MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	1	189
PROJECT FILE NO.	612188		

TITLE SHEET & INDEX

PLAN AND PROFILE OF

ROUTE 24 OVER CANTON STREET SUPERSTRUCTURE REPLACEMENT

(BRIDGE NO. R-01-004)

IN THE TOWN OF

RANDOLPH

NORFOLK COUNTY

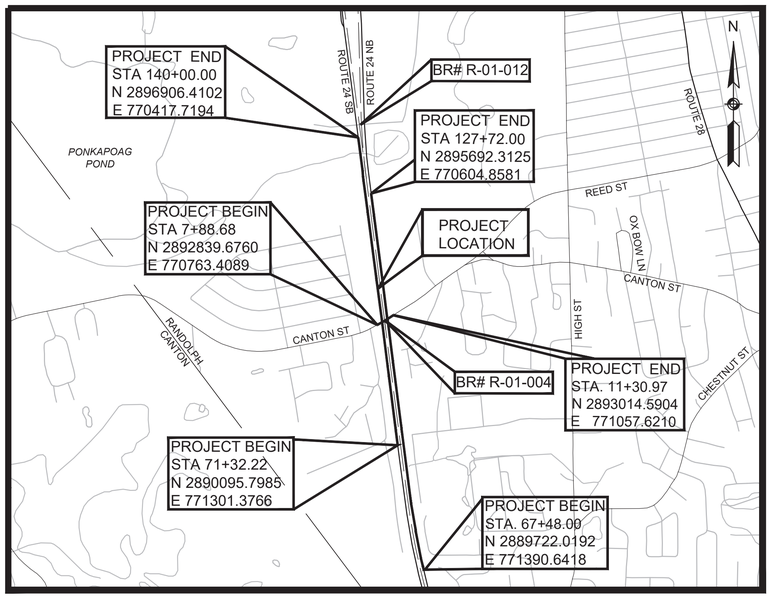
FEDERAL AID PROJECT NO.

NHP(BRR-ON)-003S(586)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

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	GENERAL NOTES
3	LEGEND & ABBREVIATIONS
4-5	KEY PLAN
6-7	TYPICAL SECTIONS
8-26	CONSTRUCTION BASELINE TIE PLANS
27-42	CONSTRUCTION PLANS
43-64	PROFILES
65	CURB TIE AND GRADING PLANS
66	UTILITY PLAN
67-82	PAVEMENT MARKING PLANS
83	STAGING TYPICAL SECTION
84-126	TEMPORARY TRAFFIC CONTROL PLANS
130-138	TEMPORARY PAVEMENT PROFILES
139	CONSTRUCTION DETAILS
140-159	BRIDGE PLANS
160-189	CROSS SECTIONS



0 1000 2000 3000 4000

SCALE: 1" = 1000'

LENGTH OF PROJECT = 7252.00 FEET = 1.373 MILES

DESIGN DESIGNATION

	ROUTE 24	CANTON STREET
DESIGN SPEED	70 MPH	35 MPH
ADT (2019)	135,810	11,780
ADT (2042)	163,130	23,660
K	8.4%	10%
D	58%	59%
T (PEAK HOUR)	3%	3%
T (AVERAGE DAY)	3%	3%
DHV	11,420	2,370
DDHV	6,620	1,400
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL (OTHER FREEWAY OR EXPRESSWAY)	URBAN MINOR ARTERIAL

COMMONWEALTH OF MASSACHUSETTS
TERESA K. SANDELL
CIVIL
No. 50425
PROFESSIONAL ENGINEER

Teresa Sandell Digitally signed by Teresa Sandell Date: 2022.08.29 09:32:57 -04'00'

FOR SHEETS 1 TO 139, 160 TO 189

COMMONWEALTH OF MASSACHUSETTS
JOSEPH K TIERNEY
CIVIL
No. 50552
PROFESSIONAL ENGINEER

Joseph K Tierney Digitally signed by Joseph K. Tierney Date: 2022.08.24 10:30:12 -04'00'

FOR SHEETS 140 TO 159

DATE	DESCRIPTION	REV #

TranSystems
101 ARCH STREET, SUITE 301, BOSTON, MA 02110, (857) 453-5450

massDOT
Massachusetts Department of Transportation
Highway Division

APPROVED

Carrie Lavallee, P.E. Digitally signed by Carrie Lavallee, P.E. Date: 2022.08.29 15:07:46 -04'00' 08/29/2022

CHIEF ENGINEER **DATE**

612188_GE(TITLE).DWG Plotted on 5-Aug-2022 10:32 AM

GENERAL NOTES

1. THE EXISTING CONDITIONS SHOWN ON THIS BASE MAP ARE THE RESULT OF AN ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BETWEEN AUGUST 4, 2021 AND SEPTEMBER 23, 2021 BY GREEN INTERNATIONAL AFFILIATES, INC. AND A LASER SCAN SURVEY PERFORMED BY LANDTECH. SEE FIELD NOTES IN MASSDOT DISTRICT 6 FIELD BOOK 43269.
2. HORIZONTAL AND VERTICAL CONTROL WAS ESTABLISHED BY MASSDOT SURVEY, IN BOOK 41673, PAGE 112, ON AUGUST 24,2021. HORIZONTAL DATUM IS BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (MAINLAND) NAD83(2011), 2010.00 EPOCH. VERTICAL DATUM IS NAVD88 (COMPUTED USING GEOID 18). GREEN RUN A CLOSED TRAVERSE AND LEVELING TO DENSIFIED CONTROL POINTS USING MASSDOT CONTROL.
   MASSDOT ESTABLISHED THE FOLLOWING POINTS FOR THIS PROJECT:

POINT	GRID NORTHING	GRID EASTING	ELEVATION	COMBINED GROUND TO GRID SCALE FACTOR
2777	2896068.847	770599.197	184.930	0.999960133460218
2778	2895751.415	770564.422	180.268	0.999960358629521
2779	2890790.840	771202.586	220.658	0.999958488106919
2780	2890444.375	771248.986	224.055	0.999958332009524
2781	2892688.587	770442.205	231.945	0.999957918249883
2782	2892815.639	770762.126	226.328	0.999958184971671

   THE UNIT OF MEASUREMENTS IS US FEET. THE PROJECT COMBINED SCALE FACTOR IS 0.99997945128564
3. THE RIGHT OF WAY LINES OF ROUTE 24 OVER CANTON STREET ARE THE DIRECT RESULT OF AN INSTRUMENT SURVEY PERFORMED ON-THE-GROUND BY GREEN INTERNATIONAL AFFILIATES, INC. WITH AN ERROR OF CLOSURE OF 1 IN 36,141, AND FROM PLANS AND DEEDS OF RECORD. OTHER RIGHTS OF WAY SHOWN, PRIVATE PROPERTY LINES HAVE NOT BEEN SURVEYED, THEY ARE COMPILED FROM DEED AND RECORD PLAN INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE.
4. THE CONTRACTOR SHALL MILL AND OVERLAY ALL ASPHALT ROADWAYS WITHIN THE LIMITS OF TEMPORARY PAVEMENT MARKINGS.
5. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS.
6. JOINTS BETWEEN NEW HOT MIX ASPHALT ROADWAY AND SAWCUT EXISTING PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBSECTION 460.49, HOT MIX ASPHALT JOINTS, IN THE MASSDOT STANDARD SPECIFICATIONS.
7. ALL LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (0.005 MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
8. SIGNS TO BE REMOVED AND RESET SHALL BE FURNISHED WITH A NEW SIGN POST (P5) IF EXISTING POST IS OLD OR DAMAGED AS DETERMINED BY THE ENGINEER.
9. AS DESCRIBED IN MASSDOT ENGINEERING DIRECTIVE E-16-003 (DATED 5/18/16), BOLT-DOWN MANHOLE COVERS SHALL BE INSTALLED ON ALL MANHOLES WITHIN MASSDOT ROADWAYS WITH POSTED SPEEDS OVER 45 MPH. ALL CATCH BASINS SHALL HAVE HOOK LOCK GRATES AS DESCRIBED IN MASSDOT ENGINEERING DIRECTIVE E-09-003, DATED JUNE 18, 2009. CATCH BASIN GRATES ON MASSDOT PROPERTY SHALL BE CASCADE GRATES.
10. EXISTING CATCH BASINS TO BE ADJUSTED SHALL HAVE THEIR EXISTING FRAME AND GRATE REPLACED WITH HOOK LOCK CASCADE GRATES
11. ALL FRAME AND COVERS ON THE MAIN LINE SHALL BE SECURED (PER ITEM #221.1)
12. ALL EXISTING SURFACES OUTSIDE OF THE LIMITS OF GRADING THAT ARE DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO THEIR EXISTING SURFACE OR SHALL BE RESTORED AS NOTED ON THE PLANS. FOR ESTIMATING PURPOSES, IT IS ASSUMED THAT LOAM & SEED AND ALL ASSOCIATED MATERIALS WILL BE NECESSARY FOR SURFACE RESTORATION TO AN OFFSET OF 2 FEET BEYOND SEDIMENT CONTROL BARRIER OR 2 FEET BEYOND THE TOP OF SLOPE.
13. 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' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.

PLAN REFERENCES

NORFOLK COUNTY REGISTRY OF DEEDS

- PLAN BOOK 3991 PAGE 687
- PLAN BOOK 4976 PAGE 732
- PLAN BOOK 4999 PAGE 405
- PLAN 627 OF 1962
- PLAN 535 OF 1966
- PLAN 693 OF 1969
- PLAN 636 OF 1970
- PLAN 198 OF 1982
- PLAN 47 OF 1984
- PLAN 198 OF 1984
- PLAN 623 OF 1988
- PLAN 332 OF 1991
- L.C.C. 10810B
- L.C.C. 39148C
- L.C.C. 41394A

DEED REFERENCES

NORFOLK COUNTY REGISTRY OF DEEDS

- BOOK 6036 PAGE 611
- BOOK 7500 PAGE 101
- BOOK 8000 PAGE 627
- BOOK 8168 PAGE 108
- BOOK 10677 PAGE 391
- BOOK 11674 PAGE 683
- BOOK 13732 PAGE 180
- BOOK 20293 PAGE 168
- BOOK 31406 PAGE 440
- BOOK 31947 PAGE 37
- BOOK 32107 PAGE 1
- BOOK 35558 PAGE 528
- LC CERT 115368
- LC CERT 199127
- LC CERT 200262
- LC CERT 203692
- LC CERT C160
- LC CERT C163

UTILITY NOTES

1. ALL UNDERGROUND UTILITIES AS SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION.
2. RECORD UTILITY INFORMATION FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES, ARE APPROXIMATE ONLY AND ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD.
3. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
4. THE LOCATION OF EXISTING PIPES OR OTHER UNDERGROUND STRUCTURES OR PROPERTY LINES ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL CALL "DIG SAFE" (1-888-344-7233) 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS.
5. SUBSURFACE UTILITY LOCATIONS HAVE BEEN PLOTTED TO MEET UTILITY QUALITY LEVEL "C" AS DESCRIBED IN ASCE STANDARD 38-02 AND SUMMARIZED BELOW. THE UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS BASED ON ABOVE-GROUND FIELD OBSERVATION AND EXISTING RECORD INFORMATION RECEIVED FROM UTILITY STAKE-HOLDERS. UTILITY RECORD PLANS WERE REQUESTED AND RECEIVED FROM THE FOLLOWING UTILITY COMPANIES/AGENCIES/MUNICIPALITIES:

UTILITY OWNERS & RECORD PLAN STATUS

NAME	REQUESTED	RECEIVED
COMCAST	X	X
CROWN CASTLE	X	
ENBRIDGE	X	X
EVERSOURCE GAS	X	X
MASSDOT	X	X
MWRA	X	
NATIONAL GRID ELECTRIC	X	X
RANDOLPH DPW	X	X
RANDOLPH DPW WATER	X	X
RANDOLPH DPW SEWER	X	X
VERIZON	X	X

6. INVERTS SHOWN ON PLAN ARE NOT GUARANTEED TO BE ACCURATE. DUE TO THE LIMITATIONS OF FIELD OBSERVATION AND SURVEY TECHNIQUES THE INVERTS ARE SHOWN AS APPROXIMATE ONLY AND SHALL NOT BE WARRANTED TO BE CORRECT. ADDITIONAL FIELD INVESTIGATION IS NECESSARY WHERE ACCURATE MEASUREMENTS ARE REQUIRED FOR DESIGN OF CRITICAL AREAS.

SUMMARY OF UTILITY MAPPING QUALITY LEVELS

THE FOLLOWING IS A SUMMARY OF THE SURVEY MAPPING LEVELS FOR UTILITIES AS DESCRIBED IN ASCE STANDARD 38-02, "STANDARD GUIDELINE FOR THE DEPICTION OF EXISTING SUBSURFACE UTILITY DATA". THESE GUIDELINES ARE MORE FULLY DESCRIBED IN THE ASCE STANDARD.

UTILITY QUALITY LEVEL A:
PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. MINIMALLY INTRUSIVE EXCAVATION EQUIPMENT IS TYPICALLY USED TO MINIMIZE THE POTENTIAL FOR UTILITY DAMAGE. A PRECISE HORIZONTAL AND VERTICAL LOCATION, AS WELL AS OTHER UTILITY ATTRIBUTES, IS SHOWN ON PLAN DOCUMENTS. ACCURACY IS TYPICALLY SET TO 15-MM VERTICAL AND TO APPLICABLE HORIZONTAL SURVEY AND MAPPING ACCURACY AS DEFINED OR EXPECTED BY THE PROJECT OWNER.

UTILITY QUALITY LEVEL B:
INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. QUALITY LEVEL B DATA SHOULD BE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THIS INFORMATION IS SURVEYED TO APPLICABLE TOLERANCES DEFINED BY THE PROJECT AND REDUCED ONTO PLAN DOCUMENTS.

UTILITY QUALITY LEVEL C:
INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.

UTILITY QUALITY LEVEL D:
INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	2	189
PROJECT FILE NO.	612188		

GENERAL NOTES

612188_LEGEND.DWG Plotted on 29-Jul-2022 11:05 AM

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
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT CONTROL BARRIER
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

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
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
PWW	PAVED WATER WAY

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	3	189
PROJECT FILE NO.	612188		

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

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
WCR	WHEEL CHAIR RAMP
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

612188_LEGEND.DWG Plotted on 29-Jul-2022 11:05 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	4	189
PROJECT FILE NO.	612188		

KEY PLAN
SHEET 1 OF 2

612188_GE(KEY PLAN).DWG Plotted on 29-Jul-2022 11:05 AM

N

RECYCLE WAY

JOHNSON DRIVE

WILLIAM MORRISON DRIVE

CANTON ST

CROWLEY DRIVE

TURNER DRIVE

JOHNSON DRIVE

IRVING ROAD

ROUTE 24

BR# R-01-004

BEGIN SOUTHBOUND
TOWN OF RANDOLPH
STA 71+32.22
N 2890095.7985
E 771301.3766

119+90.33 1957 MAIN BASELINE 'S'=
119+90.33 1957 MAIN BASE LINE 'N'

END SOUTHBOUND
TOWN OF RANDOLPH
STA 140+00
N 2896906.4102
E 770417.7194

100+27.27 1957 MAIN BASELINE 'S'=
100+27.27 1956 MAIN BASELINE

BEGIN NORTHBOUND
TOWN OF RANDOLPH
STA 67+48.00
N 2889722.0192
E 771390.6418

END NORTHBOUND
TOWN OF RANDOLPH
STA 127+72.00
N 2895692.3125
E 770604.8581

PLATE 1 | PLATE 2 | PLATE 3 | PLATE 4 | PLATE 5 | PLATE 6 | PLATE 7 | PLATE 8 | PLATE 9 | PLATE 10 | PLATE 11 | PLATE 12 | PLATE 13 | PLATE 14 | PLATE 15

LEGEND:

- (XX) CONSTRUCTION PLANS
- (XX) PAVEMENT MARKING PLANS
- [XX] CONSTRUCTION BASELINE TIE PLANS
- XX CURB TIE AND GRADING PLAN
- (XX) UTILITY PLAN

0 250 500 750 1000
SCALE: 1" = 250'

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	5	189
PROJECT FILE NO.	612188		

KEY PLAN
SHEET 2 OF 2

612188_GE(KEY PLAN).DWG Plotted on 29-Jul-2022 11:05 AM

N

RECYCLE WAY
JOHNSON DRIVE
WILLIAM MORRISON DRIVE
CANTON ST
CROWLEY DRIVE
TURNER DRIVE
JOHNSON DRIVE
IRVING ROAD

ROUTE 24

PLATE 12 | PLATE 13 | PLATE 14 | PLATE 15 | PLATE 16 | PLATE 17 | PLATE 18 | PLATE 19 | PLATE 20

119+90.33 1957 MAIN BASELINE 'S'=
119+90.33 1957 MAIN BASE LINE 'N'

100+27.27 1957 MAIN BASELINE 'S'=
100+27.27 1956 MAIN BASELINE

BR# R-01-004

BEGIN PROJECT
TOWN OF RANDOLPH
STA 67+80.00
N 2889749.2505
E 771365.3940

END PROJECT
TOWN OF RANDOLPH
STA 126+89.00
N 2895605.4463
E 770585.1952

LEGEND:

- XX — TTCP - STAGE 0
- XX — TTCP - STAGE 1
- XX — TTCP - STAGE 1B
- XX — TTCP - STAGE 2
- XX — TTCP - STAGE 2B

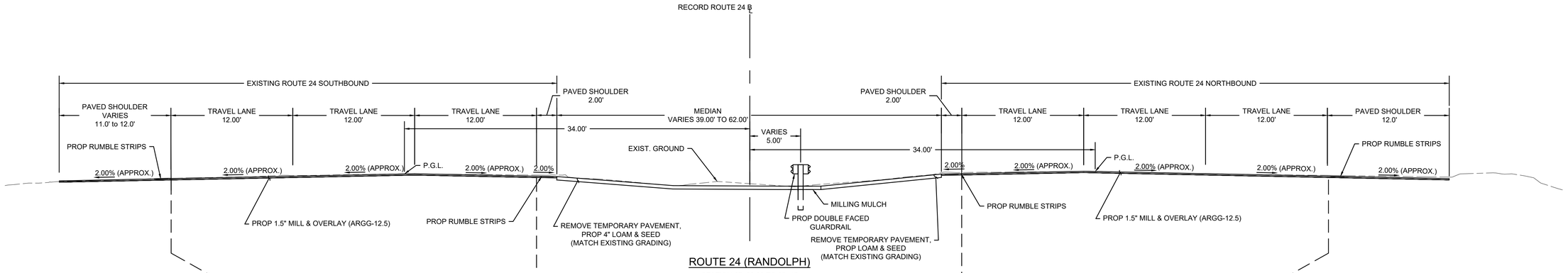
0 350 700 1050 1400
SCALE: 1" = 350'

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	6	189
PROJECT FILE NO.	612188		

TYPICAL SECTIONS - ROUTE 24 RESTORATION

610770_HD(TYPICAL SECTION SHEET).DWG Plotted on 29-Jul-2022 11:06 AM



ROUTE 24 (RANDOLPH)

STATION 67+80.00 TO 99+47
STATION 100+53 TO 126+89.00
* TOLERANCE FOR CONSTRUCTION ±0.5%

NOT TO SCALE

STATION 86+64.02 TO 98+97.30
STATION 100+32.54 TO 105+17.44
STATION 109+69.03 TO 118+48.16

STATION 100+87.85 TO 113+22.08

STATION 78+84.31 TO 96+93.60

STATION 77+03.25 TO 78+84.31
STATION 76+93.87 TO 78+34.81
STATION 96+48.33 TO 99+29.74
STATION 100+55.41 TO 100+87.85
STATION 113+22.08 TO 125+91.68

STATION 76+81.39 TO 78+47.61
STATION 96+93.60 TO 99+42.26
STATION 100+69.62 TO 101+03.37
STATION 113+22.08 TO 126+05.11

STATION 75+61.62 TO 80+33.80
STATION 85+29.64 TO 99+66.81
STATION 100+94.17 TO 102+83.33
STATION 106+17.76 TO 126+10.18

PAVEMENT NOTES

PROPOSED RESURFACING OVERLAY ROUTE 24

SURFACE COURSE: 1 ½ IN. ASPHALT RUBBER GAP GRADED - 12.5 (ARGG-12.5)

MILLING: 1 ½ IN. PAVEMENT FINE MILLING

PROPOSED RESURFACING OVERLAY CANTON STREET

SURFACE COURSE: 1 ½ IN. SUPERPAVE SURFACE COURSE - 12.5 POLYMER (SSC - 12.5 - P) OVER ASPHALT EMULSION FOR TACK COAT COVER

MILLING: 1 ½ IN. PAVEMENT FINE MILLING

PROPOSED BRIDGE PAVEMENT NOTES

SURFACE COURSE: 1 ½ IN. SUPERPAVE BRIDGE SURFACE COURSE - 9.5 (SSC-B - 9.5)

PROTECTIVE COURSE: 1 ½ IN. SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 (SPC-B - 9.5)

PROPOSED CEMENT CONCRETE WALK

SURFACE COURSE: 6 IN. CEMENT CONCRETE AIR ENTRAINED 4000 PSI, ¾" 610

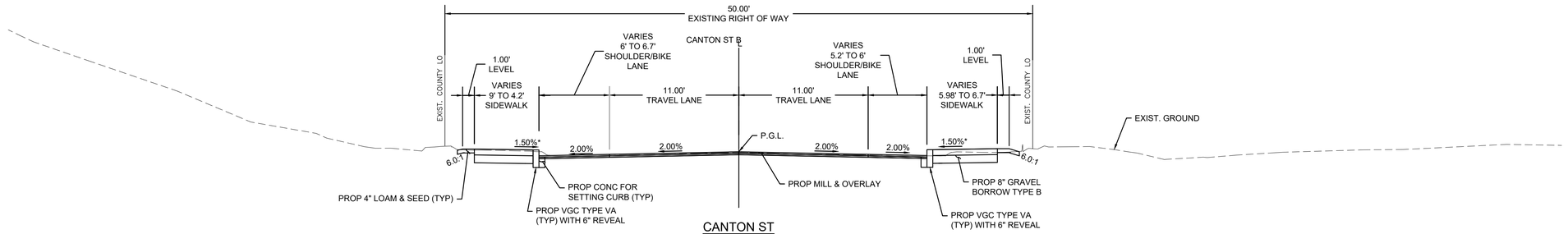
FOUNDATION: 8 IN. GRAVEL BORROW (TYPE B)

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	7	189
PROJECT FILE NO.	612188		

TYPICAL SECTIONS
- CANTON ST

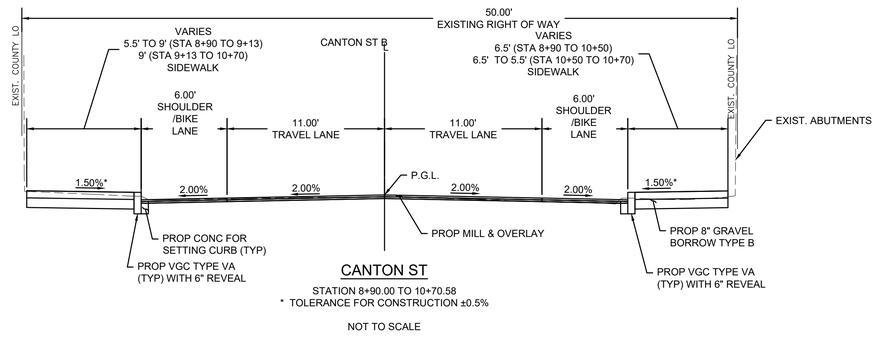
610770_HD(TYPICAL SECTION SHEET).DWG Plotted on 29-Jul-2022 11:06 AM



CANTON ST

STATION 8+52.42 TO 8+90.00
STATION 10+70.58 TO 11+30.97
* TOLERANCE FOR CONSTRUCTION ±0.5%

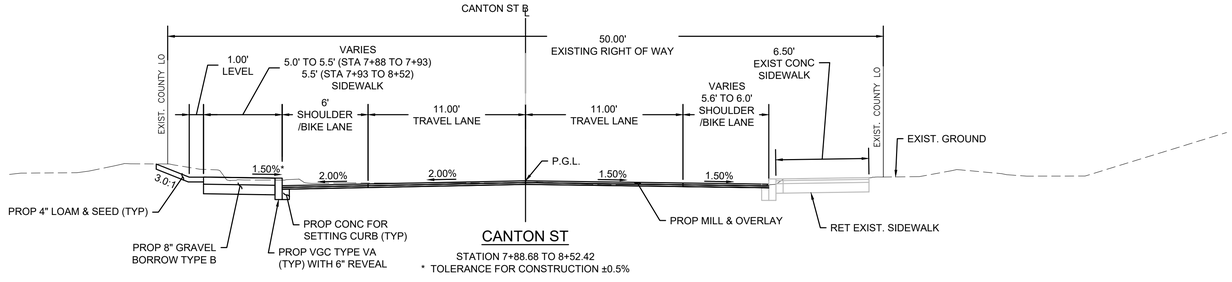
NOT TO SCALE



CANTON ST

STATION 8+90.00 TO 10+70.58
* TOLERANCE FOR CONSTRUCTION ±0.5%

NOT TO SCALE



CANTON ST

STATION 7+88.68 TO 8+52.42
* TOLERANCE FOR CONSTRUCTION ±0.5%

NOT TO SCALE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	8	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 1 OF 15

1956 MAIN BASELINE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C1	62+58.10	2889240.926	771482.465	R=10003.48' Δ=7°07'41" L=1244.51' T=623.06'		75+02.61	2890462.197	771247.296

N

N/F
ALLIED WASTE INDUSTRIES INC
LC CERT 115368
PARCEL ID 27-A-005
JONES LN

1956 STATE HIGHWAY LAYOUT SHLO 4512

Δ=7° 07' 41"
R=10,153.48' L=1,263.17'

E 771250
N 2889500

E 771250
N 2889750

S78°38'25"W
150.00'

BEGIN SOUTHBOUND
TOWN OF RANDOLPH
STA 71+32.22
N 2890095.7985
E 771301.3766

E 771250
N 2890000

SAWCUT

ROUTE 24 SOUTH BOUND

66 ROUTE 24 SOUTHBOUND CONST BASELINE 67 68 69 70 71

66 ROUTE 24 RECORD BASELINE 67 68 C1 69 70 71

66 ROUTE 24 NORTHBOUND CONST BASELINE 67 68 69 70 71

ROUTE 24 NORTH BOUND

CONTINUED ON SHEET NO. 9

SAWCUT

BEGIN NORTHBOUND
TOWN OF RANDOLPH
STA 67+48.00
N 2889722.0192
E 771390.6418

150.00'
N78°38'25"E

E 771500
N 2889750

1956 STATE HIGHWAY LAYOUT SHLO 4512

R=9,853.48' L=1,225.85'
Δ=7° 07' 41"

0 20 50 100
SCALE: 1" = 20'

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

1956 MAIN BASELINE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C1	62+58.10	2889240.926	771482.465	R=10003.48' Δ=7°07'41" L=1244.51' T=623.06'		75+02.61	2890462.197	771247.296
L3	75+02.61	2890462.197	771247.296		N7°20'08"W 2524.66'	100+27.27	2892966.195	770924.952

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	9	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 2 OF 15

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

N

1956 STATE HIGHWAY LAYOUT SHLO 4512

NO ACCESS

Δ=7° 07' 41"
R=10,153.48' L=1,263.17'

S80°55'53"W
150.00'

BEGIN SOUTHBOUND
TOWN OF RANDOLPH
STA 71+32.22
N 2890095.7985
E 771301.3766

EP

BIT

S82°39'52"W
150.00'

ROUTE 24 SOUTH BOUND

CONTINUED ON SHEET NO. 8

71 72 73 ROUTE 24 SOUTHBOUND CONST BASELINE 74 75 PT +02.62 76

CONTINUED ON SHEET NO. 10

SAWCUT

E 771250
N 2890250

N82°39'52"E
34.00'

71 72 73 ROUTE 24 RECORD BASELINE 74 75 +02.61 PT 76 L3

GRL

S82°39'52"W
34.00'

E 771250
N 2890500

EP

71 72 73 ROUTE 24 NORTHBOUND CONST BASELINE 74 75 PT +02.60 76

ROUTE 24 NORTH BOUND

150.00'
N80°55'53"E

150.00'
N82°39'52"E

0 20 50 100
SCALE: 1" = 20'

L=1,225.85'
07' 41"

NO ACCESS

R=9,853.48' L=1,225.85'
Δ=7° 07' 41"

N/F
84 AND 86 ANDERSON DR
CONDOMINIUM
LC CERT C163
PARCEL ID 27-B-003
84AND86 ANDERSON DR

N/F
BIV 109-140 YORK AVENUE LLC
LC CERT 203692
PARCEL ID 26-B-014.3
128 YORK AV

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	10	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 3 OF 15

1956 MAIN BASELINE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	75+02.61	2890462.197	771247.296		N7°20'08"W 2524.66'	100+27.27	2892966.195	770924.952

N

E 771000
N 2891000

N/F
ALLIED WASTE INDUSTRIES INC
LC CERT 115368
PARCEL ID 27-A-005
JONES LN

NO ACCESS 1956 STATE HIGHWAY LAYOUT SHLO 4512
2,459.38' N7°20'08"W

1956 STATE HIGHWAY LAYOUT SHLO 4512
2,459.38' N7°20'0

BENCHMARK: 7
AT TOP OF N.E. BOLT ON
EAST OF POLE OF SIGN
ON RT 24 SOUTH
EL=220.44'

BRT
EP
EP

ROUTE 24 SOUTH BOUND

76 77 78 ROUTE 24 SOUTHBOUND CONST BASELINE 79 80 81

EP GRL EP

CONTINUED ON SHEET NO. 9

76 L3 77 78 79 ROUTE 24 RECORD BASELINE 80 81

GRL GRL GRL GRL GRL GRL

EP EP

CONTINUED ON SHEET NO. 11

76 77 78 ROUTE 24 NORTHBOUND CONST BASELINE 79 80 81

ROUTE 24 NORTH BOUND

E 771250
N 2890750

EP EP

GRL GRL

TCB
POST

ELECTRONIC OVERHEAD SIGN

E 771230
N 2891000

BENCHMARK: 13
AT TOP OF S.W. BOLT OF
S.E. POST #1895 OF DIGITAL
OVERHEAD SIGN ABOUT 1/2 MILE
SOUTH OF CANTON ST BRIDGE
ON NORTH BOUND SIDE RT 24
EL=222.89'

0 20 50 100
SCALE: 1" = 20'

2,589.95' N7°20'08"W
NO ACCESS

1956 STATE HIGHWAY LAYOUT SHLO 4512

50' WIDE DRIVEWAY AND UTILITY EASEMENT
(PLAN 198 OF 1982)

1956 STATE HIGHWAY LAYOUT SHLO 4512
2,589.95'

N/F
BIV 109-140 YORK AVENUE LLC
LC CERT 203692
PARCEL ID 26-B-014.3
128 YORK AV

N/F
BIV 109-140 YORK AVENUE LLC
LC CERT 203692
PARCEL ID 26-B-014.3
128 YORK AV

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

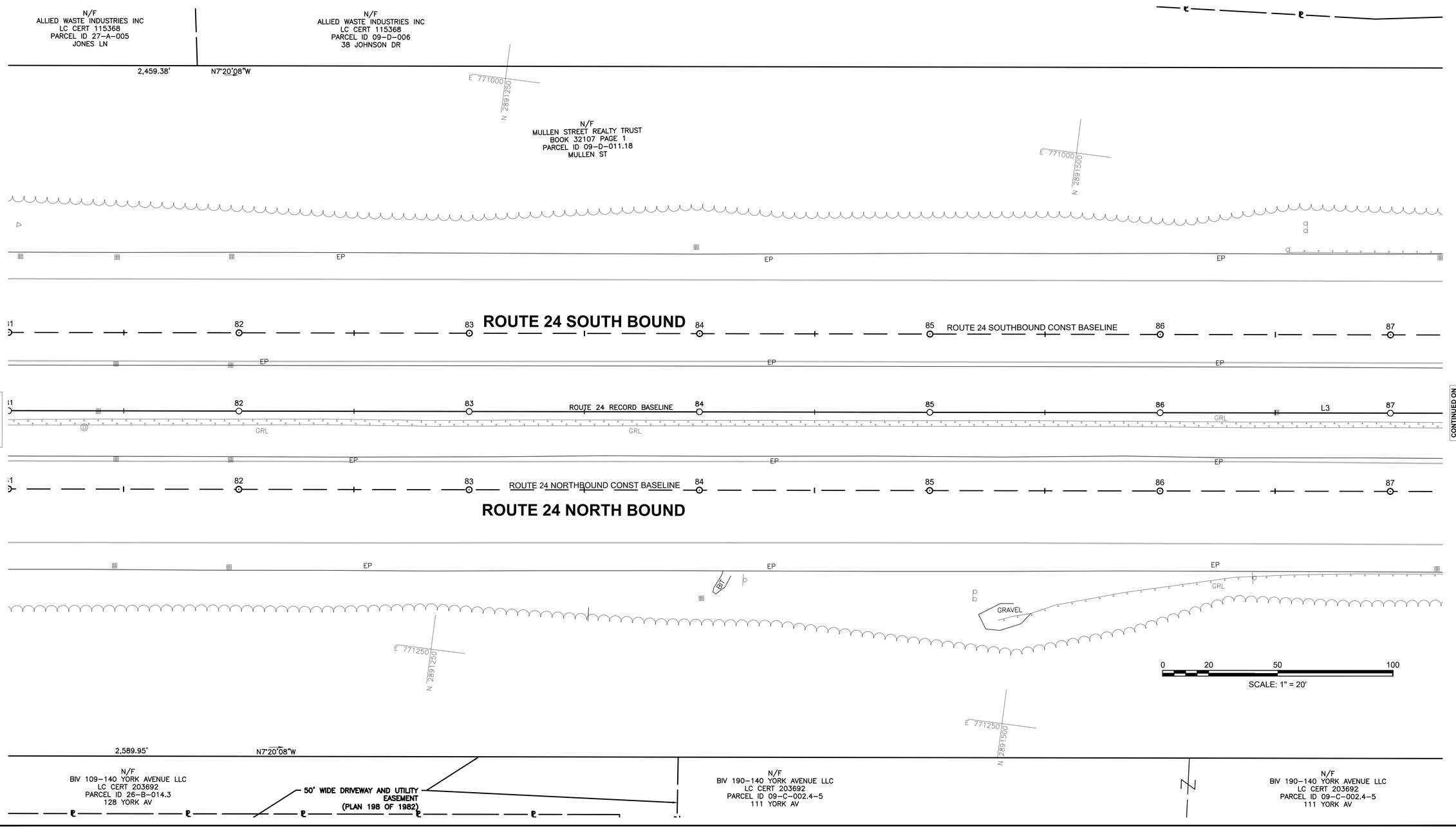
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	11	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 4 OF 15

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

1956 MAIN BASELINE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	75+02.61	2890462.197	771247.296		N7°20'08"W 2524.66'	100+27.27	2892966.195	770924.952



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	12	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 5 OF 15

1956 MAIN BASELINE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	75+02.61	2890462.197	771247.296		N7°20'08"W 2524.66'	100+27.27	2892966.195	770924.952

N

N/F
ALLIED WASTE INDUSTRIES INC
LC CERT 115368
PARCEL ID 09-D-006
38 JOHNSON DR

1956 STATE HIGHWAY LAYOUT SHLO 4512

2,459.38' N7°20'08"W

NO ACCESS

105.03'
S35°56'02"W

MH
SBF EPLP

S75°22'23"W
227.74'

S82°39'52"W
253.55'

N81°05'30"W
156.24'

N64°17'42"W
240.08'

GAS MARKER
GAS MARKER
GAS MARKER

E 771000
N 2891750

EP GRL

ROUTE 24 SOUTH BOUND

87 88 89 90 ROUTE 24 SOUTHBOUND CONST BASELINE 91 92

E 771000
N 892000

EP

CONTINUED ON SHEET NO. 11

L3 87 L3 88 89 90 ROUTE 24 RECORD BASELINE 91 92

GRL

DMH
(REC)

CONTINUED ON SHEET NO. 13

87 88 89 90 ROUTE 24 NORTHBOUND CONST BASELINE 91 92

ROUTE 24 NORTH BOUND

EP GRL

GAS MARKER

BENCHMARK: 8
AT TOP OF S.W. BOLT OF SIGN ON RT 24 NORTH
EL=238.57'

0 20 50 100
SCALE: 1" = 20'

2,589.95' N7°20'08"W
1956 STATE HIGHWAY LAYOUT SHLO 4512

NO ACCESS

N/F
BIV 190-140 YORK AVENUE LLC
LC CERT 203692
PARCEL ID 09-C-002.4-5
111 YORK AV

E 771250
N 891750

N/F
VALLEY RIDGE II CONDOMINIUM
BOOK 8000 PAGE 627
PARCEL ID 10-B-008
1001 IRVING RD

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

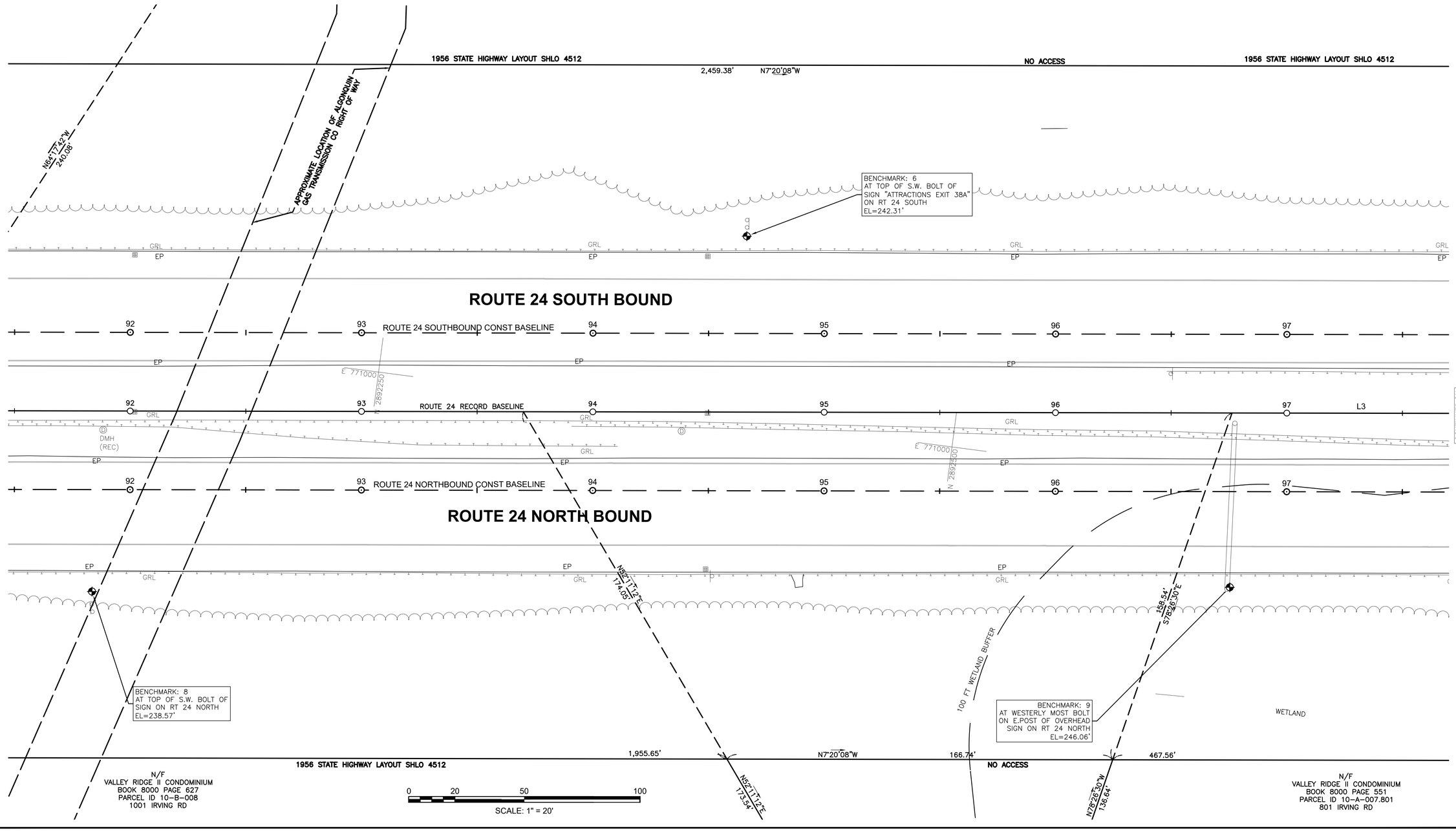
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	13	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 6 OF 15

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

1956 MAIN BASELINE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	75+02.61	2890462.197	771247.296		N7°20'08"W 2524.66'	100+27.27	2892966.195	770924.952



RANDOLPH
RTE 24 OVER CANTON STREET

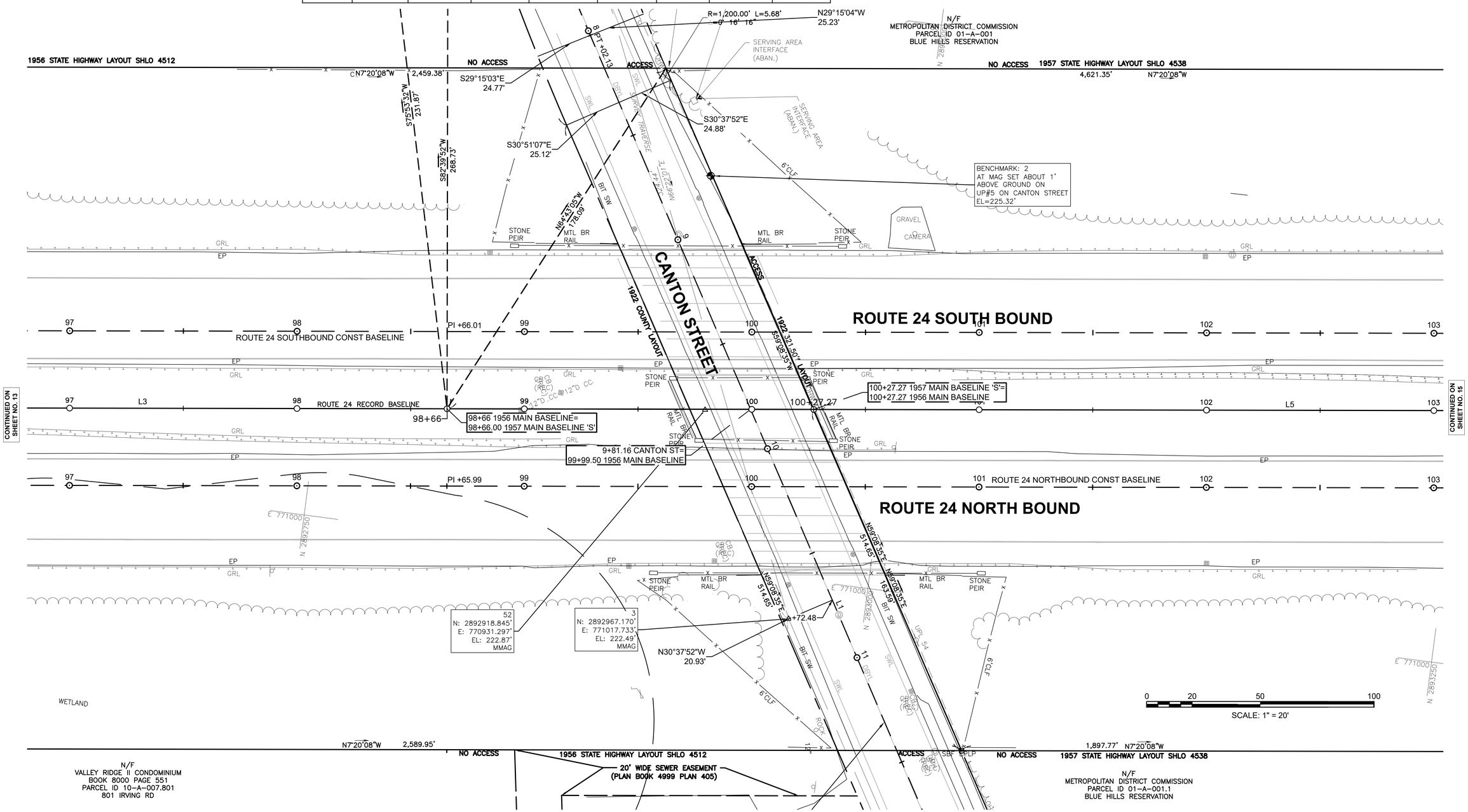
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	14	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 7 OF 15

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

1956 MAIN BASELINE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	75+02.61	2890462.197	771247.296		N7°20'08"W 2524.66'	100+27.27	2892966.195	770924.952

1957 MAIN BASELINE 'S' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	98+66.00	2892806.244	770945.542		N7°20'08"W 4717.34'	145+83.34	2897484.976	770343.239



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	15	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 8 OF 15

1957 MAIN BASELINE 'S' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	98+66.00	2892806.244	770945.542		N7°20'08"W 4717.34'	145+83.34	2897484.976	770343.239

N

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001
BLUE HILLS RESERVATION

1957 STATE HIGHWAY LAYOUT SHLO 4538

4,621.35' N7°20'08"W

NO ACCESS

E 770750
N 2893250

E 770750
N 2893500

E 770750
N 2893750

GRL EP GRL EP GRL EP

ROUTE 24 SOUTH BOUND

103 104 105 ROUTE 24 SOUTHBOUND CONST BASELINE 106 107 108

EP EP EP EP

GRL GRL GRL GF

L5 103 104 ROUTE 24 RECORD BASELINE 105 106 107 108

CONTINUED ON SHEET NO. 14

CONTINUED ON SHEET NO. 16

EP EP EP EP

103 104 105 ROUTE 24 NORTHBOUND CONST BASELINE 106 107 108

ROUTE 24 NORTH BOUND

EP EP EP EP

GRL GRL GRL

CAMERA
TCB
SOLAR PANEL

E 771000
N 2893250

E 771000
N 2893500

E 771000

BENCHMARK: 10
AT TOP OF S.W. BOLT
ON W.POST OF SIGN
"3 VIA 93 NORTH
95 VIA 93 SOUTH"
EL=216.13'

0 20 50 100
SCALE: 1" = 20'

1,897.77' N7°20'08"W

1957 STATE HIGHWAY LAYOUT SHLO 4538

NO ACCESS

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	16	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 9 OF 15

1957 MAIN BASELINE 'S' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	98+66.00	2892806.244	770945.542		N7°20'08"W 4717.34'	145+83.34	2897484.976	770343.239

N

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001
BLUE HILLS RESERVATION

NO ACCESS

1957 STATE HIGHWAY LAYOUT SHLO 4538

NO ACCESS

4,621.35' N7°20'08"W

E 770750
N 2893750

EP GRL EP GRL EP

108 109 ROUTE 24 SOUTHBOUND CONST BASELINE 110 112 113

ROUTE 24 SOUTH BOUND

E 770750
N 2891000

EP EP EP

CONTINUED ON SHEET NO. 15

GRL GRL GRL

108 109 ROUTE 24 RECORD BASELINE 110 111 112 113 L5

E 770750
N 2887750

CONTINUED ON SHEET NO. 17

EP EP EP

108 109 ROUTE 24 NORTHBOUND CONST BASELINE 110 111 112 113

ROUTE 24 NORTH BOUND

EP EP EP

GRL GRL GRL

CAMERA
TCB
SOLAR PANEL

BENCHMARK: 10
AT TOP OF S.W. BOLT
ON W.POST OF SIGN
"3 VIA 93 NORTH
95 VIA 93 SOUTH"
EL=216.13'

0 20 50 100
SCALE: 1" = 20'

NO ACCESS

1,897.77' N7°20'08"W

1957 STATE HIGHWAY LAYOUT SHLO 4538

NO ACCESS

E 771000

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	17	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 10 OF 15

1957 MAIN BASELINE 'S' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	98+66.00	2892806.244	770945.542		N7°20'08"W 4717.34'	145+83.34	2897484.976	770343.239

N

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001
BLUE HILLS RESERVATION

NO ACCESS

20'08"W

1957 STATE HIGHWAY LAYOUT SHLO 4538

4,621.35'

N7°20'08"W

NO ACCESS

100 FT WETLAND BUFFER

WETLAND

BENCHMARK: 5
AT TOP OF S.E. BOLT
ON E.POST OF SIGN
ON RT 24 SOUTH
EL=183.94'

RIP RAP

GRL
EP

ROUTE 24 SOUTH BOUND

ROUTE 24 SOUTHBOUND CONST BASELINE

113 114 115 116 117 118

EP GRL

E 770750.00
N 2894753.00

L5

ROUTE 24 RECORD BASELINE

CONTINUED ON SHEET NO. 16

CONTINUED ON SHEET NO. 18

ROUTE 24 NORTHBOUND CONST BASELINE

ROUTE 24 NORTH BOUND

E 770750.00
N 2894750.00

100 FT WETLAND BUFFER

WETLAND

BENCHMARK: 11
AT TOP OF S.W. ON
W.POST OF SIGN
"BEST ROUTE LOGAN AIRPORT"
ON RT 24 NORTH
EL=179.51'

0 20 50 100
SCALE: 1" = 20'

1,897.77'

N7°20'08"W

NO ACCESS

1957 STATE HIGHWAY LAYOUT SHLO 4538

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

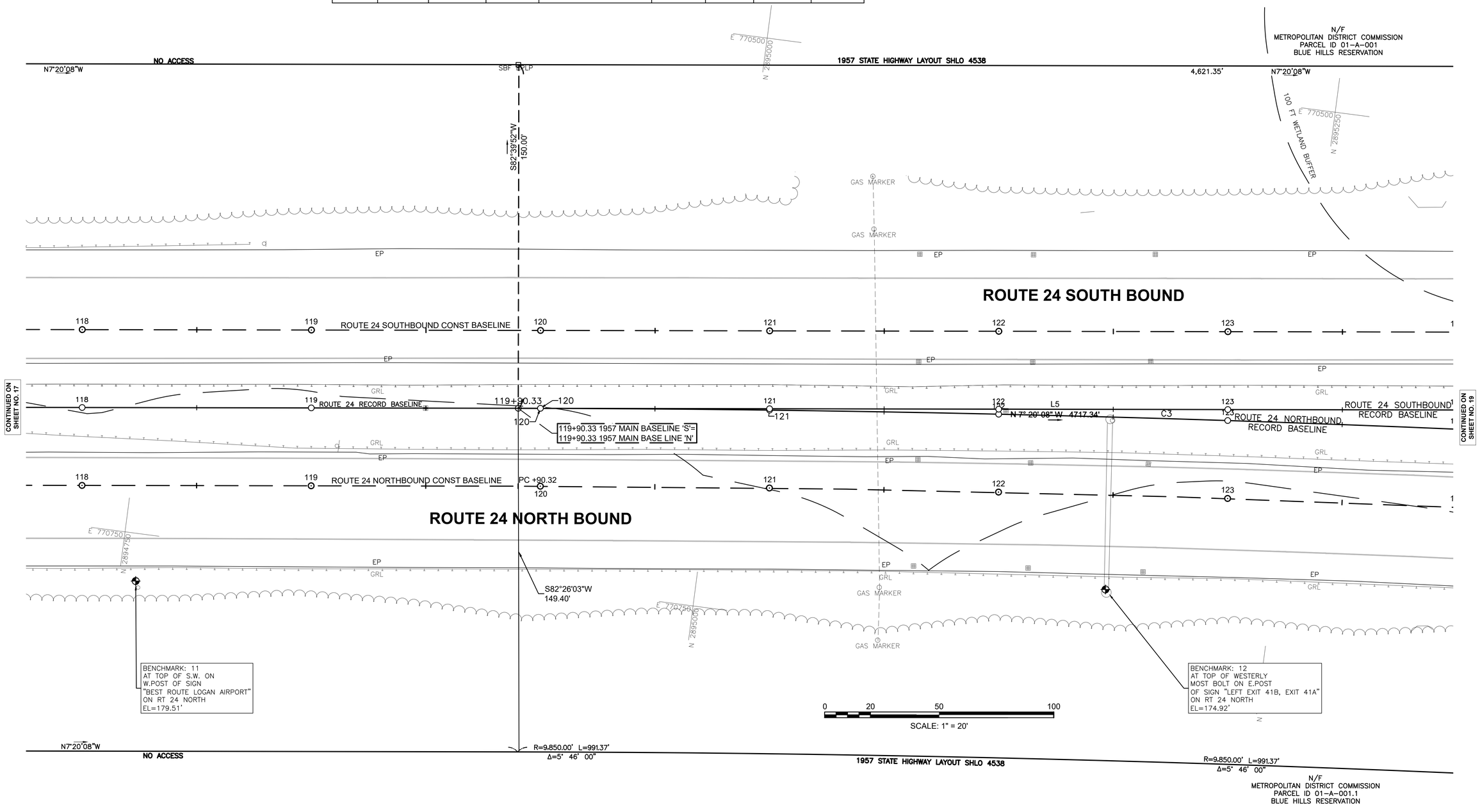
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	18	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 11 OF 15

1957 MAIN BASELINE 'S' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	98+66.00	2892806.244	770945.542		N7°20'08"W 4717.34'	145+83.34	2897484.976	770343.239

1957 MAIN BASE LINE 'N' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C3	119+90.33	2894913.188	770674.311	R=10000.00' Δ=5°46'00" L=1006.47' T=503.66'		129+96.80	2895916.198	770596.216



612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

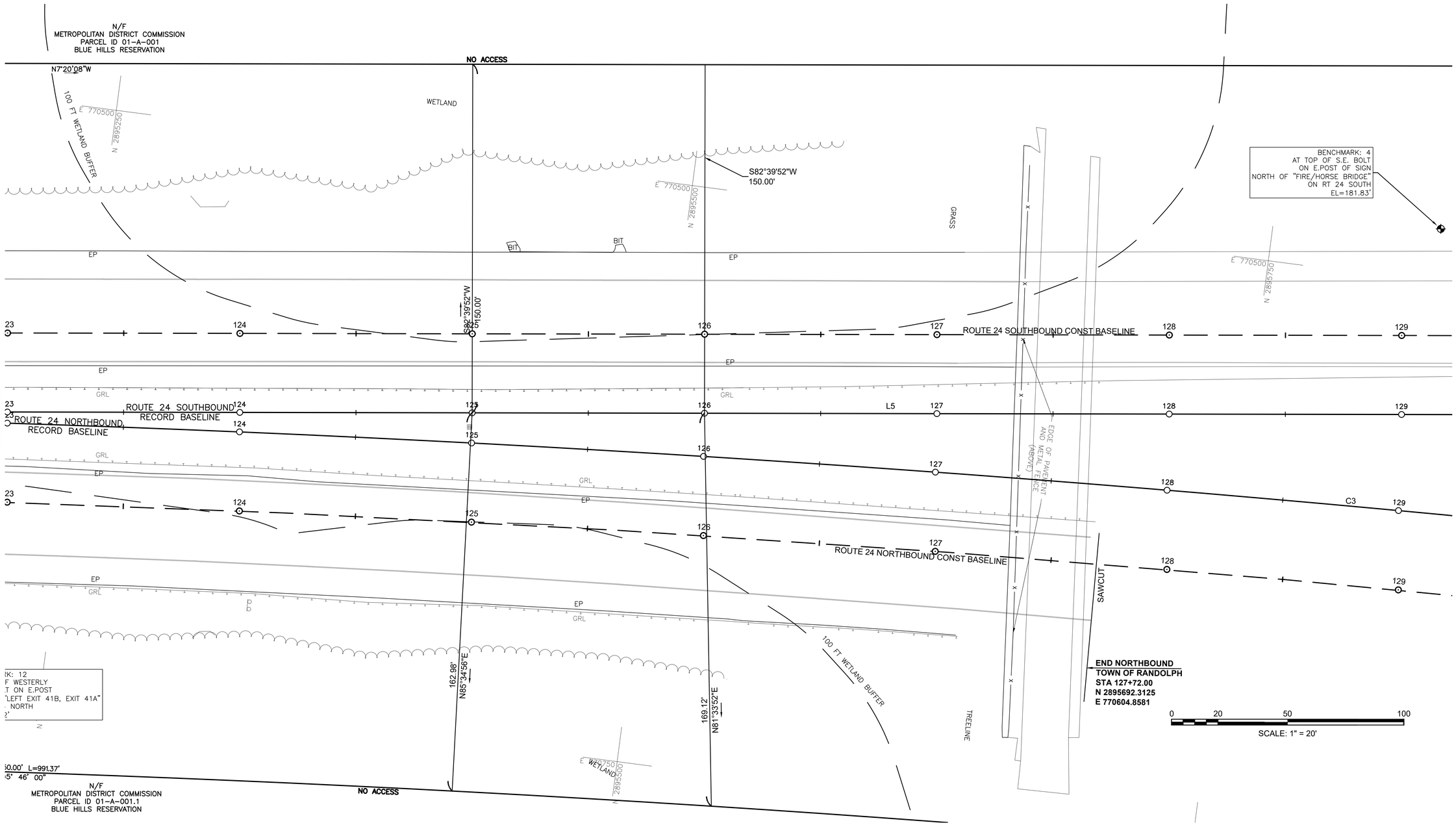
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	19	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 12 OF 15

1957 MAIN BASELINE 'S' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	98+66.00	2892806.244	770945.542		N7°20'08"W 4717.34'	145+83.34	2897484.976	770343.239

1957 MAIN BASE LINE 'N' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C3	119+90.33	2894913.188	770674.311	R=10000.00' Δ=5°46'00" L=1006.47' T=503.66'		129+96.80	2895916.198	770596.216



612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

1957 MAIN BASELINE 'S' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	98+66.00	2892806.244	770945.542		N7°20'08"W 4717.34'	145+83.34	2897484.976	770343.239

1957 MAIN BASE LINE 'N' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C3	119+90.33	2894913.188	770674.311	R=10000.00' Δ=5°46'00" L=1006.47' T=503.66'		129+96.80	2895916.198	770596.216
L8	129+96.80	2895916.198	770596.216		N1°34'08"W 1982.29'	149+79.09	2897897.745	770541.946

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	20	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 13 OF 15

N

BENCHMARK: 4
AT TOP OF S.E. BOLT
ON E.POST OF SIGN
NORTH OF "FIRE/HORSE BRIDGE"
ON RT 24 SOUTH
EL=181.83'

E 770500
N 2895750

129 130 131 132 ROUTE 24 SOUTHBOUND CONST BASELINE 133 134

CONTINUED ON SHEET NO. 19

129 130 ROUTE 24 SOUTHBOUND RECORD BASELINE 131 L5 132 133 134

CONTINUED ON SHEET NO. 21

C3 129 +96.80 PT 130 ROUTE 24 NORTHBOUND RECORD BASELINE 131 L8 132 133 134

129 129+93.37 ROUTE 24 NORTHBOUND CONST BASELINE

0 20 50 100
SCALE: 1" = 20'

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

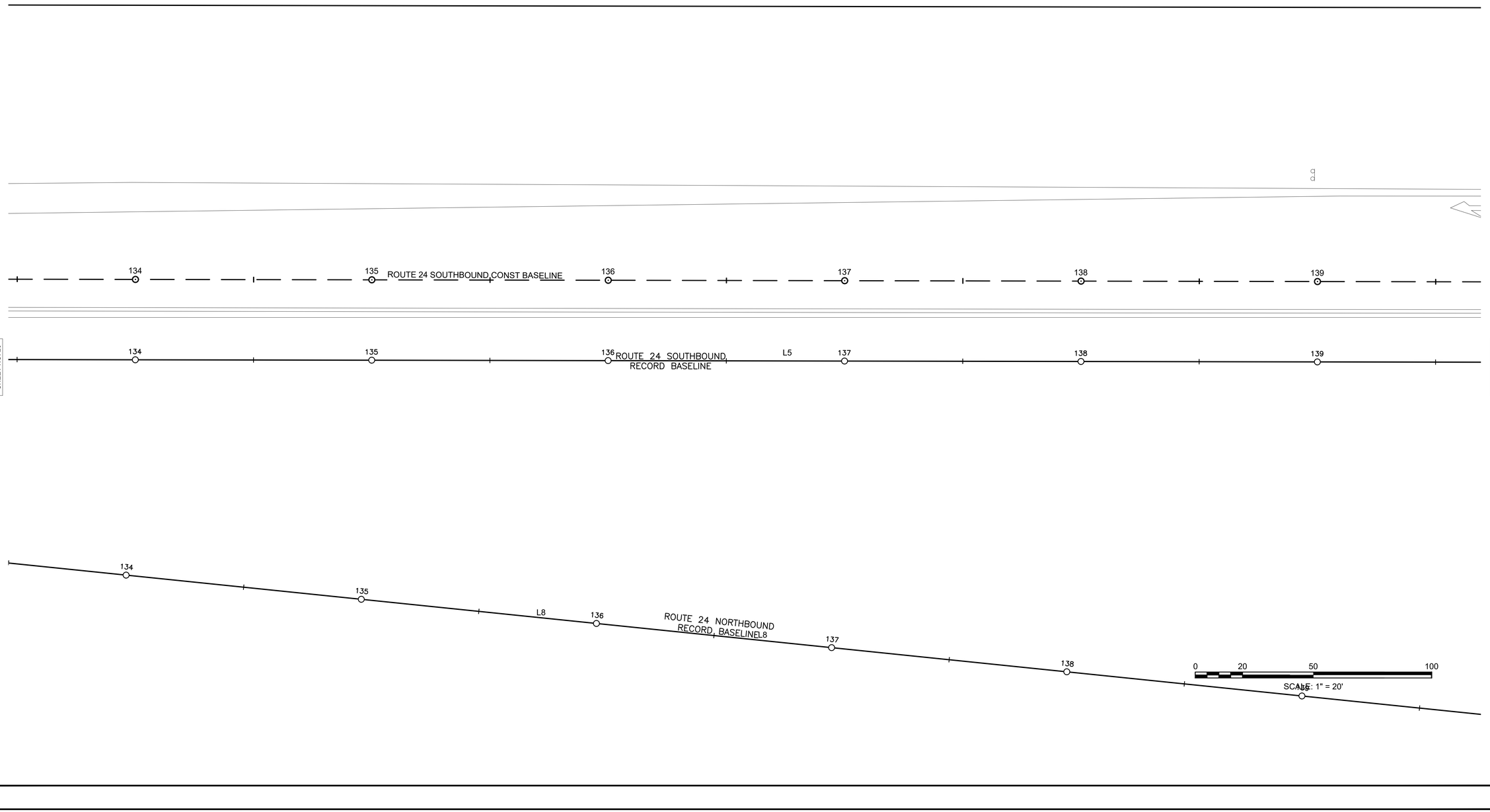
1957 MAIN BASELINE 'S' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	98+66.00	2892806.244	770945.542		N7°20'08"W 4717.34'	145+83.34	2897484.976	770343.239

1957 MAIN BASE LINE 'N' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	129+96.80	2895916.198	770596.216		N1°34'08"W 1982.29'	149+79.09	2897897.745	770541.946

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	21	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 14 OF 15



612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

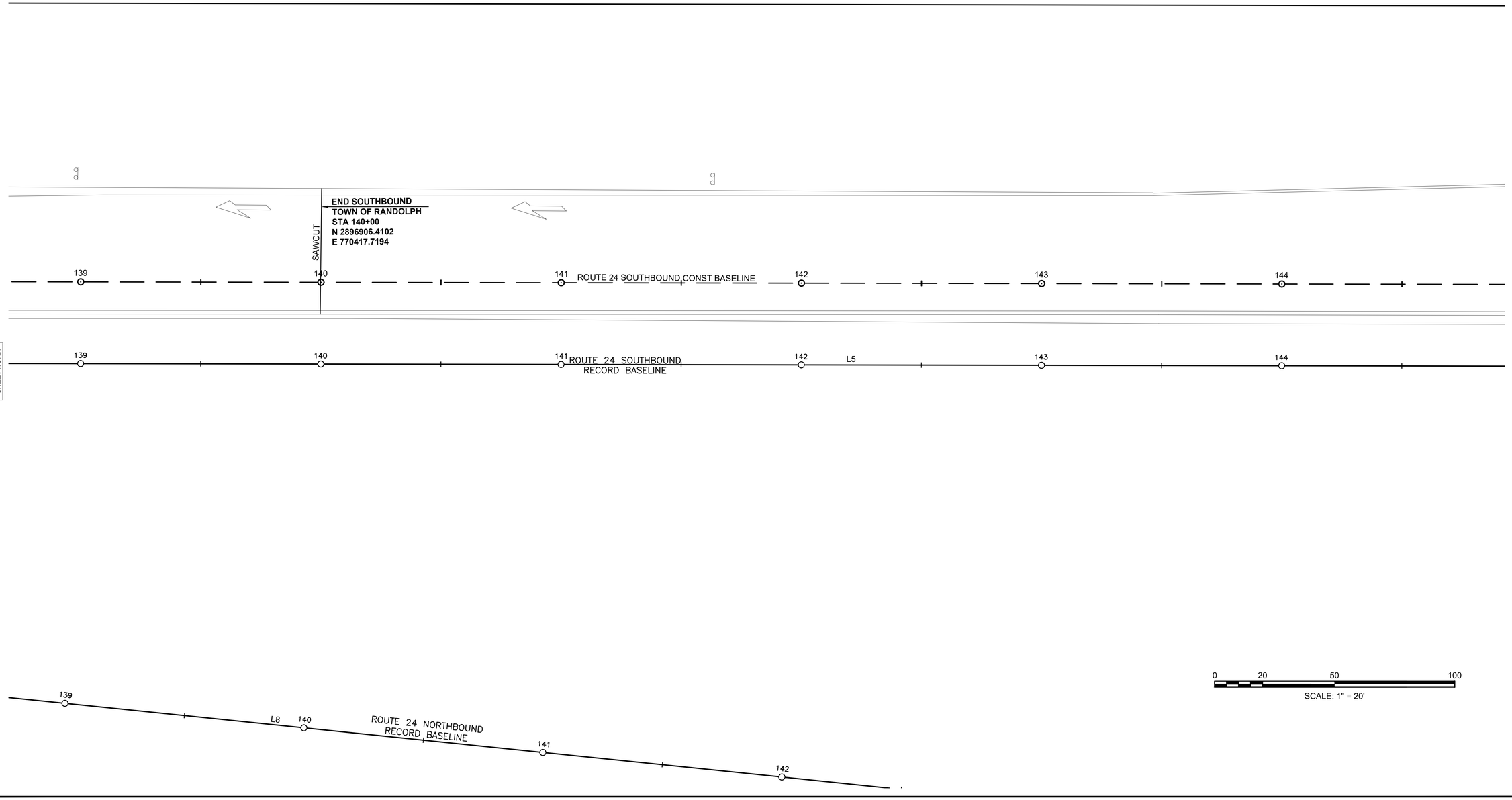
1957 MAIN BASELINE 'S' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	98+66.00	2892806.244	770945.542		N7°20'08"W 4717.34'	145+83.34	2897484.976	770343.239

1957 MAIN BASE LINE 'N' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	129+96.80	2895916.198	770596.216		N1°34'08"W 1982.29'	149+79.09	2897897.745	770541.946

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	22	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
ROUTE 24
SHEET 15 OF 15

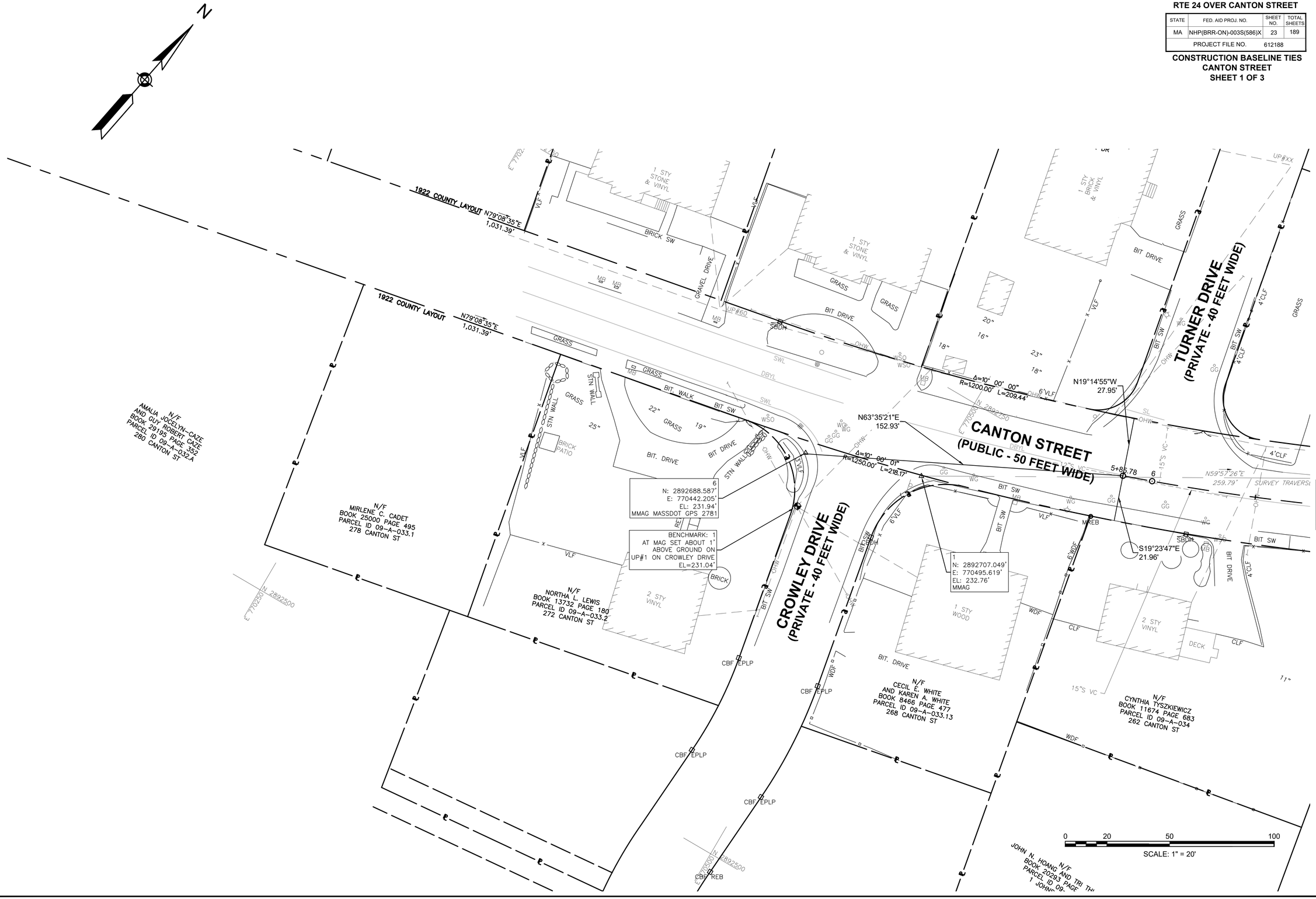


612188_HD\CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	23	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
CANTON STREET
SHEET 1 OF 3

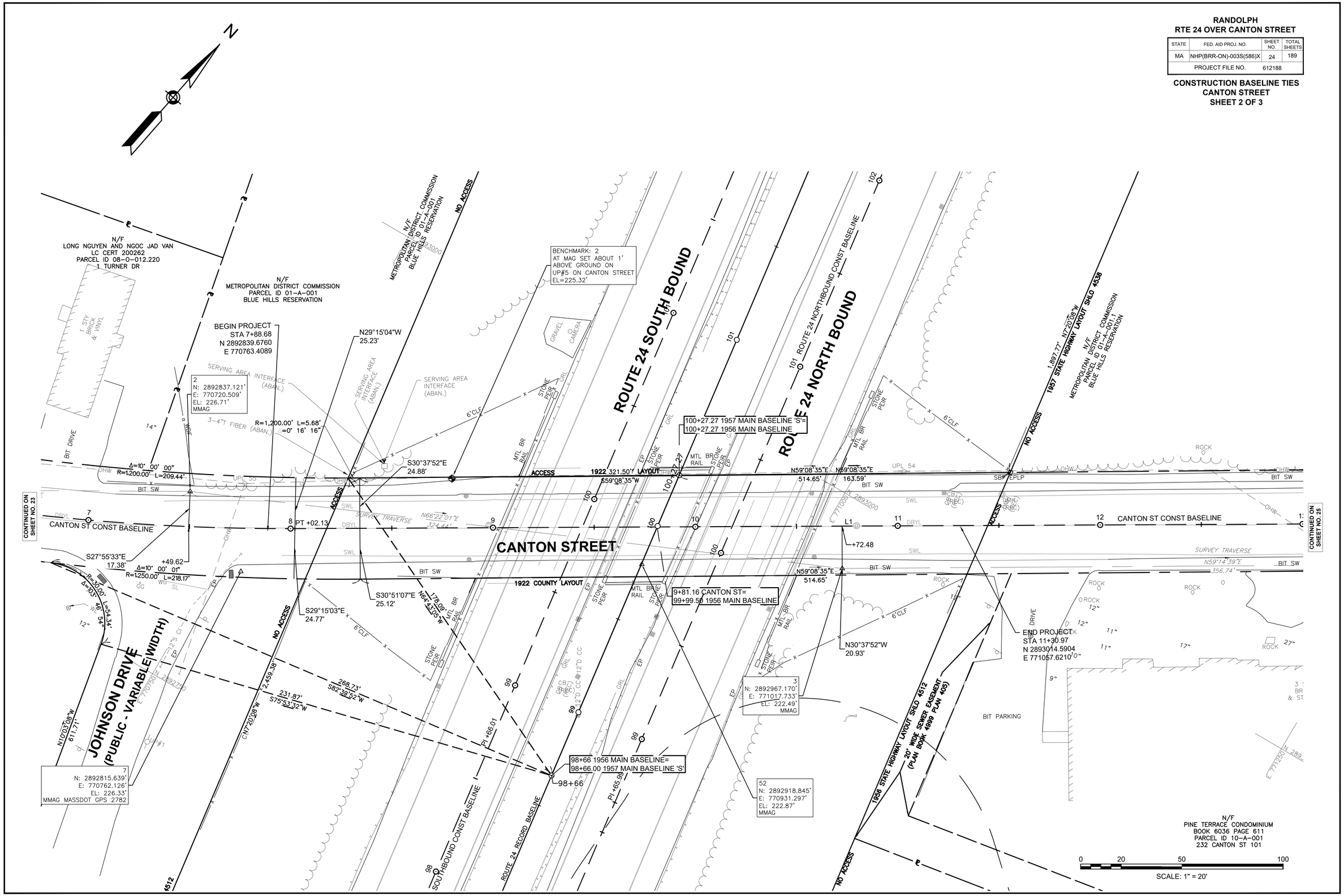


612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:06 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	24	189
	PROJECT FILE NO.	612188	

CONSTRUCTION BASELINE TIES
CANTON STREET
SHEET 2 OF 3



612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:07 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	25	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE TIES
CANTON STREET
SHEET 3 OF 3

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:07 AM

N

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

E 771250 N 2893250

BENCHMARK: 3
AT MAG SET ABOUT 1'
ABOVE GROUND ON
UP #51 ON CANTON STREET
EL=227.02'

N30°51'25"W
26.91'

N/F
JANET H. LYNCH REVOCABLE TRUST
BOOK 21189 PAGE 350
PARCEL ID 07-C-001.1
215 CANTON ST

N/F
EDNA MORALES
BOOK 18052 PAGE 179
PARCEL ID 07-C-002.2
2 FAWN CI

N/F
VIVEINE A. LOBO
BOOK 29776 PAGE 241
PARCEL ID 07-C-021.3
1 FAWN CI

TREELINE
GRASS
SBDH
N51°48'35"E
320.30'
1922 COUNTY LAYOUT
Δ=7° 20' 00"
R=2,000.00' L=255.98'
BIT SW
OHW
SWL
DBYL
SBF
CANT

CANTON STREET
13+49.09
(PUBLIC - 50 FEET WIDE)

N73°29'04"E
82.62'

CONTINUED ON SHEET NO. 24

WG
ROCK
S30°51'34"E
23.09'
21"
17"
18"
27"
4
N: 2893149.601'
E: 771324.300'
EL: 226.39'
MMAG
BIT DRIVE
Δ=7° 20' 00"
R=2,050.00' L=262.38'
8"
9"
14"
17"
12"
10"
21"
WDF
GRASS
1 STY
WOOD
SHED
BIT PARKING
18"
14"

N/F
ADESUWA LEE
BOOK 18318 PAGE 564
PARCEL ID 10-A-003.D
212-214 CANTON ST

N/F
RADLEY EMILE
BOOK 34321 PAGE 82
PARCEL ID 10-A-002.C
220 CANTON ST

0 20 50 100
SCALE: 1" = 20'

E 771250 N 2893250

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	26	189
PROJECT FILE NO.	612188		

CONSTRUCTION BASELINE DATA
SHEET 1 OF 1

CANTON ST CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	8+02.13	2892847.436	770774.450		N59°22'08"E 546.96'	13+49.09	2893126.115	771245.089

1956 MAIN BASELINE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C1	62+58.10	2889240.926	771482.465	R=10003.48' Δ=7°07'41" L=1244.51' T=623.06'		75+02.61	2890462.197	771247.296
L3	75+02.61	2890462.197	771247.296		N7°20'08"W 2524.66'	100+27.27	2892966.195	770924.952

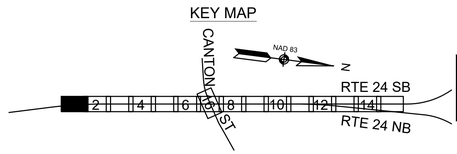
1957 MAIN BASELINE 'S' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	98+66.00	2892806.244	770945.542		N7°20'08"W 4717.34'	145+83.34	2897484.976	770343.239

1957 MAIN BASE LINE 'N' CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C3	119+90.33	2894913.188	770674.311	R=10000.00' Δ=5°46'00" L=1006.47' T=503.66'		129+96.80	2895916.198	770596.216
L8	129+96.80	2895916.198	770596.216		N1°34'08"W 1982.29'	149+79.09	2897897.745	770541.946

612188_HD(CONSTRUCTION BASELINE TIE PLAN).DWG Plotted on 29-Jul-2022 11:07 AM

HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	NONE	NONE	SEE BELOW

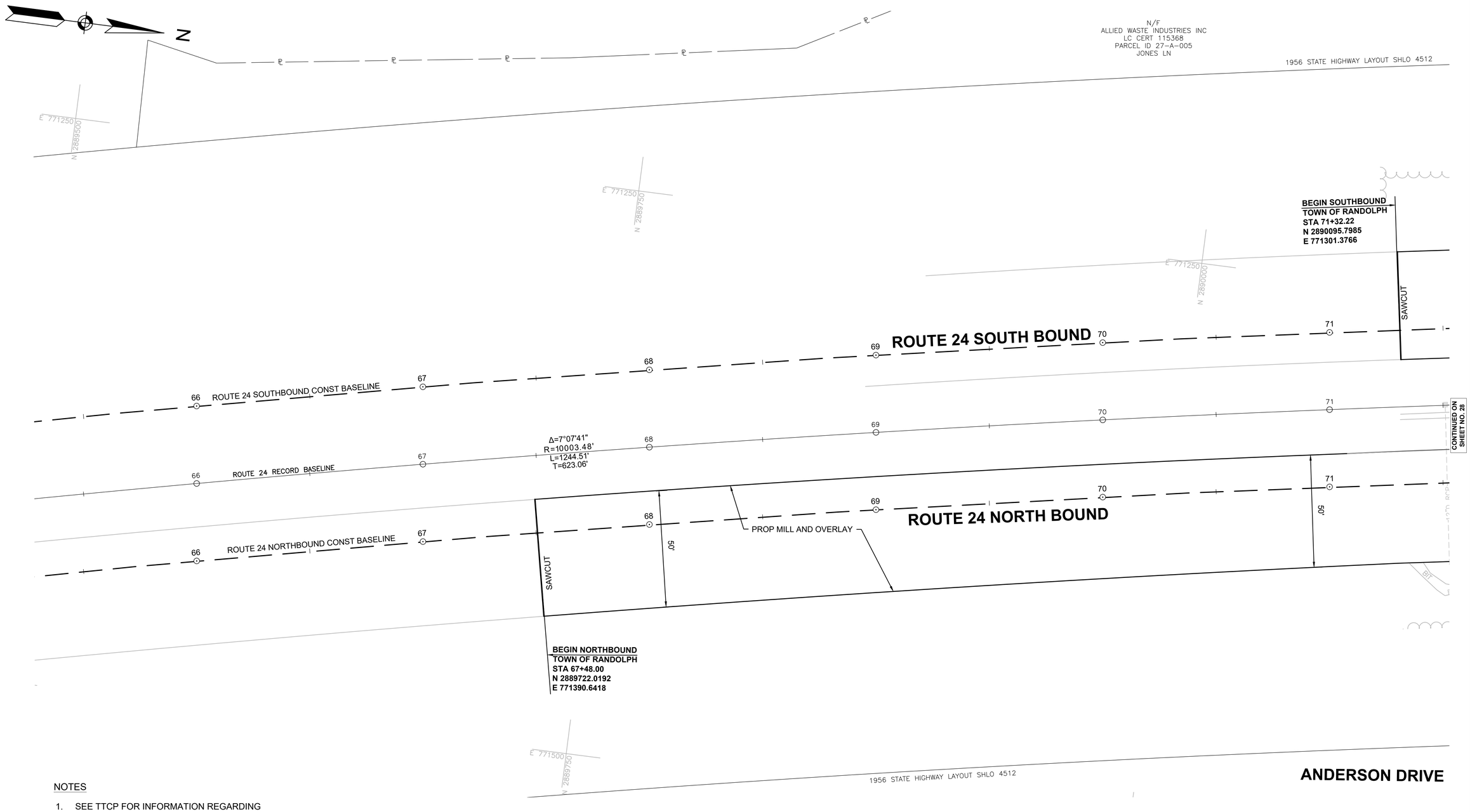
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	27	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 1 OF 16



NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 43-44 & 54

0 20 50 100
SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:22 AM

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:22 AM

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 76+47.39 RT TO STA 78+47.61 RT
R&D EXIST GUARDRAIL	STA 75+36.61 RT TO STA 80+33.80 RT
TRANSITION TO NCHRP 350 GUARDRAIL	STA 76+47.39 RT TO STA 76+81.39 RT
STEEL BEAM HWY GUARD TANGENT END TREATMENT, TL-3	STA 75+36.61 RT TO STA 75+61.62 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 75+61.62 RT TO STA 80+33.80 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 76+81.39 RT TO STA 78+47.61 RT

TRAFFIC SIGNAL CONDUIT

NONE

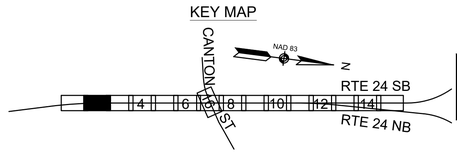
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

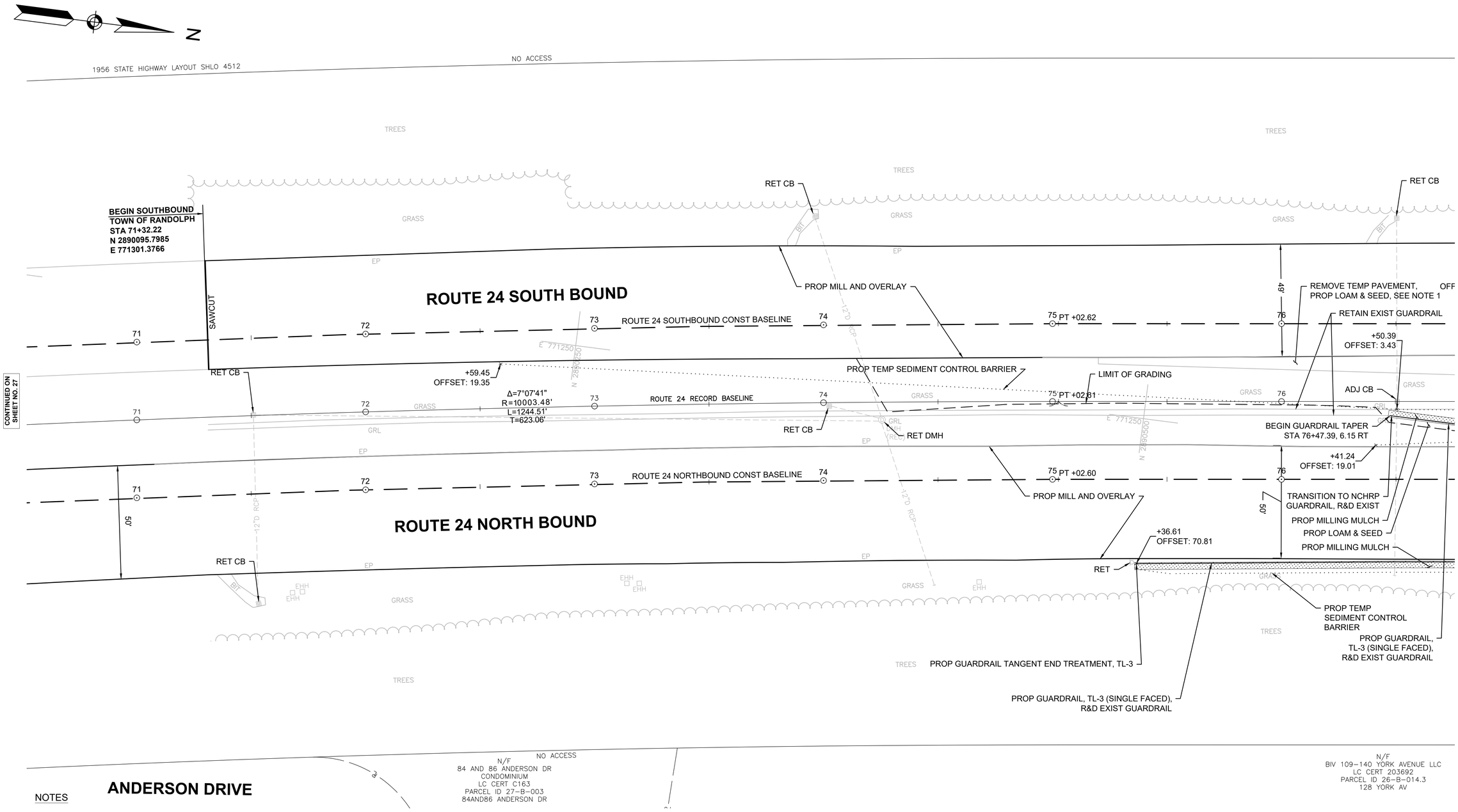
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	28	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 2 OF 16



NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 44 & 54

0 20 50 100

SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 75+36.61 RT TO STA 80+33.80 RT
R&D EXIST GUARDRAIL	STA 76+47.39 RT TO STA 78+47.61 RT
R&D EXIST GUARDRAIL	STA 76+93.87 LT TO STA 99+16.12 RT
R&D EXIST GUARDRAIL	STA 78+34.81 RT TO STA 94+10.75 RT
TRANSITION TO NCHRP 350 GUARDRAIL	STA 76+47.39 RT TO STA 76+81.39 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 75+61.62 RT TO STA 80+33.80 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 76+81.39 RT TO STA 78+38.23 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 77+03.25 LT TO STA 78+84.31 RT
TRAILING ANCHORAGE, TL-3	STA 76+93.87 LT TO STA 77+03.25 LT
GUARDRAIL, TL-3 (DOUBLE FACED)	STA 78+84.31 RT TO STA 92+18.21 RT
TRAILING ANCHORAGE, TL-3	STA 80+33.80 RT TO STA 80+24.43 RT
TRAILING ANCHORAGE, TL-3	STA 78+47.61 RT TO STA 78+ 38.23 RT

TRAFFIC SIGNAL CONDUIT

NONE

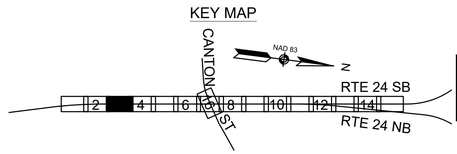
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

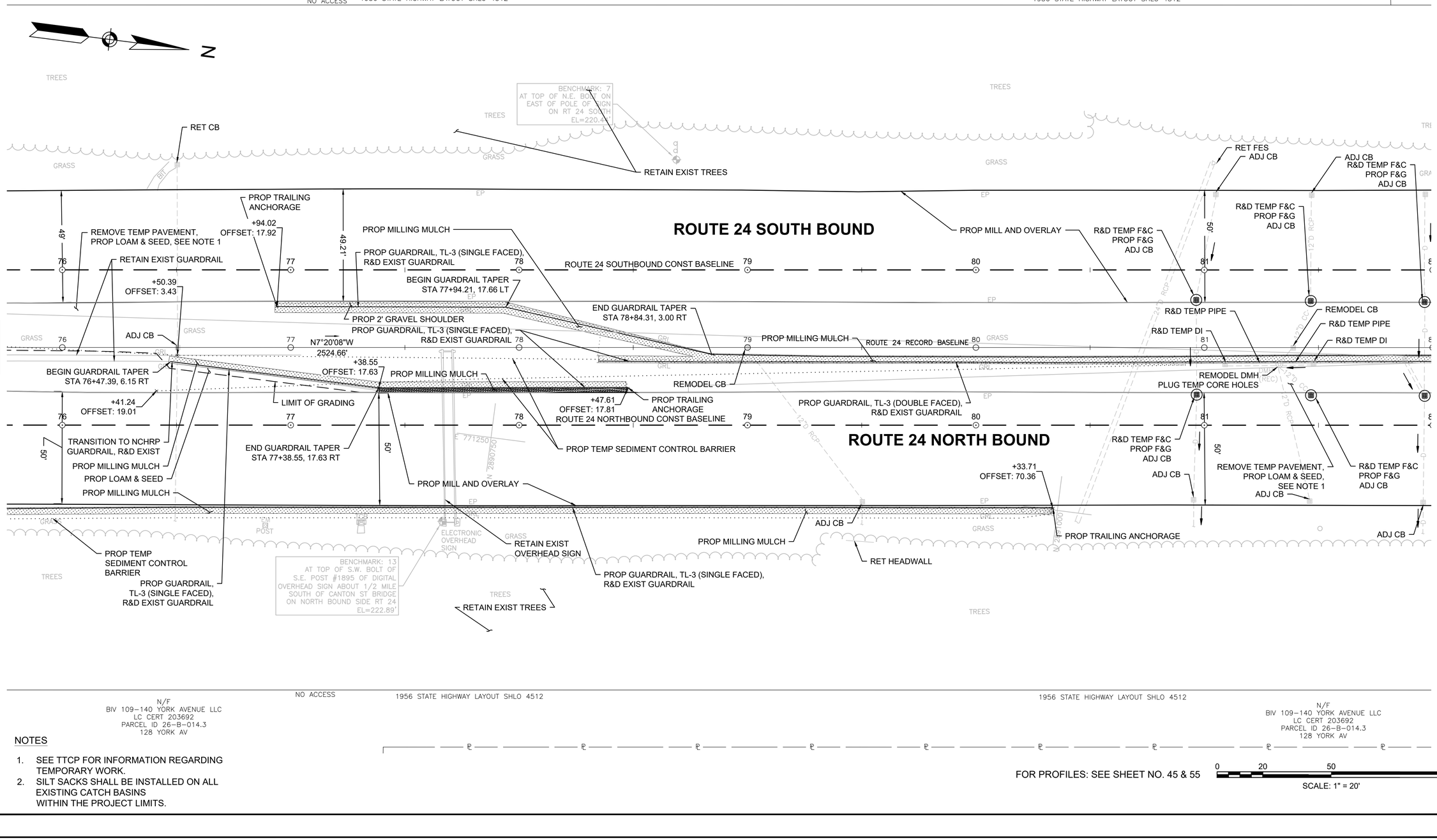
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	29	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 3 OF 16



CONTINUED ON SHEET NO. 28

CONTINUED ON SHEET NO. 30

NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 45 & 55

SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:23 AM

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 76+93.87 LT TO STA 99+16.12 RT
R&D EXIST GUARDRAIL	STA 78+34.81 RT TO STA 94+10.75 RT
GUARDRAIL, TL-3 (DOUBLE FACED)	STA 78+84.31 RT TO STA 92+18.21 RT
TANGENT END TREATMENT, TL-3	STA 85+29.64 RT TO STA 85+79.64 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 85+79.64 RT TO STA 99+66.81 RT
TRAILING ANCHORAGE, TL-3	STA 86+54.64 LT TO STA 86+64.02 LT

TRAFFIC SIGNAL CONDUIT

NONE

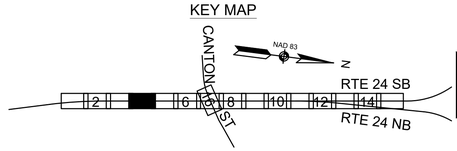
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

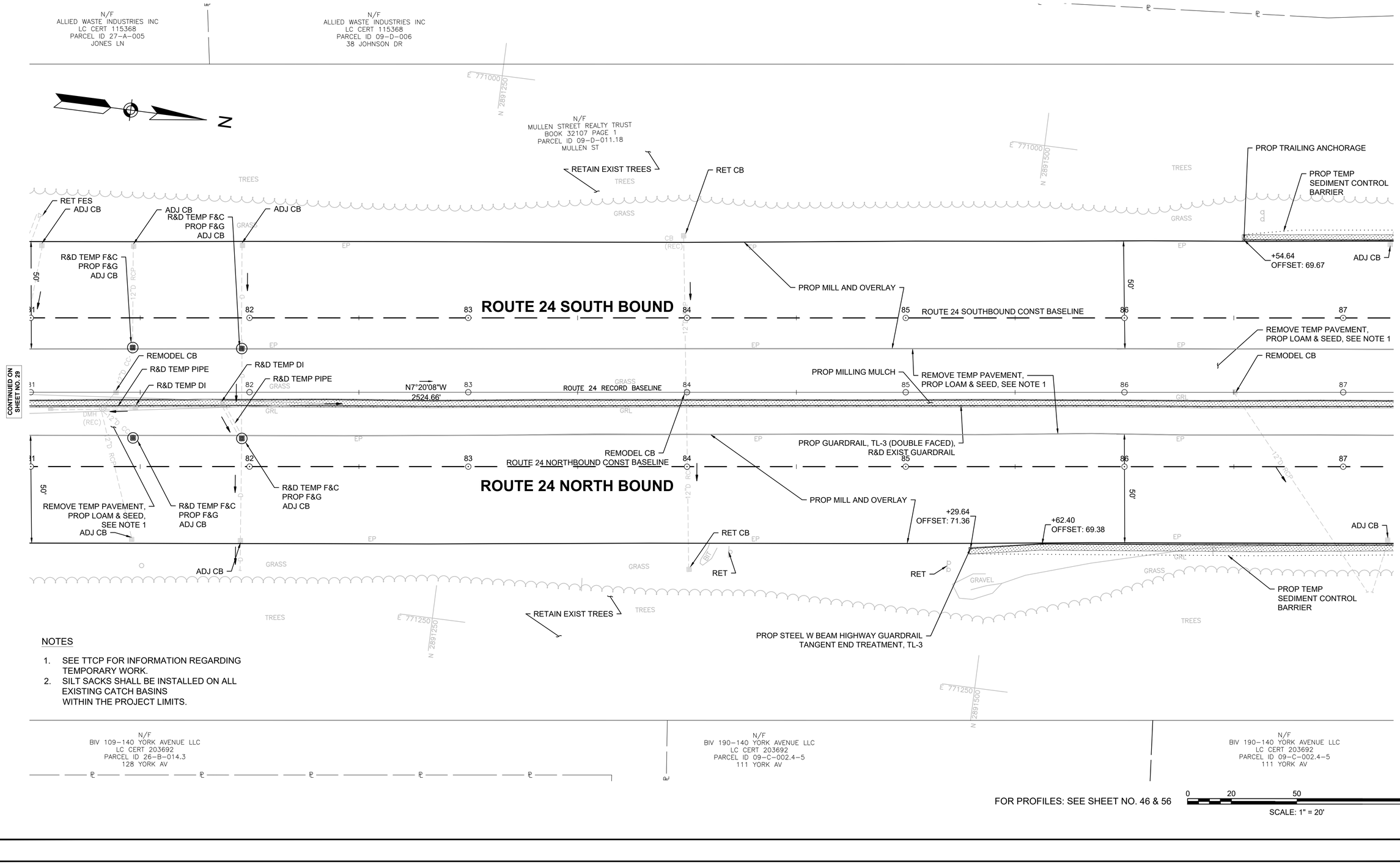
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	30	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 4 OF 16



NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 46 & 56

0 20 50 100

SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:23 AM

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 76+93.87 LT TO STA 99+16.12 RT
R&D EXIST GUARDRAIL	STA 78+34.81 RT TO STA 94+10.75 RT
R&D EXIST GUARDRAIL	STA 86+54.64 LT TO STA 105+42.44 LT
GUARDRAIL, TL-3 (DOUBLE FACED)	STA 78+84.31 RT TO STA 92+18.21 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 86+59.10 RT TO STA 99+66.81 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 86+64.02 LT TO STA 98+97.30 LT
TRAILING ANCHORAGE, TL-3	STA 86+54.64 LT TO STA 86+64.02 LT

TRAFFIC SIGNAL CONDUIT

NONE

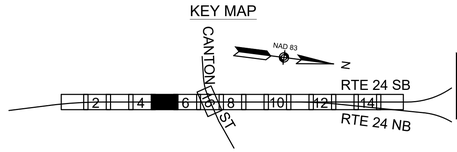
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

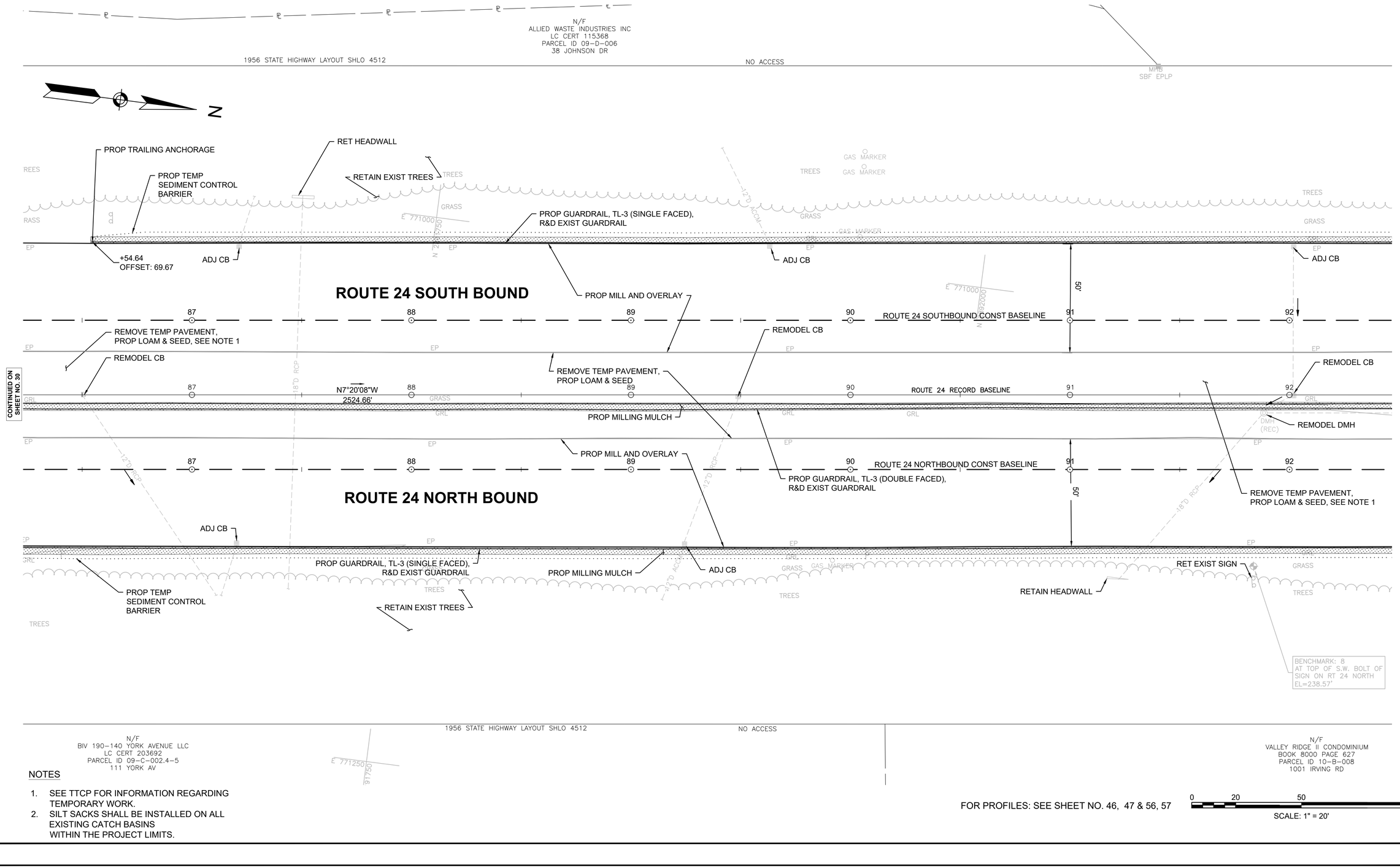
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	31	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 5 OF 16



NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 46, 47 & 56, 57

0 20 50 100

SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:23 AM

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 76+93.87 LT TO STA 99+16.12 RT
R&D EXIST GUARDRAIL	STA 78+34.81 RT TO STA 94+10.75 RT
R&D EXIST GUARDRAIL	STA 86+54.64 LT TO STA 105+42.44 LT
R&D EXIST GUARDRAIL	STA 92+18.21 RT TO STA 94+10.75 RT
R&D EXIST GUARDRAIL	STA 93+90.82 RT TO STA 100+17.74 RT
GUARDRAIL, TL-3 (DOUBLE FACED)	STA 78+84.31 RT TO STA 96+93.60 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 86+59.10 RT TO STA 99+66.81 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 96+57.71 LT TO STA 99+29.74 LT
TRAILING ANCHORAGE, TL-3	STA 96+48.33 LT TO STA 96+57.71 LT

TRAFFIC SIGNAL CONDUIT

NONE

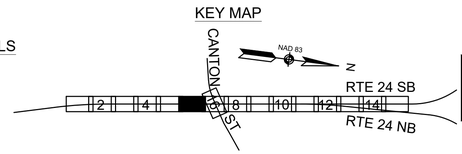
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	32	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 6 OF 16

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:24 AM

RECYCLE WAY

1956 STATE HIGHWAY LAYOUT SHLO 4512

NO ACCESS

1956 STATE HIGHWAY LAYOUT SHLO 4512

N

RETAIN EXIST TREES

RET HEADWALL

RETAIN EXIST TREES

TREES

TREES

BENCHMARK: 6
AT TOP OF S.W. BOLT OF SIGN "ATTRACTIONS EXIT 38A" ON RT 24 SOUTH
EL=242.31'

99+99.50 1956 M
9+81

GRASS

GRASS

RET

PROP GUARDRAIL, TL-3 (SINGLE FACED), R&D EXIST GUARDRAIL

PROP TEMP SEDIMENT CONTROL BARRIER

GRASS

EP

EP

EP

EP

ADJ CB

ADJ CB

PROP MILLING MULCH

ROUTE 24 SOUTH BOUND

PROP MILL AND OVERLAY

49'

REMOVE TEMP PAVEMENT, PROP LOAM & SEED, SEE NOTE 1

PROP TRAILING ANCHORAGE

92 93 ROUTE 24 SOUTHBOUND CONST BASELINE 94 95 96 97

REMODEL DMH

REMODEL CB

+48.33
OFFSET: 17.58

EP

EP

EP

REMODEL CB

E 771000

N 2892250

GRASS

REMOVE TEMP PAVEMENT, PROP LOAM & SEED

24"D RCP

CONTINUED ON SHEET NO. 31

92 N7°20'08"W 2524.66' 93 ROUTE 24 RECORD BASELINE 94 95 96 97

GRL

GRL

GRL

PROP MILLING MULCH

DMH (REC)

REMODEL DMH

12"D CP

DMH (REC)

GRL

E 771000

24"D RCP

EP

EP

EP

PROP GUARDRAIL, TL-3 (DOUBLE FACED), R&D EXIST GUARDRAIL

92 93 ROUTE 24 NORTHBOUND CONST BASELINE 94 95 96 97

PROP GUARDRAIL, TL-3 (DOUBLE FACED), R&D EXIST GUARDRAIL

18"D RCP

REMOVE TEMP PAVEMENT, PROP LOAM & SEED, SEE NOTE 1

ROUTE 24 NORTH BOUND

PROP MILL AND OVERLAY

49'

ADJ CB

EP

EP

EP

EP

RET EXIST SIGN

GRASS

GRASS

GRASS

PROP GUARDRAIL, TL-3 (SINGLE FACED), R&D EXIST GUARDRAIL

RETAIN EXIST SIGN

TREES

RETAIN EXIST TREES

TREES

PROP MILLING MULCH

TREES

100 FT WETLAND BUFFER

RETAIN EXIST OVERHEAD SIGN

RETAIN EXIST TREES

TREES

PROP TEMP SEDIMENT CONTROL BARRIER

BENCHMARK: 8
AT TOP OF S.W. BOLT OF SIGN ON RT 24 NORTH
EL=238.57'

BENCHMARK: 9
AT WESTERLY MOST BOLT ON E.POST OF OVERHEAD SIGN ON RT 24 NORTH
EL=246.06'

RET HEADWALL

WETLAND

1956 STATE HIGHWAY LAYOUT SHLO 4512

NO ACCESS

N/F
VALLEY RIDGE II CONDOMINIUM
BOOK 8000 PAGE 627
PARCEL ID 10-B-008
1001 IRVING RD

N/F
VALLEY RIDGE II CONDOMINIUM
BOOK 8000 PAGE 551
PARCEL ID 10-A-007.801
801 IRVING RD

CONTINUED ON SHEET NO. 33

NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 47, 48 & 57, 58

0 20 50 100

SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 76+93.87 LT TO STA 99+16.12 RT
R&D EXIST GUARDRAIL	STA 86+54.64 LT TO STA 105+42.44 LT
R&D EXIST GUARDRAIL	STA 93+90.82 RT TO STA 100+63.79 RT
R&D EXIST GUARDRAIL	STA 96+48.33 LT TO STA 126+16.68 LT
R&D EXIST GUARDRAIL	STA 100+87.85 LT TO STA 126+14.48 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 86+59.10 RT TO STA 99+66.81 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 86+64.02 LT TO STA 98+97.30 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 96+57.71 LT TO STA 99+29.74 LT
GUARDRAIL, TL-3 (DOUBLE FACED)	STA 93+90.82 RT TO STA 96+93.60 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 96+93.60 RT TO STA 99+42.26 RT

CONTINUED BELOW (SEE BOTTOM LEFT OF THIS SHEET)

TRAFFIC SIGNAL CONDUIT

NONE

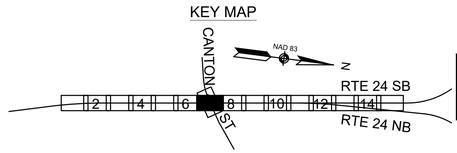
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	33	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 7 OF 16

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:24 AM

HIGHWAY GUARD DETAILS

CONTINUED FROM ABOVE	
TRANSITION TO BRIDGE RAIL	STA 99+05.19 LT TO STA 99+38.93 LT
TRANSITION TO BRIDGE RAIL	STA 99+35.41 LT TO STA 99+63.49 LT
TRANSITION TO BRIDGE RAIL	STA 99+42.26 RT TO STA 99+76.01 RT
TRANSITION TO BRIDGE RAIL	STA 99+66.81 RT TO STA 100+00.56 RT
TRANSITION TO BRIDGE RAIL	STA 99+98.79 LT TO STA 100+32.54 LT
TRANSITION TO BRIDGE RAIL	STA 100+21.66 LT TO STA 100+55.41 LT
TRANSITION TO BRIDGE RAIL	STA 100+35.87 RT TO STA 100+69.62 RT
TRANSITION TO BRIDGE RAIL	STA 100+60.42 RT TO STA 100+94.17 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 100+32.54 LT TO STA 105+17.44 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 100+55.41 LT TO STA 100+87.85 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 100+69.62 RT TO STA 100+93.95 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 100+94.17 RT TO STA 102+83.33 RT
GUARDRAIL, TL-3 (DOUBLE FACED)	STA 100+87.85 LT TO STA 113+04.70 LT
TRAILING ANCHORAGE	STA 102+83.33 RT TO STA 102+92.70 RT
TRAILING ANCHORAGE	STA 100+93.95 RT TO STA 101+03.33 RT

NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 86+54.64 LT TO STA 105+42.44 LT
R&D EXIST GUARDRAIL	STA 96+48.33 LT TO STA 126+16.68 LT
R&D EXIST GUARDRAIL	STA 100+87.85 LT TO STA 126+14.48 RT
R&D EXIST GUARDRAIL	STA 105+92.76 RT TO STA 126+10.18 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 100+32.54 LT TO STA 104+92.44 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 100+94.17 RT TO STA 102+83.33 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 106+42.76 RT TO STA 126+00.81 RT
GUARDRAIL, TL-3 (DOUBLE FACED)	STA 100+87.85 LT TO STA 113+04.70 LT

TRAFFIC SIGNAL CONDUIT

NONE

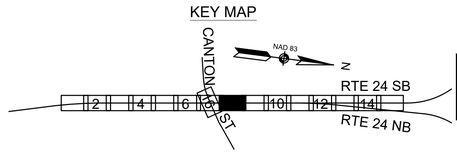
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

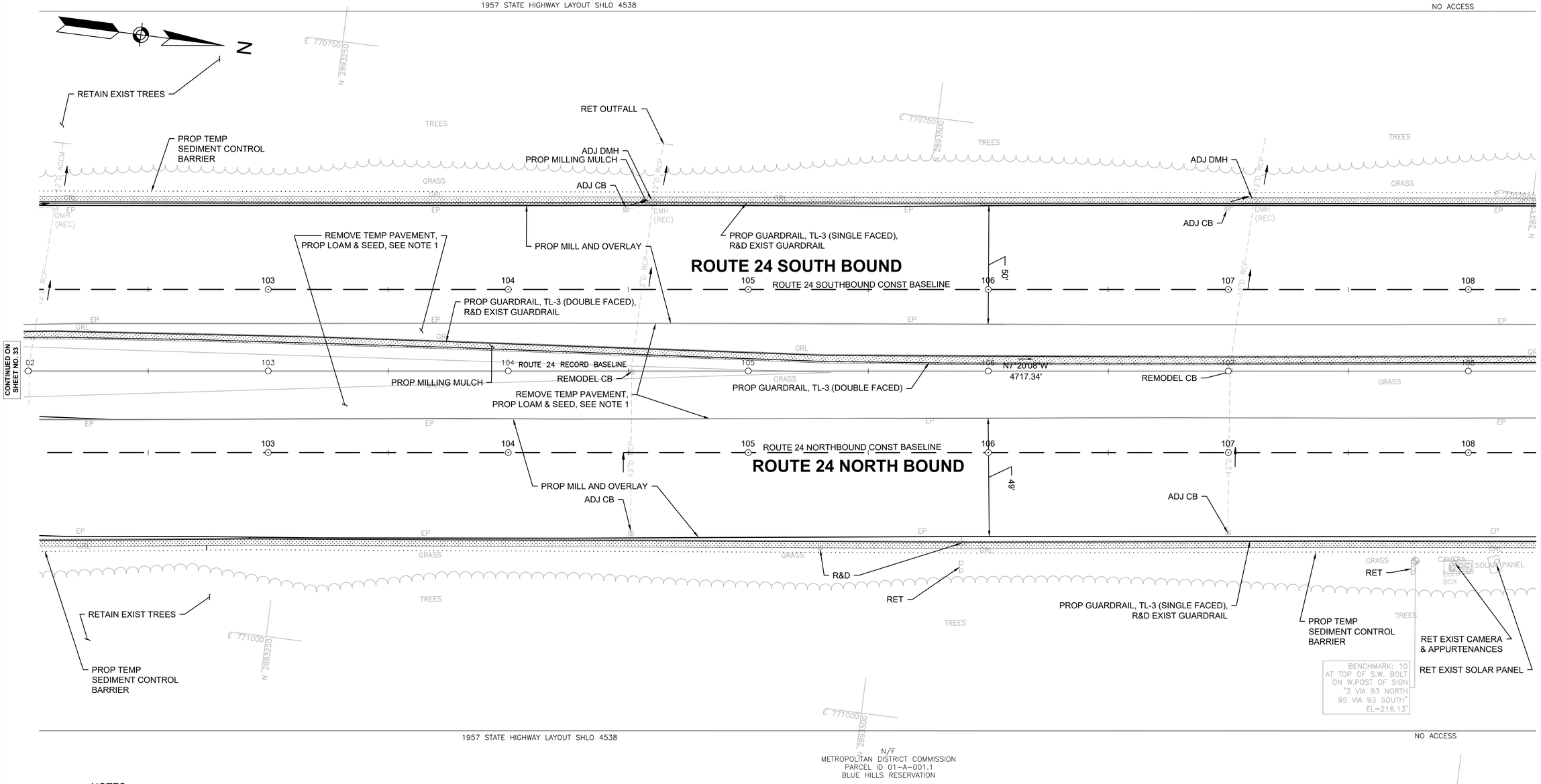
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	34	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 8 OF 16

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001
BLUE HILLS RESERVATION

1957 STATE HIGHWAY LAYOUT SHLO 4538

NO ACCESS



1957 STATE HIGHWAY LAYOUT SHLO 4538

NO ACCESS

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

E 771000

NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 49, 49 & 58, 59

0 20 50 100

SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:24 AM

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 96+48.33 LT TO STA 126+16.68 LT
R&D EXIST GUARDRAIL	STA 100+87.85 LT TO STA 126+14.48 RT
R&D EXIST GUARDRAIL	STA 105+92.76 RT TO STA 126+10.18 RT
R&D EXIST GUARDRAIL	STA 109+69.03 LT TO STA 118+73.16 LT
GUARDRAIL, TL-3 (DOUBLE FACED)	STA 100+87.85 LT TO STA 113+22.08 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 106+42.76 RT TO STA 126+00.81 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 109+78.41 LT TO STA 118+48.16 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 113+22.08 LT TO STA 125+91.68 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 113+22.08 LT TO STA 126+05.11 RT

TRAFFIC SIGNAL CONDUIT

NONE

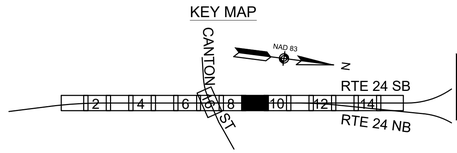
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

KEY MAP



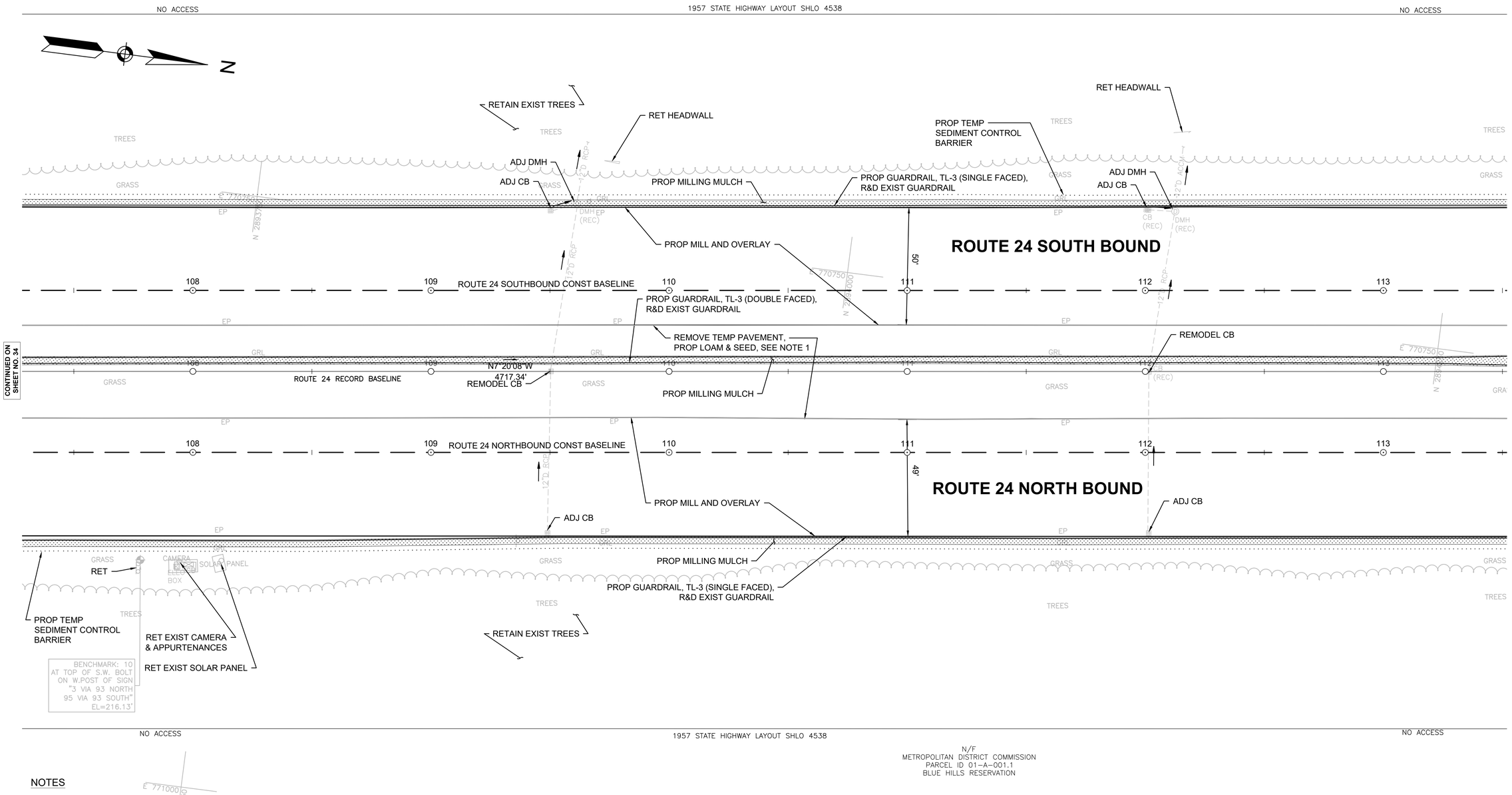
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	35	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 9 OF 16

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001
BLUE HILLS RESERVATION

NO ACCESS — 1957 STATE HIGHWAY LAYOUT SHLO 4538 — NO ACCESS



CONTINUED ON SHEET NO. 34

CONTINUED ON SHEET NO. 36

NO ACCESS — 1957 STATE HIGHWAY LAYOUT SHLO 4538 — NO ACCESS

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 50, 51 & 60, 61

0 20 50 100

SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:25 AM

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 96+48.33 LT TO STA 126+16.68 LT
R&D EXIST GUARDRAIL	STA 100+87.85 LT TO STA 126+14.48 RT
R&D EXIST GUARDRAIL	STA 105+92.76 RT TO STA 126+10.18 RT
R&D EXIST GUARDRAIL	STA 109+69.03 LT TO STA 118+73.16 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 105+92.76 RT TO STA 126+00.81 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 109+69.03 LT TO STA 118+48.16 LT
GUARDRAIL, TL-3 (DOUBLE FACED)	STA 100+87.85 LT TO STA 113+22.08 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 113+22.08 LT TO STA 125+91.68 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 113+22.08 LT TO STA 126+05.11 RT

TRAFFIC SIGNAL CONDUIT

NONE

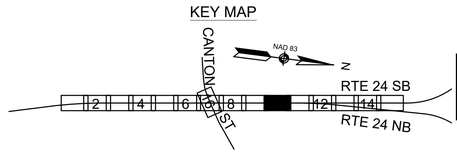
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

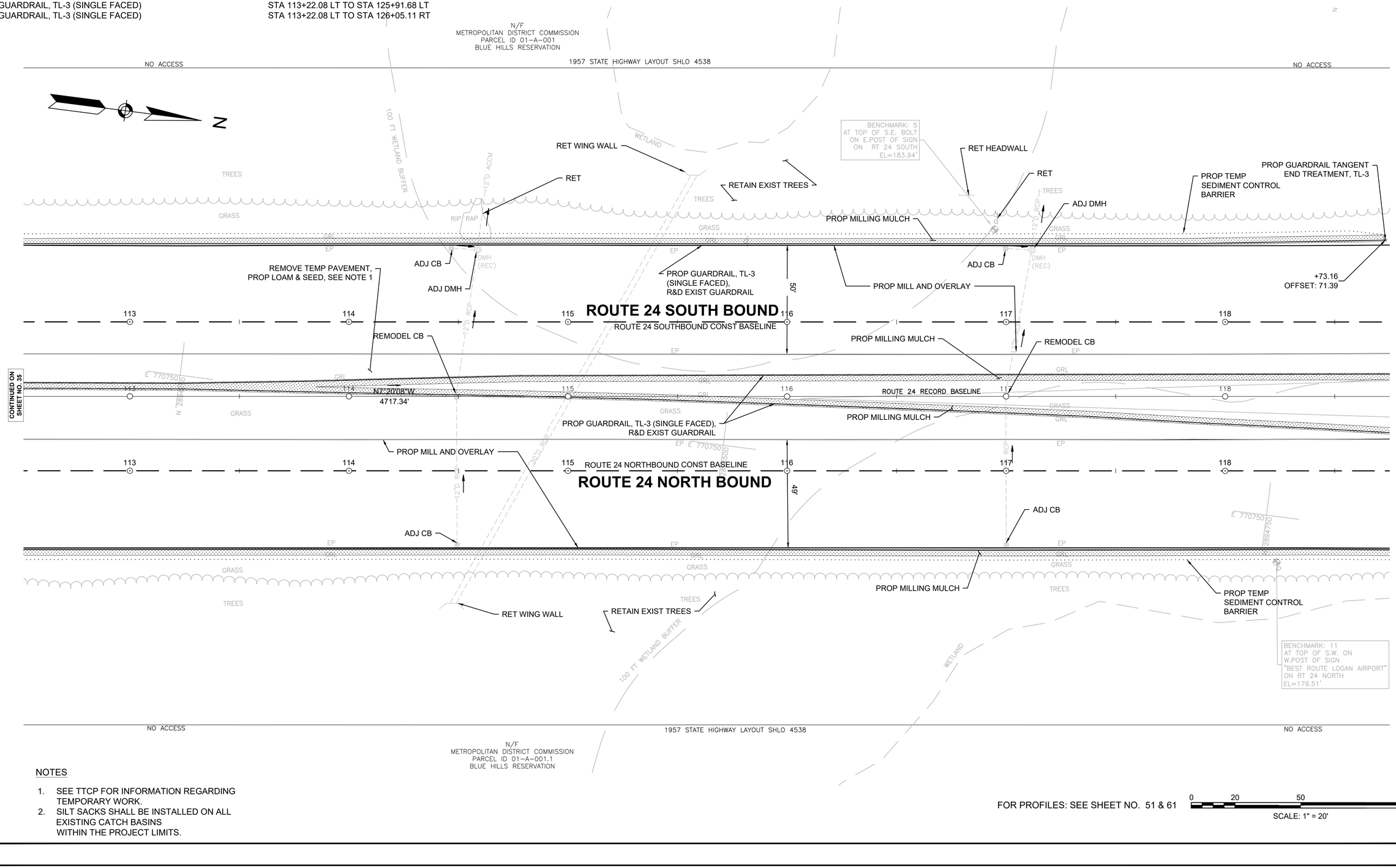
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	36	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 10 OF 16



NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 51 & 61

0 20 50 100
SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:25 AM

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 96+48.33 LT TO STA 126+16.68 LT
R&D EXIST GUARDRAIL	STA 100+87.85 LT TO STA 126+14.48 RT
R&D EXIST GUARDRAIL	STA 105+92.76 RT TO STA 126+10.18 RT
R&D EXIST GUARDRAIL	STA 109+69.03 LT TO STA 118+73.16 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 105+92.76 RT TO STA 126+00.81 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 113+22.08 LT TO STA 125+91.68 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 113+22.08 LT TO STA 126+05.11 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 109+69.03 LT TO STA 118+23.16 LT
TANGENT END TREATMENT, TL-3	STA 118+23.16 LT TO STA 118+73.16 LT

TRAFFIC SIGNAL CONDUIT

NONE

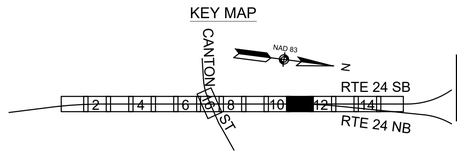
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

KEY MAP

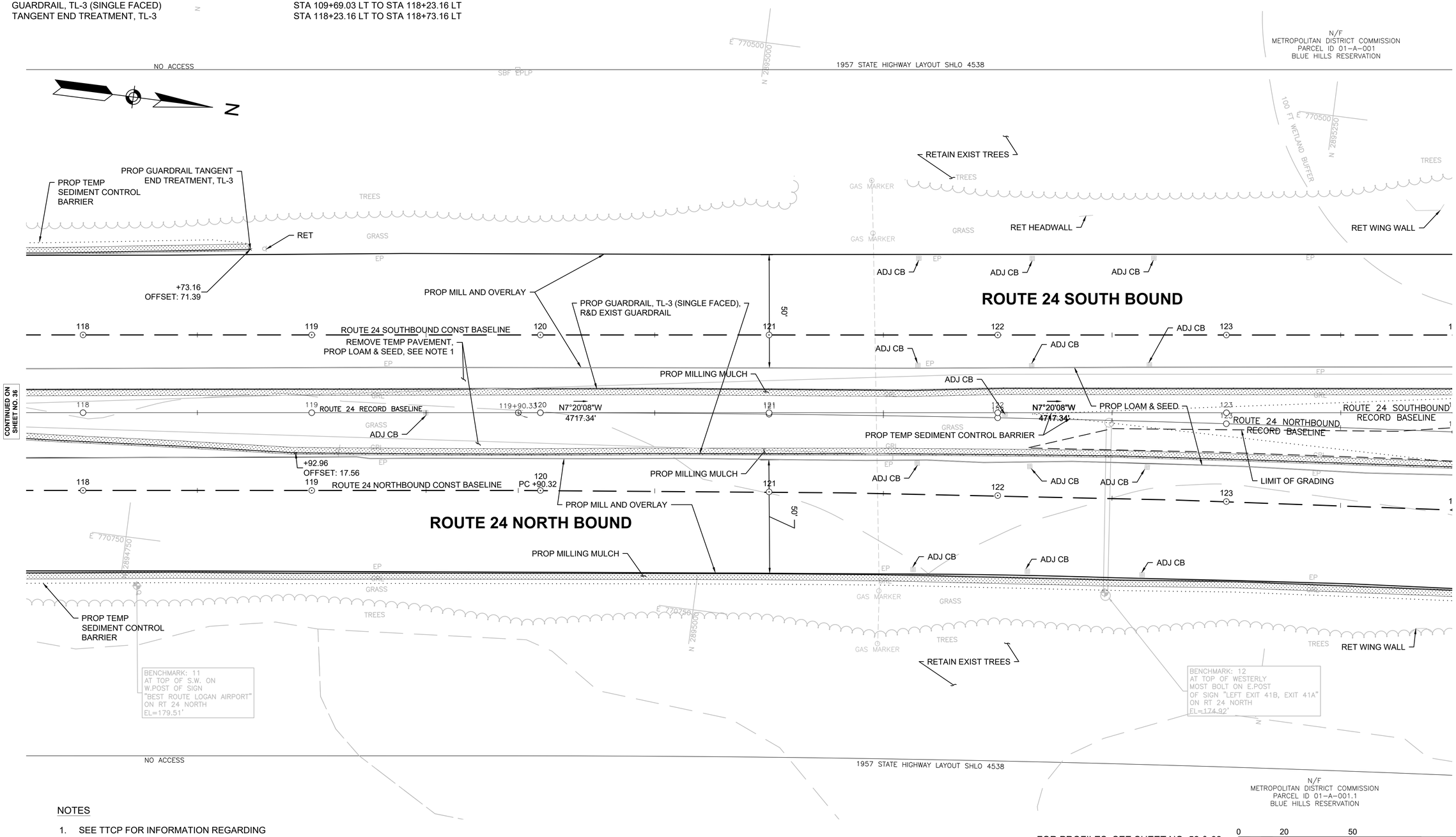


RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	37	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 11 OF 16

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:25 AM



NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 52 & 62

0 20 50 100

SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

R&D EXIST GUARDRAIL	STA 96+48.33 LT TO STA 126+16.68 LT
R&D EXIST GUARDRAIL	STA 100+87.85 LT TO STA 126+14.48 RT
R&D EXIST GUARDRAIL	STA 105+92.76 RT TO STA 126+10.18 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 105+92.76 RT TO STA 126+13+70 RT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 113+22.08 LT TO STA 126+15.18 LT
GUARDRAIL, TL-3 (SINGLE FACED)	STA 113+22.08 LT TO STA 126+15+91 RT
TRANSITION TO NCHRP 350 GUARDRAIL	STA 125+79.70 RT TO STA 126+13.70 RT
TRANSITION TO NCHRP 350 GUARDRAIL	STA 125+81.18 LT TO STA 126+15.18 LT
TRANSITION TO NCHRP 350 GUARDRAIL	STA 125+81.91 RT TO STA 126+15.91 RT

TRAFFIC SIGNAL CONDUIT

NONE

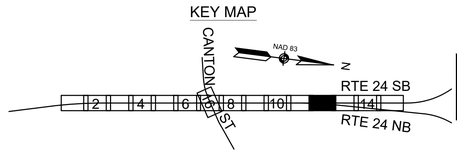
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	38	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 12 OF 16

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:26 AM

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01–A–001
BLUE HILLS RESERVATION

NO ACCESS

100 FT WETLAND BUFFER

E 770500
N 2895250

WETLAND

TREES

RETAIN EXIST TREES

GRASS

RET WING WALL

RET EXIST HORSE BRIDGE

BENCHMARK: 4
AT TOP OF S.E. BOLT
ON E.POST OF SIGN
NORTH OF "FIRE/HORSE BRIDGE"
ON RT 24 SOUTH
EL=181.83'

EP

BIT

REMOVE TEMP PAVEMENT,
PROP LOAM & SEED, SEE NOTE 1

PROP MILL AND OVERLAY

49'

23 124 125 126 127 ROUTE 24 SOUTHBOUND CONST BASELINE 128 129

PROP GUARDRAIL, TL-3 (SINGLE FACED),
R&D EXIST GUARDRAIL

+89.94
OFFSET: 20.21

PROP LOAM & SEED

PROP PERMANENT SEDIMENT
CONTROL BARRIER

PROP MILLING MULCH

N7°20'08"W
4717.34'

RETAIN EXIST GUARDRAIL

CONTINUED ON SHEET NO. 37

ROUTE 24 SOUTHBOUND
RECORD BASELINE

ROUTE 24 NORTHBOUND
RECORD BASELINE

RET CB

PROP GUARDRAIL, TL-3 (SINGLE FACED),
R&D EXIST GUARDRAIL

PROP MILLING MULCH

Δ=5°46'00"
R=10000.00'
L=1006.47'
T=503.66'

EDGE OF PAVEMENT AND METAL FENCE (ABOVE)

LIMIT OF GRADING

PROP PERMANENT SEDIMENT
CONTROL BARRIER

+01.66
OFFSET: 20.23

+15.91
OFFSET: 16.32

TRANSITION TO NCHRP
GUARDRAIL, R&D EXIST

PROP MILL AND OVERLAY

50'

ROUTE 24 NORTHBOUND CONST BASELINE

SAWCUT

CONTINUED ON SHEET NO. 39

TREES

RET WING WALL

PROP TEMP
SEDIMENT CONTROL
BARRIER

RETAIN EXIST TREES

PROP MILLING MULCH

+13.70
OFFSET: 70.09

RETAIN EXIST GUARDRAIL

100 FT WETLAND BUFFER

TREELINE

END NORTHBOUND
TOWN OF RANDOLPH
STA 127+72.00
N 2895692.3125
E 770604.8581

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01–A–001.1
BLUE HILLS RESERVATION

NO ACCESS

E 770750
N 2895500

NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

FOR PROFILES: SEE SHEET NO. 52, 53 & 62, 63

0 20 50 100
SCALE: 1" = 20'

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

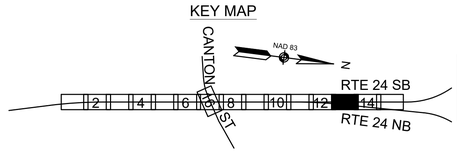
DRAINAGE DETAILS

NONE

LEGEND

RUMBLE STRIP

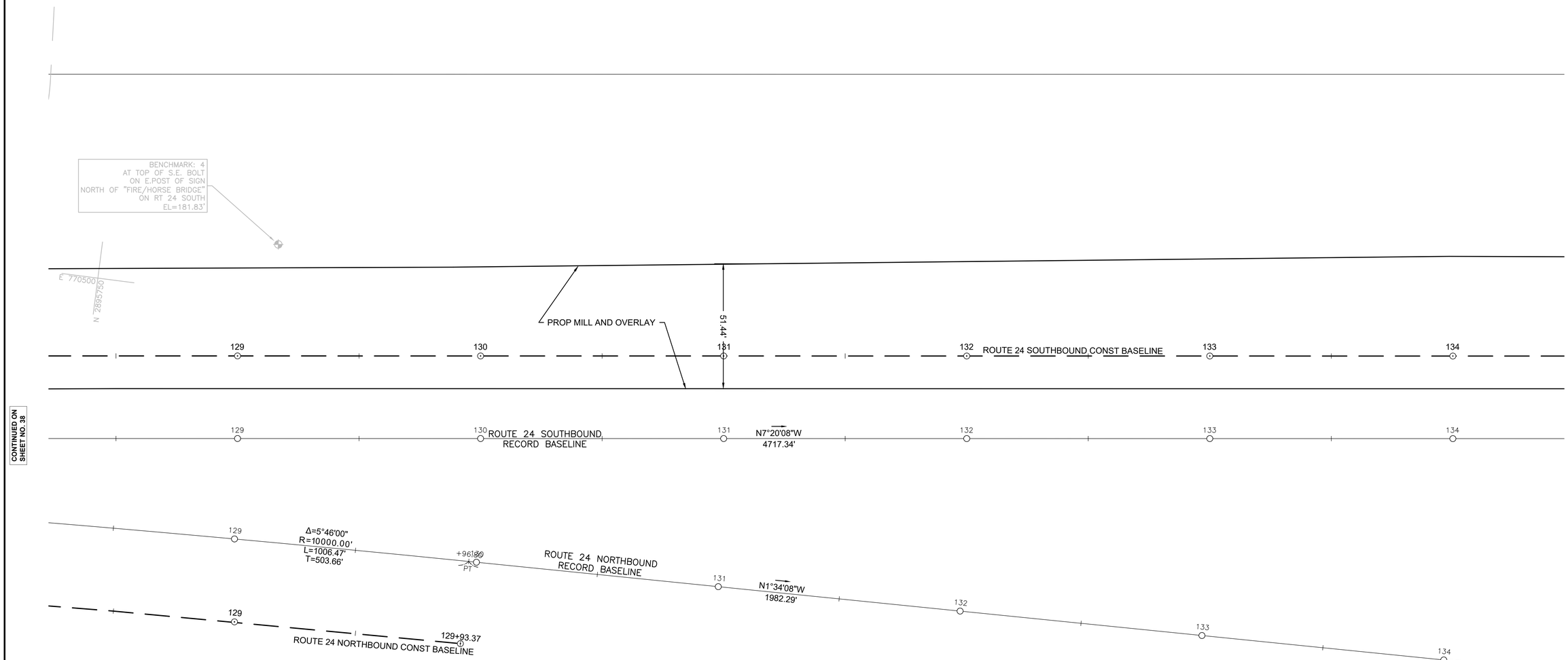
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	39	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 13 OF 16



NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

0 20 50 100

SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:26 AM

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

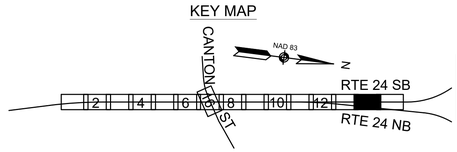
DRAINAGE DETAILS

NONE

LEGEND

RUMBLE STRIP

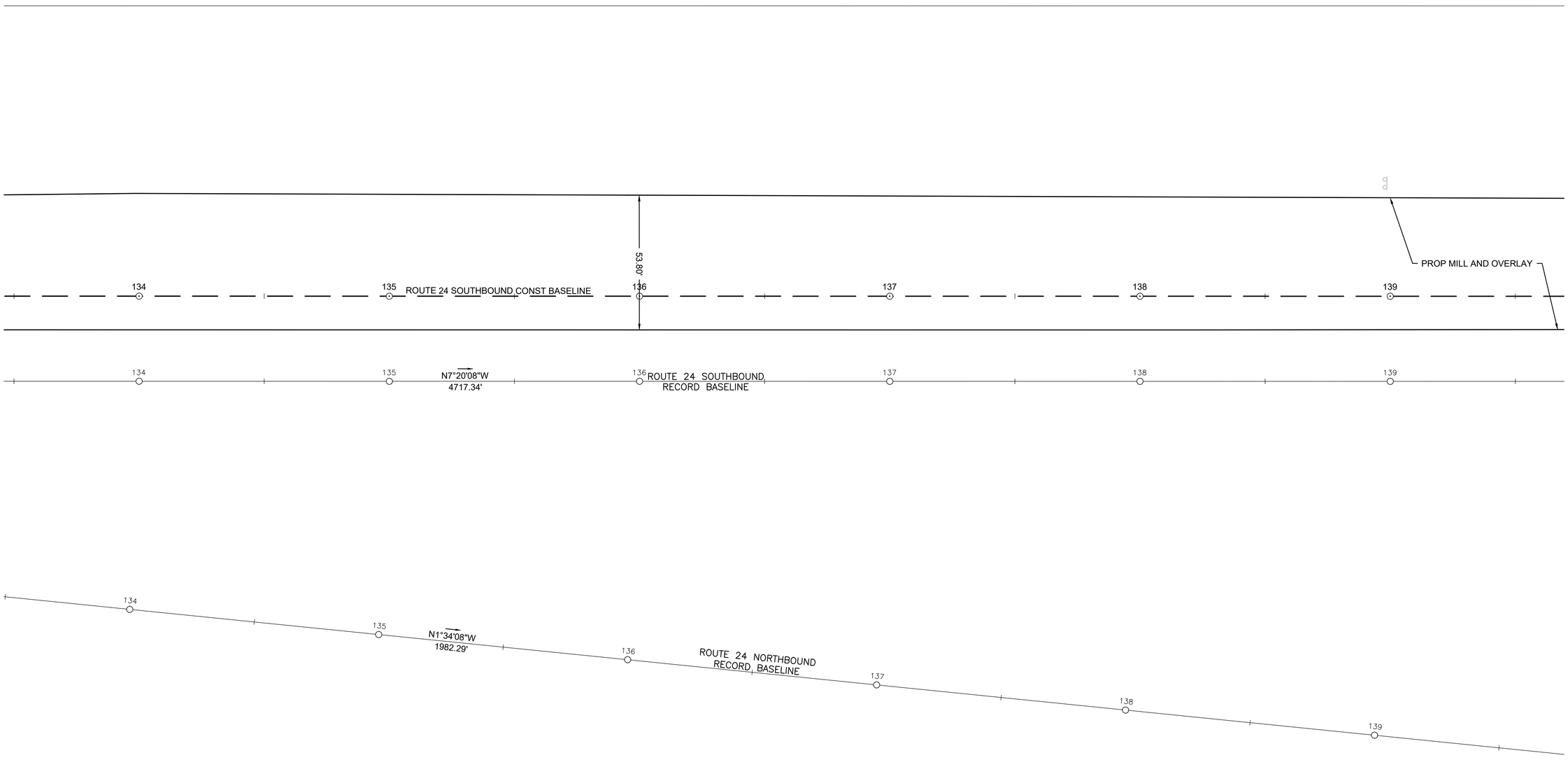
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	40	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 14 OF 16



NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

0 20 50 100

SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:26 AM

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

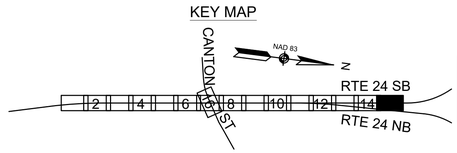
DRAINAGE DETAILS

NONE

LEGEND

RUMBLE STRIP

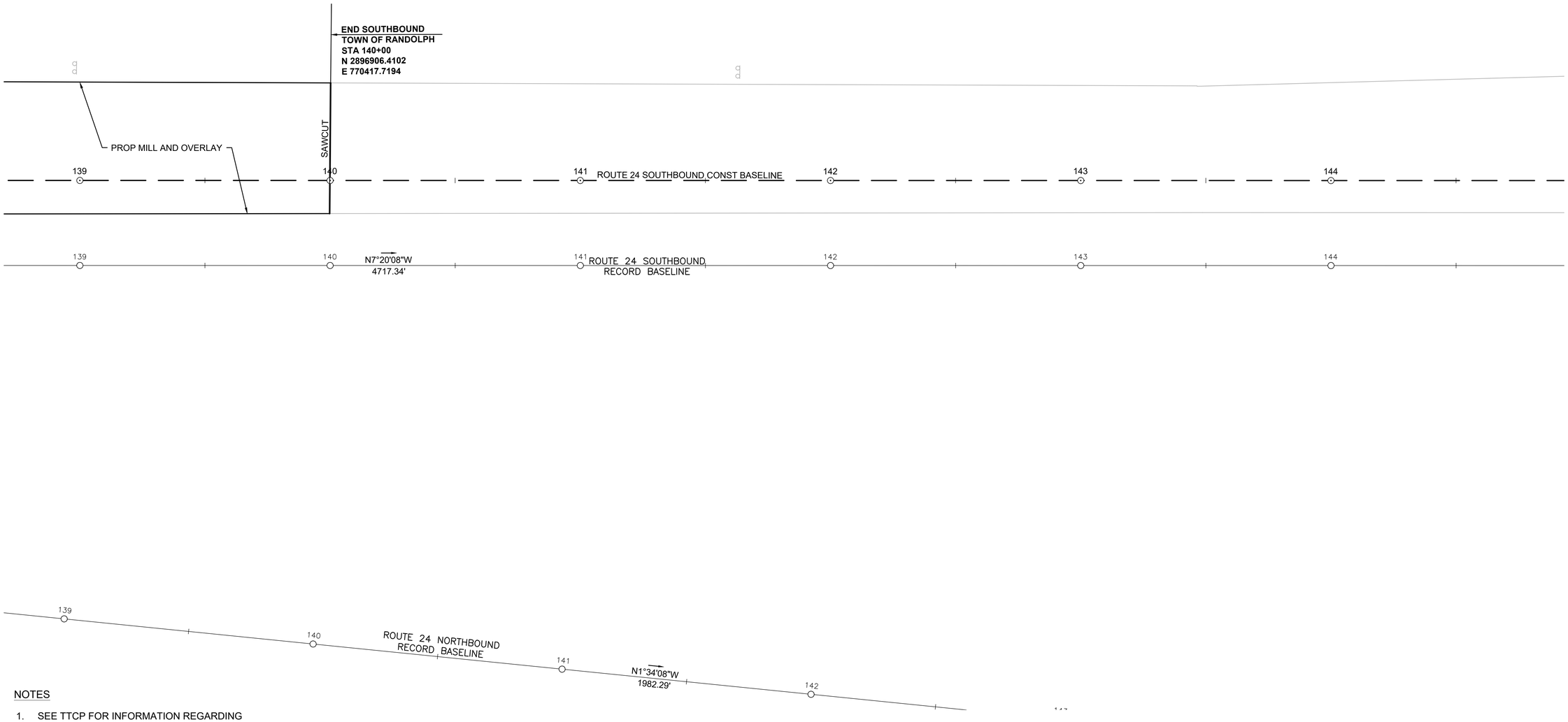
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	41	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 15 OF 16



NOTES

1. SEE TTCP FOR INFORMATION REGARDING TEMPORARY WORK.
2. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.

0 20 50 100

SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:27 AM

NOTE

ANY DISTURBANCE TO CANTON STREET BEYOND THE LIMITS OF WORK SHOWN O THIS PLAN AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR.

TRAFFIC SIGNAL CONDUIT

NONE

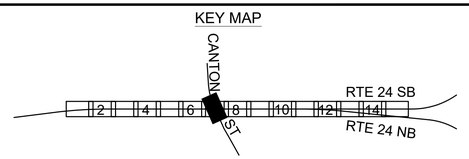
WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

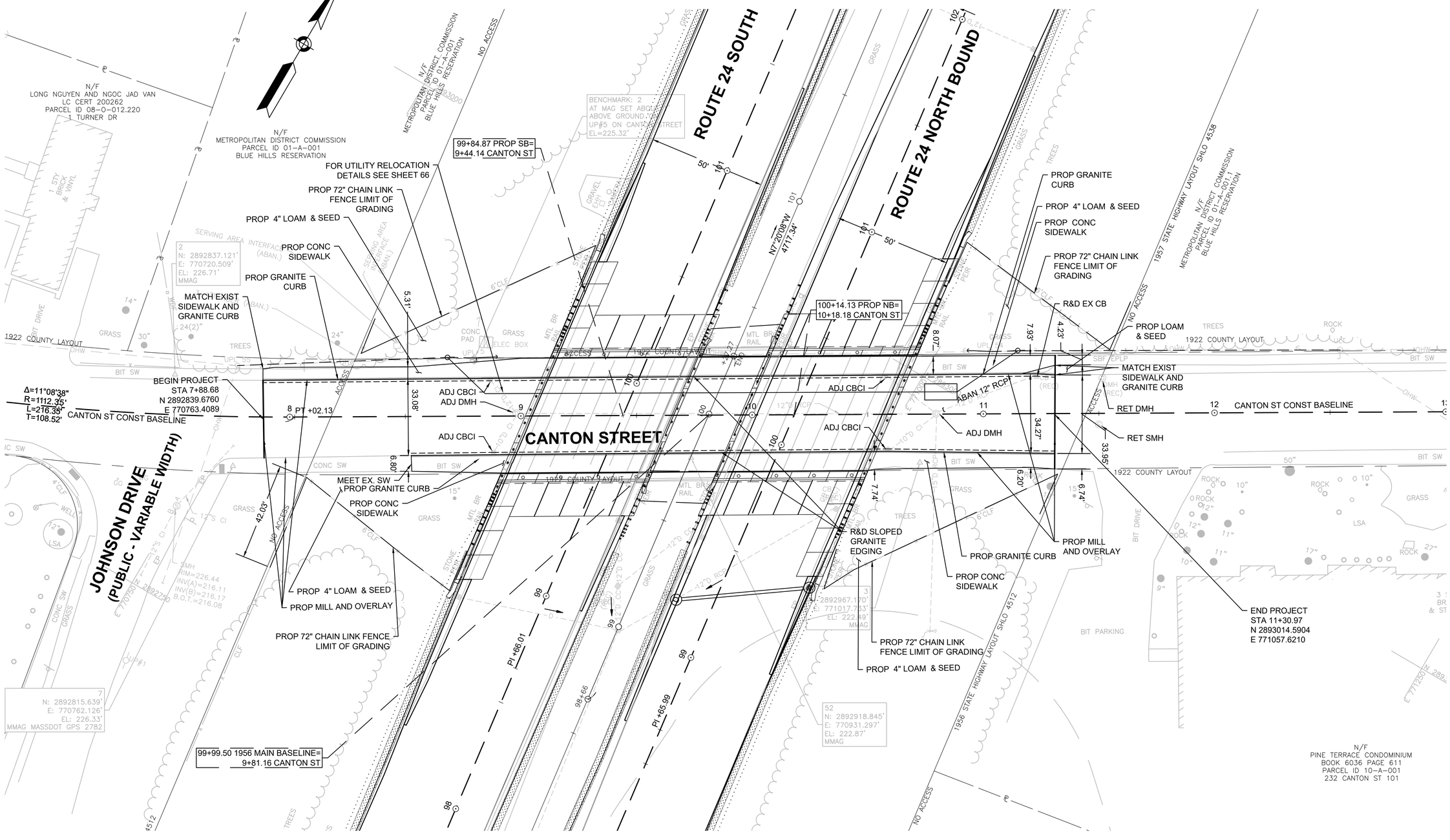
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	42	189
PROJECT FILE NO.	612188		

CONSTRUCTION PLANS
SHEET 16 OF 16



FOR PROFILES: SEE SHEET NO. 64

0 20 50 100

SCALE: 1" = 20'

610770_HD(CONSTRUCTION PLAN).DWG Plotted on 26-Aug-2022 11:28 AM

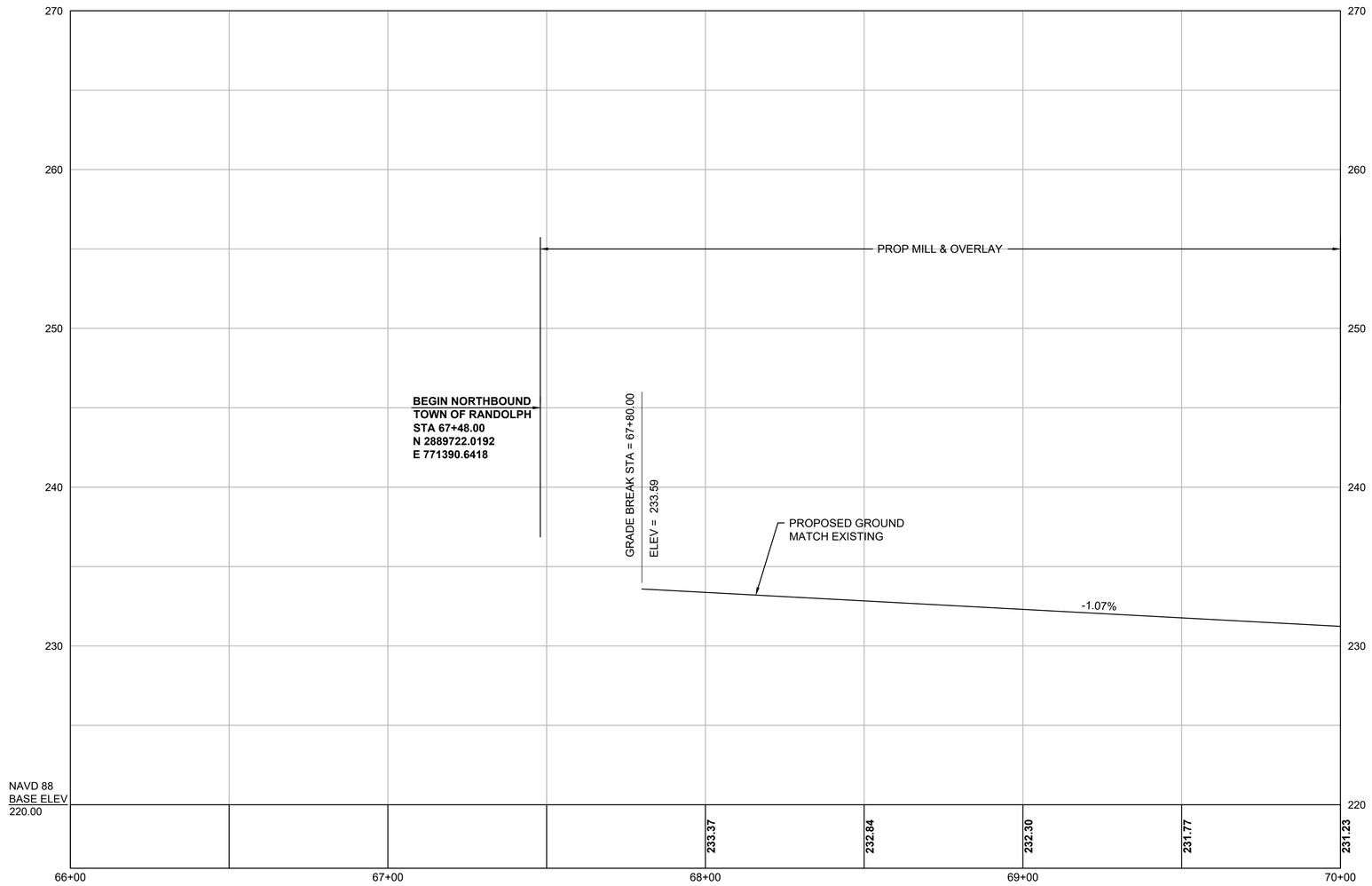
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	43	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 1 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:28 AM

PROP ROUTE 24 NB



CONTINUED ON SHEET NO. 44

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 27

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

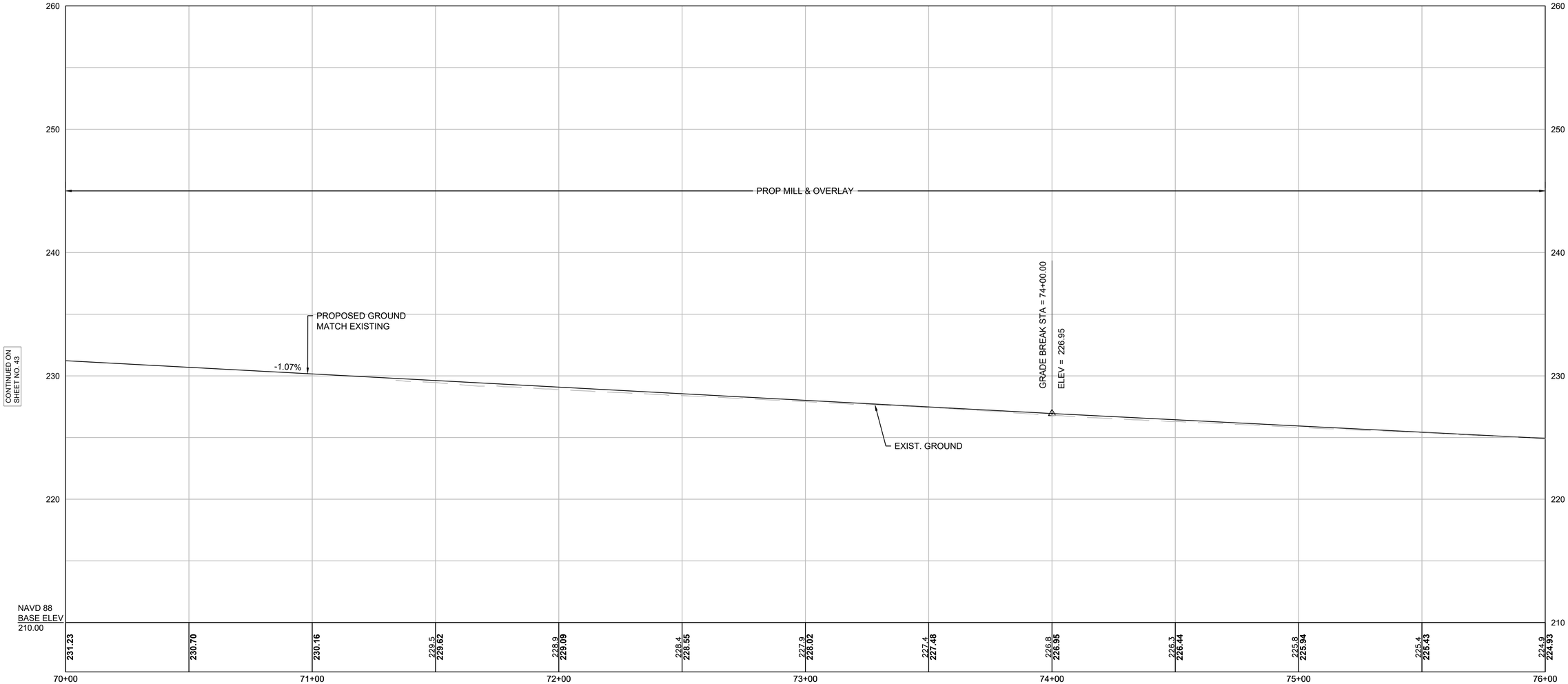
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	44	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 2 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:28 AM

PROP ROUTE 24 NB



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 28

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

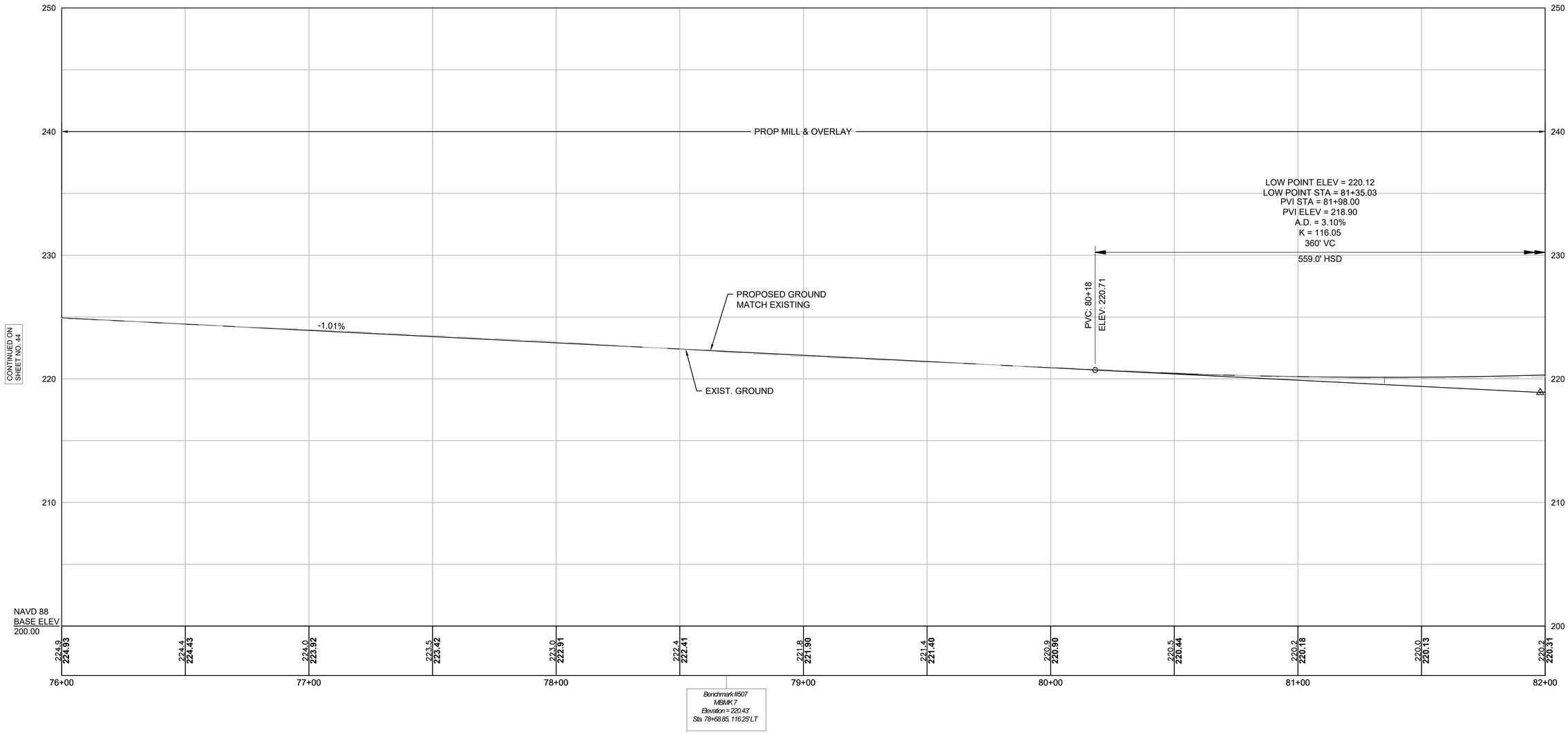
NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	45	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 3 OF 22

PROP ROUTE 24 NB



FOR CONSTRUCTION PLAN:
SEE SHEET NO. 29

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:28 AM

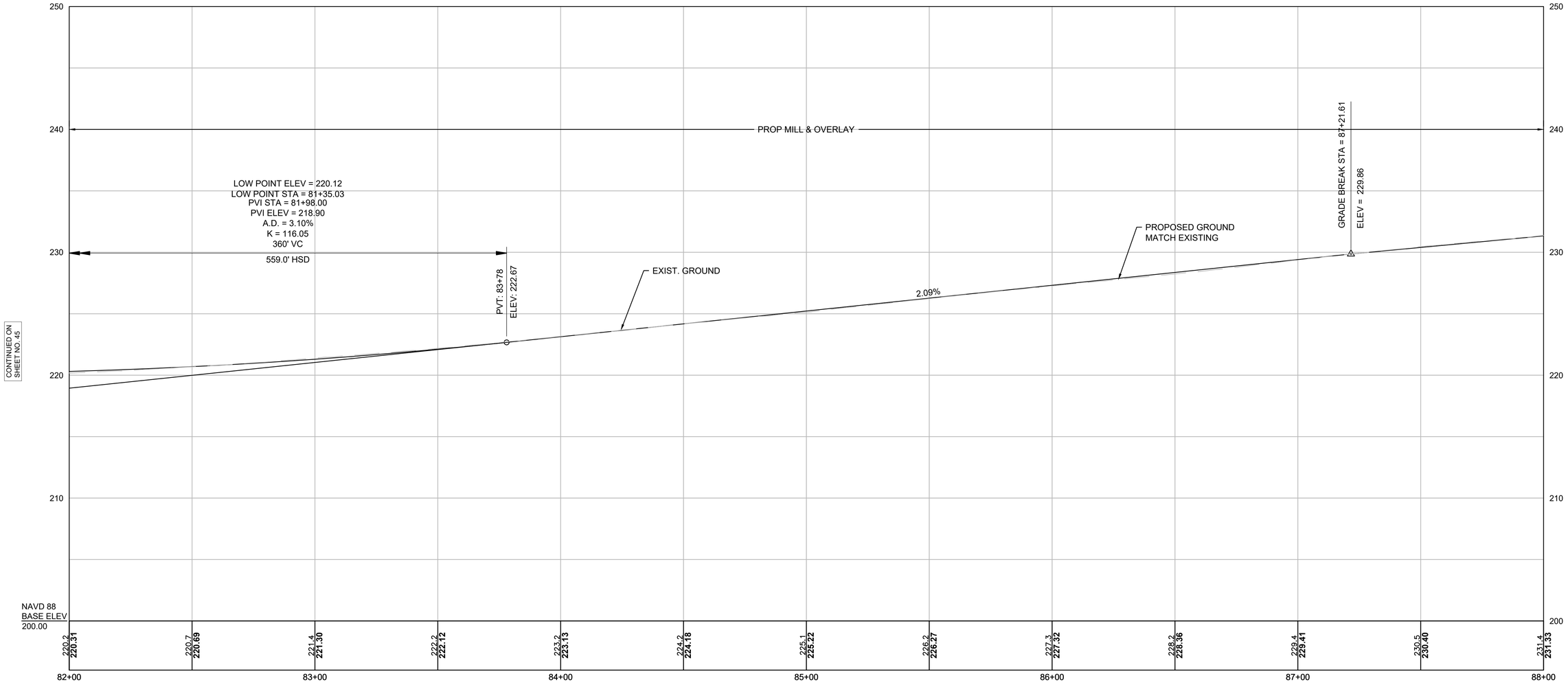
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	46	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 4 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:28 AM

PROP ROUTE 24 NB



CONTINUED ON SHEET NO. 45

CONTINUED ON SHEET NO. 47

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 30-31

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

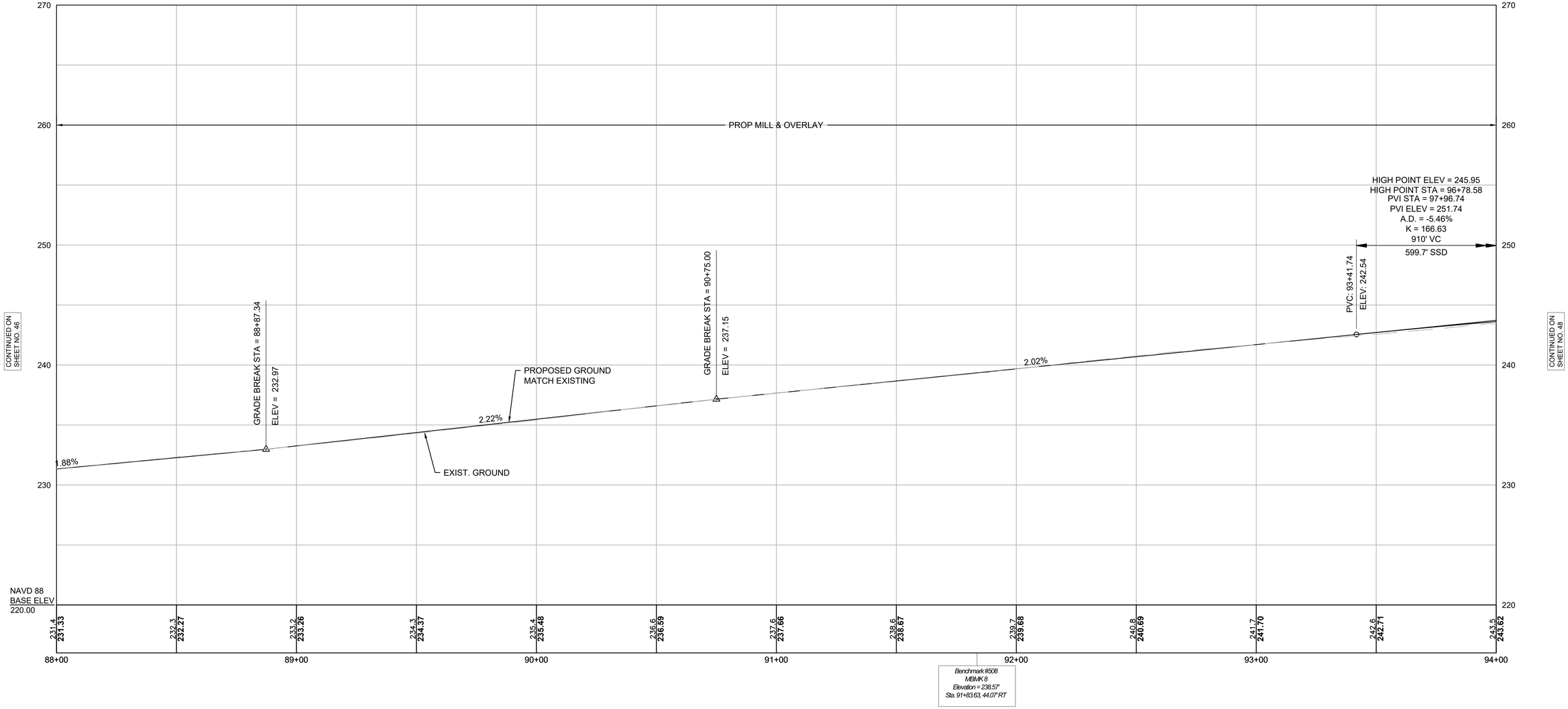
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	47	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 5 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:28 AM

PROP ROUTE 24 NB



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 31-32

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

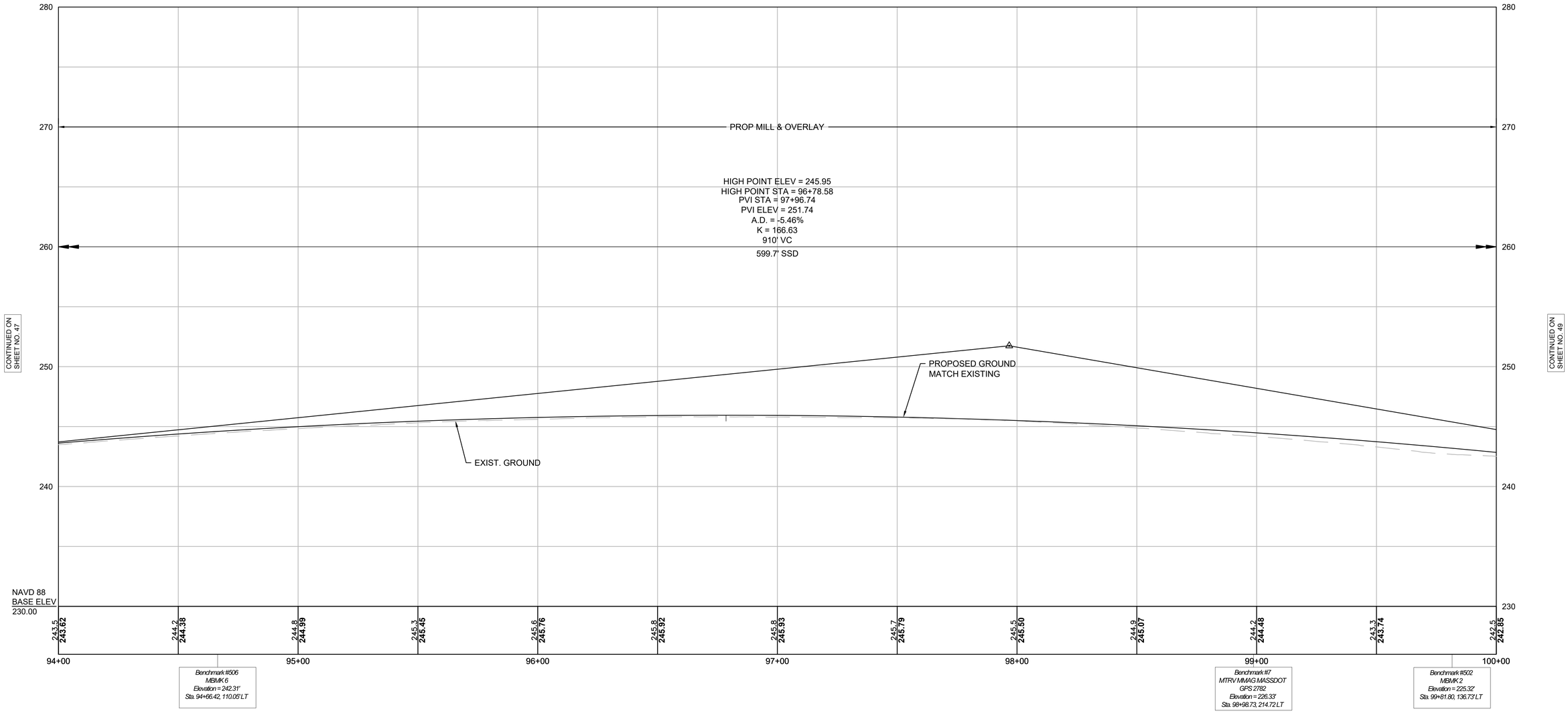
NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	48	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 6 OF 22

PROP ROUTE 24 NB



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 32-33

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:28 AM

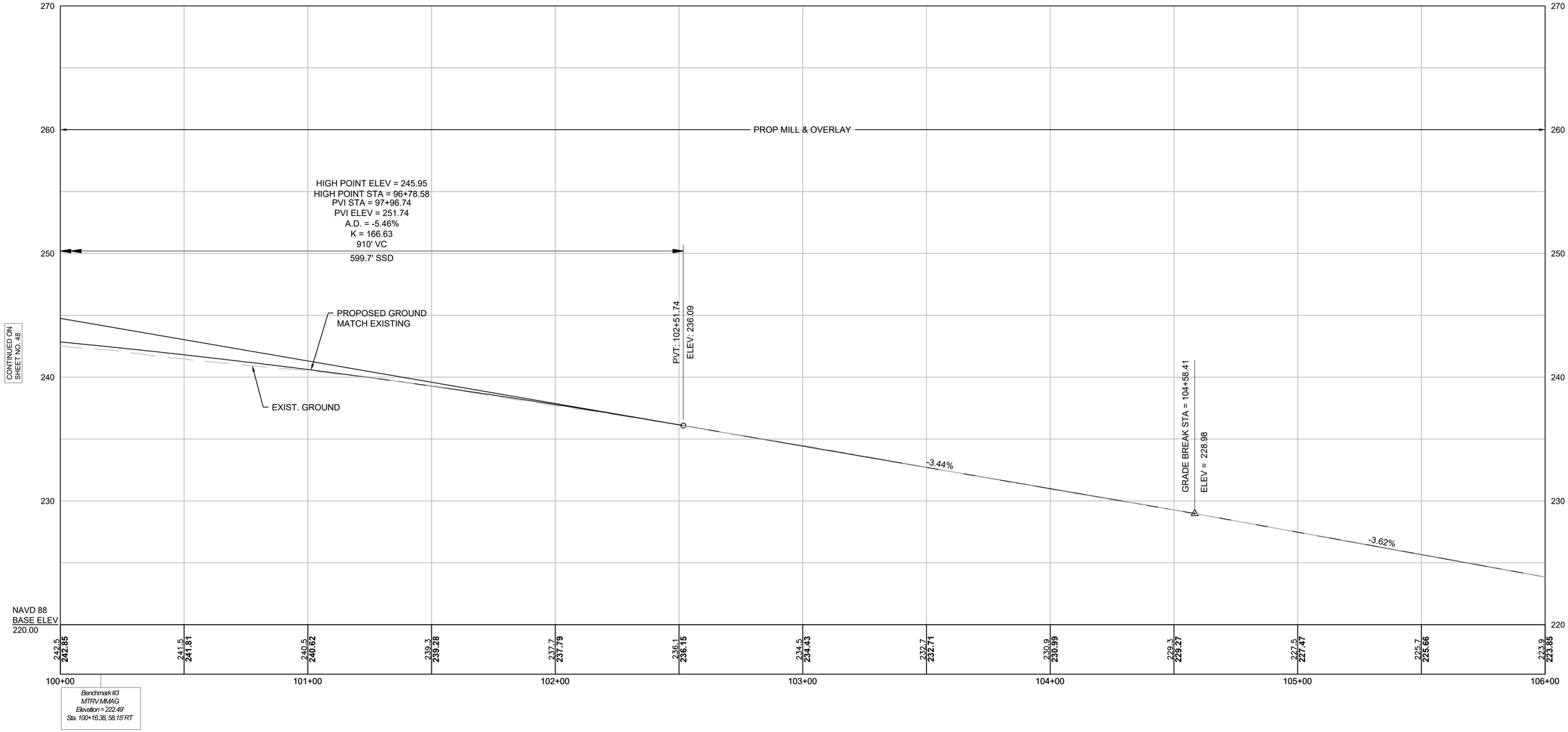
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	49	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 7 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:28 AM

PROP ROUTE 24 NB



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 33-34

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

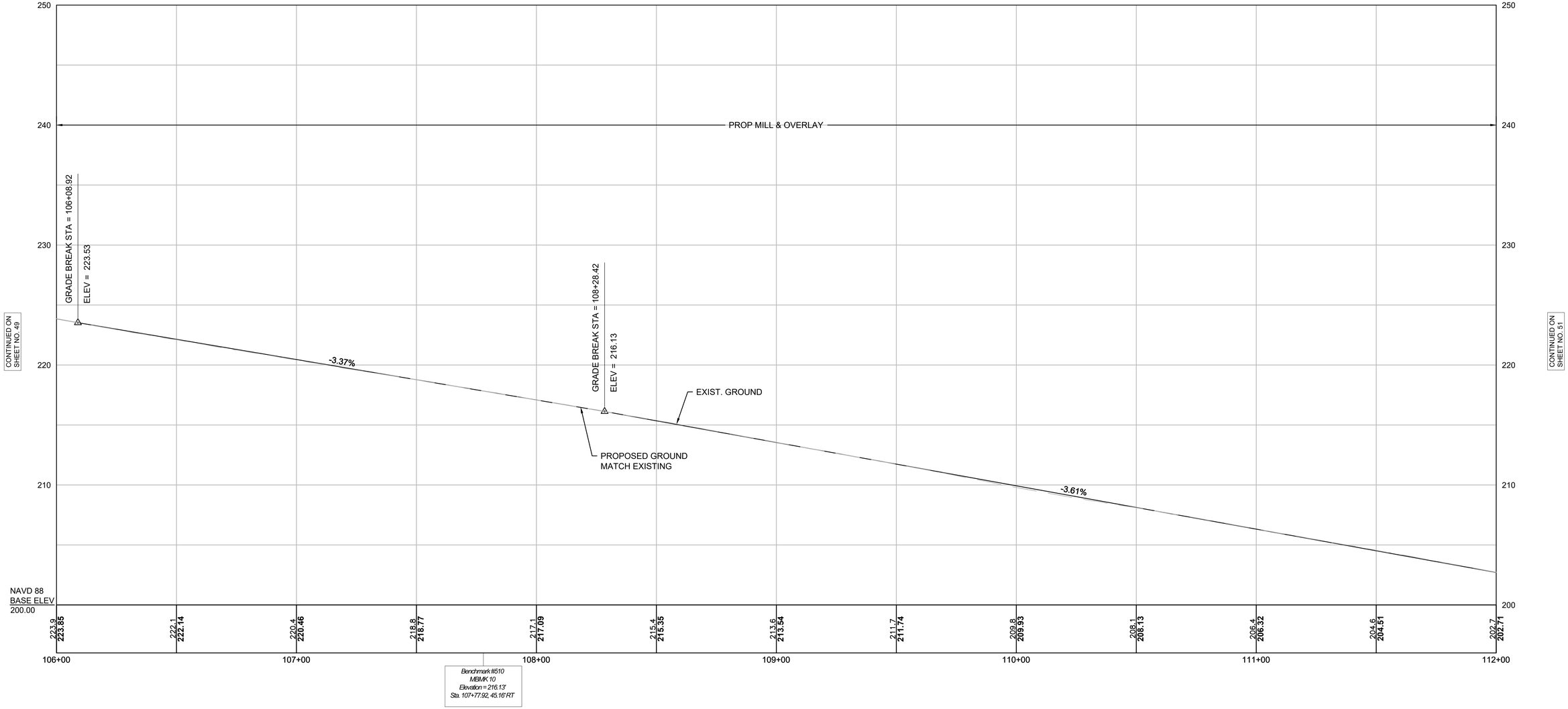
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	50	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 8 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:28 AM

PROP ROUTE 24 NB



FOR CONSTRUCTION PLAN:
SEE SHEET NO. 34-35

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

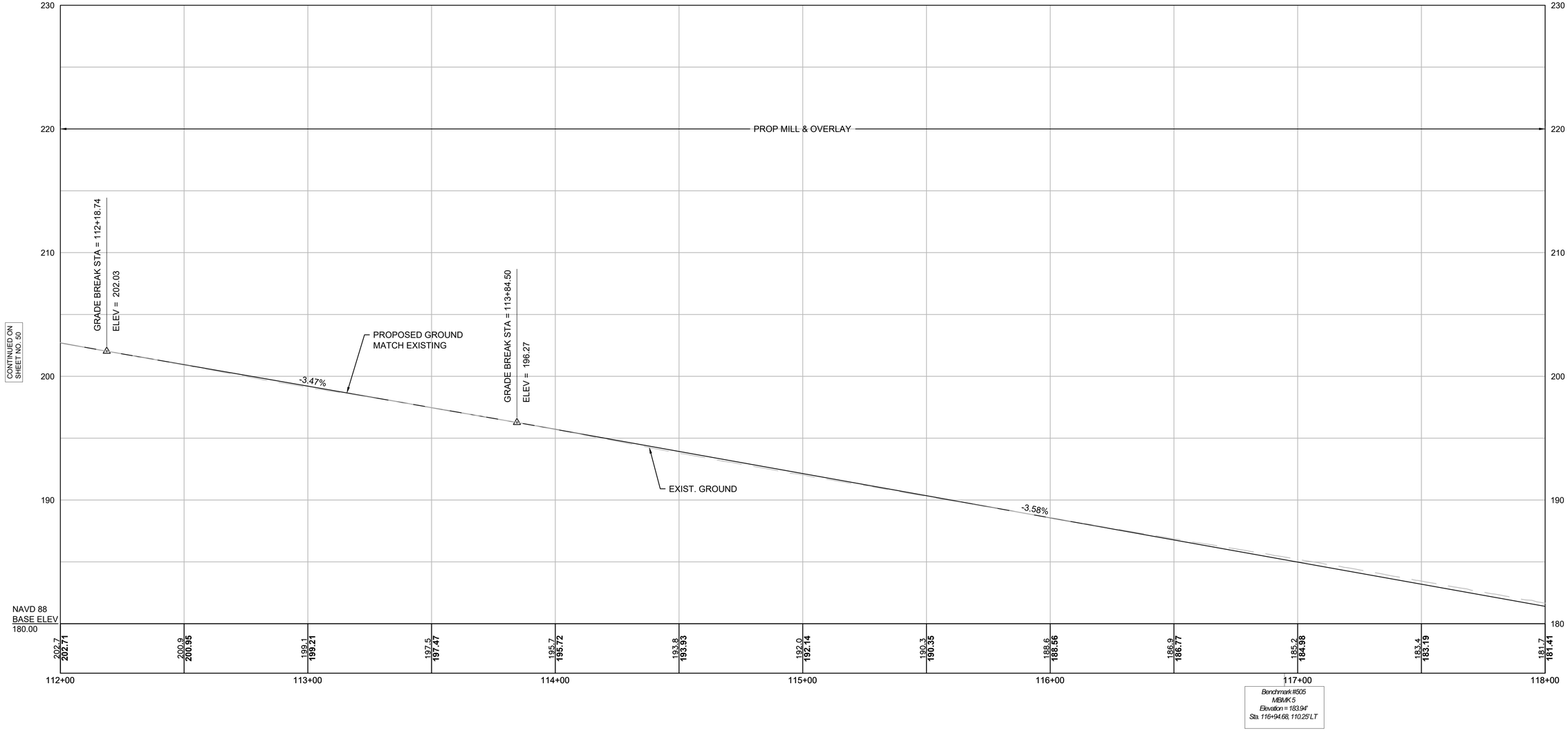
NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	51	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 9 OF 22

PROP ROUTE 24 NB



FOR CONSTRUCTION PLAN:
SEE SHEET NO. 35-36

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:29 AM

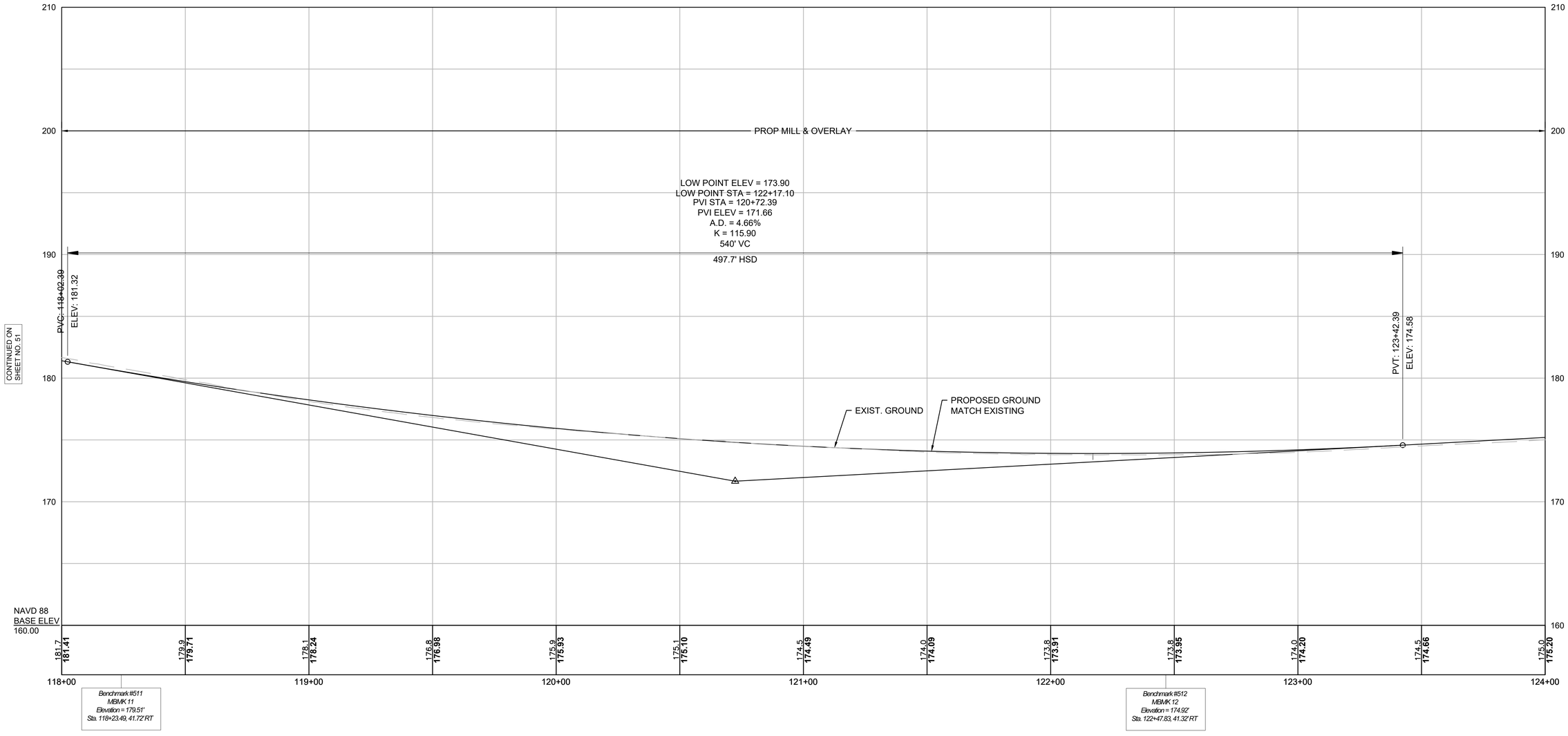
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	52	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 10 OF 22

612188_HD\PROFILES\.DWG Plotted on 26-Aug-2022 11:29 AM

PROP ROUTE 24 NB



FOR CONSTRUCTION PLAN:
SEE SHEET NO. 37

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

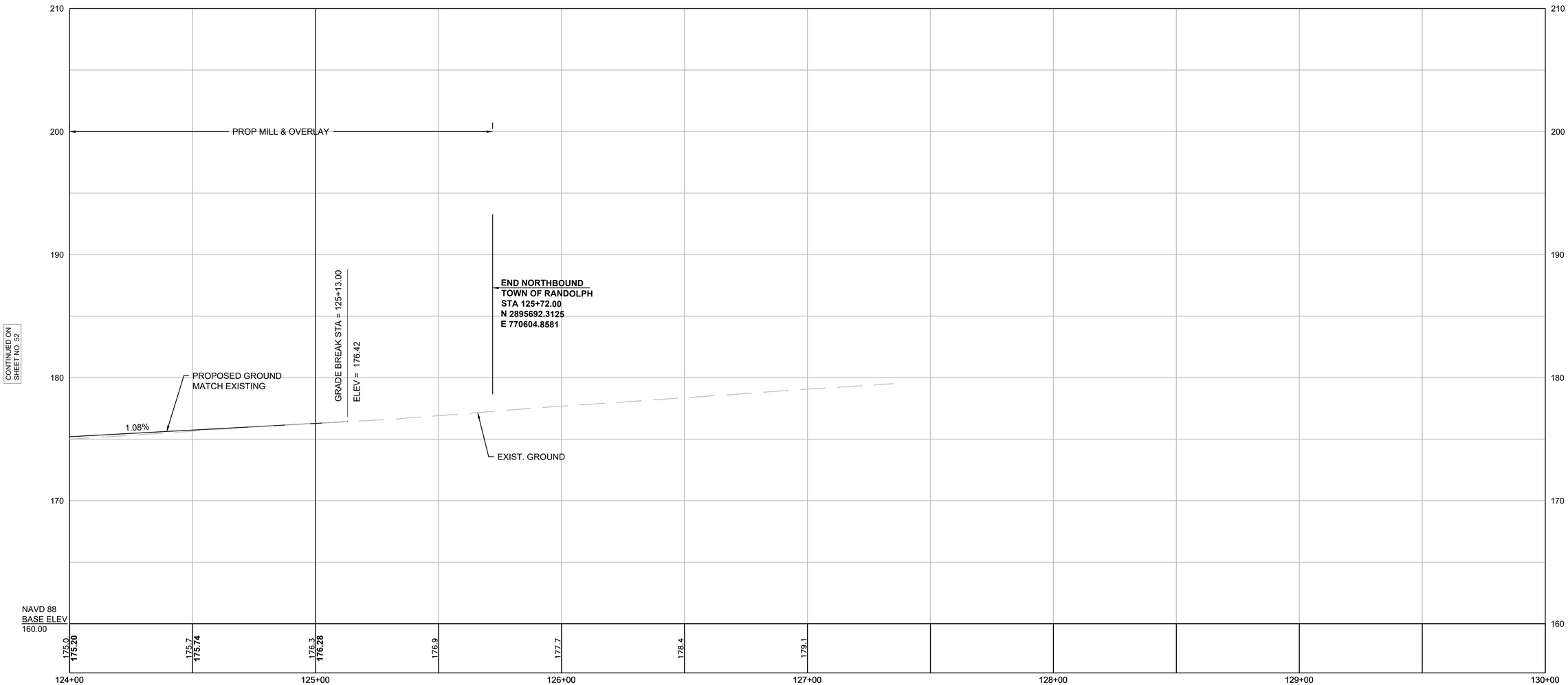
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	53	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 11 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:29 AM

PROP ROUTE 24 NB



FOR CONSTRUCTION PLAN:
SEE SHEET NO. 38

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

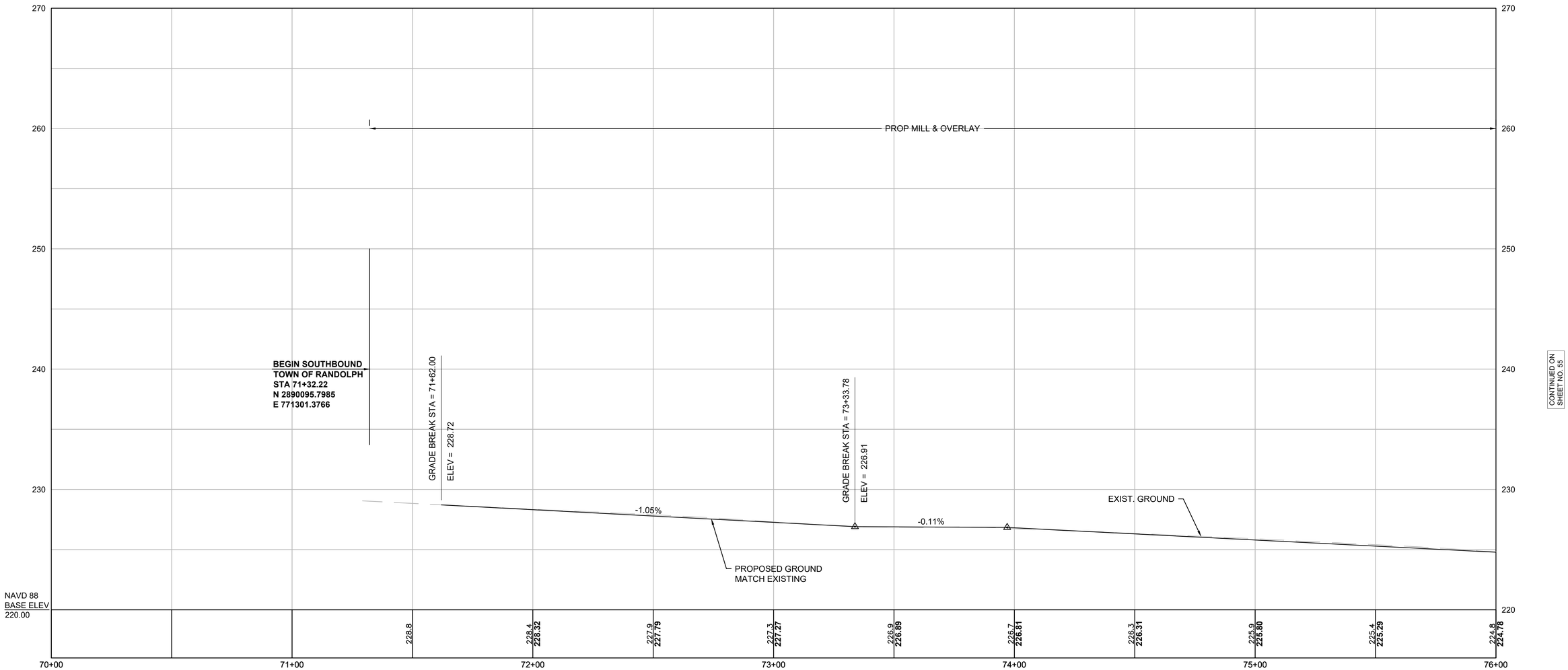
NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	54	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 12 OF 22

PROP ROUTE 24 SB



FOR CONSTRUCTION PLAN:
SEE SHEET NO. 27-28

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

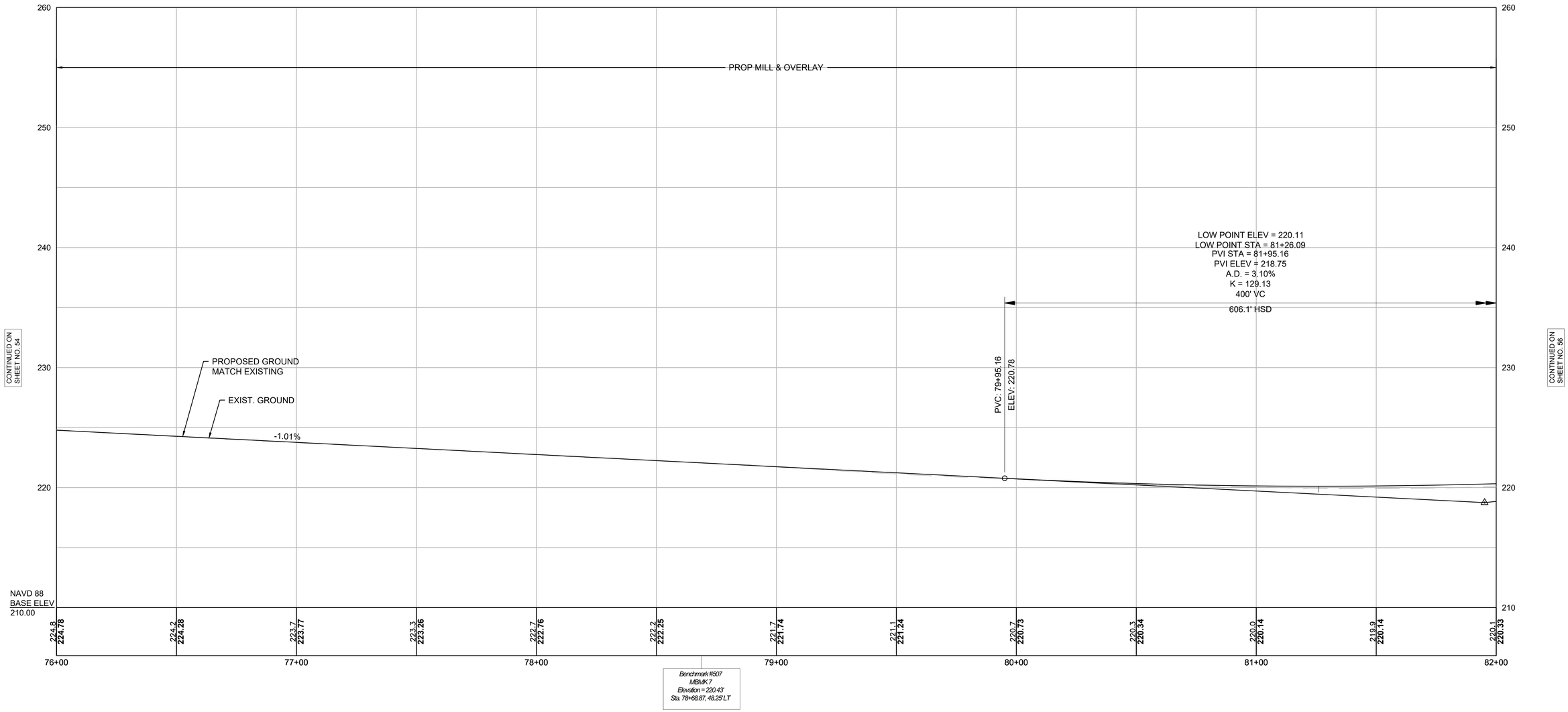
612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:29 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	55	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 13 OF 22

PROP ROUTE 24 SB



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 29

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

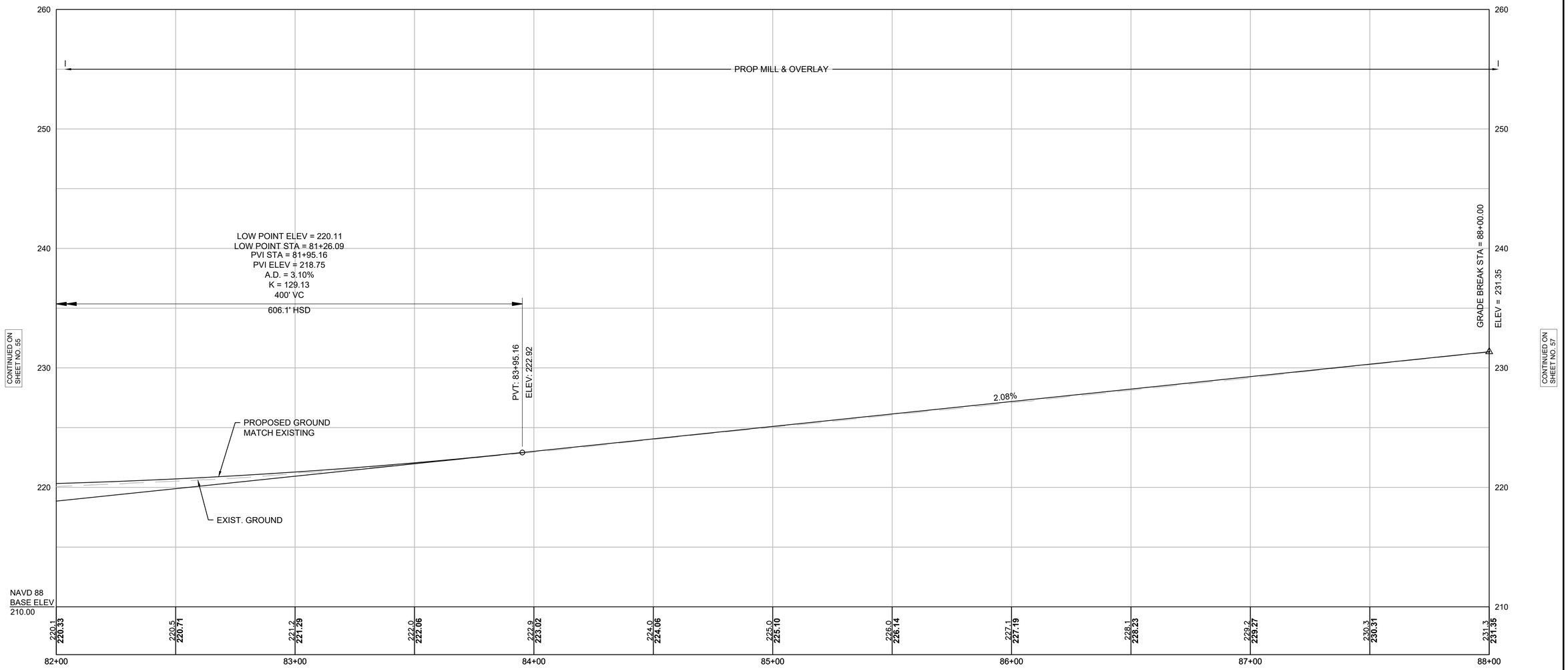
612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:29 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	56	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 14 OF 22

