MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	1	27
PROJECT FILE NO.	610768		

TITLE SHEET & INDEX

PLAN AND PROFILE OF

PERRY HILL ROAD EXTENSION OVER NORTH BRANCH MANHAN RIVER

BRIDGE NO. W-27-028 (CEQ)

IN THE TOWN OF

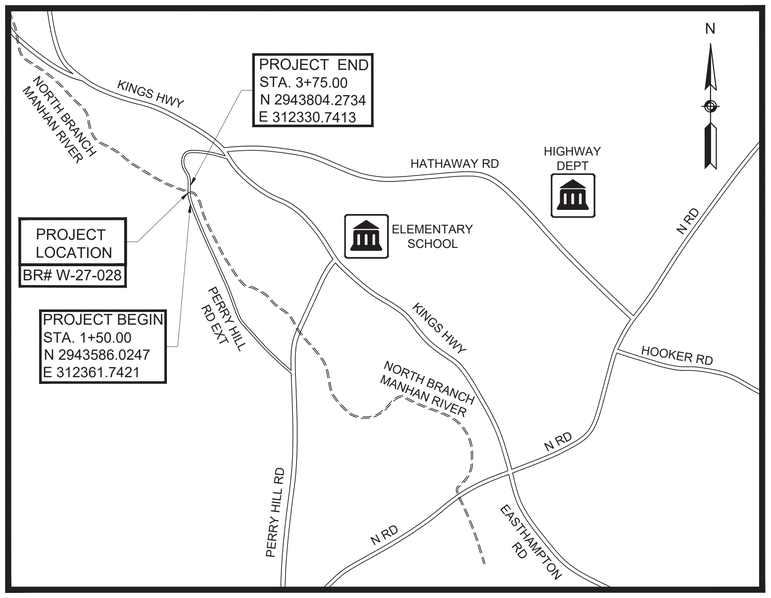
WESTHAMPTON

HAMPSHIRE COUNTY

FEDERAL AID PROJECT NO. STP(BR-OFF)-003S(808)X

THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

INDEX



LENGTH OF PROJECT = 225.00 FEET = 0.043 MILE

DESIGN DESIGNATION - PERRY HILL ROAD EXTENSION

DESIGN SPEED	25 MPH
ADT (2022)	10 VPD
ADT (2032)	11 VPD
K	10%
D	50%
T (PEAK HOUR)	1%
T (AVERAGE DAY)	1%
DHV	3 VPH
DDHV	2 VPH
FUNCTIONAL CLASSIFICATION	LOCAL ROAD

COMMONWEALTH OF MASSACHUSETTS
JEFF E. LEWIS
STRUCTURAL
No. 37302
REGISTERED PROFESSIONAL ENGINEER

Jeff Lewis
Digitally signed by Jeff Lewis
Date: 2024-12-13 12:02:33-05:00

DATE	DESCRIPTION	REV #

massDOT
Massachusetts Department of Transportation
Highway Division

GAROFALO
GAROFALO & ASSOCIATES, INC.
CIVIL & STRUCTURAL ENGINEERS\SURVEYORS
LAND PLANNERS\ENVIRONMENTAL SCIENTISTS
85 CORLISS STREET, P.O. BOX 6145
PROVIDENCE, R.I. 02940
(401)273-6000 FAX: (401)273-1000

APPROVED

Carrie Lavallee
Digitally signed by Carrie Lavallee, P.E.
Date: 2024.12.26 10:08:36 -05'00'

12/26/2024

CHIEF ENGINEER — **DATE**

610768_HD_01 (COVER).DWG Plotted on 9-Dec-2024 1:46 PM

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
		HAY BALES/SILT FENCE
		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'	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
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
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
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT

ABBREVIATIONS (cont.)

GENERAL

PWW	PAVED WATERWAY
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
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

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

WESTHAMPTON
PERRY HILL ROAD EXTENSION

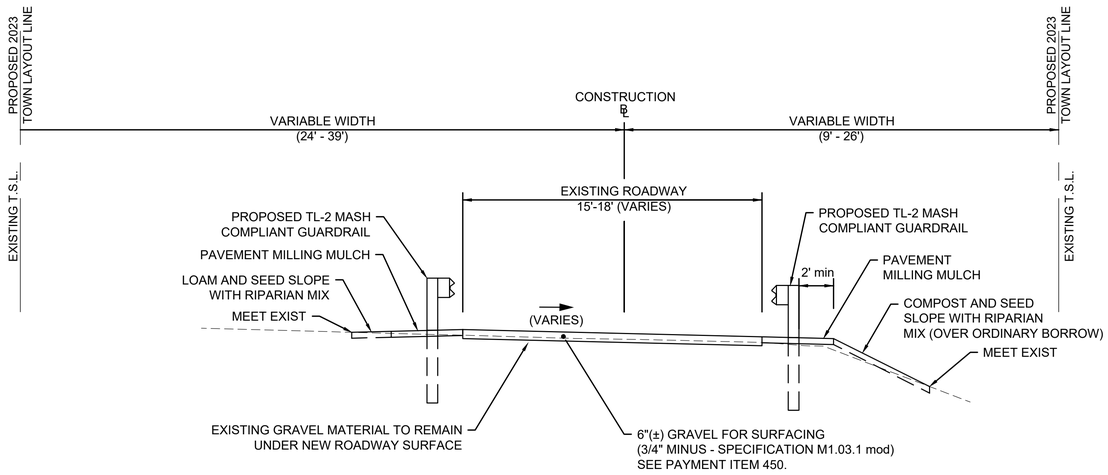
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	2	27
PROJECT FILE NO.	610768		

LEGEND & ABBREVIATIONS

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	3	27
PROJECT FILE NO.	610768		

TYPICAL SECTIONS



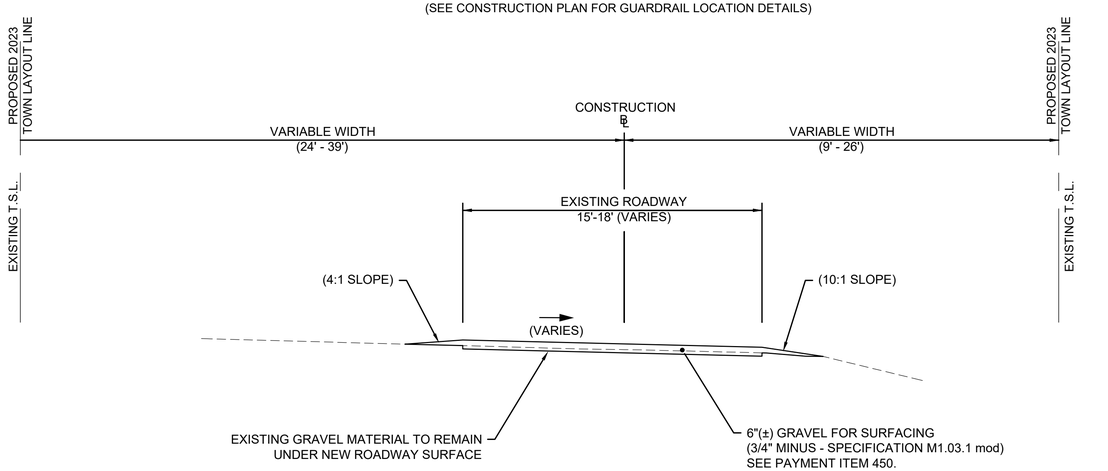
TYPICAL GRAVEL ROADWAY SECTION

PERRY HILL ROAD EXTENSION (WITH GUARDRAIL)

SCALE: 1" = 4'

STA 2+68± TO STA 3+62±

(SEE CONSTRUCTION PLAN FOR GUARDRAIL LOCATION DETAILS)



TYPICAL GRAVEL ROADWAY SECTION

PERRY HILL ROAD EXTENSION (WITHOUT GUARDRAIL)

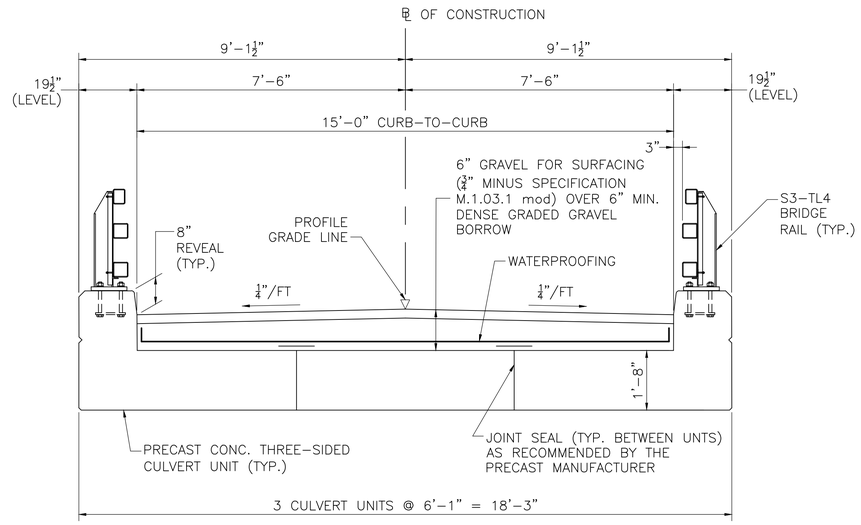
SCALE: 1" = 4'

STA 1+50 TO STA 2+33±, STA 3+62± TO STA 3+75

(SEE CONSTRUCTION PLAN FOR GUARDRAIL LOCATION DETAILS)

TYPICAL SECTION NOTES:

1. ROADWAY CROSS SLOPES WILL VARY TO CLOSELY MATCH EXISTING CROSS SLOPES.
2. SEE CROSS SECTION SHEETS FOR DETAILS SHOWING CROSS SLOPES AT EACH PARTICULAR SECTION.



PROPOSED CULVERT TRANSVERSE SECTION

SCALE: ½" = 1'–0"

STA 2+33± TO STA 2+68±

FOR THE TRANSITIONAL AREAS.

GRAVEL ROADWAY NOTES

GRAVEL ROADWAY CONSTRUCTION - PERRY HILL ROAD EXTENSION
6"(±) GRAVEL FOR SURFACING (3/4" MINUS - SPECIFICATION M1.03.1 mod)
(NOTE: ALL GRAVEL TO BE COMPACTED TO 95% DRY DENSITY)

M1.03.1 mod (3/4" MINUS)	
SQUARE OPENING SIEVE	PERCENT PASSING
1 INCH	100
3/4 INCH	86-100
NO. 4	40-70
NO. 50	5-20
NO. 200	1-6

PAVEMENT NOTES

GRAVEL ROADWAY - PERRY HILL ROAD EXT
6"± GRAVEL FOR SURFACING (M1.01.1 mod) OVER
EXISTING GRAVEL ROADWAY MATERIAL

GRAVEL ROADWAY OVER BRIDGE
6"± GRAVEL FOR SURFACING (M1.01.1 mod) OVER
6"(MIN) DENSE GRADED GRAVEL BORROW OVER
WATERPROOFING MEMBRANE OVER
CONCRETE CULVERT

PROPOSED HOT MIX ASPAHLT DRIVEWAY
1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
ASPHALT EMULSION FOR TACK COAT OVER
2.5" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
EXISTING GRAVEL

TYPICAL HIGHWAY SECTION NOTES:

1. SEE CROSS SECTION SHEETS FOR DETAILS SHOWING CROSS SLOPES FOR THE TRANSITIONAL AREAS.

HIGHWAY GUARD DETAILS

STA 1+53.65 RIGHT 12.47' - 1+79.88 RIGHT 9.24' GUARDRAIL TANGENT END TREATMENT (TL-2)
STA 1+79.88 RIGHT 9.24' - 2+15.03 RIGHT 7.75' TRANSITION TO BRIDGE RAIL

STA 2+66.96 RIGHT 7.75' - 3+00.71 RIGHT 7.75' TRANSITION TO BRIDGE RAIL
STA 3+00.71 RIGHT 7.75' - 3+23.58 RIGHT 10.47' GUARDRAIL TANGENT END TREATMENT (TL-2)

STA 2+89.40 LEFT 7.75' - 3+24.99 LEFT 7.75' TRANSITION TO BRIDGE RAIL
STA 3+24.99 LEFT 7.75' - 3+52.37 LEFT 9.50' GUARDRAIL TANGENT END TREATMENT (TL-2)

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

NONE

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	4	27
PROJECT FILE NO.	610768		

CONSTRUCTION PLAN

NAD 83
N
NORTH BRANCH MANHAN RIVER
PERRY HILL RD EXT (PUBLIC - WIDTH VARIES)
0+00 CONSTRUCTION BASELINE
N22°05'12"W 135.41'
UNDERGROUND CABLE MARKER NO 38
AMERICAN TELEPHONE & TELEGRAPH CO. EASEMENT – 16.5 FT WIDE SEE BK 1432, PG. 73
AMERICAN TELEPHONE & TELEGRAPH CO. BK/PG 1455/682 MAP/LOT 19/33
CONCRETE BLOCK BUILDING
N/F DAVID AND LAURA BLAKESLEY BK/PG 2452/195 PLAN BK/PG 126/65 NO# KINGS HIGHWAY MAP/LOT 15/31
N/F MEEHAN ESTATES INC BK/PG 13027/259 PLAN BK/PG 167/107 NO# PERRY HILL ROAD EXT MAP/LOT 19/68
N/F MEEHAN CONSTRUCTION COMPANY, INC. LE BK/PG 1140/180 42 PERRY HILL ROAD MAP/LOT 19/35
SAMUEL G. TAYLOR AND CAROL D. LOLLIS BK/PG 4923/245 35 PERRY HILL RD EXT MAP/LOT 19/34
PROP COMPOST AND NATIVE SEED MIX
PROP LIMIT OF GRADING
PROP SEDIMENT CONTROL BARRIER
REM 8" GRAV BASE. REPLACE WITH 6" ORDINARY BORROW, 1" COMPOST BLANKET AND NATIVE SEED (GRASSED SWALE)
REM CONC POST (1)
PROP VA4 CURB TRANSITION (6.5')
R&D EXIST BIT PVMT PROP HMA DRIVE (PITCH TO DRAIN SOUTHERLY)
GRAVEL ROADWAY
PROP VA4 CURB
PROP TRANSITION TO BRIDGE RAIL
REM TREE
REM CONC POST (2)
PROP GUARDRAIL TANGENT END TREATMENT, TL-2
STA 1+50.00 LIMIT OF PROJECT MATCH EXISTING N 2943586.0247 E 312361.7421
Δ=23°47'24" R=200.00' L=83.04' T=42.13'
PC +35.41
PT +18.45
BRIDGE
N1°42'12"E 82.89'
PC +01.34
Δ=40°09'42" R=100.00' L=70.10' T=36.56'
PT +71.44
N38°27'29"W 34.36'
PC +05.80
Δ=70°57'27" R=65.00' L=80.50' T=46.33'
PT +86.30
PC +14.16
N32°29'57"E 27.86'
Δ=49°47'42" R=70.00' L=60.84' T=32.49'
PT +75.00
N82°17'39"E 25.00'
6+00
PROP 2024 TOWN LAYOUT LINE
STA 3+75.00 LIMIT OF PROJECT MATCH EXISTING N 2943804.2734 E 312330.7413
TEMP EASEMENT
EXISTING CULVERT TO REMAIN
PROP STONE WALL
PROP WATER DIVERSION APPROX LOCATION. ADJUST LENGTH AND LOCATION BASED ON SITE CONDITIONS (TYP)
PROP BRIDGE 15' WIDE (CURB TO CURB)
PROP LAWN SEED AND COMPOST. LIMITS TO BE DETERMINED IN THE FIELD
REM CONC POST (3)
CLASS VIII(8)-(28"-35" D50) STONE FILL LAYER 3.3' FOR EMBANKMENT SCOUR PROTECTION. MODIFIED ROCKFILL (M2.02.4) PLACED TO FILL VOIDS IN THE RIPRAP
TOWN STREET LINE
100' WETLAND BUFFER
UNDERGROUND TEL
GARAGE
SHED
#35
ROCKS
N 2943500
N 2943750
N 2944000
E 312250
E 312500
0 20 50 100
SCALE: 1" = 20'

FOR PROFILE PLAN: SEE SHEET NO. 5

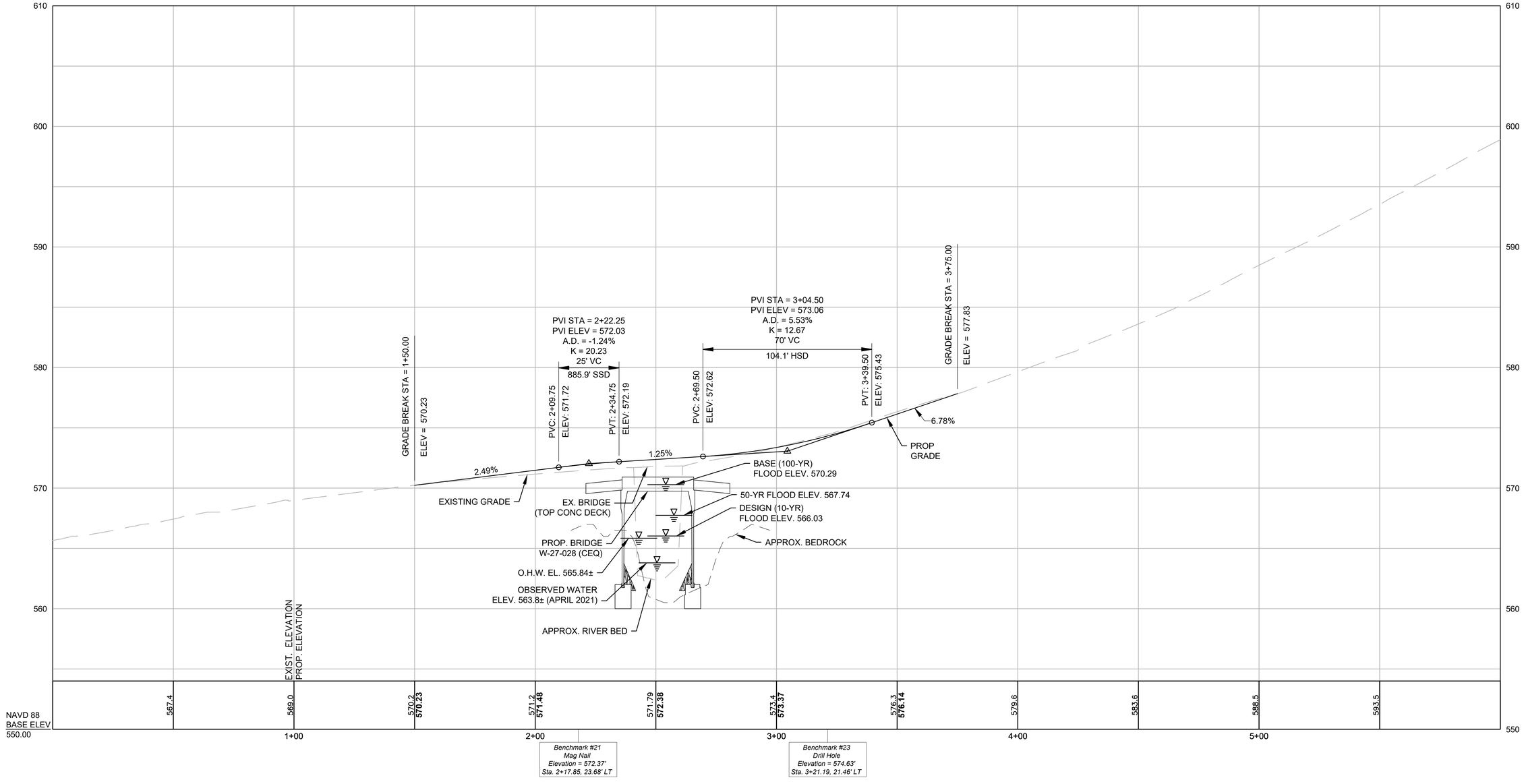
610768_HD-04 (CONSTRUCTION PLAN).DWG Plotted on 4-Nov-2024 11:53 AM

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	5	27
	PROJECT FILE NO. 610768		

PROFILE

610768_HD-05 (PROFILE).DWG Plotted on 1-Nov-2024 12:15 PM



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

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 4

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	6	27
PROJECT FILE NO.	610768		

GRADING PLAN

610768_HD-06 (GRADING).DWG Plotted on 1-Nov-2024 12:16 PM

NAD 83

N

41
N: 2943696.338'
E: 312114.945'
EL: 0.000'
MMON CONC (HELD)

42
N: 2943554.970'
E: 312186.691'
EL: 0.000'
MMON CONC (HELD FOR POSITION AND ROTATION)

26
N: 2943727.222'
E: 312209.976'
EL: 0.000'
STAKE AND NAIL SET

40
N: 2943768.185'
E: 312256.040'
EL: 574.996'
DH END

UNDERGROUND CABLE MARKER NO 38

AMERICAN TELEPHONE & TELEGRAPH CO. EASEMENT – 16.5 FT WIDE SEE BK 1432, PG. 73

UNDERGROUND CABLE MARKER NO 38

AMERICAN TELEPHONE & TELEGRAPH CO. BK/PG 1455/682 MAP/LOT 19/33

CONCRETE BLOCK BUILDING

UNDERGROUND TELEPHONE

NORTH BRANCH MANHAN RIVER

N/F
DAVID AND LAURA BLAKESLEY
BK/PG 2452/195
PLAN BK/PG 126/65
NO# KINGS HIGHWAY
MAP/LOT 15/31

N 2943500
E 312250

N 2943750
E 312250

N 2944000
E 312250

100' WETLAND BUFFER

21
N: 2943633.491'
E: 312328.455'
EL: 572.370'
MAG SET

754
N: 2943622.661'
E: 312320.378'
EL: 571.926'
MMON CONC BRKN

23
N: 2943752.479'
E: 312332.074'
EL: 574.634'
DH SET

27
N: 2943880.851'
E: 312249.707'
EL: 585.525'
STAKE AND NAIL SET

BIT PAVE

TOWN STREET LINE

N/F
MEEHAN ESTATES INC
BK/PG 13027/259
PLAN BK/PG 167/107
NO# PERRY HILL ROAD EXT
MAP/LOT 19/68

VGWF B1
VGWF BB1
VGWF B2
VGWF BB2
VGWF B3
VGWF BB3
VGWF B4
VGWF BB4 E
VGBF A1
VGBF A2
VGBF A3
VGBF A4
VGBF A5
VGBF A6
VGBF A7
VGBF A8
VGBF A9 E
VGBF AA1
VGBF AA2
VGBF AA7
VGBF AA8 E
DRAIN INV (BURIED)
DRAIN INV (BURIED)
ROCKS
UP#18
UP#19

