MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	1	81
	PROJECT FILE NO. 612190		

TITLE SHEET & INDEX

612190_HD(TITLE SHEET).DWG Plotted on 8-May-2026 10:51 AM

PLAN AND PROFILE OF

SALISBURY STREET OVER THE P&W RAILROAD

(BRIDGE NO. H-18-004)

IN THE TOWN OF

HOLDEN

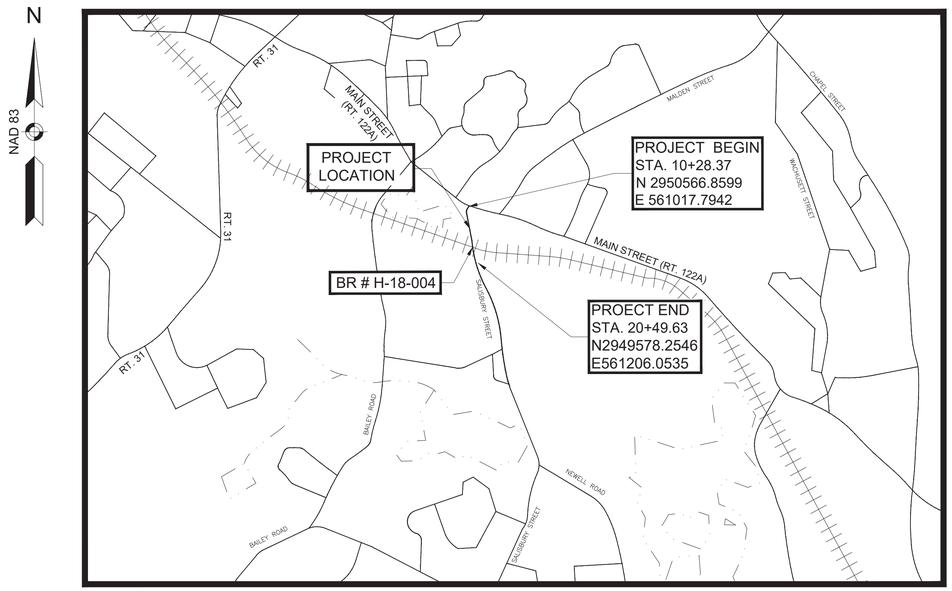
WORCESTER COUNTY

FEDERAL AID PROJECT NO. HIP(NGB)-003S(963)X

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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LENGTH OF PROJECT = 1,021.26 FEET = 0.193 MILES

DESIGN DESIGNATION (SALISBURY STREET)

DESIGN SPEED	35 MPH
ADT (2023)	5335
ADT (2043)	6510
K	9.9%
D	56%
T (PEAK HOUR)	0.8%
T (AVERAGE DAY)	2.0%
DHV	605
DDHV	340
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

COMMONWEALTH OF MASSACHUSETTS
KEITH V LINCOLN
CIVIL
No. 42587
REGISTERED PROFESSIONAL ENGINEER

Keith Lincoln
Digitally signed by Keith Lincoln
Date: 2026.05.08 12:03:09 -04'00'

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 205
MARLBOROUGH, MA 01752

DATE	DESCRIPTION	REV #

MassDOT
Massachusetts Department of Transportation
Highway Division

APPROVED

Digitally signed by Carrie Lavallee, P.E.
Date: 2026.05.08 15:21:51 -04'00'

05/08/2026

CHIEF ENGINEER **DATE**

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
C	C	CABLE MANHOLE
D	D	DRAINAGE MANHOLE
E	E	ELECTRIC MANHOLE
G	G	GAS MANHOLE
M	M	MISC MANHOLE
S	S	SEWER MANHOLE
T	T	TELEPHONE MANHOLE
W	W	WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS (ON-THE-GROUND SURVEY DATA)
100 99		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
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT BARRIER
		COIR LOG SEDIMENT 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

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	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)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
20'	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
	20'	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

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	BWL	BROKEN WHITE LINE
	BYL	BROKEN YELLOW LINE
	DWL	DOTTED WHITE LINE
	DYL	DOTTED YELLOW LINE
	DWLEx	DOTTED WHITE LINE EXTENSION
	DYLEx	DOTTED YELLOW LINE EXTENSION
	DBWL	DOUBLE WHITE LINE
	DBYL	DOUBLE YELLOW LINE

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
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
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
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
FDC	FULL DEPTH CONSTRUCTION
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
M&O	MILL & OVERLAY
NIC	NOT IN CONTRACT
NO.	NUMBER
PB	PUSH BRACE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
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

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	2	81
	PROJECT FILE NO. 612190		

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

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
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UPL	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

TRAFFIC SIGNAL ABBREVIATIONS

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

612190_HD(LEGEND).DWG Plotted on 20-May-2026 2:30 PM

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	3	81
	PROJECT FILE NO. 612190		

KEY PLAN & BORING LOCATIONS

07 CONSTRUCTION BASELINE TIES
09 CONSTRUCTION PLANS
11 PROFILES
13 CURB TIE AND GRADING PLANS
15 TRAFFIC SIGN & PAVEMENT MARKINGS
18 TEMP TRAFFIC CONTROL PLANS
28 UTILITY PLANS

08 CONSTRUCTION BASELINE TIES
10 CONSTRUCTION PLANS
12 PROFILES
14 CURB TIE AND GRADING PLANS
16 TRAFFIC SIGN & PAVEMENT MARKINGS
19 TEMP TRAFFIC CONTROL PLANS
29 UTILITY PLANS
30 UTILITY PLANS

N

PROJECT BEGIN
STA 10+28.37
N2950566.8599
E561017.7942

PROJECT END
STA 20+49.63
N2949578.2546
E561206.0535

SALISBURY STREET (PUBLIC - 60' WIDE)

OLD SALISBURY STREET (PUBLIC - 49.50' WIDE)

PINE TREE ROAD (PRIVATE WAY - 40' WIDE)

BRIDGE NO. H-18-004

PC 10+54.70
PT +06.68
PI +72.74
PC +83.89
PT +76.03
PC +64.23
PT +86.52

N 2950127.0000
E 561071.0000

N 2950056.0000
E 561140.0000

N 2950195.0000
E 561045.0000

N 2949940.0000
E 561103.0000

PROPOSED SHLO NO. 9032

49+42.73 MSHLO#2882 MARCH 29 1932=
10+00.00 SALISBURY ST CONST BL
BOOK 39762, PAGE 356

15+95.78 SALISBURY ST CONST BL=
384+25.93 10-11-1974 PROV & WORC RR CENTERLINE ALIGNMENT

TEST HOLE: TH1 (GAS)
TEST HOLE: TH2 (GAS)
TEST HOLE: TH3 (TELECOM)
TEST HOLE: TH4 (WATER)

13095
N: 2950609.954'
E: 560928.699'
EL: 745.307'
MTRV–RR SPIKE–PM–MASSDOT GPS

0 40 100 160
SCALE: 1" = 40'

612190_HD(KEY PLAN).DWG Plotted on 20-May-2026 2:30 PM

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	4	81
	PROJECT FILE NO. 612190		

TEST HOLE DATA

PROJECT NUMBER: 00048609 001
TASK: SUE QL-A
TEST HOLE DATE: 04/15/2025
COUNTY - STATE: HOLDEN-MA
LOCATION: SALISBURY ST

KCI TECHNOLOGIES, INC.
SUBSURFACE UTILITY ENGINEERING
TEST HOLE FIELD DATA

OFFICE: SYRACUSE, NY
CREW LEADER: PT
SUE CREW: SC / MK
TRUCK NUMBER: OTHER
UNITS: ☒ ENGLISH ☐ METRIC

TEST HOLE: 1
REF. POINT ID BY: PK NAIL & DISK

SURFACE ELEVATION: 760.94 FT
SURFACE TYPE: ASPHALT
SURFACE THICKNESS: 3.5 IN

CALCULATED DEPTH (TOP): 3.69 FT
TOP OF UTILITY ELEVATION: 757.25 FT

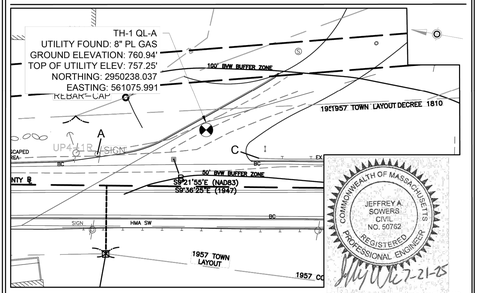
3.69 FT
8"

UTILITY REQUESTED: GAS
UTILITY FOUND: GAS
UTILITY SIZE: 8 IN
UTILITY MATERIAL: PLASTIC
SOIL CONDITIONS: ROCKY, DRY

SWING TIES
A: SIGN = 51.7 FT
B: CATCH BASIN = 19.2 FT
C: END OF GUARD RAIL = 29.1 FT

PROFILE VIEW - NOT TO SCALE

NOTES:



PLAN VIEW - NOT TO SCALE

THIS DOCUMENT IS SIGNED AND SEALED TO CERTIFY COMPLIANCE WITH ASCE 38-02.

SURVEYOR: CHAPPELL ENGINEERING PREPARED BY: M. MILLER CHECKED BY: B. MACVEAN

PROJECT NUMBER: 00048609 001
TASK: SUE QL-A
TEST HOLE DATE: 04/15/2025
COUNTY - STATE: HOLDEN-MA
LOCATION: SALISBURY ST

KCI TECHNOLOGIES, INC.
SUBSURFACE UTILITY ENGINEERING
TEST HOLE FIELD DATA

OFFICE: SYRACUSE, NY
CREW LEADER: PT
SUE CREW: SC / MK
TRUCK NUMBER: OTHER
UNITS: ☒ ENGLISH ☐ METRIC

TEST HOLE: 2
REF. POINT ID BY: PK NAIL & DISK

SURFACE ELEVATION: 761.18 FT
SURFACE TYPE: ASPHALT
SURFACE THICKNESS: 3.5 IN

CALCULATED DEPTH (TOP): 4.02 FT
TOP OF UTILITY ELEVATION: 757.16 FT

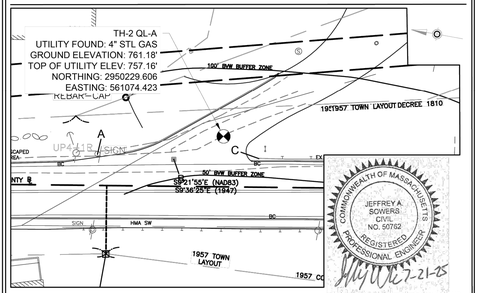
4.02 FT
4"

UTILITY REQUESTED: GAS
UTILITY FOUND: GAS
UTILITY SIZE: 4 IN
UTILITY MATERIAL: STEEL
SOIL CONDITIONS: ROCKY, DRY

SWING TIES
A: SIGN = 59.0 FT
B: CATCH BASIN = 19.7 FT
C: END OF GUARD RAIL = 21.9 FT

PROFILE VIEW - NOT TO SCALE

NOTES:



PLAN VIEW - NOT TO SCALE

THIS DOCUMENT IS SIGNED AND SEALED TO CERTIFY COMPLIANCE WITH ASCE 38-02.

SURVEYOR: CHAPPELL ENGINEERING PREPARED BY: M. MILLER CHECKED BY: B. MACVEAN

PROJECT NUMBER: 00048609 001
TASK: SUE QL-A
TEST HOLE DATE: 04/14/2025
COUNTY - STATE: HOLDEN-MA
LOCATION: SALISBURY ST

KCI TECHNOLOGIES, INC.
SUBSURFACE UTILITY ENGINEERING
TEST HOLE FIELD DATA

OFFICE: SYRACUSE, NY
CREW LEADER: PT
SUE CREW: SC / MK
TRUCK NUMBER: OTHER
UNITS: ☒ ENGLISH ☐ METRIC

TEST HOLE: 3
REF. POINT ID BY: PK NAIL & DISK

SURFACE ELEVATION: 760.80 FT
SURFACE TYPE: ASPHALT
SURFACE THICKNESS: 3 IN

CALCULATED DEPTH (TOP): 1.97 FT
TOP OF UTILITY ELEVATION: 758.83 FT

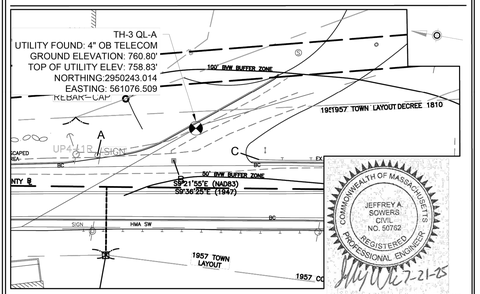
1.97 FT
4"

UTILITY REQUESTED: TELECOM
UTILITY FOUND: TELECOM
UTILITY SIZE: 4 IN
UTILITY MATERIAL: ORANGEBURG
SOIL CONDITIONS: ROCKY, DRY

SWING TIES
A: SIGN = 47.5 FT
B: CATCH BASIN = 17.1 FT
C: END OF GUARD RAIL = 34.0 FT

PROFILE VIEW - NOT TO SCALE

NOTES: EXPOSED CONDUIT MEASURES ~5" OUTSIDE DIAMETER.



PLAN VIEW - NOT TO SCALE

THIS DOCUMENT IS SIGNED AND SEALED TO CERTIFY COMPLIANCE WITH ASCE 38-02.

SURVEYOR: CHAPPELL ENGINEERING PREPARED BY: M. MILLER CHECKED BY: B. MACVEAN

PROJECT NUMBER: 00048609 001
TASK: SUE QL-A
TEST HOLE DATE: 04/16/2025
COUNTY - STATE: HOLDEN-MA
LOCATION: SALISBURY ST

KCI TECHNOLOGIES, INC.
SUBSURFACE UTILITY ENGINEERING
TEST HOLE FIELD DATA

OFFICE: SYRACUSE, NY
CREW LEADER: PT
SUE CREW: SC / MK
TRUCK NUMBER: OTHER
UNITS: ☒ ENGLISH ☐ METRIC

TEST HOLE: 4
REF. POINT ID BY: N/A

SURFACE ELEVATION: 762.54 FT
SURFACE TYPE: ASPHALT
SURFACE THICKNESS: 5 IN

CUT DEPTH: 5.14 FT
TOP OF UTILITY ELEVATION: N/A

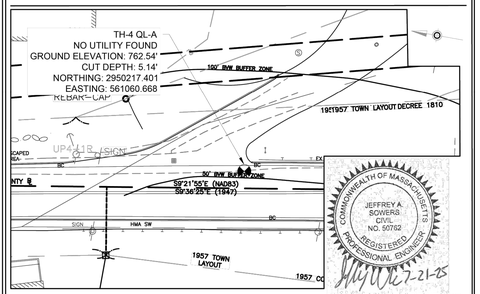
5.14 FT
NO UTILITY FOUND

UTILITY REQUESTED: WATER
UTILITY FOUND: NO UTILITY FOUND
UTILITY SIZE: -
UTILITY MATERIAL: -
SOIL CONDITIONS: ROCKY, DRY

SWING TIES

PROFILE VIEW - NOT TO SCALE

NOTES: EXCAVATED TO A DEPTH OF 5.14' AND COULD NOT DIG ANY FURTHER DUE TO LARGE DEBRIS. REFERENCE PIN NOT SET AT TH LOCATION. SURVEY COLLECTED 4 CORNERS OF RESTORATION PATCH IN ASPHALT. NORTHING AND EASTING COORDINATES SHOWN ARE THE CENTER OF THE PATCH USING THE COORDINATES FROM THE CORNERS AND THE GROUND ELEVATION IS AVERAGE ELEVATION OF THE CORNERS.



PLAN VIEW - NOT TO SCALE

THIS DOCUMENT IS SIGNED AND SEALED TO CERTIFY COMPLIANCE WITH ASCE 38-02.

SURVEYOR: CHAPPELL ENGINEERING PREPARED BY: M. MILLER CHECKED BY: B. MACVEAN

NOTES:

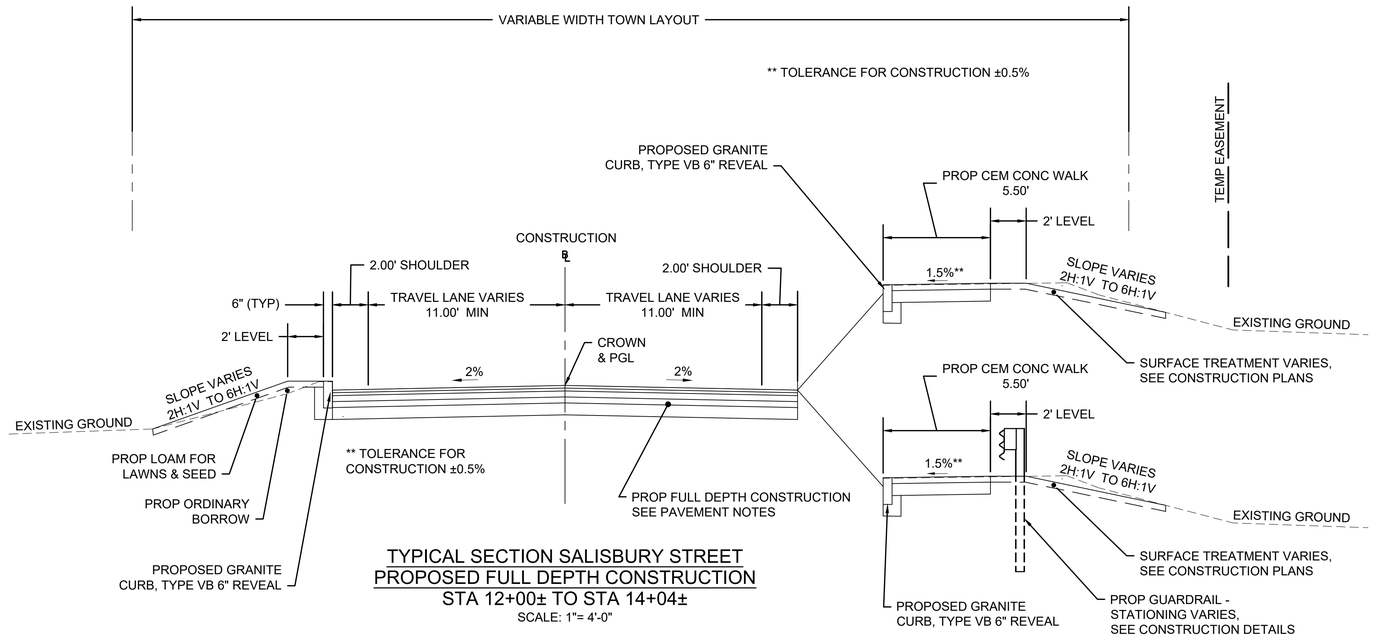
1. LOCATION OF TEST HOLES ARE SHOWN THUS: ⊠
2. TEST HOLDES ARE TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS AT TEST HOLE POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE LOCATION OF UTILITIES OUTSIDE OF THESE LOCATIONS.
3. ALL TEST HOLES WERE MADE IN APRIL 2025.
4. TEST HOLES WERE MADE BY KCI TECHNOLOGIES INC. OF GEORGETOWN, MA.
5. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
6. BORING DATA IS INCLUDED IN THE BRIDGE PLANS.

612190_HD(KEY PLAN).DWG Plotted on 20-May-2026 2:31 PM

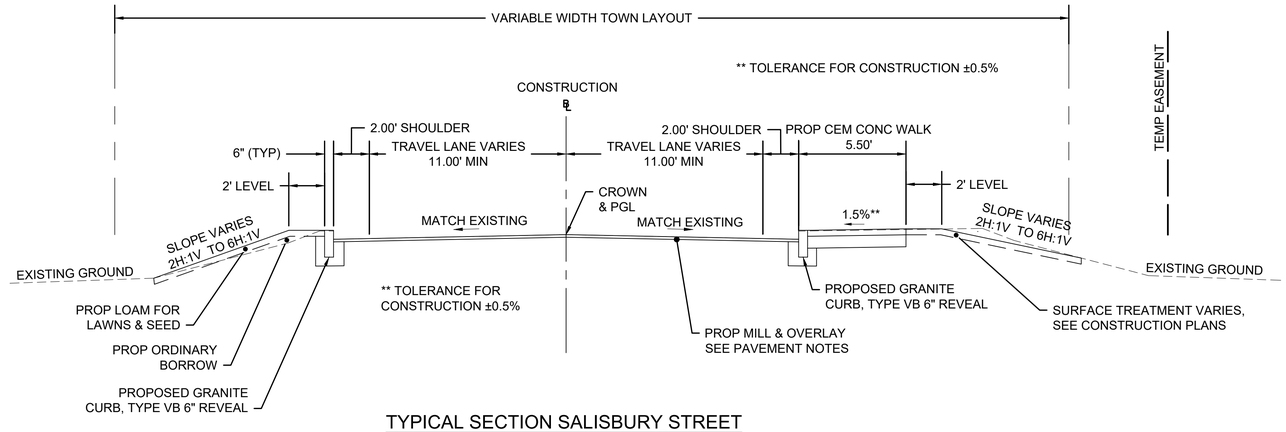
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	5	81
PROJECT FILE NO.	612190		

TYPICAL SECTIONS

612190_HD(TYPSEC).DWG Plotted on 20-May-2026 2:31 PM



TYPICAL SECTION SALISBURY STREET
PROPOSED FULL DEPTH CONSTRUCTION
STA 12+00± TO STA 14+04±
SCALE: 1"= 4'-0"



TYPICAL SECTION SALISBURY STREET
PROPOSED MILL & OVERLAY CONSTRUCTION
STA 11+15± TO STA 12+00±
SCALE: 1"= 4'-0"

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

PAVEMENT NOTES

PROPOSED PAVEMENT MILLING AND PAVEMENT OVERLAY

SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE 9.5 POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h), 0.07-0.09 GAL/ SY OVER
MILLING : 1.5" PAVEMENT FINE MILLING

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE 9.5 POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h), 0.06-0.08 GAL/ SY OVER
INTERMEDIATE: 2.75" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC - 19.0) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h), 0.06-0.08 GAL/ SY OVER
BASE: 4" SUPERPAVE BASE COURSE 37.5 (SBC - 37.5) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL, TYPE b

PROPOSED HOT MIX ASPHALT SIDEWALK

SURFACE: 1.25" SUPERPAVE SURFACE COURSE 9.5 (SSC - 9.5) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SSC - 12.5)

FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC - 9.5) OVER 2.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SSC - 12.5)

FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE SIDEWALK / PEDESTRIAN CURB RAMP

SURFACE: 4" CEMENT CONCRETE WALK SURFACE 4000 PSI, 3/4", 610 LB
FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE SIDEWALK THROUGH DRIVEWAY

SURFACE: 6" CEMENT CONCRETE WALK SURFACE 4000 PSI, 3/4", 610 LB
FOUNDATION: 8" GRAVEL BORROW, TYPE b

GENERAL NOTES

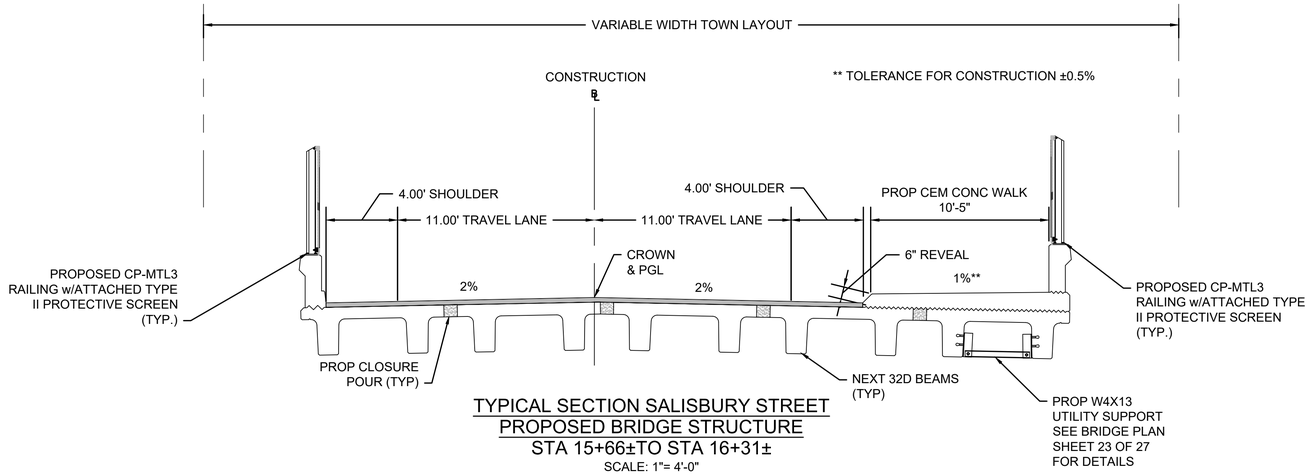
1. EXISTING PAVEMENT MARKINGS IN CONFLICT WITH PROPOSED LANE MARKINGS TO BE REMOVED, SEE SIGN AND PAVEMENT MARKING PLANS.
2. THE PROPOSED ROADWAY CROWN MAY VARY FROM THE EXISTING CROWN 0' - 3'.
3. EXISTING PAVEMENT SHALL BE REMOVED WITHIN LIMITS OF FULL DEPTH CONSTRUCTION.
4. SIDEWALK WIDTH VARIES FROM 5'-6" AT ROADWAY SECTIONS NORTH AND SOUTH OF THE BRIDGE, TO 10'-6" AT BRIDGE SECTION.
5. SLOPE TRANSITIONS SHALL BE ROUNDED CONSISTENTLY THROUGHOUT THE PROJECT PER METHODS DETAILED IN STANDARD DETAIL 150.0.1 METHOD OF ROUNDING SLOPES - CUT AND FILL SLOPES.

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

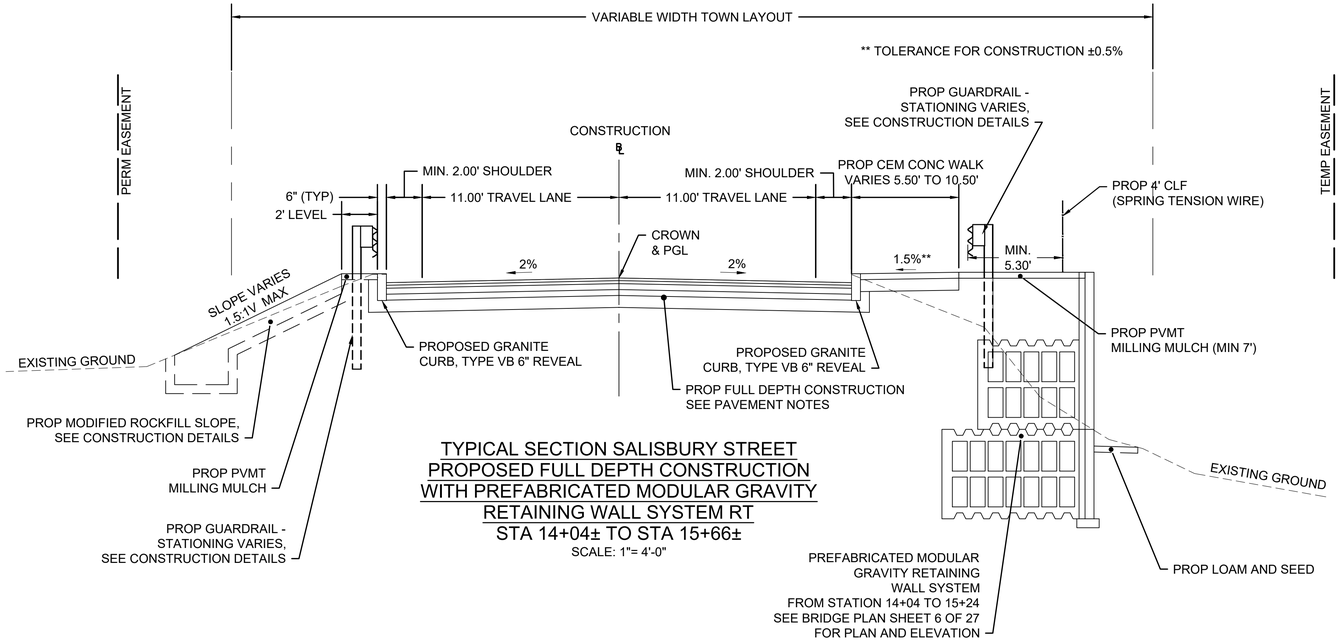
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	6	81
PROJECT FILE NO.	612190		

TYPICAL SECTIONS

612190_HD(TYPSEC).DWG Plotted on 20-May-2026 2:31 PM



TYPICAL SECTION SALISBURY STREET
PROPOSED BRIDGE STRUCTURE
STA 15+66±TO STA 16+31±
SCALE: 1"= 4'-0"



TYPICAL SECTION SALISBURY STREET
PROPOSED FULL DEPTH CONSTRUCTION
WITH PREFABRICATED MODULAR GRAVITY
RETAINING WALL SYSTEM RT
STA 14+04± TO STA 15+66±
SCALE: 1"= 4'-0"

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

PAVEMENT NOTES

PROPOSED BRIDGE PAVEMENT STRUCTURE

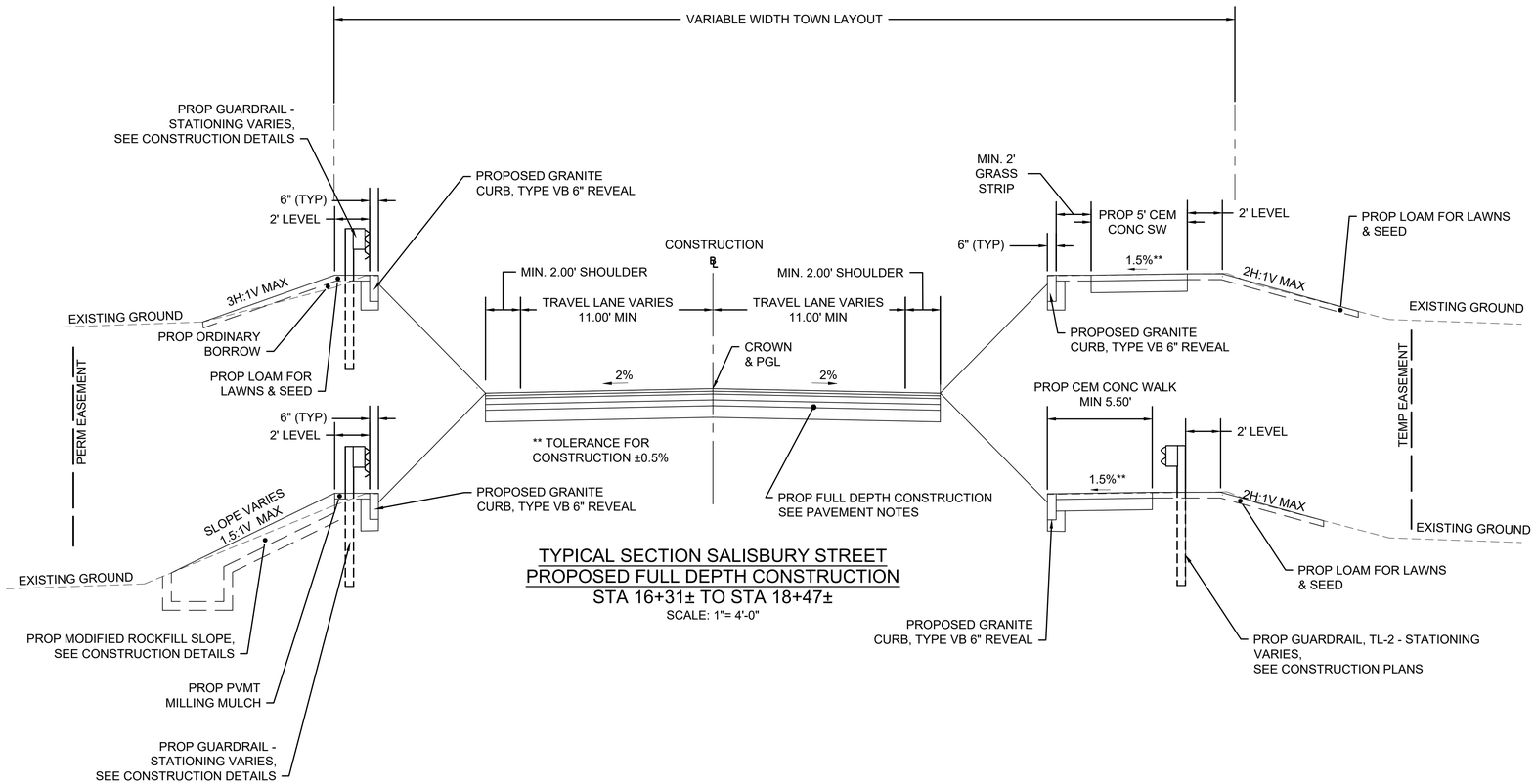
SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE 9.5 POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h) OVER

PROTECTIVE: 1.5" SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B - 9.5 - P) OVER SPRAY APPLIED MEMBRANE WATERPROOFING

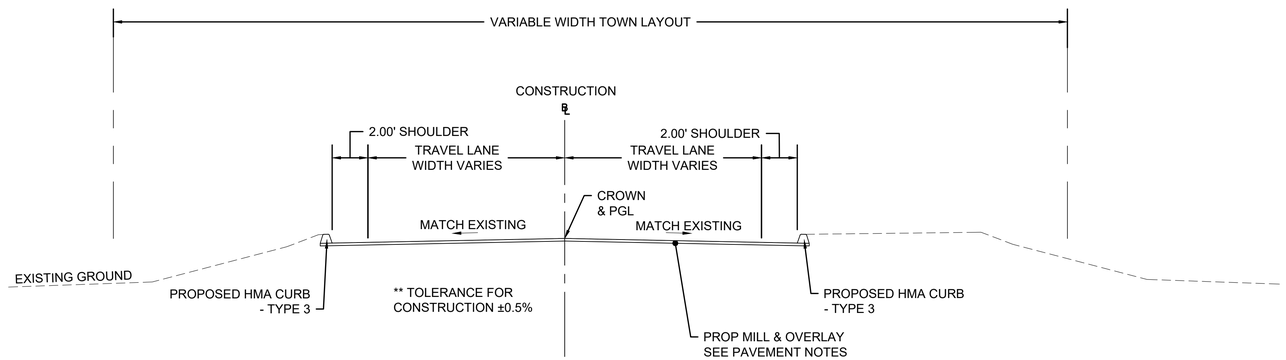
HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	7	81
PROJECT FILE NO.	612190		

TYPICAL SECTIONS



TYPICAL SECTION SALISBURY STREET
PROPOSED FULL DEPTH CONSTRUCTION
STA 16+31± TO STA 18+47±
SCALE: 1"= 4'-0"



TYPICAL SECTION SALISBURY STREET
PROPOSED MILL & OVERLAY CONSTRUCTION
STA 18+47± TO STA 20+50±
SCALE: 1"= 4'-0"

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

PROPOSED PAVEMENT MILLING AND PAVEMENT OVERLAY

SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE 9.5 POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h), 0.07-0.09 GAL/ SY OVER
MILLING : 1.5" PAVEMENT FINE MILLING

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE 9.5 POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h), 0.06-0.08 GAL/ SY OVER
INTERMEDIATE: 2.75" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC - 19.0) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h), 0.06-0.08 GAL/ SY OVER
BASE: 4" SUPERPAVE BASE COURSE 37.5 (SBC - 37.5) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL, TYPE b

PROPOSED HOT MIX ASPHALT SIDEWALK

SURFACE: 1.25" SUPERPAVE SURFACE COURSE 9.5 (SSC - 9.5) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SSC - 12.5)

FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC - 9.5) OVER 2.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SSC - 12.5)

FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE SIDEWALK / PEDESTRIAN CURB RAMP

SURFACE: 4" CEMENT CONCRETE WALK SURFACE 4000 PSI, 3/4", 610 LB
FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE SIDEWALK THROUGH DRIVEWAY

SURFACE: 6" CEMENT CONCRETE WALK SURFACE 4000 PSI, 3/4", 610 LB
FOUNDATION: 8" GRAVEL BORROW, TYPE b

GENERAL NOTES

1. EXISTING PAVEMENT MARKINGS IN CONFLICT WITH PROPOSED LANE MARKINGS TO BE REMOVED, SEE SIGN AND PAVEMENT MARKING PLANS.
2. THE PROPOSED ROADWAY CROWN MAY VARY FROM THE EXISTING CROWN 0' - 3'.
3. EXISTING PAVEMENT SHALL BE REMOVED WITHIN LIMITS OF FULL DEPTH CONSTRUCTION.
4. SIDEWALK WIDTH VARIES FROM 5'-6" AT ROADWAY SECTIONS NORTH AND SOUTH OF THE BRIDGE, TO 10'-6" AT BRIDGE SECTION.

612190_HD(TYPSEC).DWG Plotted on 20-May-2026 2:31 PM

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	8	81
	PROJECT FILE NO. 612190		

CONSTRUCTION BASELINE TIES

612190_HD(CONSTRUCTION BL TIES).DWG Plotted on 20-May-2026 2:31 PM

N NAD 83

PROJECT BEGIN
STA 10+28.37
N2950566.8599
E561017.7942

49+42.73 MSHLO#2882 MARCH 29 1932=
10+00.00 SALISBURY ST CONST BL

MAIN ST RT 122A EXIST BL

MAIN STREET (ROUTE 122A)
(PUBLIC - VARIABLE WIDTH)

SALISBURY STREET
(PUBLIC - 60' WIDE)

SALISBURY ST PROP BL

1932 STATE LAYOUT #2882 | 1999 TOWN LAYOUT

1947 TOWN LAYOUT | 1957 TOWN LAYOUT

1999 STATE LAYOUT #7418 | 1932 STATE LAYOUT #2882

1947 TOWN LAYOUT DECREE 1462

1957 TOWN LAYOUT DECREE 1810

1957 COUNTY LAYOUT DECREE 1810

47 TOWN LAYOUT | 1957 TOWN LAYOUT

N/F
SUNNYSIDE MARKETING & SALES CO., INC.
944 MAIN STREET
BOOK 39762 PAGE 356

N/F
SHAUN O. LINDGREN
925 MAIN STREET
BOOK 58567 PAGE 31

N/F
SUNNYSIDE MARKETING & SALES CO., INC.
1 SALISBURY STREET
BOOK 3916 PAGE 279
BOOK 39762 PAGE 356

N/F
SUNNYSIDE MARKETING & SALES CO., INC.
945 MAIN STREET
BOOK 47323 PAGE 14

19 SALISBURY, LLC
"AKA" NINETEEN SALISBURY, LLC
19 SALISBURY STREET
BOOK 43096 PAGE 345

SALISBURY ST CONST BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	10+00.00	2950590.741	561033.106		S32°40'02"W 51.70'	10+51.70	2950547.220	561005.201
C1	10+51.70	2950547.220	561005.201	R=70.00' Δ=45°00'03" L=54.98' T=29.00'		11+06.68	2950494.485	560995.744
L2	11+06.68	2950494.485	560995.744		S12°20'01"E 66.06'	11+72.74	2950429.949	561009.855
L3	11+72.74	2950429.949	561009.855		S12°20'01"E 111.15'	12+83.89	2950321.364	561033.597
C2	12+83.89	2950321.364	561033.597	R=2000.00' Δ=2°38'22" L=92.14' T=46.08'		13+76.03	2950230.931	561051.198
L4	13+76.03	2950230.931	561051.198		S9°41'39"E 388.20'	17+64.23	2949848.270	561116.567

MSHLO#2882 MARCH 29 1932 CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L10	42+61.11	2950949.358	560453.453		S58°15'20"E 757.02'	50+18.13	2950551.065	561097.227
L12	50+18.13	2950551.065	561097.227		S76°36'25"E 254.35'	52+72.48	2950492.150	561344.660

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 9

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 12

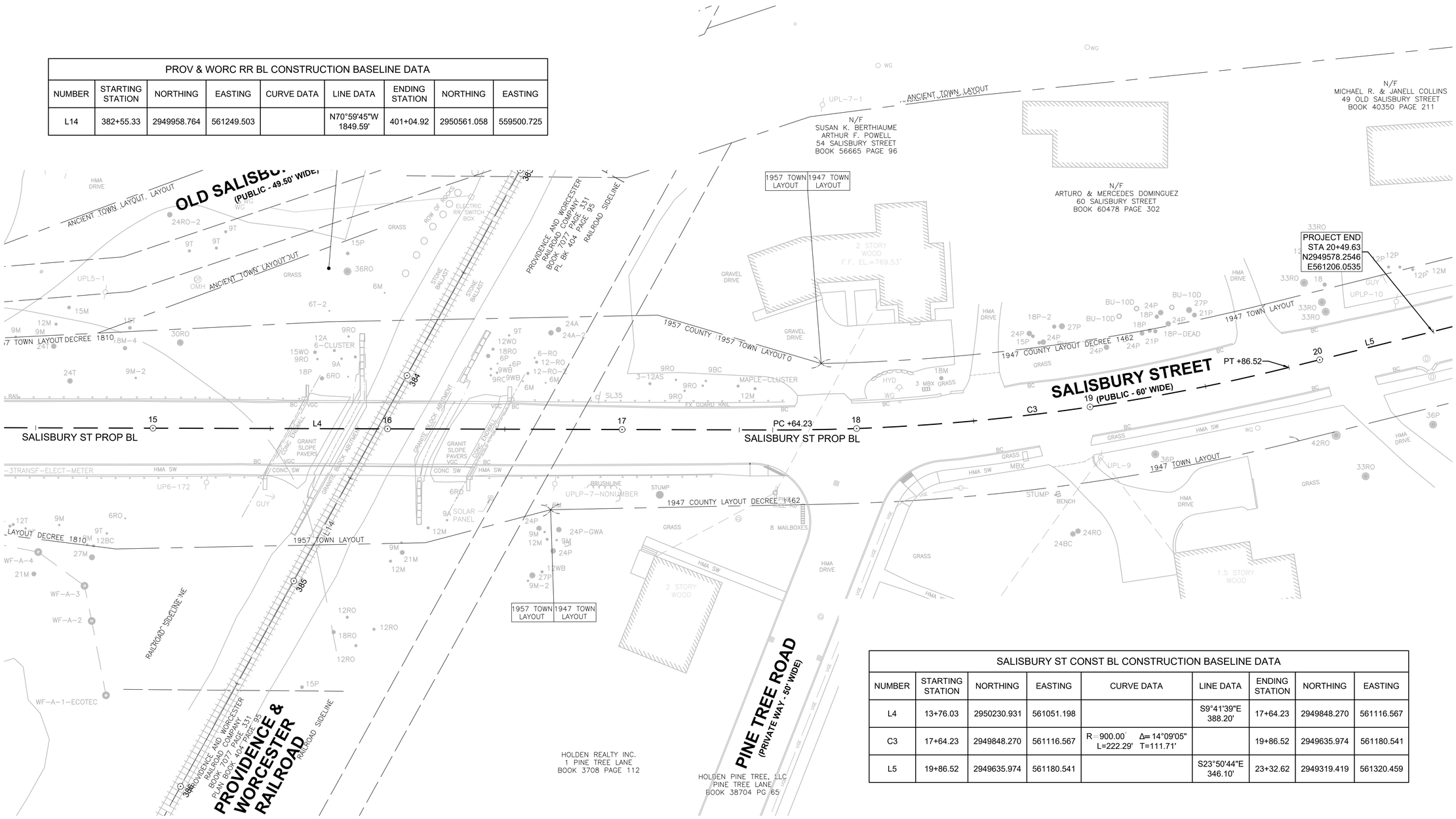
HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	9	81
PROJECT FILE NO.	612190		

CONSTRUCTION BASELINE TIES

N
NAD 83

PROV & WORC RR BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L14	382+55.33	2949958.764	561249.503		N70°59'45"W 1849.59'	401+04.92	2950561.058	559500.725



CONTINUED ON SHEET NO. 8

SALISBURY ST CONST BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	13+76.03	2950230.931	561051.198		S9°41'39"E 388.20'	17+64.23	2949848.270	561116.567
C3	17+64.23	2949848.270	561116.567	R=900.00' Δ=14°09'05" L=222.29' T=111.71'		19+86.52	2949635.974	561180.541
L5	19+86.52	2949635.974	561180.541		S23°50'44"E 346.10'	23+32.62	2949319.419	561320.459

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 13

612190_HD(CONSTRUCTION BL TIES).DWG Plotted on 20-May-2026 2:31 PM

HIGHWAY GUARD DETAILS

SEE GUARDRAIL DETAILS

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE UTILITY PLANS

DRAINAGE DETAILS

SEE UTILITY PLANS

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	10	81
PROJECT FILE NO.	612190		

CONSTRUCTION PLANS

612190_HD(CONST PLANS).DWG Plotted on 20-May-2026 2:31 PM

10+00 SALISBURY ST CONST BL=
49+42.73 MSHLO#2882 MARCH 29 1932

PROJECT BEGIN
STA 10+28.37
N2950566.8599
E561017.7942

SALISBURY STREET
(PUBLIC - 60' WIDE)

LIMIT OF WORK

MSHLO#2882 MARCH 29 1932

LIMITS OF MILL & OVERLAY, STA 11+17.31

PC +51.70

Δ=45° 00' 03"
L=54.98' R=70.00'

PT +06.68

S 32° 40' 02" W 51.70'

10+00

+18.13 PI

S 12° 20' 01" E 66.06'

PI +72.74

PROP MILL & OVERLAY

S 12° 20' 01" E 111.15'

PC +83.89

Δ=2° 38' 22"
L=92.14' R=2000.00'

PT +76.03

CONSTRUCTION ℄

S 9° 41' 39" E 386.20'

N/F
SUNNYSIDE MARKETING & SALES CO., INC.
944 MAIN STREET
BOOK 39762 PAGE 356

N/F
SHAUN O. LINDGREN
925 MAIN STREET
BOOK 58567 PAGE 31

N/F
KATHRYN L. RICKER
921 MAIN STREET
BOOK 36947 PAGE 222

N/F
KEVIN C. LARSON
20 SALISBURY STREET
BOOK 44706 PAGE 397

SUNNYSIDE MARKETING & SALES CO., INC.
30 SALISBURY STREET
BOOK 4301 PAGE 188
BOOK 39762 PAGE 356

SUNNYSIDE MARKETING & SALES CO., INC.
1 SALISBURY STREET
BOOK 3916 PAGE 279
BOOK 39762 PAGE 356

"AKA" NINETEEN SALISBURY, LLC
19 SALISBURY STREET
BOOK 43096 PAGE 345

PROVIDENCE AND WORCESTER RAILROAD COMPANY
BOOK 7077 PAGE 331
PLAN BOOK 404 PAGE 9

TOWN OF HOLDEN 15' WIDE SEWER EASEMENT
PLAN BOOK 287 PLAN 62

TOWN OF HOLDEN VARIABLE WIDTH SANITARY SEWER EASEMENT
PLAN BOOK 291 PLAN 31

82.5' WIDE CHAPTER 634 MASSDOT EASEMENT
PLAN BOOK 410 PLAN 5

M.D.C. WATER DIVISION EASEMENT

PROP 6.5 LF TRANSITION CURB
SAWCUT TO MATCH EX DWY
PROP HMA DWY
PROP 6.5 LF TRANSITION CURB
PROP SLOPE LIMITS
PROP TREE PROTECTION
PROP LOAM FOR LAWNS & SEED
R&R GAS (BO)
RET TREE
PROP GRAN CURB TYPE VB
SAWCUT
REM
PROP FULL DEPTH CONSTRUCTION
PROP GRAN CURB TYPE VB
PROP 5.5' CEM CONC SW
PROP TEMP EASE
RET VGC CORNER
SAWCUT TO MEET EX SW
PROP GRAN CURB TYPE VB
PROP SLOPE LIMITS
PROP LOAM FOR LAWNS & SEED
RET LANDSCAPING
RET
BEGIN FULL DEPTH CONSTRUCTION, STA 12+00
PROP CC SW AT DWY
PROP HMA DWY NO. 1
SAWCUT TO MATCH EX DWY
PROP LOAM FOR LAWNS & SEED
PROP SEDIMENT CONTROL BARRIER, 91± LF
PROP TEMP EASE
PROP PLANT & TREE PROTECTION FENCE
RET TREE
PROP TREE PROTECTION
PROP LOAM FOR LAWNS & SEED
REM TREES
REM TREE
MEET EX CURB
RET WALL
REBAR-CAP
REM BC
PROP GRAN CURB TYPE VB
PROP FULL DEPTH CONSTRUCTION
PROP GRAN CURB TYPE VB
PROP 5.5' CEM CONC SW
PROP PVMT MILLING MULCH
RET TREE (2)
PROP GUARDRAIL - SEE GUARDRAIL DETAILS
END LOAM FOR LAWNS
REM TREE
PROP PERM EASE
PROP TREE PROTECTION
REM. EX GUARDRAIL
PROP SLOPE LIMITS
PROP PVMT MILLING MULCH
R&S SIGN
PROP 6.5 LF TRANSITION CURB
SAWCUT TO MATCH EX DWY
PROP HMA DWY
REM TREES
REM TREE
PROP 4 FT CLF, 128± LF
PROP PVMT MILLING MULCH
PROP LOAM AND SEED
BEGIN PROP RET WALL STA 14+04.06
PROP CLEARING AND GRUBBING WITHIN SLOPE LIMITS
PROP CLEARING AND GRUBBING WITHIN SLOPE LIMITS
PROP PVMT MILLING MULCH
PROP GUARDRAIL - SEE GUARDRAIL DETAILS (SHEET 28-30)
PROP SLOPE LIMITS
PROP COMPOST AND SEED OVER MOD ROCK, STA 14+00± TO STA 15+77±
PROP PERM EASE
PROP 6.5 LF TRANSITION CURB, TO 8" REVEAL
REM TREE (4)
REM TREE
REM EX GUARDRAIL
REM EX CURB
PROP GRAN CURB TYPE VB
PROP FULL DEPTH CONSTRUCTION
PROP GRAN CURB TYPE VB
PROP 10'-5" CEM CC
PROP SEDIMENT CONTROL BARRIER, 305± LF
PROP PREFABRICATED MODULAR GRAVITY RETAINING WALL SYSTEM, REFER TO BRIDGE PLANS
PROP GUARDRAIL - SEE GUARDRAIL DETAILS (SHEET 28-30)
PROP GRANITE CURB - SPLAYED END
PROP SOLDIER PILE AND LAGGING WALL, REFER TO BRIDGE PLANS
END PROP RET WALL STA 15+23.79
PROP GRANITE CURB - SPLAYED END
RET
PROP PERM EASE
PROP COMPOST AND SEED OVER MOD ROCK, STA 14+00± TO STA 15+77±
PROP CLEARING AND GRUBBING WITHIN SLOPE LIMITS & MOD ROCK LIMITS

CONTINUED ON SHEET NO. 11

NOTES:
1. RETAIN ALL TREES UNLESS OTHERWISE SPECIFIED.
2. CONTRACTOR SHALL REMOVE ALL EXISTING ROADWAY PAVEMENT WITHIN THE LIMITS OF FULL DEPTH CONSTRUCTION. ITEM 129.2 OLD PAVEMENT EXCAVATION SHALL ACCOUNT FOR THE REMOVAL OF PAVEMENT WHERE THE PROFILE IS BEING RAISED FROM STATIONS 14+67 TO 18+00.
3. LOCATIONS OF TREE PLANTINGS MAY REQUIRE FILED ADJUSTMENT. FINAL LAYOUT SHALL BE APPROVED BY THE MASSDOT LANDSCAPE DESIGN SECTION.

LEGEND:

PROP COMPOST BLANKET AND NATIVE SEED

PROP COMPOST AND SEED OVER MOD ROCK

0 20 50 100

SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE: SEE SHEET NO. 12

HIGHWAY GUARD DETAILS

TRANSITION TO BRIDGE RAIL	16+24 RT TO 16+58 RT
GUARDRAIL (SINGLE FACED),TL-2	16+58 RT TO 17+47 RT
TRAILING ANCHORAGE	17+47 RT TO 17+56 RT

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE UTILITY PLANS

DRAINAGE DETAILS

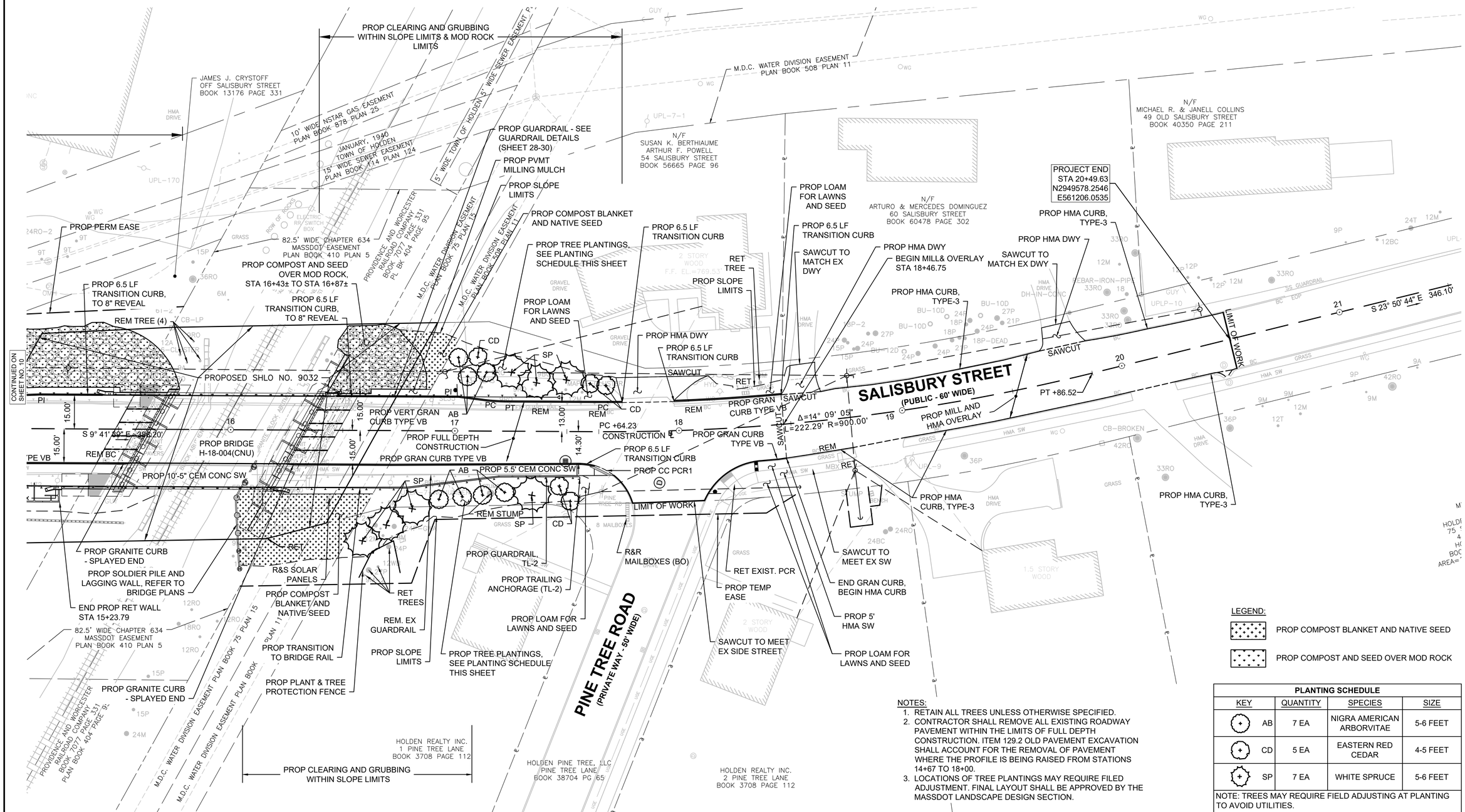
SEE UTILITY PLANS

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	11	81
	PROJECT FILE NO. 612190		

CONSTRUCTION PLANS

612190_HD(CONST PLANS).DWG Plotted on 20-May-2026 2:31 PM



LEGEND:

PROP COMPOST BLANKET AND NATIVE SEED

PROP COMPOST AND SEED OVER MOD ROCK

PLANTING SCHEDULE

KEY	QUANTITY	SPECIES	SIZE
AB	7 EA	NIGRA AMERICAN ARBORVITAE	5-6 FEET
CD	5 EA	EASTERN RED CEDAR	4-5 FEET
SP	7 EA	WHITE SPRUCE	5-6 FEET

NOTE: TREES MAY REQUIRE FIELD ADJUSTING AT PLANTING TO AVOID UTILITIES.

NOTES:

1. RETAIN ALL TREES UNLESS OTHERWISE SPECIFIED.
2. CONTRACTOR SHALL REMOVE ALL EXISTING ROADWAY PAVEMENT WITHIN THE LIMITS OF FULL DEPTH CONSTRUCTION. ITEM 129.2 OLD PAVEMENT EXCAVATION SHALL ACCOUNT FOR THE REMOVAL OF PAVEMENT WHERE THE PROFILE IS BEING RAISED FROM STATIONS 14+67 TO 18+00.
3. LOCATIONS OF TREE PLANTINGS MAY REQUIRE FILED ADJUSTMENT. FINAL LAYOUT SHALL BE APPROVED BY THE MASSDOT LANDSCAPE DESIGN SECTION.

