MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	1	145
	PROJECT FILE NO.	609211	

TITLE SHEET & INDEX

PLAN AND PROFILE OF

INDEPENDENCE GREENWAY EXTENSION
BRIDGE P-03-020 (CAK)

IN THE CITY OF

PEABODY

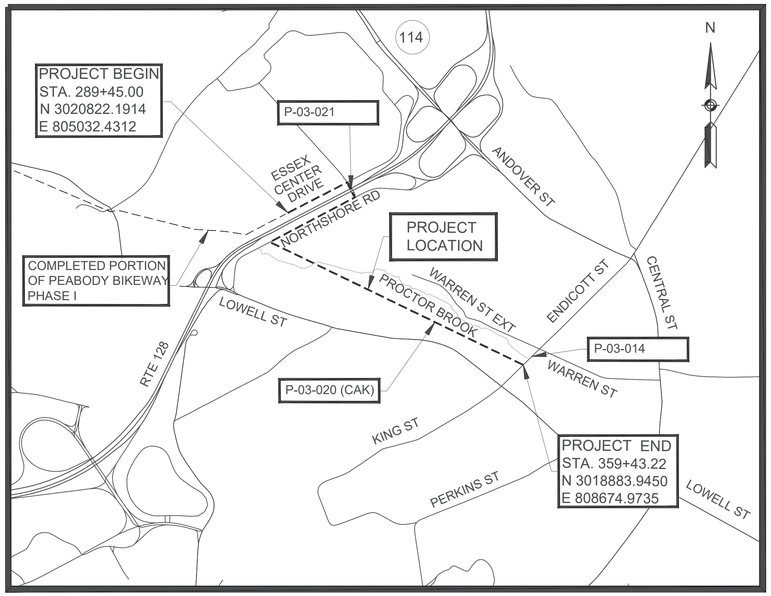
ESSEX COUNTY

FEDERAL AID PROJECT NO. TAP/CMQ-0034(027)X

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

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0 1000 2000 3000 4000

SCALE: 1" = 1000'

LENGTH OF PROJECT = 6998.22 FEET = 1.325 MILES

DESIGN DESIGNATION

	ESSEX CENTER DRIVE	NORTHSHORE ROAD	ENDICOTT STREET
ADT (2019)	6,302	6,917	7,427
ADT (2041)	6,963	7,643	8,206
DESIGN SPEED (MPH)	30	35	35
K	8.8	8.7	7.8
D	55%	63%	55%
T (PEAK HOUR)	6%	2%	5%
T (AVERAGE DAY)	6%	2%	5%
DHV	613	665	640
DDHV	337	419	352
FUNCTIONAL CLASSIFICATION	LOCAL ROADWAY	LOCAL ROADWAY	URBAN COLLECTOR

COMMONWEALTH OF MASSACHUSETTS
DENNIS A. VERTIYEV
CIVIL
No. 56113
REGISTERED PROFESSIONAL ENGINEER

Dennis Vertiyev Digitally signed by Dennis Vertiyev Date: 2025.07.25 20:57:29 -04'00'

PREPARED BY:
Green International Affiliates, Inc.
A Lochner Company
100 Ames Pond Drive, Suite 200, Tewksbury, MA 01876

DATE	DESCRIPTION	REV #

massDOT
Massachusetts Department of Transportation
Highway Division

APPROVED

Carrie Lavallee, P.E. — Carrie Lavallee, P.E. 2025.07.28 13:53:13 -04'00' — 07/28/2025

CHIEF ENGINEER — DATE

SHT001_HD(TITLE).DWG Plotted on 16-Jul-2025 5:30 PM

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS (ON-THE-GROUND SURVEY DATA)
100 99		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT CONTROL BARRIER
		COIR LOG
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		EDGE OF PAVEMENT
		LIMIT OF MICROMILLING AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	*	EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT
		INFORMATIONAL SIGN

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE (12")
	CW	CROSSWALK
	SWL	SOLID WHITE LINE (6")
	SYL	SOLID YELLOW LINE (6")
	BWL	BROKEN WHITE LINE (10' LINE SEGMENT, 30' GAP)
	BYL	BROKEN YELLOW LINE (10' LINE SEGMENT, 30' GAP)
	DWL	DOTTED WHITE LINE (3' LINE SEGMENT, 9' GAP)
	DYL	DOTTED YELLOW LINE (3' LINE SEGMENT, 9' GAP)
	DWLEx	DOTTED WHITE LINE EXTENSION (2' LINE SEGMENT, 6' GAP)
	DYLEx	DOTTED YELLOW LINE EXTENSION (2' LINE SEGMENT, 6' GAP)
	DBWL	DOUBLE WHITE LINE (6")
	DBYL	DOUBLE YELLOW LINE (6")

ABBREVIATIONS

GENERAL

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

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

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LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

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
RMD	REMODEL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SGE	SLOPED GRANITE EDGING
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
STD	STANDARD
STW	SPRING TENSION WIRE
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 OR TOP OF SEDIMENT
TOW	TOP OF WATER
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
V.I.F.	VERIFY IN FIELD
VC	VERTICAL CURVE
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

TRAFFIC SIGNAL ABBREVIATIONS

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

SHT002_HDLEGEND & NOTES).DWG Plotted on 16-Jul-2025 4:41 PM

SHT002_HD(GENERAL NOTES).DWG Plotted on 16-Jul-25 4:41 PM

GENERAL NOTES

1. ALL UTILITY POLES REQUIRING RELOCATION ARE TO BE RELOCATED BY OTHERS.
2. THE CONTRACTOR SHALL MAINTAIN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT AND MASSACHUSETTS ARCHITECTURAL ACCESS BOARD AT ALL OBSTRUCTIONS.
3. PEDESTRIAN CURB RAMPS SHALL CONFORM TO THE CURRENT MASSDOT STANDARDS.
4. TRANSITION GRANITE CURB SHALL BE INSTALLED AT PROJECT LIMITS TO MATCH EXISTING ELEVATIONS (PAVEMENT OR EXISTING CURB).
5. THE CONTRACTOR SHALL RETAIN ALL CURBS, FENCES, WALLS, TREES, SHRUBS, POSTS, LANDSCAPE FEATURES, AND OTHER MISCELLANEOUS ITEMS WITHIN ABUTTING PROPERTIES, UNLESS OTHERWISE NOTED. WHEN RETAINING THOSE ITEMS IS NOT PRACTICAL IN THE OPINION OF THE ENGINEER, THE CONTRACTOR SHALL REMOVE, STOCKPILE, PROTECT AND RESET THE ITEMS. THE CONTRACTOR SHALL REPLACE ITEMS DAMAGED DURING REMOVAL, STOCKPILING, OR RESETTING DUE TO NEGLIGENCE, CARELESSNESS, OR MISHANDLING WITH EQUIVALENT NEW ITEMS AT NO COST TO THE OWNER.
6. ALL TREES WITHIN THE SLOPE LIMIT SHALL BE RETAINED AND PROTECTED UNLESS OTHERWISE NOTED.
7. ALL TREES CALLED OUT TO BE RETAINED SHALL BE PROTECTED USING ITEM NO. 102.511 TREE PROTECTION - ARMORING AND PRUNING AND ITEM NO. 102.521 TREE AND PLANT PROTECTION FENCE.
8. CONTRACTOR SHALL PROTECT ALL PROPERTY MARKERS OF ABUTTERS.
9. TREATMENT OF SLOPE AREAS SHALL BE REPLACED IN KIND UNLESS OTHERWISE NOTED.
10. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING ALONG THE ABUTMENT FOR THE SHARED-USE PATH AT THE ROUTE 128 UNDERPASS.

UTILITY NOTES:

1. THE LOCATION OF ALL UNDERGROUND UTILITIES ARE SHOWN APPROXIMATE AND WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION. THE LOCATION OF EXISTING PIPES OR OTHER UNDERGROUND STRUCTURES OR PROPERTY LINES ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL CALL "DIG SAFE" (1-888-344-7233) AND NOTIFY THE CITY OF PEABODY AND MASSDOT AT LEAST 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS.
2. RECORD UTILITY INFORMATION FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES ARE APPROXIMATE ONLY AND ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD.
3. THE COMPLETION AND ACCURACY OF LATERAL UTILITY SERVICES IS NOT GUARANTEED AND MUST BE VERIFIED BY THE CONTRACTOR IN THE FIELD.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. SUBSURFACE UTILITY LOCATIONS HAVE BEEN PLOTTED TO MEET UTILITY QUALITY LEVEL "C" AS DESCRIBED IN ASCE STANDARD 38-02 AND SUMMARIZED ON THIS SHEET. THE UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS BASED ON ABOVE-GROUND FIELD OBSERVATION AND EXISTING RECORD INFORMATION RECEIVED FROM UTILITY STAKE-HOLDERS.
6. INVERTS SHOWN ON PLAN ARE NOT GUARANTEED TO BE ACCURATE. DUE TO THE LIMITATIONS OF FIELD OBSERVATION AND SURVEY TECHNIQUES THE INVERTS ARE SHOWN AS APPROXIMATE ONLY AND SHALL NOT BE WARRANTED TO BE CORRECT. ADDITIONAL FIELD INVESTIGATION IS NECESSARY WHERE ACCURATE MEASUREMENTS ARE REQUIRED FOR DESIGN OF CRITICAL AREAS.
7. WHERE AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, THE CONTRACTOR SHALL ACCURATELY DETERMINE THE LOCATION, ELEVATION AND SIZE OF THE UTILITY AND FURNISH THE INFORMATION TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
8. THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN EXCAVATING NEAR AND BACKFILLING IN THE VICINITY OF EXISTING UTILITIES. THE CONTRACTOR SHALL USE HAND EXCAVATION WHERE APPROPRIATE TO PROTECT EXISTING UTILITIES.
9. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES IN SERVICE AT ALL TIMES UNLESS NOTED ON THE PLANS OR APPROVED BY THE ENGINEER.
10. THE CONTRACTOR SHALL SUPPORT AND PROTECT EXISTING UTILITIES IN AND AROUND EXCAVATIONS, AND IN PARTICULAR, WHEN CROSSING OVER OR UNDER ANY DUCT OR PIPE. ALL PROTECTIVE MEASURES SHALL BE CONSIDERED INCIDENTAL WORK.
11. IF THE CONTRACTOR DAMAGES ANY UTILITY SYSTEM, HE OR SHE SHALL IMMEDIATELY NOTIFY THE RESPECTIVE UTILITY COMPANY AND SHALL REPAIR/REPLACE THE AFFECTED SYSTEM AT HIS OR HER OWN EXPENSE.
12. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES AND MAKE ARRANGEMENTS FOR ADJUSTMENTS, ALTERATIONS AND REPLACEMENT OF PRIVATE UTILITIES.
13. BELOW GROUND STRUCTURES ARE SHOWN SYMBOLIC UNLESS DIMENSIONED.
14. THE EXISTING CONDITIONS PLAN IS TO BE USED FOR THE SPECIFIED PROJECT ONLY AND IS NOT WARRANTED TO BE COMPLETE FOR ANY OTHER FUTURE PROJECTS.
15. THE EXISTING SEWER LINE WITHIN THE PROJECT LIMITS SHALL BE INSPECTED USING CLOSED CIRCUIT TV (CCTV) AT THE BEGINNING OF THE PROJECT, PRIOR TO ANY MAJOR WORK ACTIVITIES OR LARGE EQUIPMENT MOBILIZING ON SITE. A CCTV INSPECTION OF THE EXISTING SEWER LINE FOR THE SAME LIMITS SHALL ALSO BE PERFORMED AT THE END OF CONSTRUCTION TO CONFIRM ITS CONDITION HAS NOT CHANGED OVER THE COURSE OF THE PROJECT.
IN ADDITION TO THE PRE AND POST CONSTRUCTION CCTV INSPECTION OF THE EXISTING SEWER LINE FOR THE PROJECT LIMITS, INTERIM CCTV INSPECTION OF CERTAIN SEGMENTS OF THE SEWER LINE SHALL BE PERFORMED FOR SPECIFIC VIBRATION GENERATING ACTIVITIES. CCTV INSPECTION SHALL BE PERFORMED AT THE FOLLOWING LOCATIONS AND PROPOSED CONSTRUCTION ITEMS FOR EXCAVATION AND STONE INSTALLATION ACTIVITIES:

- STA 329+85 BOX CULVERT NO. 1
- STA 340+05 36" DIP PIPE CULVERT
- STA 342+25 24" DIP PIPE CULVERT
- STA 346+20 BOX CULVERT NO. 2
- STA 351+10 BOARDWALK WEST ABUTMENT
- STA 355+48 BOARDWALK EAST ABUTMENT
- STA 358+50 16" DUCTILE IRON PIPE

PRIOR TO BEGINNING ANY WORK ACTIVITIES, TEST PITS SHALL BE PERFORMED AT EACH SEWER AND CULVERT CROSSING, AS SHOWN IN THE PLANS, TO CONFIRM NO CONFLICTS EXIST IN THE VICINITY OF THE SEWER. TEST PITS SHALL EXTEND TO A MINIMUM OF TWO FEET BELOW THE PROPOSED WORK ABOVE THE LOCATION OF THE EXISTING SEWER.

SUMMARY OF UTILITY MAPPING QUALITY LEVELS:

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

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

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

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

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

SURVEY NOTES

1. THE EXISTING CONDITIONS SHOWN ON THIS BASEMAP ARE THE RESULT OF AN ARIAL SURVEY PERFORMED BY SANBORN COMPANY IN JUNE, 2004 SUPPLEMENTED BY AN ON THE GROUND INSTRUMENT SURVEY PERFORMED IN SEPTEMBER, 2004 BY GREEN INTERNATIONAL AFFILIATES, INC. (GREEN). ADDITIONAL GROUND SURVEY WAS PERFORMED BETWEEN 2017 AND 2022 BY GREEN TO SUPPLEMENT EXISTING GROUND SURVEY.
2. HORIZONTAL DATUM IS BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, VERTICAL DATUM IS NAVD88. THE UNIT OF MEASUREMENTS IS US SURVEY FEET.
3. WETLANDS WERE DELINEATED BY GREEN ON 2/15/2018 AND REFLAGGED BY ECOSYSTEMS-SOLUTIONS IN 2022 ACCORDANCE WITH THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION AND FIELD LOCATED BY GREEN ON 2/20/2018. REFLAGGING DETERMINED BOUNDARIES HAD NOT CHANGED.
4. THE RIGHT OF WAY LINES SHOWN ON THIS PLAN ARE THE DIRECT RESULT OF AN INSTRUMENT SURVEY PERFORMED ON THE GROUND BY GREEN INTERNATIONAL AFFILIATES, INC. WITH AN ERROR OF CLOSURE LESS THAN 1:15,000, AND FROM PLANS AND DEEDS OF RECORD. PRIVATE PROPERTY LINES ARE COMPILED FROM DEEDS AND PLANS AND SHOULD BE CONSIDERED APPROXIMATE.
5. THE SAID PARCELS SHOWN HERE ARE SUBJECT TO RIGHTS AND EASEMENTS AS CONTAINED IN THE VARIOUS DEEDS OF RECORD DESCRIBING SAID PREMISES. THE LOCATIONS AND EXTENT OF SAID RIGHTS AND EASEMENTS ARE NOT THE SUBJECT OF THIS SURVEY.

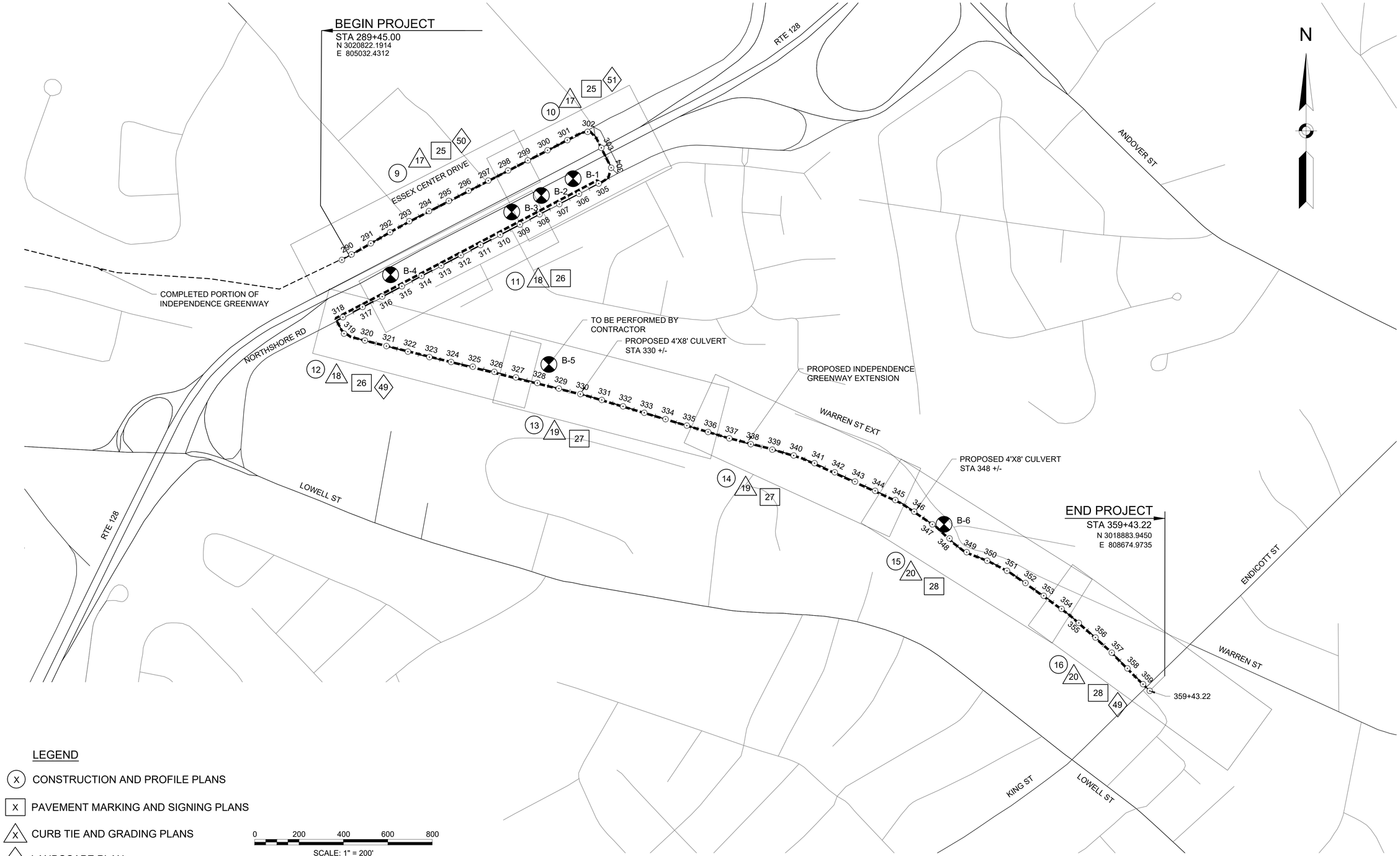
EROSION AND SEDIMENT CONTROL

1. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBANCE/EARTHWORK ACTIVITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR AND REPLACEMENT OF ALL SEDIMENTATION/EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED.

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	4	145
PROJECT FILE NO.	609211		

KEY PLAN



LEGEND

- (X) CONSTRUCTION AND PROFILE PLANS
- [X] PAVEMENT MARKING AND SIGNING PLANS
- △X CURB TIE AND GRADING PLANS
- ◇X LANDSCAPE PLAN

0 200 400 600 800

SCALE: 1" = 200'

SHT003_HDI(KEY PLAN).DWG Plotted on 16-Jul-2025 4:41 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	5	145
PROJECT FILE NO.	609211		

BORING LOGS - 1

TEST BORING LOG

GZA GeoEnvironmental, Inc. Engineers and Scientists

Peabody Bikeway - Phase II
Peabody, Massachusetts

BORING NO.: B-1
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: MPS

Drilling Co.: New England Boring Contractors
Foreman: Matt Soucy
Logged By: Zachary Morris

Type of Rig: ATV
Rig Model: Mobile B-53
Drilling Method:Hollow Stem Auger

Boring Location: N 3021910.4030, E 806262.1626
Ground Surface Elev. (ft.): 68.6
Final Boring Depth (ft.): 15.3
Date Start - Finish: 1/2/2019 - 1/2/2019

H. Datum: NAD83
V. Datum: NAVD88

Auger/Casing Type: HSA
I.D/O.D.(in): 2.75/5.75
Hammer Weight (lb.): -
Hammer Fall (in.): -
Other: -

Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2
Sampler Hmr Wt (lb): 140
Sampler Hmr Fall (in): 30
Other: Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
1/2/19	1030	6.5	n/a	10 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0-2	24	14	1 2 2 3	4	S-1: (Top 7") Dry, dark brown, fine SAND and SILT, trace Roots. (TOPSOIL) (Bottom 7") Dry, brown, fine SAND, some Silt, trace Roots. (SUBSOIL)	1 2			FILL	
5		S-2	5-7	24	13	8 19 86 22	R	S-2: (Top 3") Moist, brown, fine to medium SAND, some Silt. (FILL) (Bottom 10") Moist, brown, fine to coarse SAND, little Silt, trace Gravel. (Piece of gravel stuck in tip of spoon.)			5.3		63.3'
		S-3	7-9	24	10	38 42 45 50	87	S-3: Very dense, wet, brown/gray, GRAVEL, some fine to coarse Sand, trace Silt.	3			GLACIAL DEPOSIT	
10		S-4	9-11	24	7	25 30 13 36	43	S-4: Dense, wet, brown, fine to medium SAND, some Silt, some Gravel.					
									4				
15		S-5	15-15.1	1	1	100/1"	R	S-5: Very dense, wet, brown/gray, GRAVEL, trace Silt. (Fragment of possible bedrock stuck in tip of spoon.)	5 6		15.3		53.3'
								Bottom of boring at 15.3 feet.					
20													
25													
30													

REMARKS
1. Ground surface elevation estimated from electronic AutoCAD file entitled "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc. on 1/16/2019.
2. Borehole relocated approximately 25 feet from staked location due to access.
3. Driller noted increased drilling resistance at 6.5 feet below ground surface (bgs).
4. Gravel and Cobbles (less than 6 inches) observed in drill spoils at approximately 11 feet bgs.
5. Auger refusal at 15.3 feet bgs on possible bedrock. Borehole terminated.
6. Borehole backfilled to approximate ground surface with drill cuttings and surficial soils.

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

Boring No.: B-1

174019 PROPOSED PEABODY BIKEWAY.GPJ, STRATUM ONLY, 3/18/2019

TEST BORING LOG

GZA GeoEnvironmental, Inc. Engineers and Scientists

Peabody Bikeway - Phase II
Peabody, Massachusetts

BORING NO.: B-2
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: MPS

Drilling Co.: New England Boring Contractors
Foreman: Matt Soucy
Logged By: Zachary Morris

Type of Rig: ATV
Rig Model: Mobile B-53
Drilling Method:Hollow Stem Auger

Boring Location: N 3021834.6298, E 806118.9857
Ground Surface Elev. (ft.): 68.4
Final Boring Depth (ft.): 10.5
Date Start - Finish: 1/2/2019 - 1/2/2019

H. Datum: NAD83
V. Datum: NAVD88

Auger/Casing Type: HSA
I.D/O.D.(in): 2.75/5.75
Hammer Weight (lb.): -
Hammer Fall (in.): -
Other: -

Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2
Sampler Hmr Wt (lb): 140
Sampler Hmr Fall (in): 30
Other: Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
1/2/19	1230	10	n/a	10 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0-2	24	18	1 4 27 36	31	S-1: (Top 10") Dry, dark brown, fine SAND, some Silt, trace Roots. (TOPSOIL) (Bottom 8") Dry, dark brown/black, fine to medium SAND, little Silt, trace Gravel.	1			FILL	
		S-2	2-4	24	20	30 56 40 36	96	S-2: Very dense, moist, black/gray, fine to coarse SAND, little Silt, trace Gravel.			4		64.4'
5		S-3	4-6	24	9	28 11 19 17	30	S-3: Dense, moist, brown, fine to coarse SAND, some Gravel, some Silt.					
		S-4	6-8	24	14	70 25 20 20	45	S-4: Dense, moist, brown, fine to coarse SAND, some Gravel, some Silt.	2			GLACIAL DEPOSIT	
10		S-5	10-10.3	3	0	100/3"	R	S-5: No recovery. (Fragments of possible bedrock stuck in tip of spoon.)			10.5		57.9'
								Bottom of boring at 10.5 feet.	3 4				
15													
20													
25													
30													

REMARKS
1. Ground surface elevation estimated from electronic AutoCAD file entitled "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc. on 1/16/2019.
2. Gravel and Cobbles (less than 6 inches) observed in drill spoils at approximately 6.5 feet below ground surface (bgs).
3. Auger refusal at 10.5 feet bgs on possible bedrock. Borehole terminated.
4. Borehole backfilled to approximate ground surface with drill cuttings and surficial soils.

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

Boring No.: B-2

174019 PROPOSED PEABODY BIKEWAY.GPJ, STRATUM ONLY, 3/18/2019

TEST BORING LOG

GZA GeoEnvironmental, Inc. Engineers and Scientists

Peabody Bikeway - Phase II
Peabody, Massachusetts

BORING NO.: B-3
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: MPS

Drilling Co.: New England Boring Contractors
Foreman: Matt Soucy
Logged By: Zachary Morris

Type of Rig: ATV
Rig Model: Mobile B-53
Drilling Method:Hollow Stem Auger

Boring Location: N 3021760.5337, E 805985.8731
Ground Surface Elev. (ft.): 62.3
Final Boring Depth (ft.): 14.7
Date Start - Finish: 1/3/2019 - 1/3/2019

H. Datum: NAD83
V. Datum: NAVD88

Auger/Casing Type: HSA
I.D/O.D.(in): 2.75/5.75
Hammer Weight (lb.): -
Hammer Fall (in.): -
Other: -

Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2
Sampler Hmr Wt (lb): 140
Sampler Hmr Fall (in): 30
Other: Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
1/3/19		Not encountered		

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0-2	24	13	2 3 11 14	14	S-1: Medium dense, dry, dark brown, fine to coarse SAND, some Silt, trace Gravel, trace Roots. (TOPSOIL)	1			FILL	
		S-2	2-4	24	18	14 35 72 69	R	S-2: Very dense, moist, black with brown, fine to coarse SAND, little Gravel, trace Silt, trace Ash.					
5		S-3	4-6	24	14	27 11 12 14	23	S-3: Very dense, moist, black with brown, fine to coarse SAND, little Gravel, trace Silt, trace Ash.					
		S-4	6-8	24	10	12 14 5 3	19	S-4: Very dense, moist, black with brown, GRAVEL and fine to coarse SAND, trace Silt, trace Ash.					
		S-5	8-10	24	9	3 6 9 14	15	S-5: Medium dense, moist, brown, fine to coarse SAND, little Gravel, trace Silt.			8		54.3'
10												GLACIAL DEPOSIT	
15		S-6	14.5-14.7	2	0	100/2"	R	S-6: No recovery.	2 3		14.7		47.6'
								Bottom of boring at 14.7 feet.					
20													
25													
30													

REMARKS
1. Ground surface elevation estimated from electronic AutoCAD file entitled "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc. on 1/16/2019.
2. Auger refusal at 14.5 feet below ground surface (bgs) on possible bedrock. Advanced split spoon. Split spoon refusal at 14.7 feet bgs. Borehole terminated.
3. Borehole backfilled to approximate ground surface with drill cuttings and surficial soils.

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

Boring No.: B-3

174019 PROPOSED PEABODY BIKEWAY.GPJ, STRATUM ONLY, 3/18/2019

BORING NOTES

1. LOCATION OF BORINGS SHOWN ON THE PLAN THUS: B-1
2. BORINGS TAKEN FOR THE PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER LEVELS SHOWN ON THE BORING LOGS WERE OBSERVED AT THE TIME OF TAKING BORINGS AND DO NOT NECESSARILY SHOW THE TRUE GROUND WATER LEVEL.
4. FIGURES TO THE LEFT OF COLUMNS INDICATE DEPTH BELOW SURFACE AT BORING POINT.
5. FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS PRODUCED BY A 30" FALL OF 140 POUND MASS HAMMER REQUIRED TO DRIVE 2" I.D. SPOON 1 FOOT.
6. BORING SAMPLE TAKEN 1/2/2019 - 1/3/2019.
7. BORING CONTRACTOR - NEW ENGLAND BORING CONTRACTORS, 40 FORDWAY STREET, DERRY, NH 03038
8. BORING SAMPLES WERE STORED AT A STORAGE FACILITY ON ROUTE 114 (219 WINTHROP AVE.) IN LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.

SHT00017_HDI(BORING LOGS).DWG Plotted on 16-Jul-2025 4:41 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc. Engineers and Scientists

Peabody Bikeway - Phase II
Peabody, Massachusetts

BORING NO.: B-4
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: MPS

Drilling Co.: New England Boring Contractors
Foreman: Matt Soucy
Logged By: Zachary Morris

Type of Rig: ATV
Rig Model: Mobile B-53
Drilling Method:Hollow Stem Auger

Boring Location: N 3021477.6337, E 805439.9424
Ground Surface Elev. (ft.): 51.8
Final Boring Depth (ft.): 17
Date Start - Finish: 1/3/2019 - 1/3/2019

H. Datum: NAD83
V. Datum: NAVD88

Auger/Casing Type: HSA
I.D/O.D.(in): 2.75/5.75
Hammer Weight (lb.): -
Hammer Fall (in.): -
Other: -

Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2
Sampler Hmr Wt (lb): 140
Sampler Hmr Fall (in): 30
Other: Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
1/3/19	1145	9.5	n/a	10 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Elev.- (ft.)
		S-1	0-2	24	9	3 2 3 2	5	S-1: Loose, dry, dark brown, fine to medium SAND, some Silt, trace Roots.	1				
		S-2	2-4	24	6	2 3 3 14	6	S-2: Loose, moist, brown, fine to coarse SAND, trace Gravel, trace Silt.				FILL	
											3.5		48.3'
5		S-3	4-6	24	14	12 15 23 17	38	S-3: Dense, moist, brown, fine to coarse SAND, some Gravel, little Silt.					
		S-4	6-8	24	13	13 20 19 19	39	S-4: Dense, moist, brown, fine to coarse SAND, some Gravel, little Silt.					
10		S-5	10-12	24	6	15 21 30 21	51	S-5: Very dense, wet, brown, fine to coarse SAND, some Gravel, little Silt.	2			GLACIAL DEPOSIT	
15		S-6	15-16.9	23	12	12 18 69 100/5"	87	S-6: Very dense, wet, brown/gray, fine to coarse SAND, some Gravel, little Silt. (Possible bedrock fragments stuck in tip of spoon.)			17		34.8'
								Bottom of boring at 17 feet.	3 4				
20													
25													
30													

REMARKS
1. Ground surface elevation estimated from electronic AutoCAD file entitled "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc. on 1/16/2019.
2. Driller noted increased drilling effort at 9 feet below ground surface (bgs).
3. Auger refusal at 17 feet bgs on possible bedrock. Borehole terminated.
4. Borehole backfilled to approximate ground surface with drill cuttings and surficial soils.

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

Boring No.: B-4

174019 PROPOSED PEABODY BIKEWAY.GPJ, STRATUM ONLY, 3/18/2019

TEST BORING LOG

GZA GeoEnvironmental, Inc. Engineers and Scientists

Peabody Bikeway - Phase II
Peabody, Massachusetts

BORING NO.: B-6
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: MPS

Drilling Co.: New England Boring Contractors
Foreman: Matt Soucy
Logged By: Zachary Morris

Type of Rig: ATV
Rig Model: Mobile B-53
Drilling Method:HSA/D&W

Boring Location: N 3020353.9560, E 807932.5686
Ground Surface Elev. (ft.): 40.5
Final Boring Depth (ft.): 25.9
Date Start - Finish: 1/3/2019 - 1/3/2019

H. Datum: NAD83
V. Datum: NAVD88

Auger/Casing Type: HSA/HW
I.D/O.D.(in): 2.75/5.75 & 4.0/4.5
Hammer Weight (lb.): 300
Hammer Fall (in.): 24
Other: Safety Hammer

Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2
Sampler Hmr Wt (lb): 140
Sampler Hmr Fall (in): 30
Other: Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
1/3/19	1530	3.5	n/a	10 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Elev.- (ft.)
		S-1	0-2	24	13	4 4 11 5	15	S-1: Medium dense, dry, dark brown, fine to medium SAND, some Silt, little Gravel, trace Roots.	1				
		S-2	2-4	24	14	9 6 5 6	11	S-2: Medium dense, wet, brown, fine to medium SAND and SILT, trace Gravel.				FILL	
											2		38.5'
5		S-3	4-6	24	14	4 8 10 14	18	S-3: Medium dense, wet, brown/gray, fine to coarse SAND, trace Silt.					
		S-4	6-8	24	19	13 16 17 16	33	S-4: Dense, wet, brown/gray, fine to coarse SAND, trace Silt, trace Gravel.					
10		S-5	10-12	24	16	6 11 19 28	30	S-5: Dense, wet, brown/gray, fine to coarse SAND, trace Silt, trace Gravel.	2				
15		S-6	14-16	24	7	4 5 6 6	11	S-6: Medium dense, wet, brown/gray, fine to coarse SAND, trace Silt, trace Gravel.				SAND AND GRAVEL	
20		S-7	19-21	24	8	5 6 5 5	11	S-7: Medium dense, wet, brown/gray, fine to coarse SAND, trace Silt, trace Gravel.					
25		S-8	24-25.9	22	10	16 14 22 100/2"	36	S-8: Dense, wet, brown/gray, fine to coarse SAND and GRAVEL, trace Silt. (Possible bedrock fragments stuck in tip of spoon.)			25.9		14.6'
								Bottom of boring at 25.9 feet.	3				
30													

REMARKS
1. Ground surface elevation estimated from electronic AutoCAD file entitled "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc. on 1/16/2019.
2. Hole appears to have blown in prior to sampling S-5. Blow counts at S-5 may be inaccurate. Driller removed augers and offset 4 feet southeast of staked location and continued hole with 4-inch casing. Samples S-6 through S-8 obtained using drive and wash drilling methods.
3. Borehole backfilled to approximate ground surface with drill cuttings and surficial soils.

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

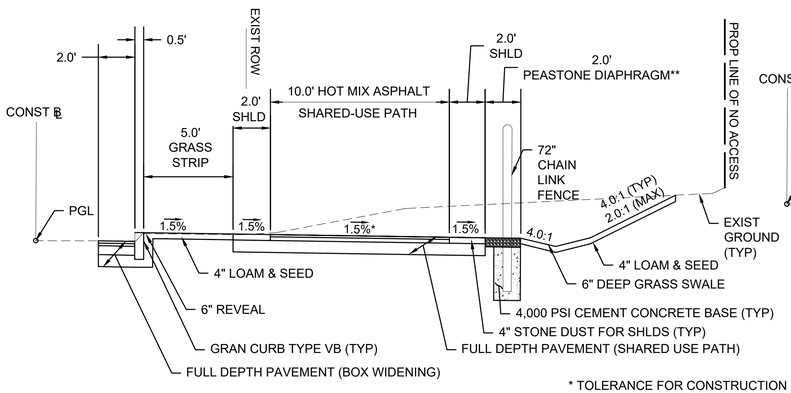
Boring No.: B-6

174019 PROPOSED PEABODY BIKEWAY.GPJ, STRATUM ONLY, 3/18/2019

BORING NOTES

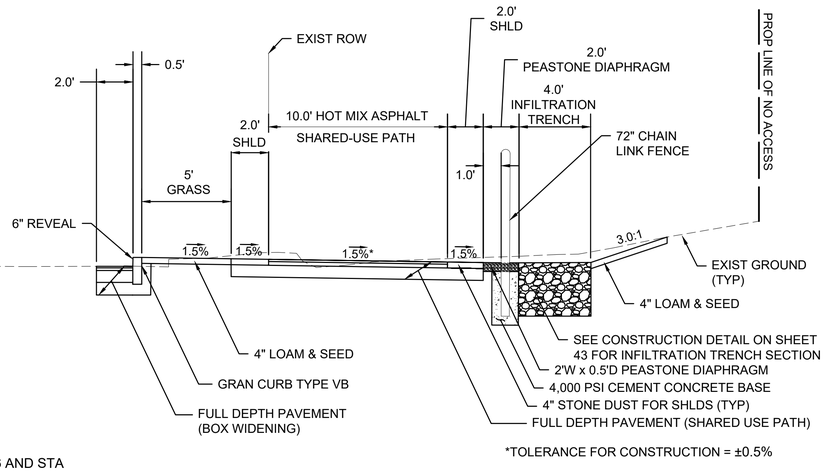
1. LOCATION OF BORINGS SHOWN ON THE PLAN THUS: B-1
2. BORINGS TAKEN FOR THE PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER LEVELS SHOWN ON THE BORING LOGS WERE OBSERVED AT THE TIME OF TAKING BORINGS AND DO NOT NECESSARILY SHOW THE TRUE GROUND WATER LEVEL.
4. FIGURES TO THE LEFT OF COLUMNS INDICATE DEPTH BELOW SURFACE AT BORING POINT.
5. FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS PRODUCED BY A 30" FALL OF 140 POUND MASS HAMMER REQUIRED TO DRIVE 2" I.D. SPOON 1 FOOT.
6. BORING SAMPLE TAKEN 1/2/2019 - 1/3/2019.
7. BORING CONTRACTOR - NEW ENGLAND BORING CONTRACTORS, 40 FORDWAY STREET, DERRY, NH 03038
8. BORING SAMPLES WERE STORED AT A STORAGE FACILITY ON ROUTE 114 (219 WINTHROP AVE.) IN LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.

SHT00017_HD(BORING LOGS).DWG Plotted on 16-Jul-2025 4:41 PM



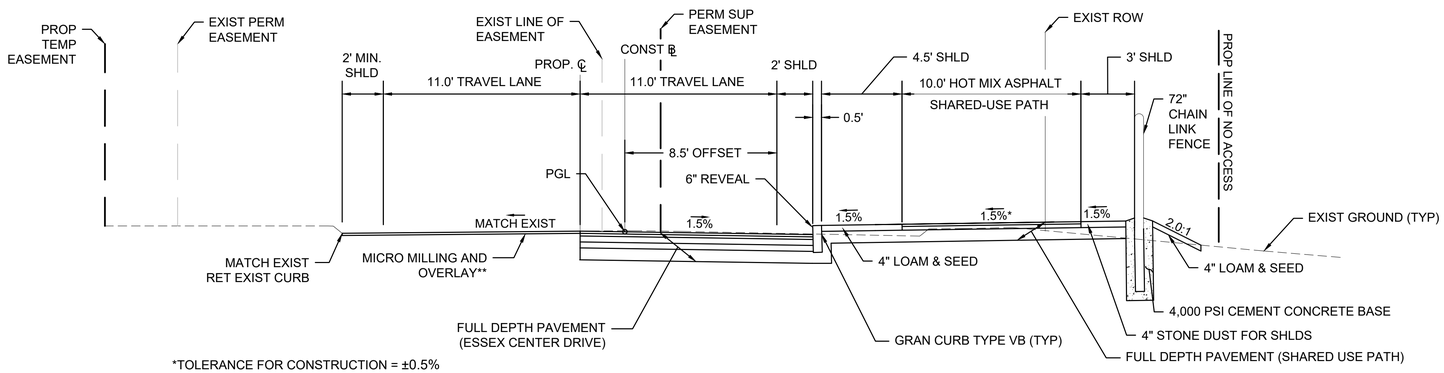
* TOLERANCE FOR CONSTRUCTION = ±0.5%
** LOAM & SEED STA 304+56.96 TO 306+56.86 AND STA 314+92.65 TO 318+32.11

TYPICAL ROADSIDE BIKEWAY SECTION WITH SWALE
STA 304+56.96 TO STA 310+39.43
STA 314+39.43 TO STA 318+32.11
SCALE: 1"=4'



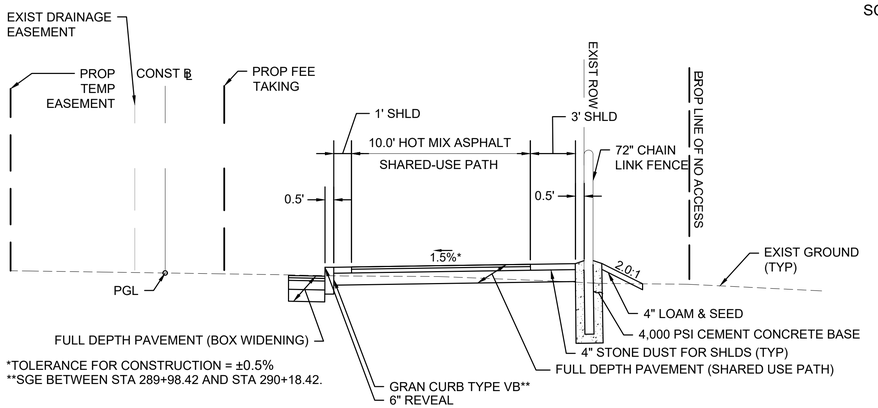
*TOLERANCE FOR CONSTRUCTION = ±0.5%

TYPICAL ROADSIDE BIKEWAY SECTION WITH INFILTRATION TRENCH
STA 310+39.43 TO STA 314+39.43
SCALE: 1"=4'



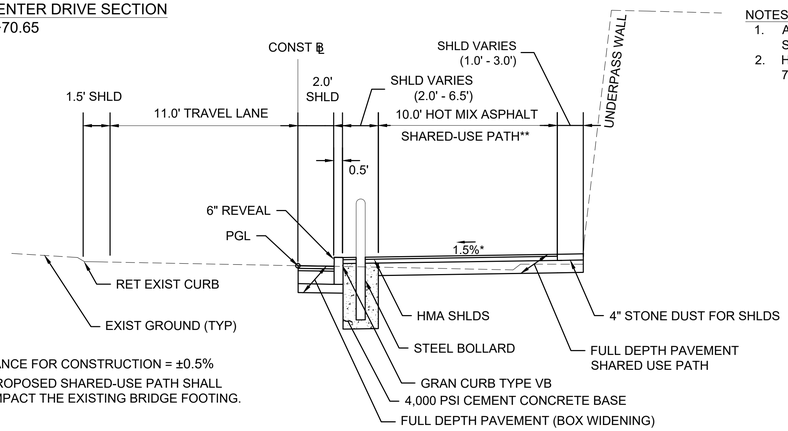
*TOLERANCE FOR CONSTRUCTION = ±0.5%
**MILLING ENDS AT STA 301+74.00.

TYPICAL ROADSIDE BIKEWAY AND ESSEX CENTER DRIVE SECTION
STA 292+53.00 TO STA 301+70.65
SCALE: 1"=4'



*TOLERANCE FOR CONSTRUCTION = ±0.5%
**SGE BETWEEN STA 289+98.42 AND STA 290+18.42.

TYPICAL ROADSIDE BIKEWAY AND ESSEX CENTER DRIVE SECTION
STA 289+83.24 TO STA 292+53.00
SCALE: 1"=4'



*TOLERANCE FOR CONSTRUCTION = ±0.5%
**THE PROPOSED SHARED-USE PATH SHALL NOT IMPACT THE EXISTING BRIDGE FOOTING.

TYPICAL ROADSIDE BIKEWAY SECTION AT UNDERPASS
STA 301+70.65 TO STA 304+56.96
SCALE: 1"=4'

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	7	145
PROJECT FILE NO.	609211		

TYPICAL SECTIONS & DETAILS 1

PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT (SHARED USE PATH)
SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
INTERMEDIATE COURSE: 2.5" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER
SUB-BASE COURSE: 8" GRAVEL BORROW (TYPE B)

PROPOSED FULL DEPTH PAVEMENT (ESSEX CENTER DRIVE)
SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
INTERMEDIATE COURSE: 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER
BASE COURSE: 4" SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5) OVER
4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER
SUB-BASE COURSE: 8" GRAVEL BORROW (TYPE B)

PROPOSED FULL DEPTH PAVEMENT (BOX WIDENING)
SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
INTERMEDIATE COURSE: 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER
BASE COURSE: 6" HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE OVER
SUB-BASE COURSE: 8" GRAVEL BORROW (TYPE B)

PROPOSED MICRO MILLING AND OVERLAY (ESSEX CENTER DRIVE)
SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
MILLING COURSE: 1.5" PAVEMENT MICRO MILLING

PROPOSED HMA WALK
SURFACE COURSE: 1.25" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
1.75 SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
SUB-BASE COURSE: 8" GRAVEL BORROW (TYPE B)

PROPOSED HMA DRIVEWAY
SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
2.5" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) (SEE NOTE 2)
SUB-BASE COURSE: 8" GRAVEL BORROW (TYPE B)

PROPOSED CEMENT CONCRETE WALK/PEDESTRIAN CURB RAMP
SURFACE COURSE: 4" CEMENT CONCRETE (AIR ENTRAINED - 4000 PSI, 3/4", 610)
SUB-BASE COURSE: 8" GRAVEL BORROW (TYPE B)

PROPOSED CEMENT CONCRETE REINFORCED PAVEMENT
SURFACE COURSE: 6" CEMENT CONCRETE (AIR ENTRAINED - 4000 PSI, 3/4", 610) WITH WWF 6x6 - W1.4 x W1.4 AT MID DEPTH
SUB-BASE COURSE: 18" GRAVEL BORROW (TYPE B)

NOTES:
1. ALL HMA FOR PATCHING, ASPHALT EMULSION FOR TACK COAT AND HMA JOINT ADHESIVE SHALL BE INSTALLED PER SECTION 450 AND 700.
2. HMA SIDEWALKS, DRIVEWAYS, AND SHARED USE PATH ARE TO BE PAID FOR UNDER ITEM 702.

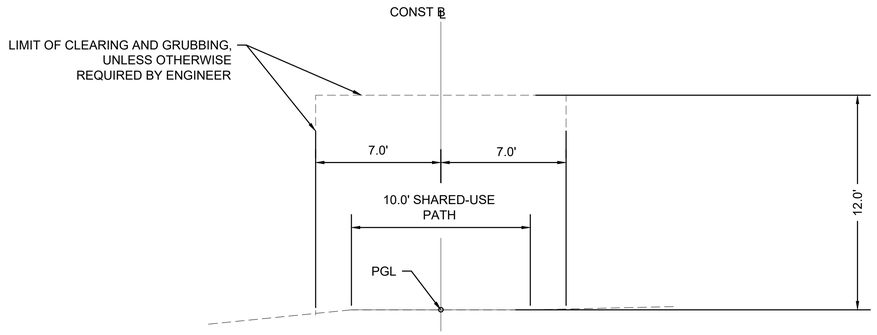
SHT004_HD(TYPICAL SECTIONS).DWG Plotted on 16-Jul-2025 4:42 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

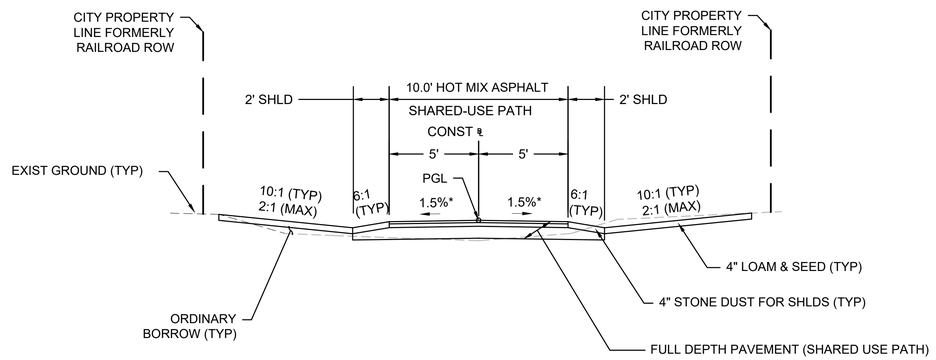
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	8	145
PROJECT FILE NO.	609211		

TYPICAL SECTIONS & DETAILS 2

SHT004_HD(TYPICAL SECTIONS).DWG Plotted on 16-Jul-2025 4:42 PM

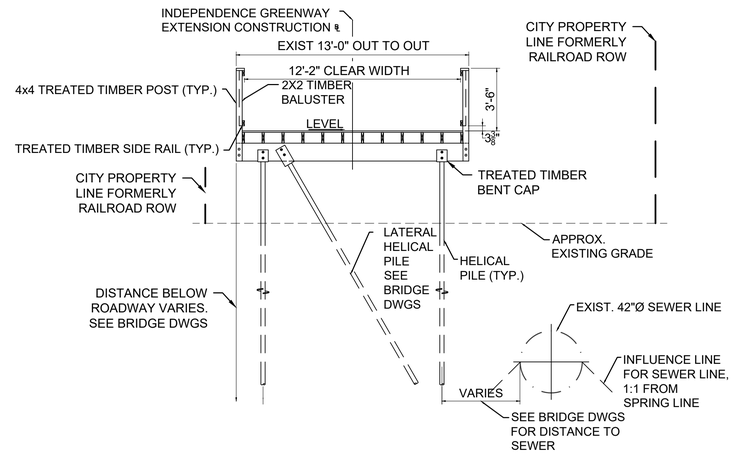


TYPICAL BIKEWAY CLEARANCE
SCALE: 1'=4"



* TOLERANCE FOR CONSTRUCTION +/-0.5%

TYPICAL BIKEWAY SECTION
STA 318+32.11 TO STA 351+09.93
STA 355+47.73 TO STA 358+93.89
SCALE: 1"=4'



TYPICAL BOARDWALK SECTION
STA 351+09.93 TO STA 355+47.73
SCALE: 1"=4'

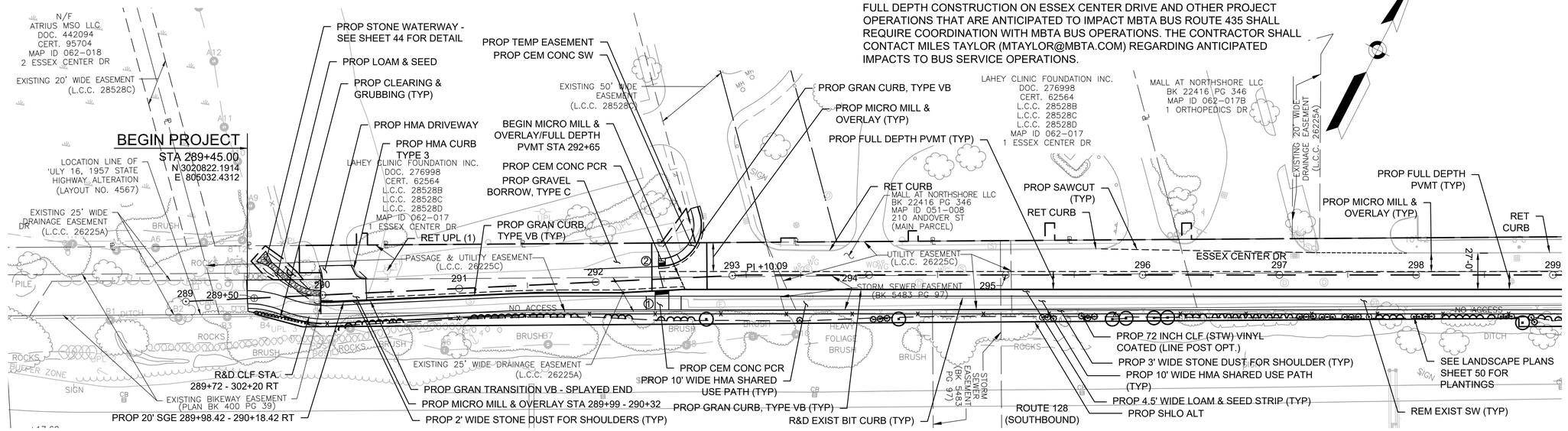
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	9	145
PROJECT FILE NO.	609211		

CONSTRUCTION PLAN & PROFILE - 1

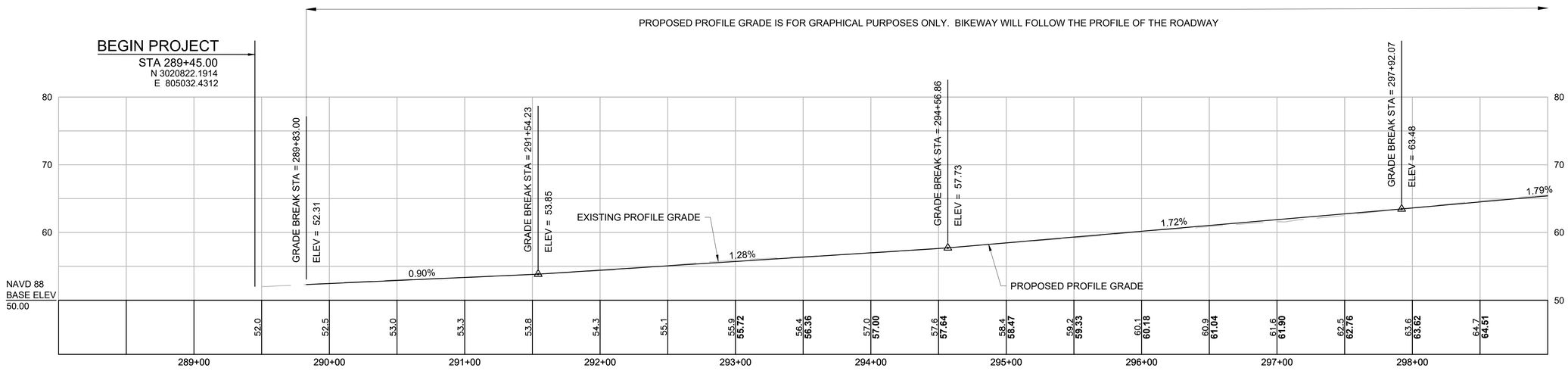
HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	NONE	NONE	SHEET 21

NOTE:
FULL DEPTH CONSTRUCTION ON ESSEX CENTER DRIVE AND OTHER PROJECT OPERATIONS THAT ARE ANTICIPATED TO IMPACT MBTA BUS ROUTE 435 SHALL REQUIRE COORDINATION WITH MBTA BUS OPERATIONS. THE CONTRACTOR SHALL CONTACT MILES TAYLOR (MTAYLOR@MBTA.COM) REGARDING ANTICIPATED IMPACTS TO BUS SERVICE OPERATIONS.



CONTINUED ON SHEET NO. 10

PEABODY BIKEWAY ALIGNMENT



HOR. SCALE IN FEET
40 0 40 80
8 0 8 16
VER. SCALE IN FEET

SHT006_HD(CONSTRUCTION PLANS & PROFILES).DWG Plotted on 16-Jul-2025 4:44 PM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

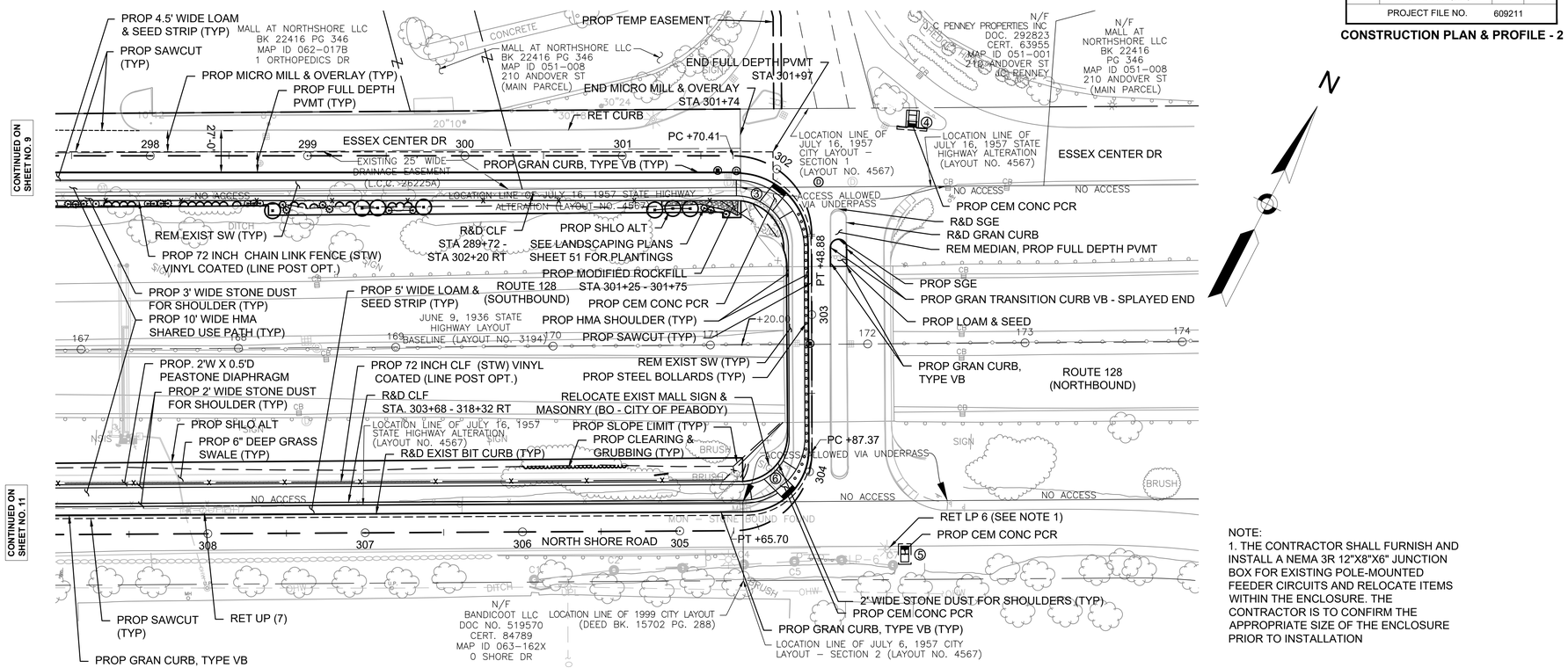
DRAINAGE DETAILS

SHEET 21

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

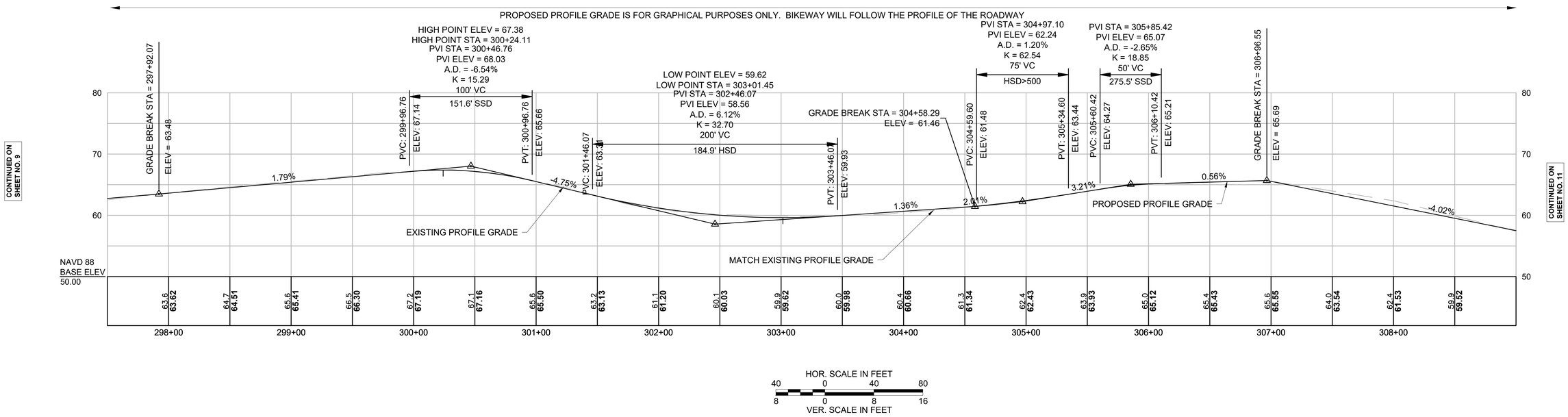
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	10	145
PROJECT FILE NO.	609211		

CONSTRUCTION PLAN & PROFILE - 2



NOTE:
1. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA 3R 12"X8"X6" JUNCTION BOX FOR EXISTING POLE-MOUNTED FEEDER CIRCUITS AND RELOCATE ITEMS WITHIN THE ENCLOSURE. THE CONTRACTOR IS TO CONFIRM THE APPROPRIATE SIZE OF THE ENCLOSURE PRIOR TO INSTALLATION

PEABODY BIKEWAY ALIGNMENT



HOR. SCALE IN FEET
40 0 40 80
8 0 8 16
VER. SCALE IN FEET

SHT006_HD(CONSTRUCTION PLANS & PROFILES).DWG Plotted on 16-Jul-2025 4:44 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	11	145
PROJECT FILE NO.	609211		

CONSTRUCTION PLAN & PROFILE - 3

SHT006_HD(CONSTRUCTION PLANS & PROFILES).DWG Plotted on 16-Jul-2025 4:45 PM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

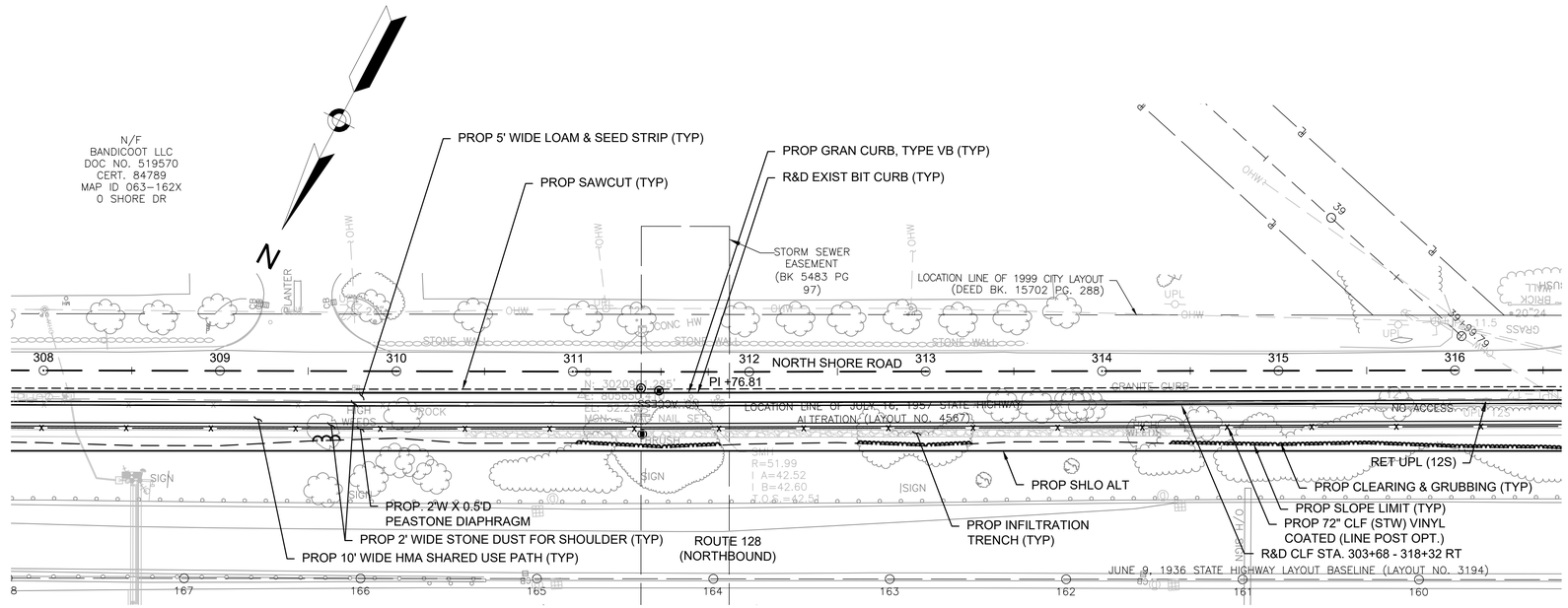
NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SHEET 21



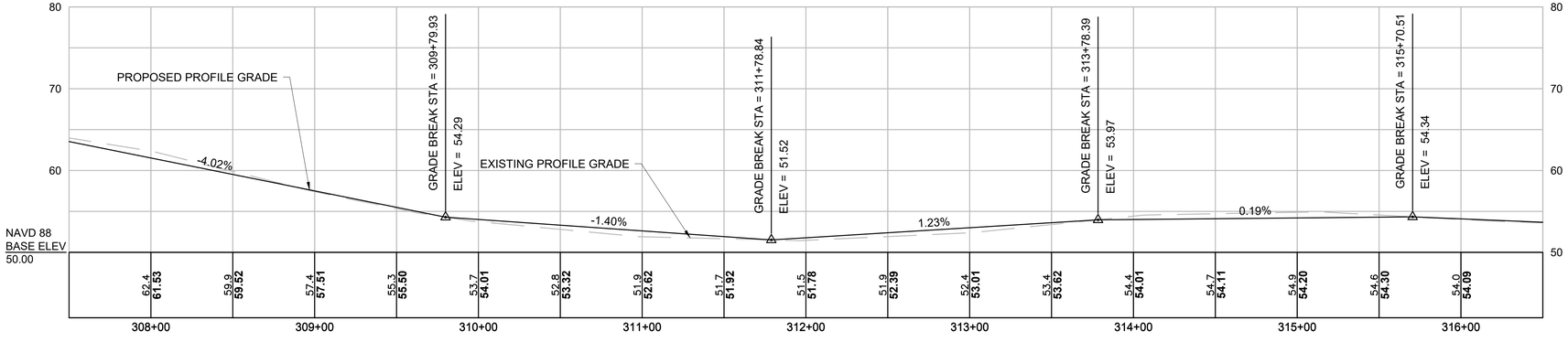
NOTE:
THE EXACT LOCATION AND ELEVATION OF THE EXISTING INTELLIGENT TRANSPORTATION SYSTEM (ITS) MUST BE FIELD VERIFIED VIA TEST PIT. THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH ANY OF THE PROPOSED WORK THAT MAY BE IN CONFLICT WITH THE EXISTING ITS.

CONTINUED ON SHEET NO. 10

CONTINUED ON SHEET NO. 12

PEABODY BIKEWAY ALIGNMENT

PROPOSED PROFILE GRADE IS FOR GRAPHICAL PURPOSES ONLY. BIKEWAY WILL FOLLOW THE PROFILE OF THE ROADWAY



HOR. SCALE IN FEET
40 0 40 80
8 0 8 16
VER. SCALE IN FEET

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

NONE

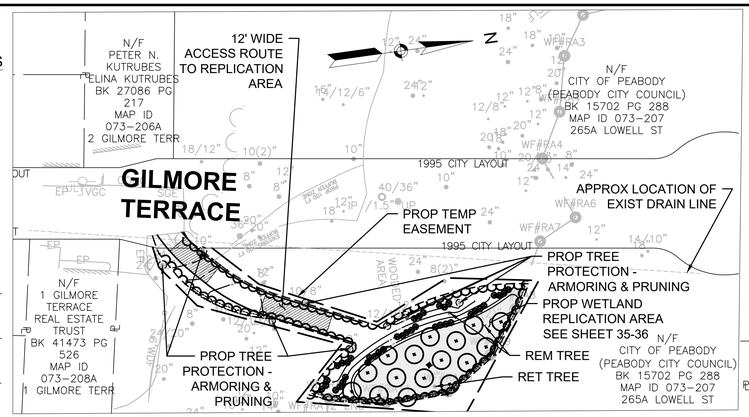
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	12	145
PROJECT FILE NO.	609211		

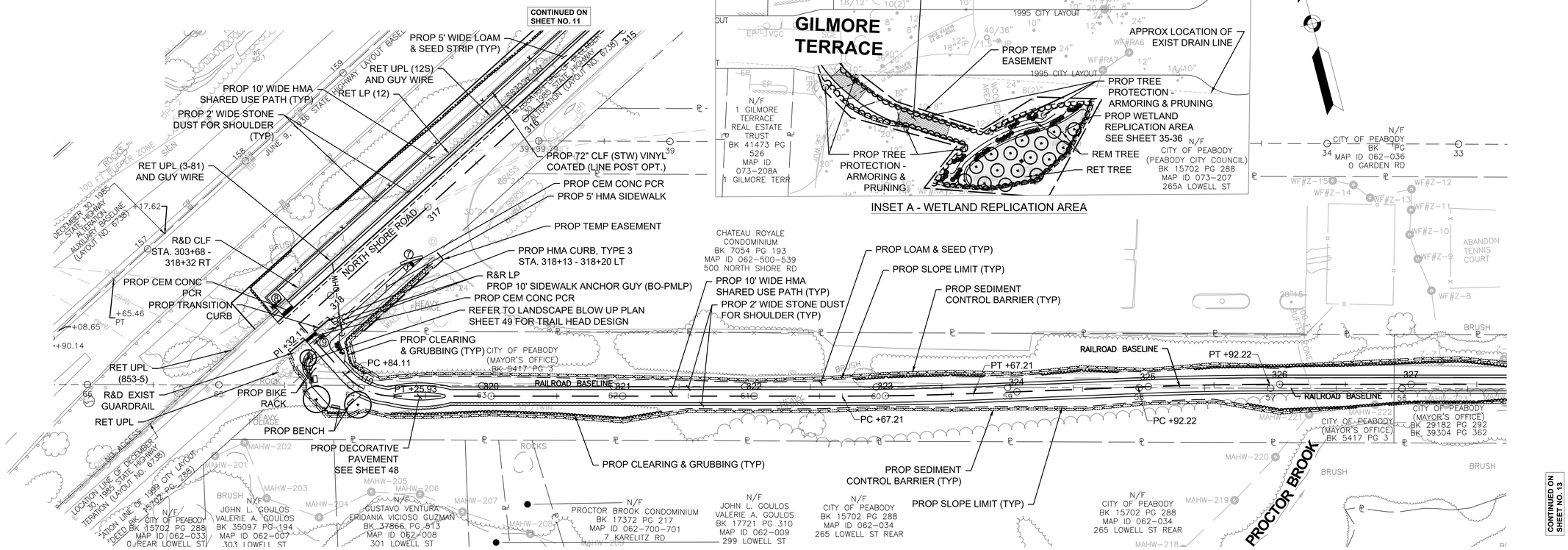
CONSTRUCTION PLAN & PROFILE - 4

CONTINUED ON SHEET NO. 11

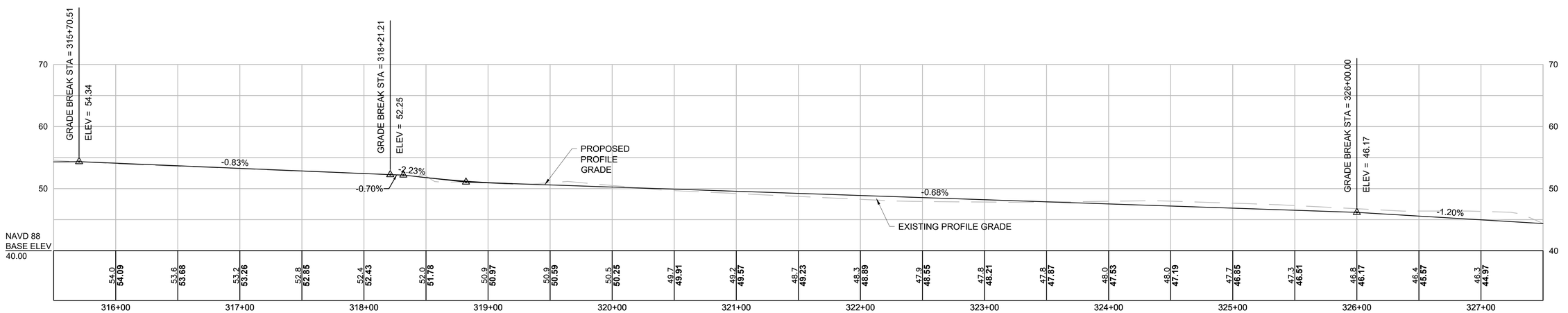
CONTINUED ON SHEET NO. 13



INSET A - WETLAND REPLICATION AREA



PEABODY BIKEWAY ALIGNMENT



HOR. SCALE IN FEET
40 0 40 80
VER. SCALE IN FEET
8 0 8 16

SHT005_HD(CONSTRUCTION PLANS & PROFILES).DWG Plotted on 16-Jul-2025 6:57 PM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

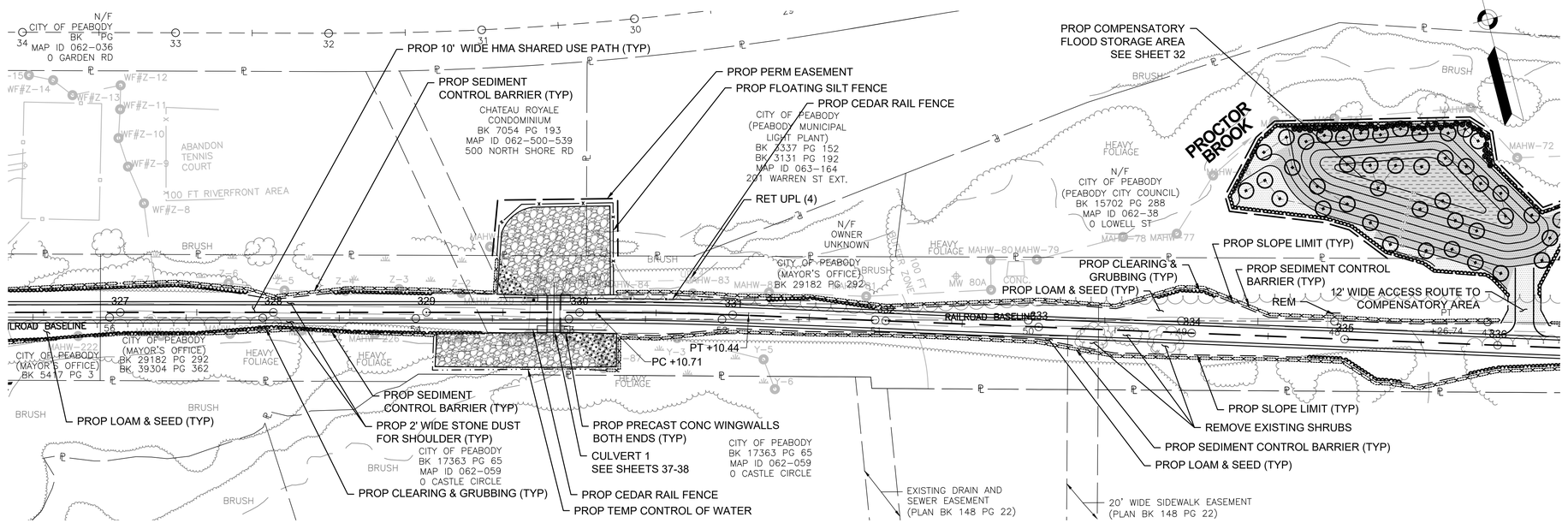
DRAINAGE DETAILS

SEE SHEET 23 FOR DRAINAGE DETAILS
SEE SHEETS 37-38 FOR CULVERT DETAILS

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	13	145
	PROJECT FILE NO. 609211		

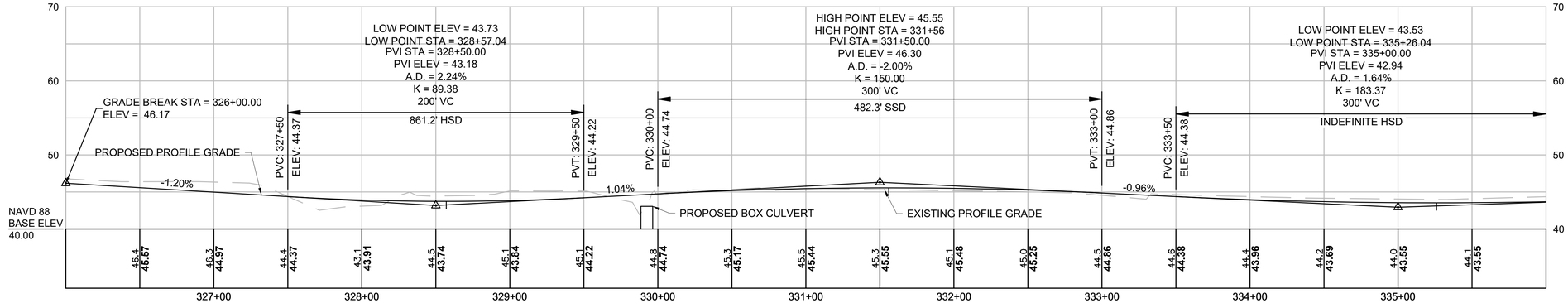
CONSTRUCTION PLAN & PROFILE - 5

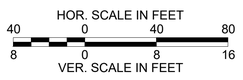


CONTINUED ON SHEET NO. 12

CONTINUED ON SHEET NO. 14

PEABODY BIKEWAY ALIGNMENT





SHT005_HD(CONSTRUCTION PLANS & PROFILES).DWG Plotted on 16-Jul-2025 4:45 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	14	145
PROJECT FILE NO.	609211		

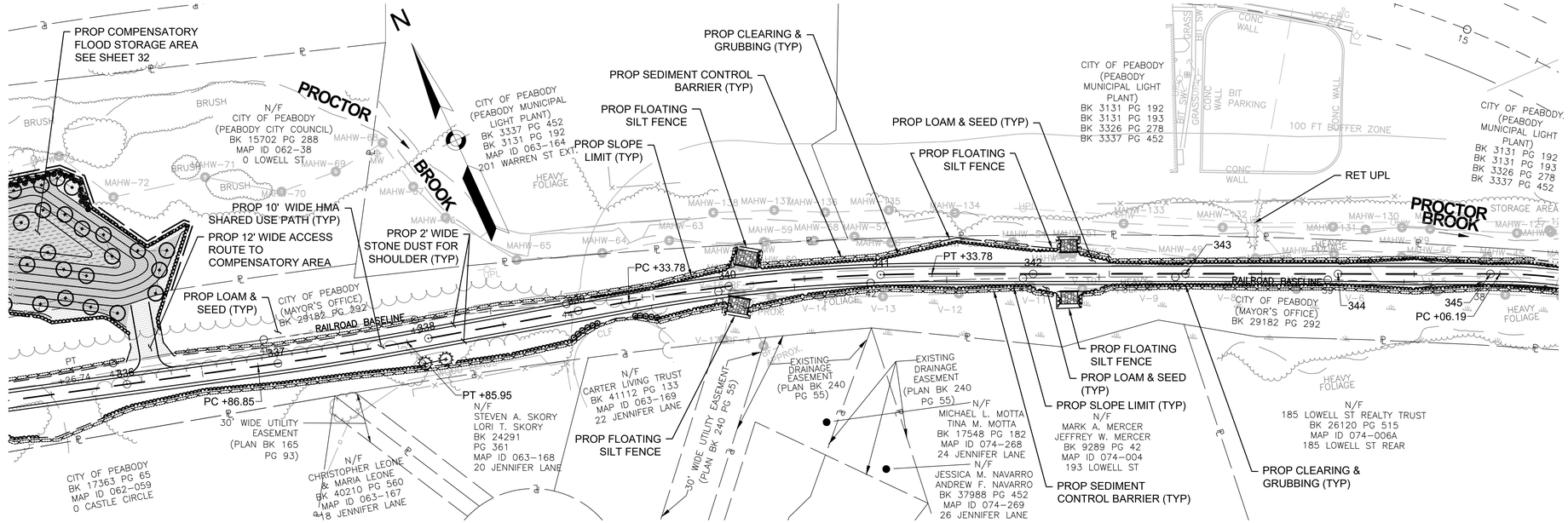
CONSTRUCTION PLAN & PROFILE - 6

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

WATER SUPPLY ALTERATIONS
NONE

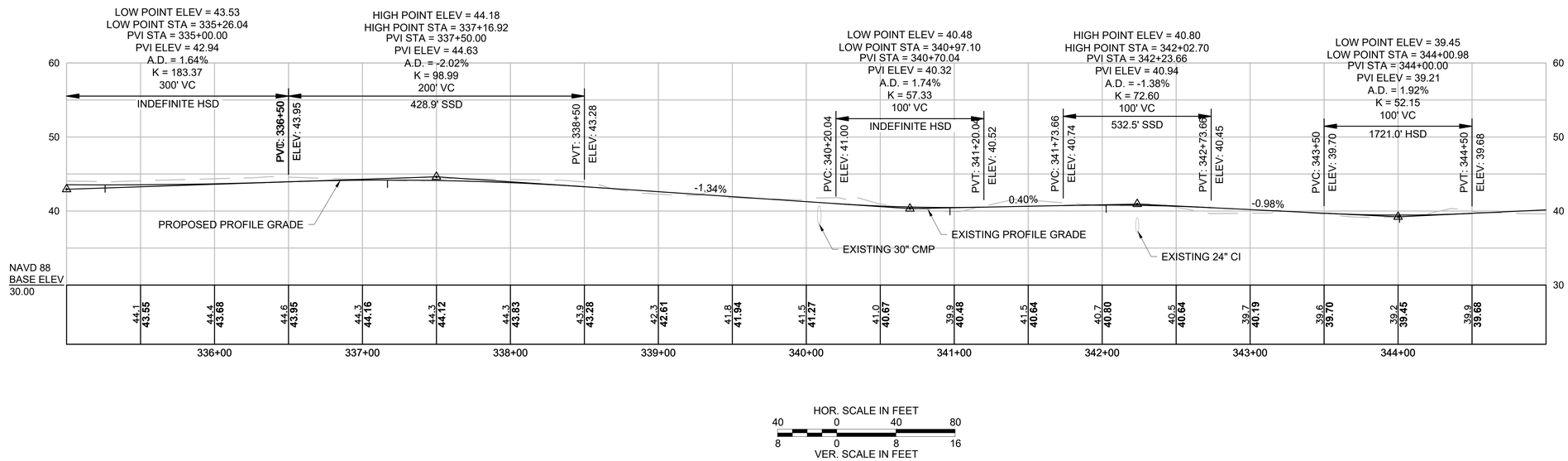
DRAINAGE DETAILS
SHEET 23



CONTINUED ON SHEET NO. 13

CONTINUED ON SHEET NO. 15

PEABODY BIKEWAY ALIGNMENT



HOR. SCALE IN FEET
40 0 40 80
VER. SCALE IN FEET
8 0 8 16

SHT006_HD(CONSTRUCTION PLANS & PROFILES).DWG Plotted on 16-Jul-2025 4:46 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	15	145
PROJECT FILE NO.	609211		

CONSTRUCTION PLAN & PROFILE - 7

HIGHWAY GUARD DETAILS

STA. 347+72 LT - STA. 348+07 LT TANGENT END TREATMENT
STA. 348+07 LT - STA. 348+32 LT GUARDRAIL, TL-2 (SINGLE FACED)
STA. 348+32 LT - STA. 348+41 LT TRAILING ANCHORAGE
STA. 348+70 LT - STA. 349+11 LT TANGENT END TREATMENT
STA. 349+11 LT - STA. 349+61 LT GUARDRAIL, TL-2 (SINGLE FACED)
STA. 349+61 LT - STA. 347+70 LT TRAILING ANCHORAGE

TRAFFIC SIGNAL CONDUIT

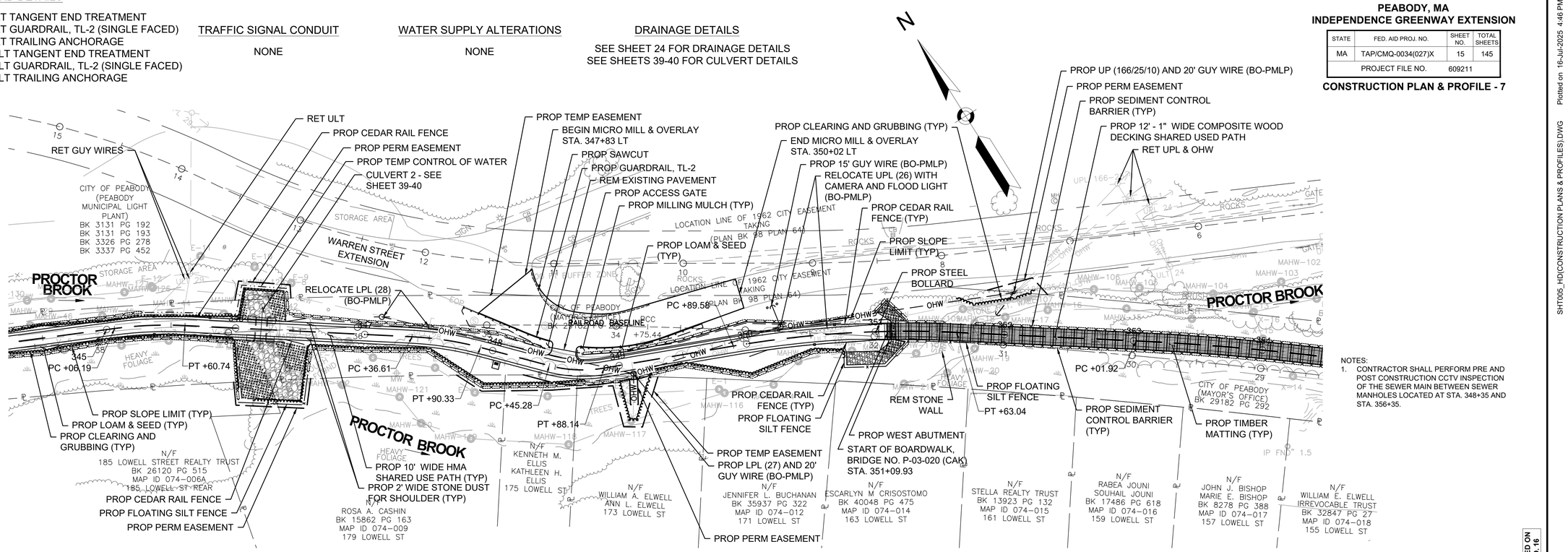
NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

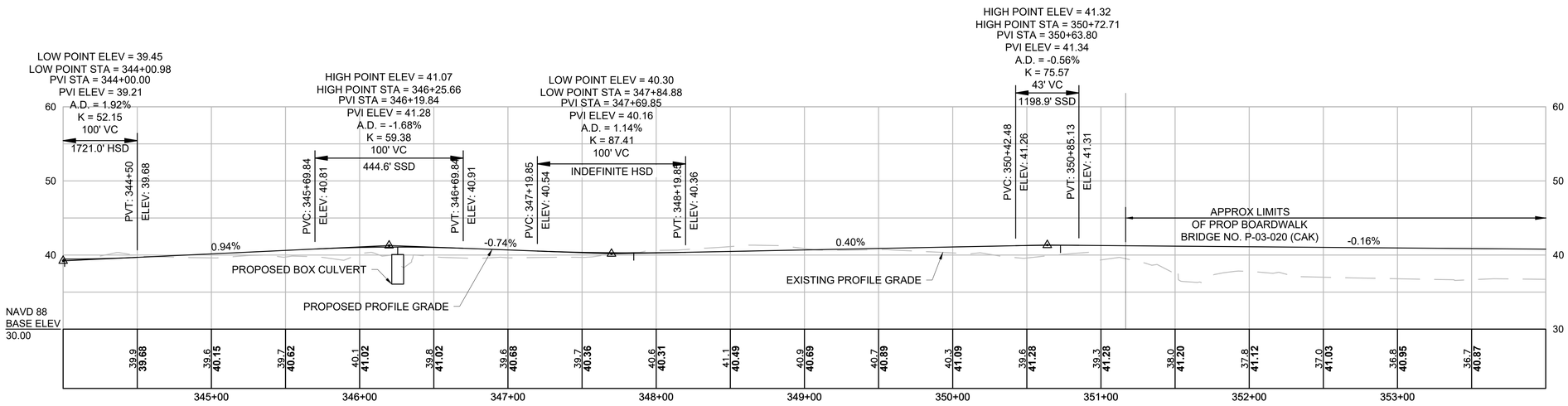
SEE SHEET 24 FOR DRAINAGE DETAILS
SEE SHEETS 39-40 FOR CULVERT DETAILS



NOTES:
1. CONTRACTOR SHALL PERFORM PRE AND POST CONSTRUCTION CCTV INSPECTION OF THE SEWER MAIN BETWEEN SEWER MANHOLES LOCATED AT STA. 348+35 AND STA. 356+35.