PROP ROUTE 24 SB



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 30

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

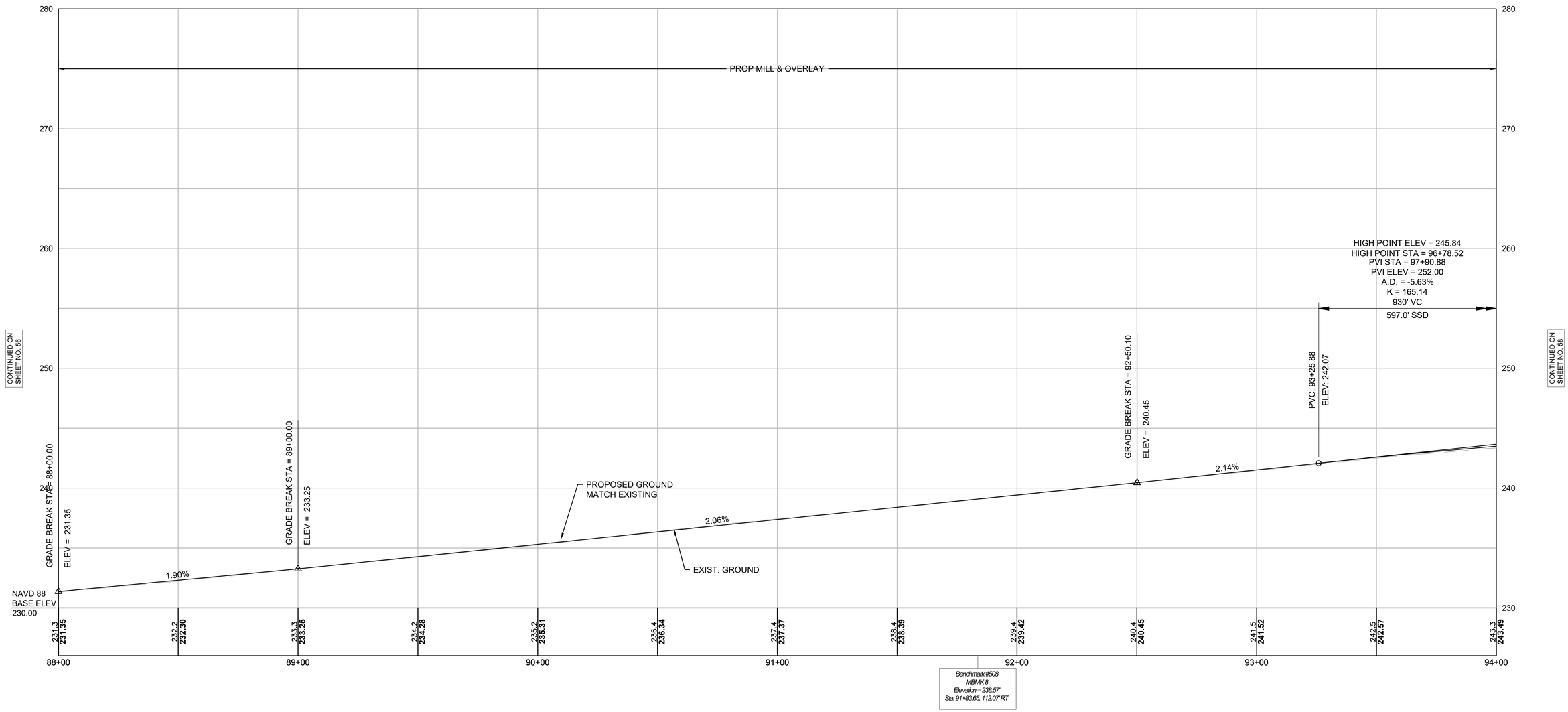
612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:29 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	57	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 15 OF 22

PROP ROUTE 24 SB



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 31-32

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

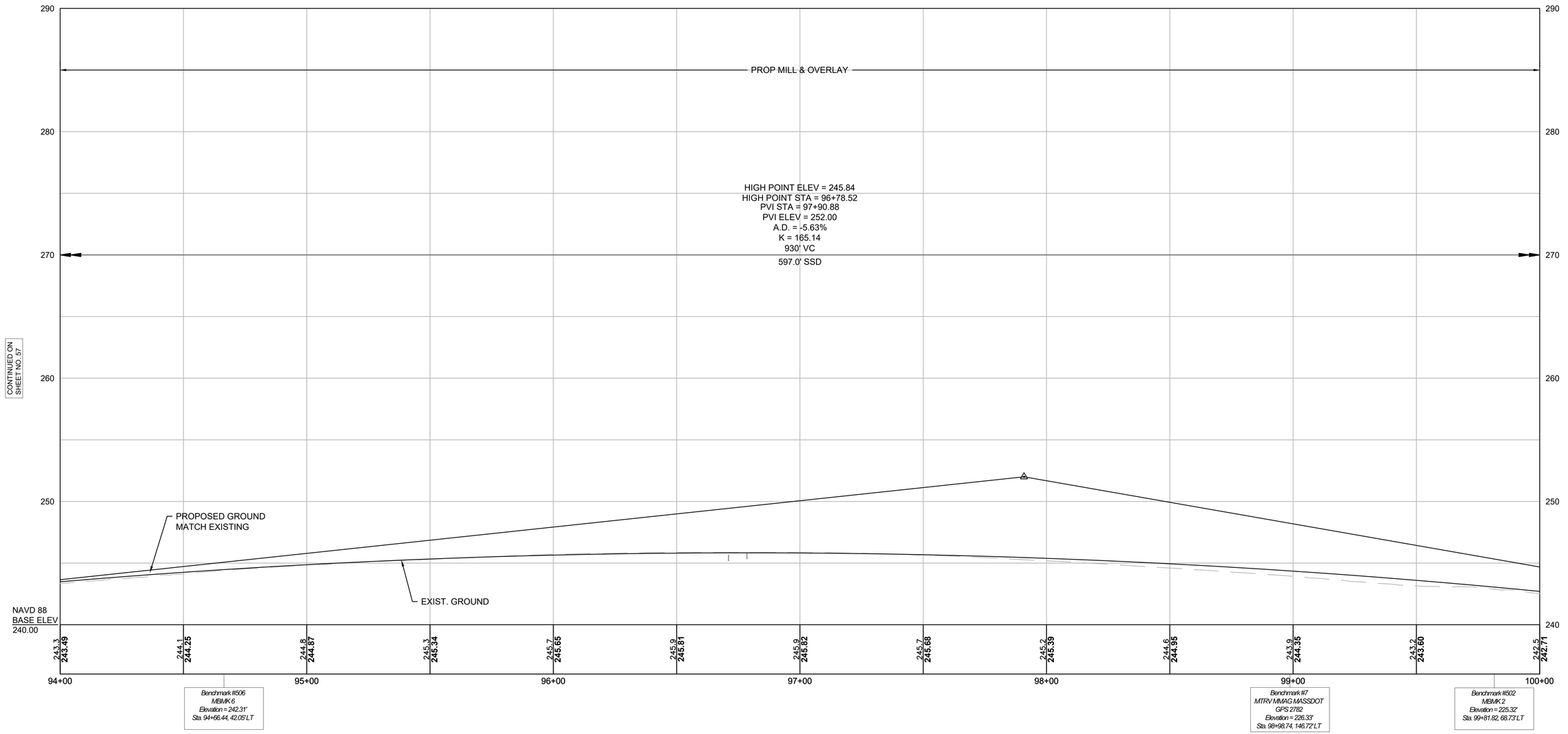
612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:29 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	58	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 16 OF 22

PROP ROUTE 24 SB



CONTINUED ON SHEET NO. 57

CONTINUED ON SHEET NO. 59

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 32-33

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:29 AM

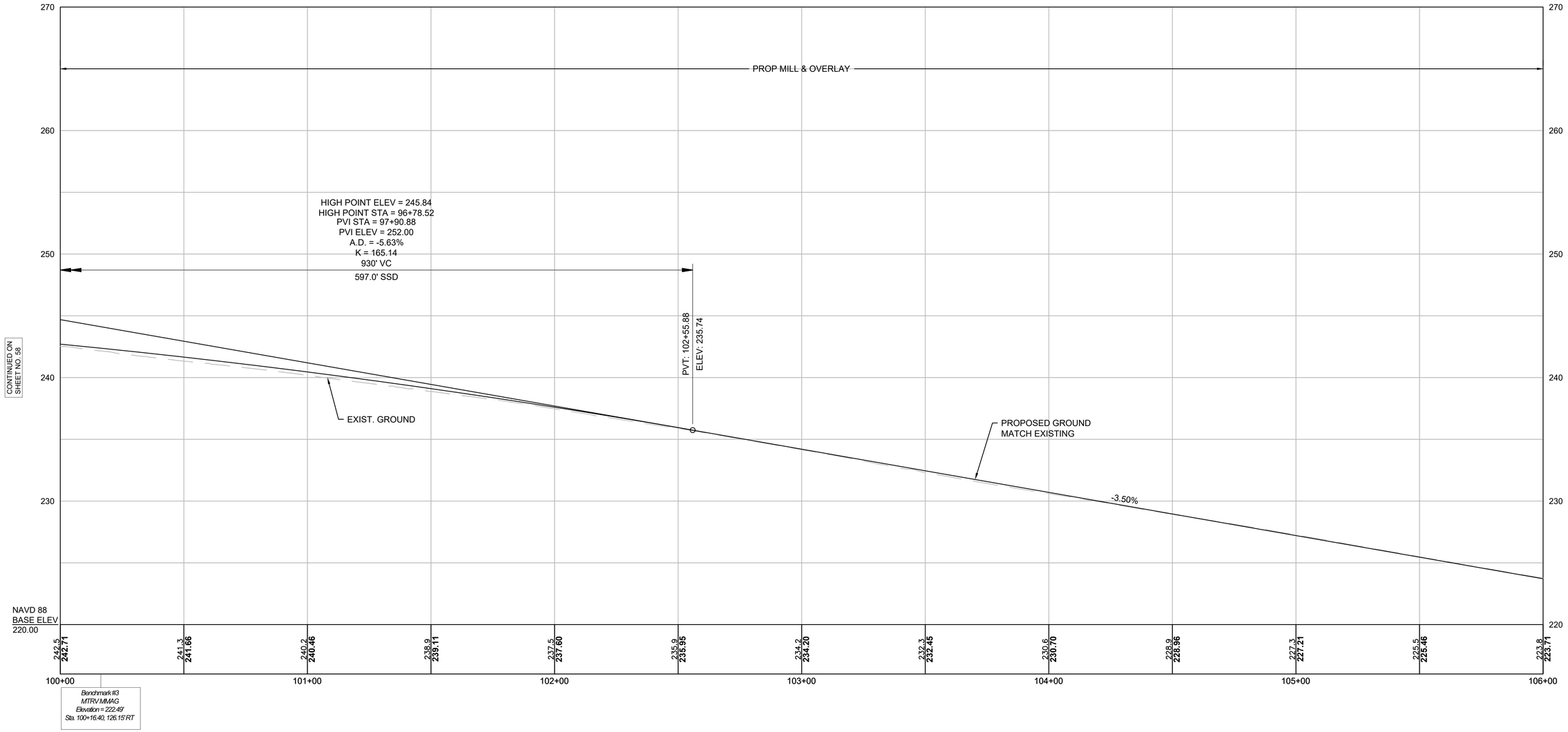
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	59	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 17 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:29 AM

PROP ROUTE 24 SB



FOR CONSTRUCTION PLAN:
SEE SHEET NO. 33-34

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

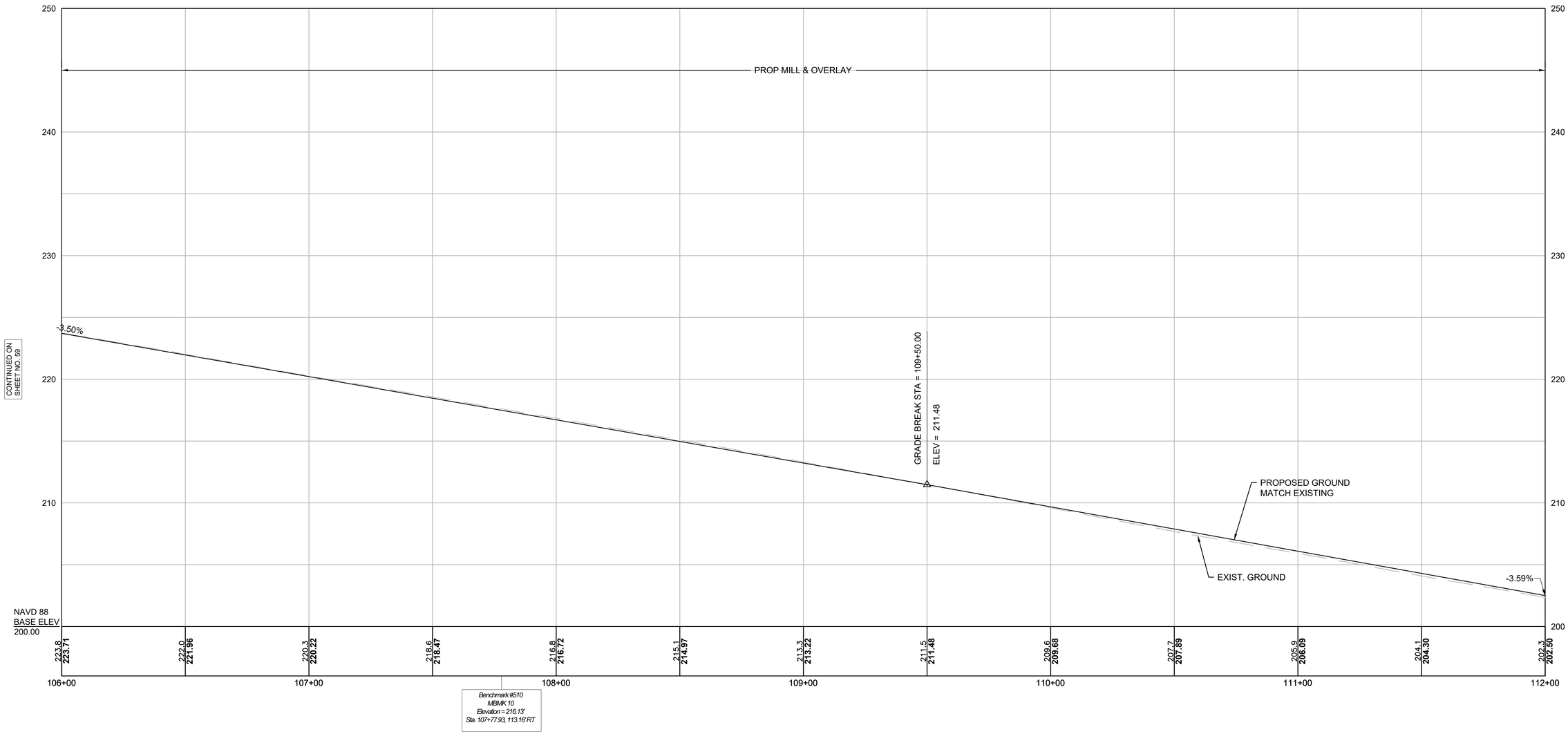
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	60	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 18 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:30 AM

PROP ROUTE 24 SB



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 34-35

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

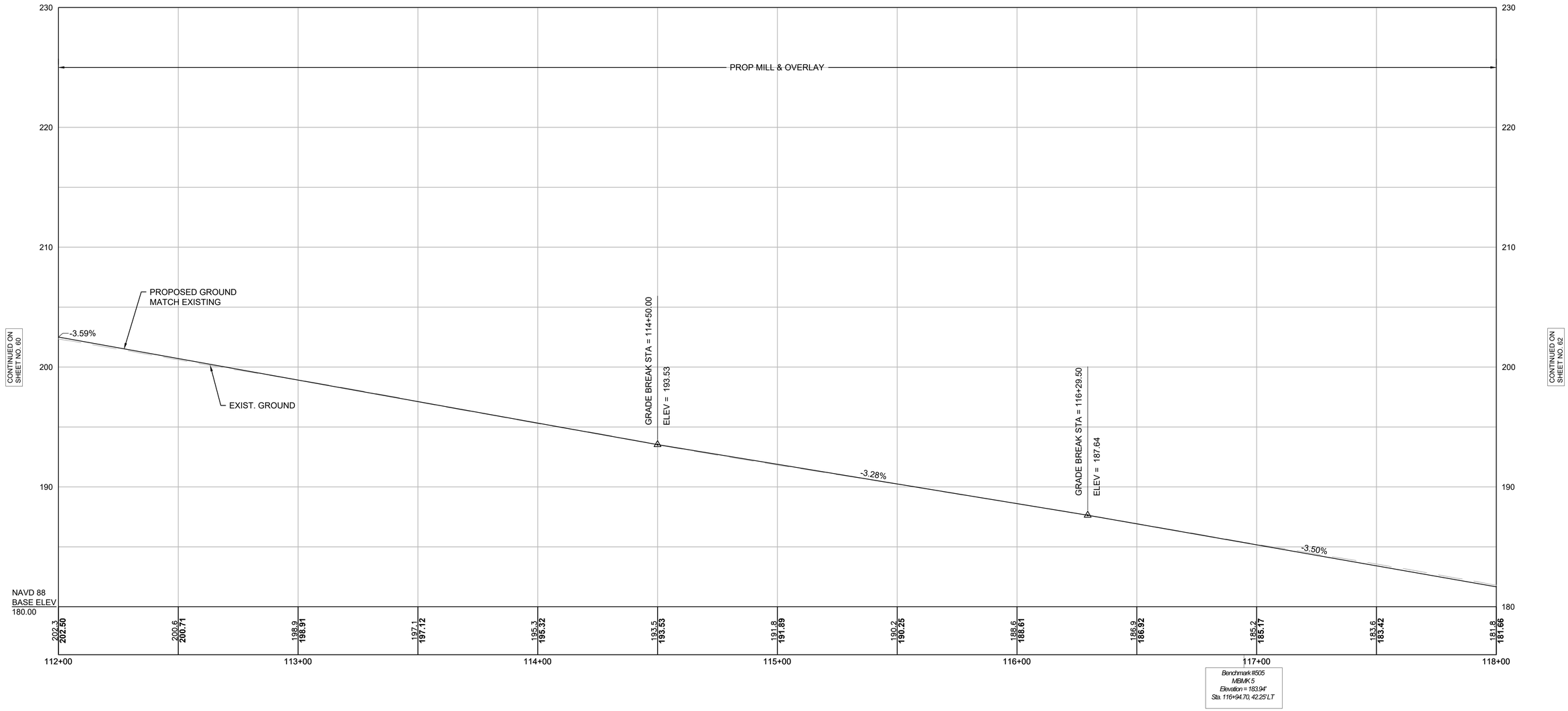
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	61	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 19 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:30 AM

PROP ROUTE 24 SB



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 35-36

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

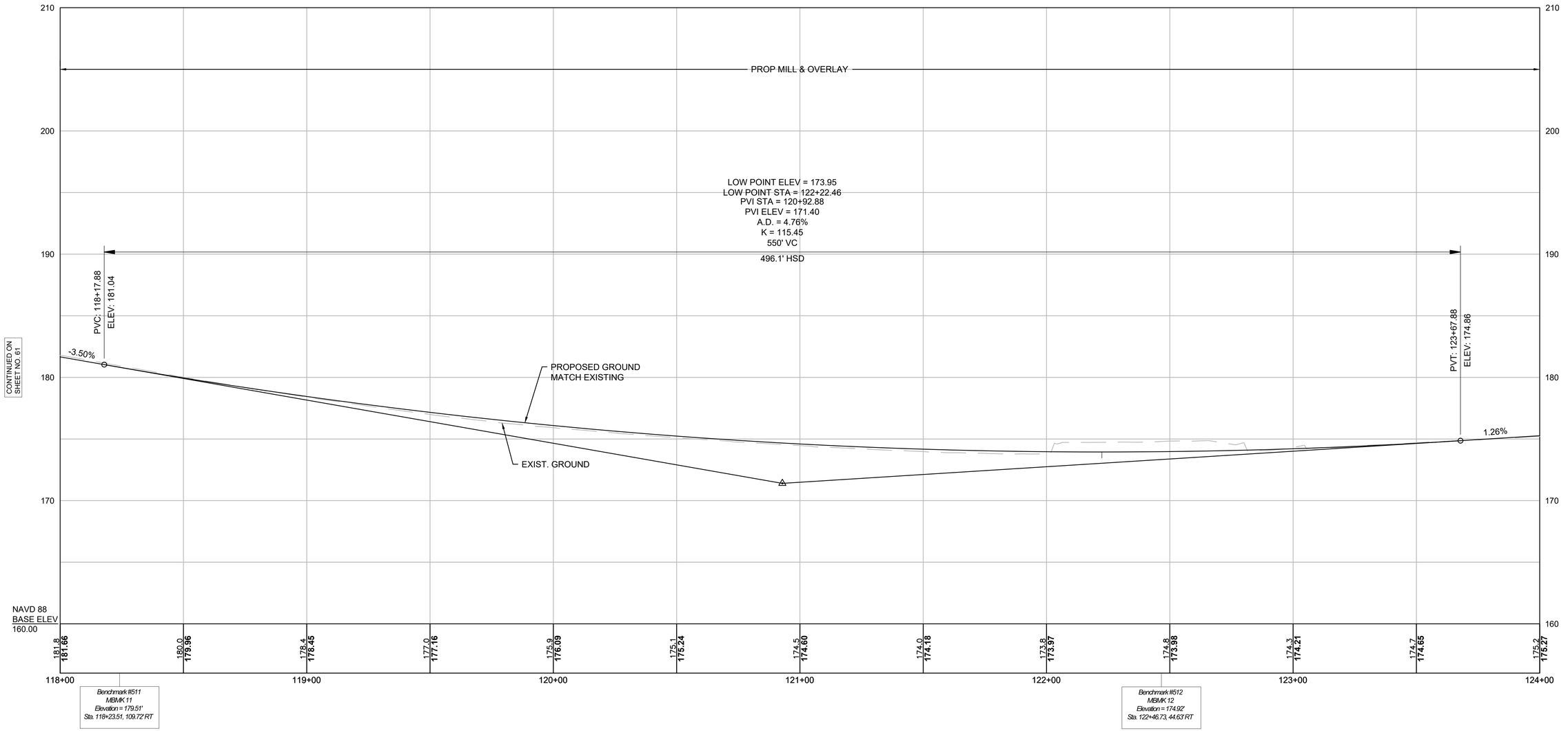
NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	62	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 20 OF 22

PROP ROUTE 24 SB



FOR CONSTRUCTION PLAN:
SEE SHEET NO. 37

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:30 AM

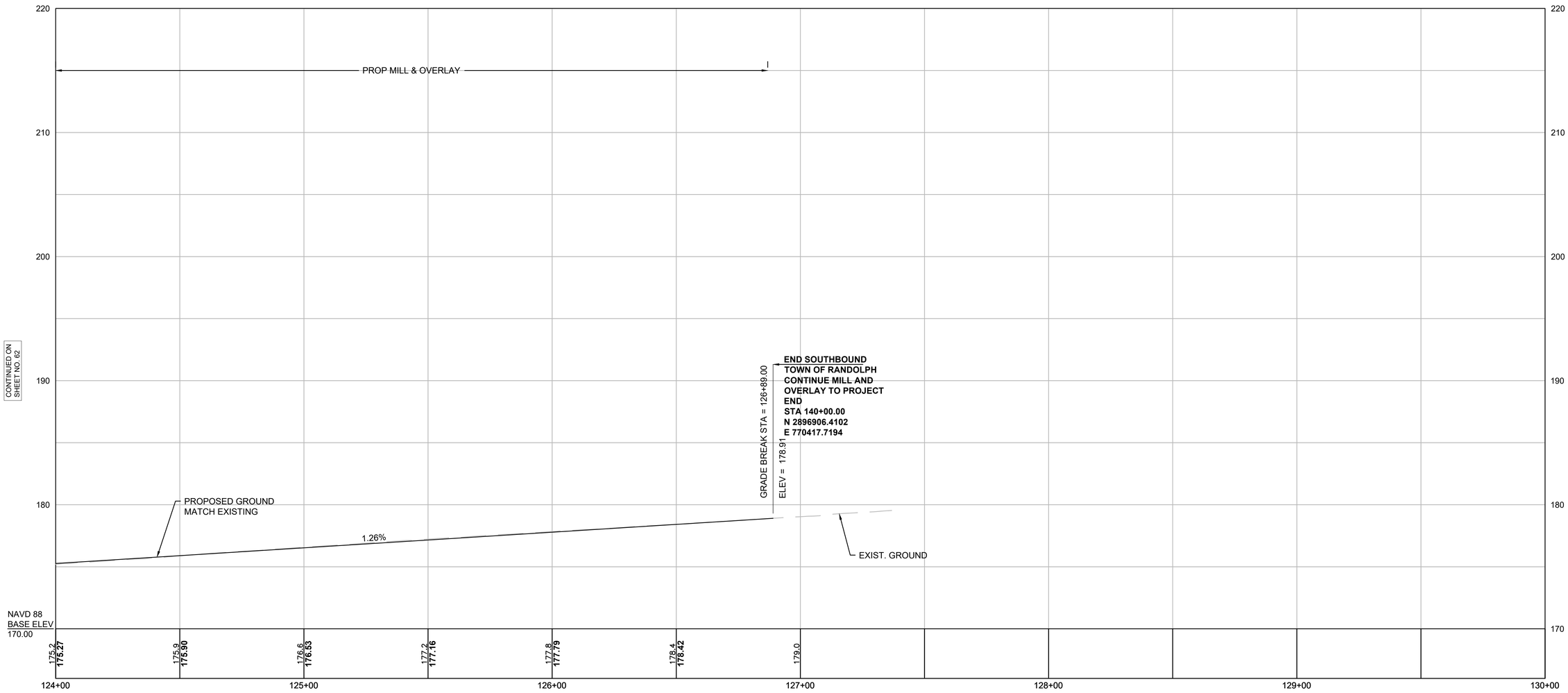
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	63	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 21 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:30 AM

PROP ROUTE 24 SB



FOR CONSTRUCTION PLAN:
SEE SHEET NO. 38

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

NOTE:
ALL WORK ALONG ROUTE 24 OVER CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

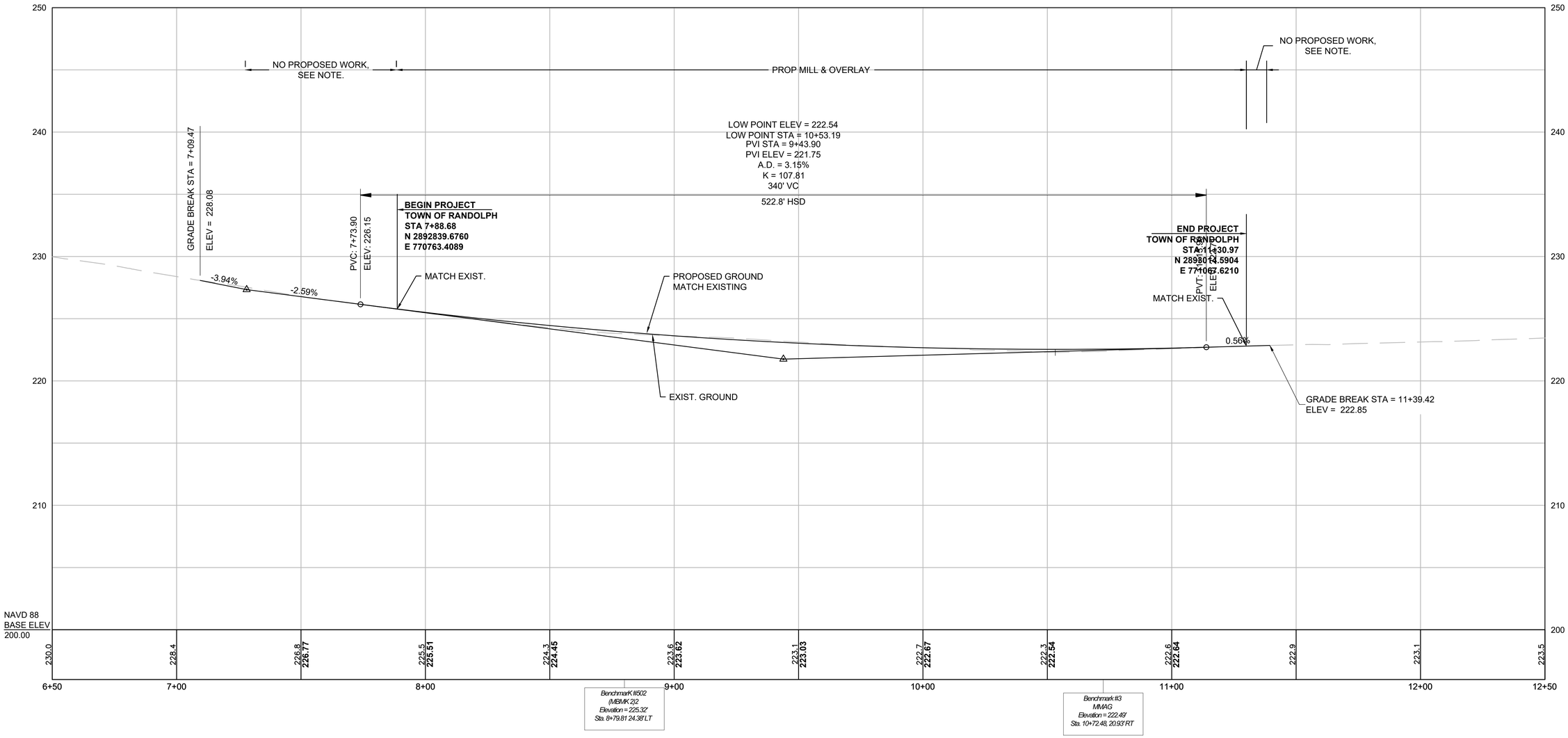
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	64	189
PROJECT FILE NO.	612188		

PROFILES
SHEET 22 OF 22

612188_HD(PROFILES).DWG Plotted on 26-Aug-2022 11:30 AM

PROP CANTON STREET



FOR CONSTRUCTION PLAN:
SEE SHEET NO. 42

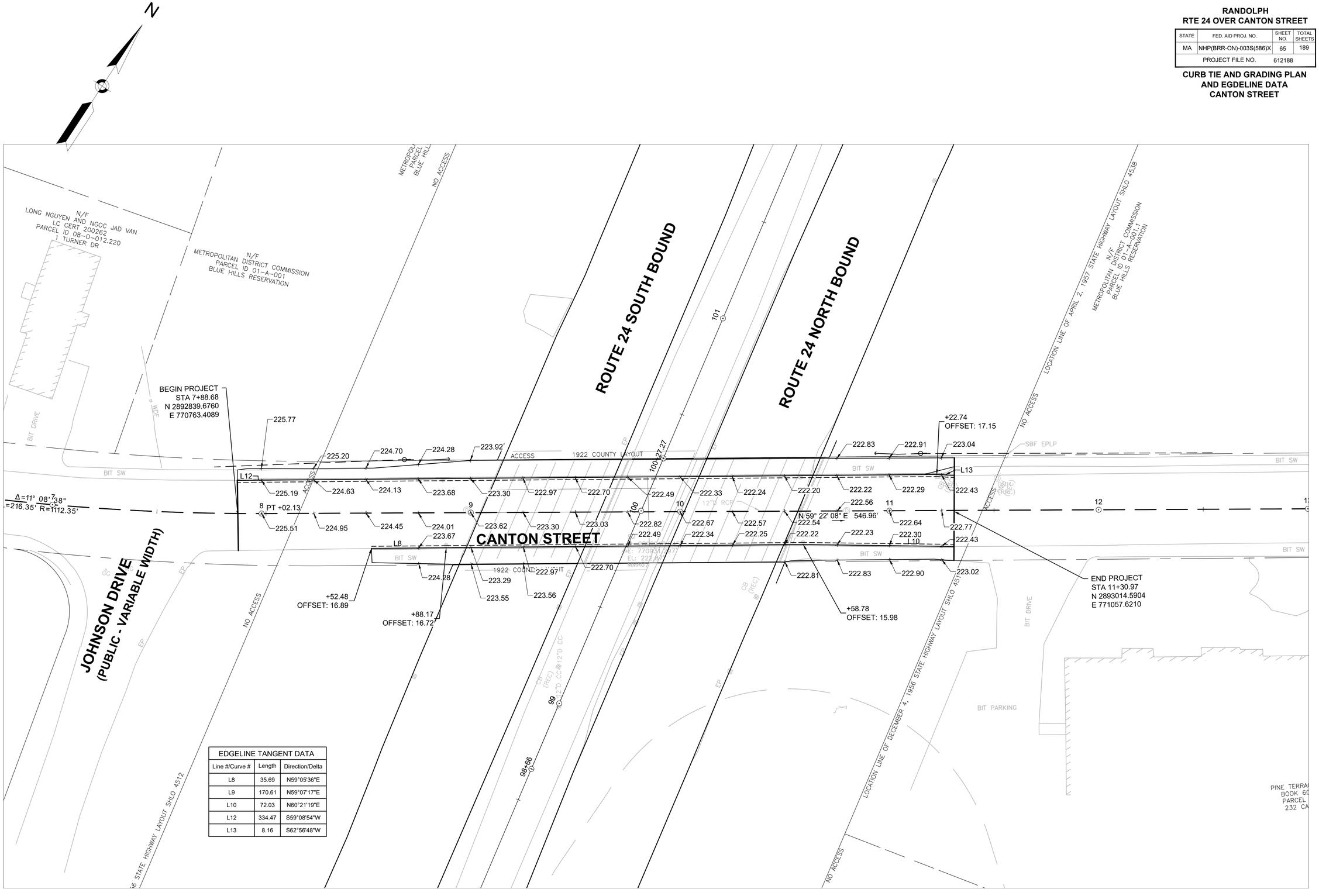
HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

NOTE:
ALL WORK ALONG CANTON STREET CONSISTS OF MILL & OVERLAY. PROPOSED PROFILE DATA IS SHOWN FOR GENERAL INFORMATION PURPOSES ONLY. EXISTING GRADES SHALL BE MAINTAINED.

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	65	189
	PROJECT FILE NO.	612188	

CURB TIE AND GRADING PLAN AND EGDELINE DATA CANTON STREET



EDGELINE TANGENT DATA		
Line #/Curve #	Length	Direction/Delta
L8	35.69	N59°05'36"E
L9	170.61	N59°07'17"E
L10	72.03	N60°21'19"E
L12	334.47	S59°08'54"W
L13	8.16	S62°56'48"W

612188_HD(CURB TIE PLAN).DWG Plotted on 26-Aug-2022 11:30 AM

UTILITY NOTES

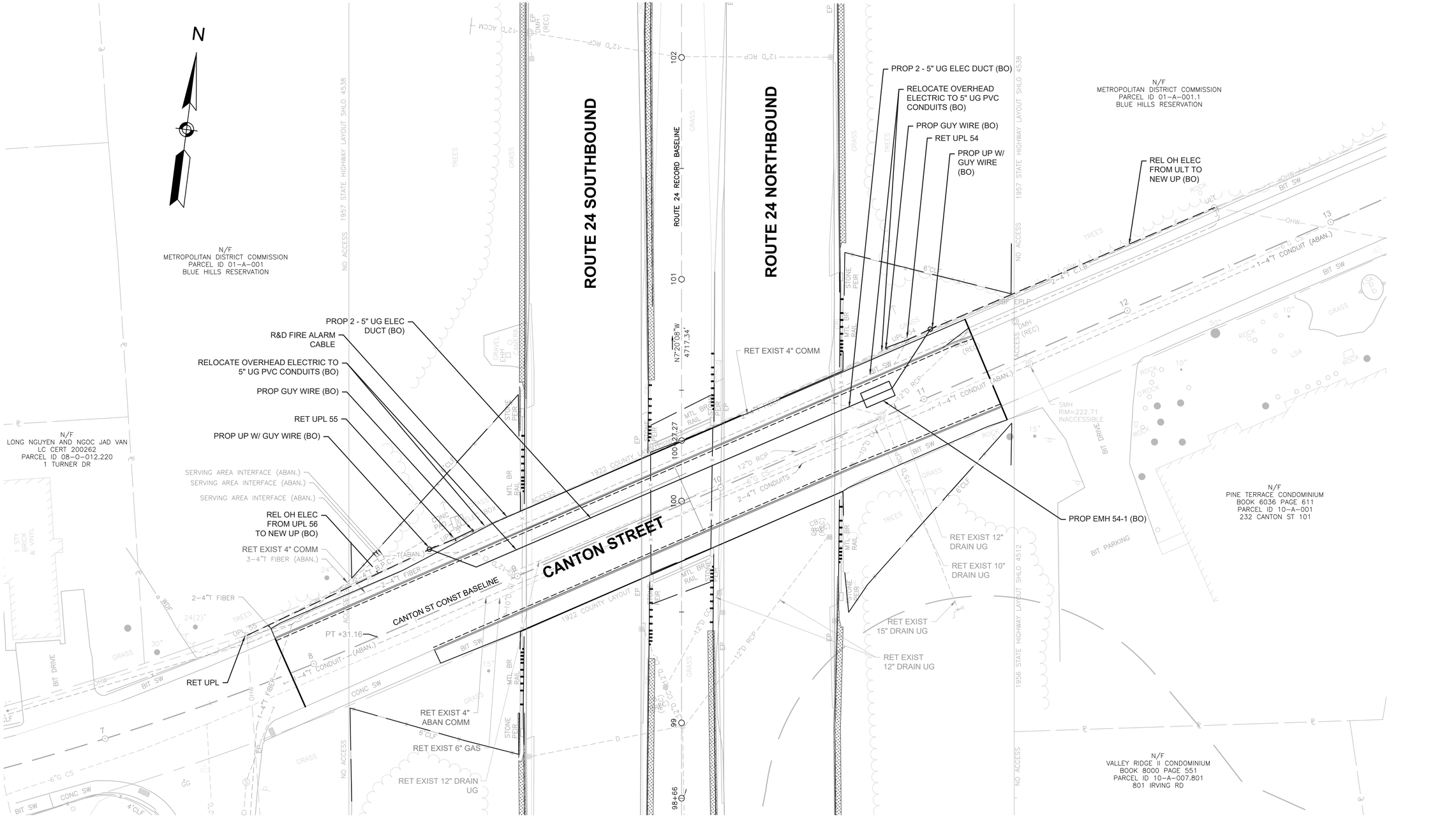
1. THE EXISTING OVERHEAD ELECTRIC LINES SHALL BE RELOCATED (BY OTHERS) TO ACCOMMODATE REPLACEMENT OF THE PROPOSED ROUTE 24 BRIDGE SUPERSTRUCTURE.
2. A NEW UTILITY POLE SHALL BE INSTALLED (BY OTHERS) AS SHOWN ON THIS PLAN. THIS UTILITY POLE WILL ACCOMMODATE THE RELOCATION OF THE AERIAL ELECTRIC LINES TO UNDERGROUND 5-INCH DIAMTER DUCTS VIA RISERS ON THIS POLE.
3. ALL EXISTING UTILITY POLES SHALL BE MAINTAINED.
4. FINAL LAYOUT OF PROPOSED DUCTS, HANDHOLES, AND ANY OTHER NECESSARY APPURTENANCES SHALL BE DETERMINED BY THE RESPONSIBLE UTILITY.
5. FIRE ALARM CABLE TO BE REMOVED AND DISPOSED BETWEEN UTILITY POLES 54 AND 55.

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	66	186
PROJECT FILE NO.	612188		

UTILITY PLAN
CANTON STREET

612188_UT(UTILITY PLAN).DWG Plotted on 26-Aug-2022 11:30 AM



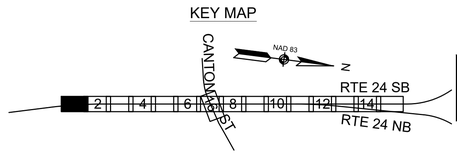
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	67	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 1 OF 16

N/F
ALLIED WASTE INDUSTRIES INC
LC CERT 115368
PARCEL ID 27-A-005
JONES LN

1956 STATE HIGHWAY LAYOUT SHLO 451

E 771250
N 2889500
E 771250
N 2889750

N

BEGIN SOUTHBOUND
TOWN OF RANDOLPH
STA 71+32.22
N 2890095.7985
E 771301.3766

E 771250
N 2890000

MEET EXIST PAVEMENT MARKINGS

ROUTE 24 SOUTHBOUND

ROUTE 24 SOUTHBOUND CONST BASELINE

ROUTE 24 RECORD BASELINE

ROUTE 24 NORTHBOUND CONST BASELINE

66 67 68 69 70 71

PROP RUMBLE STRIP (TYPE A) (TYP)

2'

6" SYL

6" BWL

6" BWL

6" SWL

12' 12' 12'

ROUTE 24 NORTHBOUND

PROP RUMBLE STRIP (TYPE A) (TYP)

CONTINUED ON SHEET NO. 68

BEGIN NORTHBOUND
TOWN OF RANDOLPH
STA 67+48.00
N 2889722.0192
E 771390.6418

E 771500
N 2889750

1956 STATE HIGHWAY LAYOUT SHLO 4512

BIT

ANDERSON DRIVE

0 20 50 100
SCALE: 1" = 20'

612188_HDI(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:30 AM

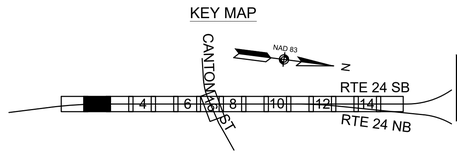
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	68	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 2 OF 16

N/F
ALLIED WASTE INDUSTRIES INC
LC CERT 115368
PARCEL ID 27-A-005
JONES LN

1956 STATE HIGHWAY LAYOUT SHLO 4512

NO ACCESS

N

BEGIN SOUTHBOUND
TOWN OF RANDOLPH
STA 71+32.22
N 2890095.7985
E 771301.3766

MEET EXIST PAVEMENT MARKINGS

ROUTE 24 SOUTHBOUND

PROP RUMBLE STRIP (TYPE A) (TYP)

ROUTE 24 SOUTHBOUND CONST BASELINE

PT +02.62

ROUTE 24 RECORD BASELINE

PT 752.61

ROUTE 24 NORTHBOUND CONST BASELINE

PT +02.60

ROUTE 24 NORTHBOUND

PROP RUMBLE STRIP (TYP)

CONTINUED ON SHEET NO. 67

CONTINUED ON SHEET NO. 69

ANDERSON DRIVE

NO ACCESS

N/F
84 AND 86 ANDERSON DR
CONDOMINIUM
LC CERT C163
PARCEL ID 27-B-003
84AND86 ANDERSON DR

N/F
BIV 109-140 YORK AVENUE LLC
LC CERT 203692
PARCEL ID 26-B-014.3
128 YORK AV

N/F
BIV 109-140 YORK AVENUE LLC
LC CERT 203692
PARCEL ID 26-B-014.3
128 YORK AV

0 20 50 100
SCALE: 1" = 20'

612188_HDI(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:31 AM

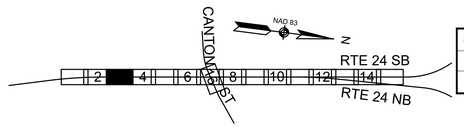
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

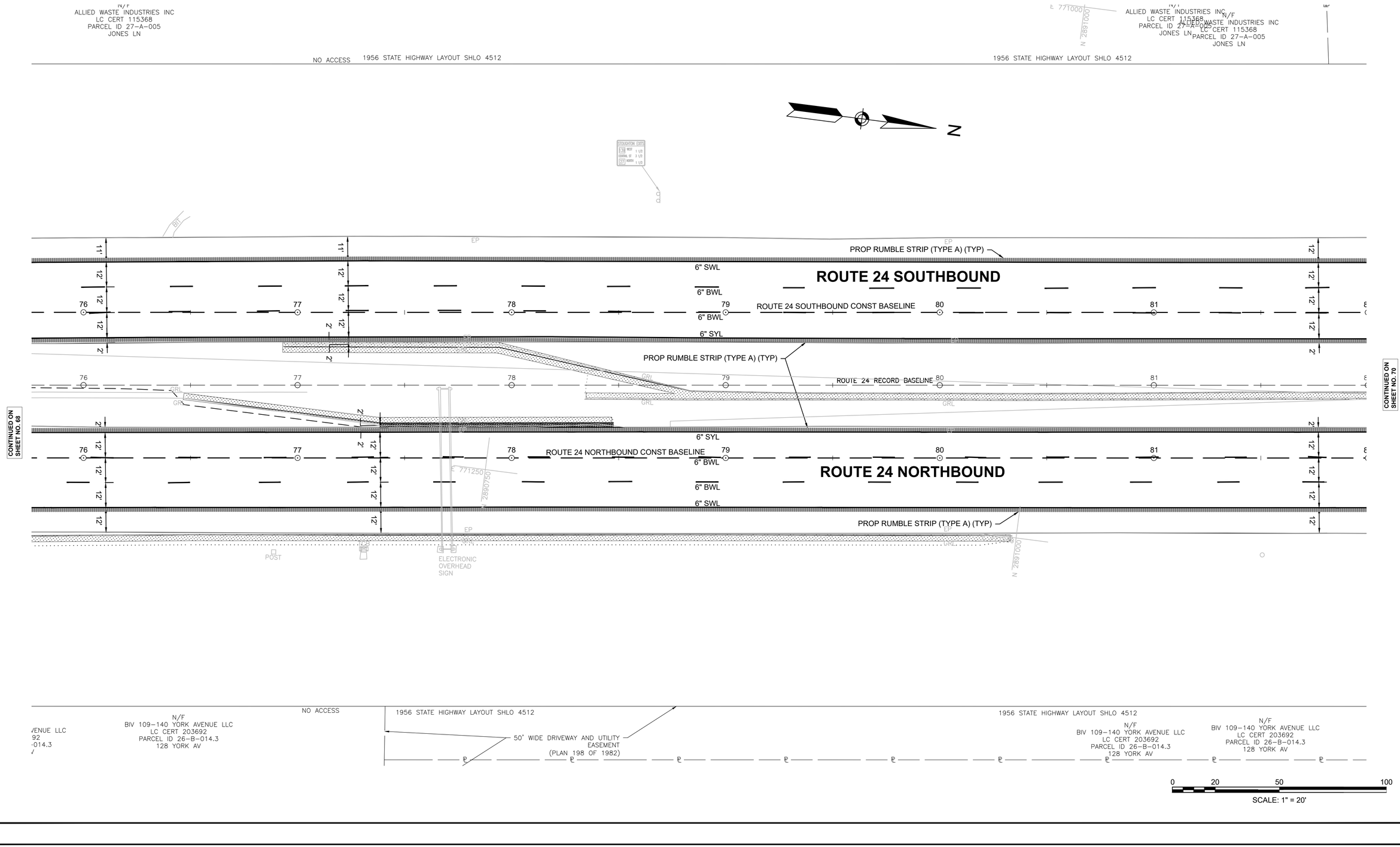
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	69	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 3 OF 16



612188_HDI(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:31 AM

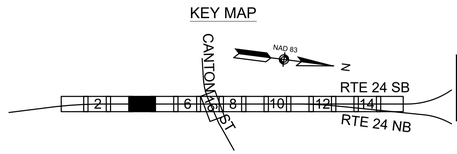
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

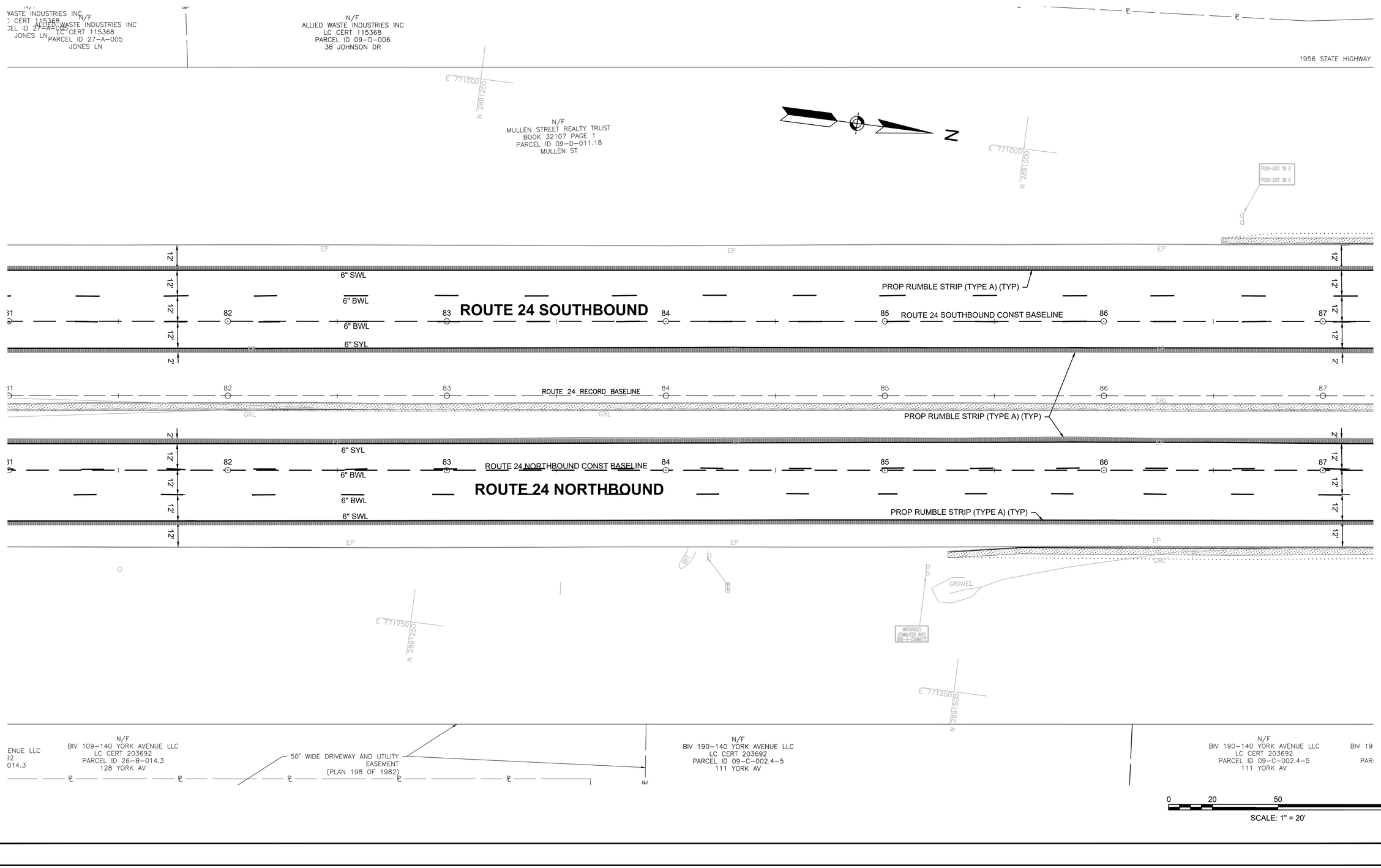
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	70	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 4 OF 16



612188_HDI(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:32 AM

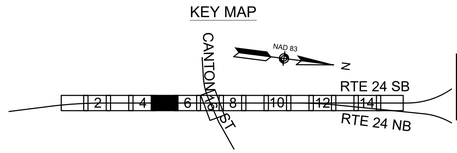
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

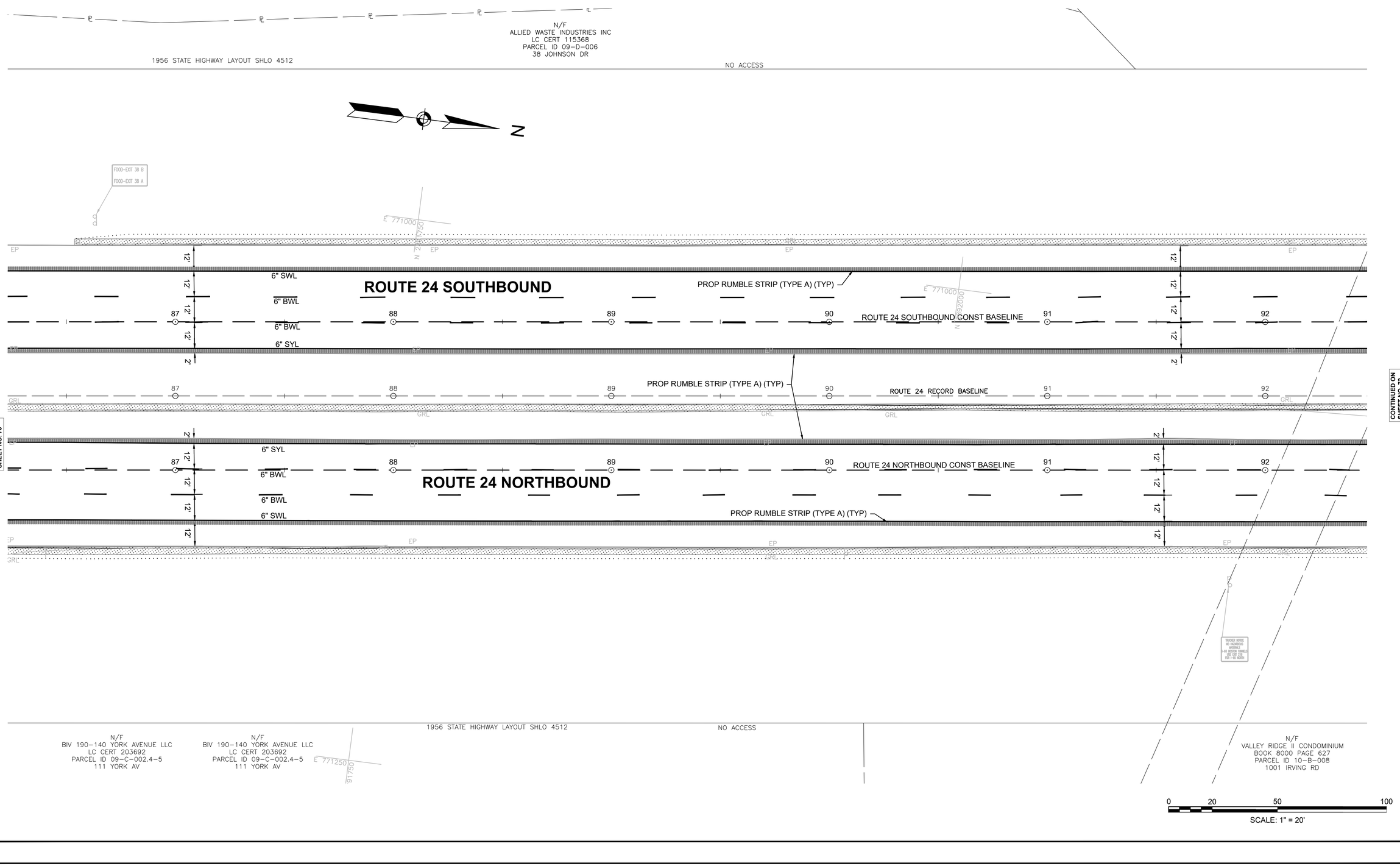
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	71	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 5 OF 16



612188_HDI(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:32 AM

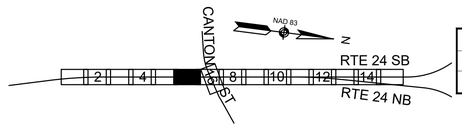
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

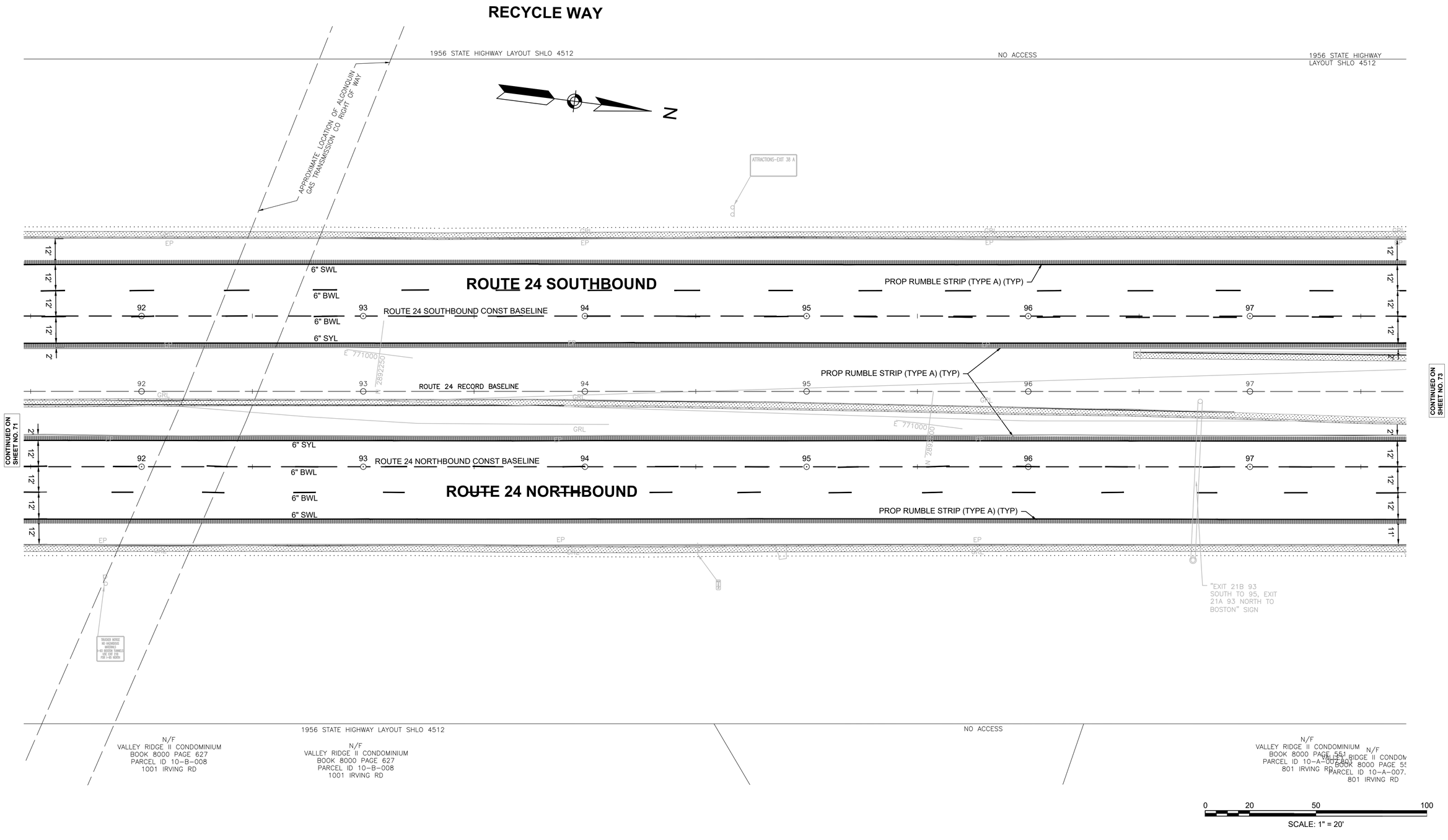
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	72	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 6 OF 16



612188_HD(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:33 AM

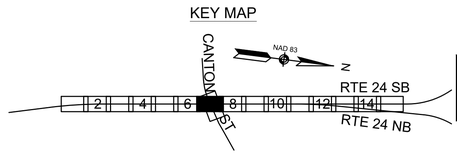
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

KEY MAP

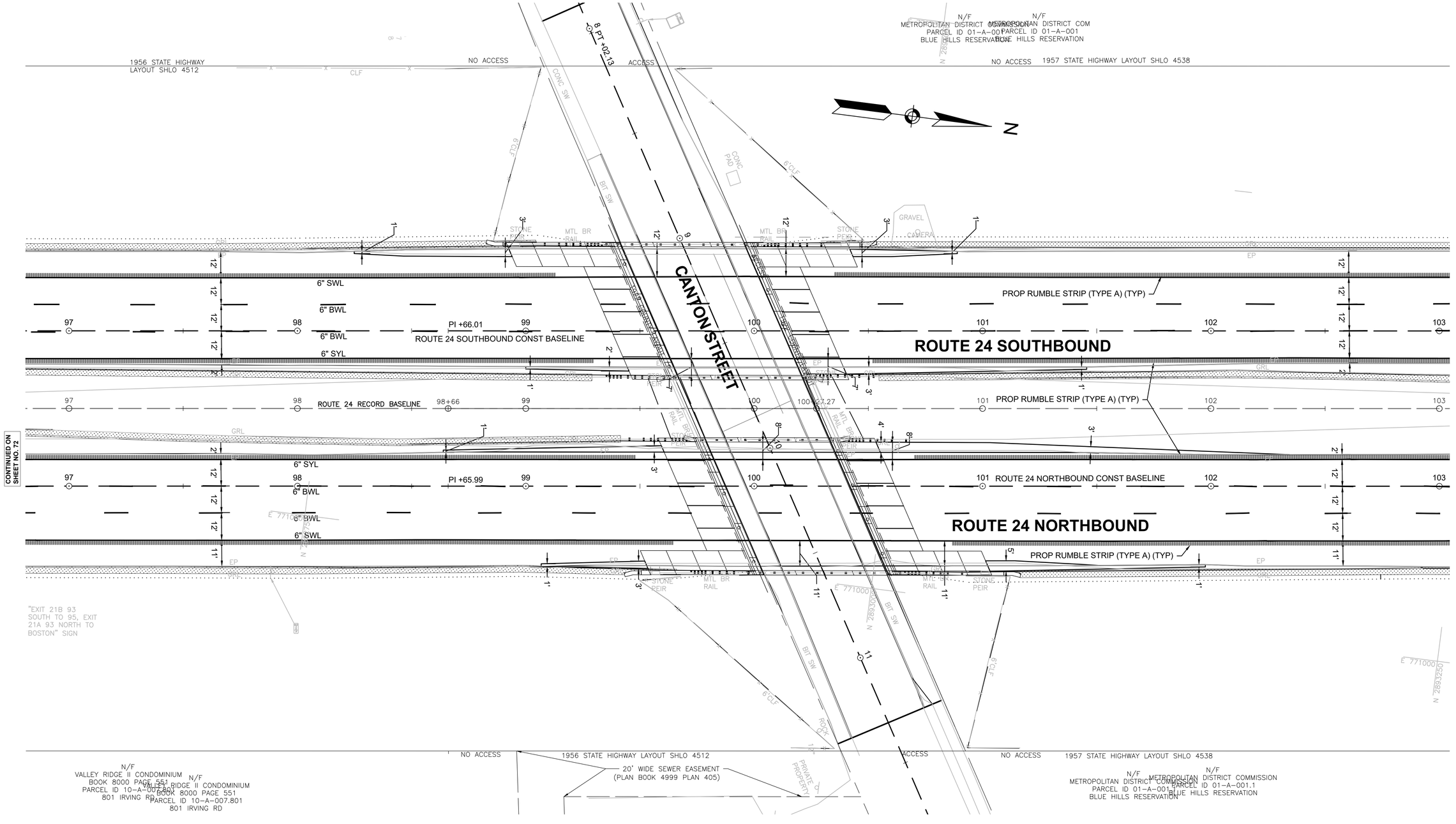


RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	73	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 7 OF 16

612188_HD(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:33 AM



0 20 50 100

SCALE: 1" = 20'

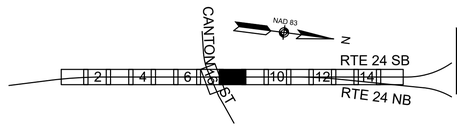
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

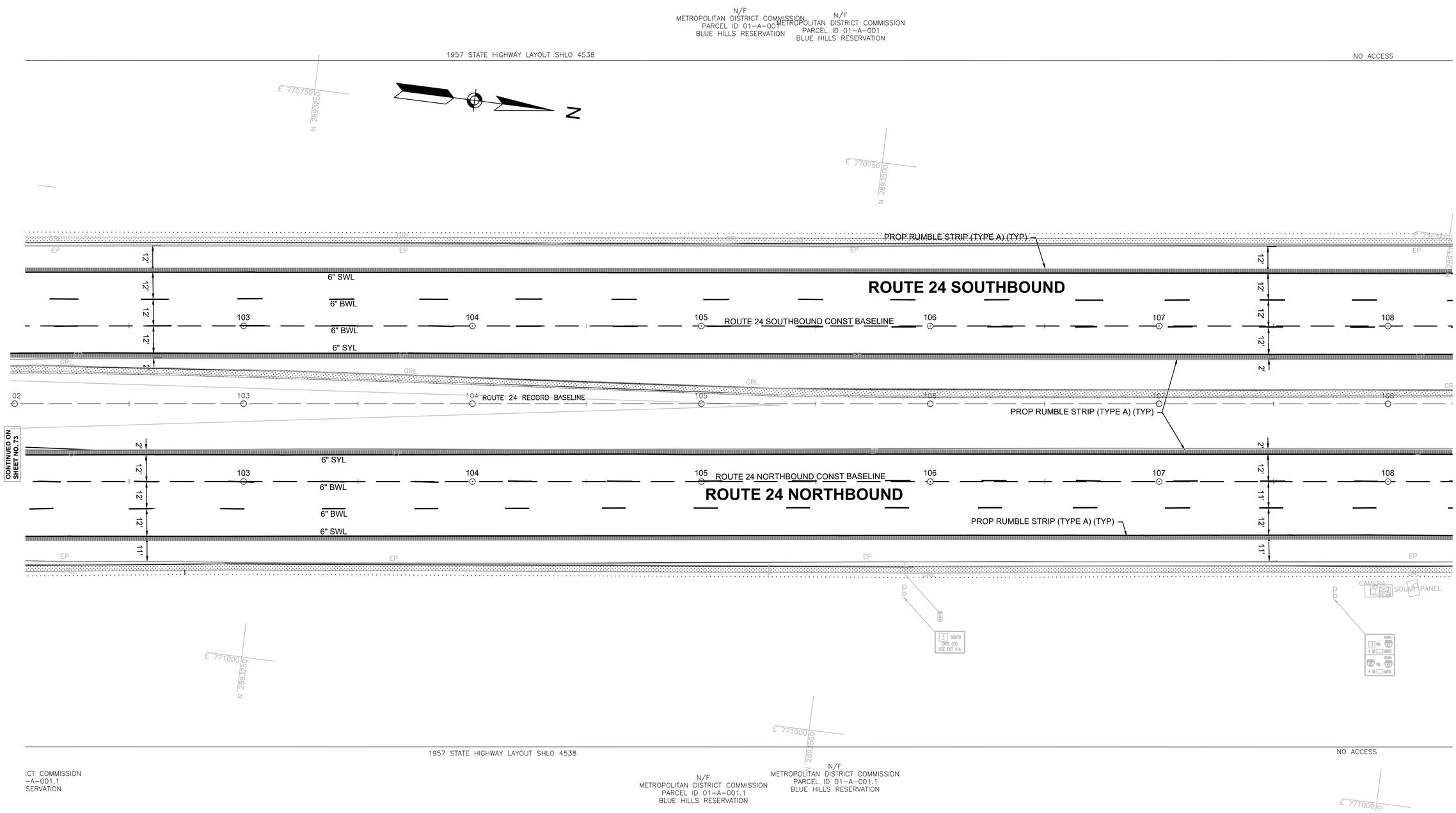
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	74	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 8 OF 16



612188_HD(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:34 AM

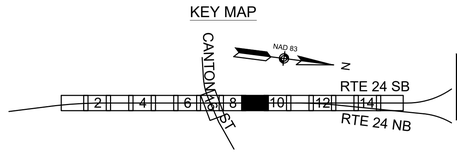
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	75	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 9 OF 16

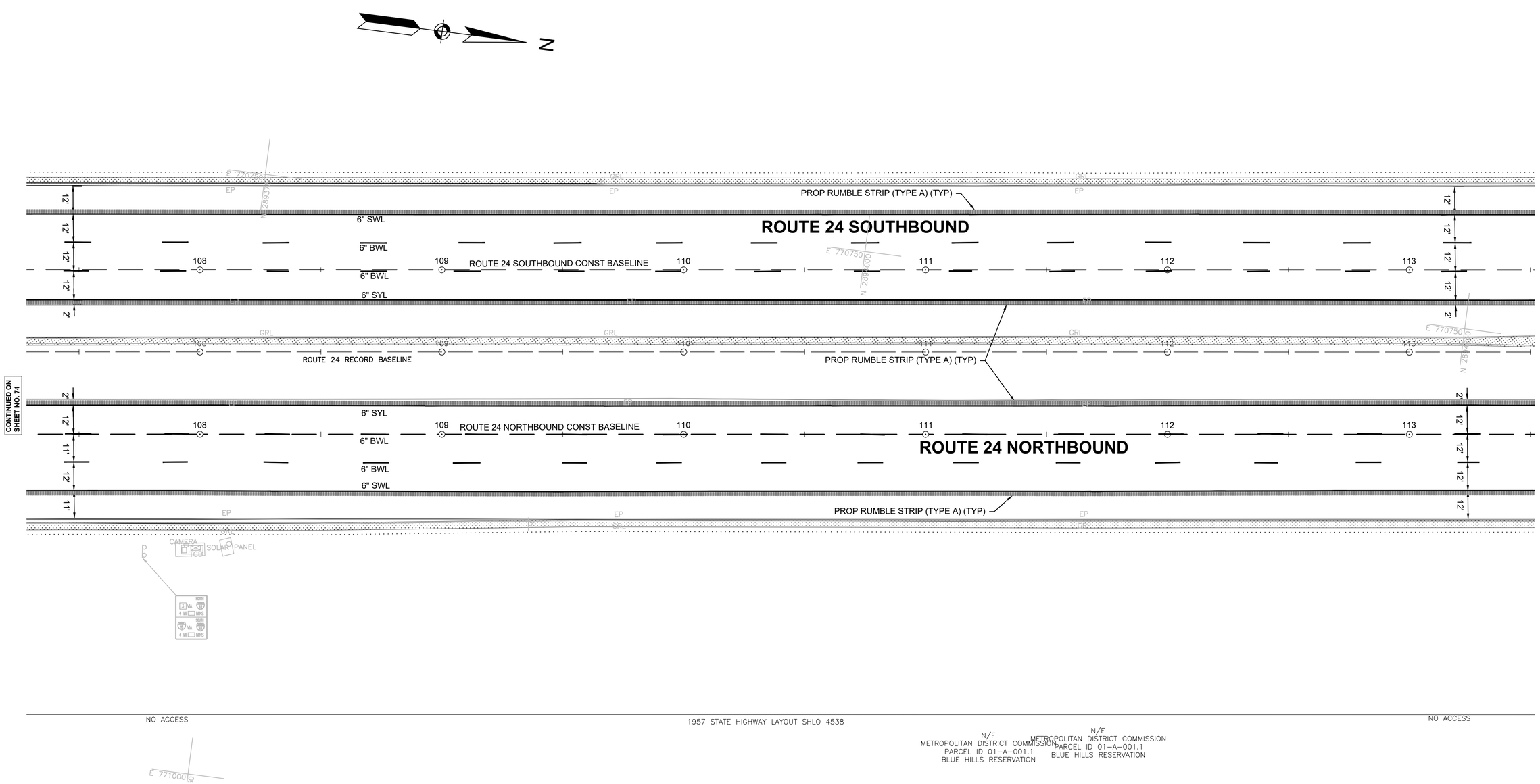
N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001
BLUE HILLS RESERVATION

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001
BLUE HILLS RESERVATION

NO ACCESS

1957 STATE HIGHWAY LAYOUT SHLO 4538

NO ACCESS



N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

NO ACCESS

1957 STATE HIGHWAY LAYOUT SHLO 4538

NO ACCESS

0 20 50 100

SCALE: 1" = 20'

612188_HDI(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:34 AM

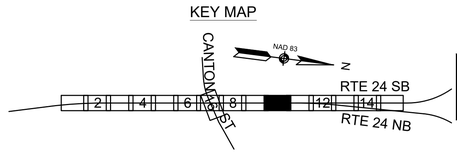
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	76	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 10 OF 16

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001
BLUE HILLS RESERVATION

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001
BLUE HILLS RESERVATION

NO ACCESS

1957 STATE HIGHWAY LAYOUT SHLO 4538

NO ACCESS

N

RIP RAP

BROCKTON 11
FALL RIVER 38
NEW BEDFORD 45

EP

12'
12'
12'
12'
2'

6" SWL
6" BWL
6" BWL
6" SYL

PROP RUMBLE STRIP (TYPE A) (TYP)

113 114 115 116 117 118

ROUTE 24 SOUTHBOUND

ROUTE 24 SOUTHBOUND CONST BASELINE

GRL

E 770750
N 2894282

ROUTE 24 RECORD BASELINE

PROP RUMBLE STRIP (TYPE A) (TYP)

CONTINUED ON SHEET NO. 75

CONTINUED ON SHEET NO. 77

6" SYL
6" BWL
6" BWL
6" SWL

ROUTE 24 NORTHBOUND CONST BASELINE

ROUTE 24 NORTHBOUND

E 770750
N 2894282

PROP RUMBLE STRIP (TYPE A) (TYP)

"BEST ROUTE LOGAN AIRPORT" SIGN

NO ACCESS

1957 STATE HIGHWAY LAYOUT SHLO 4538

NO ACCESS

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

0 20 50 100

SCALE: 1" = 20'

612188_HD(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:35 AM

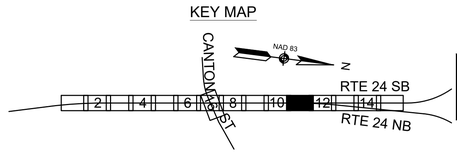
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

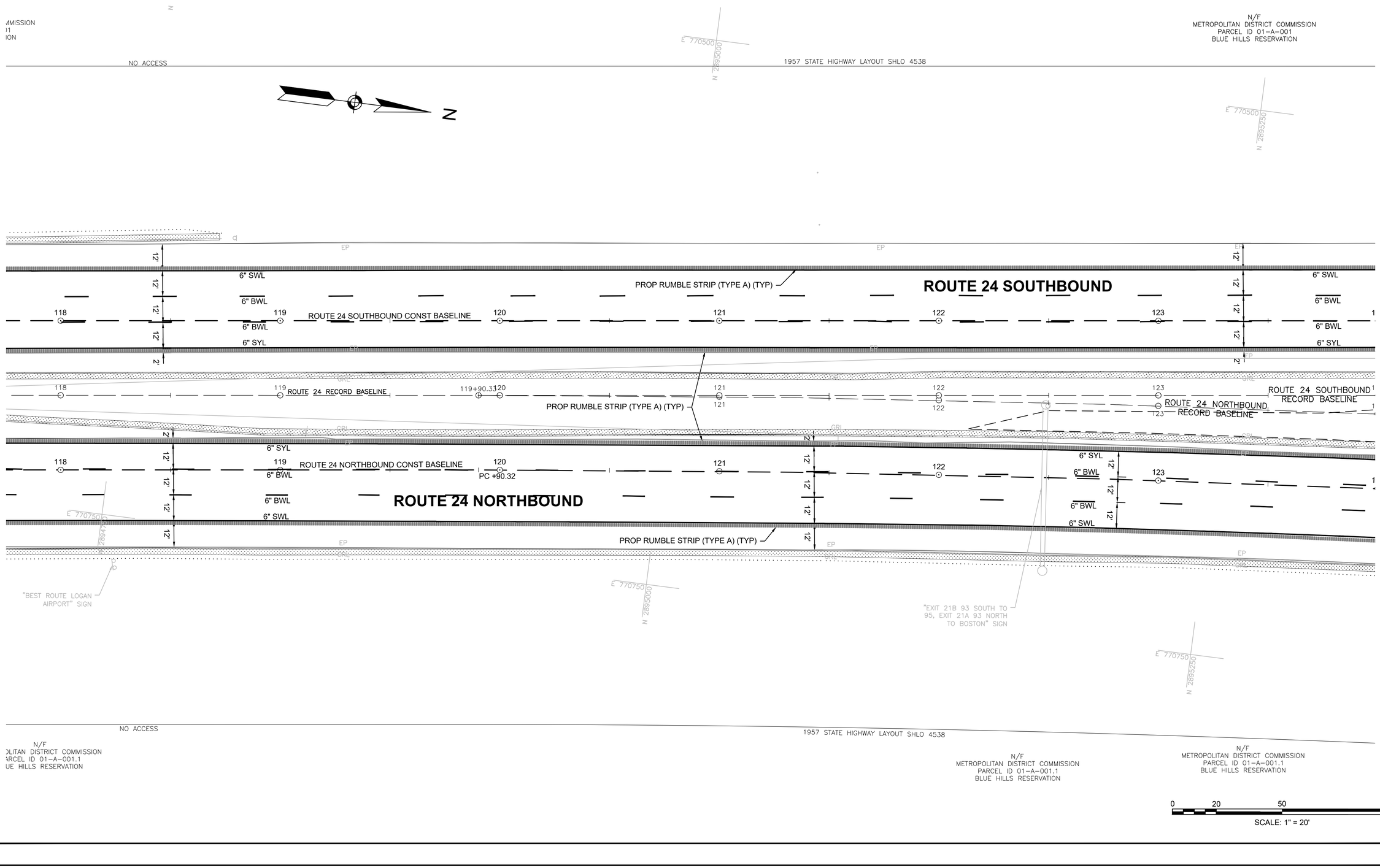
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	77	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 11 OF 16



612188_HD(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:36 AM

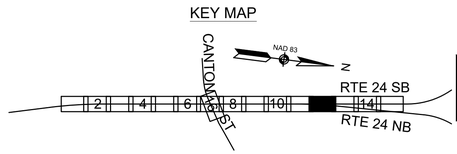
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

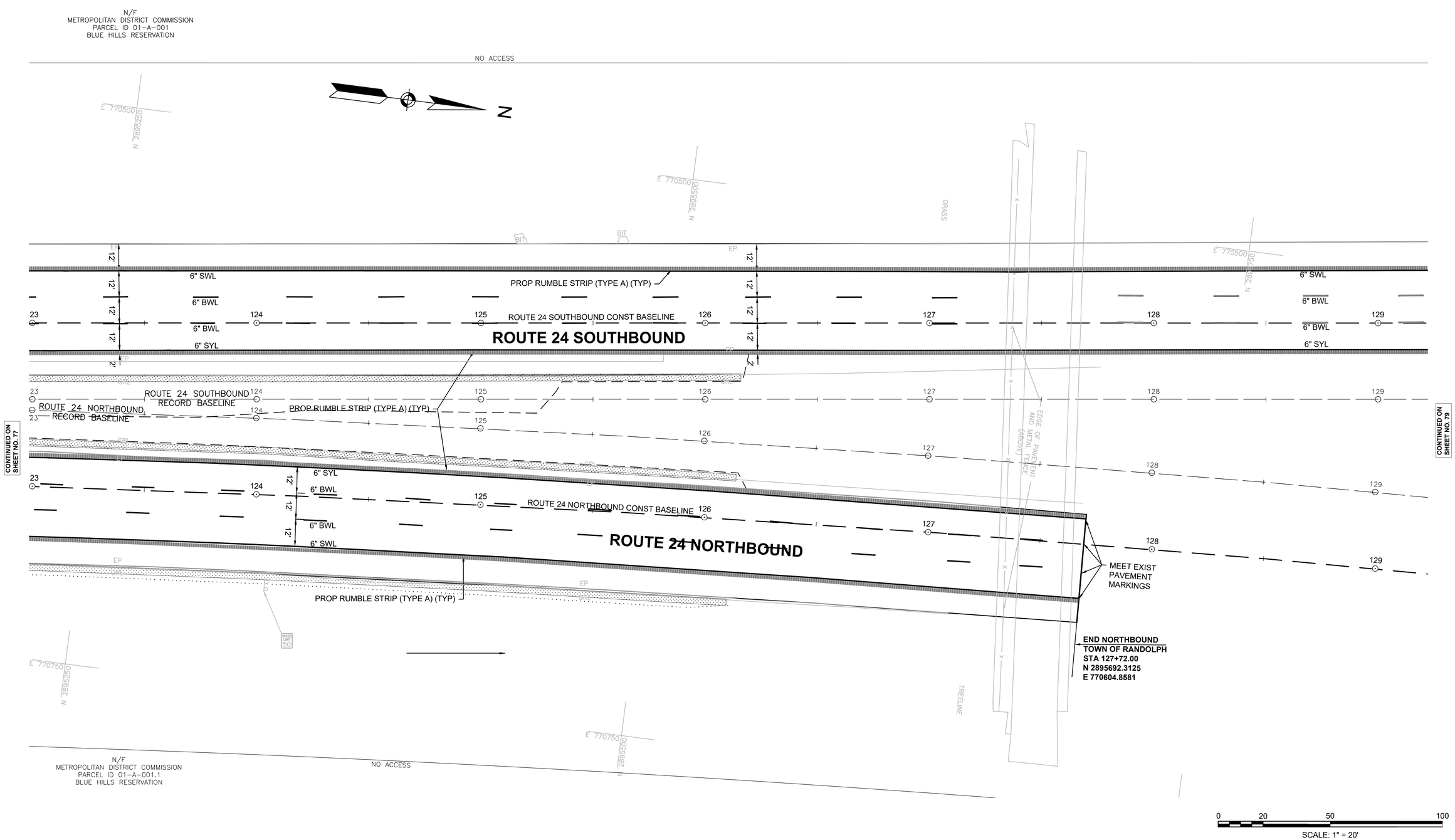
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	78	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 12 OF 16



612188_HD(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:37 AM

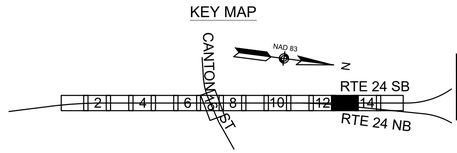
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

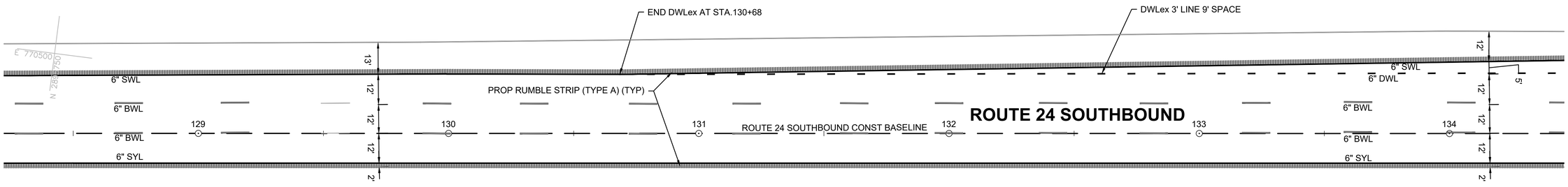
KEY MAP

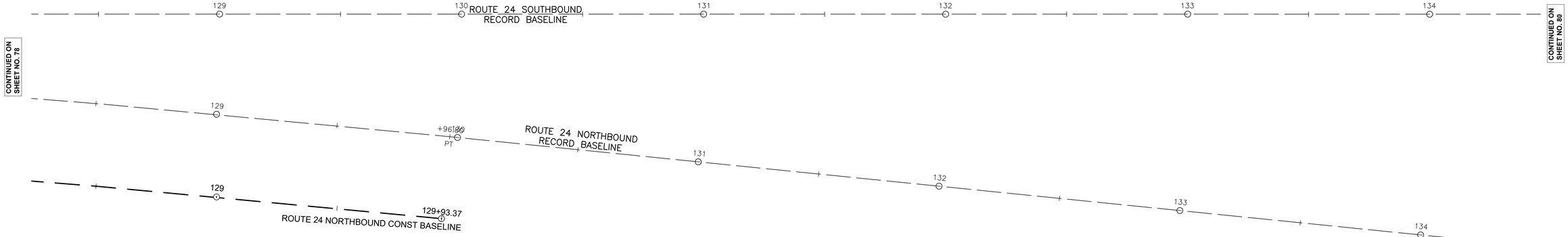


RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	79	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 13 OF 16





0 20 50 100

SCALE: 1" = 20'

612188_HD(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:38 AM

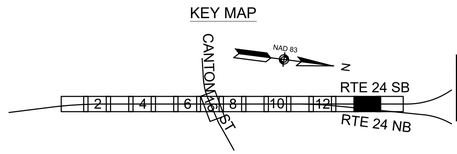
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

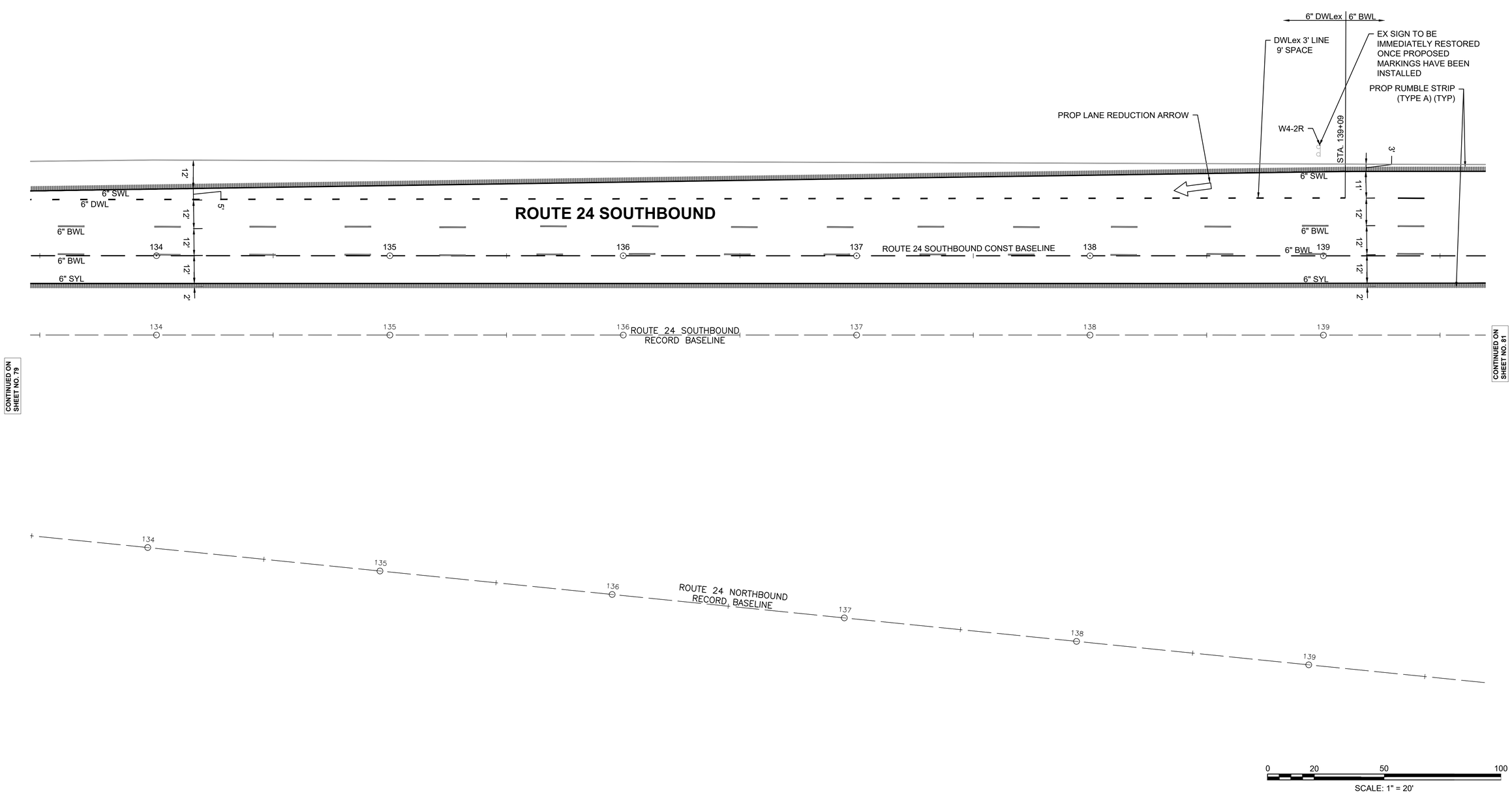
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	80	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 14 OF 16



612188_HDI(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:39 AM

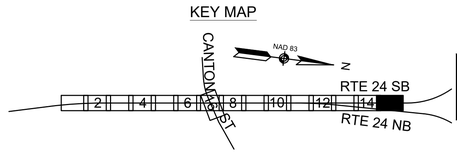
NOTE

1. ALL ROUTE 24 PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE RECESSED WET-REFLECTIVE EPOXY
2. ALL CANTON STREET PAVEMENT MARKINGS SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.
3. RUMBLE STRIPS SHALL BE INSTALLED PER MASSDOT STANDARD DETAIL E105.5.0

LEGEND

RUMBLE STRIP PER E105.5.0

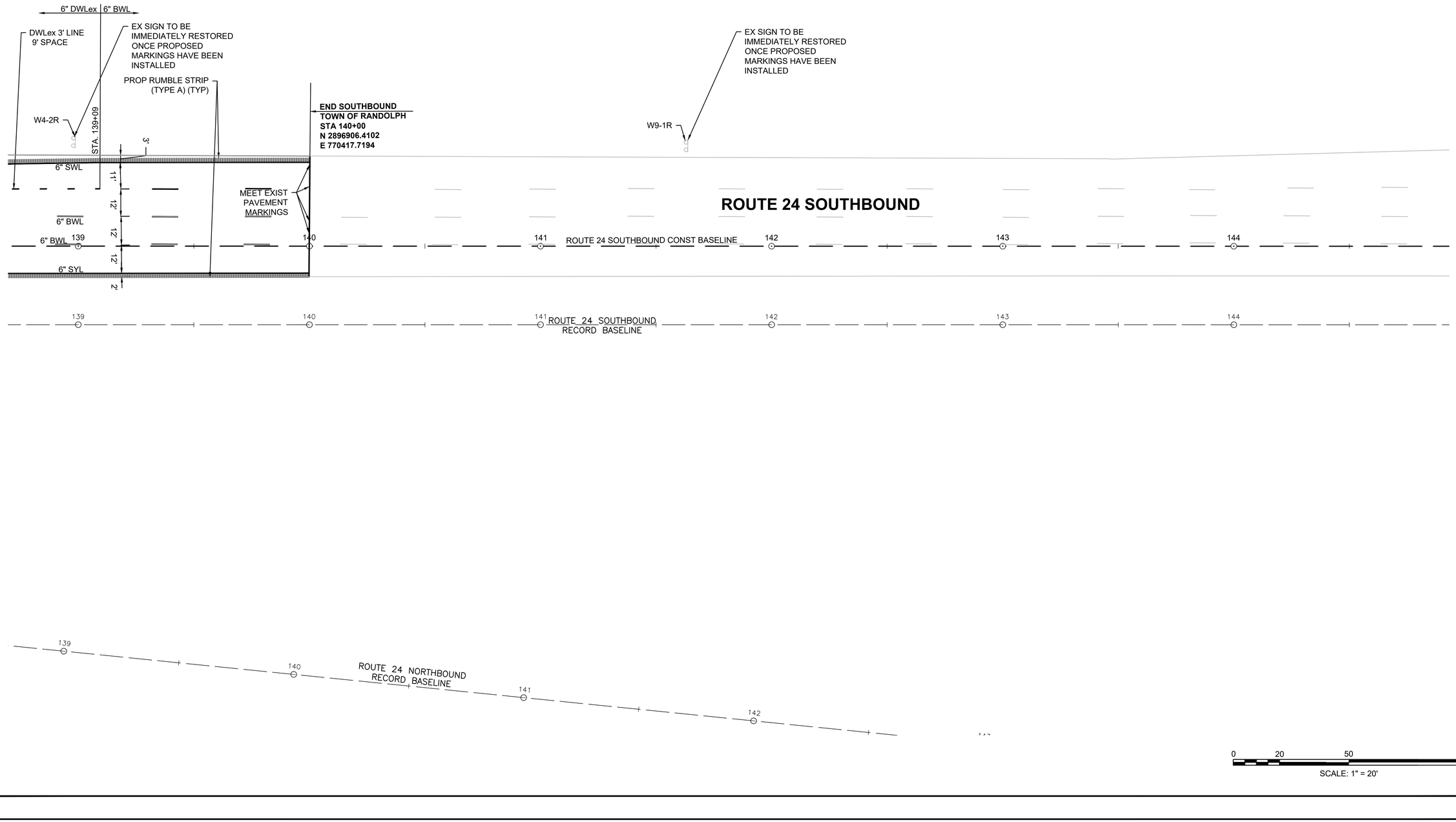
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	81	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 15 OF 16



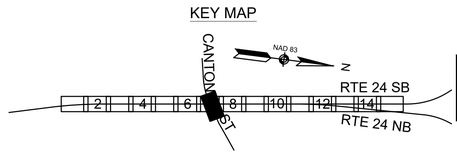
CONTINUED ON SHEET NO. 80

612188_HD(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:39 AM

NOTE

1. CANTON STREET PAVEMENT MARKING SHALL BE 6 INCHES IN WIDTH AND SHALL BE THERMOPLASTIC.

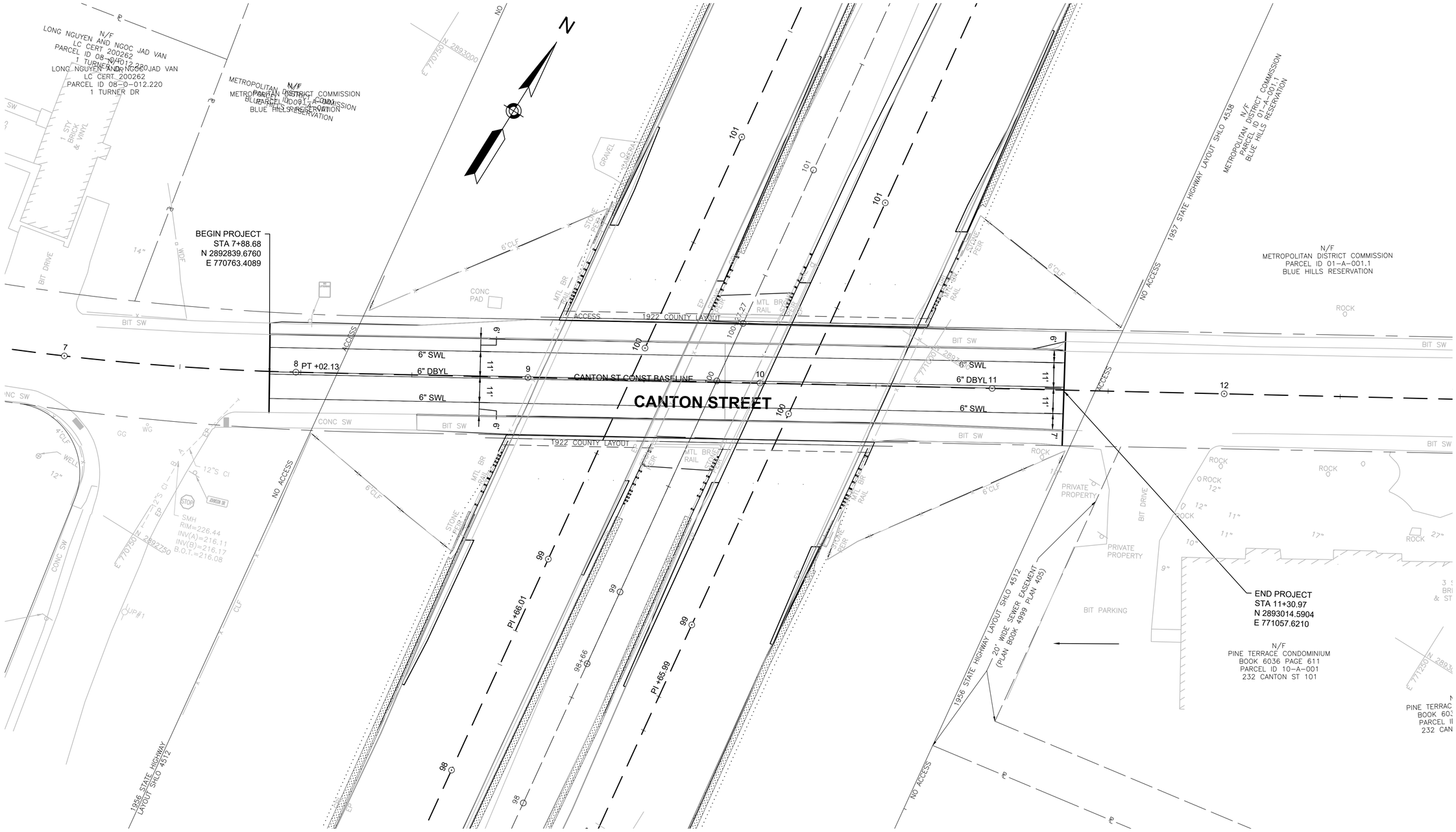
KEY MAP



RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	82	189
PROJECT FILE NO.	612188		

PAVEMENT MARKING PLANS
SHEET 16 OF 16



612188_HD(PAVEMENT MARKING PLAN).DWG Plotted on 26-Aug-2022 11:40 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	83	189
PROJECT FILE NO.	612188		

STAGING TYPICAL SECTIONS - CROSSOVER CONSTRUCTION

610770_HD(TYPICAL SECTION SHEET).DWG Plotted on 11-Aug-2022 11:27 AM

PAVEMENT NOTES

PROPOSED TEMPORARY PAVEMENT

SURFACE COURSE: 2 ½ IN. SUPERPAVE SURFACE COURSE - 19.0 (SSC-19.0)

BASE COURSE: 4 ½ IN. SUPERPAVE BASE COURSE - 37.5 (SBC-37.5)

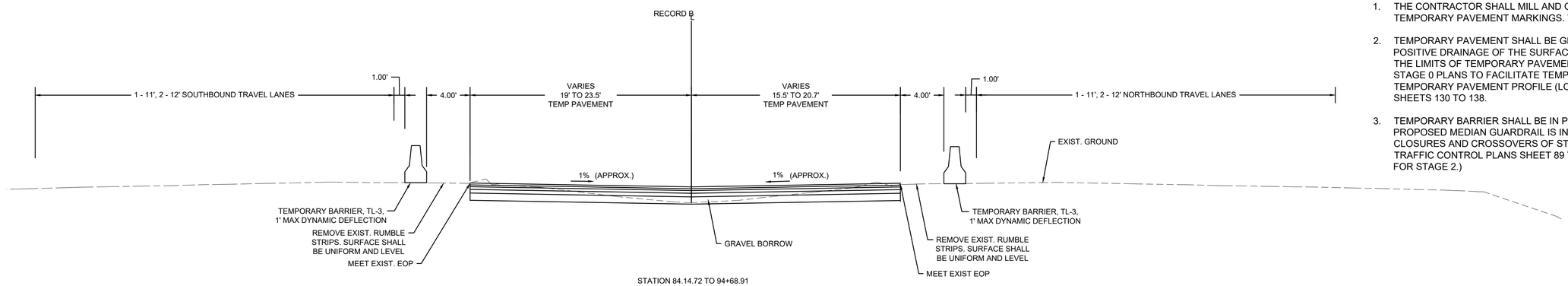
SUBBASE: 4 IN. DENSE GRADED CRUSHED STONE OVER
8 IN. GRAVEL BORROW FOR SUBBASE COURSE

SIGN & PAVEMENT MARKINGS NOTES

MATCH EXISTING PAVEMENT MARKINGS WITH NEW MARKINGS (SWL, SYL, ETC.) WHERE NECESSARY, OR AS DIRECTED BY FIELD ENGINEER.