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 13

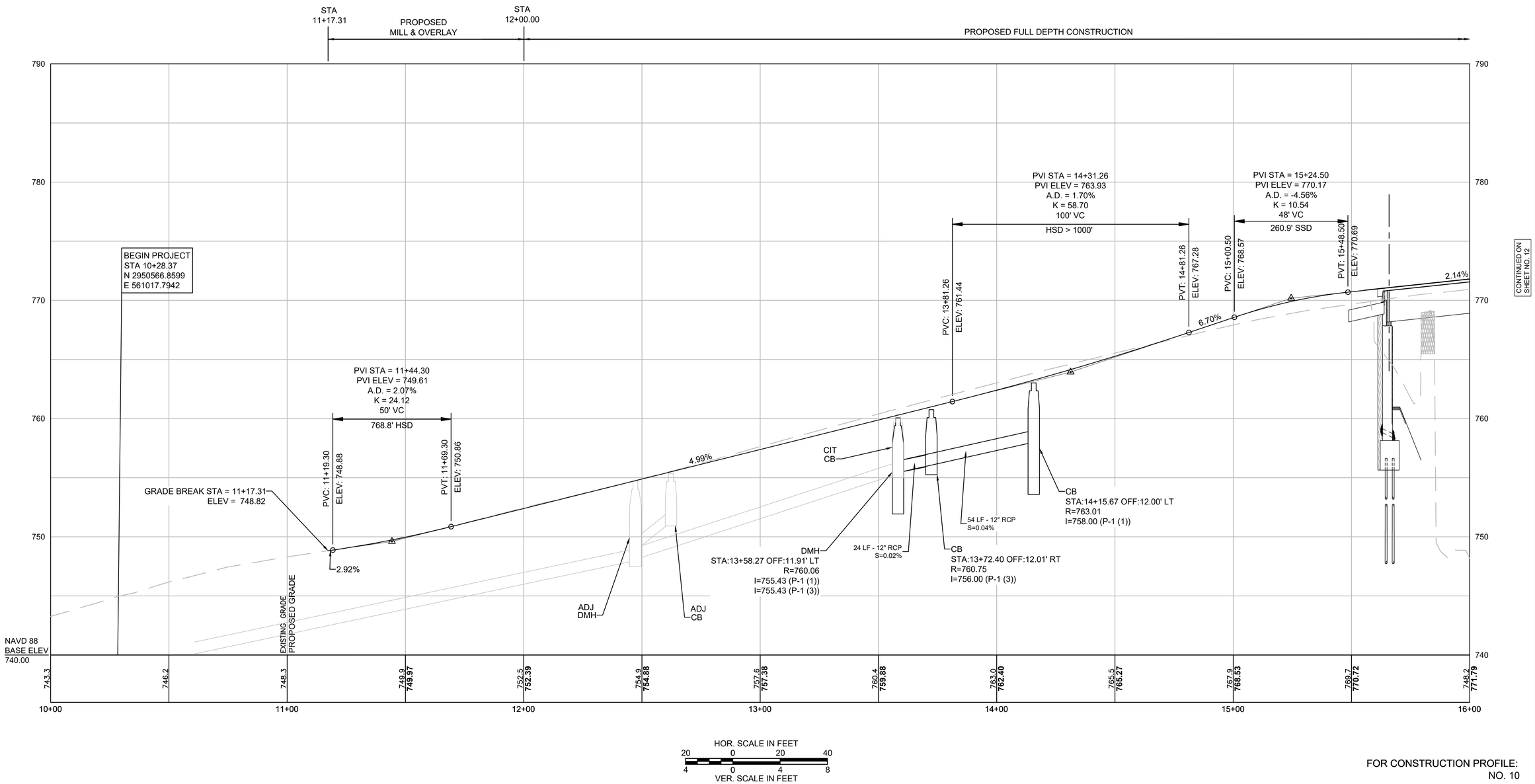
HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	12	81
PROJECT FILE NO.	612190		

PROFILES

612190_HDLPROFILE).DWG Plotted on 20-May-2026 2:31 PM

SALISBURY ST CONST BL



HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

FOR CONSTRUCTION PROFILE:
NO. 10

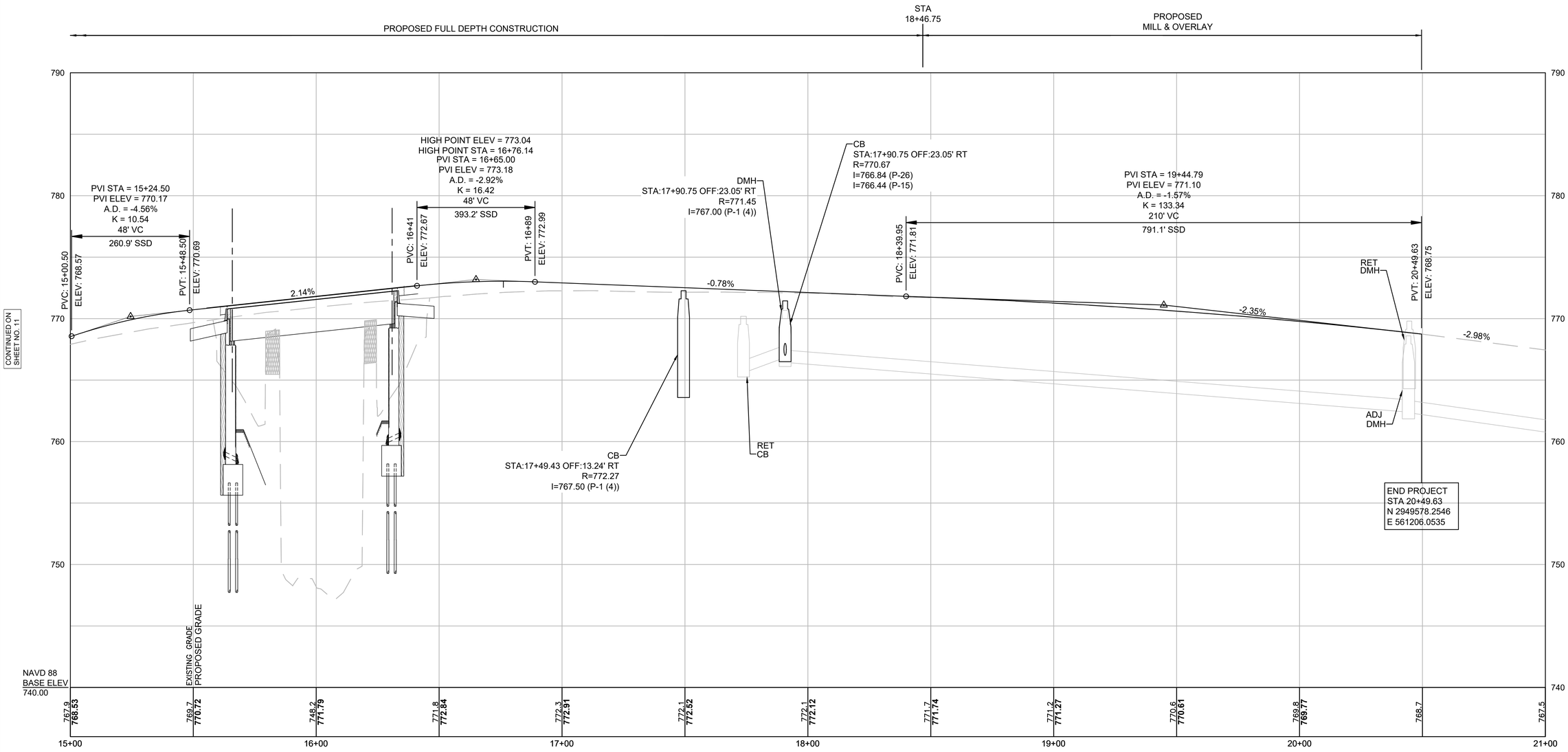
HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	13	81
PROJECT FILE NO.	612190		

PROFILES

612190_HD(PROFILE).DWG Plotted on 20-May-2026 2:31 PM

SALISBURY ST CONST BL



HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

FOR CONSTRUCTION PROFILE:
NO. 11

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	14	81
	PROJECT FILE NO. 612190		

CURB TIE & GRADING PLANS

612190_HD(CURB TIE PLANS).DWG Plotted on 20-May-2026 2:32 PM

N

SALISBURY STREET
(PUBLIC - 60' WIDE)

MAIN STREET (ROUTE 122A)
(PUBLIC - VARIABLE WIDTH)
MSHLO#2882 MARCH 29 1932

1932 SHLO ALT. NO. 2882

1999 TOWN LAYOUT ALT.

1957 COUNTY LAYOUT DECREE 1810

1947 COUNTY LAYOUT DECREE 1462

ANCIENT TOWN LAYOUT

TOWN OF HOLDEN 15' WIDE SEWER EASEMENT PLAN BOOK 287 PLAN 62

TOWN OF HOLDEN VARIABLE WIDTH SANITARY SEWER EASEMENT PLAN BOOK 291 PLAN 3

PROP TEMP EASE

PROP PERM EASE

PROP TEMP EASE

N/F
SUNNYSIDE MARKETING & SALES CO., INC.
944 MAIN STREET
BOOK 39762 PAGE 356

N/F
SUNNYSIDE MARKETING & SALES CO., INC.
944 MAIN STREET
BOOK 39762 PAGE 356

N/F
SHAUN O. LINDGREN
925 MAIN STREET
BOOK 58567 PAGE 31

N/F
KATHRYN L. RICKER
921 MAIN STREET
BOOK 36947 PAGE 222

N/F
KEVIN C. LARSON
20 SALISBURY STREET
BOOK 44706 PAGE 397

SUNNYSIDE MARKETING & SALES CO., INC.
30 SALISBURY STREET
BOOK 4301 PAGE 188
BOOK 39762 PAGE 356

SUNNYSIDE MARKETING & SALES CO., INC.
1 SALISBURY STREET
BOOK 3916 PAGE 279
BOOK 39762 PAGE 356

19 SALISBURY, LLC
"AKA" NINETEEN SALISBURY, LLC
19 SALISBURY STREET
BOOK 43096 PAGE 345

PC +51.70
PT +06.68
PI +72.74
PI 12.67'
PI 30.00'
N15°11'50"W
N12°03'30"W
PI 75.40'
PC +83.89
PT +76.03
PC +99.35
PCC
PT
PC
PT
PC
PT
PC
PT
PCC
PT
PC
PT

Curve Table			
Curve #	Delta	Radius	Length
C1	82°55'04"	3.00	4.34
C2	4°44'11"	1000.00	82.66
C3	27°34'01"	20.00	9.62
C4	62°36'54"	15.00	16.39
C7	5°33'22"	837.00	81.17
C9	2°17'26"	500.00	19.99
C11	5°29'26"	100.00	9.58

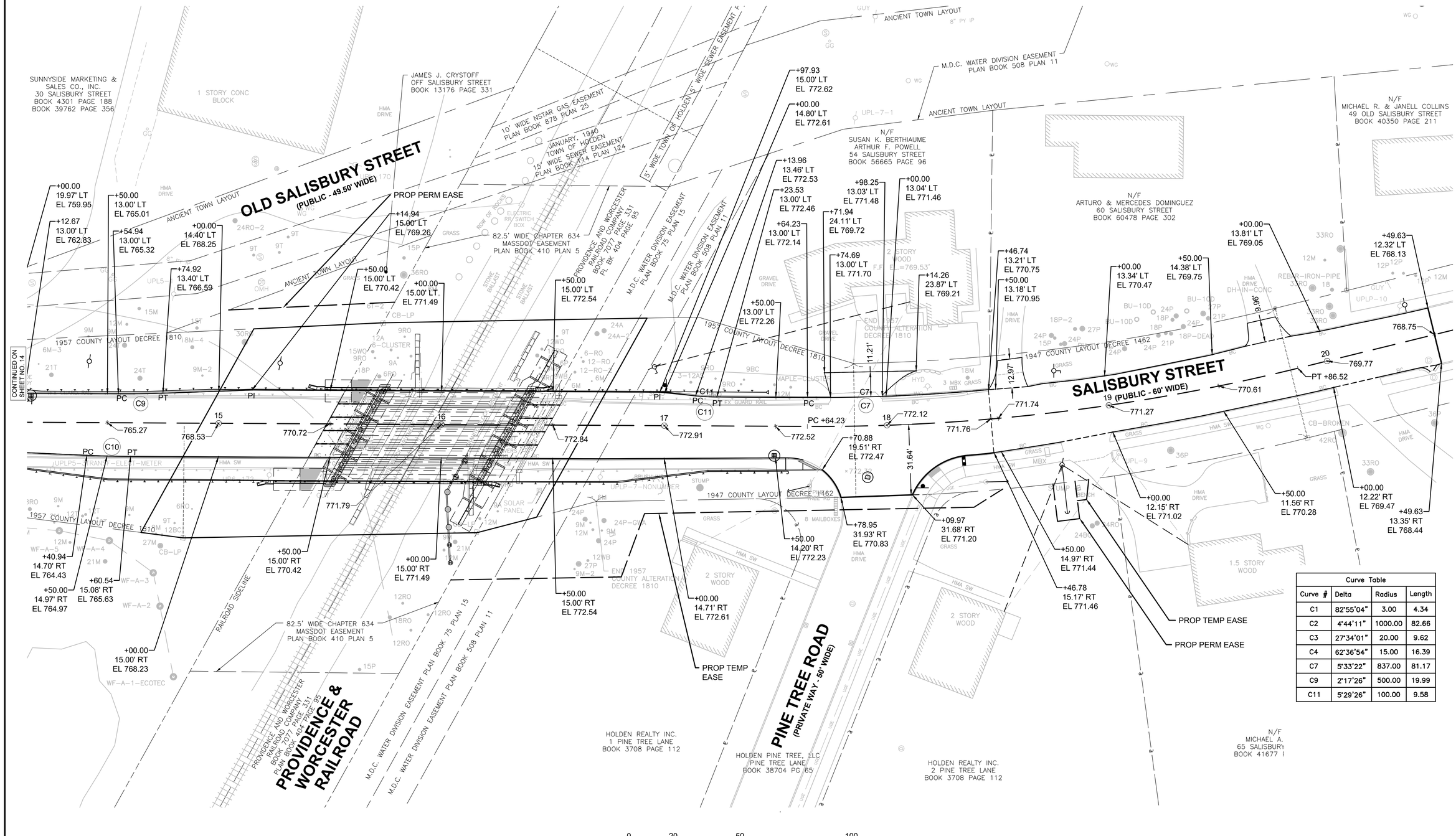
0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 15

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	15	81
PROJECT FILE NO.	612190		

CURB TIE & GRADING PLANS



Curve Table			
Curve #	Delta	Radius	Length
C1	82°55'04"	3.00	4.34
C2	4°44'11"	1000.00	82.66
C3	27°34'01"	20.00	9.62
C4	62°36'54"	15.00	16.39
C7	5°33'22"	837.00	81.17
C9	2°17'26"	500.00	19.99
C11	5°29'26"	100.00	9.58

612190_HD(CURB TIE PLANS).DWG Plotted on 20-May-2026 2:32 PM

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	16	81
	PROJECT FILE NO. 612190		

TRAFFIC SIGN & PAVEMENT MARKINGS

N
NAD 83

PROJECT BEGIN
STA 10+28.37
N2950566.8599
E561017.7942

MAIN STREET (ROUTE 122A)
(PUBLIC - VARIABLE WIDTH)

SALISBURY STREET
(PUBLIC - 60' WIDE)

PROVIDENCE & WORCESTER RAILROAD
(PRIVATE WAY - 82.58' WIDE)
BOOK 7077 PAGE 331

PROVIDENCE AND WORCESTER RAILROAD COMPANY
BOOK 7077 PAGE 331
PLAN BOOK 404 PAGE 95

N/F
SUNNYSIDE MARKETING & SALES CO., INC.
944 MAIN STREET
BOOK 39762 PAGE 356

N/F
SHAUN O. LINDGREN
925 MAIN STREET
BOOK 58567 PAGE 31

N/F
KATHRYN L. RICKER
921 MAIN STREET
BOOK 36947 PAGE 222

N/F
KEVIN C. LARSON
20 SALISBURY STREET
BOOK 44706 PAGE 397

SUNNYSIDE MARKETING & SALES CO., INC.
30 SALISBURY STREET
BOOK 4301 PAGE 188
BOOK 39762 PAGE 356

SUNNYSIDE MARKETING & SALES CO., INC.
1 SALISBURY STREET
BOOK 3916 PAGE 279
BOOK 39762 PAGE 356

19 SALISBURY, LLC
"AKA" NINETEEN SALISBURY, LLC
19 SALISBURY STREET
BOOK 43096 PAGE 345

1932 STATE LAYOUT #2882 | 1999 TOWN LAYOUT
1947 TOWN LAYOUT | 1957 TOWN LAYOUT
1999 TOWN LAYOUT | 1947 TOWN LAYOUT
1947 TOWN LAYOUT | 1957 TOWN LAYOUT

1932 SHLO ALT. NO. 2882
1932 STATE BASELINE
ANCIENT TOWN LAYOUT
PERM EASEMENT
TEMP EASEMENT
1947 TOWN LAYOUT
1957 TOWN LAYOUT

MEET EXIST SWL
RET
RET LTO & RTO SIGN
R&R NO PARKING SIGN
RET SIGN
R&S SIGN
RET EX CROSSWALK
PROP R2-1(35)
PROP 5.5' CEM CONC SW
PROP 10'-5" CEM CONC SW
SWL
DBYL
LTA-RTA ONLY
LTO-RTO-NPAT
BSOLFG-BIKEGUY
SIGNAL-HEAD
SUNNYSIDE BODY

PC +51.70
PI +72.74
PT +06.68
PC +83.89
PT +76.03

2.00'
4.00'
14.61'
11.55'
11.00'

1 STORY CONC BLOCK
2 STORY WOOD
2 STORY WOOD F.F. EL.=755.77'

CONTINUED ON SHEET NO.17

0 20 50 100
SCALE: 1" = 20'

612190_HD(SIGN & PAVEMENT).DWG Plotted on 20-May-2026 2:32 PM

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	17	81
PROJECT FILE NO.	612190		

TRAFFIC SIGN & PAVEMENT MARKINGS

612190_HD(SIGN & PAVEMENT).DWG Plotted on 20-May-2026 2:32 PM

CONTINUED ON SHEET NO. 16

N NAD 83

JAMES J. CRYSTOFF
OFF SALISBURY STREET
BOOK 13176 PAGE 331

RAILROAD SIDELINE

PROVIDENCE AND WORCESTER RAILROAD COMPANY
BOOK 7077 PAGE 331
PL BK 404 PAGE 95
RAILROAD SIDELINE

ANCIENT TOWN LAYOUT

N/F
SUSAN K. BERTHIAUME
ARTHUR F. POWELL
54 SALISBURY STREET
BOOK 56665 PAGE 96

1957 TOWN LAYOUT
1947 TOWN LAYOUT

N/F
ARTURO & MERCEDES DOMINGUEZ
60 SALISBURY STREET
BOOK 60478 PAGE 302

N/F
MICHAEL R. & JANELL COLLINS
49 OLD SALISBURY STREET
BOOK 40350 PAGE 211

PROJECT END
STA 20+49.63
N2949578.2546
E561206.0535

MEET EX PVMT MARKINGS

2 STORY WOOD
F.F. EL.=769.53'

PERM EASEMENT

R&R R2-1 (35)

PROP BRIDGE
H-18-004(XXX)

SALISBURY STREET
(PUBLIC - 60' WIDE)

SWL
DBYL
PC +64.23
PT +86.52

PROP 10'-5" CEM CONC SW

10' CW

PROP R1-1

R&S "PINE TREE RD"
SIGN ON UTILITY POLE

PROP MA-D3-1
MOUNTED BACK TO BACK

PROP 5' HMA SW

TEMP EASEMENT
PERM EASEMENT

PROVIDENCE AND WORCESTER RAILROAD
(PUBLIC - 82.50' WIDE)
BOOK 7077 PAGE 331

PINE TREE ROAD
(PRIVATE WAY - 50' WIDE)

HOLDEN REALTY INC.
1 PINE TREE LANE
BOOK 3708 PAGE 112

HOLDEN PINE TREE, LLC
PINE TREE LANE
BOOK 38704 PG 65

HOLDEN REALTY INC.
2 PINE TREE LANE
BOOK 3708 PAGE 112

N/F
MICHAEL A. RALLI
65 SALISBURY STREET
BOOK 41677 PAGE 205

0 20 50 100
SCALE: 1" = 20'

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	18	81
	PROJECT FILE NO. 612190		

TRAFFIC SIGN SUMMARY SHEET

TRAFFIC SIGN SUMMARY

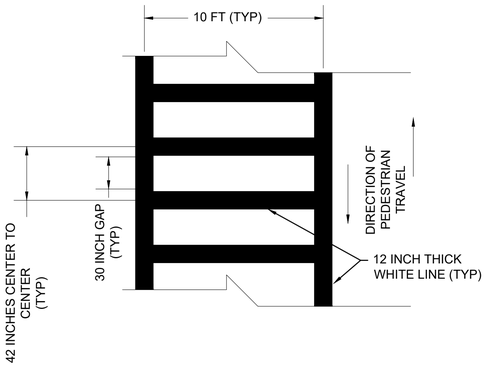
IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R2–1 (35)	24	30	SPEED LIMIT 35	MUTCD STND	MUTCD STND	MUTCD STND	1	WHITE	BLACK	BLACK	P5 (1)	5.00	5.00
R1–1	30	30	STOP	MUTCD STND	MUTCD STND	MUTCD STND	1	RED	WHITE	WHITE	P5 (1)	6.25	6.25

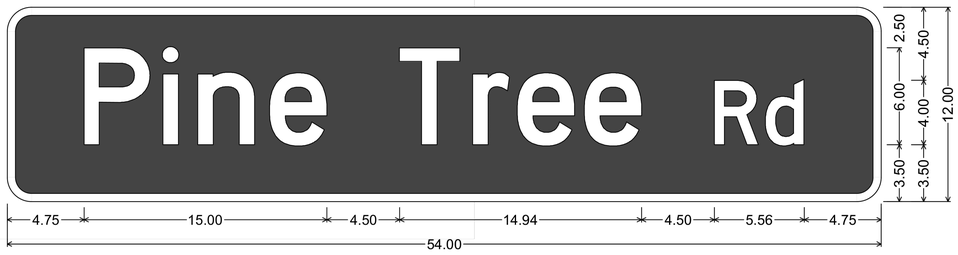
PAYMENT FOR THESE SIGNS TO BE INCLUDED WITH ITEM 832.

TOTAL THIS SHEET =11.25 SF

LADDER STYLE MARKINGS FOR CROSSWALKS

SCALE: NONE





MA-D3-1;
Job Number : 612190;
Quantity : 2;
Supports : 2 P5 POSTS;
Mounting : BACK TO BACK;
1.50" Radius, 0.50" Border, White on Green;
"Pine", D 2K; "Tree", D 2K; "Rd", D 2K;

POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
P5 (2), MOUNTED BACK–BACK	4.50	9.00

TOTAL AREA STREET SIGNS = 9.00 SF

SIGNS – GENERAL NOTES:

1. RETROREFLECTIVE SHEETING FOR ALL GUIDE AND TRAFFIC SIGNS SHALL CONFORM TO SUBSECTION M9.30.0 OF THE MASSDOT STANDARD SPECIFICATIONS.
2. ALL SIGNS NOTED AS "(R&R)" SHALL BE MOUNTED ON NEW P5 POSTS OR AS OTHERWISE INDICATED.
3. ALL P5 POSTS SHALL BE TELESCOPIC BREAKAWAY RECTANGULAR TYPE POSTS.
4. QUANTITIES OF SIGNS SHOWN ON THIS SHEET MAY DIFFER FROM THE PAVEMENT MARKING AND SIGNING PLANS. WHERE DIFFERENCES OCCUR, THE PAVEMENT MARKINGS AND SIGNING PLANS SHALL PREVAIL.
5. CONTRACTOR SHALL TAKE NOTE THAT STREET SIGN PANELS ARE PAID PER EACH. THE TOTAL SQUARE FOOTAGE SHOWN FOR STREET SIGN PANELS IS FOR REFERENCE ONLY.

612190_HD(SIGN & PAVEMENT).DWG Plotted on 20-May-2026 2:32 PM

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	19	81
	PROJECT FILE NO. 612190		

TEMPORARY TRAFFIC CONTROL PLANS

612190_HD(TTCP).DWG Plotted on 20-May-2026 2:32 PM

N

NAD 83

PROJECT BEGIN
STA 10+28.37
N2950566.8599
E561017.7942

1932 STATE BASELINE

1932 SHLO ALT. NO. 2882

1999 SHLO ALT. NO. 7418

PC +51.70

PT +06.68

PI +72.74

PC +83.89

PT +76.03

PROP R11-3A
PROP M4-10R

PROP R9-9

REFLECTORIZED TRAFFIC DRUMS (TYP.)

PROP TYPE III BARRICADE (TYP.)

PROP R11-2 SIGNS MOUNTED ON TYPE III BARRICADE

TEMPORARY IMPACT ATTENUATOR, (TL-2) (TYP)

TEMPORARY BARRIER (TL-2) (TYP)

PROP GATED TEMPORARY FENCE FOR CONTRACTOR ACCESS. LOCATION TO BE COORDINATED WITH ENGINEER

RELOCATE UTILITIES TO EAST SIDE OF BRIDGE (REFER TO UTILITY PLANS)

CONTINUED ON SHEET NO. 20

N/F
SUNNYSIDE MARKETING & SALES CO., INC.
944 MAIN STREET
BOOK 39762 PAGE 356

N/F
SHAUN O. LINDGREN
925 MAIN STREET
BOOK 58567 PAGE 31

N/F
KATHRYN L. RICKER
921 MAIN STREET
BOOK 36947 PAGE 222

N/F
KEVIN C. LARSON
20 SALISBURY STREET
BOOK 44706 PAGE 397

SUNNYSIDE MARKETING & SALES CO., INC.
30 SALISBURY STREET
BOOK 4301 PAGE 188
BOOK 39762 PAGE 356

SUNNYSIDE MARKETING & SALES CO., INC.
1 SALISBURY STREET
BOOK 3916 PAGE 279
BOOK 39762 PAGE 356

N/F
SUNNYSIDE MARKETING & SALES CO., INC.
945 MAIN STREET
BOOK 47323 PAGE 14

19 SALISBURY, LLC
"AKA" NINETEEN SALISBURY, LLC
19 SALISBURY STREET
BOOK 43096 PAGE 345

TOWN OF HOLDEN 15' WIDE SEWER EASEMENT
PLAN BOOK 287 PLAN 62

TOWN OF HOLDEN VARIABLE WIDTH SANITARY SEWER EASEMENT
PLAN BOOK 291 PLAN 31

1932 STATE LAYOUT #2882 | 1999 TOWN LAYOUT

1947 TOWN LAYOUT | 1957 TOWN LAYOUT

1999 TOWN LAYOUT | 1947 TOWN LAYOUT

1999 STATE LAYOUT #7418 | 1932 STATE LAYOUT #2882

1999 TOWN LAYOUT

1947 TOWN LAYOUT

1957 TOWN LAYOUT

ANCIENT TOWN LAYOUT

0 20 50 100

SCALE: 1" = 20'

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	20	81
	PROJECT FILE NO. 612190		

TEMPORARY TRAFFIC CONTROL PLANS

N

NAD 83

SUNNYSIDE MARKETING & SALES CO., INC.
30 SALISBURY STREET
BOOK 4301 PAGE 188
BOOK 39762 PAGE 356

JAMES J. CRYSTOFF
OFF SALISBURY STREET
BOOK 13176 PAGE 331

RAILROAD SIDELINE

10' WIDE NSTAR GAS EASEMENT
PLAN BOOK 878 PLAN 25

JANUARY, 1940
TOWN OF HOLDEN
15' WIDE SEWER EASEMENT
PLAN BOOK 114 PLAN 124

5' WIDE TOWN OF HOLDEN SEWER EASEMENT PLAN BOOK 19

RAILROAD

M.D.C. WATER DIVISION EASEMENT
PLAN BOOK 508 PLAN 11

N/F
SUSAN K. BERTHIAUME
ARTHUR F. POWELL
54 SALISBURY STREET
BOOK 56665 PAGE 96

N/F
MICHAEL R. & JANELL COLLINS
49 OLD SALISBURY STREET
BOOK 40350 PAGE 211

N/F
ARTURO & MERCEDES DOMINGUEZ
60 SALISBURY STREET
BOOK 60478 PAGE 302

82.5' WIDE CHAPTER 634
MASSDOT EASEMENT
PLAN BOOK 410 PLAN 5

PROVIDENCE AND WORCESTER RAILROAD COMPANY
BOOK 7077 PAGE 331
PLAN BOOK 404 PAGE 95

M.D.C. WATER DIVISION EASEMENT
PLAN BOOK 75 PLAN 15

M.D.C. WATER DIVISION EASEMENT
PLAN BOOK 508 PLAN 11

REMOVE THE EXISTING BRIDGE STRUCTURE AND FOUNDATION, AND CONSTRUCT THE PROPOSED BRIDGE.

BRIDGE NO. H-18-004

TEMPORARY BARRIER (TL-2) (TYP)

PROP TYPE III BARRICADE (TYP.)

PROP R11-2 SIGNS MOUNTED ON TYPE III BARRICADE

PROJECT END
STA 20+50
N2949577.9129
E561206.2045

PT +86.30

PC +64.23

PROP R9-9

PROP GATED TEMPORARY FENCE FOR CONTRACTOR ACCESS. LOCATION TO BE COORDINATED WITH ENGINEER

REFLECTORIZED TRAFFIC DRUMS (TYP.)

TEMPORARY IMPACT ATTENUATOR, (TL-2) (TYP)

RELOCATE UTILITIES TO EAST SIDE OF BRIDGE (REFER TO UTILITY PLANS)

1957 TOWN LAYOUT | 1947 TOWN LAYOUT

ANCIENT TOWN LAYOUT

HOLDEN REALTY INC.
1 PINE TREE LANE
BOOK 3708 PAGE 112

HOLDEN PINE TREE, LLC
PINE TREE LANE
BOOK 38704 PG 65

HOLDEN REALTY INC.
2 PINE TREE LANE
BOOK 3708 PAGE 112

N/F
MICHAEL A. RALLI
65 SALISBURY STREET
BOOK 41677 PAGE 205

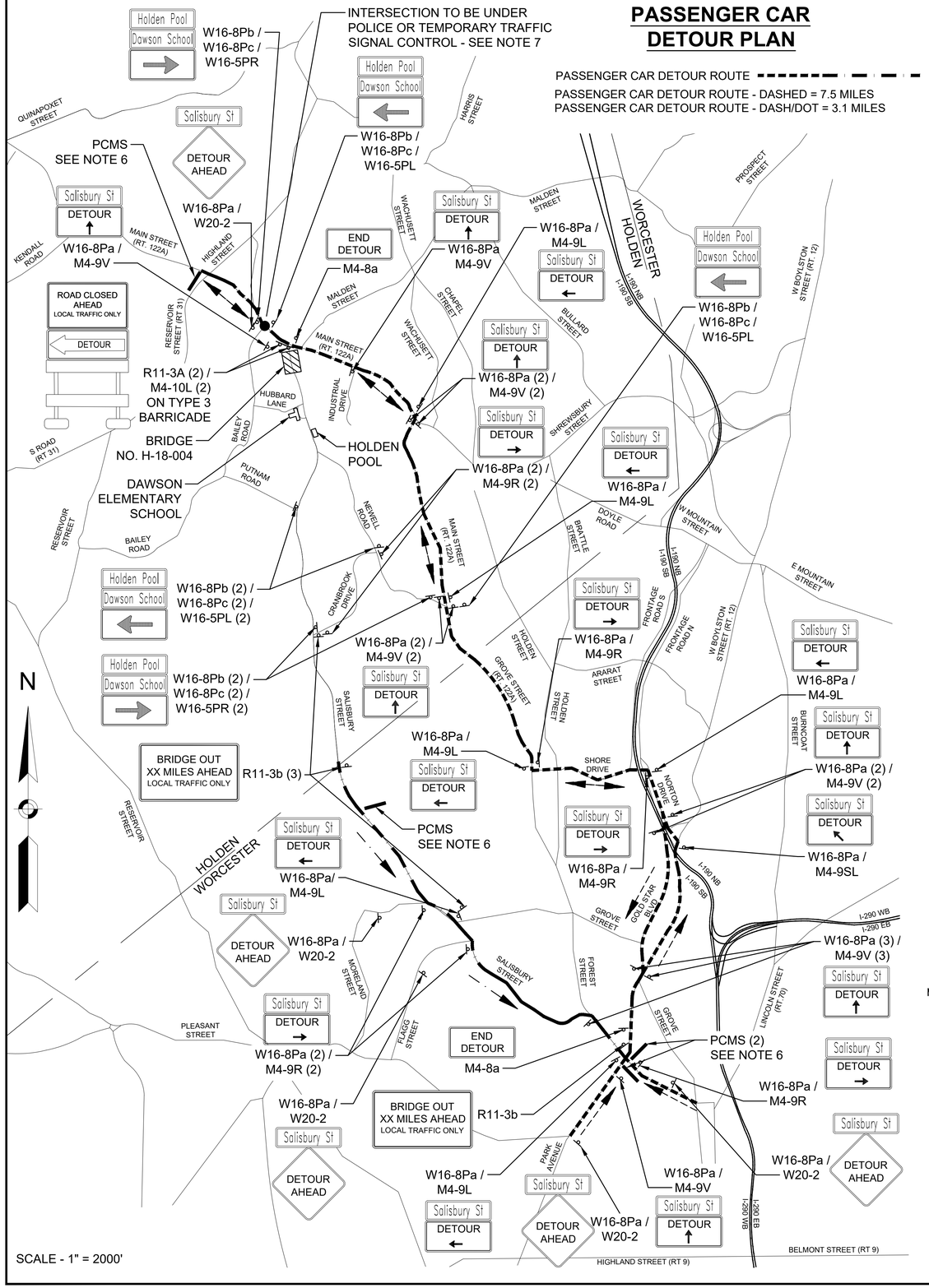
CONTINUED ON SHEET NO. 19

0 20 50 100

SCALE: 1" = 20'

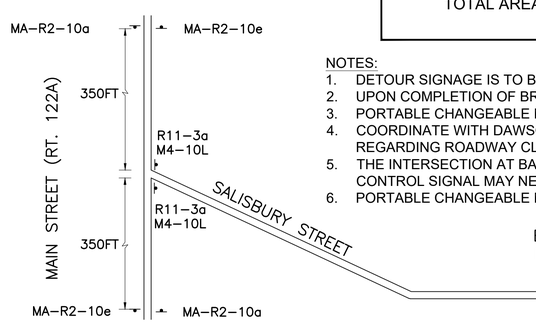
612190_HD(TTCP).DWG Plotted on 20-May-2026 2:32 PM

PASSENGER CAR DETOUR PLAN



TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES) WIDTH	SIZE OF SIGN (INCHES) HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
M4-8a	24	18	END DETOUR	SEE MUTCD			2	FLUO-RESCENT ORANGE	BLACK	BLACK	3.00	6.00
M4-9V	30	24	DETOUR				12	FLUO-RESCENT ORANGE	BLACK	BLACK	5.00	60.00
M4-9L	30	24	DETOUR				6	FLUO-RESCENT ORANGE	BLACK	BLACK	5.00	30.00
M4-9R	30	24	DETOUR				7	FLUO-RESCENT ORANGE	BLACK	BLACK	5.00	35.00
M4-9SL	30	24	DETOUR				1	FLUO-RESCENT ORANGE	BLACK	BLACK	5.00	5.00
R11-3a	60	30	ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY				2	WHITE	BLACK	BLACK	12.50	25.00
R11-3b	60	30	BRIDGE OUT XX MILES AHEAD LOCAL TRAFFIC ONLY				4	WHITE	BLACK	BLACK	12.50	50.00
R4-10L	48	18	DETOUR				2	FLUO-RESCENT ORANGE	BLACK	BLACK	6.00	12.00
W20-2	36	36	DETOUR AHEAD				5	FLUO-RESCENT ORANGE	BLACK	BLACK	9.00	45.00
W16-8Pa	42	8	Salisbury St				30	FLUO-RESCENT ORANGE	BLACK	BLACK	2.33	69.90
W16-8Pb	42	8	Holden Pool				7	FLUO-RESCENT ORANGE	BLACK	BLACK	2.33	16.31
W16-8Pc	42	8	Dawson School				7	FLUO-RESCENT ORANGE	BLACK	BLACK	2.33	16.31
W16-5PR	21	15					3	FLUO-RESCENT ORANGE	BLACK	BLACK	2.19	6.57
W16-5PL	21	15					4	FLUO-RESCENT ORANGE	BLACK	BLACK	2.19	8.76
TOTAL AREA OF SIGNS (SQUARE FEET)												385.85



PROPOSED PERMANENT CONSTRUCTION SIGNAGE
N.T.S

NOTES:
1. DETOUR SIGNAGE IS TO BE COVERED UNTIL THE DETOUR IS CONSTRUCTED AND THE BRIDGE IS CLOSED.
2. UPON COMPLETION OF BRIDGE CONSTRUCTION, DETOUR SIGNAGE SHALL BE REMOVED.
3. PORTABLE CHANGEABLE MESSAGE SIGNS WILL BE PLACED 10 DAYS PRIOR TO DETOUR.
4. COORDINATE WITH DAWSON ELEMENTARY SCHOOL AND THE HOLDEN RECREATION DEPARTMENT REGARDING ROADWAY CLOSURES AND DETOURS.
5. THE INTERSECTION AT BAILEY/MAYO/MAIN MAY REQUIRE POLICE DETAIL, OR A TEMPORARY TRAFFIC CONTROL SIGNAL MAY NEED TO BE INSTALLED TO MANAGE TRAFFIC AS DIRECTED BY THE ENGINEER.
6. PORTABLE CHANGEABLE MESSAGE SIGNS WILL BE PLACED 10 DAYS PRIOR TO DETOUR:

PCMS
SALIS BURY ST CLOSED
XXX XXTH THRU XXX XXRD

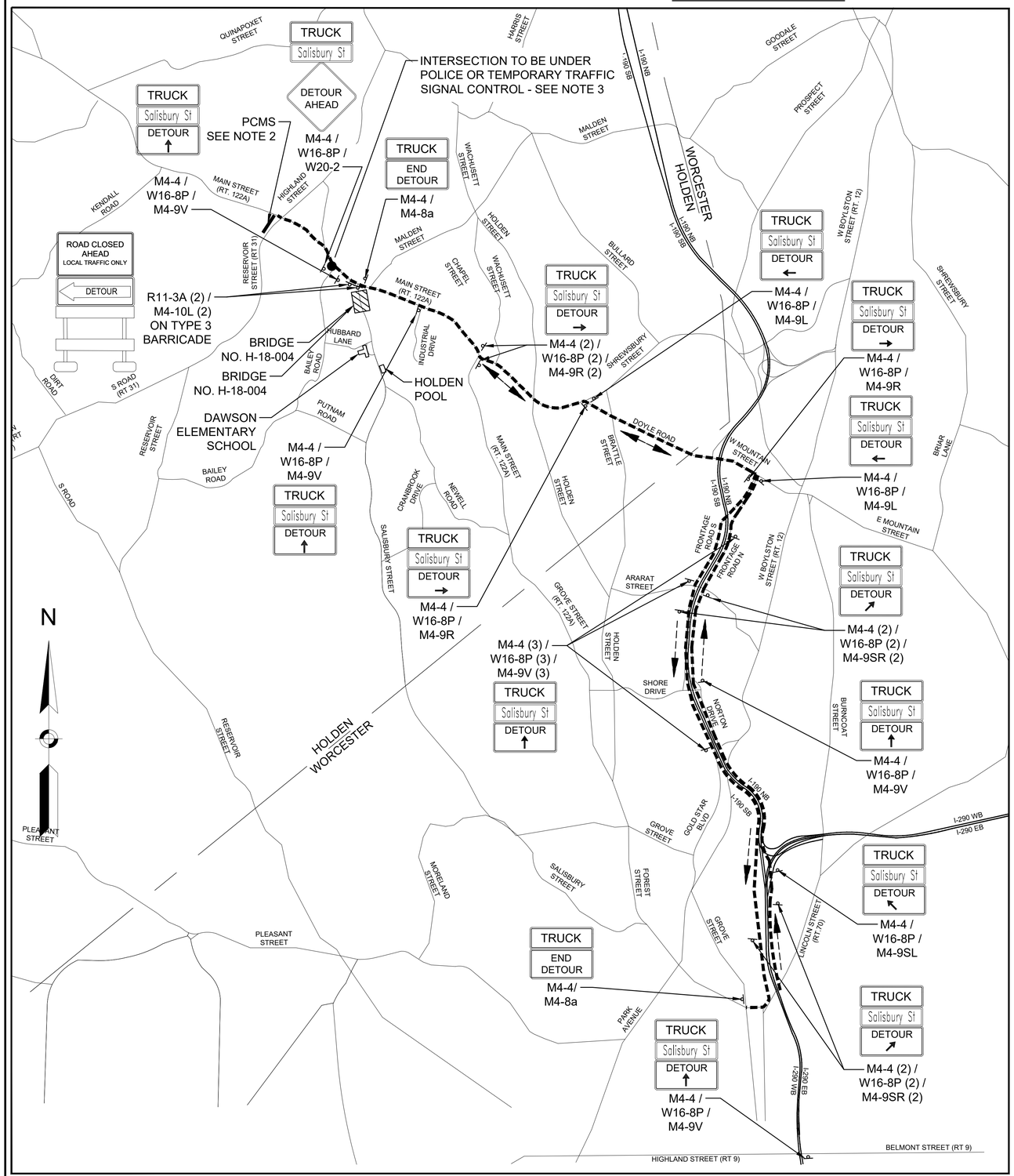
HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	21	89
PROJECT FILE NO.	612190		

DETOUR PLANS

612190_HD(DETOUR PLANS_CAR).DWG Plotted on 20-May-2026 2:32 PM

TRUCK DETOUR PLAN



SCALE - 1" = 2000'

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	22	81
PROJECT FILE NO.	612190		

DETOUR PLANS

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES) WIDTH	HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	LEGEND	BORDER	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
M4-8a	24	18	END DETOUR	SEE MUTCD			2	FLUO-RESCENT ORANGE	BLACK	BLACK	3.00	6.00
M4-9V	30	24	DETOUR ↑				6	FLUO-RESCENT ORANGE	BLACK	BLACK	5.00	30.00
M4-9L	30	24	DETOUR ←				2	FLUO-RESCENT ORANGE	BLACK	BLACK	5.00	10.00
M4-9R	30	24	DETOUR →				4	FLUO-RESCENT ORANGE	BLACK	BLACK	5.00	20.00
M4-9SR	30	24	DETOUR ↗				4	FLUO-RESCENT ORANGE	BLACK	BLACK	5.00	20.00
M4-9SL	30	24	DETOUR ↖				1	FLUO-RESCENT ORANGE	BLACK	BLACK	5.00	5.00
W20-2	36	36	DETOUR AHEAD				1	FLUO-RESCENT ORANGE	BLACK	BLACK	9.00	9.00
W16-8P	42	8	Salisbury St				19	FLUO-RESCENT ORANGE	BLACK	BLACK	2.33	44.27
R11-3a	60	30	ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY				2	WHITE	BLACK	BLACK	12.50	25.00
M4-4	24	12	TRUCK				21	WHITE	BLACK	BLACK	2.00	42.00
R4-10L	48	18	DETOUR ←				2	FLUO-RESCENT ORANGE	BLACK	BLACK	6.00	12.00
TOTAL AREA OF SIGNS (SQUARE FEET)												203.27

NOTE:
1. THE INTERSECTION AT BAILEY/MAYO/MAIN MAY REQUIRE POLICE DETAIL, OR A TEMPORARY TRAFFIC CONTROL SIGNAL MAY NEED TO BE INSTALLED TO MANAGE TRAFFIC AS DIRECTED BY THE ENGINEER.
2. PORTABLE CHANGEABLE MESSAGE SIGNS WILL BE PLACED 2 WEEKS PRIOR TO DETOUR:

PCMS
SALIS BURY ST CLOSED
XXX XXTH THRU XXX XXRD

TRUCK DETOUR ROUTE

TRUCK DETOUR ROUTE - DASHED = 6.5 MILES

612190_HD\DETOUR PLANS_TRUCK).DWG Plotted on 20-May-2026 2:32 PM

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	23	81
PROJECT FILE NO.	612190		

TEMPORARY TRAFFIC CONTROL DETAILS

612190_HD(TTC DETAILS).DWG Plotted on: 27-May-2026 10:54 AM

MASSDOT CONSTRUCTION STANDARD DETAILS **SUBSECTION 850:** **TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS**		
DETAIL NUMBER	DETAIL NAME	CURRENT VERSION
851.1.1	CONES & DRUMS	JAN 2025
851.2.1	TYPE III BARRICADE	JAN 2025
851.2.2	TYPE III BARRICADE WITH SIGN	JAN 2025
852.3.1	BICYCLE LANE CLOSURE	JAN 2025
852.5.3	TWO LANE ROAD SHOULDER CLOSURE	JAN 2025

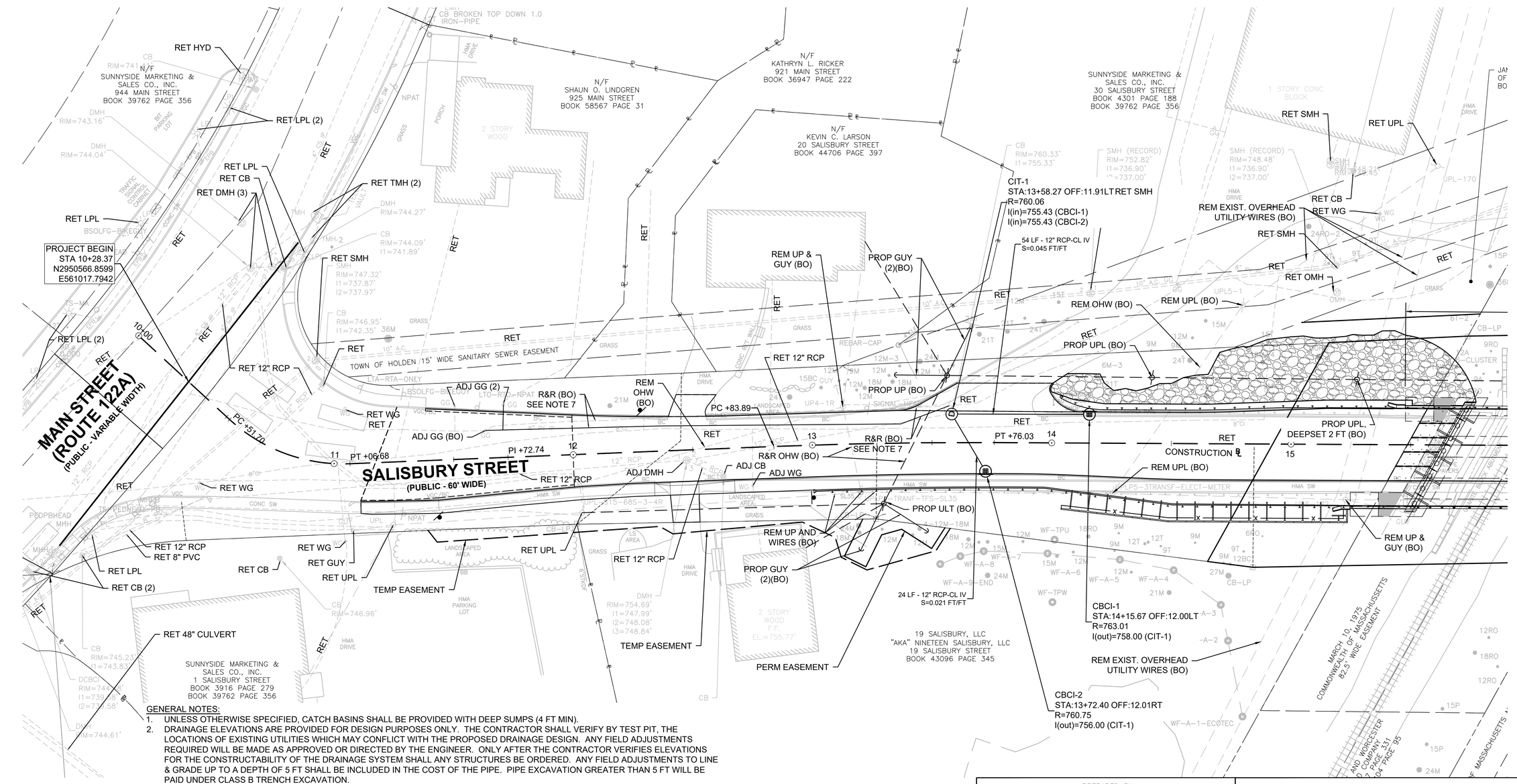
NOTES:
1. ALL TEMPORARY FACILITIES, INCLUDED BUT NOT LIMITED TO, TEMPORARY PEDESTRIAN PASSAGEWAYS AROUND A CONSTRUCTION SITE, SHALL COMPLY WITH 521 CMR.

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	24	81
PROJECT FILE NO.	612190		

UTILITY PLANS

612190_HD(UTILITY PLANS).DWG Plotted on 20-May-2026 2:33 PM



GENERAL NOTES:

1. UNLESS OTHERWISE SPECIFIED, CATCH BASINS SHALL BE PROVIDED WITH DEEP SUMPS (4 FT MIN).
2. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5 FT SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5 FT WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.
3. MANHOLE STEPS SHALL BE INSTALLED IN ALL PROPOSED MANHOLES.
4. IN INSTANCES WHERE AN EXISTING OR PROPOSED FRAME AND COVER ARE LOCATED IN AN ADA ACCESSIBLE SURFACE, THE FRAME SHALL BE CAREFULLY ADJUSTED SUCH THAT THE COVER IS FLUSH WITH THE CURB RAMP SURFACE.
5. RELOCATION OF THE UTILITY POLES SHOULD BE CAREFULLY EVALUATED COMPARED TO DRAINAGE AND SLOPE REVETMENT NEEDS. ANY POLE HOLDS REQUIRED FOR THE INSTALLATION OR REMOVAL OF UNDERGROUND UTILITIES OR BUILDING OF SLOPES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND THERE WILL BE NO COMPENSATION OR TIME EXTENSION FOR WORK RELATED TO POLE HOLDS.
6. CONTRACTOR SHALL PROVIDE ACCESS AND ROUGH GRADE THE SLOPE FOR UTILITY POLE INSTALLATION.
7. GAS RELOCATIONS ARE PROPOSED IN THE EVENT THAT THERE IS INSUFFICIENT COVER OF THE EXISTING GAS PIPES. IF THERE IS FOUND TO BE ADEQUATE COVER, THESE RELOCATIONS MAY BE OMITTED AT THE DIRECTION OF THE ENGINEER.
8. UTILITY POLES DIRECTLY TO THE NORTH AND SOUTH OF PINE TREE LANE INTERSECTION ARE TO BE INSTALLED AS PART OF THE PINE TREE ESTATES DEVELOPMENT.

0 20 50 100
SCALE: 1" = 20'

massDOT Massachusetts Department of Transportation Highway Division

PREPARED BY:

REVISIONS		
REV.	COMMENTS	DATE

SCALE: 20 FEET TO THE INCH

FILE NAME: 612190_HD(UTILITY PLANS).dwg
FIELD BOOK. NO: NO FIELDBOOK
DISTRICT IV UTILITY ENGINEER: ----
FIELD CHIEF: JS PARS. NO: -

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
DUCE UTILITY SKETCH PLAN

SALISBURY STREET OVER THE P&W RAILROAD

IN THE TOWN OF

HOLDEN

BASED OFF THE ---- 612190

DATE: 07/26/2025

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	25	81
PROJECT FILE NO.	612190		

UTILITY PLANS

612190_HD(UTILITY PLANS).DWG Plotted on 20-May-2026 2:33 PM

N NAD 83

SALISBURY STREET (PUBLIC - 60' WIDE)

PINE TREE LANE (PRIVATE WAY - 50' WIDE)

PROJECT END
STA 20+49.63
N2949578.2546
E561206.0535

PC +64.23

PT +86.52

CBCI-3
STA:17+49.43 OFF:13.24RT
R=772.27
I(out)=767.50 (DMH-1)

DMH-1
STA:17+90.75 OFF:23.05RT
R=771.45
I(in)=767.00 (CBCI-3)

39 LF - 12" RCP-CL IV
S=0.012 FT/FT

PROP BRIDGE
H-18-004

CONSTRUCTION B

JAMES J. CRYSTOFF
OFF SALISBURY STREET
BOOK 13176 PAGE 331

N/F
SUSAN K. BERTHIAUME
ARTHUR F. POWELL
54 SALISBURY STREET
BOOK 56665 PAGE 96

N/F
ARTURO & MERCEDES DOMINGUEZ
60 SALISBURY STREET
BOOK 60478 PAGE 302

N/F
MICHAEL R. & JANELL COLLINS
49 OLD SALISBURY STREET
BOOK 40350 PAGE 211

HOLDEN REALTY INC.
1 PINE TREE LANE
BOOK 3708 PAGE 112

HOLDEN PINE TREE, LLC
PINE TREE LANE

HOLDEN REALTY INC.

PROVIDENCE AND WORCESTER RAILROAD COMPANY BOOK 7077 PAGE 331 PL BK 404 PAGE 95

COMMONWEALTH OF MASSACHUSETTS M.D.C. WATER DIVISION SEWER EASEMENT BOOK 7812 PAGE 212 (PLAN BOOK 508 PLAN 11)

MARCH 10, 1975 COMMONWEALTH OF MASSACHUSETTS 82.5' WIDE EASEMENT

METROPOLITAN DISTRICT COMMISSION WATER DIVISION SEWER EASEMENT

10' WIDE NSTAR GAS EASEMENT

JANUARY, 1940 TOWN OF HOLDEN SEWER EASEMENT

5' WIDE TOWN OF HOLDEN'S WIDE SEWER EASE.