CONTINUED ON SHEET NO. 14
CONTINUED ON SHEET NO. 16

PEABODY BIKEWAY ALIGNMENT



NOTE: CONTRACTOR TO USE TIMBER MATTING FOR BOARDWALK INSTALLATION FOR WORK WITHIN WETLAND AND PROCTOR BROOK.

HOR. SCALE IN FEET
40 0 40 80
8 0 8 16
VER. SCALE IN FEET

SHT006_HD\CONSTRUCTION PLANS & PROFILES\.DWG Plotted on 16-Jul-2025 4:46 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	16	145
PROJECT FILE NO.	609211		

CONSTRUCTION PLAN & PROFILE - 8

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

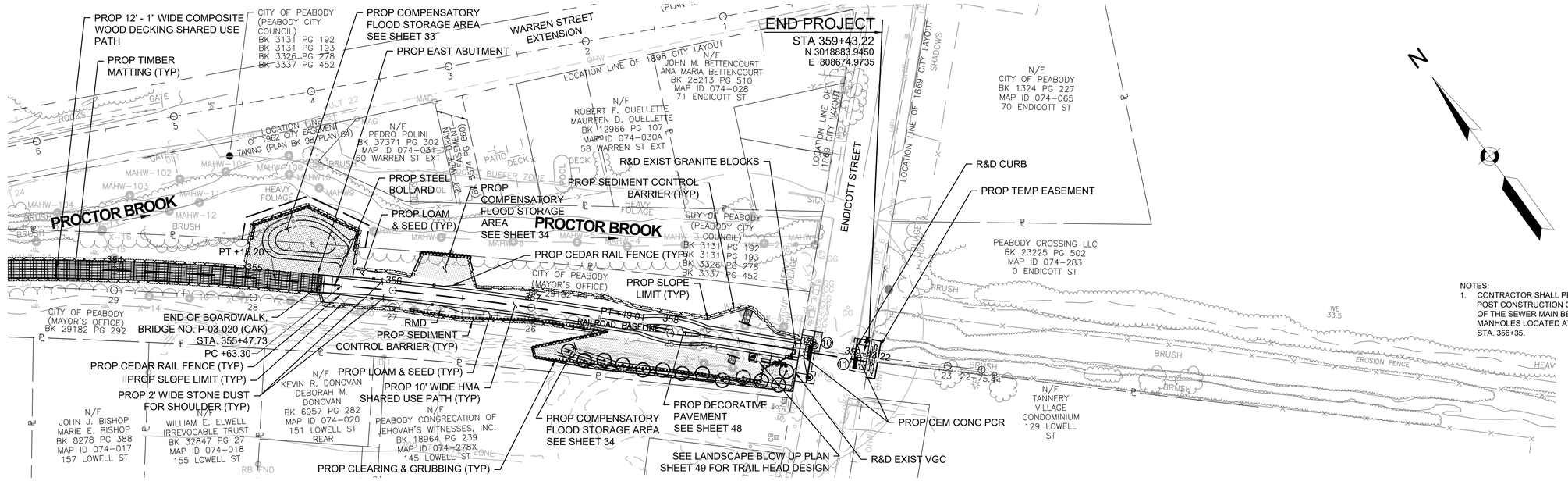
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WATER SUPPLY ALTERATIONS

NONE

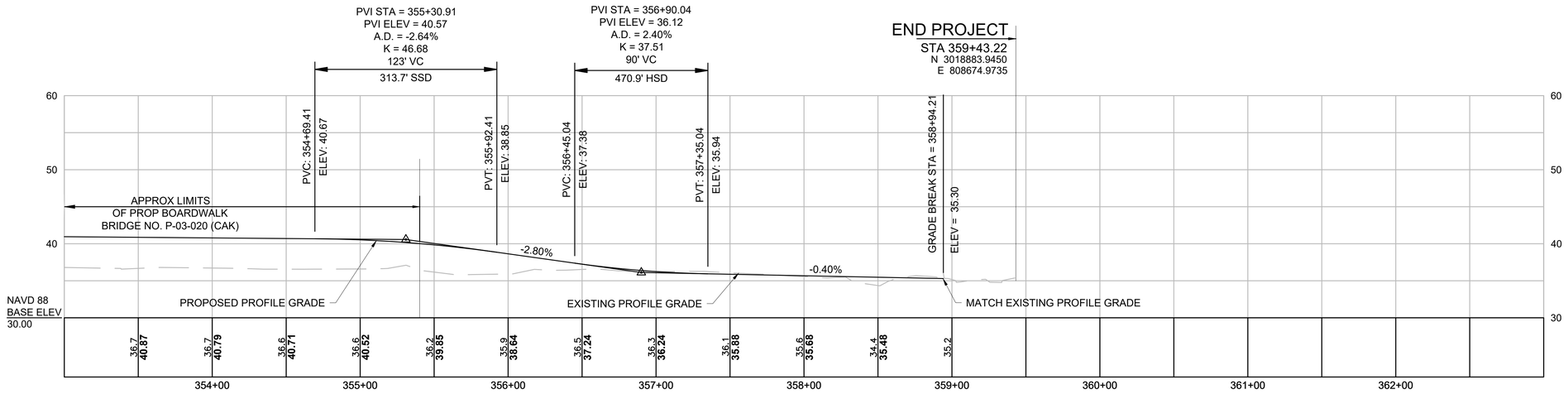
DRAINAGE DETAILS

SEE SHEET 24



CONTINUED ON SHEET NO. 15

PEABODY BIKEWAY ALIGNMENT



NOTE: CONTRACTOR TO USE TIMBER MATTING FOR BOARDWALK INSTALLATION FOR WORK WITHIN WETLAND AND PROCTOR BROOK.

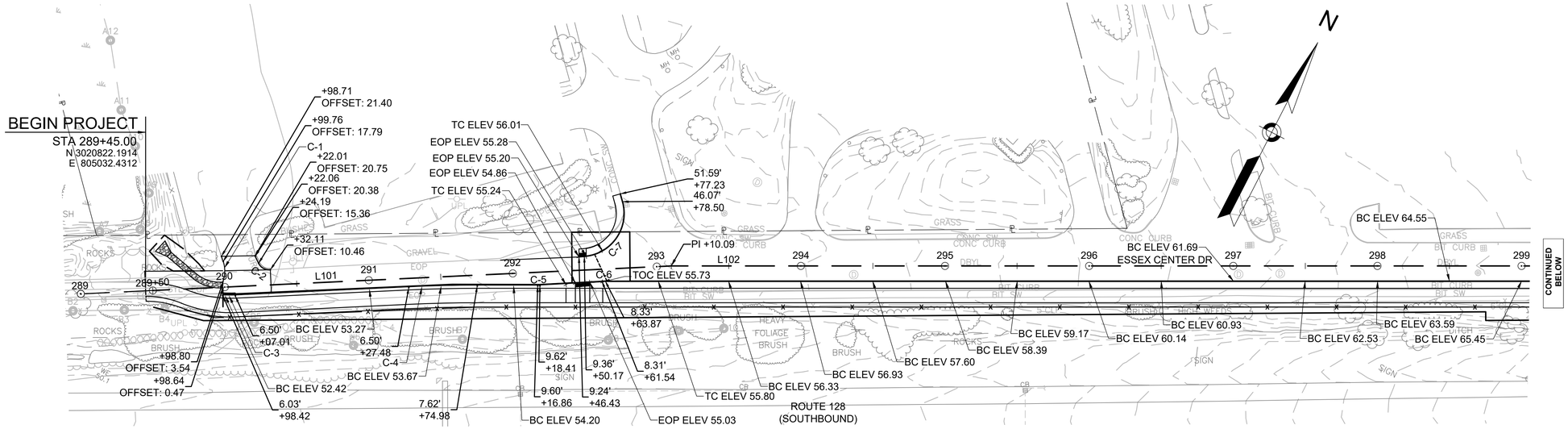
HOR. SCALE IN FEET
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8 0 8 16
VER. SCALE IN FEET

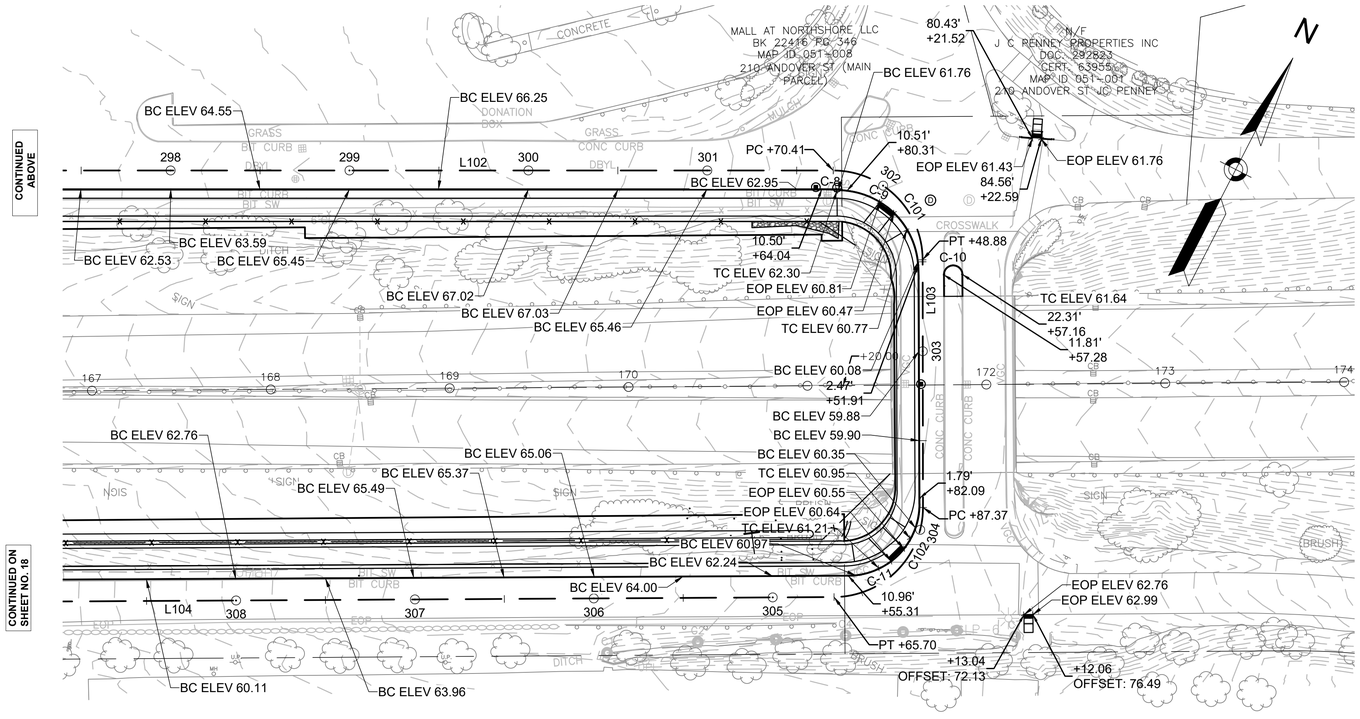
SHT006_HD\CONSTRUCTION PLANS & PROFILES\.DWG Plotted on 16-Jul-2025 4:46 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	17	145
PROJECT FILE NO.	609211		

CURB TIE AND GRADING PLANS - 1





PEABODY BIKEWAY ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L101	289+50.00	3020824.680	805036.768		N60°08'58"E 360.09'	293+10.09	3021003.909	805349.080
L102	293+10.09	3021003.909	805349.080		N62°51'31"E 860.32'	301+70.41	3021396.379	806114.666
L104	304+65.70	3021184.367	806223.889		S62°31'50"W 711.11'	311+76.81	3020856.350	805592.950

PEABODY BIKEWAY ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C101	301+70.41	3021396.379	806114.666	R=50.00' Δ=89°55'16" L=78.47' T=49.93'		302+48.88	3021374.756	806181.939
C102	303+87.37	3021251.601	806245.287	R=50.00' Δ=89°45'04" L=78.32' T=49.78'		304+65.70	3021184.367	806223.889

Curve Table			
Curve #	Delta	Radius	Length
C-1	38°59'29"	22.28	15.16
C-2	67°43'55"	8.00	9.46
C-3	6°17'02"	78.50	8.61
C-4	2°42'32"	1005.00	47.52
C-5	4°27'05"	20.00	1.55
C-6	4°27'05"	30.00	2.33
C-7	101°13'25"	30.00	53.00
C-8	6°45'47"	120.00	14.16
C-9	79°35'32"	45.00	62.51
C-10	180°00'00"	5.25	16.49
C-11	89°55'43"	40.00	62.78

0 40 100 160
SCALE: 1" = 40'

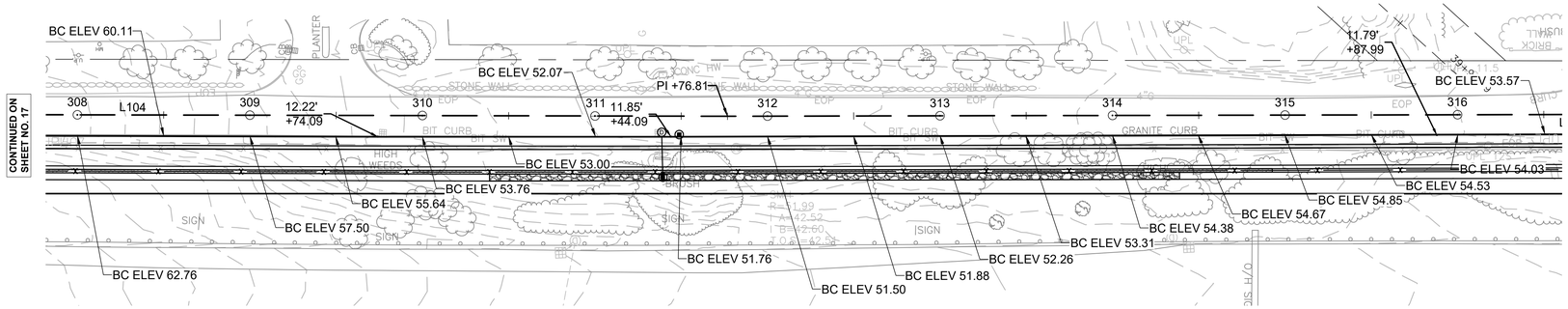
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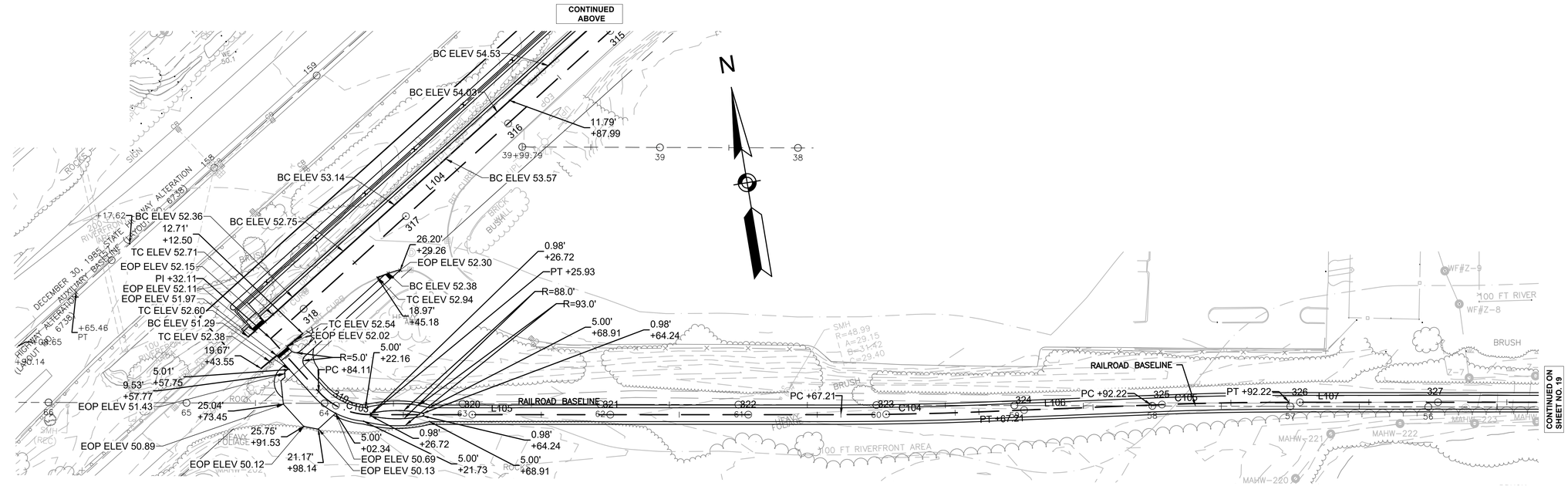
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	18	145
PROJECT FILE NO.	609211		

CURB TIE AND GRADING PLANS - 2

SHT07_HD(CURB TIE AND GRADING PLANS)_UPDATED.DWG Plotted on 16-Jul-2025 6:02 PM





PEABODY BIKEWAY ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L104	304+65.70	3021184.367	806223.889		S62°31'50"W 711.11'	311+76.81	3020856.350	805592.950
L105	319+25.93	3020480.266	805068.720		S75°31'27"E 341.28'	322+67.21	3020394.955	805399.166
L106	323+67.21	3020371.901	805496.465		S77°48'58"E 125.01'	324+92.22	3020345.518	805618.655
L107	325+92.22	3020322.464	805715.954		S75°31'27"E 418.49'	330+10.71	3020217.853	806121.161

PEABODY BIKEWAY ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C103	318+84.11	3020505.514	805036.907	R=50.00' Δ=47°55'31" L=41.82' T=22.22'		319+25.93	3020480.266	805068.720
C104	322+67.21	3020394.955	805399.166	R=2500.00' Δ=2°17'31" L=100.00' T=50.01'		323+67.21	3020371.901	805496.465
C105	324+92.22	3020345.518	805618.655	R=2500.00' Δ=2°17'31" L=100.00' T=50.01'		325+92.22	3020322.464	805715.954

0 40 100 160
SCALE: 1" = 40'

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	19	145
PROJECT FILE NO.	609211		

CURB TIE AND GRADING PLANS - 3



PEABODY BIKEWAY ALIGNMENT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L108	331+10.44	3020191.003	806217.205		S73°14'18"E 576.41'	336+86.85	3020024.772	806769.128
L109	337+85.95	3019998.340	806864.628		S75°49'10"E 147.83'	339+33.78	3019962.125	807007.949
L110	341+33.78	3019895.820	807196.346		S65°24'07"E 372.41'	345+06.19	3019740.803	807534.961

PEABODY BIKEWAY ALIGNMENT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C106	330+10.71	3020217.853	806121.161	R=2500.00' Δ=2°17'09" L=99.73' T=49.87'		331+10.44	3020191.003	806217.205
C107	336+86.85	3020024.772	806769.128	R=2200.00' Δ=2°34'51" L=99.10' T=49.56'		337+85.95	3019998.340	806864.628
C108	339+33.78	3019962.125	807007.949	R=1100.00' Δ=10°25'03" L=200.00' T=100.28'		341+33.78	3019895.820	807196.346
C109	345+06.19	3019740.803	807534.961	R=300.00' Δ=10°25'03" L=54.55' T=27.35'		345+60.74	3019713.727	807582.225

0 40 100 160

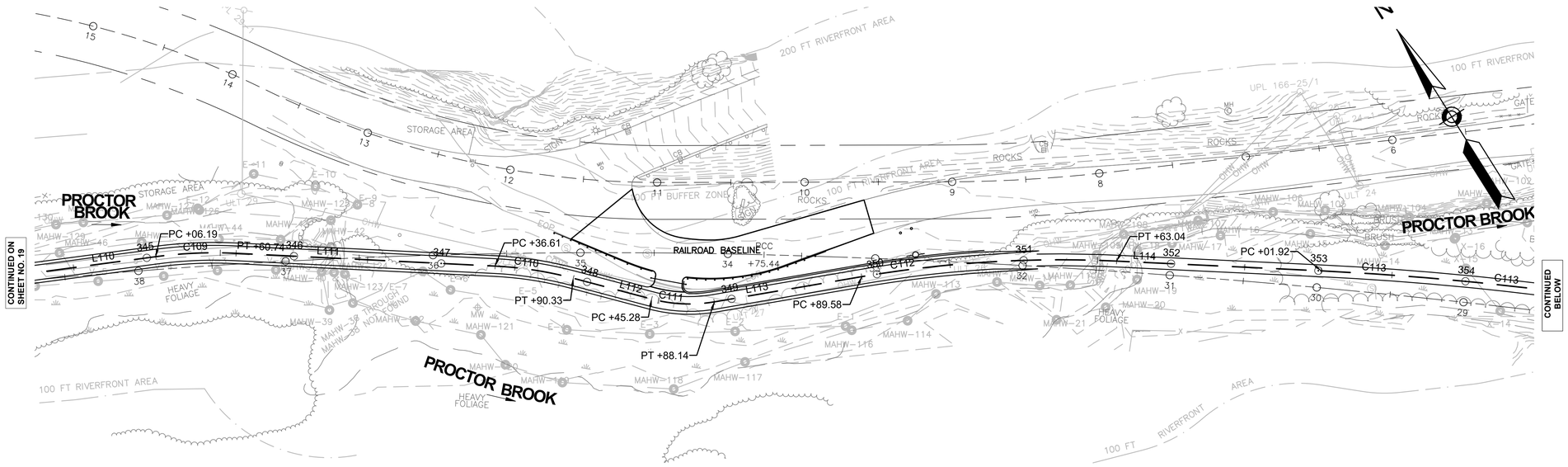
SCALE: 1" = 40'

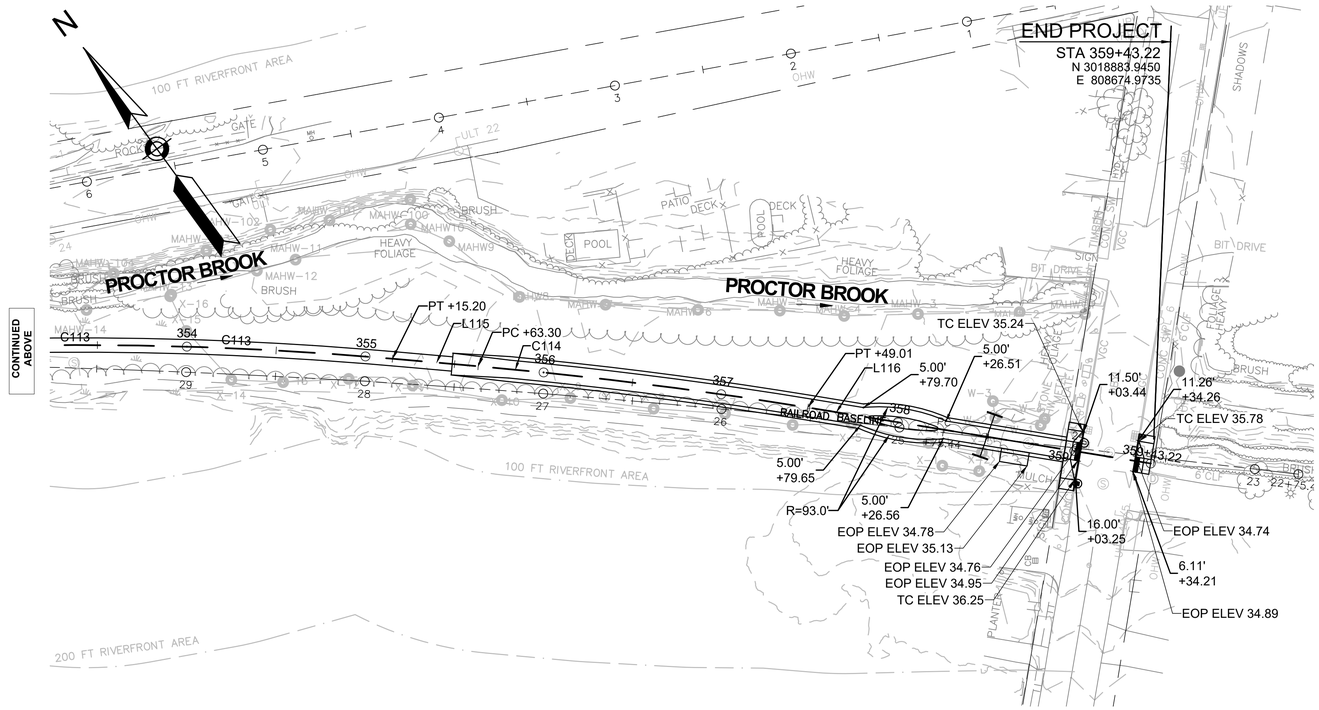
SHT07_HD(CURB TIE AND GRADING PLANS)_UPDATED.DWG Plotted on 16-Jul-2025 4:49 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	20	145
PROJECT FILE NO.	609211		

CURB TIE AND GRADING PLANS - 4





0 40 100 160

SCALE: 1" = 40'

PEABODY BIKEWAY ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L111	345+60.74	3019713.727	807582.225		S54°59'04"E 175.87'	347+36.61	3019612.813	807726.263
L112	347+90.33	3019577.610	807766.712		S42°56'58"E 54.95'	348+45.28	3019537.386	807804.155
L113	348+88.14	3019513.129	807839.093		S67°30'23"E 101.44'	349+89.58	3019474.320	807932.817
L114	351+63.04	3019391.171	808084.659		S55°05'00"E 138.88'	353+01.92	3019311.681	808198.535
L115	355+15.20	3019180.515	808366.591		S48°58'24"E 48.10'	355+63.30	3019148.940	808402.879
L116	357+49.01	3019021.951	808538.324		S44°43'02"E 194.21'	359+43.22	3018883.945	808674.974

PEABODY BIKEWAY ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C109	345+06.19	3019740.803	807534.961	R=300.00' Δ=10°25'03" L=54.55' T=27.35'		345+60.74	3019713.727	807582.225
C110	347+36.61	3019612.813	807726.263	R=255.75' Δ=12°02'06" L=53.72' T=26.96'		347+90.33	3019577.610	807766.712
C111	348+45.28	3019537.386	807804.155	R=100.00' Δ=24°33'25" L=42.86' T=21.76'		348+88.14	3019513.129	807839.093
C112	349+89.58	3019474.320	807932.817	R=800.00' Δ=12°25'23" L=173.46' T=87.07'		351+63.04	3019391.171	808084.659
C113	353+01.92	3019311.681	808198.535	R=2000.00' Δ=6°06'37" L=213.28' T=106.74'		355+15.20	3019180.515	808366.591
C114	355+63.30	3019148.940	808402.879	R=2500.00' Δ=4°15'22" L=185.71' T=92.90'		357+49.01	3019021.951	808538.324

SHT07_HD(CURB TIE AND GRADING PLANS)_UPDATED.DWG Plotted on 16-Jul-2025 4:49 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	21	145
PROJECT FILE NO.	609211		

DRAINAGE AND UTILITY PLAN - 1

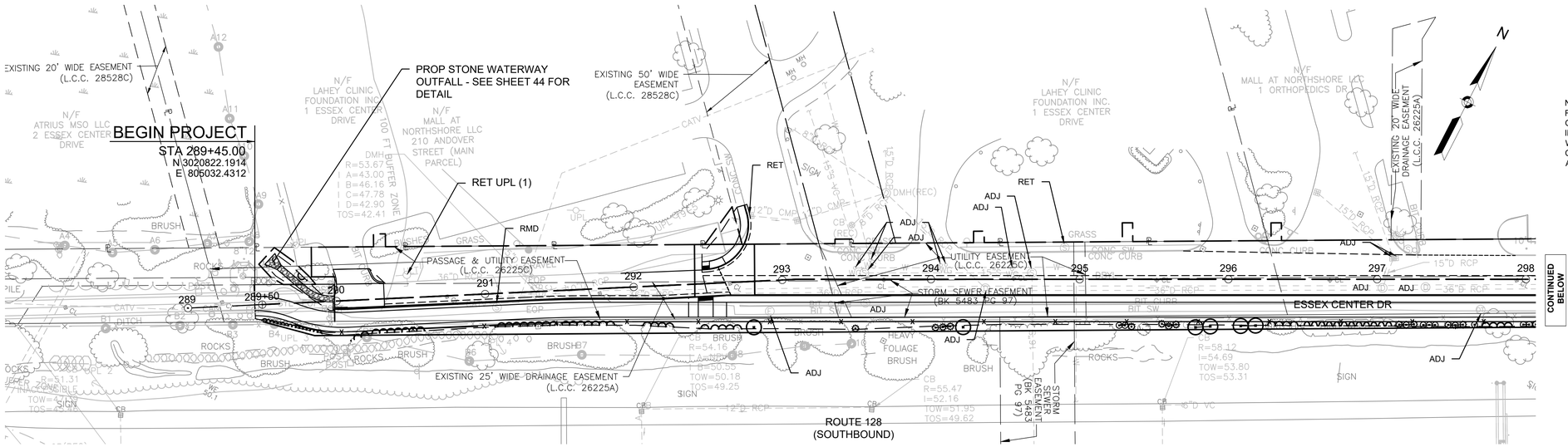
HIGHWAY GUARD DETAILS
NONE

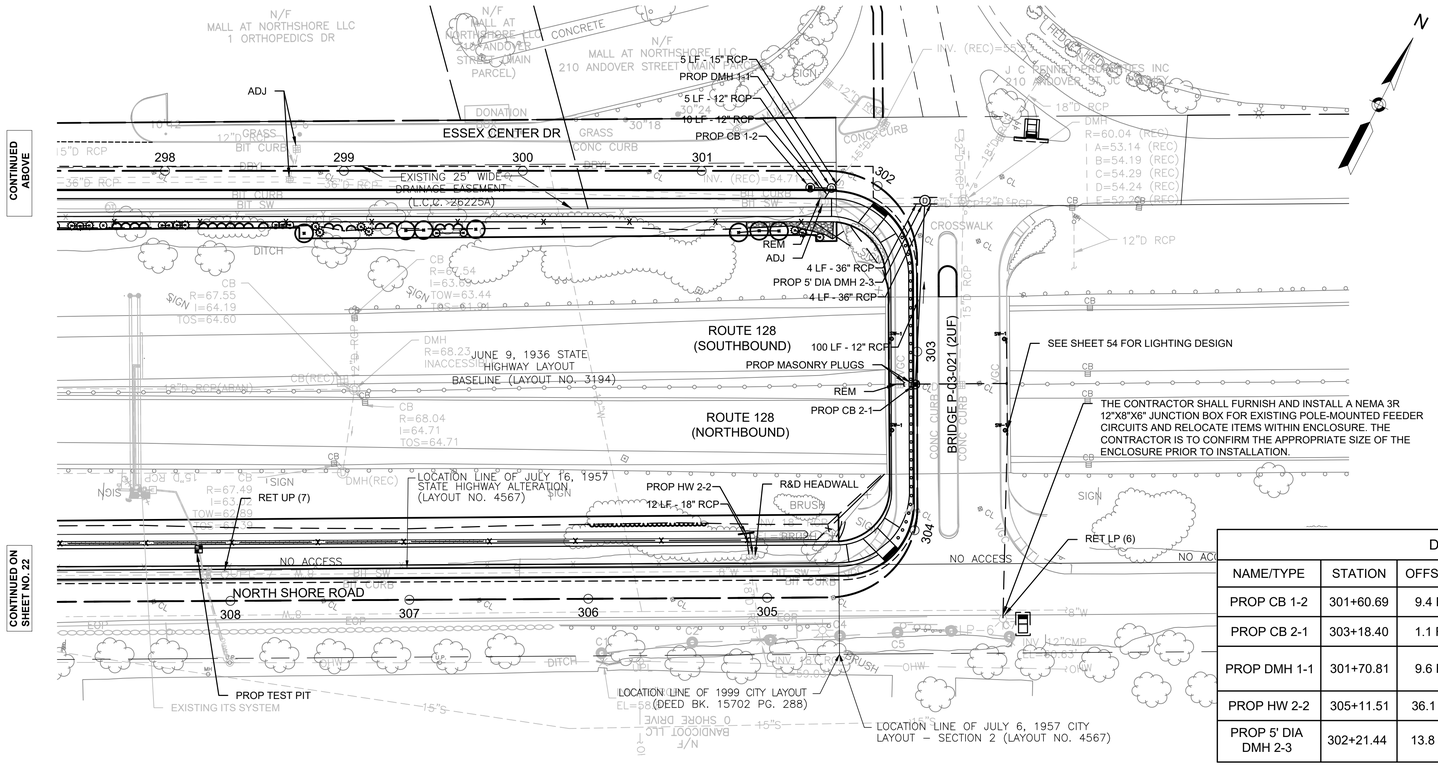
TRAFFIC SIGNAL CONDUIT
NONE

WATER SUPPLY ALTERATIONS
SEE BELOW

DRAINAGE DETAILS
SEE BELOW

NOTE:
FULL DEPTH CONSTRUCTION ON ESSEX CENTER DRIVE AND OTHER PROJECT OPERATIONS THAT ARE ANTICIPATED TO IMPACT MBTA BUS ROUTE 435 SHALL REQUIRE COORDINATION WITH MBTA BUS OPERATIONS. THE CONTRACTOR SHALL CONTACT MILES TAYLOR (MTAYLOR@MBTA.COM) REGARDING ANTICIPATED IMPACTS TO BUS SERVICE OPERATIONS.





NOTE:
1. THE EXACT LOCATION AND ELEVATION OF THE EXISTING INTELLIGENT TRANSPORTATION SYSTEM (ITS) MUST BE FIELD VERIFIED VIA TEST PIT. THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH ANY OF THE PROPOSED WORK THAT MAY BE IN CONFLICT WITH THE EXISTING ITS.

LEGEND - UTILITIES

- EXIST OVERHEAD WIRE
- EXIST GAS-OIL-STEAM
- EXIST COMMUNICATION/CATV
- EXIST SEWER (RECORD)
- EXIST SEWER
- EXIST DRAINAGE
- PROP DRAINAGE
- EXIST POTABLE WATER
- EXIST ELECTRIC

DRAINAGE STRUCTURE TABLE

NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
PROP CB 1-2	301+60.69	9.4 R	62.38		I=58.38' (PROP DMH 1-1)
PROP CB 2-1	303+18.40	1.1 R	59.73		I=55.63' (PROP 5' DIA DMH 2-3)
PROP DMH 1-1	301+70.81	9.6 R	61.80	I=54.79' (V.I.F.) I=58.20' (PROP CB 1-2)	I=53.79' (EX DMH 1-3)
PROP HW 2-2	305+11.51	36.1 R	61.00		I=59.33' (CONNECT TO EXISTING)
PROP 5' DIA DMH 2-3	302+21.44	13.8 L	60.46	I=55.58' (PROP CB 2-1) I=53.08' (V.I.F.)	I=53.07' (V.I.F.)

0 40 100 160
SCALE: 1" = 40'

SHT005_HD(DRAINAGE AND UTILITY PLANS).DWG Plotted on 16-Jul-2025 5:50 PM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE BELOW

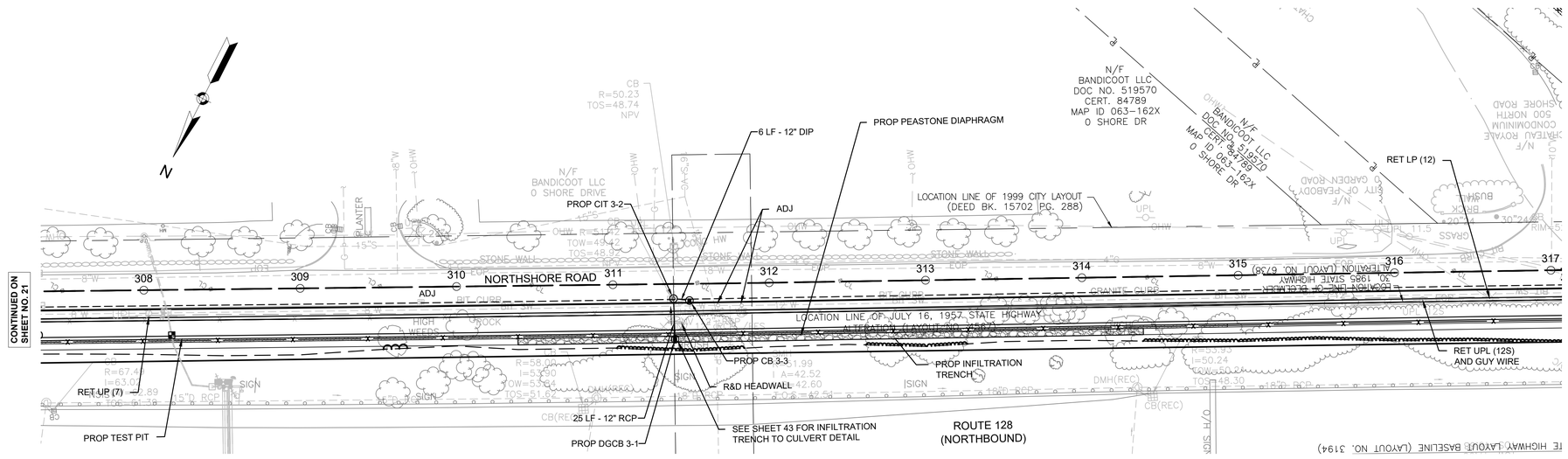
DRAINAGE DETAILS

SEE BELOW

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	22	145
PROJECT FILE NO.	609211		

DRAINAGE AND UTILITY PLAN - 2



NOTE:
THE EXACT LOCATION AND ELEVATION OF THE EXISTING INTELLIGENT TRANSPORTATION SYSTEM (ITS) MUST BE FIELD VERIFIED VIA TEST PIT. THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH ANY OF THE PROPOSED WORK THAT MAY BE IN CONFLICT WITH THE EXISTING ITS.

LEGEND - UTILITIES

- EXIST OVERHEAD WIRE
- EXIST GAS-OIL-STEAM
- EXIST COMMUNICATION/CATV
- EXIST SEWER (RECORD)
- EXIST SEWER
- EXIST DRAINAGE
- PROP DRAINAGE
- EXIST POTABLE WATER
- EXIST ELECTRIC

DRAINAGE STRUCTURE TABLE

NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
PROP DGCB 3-1	311+39.44	35.0 R	51.26		I=48.61' (PROP CIT 3-2)
PROP CIT 3-2	311+38.53	9.5 R	51.42	I=48.40' (PROP DGCB 3-1) I=48.40' (PROP CB 3-3)	I=48.30' (V.I.F.)
PROP CB 3-3	311+48.84	10.7 R	51.41		I=48.60' (PROP. CIT 3-2)

SHT005_HD(DRAINAGE AND UTILITY PLANS).DWG Plotted on 16-Jul-2025 7:14 PM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

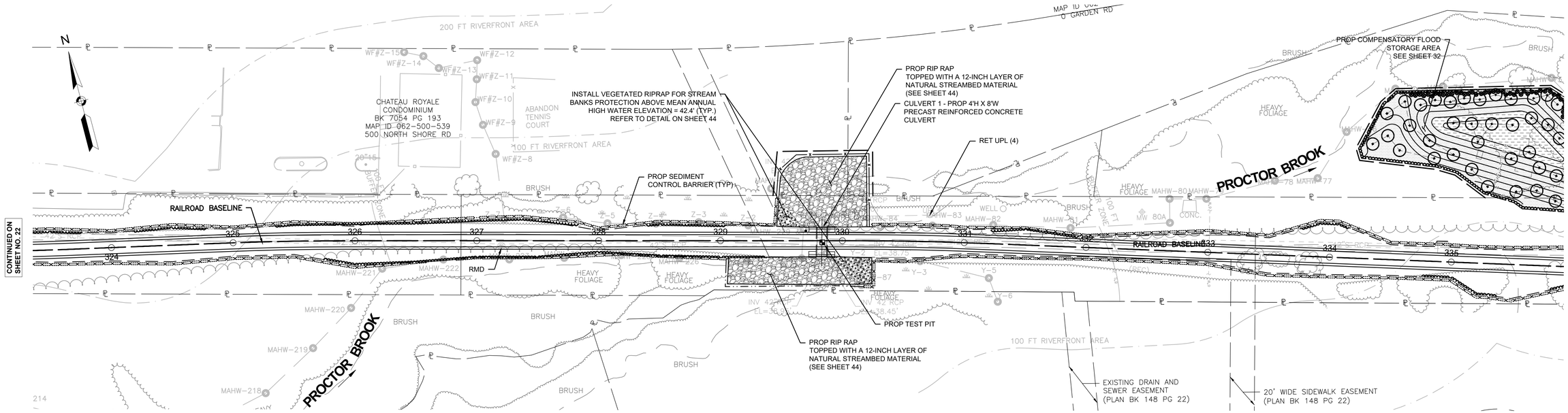
SEE BELOW

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

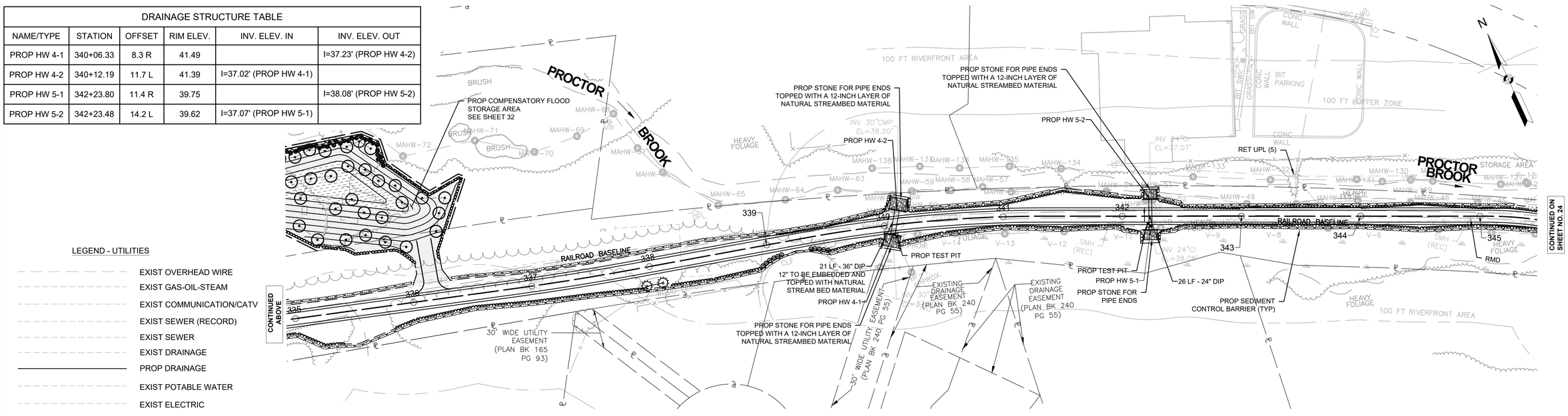
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	23	145
PROJECT FILE NO.	609211		

DRAINAGE AND UTILITY PLAN - 3

SHT005_HD(DRAINAGE AND UTILITY PLANS).DWG Plotted on 16-Jul-2025 7:20 PM



DRAINAGE STRUCTURE TABLE					
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
PROP HW 4-1	340+06.33	8.3 R	41.49		I=37.23' (PROP HW 4-2)
PROP HW 4-2	340+12.19	11.7 L	41.39	I=37.02' (PROP HW 4-1)	
PROP HW 5-1	342+23.80	11.4 R	39.75		I=38.08' (PROP HW 5-2)
PROP HW 5-2	342+23.48	14.2 L	39.62	I=37.07' (PROP HW 5-1)	



LEGEND - UTILITIES

- EXIST OVERHEAD WIRE
- EXIST GAS-OIL-STEAM
- EXIST COMMUNICATION/CATV
- EXIST SEWER (RECORD)
- EXIST SEWER
- EXIST DRAINAGE
- PROP DRAINAGE
- EXIST POTABLE WATER
- EXIST ELECTRIC

0 40 100 160

SCALE: 1" = 40'

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	24	145
PROJECT FILE NO.	609211		

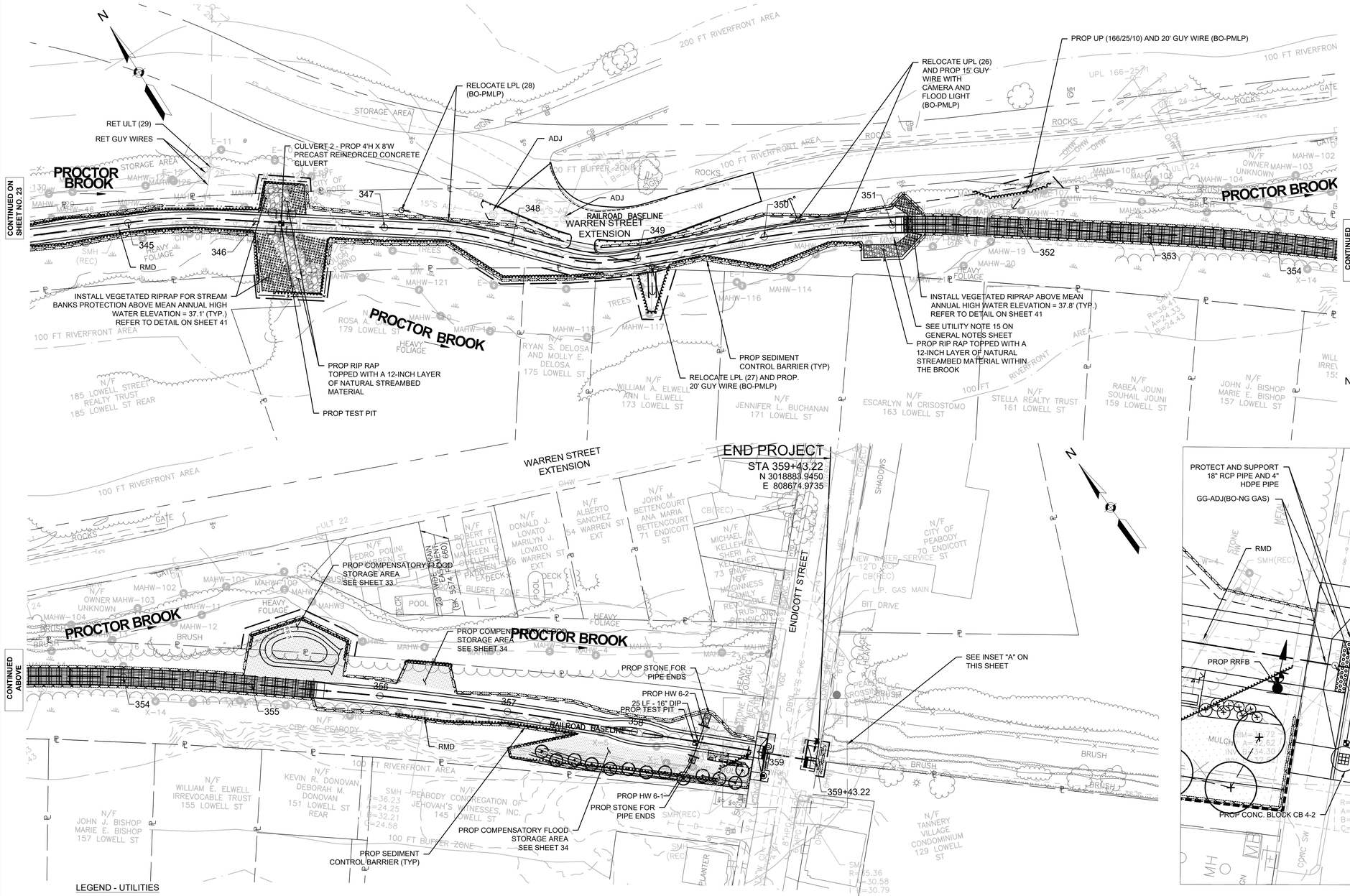
DRAINAGE AND UTILITY PLAN - 4

HIGHWAY GUARD DETAILS
NONE

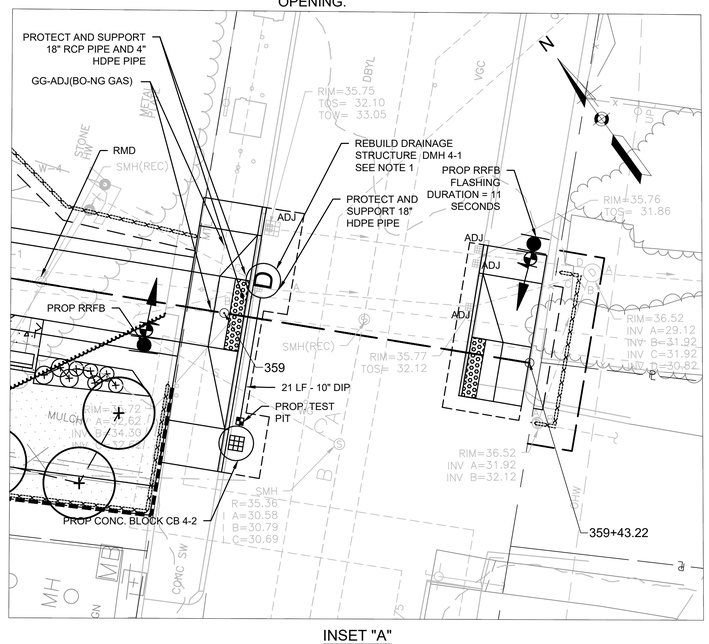
TRAFFIC SIGNAL CONDUIT
NONE

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW



NOTE:
1. REBUILD DRAINAGE STRUCTURE DMH 4-1 AS CONCRETE BLOCK STRUCTURE. REMOVE AND DISPOSE EXISTING FRAME AND GRATE AND REPLACE WITH 4" FRAME AND COVER. LOCATE FRAME AND COVER OUTSIDE OF CURB OPENING.



INSET "A"

LEGEND - UTILITIES

- EXIST OVERHEAD WIRE
- EXIST GAS-OIL-STEAM
- EXIST COMMUNICATION/CATV
- EXIST SEWER (RECORD)
- EXIST SEWER
- EXIST DRAINAGE
- PROP DRAINAGE
- EXIST POTABLE WATER
- EXIST ELECTRIC

0 40 100 160
SCALE: 1" = 40'

0 10 25 40
SCALE: 1" = 10'

DRAINAGE STRUCTURE TABLE

NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
PROP HW 6-1	358+48.46	11.6 R	35.47		I=33.51' (PROP HW 6-2)
PROP HW 6-2	358+52.79	12.9 L	34.88	I=32.92' (PROP HW 6-1)	

DRAINAGE STRUCTURE TABLE

NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
PROP CB 4-2	359+04.67	17.6 R	35.63		I=33.50' (PROP DMH 4-1)
PROP DMH 4-1 (DRAINAGE STRUCTURE REBUILT)	359+04.67	5.3 L	34.76	I=33.29 (PROP CB 4-2) I=MATCH EXISTING	I=MATCH EXISTING

SHT005_HD\DRAINAGE AND UTILITY PLANS\.DWG Plotted on 16-Jul-2025 5:51 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	25	145
PROJECT FILE NO.	609211		

PAVEMENT MARKING & SIGNING PLAN - 1

SHT06_HD\SIGNING & STRIPING PLANS\.DWG Plotted on 16-Jul-2025 4:50 PM

BEGIN PROJECT
STA 289+45.00
N 3020822.1914
E 805032.4312

SEE MILE MARKER DETAIL SHEET 48

R1-1
MA-D3-1_1
R&S R1-1 & D3-1
R1-1
R1-1

289 | 289+50 | 290 | 291 | 292 | 293 | 294 | 295 | 296 | 297 | 298 | 299

SWL (293') | SWL (915') | DBYL (293') | SWL (376') | DBYL (455') | SWL (915') | BYL (895')

ESSEX CENTER DR

CONTINUED BELOW

2' BUFFER
5' LANE
5' LANE
3' BUFFER

TYPICAL SHARED USE PATH CONFIGURATION DETAIL
STA 289+45 TO 292+18
NOT TO SCALE

4.5' BUFFER
5' LANE
5' LANE
3' BUFFER

TYPICAL SHARED USE PATH CONFIGURATION DETAIL
STA 292+62 TO 301+71
NOT TO SCALE

INSET A

ROUTE 128
(SOUTHBOUND)

0 40 100 160
SCALE: 1" = 40'

CONTINUED ABOVE

(293') | 297 | DBYL (455') | 298 | 299 | 300 | 301 | SYL (100')

ESSEX CENTER DR | SWL (915') | SWL (376')

BYL (895')

RET MALL GUIDE SIGN
RET D3-1
RET D9-2

MAP ID 051-008
210 ANDOVER ST (MAIN PARCEL)

DOC. 292823
CERT. 63955
MAP ID 051-007
210 ANDOVER ST JC PENNEY

RET R1-1

ECG ROUTE & ECG R ARROW*

SEE "SLOW DOWN" DETAIL SHEET 48

W1-1R SP-2

R&R R1-1 AND D9-2 SIGNS
R&R GUIDE SIGN

W1-1L

ROUTE 128 (SOUTHBOUND)
R&R GUIDE SIGN AND WATCH SIGN

STEEL BOLLARDS SPACED 5.0' ON CENTER (TYP.)

ROUTE 128 (NORTHBOUND)
R&R R1-1

RELOCATE EXISTING MALL SIGN AND MASONRY (BO - CITY OF PEABODY) MAINTAIN 10' CLEARANCE TO BRIDGE ABUTMENT

D1-1c

BYL (1163')

SYL (100')

SYL (162')

302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310

NORTH SHORE ROAD

SHORE DRIVE

R9-6

R&R R2-1 AND "NO LITTERING" SIGNS

2' BUFFER
5' LANE
5' LANE
2' BUFFER

TYPICAL SHARED USE PATH CONFIGURATION DETAIL
STA 304+63 TO 359+43.22
NOT TO SCALE

SEE "SLOW DOWN" DETAIL SHEET 48

W1-1L SP-2

ECG ROUTE & ECG R ARROW*

R1-1

SEE MEDIAN STRIPING DETAIL SHEET 48

BRIDGE ABUTMENT
1.3' BUFFER
5' LANE
5' LANE
2' BUFFER
CURB

TYPICAL SHARED USE PATH CONFIGURATION DETAIL
ALONG UNDERPASS
STA 302+66 TO 302+75
NOT TO SCALE

(REM). LEFT ARROW

R&S W11-2
R&S "STOP FOR PEDESTRIANS" SIGN
**R&R ECG ROUTE & ECG R ARROW TO UNDER M6-1

RET GUIDE SIGNS

R&S W11-2

W1-1R ECG ROUTE & ECG L ARROW*

R&S D9-2
R&S M6-1

D9-2 **M6-1

R1-1

CONTINUED ON SHEET NO. 26

0 40 100 160
SCALE: 1" = 40'

BEGIN PROJECT
STA 289+45.00
N 3020822.1914
E 805032.4312

D11-1bP
D1-1a
ECG ROUTE & ECG S ARROW*

D11-1bP
D1-1b
R&R ECG ROUTE & R&R ECG S ARROW FROM STA 289+94

R&S POST

PROP SWALE

R&S POST

289 | 289+50 | 290 | 291

SYL (230')

R&R PET WASTE SIGN

R9-6

R9-6

R&S POST

R&R ECG ROUTE R&R ECG ARROW TO STA 298+55

INSET A

0 20 50 100
SCALE: 1" = 20'

NOTES:

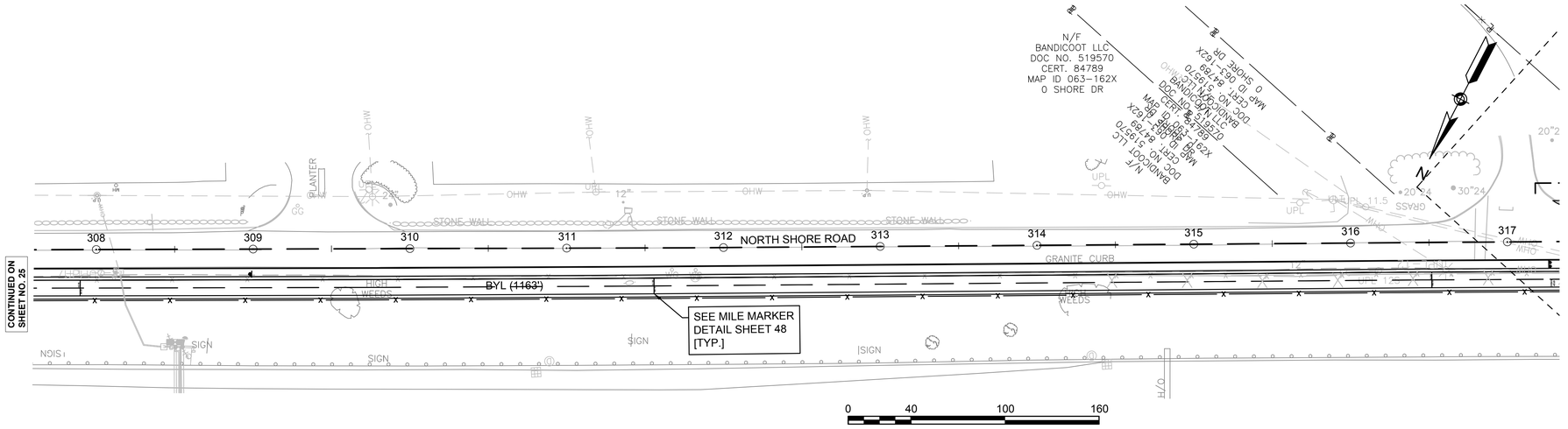
1. THE EXACT LOCATION AND ELEVATION OF THE EXISTING INTELLIGENT TRANSPORTATION SYSTEM (ITS) MUST BE FIELD VERIFIED VIA TEST PIT. THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH ANY OF THE PROPOSED WORK THAT MAY BE IN CONFLICT WITH THE EXISTING ITS.
2. ALL EXISTING SIGNS SHALL BE RETAINED UNLESS OTHERWISE NOTED IN PLANS
3. MBTA BUS ROUTE 435 AND 436 WILL BE AFFECTED DURING FULL-DEPTH OPERATIONS. WORK ON ESSEX CENTER DRIVE AND NORTHSHORE ROAD SHALL BE COORDINATED WITH MILES TAYLOR (MTAYLOR@MBTA.COM) OF BUS OPERATIONS.
4. *SIGNS TO BE ORDERED FROM EAST COAST GREENWAY ALLIANCE SEE SPECIAL PROVISIONS FOR COPY OF ORDER FORM.

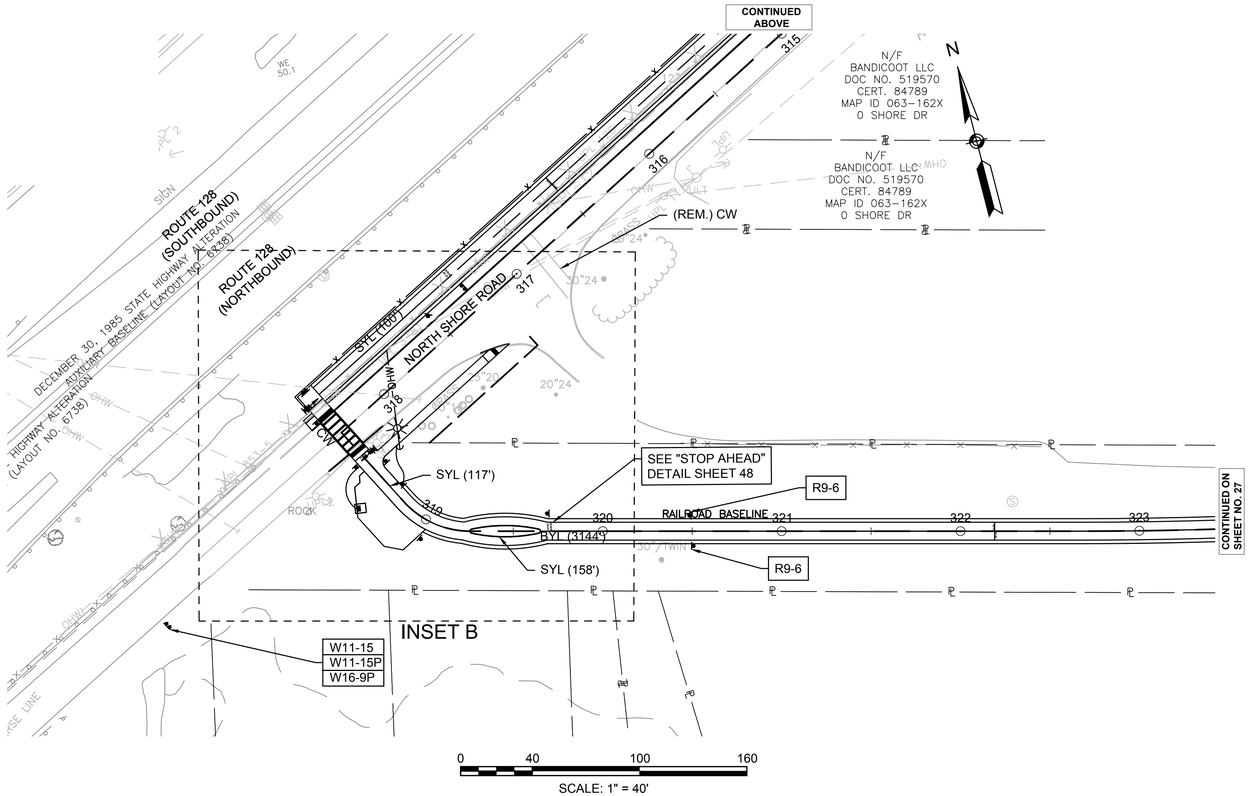
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

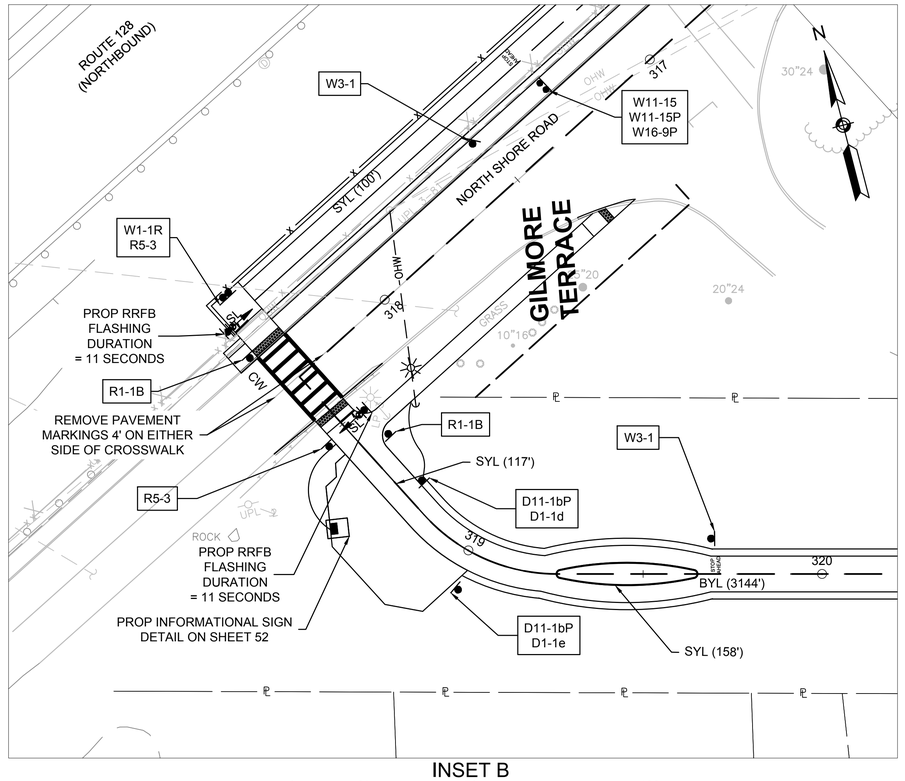
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	26	145
PROJECT FILE NO.	609211		

PAVEMENT MARKING & SIGNING PLAN - 2

SHT06_HD(SIGNING & STRIPING PLANS).DWG Plotted on 16-Jul-2025 4:50 PM





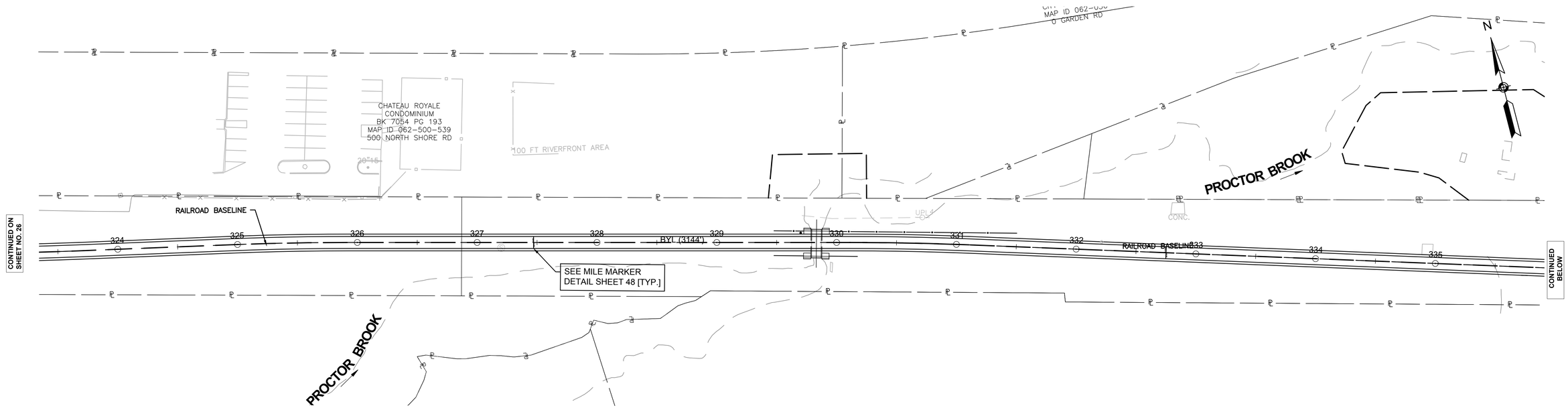


NOTE:
1. THE EXACT LOCATION AND ELEVATION OF THE EXISTING INTELLIGENT TRANSPORTATION SYSTEM (ITS) MUST BE FIELD VERIFIED VIA TEST PIT. THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH ANY OF THE PROPOSED WORK THAT MAY BE IN CONFLICT WITH THE EXISTING ITS.
2. ALL EXISTING SIGNS SHALL BE RETAINED UNLESS OTHERWISE NOTED IN PLANS.

