

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	1	51
PROJECT FILE NO.		608413	

TITLE SHEET & INDEX

PLAN AND PROFILE OF NORTHAMPTON - ROCKY HILL GREENWAY MULTI-USE TRAIL

IN THE CITY OF
NORTHAMPTON
HAMPSHIRE COUNTY

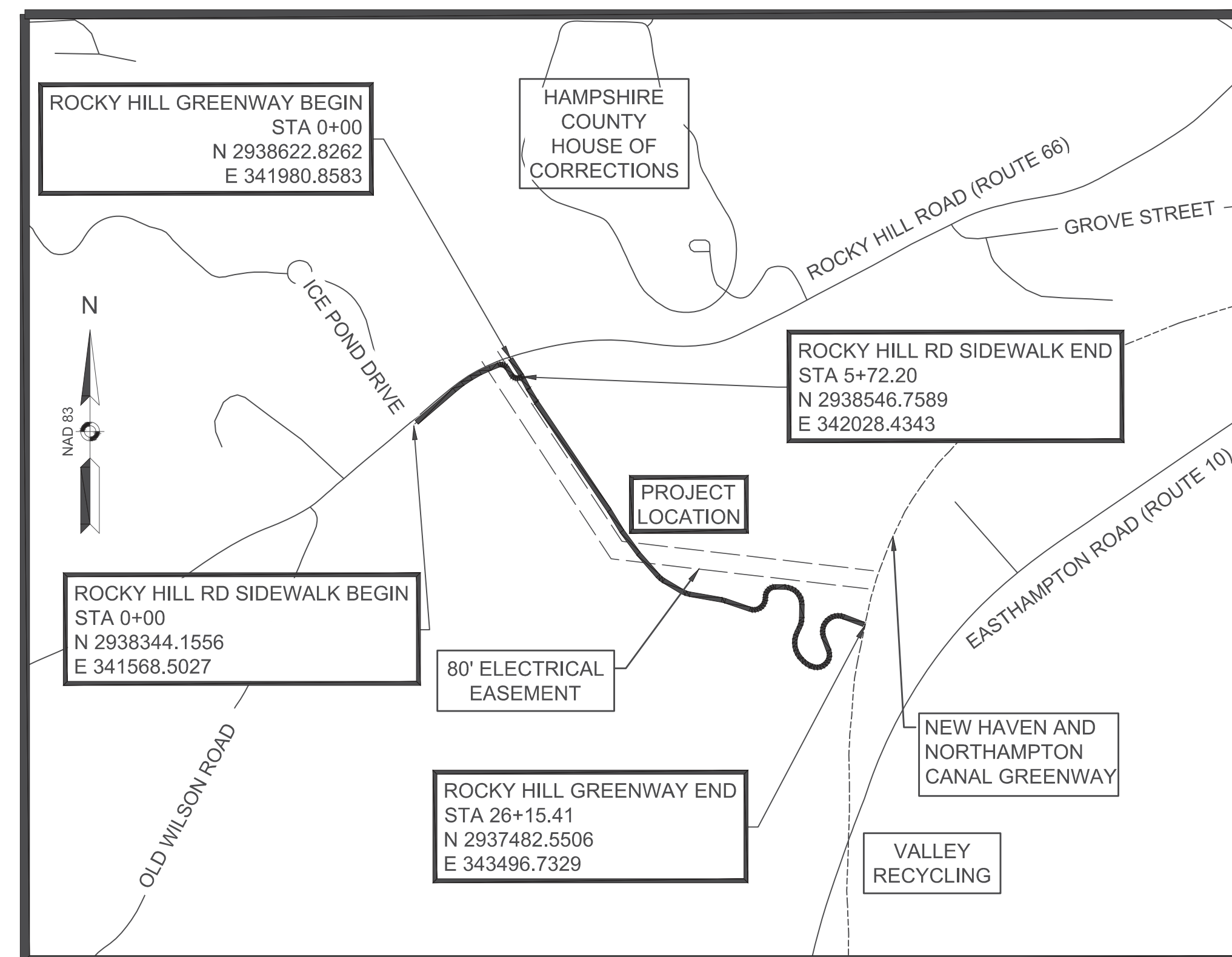
FEDERAL AID PROJECT NO.

HPP-003S(812)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.

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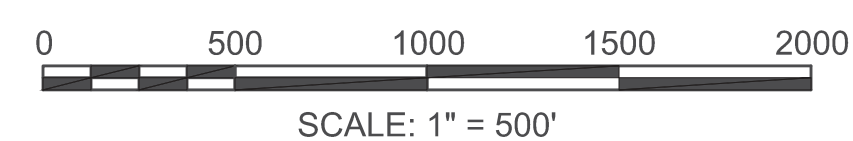
SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	GENERAL LEGEND, ABBREVIATION & NOTES
3	KEY PLAN
4	TYPICAL SECTIONS
5-6	BASE PLAN
7-9	CONSTRUCTION PLANS
10-12	PROFILES
13-15	GRADING PLANS
16-17	CURB TIE PLANS
18-19	TRAFFIC SIGN & PAVEMENT MARKING PLANS
20	TRAFFIC SIGN SUMMARY SHEET AND DETAILS
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23-27	CONSTRUCTION DETAILS
28-29	LANDSCAPE PLAN
30	LANDSCAPE DETAILS
31-34	CROSS SECTIONS - ROCKY HILL SIDEWALK
35-51	CROSS SECTIONS - MULTI-USE TRAIL



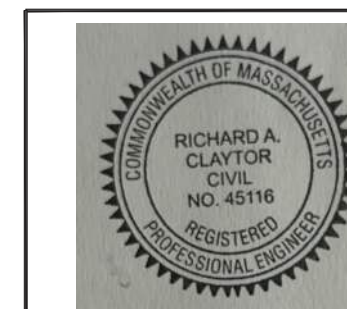
DESIGN DESIGNATION

DESIGN SPEED	N/A
ADT (2004)	N/A
ADT (DESIGN YEAR)	N/A
K	N/A
D	N/A
T (PEAK HOUR)	N/A
T (AVERAGE DAY)	N/A
DHV	N/A
DDHV	N/A
FUNCTIONAL CLASSIFICATION	SHARED USE PATH

NOTE:
HORIZONTAL DATUM IS MASS GRID.



LENGTH OF PROJECT = 3166.78 FEET = 0.599 MILES



Richard Clayton Digitally signed by Richard Clayton
Date: 2024.11.29 11:55:10 -0500

DATE	DESCRIPTION	REV #



Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com
90 Route 6A
Sandwich, MA 02563
508-833-6600 voice
508-833-3150 fax



APPROVED
Carrie Trullie Digitally signed by Carrie Trullie
Date: 2024.11.29 11:55:10 -0500
11/29/2024
CHIEF ENGINEER DATE

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	2	51
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LEGEND

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		TREE REMOVAL
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS (ON-THE-GROUND SURVEY DATA)
		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		GUARD RAIL - DOUBLE FACE - STEEL POSTS
		GUARD RAIL - DOUBLE FACE - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT BARRIER
		COIR LOG SEDIMENT BARRIER
		COMPOST BLANKET
		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
		CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE
		CROSSWALK
		SOLID WHITE LINE
		SOLID YELLOW LINE
		BROKEN WHITE LINE
		BROKEN YELLOW LINE
		DOTTED WHITE LINE
		DOTTED YELLOW LINE
		DOTTED WHITE LINE EXTENSION
		DOTTED YELLOW LINE EXTENSION
		DOUBLE WHITE LINE
		DOUBLE YELLOW LINE

ABBREVIATIONS

GENERAL	DESCRIPTION
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
BWV	BORDERING VEGETATED WETLAND
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CFT	COMPOST FILTER TUBE
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
DS	DOWNSTREAM
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
MAHW	MEAN ANNUAL HIGH WATER
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
M&O	MILL & OVERLAY
NIC	NOT IN CONTRACT
NO.	NUMBER
OCS	OUTLET CONTROL STRUCTURE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED

ABBREVIATIONS (cont.)

GENERAL	DESCRIPTION
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
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
US	UPSTREAM
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WF	WETLAND FLAG
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

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

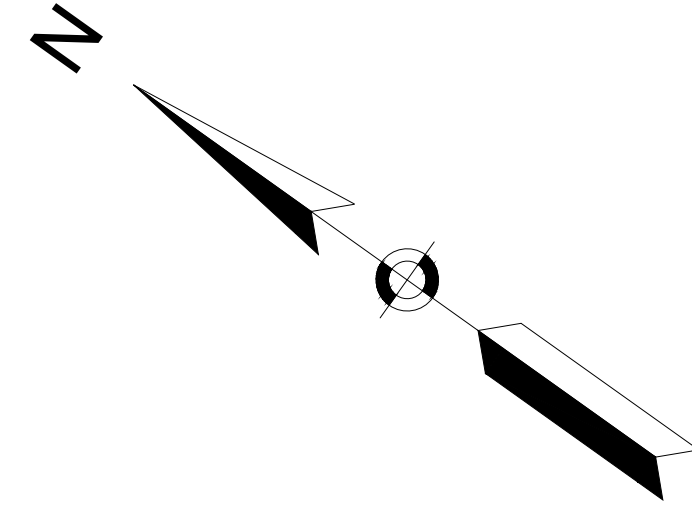
DRAINAGE DETAILS

NONE

NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL

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KEY PLAN



ROCKY HILL GREENWAY END
 STA 26+15.41
 N2937482.5506
 E343496.7329

NEW HAVEN AND NORTHAMPTON CANAL GREENWAY

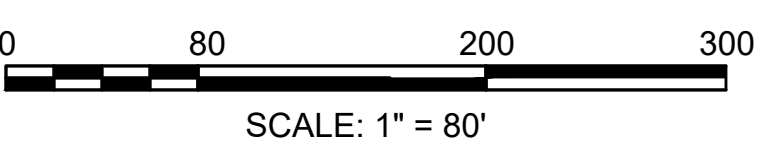
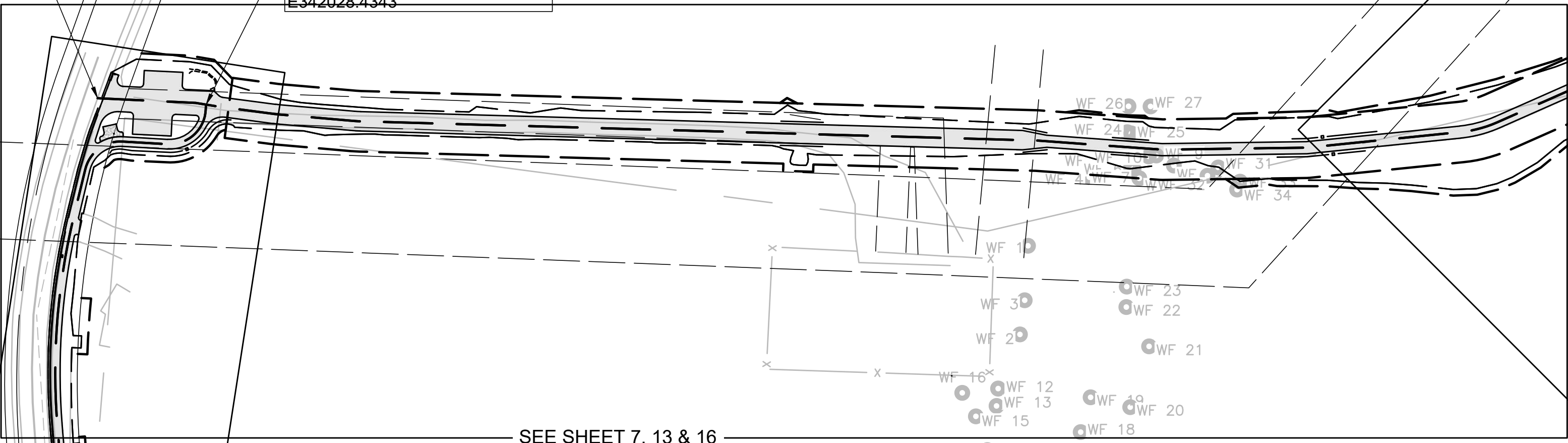
ROCKY HILL GREENWAY BEGIN
 STA 0+00
 N2938622.8262
 E341980.8583

ROCKY HILL RD SIDEWALK END
 STA 5+72.20
 N2938546.7589
 E342028.4343

CROSSWALK BEGIN
 STA 0+00
 N2938356.4980
 E341504.6116

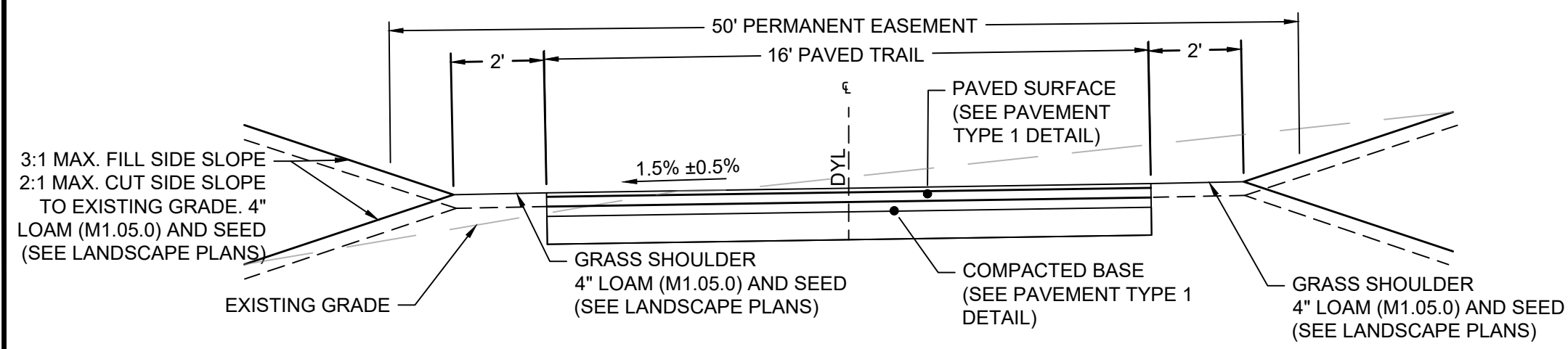
CROSSWALK END
 STA 1+26.38
 N2938368.6923
 E341597.1132

ROCKY HILL RD SIDEWALK BEGIN
 STA 0+00
 N2938344.1556
 E341568.5027

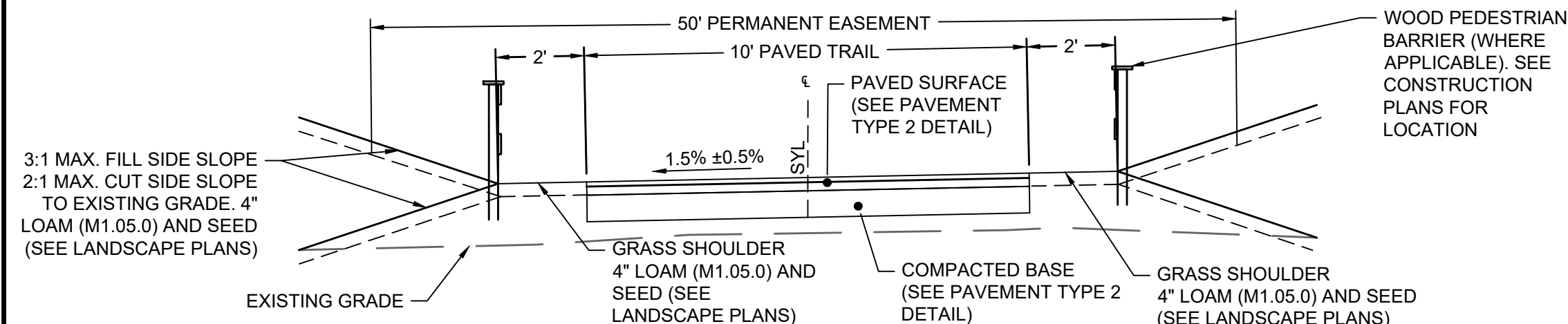


NOTES:
1. 0.5% TOLERANCE FOR CONSTRUCTION OF PATH CROSS SLOPES.

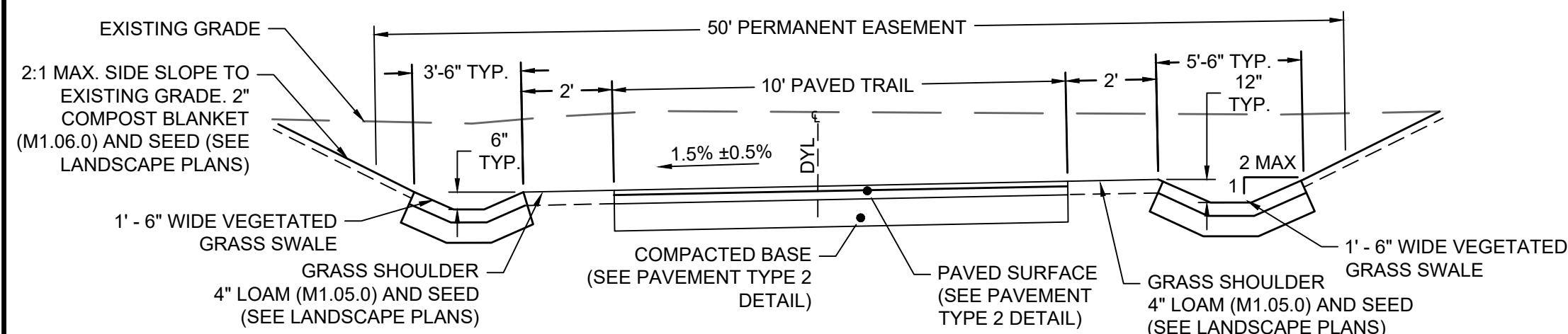
ROCKY HILL GREENWAY MULTI-USE TRAIL



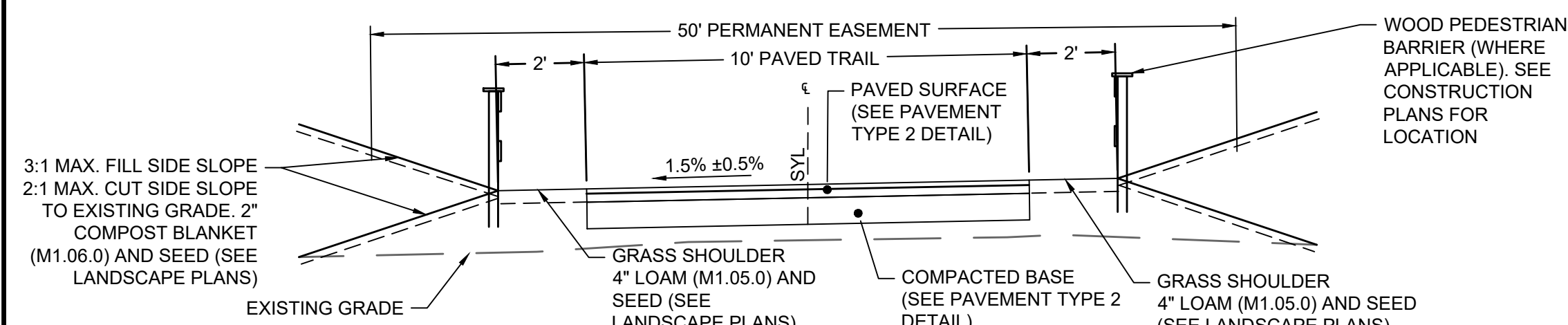
TYPICAL 16' ROCKY HILL GREENWAY MULTI-USE TRAIL / DRIVEWAY CROSS SECTION
STA 1+06.32 TO STA 7+65.30
NOT TO SCALE



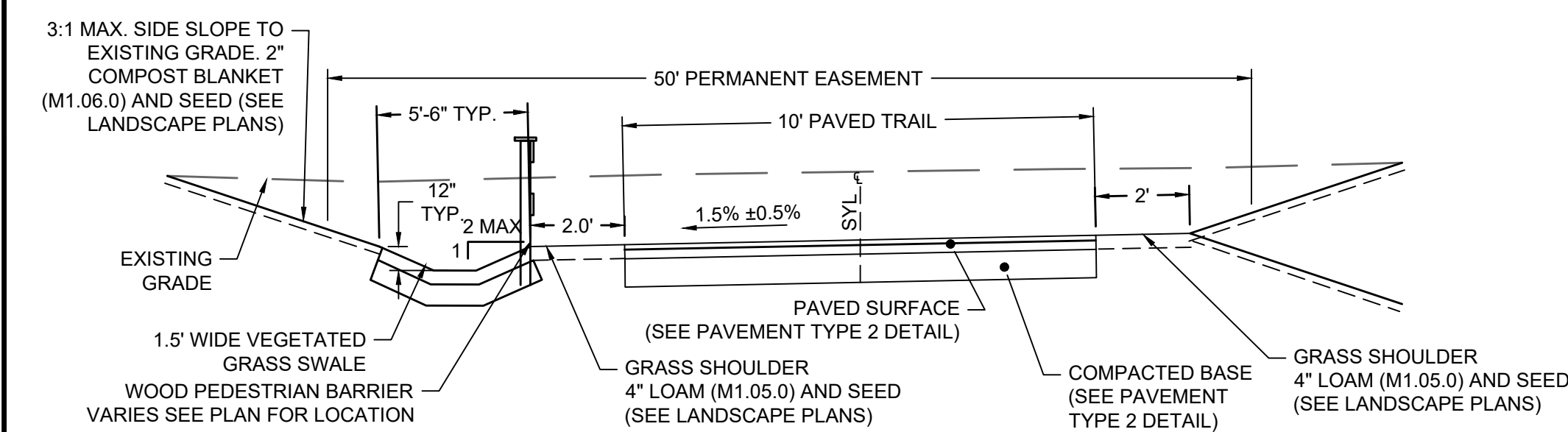
TYPICAL 10' ROCKY HILL GREENWAY MULTI-USE TRAIL CROSS SECTION
STA 7+65.30 TO STA 10+19.00
STA 13+55.00 TO STA 14+12.00
NOT TO SCALE



TYPICAL 10' ROCKY HILL GREENWAY MULTI-USE TRAIL W/ SWALE ON BOTH SIDES CROSS SECTION
STA 10+19.00 TO STA 13+55.00
NOT TO SCALE



TYPICAL 10' ROCKY HILL GREENWAY MULTI-USE TRAIL W/ WOOD BARRIER CROSS SECTION
STA 14+12.00 TO STA 22+72.55
STA 25+39.50 TO STA 26+00.00
NOT TO SCALE

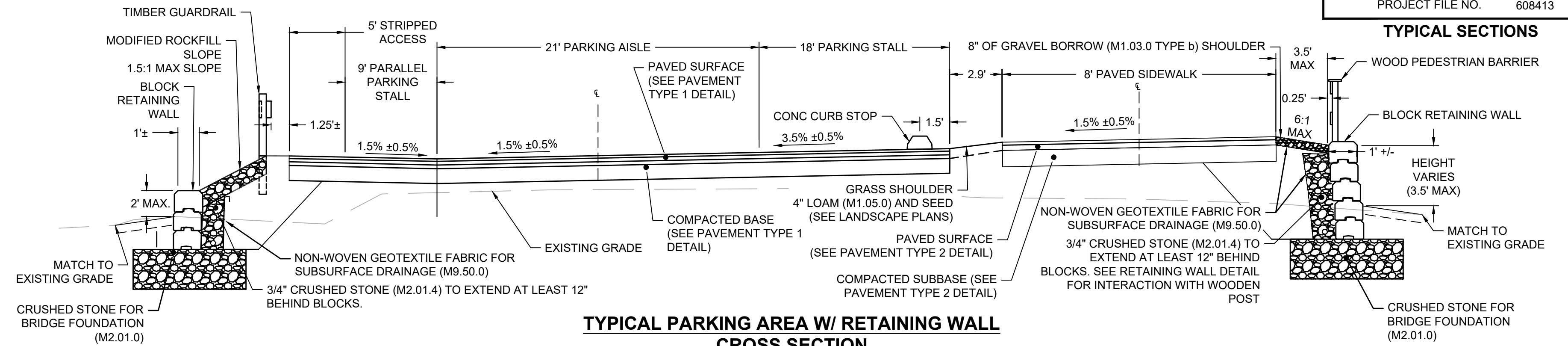


TYPICAL 10' ROCKY HILL GREENWAY MULTI-USE TRAIL W/ SWALE CROSS SECTION
STA 22+72.55 TO STA 25+39.50
NOT TO SCALE

NORTHAMPTON - ROCKY HILL GREENWAY MULTI-USE TRAIL

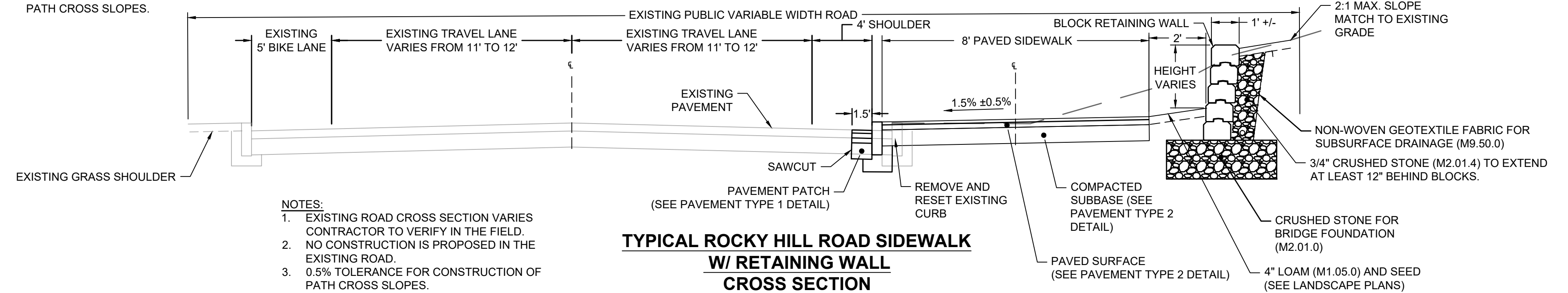
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TYPICAL SECTIONS



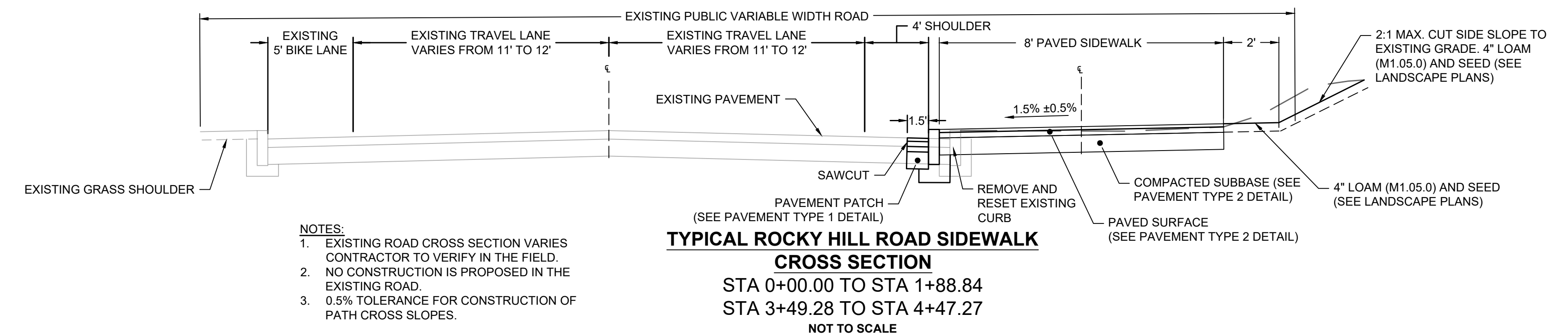
TYPICAL PARKING AREA W/ RETAINING WALL CROSS SECTION
STA 4+98.76 TO STA 5+24.30
NOT TO SCALE

NOTES:
1. 0.5% TOLERANCE FOR CONSTRUCTION OF PATH CROSS SLOPES.



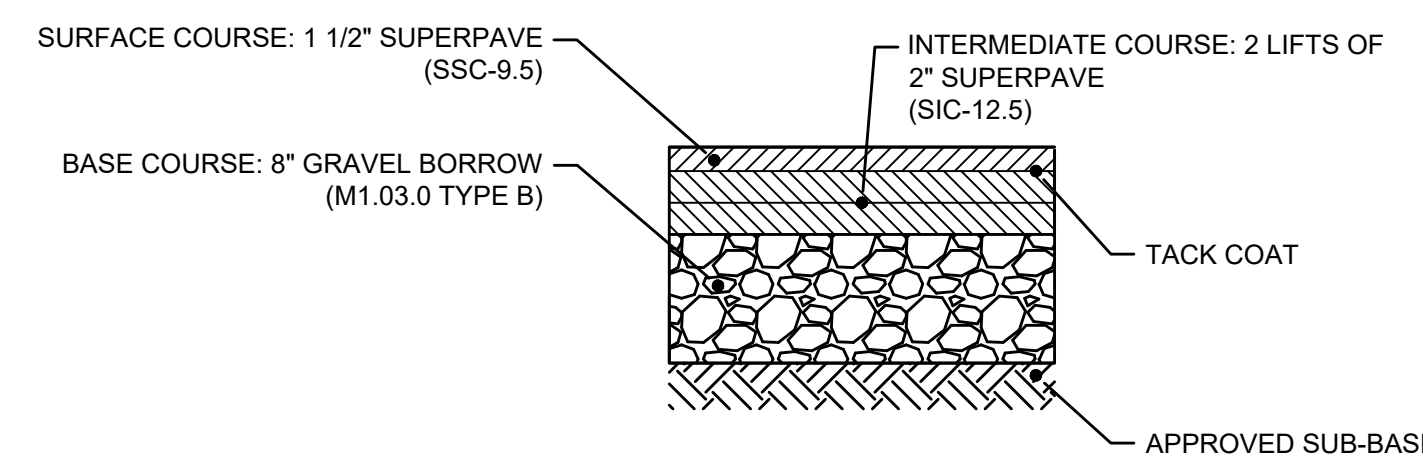
TYPICAL ROCKY HILL ROAD SIDEWALK W/ RETAINING WALL CROSS SECTION
STA 1+88.84 TO STA 3+49.28
NOT TO SCALE

NOTES:
1. EXISTING ROAD CROSS SECTION VARIES CONTRACTOR TO VERIFY IN THE FIELD.
2. NO CONSTRUCTION IS PROPOSED IN THE EXISTING ROAD.
3. 0.5% TOLERANCE FOR CONSTRUCTION OF PATH CROSS SLOPES.

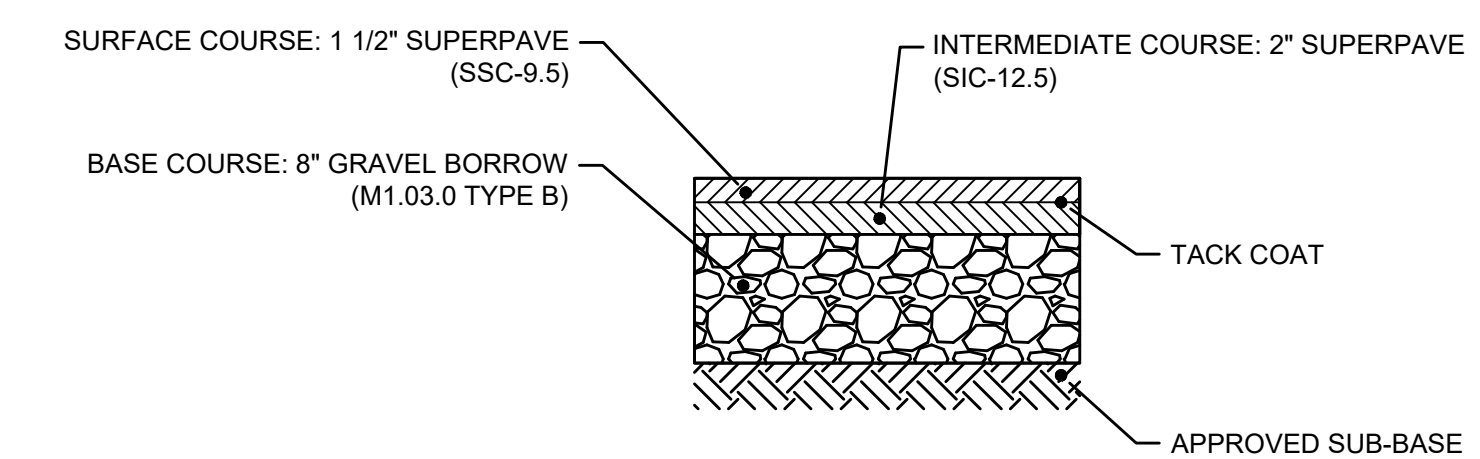


TYPICAL ROCKY HILL ROAD SIDEWALK CROSS SECTION
STA 0+00.00 TO STA 1+88.84
STA 3+49.28 TO STA 4+47.27
NOT TO SCALE

NOTES:
1. EXISTING ROAD CROSS SECTION VARIES CONTRACTOR TO VERIFY IN THE FIELD.
2. NO CONSTRUCTION IS PROPOSED IN THE EXISTING ROAD.
3. 0.5% TOLERANCE FOR CONSTRUCTION OF PATH CROSS SLOPES.



PAVEMENT TYPE 1 DETAIL
16' MULTI-USE TRAIL AND PARKING LOT
NOT TO SCALE



PAVEMENT TYPE 2 DETAIL
SIDEWALK AND 10' MULTI-USE TRAIL
NOT TO SCALE

PAVEMENT TYPE 1 NOTES

PROPOSED FULL DEPTH PAVEMENT
SURFACE COURSE: 1 1/2" SUPERPAVE - 9.5 (SSC-9.5) OVER
INTERMEDIATE COURSE: 2 LIFTS OF 2" SUPERPAVE - 12.5 (SIC-12.5) OVER
BASE: 8" GRAVEL BORROW (M1.03.0 TYPE B)

GENERAL PAVEMENT NOTES:

- SUB-GRADE (EXISTING MATERIAL) SHALL CONSIST OF GRANULAR MATERIAL - GRAVEL, CRUSHED STONE, RECLAIMED MATERIAL OR A COMBINATION OF THESE MATERIALS. EXCAVATE SANDY-LOAM AND/OR LOAMY-SAND TOPSOIL MATERIAL FROM ALL PAVED AREAS PRIOR TO SUB-BASE INSTALLATION.
- COMPACT SUB-GRADE FILL TO 95% COMPACTION.
- COMPACT BASE COURSE TO 95% COMPACTION.
- SEE SITE LAYOUT PLAN FOR PAVEMENT WIDTH AND LOCATION.
- SEE GRADING PLANS FOR PAVEMENT SLOPE AND CROSS SLOPE.
- SWEEP CLEAN THE INTERMEDIATE COURSE SURFACE BY A STREET SWEEPING MACHINE AND APPLY A TACK COAT PER SPECIFICATIONS, PRIOR TO INSTALLING THE SURFACE COURSE.

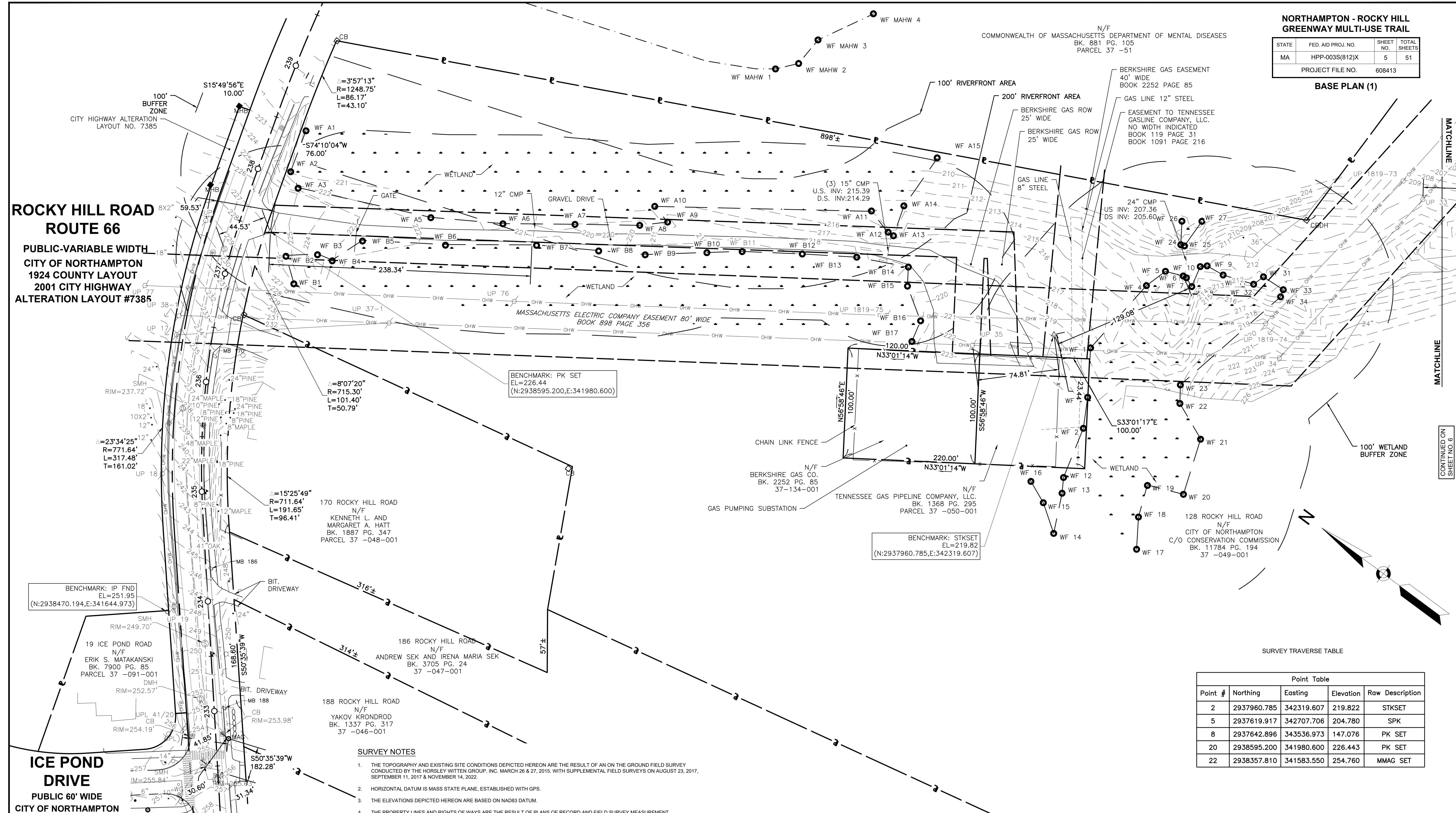
PAVEMENT TYPE 2 NOTES

PROPOSED FULL DEPTH PAVEMENT
SURFACE COURSE: 1 1/2" SUPERPAVE - 9.5 (SSC-9.5) OVER
INTERMEDIATE COURSE: 2" SUPERPAVE - 12.5 (SIC-12.5) OVER
BASE: 8" GRAVEL BORROW (M1.03.0 TYPE B)

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BASE PLAN (1)

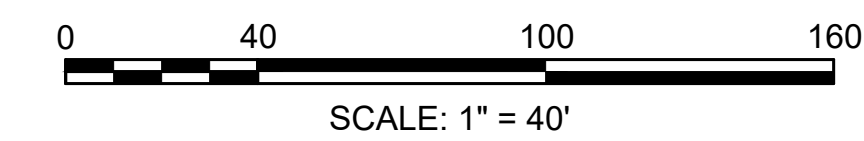


ROCKY HILL ROAD ROUTE 66
 PUBLIC-VARIABLE WIDTH
 CITY OF NORTHAMPTON
 1924 COUNTY LAYOUT
 2001 CITY HIGHWAY
 ALTERATION LAYOUT #7385

ICE POND DRIVE
 PUBLIC 60' WIDE
 CITY OF NORTHAMPTON
 PLAN BOOK 196 PAGE 66
 DECEMBER 16, 2002

SURVEY NOTES

1. THE TOPOGRAPHY AND EXISTING SITE CONDITIONS DEPICTED HEREON ARE THE RESULT OF AN ON THE GROUND FIELD SURVEY CONDUCTED BY THE HORSLEY WITTEN GROUP, INC. MARCH 26 & 27, 2015, WITH SUPPLEMENTAL FIELD SURVEYS ON AUGUST 23, 2017, SEPTEMBER 11, 2017 & NOVEMBER 14, 2022.
2. HORIZONTAL DATUM IS MASS STATE PLANE, ESTABLISHED WITH GPS.
3. THE ELEVATIONS DEPICTED HEREON ARE BASED ON NAD83 DATUM.
4. THE PROPERTY LINES AND RIGHTS OF WAYS ARE THE RESULT OF PLANS OF RECORD AND FIELD SURVEY MEASUREMENT.
5. PROPERTY LINES BETWEEN ABUTTING PROPERTY OWNERS ARE APPROXIMATE ONLY.
6. THE ACCURACY OF MEASURED PIPE INVERTS AND PIPE SIZES IS SUBJECT TO FIELD CONDITIONS, THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS AND OTHER CONDITIONS.
7. THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY IN THE CITY OF NORTHAMPTON, AND "DIGSAFE" (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
8. THE WETLAND DELINEATION SHOWN HEREON WAS CONDUCTED BY THE HORSLEY WITTEN GROUP, INC. ON MARCH 26, 2015.
9. REFERENCE PLANS: HAMPSHIRE COUNTY REGISTRY OF DEEDS
 1.) PLAN BOOK 119 PAGE 31
 2.) PLAN BOOK 17 PAGE 24
 3.) PLAN BOOK 53 PAGE 99
 4.) PLAN BOOK 196 PAGE 70
 5.) PLAN BOOK 23 PAGE 23A
 6.) PLAN BOOK 92 PAGE 60
 7.) PLAN BOOK 231 PAGE 62
 8.) PLAN BOOK 190 PAGE 69 & 70



BENCHMARK: PK SET
 EL=226.44
 (N:2938595.200,E:341980.600)

BENCHMARK: STKSET
 EL=219.82
 (N:2937960.785,E:342319.607)

SURVEY TRAVERSE TABLE

Point Table				
Point #	Northing	Eastng	Elevation	Raw Description
2	2937960.785	342319.607	219.822	STKSET
5	2937619.917	342707.706	204.780	SPK
8	2937642.896	343536.973	147.076	PK SET
20	2938595.200	341980.600	226.443	PK SET
22	2938357.810	341583.550	254.760	MMAG SET



PREPARED BY:
Horsley Witten Group, Inc.
 Sustainable Environmental Solutions
 www.horsleywitten.com
 90 Route 6A
 Sandwich, MA 02563
 508-833-6600 voice
 508-833-3150 fax

REVISIONS		
REV.	COMMENTS	DATE

SCALE: 40 FEET TO THE INCH

FILE NAME: 608143_SV.dwg
 FIELD BOOK NO.: XXXX
 DRAWN BY: GSG
 CHECKED BY: RAC
 FIELD CHIEF: DM
 PARS. NO.: 37-049-001

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
 PLAN OF TOPOGRAPHIC SURVEY OF
GREENWAY MULTI-USE TRAIL
 ROCKY HILL ROAD
 IN THE CITY OF
NORTHAMPTON - ROCKY HILL
 AS ORDERED BY
 THE MASSACHUSETTS DEPARTMENT OF
 TRANSPORTATION, HIGHWAY DIVISION

DATE: DECEMBER 2022 SHEET 5 OF 51

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

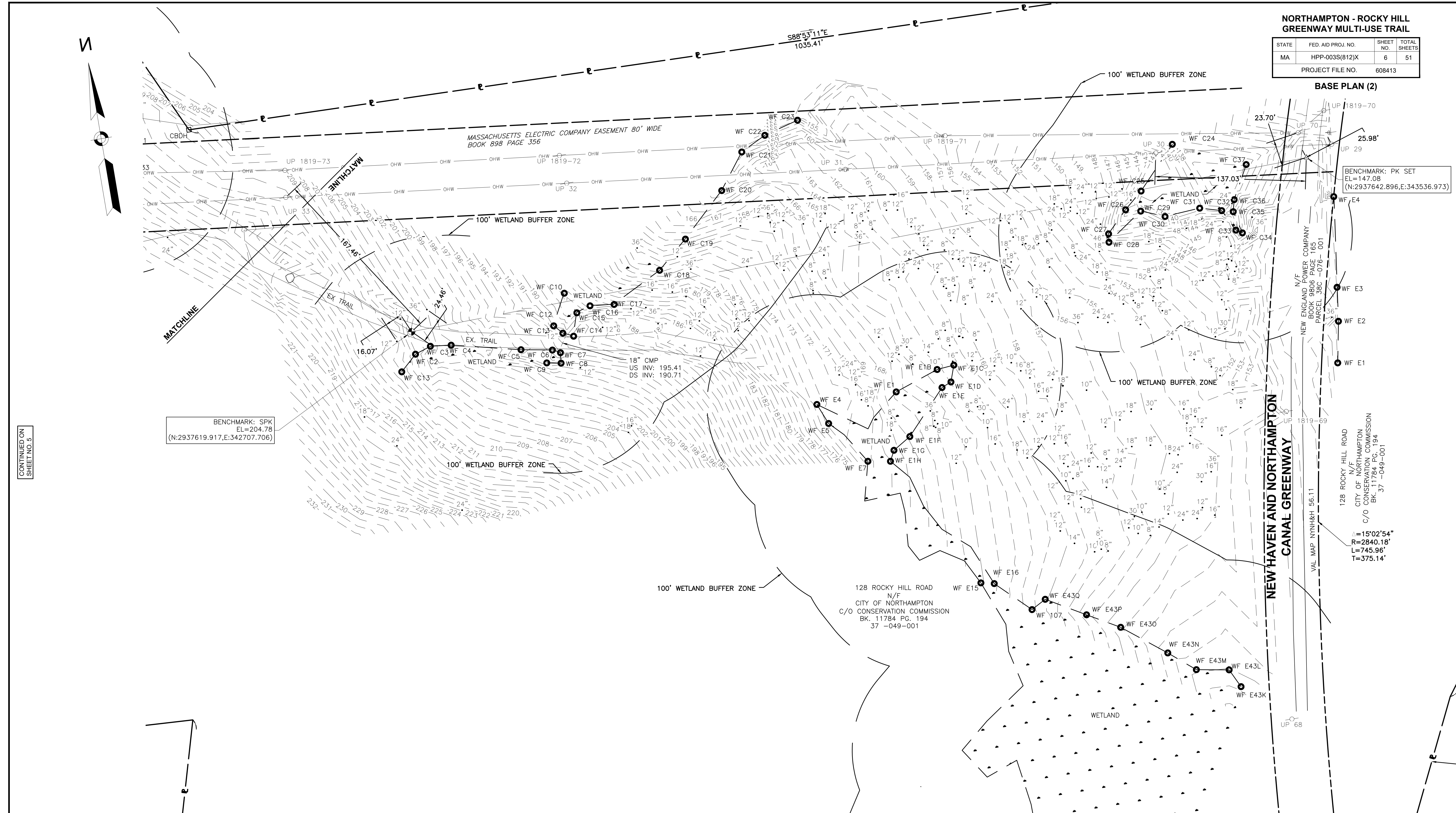
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	6	51
PROJECT FILE NO.		608413	

BASE PLAN (2)

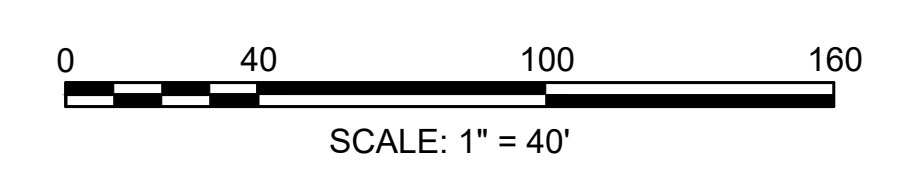
BENCHMARK: PK SET
EL=147.08
(N:2937642.896,E:343536.973)

BENCHMARK: SPK
EL=204.78
(N:2937619.917,E:342707.706)

Δ=15°02'54"
R=2840.18'
L=745.96'
T=375.14'



CONTINUED ON
SHEET NO. 3



PREPARED BY:
Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com
90 Route 6A
Sandwich, MA 02563
508-833-6600 voice
508-833-3150 fax

REVISIONS		
REV.	COMMENTS	DATE

SCALE: 40 FEET TO THE INCH	
FILE NAME:	608143_SV.dwg
FIELD BOOK NO.:	XXXX
DRAWN BY:	GSG
CHECKED BY:	RAC
FIELD CHIEF:	DM
PARS. NO.:	37-049-001

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
PLAN OF TOPOGRAPHIC SURVEY OF
GREENWAY MULTI-USE TRAIL
ROCKY HILL ROAD
IN THE CITY OF
NORTHAMPTON - ROCKY HILL
AS ORDERED BY
THE MASSACHUSETTS DEPARTMENT OF
TRANSPORTATION, HIGHWAY DIVISION

DATE: DECEMBER 2022 SHEET 6 OF 51

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

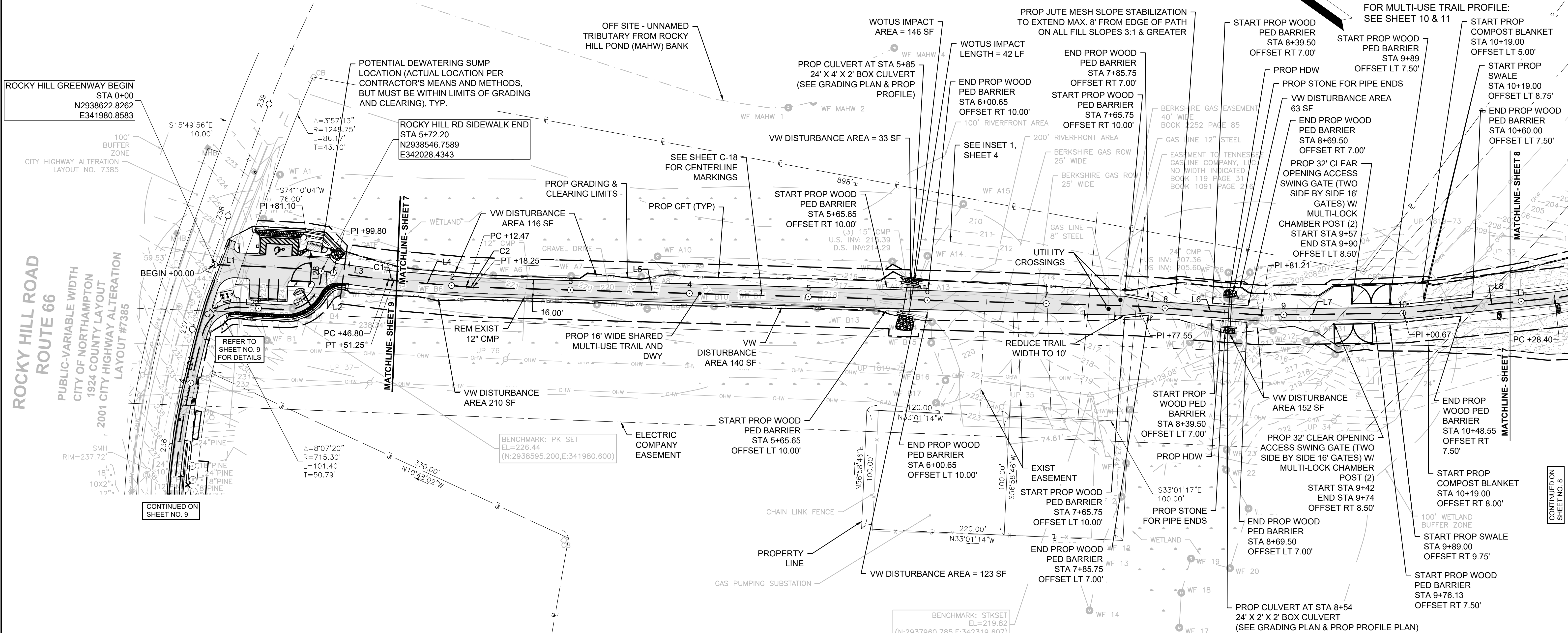
NORTHAMPTON - ROCKY HILL GREENWAY MULTI-USE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	7	51

PROJECT FILE NO. 608413

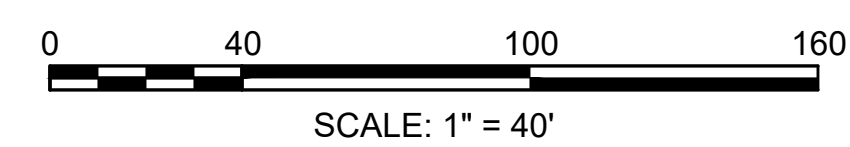
CONSTRUCTION PLANS (1)

FOR MULTI-USE TRAIL PROFILE: SEE SHEET 10 & 11



PROPOSED BIKE PATH CONSTRUCTION BASELINE DATA						
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION
L1	PT STA 0+00.00	2938622.826	341980.858		S32°49'28"E 81.10'	0+81.10
L2	PT STA 0+81.10	2938554.674	342024.821		S26°26'17"E 18.70'	0+99.80
L3	PT STA 0+99.80	2938537.930	342033.146		S28°05'21"E 47.00'	1+46.80
C1	PC STA 1+46.80	2938496.470	342055.274	R=100.00' Δ=2°33'03" L=4.45' T=2.23'		1+51.25
L4	PT STA 1+51.25	2938492.591	342057.457		S30°38'24"E 61.22'	2+12.47
C2	PC STA 2+12.47	2938439.915	342088.659	R=100.00' Δ=3°18'42" L=5.78' T=2.89'		2+18.25
L5	PT STA 2+18.25	2938435.030	342091.747		S33°57'06"E 559.30'	7+77.55
L6	PT STA 7+77.55	2937971.086	342404.110		S31°25'21"E 103.66'	8+81.21
L7	PT STA 8+81.21	2937882.629	342458.153		S36°21'24"E 119.46'	10+00.67

NOTE:
ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED PRIOR TO CLEARING IN ACCORDANCE WITH THE CONSERVATION COMMISSION'S ORDER OF CONDITIONS. SELECTIVE CLEARING MAY BE REQUIRED TO ESTABLISH THE ROCKY HILL GREENWAY BASELINE.



CONTINUED ON SHEET NO. 8

CONTINUED ON SHEET NO. 9

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

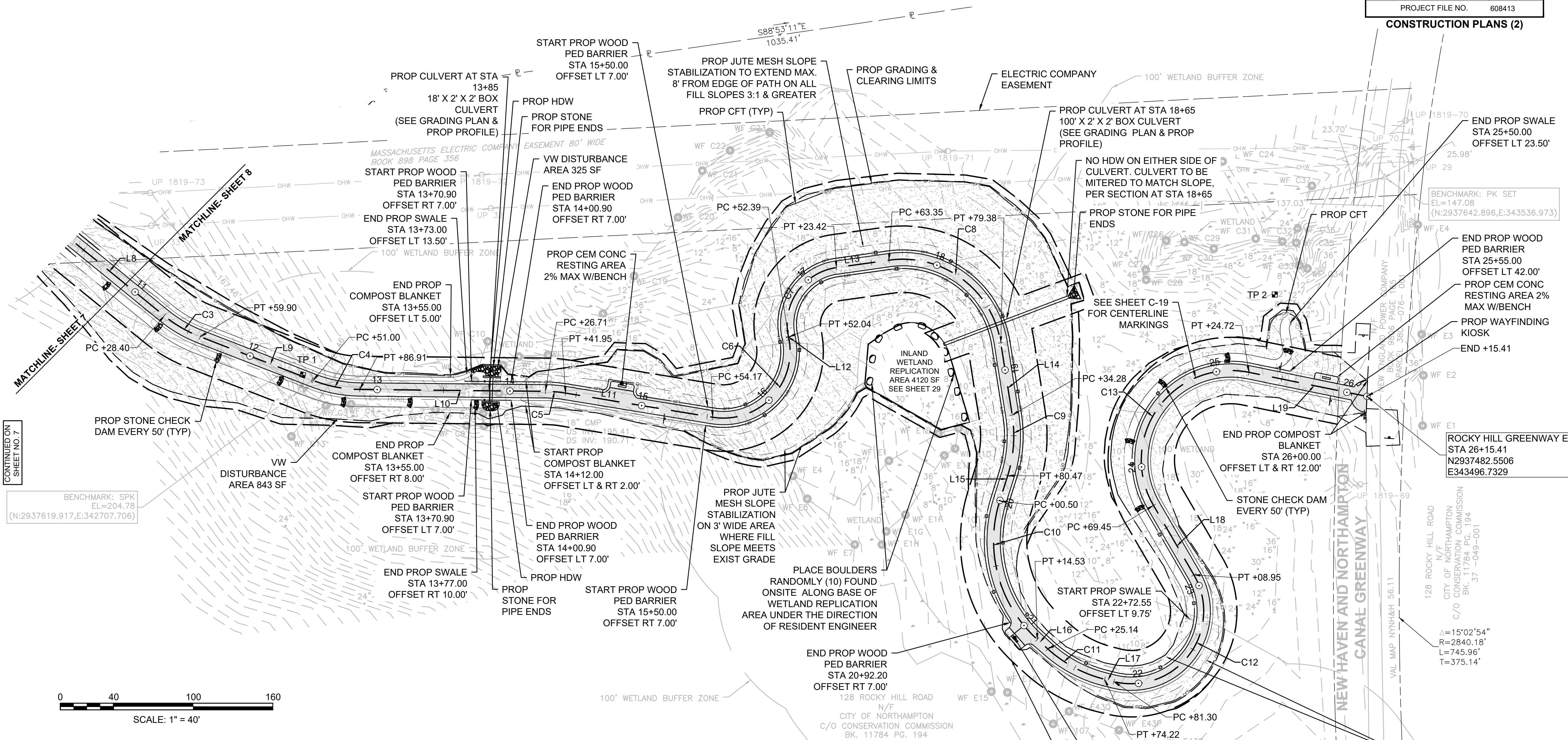
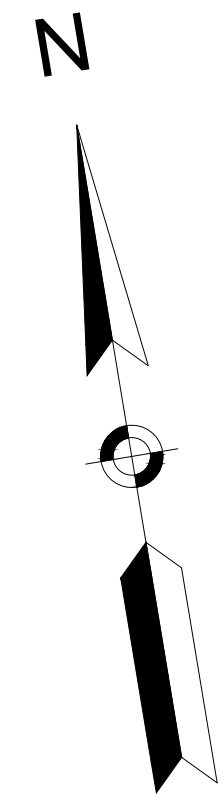
DRAINAGE DETAILS

SEE BELOW

NORTHAMPTON - ROCKY HILL GREENWAY MULTI-USE TRAIL

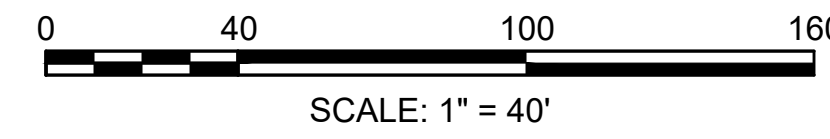
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	8	51
PROJECT FILE NO. 608413			

CONSTRUCTION PLANS (2)



CONTINUED ON SHEET NO. 7

BENCHMARK: SPK
 EL=204.78
 (N:2937619.917,E:342707.706)



PROPOSED BIKE PATH CONSTRUCTION BASELINE DATA						
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION
L8	PT STA 10+00.67	2937786.420	342528.972		S41°22'25"E 127.73'	11+28.40
C3	PC STA 11+28.40	2937690.570	342613.396	R=100.00' Δ=18°03'00" L=31.50' T=15.88'		11+59.90
L9	PT STA 11+59.90	2937670.571	342637.569		S59°25'25"E 91.10'	12+51.00
C4	PC STA 12+51.00	2937624.230	342716.001	R=100.00' Δ=20°34'26" L=35.91' T=18.15'		12+86.91
L10	PT STA 12+86.91	2937611.845	342749.501		S79°59'51"E 139.79'	14+26.71
C5	PC STA 14+26.71	2937587.564	342887.169	R=100.00' Δ=8°44'09" L=15.25' T=7.64'		14+41.95
L11	PT STA 14+41.95	2937583.784	342901.924		S71°15'42"E 112.22'	15+54.17
C6	PC STA 15+54.17	2937547.735	343008.192	R=50.21' Δ=111°41'21" L=97.88' T=74.01'		16+52.04
L12	PT STA 16+52.04	2937597.869	343074.465		N2°57'04"W 0.35'	16+52.39

PROPOSED BIKE PATH CONSTRUCTION BASELINE DATA						
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION
C7	PC STA 16+52.39	2937598.215	343074.447	R=43.14' Δ=94°20'23" L=71.03' T=46.53'		17+23.42
L13	PT STA 17+23.42	2937643.559	343118.572		S88°36'41"E 39.93'	17+63.35
C8	PC STA 17+63.35	2937642.591	343158.489	R=74.67' Δ=89°01'49" L=116.03' T=73.42'		18+79.38
L14	PT STA 18+79.38	2937567.393	343231.351		S0°25'08"W 54.90'	19+34.28
C9	PC STA 19+34.28	2937512.492	343230.950	R=100.00' Δ=26°27'49" L=46.19' T=23.51'		19+80.47
L15	PT STA 19+80.47	2937468.006	343220.146		S26°52'57"W 20.03'	20+00.50
C10	PC STA 20+00.50	2937450.144	343211.091	R=100.00' Δ=65°20'04" L=114.03' T=64.12'		21+14.53
L16	PT STA 21+14.53	2937342.742	343221.971		S38°27'06"E 10.61'	21+25.14
C11	PC STA 21+25.14	2937334.432	343228.569	R=100.00' Δ=28°07'18" L=49.08' T=25.05'		21+74.22

PROPOSED BIKE PATH CONSTRUCTION BASELINE DATA						
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION
L17	PT STA 21+74.22	2937304.861	343267.125		S66°34'25"E 7.08'	21+81.30
C12	PC STA 21+81.30	2937302.045	343273.625	R=54.49' Δ=134°12'48" L=127.65' T=129.04'		23+08.95
L18	PT STA 23+08.95	2937371.384	343346.235		N20°47'13"W 60.50'	23+69.45
C13	PC STA 23+69.45	2937427.949	343324.762	R=67.53' Δ=131°44'20" L=155.27' T=150.75'		25+24.72
L19	PT STA 25+24.72	2937514.979	343412.043		S69°02'53"E 90.69'	26+15.41

NOTE:
 ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED PRIOR TO CLEARING IN ACCORDANCE WITH THE CONSERVATION COMMISSION'S ORDER OF CONDITIONS. SELECTIVE CLEARING MAY BE REQUIRED TO ESTABLISH THE ROCKY HILL GREENWAY BASELINE.

