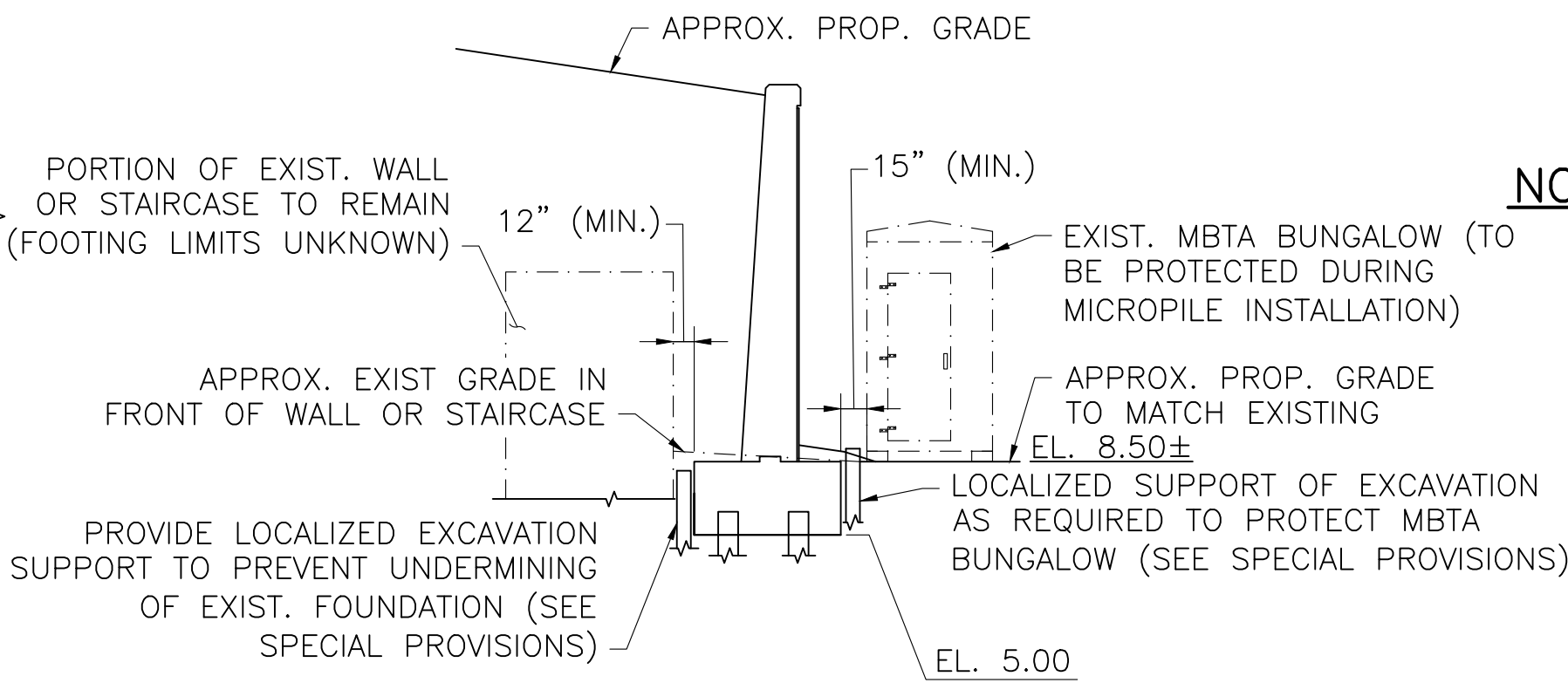
SCALE: 1/4" = 1'-0"

MICROPILES ARE TO BE SOCKETED INTO BEDROCK. PILE TIP ELEVATIONS ARE ESTIMATED TO BE EL. -98.3 FOR THE NORTHWEST WINGWALL.



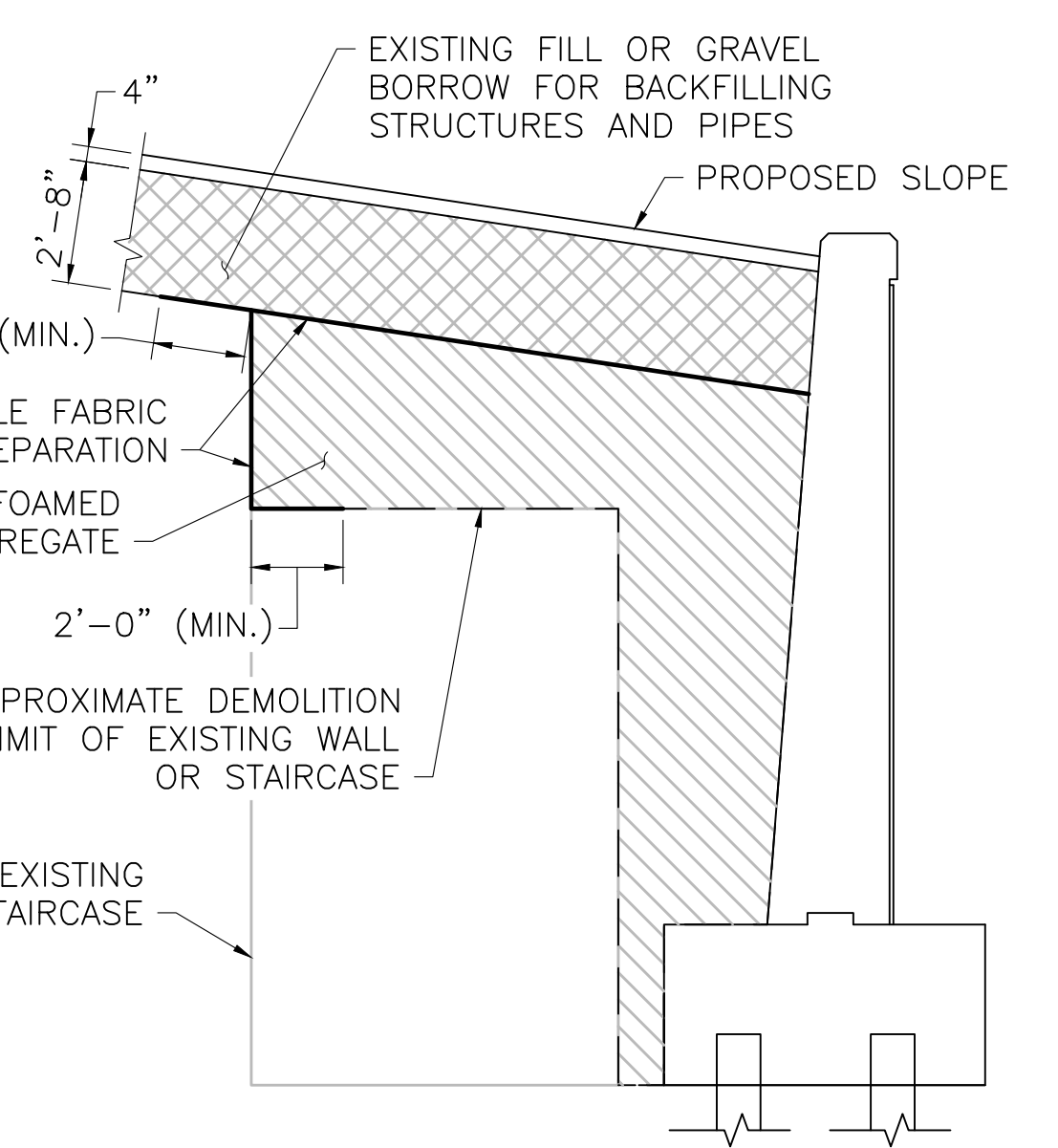
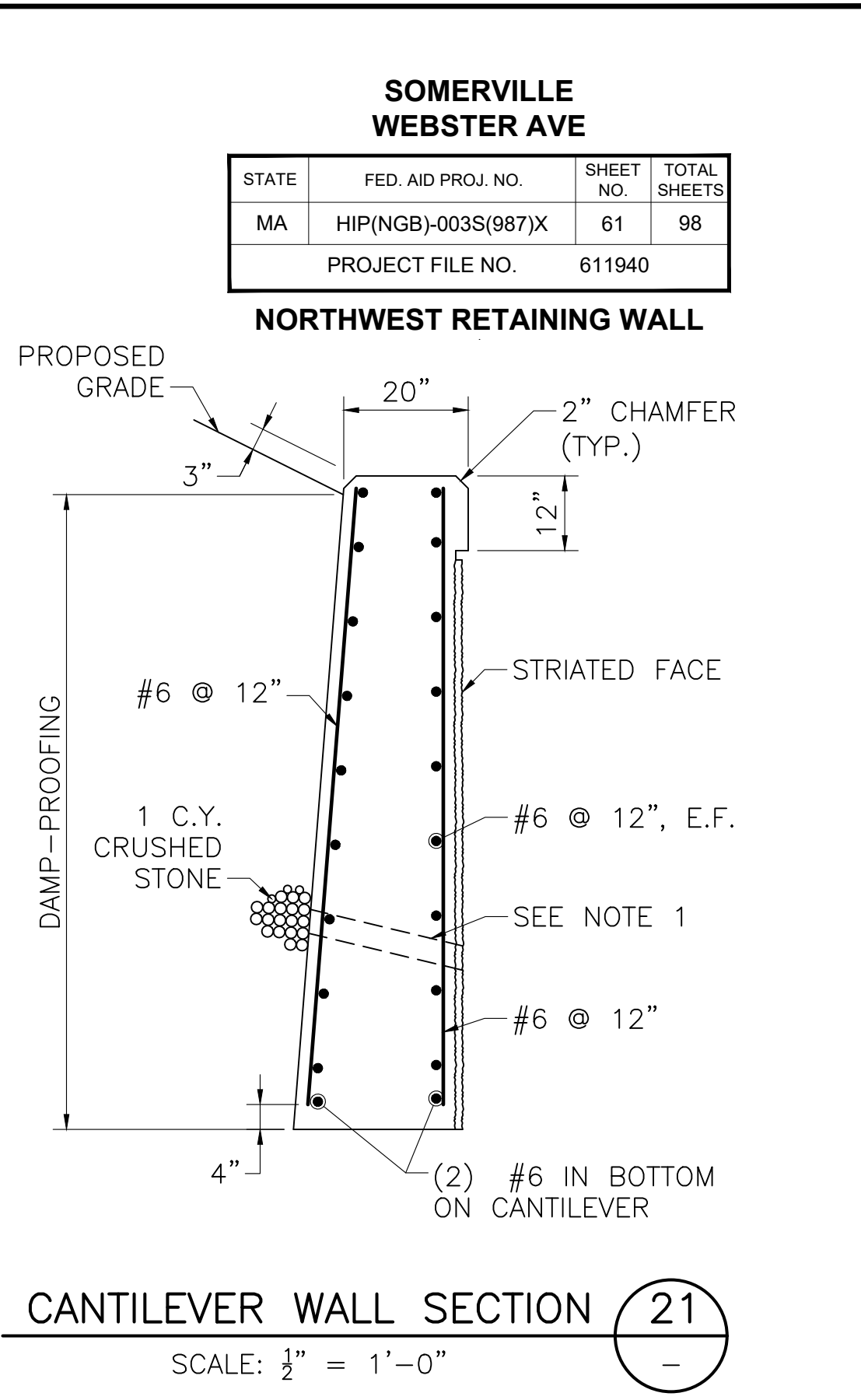
TYPICAL RETAINING WALL SECTION

SCALE: 1/2" = 1'-0"



OPTIONAL SUPPORT OF EXCAVATION

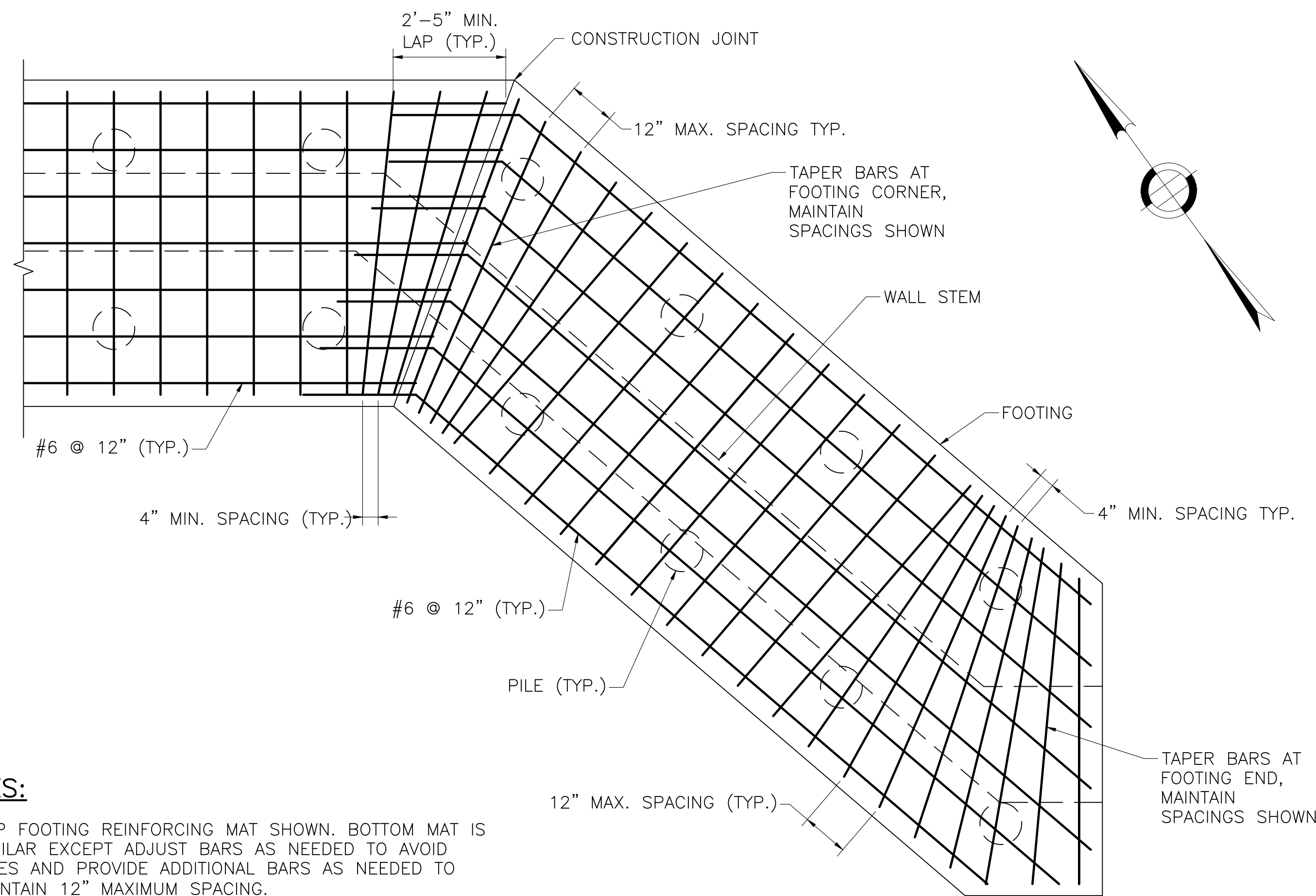
SCALE: 1/8" = 1'-0"



NORTHWEST WINGWALL BACKFILL LIMITS

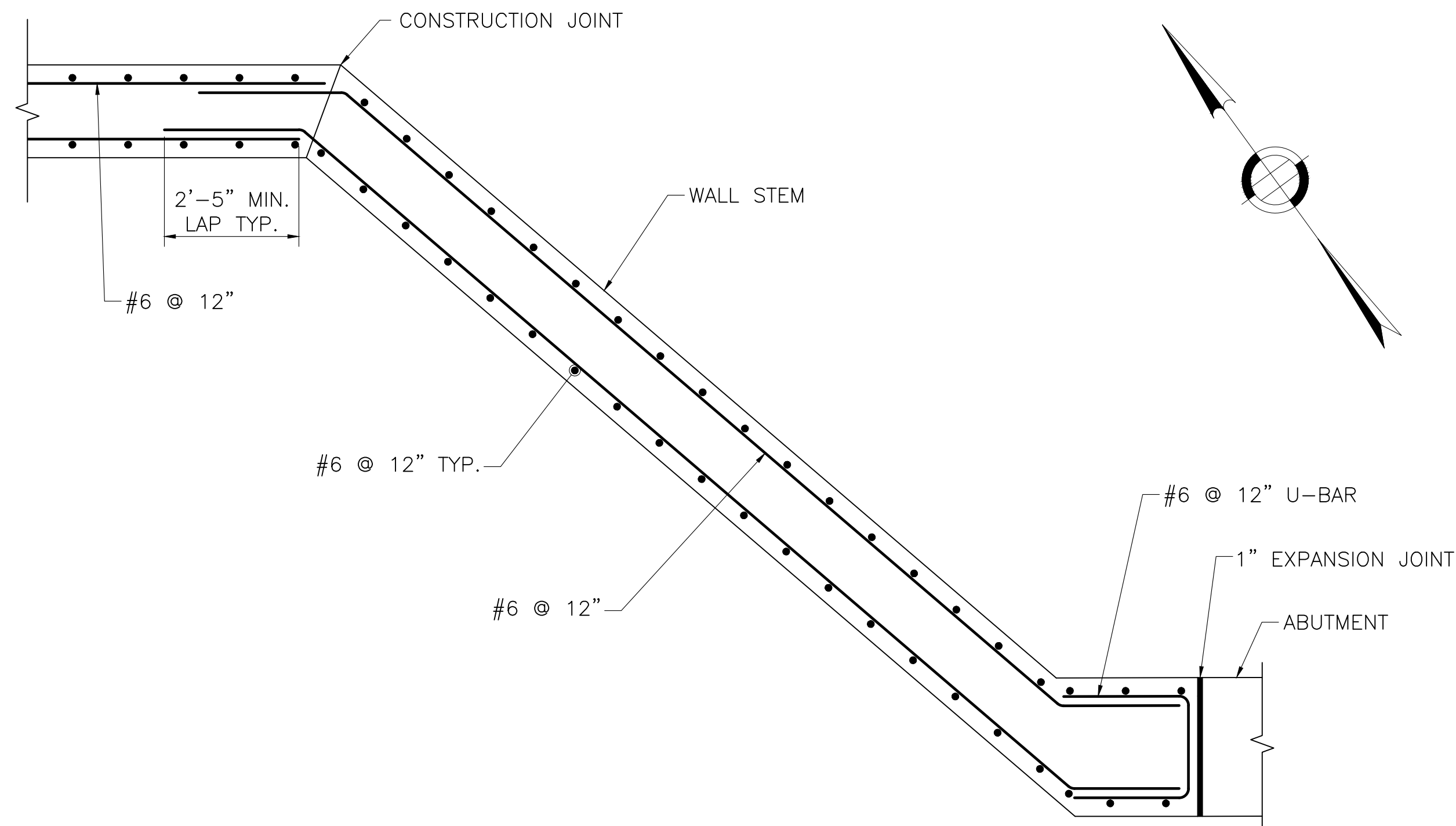
NOT TO SCALE

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- NOTES:**
1. TOP FOOTING REINFORCING MAT SHOWN. BOTTOM MAT IS SIMILAR EXCEPT ADJUST BARS AS NEEDED TO AVOID PILES AND PROVIDE ADDITIONAL BARS AS NEEDED TO MAINTAIN 12" MAXIMUM SPACING.
 2. STEM REINFORCING NOT SHOWN FOR CLARITY.

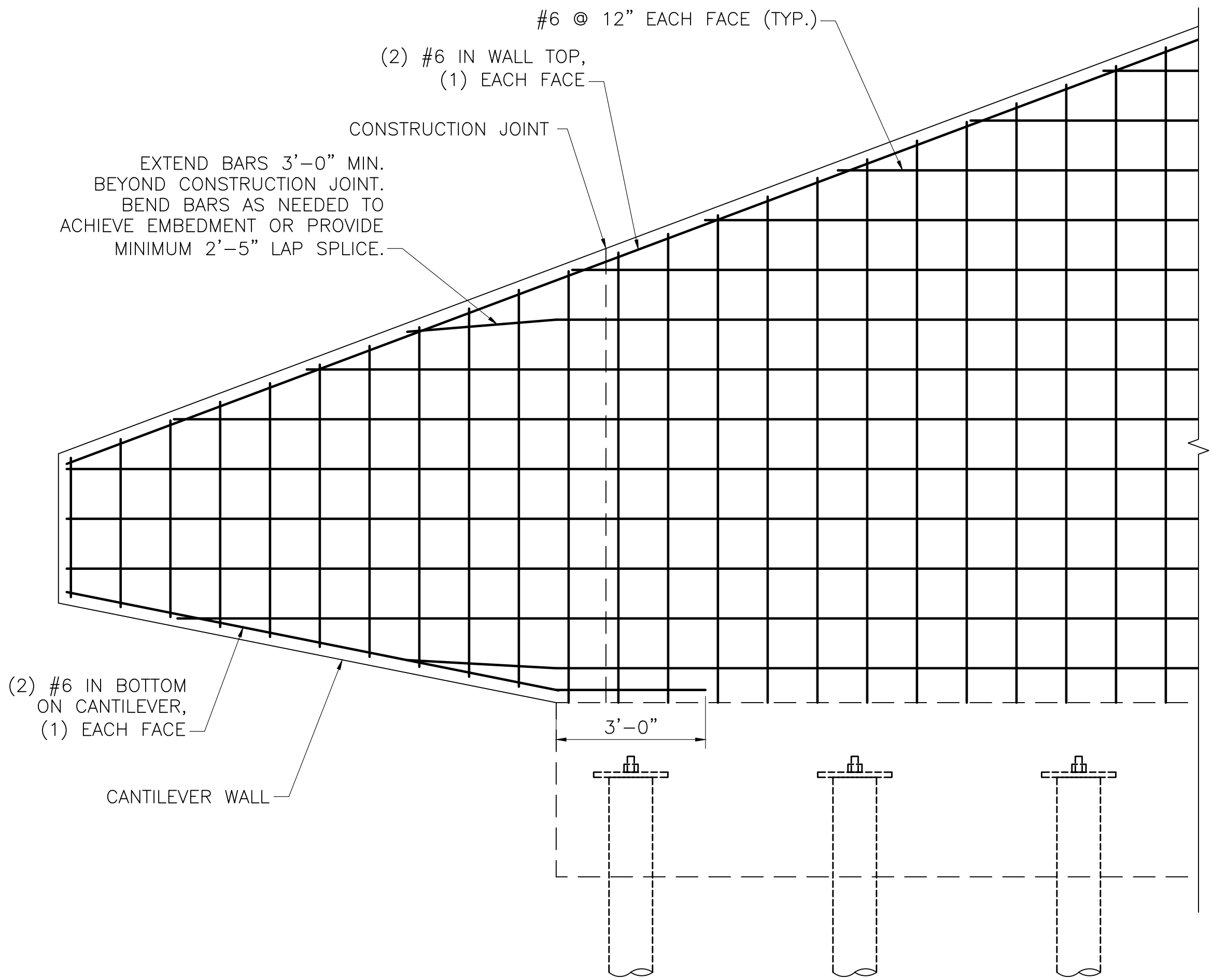
FOOTING CORNER AND END REINFORCING PLAN
SCALE: $\frac{1}{2}" = 1'-0"$



STEM CORNER AND END REINFORCING PLAN
SCALE: $\frac{1}{2}" = 1'-0"$
DOWELS AND FOOTING REINFORCING NOT SHOWN FOR CLARITY.

SOMERVILLE WEBSTER AVE			
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NORTHWEST RETAINING WALL REINFORCING

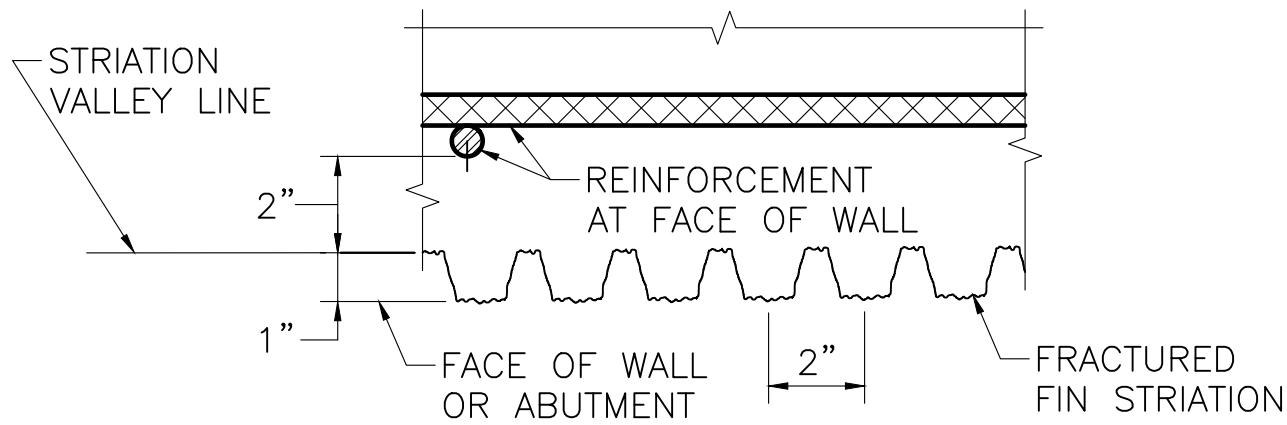


PARTIAL WALL STEM REINFORCING ELEVATION
SCALE: $\frac{1}{2}" = 1'-0"$
DOWELS AND FOOTING REINFORCING NOT SHOWN FOR CLARITY.

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MISCELLANEOUS SUBSTRUCTURE DETAILS

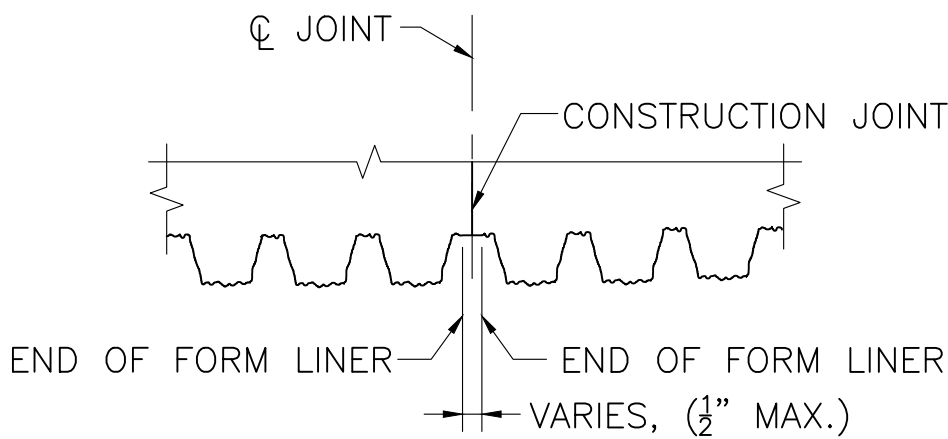


NOTES:

1. THE CONTRACTOR SHALL MAKE SURE THAT THE STRIATION FINS ARE PLUMB AND LINED UP VERTICALLY FROM PANEL TO PANEL FOR THE FULL HEIGHT OF THE WALL.
2. THE HORIZONTAL JOINT MAY BE OMITTED IF THE CONTRACTOR CAN DEMONSTRATE THAT THE FORM LINER PANELS CAN BE INSTALLED END TO END WITHOUT CREATING A VISIBLE SEAM IN THE FINAL CAST CONCRETE.

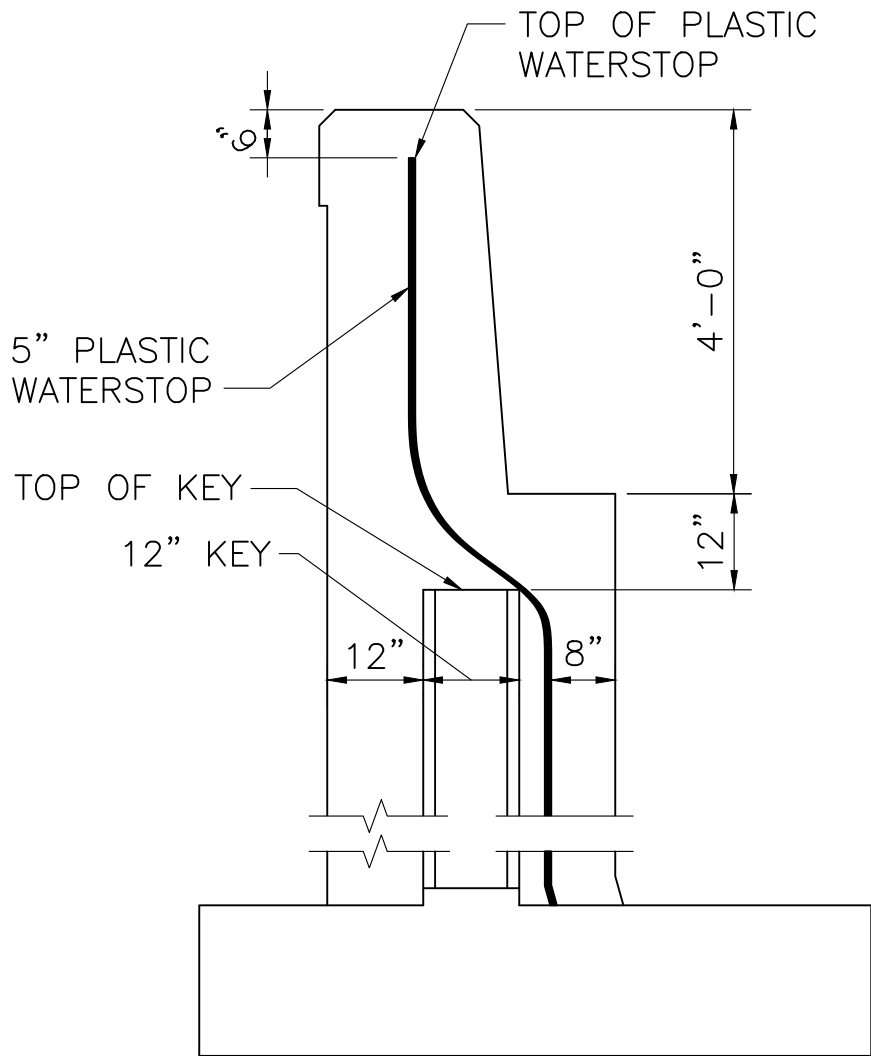
TYPICAL STRIATION DETAIL

SCALE: 3" = 1'-0"



CONSTRUCTION JOINT

SCALE: 3" = 1'-0"

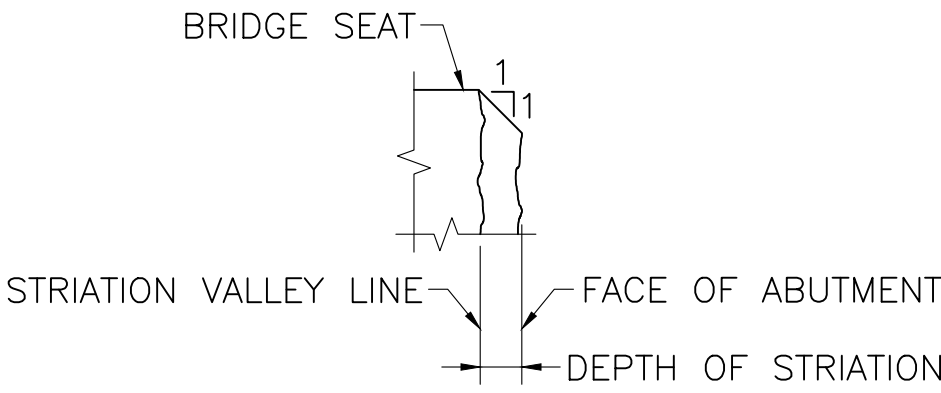


NOTE:

REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.

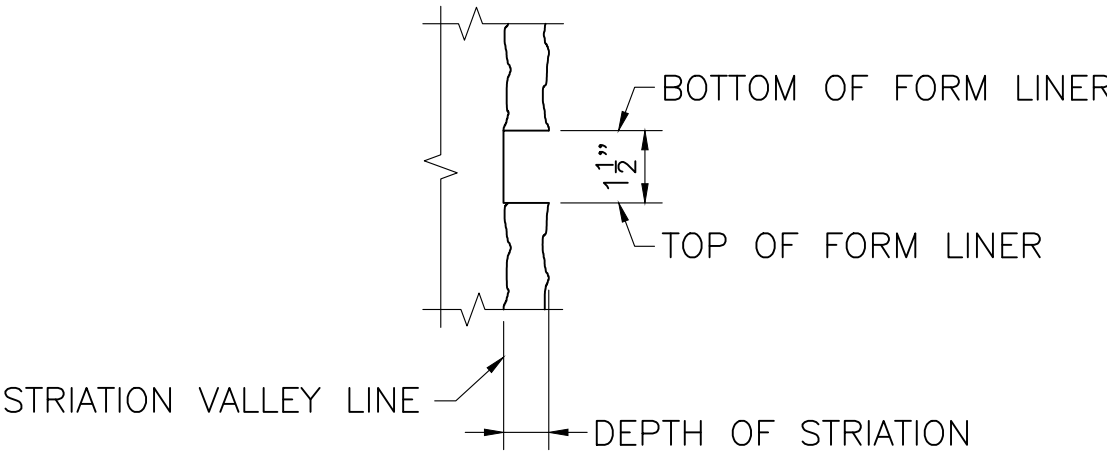
RETAINING WALL SECTION CONSTRUCTION JOINT

SCALE: 1/2" = 1'-0"



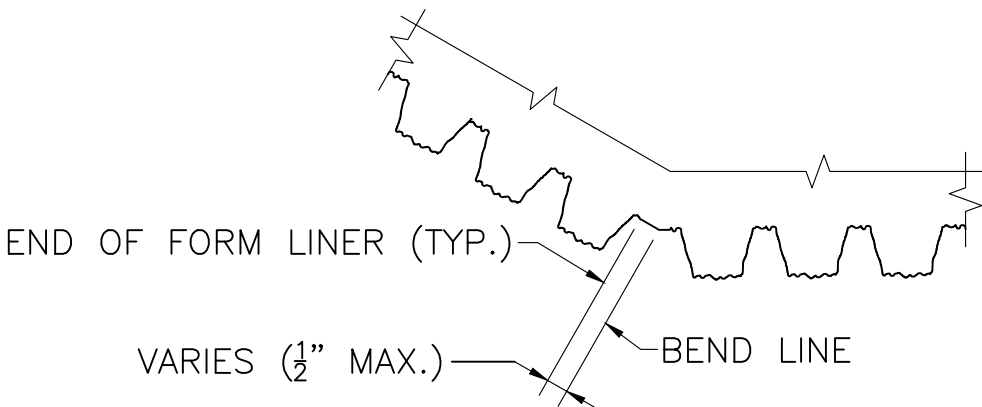
DETAIL AT BRIDGE SEAT

SCALE: 3" = 1'-0"



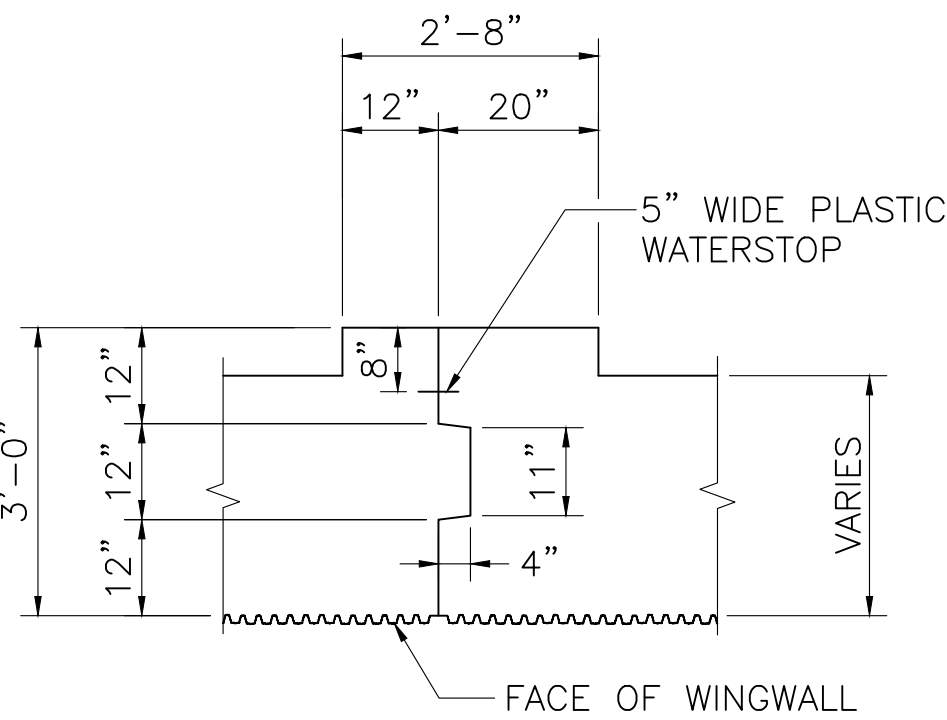
HORIZONTAL PANEL JOINT

SCALE: 3" = 1'-0"



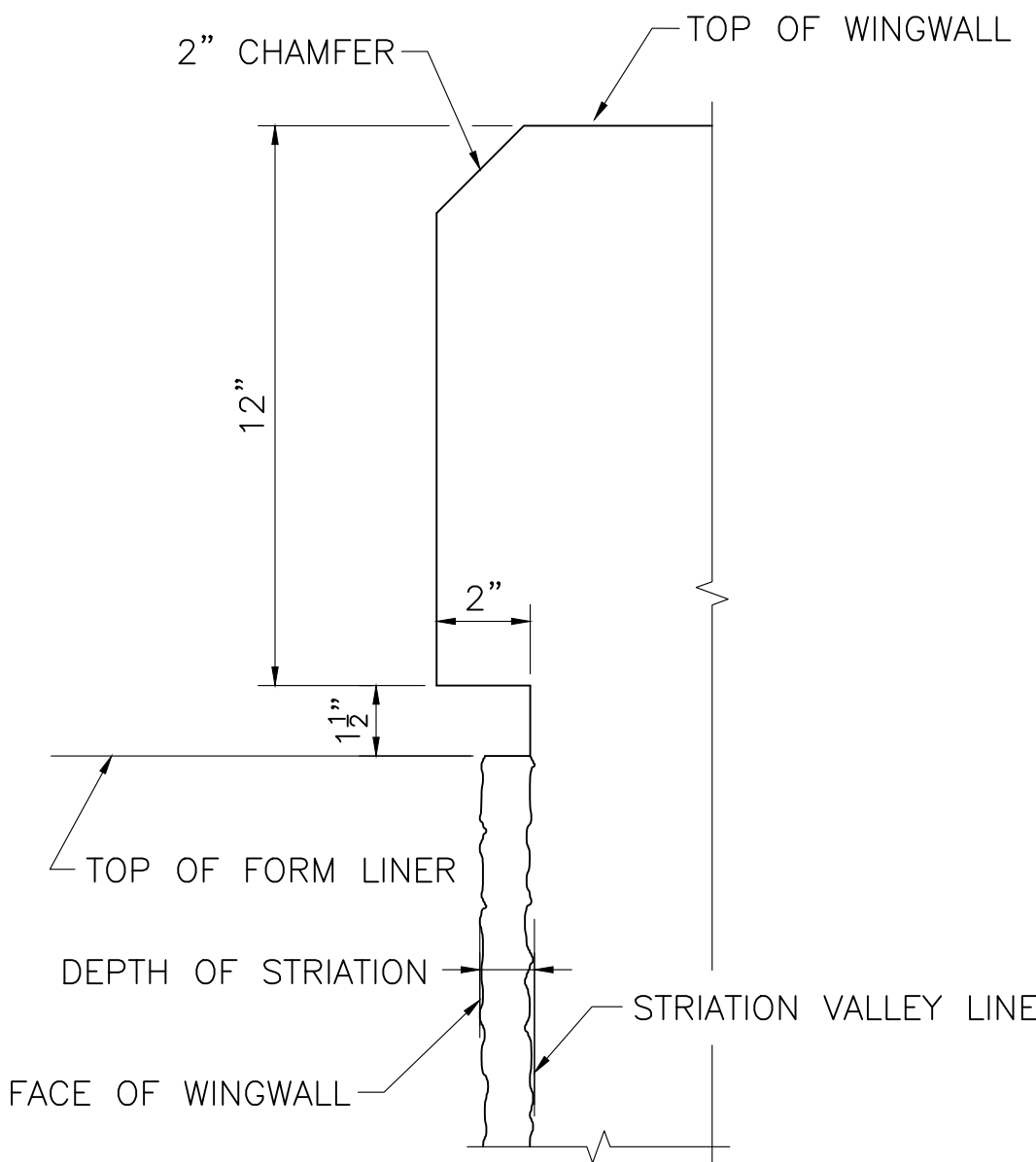
DETAIL AT WALL CORNER

SCALE: 3" = 1'-0"



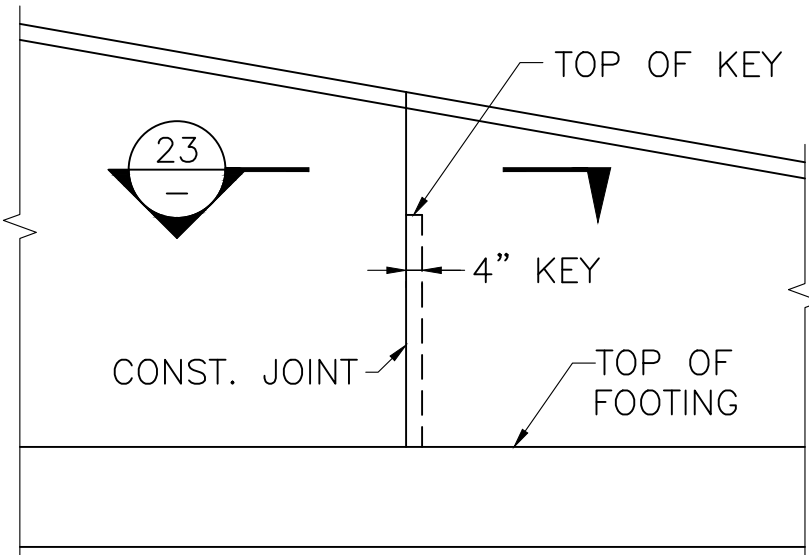
CONSTRUCTION JOINT (23)

SCALE: 1/2" = 1'-0"



DETAIL AT TOP OF RETAINING WALL

SCALE: 1/2" = 1'-0"



RETAINING WALL ELEVATION CONSTRUCTION JOINT

SCALE: 1/2" = 1'-0"

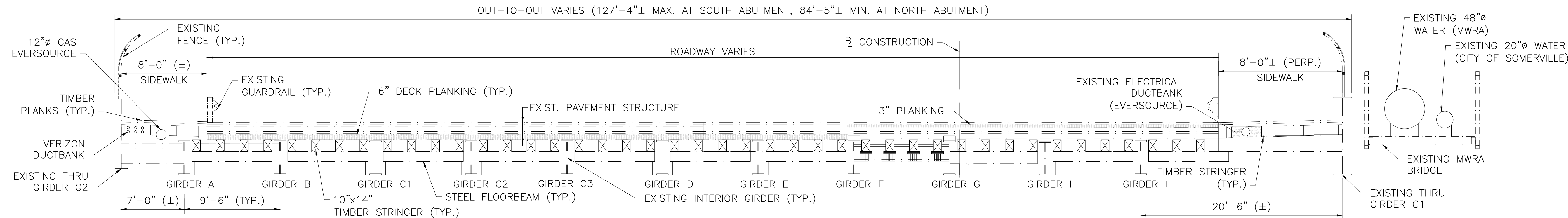
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NOTE: FOR WATERSTOP DETAILS SEE SHEET 17

SOMERVILLE
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CROSS SECTIONS

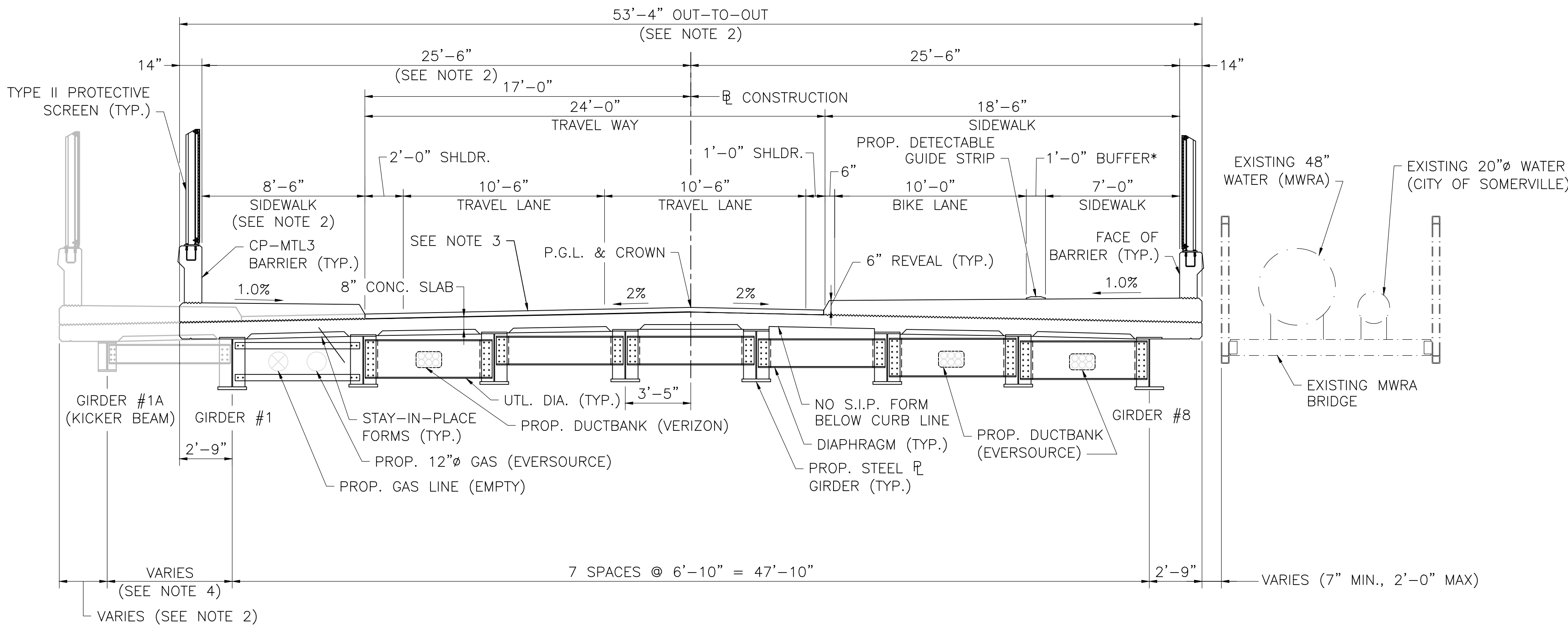


NOTES:

- EXISTING CROSS SECTION DRAWN AT 3'-6" FROM SOUTH ABUTMENT ϕ OF BEARING.
- WIDTH OF PROPOSED OVERHANG VARIES AT SOUTHWEST CORNER OF THE BRIDGE (2'-3" MIN., 3'-0" MAX.)
- 1½" SUPERPAVE BRIDGE SURFACE COURSE-9.5-POLYMER (SSC-B-9.5-P) OVER 1½" SUPERPAVE BRIDGE PROTECTIVE COURSE-9.5-POLYMER (SPC-B-9.5-P) OVER MEMBERANE WATERPROOFING
- SPACING OF KICKER BEAM TO FASCIA GIRDER # 1 VARIES FROM 5'-6" SQUARE AT THE SOUTH ABUTMENT TO 0" AT THE CONNECTION TO GIRDER #1.