STA 1+50.00
LIMIT OF PROJECT
MATCH EXISTING
N 2943586.0247
E 312361.7421

PC +35.41

PT +18.45

PC +01.34

PT +71.44

STA 3+75.00
LIMIT OF PROJECT
MATCH EXISTING
N 2943804.2734
E 312330.7413

PC +05.80

PT +86.30

PC +14.16

PT +75.00

6+00

570.16
570.86
570.23
571.14
571.70
571.48
572.02
572.04
572.23
572.38
572.59
572.70
573.29
573.37
574.38
574.53
575.92
576.14
577.51
577.83
577.99
576.45
574.58
573.26
572.57
572.23
571.87
571.30
570.55
569.99

PERRY HILL RD EXT
(PUBLIC - WIDTH VARIES)

0+00 CONSTRUCTION BASELINE

NORTH BRANCH MANHAN RIVER

22
N: 2943627.667'
E: 312443.552'
EL: 562.516'
DH SET

N/F
MEEHAN CONSTRUCTION COMPANY, INC.
LE BK/PG 1140/180
42 PERRY HILL ROAD
MAP/LOT 19/35

SAMUEL G. TAYLOR AND
CAROL D. LOLLIS
BK/PG 4923/245
35 PERRY HILL RD EXT
MAP/LOT 19/34

GARAGE

SHED

#35

0 20 50 100

SCALE: 1" = 20'

PERRY HILL RD EXT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	0+00.00	2943446.8442	312417.6455		N22°05'12"W 135.41'	1+35.41	2943572.3144	312366.7313
C1	1+35.41	2943572.3144	312366.7313	R=200.00' Δ=23°47'24" L=83.04' T=42.13'		2+18.45	2943653.4615	312352.1429
L2	2+18.45	2943653.4615	312352.1429		N1°42'12"E 82.89'	3+01.34	2943736.3164	312354.6069
C2	3+01.34	2943736.3164	312354.6069	R=100.00' Δ=40°09'42" L=70.10' T=36.56'		3+71.44	2943801.4833	312332.9573
L3	3+71.44	2943801.4833	312332.9573		N38°27'29"W 34.36'	4+05.80	2943828.3932	312311.5843
C3	4+05.80	2943828.3932	312311.5843	R=65.00' Δ=70°57'27" L=80.50' T=46.33'		4+86.30	2943903.7432	312307.6625
L4	4+86.30	2943903.7432	312307.6625		N32°29'57"E 27.86'	5+14.16	2943927.2434	312322.6333
C4	5+14.16	2943927.2434	312322.6333	R=70.00' Δ=49°47'42" L=60.84' T=32.49'		5+75.00	2943959.0010	312372.2850
L5	5+75.00	2943959.0010	312372.2850		N82°17'39"E 25.00'	6+00.00	2943962.3532	312397.0593

Point Table

Point #	Northing	Easting	Elevation	Raw Description
21	2943653.4910	312328.4550	572.37	MMAG SET
22	2943627.6670	312443.5520	562.52	MDHL SET
23	2943752.4790	312332.0740	574.63	MDHL SET
24	2943329.4160	312488.2550	561.50	MSTN SET
26	2943727.2220	312209.9760	0.00	MSTN SET
27	2943880.8509	312249.7066	585.53	MSTN SET
40	2943768.1850	312256.0400	575.00	MDHL FND
41	2943696.3380	312114.9450	0.00	MMON CONC (HELD)
42	2943554.9700	312186.6910	0.00	MMON MMON CONC (HELD FOR POSITION AND ROTATION)
754	2943622.6610	312320.3780	571.93	MMON CONC BRKN

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	7	27
PROJECT FILE NO.	610768		

CONSTRUCTION BASELINE TIES

610768_HD-07 (SURVEY TIES).DWG Plotted on 1-Nov-2024 12:20 PM

NAD 83 N

41 N: 2943696.338' E: 312114.945' EL: 0.000' MMON CONC (HELD)

42 N: 2943554.970' E: 312186.691' EL: 0.000' MMON CONC (HELD FOR POSITION AND ROTATION)

26 N: 2943727.222' E: 312209.976' EL: 0.000' STAKE AND NAIL SET

40 N: 2943768.185' E: 312256.040' EL: 574.996' DH FND

UNDERGROUND CABLE MARKER NO 38

AMERICAN TELEPHONE & TELEGRAPH CO. EASEMENT – 16.5 FT WIDE SEE BK 1432, PG. 73

UNDERGROUND CABLE MARKER NO 38

AMERICAN TELEPHONE & TELEGRAPH CO. BK/PG 1455/682 MAP/LOT 19/33

CONCRETE BLOCK BUILDING

NORTH BRANCH MANHAN RIVER

N/F DAVID AND LAURA BK/PG 2452 PLAN BK/PG NO# KINGS HI MAP/LOT 15

27 N: 2943880.851' E: 312249.707' EL: 585.525' STAKE AND NAIL SET

N/F MEEHAN ESTATES INC BK/PG 13027/259 PLAN BK/PG 167/107 NO# PERRY HILL ROAD EXT MAP/LOT 19/68

754 N: 2943622.661' E: 312320.378' EL: 571.926' MMON CONC BRKN

21 N: 2943653.491' E: 312328.455' EL: 572.370' MAG SET

23 N: 2943752.479' E: 312332.074' EL: 574.634' DH SET

BIT PAVE

+66.62 OFFSET: 8.58

+50.00 OFFSET: 8.21

+74.45 OFFSET: 8.76

STA 1+50.00 LIMIT OF PROJECT MATCH EXISTING N 2943586.0247 E 312361.7421

PC +35.41

+50.00 OFFSET: 10.25

+03.13 OFFSET: 7.50

BRIDGE CURB FOR TIE

PT +18.45

BRIDGE CURB FOR TIE

+77.46 OFFSET: 7.50

PC +01.34

+01.34 OFFSET: 7.50

+01.34 OFFSET: 7.50

+37.17 OFFSET: 7.50

PT +71.44

+70.89 OFFSET: 7.50

STA 3+75.00 LIMIT OF PROJECT MATCH EXISTING N 2943804.2734 E 312330.7413

PC +05.80

PT +86.30

PC +14.16

PT +75.00

6+00

TOWN STREET LINE

PERRY HILL RD EXT (PUBLIC - WIDTH VARIES) 0+00

NORTH BRANCH MANHAN RIVER

#35

GARAGE

SAMUEL G. TAYLOR AND CAROL D. LOLLIS BK/PG 4923/245 35 PERRY HILL RD EXT MAP/LOT 19/34

SHED

22 N: 2943627.667' E: 312443.552' EL: 562.516' DH SET

24 N: 2943329.416' E: 312488.255' EL: 561.495' STAKE AND NAIL SET

N/F MEEHAN CONSTRUCTION COMPANY, INC. LE BK/PG 1140/180 42 PERRY HILL ROAD MAP/LOT 19/35

0 20 50 100

SCALE: 1" = 20'

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	8	27
PROJECT FILE NO.	610768		

TEMPORARY TRAFFIC CONTROL PLAN

610768_HD-08 (TTC).DWG Plotted on 1-Nov-2024 12:23 PM

NAD 83

N

N/F
MEEHAN ESTATES INC
BK/PG 13027/259
PLAN BK/PG 167/107
NO# PERRY HILL ROAD EXT
MAP/LOT 19/68

AMERICAN TELEPHONE & TELEGRAPH CO.
BK/PG 1455/682
MAP/LOT 19/33

UNDERGROUND TELEPHONE

BIT PAVE

NORTH BRANCH MANHAN RIVER

N/F
DAVID AND LAURA BLAKESLEY
BK/PG 2452/195
PLAN BK/PG 126/65
NO# KINGS HIGHWAY
MAP/LOT 15/31

TOWN STREET LINE

UP#183-9

ROCKS

TEMPORARY 6' CHAIN LINK CONSTRUCTION FENCE

STA 1+50.00
LIMIT OF PROJECT
MATCH EXISTING
N 2943586.0247
E 312361.7421

TEMPORARY CONCRETE BARRIER MASH TL-2

PC +05.80

PT +86.30

PC +14.16

PT +71.44

PC +35.41

PT +18.45

PC +01.34

STA 3+75.00
LIMIT OF PROJECT
MATCH EXISTING
N 2943804.2734
E 312330.7413

PT +75.00

6+00

TEMPORARY CONCRETE BARRIER MASH TL-2

TEMPORARY 6' CHAIN LINK CONSTRUCTION FENCE

#35

GARAGE

SAMUEL G. TAYLOR AND
CAROL D. LOLLIS
BK/PG 4923/245
35 PERRY HILL RD EXT
MAP/LOT 19/34

PERRY HILL RD EXT
(PUBLIC - WIDTH VARIES)

0+00 CONSTRUCTION BASELINE

NORTH BRANCH MANHAN RIVER

SHED

N/F
MEEHAN CONSTRUCTION COMPANY, INC.
LE BK/PG 1140/180
42 PERRY HILL ROAD
MAP/LOT 19/35

1. DETOUR PLAN AND SIGNAGE DETAILS ARE SHOWN ON PLAN SHEET 9.
2. THE CONTRACTOR SHALL COORDINATE WITH THE TOWN (DPW, FIRE AND POLICE), UTILITIES AND THE RESIDENT(S) OF 35 PERRY HILL ROAD EXTENSION PRIOR TO CLOSURE OF THE BRIDGE AND IMPLEMENTATION OF THE DETOUR. IF THE DRIVEWAY TO THIS RESIDENCE IS TO BE BARRED FROM ACCESS, THE CONTRACTOR SHALL PROVIDE ALTERNATE MEANS OF VEHICLE PARKING AND ACCESS TO THE HOME, IN AGREEMENT WITH THE RESIDENT(S) AND ENGINEER.
3. CONSTRUCTION STAGING AREAS SUGGESTED BETWEEN BRIDGE AND TEMPORARY CONCRETE BARRIERS.
4. PAVED ACCESS ROAD TO PARCEL 19/33 (JUST SOUTHWEST OF BRIDGE) IS CURRENTLY USED TO AS A LOGGING ACCESS ROAD AND LOG LOADING AREA. CONTRACTOR WILL NEED TO PROVIDE ACCESS (EXISTING OR TEMP DRIVE) TO THE OWNER/OPERATOR DURING CONSTRUCTION.

0 20 50 100

SCALE: 1" = 20'

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	9	27
	PROJECT FILE NO. 610768		

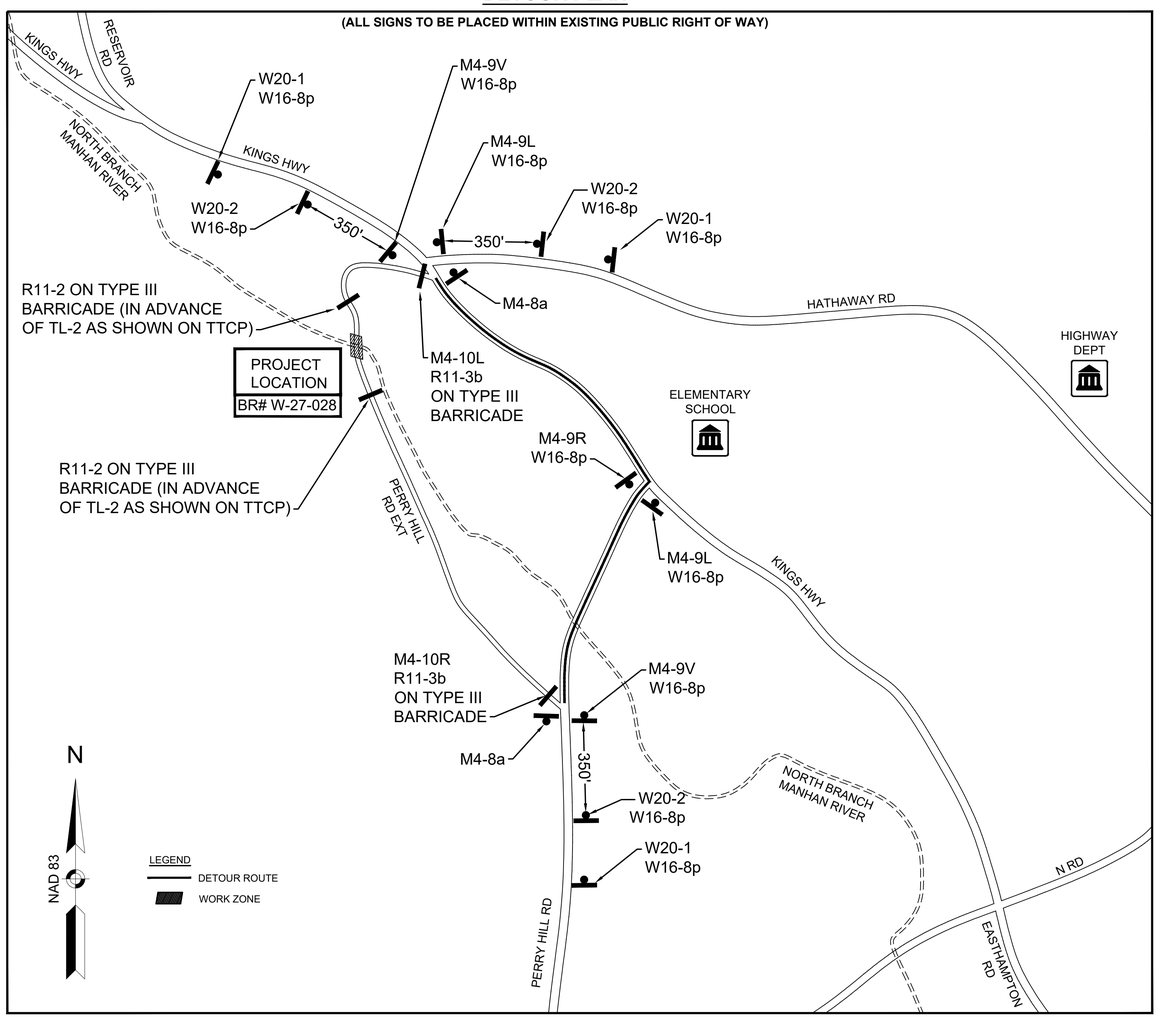
DETOUR PLAN WITH SIGN SUMMARY CHART

610768_HD-09 (DETOUR).DWG Plotted on 1-Nov-2024 12:27 PM

NOTE:
USE MUTCD FIGURE 6H-8 AS GUIDANCE FOR PLACEMENT OF SIGNS.

DETOUR PLAN

(ALL SIGNS TO BE PLACED WITHIN EXISTING PUBLIC RIGHT OF WAY)



DETOUR LENGTH = 0.36 MILE
SCALE: 1" = 250'
(ALL ROADS ALONG DETOUR ROUTE ARE TOWN OWNED)

SIGN SUMMARY NOTES:

1. SIGN TEXT SHALL CONFORM TO MUTCD (LATEST EDITION).
2. THE LEGEND BORDER AND BACKGROUND SHALL BE HIGH INTENSITY REFLECTIVE SHEETING.

TEMPORARY 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 BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	TOTAL AREA IN SQUARE FEET
M4-8a	24"	18"	END DETOUR	SEE MUTCD STANDARDS			2	FLUORESCENT ORANGE	BLACK	BLACK	WOOD POST 1	3.0	6.0
M4-9L	30"	24"	DETOUR ←				2	FLUORESCENT ORANGE	BLACK	BLACK	WOOD POST 1	5.0	10.0
M4-9R	30"	24"	DETOUR →				1	FLUORESCENT ORANGE	BLACK	BLACK	WOOD POST 1	5.0	5.0
M4-9V	30"	24"	DETOUR ↑				2	FLUORESCENT ORANGE	BLACK	BLACK	WOOD POST 1	5.0	10.0
M4-10L	48"	18"	DETOUR ←				1	FLUORESCENT ORANGE	BLACK	BLACK	TYPE III BARRICADE	6.0	6.0
M4-10R	48"	18"	DETOUR →				1	FLUORESCENT ORANGE	BLACK	BLACK	TYPE III BARRICADE	6.0	6.0
R11-2	48"	30"	ROAD CLOSED				2	WHITE	BLACK	BLACK	TYPE III BARRICADE	10.0	20.0
R11-3b	60"	30"	BRIDGE OUT PERRY HILL RD EXT LOCAL TRAFFIC ONLY				2	WHITE	BLACK	BLACK	TYPE III BARRICADE	12.5	25.0
W16-8p	36"	9"	PERRY HILL RD EXT				11	FLUORESCENT ORANGE	BLACK	BLACK	MOUNT WITH OTHERS	2.25	24.75
W20-1	36"	36"	ROAD WORK 1000 FT				3	FLUORESCENT ORANGE	BLACK	BLACK	WOOD POST 1	9.0	27.0
W20-2	36"	36"	DETOUR AHEAD				3	FLUORESCENT ORANGE	BLACK	BLACK	WOOD POST 1	9.0	27.0
											TOTAL AREA OF SIGNS (SQUARE FEET)		166.75

NOTES:

1. ALL DISTURBED AREAS THAT ARE NOT SPECIFIED FOR OTHER COVER TREATMENTS (RIPRAP, MILLINGS UNDER GUARDRAIL, GRAVEL/ASPHALT) SHALL BE SEEDED UNDER ITEM 765.553 "WETLAND RIPARIAN MIX". SEE SPECIFICATIONS FOR SEEDING MIX.

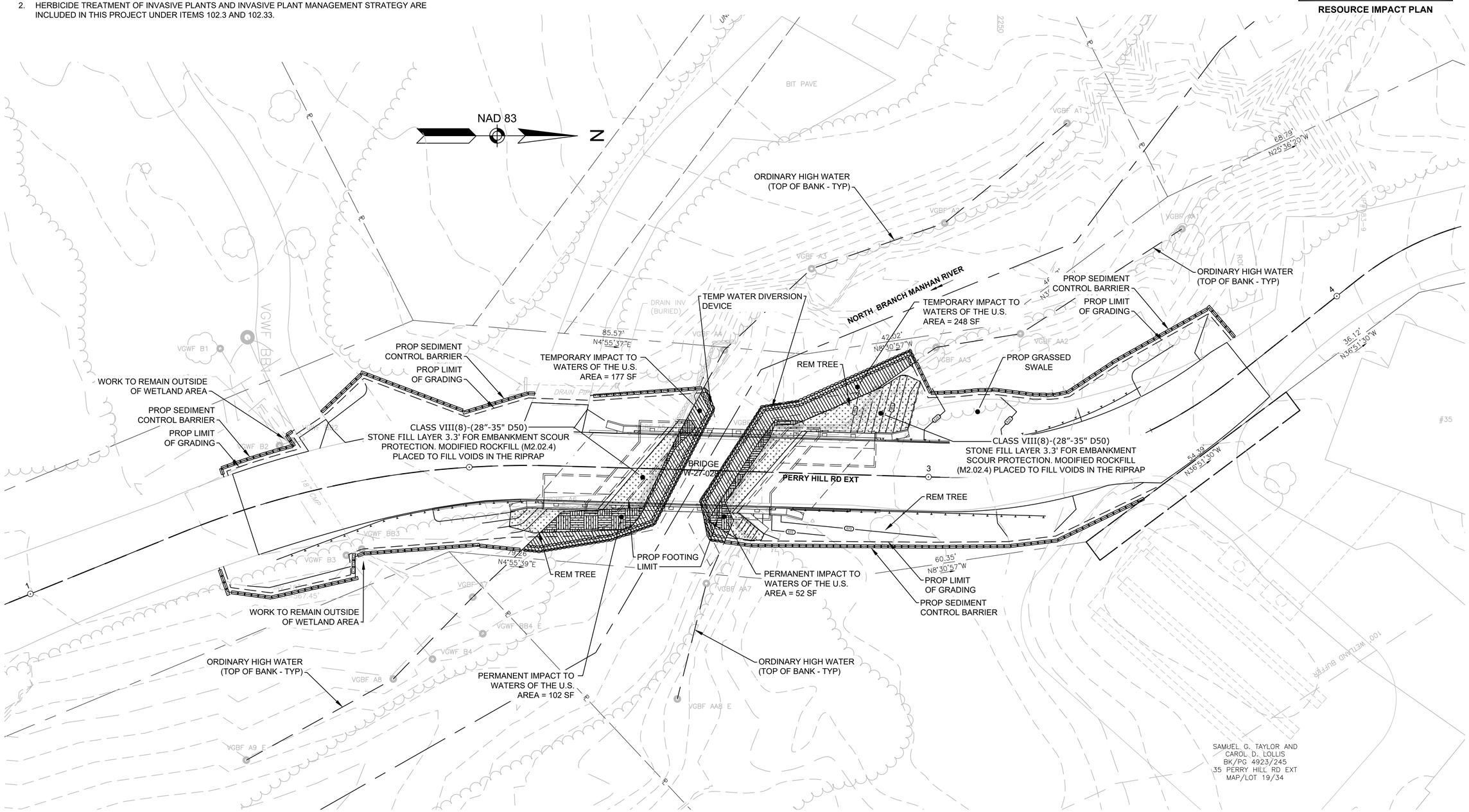
2. HERBICIDE TREATMENT OF INVASIVE PLANTS AND INVASIVE PLANT MANAGEMENT STRATEGY ARE INCLUDED IN THIS PROJECT UNDER ITEMS 102.3 AND 102.33.