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

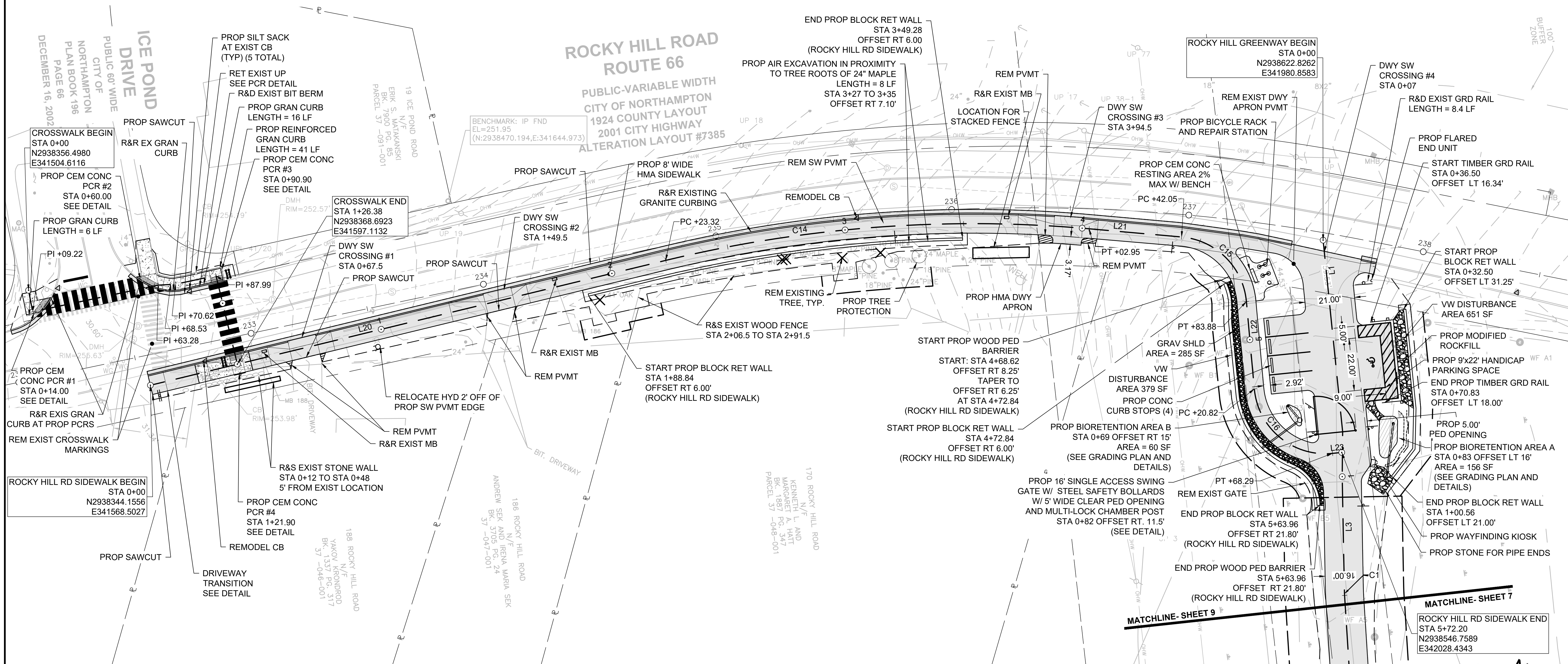
SEE BELOW

NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL

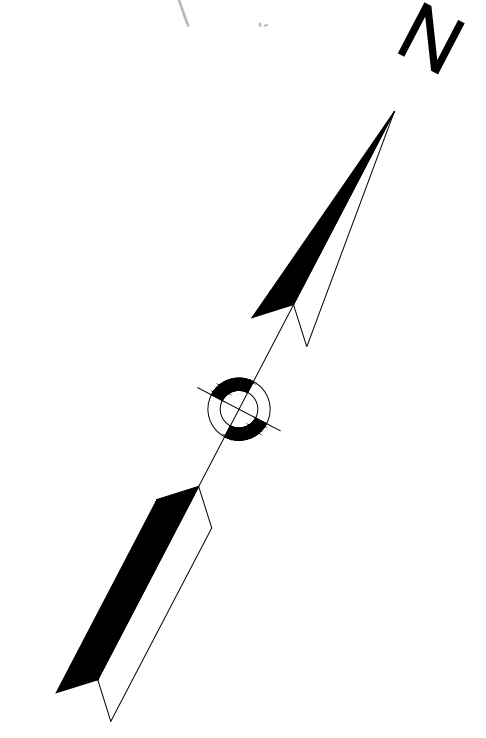
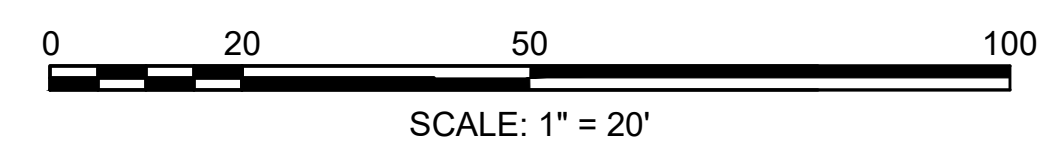
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	9	51
PROJECT FILE NO. 608413			

CONSTRUCTION PLANS (3)

FOR SIDEWALK PROFILE:
SEE SHEET 12



ROCKY HILL RD 8' SIDEWALK CONSTRUCTION BASELINE DATA						
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION
L20	PT STA 0+00.00	2938344.156	341568.503		N49°23'00"E 223.32'	2+23.32
C14	PC STA 2+23.32	2938489.535	341738.019	R = 550.44' Δ = 18°41'51" L = 179.63' T = 90.62'		4+02.95
L21	PT STA 4+02.95	2938582.356	341890.875		N68°04'38"E 39.11'	4+42.05
C15	PC STA 4+42.05	2938596.958	341927.156	R = 30.00' Δ = 79°52'40" L = 41.82' T = 25.12'		4+83.88
L22	PT STA 4+83.88	2938585.131	341963.814		S32°10'48"E 36.94'	5+20.82
C16	PC STA 5+20.82	2938553.865	341983.488	R = 30.00' Δ = 90°39'50" L = 47.47' T = 30.35'		5+68.29
L23	PT STA 5+68.29	2938544.638	342025.150		N57°09'22"E 3.91'	5+72.20

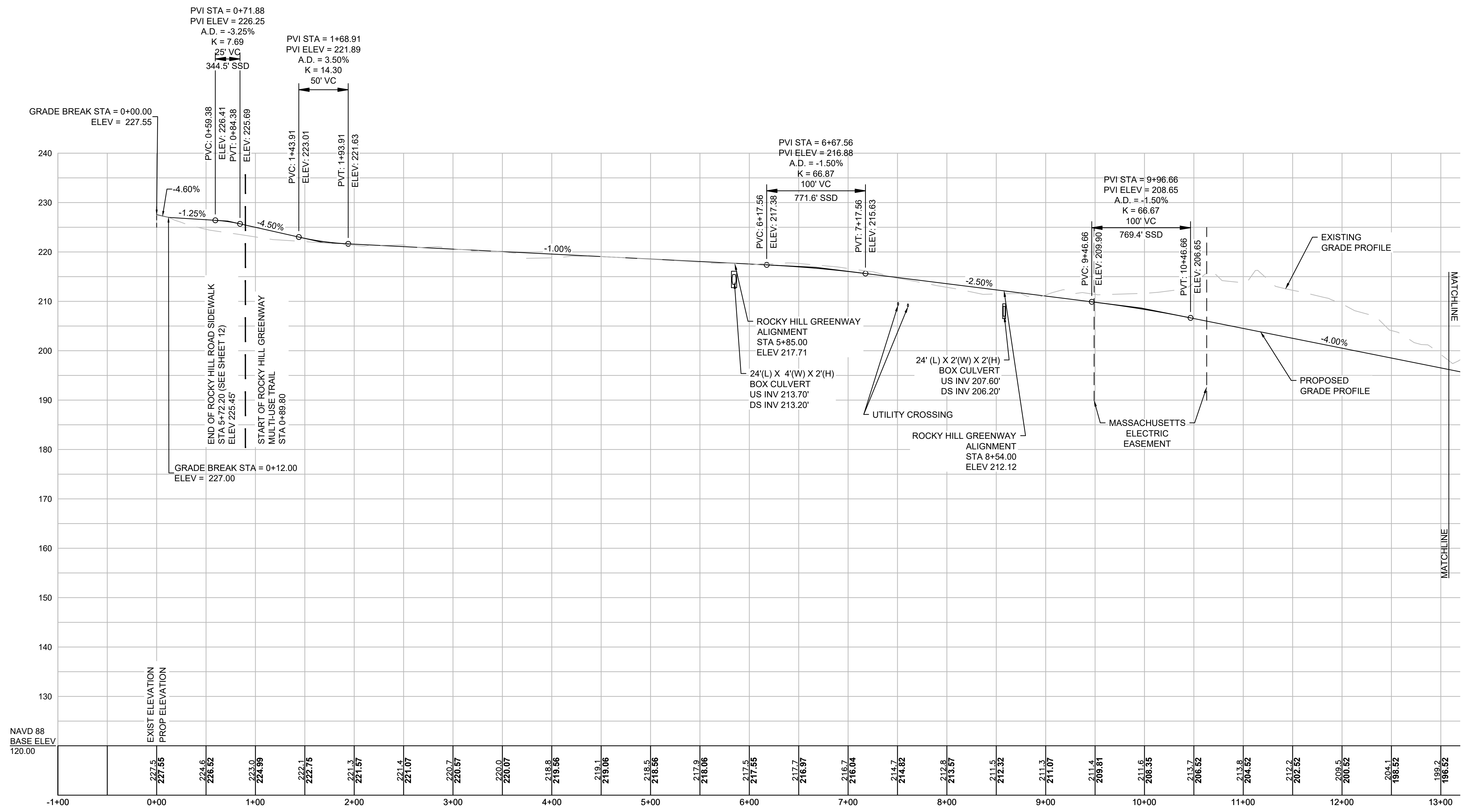


NOTE:
ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED PRIOR TO CLEARING IN ACCORDANCE WITH THE CONSERVATION COMMISSION'S ORDER OF CONDITIONS. SELECTIVE CLEARING MAY BE REQUIRED TO ESTABLISH THE ROCKY HILL GREENWAY BASELINE.

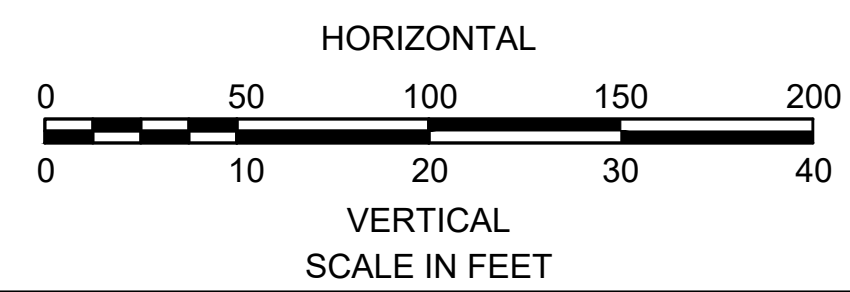
**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	10	51
PROJECT FILE NO.		608413	

ROCKY HILL GREENWAY PROFILE PLAN (1)



MULTI-USE TRAIL PROFILE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



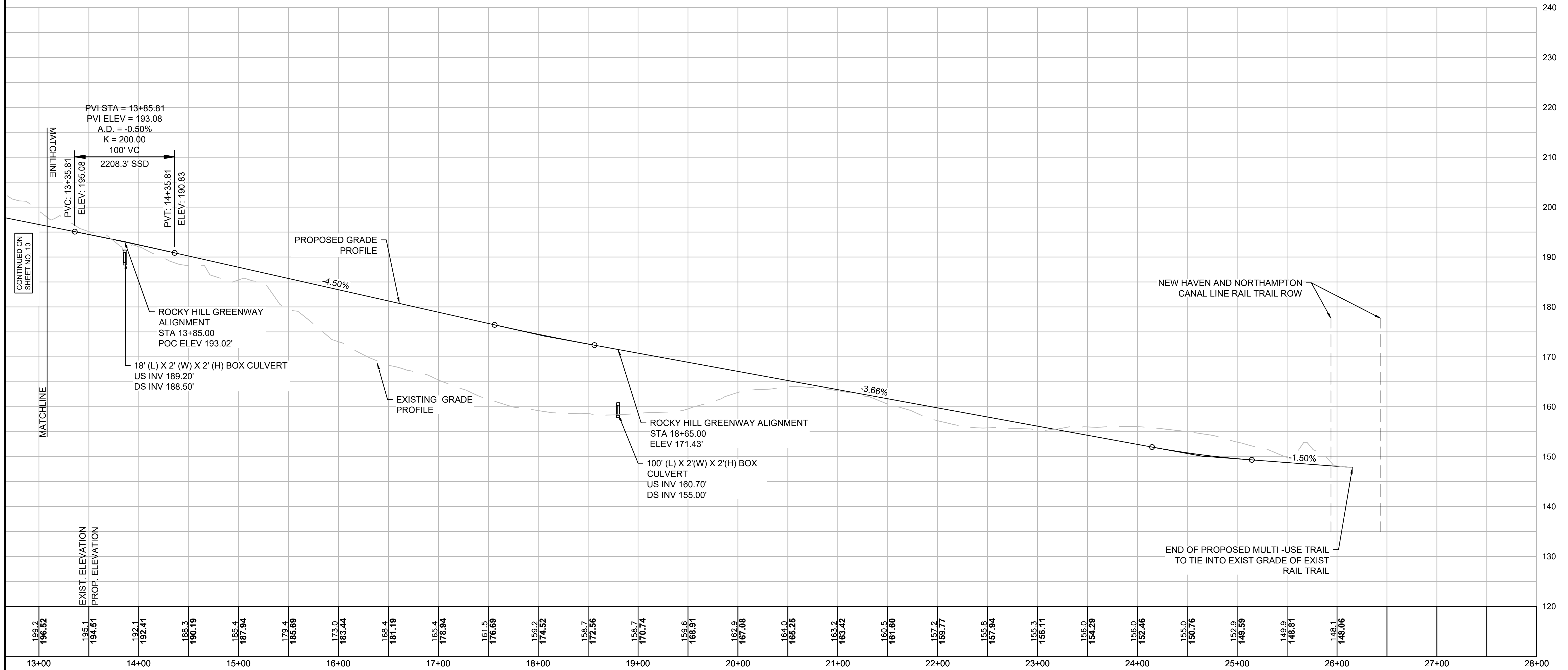
**FOR CONSTRUCTION AND GRADING PLANS:
SEE SHEET NOS. 7 & 13**

CONTINUED ON
SHEET NO. 11

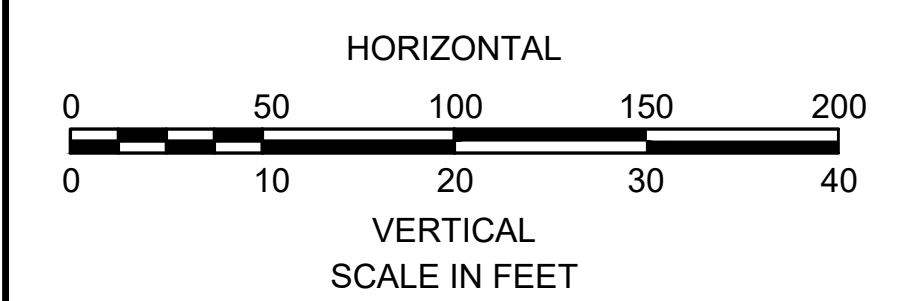
**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	11	51
PROJECT FILE NO.		608413	

ROCKY HILL GREENWAY PROFILE PLAN (2)



MULTI-USE TRAIL PROFILE
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 10'

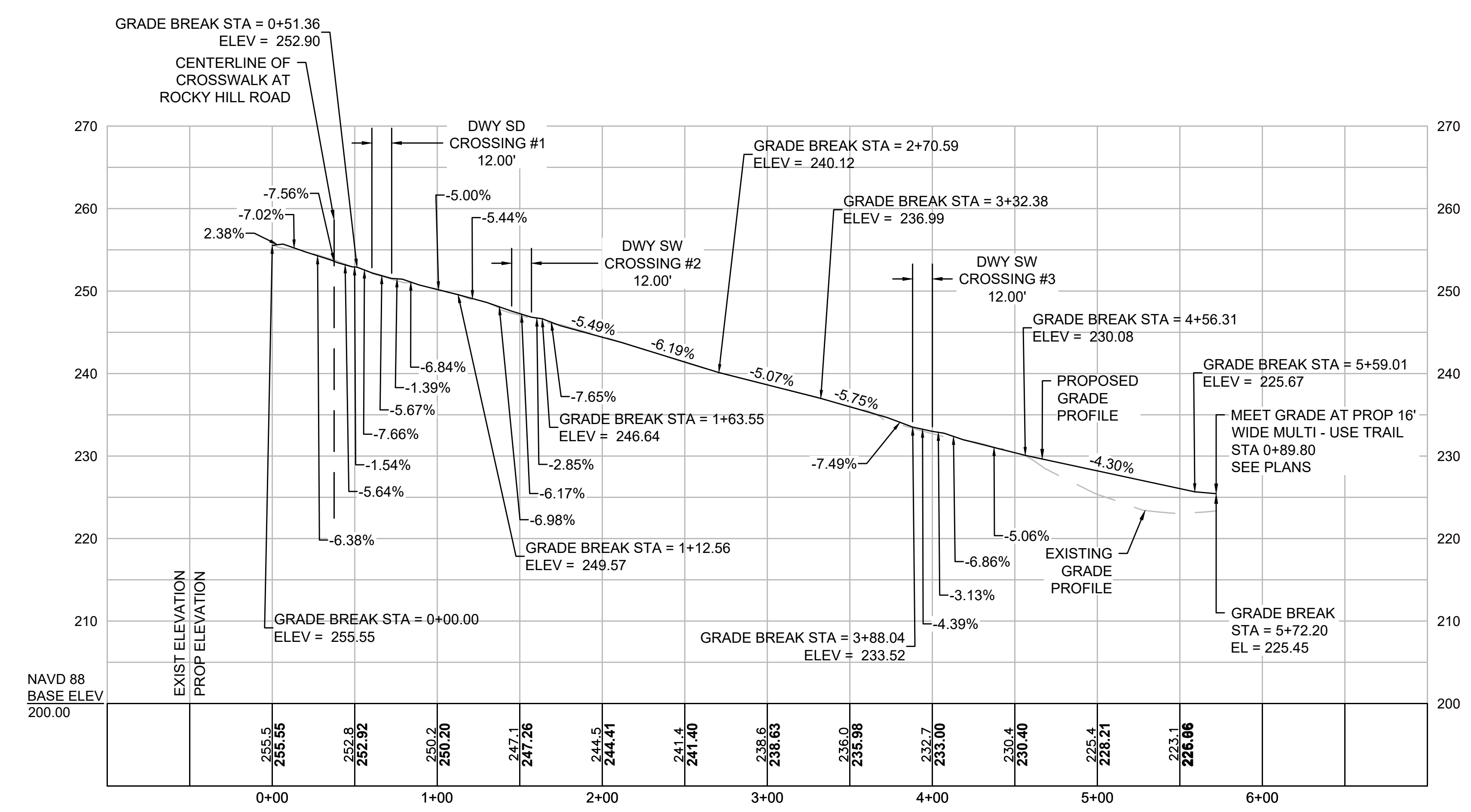


**FOR CONSTRUCTION AND GRADING PLANS:
 SEE SHEET NOS. 8 & 14**

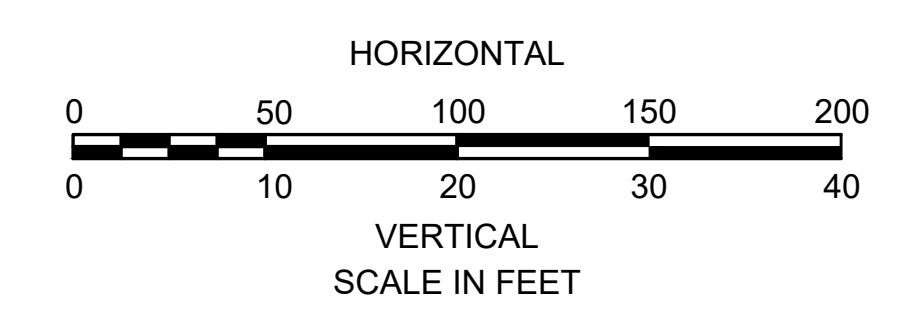
NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	12	51
PROJECT FILE NO.		608413	

ROCKY HILL RD SIDEWALK PROFILE



ROCKY HILL ROAD SIDEWALK PROFILE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



FOR CONSTRUCTION AN GRADING PLANS:
SEE SHEET NOS. 9 & 15

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

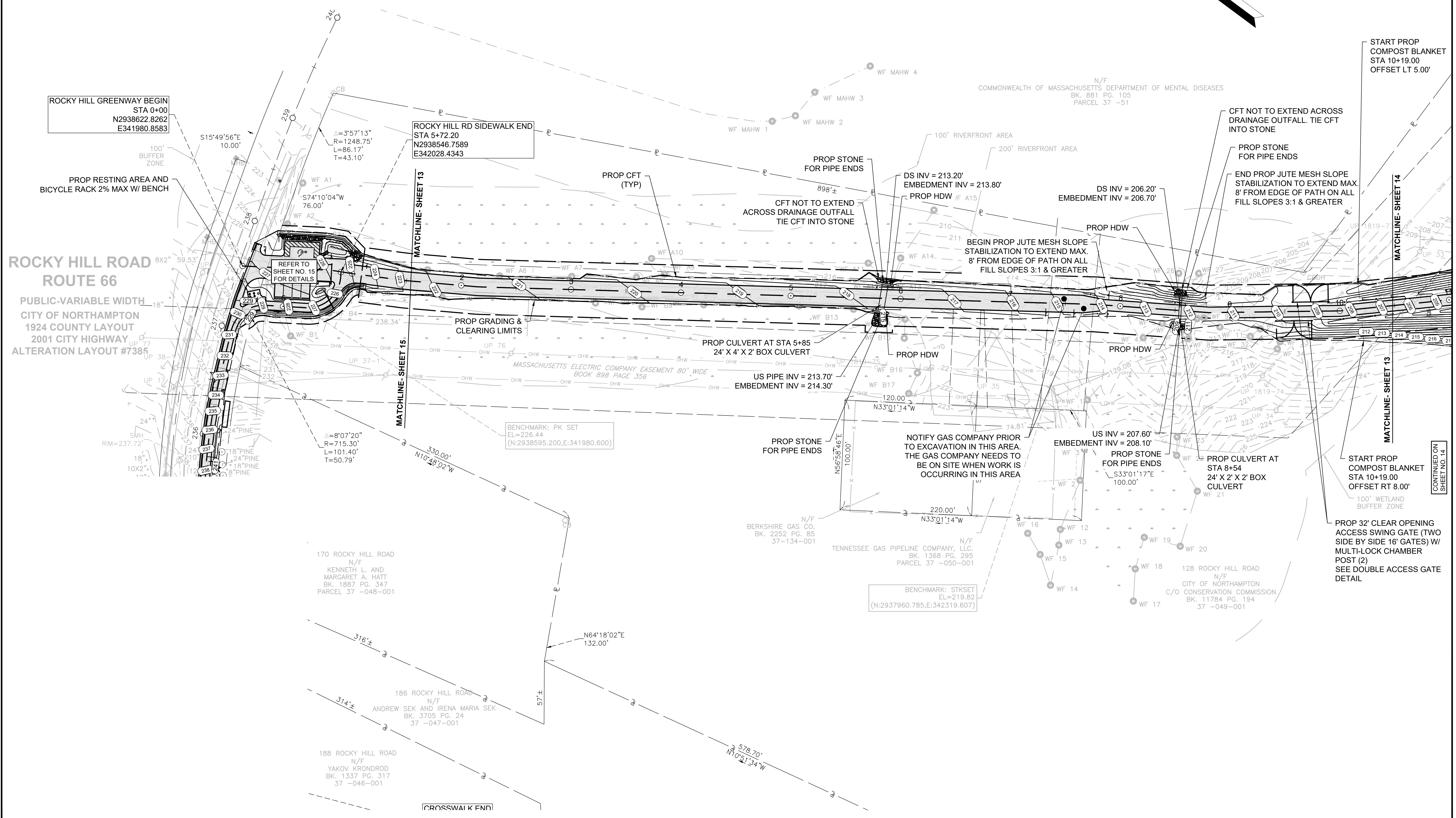
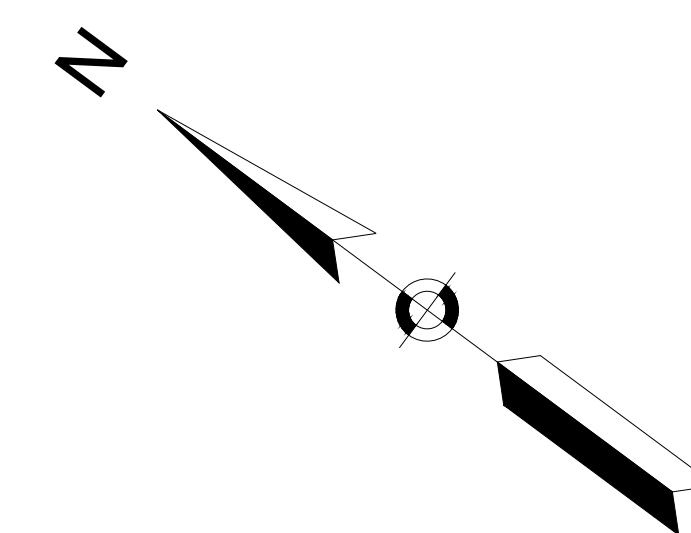
DRAINAGE DETAILS

SEE BELOW

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	13	51
PROJECT FILE NO. 608413			

GRADING PLAN (1)



**ROCKY HILL ROAD
ROUTE 66**
PUBLIC-VARIABLE WIDTH
CITY OF NORTHAMPTON
1924 COUNTY LAYOUT
2001 CITY HIGHWAY
ALTERATION LAYOUT #7385

ROCKY HILL RD SIDEWALK END
STA 5+72.20
N2938546.7589
E342028.4343

ROCKY HILL GREENWAY BEGIN
STA 0+00
N2938622.8262
E341980.8583

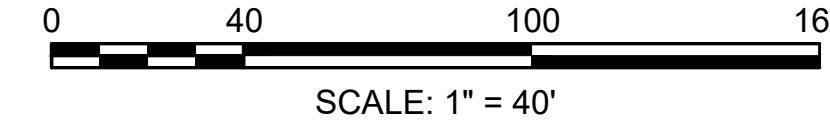
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EL=226.44
(N:2938595.200,E:341980.600)

BENCHMARK: STKSET
EL=219.82
(N:2937960.785,E:342319.607)

170 ROCKY HILL ROAD
N/F
KENNETH L. AND
MARGARET A. HATT
BK. 1887 PG. 347
PARCEL 37 -048-001

186 ROCKY HILL ROAD
N/F
ANDREW SEK AND IRENA MARIA SEK
BK. 3705 PG. 24
37 -047-001

188 ROCKY HILL ROAD
N/F
YAKOV KRONDROD
BK. 1337 PG. 317
37 -046-001



608413_HD(GRADING).DWG Plotted on: 25-Nov-2024 12:00 PM

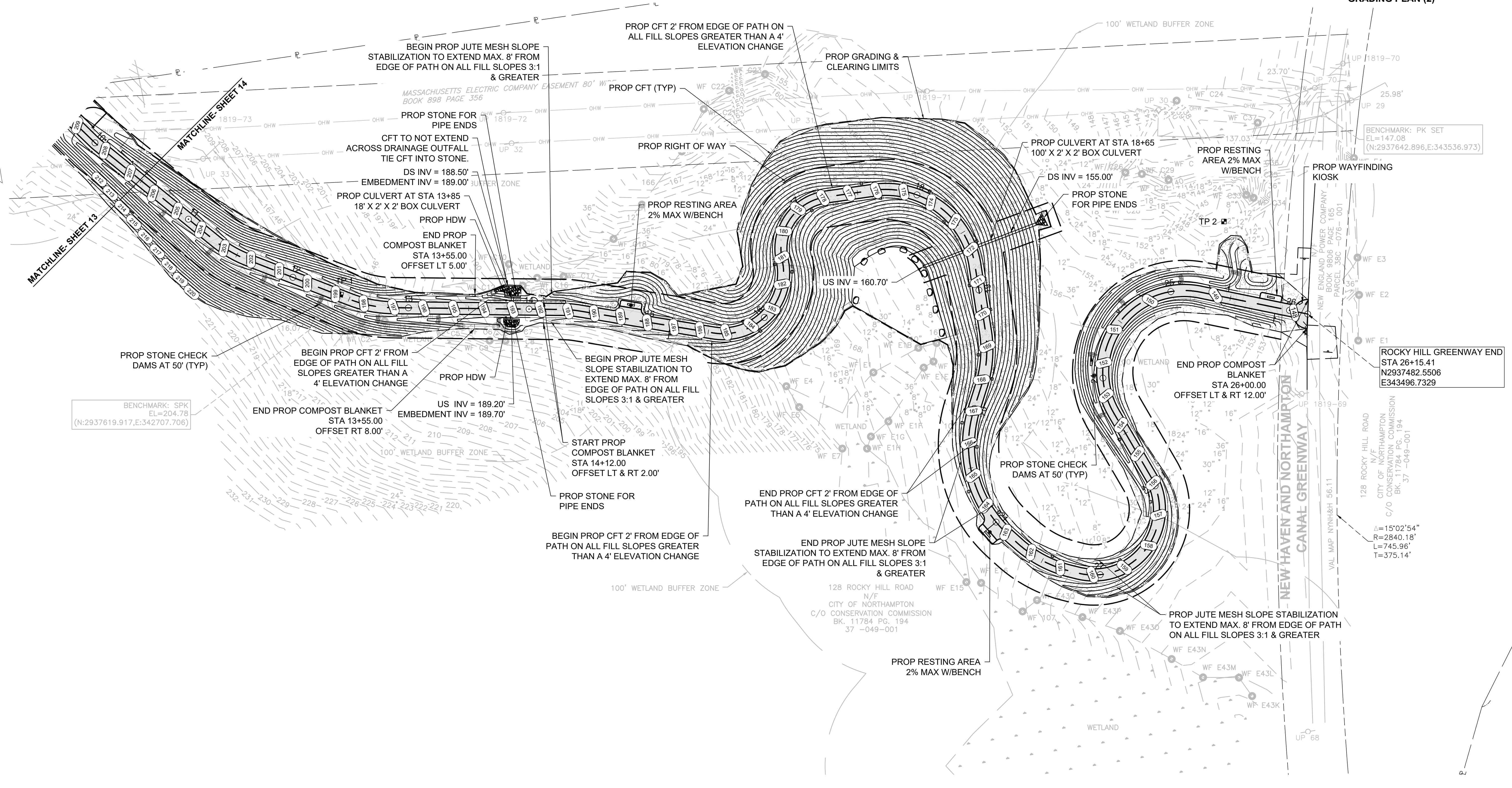
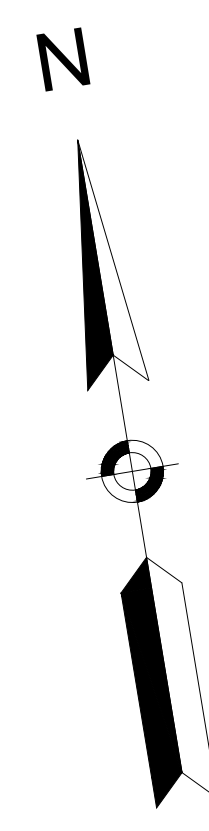
CONTINUED ON
SHEET NO. 14

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

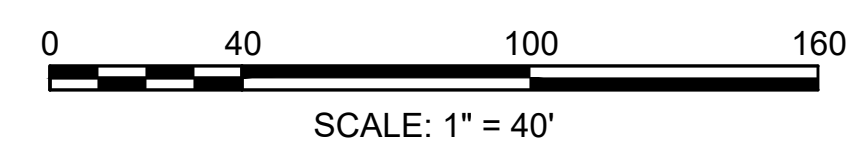
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	14	51
PROJECT FILE NO.		608413	

GRADING PLAN (2)

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



CONTINUED ON SHEET NO. 13



HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	15	51

PROJECT FILE NO. 608413

GRADING PLAN (3)

ROCKY HILL GREENWAY BEGIN
STA 0+00
N2938622.8262
E341980.8583

**ROCKY HILL ROAD
ROUTE 66**

PUBLIC-VARIABLE WIDTH
CITY OF NORTHAMPTON
1924 COUNTY LAYOUT
2001 CITY HIGHWAY
ALTERATION LAYOUT #7385

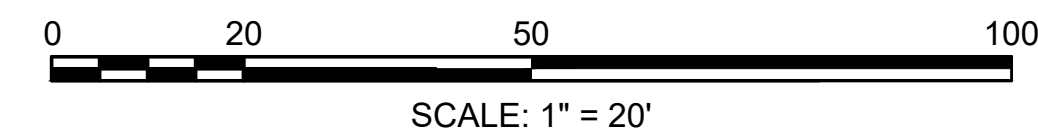
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CROSSWALK BEGIN
STA 0+00
N2938356.4980
E341504.6116

CROSSWALK END
STA 1+26.38
N2938368.6923
E341597.1132

ROCKY HILL RD SIDEWALK BEGIN
STA 0+00
N2938344.1556
E341568.5027

ROCKY HILL RD SIDEWALK END
STA 5+72.20
N2938546.7589
E342028.4343



608143_H(IGRADING).DWG
Plotted on: 25-Nov-2024 12:00 PM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

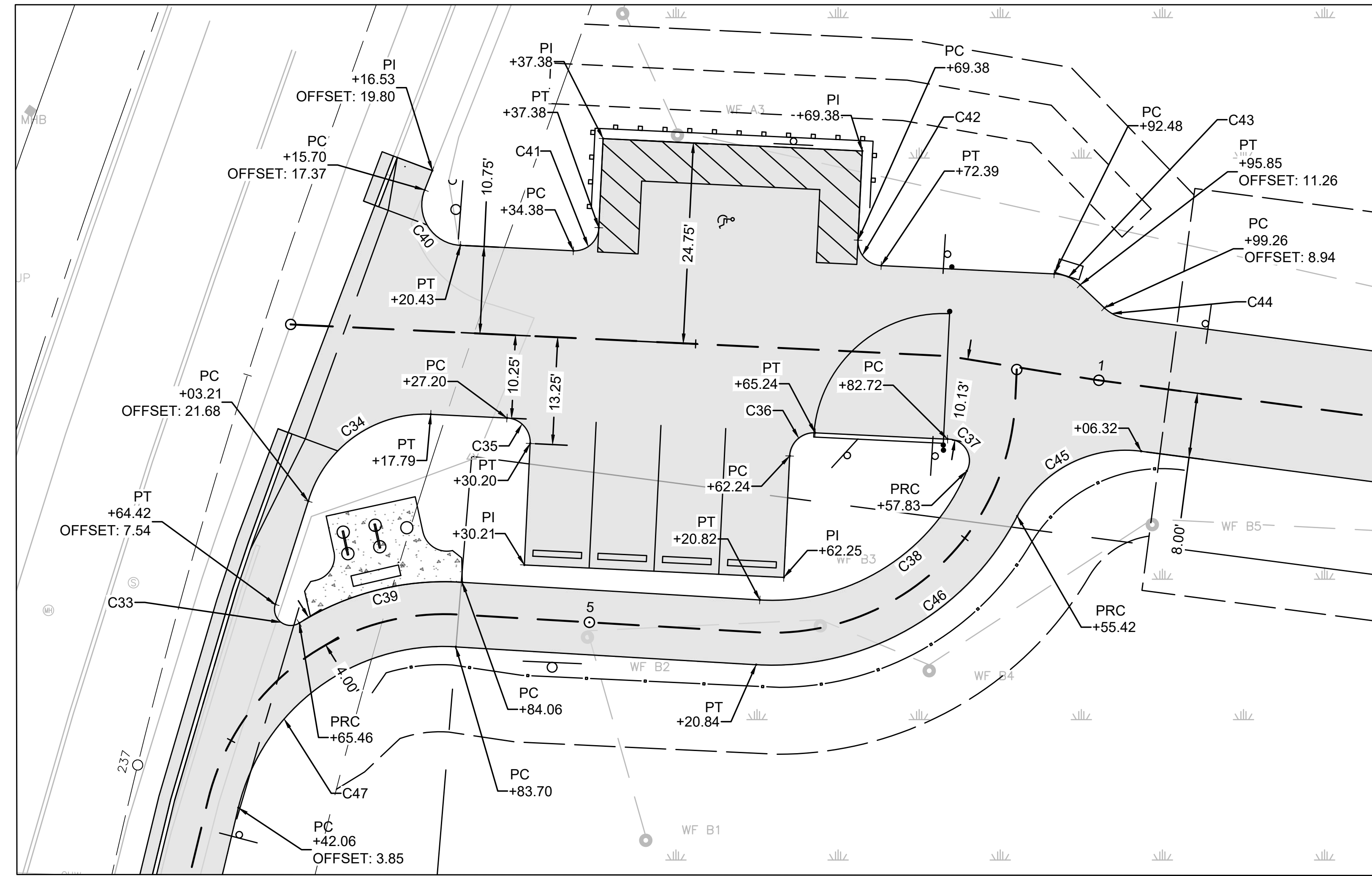
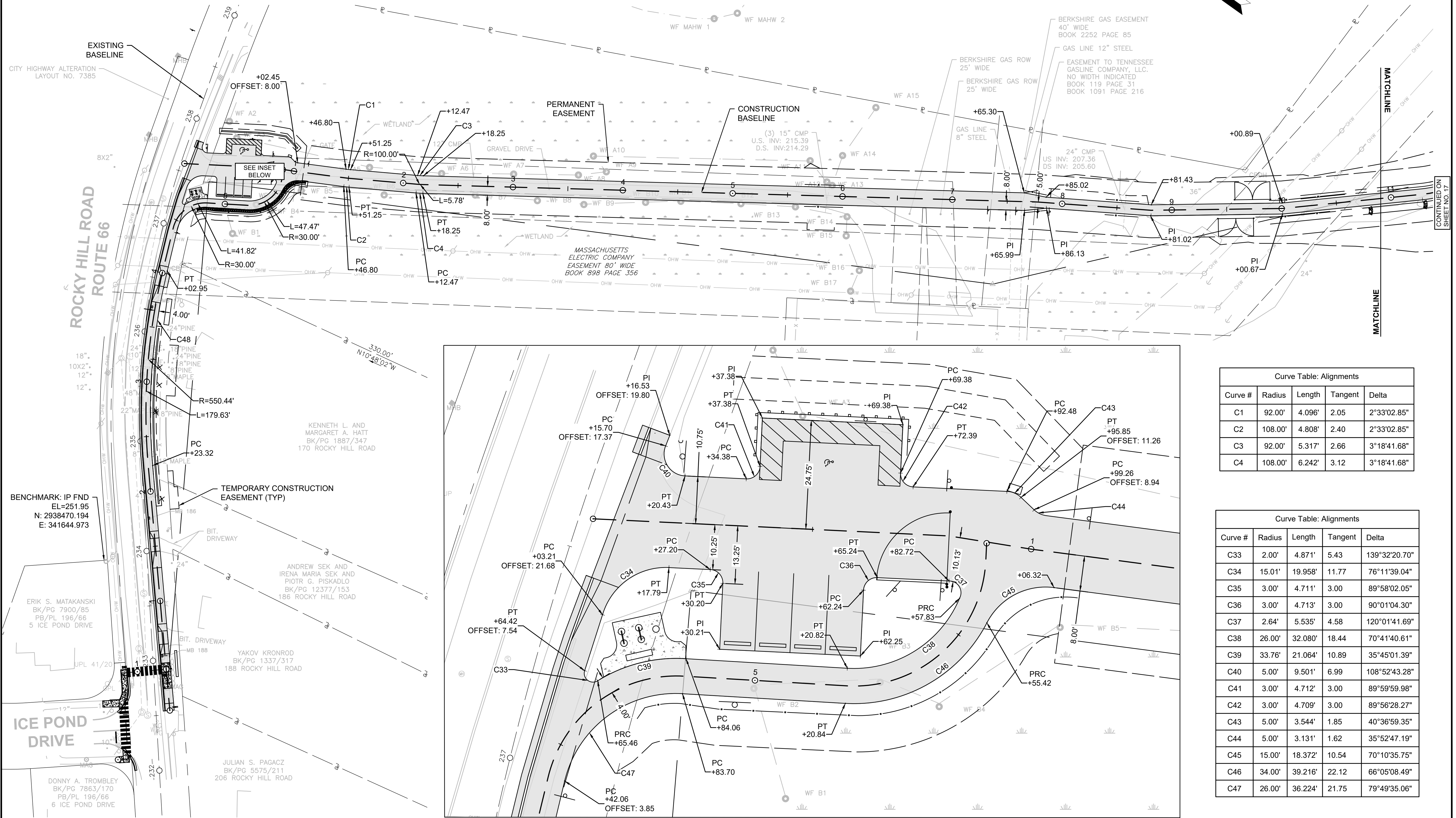
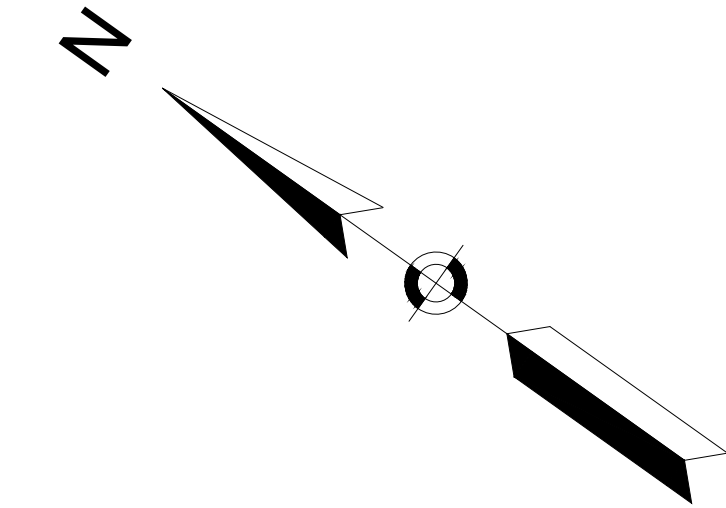
DRAINAGE DETAILS

SEE BELOW

NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	16	51
PROJECT FILE NO. 608413			

CURB TIE PLAN (1)



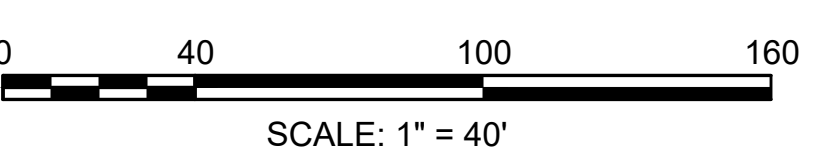
Curve Table: Alignments

Curve #	Radius	Length	Tangent	Delta
C1	92.00'	4.096'	2.05	2°33'02.85"
C2	108.00'	4.808'	2.40	2°33'02.85"
C3	92.00'	5.317'	2.66	3°18'41.68"
C4	108.00'	6.242'	3.12	3°18'41.68"

Curve Table: Alignments

Curve #	Radius	Length	Tangent	Delta
C33	2.00'	4.871'	5.43	139°32'20.70"
C34	15.01'	19.958'	11.77	76°11'39.04"
C35	3.00'	4.711'	3.00	89°58'02.05"
C36	3.00'	4.713'	3.00	90°01'04.30"
C37	2.64'	5.535'	4.58	120°01'41.69"
C38	26.00'	32.080'	18.44	70°41'40.61"
C39	33.76'	21.064'	10.89	35°45'01.39"
C40	5.00'	9.501'	6.99	108°52'43.28"
C41	3.00'	4.712'	3.00	89°59'59.98"
C42	3.00'	4.709'	3.00	89°56'28.27"
C43	5.00'	3.544'	1.85	40°36'59.35"
C44	5.00'	3.131'	1.62	35°52'47.19"
C45	15.00'	18.372'	10.54	70°10'35.75"
C46	34.00'	39.216'	22.12	66°05'08.49"
C47	26.00'	36.224'	21.75	79°49'35.06"

BENCHMARK: IP FND
EL=251.95
N: 2938470.194
E: 341644.973



INSET
SCALE: 1" = 10'

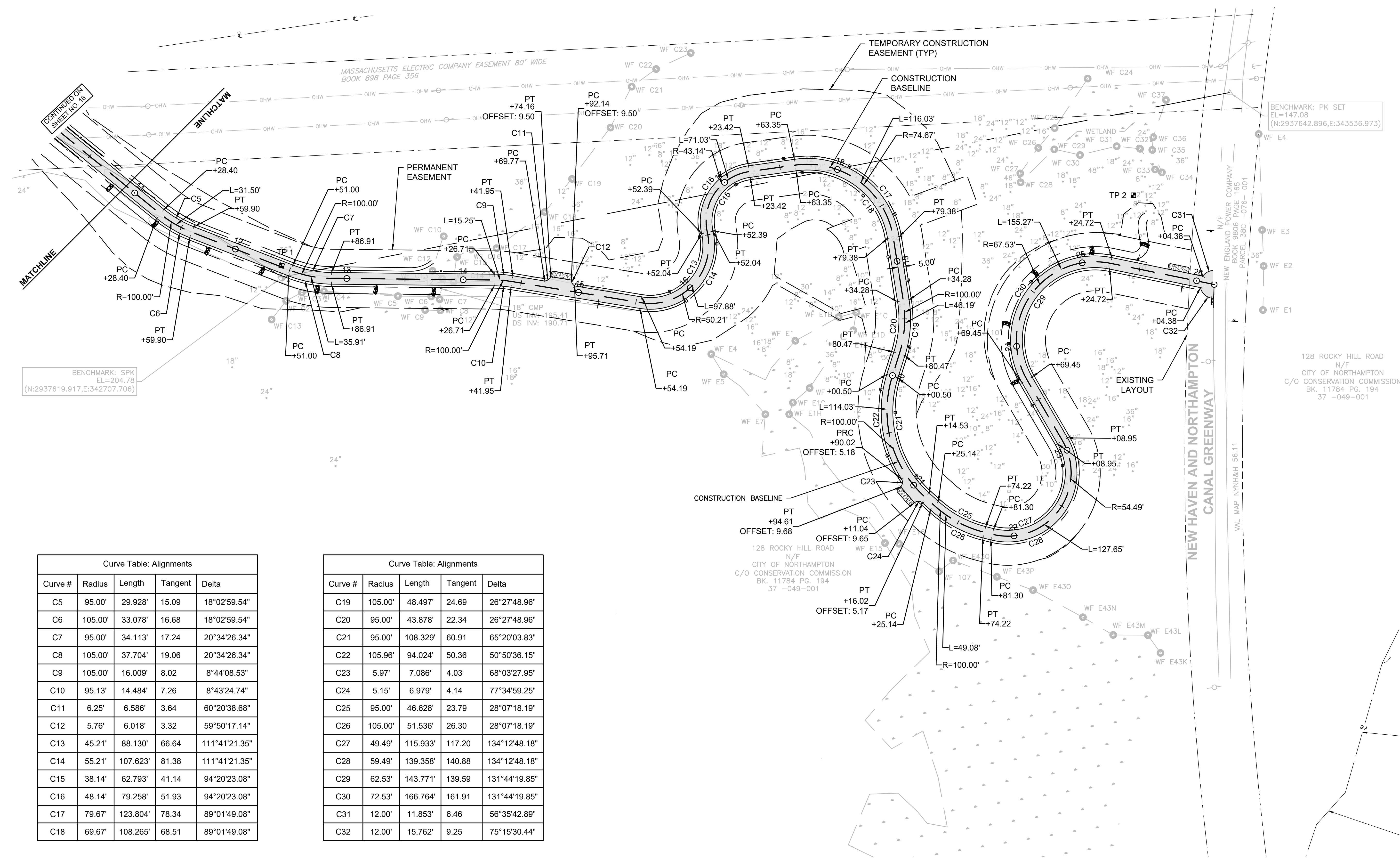
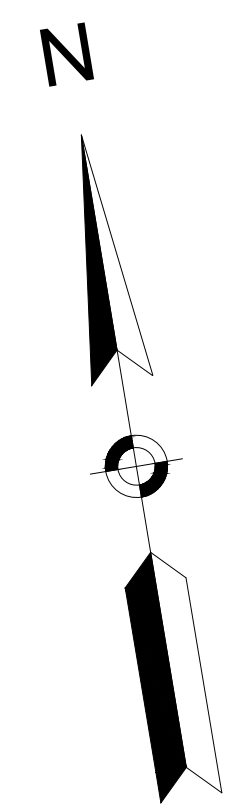
**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	17	51
PROJECT FILE NO.		608413	

CURB TIE PLAN (2)

HIGHWAY GUARD DETAILS TRAFFIC SIGNAL CONDUIT WATER SUPPLY ALTERATIONS DRAINAGE DETAILS

NONE NONE NONE SEE BELOW

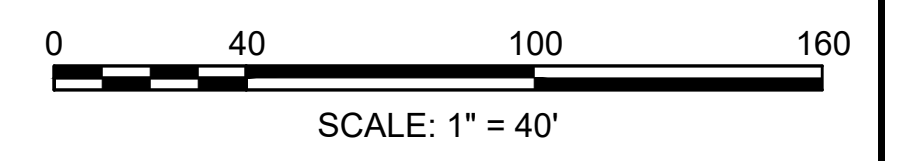


Curve Table: Alignments

Curve #	Radius	Length	Tangent	Delta
C5	95.00'	29.928'	15.09	18°02'59.54"
C6	105.00'	33.078'	16.68	18°02'59.54"
C7	95.00'	34.113'	17.24	20°34'26.34"
C8	105.00'	37.704'	19.06	20°34'26.34"
C9	105.00'	16.009'	8.02	8°44'08.53"
C10	95.13'	14.484'	7.26	8°43'24.74"
C11	6.25'	6.586'	3.64	60°20'38.68"
C12	5.76'	6.018'	3.32	59°50'17.14"
C13	45.21'	88.130'	66.64	111°41'21.35"
C14	55.21'	107.623'	81.38	111°41'21.35"
C15	38.14'	62.793'	41.14	94°20'23.08"
C16	48.14'	79.258'	51.93	94°20'23.08"
C17	79.67'	123.804'	78.34	89°01'49.08"
C18	69.67'	108.265'	68.51	89°01'49.08"

Curve Table: Alignments

Curve #	Radius	Length	Tangent	Delta
C19	105.00'	48.497'	24.69	26°27'48.96"
C20	95.00'	43.878'	22.34	26°27'48.96"
C21	95.00'	108.329'	60.91	65°20'03.83"
C22	105.96'	94.024'	50.36	50°50'36.15"
C23	5.97'	7.086'	4.03	68°03'27.95"
C24	5.15'	6.979'	4.14	77°34'59.25"
C25	95.00'	46.628'	23.79	28°07'18.19"
C26	105.00'	51.536'	26.30	28°07'18.19"
C27	49.49'	115.933'	117.20	134°12'48.18"
C28	59.49'	139.358'	140.88	134°12'48.18"
C29	62.53'	143.771'	139.59	131°44'19.85"
C30	72.53'	166.764'	161.91	131°44'19.85"
C31	12.00'	11.853'	6.46	56°35'42.89"
C32	12.00'	15.762'	9.25	75°15'30.44"



HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

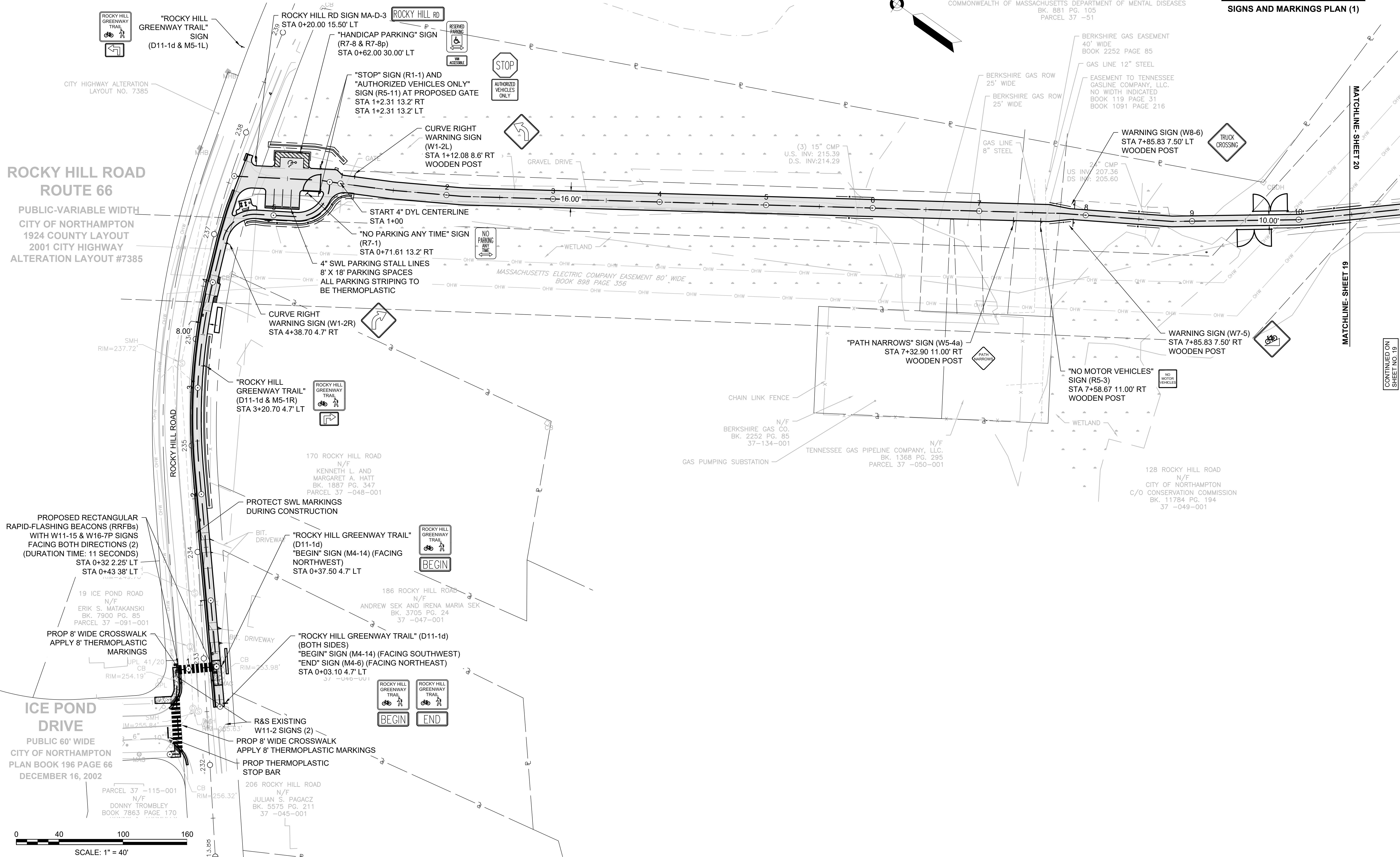
NONE

NORTHAMPTON - ROCKY HILL GREENWAY MULTI-USE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	18	51

PROJECT FILE NO. 608413

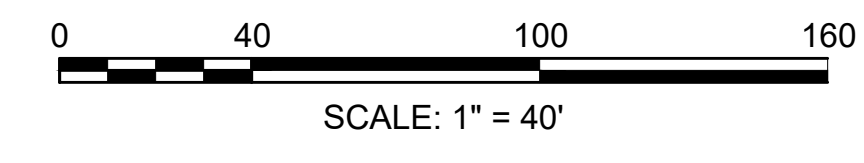
SIGNS AND MARKINGS PLAN (1)



ROCKY HILL ROAD ROUTE 66
 PUBLIC-VARIABLE WIDTH
 CITY OF NORTHAMPTON
 1924 COUNTY LAYOUT
 2001 CITY HIGHWAY
 ALTERATION LAYOUT #7385

PROPOSED RECTANGULAR
 RAPID-FLASHING BEACONS (RRFBs)
 WITH W11-15 & W16-7P SIGNS
 FACING BOTH DIRECTIONS (2)
 (DURATION TIME: 11 SECONDS)
 STA 0+32.25' LT
 STA 0+43.38' LT

ICE POND DRIVE
 PUBLIC 60' WIDE
 CITY OF NORTHAMPTON
 PLAN BOOK 196 PAGE 66
 DECEMBER 16, 2002



MATCHLINE - SHEET 20

MATCHLINE - SHEET 19

CONTINUED ON SHEET NO. 19

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

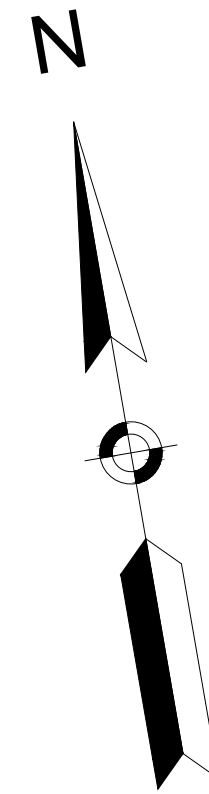
DRAINAGE DETAILS

NONE

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	19	51
PROJECT FILE NO.		608413	

SIGNS AND MARKINGS PLAN (2)



N/F
COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF MENTAL DISEASES
BK. 881 PG. 105
PARCEL 37 -51



"ROCKY HILL GREENWAY TRAIL" SIGN
(D11-1d & M6-1)
STA 25+88.16 44.00 LT & STA 26+22.55 22.5 RT
WOODEN POST

MASSACHUSETTS ELECTRIC COMPANY EASEMENT 80' WIDE
BOOK 898 PAGE 356

END 4" DYL CENTERLINE
STA 26+03.85



WARNING SIGNS (W1-5)
STA 25.31.30 8.00 LT
WOODEN POST

START 4" SYL CENTERLINE
STA 15+54.14

END 4" DYL CENTERLINE
STA 15+54.14

START 4" DYL CENTERLINE
STA 25+24.72

END 4" SYL CENTERLINE
STA 25+24.72

"CANAL LINE RAIL TRAIL" SIGN
(D11-1e & M6-4)
STA 25+75.00 6.75 RT
WOODEN POST



"NO MOTOR VEHICLES" SIGN (R5-3)
STA 26+15.36 16.00 RT
WOODEN POST



"STOP" SIGN (R1-1)
STA 26+15.36 14.00' RT
WOODEN POST



WARNING SIGNS (W1-5)
STA 15+18.16 8.00' RT
WOODEN POST



128 ROCKY HILL ROAD
N/F
CITY OF NORTHAMPTON
C/O CONSERVATION COMMISSION
BK. 11784 PG. 194
37 -049-001

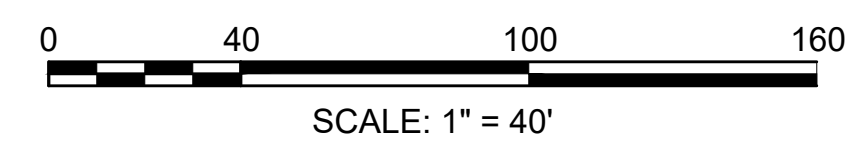
NEW HAVEN AND NORTHAMPTON
CANAL GREENWAY

128 ROCKY HILL ROAD
N/F
CITY OF NORTHAMPTON
C/O CONSERVATION COMMISSION
BK. 11784 PG. 194
37 -049-001

CONTINUED ON
SHEET NO. 18

MATCHLINE - SHEET 19



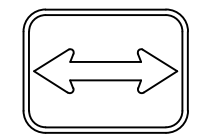
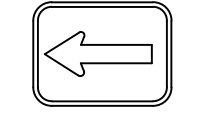

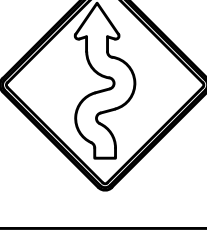



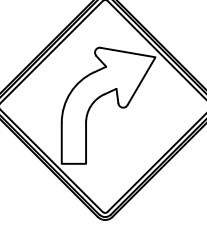
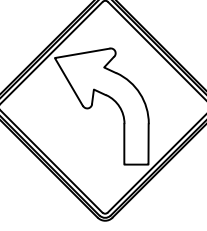
MATCHLINE - SHEET 20



NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	20	51
PROJECT FILE NO.		608413	













TRAFFIC SIGNAGE DETAILS

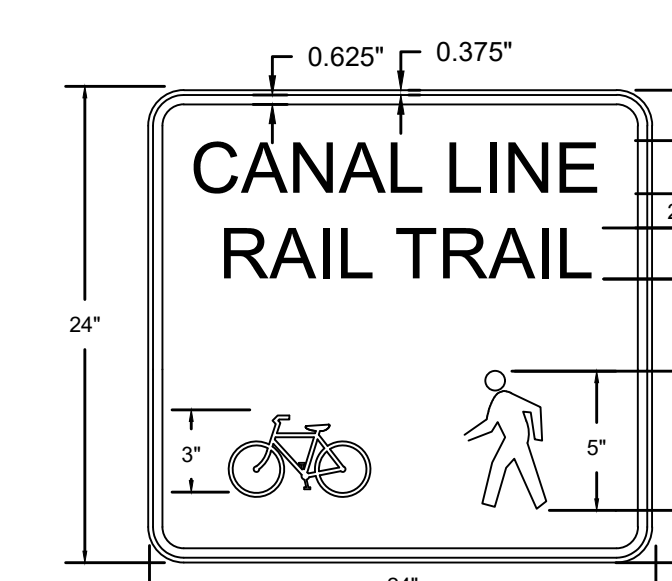
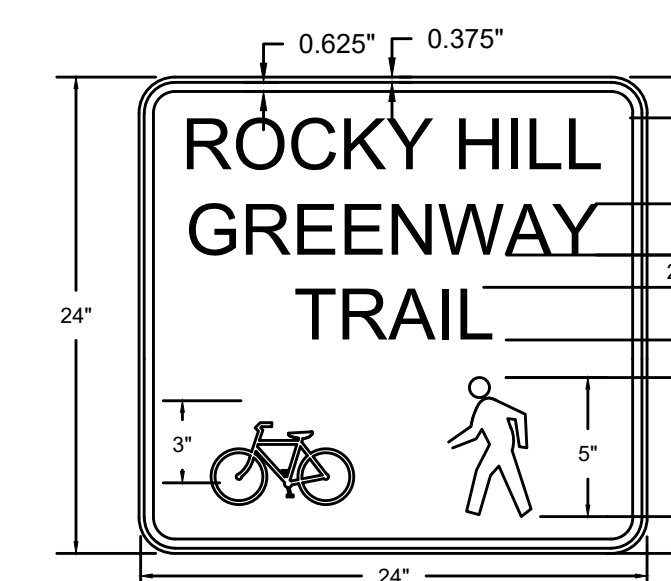
IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	NUMBER OF SIGNS REQUIRED	POST SIZE AND NUMBER REQUIRED	TEXT DIMENSIONS (INCHES)		COLOR			UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH	HEIGHT				LETTER HEIGHT	VERTICAL SPACING	BACK-GROUND	LEGEND	BORDER		
D11-1d	24"	24"	ROCKY HILL GREENWAY TRAIL 	7	P5 (5 REQ'D) WOODEN POST (2 REQ'D)	3" C SEE DETAIL	2"	GREEN	WHITE	WHITE	4.00	28.00
D11-1e	24"	24"	CANAL LINE RAIL TRAIL 	1	WOODEN POST (1 REQ'D)	3" C SEE DETAIL	2"	GREEN	WHITE	WHITE	4.00	4.00
MA-D-3	29"	8"	Rocky Hill Rd	1	P5 (1 REQ'D)	4"D/3"D	1.75" ABOVE 2.25" BELOW	GREEN	WHITE	WHITE	1.67	1.67
M6-4	12"	9"		1	0 REQ'D (MOUNTED WITH D11-1e)	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	GREEN	WHITE	WHITE	0.75	0.75
M6-1	12"	9"		2	0 REQ'D (MOUNTED WITH D11-1d)	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	GREEN	WHITE	WHITE	0.75	1.50
W7-5	18"	18"		1	WOODEN POST (1 REQ'D)	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	YELLOW	BLACK	BLACK	2.25	2.25
W1-5	18"	18"		2	WOODEN POST (2 REQ'D)	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	YELLOW	BLACK	BLACK	2.25	4.50
R7-8	12"	18"	RESERVED PARKING 	1	P5 (1 REQ'D)	2" C	1"	WHITE	GREEN (WHITE HC SYMBOL ON BLUE SQUARE)	GREEN	1.50	1.50
R7-8p	18"	9"	VW ACCESSIBLE 	1	0 REQ'D (MOUNTED WITH R7-8)	2.25"/2" D	1"	WHITE	GREEN	GREEN	1.13	1.13
R5-3	24"	24"	NO MOTOR VEHICLES 	2	WOODEN POST (2 REQ'D)	4" C/B	2.5"	WHITE	BLACK	BLACK	4.00	8.00
W1-2R	24"	24"		1	P5 (1 REQ'D)	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	YELLOW	BLACK	BLACK	4.00	4.00
W1-2L	24"	24"		1	WOODEN POST (1 REQ'D)	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	YELLOW	BLACK	BLACK	4.00	4.00

NOTES:

- SIGN SIZE, LETTERING, TEXT, AND COLORS PER MUTCD STANDARDS. ALL ROADWAY TRAFFIC SIGNS ARE HIGH INTENSITY GRADE REFLECTIVE YELLOW-GREEN WHEN AVAILABLE.
- ALL WARNING, REGULATORY AND ROUTE MARKERS ARE FABRICATED WITH HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING (SEE SECTION M9.30.0) TYPE III OR IV.
- ALL P5 POSTS ARE TELESCOPIC BREAKAWAY SQUARE TUBE POSTS PAINTED BLACK UNLESS OTHERWISE REQUIRED. POSTS LOCATED IN PAVEMENT SHALL BE SET IN A BOLLARD PER THE DETAILS.
- QUANTITIES OF SIGNS AND POSTS SHOWN ON THIS SHEET MAY DIFFER FROM THE SITE PLAN. WHERE DIFFERENCES OCCUR, THE PAVEMENT MARKINGS AND SIGNAGE PLANS WILL PREVAIL.
- SIGNS LISTED WITHOUT POSTS ARE EITHER SECURED TO A PROPOSED OR EXISTING FEATURE OR MOUNTED ON A POST WITH ANOTHER SIGN LISTED.