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	27	145
	PROJECT FILE NO. 609211		

PAVEMENT MARKING & SIGNING PLAN - 3



NOTE:
ALL EXISTING SIGNS SHALL BE RETAINED UNLESS OTHERWISE NOTED IN PLANS

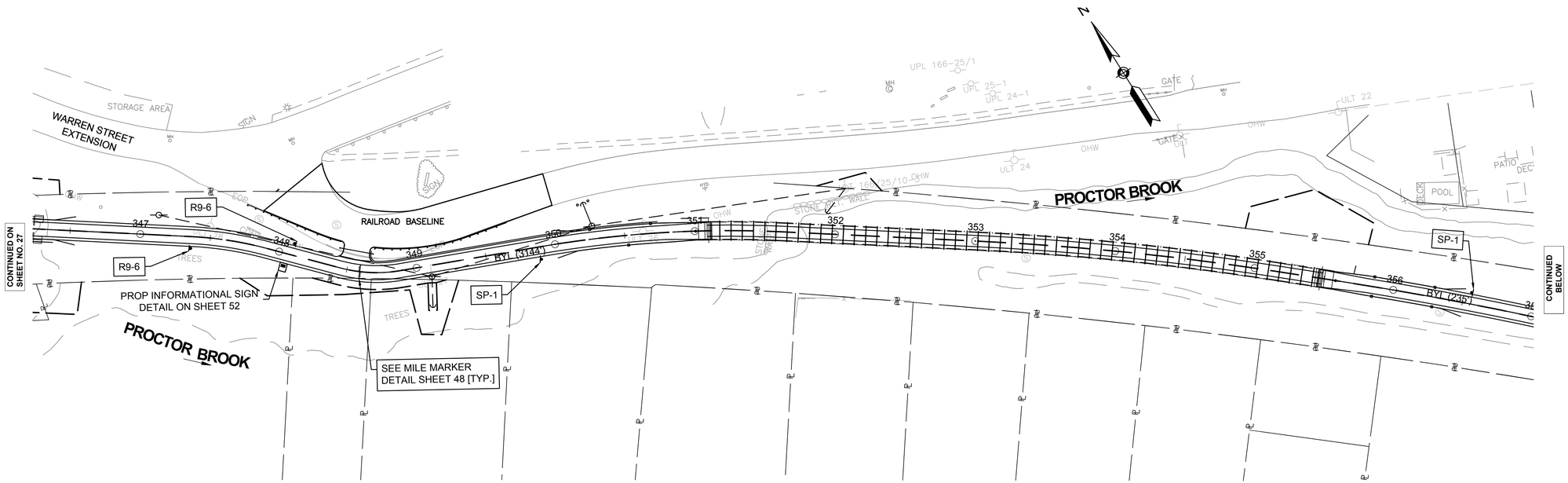
SHT06_HD\SIGNING & STRIPING PLANS\.DWG Plotted on 16-Jul-2025 4:50 PM

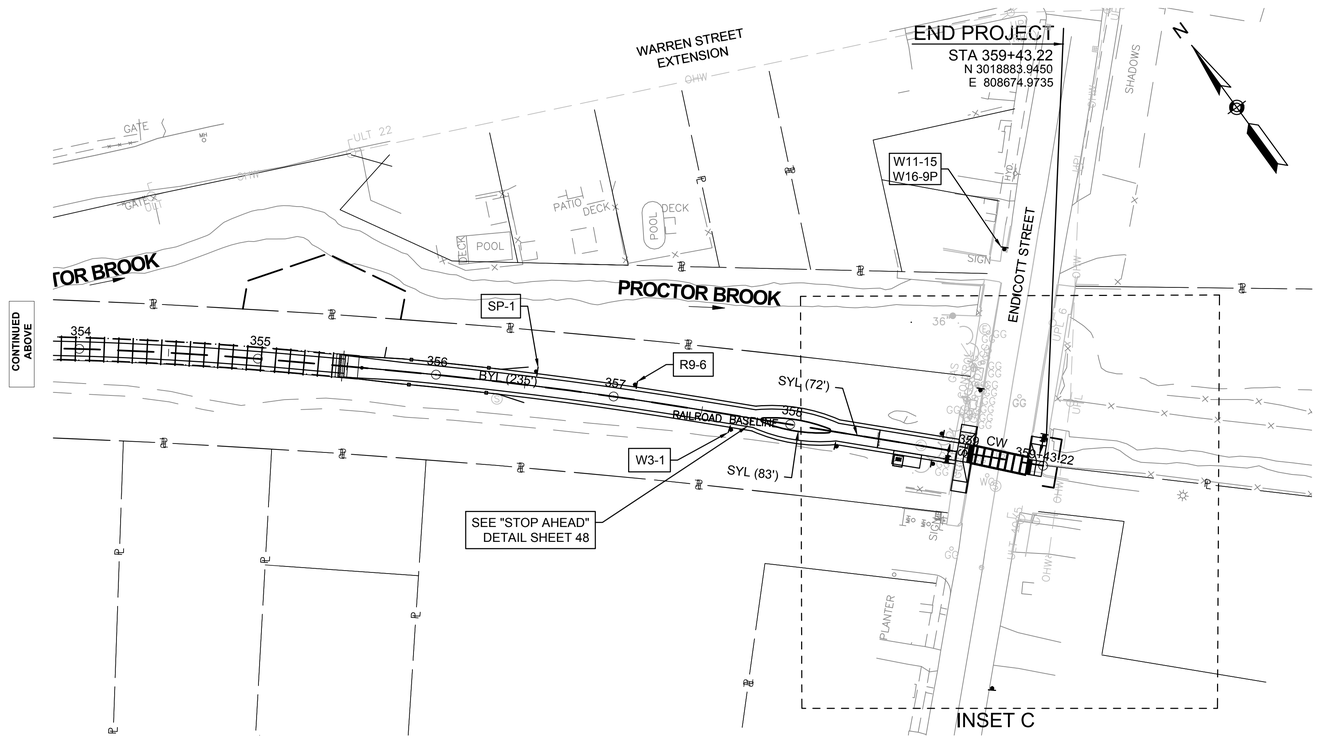
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

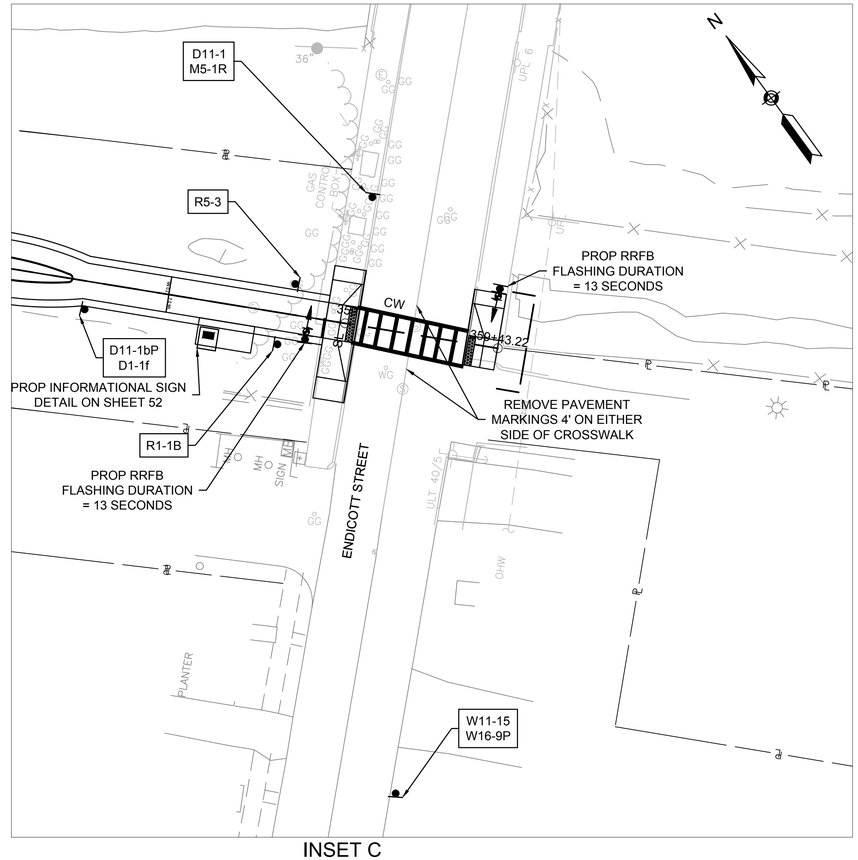
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	28	145
PROJECT FILE NO.	609211		

PAVEMENT MARKING & SIGNING PLAN - 4

SHT06_HD(SIGNING & STRIPING PLANS).DWG Plotted on 16-Jul-2025 4:50 PM







NOTE:
ALL EXISTING SIGNS SHALL BE RETAINED UNLESS OTHERWISE NOTED IN PLANS

NOTES:

1. SIGN SUPPORTS MUST CONFORM TO THE CRITERIA SET FORTH IN THE NCHRP 350 REPORT AND/OR MASH.
2. SEE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 2009 EDITION AND ALL REVISIONS, THE 2022 MASSACHUSETTS AMENDMENTS TO THE 2009 MUTCD, THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SIGN BOOK, AND THE STANDARD MUNICIPAL TRAFFIC CODE FOR LATEST SPECIFICATION ON TEXT DIMENSIONS AND COLOR. ALSO REFER TO THE MASSDOT 2024 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	29	145
PROJECT FILE NO.	609211		

TRAFFIC SIGN SUMMARY - 1

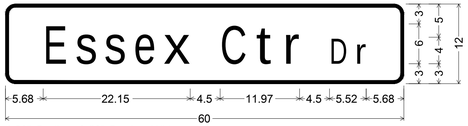
TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF REQUIRED SIGNS	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	TOTAL AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MRK		BACKGROUND	LEGEND	BORDER			
MA-D3-1_1	60	12	Essex Ctr Dr	SEE DETAIL ON SHEET 30			2 BACK TO BACK	RETROREFLECTIVE GREEN	RETROREFLECTIVE WHITE	RETROREFLECTIVE WHITE	P-5 2		
D11-1	24	18	BIKE ROUTE	SEE MUTCD STD. DETAIL			1	RETROREFLECTIVE GREEN	RETROREFLECTIVE WHITE	RETROREFLECTIVE WHITE	P-5 1	3.00	3.00
D11-1bP	18	6	BIKE ROUTE				5	RETROREFLECTIVE GREEN	RETROREFLECTIVE WHITE	RETROREFLECTIVE WHITE	P-5 5	0.75	3.75
M5-1R	21	15					1	RETROREFLECTIVE GREEN	RETROREFLECTIVE WHITE	RETROREFLECTIVE WHITE	P-5 0 1 MOUNTED WITH D11-1	2.19	2.19
M6-1R	21	15					1	BLUE	WHITE	WHITE	P-5 0 1 MOUNTED WITH D9-2	2.19	2.19
R1-1	30	30	STOP				5	RETROREFLECTIVE RED	RETROREFLECTIVE WHITE	RETROREFLECTIVE WHITE	P-5 5	6.25	31.25
R1-1B	18	18	STOP				3	RETROREFLECTIVE RED	RETROREFLECTIVE WHITE	RETROREFLECTIVE WHITE	P-5 3	2.25	6.75
R5-3	24	24	NO MOTOR VEHICLES				3	RETROREFLECTIVE WHITE	BLACK	BLACK	P-5 3	4.00	12.00
R9-6	12	18	YIELD TO PEDS				7	RETROREFLECTIVE WHITE	BLACK	BLACK	P-5 7	1.50	10.50
R10-25	9	12	PUSH BUTTON FOR GREEN LIGHT				4	RETROREFLECTIVE WHITE	BLACK	BLACK	CONTINGENT TO RRFB ITEMS		
W3-1	18	18					3	FLUORESCENT YELLOW-GREEN	BLACK, RETROREFLECTIVE RED	BLACK	P-5 3	2.25	6.75
W1-1L	18	18					2	RETROREFLECTIVE YELLOW	BLACK	BLACK	P-5 2	2.25	4.50
W1-1R	18	18					3	RETROREFLECTIVE YELLOW	BLACK	BLACK	P-5 3	2.25	6.75
W11-15	30	30					4	FLUORESCENT YELLOW-GREEN	BLACK	BLACK	P-5 4	6.25	25.00
W11-15	30	30					8	FLUORESCENT YELLOW-GREEN	BLACK	BLACK	CONTINGENT TO RRFB ITEMS		
W11-15P	24	18	TRAIL X-ING				2	FLUORESCENT YELLOW-GREEN	BLACK	BLACK	P-5 0 2 MOUNTED WITH W11-15	3.00	6.00
W16-7PL	24	12					4	RETROREFLECTIVE YELLOW-GREEN	BLACK	BLACK	CONTINGENT TO RRFB ITEMS		
W16-7PR	24	12					4	RETROREFLECTIVE YELLOW-GREEN	BLACK	BLACK	CONTINGENT TO RRFB ITEMS		

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF REQUIRED SIGNS	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	TOTAL AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MRK		BACKGROUND	LEGEND	BORDER			
W16-9P	24	12	AHEAD	SEE DETAIL ON SHEET 30			4	FLUORESCENT YELLOW-GREEN	BLACK	BLACK	P-5 0 4 MOUNTED WITH W11-15	2.00	8.00
D1-1a	36	6	Danvers 3.0				1	GREEN	WHITE	WHITE	P-5 0 1 MOUNTED WITH D11-1bP	1.50	1.50
D1-1b	36	14	Northshore Mall 0.2 Salem 2.1				1	GREEN	WHITE	WHITE	P-5 0 1 MOUNTED WITH D11-1bP	3.50	3.50
D1-1c	36	8	Northshore Mall 0.1				1	GREEN	WHITE	WHITE	P-5 1	2.00	2.00
D1-1d	36	16	Northshore Mall 0.3 East Coast Greenway 0.3	SEE DETAIL ON SHEET 31			1	GREEN	WHITE	WHITE	P-5 0 1 MOUNTED WITH D11-1bP	4.00	4.00
D1-1e	36	8	Downtown Peabody 1.4				1	GREEN	WHITE	WHITE	P-5 0 1 MOUNTED WITH D11-1bP	2.00	2.00
D1-1f	36	16	Downtown Peabody 1.4 East Coast Greenway 0.4				1	GREEN	WHITE	WHITE	P-5 0 1 MOUNTED WITH D11-1bP	4.00	4.00
D9-2	24	24	H	SEE MUTCD STD. DETAIL			1	BLUE	WHITE	WHITE	P-5 1	4.00	4.00
SP-1	24	15	Proctor Brook	SEE DETAIL ON SHEET 30			2	BROWN	WHITE	WHITE	P-5 2	2.50	5.00
SP-2	18	18	SLOW				2	RETROREFLECTIVE YELLOW	BLACK	BLACK	P-5 0 2 MOUNTED WITH W1-1(R/L)	2.25	4.50
TOTAL													159.13

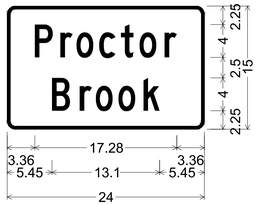
SHT013_HD(TRAFFIC SIGN SUMMARY).DWG Plotted on 16-Jul-2025 4:50 PM



1.50" Radius, 0.50" Border, White on Green;
[Essex] D; [Ctr] D; [Dr] D;
Table of distances between letter and object lefts.

5.68	E 4.84	s 4.35	s 4.45	e 4.49	x 8.52	C 5.21	t 4.21	r 7.05	D 3.82	r 1.70	5.68

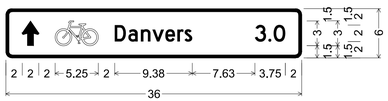
MA-D3_1
NOT TO SCALE



1.00" Radius, 0.38" Border, White on Brown;
"Proctor", C; "Brook", C;
Table of distances between letter and object lefts

3.36	P 3.11	r 1.97	o 2.75	c 2.65	t 2.27	o 3.04	r 1.49	3.36	
5.45	B 3.37	r 1.97	o 2.75	o 3.05	k 1.96	5.45			

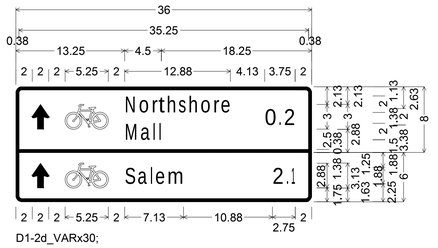
SP-1
NOT TO SCALE



D1-1a
0.75" Radius, 0.38" Border, White on Green;
Standard Arrow Custom 3.00" X 2.00" 90°;
Bicycle Symbol White; "Danvers", D 2K;
"3.0", D 2K;
Table of distances between letter and object lefts

2.00	4.00	7.25	D 1.63	a 1.50	n 1.50	v 1.50	e 1.50	r 0.88	s	
	8.50	3 1.63	. 0.75	0 1.38	2.00					

D1-1a
NOT TO SCALE



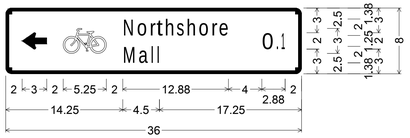
D1-2d_VARx30;

0.75" Radius, 0.38" Border, White on Green;
Standard Arrow Custom 3.00" X 2.00" 90°;
Bicycle Symbol White; "Northshore", D 2K;
"Mall", D 2K; "0.2", D 2K;

0.75" Radius, 0.38" Border, White on Green;
Standard Arrow Custom 3.00" X 2.00" 90°;
Bicycle Symbol White; "Salem", D 2K;
"2.1", D 2K;
Table of distances between letter and object lefts

2.00	4.00													
	7.25	N 1.75	o 1.50	r 0.88	t 1.00	h 1.38	s 1.25	h 1.50	o 1.50	r 0.88	e			
	5.38	0 1.75	0.63	2 1.38	2.00									
13.25	M 1.88	a 1.50	l 0.75	l 0.38	18.25									
0.38	35.25	0.38												
2.00	4.00	7.25	S 1.50	a 1.63	l 0.63	e 1.38	m							
	12.88	2 1.63	. 0.63	: 0.50	2.00									

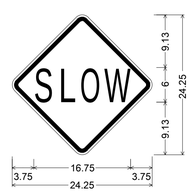
D1-1b
NOT TO SCALE



D1-1c
0.75" Radius, 0.38" Border, White on Green;
Standard Arrow Custom 3.00" X 2.00" 180°;
Bicycle Symbol White; "Northshore", D 2K;
"Mall", D 2K; "0.1", D 2K;
Table of distances between letter and object lefts

2.00	5.00													
	7.25	N 1.75	o 1.50	r 0.88	t 1.00	h 1.38	s 1.25	h 1.50	o 1.50	r 0.88	e			
	5.25	0 1.75	. 0.63	: 0.50	2.00									
14.25	M 1.88	a 1.50	l 0.75	l 0.38	17.25									

D1-1c
NOT TO SCALE



SP-13_18x18;
18.00" across sides 1.50" Radius, 0.63" Border, 0.38" Indent, Black on Yellow;
"SLOW", C 2K specified length;
"", C 2K specified length;
Table of distances between letter and object lefts

3.75	S 4.25	L 3.75	O 4.13	W 4.63	3.75

SP-2
NOT TO SCALE

NOTES:

1. SIGN SUPPORTS MUST CONFORM TO THE CRITERIA SET FORTH IN THE NCHRP 350 REPORT AND/OR MASH.
2. SEE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 2009 EDITION AND ALL REVISIONS, THE 2022 MASSACHUSETTS AMENDMENTS TO THE 2009 MUTCD, THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SIGN BOOK, AND THE STANDARD MUNICIPAL TRAFFIC CODE FOR LATEST SPECIFICATION ON TEXT DIMENSIONS AND COLOR. ALSO REFER TO THE MASSDOT 2024 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.

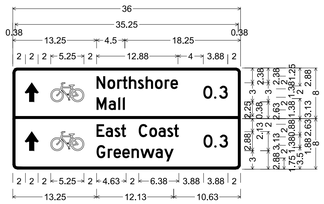
SHT013_HD(TRAFFIC SIGN SUMMARY).DWG Plotted on 16-Jul-2025 4:50 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	31	145
PROJECT FILE NO.	609211		

TRAFFIC SIGN SUMMARY - 3

SHT013_HD(TRAFFIC SIGN SUMMARY).DWG Plotted on 16-Jul-2025 4:50 PM



D1-2d_VARx30;

0.75" Radius, 0.38" Border, White on Green;
Standard Arrow Custom 3.00" X 2.00" 90°;
Bicycle Symbol White; "Northshore", D 2K;
"Mall", D 2K; "0.3", D 2K;

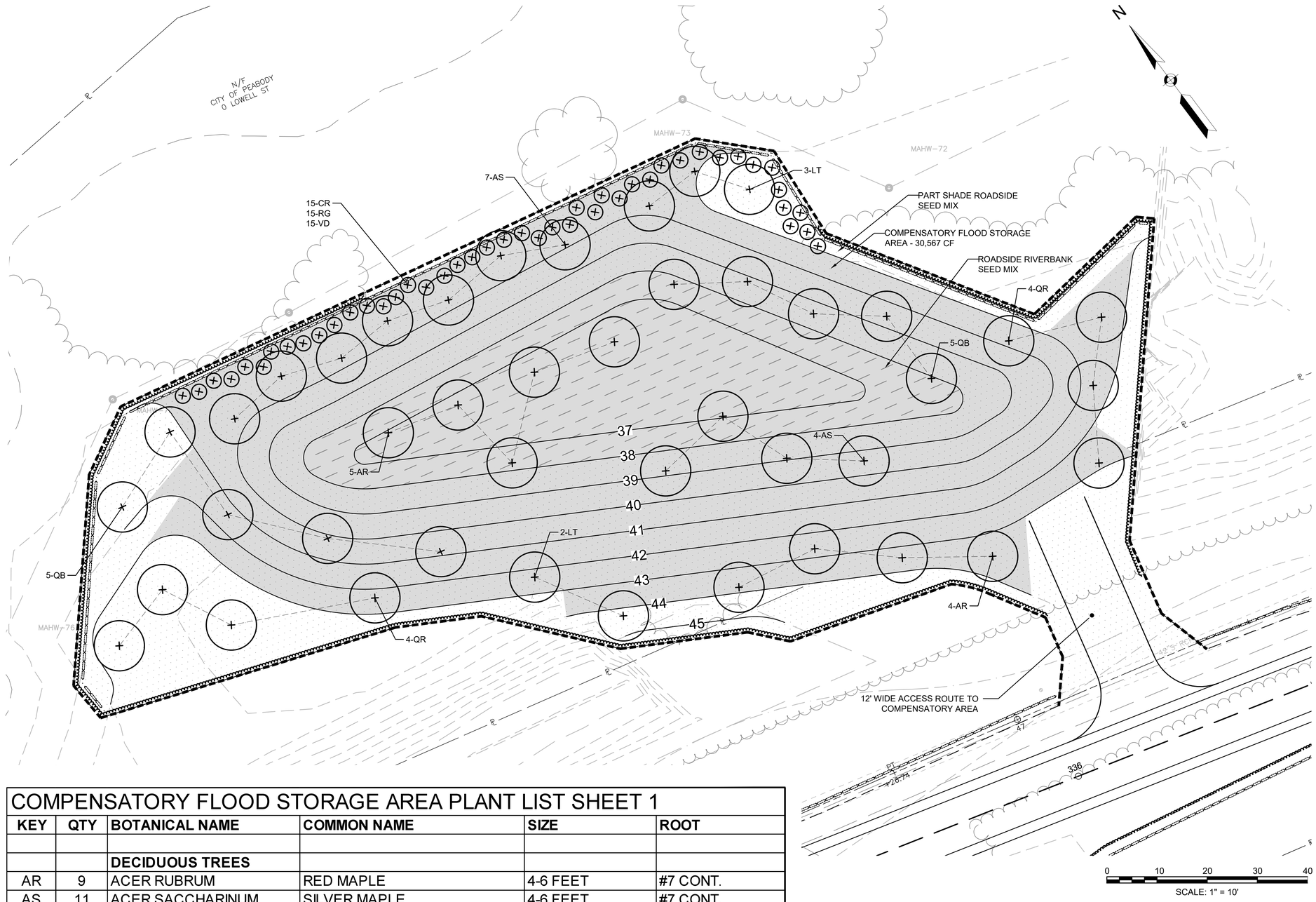
0.75" Radius, 0.38" Border, White on Green;
Standard Arrow Custom 3.00" X 2.00" 90°;
Bicycle Symbol White; "East Coast", D 2K;
"Greenway", D 2K; "0.3", D 2K;
Table of distances between letter and object lefts

| | | |

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	32	145
	PROJECT FILE NO. 609211		

COMPENSATORY FLOOD STORAGE 1 OF 3



LEGEND

- LIMIT OF WORK
- SEDIMENT CONTROL BARRIER
- 100 PROPOSED CONTOUR
- 100 EXISTING CONTOUR
- LIMIT OF CLEARING
- COMPOST BLANKET AND PART SHADE ROADSIDE SEED MIX
- COMPOST BLANKET AND ROADSIDE RIVERBANK SEED MIX
- COMPENSATORY FLOOD STORAGE

299 FT LENGTH OF SEDIMENT CONTROL BARRIER
2,941 SQ FT AREA OF ROADSIDE RIVERBANK SEED MIX
13,118 SQ FT AREA OF PART SHADE ROADSIDE SEED MIX

NOTES:

1. PRIOR TO ANY CLEARING AND GRUBBING, THE CONTRACTOR SHALL STAKE THE LIMITS OF THE FLOOD COMPENSATION AREA AS SHOWN ON THIS PLAN.
2. THE CONTRACTOR SHALL ARRANGE WITH THE ENGINEER TO HAVE THE REPRESENTATIVE FROM MASSDOT LANDSCAPE DESIGN SECTION ON SITE DURING CONSTRUCTION.
3. THE REPRESENTATIVE FROM MASSDOT LANDSCAPE DESIGN SECTION FOR THIS PROJECT IS MAXWELL MCNULTY - MAXWELL.R.MCNULTY@DOT.STATE.MA.US

COMPENSATORY FLOOD STORAGE NET CUT 100 YEAR FLOOD ELEVATION = 44.0'		
ELEVATION	ELEVATION	INCREMENTAL NET CUT VOLUME
37-38	37	2245
	38	
38-39	38	3744
	39	
39-40	39	5435
	40	
40-41	40	7523
	41	
41-42	41	7308
	42	
42-43	42	3476
	43	
43-44	43	1112
	44	
TOTAL		30842

COMPENSATORY FLOOD STORAGE AREA PLANT LIST SHEET 1					
KEY	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**ROOT**
		DECIDUOUS TREES			
AR	9	ACER RUBRUM	RED MAPLE	4-6 FEET	#7 CONT.
AS	11	ACER SACCHARINUM	SILVER MAPLE	4-6 FEET	#7 CONT.
LT	5	LIRIODENDRON TULIPIFERA	TULIP TREE	4-6 FEET	#7 CONT.
QB	10	QUERCUS BICOLOR	SWAMP WHITE OAK	4-6 FEET	#7 CONT.
QR	8	QUERCUS RUBRA	NORTHERN RED OAK	4-6 FEET	#7 CONT.
		DECIDUOUS SHRUBS			
CR	15	CORNUS RACEMOSA	GRAY TWIG DOGWOOD	2-3 FEET	#2 CONT.
RG	15	RHUS GLABRA	SMOOTH SUMAC	2-3 FEET	#2 CONT.
VD	15	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	2-3 FEET	#2 CONT.

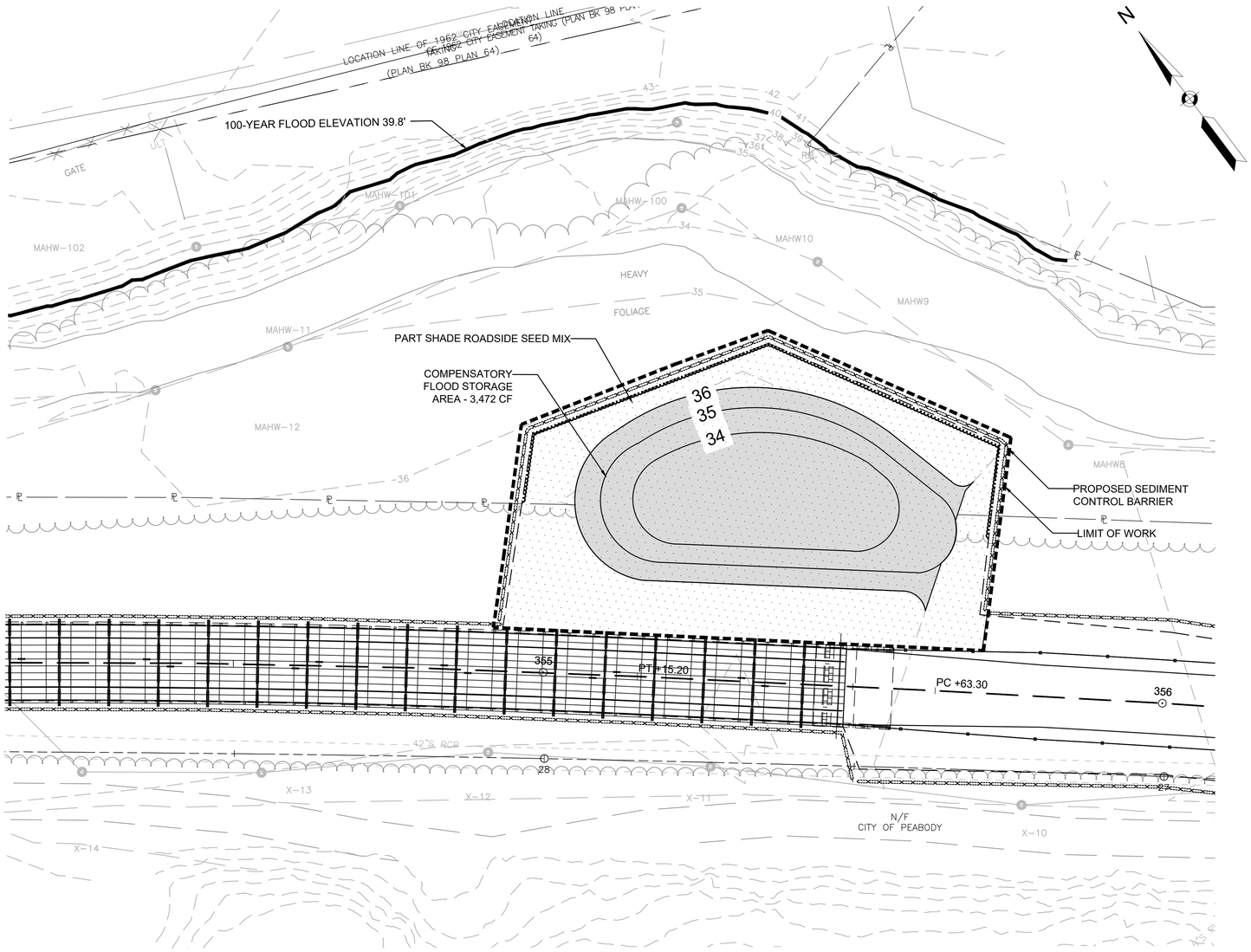
NOTE:
PLANT SHURBS IN GROUPS OF THREE OF THE SAME SPECIES +_ X FEET ON CENTER ALONG EDGE OF COMPENSATION AREA ADJACENT TO THE BROOK

SHT0XX_EV(COMPENSATORY FLOOD STORAGE).DWG Plotted on 16-Jul-2025 4:57 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	33	145
	PROJECT FILE NO. 609211		

COMPENSATORY FLOOD STORAGE 2 OF 3



0 10 20 30 40

SCALE: 1" = 10'

LEGEND

- LIMIT OF WORK
- SEDIMENT CONTROL BARRIER
- 100 PROPOSED CONTOUR
- 100 EXISTING CONTOUR
- LIMIT OF CLEARING
- COMPOST BLANKET AND PART SHADE ROADSIDE SEED MIX
- COMPENSATORY FLOOD STORAGE

144 FT LENGTH OF SEDIMENT CONTROL BARRIER

3,244 SQ FT AREA OF PART SHADE ROADSIDE SEED MIX

NOTES:

1. PRIOR TO ANY CLEARING AND GRUBBING, THE CONTRACTOR SHALL STAKE THE LIMITS OF THE FLOOD COMPENSATION AREA AS SHOWN ON THIS PLAN.
2. THE CONTRACTOR SHALL ARRANGE WITH THE ENGINEER TO HAVE THE REPRESENTATIVE FROM MASSDOT LANDSCAPE DESIGN SECTION ON SITE DURING CONSTRUCTION.
3. THE REPRESENTATIVE FROM MASSDOT LANDSCAPE DESIGN SECTION FOR THIS PROJECT IS MAXWELL MCNULTY - MAXWELL.R.MCNULTY@DOT.STATE.MA.US

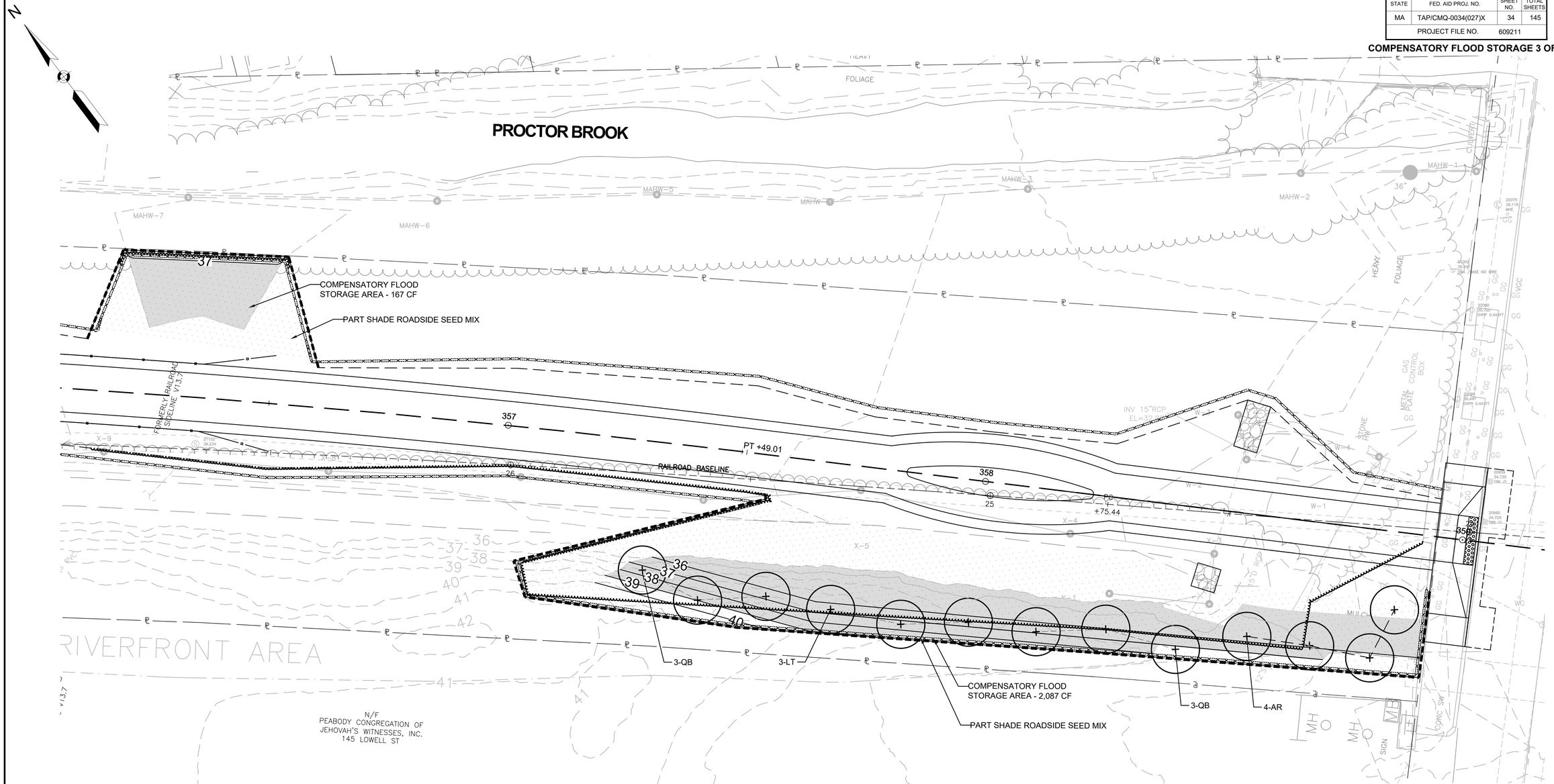
COMPENSATORY FLOOD STORAGE NET CUT 100 YEAR FLOOD ELEVATION =39.8'		
ELEVATION	ELEVATION	INCREMENTAL NET CUT VOLUME
34-35	34	921
	35	
35-36	35	1,401
	36	
36-37	36	1,151
	37	
Total		3,472

SHT0XX_EV(COMPENSATORY FLOOD STORAGE).DWG Plotted on 16-Jul-2025 4:57 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	34	145
PROJECT FILE NO.	609211		

COMPENSATORY FLOOD STORAGE 3 OF 3



0 10 20 30 40

SCALE: 1" = 10'

COMPENSATORY FLOOD STORAGE NET CUT 100 YEAR FLOOD ELEVATION = 39.8'		
ELEVATION	ELEVATION	INCREMENTAL NET CUT VOLUME
36-37	36	167
	37	
TOTAL		167

COMPENSATORY FLOOD STORAGE NET CUT 100 YEAR FLOOD ELEVATION = 39.8'		
ELEVATION	ELEVATION	INCREMENTAL NET CUT VOLUME
36-37	36	886
	37	
37-38	37	668
	38	
38-39	38	416
	39	
TOTAL		1969

LEGEND

- LIMIT OF WORK
- SEDIMENT CONTROL BARRIER
- 100 PROPOSED CONTOUR
- 100 EXISTING CONTOUR
- LIMIT OF CLEARING
- COMPOST BLANKET AND PART SHADE ROADSIDE SEED MIX
- COMPENSATORY FLOOD STORAGE

339 FT LENGTH OF SEDIMENT CONTROL BARRIER
3,939 SQ FT AREA OF PART SHADE ROADSIDE SEED MIX

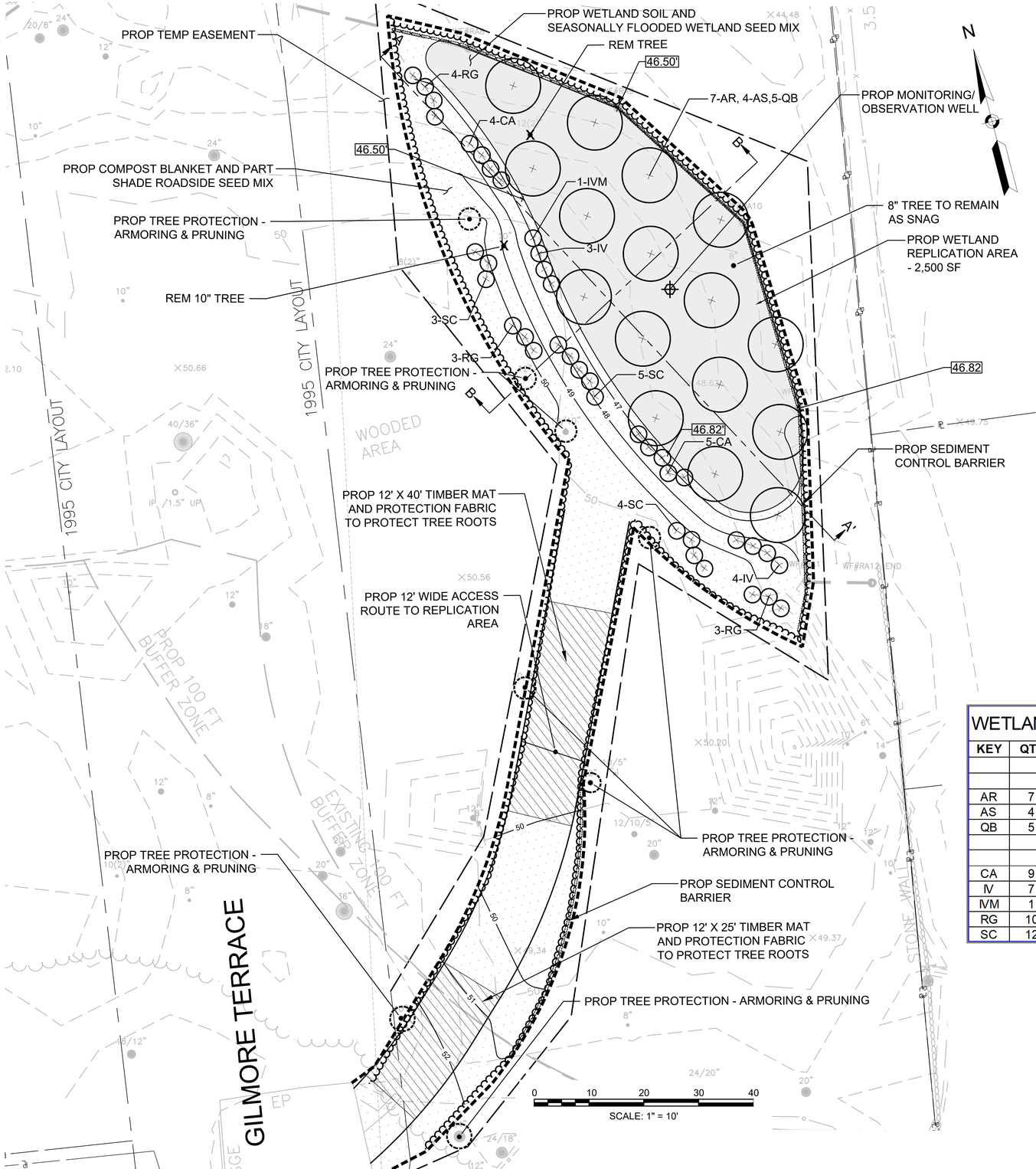
NOTES:

1. PRIOR TO ANY CLEARING AND GRUBBING, THE CONTRACTOR SHALL STAKE THE LIMITS OF THE FLOOD COMPENSATION AREA AS SHOWN ON THIS PLAN.
2. THE CONTRACTOR SHALL ARRANGE WITH THE ENGINEER TO HAVE THE REPRESENTATIVE FROM MASSDOT LANDSCAPE DESIGN SECTION ON SITE DURING CONSTRUCTION.
3. THE REPRESENTATIVE FROM MASSDOT LANDSCAPE DESIGN SECTION FOR THIS PROJECT IS MAXWELL MCNULTY - MAXWELL.R.MCNULTY@DOT.STATE.MA.US

COMPENSATORY FLOOD STORAGE AREA PLANT LIST SHEET 3

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
		DECIDUOUS TREES			
AR	4	ACER RUBRUM	RED MAPLE	4-6 FEET	#7 CONT.
LT	3	LIRIODENDRON TULIPIFERA	TULIP TREE	4-6 FEET	#7 CONT.
QB	6	QUERCUS BICOLOR	SWAMP WHITE OAK	4-6 FEET	#7 CONT.

SHT0XX_EW(COMPENSATORY FLOOD STORAGE).DWG Plotted on 16-Jul-2025 4:57 PM



NOTES:

1. IMPACTS TO EXISTING TREES AND SOILS SHALL BE MINIMIZED TO THE EXTENT POSSIBLE.
2. CONTACT THE REPRESENTATIVE FROM MASSDOT LANDSCAPE DESIGN SECTION PRIOR TO THE START OF CONSTRUCTION. THE REPRESENTATIVE FOR THIS PROJECT IS MAXWELL R. MCNULTY MAXWELL.R.MCNULTY@DOT.STATE.MA.US.
3. FINAL GRADES TO BE TO MATCH ADJACENT WETLAND. MINOR ADJUSTMENTS IN FINAL GRADES SHALL BE MADE IN THE FIELD BY THE WETLAND SPECIALIST.
4. REPLICATION AREA SHALL BE EXCAVATED BELOW PROPOSED GRADES TO ALLOW FOR THE PLACEMENT OF WETLAND SOILS. THE DEPTH OF WETLAND SOILS SHALL BE 18" MAXIMUM AND SHALL MATCH THE DEPTH OF WETLAND SOIL IN THE ADJACENT WETLAND. DEPTH OF WETLAND SOIL SHALL BE DETERMINED BY THE WETLAND SPECIALIST. THE SALVAGED TOPSOIL MATERIAL AND B-HORIZON SUBSOIL MATERIAL EXCAVATED FROM THE WETLAND IMPACT AREAS SHALL BE PLACED IN SEPARATE STOCKPILES TO BE REUSED IN THE PROPOSED REPLICATION AREA IF SUITABLE.
5. REPLICATION AREA GRADES SHALL MATCH THE ELEVATIONS OF THE ABUTTING WETLAND TO MAINTAIN A HYDROLOGIC CONNECTION. WETLAND SPECIALIST SHALL INSPECT THE SUB-GRADE OF THE REPLICATION AREA TO ENSURE THAT THE PROPER HYDROLOGY HAS BEEN ESTABLISHED. MINOR MODIFICATIONS TO THIS GRADING PLAN MAY BE MADE IN THE FIELD BY THE QUALIFIED WETLAND SPECIALIST IN RESPONSE TO SUBSURFACE HYDROLOGIC CONDITIONS.
6. TREES AND SHRUBS IN THE REPLICATION AREA AND ADJACENT UPLAND AREA SHALL BE FIELD LOCATED BY THE WETLAND SPECIALIST.

PLANTING & SEEDING NOTES:

1. SEED SHALL BE MANUALLY BROADCAST. LIMITS SHOWN ARE APPROXIMATE. ACTUAL LIMITS SHALL BE AS DIRECTED BY THE WETLAND SPECIALIST.

LEGEND

- LIMIT OF WORK
- SEDIMENT BARRIER
- 100 EXISTING CONTOUR
- 44 PROPOSED CONTOUR
- PROPERTY LINE (FROM MASSGIS)
- LIMIT OF CLEARING
- 124.694 PROPOSED SPOT GRADE
- MONITORING/OBSERVATION WELL
- COMPOST BLANKET AND PART SHADE ROADSIDE SEED MIX
- WETLAND SOIL AND SEASONALLY FLOODED WETLAND SEED MIX
- PROPOSED SHRUB
- PROPOSED TREE
- EXISTING TREE ARMORING
- X TREE REMOVAL
- TIMBER MAT AND PROTECTION FABRIC

284 FT LENGTH OF SEDIMENT CONTROL BARRIER

4,007 SQ FT OF PART SHADE ROADSIDE SEED MIX

2,500 SQ FT WETLAND SOIL AND SEASONALLY FLOODED WETLAND SEED MIX

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	35	145
PROJECT FILE NO.	609211		

WETLAND REPLICATION PLAN

WETLAND REPLICATION PLANT LIST

KEY	QTY	WETLAND STAUS	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
			DECIDUOUS TREES			
AR	7	FAC	ACER RUBRUM	RED MAPLE	4-6 FEET	#7 CONT.
AS	4	FACW	ACER SACCHARINUM	SILVER MAPLE	4-6 FEET	#7 CONT.
QB	5	FACW	QUERCUS BICOLOR	SWAMP WHITE OAK	4-6 FEET	#7 CONT.
			DECIDUOUS SHRUBS			
CA	9	FACW	CORNUS AMOMUM	SILKY DOGWOOD	2-3 FEET	#2 CONT.
IV	7	FACW	ILEX VERTICILATA	WINTERBERRY	2-3 FEET	#2 CONT.
IVM	1	FACW	ILEX VERTICILATA - MALE	MALE WINTERBERRY	2-3 FEET	#2 CONT.
RG	10	UPLAND	RHUS GLABRA	SMOOTH SUMAC	2-3 FEET	#2 CONT.
SC	12	FACW	SAMBUCUS CANADENSIS	COMMON ELDERBERRY	2-3 FEET	#2 CONT.

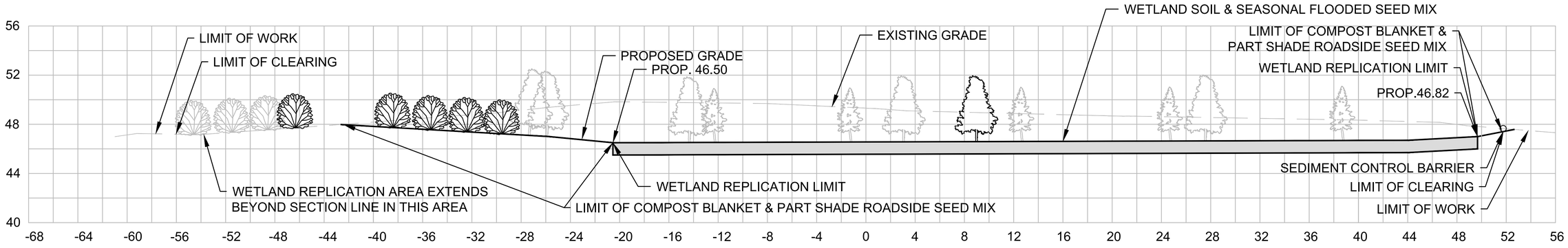
SHT0XX_EW(WETLAND REPLICATION PLAN).DWG Plotted on 16-Jul-2025 4:58 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

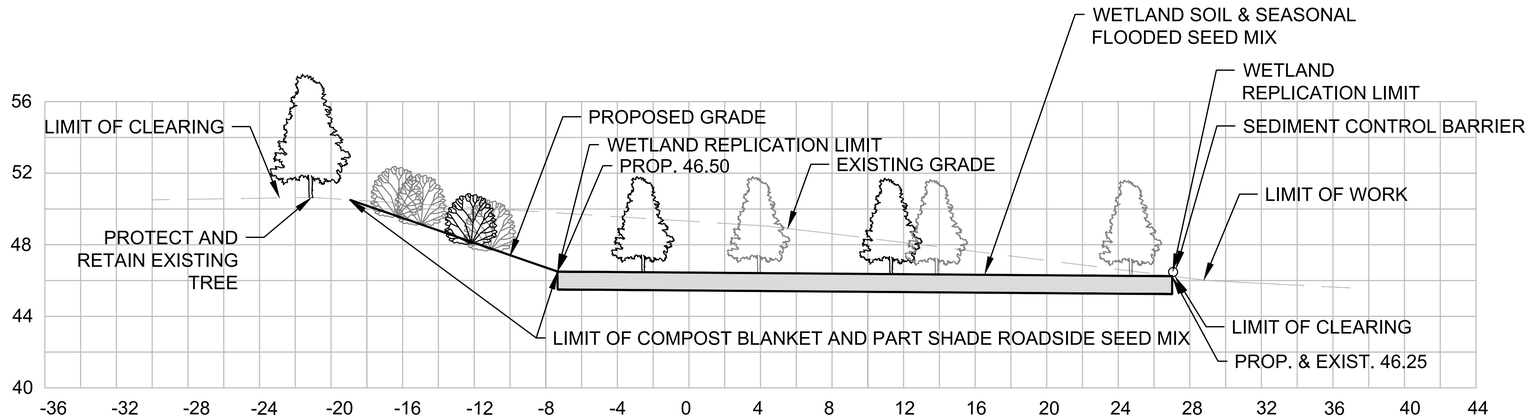
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	36	145
	PROJECT FILE NO. 609211		

WETLAND REPLICATION SECTIONS

SHT0XX_EV(WETLAND REPLICATION PLAN).DWG Plotted on 16-Jul-2025 4:58 PM



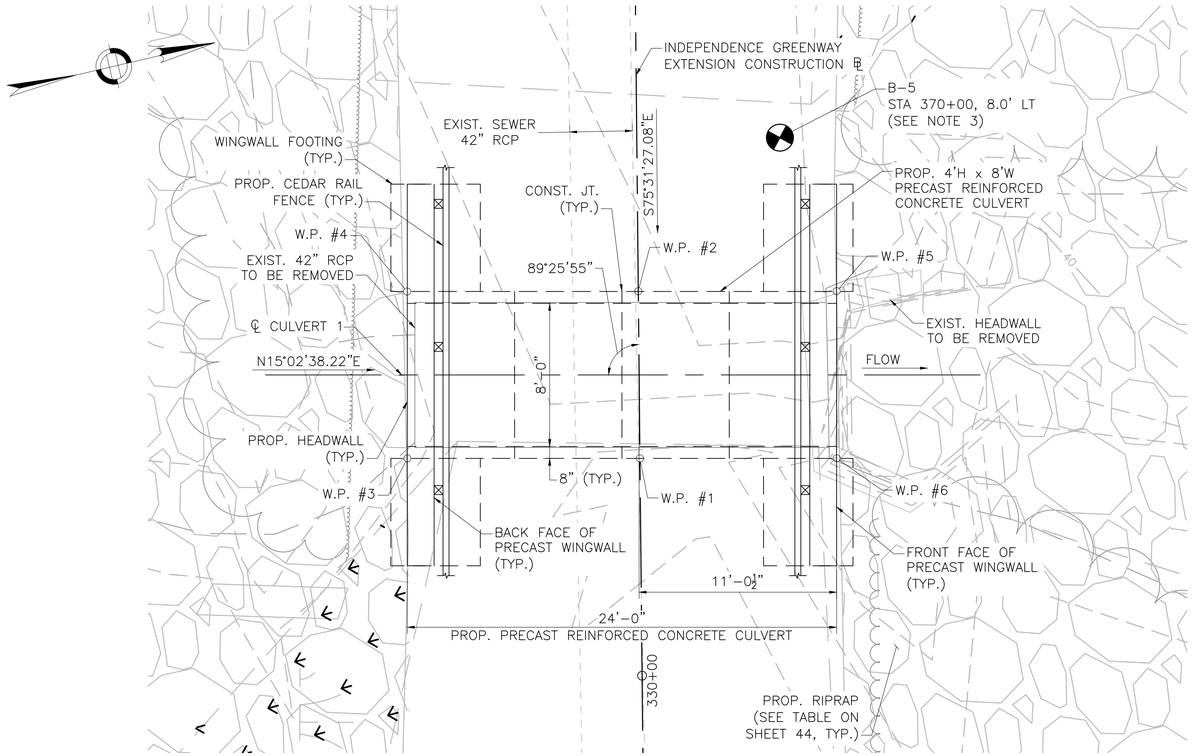
SECTION (A-A')
(HOR. SCALE 1" = 4' , VERT. SCALE 1" = 4')



SECTION (B-B')
(HOR. SCALE 1" = 4' , VERT. SCALE 1" = 4')

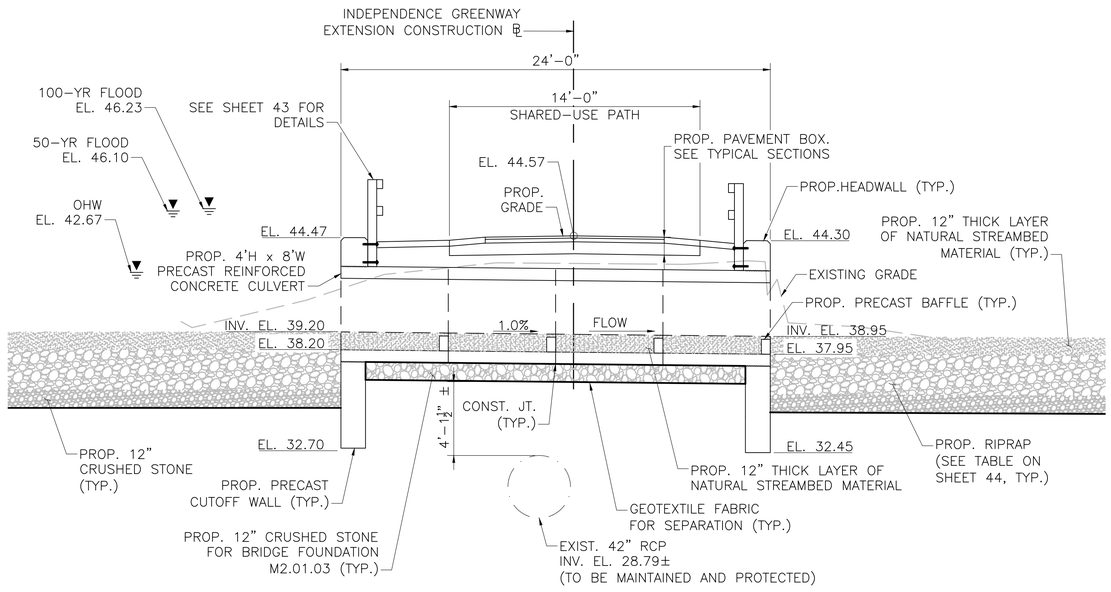
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	37	145
PROJECT FILE NO.	609211		

CULVERT 1 - PLAN AND LONGITUDINAL SECTION



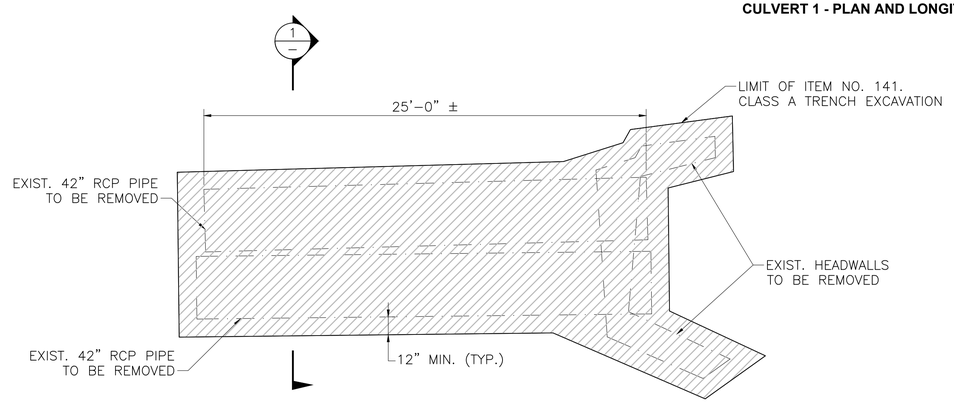
CULVERT 1 – PLAN

SCALE: ¼" = 1'–0"



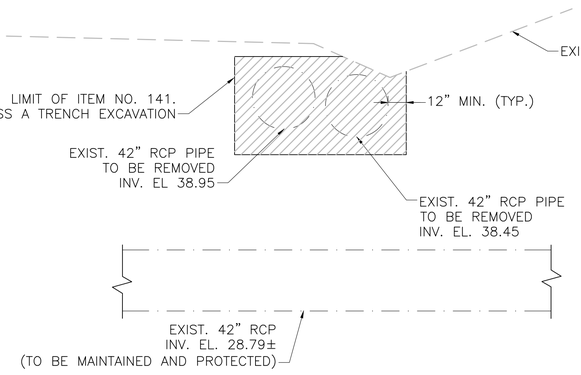
CULVERT 1 – LONGITUDINAL SECTION

SCALE: ¼" = 1'–0"



CULVERT 1 – DEMOLITION PLAN

SCALE: ¼" = 1'–0"



SECTION 1 / –

SCALE: ¼" = 1'–0"

CULVERT NO.1 WORKING POINTS:

W.P.	STATION	OFFSET	NORTHING	EASTING
1	329+87.85	0.00 LT	3020223.57	806099.03
2	329+78.52	0.00 LT	3020225.91	806089.99
3	329+87.72	45.41 RT	3020211.01	806095.66
4	329+78.39	45.37 RT	3020213.43	806086.64
5	329+78.63	44.89 LT	3020236.61	806092.87
6	329+87.96	44.87 LT	3020234.18	806101.88

NOTES:

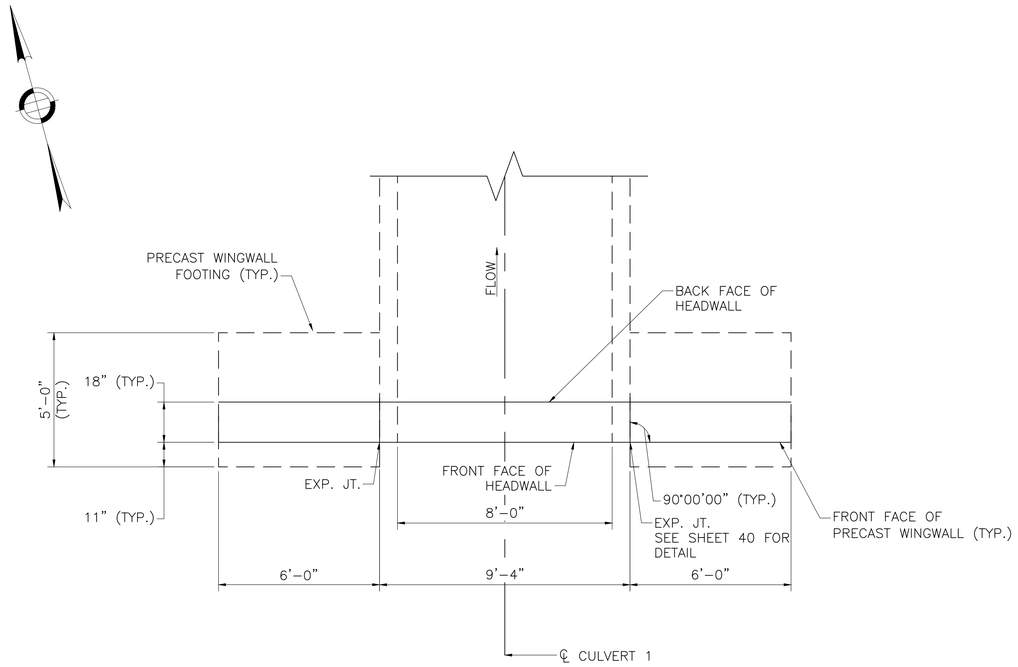
1. SEE SHEET 43 FOR CEDAR RAIL FENCE ATTACHMENT TO THE PRECAST CONCRETE HEADWALLS.
2. PRECAST BOX CULVERT CONSTRUCTION JOINT SPACING MAY VARY PER PRECASTER, UP TO 7'–0" MAXIMUM.
3. CONTRACTOR TO PERFORM DRIVE SAMPLE BORING (ITEM NO. 191.) FOR B–5 AS EARLY ACTION ITEM TO VERIFY SOIL CONDITIONS ASSUMED IN THE GEOTECHNICAL REPORT FOR CULVERT 1.
4. EXISTING 42" DIAMETER SEWER LINE TO BE MAINTAINED AND PROTECTED DURING CONSTRUCTION. PLEASE SEE SPECIAL PROVISION ITEM NO. 228. CLOSED CIRCUIT TV INSPECTION OF SEWER LINE FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

609211_BR01.DWG Plotted on 16-Jul-2025 4:59 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

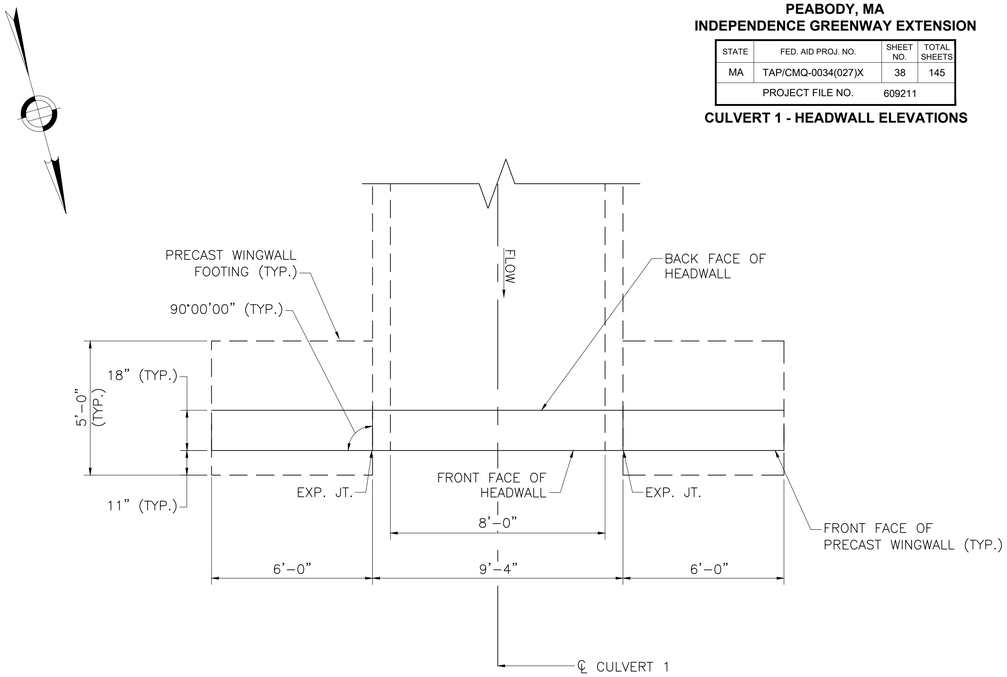
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	38	145
PROJECT FILE NO.	609211		

CULVERT 1 - HEADWALL ELEVATIONS



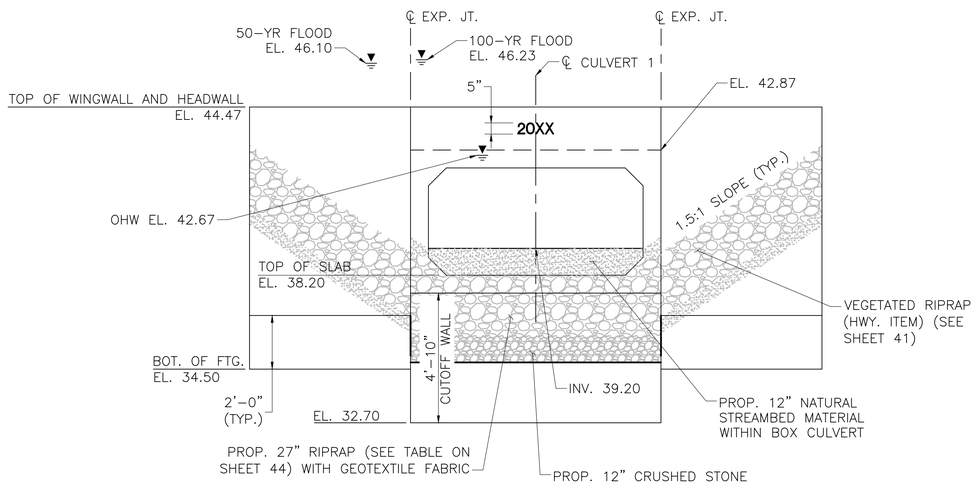
CULVERT 1 – UPSTREAM PLAN

SCALE: ⅜" = 1'-0"



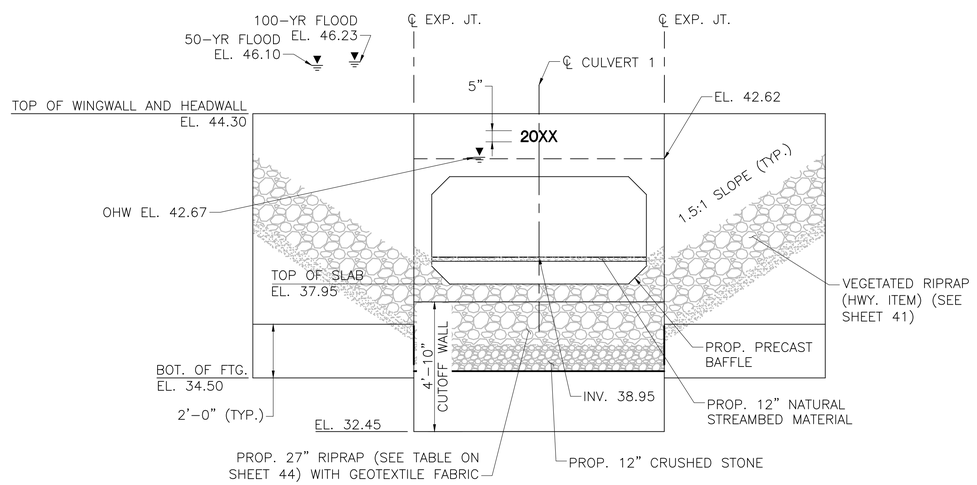
CULVERT 1 – DOWNSTREAM PLAN

SCALE: ⅜" = 1'-0"



CULVERT 1 – UPSTREAM ELEVATION

SCALE: ⅜" = 1'-0"



CULVERT 1 – DOWNSTREAM ELEVATION

SCALE: ⅜" = 1'-0"

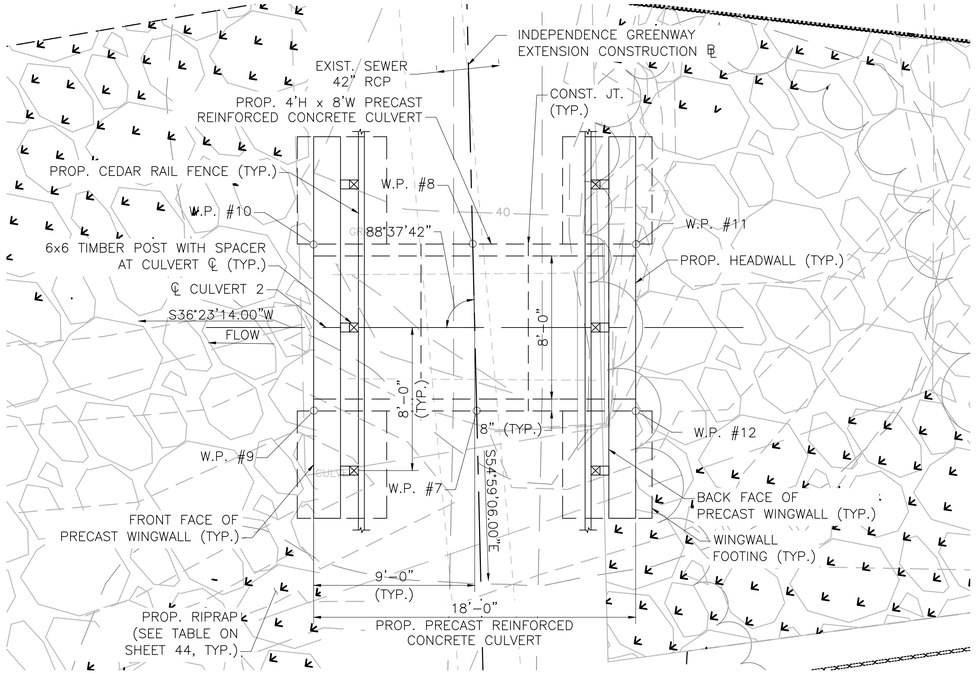
NOTES:

1. SEE SHEET 34 FOR GENERAL PLAN AND LONGITUDINAL SECTION OF STRUCTURE.
2. SEE SHEET 39 FOR HEADWALL AND WINGWALL REINFORCEMENT DETAILS.

609211_BR02.DWG Plotted on 16-Jul-2025 5:00 PM

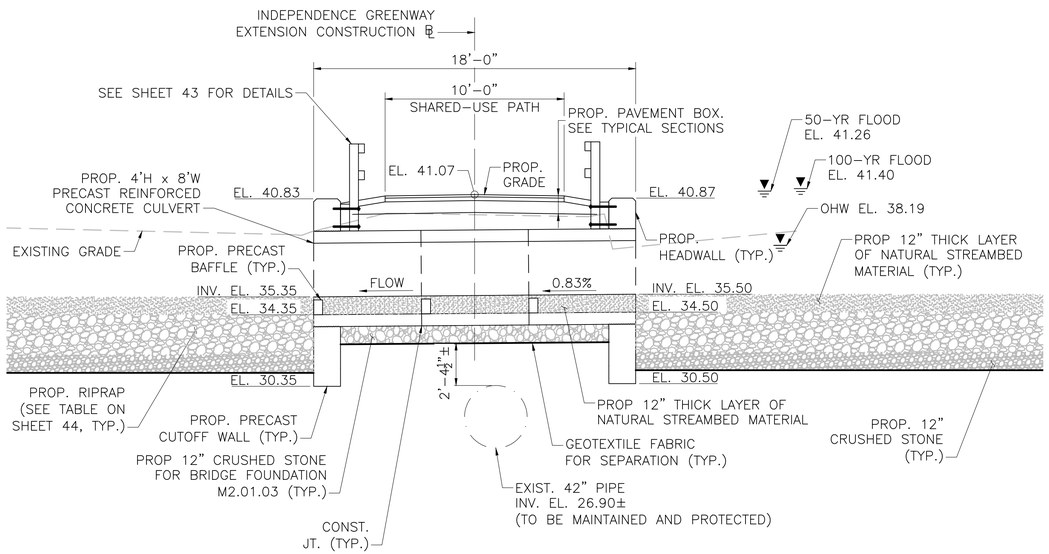
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	39	145
PROJECT FILE NO.	609211		

CULVERT 2 - PLAN AND LONGITUDINAL SECTION



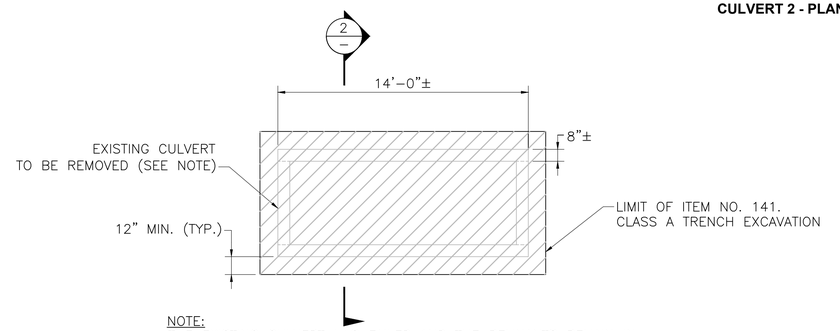
CULVERT 2 - PLAN

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



CULVERT 2 - LONGITUDINAL SECTION

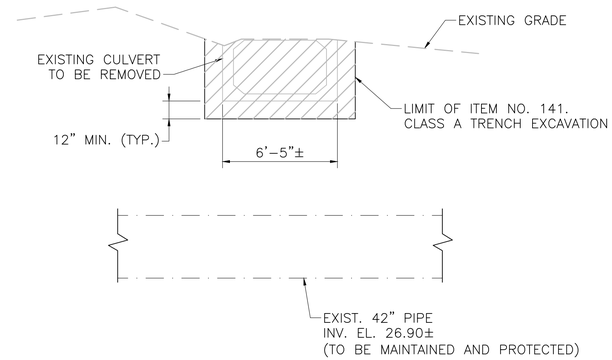
SCALE: 1/4" = 1'-0"



NOTE:
THE EXISTING CULVERT HAS FAILED AND THE REMNANTS REMAIN IN THE CHANNEL. ALL THE EXISTING REMNANTS OF THE EXISTING CULVERT TO BE REMOVED FROM THE CHANNEL. REMOVAL SHALL BE MEASURED AND PAID UNDER ITEM NO. 141. CLASS A TRENCH EXCAVATION.

CULVERT 2 - DEMOLITION PLAN

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



SECTION 2/-

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

CULVERT NO.2 WORKING POINTS:

W.P.	STATION	OFFSET	NORTHING	EASTING
7	346+24.36	0.00 LT	3019677.22	807634.33
8	346+15.02	0.00 LT	3019682.58	807626.68
9	346+9.11	9.11 RT	3019677.35	807634.15
10	346+14.81	8.89 RT	3019682.70	807626.51
11	346+15.24	9.11 LT	3019689.92	807632.09
12	346+24.57	8.89 LT	3019677.10	807634.50

NOTES:
1. SEE SHEET 43 FOR CEDAR RAIL FENCE ATTACHMENT TO THE PRECAST CONCRETE HEADWALLS.
2. PRECAST BOX CULVERT CONSTRUCTION JOINT SPACING MAY VARY PER PRECASTER, UP TO 7'-0" MAXIMUM.
3. EXISTING 42" DIAMETER SEWER LINE TO BE MAINTAINED AND PROTECTED DURING CONSTRUCTION. PLEASE SEE SPECIAL PROVISION ITEM NO. 228. CLOSED CIRCUIT TV INSPECTION OF SEWER LINE FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

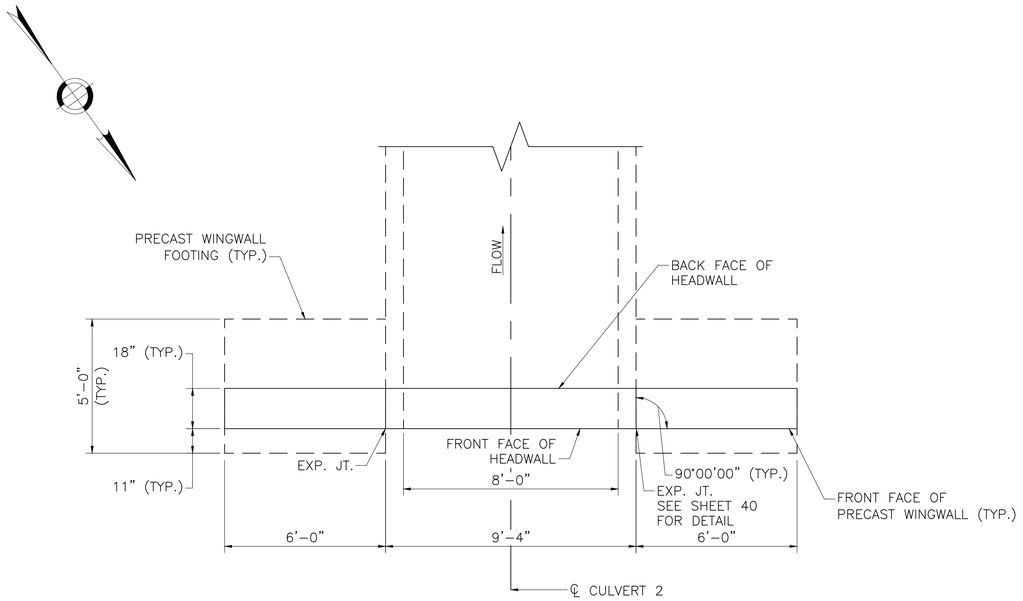
609211_BR03.DWG Plotted on 16-Jul-2025 5:02 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	40	145
	PROJECT FILE NO. 609211		

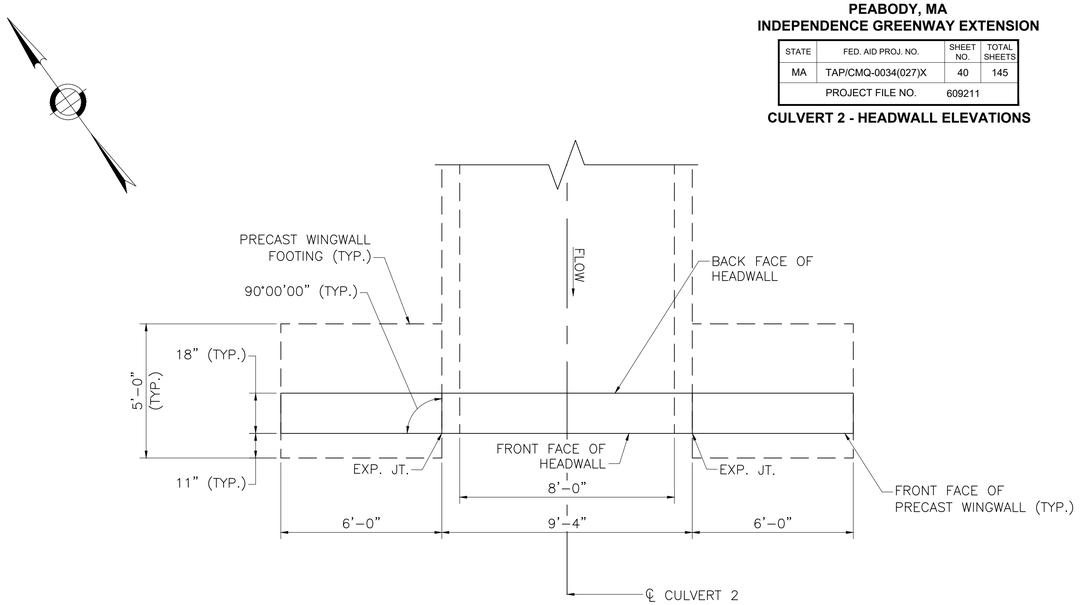
CULVERT 2 - HEADWALL ELEVATIONS

600211_BR04.DWG Plotted on 16-Jul-2025 5:03 PM



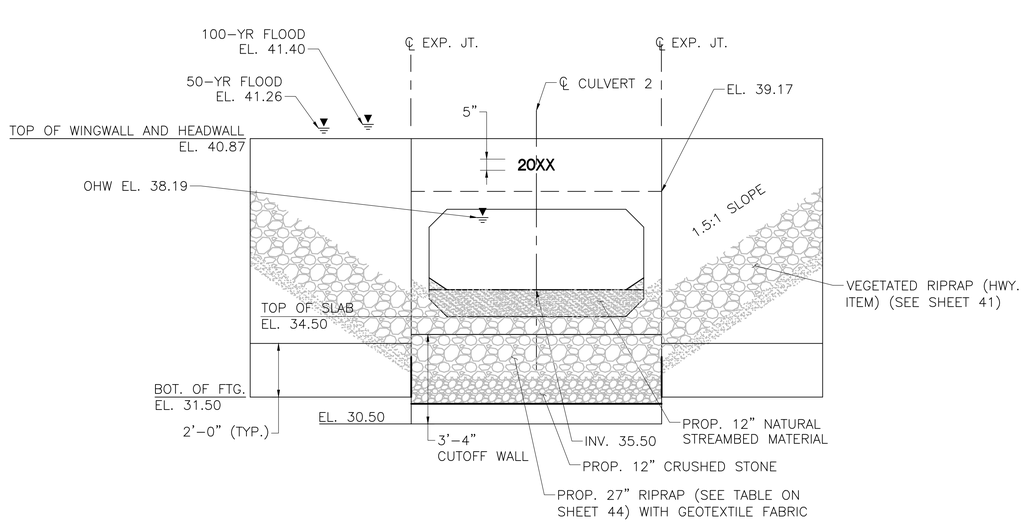
CULVERT 2 – UPSTREAM PLAN

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



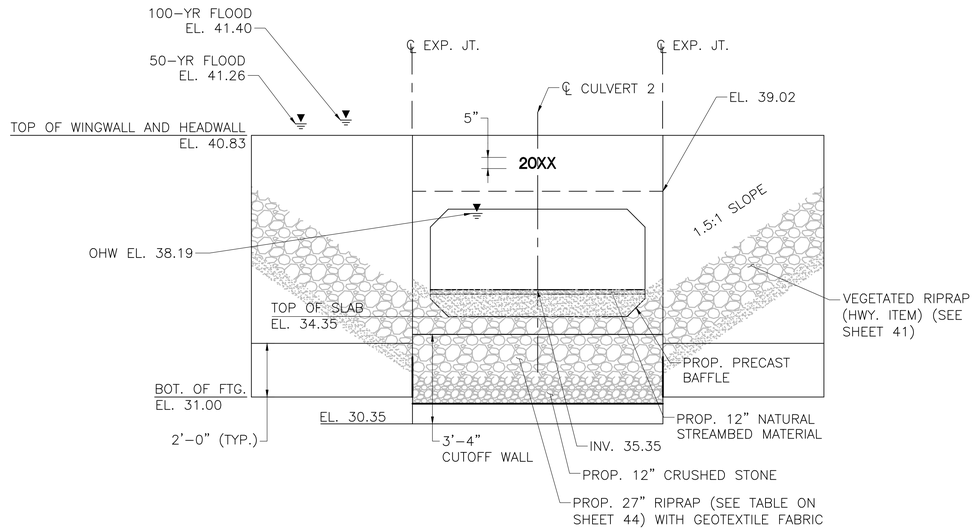
CULVERT 2 – DOWNSTREAM PLAN

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



CULVERT 2 – UPSTREAM ELEVATION

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



CULVERT 2 – DOWNSTREAM ELEVATION

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

NOTES:

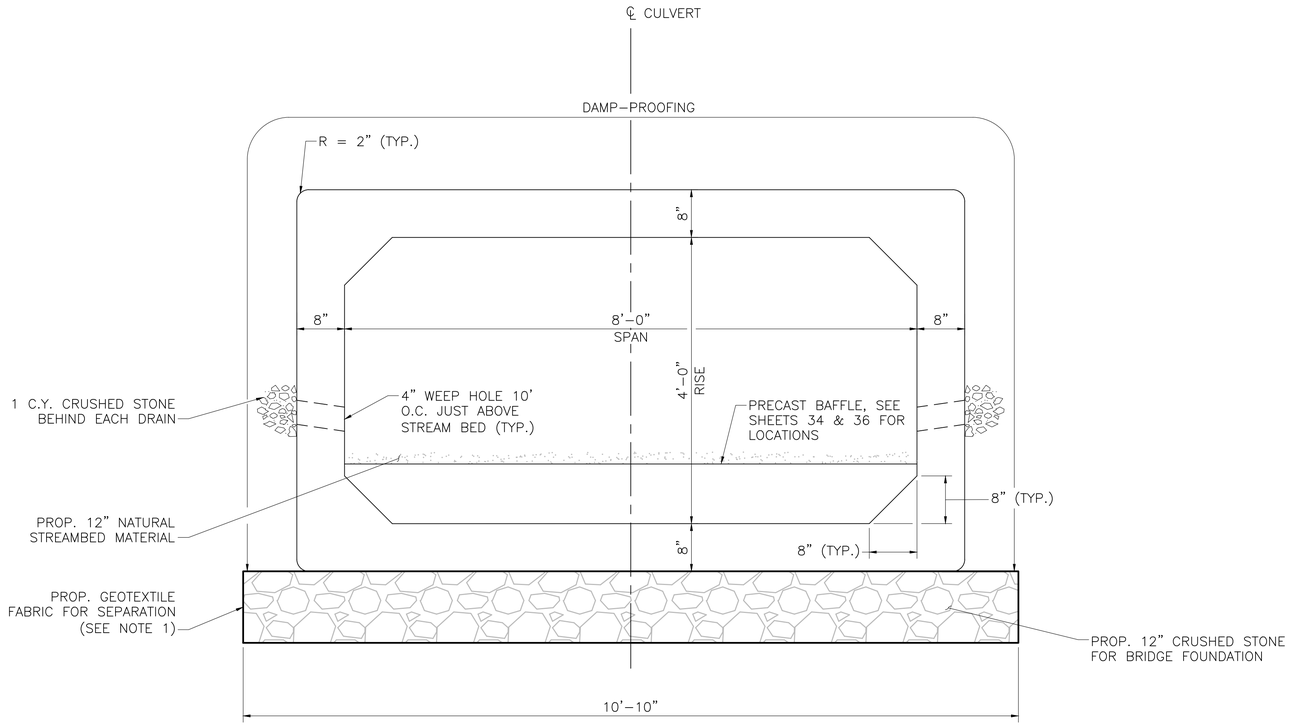
1. SEE SHEET 36 FOR GENERAL PLAN AND LONGITUDINAL SECTION OF STRUCTURE.
2. SEE SHEET 39 FOR HEADWALL AND WINGWALL REINFORCEMENT DETAILS.