EXISTING CROSS SECTION

SCALE: $\frac{3}{16}" = 1'-0"$
(SEE NOTE 1)



PROPOSED CROSS SECTION

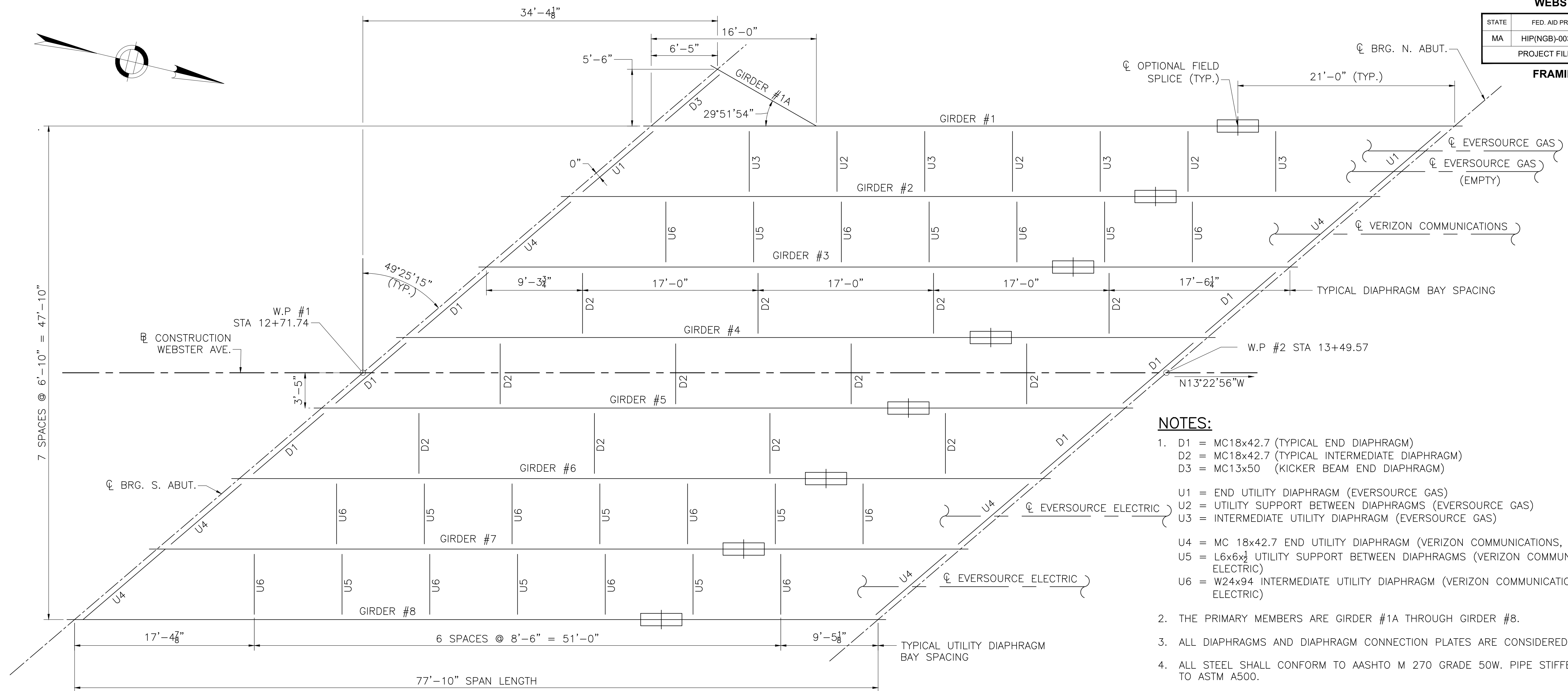
SCALE: $\frac{1}{4}" = 1'-0"$

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FRAMING PLAN

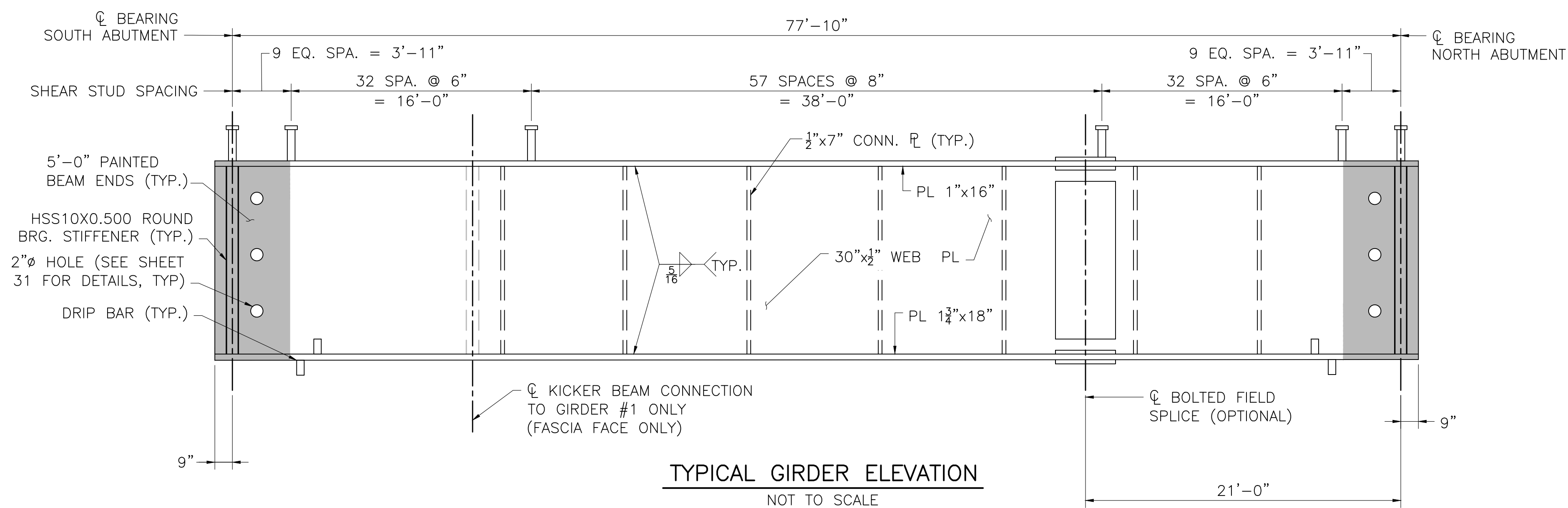


FRAMING PLAN

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

NOTES:

- D1 = MC18x42.7 (TYPICAL END DIAPHRAGM)
D2 = MC18x42.7 (TYPICAL INTERMEDIATE DIAPHRAGM)
D3 = MC13x50 (KICKER BEAM END DIAPHRAGM)
U1 = END UTILITY DIAPHRAGM (EVERSOURCE GAS)
U2 = UTILITY SUPPORT BETWEEN DIAPHRAGMS (EVERSOURCE GAS)
U3 = INTERMEDIATE UTILITY DIAPHRAGM (EVERSOURCE GAS)
U4 = MC 18x42.7 END UTILITY DIAPHRAGM (VERIZON COMMUNICATIONS, EVERSOURCE ELECTRIC)
U5 = L6x6x $\frac{1}{2}$ UTILITY SUPPORT BETWEEN DIAPHRAGMS (VERIZON COMMUNICATIONS, EVERSOURCE ELECTRIC)
U6 = W24x94 INTERMEDIATE UTILITY DIAPHRAGM (VERIZON COMMUNICATIONS, EVERSOURCE ELECTRIC)
- THE PRIMARY MEMBERS ARE GIRDER #1A THROUGH GIRDER #8.
- ALL DIAPHRAGMS AND DIAPHRAGM CONNECTION PLATES ARE CONSIDERED SECONDARY MEMBERS.
- ALL STEEL SHALL CONFORM TO AASHTO M 270 GRADE 50W. PIPE STIFFENERS SHALL CONFORM TO ASTM A500.
- ALL HIGH STRENGTH BOLTS SHALL BE $\frac{7}{8}$ " DIA. CONFORMING TO THE REQUIREMENTS OF ASTM F3125 GRADE A325 TYPE 3, UNLESS OTHERWISE NOTED. NUTS AND WASHERS SHALL BE LISTED AS SUITABLE IN THE ASTM F3125 SPECIFICATION FOR GRADE A325.
- ALL CONNECTIONS HAVE BEEN DESIGNED FOR A CLASS B SURFACE CONDITION, ASSUMING A COEFFICIENT OF FRICTION ON THE FAYING SURFACES EQUAL TO OR GREATER THAN 0.5.
- ALL WELDING AND THE PREPARATION AND ASSEMBLY OF MATERIAL FOR WELDING SHALL CONFORM TO THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, THE BRIDGE WELDING CODE (AASHTO AWS D1.5) AND ALL INTERIM REVISIONS PUBLISHED BY AASHTO AS OF THE BID OPENING DATE.
- ALL DIAPHRAGMS SHALL BE DETAILED AND FABRICATED TO THE TOTAL DEAD LOAD FIT (TLDF) CONDITION.
- THE GIRDER SHALL BE FABRICATED SO THAT THE ENDS OF THE GIRDER ARE PLUMB UNDER FULL DEAD LOAD.
- THE UNPAINTED WEATHERING STEEL GIRDER AND ATTACHED PLATES EMBEDDED IN THE CONCRETE END DIAPHRAGM AND WITHIN 12" OF THE ABUTMENT FACE SHALL BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE FINISH COAT COLOR SHALL MATCH AMS STANDARD 595A COLOR NUMBER 30045 OF FEDERAL STANDARD 595B. THE STEEL DIAPHRAGM SHALL NOT BE PAINTED.



TYPICAL GIRDER ELEVATION

NOT TO SCALE

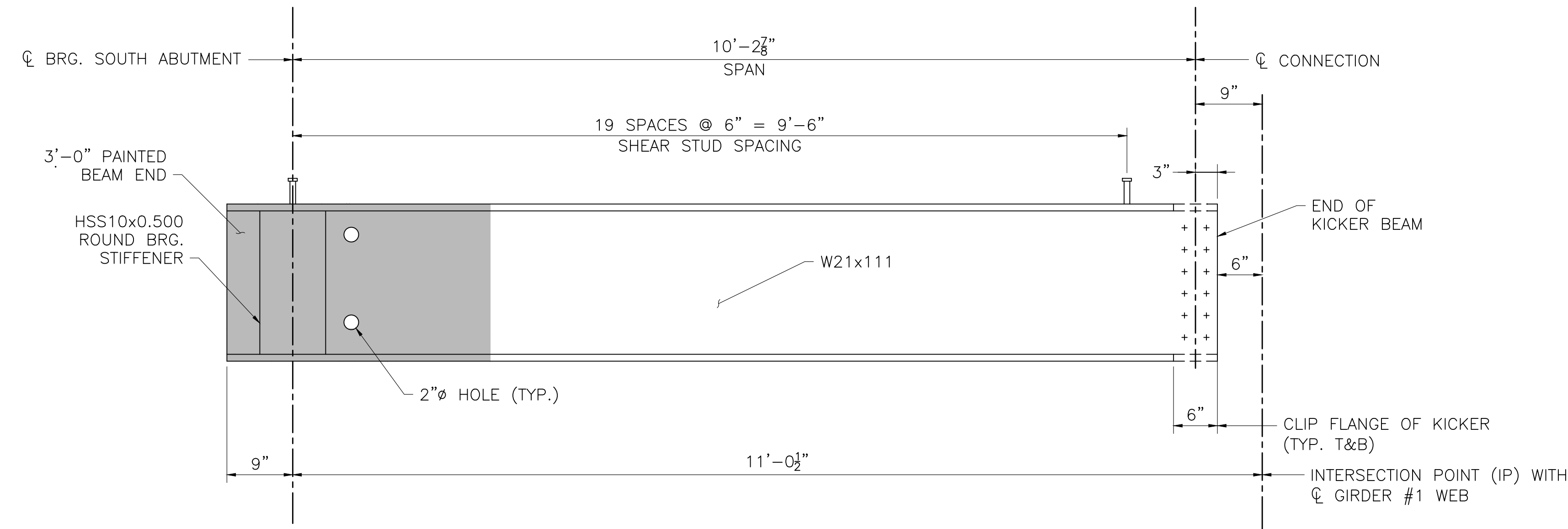
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SHEET 30 OF 44 SHEETS BRIDGE NO. S-17-016 (ATX)

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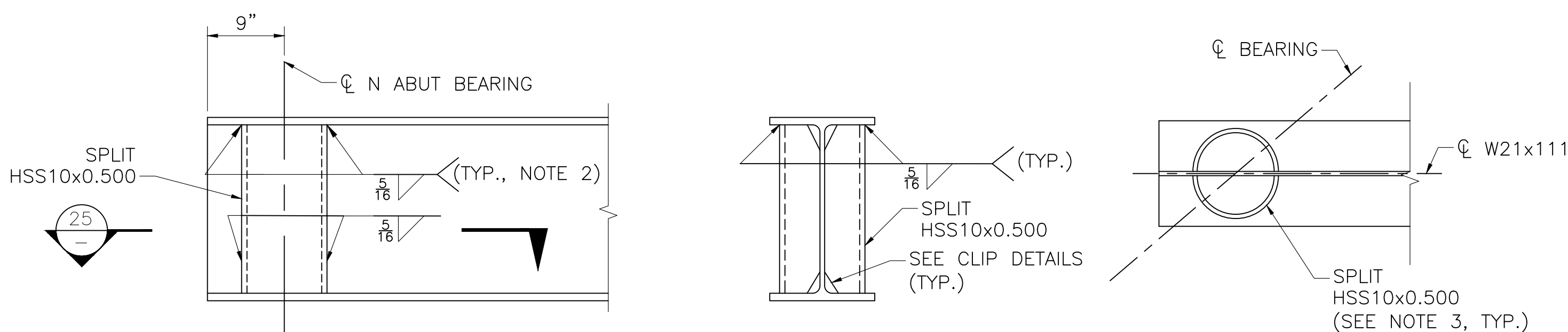
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KICKER BEAM DETAILS



KICKER BEAM G1A ELEVATION

SCALE: 1" = 1'-0"



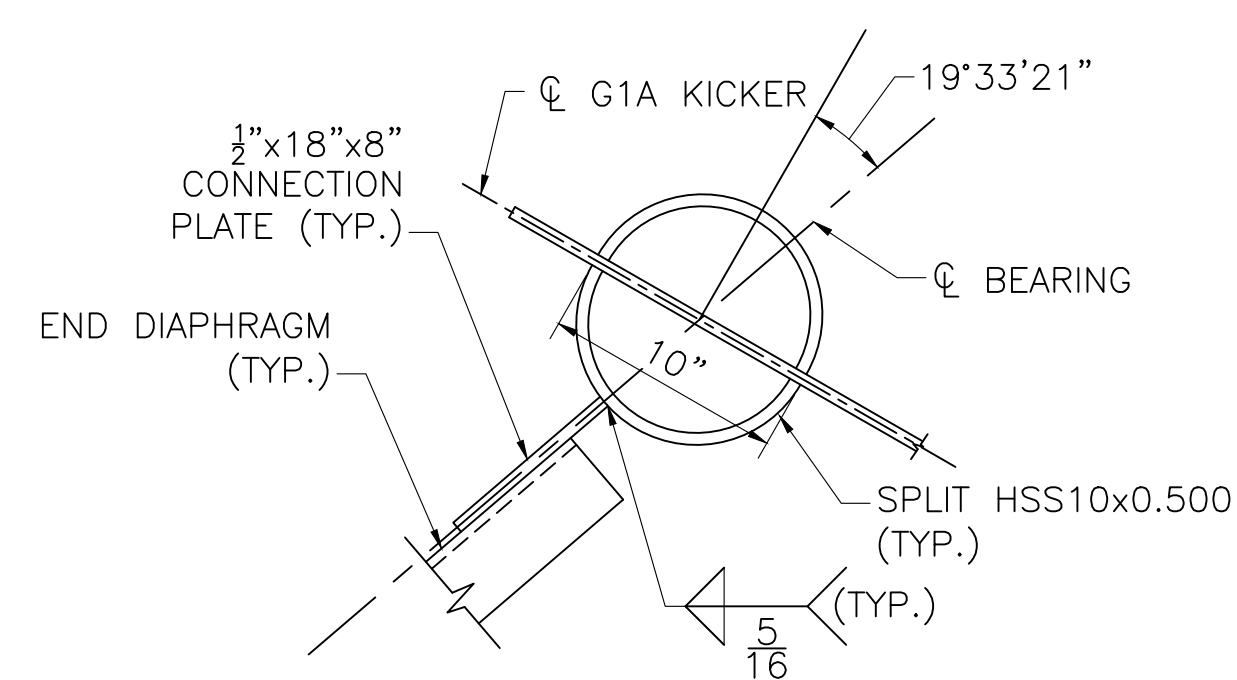
ELEVATION

VERTICAL SECTION

HORIZONTAL SECTION

BEARING STIFFENER AT ABUTMENTS - G1A KICKER

SCALE: 1" = 1'-0"

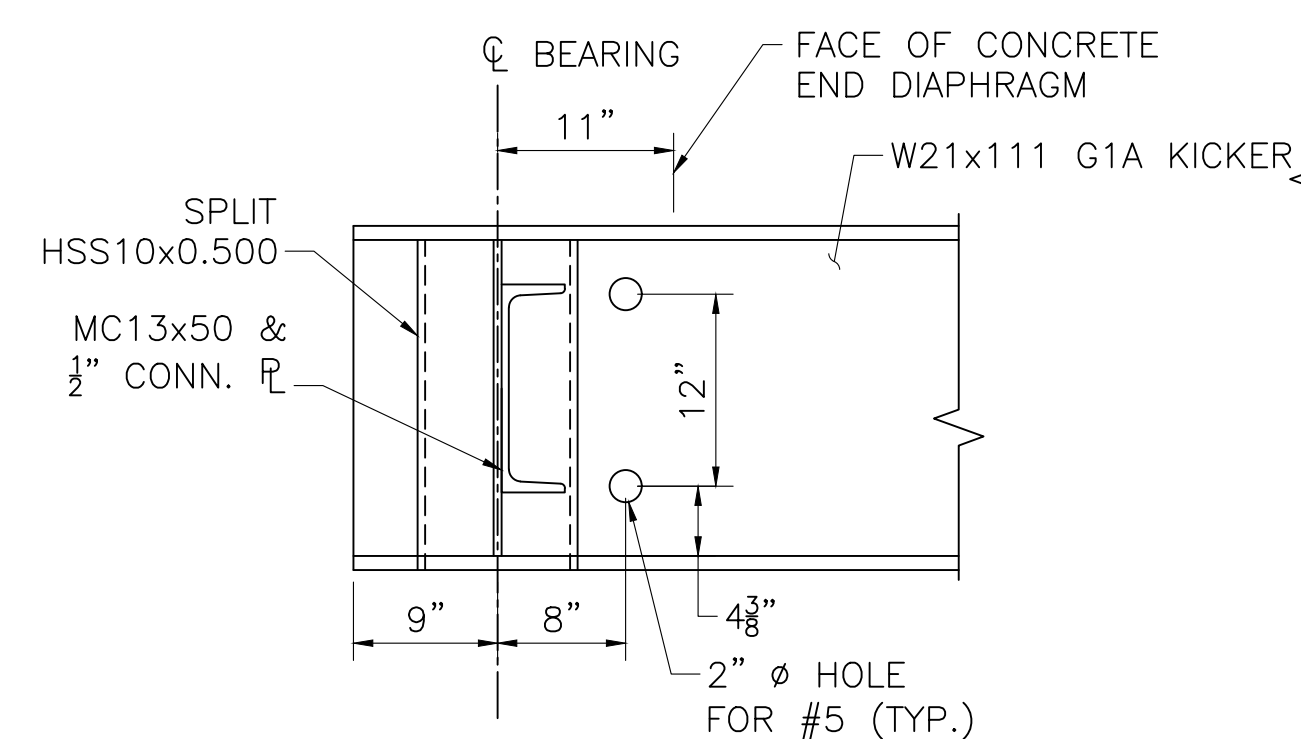


SECTION 25

SCALE: 1 1/2" = 1'-0"

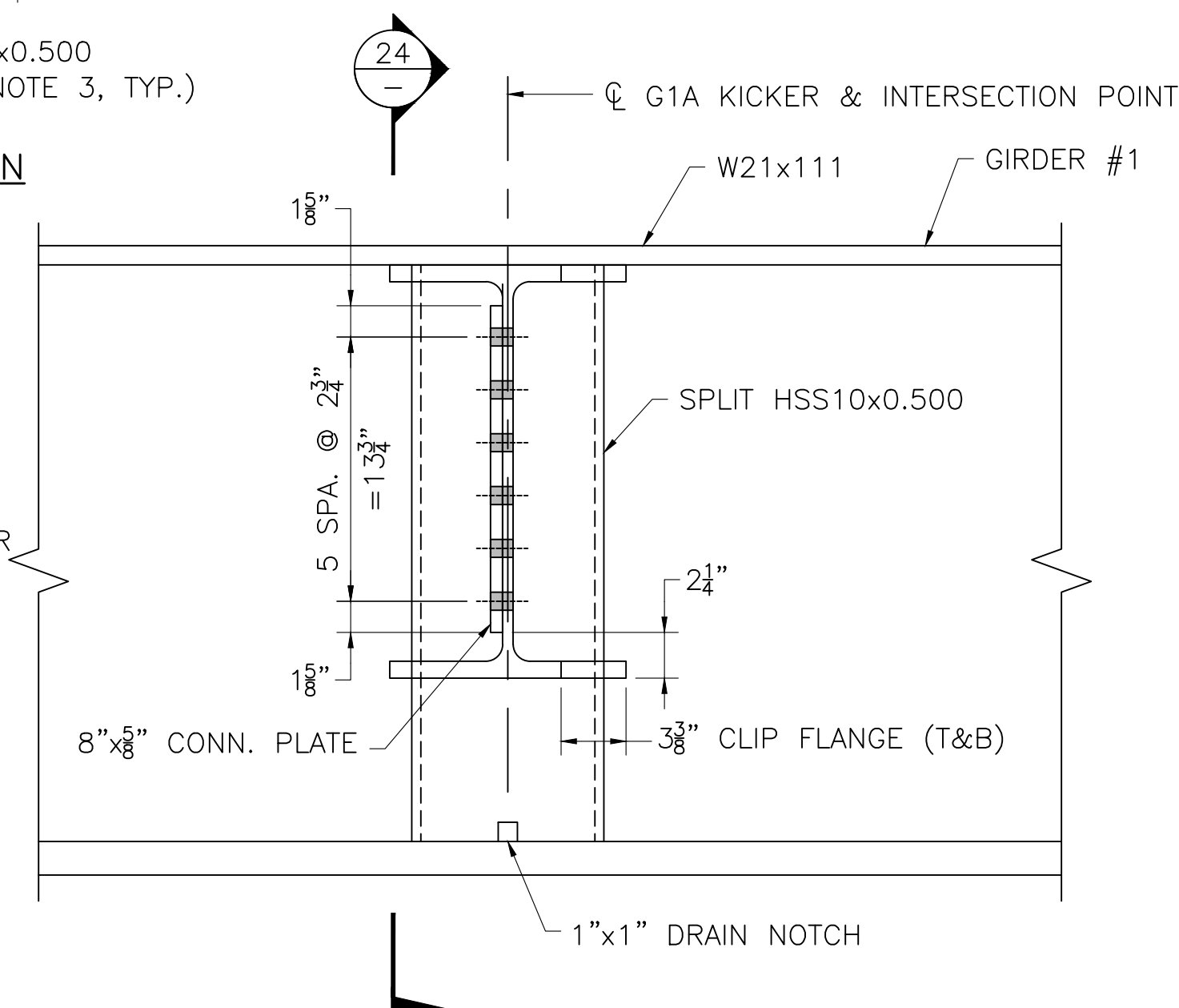
NOTES:

- ALL BEARING STIFFENERS SHALL BE PLUMB.
- BEARING STIFFENERS AT TENSION FLANGE CAN BE WELDED WITH A COMPLETE JOINT PENETRATION WELD (CJP) WITH A REINFORCING FILLET OR BE MILLED FOR TIGHT FIT AND WELDED WITH 5/16" FILLET WELDS BOTH SIDES OF THE STIFFENER.
- ROUND HSS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE C.



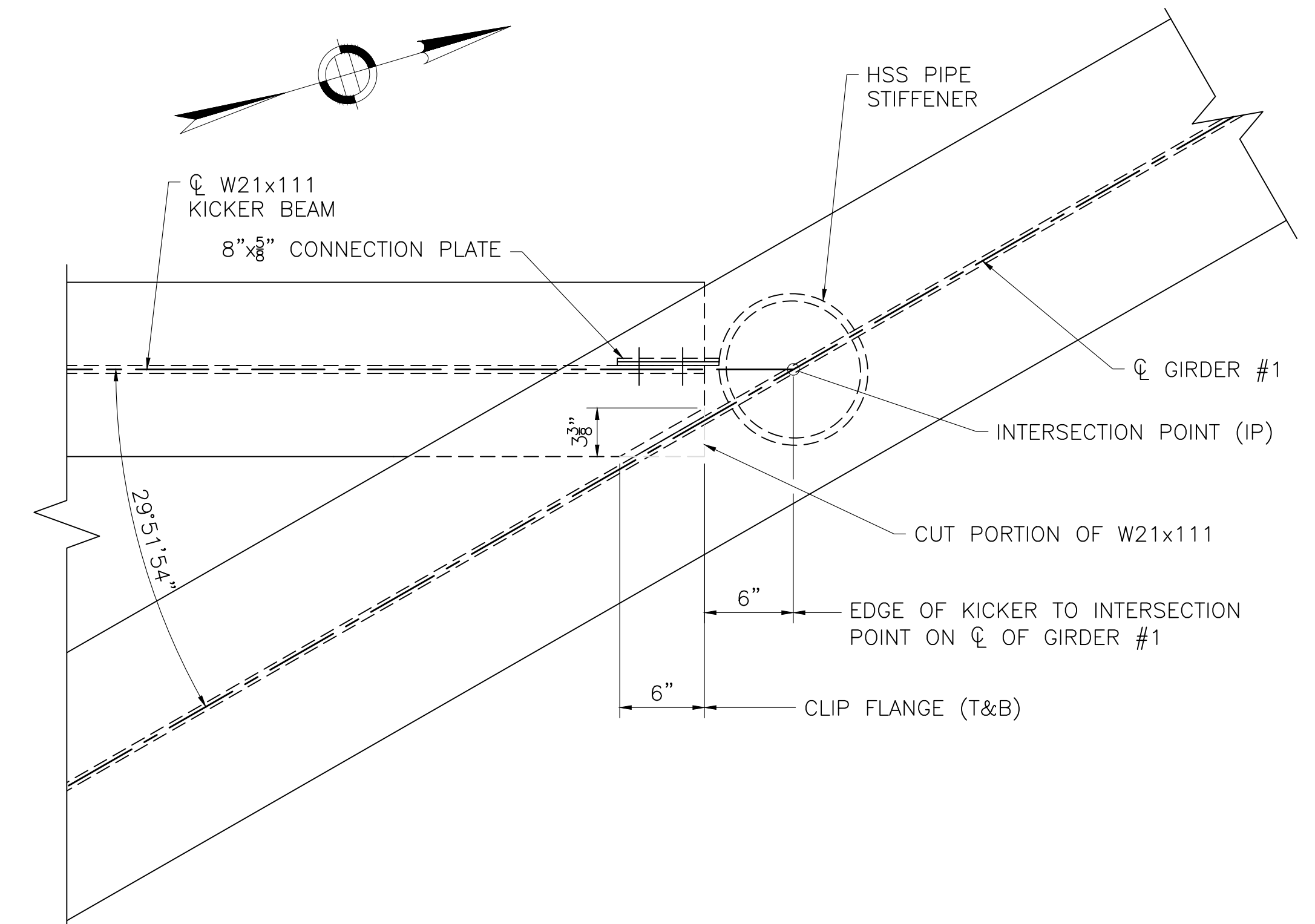
TYPICAL KICKER END ELEVATION

SCALE: 1" = 1'-0"



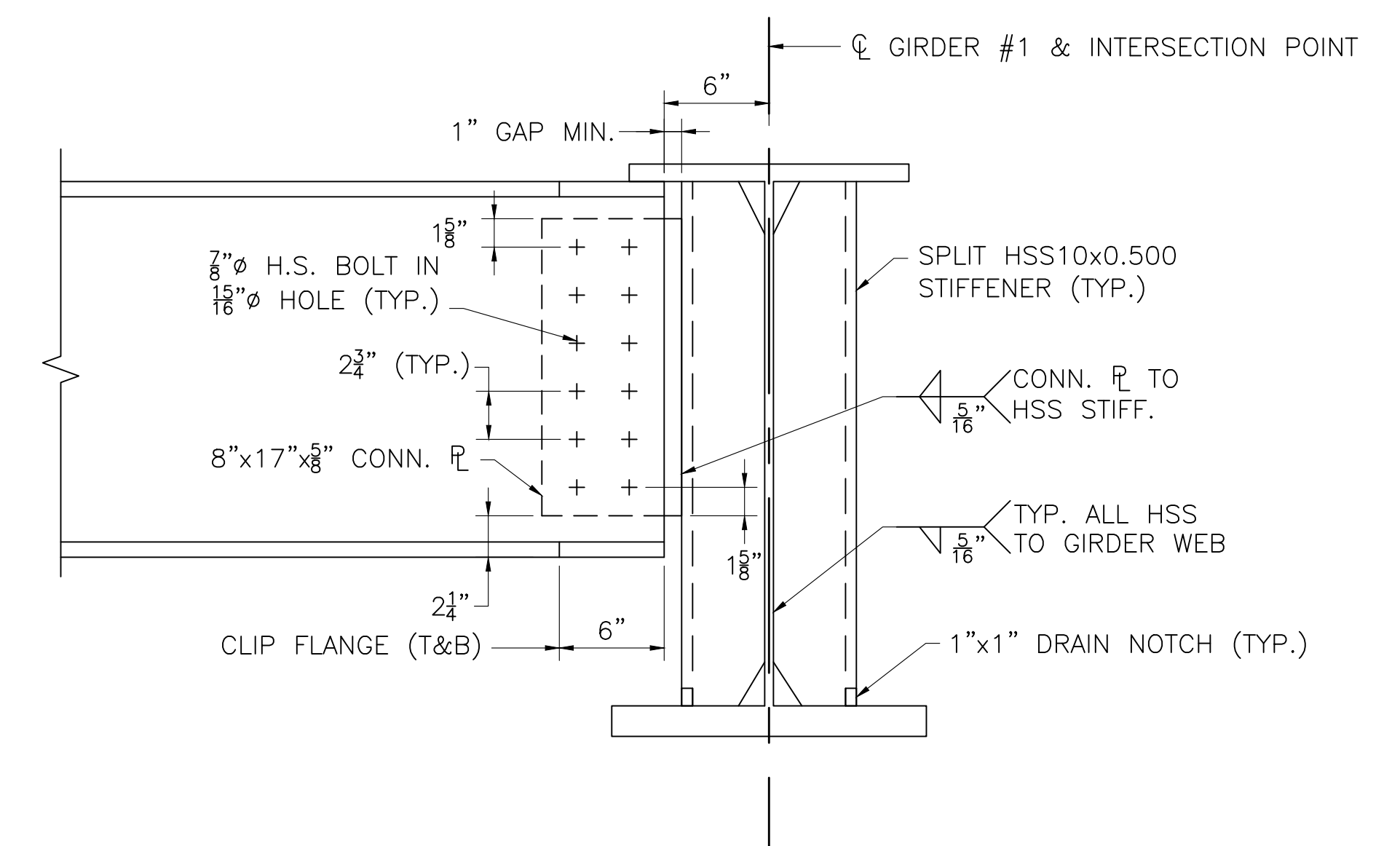
KICKER BEAM #1A TO GIRDER #1 CONNECTION DETAIL

SCALE: 1 1/2" = 1'-0"



KICKER BEAM PLAN

SCALE: 1 1/2" = 1'-0"



SECTION 24

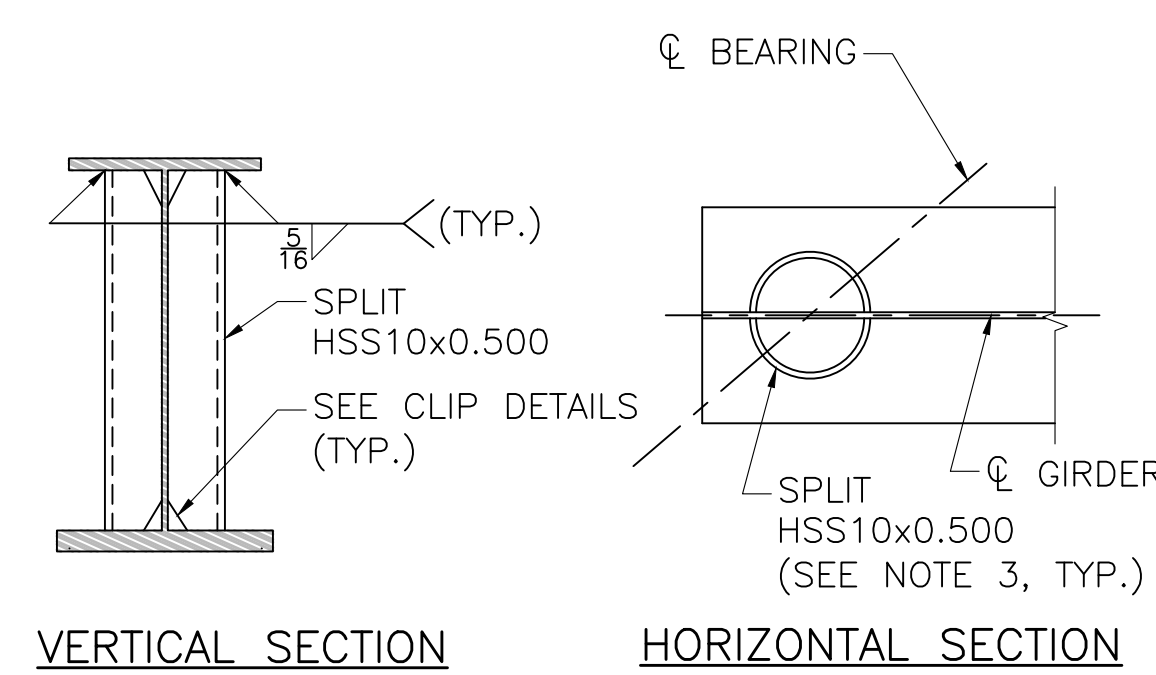
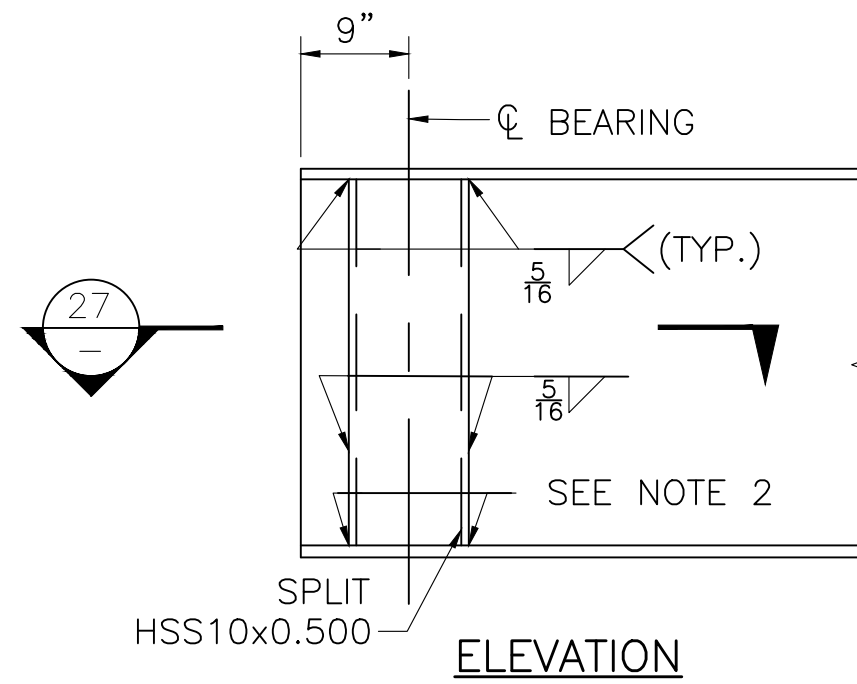
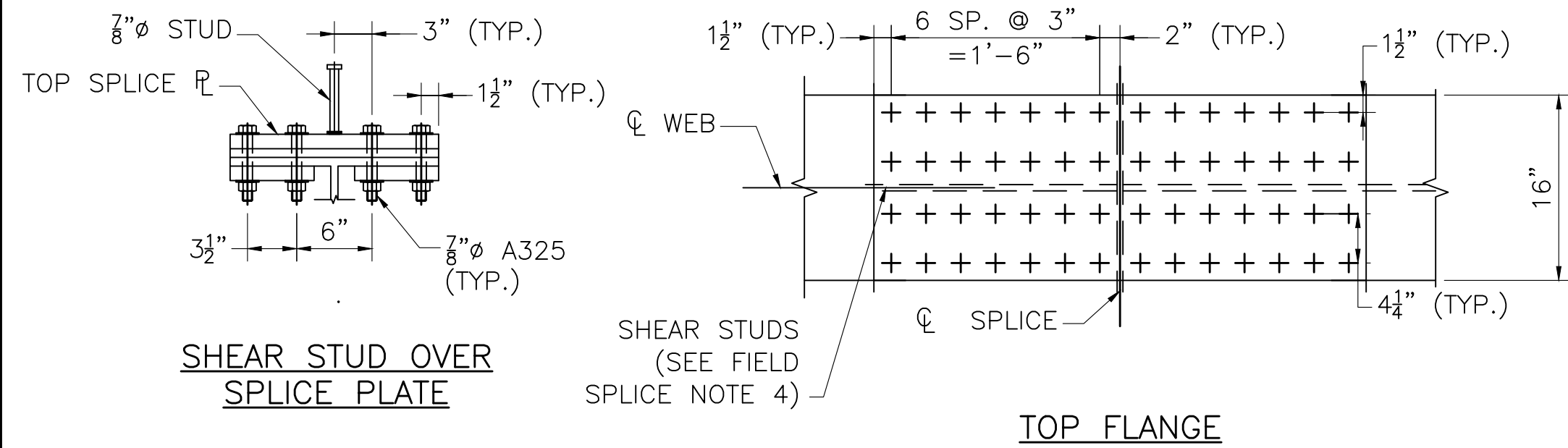
SCALE: 1 1/2" = 1'-0"

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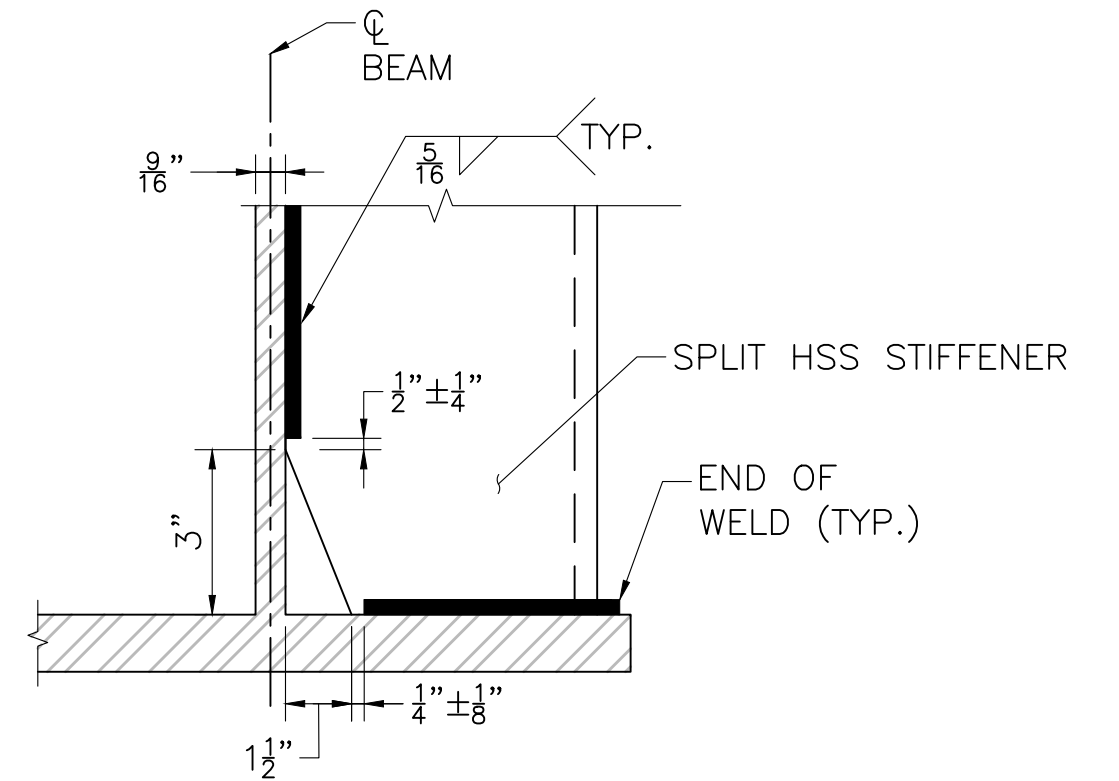
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STEEL DETAILS I



BEARING STIFFENER AT ABUTMENTS

SCALE: 3/4" = 1'-0"

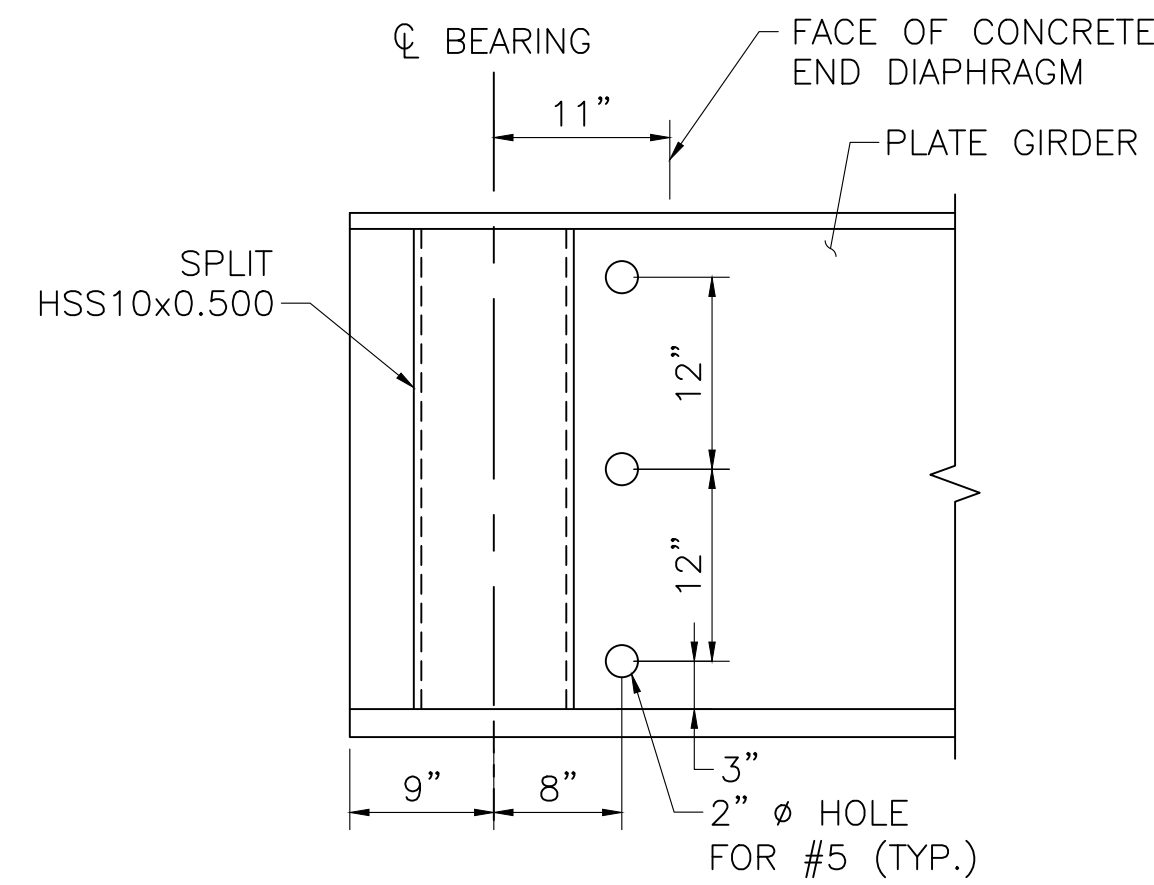
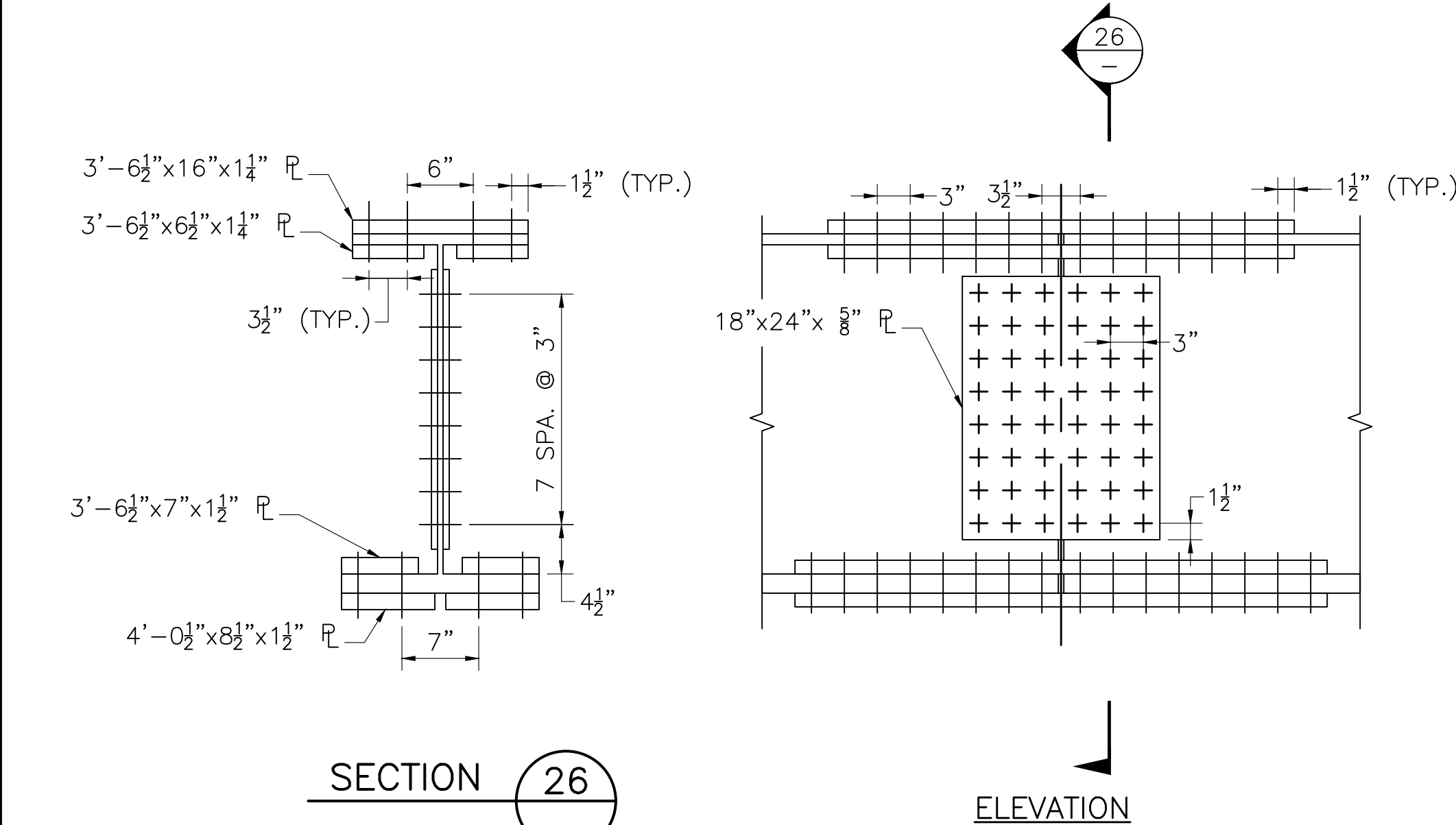


ROUND BEARING STIFFENER CLIP DETAIL

NOT TO SCALE

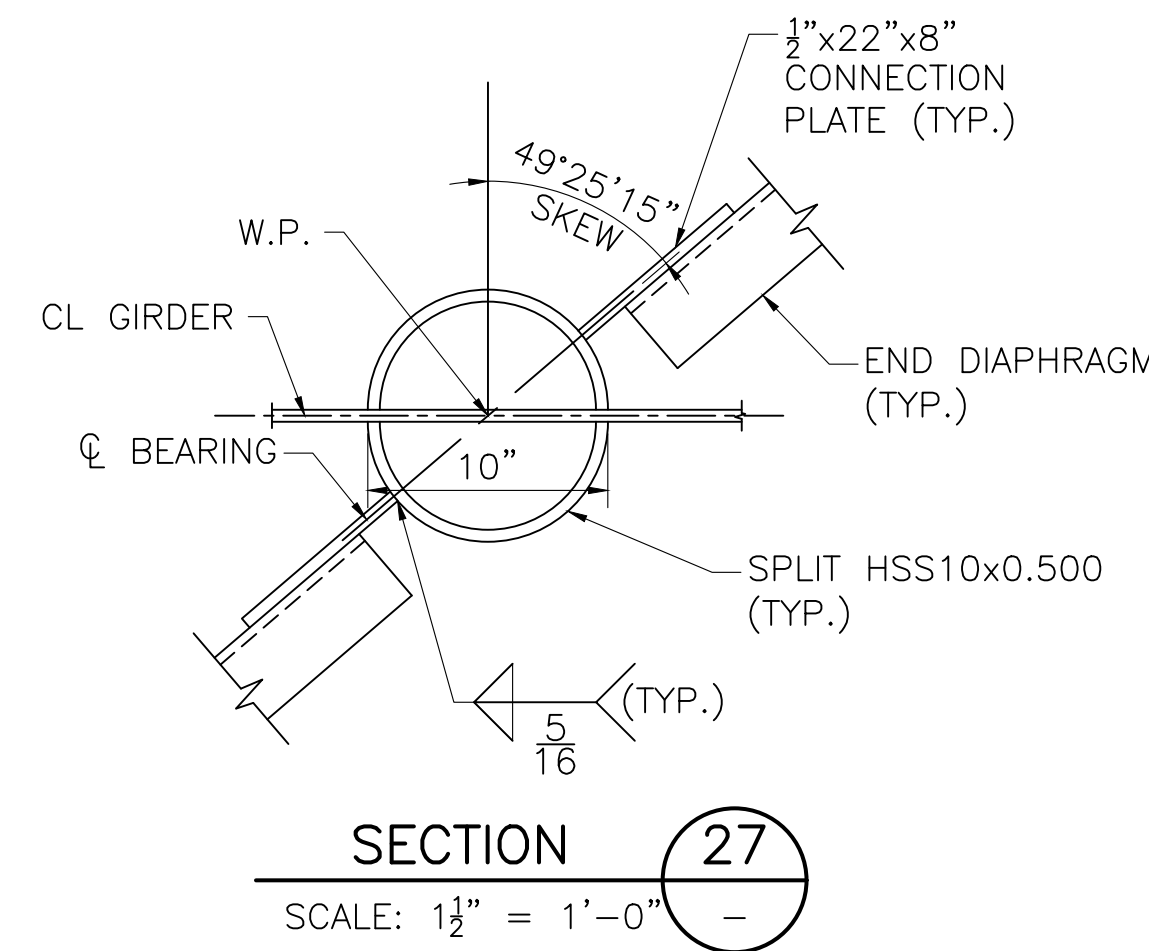
NOTES:

- ALL BEARING STIFFENERS SHALL BE PLUMB.
- BEARING STIFFENERS AT TENSION FLANGE CAN BE WELDED WITH A COMPLETE JOINT PENETRATION WELD (CJP) WITH A REINFORCING FILLET OR FABRICATED FOR TIGHT FIT AND WELDED WITH 5/16" FILLET WELDS BOTH SIDES OF THE STIFFENER.
- ROUND HSS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE C.