LEGEND	
	TEMPORARY IMPACTS TO WATERS OF THE U.S.
	PERMANENT IMPACTS TO WATERS OF THE U.S.
	PROPOSED RIPRAP STONE

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	10	27
PROJECT FILE NO.	610768		

RESOURCE IMPACT PLAN



PERMANENT IMPACT AREAS	
WATERS OF THE US	154 SF
VEGETATED WETLANDS	0 SF

TEMPORARY IMPACT AREAS	
WATERS OF THE U.S.	426 SF
VEGETATED WETLANDS	0 SF

WETLAND FLAG DELINEATION	
FLAG SERIES	CLASSIFICATION
A-1 - A-9, AA-1 - AA-8	BANKS OF NORTH BRANCH MANHAN RIVER
B-1 - B-4, BB-1 - BB-4	BORDERING VEGETATED WETLAND ASSOCIATED WITH INTERMITTENT STREAM

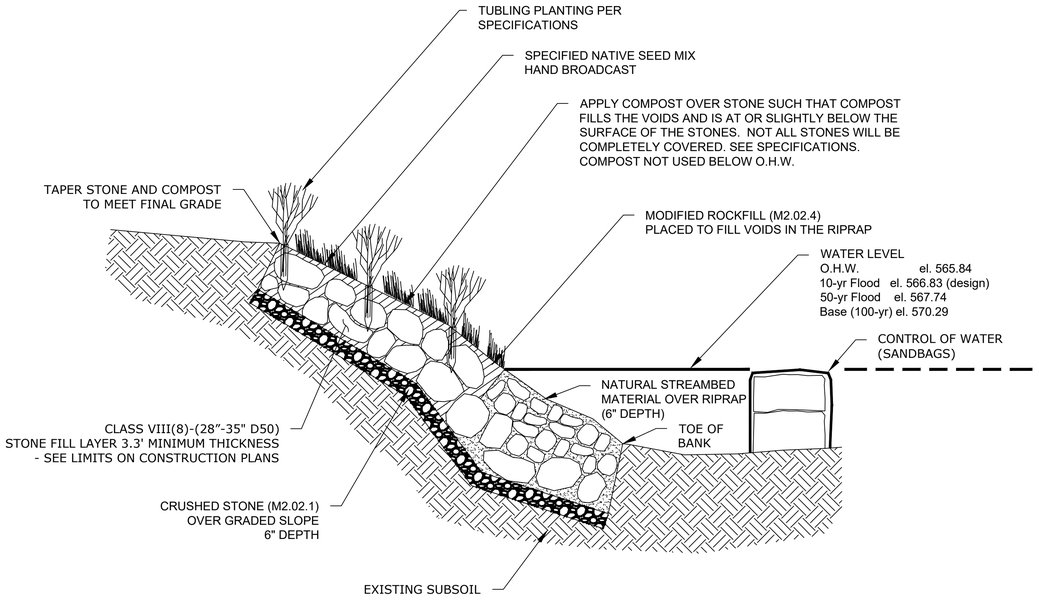
0 10 20 30 40
SCALE: 1" = 10'

610768_HD-10 (RESOURCE IMPACT PLAN).DWG Plotted on 4-Nov-24 11:53 AM

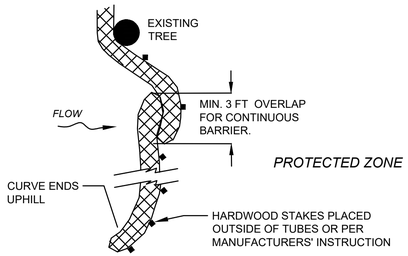
WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	11	27
PROJECT FILE NO.	610768		

CONSTRUCTION DETAILS



RIPRAP SLOPE INSTALLATION DETAIL
NOT TO SCALE



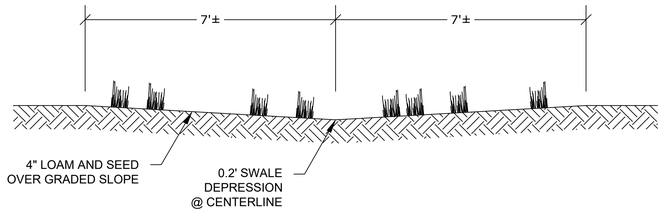
PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

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

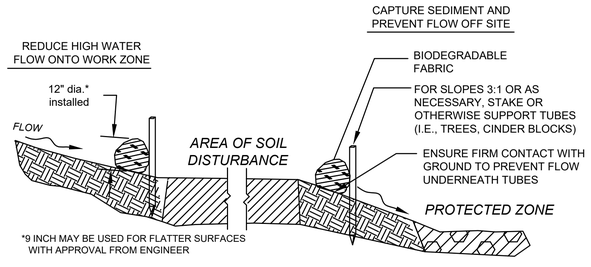
PLAN VIEW

GENERAL NOTES

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
3. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL RESTORE THE EXISTING SURFACE PAVEMENTS AND TURF DISTURBED BY THE PROPOSED WORK AND SHALL PATCH ALL HOLES RESULTING FROM THE CONTRACTOR'S OPERATIONS, WITH MATERIALS SIMILAR TO THE EXISTING.
5. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, REUSING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RELOCATE" OR "REMOVE AND RESET" (R&R).
6. IN MAKING JOINTS ALONG ANY ADJOINING EDGE SUCH AS CURB, GUTTER, OR AN ADJOINING PAVEMENT, AND AFTER THE MIXTURE IS PLACED BY THE MECHANICAL SPREADER, JUST ENOUGH OF THE HOT MATERIAL SHALL BE PLACED BY HAND METHOD TO FILL ANY SPACE LEFT OPEN. THESE JOINTS SHALL BE PROPERLY "SET-UP" WITH THE BACK OF A RAKE AT THE PROPER HEIGHT AND LEVEL TO RECEIVE THE MAXIMUM COMPACTION. THE WORK OF "SETTING-UP" THESE JOINTS SHALL BE PERFORMED ONLY BY COMPETENT WORKMEN.
7. ALL SIGNS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND RESET UNLESS NOTED OTHERWISE OR AS DIRECTED.
8. EXISTING SITE TOPOGRAPHY, DETAIL, PROPERTY LINE, AND CONSTRUCTION BASELINE INFORMATION SHOWN ON THE PLANS WERE DEVELOPED FROM SURVEY INFORMATION PREPARED BY GAROFALO & ASSOCIATES, INC., DATED APRIL & MAY of 2021. FOR TRAVERSE INFORMATION SEE MASSACHUSETTS HIGHWAY DEPARTMENT WESTHAMPTON, MA. FIELD BOOK #41716.
9. A BENCHRUN USING TRIG LEVELS WAS USED TO ESTABLISH VERTICAL CONTROL ON TRAVERSE POINTS AND RECORDED IN FIELD BOOK #41716.
10. HORIZONTAL CONTROL WAS ESTABLISHED BY INSTRUMENT SURVEY AND VERTICAL CONTROL BY DIGITAL LEVELING AND PROVIDED BY MASSDOT ON MARCH 16, 2021. MASSDOT TRAVERSE CONTROL POINT #'S 2712 AND 2713 WERE USED BY GAROFALO & ASSOCIATES AS THEIR POINT #'S RESPECTIVELY.
11. THE CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233) 72 HOURS PRIOR TO THE INITIATION OF WORK AND SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY STATE/LOCAL PERMITS AND/OR APPROVALS.
12. ALL BRIDGE WORK, INCLUDING STRUCTURAL COMPONENTS, HAS BEEN SHOWN ON THE BRIDGE DRAWINGS.
13. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY HIGHWAY BOUNDS OR PRIVATE PROPERTY MONUMENTATION THAT MAY BE DAMAGED OR DESTROYED DURING CONSTRUCTION, TO ITS LOCATION JUST PRIOR TO CONSTRUCTION.

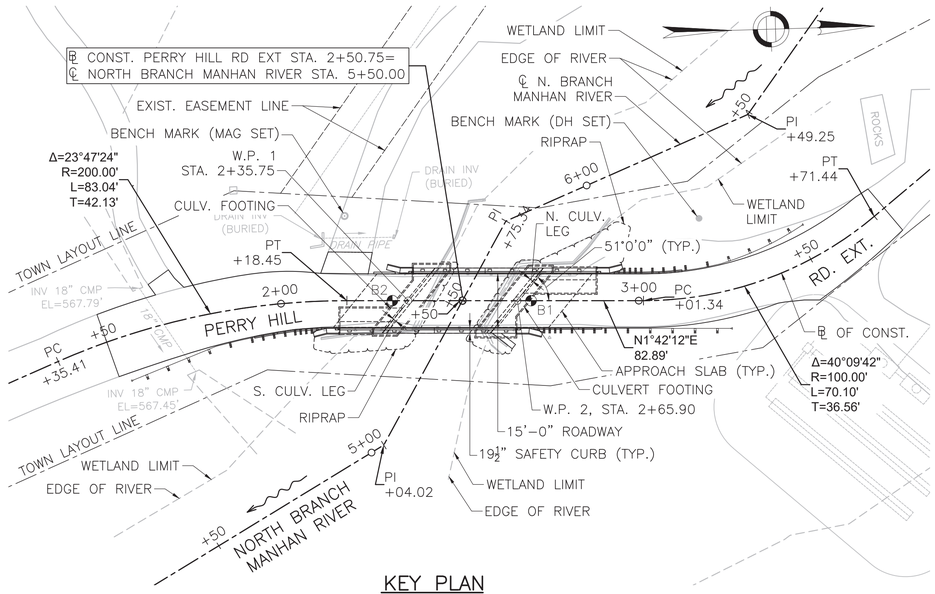


GRASSED SWALE
STA 3+00 TO STA 3+25 12', LT
NOT TO SCALE

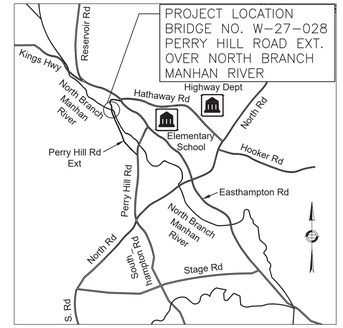


SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE
NOT TO SCALE



KEY PLAN
SCALE: 1" = 20'



LOCUS MAP
SCALE: 1" = 2,000'

WESTHAMPTON
PERRY HILL ROAD EXTENSION

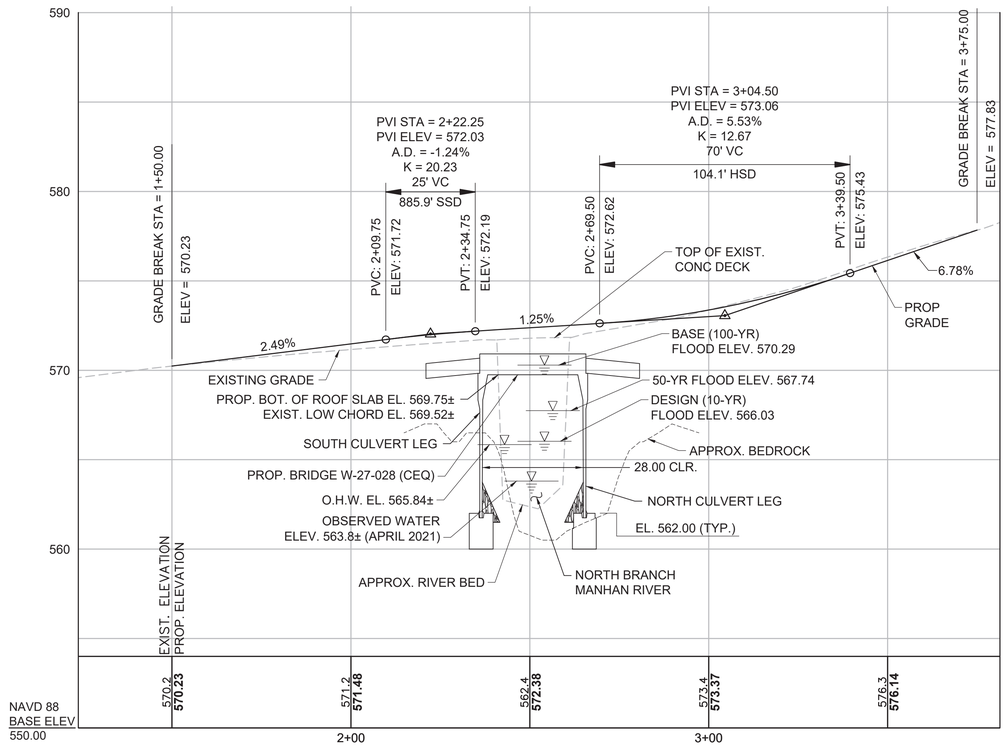
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	12	27
	PROJECT FILE NO. 610768		

KEY PLAN, LOCUS, PROFILES AND ESTIMATED QUANTITIES

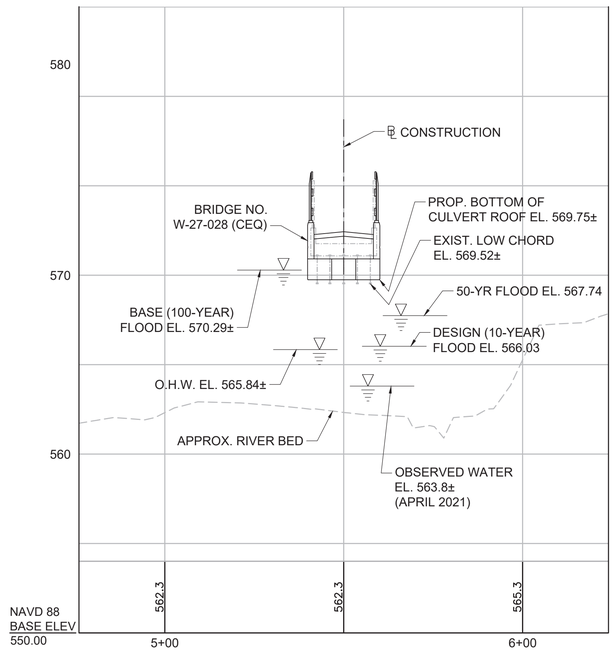
ESTIMATED QUANTITIES
(NOT GUARANTEED)

ITEM		QUANTITY
114.1	DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. W-27-028 (OTA)	1 LS
127.1	REINFORCED CONCRETE EXCAVATION	70 CY
140.	BRIDGE EXCAVATION	240 CY
144.	CLASS B ROCK EXCAVATION	63 CY
151.	GRAVEL BORROW	13 CY
151.2	GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	70 CY
*180.02	PERSONAL PROTECTION LEVEL C UPGRADE	10 HR
*180.03	LICENSED SITE PROFESSIONAL SERVICES	24 HR
*181.11	DISPOSAL OF UNREGULATED SOIL	44 TON
*181.12	DISPOSAL OF REGULATED SOIL - IN-STATE FACILITY	5 TON
*181.13	DISPOSAL OF REGULATED SOIL - OUT-OF-STATE FACILITY	5 TON
*181.14	DISPOSAL OF HAZARDOUS WASTE	3 TON
691.	BALANCE STONE WALL REMOVED AND REBUILT	10 FT
*983.2	RIPRAP	80 CY
991.1	CONTROL OF WATER - STRUCTURE NO. W-27-028 (CEQ)	1 LS
*994.011	TEMPORARY PROTECTIVE SHIELDING OUTSIDE FASCIA BEAMS BRIDGE NO. W-27-028 (OTA)	1 LS
*994.012	TEMPORARY PROTECTIVE SHIELDING BETWEEN FASCIA BEAMS BRIDGE NO. W-27-028 (OTA)	1 LS
*995.01	BRIDGE STRUCTURE, BRIDGE NO. W-27-028 (CEQ)	1 LS

INDEX OF BRIDGE SHEETS



PROFILE ALONG PERRY HILL ROAD EXTENSION
SCALE: HORIZONTAL 1"=20'
VERTICAL 1"=4'



PROFILE ALONG CENTERLINE OF NORTH BRANCH MANHAN RIVER
SCALE: HORIZONTAL 1"=20'
VERTICAL 1"=4'

JEFF E. LEWIS STRUCTURAL No. 37302 — COMMONWEALTH OF MASSACHUSETTS — REGISTERED PROFESSIONAL ENGINEER

Jeff Lewis — Digitally signed by Jeff Lewis Date: 2025-02-05 10:57:58-05:00

GAROFALO & ASSOCIATES, INC.
85 CORLISS STREET
P.O. BOX 6145
PROVIDENCE RI 02940

FEB. 1, 2025	ISSUED FOR CONSTRUCTION

MassDOT Massachusetts Department of Transportation Highway Division

PROPOSED BRIDGE
WESTHAMPTON
PERRY HILL ROAD EXTENSION
OVER NORTH BRANCH MANHAN RIVER
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: 2025.02.05 12:36:26 -05'00'	Carrie Lavallee, P.E.	Carrie Lavallee, P.E. 2025.02.13 14:13:01 -05'00'
STATE BRIDGE ENGINEER		CHIEF ENGINEER	

GENERAL NOTES

DESIGN:

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

BENCH MARKS:

	MAG SET	DH SET
℄ STA.	2+17.85, 23.68' LT	3+21.19, 21.46' LT
NORTHING	2943653.4910	2943752.4790
EASTING	312328.4550	312332.0740
ELEVATION	572.370'	574.634'

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

MASSDOT SURVEY NOTEBOOKS:

GAROFALO & ASSOCIATES SURVEY NOTEBOOK NO. 41716, PAGE 1 TO 7, WAS USED IN PREPARATION OF THESE CONSTRUCTION DRAWINGS. FILES CAN BE OBTAINED AT THE SURVEY OFFICE, MASSDOT – HIGHWAY DIVISION, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

EXISTING PLANS:

PLANS FOR EXISTING BRIDGE MAY BE SEEN AT THE OFFICE OF THE BRIDGE ENGINEER, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

EXISTING CONDITIONS:

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

UTILITIES:

THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE.

TRAFFIC:

BRIDGE W-27-028 (CEQ), PROPOSED BRIDGE, SHALL BE DONE IN ONE STAGE WITH COMPLETE BRIDGE CLOSURE AND TRAFFIC DETOUR DURING CONSTRUCTION.

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. ALL HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

SCALES:

SCALES AS NOTED ON PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY TWO 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.

ANCHOR BOLTS:

ALL ANCHOR BOLTS SHALL BE SET BY TEMPLATE BEFORE THE CONCRETE IS PLACED.

GENERAL NOTES (CONT.)

CONCRETE:

ALL CONCRETE SHALL BE 5000 HP CONCRETE EXCEPT FOR THE PRECAST THREE-SIDED CULVERT WHICH IS TO TO BE DETERMINED BY THE PRECAST MANUFACTURER. HOWEVER IT SHALL BE 5,000 HP MIN.

ALL EXPOSED CORNERS SHALL HAVE 1" CHAMFER UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING CONCRETE STAINS OR DISCOLORATIONS DURING CONSTRUCTION UNTIL SUCH TIME AS THE SURFACES ARE APPROVED AND ACCEPTED. ANY CONCRETE STAINS OR DISCOLORATIONS OCCURRING PRIOR TO ACCEPTANCE OF THE SURFACES SHALL BE REMOVED BY THE CONTRACTOR AT HIS OWN EXPENSE.

REINFORCEMENT:

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

UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

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

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

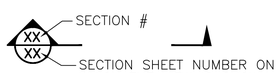
MEMBRANE WATERPROOFING:

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

PRECAST CULVERT CONCRETE:

1. THE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. THE UNITS SHALL NOT BE STORED OR HANDLED IN A UPRIGHT POSITION OR FINAL INSTALLED POSITION UNTIL THE COMPRESSIVE STRENGTH OF THE CONCRETE IS 5,000 PSI. MIN.
2. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
3. ANY STRUCTURAL MEMBERS DAMAGED DURING FABRICATION, SHIPPING OR ERECTION, SUCH THAT THEIR STRUCTURAL INTEGRITY IS COMPROMISED, SHALL BE REJECTED AND REPLACED AT THE CONTRACTOR'S OWN EXPENSE. THE ENGINEER SHALL BE THE SOLE JUDGE IN DETERMINING THE STRUCTURAL INTEGRITY OF DAMAGED PRECAST MEMBERS.
4. DURING HANDLING, THE CULVERT MUST BE MAINTAINED IN AN UPRIGHT POSITION AT ALL TIMES AND MUST BE PICKED UP ONLY BY MEANS OF APPROVED LIFTING DEVICES AT THEIR APPROVED SUPPORT POINTS.
5. ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER IN SUFFICIENT TIME TO PERMIT CAREFUL CHECKING.
6. THE PRECAST UNIT MANUFACTURER SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS STAMPED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN MASSACHUSETTS FOR REVIEW. ALL SHOP DRAWING AND CALCULATIONS TO BE ACCEPTED BY THE ENGINEER PRIOR TO FABRICATION.
7. THE FRAME DIMENSIONS PROVIDED ON THE PLANS ARE SHOWN TO ESTABLISH THE SIZE OF THE PROPOSED OPENING. THE WIDTH AND THICKNESS OF EACH FRAME UNIT MAY VARY DEPENDING UPON THE MANUFACTURER'S SPECIFICATIONS PROVIDED THAT THE OPENING SIZE IS MAINTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFYING THE DIMENSIONS OF THE FRAME BRIDGE ELEMENTS TO COMPENSATE FOR ELASTIC SHORTENING, SHRINKAGE, GRADE CORRECTIONS, AND OTHER PHENOMENA THAT MAKE IN-PROCESS FABRICATING DIMENSIONS DIFFERENT FROM THOSE SHOWN ON THE DRAWINGS. APPROVAL OF THE SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE CORRECTNESS OF THE DIMENSIONS SHOWN.
8. CONSTRUCTION OF BRIDGE COMPONENTS SHALL BE PERFORMED WITHOUT EQUIPMENT BEING WITHIN THE WATERWAY.
9. WHEN BACKFILLING BEHIND CULVERT LEGS, BRING UP BACKFILL UNIFORMLY. SEQUENCE OF BACKFILLING AND GRADE DIFFERENTIAL BETWEEN BOTH LEGS SHALL BE IN ACCORDANCE WITH THE PRECAST MANUFACTURER'S RECOMMENDATION.

SECTION MARK:



WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	13	27
PROJECT FILE NO.	610768		

GENERAL NOTES

TRAFFIC DATA*	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	N/A	
AVERAGE DAILY TRAFFIC – PRESENT	N/A	
AVERAGE DAILY TRAFFIC – DESIGN YEAR	N/A	
DESIGN HOURLY VOLUME	N/A	
DIRECTIONAL DISTRIBUTION	N/A	
TRUCK PERCENTAGE – AVERAGE DAY	N/A	
TRUCK PERCENTAGE – PEAK HOUR	N/A	
DESIGN SPEED	N/A	
DIRECTIONAL DESIGN HOURLY VOLUME	N/A	

* TRAFFIC COUNTS WERE NOT PERFORMED FOR THIS PROJECT DUE TO THE NATURE OF THIS TYPE OF ROAD WHICH IS ACTING MORE AS A DRIVEWAY FOR HOUSE #35 RATHER THAN A NORMALLY TRAVELED ROADWAY. THERE ARE ALSO NO PUBLISHED TRAFFIC COUNTS FOR THIS SECTION OF ROAD.