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	41	145
	PROJECT FILE NO. 609211		

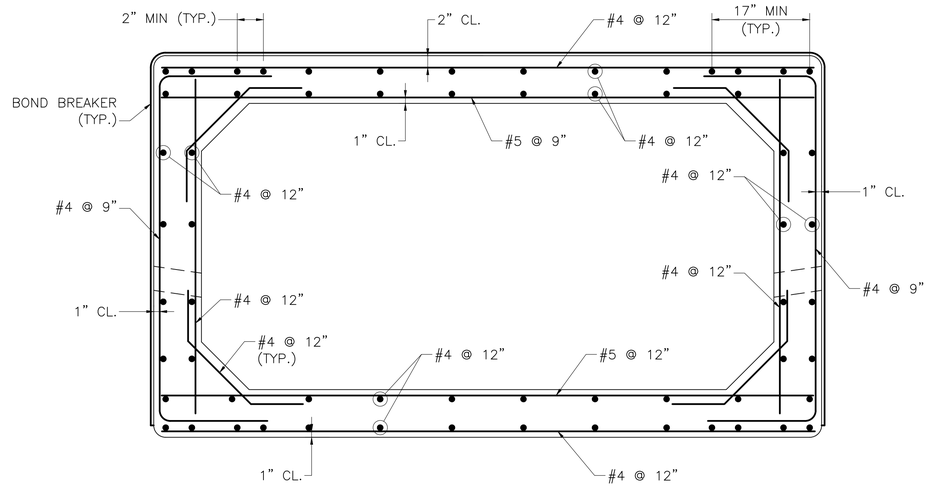
BOX CULVERT SECTIONS

600211_BR05.DWG Plotted on 16-Jul-2025 5:03 PM



BOX CULVERT TYPICAL SECTION

SCALE: 1" = 1'–0"



NOTE:

REINFORCING SHOWN IS CONCEPTUAL MINIMUM REQUIRED REINFORCEMENT FOR A DESIGN LIVE LOADING OF AASHTO HL–93 WITHOUT THE LANE LOAD. FINAL REINFORCEMENT SHALL BE DESIGNED AND DETAILED BY THE CONTRACTOR.

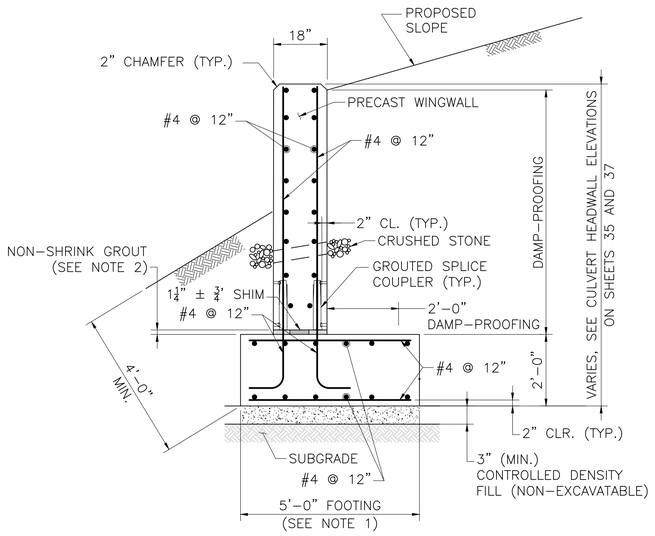
BOX CULVERT REINFORCING DETAILS

SCALE: 1" = 1'–0"

NOTES:

1. PROPOSED GEOTEXTILE FABRIC TO ENVELOP LIMITS OF 12" CRUSHED STONE FOR BRIDGE FOUNDATION WITH MINIMUM 2'–0" OVERLAP AT SEAM.
2. ALL CONCRETE TO BE 5000 PSI, ¾ IN, 685 HP CEMENT CONCRETE.
3. THE MAXIMUM FACTORED BEARING PRESSURE = 2.33 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION. FACTORED BEARING RESISTANCE = 5.00 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.
4. TRANSVERSE REINFORCING SHALL BE PLACED NORMAL TO THE ℄ OF THE CULVERT.
5. ALL REINFORCING SHALL BE GRADE 60 EPOXY COATED.

600211_BR06.DWG Plotted on 16-Jul-2025 5:03 PM

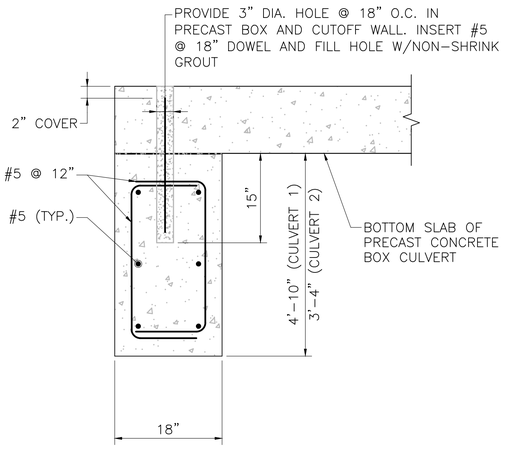


NOTES:

1. THE CONTRACTOR MAY ELECT TO USE PRECAST FOOTINGS, OR MODULAR WINGWALLS IN LIEU OF PRECAST WINGWALL STEMS DEPICTED HERE. DESIGN OF WINGWALLS AND FOOTINGS WHETHER PRECAST OR MODULAR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. PRE-BED PRECAST ELEMENT WITH NON-SHRINK GROUT WITH THICKNESS MORE THAN SHIM STACK.
3. TIMBER RAILING POST ATTACHMENT NOT SHOWN FOR CLARITY, SEE DETAIL ON THIS SHEET.

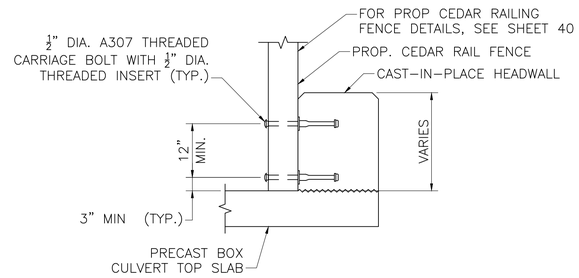
TYPICAL PRECAST WINGWALL SECTION

SCALE: ½" = 1'-0"



CUTOFF WALL DETAIL

SCALE: 1" = 1'-0"

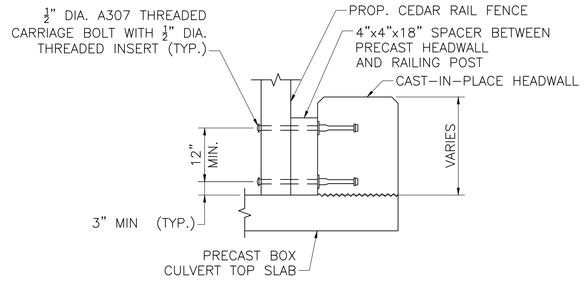


NOTES:

1. BOX CULVERT REINFORCEMENT IS NOT SHOWN FOR CLARITY.
2. DETAIL AT HEADWALL SHOWN, WINGWALL POST ATTACHMENT SIMILAR

CULVERT 1 HEADWALL – POST ATTACHMENT DETAIL

SCALE: ¾" = 1'-0"

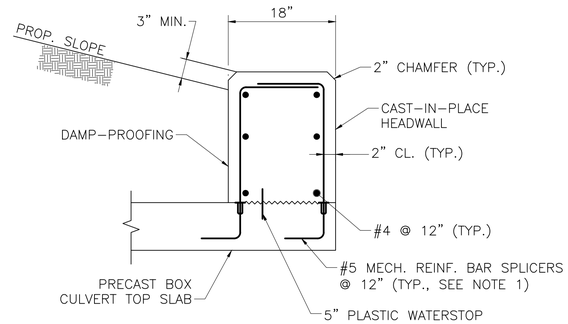


NOTES:

1. CULVERT REINFORCEMENT IS NOT SHOWN FOR CLARITY.
2. DETAIL AT HEADWALL SHOWN, WINGWALL POST ATTACHMENT SIMILAR
3. PROPOSED TIMBER SPACER TO BE PROVIDED AND CUT ALONG SKEW AS NEEDED TO PROVIDE FLUSH ATTACHMENT OF POST.

CULVERT 2 HEADWALL – POST ATTACHMENT DETAIL

SCALE: ¾" = 1'-0"

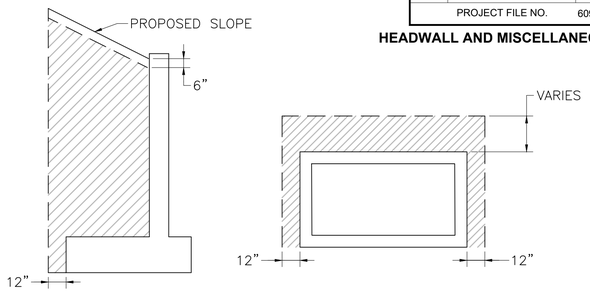


NOTES:

1. THE CONTRACTOR MAY SUBSTITUTE #5 ∫∫ DOWELS, FOR MECHANICAL REINFORCING BAR SPLICERS AND THREADED REBARS.
2. BOX CULVERT REINFORCEMENT IS NOT SHOWN FOR CLARITY.

TYPICAL CULVERT HEADWALL REINFORCEMENT DETAIL

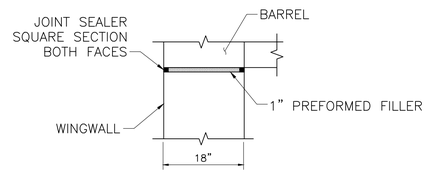
SCALE: 1" = 1'-0"



NOTE:
HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES

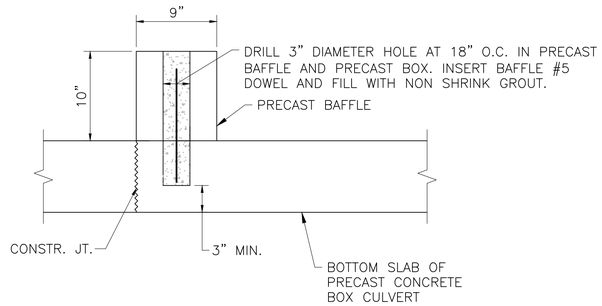
LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES

SCALE: ¼" = 1'-0"



TYPICAL CULVERT EXPANSION JOINT DETAIL

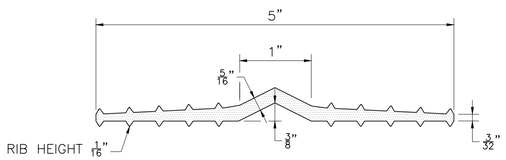
SCALE: ¾" = 1'-0"



NOTE:
PRECAST BAFFLE AND ATTACHMENT MATERIALS ARE CONSIDERED INCIDENTAL TO THE CULVERT ITEMS.

TYPICAL PRECAST BAFFLE DETAIL

SCALE: 1½" = 1'-0"



5" WATERSTOP

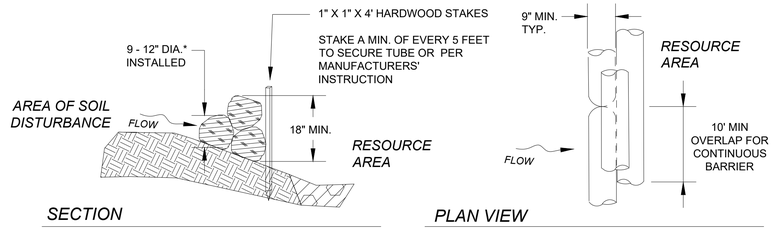
NOT TO SCALE

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	43	145
PROJECT FILE NO.	609211		

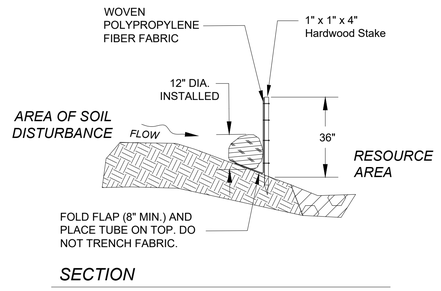
CONSTRUCTION DETAILS - 1

SHT014_HDICONSTRUCTION & DRAINAGE DETAILS) - UPDATED.DWG Plotted on 16-Jul-2025 5:03 PM



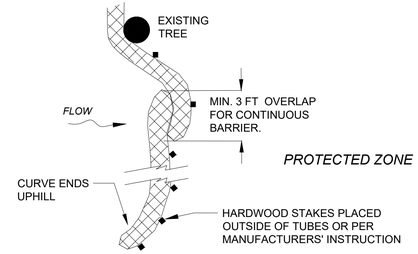
COMPOST FILTER TUBE BERM (SLOPES 2:1 OR STEEPER)

NOT TO SCALE



COMPOST FILTER TUBE & SILT FENCE

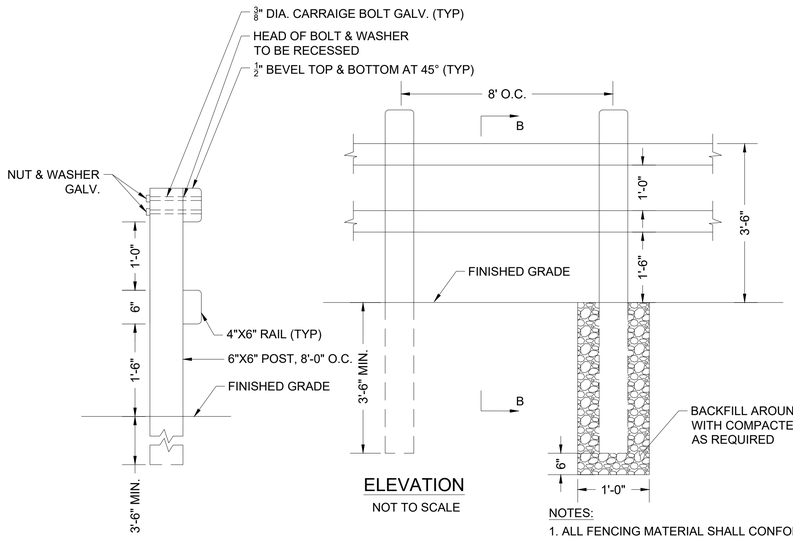
NOT TO SCALE



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

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

PLAN VIEW



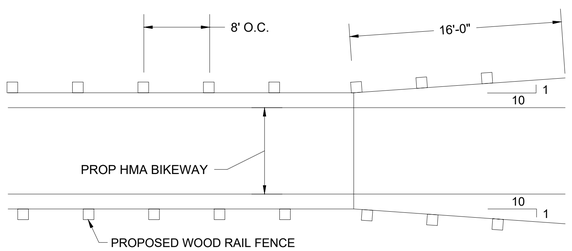
WOOD RAIL FENCE

NOT TO SCALE

NOTES:

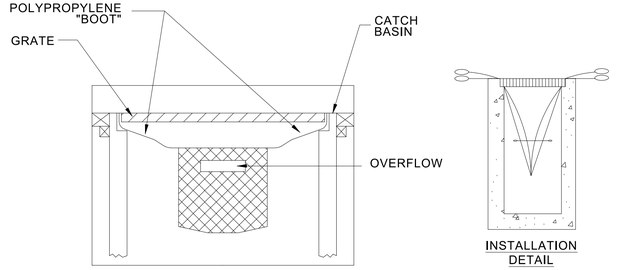
1. ALL FENCING MATERIAL SHALL CONFORM TO THE STANDARD SPECIFICATIONS & SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.

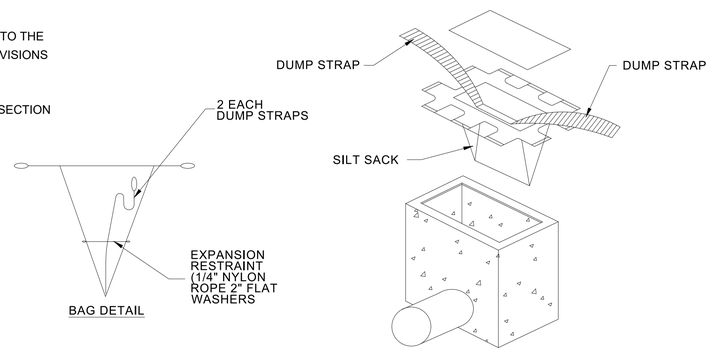
2. MOUNTING OF UPPER RAIL IS SHOWN ON SECTION B-B. MOUNT LOWER RAIL SIMILARLY.



WOOD RAIL FENCE FLARED-END TREATMENT

NOT TO SCALE

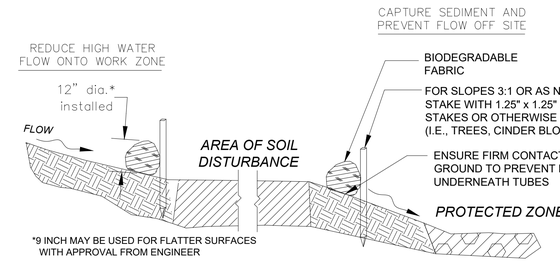




NOTE 1:
TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS.

INLET PROTECTION SILT SACK

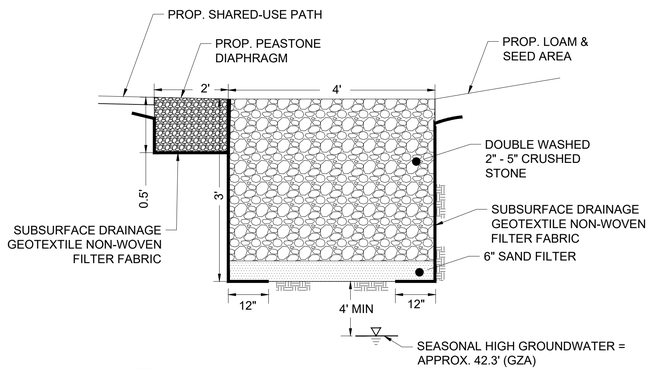
NOT TO SCALE



SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

NOT TO SCALE



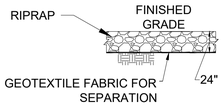
NOTE:

1. GROUNDWATER ELEVATION TAKEN AT 11:45 AM ON JANUARY 3, 2019

INFILTRATION TRENCH SECTION

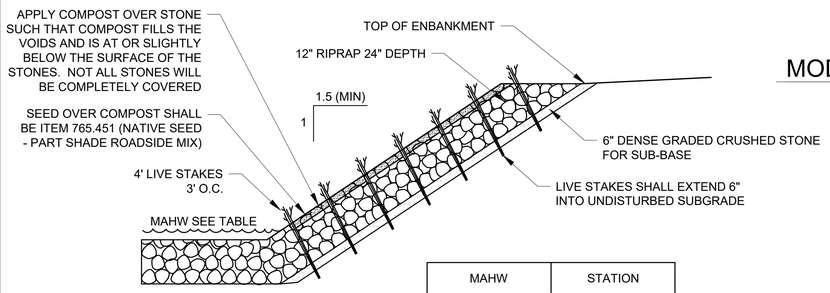
NOT TO SCALE

SHT014_HDI(CONSTRUCTION & DRAINAGE DETAILS) - UPDATED.DWG Plotted on 16-Jul-2025 5:03 PM



ABUTMENT ARMORING RIPRAP DETAIL

NOT TO SCALE



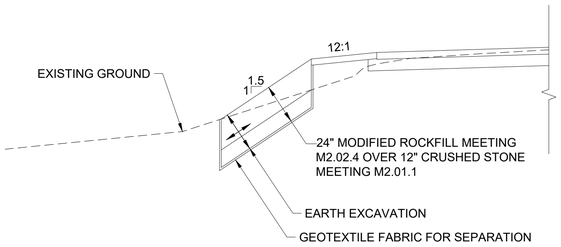
MAHW	STATION
42.4	329+85
37.1	346+20

TABLE 1

NOTES:

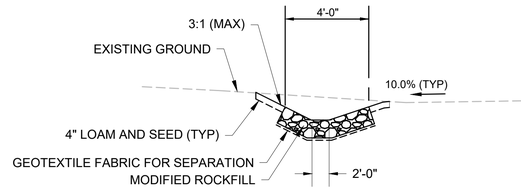
1. DRIVE REBAR INTO VOIDS BETWEEN RIP RAP.
2. HOLES SHALL EXTEND 12" BELOW RIP RAP INTO SUBGRADE OR GRANULAR FILL LAYER.
3. LIVE STAKES SHALL BE PLACED IN HOLES SO THAT THEY EXTEND 6" INTO SUBGRADE.
4. LIVE STAKES SHALL BE LOCATED APPROXIMATELY 3 FEET ON CENTER STARTING 6" ABOVE MEAN HIGH WATER.

LIVE STAKES PLANT LIST				
QTY	BOTANICAL NAME	COMMON NAME	PLANT SIZE	SPACING
100	CORNUS RACEMOSA	GREY DOGWOOD	4 FEET LENGTH	3' O.C
100	SALIX DISCOLOR	PUSSY WILLOW	4 FEET LENGTH	3' O.C
100	CORNUS SERICEA	REDOSIER DOGWOOD	4 FEET LENGTH	3' O.C



MODIFIED ROCKFILL FOR SLOPE STABILIZATION

NOT TO SCALE



STONE WATERWAY

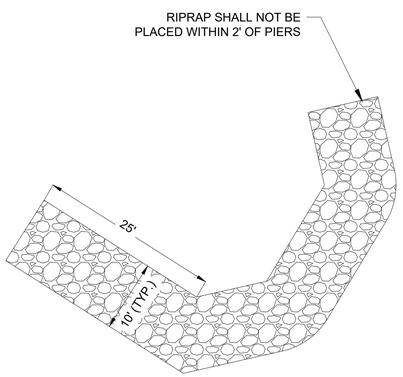
NOT TO SCALE

FHWA CLASS	LENGTH OF APRON L (FEET)	DEPTH OF APRON H (FEET)	WIDTH OF APRON (FEET)	MASSDOT RIPRAP SIZE	CULVERTS AT STATION
III	AS SHOWN IN PLANS	2.25	AS SHOWN IN PLANS	M2.02.0	329+85
II	10.0	2.0	13.5	M2.02.3	340+10
II	8.0	2.0	11.0	M2.02.3	342+25
III	AS SHOWN IN PLANS	2.25	AS SHOWN IN PLANS	M2.02.0	346+20
II	10.0	2.0	5.0	M2.02.3	358+51

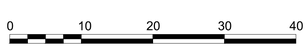
SOURCE:
FHWA HYDRAULIC ENGINEERING CIRCULAR NO. 23
MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES

COMPOST AND SEED OVER VEGETATED RIPRAP

NOT TO SCALE



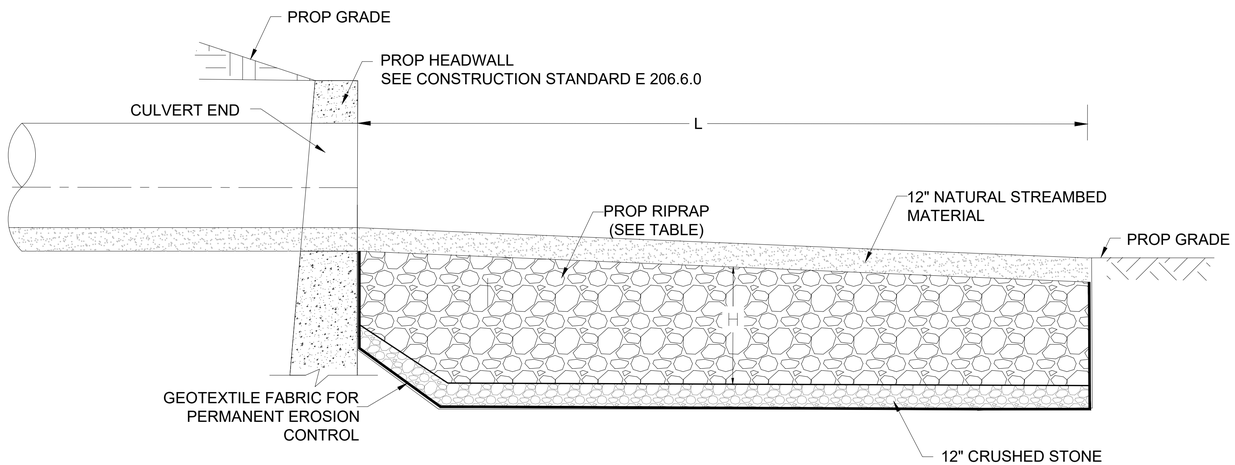
PLAN
SCALE : 1"=10'



SCALE: 1" = 10'

ABUTMENT ARMORING RIPRAP PLAN

RIPRAP CLASSES AND APRON DIMENSIONS



RIPRAP APRON AT INLETS AND OUTLETS OF CULVERTS

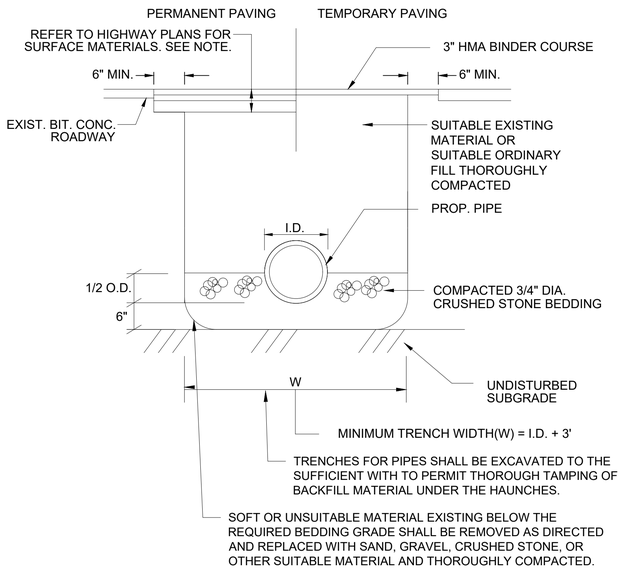
NOT TO SCALE

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	45	145
PROJECT FILE NO.	609211		

CONSTRUCTION DETAILS - 3

INFILTRATION TRENCH DETAIL_.DWG Plotted on 16-Jul-2025 6:05 PM

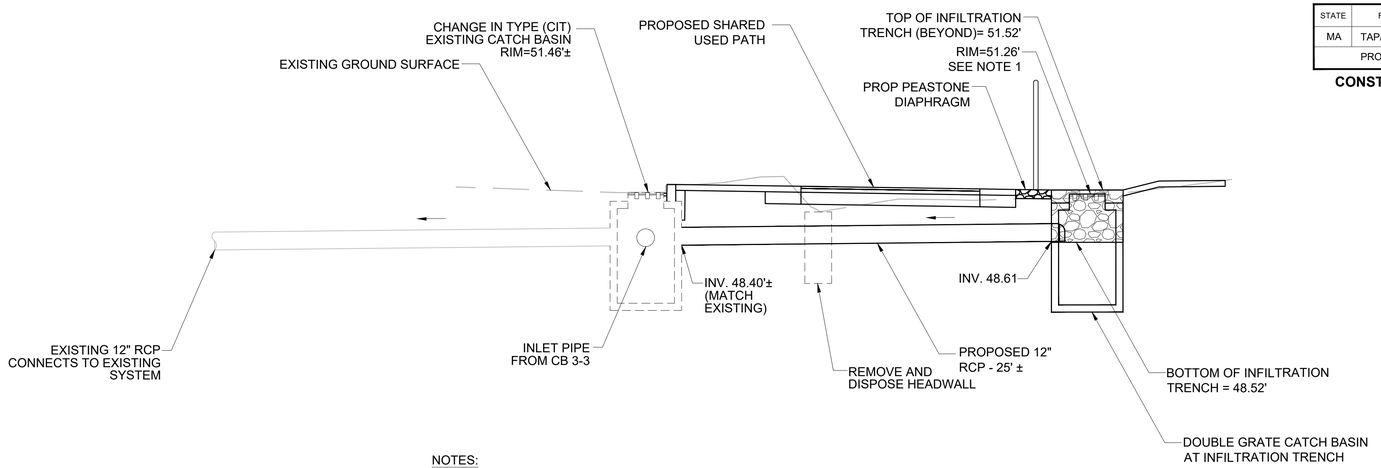


TYPICAL PIPE TRENCH

NOT TO SCALE

NOTE:

1. PERMANENT PAVING TO BE USED IN ALL AREAS OF MILL AND OVERLAY. MATERIALS SHALL MATCH CORRESPONDING FULL DEPTH SECTION. REFER TO TYPICAL ROADWAY SECTIONS.
2. HMA FOR PATCHING TO BE USED IN AREAS OF FUTURE FULL DEPTH CONSTRUCTION.
3. EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER, OR SATISFACTORY BORROW SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6 INCHES IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2 FEET OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3 INCHES.



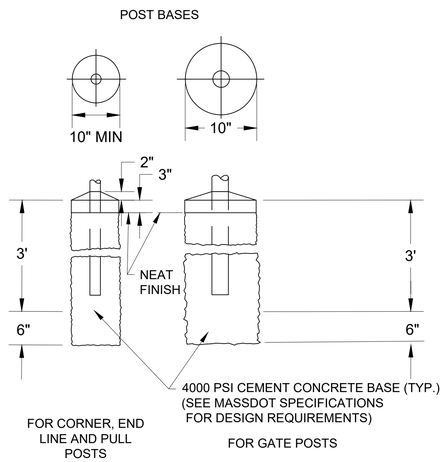
NOTES:

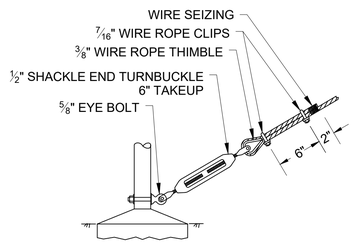
1. THE CRUSHED STONE SHALL BE PLACED AT A 3:1 SLOPE FROM THE GRATE TO THE TOP OF THE INFILTRATION TRENCH TO PREVENT DEBRIS FROM ENTERING THE GRATE

INFILTRATION TRENCH TO CULVERT DETAIL

SCALE: 1" = 4'



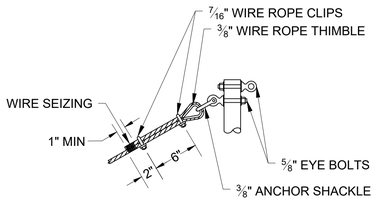




NOTE:

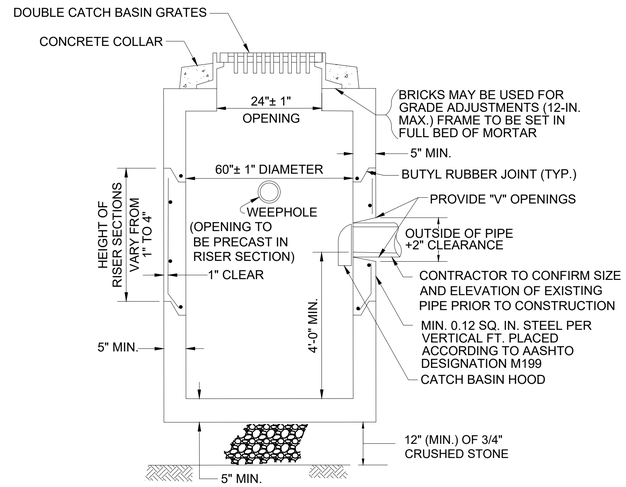
1. FOR EYE BOLT INSTALLATION THROUGH PIPE SECTIONS, USE 2 WASHERS ON "SHOULDER SIDE" AND 1 WASHER WITH LOCK WASHER ON "NUT SIDE" OF POSTS.

DETAILS OF CABLE ATTACHMENTS



CHAIN LINK FENCE DETAILS OF CABLE ATTACHMENTS AND POST BASES

NOT TO SCALE

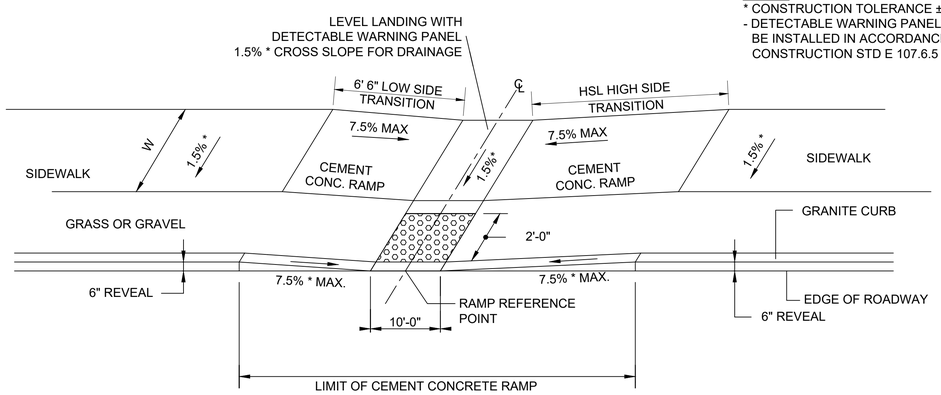


DOUBLE GRATE CATCH BASIN

NOT TO SCALE

SHT014_HD\CONSTRUCTION & DRAINAGE DETAILS) - UPDATED.DWG Plotted on 16-Jul-2025 5:04 PM

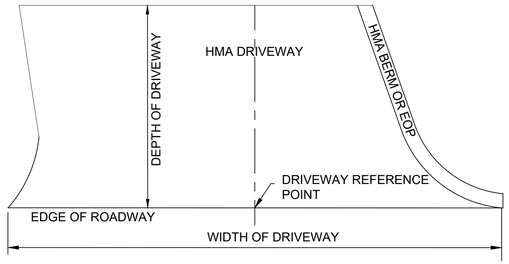
NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
- DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5



CURB CUT RAMP (NARROW SIDEWALK WITH GRASS STRIP)

NOT TO SCALE

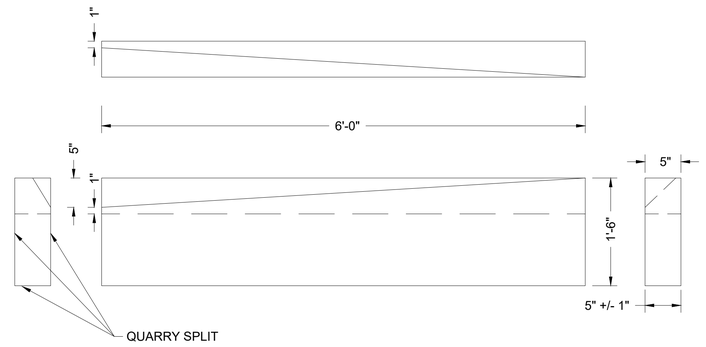
PCR #	CROSSING ROAD	RAMP REFERENCE POINT		WIDTH OF RAMP (FT.)	WIDTH OF SIDEWALK (W) (FT.)	ROADWAY GUTTER SLOPE (%)	TRANSITION LENGTH	
		STATION	OFFSET				LEFT SIDE	RIGHT SIDE
5	NORTHSHORE RD	304+13	74.30 LT	5'-0"	5'-0"	+4.60	-	-
3	ESSEX CENTER DR	302+10	7.67 RT	10'-0"	10'-0"	-3.42	6'-6"	14'-0"
1	ESSEX CENTER DR	292+48.08	8.72 RT	10'-0"	10'-0"	-1.71	9'-0"	6'-6"

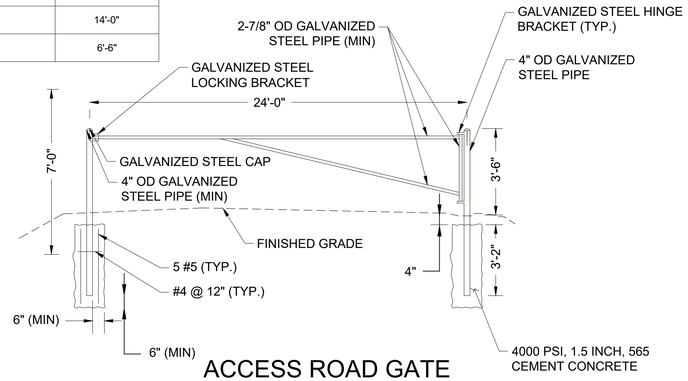


HMA DRIVEWAY WITHOUT SIDEWALK

NOT TO SCALE

CURB CUT DRIVEWAY DETAIL TABLE			
STATION	OFFSET	WIDTH OF DRIVEWAY	DEPTH OF DRIVEWAY
290+16.30	10.90 LT	31'-7"	10'-0"

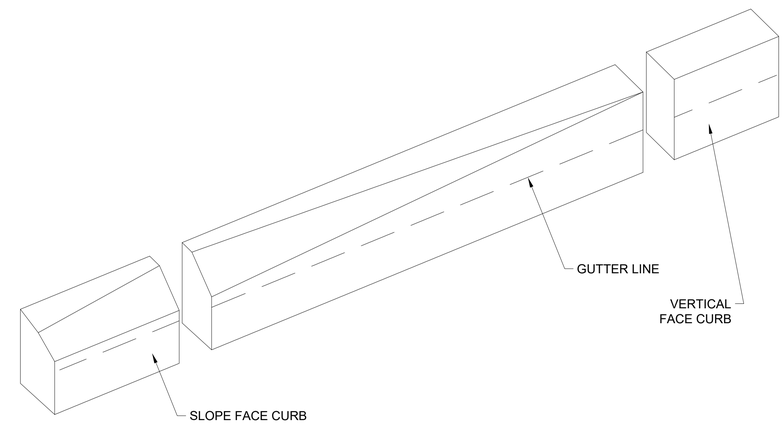




ACCESS ROAD GATE

NOT TO SCALE

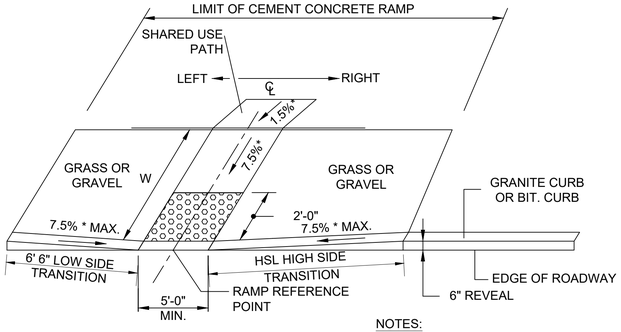
NOTE:
1. ALL GALVANIZED STEEL SHALL MEET GRADE B, Fy = 33,000 KSI AND SHALL BE IN ACCORDANCE WITH SUBSECTION 960.
2. THE GALVANIZED STEEL HINGE BRACKET AND GALVANIZED STEEL LOCKING BRACKET SHALL BE $\frac{1}{4}$" (MIN) COLD ROLLED GALVANIZED STEEL.
3. VENT HOLES SHALL BE INSTALLED IN GALVANIZED TUBES, PER MANUFACTURER'S RECOMMENDATIONS.
4. CONCRETE SHALL MEET THE REQUIREMENTS OF SUBSECTION 901 OF THE STANDARD SPECIFICATIONS.
5. STEEL REINFORCEMENT SHALL BE GRADE 60 REINFORCING LEVEL I.



GRANITE TRANSITION TYPE VB - SPLAYED END

NOT TO SCALE

NOTE:
1. TOP SURFACE AND SLOPED SURFACE TO BE DRESSED BY SAW. REMAINDER TO BE QUARRY SPLIT.
2. DETAIL SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND.

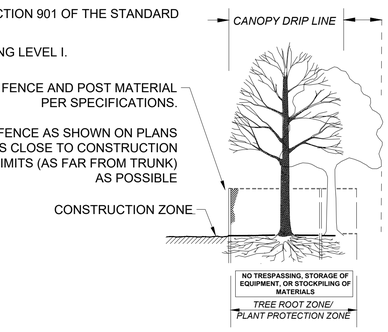


NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
- DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5
- PCR 9 LANDING TO BE CONSTRUCTED WITH HMA TO MATCH SHARED USE PATH
** TRANSITION LENGTHS FOR CURBS ONLY

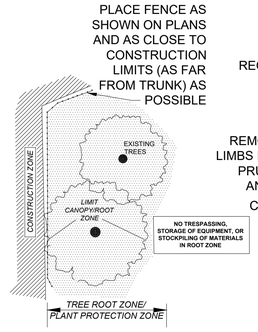
CORNER CURB CUT RAMP (ADJACENT TO SHARED USE PATH)

NOT TO SCALE

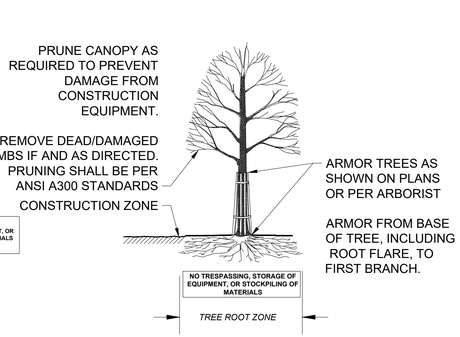
PCR #	CROSSING ROAD	RAMP REFERENCE POINT		LENGTH OF RAMP (W) (FT.)	WIDTH OF RAMP (FT.)	ROADWAY GUTTER SLOPE (%)	TRANSITION LENGTH	
		STATION	OFFSET				LEFT SIDE	RIGHT SIDE
6	NORTHSHORE RD	304+19	5.00 RT	8'-0"	10'-0"	-0.86	7'-8"	6'-6"
8	NORTHSHORE RD	318+32	12.00 RT	9'-0"	10'-0"	+0.04	7'-8"	6'-6"
9	NORTHSHORE RD	318+45	0.00	4'-6"	10'-0"	-0.64	6'-6"***	7'-8"***



SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE



SECTION - TRUNK ARMORING & PRUNING

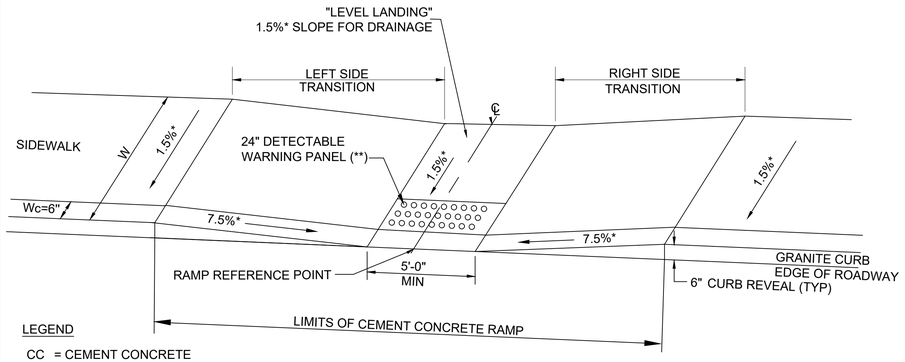
TREE PROTECTION DETAILS

NOT TO SCALE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	47	145
PROJECT FILE NO.	609211		

CONSTRUCTION DETAILS - 5

SHT014_HD(CONSTRUCTION & DRAINAGE DETAILS) - UPDATED.DWG Plotted on 16-Jul-2025 5:04 PM



LEGEND

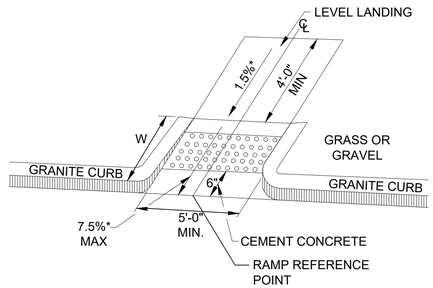
CC = CEMENT CONCRETE
W = SIDEWALK WIDTH
Wc = CURB WIDTH
* = TOLERANCE FOR CONSTRUCTION ±0.5%
USABLE SIDEWALK WIDTH PER AAB = W-Wc

(**) REFER TO MASSDOT CONSTRUCTION STANDARDS DRAWING NO. E 107.6.5 FOR DETECTABLE WARNING PANEL DETAIL. WARNING PANEL SHALL BE CUT AS REQUIRED TO EXTEND ACROSS ENTIRE RAMP OPENING. DETECTABLE WARNING PANELS ARE REQUIRED ON ALL PROPOSED CURB RAMPS AND ARE TO BE INSTALLED IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARDS.

PEDESTRIAN CURB RAMP ON NARROW SIDEWALK

NOT TO SCALE

PCR #	CROSSING ROAD	RAMP REFERENCE POINT		WIDTH OF RAMP (FT.)	WIDTH OF SIDEWALK (W) (FT.)	ROADWAY GUTTER SLOPE (%)	TRANSITION LENGTH	
		STATION	OFFSET				LEFT SIDE	RIGHT SIDE
2	ESSEX CENTER DR	292+48.95	9.32 LT	5'-0"	5'-0"	+1.54	-	9'-0"

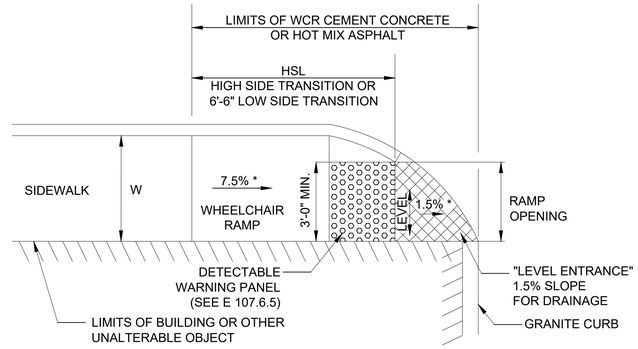


NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
- DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5

PCR #	CROSSING ROAD	RAMP REFERENCE POINT		LENGTH OF RAMP (W) (FT.)	WIDTH OF RAMP (FT.)	ROADWAY GUTTER SLOPE (%)
		STATION	OFFSET			
4	NORTHSHORE RD	302+22	82.50 LT	5'-0"	5'-0"	+5.87

CORNER CURB CUT RAMP (ADJACENT TO SHARED USE PATH)

NOT TO SCALE

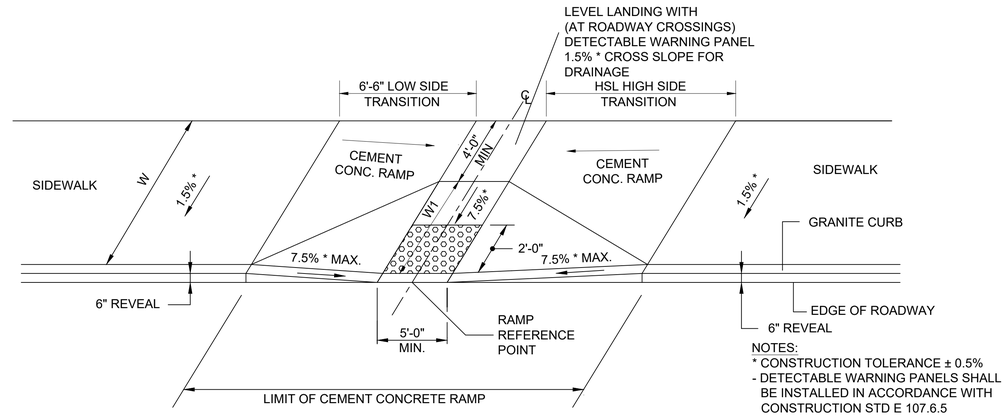


NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
- DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5

CURB CUT RAMP (CONTINUOUS DIRECTION) DETAIL E 107.6.0

NOT TO SCALE

PCR #	CROSSING ROAD	RAMP REFERENCE POINT		WIDTH OF RAMP OPENING (FT.)	WIDTH OF SIDEWALK (W) (FT.)	ROADWAY GUTTER SLOPE (%)	TRANSITION LENGTH (FT.)
7	NORTHSHORE RD	317+33	23.54 LT	3'-6"	5'-0"	+0.11	7'-8"

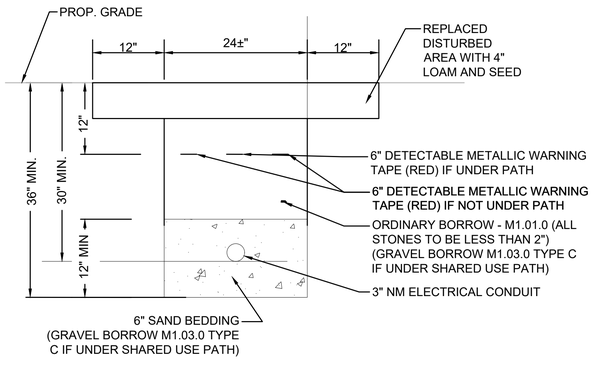


NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
- DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5

CURB CUT RAMP (LESS THAN 12'-4" SIDEWALK) DETAIL E 107.2.0

NOT TO SCALE

PCR #	CROSSING ROAD	RAMP REFERENCE POINT		WIDTH OF RAMP (FT.)	WIDTH OF SIDEWALK (W) (FT.)	LENGTH OF RAMP (W1) (FT.)	ROADWAY GUTTER SLOPE (%)	TRANSITION LENGTH	
		STATION	OFFSET					LEFT SIDE	RIGHT SIDE
10	ENDICOTT ST	359+03	0.0 RT	10'-0"	8'-3"	4'-3"	-2.27	11-0"	6'-6"
11	ENDICOTT ST	359+34	0.0 RT	8'-4"	8'-0"	4'-6"	+1.80	9'-0"	-

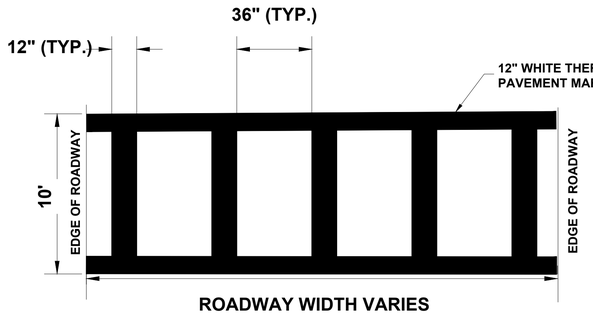


NOTES:
1. WARNING TAPE SHALL BE PER CURRENT APWA STANDARD.
2. NUMBER AND TYPE OF CONDUITS VARY PER LOCATION.

TRENCH DETAIL

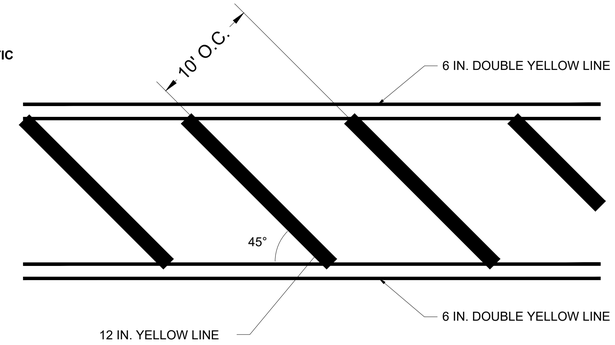
NOT TO SCALE

SHT014_HDICONSTRUCTION & DRAINAGE DETAILS) - UPDATED.DWG Plotted on 16-Jul-2025 5:04 PM



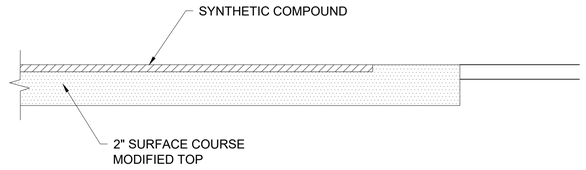
LADDER CROSSWALK DETAIL

(NOT TO SCALE)



MEDIAN STRIPING DETAIL

(NOT TO SCALE)

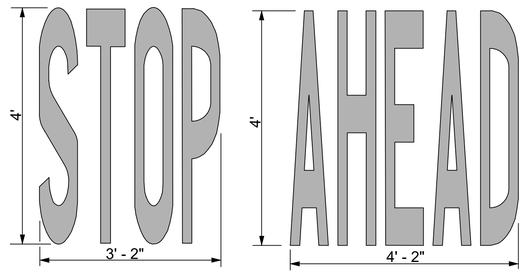


LONGITUDINAL SECTION

NOTES:
1. BRICK PATTERN TO BE STAMPED INTO MECHANICALLY HEATED SYNTHETIC COMPOUND.
2. REFER TO ITEM 706.9 FOR SPECIFICATIONS FOR TEXTURED DECORATIVE PAVEMENT.

DECORATIVE PAVEMENT

(NOT TO SCALE)



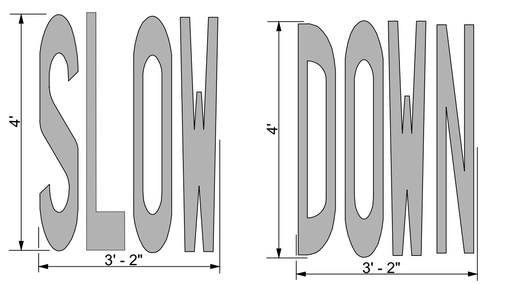
STOP

(NOT TO SCALE)

AHEAD

(NOT TO SCALE)

"STOP AHEAD" STATIONS
317+32
319+70
357+78



SLOW

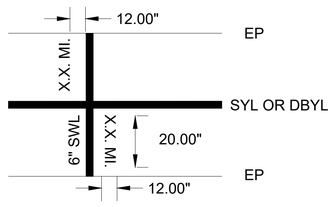
(NOT TO SCALE)

DOWN

(NOT TO SCALE)

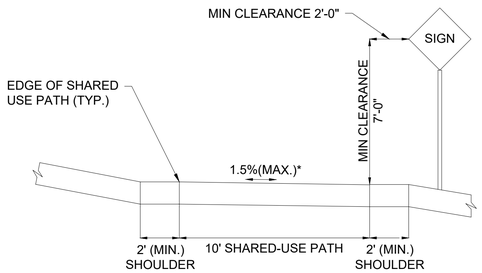
"SLOW DOWN" STATIONS
301+5430
305+00

MILE MARKER	STATION
5.7	290+51
5.8	295+79
5.9	301+07
6.0	306+35
6.1	311+63
6.2	316+91
6.3	322+19
6.4	327+47
6.5	332+75
6.6	338+03
6.7	343+31
6.8	348+59
7.0	358+50



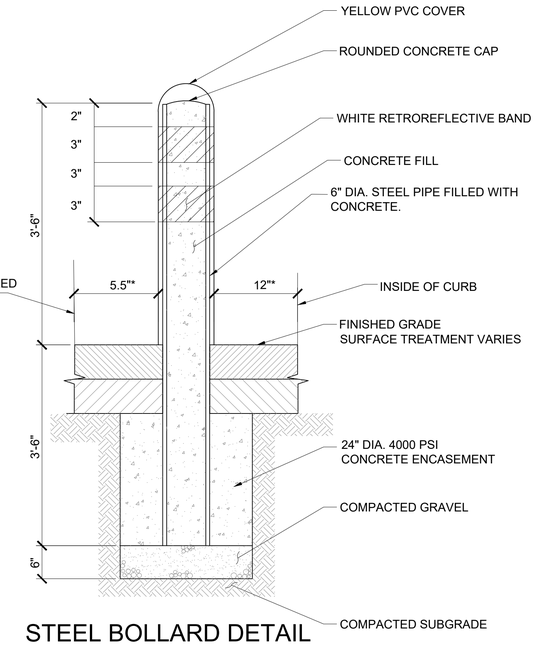
MILE MARKER DETAIL

(NOT TO SCALE)



TYPICAL SHARED-USE PATH CLEARANCE

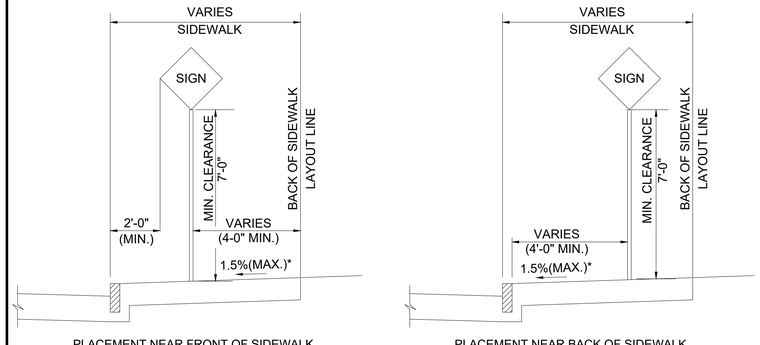
NOT TO SCALE



STEEL BOLLARD DETAIL

NOT TO SCALE

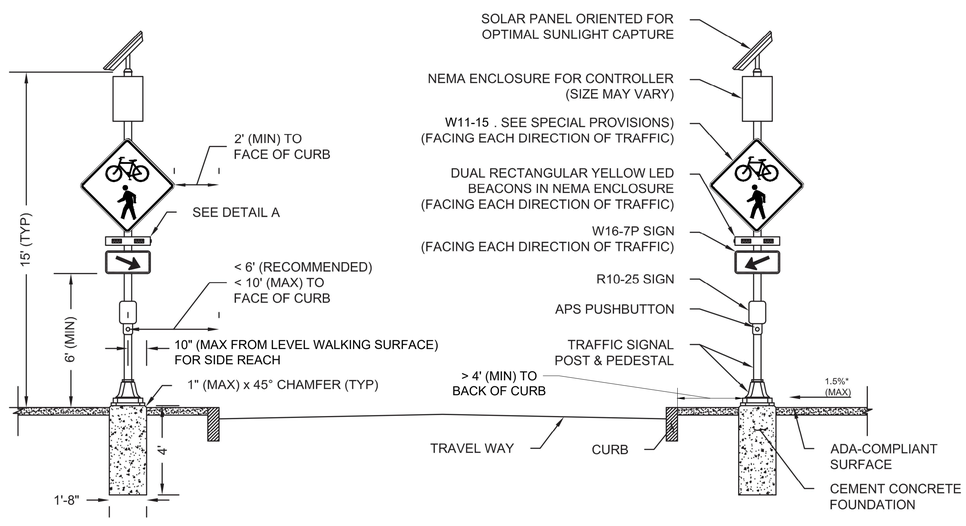
NOTE:
*CENTER THE BOLLARDS IN THE SHARED USE PATH AT THE BOARDWALK



TYPICAL SIDEWALK CLEARANCE

NOT TO SCALE

NOTES:
1. 80" MINIMUM VERTICAL CLEARANCE FOR VEGEATION OVER SIDEWALK
2. 100" MINIMUM VERTICAL CLEARANCE FOR VEGETATION OVER SHARED USE PATH



(SOLAR POWER) RECTANGULAR RAPID FLASHING BEACON (RRFB)

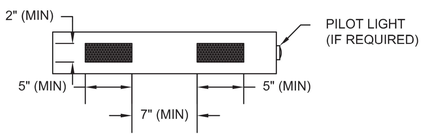
NOT TO SCALE

NOTES:
1. CROSSWALK AND ADA-COMPLIANT RAMPS NOT SHOWN. SEE PLANS FOR LOCATIONS.
2. REFER TO SPECIAL PROVISIONS FOR SIGN DIMENSIONS.
3. ACCESS TO ALL PEDESTRIAN ACTUATED CONTROLS SHALL BE ADA/AAB COMPLIANT.
4. *0.5% CONSTRUCTION TOLERANCE FOR CROSS-SLOPE.

MAJOR ITEMS LIST

2	CEMENT CONCRETE FOUNDATIONS PER SD3-030
2	15' TRAFFIC SIGNAL POST & PEDESTRALS
2	APS PUSHBUTTON SYSTEMS
4	DUAL RECTANGULAR YELLOW LED BEACONS IN NEMA ENCLOSURES
2	R10-25 SIGNS
4	W11-15 SIGNS
2	W16-7PR SIGNS
2	W16-7PL SIGNS
2	SOLAR POWER SYSTEMS
2	NEMA ENCLOSURES FOR ALL COMPONENTS NEEDED TO MEET FUNCTIONAL REQUIREMENTS PER SPECIAL PROVISIONS
2	BATTERY SYSTEMS

PLUS ALL MOUNTING AND SUPPORTING HARDWARD AND WIRING NECESSARY TO COMPLETE A WORKING SET.



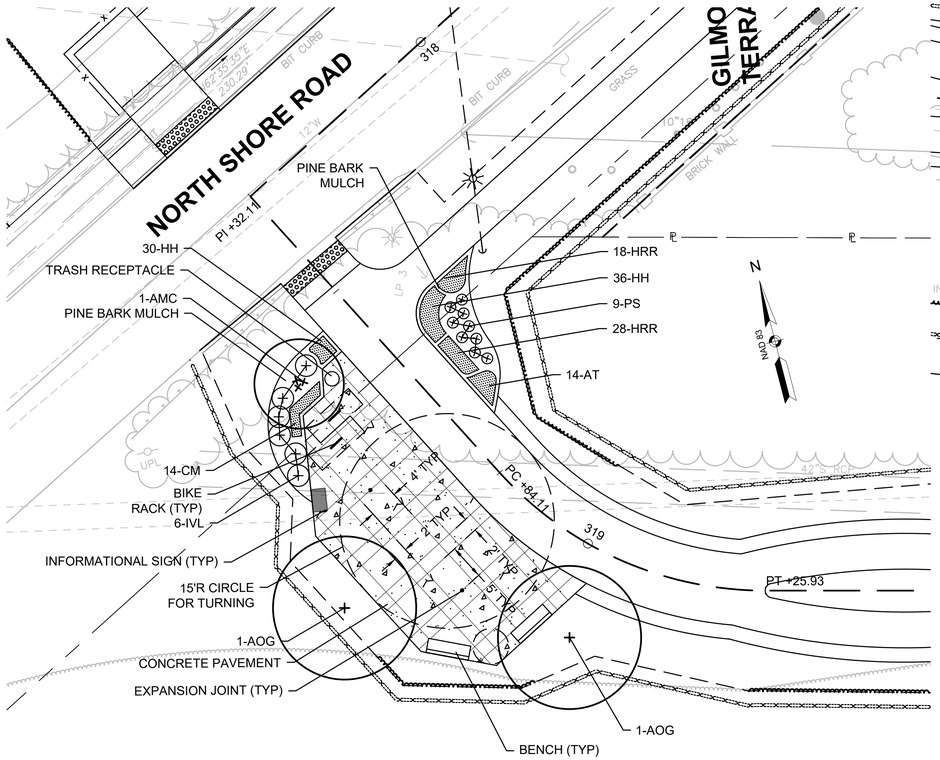
DETAIL A: DUAL YELLOW BEACON

NOT TO SCALE

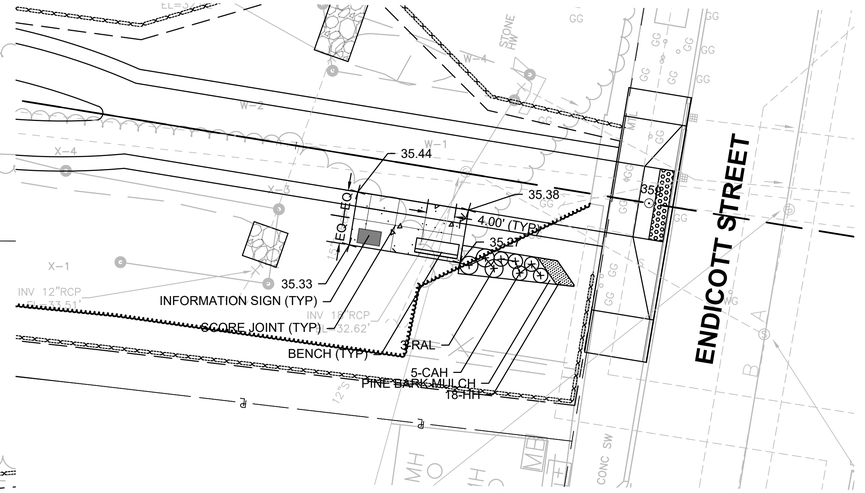
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	49	145
	PROJECT FILE NO.	609211	

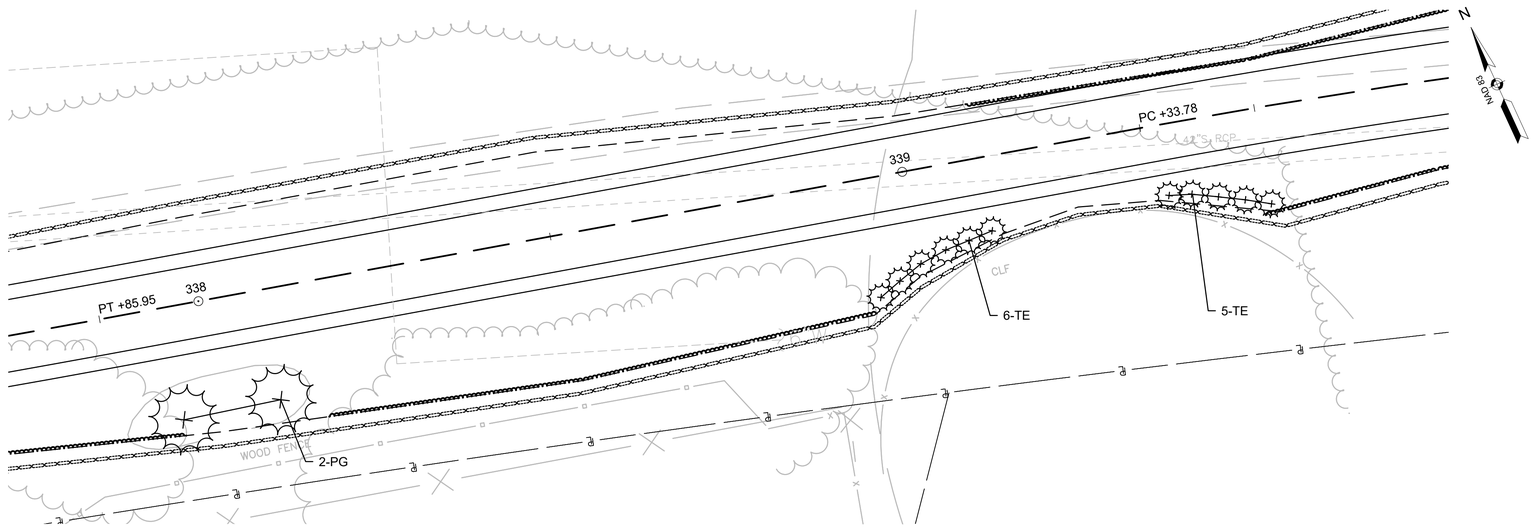
LANDSCAPE PLAN - 1



1 BLOW UP PLAN TRAILHEAD AT NORTHSHORE ROAD
SCALE 1" = 10'-0"



2 BLOW UP PLAN TRAILHEAD AT ENDICOTT STREET
SCALE 1" = 10'-0"



3 BLOW UP PLAN STA 337+57 TO 339+50
SCALE 1" = 10'-0"

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
2. PLANT LOCATIONS ARE APPROXIMATE. PRIOR TO PLANTING, LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER AND THE LANDSCAPE ARCHITECT.
3. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME, CULTIVAR, & SIZE.
4. IMMEDIATELY AFTER ACCEPTANCE OF PLANTING, TAGS AND RIBBONS SHALL BE REMOVED.
5. ALL PLANTS WILL BE MULCHED PER PLANS AND SPECIFICATIONS.
6. ALL SHRUB AND PERENNIAL BEDS WILL BE WEEDED AND OTHERWISE NEATLY MAINTAINED FOR THE DURATION OF THE CONTRACT.
7. PLANTS AND PLANTING BEDS SHALL BE THOROUGHLY WATERED AS NECESSARY AND PER SPECIFICATIONS.

WATERING NOTES

1. IRRIGATION BAGS MAY BE USED FOR STREETSCAPE AND PARK PLANTINGS ONLY.
2. A SCHEDULE FOR FILLING AND REMOVAL SHALL BE SUBMITTED TO THE ENGINEER.
3. USE AND SCHEDULE MUST BE APPROVED BY THE MASSDOT LANDSCAPE ARCHITECT.
4. A MINIMUM OF 2 BAGS PER TREE SHALL BE USED. BAGS SHALL BE ATTACHED TO STAKES.
5. NO BAGS SHALL BE PLACED AROUND THE TREE TRUNK.
6. BAGS SHALL BE MAINTAINED FULL JUNE 1 - OCTOBER 1 OR AS APPROVED.
7. BAGS SHALL BE REMOVED AT THE END OF THE SEASON.

PLANT LIST - LANDSCAPE PLAN 1

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	
		DECIDUOUS TREES				
AMC	1	AMELANCHIERXGRANDIFLORA	AUTUMN BRILLIANCE SERVICEBERRY	4-5' FEET CLUMP	B&B	
AOG	2	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2-2 1/2" CAL	B&B	
		EVERGREEN TREES				
PG	2	PICEA GLAUCA	WHITE SPRUCE	4-5' HT	B&B	
TE	11	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	4-5' HT	B&B	
		DECIDUOUS SHRUBS				
CAH	5	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	HUMMINGBIRD SUMMERSWEET	18-24" SP	#3 CONT	2' O.C.
IVL	6	ITEA VIRGINIANA 'SPRICH' LITTLE HENRY	LITTLE HENRY SWEETSPIRE	12-18" HT.	#3 CONT	2' O.C.
RAL	3	RHUS AROMATICA 'GRO-LOW'	GRO-LOW SUMAC	2-3 FT SP	#2 CONT	2.5' O.C.
		PERENNIALS AND ORNAMENTAL GRASSES				
AT	14	ASCLEPIAS TUBEROSA	BUTTERFLYWEED	#1 CONT		12" O.C.
CM	14	CAREX MORROWII 'ICE DANCE'	ICE DANCE SEDGE	#1 CONT		12" O.C.
HH	84	HEMEROCALLIS HAPPY RETURNS	HAPPY RETURNS DAY LILLY	#1 CONT		9" O.C.
HRR	46	HEMEROCALLIS ROSY RETURNS	ROSY RETURNS DAY LILLY	#1 CONT		9" O.C.
PS	9	PANICUM VIRGATUM 'SHENANADOAH'	SHENANADOAH SWITCH GRASS	#2 CONT.		18"'O.C.

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

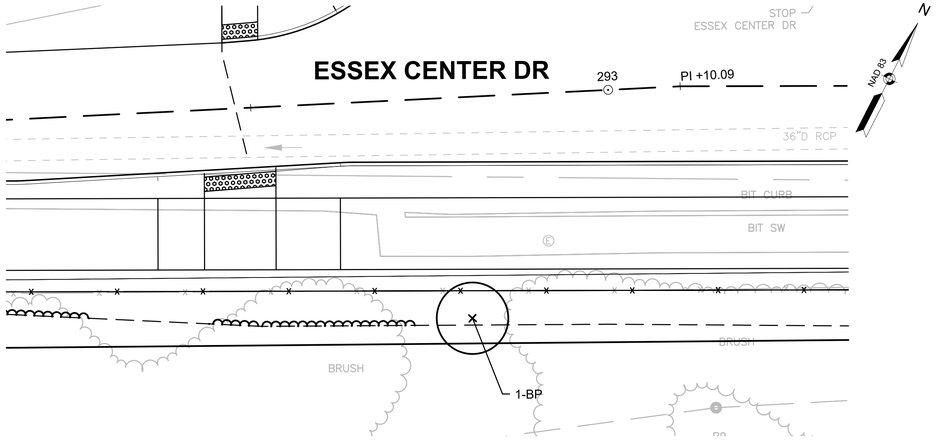
SHT005_HDLANDSCAPE).DWG Plotted on 16-Jul-2025 5:06 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	50	145
	PROJECT FILE NO. 609211		

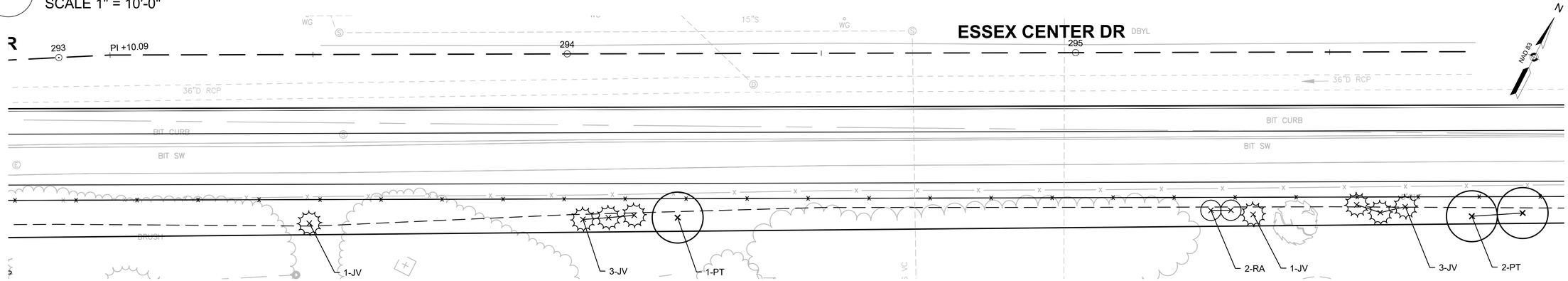
LANDSCAPE PLAN - 2

SHT005_HD(LANDSCAPE).DWG Plotted on 16-Jul-2025 5:06 PM

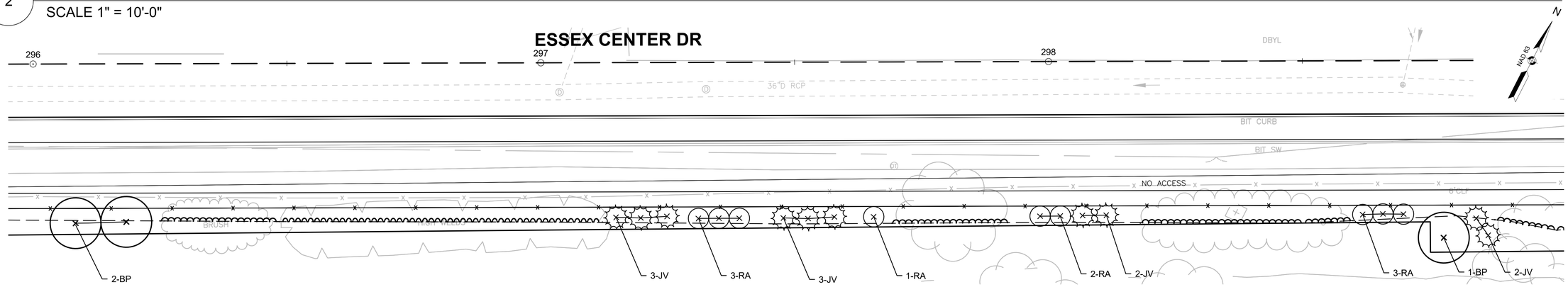


1 BLOW UP PLAN - TREE PLANTING ESSEX CENTER DRIVE STA. 292+16 TO 293+33
SCALE 1" = 10'-0"

PLANT LIST - LANDSCAPE PLAN 2					
KEY	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**ROOT**
		DECIDUOUS TREES			
BP	4	BETULA POPULIFOLIA	GRAY BIRCH	4-5 FEET	#3 CONT
PT	3	POPULUS TREMULOIDES	QUAKING ASPEN	4-5 FEET	#3 CONT
		EVERGEEN TREES			
JV	18	JUNIPERUS VIRGINIANA	RED CEDAR	3-4 FT	#3 CONT
		DECIDUOUS SHRUBS			
RA	11	RHUS AROMATICA	FRAGRANT SUMAC	2-3 FT SP	#2 CONT



2 BLOW UP PLAN - TREE PLANTING ESSEX CENTER STA. 292+80 TO 296+00
SCALE 1" = 10'-0"



3 BLOW UP PLAN - TREE PLANTING ESSEX CENTER STA. 296+00 TO 299+00
SCALE 1" = 10'-0"

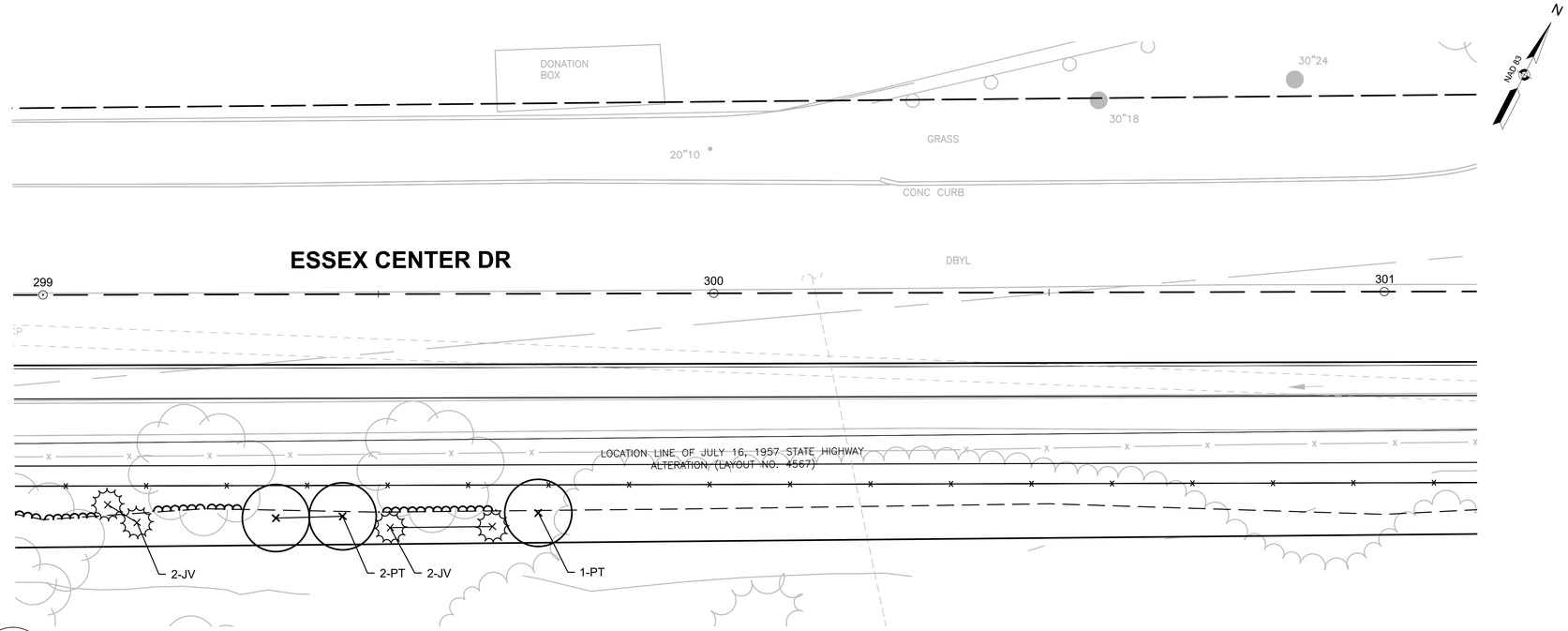
0 10 20 30 40
SCALE: 1" = 10'

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	51	145
	PROJECT FILE NO. 609211		

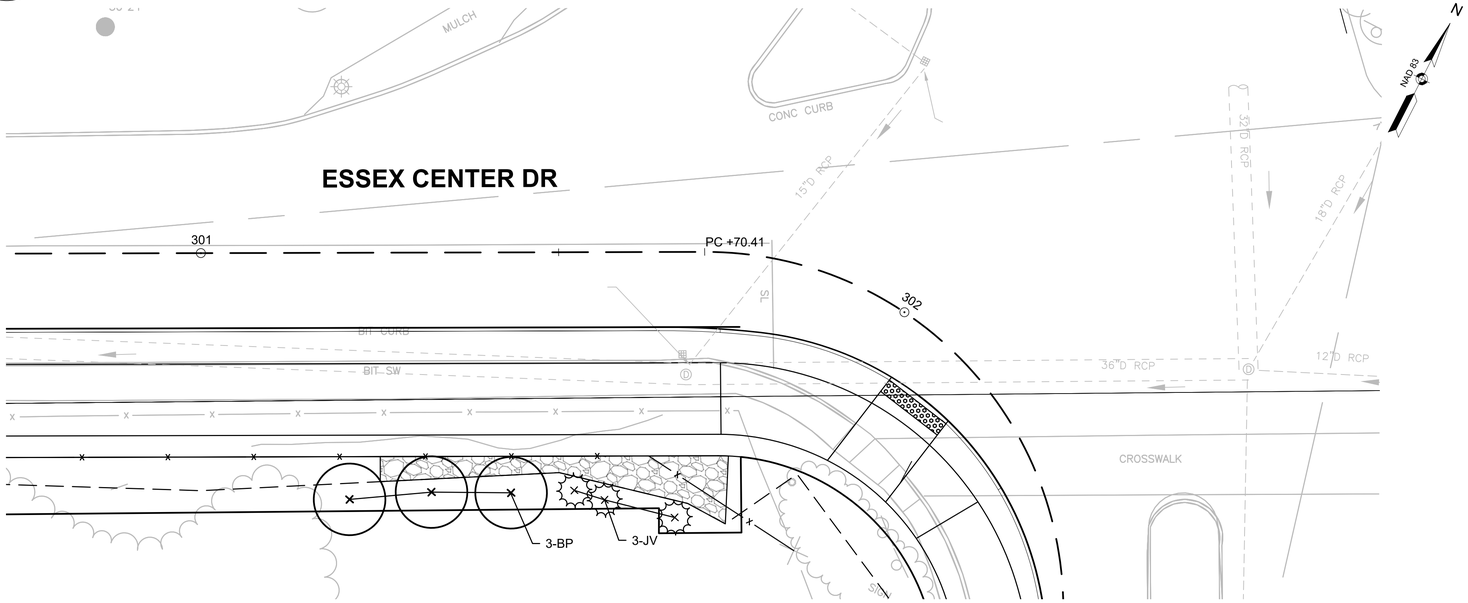
LANDSCAPE PLAN - 3

SHT005_HD(LANDSCAPE).DWG Plotted on 16-Jul-2025 5:06 PM



1 BLOW UP PLAN - TREE PLANTING ESSEX CENTER DRIVE STA. 299+00 TO 300+14

SCALE 1" = 10'-0"



2 BLOW UP PLAN - TREE PLANTING ESSEX CENTER STA. 300+78 TO 301+97

SCALE 1" = 10'-0"

0 10 20 30 40

SCALE: 1" = 10'

PLANT LIST - LANDSCAPE PLAN 3

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
		DECIDUOUS TREES			
BP	3	BETULA POPULIFOLIA	GRAY BIRCH	4-5 FEET	#3 CONT
PT	3	POPULUS TREMULOIDES	QUAKING ASPEN	4-5 FEET	#3 CONT
		EVERGEEN TREES			
JV	7	JUNIPERUS VIRGINIANA	RED CEDAR	3-4 FT	#3 CONT

PLANT LIST - UPLAND PROJECT TOTAL

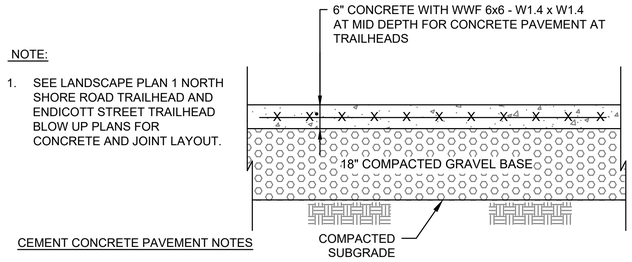
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	
		DECIDUOUS TREES				
AMC	1	AMELANCHIERXGRANDIFLORA	AUTUMN BRILLIANCE SERVICEBERRY	4-5' FEET CLUMP	B&B	
AOG	2	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2-2 1/2" CAL	B&B	
BP	7	BETULA POPULIFOLIA	GRAY BIRCH	4-5 FEET	#3 CONT	
PT	6	POPULUS TREMULOIDES	QUAKING ASPEN	4-5 FEET	#3 CONT	
		EVERGREEN TREES				
JV	25	JUNIPERUS VIRGINIANA	RED CEDAR	3-4 FT	#3 CONT	
PG	2	PICEA GLAUCA	WHITE SPRUCE	4-5' HT	B&B	
TE	11	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	4-5' HT	B&B	
		DECIDUOUS SHRUBS				
CAH	5	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	HUMMINGBIRD SUMMERSWEET	18-24" SP	#3 CONT	2' O.C.
IVL	6	ITEA VIRGINIANA 'SPRICH' LITTLE HENRY	LITTLE HENRY SWEETSPIRE	12-18" HT.	#3 CONT	2' O.C.
RAL	3	RHUS AROMATICA 'GRO-LOW'	GRO-LOW SUMAC	2-3 FT SP	#2 CONT	2.5' O.C.
RA	11	RHUS AROMATICA	FRAGRANT SUMAC	2-3 FT SP	#2 CONT	3' O.C.
		PERENNIALS AND ORNAMENTAL GRASSES				
AT	14	ASCLEPIAS TUBEROSA	BUTTERFLYWEED	#1 CONT		12" O.C.
CM	14	CAREX MORROWII 'ICE DANCE'	ICE DANCE SEDGE	#1 CONT		12" O.C.
HH	84	HEMEROCALLIS HAPPY RETURNS	HAPPY RETURNS DAY LILLY	#1 CONT		9" O.C.
HRR	46	HEMEROCALLIS ROSY RETURNS	ROSY RETURNS DAY LILLY	#1 CONT		9" O.C.
PS	9	PANICUM VIRGATUM 'SHENANADOAH'	SHENANADOAH SWITCH GRASS	#2 CONT.		18"'O.C.