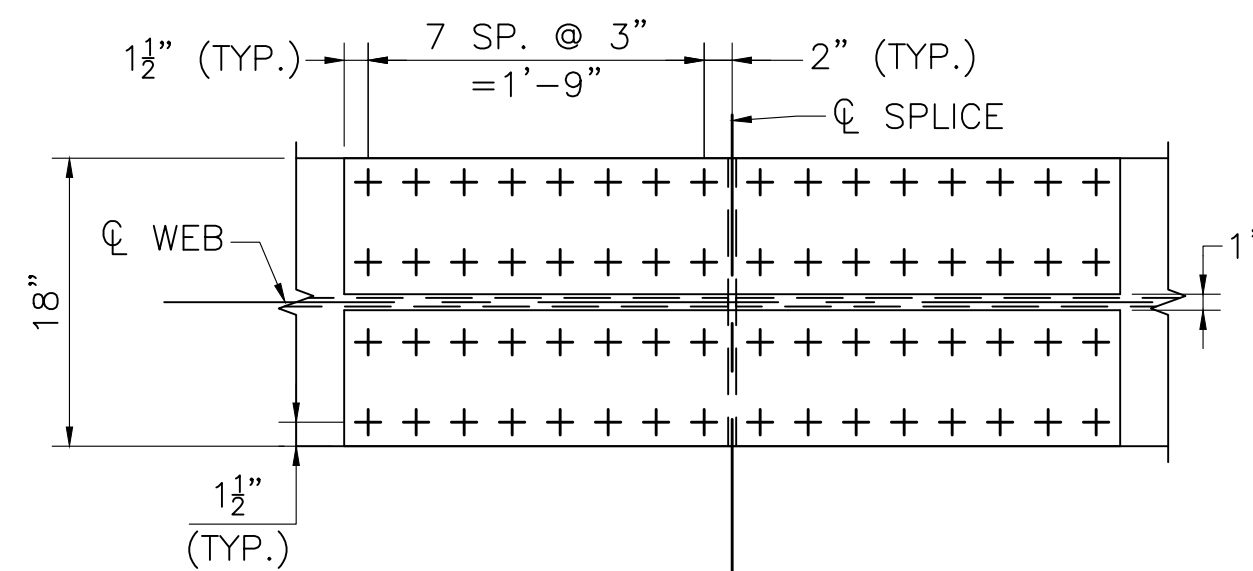
TYPICAL INTERIOR GIRDER END ELEVATION

SCALE: 1" = 1'-0"



SECTION

SCALE: 1 1/2" = 1'-0"

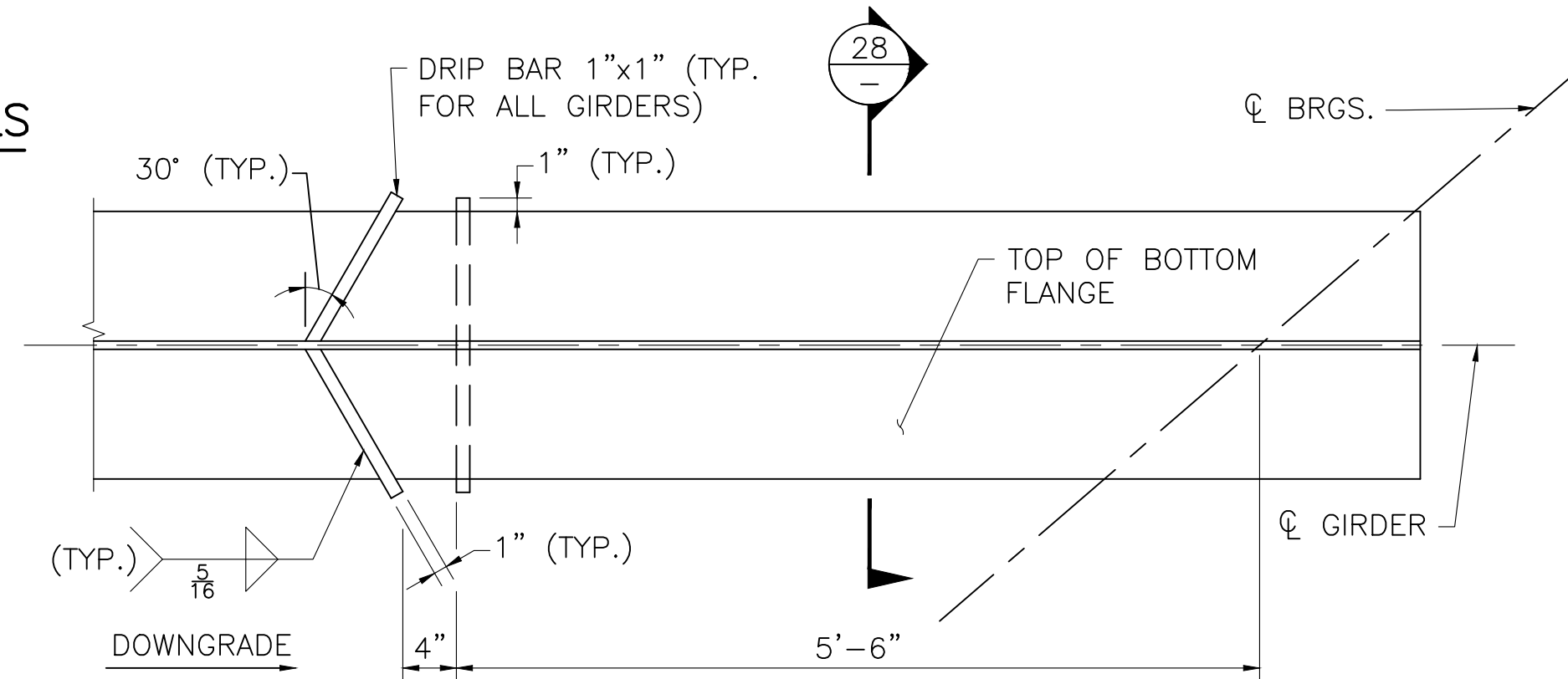


GIRDER BOLTED FIELD SPLICE DETAILS

SCALE: 1" = 1'-0"

FIELD SPLICE NOTES:

- BOLTED FIELD SPLICES SHALL BE CONSIDERED SLIP-CRITICAL CONNECTIONS WITH CLASS B FAYING SURFACES.
- + DENOTES A 7/8" diameter HIGH STRENGTH BOLTS CONFORMING TO THE REQUIREMENTS OF ASTM F3125 GRADE A325 TYPE 3. NUTS AND WASHERS SHALL BE LISTED AS SUITABLE IN THE ASTM F3125 SPECIFICATION FOR GRADE A325.
- FILLER PLATES SHALL CONFORM TO AASHTO M 270 GRADE 50W OR ASTM A606.
- ONE ROW OF STUD SHEAR CONNECTORS SHALL BE PLACED ALONG THE CENTERLINE OF THE TOP FLANGE SPLICE PLATE, SEE SHEAR STUD OVER SPLICE PLATE DETAIL ON THIS SHEET.

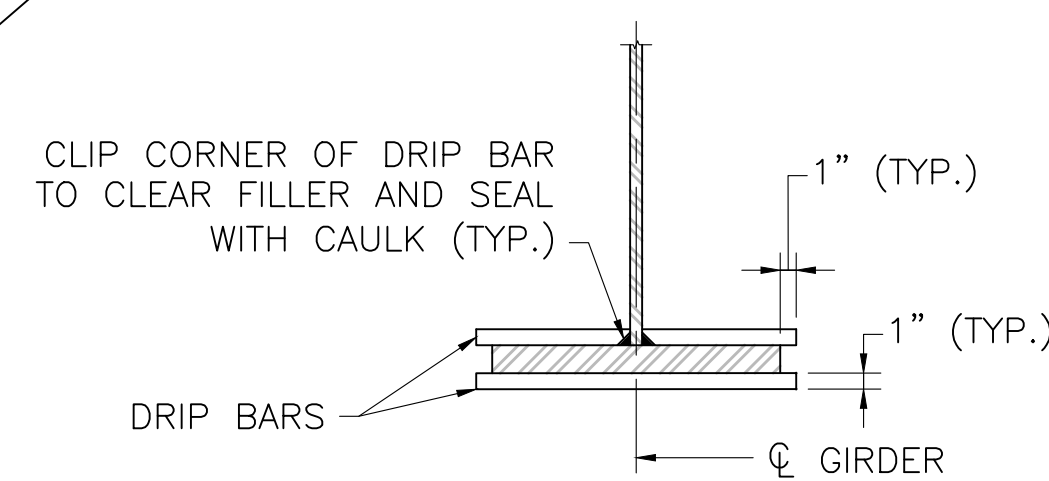


NOTE:

DRIP BARS SHALL BE LOCATED ON THE LOW END OF EACH SPAN FOR ALL GIRDERS

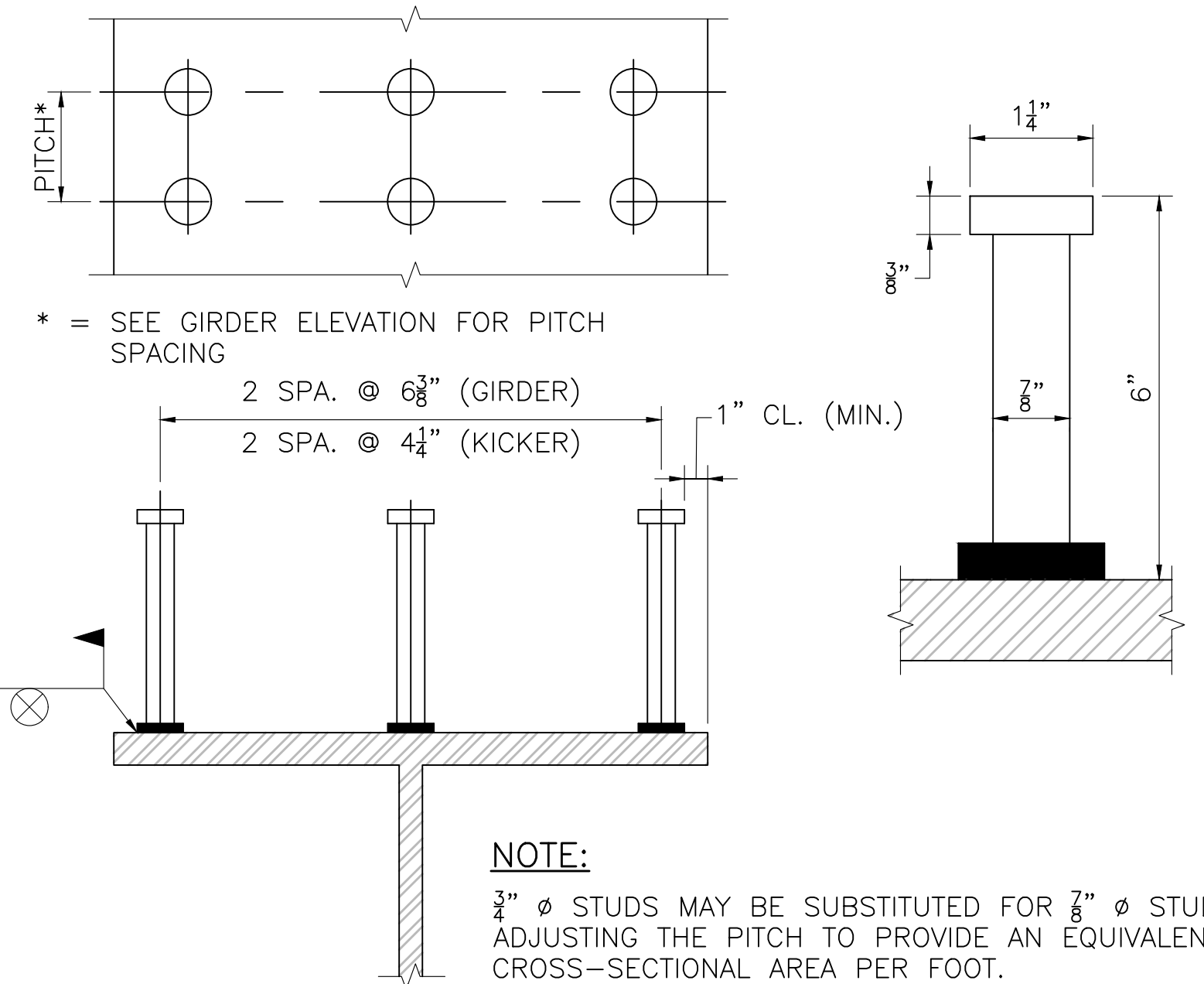
DRIP BAR DETAIL

SCALE: 1" = 1'-0"



SECTION

SCALE: 1" = 1'-0"



NOTE:

3/4" diameter STUDS MAY BE SUBSTITUTED FOR 7/8" diameter STUDS BY ADJUSTING THE PITCH TO PROVIDE AN EQUIVALENT CROSS-SECTIONAL AREA PER FOOT.

STUD SHEAR CONNECTORS

NOT TO SCALE

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10'-6"

1" (TYP.)

1 1/2" (TYP.)

MC18x42.7 SLOPE PARALLEL TO DECK (TYP.)

3 1/2" (TYP.)

2 1/2" (TYP.)

3 1/2" (TYP.)

3" (TYP.)

1" (TYP.)

7/8" Ø H.S. BOLT IN 1 5/8" Ø HOLE (TYP.)

2 3/4" (TYP.)

1" (TYP.)

SPLIT HSS10x0.500 (TYP.)

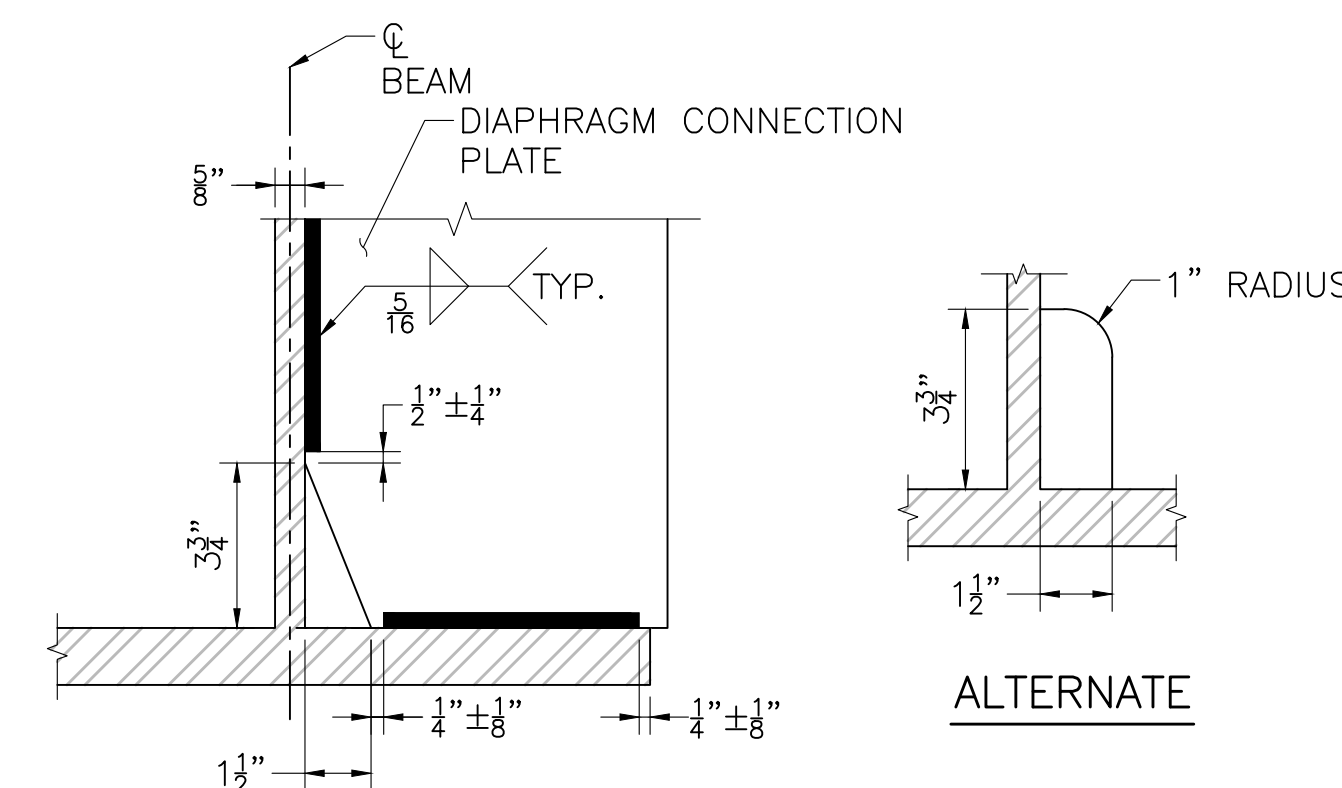
3"x22"x8" CONNECTION PLATE (TYP.)

SECTION 29

SCALE: 1" = 1'-0"

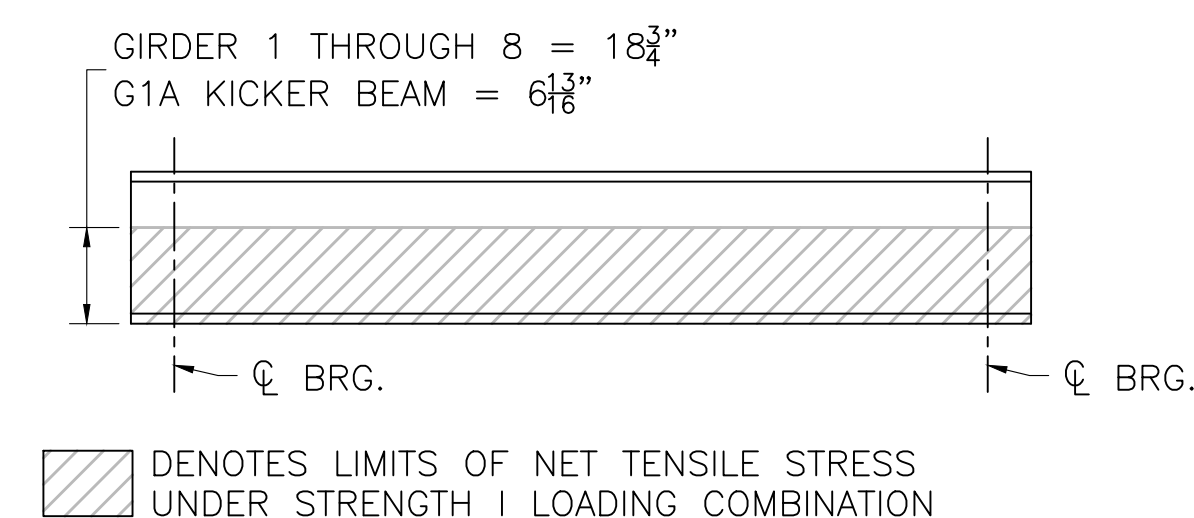
END DIAPHRAGM - D1

SCALE: 1" = 1'-0"



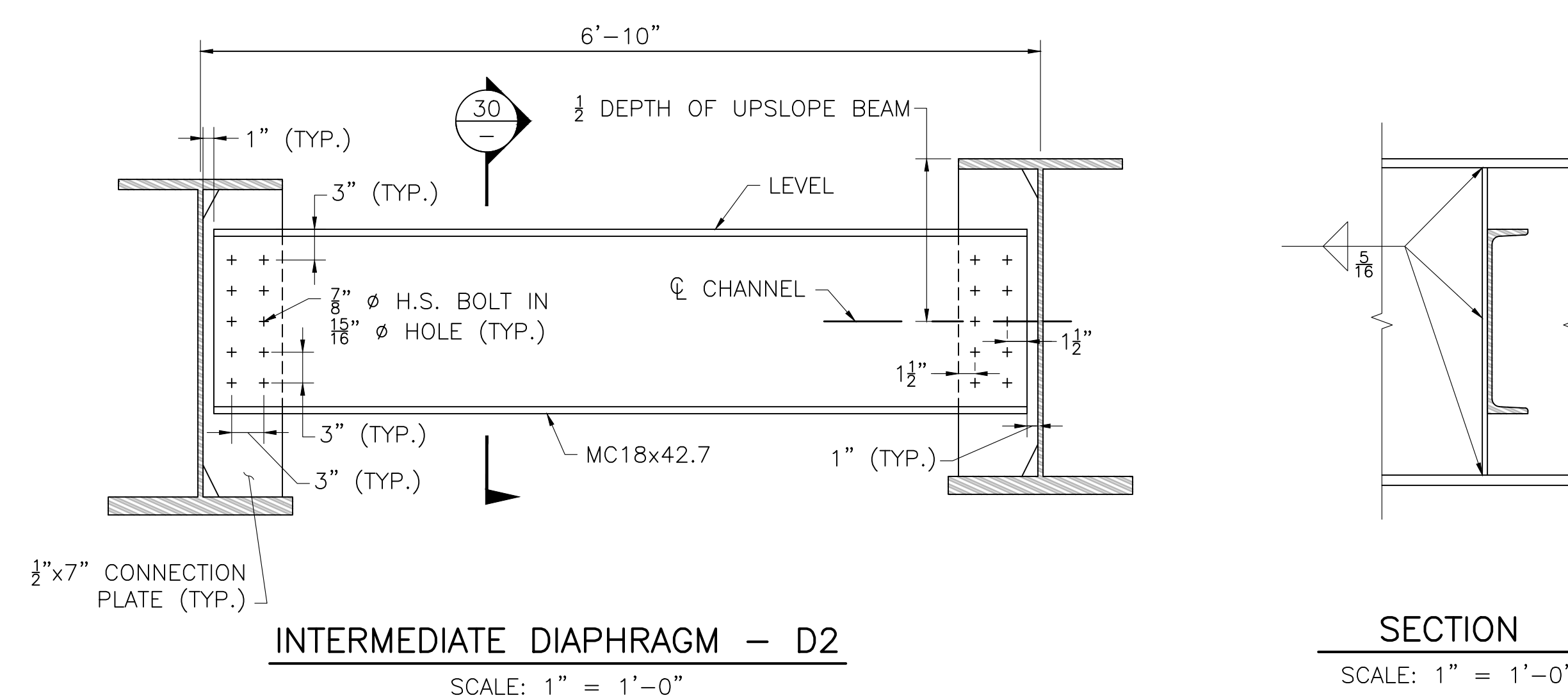
CONNECTION PLATE CLIP DETAILS

NOT TO SCALE



NET TENSILE LIMITS DETAIL

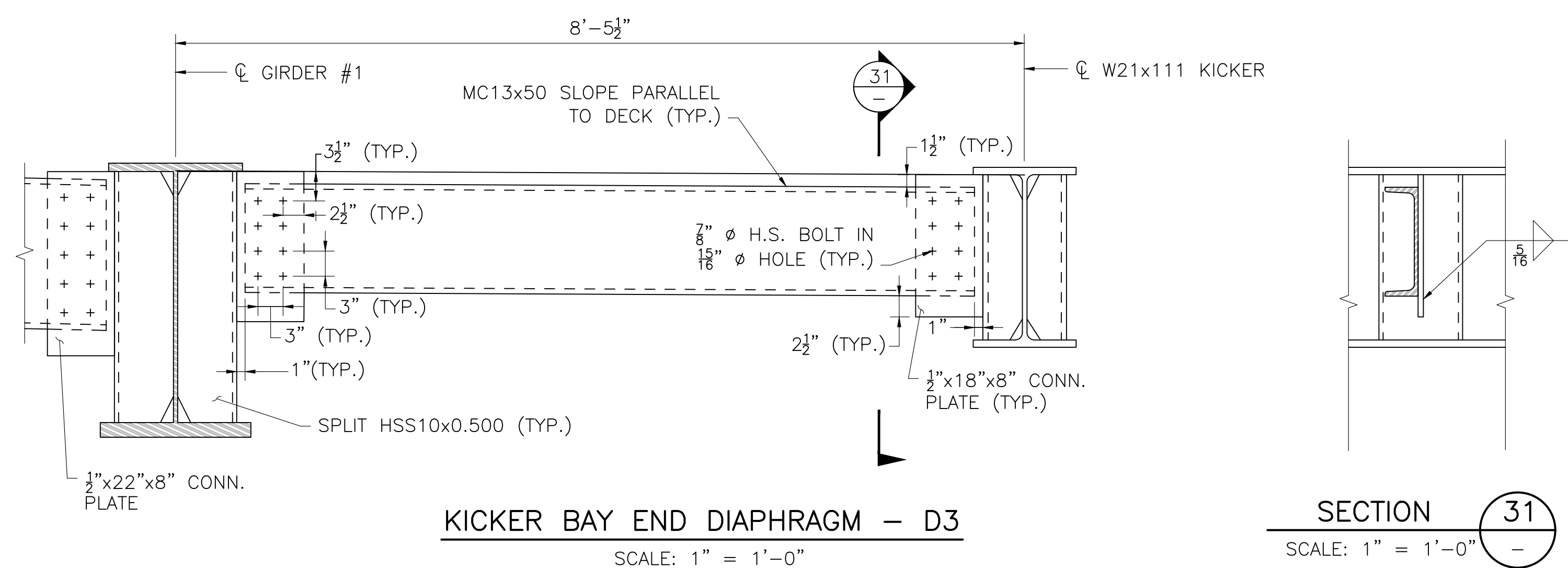
NOT TO SCALE



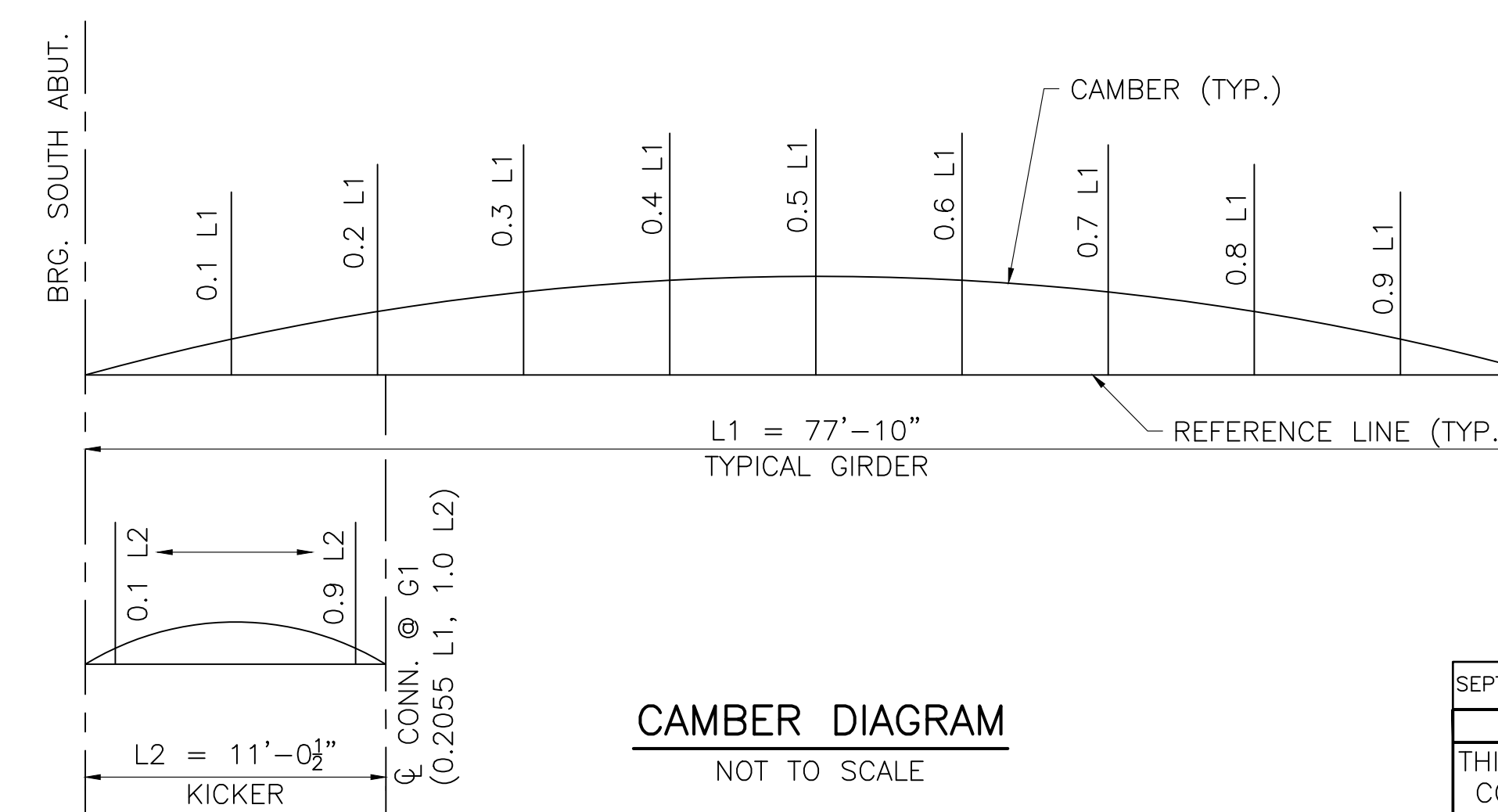
SECTION 30
SCALE: 1" = 1'-0"

CAMBER TABLE (INCHES)												
GIRDER NO.		CL. BRG. S. ABUT.	0.1 L1	0.2 L1	0.3 L1	0.4 L1	0.5 L1	0.6 L1	0.7 L1	0.8 L1	0.9 L1	CL. BRG. N. ABUT.
1, 6, 8	STEEL DL DEFLECTION	0.00	0.42	0.80	1.09	1.27	1.33	1.26	1.07	0.78	0.41	0.00
	CONC. DL DEFLECTION	0.00	0.46	0.88	1.20	1.41	1.48	1.41	1.20	0.88	0.46	0.00
	S.D.L. DEFLECTION	0.00	0.32	0.61	0.83	0.97	1.01	0.96	0.82	0.60	0.32	0.00
	VERT. CURVE CAMBER	0.00	2.64	4.68	6.14	7.00	7.27	6.95	6.04	4.53	2.44	0.00
	ADDITIONAL CAMBER	0.00	0.10	0.20	0.30	0.40	0.50	0.40	0.30	0.20	0.10	0.00
	TOTAL CAMBER	0.00	3.95	7.17	9.56	11.04	11.58	10.98	9.43	6.99	3.73	0.00
2-5	STEEL DL DEFLECTION	0.00	0.36	0.68	0.93	1.09	1.14	1.09	0.93	0.68	0.36	0.00
	CONC. DL DEFLECTION	0.00	0.51	0.97	1.33	1.56	1.64	1.56	1.33	0.97	0.51	0.00
	S.D.L. DEFLECTION	0.00	0.24	0.46	0.63	0.74	0.77	0.74	0.63	0.46	0.24	0.00
	VERT. CURVE CAMBER	0.00	2.66	4.73	6.21	7.10	7.39	7.10	6.21	4.73	2.66	0.00
	ADDITIONAL CAMBER	0.00	0.10	0.20	0.30	0.40	0.50	0.40	0.30	0.20	0.10	0.00
	TOTAL CAMBER	0.00	3.88	7.04	9.40	10.88	11.44	10.88	9.40	7.04	3.88	0.00
7	STEEL DL DEFLECTION	0.00	0.35	0.66	0.90	1.05	1.10	1.05	0.90	0.66	0.35	0.00
	CONC. DL DEFLECTION	0.00	0.51	0.97	1.33	1.56	1.64	1.56	1.33	0.97	0.51	0.00
	S.D.L. DEFLECTION	0.00	0.40	0.76	1.03	1.21	1.27	1.21	1.03	0.76	0.40	0.00
	VERT. CURVE CAMBER	0.00	2.35	4.46	5.97	6.89	7.22	6.96	6.11	4.66	2.63	0.00
	ADDITIONAL CAMBER	0.00	0.10	0.20	0.30	0.40	0.50	0.40	0.30	0.20	0.10	0.00
	TOTAL CAMBER	0.00	3.71	7.04	9.53	11.11	11.73	11.18	9.67	7.24	3.99	0.00
KICKER NO.		CL. BRG. S. ABUT.	0.1 L2	0.2 L2	0.3 L2	0.4 L2	0.5 L2	0.6 L2	0.7 L2	0.8 L2	0.9 L2	CL. BRG. N. ABUT.
1A	STEEL DL DEFLECTION	0.0000	0.0004	0.0007	0.0009	0.0011	0.0011	0.0011	0.0009	0.0007	0.0004	0.0000
	CONC. DL DEFLECTION	0.0000	0.0006	0.0012	0.0017	0.0019	0.0020	0.0019	0.0016	0.0012	0.0006	0.0000
	S.D.L. DEFLECTION	0.0000	0.0004	0.0007	0.0010	0.0012	0.0012	0.0012	0.0010	0.0007	0.0004	0.0000
	VERT. CURVE CAMBER	0.00	0.04	0.07	0.09	0.11	0.11	0.11	0.09	0.07	0.04	0.00
	ADDITIONAL CAMBER	0.00	0.03	0.05	0.08	0.10	0.13	0.10	0.08	0.05	0.03	0.00
	TOTAL CAMBER	0.00	0.07	0.12	0.17	0.21	0.24	0.21	0.17	0.12	0.07	0.00

CAMBER
NOT TO SCALE

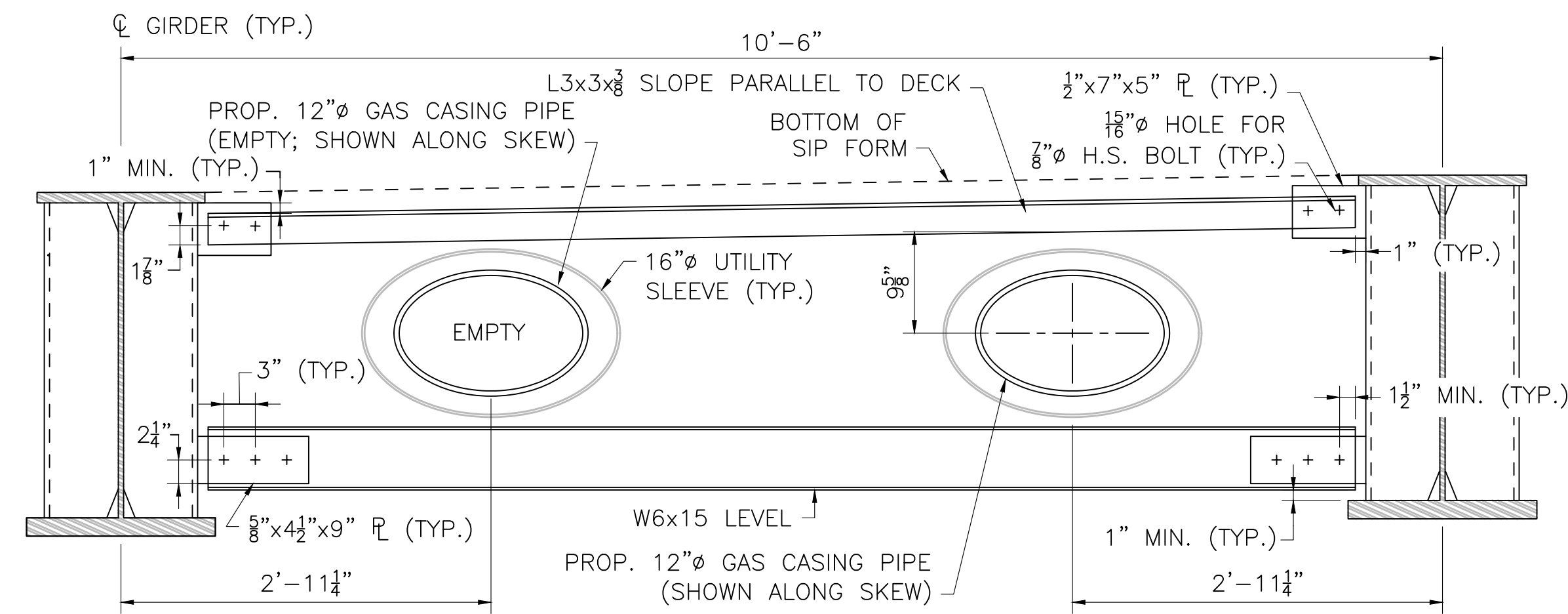


SECTION 31



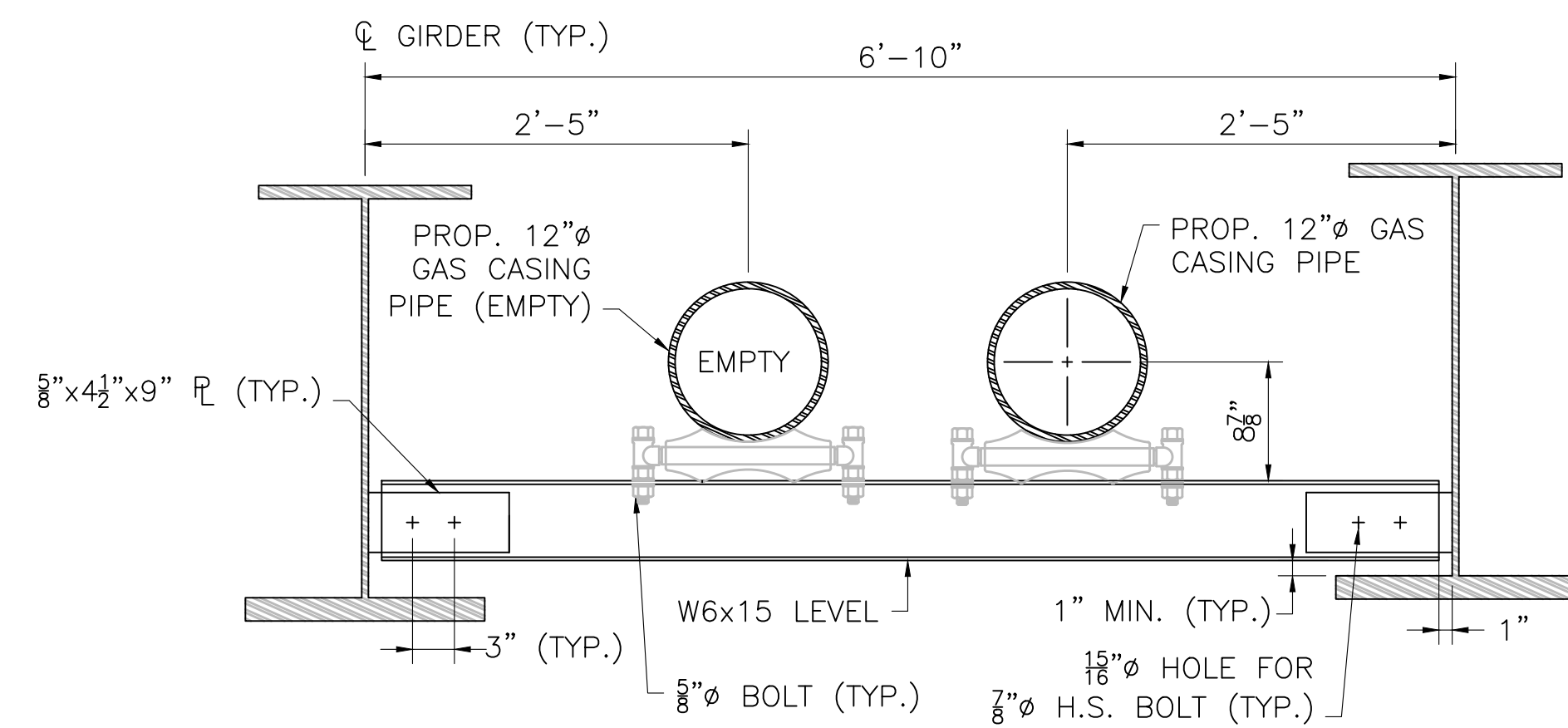
CAMBER DIAGRAM
NOT TO SCALE

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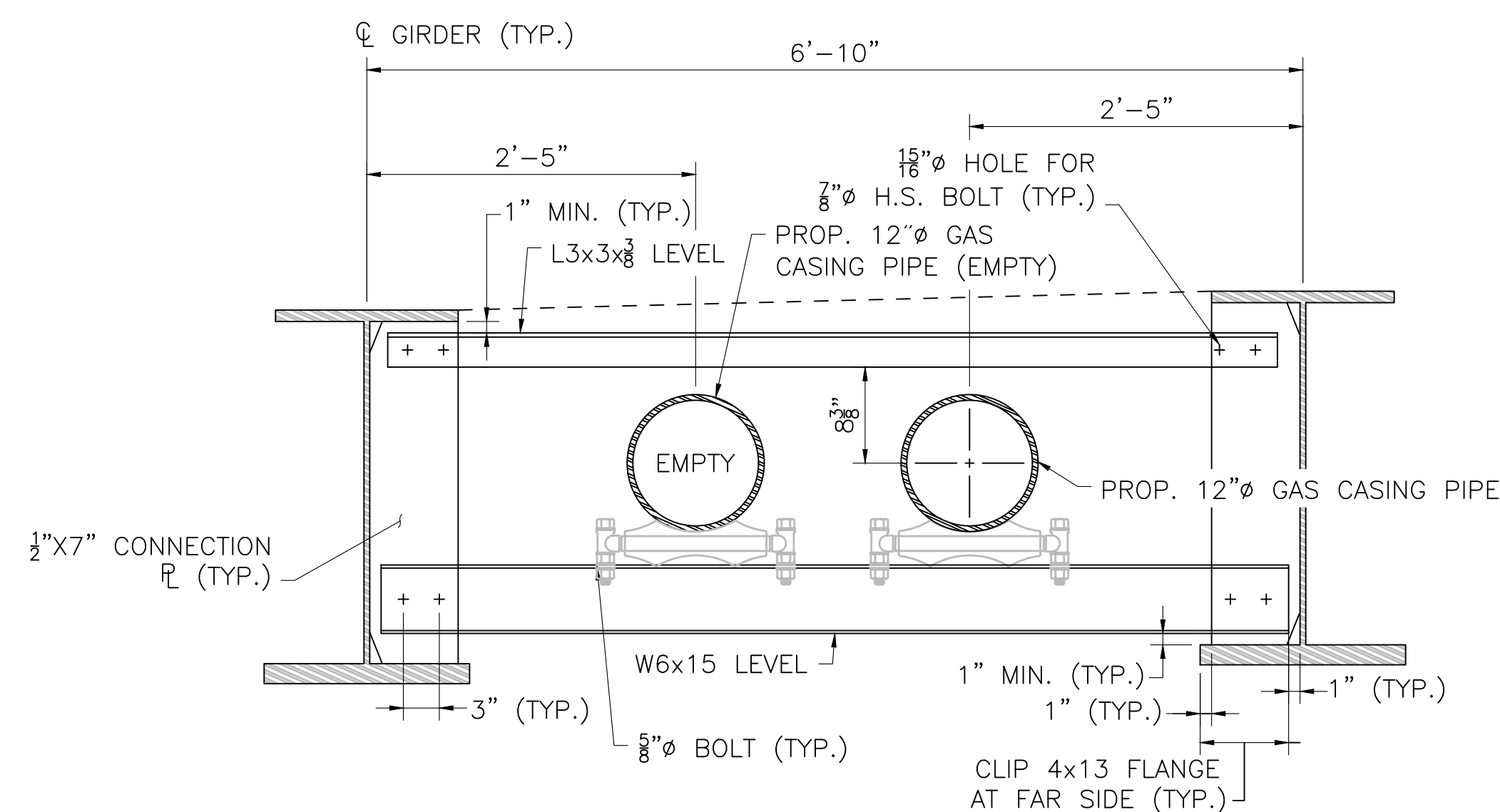
END UTILITY DIAPHRAGM U1 (GAS MAIN)

SCALE: 1" = 1'-0"



UTILITY SUPPORT BETWEEN DIAPHRAGMS U2 (GAS MAIN)