10"A.C. ENCASED IN 20" STEEL SLEEVE

RET SMH
RET UPL
RET CB
RET WG
RET OMH
RET UP & GUY
RET SMH (2)
RET GG
RET UP
RET WG
RET WG
RET
PROP UPL, DEEPSET 2 FT (BO)
REM UP & GUY (BO)
REM UPL & OHW (BO)
PROP UPL & GUY (BO)
PROP ULT (BO)
PROP SERVICE (BO)
PROP STRAIN WIRE & SERVICE (BO)
PROP FIBER VAULT, TYP (BO)
RET UPL & PROP GUY (BO)
RET 6" CI
RET 12" RCP
ADJ HYD
ADJ WG
ADJ DMH
RET DMH
RET WG
REM UPL & OHW (BO)
PROP 2" HDPE FIBER (BO)
PERM EASEMENT
TEMP EASEMENT
REM UPL & GUY (BO)
PROP UPL (BO)
RET OHW (BO)

CONTINUED ON SHEET NO. 24

0 20 50 100
SCALE: 1" = 20'

GENERAL NOTES:

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massDOT Massachusetts Department of Transportation Highway Division

PREPARED BY:

REVISIONS		
REV.	COMMENTS	DATE

SCALE: 20 FEET TO THE INCH

FILE NAME: 612190_HD(UTILITY PLANS).dwg
FIELD BOOK. NO: NO FIELDBOOK
DISTRICT IV UTILITY ENGINEER: ----
FIELD CHIEF: JS PARS. NO: -

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
DUCE UTILITY SKETCH PLAN

SALISBURY STREET OVER THE P&W RAILROAD

IN THE TOWN OF

HOLDEN

BASED OFF THE ----
612190

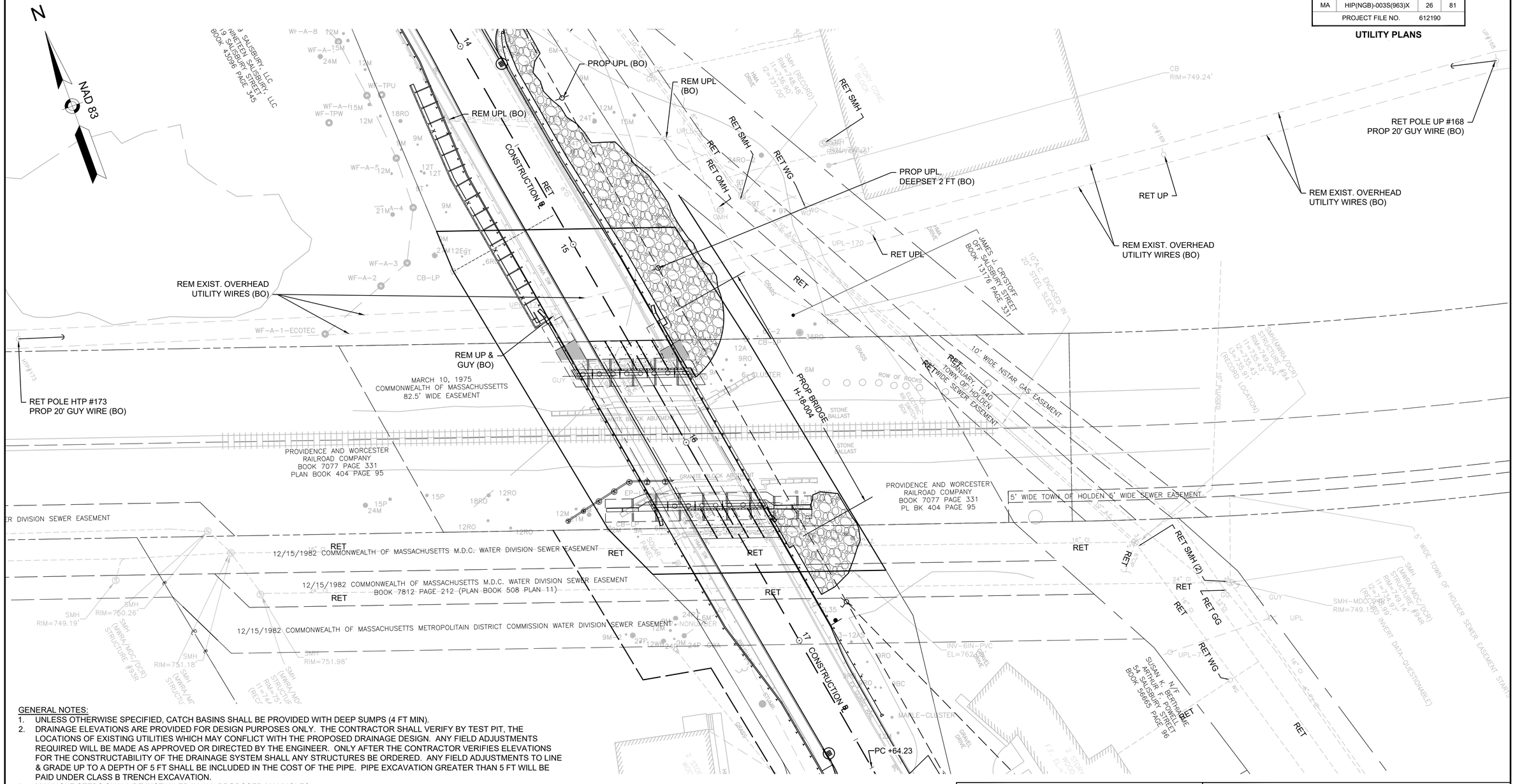
DATE: 07/26/2025 SHEET 25 OF 81

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	26	81
PROJECT FILE NO. 612190			

UTILITY PLANS

612190_HD(UTILITY PLANS).DWG Plotted on 20-May-2026 2:33 PM



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0 20 50 100

SCALE: 1" = 20'

massDOT Massachusetts Department of Transportation Highway Division

PREPARED BY:

REVISIONS		
REV.	COMMENTS	DATE

SCALE: 20 FEET TO THE INCH

FILE NAME: 612190_HD(UTILITY PLANS).dwg
FIELD BOOK. NO: NO FIELDBOOK
DISTRICT IV UTILITY ENGINEER: ----
FIELD CHIEF: JS PARS. NO: -

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
DUCE UTILITY SKETCH PLAN
SALISBURY STREET OVER THE P&W RAILROAD
IN THE TOWN OF
HOLDEN
BASED OFF 75% SUBMITTAL
612190

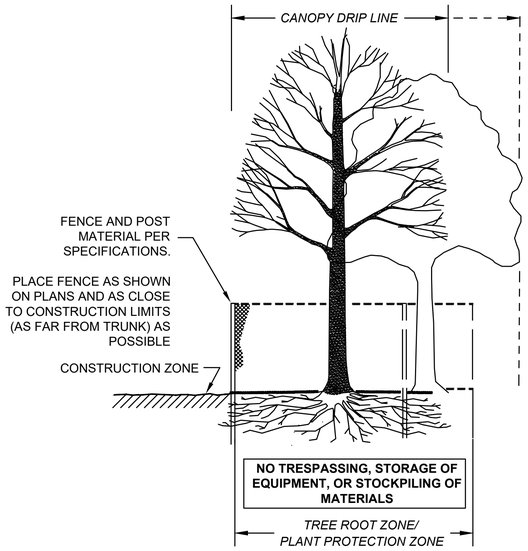
DATE: 07/26/2025 SHEET 26 OF 81

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

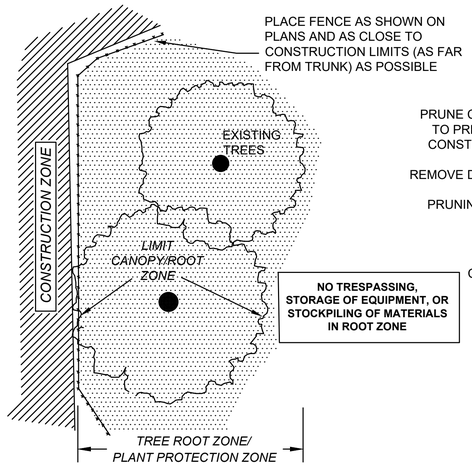
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	27	81
	PROJECT FILE NO. 612190		

CONSTRUCTION DETAILS

612190_HD(CONSTRUCTION DETAILS).DWG Plotted on 20-May-2026 2:33 PM



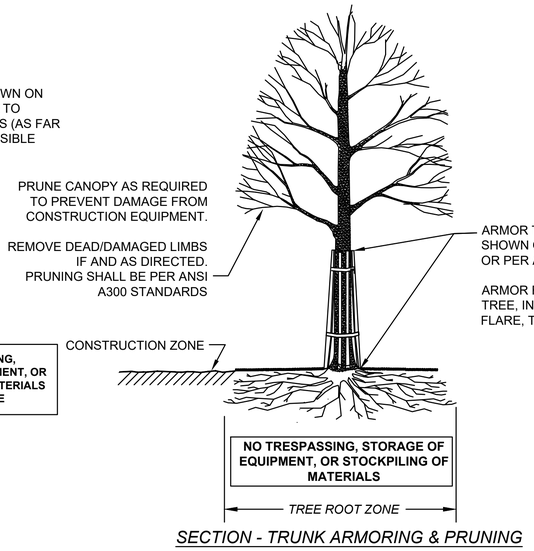
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

TREE PROTECTION - ROOT ZONE

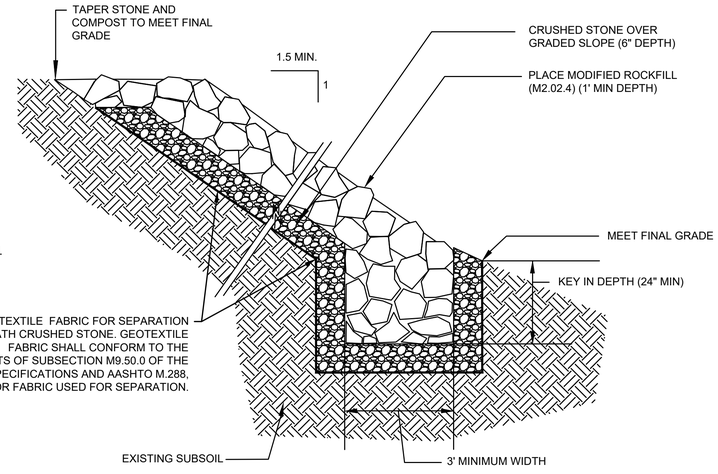
NOT TO SCALE



SECTION - TRUNK ARMORING & PRUNING

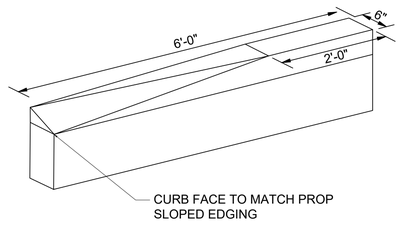
TREE PROTECTION - TRUNK

NOT TO SCALE



MODIFIED ROCKFILL (NON-WATERWAY)

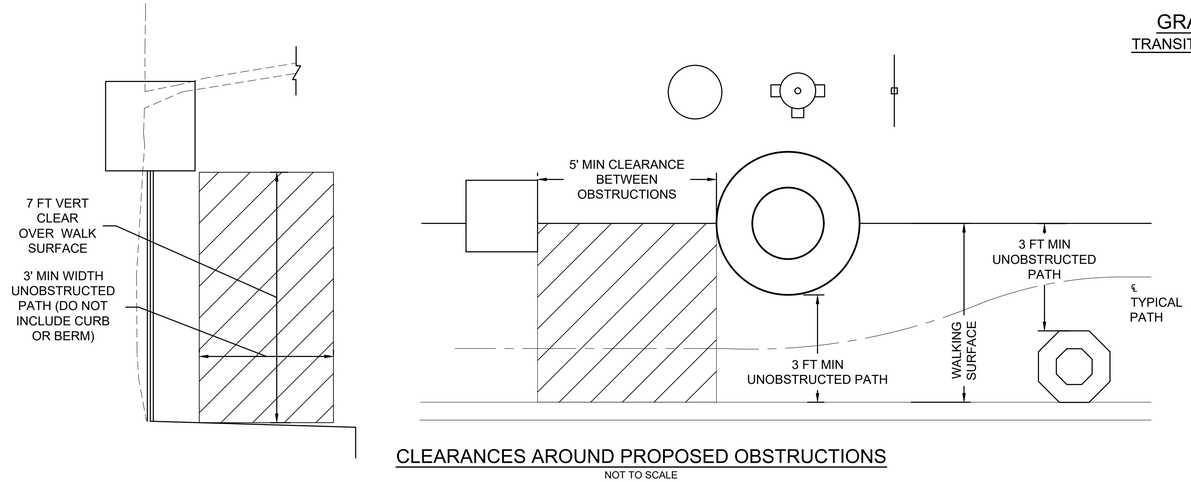
NOT TO SCALE



GRANITE CURB - SPLAYED END

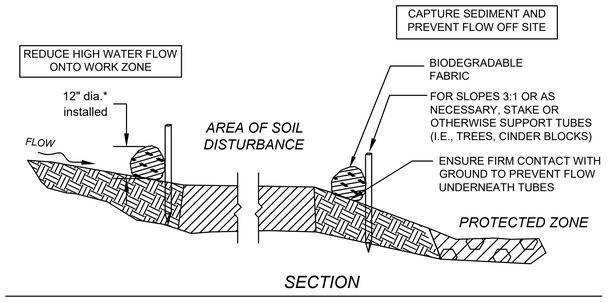
TRANSITION FROM VERTICAL GRANITE CURB TO SLOPED EDGING

SCALE: NONE

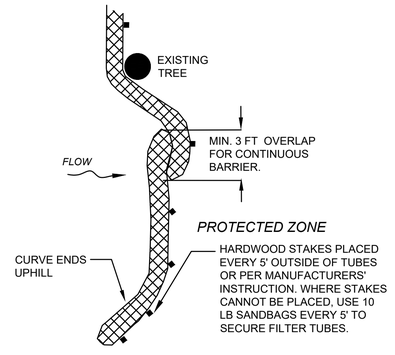


CLEARANCES AROUND PROPOSED OBSTRUCTIONS

NOT TO SCALE



SECTION



PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

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

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

PLAN VIEW

SEDIMENT BARRIERS - COMPOST FILTER TUBES

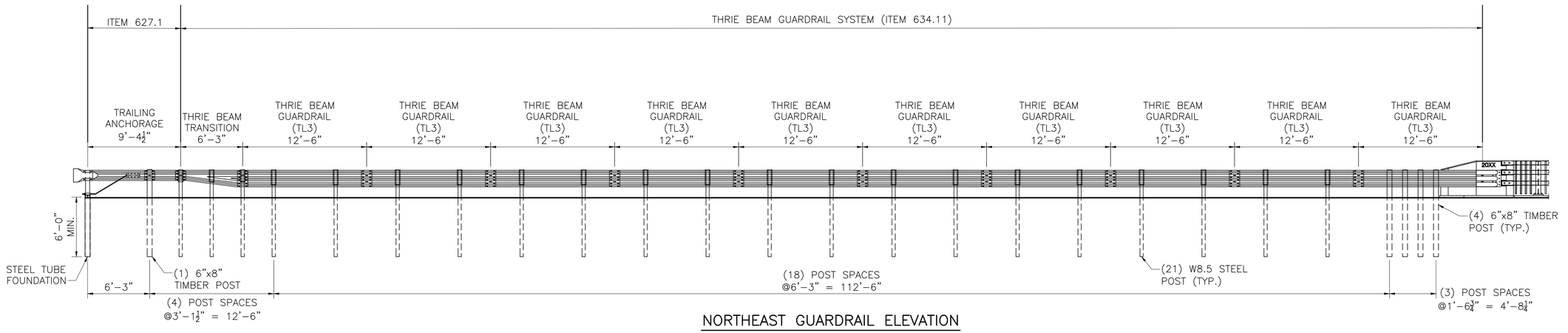
NOT TO SCALE

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	28	81
	PROJECT FILE NO. 612190		

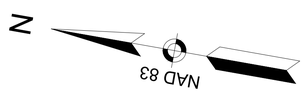
PROPOSED GUARDRAIL DETAILS
SHEET 1 OF 3

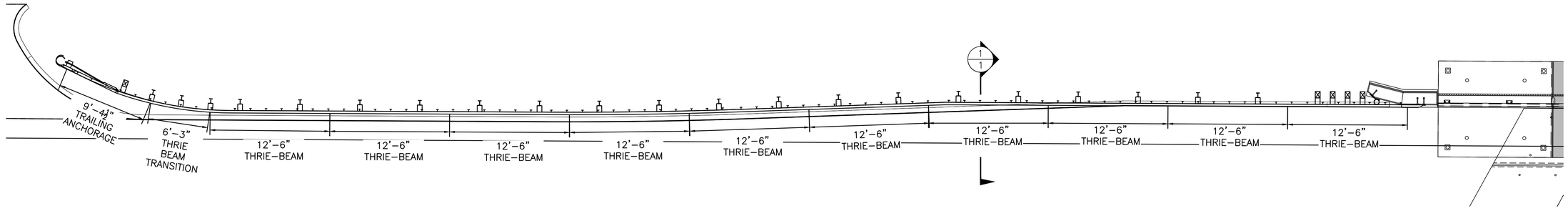
612190_HDI(GUARDRAIL).DWG Plotted on 20-May-2026 2:33 PM



NORTHEAST GUARDRAIL ELEVATION

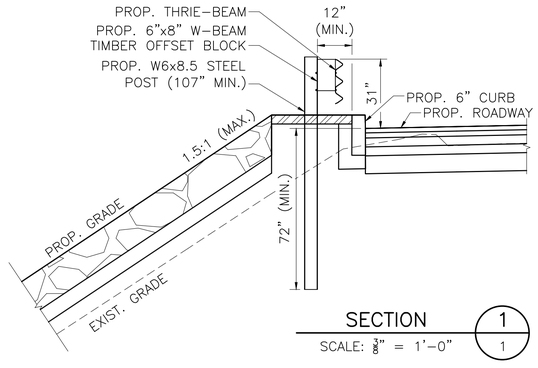
SCALE: $\frac{3}{16}$" = 1'–0"





NORTHEAST GUARDRAIL PLAN

SCALE: $\frac{3}{16}$" = 1'–0"



SECTION 1/1

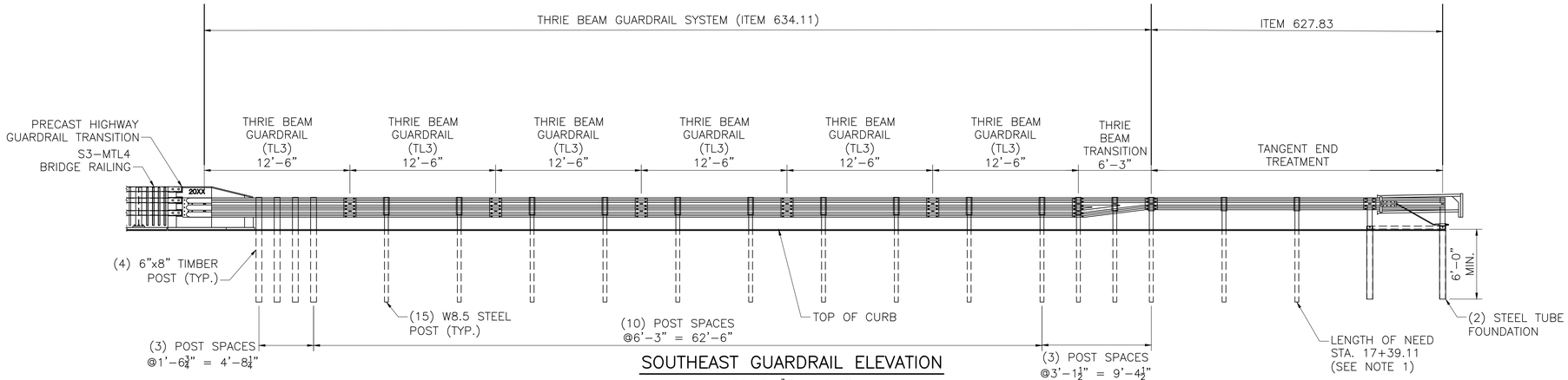
SCALE: $\frac{3}{8}$" = 1'–0"

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	29	81
	PROJECT FILE NO. 612190		

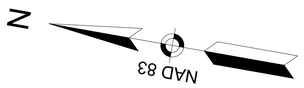
PROPOSED GUARDRAIL DETAILS
SHEET 2 OF 3

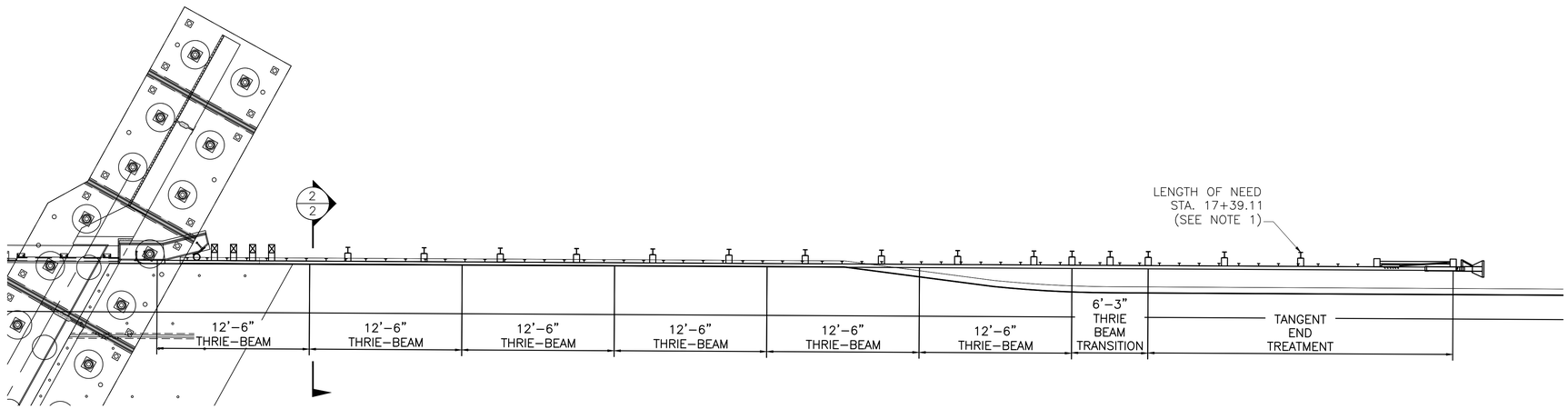
612190_HD(GUARDRAIL).DWG Plotted on 20-May-2026 2:33 PM



SOUTHEAST GUARDRAIL ELEVATION

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

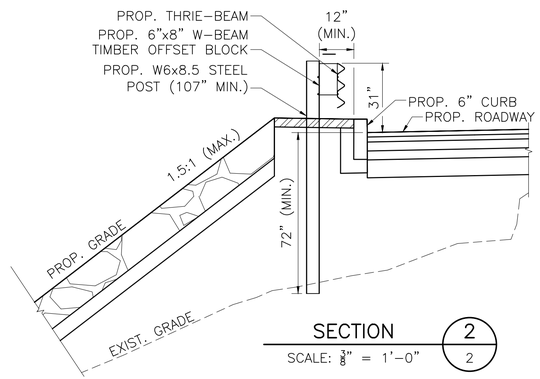




SOUTHEAST GUARDRAIL PLAN

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

NOTES:
1. THE END OF THE GUARDRAIL SHOWN IN THE PLANS CORRESPONDS WITH THE BEGIN LENGTH OF NEED POINT FOR THE END TREATMENT (SHOWN AT POST 3 IN THIS DRAWING, BUT MAY VARY BY MANUFACTURER.)



SECTION 2/2

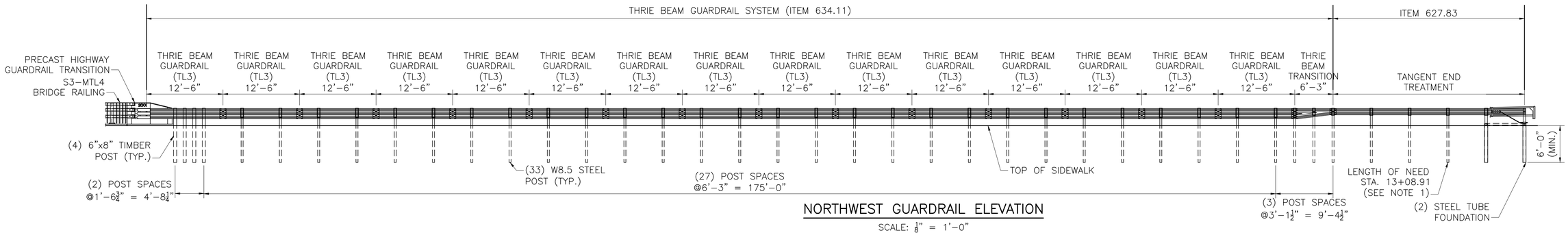
SCALE: $\frac{3}{8}$" = 1'-0"

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	30	81
	PROJECT FILE NO. 612190		

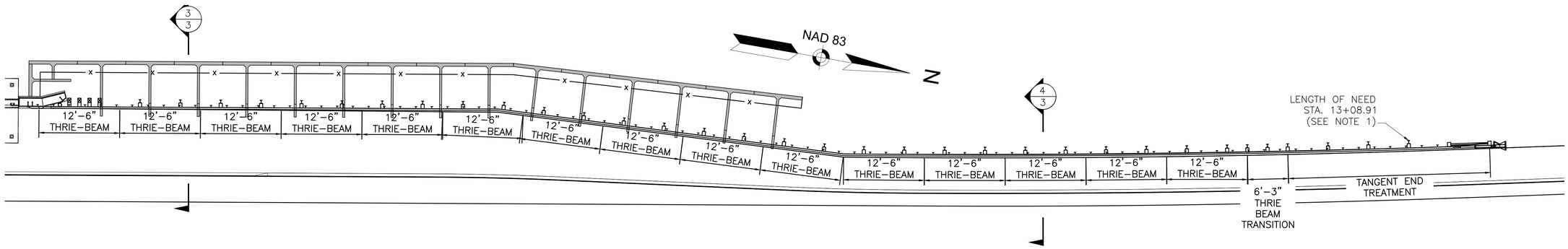
PROPOSED GUARDRAIL DETAILS
SHEET 3 OF 3

612190_HD(GUARDRAIL).DWG Plotted on 20-May-2026 2:33 PM



NORTHWEST GUARDRAIL ELEVATION

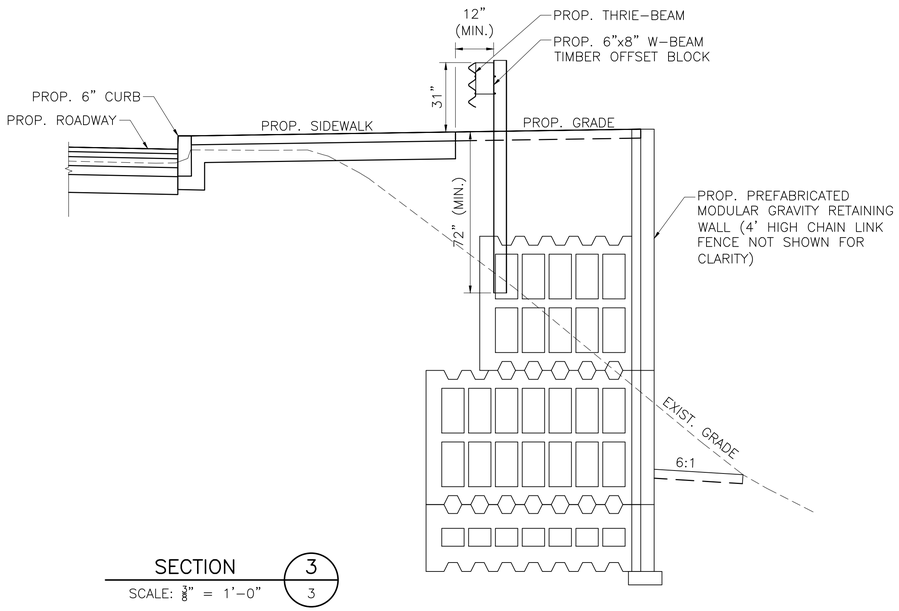
SCALE: ⅛" = 1'-0"



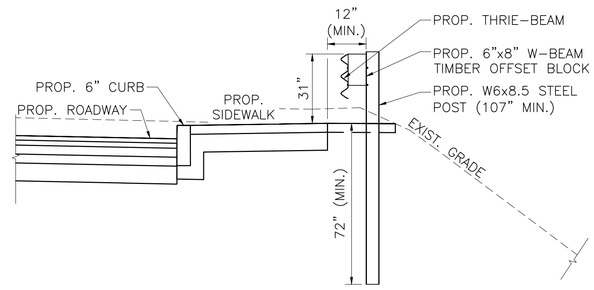
NORTHWEST GUARDRAIL PLAN

SCALE: ⅛" = 1'-0"

NOTES:
1. THE END OF THE GUARDRAIL SHOWN IN THE PLANS CORRESPONDS WITH THE BEGIN LENGTH OF NEED POINT FOR THE END TREATMENT (SHOWN AT POST 3 IN THIS DRAWING, BUT MAY VARY BY MANUFACTURER.)



SECTION 3/3
SCALE: ⅜" = 1'-0"



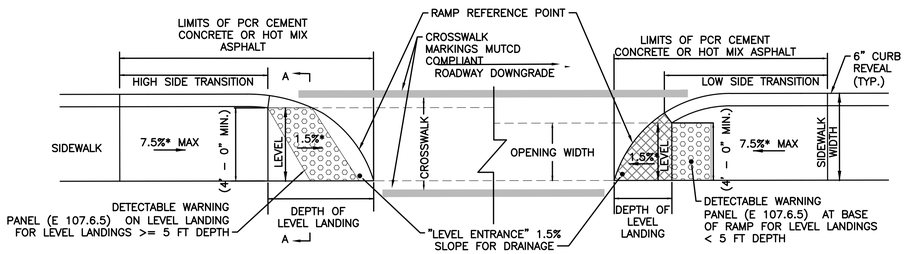
SECTION 4/3
SCALE: ⅜" = 1'-0"

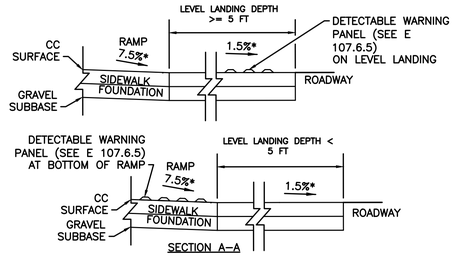
HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	31	81
	PROJECT FILE NO. 612190		

PEDESTRIAN CURB RAMP DETAILS

612190_HD(PCR DETAILS).DWG Plotted on 20-May-2026 2:33 PM





* ± 0.5% FOR CONSTRUCTION TOLERANCE

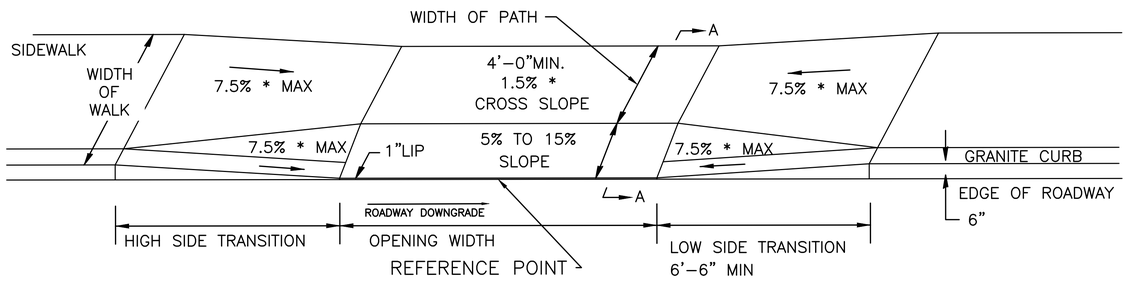
FOR TRANSITION LENGTH SEE CONSTRUCTION STANDARDS 701.2.8

SEE PAVEMENT NOTES ON TYPICAL SECTIONS FOR PAVEMENT STRUCTURE (MATERIALS AND THICKNESSES).
FOR SIDEWALKS ABUTTING THE ROADWAY, THE WIDTH OF THE CURB IS INCLUDED IN THE WIDTH OF THE SIDEWALK.

LEGEND
HSL = HIGH SIDE TRANSITION LENGTH
CC = CEMENT CONCRETE
HMA = HOT MIX ASPHALT

PEDESTRIAN CURB RAMP WITH CONTINUOUS TRAVEL

PCR NO	BASELINE	REFERENCE PT: STA AT CENTER OF OPENING	OFFSET	OPENING WIDTH (FT)	GUTTER PROFILE SLOPE (%)	HIGH SIDE TRANS LENGTH (FT)	LOW SIDE TRANS LENGTH (FT)	SIDEWALK WIDTH (FT)	DEPTH OF LEVEL LANDING (FT)	COMMENT
1	CONST. BASELINE	17+66.80	16.87 RT	4.00	0.78	7.67	--	5.50	8.72	



SIDEWALK AT DRIVEWAYS WITHOUT CURB RETURNS

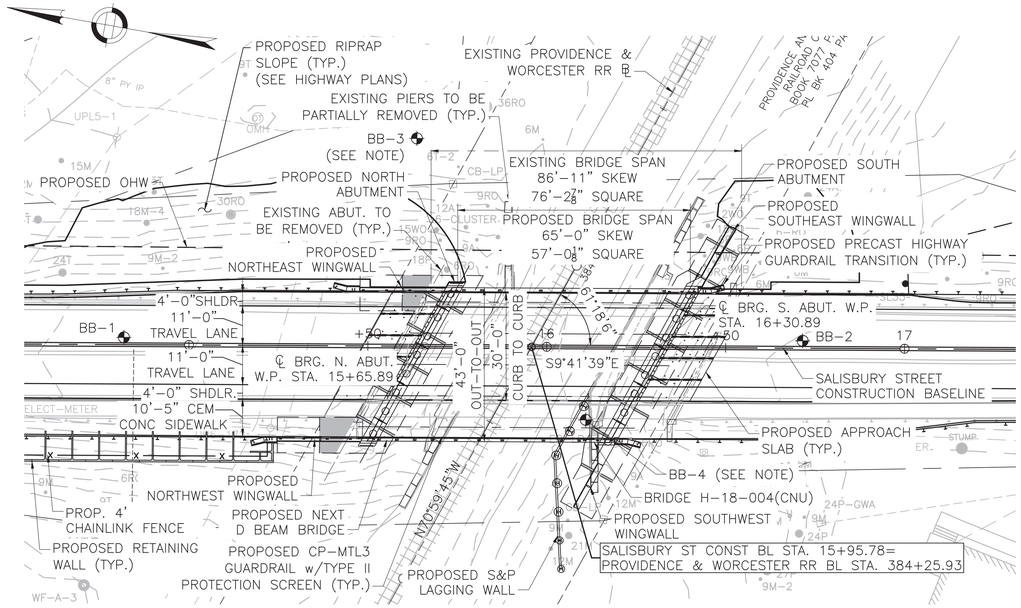
DWY NO	BASELINE	STA AT CENTER OF OPENING	OFFSET	OPENING WIDTH (FT)	GUTTER PROFILE SLOPE (%)	HIGH SIDE TRANS LENGTH (FT)	LOW SIDE TRANS LENGTH (FT)	WIDTH OF WALK (FT)	WIDTH OF PATH ACROSS DWY (FT)	COMMENT
1	CONST. BASELINE	12+45.93	13.00 RT	12.00	4.42	15.00	6.50	5.50	4.00	

PCR AND DRIVEWAY NOTES:
1. CONSTRUCTION DETAILS SHALL BE IN ACCORDANCE WITH CURRENT STANDARDS FOR LANDING & TRANSITION RUNNING SLOPES, CROSS SLOPES, AND WIDTHS.
2. CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
3. SEE CONSTRUCTION PLANS FOR LOCATION OF PEDESTRIAN CURB RAMP, AND DRIVEWAYS.
4. DETECTABLE WARNING PANEL LOCATED NOT LESS THAN 6" OR MORE THAN 24" FROM ROADWAY EDGE (GUTTER LINE). TRUNCATED DOMES TO BE ALIGNED WITH DIRECTION OF TRAVEL.
5. FOR DETAILS OF TRUNCATED DOMES SEE CONSTRUCTION STANDARDS 701.2.1
6. ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS.
7. ALL TRANSITIONS ARE 6 INCH MAXIMUM REVEAL AT THE TOP OF THE TRANSITION UNLESS OTHERWISE NOTED ON THE SCHEDULES OR THE CONSTRUCTION PLANS.

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

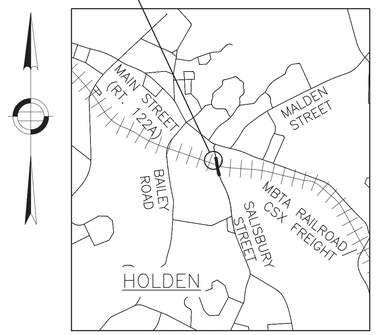
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	32	81
	PROJECT FILE NO. 612190		

KEY PLAN, PROFILES, AND LOCUS MAP



KEY PLAN
SCALE: 1" = 20'

PROPOSED BRIDGE
H-18-004 (CNU)



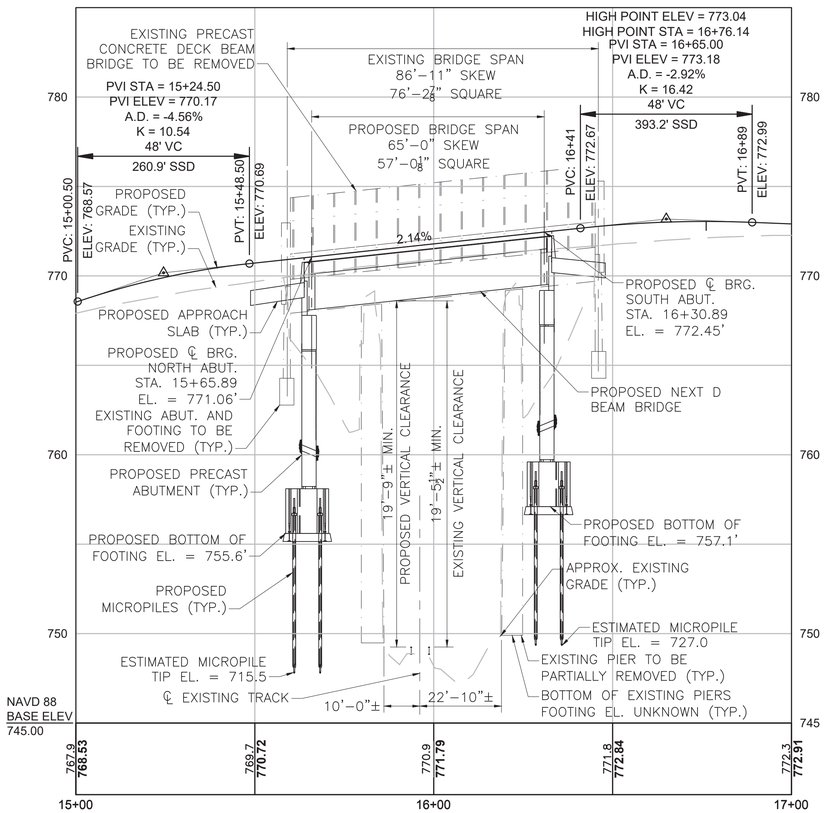
LOCUS PLAN
SCALE: 1" = 2000'

NOTE:
BORING BB-3 (LOCATED NORTHING:2,950,056 EASTING:561,140) TO BE PERFORMED DURING CONSTRUCTION PRIOR TO INSTALLATION OF VERIFICATION PILE

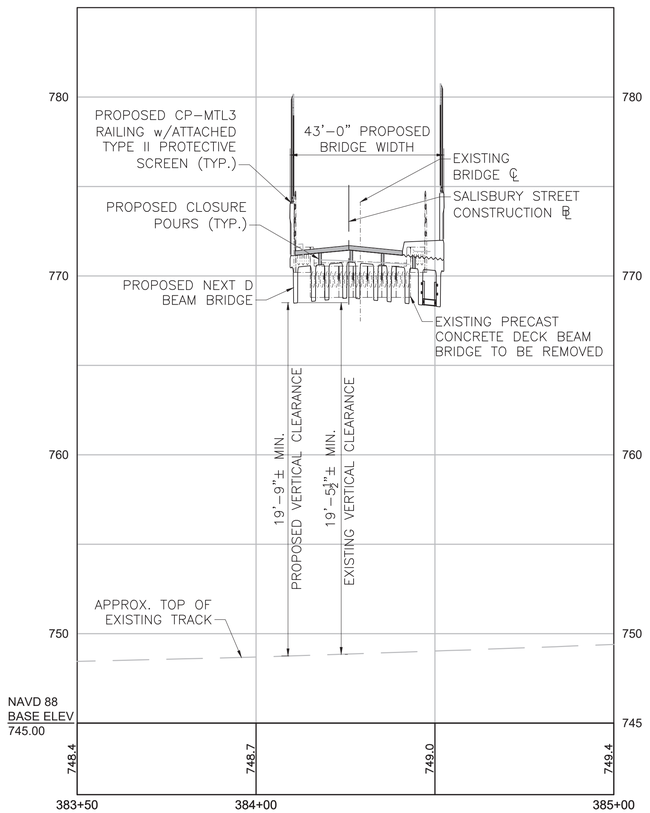
BORING BB-4 (LOCATED APPROX.) TO BE PERFORMED AS EARLY ACTION ITEM PRIOR TO CONSTRUCTION, SEE SPECIAL PROVISIONS

SHEET INDEX

1. KEY PLAN, PROFILES, AND LOCUS MAP
2. GENERAL NOTES AND ESTIMATED QUANTITIES
3. BORING LOGS (SHEET 1 OF 3)
4. BORING LOGS (SHEET 2 OF 3)
5. BORING LOGS (SHEET 3 OF 3)
6. PLAN AND ELEVATION
7. SOUTH ABUTMENT PLAN AND ELEVATION
8. NORTH ABUTMENT PLAN AND ELEVATION
9. ABUTMENT AND WINGWALL SECTIONS (SHEET 1 OF 2)
10. ABUTMENT AND WINGWALL SECTIONS (SHEET 2 OF 2)
11. SOLDIER PILE & LAGGING WALL DETAILS (SHEET 1 OF 5)
12. SOLDIER PILE & LAGGING WALL DETAILS (SHEET 2 OF 5)
13. SOLDIER PILE & LAGGING WALL DETAILS (SHEET 3 OF 5)
14. SOLDIER PILE & LAGGING WALL DETAILS (SHEET 4 OF 5)
15. SOLDIER PILE & LAGGING WALL DETAILS (SHEET 5 OF 5)
16. PRECAST TOLERANCE DETAILS
17. FOOTING PLAN AND DETAILS (SHEET 1 OF 2)
18. FOOTING PLAN AND DETAILS (SHEET 1 OF 2)
19. ABUTMENT AND WINGWALL DETAILS
20. HIGHWAY GUARDRAIL TRANSITION DETAILS
21. APPROACH SLAB PLAN AND DETAILS
22. FRAMING PLAN
23. NEXT D BEAM DETAILS (SHEET 1 OF 4)
24. NEXT D BEAM DETAILS (SHEET 2 OF 4)
25. NEXT D BEAM DETAILS (SHEET 3 OF 4)
26. NEXT D BEAM DETAILS (SHEET 4 OF 4)
27. DECK DETAILS (SHEET 1 OF 2)
28. DECK DETAILS (SHEET 2 OF 2)
29. HIGHWAY GUARDRAIL BRIDGE TRANSITION
30. TYPE II PROTECTIVE SCREEN DETAILS (SHEET 1 OF 2)
31. TYPE II PROTECTIVE SCREEN DETAILS (SHEET 2 OF 2)
32. BRIDGE HANDRAIL DETAILS



PROFILE ALONG SALISBURY STREET
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'



PROFILE ALONG THE P&W RAILROAD
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'

Laura Ingelido Civil ENGINEER NO. 52212 REGISTERED PROFESSIONAL ENGINEER
Laura Ingelido Digitally signed by Laura Ingelido Date: 2026.05.20 11:26:45 -04'00'

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 205
MARLBOROUGH, MA 01752

May 30, 2026 | ISSUED FOR CONSTRUCTION

MassDOT Massachusetts Department of Transportation Highway Division

PROPOSED BRIDGE
HOLDEN
SALISBURY STREET
OVER THE P&W RAILROAD
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

Alexander K. Bardow, P.E. — Digitally signed by Alexander K. Bardow, P.E. Date: 2026.05.20 12:01:49 -04'00'
STATE BRIDGE ENGINEER

Carrie Lavallee, P.E. — Digitally signed by Carrie Lavallee, P.E. Date: 2026.05.21 10:24:32 -04'00'
CHIEF ENGINEER

SHEET 1 OF 32 SHEETS BRIDGE NO. H-18-004 (CNU)

612190_BR1-2 (FIRST SHEET).DWG Plotted on 19-May-2026 5:11 PM
612190 Final Structural Submittal (SF) 23-May-2026

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	33	81
	PROJECT FILE NO. 612190		

GENERAL NOTES AND ESTIMATED QUANTITIES

GENERAL NOTES:

DESIGN:

IN ACCORDANCE WITH THE 2020 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020, FOR HL-93 LOADING.

MASSDOT BENCH MARK:

ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

BENCH MARK:
UTILITY POLE LIGHT ON SALISBURY STREET MBMK-UPLP7
NAVD88 ELEVATION = 773.04'
N 2949935.92 E 561078.07

DATE:

TO BE PLACED ON THE INSIDE FACE OF THE SOUTHEAST AND NORTHWEST 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 TRANSITIONS SHALL FEATURE THE SAME DATE.

MASSDOT SURVEY NOTEBOOKS:

COPIES OF ELECTRONIC SURVEY FILES MAY BE OBTAINED FROM THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION, 10 PARK PLAZA, BOSTON, MA 02116

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	#7 BARS	#8 BARS
1. NONE	15"	19"	22"	33"	37"
2. 12" OF CONCRETE BELOW BAR	19"	24"	29"	43"	49"
3. COATED BARS, COVER < 3db, OR CLEAR SPACING < 6db	22"	28"	34"	49"	56"
4. COATED BARS, ALL OTHER CASES	18"	22"	27"	39"	45"
5. CONDITION 2. AND 3.	25"	32"	38"	56"	64"
6. CONDITION 2. AND 4.	23"	29"	35"	51"	58"

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

REINFORCING STEEL FOR THE APPROACH SLABS SHALL BE BLACK.

CONCRETE:

UNLESS OTHERWISE SPECIFIED, ALL CIP CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE INCLUDING SIDEWALK AND PARAPETS WITH THE EXCEPTION OF ULTRA HIGH PERFORMANCE CEMENT CONCRETE FOR THE DECK CLOSURE POURS AND 5000 PSI RAPID HARDENING LOW PERMEABILITY CEMENT CONCRETE FOR THE SUBSTRUCTURE CLOSURE POURS, AS SPECIFIED BELOW. ALL PRECAST CONCRETE ELEMENTS SHALL BE 5000 PSI.

UHPC SHALL BE USED FOR THE DECK CLOSURE POURS. 5000 PSI RAPID HARDENING LOW PERMEABILITY CEMENT CONCRETE SHALL BE USED FOR THE SUBSTRUCTURE CLOSURE POURS

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

UTILITIES:

THE CONTRACTOR SHALL LOCATE AND PROTECT FROM DAMAGE ALL EXISTING UTILITIES. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE RESPECTIVE UTILITY OWNERS FOR ALL UTILITIES TO BE TEMPORARILY OR PERMANENTLY RELOCATED FOR BRIDGE REPLACEMENT WORK.

TRAFFIC:

THE BRIDGE WILL BE CLOSED TO VEHICULAR AND PEDESTRIAN TRAFFIC DURING DEMOLITION AND CONSTRUCTION. VEHICULAR AND PEDESTRIAN TRAFFIC WILL BE CONTROLLED AS SHOWN IN THE TRAFFIC MANAGEMENT PLANS. FOR BRIDGE CLOSURE DETAILS, SEE SPECIAL PROVISIONS.

MEMBRANE WATERPROOFING:

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

TRAFFIC DATA	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2030	
AVERAGE DAILY TRAFFIC - PRESENT	6090	
AVERAGE DAILY TRAFFIC - DESIGN YEAR	6530	
DESIGN HOURLY VOLUME	605	
DIRECTIONAL DISTRIBUTION	56% NB	
TRUCK PERCENTAGE - AVERAGE DAY	2.0%	
TRUCK PERCENTAGE - PEAK HOUR	0.8%	
DESIGN SPEED	35MPH	
DIRECTIONAL DESIGN HOURLY VOLUME	340	

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	1000 yr
DESIGN SPECTRA	
As	0.102g
SDs	0.219g
SD1	0.093g
SITE CLASS	D
SEISMIC DESIGN CATEGORY (SDC)	A

ESTIMATED QUANTITIES			
114.1	DEMOLITION OF SUPERSTRUCTURE BRIDGE NO. H-18-004(225)	1	LS
127.1	REINFORCED CONCRETE EXCAVATION	400	CY
140	BRIDGE EXCAVATION	950	CY
151.2	GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	160	CY
160.3	CONTROLLED LOW STRENGTH MATERIAL(CLSM) >300PSI	34	CY
450.601	SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P)	21	TON
450.701	SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B-9.5-P)	44	TON
458.71	EXPANDED SHALE LIGHTWEIGHT AGGREGATE	335	CY
698.30	GEOTEXTILE FABRIC FOR SEPARATION	240	SY
945.10	DRILLED MICROPILES	2100	FT
948.60	MICROPILE VERIFICATION LOAD TEST	1	EA
948.61	MICROPILE PROOF LOAD TEST	4	EA
994.01	TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. H-18-004	1	LS
995.01	BRIDGE STRUCTURE, BRIDGE No. H-18-004(CNU)	1	LS
996.4	SOLDIER PILE LAGGING WALL	1	LS
996.5	PREFABRICATED MODULAR RETAINING WALL	960	SF

May 30, 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

612190_BR1-2 (FIRST SHEET).DWG Plotted on 21-May-2026 1:39 PM
612190 Final Structural Submittal (SF) 30-May-2026

NOTES:

1. LOCATION OF BORINGS ARE SHOWN THUS: ⊕
2. BORINGS ARE TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
3. 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 1⅜" I.D. SPLIT SPOON SAMPLER 6" USING 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.
6. ALL BORINGS WERE MADE IN JUNE 2023 AND JUNE 2025
7. BORINGS WERE MADE BY NEW ENGLAND BORING CONTRACTORS (NEBC) OF DERRY, NH.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	34	81
PROJECT FILE NO.	612190		

BORING LOGS
SHEET 1 OF 3

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Chappell Engineering Associates, LLC
Salisbury Street Bridge Replacement
Bridge No. H-18-004
Holden, Massachusetts

BORING NO.: BB-1
SHEET: 1 of 2
PROJECT NO: 01.0175938.00
REVIEWED BY: HA

Drilling Co.: New England Boring Contractors
Foreman: Mark D'Ambrosio
Logged By: Lauren Shea
Type of Rig: Truck Mounted
Rig Model: Gtech Drill GT8
Drilling Method: Drive & Wash
Boring Location: N2950127 - E561071
Ground Surface Elev. (ft.): 767.5
Final Boring Depth (ft.): 52.5
Date Start - Finish: 6/23/2023 - 6/23/2023
H. Datum: NAD83
V. Datum: NAVD88

Auger/Casing Type: HW/NW
I.D/O.D.(in): 4/4.5 / 3/3.5
Hammer Weight (lb.): 140/300
Hammer Fall (in.): 30/24
Other: Automatic/Safety
Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2
Sampler Hmr Wt (lb): 140
Sampler Hmr Fall (in): 30
Other: Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
6/23/23	1430	31.5	40	0 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
									1		0.4'	ASPHALT	767.1'
		S-1	1-3	24	19	22 24		S-1A: (Top 13") Dense, brown, fine to coarse SAND, little	2				
						24 23	48	Gravel, trace Silt.	3		2.1'	SUBBASE/BASE COURSE	765.4'
								S-1B: (Bottom 6") Brown, fine to coarse SAND, some					
		S-2	3-5	24	12	16 12		Gravel, trace Silt.					
5						22 16	34	S-2: Dense, brown, fine to coarse SAND, some Gravel,					
		S-3	5-7	24	13	15 13		trace Silt.					
						10 8	23	S-3: Medium dense, brown, GRAVEL and fine to coarse					
								SAND, trace Silt.					
		S-4	7-9	24	12	12 8		S-4: Medium dense, brown, fine to coarse SAND and	4				
						9 8	17	GRAVEL, trace Silt, trace Organics.					
									5				
10		S-5	10-12	24	6	9 7		S-5: Medium dense, brown, fine to coarse SAND and	6				
						8 39	15	GRAVEL, trace Silt.					
											13.5'		754.0'
15		S-6	15-17	24	9	74 15		S-6: Medium dense, brown, fine to coarse SAND and					
						10 9	25	GRAVEL, trace Silt.				SAND AND GRAVEL	
		S-7	20-22	24	4	11 11		S-7: Medium dense, brown, GRAVEL, some fine to coarse					
20						11 9	22	Sand, little Silt.					
											22.5'		745.0'
									7				
25		S-8	25-27	24	10	10 11		S-8: Dense, brown, GRAVEL, some Silt, some fine to					
						23 39	34	medium Sand.				GLACIAL TILL	
30									8				

REMARKS

1. Ground surface elevation estimated from a plan entitled "612190_sv(basemap).dwg" prepared by Chappell Associates, LLC.
2. Boring offset approximately 55 feet north from originally proposed location due to overhead power lines and approach slab.
3. Driller used roller cone bit to break through 0.4 feet of asphalt.
4. Likely buried topsoil encountered in S-4.
5. Driller switched from driving casing with 300-lb. safety hammer to 140-lb. auto hammer from 4 to 9 feet below ground surface (bgs) and reported presence of cobbles/boulders.
6. Rig chatter while washing from 4 to 14 feet bgs.
7. Significant rig chatter while washing from 24 to 40 feet bgs.
8. Driller advanced borehole using open hole techniques from 29 to 41.8 feet bgs.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: BB-1

175938.00 SALISBURY ST BRIDGE REPLACEMENT.GPJ; STRATUM ONLY W/O SMPL W/WE; 7/31/2024

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Chappell Engineering Associates, LLC
Salisbury Street Bridge Replacement
Bridge No. H-18-004
Holden, Massachusetts

BORING NO.: BB-1
SHEET: 2 of 2
PROJECT NO: 01.0175938.00
REVIEWED BY: HA

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-9	30-32	24	13	51 28		S-9: Very dense, brown, fine to coarse SAND and					
						35 103	63	GRAVEL, trace Silt.					
35													
		S-10	35-37	24	11	30 25							
						18 22	43	S-10: Dense, brown, GRAVELand fine to coarse SAND, little Silt.				GLACIAL TILL	
40													
		S-11	40-41.8	22	7	12 10			9				
						18 50/4"	28	S-11: Medium dense, brown, GRAVEL and fine to coarse SAND, little Silt.			41.8'		725.7'
									10			POSSIBLE WEATHERED BEDROCK	
											44'		723.5'
45	4:14	C-1	44-49	60	59			C-1: Hard, fresh, medium grained, dark gray, gneissic GRANITE, very thin, subhorizontal foliation, close to moderately close, subhorizontal to moderately dipping fractures. RQD=87%	11				
	3:14								12				
	3:12												
	4:10												
	4:43	C-2	49-52.5	42	39			C-2: Hard, fresh to slightly weathered, medium grained, dark gray, gneissic GRANITE, very thin, subhorizontal foliation, close to moderately close, subhorizontal dipping fractures. RQD=62%				BEDROCK	
50	4:14								13				
	5:12												
	4:27										52.5'		715.0'
	2:40 (6")							Auger refusal at 52.5 feet.	14				
55													
60													
65													

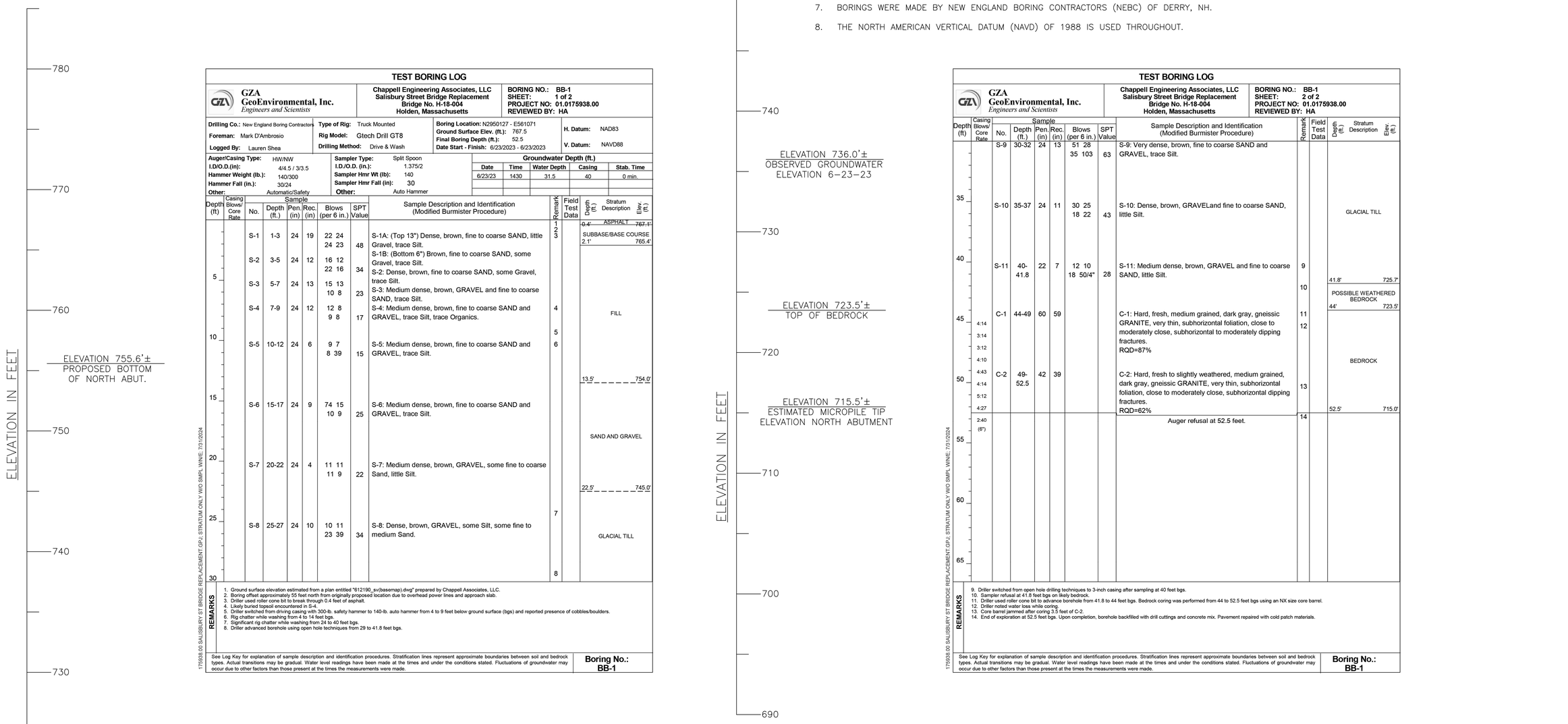
REMARKS

9. Driller switched from open hole drilling techniques to 3-inch casing after sampling at 40 feet bgs.
10. Sampler refusal at 41.8 feet bgs on likely bedrock.
11. Driller used roller cone bit to advance borehole from 41.8 to 44 feet bgs. Bedrock coring was performed from 44 to 52.5 feet bgs using an NX size core barrel.
12. Driller noted water loss while coring.
13. Core barrel jammed after coring 3.5 feet of C-2.
14. End of exploration at 52.5 feet bgs. Upon completion, borehole backfilled with drill cuttings and concrete mix. Pavement repaired with cold patch materials.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: BB-1

175938.00 SALISBURY ST BRIDGE REPLACEMENT.GPJ; STRATUM ONLY W/O SMPL W/WE; 7/31/2024



BORING LOGS BB-1

SCALE: ¼" = 1'-0"