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	52	145
	PROJECT FILE NO. 609211		

LANDSCAPE DETAILS - 1

SHT005_HDLANDSCAPE DETAILS).DWG Plotted on 16-Jul-2025 5:06 PM



NOTE:

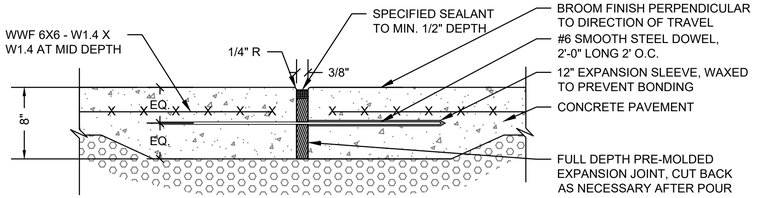
1. SEE LANDSCAPE PLAN 1 NORTH SHORE ROAD TRAILHEAD AND ENDICOTT STREET TRAILHEAD BLOW UP PLANS FOR CONCRETE AND JOINT LAYOUT.

CEMENT CONCRETE PAVEMENT NOTES

1. CEMENT CONCRETE PAVEMENT SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI WITH 6% AIR-ENTRAINMENT AND MINIMUM CEMENT CONTENT OF 610 LBS/C.Y.
2. CONTRACTOR SHALL SUBMIT CONCRETE JOINT LAYOUT PLAN FOR APPROVAL. EXPANSION JOINTS SHALL BE TRANSVERSE PREFORMED EXPANSION JOINT FILLER (AASHTO M-213-65) ½ IN. THICKNESS.
3. PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED ADJACENT TO OR AROUND EXISTING STRUCTURES AND WALKWAYS.
4. EXPANSION JOINTS SHALL BE CONSTRUCTED WITH DOWELS, AS INDICATED IN DETAIL 2 LANDSCAPE DETAIL SHEET 1.
5. AFTER CONSOLIDATION, CONCRETE DEPTH SHALL BE 6 INCHES IN DEPTH FOR TRAILHEADS.
6. ENSURE THAT NO BLED WATER OR WATER SHEEN EXISTS ON THE SURFACE OF THE CONCRETE AND THAT CONCRETE HAS STARTED TO STIFFEN BEFORE ANY FINISHING OPERATIONS ARE PERFORMED.
7. AFTER TROWELING, SURFACE SHALL BE BRUSHED BY DRAWING A SOFT-BRISTLED PUSHBROOM WITH A LONG HANDLE OVER THE SURFACE OF THE CONCRETE TO PRODUCE A NON-SLIP SURFACE.
8. THE FINISHING OF CONCRETE SURFACE SHALL BE DONE BY EXPERIENCED AND COMPETENT CEMENT CONCRETE FINISHERS.
9. FINISHING SHALL BE BROOM FINISH.
10. SAW CUT CONTROL JOINTS.
11. WHEN COMPLETED, CONCRETE SHALL BE KEPT MOIST AND PROTECTED FROM TRAFFIC AND WEATHER FOR AT LEAST 3 DAYS.
12. WELDED WIRE MESH SHALL BE 6"x6" No. 10 GAUGE AND SHALL BE SHEET MESH ONLY NOT ROLLED. MESH SHALL REST ON CONCRETE BLOCKS AND BE INSTALLED AT MID DEPTH IN CONCRETE.

1 CEMENT CONCRETE PAVEMENT AT TRAILHEADS

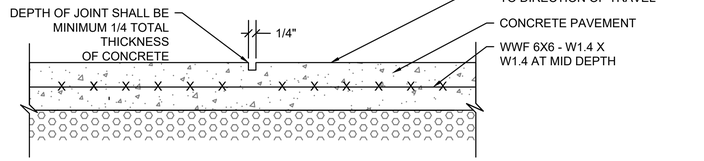
SCALE: N.T.S.



EXPANSION JOINT REQUIRED FOR EVERY +/- 225 SF OF PAVING OR EVERY 30FT ALONG WALKWAYS

EXPANSION JOINT NOTES:

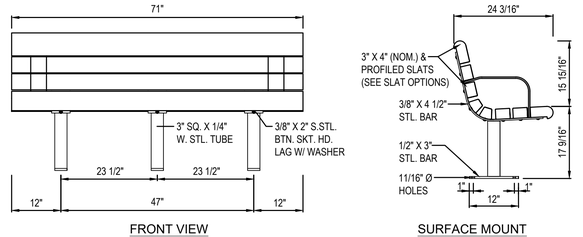
1. DOWEL IS TYPICAL AT ALL EXPANSION JOINTS EXCEPT AGAINST VERTICAL JOINTS WITH WALLS, CURBS OR SITE IMPROVEMENTS.



SAWCUT CONTROL JOINT REQUIRED FOR EVERY 36 SF OF PAVING.

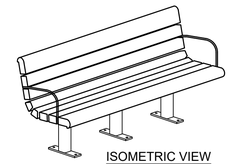
2 CONCRETE PAVEMENT JOINTS AT TRAILHEADS

SCALE: N.T.S.



FRONT VIEW

SURFACE MOUNT



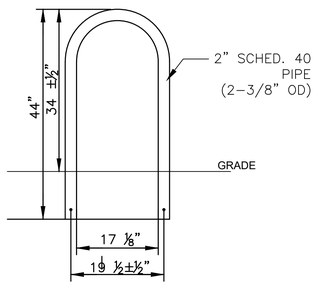
ISOMETRIC VIEW

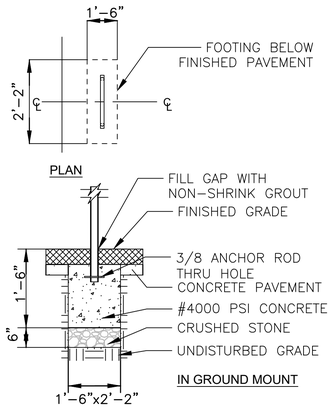
NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DRAWING NOT TO SCALE.
3. ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/POLYESTER POWDER COATING.
4. ½" x 3 ¾" EXPANSION ANCHOR BOLT 6 PER BENCH.
5. SUBMIT SHOP DRAWING FOR APPROVAL.
6. BENCH SHALL HAVE ARMREST ON BOTH ENDS.

3 BENCH

SCALE: N.T.S.





BIKE RACK SECTION

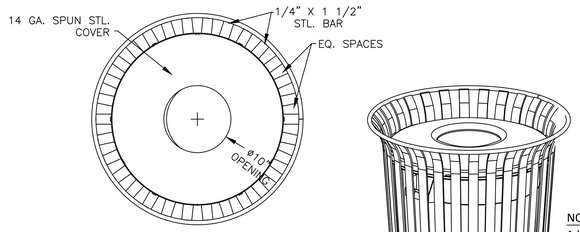
SECTION

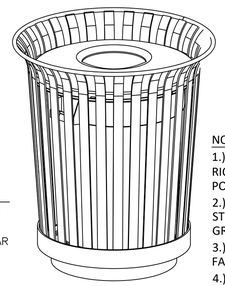
NOTES:

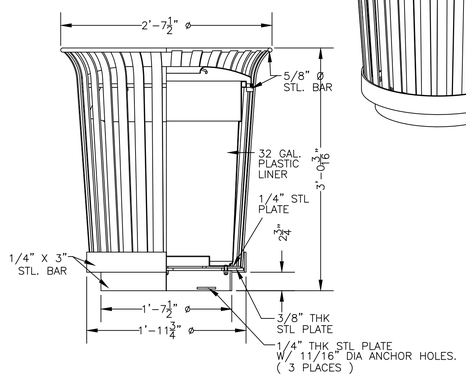
1. INSTALL BIKE RACKS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. SUBMIT SHOP DRAWING FOR APPROVAL.

4 BIKE RACK

SCALE: N.T.S.







NOTES:

1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.

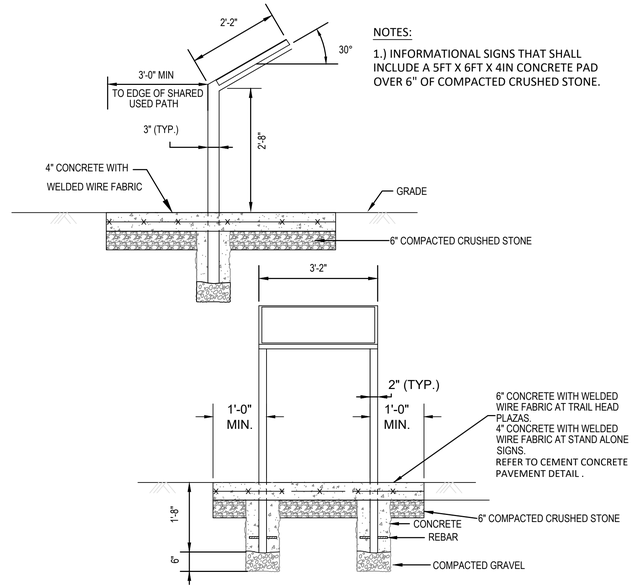
2.) ANCHOR BOLTS SHALL BE STAINLESS STEEL AND EXTENDED 3" BELOW FINISH GRADE.

3.) RECEPTACLE FULLY ASSEMBLED AT FACTORY.

4.) PROVIDE CABLE ATTACHMENT FOR LID

5 TRASH RECEPTACLE

SCALE: N.T.S.



NOTES:

1.) INFORMATIONAL SIGNS THAT SHALL INCLUDE A 5FT X 6FT X 4IN CONCRETE PAD OVER 6" OF COMPACTED CRUSHED STONE.

6 INFORMATIONAL SIGN

SCALE: N.T.S.

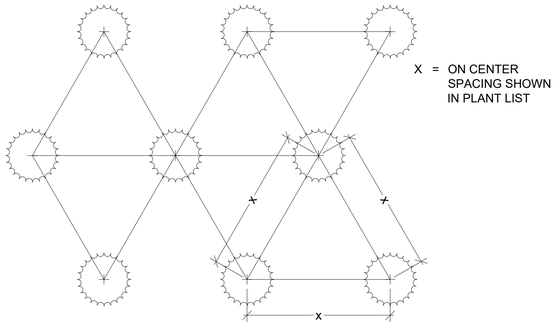
SIGN GRAPHIC CONTENT TO BE PROVIDED AND INSTALLED BY OTHERS

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	53	145
PROJECT FILE NO.	609211		

LANDSCAPE DETAILS - 2

SHT005_HD(LANDSCAPE DETAILS).DWG Plotted on 16-Jul-2025 5:06 PM

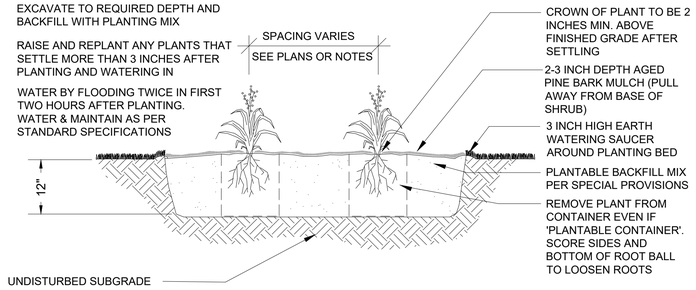


1 SHRUB, PERENNIAL AND ORNAMENTAL GRASS SPACING PLAN DETAIL

SCALE: N.T.S.

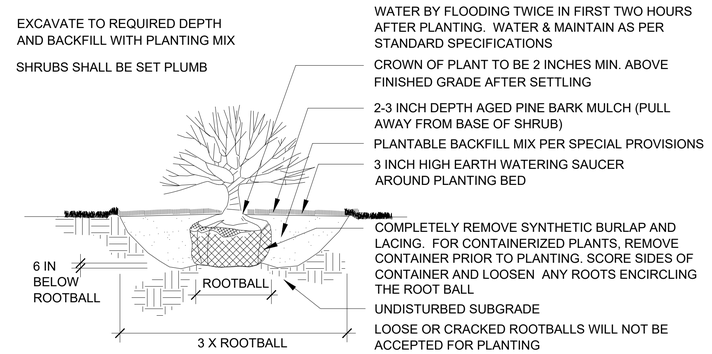
NOTE:

PINE BARK MULCH IN PERENNIAL AND SHRUB PLANTING BEDS SHALL BE PAID FOR IN PINE BARK MULCH ITEM. PINE BARK MULCH IN TREE PLANTING PITS AND SHRUBS NOT IN BEDS SHALL BE INCIDENTAL TO THOSE ITEMS.



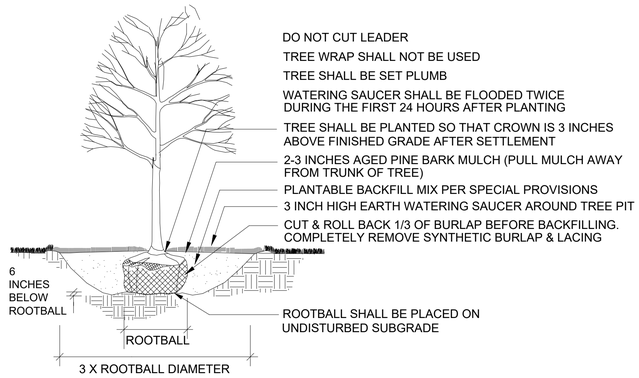
2 PERENNIAL AND ORNAMENTAL GRASS PLANTING

SCALE: N.T.S.



3 SHRUB PLANTING

SCALE: N.T.S.

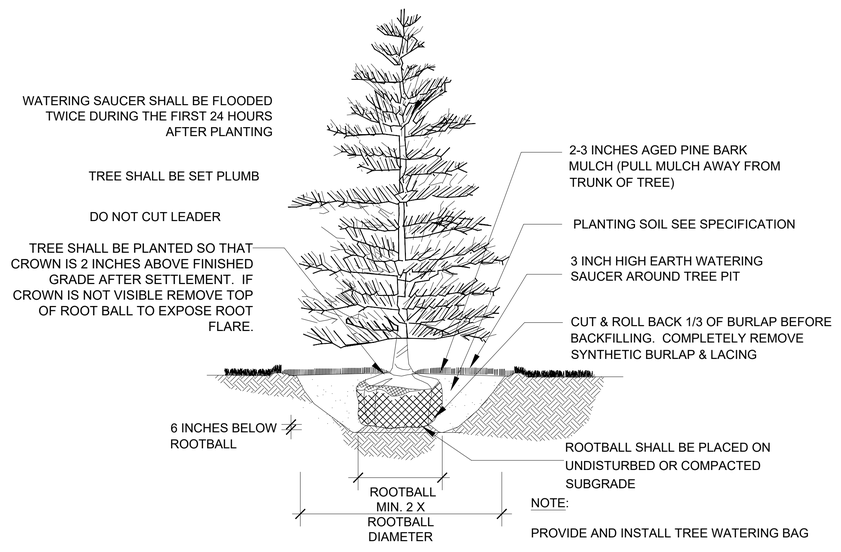


NOTE:

TREE TRUNK GUARDS SHALL BE INSTALLED AT ALL TREES. SEE SPECIAL PROVISION.

4 TREE PLANTING

SCALE: N.T.S.



NOTE:

PROVIDE AND INSTALL TREE WATERING BAG

5 EVERGREEN TREE PLANTING

SCALE: N.T.S.

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	54	145
PROJECT FILE NO.	609211		

LIGHTING PLAN

SHT0XX_HD(LIGHTING)_1.DWG Plotted on 16-Jul-2025 5:07 PM

FURNISH AND INSTALL LIGHT FIXTURE SW-1

FURNISH AND INSTALL JUNCTION BOX

FURNISH AND INSTALL JUNCTION BOX

SURFACE MOUNTED 1"C RGS 2#10, 1#10G

FURNISH AND INSTALL LIGHT FIXTURE SW-1

FURNISH AND INSTALL JUNCTION BOX

SW-1

SW-1

SW-1

REPLACE EXISTING LIGHT FIXTURE W/SW-1 AND RECONNECT TO EXISTING CIRCUIT

REPLACE EXISTING JUNCTION BOX

REPLACE EXISTING CONDUIT SECTION WITH 1"C RGS

FURNISH AND INSTALL JUNCTION BOX

SURFACE MOUNTED 1"C RGS 2#10, 1#10G

REPLACE EXISTING LIGHT FIXTURE W/SW-1 AND RECONNECT TO EXISTING CIRCUIT

REPLACE EXISTING JUNCTION BOX

EXISTING CONDUIT TO CONTROL CABINET TO REMAIN

APPROXIMATE LOCATION OF CONDUIT

THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA 3R 12X8X6 JUNCTION BOX FOR EXISTING POLE-MOUNTED FEEDER CIRCUITS AND RELOCATE ITEMS WITHIN ENCLOSURE. THE CONTRACTOR IS TO CONFIRM THE APPROPRIATE SIZE OF THE ENCLOSURE PRIOR TO INSTALLATION.

303

304

PC +87.37

PT +65.70

15"D RCP

CONC CURB

CONC CURB

VGC

VGC

VGC

CB

CB

CB

CB

BRUSH

BRUSH

SIGN

SIGN

RCP

NO ACCESS

NO ACCESS

BIT SW

BIT CURB

EOP

C3

C4

C5

C6

C7

LP-6

LOCATION LINE OF JULY 6, 1957 CITY LAYOUT

INV. 12"CMP

8"W

NAD 83

N

NORTH SHORE ROAD

0 10 20 30 40

SCALE: 1" = 10'

1 BLOW UP PLAN - LIGHTING LAYOUT AT UNDERPASS

SCALE 1" = 10'-0"

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

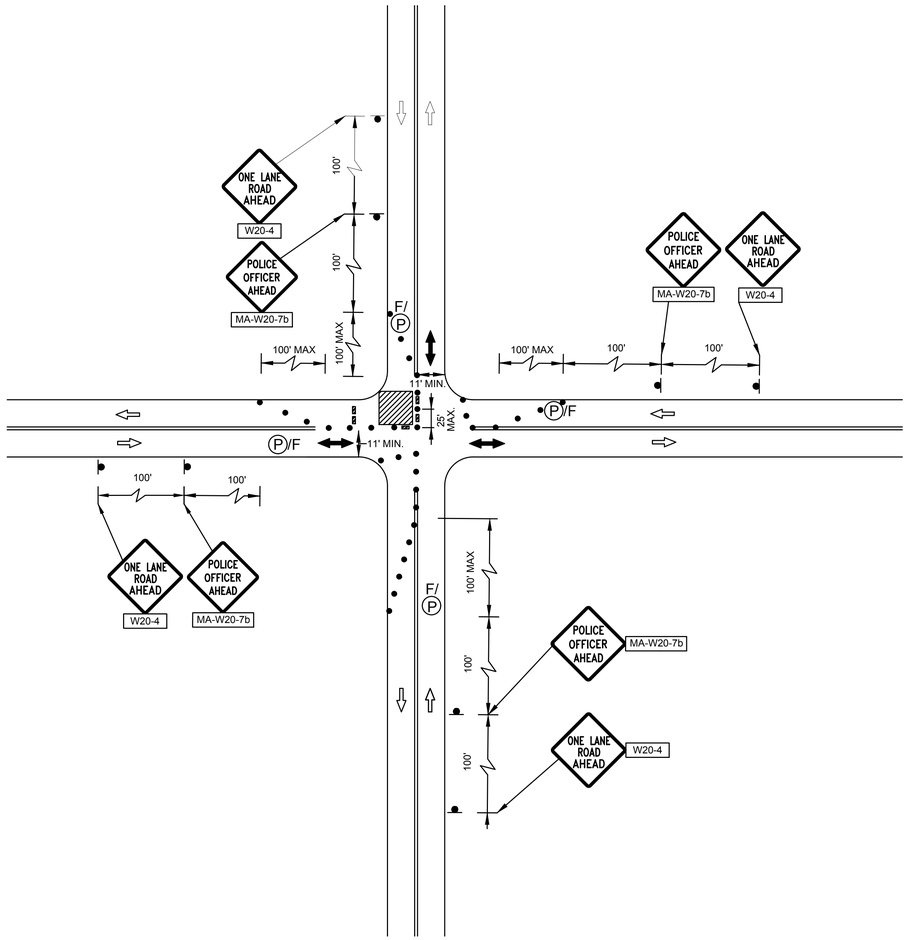
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	55	145
PROJECT FILE NO.	609211		

TRAFFIC MANAGEMENT PLAN - 1

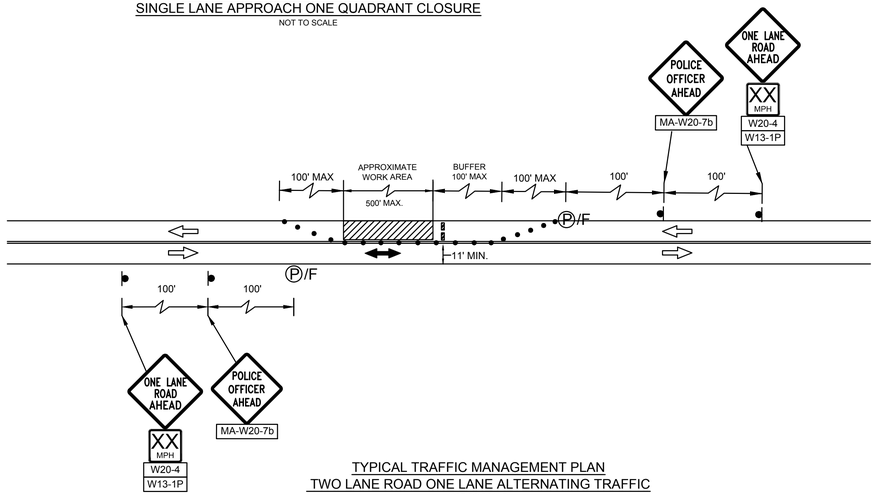
SHT015_HDLTMP).DWG Plotted on 16-Jul-2025 4:51 PM

TEMPORARY TRAFFIC CONTROL NOTES:

1. MINIMUM LANE WIDTH OF 11 FEET SHALL BE MAINTAINED AT ALL TIMES. MINIMUM LANE WIDTHS TO BE MEASURED FROM THE EDGE OF THE DRUMS OR CONES (IF USED).
2. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY MUST PASS THE CRITERIA SET FORTH IN THE NHCRP 350 REPORT.
3. THE CONTRACTOR SHALL COORDINATE APPROVAL AND IMPLEMENTATION OF THIS TEMPORARY TRAFFIC CONTROL PLAN WITH MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT) PRIOR TO CONSTRUCTION ACTIVITIES.
4. THE CONTRACTOR SHALL COORDINATE APPROVAL OF ANY CHANGES TO THE TEMPORARY TRAFFIC CONTROL PLAN WITH MASSDOT PRIOR TO CONSTRUCTION ACTIVITES. THE CONTRACTOR SHALL ALSO NOTIFY MASSDOT, THE NORTH SHORE MALL, AND THE CITY OF PEABODY THREE (3) WEEKS IN ADVANCE OF PLACING TEMPORARY TRAFFIC CONTROL SIGNS.
5. ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM WITH THE 2023 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND "STANDARD HIGHWAY SIGNS" CURRENT EDITION.
6. PLACE ALL SAFETY DEVICES AND CONSTRUCTION SIGNING BEFORE ACTUAL CONSTRUCTION WORK BEGINS.
7. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED BASED ON FIELD CONDITIONS WITH THE DIRECTION AND APPROVAL OF ENGINEER.
8. ALL WARNING SIGNS SHALL BE BLACK LEGEND ON A REFLECTIVE ORANGE BACKGROUND.
9. ALL DRUMS SHALL BE PLACED APPROPRIATELY OR MOVED AS NECESSARY TO MAINTAIN SAFE AND REASONABLE ABUTTER ACCESS AT ALL TIMES.
10. ALL SIGNS NOT APPLICABLE TO THE CURRENT TRAFFIC SETUP SHALL BE REMOVED AND RESET UPON COMPLETION OF CONSTRUCTION OR COVERED.
11. A LONGITUDINAL BUFFER SPACE SHALL BE UTILIZED IN ADVANCE OF WORK AREAS. REFER TO PART VI OF THE 2009 MUTCD FOR GUIDELINES AND DETAILS.
12. AT THE END OF EACH WORKING DAY, EXCAVATED AREA OF TRAVEL LANE SHALL BE RESURFACED OR STEEL PLATED FOR VEHICLE USE.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS/EGRESS AT ALL CURB CUTS, BUSINESS ENTRANCES, RESIDENTIAL ENTRANCES LOCATED WITHIN THE WORK ZONES.
14. CONTRACTOR SHALL PROVIDE AND MAINTAIN A TEMPORARY ADA AND AAB COMPLIANT ACCESSIBLE PEDESTRIAN ROUTE AROUND BLOCKAGES TO AN EXISTING PEDESTRIAN ROUTE (E.G. SIDEWALKS, CROSSWALKS, PEDESTRIAN CURB RAMPS, ETC.). ALL TEMPORARY WHEELCHAIR RAMPS SHALL MEET MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (AAB) AND AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS. BLOCKAGES INCLUDE, BUT ARE NOT LIMITED TO CONSTRUCTION WORK, EXCAVATIONS, EQUIPMENT AND VEHICLES, TEMPORARY WATER AND UTILITY LINES PLACED ON THE SURFACE, TRAFFIC DIVERTERS, ETC. PROVIDE TEMPORARY FENCING OR BARRIERS AS NECESSARY TO MAINTAIN SAFE PEDESTRIAN PASSAGE AT ALL TIMES.
15. CONTRACTOR SHALL MAINTAIN EMERGENCY PASSAGE AT ALL TIMES TO BUILDINGS WITHIN AND ADJACENT TO THE PROJECT LIMITS AS WELL AS A LARGER AREA IF AFFECTED BY CONSTRUCTION CONDITIONS. CONTRACTOR SHALL MAINTAIN 24 HOUR EMERGENCY VEHICLE ACCESS TO CONSTRUCTION AREAS.
16. CONTRACTOR SHALL COORDINATE WITH ABUTTERS FOR THE PROPOSED WORK AND SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF THE WORK THAT WILL REQUIRE TEMPORARY CLOSURE OF ACCESS.
17. SAFETY SIGNS PROPOSED FOR LOCATIONS OTHER THAN ERECTED ON TEMPORARY BARRICADES SHALL BE CONSTRUCTED WITH THEIR OWN SUPPORTS OR SIGN POSTS.
18. TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC DEVICES SHALL BE REMOVED FROM THE ROADWAY WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
19. UNLESS OTHERWISE NOTED, ALL PAVEMENT MARKINGS, SIGNS AND OTHER TRAFFIC EQUIPMENT REMOVED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN CONFORMANCE WITH THE STANDARDS OF APPLICABLE STATE AND LOCAL AGENCIES.
20. CONTRACTOR SHALL INSTALL, RENEW AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS SHOWN ON THE DRAWINGS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND AS REQUIRED BY APPLICABLE STATE AND LOCAL AGENCIES.
21. THE CONTRACTOR SHALL NOTIFY APPLICABLE STATE AND LOCAL AGENCIES TWO (2) WEEKS IN ADVANCE OF PLACING TEMPORARY TRAFFIC CONTROL SIGNS.
22. THE CONTRACTOR SHALL LOCATE ALL TEMPORARY BARRIERS (IF USED) SO THERE ARE NO EXPOSED BLUNT ENDS WHICH WILL CAUSE HAZARDOUS CONDITIONS TO TRAFFIC. IN SUCH CASES, THE CONTRACTOR SHALL PROVIDE AND LOCATE BARRIER TAPERED END SECTIONS TO PROTECT VEHICULAR TRAFFIC AND THE WORK AREA.
23. THE FIRST TEN (10) PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
24. THE CONTRACTOR SHALL COORDINATE WITH ANY ABUTTING PROJECTS.
25. ON-STREET PARKING, IF APPLICABLE, TO BE RESTRICTED PRIOR TO WORK.
26. THESE PLANS ARE NOT INTENDED TO LIMIT THE CONTRACTOR'S APPROACH TO SCHEDULE THE WORK BUT TO OUTLINE ONE WAY OF PROGRESSING. THE CONTRACT IS EXPECTED TO USE KNOWLEDGE AND EXPERIENCE TO PERFORM THE WORK IN THE MOST EFFICIENT AND SAFE MANNER IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS.
27. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
28. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
29. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
30. MBTA BUS ROUTES 435 AND 436 WILL BE AFFECTED DURING FULL-DEPTH OPERATIONS. WORK ON ESSEX CENTER DRIVE AND NORTHSHORE ROAD SHALL BE COORDINATED WITH MILES TAYLOR (MTAYLOR@MBTA.COM) OF BUS OPERATIONS.
31. WORK REQUIRING LANE CLOSURES SHALL BE PERFORMED BETWEEN 9:30 A.M. AND 3:30 P.M. FOR DAYTIME WORK OR BETWEEN 8:00 P.M. AND 6:00 A.M. FOR NIGHTTIME WORK. REFER TO SUBSECTION 8.02 SCHEDULE OF OPERATIONS LANGUAGE IN THE SPECIAL PROVISIONS.



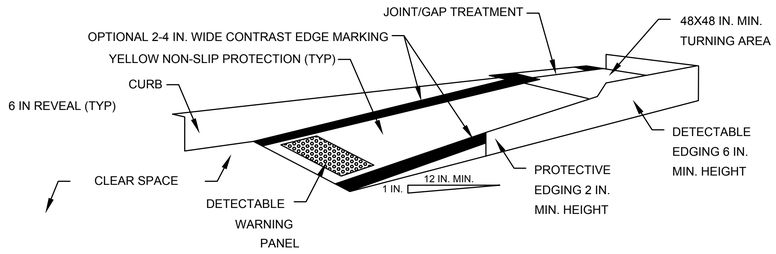
TYPICAL TRAFFIC MANAGEMENT PLAN
SINGLE LANE APPROACH ONE QUADRANT CLOSURE
NOT TO SCALE



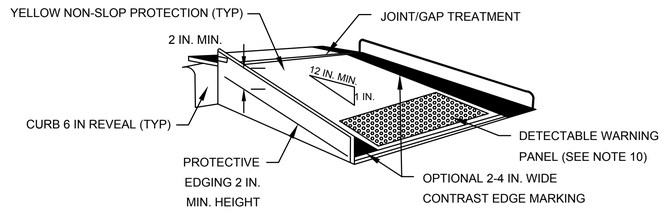
TYPICAL TRAFFIC MANAGEMENT PLAN
TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC
NOT TO SCALE

TRAFFIC DEVICE LEGEND

- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- DIRECTION OF PROPOSED VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- (P) POLICE OFFICER



TEMPORARY CURB RAMP-PARALLEL TO CURB

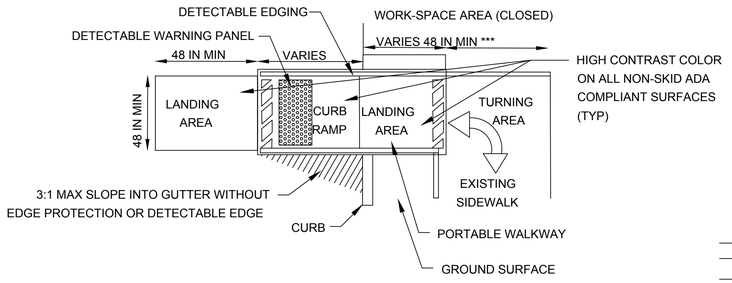


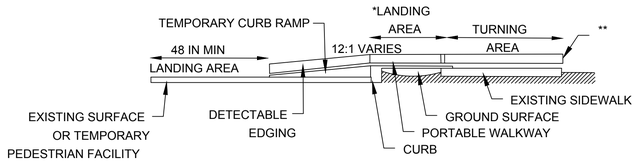
TEMPORARY CURB RAMP - PERPENDICULAR TO CURB

NOT TO SCALE

NOTES:

1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
6. CLEAR SPACE OF 60x60 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.

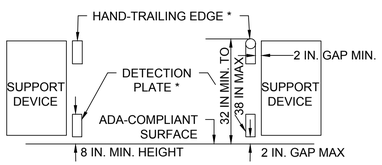




TEMPORARY CURB RAMP-TYPE 2

NOT TO SCALE

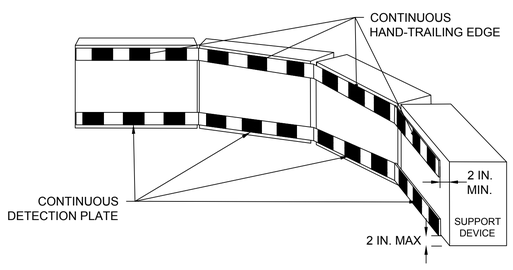
* LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.
** A DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.
*** 60 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK.



CROSS SECTION VIEW

PEDESTRIAN CHANNELIZING DEVICE

* THE HAND-TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGH-OUT THE LENGTH OF THE PATH.



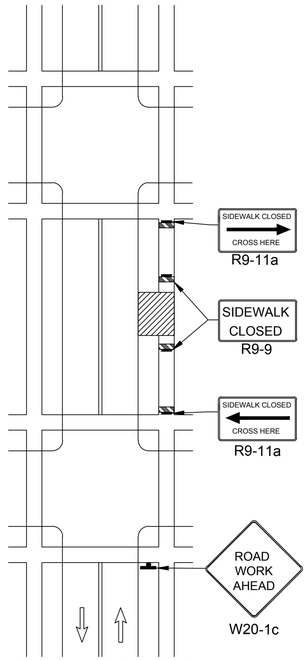
NOTES:

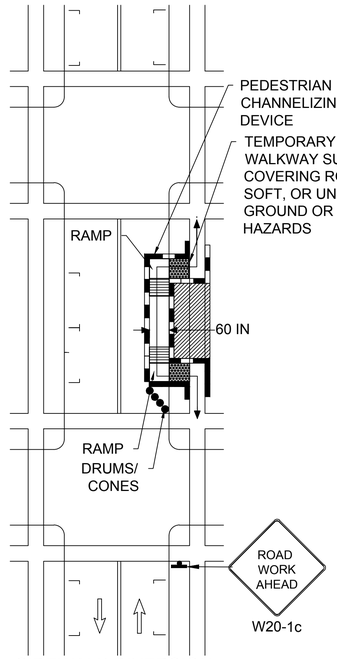
1. THERE SHOULD BE AT LEAST A 2-INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.
2. A MAXIMUM 2-INCH GAP BETWEEN THE BOTTOM OF THE CONTINUOUS DETECTION PLATE AND THE WALKWAY MAY BE USED TO PROVIDE DRAINAGE.
3. SHEETING PANELS MAY BE EITHER VERTICAL OR AT A 45-DEGREE ANGLE.
4. HAND-TRAILING EDGE AND/OR DETECTION PLATES ARE OPTIONAL FOR CONTINUOUS WALLS.

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	56	145
PROJECT FILE NO.	609211		

TRAFFIC MANAGEMENT PLAN - 2





NOTES:

1. PEDESTRIAN DETOUR ROUTES MUST BE ADA/MAAB COMPLIANT.
2. WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A WORK ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED. THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
3. A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
4. WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT.
5. THE ALTERNATIVE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
6. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 5 FEET WIDE.
7. THE PROTECTIVE REQUIREMENTS OF A WORK ZONE HAVE PRIORITY IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS OR BARRICADES AND THEIR USE IN THIS SITUATION SHOULD BE BASED ON ENGINEERING JUDGEMENT.
8. THE PEDESTRIAN DETAILS SHOW ONLY CONTROLS FOR PEDESTRIAN TRAFFIC; VEHICULAR TRAFFIC SHOULD BE DESIGNED AS SHOWN ELSEWHERE. THESE DETAILS ARE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTIONS STAGING AS DETERMINED BY THE ENGINEER.
9. AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MIDBLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.
10. EXISTING AUDIBLE DEVICES NO LONGER APPLICABLE DUE TO CONSTRUCTION SHALL BE DISABLED.

AUDIBLE DEVICES

FOR LONG TERM SIDEWALK CLOSURES (AT A MINIMUM OVERNIGHT) A FORM OF SPEECH MESSAGING FOR PEDESTRIANS WITH VISUAL DISABILITIES SHALL BE PROVIDED. AUDIBLE INFORMATION DEVICES SUCH AS DETECTABLE BARRIERS OR BARRICADES AND OTHER PASSIVE PEDESTRIAN ACTIVATION (MOTION ACTIVATED) DEVICES SHOULD BE CONSIDERED FOR THESE CASES. THESE AUDIBLE DEVICES CAN BE MOUNTABLE OR STAND ALONE.

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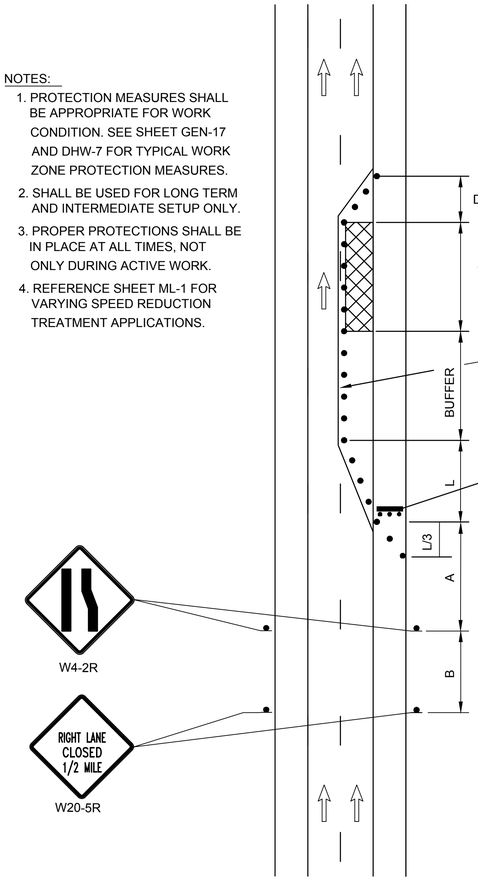
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	57	145
PROJECT FILE NO.	609211		

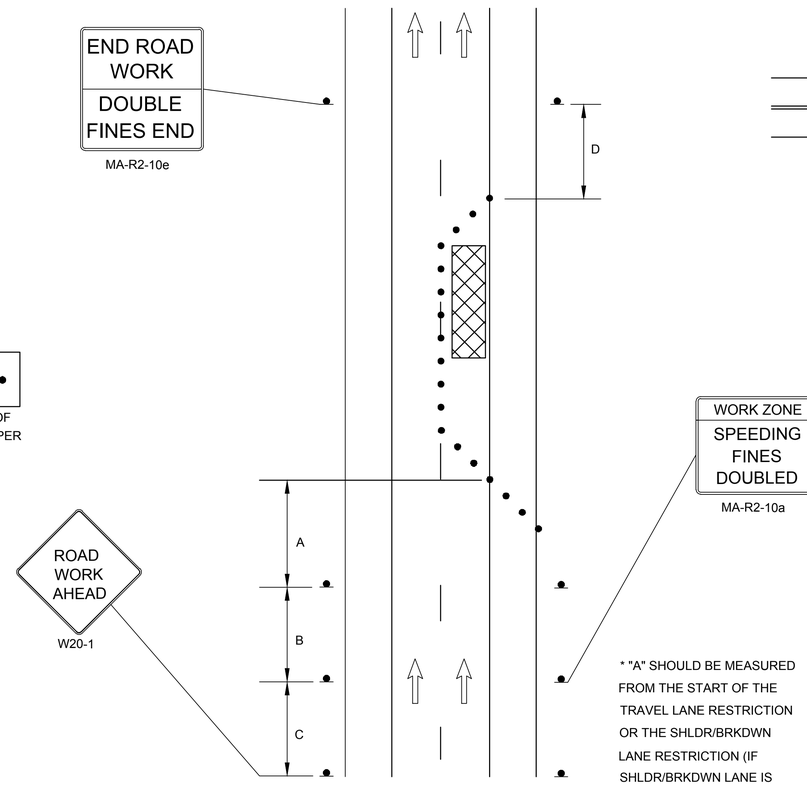
TRAFFIC MANAGEMENT PLAN - 3

NOTES:

1. PROTECTION MEASURES SHALL BE APPROPRIATE FOR WORK CONDITION. SEE SHEET GEN-17 AND DHW-7 FOR TYPICAL WORK ZONE PROTECTION MEASURES.
2. SHALL BE USED FOR LONG TERM AND INTERMEDIATE SETUP ONLY.
3. PROPER PROTECTIONS SHALL BE IN PLACE AT ALL TIMES, NOT ONLY DURING ACTIVE WORK.
4. REFERENCE SHEET ML-1 FOR VARYING SPEED REDUCTION TREATMENT APPLICATIONS.



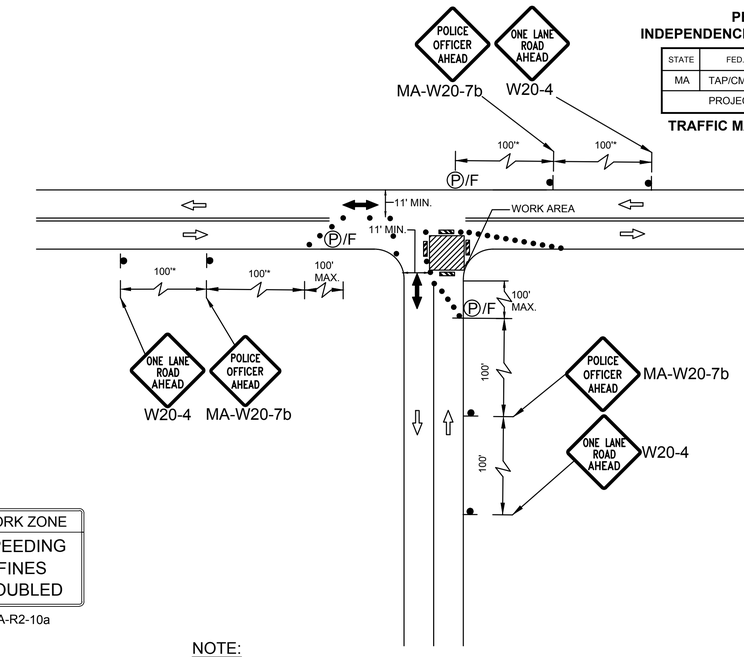
TYPICAL TRAFFIC MANAGEMENT PLAN
RIGHT LANE CLOSURE
NOT TO SCALE



* "A" SHOULD BE MEASURED FROM THE START OF THE TRAVEL LANE RESTRICTION OR THE SHLDR/BRKDWN LANE RESTRICTION (IF SHLDR/BRKDWN LANE IS ONLY LANE BEING CLOSED)

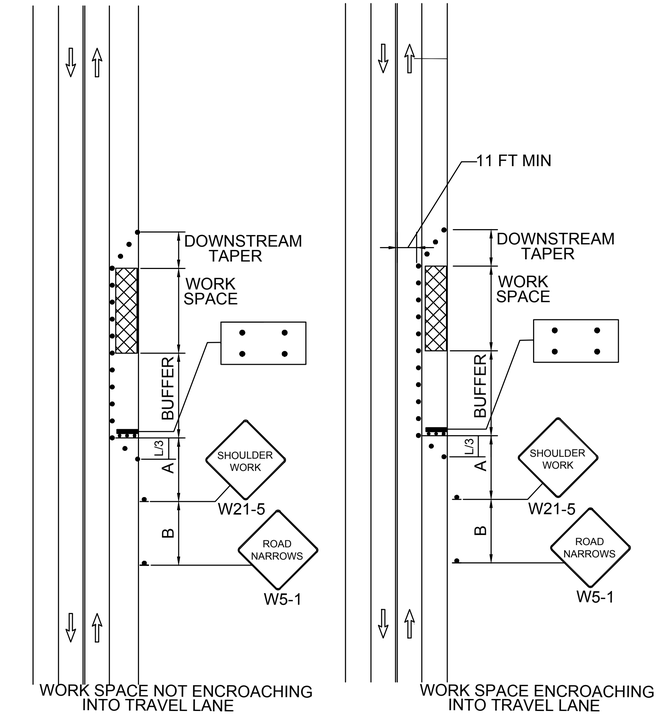
TYPICAL TRAFFIC MANAGEMENT PLAN
WORK ZONE SIGN SPACING
NOT TO SCALE

ROAD TYPE	DISTANCE			
	A	B	C	D
URBAN (30 MPH OR LESS)	100 FEET	100 FEET	100 FEET	100 FEET
EXPRESSWAY/FREEWAY	1,000 FEET	1,500 FEET	2,640 FEET	500 FEET



NOTE:
USE SIMILAR TRAFFIC SETUP FOR WORK AT OPPOSITE SIDE OF INTERSECTION.

TYPICAL TRAFFIC MANAGEMENT PLAN
SINGLE LANE APPROACH ONE QUADRANT CLOSURE AT T-INTERSECTION
NOT TO SCALE



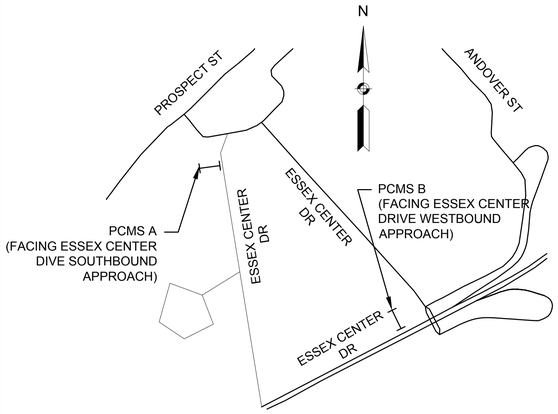
WORK SPACE NOT ENCROACHING INTO TRAVEL LANE

WORK SPACE ENCROACHING INTO TRAVEL LANE

TRAFFIC DEVICE LEGEND

- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- DIRECTION OF PROPOSED VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- Ⓟ POLICE OFFICER

SHT015_HDLTMP.DWG Plotted on 16-Jul-2025 4:51 PM



TRAILHEAD CONSTRUCTION STAGES 2A, 2B, 3

PCMS A, B DISPLAY ADVANCED NOTIFICATION

ESSEX CTR DR CONST	MM/DD TO MM/DD

PCMS A,B DISPLAY DURING CONSTRUCTION

ESSEX CTR DR CONST	AT TRAIL PARKING

FULL-DEPTH CONSTRUCTION OF ESSEX CENTER DRIVE STA 293+00 - 302+00

PCMS A, B DISPLAY ADVANCED NOTIFICATION

ESSEX CTR DR CONST	MM/DD TO MM/DD

PCMS A, B DISPLAY DURING CONSTRUCTION

ESSEX CTR DR CONST	ONE LANE ALT

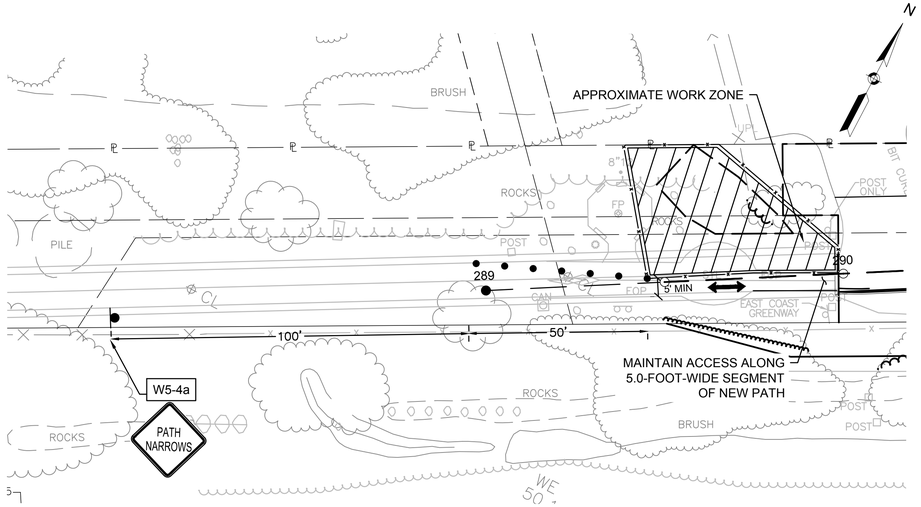
NOTE:

- THE CONTRACTOR SHALL INSTALL PCMS BOARDS ON ESSEX CENTER DRIVE APPROACHES TO THE INTERSECTION.
- THE PCMS BOARDS SHALL BE INSTALLED 1/4 MILE FROM THE INTERSECTION.

PCMS BOARD SETUP FOR TRAILHEAD CLOSURE
NOT TO SCALE

TRAFFIC DEVICE LEGEND

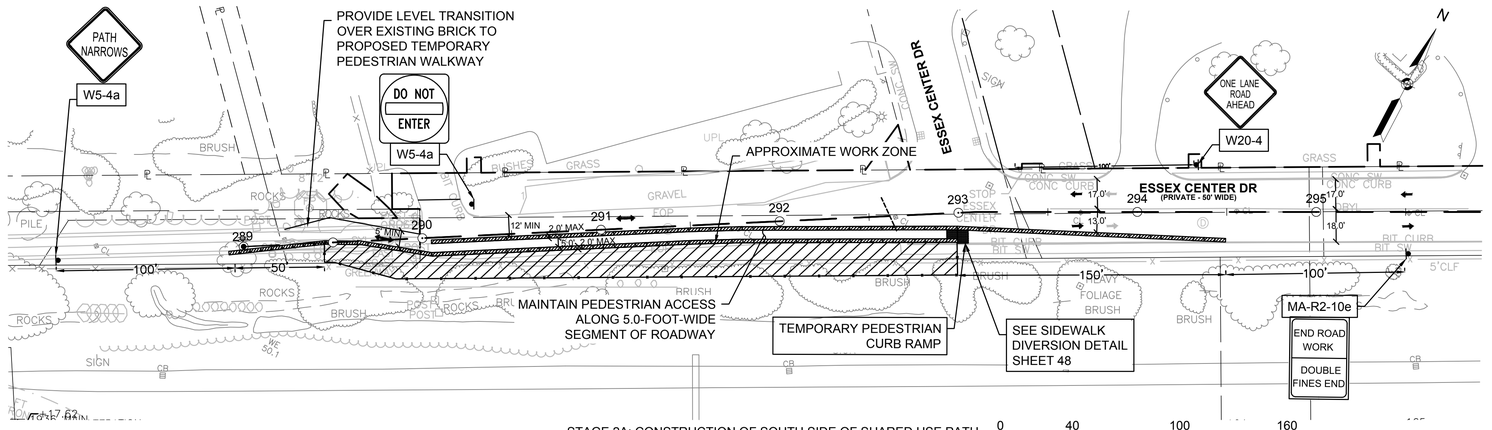
- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- DIRECTION OF PROPOSED VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- PEDESTRIAN BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- PCMS BOARD
- TEMPORARY PEDESTRIAN RAMP



STAGE 1: CONSTRUCTION OF TEMPORARY PAVEMENT AREA AT EXISTING TRAILHEAD AND SWALE

0 20 50 100

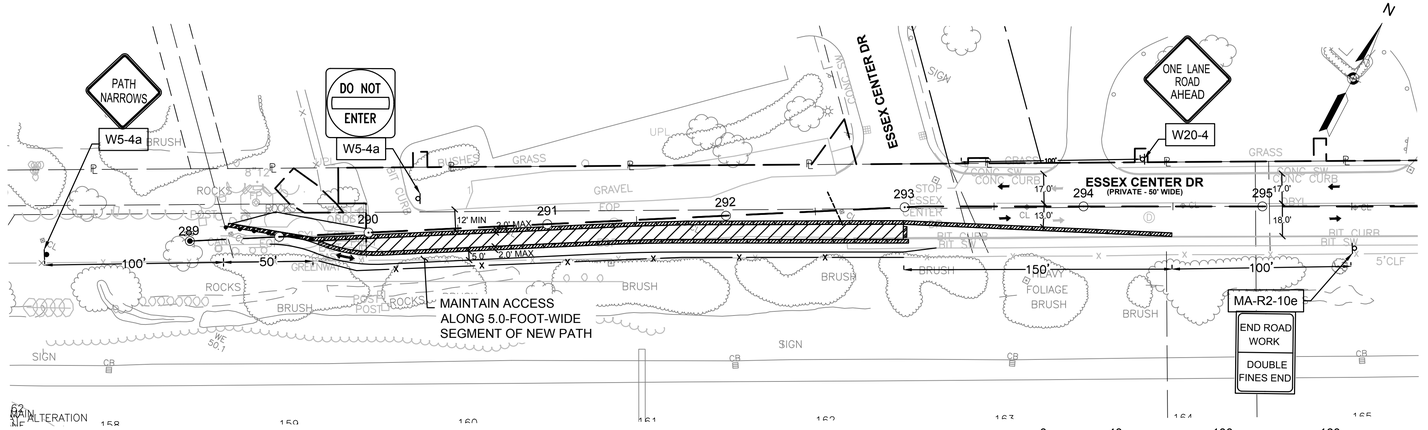
SCALE: 1" = 20'



STAGE 2A: CONSTRUCTION OF SOUTH SIDE OF SHARED USE PATH

0 40 100 160

SCALE: 1" = 40'



STAGE 2B: CONSTRUCTION OF CURB AND NORTH SIDE OF SHARED USE PATH

0 40 100 160

SCALE: 1" = 40'

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	58	145
PROJECT FILE NO.	609211		

TRAFFIC MANAGEMENT PLAN - 4

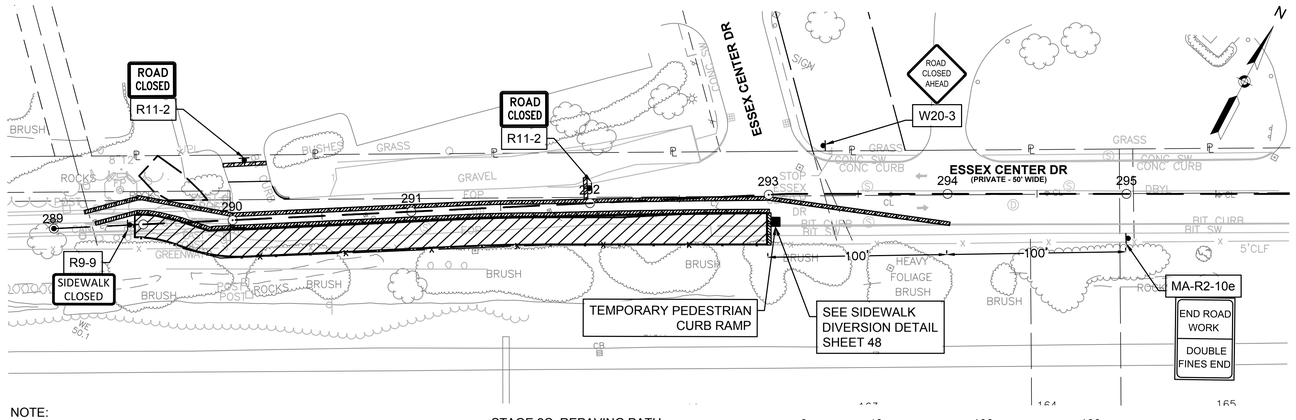
SHT015_HD(TMP).DWG Plotted on 16-Jul-2025 4:52 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	59	145
PROJECT FILE NO.	609211		

TRAFFIC MANAGEMENT PLAN - 5

SHT015_HDLTMP).DWG Plotted on 16-Jul-2025 4:52 PM

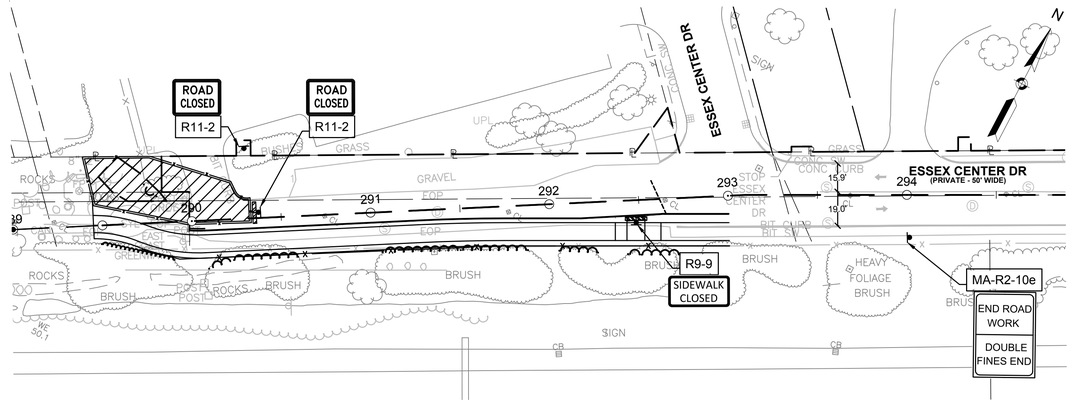


NOTE:
ALL WORK IN THIS PHASE SHALL OCCUR AT NIGHT TO LIMIT IMPACTS TO TRAIL USERS AND PARKING

STAGE 2C: REPAVING PATH

0 40 100 160

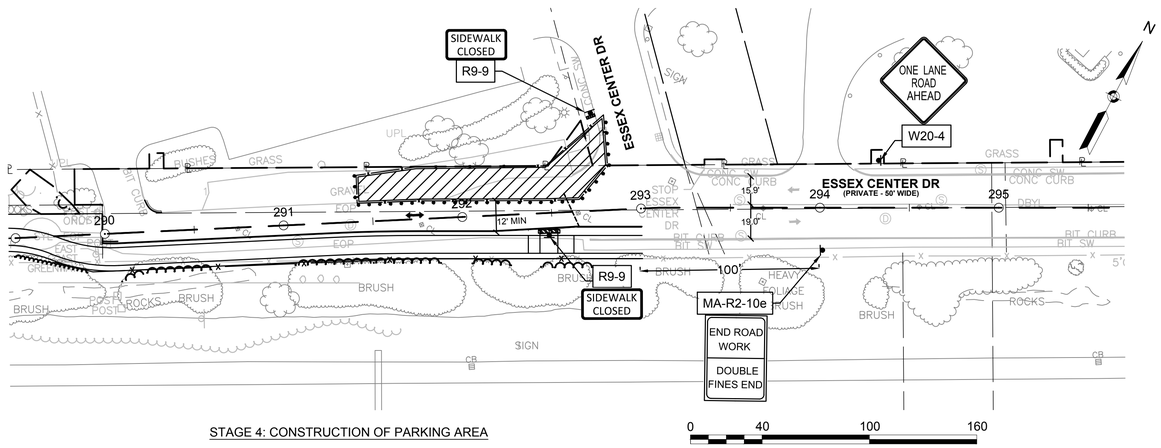
SCALE: 1" = 40'



STAGE 3: CONSTRUCTION OF PARKING AREA AT HOSPITAL DRIVE AND COMPLETION OF SWALE

0 40 100 160

SCALE: 1" = 40'



STAGE 4: CONSTRUCTION OF PARKING AREA

0 40 100 160

SCALE: 1" = 40'

TRAFFIC DEVICE LEGEND

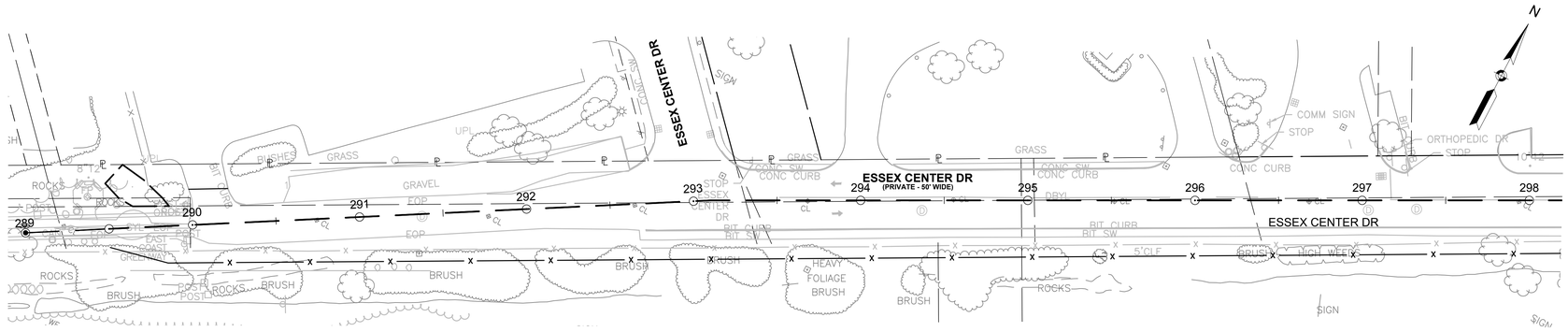
- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- DIRECTION OF PROPOSED VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- PEDESTRIAN BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- PCMS BOARD
- TEMPORARY PEDESTRIAN RAMP

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	60	145
PROJECT FILE NO.	609211		

TRAFFIC MANAGEMENT - FENCING

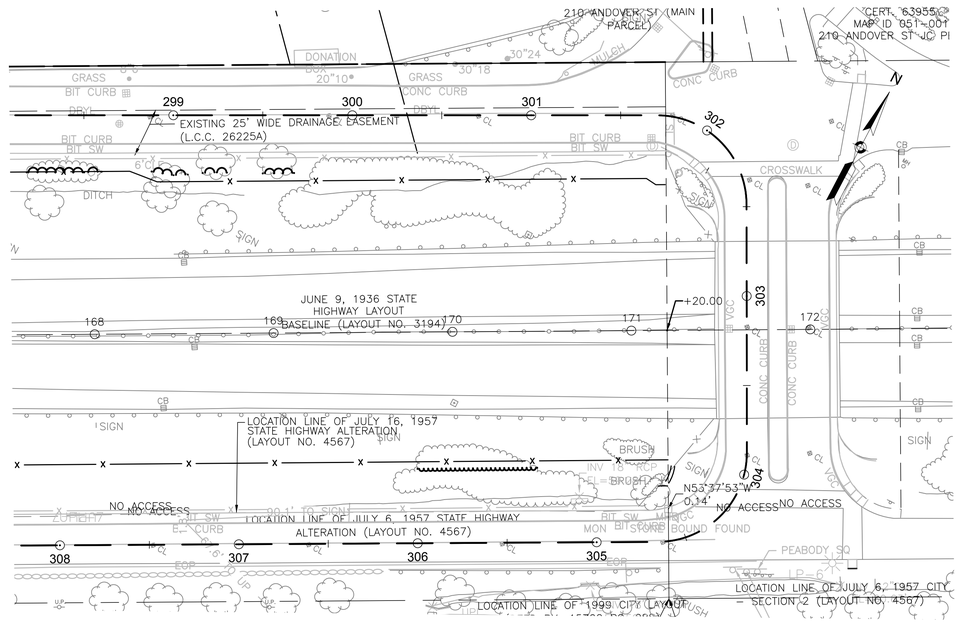
SHT015_HDLTMP).DWG Plotted on 16-Jul-2025 4:53 PM



TEMPORARY FENCE PLACEMENT ALONG ESSEX CENTER DRIVE

0 40 100 160

SCALE: 1" = 40'

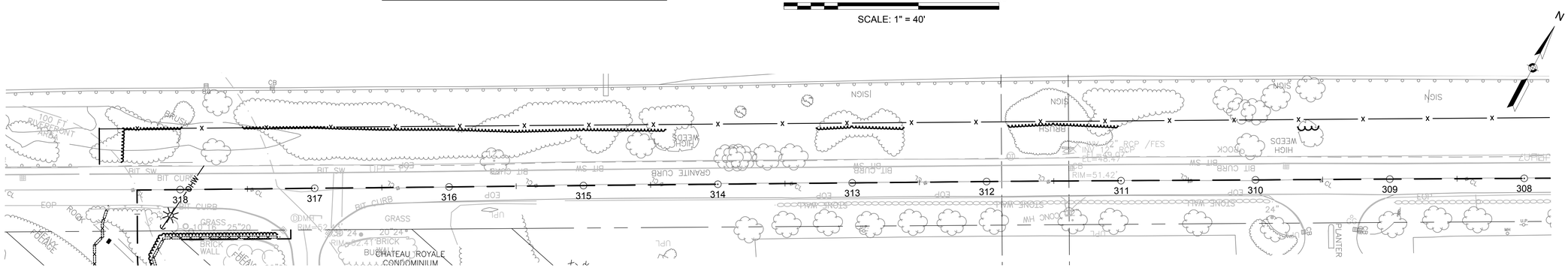


TEMPORARY FENCE PLACEMENT IN VICINITY OF UNDERPASS

0 40 100 160

SCALE: 1" = 40'

NOTES:
1. CONTRACTOR TO INSTALL TEMPORARY FENCING PRIOR TO REMOVAL OF EXISTING FENCING.
2. SEE NOTE 26 ON SHEET 55 REGARDING PLACEMENT OF THE FENCE.
3. TEMPORARY FENCE SHALL MEET AT EXISTING FENCE TO FORM CONTINUOUS BARRIER ALONG THE ROUTE 128 CORRIDOR.



TEMPORARY FENCE PLACEMENT ALONG NORTH SHORE ROAD

0 40 100 160

SCALE: 1" = 40'

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	61	145
PROJECT FILE NO.	609211		

TRAFFIC MANAGEMENT - UNDERPASS

SHT015_HDL(TMP).DWG Plotted on 16-Jul-2025 4:53 PM

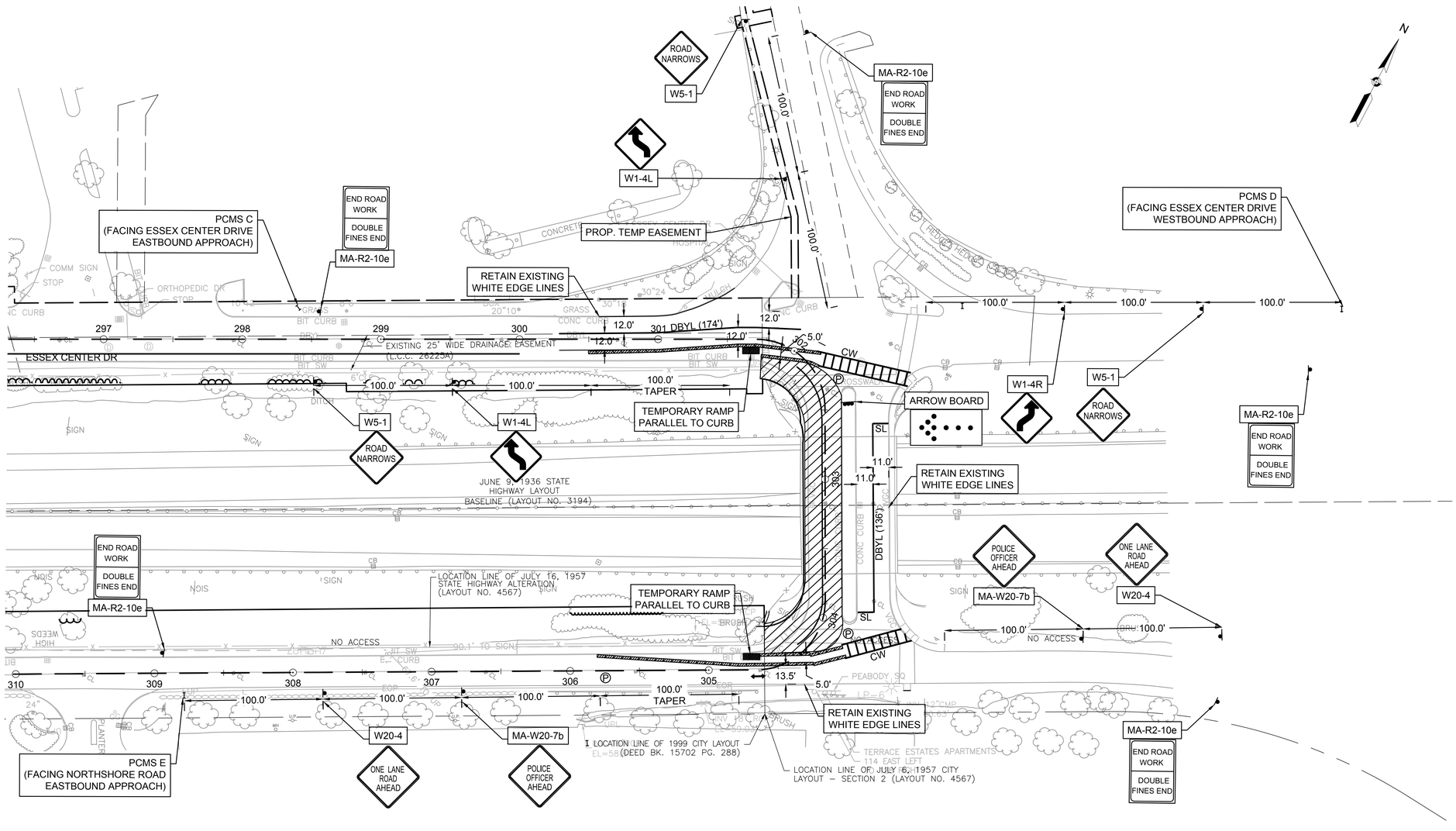
UNDERPASS PATH SEGMENT CONSTRUCTION

PCMS C, D, E DISPLAY ADVANCED NOTIFICATION

UNDER-PASS CONST | MM/DD TO MM/DD

PCMS C, D, E DISPLAY DURING CONSTRUCTION

UNDER-PASS CONST | LANE SHIFT AHEAD



CONSTRUCTION OF SHARED USE PATH UNDER UNDERPASS
40 SCALE

0 40 100 160
SCALE: 1" = 40'

TRAFFIC DEVICE LEGEND

- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- DIRECTION OF PROPOSED VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- PEDESTRIAN BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- PCMS BOARD
- TEMPORARY PEDESTRIAN RAMP
- POLICE DETAIL

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	62	145
PROJECT FILE NO.	609211		

TEMPORARY TRAFFIC SIGN SUMMARY

TEMPORARY TRAFFIC SIGN SUMMARY SHEET

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF REQUIRED SIGNS	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	TOTAL AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MRK		BACKGROUND	LEGEND	BORDER			
MA-R2-10a	48	36	WORK ZONE SPEEDING FINES DOUBLED	SEE MASSDOT STD. DETAIL			5	FLUORESCENT ORANGE AND RETROREFLECTIVE WHITE	BLACK	BLACK	P-5 10	12.00	60.00
MA-R2-10e	36	48	END ROAD WORK / DOUBLE FINES END				5	FLUORESCENT ORANGE AND RETROREFLECTIVE WHITE	BLACK	BLACK	P-5 5	12.00	60.00
MA-W20-7b	36	36	POLICE OFFICER AHEAD				5	FLUORESCENT ORANGE	BLACK	BLACK	P-5 10	9.00	45.00
R9-9	24	12	SIDEWALK CLOSED	SEE MUTCD STD. DETAIL			2	RETROREFLECTIVE WHITE	BLACK	BLACK	MOUNTED ON TYPE III BARRICADE	2.00	4.00
R9-11aL	24	18	SIDEWALK CLOSED AHEAD ← CROSS HERE				1	RETROREFLECTIVE WHITE	BLACK	BLACK	MOUNTED ON TYPE III BARRICADE	3.00	3.00
R9-11aR	24	18	SIDEWALK CLOSED AHEAD → CROSS HERE				1	RETROREFLECTIVE WHITE	BLACK	BLACK	MOUNTED ON TYPE III BARRICADE	3.00	3.00
R11-2	48	30	ROAD CLOSED				2	RETROREFLECTIVE WHITE	BLACK	BLACK	P-5 4	10.00	20.00
W13-1P	24	24	XX MPH				2	FLUORESCENT ORANGE	BLACK	BLACK	MOUNTED WITH W20-4	4.00	8.00
W20-1	36	36	ROAD WORK AHEAD				5	FLUORESCENT ORANGE	BLACK	BLACK	P-5 10	9.00	45.00
W20-4	36	36	ONE LANE ROAD AHEAD				4	FLUORESCENT ORANGE	BLACK	BLACK	P-5 8	9.00	36.00
W5-4a	18	18	PATH NARROWS				1	FLUORESCENT ORANGE	BLACK	BLACK	P-5 1	2.25	2.25
W21-5	36	36	SHOULDER WORK				1	FLUORESCENT ORANGE	BLACK	BLACK	P-5 2	9.00	9.00
W20-3	36	36	ROAD CLOSED AHEAD				1	FLUORESCENT ORANGE	BLACK	BLACK	P-5 2	9.00	9.00

TEMPORARY TRAFFIC SIGN SUMMARY SHEET

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF REQUIRED SIGNS	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	TOTAL AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MRK		BACKGROUND	LEGEND	BORDER			
W1-4L	36	36		SEE MUTCD STD. DETAIL			2	FLUORESCENT ORANGE	BLACK	BLACK	P-5 4	9.00	18.00
W1-4R	36	36					1	FLUORESCENT ORANGE	BLACK	BLACK	P-5 2	9.00	9.00
W5-1	36	36	ROAD NARROWS				3	FLUORESCENT ORANGE	BLACK	BLACK	P-5 6	9.00	27.00
R5-1	36	36	DO NOT ENTER				1	RETROREFLECTIVE WHITE	RED	BLACK	P-5 1	9.00	9.00
W4-2R	36	36					1	FLUORESCENT ORANGE	BLACK	BLACK	P-5 2	9.00	9.00
W20-5R	36	36	RIGHT LANE CLOSED 1/2 MILE				1	FLUORESCENT ORANGE	BLACK	BLACK	P-5 2	9.00	9.00
												TOTAL	385.25

NOTES:

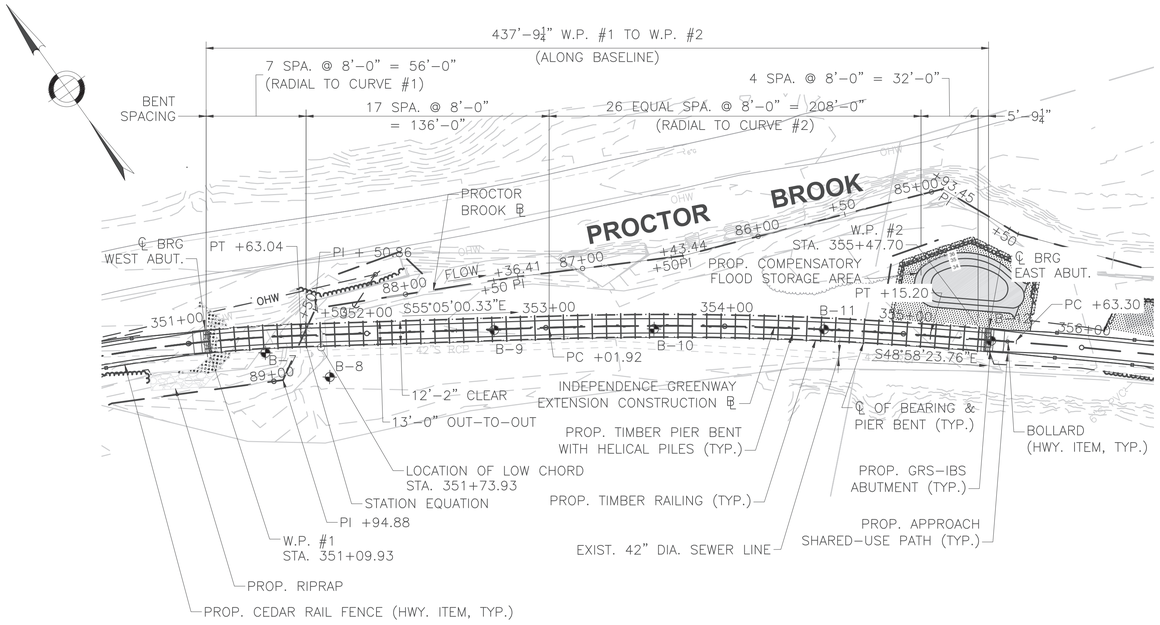
1. SIGN SUPPORTS MUST CONFORM TO THE CRITERIA SET FORTH IN THE NCHRP 350 REPORT AND/OR MASH.
2. TEXT DIMENSIONS AND COLOR SHALL BE PER MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 2023 EDITION AND ALL REVISIONS, THE 2022 MASSACHUSETTS AMENDMENTS TO THE 2009 MUTCD, THE MASSDOT STANDARD SIGNS BOOK AND THE STANDARD MUNICIPAL TRAFFIC CODE.
3. TEMPORARY SPEED LIMITS SHALL BE DETERMINED BY THE FIELD ENGINEER AS CONSTRUCTION IS ABOUT TO START.