NOT TO SCALE

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	NUMBER OF SIGNS REQUIRED	POST SIZE AND NUMBER REQUIRED	TEXT DIMENSIONS (INCHES)		COLOR			UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH	HEIGHT				LETTER HEIGHT	VERTICAL SPACING	BACK-GROUND	LEGEND	BORDER		
W5-4a	18"	18"	PATH NARROWS 	1	WOODEN POST (1 REQ'D)	3" C	1.625"	YELLOW	BLACK	BLACK	2.25	2.25
M5-1L	21"	15"		1	0 REQ'D (MOUNTED WITH D11-1d)	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	GREEN	WHITE	WHITE	2.19	2.19
M5-1R	21"	15"		1	0 REQ'D (MOUNTED WITH D11-1d)	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	GREEN	WHITE	WHITE	2.19	2.19
R7-1	12"	18"	NO PARKING ANY TIME 	1	P5 (1 REQ'D)	3" C/B, 2" C	0.875", 0.625"	WHITE	RED	RED	1.50	1.50
W8-6	24"	24"	TRUCK CROSSING 	1	WOODEN POST (1 REQ'D)	4" C	2.5"	YELLOW	BLACK	BLACK	4.00	4.00
R1-1	18"	18"	STOP 	3	P5 (2 REQ'D) WOODEN POST (1 REQ'D)	6" C	N/A	RED	WHITE	WHITE	2.25	6.75
R5-11	30"	24"	AUTHORIZED VEHICLES ONLY 	2	0 REQ'D (MOUNTED WITH R1-1)	4" C/D	2.5"	WHITE	BLACK	BLACK	5.00	10.00
M4-14	24"	12"	BEGIN 	2	0 REQ'D (MOUNTED WITH D11-1d)	5" D	N/A	GREEN	WHITE	WHITE	2.00	4.00
M4-6	24"	12"	END 	1	0 REQ'D (MOUNTED WITH D11-1d)	6" D	N/A	GREEN	WHITE	WHITE	2.00	2.00
M4-6	24"	24"		4	MOUNTED ON RRFB	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	YELLOW	BLACK	BLACK	4.00	16.00
M4-6	24"	12"		2	MOUNTED ON RRFB	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	YELLOW	BLACK	BLACK	2.00	4.00
M4-6	24"	12"		2	MOUNTED ON RRFB	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	SEE THE MUTCD STANDARD HIGHWAY SIGNS BY FHWA FOR TEXT DIMENSIONS	YELLOW	BLACK	BLACK	2.00	4.00



SIGN DETAILS
NOT TO SCALE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	21	51
PROJECT FILE NO.		608413	

TRAFFIC MANAGEMENT (1)

NOTES:

- 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.
- ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- 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.
- 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).
- 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.
- THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
- THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
- DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
- MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
- 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.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
- LANE CLOSURE TO ONLY BE DURING THE DAILY WORKSHIFT

LEGEND:

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

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

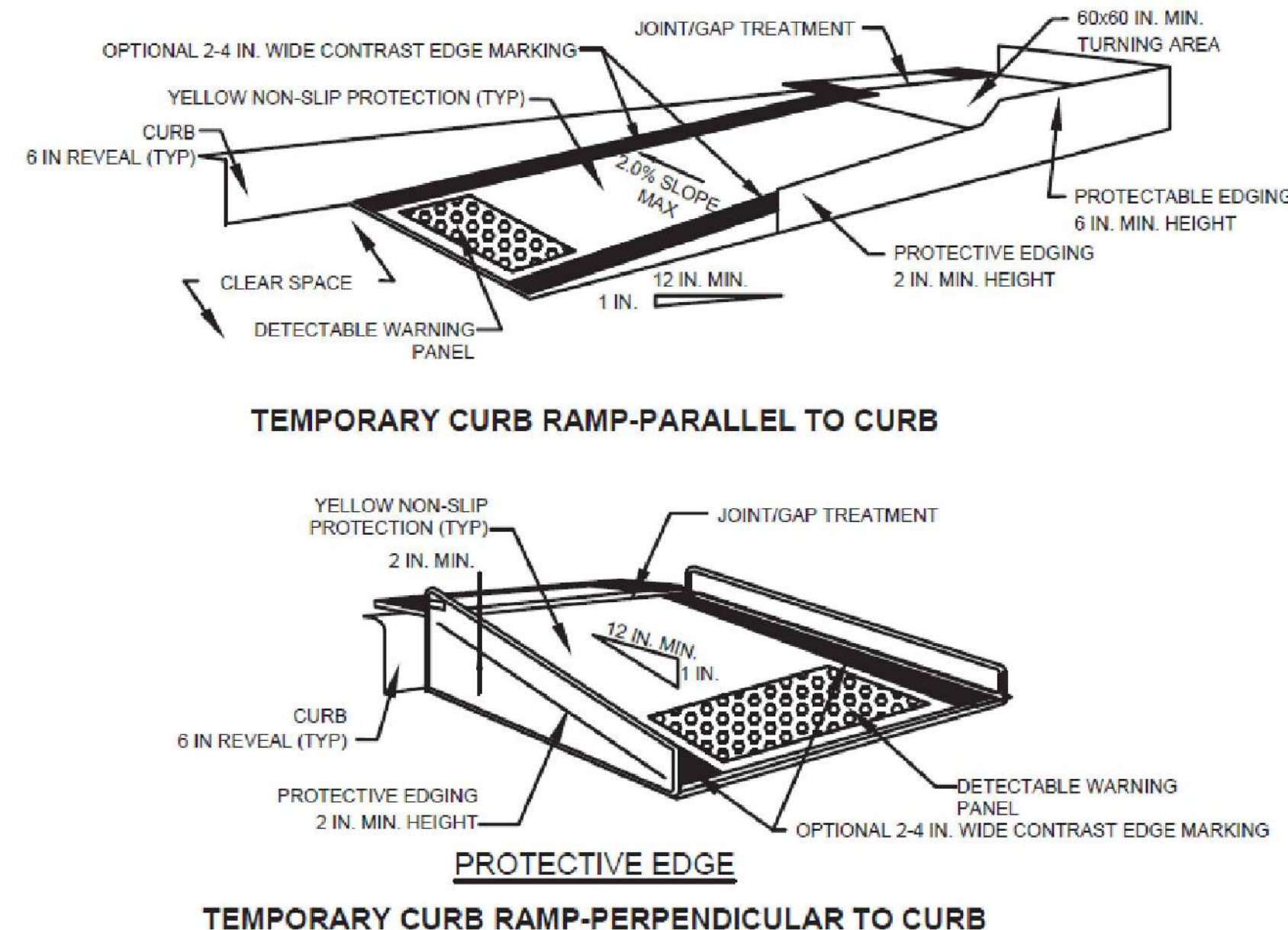
NUMBER OF LANES		NUMBER OF STUDIES	AVERAGE CAPACITY	
NORMAL (EXISTING)	OPEN (TO TRAFFIC)		VPH	VPHPL
3	1	7	1,170	1,170
2	1	8	1,340	1,340
5	2	8	2,740	1,370
4	2	4	2,950	1,480
3	2	9	2,980	1,490
4	3	4	4,560	1,520

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.

NOTES:

- CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
- PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
- DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
- CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
- CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
- LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
- CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.
- IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



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 TTC 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, MA-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

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 ADT. 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

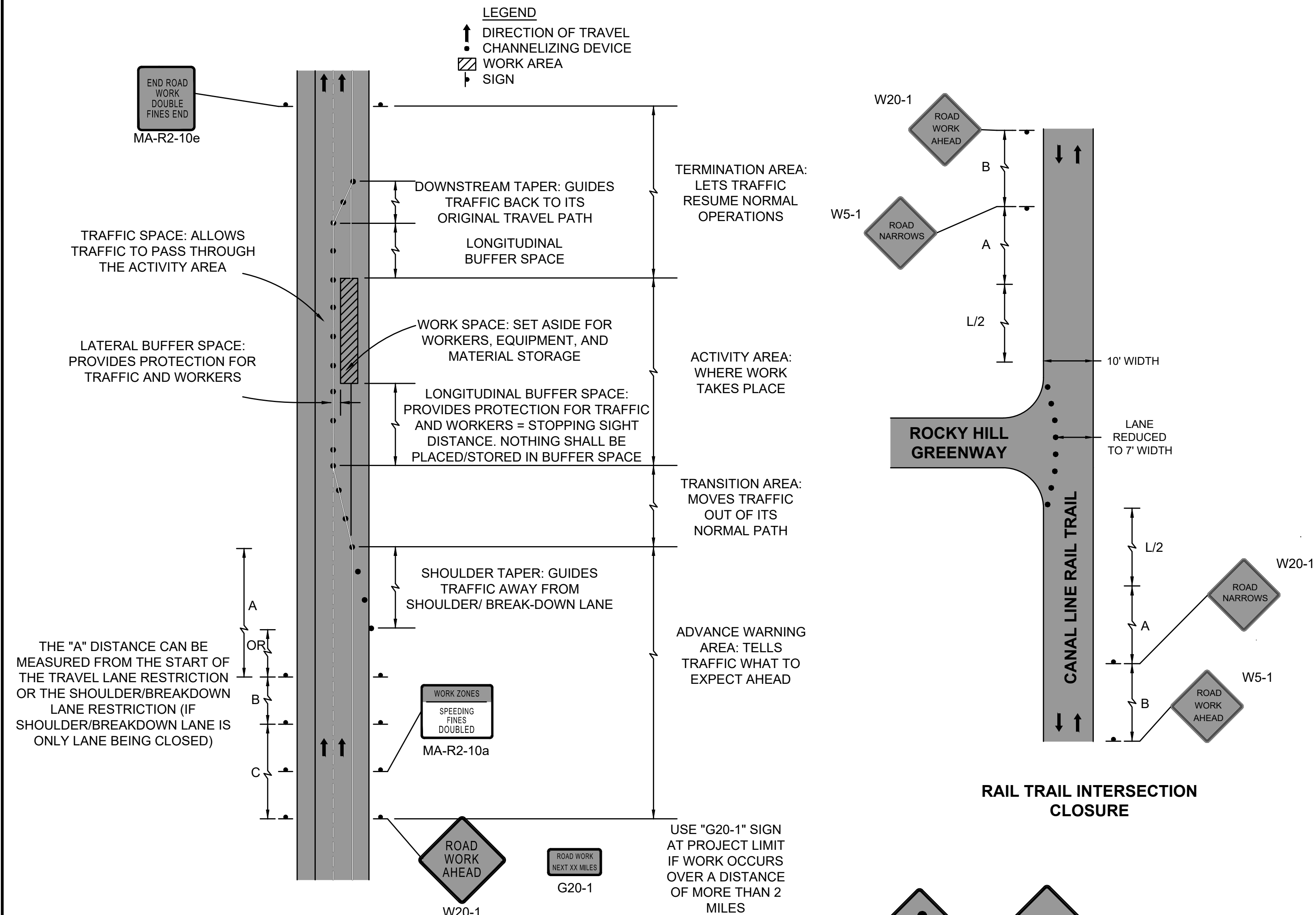
W = WIDTH OF OFFSET IN FEET

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

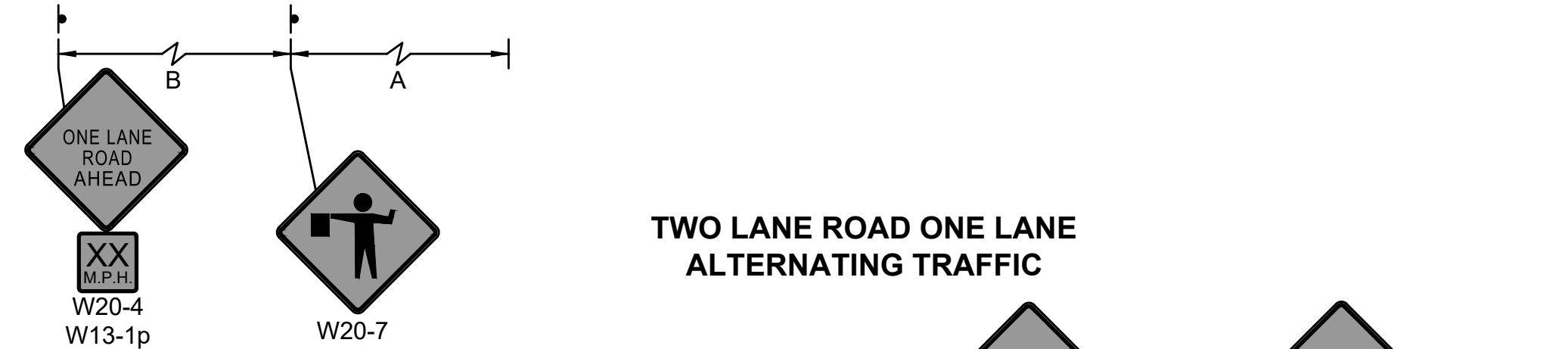
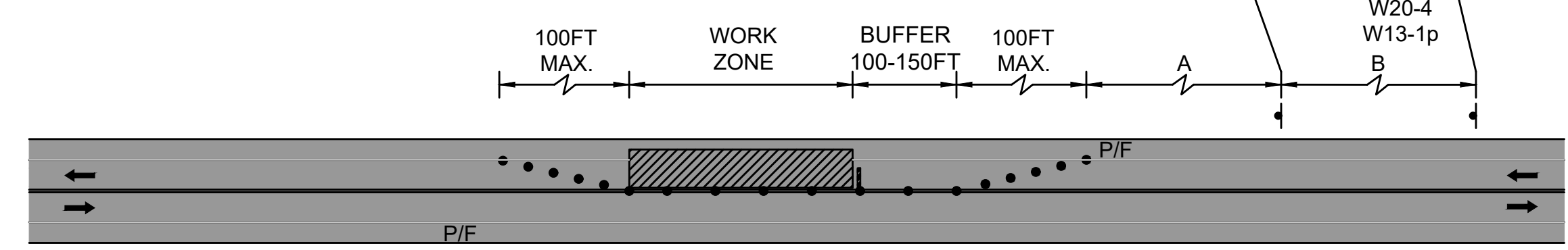
Source: Table 6C-4 MUTCD LATEST EDITION

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
MA-R2-10e	36"	48"	END ROAD WORK DOUBLE FINES END	5" C	4"	N/A	2	FLUORESCENT ORANGE /WHITE	BLACK	BLACK	P5 (2 REQ'D)	12	24
MA-R2-10a	48"	36"	WORK ZONES SPEEDING FINES DOUBLED	4"6" D	2.5"7/3"	N/A	2	FLUORESCENT ORANGE /WHITE	BLACK	BLACK	P5 (2 REQ'D)	12	24
W20-1	30"	30"	ROAD WORK AHEAD	4" D	2"	N/A	4	FLUORESCENT ORANGE	BLACK	BLACK	P5 (4 REQ'D)	6.25	25
W20-7	36"	36"	ROAD NARROWS	N/A	N/A	N/A	2	FLUORESCENT ORANGE	BLACK	BLACK	P5 (2 REQ'D)	9	18
W20-4	36"	36"	ONE LANE ROAD AHEAD	4" C	1.875"	N/A	2	FLUORESCENT ORANGE	BLACK	BLACK	P5 (2 REQ'D)	9	18
W13-1p	24"	24"	XX MPH	8"3" E	2"	N/A	2	FLUORESCENT ORANGE	BLACK	BLACK	MOUNTED WITH W-20	4	8
W21-5aR	30"	30"	RIGHT SHOULDER CLOSED	4" D	2.75"	N/A	1	FLUORESCENT ORANGE	BLACK	BLACK	P5 (1 REQ'D)	6.25	6.25
W5-1	30"	30"	ROAD NARROWS	5" D	3"	N/A	3	FLUORESCENT ORANGE	BLACK	BLACK	P5 (3 REQ'D)	6.25	18.75
W8-1	30"	30"	BUMP	6" D	N/A	N/A	2	FLUORESCENT ORANGE	BLACK	BLACK	P5 (2 REQ'D)	6.25	12.5
W8-15	30"	30"	GROOVED PAVEMENT	6" D	N/A	N/A	2	FLUORESCENT ORANGE	BLACK	BLACK	P5 (2 REQ'D)	6.25	12.5
TOTAL AREA OF SIGNS (SQUARE FEET)												167.00	

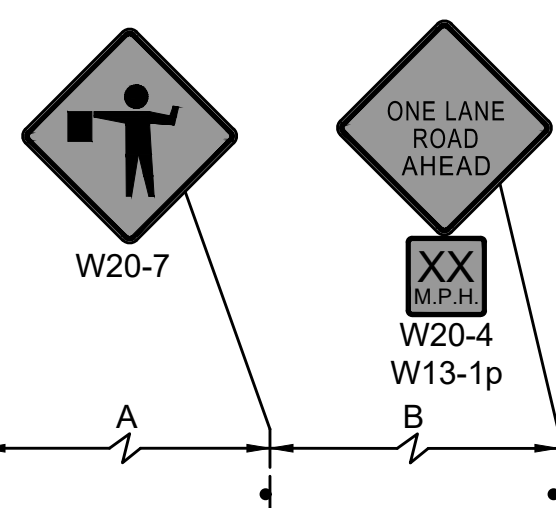


COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE

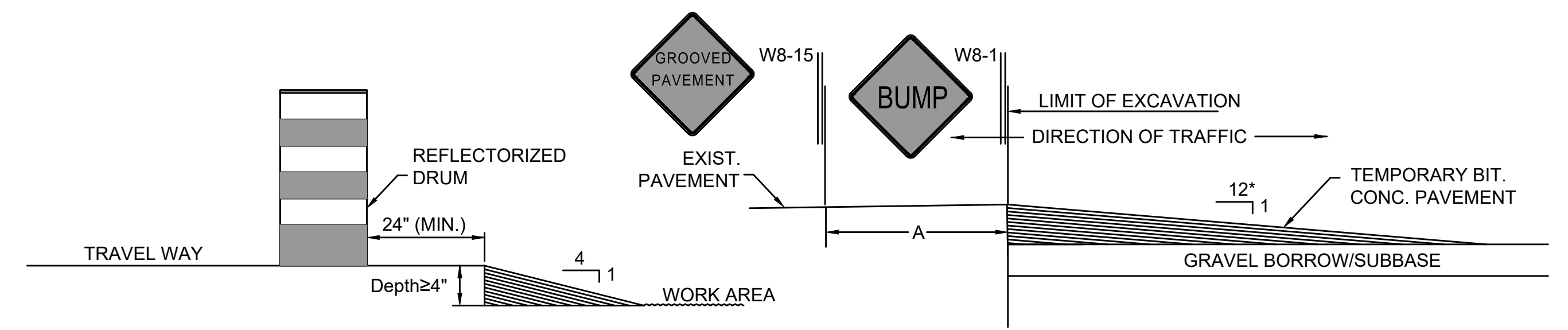


TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC

TWO LANE ROAD SHOULDER CLOSED



RAIL TRAIL INTERSECTION CLOSURE



LATERAL DROP-OFF DETAIL

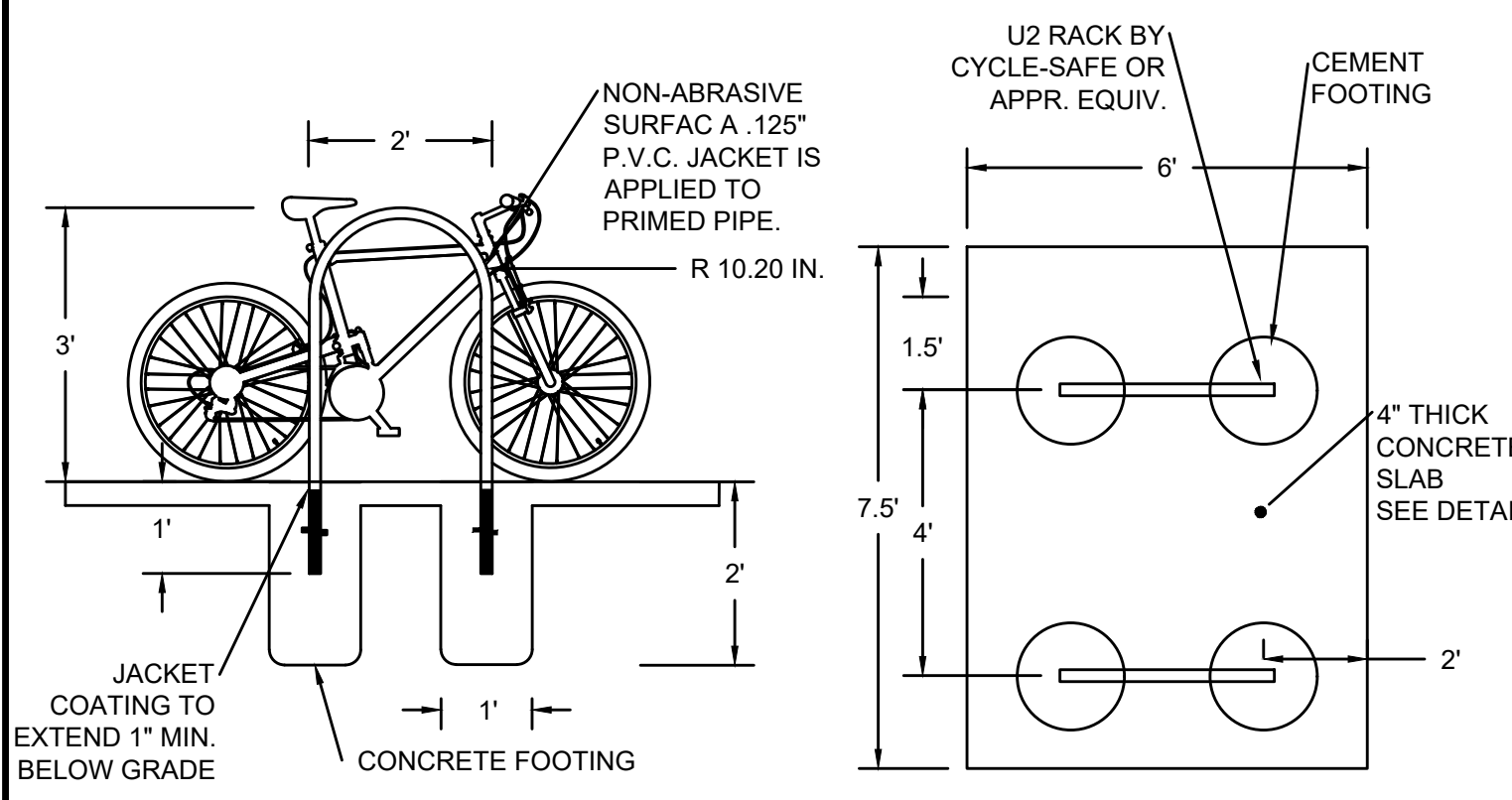
LONGITUDINAL DROP-OFF DETAIL

LATERAL AND LONGITUDINAL DROP-OFF DETAILS

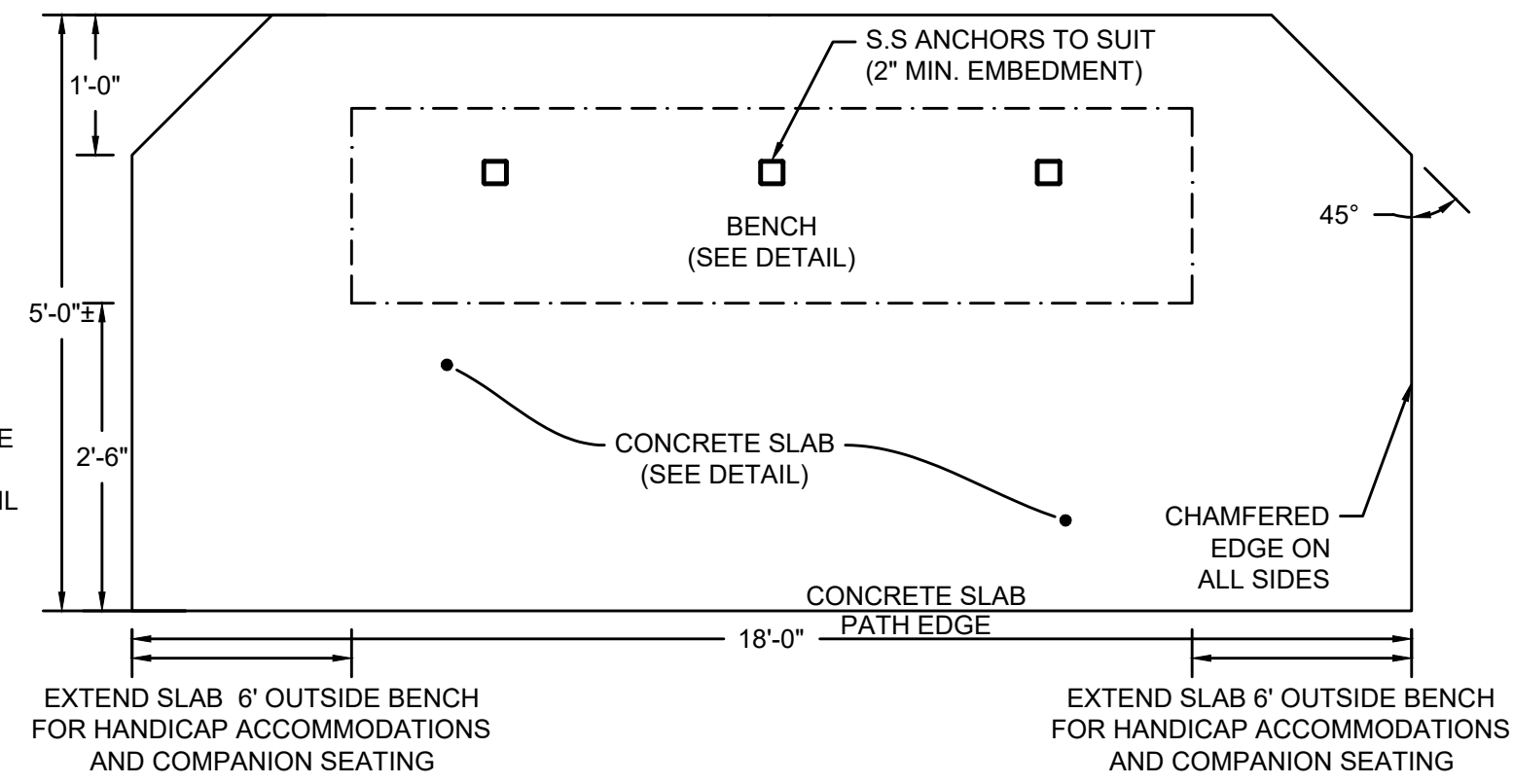
- NOTE:
- CLOSE ONE LANE DURING THE DAILY WORK SHIFT OF CONSTRUCTION OF MULTI-USE TRAIL FOR TEMPORARY PEDESTRIAN ROUTE .

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

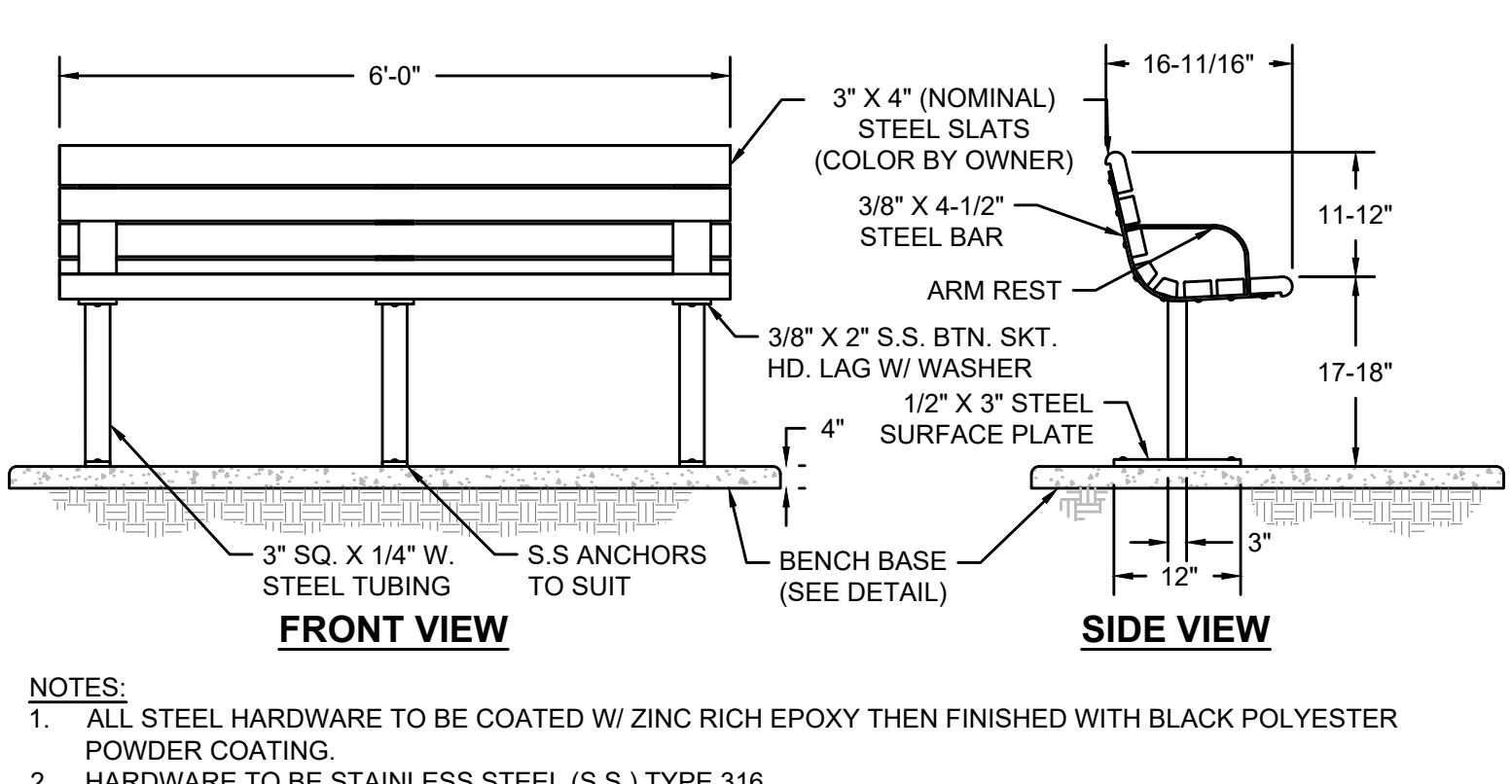
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	23	51
PROJECT FILE NO.		608413	



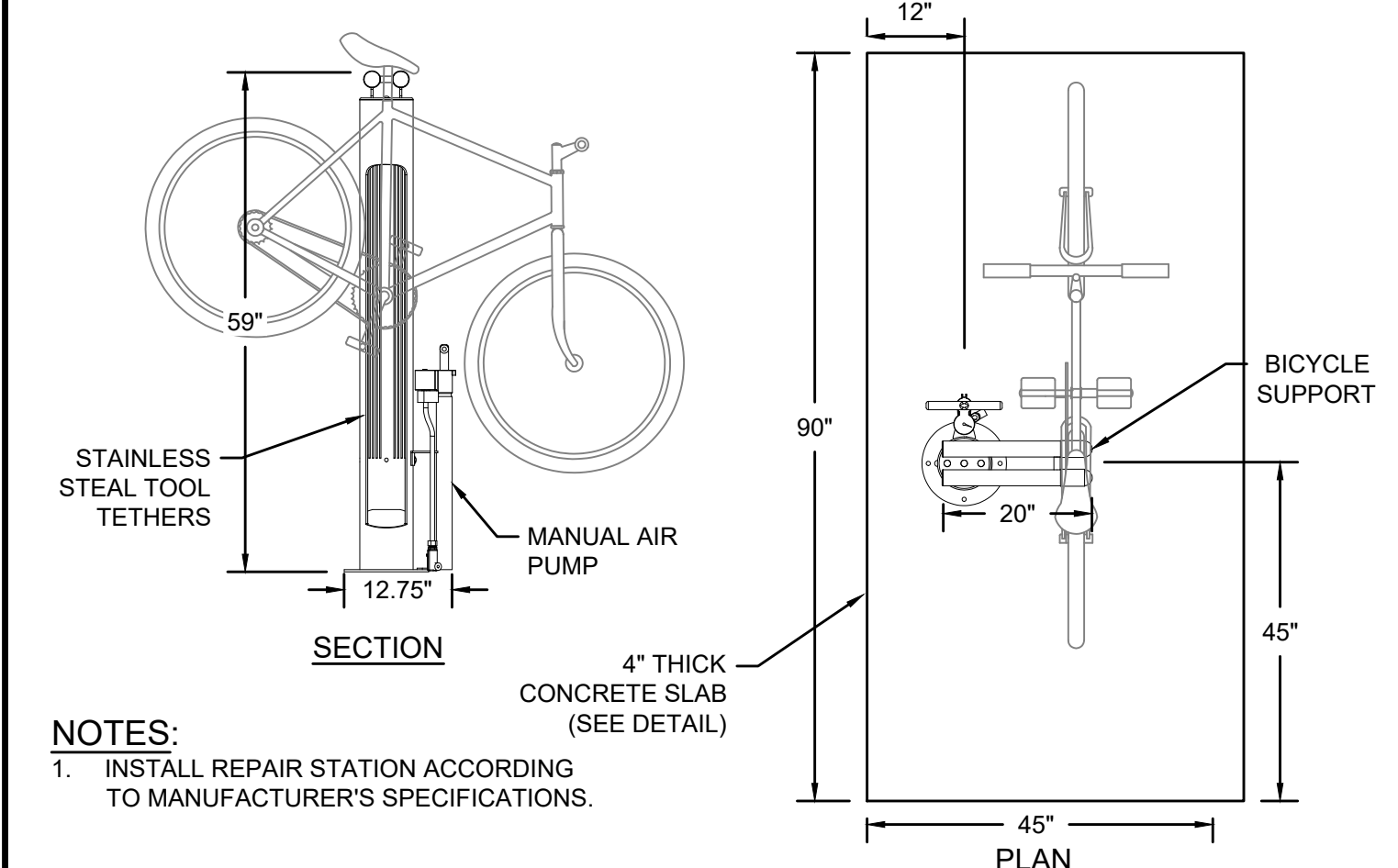
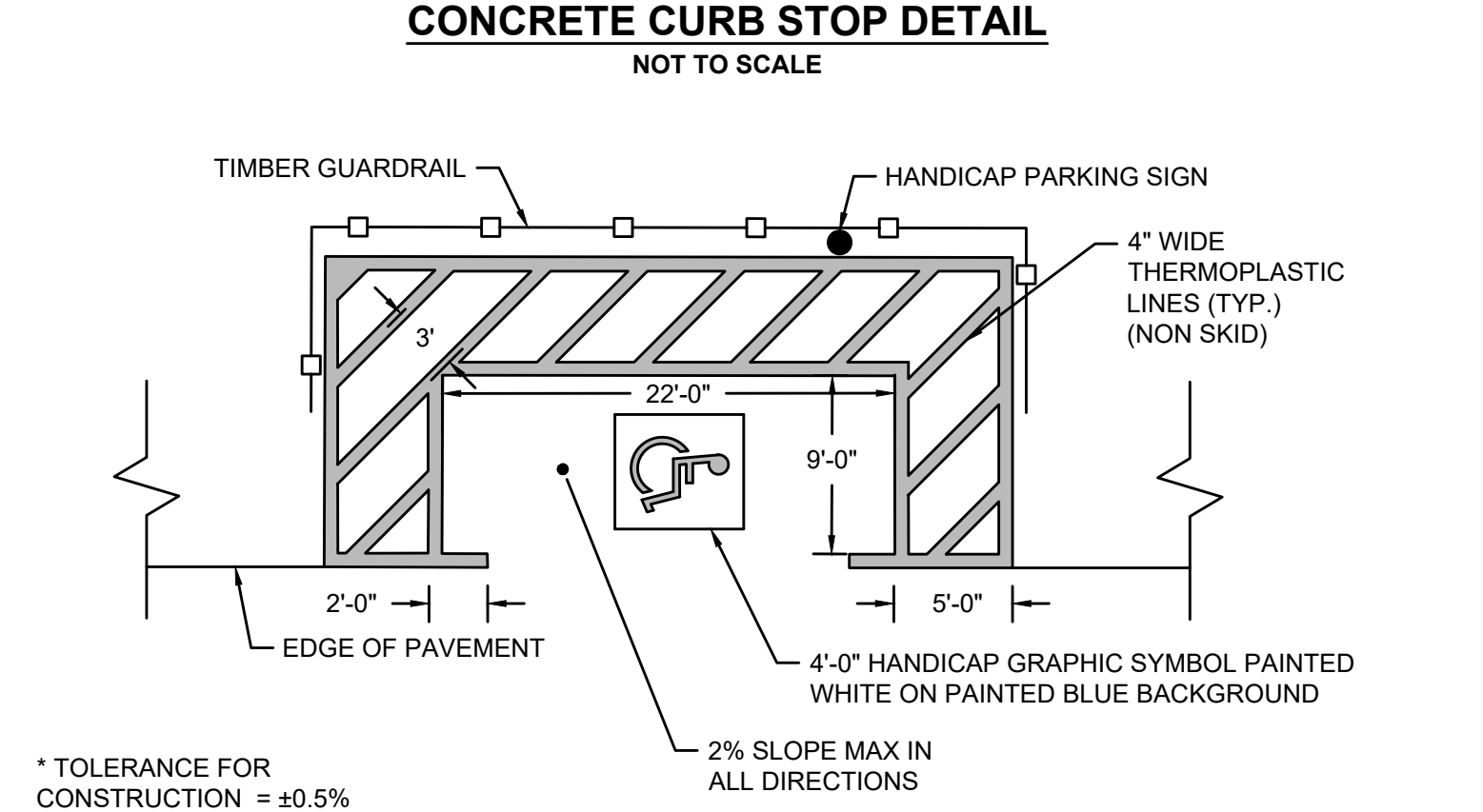
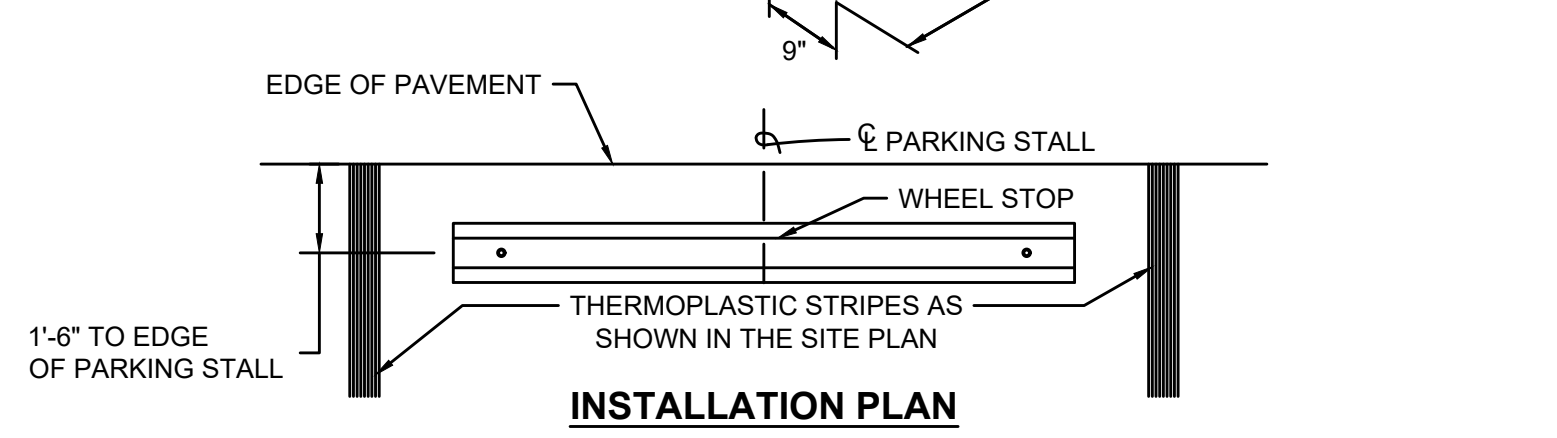
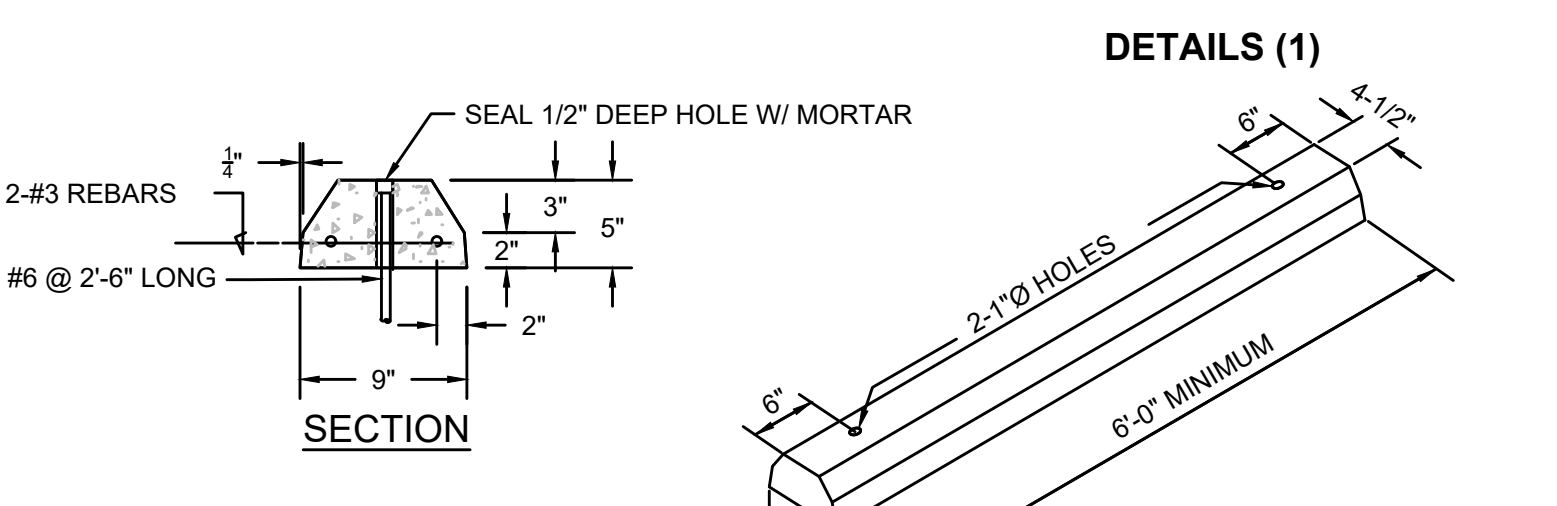
NOTES:
1. MAINTAIN A 6" OBSTRUCTION-FREE AISLE AROUND AT LEAST THREE SIDES OF EACH BIKE RACK.
2. SCHEMATIC ADAPTED FROM DETAIL PROVIDED BY CYCLE-SAFE.



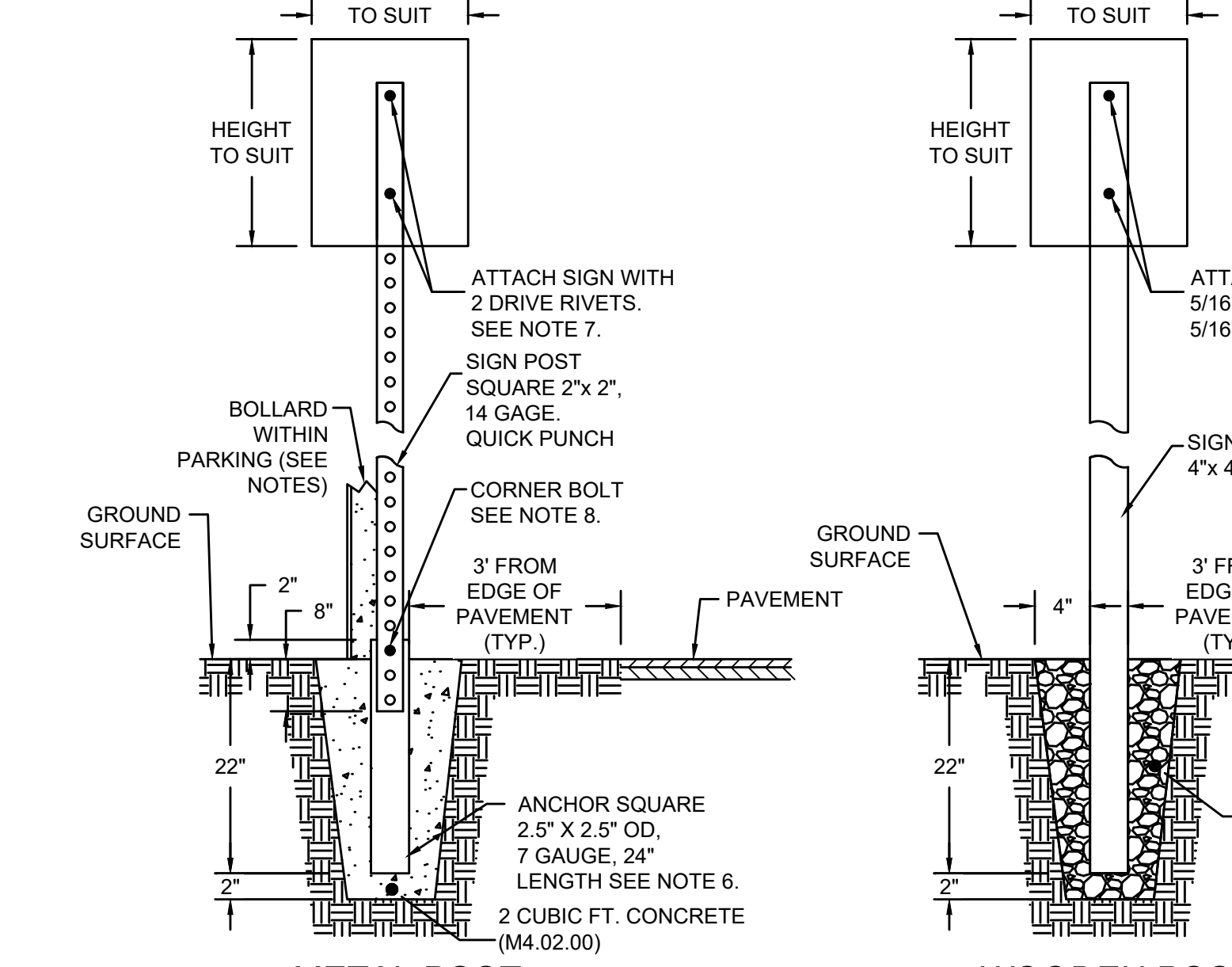
NOTES:
1. HARDWARE TO BE STAINLESS STEEL (S.S.) TYPE 316.



NOTES:
1. ALL STEEL HARDWARE TO BE COATED W/ ZINC RICH EPOXY THEN FINISHED WITH BLACK POLYESTER POWDER COATING.
2. HARDWARE TO BE STAINLESS STEEL (S.S.) TYPE 316.
3. CONTRACTOR TO PROVIDE COLOR CHART FOR BENCH SLATS TO OWNER.

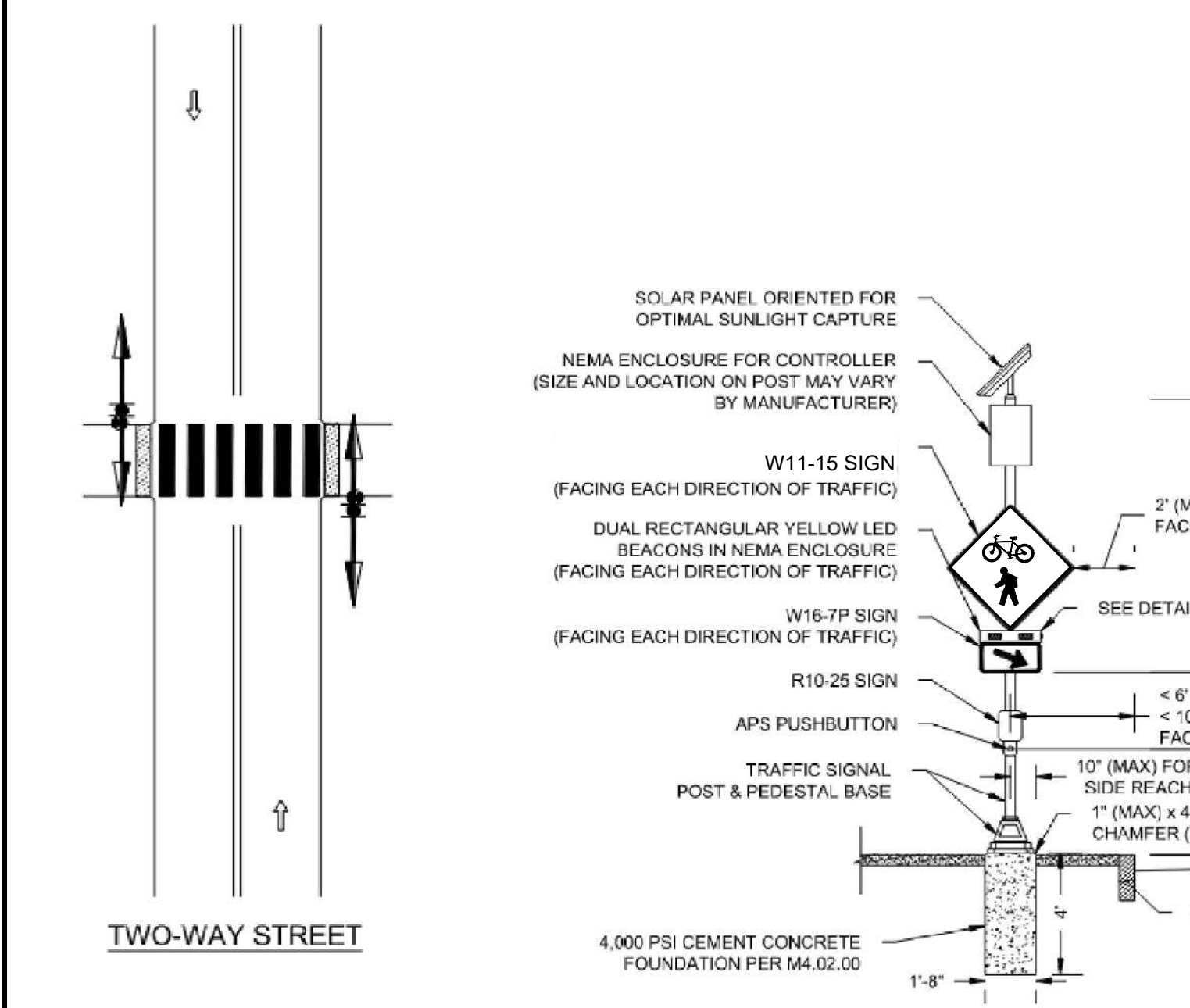
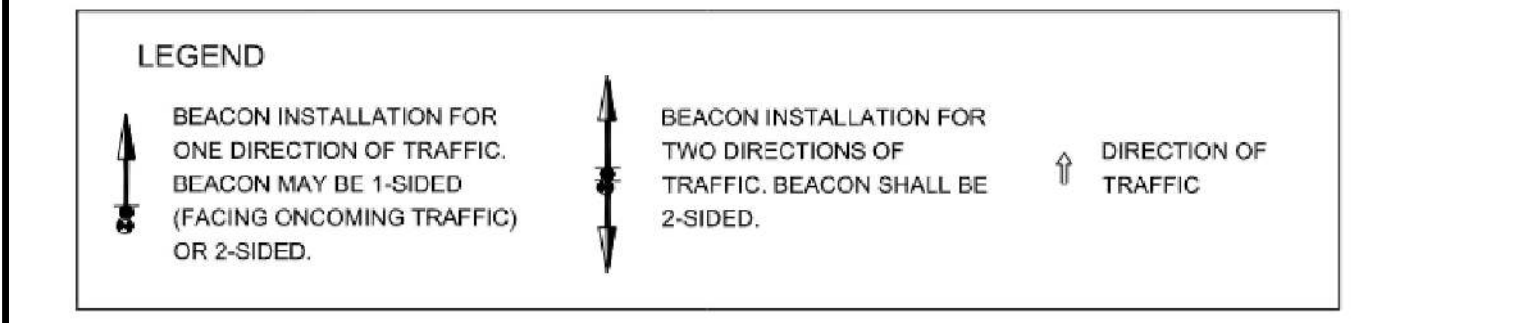


NOTES:
1. INSTALL REPAIR STATION ACCORDING TO MANUFACTURER'S SPECIFICATIONS.



ALL POSTS TO BE METAL UNLESS OTHERWISE STATED

NOTES:
1. SIGN HEIGHT - 7' FROM BOTTOM OF SIGN TO STREET OR SIDEWALK, 6' FROM BOTTOM OF LOWER SIGN FOR MULTIPLE SIGNS ON ONE POST. EXCEPTIONS ONLY AS SPECIFICALLY STATED OR APPROVED BY THE ENGINEER.
2. METAL STOP AND YIELD SIGN POSTS SHALL HAVE ALTERNATING 1' BANDS OF RED AND WHITE 3M DIAMOND GRADE SHEETING. ALL OTHER POSTS SHALL BE UNSHEETED.
3. FOR IN-SIDEWALK INSTALLATIONS, CORE 4" DIAM. HOLE. ANCHOR LENGTH MAY BE DECREASED TO 12".
4. METAL POSTS SHALL BE TELESPAR QUICK PUNCH POST OR EQUAL.
5. POST SHALL BE ROLLED CARBON SHEET STEEL, ASTM A570 GRADE 50 AND BE HOT DIPPED GALVANIZED AASHTO M-120 YIELD STRENGTH 60,000 PSI MIN. POST SHALL HAVE 7/16" DIE-PUNCHED KNOCKOUTS ON 1" CENTERS FULL LENGTH, FOUR SIDES.
6. ANCHOR SHALL HAVE 4 7/16" HOLES ONE EACH SIDE 2" FROM TOP END. FINISH SHALL BE ZINC HOT DIPPED GALVANIZED MATERIAL TO MEET ASTM A500 GRADE B.
7. DRIVE RIVETS TO BE TL3806 3/8" DIA. OR EQUAL.
8. CORNER BOLTS TO BE TL3806 3/8" DIA. OR EQUAL.
9. SIGN POSTS WITHIN PARKING AREAS (PAVEMENT) SHALL BE A BOLLARD TYPE WITH A 6 INCH DIAMETER DUCTILE IRON PIPE FILLED WITH CONCRETE EXTENDING A MIN. 4" FROM GROUND SURFACE.
10. CEMENT CONCRETE: 4,000 PSI, 3/4-INCH, 610 (M4.02.00).
11. SIGNS LOCATED ALONG DESIGNATED MULTI USE TRAIL SHALL USE WOODEN POST OPTION FOR INSTALLATION.
12. SIGNS TO BE LOCATED 3' OFFSET FROM EOP OF SIDEWALK AND TRAIL

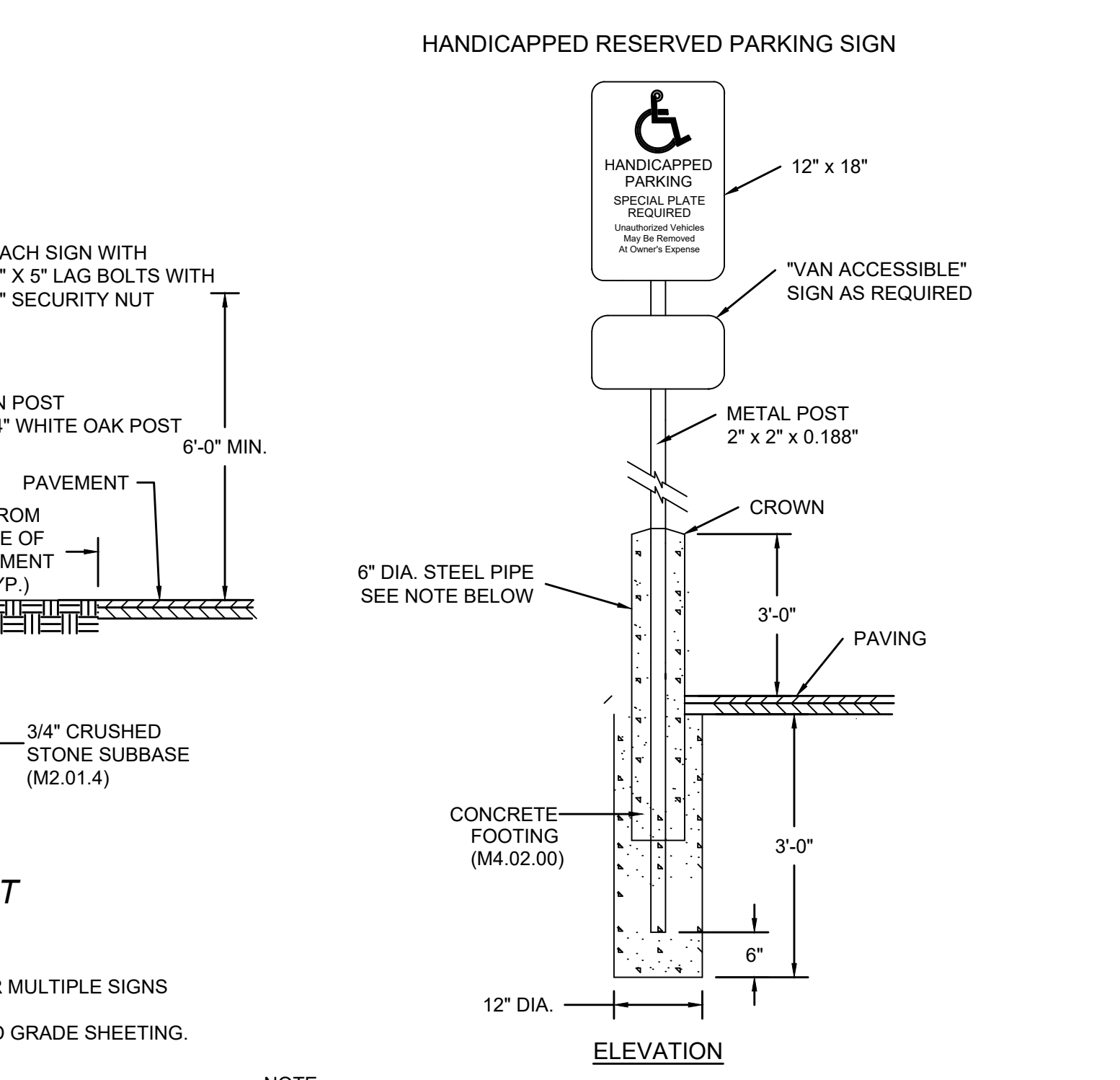


SIGN INSTALLATION DETAIL
NOT TO SCALE

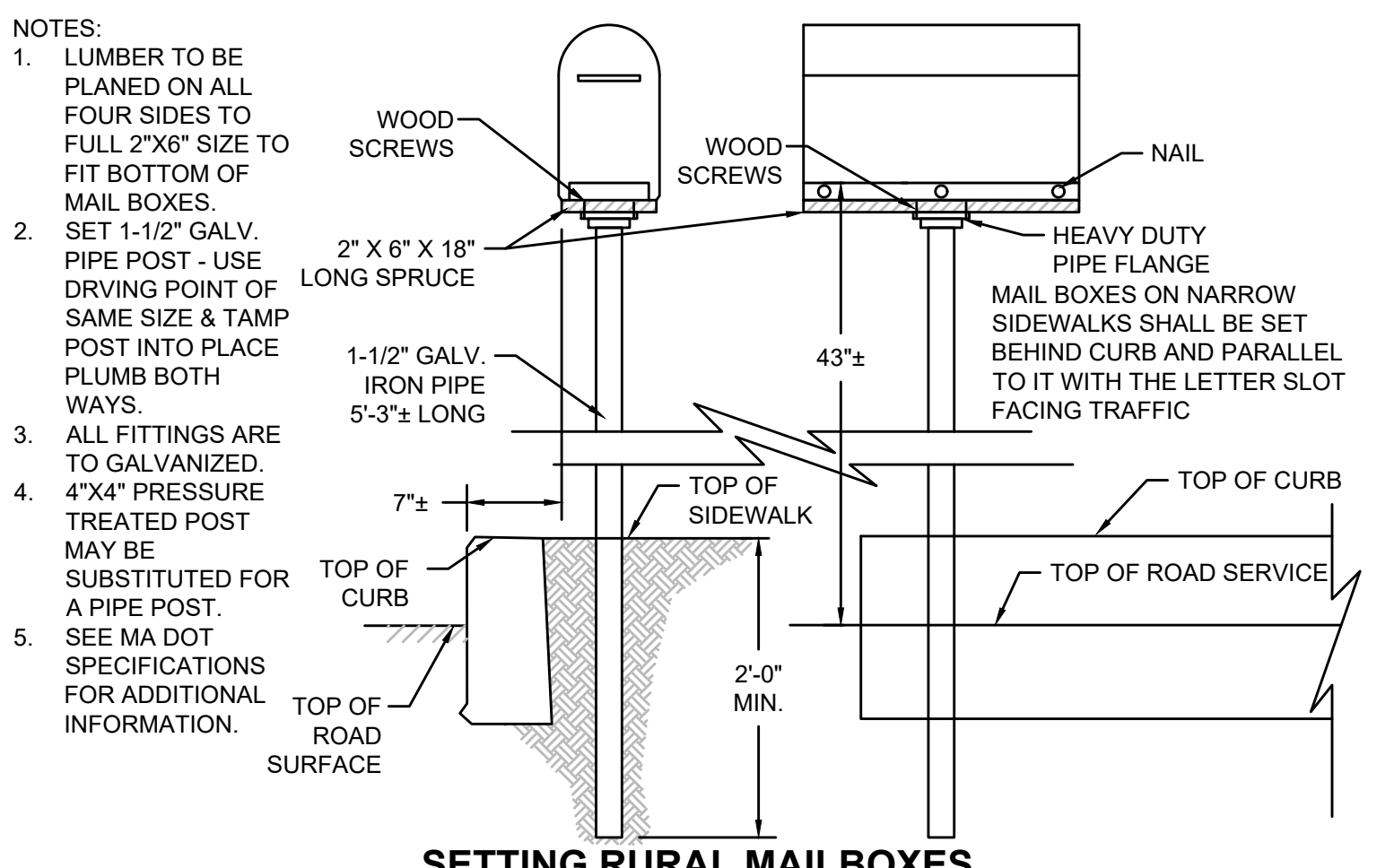
NOTES:
1. CROSSWALK AND ADA/AA-B-COMPLIANT RAMPS NOT SHOWN. SEE PLANS FOR LOCATIONS.
2. APS PUSHBUTTONS SHALL BE POSITIONED TO MEET ALL ADA/AA-B REQUIREMENTS.
3. THE DURATION TIME OF THE REPEATING FLASH SEQUENCE SHALL BE 11 SECONDS (32' WIDE ROAD AT A WALKING SPEED OF 3FPS). CALCULATION BASED ON SECTION 4E.06 OF THE 2009 MUTCD.

DETAIL A: DUAL YELLOW BEACON

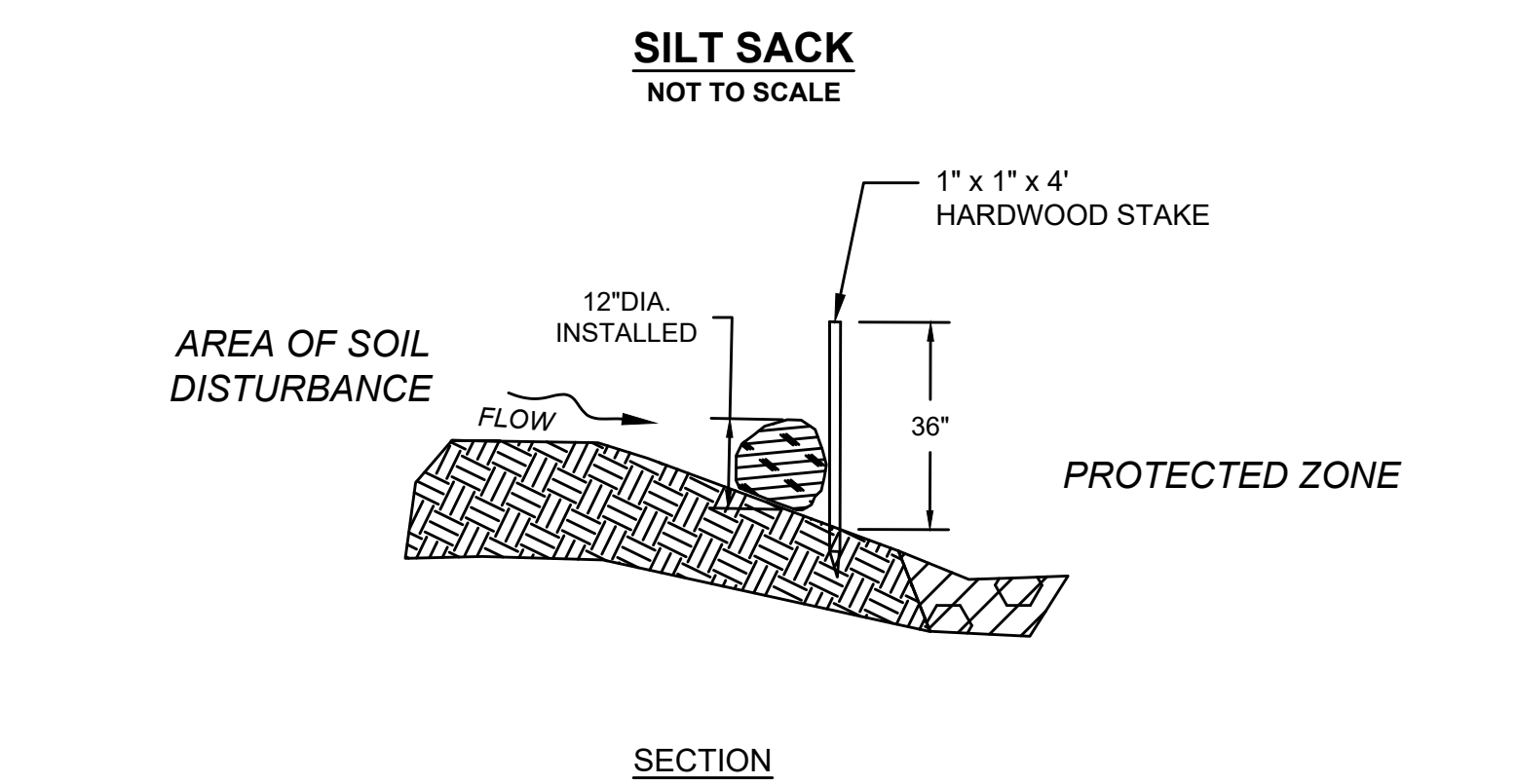
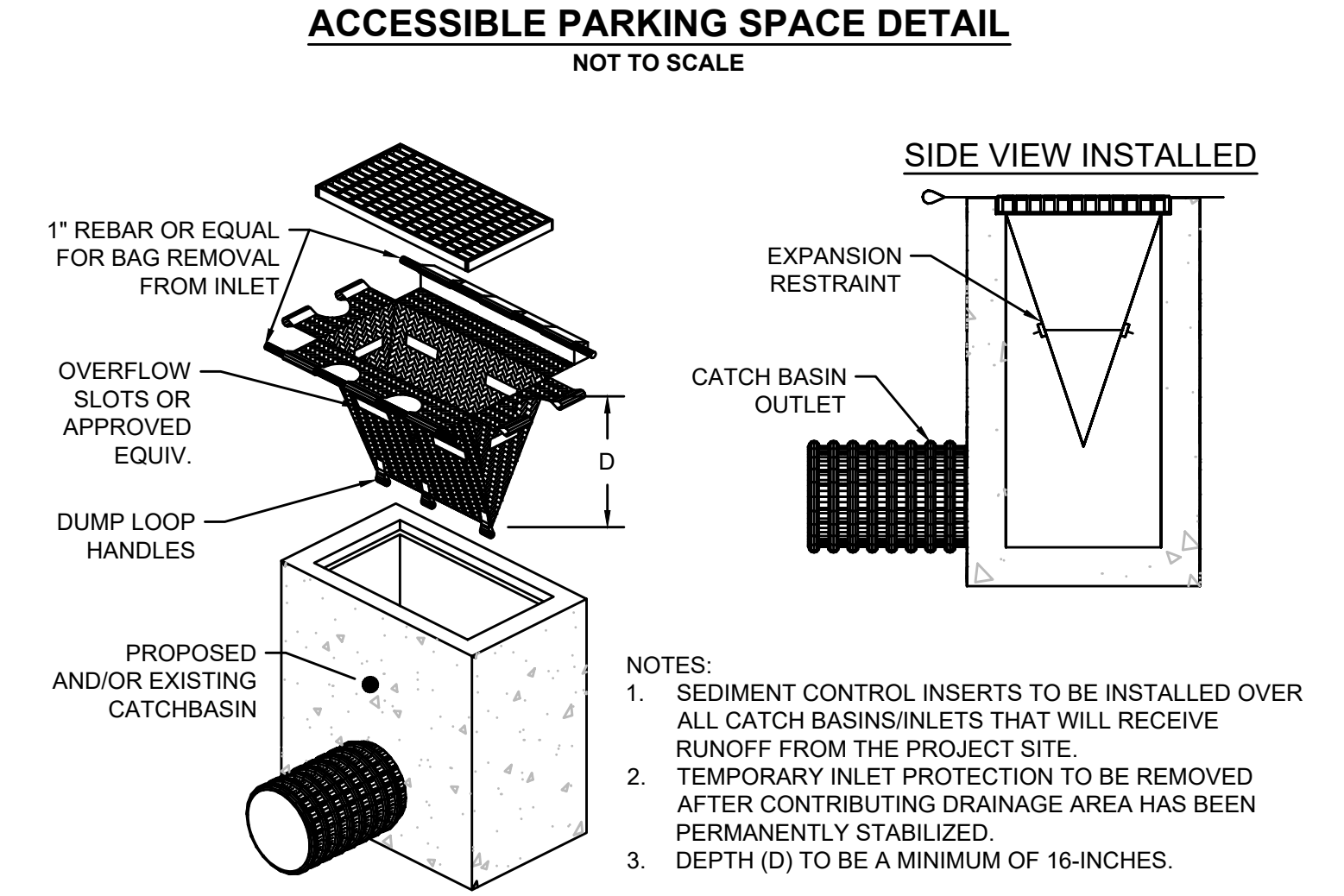
PILOT LIGHT (IF REQUIRED)
2" (MIN)
5" (MIN)
7" (MIN)
5" (MIN)



NOTE:
1. SIGN LAYOUT, COLORS, SYMBOL AND LETTERING SHALL BE STANDARD.
2. TO BE LOCATED ON SITE AS DIRECTED.
3. METAL POST TO BE PAINTED 2 COATS OF EXTERIOR GREEN ENAMEL (SEE SPECS).
4. TO BE LOCATED AT APPROPRIATE SPACES.
5. STEEL PIPE TO BE USED WHERE SIGN IS INSTALLED ON PAVED AREA.
6. CEMENT CONCRETE: 4,000 PSI, 3/4-INCH, 610 (M4.02.00).