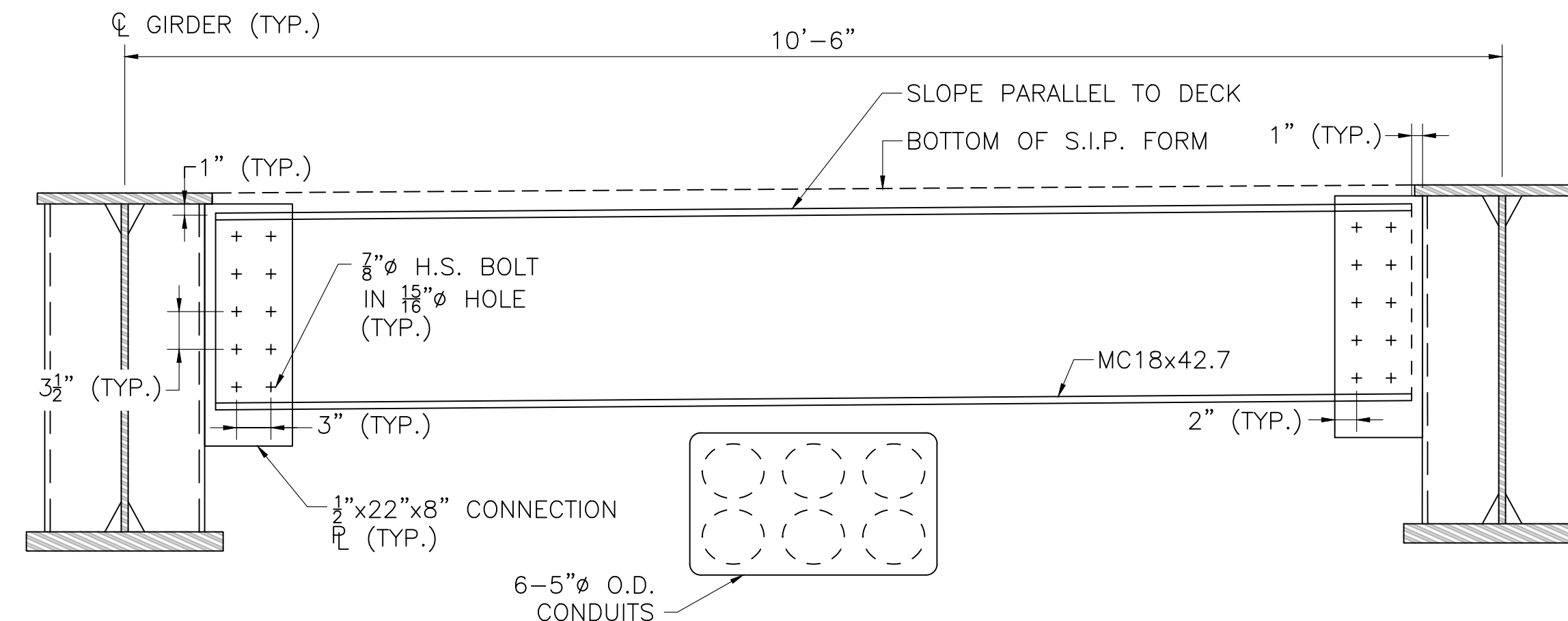
SCALE: 1" = 1'-0"



UTILITY DIAPHRAGM U3 (GAS MAIN)

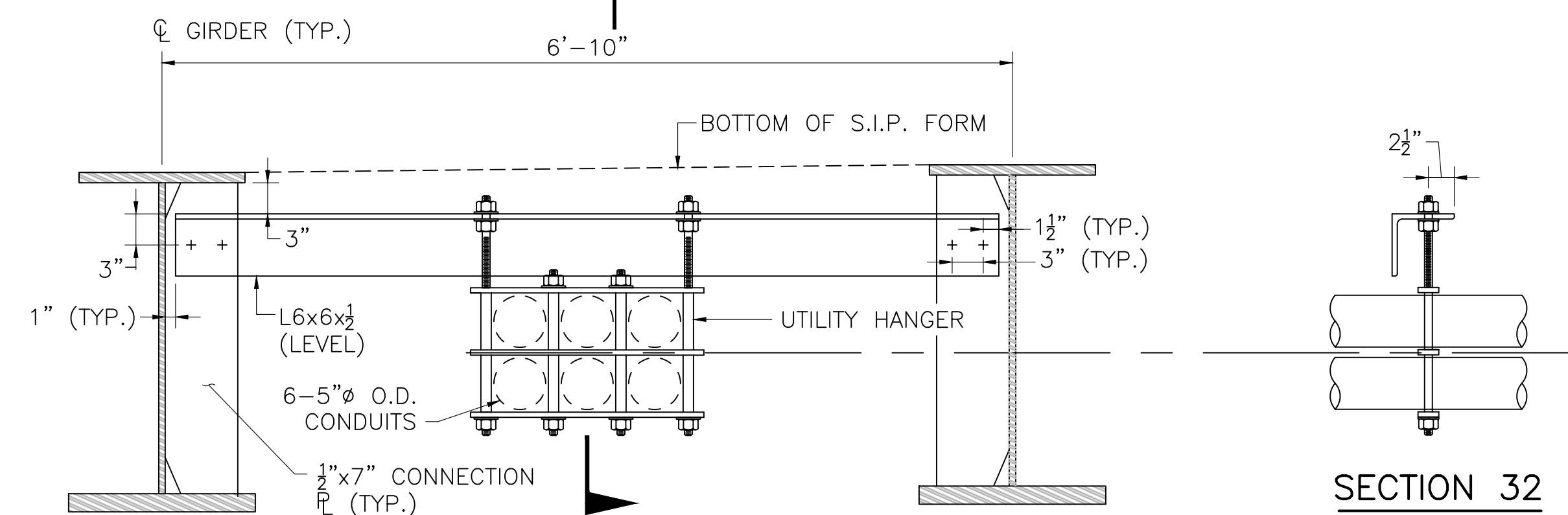
SCALE: 1" = 1'-0"

NOTE: BEFORE SHOP DRAWING SUBMITTAL CONTRACTOR SHALL COORDINATE WITH UTILITY OWNERS TO VERIFY SIZE AND CONFIGURATION OF UTILITY HANGER ASSEMBLIES INCLUDING ROD SIZE AND SPACING



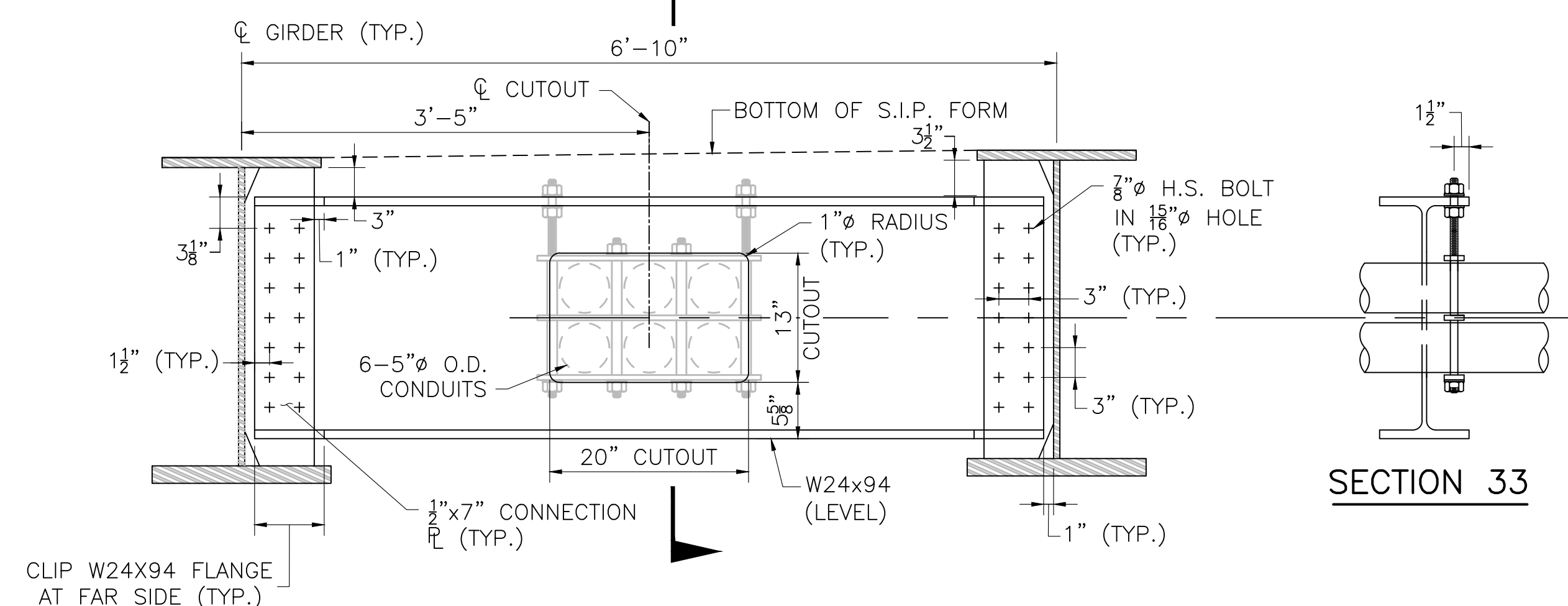
END UTILITY DIAPHRAGM U4 (EVERSOURCE/VERIZON)

SCALE: 1" = 1'-0"



UTILITY SUPPORT BETWEEN DIAPHRAGMS U5 (EVERSOURCE/VERIZON)

SCALE: 1" = 1'-0"

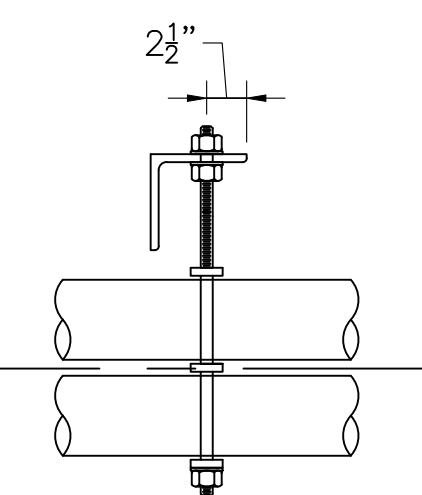


INTERMEDIATE UTILITY DIAPHRAGM U6 (EVERSOURCE/VERIZON)

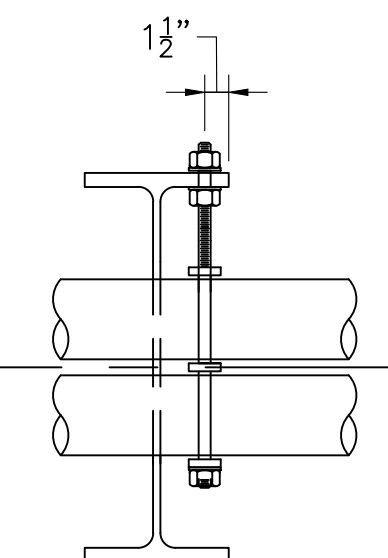
SCALE: 1" = 1'-0"

SOMERVILLE WEBSTER AVE			
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STEEL DETAILS III



SECTION 32



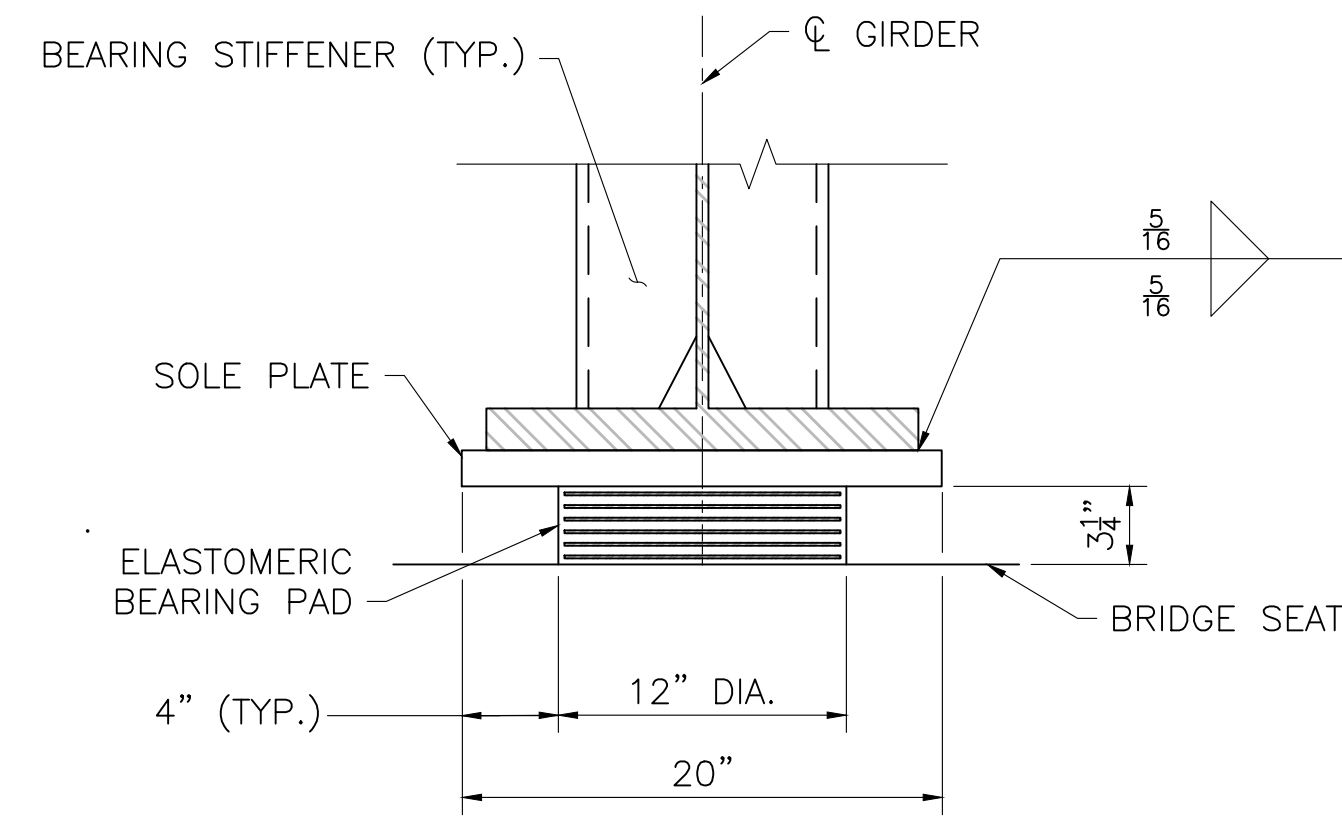
SECTION 33

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
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SOMERVILLE
WEBSTER AVE

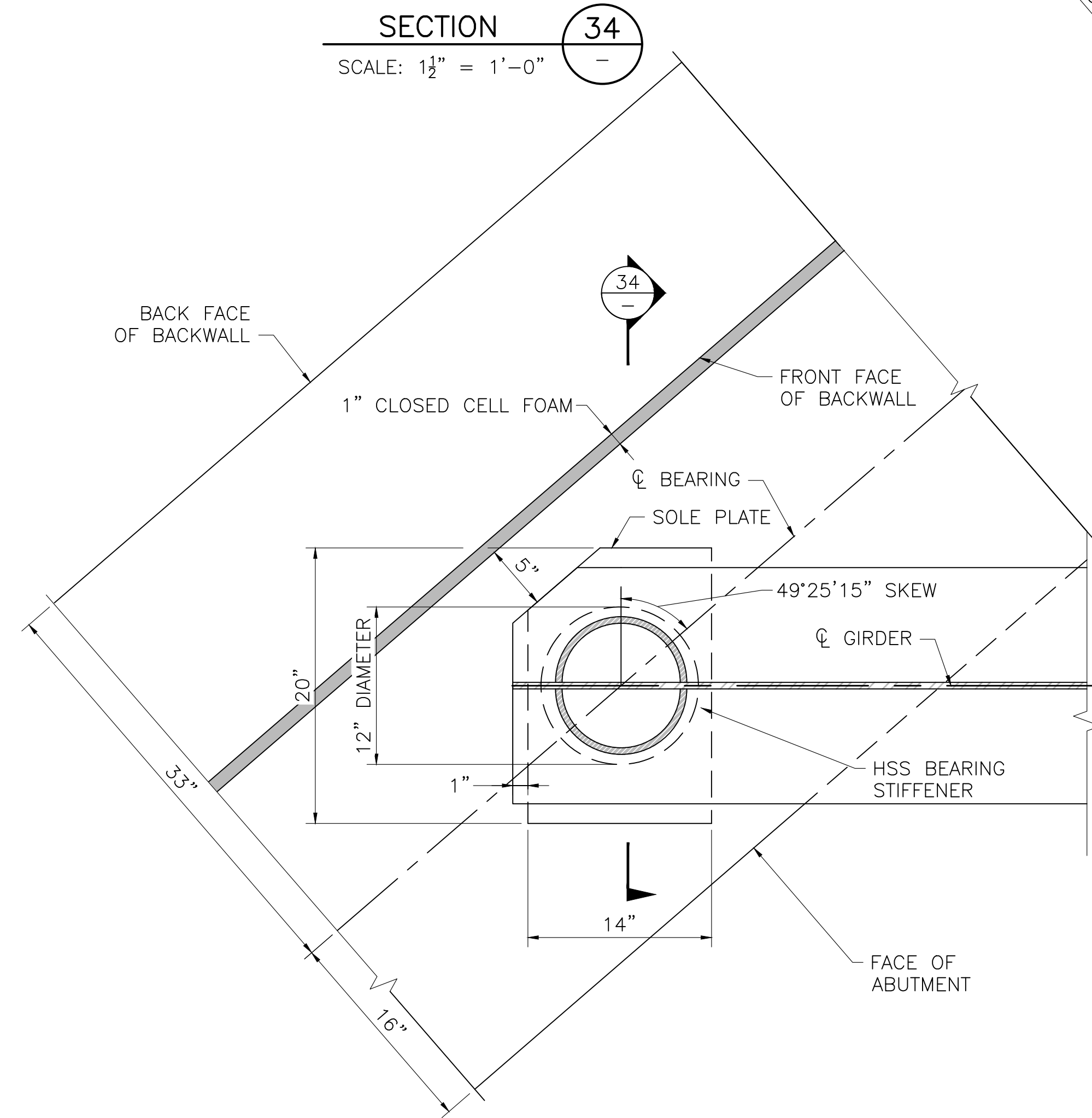
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	70	98
PROJECT FILE NO.		611940	

BEARINGS

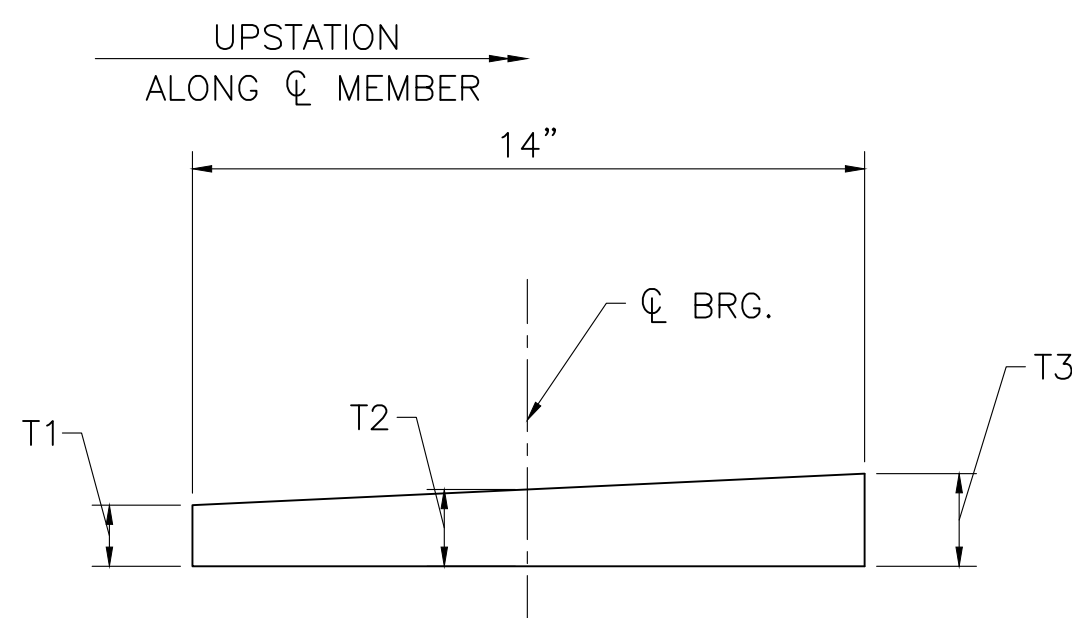


(*) - WELDS SHALL TERMINATE 1/4" FROM EDGE OF PLATE.

SECTION 34
SCALE: 1 1/2" = 1'-0"



PLAN - TYPICAL GIRDER
SCALE: 1 1/2" = 1'-0"

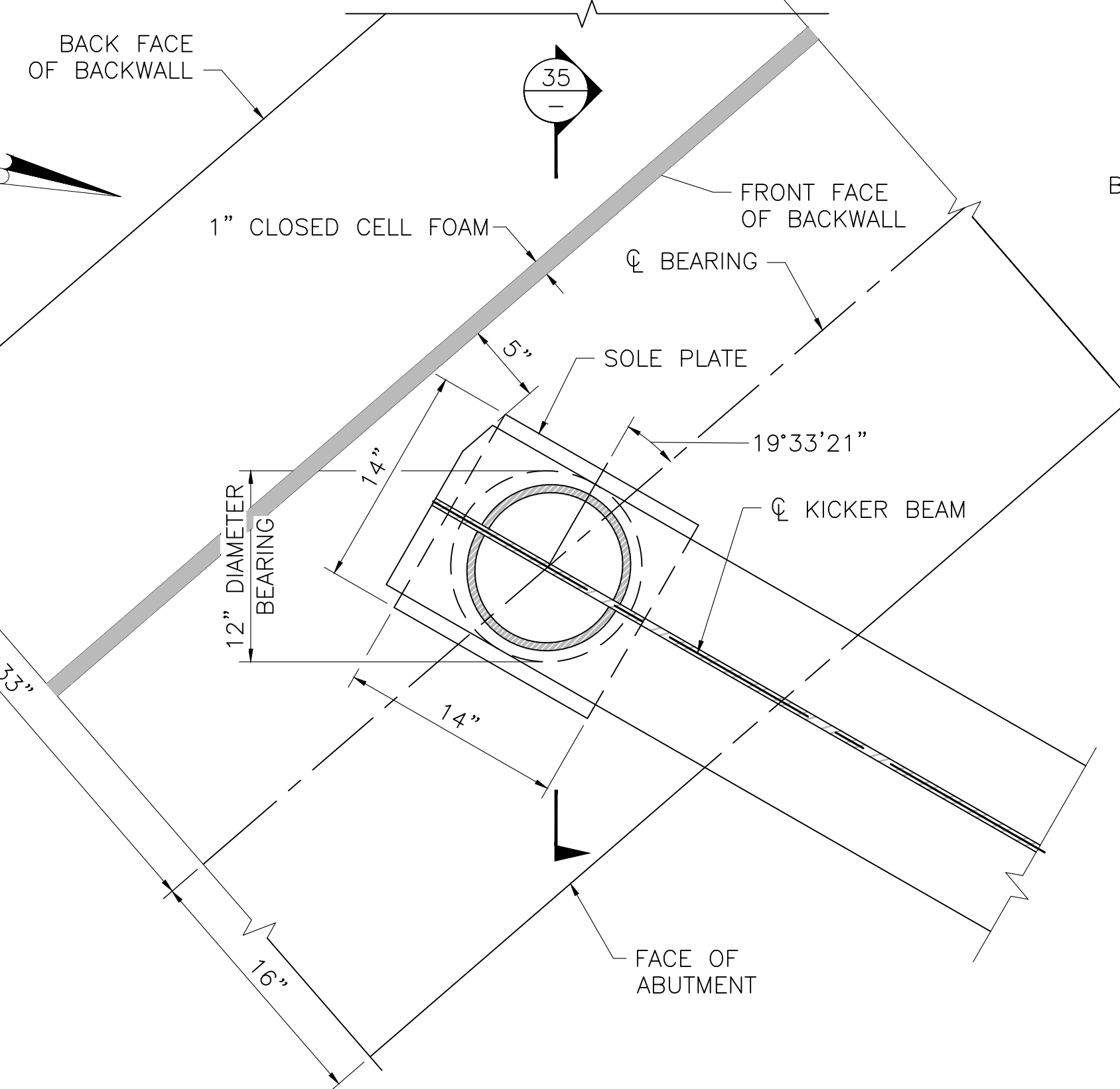


SOLE PLATE DETAIL
SCALE: 3" = 1'-0"

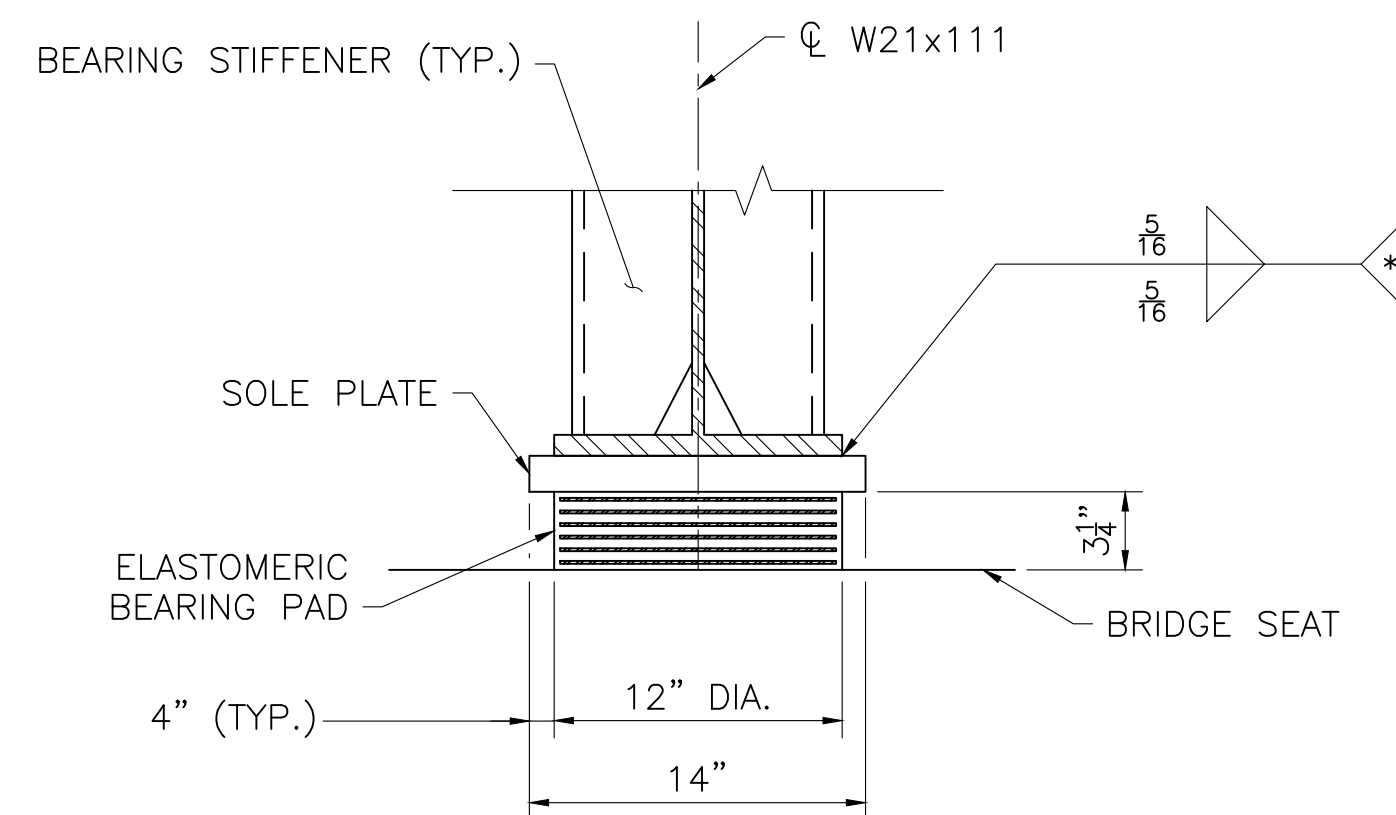
GIRDER	SOLE PLATE THICKNESS (IN)					
	SOUTH ABUTMENT			NORTH ABUTMENT		
	T1	T2	T3	T1	T2	T3
1	1.50	1.50	1.50	1.75	1.50	1.25
2	1.25	1.50	1.75	1.75	1.50	1.25
3	1.25	1.50	1.75	1.75	1.50	1.25
4	1.25	1.50	1.75	1.625	1.50	1.375
5	1.125	1.50	1.875	1.625	1.50	1.375
6	1.125	1.50	1.875	1.50	1.50	1.50
7	1.125	1.50	1.875	1.50	1.50	1.50
8	1.125	1.50	1.875	1.50	1.50	1.50
KICKER	1.375	1.50	1.625	NA	NA	NA

SOLE PLATE NOTES:

- T1 = DOWNSTATION EDGE SOLE PLATE THICKNESS
- T2 = MID-WIDTH SOLE PLATE THICKNESS
- T3 = UPSTATION EDGE SOLE PLATE THICKNESS
- STEEL SOLE PLATE SHALL CONFORM TO AASHTO M 270 GRADE 50W AND BE PAINTED.
- FOR REMAINING BEARING DETAILS SEE SHEET 35 OF 43.

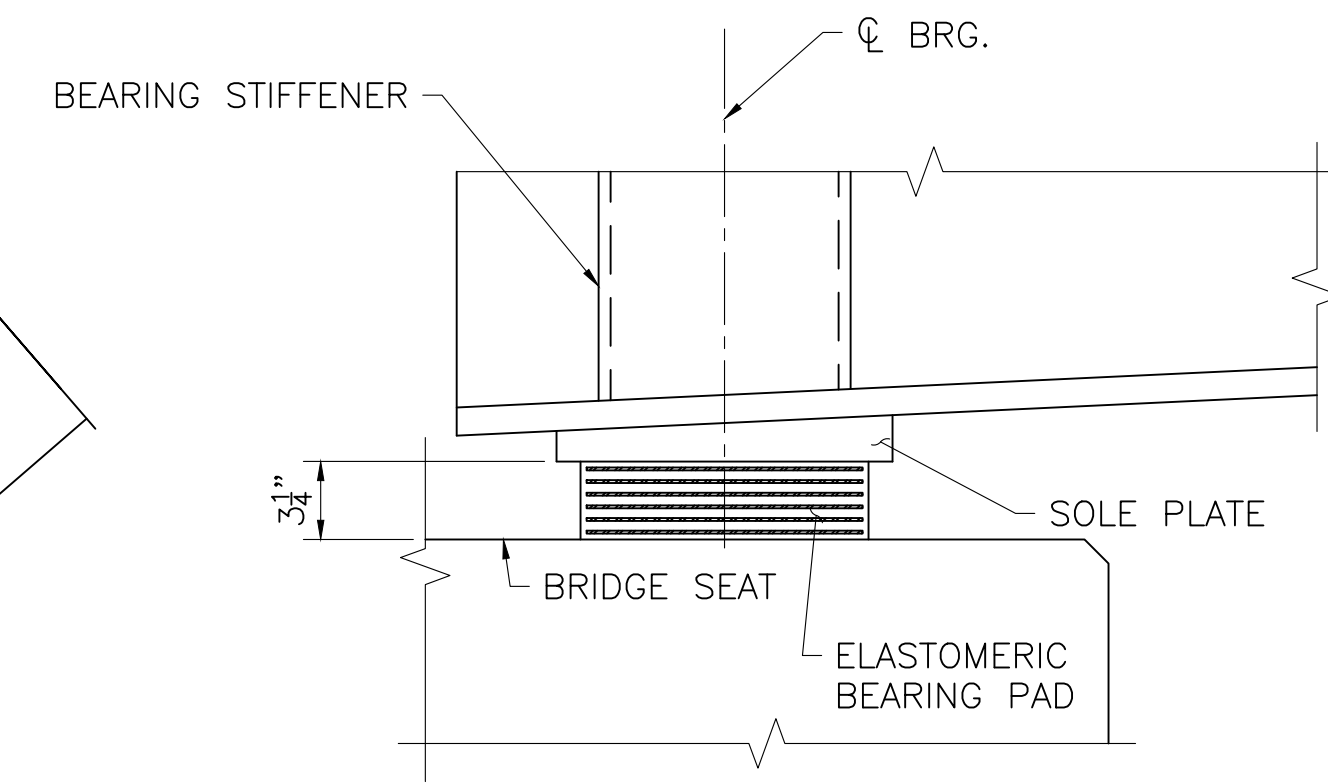


PLAN - KICKER BEAM
SCALE: 1 1/2" = 1'-0"

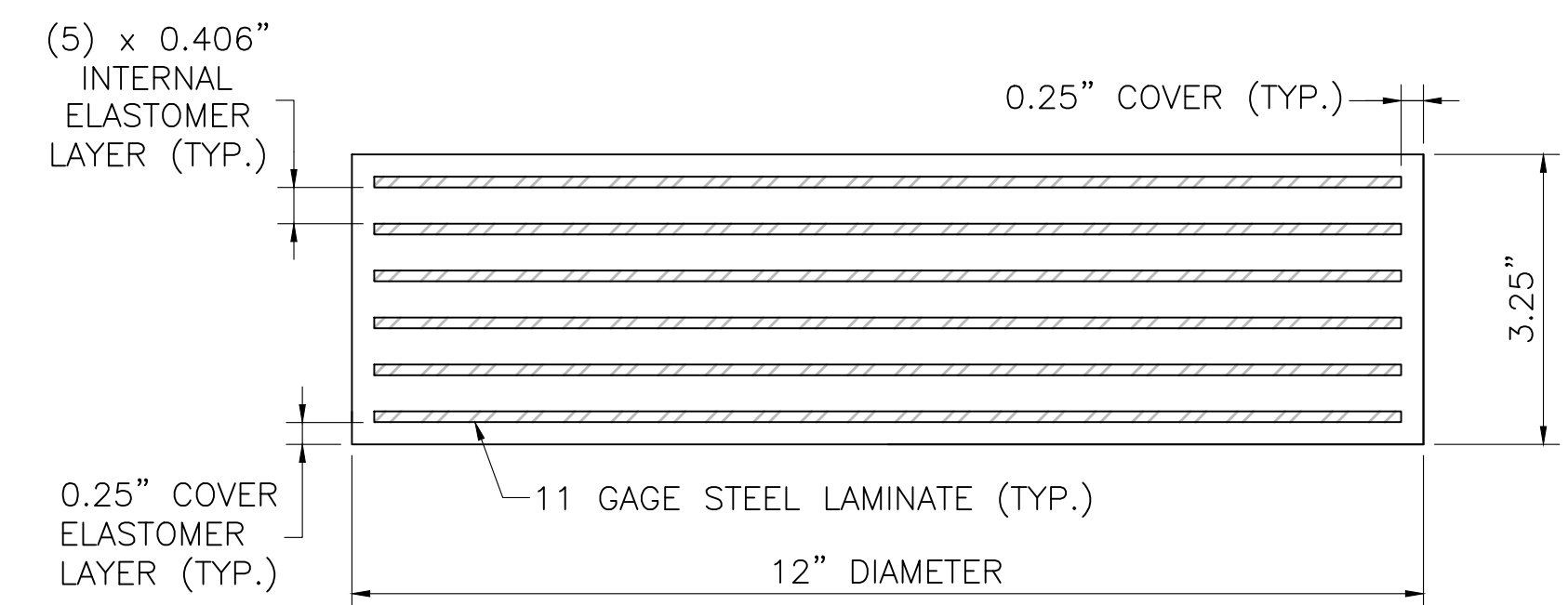


(*) - WELDS SHALL TERMINATE 1/4" FROM EDGE OF PLATE.

SECTION 35
SCALE: 1 1/2" = 1'-0"



ELEVATION
SCALE: 1 1/2" = 1'-0"

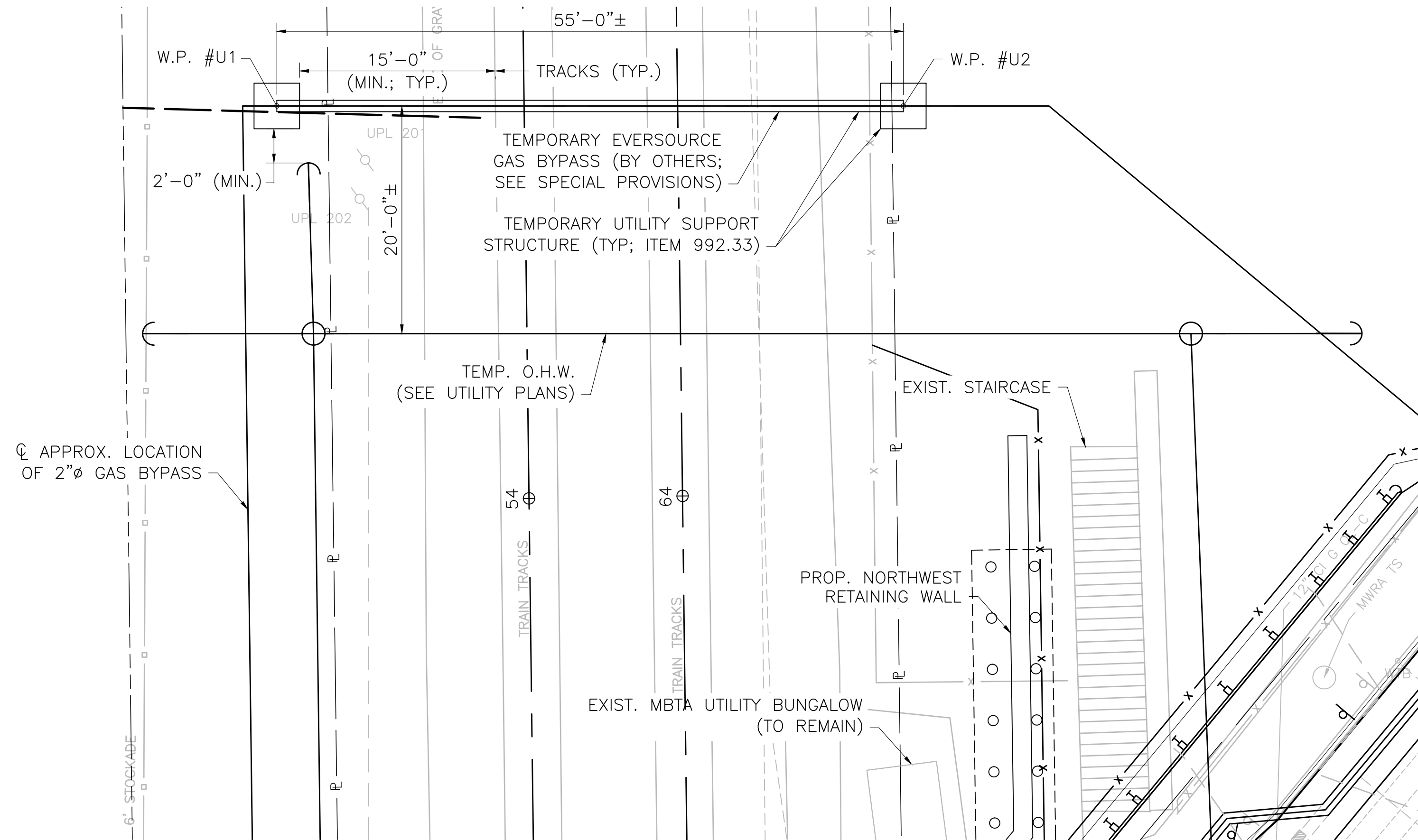
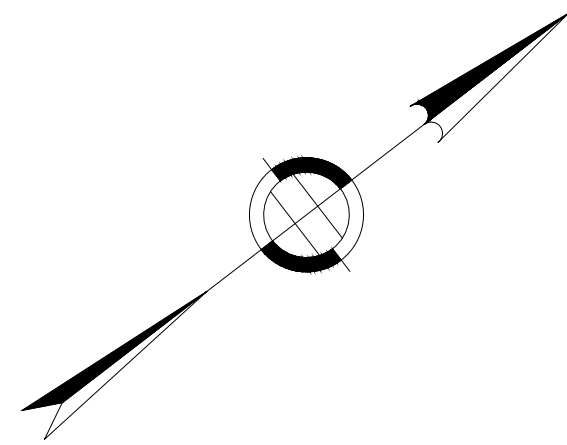


ELASTOMERIC BEARING PAD (ABUTMENTS)
NOT TO SCALE

NOTES:

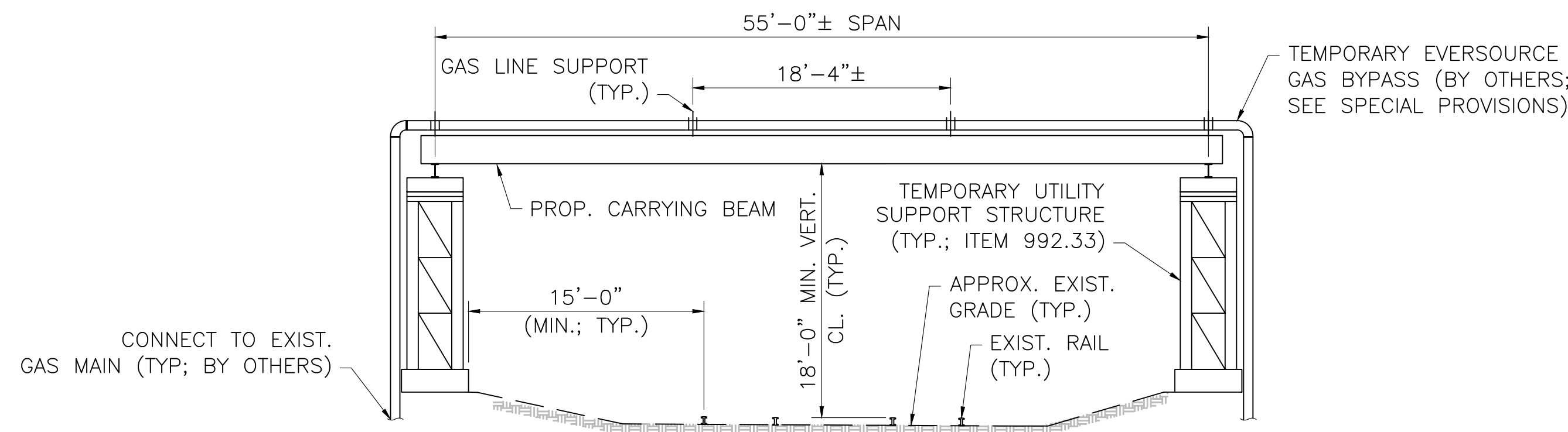
- THIS BEARING IS DESIGNED USING AASHTO METHOD B.
- ELASTOMER SHALL HAVE A SHEAR MODULUS OF 0.160 KSI.
- STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36 OR HIGHER. ALL EDGES OF STEEL LAMINATES SHALL BE GROUND SMOOTH.
- THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD IS 182 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 1.61 KSI
- THE 25 YEAR CREEP STRAIN SHALL BE LIMITED TO 35%.
- ELASTOMERIC BEARING PAD SHALL NOT BE VULCANIZED TO THE SOLE PLATE.
- STEEL SOLE PLATE SHALL CONFORM TO AASHTO M 270 GRADE 50W AND BE PAINTED. FOR SOLE PLATE DETAIL AND THICKNESS TABLE SEE SHEET 37 OF 43.
- ALL BEARING SOLE PLATES SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A 1/2" DEEP DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER BEARING IS INSTALLED.
- CENTER THE ELASTOMERIC PAD UNDER THE SOLE PLATE DURING GIRDER ERECTION.
- BEAMS SHALL BE ERECTED WHEN THE AMBIENT TEMPERATURE IS BETWEEN 30 °F AND 90 °F. IF THE 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.

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CONCEPTUAL TEMPORARY UTILITY SUPPORT PLAN

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



CONCEPTUAL TEMPORARY UTILITY SUPPORT ELEVATION

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

SOMERVILLE
WEBSTER AVE

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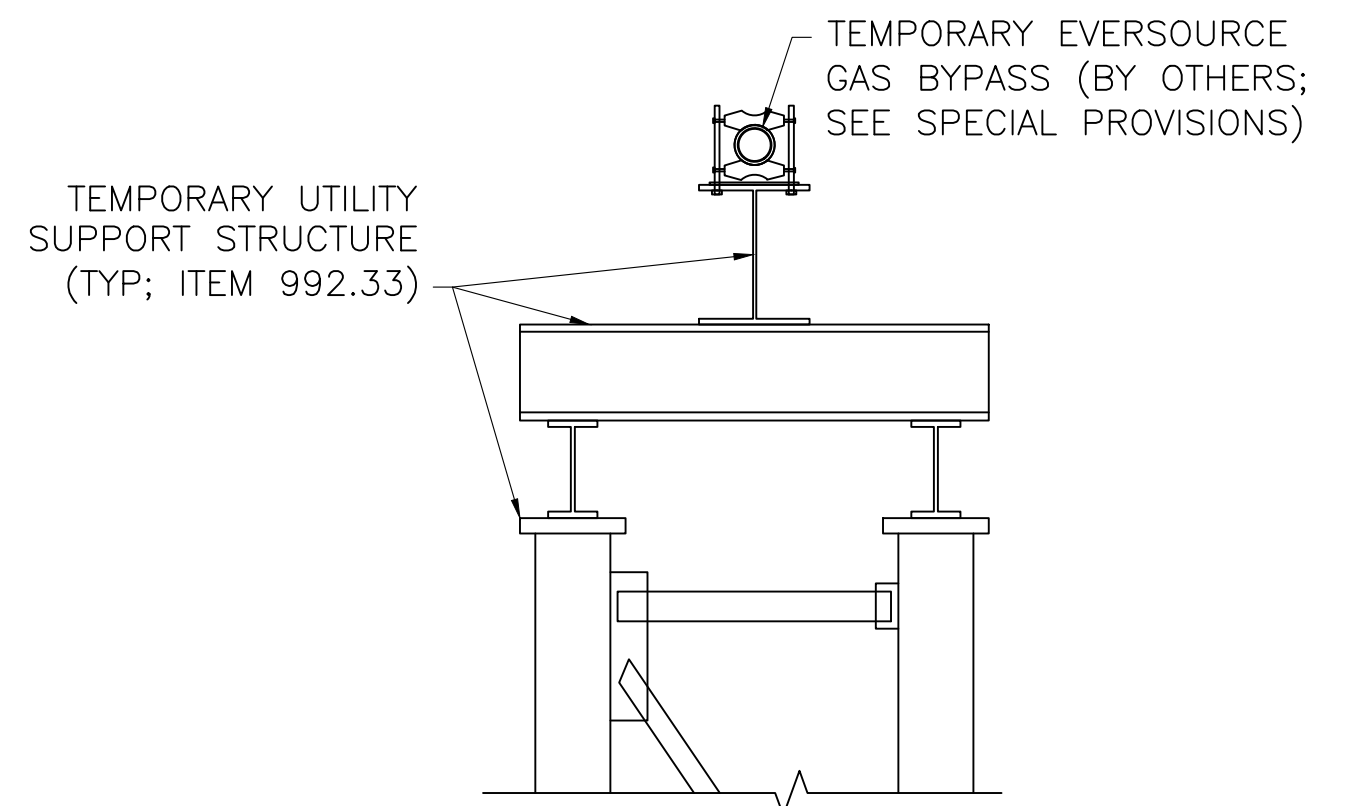
TEMPORARY UTILITY SUPPORT STRUCTURE

WORKING POINT INFORMATION		
	NORTHING	EASTING
WPU1	2963024.7454	765225.3082
WPU2	2963068.7345	765258.3113

WORKING POINTS TO TRACK 1		
	STATION	OFFSET
WPU1	54+34.75	-21.70
WPU2	54+34.06	33.29

WORKING POINTS TO TRACK 2		
	STATION	OFFSET
WPU1	64+34.70	-35.18
WPU2	64+34.01	19.81

WORKING POINTS TO WEBSTER AVE #		
	STATION	OFFSET
WPU1	14+11.49	-123.15
WPU2	14+46.65	-80.86



CONCEPTUAL TEMPORARY UTILITY SUPPORT STRUCTURE

NOT TO SCALE

NOTES:

- FOR ADDITIONAL DETAILS ON THE GAS LINE SEE HIGHWAY UTILITY PLAN SHEET 26.
- THE CONTRACT PLANS AND DETAILS PERTAINING TO THE TEMPORARY UTILITY SUPPORT STRUCTURE ARE SHOWN FOR SCHEMATIC PURPOSES ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO FULLY DESIGN AND DETAIL THE UTILITY SUPPORT SYSTEM.