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	1,000
DESIGN SPECTRA	
As	0.060
SDs	0.135
SD1	0.040
SITE CLASS	B
SEISMIC DESIGN CATEGORY (SDC)	A

HYDRAULIC DESIGN DATA	
DRAINAGE AREA (SQ. MILES)	4.27
DESIGN FLOOD DISCHARGE (C.F.S.)	723
DESIGN FLOOD FREQUENCY (YEARS)	10
DESIGN FLOOD VELOCITY (F.P.S.)	11.58
DESIGN FLOOD ELEVATION (FEET, NAVD)	566.03
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	1,849
BASE FLOOD ELEVATION (FEET, NAVD)	570.29
DESIGN AND CHECK SCOUR DATA	
DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	25
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	4.75
CHECK SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	50
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	5.64
FLOOD OF RECORD	
DISCHARGE (C.F.S.)	N/A
FREQUENCY (IF KNOWN, YEARS)	N/A
MAXIMUM ELEVATION (FEET, NAVD)	N/A
DATE (MM/YYYY)	N/A
HISTORY OF ICE FLOES	N/A
EVIDENCE OF SCOUR AND EROSION	NONE DOCUMENTED

FEB. 1, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

USE ONLY PRINTS OF LATEST DATE

BORING INFORMATION

NORTHING (ft): 2,943,708 **EASTING (ft):** 312,354
GROUND SURFACE EL. (ft): 572.2 **DATE START/END:** 5/17/2021 - 5/17/2021
VERT./HORIZ. DATUMS: NAVD 88/NAD 83 **DRILLING COMPANY:** Seaboard Drilling, Inc.
TOTAL DEPTH (ft): 27.7 **DRILLER NAME:** J. Nitsch
LOGGED BY: R. Oulal **RIG TYPE:** Mobile Drill B-53

BORING B1

PAGE 1 of 2

DRILLING INFORMATION

HAMMER TYPE: Automatic **CASING I.D./O.D.:** 4 inch/ 4.5 inch **CORE BARREL TYPE:** NX
AUGER I.D./O.D.: NA / NA **DRILL ROD O.D.:** 2.625 inch **CORE BARREL I.D./O.D.:** 3 inch / 3.5 inch
DRILLING METHOD: Drive and Wash
WATER LEVEL DEPTHS (ft): ▼6.0 5/17/2021 3:35 pm

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation = Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D.= Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
570		S1	0 to 2	24/14	5-5-5-11		SAND AND GRAVEL	S1: Dry, medium dense, brown, FINE TO COARSE SAND, trace fine to medium gravel. Fractured rock at tip of spoon.
	5	S2	5 to 7	24/10	15-11-13-7	Roller bit grinded on something hard near 4.8 ft.		S2: Wet, medium dense, brown, FINE TO COARSE GRAVEL, some fine to coarse sand.
						Rig chattered at 7 ft. Driller noted it was a cobble.	COBBLES/SAND	
	10	S3	10 to 10.3	4/2	100/4"	Rig chattered at 10 ft. Driller indicates it maybe rock. Core Time (min/ ft) = 1.25, 0.5		S3: Weathered rock.
560		C1	10.5 to 12.5	24/0	0	While coring C1, driller indicates transition to soft material. Driller noted the changes in core rate and wash color from gray to brown at ~12 ft.		C1: No recovery.
	15	C2	15 to 20	60/10	0	Driller indicated top of rock at ~15 ft.Core Time (min/ ft) = 2.5, 6.25, 3.5, 4.0, 3.25	BEDROCK	C2: White and gray, PEGMATITE, hard, fine to coarse grained, moderately weathered, highly fractured with joint 0 to 2 inches apart. Trace of phyllite.
	20	C3	20 to 24.7	56/49	45	Core Time (min/ ft) = 3.25, 3.5, 5.75, 13.75, 8.75 min/ 8"		C3: White and gray, PEGMATITE with mica, hard, fine to coarse grained, joints rough and spaced from 1 to 7 inches apart and at 0 to 80 degrees. Rusting at joints.
550								

EL. 566.2 5/17/2021

BOTTOM OF N.W. WINGWALL BASE EL. 563.0

NORTH CULVERT LEG TOP OF FOOTING EL. 562.0

NOTES: 1. Offset borehole about 3 ft north of proposed location.

PROJECT NAME: Perry Hill Road Over North Branch River Bridge Replacement
CITY/STATE: Westhampton, Massachusetts
GEI PROJECT NUMBER: 2101152

GEI Consultants

GEI WOBURN STD 5-NORTH-EAST-LAYER NAME BORING LOGS.GPJ 7/15/21

NORTHING (ft): 2,943,708 **EASTING (ft):** 312,354
GROUND SURFACE EL. (ft): 572.2 **DATE START/END:** 5/17/2021 - 5/17/2021
VERT./HORIZ. DATUMS: NAVD 88/NAD 83 **DRILLING COMPANY:** Seaboard Drilling, Inc.

BORING B1

PAGE 2 of 2

Elev. (ft)	Depth (ft)	Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
	25	C4	24.7 to 27.7	36/14	0	Core Time (min/ ft) = 5.5, 3.75, 8.0 Lost core sample C4 while pulling out rods. Driller cored less than an inch into the bottom of C4 to retrive the core sample.	BEDROCK	C4: Similar to C3 except highly fractured.
540	30							Bottom of boring at 27.7 feet. Backfilled with cuttings.
	35							
	40							
530								
	45							
	50							
520								
	55							

NOTES: 1. Offset borehole about 3 ft north of proposed location.

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CITY/STATE: Westhampton, Massachusetts
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GEI Consultants

GEI WOBURN STD 5-NORTH-EAST-LAYER NAME BORING LOGS.GPJ 7/15/21

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	14	27
	PROJECT FILE NO. 610768		

BORING LOGS 1

610768_BR03-04(W27028)(BORING LOGS).DWG Plotted on 5-Feb-2025 9:48 AM

BORING NOTES:

1. LOCATION OF BORINGS SHOWN ON THE PLAN 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 AVENUE) 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 MAY OF 2021.
7. BORINGS WERE MADE BY SEABOARD DRILLING, INC., 649 MEADOW ST, CHICOPEE, MA 01013.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

DATE	DESCRIPTION
FEB. 1, 2025	ISSUED FOR CONSTRUCTION

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

USE ONLY PRINTS OF LATEST DATE

28-November-2024

Final Structural Submittal (SF)

BORING INFORMATION

NORTHING (ft): 2,943,662 **EASTING (ft):** 312,353
GROUND SURFACE EL. (ft): 571.6 **DATE START/END:** 5/17/2021 - 5/17/2021
VERT./HORIZ. DATUMS: NAVD 88/NAD 83 **DRILLING COMPANY:** Seaboard Drilling, Inc.
TOTAL DEPTH (ft): 25.0 **DRILLER NAME:** J. Nitsch
LOGGED BY: R. Oulal **RIG TYPE:** Mobile Drill B-53

BORING B2

DRILLING INFORMATION

HAMMER TYPE: Automatic **CASING I.D./O.D.:** 4 inch/ 4.5 inch **CORE BARREL TYPE:** NX
AUGER I.D./O.D.: NA / NA **DRILL ROD O.D.:** 2.625 inch **CORE BARREL I.D./O.D.:** 3 inch / 3.5 inch
DRILLING METHOD: Drive and Wash
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation = Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
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HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
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PID = Photoionization Detector
I.D./O.D.= Inside Diameter/Outside Diameter
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Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Sample Information: Depth (ft)	Sample Information: Pen./ Rec. (in)	Sample Information: Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
570		S1	0 to 2	24/17	7-8-6-5		SAND AND GRAVEL	S1: Dry, medium dense, brown, FINE TO COARSE GRAVEL AND FINE TO COARSE SAND, trace inorganic silt.
	5	C1	5 to 10	60/49	48	Rig slightly chattered. Rig heavily chattered. Lost core sample C1 while pulling out rods. Driller cored less than an inch into bottom of C1 to retrive the core sample.Core Time (min/ ft) = 3.0, 2.75, 5.5, 5.5, 6.0		C1: White with gray and black, PEGMATITE with mica, coarse grained, hard, joints rough and spaced from 1 to 6 inches apart and at 0 to 10 degrees, freshly weathered. Rusting at joints.
								BOTTOM OF S.E. WINGWALL BASE EL. 563.0
560	10	C2	10 to 15	60/54	78	Core Time (min/ ft) = 3.25, 4.0, 4.75, 5.0, 6.0	BEDROCK	C2: Similar to C1, except joints spaced at 1 to 24 inches apart and at 0 to 45 degrees.
								SOUTH CULVERT LEG TOP OF FOOTING EL. 562.0
	15	C3	15 to 20	60/57	90	Core Time (min/ ft) = 3.5, 3.0, 2.5, 2.75, 2.0		C3: White with gray and black, GRANODIORITE with mica, fine to coarse grained, hard, joints rough and spaced from 2 to 22 inches apart and at 0 degrees, freshly weathered. Rusting at joints.
550	20	C4	20 to 25	60/54	13	Core Time (min/ ft) = 3.25, 2.0, 1.75, 2.0, 1.0		C4: Similar to C3, except joints at 1 to 4 inches apart and at 0 degrees.

NOTES: 1. Offset borehole about 4 ft south of proposed location.

PROJECT NAME: Perry Hill Road Over North Branch River Bridge Replacement
CITY/STATE: Westhampton, Massachusetts
GEI PROJECT NUMBER: 2101152

GEI Consultants

GEI WOBURN STD 5-NORTH-EAST-LAYER NAME BORING LOGS.GPJ 7/15/21

NORTHING (ft): 2,943,662 **EASTING (ft):** 312,353
GROUND SURFACE EL. (ft): 571.6 **DATE START/END:** 5/17/2021 - 5/17/2021
VERT./HORIZ. DATUMS: NAVD 88/NAD 83 **DRILLING COMPANY:** Seaboard Drilling, Inc.

BORING B2

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Sample Information: Depth (ft)	Sample Information: Pen./ Rec. (in)	Sample Information: Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
	25							Bottom of boring at 25 feet. Backfilled with cuttings.
540	30							
	35							
	40							
530	45							
	50							
520	55							

NOTES: 1. Offset borehole about 4 ft south of proposed location.

PROJECT NAME: Perry Hill Road Over North Branch River Bridge Replacement
CITY/STATE: Westhampton, Massachusetts
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GEI WOBURN STD 5-NORTH-EAST-LAYER NAME BORING LOGS.GPJ 7/15/21

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	15	27
PROJECT FILE NO.	610768		

BORING LOGS 2

DATE	DESCRIPTION
FEB. 1, 2025	ISSUED FOR CONSTRUCTION

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

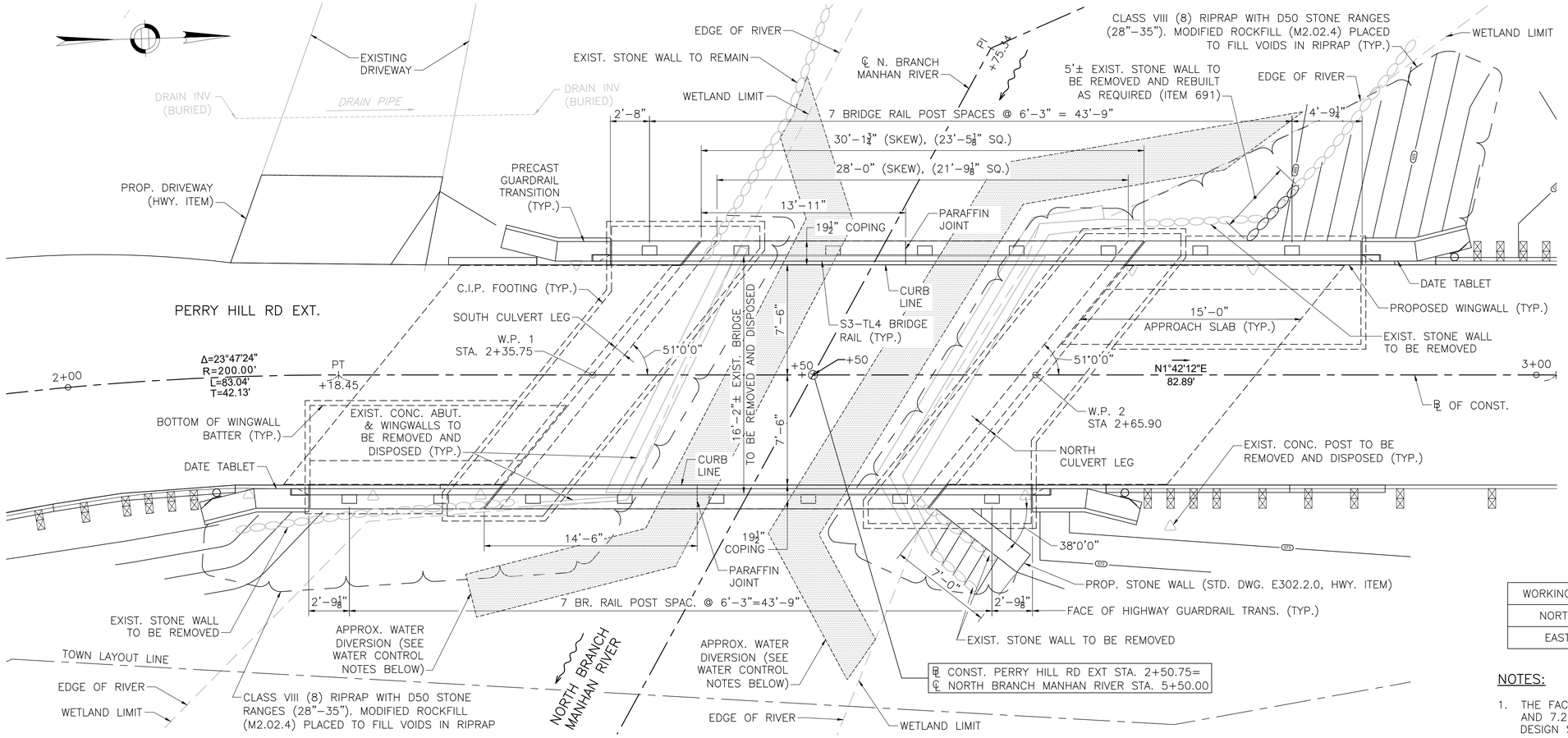
610768_BR03-04(W27028)(BORING LOGS).DWG Plotted on 5-Feb-2025 9:48 AM

Final Structural Submittal (SF) 28-December-2024

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	16	27
	PROJECT FILE NO. 610768		

BRIDGE GENERAL PLAN AND ELEVATION



BRIDGE GENERAL PLAN

SCALE: ¼" = 1'–0"

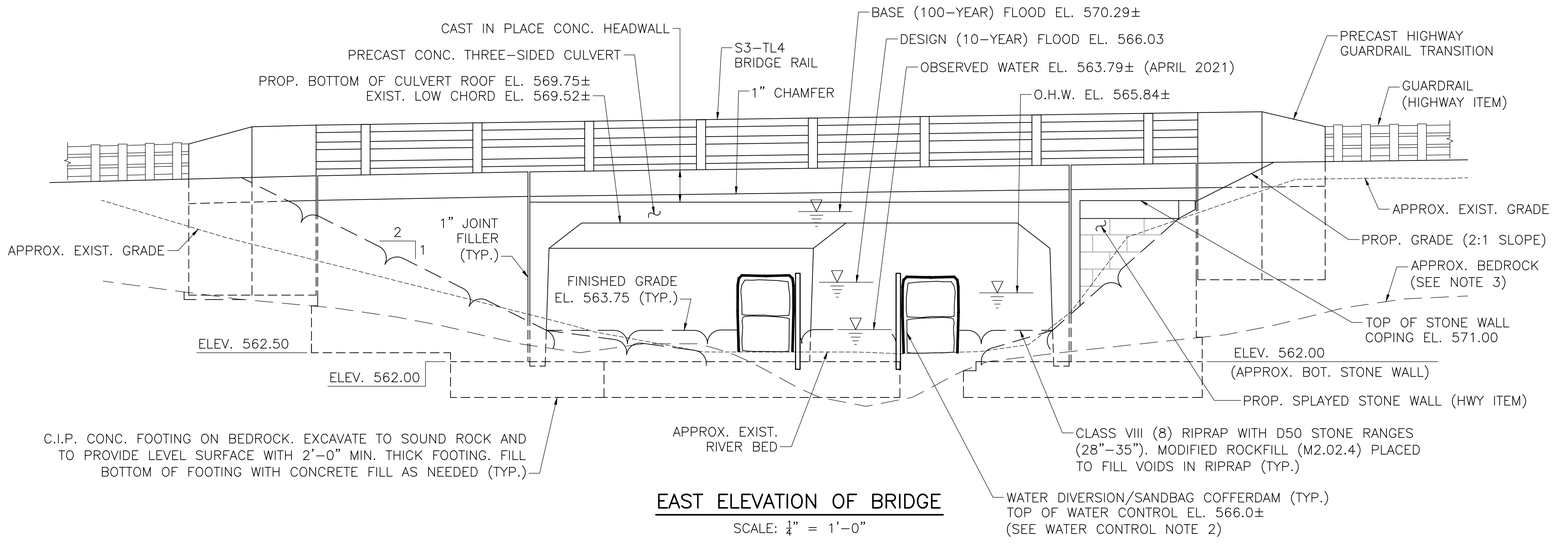
WORKING POINT	W.P. 1	W.P. 2
NORTHING	2943670.7555	2943700.8867
EASTING	312352.6572	312353.5533

NOTES:

1. THE FACTORED BEARING PRESSURE = 11 KSF AT CULVERT AND 7.2 KSF AT WINGWALLS, AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
2. THE FACTORED BEARING RESISTANCE = 41 KSF AT CULVERT AND 49.5 KSF AT WINGWALLS. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45 AND 0.55 RESPECTIVELY.
3. TOP OF BEDROCK IS DERIVED FROM THE INTERPRETED TOP OF BEDROCK CONTOUR FIGURES PROVIDED IN HAGER GEOSCIENCES JULY 2021 GEOPHYSICAL SURVEY REPORT (APPENDIX E OF GEOTECHNICAL REPORT). AS NOTED IN HAGER'S REPORT, "EVIDENCE THAT THE TOP OF ROCK IS SIGNIFICANTLY WEATHERED/FRACTURED DUE TO VARYING DEPTHS WAS NOTED THROUGHOUT THE SURVEY AREA".

WATER CONTROL NOTES:

1. WATER DIVERSION DEVICE SHALL BE INSTALLED ALONG ONE SIDE AT A TIME DURING DEWATERING AND FOUNDATION WORK, AND AT TIMES THAT WON'T NEGATIVELY DISRUPT WATER FLOW ALONG BOTH UPSTREAM AND DOWNSTREAM.
2. TEMPORARY COFFERDAM SHALL BE INSTALLED AS NEEDED FOR RETAINING SOIL ADJACENT TO THE WATER DIVERSION DEVICE. COST FOR THE TEMPORARY COFFERDAM AND WATER DIVERSION DEVICE SHALL BE INCIDENTAL TO ITEM 991.1.



EAST ELEVATION OF BRIDGE

SCALE: ¼" = 1'–0"

FEB. 1, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

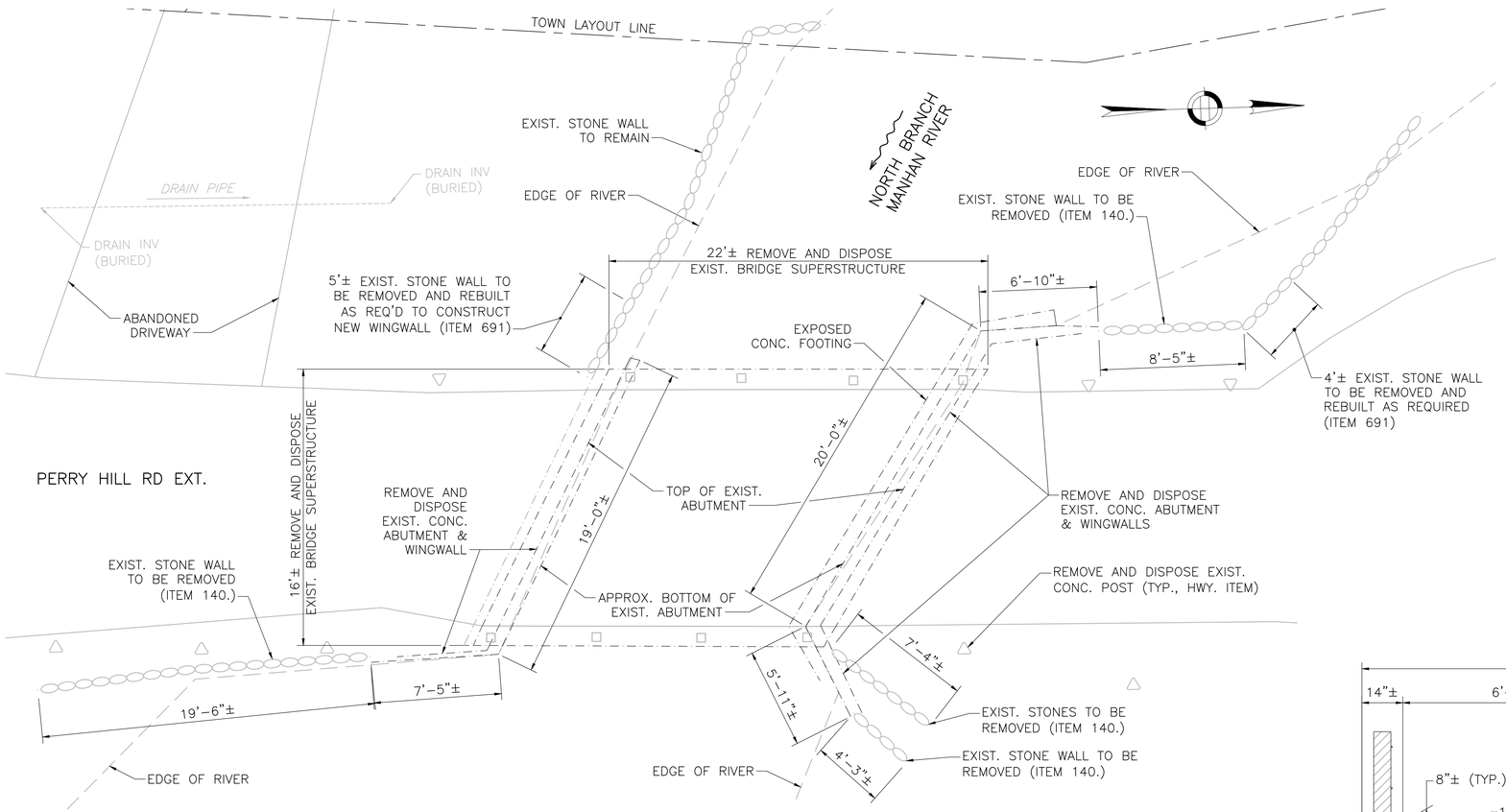
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

WESTHAMPTON
PERRY HILL ROAD EXTENSION

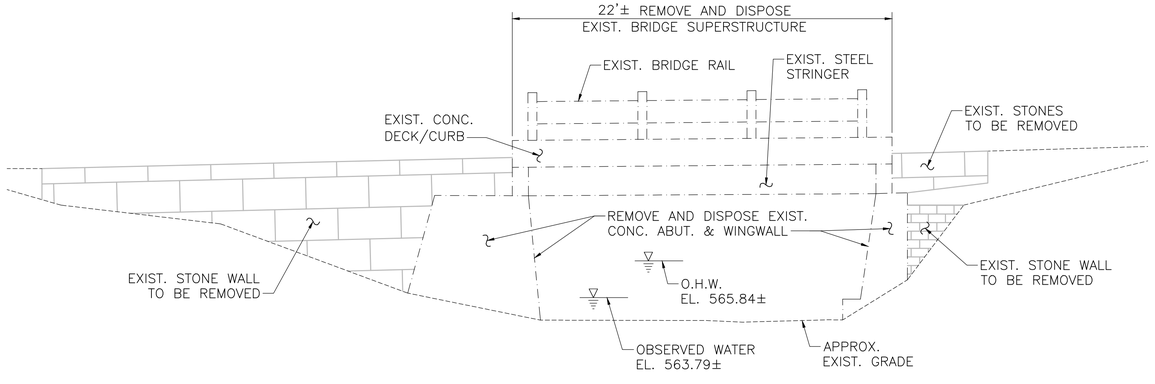
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	17	27
PROJECT FILE NO.	610768		