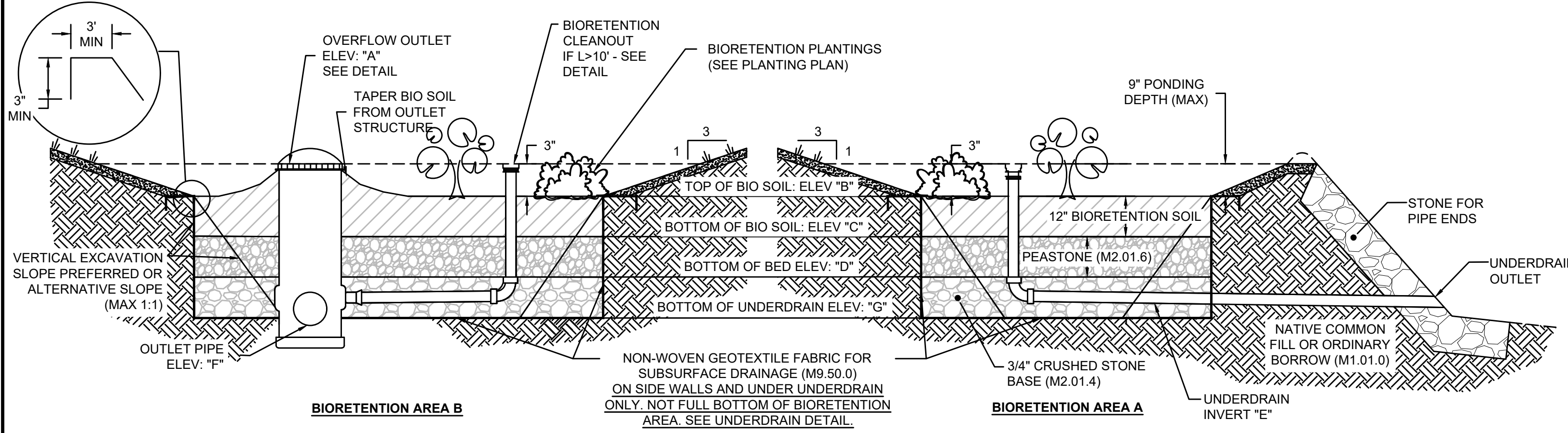
NOTES:
1. LUMBER TO BE PLANED ON ALL FOUR SIDES TO FULL 2"x6" SIZE TO FIT BOTTOM OF MAIL BOXES.
2. SET 1-1/2" GALV. PIPE POST - USE DRIVING POINT OF SAME SIZE & TAMP POST INTO PLACE PLUMB BOTH WAYS.
3. ALL FITTINGS ARE TO GALVANIZED.
4. 4"x4" PRESSURE TREATED POST MAY BE SUBSTITUTED FOR A PIPE POST.
5. SEE MA DOT SPECIFICATIONS FOR ADDITIONAL INFORMATION.



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	24	51
PROJECT FILE NO.		608413	

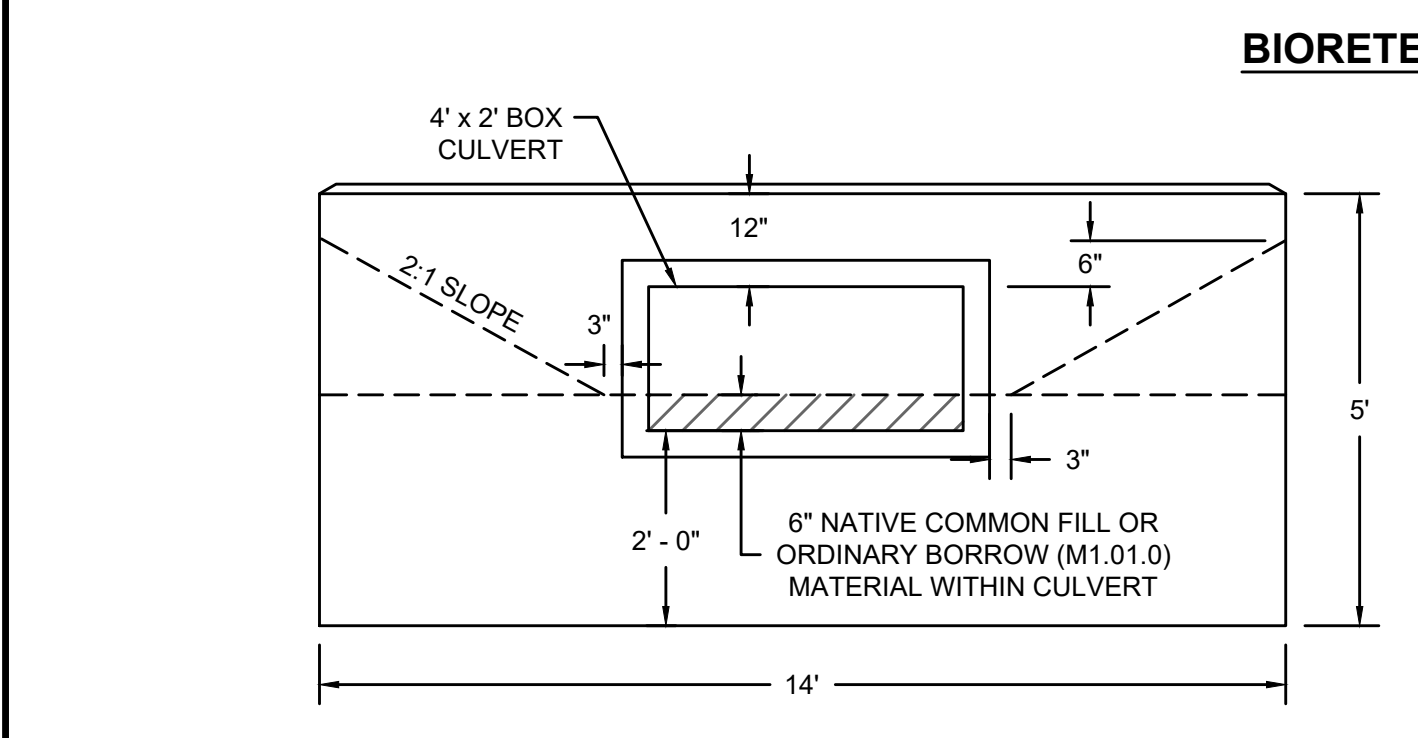
DETAILS (2)

- NOTES:
 1. CONTRACTOR RESPONSIBLE FOR SLOPE STABILIZATION AND SAFETY MEASURES DURING CONSTRUCTION. SIDE SLOPES TO BE 3:1 MAXIMUM SLOPE.
 2. LOAM AND SEED SIDE SLOPES PER SPECIFICATIONS. THE REMAINING DISTURBED AREA SHALL BE LOAM & SEED OR LANDSCAPED PER PLANTING PLAN.

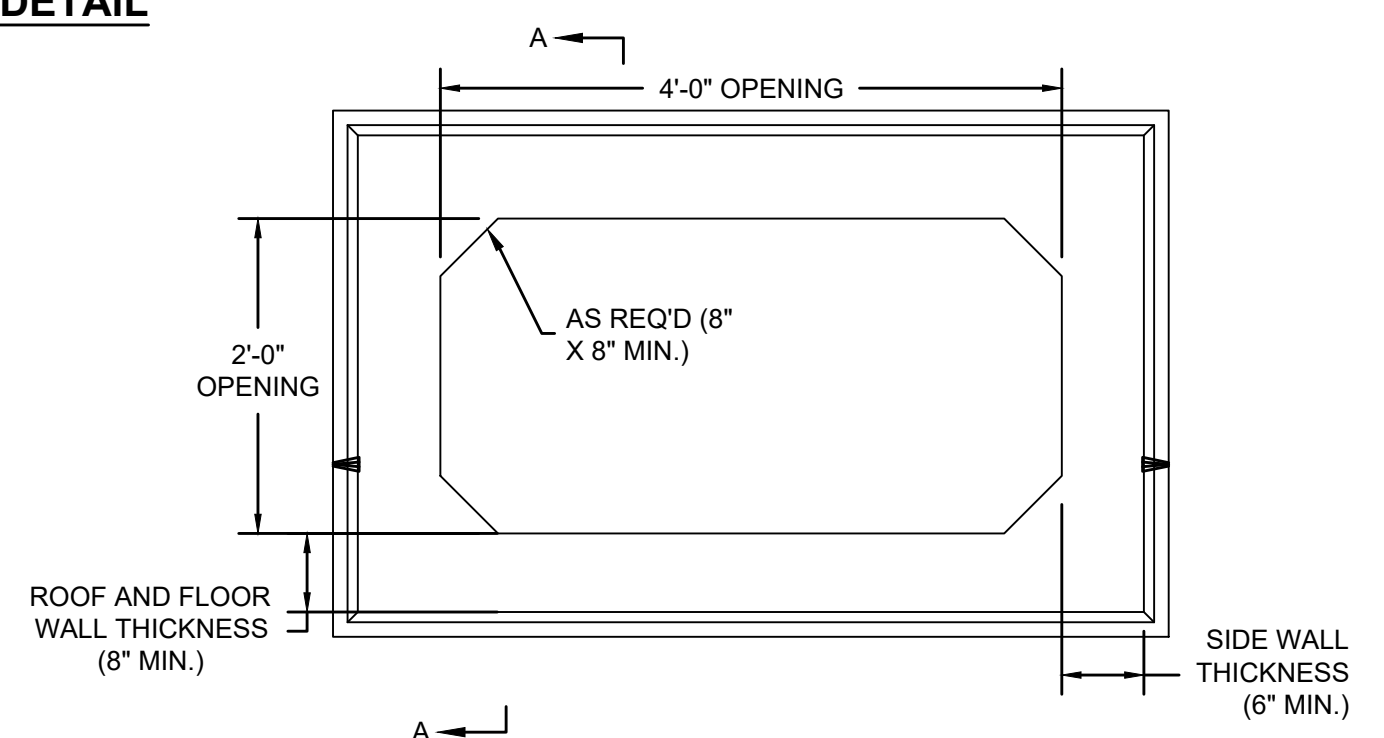


BIORETENTION SCHEDULE:

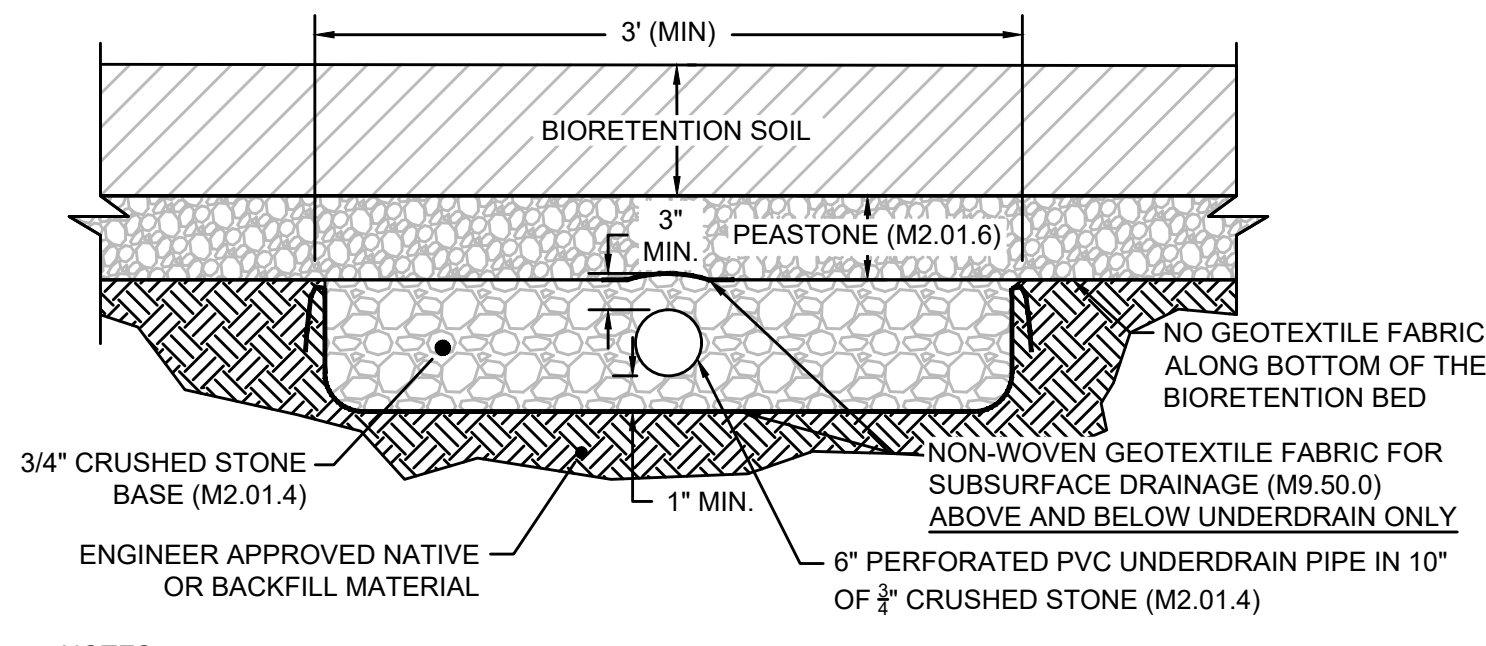
No.	Bottom Surface Area (sf)	Spillway Elevation (ft)	Design Freeboard (ft)	Overflow Inlet Rim (ft)	Ponding Depth (ft)	Bottom of Bio Area (ft)	Overflow Inlet Type #	ELEV. A			ELEV. B			ELEV. C			ELEV. D			ELEV. E			ELEV. F			ELEV. G		
								Top of Bio Soil (ft)	Bio Soil Depth (ft)	Bottom Bio Soil (ft)	Bottom of Bed (ft)	Min Underdrain Stone cover (in.)	Length Underdrain (ft)	Slope Underdrain (ft/ft)	Underdrain Pipe Invert (ft)	Outlet Invert (ft)	Bottom of Underdrain (ft)	Distal Underdrain Stone Depth (ft)	Outlet Underdrain Stone Depth (ft)									
A	116	224.90	0.30	N/A	0.75	224.15	NOTCH	224.15	1.00	223.15	0.50	222.65	3.00	0	221.90	221.65	0.92	1.00										
B	35	226.00	0.25	225.75	0.55	225.20	OVFL STR	225.20	1.00	224.20	0.50	223.70	3.00	7	0.5	222.95	222.90	222.70	0.88	1.00								



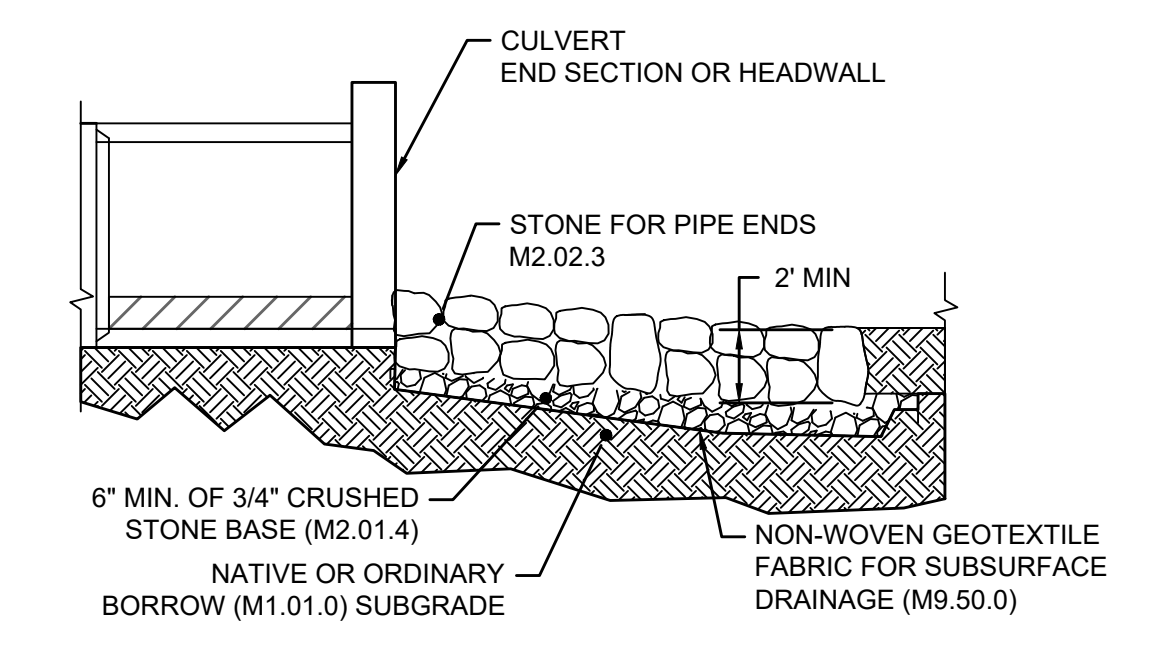
**HEADWALL FOR 4' X 2' BOX CULVERT
(STA. 5+85 ONLY)**
NOT TO SCALE



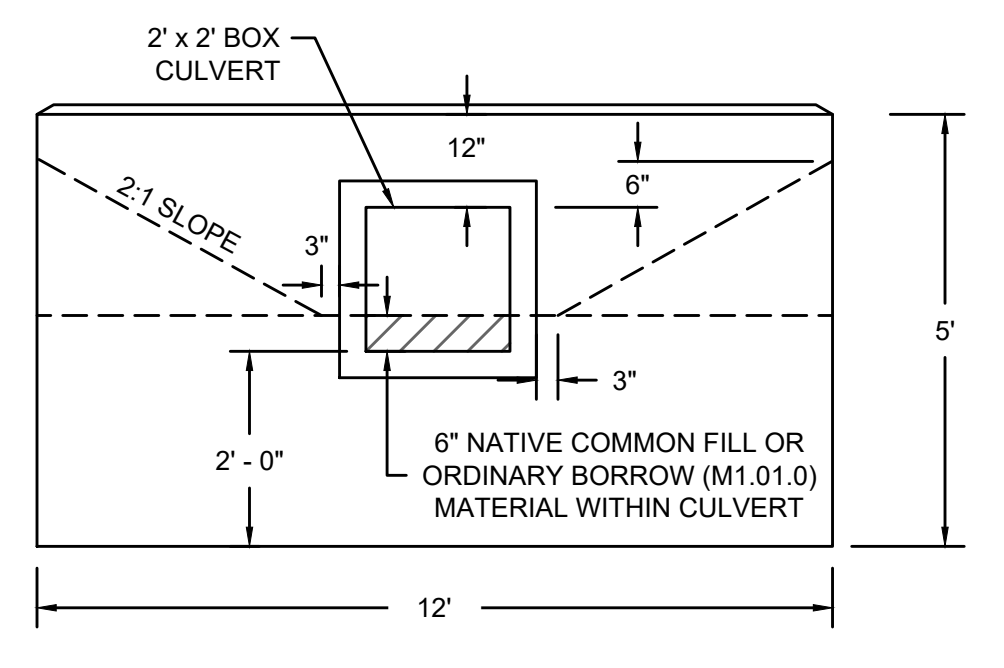
**FRONT VIEW FOR 4' X 2' BOX CULVERT
(STA. 5+85 ONLY)**
NOT TO SCALE



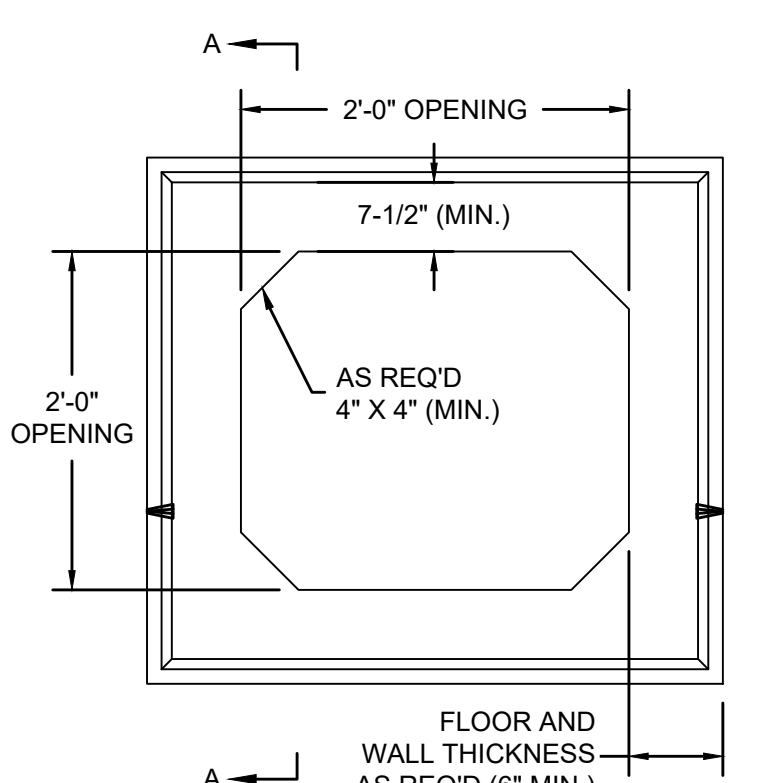
UNDERDRAIN DETAIL
NOT TO SCALE



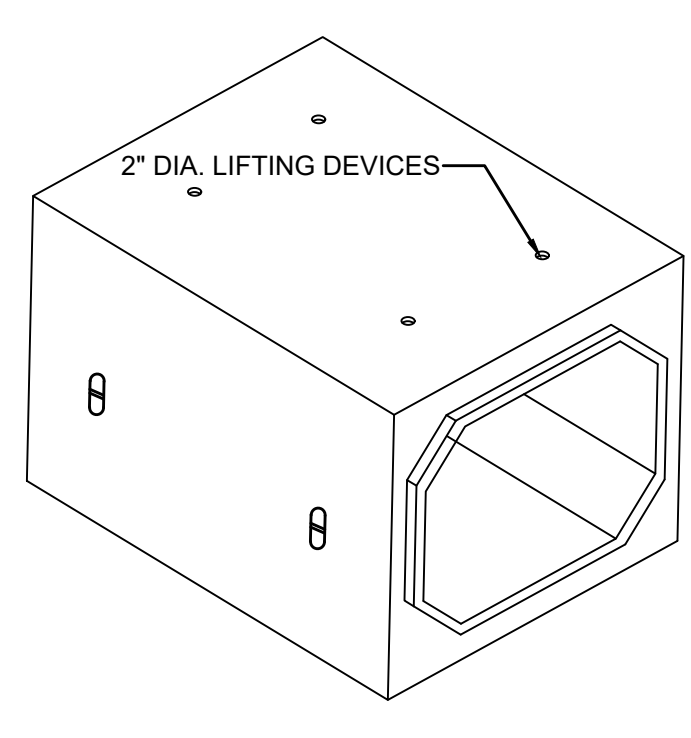
SECTION A-A



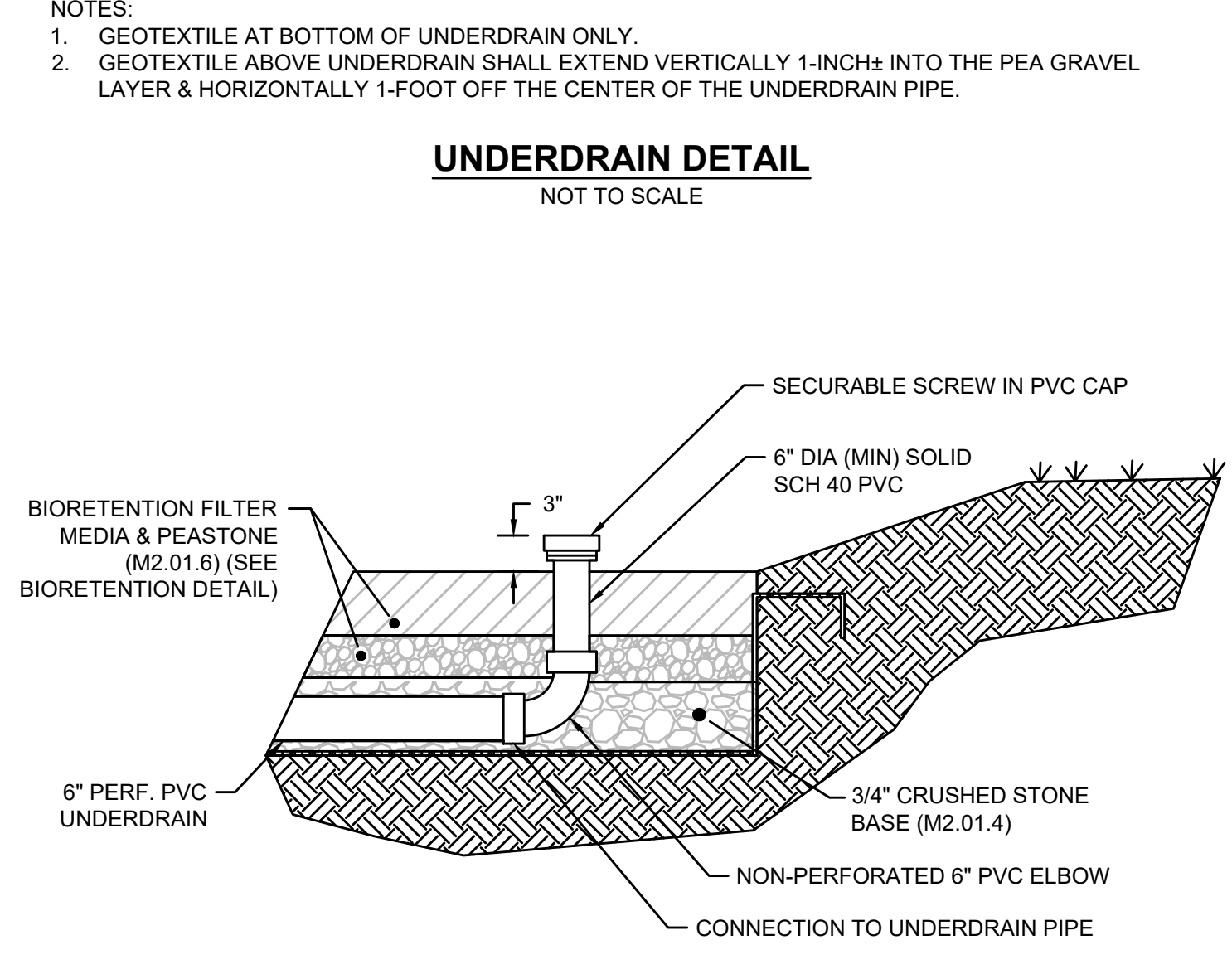
HEADWALL FOR 2' X 2' BOX CULVERT
NOT TO SCALE



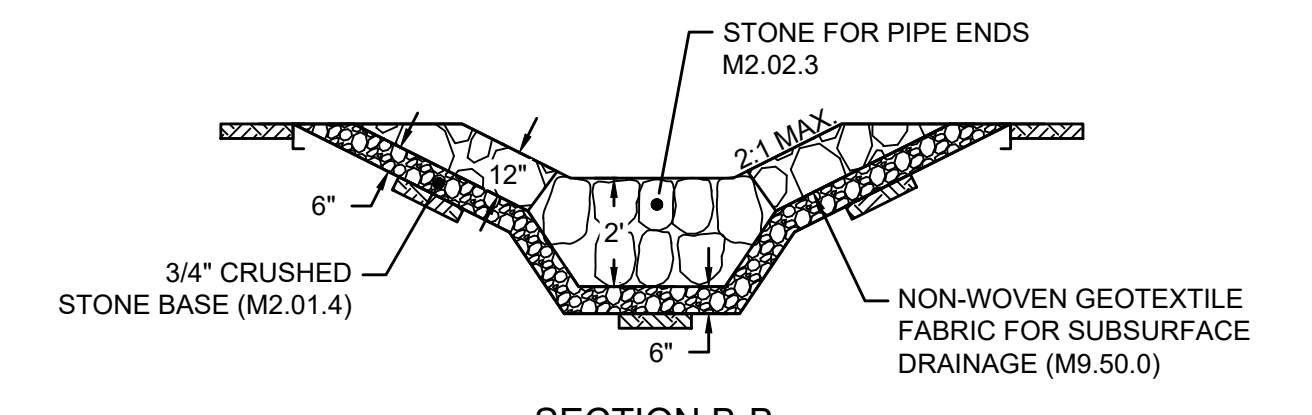
FRONT VIEW FOR 2' X 2' BOX CULVERT
NOT TO SCALE



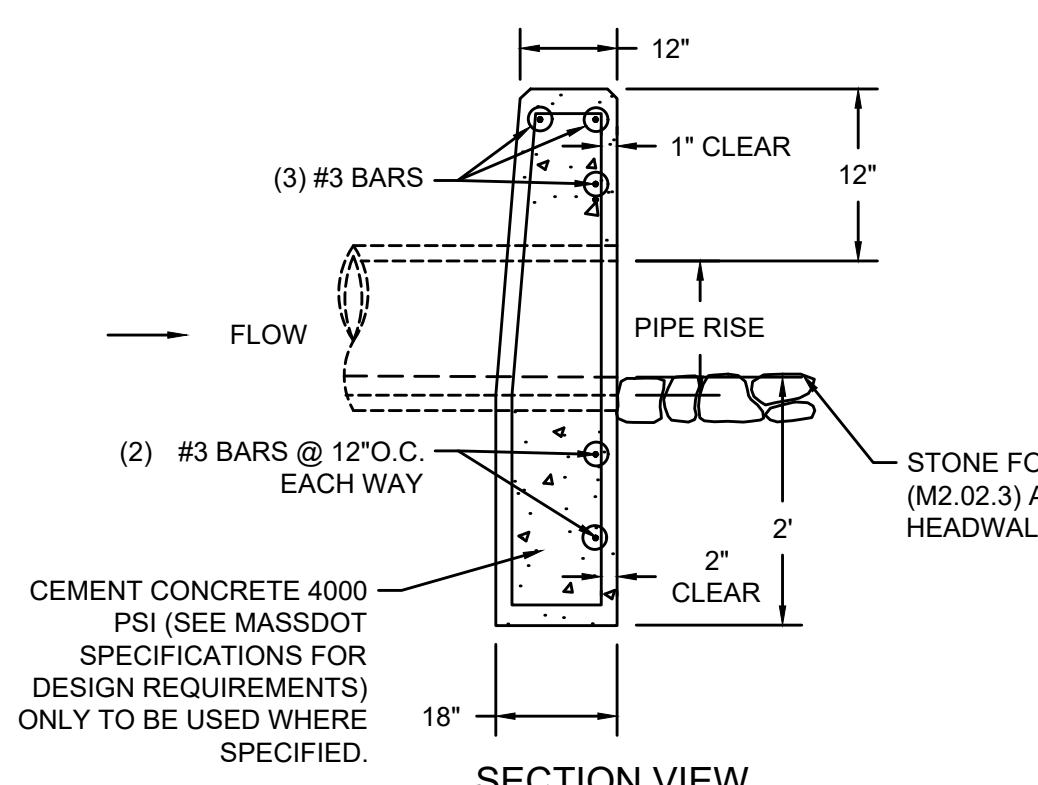
BOX CULVERT SCHEMATIC



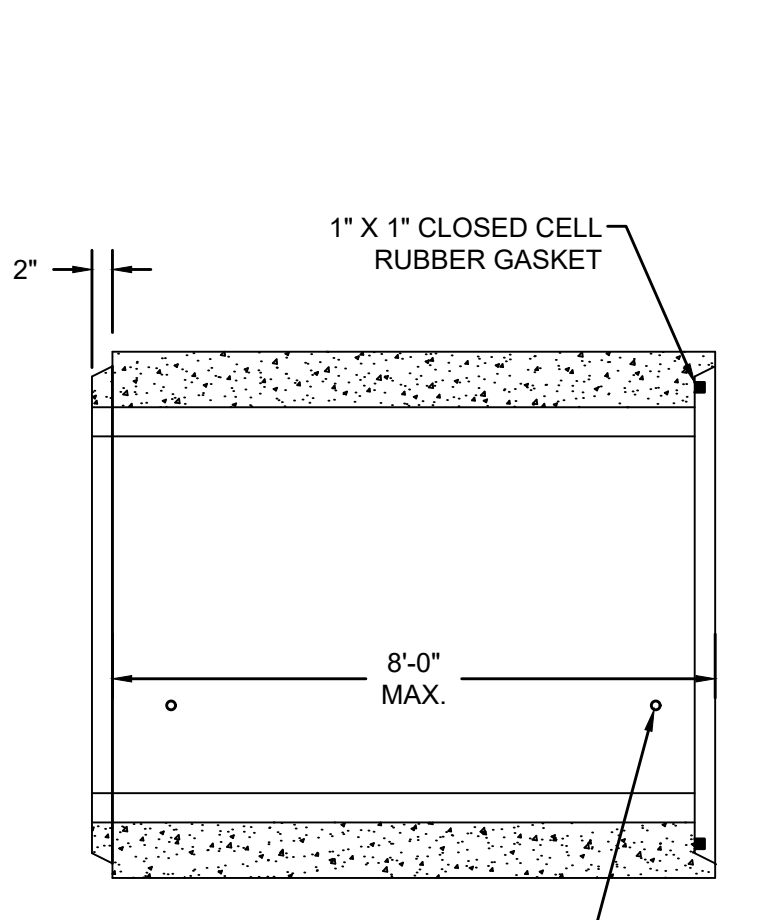
TYPICAL BIORETENTION CLEANOUT DETAIL
NOT TO SCALE



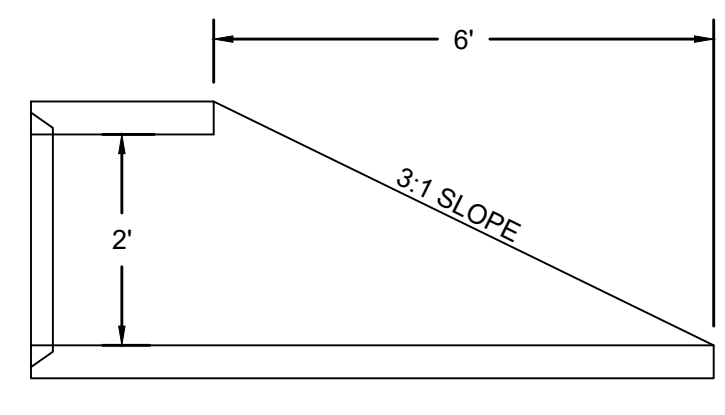
SECTION B-B



**CONCRETE MASONRY PIPE ENDS
MODIFIED MASSDOT DETAIL E206.4.0**
NOT TO SCALE

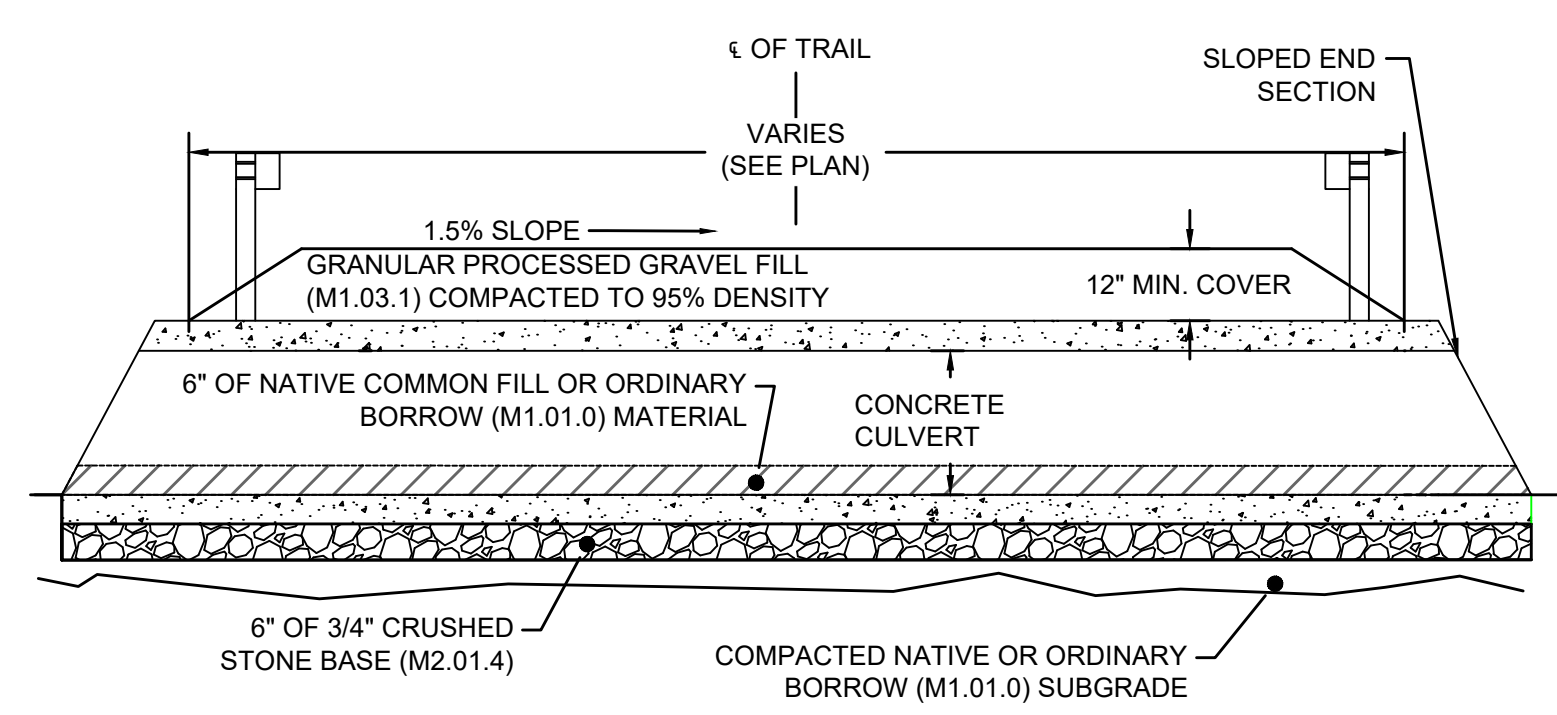


BOX CULVERT DETAIL
NOT TO SCALE

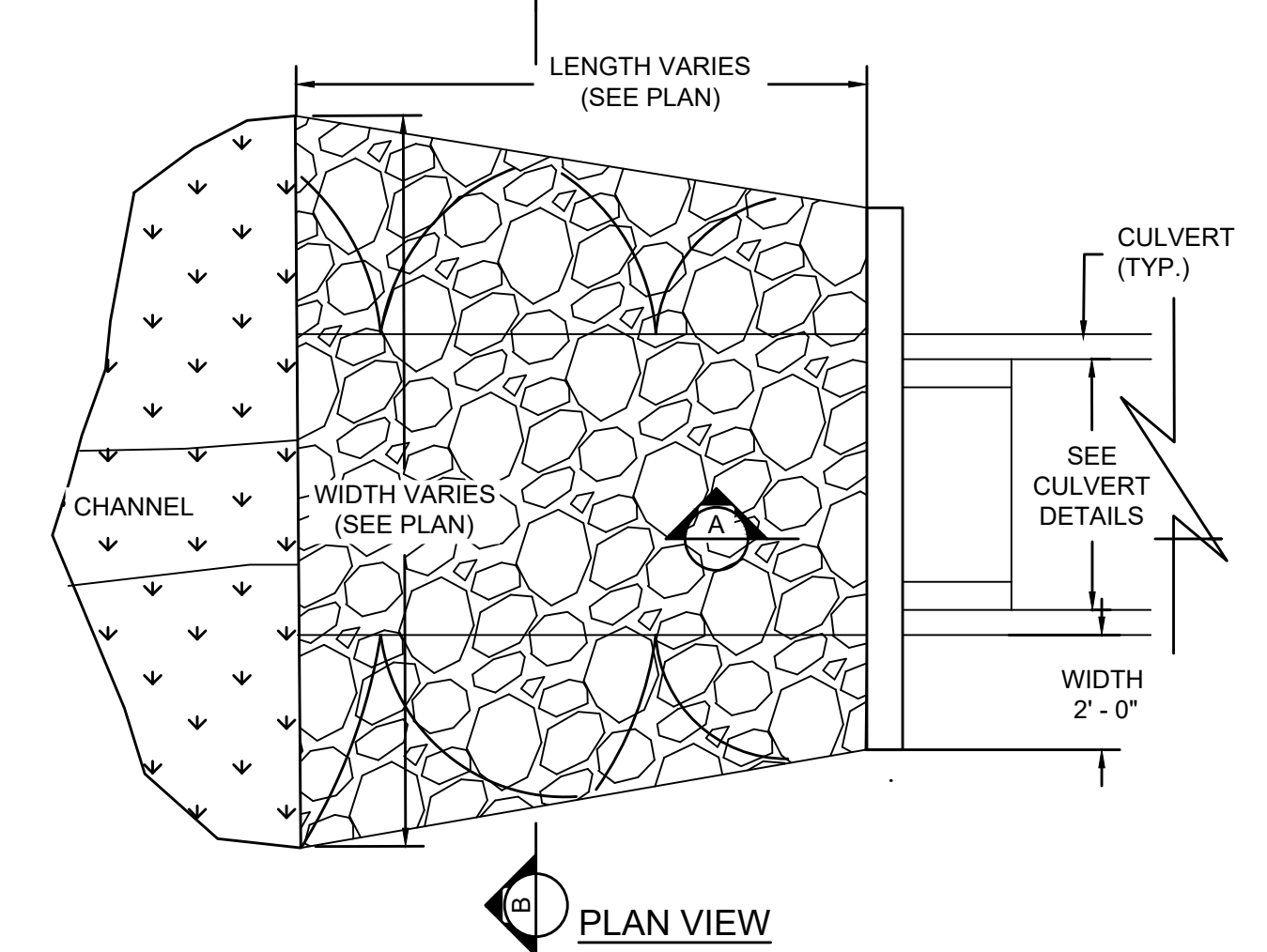


**MITERED END SCHEMATIC
(PROP CULVERT AT STA. 18+65 ONLY)**

- GENERAL NOTES:
 1. CONCRETE: 5,000 P.S.I. MINIMUM STRENGTH @ 28 DAYS.
 2. STEEL REINFORCING- ASTM A-615, GRADE 60.
 3. COVER TO STEEL- 1\"/>



TYPICAL PRECAST CONCRETE CULVERT PROFILE
NOT TO SCALE



PLAN VIEW

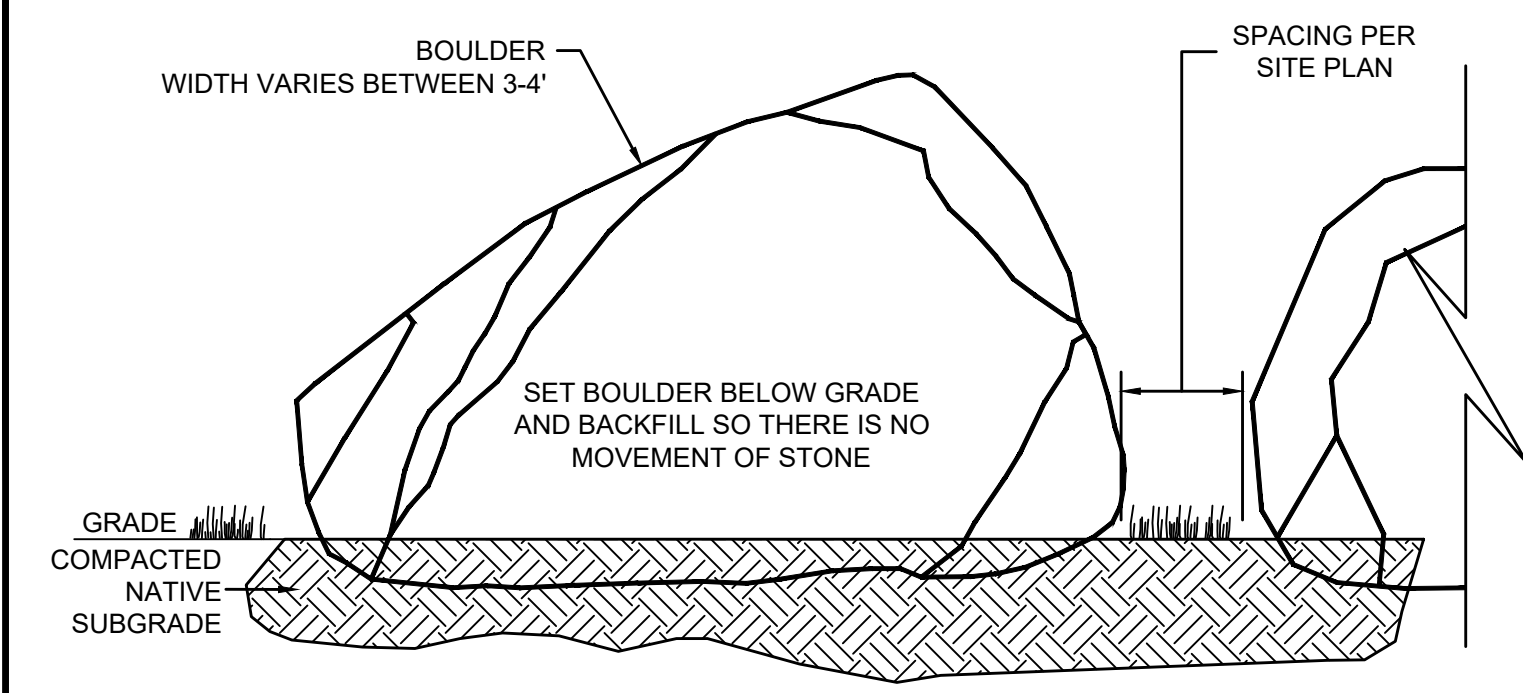
- NOTES:
 1. STONE TO EXTEND UP BOTH SIDES OF THE APRON AND AROUND THE END OF THE CULVERT AT THE DISCHARGE OUTLET AT A MAXIMUM SLOPE OF 2:1 AND A HEIGHT NOT LESS THAN 2/3 THE CULVERT HEIGHT.
 2. THE AREA TO BE STONED TO BE UNDERCUT SO THAT THE INVERT OF THE APRON SHALL BE AT THE SAME GRADE (FLUSH) WITH THE RECEIVING CHANNEL.
 3. THE WIDTH OF THE END OF THE APRON TO BE EQUAL TO THE BOTTOM WIDTH OF THE RECEIVING CHANNEL (MAX TAPER 5:1).
 4. ALL SUBGRADE FOR STRUCTURE TO BE COMPACTED TO 95% OR GREATER.
 5. ANY DISTURBED AREA FROM END OF APRON TO RECEIVING CHANNEL MUST BE STABILIZED.
 6. ANY UNSUITABLE ORGANIC MATERIAL FOUND BELOW THE SUB-BASE OF THE CULVERT SHALL BE REMOVED & REPLACED W/ COMPACTED PROCESSED GRAVEL SUBBASE (M1.03.1) AS REQUIRED AT AN ADDITIONAL EXPENSE.

CULVERT TO STONE TRANSITION DETAIL
NOT TO SCALE

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	25	51
PROJECT FILE NO.		608413	

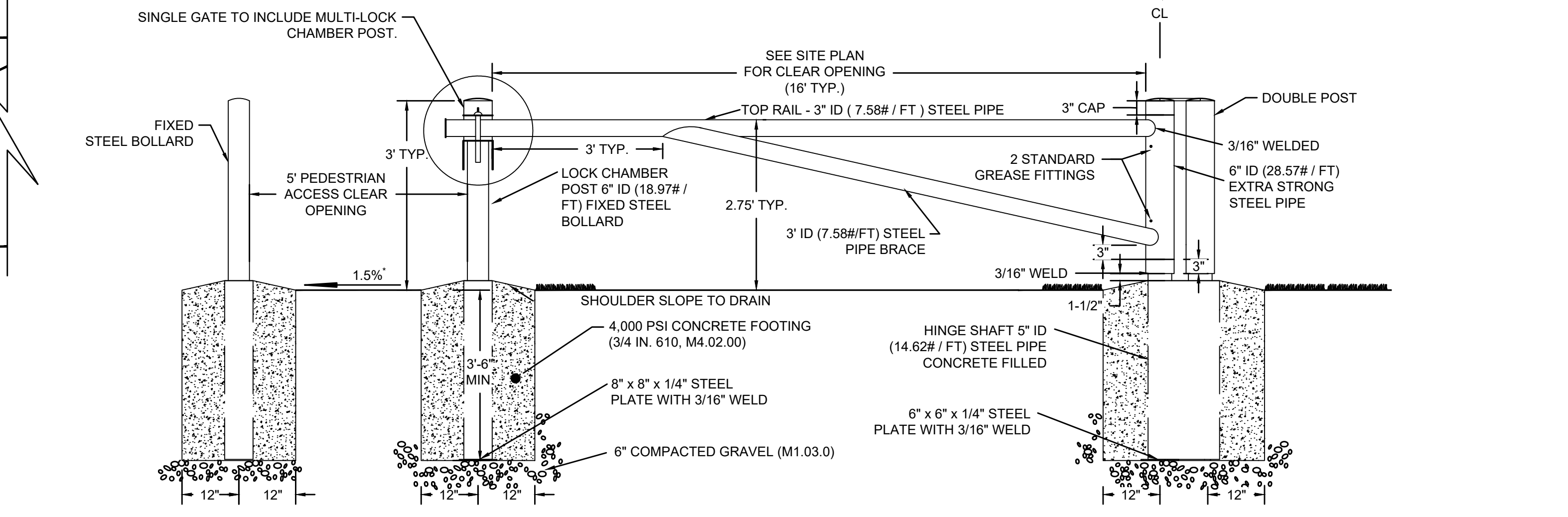
DETAILS (3)



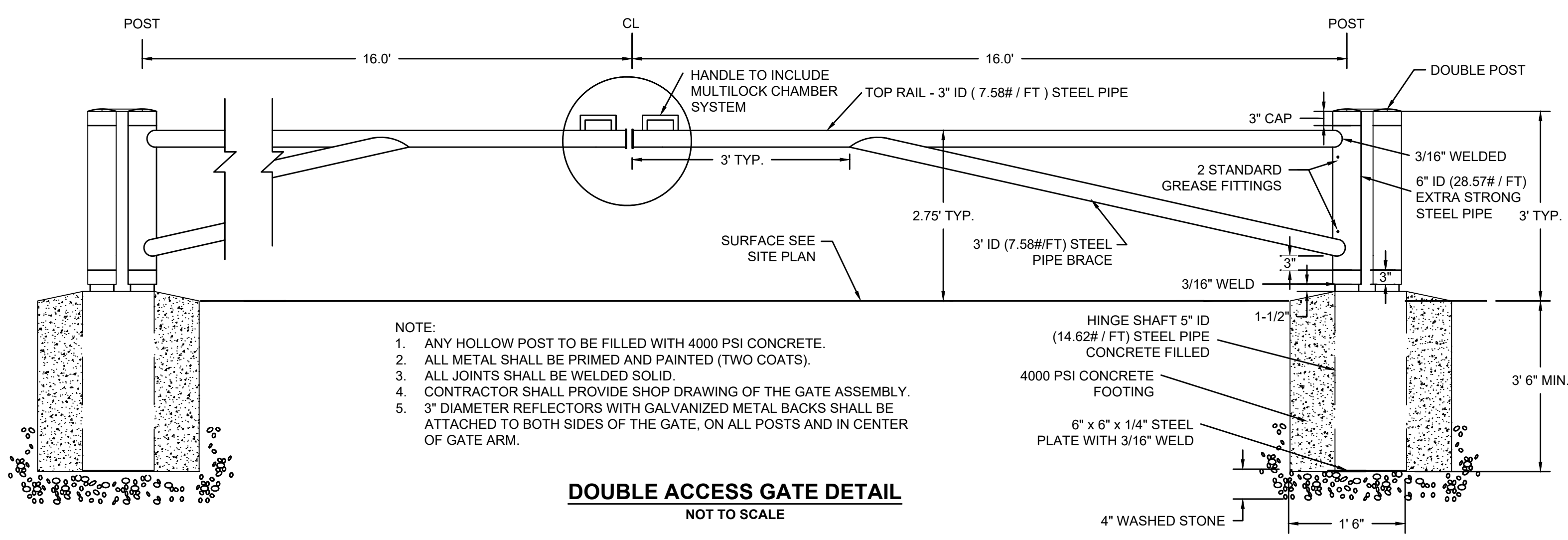
RESET BOULDER
NOT TO SCALE

NOTE: BOULDERS FOUND ON SITE TO BE RESET ALONG EDGE OF WETLAND REPLICATION AREA.

NOTE:
1. PROVIDE TWO LOCK CHAMBER POSTS FOR EACH GATE: ONE AT LOCKED POSITION AND ONE AT OPEN POSITION (SEE SITE PLAN).
2. ANY HOLLOW POSTS TO BE FILLED WITH CONCRETE (4,000 PSI, 3/4 IN. MASSDOT M4).
3. * ±0.5% TOLERANCE FOR CONSTRUCTION OF CROSS SLOPES ON ACCESSIBLE SURFACES.

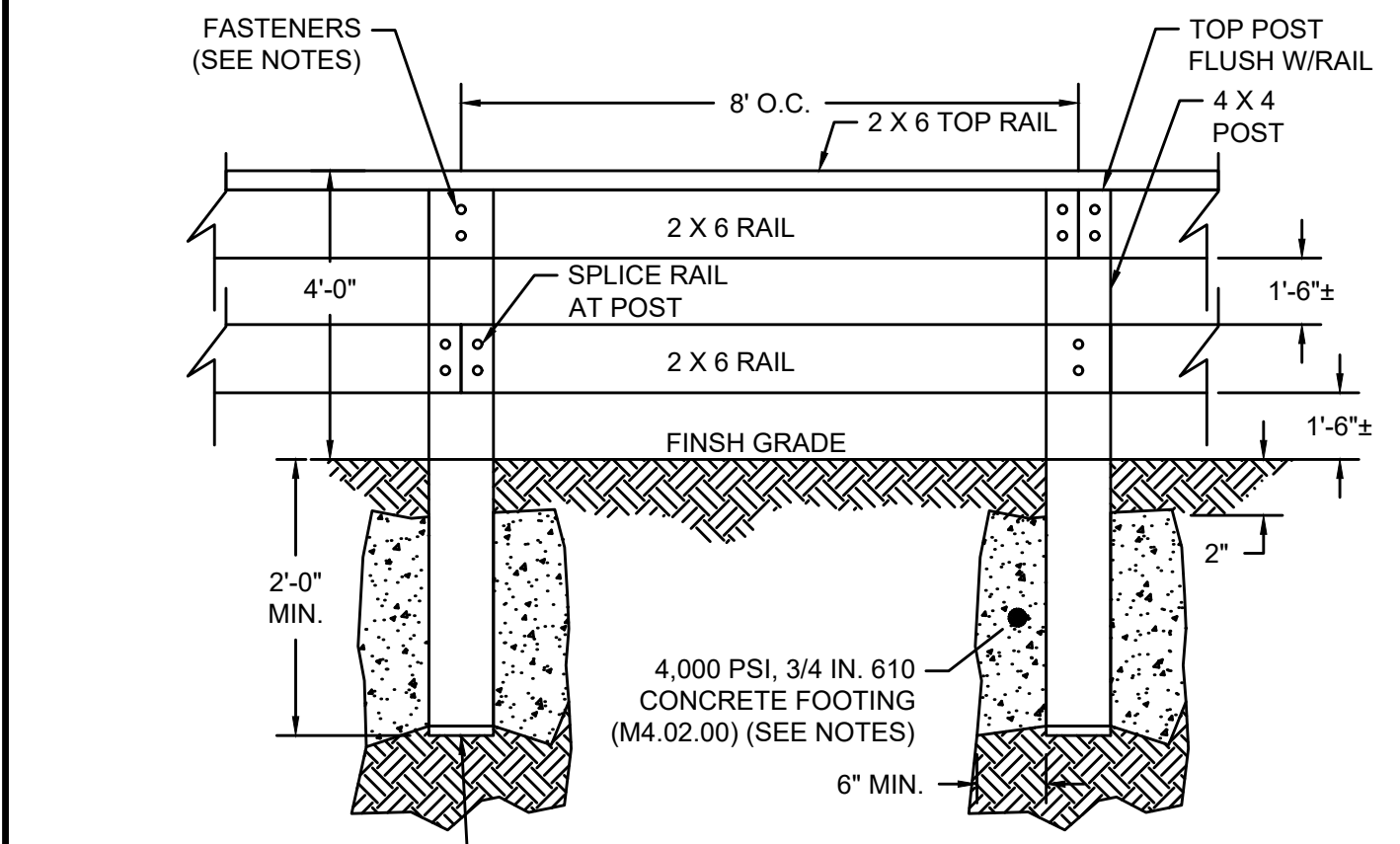


SINGLE ACCESS GATE DETAIL
NOT TO SCALE



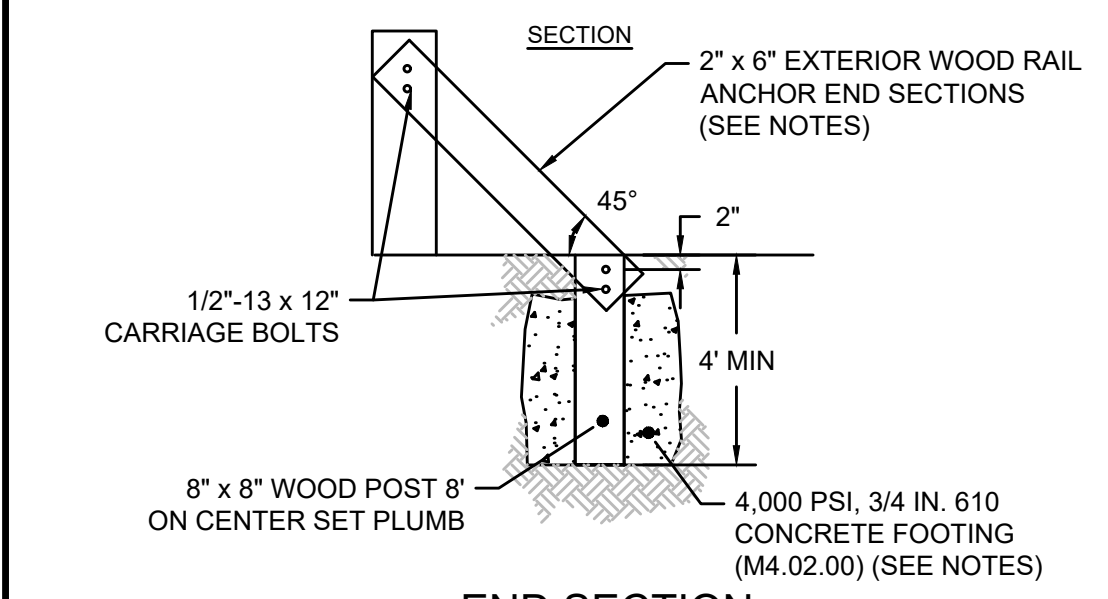
DOUBLE ACCESS GATE DETAIL
NOT TO SCALE

NOTE:
1. ANY HOLLOW POST TO BE FILLED WITH 4000 PSI CONCRETE.
2. ALL METAL SHALL BE PRIMED AND PAINTED (TWO COATS).
3. ALL JOINTS SHALL BE WELDED SOLID.
4. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF THE GATE ASSEMBLY.
5. 3" DIAMETER REFLECTORS WITH GALVANIZED METAL BACKS SHALL BE ATTACHED TO BOTH SIDES OF THE GATE, ON ALL POSTS AND IN CENTER OF GATE ARM.

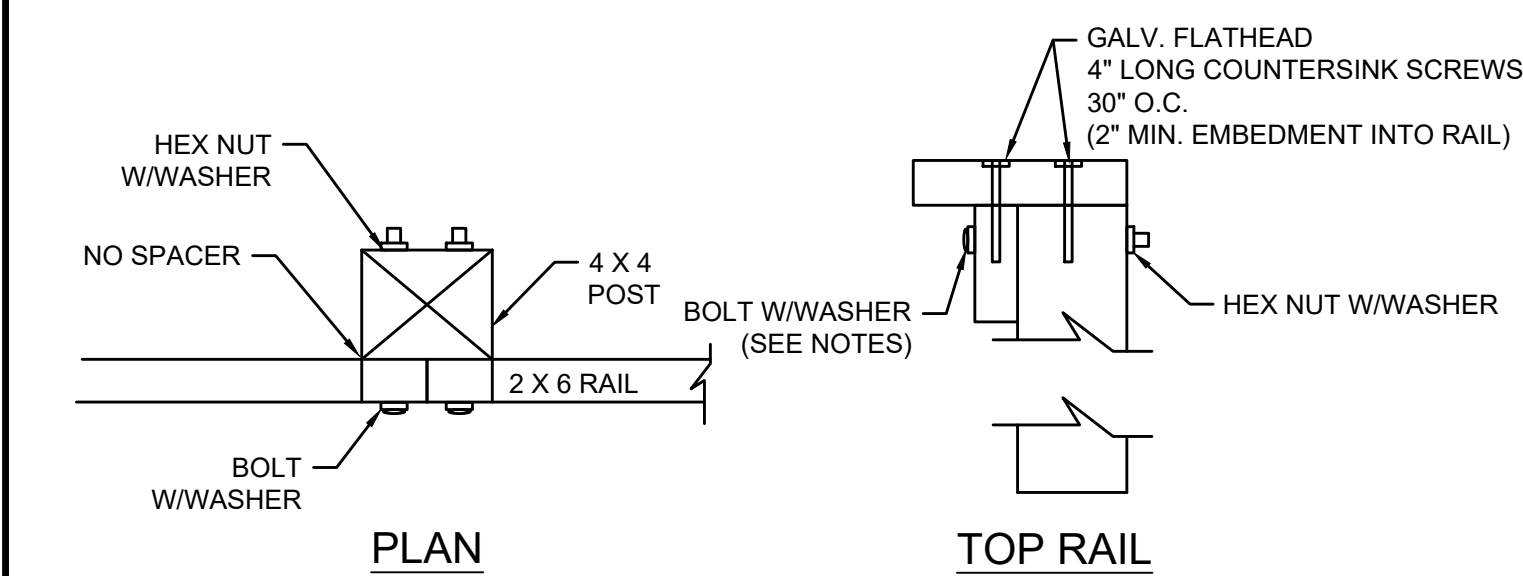


SECTION

POST BELOW CONCRETE (1" MIN.) FOR FREE DRAINAGE



END SECTION

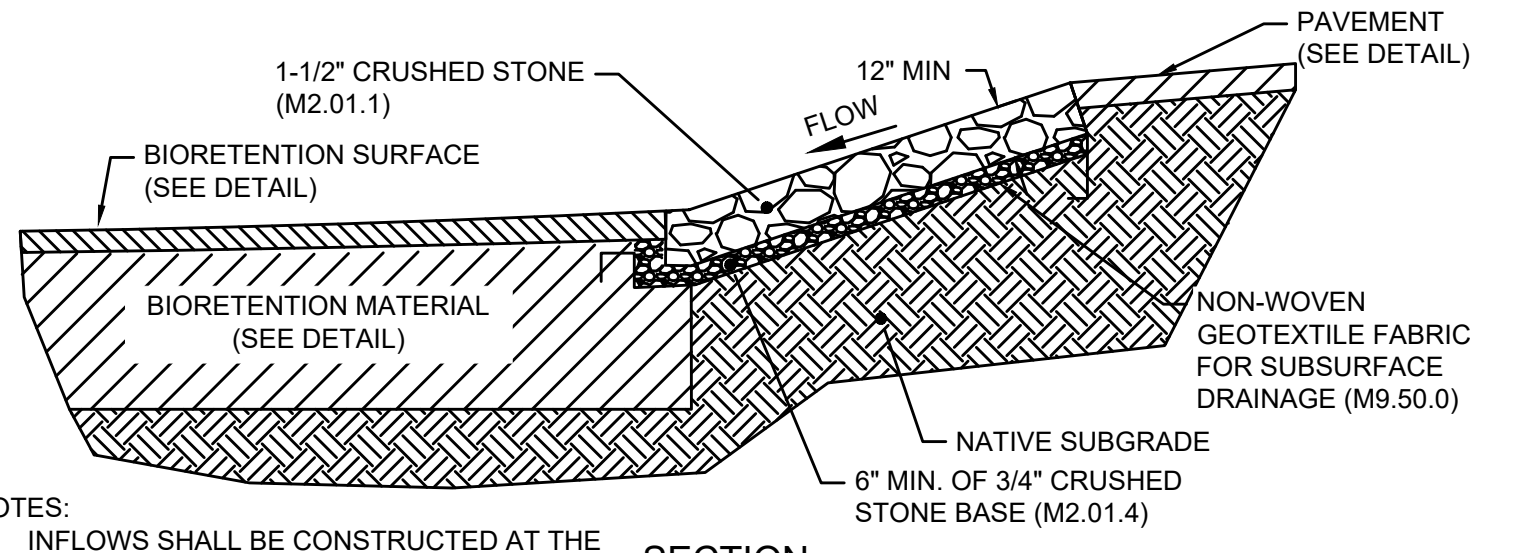


PLAN

TOP RAIL

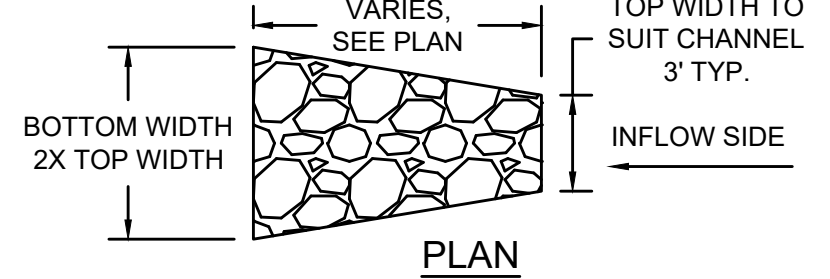
NOTE:
1. MATERIALS PER MASSDOT M9.05.1 AND M9.05.5. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. POST AND RAILS TO BE PRESSURE TREATED LUMBER GROUND CONTACT LUMBER, NO. 2 GRADE MIN.
3. ALL SPLICES ARE TO BE MADE AT POSTS. ALTERNATE SPLICE CONNECTIONS.
4. FASTENERS TO BE HOT DIPPED GALVANIZED OR STAINLESS STEEL MATCHING ASTM A153 AND ASTM A653.
5. THE CONTRACTOR SHALL INSTALL TWO 1/2" BOLTS AT EACH RAIL TO POST CONNECTION. ALTERNATIVE OPTION: THRU-LOCKING BOLT (FASTENMASTER THRU LOCK OR EQUAL).
6. FOOTING MATERIAL TO EXTEND AROUND THE ENTIRE POST IF EXCAVATING AND BACKFILLING.
7. WOOD POSTS SHALL BE NOTCHED AS NECESSARY TO FACILITATE CURVES AND CHANGES IN DIRECTION. RAIL SHALL BE CUT TO CREATE A RAIL TO RAIL FLUSH FACE JOINT AS NECESSARY.
8. END SECTIONS SHALL BE ANCHORED INTO THE GROUND A MINIMUM 1-FOOT BELOW FINISH GRADE WHERE PARALLEL TO TRAFFIC TO AVOID BLUNT ENDINGS.
9. INSTALL WITH POST BRACKETS WHEN OVER BLOCK WALL AND CONCRETE HEADWALLS. SEE POST BRACKET (WOOD TO CONCRETE) DETAIL.