May 30, 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

612190_BR3-4 (BORING LOGS).DWG Plotted on 27-May-2026 10:53 AM

612190 Final Structural Submittal (SF) 30-May-2026

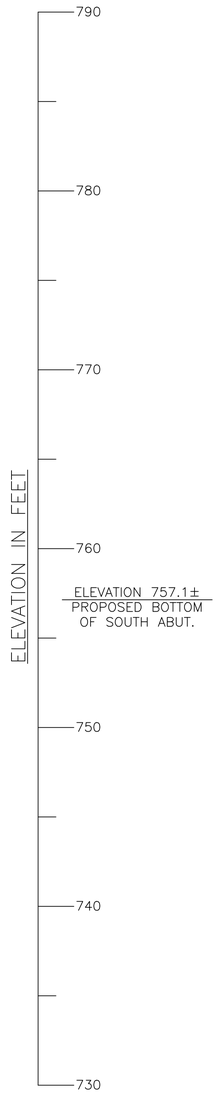
NOTES:

SEE BORING NOTES ON SHEET 3

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	35	81
PROJECT FILE NO. 612190			

BORING LOGS
SHEET 2 OF 3



TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Chappell Engineering Associates, LLC
Salisbury Street Bridge Replacement
Bridge No. H-18-004
Holden, Massachusetts

BORING NO.: BB-2
SHEET: 1 of 2
PROJECT NO: 01.0175938.00
REVIEWED BY: HA

Drilling Co.: New England Boring Contractors
Foreman: Mark D'Ambrosio
Logged By: Lauren Shea
Type of Rig: Truck Mounted
Rig Model: Gtech Drill GT8
Drilling Method: Drive & Wash
Boring Location: N2949940 - E561103
Ground Surface Elev. (ft.): 772
Final Boring Depth (ft.): 44
Date Start - Finish: 6/21/2023 - 6/21/2023
H. Datum: NAD83
V. Datum: NAVD88

Auger/Casing Type: HW/NW
I.D/O.D.(in): 4/4.5 / 3/3.5
Hammer Weight (lb.): 140/300
Hammer Fall (in.): 30/24
Other: Automatic/Safety
Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2
Sampler Hmr Wt (lb): 140
Sampler Hmr Fall (in): 30
Other:

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
6/21/23	1230	30.5	24	30 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
									1		0.4'	ASPHALT	771.6'
									2				
		S-1	1-3	24	16	16 20		S-1A: (Top 8") Gray to dark gray, fine to coarse SAND,	3		1.7'	SUBBASE	770.3'
						13 14	33	some Gravel, trace Silt. (Subbase)					
								S-1B: (Bottom 8") Brown, fine to coarse SAND and					
		S-2	3-5	24	6	17 18		GRAVEL, trace Silt.					
						32 14	50	S-2: Dense, brown, fine to coarse SAND and GRAVEL,	4				
5		S-3	5-7	24	12	5 6		little Silt.	5				
						6 11	12	S-3: Medium dense, brown, fine to coarse SAND and					
		S-4	7-9	24	12	4 13		GRAVEL, little Silt.				FILL	
						11 11	24	S-4: Medium dense, brown, fine to coarse SAND and					
								GRAVEL, little Silt.					
											9.5'		762.5'
10		S-5	10-12	24	8	6 5							
						5 11	10	S-5: Medium dense, brown, fine SAND and Clayey SILT,					
								trace Gravel.					
		S-6	12-14	24	9	14 6		S-6: Medium dense, brown, fine SAND and Clayey SILT,					
						6 7	12	trace Gravel.				SAND AND SILT	
											14.5'		757.5'
15		S-7	15-17	24	10	7 6							
						9 12	15	S-7: Medium dense, brown, fine to coarse SAND, some					
								Gravel, little Silt.				SAND AND GRAVEL	
											20.1'		751.9'
20		S-8	19-20.1	13	8	15 31				6			
						50/1"	R	S-8: Very dense, brown, fine to coarse SAND and					
								GRAVEL, trace Silt.				BOULDER	
											23.5'		748.5'
25		S-9	25-27	24	14	36 52				7			
						66 96	R	S-9: Very dense, brown, fine to coarse SAND and					
								GRAVEL, some Silt.				GLACIAL TILL	
30													

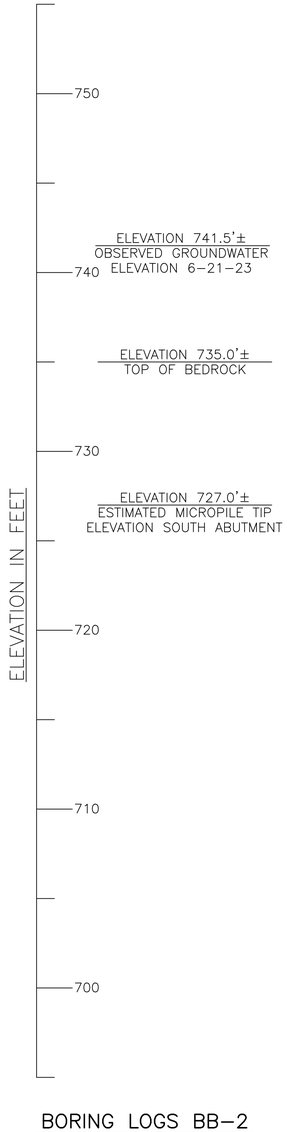
REMARKS

1. Ground surface elevation estimated from a plan entitled "612190_sv(basemap).dwg" prepared by Chappell Associates, LLC.
2. Boring offset approximately 23 feet southeast from originally proposed location due to overhead power lines and tree coverage.
3. Used roller cone bit to break through 0.4 feet of asphalt.
4. Driller switched from auto hammer to 300-lb. safety hammer to drive casing from 4 to 9 feet below ground surface (bgs).
5. Rig chatter while washing from approximately 4 to 35 feet bgs.
6. Sampler refusal at 20.1 feet bgs on possible boulder. Driller used roller cone bit to break through boulder to approximately 23.5 feet bgs.
7. Casing refusal at approximately 24 feet bgs on possible boulder. Driller advanced borehole using open hole techniques starting at 24 feet bgs.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: BB-2

175938.00 SALISBURY ST BRIDGE REPLACEMENT.GPJ; STRATUM ONLY W/O SMPL WINVE: 7/31/2024



BORING LOGS BB-2

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

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Chappell Engineering Associates, LLC
Salisbury Street Bridge Replacement
Bridge No. H-18-004
Holden, Massachusetts

BORING NO.: BB-2
SHEET: 2 of 2
PROJECT NO: 01.0175938.00
REVIEWED BY: HA

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-10	30-32	24	12	30 22							
						16 27	38	S-10: Dense, brown, GRAVEL, some fine to coarse Sand,					
								trace Silt.					
												GLACIAL TILL	
											35.1'		736.9'
35		S-11	35-35.1	1	1	50/1"	R	S-11: Very dense, brown, fine to coarse SAND and	8				
								GRAVEL, little Silt.				POSSIBLE WEATHERED BEDROCK	
											37'		735.0'
		C-1	37-39	24	23			C-1: Very hard, fresh to slightly weathered, medium to	9				
								coarse grained, dark gray, gneissic GRANITE, very thin,	10				
40		C-2	39-44	60	56			subhorizontal foliation, very close, subhorizontal to					
								moderately dipping fractures.					
								RQD=42%				BEDROCK	
								C-2: Very hard, fresh to slightly weathered, medium to					
								coarse grained, dark gray, gneissic GRANITE, very thin,					
								subhorizontal foliation, very close, subhorizontal to					
								moderately dipping fractures.					
45								RQD=83%	11				
								Auger refusal at 44 feet.					
50													
55													
60													
65													

REMARKS

8. Driller switched from open hole drilling to 3-inch casing after sampling at 35 feet bgs. Driller spun casing due to presence of boulders.
9. Casing refusal at 37 feet bgs on possible bedrock. Bedrock coring performed from 37 to 44 feet bgs using an NX size core barrel.
10. Core barrel jammed after coring from 37 to 39 feet bgs. Driller removed the first two feet of core C-1 and continued coring an additional 5 feet (C-2).
11. End of exploration at 44 feet bgs. Upon completion, borehole backfilled with drill cuttings. Pavement repaired with cold patch materials.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: BB-2

175938.00 SALISBURY ST BRIDGE REPLACEMENT.GPJ; STRATUM ONLY W/O SMPL WINVE: 7/31/2024

May 30, 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	

612190_BR3-4 (BORING LOGS).DWG Plotted on 27-May-2026 10:53 AM

612190 Final Structural Submittal (SF) 30-May-2026

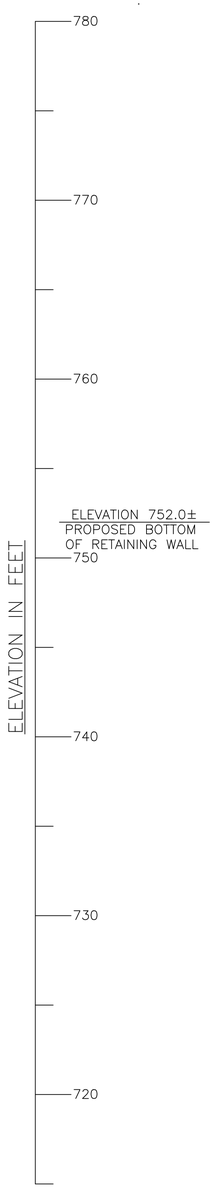
NOTES:

SEE BORING NOTES ON SHEET 3

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	36	81
PROJECT FILE NO. 612190			

BORING LOGS
SHEET 3 OF 3



TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Chappell Engineering Associates, LLC
Salisbury Street Bridge Replacement
160 Old Post Road
Holden, Massachusetts

BORING NO.: RW-1
SHEET: 1 of 1
PROJECT NO: 1.0175938.01
REVIEWED BY: HLA

Drilling Co.: New England Boring Contractors	**Type of Rig:** Truck Mounted	**Boring Location:** N2950200 - E561048	**H. Datum:** NAD83
Foreman: Norman Studdard	**Rig Model:** S15	**Ground Surface Elev. (ft.):** 763	
Logged By: Jessica Abbazia	**Drilling Method:** Drive & Wash	**Final Boring Depth (ft.):** 31	**V. Datum:** NAVD88
		Date Start - Finish: 6/27/2025 - 6/27/2025	

Auger/Casing Type: HW	**Sampler Type:** Split Spoon	
I.D/O.D.(in): 4/4.5	**I.D./O.D. (in.):** 1.375/2	
Hammer Weight (lb.): 140	**Sampler Hmr Wt (lb):** 140	
Hammer Fall (in.): 30	**Sampler Hmr Fall (in):** 30	
Other: Autohammer	**Other:** Autohammer	

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
6/27/25	1149	12'10"		2 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Elev. (ft.)
									1		0.4'	ASPHALT	762.6'
									2		1.1'	SUBBASE	761.9'
5		S-1	1-3	24	12	20 20 19 39	39	S-1: (Top 1") Dark brown, fine to coarse SAND, trace Silt. (Subbase) S-1: (Bottom 12") Brown, fine to coarse SAND and GRAVEL, trace Silt.				FILL	
		S-2	3-5	24	10	33 19 13 18	32	S-2: Dense, brown, fine to coarse SAND and GRAVEL, trace Silt.					
		S-3	6-7	24	11	21 11	20	S-3: Medium dense, brown, fine to coarse SAND and GRAVEL, trace Silt.					
		S-4	7-9	24	4	9 5 5 5	12	S-4: Medium dense, brown, fine to coarse SAND and GRAVEL, trace Silt.		3			
10		S-5	9-11	24	12	7 7 12 8 9 8	17	S-5: Medium dense, brown, fine to coarse SAND and GRAVEL, trace Silt.			12.5'		750.5'
15		S-6	14-16	24	5	14 21 9 8	30	S-6: Medium dense, brown, fine to coarse SAND and GRAVEL, trace Silt.				SAND & GRAVEL	
											17.5'		745.5'
20		S-7	19-21	24	7	6 4 6 21	10	S-7: (Top 3") Orange-brown, fine to coarse SAND and SILT, trace Gravel. S-7: (Bottom 4") Brown, fine to coarse SAND and GRAVEL, trace Silt.			19.25'	SILT AND SAND	743.8'
25		S-8	24-26	24	15	12 10 11 12	21	S-8: Medium dense, gray, fine SAND, some Silt, trace Gravel.				SAND AND GRAVEL	
											27.5'		735.5'
30		S-9	29-31	24	10	46 37 18 30	55	S-9: Very dense, gray, fine to coarse SAND and GRAVEL, trace Silt.				GLACIAL TILL	
											31'		732.0'
35								Bottom of boring at 31 feet.	4				

REMARKS

1. Elevation estimated from a plan titled "312190_sv(basemap).dwg", prepared by Chappell Engineering Associates, LLC.
2. Used roller cone to break through 0.4 feet of asphalt.
3. Boring advanced via drive and wash methods from 7 to 31 feet below ground surface (bgs).
4. End of excavation at 31 feet bgs. Upon completion, borehole backfilled with cuttings and sealed with cold patch.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.: RW-1

175938.01 RW LOGS.GPJ; STRATUM ONLY NORWOOD; 11/25/2025

BORING LOGS RW–1

SCALE: ¼" = 1'–0"

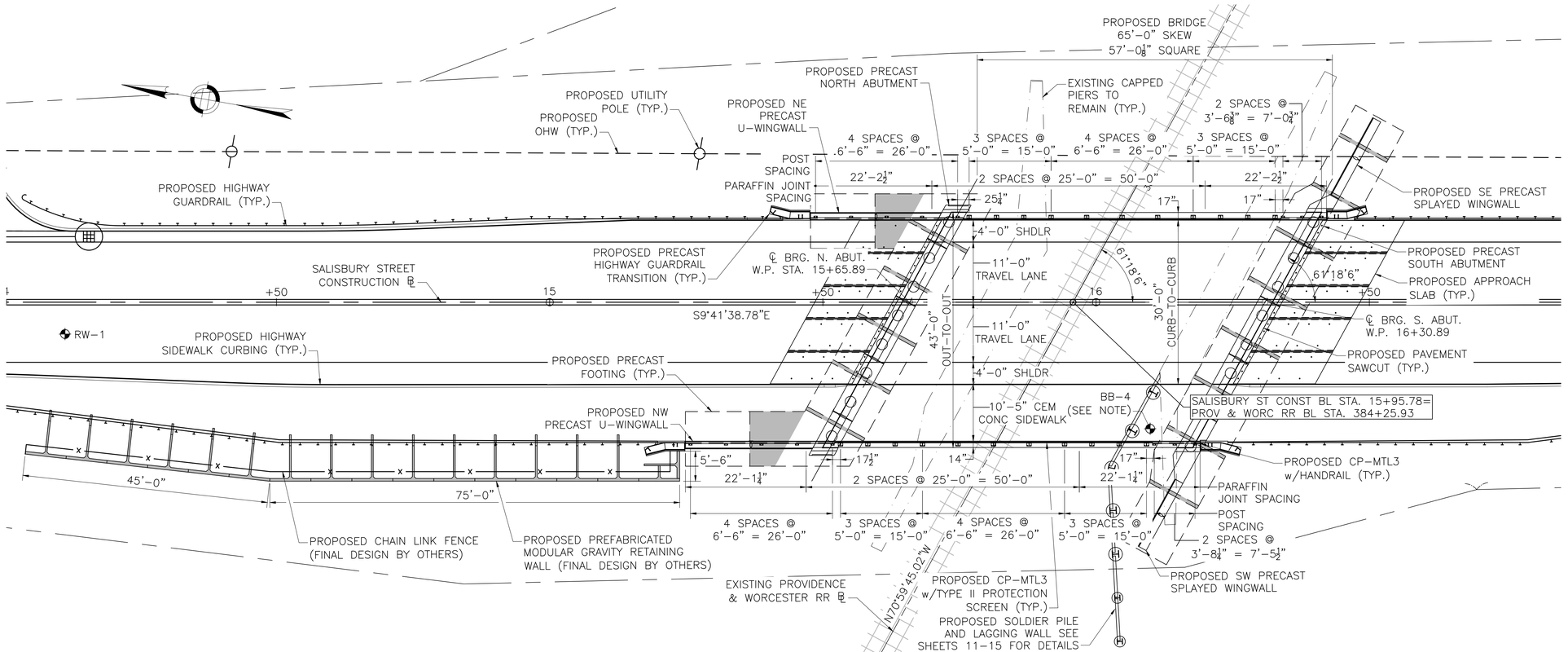
May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

612190_BR3-4 (BORING LOGS).DWG Plotted on 27-May-2026 10:53 AM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

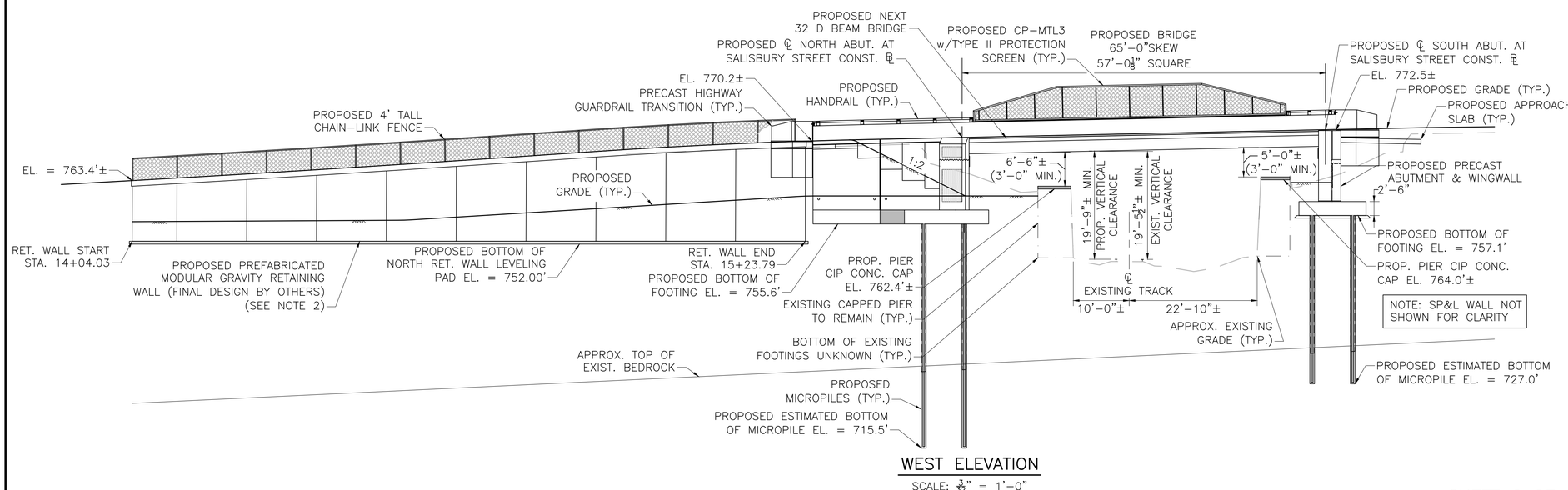
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	37	81
PROJECT FILE NO.	612190		

PLAN AND ELEVATION



GENERAL PLAN

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



WEST ELEVATION

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

PRECAST HIGHWAY GUARDRAIL TRANSITION ELEVATIONS	
LOCATION	BOTTOM OF TRANSITION BASE EL.
NORTHEAST	763.7'
NORTHWEST	763.9'
SOUTHEAST	766.1'
SOUTHWEST	765.9'

NOTES:

1. DEMO EXISTING PIERS AS NEEDED TO INSTALL PROPOSED BRIDGE SUPER STRUCTURE.
2. IF THE CONTRACTOR CHOOSES TO CONSTRUCT THE PRECAST CONCRETE MODULAR WALL AFTER CONSTRUCTION OF THE PRECAST WINGWALL THE CONTRACTOR SHALL MAINTAIN THE STABILITY OF THE PRECAST WINGWALL DURING THE EXCAVATION AND CONSTRUCTION OF THE PREFABRICATED MODULAR GRAVITY WALL BY MEANS OF AN APPROPRIATE SUPPORT OF EXCAVATION SYSTEM

PARAFFIN NOTES:

1. FOR PARAFFIN JOINT DETAILS SEE SHEET 23
2. RAIL POST AND PARAFFIN JOINT SPACING DIMENSIONS ARE MEASURED ALONG THE CENTERLINE OF BASE PLATES FROM FACE OF GUARD RAIL TRANSITION

BORING NOTE:

BORING BB-4 (LOCATED APPROX.) TO BE PERFORMED AS EARLY ACTION ITEM PRIOR TO CONSTRUCTION, SEE SPECIAL PROVISIONS

May 30, 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	

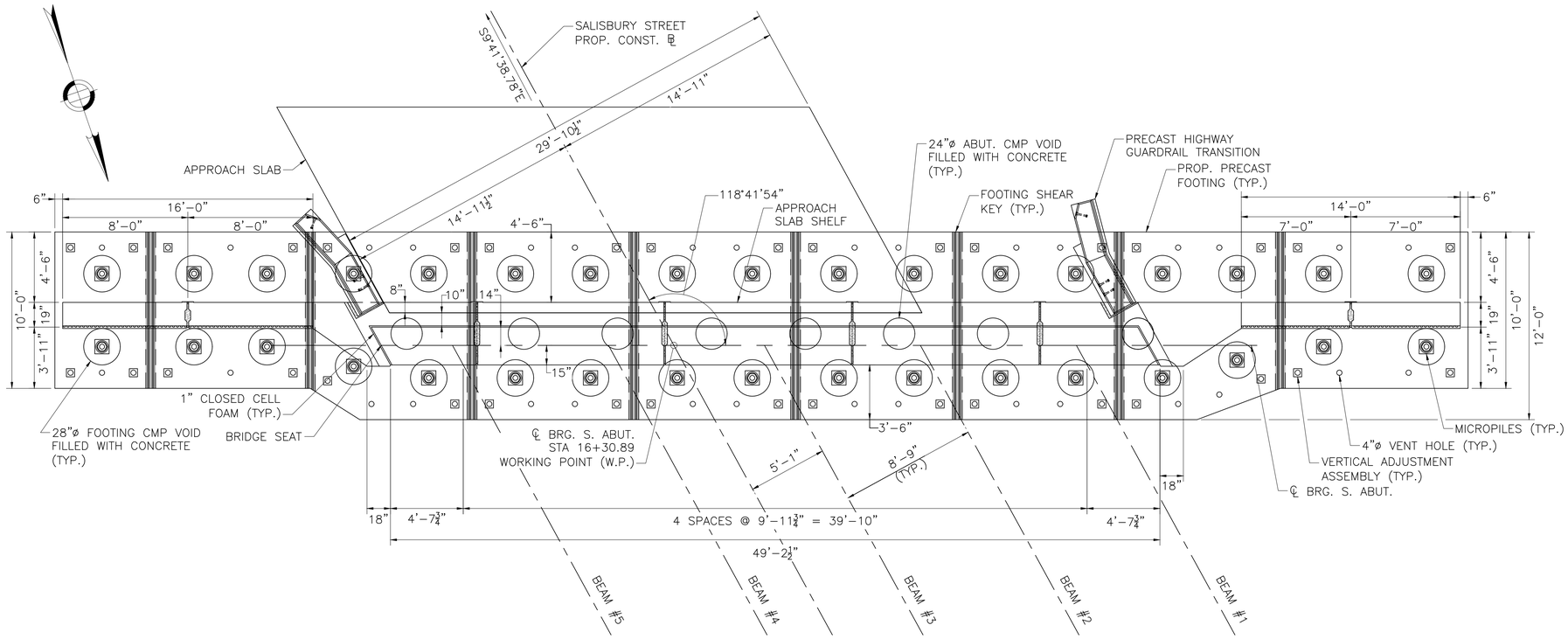
612190_BR5 (PLAN_ELEV).DWG Plotted on 21-May-2026 1:43 PM

612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

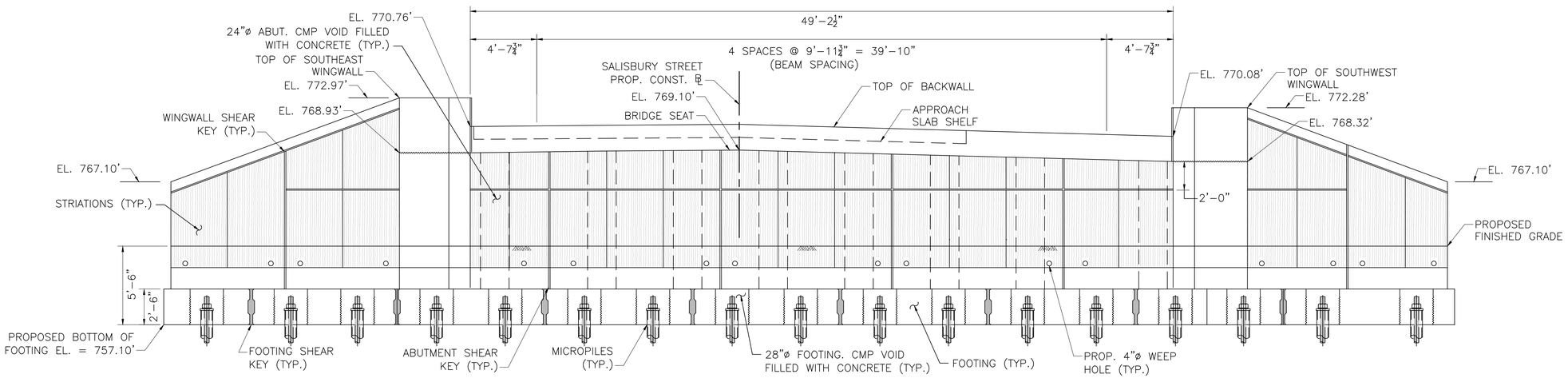
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	38	81
PROJECT FILE NO.	612190		

SOUTH ABUTMENT PLAN AND ELEVATION



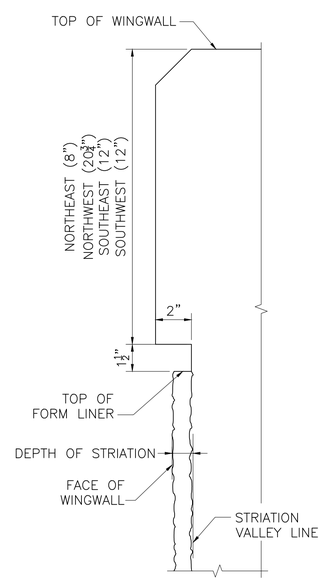
PROPOSED SOUTH ABUTMENT PLAN

SCALE: ¼" = 1'-0"



PROPOSED SOUTH ABUTMENT & WINGWALL ELEVATION

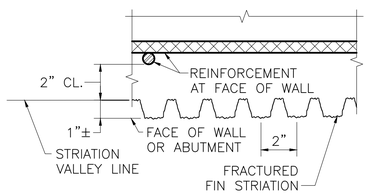
SCALE: ¼" = 1'-0"



DETAIL AT TOP OF WINGWALL

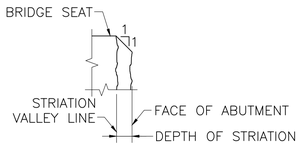
SCALE: 3"=1'-0"

BEAM SEAT ELEVATIONS AT ℄ OF BRG. S. ABUTMENT		
BEAM	ELEVATION AT WEST STEM	ELEVATION AT EAST STEM
1	768.49	768.33
2	768.77	768.61
3	769.05	769.89
4	769.09	769.12
5	769.01	769.05



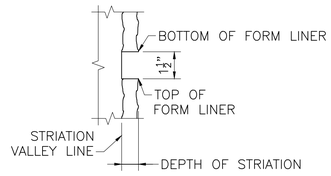
TYPICAL STRIATION DETAIL

SCALE: 3"=1'-0"



DETAIL AT BRIDGE SEAT

SCALE: 3"=1'-0"



HORIZONTAL PANEL JOINT

SCALE: 3"=1'-0"

STRIATION 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.

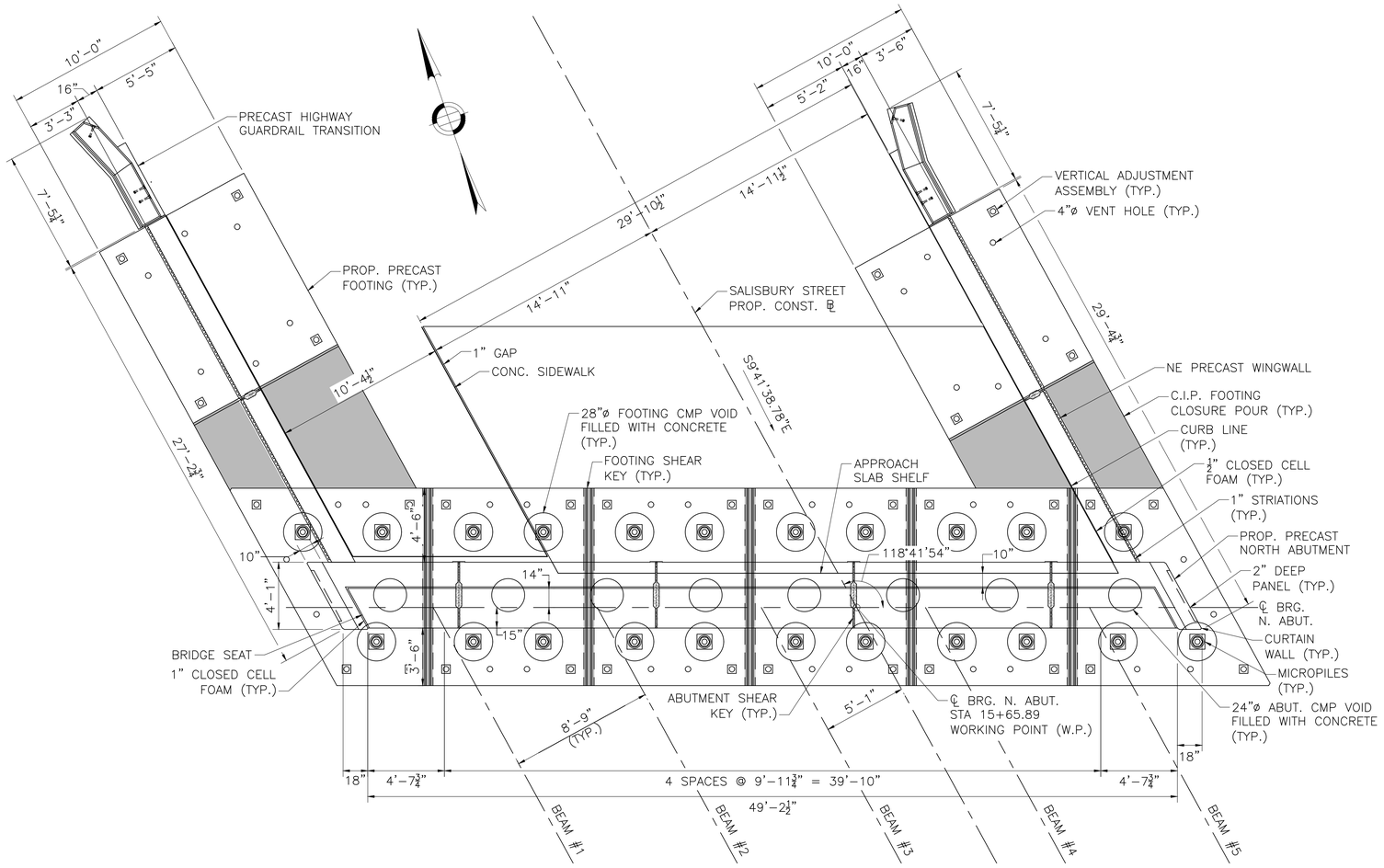
May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

612190_BR6 (SOUTH ABUTMENT).DWG Plotted on 21-May-2026 1:43 PM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

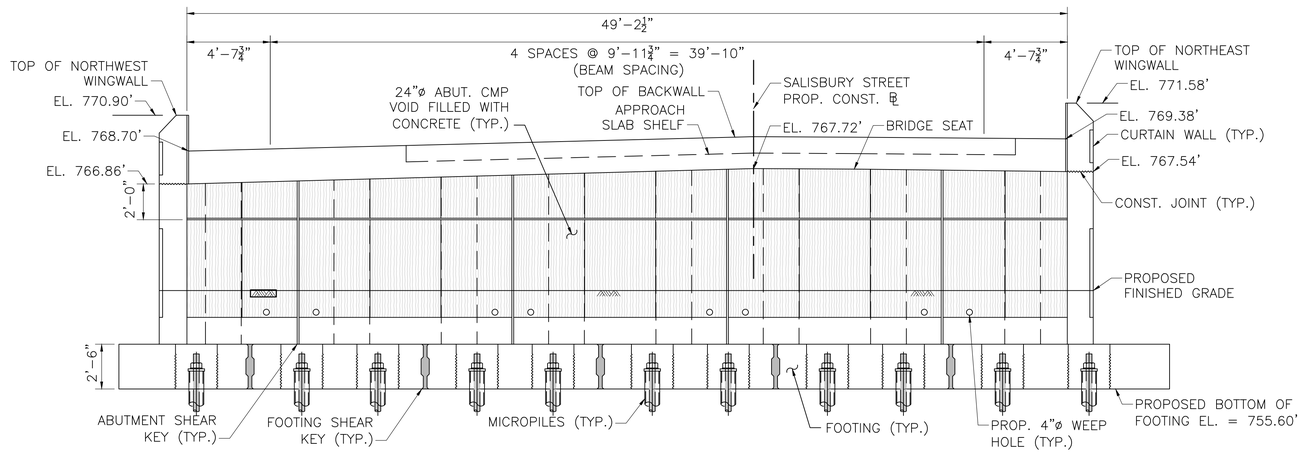
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	39	81
PROJECT FILE NO.	612190		

NORTH ABUTMENT PLAN AND ELEVATION



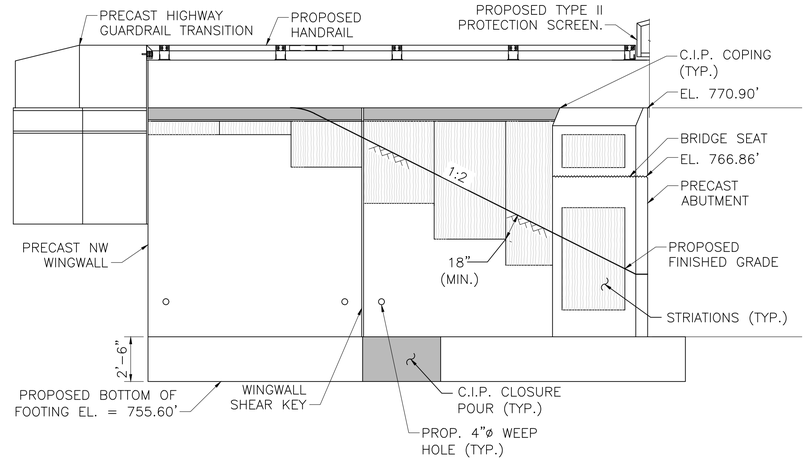
PROPOSED NORTH ABUTMENT PLAN

SCALE: ¼" = 1'-0"



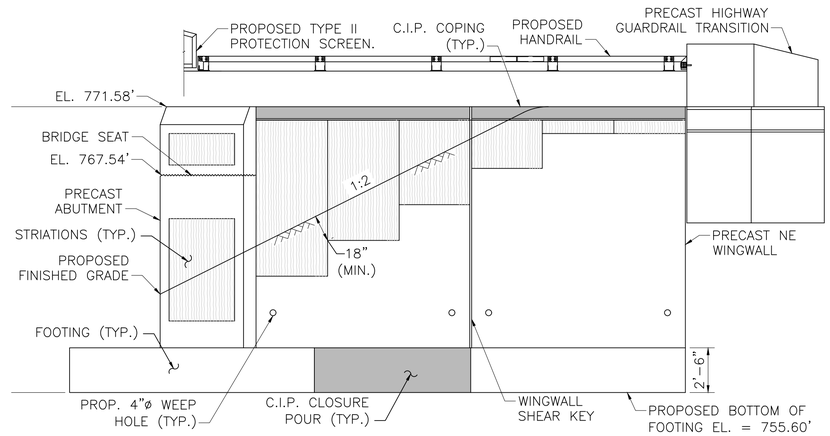
PROPOSED NORTH ABUTMENT SECTION

SCALE: ¼" = 1'-0"



PROPOSED NORTHWEST WINGWALL ELEVATION

SCALE: ¼" = 1'-0"



PROPOSED NORTHEAST WINGWALL ELEVATION

SCALE: ¼" = 1'-0"

BEAM SEAT ELEVATIONS AT ℄ OF BRG. N. ABUTMENT		
BEAM	ELEVATION AT WEST STEM	ELEVATION AT EAST STEM
1	767.10	766.94
2	767.38	767.22
3	767.66	767.50
4	767.70	767.73
5	767.61	767.66

May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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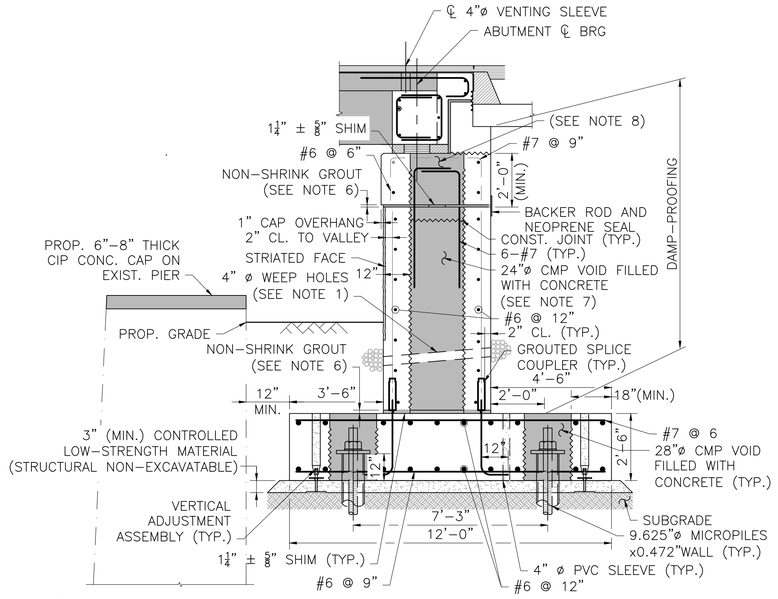
612190_BR7 (NORTH ABUTMENT).DWG Plotted on 21-May-2026 1:43 PM

612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	40	81
	PROJECT FILE NO. 612190		

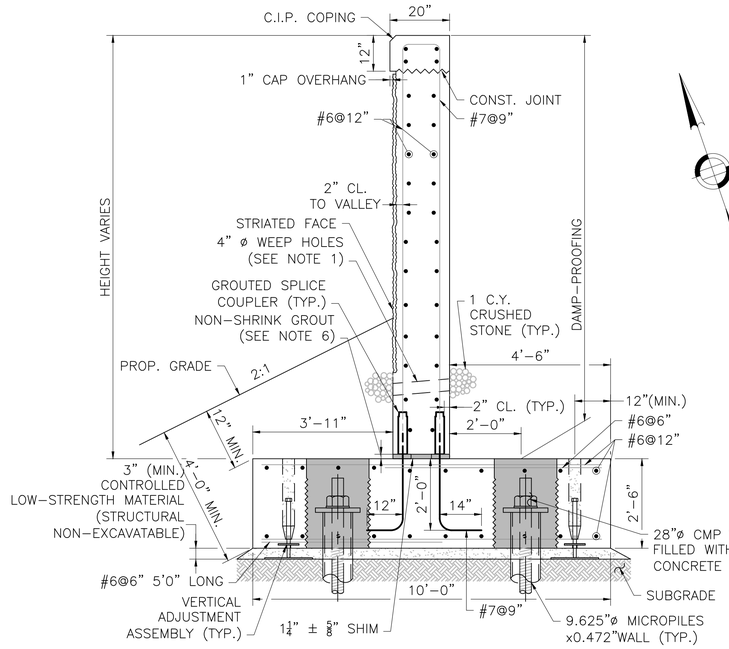
ABUTMENT AND WINGWALL SECTIONS
SHEET 1 OF 2



ABUTMENT SECTION

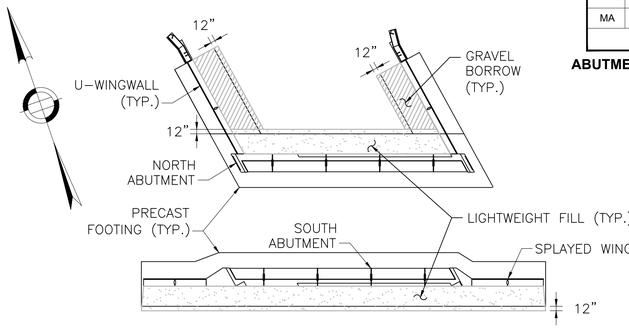
SCALE: ⅜" = 1'-0"

NOTE:
ADJUST HOOKED BAR AS NECESSARY TO AVOID CMP VOID



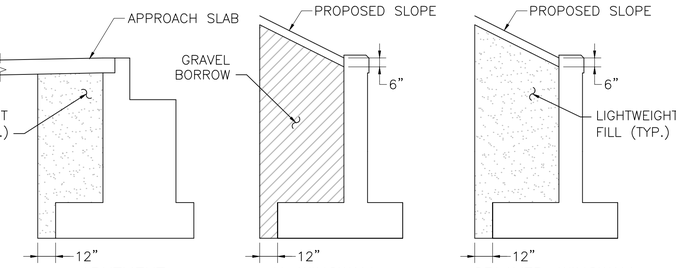
SOUTH SPLAYED WINGWALL SECTION

SCALE: ½" = 1'-0"



PLAN VIEW LIMITS OF GRAVEL BORROW/FILL

NOT TO SCALE

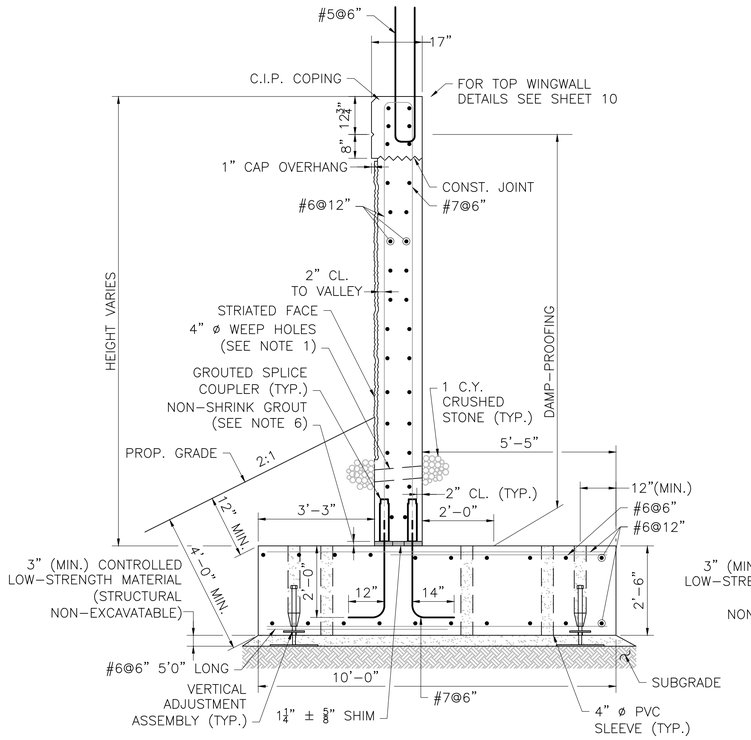


NOTES:

1. GEOTEXTILE FABRIC FOR SEPARATION IS TO BE PLACED WHEREVER LIGHTWEIGHT FILL COMES IN CONTACT WITH OTHER SOIL, FILL OR LOAM. CONCRETE CAN BE PLACED DIRECTLY ON THE LIGHTWEIGHT FILL

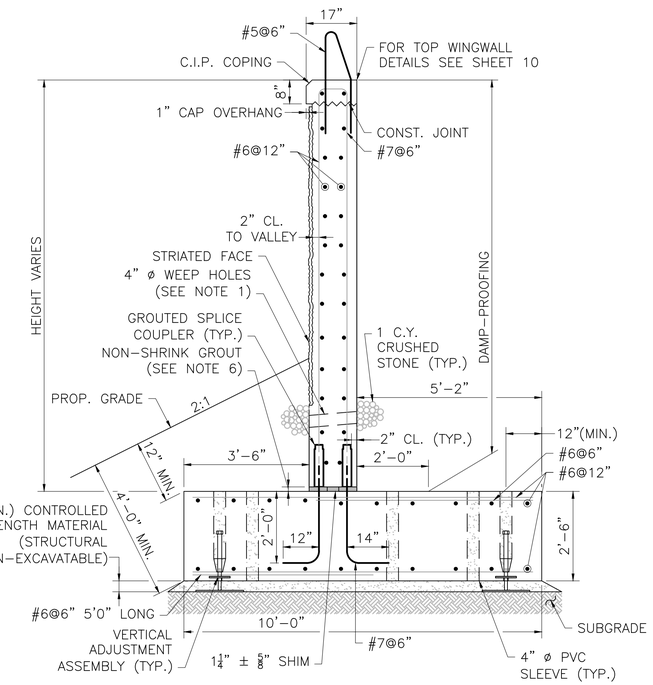
LIMITS OF GRAVEL BORROW/FILL FOR BACKFILLING STRUCTURES AND PIPES

SCALE: ¼" = 1'-0"



NORTHWEST U-WINGWALL SECTION

SCALE: ½" = 1'-0"



NORTHEAST U-WINGWALL SECTION

SCALE: ½" = 1'-0"

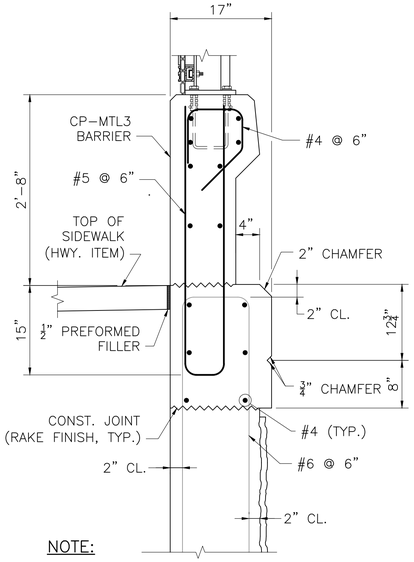
WINGWALL & ABUTMENT NOTES:

1. 4" ø WEEP HOLES AT 10'-0" O.C LOCATED 24"± 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.
2. EXTEND EVERY OTHER BAR FULL LENGTH AS SHOWN.
3. WINGWALL FACTORED BEARING PRESSURE PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
   - STRENGTH I LIMIT STATE
     FACTORED BEARING PRESSURE: NE WINGWALL = 6.30 KSF
     NW WINGWALL = 6.47 KSF
   - EXTREME EVENT II STATE
     FACTORED BEARING PRESSURE: NE WINGWALL = 2.77 KSF
     NW WINGWALL = 2.88 KSF
4. WINGWALL FACTORED BEARING RESISTANCE = 11.5 KSF FOR THE STRENGTH 1 LIMIT STATE AND IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE OF 20.9 KSF AND A RESISTANCE FACTOR OF 0.55.
5. SHEAR KEYS SHALL HAVE AN EXPOSED AGGREGATE FINISH AND SHALL BE CLEANED AND SURFACE SATURATED DRY PRIOR TO PLACING CLOSURE POUR CONCRETE.
6. PRE-BED PREFABRICATED ELEMENT WITH NON-SHRINK GROUT WITH THICKNESS MORE THAN SHIM STACK.
7. AFTER GROUT REACHES 5000 PSI FILL CMP VOID IN STEM WITH CONCRETE.
8. AFTER SETTING PRECAST CAP, FILL REMAINDER OF CMP VOID.
9. DEMO EXISTING PIERS AS NEEDED TO INSTALL PROPOSED BRIDGE SUPER STRUCTURE.

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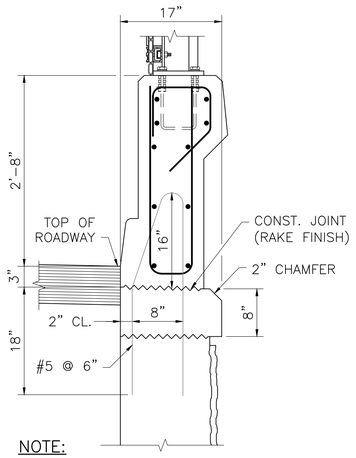
612190_BR8-10 (SECTIONS).DWG Plotted on 21-May-2026 1:43 PM
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NOTE:
SEE SECTION THRU CP–MTL3 BARRIER AT SIDEWALK FOR DIMENSIONS AND REINFORCEMENT NOT SHOWN HERE.

TOP OF U–WINGWALL DETAILS AT SIDEWALK

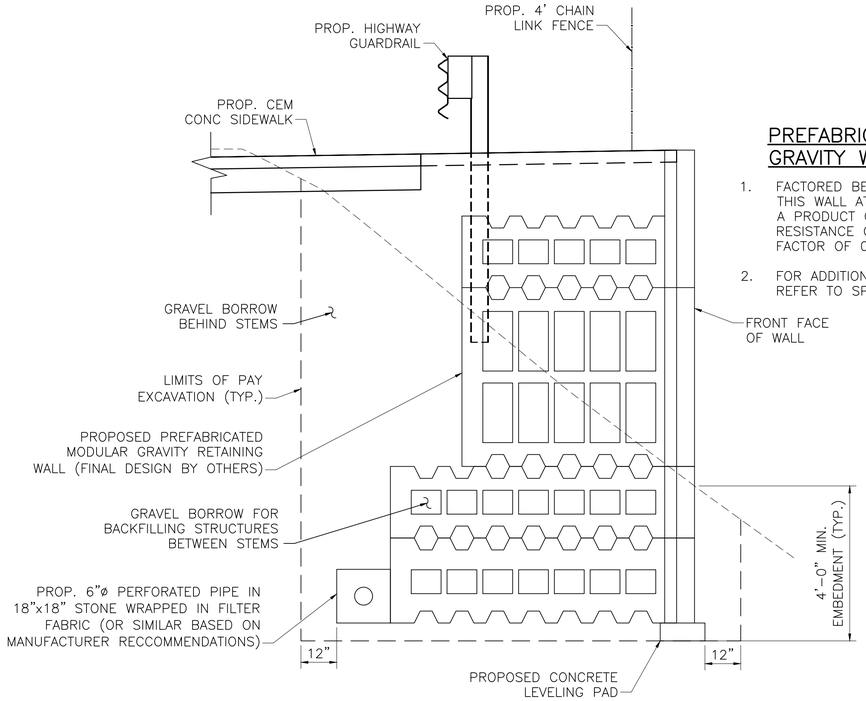
SCALE: 1" = 1'–0"



NOTE:
SEE SECTION THRU CP–MTL3 BARRIER AT SAFETY CURB FOR DIMENSIONS AND REINFORCEMENT NOT SHOWN HERE.

TOP OF U–WINGWALL DETAILS AT SAFETY CURB

SCALE: 1" = 1'–0"

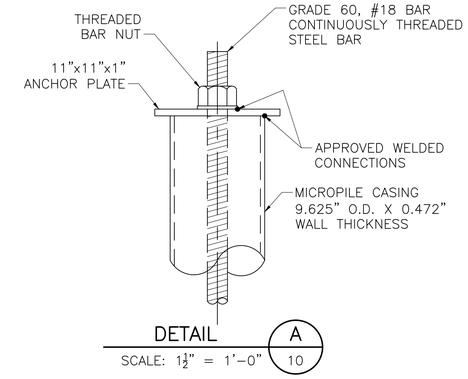


TYPICAL PREFABRICATED MODULAR RET WALL SECTION

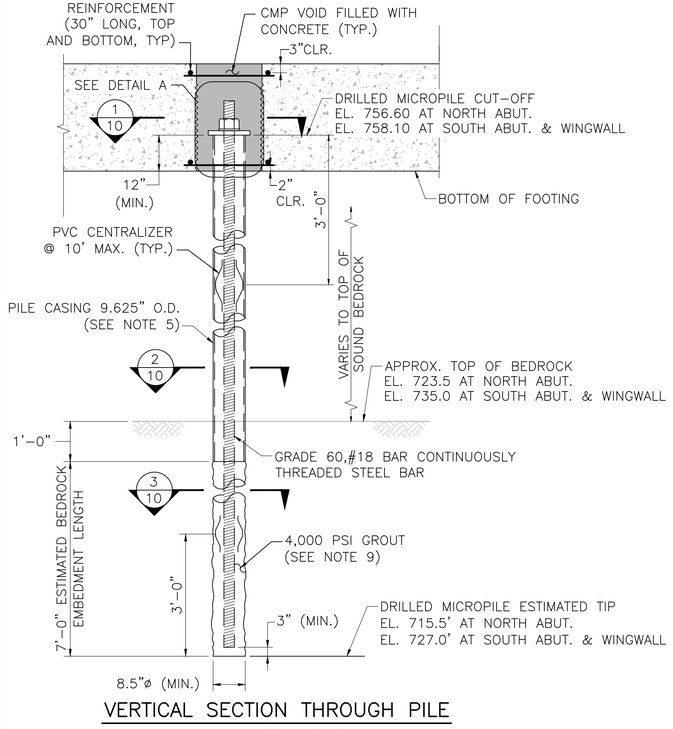
SCALE: ½" = 1'–0"

PREFABRICATED MODULAR GRAVITY WALL NOTES:

1. FACTORED BEARING RESISTANCE IS 5.9ksf FOR THIS WALL AT THE STRENGTH LIMIT STATE AND IS A PRODUCT OF THE NOMINAL BEARING RESISTANCE OF 13.1ksf AND THE RESISTANCE FACTOR OF 0.45.
2. FOR ADDITIONAL RETAINING WALL REQUIREMENTS, REFER TO SPECIAL PROVISION 996.5

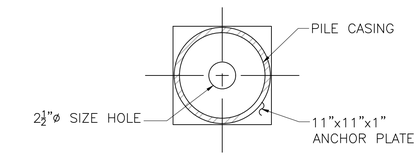


DETAIL A (1) 10
SCALE: 1½" = 1'–0"

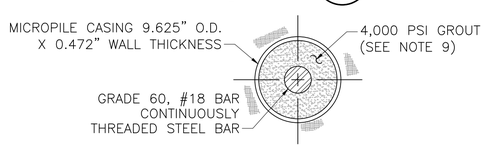


VERTICAL SECTION THROUGH PILE

SCALE: ½" = 1'–0"

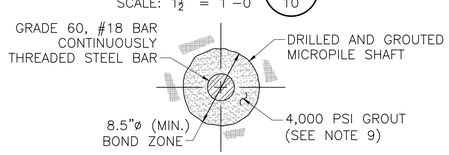


SECTION (1) 10
SCALE: 1½" = 1'–0"



(CASED ZONE)

SECTION (2) 10
SCALE: 1½" = 1'–0"



(BONDED ZONE)

SECTION (3) 10
SCALE: 1½" = 1'–0"

MICROPILE NOTES:

1. FACTORED AXIAL DESIGN LOAD PER MICROPILE PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
   - STRENGTH I LIMIT STATE
     FACTORED AXIAL DESIGN LOAD = 113.8 KIPS.
2. THE FACTORED STRUCTURAL PILE RESISTANCE IS 299.9 KIPS AND IS THE PRODUCT OF THE NOMINAL STRUCTURAL RESISTANCE OF 399.9 KIPS AND A RESISTANCE FACTOR OF 0.75.
3. THE FACTORED GEOTECHNICAL PILE RESISTANCE IS 200 KIPS AND IS THE PRODUCT OF THE NOMINAL GEOTECHNICAL RESISTANCE OF 363.6 KIPS AND A RESISTANCE FACTOR OF 0.55.
4. THE ESTIMATED TIP ELEVATION IS 715.5' AT NORTH ABUTMENT.
   THE ESTIMATED TIP ELEVATION IS 727.0' AT SOUTH ABUTMENT & WINGWALL.
5. STEEL CASING SHALL BE PRIME STEEL AND MEET THE REQUIREMENTS OF API 5L PSL1 GRADE 52 WITH SR 15 SUPPLEMENTAL REQUIREMENTS.
6. THREADED STEEL BAR SHALL BE CONTINUOUSLY THREADED FOR THE ENTIRE BAR LENGTH CONFORMING TO AASHTO M31, HAVING A MINIMUM YIELD STRENGTH OF 60 KSI.
7. THREADED CASING JOINTS ARE NOT ALLOWED WITHIN 10'–0" OF THE PILE CAP.
8. ANCHOR PLATE SHALL MEET THE REQUIREMENTS OF AASHTO M270 GRADE 50.
9. GROUT SHALL HAVE A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4000 PSI AND CEMENT SHALL CONFORM TO AASHTO M85 TYPE 1.
10. GROUT SHALL BE PLACED USING TREMIE METHODS.
11. THE CONTRACTOR SHALL SUBMIT A MICROPILE SCHEDULE, MICROPILE INSTALLATION, AND MICROPILE TESTING PLAN FOR REVIEW AND APPROVAL BY THE ENGINEER.
12. THE VERIFICATION LOAD TEST MICROPILE SHALL BE A SACRIFICIAL MICROPILE. THE VERIFICATION LOAD TEST SHALL BE PERFORMED PRIOR TO CONSTRUCTION OF PRODUCTION MICROPILES. THE LOCATION OF THE VERIFICATION LOAD TEST IS APPROXIMATE, AS SHOWN. CONTRACTOR TO SELECT EXACT LOCATION OF VERIFICATION LOAD TEST MICROPILE WITH APPROVAL BY THE ENGINEER.
13. 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.
   - ONE MICROPILE VERIFICATION LOAD TEST WILL BE REQUIRED, SEE BB–3 ON SHEET 1.
   - FOUR MICROPILE PROOF LOAD TESTS WILL BE REQUIRED, TWO PER ABUTMENT.