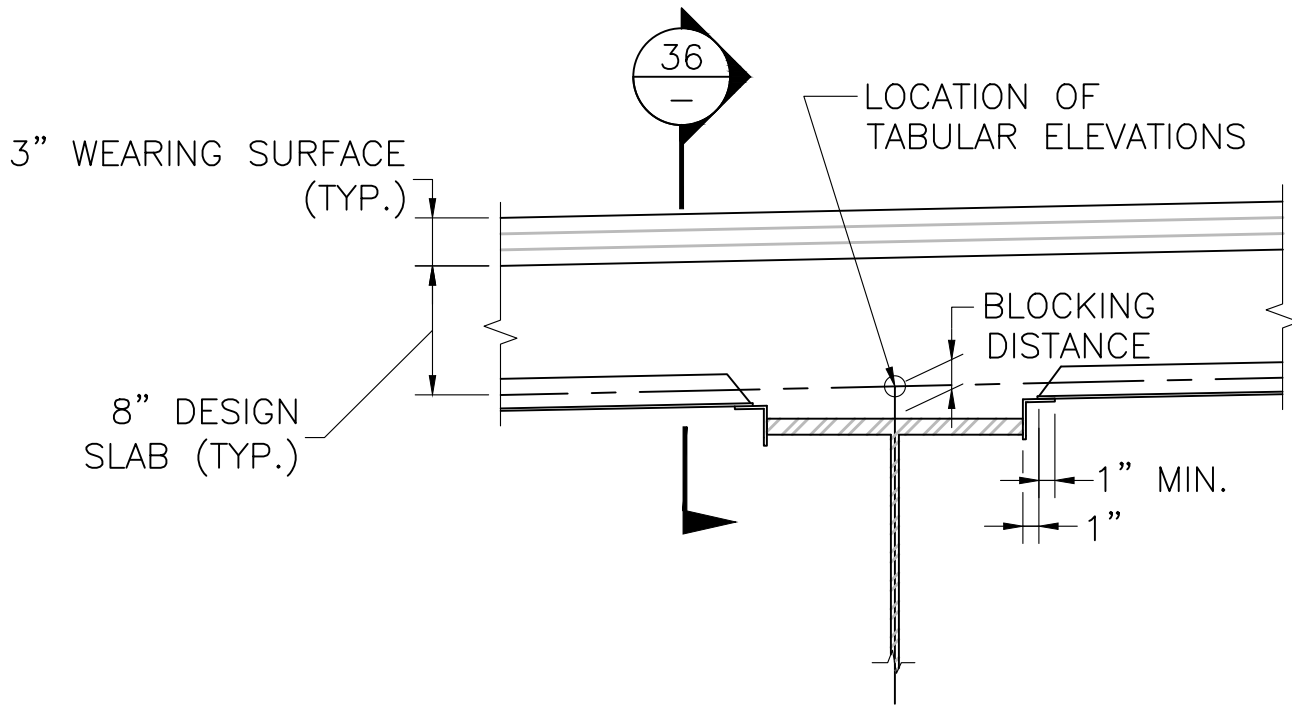
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SHEET 36 OF 44 SHEETS BRIDGE NO. S-17-016 (ATX)

TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE												
GIRDER NO.	INCREASING STATIONS →											
	S. CL. BRG.	0.1 L1	0.2 L1	0.3 L1	0.4 L1	0.5 L1	0.6 L1	0.7 L1	0.8 L1	0.9 L1	N. CL. BRG.	
1	27.83	27.97	28.06	28.09	28.04	27.94	27.76	27.51	27.20	26.83	26.42	
2	27.83	27.96	28.04	28.07	28.05	27.99	27.87	27.70	27.49	27.22	26.91	
3	27.79	28.03	28.22	28.35	28.41	28.40	28.32	28.18	27.97	27.69	27.36	
4	27.69	27.99	28.22	28.40	28.51	28.56	28.53	28.43	28.27	28.05	27.77	
5	27.40	27.75	28.04	28.27	28.43	28.52	28.55	28.50	28.39	28.22	27.99	
6	26.93	27.33	27.67	27.95	28.17	28.31	28.38	28.39	28.33	28.20	28.02	
7	26.43	26.86	27.26	27.59	27.86	28.06	28.18	28.23	28.22	28.14	28.00	
8	25.93	26.36	26.79	27.18	27.50	27.74	27.92	28.02	28.05	28.02	27.92	
GIRDER NO.	INCREASING STATIONS →											
	S. CL. BRG.	0.1 L2	0.2 L2	0.3 L2	0.4 L2	0.5 L2	0.6 L2	0.7 L2	0.8 L2	0.9 L2	CL. CONN.	
KICKER	27.83	27.85	27.87	27.88	27.90	27.92	27.93	27.94	27.96	27.97	27.98	

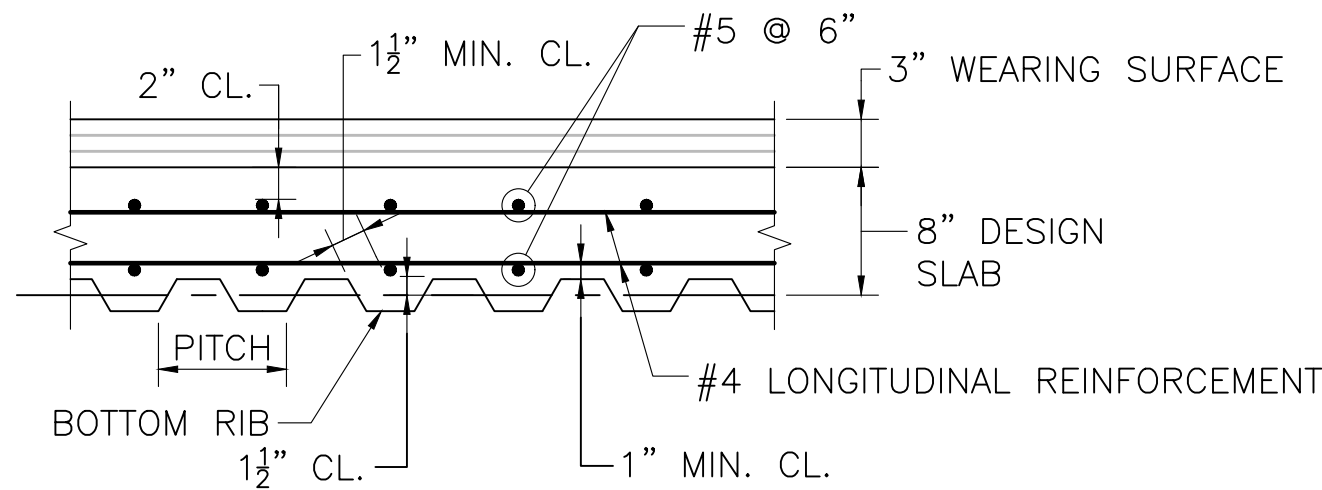
TOP OF FORM ELEVATION NOTES:

- AFTER THE BEAMS ARE ERECTED BUT BEFORE THE FORMS ARE PLACED, THE ELEVATION AT THE TOP OF THE FLANGE OF EACH BEAM SHALL BE OBTAINED AT THE POINTS INDICATED IN THE TABLE. THE DIFFERENCE BETWEEN EACH OBTAINED ELEVATION AND ITS CORRESPONDING ELEVATION SHOWN IN THE TABLE IS THE BLOCKING DISTANCE FROM THE TOP OF THE BEAM TO THE BOTTOM OF THE SLAB AT THE CENTERLINE OF THE BEAM.
- THE CONTRACTOR SHALL ESTABLISH THE CENTERLINES OF BEARING AT THE SUPPORTS FOR EACH GIRDER AND SHALL TAKE ELEVATIONS AT THE NOTED LOCATIONS. ELEVATIONS SHALL BE TAKEN AT THE TOP OF 16" WIDE TOP FLANGE PLATES ONLY.
- TOP OF FORM ELEVATIONS SHALL BE CHECKED AND APPROVED BY THE DESIGNER ONCE FIELD MEASUREMENTS HAVE BEEN OBTAINED THROUGH SURVEY.
- L1 REPRESENTS THE LENGTH OF THE TYPICAL PLATE GIRDERS (GIRDER #1-8) AND L2 REPRESENTS THE LENGTH OF THE W21x111 KICKER G1A BEAM.



TYPICAL HAUNCH DETAIL AT GIRDER

SCALE: 1" = 1'-0"



SECTION 36

NOT TO SCALE

STAY-IN-PLACE FORM NOTES:

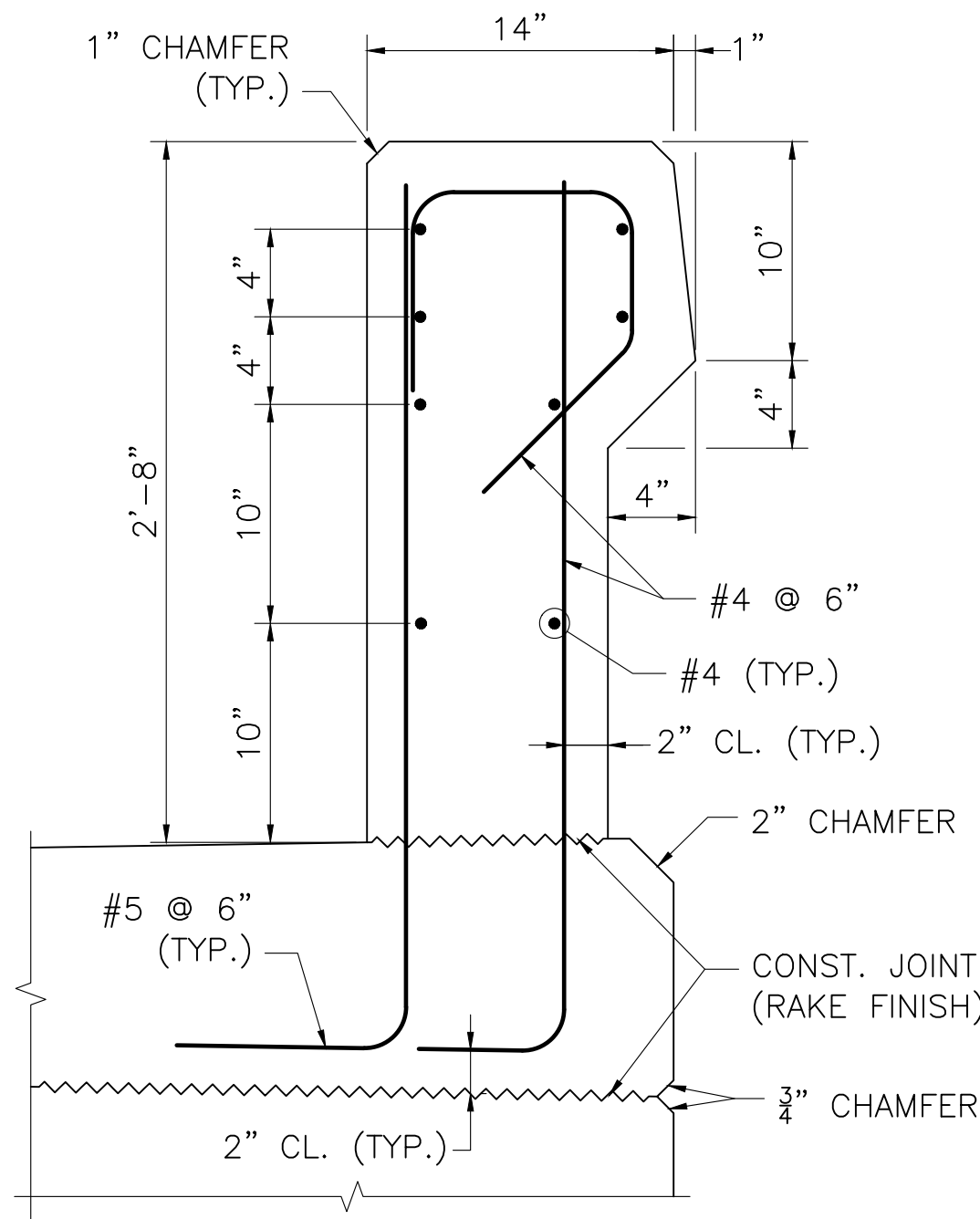
- FOR 2" S.I.P. FORM, SET BOTTOM OF FORM 1" BELOW ELEVATION GIVEN IN TABLE. FOR 3" S.I.P. FORM, SET BOTTOM OF FORM 1 1/2" BELOW TABLE ELEVATIONS.
- FORM ENDS SHALL BE CRIMPED CLOSED IN A TAPERED MANNER. SEPARATE END CLOSURE PIECES WILL NOT BE ALLOWED.
- SUPPORT ANGLES SHALL BE PLACED IN THE "LEG DOWN" POSITION WHERE POSSIBLE. WHERE "LEG UP" POSITION IS NECESSARY, THE UPPER MOST PORTION OF THE ANGLE SHALL NOT PROJECT MORE THAN 1" ABOVE THE TOP FLANGE OR COVER PLATE. THE CONTRACTOR SHALL HAVE AN ASSORTMENT OF ANGLES OF VARIOUS SIZES AVAILABLE ON THE SITE TO CONFORM TO THIS REQUIREMENT.
- ALL MAIN STEEL REINFORCEMENT IN THE LOWER MAT SHALL BE CENTERED OVER THE VALLEY OF THE S.I.P. FORM.
- CONTRACTOR SHALL DESIGN AND DETAIL ALL ELEMENTS OF THE FORMING SYSTEM AND SHALL SUBMIT TO THE ENGINEER FOR APPROVAL.
- IN CASES WHERE STANDARD 2" OR 3" DEEP S.I.P. FORMS DO NOT SATISFY DESIGN REQUIREMENTS AN ALTERNATIVE FORMING SYSTEM CONSISTING OF DEEPER S.I.P. FORMS OR REMOVABLE FORMS SHALL BE DESIGNED AND DETAILED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL. THE DESIGN THICKNESS OF THE SLAB SHALL NOT BE REDUCED.
- ABOVE TYPICAL HAUNCH DETAIL SHOWN FOR TYPICAL GIRDER, ALL DIMENSIONS SIMILAR FOR W21x111 KICKER BEAM, SEE TABLE FOR TOP OF FORM ELEVATIONS. THE TOP FLANGE SHOULD TERMINATE AT THE SAME ELEVATION AS GIRDER #1 AT THE CONNECTION. SEE STEEL DETAILS - KICKER BEAM SHEET FOR FURTHER DETAILS.

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SOMERVILLE
WEBSTER AVE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	73	98
PROJECT FILE NO.		611940	

DECK DETAILS I

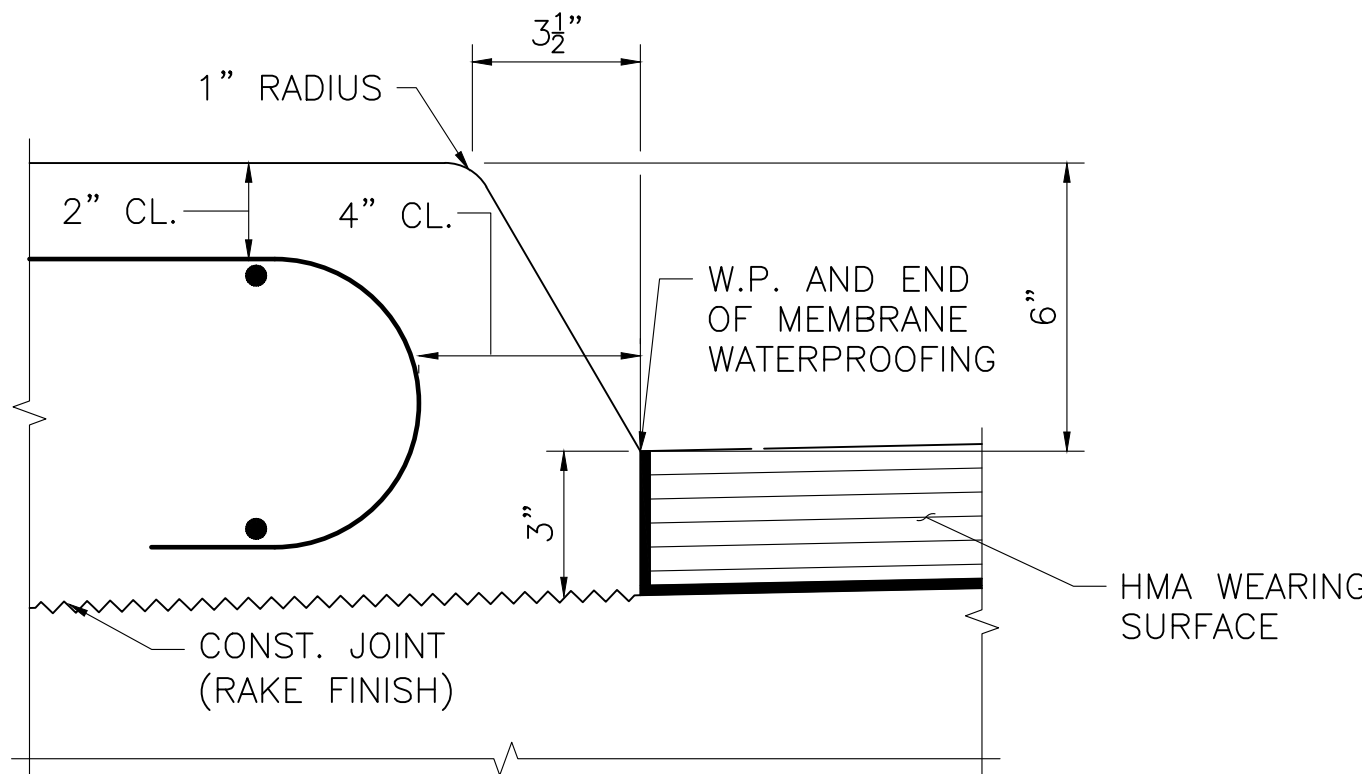


NOTE:

FOR SIDEWALK REINFORCEMENT SEE SECTION THRU SIDEWALK.

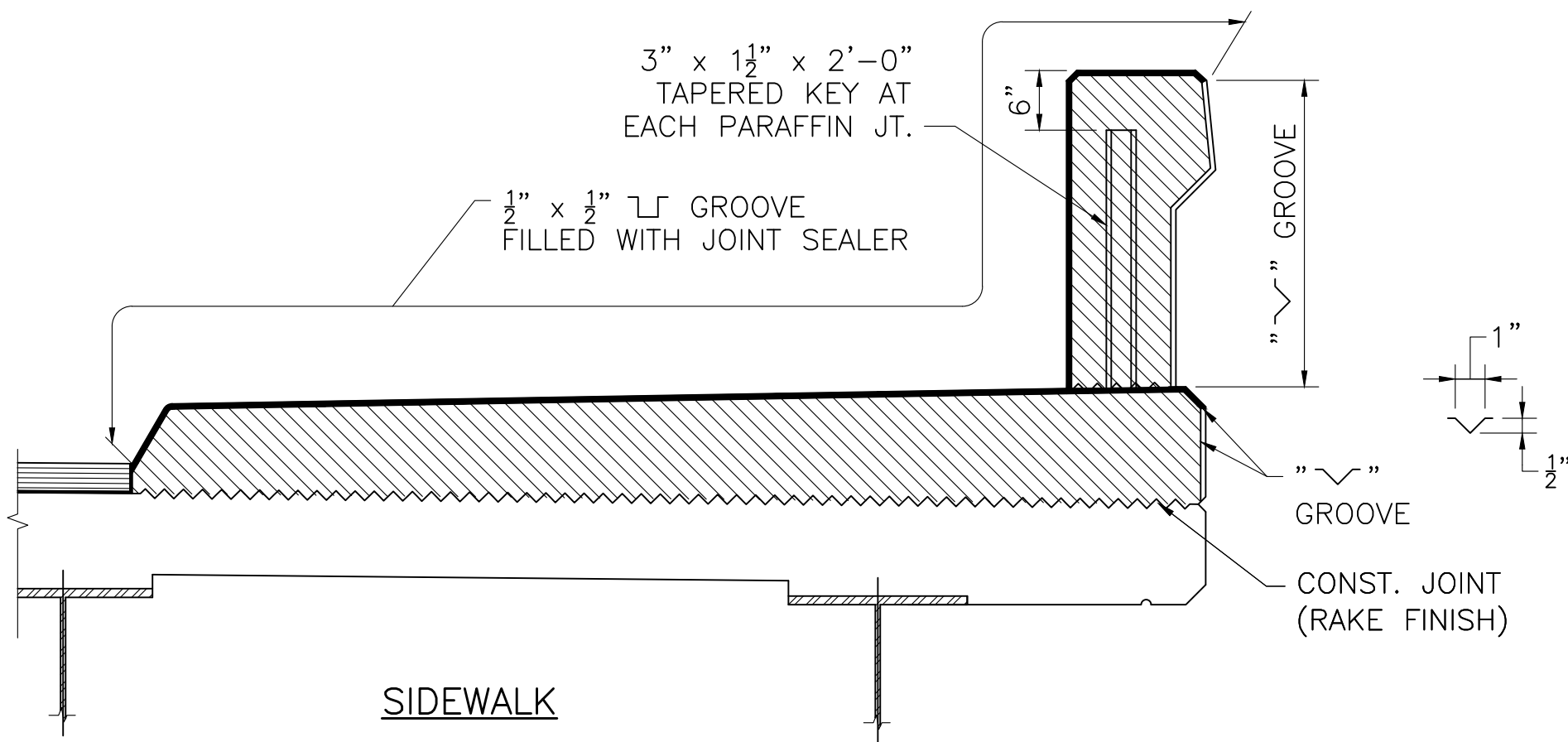
SECTION THRU BARRIER AT SIDEWALK

SCALE: 1 1/2" = 1'-0"



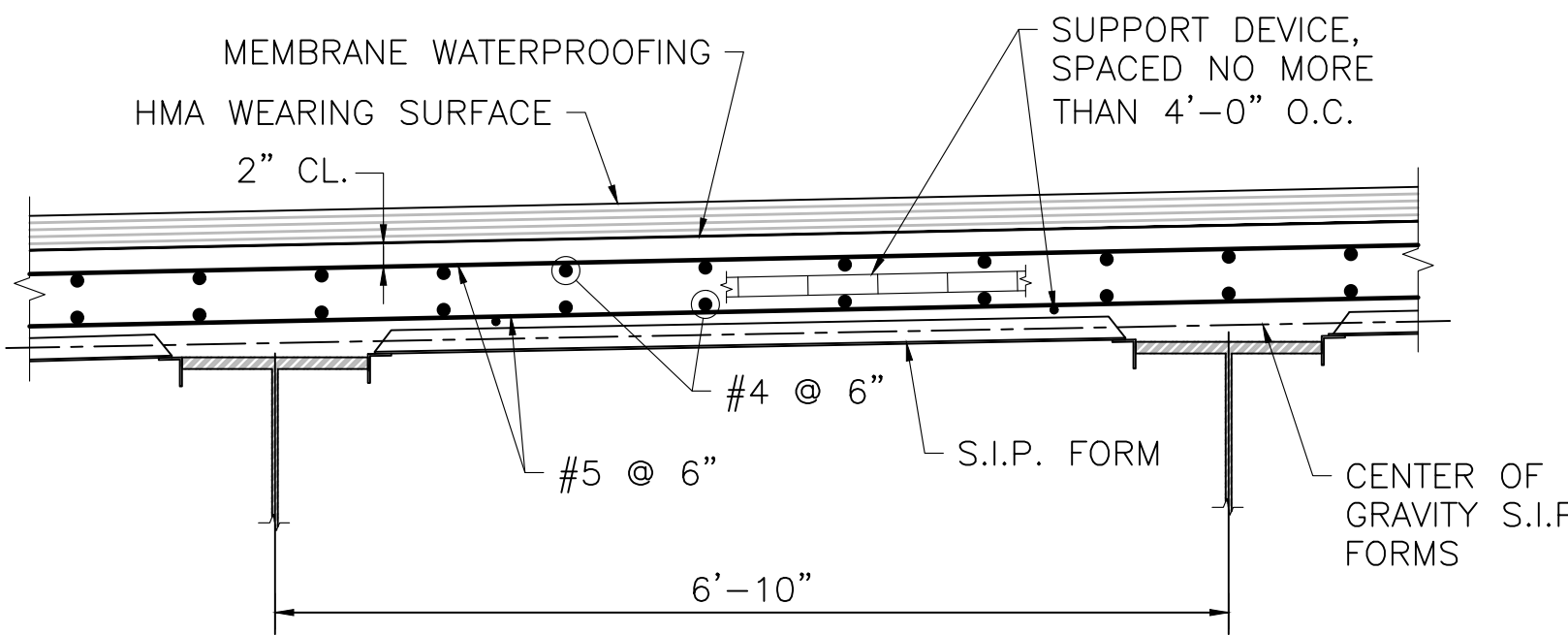
FACE OF SIDEWALK CURB

NOT TO SCALE



PARAFFIN JOINT DETAILS

SCALE: 3/4" = 1'-0"

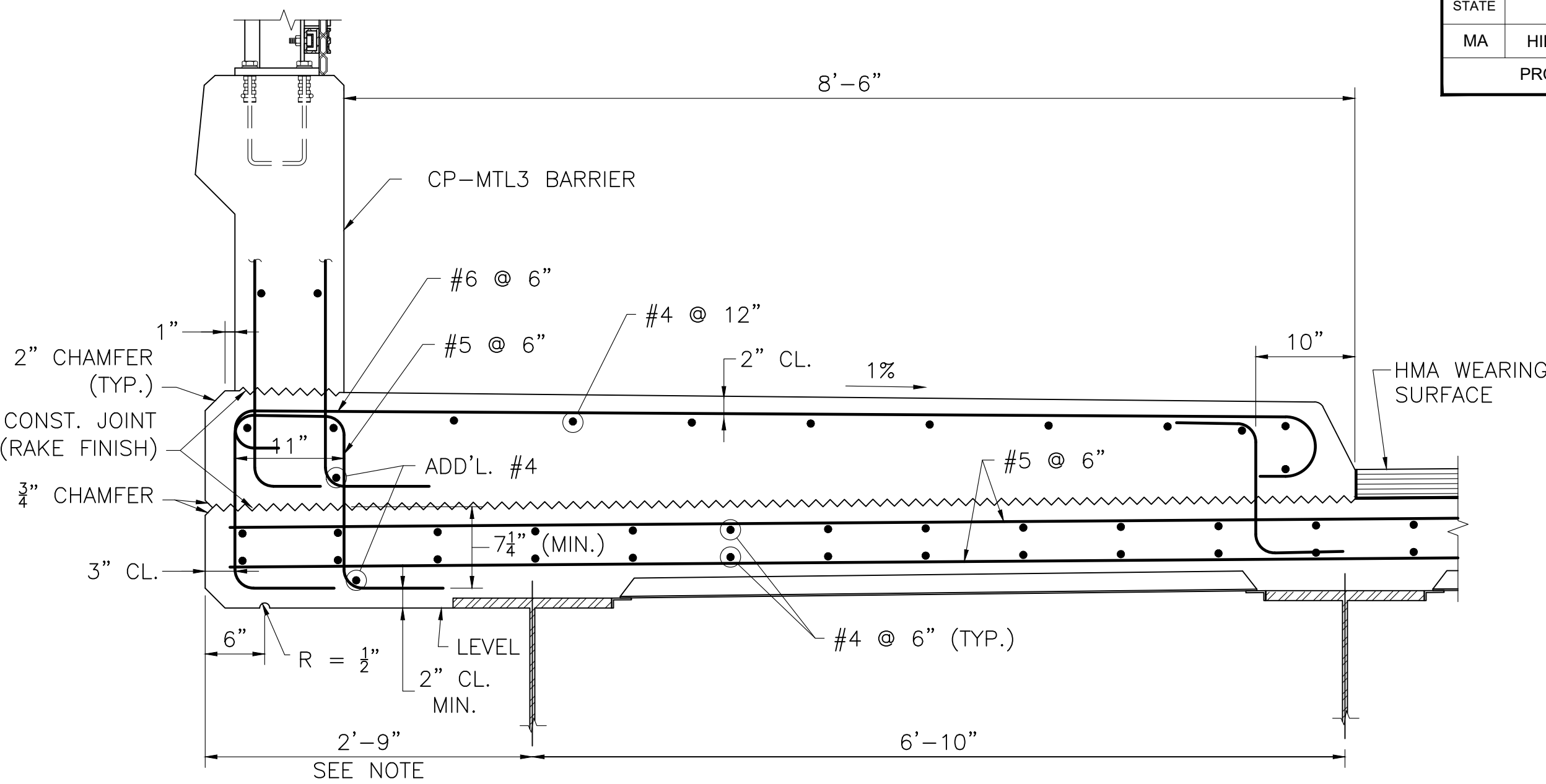


TYPICAL DECK REINFORCEMENT

SCALE: 3/4" = 1'-0"

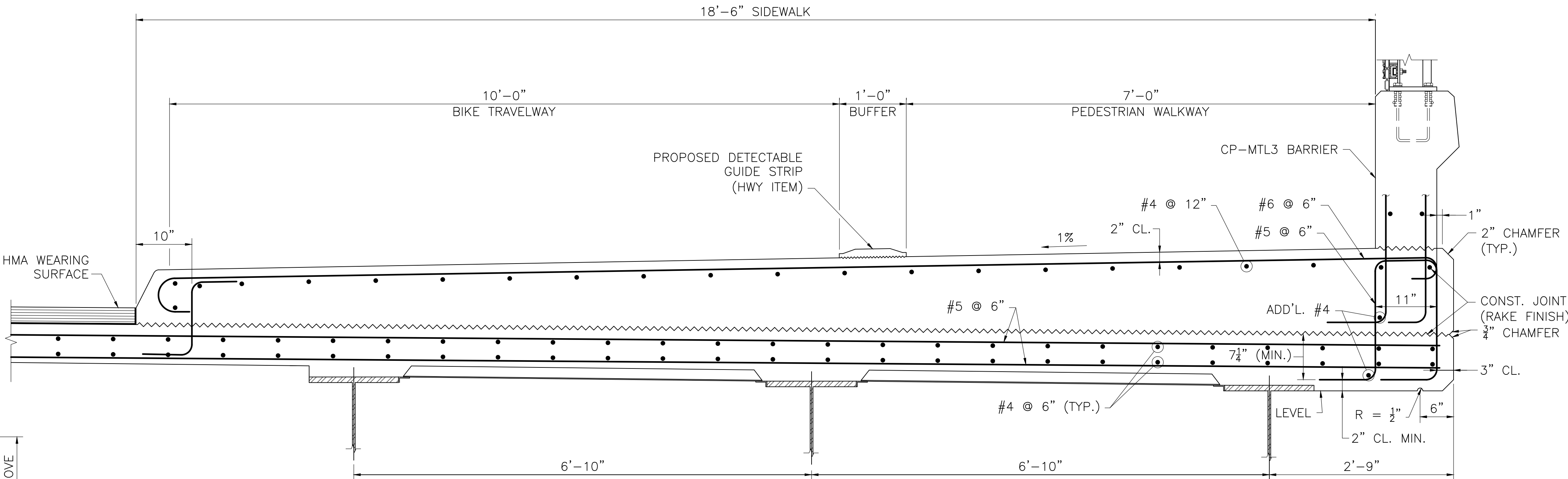
NOTES:

- LONGITUDINAL REINFORCEMENT SHALL BE PLACED PARALLEL TO THE DIRECTION OF CONSTRUCTION. TRANSVERSE (PRIMARY) REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE CONSTRUCTION LINE.
- ALL REINFORCEMENT AND SUPPORT DEVICES SHALL BE COATED.
- THE FINISHED SURFACE OF THE BRIDGE DECK SHALL BE SMOOTH AND WITHOUT ANY PROJECTIONS THAT COULD PUNCTURE THE MEMBRANE WATERPROOFING OR DEPRESSIONS THAT COULD RETAIN WATER.



SECTION THRU WEST SIDEWALK

SCALE: 1" = 1'-0"



SECTION THRU EAST SIDEWALK

SCALE: 1" = 1'-0"

NOTES:

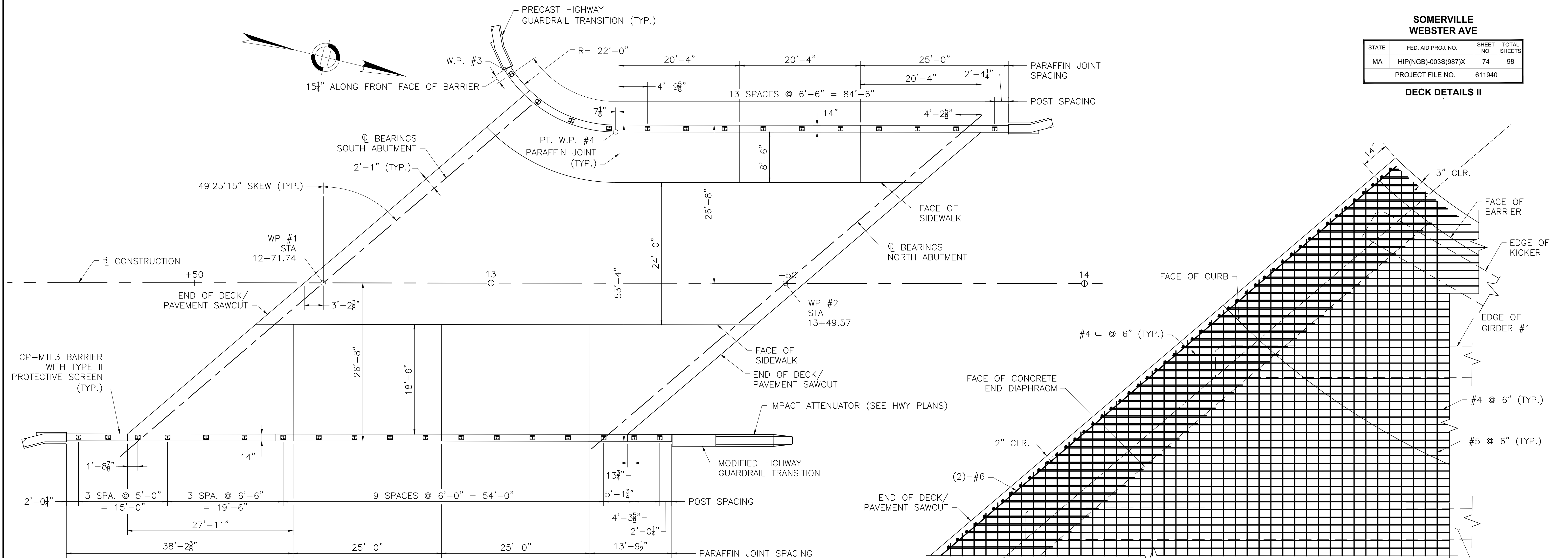
- ALL CONCRETE ABOVE THE SLAB SHALL BE POURED IN ALTERNATING SECTIONS WITH NOT LESS THAN 3 DAYS BETWEEN POURS.
- DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINTS. END THE REINFORCEMENT 2" CLEAR OF THE JOINT.
- JOINT SHALL BE SQUARE TO FACE OF CURB. AT PIER THE PARAFFIN JOINT SHALL BE PLACED OVER CENTER BEARING AT THE SKEW.

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
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SOMERVILLE
WEBSTER AVE

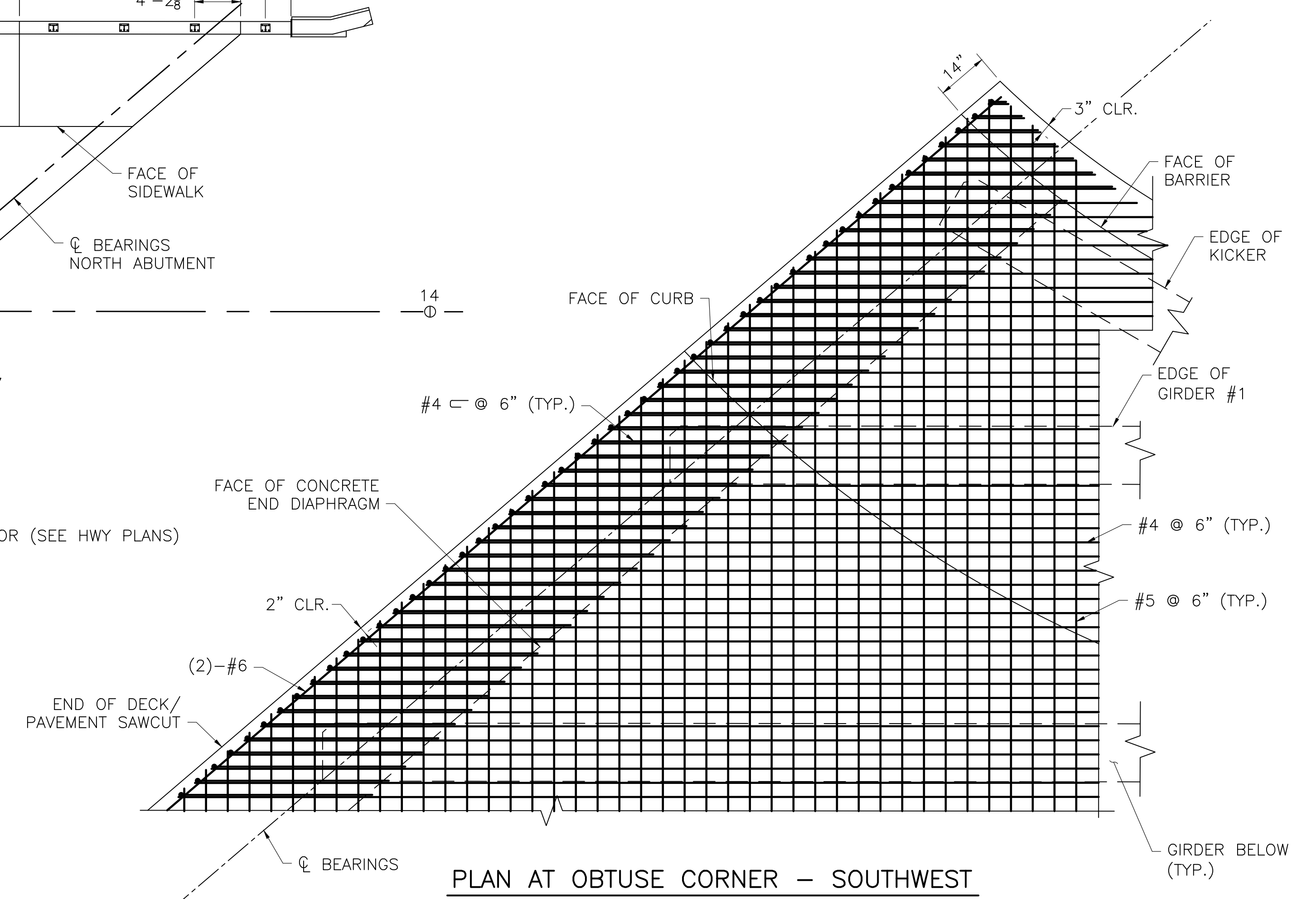
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	74	98
PROJECT FILE NO.		611940	

DECK DETAILS II



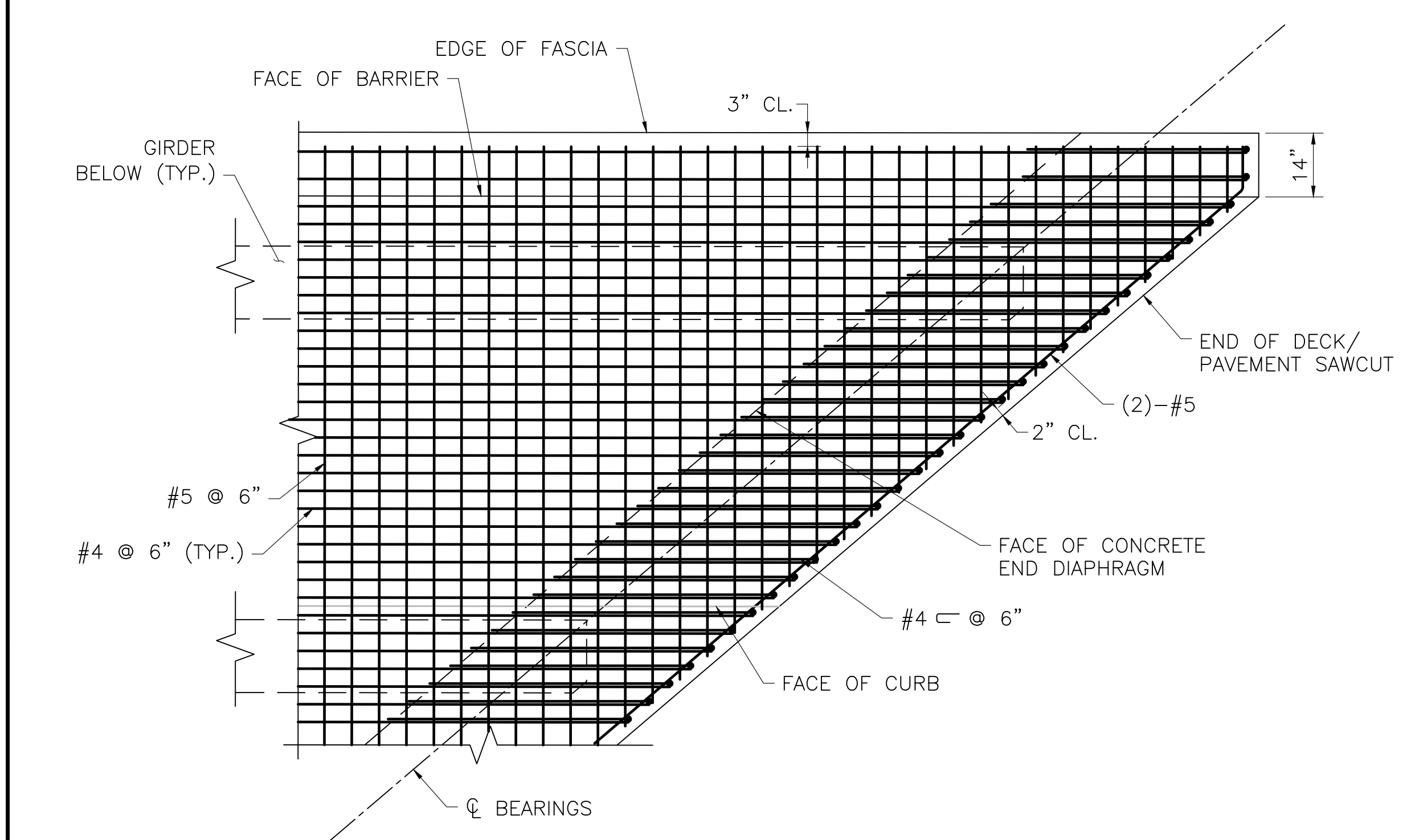
PROTECTIVE SCREEN POST & PARAFFIN JOINT PLAN

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



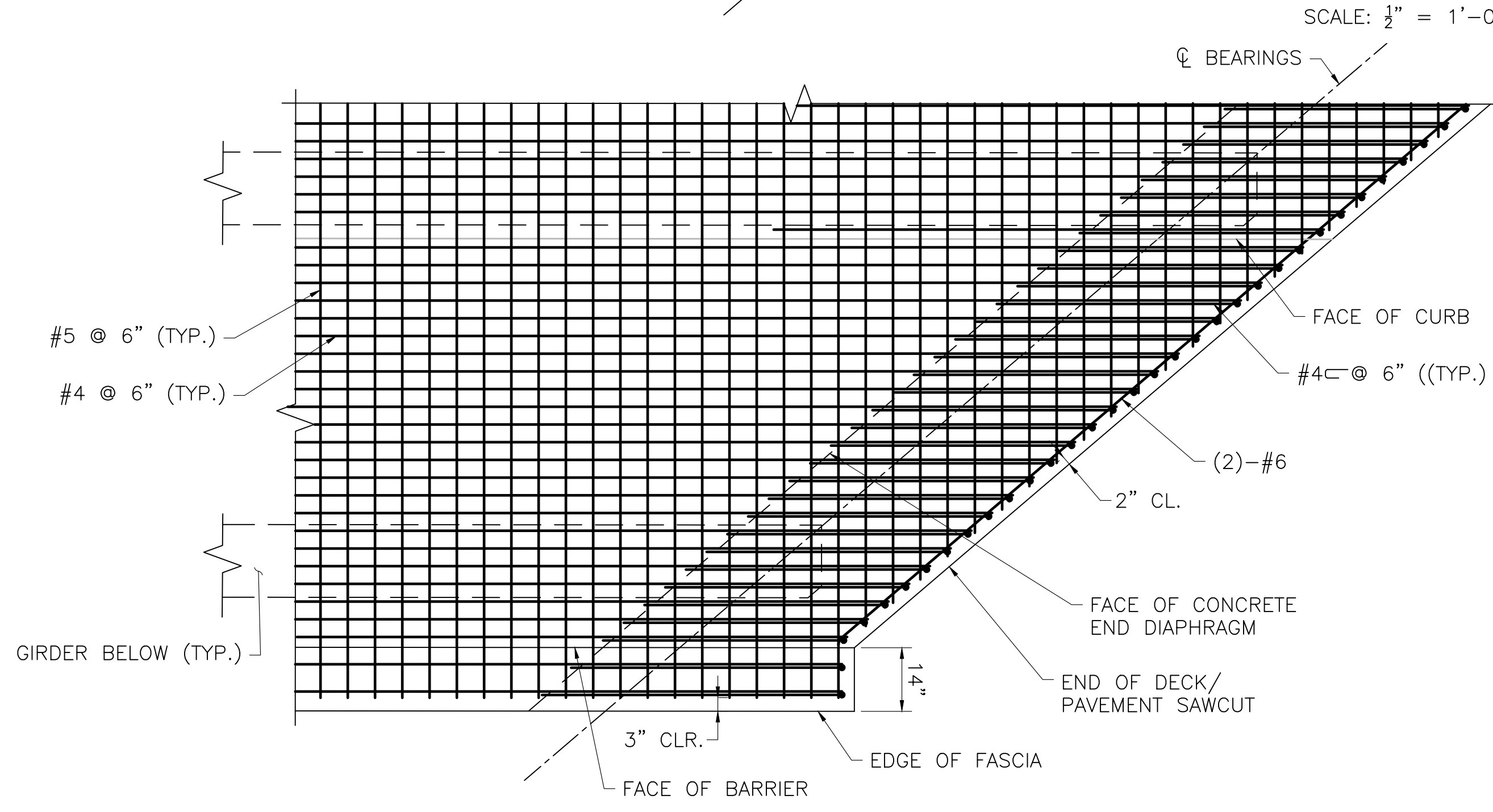
PLAN AT OBTUSE CORNER - SOUTHWEST

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



PLAN AT ACUTE NW CORNER

SCALE: $\frac{1}{2}$ " = 1'-0"
(SE SIMILAR OPP HAND)



PLAN AT OBTUSE CORNER - NORTHEAST

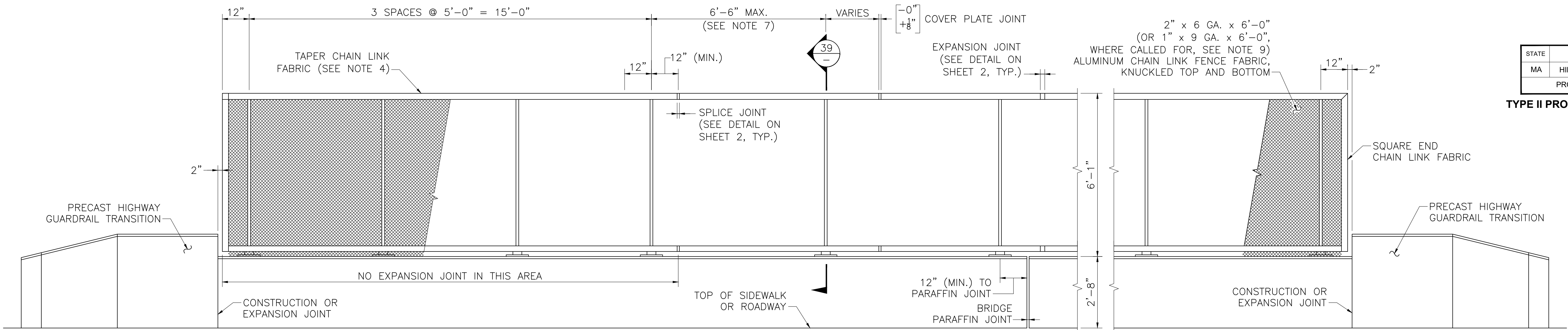
SCALE: $\frac{1}{2}$ " = 1'-0"