WOOD PEDESTRIAN BARRIER
NOT TO SCALE

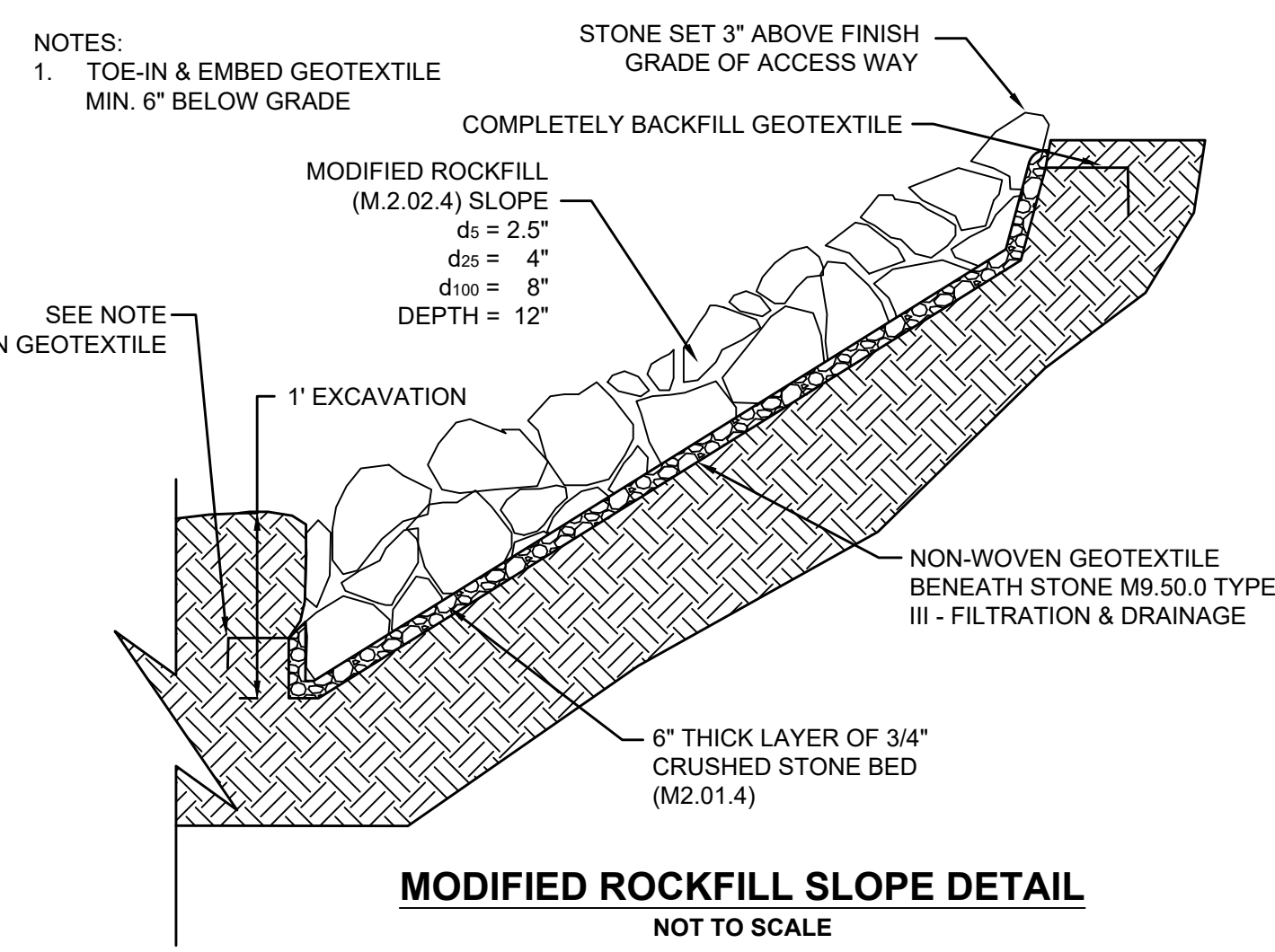


SECTION

BIORETENTION INFLOW DETAIL
NOT TO SCALE



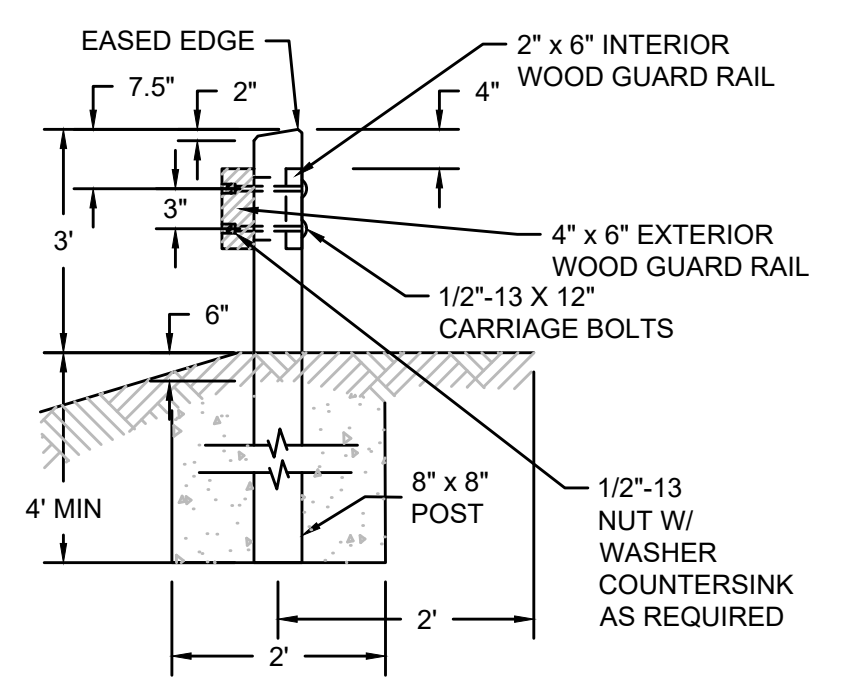
PLAN



MODIFIED ROCKFILL SLOPE DETAIL
NOT TO SCALE

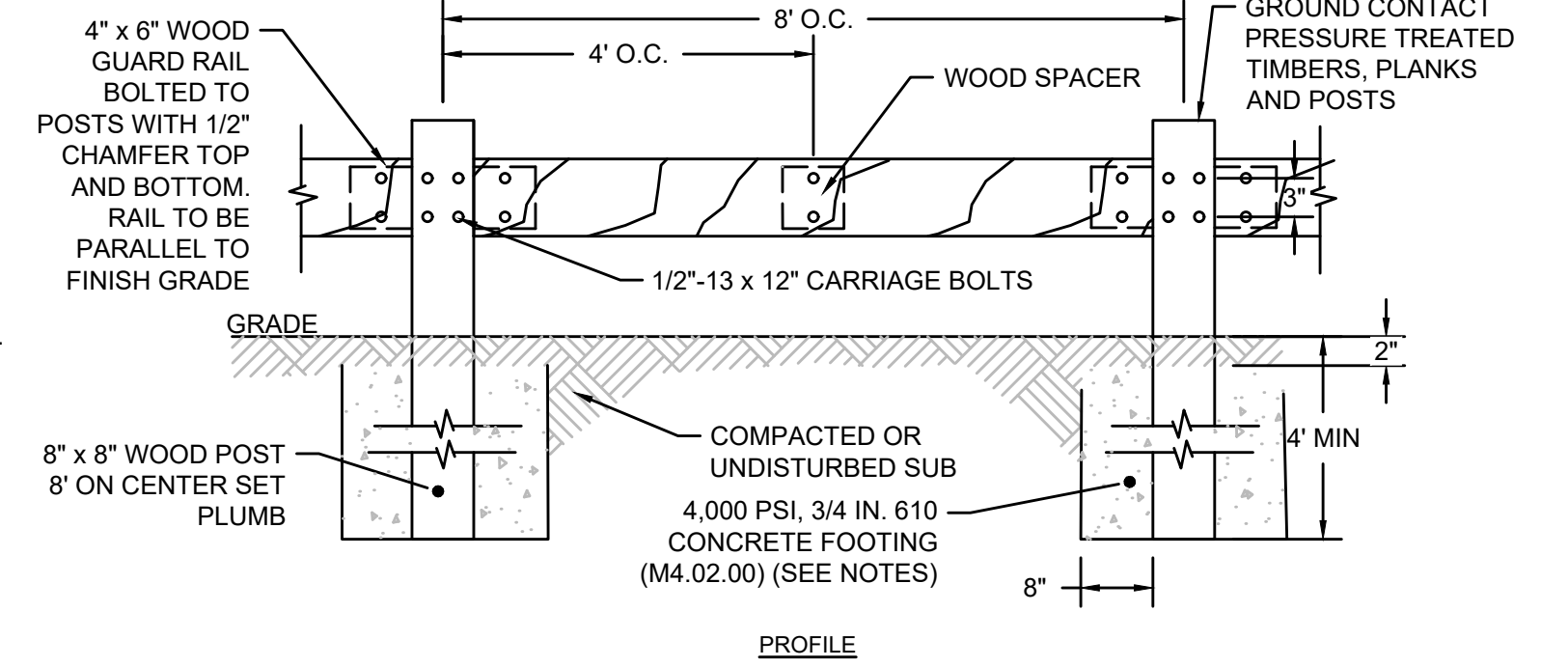
NOTE:
1. TOE-IN & EMBED GEOTEXTILE MIN. 6" BELOW GRADE

NOTE:
1. MATERIALS PER MASSDOT M9.05.1 AND M9.05.5. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. POST AND RAILS TO BE PRESSURE TREATED LUMBER GROUND CONTACT LUMBER, NO. 2 GRADE MIN.
3. ALL SPLICES ARE TO BE MADE AT POSTS. ALTERNATE SPLICE CONNECTIONS.
4. FASTENERS TO BE HOT DIPPED GALVANIZED OR STAINLESS STEEL MATCHING ASTM A153 AND ASTM A653.
5. THE CONTRACTOR SHALL INSTALL TWO 1/2" BOLTS AT EACH RAIL TO POST CONNECTION. ALTERNATIVE OPTION: THRU-LOCKING BOLT (FASTENMASTER THRU LOCK OR EQUAL).
6. FOOTING MATERIAL TO EXTEND AROUND THE ENTIRE POST IF EXCAVATING AND BACKFILLING.
7. WOOD POSTS SHALL BE NOTCHED AS NECESSARY TO FACILITATE CURVES AND CHANGES IN DIRECTION. RAIL SHALL BE CUT TO CREATE A RAIL TO RAIL FLUSH FACE JOINT AS NECESSARY.
8. END SECTIONS SHALL BE ANCHORED INTO THE GROUND A MINIMUM 1-FOOT BELOW FINISH GRADE WHERE PARALLEL TO TRAFFIC TO AVOID BLUNT ENDINGS.

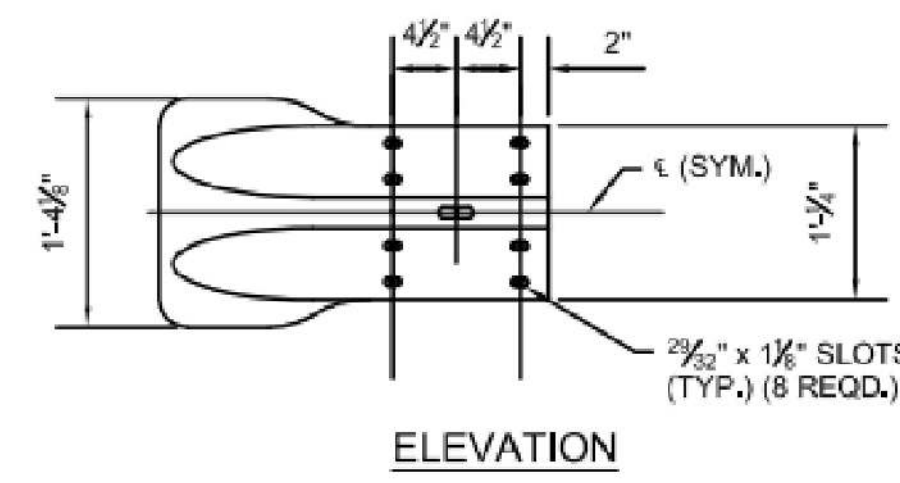


SECTION

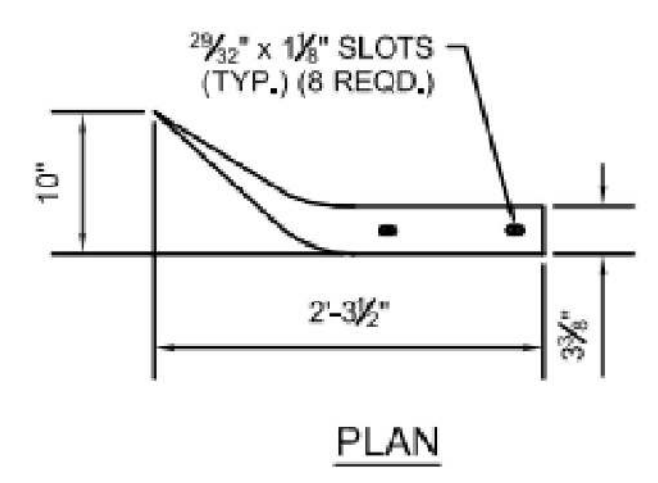
END SECTION



TIMBER GUARDRAIL
NOT TO SCALE



ELEVATION



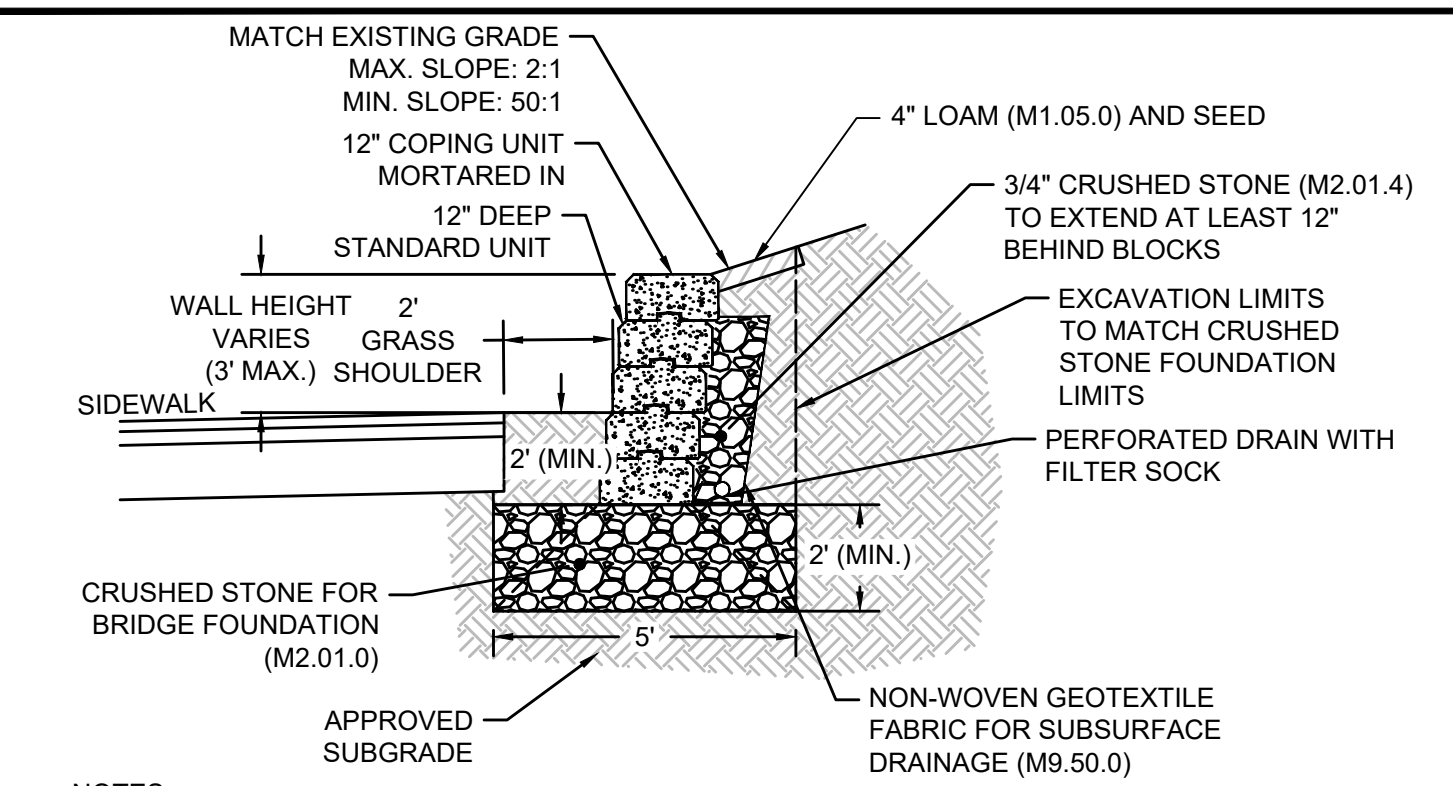
PLAN

FLARED END UNIT
NOT TO SCALE

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

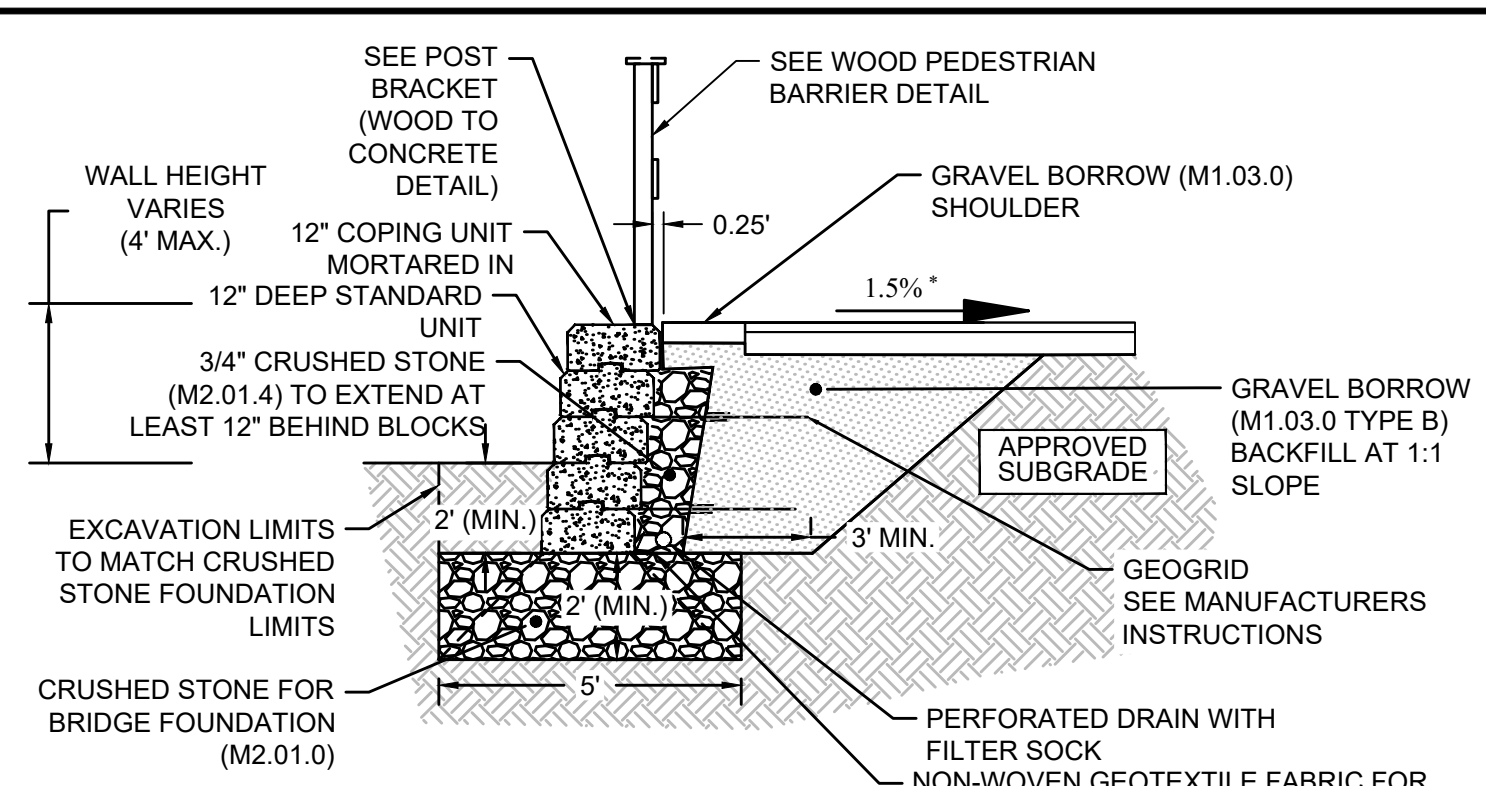
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	26	51
PROJECT FILE NO. 608413			

DETAILS (4)



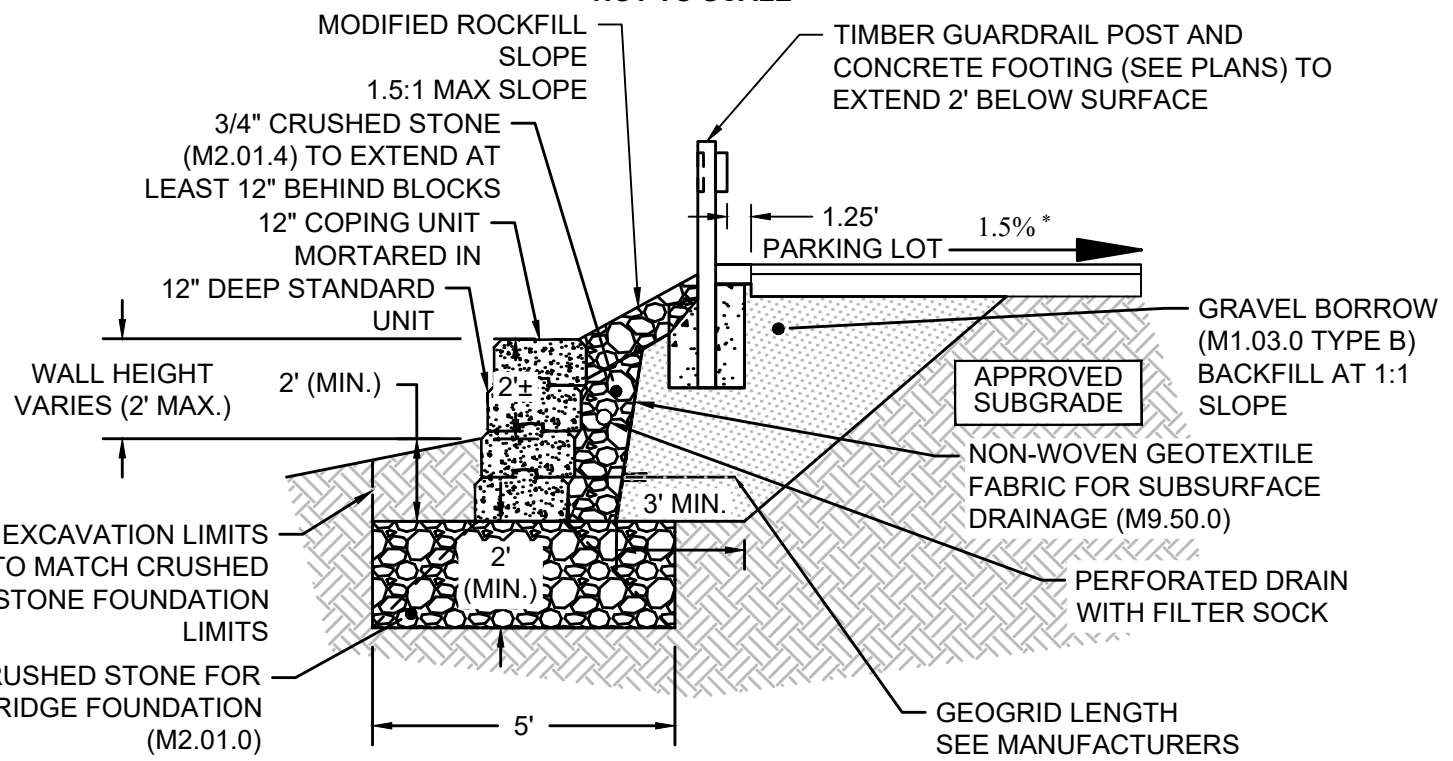
- NOTES:
- SEE SPECIFICATIONS FOR MANUFACTURERS INSTALLATION INSTRUCTIONS.
 - ASSUME NO GEOGRID REQUIRED FOR WALLS LESS THAN 3 FEET HIGH OR WALLS IN A CUT SLOPE CONDITION.
 - WALLS ARE TO BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH SPECIAL PROVISIONS 996.03 THROUGH 996.05.

**BLOCK RETAINING WALL (ALONG ROCKY HILL ROAD) DETAIL
STA 1+88.84 TO STA 3+49.28 (SIDEWALK CL)**



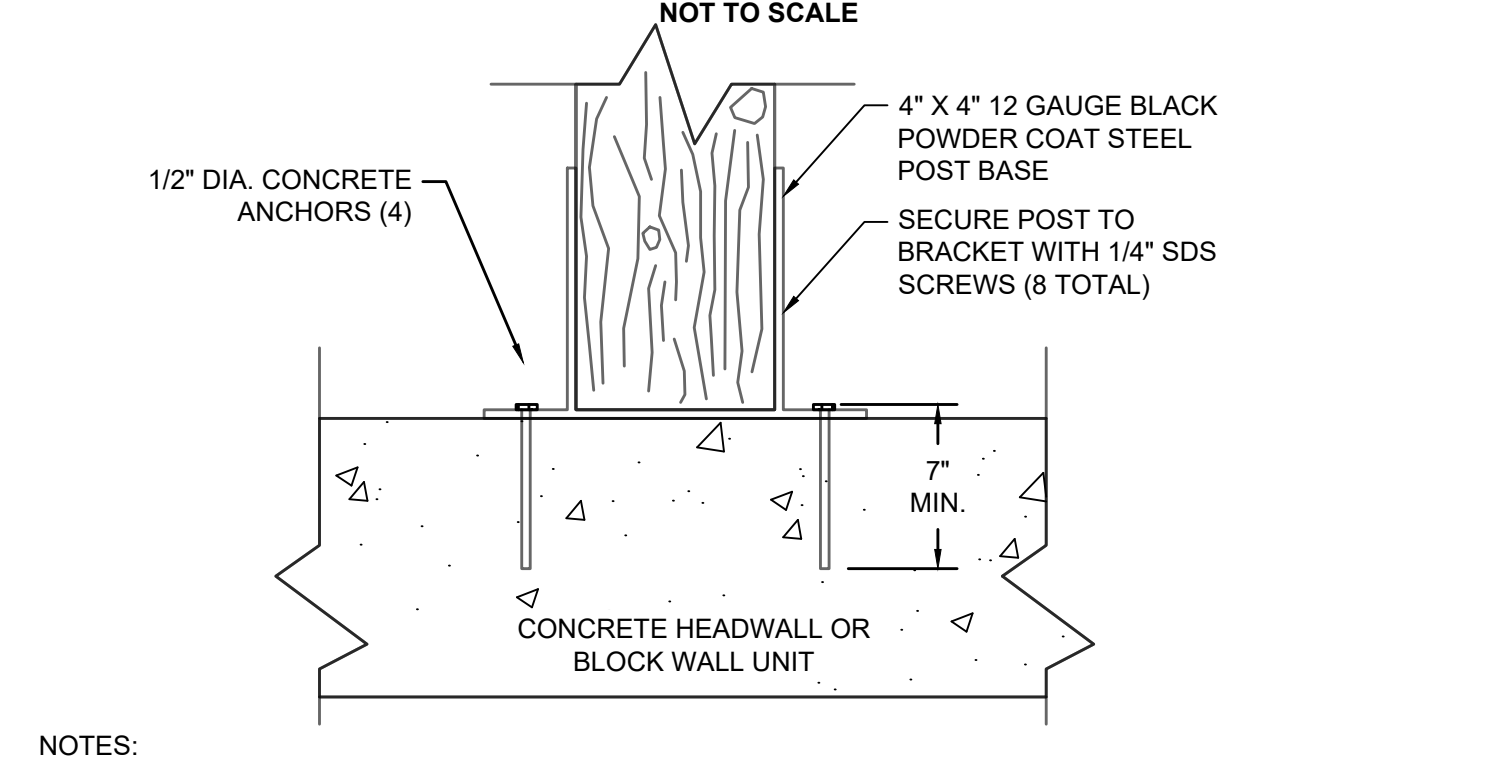
- NOTES:
- SEE SPECIFICATIONS FOR MANUFACTURERS INSTALLATION INSTRUCTIONS.
 - $\pm 0.5\%$ TOLERANCE FOR CONSTRUCTION OF CROSS SLOPES ON ACCESSIBLE SURFACES.
 - WALLS ARE TO BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH SPECIAL PROVISIONS 996.03 THROUGH 996.05.

**BLOCK RETAINING WALL (POST ON WALL) DETAIL
STA 4+68.62 TO STA 5+63.96 (SIDEWALK CL)**



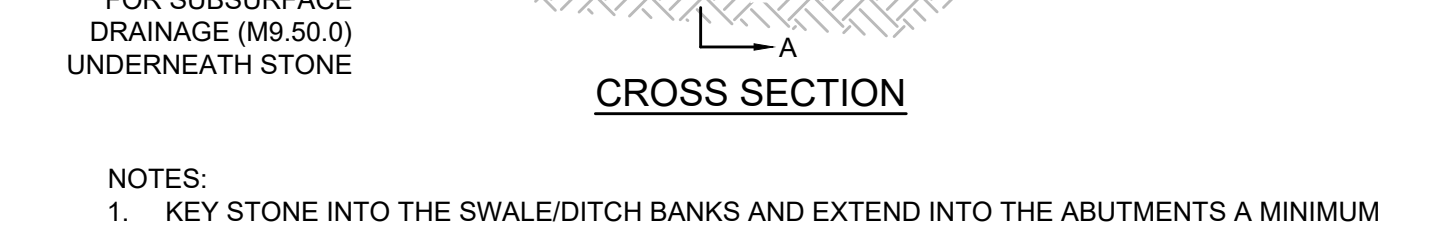
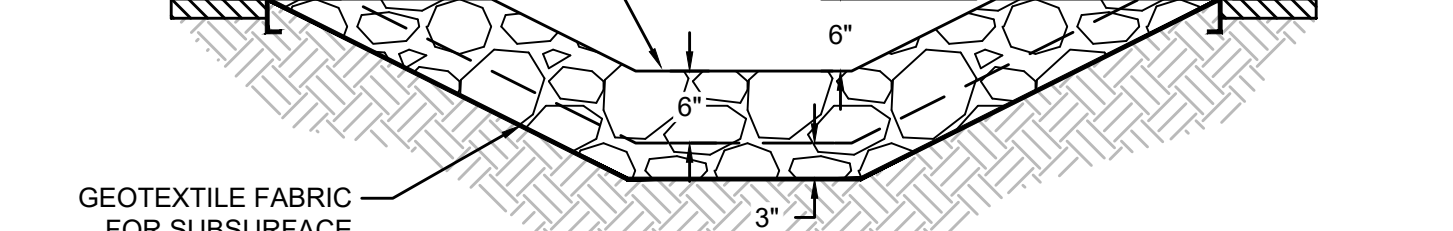
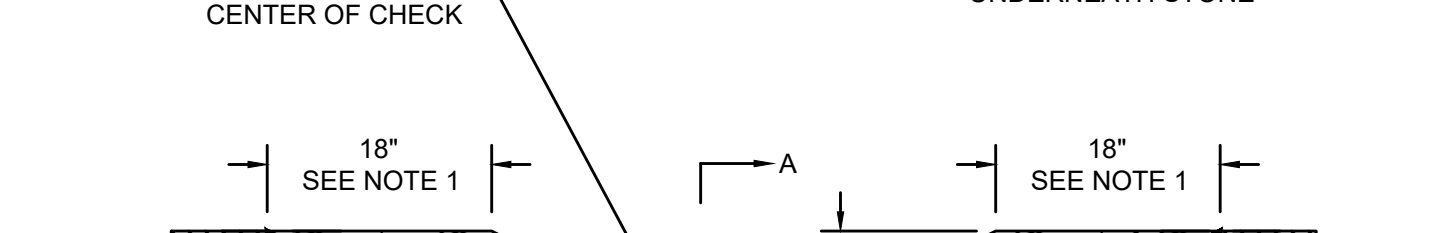
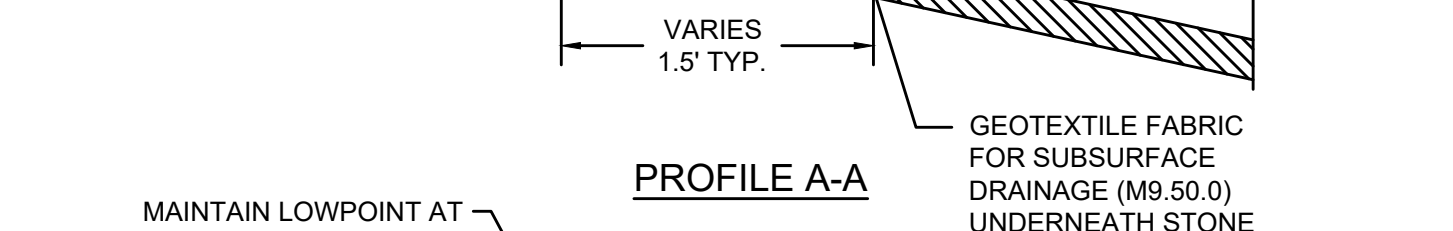
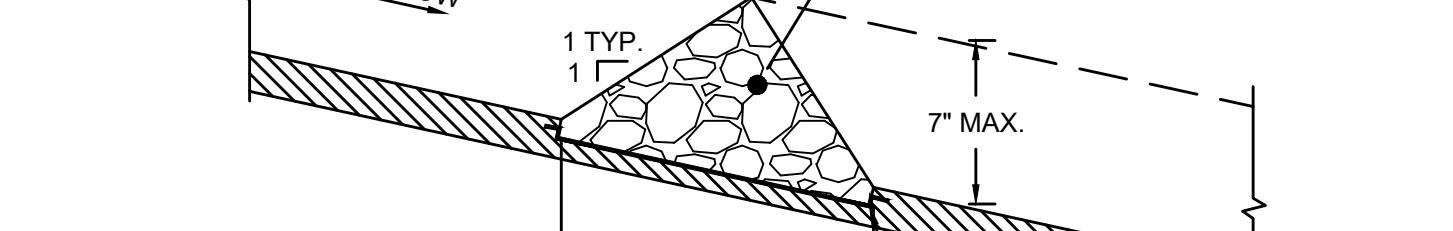
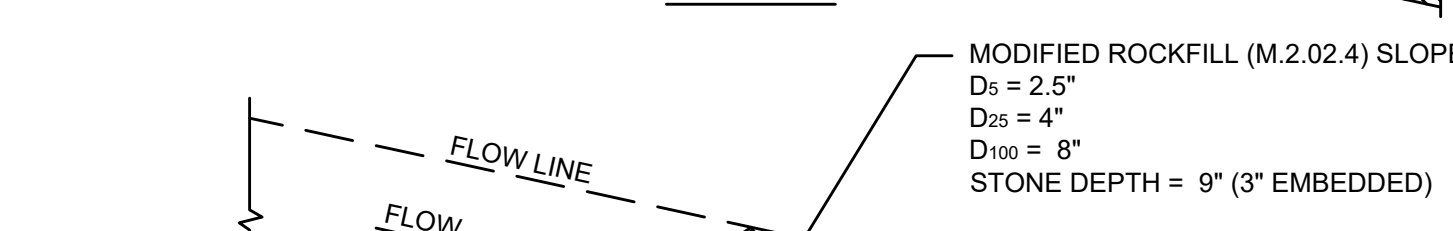
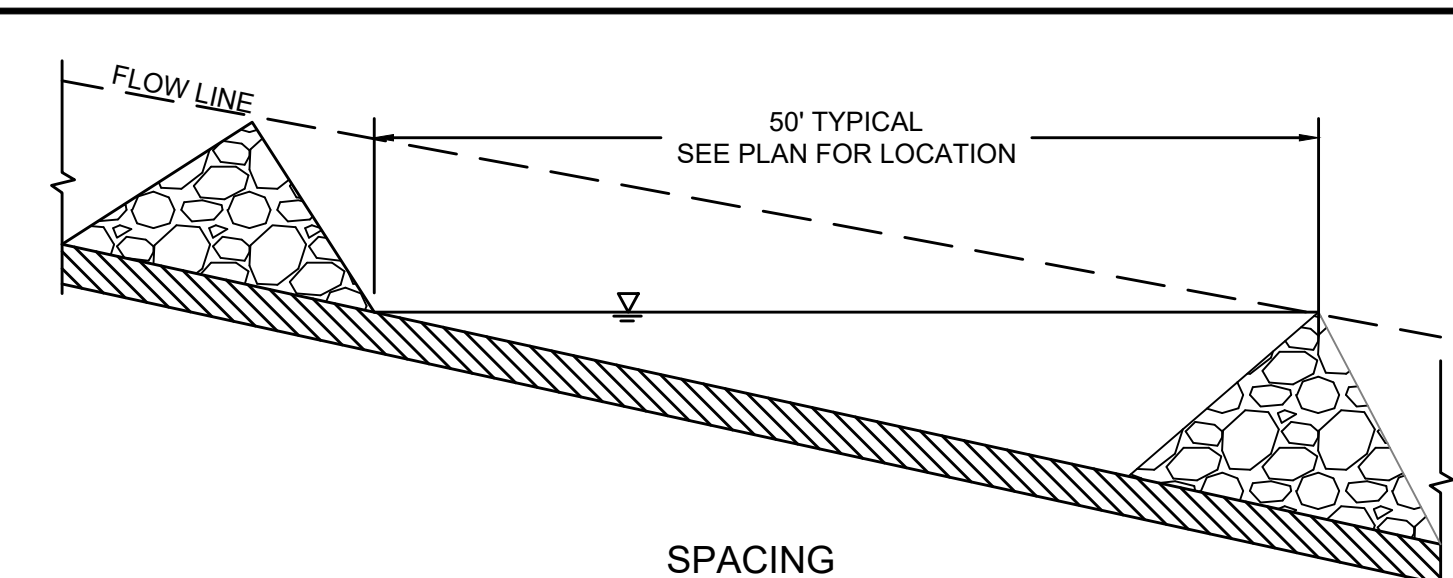
- NOTES:
- SEE SPECIFICATIONS FOR MANUFACTURERS INSTALLATION INSTRUCTIONS.
 - $\pm 0.5\%$ TOLERANCE FOR CONSTRUCTION OF CROSS SLOPES ON ACCESSIBLE SURFACES.
 - WALLS ARE TO BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH SPECIAL PROVISIONS 996.03 THROUGH 996.05.

**BLOCK RETAINING WALL (IN PARKING LOT) DETAIL
STA 0+32.50 TO STA 1+00.56 (MULTI-USE TRAIL CL)**

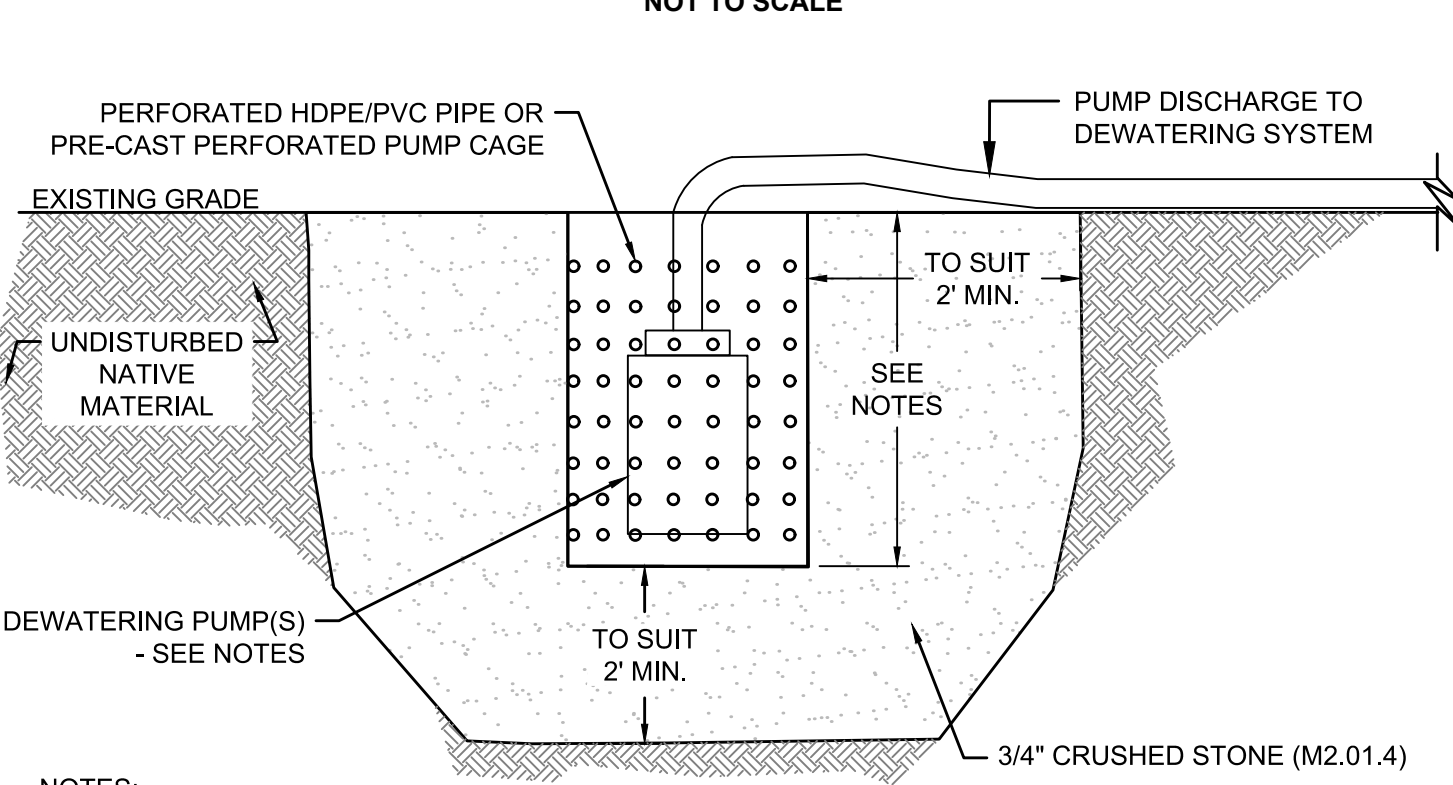


- NOTES:
- SEE SPECIFICATIONS FOR INSTALLATION INSTRUCTIONS.
 - FOR WOOD PEDESTRIAN BARRIER POSTS, WHEN CONCRETE FOOTING IS NOT POSSIBLE.
 - ALL HARDWARE TO BE HOT DIPPED GALVANIZED STEEL.

POST BRACKET (WOOD TO CONCRETE)

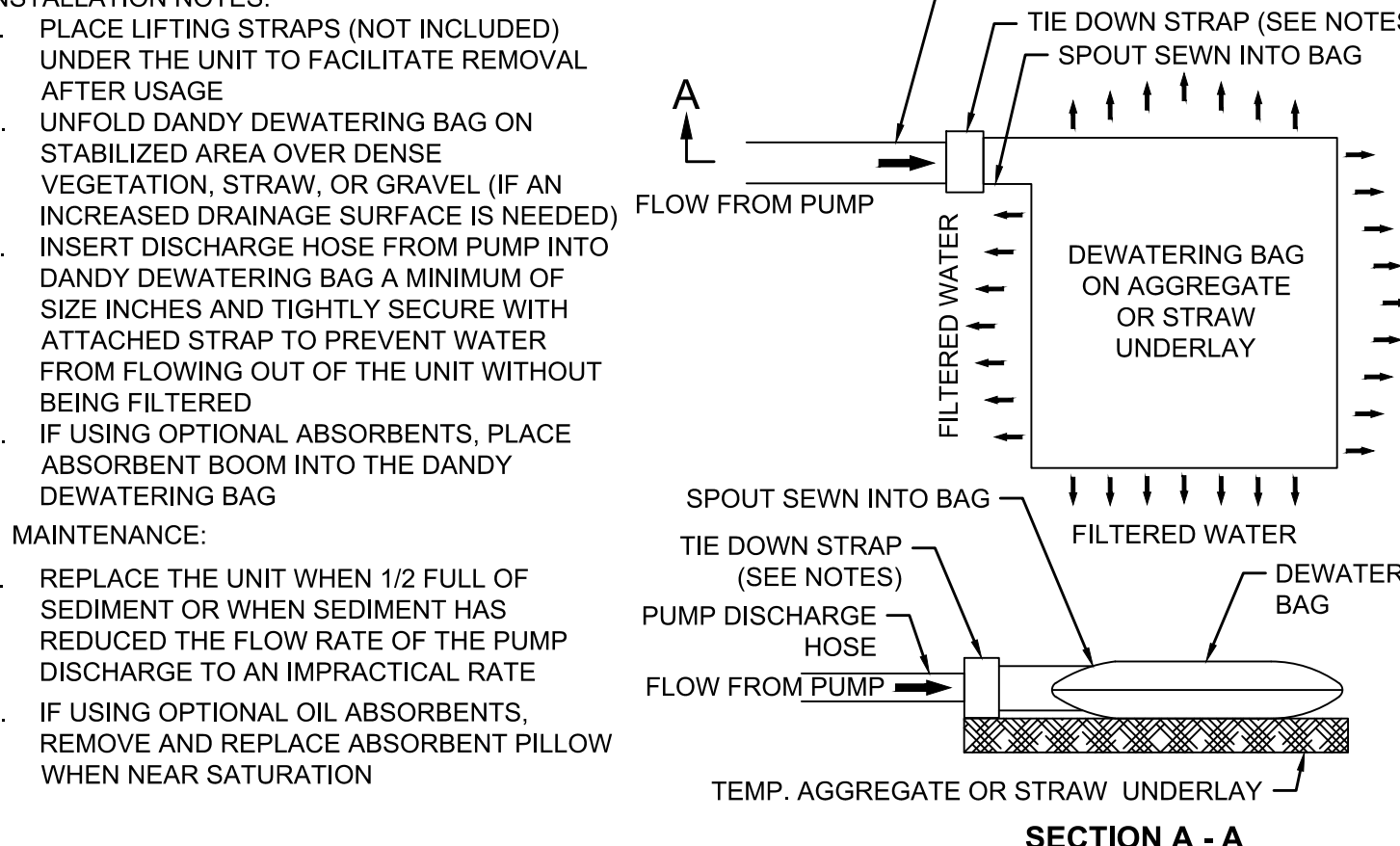


**STONE CHECK DAM FOR SWALE DETAIL
NOT TO SCALE**

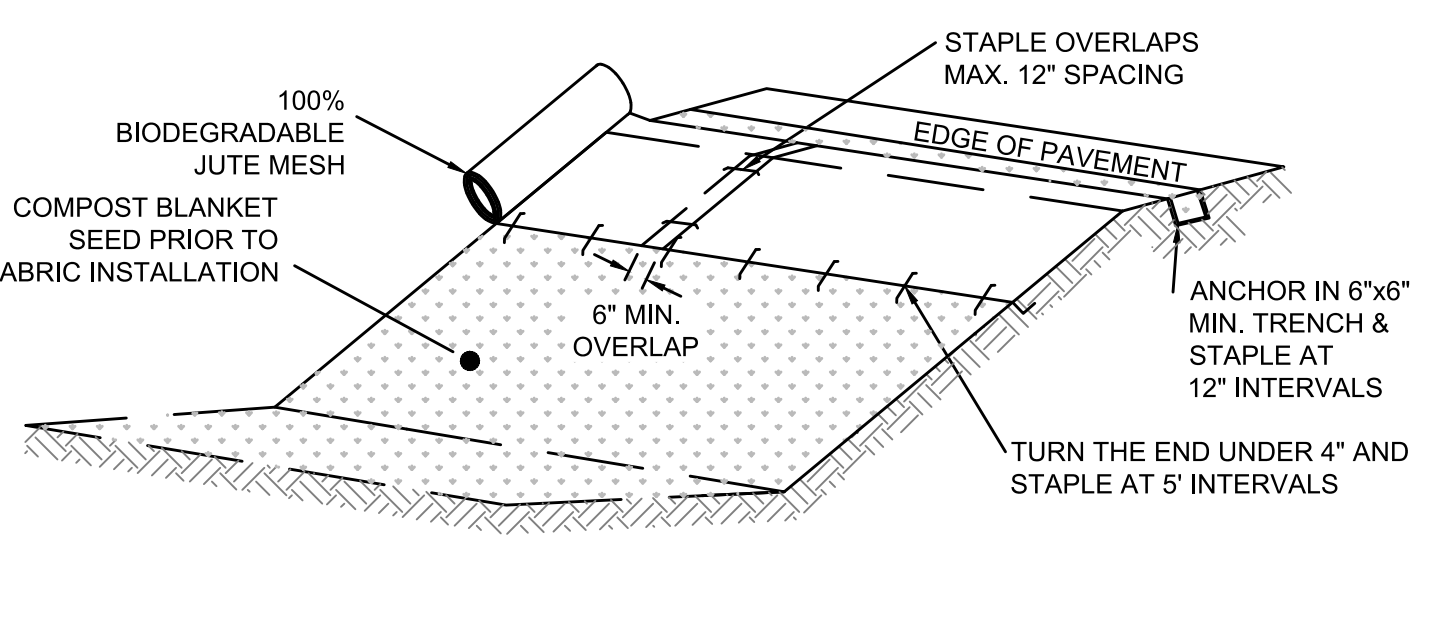
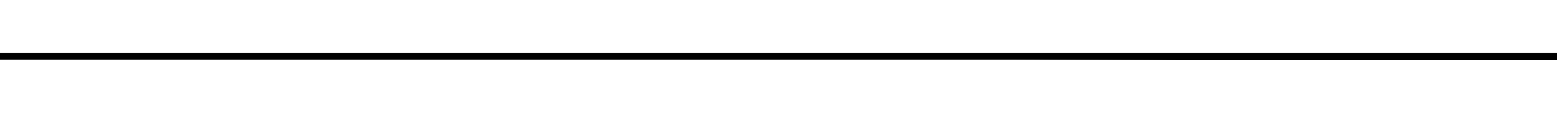
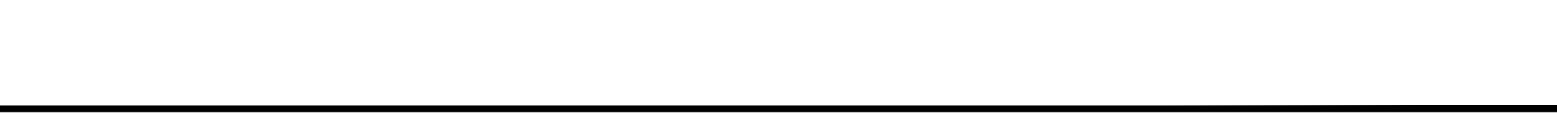
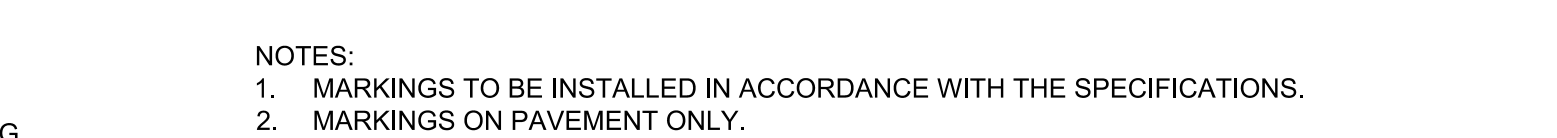
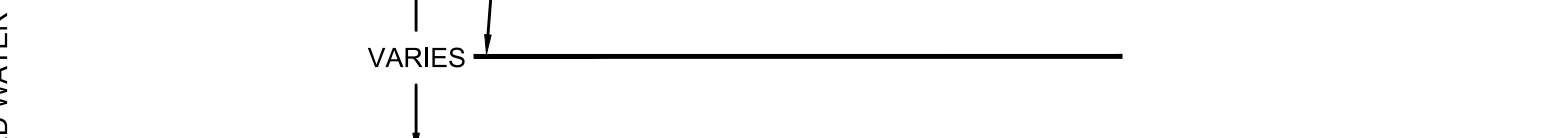
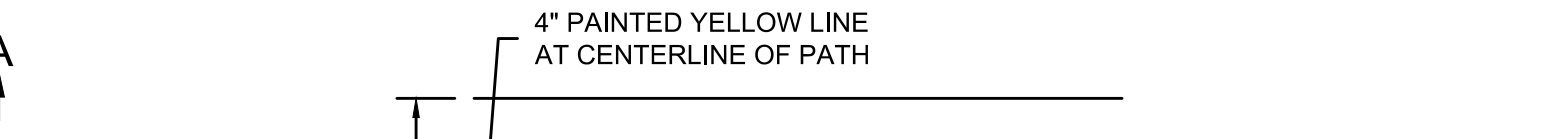
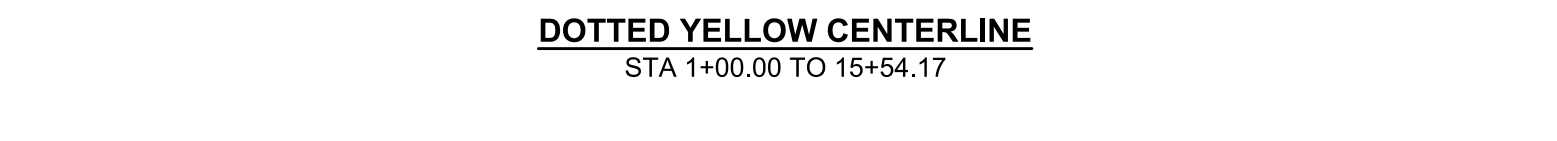
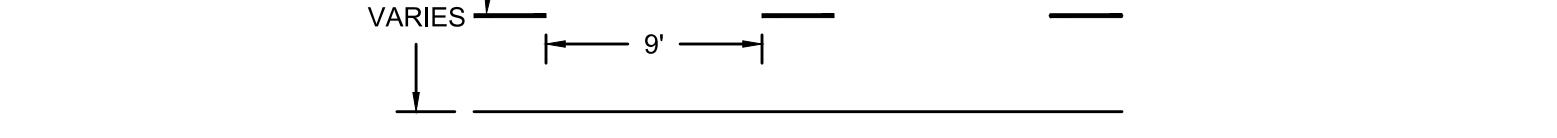
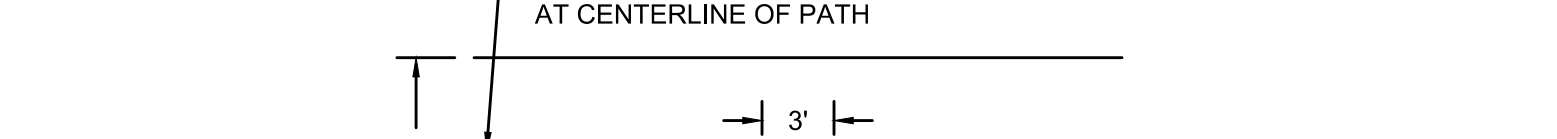
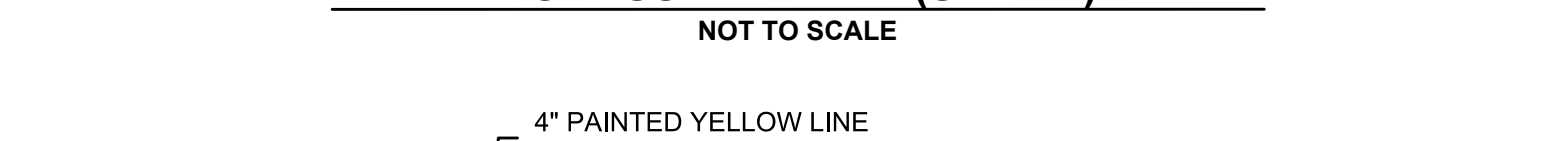
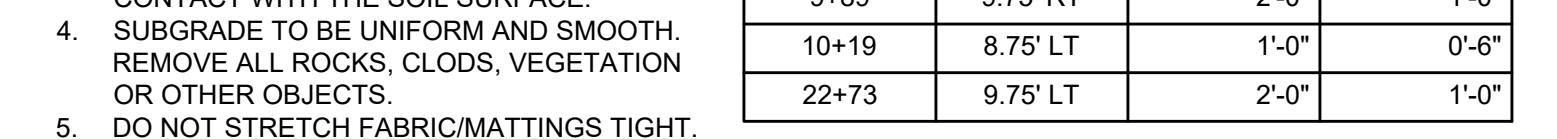
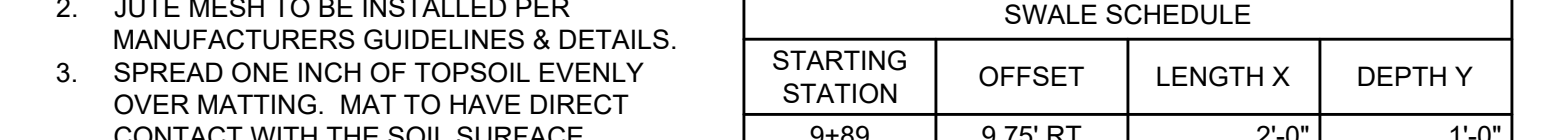
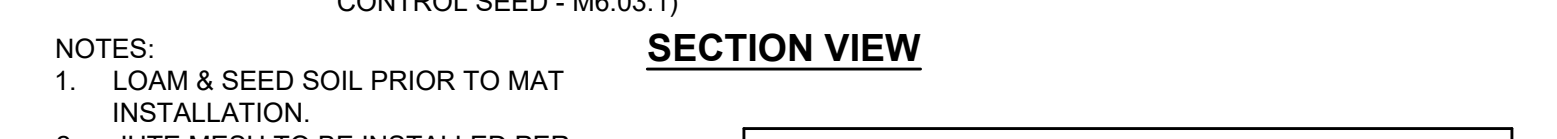
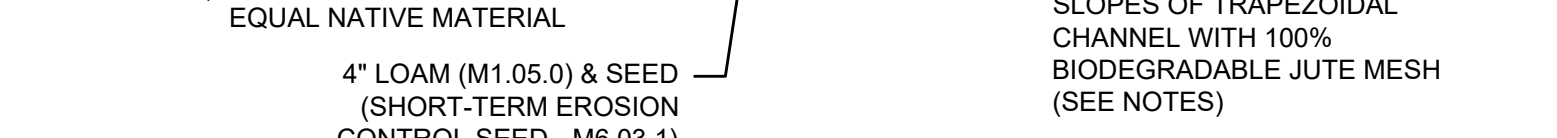
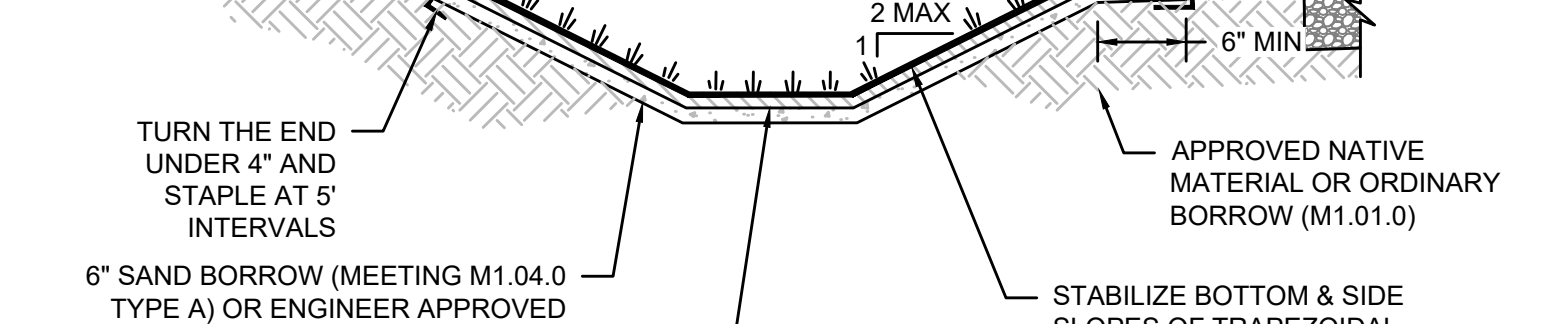
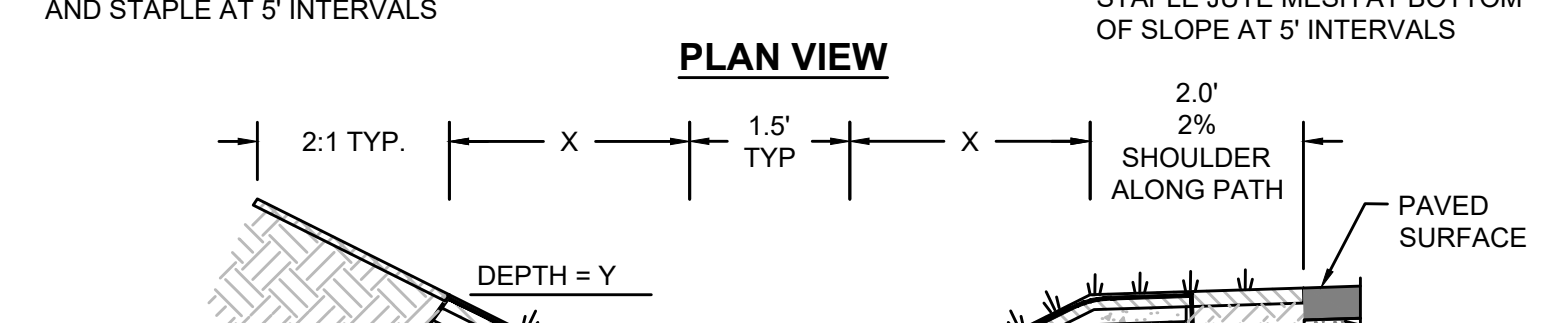
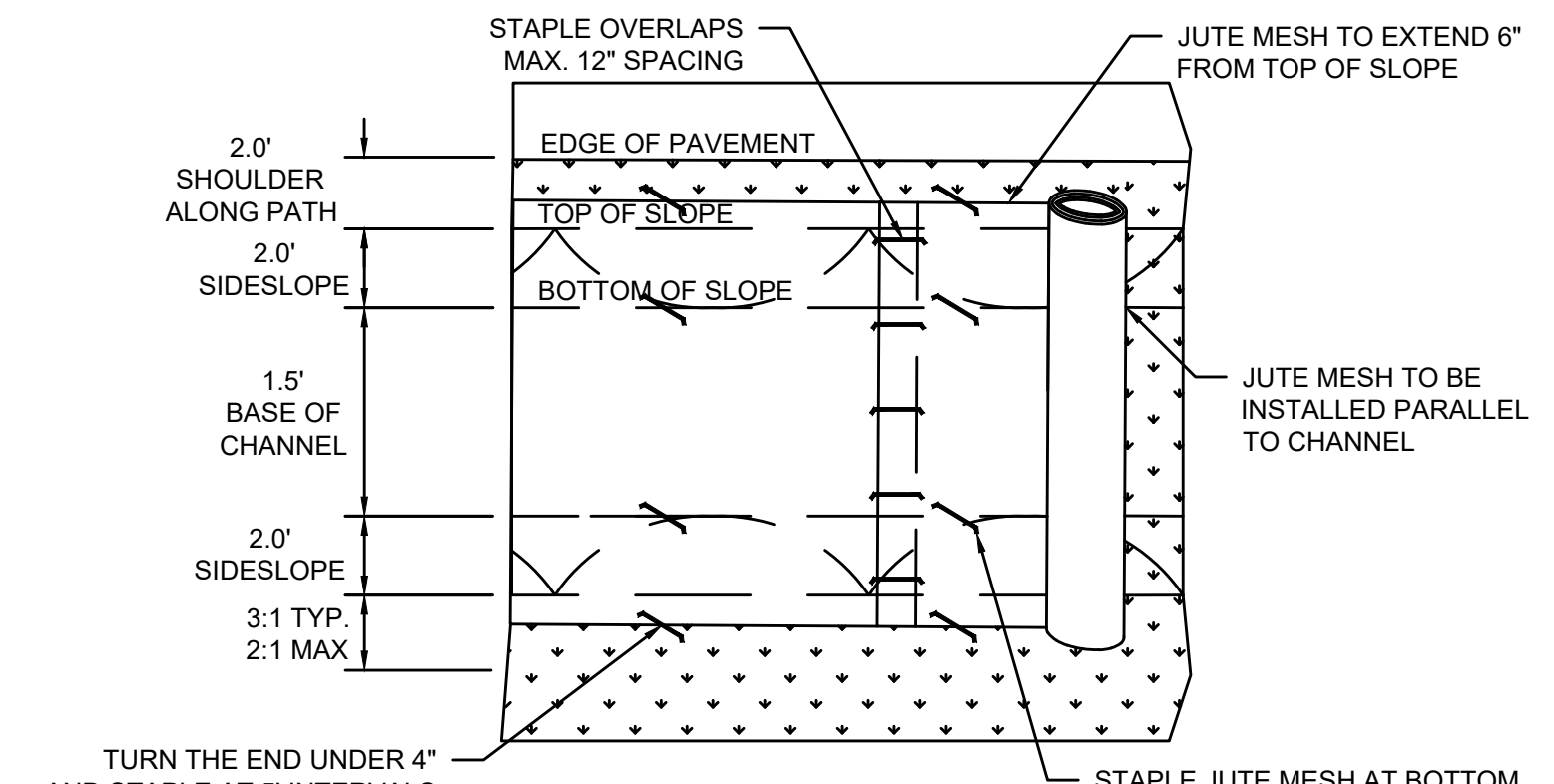


- NOTES:
- ALL EQUIPMENT IS TEMPORARY AND MUST BE REMOVED AFTER USE. STONE AND/OR NATURAL MATERIAL CAN REMAIN.
 - PUMP LOCATION TO SUIT WORK. PUMP SIZE/HP TO SUIT SITE REQUIREMENTS. MULTIPLE PUMPS TO BE INSTALLED WHERE NECESSARY.
 - PUMP CHAMBER SIZE TO BE DETERMINED BASED ON PUMP DIMENSIONS.
 - FINAL DEPTH TO BE DETERMINED BY CONTRACTOR BASED ON EXISTING GRADE.