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612190 Final Structural Submittal (SF) 30-May-2026

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	42	81
	PROJECT FILE NO. 612190		

SOLDIER PILE & LAGGING WALL DETAILS
SHEET 1 OF 5

612190_BR (RET_WALL).DWG Plotted on 21-May-2026 1:43 PM

GENERAL NOTES:

1. BASE DRAWINGS AND SOLDIER PILE RETAINING WALL DESIGN SHOWN HEREIN ARE BASED ON THE INFORMATION PROVIDED ON CONTRACT DRAWINGS ENTITLED "SALISBURY STREET OVER THE P&W RAILROAD (BRIDGE NO. H-18-004) 25% SUBMITTAL" BY CHAPPELL ENGINEERING ASSOCIATES, LLC. REFER TO APPLICABLE CONTRACT DOCUMENTS FOR STRUCTURE AND CONTRACT DESIGN ELEMENTS.
2. ELEVATIONS SHOWN ON THESE DRAWINGS ARE BASED ON THE PROJECT ELEVATION DATUM WHICH IS REPORTED TO BE THE NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD88).
3. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODES.
4. CONFORM TO CONSTRUCTION SEQUENCE, NOTES, AND ALL OTHER REQUIREMENTS ON THE THESE DRAWINGS UNLESS OTHERWISE APPROVED BY GZA GEOENVIRONMENTAL, INC. (GZA). ANY DEVIATIONS FROM THE REQUIREMENTS SHOWN ON THE DRAWINGS SHALL BE APPROVED BY GZA.
5. PROVIDE SAFETY RAIL AND/OR TRAFFIC BARRIER AROUND TOP OF RETAINING WALL IN ACCORDANCE WITH PROJECT AND OSHA REQUIREMENTS.
6. SUBSURFACE CONDITIONS SHOWN ON THESE DRAWINGS, AND USED IN THE DESIGN, HAVE BEEN TAKEN FROM NEARBY BORING B-2 AS PROVIDED IN THE GEOTECHNICAL ENGINEERING REPORT ENTITLED" GEOTECHNICAL ENGINEERING REPORT, SALISBURY STREET BRIDGE (BRIDGE NO. H-18-004) REPLACEMENT", DATED APRIL 24, 2026, AND PREPARED BY GZA. REPORT ANY CHANGES IN CONTRACT DOCUMENTS AND CHANGED SUBSURFACE CONDITIONS TO GZA SO THAT THE EFFECT ON THE DESIGN CAN BE EVALUATED, AND THE DESIGN MODIFIED AS REQUIRED.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THESE DRAWINGS IN ACCORDANCE WITH ALL PROJECT REQUIREMENTS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING LOCATIONS OF ALL EXISTING AND PROPOSED CONSTRUCTION INCLUDING STRUCTURES AND UTILITIES PRIOR TO EXCAVATION AND INSTALLATION OF RETAINING WALL. REFER TO CONTRACT DRAWINGS FOR EXISTING AND PROPOSED LOCATIONS.
9. ALL EXCAVATION, BACKFILLING AND GRADING SHALL BE IN GENERAL ACCORDANCE WITH CONTRACT DOCUMENTS AND SPECIFICATIONS.
10. ALL EXCAVATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE FEDERAL REGISTER BY THE DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, 29 CFR PART 1926, FOR EXCAVATIONS. ALL ANCILLARY ITEMS SUCH AS HANDRAILS WHICH ARE REQUIRED BY OSHA BUT NOT SHOWN ON THE DRAWINGS SHALL BE DESIGNED AND INSTALLED BY THE CONTRACTOR.
11. REPORTED GROUNDWATER IS ASSUMED TO OCCUR BELOW PROPOSED BOTTOM OF EXCAVATION (BOE) GRADE BASED ON THE NEARBY CONTRACT BORINGS. HOWEVER, GROUNDWATER SHALL BE MANAGED AND DEWATERED TO MAINTAIN GROUNDWATER 2'-0" BELOW BOE ELEVATION AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHOULD BE PREPARED TO DEWATER GROUNDWATER WITH LOCAL SUMPING (OR OTHER MEANS) AS A MINIMUM AS REQUIRED. ANY REQUIRED DEWATERING (METHODS AND DESIGN) WHICH MAY BE REQUIRED IS BY THE CONTRACTOR.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROL OF SURFACE WATER DURING THE WORK. TEMPORARY WATER CONTROL MEASURES SHALL SATISFY BEST MANAGEMENT PRACTICES (BMP) WHICH INCLUDE PERIODIC INSPECTION, MAINTENANCE AND CLEANING OF CONTROL MEASURES. ALL TEMPORARY WATER CONTROL MEASURES SHALL BE IMPLEMENTED IN CONJUNCTION WITH APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL REMOVE ALL CHANNELED, PUMPED, DIVERTED, OR SIPHONED SURFACE WATER AWAY FROM THE WORK AREA, AND PROVIDE SEDIMENTATION CONTROL AND RECHARGE IN ACCORDANCE WITH ALL APPLICABLE LOCAL CODES AND BMP FEATURES. TEMPORARY SURFACE WATER CONTROL MEASURES MAY INCLUDE USAGE OF SWALES, EROSION CONTROL BLANKETS, FILTER FABRIC, CRUSHED STONE, RIPRAP, DETENTION BASINS ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL MEASURES NECESSARY FOR WATER CONTROL NECESSARY TO EXECUTE THE WORK. ALL GROUNDWATER COLLECTED FROM DEWATERING SHALL BE DISCHARGED IN ACCORDANCE WITH ALL APPLICABLE ENVIRONMENTAL REGULATIONS AND PERMITS REQUIRED ON THE PROJECT.
13. AN ASSUMED SURCHARGE FOR HS-20 VEHICULAR LOADING OF 250 PSF (22'-0" WIDE STRIP LOAD LOCATED 2'-0" FROM THE REAR FACE OF THE PERMANENT SOLDIER PILE AND LAGGING WALL) HAS BEEN CONSIDERED IN THE DESIGN.
    - 13.1. PROPOSED SURCHARGE LOADING OTHER THAN ABOVE MUST BE SUBMITTED TO GZA FOR EVALUATION AND WRITTEN APPROVAL PRIOR TO APPLICATION OF LOAD.

PERMANENT SOLDIER PILE AND LAGGING CONSTRUCTION SEQUENCE:

1. FIELD LOCATE ALL UTILITIES AND EXISTING STRUCTURES WHICH MAY INTERFERE WITH PROPOSED CONSTRUCTION, AND SUPPORT OR RELOCATE AS REQUIRED. EXCAVATE TEST PITS (AS REQ.) BY MEANS OF "SOFT DIG" TECHNIQUES TO VERIFY DEPTH, SIZE, AND LOCATIONS OF EXISTING UTILITIES IN FIELD. NOTIFY GZA IF SIZES, LOCATIONS, AND DEPTHS ARE DIFFERENT FROM WHAT IS ASSUMED AND SHOWN ON PLANS, SO THAT THE AFFECTS ON THE DESIGN MAY BE EVALUATED, AND MODIFIED AS REQUIRED. NOTIFY GZA IF DESIGN OF ADDITIONAL TEMPORARY SUPPORT OF EXISTING UTILITIES IS REQUIRED.
2. SOLDIER PILES SHALL BE INSTALLED IN PRE-DRILLED HOLES (DRILLED SHAFTS) AT THE LOCATIONS SHOWN ON THE DRAWINGS. THE MINIMUM DIAMETER OF THE DRILLED SHAFTS SHALL BE AT LEAST EQUAL TO THE DIAMETER SHOWN ON THE DRAWINGS AND SHALL BE AT LEAST THREE INCHES (3") LARGER THAN THE MAXIMUM DIAGONAL DIMENSION OF THE PILE SECTIONS. THE DRILLER MAY ELECT TO USE LARGER DIAMETER HOLES, IF REQUIRED, TO COMPLY WITH THE SPECIFIED INSTALLATION TOLERANCES HEREIN. SOLDIER PILES SHALL NOT BE DRIVEN OR VIBRATED INTO PLACE TO LIMIT VIBRATIONS INDUCED DURING CONSTRUCTION.
3. DRILL HOLES (DRILLED SHAFTS) FOR SOLDIER PILES SHALL BE INSTALLED THROUGH ALL MATERIAL ENCOUNTERED TO THE SPECIFIED DEPTH. INSTALLATION EQUIPMENT SHALL BE CAPABLE OF DRILLING THROUGH OVERBURDEN SOILS, BEDROCK, BOULDERS, AND ANY OTHER OBSTRUCTIONS ENCOUNTERED DURING INSTALLATION.
4. PRIOR TO INSTALLATION OF THE STEEL SOLDIER PILES, ALL DAMAGE (I.E. SCRATCHES, NICKS, CRACKS), ON THE HOT-DIP GALVANIZED STEEL SHALL BE REPAIRED IN ACCORDANCE WITH ASTM A780 ANNEX A2 "REPAIR USING ZINC-RICH PAINTS". THE ZINC-RICH PAINT SHALL CONFORM TO FEDERAL SPECIFICATION TT-P-641 TYPE 1 AND SHALL BE SPRAY APPLIED WITH A DRY FILM THICKNESS OF 4 TO 6 MILS.
5. CONCRETE SPACERS OR OTHER APPROVED NON-CORROSIVE SPACING DEVICES SHALL BE USED AT SUFFICIENT INTERVALS TO ENSURE PROPER VERTICAL ALIGNMENT OF THE SOLDIER PILES.
6. PRECAST CONCRETE PANELS SHALL BE INSTALLED BEHIND THE FRONT FLANGE OF THE SOLDIER PILES BETWEEN ADJACENT SOLDIER PILES TO SERVE AS THE PERMANENT RETAINING WALL. CRUSHED STONE (M2.01.2) SHALL BE USED TO FILL THE VOID BETWEEN THE PANEL AND THE SOLDIER PILES. ADDITIONALLY, PROVIDE A MIRAFI G100W DRAINAGE COMPOSITE BEHIND THE PRECAST CONCRETE PANEL.
7. BACKFILL AND COMPACT BEHIND THE PERMANENT SOLDIER PILE AND LAGGING WALL UP TO THE PROPOSED GRADE ELEVATION AS REQUIRED PER THE CONTRACT DOCUMENTS.
8. SEE SPECIAL PROVISION ITEM 996.4 FOR ADDITIONAL WALL REQUIREMENTS REGARDING TOLERANCES, STEEL PLACEMENT, AND DEFLECTION MONITORING.

SURVEY & MONITORING NOTES:

1. AFTER INSTALLATION OF SOLDIER PILES AND PRIOR TO THE START OF EXCAVATION AND/OR BACKFILLING, THE POSITION OF THE TOP OF EACH SOLDIER PILE SHALL BE SURVEYED IN THREE DIRECTIONS (VERTICAL, INTO EXCAVATION, AND OUT OF EXCAVATION). PILES SHALL BE SURVEYED AT LEAST THREE TIMES PRIOR TO EXCAVATION AND/OR BACKFILLING TO ESTABLISH A BASELINE.
2. MONITORING OF SOLDIER PILES SHALL BE PERFORMED DAILY FROM THE START OF EXCAVATION UNTIL EXCAVATION IS COMPLETE. UPON COMPLETION OF EXCAVATION, THE CONTRACTOR SHALL MONITOR SOLDIER PILES ONCE PER WEEK UNTIL EXCAVATION HAS BEEN BACKFILLED, UNLESS OTHERWISE DIRECTED BY MASSDOT.
3. STOP WORK IMMEDIATELY, NOTIFY MASSDOT, CHAPPELL ENGINEERING AND GZA GEOENVIRONMENTAL, INC., AND TAKE IMMEDIATE REMEDIAL ACTION IF EITHER OR BOTH VERTICAL OR LATERAL MOVEMENT OF THE EARTH SUPPORT SYSTEM EXCEEDS ONE INCH (1") OR TWO INCHES (2"), RESPECTIVELY.
4. THE MONITORING SCHEDULE PROVIDED ABOVE IS THE MINIMUM REQUIRED FREQUENCY. THE CONTRACTOR MAY ELECT TO PERFORM MORE FREQUENT MONITORING IF, IN HIS OPINION, IT IS REQUIRED FOR SAFE CONSTRUCTION OF THE EARTH SUPPORT SYSTEM AND NEW ABUTMENT CONSTRUCTION.

MATERIAL NOTES:

1. ALL STRUCTURAL STEEL W SECTIONS SHALL BE SIZED AS NOTED AND SHALL CONFORM TO ASTM A572, GR. 50, MIN.
    - 1.1. ALL STRUCTURAL STEEL SHALL BE HOT-DIPPED GALVANIZED UNLESS NOTED OTHERWISE.
    - 1.2. ALL PREVIOUSLY GALVANIZED STEEL ON WHICH IS DAMAGED SHALL BE APPROPRIATELY RE-COATED WITH GALVANIZING PAINT TO SATISFY THE INTENT OF THE ORIGINAL GALVANIZING PROCESS. A MINIMUM OF 1.5 TIMES THE AFFECTED AREA SHALL BE RE-COATED WITH APPROXIMATE CENTROID OF THE RE-COATED AREA COINCIDENTAL WITH THE APPROXIMATE CENTROID OF THE AFFECTED AREA.
2. AISC SPECIFICATION FOR "DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL", 15TH EDITION (ASD) AND AASHTO LRFD BRIDGE DESIGN MANUAL, DATED 2020. SHALL APPLY, EXCEPT AS MODIFIED BY THE DRAWINGS AND SPECIFICATIONS.
3. TORCH CUTTING SHALL NOT BE PERMITTED IN THE FIELD WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
4. REINFORCING BARS FOR PRECAST CONCRETE PANELS AND ASSOCIATED WORK SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60 AND SHALL BE UNCOATED, UNLESS NOTED OTHERWISE.
5. ALL PRECAST AND CAST-IN-PLACE CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH NOT LESS THAN 4,000 PSI (MIN.) UNLESS NOTED OTHERWISE. ALL CONCRETE SHALL BE NORMAL WEIGHT (150 PCF). AGGREGATE SIZE SHALL NOT BE LARGER THAN AS NOTED IN SPECIFICATIONS. FOR ADDITIONAL REQUIREMENTS, REFER TO APPROPRIATE SPECIFICATIONS. LEVELING NON-SHRINK GROUT SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH NOT LESS THAN 3,000 PSI (MIN.)
    - 5.1. PRECAST MANUFACTURER TO DESIGN AND SUPPLY ALL DOWELS, ANGLES, BRACES, PLATES AND MISCELLANEOUS METALS TO SUPPORT PRECAST ON STRUCTURAL STEEL, CONCRETE, OR OTHER PRECAST CONCRETE.
    - 5.2. ALL BOLTS, INSERTS, PLATES AND STEEL PIECES, WHICH ARE EXPOSED TO WEATHER, SHALL BE GALVANIZED.
6. UNLESS OTHERWISE NOTED, ANY SUBSTITUTIONS OF STRUCTURAL SHAPES, ELEMENTS, CONNECTIONS, OR DETAILS SHALL BE APPROVED BY GZA IN WRITING PRIOR TO USE.
7. THE USE OF PRESSURE-TREATED TIMBER LAGGING, STARTING FROM THE TOP AND PROGRESSING TO THE BOTTOM OF THE WALL., MAY BE NEEDED FOR THE EXCAVATION TO REMAIN STABLE. A FILTER FABRIC SHALL BE ATTACHED TO THE BACK OF THE LAGGING TO PREVENT SOIL RAVELING BETWEEN LAGGING BOARDS.
8. DAMPROOFING SHALL BE PLACED TO THE BACKSIDE OF EACH PRECAST PANEL SECTION. THE DRAINAGE MAT SHALL MEET THE REQUIREMENTS IN ITEM 996.5.
9. MECHANICAL ANCHOR SHALL BE MADE OF STAINLESS STEEL, SUITABLE AND RATED FOR USE OUTDOORS, IN UNCRACKED CONCRETE/ROCK, MEETING THE MINIMUM SIZE AND GRADE SHOWN HEREIN.

May 30, 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

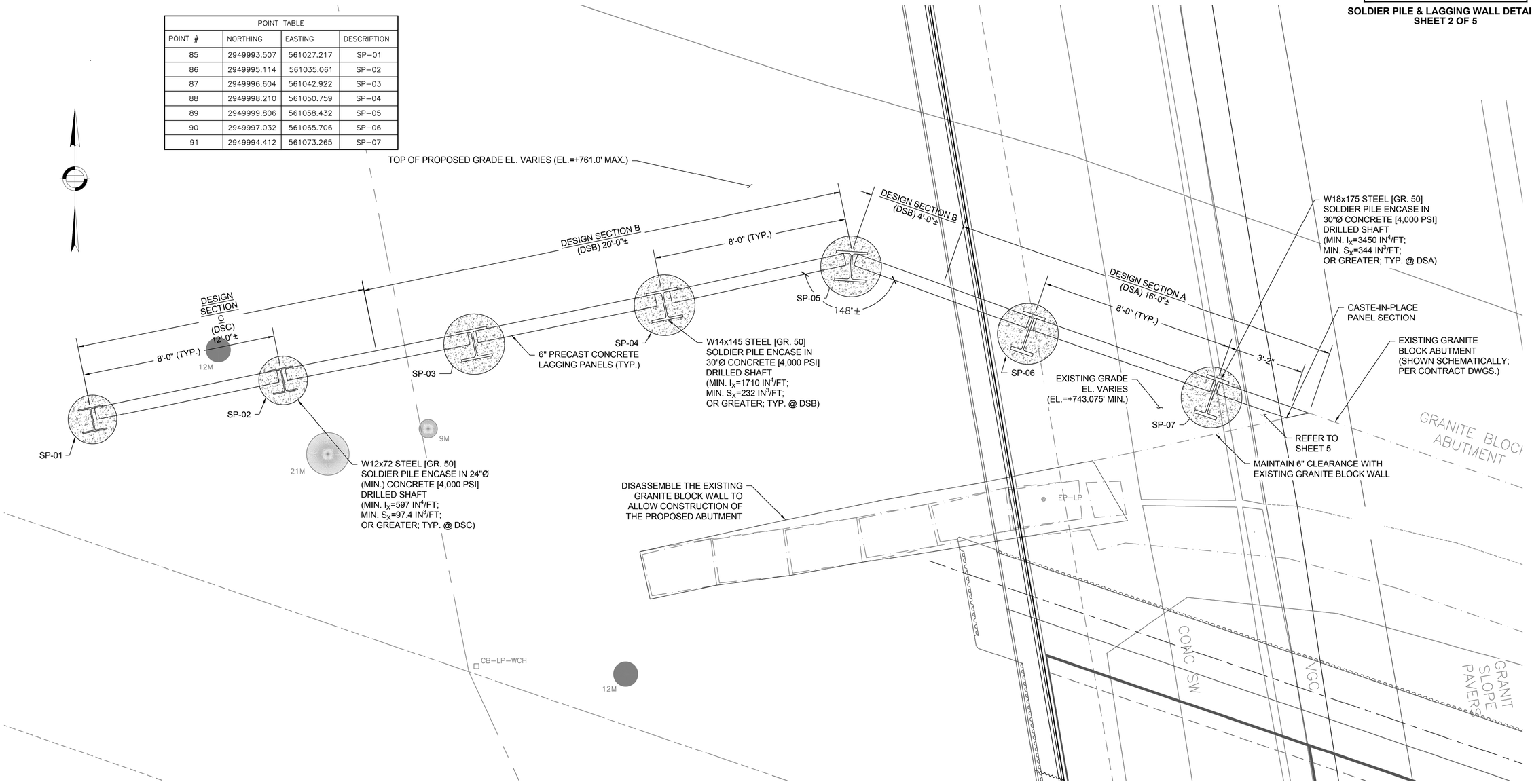
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	43	81
PROJECT FILE NO.	612190		

SOLDIER PILE & LAGGING WALL DETAILS
SHEET 2 OF 5

POINT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
85	2949993.507	561027.217	SP-01
86	2949995.114	561035.061	SP-02
87	2949996.604	561042.922	SP-03
88	2949998.210	561050.759	SP-04
89	2949999.806	561058.432	SP-05
90	2949997.032	561065.706	SP-06
91	2949994.412	561073.265	SP-07



RETAINING WALL PLAN VIEW

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

May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

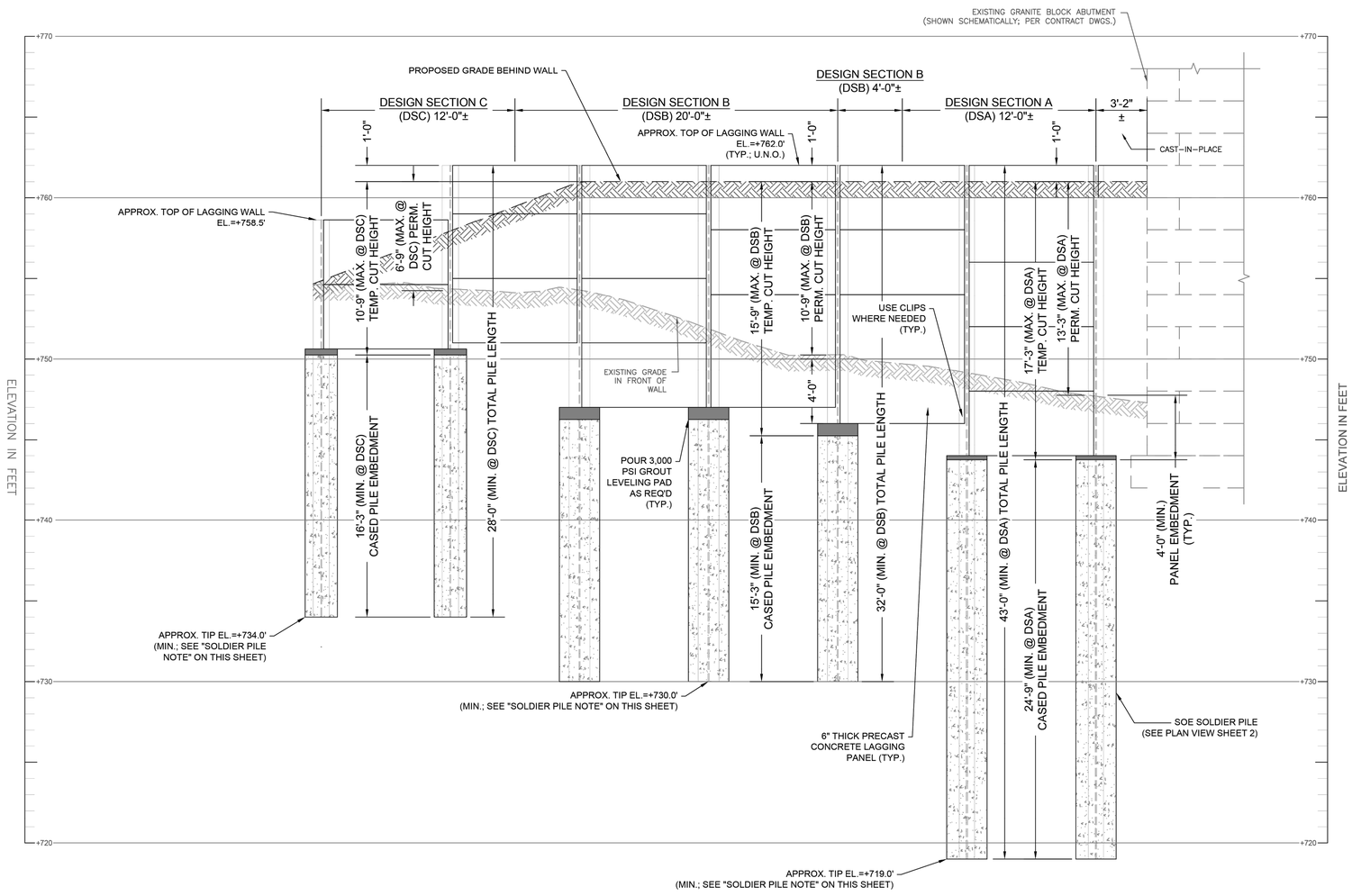
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

612190_BR (RET_WALL).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	44	81
	PROJECT FILE NO. 612190		

SOLDIER PILE & LAGGING WALL DETAILS
SHEET 3 OF 5



RETAINING WALL ELEVATION

SCALE: $\frac{1}{4}$" = 1'–0"

SOLDIER PILE NOTES:

1. PILES SHALL BE INSTALLED TO THE MIN. TOE EMBEDMENT AND MIN. TIP ELEVATION SHOWN IF BEDROCK IS NOT ENCOUNTERED. IF BEDROCK IS ENCOUNTERED, SOLDIER PILES SHALL BE INSTALLED TO A MIN. EMBEDMENT DEPTH OF 5'-0" BELOW THE TOP OF THE ENCOUNTERED BEDROCK.
2. SHEET REFERENCES TO SOLDIER PILE & LAGGING WALL DETAILS SHEETS 1 THROUGH 5.
3. REFER TO MINIMUM DRILLED SHAFT DIAMETERS ON SHEET 2.

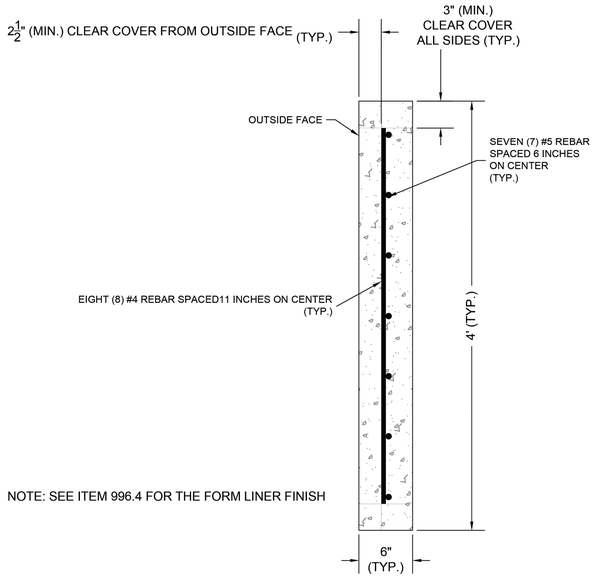
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612190 Final Structural Submittal (SF) 30-May-2026

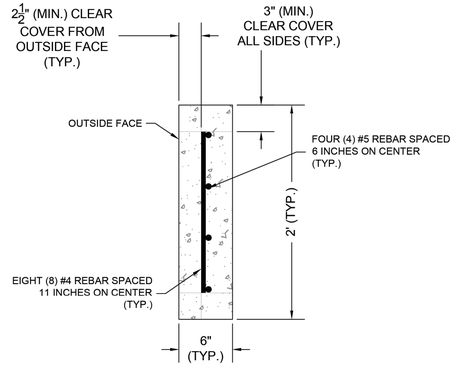
HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	45	81
	PROJECT FILE NO. 612190		

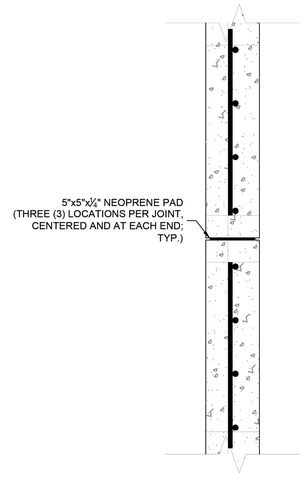
SOLDIER PILE & LAGGING WALL DETAILS
SHEET 4 OF 5



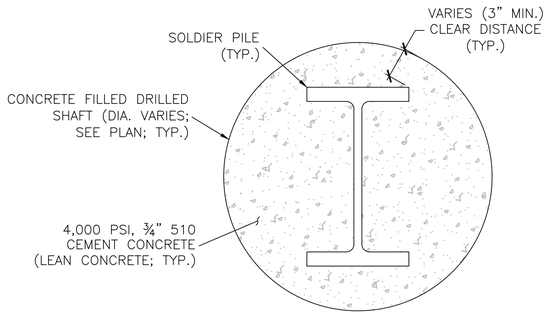
1/4 **4'-0" TALL WALL PANEL TYPICAL SECTION**
SCALE: 1-1/2"=1'-0"



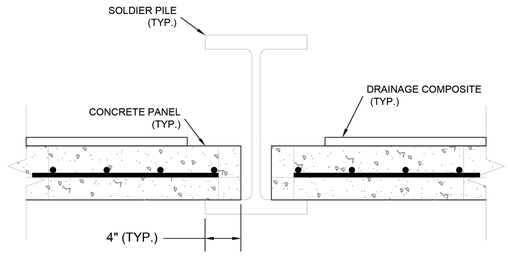
2/4 **2'-0" TALL WALL PANEL TYPICAL SECTION**
SCALE: 1-1/2"=1'-0"



3/4 **PANEL JOINT DETAIL**
SCALE: 1-1/2"=1'-0"



4/4 **DRILLED SHAFT TYPICAL SECTION**
SCALE: 1-1/2"=1'-0"



4/5 **CONCRETE PANEL SOLDIER PILE OVERLAP DETAIL**
SCALE: 1-1/2"=1'-0"

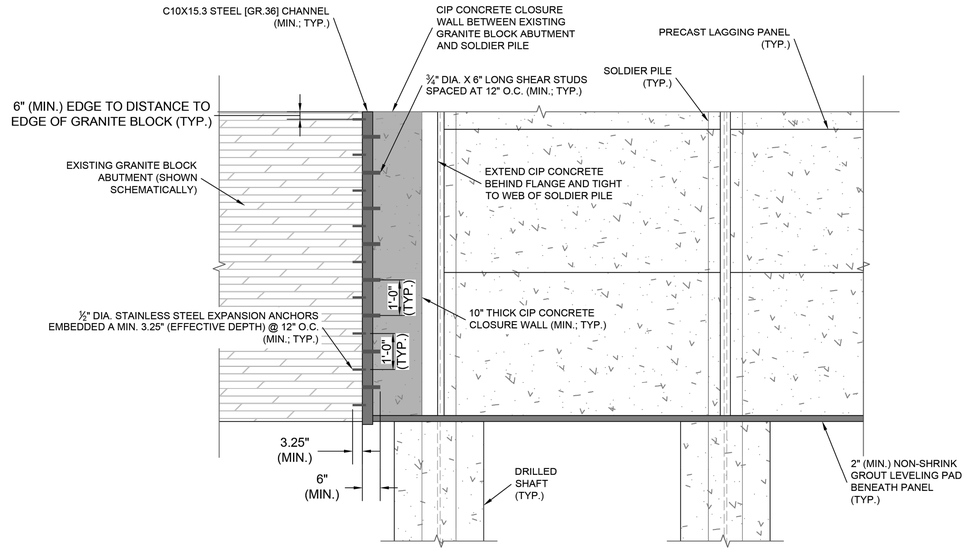
May 30, 2026	ISSUED FOR CONSTRUCTION
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USE ONLY PRINTS OF LATEST DATE	

612190_BR (RET_WALL).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	46	81
	PROJECT FILE NO. 612190		

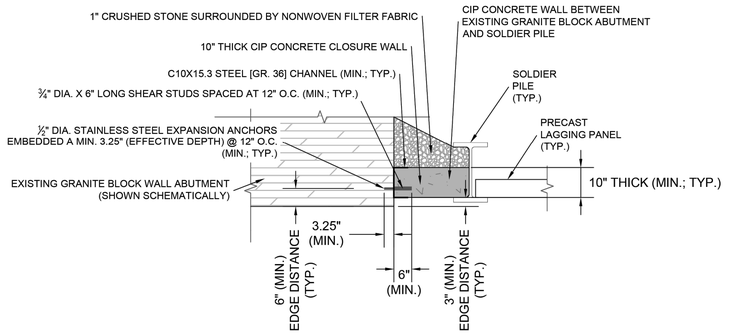
SOLDIER PILE & LAGGING WALL DETAILS
SHEET 5 OF 5



CONNECTION DETAIL - ROCK DOWELS AT EXISTING GRANITE BLOCK ABUTMENT (ELEVATION)

1/5

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



NOTE:

1. PRECAST PANEL REINFORCING NOT SHOWN FOR CLARITY. REFER TO DETAILS ON SHEET 4.
2. CIP CONCRETE CLOSURE WALL REBAR SHALL CONSIST OF #5 BAR SPACED AT 8" O.C. HORIZONTALLY AND #4 BAR SPACED AT 12" VERTICALLY. PROVIDE 3" (MIN.) CLEAR COVER ON ALL SIDES AND 2.5" (MIN.) COVER TO FRONT AND REAR FACES.
3. CHIP OUT GRANITE BLOCK WALL TO ALLOW FOR 6" CLEARANCE WITH DRILLED SHAFT.

CONNECTION DETAIL - ROCK DOWELS AT EXISTING GRANITE BLOCK ABUTMENT (ELEVATION)

2/5

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

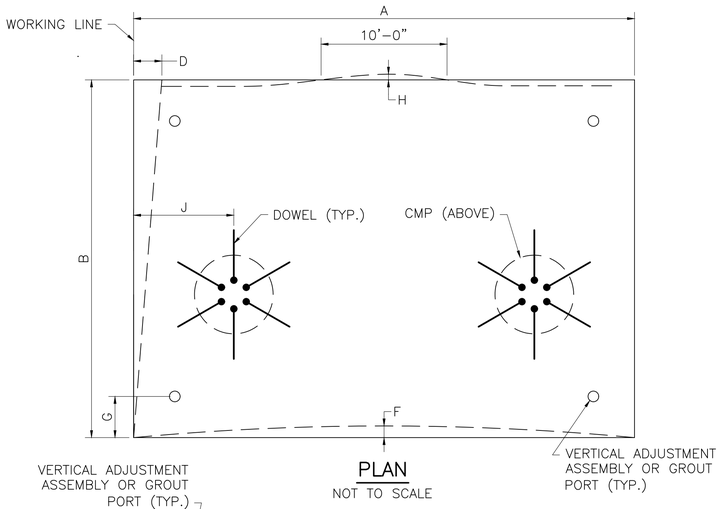
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612190 Final Structural Submittal (SF) 30-May-2026

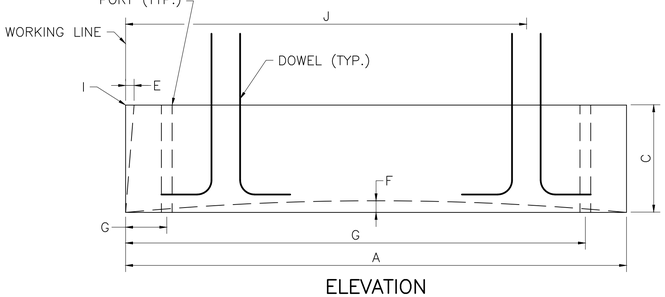
HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	47	81
	PROJECT FILE NO. 612190		

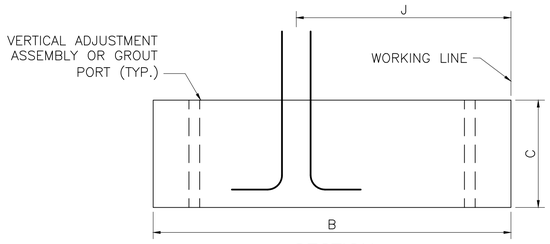
PRECAST TOLERANCE DETAILS



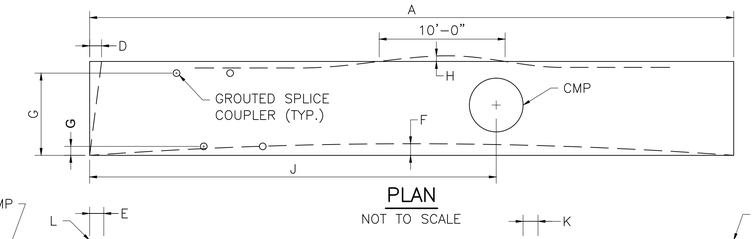
PLAN
NOT TO SCALE



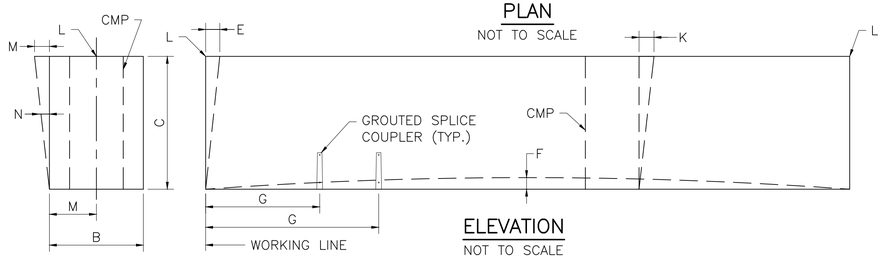
ELEVATION
NOT TO SCALE



SECTION
NOT TO SCALE

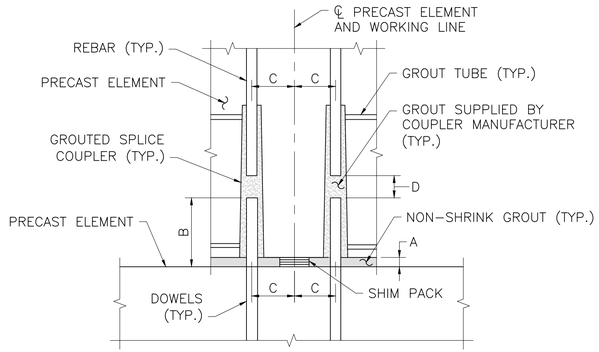


PLAN
NOT TO SCALE



ELEVATION
NOT TO SCALE

SECTION
NOT TO SCALE



GROUTED SPLICE COUPLER DETAILS
NOT TO SCALE

FOOTING FABRICATION TOLERANCES

A	LENGTH (OVERALL)	$\pm\frac{1}{2}$"
B	WIDTH (OVERALL)	$\pm\frac{1}{4}$"
C	DEPTH (OVERALL)	$\pm\frac{1}{4}$"
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	$\pm\frac{1}{8}$" PER 12" WIDTH $\pm\frac{1}{2}$" MAXIMUM
E	VARIATION FROM SPECIFIED ELEVATION END SQUARENESS OR SKEW	$\pm\frac{1}{8}$" PER 12" WIDTH $\pm\frac{1}{2}$" MAXIMUM
F	SWEEP OVER MEMBER LENGTH	$\pm\frac{1}{2}$"
G	LOCATION OF LEVELING DEVICE OR GROUT PORT MEASURED FROM A WORKING LINE	±2"
H	LOCAL SMOOTHNESS OF ANY SURFACE	$\pm\frac{1}{8}$" IN 10 FEET
J	LOCATION OF PROJECTING DOWELS MEASURED FROM A WORKING LINE	±1"

FOOTING ERECTION TOLERANCES

I	ERECTION ELEVATION TOLERANCE	$\pm\frac{1}{4}$"

WALL ELEMENTS ERECTION TOLERANCES

L	ACTUAL ELEVATION FROM SPECIFIED ELEVATION MAXIMUM LOW MAXIMUM HIGH	 $\frac{1}{2}$" $\frac{1}{4}$"
M	MAXIMUM PLUMB VARIATION OVER HEIGHT OF PANEL	$\frac{1}{2}$"
N	PLUMB IN ANY 10 FEET OF PANEL HEIGHT	$\frac{1}{4}$"

WALL ELEMENTS FABRICATION TOLERANCES

A	LENGTH (OVERALL)	$\pm\frac{1}{4}$"
B	WIDTH (OVERALL)	$\pm\frac{1}{4}$"
C	DEPTH (OVERALL)	$\pm\frac{1}{4}$"
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	$\pm\frac{1}{8}$"PER 12 INCH WIDTH $\pm\frac{1}{2}$"MAXIMUM
E	VARIATION FROM SPECIFIED ELEVATION END SQUARENESS OR SKEW	$\pm\frac{1}{8}$"PER 12 INCH WIDTH $\pm\frac{1}{2}$"MAXIMUM
F	SWEEP OVER MEMBER LENGTH	$\pm\frac{3}{8}$"
G	LOCATION OF GROUTED SPLICE COUPLER MEASURED FROM A WORKING LINE	$\pm\frac{1}{4}$"
H	LOCAL SMOOTHNESS OF ANY SURFACE	$\pm\frac{1}{4}$" IN 10 FEET
J	LOCATION OF BLOCKOUT FOR PILES OR VOIDS	±1"
K	MAXIMUM PLUMB VARIATION OVER HEIGHT OF CMP VOID	$\pm\frac{1}{2}$"

NOTES:

1. USE MATCHING TEMPLATES FOR THE LOCATION OF REINFORCEMENT AND GROUTED SPLICE COUPLER PLACEMENT WITHIN THE ELEMENTS TO CONTROL THE CRITICAL DIMENSION "C".
2. CONSULT MANUFACTURER OF THE GROUTED SPLICE COUPLER FOR PROPER DIMENSIONS "B" AND "D" AND FOR TOLERANCES ON THESE AND ALL DIMENSIONS.
3. BEFORE EXECUTING GROUTED SPLICE COUPLER ASSEMBLIES, ALWAYS SEEK INSTALLATION RECOMMENDATIONS FROM THE MANUFACTURER OF THE GROUTED SPLICE COUPLER USED.

GROUTED SPLICE COUPLER INSTALLATION TOLERANCES

A	SHIM PACK HEIGHT	$1\frac{1}{4}$" ± $\frac{5}{8}$"
B	DOWEL HEIGHT	CONSULT MANUFACTURER
C	LOCATION OF REINFORCING, GROUTED SPLICE COUPLER, AND DOWELS MEASURED FROM A WORKING LINE	$\pm\frac{1}{4}$"
D	GAP BETWEEN DOWELS AND REINFORCING	CONSULT MANUFACTURER

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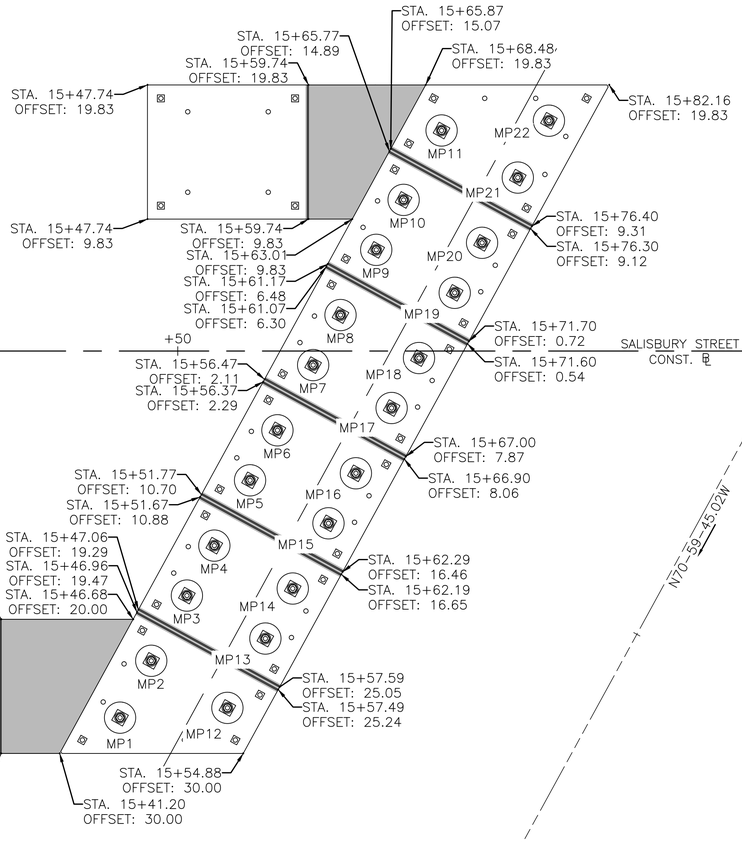
612190_BR8-10 (SECTIONS).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	48	81
	PROJECT FILE NO. 612190		

FOOTING PLAN AND DETAILS
SHEET 1 OF 2

PILE LOCATION TABLE			
PILE NO.		NORTHING	EASTING
MP1		2950059.0755	561052.8270
MP2		2950057.5016	561057.3969
MP3		2950055.6970	561062.6365
MP4		2950054.3131	561066.6549
MP5		2950052.5074	561071.8976
MP6		2950051.1235	561075.9159
MP7		2950049.3179	561081.1586
MP8		2950047.9339	561085.1769
MP9		2950046.1293	561090.4166
MP10		2950044.7454	561094.4349
MP11		2950042.8255	561100.0094
MP12		2950051.3136	561054.8911
MP13		2950049.3937	561060.5646
MP14		2950048.0098	561064.4840
MP15		2950046.2041	561069.7266
MP16		2950044.8202	561073.74.50
MP17		2950043.0146	561078.9877
MP18		2950041.6306	561083.0060
MP19		2950039.8260	561088.2456
MP20		2950038.4421	561092.2640
MP21		2950036.6375	561097.5036
MP22		2950035.0636	561102.0735
MP23		2949995.4555	561048.6413
MP24		2949993.3185	561054.8461
MP25		2949992.3249	561060.3650
MP26		2949991.8509	561065.2491
MP27		2949990.0463	561070.4887
MP28		2949988.4819	561075.0311
MP29		2949986.6773	561080.2707
MP30		2949985.1129	561084.8130
MP31		2949983.3083	561090.0526
MP32		2949981.7439	561094.5949
MP33		2949979.9393	561099.8345
MP34		2949978.3749	561104.3769
MP35		2949976.5703	561109.6165
MP36		2949974.3088	561113.9187
MP37		2949971.3104	561118.7471
MP38		2949969.7907	561123.1594
MP39		2949967.8739	561128.7250
MP40		2949991.0432	561047.1217
MP41		2949988.9062	561053.3265
MP42		2949987.1016	561058.5661
MP43		2949985.5476	561063.0782
MP44		2949983.7430	561068.3178
MP45		2949982.1786	561072.8601
MP46		2949980.3740	561078.0998
MP47		2949978.8096	561082.6421
MP48		2949977.0050	561087.8817
MP49		2949975.4406	561092.4240
MP50		2949973.6360	561097.6636
MP51		2949972.0716	561102.2059
MP52		2949970.2670	561107.4456
MP53		2949968.7026	561111.9879
MP54		2949966.8981	561117.2275
MP55		2949965.3784	561121.6398
MP56		2949963.4616	561127.2053



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

REQUIRED PILE LOCATION TOLERANCES:

1. CONFORMANCE TO THE FOLLOWING TOLERANCES IS OF EXTERME IMPORTANCE TO FOUNDATIONS OF THIS TYPE.
2. PRIOR TO DRILLING, EACH ABUTMENT MICROPILE SHALL BE HELD BY TEMPLATE TO WITHIN 1" OF PLAN LOCATION.
3. AFTER EACH ABUTMENT MICROPILE IS DRILLED, THE TOP OF THE MICROPILE SHALL BE WITHIN 3" OF PLAN LOCATION.

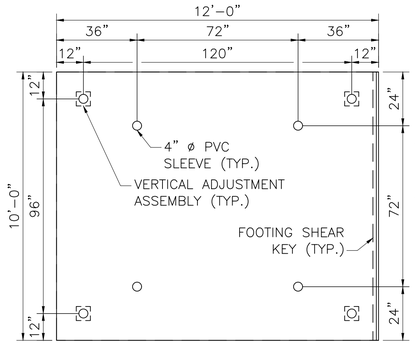
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USE ONLY PRINTS OF LATEST DATE	

612190_BR11-12 (FOOTING PLAN).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

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MA	HIP(NGB)-003S(963)X	49	81
	PROJECT FILE NO. 612190		

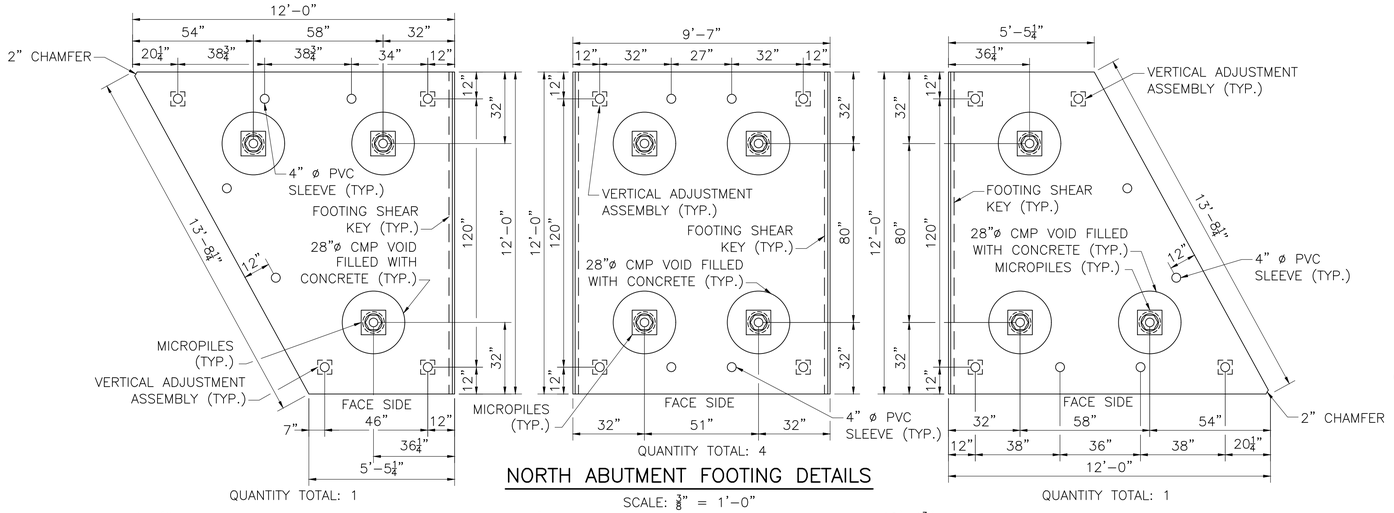
FOOTING PLAN AND DETAILS
SHEET 2 OF 2



QUANTITY TOTAL: 2

NORTH WINGWALL FOOTING DETAILS

SCALE: $\frac{3}{8}$" = 1'–0"



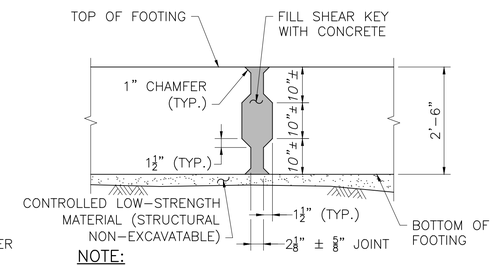
QUANTITY TOTAL: 1

QUANTITY TOTAL: 4

NORTH ABUTMENT FOOTING DETAILS

SCALE: $\frac{3}{8}$" = 1'–0"

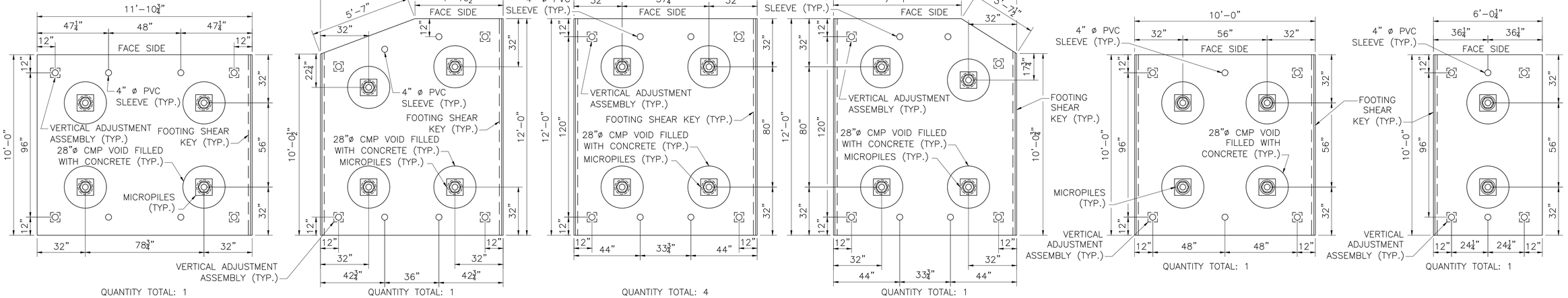
QUANTITY TOTAL: 1



NOTE:
FOOTING REINFORCEMENT IS NOT SHOWN FOR CLARITY.

SECTION THRU SHEAR KEY

SCALE: 1" = 1'–0"



QUANTITY TOTAL: 1

QUANTITY TOTAL: 1

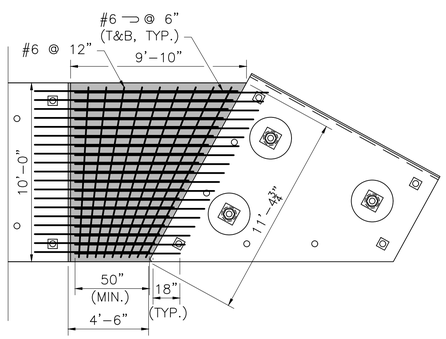
QUANTITY TOTAL: 4

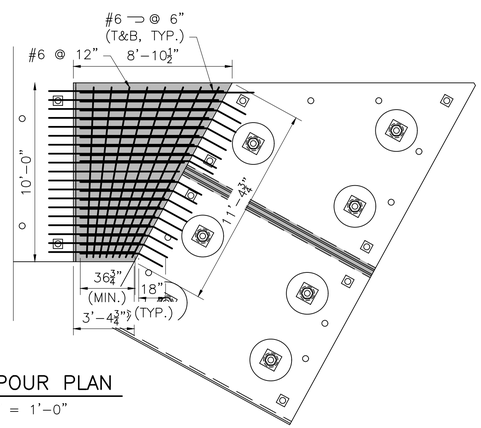
QUANTITY TOTAL: 1

QUANTITY TOTAL: 1

SOUTH ABUTMENT & WINGWALL FOOTING DETAILS

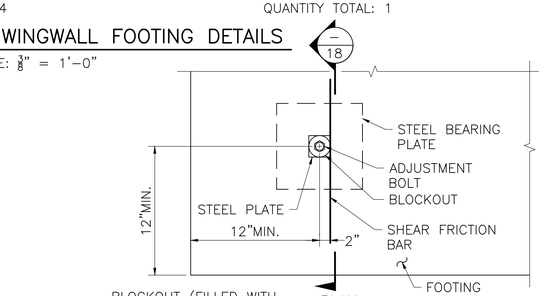
SCALE: $\frac{3}{8}$" = 1'–0"

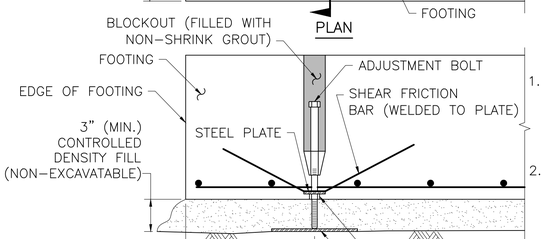




CLOSURE POUR PLAN

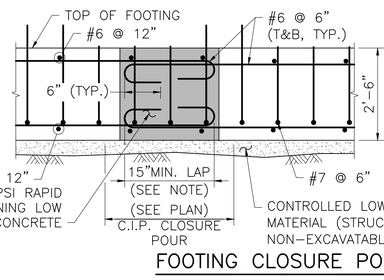
SCALE: $\frac{1}{4}$" = 1'–0"





VERTICAL ADJUSTMENT ASSEMBLY

SCALE: 1" = 1'–0"



NOTE:
MECHANICAL REINFORCING BAR SPLICERS MAY BE USED IN LIEU OF THE EXTENDED REINFORCEMENT.

FOOTING CLOSURE POUR

NOT TO SCALE

VERTICAL ADJUSTMENT NOTES:

1. THE VERTICAL ADJUSTMENT ASSEMBLY SHOWN IS CONCEPTUAL. DESIGN OF THE VERTICAL ADJUSTMENT ASSEMBLY SHALL BE PERFORMED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
2. VERTICAL ADJUSTMENT ASSEMBLIES CONSISTING OF ADJUSTMENT BOLTS SHALL BE NON–COATED AND THE REINFORCING STEEL WHERE APPLICABLE SHALL CONFORM TO ASTM A706 FOR WELDING.
3. ADJUSTMENT BOLTS SHALL BE REMOVED PRIOR TO PLACEMENT OF NON–SHRINK GROUT.