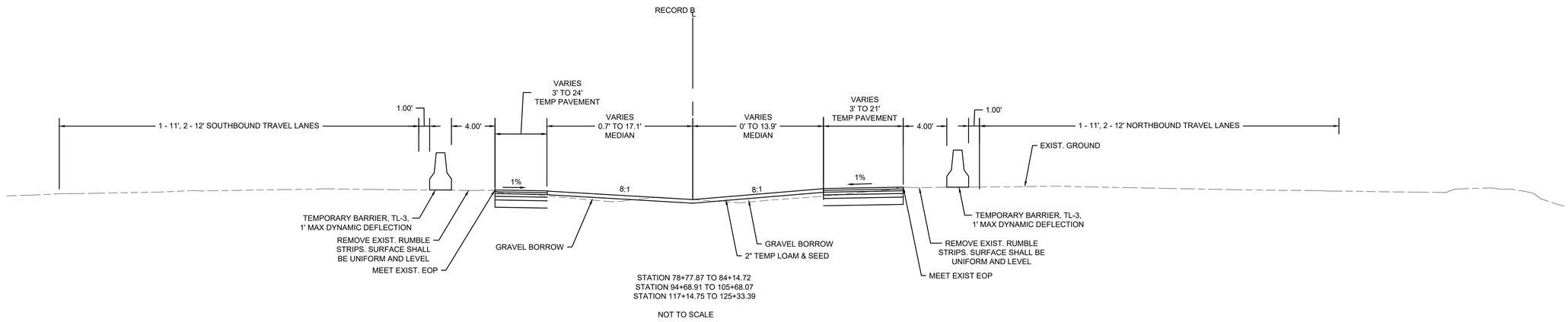
TTCP NOTES

1. THE CONTRACTOR SHALL MILL AND OVERLAY ALL ROADWAY WITHIN THE LIMITS OF TEMPORARY PAVEMENT MARKINGS. THE SURFACE SHALL BE UNIFORM AND LEVEL.
2. TEMPORARY PAVEMENT SHALL BE GRADED TOWARD THE BASELINE TO ENSURE POSITIVE DRAINAGE OF THE SURFACE. EXISTING DRAINAGE STRUCTURES WITHIN THE LIMITS OF TEMPORARY PAVEMENT SHALL BE MODIFIED AS NOTED ON THE STAGE 0 PLANS TO FACILITATE TEMPORARY DRAINAGE. APPROXIMATE TEMPORARY PAVEMENT PROFILE (LOCATED ALONG EDGE LINE) IS SHOWN ON SHEETS 130 TO 138.
3. TEMPORARY BARRIER SHALL BE IN PLACE THROUGHOUT CONSTRUCTION UNTIL PROPOSED MEDIAN GUARDRAIL IS INSTALLED EXCEPT DURING THE WEEKEND CLOSURES AND CROSSOVERS OF STAGE 1 AND STAGE 2 (SEE TEMPORARY TRAFFIC CONTROL PLANS SHEET 89 TO 94 FOR STAGE 1 AND SHEETS 100 TO 104 FOR STAGE 2.)



STATION 84.14.72 TO 94+68.91
STATION 105+68.07 TO 117+14.75

NOT TO SCALE



STATION 78+77.87 TO 84+14.72
STATION 94+68.91 TO 105+68.07
STATION 117+14.75 TO 125+33.39

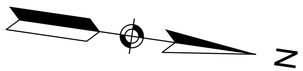
NOT TO SCALE

GENERAL STAGING NOTES:

1. SILT SACKS SHALL BE INSTALLED ON ALL EXISTING CATCH BASINS WITHIN THE PROJECT LIMITS.
2. ALL EXISTING RUMBLE STRIPS IN CONFLICT WITH TEMPORARY TRAFFIC LANES SHALL BE PAVED OVER PRIOR TO THE OPENING OF THE TEMPORARY TRAFFIC LANES. ROAD SURFACE SHALL BE UNIFORM AND LEVEL.
3. ALL EXISTING PAVEMENT MARKINGS IN CONFLICT WITH TEMPORARY PAVEMENT MARKINGS SHALL BE MASKED OR REMOVED.
4. STATIONING CALLOUTS FOR TRAFFIC CONTROL DEVICES ARE REFERENCED TO THE RECORD BASELINE.
5. THE EXISTING PAVEMENT MARKINGS AND SIGNAGE FOR THE LANE REDUCTION ON ROUTE 24 SOUTHBOUND SHALL BE MASKED PRIOR TO THE IMPLEMENTATION OF THE TRAFFIC PATTERN SHOWN IN STAGE 0. THE PAVEMENT MARKINGS AND SIGNAGE SHALL REMAIN MASKED UNTIL STAGE 2B.
6. MOVEABLE BARRIER MAY BE PLACED IN THE LEFT SHOULDERS ON ROUTE 24 WITH TL-3 IMPACT ATTENUATORS.
7. DURING STAGE 0, GUARDRAIL SHALL ONLY BE REMOVED WITHIN THE LIMITS OF THE TEMPORARY CROSSOVER ROADWAY.

STAGE 0 NOTES:

1. ALL BARRIER IN THIS STAGE SHALL PERMIT STORMWATER TO FLOW TO EXISTING DRAINAGE STRUCTURES.
2. INSTALL LINEAR SEDIMENT CONTROL BARRIER AROUND THE LIMITS OF GRADING IN THE MEDIAN.
3. EXISTING RUMBLE STRIPS IN THE RIGHT SHOULDERS WITHIN THE LIMITS OF TEMPORARY TRAFFIC SHALL BE FILLED PRIOR TO SHIFTING TRAFFIC.
4. WORK IN THIS STAGE INCLUDES MODIFICATIONS TO EXISTING DRAINAGE STRUCTURES TO ACCOMMODATE TEMPORARY PAVEMENT WITHIN THE MEDIAN AS WELL AS CONSTRUCTION OF THE MEDIAN CROSSOVER PAVEMENT. EXISTING GUARDRAIL WITHIN THE LIMITS OF TEMPORARY PAVEMENT ONLY SHALL BE REMOVED. REMAINING GUARDRAIL SHOWN TO BE REPLACED ON THE CONSTRUCTION PLANS SHALL BE REMOVED AND REPLACED AFTER BRIDGE WORK IS COMPLETED. TEMPORARY BARRIER AS SHOWN IN STAGE 0 SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION EXCEPT AS SHOWN IN STAGE 1 AND STAGE 2.
5. ALL LANE WIDTHS SHALL BE MINIMUM OF 11' WIDE.
6. TEMPORARY IMPACT ATTENUATORS SHALL MEET MASH TEST LEVEL 3, AS WELL AS BE UNI-DIRECTIONAL AND REDIRECTIVE UNLESS OTHERWISE NOTED.



LEGEND:

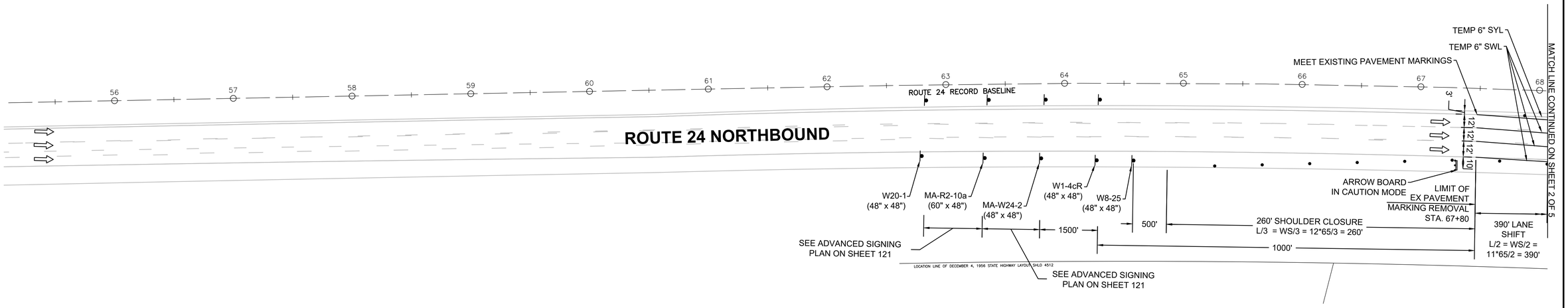
- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	84	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 0
SHEET 1 OF 5





0 40 100 160

SCALE: 1" = 40'

612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:27 AM

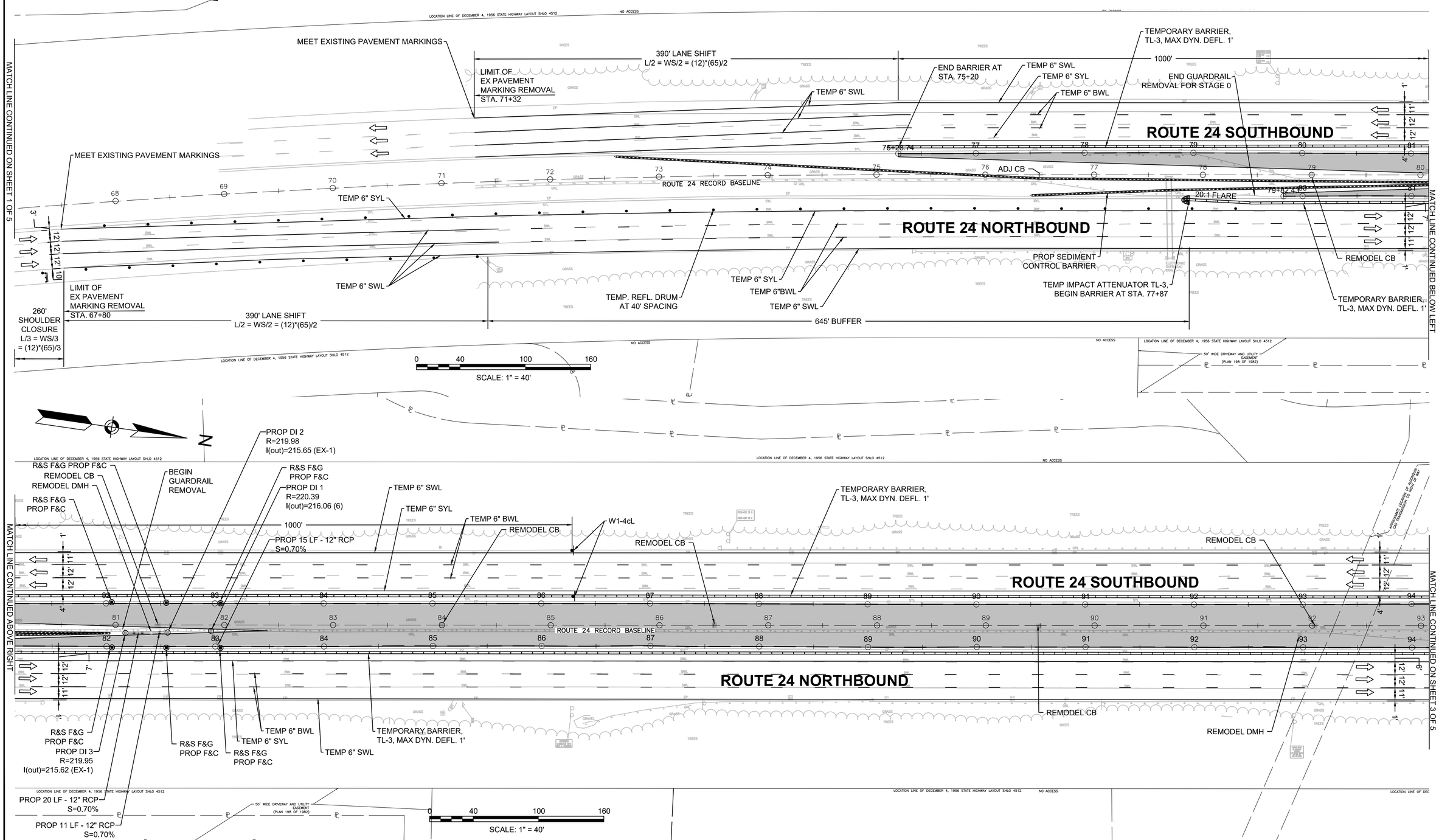
LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	85	189
PROJECT FILE NO.		612188	

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 0
SHEET 2 OF 5



612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:27 AM

LEGEND:

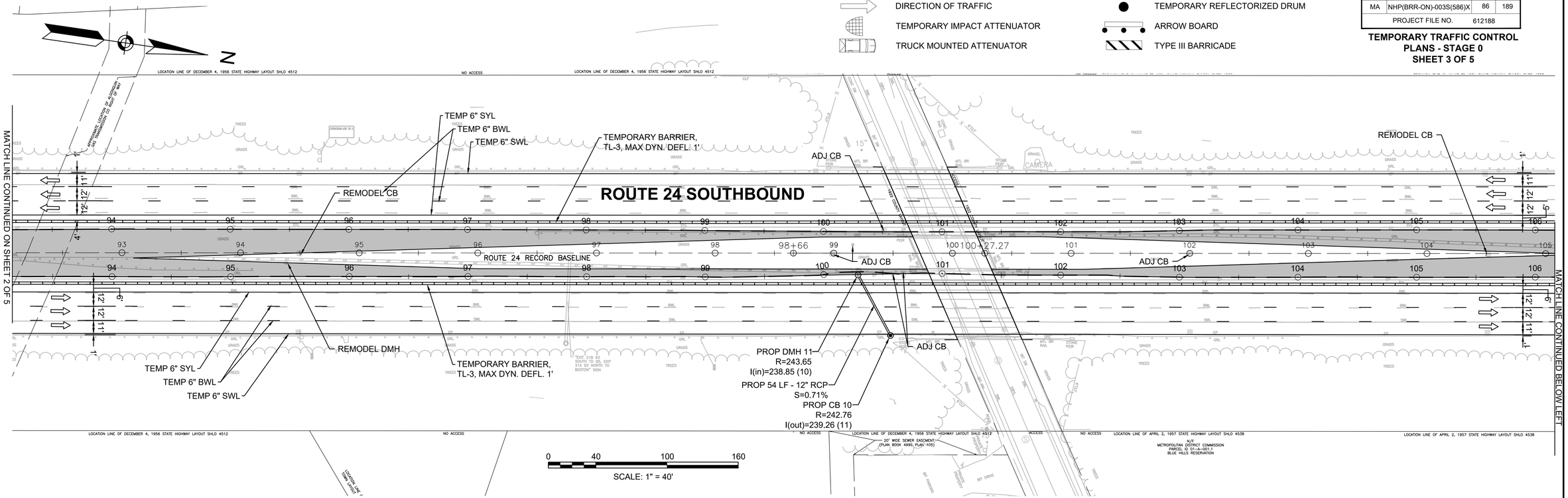
- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	86	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 0
SHEET 3 OF 5

612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:27 AM



LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	87	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 0
SHEET 4 OF 5

612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:27 AM

N

NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538

645' BUFFER SPACE

TEMP 6" SYL
TEMP 6" SWL
TEMP 6" BWL
TEMP IMPACT ATTENUATOR TL-3, BEGIN BARRIER AT STA. 121+10
TEMP. REFL. DRUM AT 40' SPACING
PROP SEDIMENT CONTROL BARRIER

MATCH LINE CONTINUED ON SHEET 3 OF 5

20:1 FLARE
ADJ CB
ROUTE 24 SOUTHBOUND RECORD BASELINE
ROUTE 24 NORTHBOUND RECORD BASELINE
126+90.14
126+94.97

ROUTE 24 NORTHBOUND

END BARRIER AT STA. 126+15
LIMIT OF EX PAVEMENT MARKING REMOVAL STA. 126+08
R=1500.00'
TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 1'
1000'
390' LANE SHIFT
L/2 = WS/2 = (12)*(65)/2
END GUARDRAIL REMOVAL FOR STAGE 0
MEET EXISTING PAVEMENT MARKINGS

MATCH LINE CONTINUED BELOW LEFT

NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538 — NO ACCESS

0 40 100 160
SCALE: 1" = 40'

N

MATCH LINE CONTINUED ABOVE RIGHT

790' LANE CLOSURE
L = WS = (12)*(65) = 780'

MEET EXISTING PAVEMENT MARKINGS
1000'
TEMP 6" BWL
TEMP 6" DWL
TEMP 6" SWL
TEMP 6" SYL
MASK EX W4-2R
MASK EX W9-1R
LIMIT OF EX PAVEMENT MARKING REMOVAL STA. 139+75

ROUTE 24 SOUTHBOUND

ROUTE 24 SOUTHBOUND RECORD BASELINE
ROUTE 24 NORTHBOUND RECORD BASELINE
REM EX LANE MARKINGS

MATCH LINE CONTINUED ON SHEET 5 OF 5

0 40 100 160
SCALE: 1" = 40'

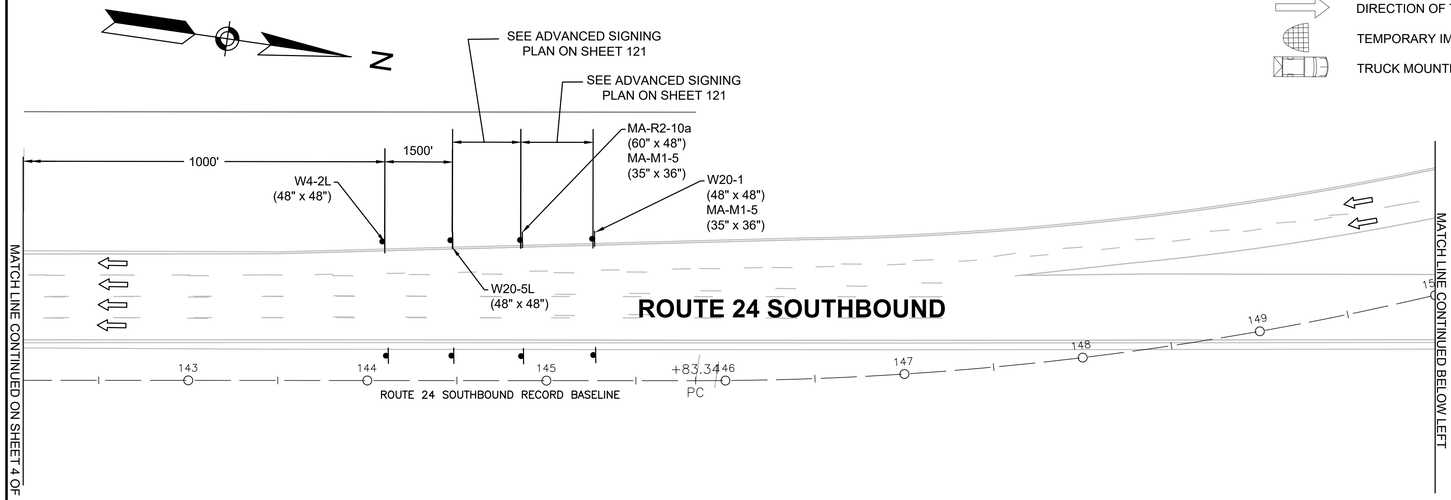
LEGEND:

WORK ZONE
TEMPORARY BARRIER
DIRECTION OF TRAFFIC
TEMPORARY IMPACT ATTENUATOR
TRUCK MOUNTED ATTENUATOR
TEMPORARY ZIPPER BARRIER
PORTABLE RUMBLE STRIP
TEMPORARY REFLECTORIZED DRUM
ARROW BOARD
TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	88	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 0
SHEET 5 OF 5



0 40 100 160
SCALE: 1" = 40'

612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:28 AM

STAGE 1 NOTES:

1. TEMPORARY PAVEMENT MARKINGS FOR STAGE 1 MAY CONSIST OF WET REFLECTIVE TAPE PROVIDED THE MARKINGS ARE IN USE FOR LESS THAN 7 DAYS. TEMPORARY STRIPING INSTALLED IN STAGE 0 SHALL BE MAINTAINED AS NOTED ON THE STAGE 1 PLANS. STAGE 0 STRIPING THAT CONFLICTS WITH STAGE 1 TAPE SHALL BE MASKED OR REMOVED. STAGE 0 TEMPORARY STRIPING THAT IS LOCATED OUTSIDE OF THE STAGE 1 LANE CONFIGURATION FOOTPRINT MAY BE RETAINED.
2. WORK ON THIS STAGE CONSISTS OF CLOSING THE SOUTHBOUND BARREL OF ROUTE 24 ACROSS THE BRIDGE AND CROSSING TRAFFIC OVER ONTO NORTHBOUND ROUTE 24. NORTHBOUND AND SOUTHBOUND ROUTE 24 WILL EACH PROVIDE TWO LANES OF TRAFFIC.
3. ALL LANE WIDTHS SHALL BE MINIMUM OF 11' WIDE. A MINIMUM OFFSET OF 1' SHALL BE PROVIDED BETWEEN TRAVEL LANES AND TEMPORARY BARRIER. LANE WIDTH ADJACENT TO ZIPPER BARRIER IS DIMENSIONED AS A MINIMUM 12' LANE TO PROVIDE THE 11' AND 1' OFFSET.
4. DYNAMIC MERGE SYSTEM AND REAL TIME TRAFFIC MANAGEMENT SYSTEM SHALL BE IMPLEMENTED BY THE CONTRACTOR TO FACILITATE TRAFFIC OPERATIONS THROUGH THE WORK ZONES. DETAILS FOR QUEUE DETECTION AND RTTM ARE ON SHEETS 124-129.
5. STAGE 1 SHALL ONLY BE IN EFFECT OVER A WEEKEND PERIOD BETWEEN THE HOURS OF 8PM FRIDAY EVENING THROUGH 4AM MONDAY. ROUTE 24 SHALL BE RETURNED TO THE 3-LANE CONFIGURATION SHOWN IN STAGE 1B AT THE END OF THE WEEKEND CLOSURE.
6. TEMPORARY IMPACT ATTENUATORS SHALL MEET MASH TEST LEVEL 3, AS WELL AS BE UNI-DIRECTIONAL AND REDIRECTIVE UNLESS OTHERWISE NOTED.

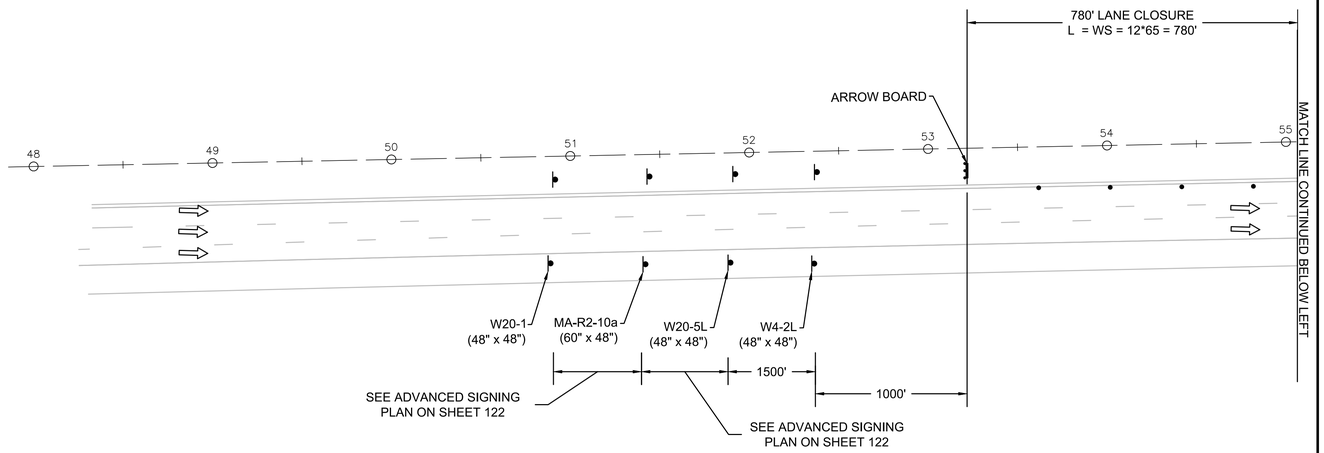
LEGEND:

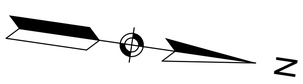
- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

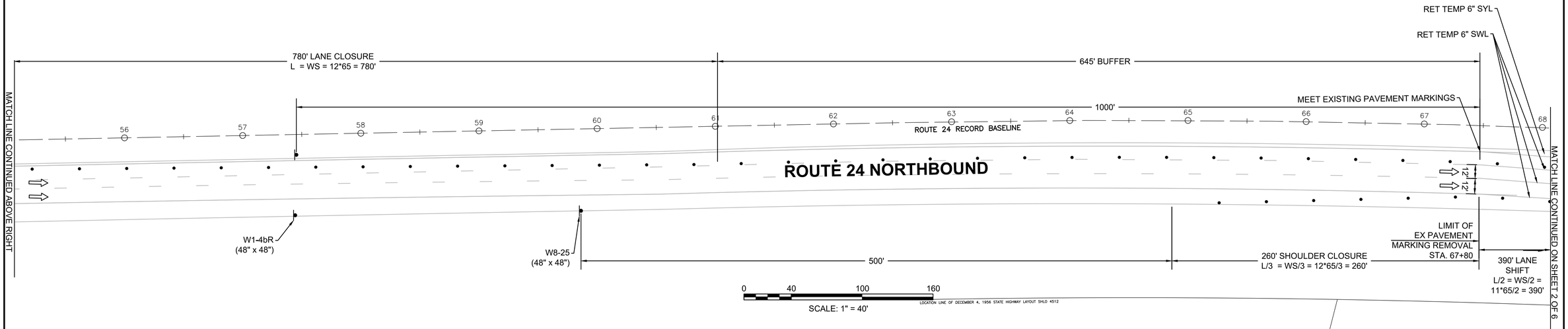
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	89	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1
SHEET 1 OF 6









612188_HDI(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:28 AM

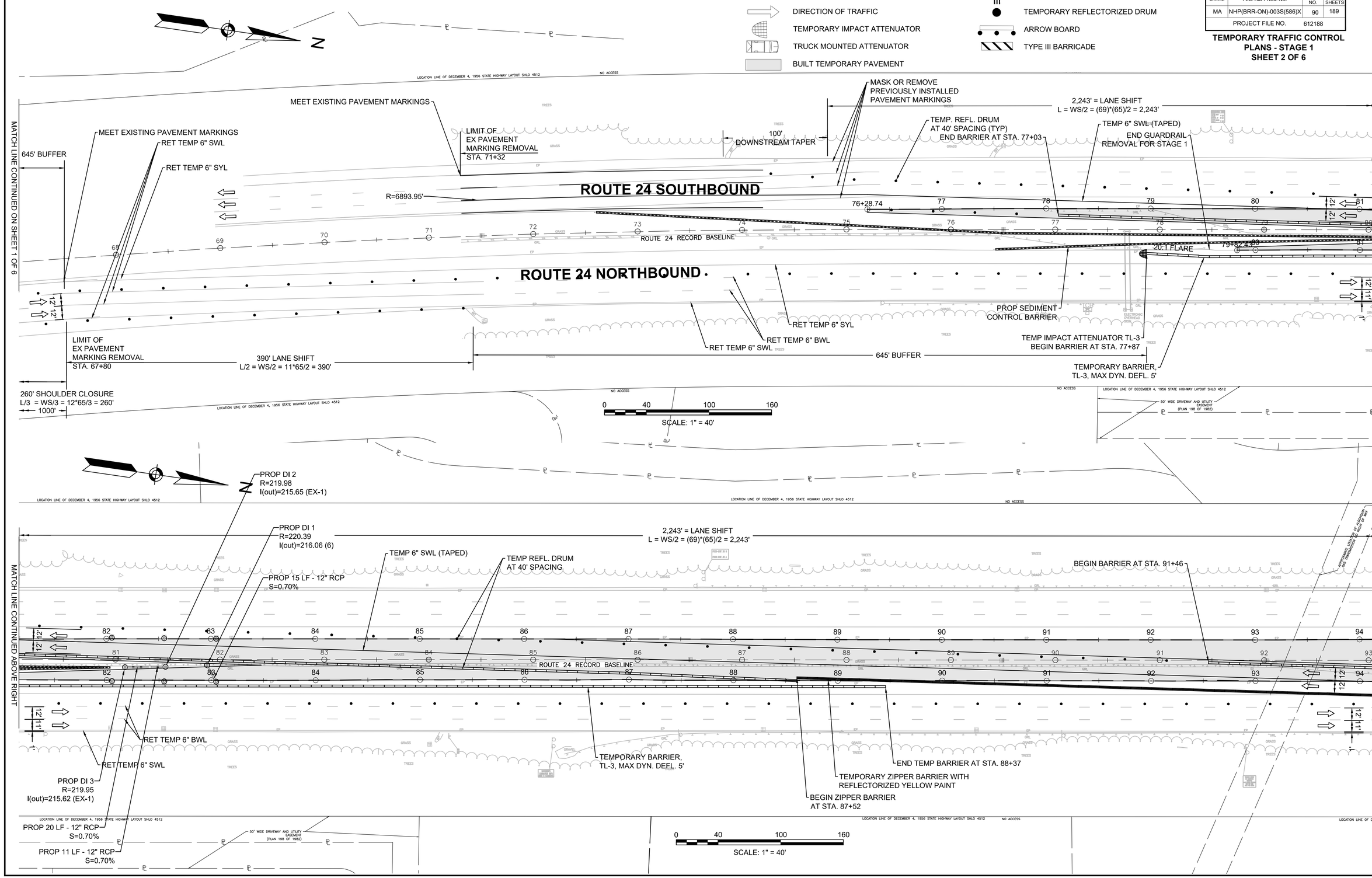
LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	90	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1
SHEET 2 OF 6



612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:28 AM

LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	91	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1
SHEET 3 OF 6

Plotted on 11-Aug-2022 11:29 AM
612188_HDJTTCP SHEET).DWG

N

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512 — NO ACCESS — LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHL

APPROXIMATE LOCATION OF ALTERNATOR NO. 1 MANHOLE

2,243' = LANE SHIFT
L = WS/2 = (69)*(65)/2 = 2,243'

MATCH LINE CONTINUED ON SHEET 2 OF 6

ROUTE 24 SOUTHBOUND

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 5'

2640' LANE SHIFT
L/2 = WS/2 = (80)*(65)/2 = 2600'

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 5'

94 95 96 97 98 99 100 101 102 103 104 105 106

93 94 95 96 97 98 98+66 99 100 101 102 103 104 105

ROUTE 24 RECORD BASELINE

94 95 96 97 98 99 100 101 102 103 104 105 106

12' 12' 12' 11'

ROUTE 24 NORTHBOUND

RET TEMP 6" SWL
RET TEMP 6" BWL

TEMP 6" SWL (TAPED)

"EXIT 21B 93 SOUTH TO 95, EXIT 21A 93 NORTH TO BOSTON" SIGN

TEMPORARY ZIPPER BARRIER WITH REFLECTORIZED YELLOW PAINT (CENTERED OVER TEMP BWL)

CONNECT TEMP BARRIER TO EX BRIDGE RAIL USING THRIE BEAM PANELS

130' BUFFER

TEMP REFL. DRUM AT 40' SPACING (TYP)
330' LANE ADD

MATCH LINE CONTINUED BELOW LEFT

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512 — NO ACCESS — NO ACCESS — LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512 — ACCESS — NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538 — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538

20' WIDE SEWER EASEMENT (PLAN BOOK 4995, PLAN 405)

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

0 40 100 160
SCALE: 1" = 40'

N

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512

MATCH LINE CONTINUED ABOVE RIGHT

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 5'

2640' LANE SHIFT
L/2 = WS/2 = (80)*(65)/2 = 2600'

TRUCK MOUNTED ATTENUATOR (TYP)

TEMP IMPACT ATTENUATOR TL-3 END BARRIER AT STA. 110+23

TEMP REFL. DRUM AT 40' SPACING

TEMP 6" SWL (TAPED)

R11-2
W1-6L
MOUNTED ON TYPE III BARRICADE

107 108 109 110 111 112 113 114 115 116 117 118 119

106 107 108 109 111 112 113 114 115 116 117 118

20:1 FLARE

ROUTE 24 RECORD BASELINE

107 108 109 110 111 112 113 114 115 116 117 118 119

12' 12' 12' 11'

CAMERA & RADAR PANEL

RET TEMP 6" SWL
RET TEMP 6" SYL
RET TEMP 6" BWL

W1-4cL

330' LANE ADD

TEMPORARY ZIPPER BARRIER WITH REFLECTORIZED YELLOW PAINT

1000'

BEGIN TEMP BARRIER TL-3 AT STA. 115+23

RET TEMP 6" SYL

BEGIN TEMP BARRIER TL-3 AT STA. 117+45

END ZIPPER BARRIER AT STA. 117+51

MATCH LINE CONTINUED ON SHEET 4 OF 6

NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538 — NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538

0 40 100 160
SCALE: 1" = 40'

LEGEND:

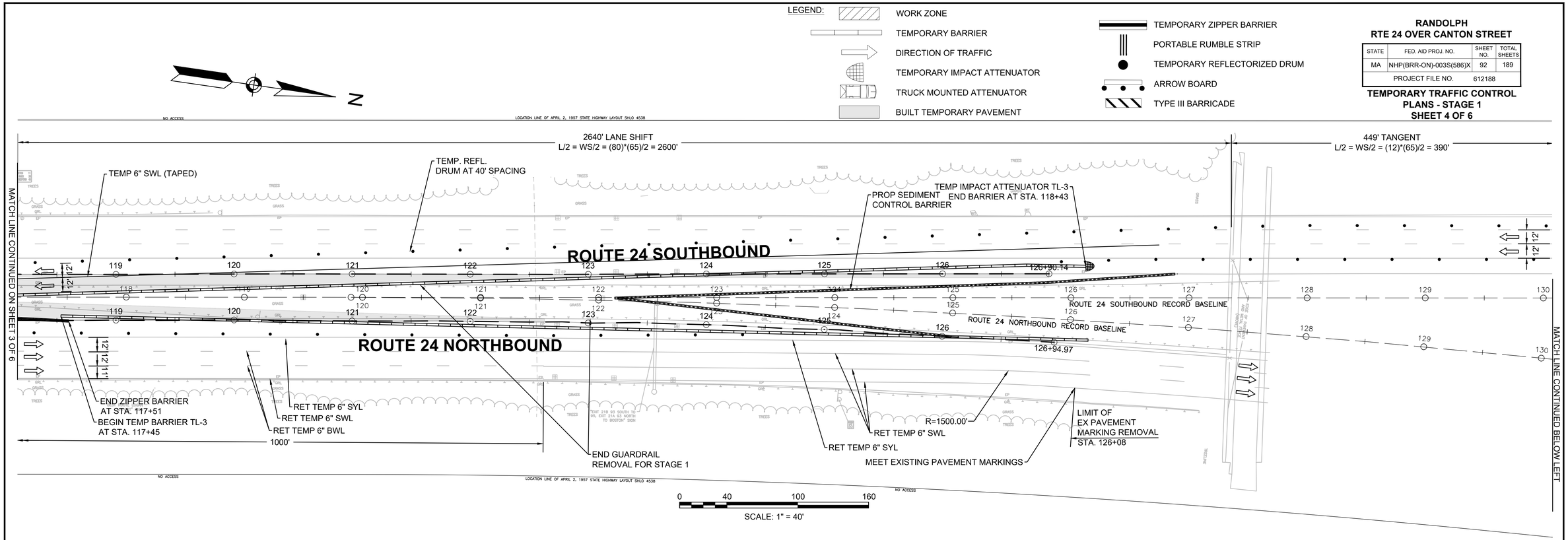
- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

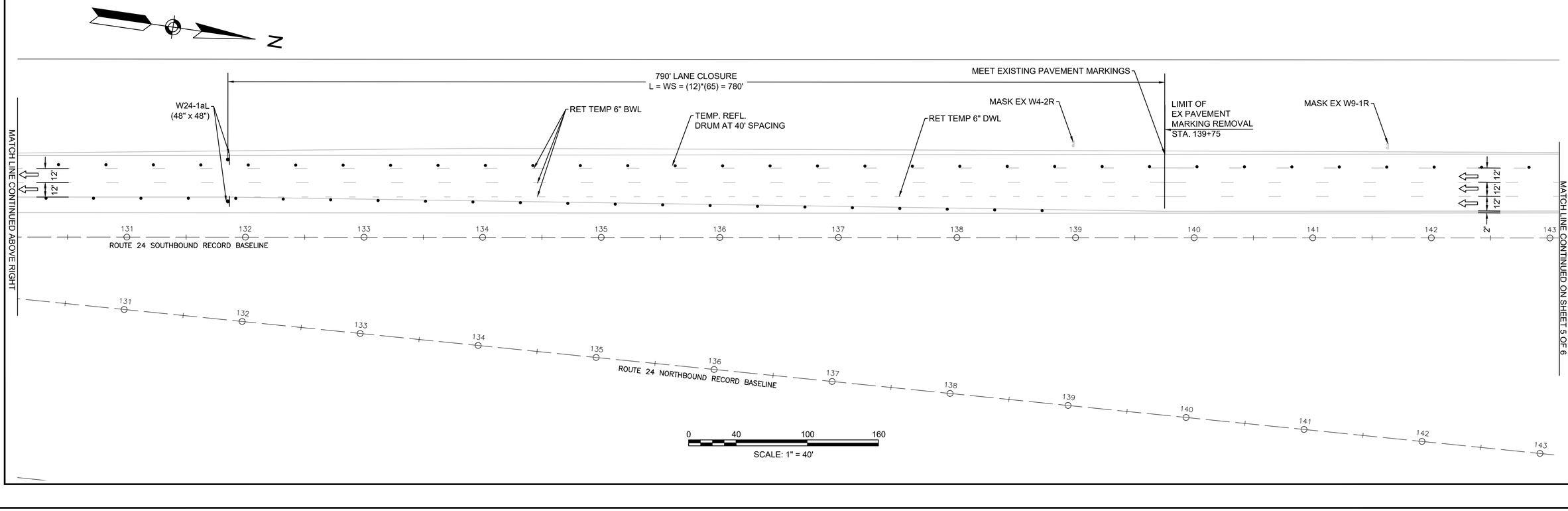
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	92	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1
SHEET 4 OF 6

612188_HDTTCP SHEET).DWG Plotted on 11-Aug-2022 11:28 AM





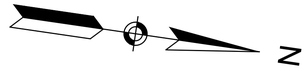
LEGEND:

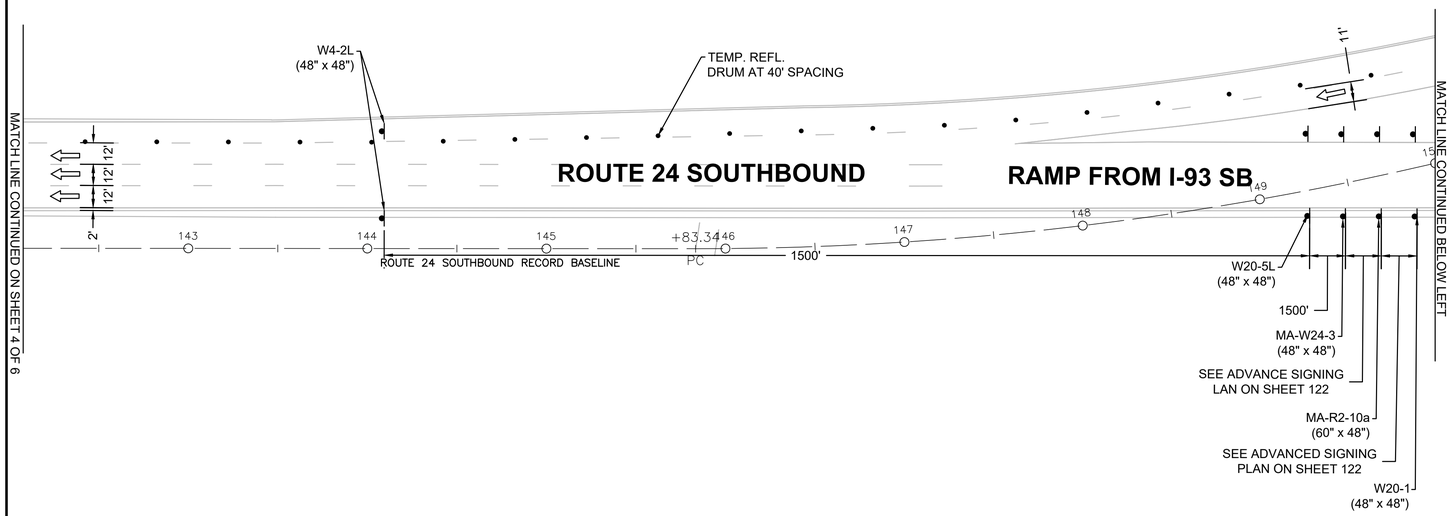
- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

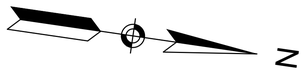
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	93	189
PROJECT FILE NO.	612188		

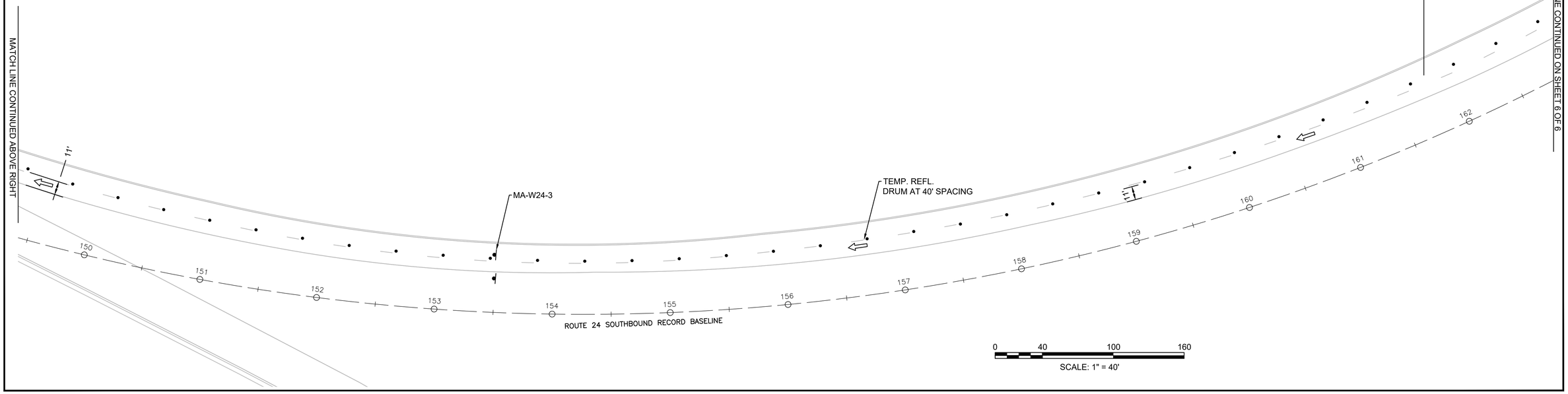
TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1
SHEET 5 OF 6





0 40 100 160
SCALE: 1" = 40'





0 40 100 160
SCALE: 1" = 40'

612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:28 AM

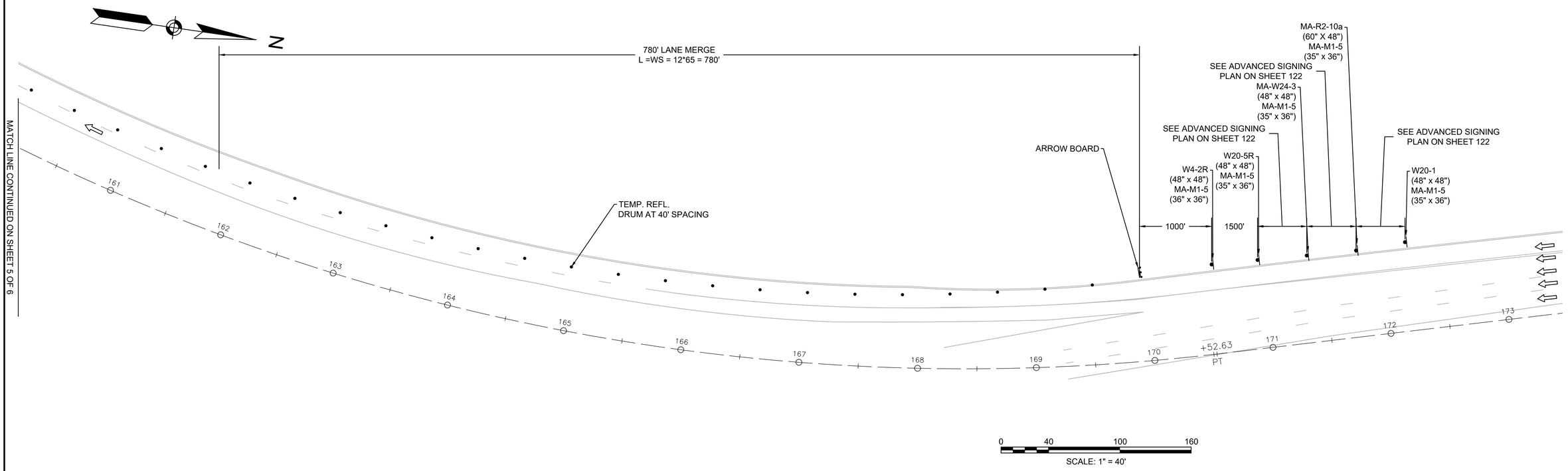
LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	94	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1
SHEET 6 OF 6



612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:28 AM

STAGE 1B NOTES:

1. WORK ON THIS STAGE CONSISTS OF SHIFTING SOUTHBOUND TRAFFIC AND CONSTRUCTING THE PROPOSED MEDIAN BARRIER ON THE SOUTHBOUND BRIDGE. OUTSIDE OF THE LANE SHIFT, SOUTHBOUND RETURNS TO THE STAGE 0 CONFIGURATION. NORTHBOUND TRAFFIC IS IN STAGE 0 CONFIGURATION.
2. TEMPORARY IMPACT ATTENUATORS SHALL MEET MASH TEST LEVEL 3, AS WELL AS BE UNI-DIRECTIONAL AND REDIRECTIVE UNLESS OTHERWISE NOTED.
3. THREE LANES OF TRAFFIC SHALL BE MAINTAINED IN THE NORTHBOUND DIRECTION AT ALL TIMES DURING STAGE 1B
4. THREE LANE OF TRAFFIC SHALL BE MAINTAINED IN THE SOUTHBOUND DIRECTION WITH THE EXCEPTION OF OVERNIGHT HOURS WHERE THE NUMBER OF TRAVEL LANES MAY BE REDUCED TO FACILITATE BRIDGE BARRIER INSTALLATION.

LEGEND:

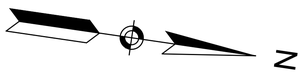
- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

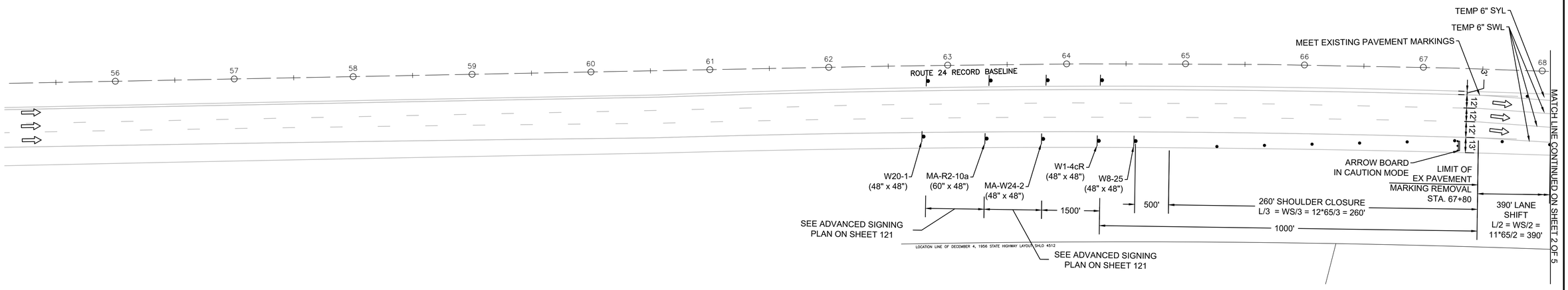
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	95	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1B
SHEET 1 OF 5

612188_HDI(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:28 AM







0 40 100 160

SCALE: 1" = 40'

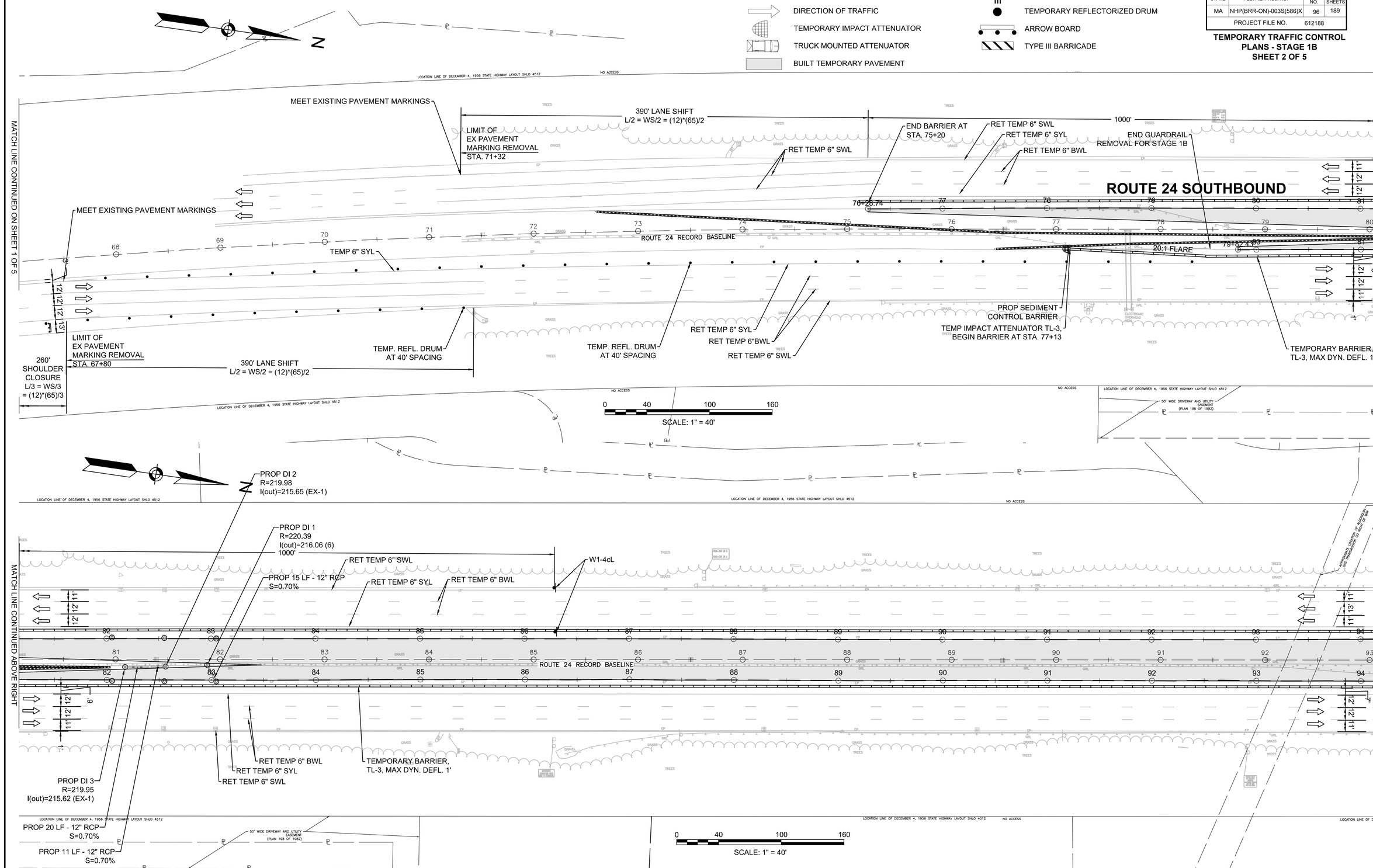
LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	96	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1B
SHEET 2 OF 5



612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:29 AM

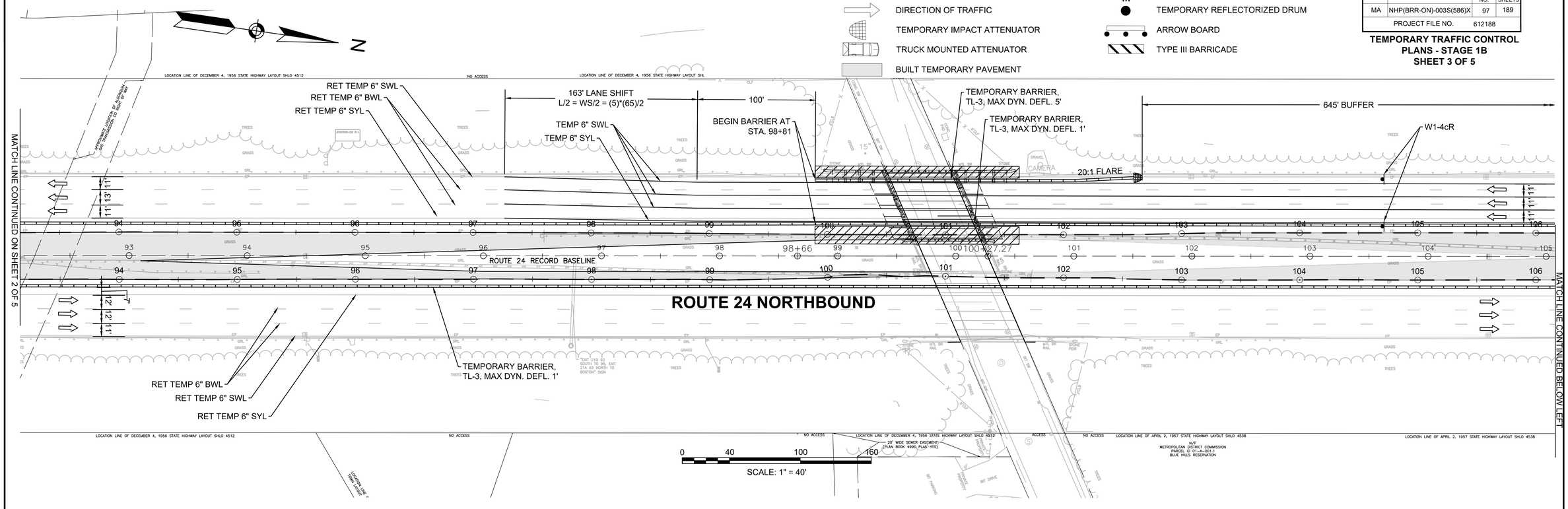
LEGEND:

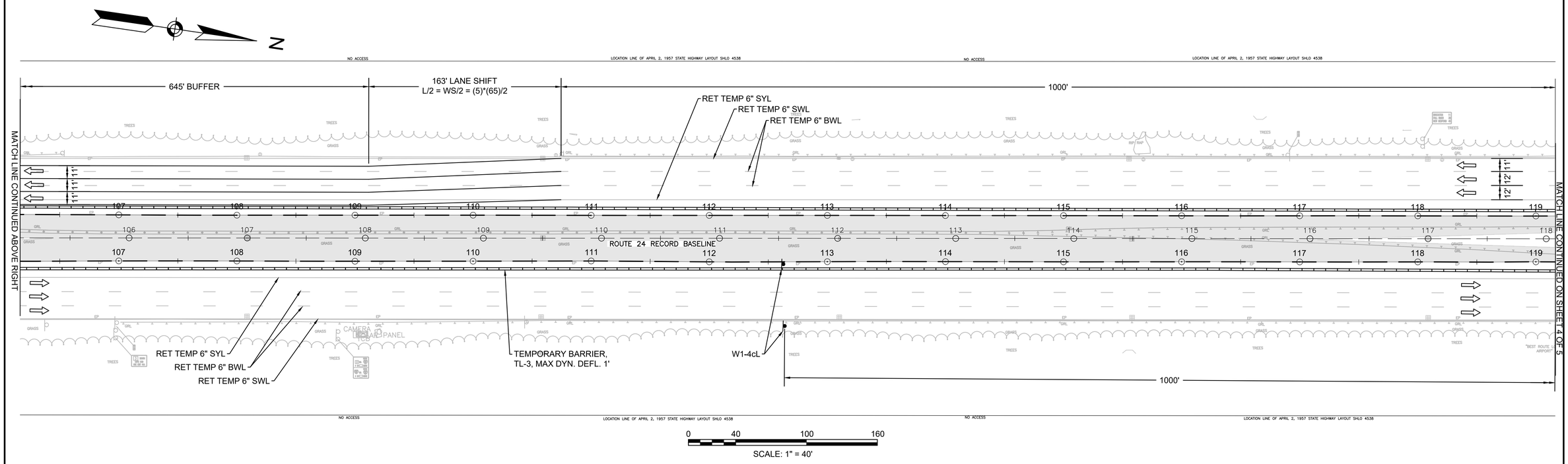
- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	97	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1B
SHEET 3 OF 5





612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:29 AM

LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	98	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1B
SHEET 4 OF 5

612188_HDTTCP SHEET).DWG Plotted on 11-Aug-2022 11:29 AM

N

NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLD 4538

MATCH LINE CONTINUED ON SHEET 3 OF 5

1000'

W1-4cL

RET TEMP 6" SYL

RET TEMP 6" SWL

RET TEMP 6" BWL

TEMP IMPACT ATTENUATOR TL-3, END BARRIER AT STA. 119+11

PROP SEDIMENT CONTROL BARRIER

20:1 FLARE

119 120 121 122 123 124 125 126 126+90.14

118 119 120 121 122 123 124 125 126 127 128 129 130

ROUTE 24 SOUTHBOUND RECORD BASELINE

119 120 121 122 123 124 126 126+94.97

ROUTE 24 NORTHBOUND RECORD BASELINE

127 128 129 130

ROUTE 24 NORTHBOUND

RET TEMP 6" SYL
RET TEMP 6" BWL
RET TEMP 6" SWL

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 1'

"BEST ROUTE LOGAN AIRPORT" SIGN

"EXIT 21B 93 SOUTH TO 95, EXIT 31A 93 NORTH TO BOSTON" SIGN

1000'

390' LANE SHIFT
L/2 = WS/2 = (12)*(65)/2

END GUARDRAIL REMOVAL FOR STAGE 1B

MEET EXISTING PAVEMENT MARKINGS

LIMIT OF EX PAVEMENT MARKING REMOVAL STA. 126+08

NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLD 4538 — NO ACCESS

0 40 100 160

SCALE: 1" = 40'

MATCH LINE CONTINUED BELOW LEFT

N

MATCH LINE CONTINUED ABOVE RIGHT

MEET EXISTING PAVEMENT MARKINGS

790' LANE CLOSURE
L = WS = (12)*(65) = 780'

1000'

LIMIT OF EX PAVEMENT MARKING REMOVAL STA. 139+75

11' 13' 11'

12' 12' 12' 12'

131 132 133 134 135 136 137 138 139 140 141 142 143

ROUTE 24 SOUTHBOUND RECORD BASELINE

131 132 133 134 135 136 137 138 139 140 141 142 143

ROUTE 24 NORTHBOUND RECORD BASELINE

MATCH LINE CONTINUED ON SHEET 5 OF 5

0 40 100 160

SCALE: 1" = 40'

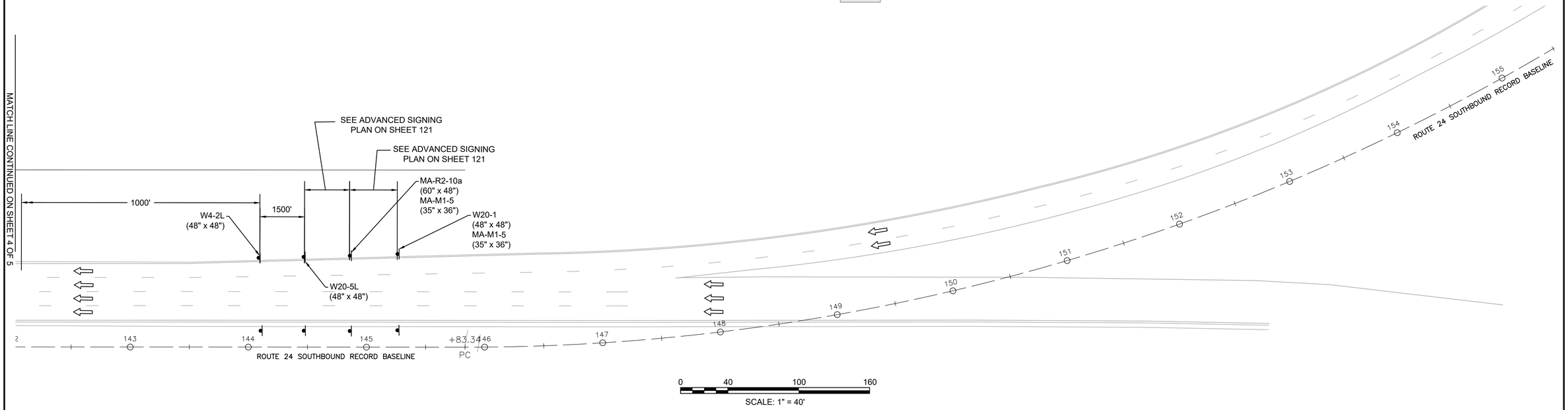
LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	99	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 1B
SHEET 5 OF 5



612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:29 AM

STAGE 2 NOTES:

1. TEMPORARY PAVEMENT MARKINGS FOR STAGE 2 MAY CONSIST OF WET REFLECTIVE TAPE PROVIDED THE MARKINGS ARE IN USE FOR LESS THAN 7 DAYS.
2. WORK IN THIS STAGE CONSISTS OF CLOSING THE NORTHBOUND BARREL OF ROUTE 24 ACROSS THE BRIDGE AND CROSSING TRAFFIC OVER ONTO SOUTHBOUND ROUTE 24. NORTHBOUND AND SOUTHBOUND ROUTE 24 WILL EACH PROVIDE TWO LANES OF TRAFFIC.
3. ALL LANE WIDTHS SHALL BE A MINIMUM OF 11' WIDE. A MINIMUM OFFSET OF 1' SHALL BE PROVIDED BETWEEN TRAVEL LANES AND TEMPORARY BARRIER. LANE WIDTH ADJACENT TO ZIPPER BARRIER IS DIMENSIONED AS A MINIMUM 12' LANE TO PROVIDE THE 11' WIDTH AND 1' OFFSET.
4. QUEUE DETECTION SYSTEM AND REAL TIME TRAFFIC MANAGEMENT SYSTEM SHALL BE IMPLEMENTED BY THE CONTRACTOR TO FACILITATE TRAFFIC OPERATIONS THROUGH THE WORK ZONES. DETAILS FOR DYNAMIC MERGE AND RTTM ARE ON SHEETS 124-129.
5. STAGE 2 SHALL ONLY BE IN EFFECT OVER A WEEKEND PERIOD BETWEEN THE HOURS OF 8PM FRIDAY EVENING THROUGH 4AM MONDAY. ROUTE 24 SHALL BE RETURNED TO THE 3-LANE CONFIGURATION SHOWN IN STAGE 2B AT THE END OF THE WEEKEND CLOSURE.
6. TEMPORARY IMPACT ATTENUATORS SHALL MEET MASH TEST LEVEL 3, AS WELL AS BE UNI-DIRECTIONAL AND REDIRECTIVE UNLESS OTHERWISE NOTED.

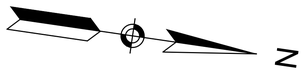
LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

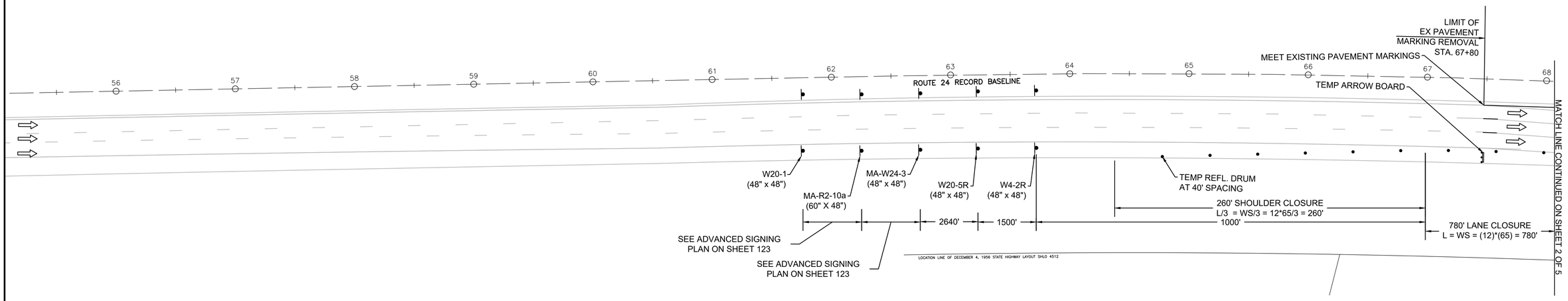
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	100	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 2
SHEET 1 OF 5







0 40 100 160

SCALE: 1" = 40'

612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:29 AM

LEGEND:

WORK ZONE
TEMPORARY BARRIER
DIRECTION OF TRAFFIC
TEMPORARY IMPACT ATTENUATOR
TRUCK MOUNTED ATTENUATOR
BUILT TEMPORARY PAVEMENT
TEMPORARY ZIPPER BARRIER
PORTABLE RUMBLE STRIP
TEMPORARY REFLECTORIZED DRUM
ARROW BOARD
TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	101	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 2
SHEET 2 OF 5

612188_HDITTCP SHEET).DWG Plotted on 11-Aug-2022 11:29 AM

MATCH LINE CONTINUED ON SHEET 1 OF 5

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512

NO ACCESS

MEET EXISTING PAVEMENT MARKINGS

LIMIT OF EX PAVEMENT MARKING REMOVAL STA. 71+32

390' LANE SHIFT
L/2 = WS/2 = (12)*(65)/2

END BARRIER AT STA. 75+20
RET TEMP 6" SWL
RET TEMP 6" BWL
RET TEMP 6" SYL
RET TEMP 6" SWL

1000'

TEMPORARY BARRIER TL-3, MAX DYN. DEFL. 5'

END GUARDRAIL REMOVAL FOR STAGE 2

MEET EXISTING PAVEMENT MARKINGS

TEMP ARROW BOARD

ROUTE 24 RECORD BASELINE

76+26.74

79+62.49

20:1 FLARE

ROUTE 24 NORTHBOUND

LIMIT OF EX PAVEMENT MARKING REMOVAL STA. 67+80

MASK OR REMOVE PREVIOUSLY INSTALLED PAVEMENT MARKINGS

TEMP 6" SYL

TEMP 6" BWL

W24-1aL (48" X 48")

TEMP REFL. DRUM AT 40' SPACING

PROP SEDIMENT CONTROL BARRIER

TEMP IMPACT ATTENUATOR TL-3 BEGIN BARRIER AT STA. 78+48

TEMP 6" SWL (TAPED)

780' LANE CLOSURE
L = WS = (12)*(65) = 780'

390' BUFFER
L/2 = WS/2 = (12)*(65)/2 = 390'

2016' LANE SHIFT
L/2 = WS/2 = (63)*(65)/2 = 2016'

0 40 100 160
SCALE: 1" = 40'

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512

50' WIDE DRIVEWAY AND UTILITY EASEMENT (PLAN 198 OF 1982)

MATCH LINE CONTINUED BELOW LEFT

MATCH LINE CONTINUED ABOVE RIGHT

PROP DI 2
R=219.98
I(out)=215.65 (EX-1)

RET TEMP 6" BWL

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 5'

PROP DI 1
R=220.39
I(out)=216.06 (6)
1000'

RET TEMP 6" SWL

RET TEMP 6" SYL

W1-4cL (48" x 48")

END BARRIER AT STA. 87+56

TEMPORARY ZIPPER BARRIER WITH REFLECTORIZED YELLOW PAINT

PROP 15 LF - 12" RCP
S=0.70%

ROUTE 24 SOUTHBOUND

ROUTE 24 RECORD BASELINE

20:1 FLARE

ROUTE 24 NORTHBOUND

TEMP REFL. DRUM AT 40' SPACING

TEMP 6" SWL (TAPED)

BEGIN BARRIER AT STA. 86+92

R11-2
W1-6L
MOUNTED ON TYPE III BARRICADE

TEMP IMPACT ATTENUATOR TL-3, BEGIN BARRIER AT 90+87

TRUCK MOUNTED ATTENUATOR (TYP)

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 5'

PROP DI 3
R=219.95
I(out)=215.62 (EX-1)

2016' LANE SHIFT
L/2 = WS/2 = (63)*(65)/2 = 2016'

PROP 20 LF - 12" RCP
S=0.70%

PROP 11 LF - 12" RCP
S=0.70%

0 40 100 160
SCALE: 1" = 40'

LOCATION LINE OF DEC

MATCH LINE CONTINUED ON SHEET 3 OF 5

LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	102	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 2
SHEET 3 OF 5

612188_HDTTCP SHEET).DWG Plotted on 11-Aug-2022 11:29 AM

N

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512 — NO ACCESS — LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512

APPROXIMATE LOCATION OF ALIGNMENT AT BEGINNING OF WORK

RET TEMP 6" BWL
RET TEMP 6" SWL
RET TEMP 6" SYL

TEMP 6" SWL (TAPED)

TEMPORARY ZIPPER BARRIER WITH REFLECTORIZED YELLOW PAINT

130'

TEMP REFL. DRUM AT 40' SPACING

TEMPORARY ZIPPER BARRIER WITH REFLECTORIZED YELLOW PAINT (ADJACENT TO TEMP BWL)

CONNECT TEMP BARRIER TO EX BRIDGE RAIL USING THRIE BEAM PANELS

MATCH LINE CONTINUED ON SHEET 2 OF 5

ROUTE 24 SOUTHBOUND

94 95 96 97 98 99 100 101 102 103 104 105 106

93 94 95 96 97 98 98+66 99 100 100+27.27 101 102 103 104 105

ROUTE 24 RECORD BASELINE

94 95 96 97 98 99 100 101 102 103 104 105 106

ROUTE 24 NORTHBOUND

MATCH LINE CONTINUED BELOW LEFT

CONNECT TEMP BARRIER TO EX BRIDGE RAIL USING THRIE BEAM PANELS

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 5'

"EXIT 21B 93 SOUTH TO 95, EXIT 21A 93 NORTH TO BOSTON" SIGN

2016' LANE SHIFT
L/2 = WS/2 = (63)*(65)/2 = 2016'

2,066' LANE SHIFT
L/2 = WS/2 = (63)*(65)/2 = 2,048'

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512 — NO ACCESS — LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512 — ACCESS — NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538 — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538

20' WIDE SEWER EASEMENT (PLAN BOOK 4999, PLAN 405)

N/F
METROPOLITAN DISTRICT COMMISSION
PARCEL ID 01-A-001.1
BLUE HILLS RESERVATION

0 40 100 160
SCALE: 1" = 40'

N

NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538 — NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538

MATCH LINE CONTINUED ABOVE RIGHT

780' LANE CLOSURE
L = WS = (12)*(65) = 780'

1560' BUFFER
2L = 2WS = 2*(12)*(65) = 1560'

RET TEMP 6" SWL
RET TEMP 6" BWL

TEMPORARY ZIPPER BARRIER WITH REFLECTORIZED YELLOW PAINT

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 5'

END BARRIER AT STA. 112+97

END BARRIER AT STA. 113+71

TEMP REFL. DRUM AT 40' SPACING

TEMP ARROW BOARD

ROUTE 24 SOUTHBOUND

107 108 109 110 111 112 113 114 115 116 117 118 119

106 107 108 109 110 111 112 113 114 115 116 117 118

ROUTE 24 RECORD BASELINE

107 108 109 110 111 112 113 114 115 116 117 118 119

ROUTE 24 NORTHBOUND

MATCH LINE CONTINUED ON SHEET 4 OF 5

END BARRIER AT STA. 106+94

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 5'

TEMP REFL. DRUM AT 40' SPACING

2,066' LANE SHIFT
L/2 = WS/2 = (66)*(65)/2 = 2,048'

NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538 — NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538

0 40 100 160
SCALE: 1" = 40'

LEGEND:

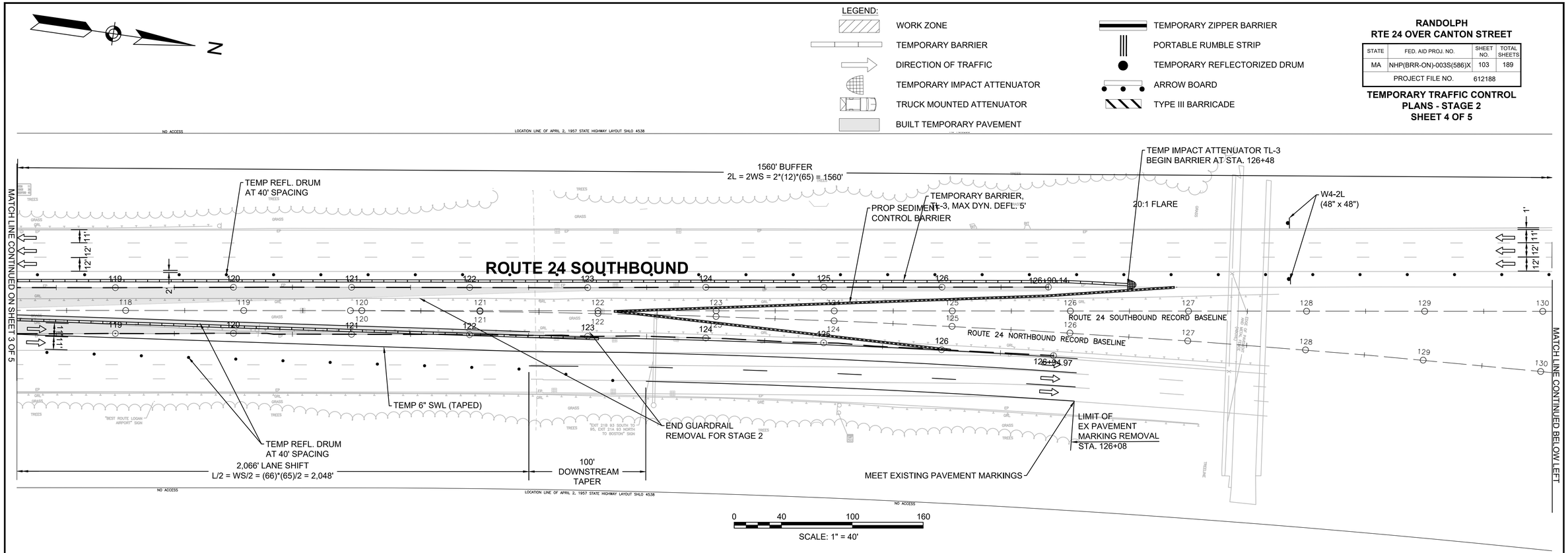
- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	103	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 2
SHEET 4 OF 5

612188_HDITTCP SHEET).DWG Plotted on 11-Aug-2022 11:30 AM



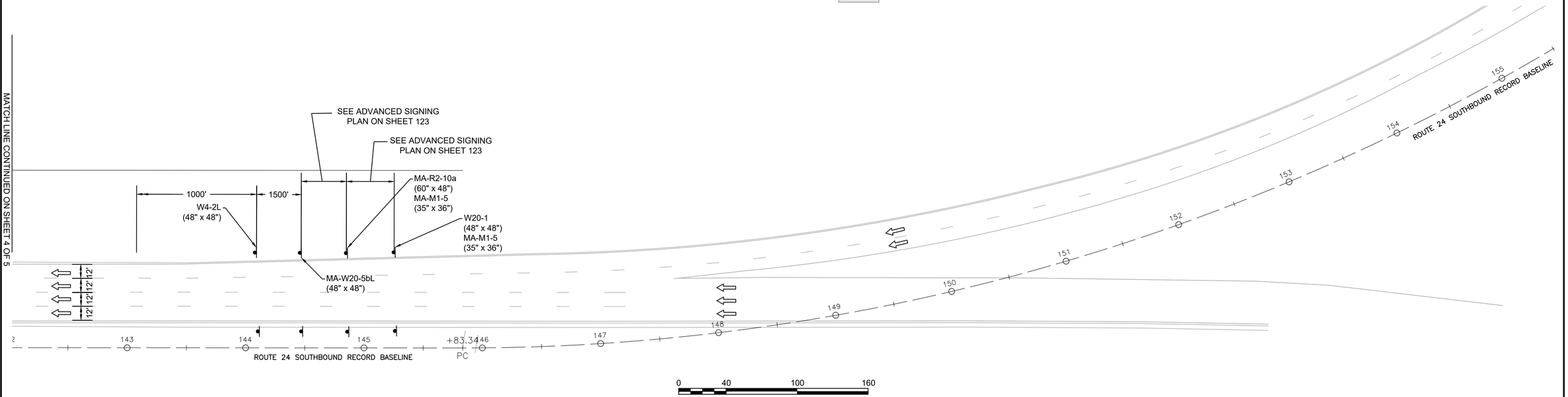
LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- BUILT TEMPORARY PAVEMENT
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	104	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 2
SHEET 5 OF 5



612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:30 AM

STAGE 2B NOTES:

1. WORK ON THIS STAGE CONSISTS OF CONSTRUCTING THE PROPOSED MEDIAN BARRIER ON THE NORTHBOUND BRIDGE AND THE REMOVAL OF TEMPORARY PAVEMENT.
2. TEMPORARY IMPACT ATTENUATORS SHALL MEET MASH TEST LEVEL 3, AS WELL AS BE UNI-DIRECTIONAL AND REDIRECTIVE UNLESS OTHERWISE NOTED.
3. THREE LANES OF TRAFFIC SHALL BE MAINTAINED IN THE SOUTHBOUND DIRECTION AT ALL TIMES DURING STAGE 2B.
4. THREE LANES OF TRAFFIC SHALL BE MAINTAINED IN THE NORTHBOUND DIRECTION WITH EXCEPTION OF OVERNIGHT HOURS WHERE THE NUMBER OF TRAVEL LANES MAY BE REDUCED TO FACILITATE BRIDGE BARRIER INSTALLATION.

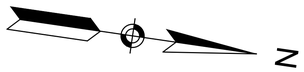
LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

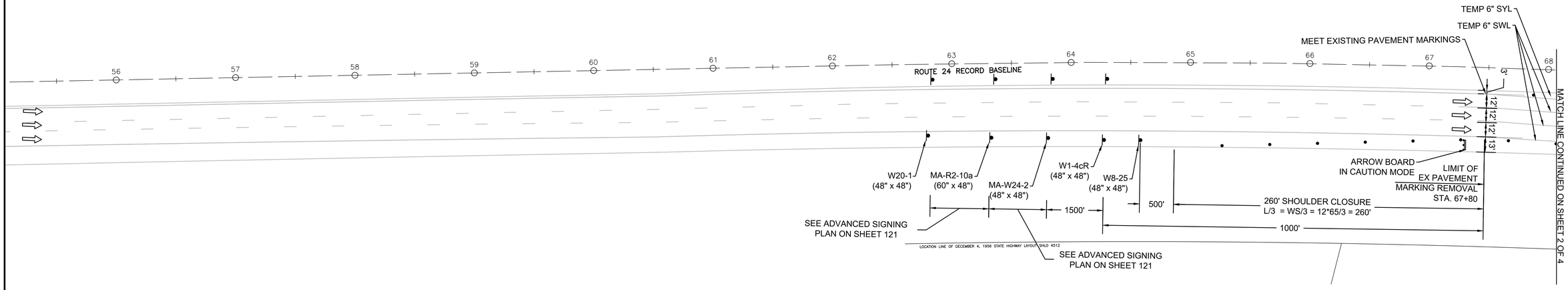
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	105	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 2B
SHEET 1 OF 4







0 40 100 160

SCALE: 1" = 40'

612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:30 AM

LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	106	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 2B
SHEET 2 OF 4

612188_HDITTCP SHEET).DWG Plotted on 11-Aug-2022 11:30 AM

N

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512

NO ACCESS

MATCH LINE CONTINUED ON SHEET 1 OF 4

MEET EXISTING PAVEMENT MARKINGS

LIMIT OF EX PAVEMENT MARKING REMOVAL STA. 71+32

390' LANE SHIFT
L/2 = WS/2 = (12)*(65)/2

RET 6" SWL

END BARRIER AT STA. 75+20

RET 6" SWL

RET 6" SYL

RET 6" BWL

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 1'

1000'

END GUARDRAIL REMOVAL FOR STAGE 1B

MEET EXISTING PAVEMENT MARKINGS

RET 6" SYL

ROUTE 24 RECORD BASELINE

RET 6" SWL

LIMIT OF EX PAVEMENT MARKING REMOVAL STA. 67+80

20:1 FLARE

PROP SEDIMENT CONTROL BARRIER

TEMP IMPACT ATTENUATOR TL-3, BEGIN BARRIER AT STA. 77+87

W1-4cL

1000'

MATCH LINE CONTINUED BELOW LEFT

0 40 100 160

SCALE: 1" = 40'

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512

50' WIDE DRIVEWAY AND UTILITY EASEMENT (PLAN 198 OF 1982)

NO ACCESS

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512

N

PROP DI 2
R=219.98
I(out)=215.65 (EX-1)

BEGIN GUARDRAIL REMOVAL

PROP DI 1
R=220.39
I(out)=216.06 (6)

RET 6" BWL

1000'

PROP 15 LF - 12" RCP
S=0.70%

W1-4cL

RET 6" SYL

RET 6" SWL

TEMPORARY BARRIER, TL-3, MAX DYN. DEFL. 1'

APPROXIMATE LOCATION OF ALIGNMENT CHANGE AS MONUMENTED (SEE SHEET 3 OF 4)

MATCH LINE CONTINUED ABOVE RIGHT

ROUTE 24 RECORD BASELINE

RET 6" SYL

RET 6" SWL

PROP DI 3
R=219.95
I(out)=215.62 (EX-1)

RET 6" BWL

1000'

TEMP 6" SYL

TEMP 6" SWL

TEMP REFL DRUM AT 40' SPACING

MATCH LINE CONTINUED ON SHEET 3 OF 4

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512

PROP 20 LF - 12" RCP
S=0.70%

PROP 11 LF - 12" RCP
S=0.70%

50' WIDE DRIVEWAY AND UTILITY EASEMENT (PLAN 198 OF 1982)

0 40 100 160

SCALE: 1" = 40'

LOCATION LINE OF DECEMBER 4, 1956 STATE HIGHWAY LAYOUT SHLO 4512

NO ACCESS

260' LANE SHIFT
L/2 = WS/2 = (4)*(65)/2 = 260'

645' BUFFER

LOCATION LINE OF DEC

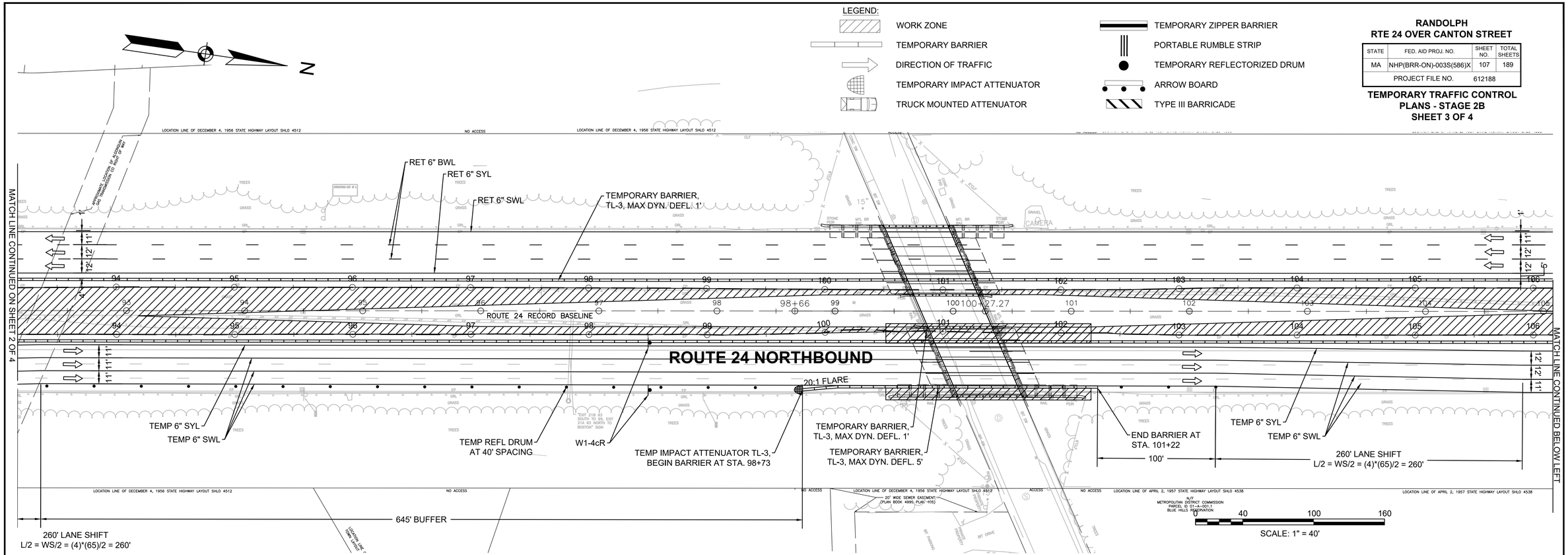
LEGEND:

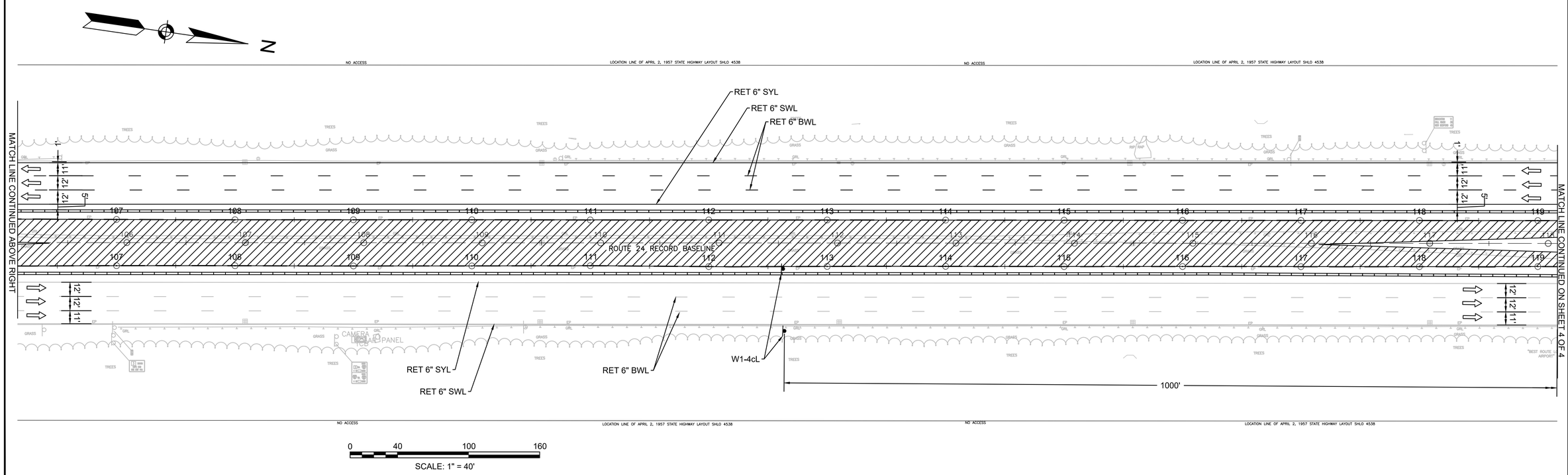
- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	107	189
PROJECT FILE NO.		612188	

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 2B
SHEET 3 OF 4





612188_HD(TTCP SHEET).DWG Plotted on 11-Aug-2022 11:30 AM

LEGEND:

- WORK ZONE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TRUCK MOUNTED ATTENUATOR
- TEMPORARY ZIPPER BARRIER
- PORTABLE RUMBLE STRIP
- TEMPORARY REFLECTORIZED DRUM
- ARROW BOARD
- TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	108	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS - STAGE 2B
SHEET 4 OF 4

612188_HDTTCP SHEET).DWG Plotted on 11-Aug-2022 11:31 AM

N

NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538

645' BUFFER SPACE

TEMP IMPACT ATTENUATOR TL-3, BEGIN BARRIER AT STA. 119+20

RET 6" SYL

RET 6" SWL

RET 6" BWL

TEMP. REFL. DRUM AT 40' SPACING

PROP SEDIMENT CONTROL BARRIER

MATCH LINE CONTINUED ON SHEET 3 OF 4

20:1 FLARE

ROUTE 24 SOUTHBOUND RECORD BASELINE

ROUTE 24 NORTHBOUND RECORD BASELINE

126+90.14

126+94.97

ROUTE 24 NORTHBOUND

RET 6" SYL

RET 6" BWL

RET 6" SWL

1000'

390' LANE SHIFT
L/2 = WS/2 = (12)*(65)/2

END GUARDRAIL REMOVAL FOR STAGE 2B

MEET EXISTING PAVEMENT MARKINGS

LIMIT OF EX PAVEMENT MARKING REMOVAL STA. 126+08

MATCH LINE CONTINUED BELOW LEFT

NO ACCESS — LOCATION LINE OF APRIL 2, 1957 STATE HIGHWAY LAYOUT SHLO 4538 — NO ACCESS

0 40 100 160

SCALE: 1" = 40'

N

MATCH LINE CONTINUED ABOVE RIGHT

790' LANE CLOSURE
L = WS = (12)*(65) = 780'

MEET EXISTING PAVEMENT MARKINGS

1000'

RET 6" BWL

RET 6" DWL

MASK EX W4-2R

MASK EX W9-1R

RET 6" SWL

RET 6" SYL

LIMIT OF EX PAVEMENT MARKING REMOVAL STA. 139+75

ROUTE 24 SOUTHBOUND RECORD BASELINE

MATCH LINE CONTINUED BELOW

SEE ADVANCED SIGNING PLAN ON SHEET 121

SEE ADVANCED SIGNING PLAN ON SHEET 121

MA-R2-10a (60" x 48")
MA-M1-5 (35" x 36")

1000'

1500'

W4-2L (48" x 48")

W20-1 (48" x 48")
MA-M1-5 (35" x 36")

W20-5L (48" x 48")

MATCH LINE ABOVE RIGHT

+83.34

0 40 100 160

SCALE: 1" = 40'

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED STAGE 0	STAGE 1	STAGE 1B	STAGE 2	STAGE 2B	DETOUR	DETAIL	TOTAL	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
MA-M1-5	36"	36"	24	SEE MASSDOT STANDARD SIGNS BOOK				10	8	8				10	WHITE	BLACK	BLACK	-	9.00	90.00
MA-R2-10a	60"	48"	WORK ZONE SPEEDING FINES DOUBLED				8	8	8	8	8			8	FLUOR-ORANGE WHITE	BLACK	BLACK	-	20.00	160.00
MA-R2-10a	48"	36"	WORK ZONE SPEEDING FINES DOUBLED										2	2	FLUOR-ORANGE WHITE	BLACK	BLACK	-	12.00	24.00
MA-R2-10e	48"	60"	END ROAD WORK / DOUBLE FINES END				4	4	4	4	4			4	FLUOR-ORANGE WHITE	BLACK	BLACK	-	20.00	80.00
MA-R2-10e	36"	48"	END ROAD WORK / DOUBLE FINES END										2	2	FLUOR-ORANGE WHITE	BLACK	BLACK	-	12.00	24.00
MA-W20-5bL	48"	48"	LEFT TWO LANES CLOSED 1/2 MILE							2			2	4	FLUOR-ORANGE	BLACK	BLACK	-	16.00	64.00
MA-W20-5bR	48"	48"	RIGHT TWO LANES CLOSED 1/2 MILE										2	2	FLUOR-ORANGE	BLACK	BLACK	-	16.00	32.00
MA-W24-2	48"	48"	LANES SHIFT AHEAD				2		2		2			2	FLUOR-ORANGE	BLACK	BLACK	-	16.00	32.00
MA-W24-3	48	48"	MEDIAN CROSSOVER 1/2 MILE					4		2			2	6	FLUOR-ORANGE	BLACK	BLACK	-	16.00	96.00
MA-W28-1	48"	48"	RUMBLE STRIPS AHEAD										2	2	FLUOR-ORANGE	BLACK	BLACK	-	16.00	32.00
R11-2	48"	30"	ROAD CLOSED	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS				3		3				3	WHITE	BLACK	BLACK	-	10.00	30.00
W1-4L	48"	48"											2	2	FLUOR-ORANGE	BLACK	BLACK	-	16.00	32.00
W1-4R	48"	48"											2	2	FLUOR-ORANGE	BLACK	BLACK	-	16.00	32.00
W1-4cL	48"	48"					4	2	6	2	4			4	FLUOR-ORANGE	BLACK	BLACK	-	16.00	64.00
W1-4cR	48"	48"					2		4		4		1	4	FLUOR-ORANGE	BLACK	BLACK	-	16.00	64.00
W1-6L	60"	30"						3		3			1	3	FLUOR-ORANGE	BLACK	BLACK	-	12.50	37.50

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	109	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC SIGN SUMMARY
SHEET 1 OF 3

NOTES

1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1996 MASSDOT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED; THE MASSDOT SIGN LISTINGS 1993 EDITION, AS AMENDED; AND THE MASSDOT GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS, 2005 EDITION, AS AMENDED.
2. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE FLUORESCENT ORANGE COLOR BACKGROUNDS UNLESS OTHERWISE NOTED.

612188_TR(CONSTRUCTION SIGN SUMMARY).DWG Plotted on 11-Aug-2022 11:31 AM

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.	STAGE 0	STAGE 1	STAGE 1B	STAGE 2	STAGE 2B	DETOUR	DETAIL	TOTAL	BACKGROUND	LEGEND	BORDER			
W4-2L	48"	48"		SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			2	4	2	2	2		2	4	FLUOR-ORANGE	BLACK	BLACK	-	16.00	64.00
W4-2R	48"	48"						2		4			4	8	FLUOR-ORANGE	BLACK	BLACK	-	16.00	128.00
W5-1	36"	36"											1	1	FLUOR-ORANGE	BLACK	BLACK	-	9.00	9.00
W8-25	48"	48"					1	1	1	1			1	1	FLUOR-ORANGE	BLACK	BLACK	-	16.00	16.00
W9-1L	48"	48"					4		4		4			4	FLUOR-ORANGE	BLACK	BLACK	-	16.00	64.00
W11-2	36"	36"											1	1	FLUOR-ORANGE	BLACK	BLACK	-	9.00	9.00
W13-1p	24"	24"					4	6	4	4	2		6	6	FLUOR-ORANGE	BLACK	BLACK	-	4.00	24.00
W20-1	48"	48"					4	6	4	4	4		2	6	FLUOR-ORANGE	BLACK	BLACK	-	16.00	96.00
W20-5L	48"	48"					2	4	2	2	2		2	6	FLUOR-ORANGE	BLACK	BLACK	-	16.00	96.00
W20-5R	48"	48"						2		2			2	4	FLUOR-ORANGE	BLACK	BLACK	-	16.00	64.00
W21-5aR	36"	36"											2	2	FLUOR-ORANGE	BLACK	BLACK	-	9.00	18.00
W21-5aR	36"	36"											1	1	FLUOR-ORANGE	BLACK	BLACK	-	9.00	9.00
W24-1aL	48"	48"						2		2				2	FLUOR-ORANGE	BLACK	BLACK	-	16.00	32.00

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	110	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC SIGN SUMMARY
SHEET 2 OF 3

NOTES

1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1996 MASSDOT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED; THE MASSDOT SIGN LISTINGS 1993 EDITION, AS AMENDED; AND THE MASSDOT GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS, 2005 EDITION, AS AMENDED.
2. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE FLUORESCENT ORANGE COLOR BACKGROUNDS UNLESS OTHERWISE NOTED.

612188_TR(CONSTRUCTION SIGN SUMMARY).DWG Plotted on 11-Aug-2022 11:31 AM

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.	STAGE 0	STAGE 1	STAGE 1B	STAGE 2	STAGE 2B	DETOUR	DETAIL	TOTAL	BACKGROUND	LEGEND	BORDER			
M4-8a	24"	18"	END DETOUR	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS								2		2	FLUOR-ORANGE	BLACK	BLACK	-	3.00	6.00
M4-9AL	30"	24"	DETOUR ←									7		7	FLUOR-ORANGE	BLACK	BLACK	-	5.00	35.00
M4-9AR	30"	24"	DETOUR →									6		6	FLUOR-ORANGE	BLACK	BLACK	-	5.00	30.00
M4-9L	30"	24"	DETOUR ←									8		8	FLUOR-ORANGE	BLACK	BLACK	-	5.00	40.00
M4-9R	30"	24"	DETOUR →									7		7	FLUOR-ORANGE	BLACK	BLACK	-	5.00	35.00
M4-9V	30"	24"	DETOUR ↑									18		18	FLUOR-ORANGE	BLACK	BLACK	-	5.00	90.00
M4-10L	48"	18"	← DETOUR									5		5	BLACK	BLACK	ORANGE	-	6.00	30.00
M4-10R	48"	18"	DETOUR →									5		5	BLACK	BLACK	ORANGE	-	6.00	30.00
R11-3a (1/2 MILE)	60"	30"	ROAD CLOSED 1/2 MILE AHEAD LOCAL TRAFFIC ONLY									2		2	WHITE	BLACK	BLACK	-	12.50	25.00
R11-3a (1 MILE)	60"	30"	ROAD CLOSED 1 MILE AHEAD LOCAL TRAFFIC ONLY									1		1	WHITE	BLACK	BLACK	-	12.50	12.50
R11-3a (2 MILES)	60"	30"	ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY									1		1	WHITE	BLACK	BLACK	-	12.50	12.50
W16-8P	42"	12"	Canton St	SEE DETAIL AT RIGHT								68		68	FLUOR-ORANGE	BLACK	BLACK	-	3.50	238.00
W20-2	36"	36"	DETOUR AHEAD	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS								14		14	FLUOR-ORANGE	BLACK	BLACK	-	9.00	126.00
W20-2 (500FT)	36"	36"	DETOUR 500 FT									1		1	FLUOR-ORANGE	BLACK	BLACK	-	9.00	9.00
W20-3 (500FT)	36"	36"	ROAD CLOSED 500 FT									2		2	FLUOR-ORANGE	BLACK	BLACK	-	9.00	18.00
W20-3 (1000FT)	36"	36"	ROAD CLOSED 1000 FT									2		2	FLUOR-ORANGE	BLACK	BLACK	-	9.00	18.00

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	111	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC SIGN SUMMARY
SHEET 3 OF 3

NOTES

1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1996 MASSDOT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED; THE MASSDOT SIGN LISTINGS 1993 EDITION, AS AMENDED; AND THE MASSDOT GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS, 2005 EDITION, AS AMENDED.
2. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE FLUORESCENT ORANGE COLOR BACKGROUNDS UNLESS OTHERWISE NOTED.



1.5" Radius, 0.4" Border, Black on Orange;
"Canton St" C;

612188_TR(CONSTRUCTION SIGN SUMMARY).DWG Plotted on 11-Aug-2022 11:31 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	112	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL DETAILS
SHEET 1 OF 6

612188_TR(TTCP DETAILS).DWG Plotted on 11-Aug-2022 11:31 AM

NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
6. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
7. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL LIGHTS.
8. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
9. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
10. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
11. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

LEGEND:

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

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

MEASURED AVERAGE WORK ZONE CAPACITIES

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

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

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

MASSDOT FIGURE GEN-1

SUGGESTED WORK ZONE WARNING SIGN SPACING

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

* ROAD TYPE TO BE DETERMINED BY MASSDOT OFFICE OF TRANSPORTATION PLANNING.