DEMOLITION DETAILS



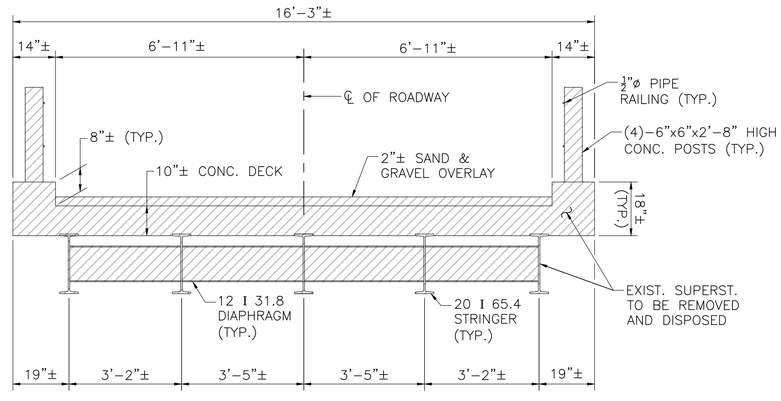
EXISTING BRIDGE PLAN

SCALE: $\frac{1}{4}$" = 1'–0"



EXISTING BRIDGE EAST ELEVATION

SCALE: $\frac{1}{4}$" = 1'–0"



EXISTING TRANSVERSE SECTION

SCALE: $\frac{1}{2}$" = 1'–0"

NOTE:

1. EXISTING STONES TO BE REMOVED SHALL BE SALVAGED AND REUSED TO STACK AND BALANCE STONE WALLS AS REQUIRED.

LEGEND

REMOVED AND DISPOSED

FEB. 1, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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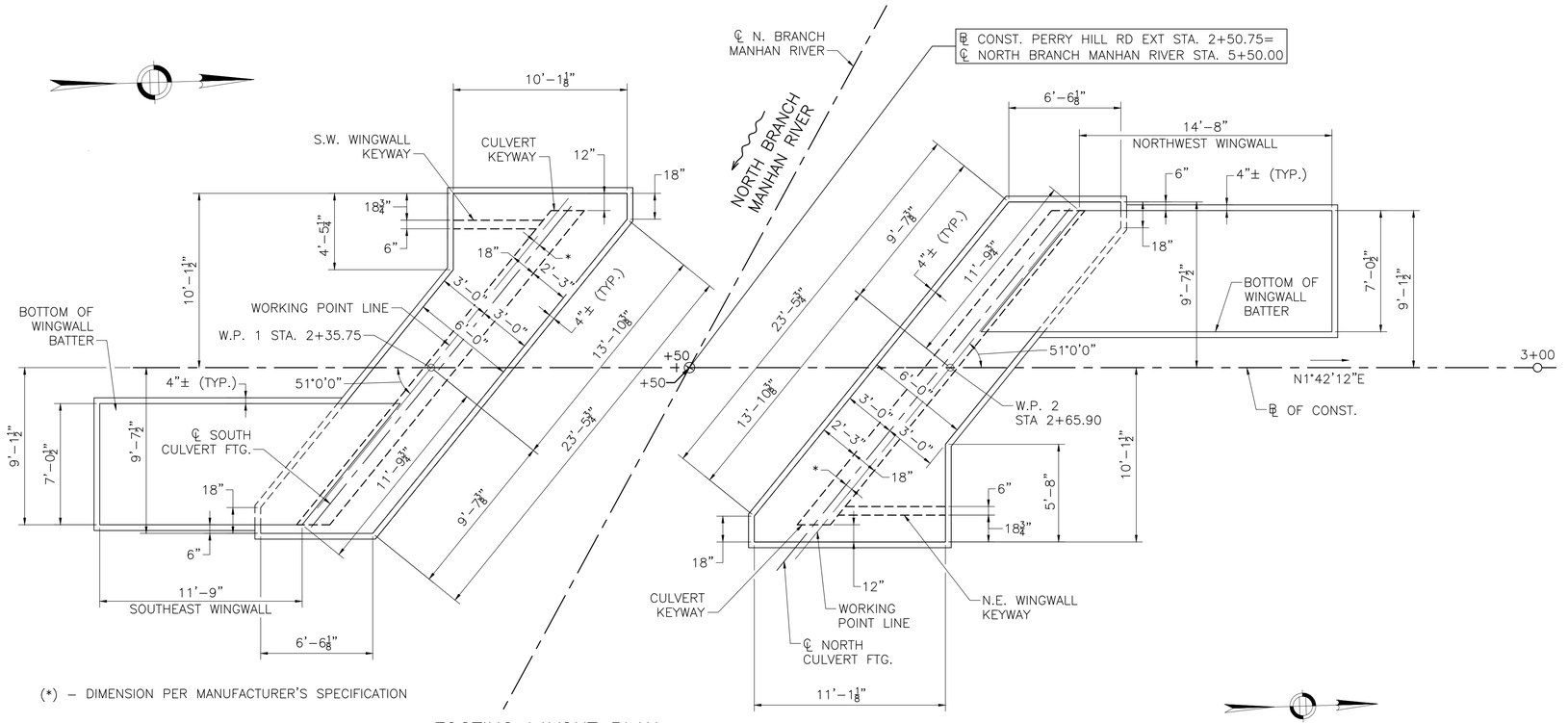
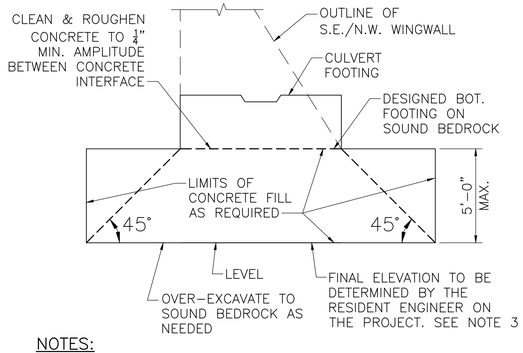
WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	18	27
	PROJECT FILE NO. 610768		

FOOTING LAYOUT PLAN



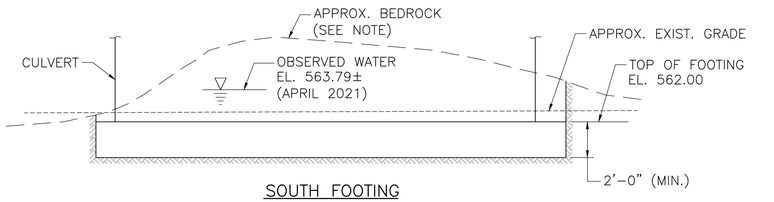
FOOTING LAYOUT PLAN
SCALE: ¼" = 1'–0"



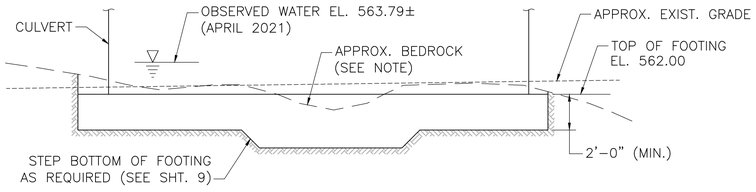
NOTES:

1. DO NOT USE WHERE FOOTING/FOUNDATION IS SUBJECTED TO UNPROTECTED STREAM FLOW.
2. CONCRETE FILL MUST BE INSTALLED IN THE DRY. USE WATER CONTROL WHERE REQUIRED.
3. IF SOIL OR LOOSE BOULDER IS ENCOUNTERED AT THE DESIGNED BOTTOM OF FOOTING/FOUNDATION, IT SHALL BE OVER–EXCAVATED DOWN TO SOUND BEDROCK. THE BEDROCK SHALL THEN BE LEVELED PRIOR TO FILLING WITH CONCRETE FILL. IF SOUND BEDROCK IS DEEPER THAN 5'–0" BELOW THE BOTTOM OF FOOTING/FOUNDATION, THE RESIDENT ENGINEER SHALL NOTIFY THE ENGINEER IMMEDIATELY.

LIMITS OF CONCRETE FILL
NOT TO SCALE



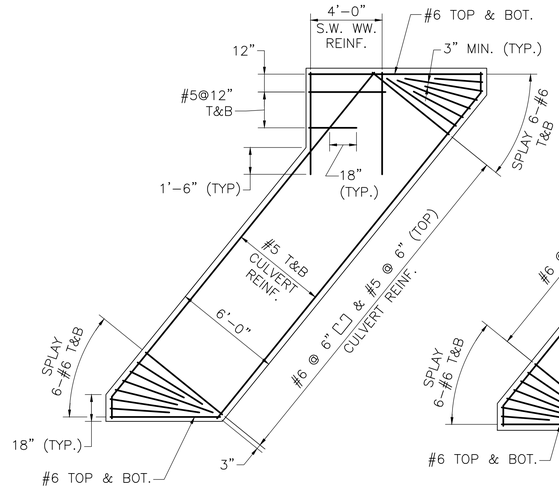
SOUTH FOOTING



NORTH FOOTING

CULVERT FOOTING LONGITUDINAL SECTION
(LOOKING ALONG FRONT FACE OF CULVERT)
SCALE: ¼" = 1'–0"

NOTE: TOP OF BEDROCK IS DERIVED FROM THE INTERPRETED TOP OF BEDROCK CONTOUR FIGURES PROVIDED IN HAGER GEOSCIENCES JULY 2021 GEOPHYSICAL SURVEY REPORT (APPENDIX E OF GEOTECHNICAL REPORT). AS NOTED IN HAGER'S REPORT, "EVIDENCE THAT THE TOP OF ROCK IS SIGNIFICANTLY WEATHERED/FRACTURED DUE TO VARYING DEPTHS WAS NOTED THROUGHOUT THE SURVEY AREA".



SOUTH FOOTING NORTH FOOTING

FOOTING REINFORCEMENT PLAN
NOT TO SCALE

FEB. 1, 2025	ISSUED FOR CONSTRUCTION
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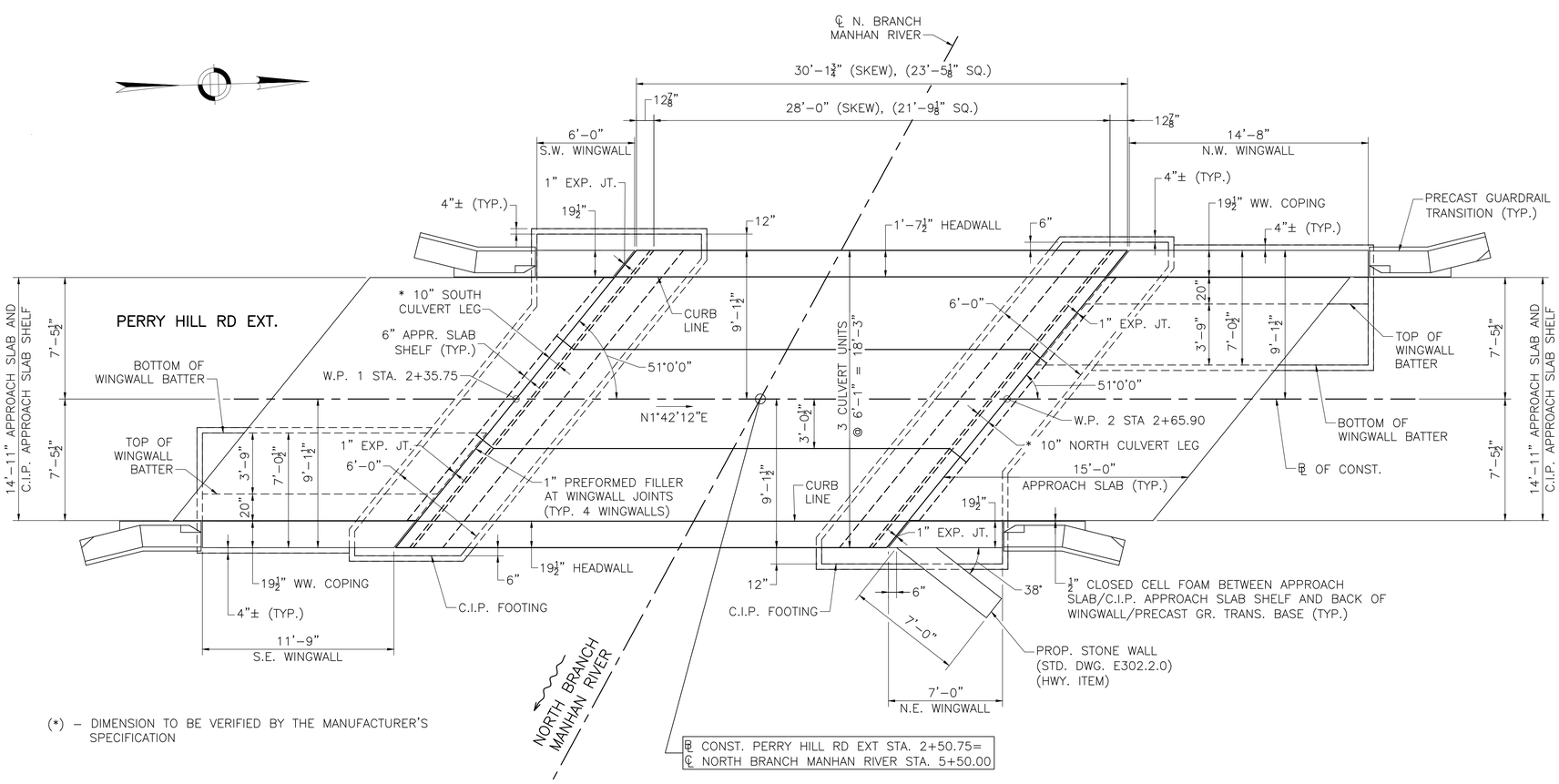
USE ONLY PRINTS OF LATEST DATE

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	19	27
PROJECT FILE NO.	610768		

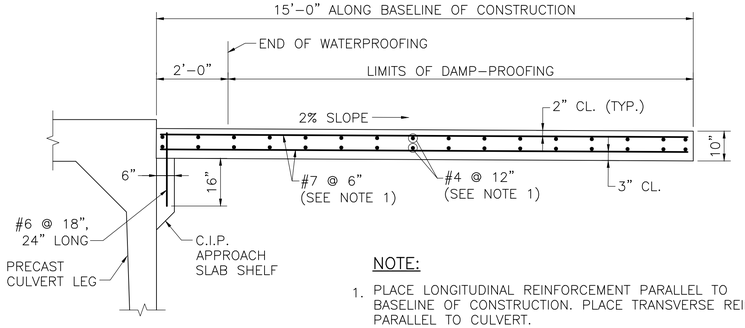
CULVERT AND WINGWALL PLAN



(*) – DIMENSION TO BE VERIFIED BY THE MANUFACTURER'S SPECIFICATION

CULVERT AND WINGWALL PLAN

SCALE: ¼" = 1'–0"



NOTE:

1. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO BASELINE OF CONSTRUCTION. PLACE TRANSVERSE REINF. PARALLEL TO CULVERT.

APPROACH SLAB DETAILS

SCALE: ½" = 1'–0"

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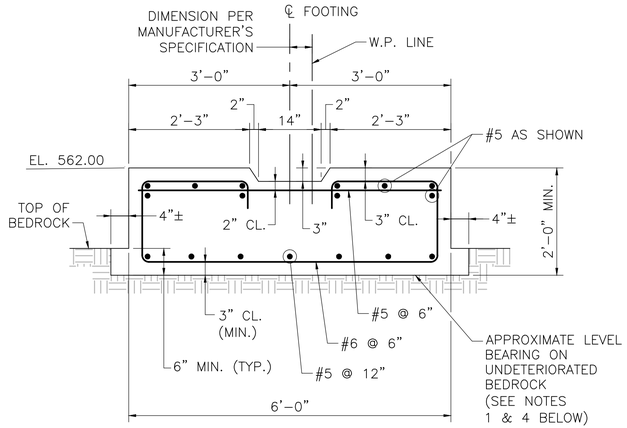
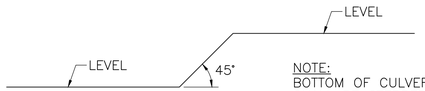
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

PROPOSED TRANSVERSE SECTION AND CULVERT DETAILS



TYPICAL FOOTING SECTION

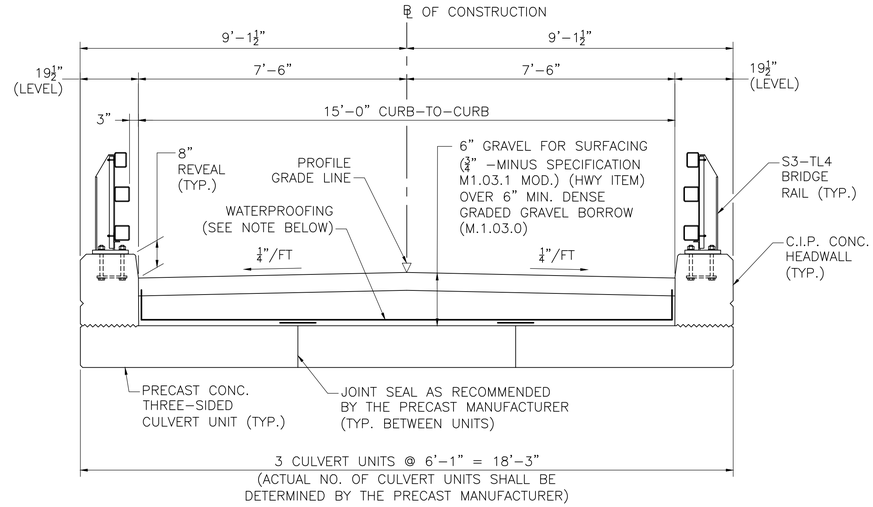
SCALE: ¾" = 1'–0"



NOTE:
BOTTOM OF CULVERT FOOTING SHALL BE STEPPED ALONG ITS LENGTH TO CONFORM WITH SOUND BEDROCK AS REQUIRED

FOOTING NOTES:

1. EXCAVATE TO SOUND ROCK AND PROVIDE LEVEL SURFACE. FILL BOTTOM OF FOOTING WITH CONCRETE FILL AS REQUIRED.
2. 4"± OVER–EXCAVATION CAN BE ELIMINATED IF CONCRETE FILL IS USED BELOW THE CULVERT FOOTING.
3. FOOTING KEY SHOULD BE DRY AND CLEAN PRIOR TO PLACING THE CULVERT UNITS.
4. FOR REINFORCING LAYOUT SEE FOOTING PLAN, SHEET 7 OF 14.
5. FOR LIMITS OF CONCRETE FILL SEE FOOTING PLAN, SHEET 7 OF 14.

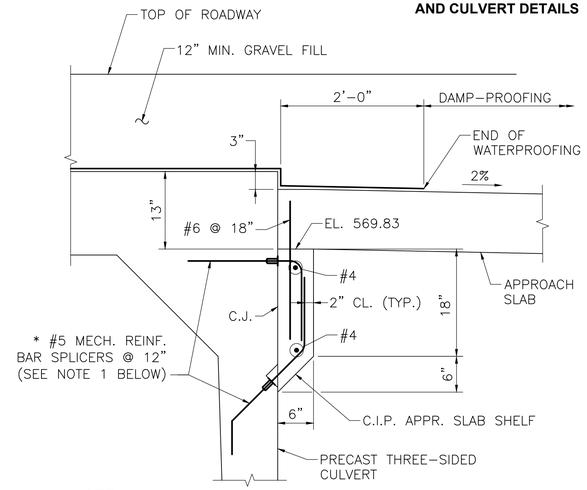


PROPOSED TRANSVERSE SECTION

SCALE: ½" = 1'–0"

NOTE:

WATERPROOFING SHALL BE PROTECTED FROM CONSTRUCTION EQUIPMENT. ALL DAMAGE ON THE WATERPROOFING RESULTING FROM EQUIPMENT SHALL BE REPAIRED AT NO COST TO THE DEPARTMENT. GRAVEL ROADWAY FILL SHALL BE PLACED WITHIN 24 HOURS AFTER THE REQUIRED CURING AND INSPECTION HAVE BEEN COMPLETED FOR THE WATERPROOFING.



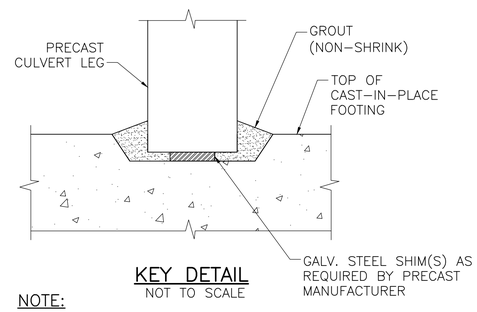
NOTE:

1. THE CULVERT MANUFACTURER MAY SUBSTITUTE #5 ⊃ DOWELS FOR MECHANICAL REINFORCING BAR SPLICERS AND THREADED REBARS.

C.I.P APPROACH SLAB SHELF DETAILS

SCALE: 1" = 1'–0"

(*) – REINFORCEMENT TO BE PAID UNDER CULVERT ITEM 999.3

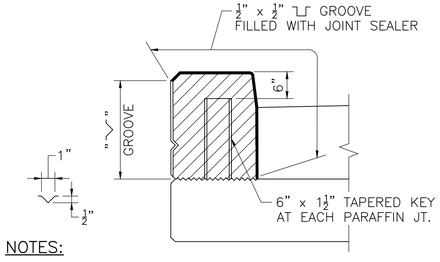


KEY DETAIL

NOT TO SCALE

NOTE:

THIS DETAIL MAY BE MODIFIED SUBJECT TO THE APPROVAL OF ENGINEER

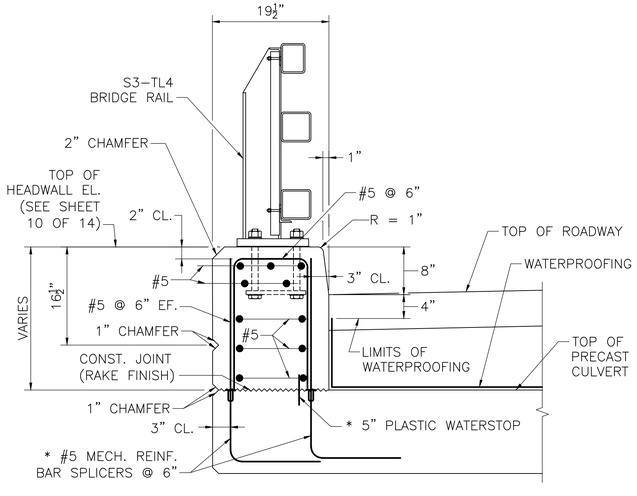


NOTES:

1. THE CAST–IN–PLACE CONCRETE HEADWALL 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.
4. FOR LOCATION OF PARAFFIN JOINT. SEE BRIDGE GENERAL PLAN.