May 30, 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

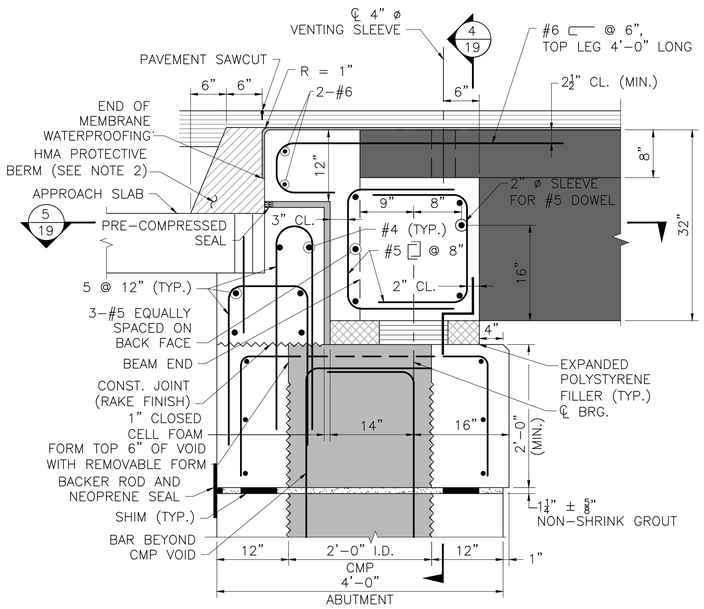
612190_BR11-12 (FOOTING PLAN).DWG Plotted on 21-May-2026 1:44 PM

612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

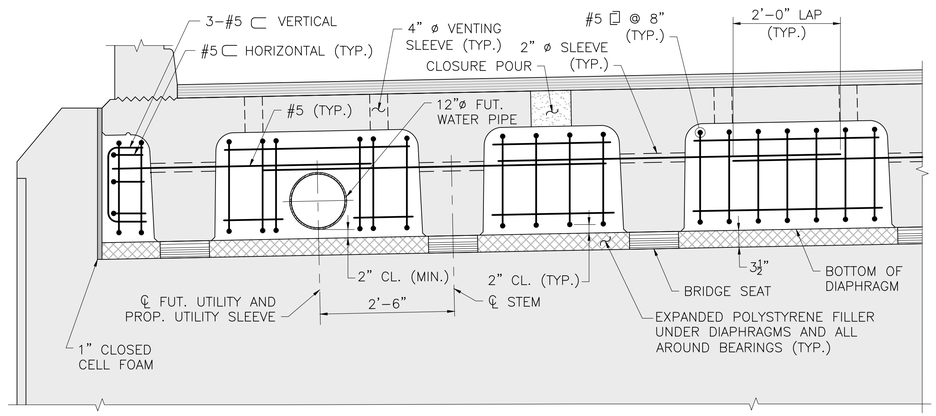
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	50	81
	PROJECT FILE NO. 612190		

ABUTMENT AND WINGWALL DETAILS

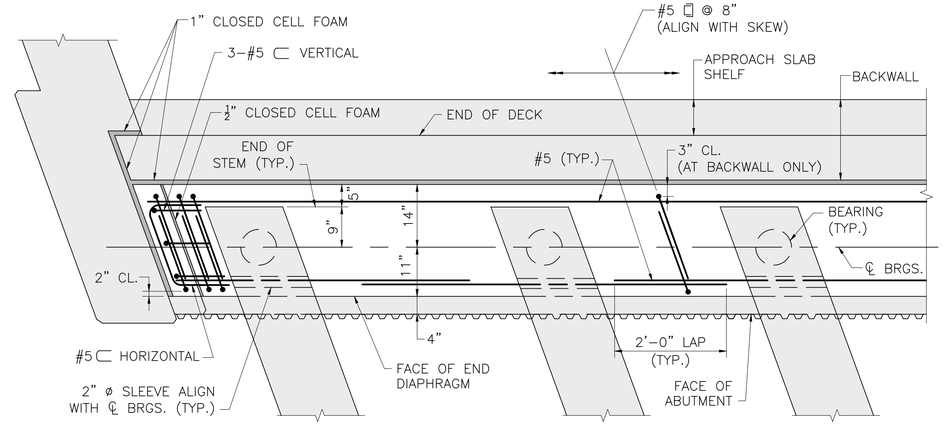


ROADWAY SECTION AT ABUTMENT WITH PAVEMENT SAWCUT

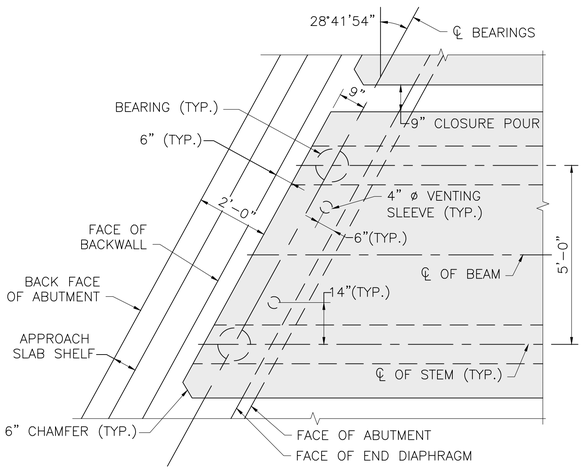
SCALE: 1" = 1'–0"



SECTION 4 / 19
NOT TO SCALE

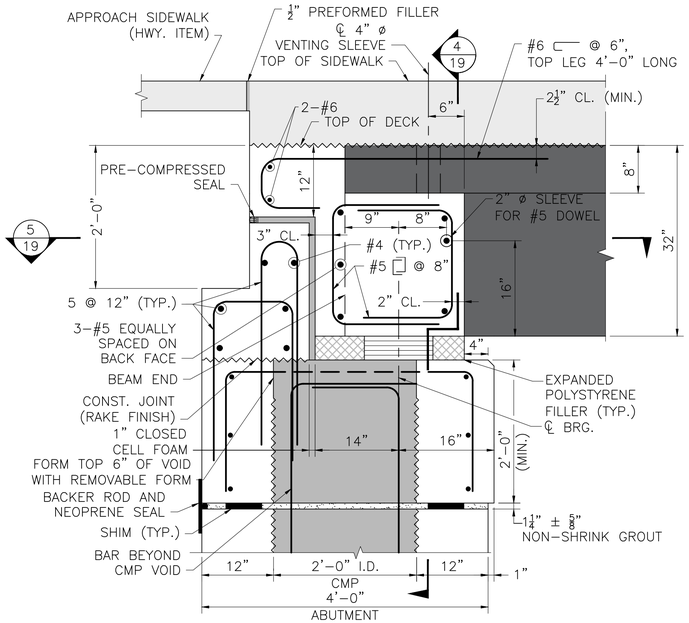


SECTION 5 / 19
NOT TO SCALE



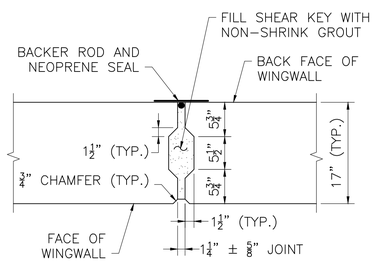
END OF BEAM PLAN AT ABUTMENT

SCALE: ½" = 1'–0"



SIDEWALK SECTION AT ABUTMENT WITH PAVEMENT SAWCUT

SCALE: 1" = 1'–0"

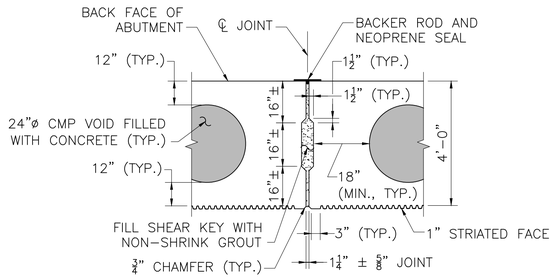


NOTE:

REINFORCEMENT IS NOT SHOWN FOR CLARITY.

SECTION THRU WINGWALL SHEAR KEY

NOT TO SCALE



NOTE:

REINFORCEMENT IS NOT SHOWN FOR CLARITY.

SECTION THRU ABUTMENT SHEAR KEY

NOT TO SCALE

1. ALL REINFORCEMENT SHALL BE COATED.
2. 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.
3. THE BACKWALL AND CURTAIN WALL CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE END DIAPHRAGM CONCRETE (5000 PSI HIGH EARLY STRENGTH CEMENT CONCRETE).
4. PRIOR TO PLACING END DIAPHRAGM CONCRETE, CLOSED CELL FOAM OF THE SPECIFIED THICKNESS SHALL BE ATTACHED WITH ADHESIVE TO ALL SURFACES OF THE BACKWALL, KEEPER BLOCKS, AND CURTAIN WALLS AS SHOWN ON THE CONSTRUCTION DRAWINGS. THE BOTTOM OF THE END DIAPHRAGM SHALL BE FORMED BY PLACING EXPANDED POLYSTYRENE FILLER OF THE REQUIRED THICKNESS ON THE BRIDGE SEAT AND TUCKING IT UNDER THE BEAM BOTTOM FLANGES. THE CONTRACTOR SHALL MAKE SURE THAT THE CLOSED CELL FOAM AND EXPANDED POLYSTYRENE FILLER HAVE BEEN PROPERLY AND SECURELY INSTALLED SO THAT THE END DIAPHRAGM CONCRETE SHALL NOT COME IN DIRECT CONTACT WITH THE ABUTMENT CONCRETE.
5. FLANGE REINFORCEMENT NOT SHOWN FOR CLARITY.

May 30, 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

612190_BR13 (ABUTMENT_DETAILS).DWG Plotted on 21-May-2026 1:44 PM

612190 Final Structural Submittal (SF) 30-May-2026

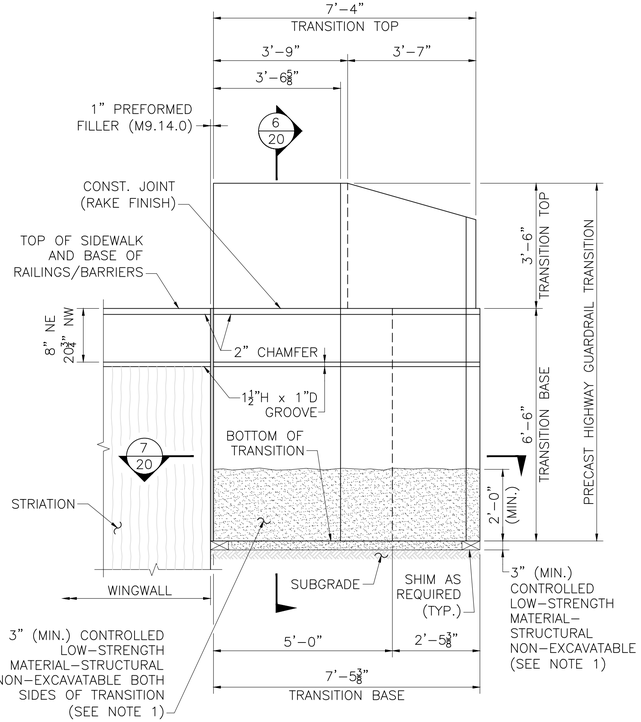
HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	51	81
PROJECT FILE NO.	612190		

HIGHWAY GUARDRAIL TRANSITION DETAILS

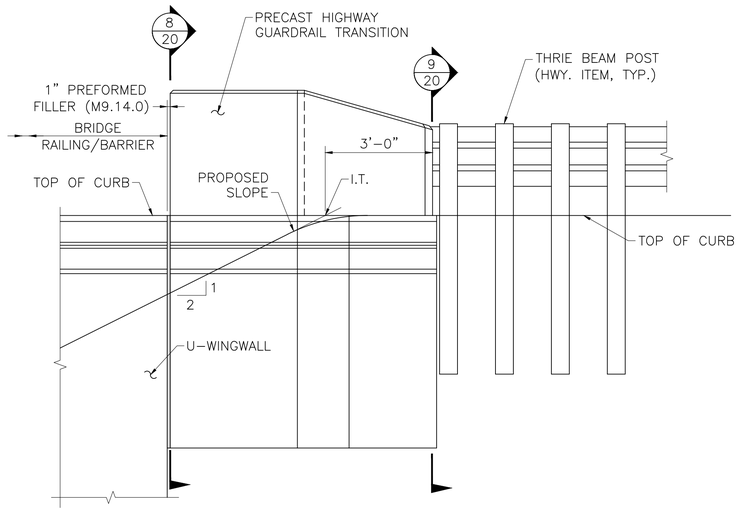
NOTES:

1. GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE 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.
2. CONTRACTOR SHALL SET THE PRECAST GUARDRAIL TRANSITION TO THE REQUIRED ELEVATION AND ALIGNMENT, AND BACKFILL GUARDRAIL TRANSITION WITH CONTROLLED LOW–STRENGTH MATERIAL–STRUCTURAL–NON–EXCAVATABLE TO THE ELEVATION SHOWN.
3. BACKFILL THE REMAINDER OF EXCAVATION WITH GRAVEL BORROW, WHICH SHALL BE THOROUGHLY COMPACTED IN 12" LIFTS.



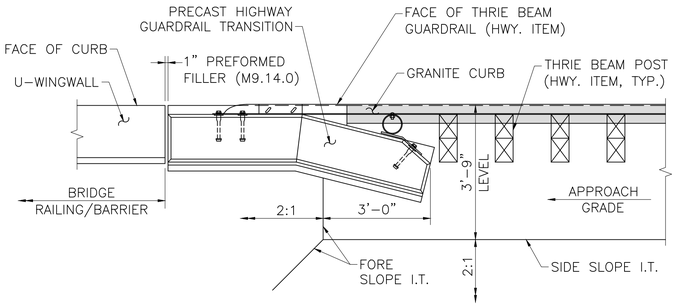
PRECAST GUARDRAIL TRANSITION ELEVATION AT U–WINGWALL

SCALE: ½" = 1'–0"



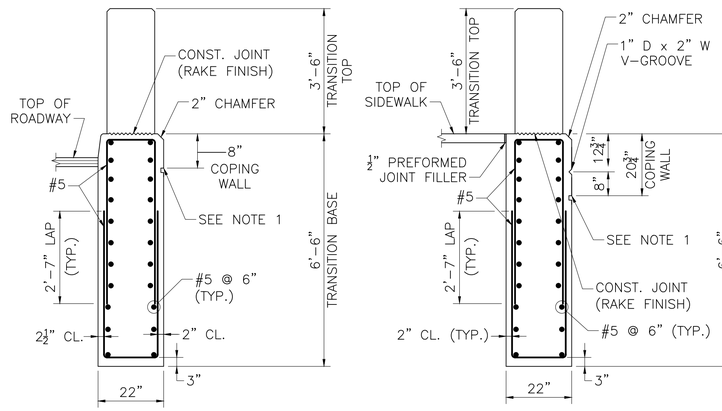
GRADING REQUIREMENTS ELEVATION

SCALE: 1" = 1'–0"



GRADING REQUIREMENTS PLAN

SCALE: 1" = 1'–0"



SECTION 6/20

SCALE: ½" = 1'–0"

NOTES:

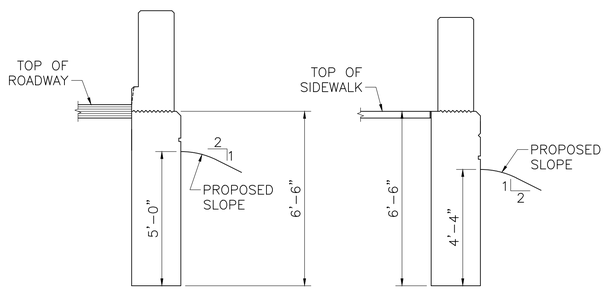
1. 1½" H x 1" D GROOVE. ALIGN WITH GROOVE AT TOP OF STRIATIONS.
2. REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

NOTE:

WINGWALL REINFORCEMENT AND STRIATIONS NOT SHOWN FOR CLARITY.

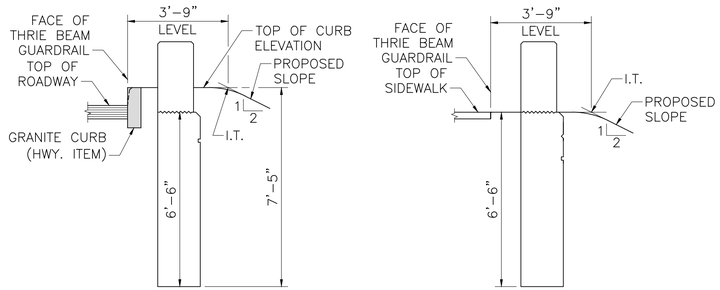
SECTION 7/20

SCALE: ½" = 1'–0"



SECTION 8/20

SCALE: ⅜" = 1'–0"



SECTION 9/20

SCALE: ⅜" = 1'–0"

May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

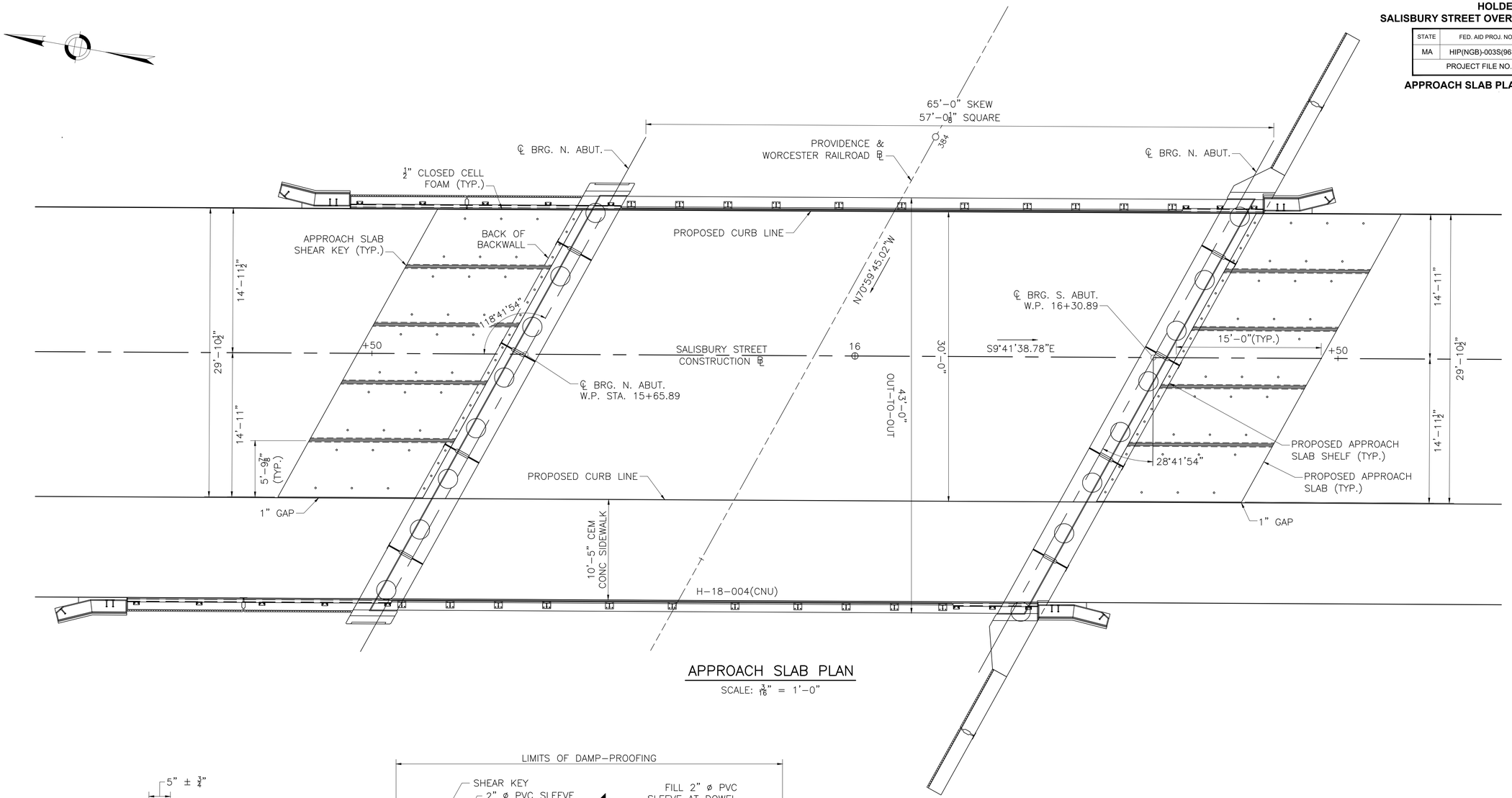
612190_BR14 (PRECASTHGT).DWG Plotted on 21-May-2026 1:44 PM

612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

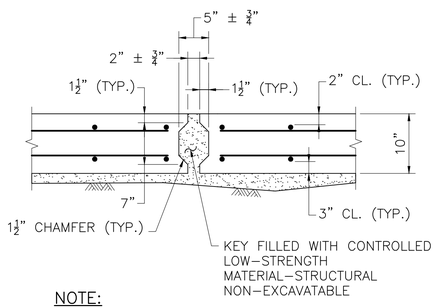
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	52	81
PROJECT FILE NO.	612190		

APPROACH SLAB PLAN AND DETAILS



APPROACH SLAB PLAN

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

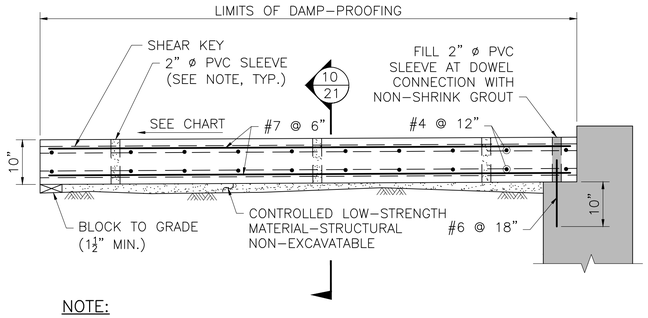


NOTE:

ALL SHEAR KEYS SHALL HAVE AN EXPOSED AGGREGATE FINISH.

SECTION 10/21

SCALE: ¾" = 1'-0"



NOTE:

PVC SLEEVES TO BE INCLUDED IN APPROACH SLABS TO FACILITATE PLACEMENT OF CONTROLLED LOW-STRENGTH MATERIAL-STRUCTURAL NON-EXCAVATABLE.

APPROACH SLAB DETAILS

SCALE: ¾" = 1'-0"

APPROACH SLAB SLOPES	
	SLOPE (%)
NORTHSIDE	3%
SOUTHSIDE	2%

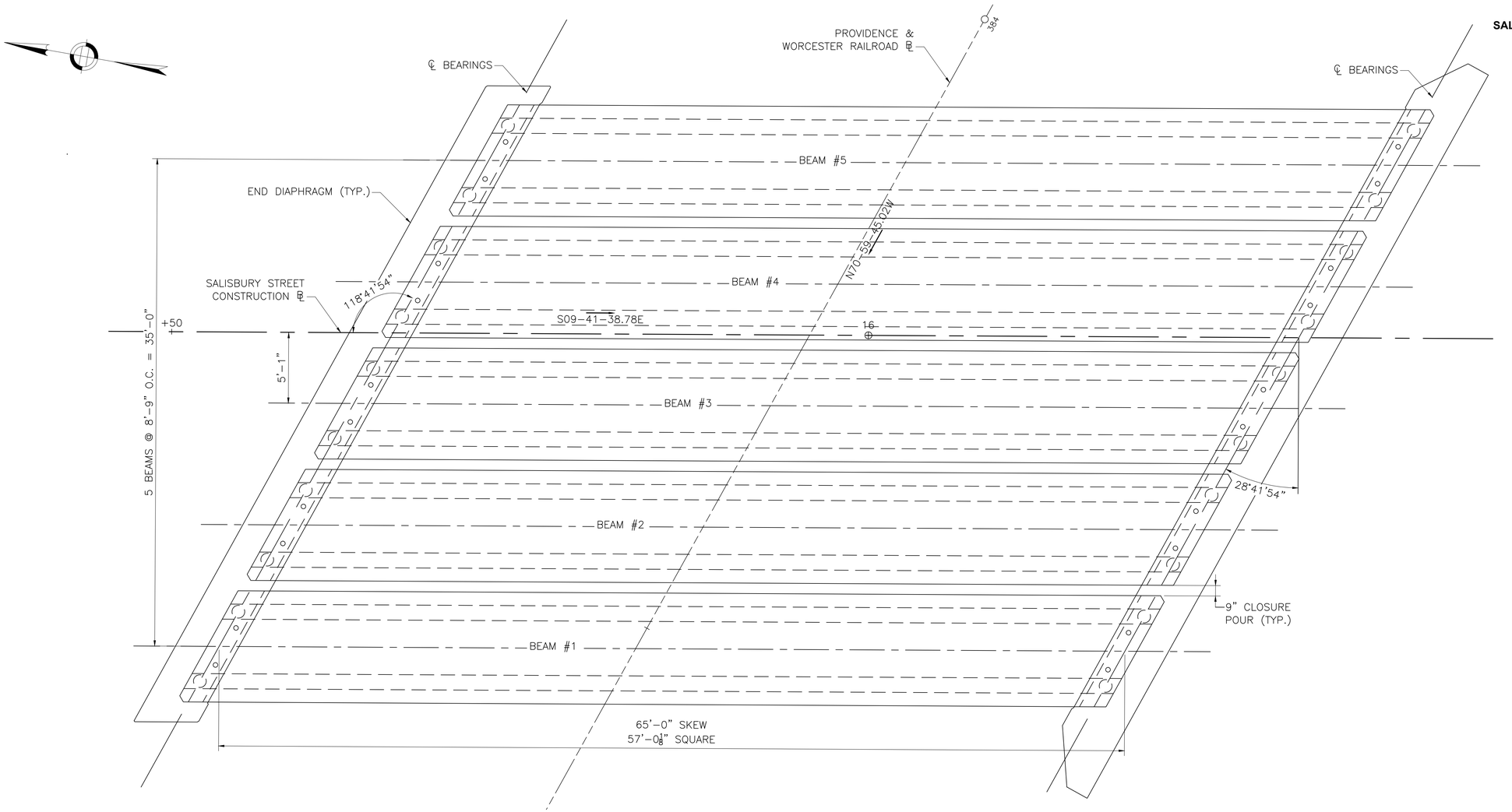
May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

612190_BR16 (APPROACH).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	53	81
	PROJECT FILE NO. 612190		

FRAMING PLAN



FRAMING PLAN
SCALE: ¼" = 1'-0"

ESTIMATED CAMBER AND DEFLECTIONS AT MIDSPAN (INCHES)						
STATE OF BEAM	DIRECTION	BEAM #1	BEAM #2	BEAM #3	BEAM #4	BEAM #5
CAMBER AT TRANSFER (2)	UP	1.908	1.734	1.734	1.734	1.734
CAMBER AT ERECTION	UP	3.384	3.071	3.071	3.071	3.071
FINAL NCDL DEFLECTION (3)	DOWN	0	0	0	0	0
FINAL CDL DEFLECTION (3)	DOWN	2.304	1.699	1.223	1.266	1.180

NOTES:

1. CAMBER AND DEFLECTIONS IN THE TABLE ARE NOT GUARANTEED AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
2. THE BEAM CONCRETE MODULUS OF ELASTICITY AT TRANSFER USED IN THE ABOVE BEAM CAMBER IS ASSUMED TO BE 8000 PSI.
3. THE BEAM CONCRETE MODULUS OF ELASTICITY USED IN THE ABOVE BEAM DEFLECTION IS ASSUMED TO BE 10,000 PSI (AT 28 DAYS).

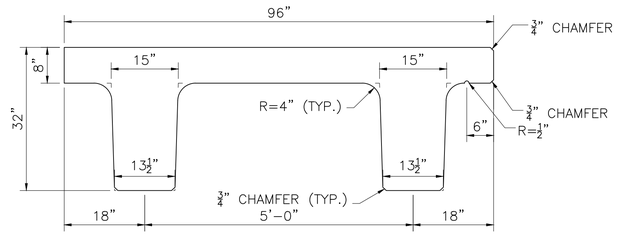
May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

612190_BR17 (FRAMING PLAN).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

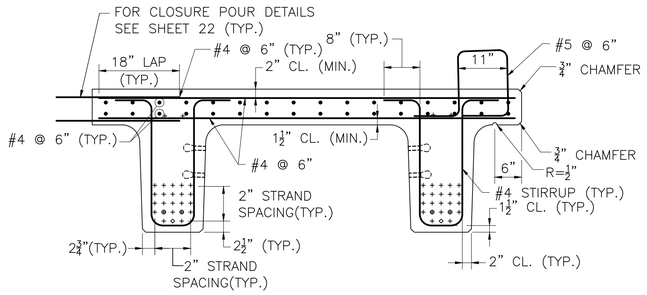
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	54	81
	PROJECT FILE NO. 612190		

NEXT D BEAM DETAILS
SHEET 1 OF 4



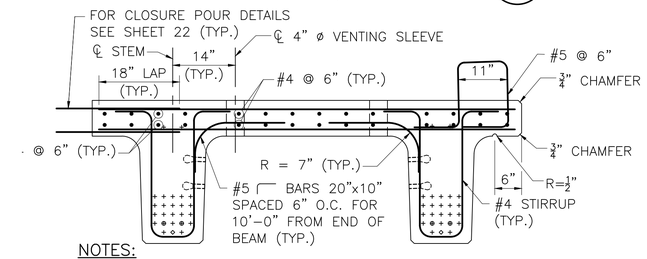
TYPICAL BEAM 1 DIMENSIONS

SCALE: ¾" = 1'–0"



BEAM 1 MIDSPAN SECTION 11/23

SCALE: ¾" = 1'–0"

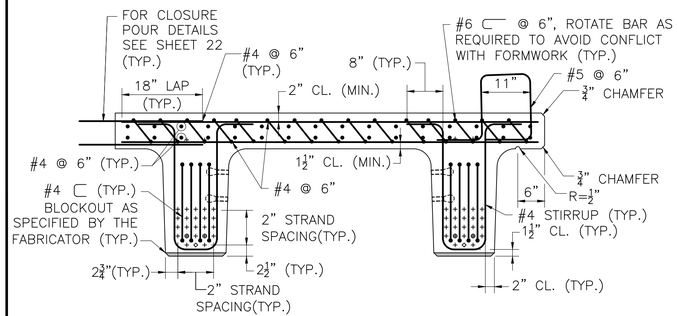


NOTES:

1. SEE MIDSPAN SECTION FOR DETAILS AND INFORMATION NOT SHOWN ABOVE.
2. TOP FLANGE REBAR NOT SHOWN FOR CLARITY.

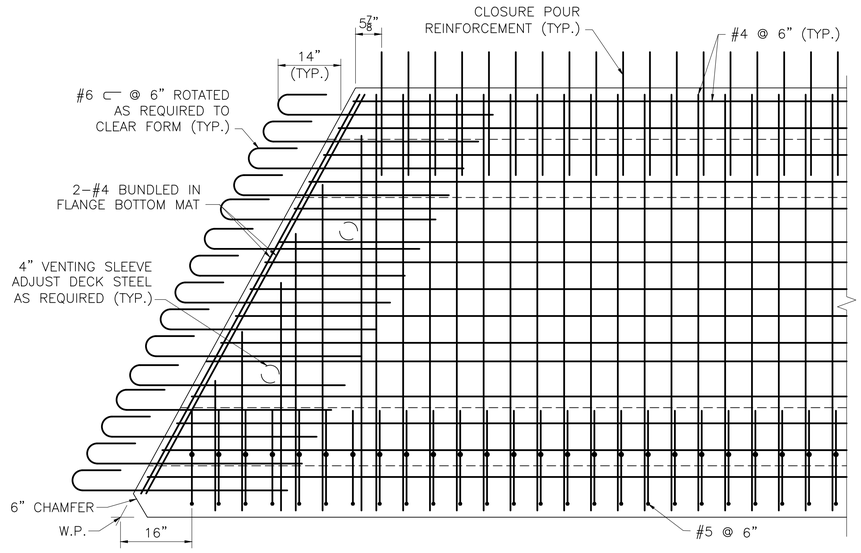
BEAM 1 VERTICAL SECTION NEAR ABUTMENT

SCALE: ¾" = 1'–0"

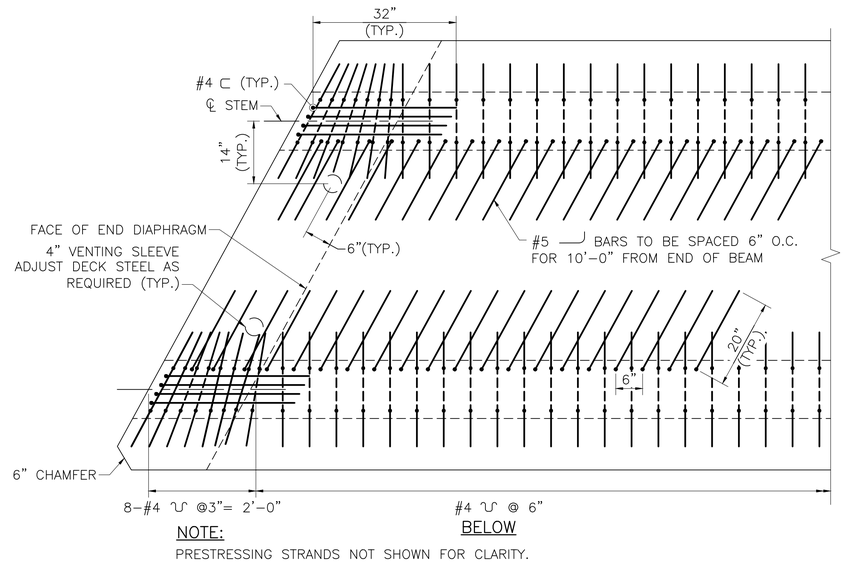


BEAM 1 VERTICAL SECTION AT ABUTMENT 12/23

SCALE: ¾" = 1'–0"



ABOVE

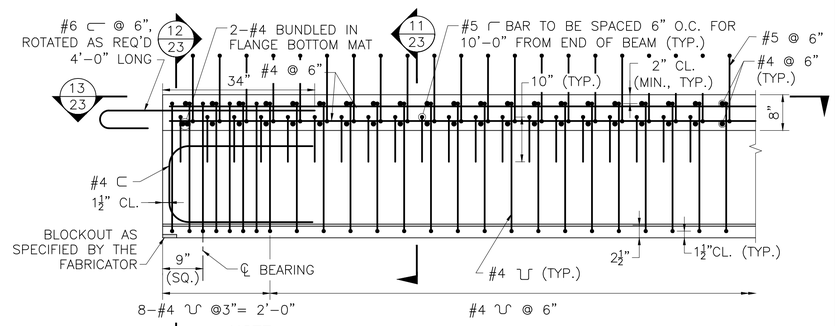


BELOW

NOTE:
PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

BEAM 1 HORIZONTAL SECTION AT ABUTMENT 13/23

SCALE: ¾" = 1'–0"



NOTE:
REMAINDER OF PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

BEAM 1 LONGITUDINAL SECTION AT ABUTMENT

SCALE: ¾" = 1'–0"

NOTES:

1. + DENOTES STRAIGHT STRANDS.
2. ⊕ DENOTES DEBONDED STRANDS. DEBONDING LENGTH IS 4'–0"
   ◇ DENOTES DEBONDED STRANDS. DEBONDING LENGTH IS 6'–0"
3. ALL PRETENSIONING ELEMENTS SHALL BE 0.6" ø, UNCOATED, SEVEN–WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203.
4. THE NOMINAL TENSILE STRENGTH OF THE PRETENSIONING STRANDS SHALL BE 270 KSI.
5. THE INITIAL TENSION PER 0.6" ø STRAND SHALL BE 44 KIPS.
6. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 10,000 PSI.
7. NO PRESTRESS SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH, AS SHOWN BY A CYLINDER TEST, OF AT LEAST 8000 PSI.
8. THE TOP OF THE BEAMS UNDER THE SIDEWALKS/SAFETY CURBS/BARRIERS SHALL BE GIVEN A RAKED FINISH (¼" AMPLITUDE) ACROSS THE ENTIRE WIDTH PERPENDICULAR TO THE BEAM'S AXIS.
9. THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICES WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTION PROCEDURE.
10. TO CONTROL CRACKING AT THE END OF THE BEAM, THE FABRICATOR SHALL DEBOND APPROXIMATELY 50% OF THE STRANDS FOR THE FIRST 6" FROM THE END OF THE BEAM.

May 30, 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	

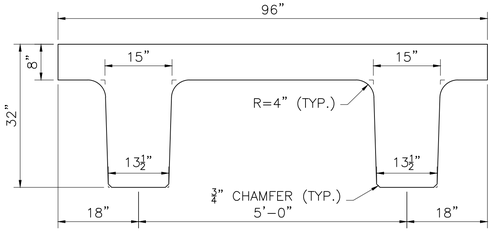
612190_BR18-23 (BEAM DETAILS).DWG Plotted on 21-May-2026 1:44 PM

612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

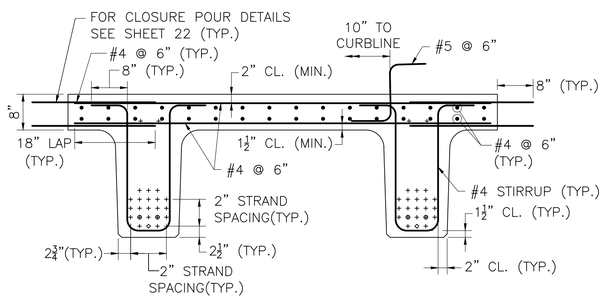
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	55	81
	PROJECT FILE NO. 612190		

NEXT D BEAM DETAILS
SHEET 2 OF 4



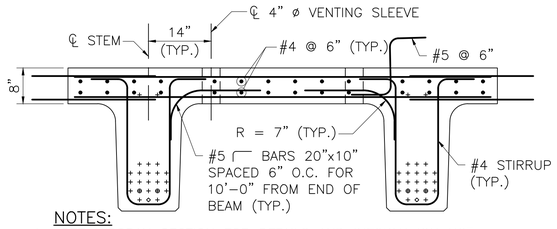
TYPICAL BEAM DIMENSIONS

SCALE: ¾" = 1'–0"



BEAM 2 MIDSPAN SECTION 14/24

SCALE: ¾" = 1'–0"

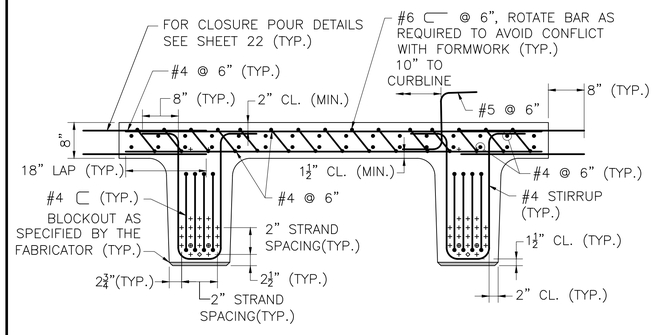


NOTES:

1. SEE MIDSPAN SECTION FOR DETAILS AND INFORMATION NOT SHOWN ABOVE.
2. TOP FLANGE REBAR NOT SHOWN FOR CLARITY.

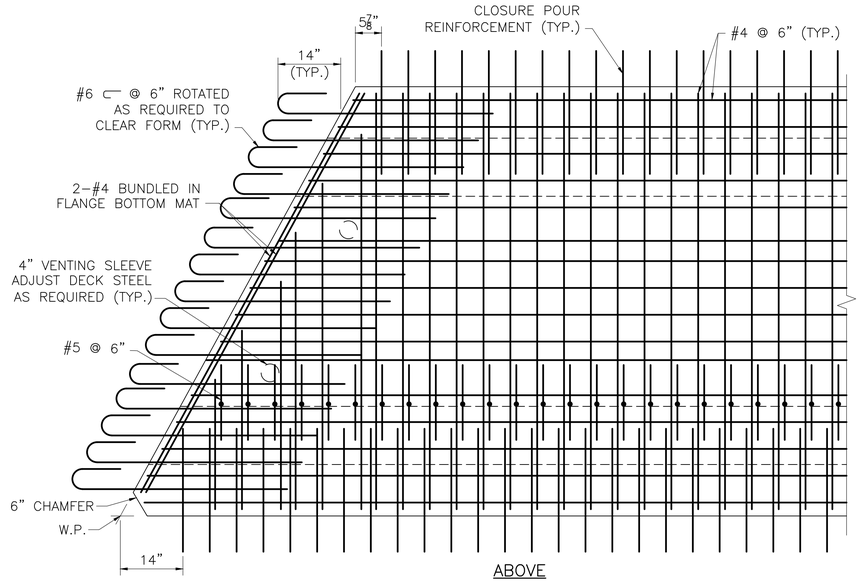
BEAM 2 VERTICAL SECTION NEAR ABUTMENT

SCALE: ¾" = 1'–0"

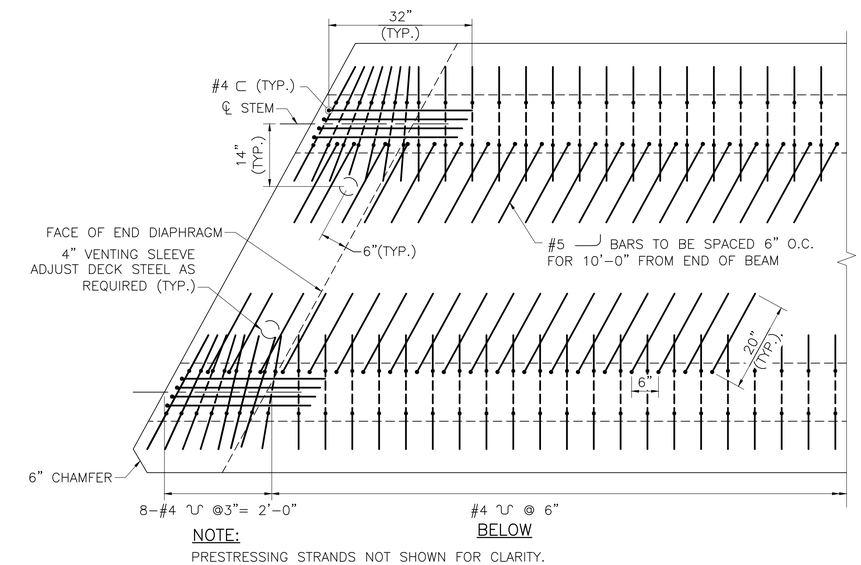


BEAM 2 VERTICAL SECTION AT ABUTMENT 15/24

SCALE: ¾" = 1'–0"



ABOVE



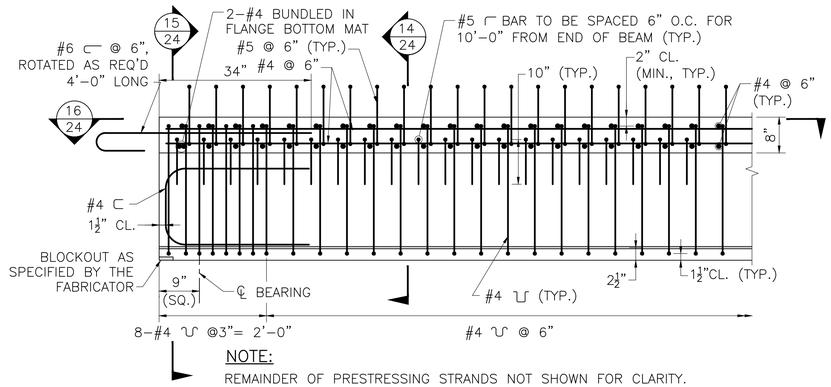
NOTE:

PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

BELOW

BEAM 2 HORIZONTAL SECTION AT ABUTMENT 16/24

SCALE: ¾" = 1'–0"



NOTE:

REMAINDER OF PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

BEAM 2 LONGITUDINAL SECTION AT ABUTMENT

SCALE: ¾" = 1'–0"

NOTES:

1. + DENOTES STRAIGHT STRANDS.
2. ⊕ DENOTES DEBONDED STRANDS. DEBONDING LENGTH IS 4'–0"
   ◇ DENOTES DEBONDED STRANDS. DEBONDING LENGTH IS 6'–0"
3. ALL PRETENSIONING ELEMENTS SHALL BE 0.6" ø, UNCOATED, SEVEN–WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203.
4. THE NOMINAL TENSILE STRENGTH OF THE PRETENSIONING STRANDS SHALL BE 270 KSI.
5. THE INITIAL TENSION PER 0.6" ø STRAND SHALL BE 44 KIPS.
6. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 10,000 PSI.
7. NO PRESTRESS SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH, AS SHOWN BY A CYLINDER TEST, OF AT LEAST 8000 PSI.
8. THE TOP OF THE BEAMS UNDER THE SIDEWALKS/SAFETY CURBS/BARRIERS SHALL BE GIVEN A RAKED FINISH (¼" AMPLITUDE) ACROSS THE ENTIRE WIDTH PERPENDICULAR TO THE BEAM'S AXIS.
9. THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICES WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTION PROCEDURE.
10. TO CONTROL CRACKING AT THE END OF THE BEAM, THE FABRICATOR SHALL DEBOND APPROXIMATELY 50% OF THE STRANDS FOR THE FIRST 6" FROM THE END OF THE BEAM.

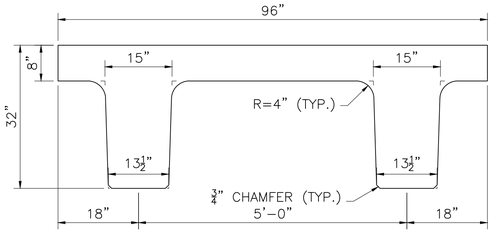
May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

612190_BR18-23 (BEAM DETAILS).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

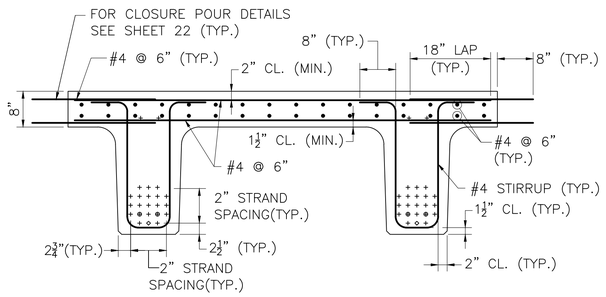
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	56	81
	PROJECT FILE NO. 612190		

NEXT D BEAM DETAILS
SHEET 3 OF 4



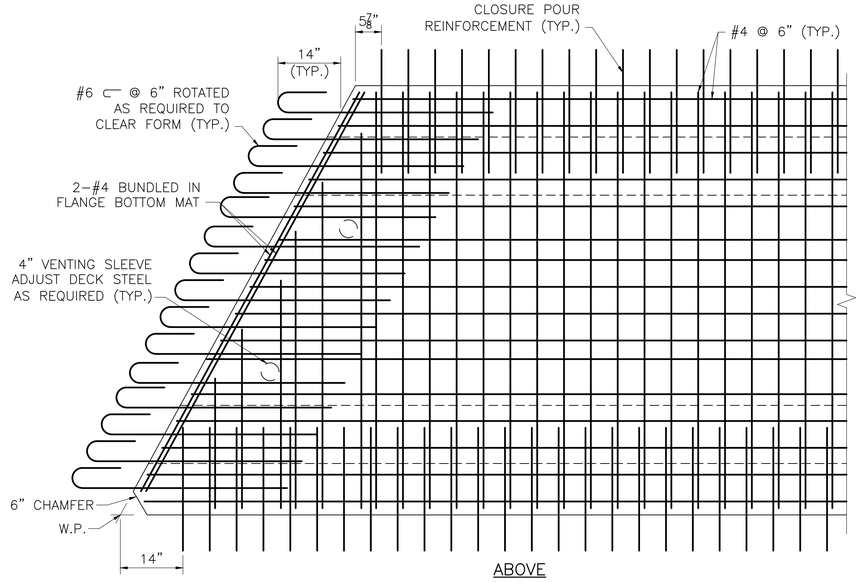
TYPICAL BEAM DIMENSIONS

SCALE: ¾" = 1'–0"

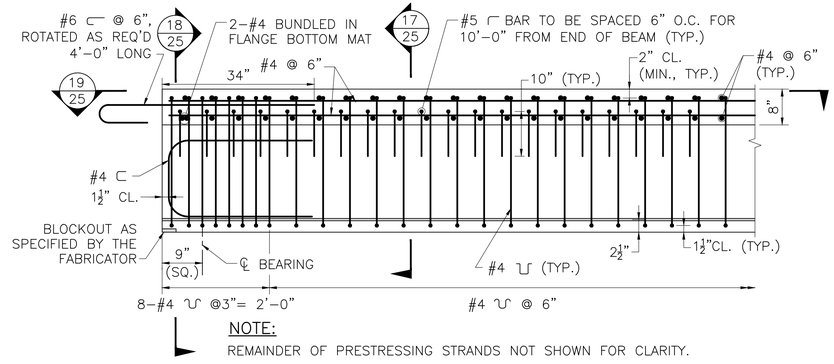


BEAM 3 & 4 MIDSPAN SECTION 17/25

SCALE: ¾" = 1'–0"



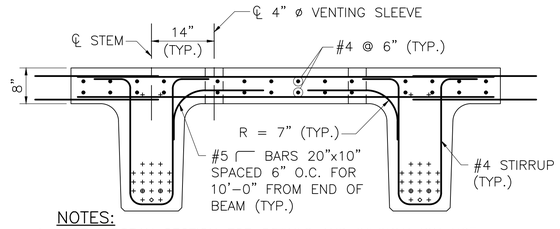
ABOVE



NOTE:
REMAINDER OF PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

BEAM 3 & 4 LONGITUDINAL SECTION AT ABUTMENT

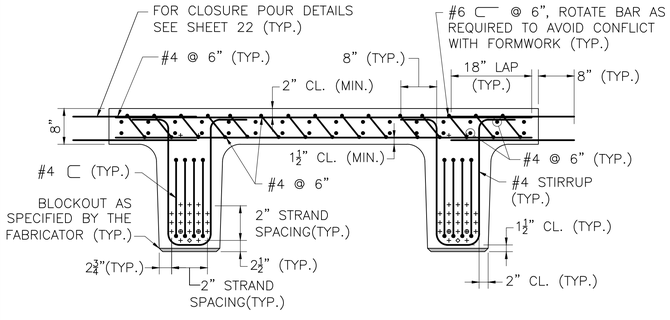
SCALE: ¾" = 1'–0"



NOTES:
1. SEE MIDSPAN SECTION FOR DETAILS AND INFORMATION NOT SHOWN ABOVE.
2. TOP FLANGE REBAR NOT SHOWN FOR CLARITY.

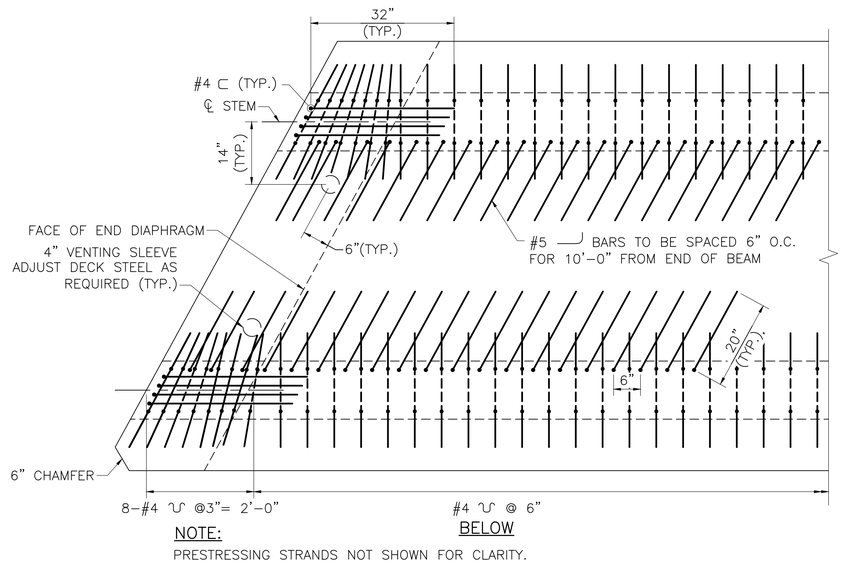
BEAM 3 & 4 VERTICAL SECTION NEAR ABUTMENT

SCALE: ¾" = 1'–0"



BEAM 3 & 4 VERTICAL SECTION AT ABUTMENT 18/25

SCALE: ¾" = 1'–0"



BELOW

NOTE:
PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

BEAM 3 & 4 HORIZONTAL SECTION AT ABUTMENT 19/25

SCALE: ¾" = 1'–0"

NOTES:

1. + DENOTES STRAIGHT STRANDS.
2. ⊕ DENOTES DEBONDED STRANDS. DEBONDING LENGTH IS 4'–0"
   ◇ DENOTES DEBONDED STRANDS. DEBONDING LENGTH IS 6'–0"
3. ALL PRETENSIONING ELEMENTS SHALL BE 0.6" ø, UNCOATED, SEVEN–WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203.
4. THE NOMINAL TENSILE STRENGTH OF THE PRETENSIONING STRANDS SHALL BE 270 KSI.
5. THE INITIAL TENSION PER 0.6" ø STRAND SHALL BE 44 KIPS.
6. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 10,000 PSI.
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10. TO CONTROL CRACKING AT THE END OF THE BEAM, THE FABRICATOR SHALL DEBOND APPROXIMATELY 50% OF THE STRANDS FOR THE FIRST 6" FROM THE END OF THE BEAM.

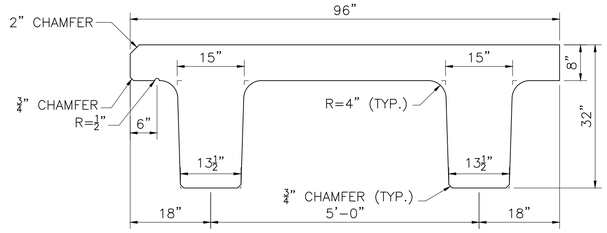
May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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USE ONLY PRINTS OF LATEST DATE

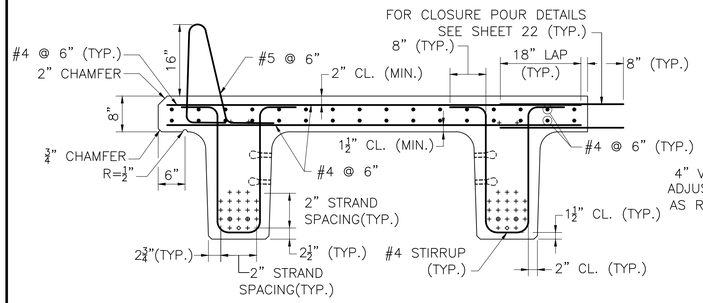
612190_BR18-23 (BEAM DETAILS).DWG Plotted on 21-May-2026 1:44 PM

612190 Final Structural Submittal (SF) 30-May-2026



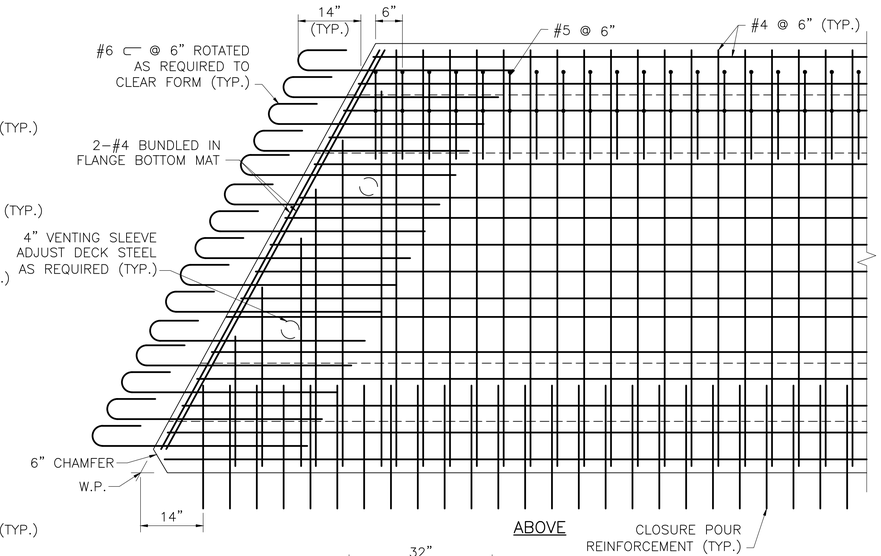
TYPICAL BEAM 5 DIMENSIONS

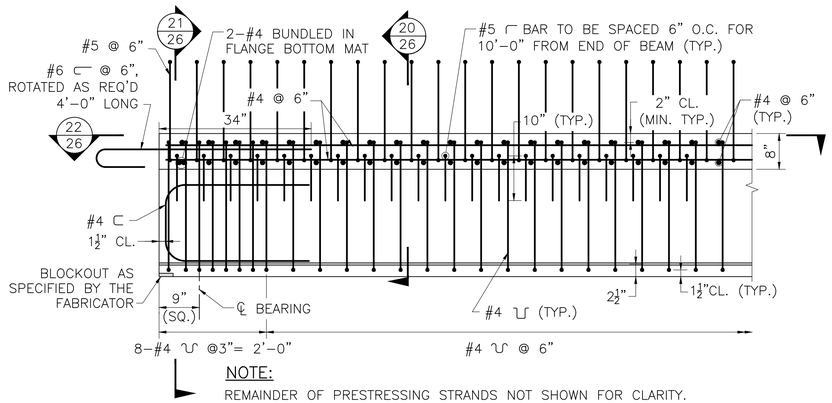
SCALE: ¾" = 1'-0"



BEAM 5 MIDSPAN SECTION 20/26

SCALE: ¾" = 1'-0"

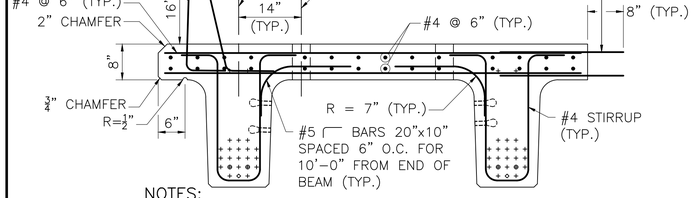




NOTE:
REMAINDER OF PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

BEAM 5 LONGITUDINAL SECTION AT ABUTMENT

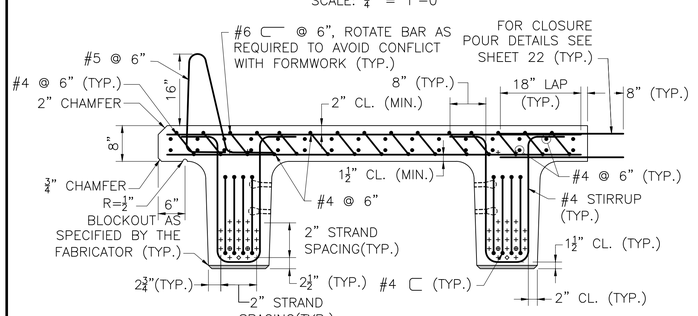
SCALE: ¾" = 1'-0"



NOTES:
1. SEE MIDSPAN SECTION FOR DETAILS AND INFORMATION NOT SHOWN ABOVE.
2. TOP FLANGE REBAR NOT SHOWN FOR CLARITY.