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

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

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

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

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

Based on: Table 6C-1 MUTCD LATEST EDITION

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

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

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

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

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

Source: Table 6C-2 MUTCD LATEST EDITION

MASSDOT FIGURE GEN-2

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

EXPRESSWAY- A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.

FREEWAY- A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS.

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

Source: MUTCD LATEST EDITION

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

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

Source: Table 6C-3 MUTCD LATEST EDITION

FORMULAS FOR DETERMINING TAPER LENGTHS

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

WHERE: L = TAPER LENGTH IN FEET

W = WIDTH OF OFFSET IN FEET

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

Source: Table 6C-4 MUTCD LATEST EDITION

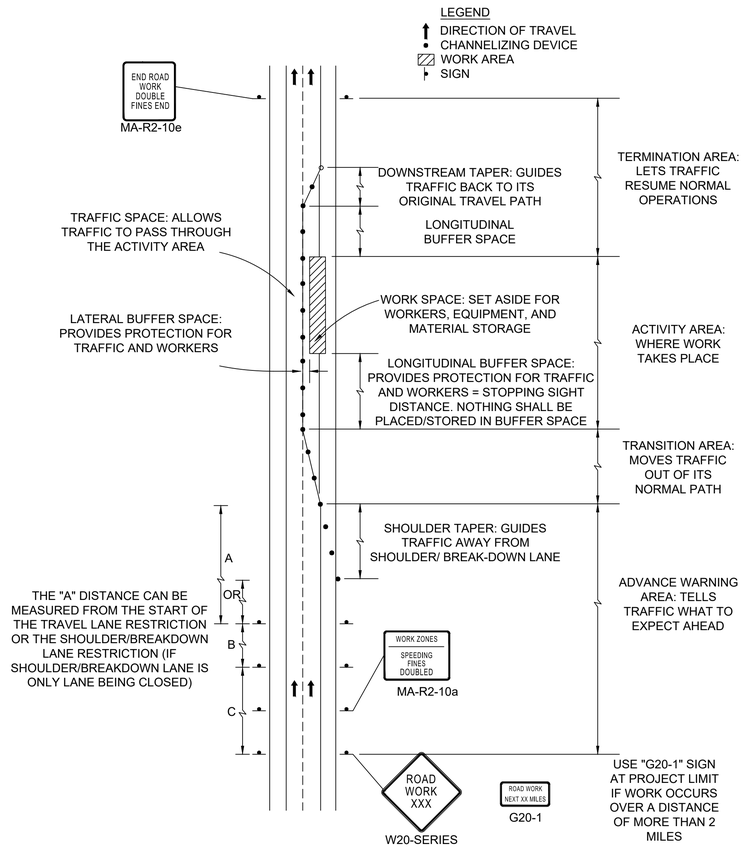
MASSDOT FIGURE GEN-3

RANDOLPH
RTE 24 OVER CANTON STREET

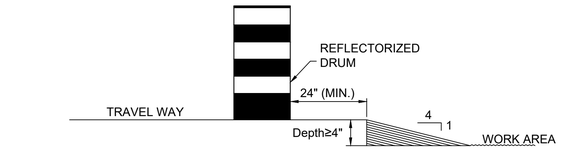
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	113	189
PROJECT FILE NO.	612188		

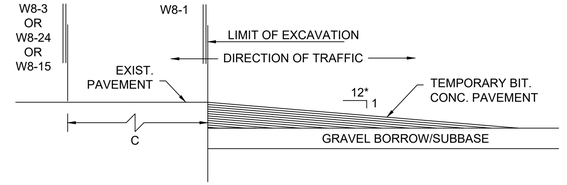
TEMPORARY TRAFFIC CONTROL DETAILS
SHEET 2 OF 6

612188_TR(TTCP DETAILS).DWG Plotted on 11-Aug-2022 11:31 AM



MASSDOT FIGURE GEN-4





* - INCREASE SLOPE RATIO FOR HIGHER SPEEDS

MASSDOT FIGURE GEN-6

RANDOLPH
RTE 24 OVER CANTON STREET

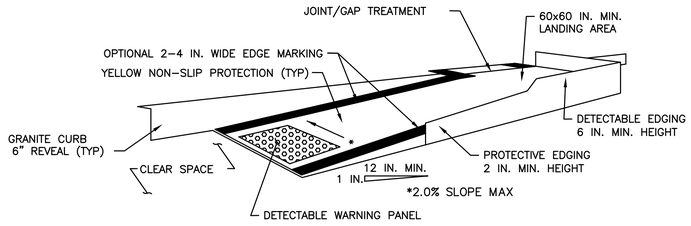
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	114	189
	PROJECT FILE NO. 612188		

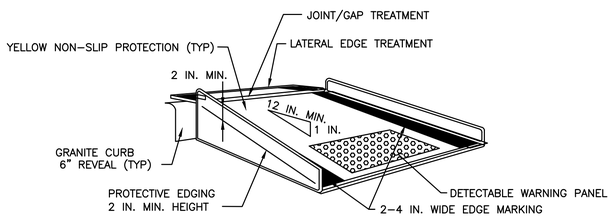
TEMPORARY TRAFFIC CONTROL DETAILS
SHEET 3 OF 6

612188_TR(TTCP DETAILS).DWG Plotted on 11-Aug-2022 11:31 AM

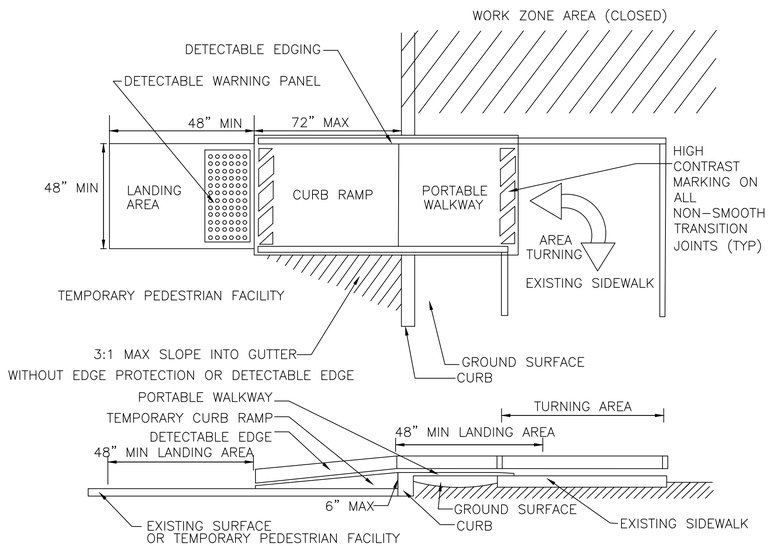
NOTES:

1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON–SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS–SLOPE.
5. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
6. THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR 2 TO 4 IN. WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.

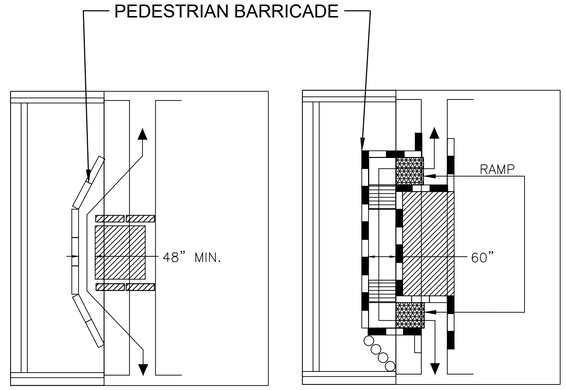




MASSDOT FIGURE PED-1



MASSDOT FIGURE PED-2



- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, temporary facilities shall be provided and they shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
- A pedestrian channelizing device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
- When used, temporary ramps shall comply with Americans with Disabilities Act (see Figures Ped–1 & Ped–2).
- The alternate pathway should have a smooth continuous hard surface for the entire length of the temporary pedestrian facility.
- The protective requirements of a TTC situation have priority in determining the need for temporary traffic barriers and their use in this situation should be based on engineering judgment.
- Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.

AUDIBLE DEVICES

For long term sidewalk closures (at a minimum overnight) a form of speech messaging for pedestrians with visual disabilities shall be provided. Audible information devices such as detectable barriers or barricades and other passive pedestrian activation (motion activated) devices should be considered for these cases. These audible devices can be mountable or stand alone.

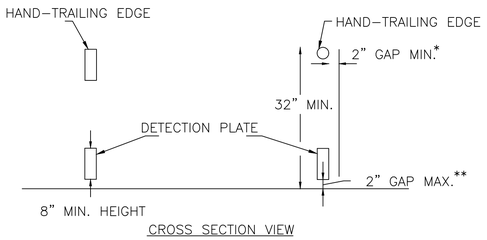
MASSDOT FIGURE PED-3

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	115	189
	PROJECT FILE NO. 612188		

TEMPORARY TRAFFIC CONTROL DETAILS
SHEET 4 OF 6

612188_TR(TTCP DETAILS).DWG Plotted on 11-Aug-2022 11:31 AM

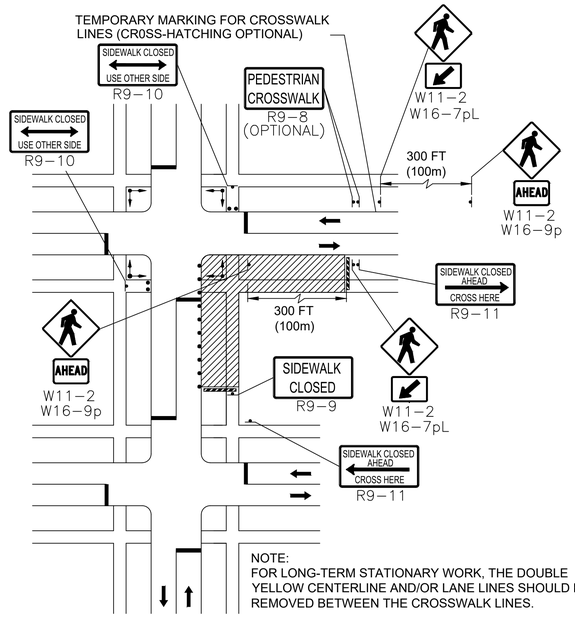


NOTES:

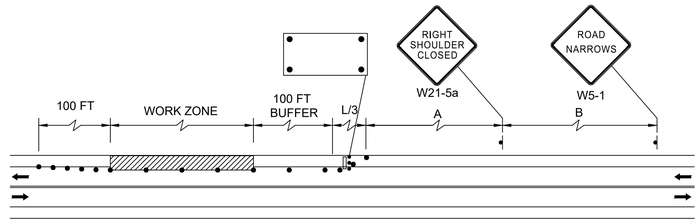
* THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND–TRAILING EDGE AND ITS SUPPORT.

** A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.

MASSDOT FIGURE PED-4



MASSDOT FIGURE PED-6

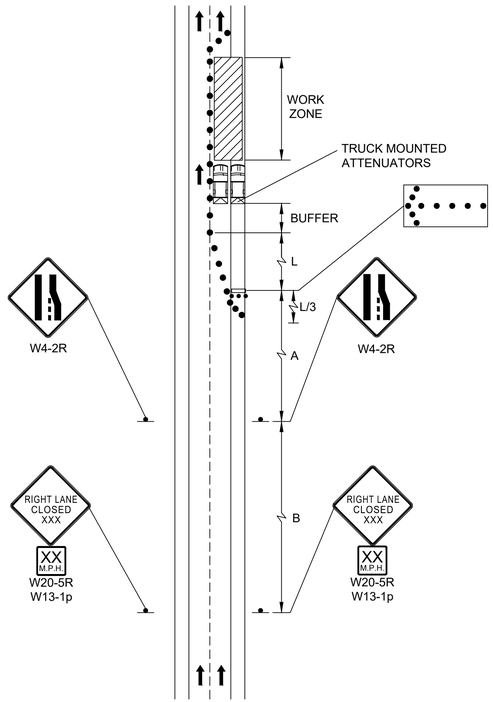


MASSDOT FIGURE TLR-1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	116	189
PROJECT FILE NO.	612188		

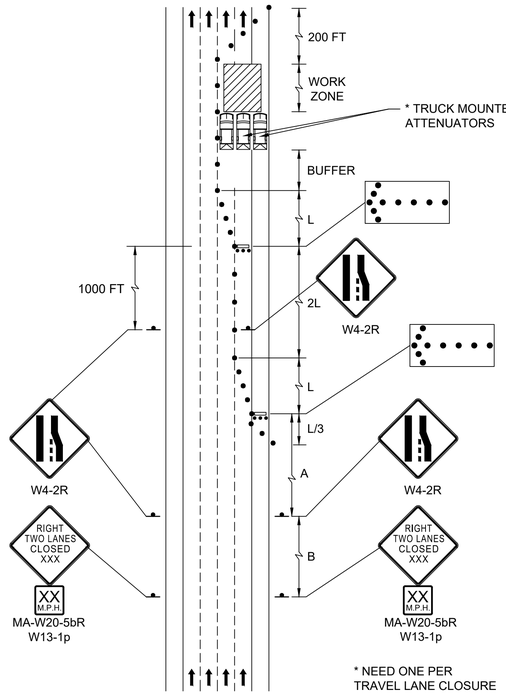
TEMPORARY TRAFFIC CONTROL DETAILS
SHEET 5 OF 6

612188_TR(TTCP DETAILS).DWG Plotted on 11-Aug-2022 11:31 AM



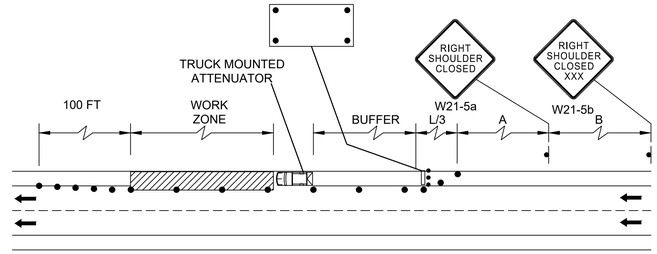
DIVIDED HIGHWAY/LANE CLOSURE (SHORT TERM)

MASSDOT FIGURE DIV-2



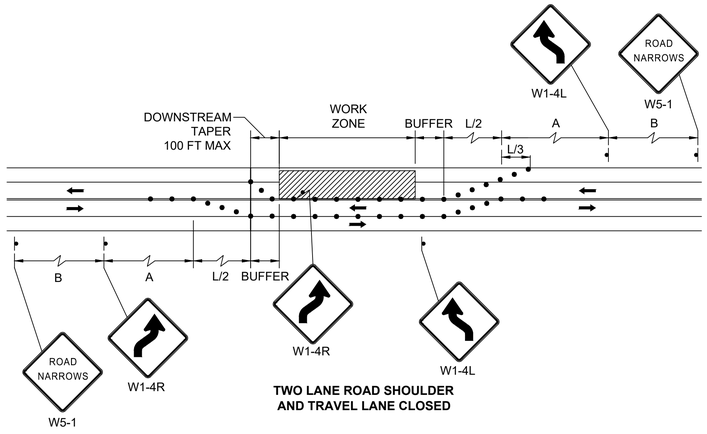
DIVIDED HIGHWAY MULTIPLE LANE CLOSURE

MASSDOT FIGURE DIV-5



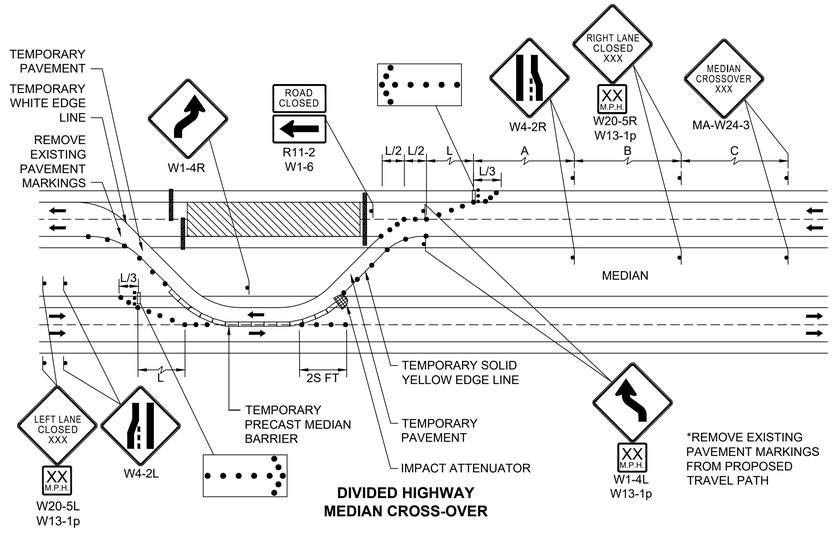
DIVIDED HIGHWAY SHOULDER CLOSED

MASSDOT FIGURE DIV-9



TWO LANE ROAD SHOULDER AND TRAVEL LANE CLOSED

MASSDOT FIGURE TLR-2



DIVIDED HIGHWAY MEDIAN CROSS-OVER

MASSDOT FIGURE DIV-8

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	117	189
PROJECT FILE NO.	612188		

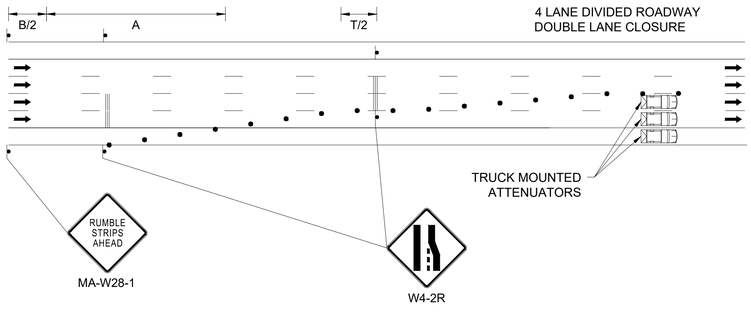
TEMPORARY TRAFFIC CONTROL DETAILS
SHEET 6 OF 6

612188_TR(TTCP DETAILS).DWG Plotted on 11-Aug-2022 11:31 AM

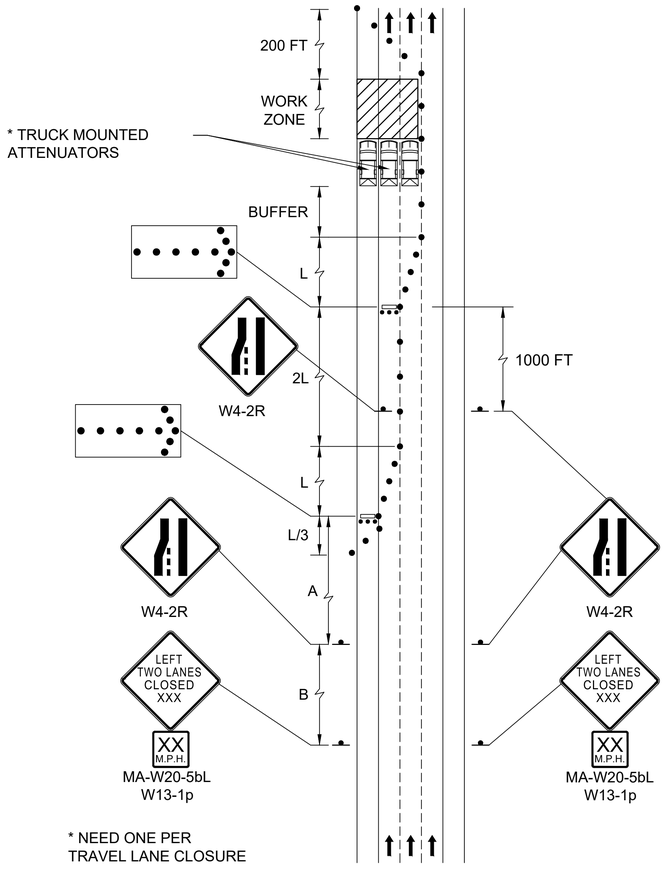
POSTED REGULATORY OR WORK ZONE SPEED	SEPARATION BETWEEN RUMBLE STRIPS
Above 55-mph	20-feet
36-mph to 55-mph	15-feet
35-mph and under	10-feet

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	TANGENT LENGTH BETWEEN TAPERS (T) (FT)
25-40	500 / 500 / 500	640
45-55	500 / 1000 / 1000	1320
60-65	1000 / 1600 / 2600	1560

NOTES
1. THE INTENTION OF THIS DETAIL IS ONLY TO DEPICT THE PLACEMENT OF TEMPORARY PORTABLE RUMBLE STRIPS (TPRS) IN RELATIONSHIP TO THE TAPER AND THE BUFFER OF A MULTI-LANE CLOSURE. THE DEPICTION OF THE NUMBER AND SPACING OF ALL OTHER TRAFFIC CONTROL DEVICES IS NOT TO SCALE. REFER TO OTHER DETAILS FOR LANE CLOSURES FOR THE PLACEMENT AND NUMBER OF ALL OTHER TRAFFIC CONTROL DEVICES.
2. THIS DETAIL ONLY DEPICTS RIGHT LANE CLOSURE. LEFT LANE CLOSURE SHOULD UTLIZE A MIRROR IMAGE OF THESE SETUPS, STARTING WITH CLOSURE OF THE LEFTMOST LANE.
3. DETAIL SHOWS THE MINIMUM NUMBER OF TPRS REQUIRED. ADDITIONAL MAY BE USED IF CONDITIONS WARRANT.



MASSDOT FIGURE 24-1
MULTILANE DIVIDED
ROADWAY PLACEMENT
RUMBLE STRIPS



TWO LANE CLOSURE IN ADVANCE
OF TEMPORARY PAVEMENT
MARKING TAPE INSTALLATION

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	118	189
PROJECT FILE NO.	612188		

STREET LEVEL DETOURS

N

NAD 83

PROJECT LOCATION
SEE CANTON STREET DETAIL ON SHEET # 119

CANTON ST

ROUTE 24

R11-2 MOUNTED ON TYPE III BARRICADE

R11-3a (2 MILES) M4-10R MOUNTED ON TYPE III BARRICADE

R11-3a (1 MILE) M4-10R MOUNTED ON TYPE III BARRICADE

R11-3a (½ MILE) M4-10L MOUNTED ON TYPE III BARRICADE

R11-3a (1 MILE) M4-10L MOUNTED ON TYPE III BARRICADE

RANDOLPH ST

TURNPIKE ST (ROUTE 138)

MAIN ST (ROUTE 28)

WASHINGTON ST (ROUTE 138)

TURNPIKE ST (ROUTE 139)

LINDELOF AVE (ROUTE 139)

WARREN ST (ROUTE 139)

PLEASANT ST (ROUTE 139)

CENTRAL ST

POND ST

PCMS #8

PCMS #9

W20-2 W16-8P

W16-8P M4-9L

W16-8P M4-9AL

W16-8P M4-9AR

W16-8P M4-9R

W16-8P M4-9V

W16-8P M4-8a

500'

1000'

700'

NOTES:

1. THE DETOUR ON THIS SHEET SHOWS THE CLOSURE OF CANTON STREET AT ROUTE 24. THE DETOUR SHALL ONLY BE USED DURING THE BRIDGE DEMOLITION AND CONSTRUCTION WEEKENDS.
2. ALL DETOUR SIGNS SHALL BE COVERED WHEN NOT IN USE.
3. FOR 2 WEEKS IN ADVANCE OF STREET CLOSURE, A PCMS BOARD SHALL BE PLACED ON EACH SIDE OF THE BRIDGE. THE BOARD SHALL SHOW THE FOLLOWING 2-PHASE MESSAGE:

CANTON AT RT 24 CLOSING	FRI X/X 8PM TO MON 5AM

4. DURING THE STREET CLOSURE, THE PCMS BOARD SHALL BE PLACED AS SHOWN ON THIS PLAN AND SHOW THE FOLLOWING MESSAGE:

CANTON AT RT 24 CLOSED	FOLLOW DETOUR

0 1000 2000 3000 4000

SCALE: 1" = 1000'

610770_TR(CANTON STREET DETOUR).DWG Plotted on 11-Aug-2022 11:31 AM

LEGEND:

WORK ZONE

PORTABLE CHANGEABLE MESSAGE SIGN

TYPE III BARRICADE

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	119	189
PROJECT FILE NO.	612188		

CANTON STREET DETOUR DETAIL

N

CANTON STREET

500'

W20-3 (500 FT)

ROAD CLOSED 1000FT

ROAD CLOSED 500FT

W20-3 (500 FT)

Canton st DETOUR

W16-8P M4-9R

TURNER DRIVE

ROAD CLOSED

R11-2 MOUNTED ON TYPE III BARRICADE

Canton st DETOUR

W16-8P M4-10L

ROUTE 24 SOUTH BOUND

ROUTE 24 NORTH BOUND

PCMS # 6

PCMS # 7

ROUTE 24 RECORD BASELINE

CROWLEY DRIVE

RECYCLE WAY

Canton st DETOUR

W16-8P M4-10L

ROAD CLOSED

R11-2 MOUNTED ON TYPE III BARRICADE

FAWN CIRCLE

ROAD CLOSED 500FT

W20-3 (500 FT)

Canton st DETOUR

W16-8P M4-10L

ROAD CLOSED 1000FT

W20-3 (1000 FT)

500'

IRVING RD

W16-8P M4-10R

Canton st DETOUR

CONCETTA SASS DR

W16-8P M4-10R

Canton st DETOUR

REED STREET

W16-8P M4-10R

Canton st DETOUR

DETOUR 500 FT

W20-2 (500FT)

CANTON STREET

0 100 200 300 400

SCALE: 1" = 100'

612188_TR(WORKZONE SIGNAGE).DWG Plotted on 11-Aug-2022 11:31 AM

PORTABLE CHANGEABLE MESSAGE MESSAGE SIGN (PCMS) NOTES:

1. DURING CONSTRUCTION, PCMS SHALL HAVE THE FOLLOWING MESSAGES, PCMS WITH TWO-PHASE MESSAGES SHALL HAVE A CYCLE OF 8 SECONDS WITH EACH MESSAGE DISPLAYED FOR 4 SECONDS.
2. PCMS #1, #2, AND #3 PROVIDE ADVANCED WARNING OF CONSTRUCTION OF STAGE 0. THESE PCMS SHALL BE IN PLACE A MINIMUM OF 1 WEEK IN ADVANCE OF THE BEGINNING OF CONSTRUCTION.
3. IF A DATE RANGE, DESIGNATED "X/X-X/X" BELOW, WILL EXCEED THE LINE LENGTH OF THE PCMS (MAXIMUM OF 8 CHARACTERS), THE START DATE OF CONSTRUCTION MAY BE USED INSTEAD.
4. THIS PLAN DEPICTS GENERAL CONSTRUCTION SIGNING (W20 SERIES, MA-R2-10A, MA-R2-10E, MA-M1-5) AND PCMS BOARDS THAT SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION. STAGE SPECIFIC SIGNING AND PCMS BOARD PLACEMENT TO SUPPLEMENT THESE SIGNS ARE SHOWN ON SHEETS 121-123.

PCMS #1, #2, #3
ADVANCED WARNING
MINIMUM 1 WEEK IN ADVANCE OF STAGE 0

ROUTE 24 ROAD WORK
BEGINS X/X

PCMS #1, #2, #3
DURING CONSTRUCTION

ROUTE 24 ROAD WORK
NEW TRAFFIC PATTERN

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	120	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS
ADVANCED SIGNING PLAN
GENERAL PLAN



612188_TRADVANCED SIGNING PLANS).DWG Plotted on 11-Aug-2022 11:32 AM

PORTABLE CHANGEABLE MESSAGE MESSAGE SIGN (PCMS) NOTES:

1. DURING CONSTRUCTION, PCMS SHALL HAVE THE FOLLOWING MESSAGES, PCMS WITH TWO-PHASE MESSAGES SHALL HAVE A CYCLE OF 8 SECONDS WITH EACH MESSAGE DISPLAYED FOR 4 SECONDS.
2. PCMS #1, #2, AND #3 PROVIDE ADVANCED WARNING OF CONSTRUCTION. THESE PCMS SHALL BE IN PLACE A MINIMUM OF 1 WEEK IN ADVANCE OF THE BEGINNING OF STAGE 0 CONSTRUCTION. IF THE PCMS BOARDS ARE STILL SHOWING THE CONSTRUCTION MESSAGES FOR THE PREVIOUS STAGE, THE ADVANCED WARNING MESSAGE SHALL TAKE PRECEDENCE.
3. IF A DATE RANGE, DESIGNATED "X/X-X/X" BELOW, WILL EXCEED THE LINE LENGTH OF THE PCMS (MAXIMUM OF 8 CHARACTERS), THE START DATE OF CONSTRUCTION MAY BE USED INSTEAD.
4. ADVANCED SIGNING SITUATED ON THE RAMPS FROM I-93 TO ROUTE 24 SOUTHBOUND SHALL BE INSTALLED ON BOTH SIDES OF THE ROADWAY UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER.

PCMS #1, #2, #3
STAGE 0
ADVANCED WARNING

ROUTE 24 ROAD WORK
BEGINS X/X

PCMS #1, #2, #3
DURING CONSTRUCTION

ROUTE 24 ROAD WORK
NEW TRAFFIC PATTERN

NOTES:
1. THE SIGNS SHOWN ON THIS SHEET IS INTENDED FOR USE DURING STAGES 0, 1B, AND 2B. FOR ADVANCE SIGNING IN STAGE 1, SEE SHEET 122. FOR ADVANCE SIGNING IN STAGE 2, SEE SHEET 123.

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	121	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS
ADVANCED SIGNING PLAN
STAGES 0, 1B, 2B



612188_TR(ADVANCED SIGNING PLANS).DWG Plotted on 11-Aug-2022 11:32 AM

PORTABLE CHANGEABLE MESSAGE MESSAGE SIGN (PCMS) NOTES:

1. DURING CONSTRUCTION, PCMS SHALL HAVE THE FOLLOWING MESSAGES, PCMS WITH TWO-PHASE MESSAGES SHALL HAVE A CYCLE OF 8 SECONDS WITH EACH MESSAGE DISPLAYED FOR 4 SECONDS.
2. ALL PCMS PROVIDE ADVANCED WARNING OF CONSTRUCTION. PCMS #4, #5, AND #6 SHALL BE IN PLACE 2 WEEKS IN ADVANCE OF THE BEGINNING OF THE STAGE 1 CROSSOVER CONSTRUCTION.
3. ADVANCE WARNING MESSAGE SHALL BE DISPLAYED STARTING TWO WEEKS PRIOR TO THE BEGINNING OF THE STAGE 1 WEEKEND CROSSOVER WORK. IF THE PCMS BOARDS ARE STILL SHOWING THE CONSTRUCTION MESSAGES FOR THE PREVIOUS STAGE, THE ADVANCED WARNING MESSAGE SHALL TAKE PRECEDENCE.
4. PCMS #4 AND #5 SHALL BE BLANK OR IN CAUTION MODE FOR THE DURATION OF STAGE 1 WEEKEND CROSSOVER WORK.
5. PCMS #6, #7 SHALL REMAIN IN PLACE DURING THE STAGE 1 WEEKEND CROSSOVER CONSTRUCTION.
6. IF A DATE RANGE, DESIGNATED "X/X-X/X" BELOW, WILL EXCEED THE LINE LENGTH OF THE PCMS (MAXIMUM OF 8 CHARACTERS), X/X-X MAY BE USED INSTEAD.
7. DURING STAGES 1 AND 2, RTTM SYSTEM WILL BE USED TO PROVIDE ADVANCE NOTIFICATION AND ROUTING INFORMATION. FOR RTTM, SEE SHEETS 124-129.
8. ADVANCED SIGNING SITUATED ON THE RAMPS FROM I-93 TO ROUTE 24 SOUTHBOUND SHALL BE INSTALLED ON BOTH SIDES OF THE ROADWAY UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER.

PCMS #1, #2, #3 ADVANCED WARNING	PCMS #1, #2, #3 DURING CONSTRUCTION	PCMS #4, #5 ADVANCED WARNING	PCMS #6, #7 ADVANCED WARNING	PCMS #6, #7 DURING CONSTRUCTION
ROUTE 24 LANE CLOSURES	ROUTE 24 LANE CLOSURES	ROUTE 24 LANE CLOSURES	ROAD CLOSED X/X - X/X	ROAD CLOSED
X/X-X/X SEEK ALT ROUTE	EXPECT DELAYS	X/X-X/X SEEK ALT ROUTE	SEEK ALT ROUTE	FOLLOW DETOUR

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	122	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS
ADVANCED SIGNING PLAN
STAGE 1



612188_TR(ADVANCED SIGNING PLANS).DWG Plotted on 11-Aug-2022 11:32 AM

PORTABLE CHANGEABLE MESSAGE MESSAGE SIGN (PCMS) NOTES:

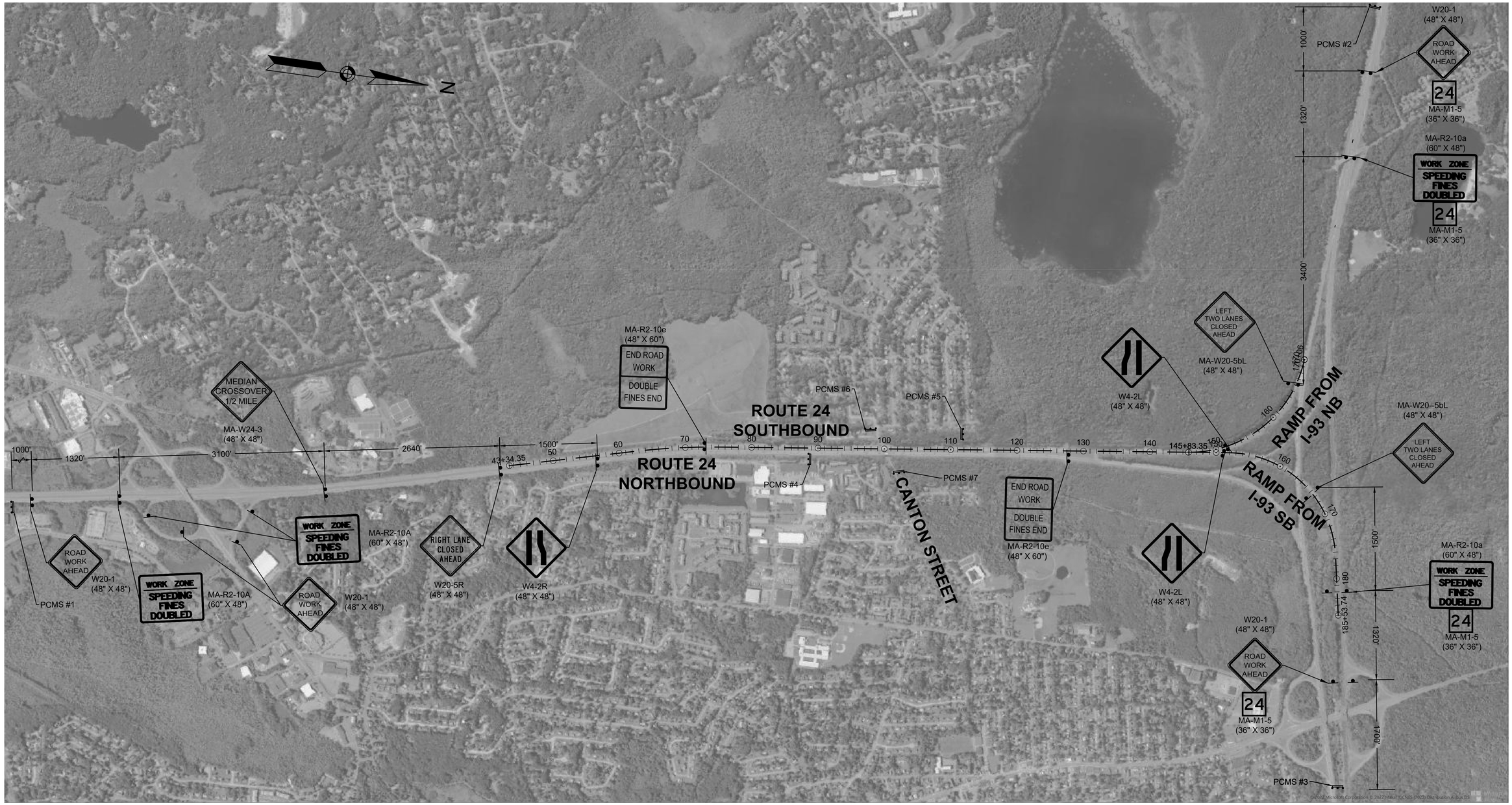
1. DURING CONSTRUCTION, PCMS SHALL HAVE THE FOLLOWING MESSAGES, PCMS WITH TWO-PHASE MESSAGES SHALL HAVE A CYCLE OF 8 SECONDS WITH EACH MESSAGE DISPLAYED FOR 4 SECONDS.
2. ALL PCMS PROVIDE ADVANCED WARNING OF CONSTRUCTION. PCMS #4, #5, AND #6 SHALL BE IN PLACE 2 WEEKS IN ADVANCE OF THE BEGINNING OF THE STAGE 2 CROSSOVER CONSTRUCTION. IF THE PCMS BOARDS ARE STILL SHOWING THE CONSTRUCTION MESSAGES FOR THE PREVIOUS STAGE, THE ADVANCED WARNING MESSAGE SHALL TAKE PRECEDENCE.
3. ADVANCE WARNING MESSAGE SHALL BE DISPLAYED STARTING TWO WEEKS PRIOR TO THE BEGINNING OF THE STAGE 2 WEEKEND CROSSOVER WORK OR AT THE END OF THE STAGE 1 WEEKEND CROSSOVER, WHICHEVER IS SHORTER.
4. PCMS #4 AND #5 SHALL BE BLANK OR IN CAUTION MODE FOR THE DURATION OF STAGE 2 WEEKEND CROSSOVER WORK.
5. PCMS #6, #7 SHALL REMAIN IN PLACE DURING THE STAGE 2 WEEKEND CROSSOVER CONSTRUCTION.
6. IF A DATE RANGE, DESIGNATED "X/X-X/X" BELOW, WILL EXCEED THE LINE LENGTH OF THE PCMS (MAXIMUM OF 8 CHARACTERS), X/X-X MAY BE USED INSTEAD.
7. DURING STAGES 1 AND 2, RTTM SYSTEM WILL BE USED TO PROVIDE ADVANCE NOTIFICATION AND ROUTING INFORMATION. FOR RTTM, SEE SHEETS 124-129.
8. ADVANCED SIGNING SITUATED ON THE RAMPS FROM I-93 TO ROUTE 24 SOUTHBOUND SHALL BE INSTALLED ON BOTH SIDES OF THE ROADWAY UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER.

PCMS #1, #2, #3 ADVANCED WARNING	PCMS #1, #2, #3 DURING CONSTRUCTION	PCMS #4, #5 ADVANCED WARNING	PCMS #6, #7 ADVANCED WARNING	PCMS #6, #7 DURING CONSTRUCTION
ROUTE 24 LANE CLOSURES	ROUTE 24 LANE CLOSURES	ROUTE 24 LANE CLOSURES	ROAD CLOSED X/X - X/X	ROAD CLOSED
X/X-X/X SEEK ALT ROUTE	EXPECT DELAYS	X/X-X/X SEEK ALT ROUTE	SEEK ALT ROUTE	FOLLOW DETOUR

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	123	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL PLANS
ADVANCED SIGNING PLAN
STAGE 2



©2022 Microsoft Corporation © 2022 Maxar ©CNES (2022) Distribution Airbus DS

612188_TR(ADVANCED SIGNING PLANS).DWG Plotted on 11-Aug-2022 11:32 AM

SEE TOP RIGHT

DETAIL 1

TRAVEL TIME TO RTE 3 (BRAINTREE) AND RTE 24 (RANDOLPH)

TRAVEL TIME TO RTE 1 (DEDHAM), UNIV. AVE, AND I-93 (CANTON)

TRAVEL TIME TO RTE 24 (RANDOLPH), I-95 (CANTON), AND RTE 18 VIA RTE 3

TRAVEL TIME TO I-93 (CANTON), RTE 3 (BRAINTREE), AND I-495 VIA I-95

TRAVEL TIME TO BURGIN PKWY, I-90 (BOSTON), AND I-95 VIA I-93

WORK ZONE

TRAVEL TIME TO RTE 3 (BRAINTREE), AND RTE 27 VIA RTE 24 SB AND COLUMBIA RD

TRAVEL TIME TO I-93 AND I-90

SEE BELOW RIGHT

LEGEND

(#) PCMS FOR TRAVEL TIME OR GENERAL PROJECT INFORMATION

(G) EXISTING GO-TIME SIGN LOCATIONS

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	124	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL
REAL TIME TRAFFIC MANAGEMENT

DETAIL 2

0 5,000 10,000 15,000
SCALE: 1" = 5,000'

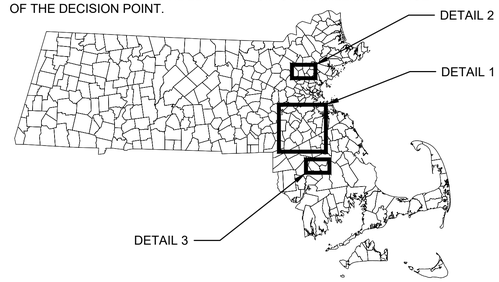
DETAIL 3

TRAVEL TIME TO I-95 VIA I-495, RTE 27 AND I-93

TRAVEL TIME TO RTE 24 AND I-95 (MANSFIELD)

0 5,000 10,000 15,000
SCALE: 1" = 5,000'

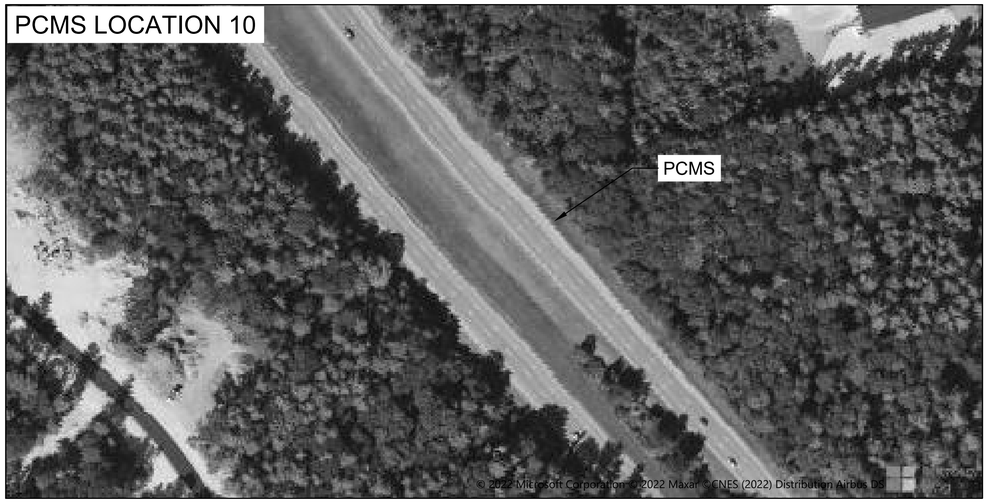
NOTES:
1. FOR PCMS MESSAGES, SEE SHEET 127.
2. NOT ALL EXISTING GO-TIME SIGNS ARE SHOWN. ONLY GO-TIME SIGNS APPROACHING THE GENERAL PROJECT AREA OR IN THE VICINITY OF RTTM PCMS SIGNS ARE SHOWN.
3. ALL PCMS SHALL BE PROVIDED A MINIMUM OF 1/2 MILE IN ADVANCE OF THE DECISION POINT.

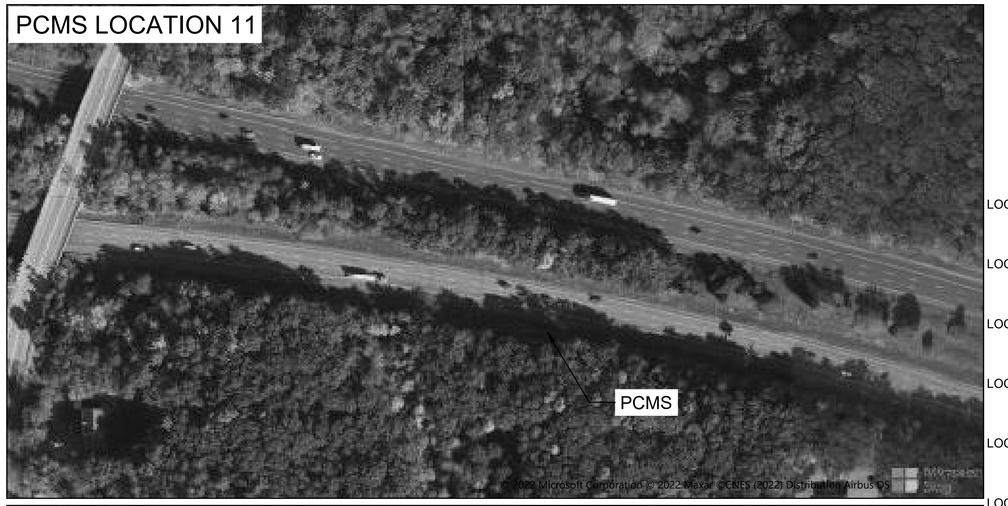


N
NAD 83

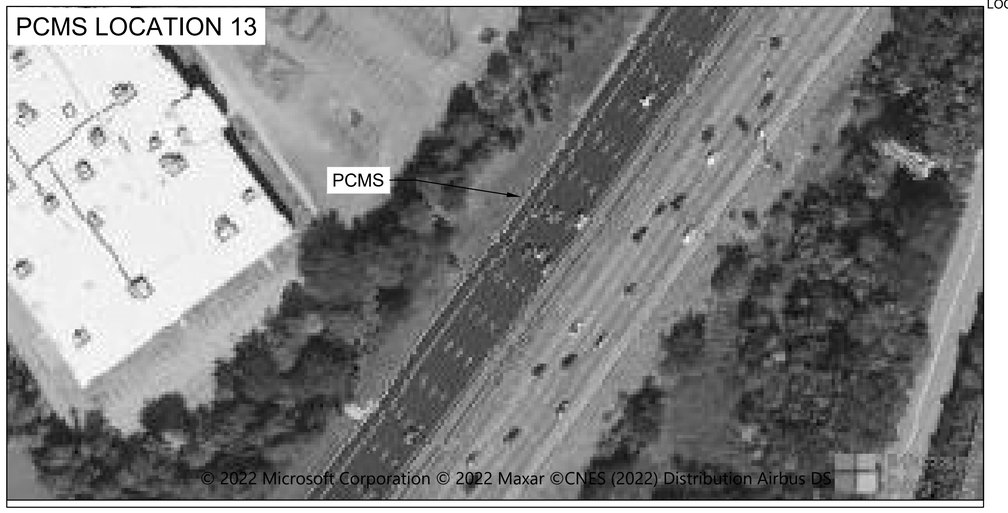
0 5,000 10,000 15,000
SCALE: 1" = 5,000'

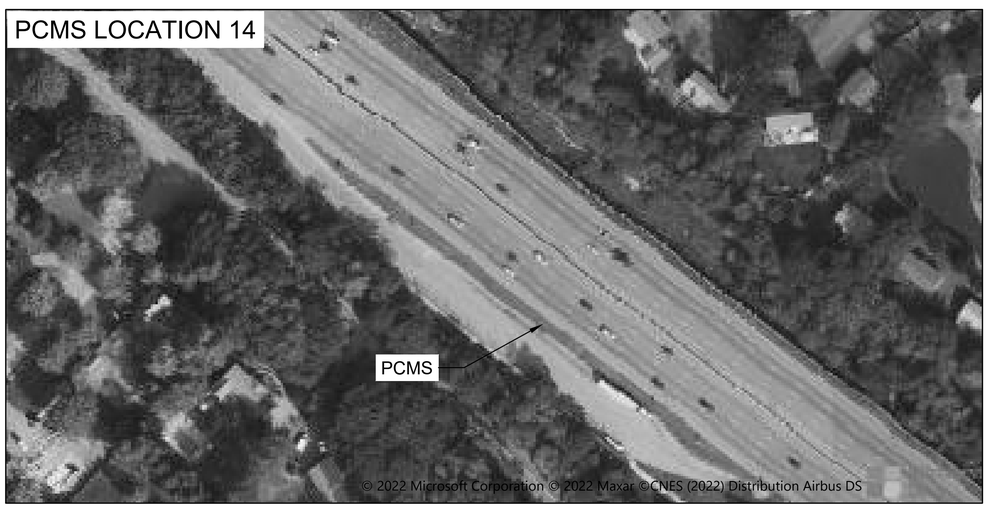
612188_TR(TTCP REGIONAL ADVANCED SIGNAGE).DWG Plotted on 11-Aug-2022 11:32 AM













RANDOLPH
RTE 24 OVER CANTON STREET

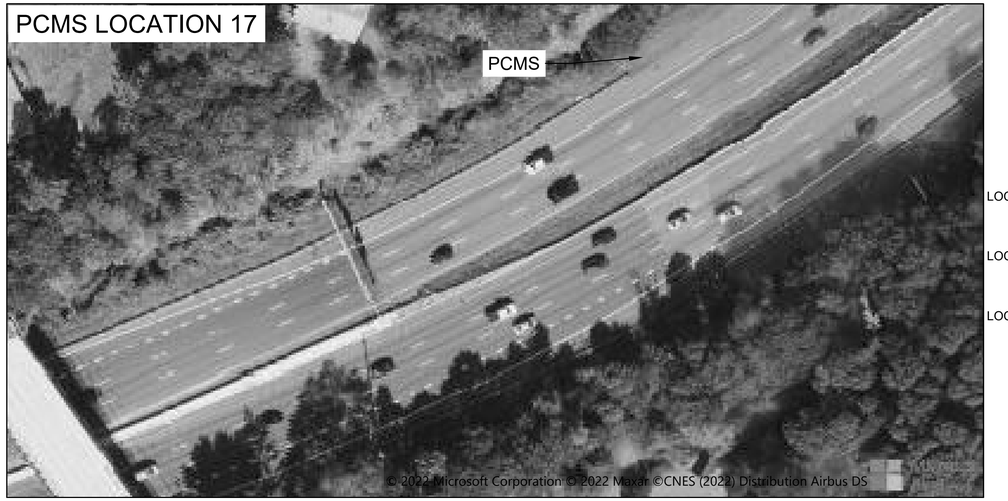
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	125	189
PROJECT FILE NO.	612188		

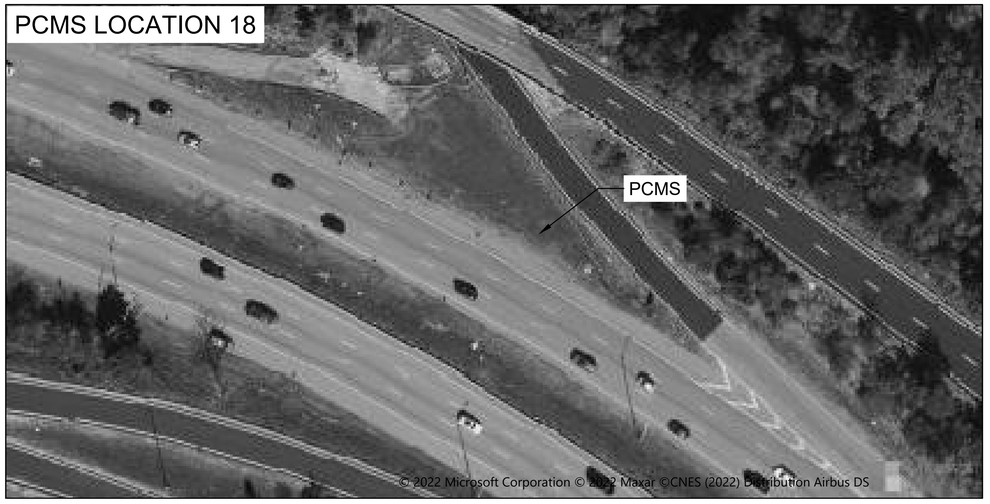
TEMPORARY TRAFFIC CONTROL
REAL TIME TRAFFIC MANAGEMENT
PCMS LOCATIONS

LOCATION 10: I-495 NB	RAYNHAM 1/2 MILE EAST OF RAMP TO ROUTE 24 NB, MILE 18
LOCATION 11: I-495 SB	FOXBOROUGH 1/2 MILE WEST OF RAMP TO I-95 SB, MILE 33.6
LOCATION 12: RTE 24 NB	RAYNHAM 1/2 MILE SOUTH OF RAMP TO I-495 NB, MILE 22
LOCATION 13: I-93 SB	RANDOLPH 1/2 MILE WEST OF RAMP FROM ROUTE 37
LOCATION 14: I-95 SB	WESTWOOD 1 MILE WEST OF RAMP TO I-95 SB
LOCATION 15: I-93 SB	MILTON 3/4 MILE NORTH OF EXIT 8

Plotted on 11-Aug-2022 11:32 AM
612188_TR(TTCP REGIONAL ADVANCED SIGNAGE).DWG







RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	126	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL
REAL TIME TRAFFIC MANAGEMENT
PCMS LOCATIONS

LOCATION 16: I-93 SB	WOBURN 1/2 MILE NORTH OF RAMP TO I-95 SB
LOCATION 17: I-95 SB	WAKEFIELD 1 MILE EAST OF RAMP TO I-93 NB, MILE 57
LOCATION 18: RTE 3 NB	BRAINTREE 1/2 MILE EAST OF RAMP TO I-93 NB

612188_TR(TTCP REGIONAL ADVANCED SIGNAGE).DWG Plotted on 11-Aug-2022 11:32 AM

PCMS FOR RTTM SCHEDULE - ALL BRIDGE CONSTRUCTION PHASES					
PCMS ID	LOCATION*	BEFORE CONSTRUCTION		DURING CONSTRUCTION	
10	I-495 NB	RTE 24 LANE CLOSURES	X/X TO X/X	I-93 / 24 VIA 24 XX MIN	I-93 / 24 VIA I-95 XX MIN
11	I-495 SB	RTE 24 LANE CLOSURES	X/X TO X/X	I-93 / 24 VIA 24 XX MIN	I-93 / 24 VIA I-95 XX MIN
12	ROUTE 24 NB	RTE 24 LANE CLOSURES	X/X TO X/X	I-93 / 24 VIA 495 / 95	XX MIN
13	I-93 SB	RTE 24 LANE CLOSURES	X/X TO X/X	495 / 24 VIA 24 XX MIN	495 / 24 VIA I-95 XX MIN
14	I-95 SB	RTE 24 LANE CLOSURES	X/X TO X/X	495 / 24 VIA 24 XX MIN	495 / 24 VIA I-95 XX MIN
15	I-93 SB	RTE 24 LANE CLOSURES	X/X TO X/X	RTE 24 LANE CLOSURES	SEEK ALT ROUTE
16	I-93 SB	RTE 24 LANE CLOSURES	X/X TO X/X	RTE 24 LANE CLOSURES	SEEK ALT ROUTE
17	I-95 SB	RTE 24 LANE CLOSURES	X/X TO X/X	RTE 24 LANE CLOSURES	SEEK ALT ROUTE
18	ROUTE 3 NB	I-93 / 24 EXPECT DELAYS	X/X TO X/X	RTE 24 LANE CLOSURES	SEEK ALT ROUTE

* FOR ADDITIONAL LOCATION DETAILS, SEE SHEETS 125-126.

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	127	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL
REAL TIME TRAFFIC MANAGEMENT
PCMS MESSAGES

612188_TR(TTCP REGIONAL ADVANCED SIGNAGE).DWG Plotted on 11-Aug-2022 11:32 AM

ROUTE 24 NORTHBOUND QUEUE DETECTION LOGIC

DURING CONSTRUCTION IN STAGES 1 AND 2 ONLY

PCMS BOARD	APPLICABLE SENSORS	<= 35 MPH	< 15 MPH
P1	S1 S2 S3 S4 S5	CAUTION SLOW TRAFFIC	CAUTION STOPPED TRAFFIC
		X MILES AHEAD	X MILES AHEAD
P2	S3 S4 S5	CAUTION SLOW TRAFFIC	CAUTION STOPPED TRAFFIC
		X MILES AHEAD	X MILES AHEAD
P3	S4 S5	CAUTION SLOW TRAFFIC	CAUTION STOPPED TRAFFIC
		X MILES AHEAD	X MILES AHEAD

ROUTE 24 SOUTHBOUND QUEUE DETECTION LOGIC

DURING CONSTRUCTION IN STAGES 1 AND 2 ONLY

PCMS BOARD	APPLICABLE SENSORS	<= 35 MPH	< 15 MPH
P4	S6 S7 S8 S9 S15*	CAUTION SLOW TRAFFIC	CAUTION STOPPED TRAFFIC
		X MILES AHEAD	X MILES AHEAD
P5	S8 S9 S10 S15*	CAUTION SLOW TRAFFIC	CAUTION STOPPED TRAFFIC
		X MILES AHEAD	X MILES AHEAD
P6	S15	CAUTION SLOW TRAFFIC	CAUTION STOPPED TRAFFIC
		X MILES AHEAD	X MILES AHEAD
P7	S10 S11 S12 S13 S14 S15*	CAUTION SLOW TRAFFIC	CAUTION STOPPED TRAFFIC
		X MILES AHEAD	X MILES AHEAD
P8	S11 S12 S13 S14 S15*	CAUTION SLOW TRAFFIC	CAUTION STOPPED TRAFFIC
		X MILES AHEAD	X MILES AHEAD
P9	S13 S14 S15*	CAUTION SLOW TRAFFIC	CAUTION STOPPED TRAFFIC
		X MILES AHEAD	X MILES AHEAD
P10	S15	CAUTION SLOW TRAFFIC	CAUTION STOPPED TRAFFIC
		ROUTE 24 SOUTH	ROUTE 24 SOUTH

NOTES:
1. X SHALL BE THE DISTANCE MEASURED FROM THE PCMS BOARD TO THE NEAREST SENSOR WHERE TRAVEL SPEEDS ARE AT OR BELOW 35 MPH.
2. IF ALL SENSORS FOR A PCMS BOARD DETECT SPEEDS ABOVE 35 MPH, THEN THE PCMS BOARD SHALL BE BLANK.
3. FOR PCMS AND SENSOR LOCATIONS, SEE MAP ON SHEET 129

* IF ONLY S15 DETECTS SPEEDS <35 MPH OR <15 MPH THEN THE SECOND PCMS PANEL SHALL DISPLAY "RT 24 SOUTH"

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	128	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL
REAL TIME TRAFFIC MANAGEMENT
QUEUE DETECTION SYSTEM

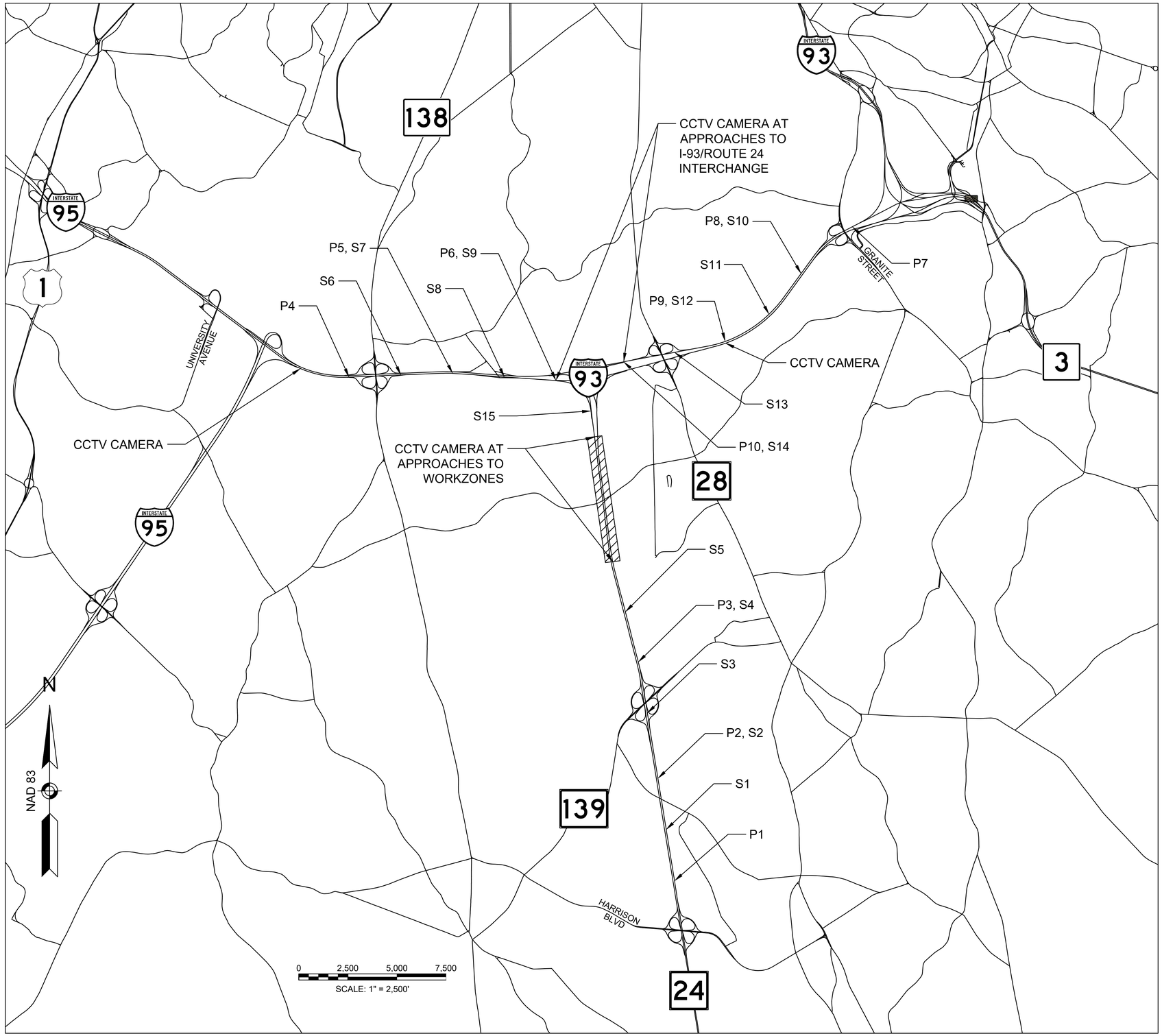
612188_TR(TTCP REGIONAL ADVANCED SIGNAGE).DWG Plotted on 11-Aug-2022 11:32 AM

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	129	189
PROJECT FILE NO.	612188		

TEMPORARY TRAFFIC CONTROL
REAL TIME TRAFFIC MANAGEMENT
QUEUE DETECTION SYSTEM

RTTM QUEUE DETECTION LOCATIONS



LEGEND

P# PCMS
S# SENSOR

NOTES:

1. CONTRACTOR SHALL MOBILIZE RTTM SYSTEM 30 DAYS MINIMUM PRIOR TO LANE REDUCTION ON ROUTE 24 NB OR SB
2. CONTRACTOR SHALL REVIEW AND COORDINATE ALL EQUIPMENT LOCATIONS, INSTALLATION METHODS, AND TEMPORARY TRAFFIC CONTROL WITH THE RELEVANT MASSDOT DISTRICT PRIOR TO DEPLOYMENT
3. CONTRACTOR SHALL SUBMIT RTTM LOGIC INCLUDING ANY THIRD-PARTY DATA ROUTING MAPS AND MESSAGING ALONG WITH THE FINAL EQUIPMENT LOCATION INFORMATION FOR REVIEW AND APPROVAL BY MASSDOT PRIOR TO DEPLOYMENT OF EQUIPMENT IN THE FIELD
4. CONTRACTOR SHALL PROVIDE A WRITTEN REQUEST TO MASSDOT FOR THE NAMES AND EMAIL ADDRESSES OF ALL SYSTEM USERS. MASSDOT SHALL SUPPLY THE INFORMATION WITHIN 15 BUSINESS DAYS OF THE RECEIPT OF THE WRITTEN REQUEST. MASSDOT SHALL ALSO SPECIFY WHAT PERMISSION LEVEL EACH USER SHALL BE ALLOWED (VIEWER, OPERATOR, ADMINISTRATOR ETC.) HEREIN. CONTRACTOR SHALL SUPPLY SYSTEM USER NAMES AND PASSWORDS A MINIMUM OF 7 DAYS PRIOR TO IMPLEMENTATION OF ANY LONG-TERM LANE CLOSURE ON ROUTE 24.
5. ALL PCMS MESSAGES SHALL BE REVIEWED AND APPROVED BY MASSDOT PRIOR TO IMPLEMENTATION.

612188_TR(TTCP REGIONAL ADVANCED SIGNAGE).DWG Plotted on 11-Aug-2022 11:32 AM

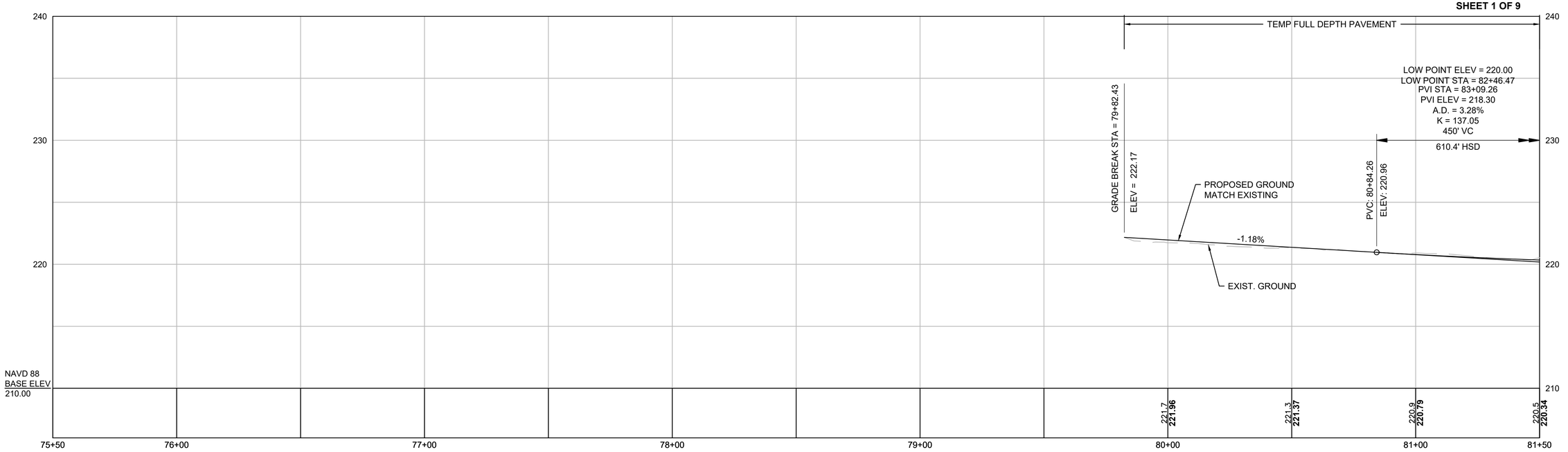
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	130	189
PROJECT FILE NO.	612188		

TEMPORARY PAVEMENT PROFILES
SHEET 1 OF 9

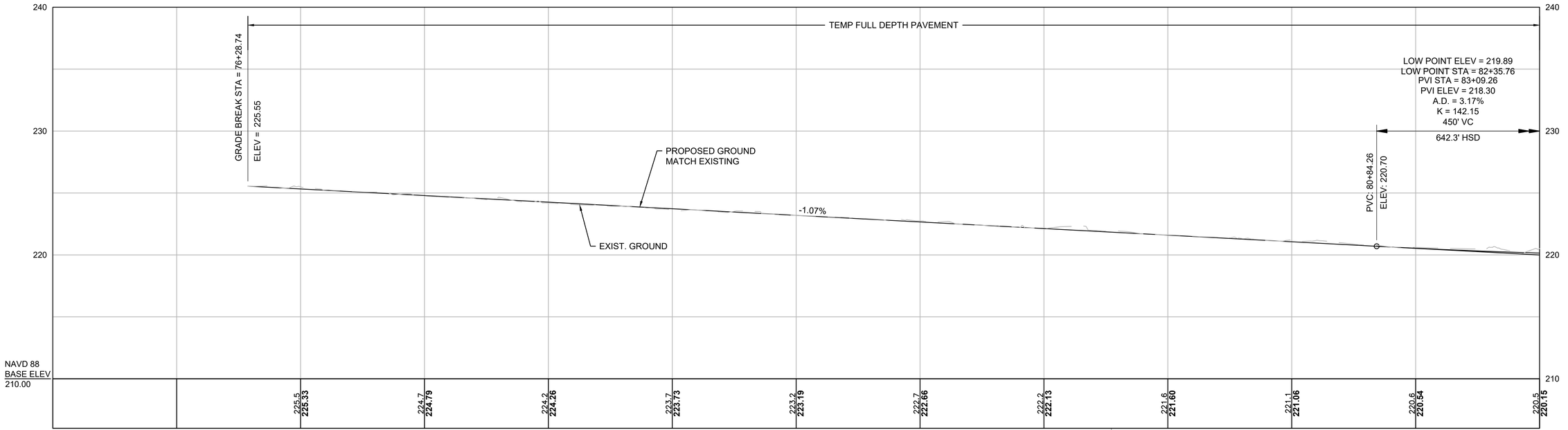
612188_HD(PROFILES).DWG Plotted on 11-Aug-2022 11:33 AM

RT EDGE OF TEMP PVMT



CONTINUED ON SHEET NO. 131

LT EDGE OF TEMP PVMT



Benchmark #507
MBMK 7
Elevation = 220.43'
Sta. 79+77.21, 62.12' LT

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

FOR PLANS:
SEE STAGE 0 SHEET NO. 85

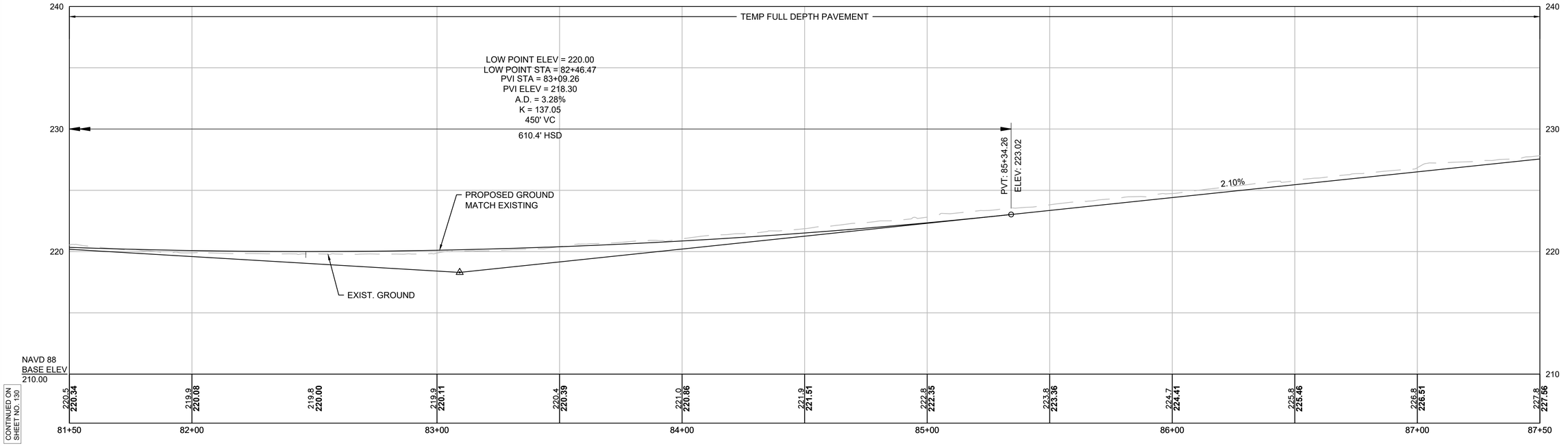
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	131	189
PROJECT FILE NO.	612188		

TEMPORARY PAVEMENT PROFILES
SHEET 2 OF 9

612188_HD(PROFILES).DWG Plotted on 11-Aug-2022 11:33 AM

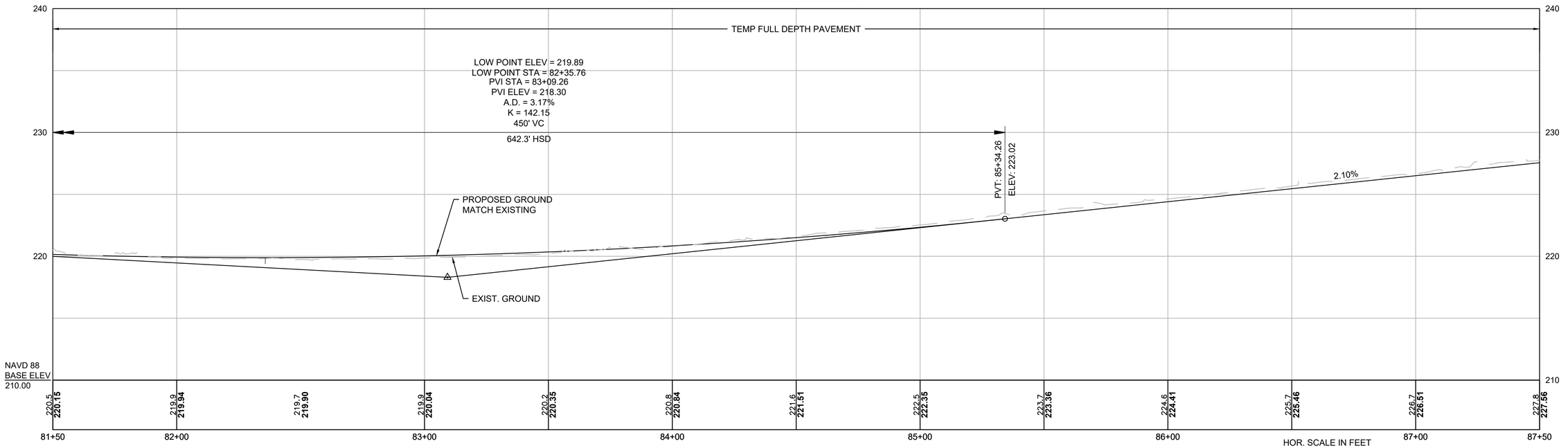
RT EDGE OF TEMP PVMT



CONTINUED ON SHEET NO. 130

CONTINUED ON SHEET NO. 132

LT EDGE OF TEMP PVMT



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

FOR PLANS:
SEE STAGE 0 SHEET NO. 85

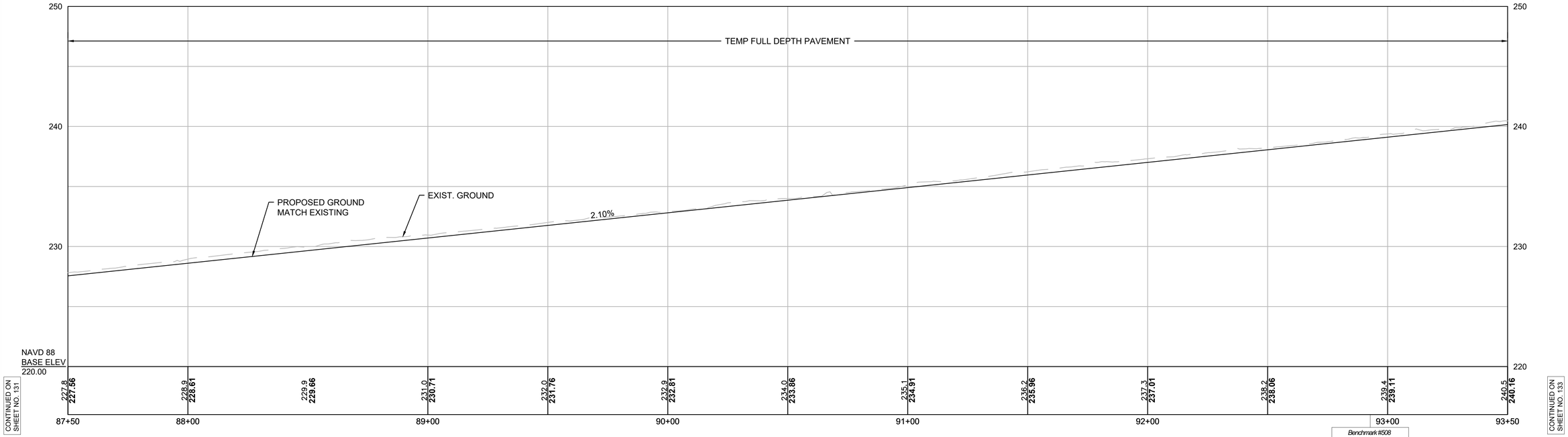
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	132	189
PROJECT FILE NO.	612188		

TEMPORARY PAVEMENT PROFILES
SHEET 3 OF 9

612188_HD(PROFILES).DWG Plotted on 11-Aug-2022 11:33 AM

RT EDGE OF TEMP PVMT

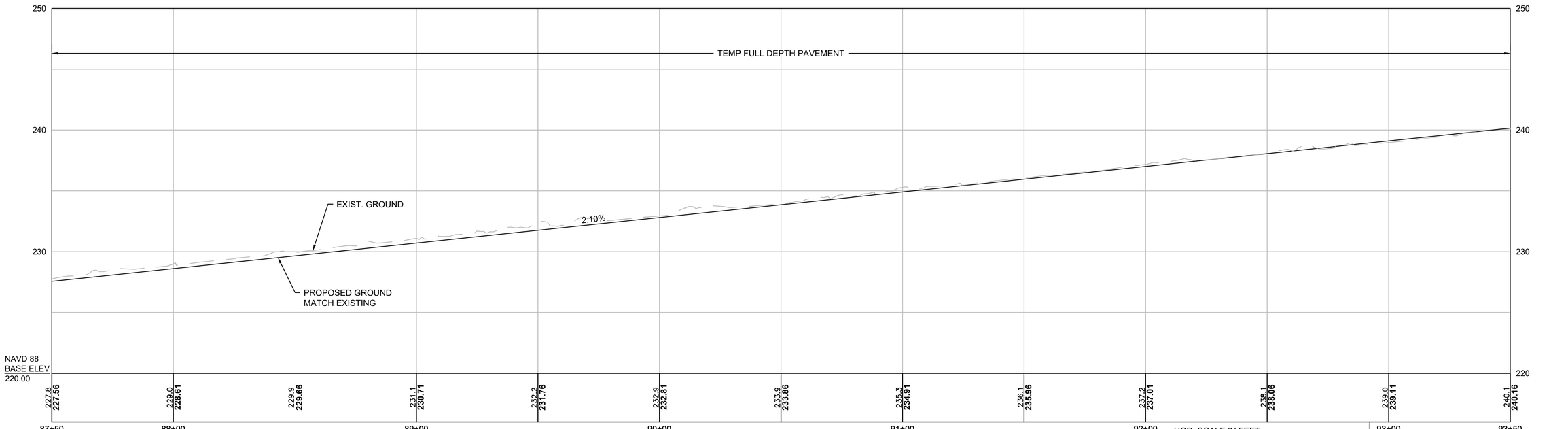


CONTINUED ON SHEET NO. 131

CONTINUED ON SHEET NO. 133

Benchmark #508
MBMK 8
Elevation = 238.57'
Sta. 92+92.76, 58.25' RT

LT EDGE OF TEMP PVMT



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

Benchmark #508
MBMK 8
Elevation = 238.57'
Sta. 92+92.34, 97.44' RT

FOR PLANS:
SEE STAGE 0 SHEET NO. 85

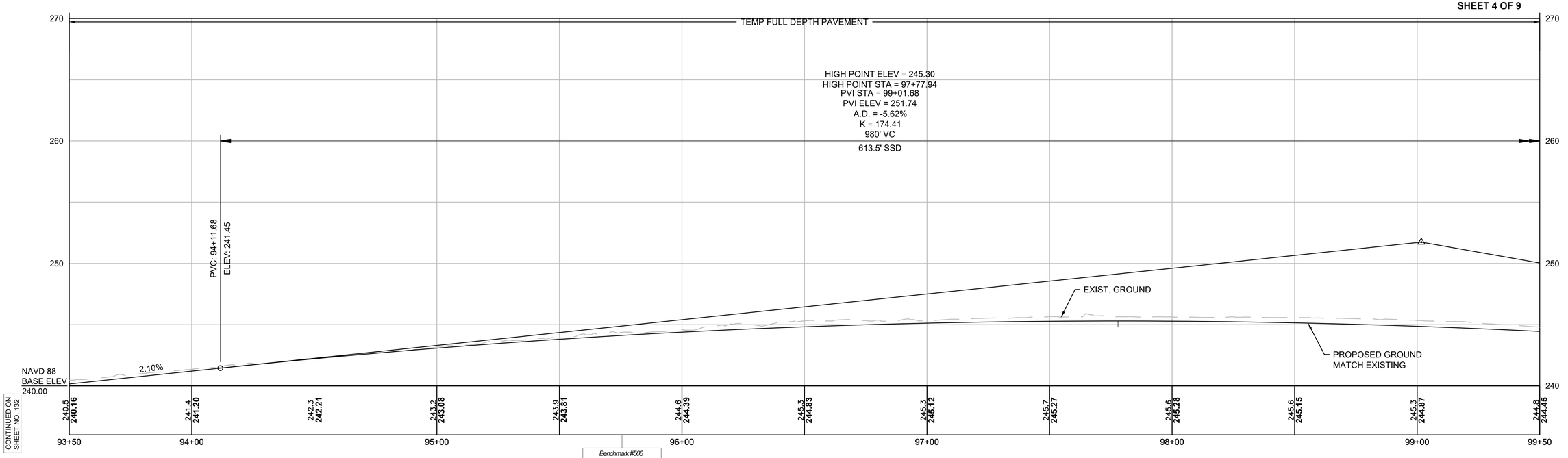
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	133	189
PROJECT FILE NO.	612188		

TEMPORARY PAVEMENT PROFILES
SHEET 4 OF 9

612188_HD(PROFILES).DWG Plotted on 11-Aug-2022 11:33 AM

RT EDGE OF TEMP PVMT

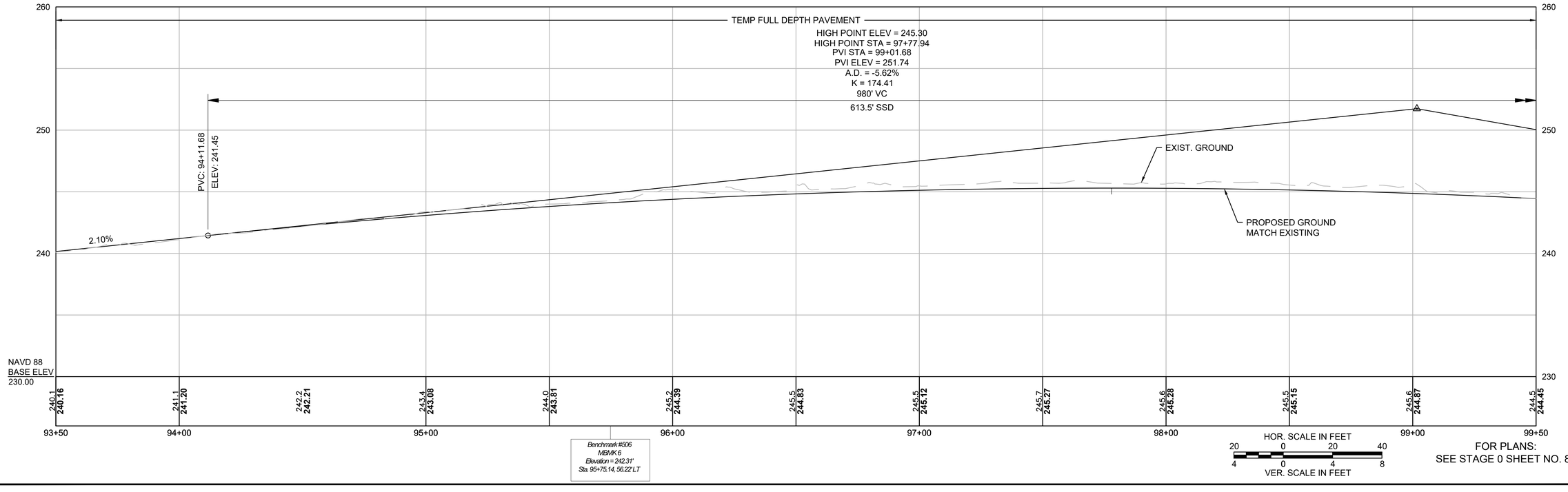


CONTINUED ON SHEET NO. 132

CONTINUED ON SHEET NO. 134

Benchmark #506
MBMK 6
Elevation = 242.31'
Sta. 95+74.61, 95.93' LT

LT EDGE OF TEMP PVMT



Benchmark #506
MBMK 6
Elevation = 242.31'
Sta. 95+75.14, 56.22' LT

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

FOR PLANS:
SEE STAGE 0 SHEET NO. 86

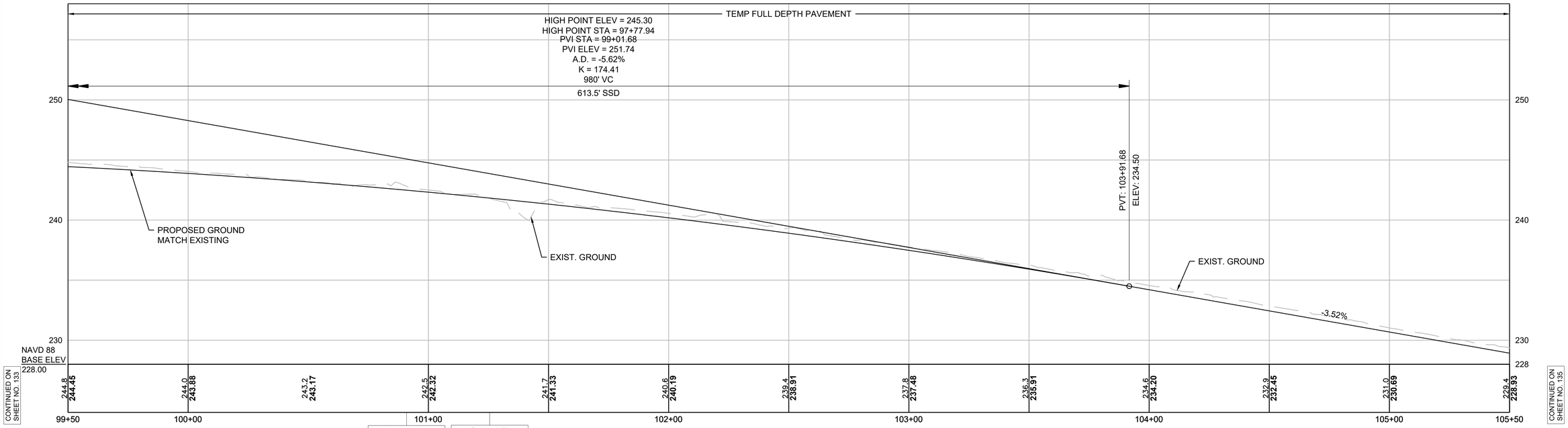
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	134	189
PROJECT FILE NO.	612188		

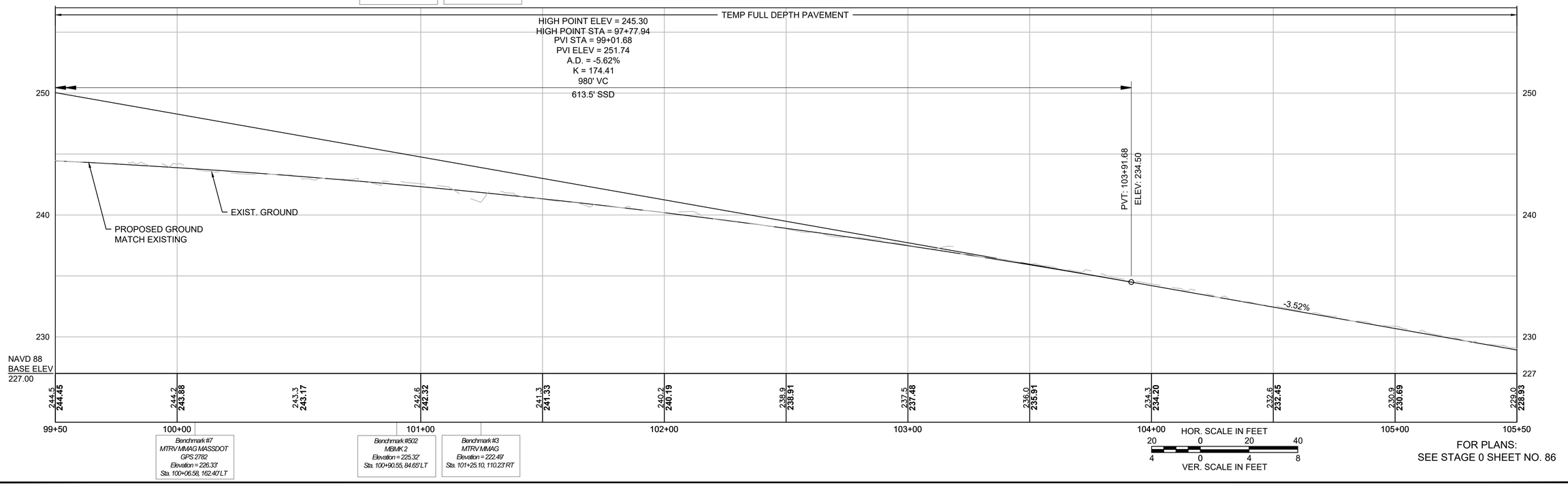
TEMPORARY PAVEMENT PROFILES
SHEET 5 OF 9

612188_HD(PROFILES).DWG Plotted on 11-Aug-2022 11:34 AM

RT EDGE OF TEMP PVMT



LT EDGE OF TEMP PVMT



FOR PLANS:
SEE STAGE 0 SHEET NO. 86

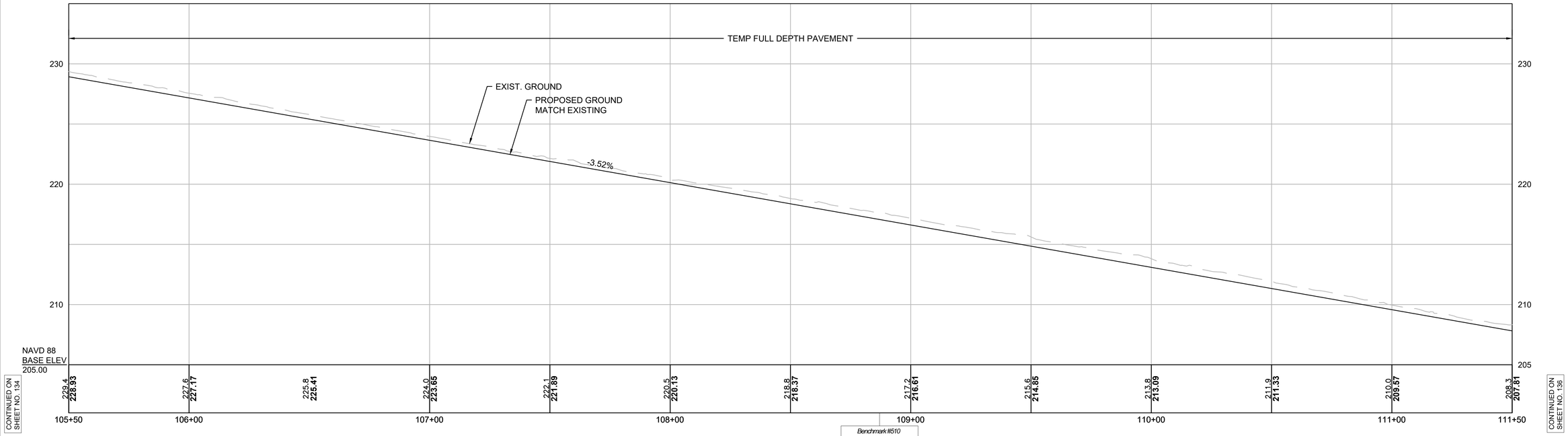
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	135	189
PROJECT FILE NO.	612188		

TEMPORARY PAVEMENT PROFILES
SHEET 6 OF 9

612188_HD(PROFILES).DWG Plotted on 11-Aug-2022 11:34 AM

RT EDGE OF TEMP PVMT

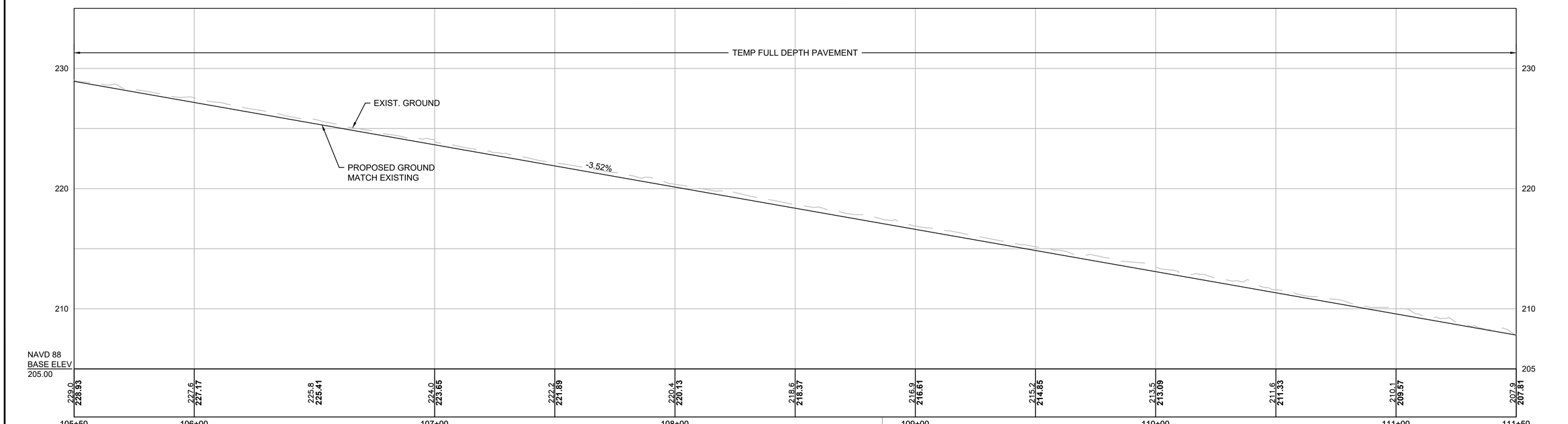


CONTINUED ON SHEET NO. 134

CONTINUED ON SHEET NO. 136

Benchmark #510
MBMK 10
Elevation = 216.13'
Sta. 108+86.58, 59.54' RT

LT EDGE OF TEMP PVMT



Benchmark #510
MBMK 10
Elevation = 216.13'
Sta. 108+86.60, 98.54' RT

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

FOR PLANS:
SEE STAGE 0 SHEET NO. 86

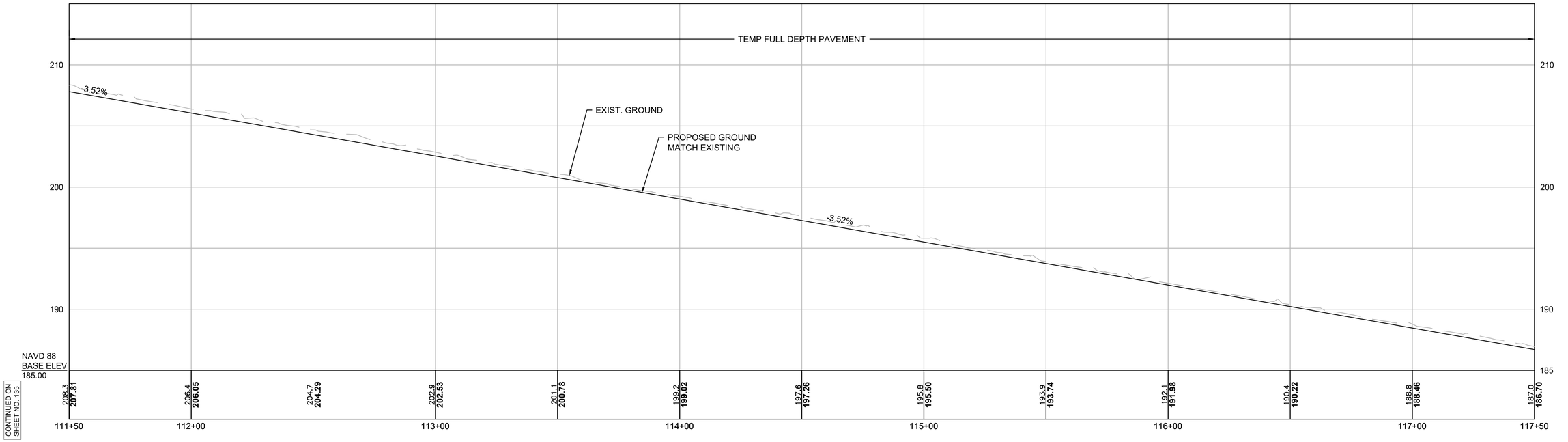
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	136	189
PROJECT FILE NO.	612188		

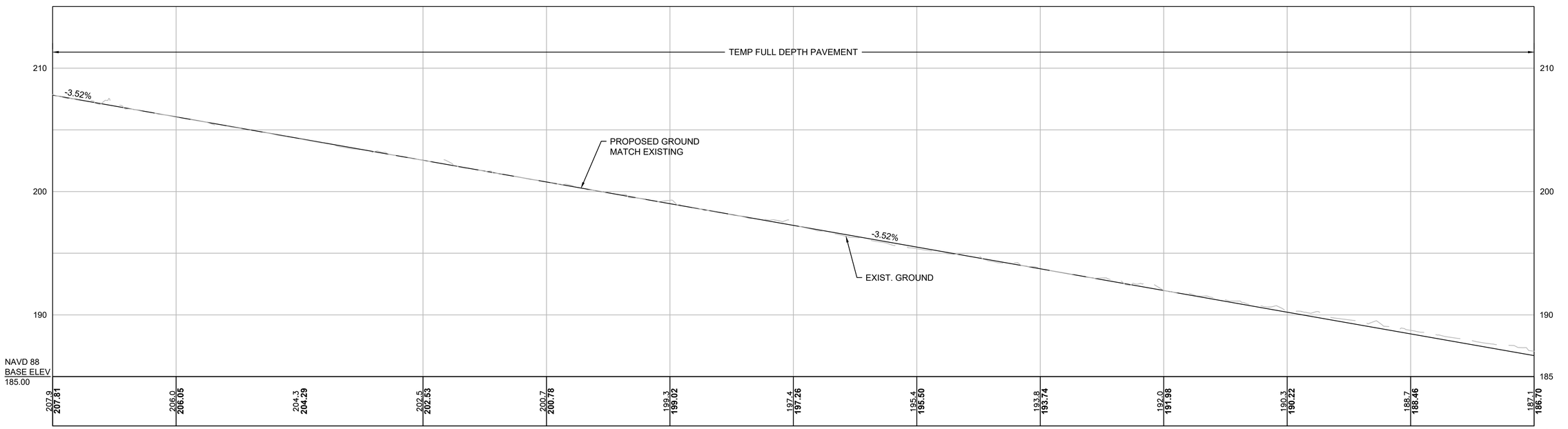
TEMPORARY PAVEMENT PROFILES
SHEET 7 OF 9