SHT015_HDLTMP).DWG Plotted on 16-Jul-2025 4:53 PM

PEABODY
INDEPENDENCE GREENWAY EXTENSION

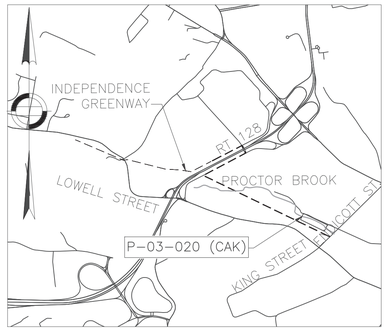
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	63	145
	PROJECT FILE NO. 609211		

KEY PLAN PROFILE AND LOCUS



KEY PLAN
SCALE: 1" = 40'

STATION EQUATION: INDEPENDENCE GREENWAY EXTENSION CONSTRUCTION ℄ STA. 351+64.36 = PROCTOR BROOK ℄ STA. 88+67.46



LOCUS
1" = 2000'

HORIZONTAL CURVE #1 DATA
PC = 349+89.58
PT = 351+63.04
Δ = 12°-25'-23"
R = 800.00'
L = 173.46'
T = 87.07'

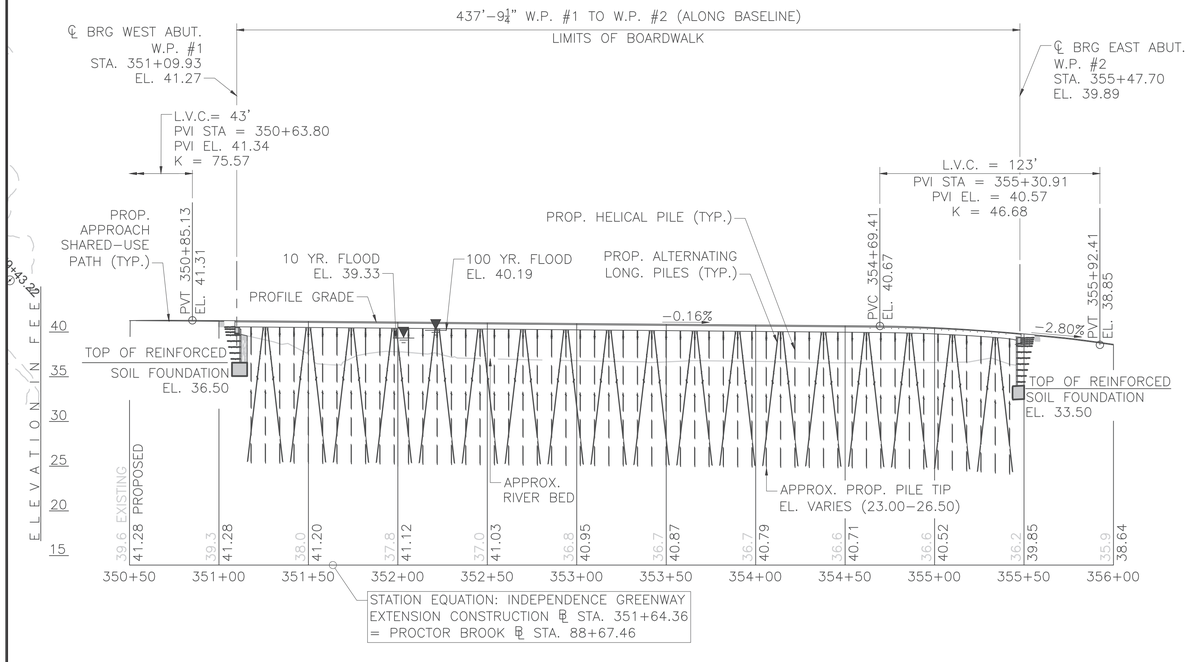
HORIZONTAL CURVE #2 DATA
PC = 353+01.92
PT = 355+15.20
Δ = 6°-06'-37"
R = 2000.00'
L = 213.28'
T = 106.74'

ESTIMATED QUANTITIES
(NOT GUARANTEED)

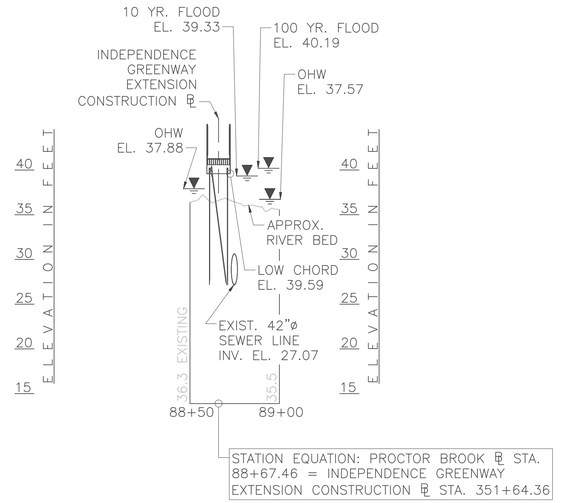
BRIDGE EXCAVATION	40 CY
TEST PIT FOR EXPLORATION	19 CY
CLASS B ROCK EXCAVATION	5 CY
CRUSHED STONE FOR BRIDGE FOUNDATIONS	15 TON
GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL	55 SY
HELICAL PILE AND BRACKET ASSEMBLY	3700 FT
PRE-DRILLING FOR PILE OBSTRUCTIONS	80 FT
HELICAL PILE VERIFICATION LOAD TEST	3 EA
RIPRAP	145 TON
NATURAL STREAMBED MATERIAL	75 SY
CONTROL OF WATER – STRUCTURE NO. P-03-020	1 LS
BRIDGE STRUCTURE, BRIDGE NO. P-03-020 (CAK)	1 LS

INDEX OF DRAWINGS

TITLE	SHEET NO.
KEY PLAN PROFILE AND LOCUS	1
GENERAL NOTES	2
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PROFILE-INDEPENDENCE GREENWAY EXTENSION
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 8'



PROFILE-PROCTOR BROOK
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 8'

COMMONWEALTH OF MASSACHUSETTS
TIFFANY CARD
CIVIL
No. 53717
REGISTERED PROFESSIONAL ENGINEER

Tiffany Card Digitally signed by Tiffany Card Date: 2025.07.28 12:48:14 -04'00'

GREEN A Lochner Company
Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200, Tewksbury, MA 01876
T: (978) 923-0400 | www.greenintl.com

AUG. 23, 2025	ISSUED FOR CONSTRUCTION

massDOT Massachusetts Department of Transportation Highway Division

PROPOSED BRIDGE
PEABODY
INDEPENDENCE GREENWAY EXTENSION OVER PROCTOR BROOK

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

Alexander K. Bardow, P.E.	Carrie Lavallee, P.E.
Digitally signed by Alexander K. Bardow, P.E. Date: 2025.07.28 14:46:32 -04'00'	2025.07.29 10:33:45 -04'00'
STATE BRIDGE ENGINEER	CHIEF ENGINEER

SHEET 1 OF 17 SHEETS BRIDGE NO. P-03-020 (CAK)

609211_BR01(P03020).DWG Plotted on 16-Jul-2025 7:37 AM

11-June-2025 FINAL STRUCTURAL SUBMISSION (SF)

Y:\Shared\Engineering\Projects\2017\171118\Dwg\Bridge\Pedestrian Walkway

GENERAL NOTES

DESIGN:
IN ACCORDANCE WITH THE 2009 AASHTO LRFD GUIDE SPECIFICATION FOR DESIGN OF PEDESTRIAN BRIDGES WITH 2015 INTERIM REVISIONS, FOR 90 PSF DESIGN PEDESTRIAN LOADING.

MASSDOT BENCH MARK:
ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

BENCHMARK: 9 – MAG NAIL SET UP #28 ON WARREN ROAD
STATION: 347+49.19 – 8.971 LT
NORTHING: 3019612.4266
EASTING: 807741.8898
ELEVATION: 41.17'

BENCHMARK: 11 – MAG NAIL SET ABOUT 1' ABOVE GROUND AT LP#6 ON ENDICOTT STREET
STATION: 359+34.38 – 79.411 LT
NORTHING: 3018945.6274
EASTING: 808725.6506
ELEVATION: 37.33'

MASSDOT SURVEY:
THE EXISTING CONDITIONS SHOWN ON THIS BASEMAP ARE THE RESULTS OF AN AERIAL SURVEY PERFORMED BY SANBORN COMPANY IN JUNE, 2004 SUPPLEMENTED BY AN ON GROUND INSTRUMENT SURVEY PERFORMED IN SEPTEMBER, 2004 BY GREEN INTERNATIONAL AFFILIATES, INC. (GREEN). ADDITIONAL GROUND SURVEY WAS PERFORMED BETWEEN 2017 AND 2022 BY GREEN TO SUPPLEMENT EXISTING GROUND SURVEY.

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

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

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

GEOTECHNICAL REPORT:
REFER TO GEOTECHNICAL REPORT, DATED MAY 2023, PREPARED BY GZA GEO ENVIRONMENTAL.

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

STRUCTURAL WOOD NOTES:
ALL DIMENSIONAL LUMBER SHALL BE SOUTHERN PINE STAMPED BY A MEMBER OF THE WWPA AND KILN DRIED TO 19% MAXIMUM MOISTURE CONTENT. ALL STRUCTURAL LUMBER SHALL BE SELECT STRUCTURAL GRADE. IN ACCORDANCE WITH AASHTO TABLE 8.4.1.1.4-1 AND THE 2018 NATIONAL DESIGN SPECIFICATIONS (NDS) FOR WOOD CONSTRUCTION ALL PROPOSED TIMBER ELEMENTS SHALL HAVE A MINIMUM MODULUS OF ELASTICITY OF 1800 KSI.

STRINGERS AND PIER BENTS SHALL NOT BE NOTCHED EXCEPT WHERE SHOWN IN DETAILS. OBTAIN STRUCTURAL ENGINEER'S APPROVAL FOR ANY HOLES THROUGH OR NOTCHES IN THE TOP OF HORIZONTAL MEMBERS.

FOR BLACK LOCUST DECKING MATERIAL REQUIREMENTS PLEASE REFER TO THE SPECIAL PROVISIONS.

PROPOSED WOOD SCREWS FOR TIMBER FRAMING ELEMENTS SHALL COMPLY WITH ASME B18.6 REQUIREMENTS AND SHALL BE GALVANIZED UNLESS OTHERWISE NOTED. WOOD SCREW SIZES AND LENGTHS SHALL BE AS SHOWN ON THE PLANS.

SEE SHEET 17 FOR CONNECTION HARDWARE NOTES.

GRS-IBS MATERIALS
SEE SPECIAL PROVISIONS FOR DETAILED REQUIREMENTS.

CONCRETE MASONRY UNIT (CMU) FACING ELEMENTS
FACING ELEMENTS CONSISTING OF SPLIT-FACE CMU BLOCK UNITS SHALL MEET ASTM C90-11B AND THE REQUIREMENTS OF THE SPECIAL PROVISIONS, WITH A MINIMUM REQUIRED COMPREHENSIVE STRENGTH OF 4000 PSI AND A MAXIMUM WATER ABSORPTION RATE OF 5 PERCENT AFTER 24 HOURS.

CONSTRUCTION JOINTS
CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.

BACKFILL MATERIALS
A. GEOSYNTHETIC REINFORCED SOIL (GRS) BACKFILL SHALL CONSIST OF CRUSHED STONE MEETING THE REQUIREMENTS OF M2.01.6 AND HAVE A MINIMUM ANGLE OF INTERNAL FRICTION OF 30 DEGREES AS CONFIRMED BY A DIRECT SHEAR TEST.
B. REINFORCED SOIL FOUNDATION (RSF) BACKFILL SHALL CONSIST OF CRUSHED STONE MEETING THE REQUIREMENTS OF M2.01.4 AND HAVE A MINIMUM ANGLE OF INTERNAL FRICTION OF 38 DEGREES AS CONFIRMED BY A DIRECT SHEAR TEST.
C. INTEGRATED APPROACH BACKFILL SHALL CONSIST OF CRUSHED STONE MEETING THE REQUIREMENTS OF M2.01.1.
D. LEVELING COURSE BACKFILL SHALL CONSIST OF CRUSHED STONE MEETING THE REQUIREMENTS OF M2.01.6.

GEOSYNTHETICS
FURNISH GEOSYNTHETICS CONSISTING OF GEOTEXTILE FOR THE GRS ABUTMENT, RSF AND INTEGRATED APPROACH. THE GEOSYNTHETIC MATERIAL SHALL BE MANUFACTURED FROM POLYPROPYLENE, HIGH-DENSITY POLYETHYLENE, OR POLYESTER AND MEET THE REQUIREMENTS OF THE SPECIAL PROVISIONS.

A. GEOSYNTHETIC REINFORCED SOIL SHALL INCLUDE A CLASS 1 GEOTEXTILE WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 4800 LB/FT ACCORDING TO ASTM D 4595-11 AND A REINFORCEMENT STRENGTH OF 1370 LB/FT AT 2 PERCENT STRAIN IN THE CROSS DIRECTION.
B. REINFORCED SOIL FOUNDATION SHALL INCLUDE A CLASS 1 GEOTEXTILE WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 4800 LB/FT ACCORDING TO ASTM D 4595-11 AND A REINFORCEMENT STRENGTH OF 1370 LB/FT AT 2 PERCENT STRAIN IN THE CROSS DIRECTION.
C. INTEGRATED APPROACH SOIL SHALL INCLUDE A CLASS 2 GEOTEXTILE WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 4800 LB/FT ACCORDING TO ASTM D 4595-11.

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	64	145
PROJECT FILE NO.	609211		

GENERAL NOTES

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

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	1000
DESIGN SPECTRA	
As	0.133
SDs	0.263
SD1	0.096
SITE CLASS	D
SEISMIC DESIGN CATEGORY (SDC)	A

HYDRAULIC DESIGN DATA	
DRAINAGE AREA (SQ. MILES)	3.52
DESIGN FLOOD DISCHARGE (C.F.S.)	240
DESIGN FLOOD FREQUENCY (YEARS)	10
DESIGN FLOOD VELOCITY (F.P.S.)	5.97
DESIGN FLOOD ELEVATION (FEET, NAVD)	39.33
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	420
BASE FLOOD ELEVATION (FEET, NAVD)	40.19
DESIGN AND CHECK SCOUR DATA	
DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	25
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	1.95
DESIGN FLOOD PIER SCOUR DEPTH (FEET)	1.17
CHECK SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	50
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	2.28
CHECK FLOOD PIER SCOUR DEPTH (FEET)	1.22
FLOOD OF RECORD	
DISCHARGE (C.F.S.)	N/A
FREQUENCY (IF KNOWN, YEARS)	N/A
MAXIMUM ELEVATION (FEET, NAVD)	N/A
DATE (MM/YYYY)	N/A
HISTORY OF ICE FLOES	N/A
EVIDENCE OF SCOUR AND EROSION	N/A

TEMPORARY WATER CONTROL DESIGN DATA	
DESIGN FLOOD DISCHARGE (C.F.S.)	175
DESIGN FLOOD FREQUENCY (YEARS)	2
DESIGN FLOOD VELOCITY (F.P.S.)	5.56
DESIGN FLOOD ELEVATION (FEET, NAVD)	38.99

DATE	DESCRIPTION
AUG. 23, 2025	ISSUED FOR CONSTRUCTION

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

609211_BR02(P03020).DWG Plotted on 16-Jul-2025 7:37 AM
11-June-2025
FINAL STRUCTURAL SUBMISSION (SF)
Y:\Shared\Engineering\Projects\2017\17118\Dwg\Bridge\Pedestrian Walkway

TEST BORING LOG

GZA GeoEnvironmental, Inc. Engineers and Scientists

Peabody Bikeway - Phase II
Peabody, Massachusetts

BORING NO.: B-7
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: MPS

Drilling Co.: New England Boring Contractors
Foreman: Matt Soucy
Logged By: Doug Maguire

Type of Rig: ATV
Rig Model: Mobile B-53
Drilling Method:Drive & Wash

Boring Location: N: 3019395.2599, E: 808062.9728
Ground Surface Elev. (ft.): 38.5
Final Boring Depth (ft.): 36
Date Start - Finish: 1/4/2019 - 1/4/2019

H. Datum: NAD83

V. Datum: NAVD88

Auger/Casing Type: HW
I.D/O.D.(in): 4.0/4.5
Hammer Weight (lb.): 300
Hammer Fall (in.): 24
Other: Safety Hammer

Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2
Sampler Hmr Wt (lb): 140
Sampler Hmr Fall (in): 30
Other: Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
1/4/19	1300	2.8	24	10 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0-2	24	14	2 5 7 4	12	S-1: Medium dense, dark brown, fine to coarse SAND, little Gravel, little Silt, trace Wood, trace Roots.	1 2				
		S-2	2-4	24	9	2 2 3 1	5	S-2: Loose, gray-brown to dark brown, fine to medium SAND, little Silt, little Gravel, trace Roots.	3			FILL/TOPSOIL	
5		S-3	4-6	24	9	3 2 4 4	6	S-3: Loose, gray-brown, fine to medium SAND, little Gravel, little Silt, 3/4" seam of Clayey Silt 4" from bottom.			4		34.5'
		S-4	6-8	24	12	2 3 3 3	6	S-4: (Top 5") Brown, fine to coarse SAND, some Silt, little Gravel. (Bottom 7") Gray, fine to medium SAND, little Gravel, little Silt.					
		S-5	8-10	24	12	5 5 6 6	11	S-5: Medium dense, brown to gray with orange, fine to medium SAND, some Gravel, little Silt. Silt observed 5-6" from bottom.				SAND AND GRAVEL	
15		S-6	14-16	24	9	6 9 11 11	20	S-6: Medium dense, light brown, fine to medium SAND, some Gravel, little (-) Silt.	4 5				
									6		17.5		21.0'
20		S-7	19-21	24	14	21 23 21 22	44	S-7: (Top 3") Light brown, SILT & CLAY, trace fine Sand, trace Gravel. (Bottom 11") Light brown, fine to medium SAND, some Gravel, some Silt.			19.3	SILT & CLAY	19.2'
												GLACIAL DEPOSIT	
		S-8	24-24.2	2	2	100/2"	R	S-8: Very dense, gray, GRAVEL, little fine Sand, little Clayey Silt.	7		23.8		14.7'
25											25	WEATHERED BEDROCK	13.5'
	min/ft 2:00 1:30 2:30 2:30 2:45	C-1	26-31	60	56			C-1: Hard to medium hard, slightly weathered, medium to coarse grained, gray with pink, GRANITE, rough to smooth, planar to irregular, very close, subhorizontal to subvertical joints/fractures. RQD=20%	8			BEDROCK	
30	2:30 2:45	C-2	31-36	60	60			C-2: Hard, slightly weathered, medium to coarse grained, gray with pink, GRANITE, rough to smooth, planar to irregular, very close, moderately dipping to subvertical joints/fractures. RQD=35%				BEDROCK	
35	2:30 3:00 3:00 2:45										36		2.5'
								Bottom of boring at 36 feet.	9				

REMARKS

1. Ground surface elevation estimated from electronic AutoCAD file entitled "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc. on 1/16/2019.
2. Boring relocated 5.5 feet south of staked location due to restricted access and overhead wires.
3. Continuous sampling performed from sampling depths 0 to 10 feet below ground surface (bgs). Driller advanced 4-inch casing down as sampling advanced. The casing was advanced to 14 feet bgs following sampling of S-5.
4. Standard sampling performed from sample depths 14 to 24.2 feet bgs.
5. Driller advanced 4-inch casing from 14 to 24 feet bgs.
6. Clayey Silt observed in drill cuttings from 17.5 to 19 feet bgs.
7. Weathered Bedrock fragments and increased drill effort observed at 23.8 feet bgs.
8. Cored bedrock with a downward pressure of 500 psi at 1,350 rpm in 3rd gear using an NX core barrel.
9. Borehole backfilled to approximate ground surface with drill cuttings and surficial soils.

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

Boring No.: B-7

174019 PROPOSED PEABODY BIKEWAY.GPJ, STRATUM ONLY: 3/18/2019

ELEVATION IN FEET

40 30 10 0 −10

35.70 ▼ (1/04/19)

PROP. TOP OF REINFORCED SOIL FOUNDATION WEST ABUTMENT EL. 36.50

B−7

SCALE: 1/4" = 1'−0"

TEST BORING LOG

GZA GeoEnvironmental, Inc. Engineers and Scientists

Peabody Bikeway - Phase II
Peabody, Massachusetts

BORING NO.: B-8
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: MPS

Drilling Co.: New England Boring Contractors
Foreman: Matt Soucy
Logged By: Doug Maguire

Type of Rig: ATV
Rig Model: Soil Scout
Drilling Method:Drive & Wash

Boring Location: N: 3019362.9337, E: 808083.6438
Ground Surface Elev. (ft.): 37.8
Final Boring Depth (ft.): 41
Date Start - Finish: 1/15/2019 - 1/15/2019

H. Datum: NAD83

V. Datum: NAVD88

Auger/Casing Type: HW
I.D/O.D.(in): 4.0/4.5
Hammer Weight (lb.): 300
Hammer Fall (in.): 24
Other: Safety Hammer

Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2
Sampler Hmr Wt (lb): 140
Sampler Hmr Fall (in): 30
Other: Safety Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
1/15/19	1520	5.8	29.5	10 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0-2	24	11	6 4 4 6	8	S-1: (Top 6") Brown to light brown, fine to medium SAND, some Gravel, trace Silt, trace Roots. (Bottom 5") Dark brown, Organic CLAY & SILT, some fine to medium Sand, little Brick, trace Roots, trace Glass.	1 2				
		S-2	2-4	24	5	21 18 14 28	32	S-2: Hard, dark brown, CLAY & SILT, some fine to medium Sand, little Gravel, trace Roots.	3			FILL	
5		S-3	4-6	24	7	18 15 18 12	33	S-3: Dense, gray-brown, fine to coarse SAND, some Gravel, some Clayey Silt.			4		33.8'
		S-4	6-8	24	15	17 16 13 14	29	S-4: Medium dense, light brown to gray, fine to coarse SAND, some Clayey Silt, some Gravel.					
		S-5	8-10	24	8	16 11 13 13	24	S-5: Dense, light brown, fine to medium SAND, some Gravel, little Silt.				SAND AND GRAVEL	
15		S-6	14-16	24	7	6 10 9 10	19	S-6: Medium dense, light brown, fine to medium SAND, little Silt, trace (+) Gravel.					
											19.2		18.6'
20		S-7	19-21	24	12	6 6 6 7	12	S-7: (Top 2") Light brown, fine to medium SAND, little Silt. (Bottom 10") Brown-gray, SILT & CLAY, trace fine Sand.				SILT & CLAY	
											22.5		15.3'
		S-8	24-26	24	6	26 22 18 23	40	S-8: Dense, gray-brown, fine to coarse SAND, some Silt, some Gravel.				GLACIAL DEPOSIT	
25		S-9	29-29.4	5	5	100/5"	R	S-9: Very dense, gray, GRAVEL, some fine to coarse Sand, little (-) Silt.	4		30		7.8'
30	min/ft 3:00 3:45 4:30 5:15	C-1	31-36	60	42			C-1: Hard, slightly to moderately weathered, coarse to medium grained, gray with purple, GRANITE, rough, irregular to planar, very close, subvertical to subhorizontal joints/fractures. RQD=0%	5			BEDROCK	
35	4:15 4:45 5:15 4:30 4:30 3:30	C-2	36-41	60	60			C-2: Hard, slightly weathered, coarse to medium grained, gray with pink and purple, GRANITE, rough, irregular to planar, very close, subhorizontal to subvertical joints/fractures. RQD=0%	6				
40											41		-3.2'
								Bottom of boring at 41 feet.	7				

REMARKS

1. Ground surface elevation estimated from electronic AutoCAD file entitled "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc. on 1/16/2019.
2. Boring relocated 3.5 feet south due to restricted access.
3. Advanced boring using 4-inch casing from sample depths 0 to 29 feet below ground surface (bgs).
4. Consistent coarse sand-sized rock fragments observed in drill cuttings from sample depths 30 to 31 feet bgs.
5. Drill rig did not have a downward pressure or RPM gauge. Cored bedrock in 3rd gear using an NX core barrel.
6. Core barrel jammed with no loss of water at sample depths 35.1 and 38.3 feet bgs.
7. Borehole backfilled to approximate ground surface with drill cuttings.

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

Boring No.: B-8

174019 PROPOSED PEABODY BIKEWAY.GPJ, STRATUM ONLY: 3/18/2019

32.00 ▼ (1/15/19)

APPROX. PROP. PILE TIP VARIES EL. 23.00−25.50

B−8

SCALE: 1/4" = 1'−0"

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	65	145
	PROJECT FILE NO. 609211		

BORING LOGS 1 OF 3

BORING NOTES:

1. LOCATION OF BORINGS SHOWN ON THE PLAN THUS: B−# ⌖
2. BORINGS ARE TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER LEVELS SHOWN ON THE BORING LOGS WERE OBSERVED AT THE TIME OF TAKING BORINGS AND DO NOT NECESSARILY SHOW THE TRUE GROUND WATER LEVEL.
4. FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1 3/8" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
5. BORING SAMPLES ARE STORED AT A STORAGE FACILITY LOCATED ON ROUTE 114 (219 WINTHROP AVE.) IN LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.
6. B−7 AND B−8 WERE MADE IN JANUARY 2019 AND B−9 THROUGH B−12 WERE MADE IN FEBRUARY 2022.
7. BORINGS WERE MADE BY NEW ENGLAND BORING CONTRACTORS, 40 FORDWAY STREET, DERRY, NH, 03038.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

AUG. 23, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

USE ONLY PRINTS OF LATEST DATE

SHEET 3 OF 17 SHEETS BRIDGE NO. P−03−020 (CAK)

609211_BR03(P03020).DWG Plotted on 16-Jul-2025 7:37 AM

11-June-2025 FINAL STRUCTURAL SUBMISSION (SF)

Y:\Shared\Engineering\Projects\20\17\17118\Dwg\Bridge\Pedestrian Walkway

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	66	145
	PROJECT FILE NO. 609211		

BORING LOGS 2 OF 3

ELEVATION IN FEET

50 40 30 20 10 0

34.90 ▼ (2/21/22)

APPROX. PROP. PILE TIP VARIES EL. 23.00–26.50

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Peabody Bikeway – Phase II
Peabody, Massachusetts

BORING NO.: B-9
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: LWP

Drilling Co.:	New England Boring Contractors	Type of Rig:	ATV Rig
Foreman:	Walter Hoeckele	Rig Model:	B-53 Mobile
Logged By:	Ryan Baronowski	Drilling Method:	Drive & Wash

Boring Location: N 3,019,329 / E 808,173
Ground Surface Elev. (ft.): 37.5
Final Boring Depth (ft.): 22.6
Date Start – Finish: 2/21/2022 – 2/21/2022

H. Datum: NAD83
V. Datum: NAVD88

Auger/Casing Type:	HW	Sampler Type:	Split Spoon
I.D./O.D.(in):	4/4-1/2"	I.D./O.D. (in.):	1.375/2.0
Hammer Weight (lb.):	300 lbs.	Sampler Hmr Wt (lb):	140 lbs
Hammer Fall (in.):	24"	Sampler Hmr Fall (in):	30"
Other:	Safety Hammer	Other:	Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
2/21/22	1100	2.65	20'	15 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0–2	24	12	2 4 10 12	14	S-1: Medium dense, dark brown to brown, fine to coarse SAND, little fine to coarse Gravel, little Silt, trace Wood, trace Leaves.	1 2		3'	FILL	34.5'
		S-2	4–6	24	2	3 4 4 2	8	S-2: Loose, brown, fine to coarse SAND, little fine Gravel, trace Silt.					
		S-3	9–11	24	6	12 7 4 6	11	S-3: Medium dense, fine to coarse SAND, some fine to coarse Gravel, little Silt (–).					
		S-4	11–13	24	5	4 3 5 5	8	S-4: Loose, brown, fine to coarse SAND, little Gravel, little Silt.	3			SAND AND GRAVEL	
		S-5	13–15	24	2	6 6 3 2	9	S-5, Loose, brown, fine to coarse SAND, little fine Gravel, trace Silt.	4				
		S-6	15–17	24	7	5 7 7 12	14	S-6: Medium dense, brown, fine to medium SAND, trace fine Gravel, trace Silt.					
		S-7	17–19	24	11	7 8 10 13	18	S-7: Medium dense, brown, fine to medium SAND, little Silt.					
		S-8	19–21	24	17	8 9 6 5	15	S-8: Top 11": Medium dense, brown, fine to medium SAND, little Silt. Bottom 6": Brown/gray, CLAY & SILT, trace (–) fine Sand.			20.3'		17.2'
		S-9	21–22.6	20	16	7 4 7 50/2"	11	S-9: Stiff, Silty CLAY, trace fine to coarse Gravel.	5		22.6'	CLAY & SILT	14.9'
								Bottom of boring at 22.6 feet.					

REMARKS

1. Ground surface elevation estimated from electronic AutoCAD file entitles "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc on 1/16/2019.
2. Driller advanced 4" diameter casing to approximately 20 feet below ground surface.
3. Driller noted difficult keeping casing straight from 10 to 15 feet below ground surface.
4. Sample S-6 appeared to consist of wash material.
5. Boring was terminated at approximately 22.6 feet below ground surface upon SPT refusal. Borehole was backfilled with natural soil cuttings.

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

Boring No.: B-9

17A019.00 PEABODY BIKE PHILGPJ; STRATUM ONLY NORWOOD; 1/20/2023

B–9
SCALE: 1/4" = 1'–0"

33.80 ▼ (2/21/22)

APPROX. PROP. PILE TIP VARIES EL. 23.00–26.50

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Peabody Bikeway – Phase II
Peabody, Massachusetts

BORING NO.: B-10
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: LWP

Drilling Co.:	New England Boring Contractors	Type of Rig:	ATV Rig
Foreman:	Walter Hoeckele	Rig Model:	B-53 Mobile
Logged By:	Ryan Baronowski	Drilling Method:	Drive & Wash

Boring Location: N 3,019,276 / E 808,248
Ground Surface Elev. (ft.): 36
Final Boring Depth (ft.): 23.1
Date Start – Finish: 2/21/2022 – 2/21/2022

H. Datum: NAD83
V. Datum: NAVD88

Auger/Casing Type:	HW	Sampler Type:	Split Spoon
I.D./O.D.(in):	4/4-1/2"	I.D./O.D. (in.):	1.375/2.0
Hammer Weight (lb.):	300 lbs.	Sampler Hmr Wt (lb):	140 lbs
Hammer Fall (in.):	24"	Sampler Hmr Fall (in):	30"
Other:	Safety Hammer	Other:	Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
2/21/22	1500	2.25	15'	20 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev.(ft.)
		S-1	0–2	24	6	3 8 9 6	17	S-1: Medium dense, dark brown, fine to coarse SAND, little Silt, little fine Gravel, trace Leaves, trace Roots.	1 2				
		S-2	4–6	24	1	5 1 WOH WOH	1	S-2: Very loose, brown, fine to coarse SAND, little Silt, trace fine Gravel.				FILL	
		S-3	9–11	24	0	3 WOH WOH WOH	0	S-3: No Recovery.					
		S-4	11–13	24	11	3 6 5 8	11	S-4: Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, little Silt.			11'		25.0'
		S-5	13–15	24	8	5 7 8 7	15	S-5: Medium dense, brown, fine to medium SAND, little fine Gravel, trace Silt.					
		S-6	15–17	24	19	9 8 8 9	16	S-6: Medium dense, brown, fine to medium SAND, little (–) fine Gravel, trace Silt.	3			SAND AND GRAVEL	
		S-7	17–19	24	1	6 7 8 6	15	S-7: Medium dense, brown, fine to medium SAND, little Silt, trace fine Gravel.	4				
		S-8	19–21	24	15	2 4 3 5	7	S-8: Top 8": Loose, brown, fine to medium SAND, trace Silt, trace fine Gravel. Bottom 7": Gray, Silty CLAY, trace fine Sand.			20.2'		15.8'
		S-9	21–22.8	22	12	6 5 22 75/4"	27	S-9: Top 6": Gray, Silty CLAY, trace fine Sand, trace fine Gravel.			22'	SILTY CLAY	14.0'
		S-10	23–23.1	1"	0	75/1"	R	Bottom 6": Medium dense, gray, fine to coarse SAND and fine to coarse GRAVEL, little Clayey Silt. S-10: No Recovery.	5		23.1'	GLACIAL DEPOSIT	12.9'
								Bottom of boring at 23.1 feet.					

REMARKS

1. Ground surface elevation estimated from electronic AutoCAD file entitles "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc on 1/16/2019.
2. Driller advanced 4" diameter casing to approximately 20 feet below ground surface.
3. Drill chatter observed while advancing rollerbit from 15–17 feet below ground surface.
4. Sample S-7, consisted predominantly of wash material.
5. Boring was terminated at approximately 23.1 feet below ground surface upon refusal in Glacial Till. Borehole was backfilled with natural soil cuttings.

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

Boring No.: B-10

17A019.00 PEABODY BIKE PHILGPJ; STRATUM ONLY NORWOOD; 1/20/2023

B–10
SCALE: 1/4" = 1'–0"

BORING NOTE:

SEE SHEET 3 FOR BORING NOTES.

AUG. 23, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

609211_BR04(P03020).DWG Plotted on 16-Jul-2025 7:38 AM

11-June-2025 FINAL STRUCTURAL SUBMISSION (SF)

Y:\Shared\Engineering\Projects\2017\17118\Dwg\Bridge\Pedestrian Walkway

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	67	145
	PROJECT FILE NO. 609211		

BORING LOGS 3 OF 3

BORING NOTE:

SEE SHEET 3 FOR BORING NOTES.

ELEVATION IN FEET

50 40 30 20 10 0

34.30 ▼ (2/22/22)

APPROX. PROP. PILE TIP VARIES EL. 23.00–26.50

PROPOSED TOP OF REINFORCED SOIL FOUNDATION EAST ABUTMENT EL. 33.50

33.90 ▼ (2/22/22)

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Peabody Bikeway – Phase II
Peabody, Massachusetts

BORING NO.: B-11
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: LWP

Drilling Co.: New England Boring Contractors
Foreman: Walter Hoeckele
Logged By: Ryan Baronowski

Type of Rig: ATV Rig
Rig Model: B-53 Mobile
Drilling Method: Drive & Wash

Boring Location: N 3,019,219 / E 808,321
Ground Surface Elev. (ft.): 36
Final Boring Depth (ft.): 27
Date Start – Finish: 2/22/2022 – 2/22/2022

H. Datum: NAD83
V. Datum: NAVD88

Auger/Casing Type: HW
I.D./O.D.(in): 4/4-1/2"
Hammer Weight (lb.): 300 lbs.
Hammer Fall (in.): 24"
Other: Safety Hammer

Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2.0
Sampler Hmr Wt (lb): 140 lbs
Sampler Hmr Fall (in): 30"
Other: Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
2/22/22	1150	1.7	Removed	25 min.

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft.)
		S-1	0–2	24	9	2 4 5 2	9	S-1: Loose, dark brown to brown, fine to coarse SAND, some fine to coarse Gravel, little Silt, trace Wood, trace Leaves, trace Roots.	1 2 3			FILL	
											3'		33.0'
5		S-2	4–6	24	11	9 6 6 7	12	S-2: Medium dense, brown to red, fine to medium SAND, little (–) fine Gravel, little Silt.					
10		S-3	9–11	24	8	9 6 5 5	11	S-3: Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt.	4 5			SAND AND GRAVEL	
		S-4	11–13	24	16	9 7 7 8	14	S-4: Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt.					
		S-5	13–15	24	7	6 6 5 4	11	S-5: Medium dense, brown, fine to coarse SAND and fine to coarse GRAVEL, trace (+) Silt.					
15		S-6	15–17	24	19	6 6 8 7	14	S-6: Top 9": Brown, fine to coarse SAND, some (–) fine to coarse Gravel, trace Silt. Bottom 10": Medium dense, brown, fine to medium SAND, little Silt, trace (–) fine Gravel.	6				
		S-7	17–19	24	12	5 4 3 8	7	S-7: Top 7": Loose, brown, fine to medium SAND, trace Silt. Bottom 5": Brown, CLAY & SILT.	7		18.2'		17.8'
											19'	CLAY & SILT	17.0'
20		S-8	19–21	24	18	6 8 11 13	19	S-8: Top 11": Brown, fine to medium SAND, trace Silt, trace (–) fine Gravel. Bottom 7": Gray, fine SAND, some Silt.				SAND AND GRAVEL	
		S-9	21–23	24	24	10 11 6 10	17	S-9: Top 13": Medium dense, brown, fine to medium SAND, little Silt, trace fine Gravel. Bottom 11": Gray, SILT & CLAY.			22'		14.0'
		S-10	23–25	24	18	WOH 1 15 9	16	S-10: Top 8": Gray, SILT & CLAY. Bottom 10": Very stiff, gray, SILT & CLAY, little fine Gravel, fine to medium Sand.			25'	SILT AND CLAY	11.0'
25		S-11	25–27	24	14	13 20 29 25	49	S-11: Dense, brown to gray, fine to coarse SAND, some fine to coarse Gravel, little Clayey Silt.	8		27'	GLACIAL DEPOSIT	9.0'
								Bottom of boring at 27 feet.					
30													

REMARKS:
1. Ground surface elevation estimated from electronic AutoCAD file entitles "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc on 1/16/2019.
2. Driller advanced 4" diameter casing to approximately 25 feet below ground surface.
3. Standard sampling performed from sample depths 0 to 9 feet below ground surface.
4. Continuous sampling performed from sample depths 9 to 27 feet below ground surface.
5. Significant difficulty advancing casing from 0–5 feet below ground surface. Wash appeared to be fine to coarse Sand.
6. Red/black mottling in sample S-7, S-8, and S-9.
7. Alternating layers of Sand, Clay and Silt in sample S-8 and S-9.
8. Borehole was backfilled with natural soil cuttings and sand.

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

Boring No.: B-11

174019.00 PEABODY BIKE PHILGP2; STRATUM ONLY NORWOOD, 1/20/2023

B–11
SCALE: 1/4" = 1'–0"

TEST BORING LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Peabody Bikeway – Phase II
Peabody, Massachusetts

BORING NO.: B-12
SHEET: 1 of 1
PROJECT NO: 01.0174019.00
REVIEWED BY: LWP

Drilling Co.: New England Boring Contractors
Foreman: Walter Hoeckele
Logged By: Ryan Baronowski

Type of Rig: ATV Rig
Rig Model: B-53 Mobile
Drilling Method: Drive & Wash

Boring Location: N 3,019,158 / E 808,392
Ground Surface Elev. (ft.): 36
Final Boring Depth (ft.): 27
Date Start – Finish: 2/22/2022 – 2/22/2022

Auger/Casing Type: HW
I.D./O.D.(in): 4/4-1/2"
Hammer Weight (lb.): 300 lbs.
Hammer Fall (in.): 24"
Other: Safety Hammer

Sampler Type: Split Spoon
I.D./O.D. (in.): 1.375/2.0
Sampler Hmr Wt (lb): 140 lbs
Sampler Hmr Fall (in): 30"
Other: Auto Hammer

Groundwater Depth (ft.)

Date	Time	Water Depth
2/22/22	1500	2.1

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Depth (ft)	Stratum Description	Stratum Elev. (ft.)
		S-1	0–2	24	18	3 5 5 3	10	S-1: Medium dense, dark brown to brown, fine to medium SAND, little fine to coarse Gravel, little Silt, trace Wood, trace Roots.	1 2				
5		S-2	4–6	24	4	7 1 5 6	6	S-2: Loose, brown, fine to coarse SAND, little fine to coarse Gravel, little Wood/Decomposed Wood, trace Plastic.				FILL	
											8'		28.0'
10		S-3	9–11	24	6	5 5 5 5	10	S-3: Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt.					
		S-4	11–13	24	15	10 9 12 9	21	S-4: Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt.					
		S-5	13–15	24	10	5 6 6 8	12	S-5: Medium dense, brown, fine to medium SAND, some fine to coarse Gravel, little Silt.				SAND AND GRAVEL	
15		S-6	15–17	24	23	10 13 13 12	26	S-6: Medium dense, brown, fine to medium SAND, little Silt, trace fine Gravel.					
		S-7	17–19	24	15	5 7 9 12	16	S-7: Medium dense, brown to gray, fine SAND, some Silt.	3				
		S-8	19–21	24	19	6 7 5 5	12	S-8: Top 11": Medium dense, gray, fine SAND & SILT. Bottom 8": Gray, CLAY & SILT, trace fine Sand.			20'		16.0'
20		S-9	21–23	24	24	3 3 5 5	8	S-9: Medium stiff, gray, CLAY & SILT, trace fine Sand.				CLAY & SILT	
		S-10	23–25	24	24	5 6 6 9	12	S-10: Stiff, gray, CLAY & SILT, trace fine Sand.	4				
25		S-11	25–27	24	24	9 12 12 19	24	S-11: Medium dense, gray to brown, fine to coarse SAND and fine to coarse GRAVEL, little Clayey Silt.	5		25'		11.0'
								Bottom of boring at 27 feet.	6				
30													

REMARKS:
1. Ground surface elevation estimated from electronic AutoCAD file entitles "Peabody Bike Path 2018 Merge Basemap-Final.DWG", provided by Green International, Inc on 1/16/2019.
2. Driller advanced 4" diameter casing to approximately 25 feet below ground surface.
3. Red mottling observed in samples S-5 through S-7.
4. Significant drill chatter observed beginning at approximately 24.7 feet below ground surface.
5. Gravel in tip of sample S-10.
6. Borehole was backfilled with natural soil cuttings.

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

174019.00 PEABODY BIKE PHILGP2; STRATUM ONLY NORWOOD, 1/20/2023

B–12
SCALE: 1/4" = 1'–0"

AUG. 23, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

SHEET 5 OF 17 SHEETS BRIDGE NO. P–03–020 (CAK)

609211_BR05(P03020).DWG Plotted on 16-Jul-2025 7:38 AM

11-June-2025

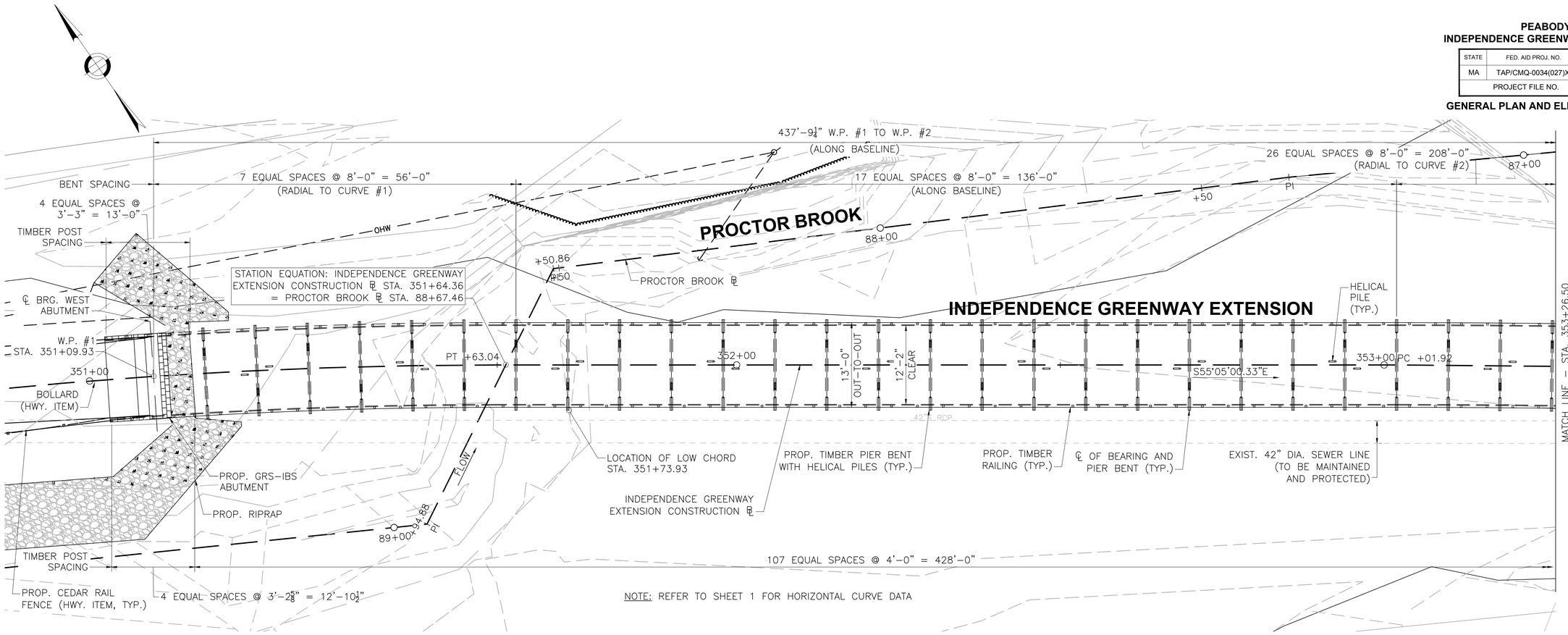
FINAL STRUCTURAL SUBMISSION (SF)

Y:\Shared\Engineering\Projects\2017\17118\Dwg\Bridge\Pedestrian Walkway

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	68	145
PROJECT FILE NO.	609211		

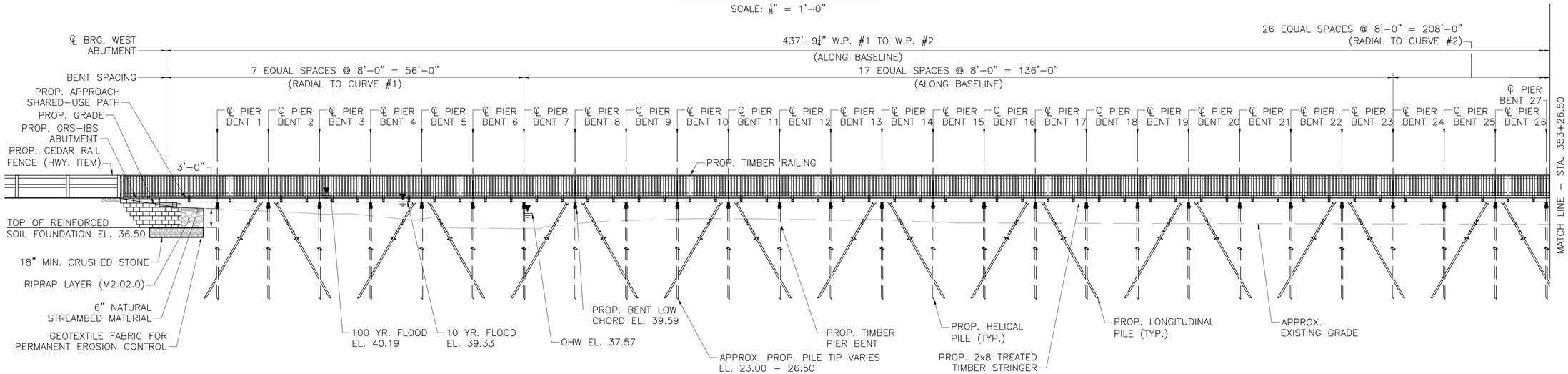
GENERAL PLAN AND ELEVATION 1 OF 2



NOTE: REFER TO SHEET 1 FOR HORIZONTAL CURVE DATA

GENERAL PLAN (1 OF 2)

SCALE: ⅛" = 1'-0"



NOTE:

EXISTING 42" DIAMETER SEWER LINE TO BE MAINTAINED AND PROTECTED DURING CONSTRUCTION. PLEASE SEE SPECIAL PROVISION ITEM NO. 228. CLOSED CIRCUIT TV INSPECTION OF SEWER LINE FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

TYPICAL ELEVATION (1 OF 2)

SCALE: ⅛" = 1'-0"

DATE	DESCRIPTION
AUG. 23, 2025	ISSUED FOR CONSTRUCTION

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

SHEET 6 OF 17 SHEETS BRIDGE NO. P-03-020 (CAK)

609211_BR06(P03020).DWG Plotted on 16-Jul-2025 7:38 AM

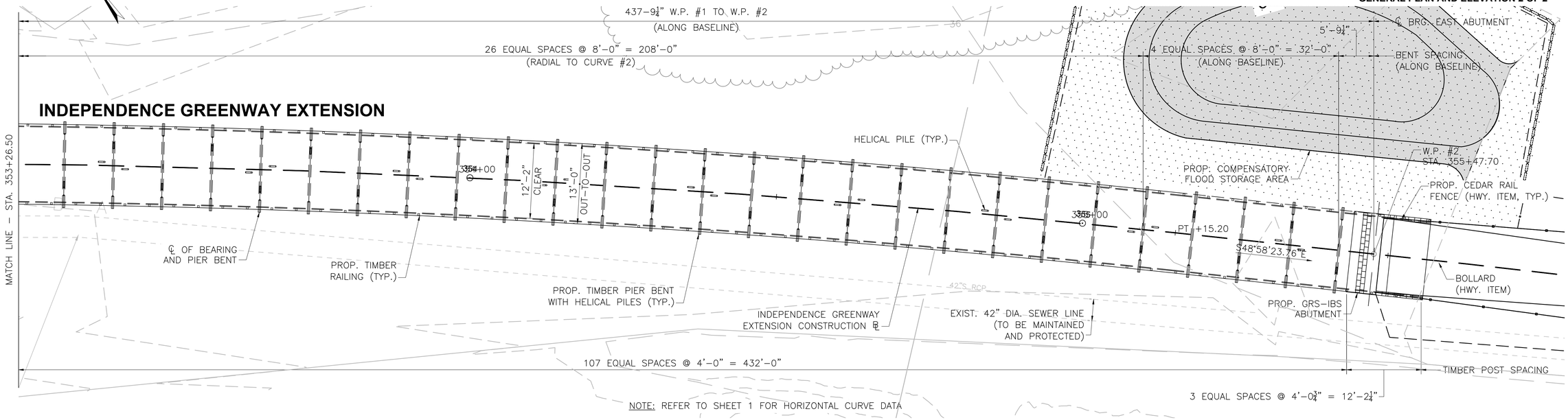
FINAL STRUCTURAL SUBMISSION (SF) 11-June-2025

Y:\Shared\Engineering\Projects\2017\17118\Dwg\Bridge\Pedestrian Walkway

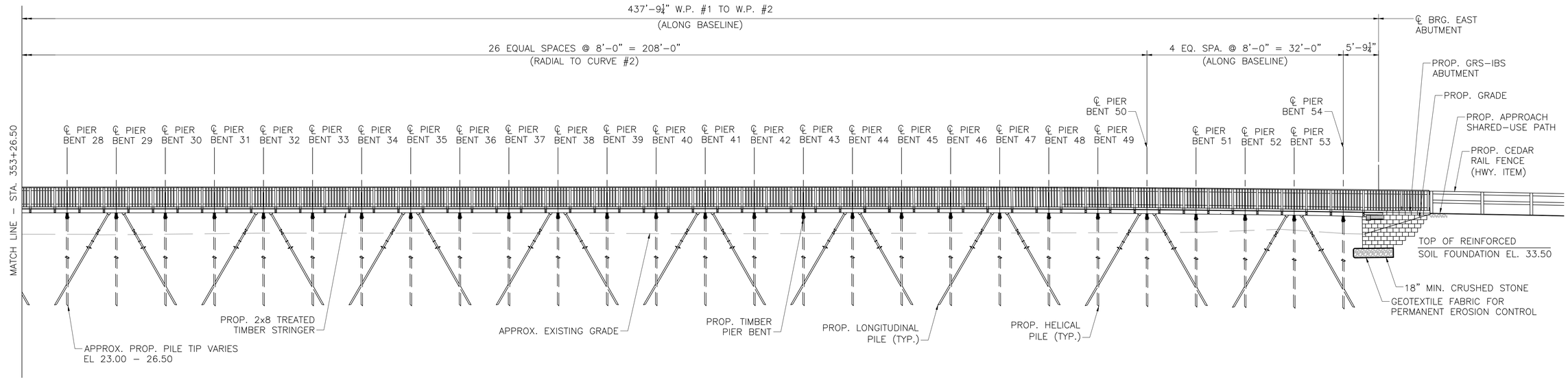
PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	69	145
	PROJECT FILE NO. 609211		

GENERAL PLAN AND ELEVATION 2 OF 2



GENERAL PLAN (2 OF 2)
SCALE: ⅛" = 1'–0"



TYPICAL ELEVATION (2 OF 2)
SCALE: ⅛" = 1'–0"

AUG. 23, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

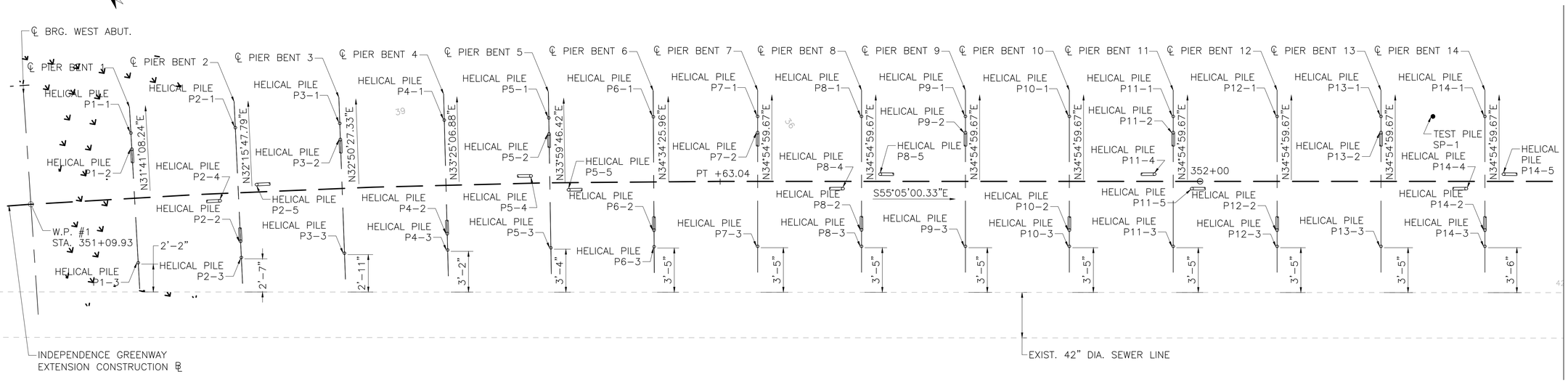
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

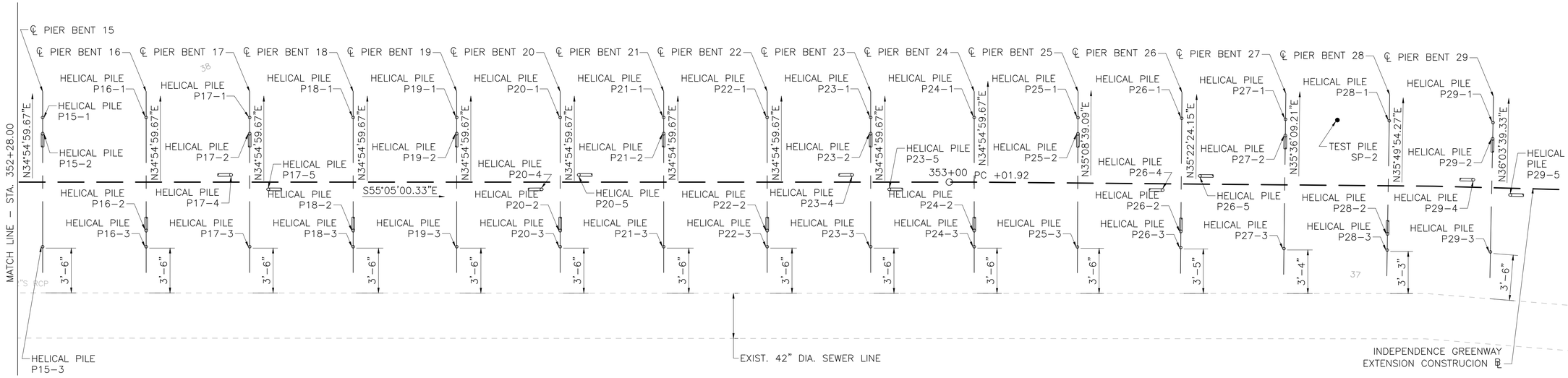
609211_BR07(P03020).DWG Plotted on 16-Jul-2025 7:39 AM
FINAL STRUCTURAL SUBMISSION (SF) 11-June-2025
Y:\Shared\Engineering\Projects\2017\17118\Dwg\Bridge\Pedestrian Walkway

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	70	145
PROJECT FILE NO. 609211			

HELICAL PILE LAYOUT PLAN 1 OF 2





NOTES:

1. SEE SHEET 10 FOR HELICAL PILE STATION AND OFFSET.
2. SEE SHEET 11 FOR HELICAL PILE NOTES.
3. HELICAL PILE MINIMUM EMBEDMENT SHALL BE 11'–6" TO THE TOP HELICE FOR ALL P#–3 LOCATIONS WITH AN OFFSET LESS THAN 3'–6" BETWEEN THE CENTER OF PILE AND THE EDGE OF THE SEWER LINE AS DIMENSIONED ON THIS SHEET.
4. ALL DIMENSIONS SHOWN FOR THE SOUTH HELICAL PILES TO THE EXISTING SEWER LINE ARE APPROXIMATE AND TAKEN PERPENDICULAR TO THE SEWER LINE.
6. THE VERIFICATION TEST HELICAL PILES SHALL BE A SACRIFICIAL HELICAL PILE. THE VERIFICATION TEST SHALL BE PERFORMED PRIOR TO CONSTRUCTION OF PRODUCTION HELICAL PILES. THE VERIFICATION TEST LOCATIONS ARE APPROXIMATE AS SHOWN. CONTRACTOR TO SELECT THE EXACT LOCATION OF THE VERIFICATION TEST HELICAL PILES WITH APPROVAL BY THE ENGINEER.
7. PRIOR TO LAYOUT AND INSTALLATION OF THE HELICAL PILES, THE CONTRACTOR SHALL LOCATE THE EXISTING SEWER MANHOLES AND STAKE OUT THE 42" RCP PIPE ALIGNMENT AT 10 FEET MAXIMUM INCREMENTS BETWEEN MANHOLES WITHIN THE LIMITS OF THE PROPOSED BOARDWALK. THE CONTRACTOR SHALL PERFORM A MINIMUM OF TWO (2) TEST PITS ALONG THE STAKED OUT ALIGNMENT OF THE SEWER WITHIN THE PROXIMITY OF THE HELICAL PILES.

LEGEND:

- ◦ HELICAL PILE P#–#
- • TEST PILE SP–#

HELICAL PILE LAYOUT PLAN 1

SCALE: ¼" = 1'–0"

AUG. 23, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

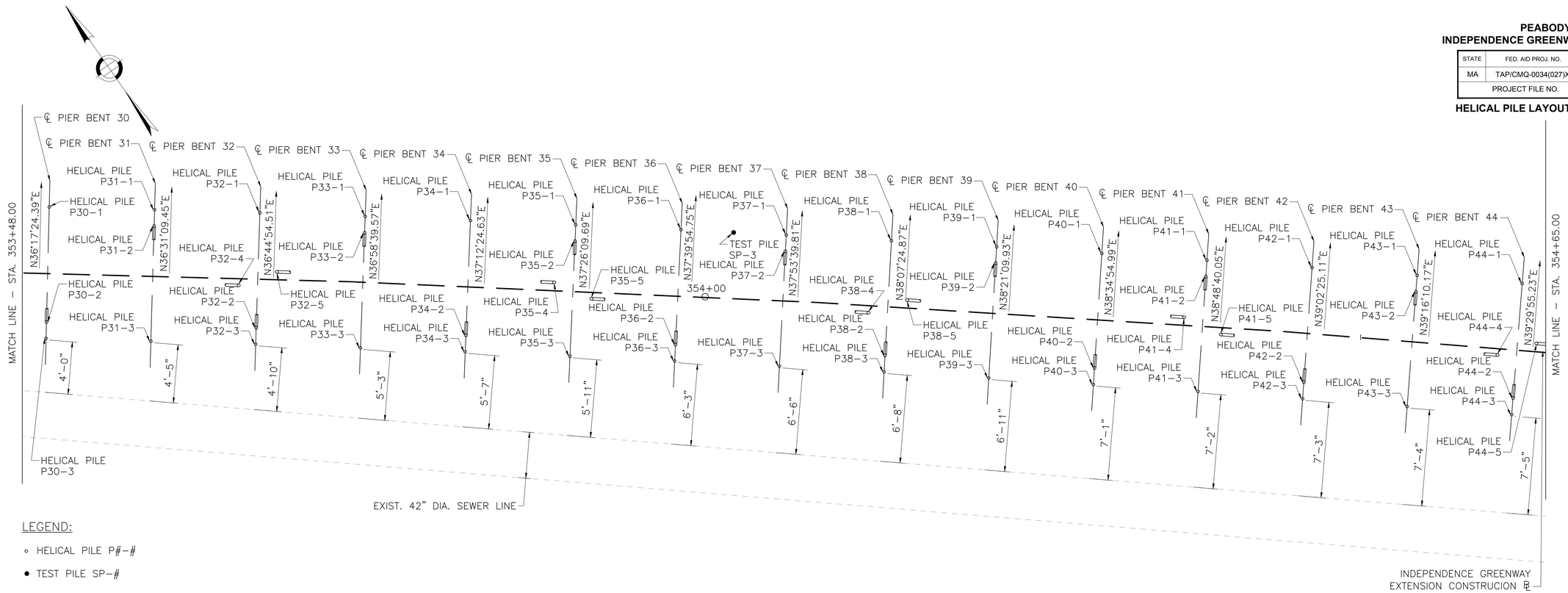
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

609211_BR08(P03020).DWG Plotted on 16-Jul-2025 7:39 AM
FINAL STRUCTURAL SUBMISSION (SF) 11-June-2025
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PEABODY
INDEPENDENCE GREENWAY EXTENSION

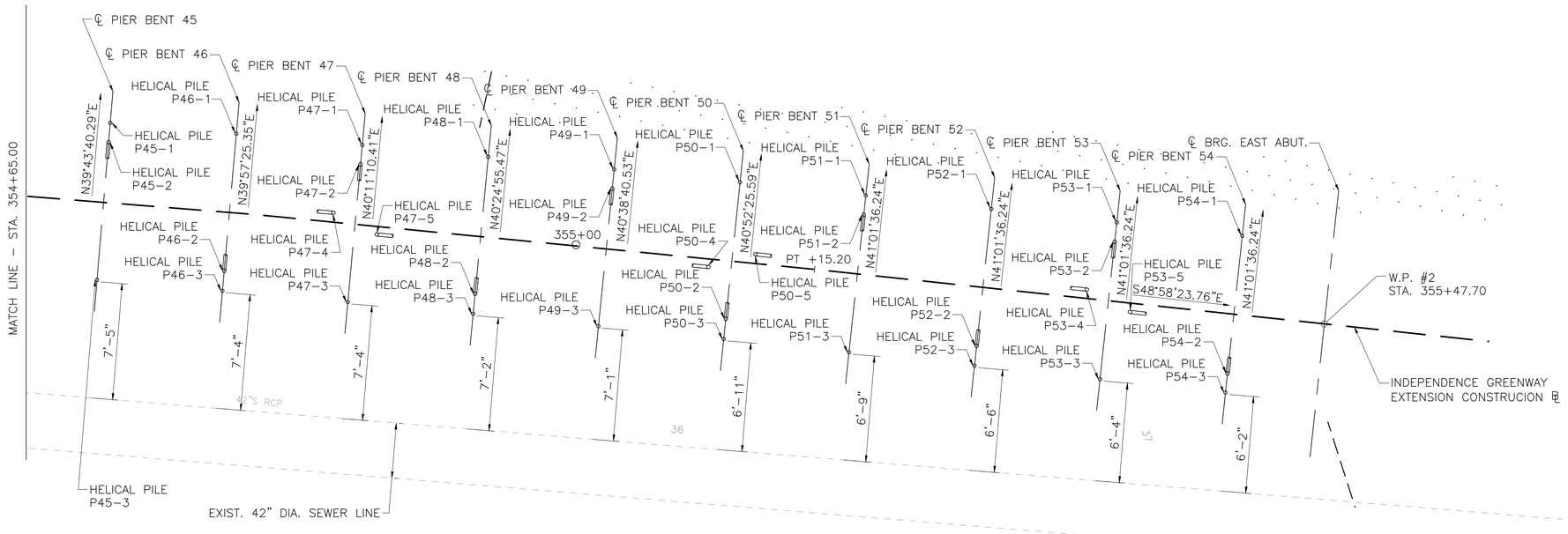
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	71	145
	PROJECT FILE NO. 609211		

HELICAL PILE LAYOUT PLAN 2 OF 2



LEGEND:

- ◦ HELICAL PILE P#–#
- • TEST PILE SP–#



HELICAL PILE LAYOUT PLAN 2

SCALE: $\frac{1}{4}$" = 1'–0"

NOTES:

1. SEE SHEET 10 FOR HELICAL PILE STATION AND OFFSET.
2. SEE SHEET 11 FOR HELICAL PILE NOTES.
3. HELICAL PILE MINIMUM EMBEDMENT SHALL BE 11'–6" TO THE TOP HELICE FOR ALL P#–3 LOCATIONS WITH AN OFFSET LESS THAN 3'–6" BETWEEN THE CENTER OF PILE AND THE EDGE OF THE SEWER LINE AS DIMENSIONED ON THIS SHEET.
4. ALL DIMENSIONS SHOWN FOR THE SOUTH HELICAL PILES TO THE EXISTING SEWER LINE ARE APPROXIMATE AND TAKEN PERPENDICULAR TO THE SEWER LINE.
5. THE VERIFICATION TEST HELICAL PILES SHALL BE A SACRIFICIAL HELICAL PILE. THE VERIFICATION TEST SHALL BE PERFORMED PRIOR TO CONSTRUCTION OF PRODUCTION HELICAL PILES. THE VERIFICATION TEST LOCATIONS ARE APPROXIMATE AS SHOWN. CONTRACTOR TO SELECT THE EXACT LOCATION OF THE VERIFICATION TEST HELICAL PILES WITH APPROVAL BY THE ENGINEER.
6. PRIOR TO LAYOUT AND INSTALLATION OF THE HELICAL PILES, THE CONTRACTOR SHALL LOCATE THE EXISTING SEWER MANHOLES AND STAKE OUT THE 42" RCP PIPE ALIGNMENT AT 10 FEET MAXIMUM INCREMENTS BETWEEN MANHOLES WITHIN THE LIMITS OF THE PROPOSED BOARDWALK. THE CONTRACTOR SHALL PERFORM A MINIMUM OF TWO (2) TEST PITS ALONG THE STAKED OUT ALIGNMENT OF THE SEWER WITHIN THE PROXIMITY OF THE HELICAL PILES.

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609211_BR09(P03020).DWG Plotted on 16-Jul-2025 7:39 AM
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FINAL STRUCTURAL SUBMISSION (SF)
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PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	72	145
	PROJECT FILE NO. 609211		

HELICAL PILE LAYOUT TABLE

HELICAL PILE	STATION	OFFSET
P1–1	351+17.93	5.00 LT
P1–2	351+17.93	3.75 LT
P1–3	351+17.93	5.00 RT
P2–1	351+25.93	5.00 LT
P2–2	351+25.93	3.75 RT
P2–3	351+25.93	5.00 RT
P3–1	351+33.93	5.00 LT
P3–2	351+33.93	3.75 LT
P3–3	351+33.93	5.00 RT
P4–1	351+41.93	5.00 LT
P4–2	351+41.93	3.75 RT
P4–3	351+41.93	5.00 RT
P5–1	351+49.93	4.99 LT
P5–2	351+49.93	3.76 LT
P5–3	351+49.93	5.01 RT
P6–1	351+57.93	4.99 LT
P6–2	351+57.93	3.74 RT
P6–3	351+57.93	5.01 RT
P7–1	351+65.93	5.00 LT
P7–2	351+65.93	3.75 LT
P7–3	351+65.93	5.00 RT
P8–1	351+73.93	5.00 LT
P8–2	351+73.93	3.73 RT
P8–3	351+73.93	5.00 RT
P9–1	351+81.93	5.00 LT
P9–2	351+81.93	3.75 LT
P9–3	351+81.93	5.00 RT
P10–1	351+89.93	5.00 LT
P10–2	351+89.93	3.75 RT
P10–3	351+89.93	5.00 RT
P11–1	351+97.93	5.00 LT
P11–2	351+97.93	3.75 LT
P11–3	351+97.93	5.00 RT
P12–1	352+05.93	5.00 LT
P12–2	352+05.93	3.75 RT
P12–3	352+05.93	5.00 RT
P13–1	352+13.93	5.00 LT
P13–2	352+13.93	3.75 LT
P13–3	352+13.93	5.00 RT
P14–1	352+21.93	5.00 LT
P14–2	352+21.93	3.75 RT
P14–3	352+21.93	5.00 RT
P15–1	352+29.93	5.00 LT
P15–2	352+29.93	3.75 LT
P15–3	352+29.93	5.00 RT
P16–1	352+37.93	5.00 LT
P16–2	352+37.93	3.75 RT
P16–3	352+37.93	5.00 RT
P17–1	352+45.93	5.00 LT
P17–2	352+45.93	3.75 LT
P17–3	352+45.93	5.00 RT
P18–1	352+53.93	5.00 LT
P18–2	352+53.93	3.75 RT
P18–3	352+53.93	5.00 RT
P19–1	352+61.93	5.00 LT
P19–2	352+61.93	3.75 LT
P19–3	352+61.93	5.00 RT
P20–1	352+69.93	5.00 LT
P20–2	352+69.93	3.75 RT
P20–3	352+69.93	5.00 RT

HELICAL PILE	STATION	OFFSET
P21–1	352+77.93	5.00 LT
P21–2	352+77.93	3.50 LT
P21–3	352+77.93	5.00 RT
P22–1	352+85.93	5.00 LT
P22–2	352+85.93	3.75 RT
P22–3	352+85.93	5.00 RT
P23–1	352+93.93	5.00 LT
P23–2	352+93.93	3.75 LT
P23–3	352+93.93	5.00 RT
P24–1	353+01.93	5.00 LT
P24–2	353+01.93	3.75 RT
P24–3	353+01.93	5.00 RT
P25–1	353+09.93	5.00 LT
P25–2	353+09.93	3.75 LT
P25–3	353+09.93	5.00 RT
P26–1	353+17.93	5.00 LT
P26–2	353+17.93	3.75 RT
P26–3	353+17.93	5.00 RT
P27–1	353+25.93	5.00 LT
P27–2	353+25.93	3.75 LT
P27–3	353+25.93	5.00 RT
P28–1	353+33.93	5.00 LT
P28–2	353+33.93	3.75 RT
P28–3	353+33.93	5.00 RT
P29–1	353+41.93	5.00 LT
P29–2	353+41.93	3.75 LT
P29–3	353+41.93	5.00 RT
P30–1	353+49.93	5.00 LT
P30–2	353+49.93	3.75 RT
P30–3	353+49.93	5.00 RT
P31–1	353+57.93	5.00 LT
P31–2	353+57.93	3.75 LT
P31–3	353+57.93	5.00 RT
P32–1	353+65.93	5.00 LT
P32–2	353+65.93	3.75 RT
P32–3	353+65.93	5.00 RT
P33–1	353+73.93	5.00 LT
P33–2	353+73.93	3.75 LT
P33–3	353+73.93	5.00 RT
P34–1	353+81.93	5.00 LT
P34–2	353+81.93	3.74 RT
P34–3	353+81.93	5.00 RT
P35–1	353+89.93	5.00 LT
P35–2	353+89.93	3.76 LT
P35–3	353+89.93	5.00 RT
P36–1	353+97.93	5.00 LT
P36–2	353+97.93	3.74 RT
P36–3	353+97.93	5.00 RT
P37–1	354+05.93	5.00 LT
P37–2	354+05.93	3.76 LT
P37–3	354+05.93	5.00 RT
P38–1	354+13.93	5.00 LT
P38–2	354+13.93	3.74 RT
P38–3	354+13.93	5.00 RT
P39–1	354+21.93	5.00 LT
P39–2	354+21.93	3.76 LT
P39–3	354+21.93	5.00 RT
P40–1	354+29.93	5.00 LT
P40–2	354+29.93	3.74 RT
P40–3	354+29.93	5.00 RT

HELICAL PILE	STATION	OFFSET
P41–1	354+37.93	5.00 LT
P41–2	354+37.93	3.76 LT
P41–3	354+37.93	5.00 RT
P42–1	354+45.93	5.00 LT
P42–2	354+45.93	3.73 RT
P42–3	354+45.93	5.00 RT
P43–1	354+53.93	5.00 LT
P43–2	354+53.93	3.77 LT
P43–3	354+53.93	5.00 RT
P44–1	354+61.93	5.00 LT
P44–2	354+61.93	3.73 RT
P44–3	354+61.93	5.00 RT
P45–1	354+69.93	5.00 LT
P45–2	354+69.93	3.77 LT
P45–3	354+69.93	5.00 RT
P46–1	354+77.93	5.00 LT
P46–2	354+77.93	3.73 RT
P46–3	354+77.93	5.00 RT
P47–1	354+85.93	5.00 LT
P47–2	354+85.93	3.78 LT
P47–3	354+85.93	5.00 RT
P48–1	354+93.93	5.00 LT
P48–2	354+93.93	3.72 RT
P48–3	354+93.93	5.00 RT
P49–1	355+01.93	5.00 LT
P49–2	355+01.93	3.78 LT
P49–3	355+01.93	5.00 RT
P50–1	355+09.93	5.00 LT
P50–2	355+09.93	3.72 RT
P50–3	355+09.93	5.00 RT
P51–1	355+17.93	5.00 LT
P51–2	355+17.93	3.78 LT
P51–3	355+17.93	5.00 RT
P52–1	355+25.93	5.00 LT
P52–2	355+25.93	3.74 RT
P52–3	355+25.93	5.00 RT
P53–1	355+33.93	5.00 LT
P53–2	355+33.93	3.77 LT
P53–3	355+33.93	5.00 RT
P54–1	355+41.93	5.00 LT
P54–2	355+41.93	3.78 RT
P54–3	355+41.93	5.00 RT

HELICAL PILE	STATION	OFFSET
P2–4	351+24.49	0.56 RT
P2–5	351+27.37	0.56 LT
P5–4	351+48.48	0.56 LT
P5–5	351+51.37	0.56 RT
P8–4	351+72.49	0.56 RT
P8–5	351+75.37	0.56 LT
P11–4	351+96.49	0.56 LT
P11–5	351+99.37	0.56 RT
P14–4	352+20.49	0.56 RT
P14–5	352+23.37	0.56 LT
P17–4	352+44.50	0.56 LT
P17–5	352+47.37	0.56 RT
P20–4	352+68.50	0.56 RT
P20–5	352+71.37	0.56 LT
P23–4	352+92.49	0.56 LT
P23–5	352+95.37	0.56 RT
P26–4	353+16.50	0.56 RT
P26–5	353+19.37	0.56 LT
P29–4	353+40.50	0.56 LT
P29–5	353+43.37	0.56 RT
P32–4	353+64.49	0.56 RT
P32–5	353+67.37	0.56 LT
P35–4	353+88.50	0.56 LT
P35–5	353+91.38	0.56 RT
P38–4	354+12.50	0.56 RT
P38–5	354+15.38	0.56 LT
P41–4	354+36.50	0.56 LT
P41–5	354+39.38	0.56 RT
P44–4	354+60.51	0.56 RT
P44–5	354+63.38	0.56 LT
P47–4	354+84.51	0.56 LT
P47–5	354+87.38	0.56 RT
P50–4	355+8.49	0.56 RT
P50–5	355+11.37	0.56 LT
P53–4	355+32.50	0.56 LT
P53–5	355+35.37	0.56 RT

SACRIFICIAL HELICAL TEST PILE	STATION	OFFSET
SP–1	352+17.93	5.00 LT
SP–2	353+29.93	5.00 LT
SP–3	354+01.93	5.00 LT

NOTE:

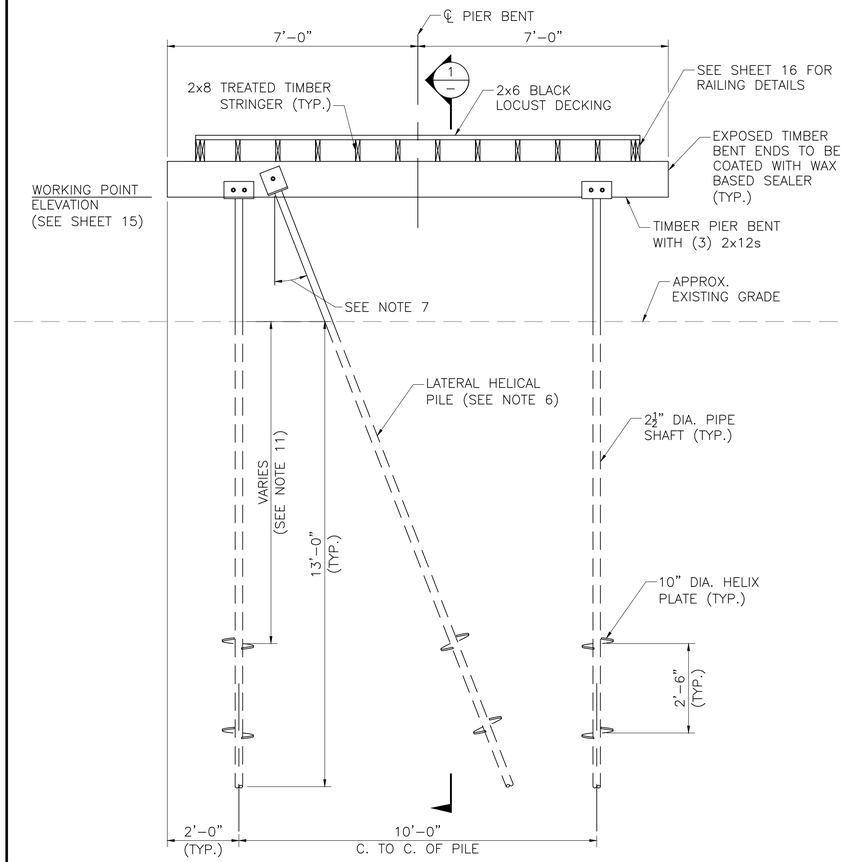
SEE SHEETS 8 AND 9 FOR PILE LAYOUT AND ADDITIONAL NOTES.