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE
WEBSTER AVE

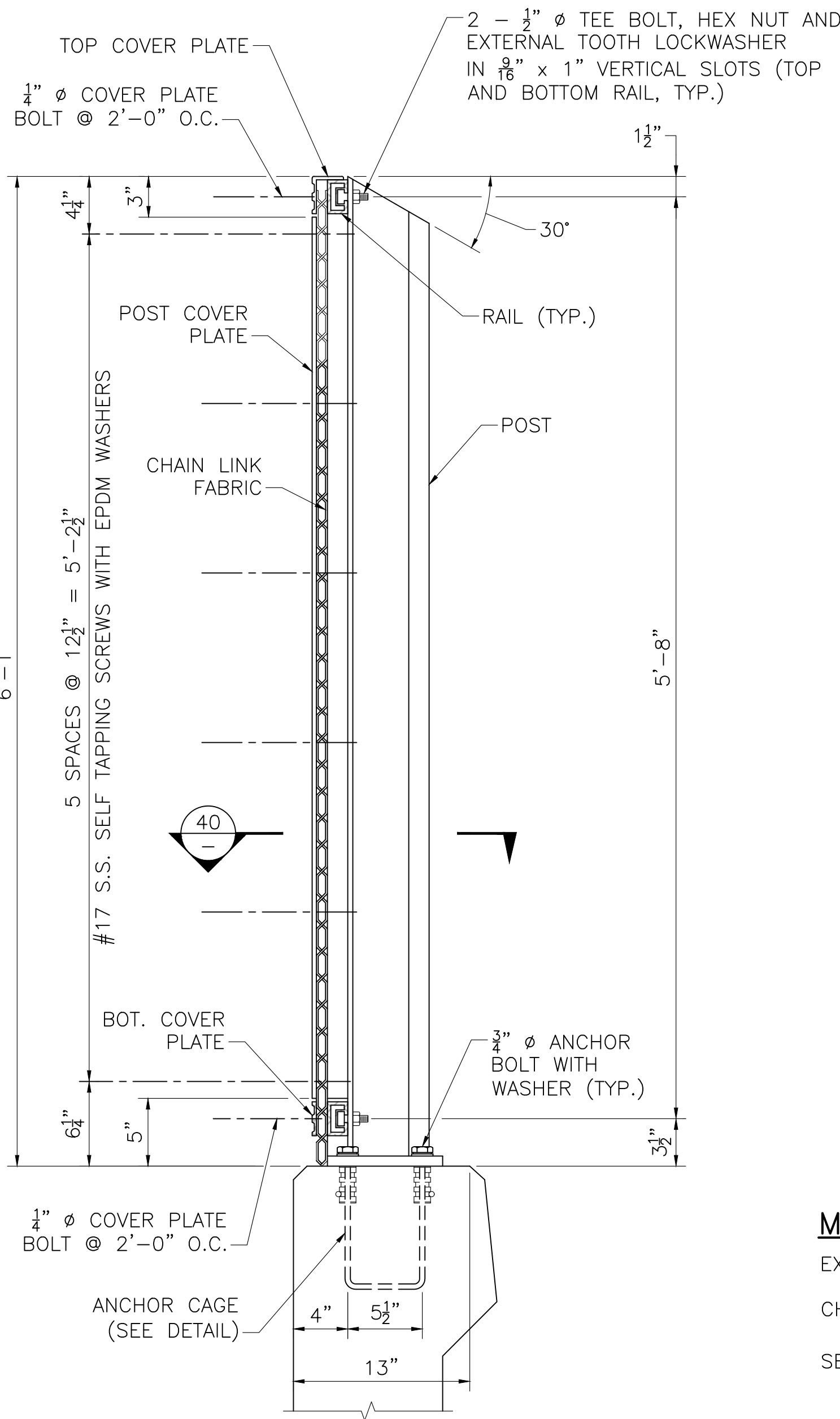
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	76	98
PROJECT FILE NO.		611940	

TYPE II PROTECTIVE SCREEN DETAILS II



ELEVATION

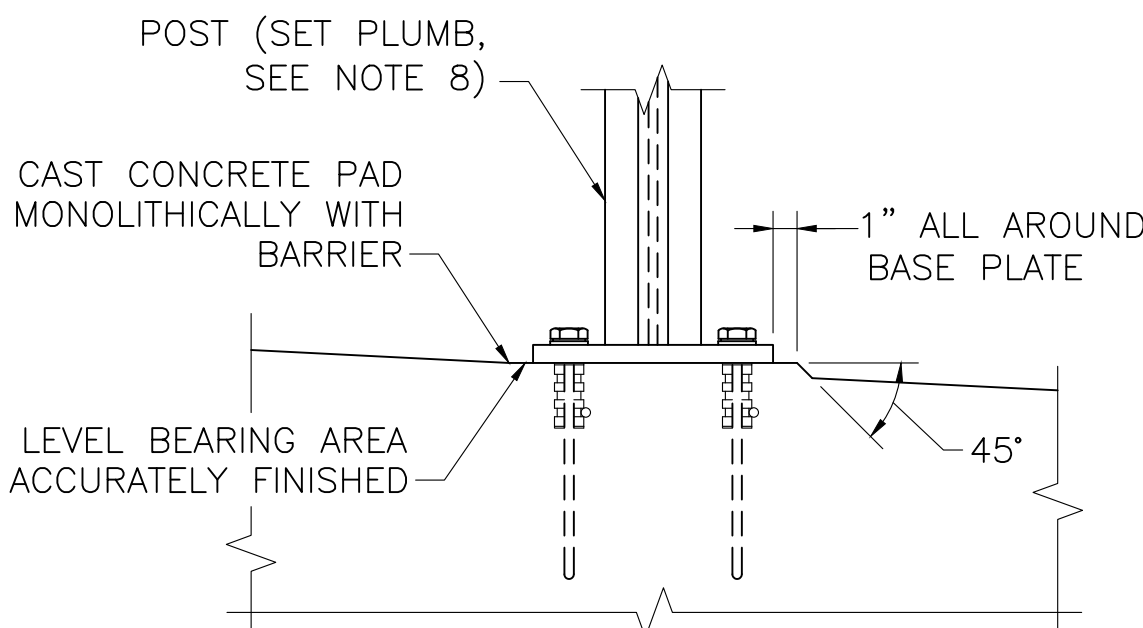
1/2" = 1'-0"



SECTION

SCALE: 1/2" = 1'-0"

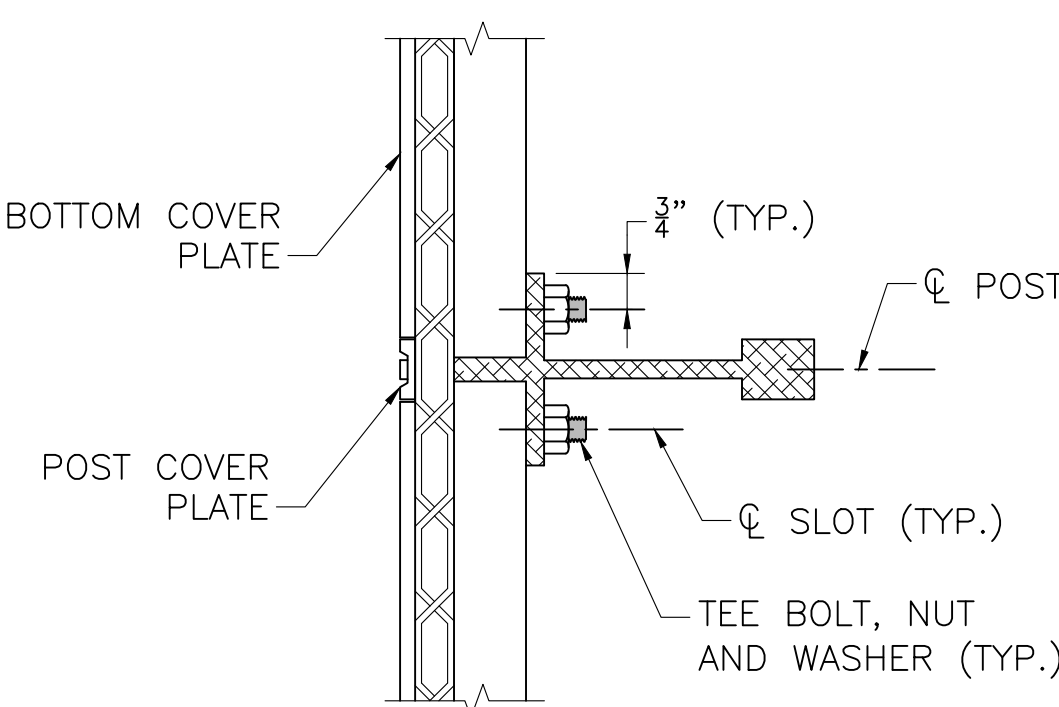
39



PROFILE GRADE OVER 3%

SETTING OF POSTS

1/2" = 1'-0"



SECTION

SCALE: 3" = 1'-0"

40

MATERIALS:

EXTRUSIONS & PLATES ASTM B 221, ALLOY 6061-T6

CHAIN LINK FABRIC AASHTO M 181 TYPE III (ALLOY 6061-T89 OR T94)

SELF TAPPING SCREWS TYPE 304 STAINLESS STEEL WITH 1/4" THICK EPDM (ETHYLENE PROPYLENE DIENE MONOMER) WASHERS

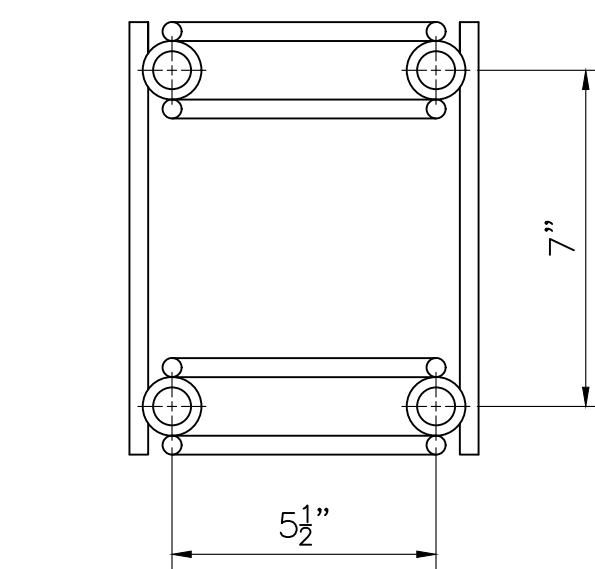
ANCHOR BOLTS ASTM F3125 GRADE 325 TYPE 1 GALVANIZED (ROTATION CAPACITY TEST NOT REQUIRED)

TEE BOLTS ASTM A 307 GALVANIZED OR TYPE 304 STAINLESS STEEL

TYPE 304 STAINLESS STEEL WITH OVERSIZED STAINLESS WASHER AND STAINLESS NUT WITH NYLON INSERT

FINISHES:

- POSTS, RAILS, COVER PLATES AND SPLICE PLATES SHALL RECEIVE A DARK BRONZE ANODIZED FINISH.
- CHAIN LINK FABRIC SHALL RECEIVE A 4±1 MIL POLYESTER POWDER COAT FINISH. THE COLOR SHALL BE DARK BRONZE TO MATCH COLOR OF ANODIZED ALUMINUM FRAMEWORK.
- #17 SELF TAPPING SCREWS AND 1/4" Ø COVER PLATE BOLTS TO BE COLORED TO MATCH THE ANODIZED EXTRUSIONS.

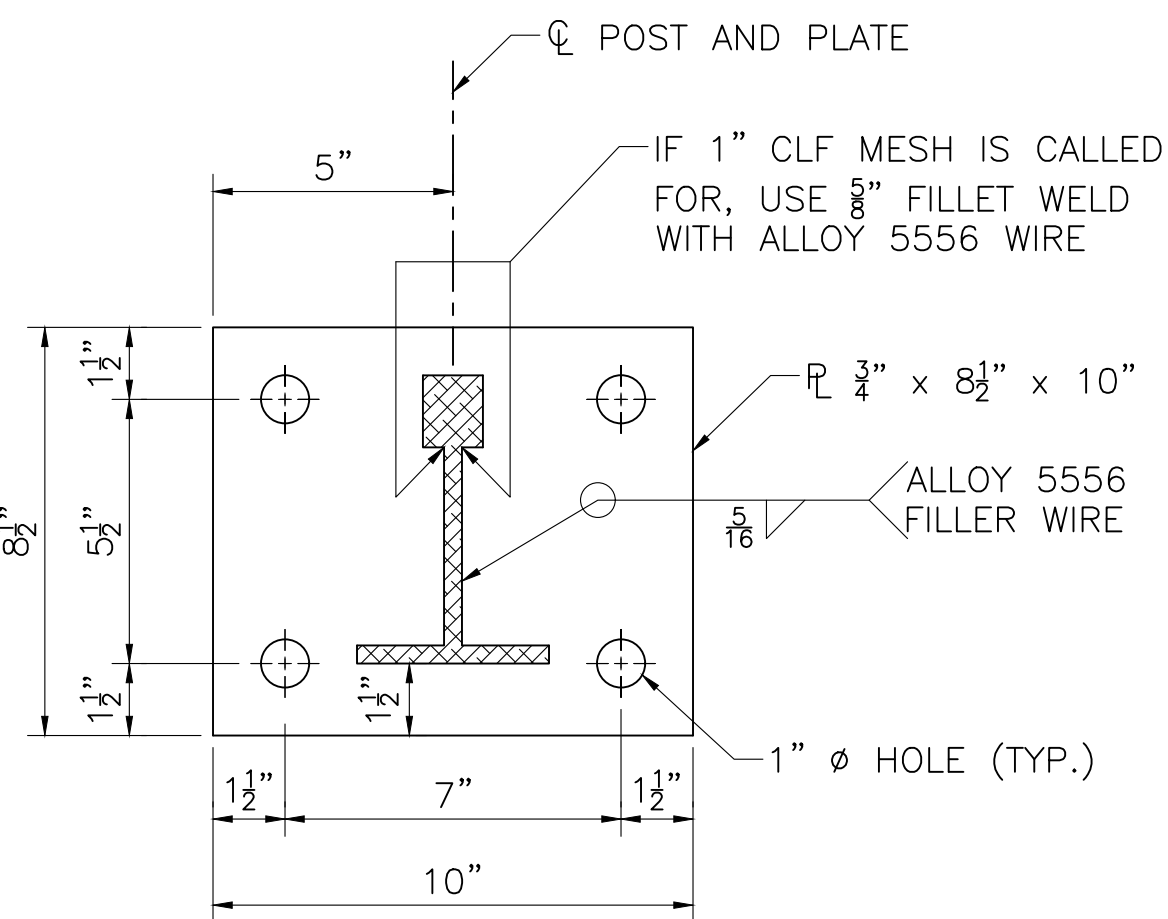


NOTE:

GALVANIZED OR ELECTROPLATE FINISH.

ANCHOR CAGE

3" = 1'-0"



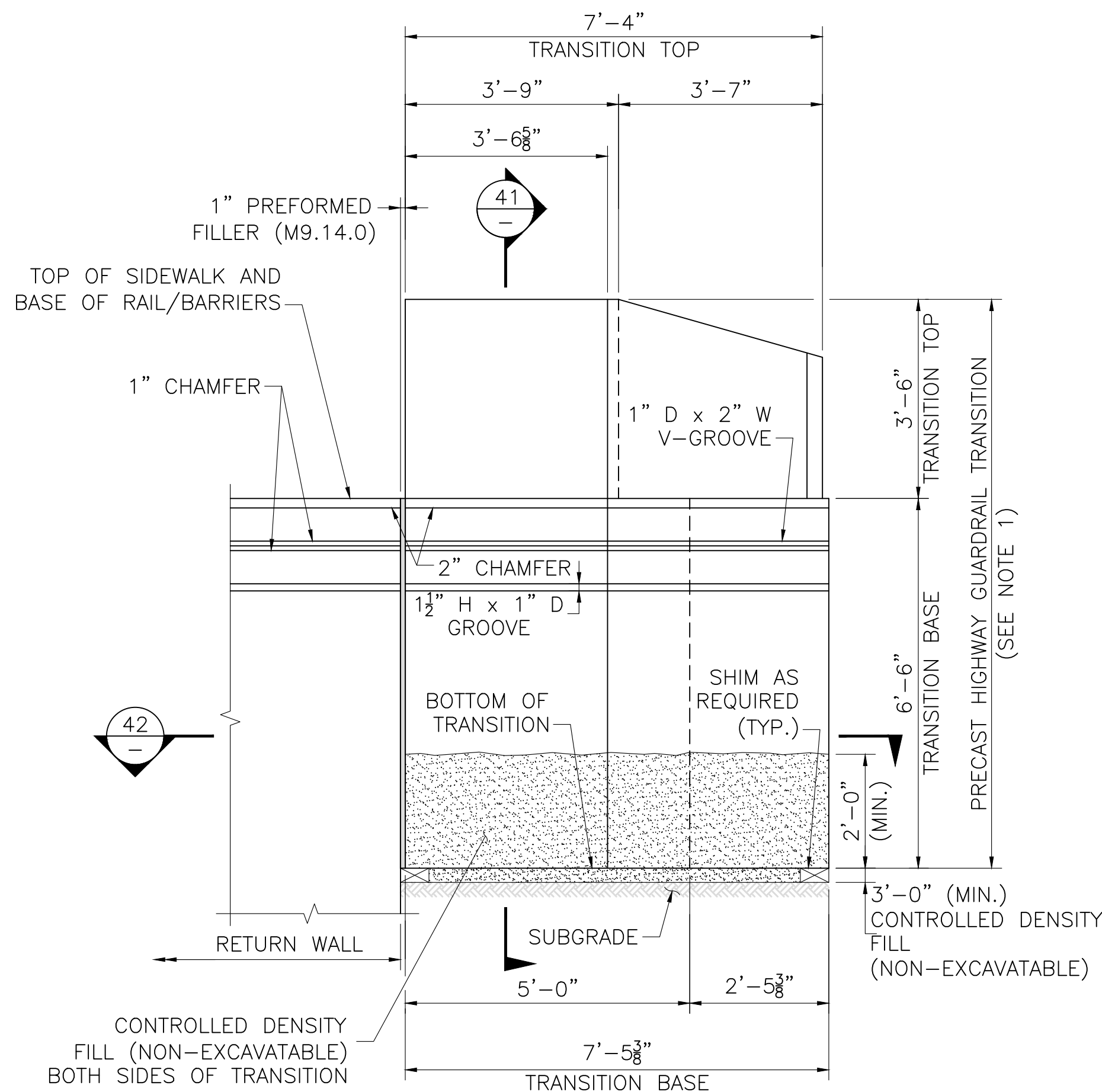
BASE PLATE DETAIL

3" = 1'-0"

NOTES:

- RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POSTS, IF POSSIBLE.
- RAILS SHALL HAVE AN EXPANSION JOINT IN THE PANEL OVER A BRIDGE EXPANSION JOINT AND AT 30 FOOT MAXIMUM SPACING ELSEWHERE.
- BOTTOM OF POST BASE PLATE TO BE SET ON A 1/4" MOLDED FABRIC BEARING PAD (M9.16.2). THE THICKNESS OF THE PAD SHALL BE IGNORED BY THE DETAILER.
- THE CHAIN LINK FABRIC SHALL BE SECURED BY KNUCKLING TOGETHER THE CUT ENDS OF THE FABRIC WIRE IN A MANNER SIMILAR TO THE ORIGINALLY MANUFACTURED END.
- WHERE THE R.O.W. FENCE MUST MEET THE SCREEN, USE THE SQUARE END TO HIGHWAY GUARDRAIL TRANSITION DETAIL.
- THE SCREEN END TREATMENT TO BE USED (SQUARE OR TAPERED) IS SPECIFIED ELSEWHERE ON THE CONSTRUCTION DRAWINGS.
- POST SPACING SHALL BE UNIFORM BETWEEN TAPERED ENDS.
- SET POSTS PERPENDICULAR TO GRADE FOR GRADES UP TO 3%. SET POSTS PLUMB FOR GRADES GREATER THEN 3%.
- USE 2" x 6 GA. FABRIC, EXCEPT OVER MBTA RAPID TRANSIT LINES (RED, ORANGE, GREEN, AND BLUE), WHERE 1" x 9 GA. FABRIC SHALL BE USED.

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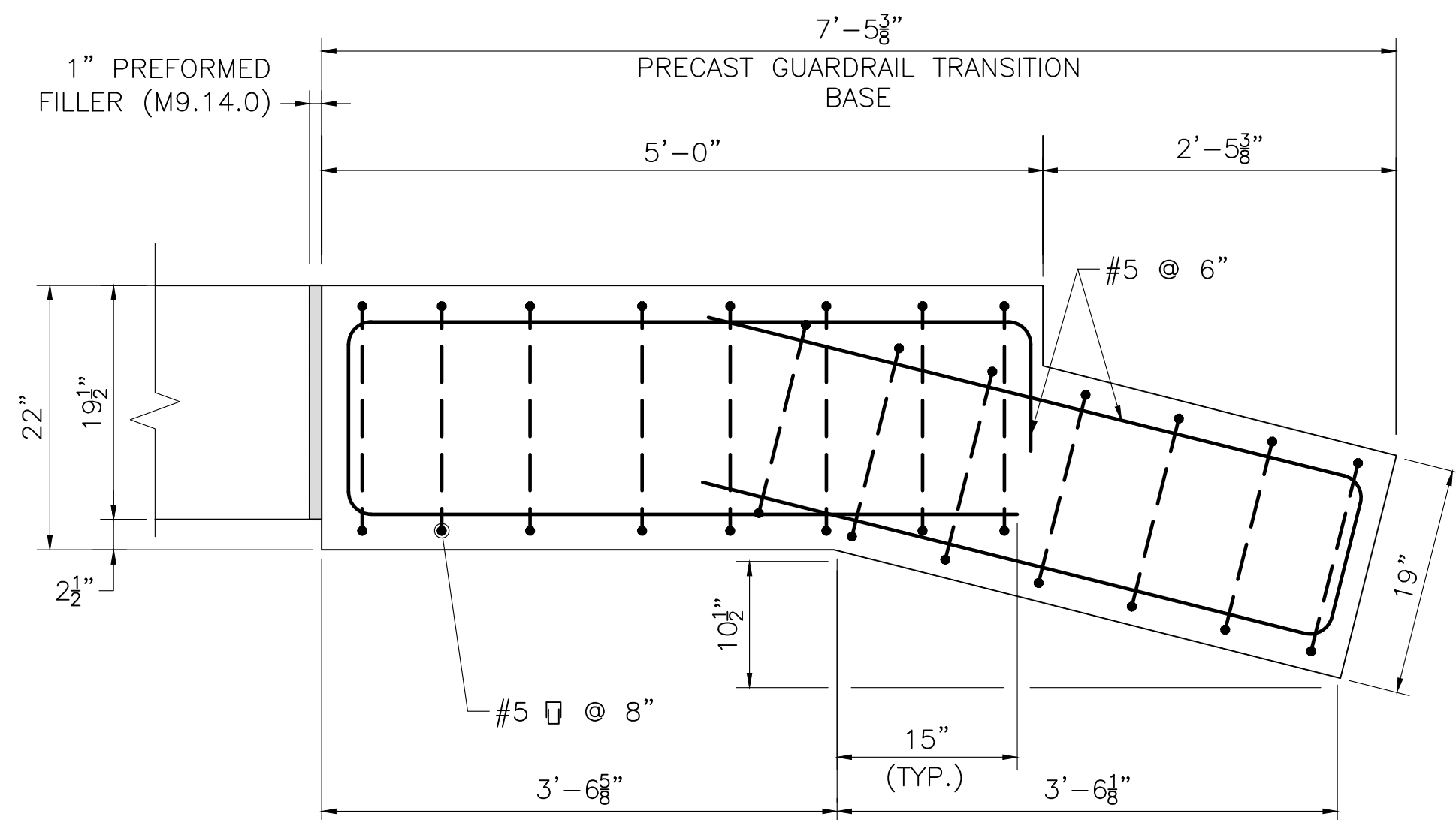


PRECAST GUARDRAIL TRANSITION
ELEVATION AT U-WINGWALL

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

NOTES:

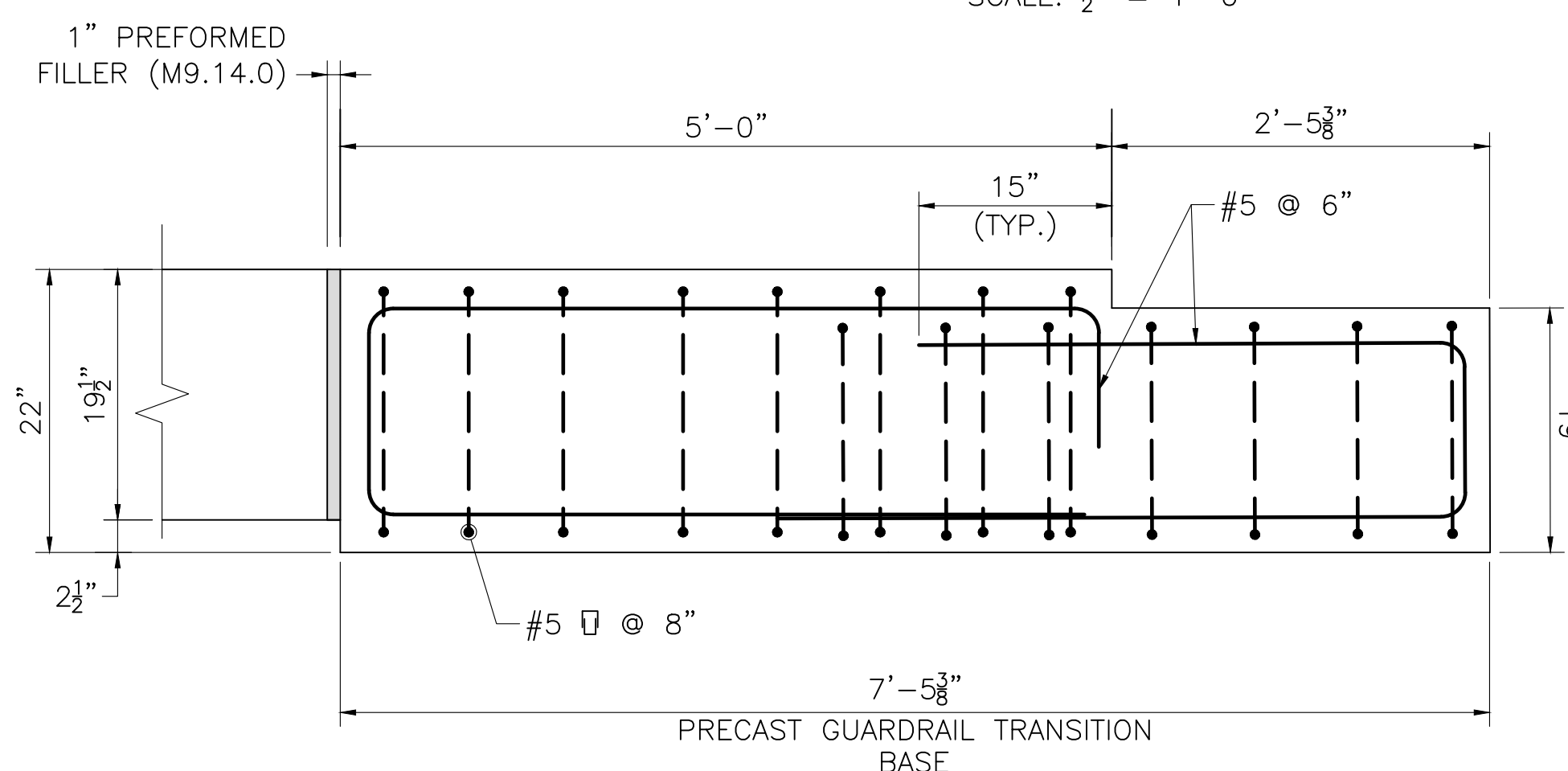
- GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE PRECAST GUARDRAIL TRANSITION BASE AND TO A HEIGHT OF 2'-0" (MIN.) ON ALL SIDES OF THE TRANSITION BASE TO FORM A TRENCH IN WHICH TO SET THE TRANSITION. WHERE NO GRAVEL BORROW IS REQUIRED BELOW THE BASE, IT SHALL BE PLACED ON UNDISTURBED SOIL.
- CONTRACTOR SHALL SET THE PRECAST GUARDRAIL TRANSITION TO THE REQUIRED ELEVATION AND ALIGNMENT, AND BACKFILL PRECAST GUARDRAIL TRANSITION WITH CONTROLLED DENSITY FILL (NON-EXCAVATABLE) TO THE ELEVATION SHOWN.



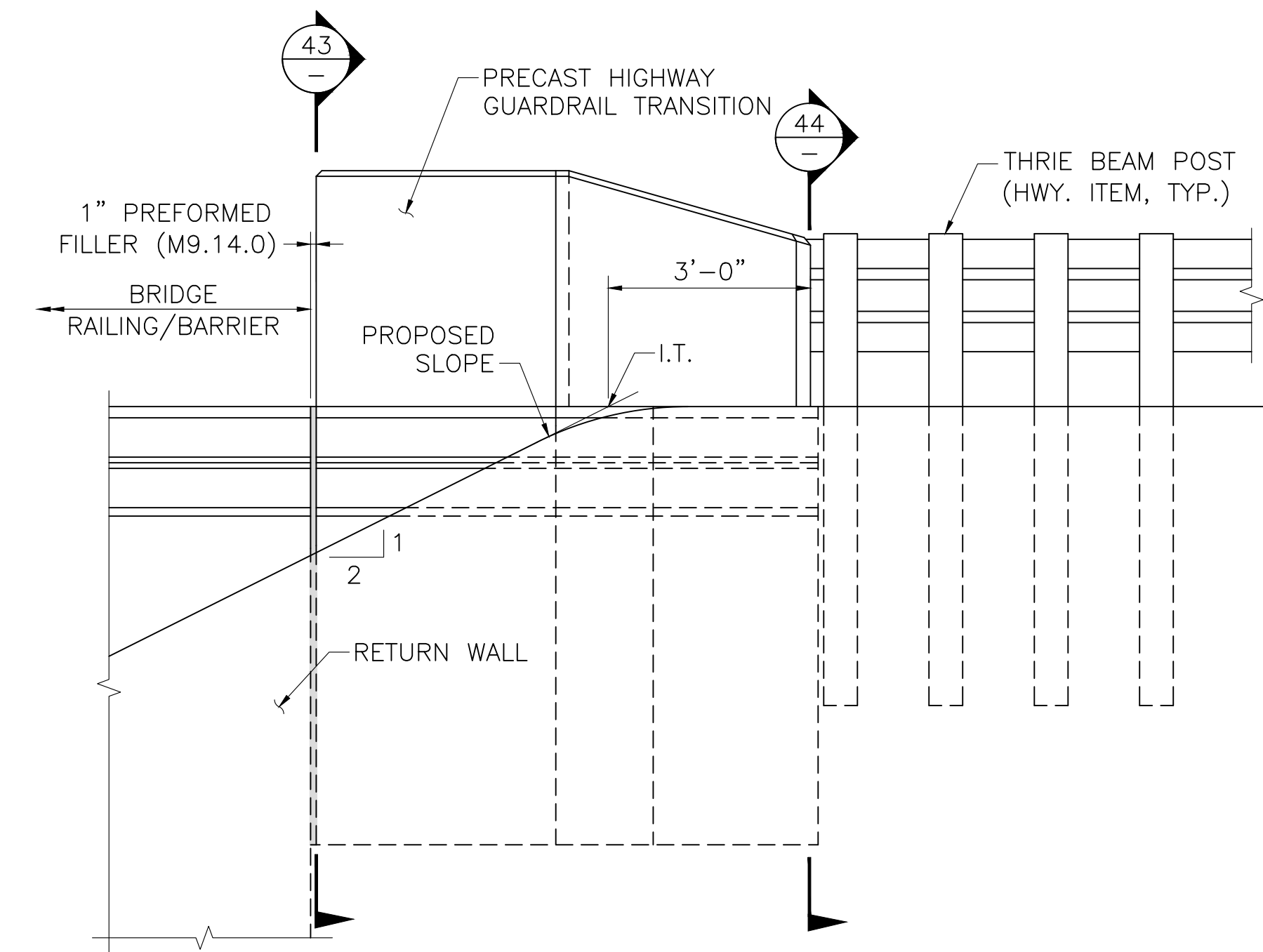
STANDARD TRANSITION

SECTION 42

SCALE: 1" = 1'-0"

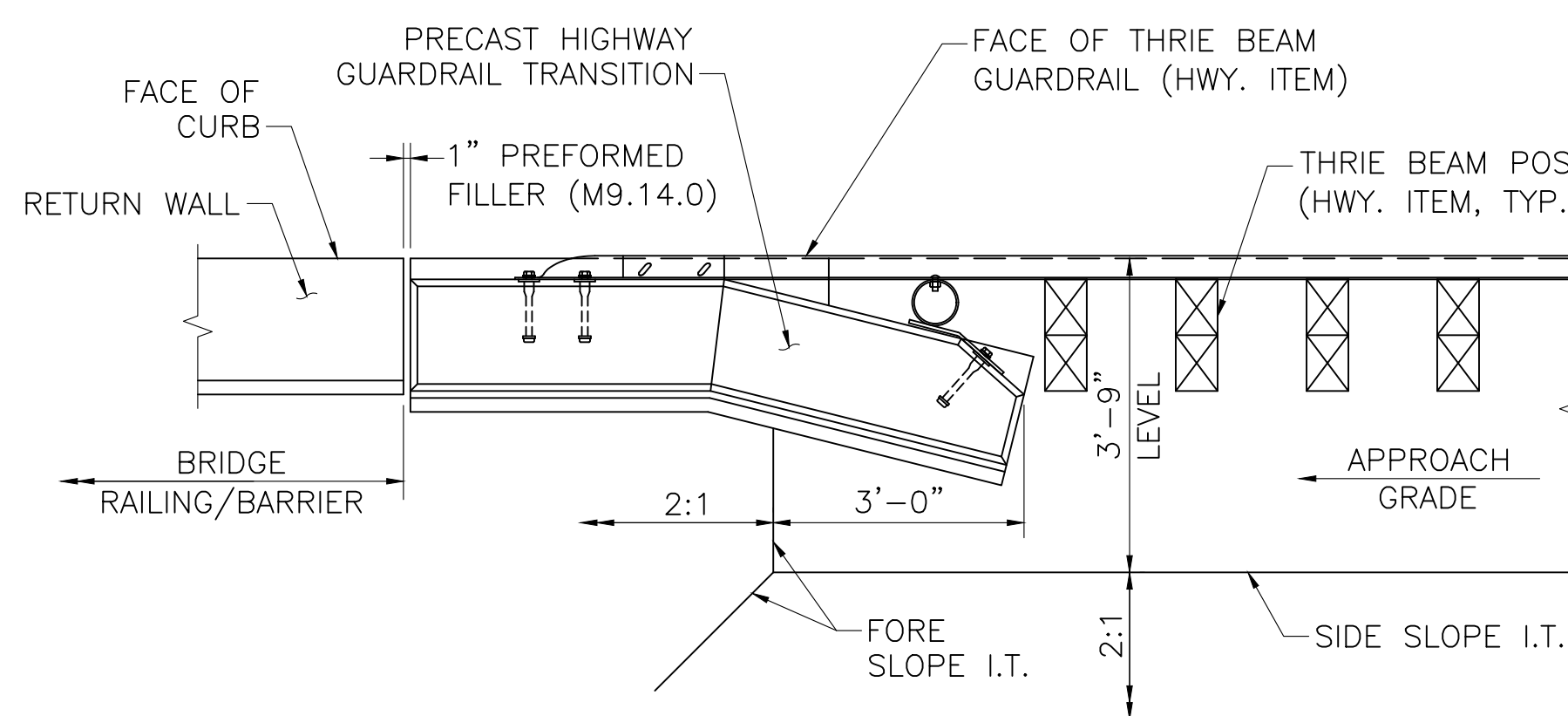


MODIFIED TRANSITION



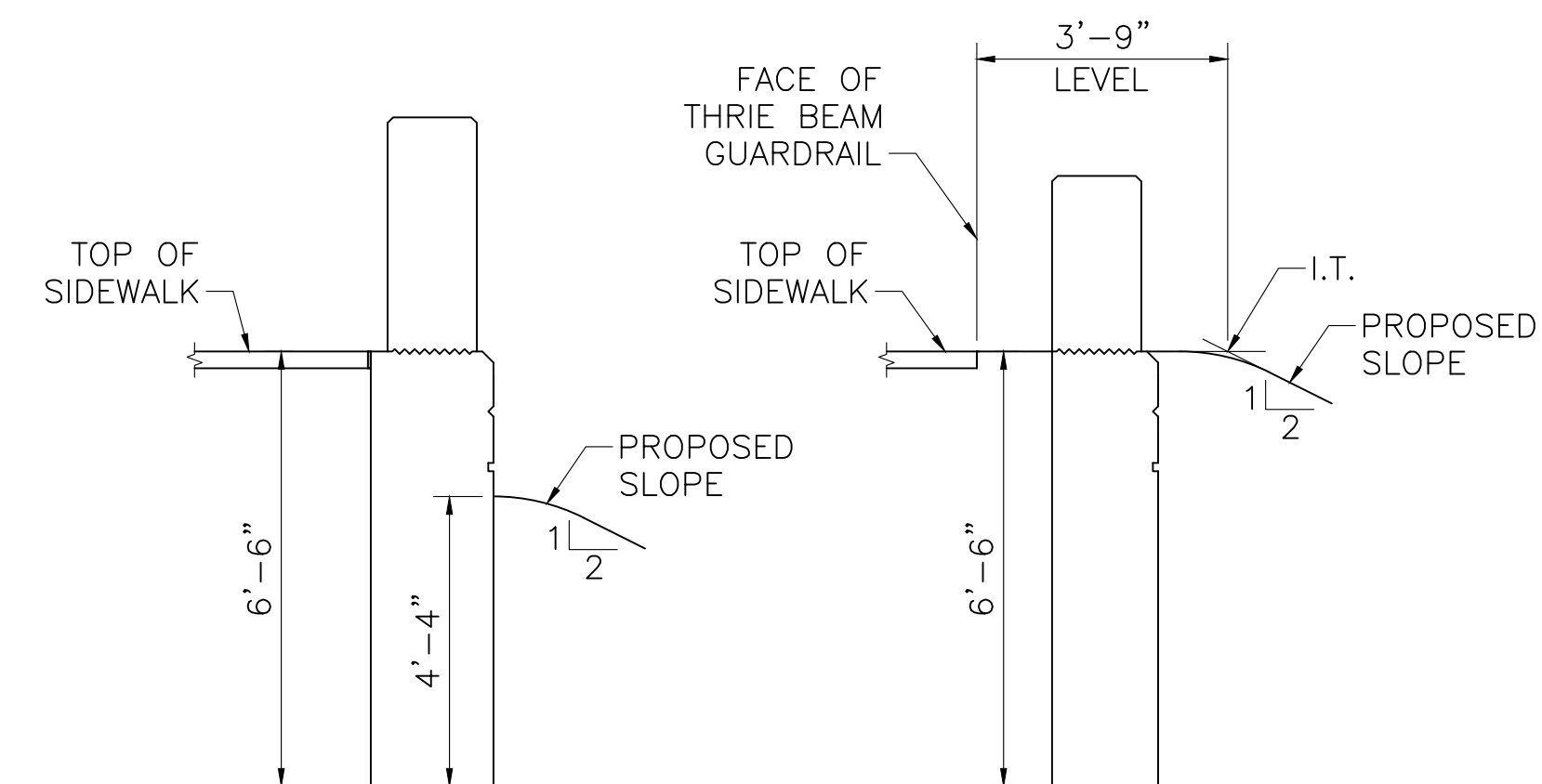
GRADING REQUIREMENTS
ELEVATION

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



GRADING REQUIREMENTS
PLAN

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

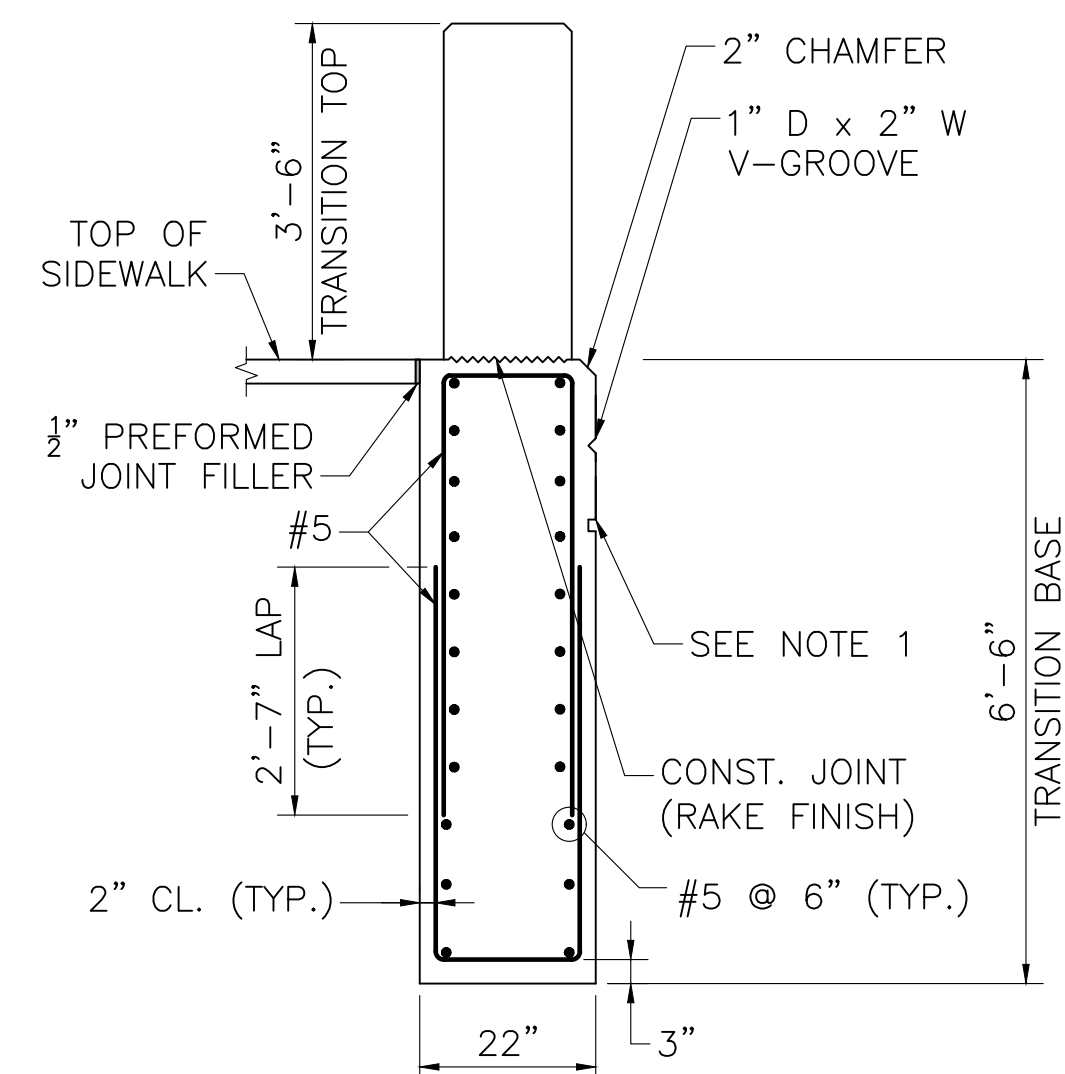


SECTION 43

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

SECTION 44

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



SECTION 41

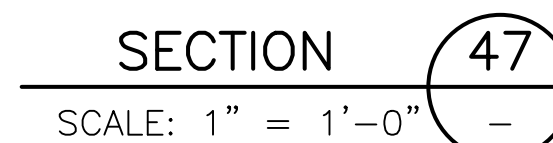
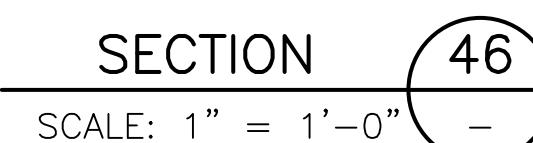
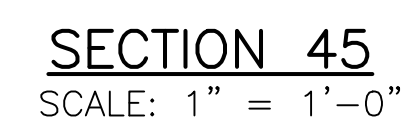
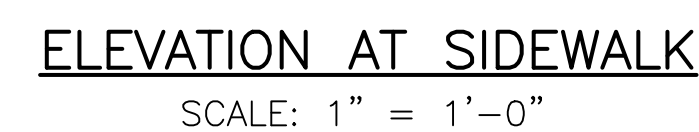
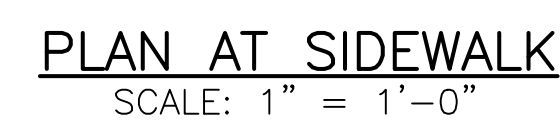
SCALE: $\frac{1}{2}$ " = 1'-0"

NOTES:

- $\frac{1}{2}$ " H x 1" D GROOVE. ALIGN WITH GROOVE AT TOP OF STRIATIONS.
- REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

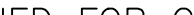
SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

SHEET 42 OF 44 SHEETS BRIDGE NO. S-17-016 (ATX)



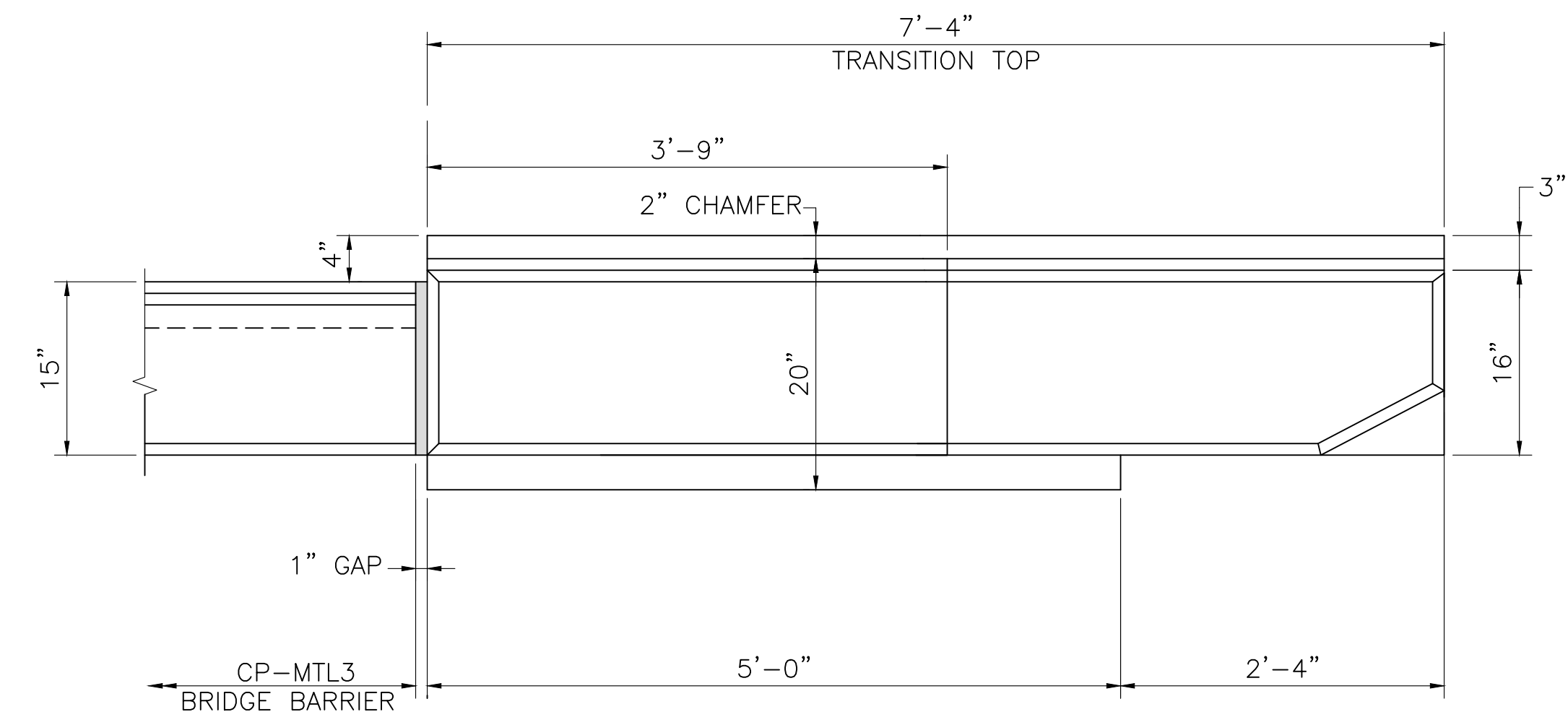
LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE 1½" CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON-SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.