612188_HD(PROFILES).DWG Plotted on 11-Aug-2022 11:34 AM

RT EDGE OF TEMP PVMT



LT EDGE OF TEMP PVMT



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

FOR PLANS:
SEE STAGE 0 SHEET NO. 86

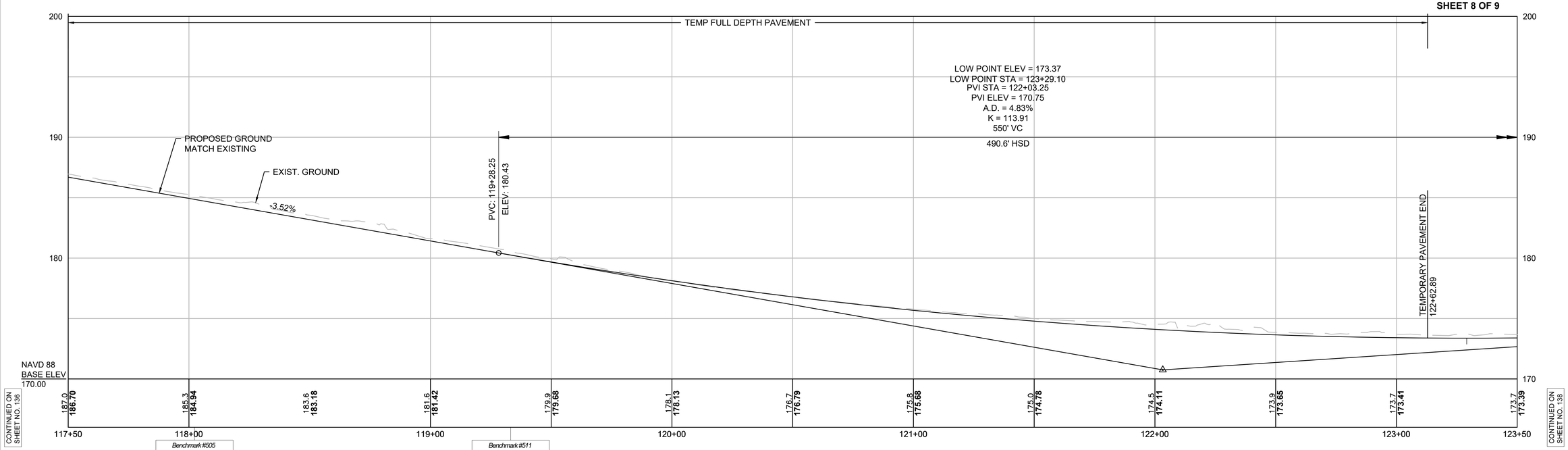
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	137	189
PROJECT FILE NO.	612188		

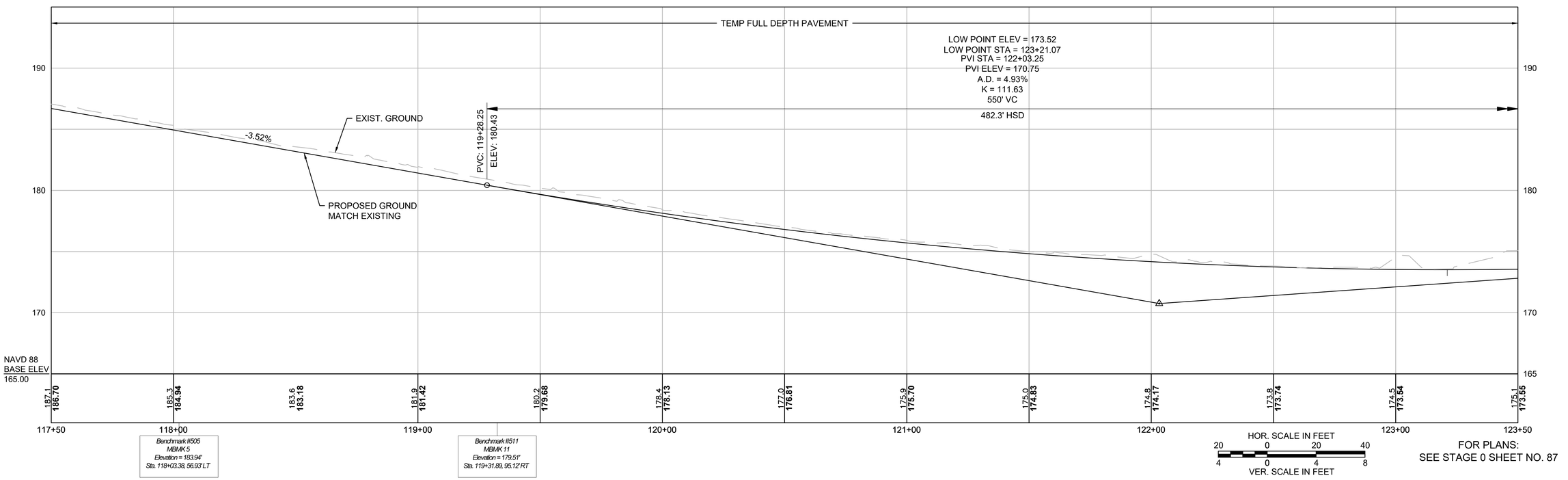
TEMPORARY PAVEMENT PROFILES
SHEET 8 OF 9

612188_HD(PROFILES).DWG Plotted on 11-Aug-2022 11:34 AM

RT EDGE OF TEMP PVMT



LT EDGE OF TEMP PVMT



FOR PLANS:
SEE STAGE 0 SHEET NO. 87

RANDOLPH
RTE 24 OVER CANTON STREET

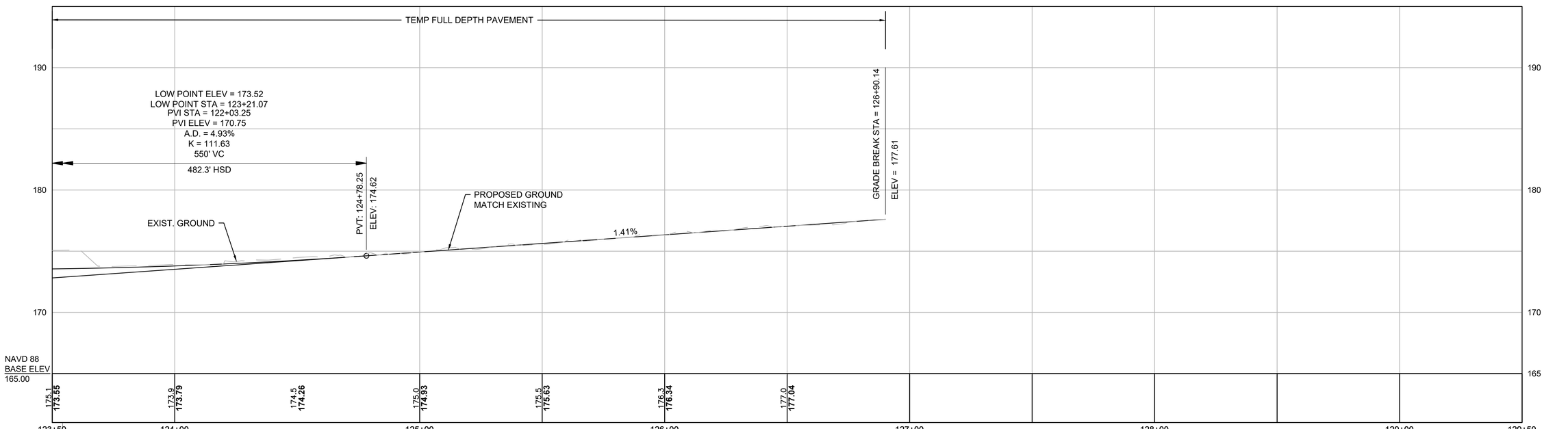
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	138	189
PROJECT FILE NO.	612188		

TEMPORARY PAVEMENT PROFILES
SHEET 9 OF 9

612188_HD(PROFILES).DWG Plotted on 11-Aug-2022 11:34 AM

CONTINUED ON SHEET NO. 137

LT EDGE OF TEMP PVMT



Benchmark #512
MBMK 12
Elevation = 174.92'
Sta. 123+55.07, 98.46' RT

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

FOR PLANS:
SEE STAGE 0 SHEET NO. 87

RANDOLPH
RTE 24 OVER CANTON STREET

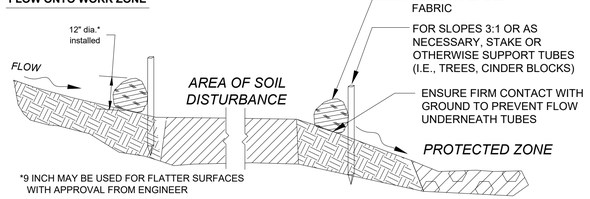
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	139	189
PROJECT FILE NO.	612188		

CONSTRUCTION DETAILS
SHEET 1 OF 1

612188_HD(CONSTRUCTION DETAILS).DWG Plotted on 26-Aug-2022 9:36 AM

REDUCE HIGH WATER FLOW ONTO WORK ZONE

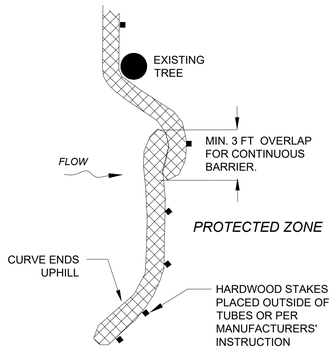
CAPTURE SEDIMENT AND PREVENT FLOW OFF SITE



SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBES

NOT TO SCALE



PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

PLACE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE

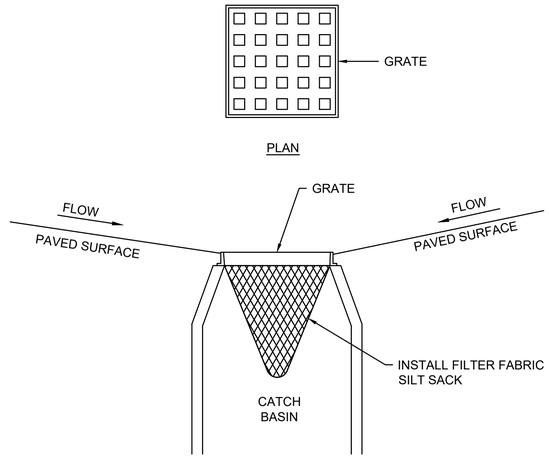
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

PLAN VIEW

COMPOST FILTER TUBE

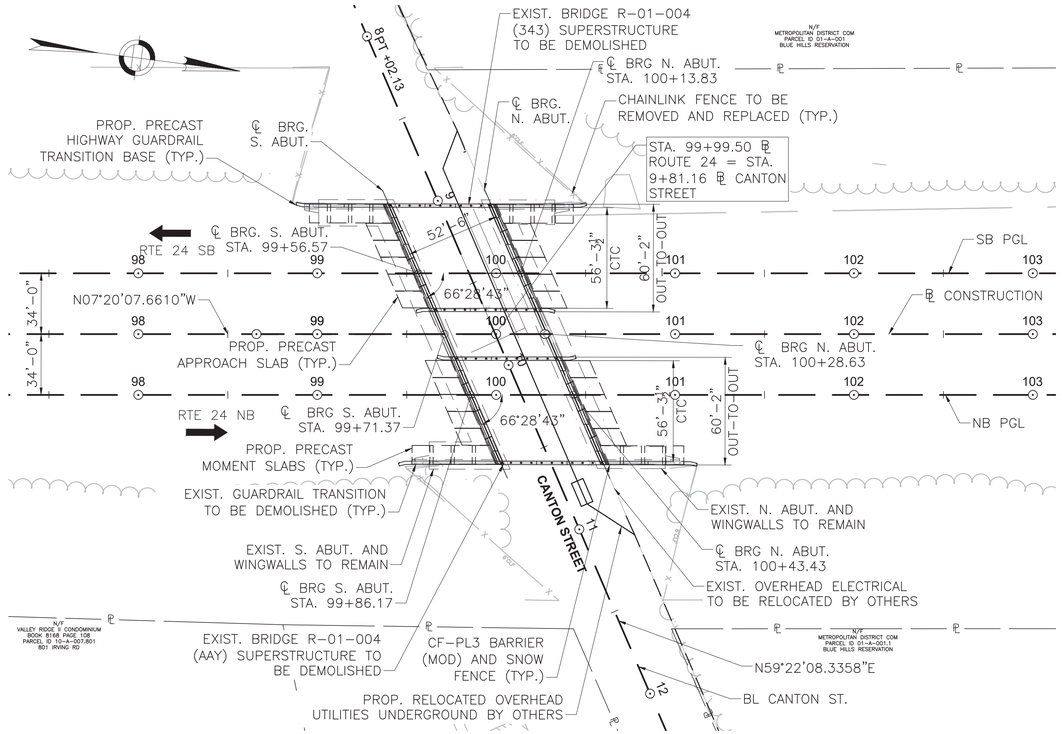
NOT TO SCALE



SECTION

CATCH BASIN WITH SILT SACK PROTECTION

NOT TO SCALE



KEY PLAN
SCALE: 1" = 40'-0"

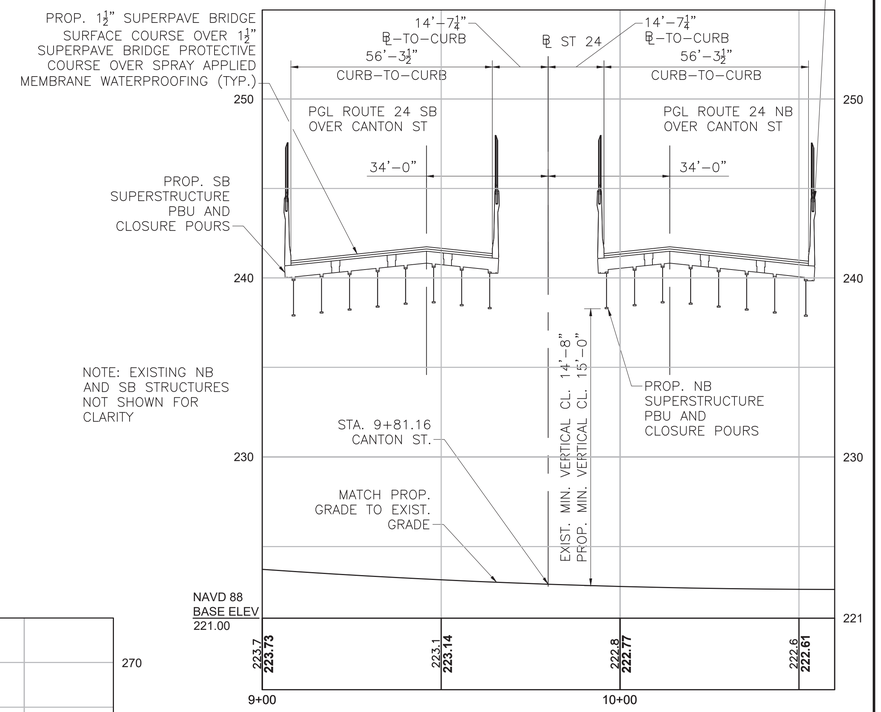


LOCUS PLAN
SCALE: 1" = 2000'

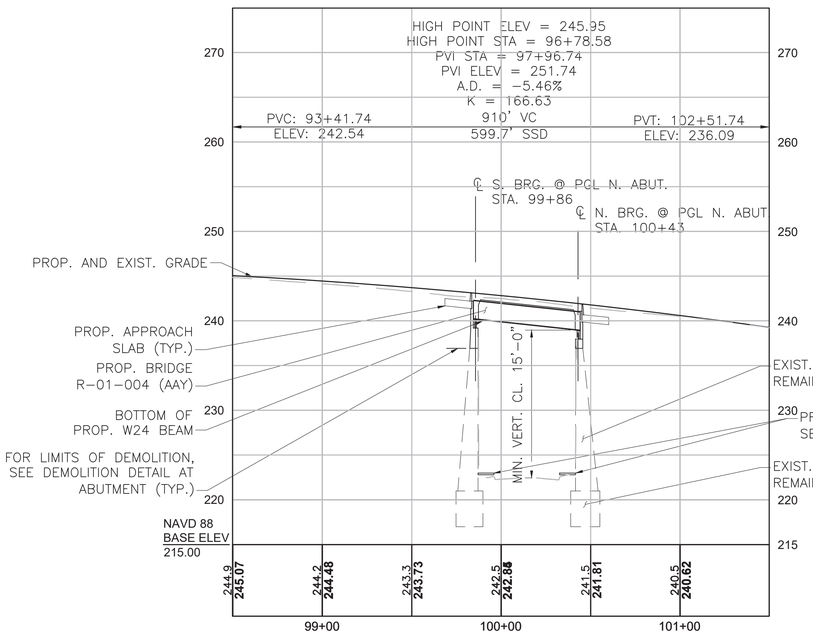
RANDOLPH
RTE 24 OVER CANTON ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	140	189
PROJECT FILE NO. 612188			

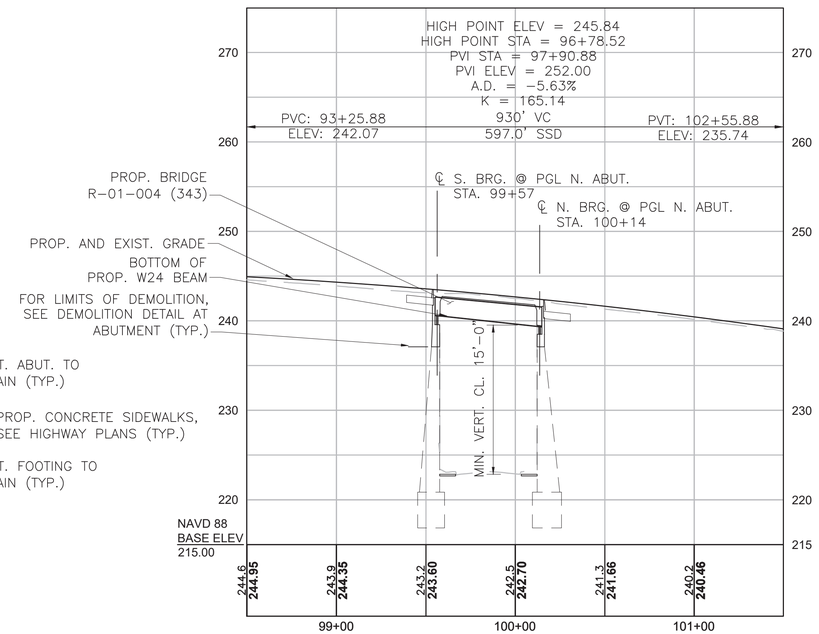
KEY PLAN



PROFILE – CANTON STREET
HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" – 4'-0"



PROFILE ALONG ROUTE 24 NORTHBOUND PGL
HORIZONTAL SCALE: 1" = 40'-0"
VERTICAL SCALE: 1" – 8'-0"



PROFILE ALONG ROUTE 24 SOUTHBOUND PGL
HORIZONTAL SCALE: 1" = 40'-0"
VERTICAL SCALE: 1" – 8'-0"

*
343
AAY

COMMONWEALTH OF MASSACHUSETTS
JOSEPH K TIERNEY
CIVIL
No. 50552
PROFESSIONAL ENGINEER
Joseph K Tierney Digitally signed by Joseph K Tierney. Date: 2022.08.24 08:54:56 -04'00'

TranSystems
101 ARCH STREET, SUITE 301, BOSTON, MA 02110, (857) 453-5450

AUG. 27, 2022	ISSUED FOR CONSTRUCTION

massDOT Massachusetts Department of Transportation Highway Division

PROPOSED SUPERSTRUCTURE REPLACEMENT
RANDOLPH
ST 24
OVER CANTON STREET

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: 2022.08.24 16:30:27 -04'00'
STATE BRIDGE ENGINEER

Carrie Lavallee, P.E. Digitally signed by Carrie Lavallee, P.E. Date: 2022.08.29 15:12:03 -04'00'
CHIEF ENGINEER

SHEET 01 OF 20 SHEETS BRIDGE NO. R-01-004 (*)

612188_BR1(R01004).DWG Plotted on 11-Aug-2022 2:19 PM

GENERAL NOTES

DESIGN:

IN ACCORDANCE WITH THE 2020 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS WITH CURRENT INTERIM SPECIFICATIONS THROUGH 2022, FOR HL–93 LOADING.

MASSDOT BENCH MARK:

BENCHMARK #2
AT MAG SET ABOUT 1' ABOVE GROUND ON UP#5 ON CANTON STREET
ELEV. = 225.32'
STA. 8+79.81, 26.33' LT.

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

DATE:

TO BE PLACED ON THE INSIDE OF THE FACE OF THE NORTH GUARDRAIL TRANSITIONS ON THE SOUTHBOUND ROADWAY AND ON THE SOUTH GUARDRAIL TRANSITIONS ON THE NORTHBOUND ROADWAY. 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:

ELECTRONIC SURVEY PROVIDED BY GREEN INTERNATIONAL AFFILIATES, INC. HAS BEEN USED. COPIES OF THE FILE MAY BE OBTAINED FROM MASSDOT.

SCALES:

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

STAGING:

THE SUPERSTRUCTURE REPLACEMENTS SHALL BE CONSTRUCTED ONE BOUND AT A TIME DURING WEEKEND CLOSURES USING MEDIAN CROSSOVERS.

DIMENSIONS:

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

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.

CONCRETE:

SIDEWALKS, CF–PL3 BARRIER AND PRECAST MOMENT SLABS SHALL BE 5000 PSI, 3/8 INCH, 710 HP CEMENT CONCRETE.

BOTTOM OF CORRUGATED METAL PIPE (CMP) VOIDS SHALL BE FILLED WITH 4000 PSI (MIN.) NON–SHRINK GROUT.

PRECAST DECK AND PRECAST END DIAPHRAGMS SHALL BE 4000 PSI, 3/4 INCH, 585 HP CEMENT CONCRETE.

PRECAST APPROACH SLABS, ABUTMENT CAPS, AND BACKWALLS SHALL BE 4000 PSI, 1½ INCH, 565 CEMENT CONCRETE.

HIGHWAY GUARDRAIL TRANSITIONS AND WINGWALL REFACING SHALL BE 5000 PSI, 3/4 INCH, 685 HP CEMENT CONCRETE.

CLOSURE POUR CONCRETE SHALL BE RAPID SETTING LOW PERMEABILITY CEMENT CONCRETE AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 7000 PSI AND REACH A COMPRESSIVE STRENGTH OF 2500 PSI BEFORE ROADWAY IS REOPENED TO PUBLIC TRAFFIC.

WATERPROOFING:

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

REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60. REINFORCING SHALL BE EPOXY COATED. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

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

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

BOLTS:

ALL BOLTS SHALL BE $\frac{7}{8}$"ø AASHTO M164 HIGH STRENGTH BOLTS IN $\frac{15}{16}$"ø HOLES UNLESS NOTED OTHERWISE. HARDENED WASHERS SHALL BE PLACED UNDER THE TURNED ELEMENT. UNLESS NOTED OTHERWISE, BOLTED CONNECTIONS USING HIGH STRENGTH BOLTS SHALL BE CONSIDERED SLIP–CRITICAL WITH CLASS C FAYING SURFACES.

STEEL AND WELDING:

ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270, GRADE 50, HOT–DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M111 AND M232, UNLESS OTHERWISE NOTED ON THE PLANS, OR OTHERWISE SPECIFIED BELOW.

EXTERIOR FASCIA AND BOTTOM OF EXTERIOR BEAMS SHALL BE PAINTED GREEN FEDERAL STANDARD NO. 14223, SEE SPECIFICATIONS.

STRUCTURAL STEEL DESIGNATED AS A MAIN MEMBER SHALL CONFORM TO THE CHARPY V–NOTCH REQUIREMENTS OF AASHTO M270 ZONE T2. STRUCTURAL STEEL DESIGNATED AS A FRACTURE CRITICAL MEMBER SHALL CONFORM TO THE CHARPY V–NOTCH REQUIREMENTS OF AASHTO M270 ZONE F2.

ALL WELDING, WELDING MATERIAL, PREPARATION AND ASSEMBLY OF MATERIAL FOR WELDING STEEL SHALL CONFORM TO THE LATEST MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, THE BRIDGE WELDING CODE (AASHTO/AWS D1.5), AND ALL INTERIM REVISIONS PUBLISHED BY AASHTO, AND THE LATEST AASHTO BRIDGE CONSTRUCTION SPECIFICATIONS.

THE CONTRACTOR IS NOTIFIED THAT TACK WELDING IS NOT PERMITTED.

EXISTING CONDITIONS:

PLANS OF THE EXISTING BRIDGE ARE AVAILABLE FOR INSPECTION AT THE OFFICE OF PLANS AND RECORDS, ROOM 6262, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, 10 PARK PLAZA, BOSTON, MA 02116.

THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH THE EXTENT AND NATURE OF THE WORK TO BE DONE UNDER THIS CONTRACT.

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL OF ALL EXISTING MATERIALS WHICH ARE TO BE REMOVED FROM THE STRUCTURE AS SHOWN ON THE PLANS. THE BID PRICE FOR EACH REPAIR SHALL INCLUDE THE COMPLETE COST OF REMOVAL, HANDLING AND LEGAL DISPOSAL OF SUCH MATERIALS. THE TRAVEL ROADWAY IS TO REMAIN CLEAR OF DEBRIS AND MATERIALS.

ELASTOMERIC PROTECTIVE COATING:

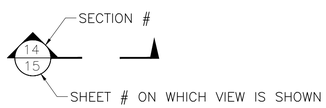
2 COATS OF ELASTOMERIC ACRYLIC PROTECTIVE COATING SHALL BE APPLIED TO ALL EXPOSED CONCRETE FACES OF THE BRIDGE AS FOLLOWS:

ALL EXISTING AND NEW ABUTMENT STEMS, BRIDGE SEATS, BACKWALLS, AND WINGWALLS.

UTILITIES:

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

SECTION MARK:



SEISMIC GROUND SHAKING HAZARD:

DESIGN RETURN PERIOD: 2500 YEAR
DESIGN SPECTRA:

As = 0.147g
SDs = 0.242g
SD1 = 0.132g

SITE CLASS = D
SEISMIC DESIGN CATEGORY (SDC) = A

RANDOLPH
RTE 24 OVER CANTON ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	141	189
PROJECT FILE NO. 612188			

GENERAL NOTES

INDEX OF DRAWINGS	
01	KEY PLAN
02	GENERAL NOTES
03	PLAN & ELEVATION
04	DEMOLITION PLAN
05	CONSTRUCTION STAGING
06	NORTH ABUTMENT
07	SOUTH ABUTMENT
08	SUBSTRUCTURE DETAILS 1 OF 2
09	SUBSTRUCTURE DETAILS 2 OF 2
10	BEARING DETAILS
11	STEEL DETAILS
12	PRECAST TOLERANCES
13	PBU DETAILS 1 OF 2
14	PBU DETAILS 2 of 2
15	DECK DETAILS 1 of 2
16	DECK DETAILS 2 of 2
17	HIGHWAY GUARDRAIL TRANSITION 1 of 2
18	HIGHWAY GUARDRAIL TRANSITION 2 of 2
19	PROTECTIVE SCREEN, TYPE II – 1 of 2
20	PROTECTIVE SCREEN, TYPE II – 2 of 2

ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	UNITS	QUANTITY
107.855	PRESSURE INJECTION OF CRACKS	FT	260
114.1	DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. R–01–004	LS	1
127	CONCRETE EXCAVATION	CY	51
127.1	REINFORCED CONCRETE EXCAVATION	CY	265
127.41	REINFORCED CONCRETE DECK EXCAVATION (PARTIAL DEPTH)	CY	4
140	BRIDGE EXCAVATION	CY	320
153.1	CONTROLLED DENSITY FILL – NON–EXCAVATABLE	CY	37
450.6	SUPERPAVE BRIDGE SURFACE COURSE – 9.5 (SSC–B – 9.5)	TON	71
450.7	SUPERPAVE BRIDGE PROTECTIVE COURSE – 9.5 (SPC–B – 9.5)	TON	71
904.3	5000 PSI, 3/4 IN., 685 HP CEMENT CONCRETE	CY	51
905.3	RAPID SETTING LOW PERMEABILITY CEMENT CONCRETE	CY	4
910.1	STEEL REINFORCEMENT FOR STRUCTURES – EPOXY COATED	LB	3500
912.5	DRILLED AND GROUTED #5 DOWELS	EA	1480
964.3	ELASTOMERIC PROTECTIVE COATING	SF	7000
994.1	TEMPORARY PROTECTIVE SHIELDING	SF	15
995	BRIDGE SUPERSTRUCTURE, BRIDGE NO. R–01–004	LS	1

TRAFFIC DATA		
	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2042	2042
AVERAGE DAILY TRAFFIC – PRESENT	135,810	11,780
AVERAGE DAILY TRAFFIC – DESIGN YEAR	163,130	23,660
DESIGN HOURLY VOLUME	11,420	2,370
DIRECTIONAL DISTRIBUTION	58%	59%
TRUCK PERCENTAGE – AVERAGE DAY	3%	3%
TRUCK PERCENTAGE – PEAK HOUR	3%	3%
DESIGN SPEED	70	35
DIRECTIONAL DESIGN HOURLY VOLUME	6,620	1,400

*
343
AAY

AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

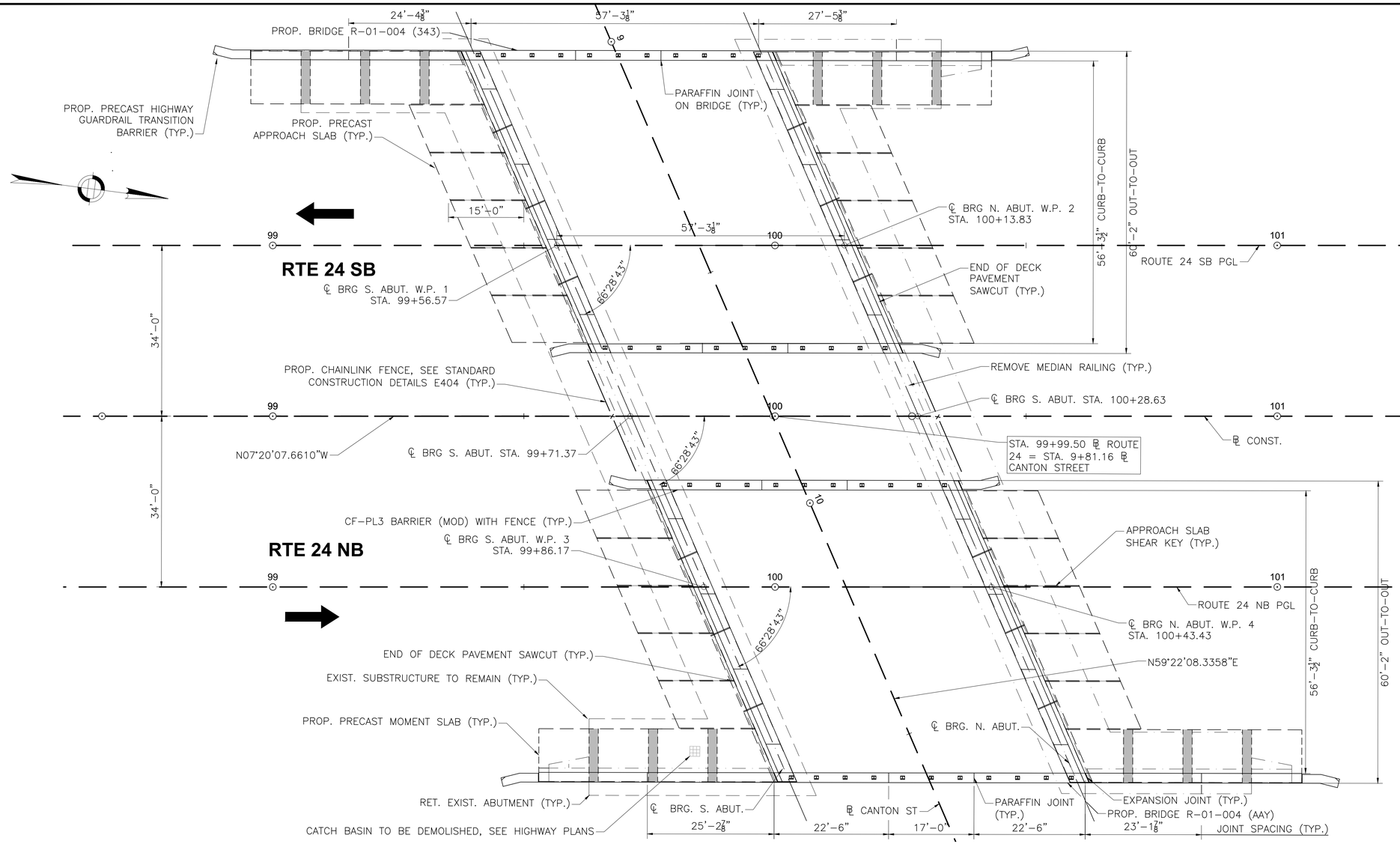
612188_BR2(R01004).DWG Plotted on 29-Aug-2022 10:49 AM

RANDOLPH
RTE 24 OVER CANTON ST

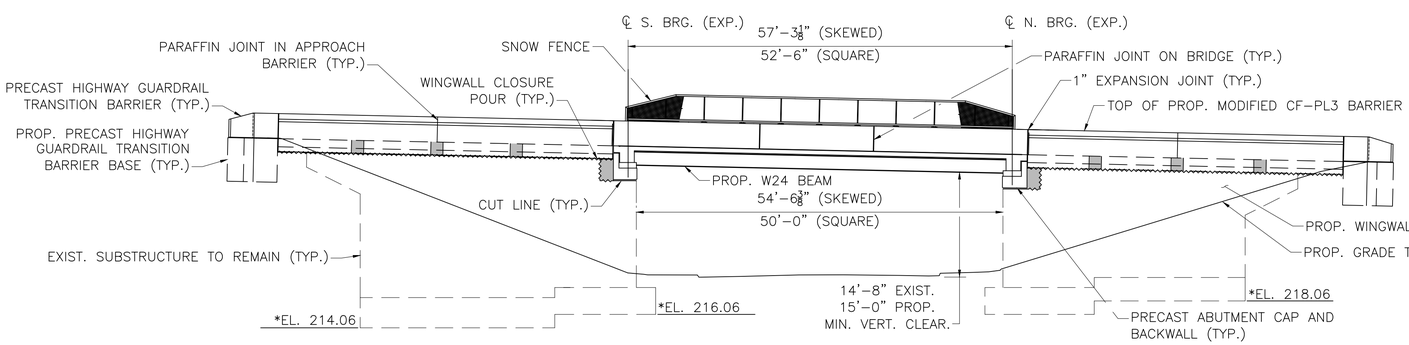
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	142	189
PROJECT FILE NO. 612188			

PLAN & ELEVATION

WORKING POINTS				
ID NO.	STATION	OFFSET	NORTHING	EASTING
W.P. 1	99+56.57	0.0	2892892	770900
W.P. 2	100+13.83	0.0	2892949	770893
W.P. 3	99+86.17	0.0	2892929	770964
W.P. 4	100+43.43	0.0	2892986	770957



BRIDGE PLAN
SCALE: 3/32" = 1'-0"



ELEVATION
SCALE: 3/32" = 1'-0"

*NOTE:
EXISTING FOOTING ELEVATIONS TAKEN FROM 1955 RECORD PLANS AND HAVE NOT BEEN VERIFIED. ELEVATIONS HAVE BEEN ADJUSTED FROM THE 1929 NGVD DATUM USED FOR THE 1955 PROJECT AND CONVERTED TO THE 1988 NAVD DATUM USED FOR THIS PROJECT BY SUBTRACTING 0.94 FT FROM THE 1955 ELEVATIONS.

DATE	DESCRIPTION
AUG. 27, 2022	ISSUED FOR CONSTRUCTION

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

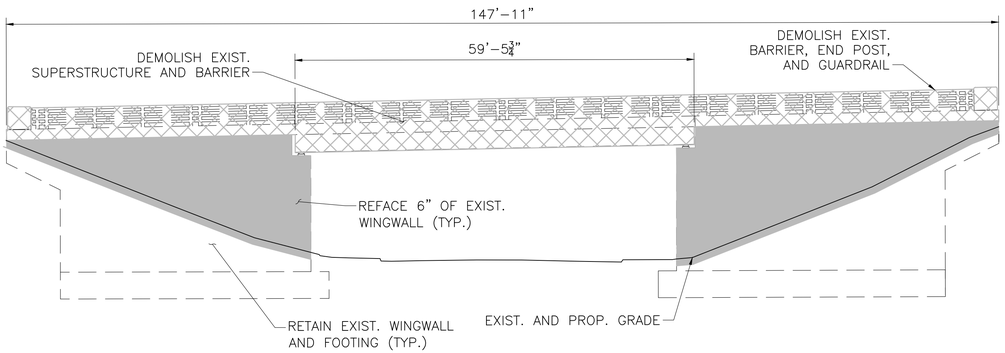
*
343
AAY

612188_BR3(R01004).DWG Plotted on 29-Aug-2022 10:49 AM

RANDOLPH
RTE 24 OVER CANTON ST

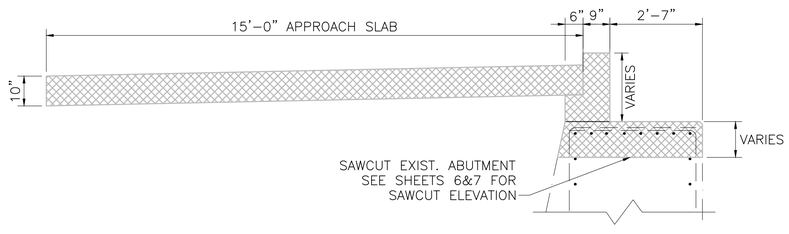
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	143	189
	PROJECT FILE NO. 612188		

DEMOLITION PLAN

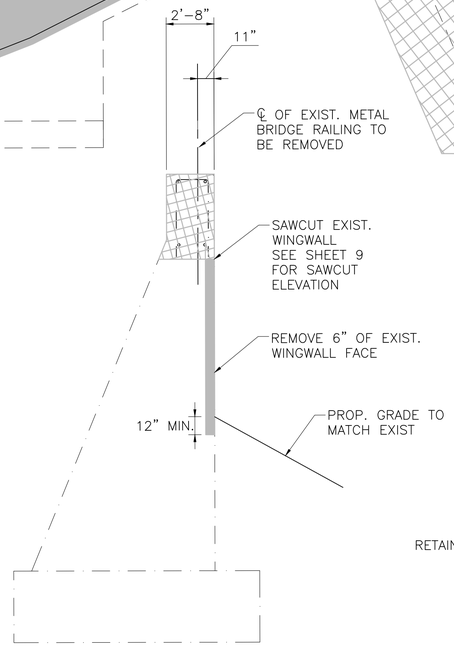


WESTERLY ELEVATION DEMOLITION

(EASTERLY ELEVATION SIMILAR)
SCALE: $\frac{3}{32}$" = 1'–0"



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



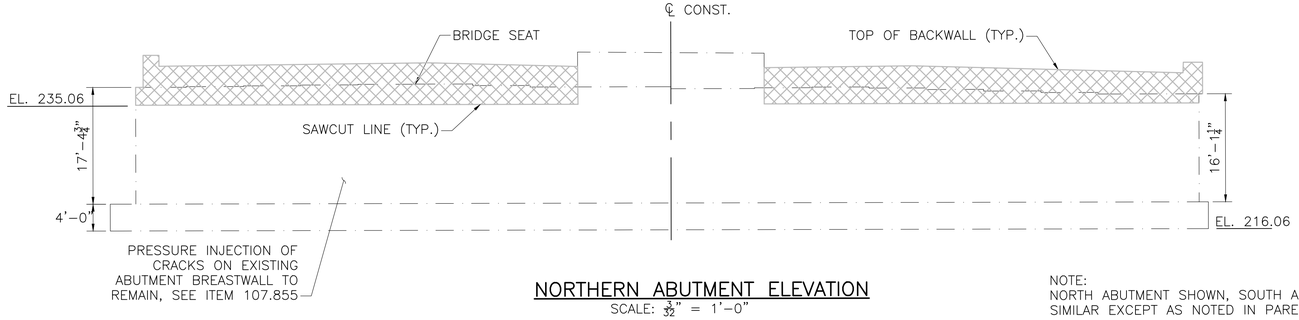
TYPICAL WINGWALL SECTION

SCALE: $\frac{1}{4}$" = 1'–0"

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

BRIDGE DEMOLITION PLAN

SCALE: $\frac{3}{32}$" = 1'–0"



NORTHERN ABUTMENT ELEVATION

SCALE: $\frac{3}{32}$" = 1'–0"

NOTE:
NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR EXCEPT AS NOTED IN PARENTHESES

LEGEND:

- DENOTES AREA OF CONCRETE EXCAVATION
- DENOTES AREA OF ABUTMENT FACE REHABILITATION

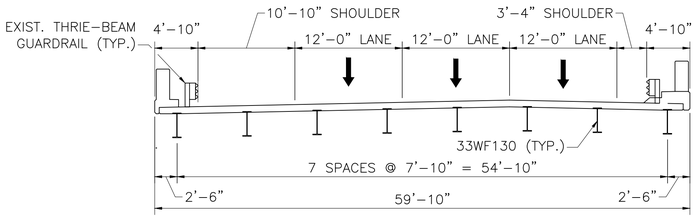
*
343
AAY

DATE	DESCRIPTION
AUG. 27, 2022	ISSUED FOR CONSTRUCTION

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

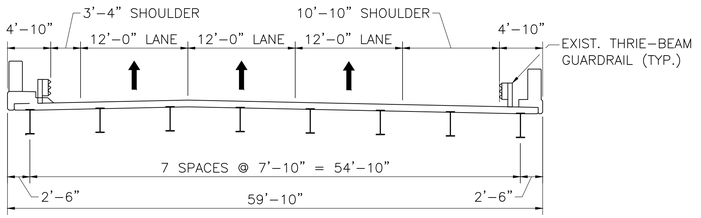
612188_BR4(R01004).DWG Plotted on 29-Aug-2022 10:50 AM

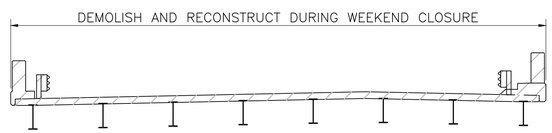
ROUTE 24 SOUTHBOUND



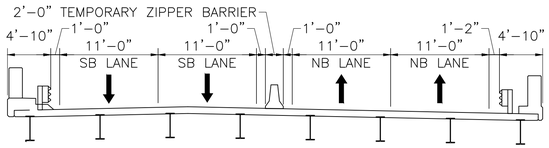
EXISTING

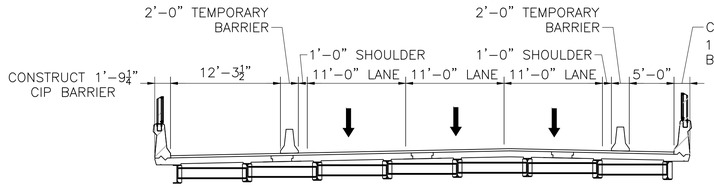
ROUTE 24 NORTHBOUND



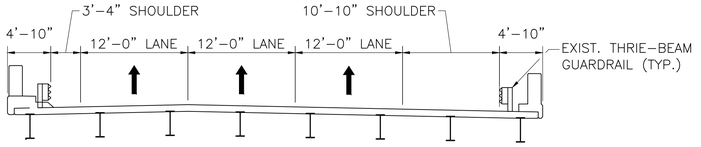


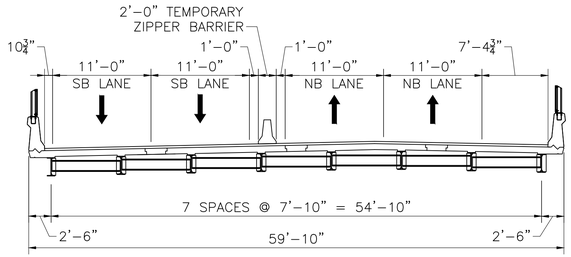
STAGE 1A



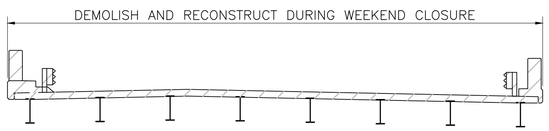


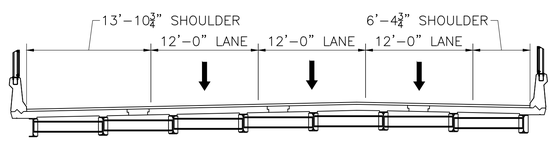
STAGE 1B



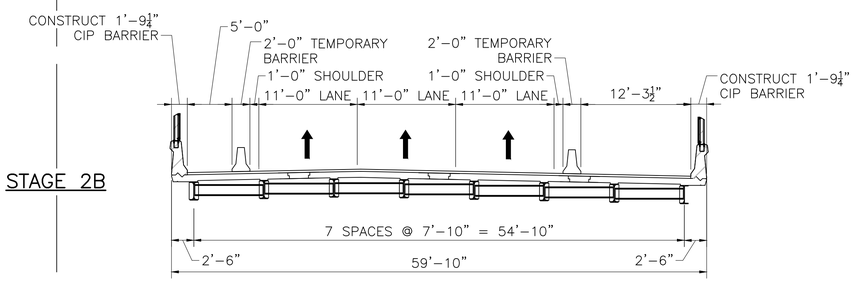


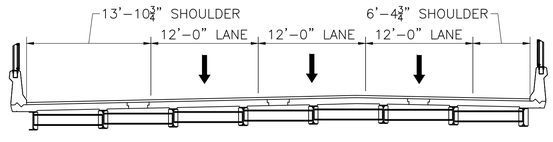
STAGE 2A



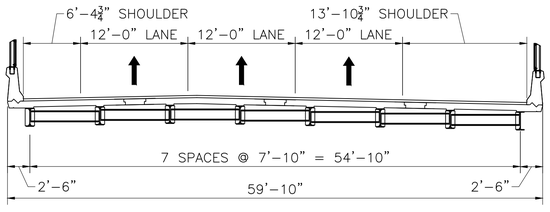


STAGE 2B





PROPOSED



ROUTE 24 SOUTHBOUND

ROUTE 24 NORTHBOUND

RANDOLPH
RTE 24 OVER CANTON ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	144	189
	PROJECT FILE NO. 612188		

CONSTRUCTION STAGING

CONSTRUCTION SEQUENCE:

STAGE 0:
* INSTALL MEDIAN CROSSOVER (SEE HIGHWAY PLANS)

STAGE 1A:
* INSTALL NORTHBOUND TEMPORARY BARRIER
* DIVERT SOUTHBOUND TRAFFIC TO NORTHBOUND BRIDGE
* DEMOLISH SOUTHBOUND BRIDGE
* CONSTRUCT PROPOSED SOUTHBOUND BRIDGE
* END CROSSOVER DIVERSION
* REMOVE NORTHBOUND TEMPORARY BARRIER

STAGE 1B:
* INSTALL SOUTHBOUND CIP BRIDGE BARRIERS

STAGE 2A:
* INSTALL SOUTHBOUND TEMPORARY BARRIER
* DIVERT NORTHBOUND TRAFFIC TO SOUTHBOUND BRIDGE
* DEMOLISH NORTHBOUND BRIDGE
* CONSTRUCT PROPOSED NORTHBOUND BRIDGE
* END CROSSOVER DIVERSION
* REMOVE SOUTHBOUND TEMPORARY BARRIER

STAGE 2B:
* INSTALL NORTHBOUND CIP BRIDGE BARRIERS

LEGEND:

BRIDGE DEMOLITION

AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

USE ONLY PRINTS OF LATEST DATE

*
343
AAY

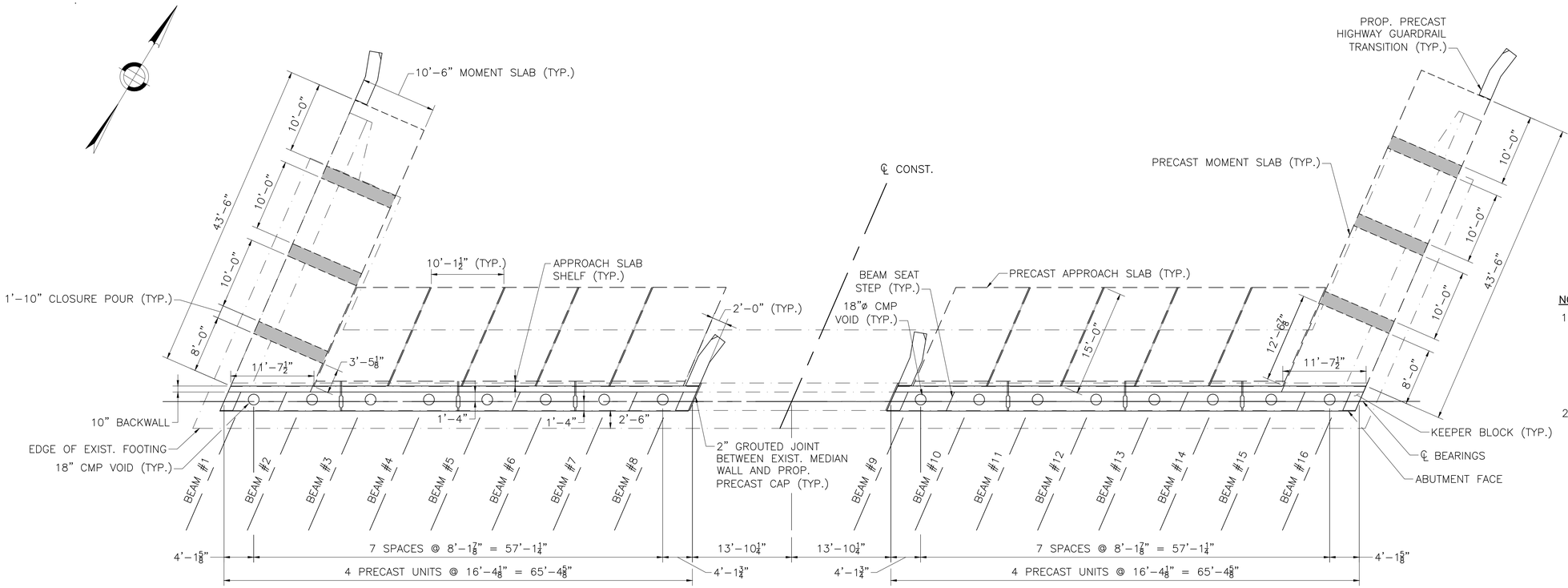
612188_BR5(R01004).DWG Plotted on 29-Aug-2022 10:50 AM

RANDOLPH
RTE 24 OVER CANTON ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	145	189
PROJECT FILE NO.	612188		

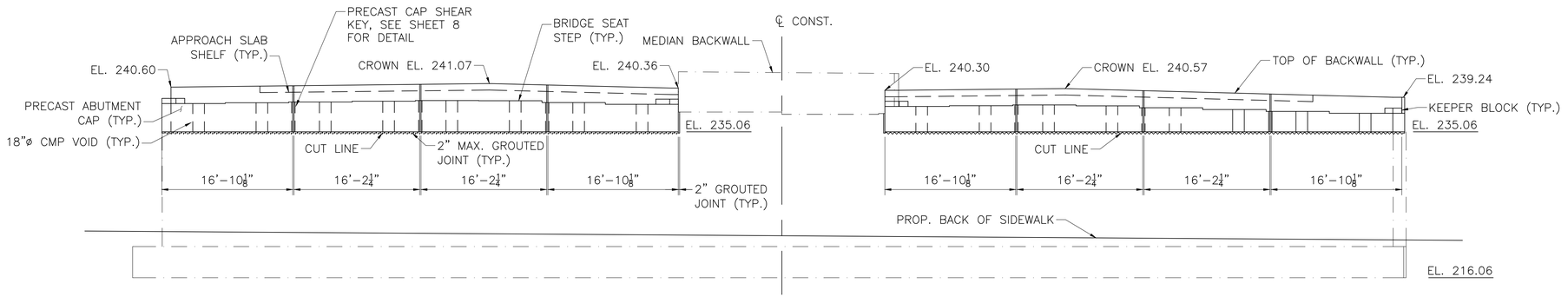
NORTH ABUTMENT

612188_BR6-7(R01004).DWG Plotted on 29-Aug-2022 10:50 AM



NORTHERN ABUTMENT PLAN

SCALE: ⅛" = 1'-0"



NORTHERN ABUTMENT ELEVATION

SCALE: ⅛" = 1'-0"

NOTES:

1. THE FACTORED BEARING PRESSURE AS PER AASHTO LRFD BRIDGE SPECIFICATIONS STRENGTH I LOAD COMBINATION:

ABUTMENTS	6.86 KSF
WINGWALLS	6.94 KSF

2. THE FACTORED BEARING RESISTANCE:

ABUTMENTS	9.45 KSF
WINGWALLS	8.71 KSF

   FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.

BEAM	BEAM SEAT ELEVATIONS
1	238.41
2	238.51
3	238.60
4	238.70
5	238.79
6	238.76
7	238.53
8	238.30
9	238.14
10	238.23
11	238.32
12	238.21
13	237.97
14	237.73
15	237.49
16	237.25

*
343 AAY

AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

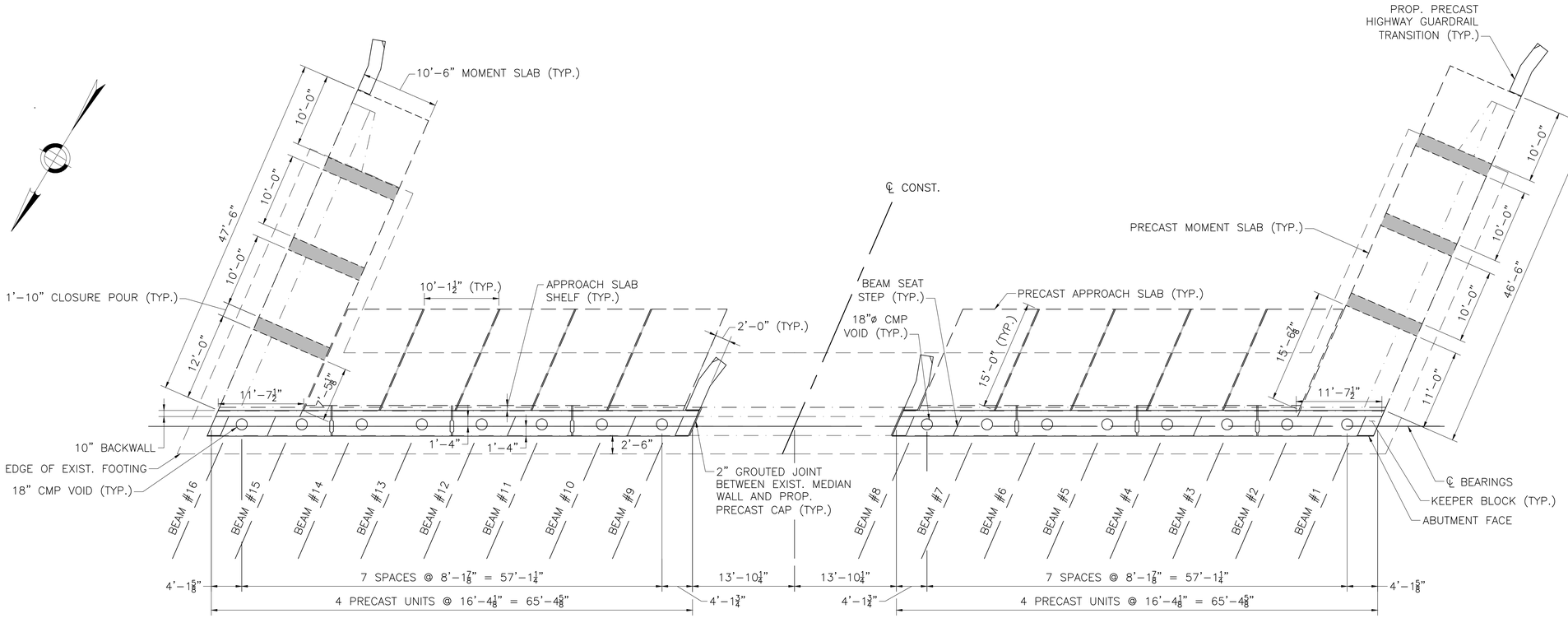
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

RANDOLPH
RTE 24 OVER CANTON ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	146	189
PROJECT FILE NO.	612188		

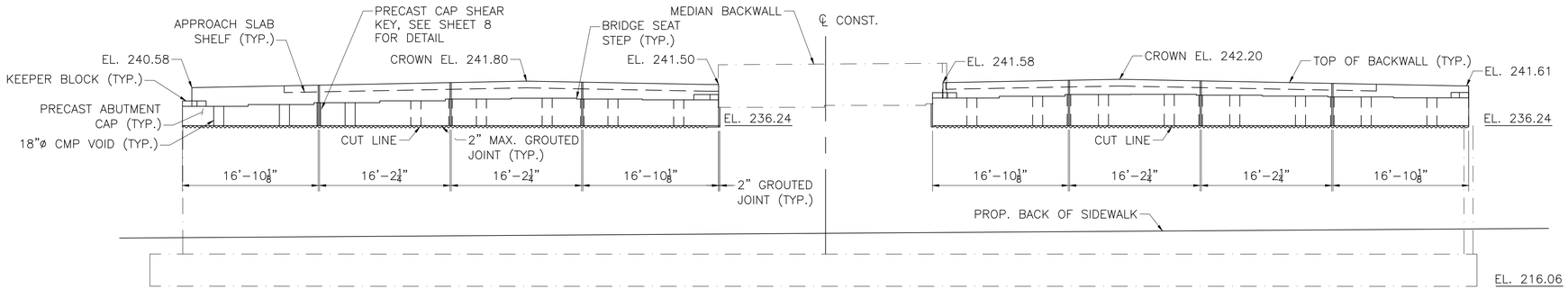
SOUTH ABUTMENT

612188_BR6-7(R01004).DWG Plotted on 29-Aug-2022 10:50 AM



SOUTHERN ABUTMENT PLAN

SCALE: ⅛" = 1'-0"



SOUTHERN ABUTMENT ELEVATION

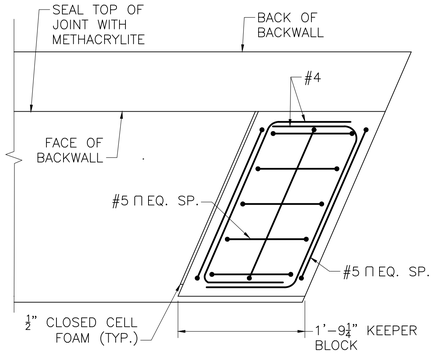
SCALE: ⅛" = 1'-0"

BEAM	BEAM SEAT ELEVATIONS
1	239.42
2	239.53
3	239.64
4	239.75
5	239.85
6	239.83
7	239.61
8	239.39
9	239.27
10	239.37
11	239.47
12	239.37
13	239.14
14	238.92
15	238.69
16	238.46

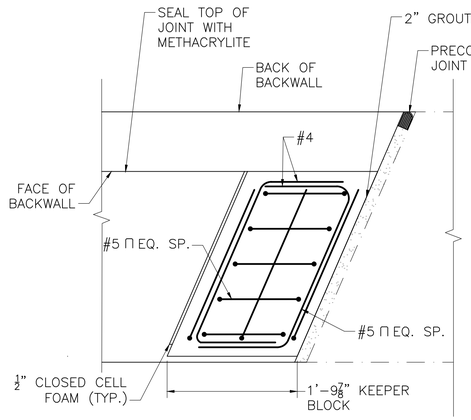
*
343
AAY

AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

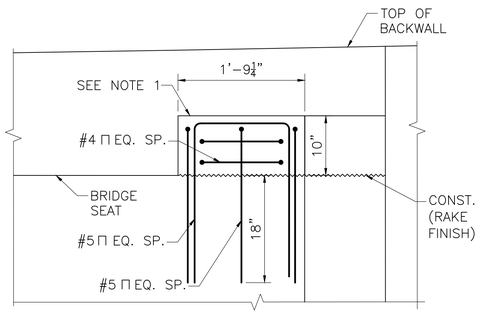
612188_BRR(R01004).DWG Plotted on 29-Aug-2022 10:50 AM



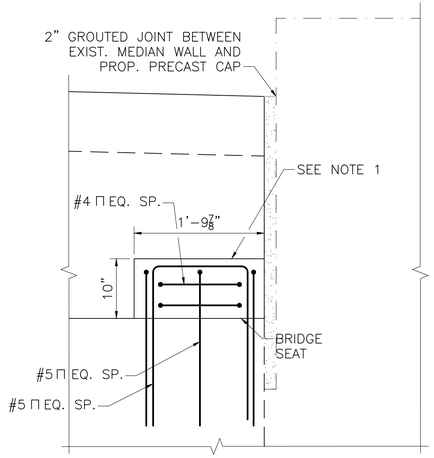
PLAN AT EXTERIOR



PLAN AT MEDIAN



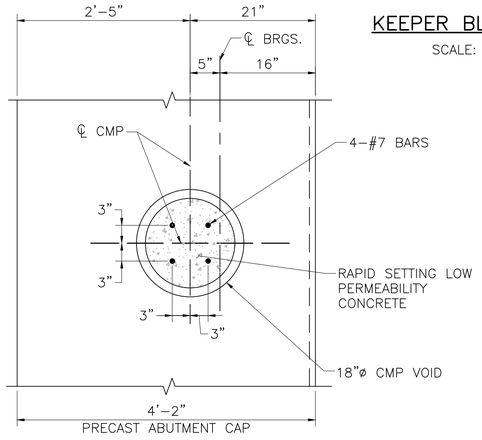
ELEVATION AT EXTERIOR



ELEVATION AT MEDIAN

NOTES:

1. TOP OF KEEPER BLOCK SHALL BE TROWELED SMOOTH PARALLEL TO PROFILE GRADE.
2. ABUTMENT REINFORCEMENT BELOW CONSTRUCTION JOINT HAS BEEN OMITTED FOR CLARITY.

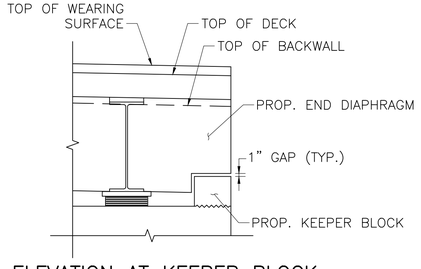


KEEPER BLOCK DETAILS

SCALE: 1" = 1'–0"

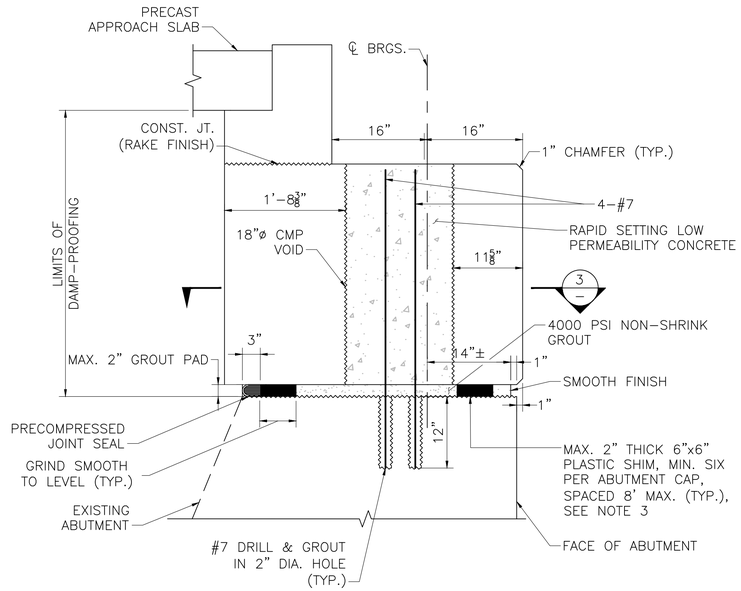
SECTION 3 / –

SCALE: 1" = 1'–0"



ELEVATION AT KEEPER BLOCK

SCALE: ½" = 1'–0"

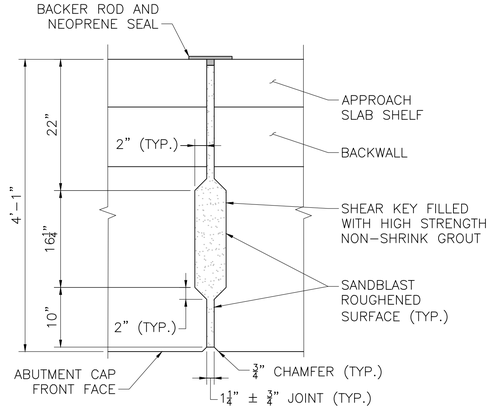


TYPICAL SECTION THROUGH ABUTMENT

SCALE: 1" = 1'–0"

ABUTMENT CAP SECTION NOTES:

1. PRE–BED SEAT WITH NON–SHRINK GROUT WITH THICKNESS MORE THAN SHIM STACK
2. PROTECTIVE COURSE TO BE HOT MIX ASPHALT DENSE BINDER COURSE FOR BRIDGES, PLACED IN 2" LAYERS AND COMPACTED WITH A MECHANICAL HAND–GUIDED TAMPER WITHIN 12 HOURS AFTER PLACING MEMBRANE WATERPROOFING.
3. PLASTIC SHIMS SHALL BE SECURED TO THE EXISTING ABUTMENT WITH COUNTER SUNK SCREWS PRIOR TO PRE–BEDDING GROUT.

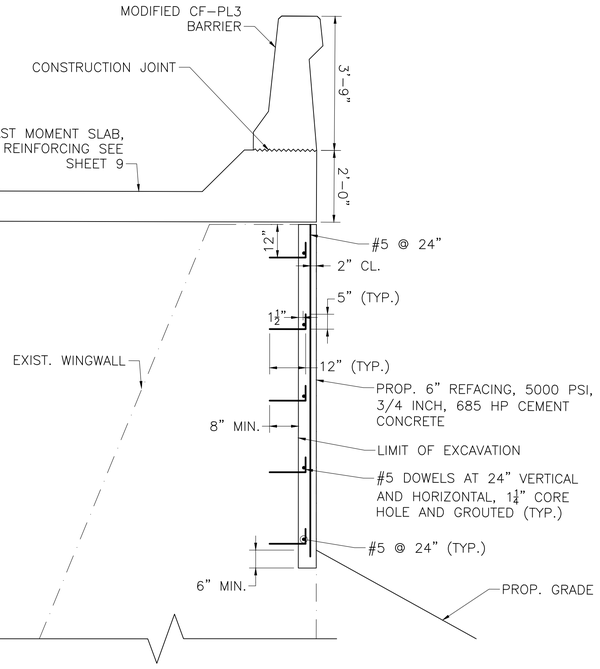


PRECAST ABUTMENT CAP SHEAR KEY DETAIL

SCALE: 1" = 1'–0"

SUGGESTED SEQUENCE – WINGWALL CONCRETE REPAIRS

1. PRIOR TO REMOVING DETERIORATED CONCRETE, THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL WORK AREAS. USING THE CONTRACT DRAWINGS AS A GUIDE, THE ENGINEER AND CONTRACTOR SHALL MARK THE LIMITS OF CONCRETE TO BE REMOVED.
2. THE LIMITS OF CONCRETE REMOVAL AS MARKED ON THE STRUCTURE SHALL BE USED AS A GUIDE FOR SAWCUTTING TO A 6" DEPTH.
3. DETERIORATED CONCRETE SHALL BE REMOVED 6" TO A SOUND SUBSTRATE.
4. THE SURFACES TO RECEIVE THE REPAIR MATERIAL SHALL BE FREE OF OIL, SOLVENT, GREASE, DIRT, LOOSE PARTICLES AND FOREIGN MATTER. CLEANING OF THE REPAIR AREAS SHALL BE PERFORMED BY ABRASIVE BLASTING (NOT MORE THAN 36 HRS AHEAD OF THE REPAIR PLACEMENT) OR OTHER METHODS APPROVED BY THE ENGINEER.
5. ALL CONCRETE SURFACES SHALL BE COATED WITH EPOXY BONDING COMPOUND AFTER CLEANING. EPOXY BONDING COMPOUND SHALL BE INCIDENTAL TO ITEM 904.3.
6. PRESOAK SUBSTRATE PRIOR TO PLACEMENT OF MATERIAL. THE SUBSTRATE SHALL BE SATURATED SURFACE DRY AT TIME OF PLACEMENT.
7. CONCRETE REPAIR MATERIAL SHALL BE PLACED ACCORDING TO THE MANUFACTURER'S LATEST WRITTEN RECOMMENDATIONS.
8. THE CONCRETE SHALL BE FINISHED TO CONFORM TO THE LINE, GRADE AND SURFACE TEXTURE OF THE ORIGINAL CONCRETE SURFACE.



TYPICAL WINGWALL SECTION

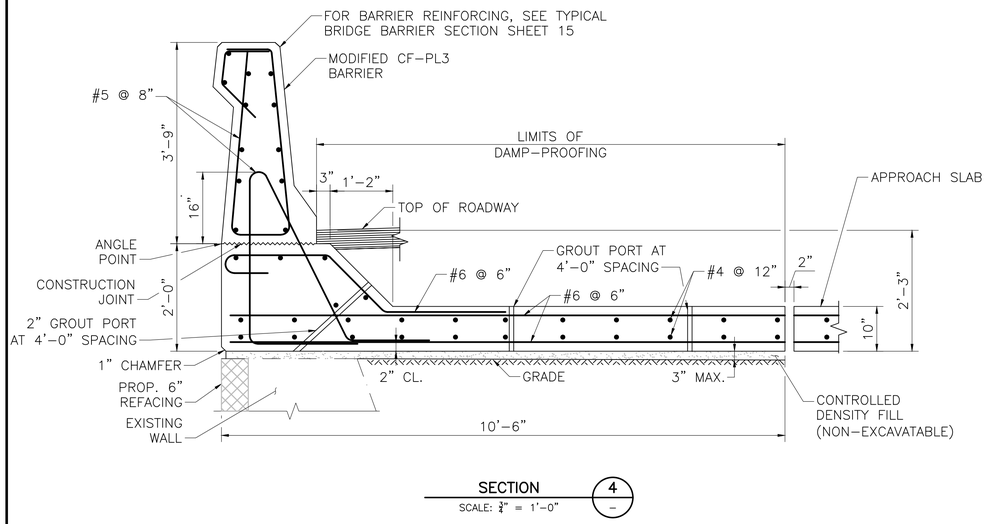
SCALE: ½" = 1'–0"

DATE	DESCRIPTION
AUG. 27, 2022	ISSUED FOR CONSTRUCTION

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

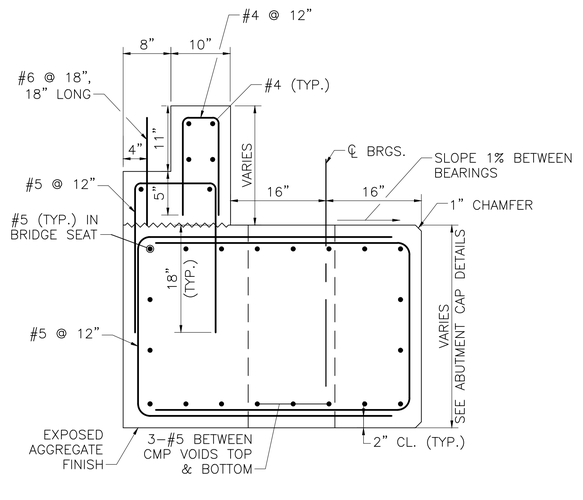
USE ONLY PRINTS OF LATEST DATE

*
343
AAY



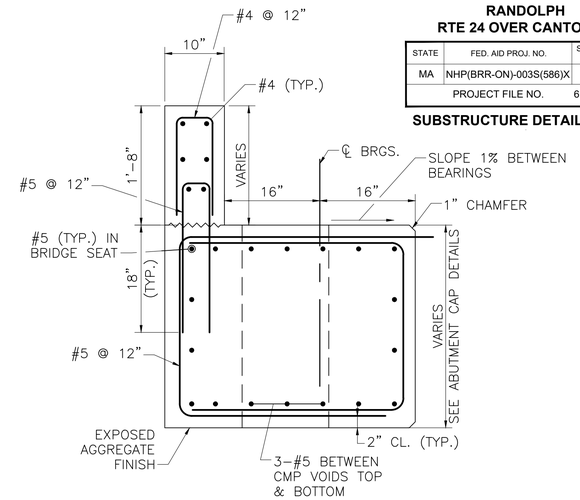
SECTION 4

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



TYPICAL SECTION THROUGH PRECAST ABUTMENT CAP

SCALE: 1" = 1'-0"



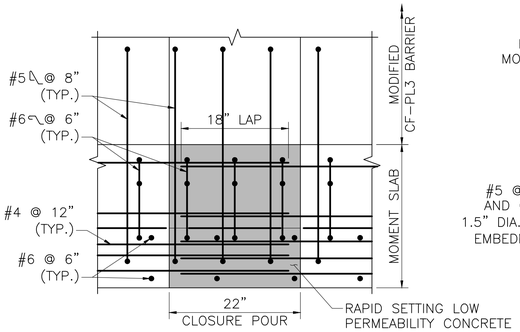
SECTION THROUGH PRECAST ABUTMENT CAP AT ENDS WITHOUT APPROACH SLABS

SCALE: 1" = 1'-0"

RANDOLPH
RTE 24 OVER CANTON ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	148	189
PROJECT FILE NO.	612188		

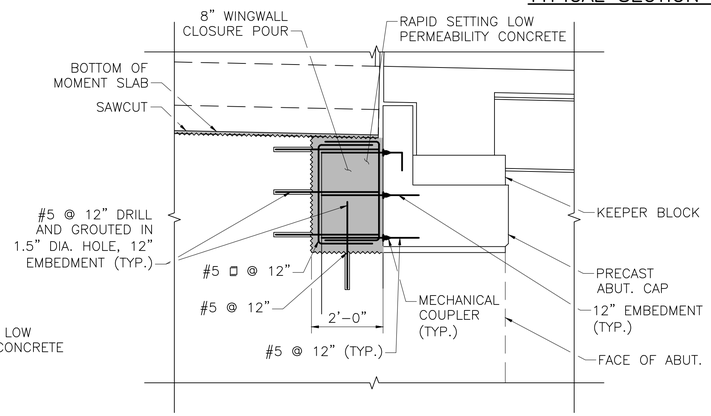
SUBSTRUCTURE DETAILS 2 OF 2



NOTE:
BARRIER REINFORCEMENT NOT SHOWN FOR CLARITY

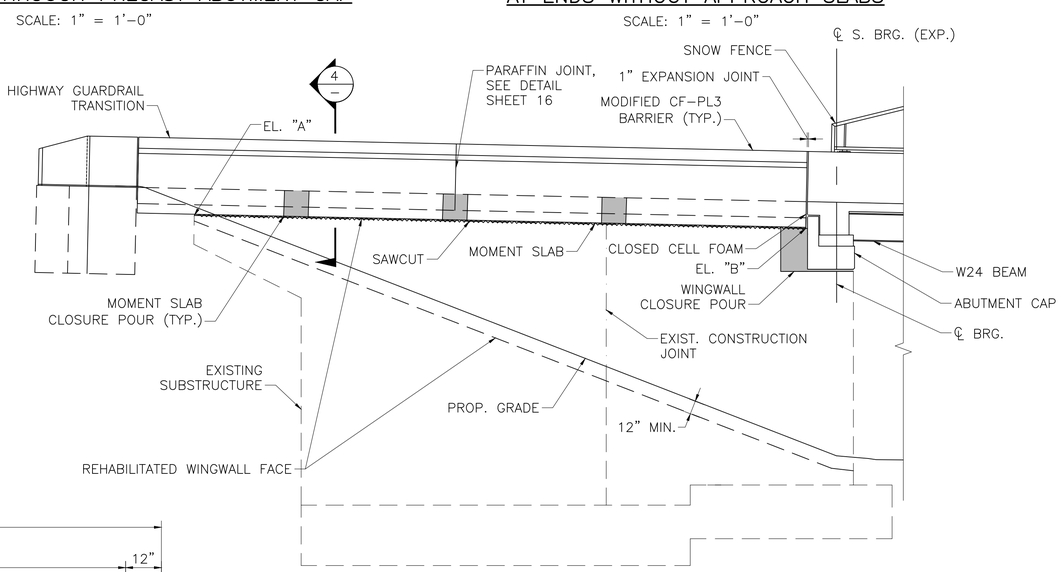
TYPICAL TRANSVERSE MOMENT SLAB CLOSURE POUR DETAIL

SCALE: 1" = 1'-0"



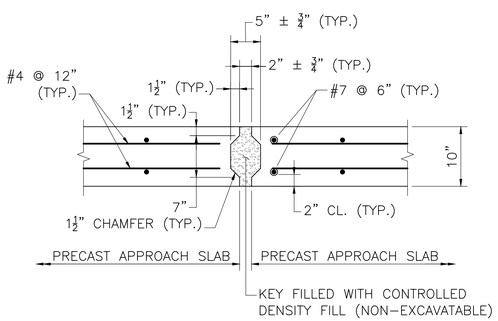
TYPICAL WINGWALL CLOSURE POUR DETAIL

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



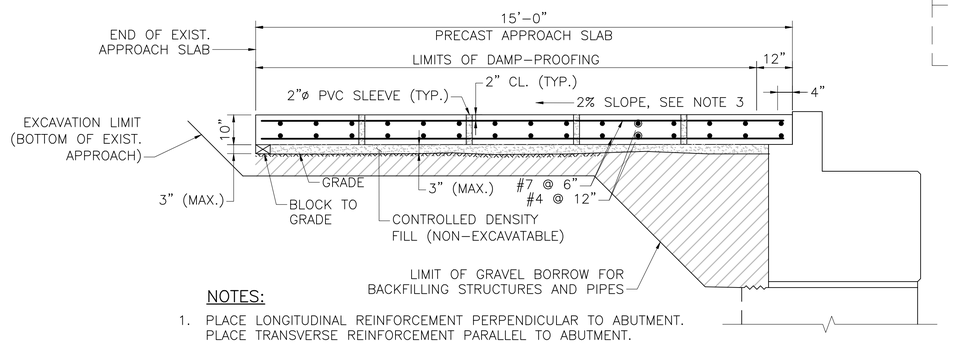
TYPICAL WINGWALL ELEVATION

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



APPROACH SLAB SHEAR KEY

NOT TO SCALE



NOTES:

1. PLACE LONGITUDINAL REINFORCEMENT PERPENDICULAR TO ABUTMENT. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
2. PVC SLEEVES TO BE INCLUDED IN PRECAST APPROACH SLABS TO FACILITATE PLACEMENT OF CONTROLLED DENSITY FILL (NON-EXCAVATABLE).
3. SLOPE SHOULD BE EQUAL TO OR GREATER THAN ROADWAY LONGITUDINAL SLOPE.

TYPICAL APPROACH SLAB

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

LIMITS OF DEMOLITION ELEVATIONS		
WINGWALL	"A"	"B"
NORTHWEST	238.78	239.48
SOUTHWEST	241.08	240.53
NORTHEAST	237.47	238.27
SOUTHEAST	240.24	239.53

DATE	DESCRIPTION
AUG. 27, 2022	ISSUED FOR CONSTRUCTION

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

*
343
AAY

SHEET 09 OF 20 SHEETS BRIDGE NO. R-01-004 (*)

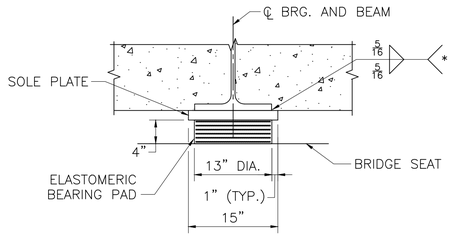
612188_BR9(R01004).DWG Plotted on 29-Aug-2022 10:51 AM

RANDOLPH
RTE 24 OVER CANTON ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	149	189
	PROJECT FILE NO. 612188		

BEARING DETAILS

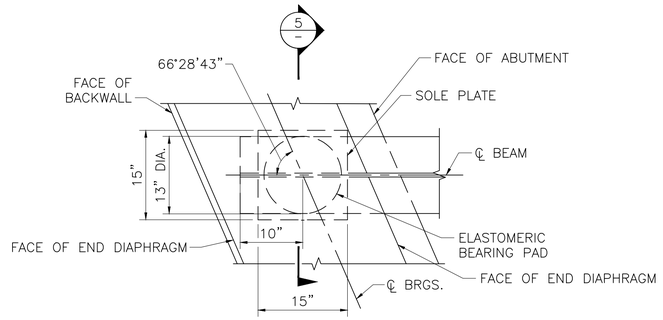
612188_BR10(R01004).DWG Plotted on 29-Aug-2022 10:51 AM



(*) – WELDS SHALL TERMINATE ¼" FROM EDGE OF PLATE.

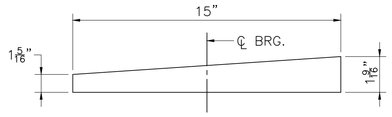
SECTION 5/–

SCALE: 1" = 1'–0"



ELASTOMERIC BEARING PAD PLAN VIEW

SCALE: 1" = 1'–0"

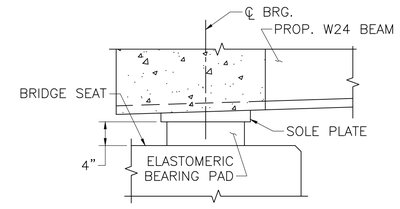


SOLE PLATE DETAIL

SCALE: 3" = 1'–0"

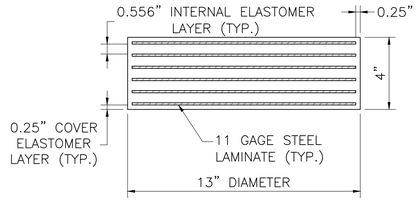
BEARING NOTES:

1. STEEL SOLE PLATE SHALL CONFORM TO AASHTO M 270 GRADE 36 AND SHALL BE HOT–DIP GALVANIZED.
2. CENTER THE ELASTOMERIC PAD UNDER THE SOLE PLATE DURING BEAM ERECTION.



ELASTOMERIC BEARING PAD ELEVATION

SCALE: 1" = 1'–0"



NOTES:

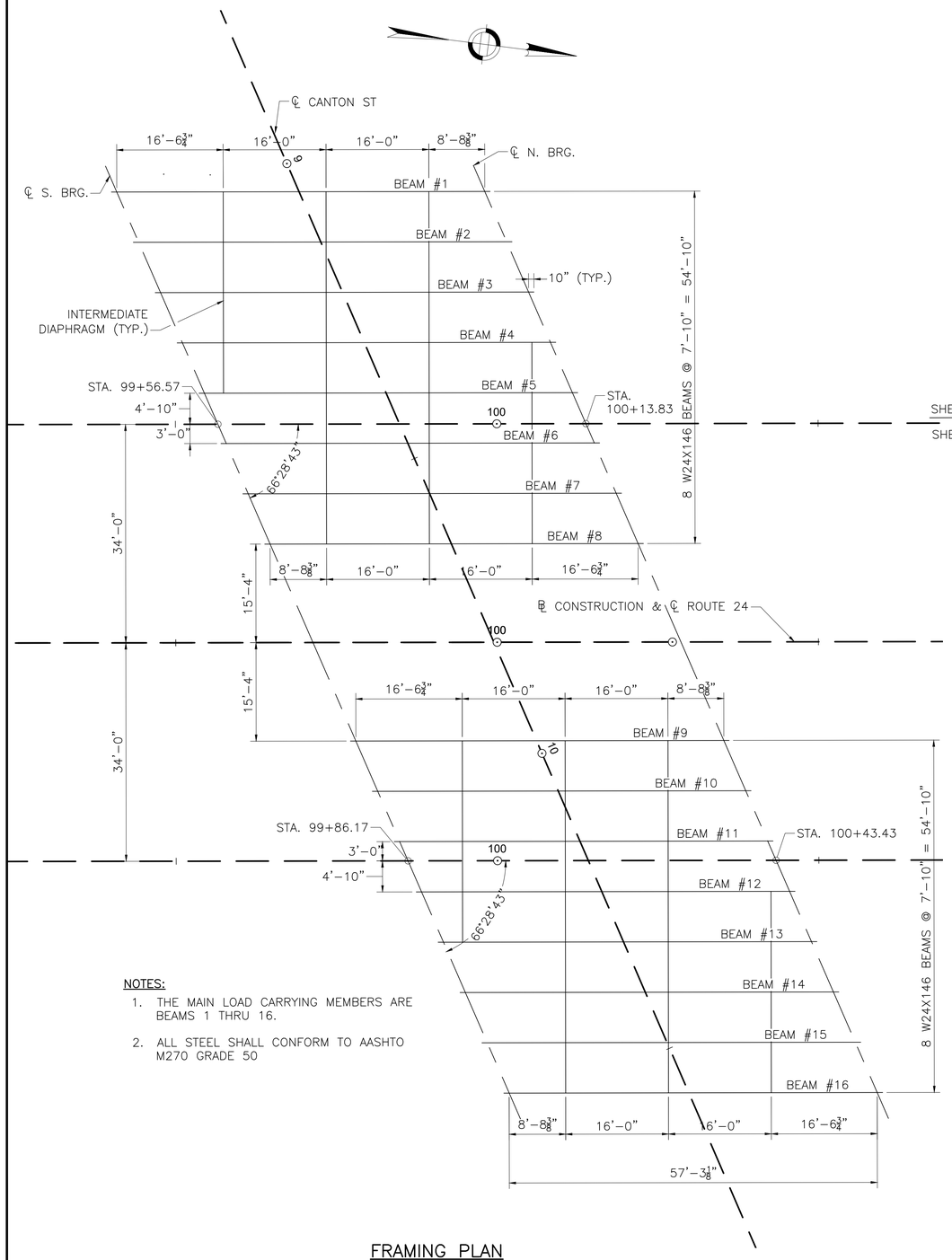
1. ELASTOMER SHALL HAVE A SHEAR MODULUS OF 0.160 KSI.
2. STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36.
3. THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD IS 117 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 0.876 KSI.
4. ELASTOMERIC BEARING PAD SHALL NOT BE VULCANIZED TO THE SOLE PLATE.

ELASTOMERIC BEARING PAD

SCALE: 3" = 1'–0"

*
343
AAY

AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

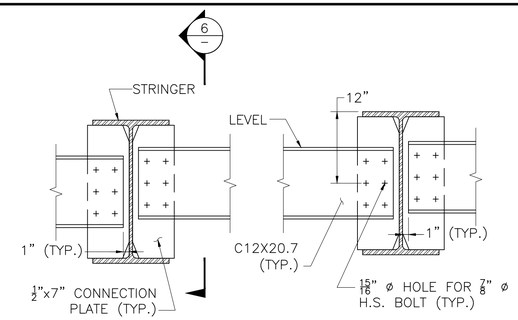


NOTES:

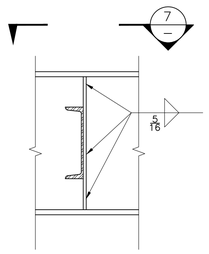
1. THE MAIN LOAD CARRYING MEMBERS ARE BEAMS 1 THRU 16.
2. ALL STEEL SHALL CONFORM TO AASHTO M270 GRADE 50

FRAMING PLAN

SCALE: 1" = 10'



ELEVATION VIEW



SECTION 6

SCALE: 1" = 1'–0"

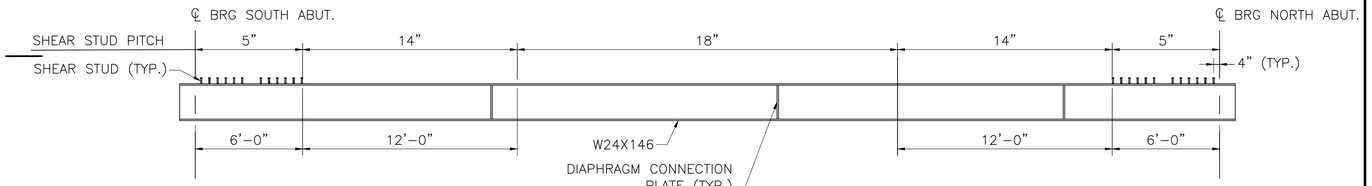
RANDOLPH
RTE 24 OVER CANTON ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	150	189
	PROJECT FILE NO. 612188		

STEEL DETAILS

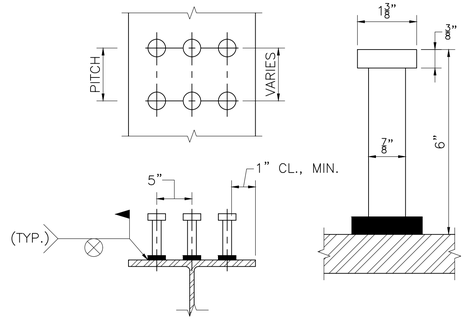
INTERMEDIATE DIAPHRAGM DETAILS

SCALE: 1" = 1'–0"



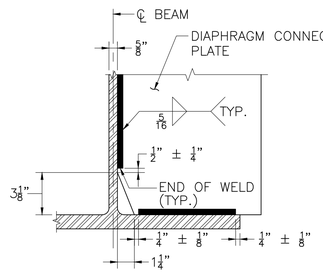
BEAM ELEVATION

SCALE: ¼" = 1'–0"



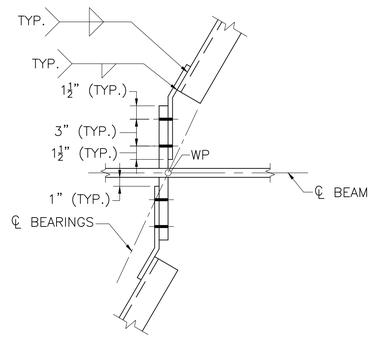
STUD SHEAR CONNECTORS

NOT TO SCALE



CLIP DETAIL

NOT TO SCALE



PLAN VIEW

SECTION 7

SCALE: 1½" = 1'–0"

CAMBER TABLE

BM. NO.		SPAN NO. 1										
		℄ BRG. ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ BRG. ABUT.
1 & 8, 9 & 16	STEEL DL DEFLECTION	0.00	0.09	0.16	0.22	0.26	0.27	0.26	0.22	0.16	0.09	0.00
	CONC. DL DEFLECTION	0.00	0.41	0.78	1.07	1.26	1.32	1.26	1.07	0.78	0.41	0.00
	S.D.L. DEFLECTION	0.00	0.16	0.31	0.42	0.49	0.52	0.49	0.42	0.31	0.16	0.00
	VERT. CURVE CAMBER	0.00	0.11	0.19	0.25	0.29	0.30	0.29	0.25	0.19	0.11	0.00
	ADDITIONAL CAMBER	0.00	0.13	0.23	0.30	0.34	0.36	0.34	0.30	0.23	0.13	0.00
	TOTAL CAMBER	0.00	0.90	1.68	2.27	2.64	2.77	2.64	2.27	1.68	0.90	0.00
2 TO 7, & 10 TO 16	STEEL DL DEFLECTION	0.00	0.09	0.17	0.23	0.27	0.28	0.27	0.23	0.17	0.09	0.00
	CONC. DL DEFLECTION	0.00	0.46	0.87	1.19	1.39	1.46	1.39	1.19	0.87	0.46	0.00
	S.D.L. DEFLECTION	0.00	0.12	0.22	0.30	0.35	0.37	0.35	0.30	0.22	0.12	0.00
	VERT. CURVE CAMBER	0.00	0.11	0.19	0.25	0.29	0.30	0.29	0.25	0.19	0.11	0.00
	ADDITIONAL CAMBER	0.00	0.13	0.23	0.30	0.34	0.36	0.34	0.30	0.23	0.13	0.00
	TOTAL CAMBER	0.00	0.90	1.68	2.27	2.65	2.78	2.65	2.27	1.68	0.90	0.00

DATE	DESCRIPTION
AUG. 27, 2022	ISSUED FOR CONSTRUCTION

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

USE ONLY PRINTS OF LATEST DATE

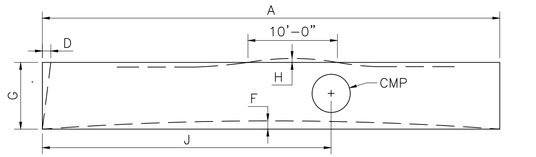
*
343
AAY

612188_BR11(R01004).DWG Plotted on 29-Aug-2022 10:51 AM

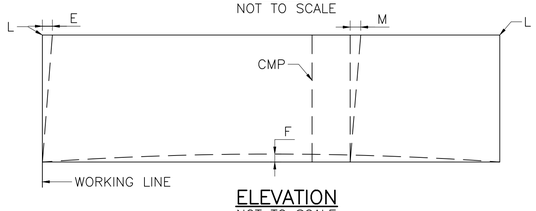
RANDOLPH
RTE 24 OVER CANTON ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	151	189
PROJECT FILE NO.	612188		

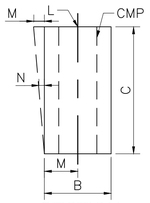
PRECAST TOLERANCES



PLAN
NOT TO SCALE



ELEVATION
NOT TO SCALE



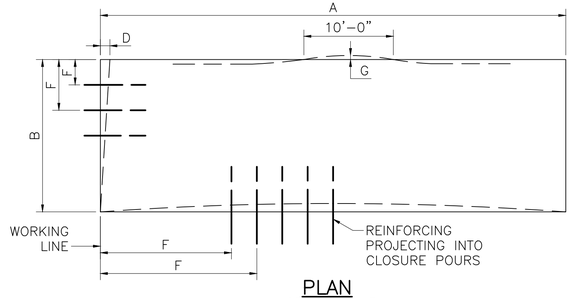
SECTION
NOT TO SCALE

ABUTMENT CAP SEGMENT ELEVATION ERECTION TOLERANCES

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

ABUTMENT CAP SEGMENT FABRICATION TOLERANCES

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



PLAN
NOT TO SCALE



ELEVATION
NOT TO SCALE

APPROACH SLAB FABRICATION TOLERANCES

A	LENGTH	$\pm\frac{1}{4}$"
B	WIDTH (OVERALL)	$\pm\frac{1}{4}$"
C	DEPTH (OVERALL)	$\pm\frac{1}{4}$"
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	$\pm\frac{1}{2}$"
E	SWEEP OVER MEMBER LENGTH	$\pm\frac{3}{8}$"
F	LOCATION OF PROJECTING REINFORCING MEASURED FROM A WORKING LINE	$\pm\frac{1}{2}$"
G	LOCAL SMOOTHNESS OF ANY SURFACE	$\pm\frac{1}{4}$" IN 10 FEET

AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

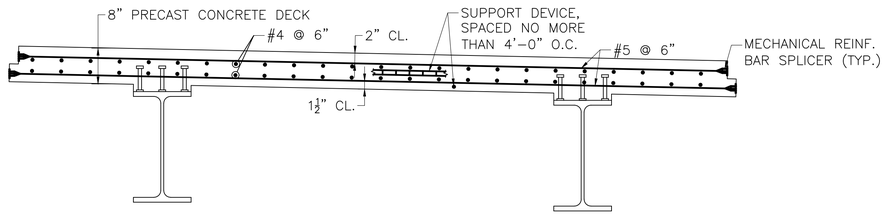
*
343
AAY

612188_BR12(R01004).DWG Plotted on 29-Aug-2022 10:51 AM

RANDOLPH
RTE 24 OVER CANTON ST

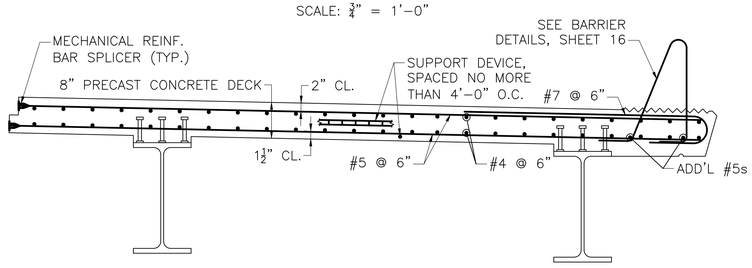
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	152	189
PROJECT FILE NO.	612188		

PBU DETAILS 1 OF 2



PRECAST BRIDGE UNIT – INTERIOR

SCALE: ¾" = 1'-0"

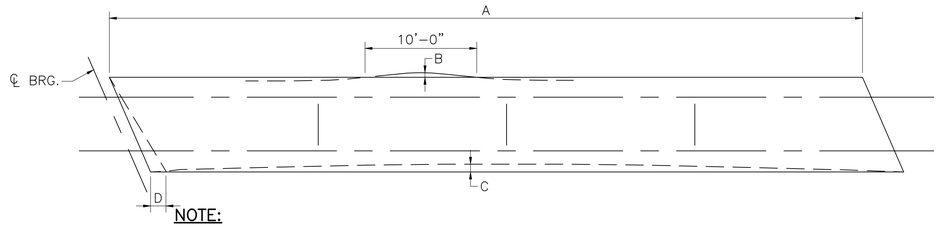


PRECAST BRIDGE UNIT – EXTERIOR

SCALE: ¾" = 1'-0"

NOTES:

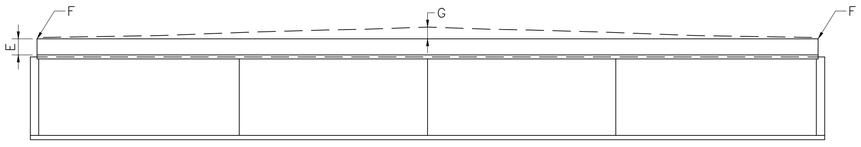
1. LONGITUDINAL REINFORCEMENT SHALL BE PLACED PARALLEL TO THE ℄ OF CONSTRUCTION.
2. TRANSVERSE (PRIMARY) REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE ℄ OF CONSTRUCTION.
3. SEE SHEET 15 FOR SPLAYED REINFORCING AT DECK ENDS.
4. THE FINISHED SURFACE OF BRIDGE DECK SHALL BE SMOOTH AND WITHOUT ANY PROJECTIONS THAT COULD PUNCTURE THE MEMBRANE WATERPROOFING OR DEPRESSIONS THAT COULD RETAIN WATER.



NOTE:
CLOSURE POUR REINFORCEMENT NOT SHOWN OR CLARITY.