PARAFFIN JOINT DETAILS

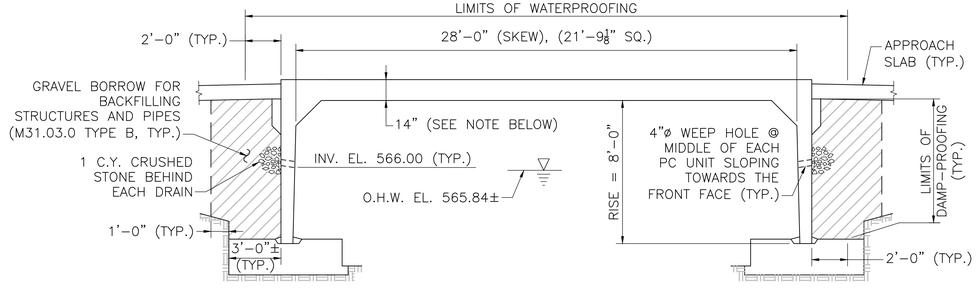
SCALE: ¾" = 1'–0"



C.I.P. HEADWALL SECTION

SCALE: 1" = 1'–0"

(*) – ITEMS TO BE PAID UNDER CULVERT ITEM 999.3



LONGITUDINAL CULVERT CROSS SECTION

NOT TO SCALE

NOTE: ACTUAL CULVERT ROOF SLAB THICKNESS SHALL BE DETERMINED BY THE PRECAST MANUFACTURER.

FEB. 1, 2025	ISSUED FOR CONSTRUCTION
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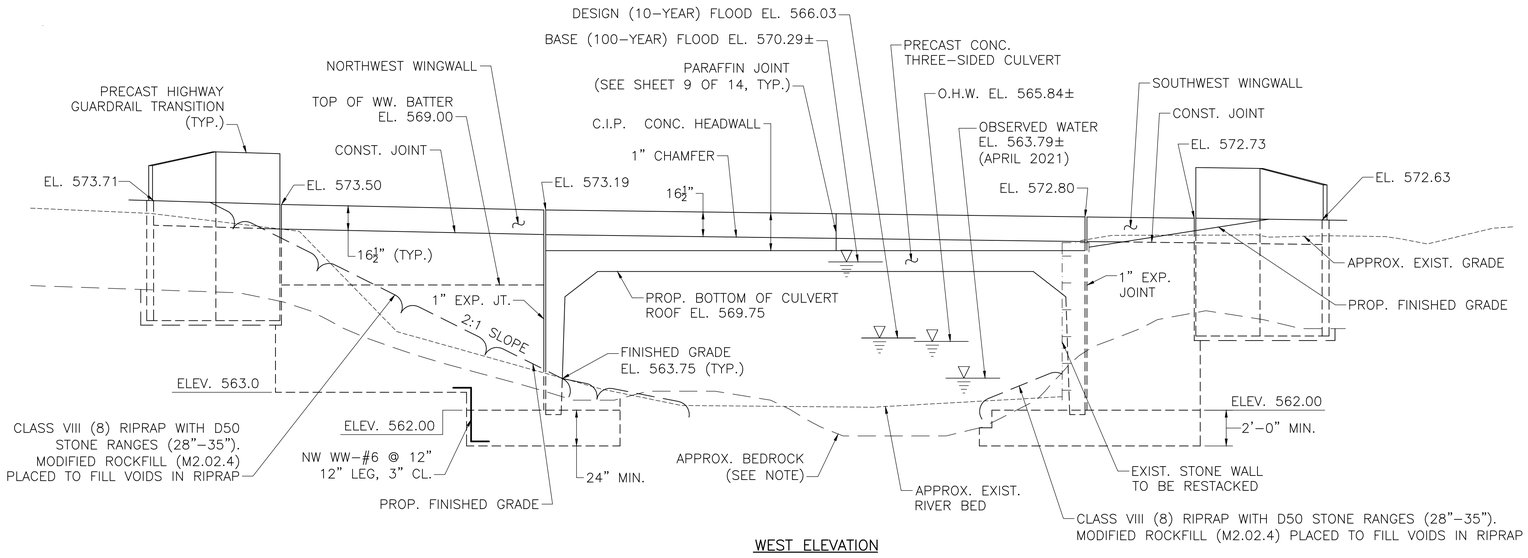
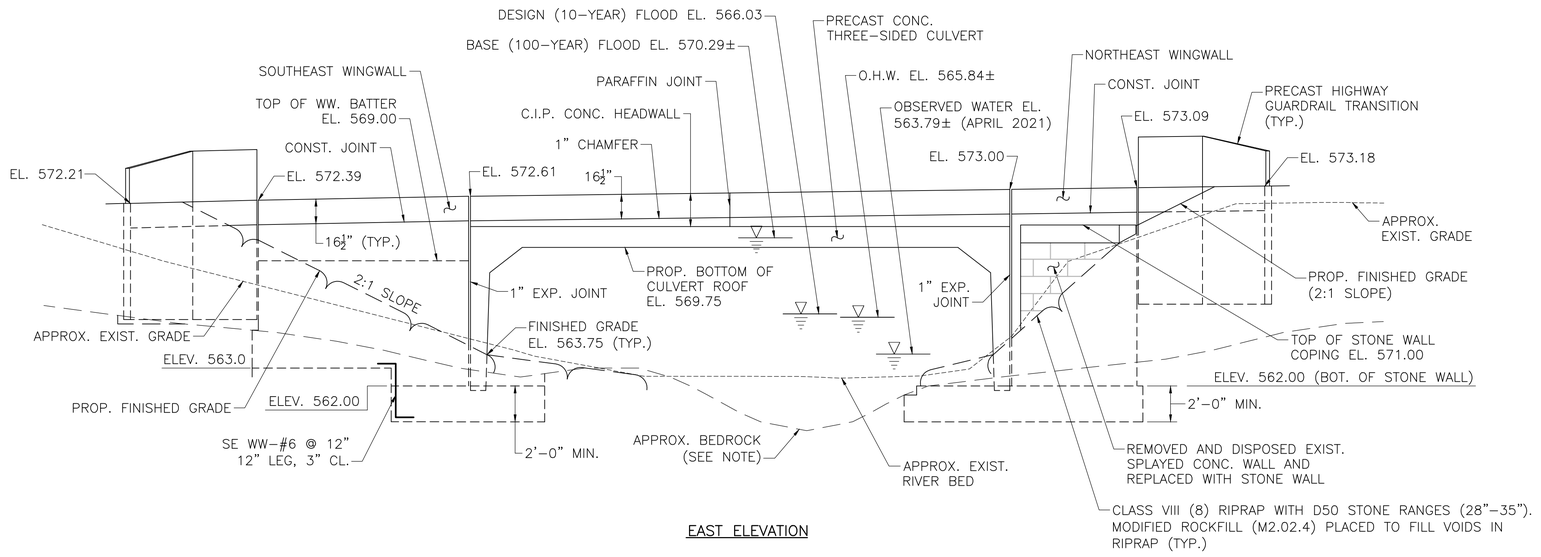
WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	21	27
PROJECT FILE NO.	610768		

CULVERT & WINGWALL ELEVATIONS



WEST ELEVATION



EAST ELEVATION

CULVERT AND WINGWALL ELEVATIONS

SCALE: ¼" = 1'–0"

NOTE: TOP OF BEDROCK IS DERIVED FROM THE INTERPRETED TOP OF BEDROCK CONTOUR FIGURES PROVIDED IN HAGER GEOSCIENCES JULY 2021 GEOPHYSICAL SURVEY REPORT (APPENDIX E OF GEOTECHNICAL REPORT). AS NOTED IN HAGER'S REPORT, "EVIDENCE THAT THE TOP OF ROCK IS SIGNIFICANTLY WEATHERED/FRACTURED DUE TO VARYING DEPTHS WAS NOTED THROUGHOUT THE SURVEY AREA".

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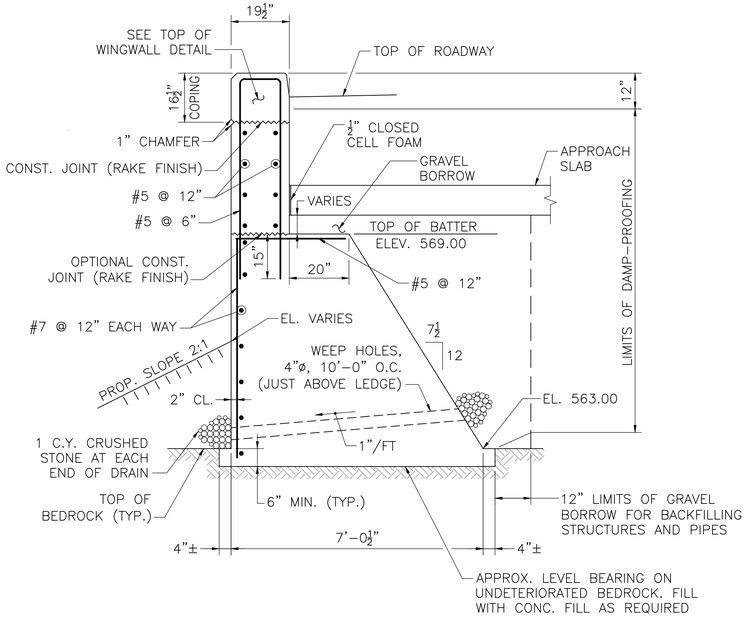
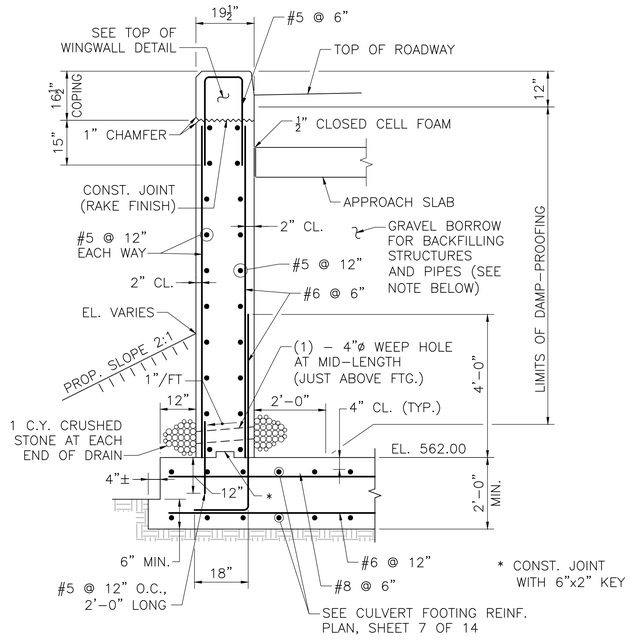


SOUTHEAST & NORTHWEST WINGWALL SECTION

SCALE: ½" = 1'-0"

NOTE: 4"± OVER-EXCAVATION CAN BE ELIMINATED IF CONCRETE FILL IS USED BELOW THE WINGWALL.



NOTE:
FOR LIMITS OF GRAVEL BORROW SEE LONGITUDINAL CULVERT SECTION ON SHEET 9 OF 14.

SOUTHWEST & NORTHEAST WINGWALL SECTION

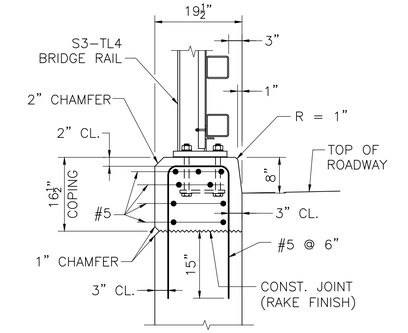
SCALE: ½" = 1'-0"

NOTE:

1. THE FACTORED BEARING PRESSURE = 3.6 KSF AT SOUTHEAST AND NORTHWEST WINGWALLS, AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SERVICE I LOAD COMBINATION.

   THE FACTORED BEARING RESISTANCE = 20 KSF AT SOUTHEAST AND NORTHWEST WINGWALLS. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 1.0.

2. 4"ø WEEP HOLES 10'-0" O.C. MAX. LOCATED ABOVE THE HEEL OF THE FOOTING OR LEDGE SLOPING 1" PER FOOT TOWARDS THE FRONT FACE. PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEPHOLE.

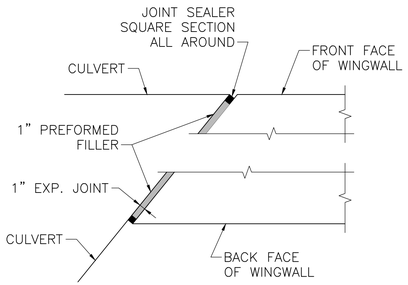


NOTES:

1. SW AND NE WINGWALL SHOWN, SE AND NW SIMILAR.
2. FOR WINGWALL STEM REINFORCEMENT SEE WINGWALL SECTION DETAILS.

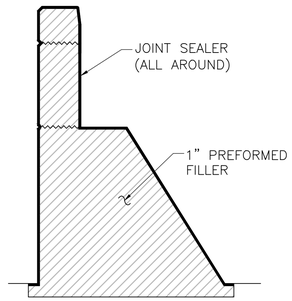
TOP OF WINGWALL DETAIL

SCALE: ¾" = 1'-0"

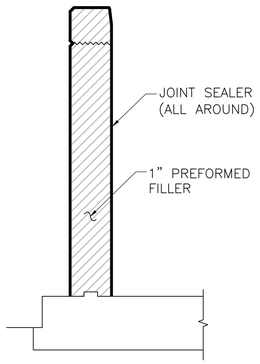


TYPICAL WINGWALL JOINT DETAIL

NOT TO SCALE



S.E. & N.W. WINGWALL



S.W. & N.E. WINGWALL

VERTICAL SECTION THRU WINGWALL JOINT

NOT TO SCALE

FEB. 1, 2025	ISSUED FOR CONSTRUCTION
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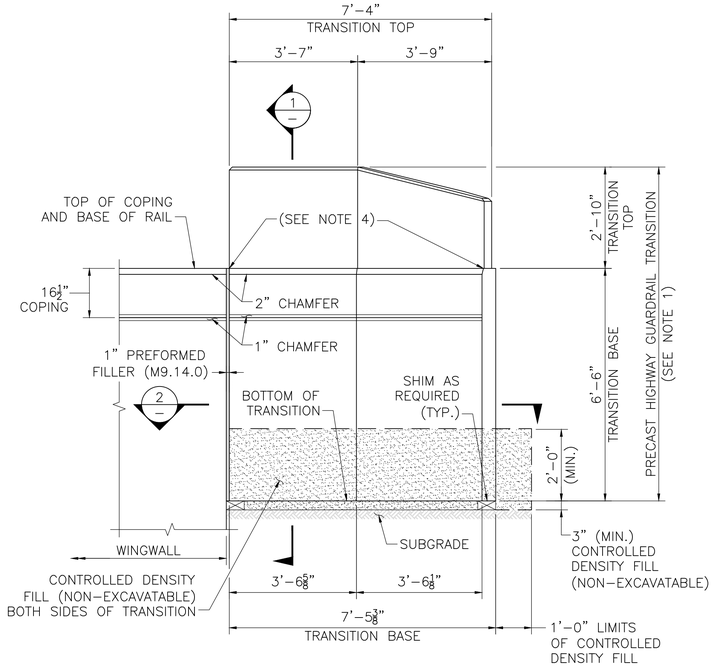
WESTHAMPTON
PERRY HILL ROAD EXTENSION

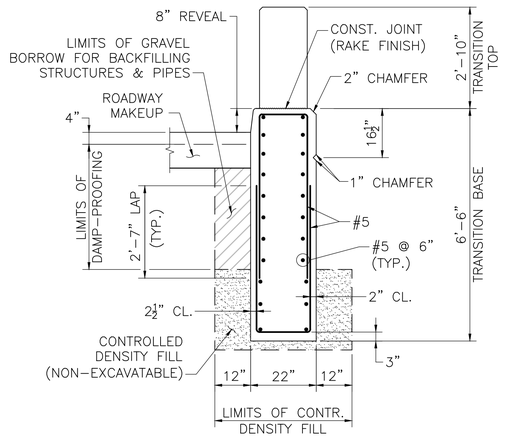
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	23	27
	PROJECT FILE NO. 610768		

PRECAST HIGHWAY GUARDRAIL TRANSITION DETAILS



PRECAST GUARDRAIL TRANSITION ELEVATION AT WINGWALL

SCALE: ½" = 1'-0"



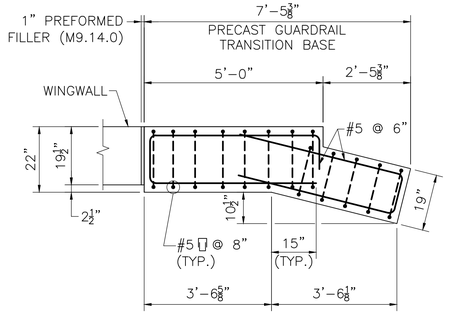
NOTE:
REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

SECTION 1

SCALE: ½" = 1'-0"

PRECAST GUARDRAIL TRANSITION NOTES:

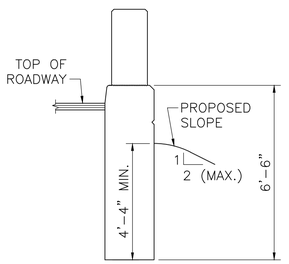
1. GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE PRECAST GUARDRAIL TRANSITION BASE AND TO A HEIGHT OF 2'-0" (MIN.) ON ALL SIDES OF THE TRANSITION BASE TO FORM A TRENCH IN WHICH TO SET THE TRANSITION. WHERE NO GRAVEL BORROW IS REQUIRED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



NOTE:
WINGWALL REINFORCEMENT NOT SHOWN FOR CLARITY.

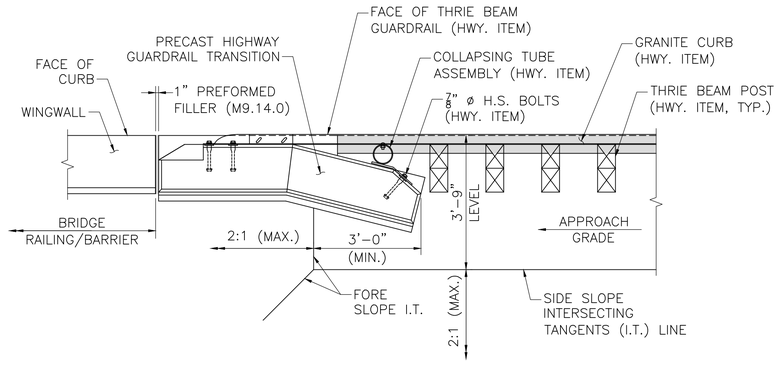
SECTION 2

SCALE: ½" = 1'-0"



SECTION 3

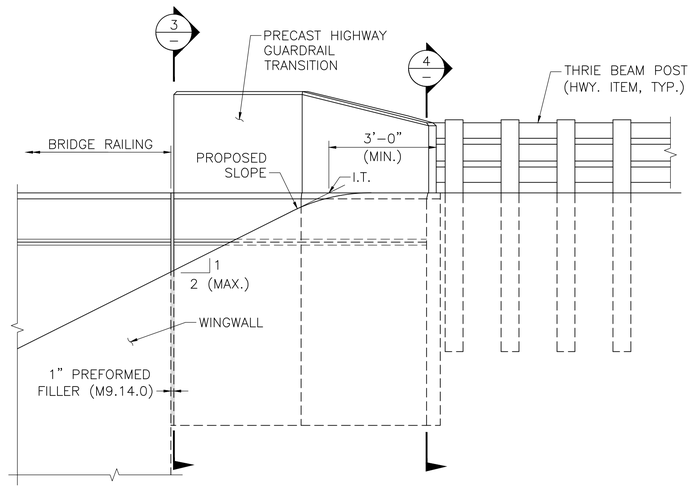
SCALE: ⅜" = 1'-0"



GRADING REQUIREMENTS PLAN

SCALE: ½" = 1'-0"

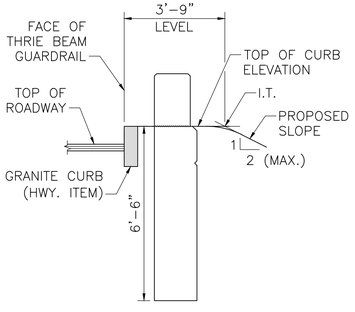
NOTE: NO GUARDRAIL CONNECTION AT SOUTHWEST GUARDRAIL TRANSITION



GRADING REQUIREMENTS ELEVATION

SCALE: ½" = 1'-0"

NOTE: NO GUARDRAIL CONNECTION AT SOUTHWEST GUARDRAIL TRANSITION



SECTION 4

SCALE: ⅜" = 1'-0"