HIGHWAY GUARDRAIL TRANSITION DETAILS II

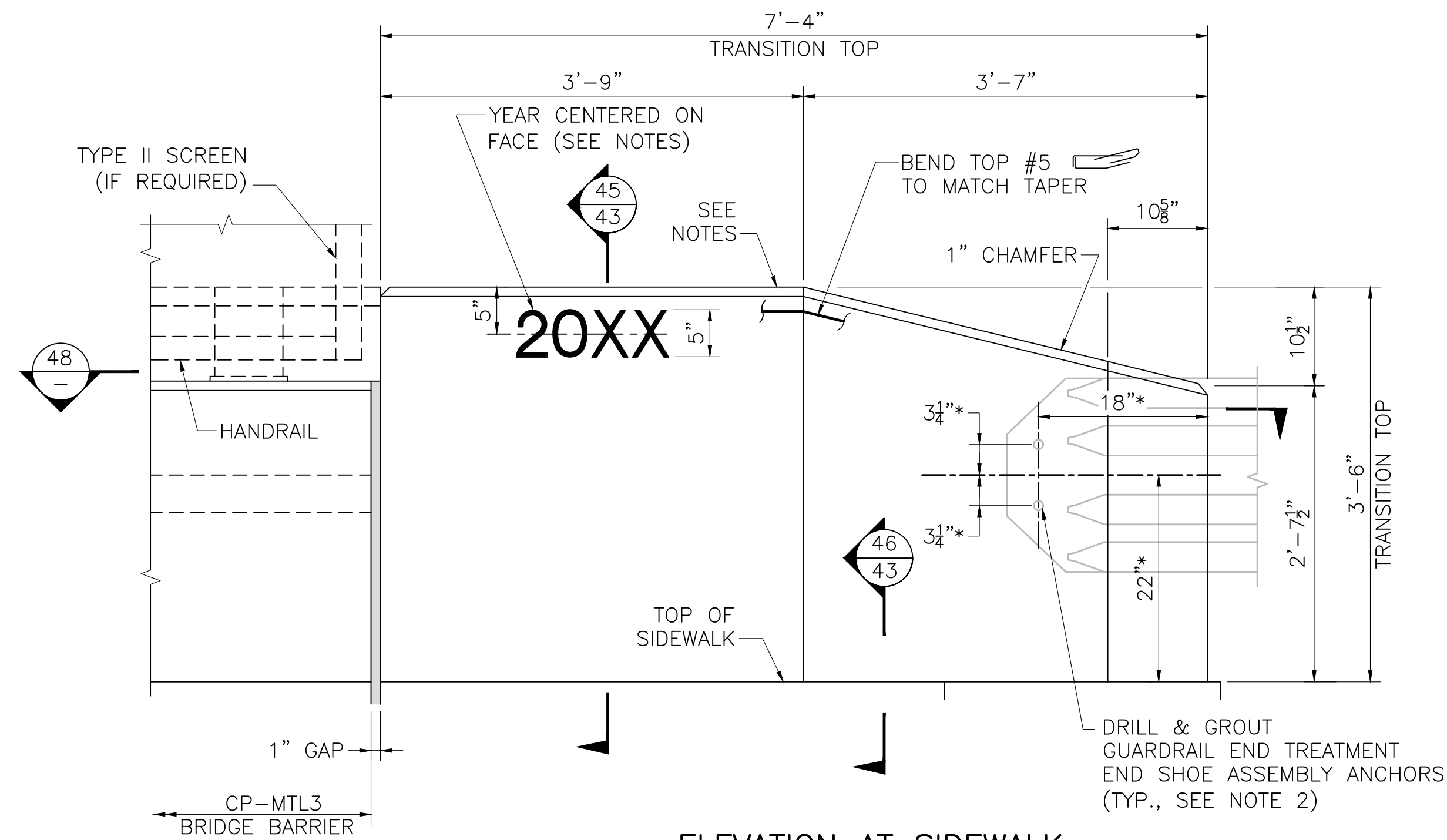
SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	 STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

SOMERVILLE WEBSTER AVE			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	79	98
PROJECT FILE NO.		611940	

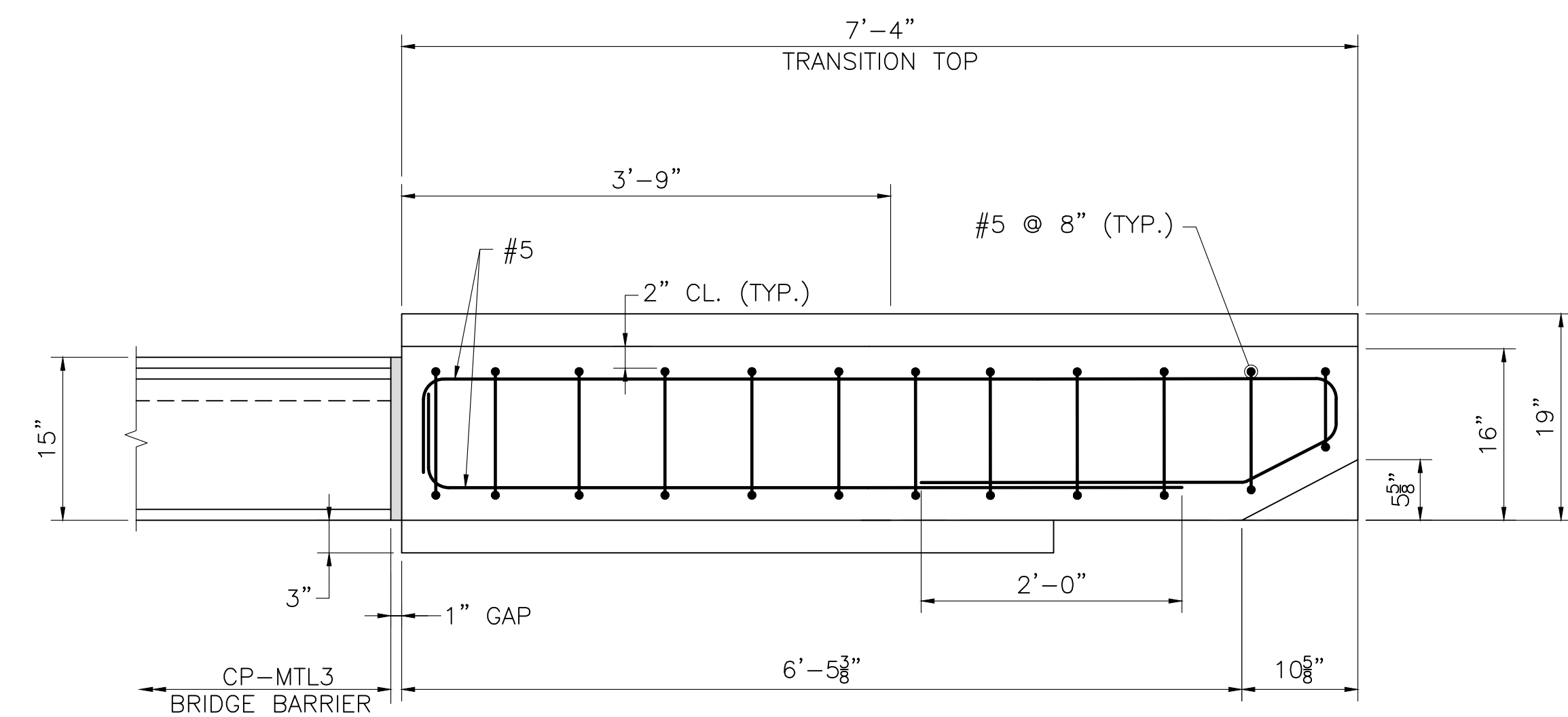
HIGHWAY GUARDRAIL TRANSITION DETAILS III



PLAN AT SIDEWALK
SCALE: 1" = 1'-0"



ELEVATION AT SIDEWALK
SCALE: 1" = 1'-0"



SECTION 48
SCALE: 1" = 1'-0"

NOTES:

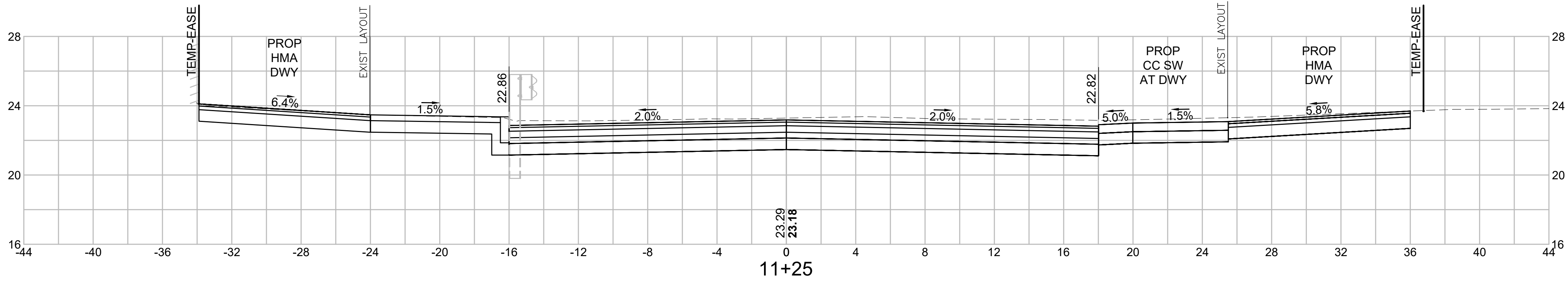
- SEE HIGHWAY GUARDRAIL TRANSITION DETAILS II (SHEET 43) FOR ADDITIONAL NOTES.
- * COORDINATE SIZING, NUMBER AND LOCATION OF ANCHORS WITH END TREATMENT MANUFACTURER. COST OF ANCHORS AS WELL AS THE DRILLING AND GROUTING SHALL BE INCIDENTAL TO ITEM 628.312.

SEPTEMBER 5, 2026	ISSUED FOR CONSTRUCTION
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AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

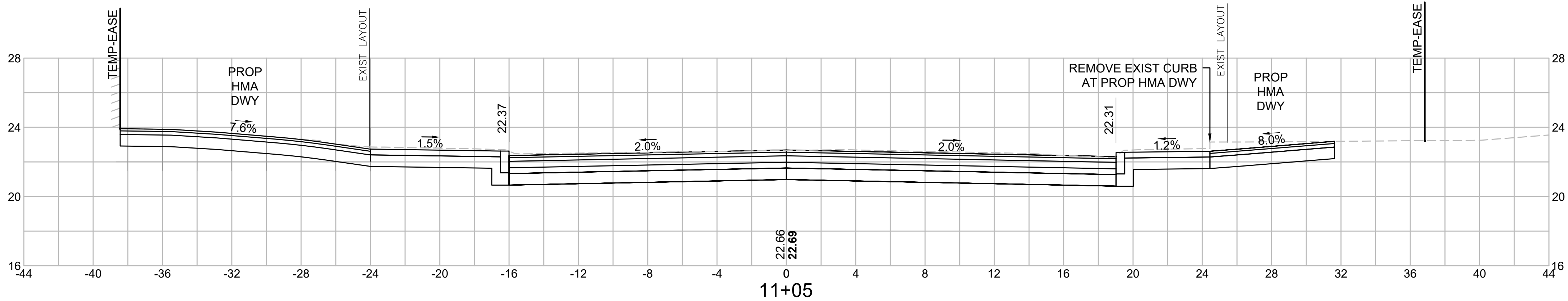
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	80	98
PROJECT FILE NO.		611940	

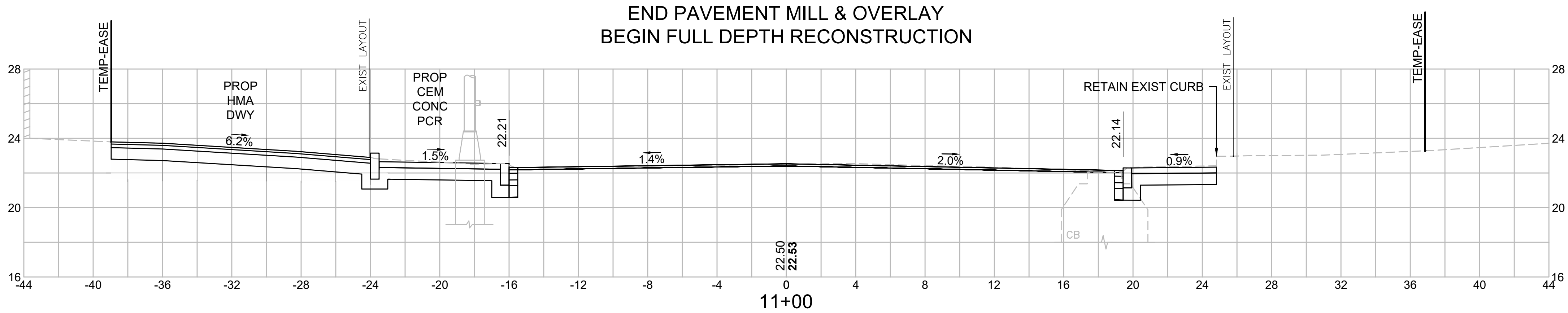
CROSS SECTIONS - 01
WEBSTER AVE



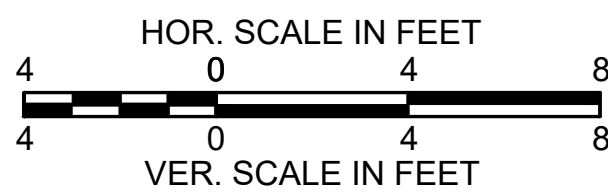
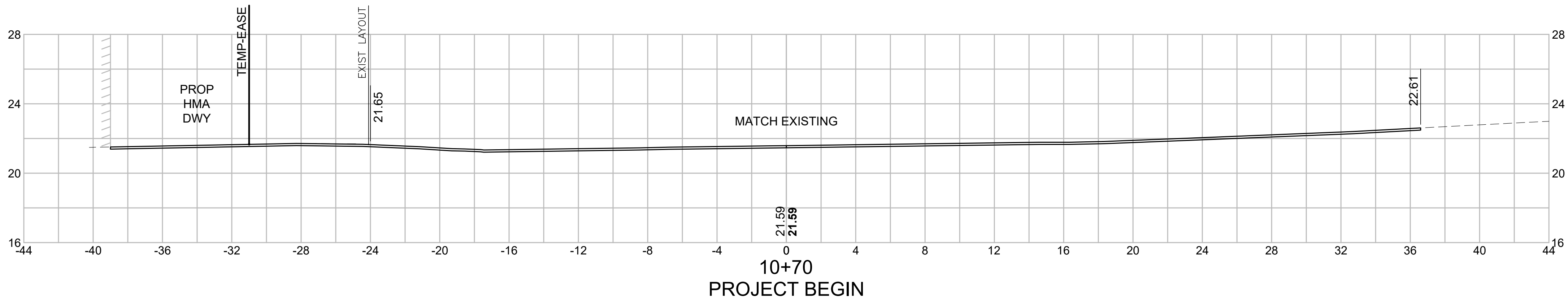
C = 106.00 SF
F = 0.00 SF



C = 97.79 SF
F = 0.00 SF



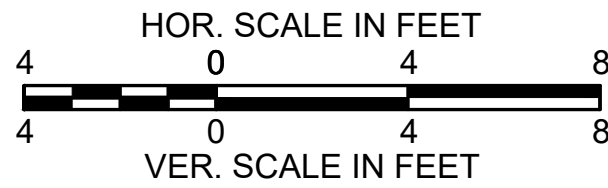
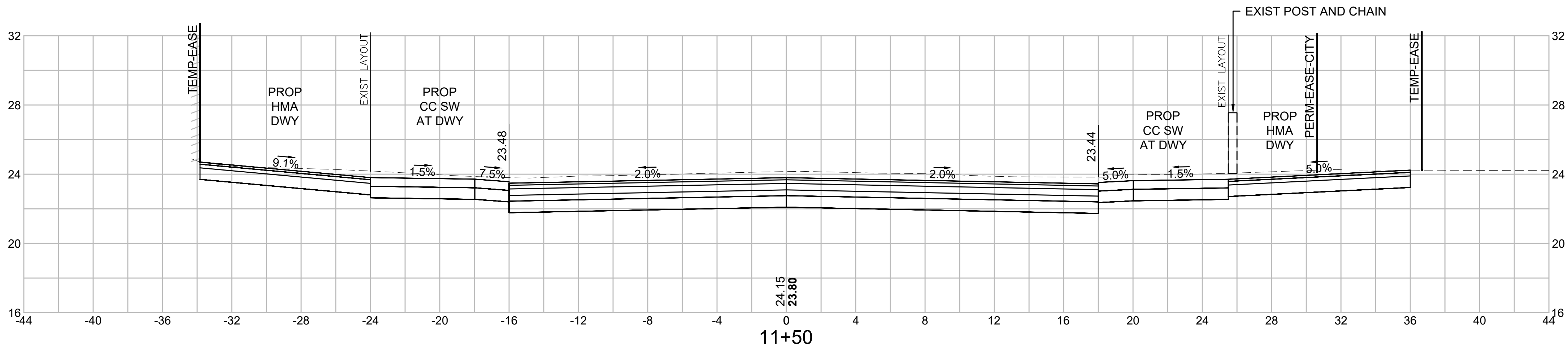
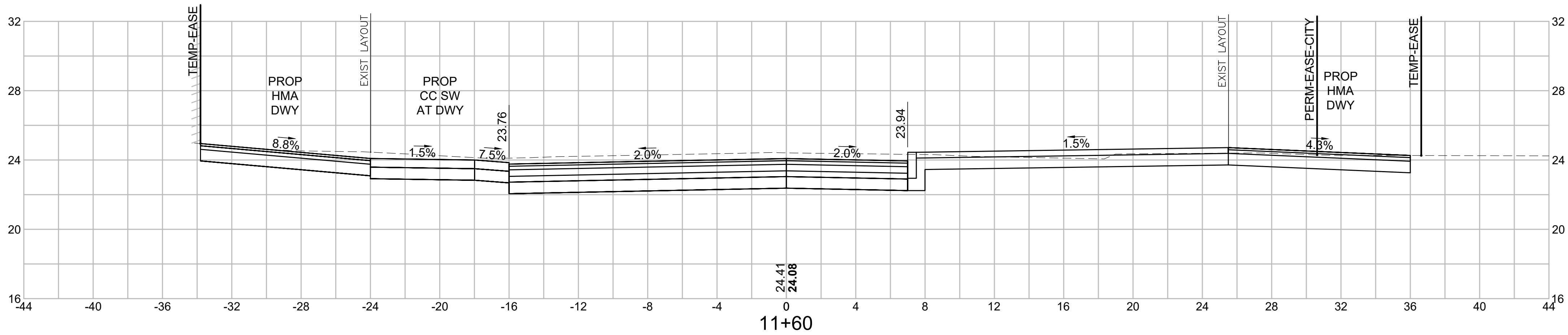
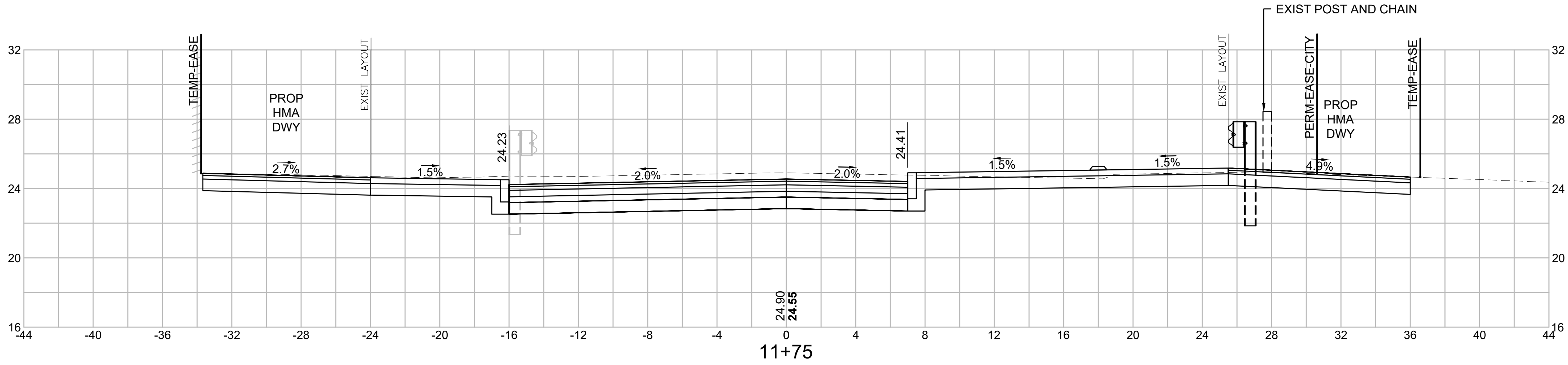
C = 31.30 SF
F = 0.00 SF



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	81	98
PROJECT FILE NO.		611940	

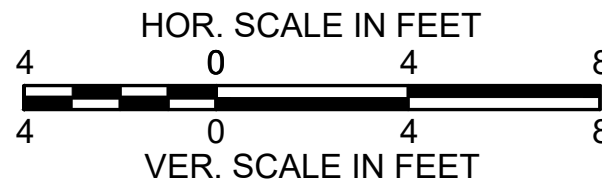
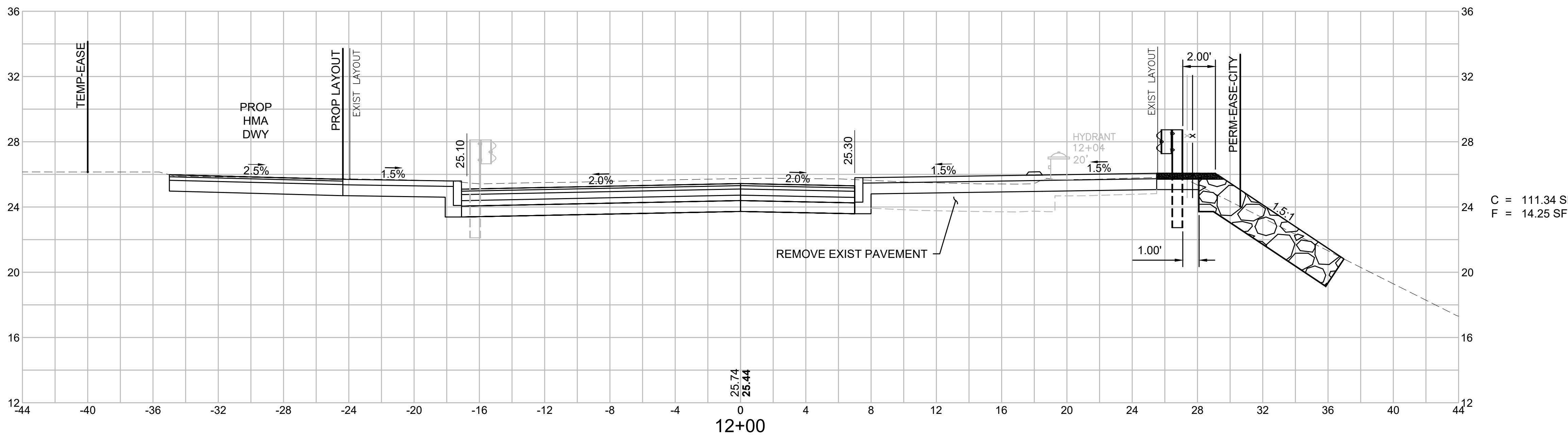
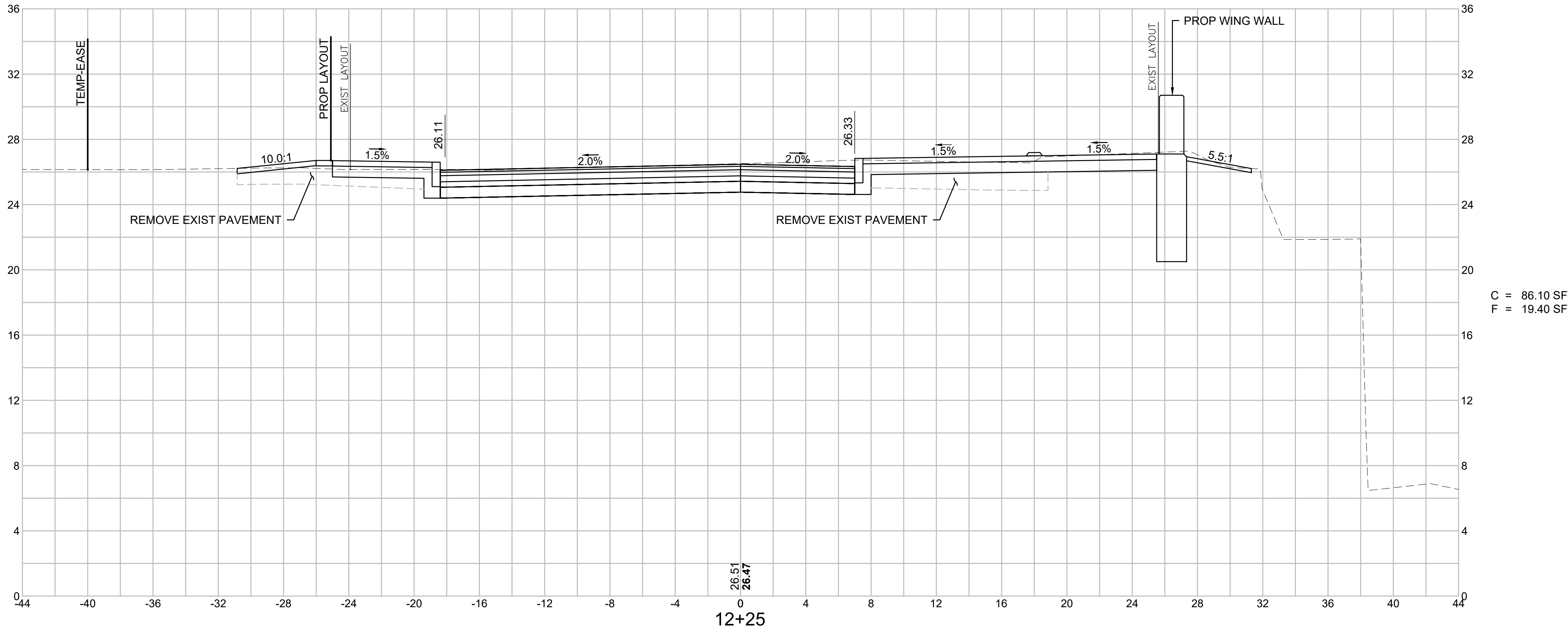
CROSS SECTIONS - 02
WEBSTER AVE



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	82	98
PROJECT FILE NO.		611940	

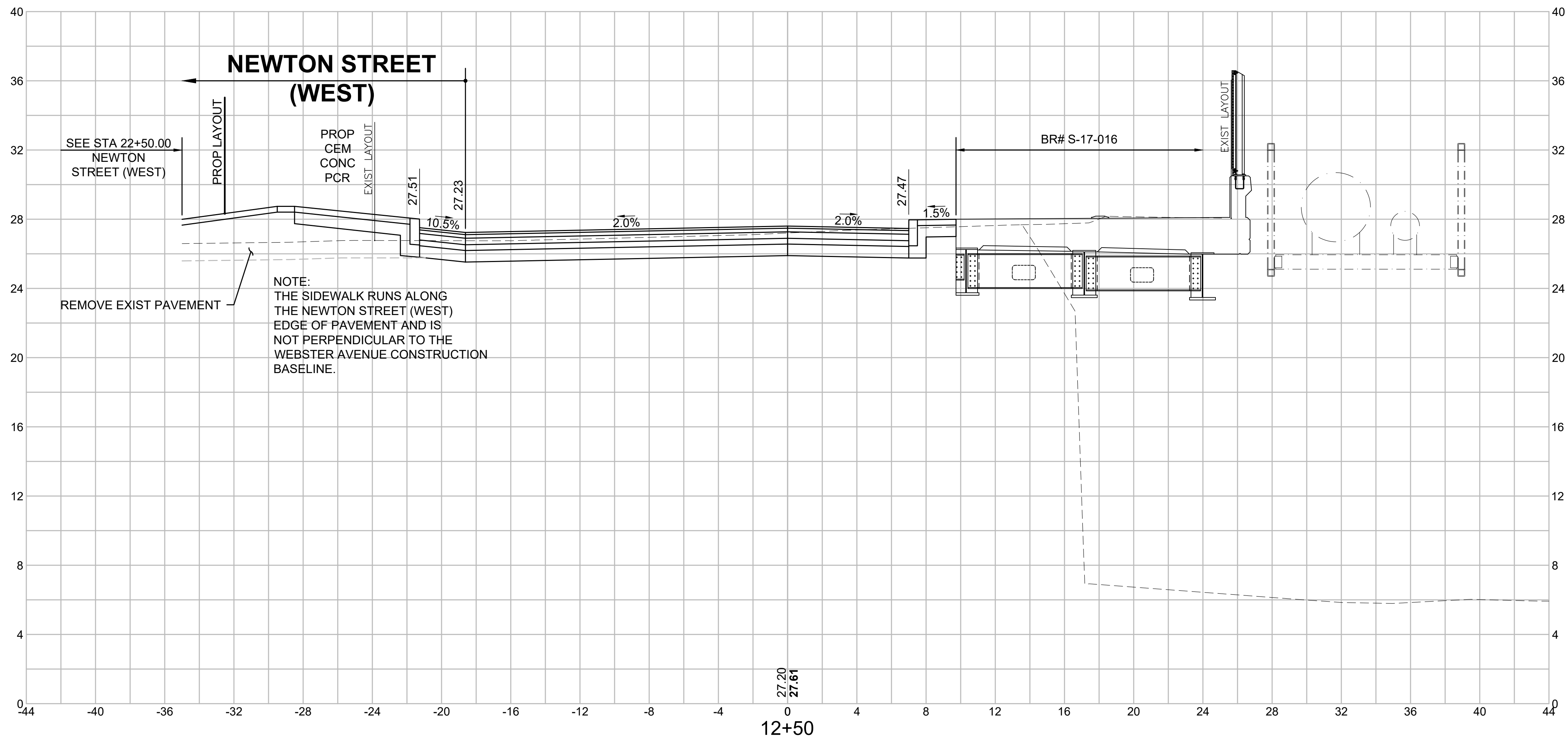
CROSS SECTIONS - 03
WEBSTER AVE



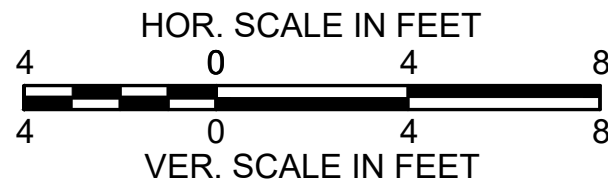
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	83	98
PROJECT FILE NO.		611940	

CROSS SECTIONS - 04
WEBSTER AVE



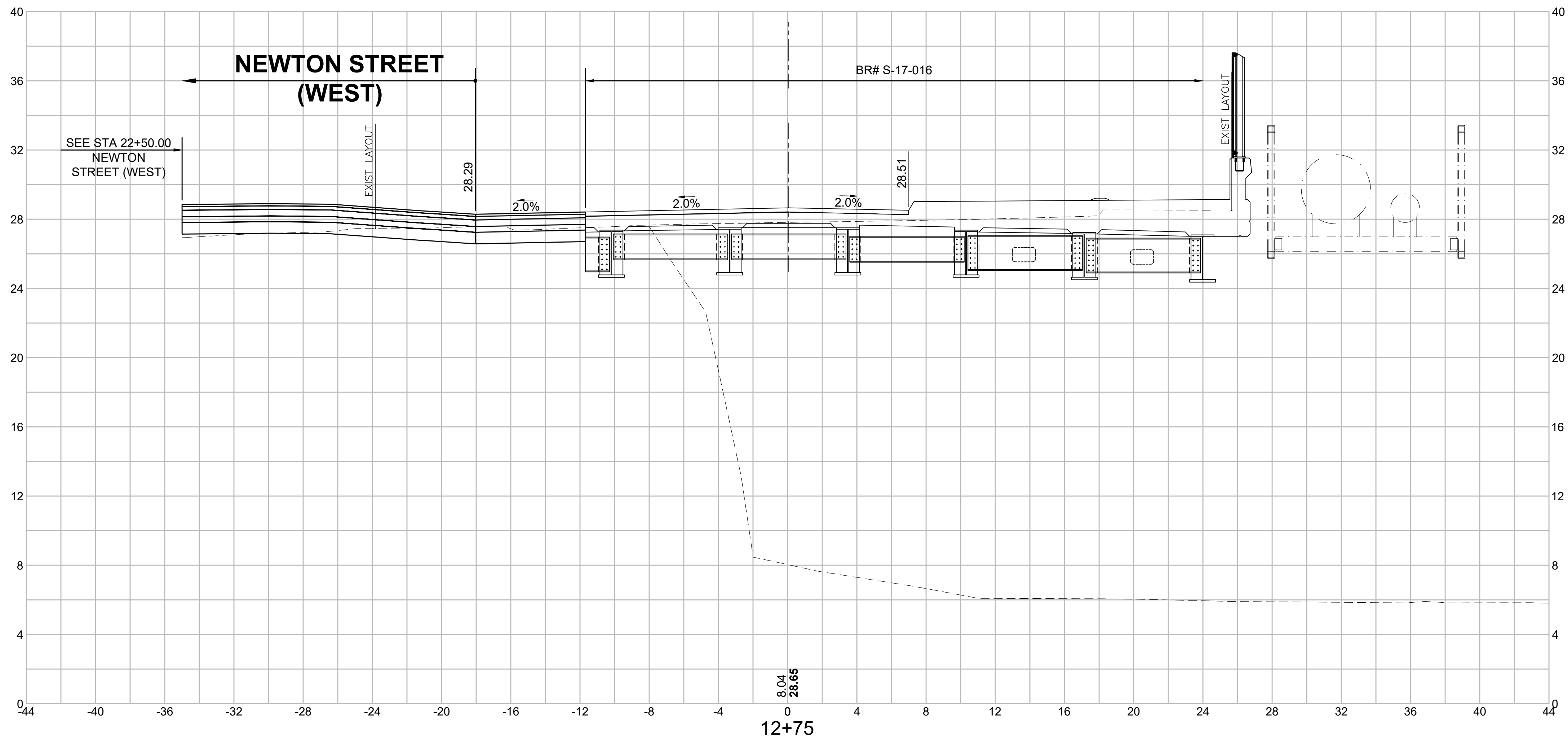
C = 52.51 SF
F = 12.83 SF



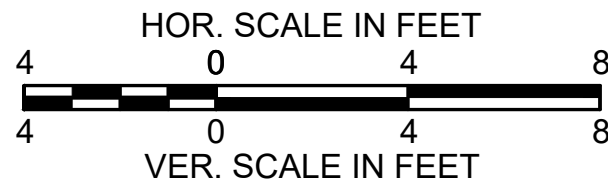
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

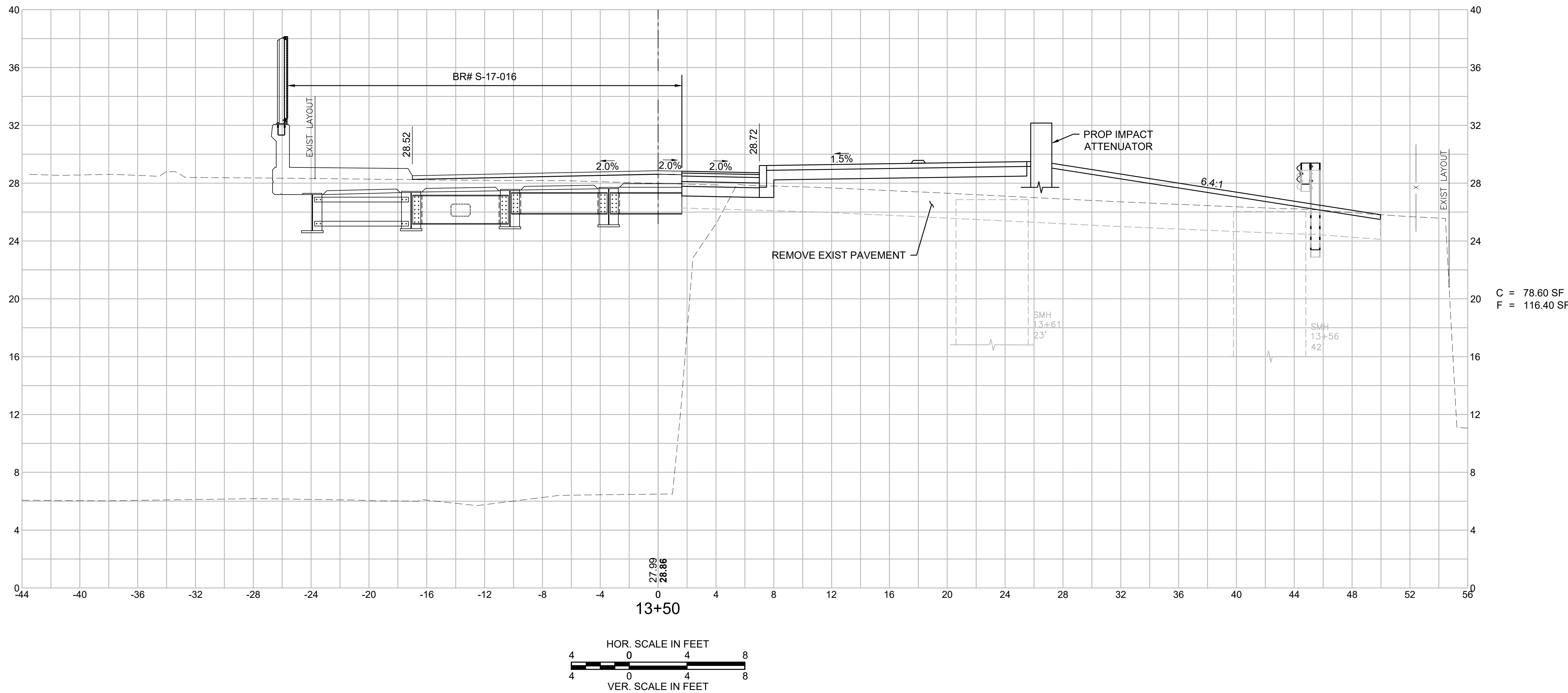
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	84	98
PROJECT FILE NO.		611940	

CROSS SECTIONS - 05
WEBSTER AVE



C = 10.59 SF
F = 0.00 SF

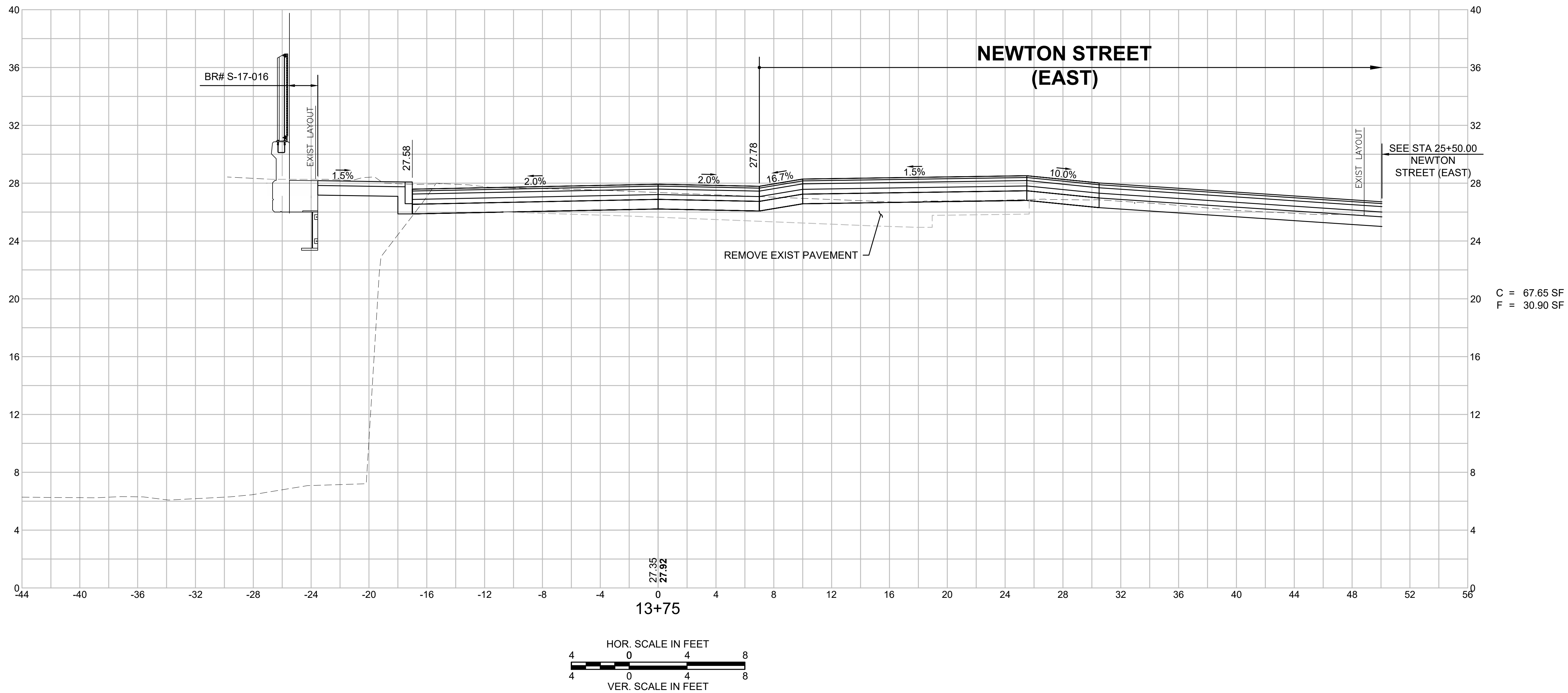




SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	86	98
PROJECT FILE NO.		611940	

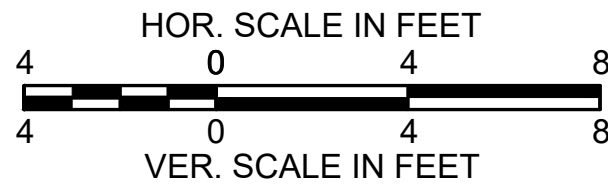
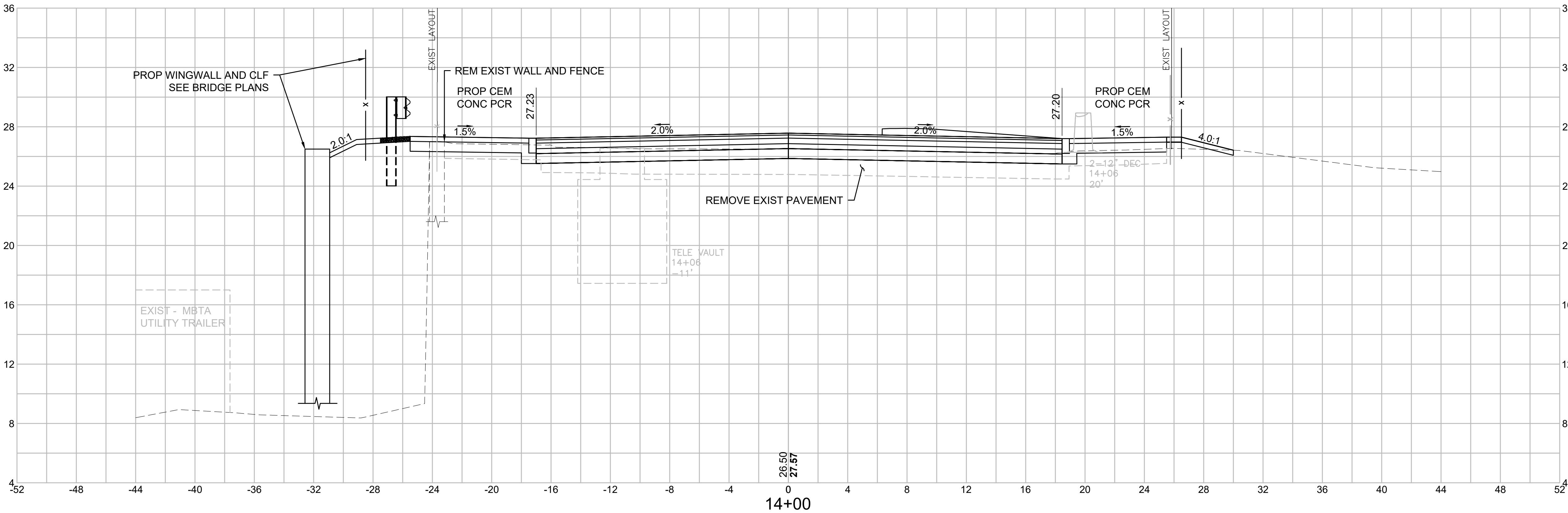
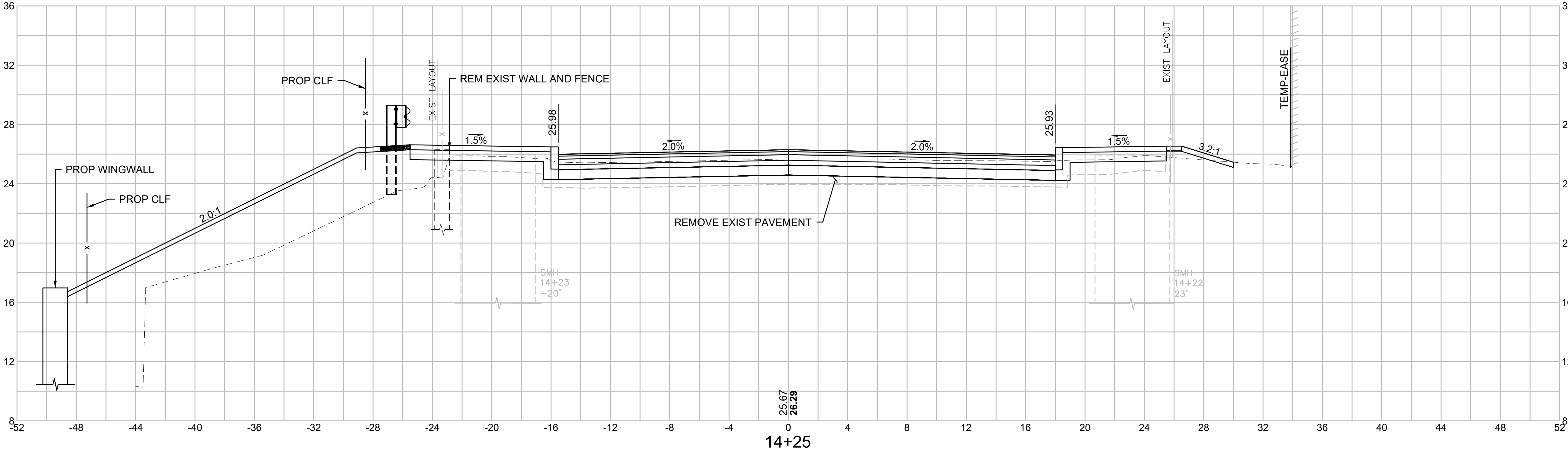
CROSS SECTIONS - 07
WEBSTER AVE



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	87	98
PROJECT FILE NO.		611940	