PBU TOLERANCES – PLAN

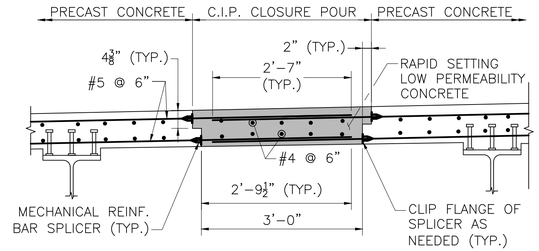
NOT TO SCALE



PBU TOLERANCES – ELEVATION

NOT TO SCALE

PBU TOLERANCES		
A	LENGTH (OVERALL)	±¼"
B	LOCAL SMOOTHNESS OF A SURFACE	±¼" IN 10 FEET
C	SWEEP OVER MEMBER LENGTH	±⅜"
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	±¼"
E	DEPTH (OVERALL)	±¼"
F	ERECTION ELEVATION TOLERANCE	±⅛"
G	CAMBER VARIATION FROM DESIGN CAMBER	±¼"

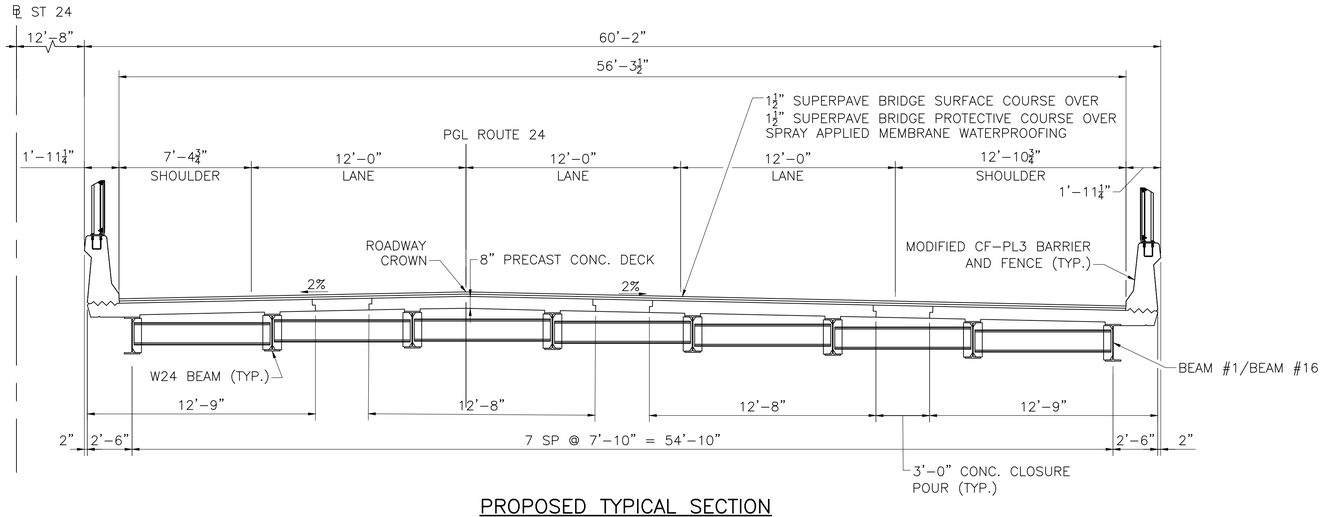


DETAIL – TYPICAL CLOSURE POUR

SCALE: ¾" = 1'-0"

CAST-IN-PLACE CLOSURE POUR NOTES:

1. THE EDGE SURFACE OF THE PRECAST CONCRETE DECK PANELS SHALL BE BLAST CLEANED AND WETTED WITH CLEAN WATER, IMMEDIATELY PRIOR TO PLACING CLOSURE POUR CONCRETE.
2. CLOSURE POUR CONCRETE SHALL BE PLACED AFTER LONGITUDINAL POST-TENSIONING IS COMPLETED.



PROPOSED TYPICAL SECTION

SCALE: ¼" = 1'-0"

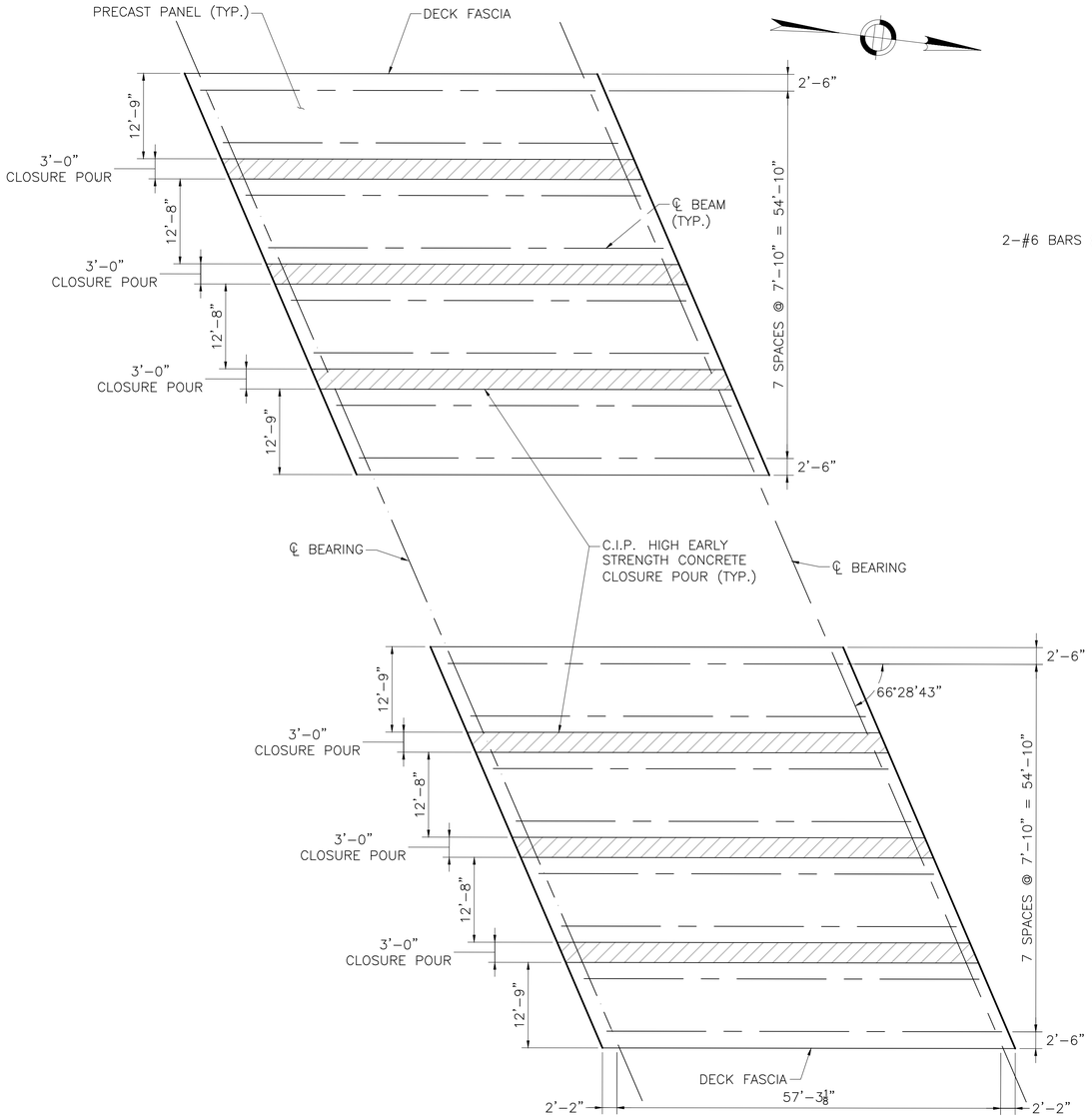
*
343
AAY

AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

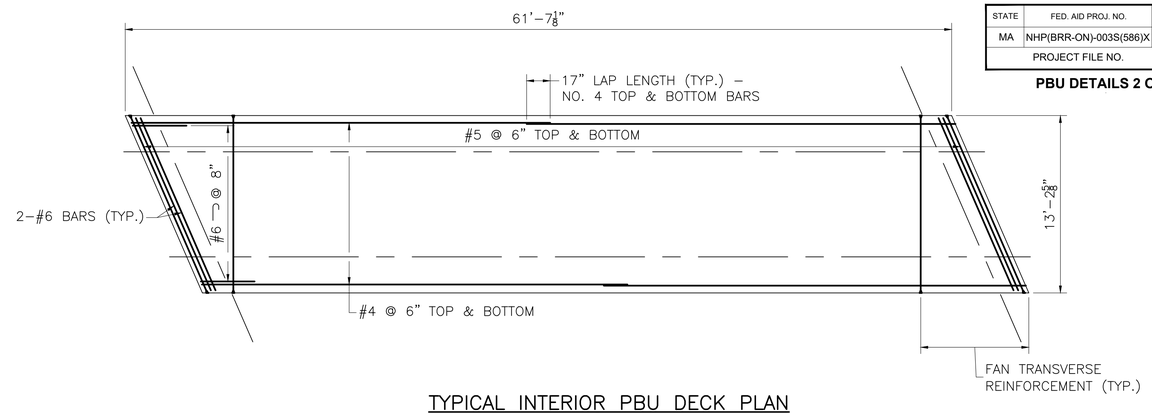
612188_BR13(R01004).DWG Plotted on 29-Aug-2022 10:52 AM

612188_BR14(R01004).DWG Plotted on 29-Aug-2022 10:52 AM



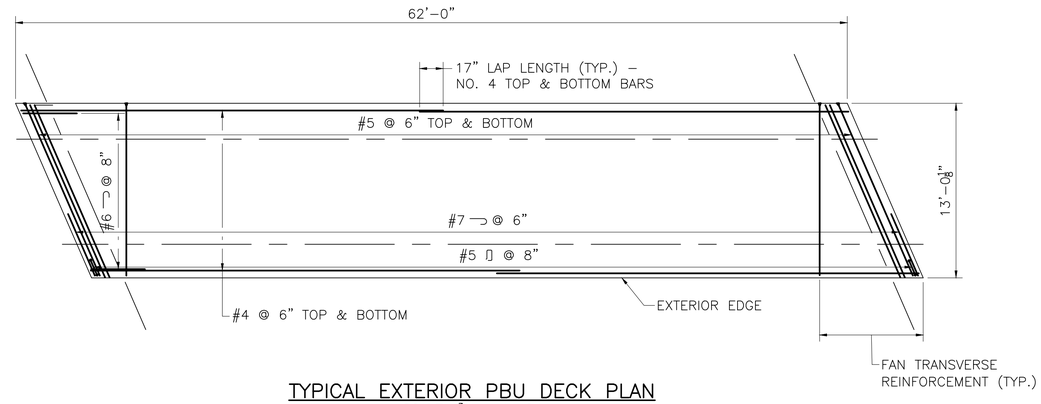
PREFABRICATED BRIDGE UNIT LAYOUT PLAN

SCALE: 3/32" = 1'-0"



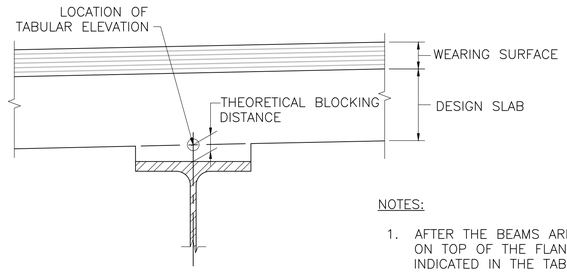
TYPICAL INTERIOR PBU DECK PLAN

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



TYPICAL EXTERIOR PBU DECK PLAN

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



HAUNCH DETAIL

NOT TO SCALE

BEAM NO.	TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE								
	INCREASING STATIONS →								
	℄ BRG.	1/8 PT.	1/4 PT.	3/8 PT.	1/2 PT.	5/8 PT.	3/4 PT.	7/8 PT.	℄ BRG.
BEAM #1	242.09	242.04	241.97	241.88	241.77	241.63	241.46	241.28	241.08
BEAM #2	242.20	242.14	242.07	241.98	241.87	241.73	241.56	241.38	241.18
BEAM #3	242.31	242.25	242.18	242.09	241.97	241.83	241.66	241.48	241.28
BEAM #4	242.42	242.36	242.28	242.19	242.07	241.93	241.76	241.57	241.37
BEAM #5	242.52	242.46	242.39	242.29	242.17	242.03	241.86	241.67	241.47
BEAM #6	242.50	242.44	242.37	242.27	242.15	242.00	241.83	241.64	241.44
BEAM #7	242.28	242.22	242.14	242.04	241.92	241.77	241.60	241.41	241.20
BEAM #8	242.06	242.00	241.92	241.82	241.69	241.54	241.37	241.18	240.97

BEAM NO.	TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE								
	INCREASING STATIONS →								
	℄ BRG.	1/8 PT.	1/4 PT.	3/8 PT.	1/2 PT.	5/8 PT.	3/4 PT.	7/8 PT.	℄ BRG.
BEAM #9	241.94	241.87	241.79	241.68	241.56	241.40	241.22	241.03	240.81
BEAM #10	242.04	241.97	241.89	241.78	241.65	241.50	241.32	241.12	240.90
BEAM #11	242.14	242.07	241.98	241.88	241.75	241.59	241.41	241.21	240.99
BEAM #12	242.04	241.97	241.88	241.77	241.64	241.48	241.30	241.10	240.88
BEAM #13	241.82	241.74	241.65	241.54	241.41	241.25	241.06	240.86	240.64
BEAM #14	241.59	241.51	241.42	241.31	241.17	241.01	240.83	240.62	240.40
BEAM #15	241.36	241.28	241.19	241.08	240.94	240.78	240.59	240.38	240.16
BEAM #16	241.13	241.05	240.96	240.84	240.70	240.54	240.35	240.14	239.92

NOTES:

1. AFTER THE BEAMS ARE ERECTED BUT BEFORE THE FORMS ARE BUILT, ELEVATIONS ON TOP OF THE FLANGE OF THE BEAMS ARE TO BE OBTAINED AT THE POINTS INDICATED IN THE TABLE. THE DIFFERENCE BETWEEN THE ELEVATIONS OBTAINED AND THOSE SHOWN IN THE TABLE GIVES THE ACTUAL BLOCKING DISTANCE FROM THE TOP OF BEAM TO THE BOTTOM OF THE SLAB AT CENTER LINE OF BEAM.
2. TOP OF FORM AND CAMBER VALUES ASSUME THE SLAB AND BEAM ARE FULLY SUPPORTED WHEN THE SLAB IS PLACED, AND THEREFORE THE DEFLECTION DUE TO THE SLAB AND BEAM DEAD LOADS ACT ON THE COMPOSITE SECTION. THE CONTRACTOR SHALL VERIFY TOP OF FORM AND CAMBER VALUES IF A DIFFERENT CONSTRUCTION PROCEDURE IS USED.
3. TOP OF FORM ELEVATIONS ARE SHOWN FOR FABRICATOR INFORMATION ONLY FOR RELATIVE ELEVATIONS.

*
343 AAY

AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

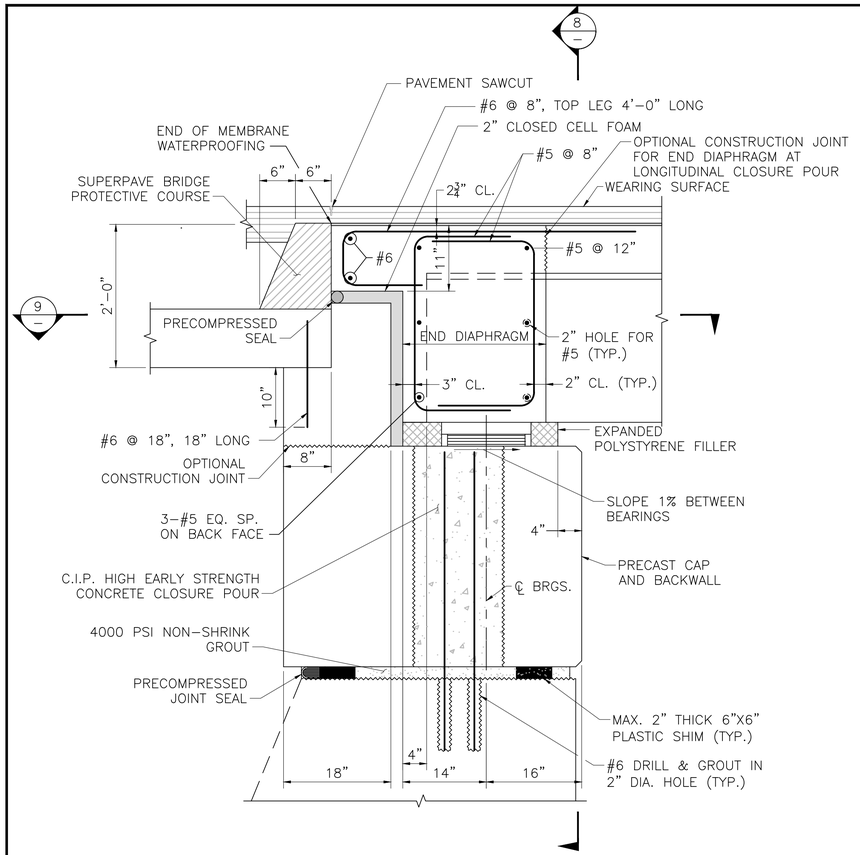
USE ONLY PRINTS OF LATEST DATE

RANDOLPH
RTE 24 OVER CANTON ST

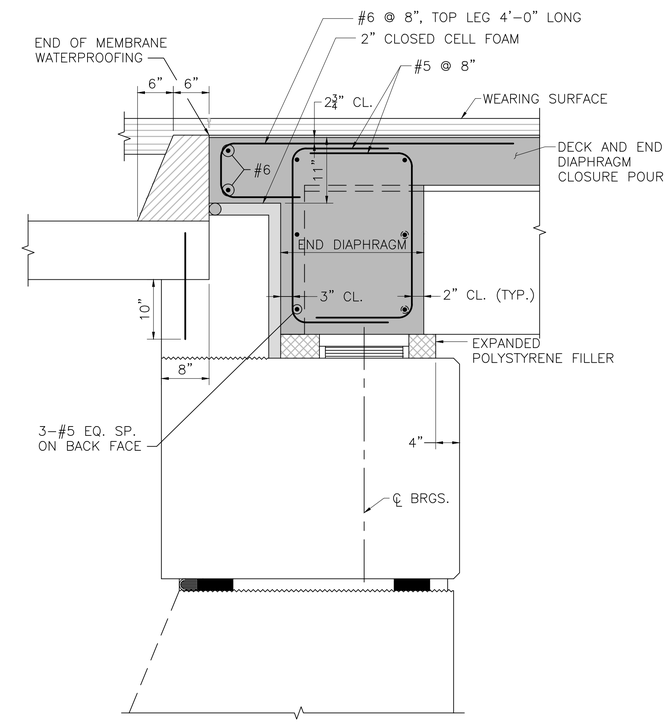
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	154	189
	PROJECT FILE NO. 612188		

DECK DETAILS 1 OF 2

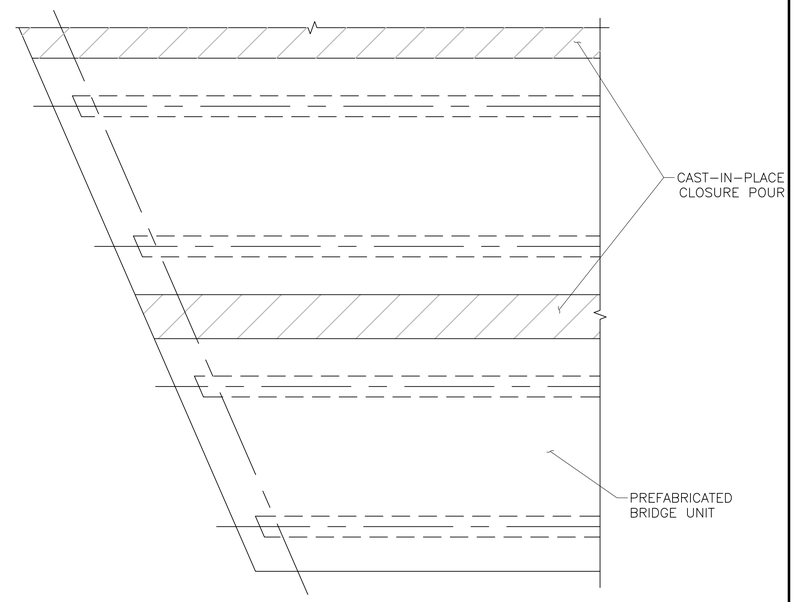
612188_BR15(R01004).DWG Plotted on 29-Aug-2022 10:52 AM



ROADWAY SECTION AT ABUTMENT
SCALE: 1" = 1'-0"

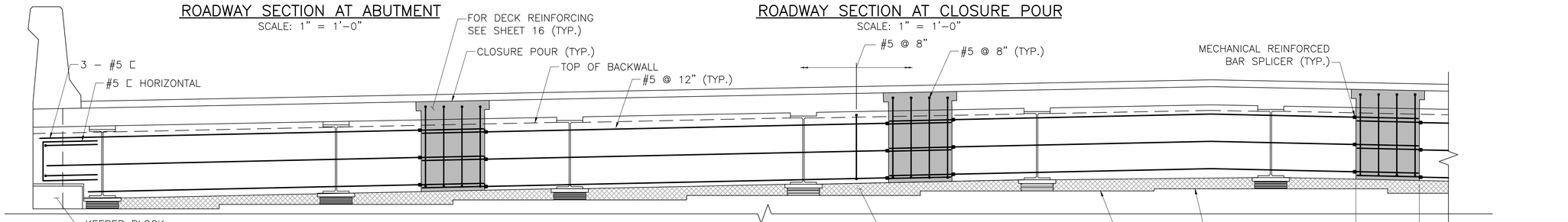


ROADWAY SECTION AT CLOSURE POUR
SCALE: 1" = 1'-0"

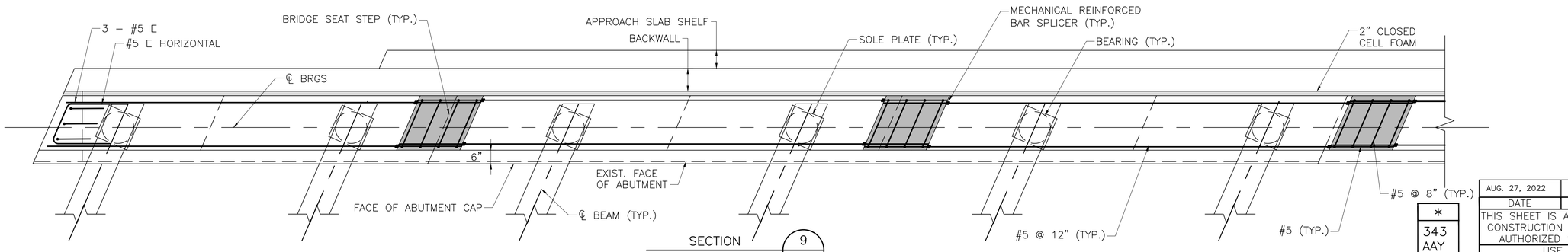


END OF DECK PLAN
SCALE: ¼" = 1'-0"

NOTE: FOR DECK REINFORCING SEE SHEET 16



SECTION 8 — SCALE: ½" = 1'-0"



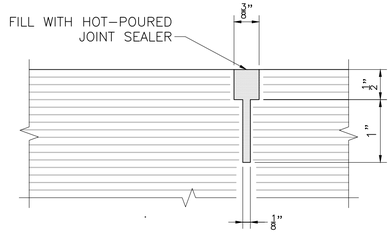
SECTION 9 — SCALE: ½" = 1'-0"

AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

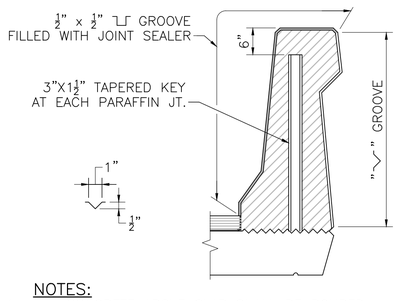
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

*
343
AAY

612188_BR16(R01004).DWG Plotted on 29-Aug-2022 10:52 AM

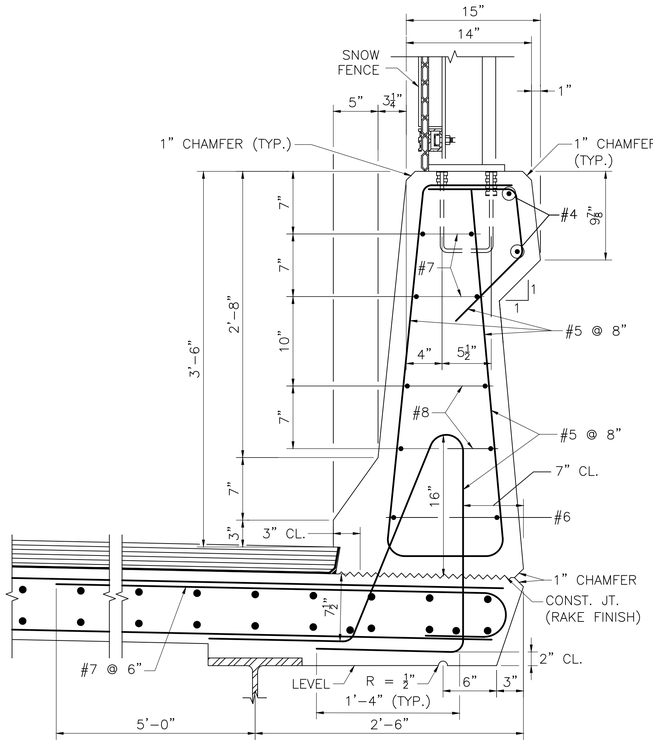


PAVEMENT SAWCUT DETAILS
NOT TO SCALE



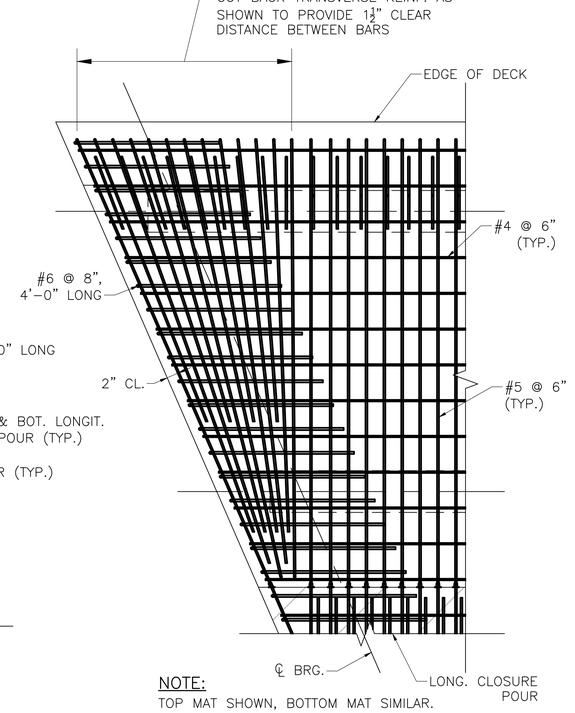
NOTES:
1. ALL CONCRETE ABOVE SLAB SHALL BE POURED IN ALTERNATING SECTIONS WITH NOT LESS THAN 3 DAYS BETWEEN POURS.
2. DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINTS. END THE REINFORCEMENT 2" CLEAR OF JOINT.
3. JOINT SHALL BE SQUARE TO FACE OF CURB.

PARAFFIN JOINT DETAILS
SCALE: 3/4" = 1'-0"



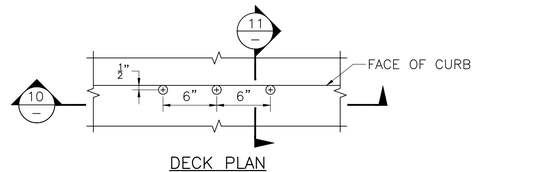
SECTION THROUGH BARRIER AND OVERHANG
SCALE: 1 1/2" = 1'-0"

DECK PLAN DETAILS AT DECK ENDS
SCALE: 1/4" = 1'-0"

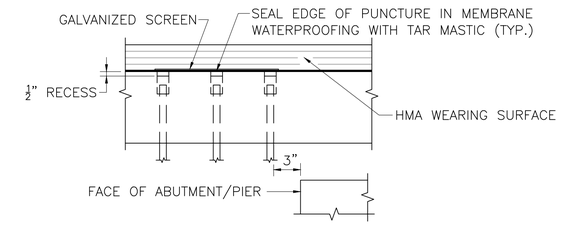


NOTE:
TOP MAT SHOWN, BOTTOM MAT SIMILAR.

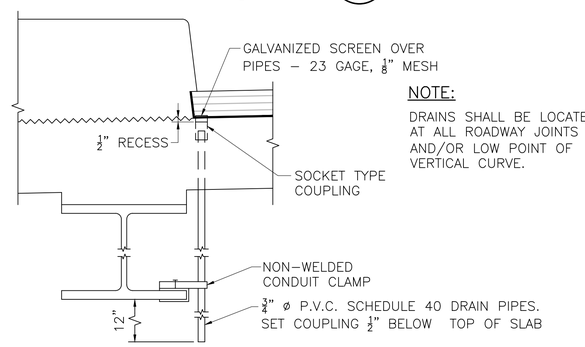
REINFORCING FANNING AT SKEW ENDS
SCALE: 1/2" = 1'-0"



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



SECTION 10 / –
SCALE: 1 1/2" = 1'-0"



NOTE:
DRAINS SHALL BE LOCATED AT ALL ROADWAY JOINTS AND/OR LOW POINT OF VERTICAL CURVE.

SECTION 11 / –
SCALE: 1 1/2" = 1'-0"

DECK DRAIN PIPES
SCALE: 1 1/2" = 1'-0"

DATE	DESCRIPTION
AUG. 27, 2022	ISSUED FOR CONSTRUCTION

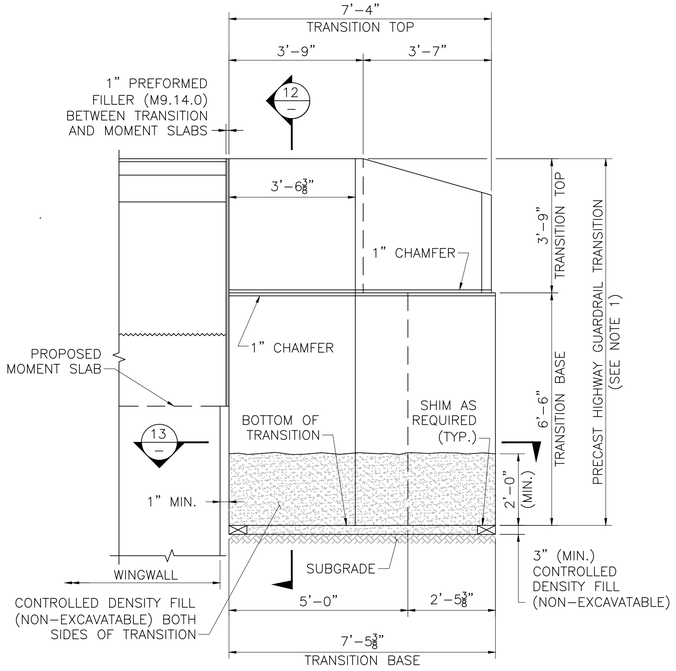
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

*
343
AAY

RANDOLPH
RTE 24 OVER CANTON ST

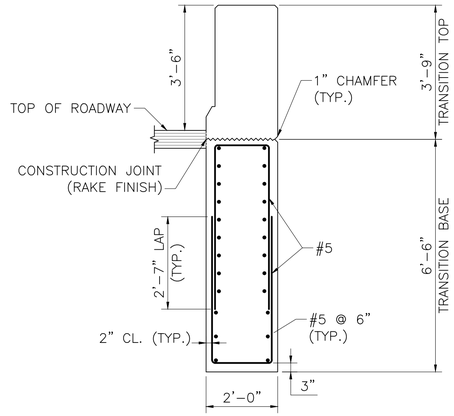
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	156	189
	PROJECT FILE NO. 612188		

HIGHWAY GUARDRAIL TRANSITION 1 OF 2



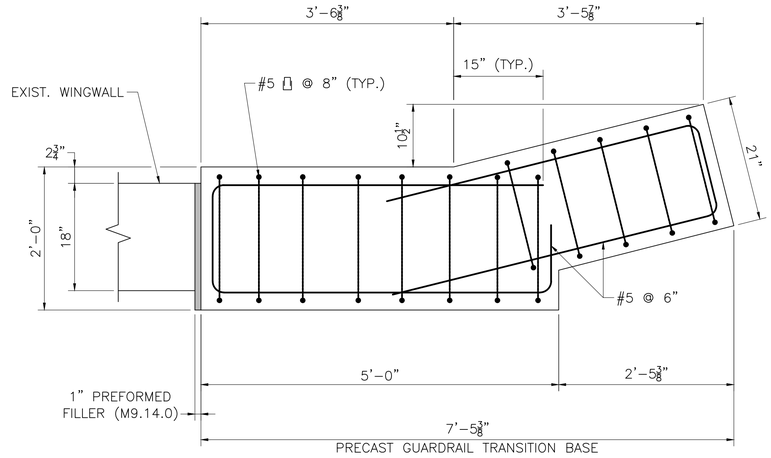
PRECAST GUARDRAIL TRANSITION ELEVATION AT WINGWALL

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



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

SECTION 12 / SCALE: 1/2" = 1'-0"

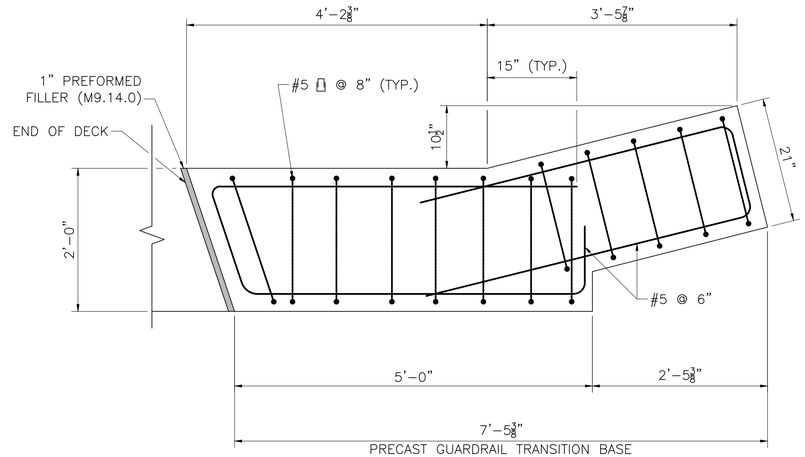


NOTE:
WINGWALL REINFORCEMENT AND STRIATIONS NOT SHOWN FOR CLARITY

SECTION 13 / SCALE: 1" = 1'-0"

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 TRANSTION TO THE REQUIRED ELEVATION AND ALIGNMENT, AND BACKFILL PRECAST GUARDRAIL TRANSITION WITH CONTROLLED DENSITY FILL (NONOEXCAVATABLE) TO THE ELEVATION SHOWN.



NOTE:
WINGWALL REINFORCEMENT AND STRIATIONS NOT SHOWN FOR CLARITY

SECTION AT MEDIAN

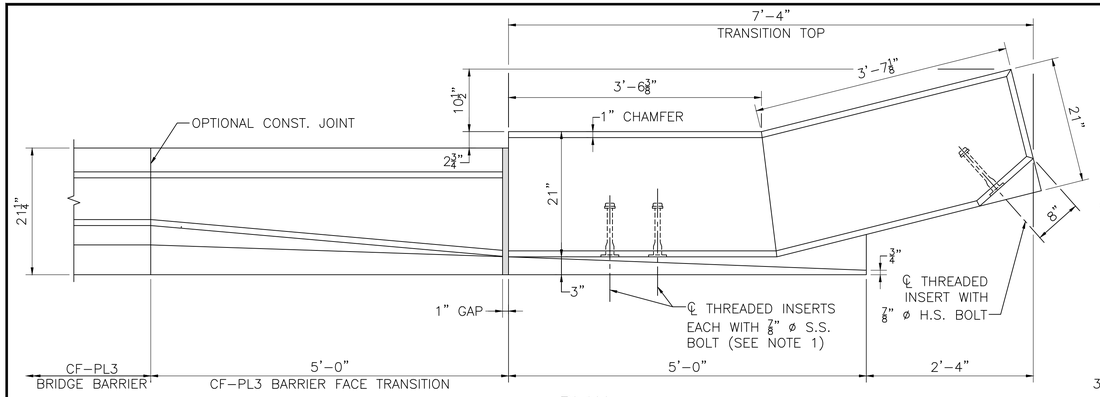
SCALE: 1" = 1'-0"

DATE	DESCRIPTION
AUG. 27, 2022	ISSUED FOR CONSTRUCTION

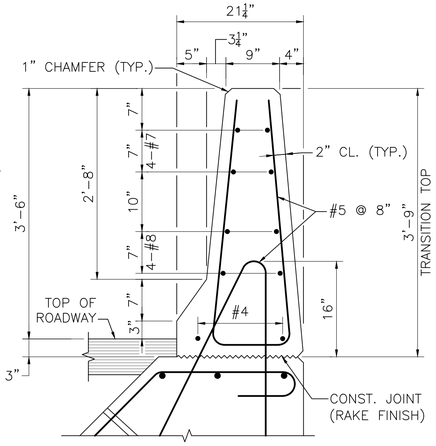
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

*
343
AAY

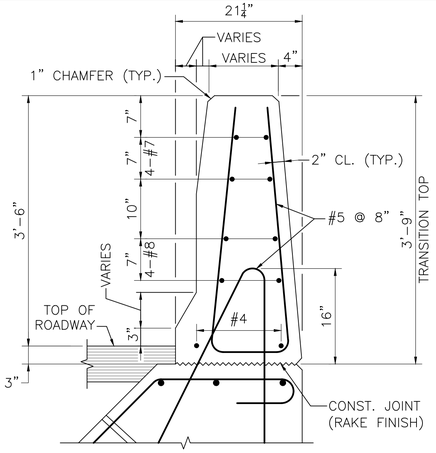
612188_BR17(R01004).DWG Plotted on 29-Aug-2022 10:52 AM



PLAN
SCALE: 1" = 1'–0"



SECTION 15
TYPICAL CF–PL3 BRIDGE BARRIER
SCALE: 1" = 1'–0"

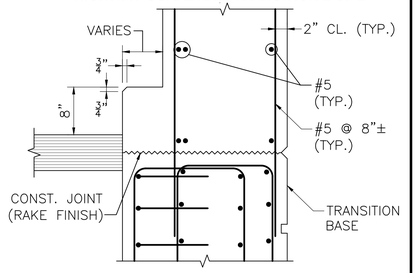


SECTION 16
SCALE: 1" = 1'–0"

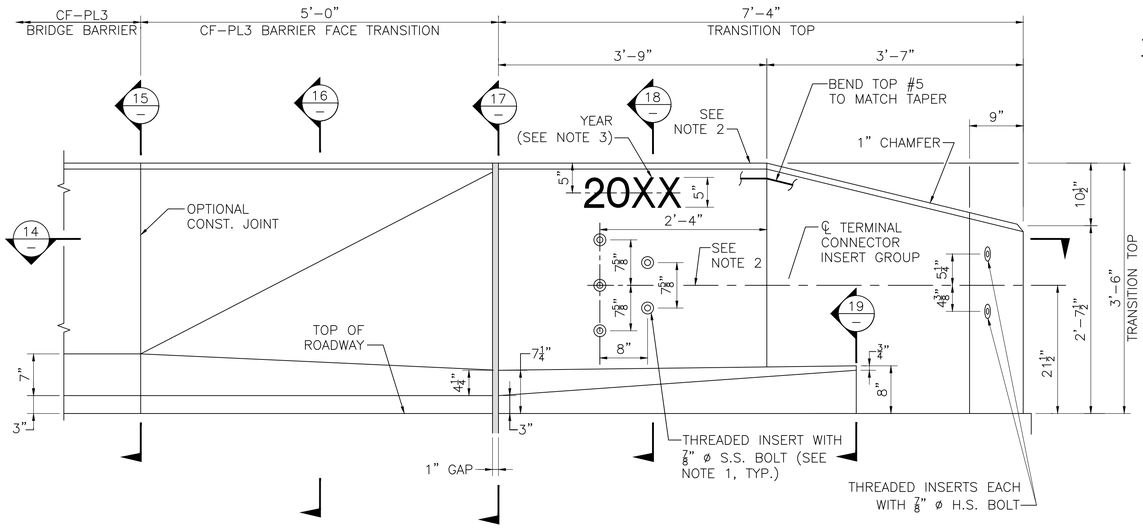
RANDOLPH
RTE 24 OVER CANTON ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	157	189
	PROJECT FILE NO. 612188		

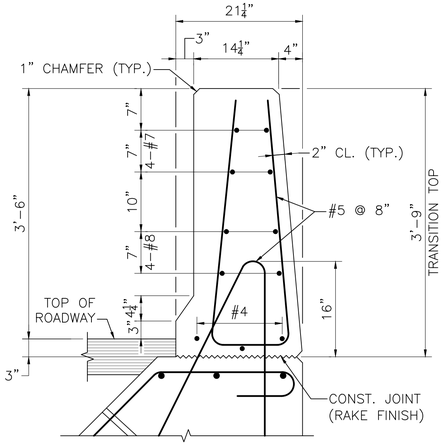
HIGHWAY GUARDRAIL TRANSITION 2 OF 2



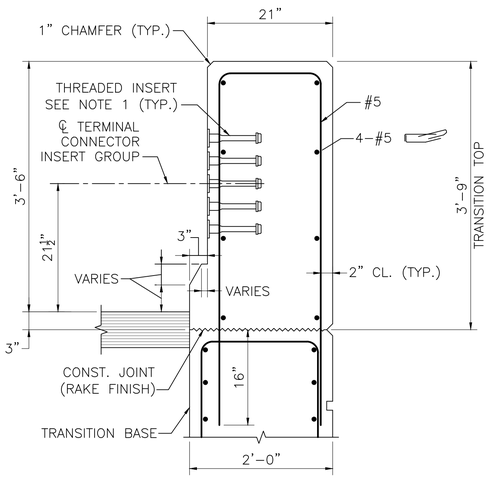
SECTION 19
SCALE: 1" = 1'–0"



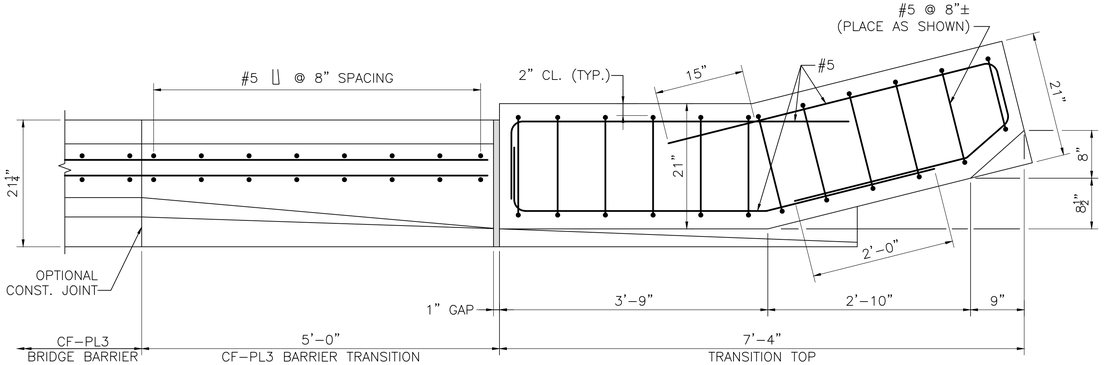
ELEVATION
SCALE: 1" = 1'–0"



SECTION 17
SCALE: 1" = 1'–0"



SECTION 18
SCALE: 1" = 1'–0"



SECTION 14
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 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.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS.
4. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, ¾", 685 HP CEMENT CONCRETE.
5. 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.

DATE	DESCRIPTION
AUG. 27, 2022	ISSUED FOR CONSTRUCTION

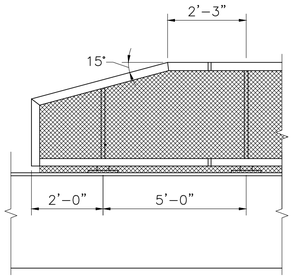
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

*
343
AAY

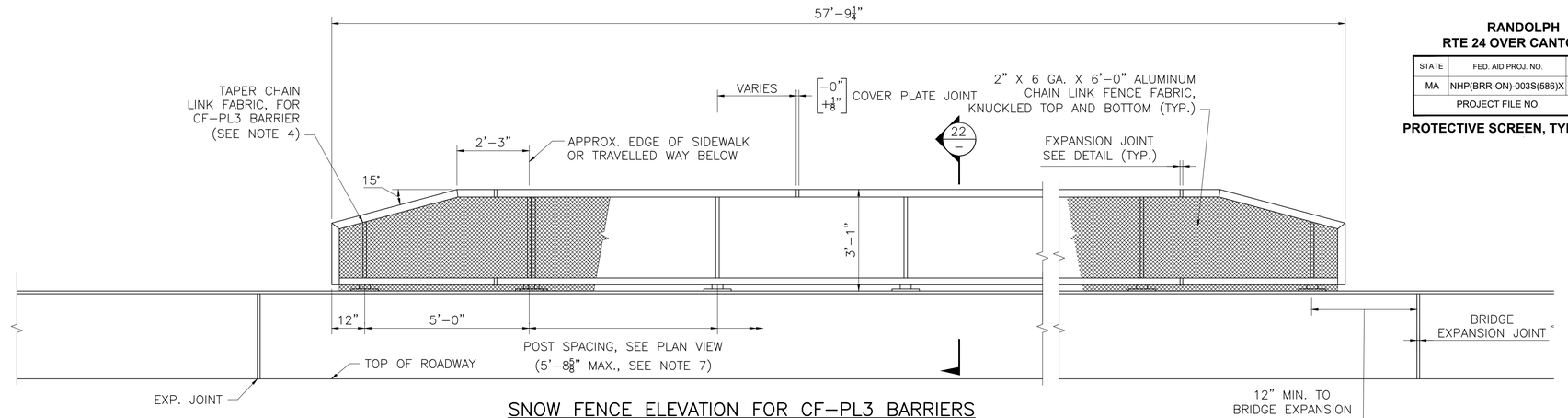
TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR CF–PL3 BARRIER

612188_BR18(R01004).DWG Plotted on 29-Aug-2022 10:53 AM

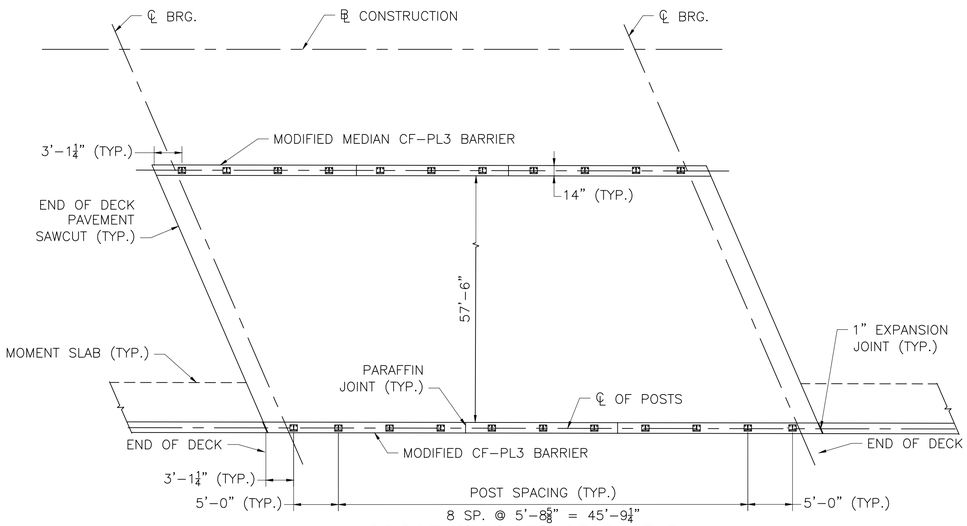
612188_BR19(R01004).DWG Plotted on 29-Aug-2022 10:53 AM



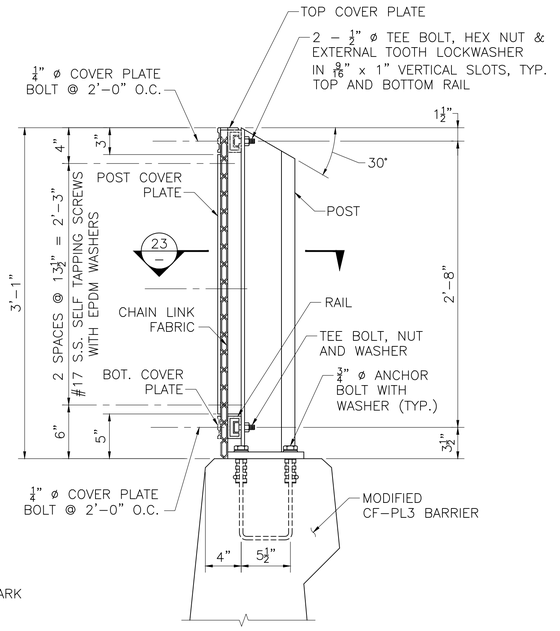
SNOW FENCE ELEVATION – TERMINATION AT MEDIAN
SCALE: ½" = 1'–0"



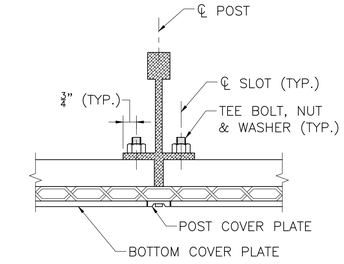
SNOW FENCE ELEVATION FOR CF–PL3 BARRIERS
SCALE: ½" = 1'–0"



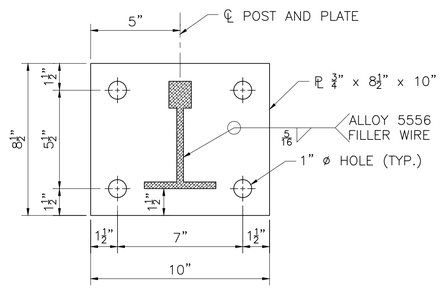
BRIDGE SNOW FENCE POST PLAN
NOT TO SCALE



SECTION 20
CF–PL3 BARRIER
SCALE: 1½" = 1'–0"



SECTION 23
SCALE: 3" = 1'–0"



BASE PLATE DETAIL
SCALE: 3" = 1'–0"

GENERAL NOTES:

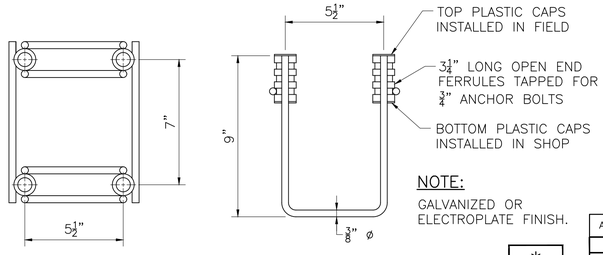
1. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POSTS, IF POSSIBLE.
2. RAILS SHALL HAVE AN EXPANSION JOINT IN THE PANEL OVER A BRIDGE EXPANSION JOINT, IF ANY, AND AT 30 FOOT MAXIMUM SPACING ELSEWHERE.
3. BOTTOM OF POST BASE PLATE TO BE SET ON A ⅛" MOLDED FABRIC BEARING PAD (M9.16.2). THE THICKNESS 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 1.5%. SET POSTS PLUMB FOR GRADES GREATER THAN 1.5%.

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.

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	AASHTO M 164 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



ANCHOR CAGE
SCALE: 3" = 1'–0"

NOTE:
GALVANIZED OR ELECTROPLATE FINISH.

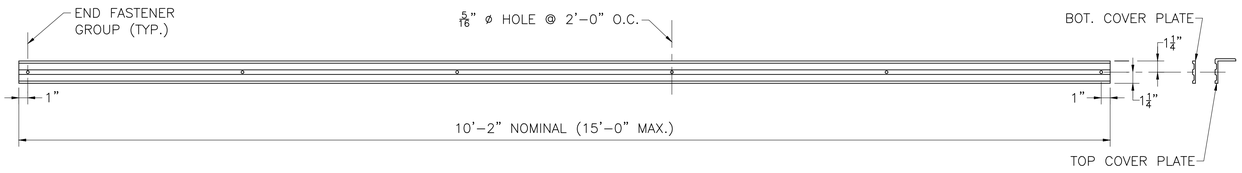
AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

*
343
AAY

SNOW FENCE FOR CP–PL2 AND CF BARRIERS
(SHEET 1 OF 2)

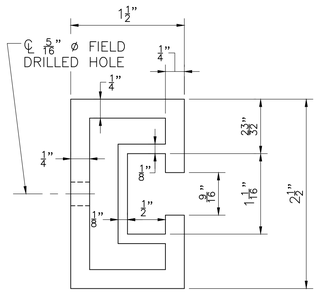
612188_BR20(R01004).DWG Plotted on 29-Aug-2022 10:53 AM



TOP AND BOTTOM COVER PLATE
SCALE: 1½" = 1'-0"

COVER PLATE NOTES:

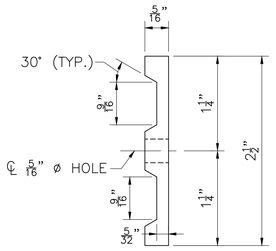
1. COVER PLATES MAY BE CONTINUOUS OVER A RAIL EXPANSION JOINT SPLICE. COVER PLATES SHALL BE FIELD CUT AS REQUIRED TO CLEAR THE EXPANSION JOINT. SEE DETAIL AT EXPANSION JOINT.
2. FIELD DRILL 5/16" ø HOLE 1" FROM THE FIELD CUT END OF A COVER PLATE, UNLESS THERE IS AN EXISTING HOLE WITHIN 6" FROM THE COVER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



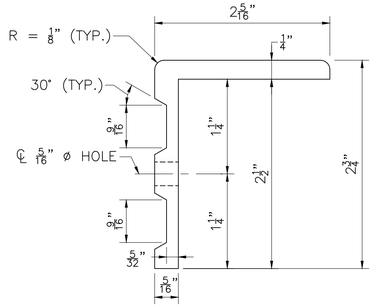
NOTE:

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

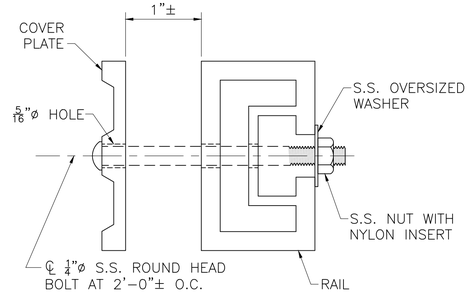
RAIL EXTRUSION
FULL SIZE



BOTTOM COVER PLATE EXTRUSION
FULL SIZE



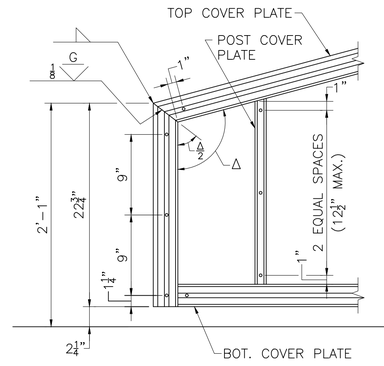
TOP COVER PLATE EXTRUSION
FULL SIZE



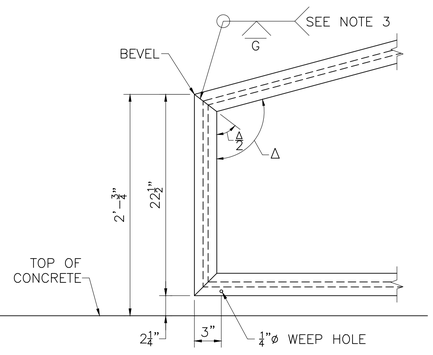
NOTE:

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

RAIL & COVER PLATE DETAIL
FULL SIZE



COVER PLATE DETAILS

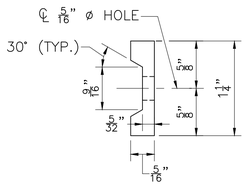


RAIL DETAILS

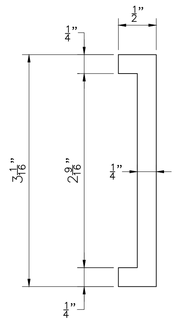
NOTES:

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.

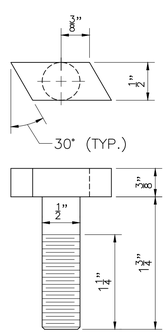
TAPERED END DETAILS
SCALE: 1½" = 1'-0"



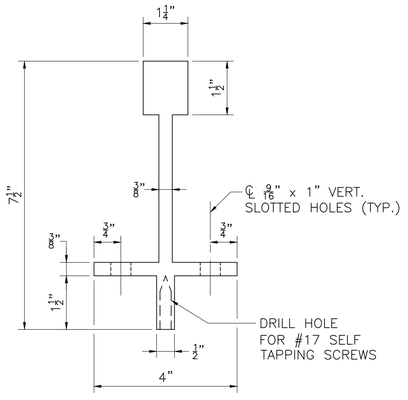
POST COVER PLATE EXTRUSION
FULL SIZE



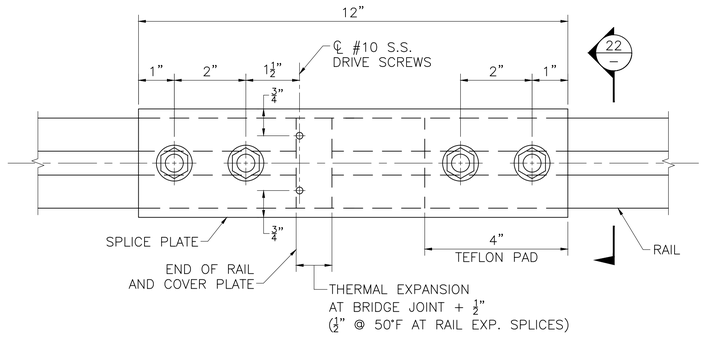
SPLICE PLATE EXTRUSION
FULL SIZE



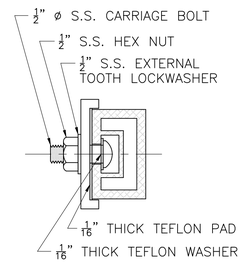
TEE BOLT
FULL SIZE



POST EXTRUSION
SCALE: 6" = 1'-0"



DETAIL AT RAIL EXPANSION JOINT SPLICE
SCALE: 6" = 1'-0"



SECTION 24
SCALE: 6" = 1'-0"

SNOW FENCE FOR CP-PL2 AND CF BARRIERS (SHEET 2 OF 2)

AUG. 27, 2022	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

*
343
AAY

NOTE

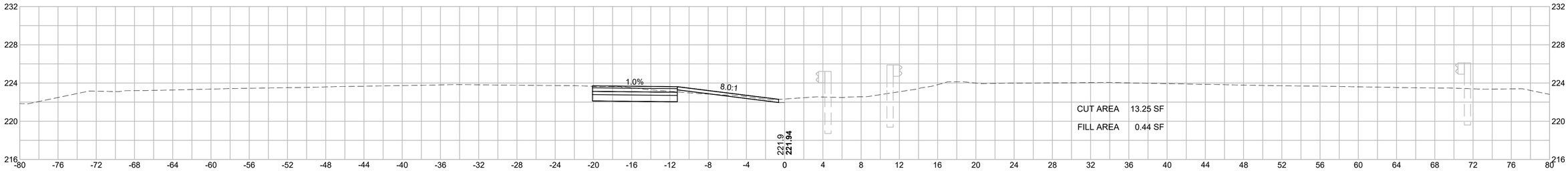
CROSS SECTIONS REFERENCE THE TEMPORARY PAVEMENT BASELINE. SEE TTCP SHEETS FOR LOCATION OF BASELINE.

RANDOLPH
RTE 24 OVER CANTON STREET

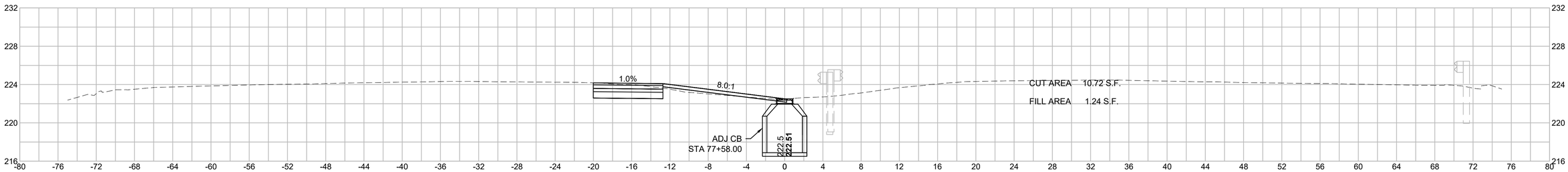
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	160	189
PROJECT FILE NO.	612188		

CROSSOVER CROSS SECTIONS

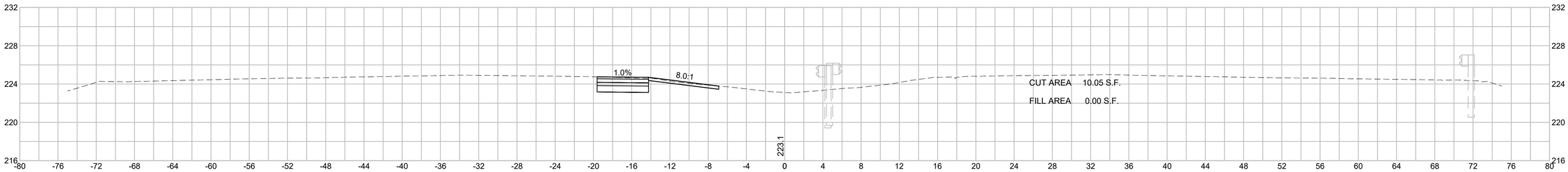
78+00.00



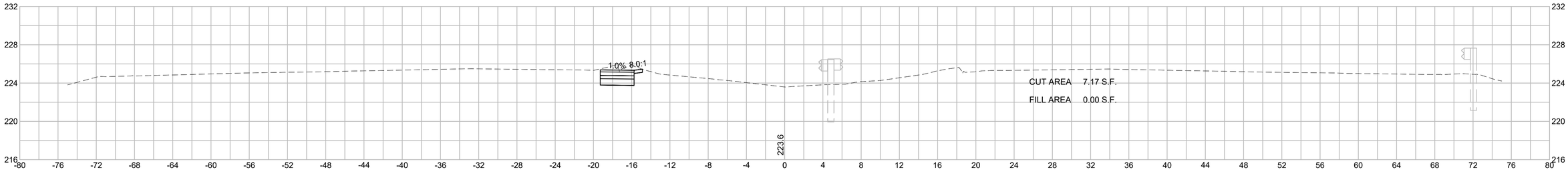
77+50.00



77+00.00



76+50.00



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

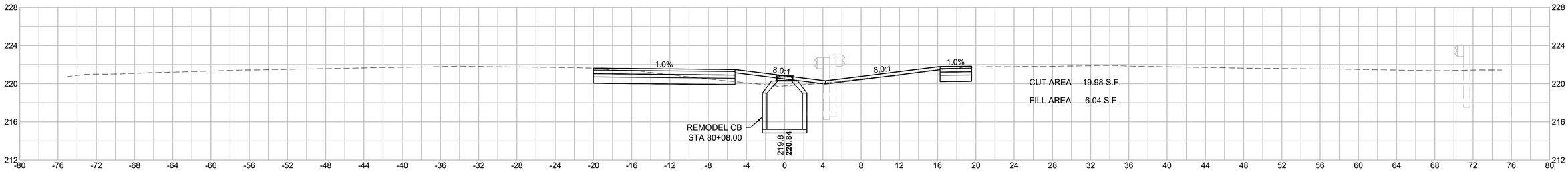
610770_HDX(XSC).DWG Plotted on 29-Aug-2022 11:45 AM

RANDOLPH
RTE 24 OVER CANTON STREET

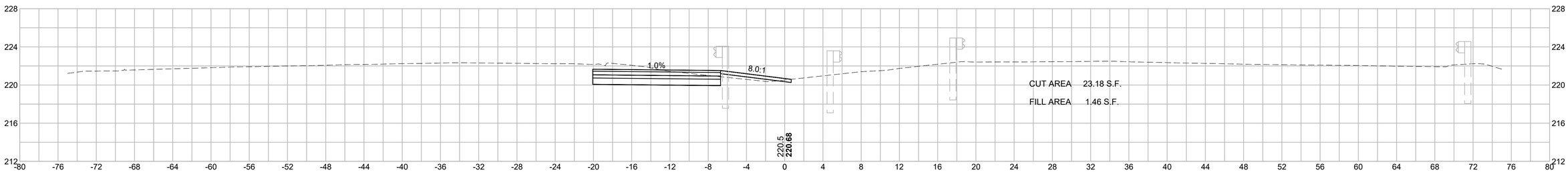
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	161	189
PROJECT FILE NO.	612188		

CROSSOVER CROSS SECTIONS

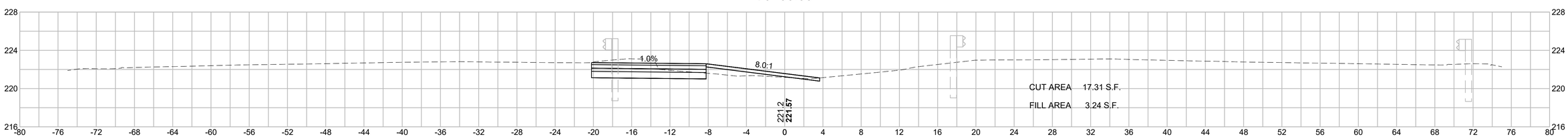
80+00.00



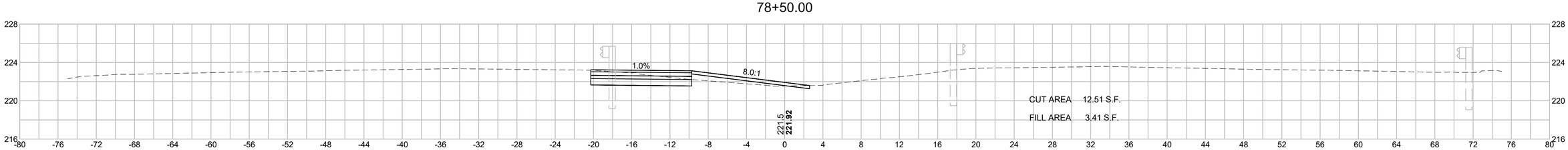
79+50.00



79+00.00



78+50.00



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

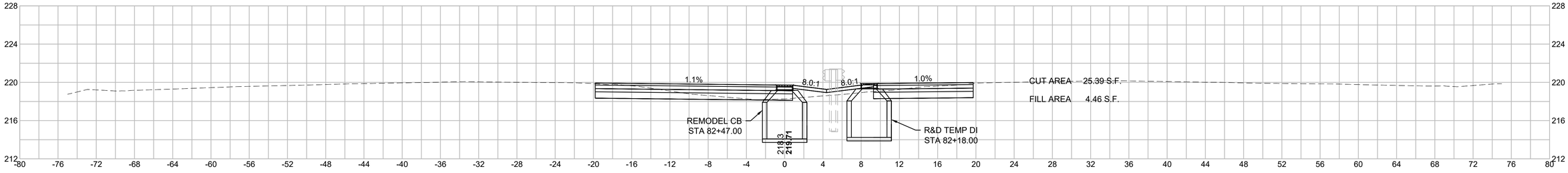
610770_HDX(XSC).DWG Plotted on 29-Aug-2022 11:45 AM

RANDOLPH
RTE 24 OVER CANTON STREET

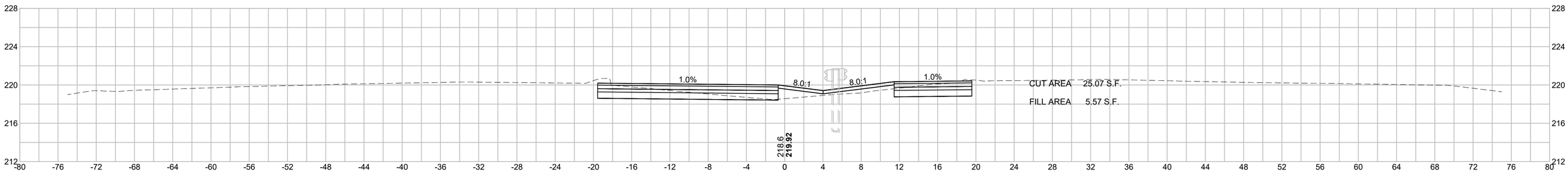
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	162	189
PROJECT FILE NO.	612188		

CROSSOVER CROSS SECTIONS

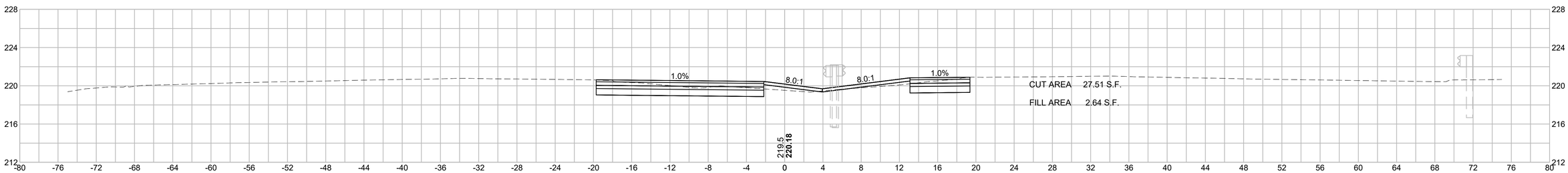
82+00.00



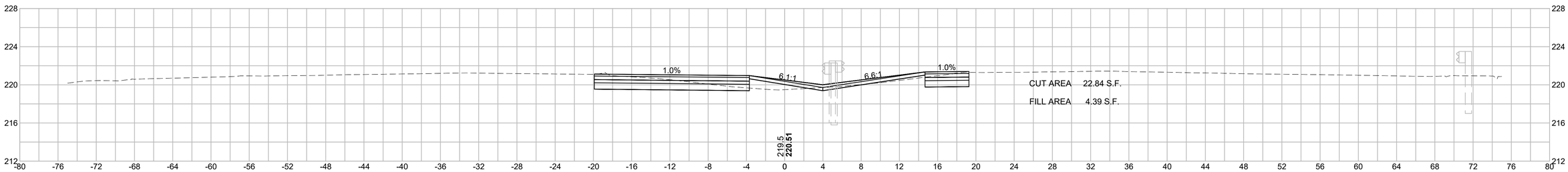
81+50.00



81+00.00



80+50.00



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

610770_HDXSC.DWG Plotted on 29-Aug-2022 11:45 AM

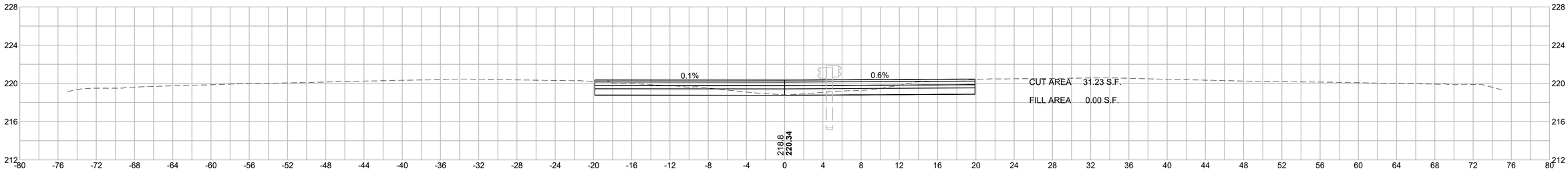
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	163	189
PROJECT FILE NO.	612188		

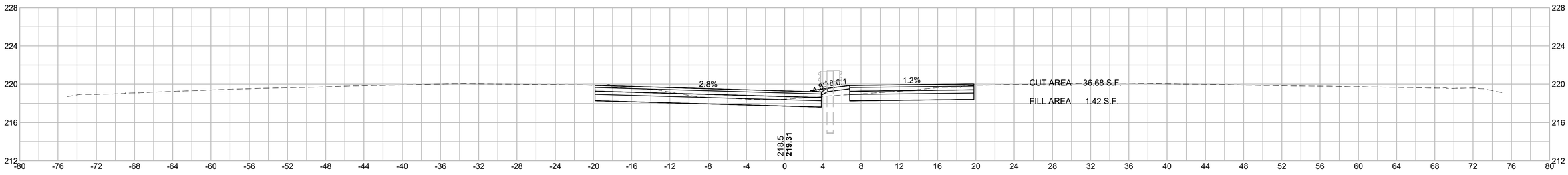
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:45 AM

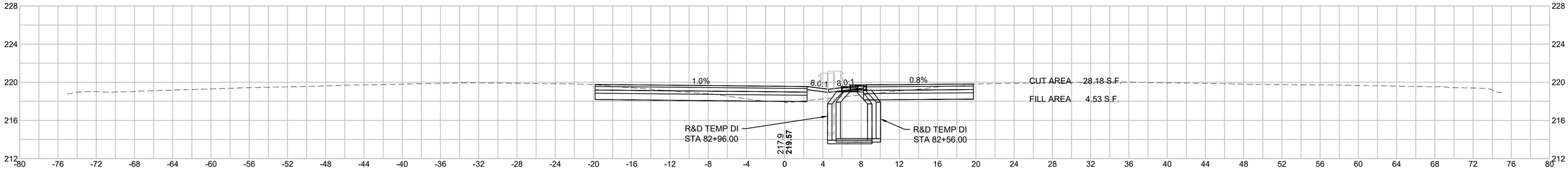
83+50.00



83+00.00



82+50.00

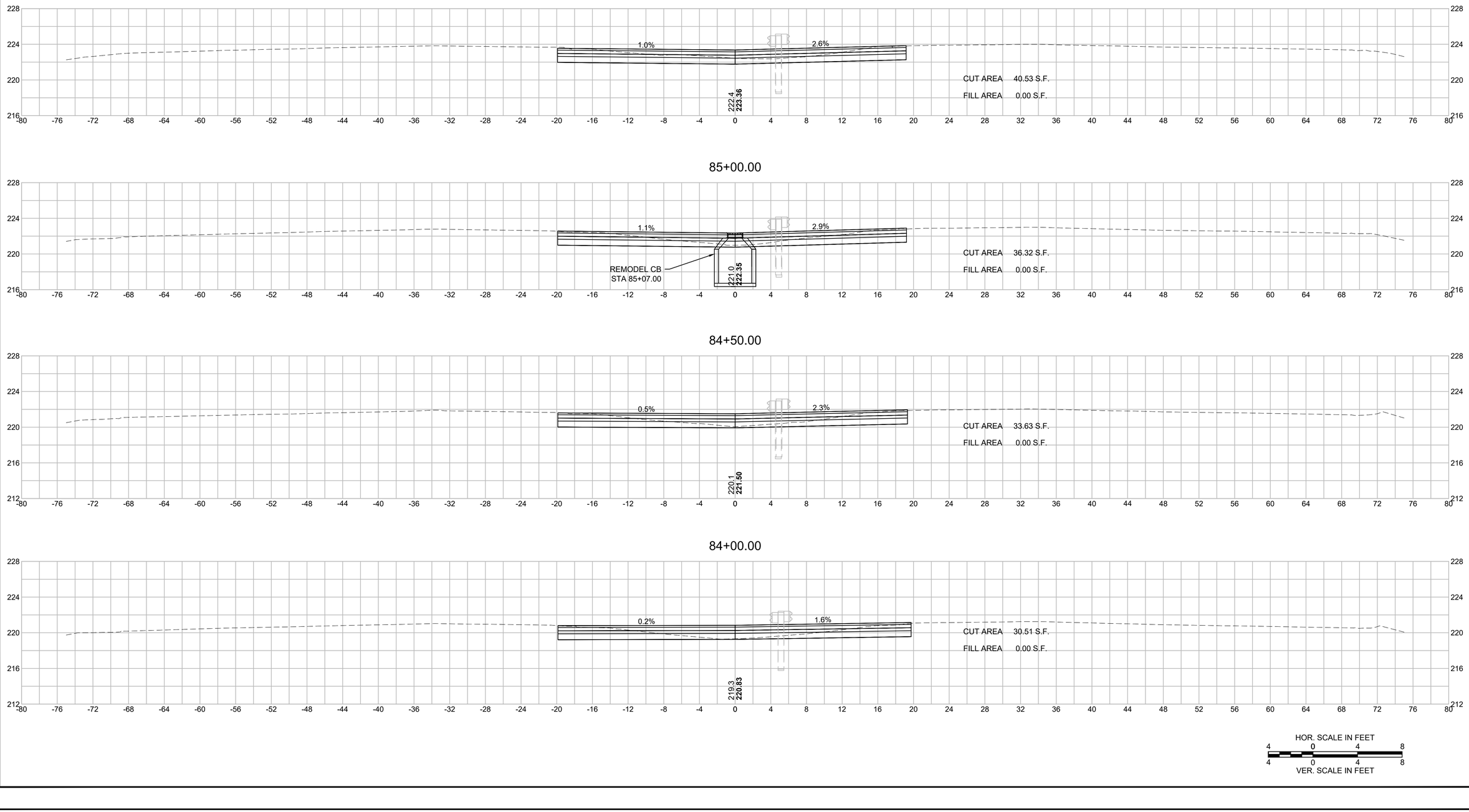


HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	164	189
PROJECT FILE NO.	612188		

CROSSOVER CROSS SECTIONS



610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:46 AM

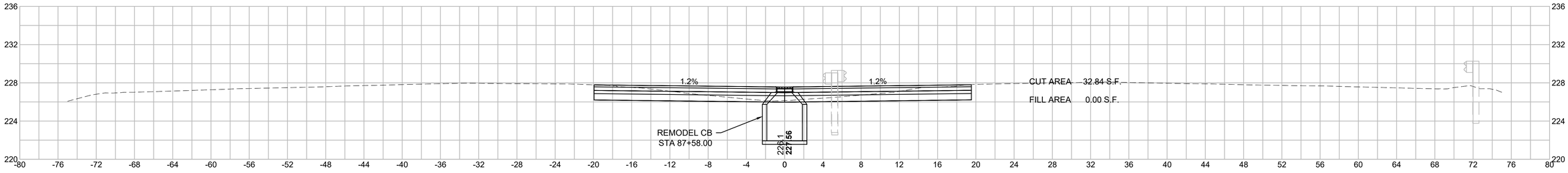
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	165	189
PROJECT FILE NO.	612188		

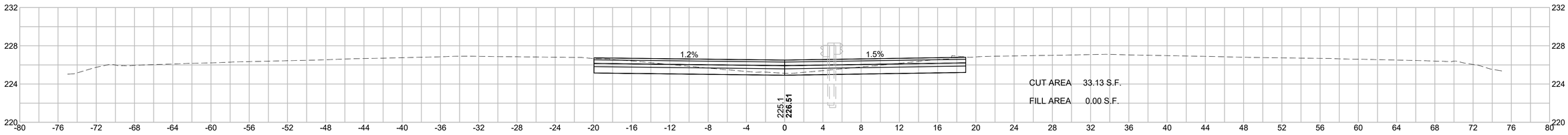
CROSSOVER CROSS SECTIONS

610770_HDX(SC).DWG Plotted on 29-Aug-2022 11:46 AM

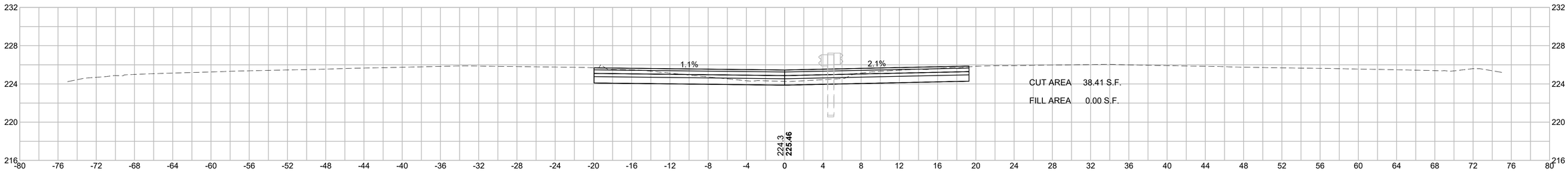
87+50.00



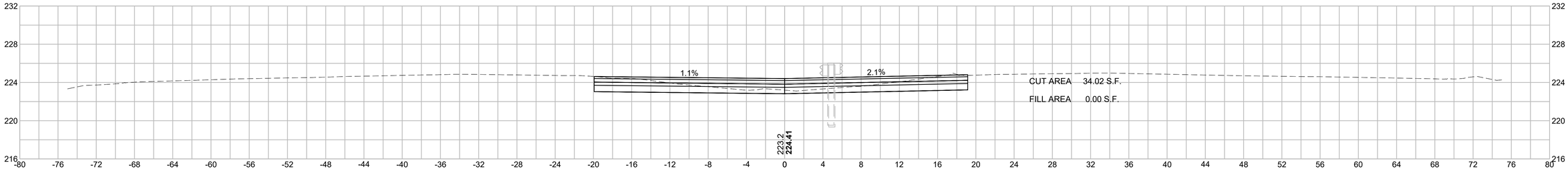
87+00.00



86+50.00



86+00.00



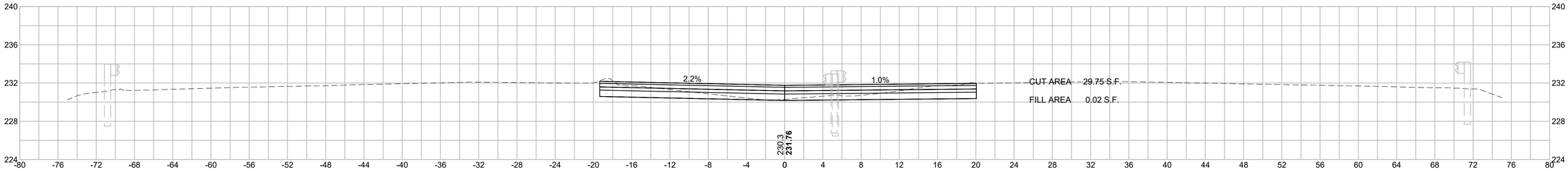
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

RANDOLPH
RTE 24 OVER CANTON STREET

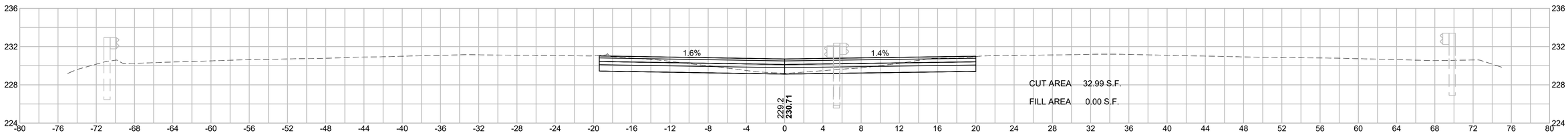
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	166	189
PROJECT FILE NO.	612188		

CROSSOVER CROSS SECTIONS

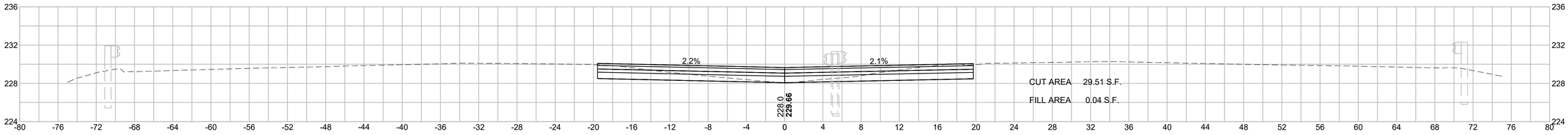
89+50.00



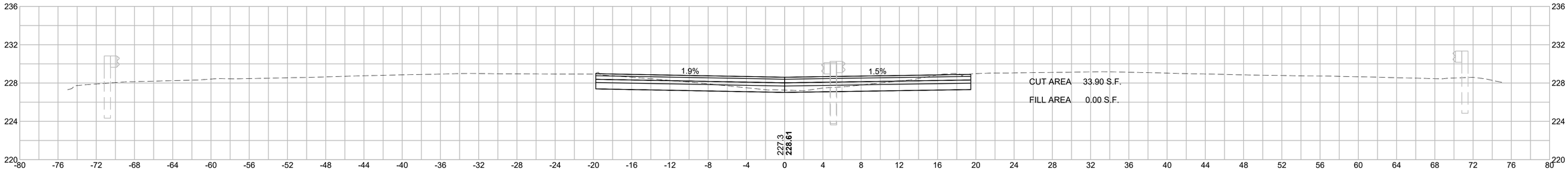
89+00.00



88+50.00



88+00.00



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

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:46 AM

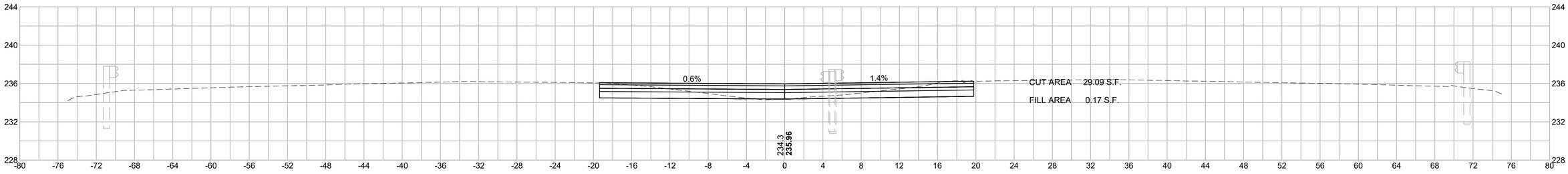
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	167	189
PROJECT FILE NO.	612188		

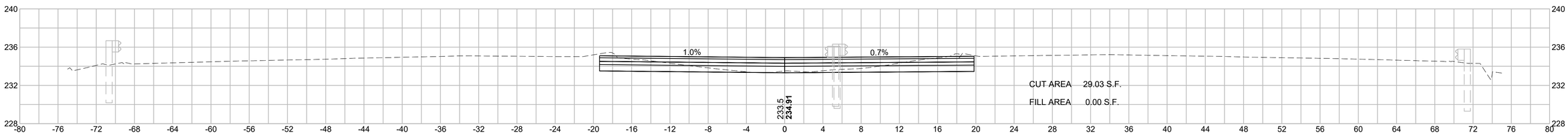
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:46 AM

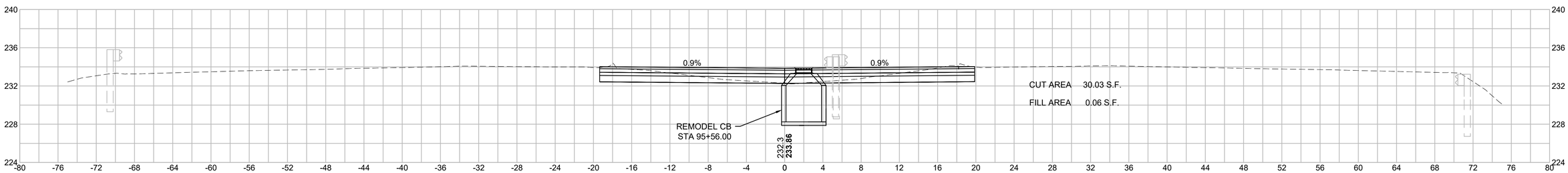
91+50.00



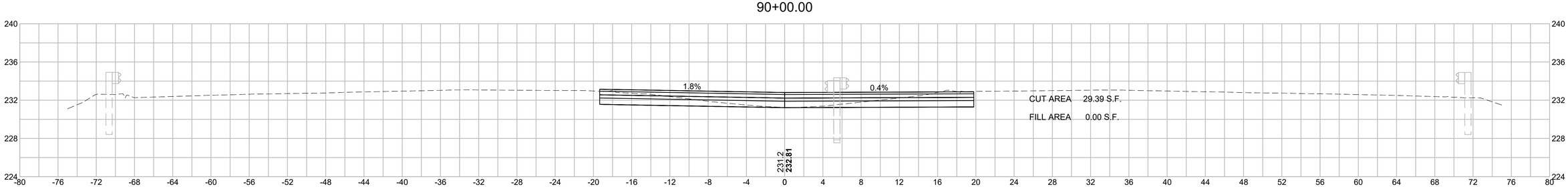
91+00.00



90+50.00



90+00.00



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

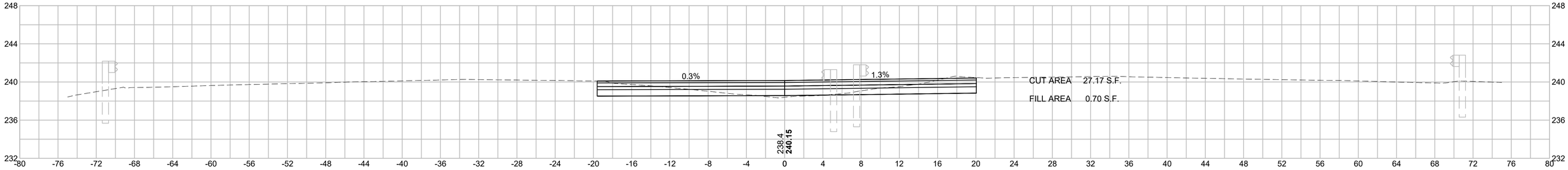
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	168	189
PROJECT FILE NO.	612188		

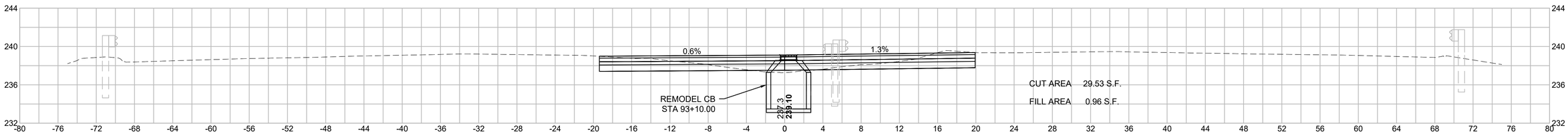
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:46 AM

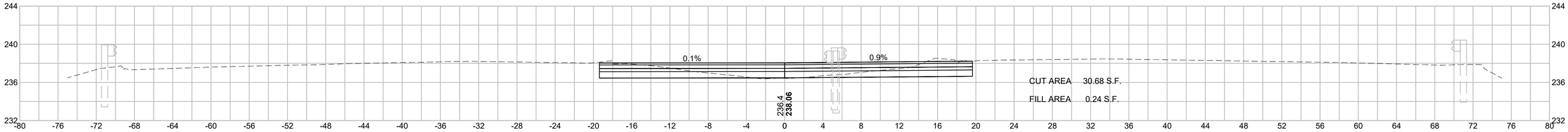
93+50.00



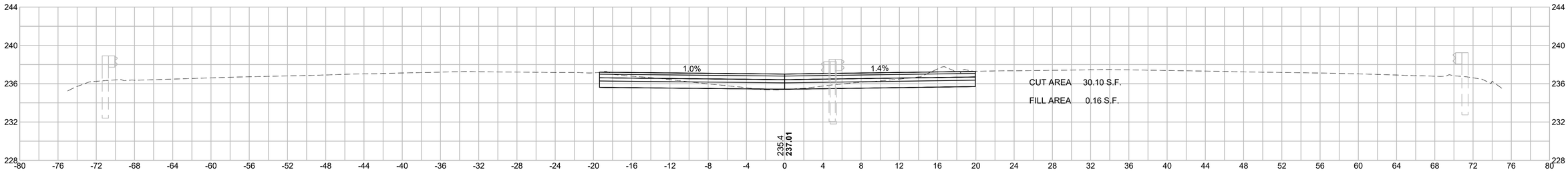
93+00.00



92+50.00



92+00.00



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

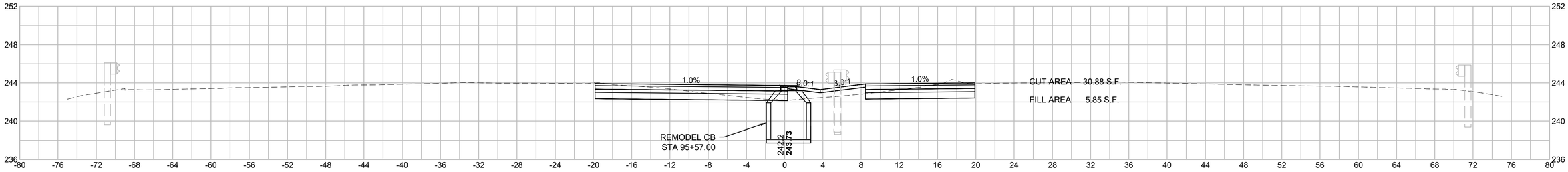
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	169	189
PROJECT FILE NO.	612188		

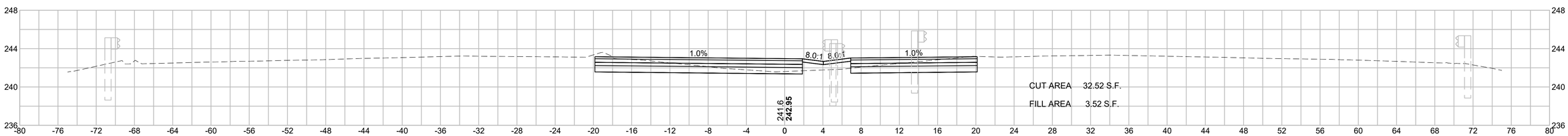
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:47 AM

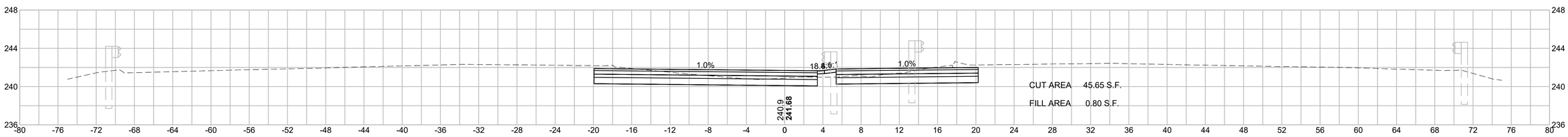
95+50.00



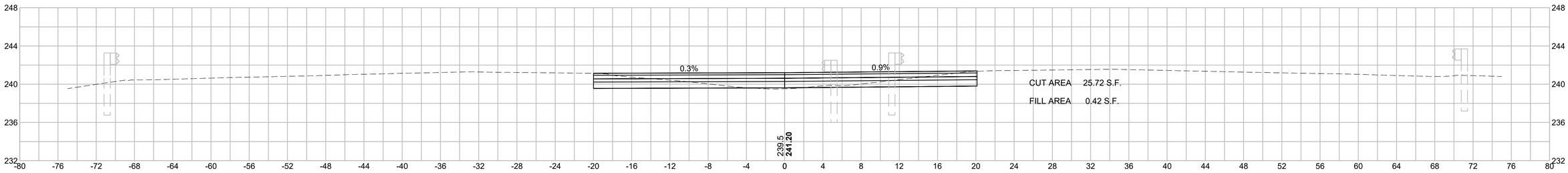
95+00.00



94+50.00



94+00.00



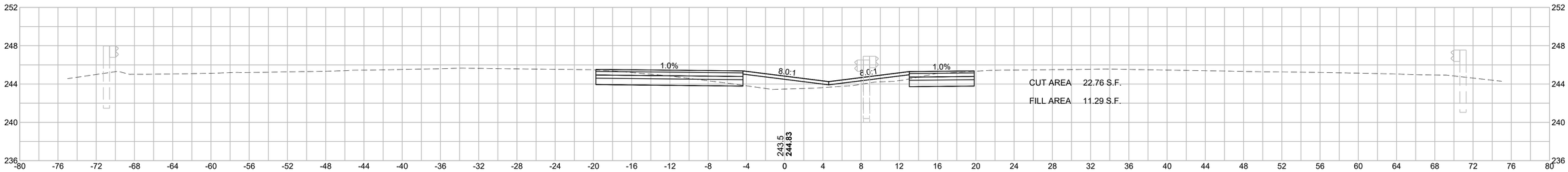
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

RANDOLPH
RTE 24 OVER CANTON STREET

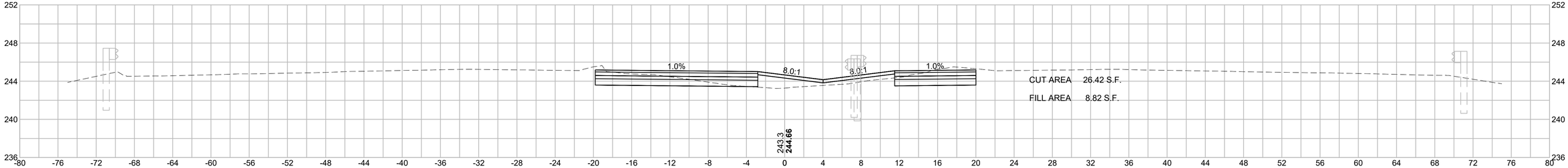
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	170	189
PROJECT FILE NO.	612188		

CROSSOVER CROSS SECTIONS

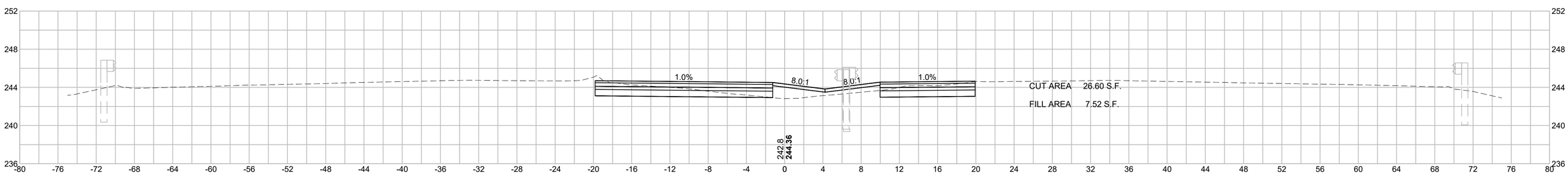
97+00.00



96+50.00



96+00.00



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

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:47 AM

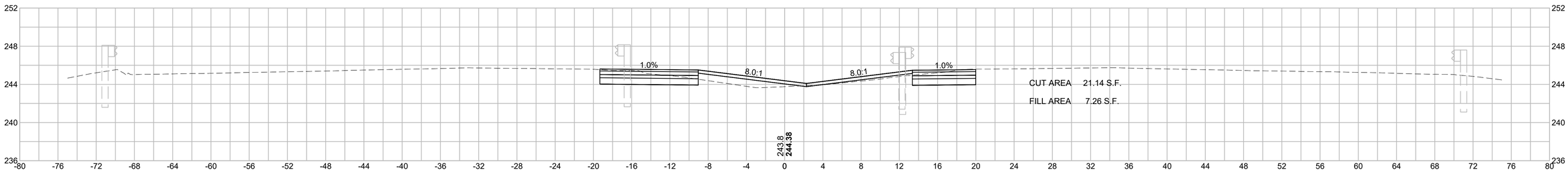
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	171	189
PROJECT FILE NO.	612188		

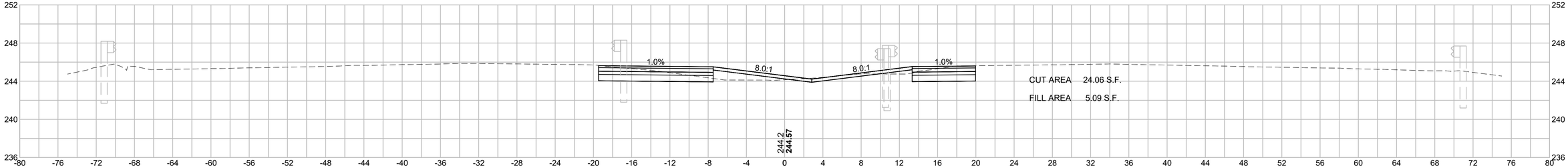
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:47 AM

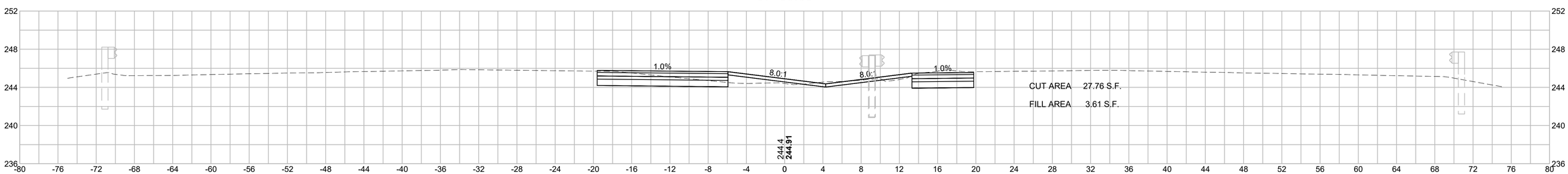
98+50.00



98+00.00



97+50.00



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

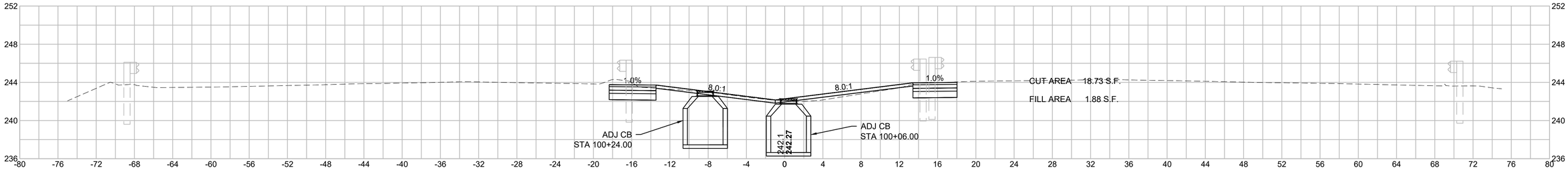
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	172	189
PROJECT FILE NO.	612188		