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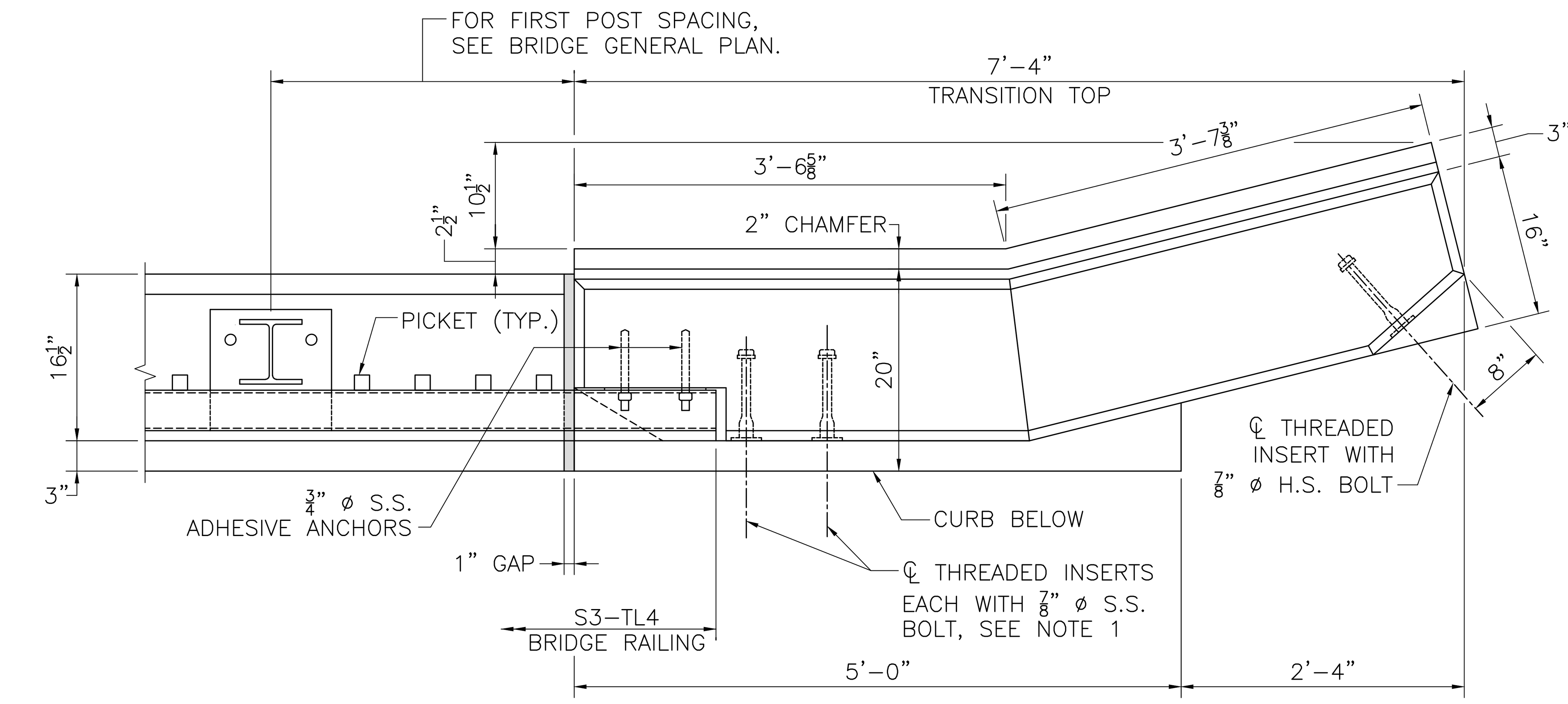
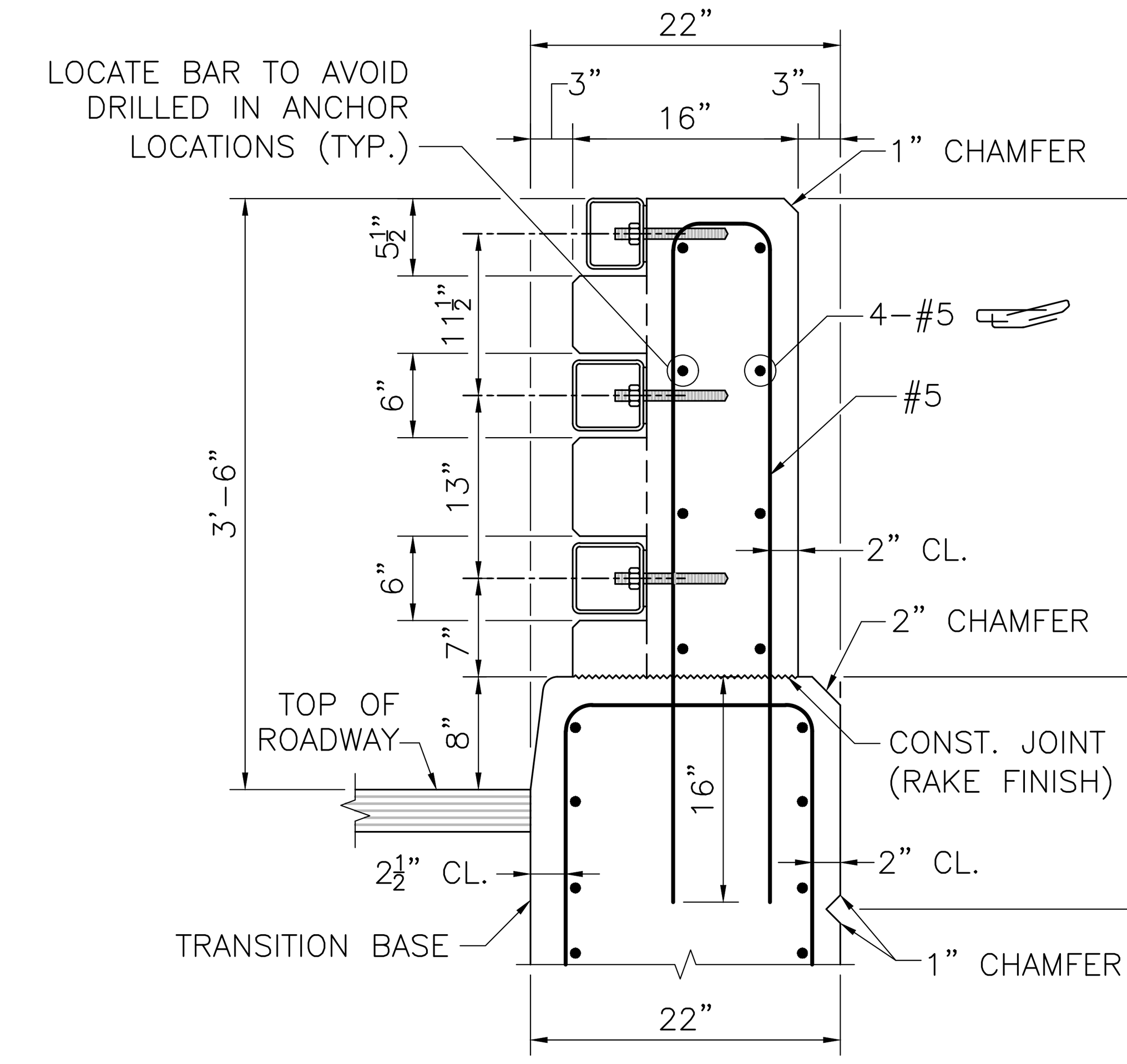
WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	24	27
	PROJECT FILE NO.	610768	

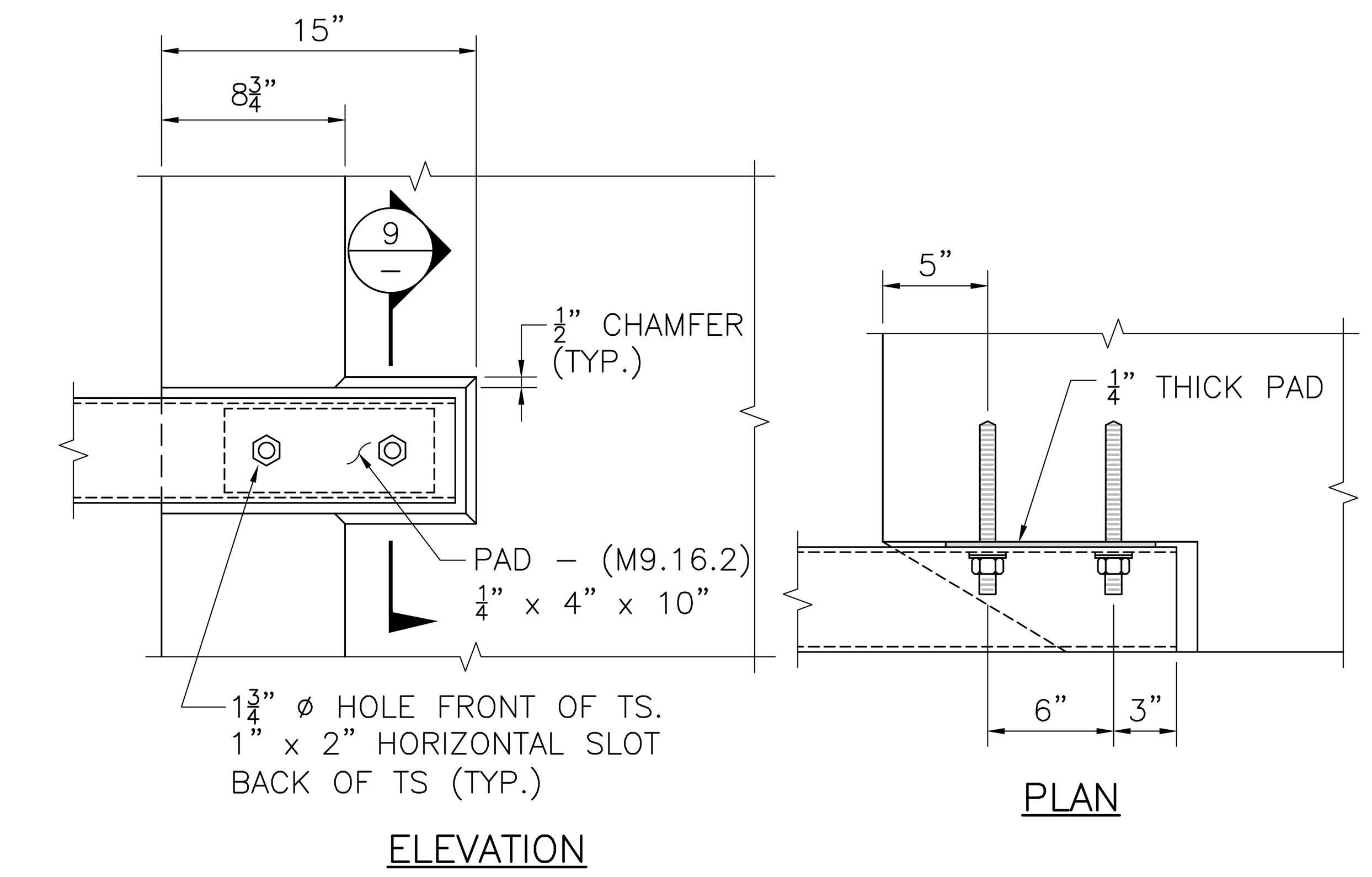
TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION DETAILS



PLAN
SCALE: 1" = 1'-0"



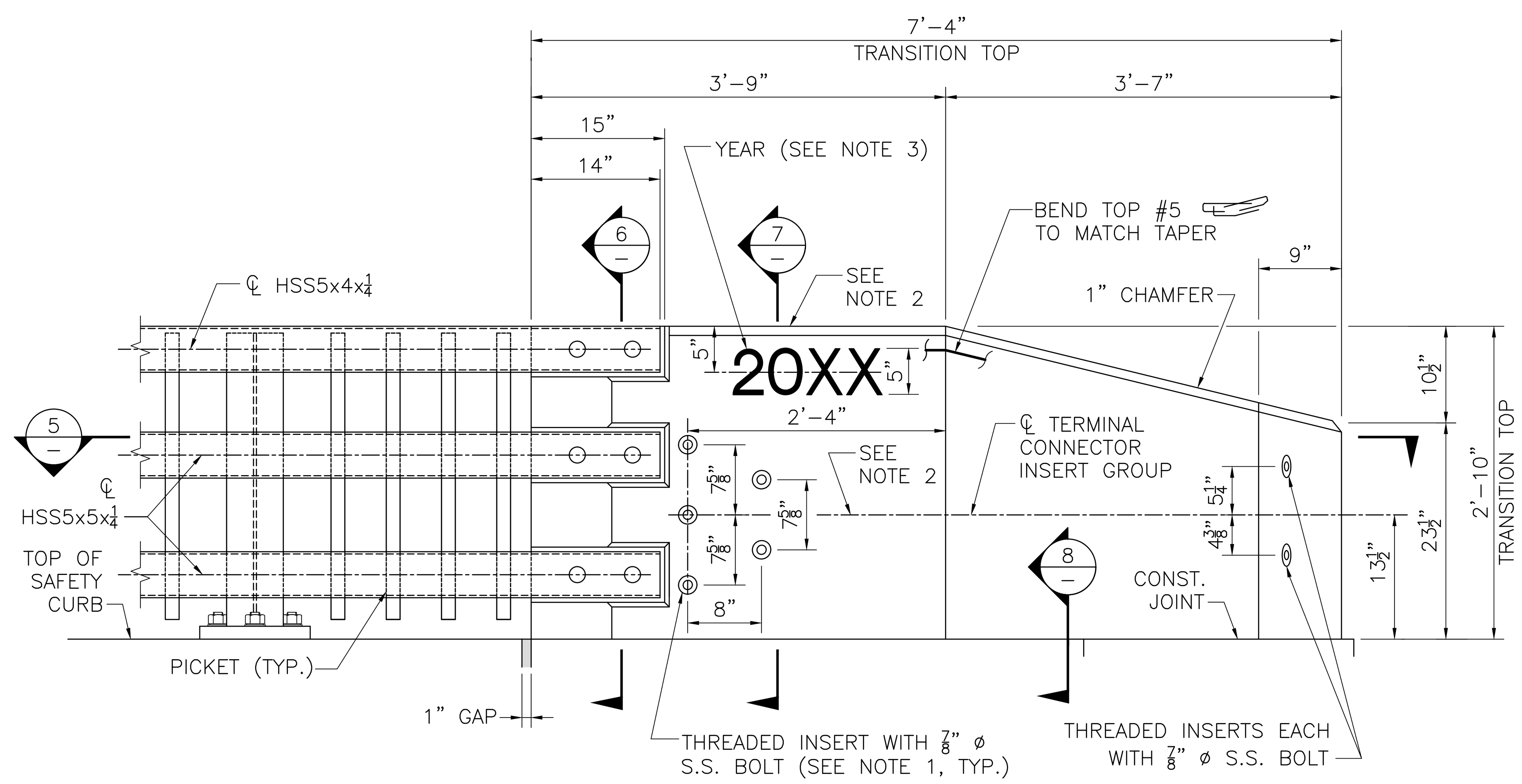
SECTION 6
SCALE: 1" = 1'-0"



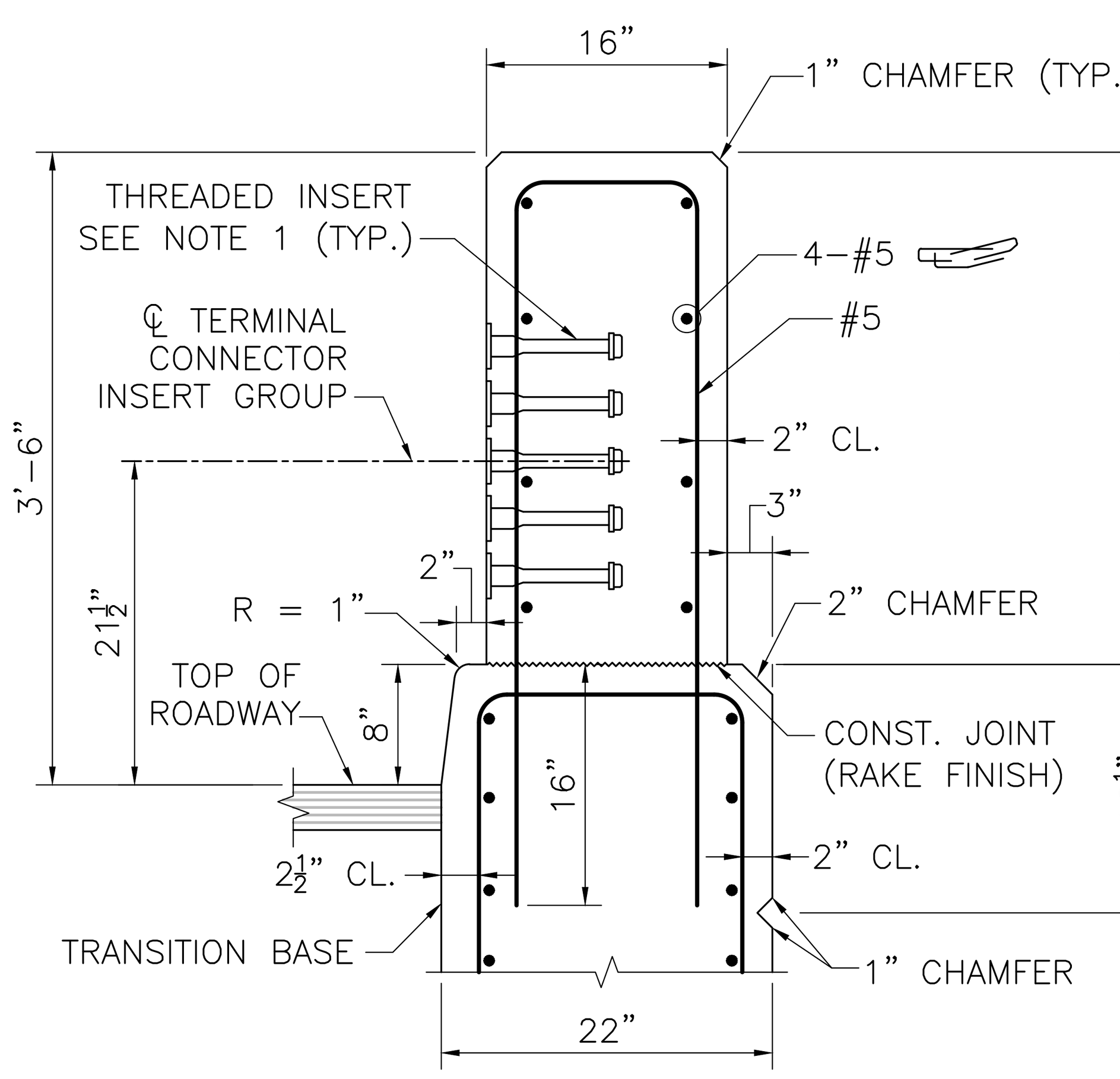
ELEVATION

PLAN

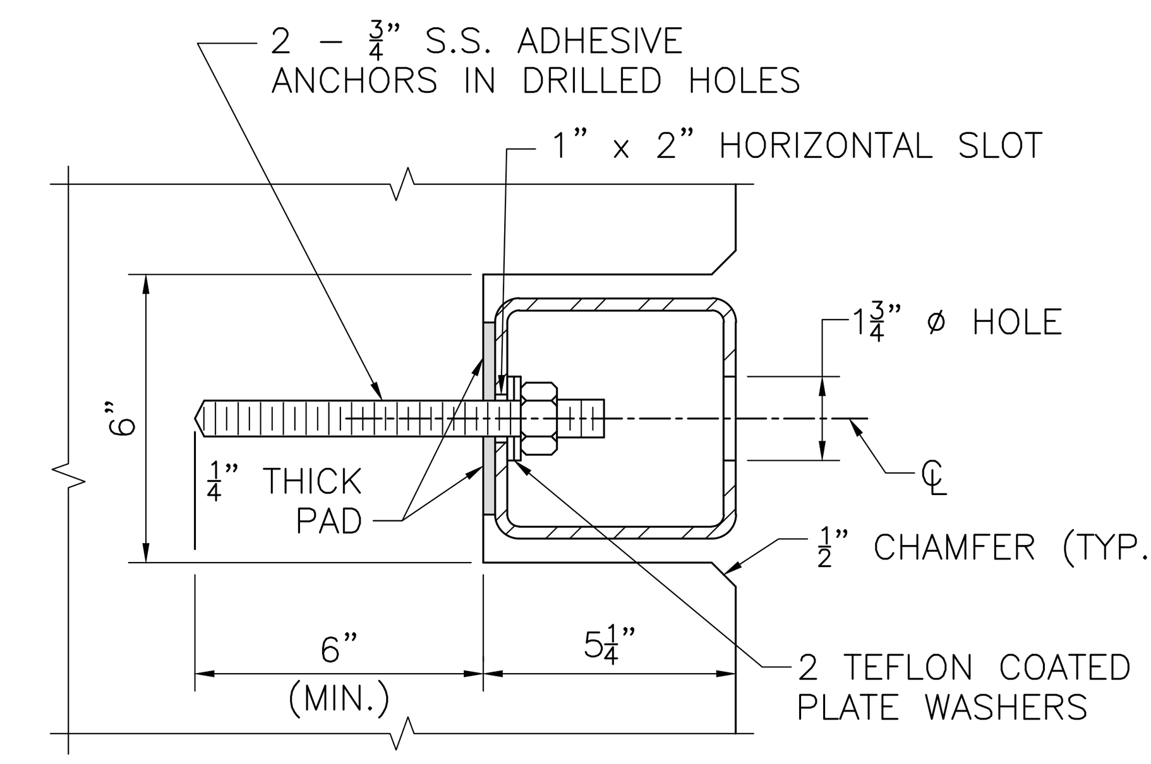
RAIL ATTACHMENT
SCALE: 1½" = 1'-0"



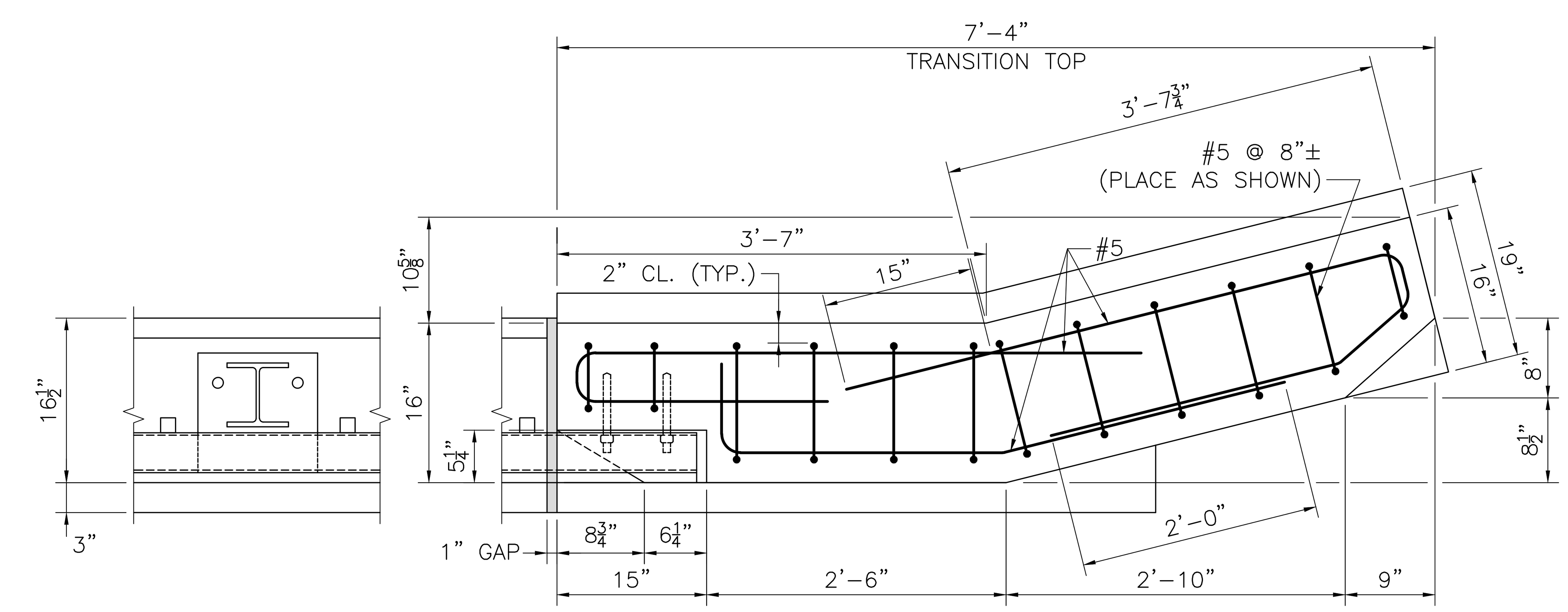
ELEVATION
SCALE: 1" = 1'-0"



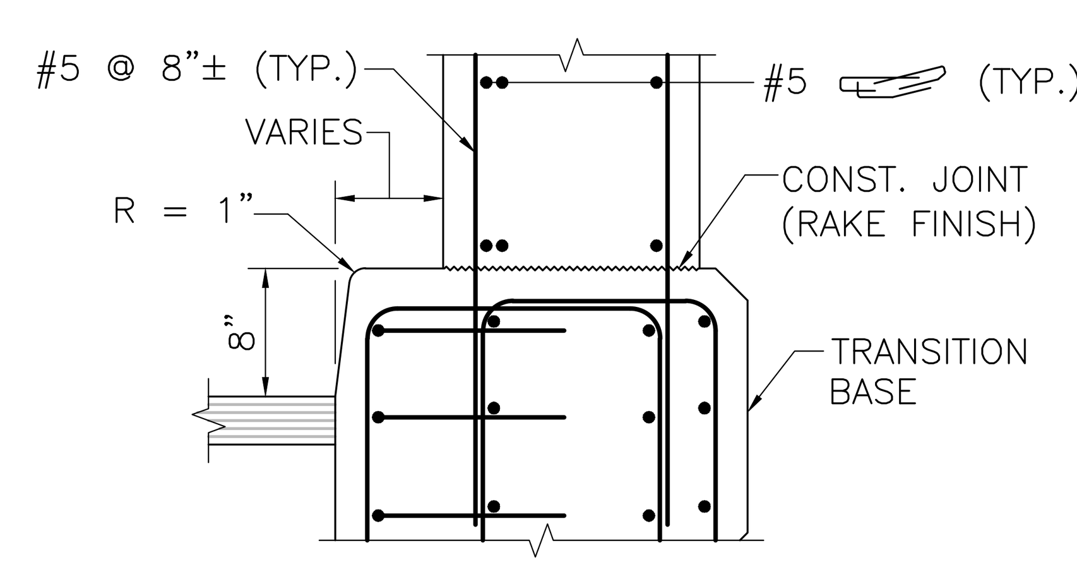
SECTION 7
SCALE: 1" = 1'-0"



SECTION 9
SCALE: 3" = 1'-0"



SECTION 5
SCALE: 1" = 1'-0"



SECTION 8
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. BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.