AUG. 23, 2025	ISSUED FOR CONSTRUCTION
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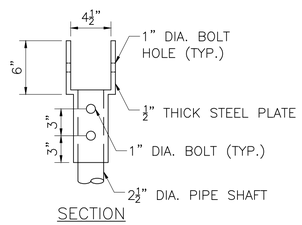
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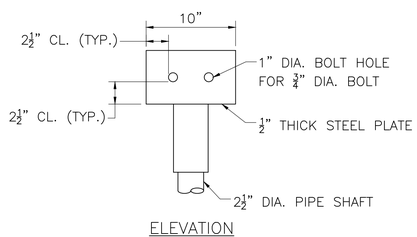


HELICAL PILE TYPICAL SECTION

SCALE: ½" = 1'–0"



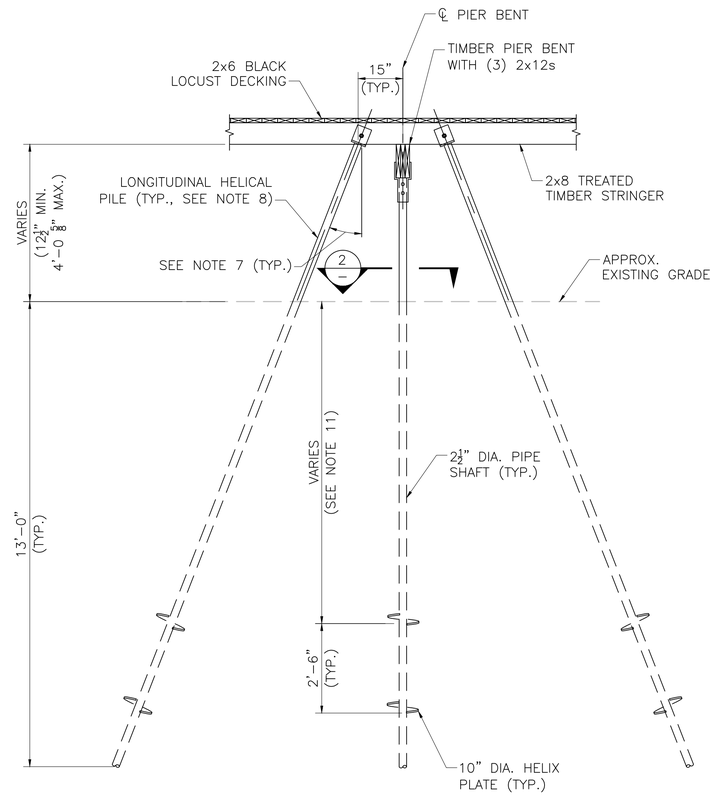
SECTION



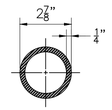
ELEVATION

HELICAL PILE ATTACHMENT ASSEMBLY

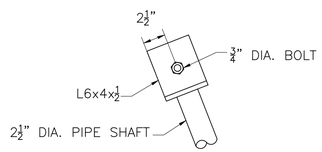
SCALE: 1½" = 1'–0"



SECTION 1 / SCALE: ½" = 1'–0"



SECTION 2 / SCALE: 3" = 1'–0"



LATERAL AND LONGITUDINAL HELICAL PILE ATTACHMENT ASSEMBLY

SCALE: 1½" = 1'–0"

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	73	145
PROJECT FILE NO.	609211		

HELICAL PILE DETAILS

NOTES:

1. THE TABLE BELOW SUMMARIZES THE FACTORED AXIAL DESIGN LOADS PER PILE FOR AASHTO LRFD BRIDGE SPECIFICATIONS STRENGTH I LOAD COMBINATIONS. THE NOMINAL GEOTECHNICAL RESISTANCE, AND THE FACTORED GEOTECHNICAL RESISTANCE PER PILE:

	FACTORED DESIGN LOADS	NOMINAL GEOTECHNICAL RESISTANCE	FACTORED GEOTECHNICAL RESISTANCE**
HELICAL PILE (COMPRESSION)	10.00 KIPS	17.00 KIPS	11.90 KIPS
HELICAL PILE (TENSION)	5.00 KIPS	14.80 KIPS	10.35 KIPS

**FACTORED GEOTECHNICAL RESISTANCE IS THE PRODUCT OF THE NOMINAL GEOTECHNICAL RESISTANCE AND A RESISTANCE FACTOR OF 0.70.

2. THE TOP HELIX OF ALL PROPOSED HELICAL PILES SHALL BE TORQUED TO A MINIMUM EMBEDMENT OF 9 FEET BELOW EXISTING GRADE, EXCEPT AS NOTED ON SHEET 8 ADJACENT TO THE SEWER LINE.

3. THREE PRE–PRODUCTION VERIFICATION LOAD TESTS FOR THREE SACRIFICIAL PILES ARE REQUIRED TO CONFIRM THE HELICAL PILE NOMINAL RESISTANCE. LOAD TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIAL PROVISION REQUIREMENTS, THE GEOTECHNICAL REPORT RECOMMENDATIONS, AND THE SACRIFICIAL PILE LOCATIONS SHALL BE AGREED UPON BY THE CONTRACTOR AND ENGINEER. A RESISTANCE FACTOR OF 0.70 MAY BE UTILIZED UPON SUCCESSFUL COMPLETION OF STATIC LOAD TESTING.

4. THE CONTRACTOR SHALL SUBMIT A PILE SCHEDULE, PILE INSTALLATION, AND TESTING PLAN FOR REVIEW AND APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE PROPOSED HELICAL PILES SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS.

5. ALTERNATIVE ATTACHMENT AND ASSEMBLIES CAN BE SUBMITTED THROUGH THE SHOP DRAWING PROCESS FOR REVIEW AND APPROVAL.

6. LATERAL PILES ALTERNATE DIRECTION EVERY BENT.

7. LATERAL AND LONGITUDINAL PILE ANGLE CAN RANGE BETWEEN 25° AND 35°.

8. LONGITUDINAL BATTERED PILES SHALL BE AT EVERY THIRD PIER BENT TO RESIST LONGITUDINAL LOADING.

9. HELICAL PILES AND CONNECTIONS SHALL BE HOT–DIPPED GALVANIZED.

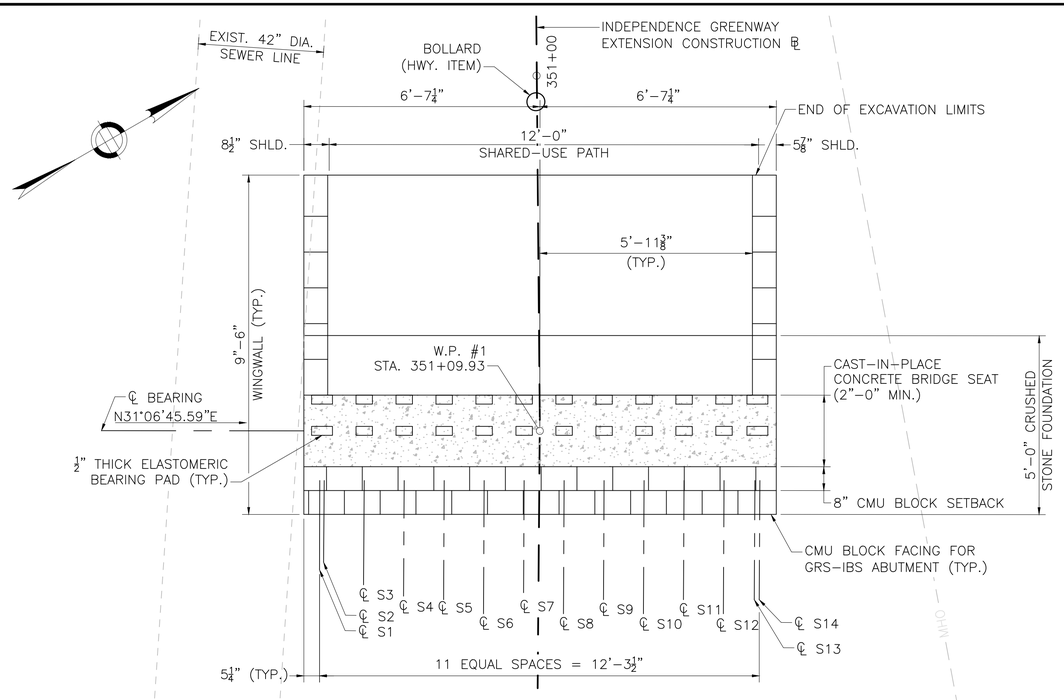
10. REMOVAL OF SURFICIAL COBBLES/BOULDERS WILL BE REQUIRED PRIOR TO HELICAL PILE INSTALLATION. PRE–DRILLING MAY BE REQUIRED TO PENETRATE THE COBBLES AND BOULDERS.

11. HELICAL PILE MINIMUM EMBEDMENT SHALL BE 11'–6" TO THE TOP HELICE FOR ALL P#–3 LOCATIONS WITH AN OFFSET LESS THAN 3'–6" BETWEEN THE CENTER OF PILE AND THE EDGE OF THE SEWER LINE. MINIMUM EMBEDMENT FOR ALL REMAINING PILES SHALL BE 9'–0".

12. FOR ADDITIONAL HELICAL PILE REQUIREMENTS, SEE SPECIAL PROVISION ITEM NO. 943.20.

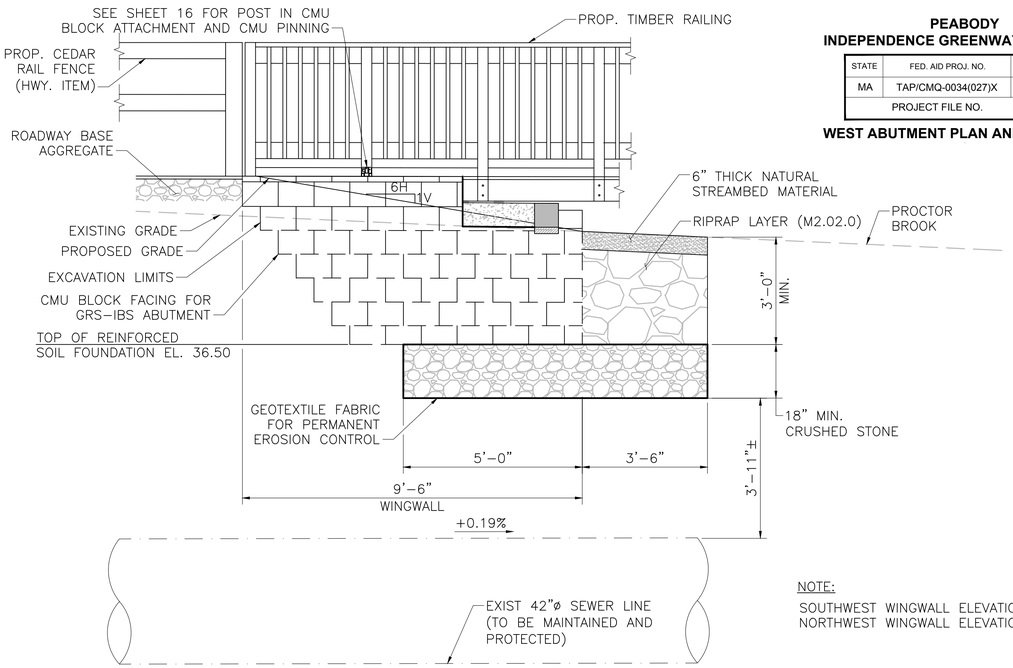
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WEST ABUTMENT PLAN

SCALE: ½" = 1'-0"

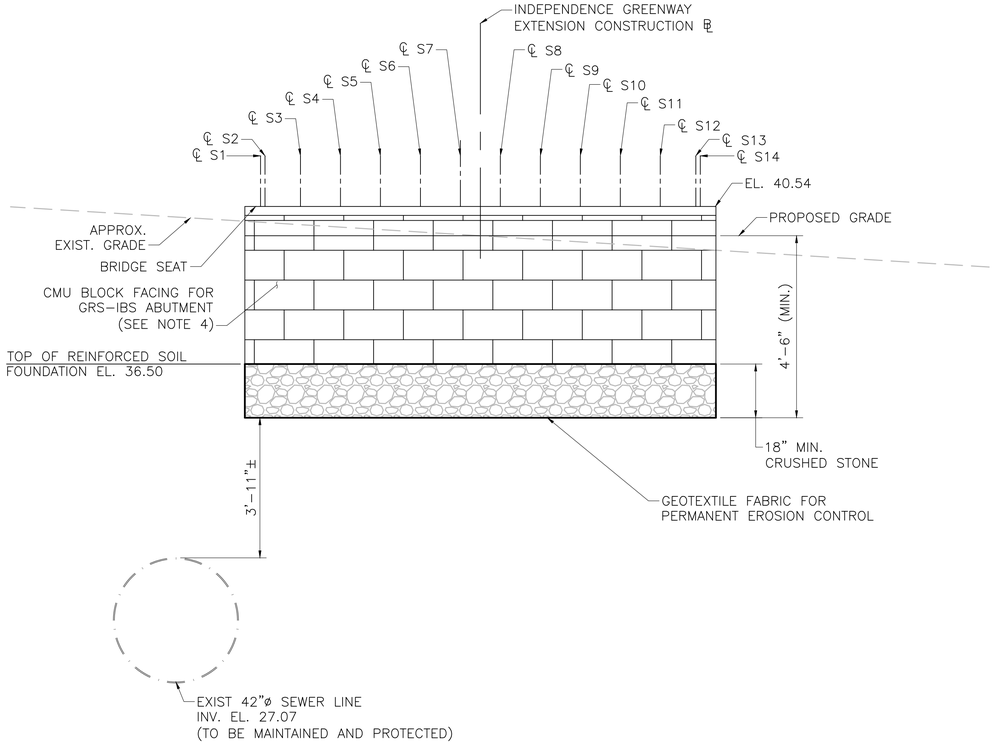


NOTE:

SOUTHWEST WINGWALL ELEVATION SHOWN, NORTHWEST WINGWALL ELEVATION SIMILAR.

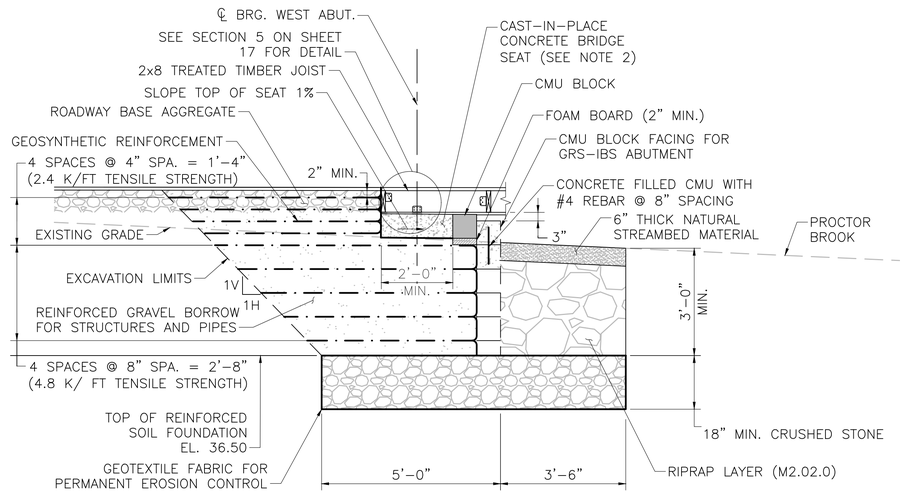
SOUTHWEST ABUTMENT WINGWALL ELEVATION

SCALE: ½" = 1'-0"



WEST ABUTMENT ELEVATION

SCALE: ½" = 1'-0"



WEST ABUTMENT TYPICAL SECTION

SCALE: ½" = 1'-0"

GRS-IBS ABUTMENT NOTES:

1. THE FACTORED BEARING PRESSURE = 0.897 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.

   FACTORED BEARING RESISTANCE = 5.8 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.65.

2. CAST-IN-PLACE CONCRETE BEARING SEAT SHALL BE 5000 PSI HP CEMENT CONCRETE WITH ONE LAYER OF #4 WELDED WIRE FABRIC PLACED AT MID-HEIGHT.

3. THE GEOTEXTILE REINFORCEMENT SHALL EXTEND BETWEEN THE LAYERS OF CMU BLOCK.

4. ALL CMU BLOCKS ABOVE PROPOSED GRADE AND THE FIRST BLOCK BELOW GRADE SHALL BE HOLLOW AND FILLED WITH BLOCK WALL CONCRETE FILL. ALL CMU BLOCKS BELOW THAT POINT SHALL BE SOLID. SEE SECTION VIEW FOR LIMITS OF CONCRETE FILL CMU BLOCKS ABOVE GRADE.

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	74	145
PROJECT FILE NO.	609211		

WEST ABUTMENT PLAN AND ELEVATION

AUG. 23, 2025	ISSUED FOR CONSTRUCTION
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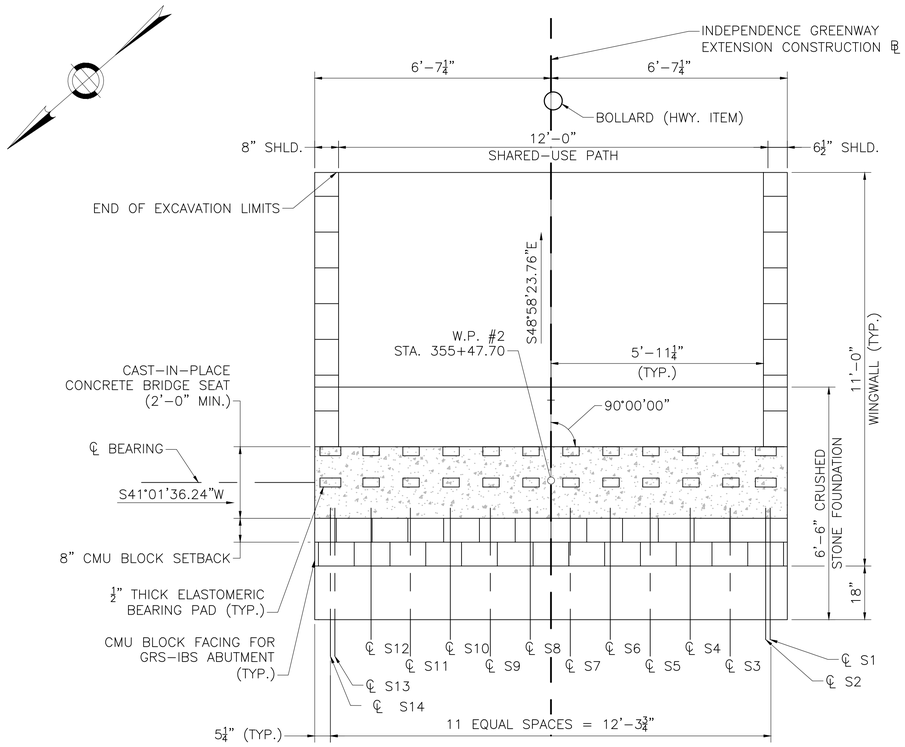
USE ONLY PRINTS OF LATEST DATE

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Y:\Shores\Engineering\Projects\2017\171185\Dwg\Bridge\Pedestrian Walkway

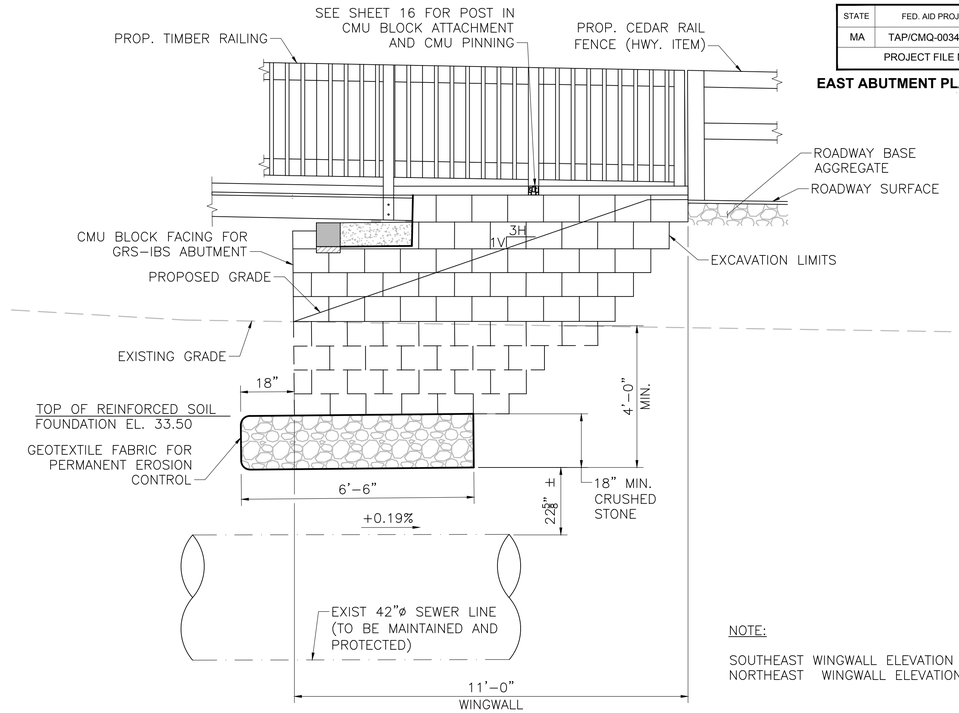
PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	75	145
PROJECT FILE NO.	609211		

EAST ABUTMENT PLAN AND ELEVATION



EXIST. 42" DIA. SEWER LINE

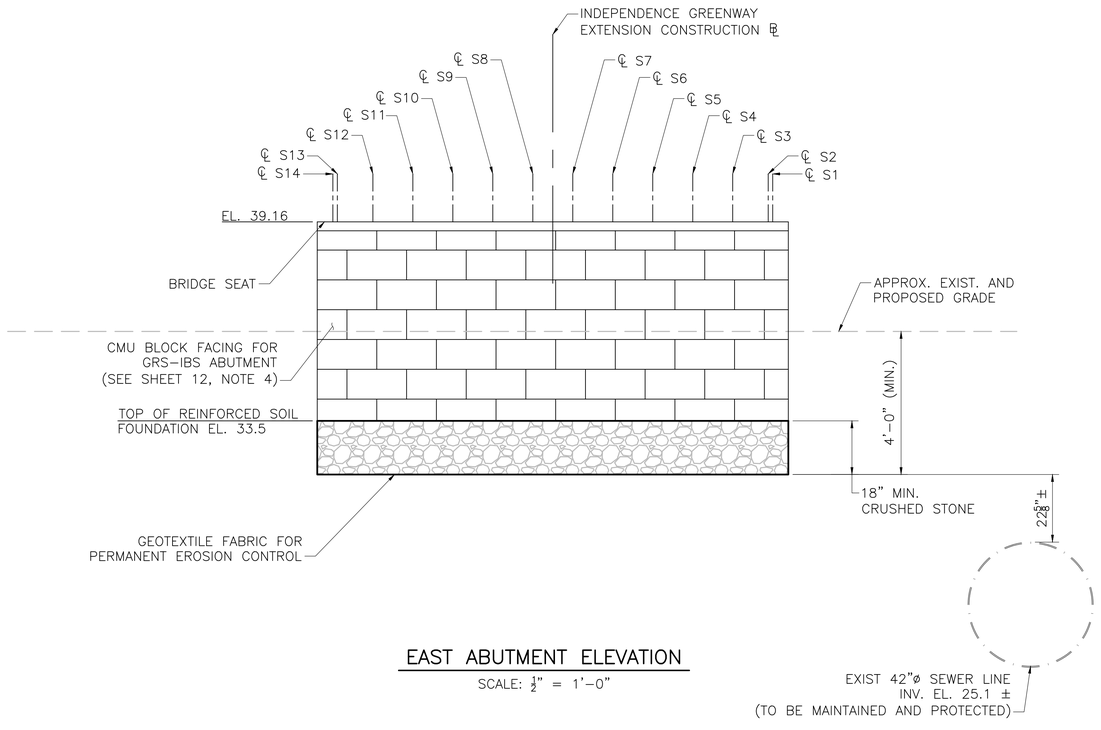


NOTE:

SOUTHEAST WINGWALL ELEVATION SHOWN AND NORTHEAST WINGWALL ELEVATION SIMILAR.

EAST ABUTMENT PLAN

SCALE: ½" = 1'-0"

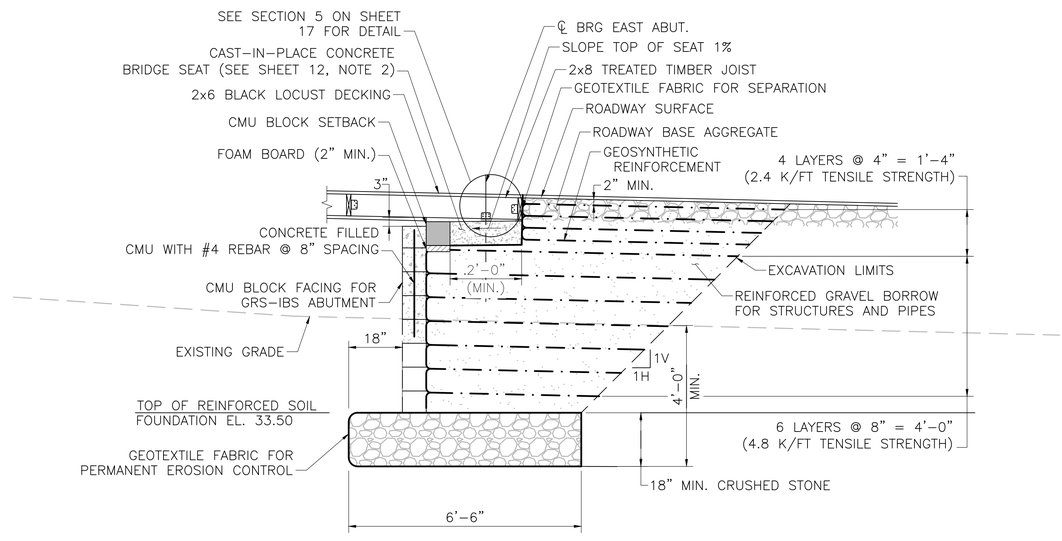


EAST ABUTMENT ELEVATION

SCALE: ½" = 1'-0"

SOUTHEAST ABUTMENT WINGWALL ELEVATION

SCALE: ½" = 1'-0"



EAST ABUTMENT SECTION

SCALE: ½" = 1'-0"

NOTE:

SEE SHEET 12 FOR GRS-IBS ABUTMENT NOTES.

DATE	DESCRIPTION
AUG. 23, 2025	ISSUED FOR CONSTRUCTION

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

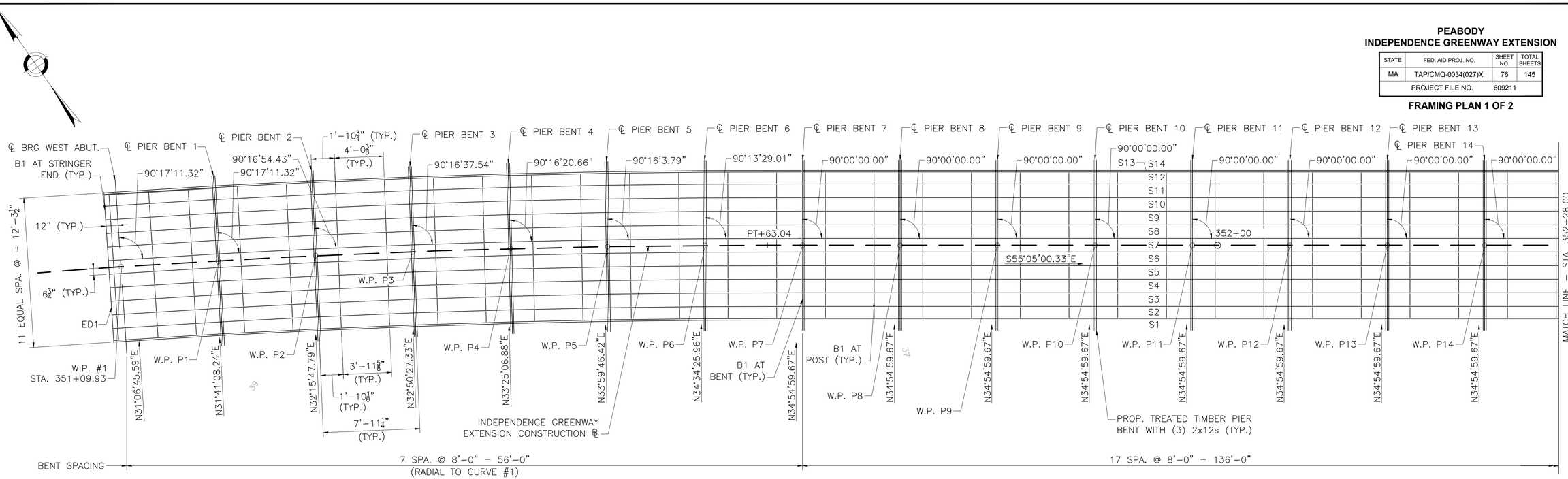
USE ONLY PRINTS OF LATEST DATE

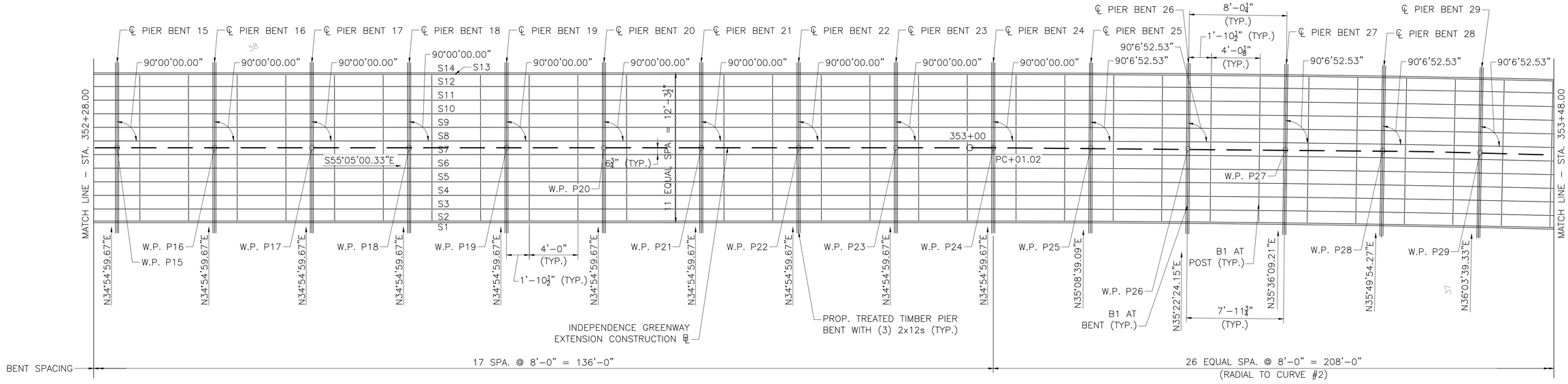
609211_BR13(P03020).DWG Plotted on 16-Jul-2025 7:40 AM
11-June-2025 FINAL STRUCTURAL SUBMISSION (SF)
Y:\Shared\Engineering\Projects\2017\17118\Dwg\Bridge\Pedestrian Walkway

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	76	145
PROJECT FILE NO.	609211		

FRAMING PLAN 1 OF 2





STRUCTURAL TIMBER NOTES:

1. B1 = TYPICAL 2X8 BLOCKING
   ED1 = CONTINUOUS 2X8 END DIAPHRAGM
2. THE MAIN LOAD CARRYING MEMBERS ARE 2X8 JOISTS S1 THROUGH S14.
3. SEE SHEET 2 FOR STRUCTURAL TIMBER NOTES.
4. SEE SHEET 17 FOR BLOCKING DETAILS.
5. SEE SHEET 15 FOR THE FRAMING WORKING POINT STATIONS ALONG THE BASELINE (W.P. P##)

FRAMING PLAN 1

SCALE: ¼" = 1'-0"

AUG. 23, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

USE ONLY PRINTS OF LATEST DATE

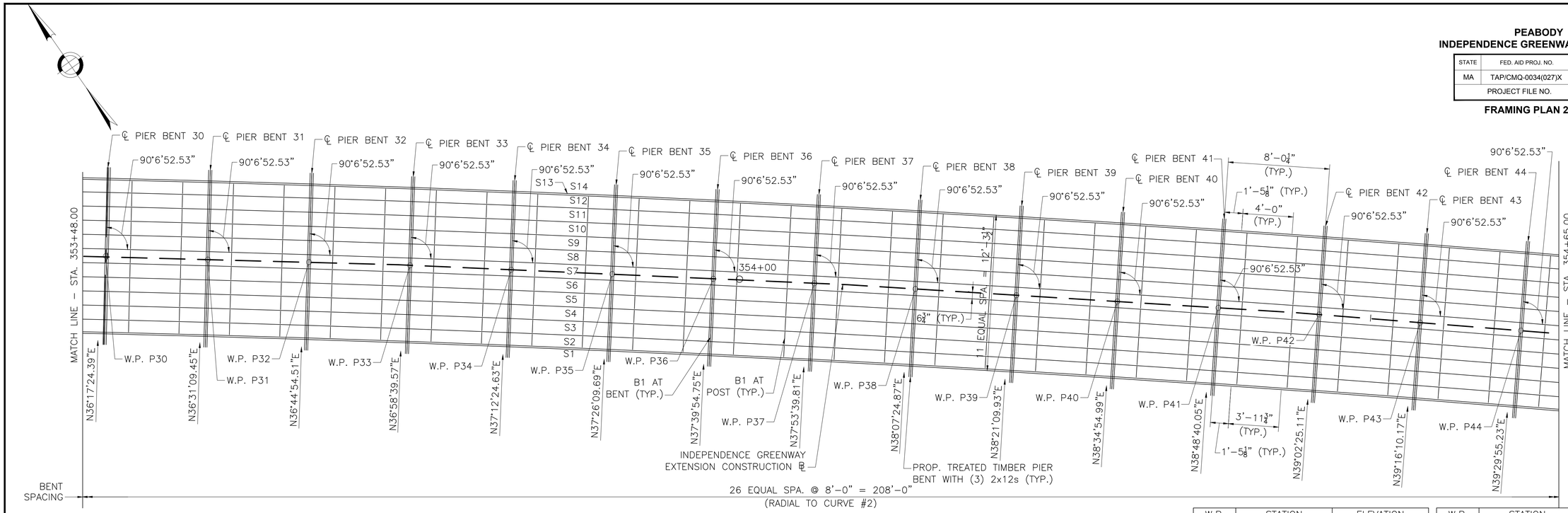
SHEET 14 OF 17 SHEETS BRIDGE NO. P-03-020 (CAK)

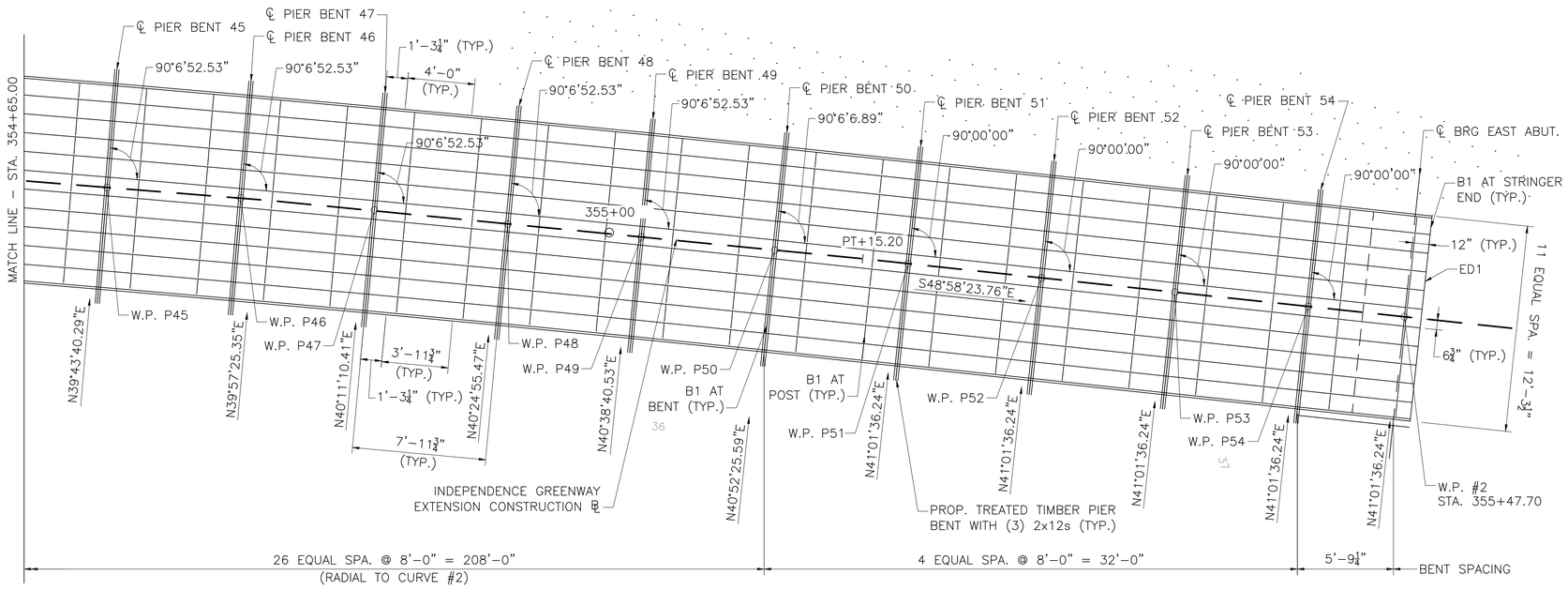
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11-June-2025 FINAL STRUCTURAL SUBMISSION (SF)
Y:\Shared\Engineering\Projects\2017\17118\Dwg\Bridge\Pedestrian Walkway

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	77	145
PROJECT FILE NO.	609211		

FRAMING PLAN 2 OF 2





W.P.	STATION	ELEVATION
P1	351+17.93	4.00
P2	351+25.93	41.24
P3	351+33.93	41.23
P4	351+41.93	41.22
P5	351+49.93	41.21
P6	351+57.93	41.19
P7	351+65.93	41.18
P8	351+73.93	41.17
P9	351+81.93	41.16
P10	351+89.93	41.14
P11	351+97.93	41.13
P12	352+05.93	41.12
P13	352+13.93	41.10
P14	352+21.93	41.09
P15	352+29.93	41.08
P16	352+37.93	41.07
P17	352+45.93	41.05
P18	352+53.93	41.04
P19	352+61.93	41.03
P20	352+69.93	41.01
P21	352+77.93	41.00
P22	352+85.93	40.99
P23	352+93.93	40.98
P24	353+01.93	40.96
P25	353+09.93	40.95
P26	353+17.93	40.94
P27	353+25.93	40.92

W.P.	STATION	ELEVATION
P28	353+33.93	40.91
P29	353+41.93	40.90
P30	353+49.93	40.89
P31	353+57.93	40.87
P32	353+65.93	40.86
P33	353+73.93	40.85
P34	353+81.93	40.84
P35	353+89.93	40.82
P36	353+97.93	40.81
P37	354+05.93	40.80
P38	354+13.93	40.78
P39	354+21.93	40.77
P40	354+29.93	40.76
P41	354+37.93	40.75
P42	354+45.93	40.73
P43	354+53.93	40.72
P44	354+61.93	40.71
P45	354+69.93	40.67
P46	354+77.93	40.65
P47	354+85.93	40.61
P48	354+93.93	40.57
P49	355+01.93	40.50
P50	355+09.93	40.43
P51	355+17.93	40.34
P52	355+25.93	40.24
P53	355+33.93	40.12
P54	355+41.93	39.99

NOTE:

WORKING POINT ELEVATIONS PROVIDED AT BOTTOM OF TIMBER PIER BENT CAP ASSEMBLY.

STRUCTURAL TIMBER NOTE:

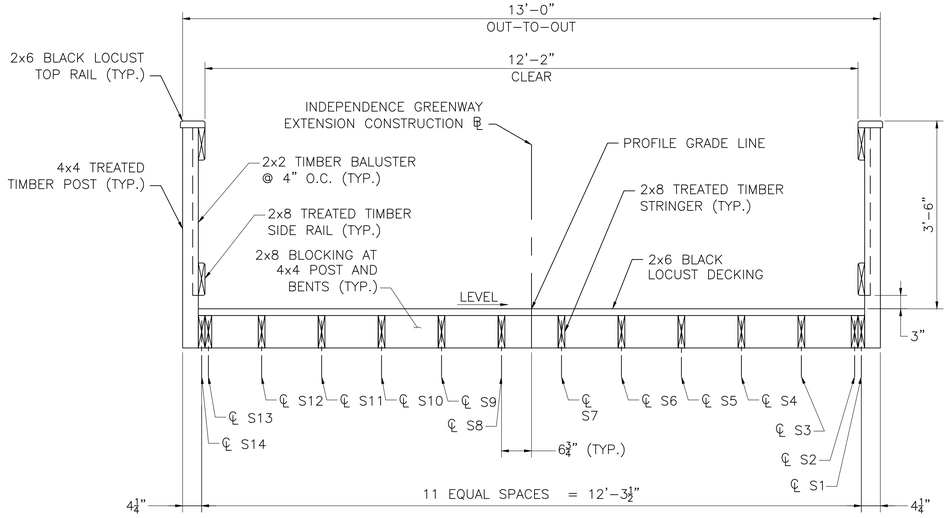
SEE SHEET 14 FOR NOTES.

FRAMING PLAN 2

SCALE: ¼" = 1'–0"

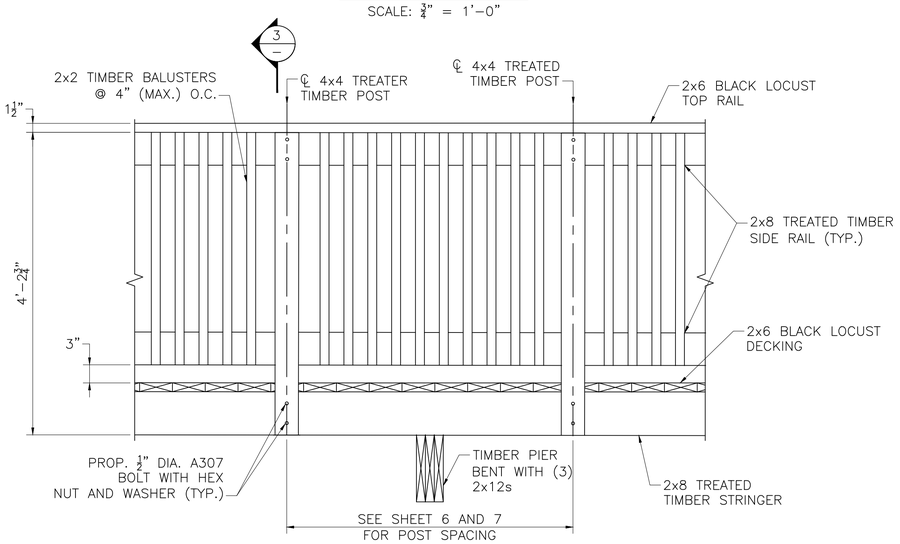
AUG. 23, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

609211_BR15(P03020).DWG Plotted on 16-Jul-2025 7:41 AM
11-June-2025
FINAL STRUCTURAL SUBMISSION (SF)
Y:\Shared\Engineering\Projects\2017\17118\Dwg\Bridge\Pedestrian Walkway



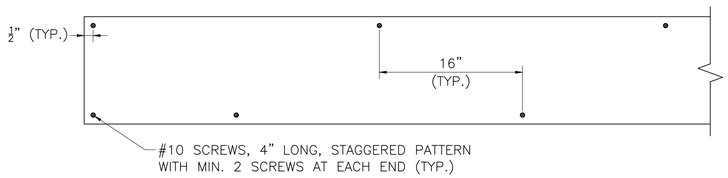
TYPICAL SECTION

SCALE: ¾" = 1'-0"



RAILING ELEVATION

SCALE: 1" = 1'-0"

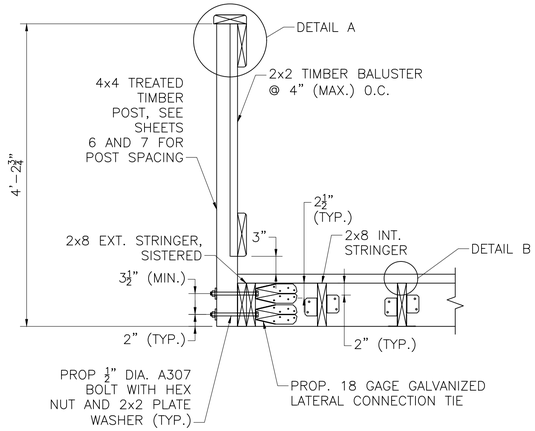


NOTES:

1. DETAIL SHOWN FOR PIER CAP ASSEMBLY, SISTERED EXTERIOR STRINGERS SIMILAR.
2. FOR CONNECTION OF 3 MEMBERS, SCREWS TO BE INSTALLED ON BOTH SIDES. FOR CONNECTIONS OF 2 MEMBERS SCREWS TO BE INSTALLED ON ONE SIDE

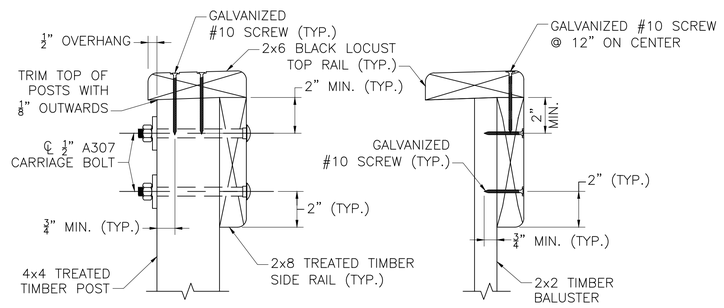
PIER CAP ASSEMBLY DETAIL

SCALE: 1½" = 1'-0"



SECTION 3

SCALE: 1" = 1'-0"

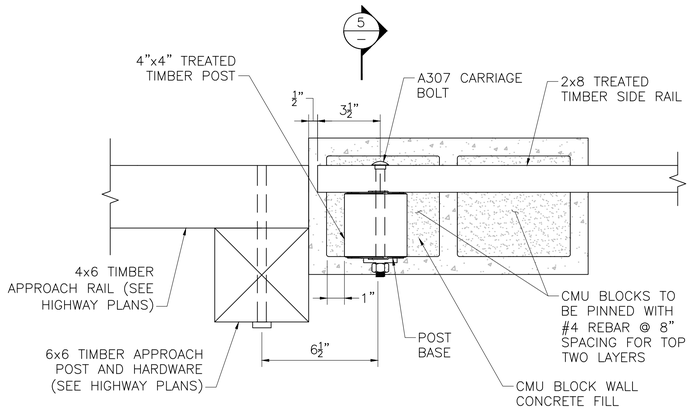


NOTE:

RUB RAIL CONNECTION NOT SHOWN BUT SIMILAR.

DETAIL A

SCALE: 3" = 1'-0"



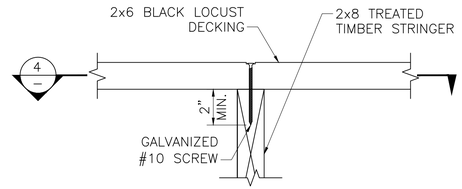
RAILING POST IN CMU BLOCK PLAN

SCALE: 3" = 1'-0"

PEABODY
INDEPENDENCE GREENWAY EXTENSION

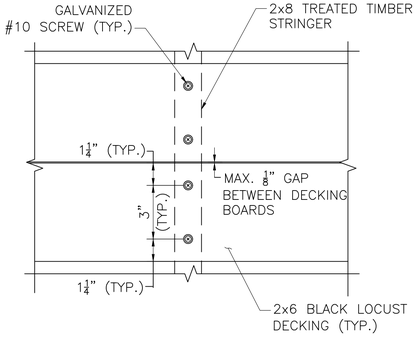
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	78	145
PROJECT FILE NO.	609211		

TYPICAL SECTION AND TIMBER CONNECTION DETAILS



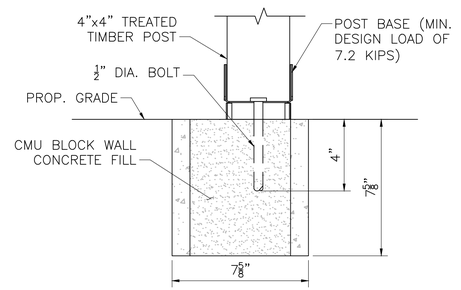
DETAIL B

SCALE: 3" = 1'-0"



SECTION 4

SCALE: 3" = 1'-0"



SECTION 5

SCALE: 3" = 1'-0"

DATE	DESCRIPTION
AUG. 23, 2025	ISSUED FOR CONSTRUCTION

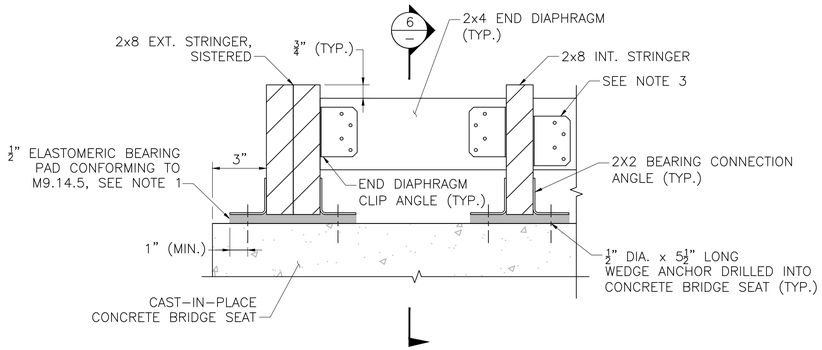
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

Y:\Shared\Engineering\Projects\2017\17118\Dwg\Bridge\Pedestrian Walkway
609211_BR16(P03020).DWG Plotted on 16-Jul-2025 7:41 AM
11-June-2025
FINAL STRUCTURAL SUBMISSION (SF)

PEABODY
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	79	145
	PROJECT FILE NO. 609211		

TYPICAL SECTION AND TIMBER CONNECTION DETAILS

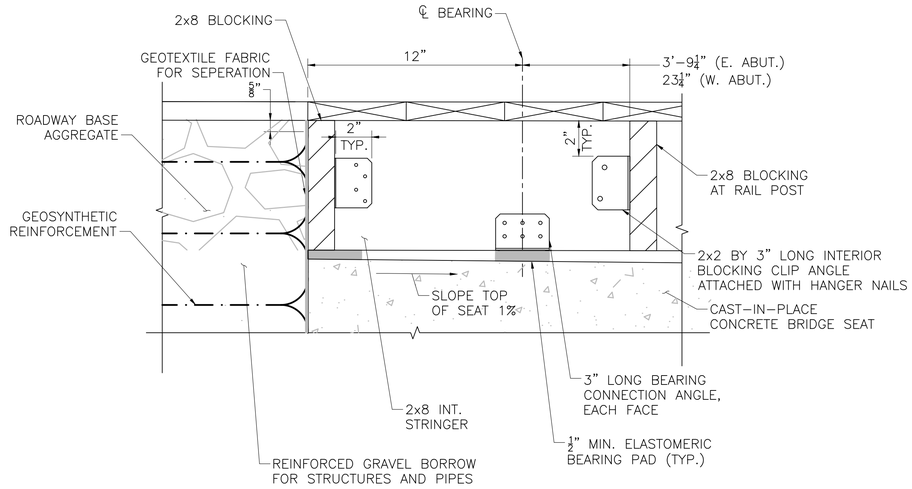


NOTES:

1. ELASTOMERIC BEARING PAD SHALL BE CUT TO SIZE TO MATCH THE PLAN VIEW LIMITS OF THE CONNECTION ANGLES AND STRINGER(S) IN BETWEEN.
2. TIMBER DECKING NOT SHOWN FOR CLARITY.
3. INTERIOR BLOCKING CLIP ANGLES STAGGERED UP TO ½" VERTICALLY AT EACH FACE OF STRINGER TO AVOID CONFLICT WITH SCREW INSTALLATION.

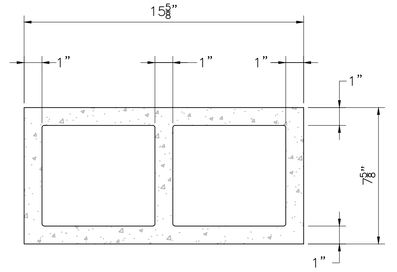
END DIAPHRAGM & BEARING ELEVATION

SCALE: 3" = 1'-0"



SECTION 6

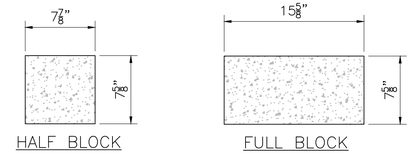
SCALE: 3" = 1'-0"



NOTE: SOLID CMU BLOCKS HAVE EXTERIOR DIMENSIONS AS SHOWN, WITH NO VOIDS.

8" CMU PLAN VIEW

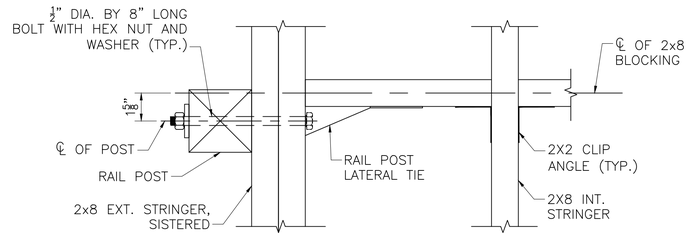
SCALE: 3" = 1'-0"



NOTE: SOLID CMU BLOCKS HAVE EXTERIOR DIMENSIONS AS SHOWN, WITH NO VOIDS.

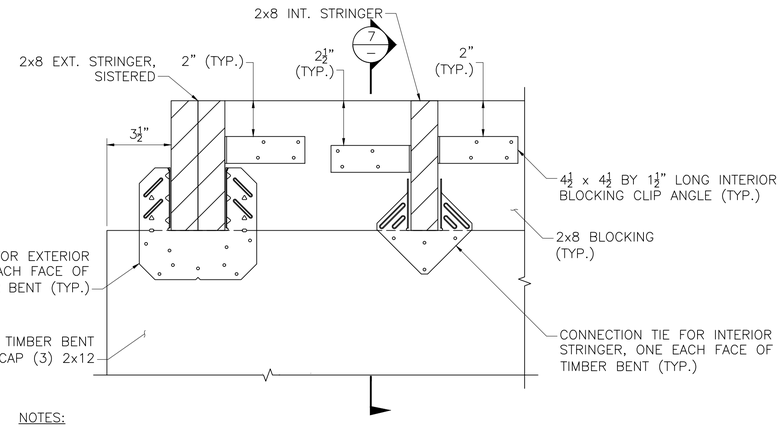
TYPICAL CMU BLOCK ELEVATION

SCALE: 1½" = 1'-0"



SECTION 8

SCALE: 3" = 1'-0"

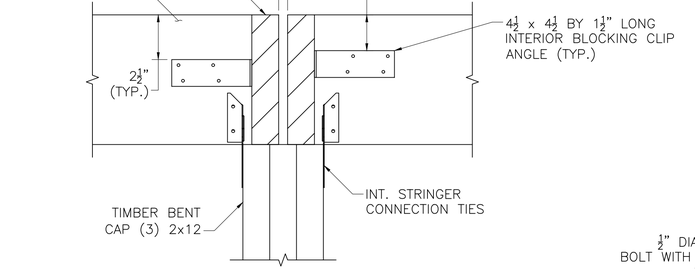


NOTES:

1. TIMBER DECKING NOT SHOWN FOR CLARITY.

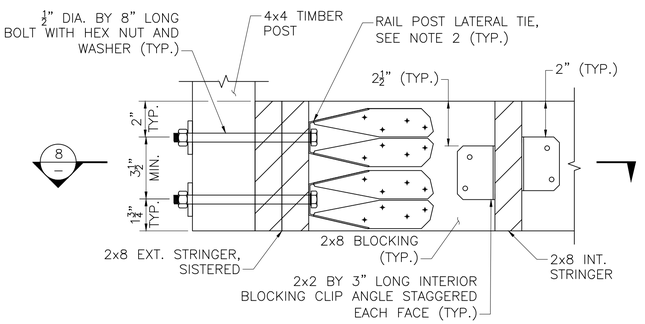
STRINGER AT PIER BENT SUPPORT ELEVATION

SCALE: 3" = 1'-0"



SECTION 7

SCALE: 3" = 1'-0"



NOTES:

1. TIMBER DECKING NOT SHOWN FOR CLARITY.
2. LATERAL TIES SHALL BE STAINLESS STEEL, GALVANIZED, OR ZINC COATED. EACH TIE SHALL PROVIDE A MINIMUM LATERAL TENSILE CAPACITY OF 1,500 LBS.

RAIL POST CONNECTION TO STRINGER ELEVATION

SCALE: 3" = 1'-0"

CONNECTION HARDWARE GENERAL NOTES:

1. ALL CONNECTION COMPONENTS, OTHER THAN BOLTS, SHALL BE 33 KSI STAINLESS STEEL, GALVANIZED STEEL, OR ZINC COATED STEEL, UNLESS OTHERWISE SPECIFIED.
2. ALL CONNECTION COMPONENTS SHALL BE A MINIMUM OF 18 GAUGE STEEL.
3. ALL PROPOSED BOLTS SHALL BE EITHER ASTM A307 GALVANIZED BOLTS, OR ASTM SS316 STAINLESS STEEL BOLTS.
4. ALL WOOD OR LAG SCREWS SHALL BE GALVANIZED OR STAINLESS STEEL #10 BY 1½" LONG, UNLESS OTHERWISE NOTED.

AUG. 23, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

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609211_BR17(P03020).DWG Plotted on 16-Jul-2025 7:41 AM
FINAL STRUCTURAL SUBMISSION (SF) 11-June-2025
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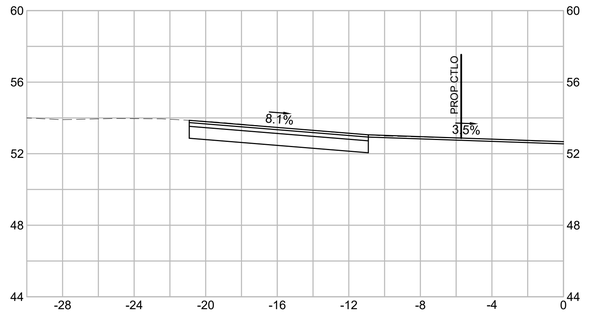
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	80	145
PROJECT FILE NO.	609211		

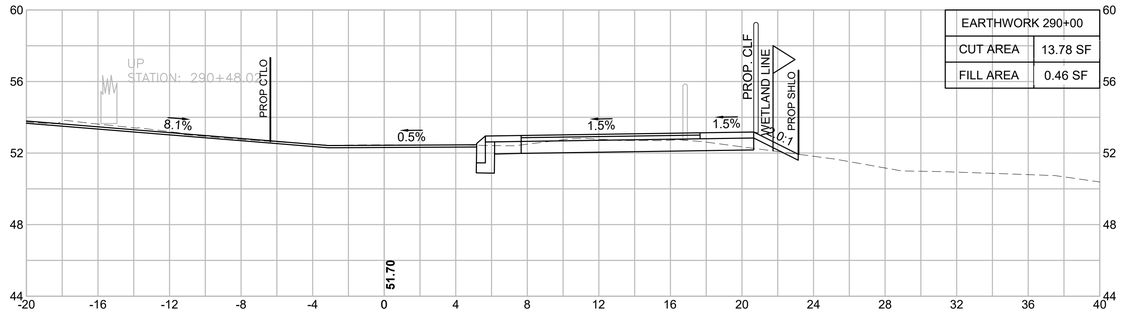
SECTION SHEET 1

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:10 PM

290+16



290+00



EARTHWORK 290+00	
CUT AREA	13.78 SF
FILL AREA	0.46 SF

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

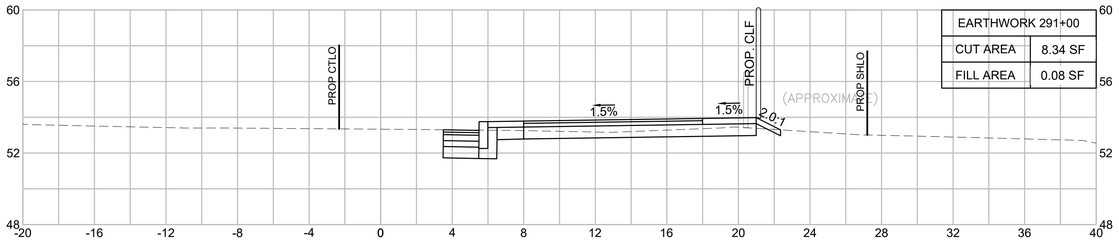
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	81	145
PROJECT FILE NO.	609211		

SECTION SHEET 2

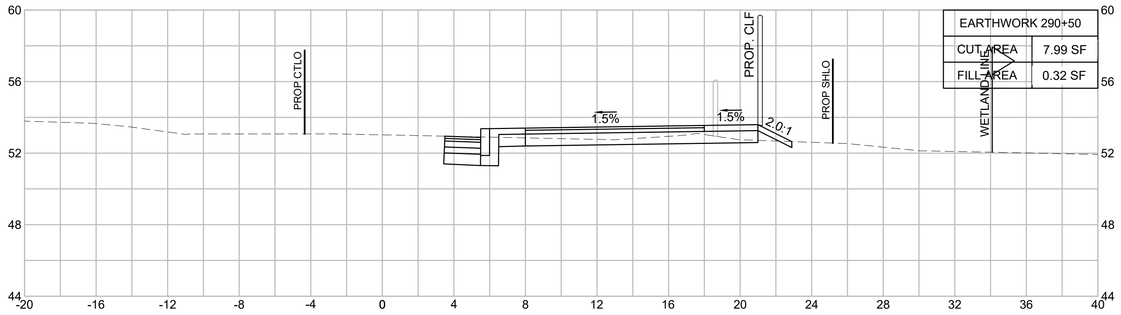
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:10 PM

291+00



EARTHWORK 291+00	
CUT AREA	8.34 SF
FILL AREA	0.08 SF

290+50



EARTHWORK 290+50	
CUT AREA	7.99 SF
FILL AREA	0.32 SF

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

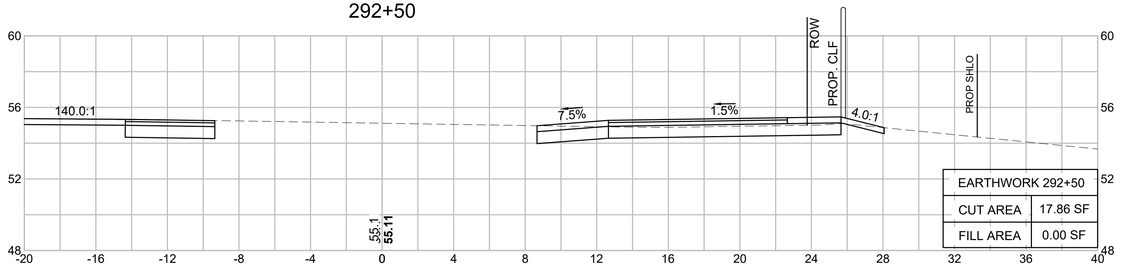
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	82	145
PROJECT FILE NO.	609211		

SECTION SHEET 3

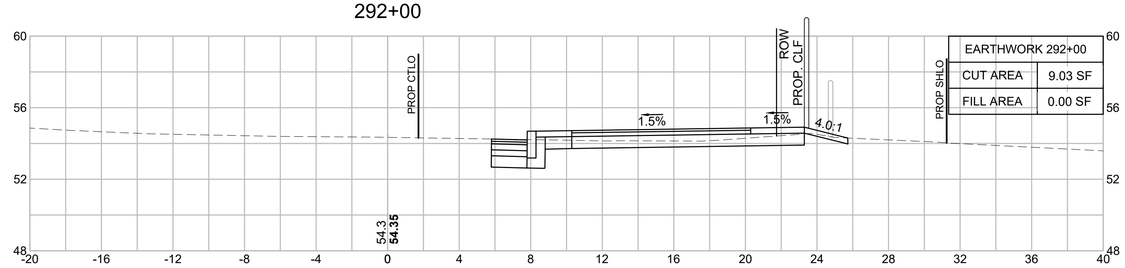
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:10 PM

292+50



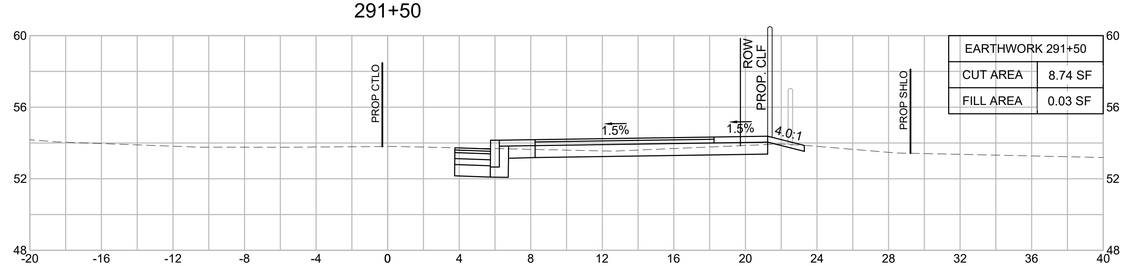
EARTHWORK 292+50	
CUT AREA	17.86 SF
FILL AREA	0.00 SF

292+00



EARTHWORK 292+00	
CUT AREA	9.03 SF
FILL AREA	0.00 SF

291+50



EARTHWORK 291+50	
CUT AREA	8.74 SF
FILL AREA	0.03 SF

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

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

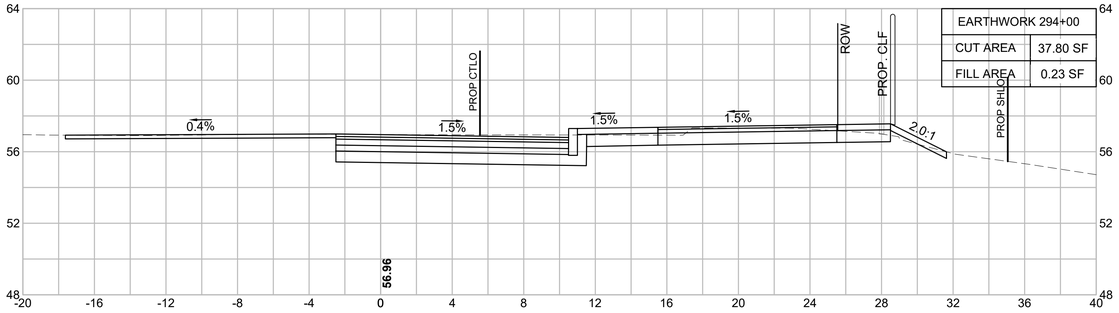
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	83	145
	PROJECT FILE NO. 609211		

SECTION SHEET 4

Plotted on 16-Jul-2025 5:11 PM

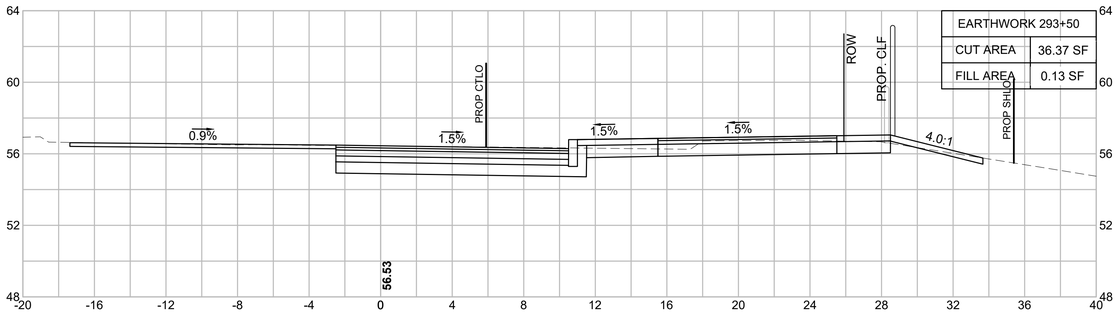
SHT016_HD(CROSS SECTIONS).DWG

294+00



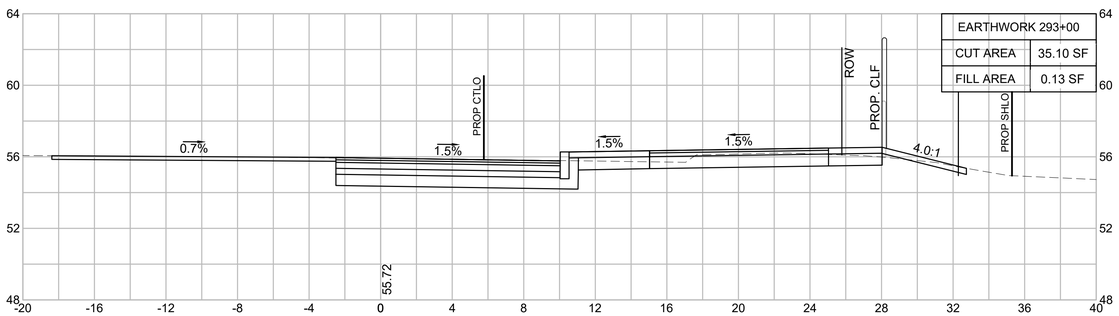
EARTHWORK 294+00	
CUT AREA	37.80 SF
FILL AREA	0.23 SF

293+50



EARTHWORK 293+50	
CUT AREA	36.37 SF
FILL AREA	0.13 SF

293+00



EARTHWORK 293+00	
CUT AREA	35.10 SF
FILL AREA	0.13 SF

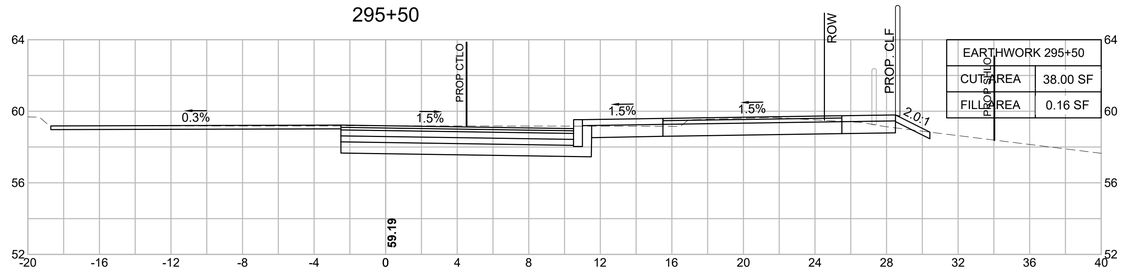
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

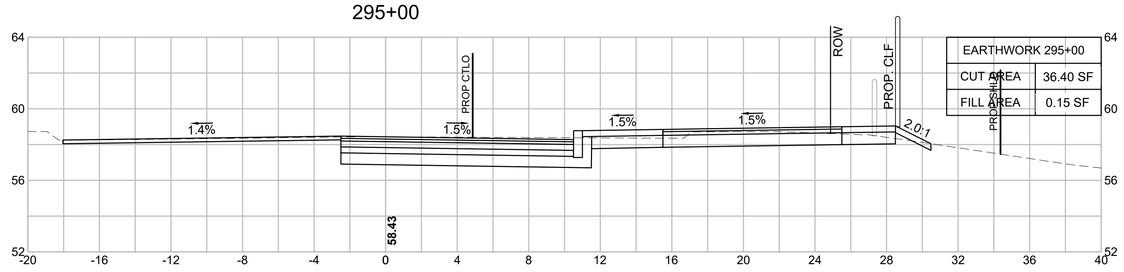
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	84	145
PROJECT FILE NO.	609211		

SECTION SHEET 5

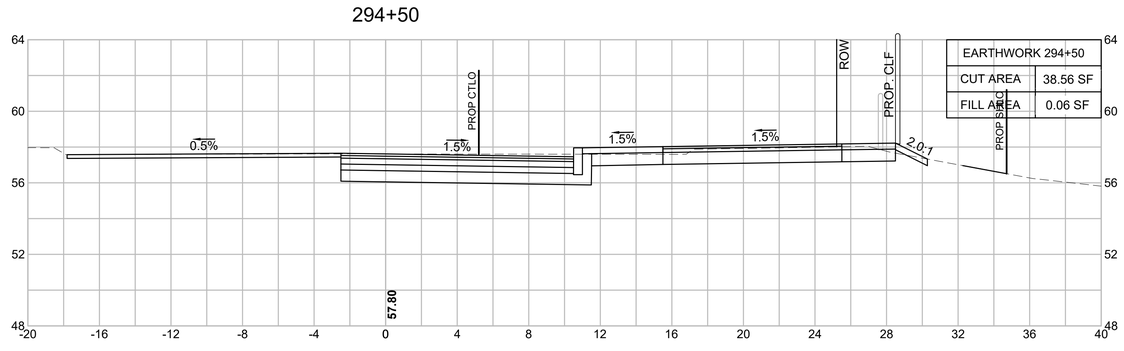
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:11 PM



EARTHWORK 295+50	
CUT AREA	38.00 SF
FILL AREA	0.16 SF



EARTHWORK 295+00	
CUT AREA	36.40 SF
FILL AREA	0.15 SF



EARTHWORK 294+50	
CUT AREA	38.56 SF
FILL AREA	0.06 SF

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

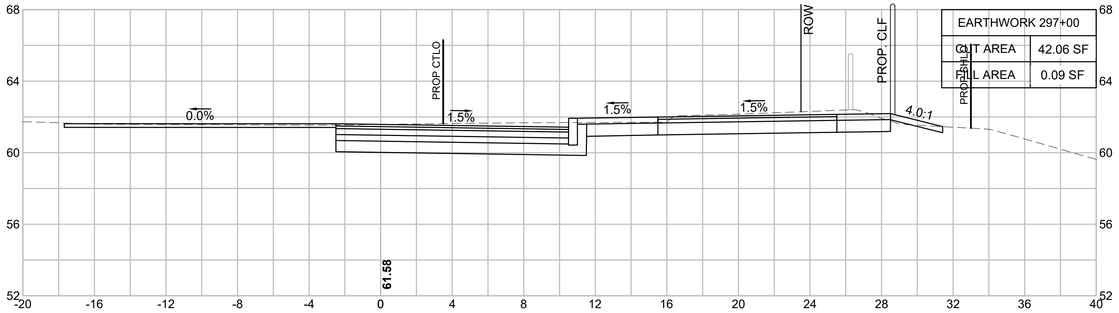
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	85	145
PROJECT FILE NO.	609211		

SECTION SHEET 6

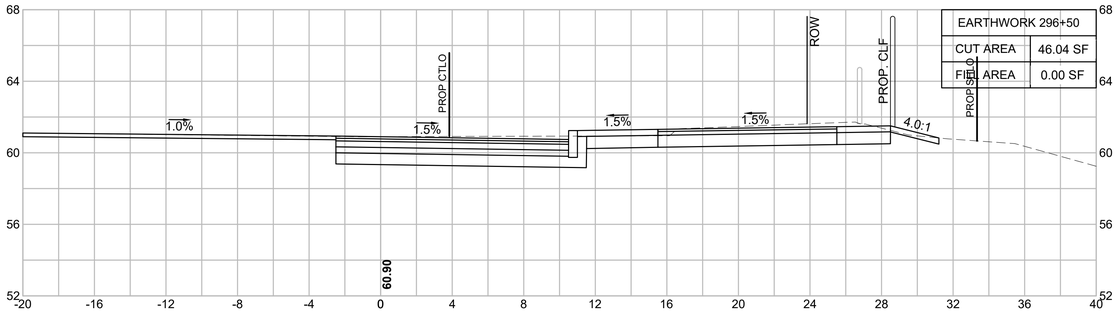
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:11 PM

297+00



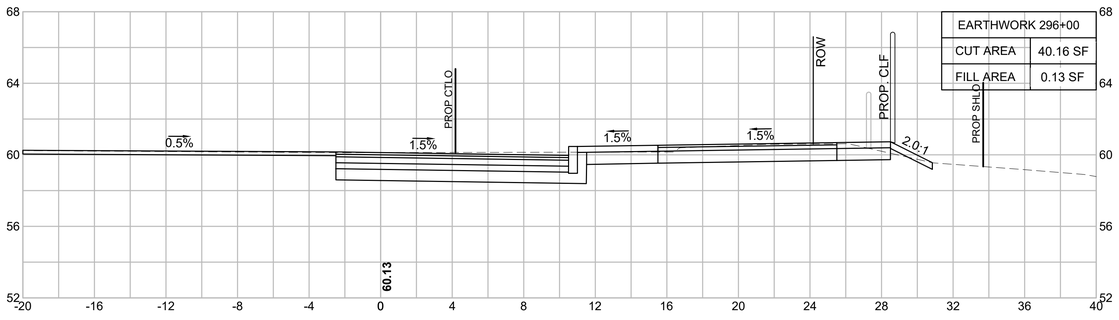
EARTHWORK 297+00	
CUT AREA	42.06 SF
FILL AREA	0.09 SF

296+50



EARTHWORK 296+50	
CUT AREA	46.04 SF
FILL AREA	0.00 SF

296+00



EARTHWORK 296+00	
CUT AREA	40.16 SF
FILL AREA	0.13 SF

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

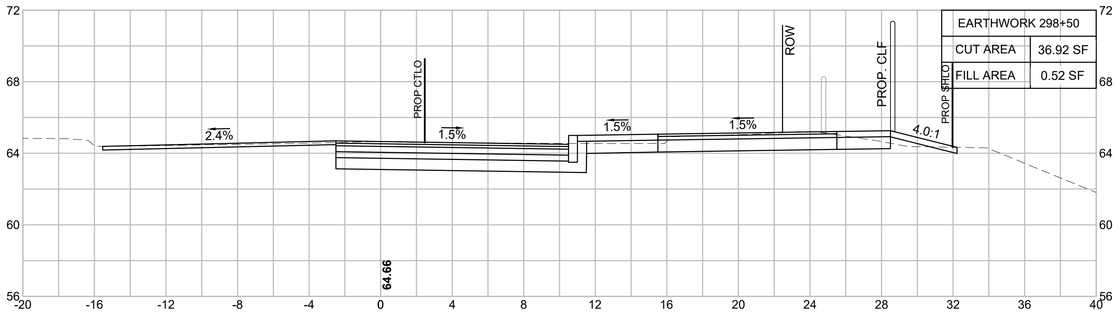
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	86	145
PROJECT FILE NO.	609211		

SECTION SHEET 7

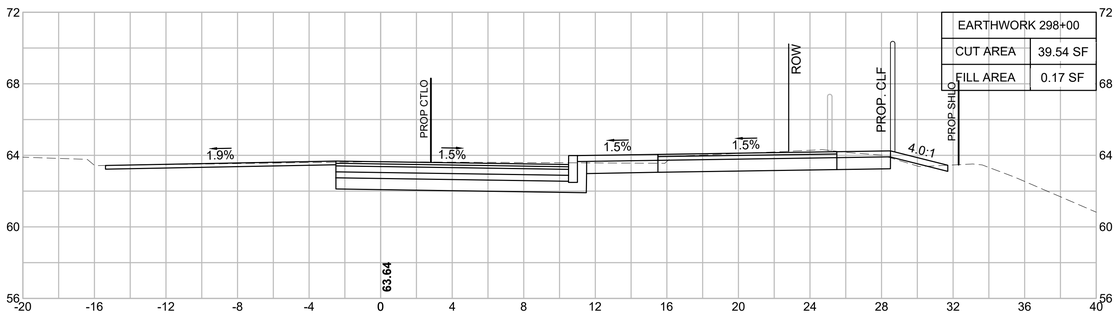
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:11 PM

298+50



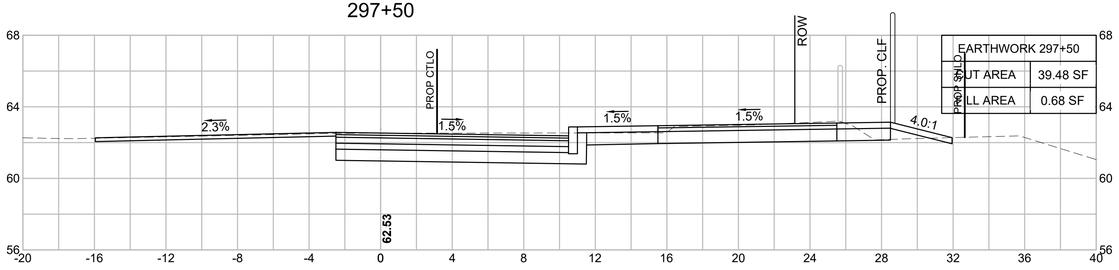
EARTHWORK 298+50	
CUT AREA	36.92 SF
FILL AREA	0.52 SF