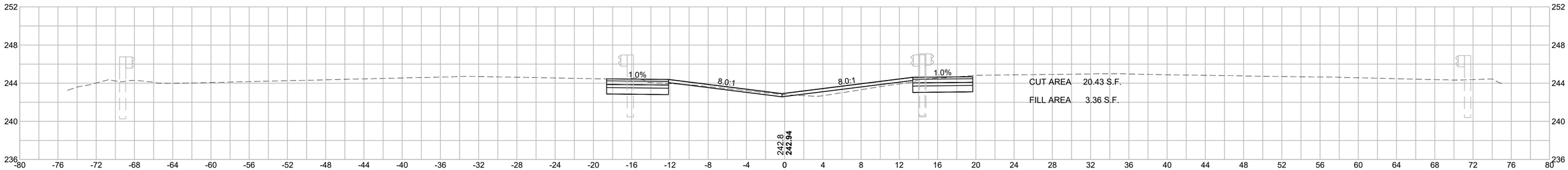
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:47 AM

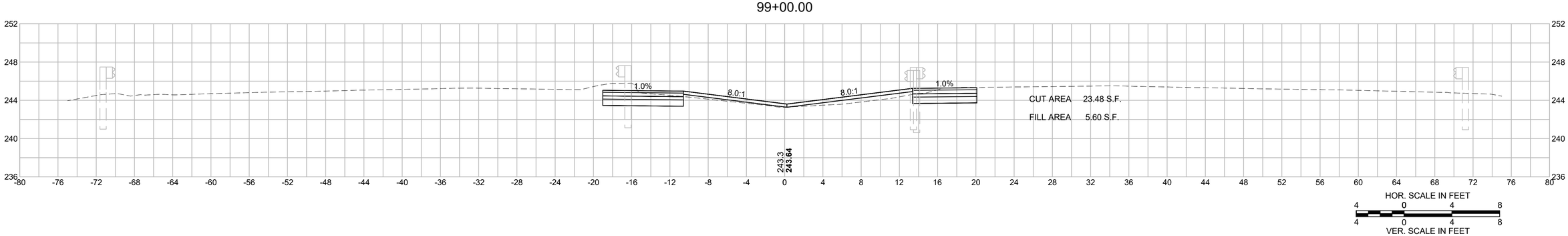
100+00.00



99+50.00



99+00.00



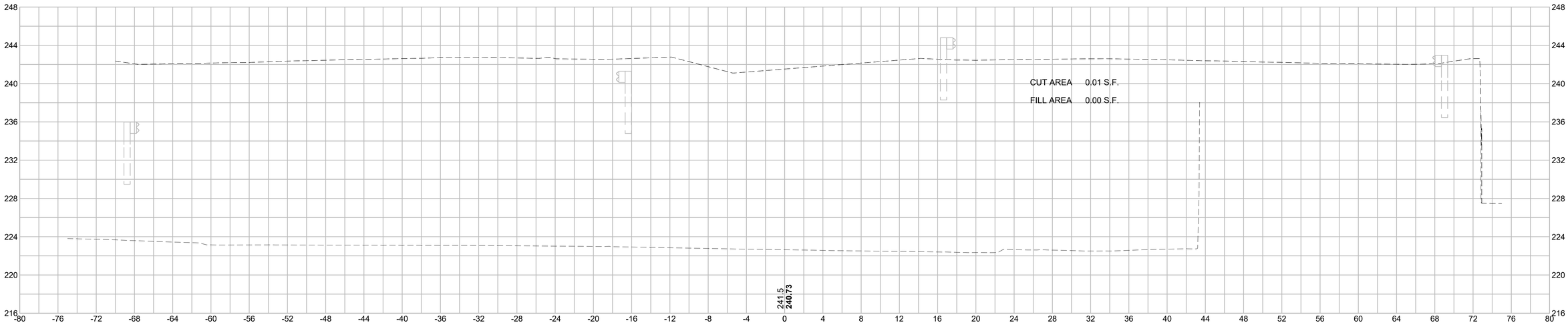
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	173	189
PROJECT FILE NO.	612188		

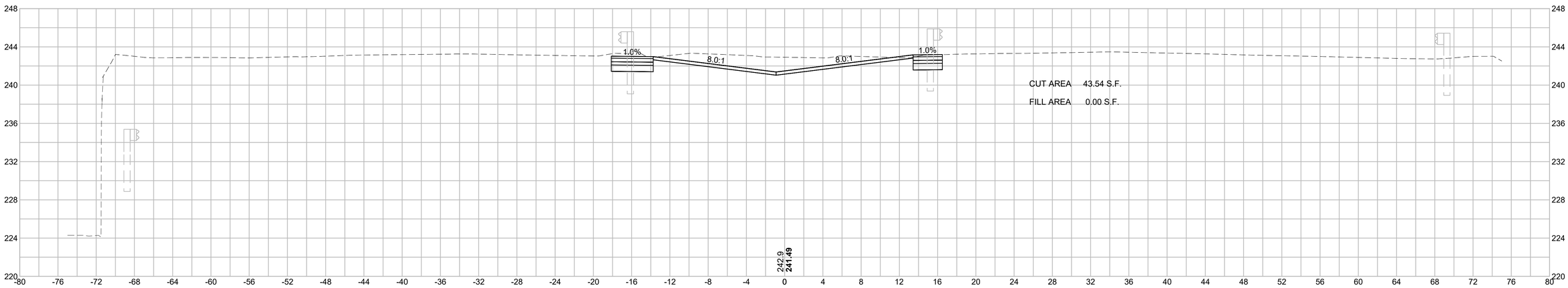
CROSSOVER CROSS SECTIONS

610770_HDXSC.DWG Plotted on 29-Aug-2022 11:48 AM

101+00.00



100+50.00



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

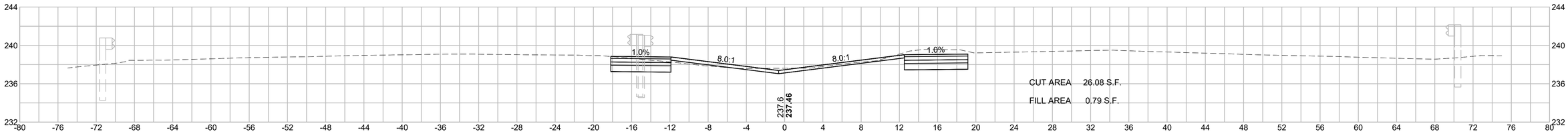
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	174	189
PROJECT FILE NO.	612188		

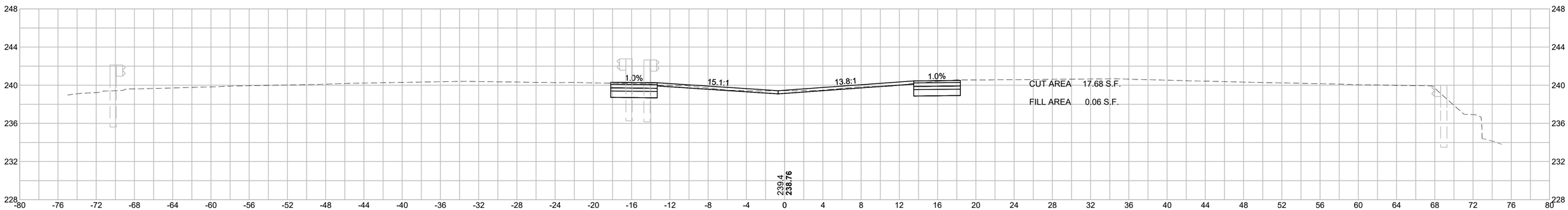
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:48 AM

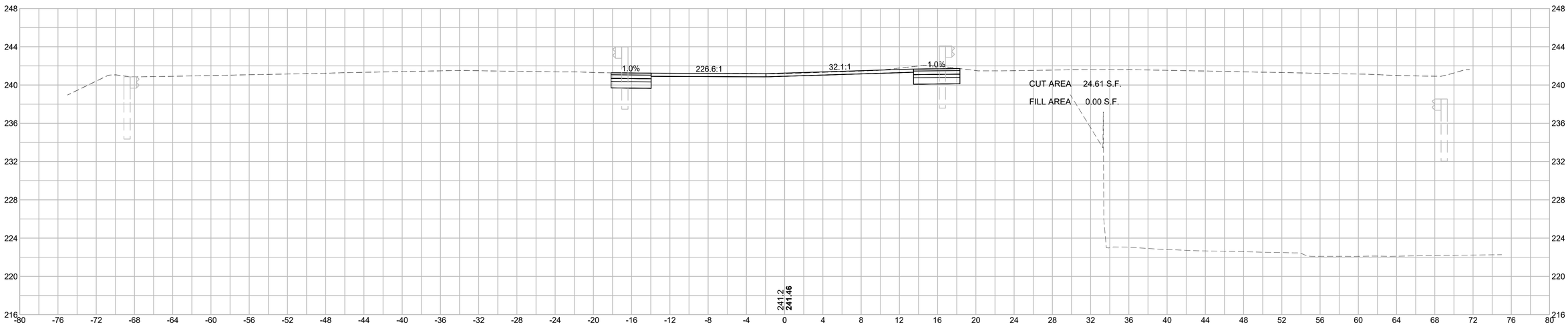
102+50.00



102+00.00



101+50.00



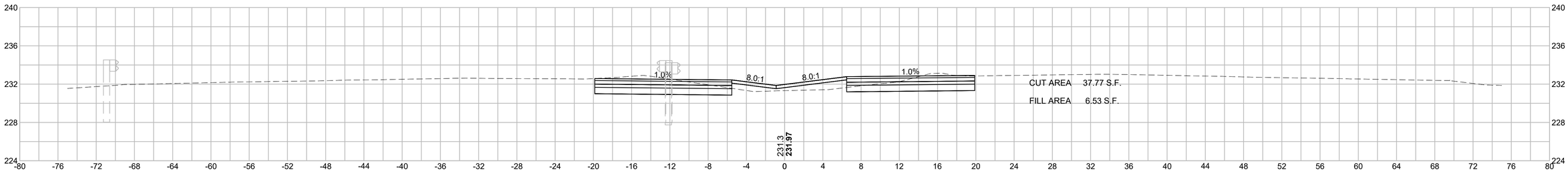
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

RANDOLPH
RTE 24 OVER CANTON STREET

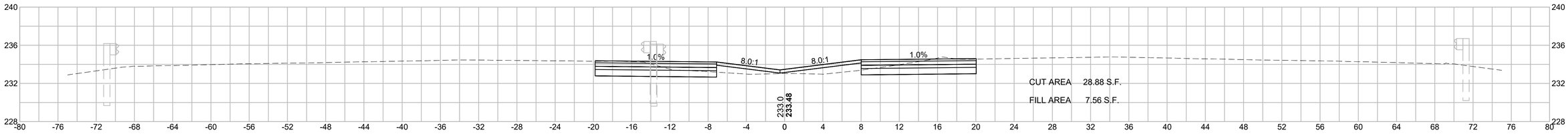
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	175	189
PROJECT FILE NO.	612188		

CROSSOVER CROSS SECTIONS

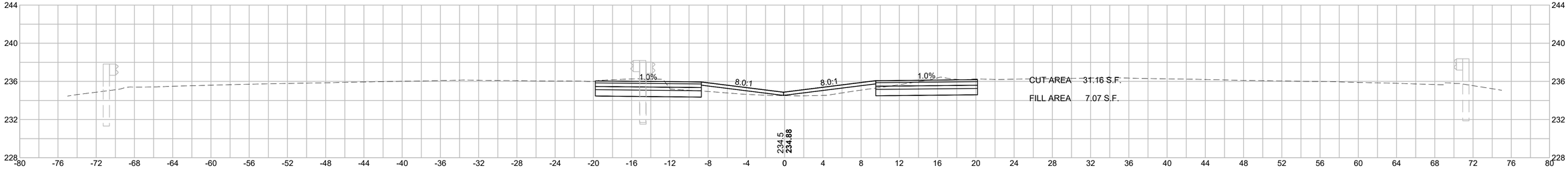
104+50.00



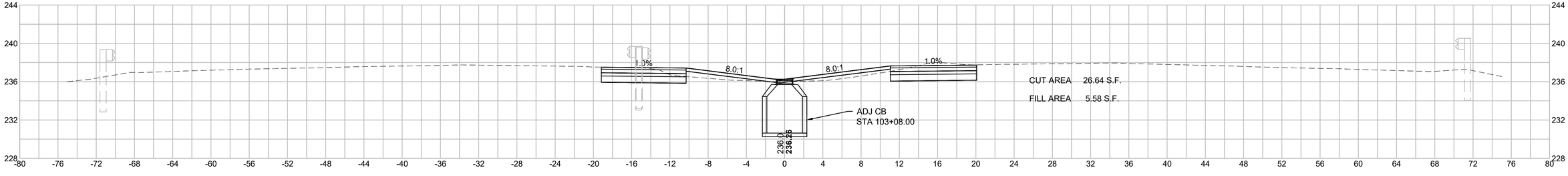
104+00.00



103+50.00



103+00.00



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

610770_HDI(XSC).DWG Plotted on 29-Aug-2022 11:48 AM

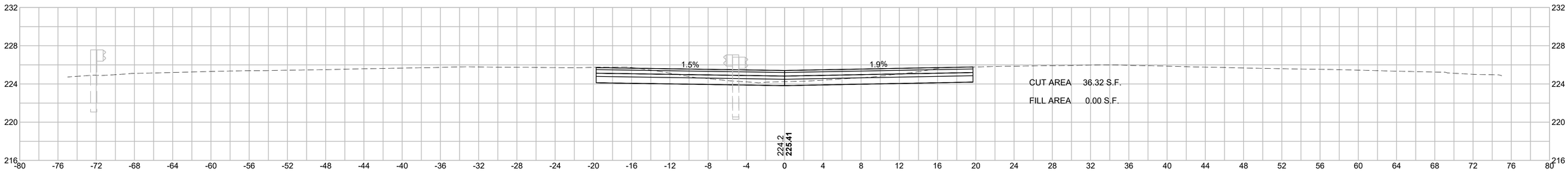
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	176	189
PROJECT FILE NO.	612188		

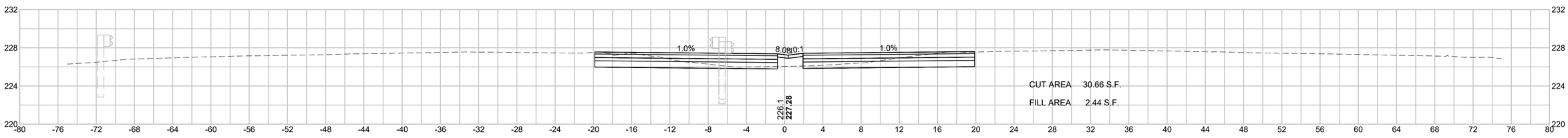
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:48 AM

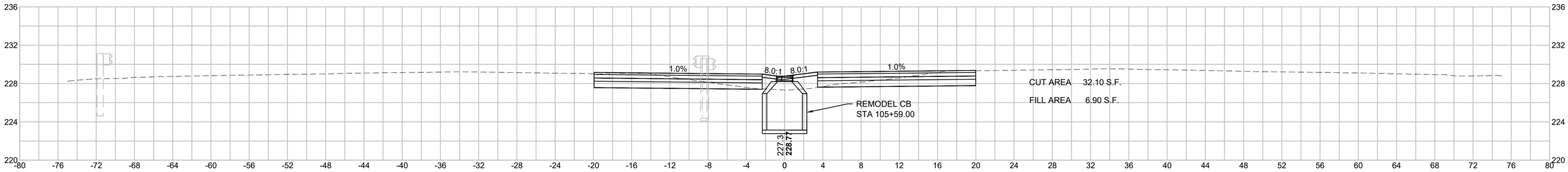
106+50.00



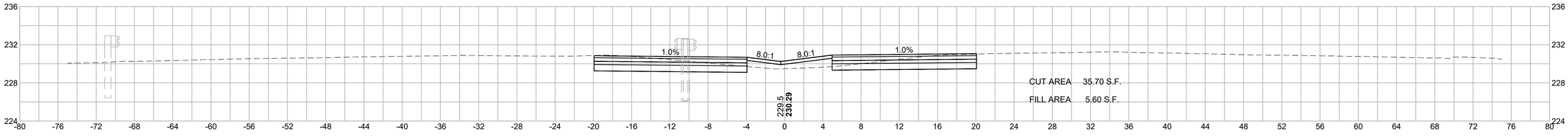
106+00.00



105+50.00



105+00.00



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

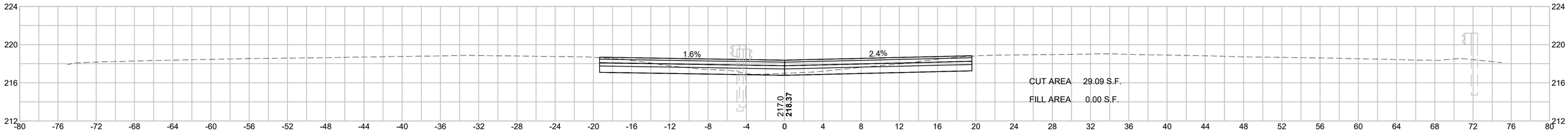
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	177	189
PROJECT FILE NO.	612188		

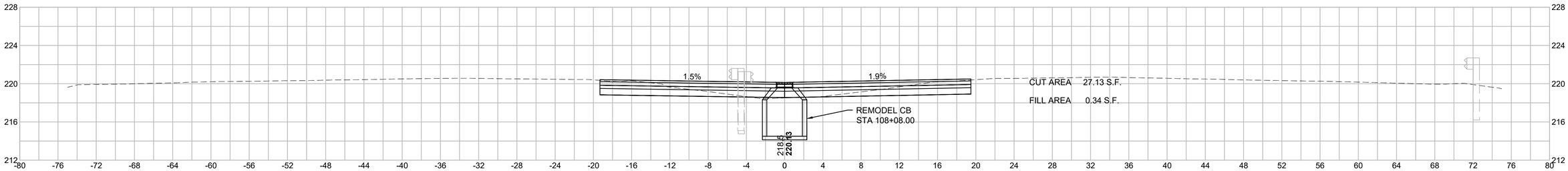
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:49 AM

108+50.00



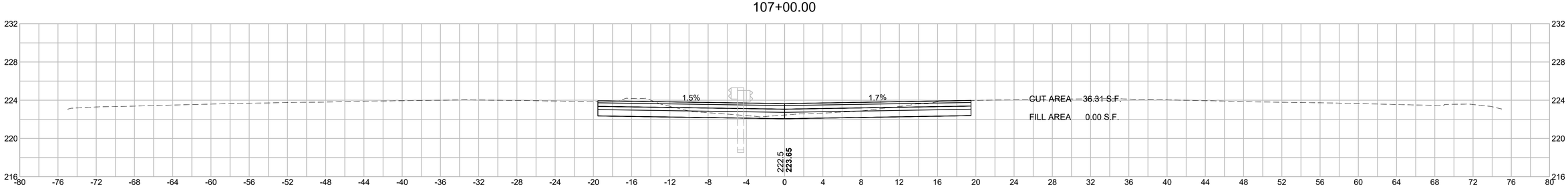
108+00.00



107+50.00



107+00.00



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

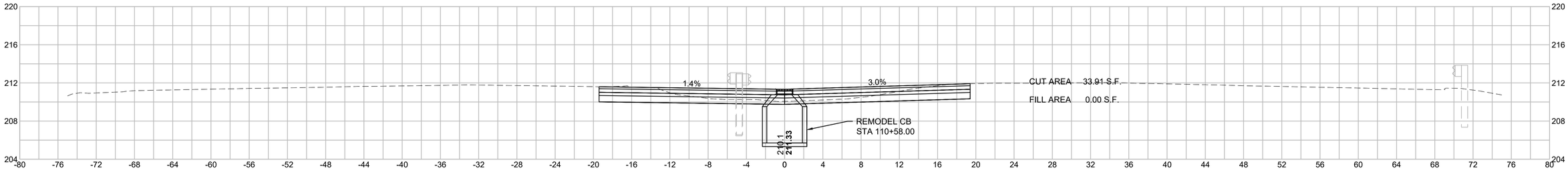
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	178	189
PROJECT FILE NO.	612188		

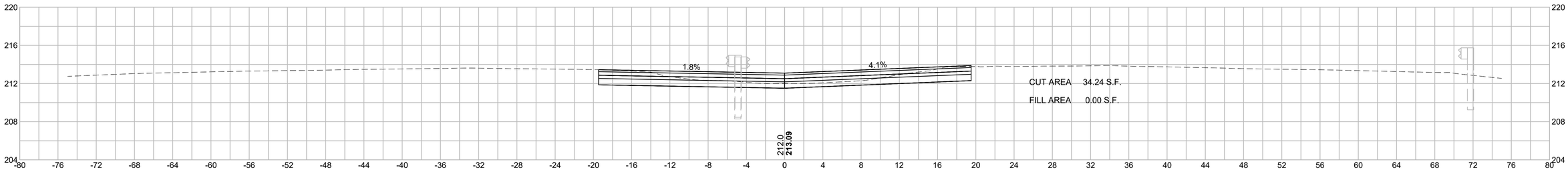
CROSSOVER CROSS SECTIONS

Plotted on 29-Aug-2022 11:49 AM
610770_HDX(SC).DWG

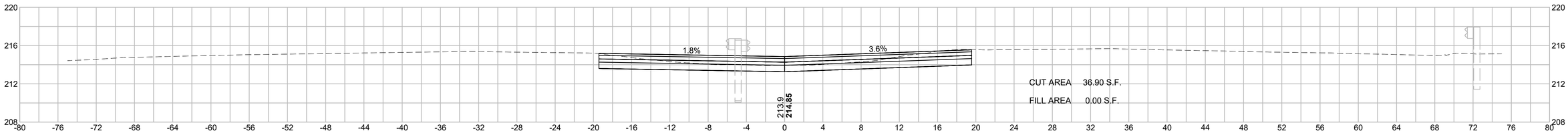
110+50.00



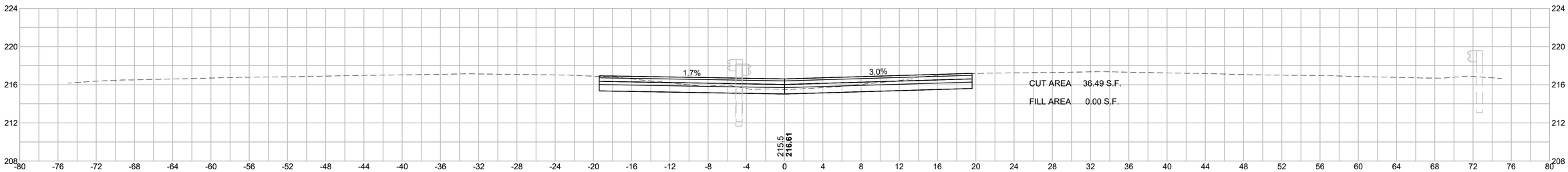
110+00.00



109+50.00



109+00.00



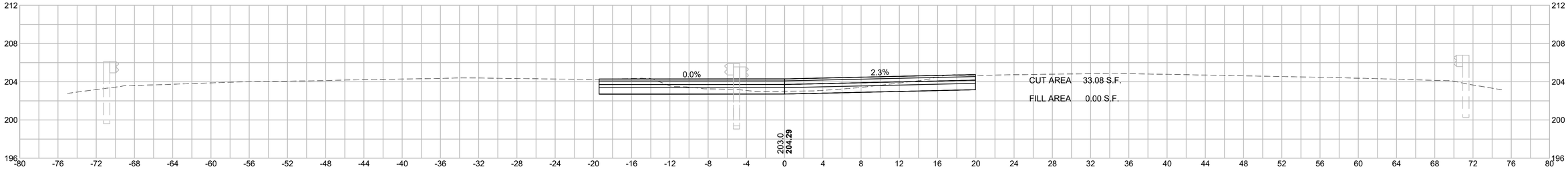
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

RANDOLPH
RTE 24 OVER CANTON STREET

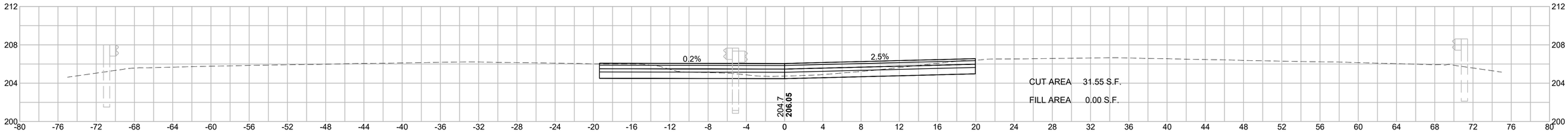
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	179	189
PROJECT FILE NO.	612188		

CROSSOVER CROSS SECTIONS

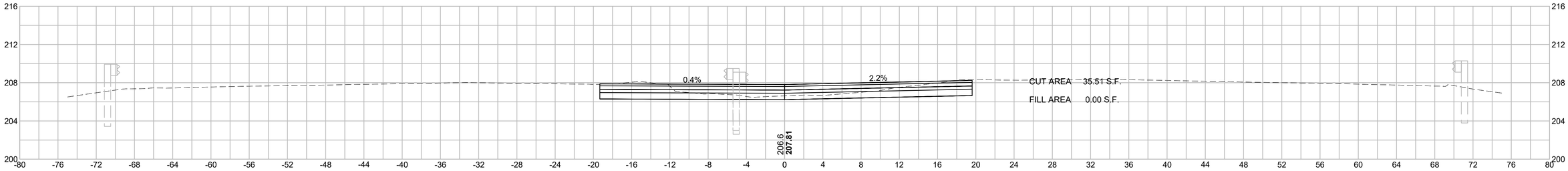
112+50.00



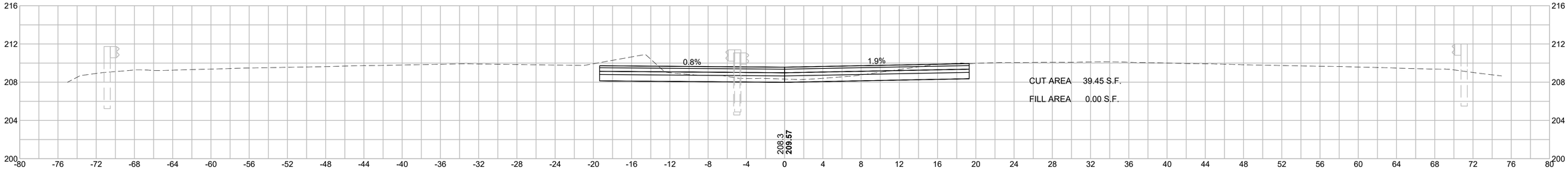
112+00.00



111+50.00



111+00.00



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

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:49 AM

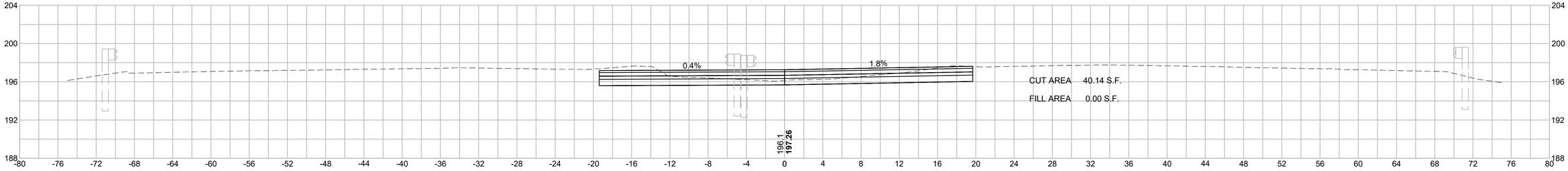
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	180	189
PROJECT FILE NO.	612188		

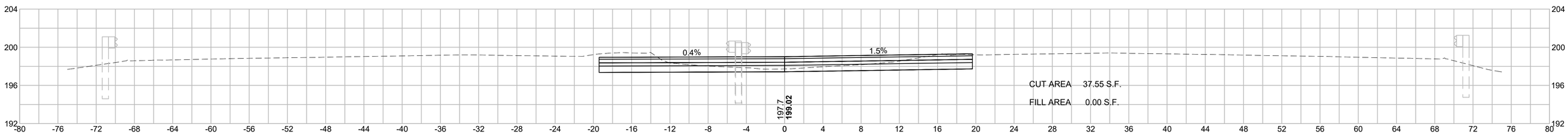
CROSSOVER CROSS SECTIONS

Plotted on 29-Aug-2022 11:49 AM
610770_HD(XSC).DWG

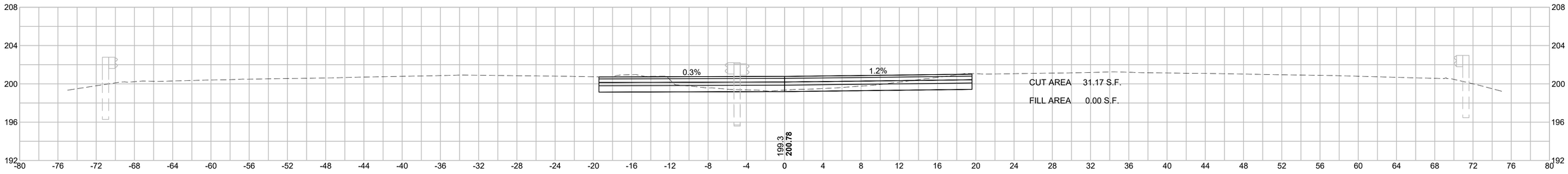
114+50.00



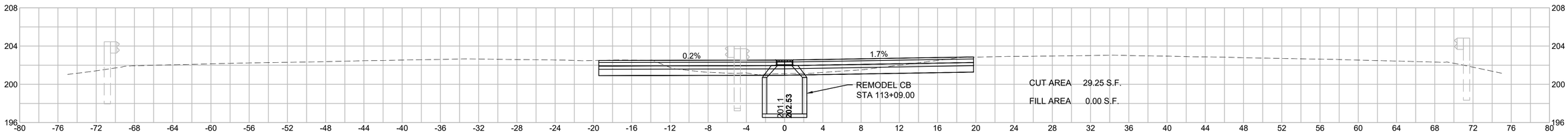
114+00.00



113+50.00



113+00.00



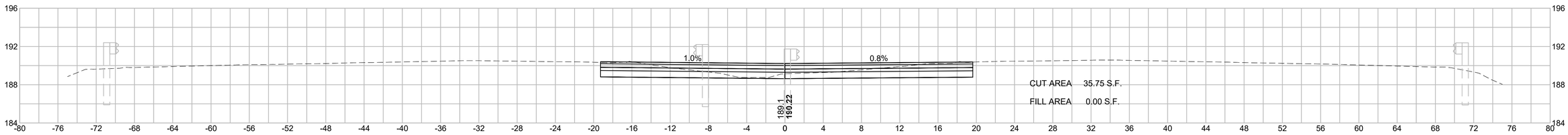
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

RANDOLPH
RTE 24 OVER CANTON STREET

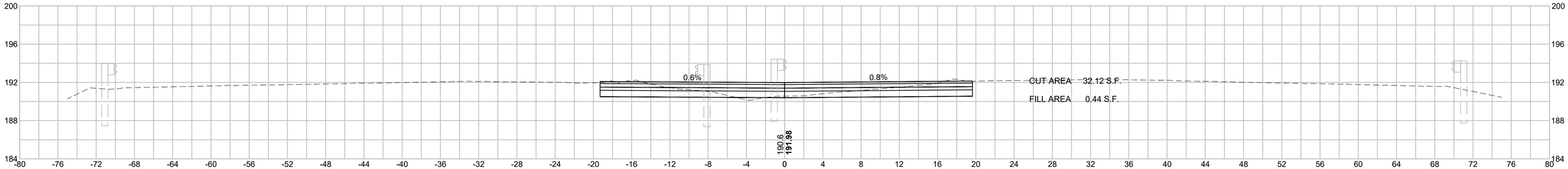
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	181	189
PROJECT FILE NO.	612188		

CROSSOVER CROSS SECTIONS

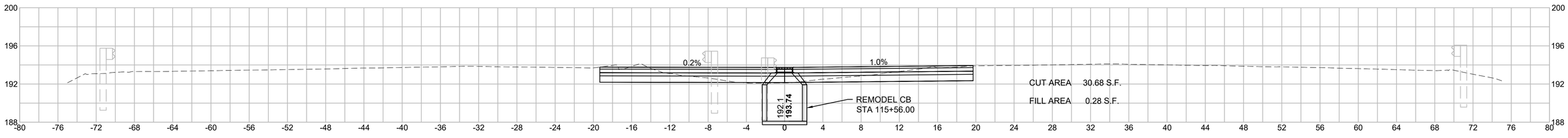
116+50.00



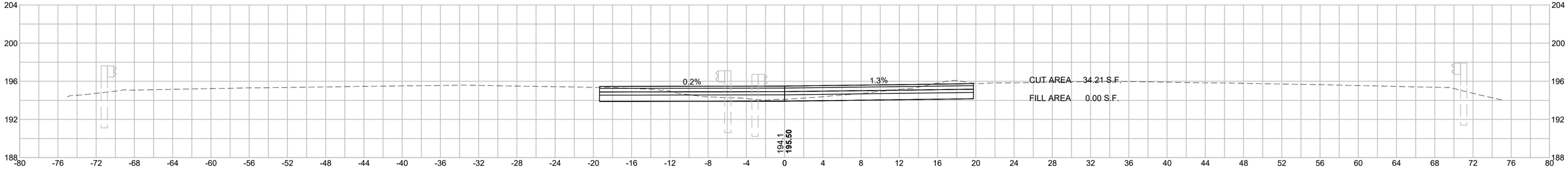
116+00.00



115+50.00



115+00.00



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

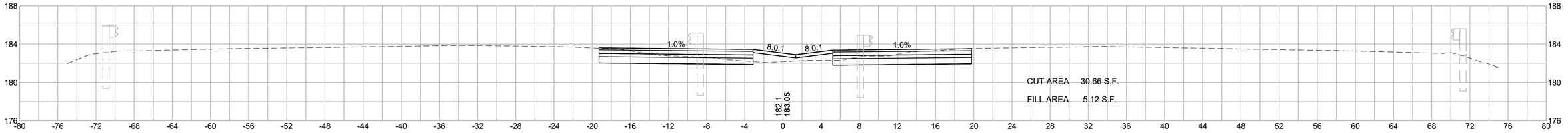
610770_HDX(XSC).DWG Plotted on 29-Aug-2022 11:49 AM

RANDOLPH
RTE 24 OVER CANTON STREET

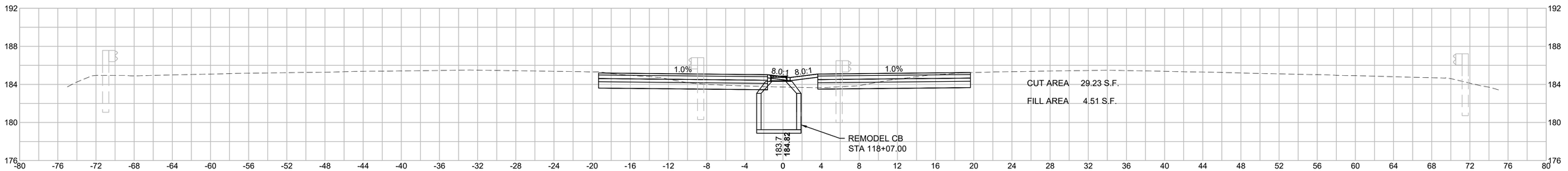
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	182	189
PROJECT FILE NO.	612188		

CROSSOVER CROSS SECTIONS

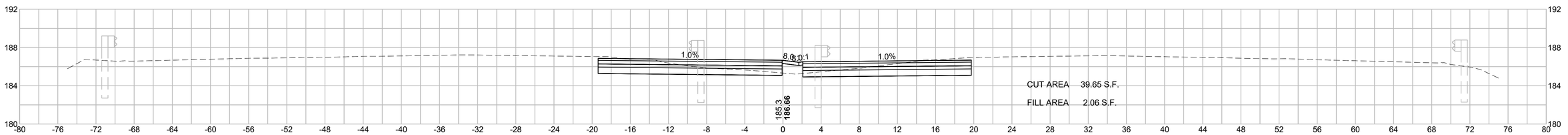
118+50.00



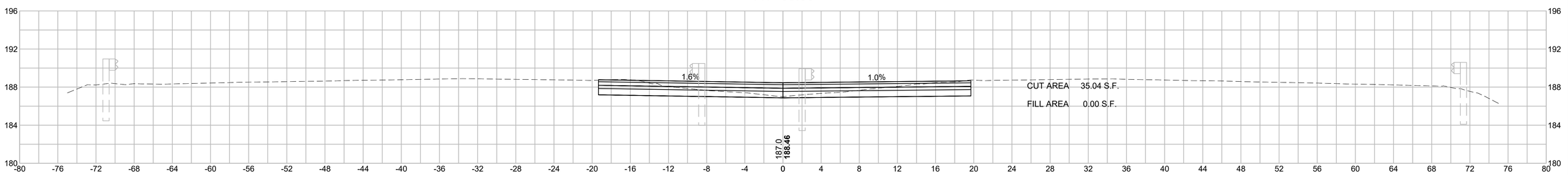
118+00.00



117+50.00



117+00.00



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

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:50 AM

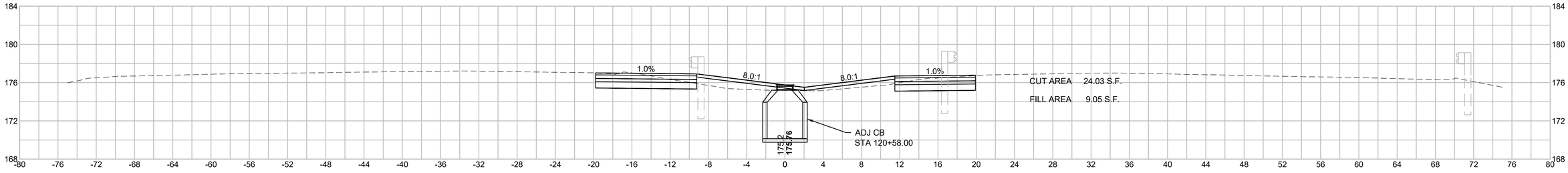
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	183	189
PROJECT FILE NO.	612188		

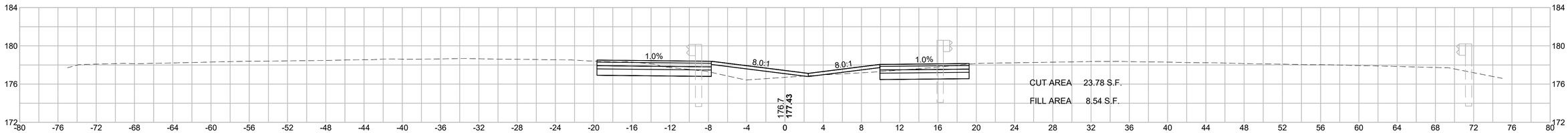
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:50 AM

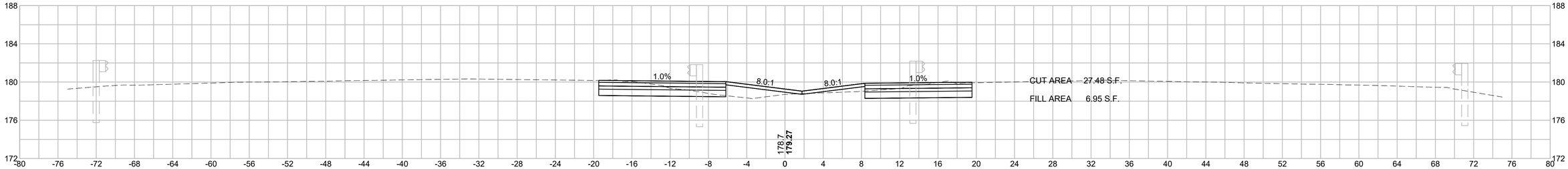
120+50.00



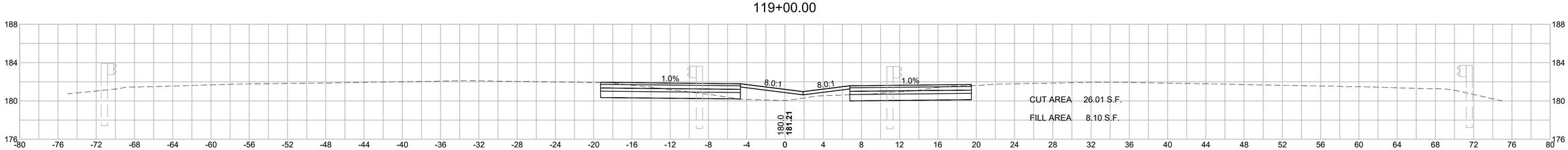
120+00.00



119+50.00



119+00.00



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

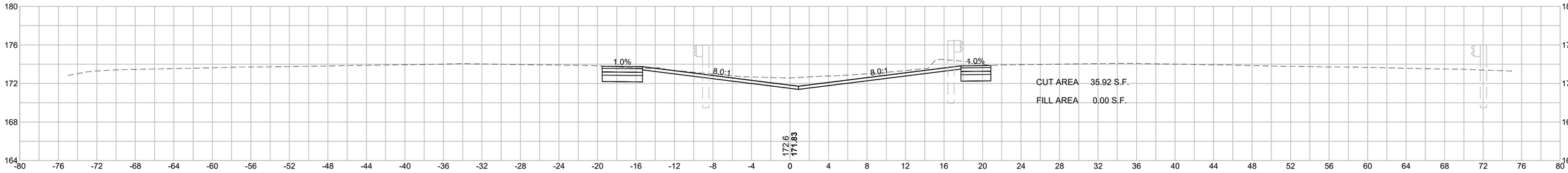
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	184	189
PROJECT FILE NO.	612188		

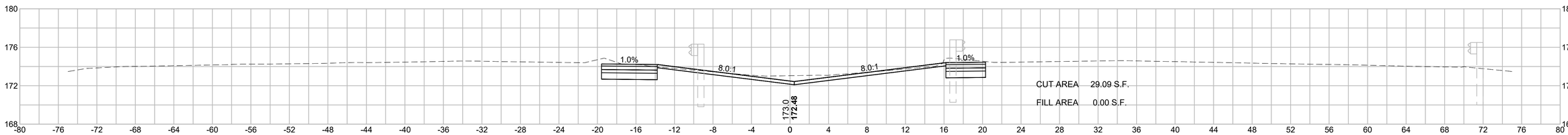
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:50 AM

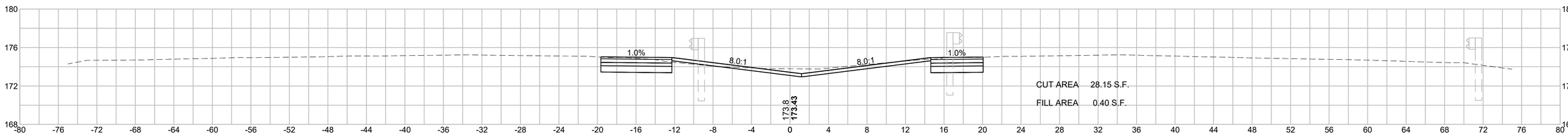
122+50.00



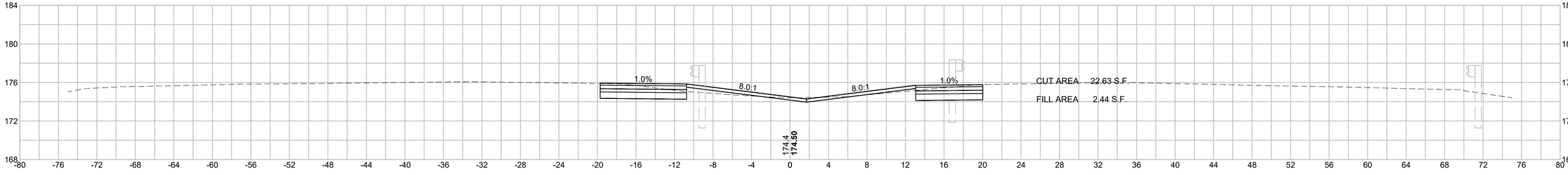
122+00.00



121+50.00



121+00.00



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

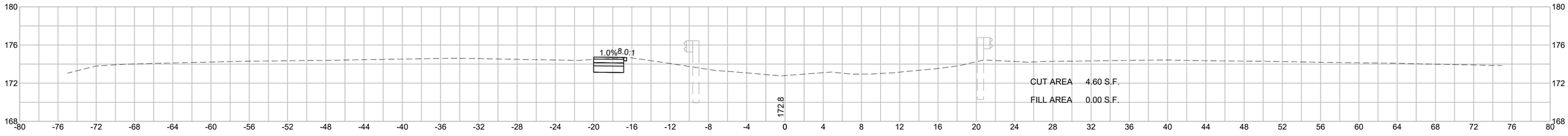
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	185	189
PROJECT FILE NO.	612188		

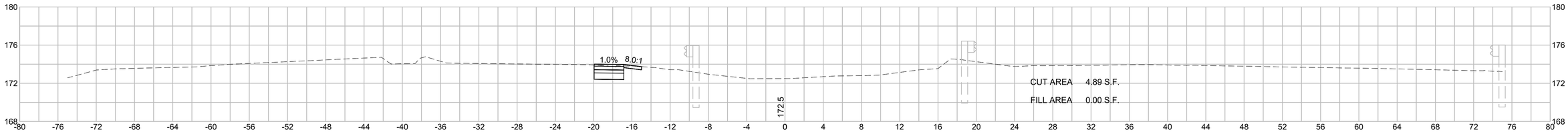
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:50 AM

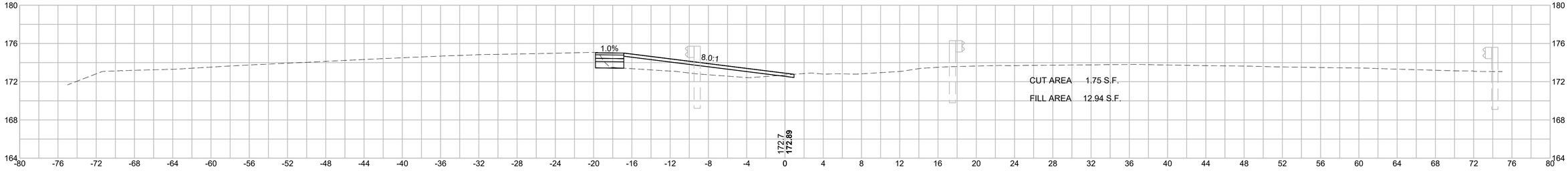
124+50.00



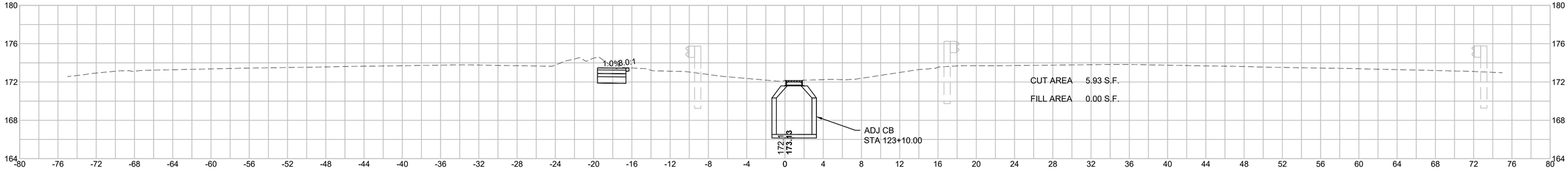
124+00.00



123+50.00



123+00.00



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

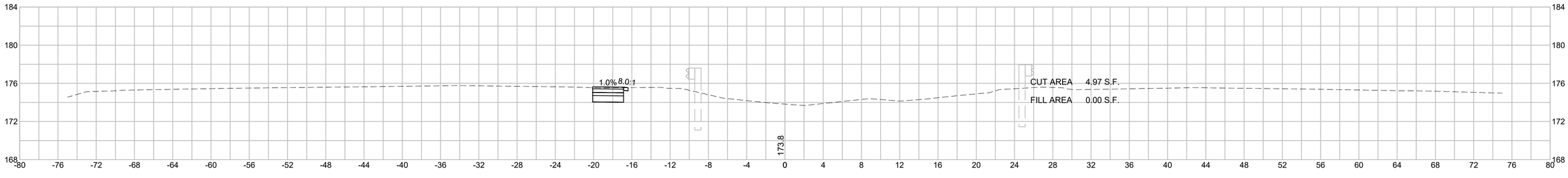
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	186	189
PROJECT FILE NO.	612188		

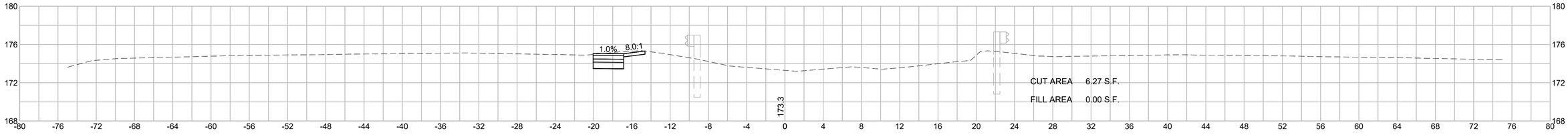
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:50 AM

125+50.00



125+00.00



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

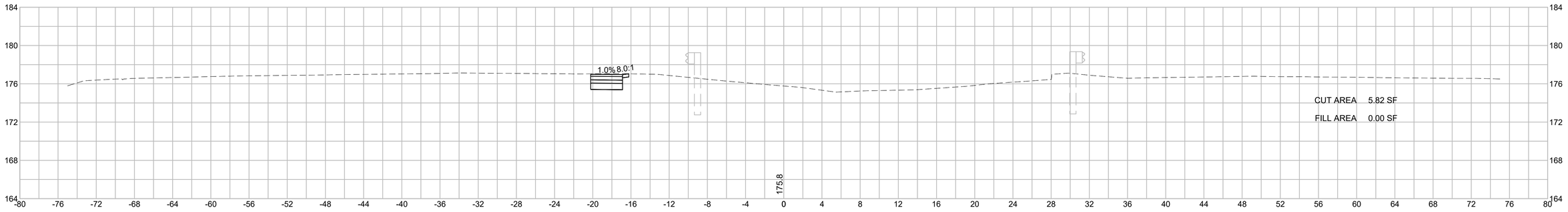
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	187	189
PROJECT FILE NO.	612188		

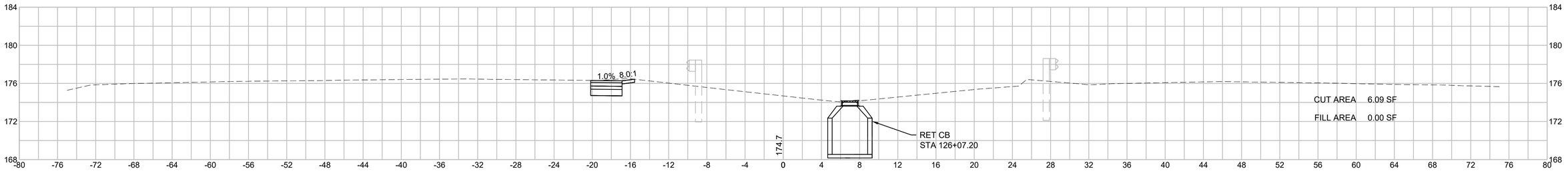
CROSSOVER CROSS SECTIONS

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:51 AM

126+50.00



126+00.00



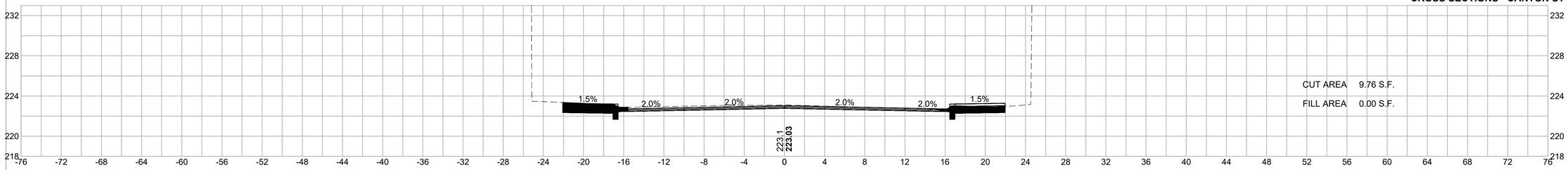
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

RANDOLPH
RTE 24 OVER CANTON STREET

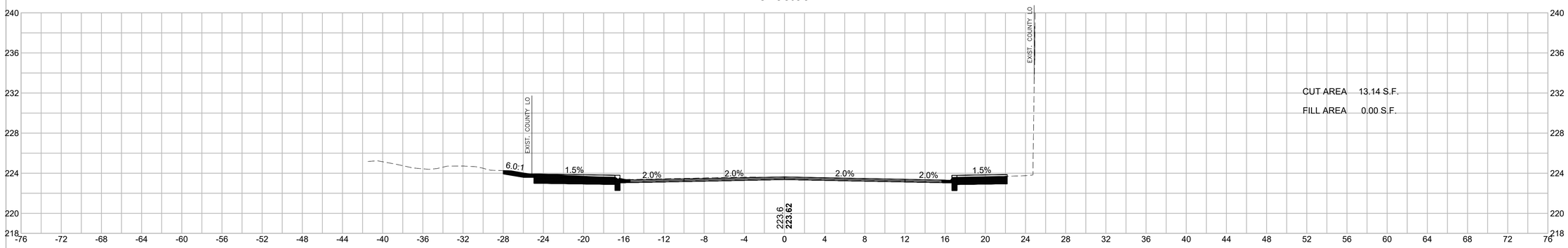
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	188	189
PROJECT FILE NO.	612188		

CROSS SECTIONS - CANTON ST

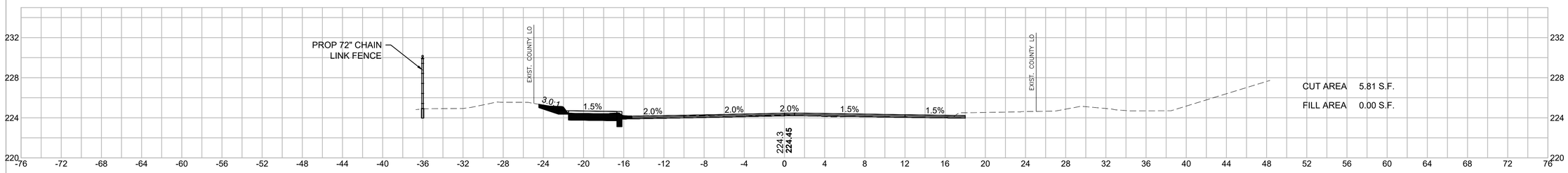
9+50.00



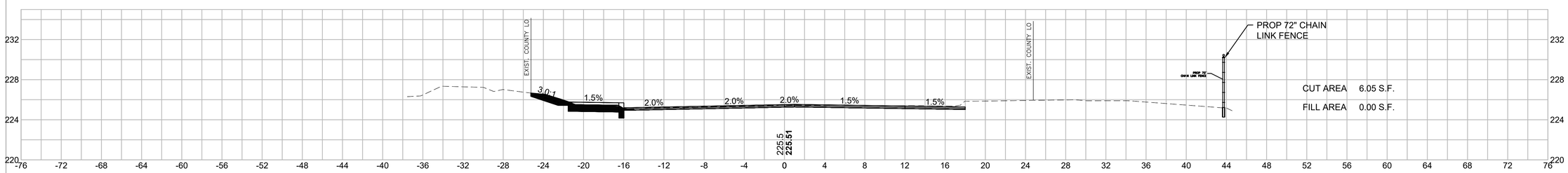
9+00.00



8+50.00



8+00.00



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

612770_HDX(XSC).DWG Plotted on 29-Aug-2022 11:51 AM

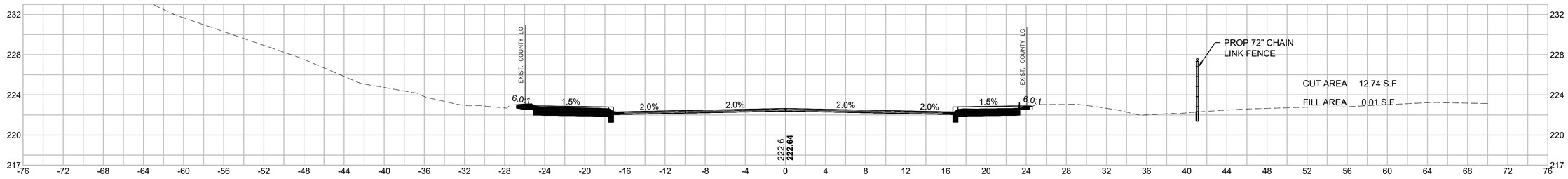
RANDOLPH
RTE 24 OVER CANTON STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(BRR-ON)-003S(586)X	189	189
PROJECT FILE NO.	612188		

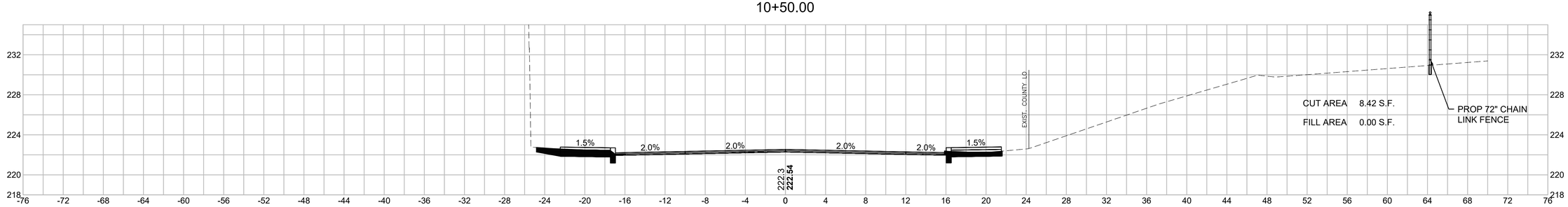
CROSS SECTIONS - CANTON ST

610770_HD(XSC).DWG Plotted on 29-Aug-2022 11:51 AM

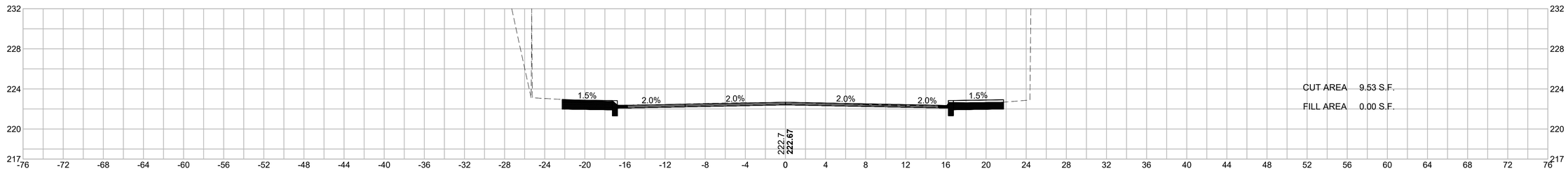
11+00.00



10+50.00

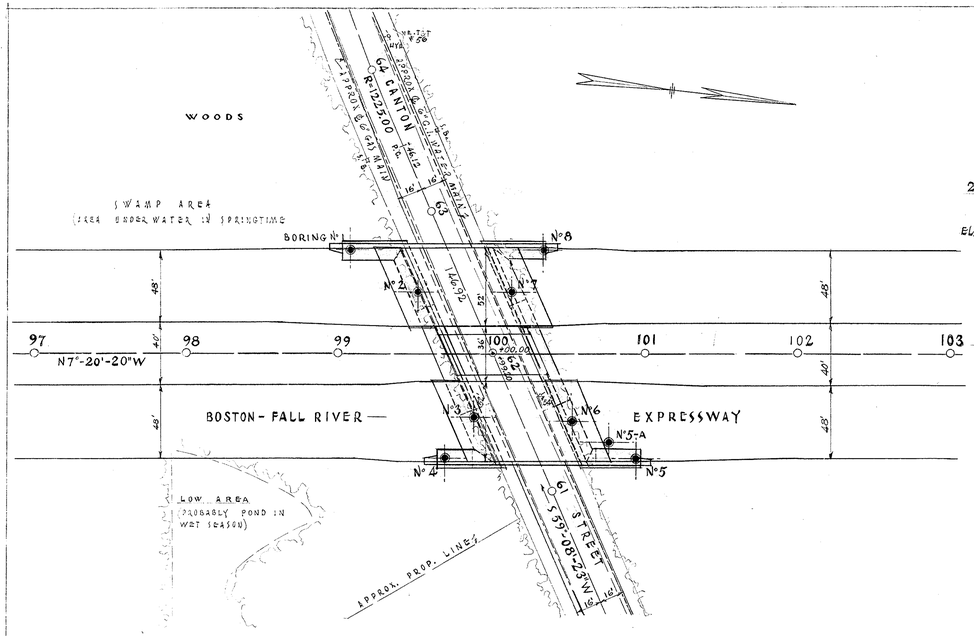


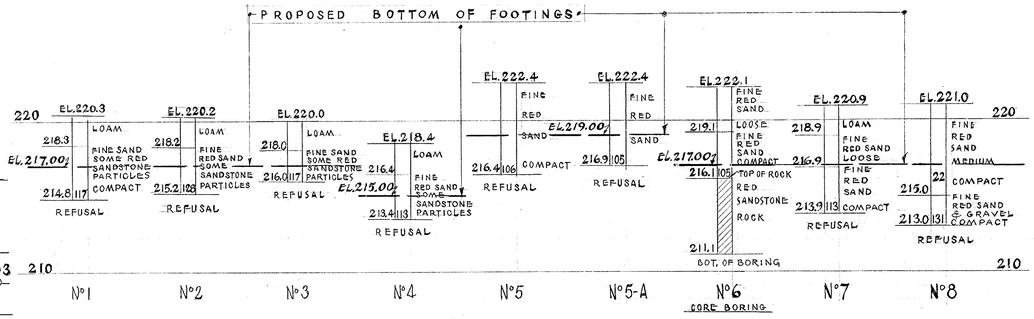
10+00.00



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

PUB. ROAD DIV. Nº	STATE	FED. AID PROJ. Nº	FISCAL YEAR	SHEET Nº	TOTAL SHEETS
1	MASS	U-3449		23	91





BORING DATA

SCALE 1" = 4'-0" BORINGS TAKEN OCTOBER 1956 BY AMERICAN DRILLING CO INC.

BORING NOTES

LOCATIONS OF BORINGS SHOWN ON KEY PLAN THUS:-⊕-Nº1. BORINGS TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW NATURE OF MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION. FIGURES IN COLUMNS INDICATE BLOWS PER FOOT ON ONE INCH ϕ PIPE PRODUCED BY 30 INCH FALL OF 140 POUND HAMMER. BORING SAMPLES MAY BE SEEN AT THE DEPARTMENT'S LABORATORY IN THE MAINTENANCE BUILDING ON ROUTE 9 IN WELLESLEY.

GENERAL NOTES

FOUNDATIONS:
MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DATE & SEAL:
DATE TO BE CUT INTO ONE STONE OF SUITABLE SIZE LOCATED ON THE INSIDE FACES OF NORTHWESTERLY, AND SOUTHEASTERLY END POSTS, AS SHOWN IN DETAIL ON SHEET 3. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. SEAL WILL BE FURNISHED BY THE COMMONWEALTH, AND SHALL BE PLACED BY THE CONTRACTOR.

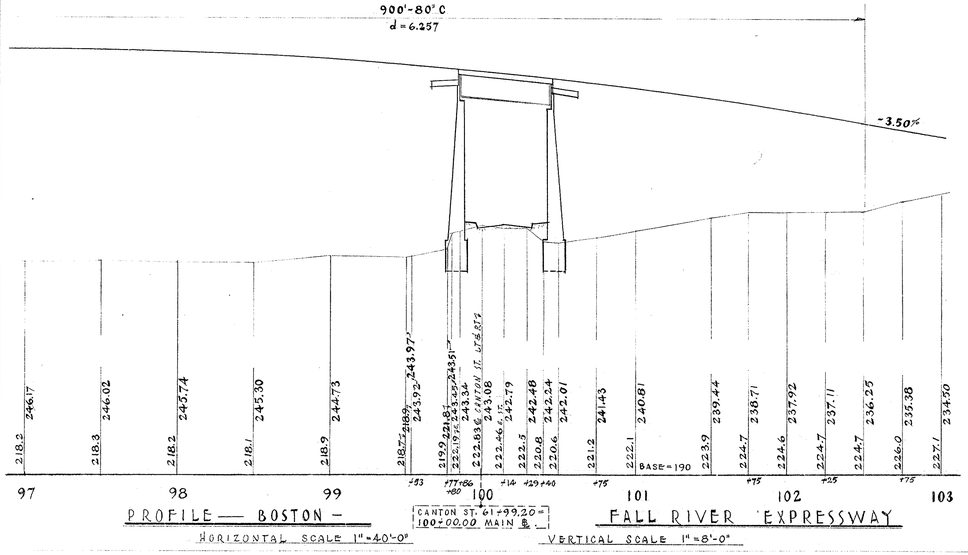
DESIGN:
ACCORDING TO SPECIFICATIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (1953 EDITION) FOR H20-44 LOADING.

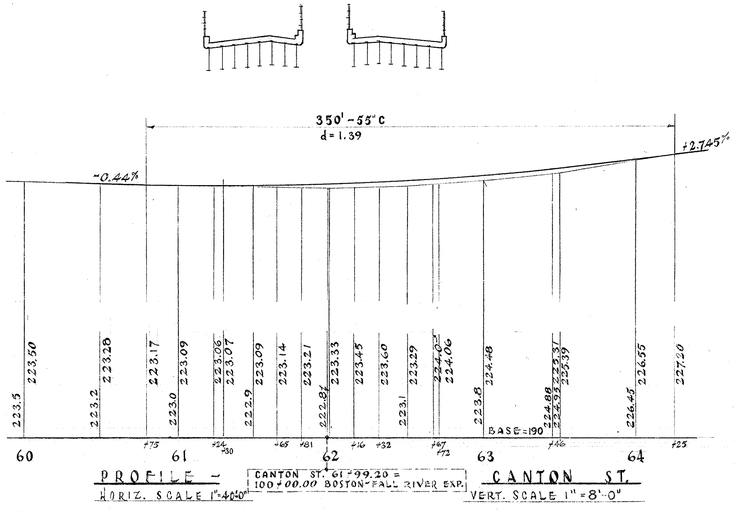
BENCH MARK:
B.M. STA. 63+42 (CANTON ST. ℄) SOUTH 19.0' HIGH POINT ON BOULDER = CUT PAINTED RED EL. 226.035 SEA LEVEL DATUM OF 1929.

REINFORCEMENT:
ALL BARS SHALL HAVE DEFORMATIONS CONFORMING TO A.S.T.M. DESIGNATION A 305, UNLESS OTHERWISE SHOWN ON THE PLANS, REINFORCING BARS SHALL BE LAPPED 20 DIAMETERS TO MAKE A SPLICE, EXCEPT THAT MAIN REINFORCING BARS NEAR THE TOP OF SLABS AND BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS SHALL BE LAPPED 35 DIAMETERS TO MAKE A SPLICE.

ESTIMATED QUANTITIES
(NOT GUARANTEED)

BRIDGE EXCAVATION	1100 CU. YDS.
CLASS B ROCK EXAVATION	10 CU. YDS.
GRAVEL BORROW	2250 CU. YDS.
BRIDGE STRUCTURE	1 LUMP SUM

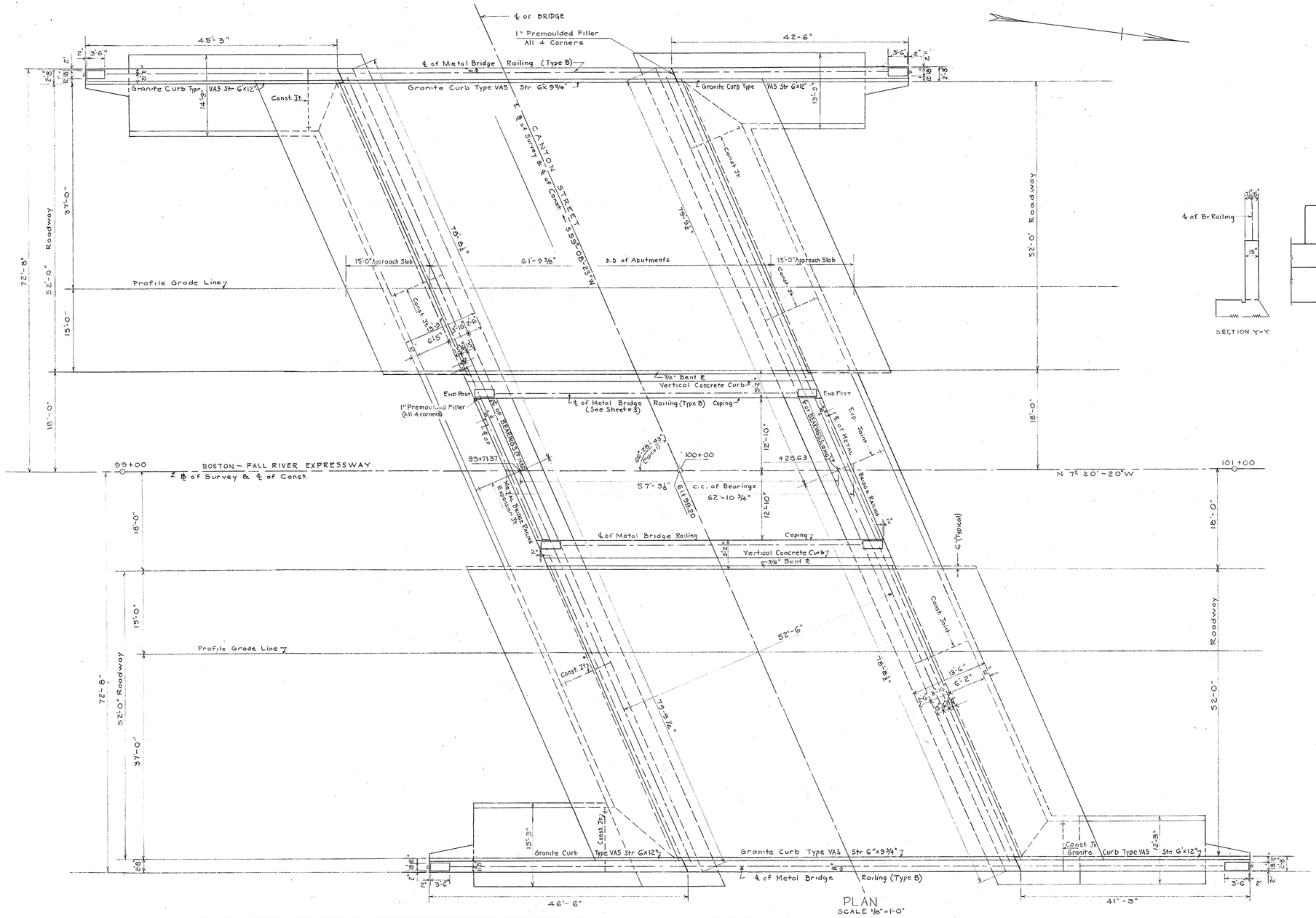


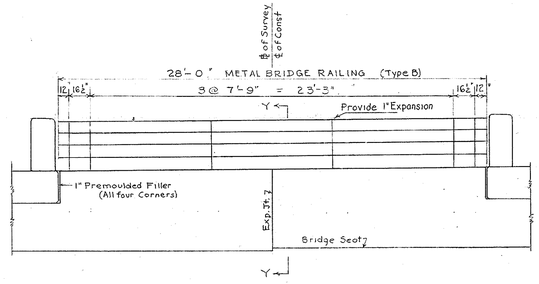


DES. FRYE	MAR. 16, 1957 — ISSUED FOR CONSTRUCTION
DR. FRYE SMITH	THE COMMONWEALTH OF MASSACHUSETTS
CHK. GAGNON	PROPOSED BRIDGE
APPROVED FOR DES.	**RANDOLPH**
ENGR	BOSTON-FALL RIVER EXPRESSWAY
SPECS	OVER CANTON STREET
	SCALES AS NOTED
	OFFICE OF DEPARTMENT OF PUBLIC WORKS 100 NASHUA ST. — BOSTON, MASS. MAR. 1957
	S. Kinsley BRIDGE ENGINEER — E.J. McCarthy CHIEF ENGINEER

SHEET 1 OF 6 SHEETS BRIDGE Nº R-1-4

PUB ROAD DIV. NO	STATE	FED. AID PROJ. NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
1	MASS	U-3440(9)		24	91



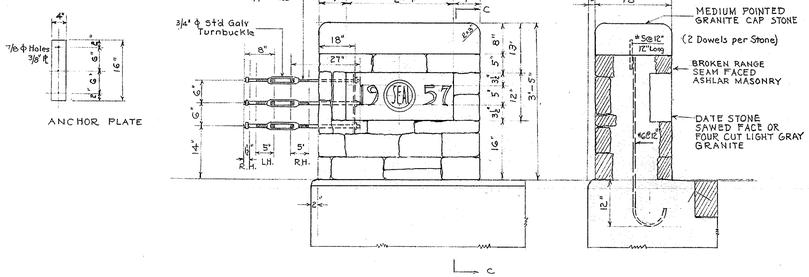


ABUTMENT MEDIAN ELEVATION
Scale 1/4" = 1'-0"

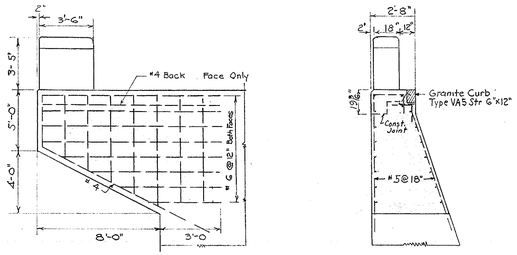
DATE	DESCRIPTION
MAR/61957	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

SHEET 2 OF 6 SHEETS BRIDGE № R-1-4

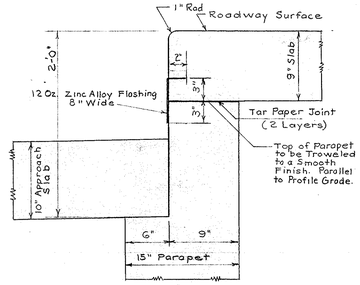
PUB. ROAD DIV. NO	STATE	FED. AID PROJ. NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
1	MASS	U-3449		25	91



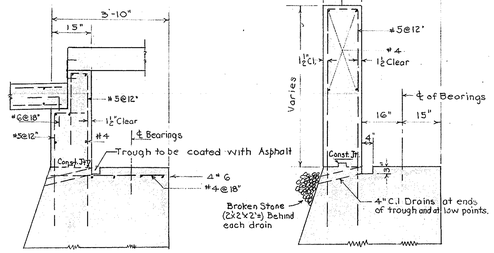
END POST DETAILS ARRANGEMENT OF DATE & SEAL
SCALE 3/4"=1'-0"



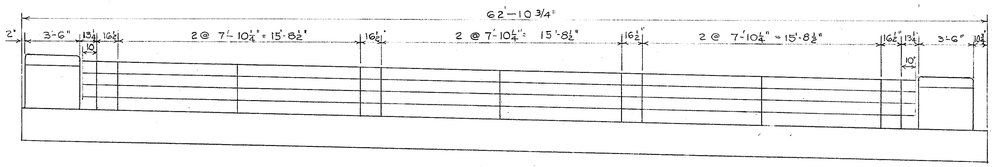
FLYING WING WALL DETAILS
SCALE 1/4"=1'-0"



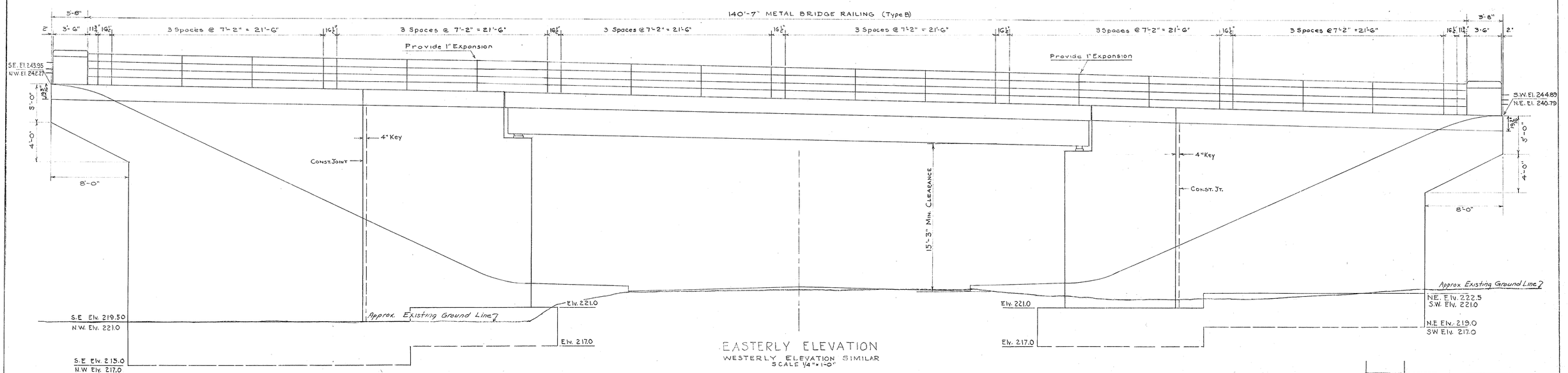
FLASHING DETAIL
Scale 1½"=1'-0"



PARAPET DETAILS



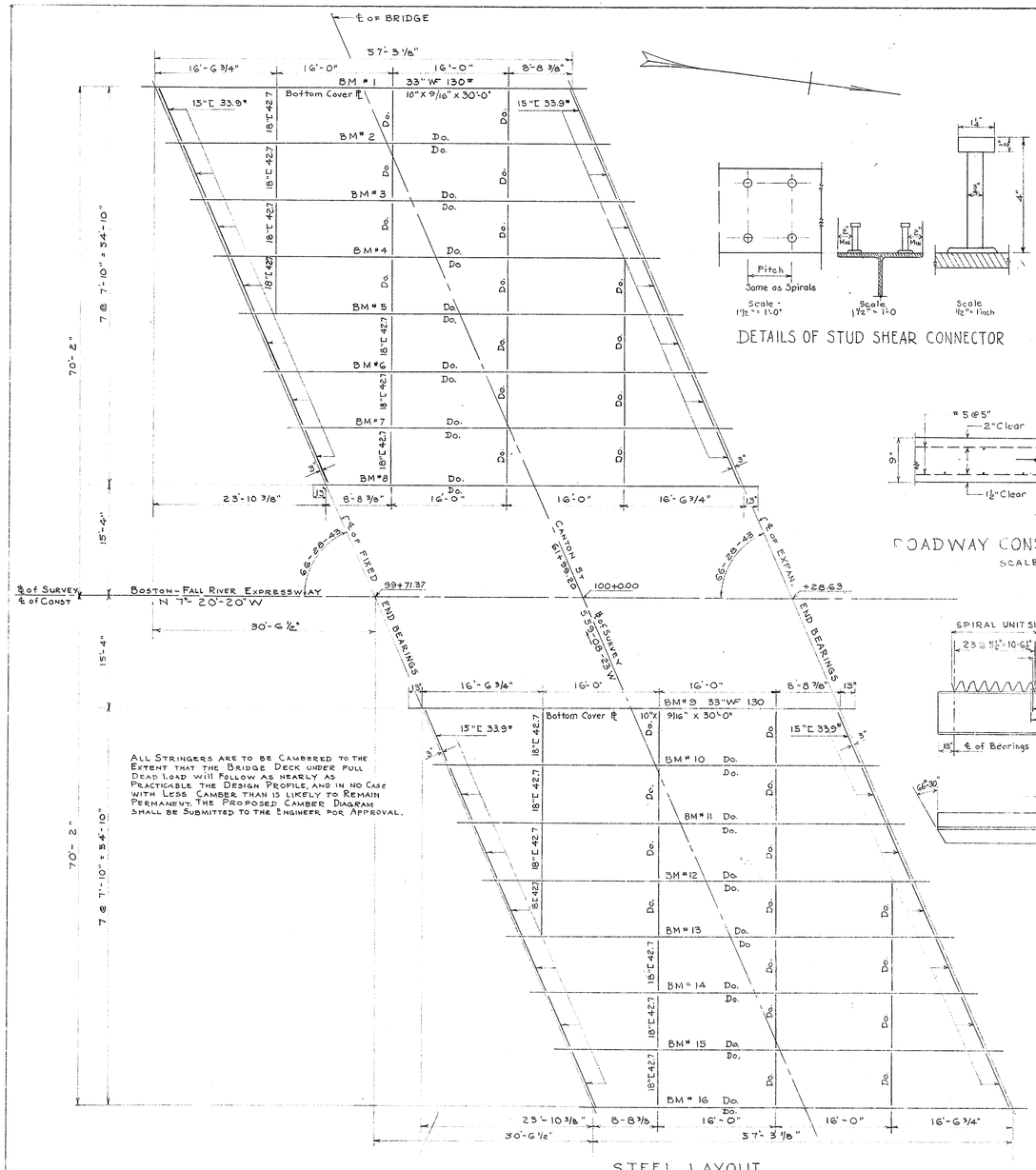
INTERIOR METAL BRIDGE RAILING (TYPE B)
Scale ¼"=1'-0"



EASTERLY ELEVATION
WESTERLY ELEVATION SIMILAR
SCALE 1/4"=1'-0"

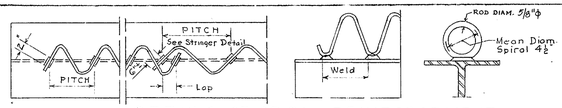
DATE	DESCRIPTION
MAR. 16, 1957	ISSUED FOR CONSTRUCTION

USE ONLY PRINTS OF LATEST DATE

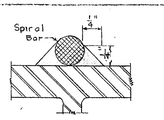


STEEL LAYOUT
Scale 1/8"=1'-0"

DETAILS OF STUD SHEAR CONNECTOR



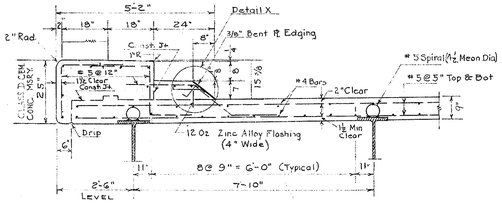
DETAILS OF SPIRAL REINFORCEMENT
NO SCALE



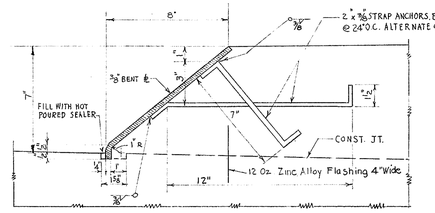
PUB ROAD DIV NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
1	MASS	U-3449		26	91

1/2 TYPICAL CROSS SECTION
SCALE 1/4"=1'-0"

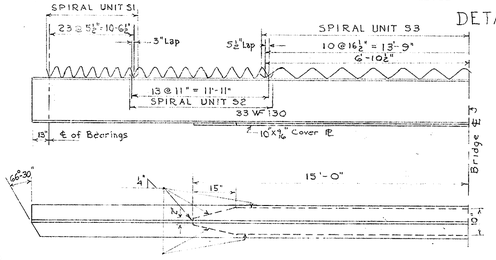
ROADWAY CONSTRUCTION JOINT
SCALE 1"=1'-0"



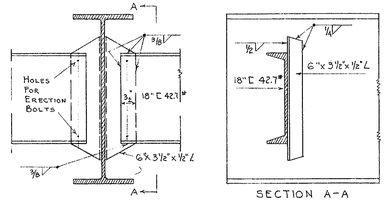
DETAILS OF SAFETY CURB
SCALE 1/2"=1'-0"



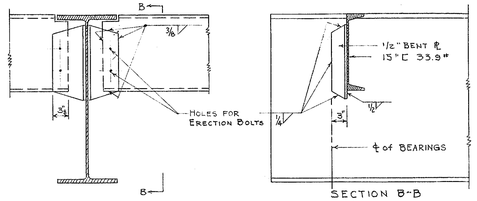
DETAIL X
Scale 3"=1'-0"



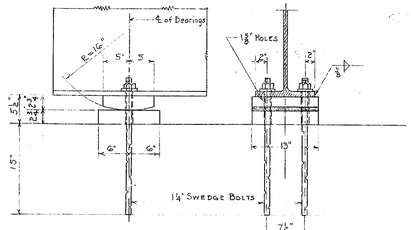
STRINGER DETAILS
NO SCALE



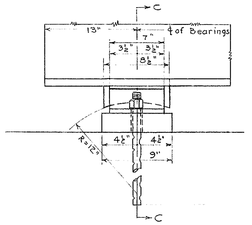
WELDED DIAPHRAGM CONNECTIONS
SCALE 1"=1'-0"



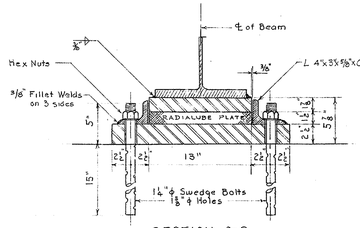
WELDED END DIAPHRAGM CONNECTION
SCALE 1"=1'-0"



FIXED END BEARING DETAILS
SCALE 1"=1'-0"



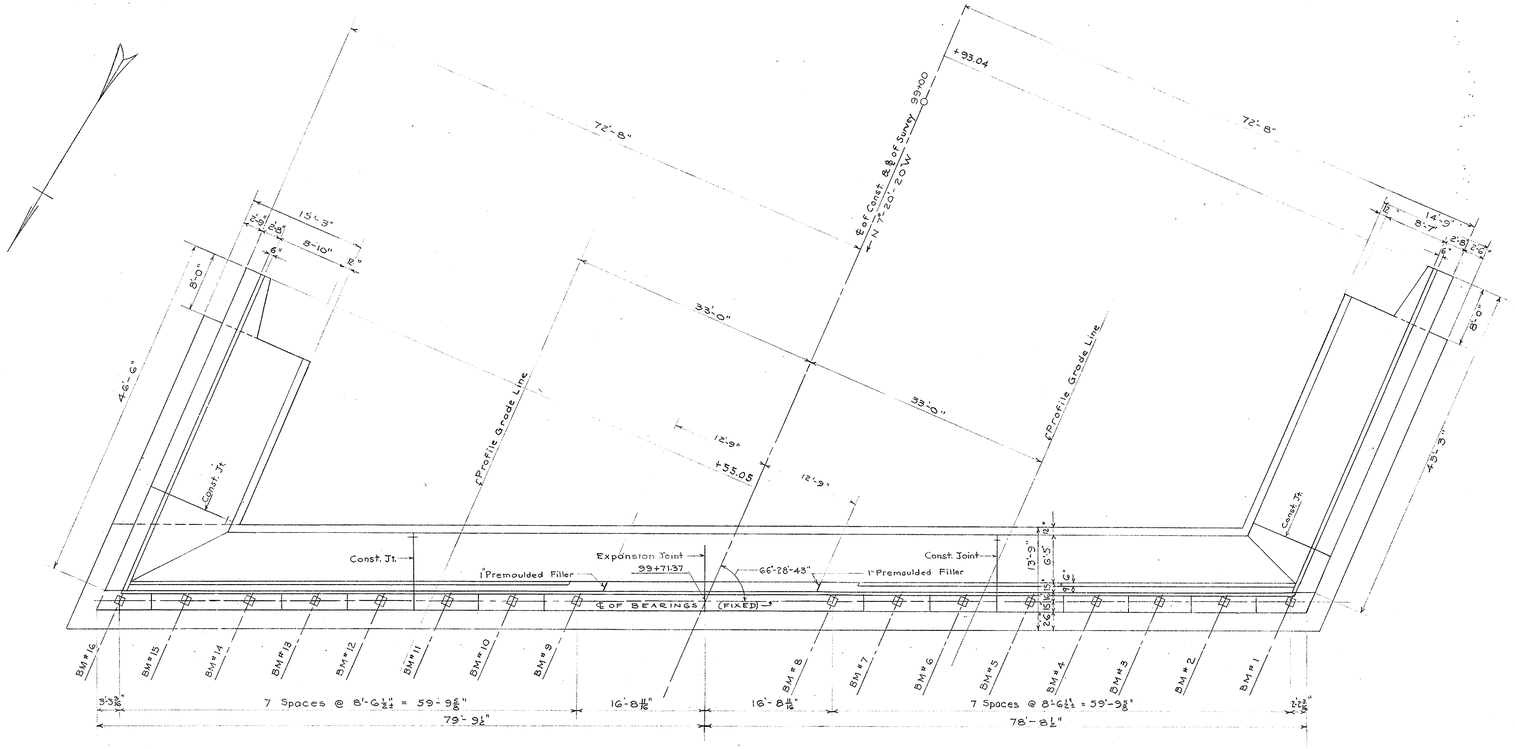
EXPANSION BEARING DETAILS
SCALE 1/2"=1'-0"



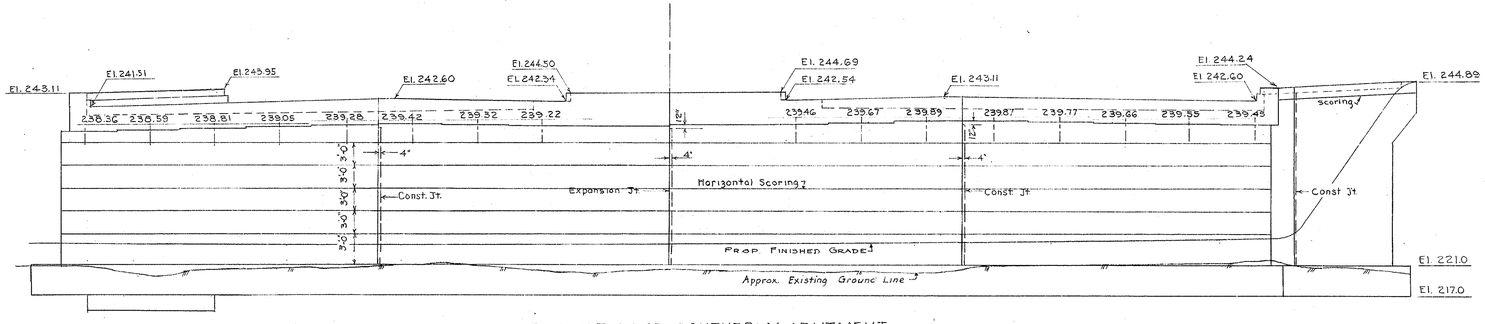
MAR. 16, 1957	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

USE ONLY PRINTS OF LATEST DATE

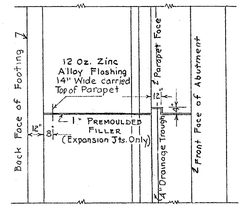
PUB ROAD DIV. NO	STATE	FED AID PROJ. NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
1	MASS	U-344(9)		27	91



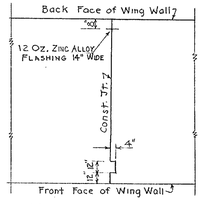
PLAN OF SOUTHERLY ABUTMENT
SCALE 1/8" = 1'-0"



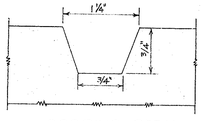
ELEVATION OF SOUTHERLY ABUTMENT
SCALE 1/8" = 1'-0"



CONST. & EXPANSION JOINT PLAN
SCALE 1/4" = 1'-0"

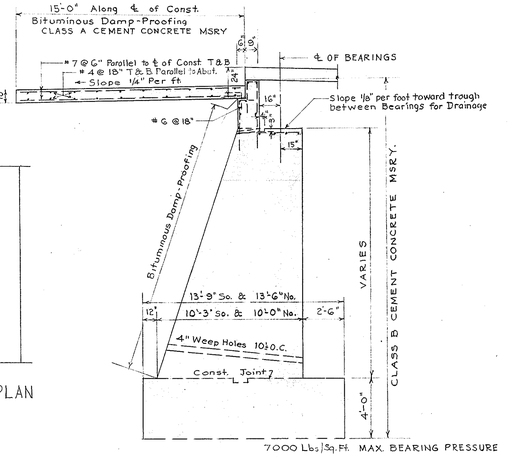


WING WALL PLAN
SCALE 1/4" = 1'-0"



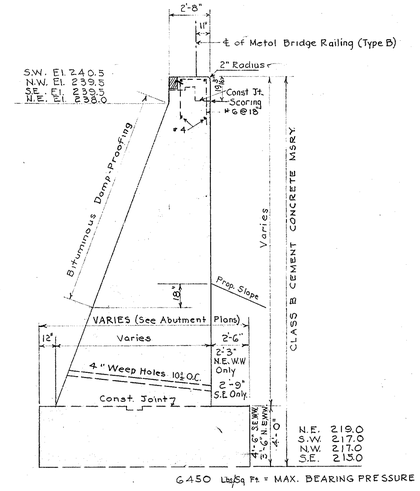
SCORING DETAIL
ABUTMENTS & TOP OF WING WALLS
Full Scale

For Parapet Details See Sheet No. 3



7000 Lbs./Sq. Ft. MAX. BEARING PRESSURE

ABUTMENT SQUARE SECTION
SCALE 1/4" = 1'-0"



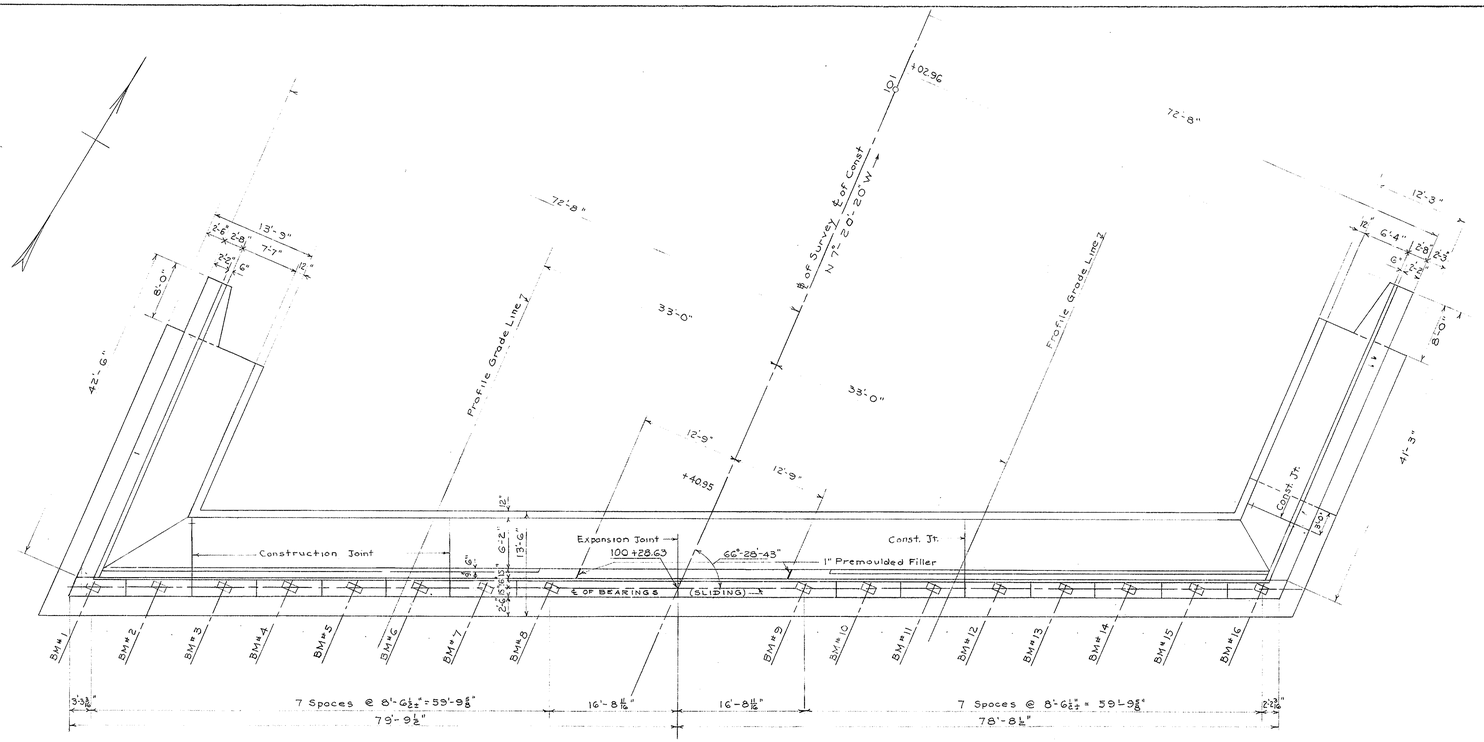
6450 Lbs./Sq. Ft. = MAX. BEARING PRESSURE

WING WALL SECTION
Scale 1/4" = 1'-0"

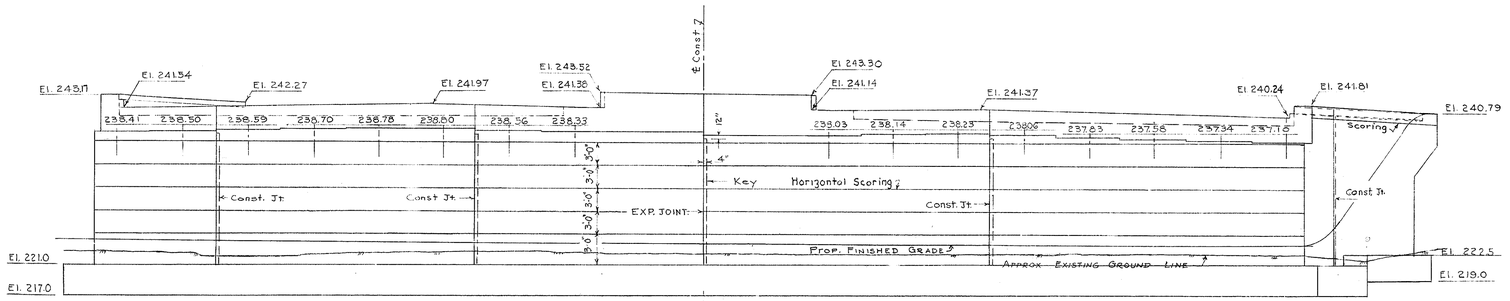
DATE	DESCRIPTION
MAR. 16, 1957	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

SHEET 5 OF 6 SHEETS BRIDGE No. R-1-4

PUB ROAD DIV NO	STATE	FED AID PROJ Nº	FISCAL YEAR	SHEET NO	TOTAL SHEETS
1	MASS	U-344(9)		28	91



PLAN OF NORTHERLY ABUTMENT
SCALE 1/8" = 1'-0"



ELEVATION OF NORTHERLY ABUTMENT
SCALE 1/8" = 1'-0"

DATE	DESCRIPTION
MAR. 16, 1957	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

SHEET 6 OF 6 SHEETS BRIDGE Nº R-1-4