2. 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.

   FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF CURB 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.

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

4. 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.

5. NO GUARDRAIL CONNECTION SHALL BE INSTALLED AT THE SOUTHWEST GUARDRAIL TRANSITION.

DATE	DESCRIPTION
FEB. 1, 2025	ISSUED FOR CONSTRUCTION

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

TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION DETAILS

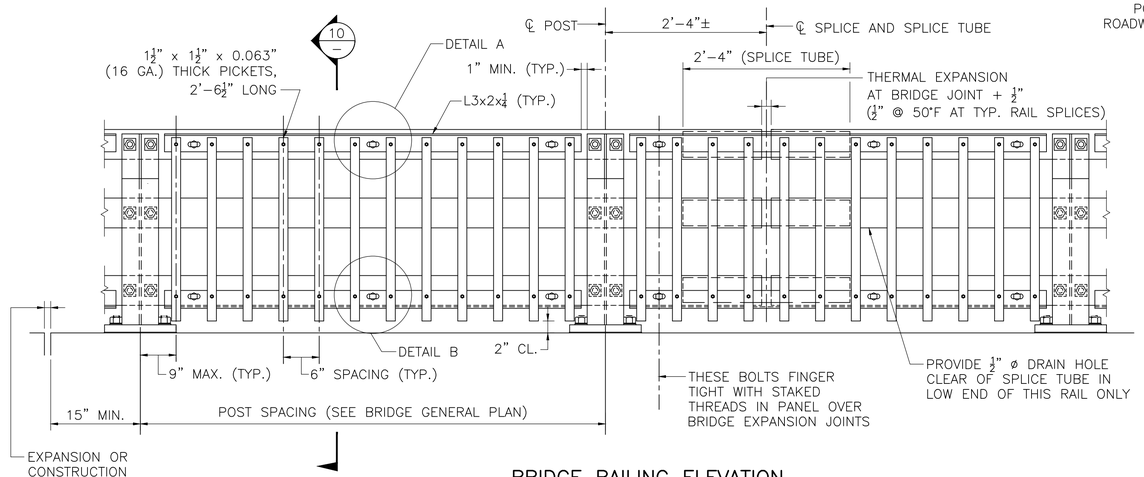
SHEET 13 OF 14 BRIDGE NO. W-27-028 (CEQ)

610768_BR13(W27028)(GUARDRAIL TRANS TOP).DWG Plotted on 5-Feb-2025 9:56 AM
Final Structural Submittal (SF) 28-December-2024

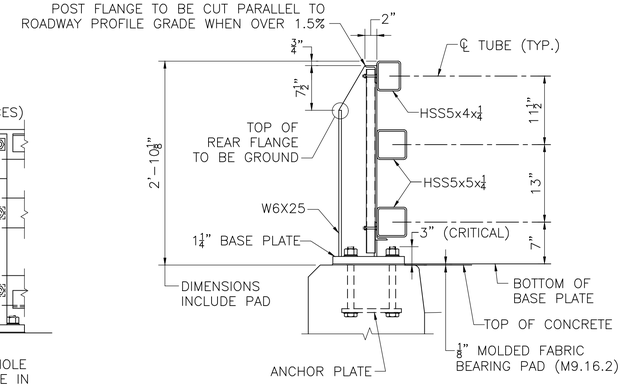
WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	25	27
	PROJECT FILE NO. 610768		

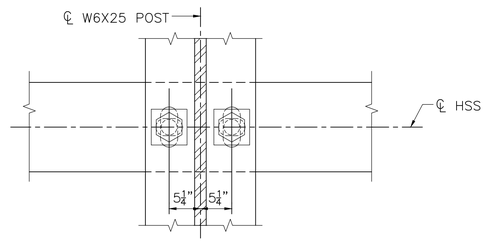
S3-TL4 BRIDGE RAILING DETAILS



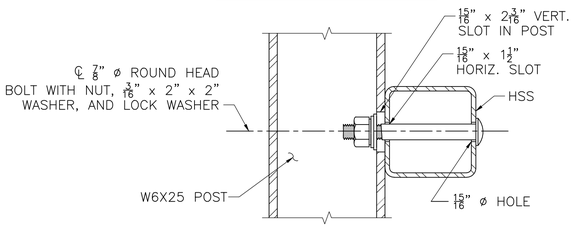
BRIDGE RAILING ELEVATION
SCALE: 1" = 1'-0"



SECTION 10
SCALE: 1" = 1'-0"



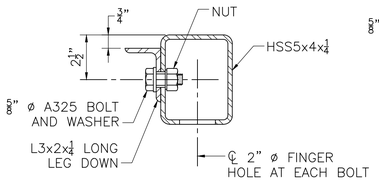
SECTION THRU POST WEB



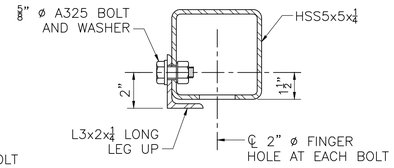
SECTION THRU RAIL

NOTE:
CONNECTIONS AT LOWER RAILS SHOWN.
CONNECTIONS AT TOP RAIL SIMILAR.

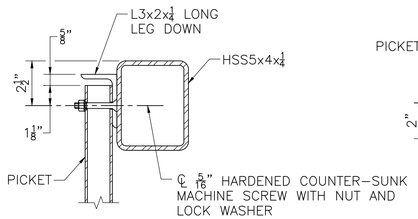
TYPICAL RAIL TO POST CONNECTIONS
SCALE: 1" = 1'-0"



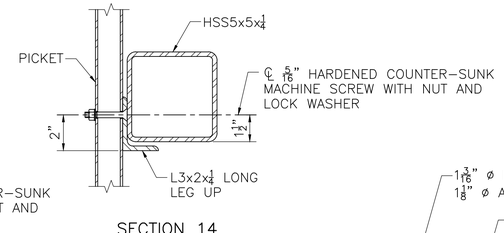
SECTION 11



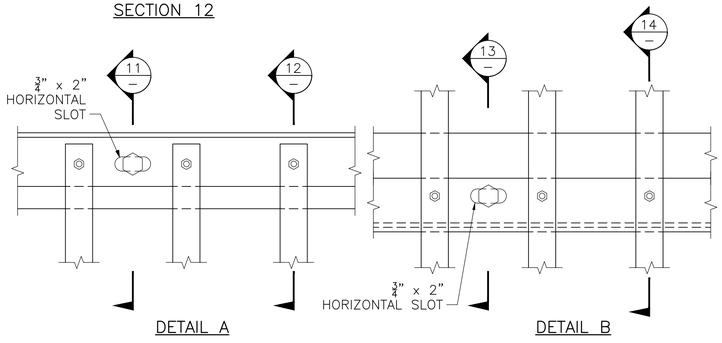
SECTION 13



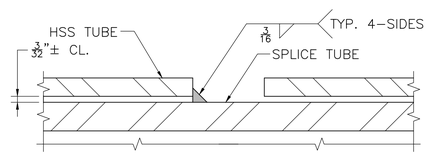
SECTION 12



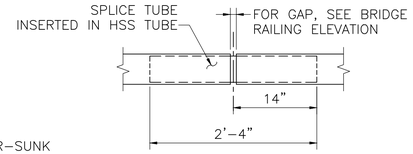
SECTION 14



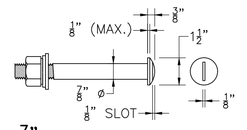
TYPICAL PICKET TO RAIL DETAILS
SCALE: 3" = 1'-0"



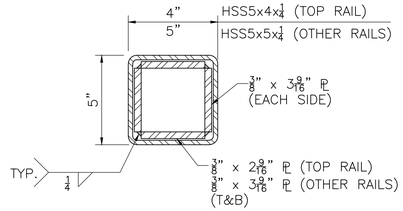
SPLICE DETAIL
FULL SIZE



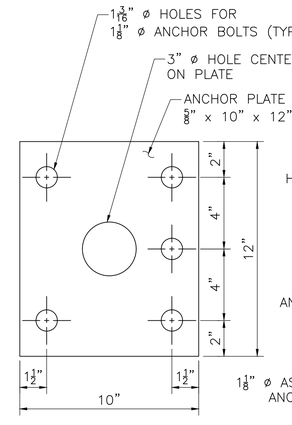
TYPICAL SPLICE
SCALE: 1" = 1'-0"



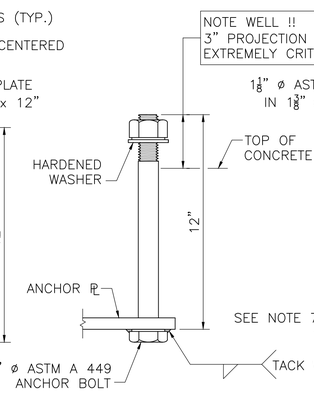
⅞" ø ROUND HEAD BOLT
SCALE: 3" = 1'-0"



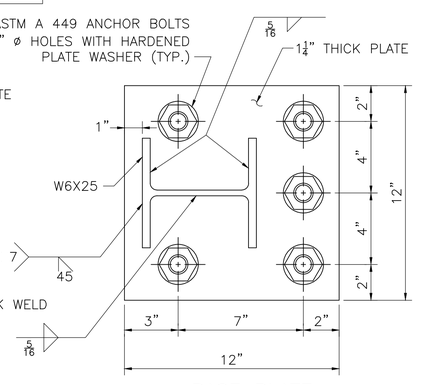
SPLICE TUBE DETAILS
SCALE: 3" = 1'-0"



ANCHOR PLATE
SCALE: 3" = 1'-0"



ANCHOR BOLT
SCALE: 3" = 1'-0"



BASE PLATE
SCALE: 3" = 1'-0"

RAILING NOTES:

1. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500 WITH A CERTIFIED Fy = 50 KSI MINIMUM. THE MINIMUM HORIZONTAL BENDING RADII OF THE HSS TUBING SHALL BE 8 FEET. PICKET CARRIER ANGLES, ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 36. PICKET TUBING SHALL CONFORM TO ASTM A 513 WITH Fy = 36 KSI MIN. OR A 500 GRADE B.
2. ALL STEEL (EXCEPT THE ⅝" ANCHOR PLATE AND FASTENERS) SHALL BE GALVANIZED AND PAINTED DARK BRONZE (FEDERAL STD. 595B COLOR NO. 10045). ANCHOR PLATE SHALL BE GALVANIZED ONLY. HEADS OF ⅞" ø ROUND HEAD BOLTS SHALL BE PAINTED TO MATCH RAIL.
3. ANCHOR BOLTS SHALL BE SET WITH TEMPLATES. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN AFTER STEEL IS IN PLACE.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR (4) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN THE PANELS OVER EXPANSION JOINT.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. ALL POSTS TO BE PLUMB WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%, POSTS SHALL BE SET PERPENDICULAR TO GRADE.
7. POST FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING. WELD SHALL BE BACK-GOUGED ON BACK SIDE EXCEPT AT WEB. WELD IS THE SAME ON BOTH FLANGES.
8. ⅞" ø ROUND HEAD BOLTS SHALL CONFORM TO THE CHEMICAL AND PHYSICAL REQUIREMENTS OF AASHTO M 164.

FEB. 1, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

S3-TL4 BRIDGE RAILING

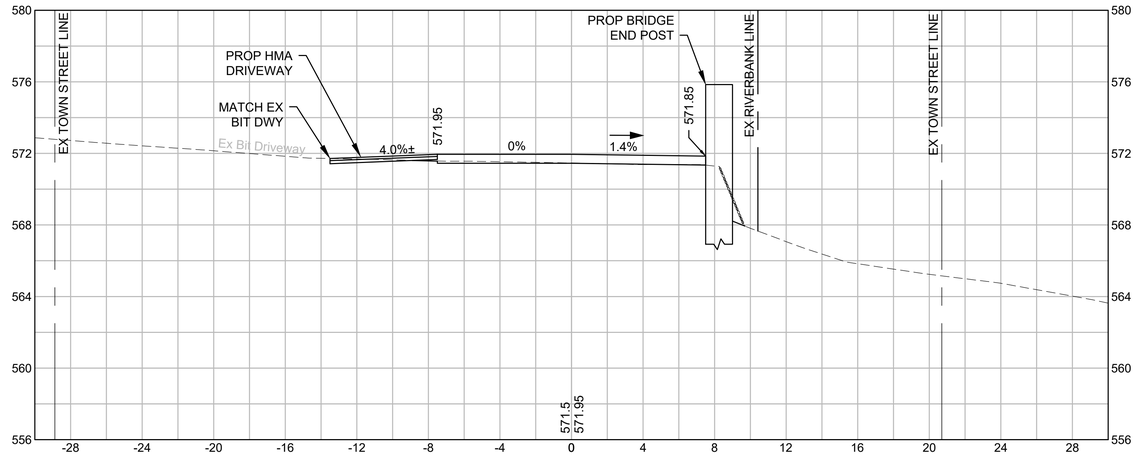
WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	26	27
PROJECT FILE NO.	610768		

CROSS SECTIONS - SHEET 1
PERRY HILL ROAD EXTENSION

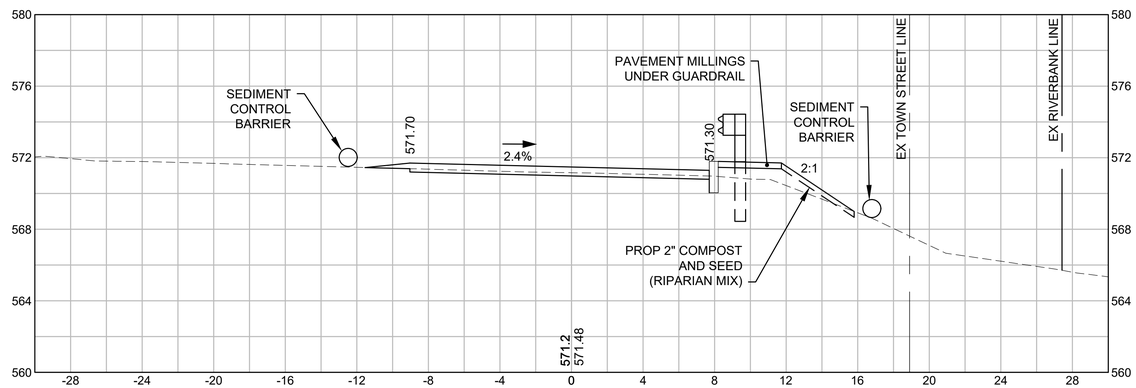
610768_HD-12 (CROSS SECTIONS).DWG Plotted on 1-Nov-2024 12:33 PM

2+20



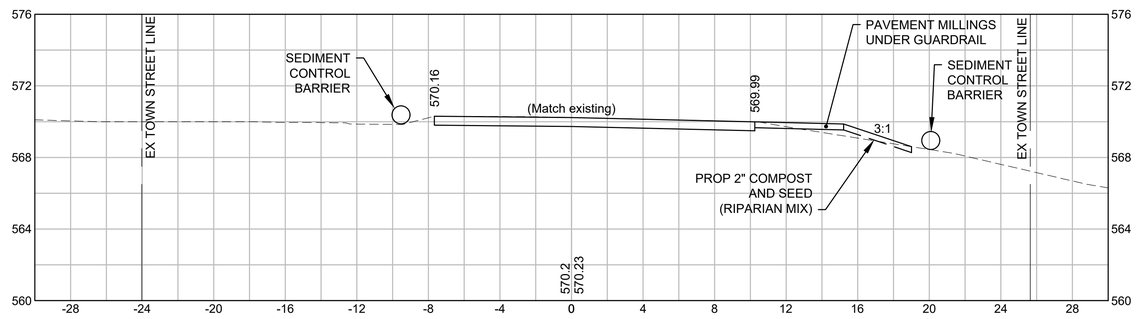
CUT: 5 SF
FILL: 0 SF

2+00



CUT: 5 SF
FILL: 5 SF

1+50



CUT: 10 SF
FILL: 5 SF

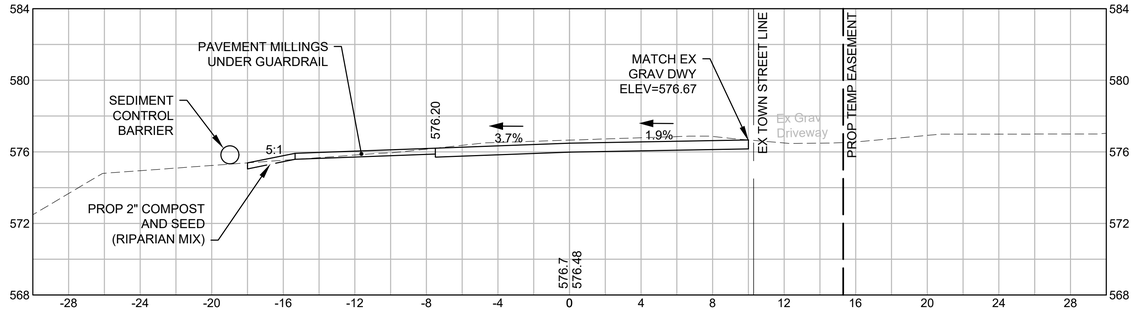
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

WESTHAMPTON
PERRY HILL ROAD EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(808)X	27	27
PROJECT FILE NO.	610768		

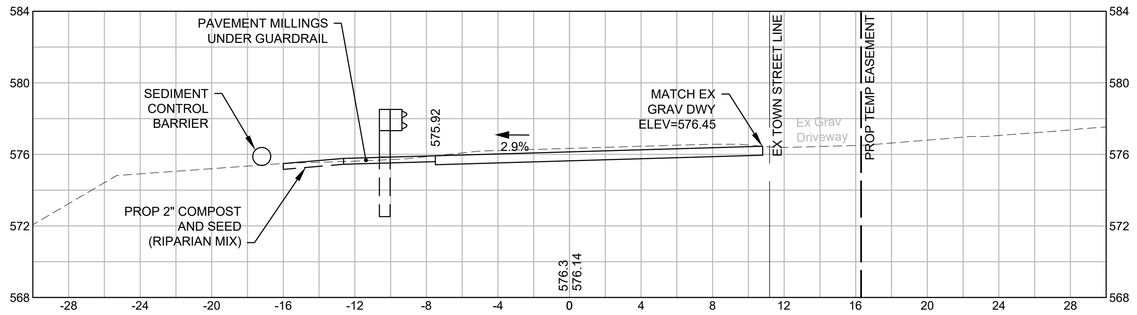
CROSS SECTIONS - SHEET 2
PERRY HILL ROAD EXTENSION

3+55



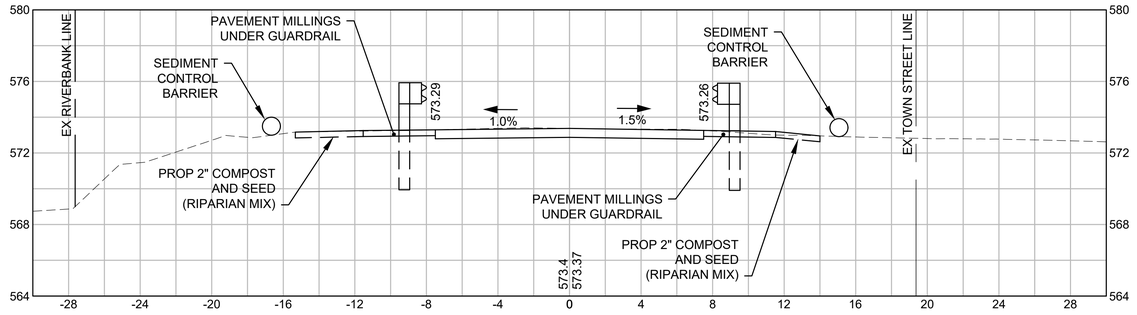
CUT: 15 SF
FILL: 0 SF

3+50



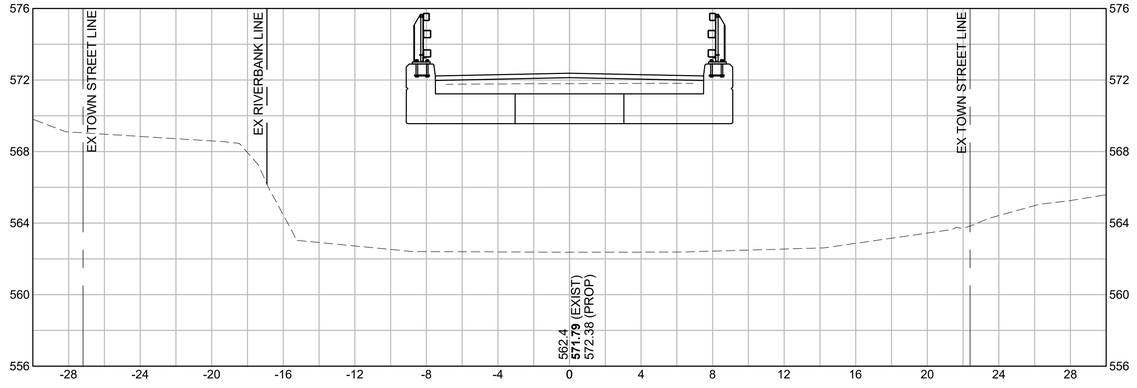
CUT: 15 SF
FILL: 0 SF

3+00



CUT: 15 SF
FILL: 0 SF

2+50



CUT: (N/A) SF
FILL: (N/A) SF

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

MassDOT
Massachusetts Department of Transportation
Highway Division

Bridge W-27-28 is a municipal owned structure. You will need to contact the city/town for any plans you might need.