**DEWATERING SUMP DETAIL
NOT TO SCALE**

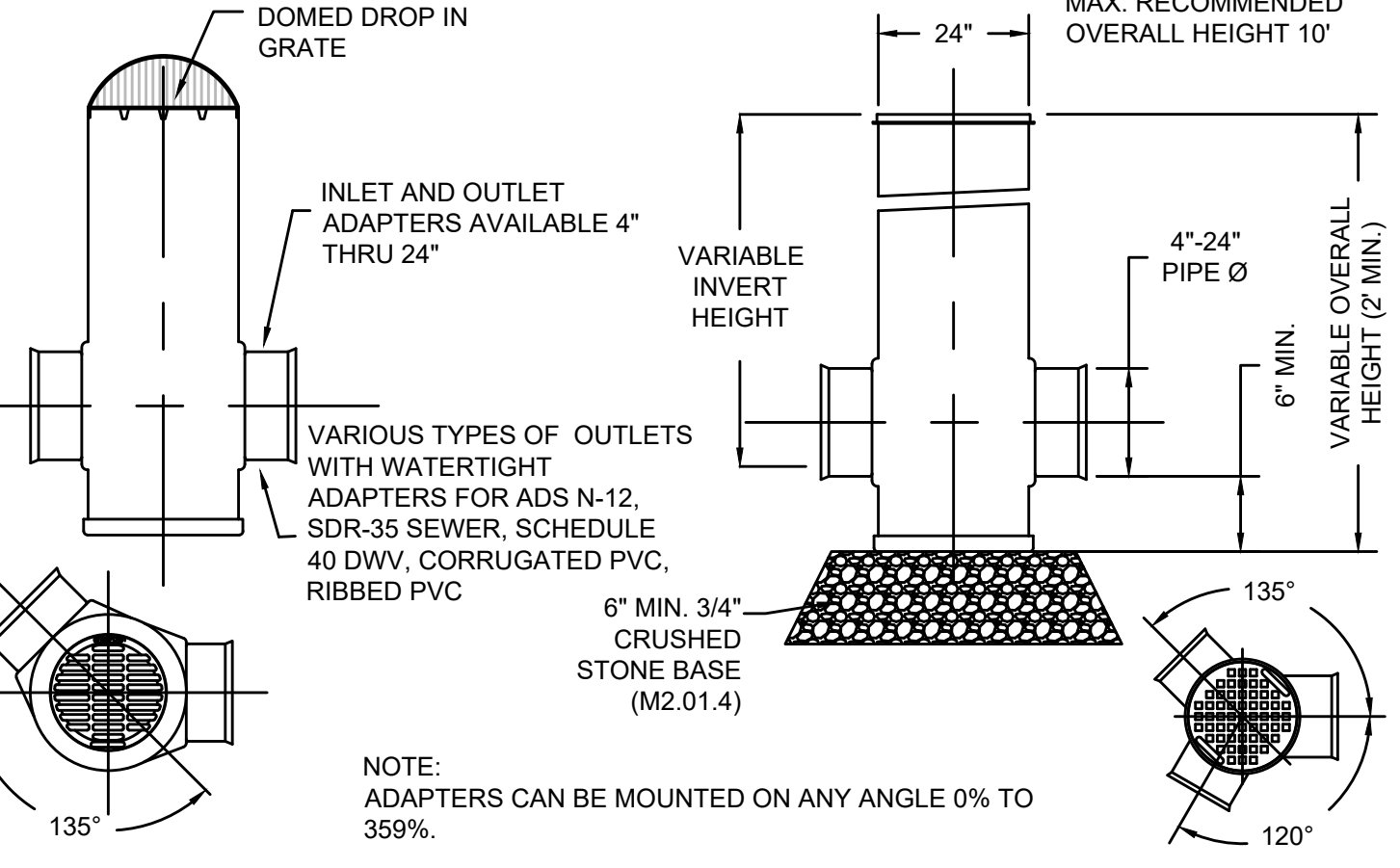


**DEWATERING BAG DETAIL
NOT TO SCALE**

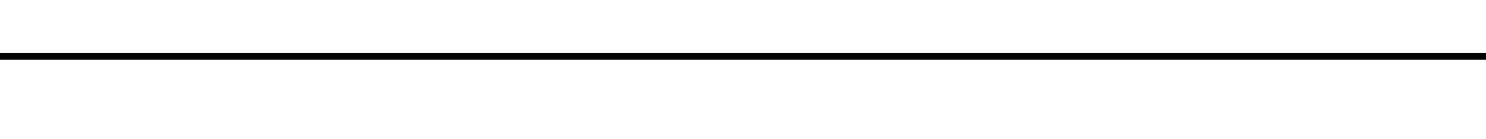
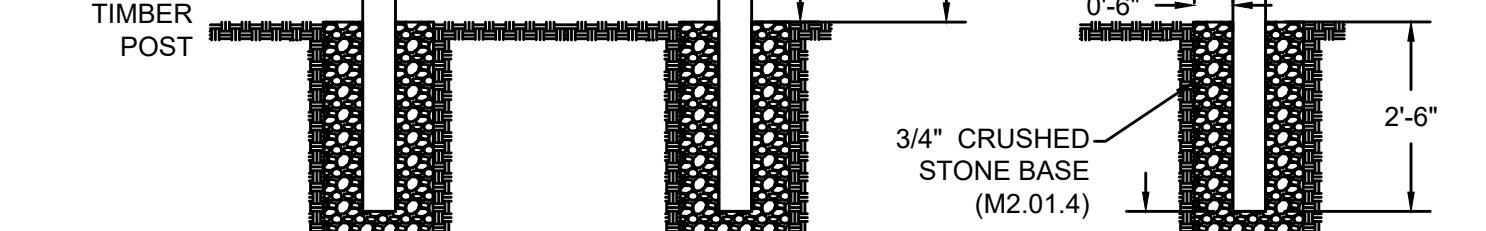
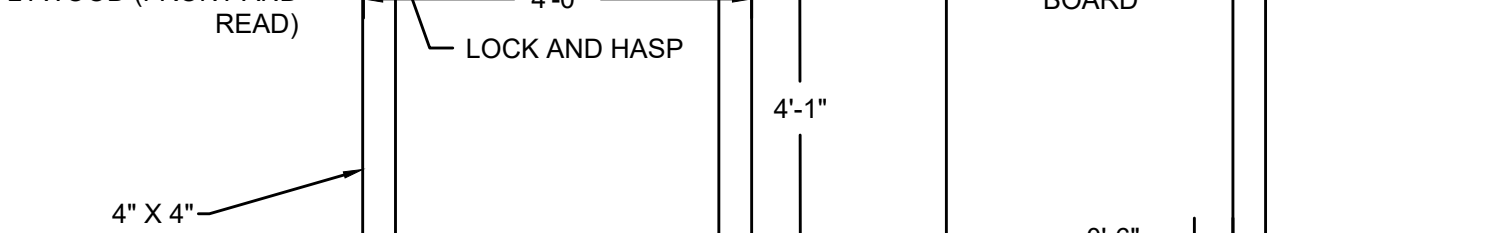
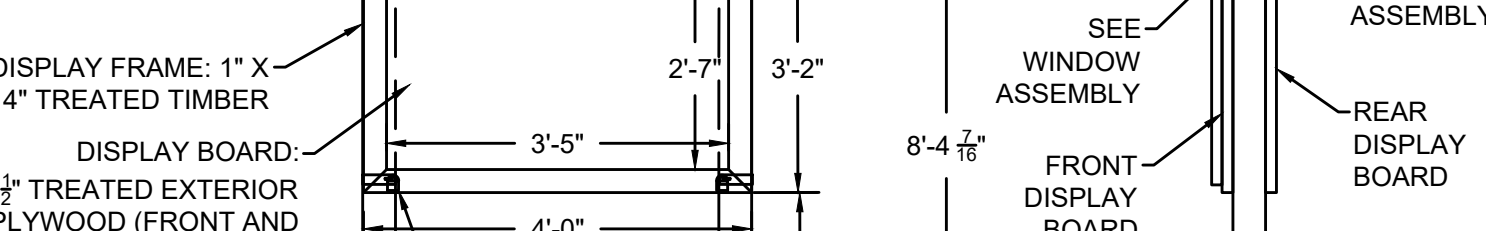
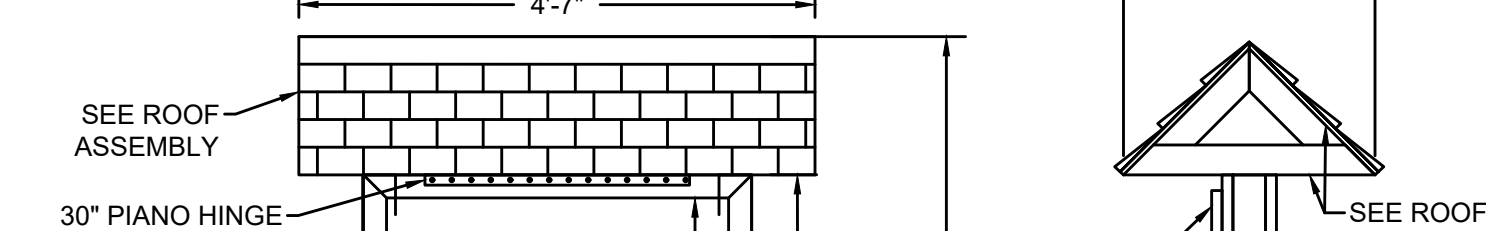
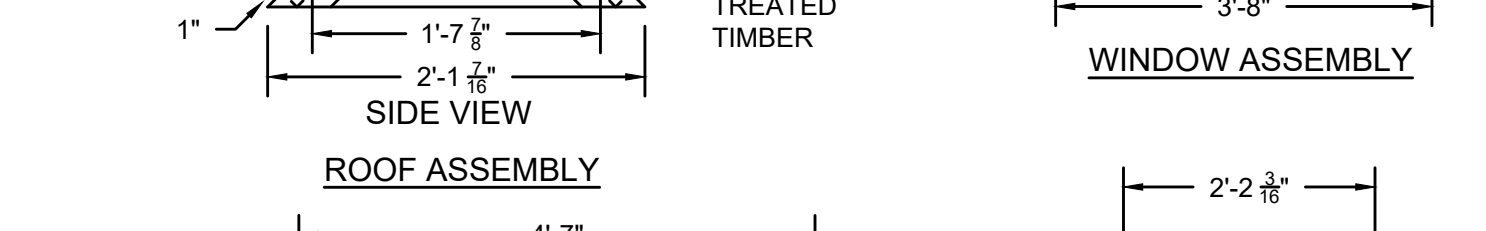
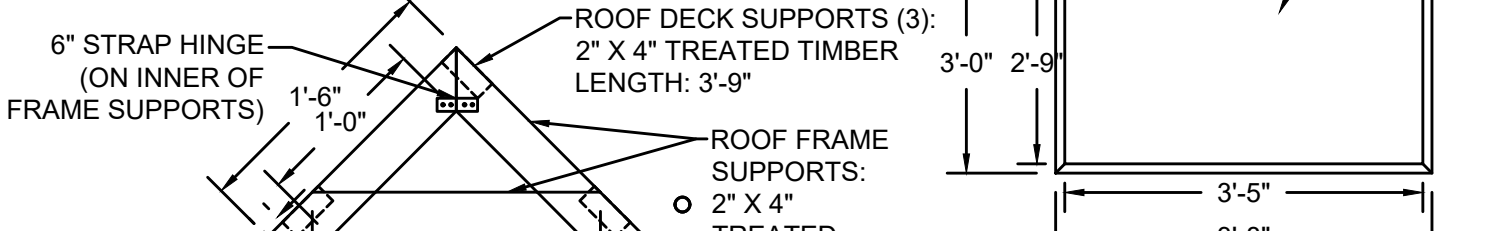
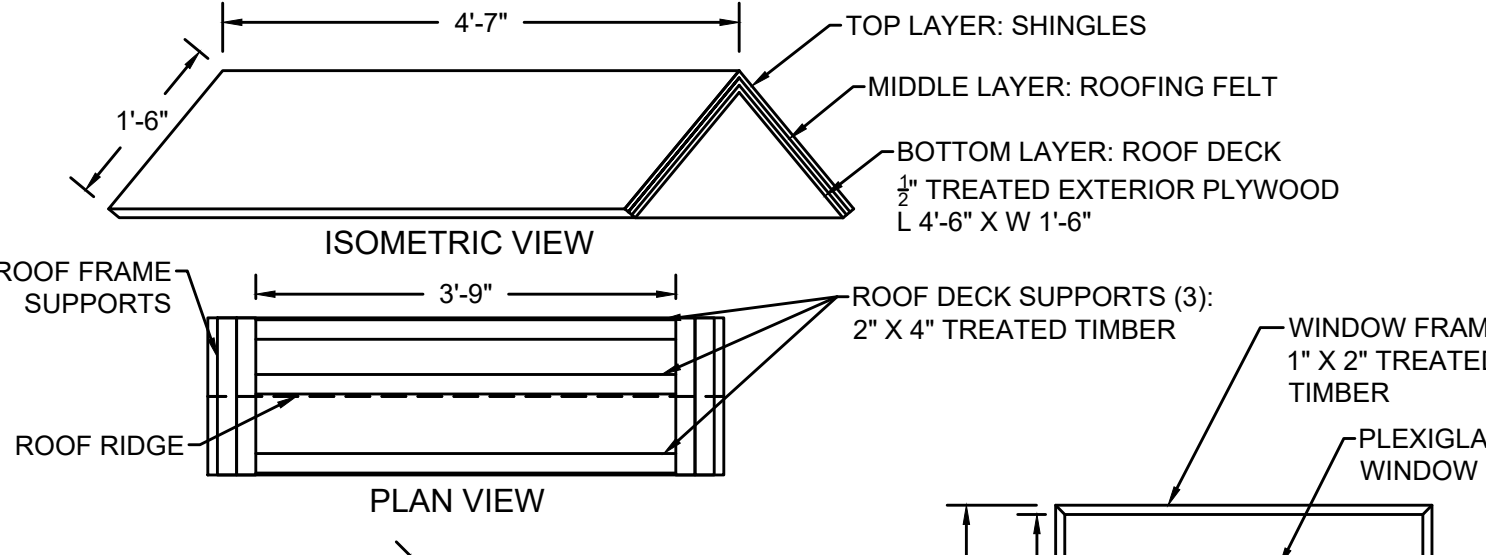


- NOTES:
- COMPOST BLANKET AND SEED PRIOR TO FABRIC INSTALLATION.
 - SLOPE SURFACE SHALL BE SMOOTH BEFORE PLACEMENT FOR PROPER SOIL CONTACT.
 - STAPLING PATTERN AS PER MANUFACTURER'S RECOMMENDATIONS.
 - DO NOT STRETCH FABRIC/MATTINGS TIGHT. ALLOW THE ROLLS TO MOLD TO ANY IRREGULARITIES.
 - LIME, FERTILIZE AND SEED BEFORE INSTALLATION. PLANTING OF SHRUBS, TREES, ETC. SHOULD OCCUR AFTER INSTALLATION.

**JUTE MESH SLOPE STABILIZATION DETAIL
NOT TO SCALE**



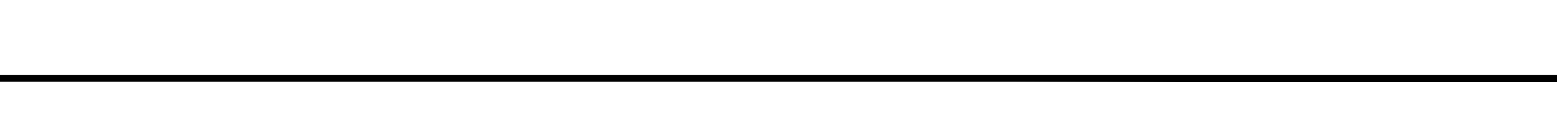
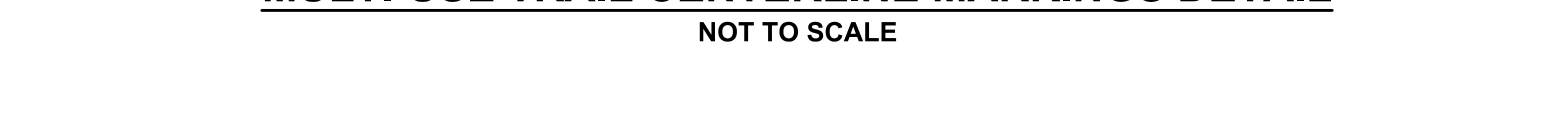
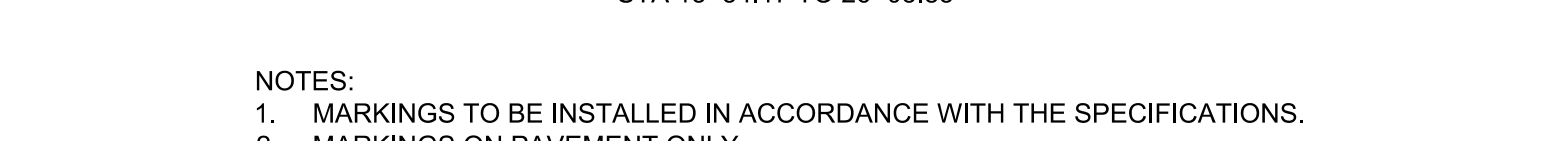
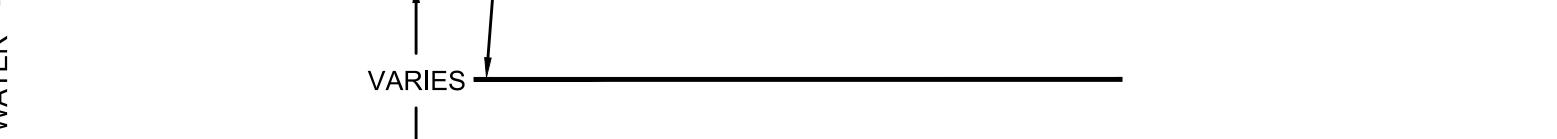
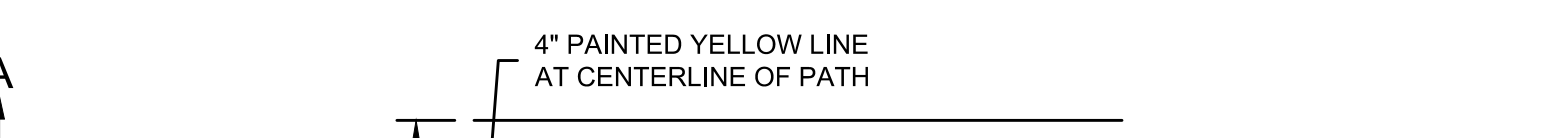
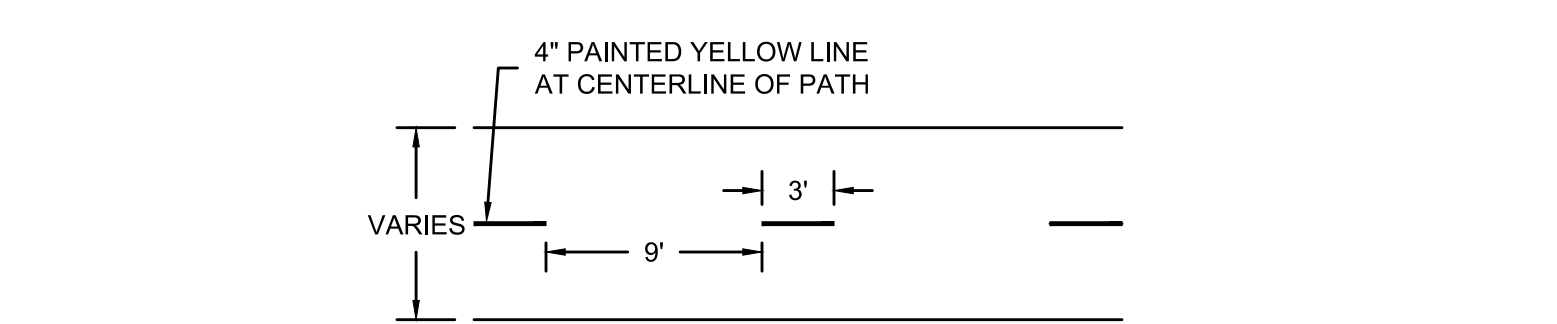
**OVERFLOW OUTLET DETAIL
NOT TO SCALE**



SWALE SCHEDULE

STARTING STATION	OFFSET	LENGTH X	DEPTH Y
9+89	9.75' RT	2'-0"	1'-0"
10+19	8.75' LT	1'-0"	0'-6"
22+73	9.75' LT	2'-0"	1'-0"

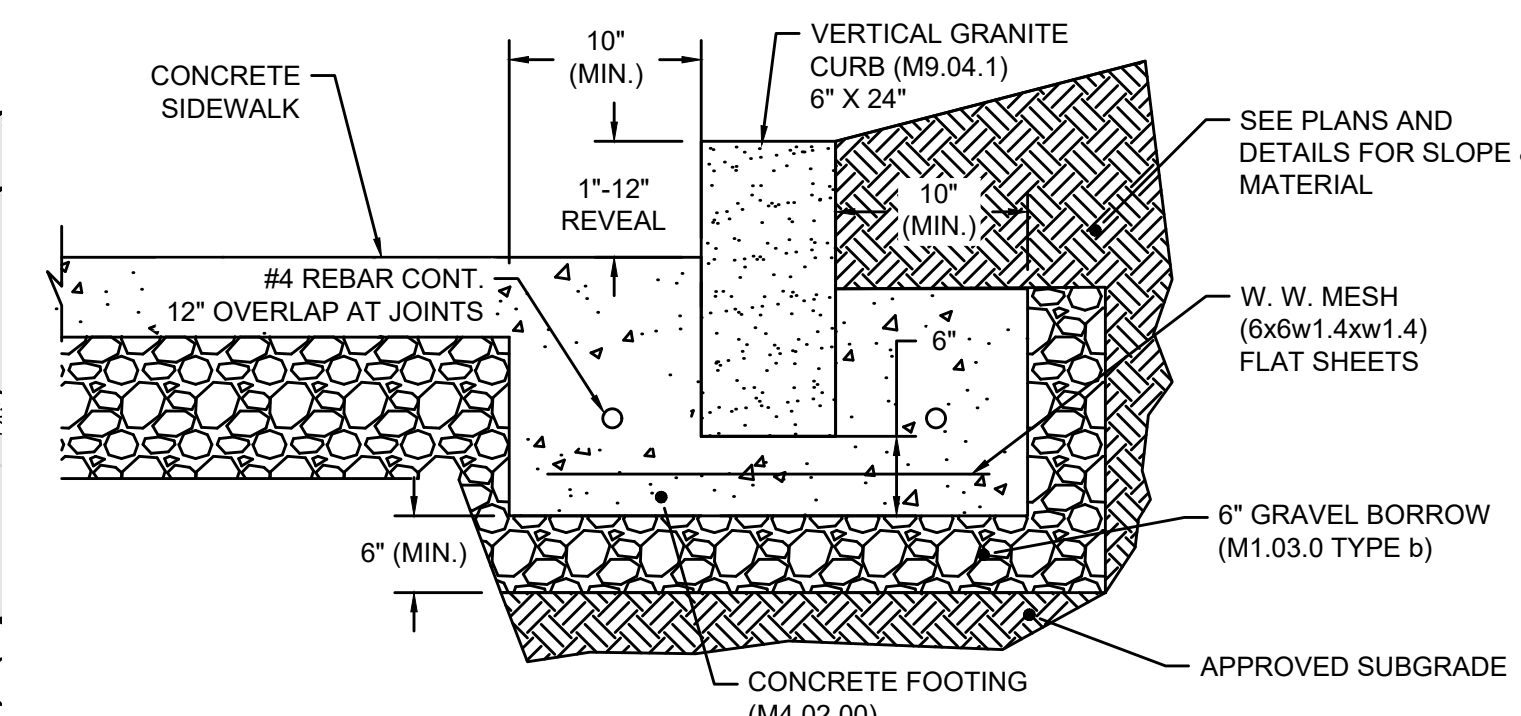
**TYPICAL GRASS CHANNEL (SWALE) DETAIL
NOT TO SCALE**



**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

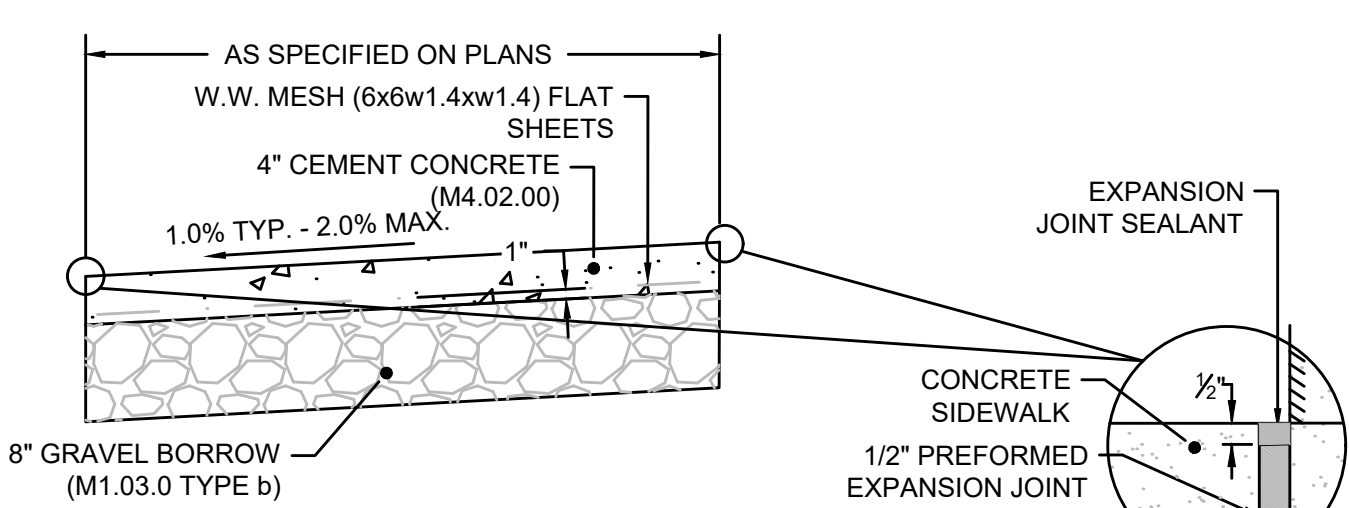
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	27	51
PROJECT FILE NO.		608413	

DETAILS (5)



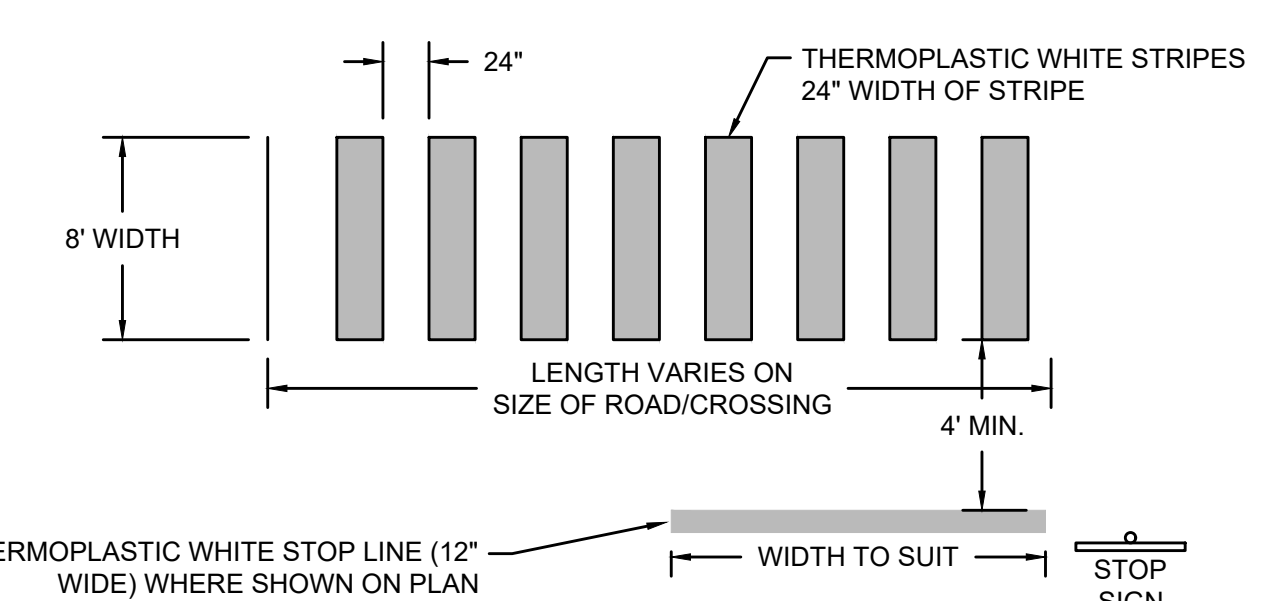
- NOTE:
1. MINIMUM HEIGHT = 24", MINIMUM WIDTH = 6"
 2. INSTALL IN LOCATIONS AS INDICATED ON PLAN.
 3. CURB SECTIONS TO A MINIMUM OF 5' IN LENGTH.
 4. CEMENT MORTAR JOINTS & INSTALL PREFORMED (1/2") EXPANSION JOINT WHERE REQUIRED.
 5. SET CURB IN CONCRETE FOOTING AS INDICATED.

REINFORCED GRANITE CURB
NOT TO SCALE



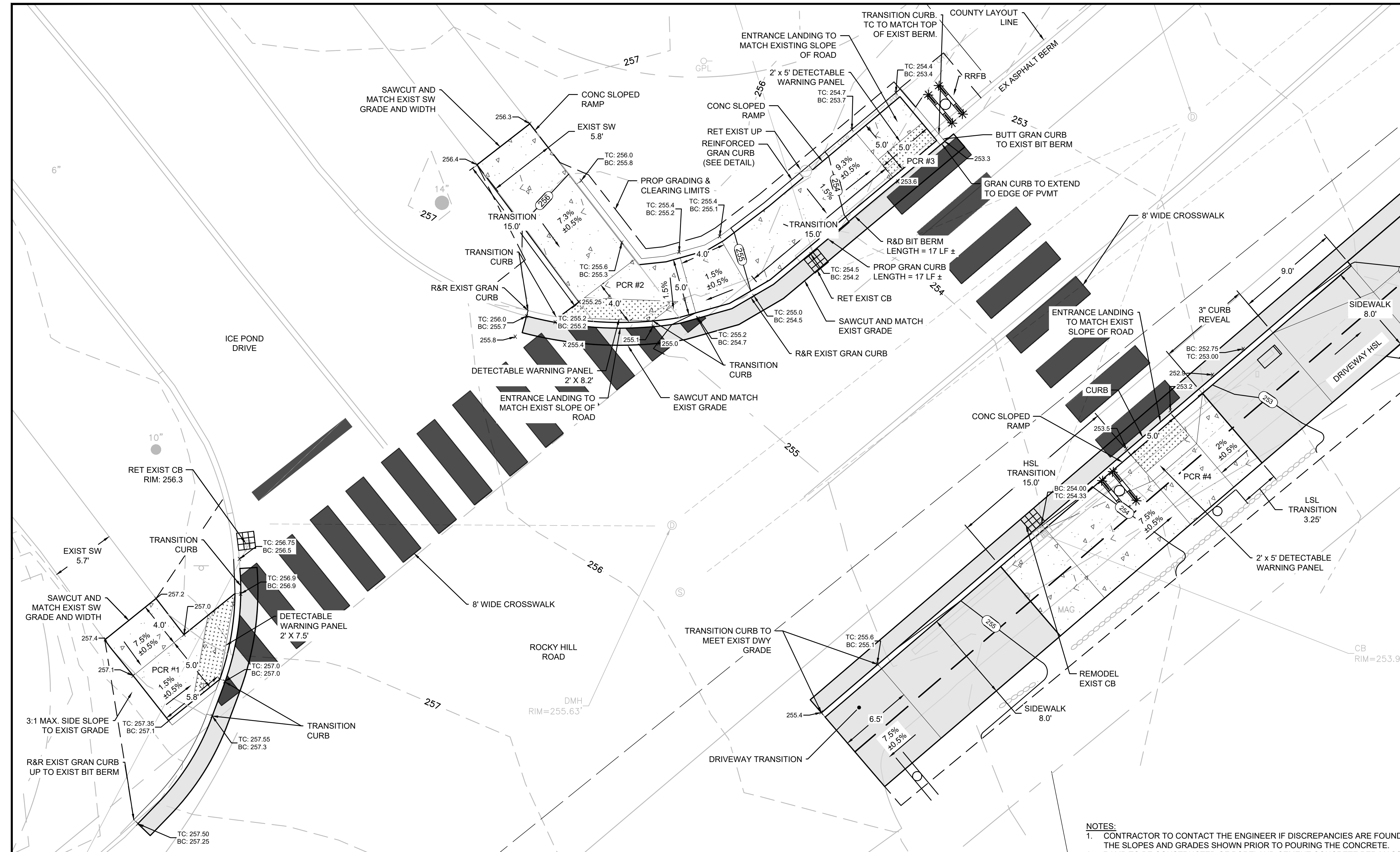
- NOTE:
1. PROVIDE EXPANSION JOINTS AT MIN. 30 FT. O.C. WITH PREFORMED JOINT FILLER (M9.14.0).
 2. PROVIDE TOOLED CONTROL JOINTS AT 5' O.C. TYP. - 6" MAX.
 3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO PATH.
 4. IF APPLICABLE, MATCH ALL EXISTING SIDEWALK WIDTHS.
 5. SUBBASE: COMPACTED TO 95%.

CONCRETE SLAB DETAIL
NOT TO SCALE



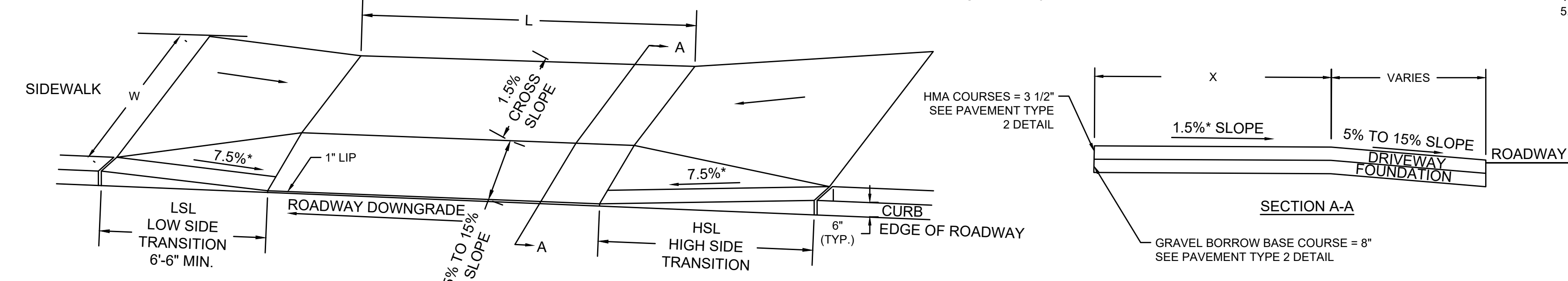
- NOTE:
1. ALL THERMOELASTIC LINES SHALL BE NON-SKID.
 2. THERMOELASTIC LINES SHALL BE WHITE.

CROSSWALK STRIPING DETAIL
NOT TO SCALE



PEDESTRIAN CURB RAMPS (PCR) #1-#4 AND DRIVEWAY TRANSITION
SCALE: 1" = 5'

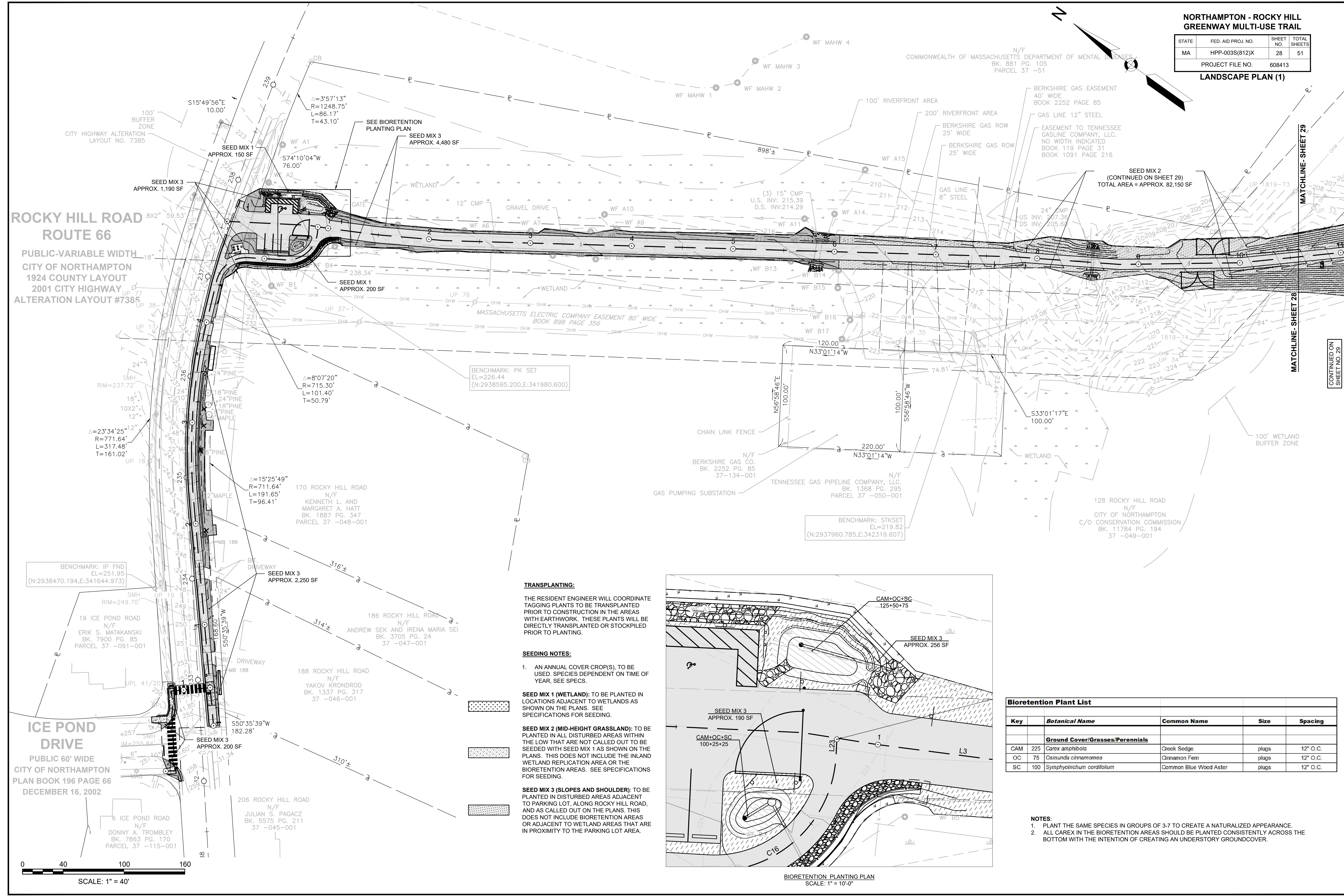
- NOTES:
1. CONTRACTOR TO CONTACT THE ENGINEER IF DISCREPANCIES ARE FOUND IN THE SLOPES AND GRADES SHOWN PRIOR TO POURING THE CONCRETE.
 2. RAMP TO BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE PER MASS DOT & ADA REQUIREMENTS.
 3. CONTRACTOR TO REPLACE/RESET EX. CURB/BERM AS NECESSARY.
 4. CURB END SECTIONS TO BE INSTALLED AT ALL RAMPS WHEN APPLICABLE.
 5. DETECTABLE WARNING PANEL TO BE NON SLIP SURFACE FULLY EMBEDDED AND MEETING ADA REQUIREMENTS INSTALLED AT ALL ROADWAY CROSSING AND INLINE WITH CROSSWALK.



DRIVEWAY SIDEWALK CROSSING #	RAMP REFERENCE POINT			WIDTH OF SIDEWALK (W)	PATH OF TRAVEL (X) 3'-3" (MIN)	CURB OPENING (L)	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
	BASELINE	STATION	OFFSET					HSL	LSL
1	SIDEWALK CL	0+67.50	0	8.0'	5' - 0"	12' - 0"	+ 5.00 %	9' - 0" R (3" REVEAL)	6' - 6" L
2	SIDEWALK CL	1+51.50	0	8.0'	5' - 0"	12' - 0"	+ 5.95 %	15' - 0" R	6' - 6" L
3	SIDEWALK CL	3+94.50	0	8.0'	5' - 0"	12' - 0"	+ 8.17 %	15' - 0" R	6' - 6" L
4	GREENWAY CL	0+07	0	5.0'	3' - 3"	30' - 0"	+ 5.00 %	15' - 0" R	6' - 6" L

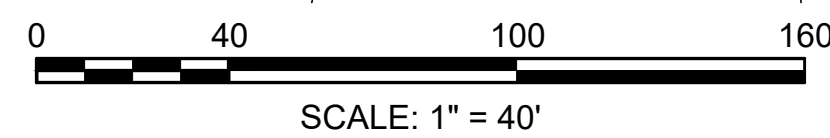
SIDEWALK THROUGH DRIVEWAYS - WITHOUT CURB RETURNS
NOT TO SCALE

HMA = HOT MIX ASPHALT
HSL = HIGH SIDE TRANSITION LENGTH
LSL = LOW SIDE TRANSITION LENGTH
W = WIDTH OF SIDEWALK
L = LENGTH OF CURB OPENING
X = WIDTH OF PATH OF TRAVEL
* = TOLERANCE FOR CONSTRUCTION ±0.5%



**ROCKY HILL ROAD
ROUTE 66**
PUBLIC-VARIABLE WIDTH
CITY OF NORTHAMPTON
1924 COUNTY LAYOUT
2001 CITY HIGHWAY
ALTERATION LAYOUT #7385

ICE POND DRIVE
PUBLIC 60' WIDE
CITY OF NORTHAMPTON
PLAN BOOK 196 PAGE 66
DECEMBER 16, 2002



TRANSPLANTING:

THE RESIDENT ENGINEER WILL COORDINATE TAGGING PLANTS TO BE TRANSPLANTED PRIOR TO CONSTRUCTION IN THE AREAS WITH EARTHWORK. THESE PLANTS WILL BE DIRECTLY TRANSPLANTED OR STOCKPILED PRIOR TO PLANTING.

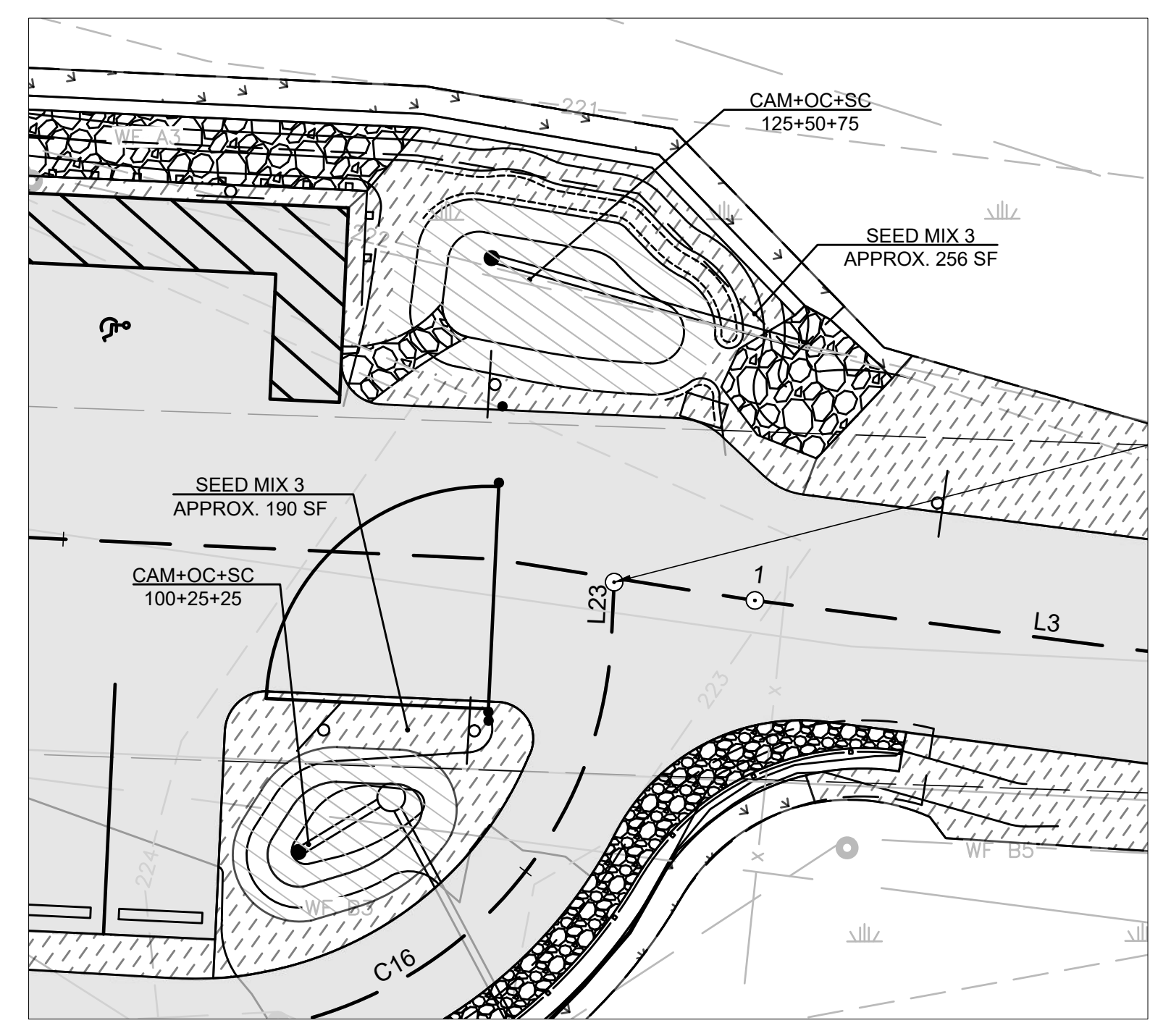
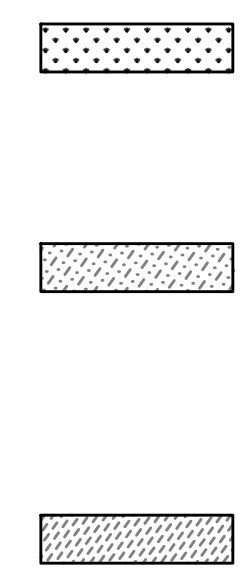
SEEDING NOTES:

1. AN ANNUAL COVER CROP(S) TO BE USED. SPECIES DEPENDENT ON TIME OF YEAR, SEE SPECS.

SEED MIX 1 (WETLAND): TO BE PLANTED IN LOCATIONS ADJACENT TO WETLANDS AS SHOWN ON THE PLANS. SEE SPECIFICATIONS FOR SEEDING.

SEED MIX 2 (MID-HEIGHT GRASSLAND): TO BE PLANTED IN ALL DISTURBED AREAS WITHIN THE LOW THAT ARE NOT CALLED OUT TO BE SEEDED WITH SEED MIX 1 AS SHOWN ON THE PLANS. THIS DOES NOT INCLUDE THE INLAND WETLAND REPLICATION AREA OR THE BIORETENTION AREAS. SEE SPECIFICATIONS FOR SEEDING.

SEED MIX 3 (SLOPES AND SHOULDER): TO BE PLANTED IN DISTURBED AREAS ADJACENT TO PARKING LOT, ALONG ROCKY HILL ROAD, AND AS CALLED OUT ON THE PLANS. THIS DOES NOT INCLUDE BIORETENTION AREAS OR ADJACENT TO WETLAND AREAS THAT ARE IN PROXIMITY TO THE PARKING LOT AREA.



BIORETENTION PLANTING PLAN
SCALE: 1" = 10'-0"

Bioretention Plant List

Key	Botanical Name	Common Name	Size	Spacing
Ground Cover/Grasses/Perennials				
CAM	225 <i>Carex amphibola</i>	Creek Sedge	plugs	12" O.C.
OC	75 <i>Osmunda cinnamomea</i>	Cinnamon Fern	plugs	12" O.C.
SC	100 <i>Symphytichnum cordifolium</i>	Common Blue Wood Aster	plugs	12" O.C.

NOTES:

1. PLANT THE SAME SPECIES IN GROUPS OF 3-7 TO CREATE A NATURALIZED APPEARANCE.
2. ALL CAREX IN THE BIORETENTION AREAS SHOULD BE PLANTED CONSISTENTLY ACROSS THE BOTTOM WITH THE INTENTION OF CREATING AN UNDERSTORY GROUND COVER.

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	29	51
PROJECT FILE NO.		608413	

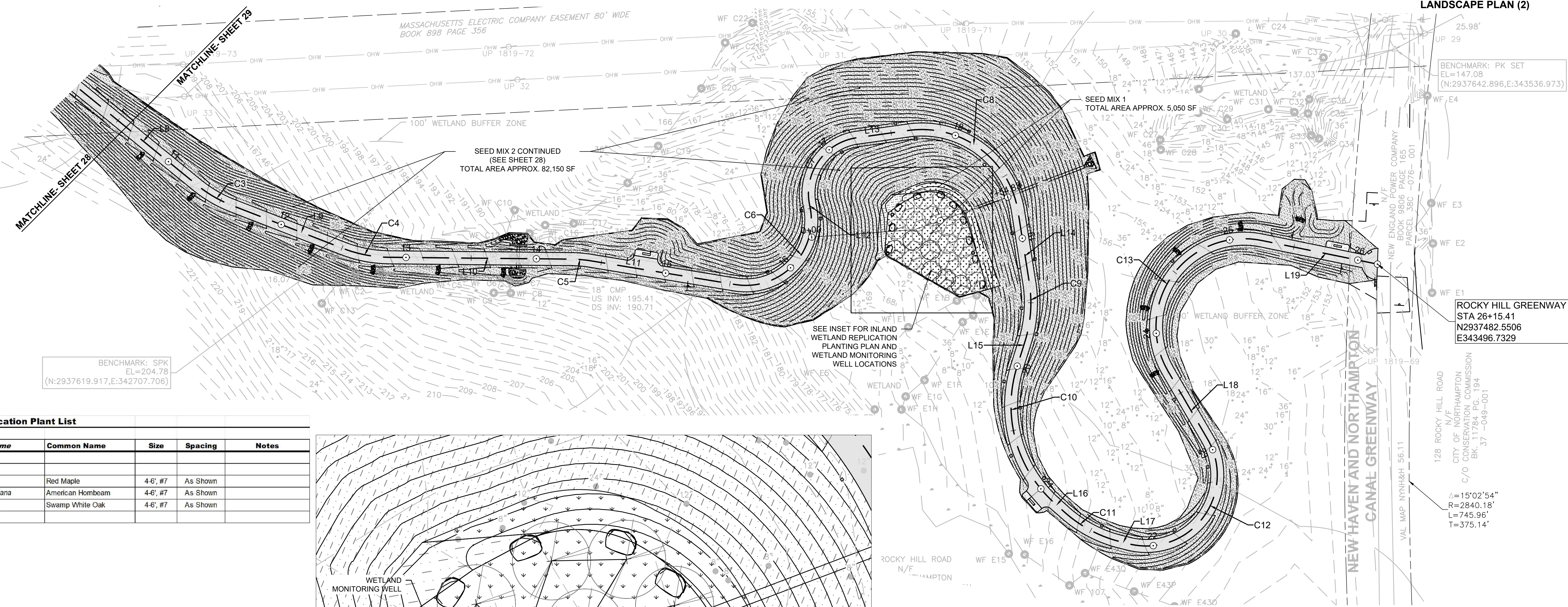
LANDSCAPE PLAN (2)

BENCHMARK: PK SET
EL=147.08
(N:2937642.896,E:343536.973)

ROCKY HILL GREENWAY END
STA 26+15.41
N2937482.5506
E343496.7329

VAL MAP NYNH&H 56.11
128 ROCKY HILL ROAD
N/F
CITY OF NORTHAMPTON
CONSERVATION COMMISSION
BK. 11784 PG. 194
37 - 049 - 001
Δ=15°02'54"
R=2840.18'
L=745.96'
T=375.14'

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



BENCHMARK: SPK
EL=204.78
(N:2937619.917,E:342707.706)

Inland Wetland Replication Plant List

Key	Botanical Name	Common Name	Size	Spacing	Notes
Trees					
AR	<i>Acer rubrum</i>	Red Maple	4-6', #7	As Shown	
CAC	<i>Carpinus caroliniana</i>	American Hornbeam	4-6', #7	As Shown	
QB	<i>Quercus bicolor</i>	Swamp White Oak	4-6', #7	As Shown	

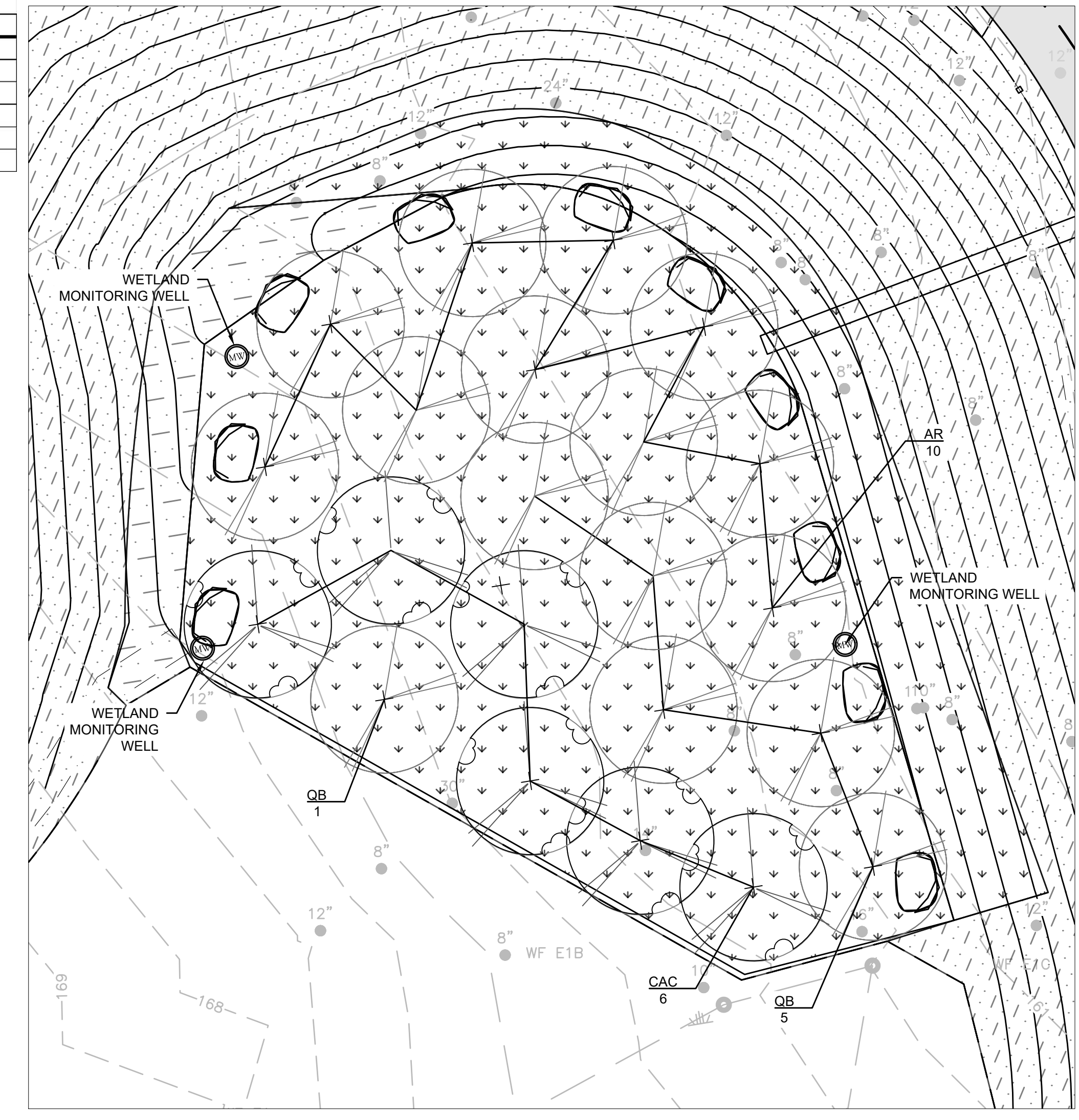
SEEDING NOTES:

1. AN ANNUAL COVER CROP(S), TO BE USED. SPECIES DEPENDENT ON TIME OF YEAR, SEE SPECS.

SEED MIX 1 (WETLAND): TO BE PLANTED IN LOCATIONS ADJACENT TO WETLANDS AS SHOWN ON THE PLANS. SEE SPECIFICATIONS FOR SEEDING.

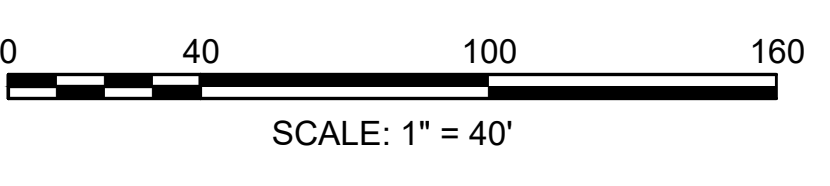
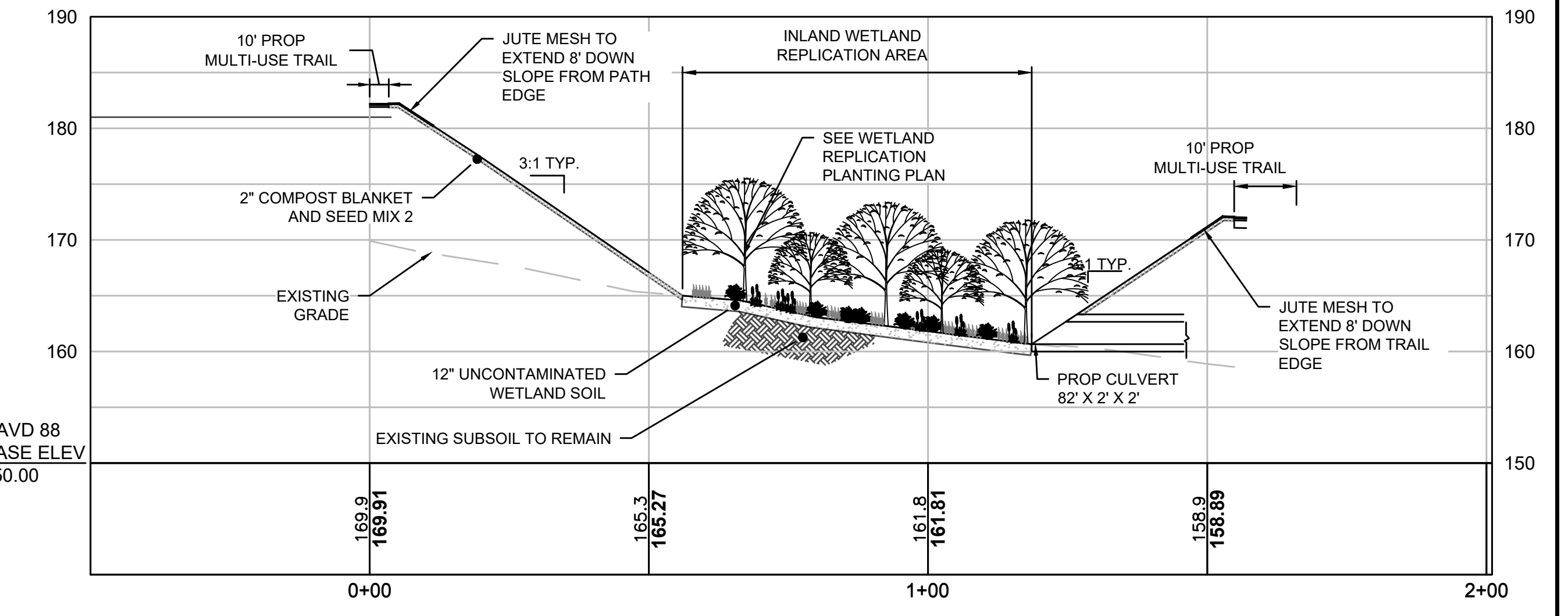
SEED MIX 2 (MID-HEIGHT GRASSLAND): TO BE PLANTED IN ALL DISTURBED AREAS WITHIN THE LOW THAT ARE NOT CALLED OUT TO BE SEEDDED WITH SEED MIX 1 AS SHOWN ON THE PLANS. THIS DOES NOT INCLUDE THE INLAND WETLAND REPLICATION AREA OR THE BIORETENTION AREAS. SEE SPECIFICATIONS FOR SEEDING.

SEED MIX 3 (SLOPES AND SHOULDER): TO BE PLANTED IN DISTURBED AREAS ADJACENT TO PARKING LOT AND ALONG ROCKY HILL ROAD, AS CALLED OUT ON THE PLANS. THIS DOES NOT INCLUDE BIORETENTION AREAS OR ADJACENT TO WETLAND AREAS THAT ARE IN PROXIMITY TO THE PARKING LOT AREA.