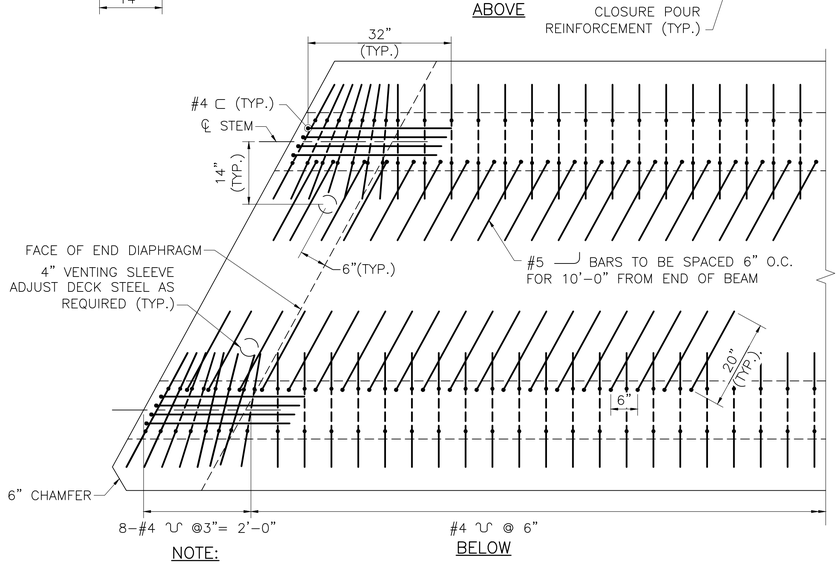
BEAM 5 VERTICAL SECTION NEAR ABUTMENT

SCALE: ¾" = 1'-0"



BEAM 5 VERTICAL SECTION AT ABUTMENT 21/26

SCALE: ¾" = 1'-0"



NOTE:
PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

BEAM 5 HORIZONTAL SECTION AT ABUTMENT 22/26

SCALE: ¾" = 1'-0"

NOTES:

1. + DENOTES STRAIGHT STRANDS.
2. ⊕ DENOTES DEBONDED STRANDS. DEBONDING LENGTH IS 4'-0"
   ◇ DENOTES DEBONDED STRANDS. DEBONDING LENGTH IS 6'-0"
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10. TO CONTROL CRACKING AT THE END OF THE BEAM, THE FABRICATOR SHALL DEBOND APPROXIMATELY 50% OF THE STRANDS FOR THE FIRST 6" FROM THE END OF THE BEAM.

May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

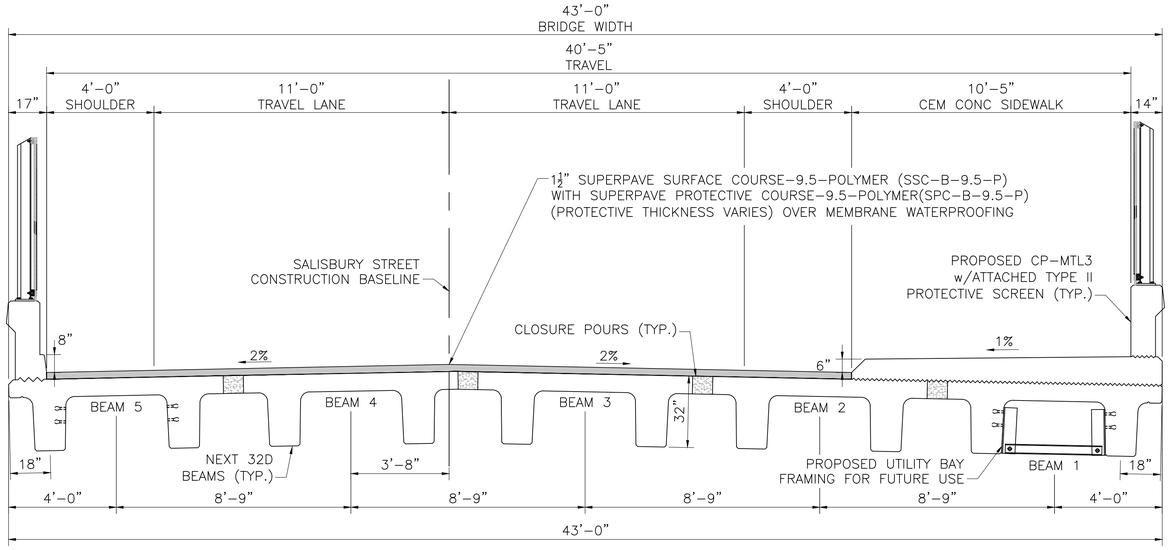
612190_BR18-23 (BEAM DETAILS).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	58	81
PROJECT FILE NO.	612190		

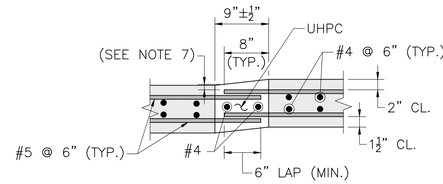
DECK DETAILS
SHEET 1 OF 2

ESTIMATED PAVEMENT THICKNESS						
LOCATION		BEAM #1	BEAM #2	BEAM #3	BEAM #4	BEAM #5
℄ BRGS SOUTH ABUT.		N/A	4.180	4.656	4.612	4.587
MIDSPAN		N/A	3	3	3	3
℄ BRGS NORTH ABUT.		N/A	4.180	4.656	4.612	4.587

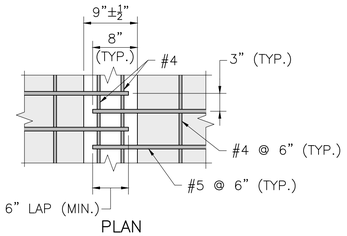


TYPICAL TRANSVERSE SECTION

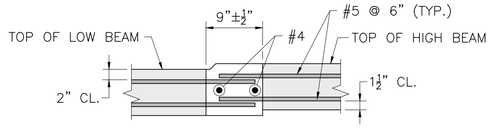
SCALE: $\frac{3}{8}$" = 1'–0"



SECTION



PLAN



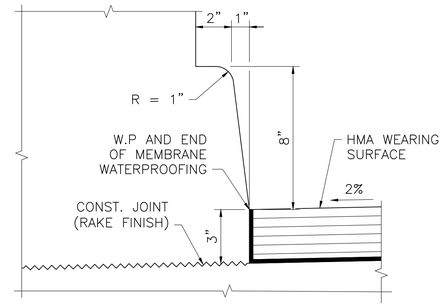
CAMBER DIFFERENTIAL DETAIL

UHPC CLOSURE POUR DETAILS

SCALE: 1" = 1'–0"

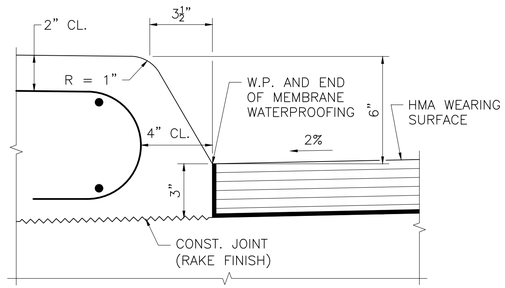
NOTES:

1. EDGE OF BEAM FLANGE IN CLOSURE POUR TO HAVE EXPOSED AGGREGATE FINISH.
2. CLOSURE POUR REINFORCEMENT TO BE PLACED ALONG THE ENTIRE SPAN.
3. CLOSURE POUR REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO BEAM EDGE.
4. METHOD OF FORMING CLOSURE POUR TO BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND SHALL BE ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHOULD NOT PENETRATE THROUGH TOP OF POUR UNLESS APPROVED BY THE ENGINEER.
5. NEXT D CLOSURE POUR CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 18,000 PSI AND SHALL REACH A COMPRESSIVE STRENGTH OF 4,000 PSI BEFORE THE ROADWAY IS REOPENED TO PUBLIC TRAFFIC.
6. AT THE CONTRACTOR'S OPTION, GALVANIZED INSERTS MAY BE CAST IN TO THE BEAMS TO FACILITATE FORMING OF THE CLOSURE POUR. THE INSERTS SHALL BE SHOWN ON THE SHOP DRAWINGS AND MAY NOT BE CLOSER THAN 2'–0" O.C.. CALCULATIONS SHALL BE PROVIDED ALONG WITH MANUFACTURER'S RECOMMENDATIONS DEMONSTRATING THAT THE INSERTS ARE SUFFICIENT FOR THE INTENDED PURPOSE.
7. WHEN MINIMUM COVER OVER HOOPS IN THE CLOSURE POUR IS LESS THAN 1" USE CAMBER DIFFERENTIAL DETAIL.



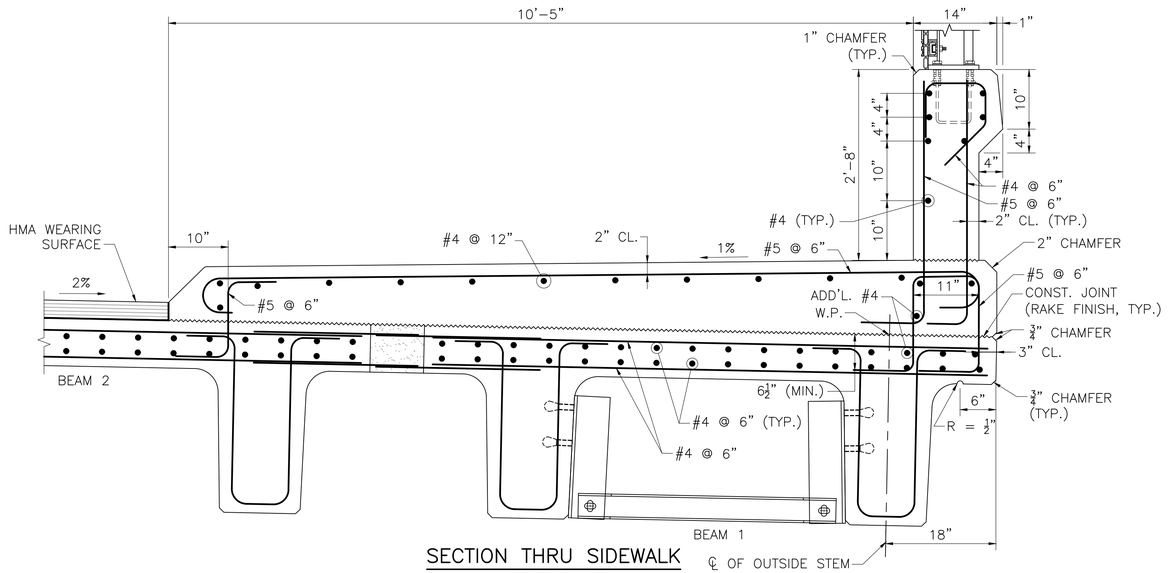
FACE OF SAFETY CURB DETAILS

NOT TO SCALE



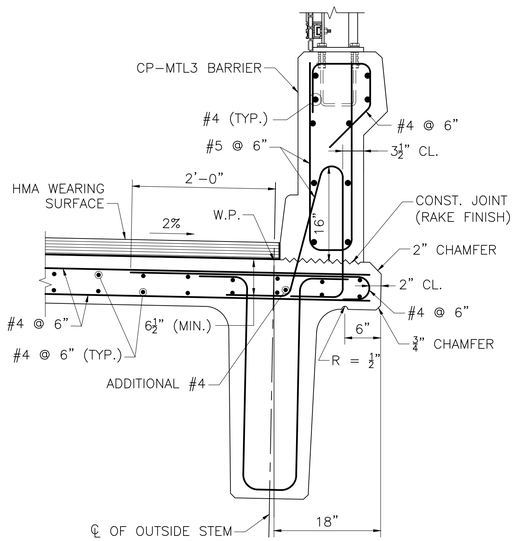
FACE OF SIDEWALK CURB DETAILS

NOT TO SCALE



SECTION THRU SIDEWALK

NOT TO SCALE



SECTION THRU SAFETY CURB

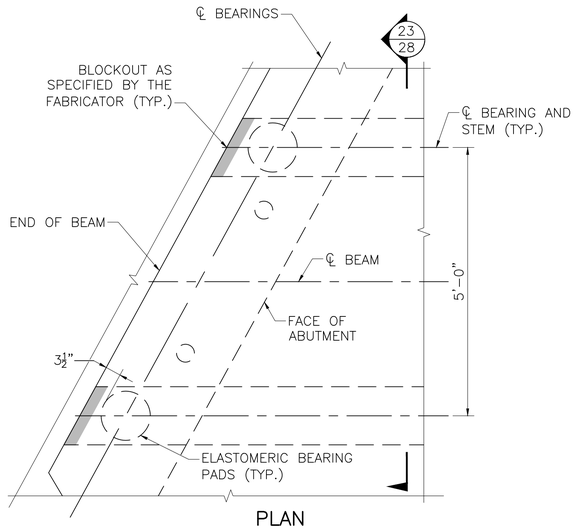
NOT TO SCALE

May 30, 2026	ISSUED FOR CONSTRUCTION
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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

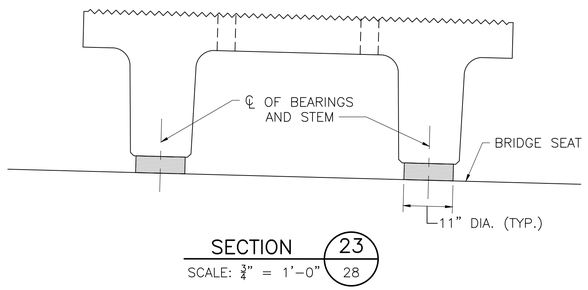
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612190 Final Structural Submittal (SF) 30-May-2026



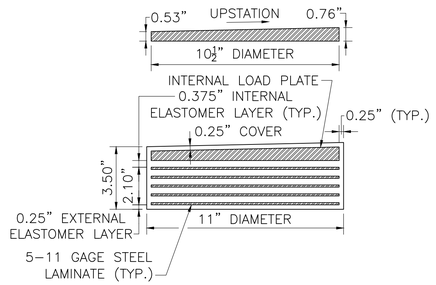
PLAN

SCALE: ¾" = 1'-0"



SECTION 23/28

SCALE: ¾" = 1'-0"

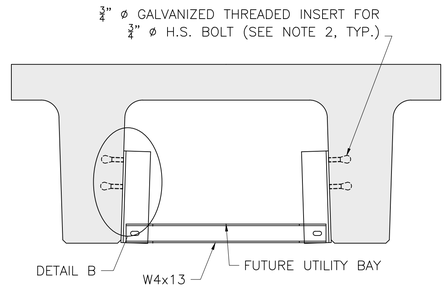


ELASTOMERIC BEARING PAD

SCALE: 3" = 1'-0"

BEARING PAD NOTES:

1. BEARING IS DESIGNED USING AASHTO METHOD B.
2. ELASTOMER SHALL HAVE A SHEAR MODULUS OF 0.160 KSI.
3. STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36 OR HIGHER. ALL EDGES OF STEEL LAMINATES SHALL BE GROUND SMOOTH.
4. THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD IS 73.4 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 0.79 KSI.
5. THE 25 YEAR CREEP STRAIN SHALL BE LIMITED TO 35%.
6. TAPERED INTERNAL LOAD PLATE SHALL CONFORM TO AASHTO M 270 GRADE 36 OR GRADE 50. ALL EDGES OF TAPERED INTERNAL LOAD PLATE SHALL BE GROUND SMOOTH.
7. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A $\frac{1}{32}$" DEEP DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER BEARING IS INSTALLED.
8. BEAMS SHALL BE ERECTED WHEN THE AMBIENT TEMPERATURE IS BETWEEN 30 °F AND 90 °F. IF BEAMS ARE ERECTED AT OTHER AMBIENT TEMPERATURES, THEY WILL HAVE TO BE JACKED AND THE ELASTOMERIC BEARINGS RECENTERED WHEN THE TEMPERATURE RETURNS TO THAT RANGE.

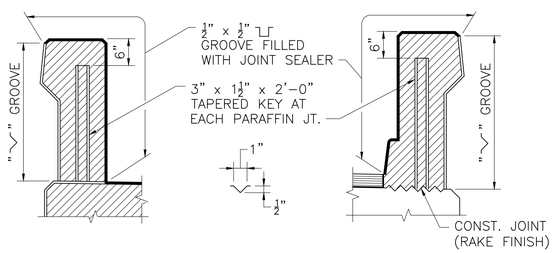


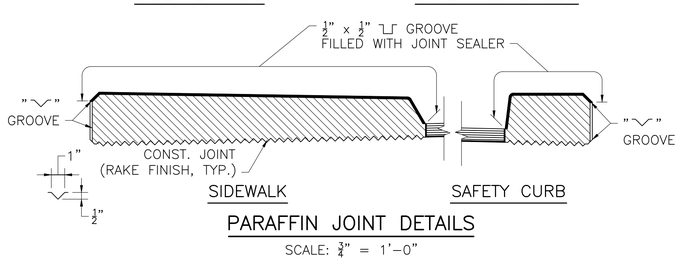
NOTES:

1. ALL STRUCTURAL STEEL FOR UTILITY SUPPORTS SHALL CONFORM TO AASHTO M 270 GRADE 36 OR GRADE 50. ALL STRUCTURAL STEEL AND FASTENERS SHALL BE HOT-DIP GALVANIZED.
2. THE ¾" ø GALVANIZED THREADED INSERTS FOR ¾" ø H.S. BOLTS SHALL BE CAST INTO THE PRECAST BEAMS BY THE FABRICATOR. THEY SHALL PROVIDE A MINIMUM NOMINAL TENSILE RESISTANCE OF 4.0 KIPS AND A MINIMUM NOMINAL SHEAR RESISTANCE OF 4.0 KIPS IN 3000 PSI CONCRETE.

UTILITY SUPPORT DETAILS

SCALE: ¾" = 1'-0"



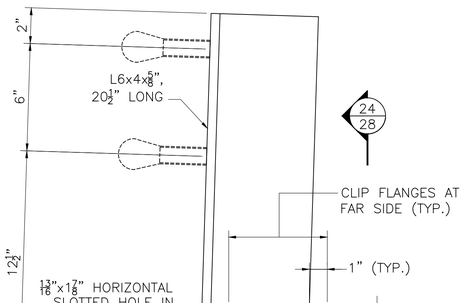


PARAFFIN JOINT DETAILS

SCALE: ¾" = 1'-0"

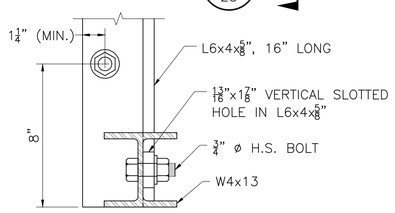
PARAFFIN NOTES:

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



DETAIL B 28

SCALE: 3" = 1'-0"



SECTION 24/28

SCALE: 3" = 1'-0"

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	59	81
PROJECT FILE NO.	612190		

DECK DETAILS
SHEET 2 OF 2

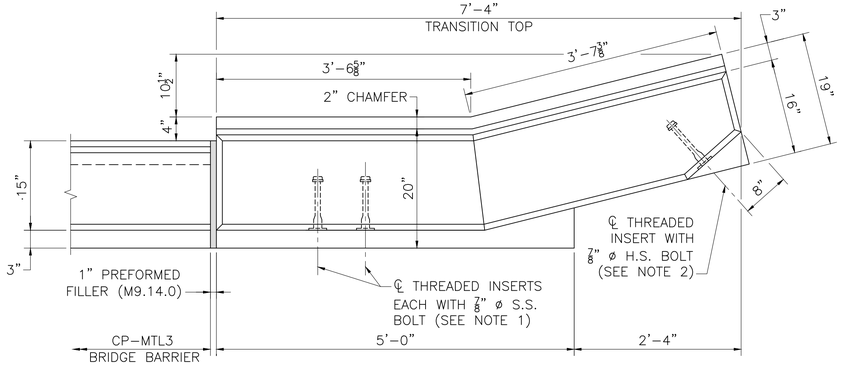
May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

612190_BR18-23 (BEAM DETAILS).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026

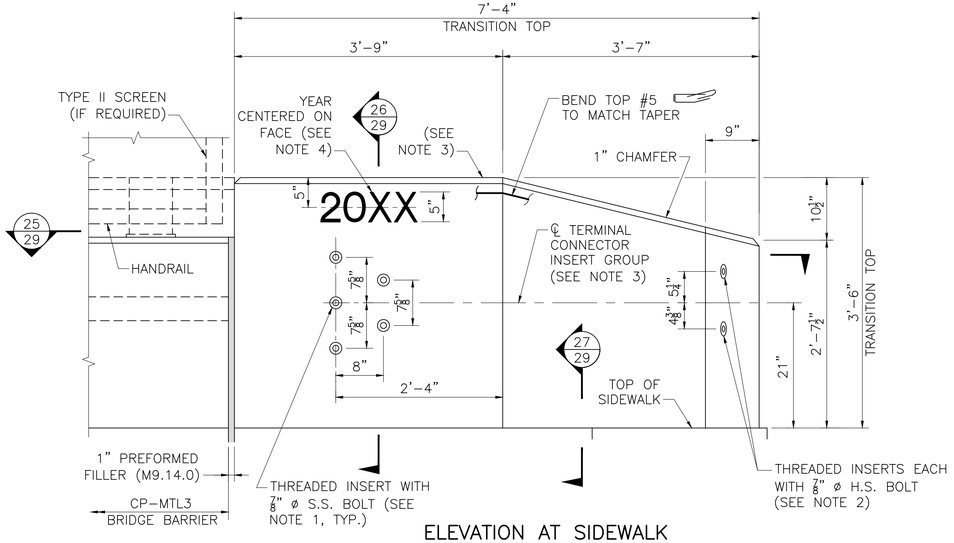
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	60	81
PROJECT FILE NO.	612190		

HIGHWAY GUARDRAIL BRIDGE TRANSITION



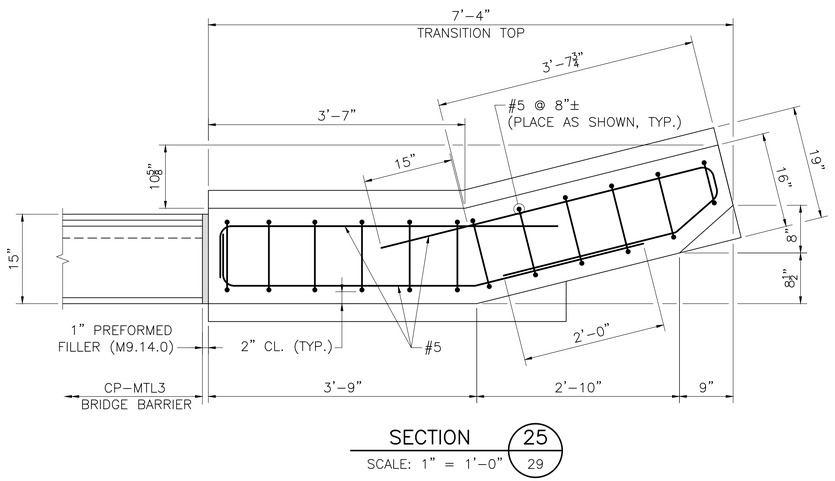
PLAN AT SAFETY CURB

SCALE: 1" = 1'-0"



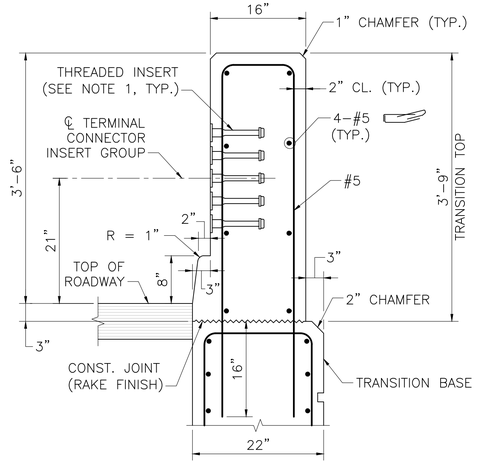
ELEVATION AT SIDEWALK

SCALE: 1" = 1'-0"



SECTION 25/29

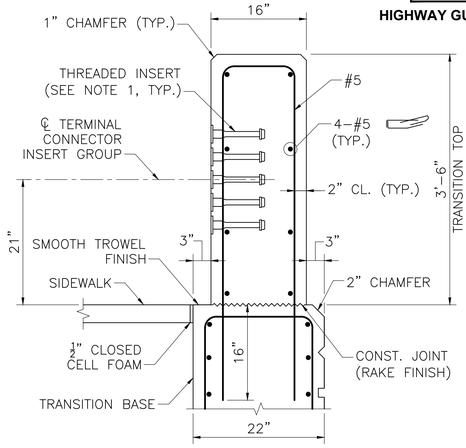
SCALE: 1" = 1'-0"



SECTION AT SAFETY CURB

SECTION 26/29

SCALE: 1" = 1'-0"



SECTION AT SIDEWALK

SECTION 26/29

SCALE: 1" = 1'-0"

SECTION AT SAFETY CURB

SECTION 27/29

SCALE: 1" = 1'-0"

SECTION AT SIDEWALK

SECTION 27/29

SCALE: 1" = 1'-0"

NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. (STAINLESS STEEL) BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED CONFORMING TO ASTM F593D WITH AISI TYPE 304N S.S. WASHERS. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.

2. ⅞" ø HIGH STRENGTH BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F3125 GRADE 325 TYPE 1 GALVANIZED. USE ADDITIONAL WASHERS AS REQUIRED TO PROPERLY ENGAGE THE BOLTS.

3. FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF THE BRIDGE BARRIERS SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.

   FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.

4. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS.

5. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 HP CEMENT CONCRETE.

6. 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.

May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

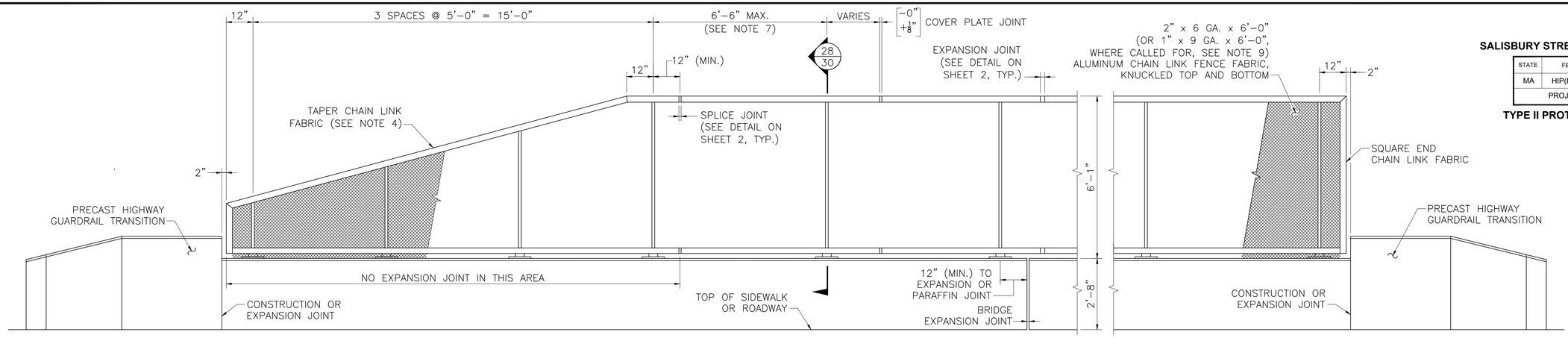
USE ONLY PRINTS OF LATEST DATE

612190_BR15 (PRECASTHGT2).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026

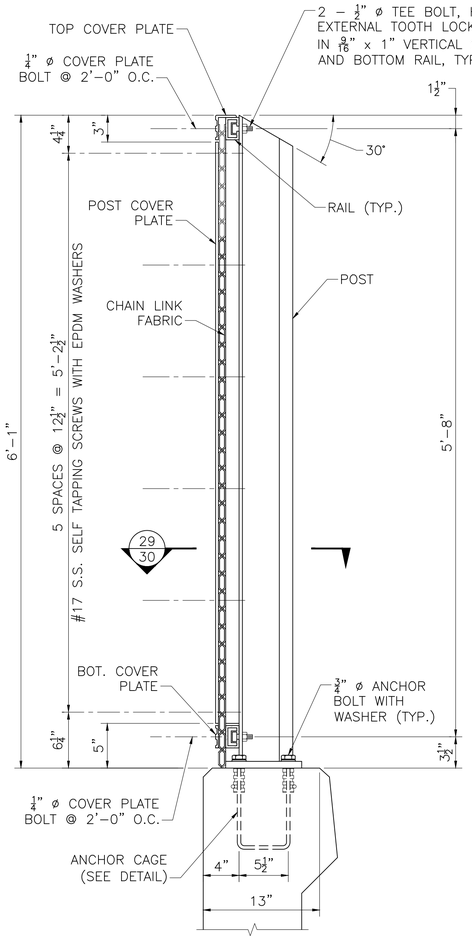
HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	61	81
PROJECT FILE NO.	612190		

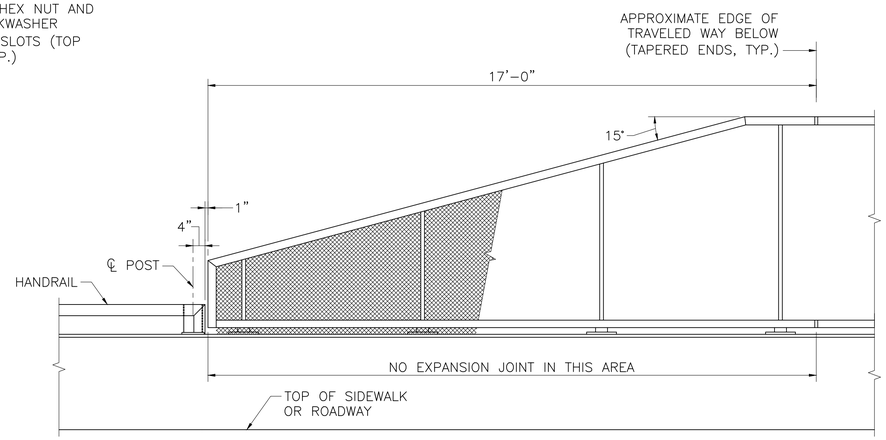
TYPE II PROTECTIVE SCREEN DETAILS
SHEET 1 OF 2



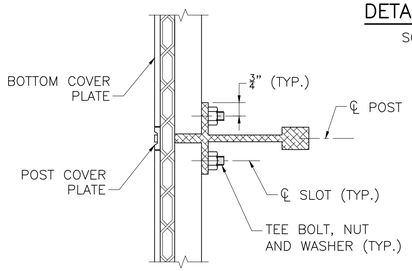
ELEVATION
SCALE: $\frac{1}{2}$" = 1'–0"



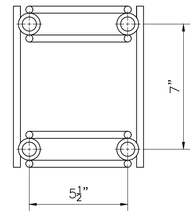
SECTION 28/30
SCALE: 1½" = 1'–0"

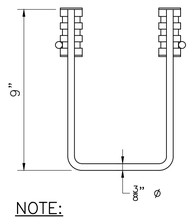


DETAIL AT HANDRAIL
SCALE: $\frac{1}{2}$" = 1'–0"



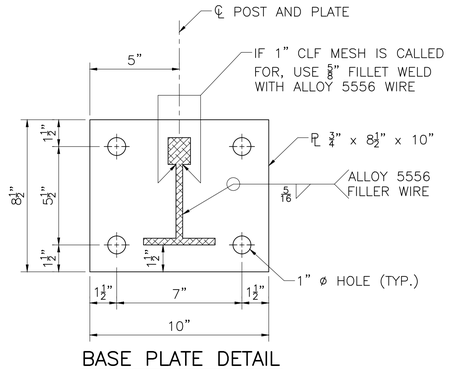
SECTION 29/30
SCALE: 3" = 1'–0"



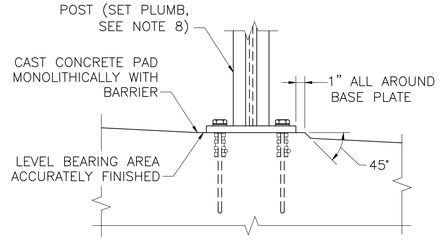


NOTE:
GALVANIZED OR ELECTROPLATE FINISH.

ANCHOR CAGE
SCALE: 3" = 1'–0"



BASE PLATE DETAIL
SCALE: 3" = 1'–0"



PROFILE GRADE OVER 3%

SETTING OF POSTS
SCALE: 1½" = 1'–0"

NOTES:

1. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POSTS, IF POSSIBLE.
2. RAILS SHALL HAVE AN EXPANSION JOINT IN THE PANEL OVER A BRIDGE EXPANSION JOINT AND AT 30 FOOT MAXIMUM SPACING ELSEWHERE.
3. BOTTOM OF POST BASE PLATE TO BE SET ON A $\frac{1}{8}$" MOLDED FABRIC BEARING PAD (M9.16.2). THE THICKNESS OF THE PAD SHALL BE IGNORED BY THE DETAILER.
4. 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.
5. WHERE THE R.O.W. FENCE MUST MEET THE SCREEN, USE THE SQUARE END TO HIGHWAY GUARDRAIL TRANSITION DETAIL.
6. THE SCREEN END TREATMENT TO BE USED (SQUARE OR TAPERED) IS SPECIFIED ELSEWHERE ON THE CONSTRUCTION DRAWINGS.
7. POST SPACING SHALL BE UNIFORM BETWEEN TAPERED ENDS.
8. SET POSTS PERPENDICULAR TO GRADE FOR GRADES UP TO 3%. SET POSTS PLUMB FOR GRADES GREATER THEN 3%.
9. 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.

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 ¼" 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

COVER PLATE BOLTS — TYPE 304 STAINLESS STEEL WITH OVERSIZED STAINLESS WASHER AND STAINLESS NUT WITH NYLON INSERT

FINISHES:

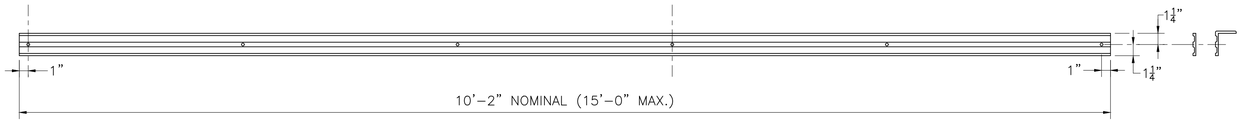
1. POSTS, RAILS, COVER PLATES AND SPLICE PLATES SHALL RECEIVE A DARK BRONZE ANODIZED FINISH.
2. CHAIN LINK FABRIC SHALL RECEIVE A 4±1 MIL POLYESTER POWDER COAT FINISH. THE COLOR SHALL BE DARK BRONZE TO MATCH COLOR OF ANODIZED ALUMINUM FRAMEWORK.
3. #17 SELF TAPPING SCREWS AND ¼" ø COVER PLATE BOLTS TO BE COLORED TO MATCH THE ANODIZED EXTRUSIONS.

May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
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612190_BR24 (TYPEIIPROTFENCE).DWG Plotted on 21-May-2026 1:44 PM
612190 Final Structural Submittal (SF) 30-May-2026



TOP AND BOTTOM COVER PLATE

SCALE: 1½" = 1'-0"

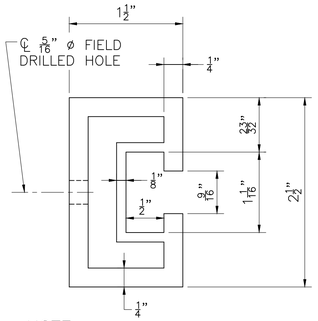
COVER PLATE NOTES:

1. COVER PLATES MAY BE CONTINUOUS OVER A RAIL EXPANSION JOINT SPLICE. COVER PLATES SHALL BE FIELD CUT AS REQUIRED TO CLEAR THE EXPANSION JOINT. SEE DETAIL AT EXPANSION JOINT.
2. FIELD DRILL $\frac{5}{16}$" ø HOLE 1" FROM THE FIELD CUT END OF A COVER PLATE, UNLESS THERE IS AN EXISTING HOLE WITHIN 6" FROM THE COVER PLATE END.
3. FIELD PAINT THE FIELD CUT ENDS OF THE COVER PLATES TO MATCH THE ANODIZED COLOR.

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	62	81
PROJECT FILE NO.	612190		

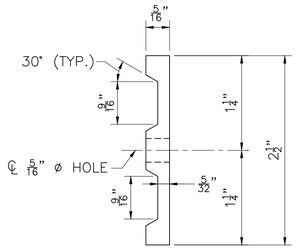
TYPE II PROTECTIVE SCREEN DETAILS
SHEET 2 OF 2



NOTE:
OTHER CONFIGURATIONS OF THE INTERNAL WALLS OF THE RAIL EXTRUSION MAY BE SUBMITTED FOR APPROVAL.

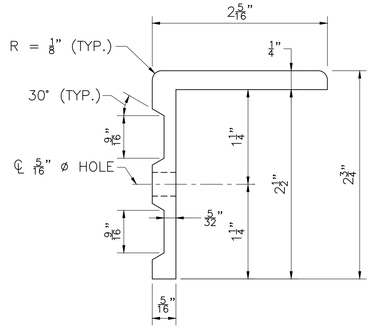
RAIL EXTRUSION

FULL SIZE



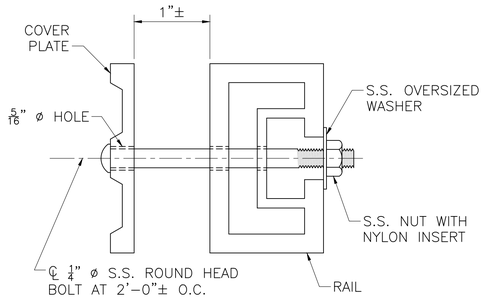
BOTTOM COVER PLATE EXTRUSION

FULL SIZE



TOP COVER PLATE EXTRUSION

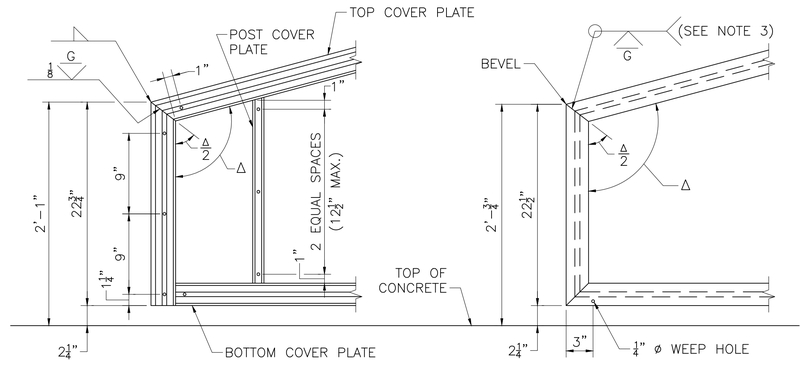
FULL SIZE



NOTE:
BOLTS SHALL BE TYPE 304 WITH A DRIVE HEAD TO BE COLORED TO MATCH ANODIZING.

RAIL AND COVER PLATE DETAIL

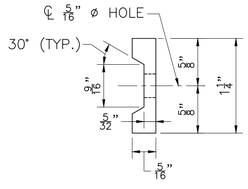
FULL SIZE



COVER PLATE DETAILS

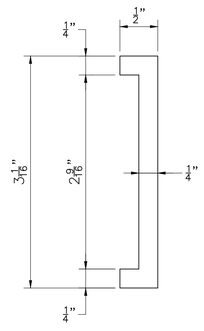
NOTES:

1. WELDING OF TOP COVER PLATE AND RAILS OF NON-TAPERED END IS SIMILAR.
2. WELDS AND MITERING TYPICAL FOR ALL ANGLED CORNERS.
3. WELD TYPICAL FOR TOP AND BOTTOM END CORNERS OF RAIL. INTERRUPT WELD AT SLOT IN BACK OF RAIL.



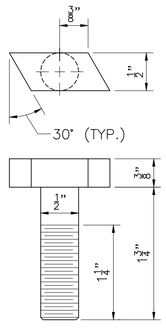
POST COVER PLATE EXTRUSION

FULL SIZE



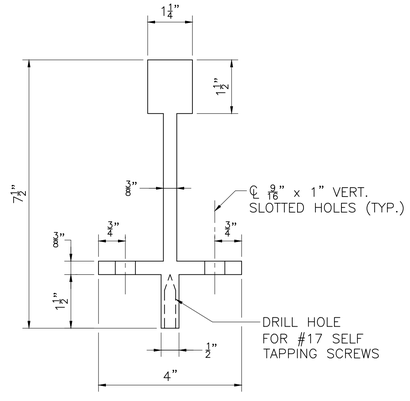
SPLICE PLATE EXTRUSION

FULL SIZE



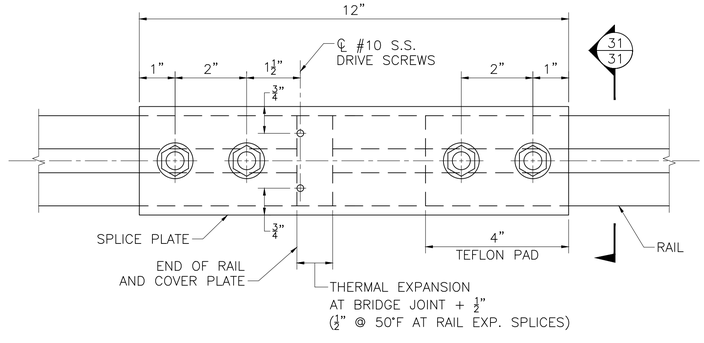
TEE BOLT

FULL SIZE



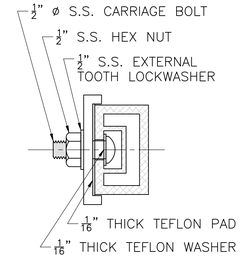
POST EXTRUSION

SCALE: 6" = 1'-0"



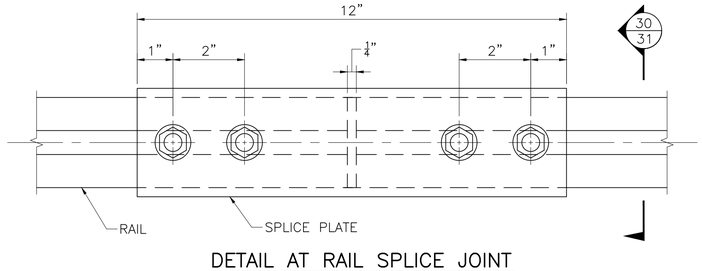
DETAIL AT RAIL EXPANSION JOINT SPLICE

SCALE: 6" = 1'-0"



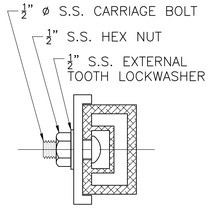
SECTION 31/31

SCALE: 6" = 1'-0"



DETAIL AT RAIL SPLICE JOINT

SCALE: 6" = 1'-0"



SECTION 30/31

SCALE: 6" = 1'-0"

May 30, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

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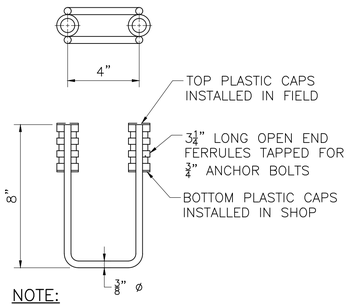
612190_BR25 (TYPEIIPROTFENCE2).DWG Plotted on 21-May-2026 1:44 PM

612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

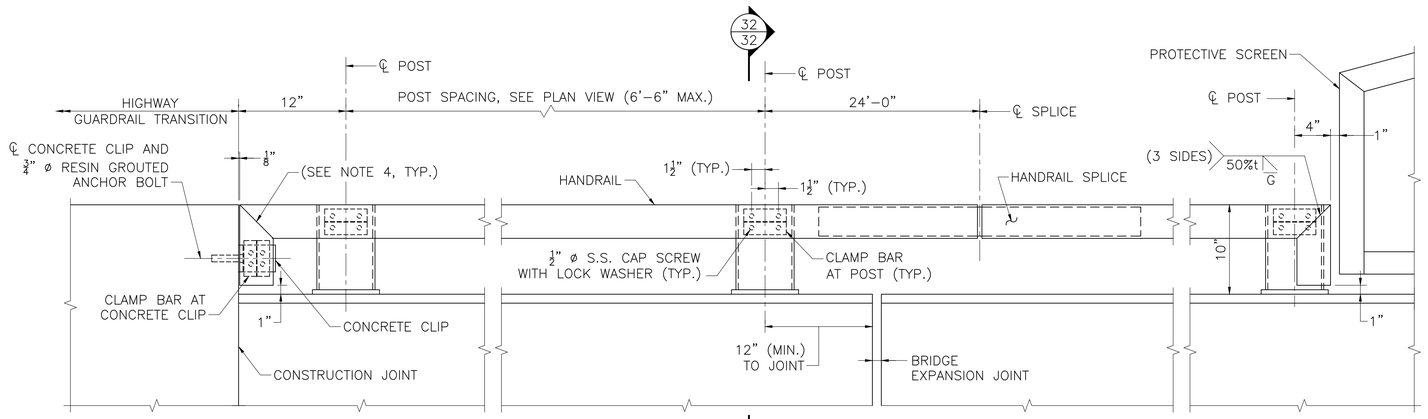
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	63	81
	PROJECT FILE NO. 612190		

BRIDGE HANDRAIL DETAILS

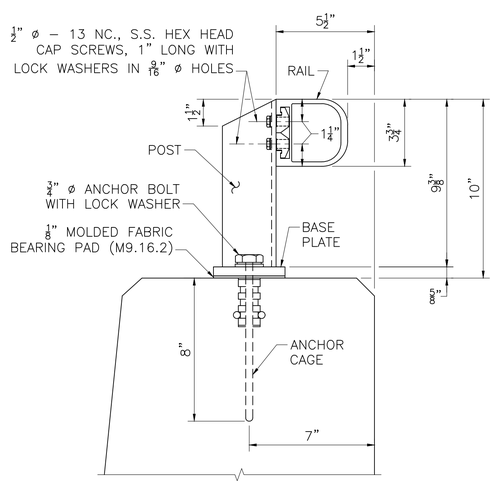


NOTE:
GALVANIZED OR ELECTROPLATE FINISH.

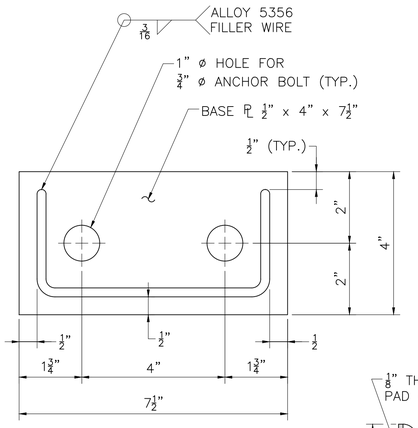
ANCHOR CAGE
SCALE: 3" = 1'–0"



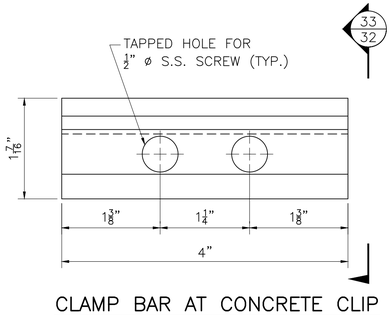
HANDRAIL ELEVATION
SCALE: 1½" = 1'–0"



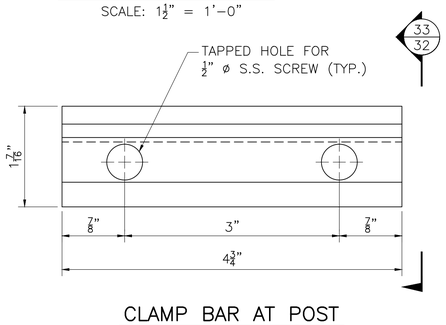
SECTION 32
SCALE: 3" = 1'–0"



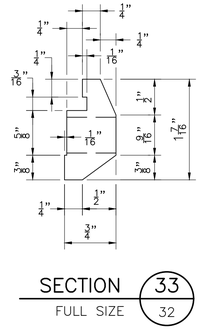
BASE PLATE DETAIL
SCALE: 6" = 1'–0"



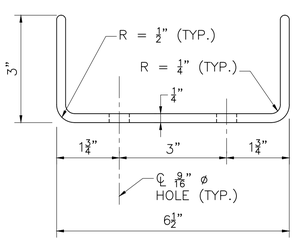
CLAMP BAR AT CONCRETE CLIP
FULL SIZE

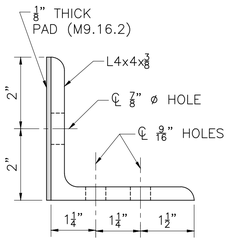


CLAMP BAR AT POST
FULL SIZE

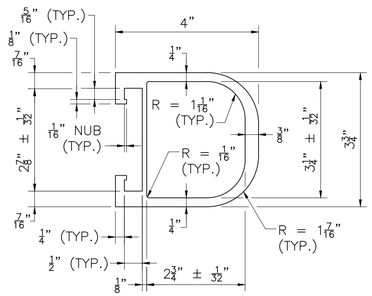


SECTION 33 / 32
FULL SIZE

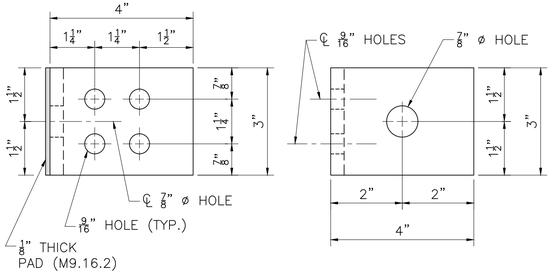


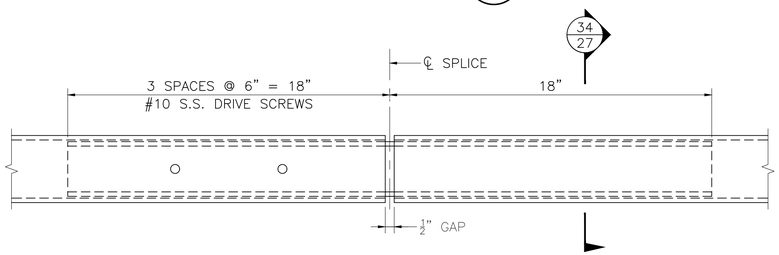


TOP VIEW

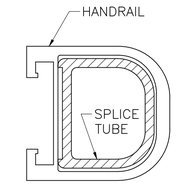


RAIL DETAIL
SCALE: 6" = 1'–0"

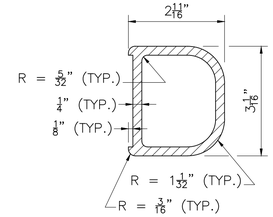




HANDRAIL SPLICE
SCALE: 3" = 1'–0"



SECTION 34
SCALE: 6" = 1'–0"



FINISH:

POSTS, RAILS, BASE PLATES, CONCRETE CLIP AND SPLICE TUBE SHALL RECEIVE A DARK BRONZE ANODIZED FINISH.

MATERIALS:

RAIL, POST AND BASE PLATE	ASTM B 221, ALLOY 6061–T6
CLAMP BAR, RAIL SPLICE AND CONC. CLIP	ASTM B 221, ALLOY 6061–T6
S.S. FASTENERS	ASTM A 193 GRADE B8 (TYPE 304)
ANCHOR BOLTS	ASTM F3125 GRADE 325 TYPE 1 GALVANIZED (ROTATION CAPACITY TEST NOT REQUIRED)
ALUMINUM WASHERS	ASTM B 209 ALLOY ALCLAD 2024–T4

GENERAL NOTES:

1. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POST, IF POSSIBLE.
2. RAILS SHALL HAVE A HANDRAIL SPLICE, WITH A ½" GAP, BETWEEN CONTINUOUS LENGTHS OF RAIL AND IN THE PANEL OVER A BRIDGE EXPANSION JOINT. ½" GAP SHALL BE INCREASE AS REQUIRED.
3. OTHER CONFIGURATIONS OF THE INTERNAL WALLS OF THE RAIL EXTRUSION MAY BE SUBMITTED FOR APPROVAL.
4. AT 45° MITRES, TRIM OFF 1/16" NUB ON VERTICAL RAIL SECTION AS NEEDED TO ALLOW BOTTOM HORIZONTAL CLAMP BAR TO PROPERLY ENGAGE THE HORIZONTAL RAIL.