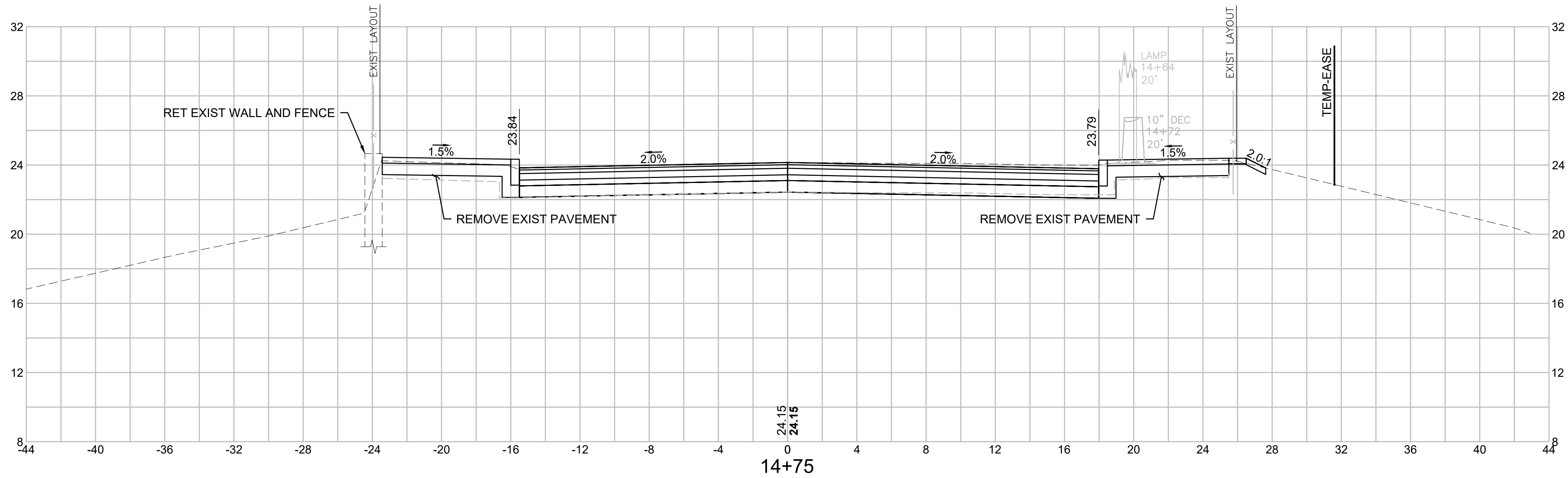
CROSS SECTIONS - 08
WEBSTER AVE



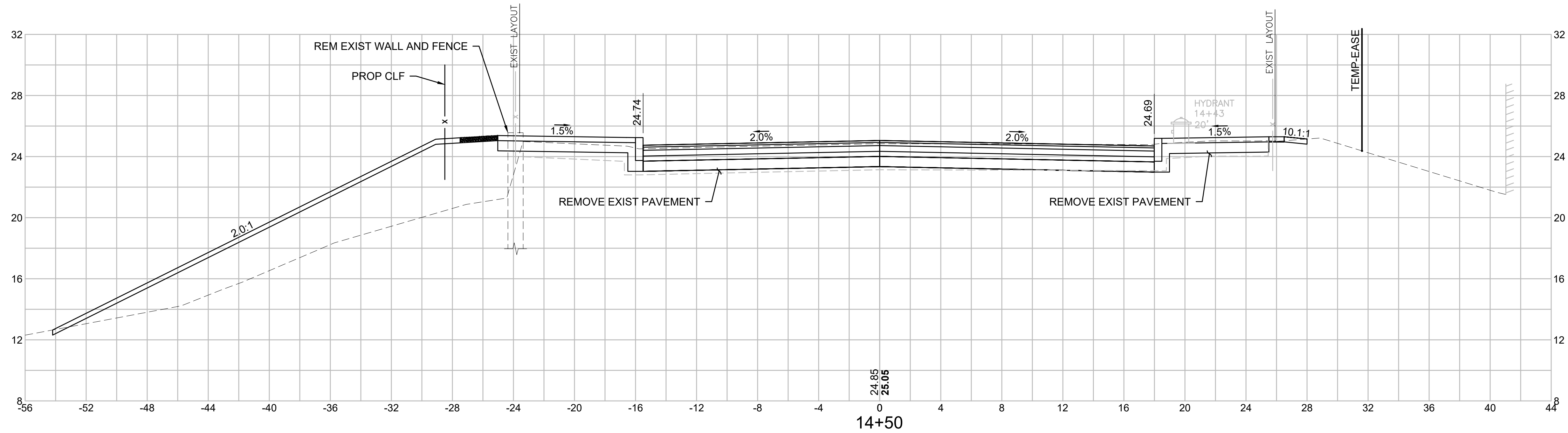
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	88	98
PROJECT FILE NO.		611940	

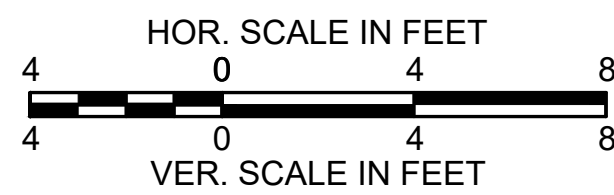
CROSS SECTIONS - 09
WEBSTER AVE



C = 75.74 SF
F = 5.75 SF



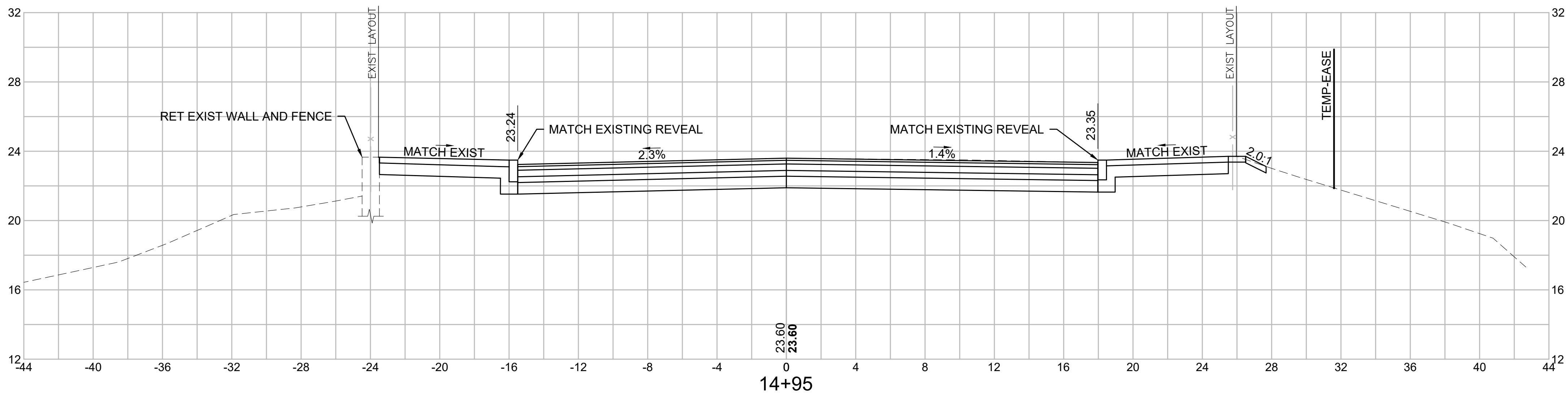
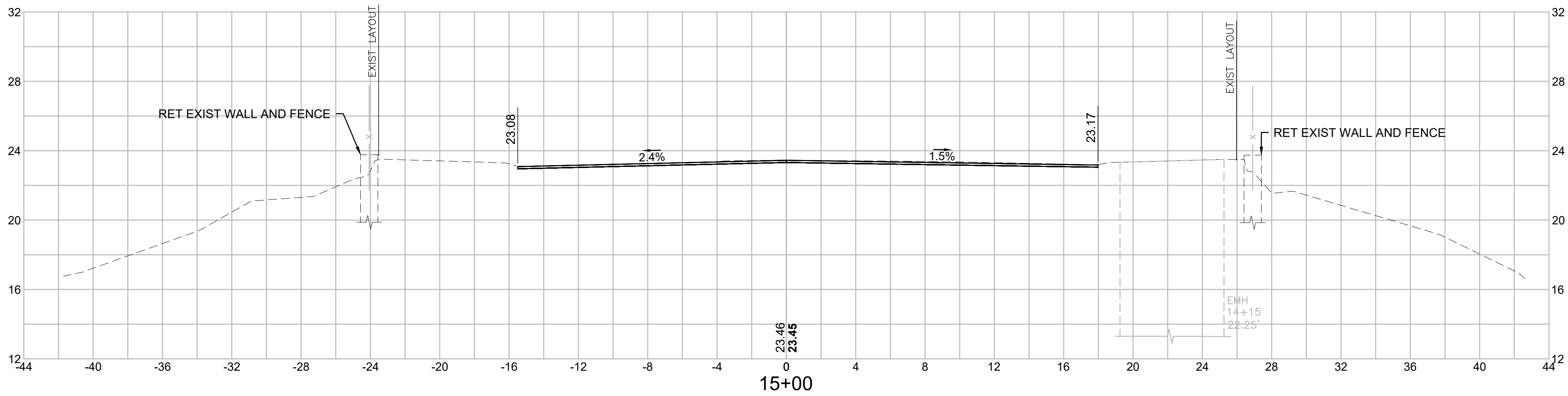
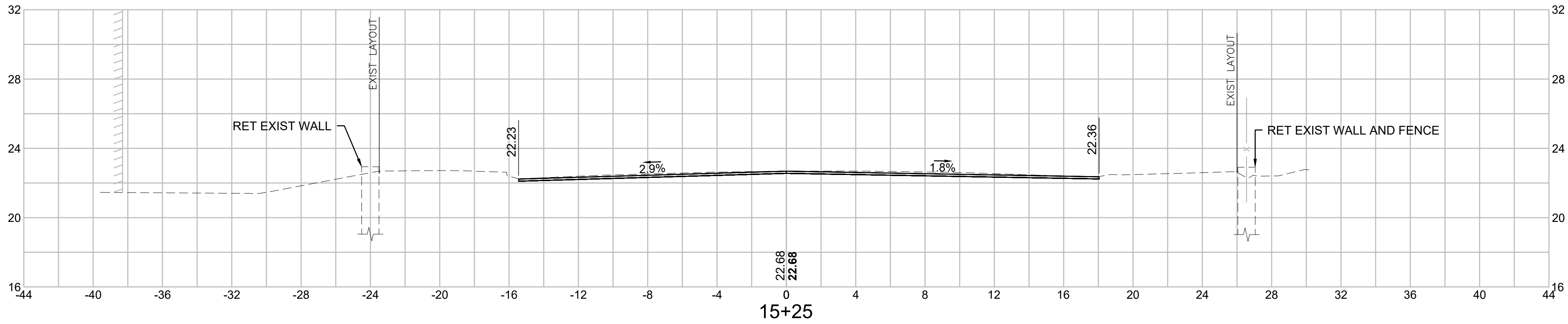
C = 74.60 SF
F = 100.44 SF



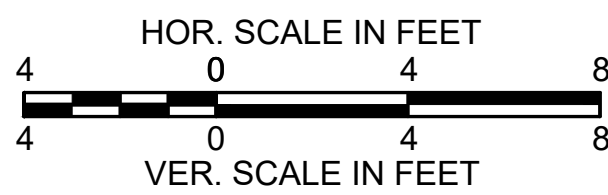
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	89	98
PROJECT FILE NO. 611940			

CROSS SECTIONS - 10
WEBSTER AVE



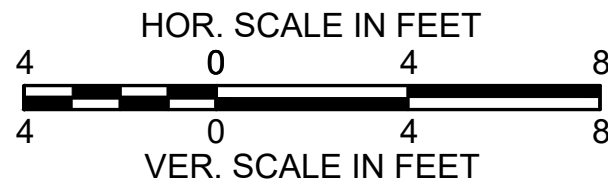
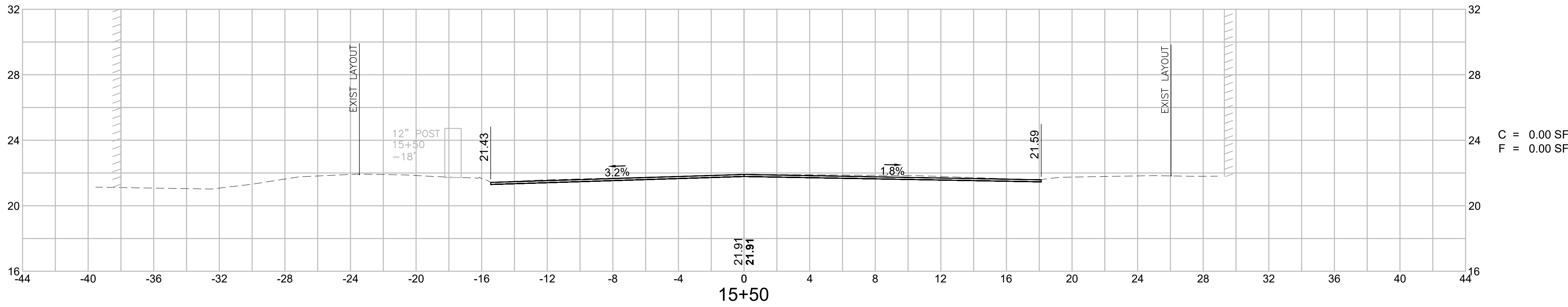
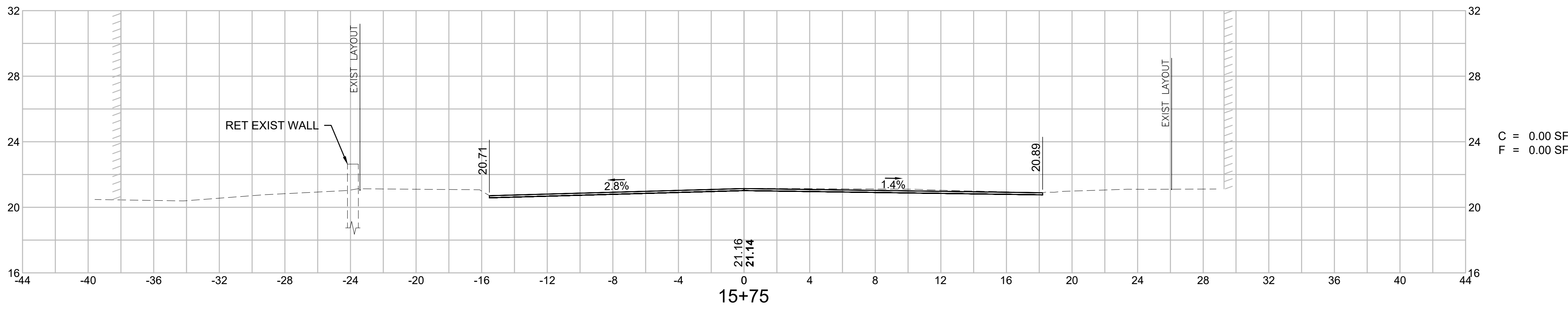
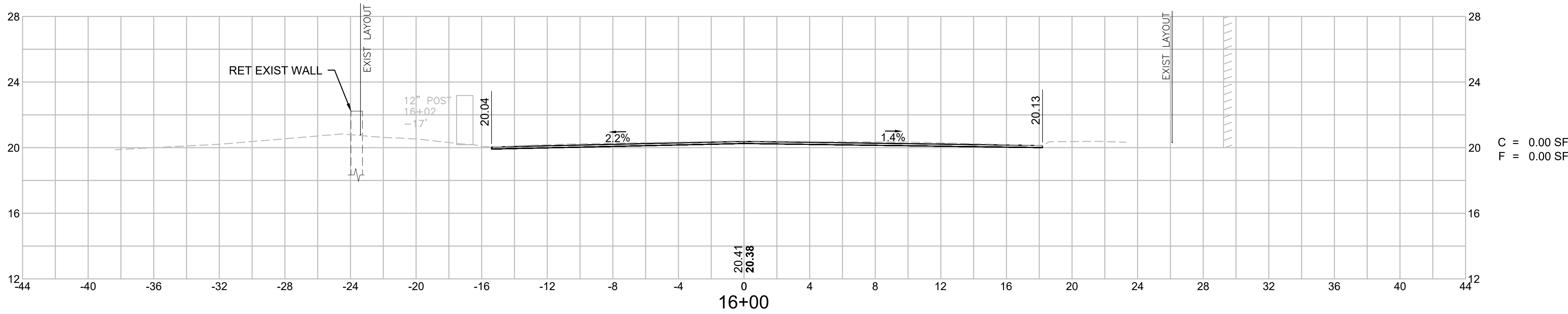
END FULL DEPTH RECONSTRUCTION AND SIDEWALKS
BEGIN PAVEMENT MILL & OVERLAY



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	90	98
PROJECT FILE NO.		611940	

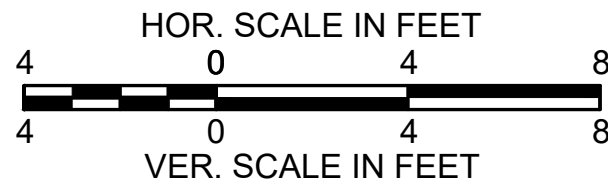
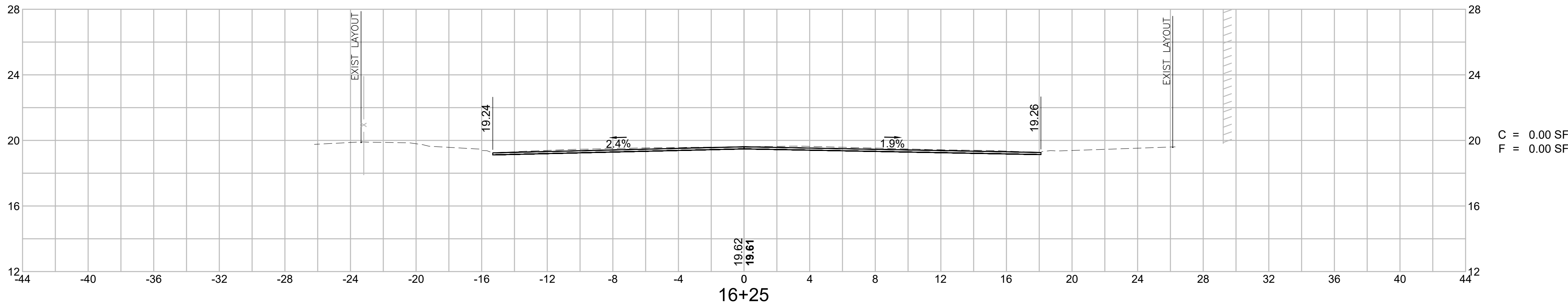
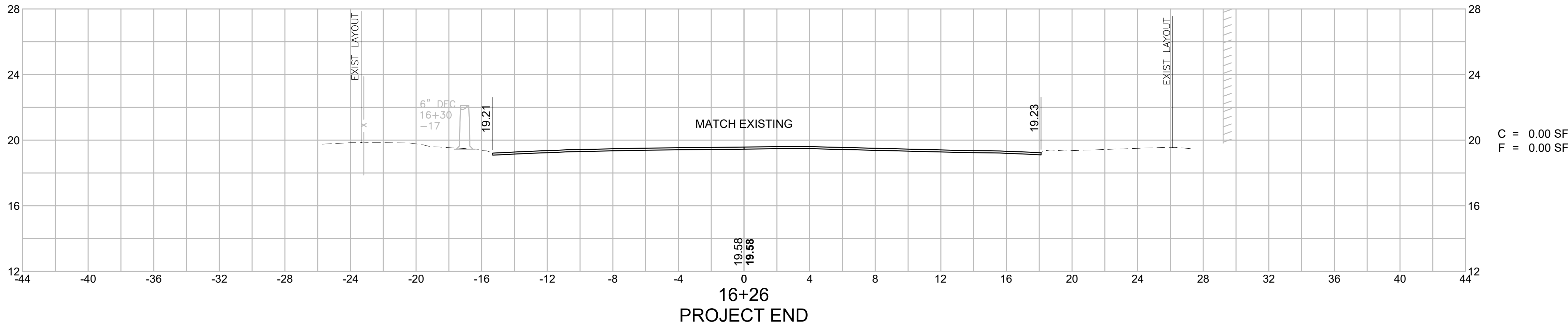
CROSS SECTIONS - 11
WEBSTER AVE



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	91	98
PROJECT FILE NO.		611940	

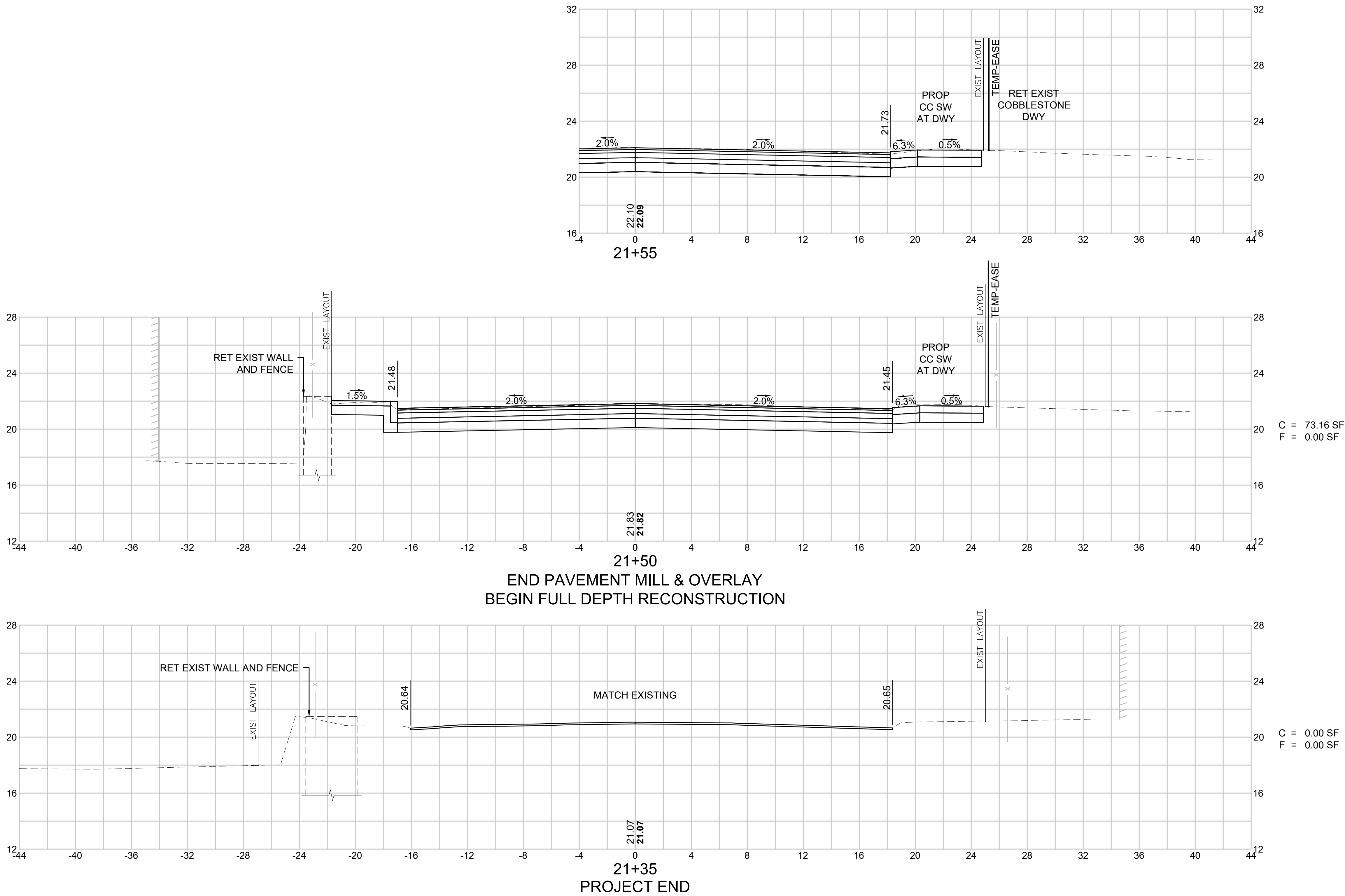
CROSS SECTIONS - 12
WEBSTER AVE



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	92	98
PROJECT FILE NO.		611940	

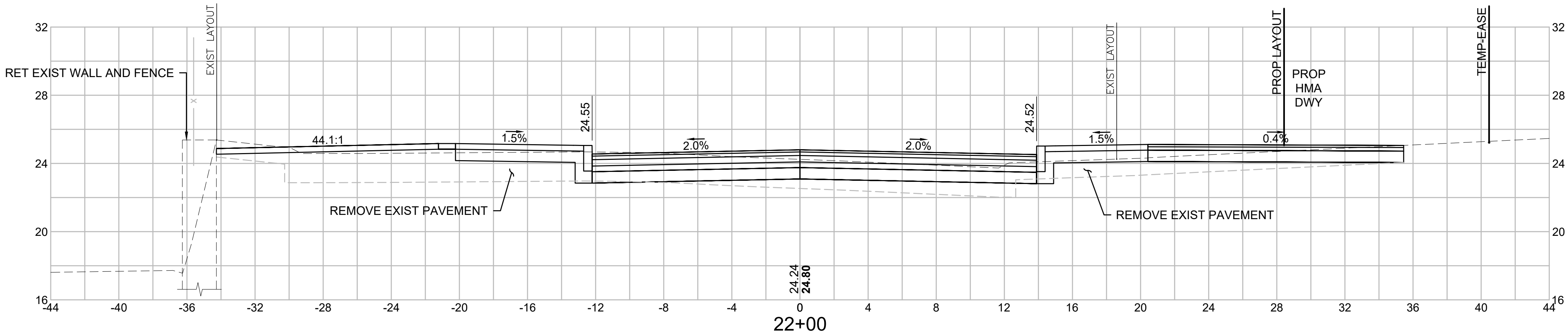
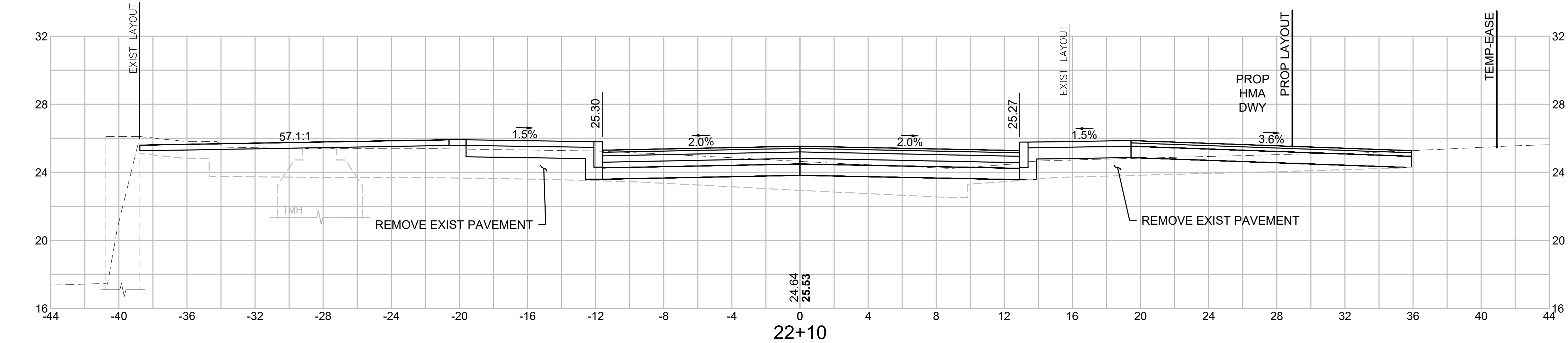
CROSS SECTIONS - 13
NEWTON ST



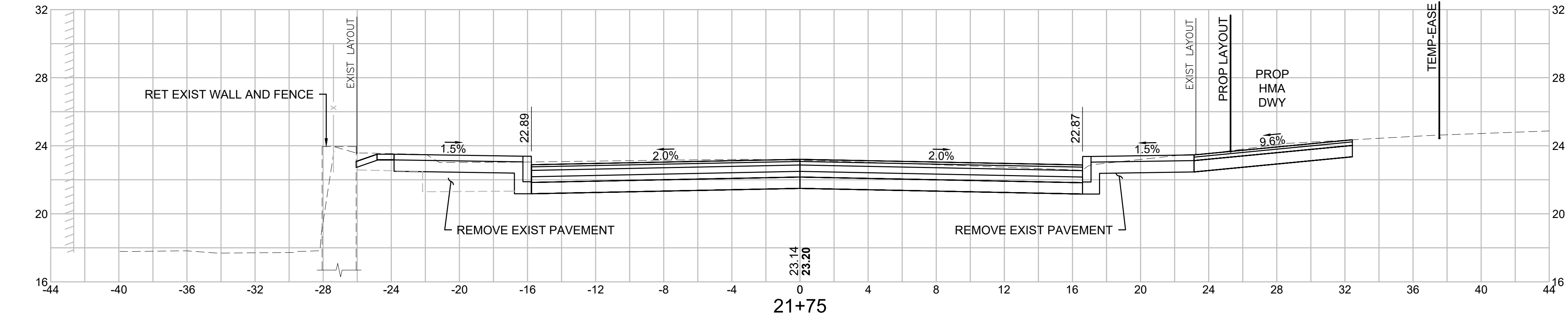
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	93	98
PROJECT FILE NO.		611940	

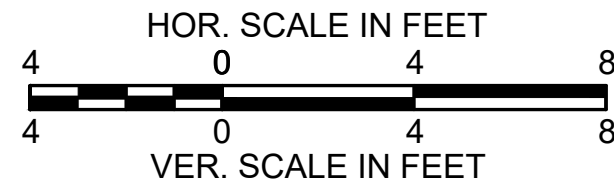
CROSS SECTIONS - 14
NEWTON ST



C = 101.21 SF
F = 49.90 SF



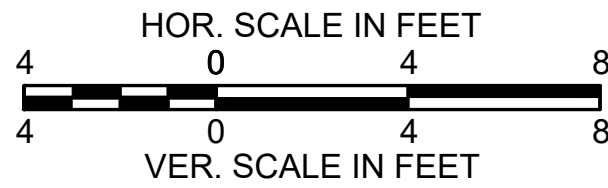
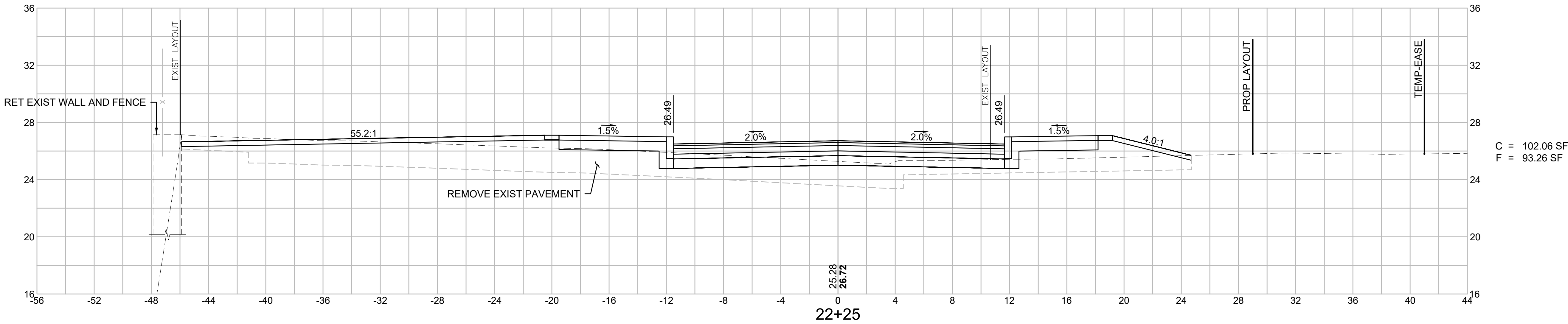
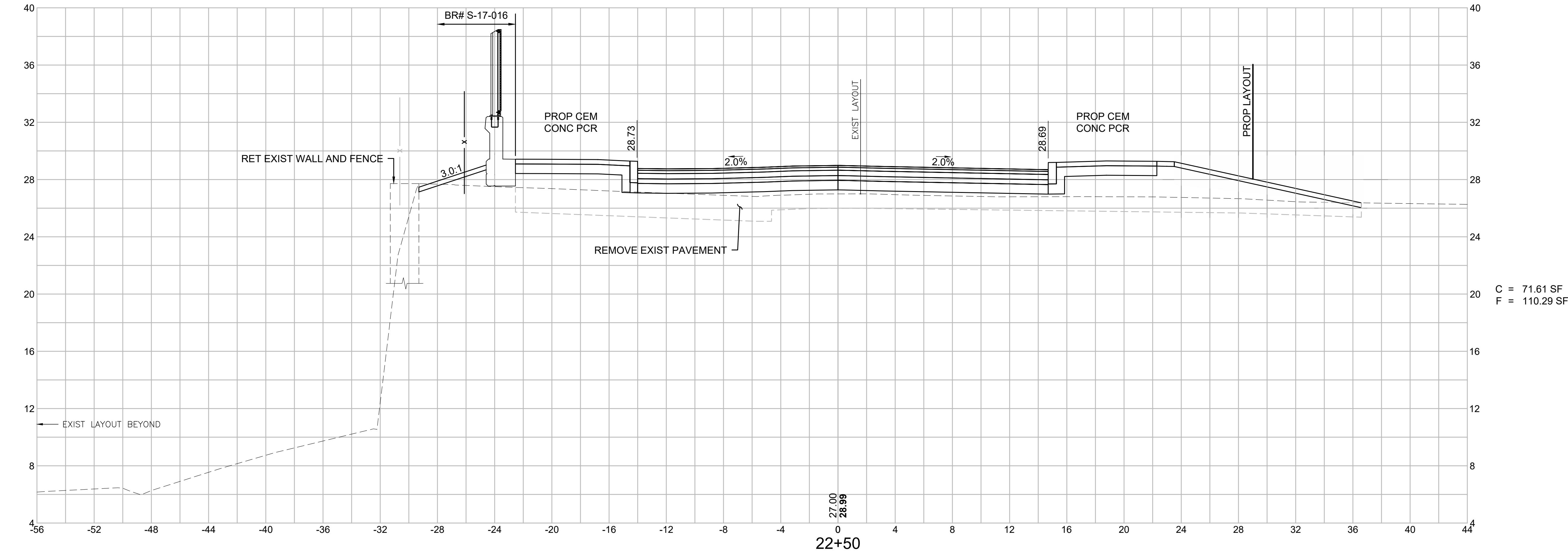
C = 85.47 SF
F = 7.09 SF



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	94	98
PROJECT FILE NO.		611940	

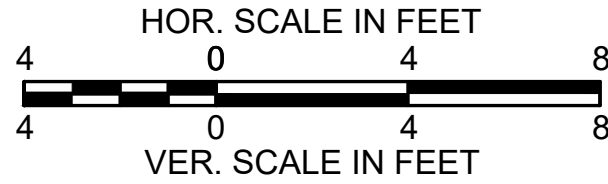
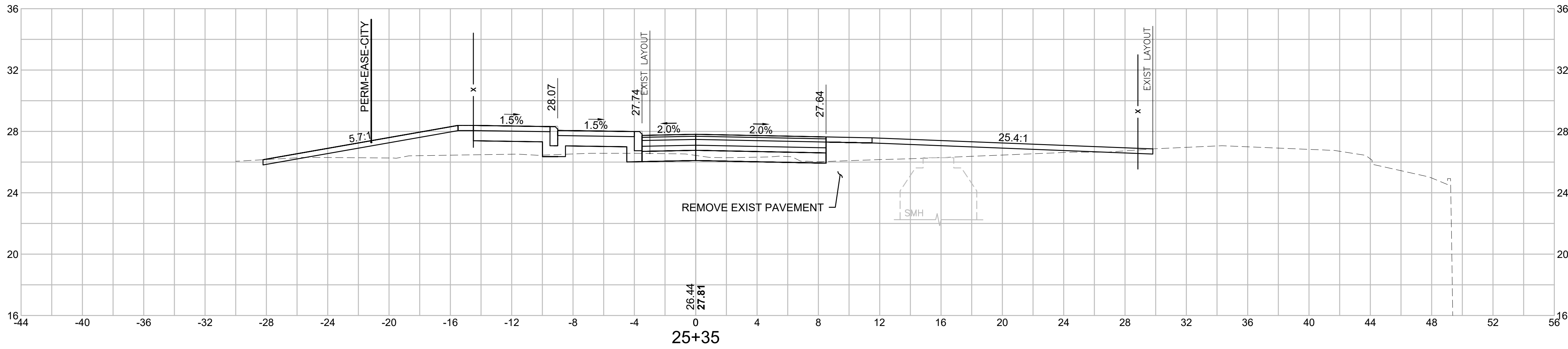
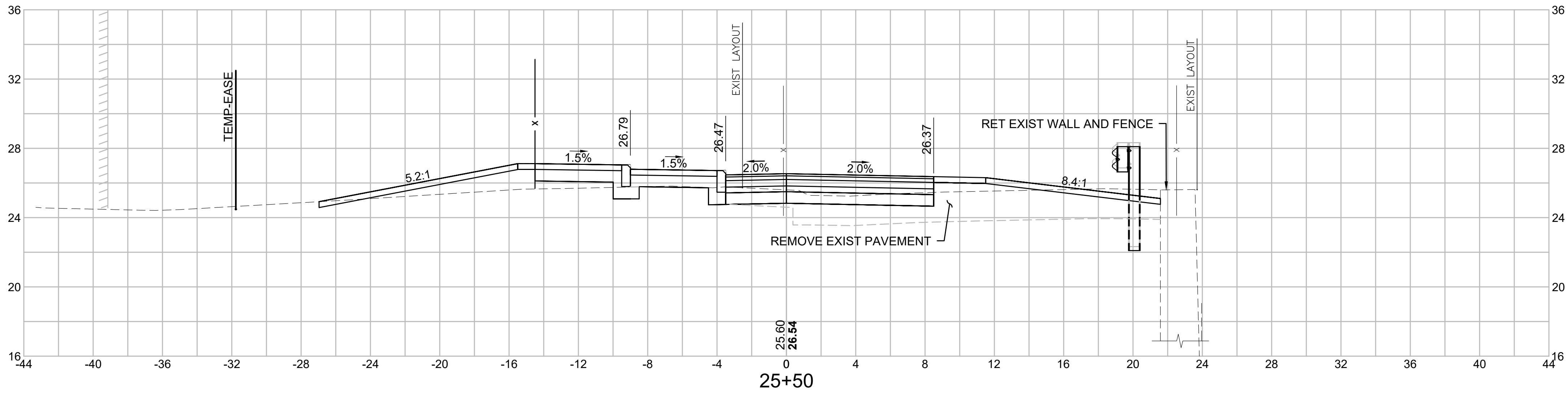
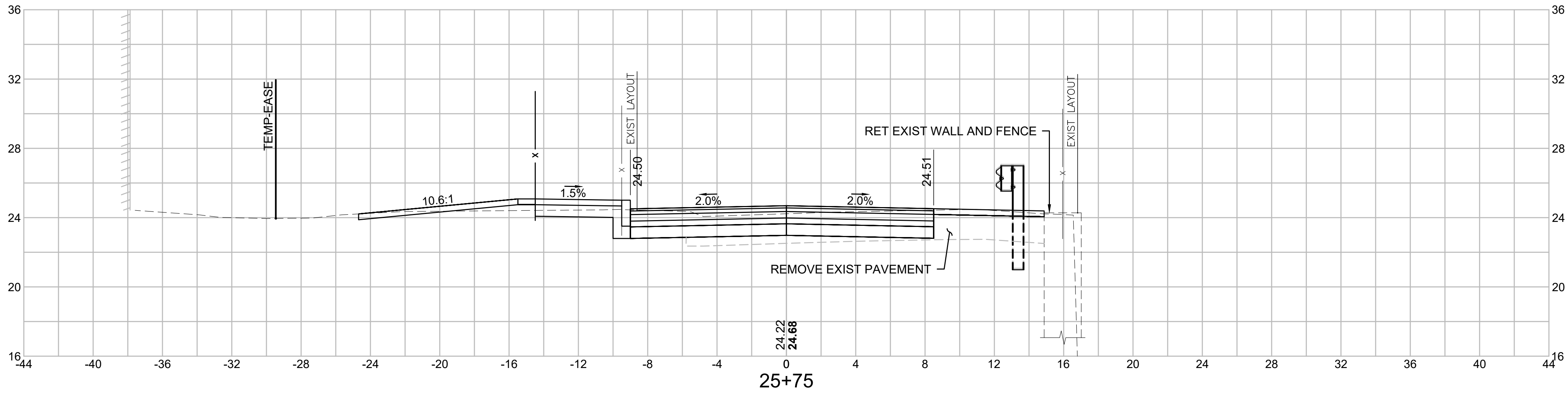
CROSS SECTIONS - 15
NEWTON ST



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

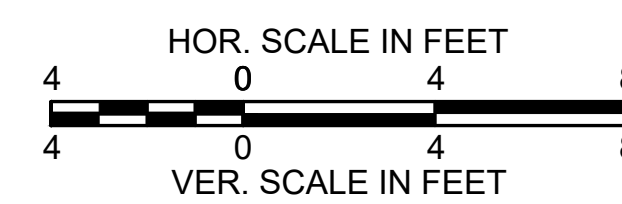
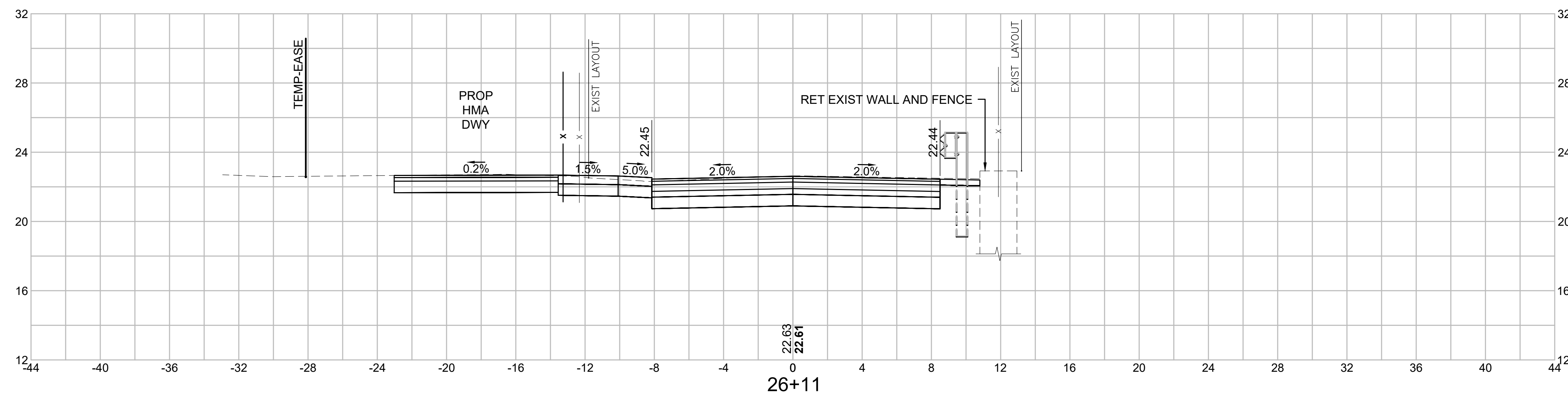
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	95	98
PROJECT FILE NO.		611940	

CROSS SECTIONS - 16
NEWTON ST



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	96	98
PROJECT FILE NO.		611940	

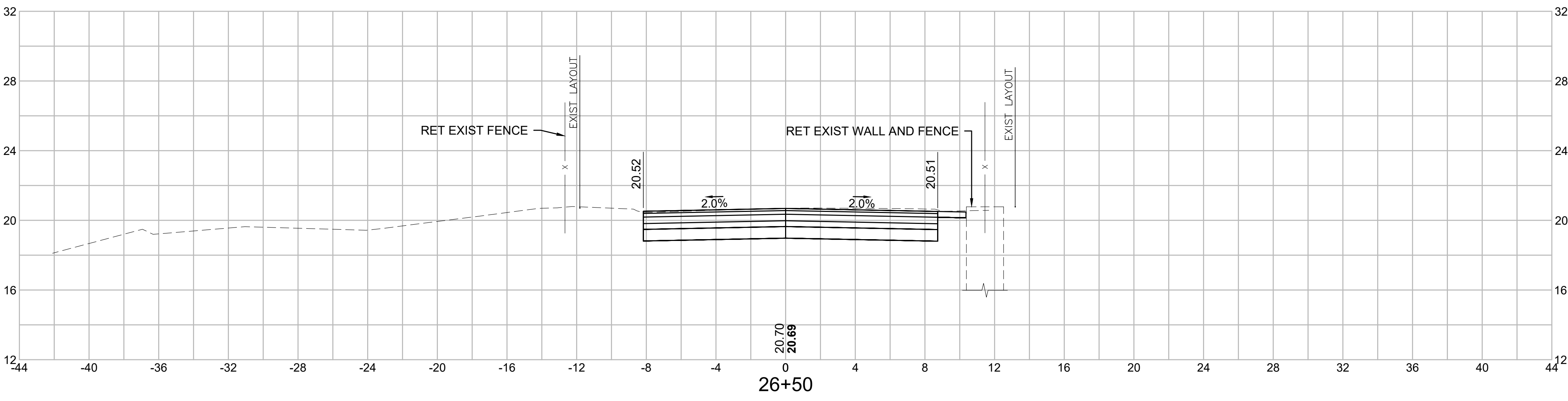
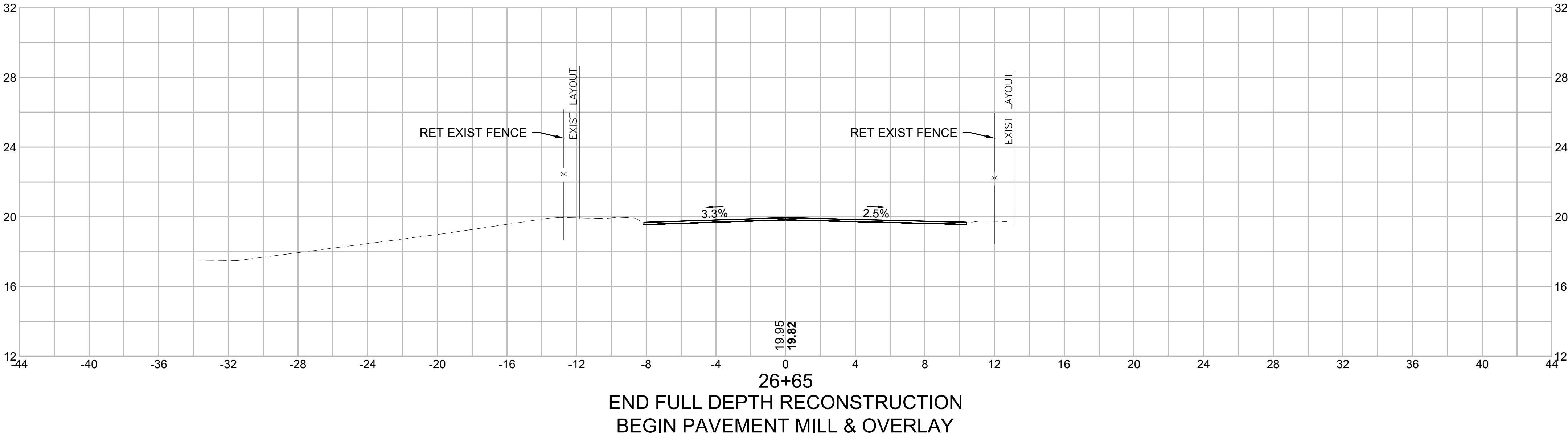
C = 29.36 SF
F = 0.00 SF



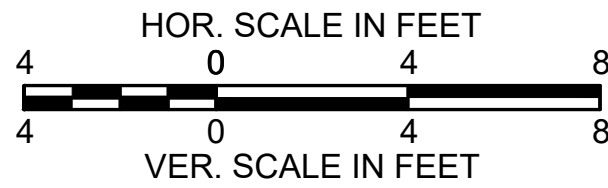
SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	97	98
PROJECT FILE NO.		611940	

CROSS SECTIONS - 18
NEWTON ST



C = 30.04 SF
F = 0.00 SF



SOMERVILLE
WEBSTER AVENUE OVER MBTA/BMRR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(987)X	98	98
PROJECT FILE NO.		611940	

CROSS SECTIONS - 19
NEWTON ST