INLAND WETLAND REPLICATION PLANTING PLAN
SCALE: 1" = 10'

INLAND WETLAND REPLICATION AREA

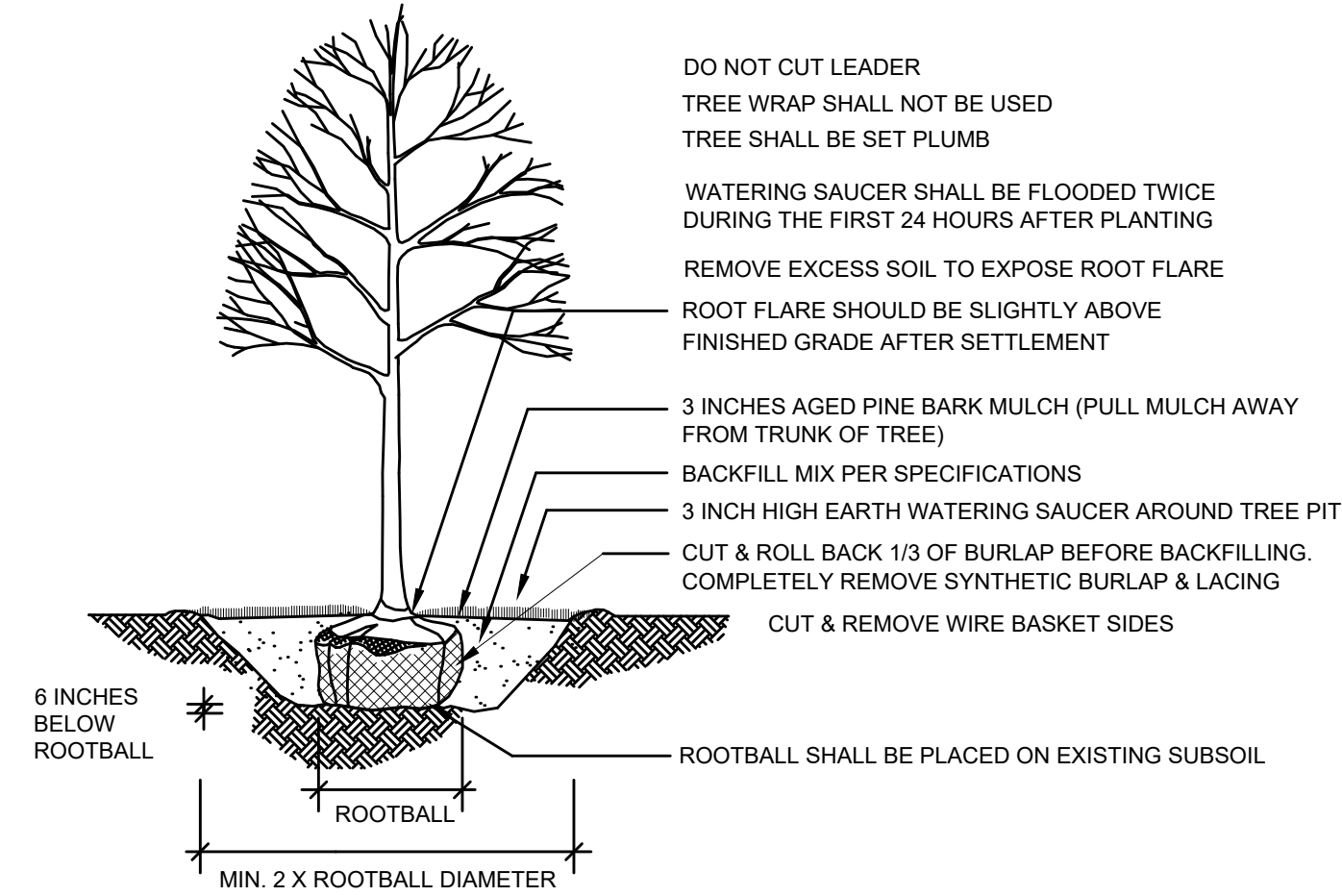


**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

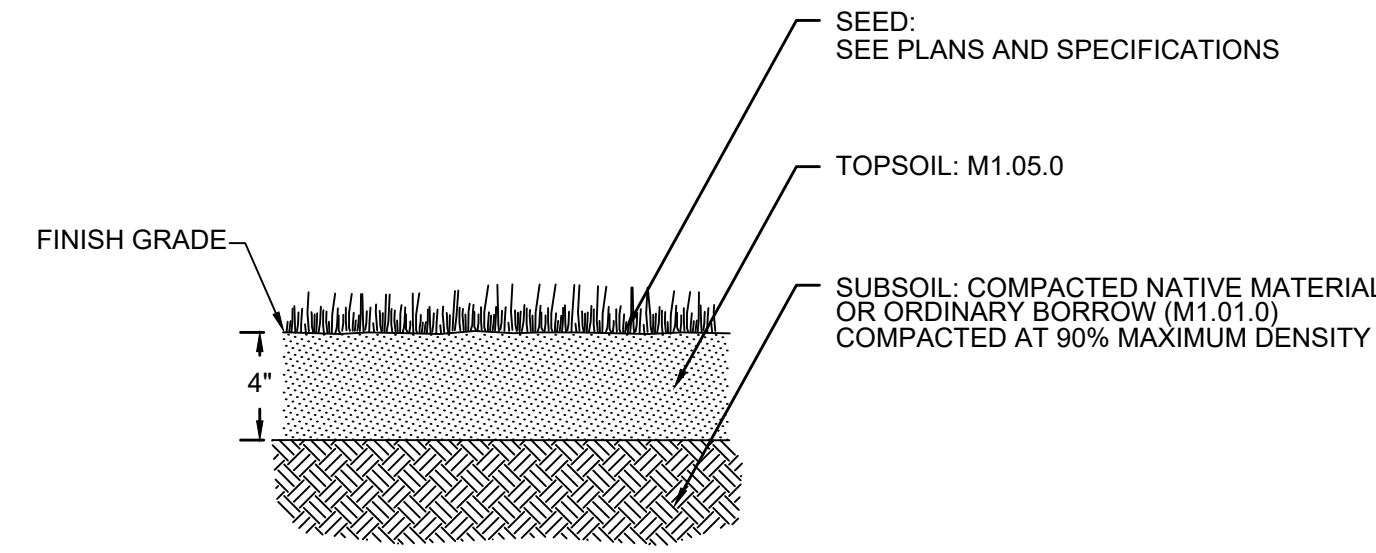
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	30	51
PROJECT FILE NO.		608413	

LANDSCAPE DETAILS

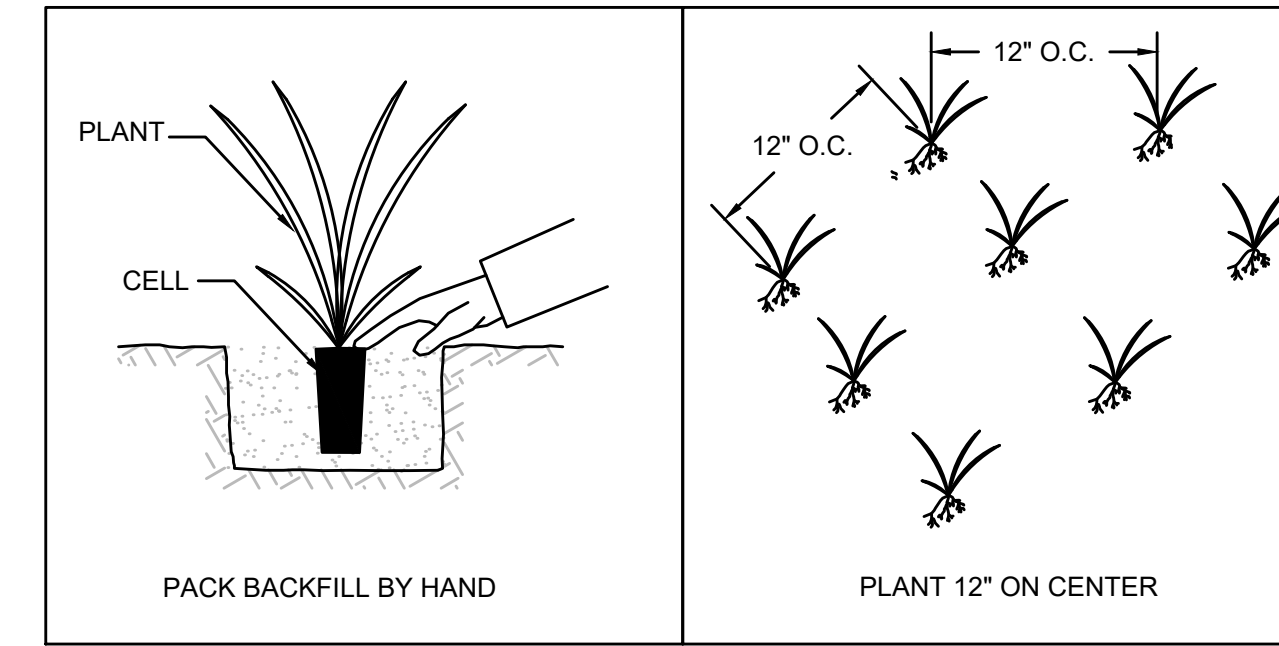
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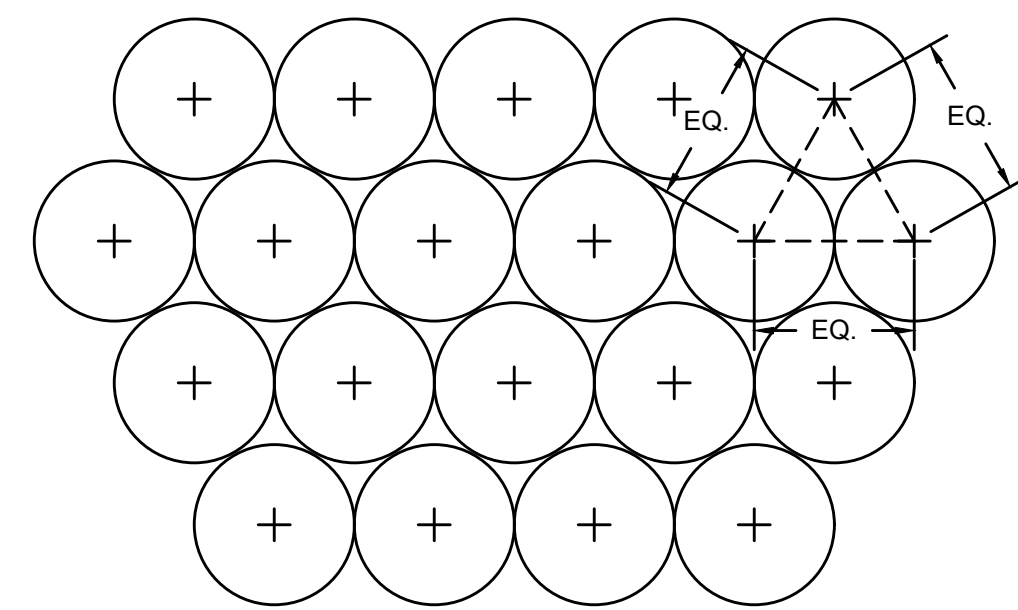
DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



LOAM AND SEED DETAIL
NOT TO SCALE

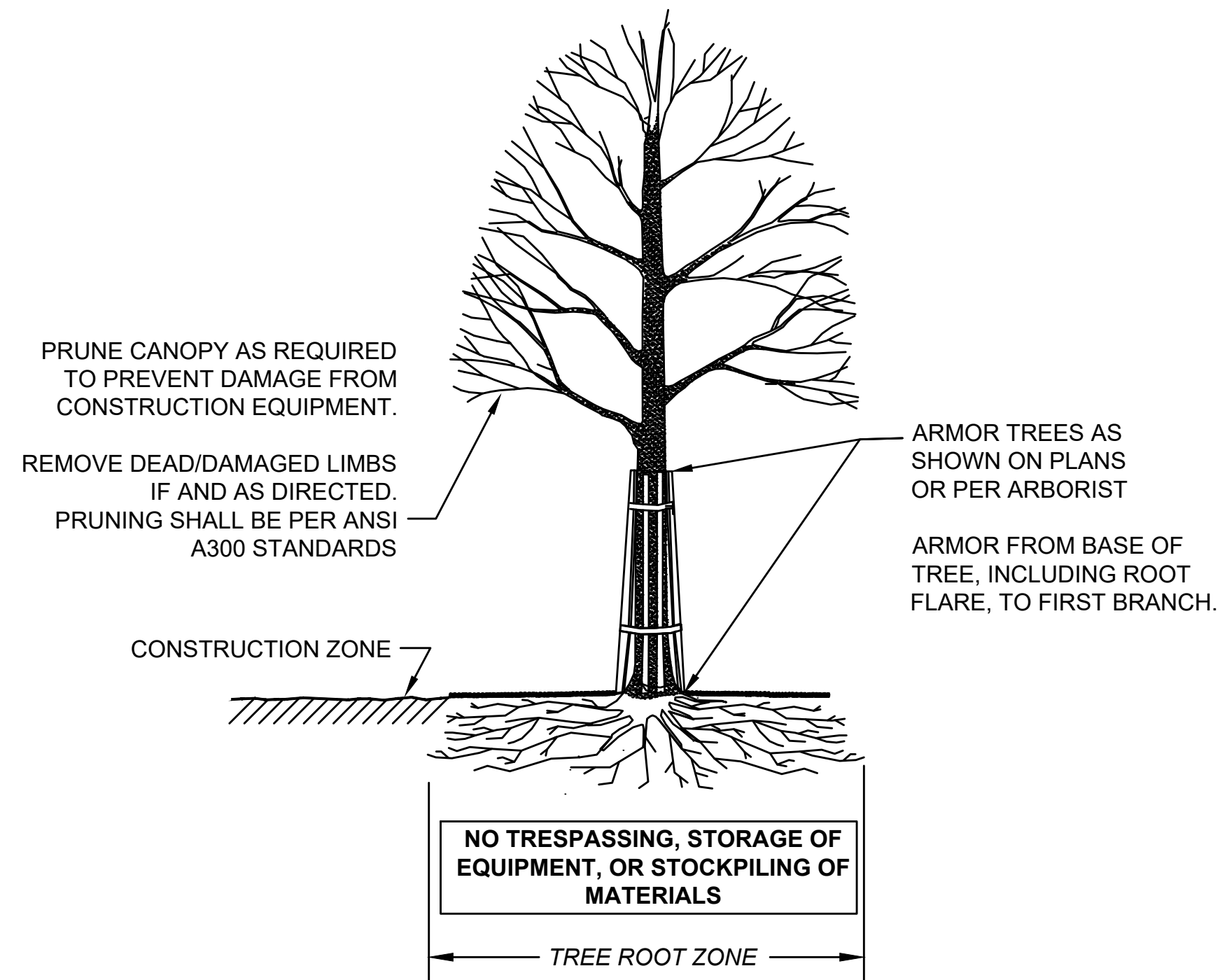


PLUG PLANTING DETAIL
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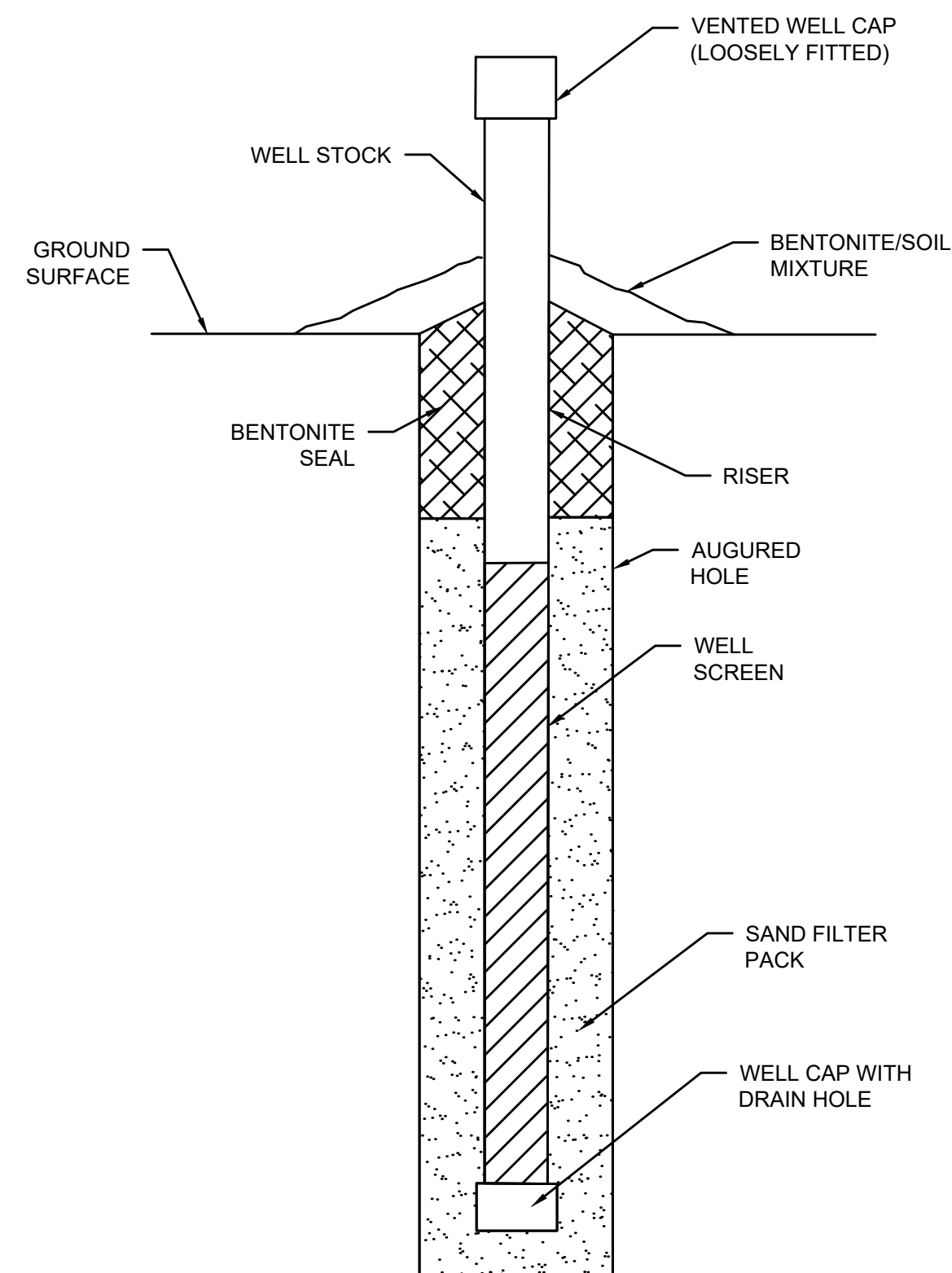


USE EQUIDISTANT TRIANGULAR SPACING FOR PLANTS - FOR ACTUAL SPACING SEE PLANS OR PLANTING SCHEDULE

PLANTING SPACING DETAIL
NOT TO SCALE



SECTION - TRUNK ARMORING & PRUNING
TREE PROTECTION DETAIL - TRUNK
NOT TO SCALE

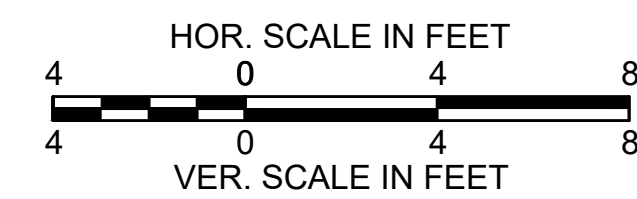
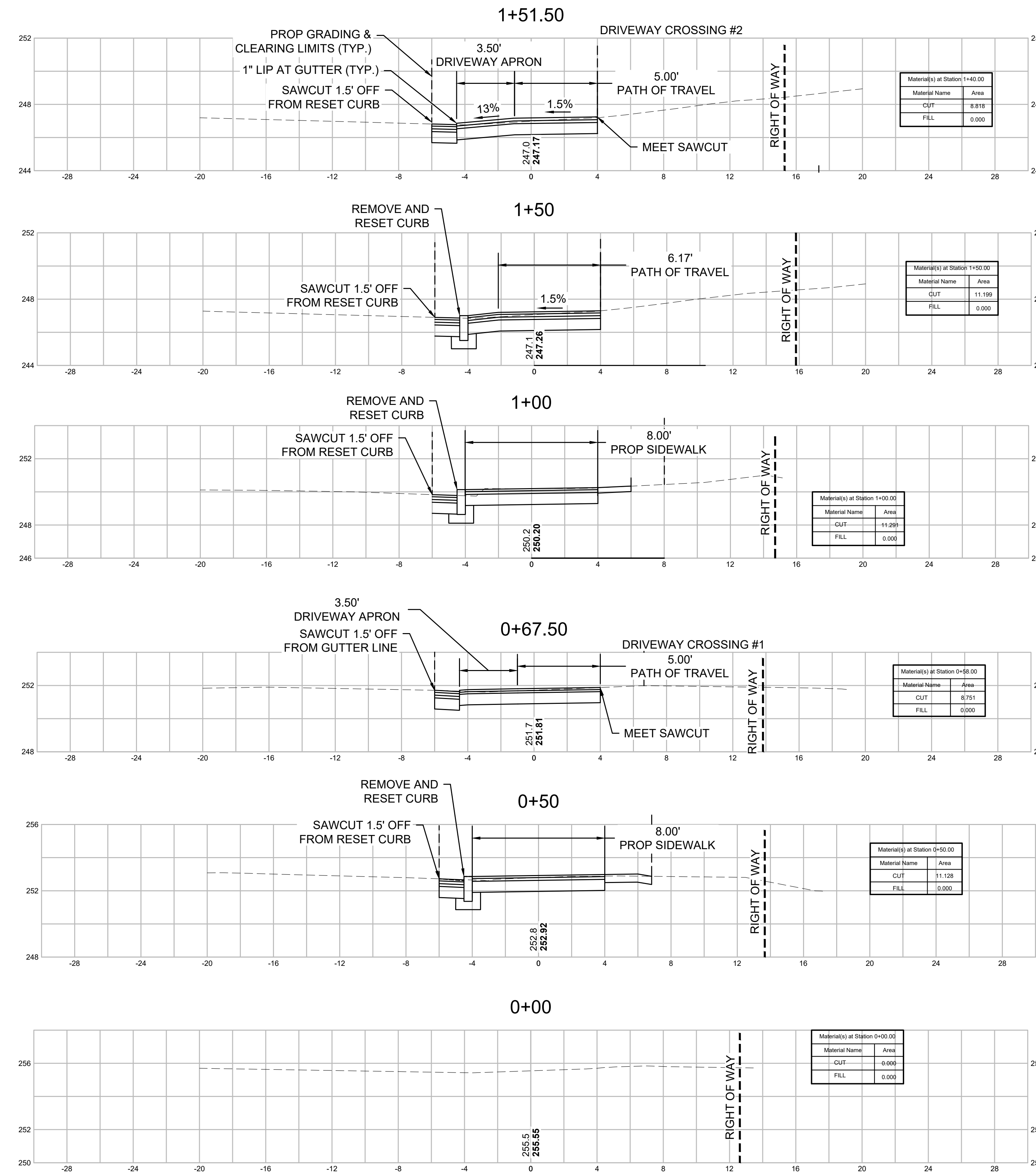


WETLAND MONITORING WELL DETAIL
NOT TO SCALE

**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	31	51
PROJECT FILE NO.		608413	

CROSS SECTIONS - ROCKY HILL SIDEWALK (1)

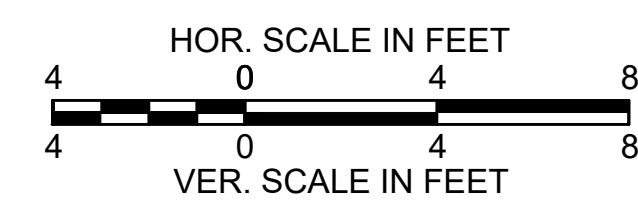
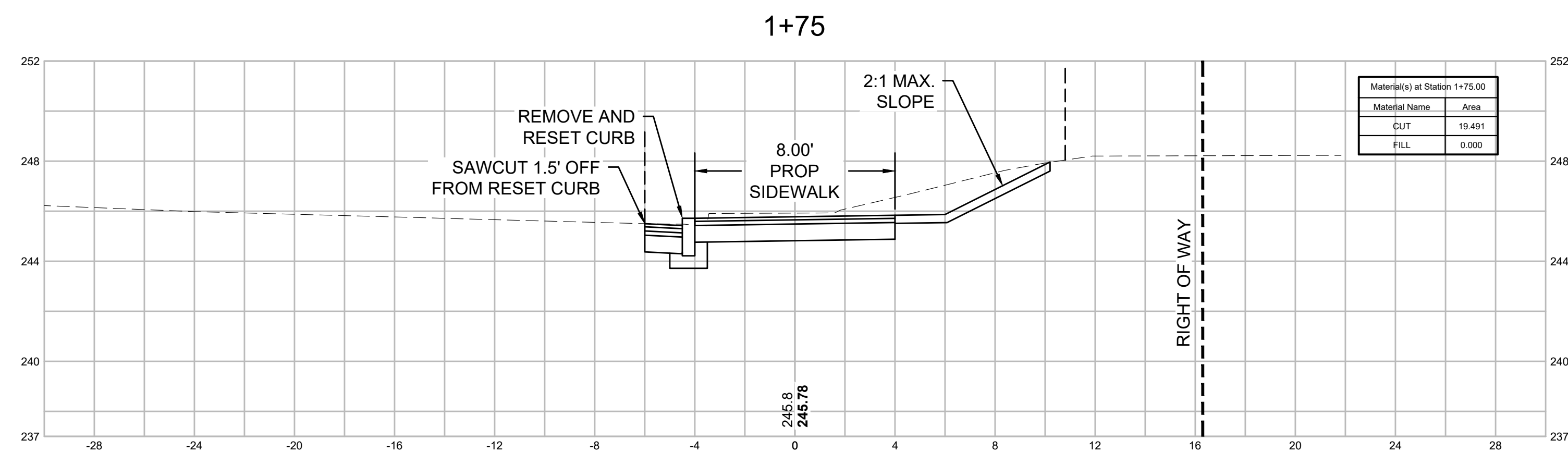
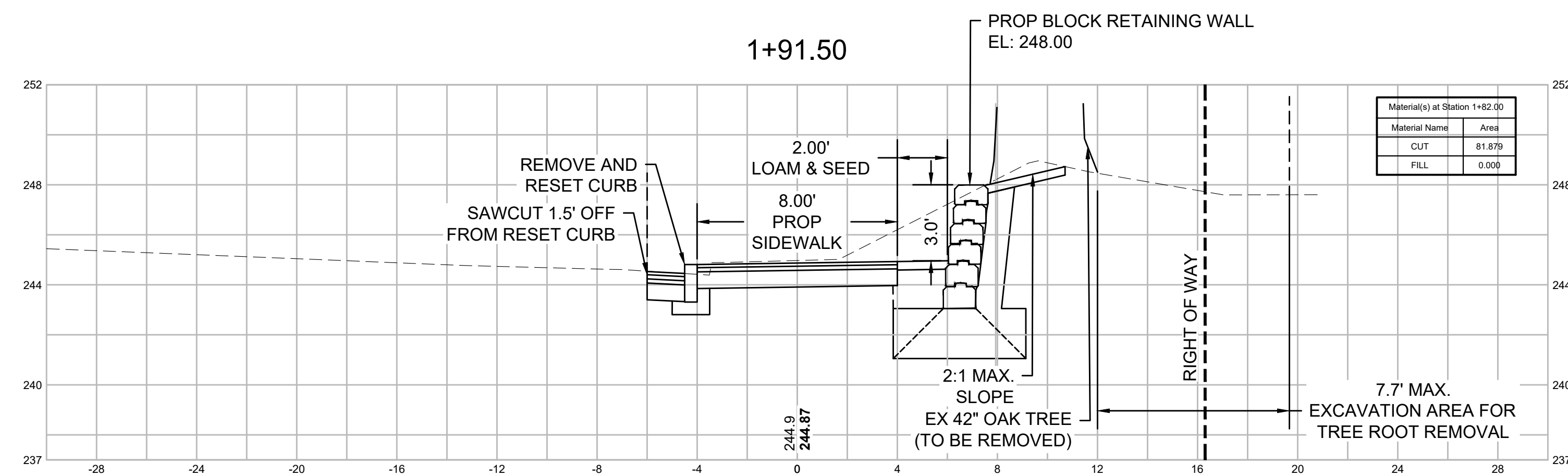
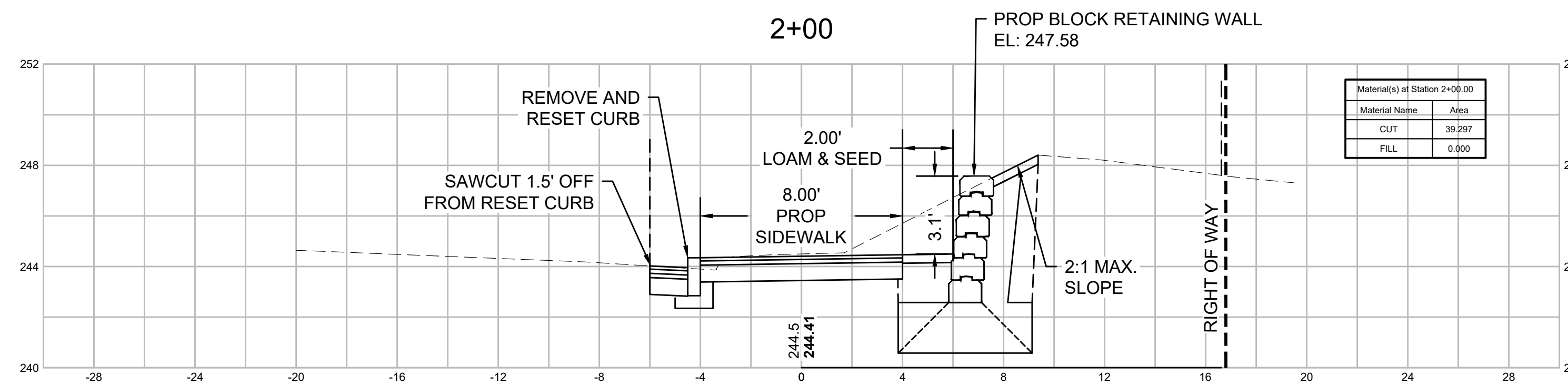
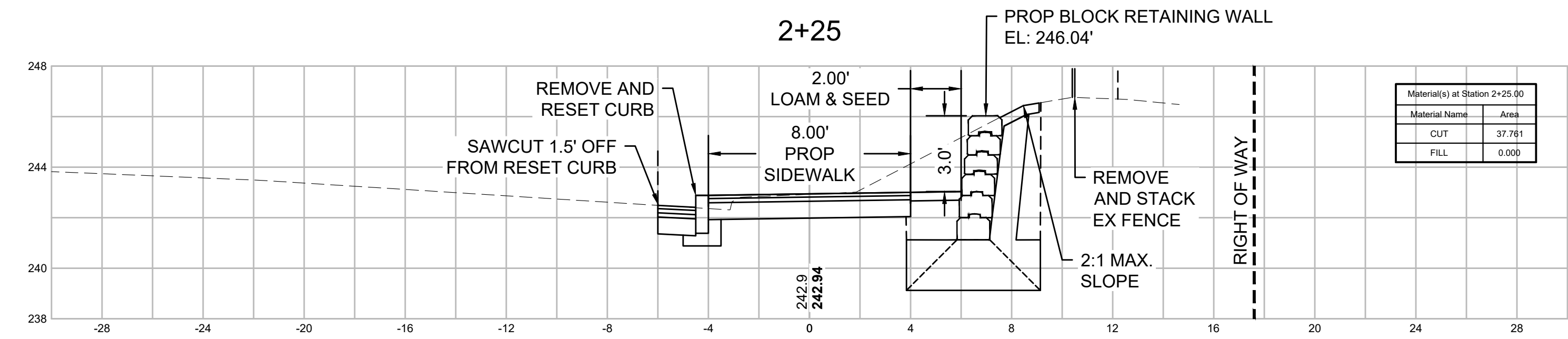
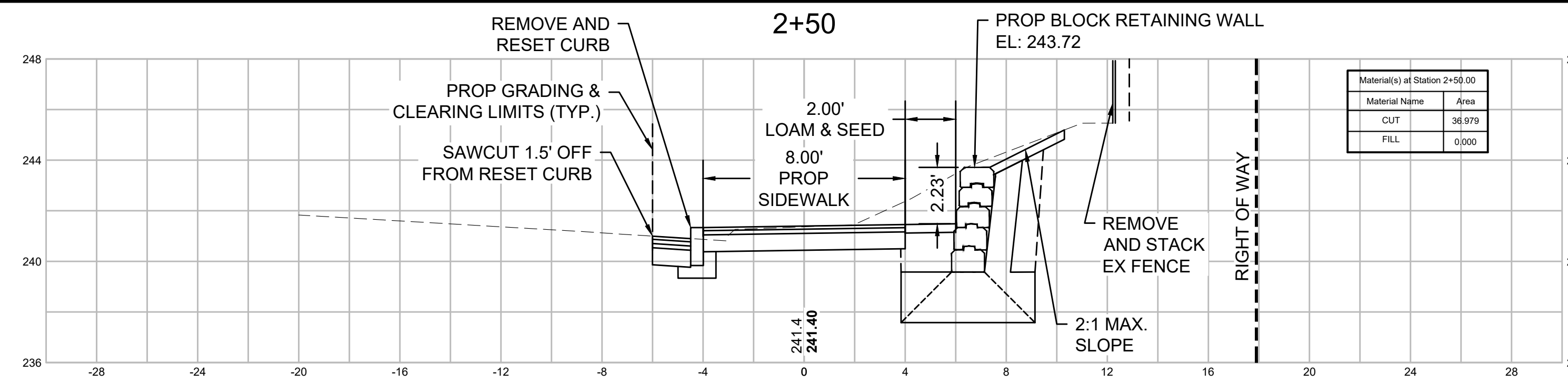


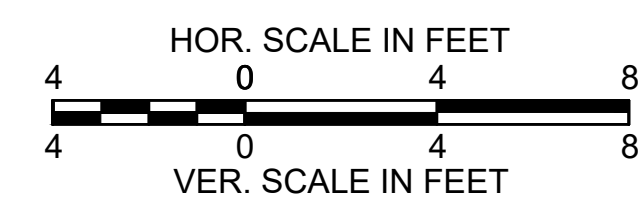
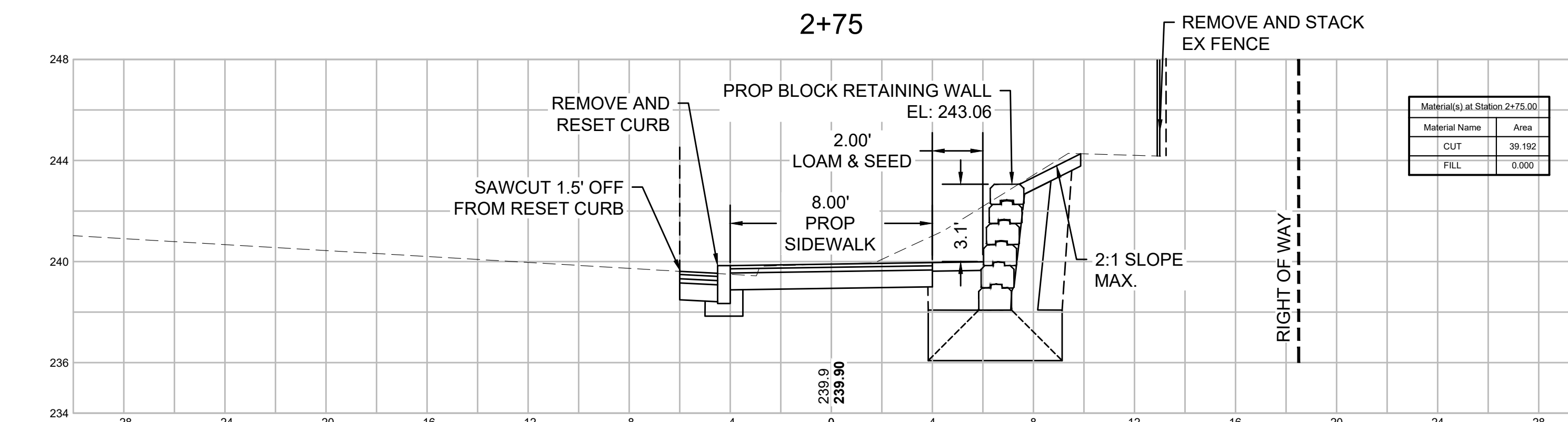
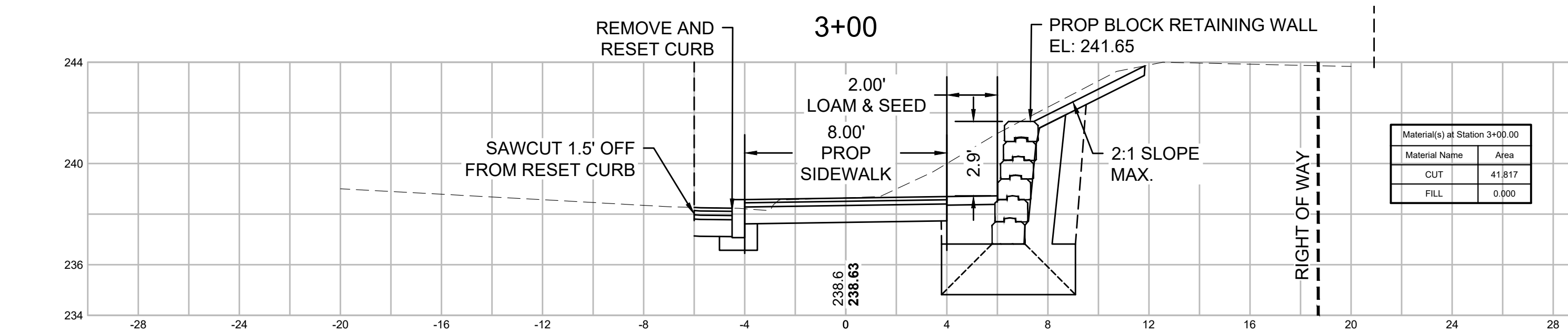
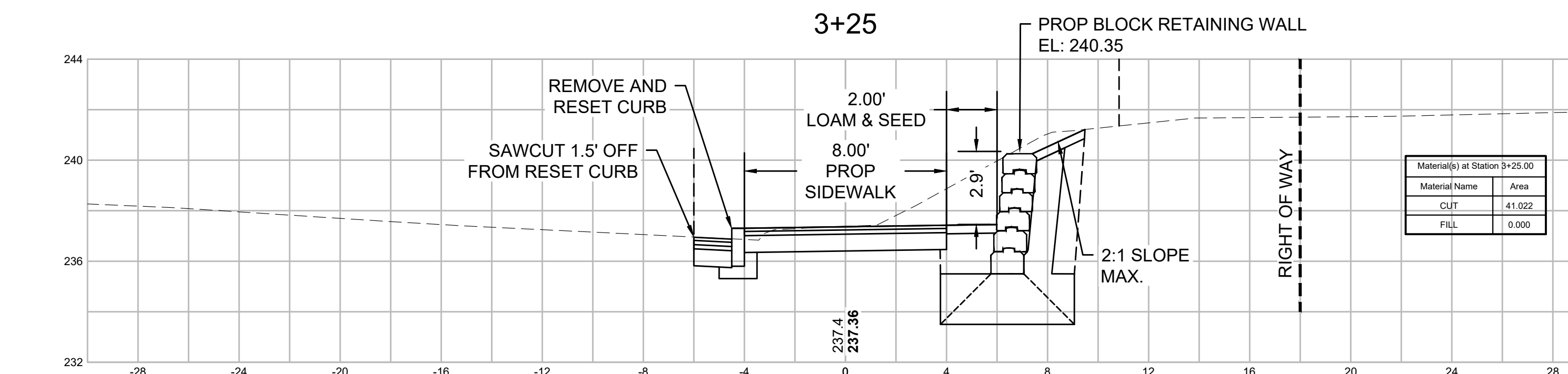
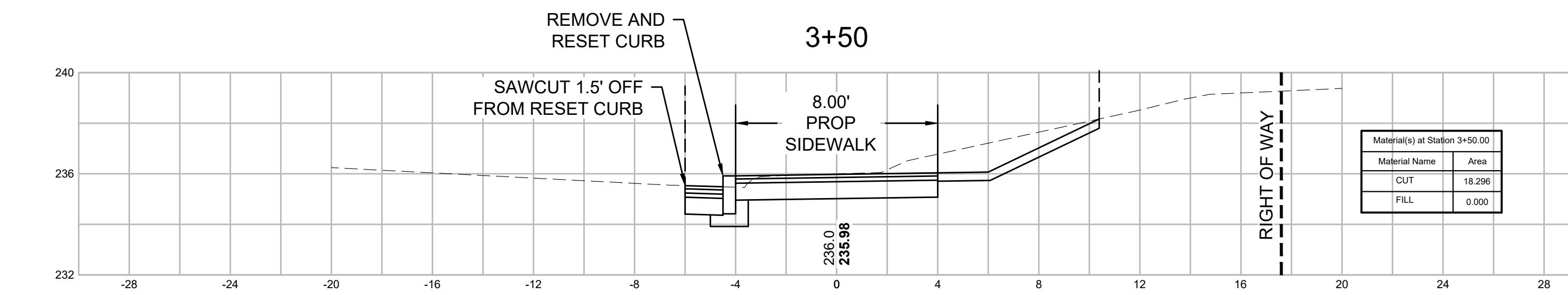
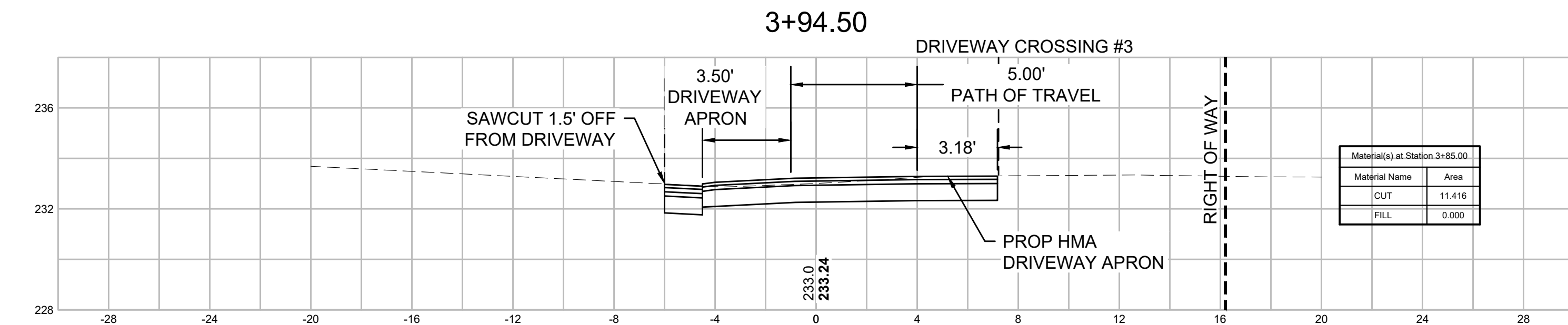
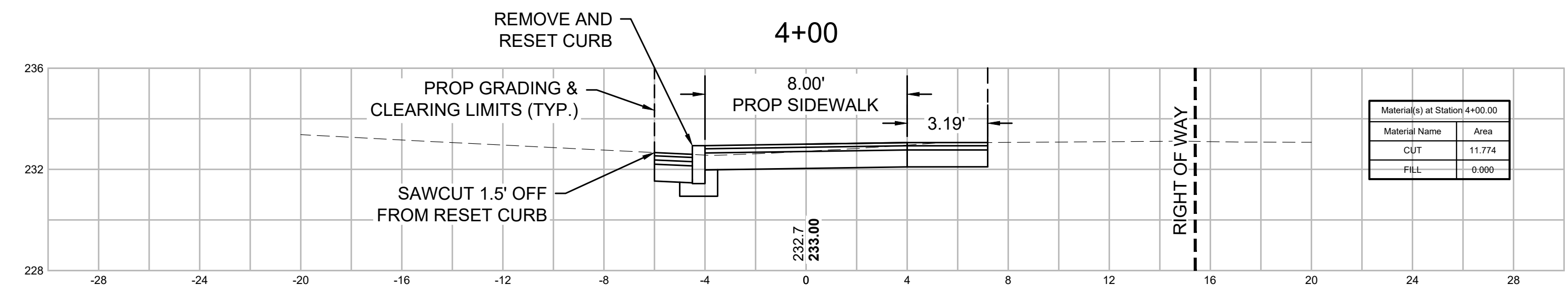
PTH = PLANIMETER TO HERE

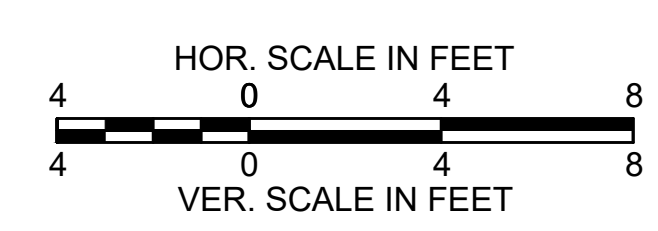
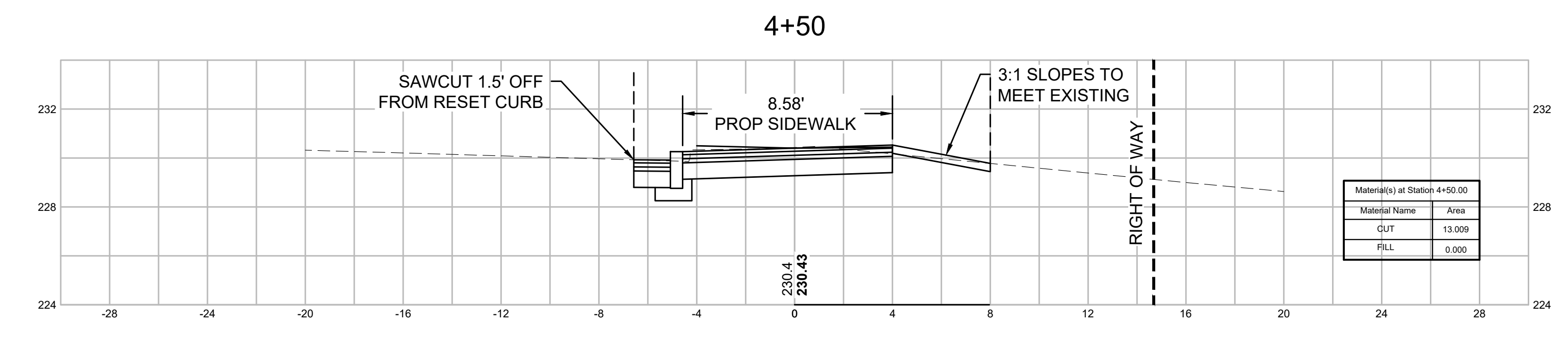
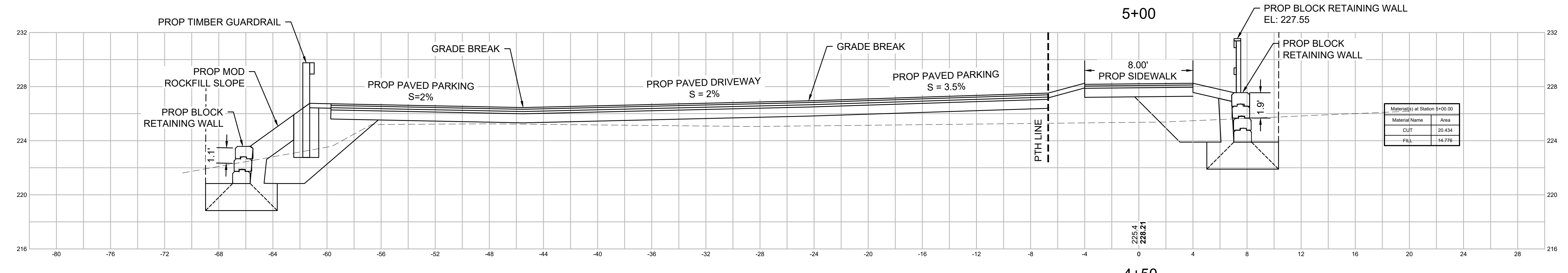
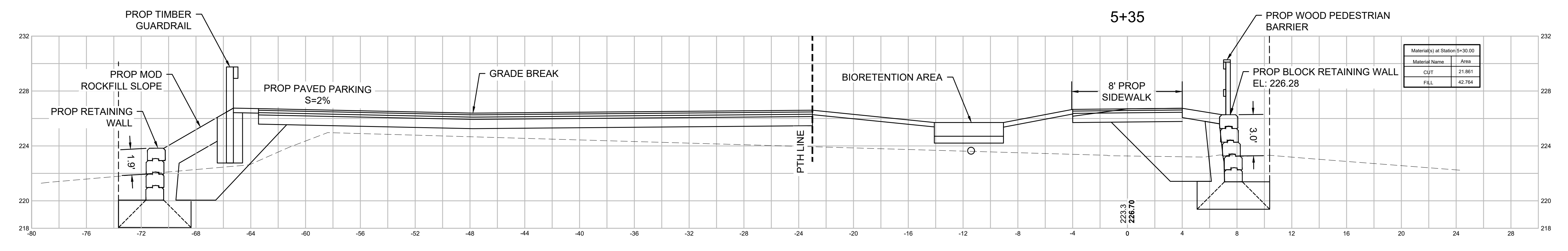
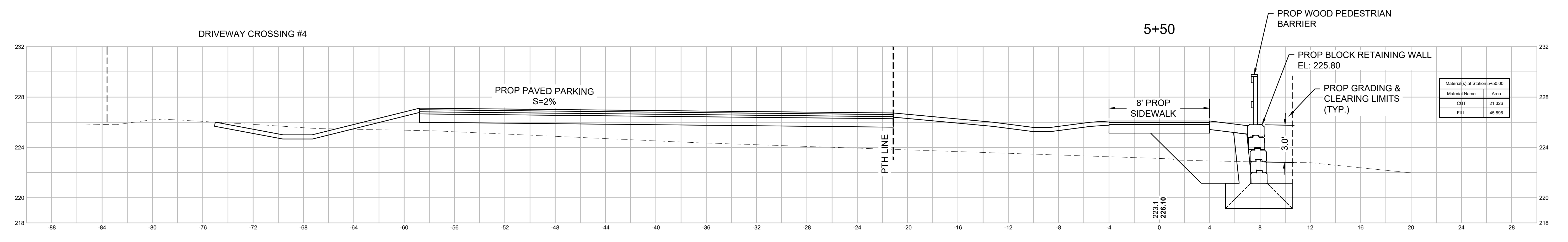
**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

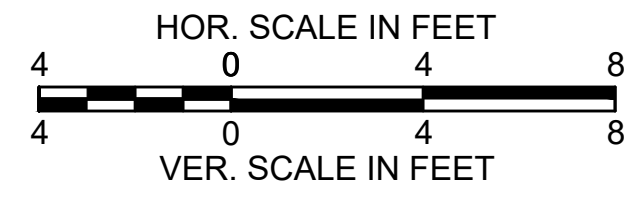
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	32	51
PROJECT FILE NO.		608413	

CROSS SECTIONS - ROCKY HILL SIDEWALK (2)





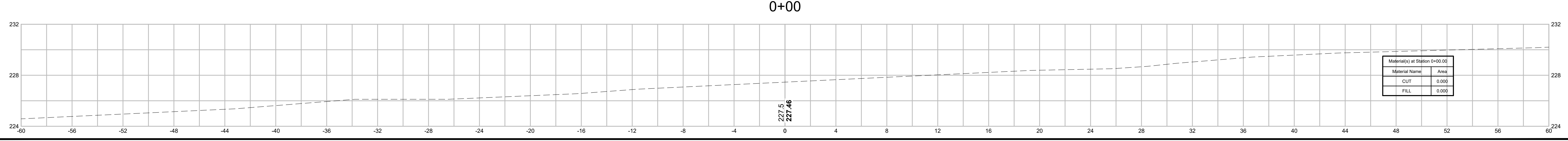
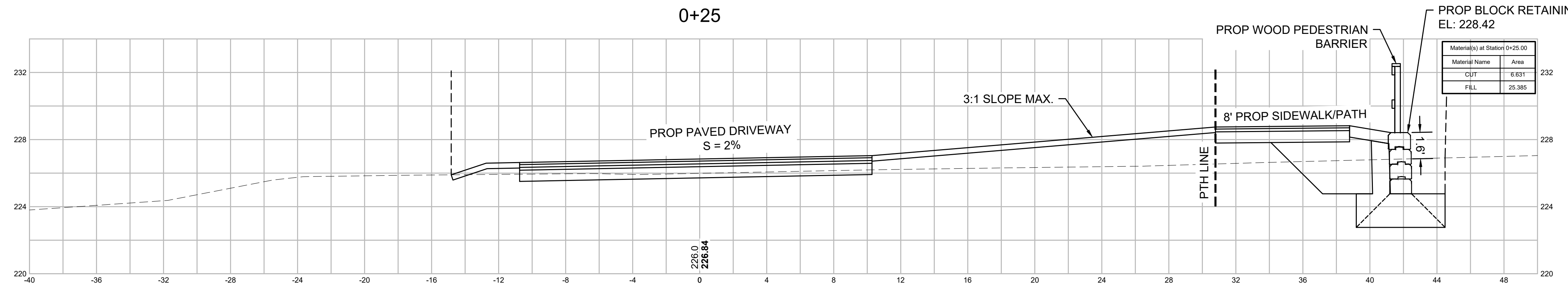
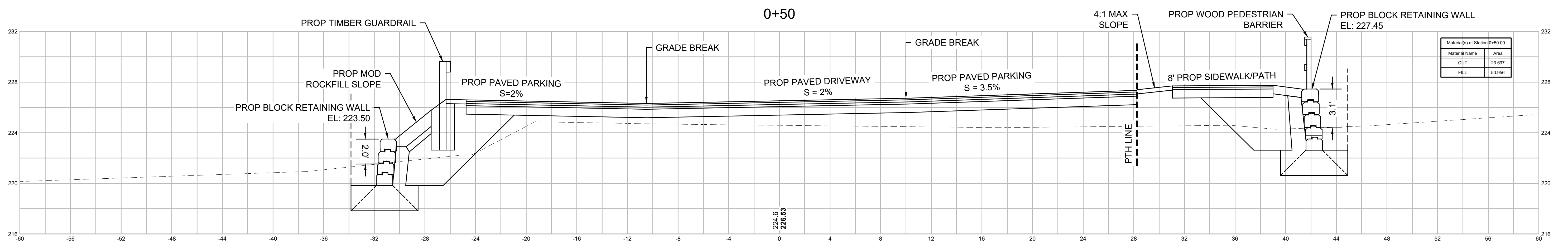
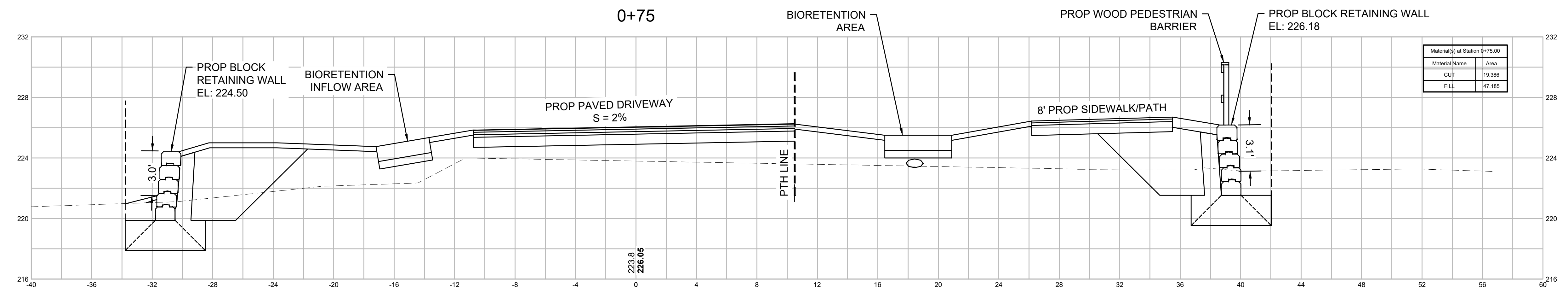
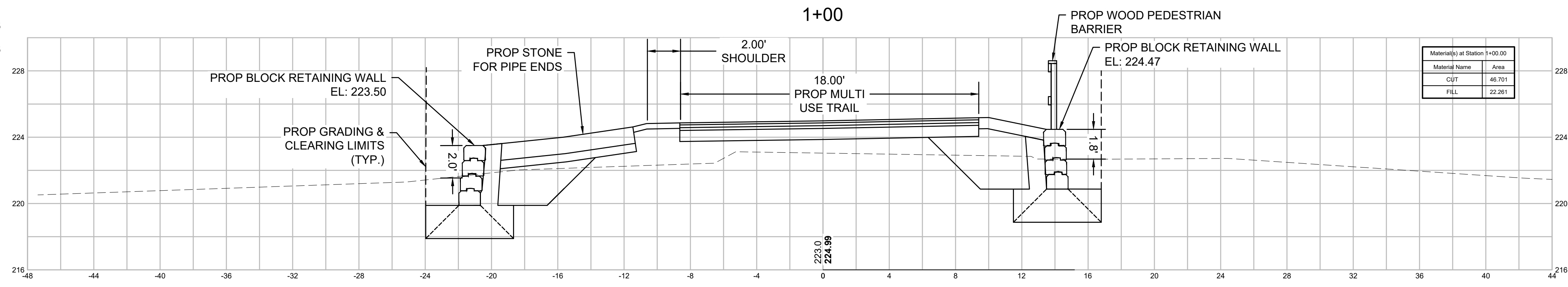




**NORTHAMPTON - ROCKY HILL
 GREENWAY MULTI-USE TRAIL**

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PROJECT FILE NO. 608413			

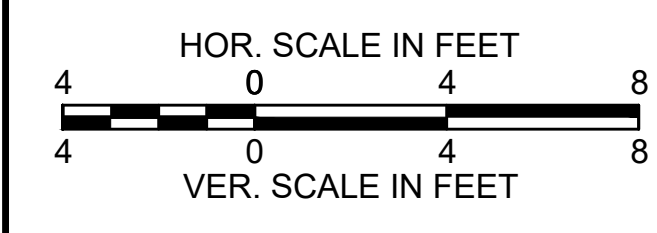
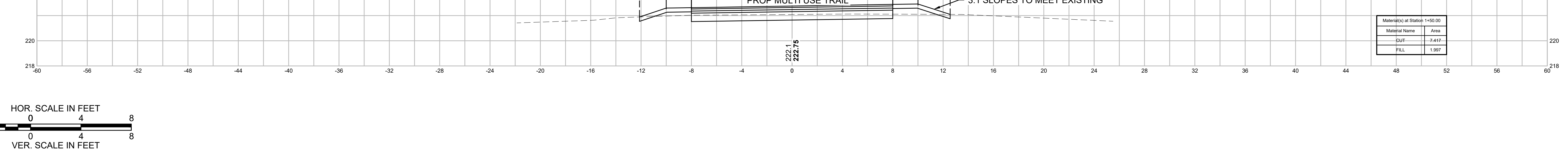
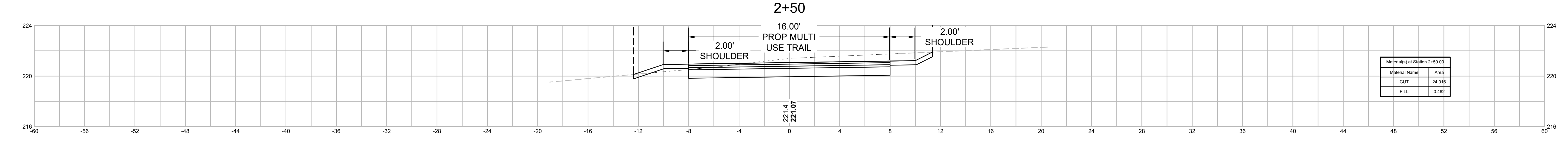
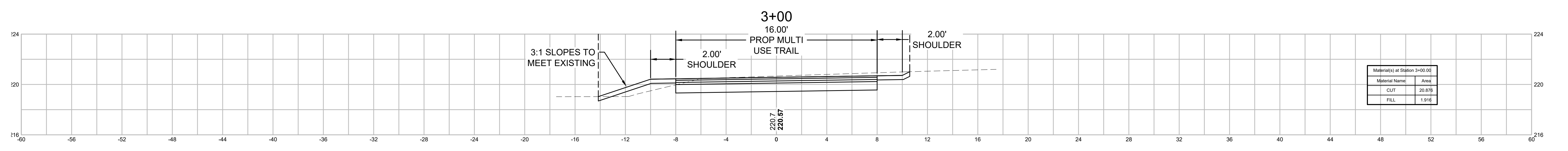
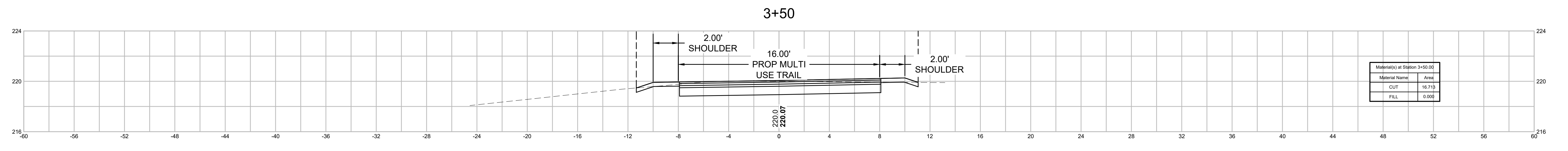
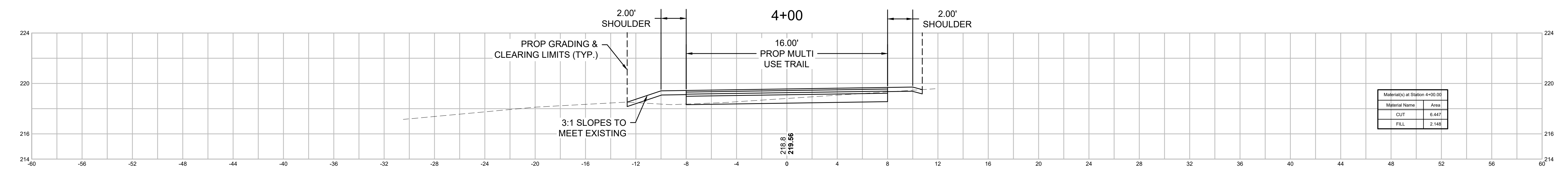
CROSS SECTIONS - MULTI USE TRAIL



**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	36	51
PROJECT FILE NO. 608413			

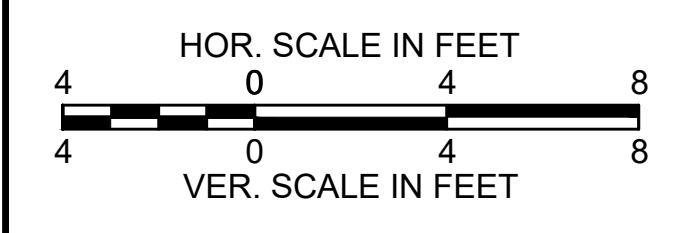
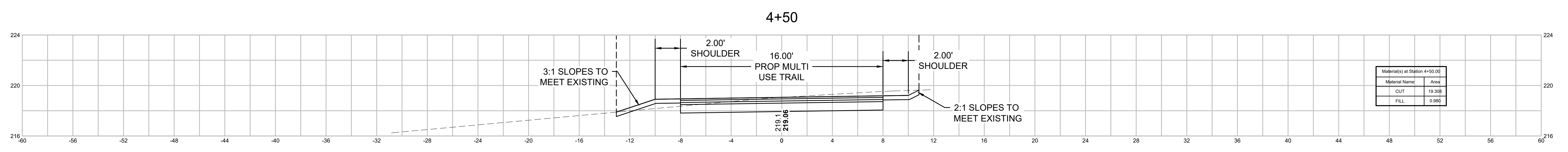
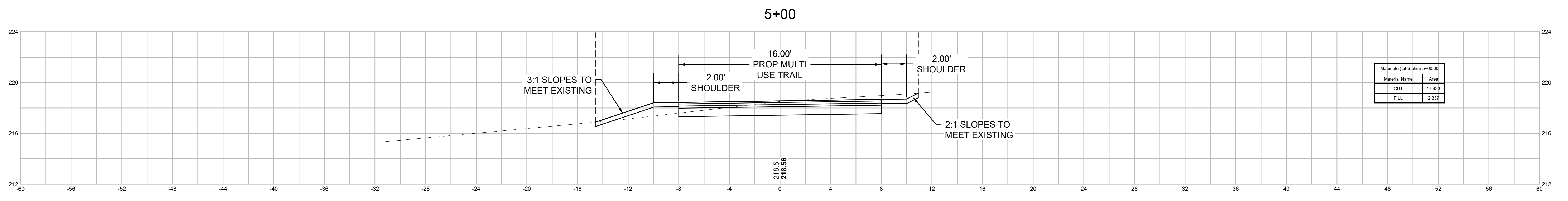
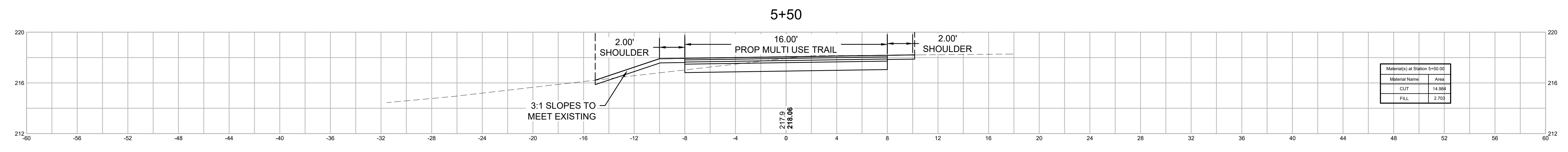
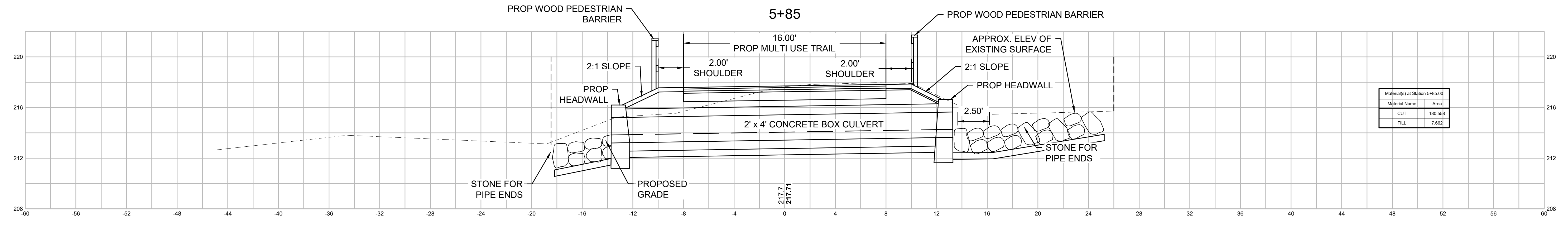
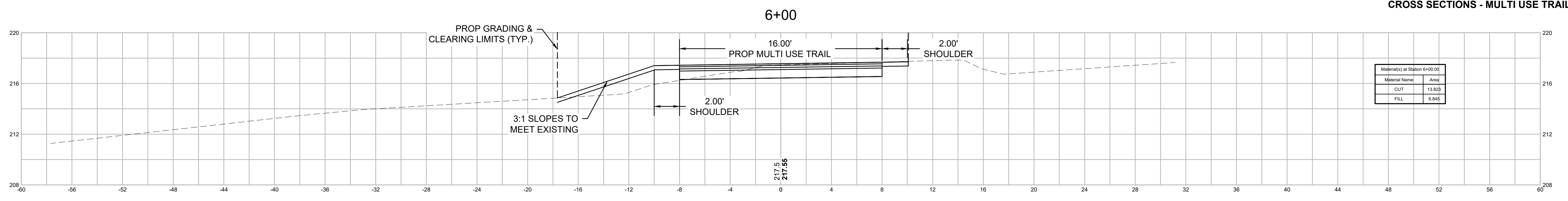
CROSS SECTIONS - MULTI USE TRAIL (2)