DATE	DESCRIPTION
May 30, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

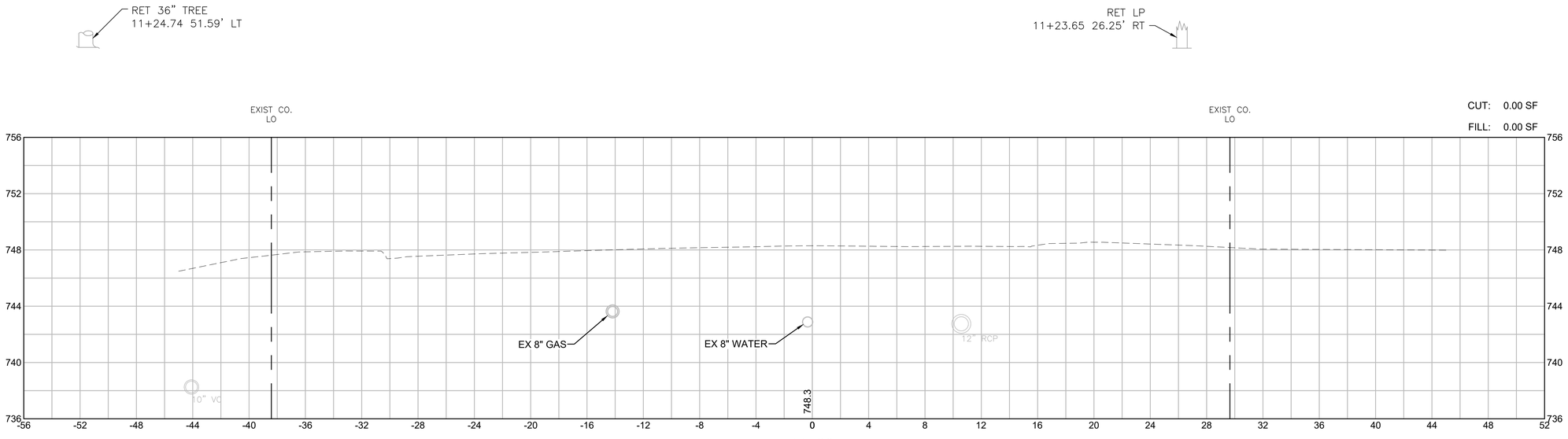
612190_BR27 (HANDRAILS).DWG Plotted on 21-May-2026 1:45 PM
612190 Final Structural Submittal (SF) 30-May-2026

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

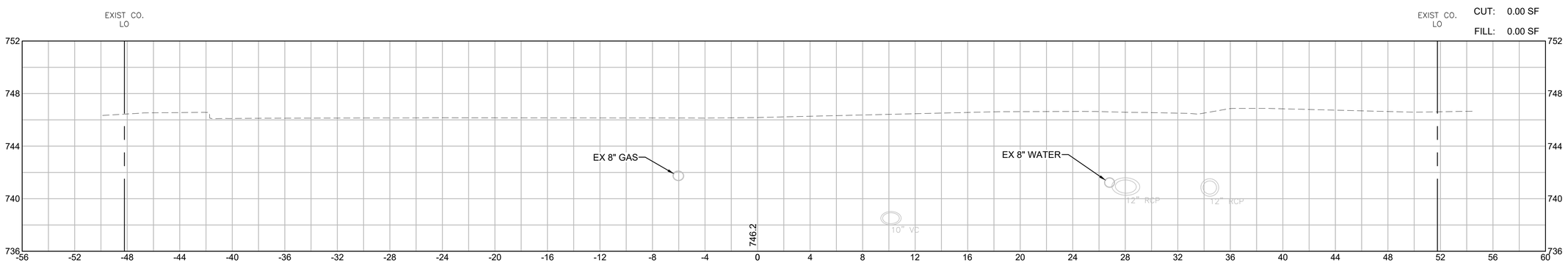
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	64	81
PROJECT FILE NO.	612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM



11+00



10+50

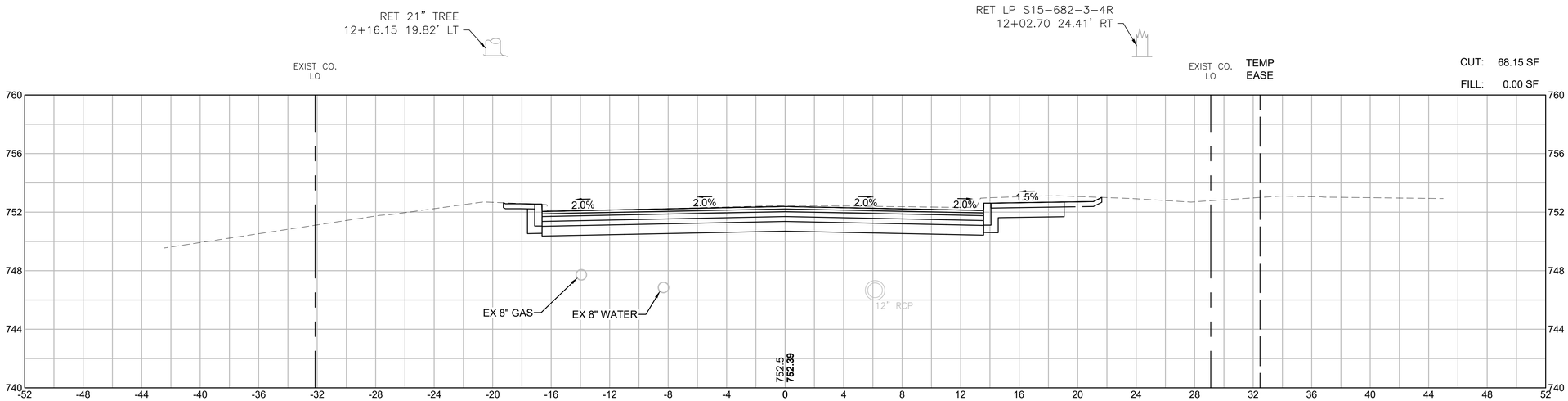
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

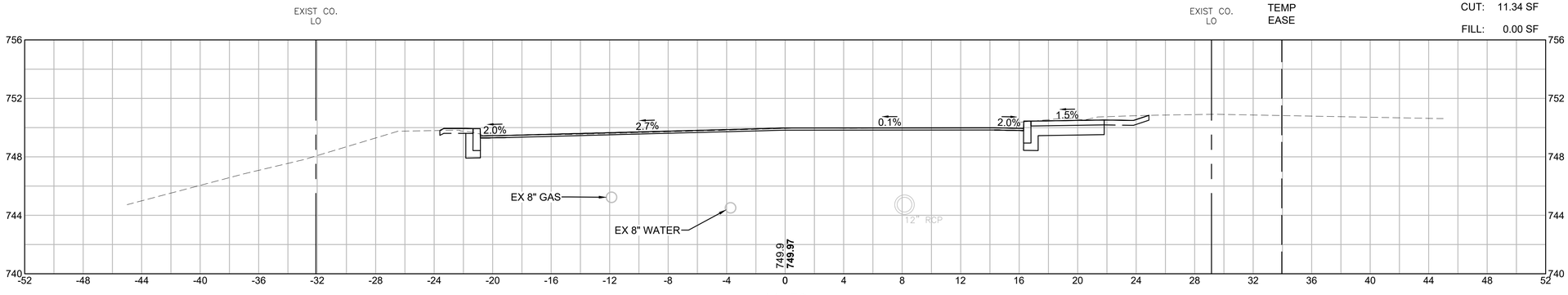
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	65	81
PROJECT FILE NO.	612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM



12+00



11+50

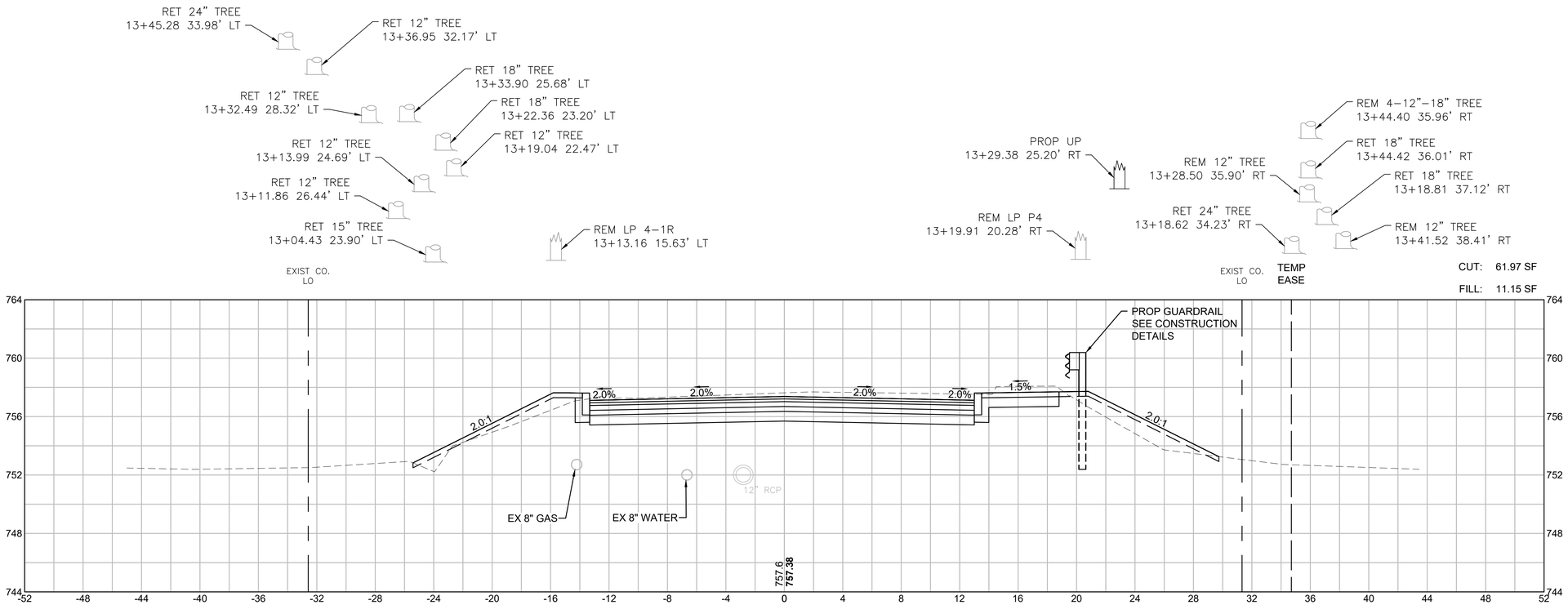
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

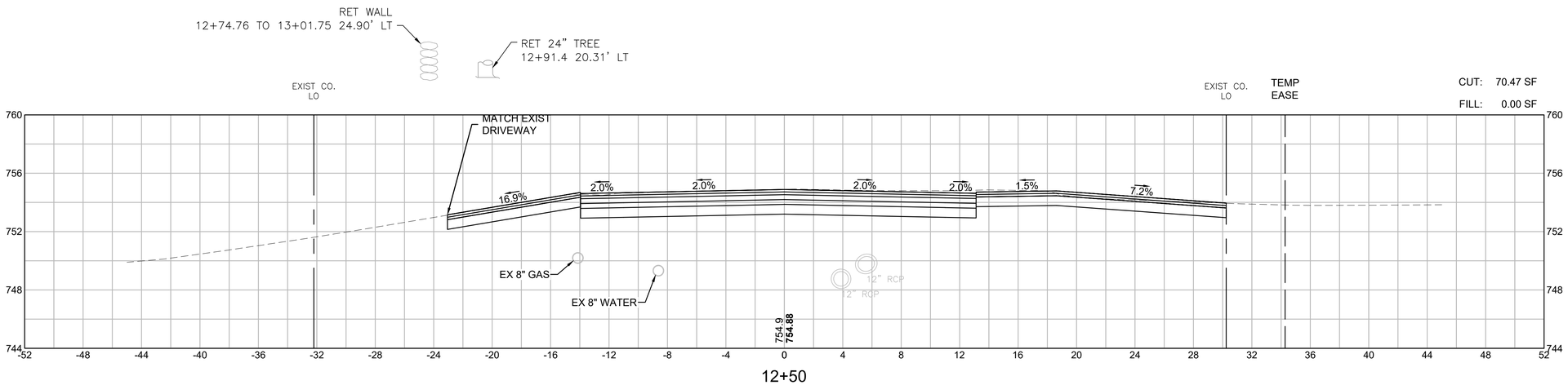
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	66	81
PROJECT FILE NO.	612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM



13+00



12+50

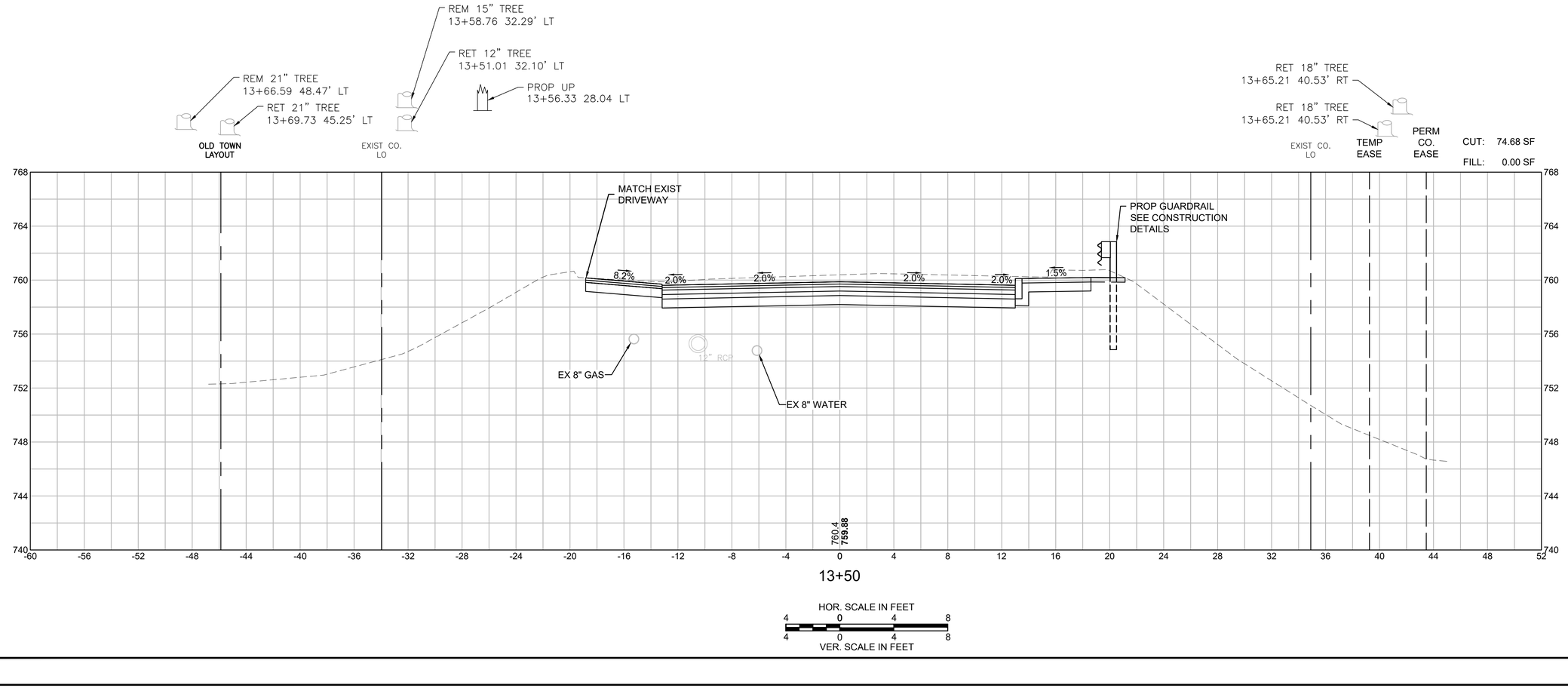
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	67	81
	PROJECT FILE NO. 612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM

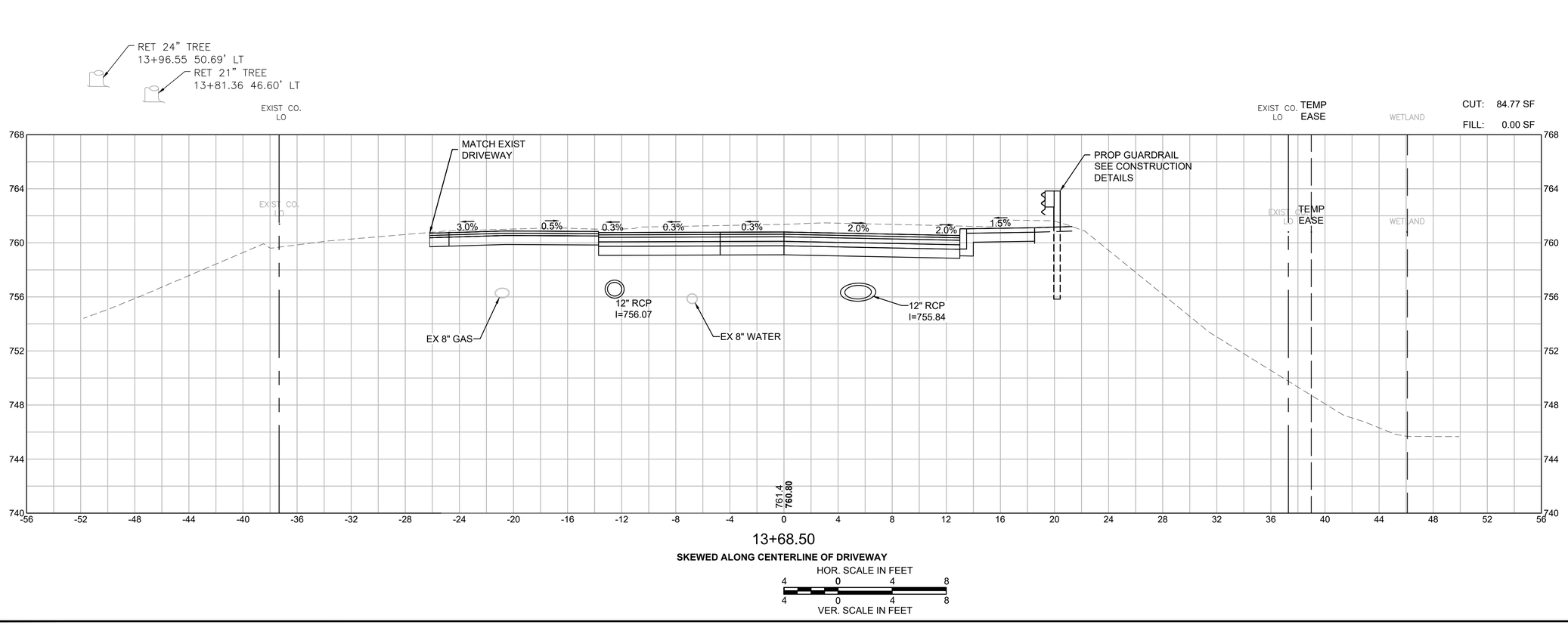


HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	68	81
	PROJECT FILE NO. 612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM



13+68.50

SKEWED ALONG CENTERLINE OF DRIVEWAY

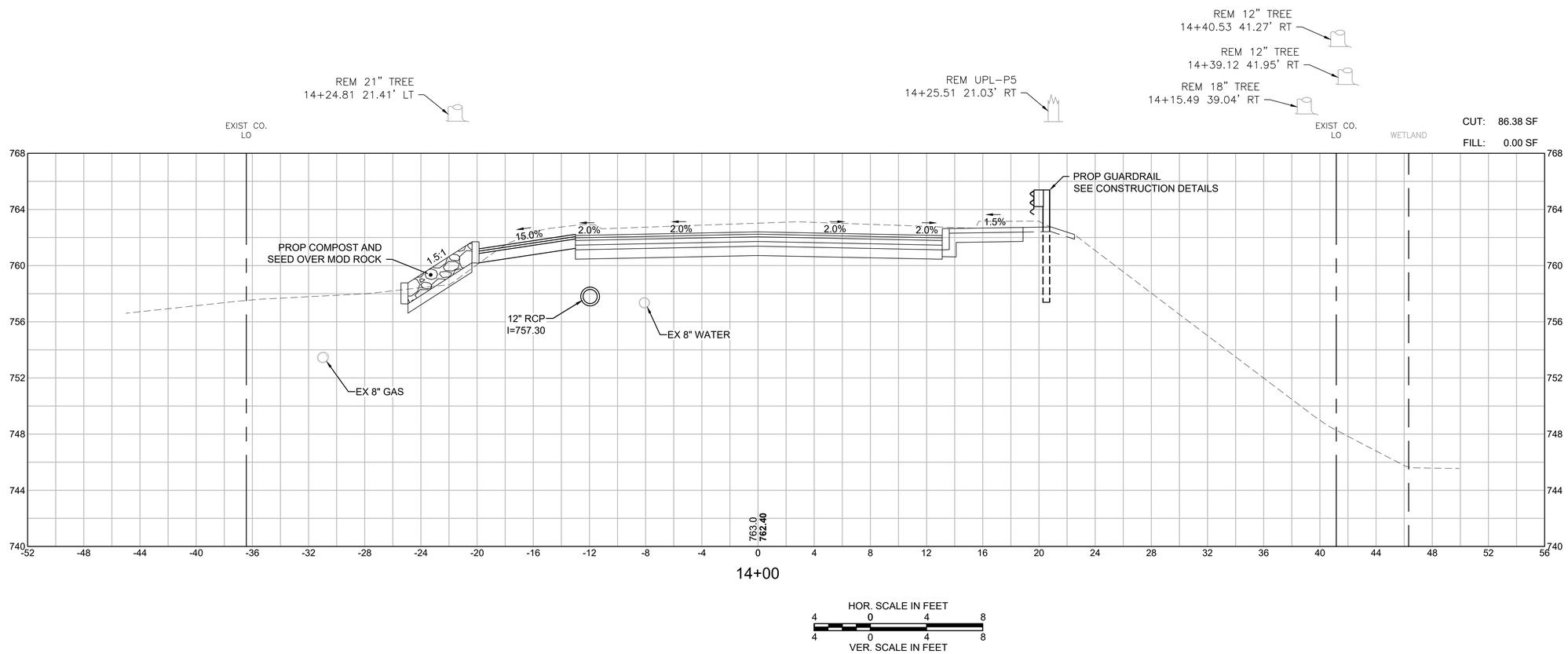
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	69	81
	PROJECT FILE NO. 612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM

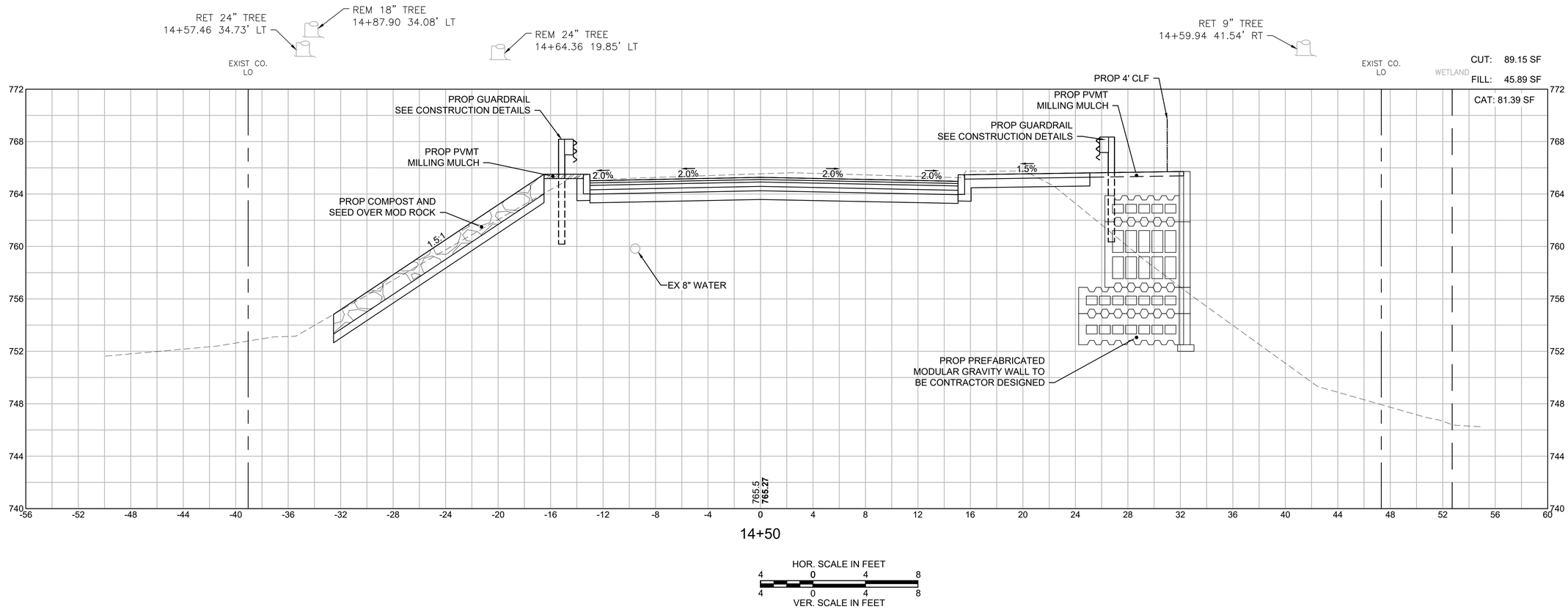


HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	70	81
	PROJECT FILE NO. 612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM

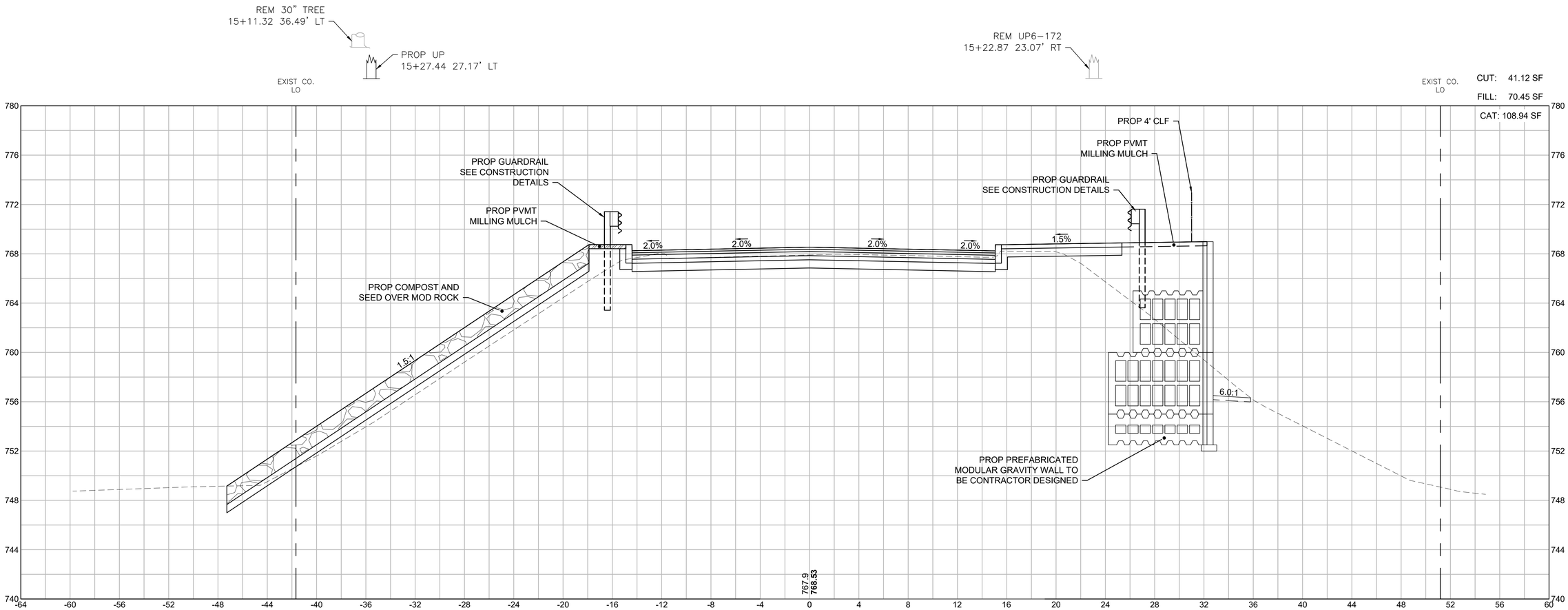


HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	71	81
PROJECT FILE NO.	612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	72	81
	PROJECT FILE NO. 612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM

REM 9" TREE
15+83.29 39.31' LT

REM 9" TREE
15+80.31 29.84' LT

REM 12" TREE
15+77.22 33.31' LT

REM 9" TREE
15+70.06 29.64' LT

REM 15" TREE
15+69.08 32.45' LT

REM 18" TREE
15+71.88 21.34' LT

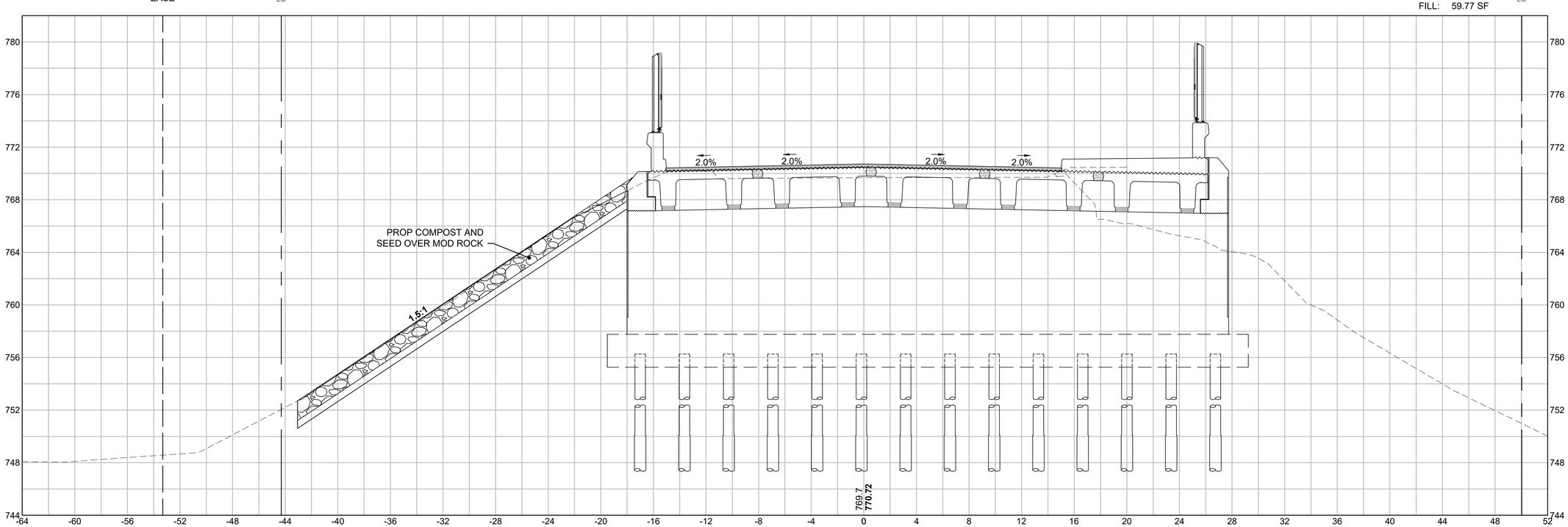
PERM CO. EASE

EXIST CO. LO

CUT: 49.84 SF

FILL: 59.77 SF

EXIST CO. LO



15+50

HOR. SCALE IN FEET
4 0 4 8

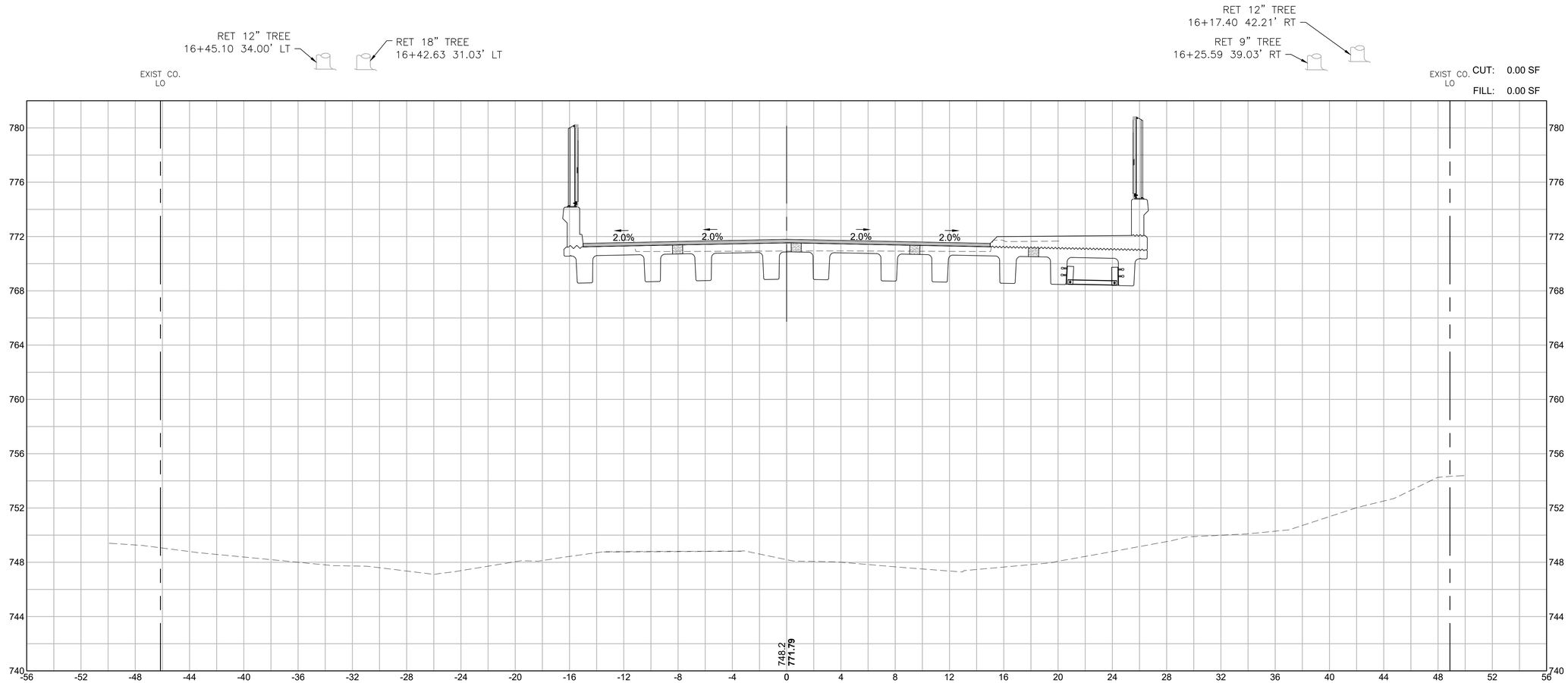
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	73	81
PROJECT FILE NO.	612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM



16+00

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	74	81
	PROJECT FILE NO. 612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM

PROP TREE PLANTING
16+98.62 32.13' LT

REM 24" TREE
16+69.58 41.00' LT

REM 24" TREE
16+72.74 42.48' LT

REM 12" TREE
16+63.58 28.89' LT

PROP UP
16+95.44 26.40' LT

REM 12" TREE
16+59.76 23.56' LT

REM UPLP7
16+71.36 23.20' RT

PROP TREE PLANTING
16+93.11 30.56' RT

PROP TREE PLANTING
16+81.20 34.82' RT

REM 24" TREE
16+73.18 42.74' LT

PROP TREE PLANTING
16+69.70 42.21' RT

REM 12" TREE
16+68.20 46.90' RT

REM 24" TREE
16+64.70 42.22' RT

PROP TREE PLANTING
16+59.06 49.30' RT

RET 24" TREE
16+70.79 51.82' RT

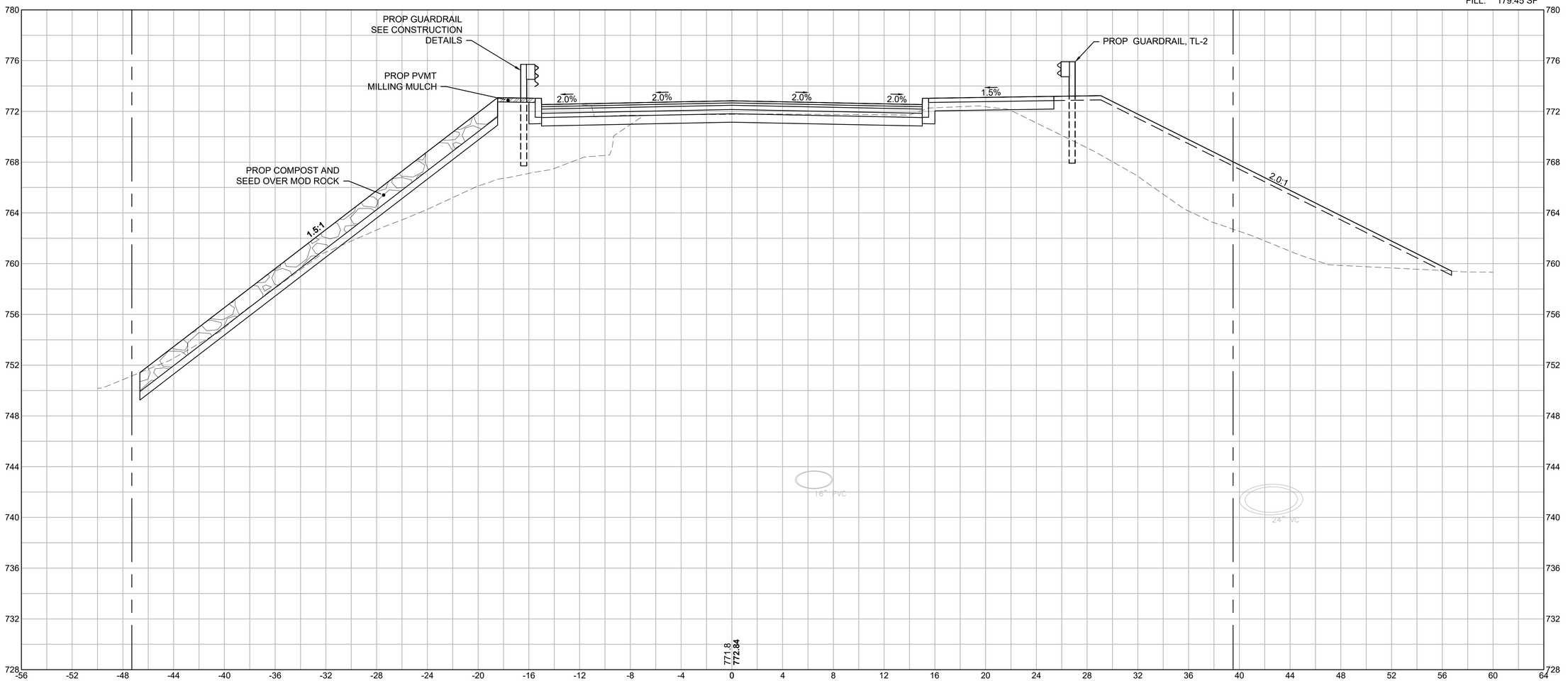
RET 12" TREE
16+66.04 60.75' RT

RET 27" TREE
16+61.92 62.27' RT

RET 9M-2" TREE
16+60.08 64.62' RT

CUT: 32.27 SF

FILL: 179.45 SF



16+50

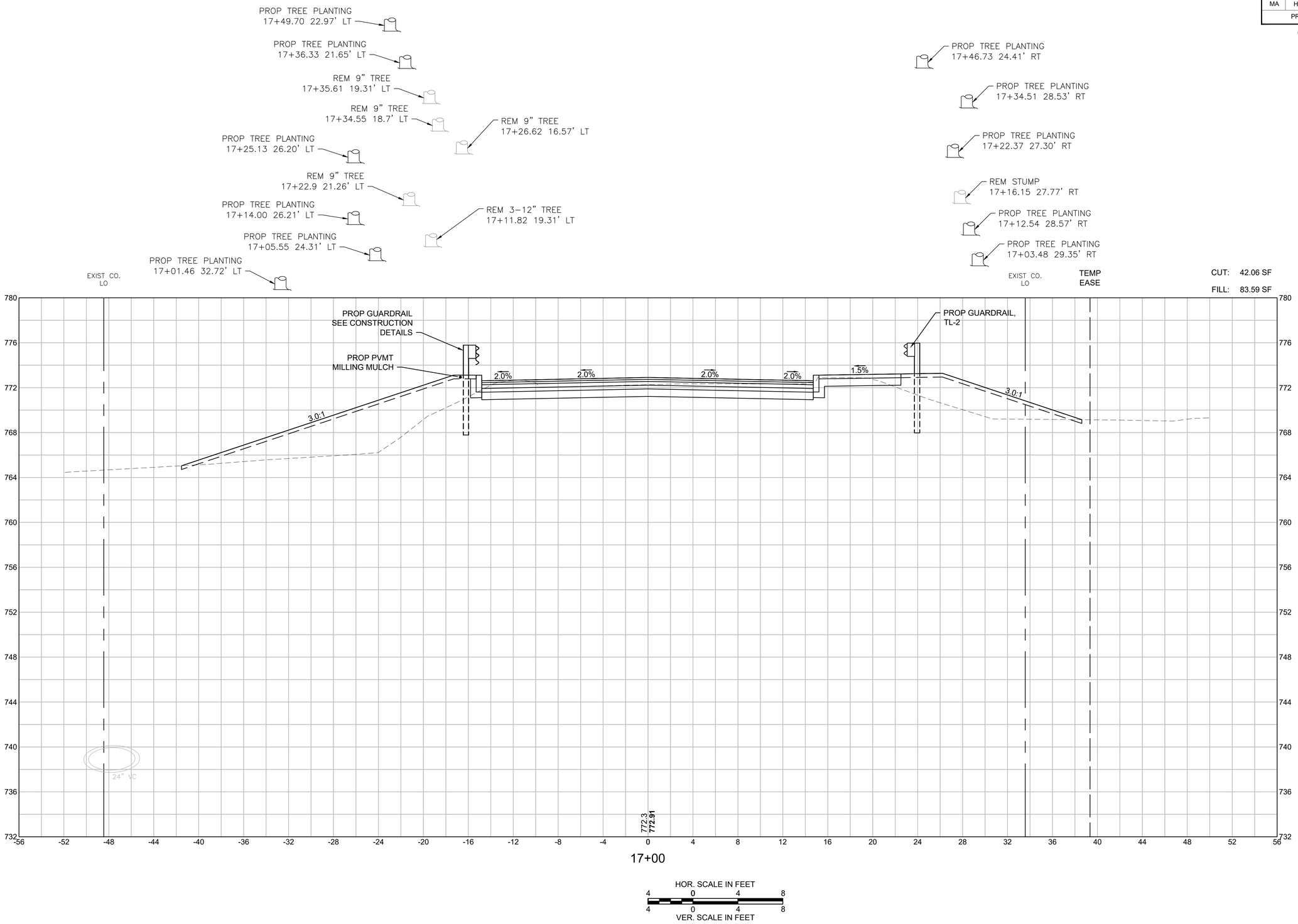
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	75	81
	PROJECT FILE NO. 612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM

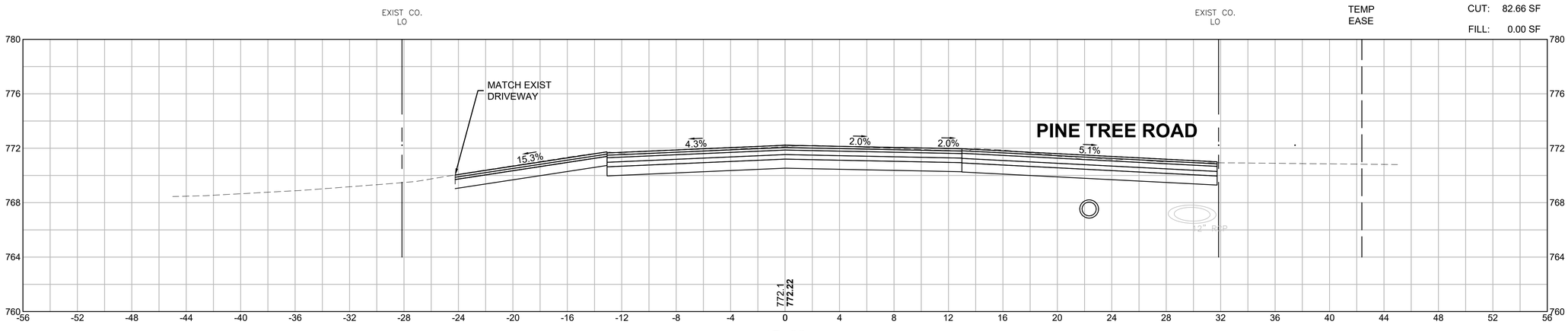


HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	76	81
PROJECT FILE NO.	612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 3:07 PM



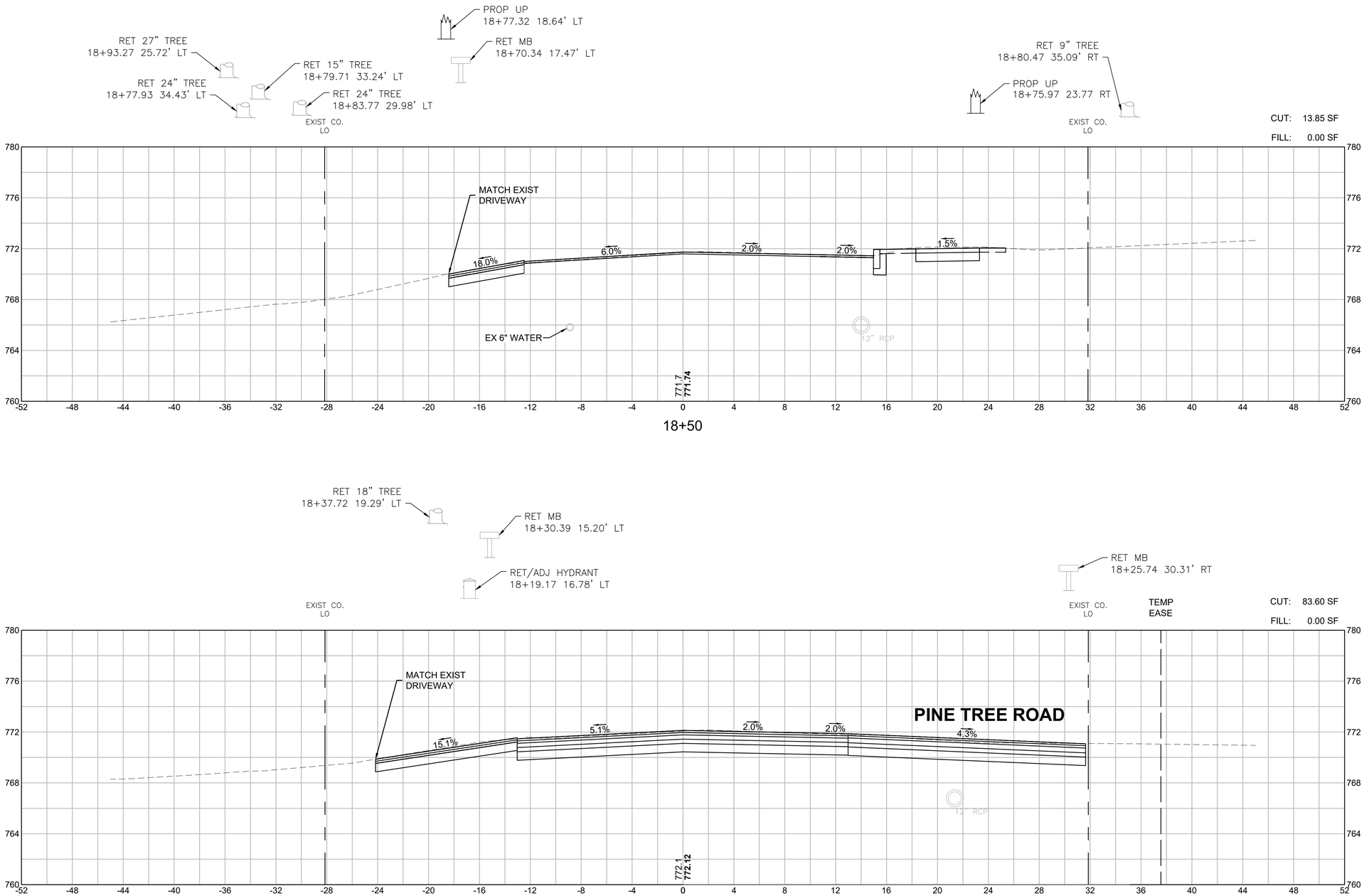
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	77	81
PROJECT FILE NO.	612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM



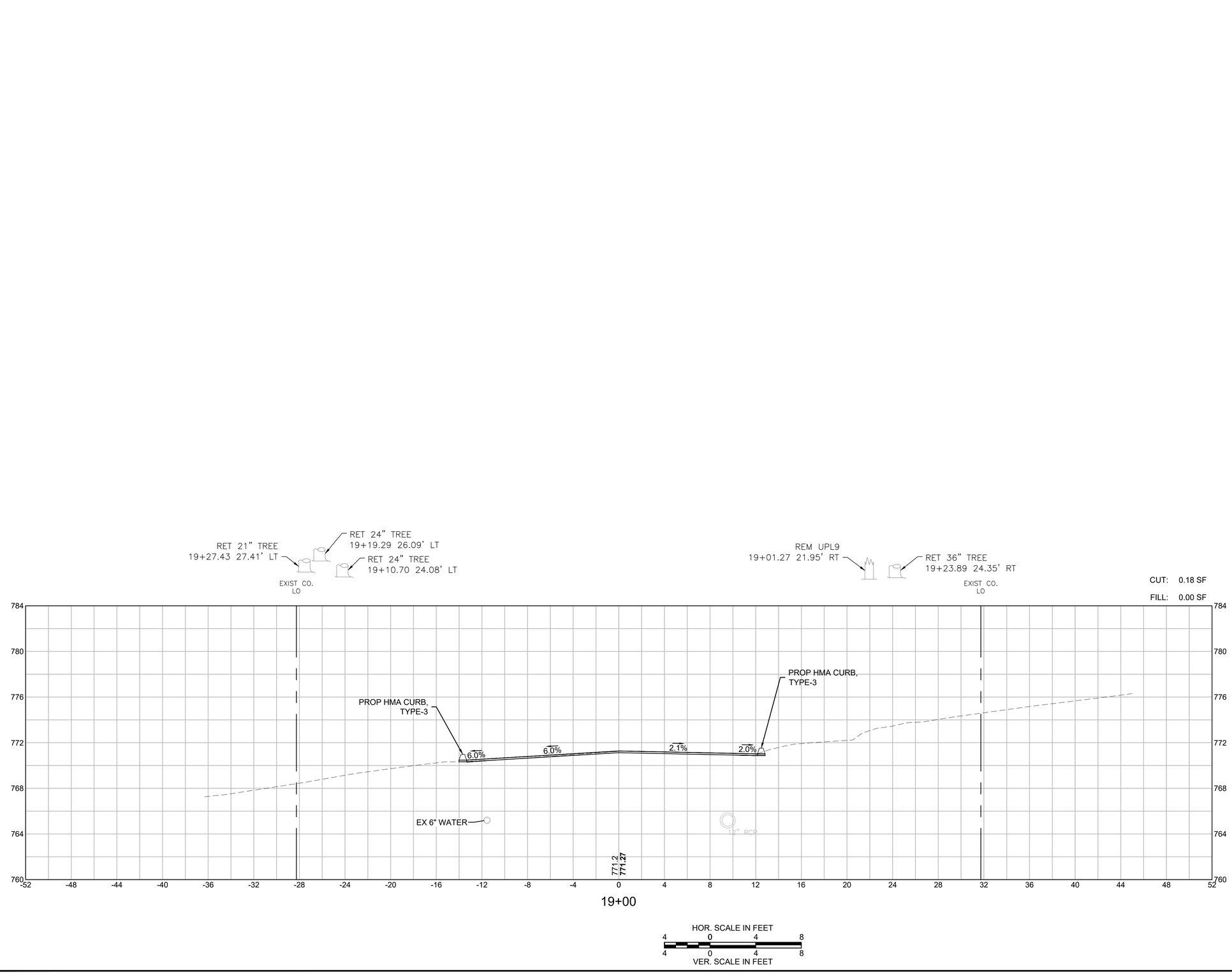
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	78	81
	PROJECT FILE NO. 612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM

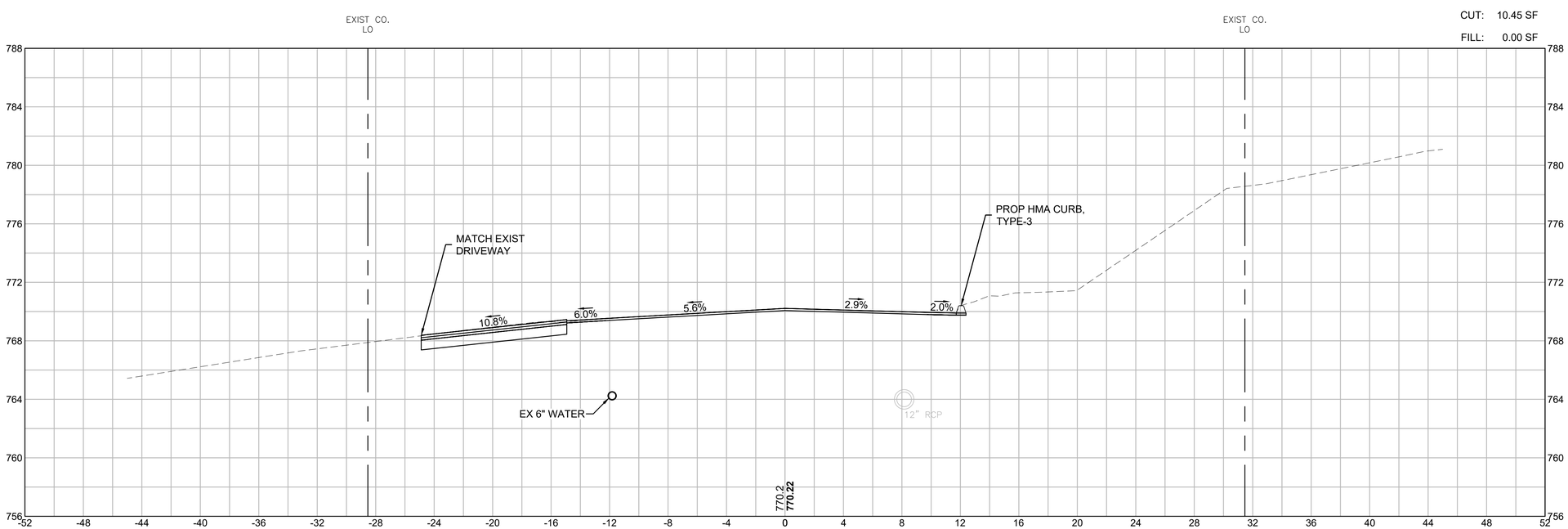


HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

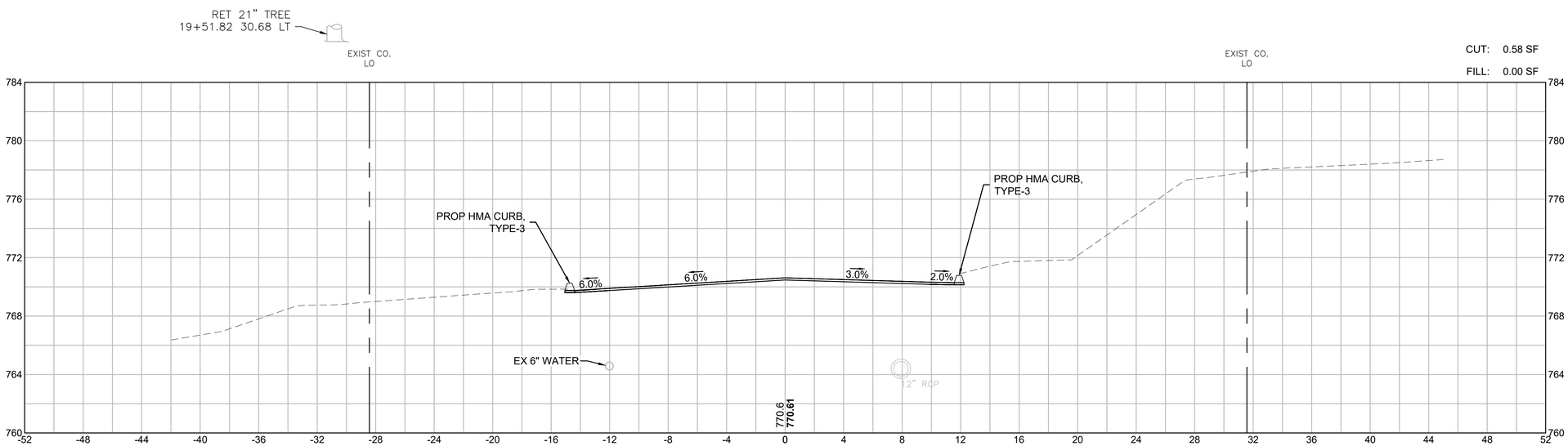
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	79	81
PROJECT FILE NO.	612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM



19+75



19+50

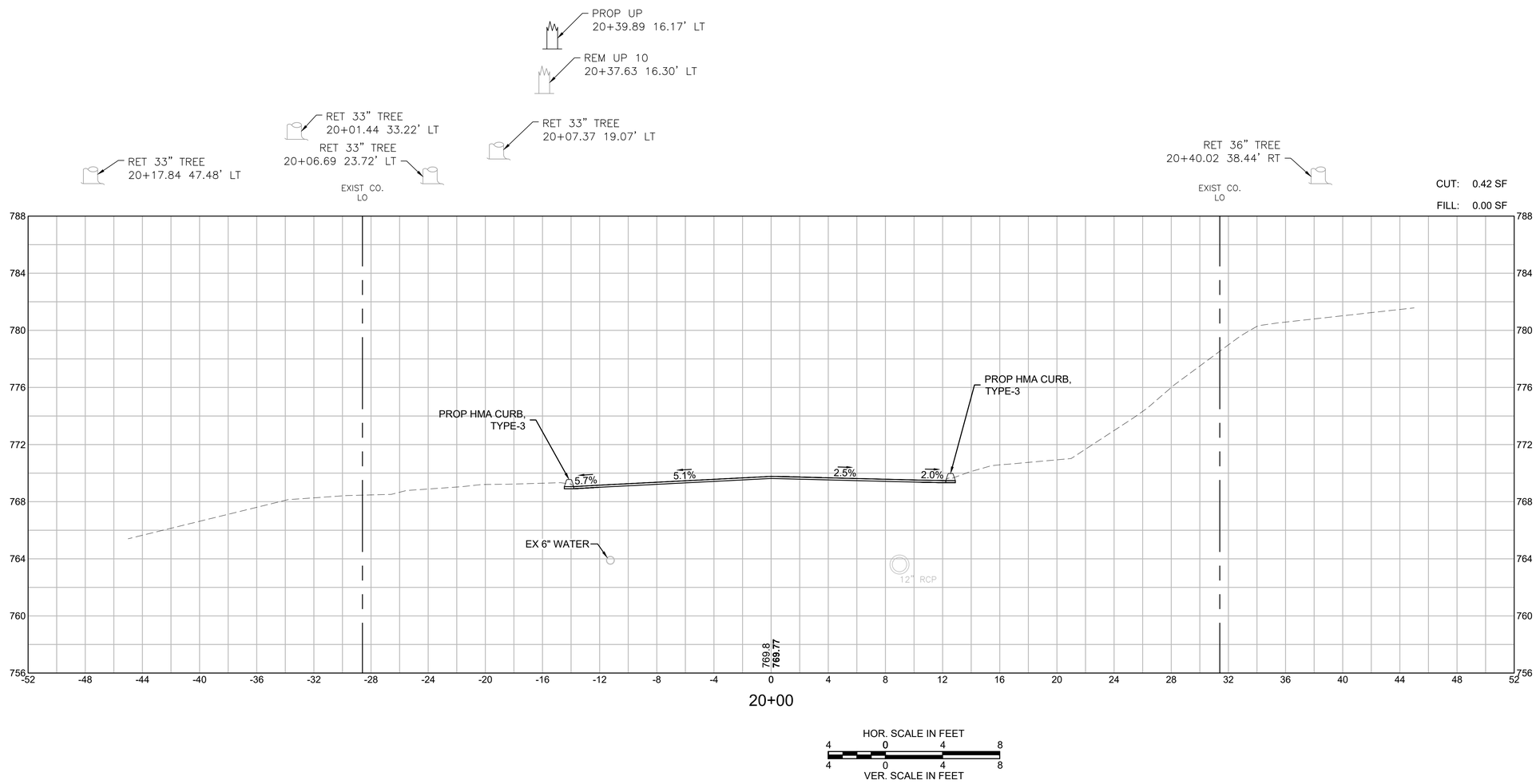
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	80	81
PROJECT FILE NO.	612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM



HOLDEN
SALISBURY STREET OVER THE P&W RAILROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)-003S(963)X	81	81
	PROJECT FILE NO. 612190		

CROSS SECTIONS

612190_HD(CROSS SECTION).DWG Plotted on 20-May-2026 2:36 PM