**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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PROJECT FILE NO.		608413	

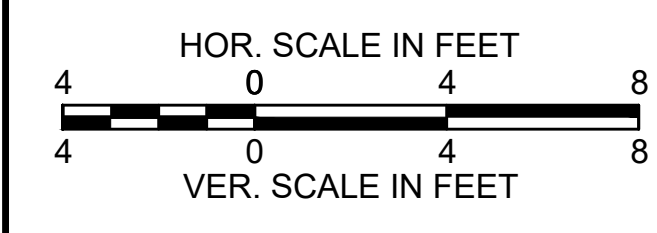
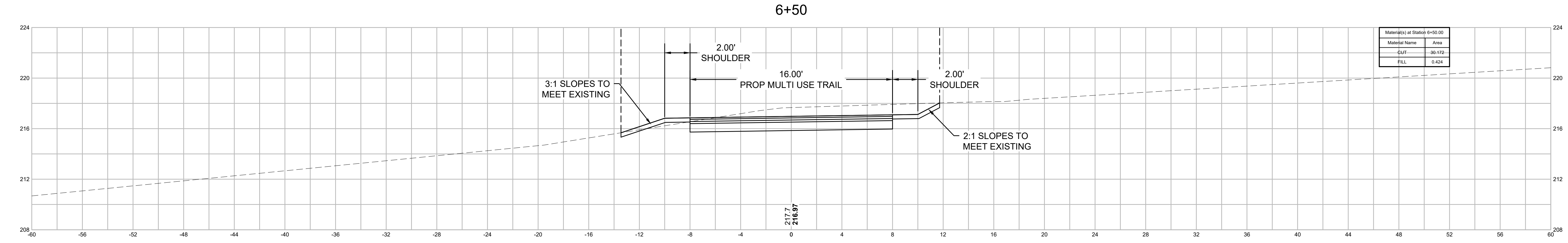
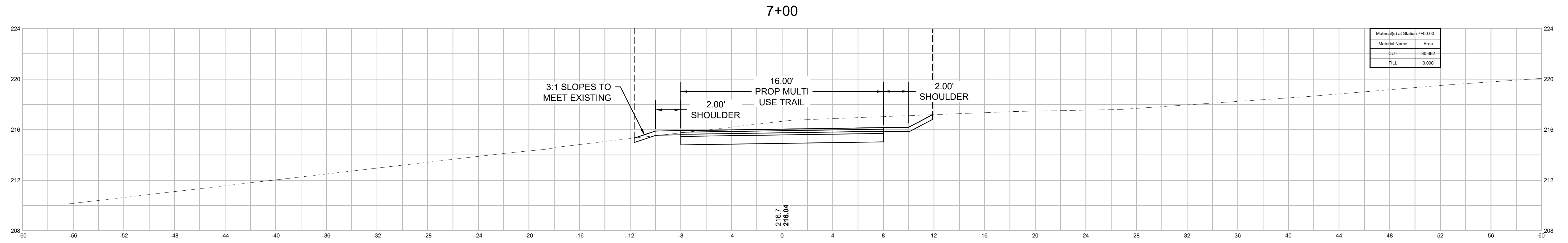
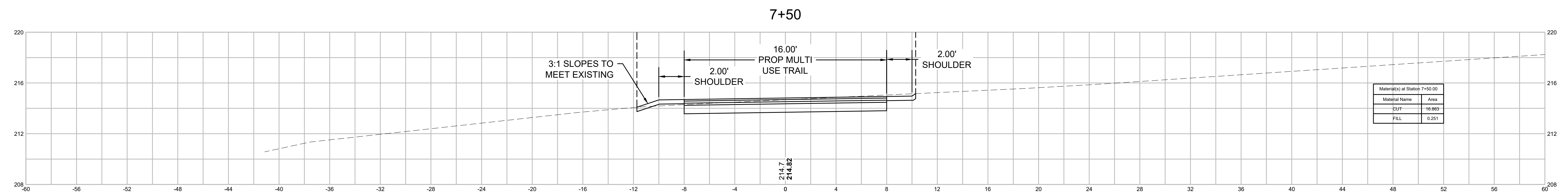
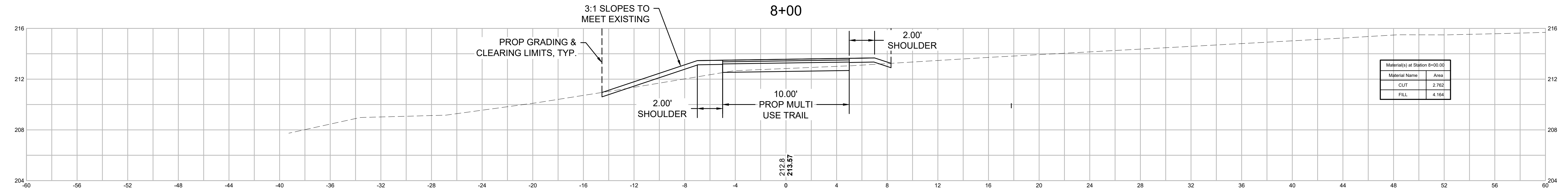
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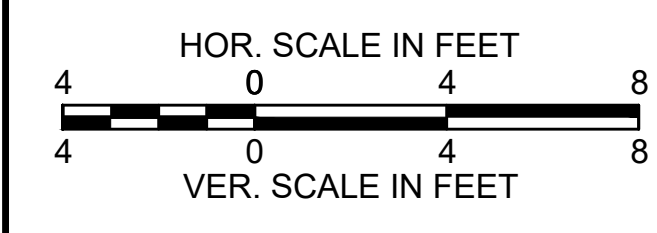
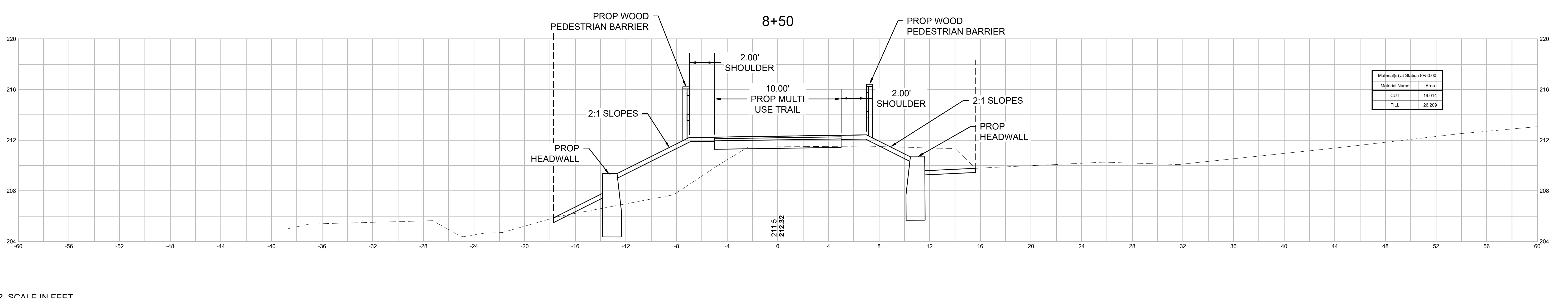
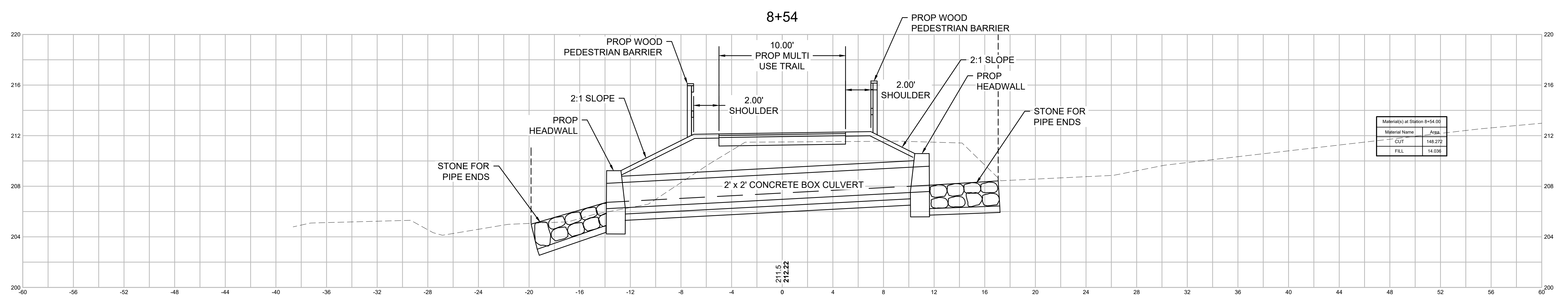
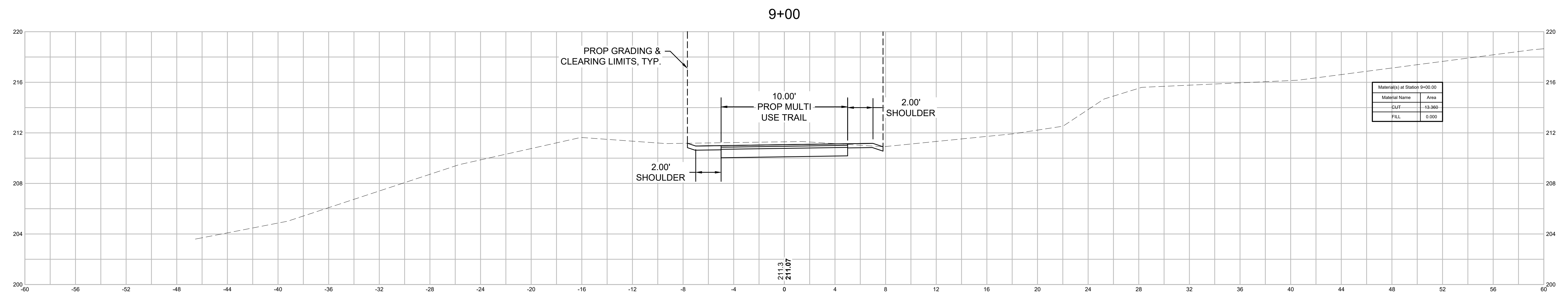


**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	38	51
PROJECT FILE NO.		608413	

CROSS SECTIONS - MULTI USE TRAIL (4)



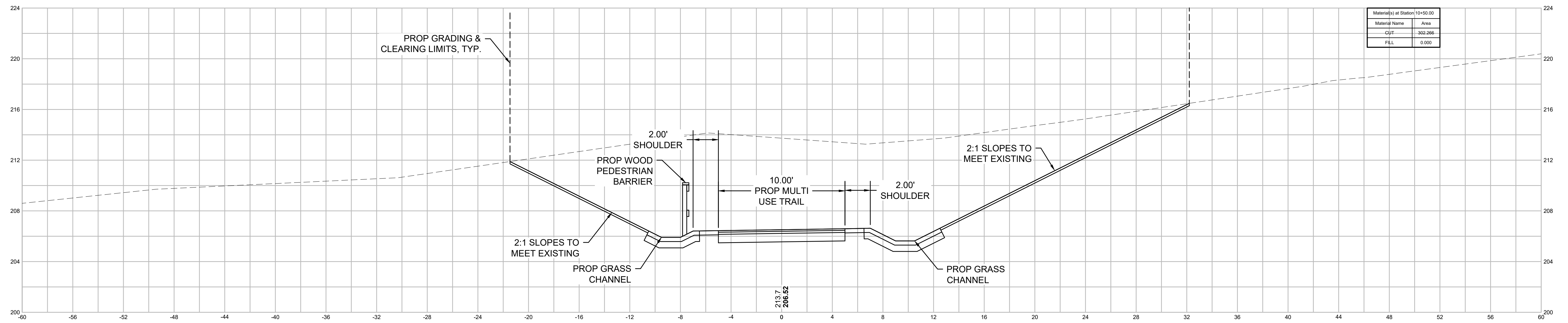


**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

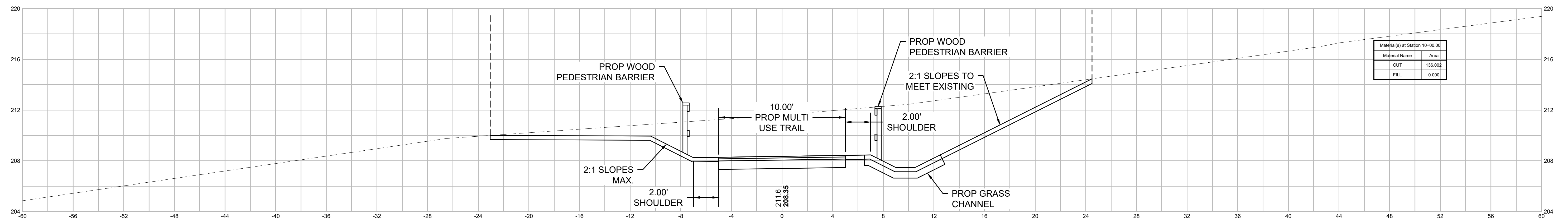
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	40	51
PROJECT FILE NO.		608413	

CROSS SECTIONS - MULTI USE TRAIL (6)

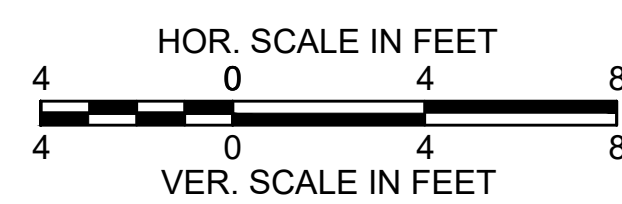
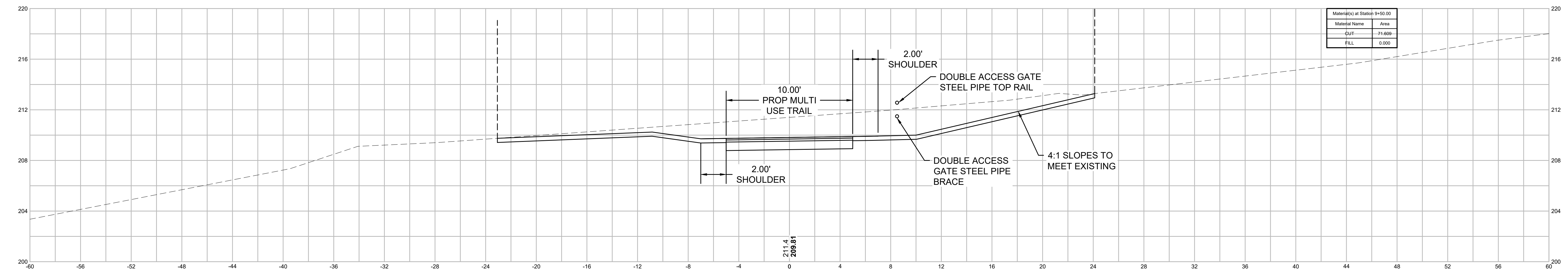
10+50



10+00



9+50

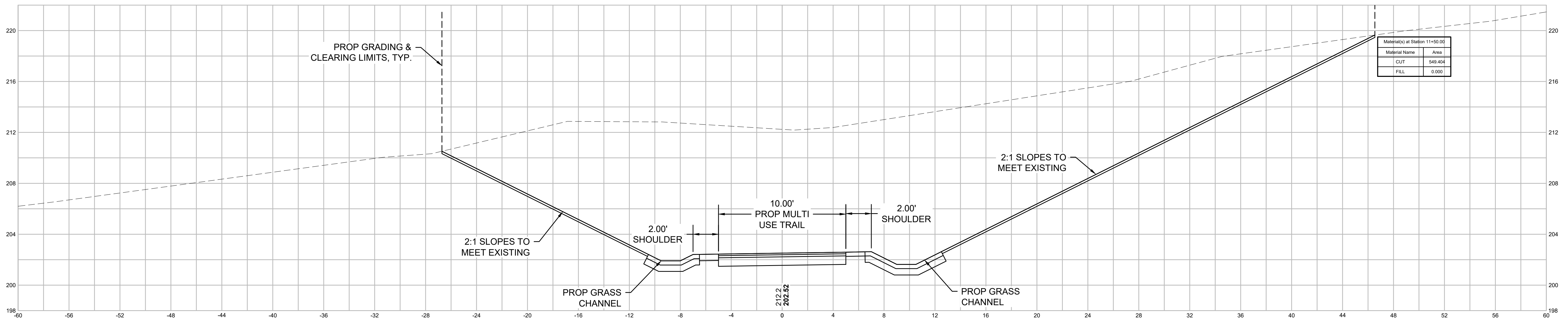


**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

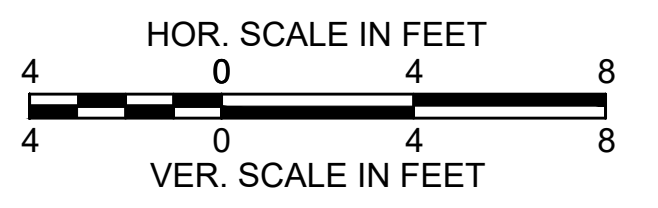
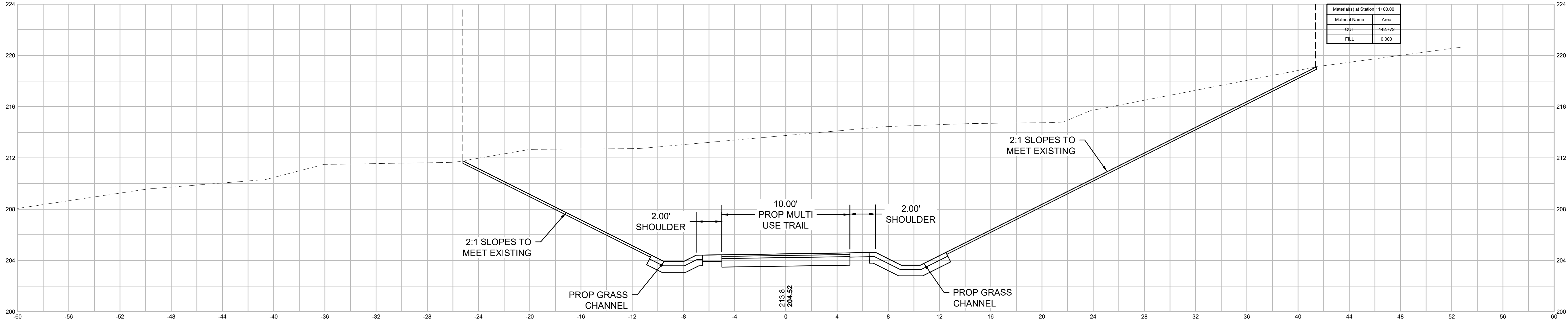
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	41	51
PROJECT FILE NO.		608413	

CROSS SECTIONS - MULTI USE TRAIL (7)

11+50



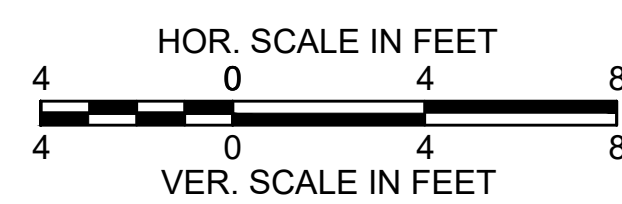
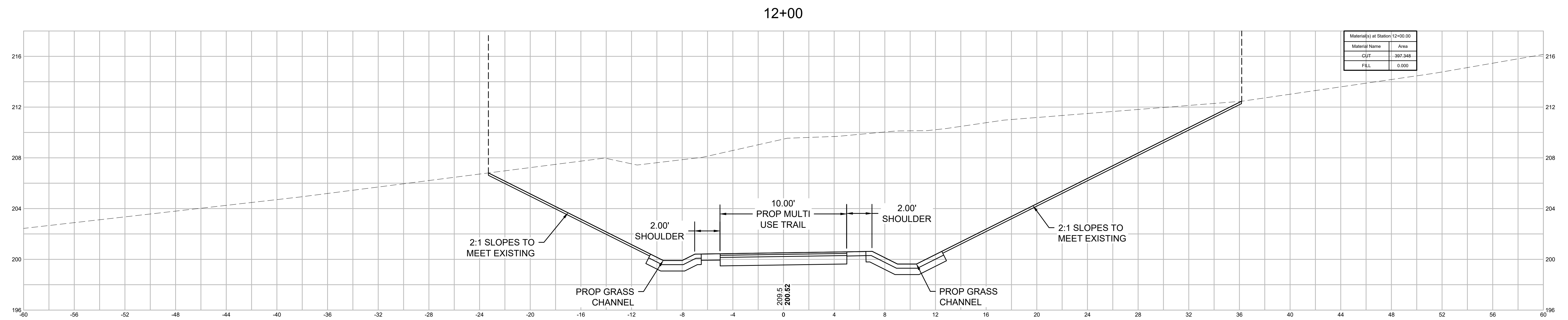
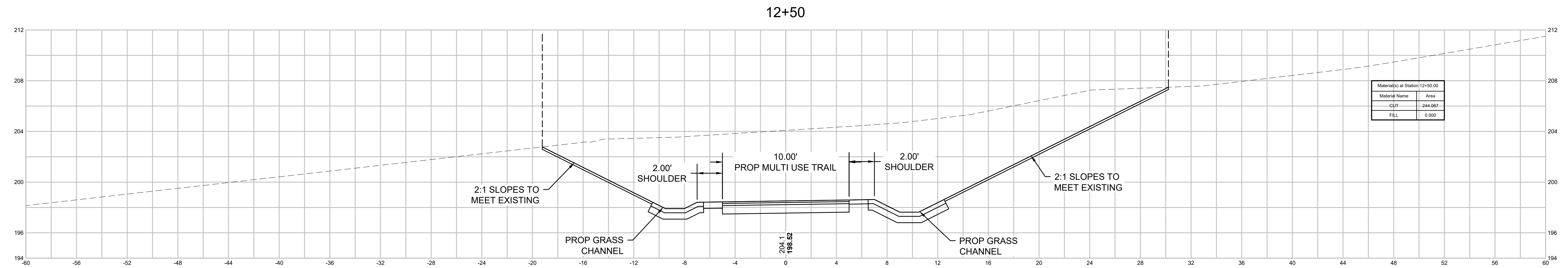
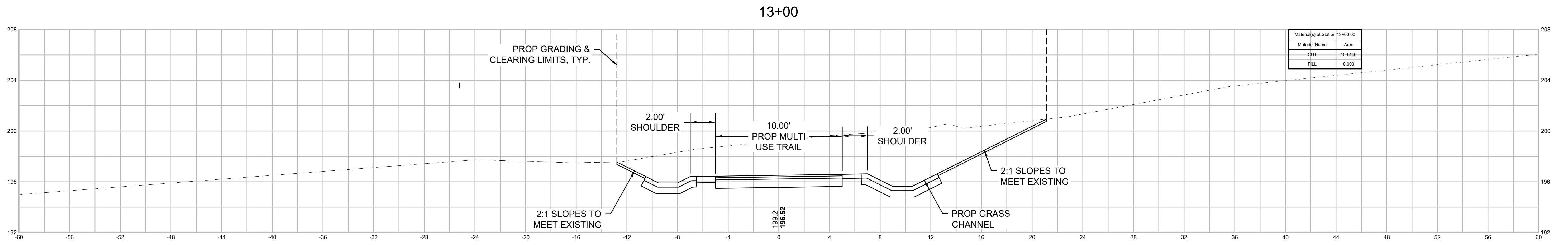
11+00



**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	42	51
PROJECT FILE NO.		608413	

CROSS SECTIONS - MULTI USE TRAIL (8)

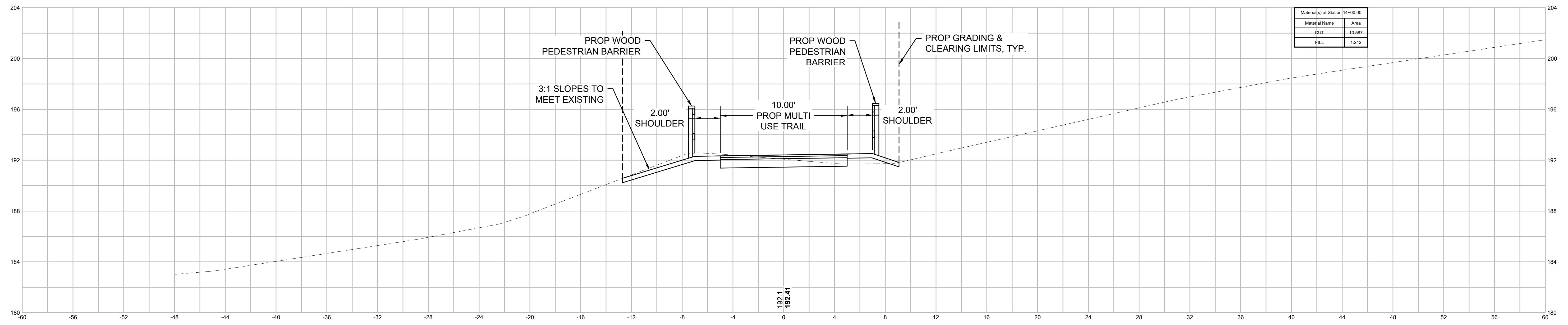


**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

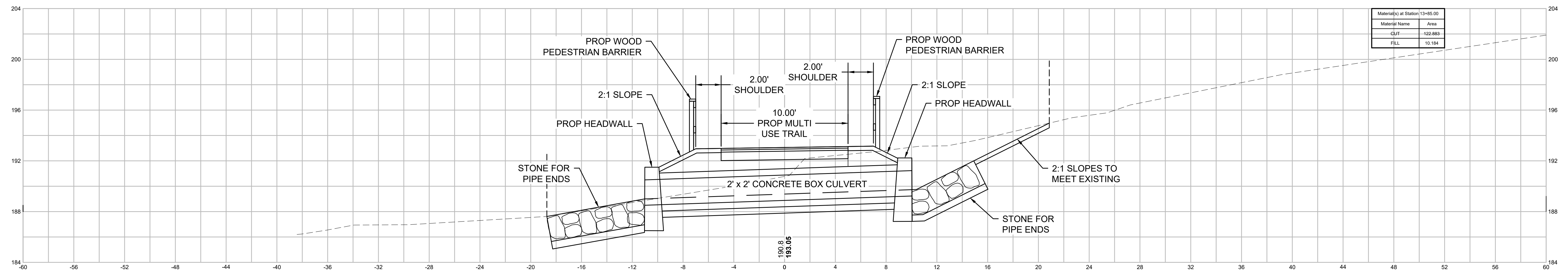
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	43	51
PROJECT FILE NO.		608413	

CROSS SECTIONS - MULTI USE TRAIL (9)

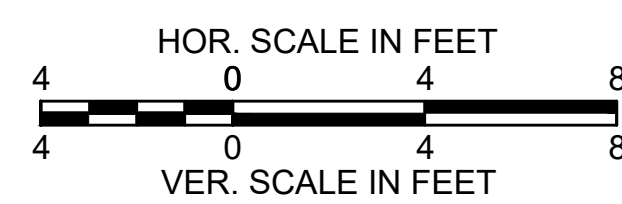
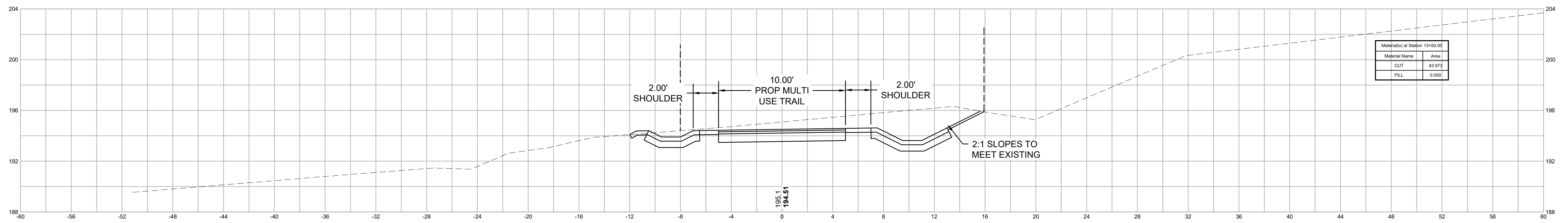
14+00



13+85



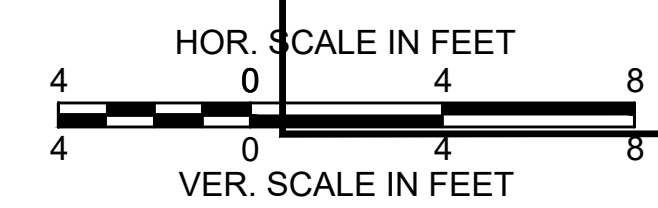
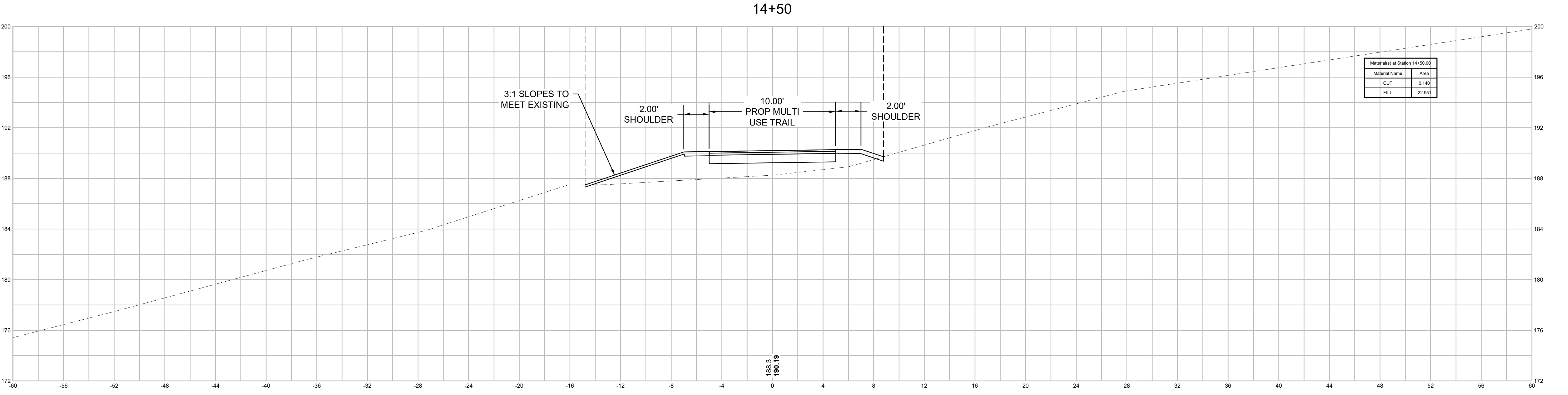
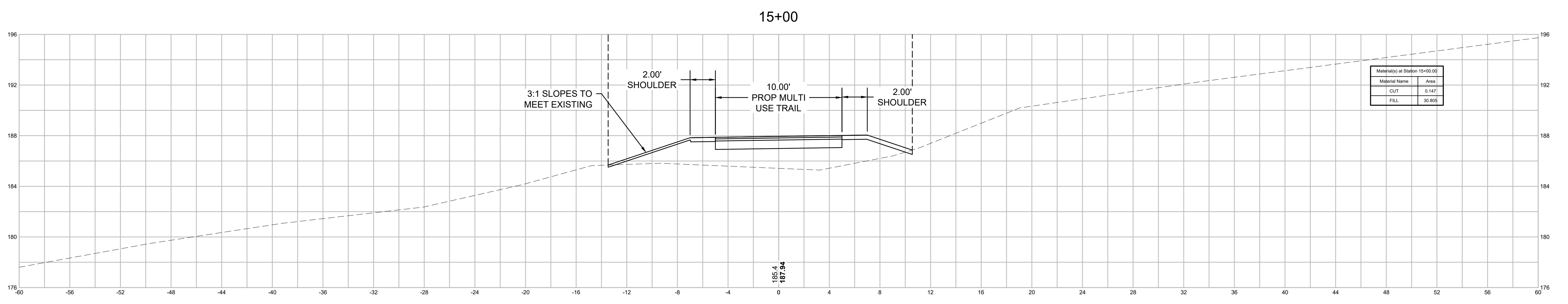
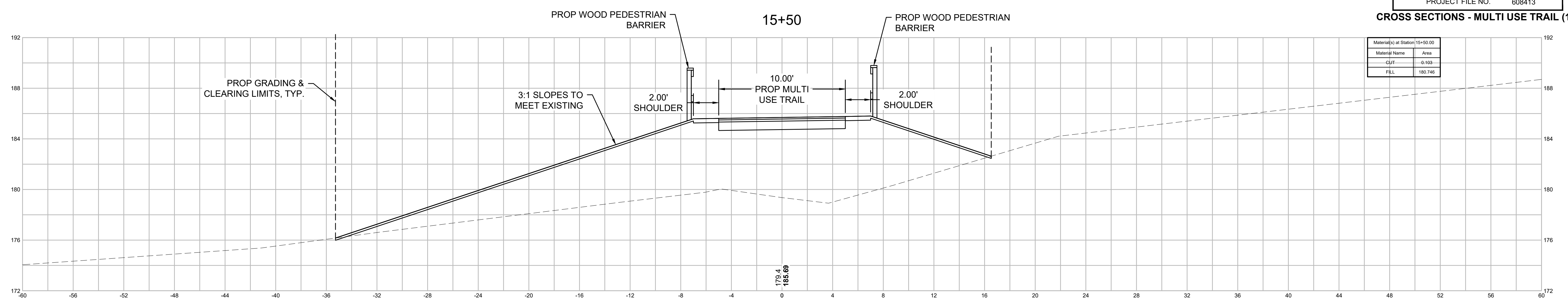
13+50



**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	44	51
PROJECT FILE NO.		608413	

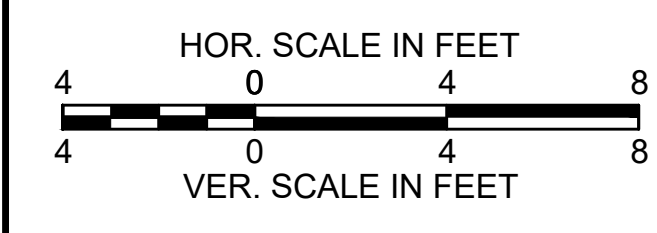
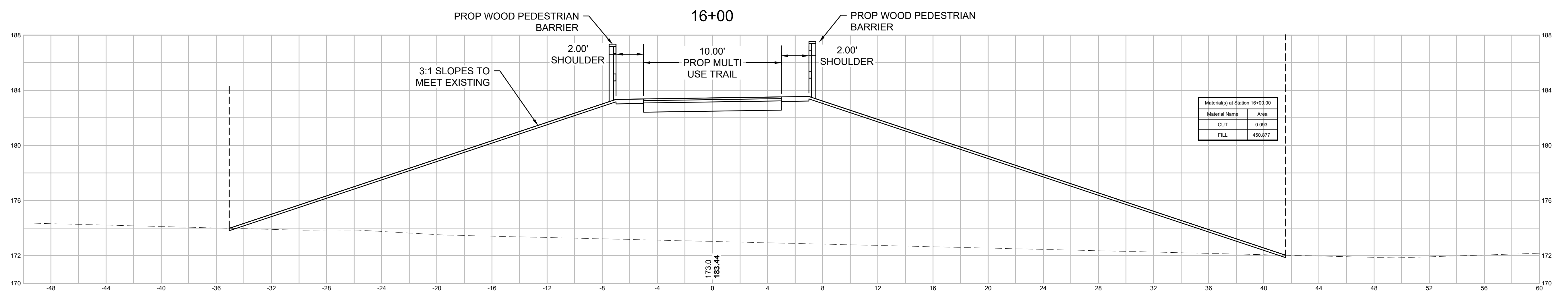
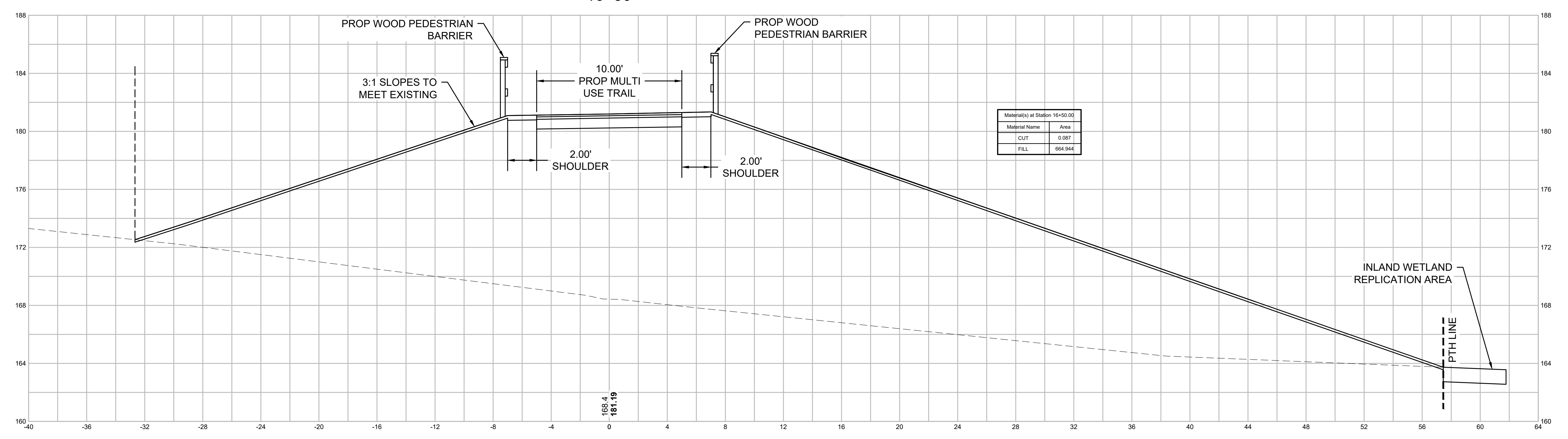
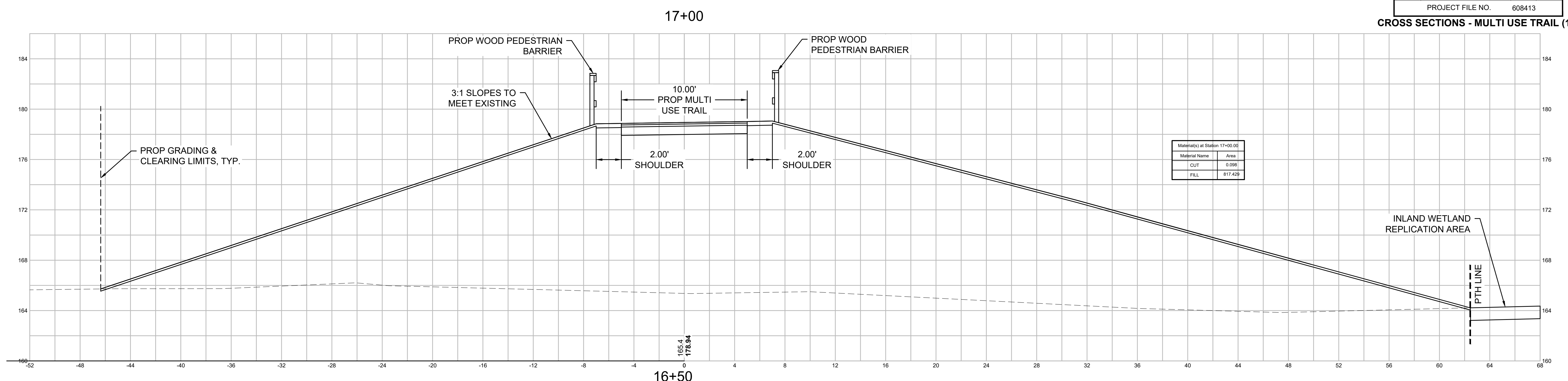
CROSS SECTIONS - MULTI USE TRAIL (10)

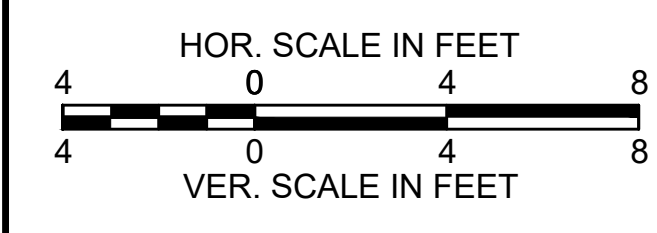
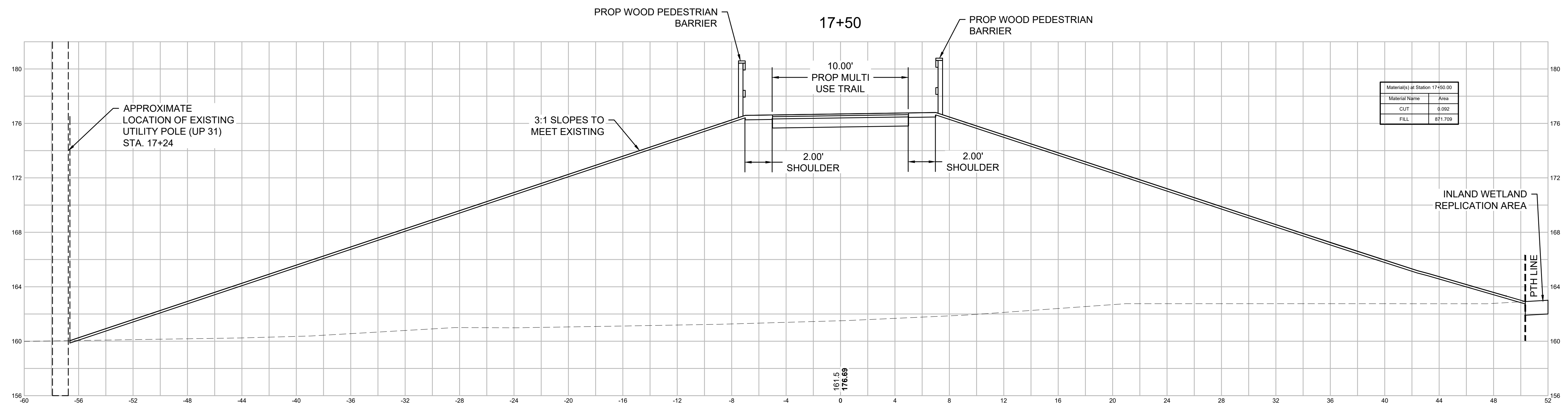
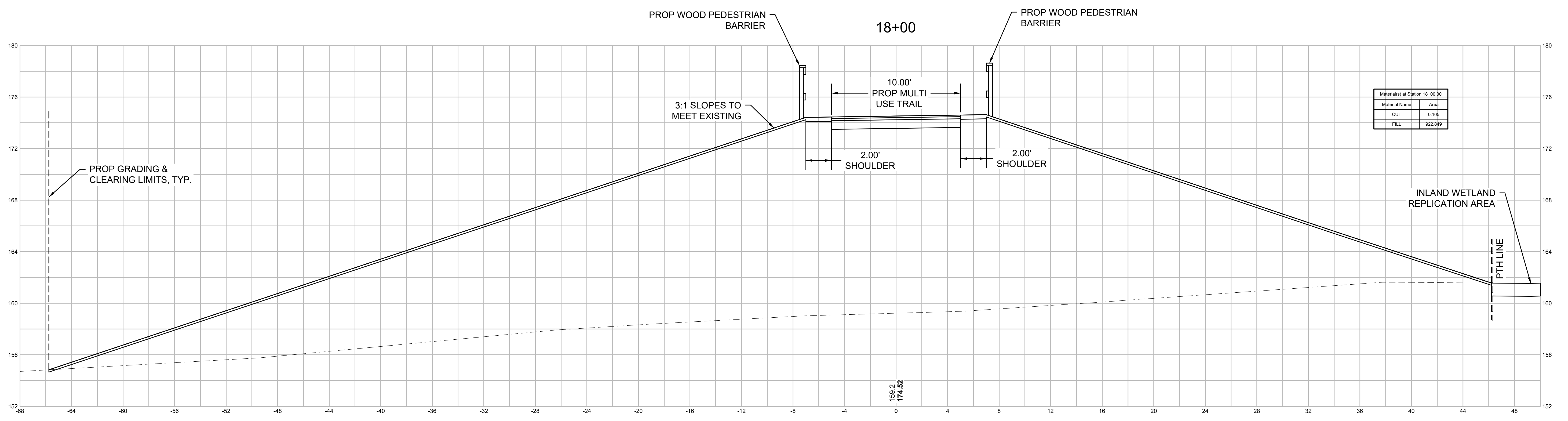


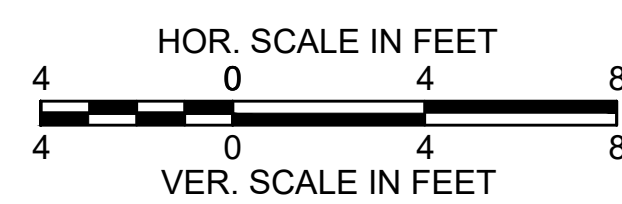
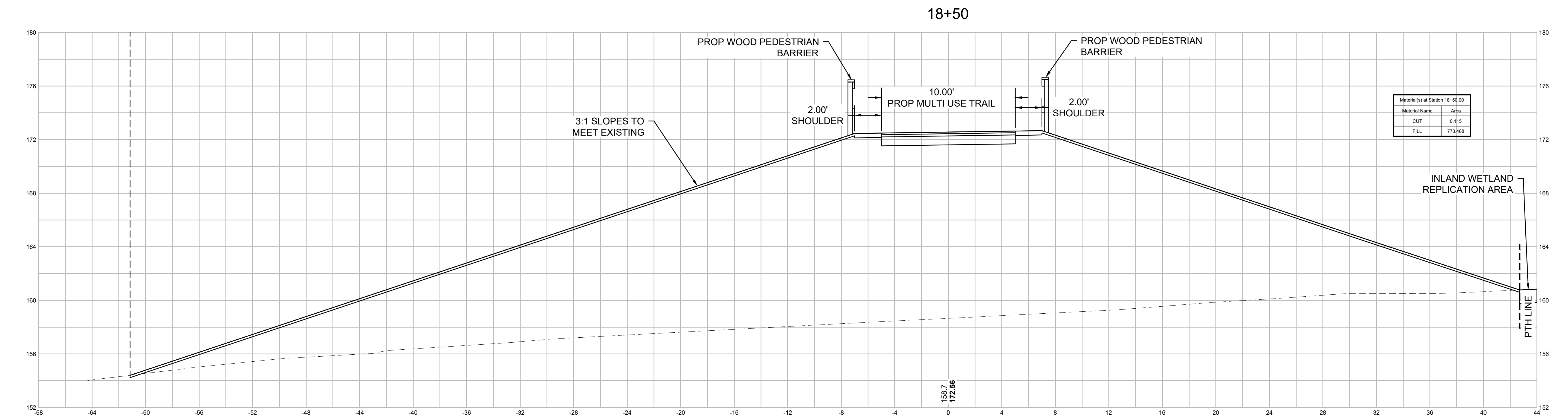
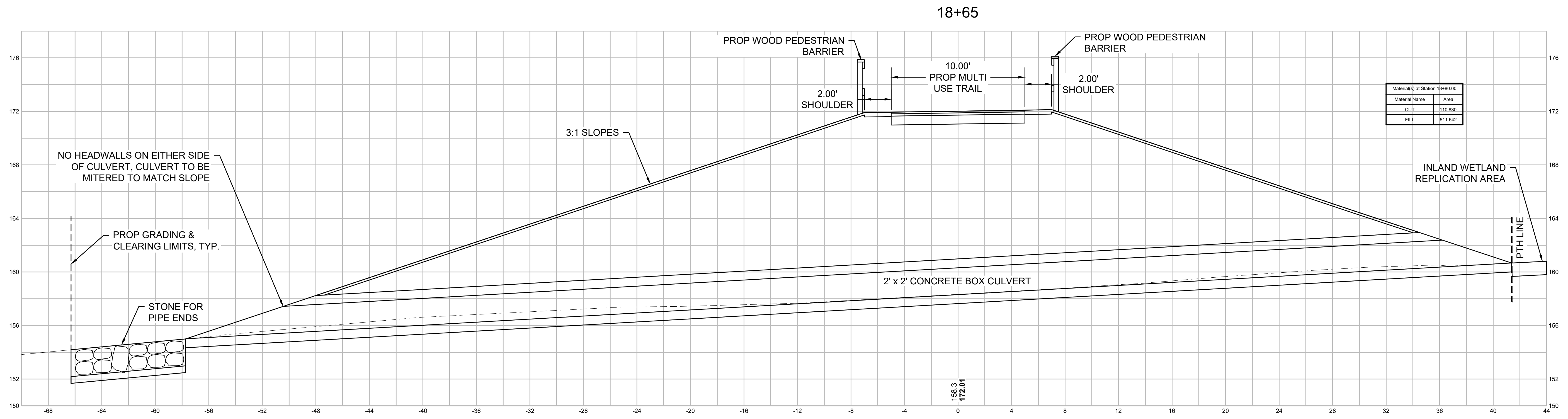
**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	45	51
PROJECT FILE NO. 608413			

CROSS SECTIONS - MULTI USE TRAIL (11)





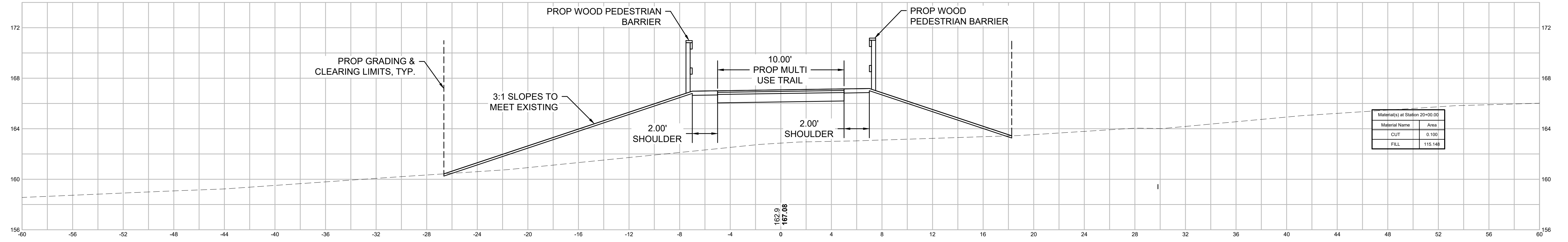


**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

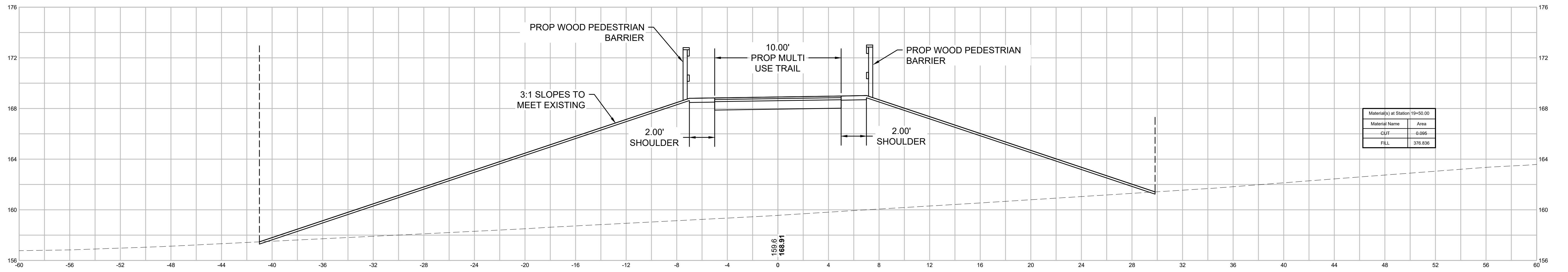
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	48	51
PROJECT FILE NO.		608413	

CROSS SECTIONS - MULTI USE TRAIL (14)

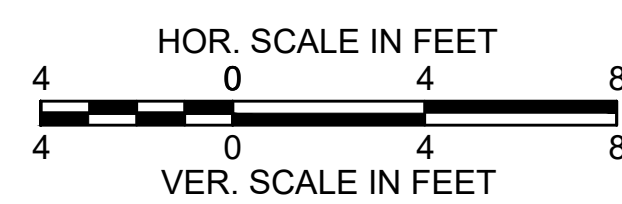
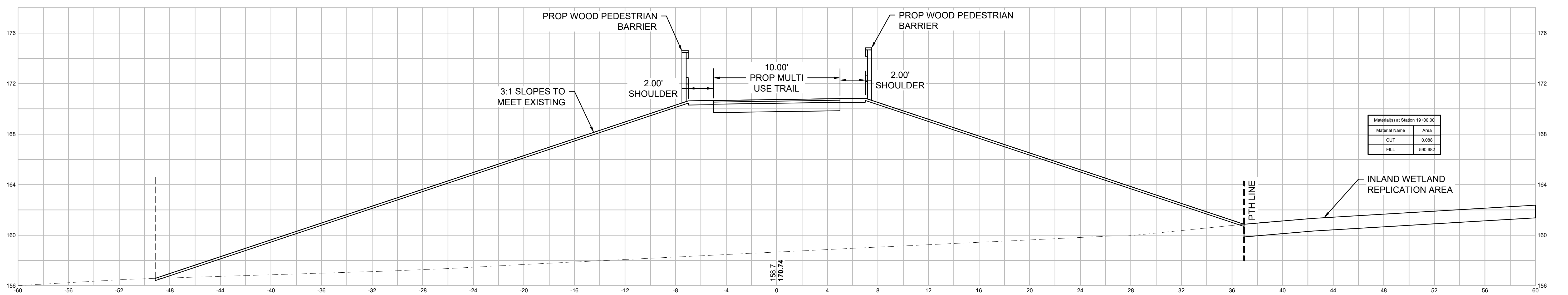
20+00



19+50



19+00

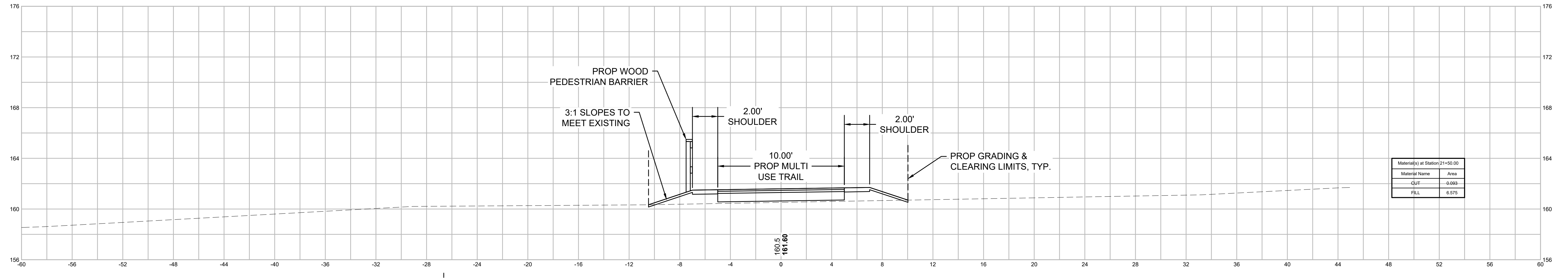


**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

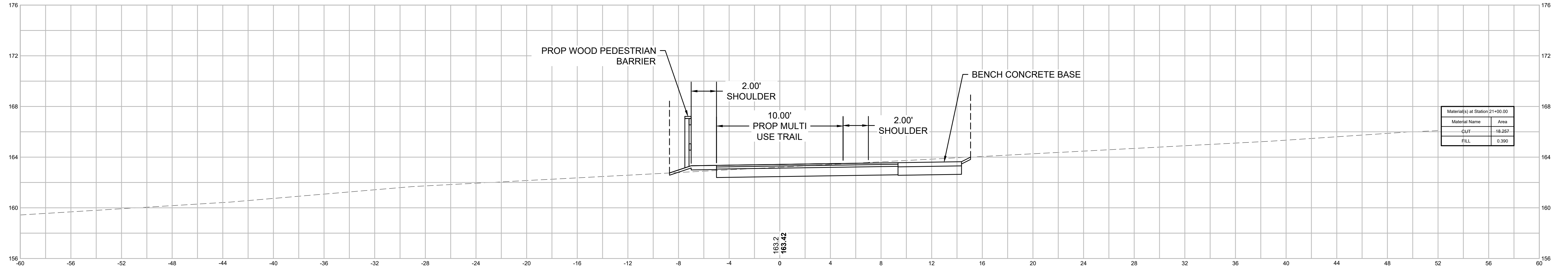
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	49	51
PROJECT FILE NO.		608413	

CROSS SECTIONS - MULTI USE TRAIL (15)

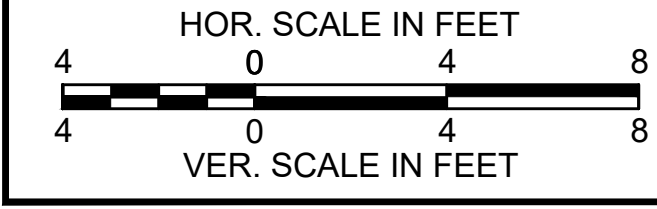
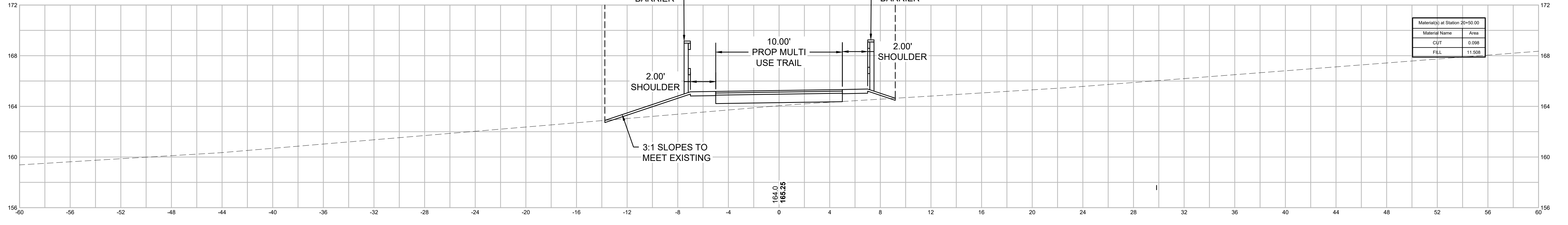
21+50



21+00



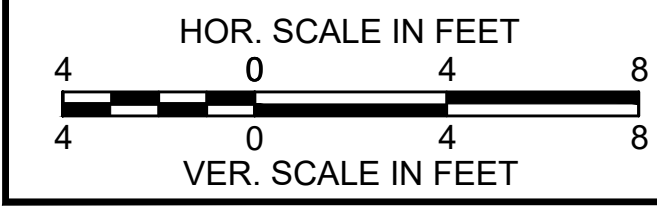
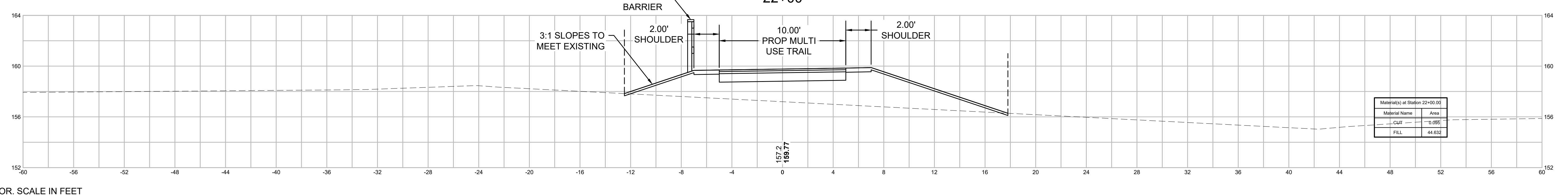
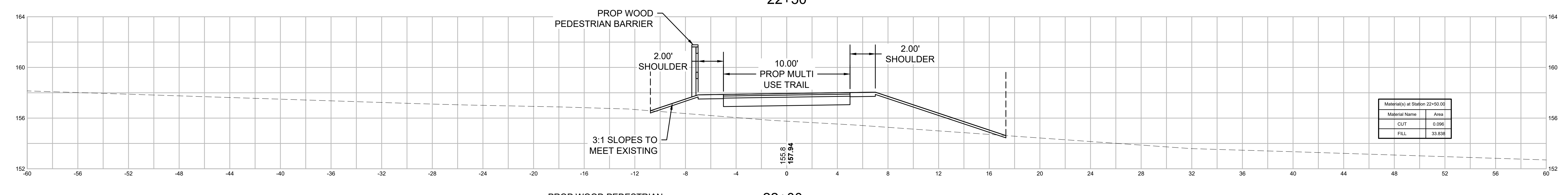
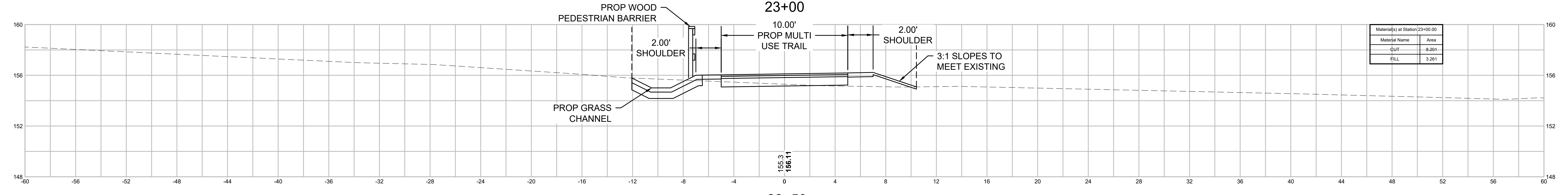
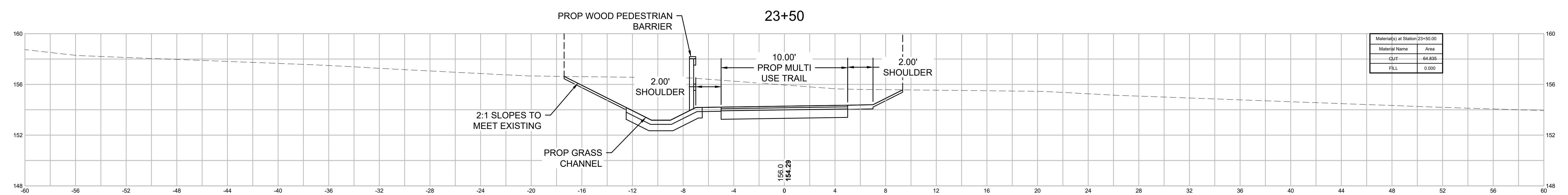
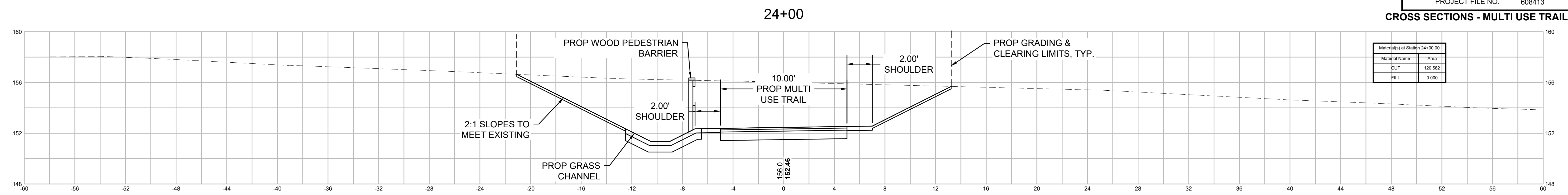
20+50



**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	50	51
PROJECT FILE NO. 608413			

CROSS SECTIONS - MULTI USE TRAIL (16)



**NORTHAMPTON - ROCKY HILL
GREENWAY MULTI-USE TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HPP-003S(812)X	51	51
PROJECT FILE NO.		608413	

CROSS SECTIONS - MULTI USE TRAIL (17)