298+00



EARTHWORK 298+00	
CUT AREA	39.54 SF
FILL AREA	0.17 SF

297+50



EARTHWORK 297+50	
CUT AREA	39.48 SF
FILL AREA	0.68 SF

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

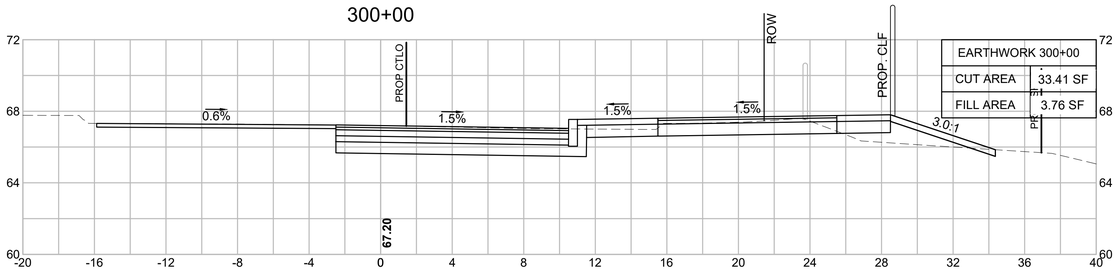
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	87	145
PROJECT FILE NO.	609211		

SECTION SHEET 8

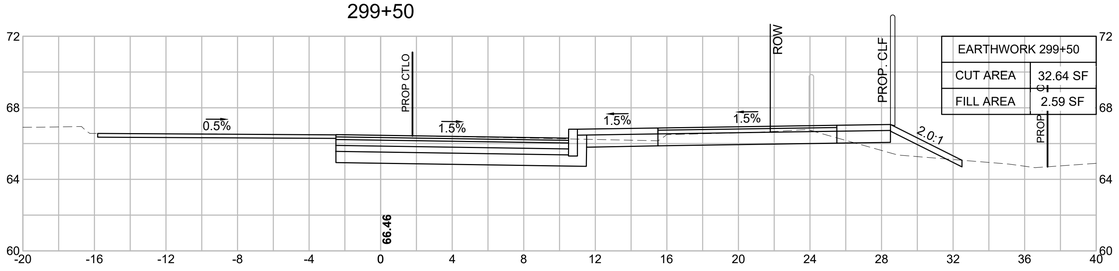
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:11 PM

300+00



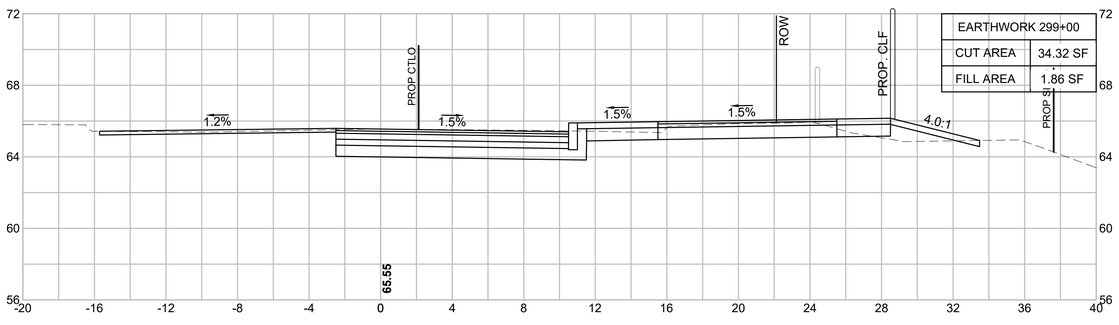
EARTHWORK 300+00	
CUT AREA	33.41 SF
FILL AREA	3.76 SF

299+50



EARTHWORK 299+50	
CUT AREA	32.64 SF
FILL AREA	2.59 SF

299+00



EARTHWORK 299+00	
CUT AREA	34.32 SF
FILL AREA	1.86 SF

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

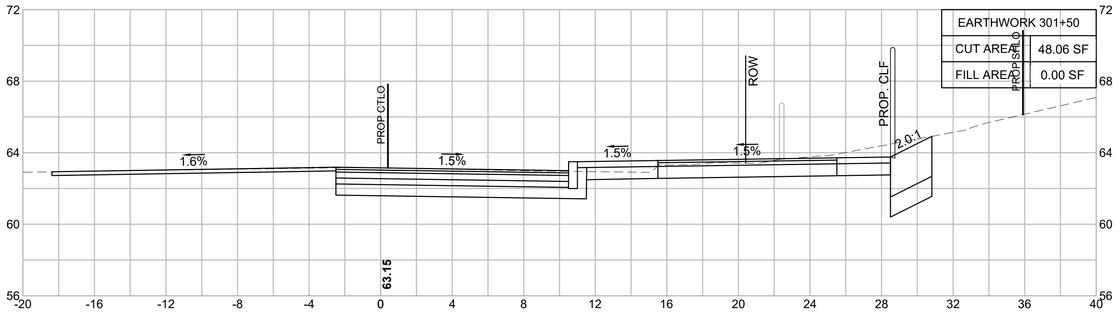
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	88	145
PROJECT FILE NO.	609211		

SECTION SHEET 9

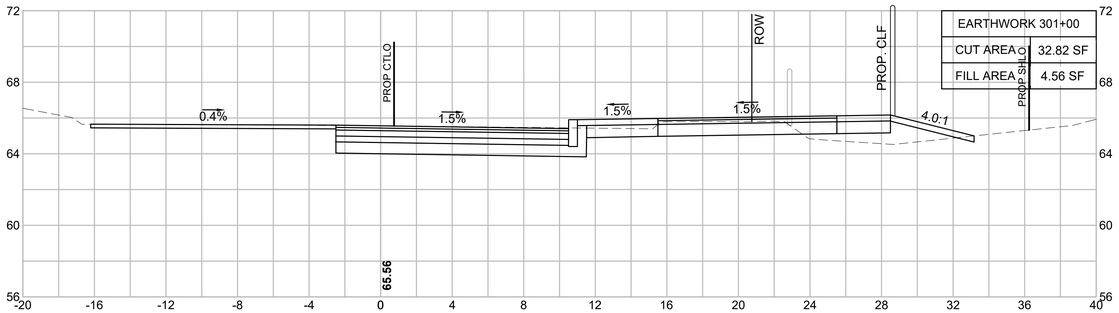
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:12 PM

301+50



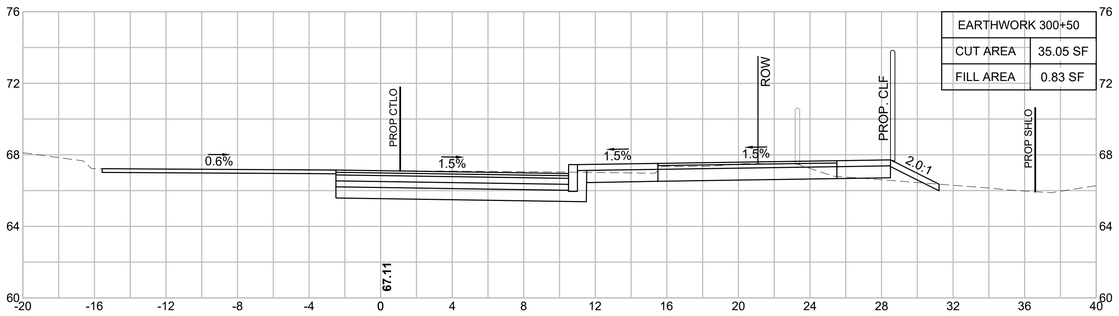
EARTHWORK 301+50	
CUT AREA	48.06 SF
FILL AREA	0.00 SF

301+00



EARTHWORK 301+00	
CUT AREA	32.82 SF
FILL AREA	4.56 SF

300+50



EARTHWORK 300+50	
CUT AREA	35.05 SF
FILL AREA	0.83 SF

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

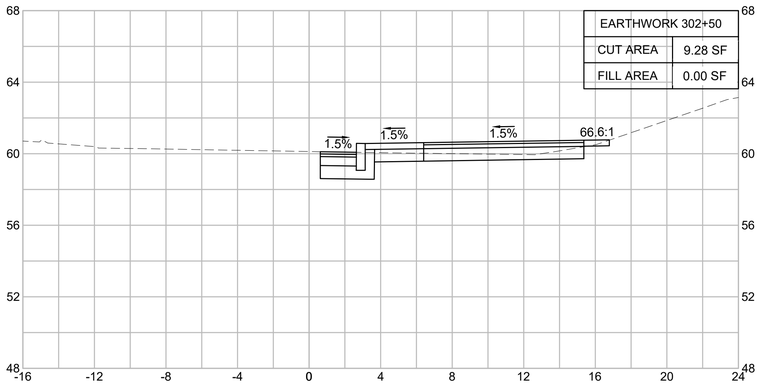
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	89	145
PROJECT FILE NO.	609211		

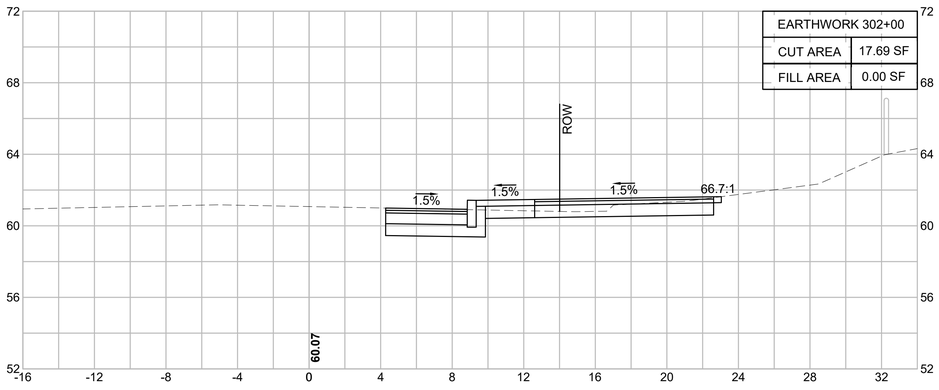
SECTION SHEET 10

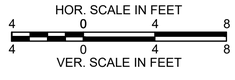
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:12 PM

302+50



302+00





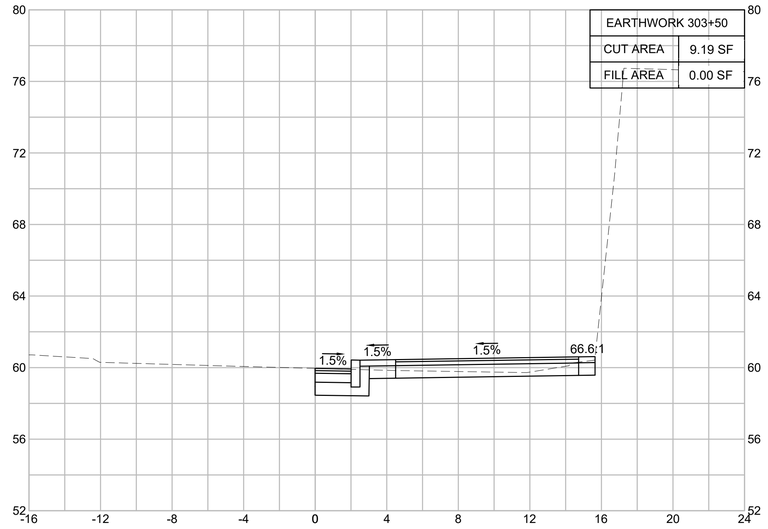
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	90	145
PROJECT FILE NO.	609211		

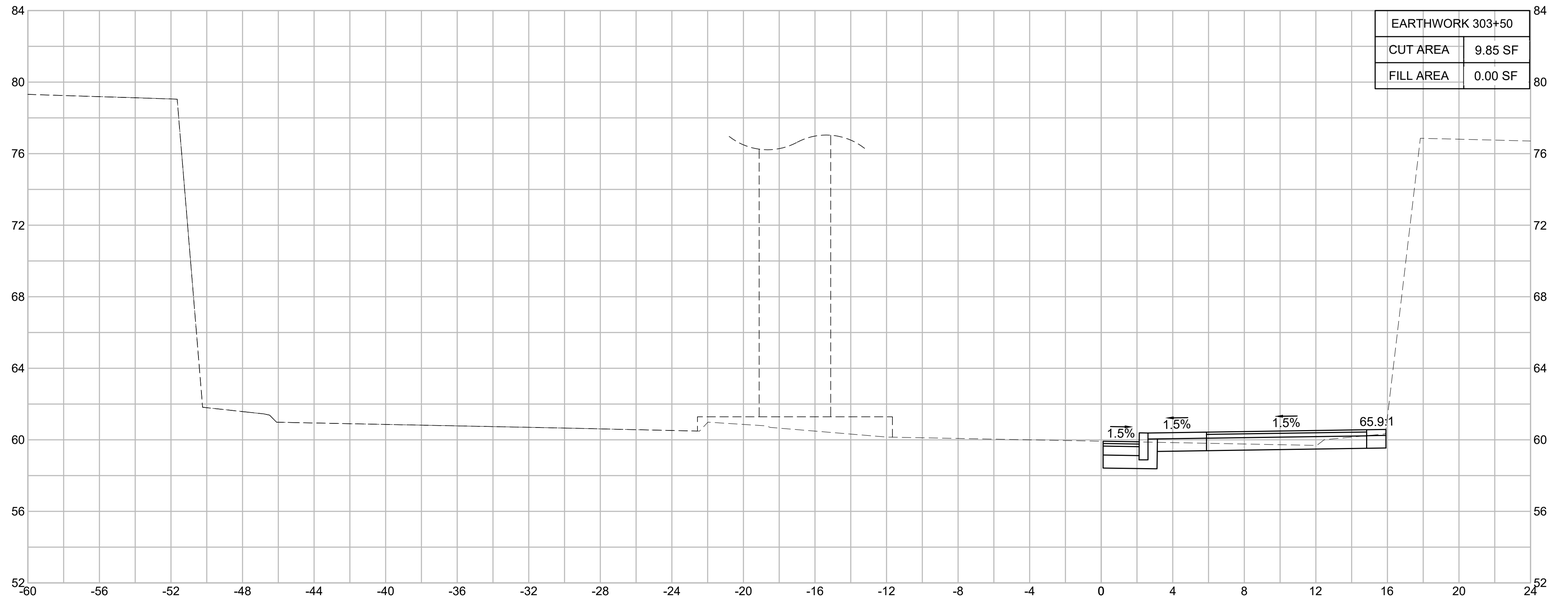
SECTION SHEET 11

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:12 PM

303+50



303+00



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

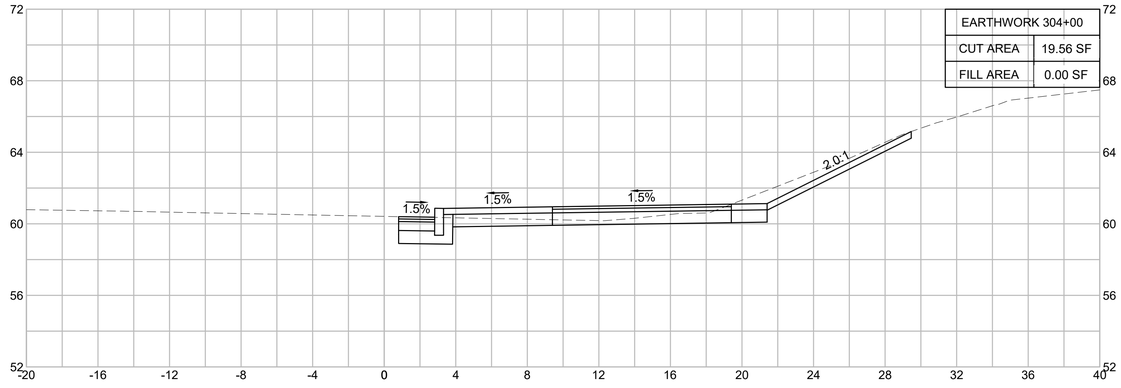
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	91	145
PROJECT FILE NO.	609211		

SECTION SHEET 12

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:12 PM

304+00



EARTHWORK 304+00	
CUT AREA	19.56 SF
FILL AREA	0.00 SF

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

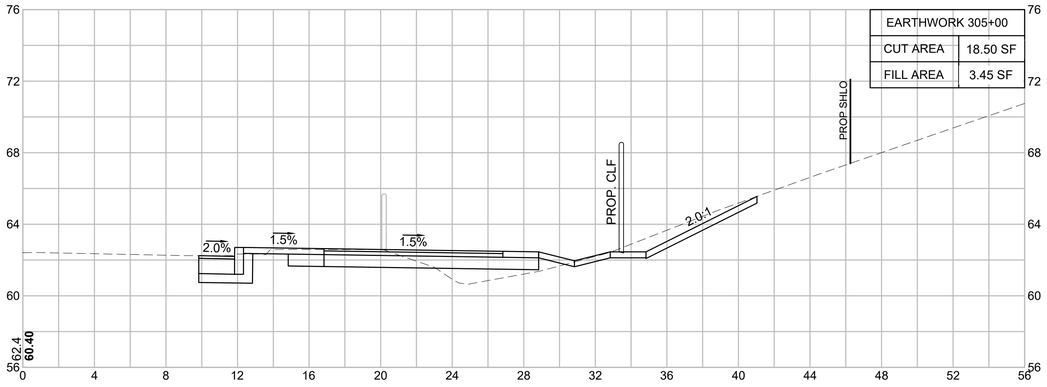
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	92	145
PROJECT FILE NO.	609211		

SECTION SHEET 13

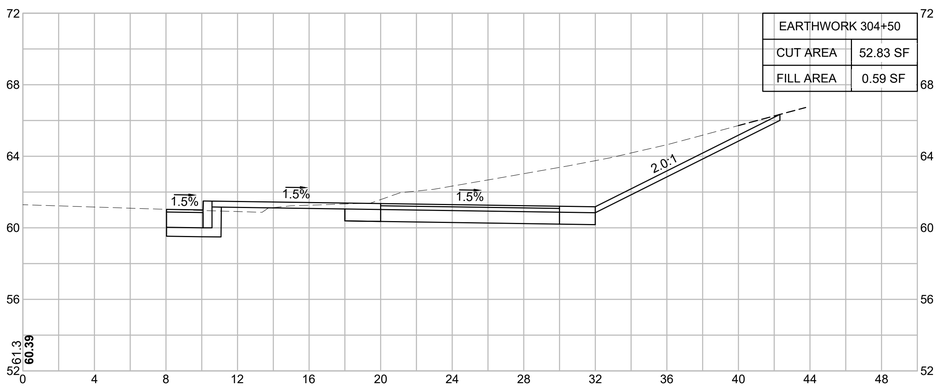
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:12 PM

305+00



EARTHWORK 305+00	
CUT AREA	18.50 SF
FILL AREA	3.45 SF

304+50



EARTHWORK 304+50	
CUT AREA	52.83 SF
FILL AREA	0.59 SF

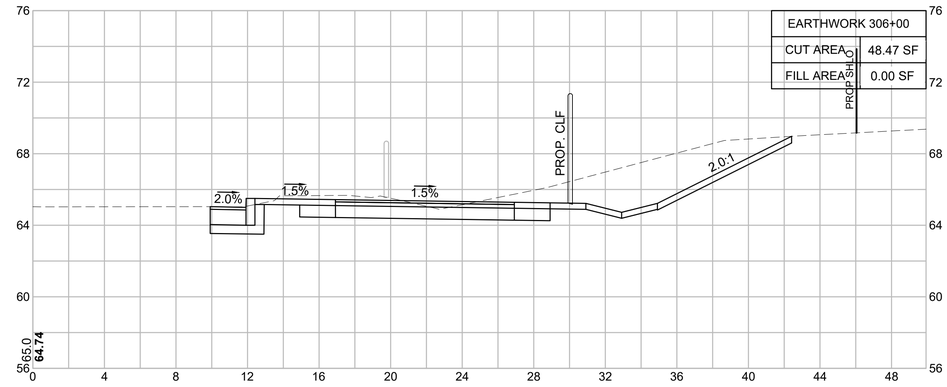
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

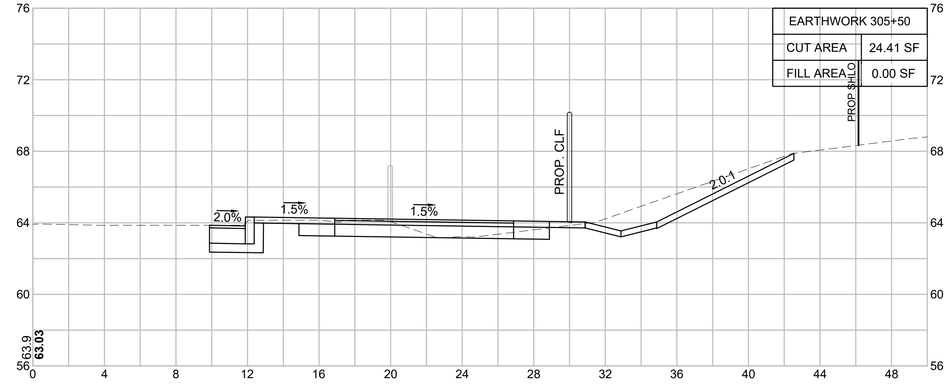
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	93	145
PROJECT FILE NO.	609211		

SECTION SHEET 14

306+00



305+50



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

SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:13 PM

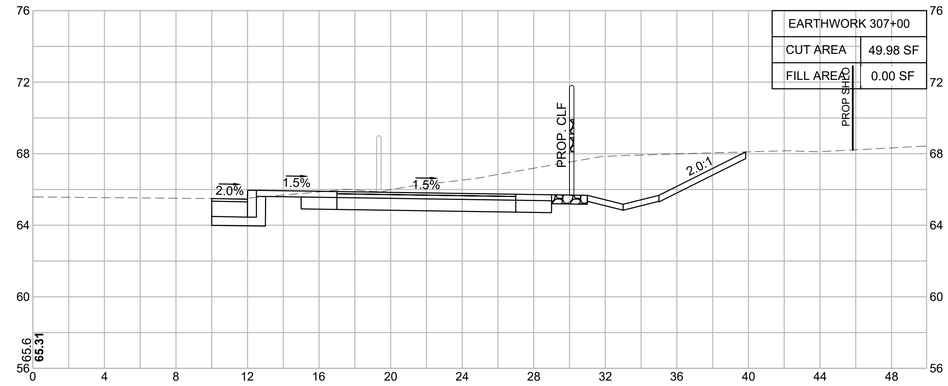
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	94	145
PROJECT FILE NO.	609211		

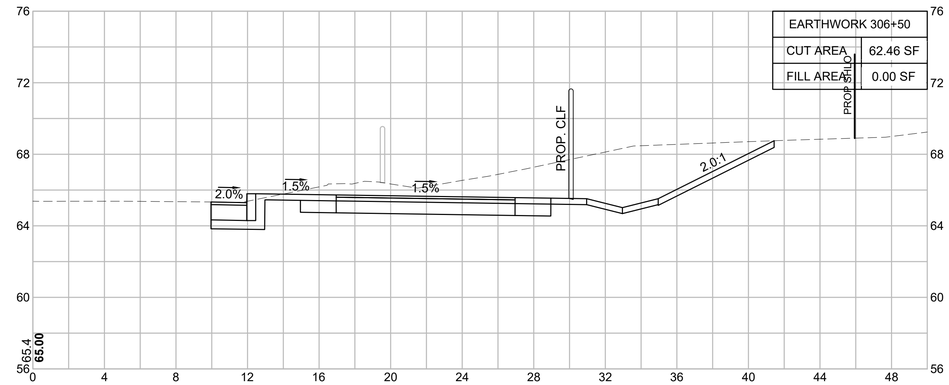
SECTION SHEET 15

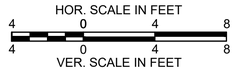
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:13 PM

307+00



306+50





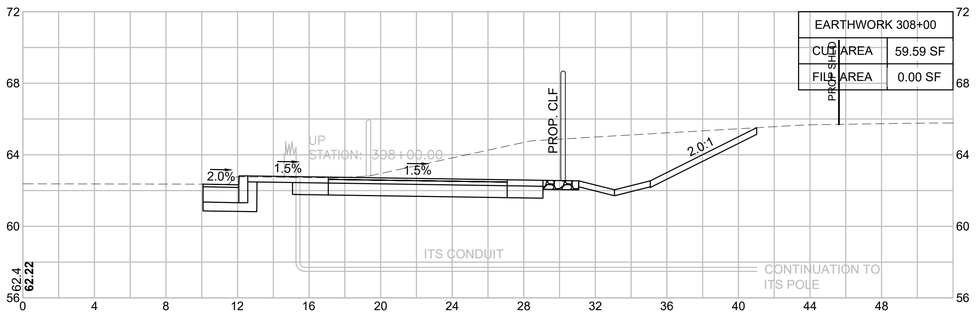
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	95	145
	PROJECT FILE NO.	609211	

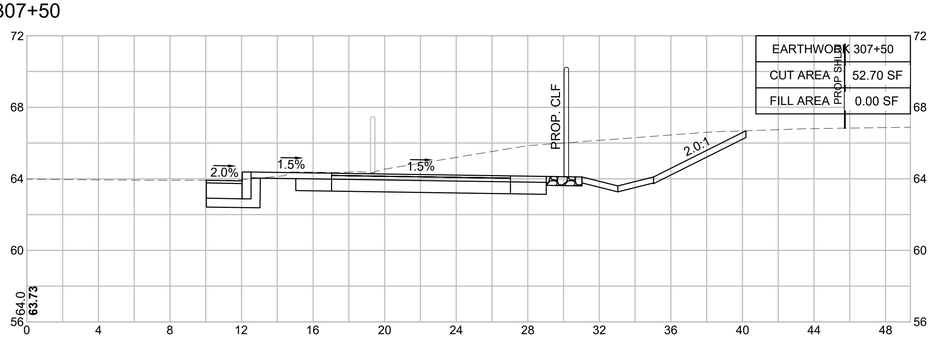
SECTION SHEET 16

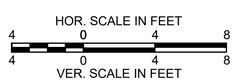
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:13 PM

308+00



307+50





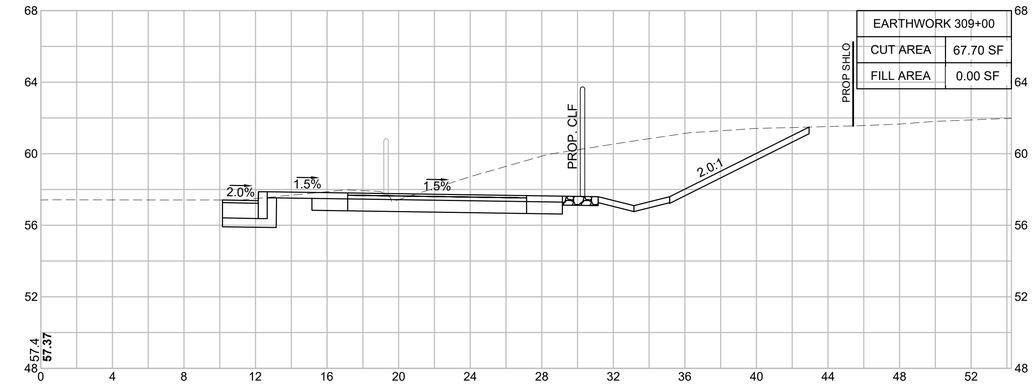
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	96	145
PROJECT FILE NO.	609211		

SECTION SHEET 17

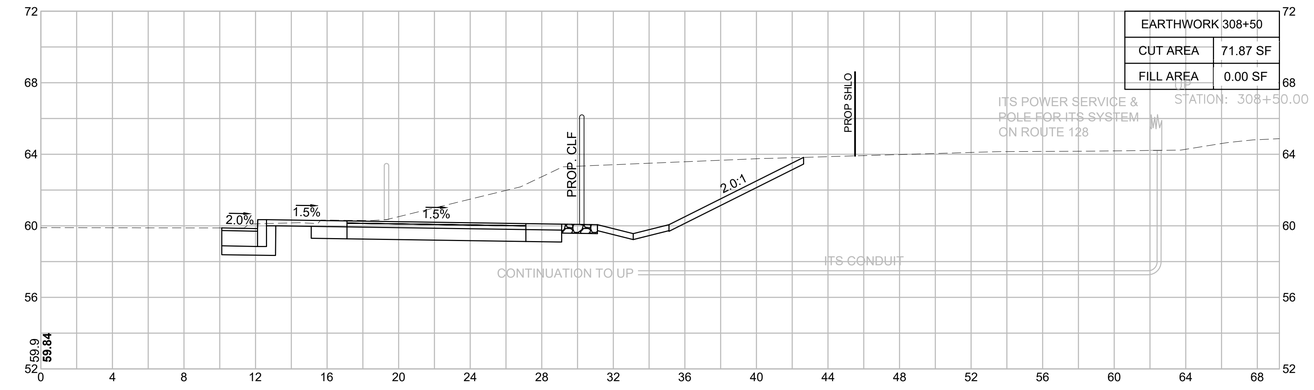
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:13 PM

309+00



EARTHWORK 309+00	
CUT AREA	67.70 SF
FILL AREA	0.00 SF

308+50



EARTHWORK 308+50	
CUT AREA	71.87 SF
FILL AREA	0.00 SF

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

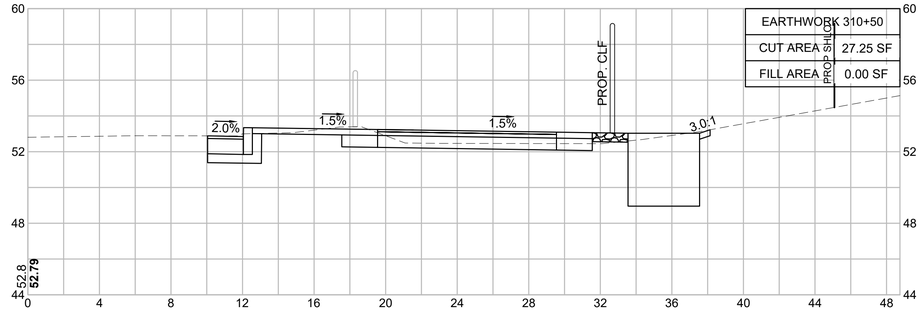
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	97	145
PROJECT FILE NO.	609211		

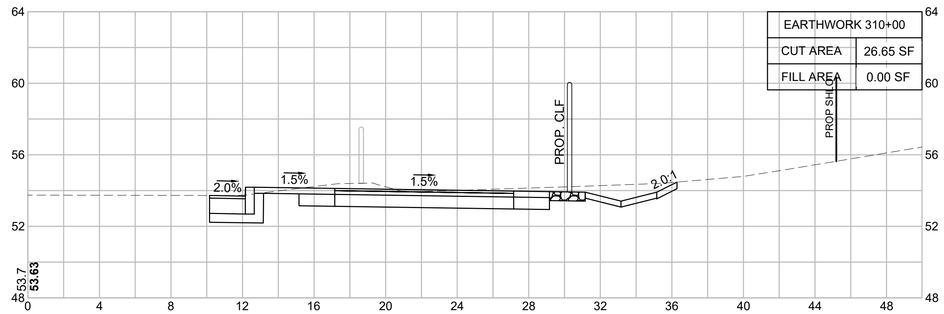
SECTION SHEET 18

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:14 PM

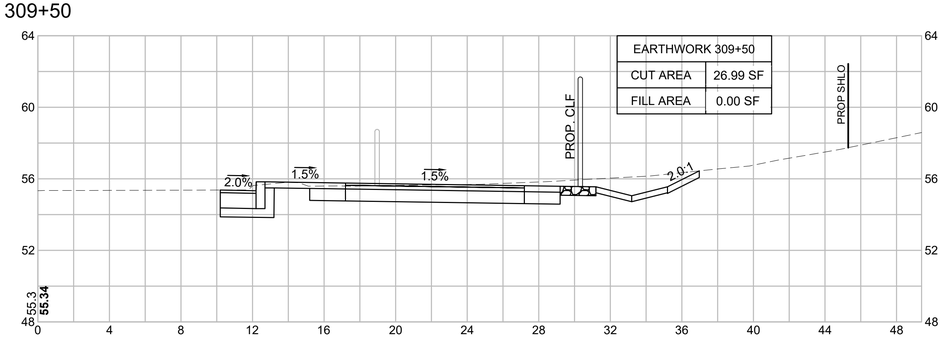
310+50



310+00



309+50



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

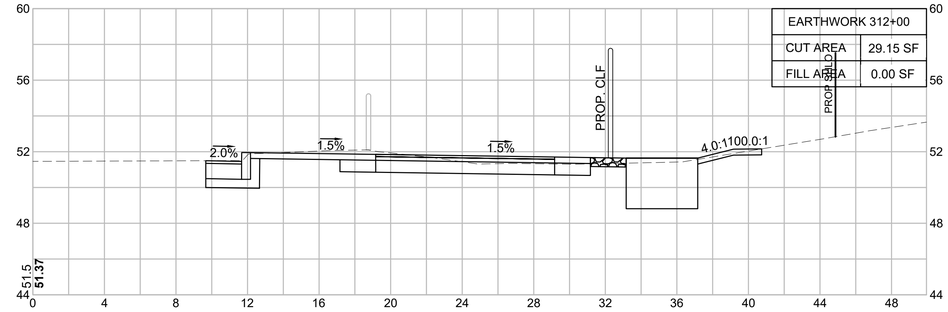
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	98	145
PROJECT FILE NO.	609211		

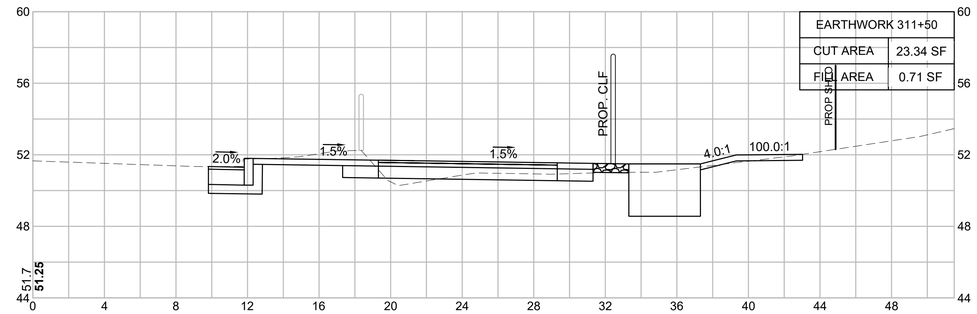
SECTION SHEET 19

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:14 PM

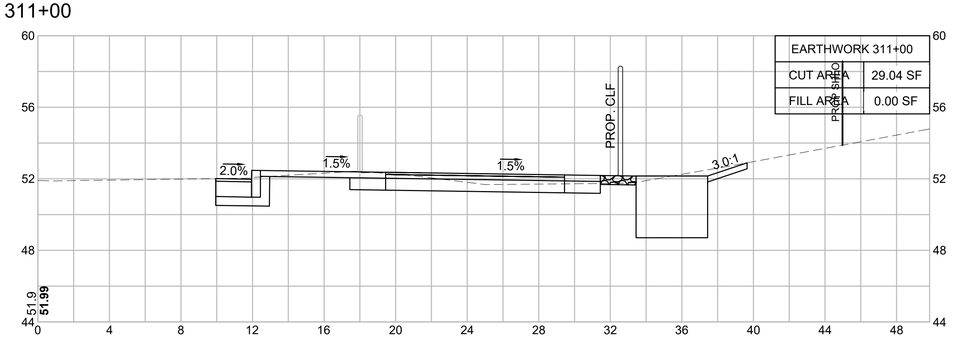
312+00



311+50



311+00



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

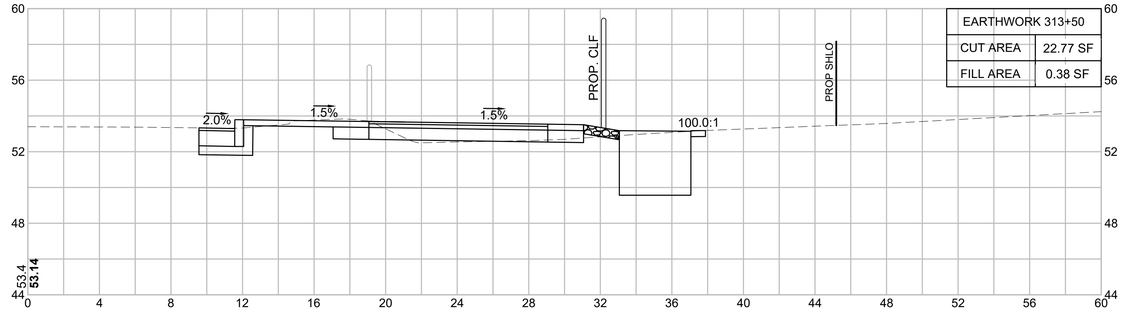
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	99	145
PROJECT FILE NO.	609211		

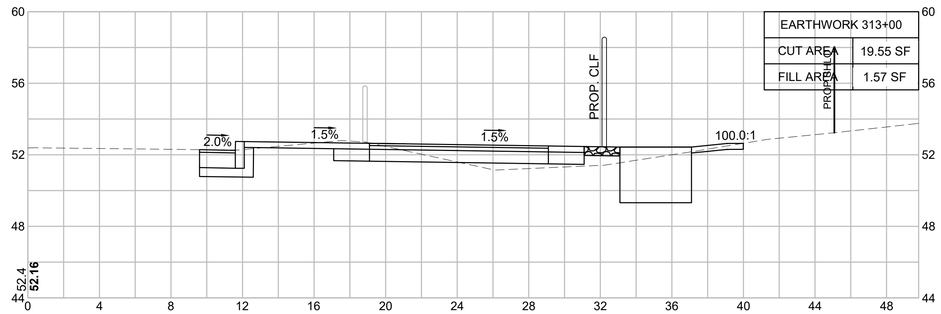
SECTION SHEET 20

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:14 PM

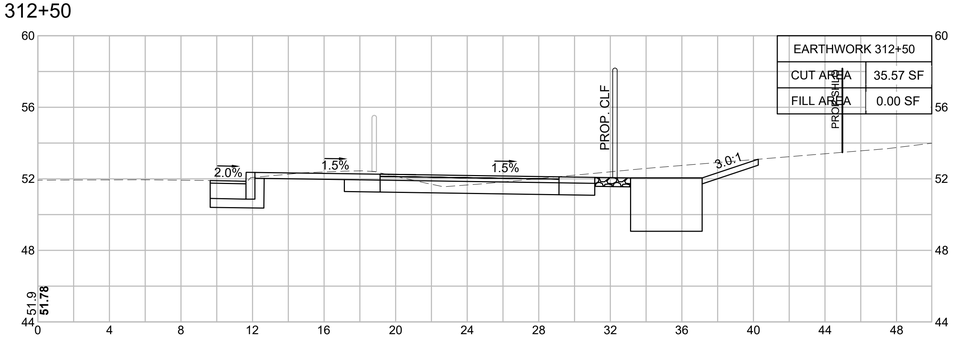
313+50

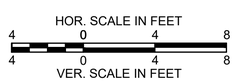


313+00



312+50



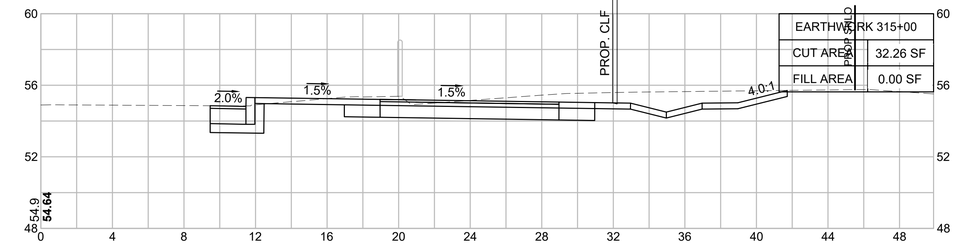


PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

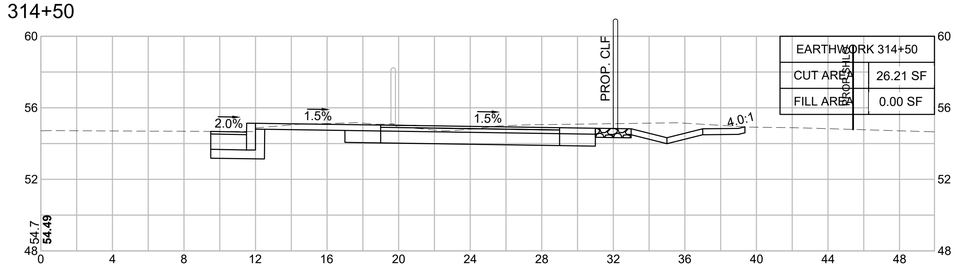
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	100	145
	PROJECT FILE NO. 609211		

SECTION SHEET 21

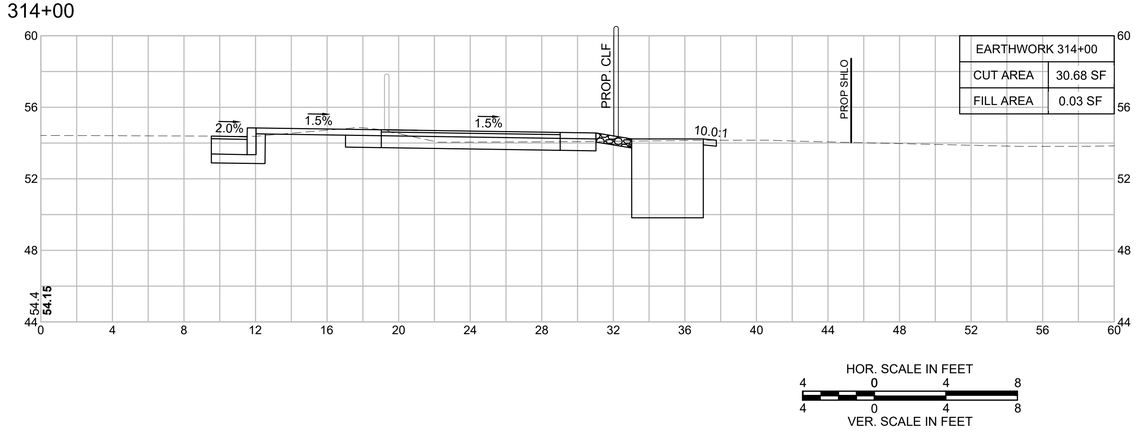
315+00



314+50



314+00



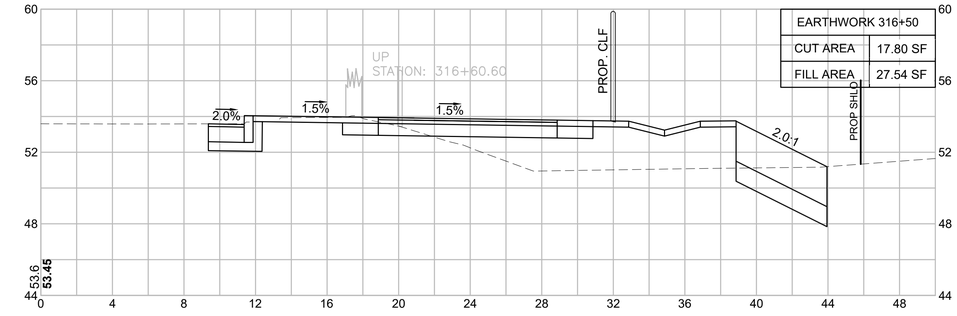
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:14 PM

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

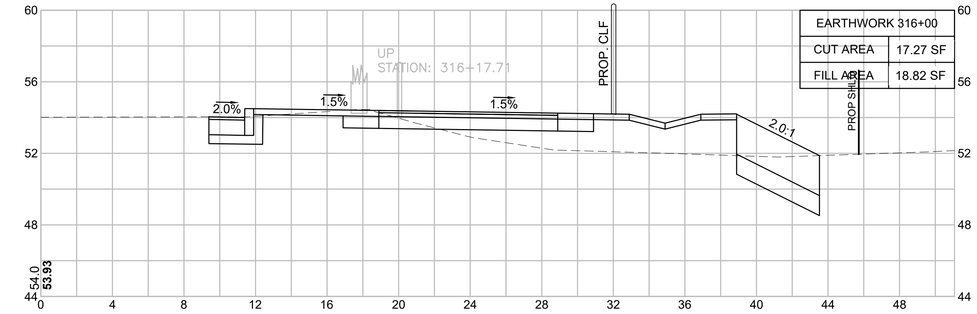
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	101	145
PROJECT FILE NO.	609211		

SECTION SHEET 22

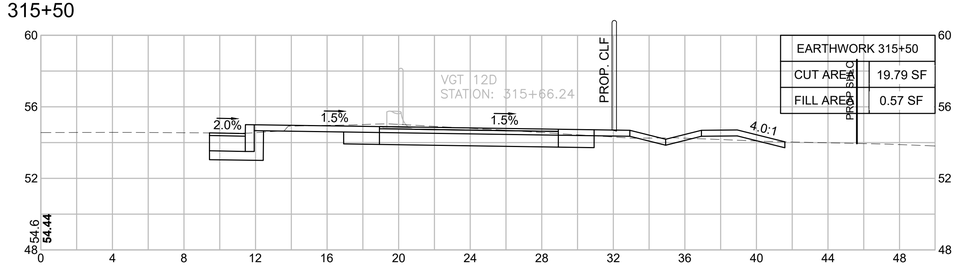
316+50



316+00



315+50



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

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:14 PM

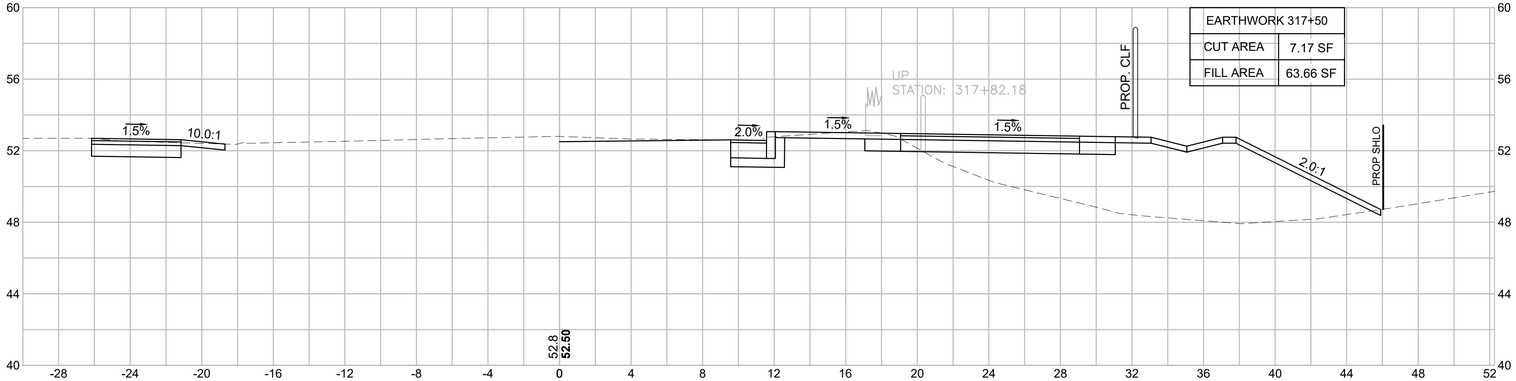
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	102	145
PROJECT FILE NO.	609211		

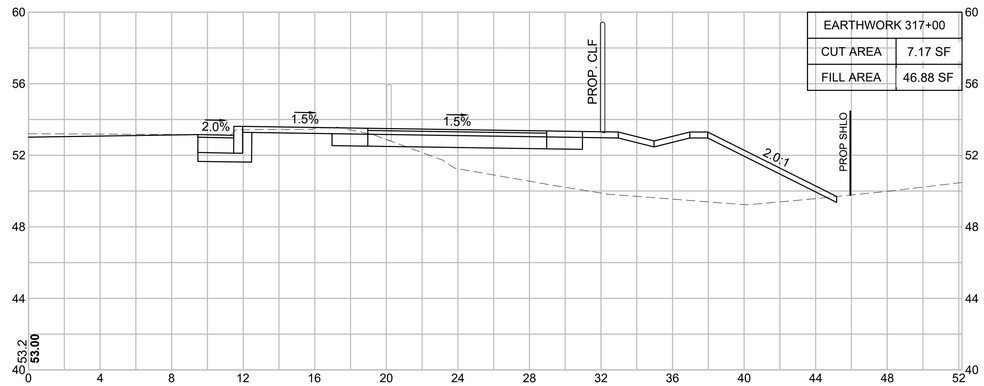
SECTION SHEET 23

SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:15 PM

317+50



317+00



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

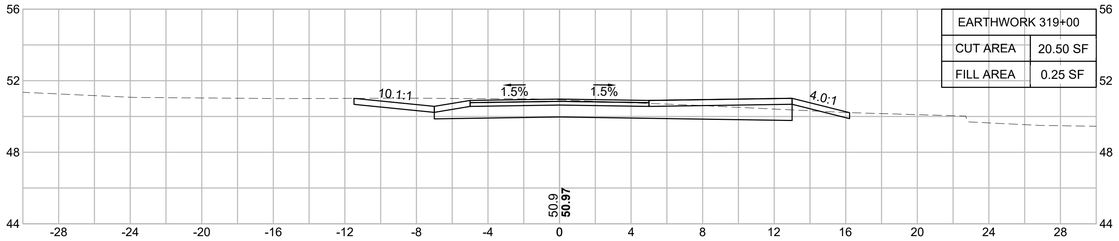
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	103	145
PROJECT FILE NO.	609211		

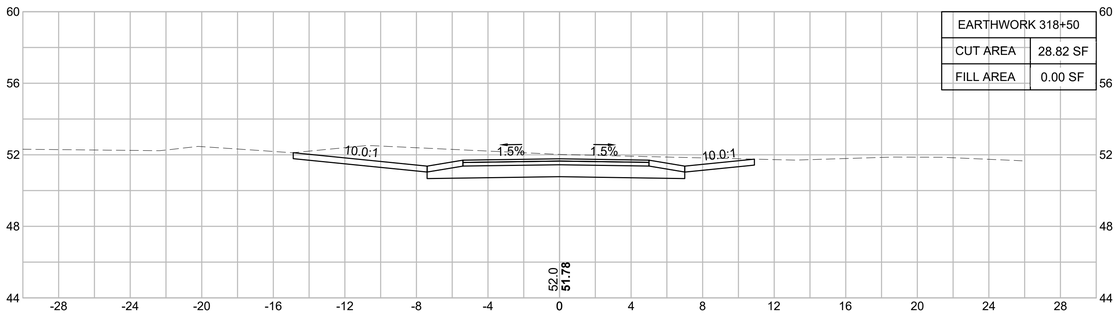
SECTION SHEET 24

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:15 PM

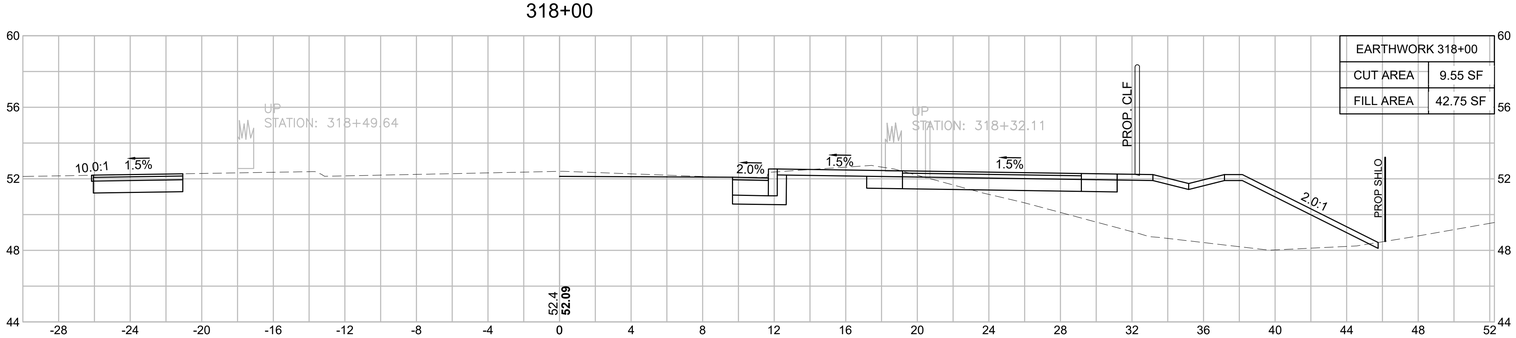
319+00



318+50



318+00



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

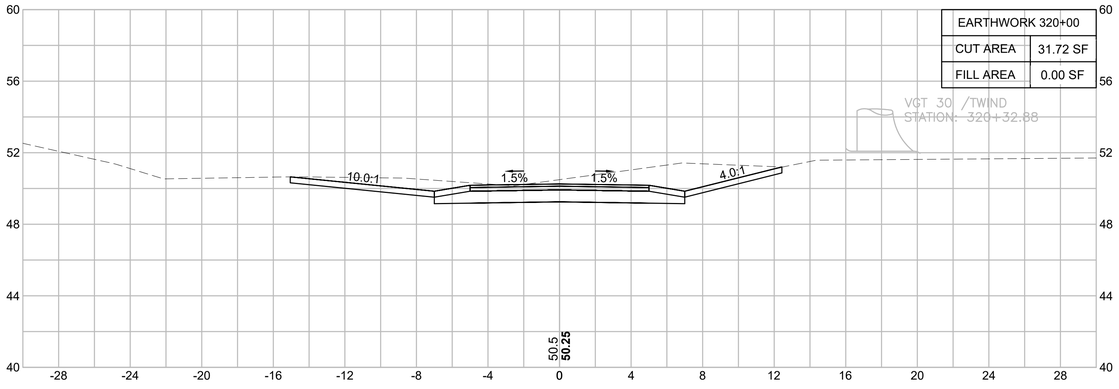
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	104	145
PROJECT FILE NO.	609211		

SECTION SHEET 25

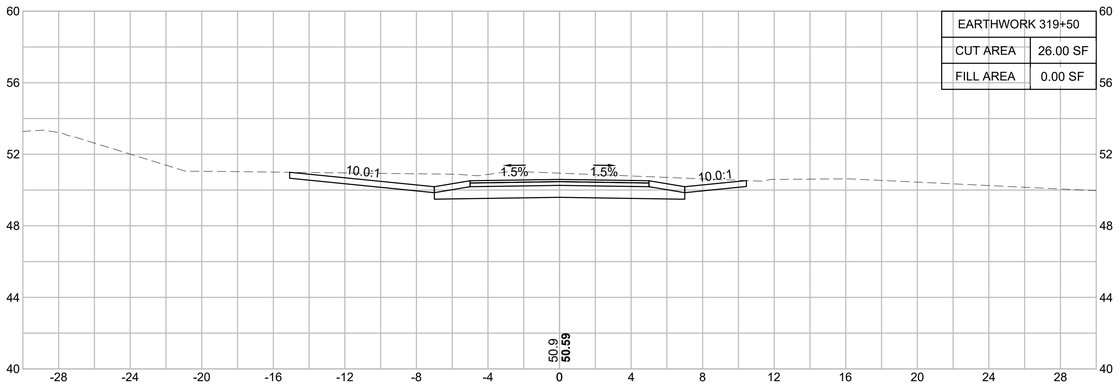
SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:15 PM

320+00



EARTHWORK 320+00	
CUT AREA	31.72 SF
FILL AREA	0.00 SF

319+50



EARTHWORK 319+50	
CUT AREA	26.00 SF
FILL AREA	0.00 SF

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

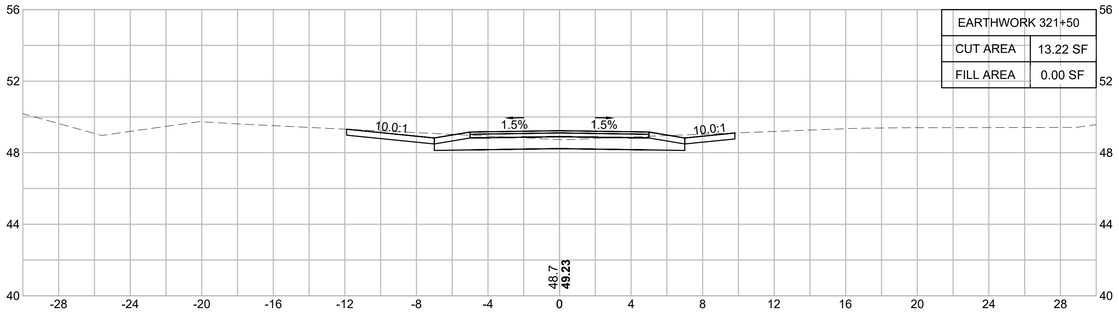
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	105	145
PROJECT FILE NO.	609211		

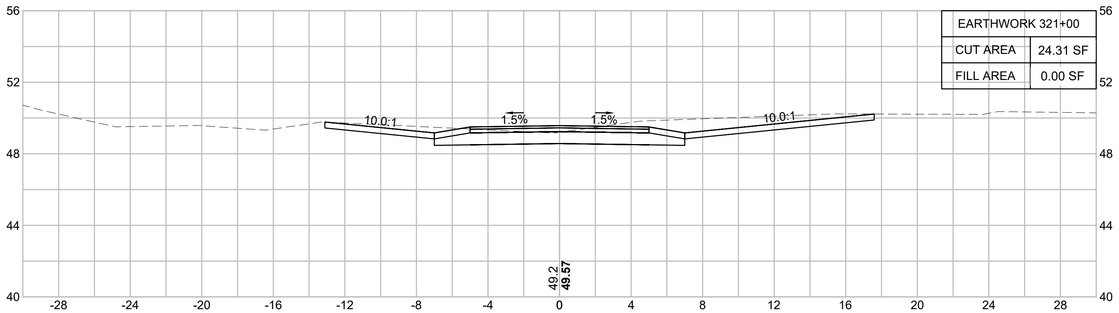
SECTION SHEET 26

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:15 PM

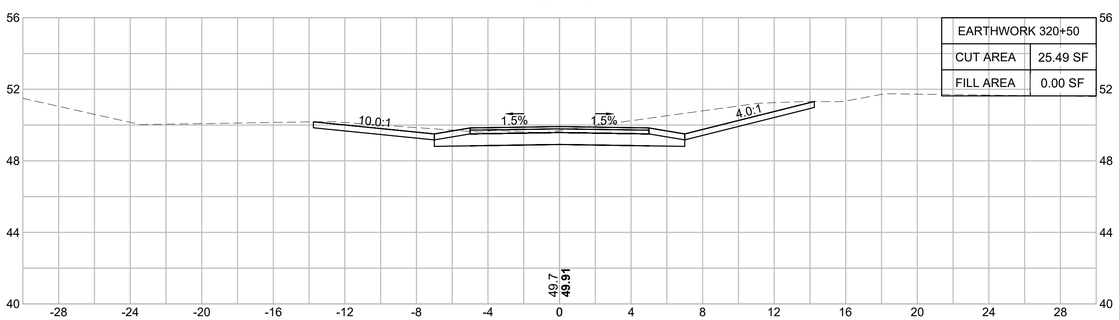
321+50



321+00



320+50



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

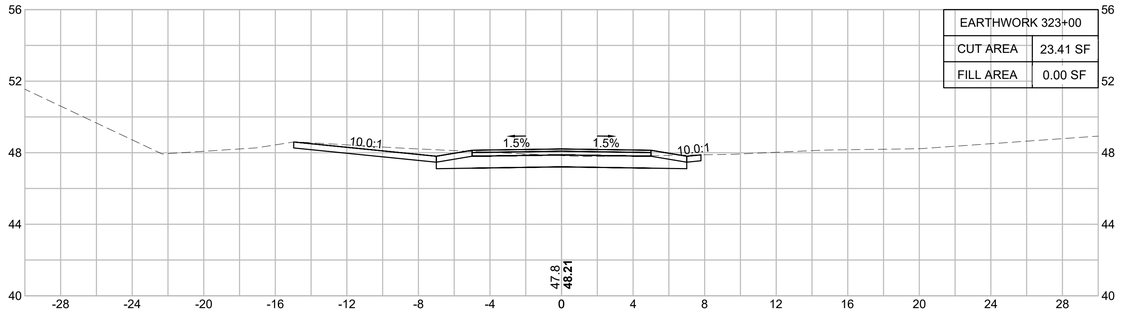
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	106	145
PROJECT FILE NO.	609211		

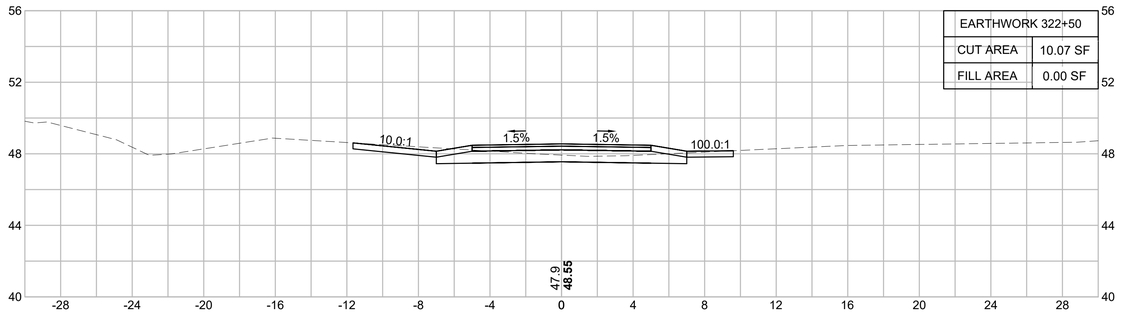
SECTION SHEET 27

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:16 PM

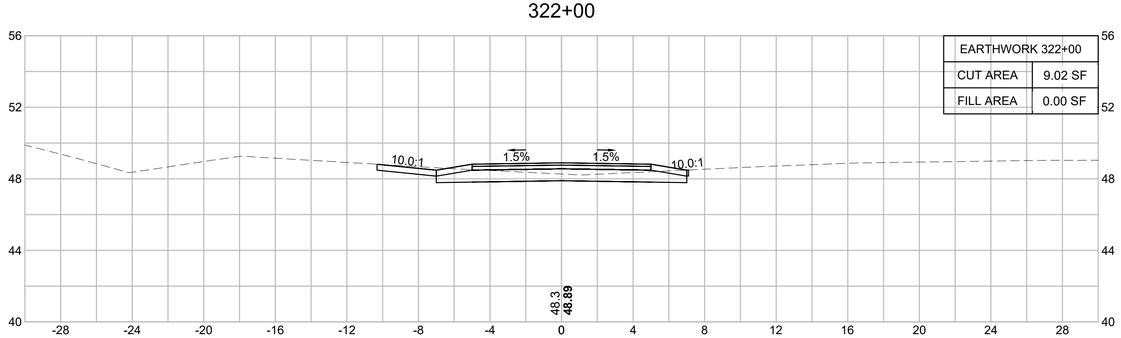
323+00



322+50



322+00



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

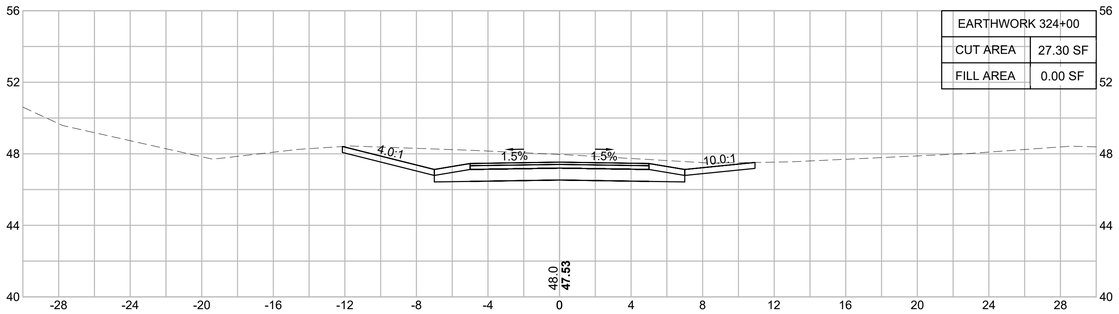
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	107	145
PROJECT FILE NO.	609211		

SECTION SHEET 28

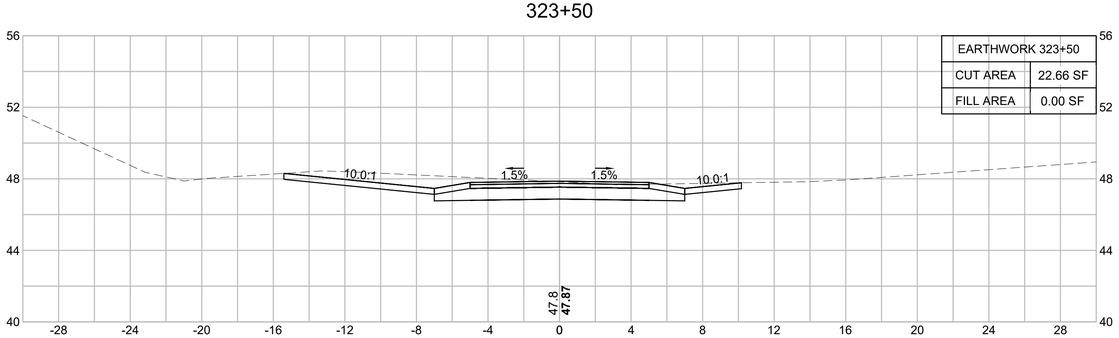
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:16 PM

324+00



EARTHWORK 324+00	
CUT AREA	27.30 SF
FILL AREA	0.00 SF

323+50



EARTHWORK 323+50	
CUT AREA	22.66 SF
FILL AREA	0.00 SF

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

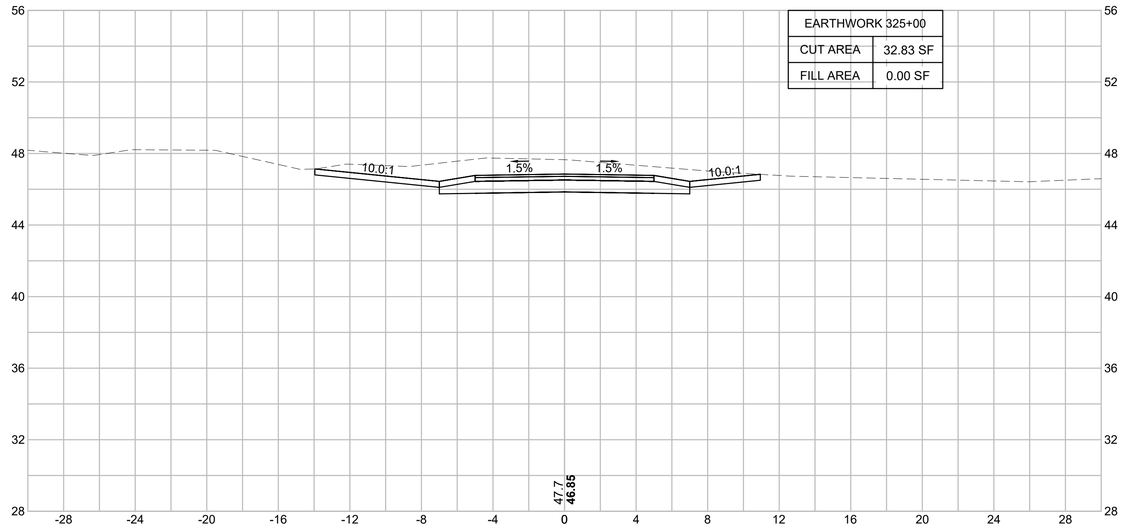
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	108	145
PROJECT FILE NO.	609211		

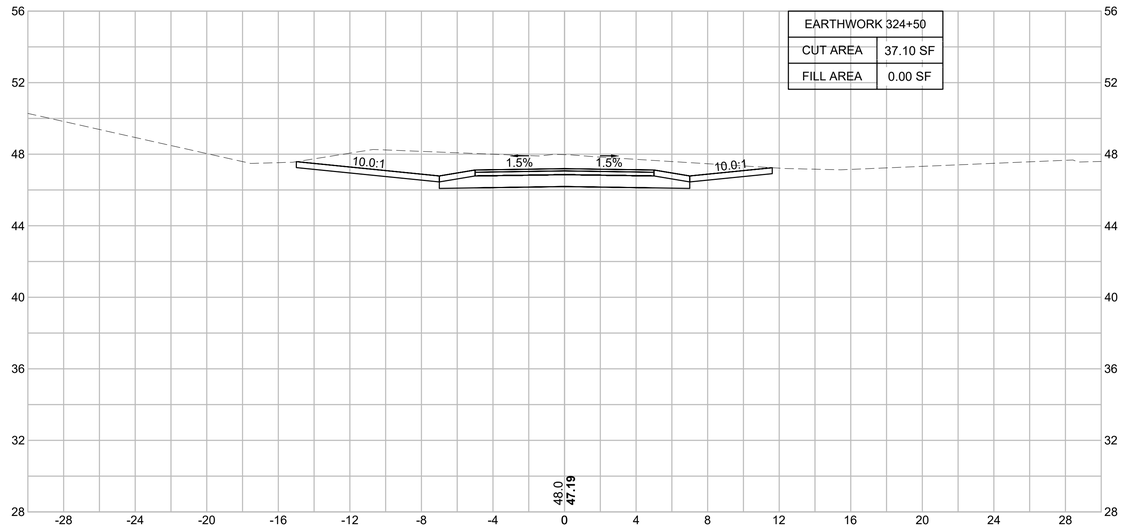
SECTION SHEET 29

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:16 PM

325+00



324+50



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

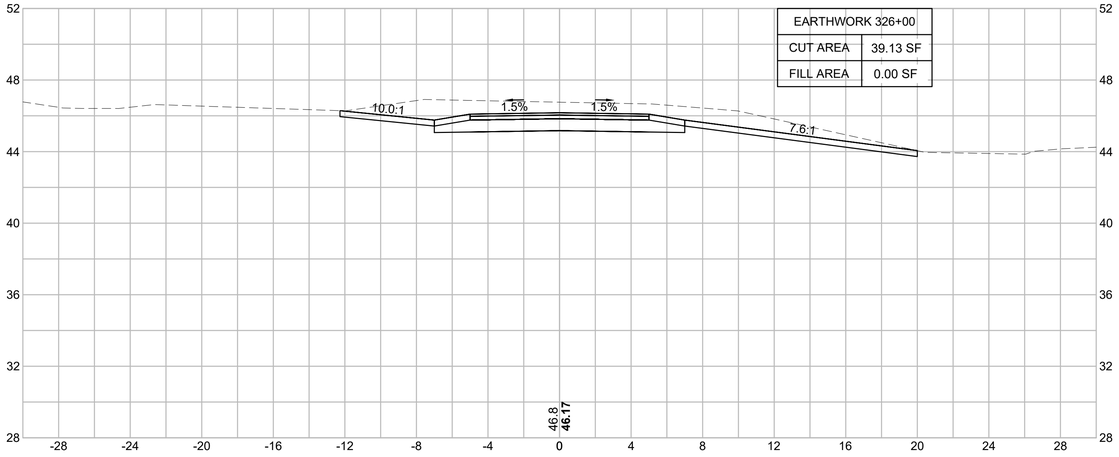
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	109	145
PROJECT FILE NO.	609211		

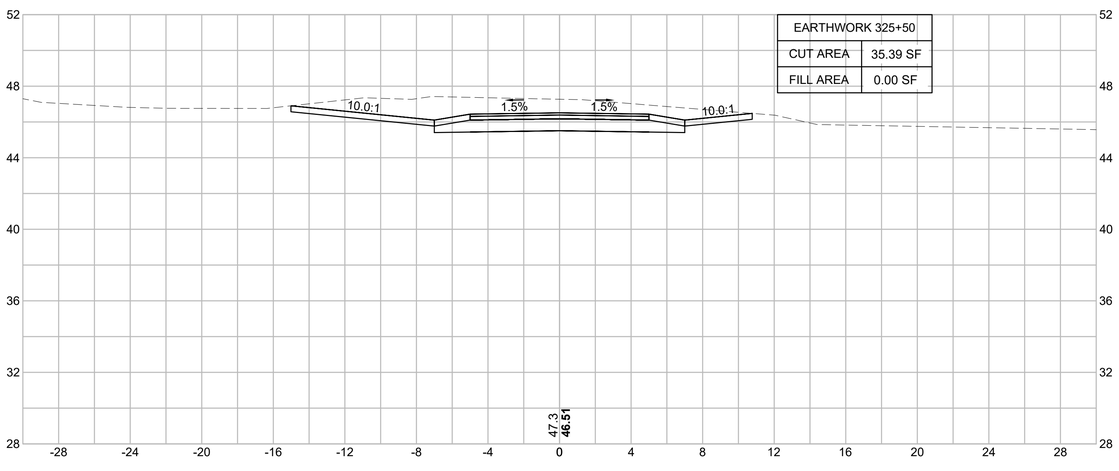
SECTION SHEET 30

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:16 PM

326+00



325+50



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

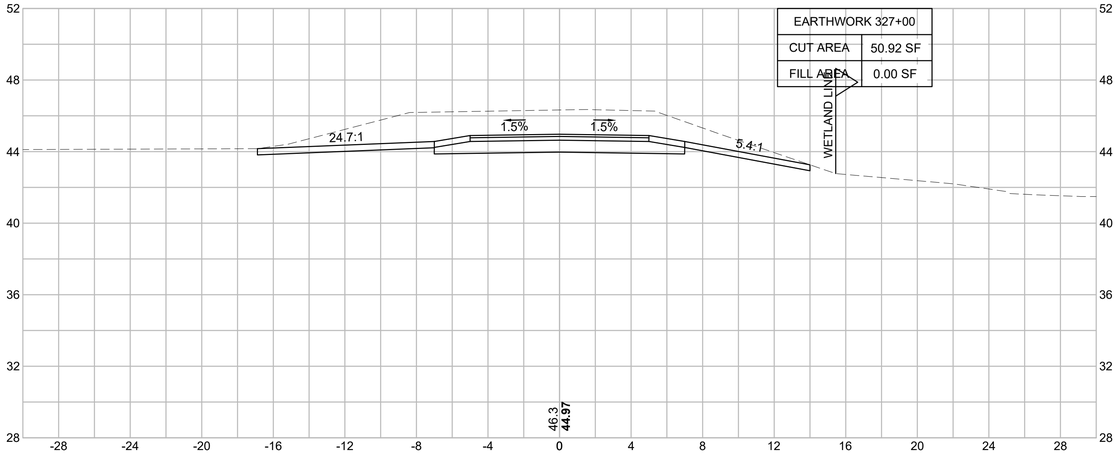
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	110	145
PROJECT FILE NO.	609211		

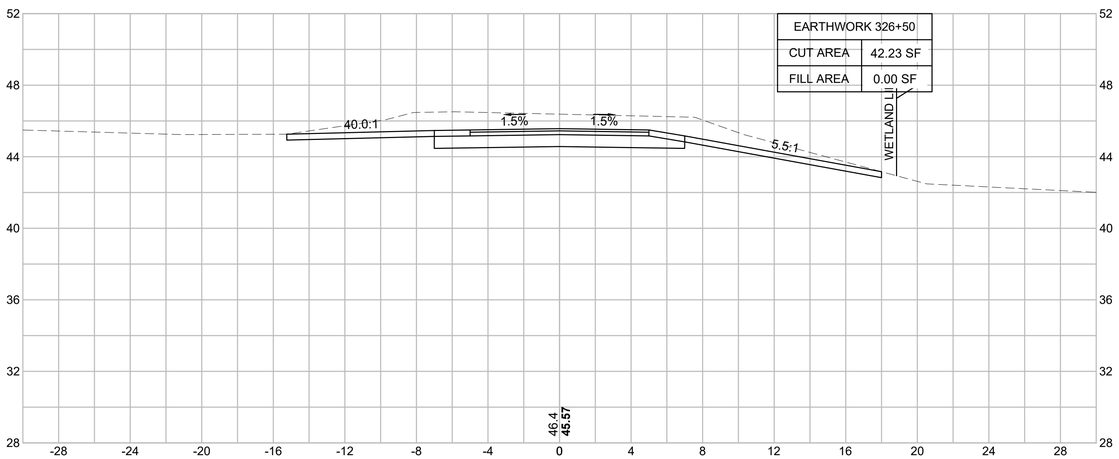
SECTION SHEET 31

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:17 PM

327+00



326+50



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

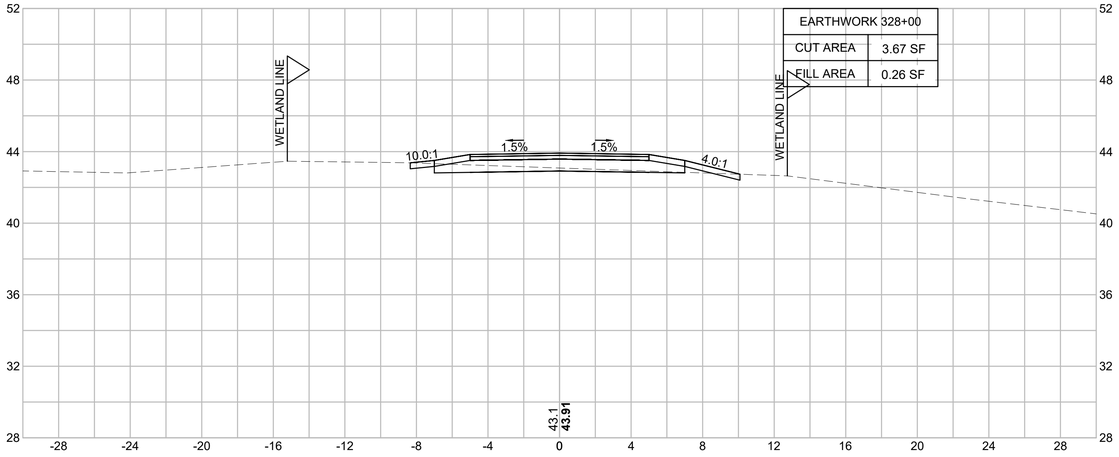
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	111	145
	PROJECT FILE NO. 609211		

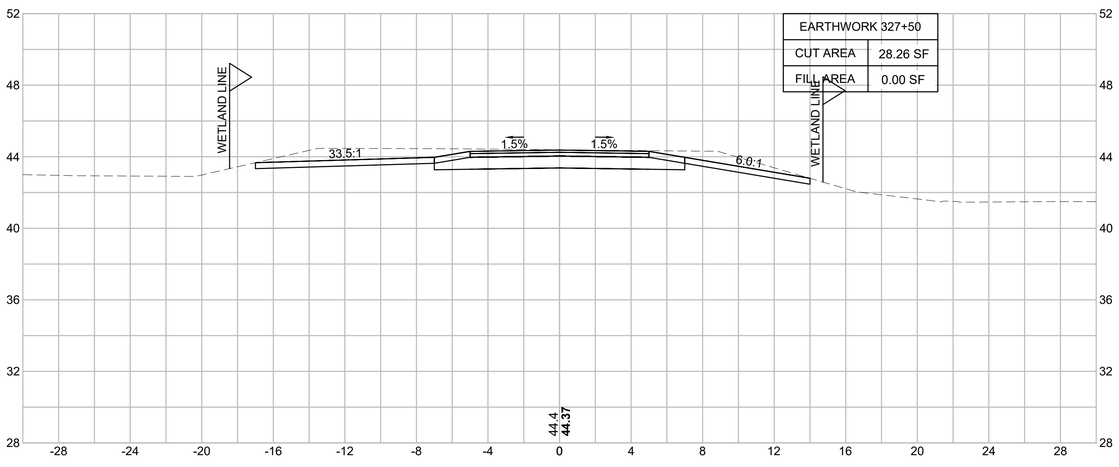
SECTION SHEET 32

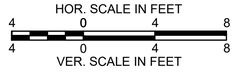
SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:17 PM

328+00



327+50





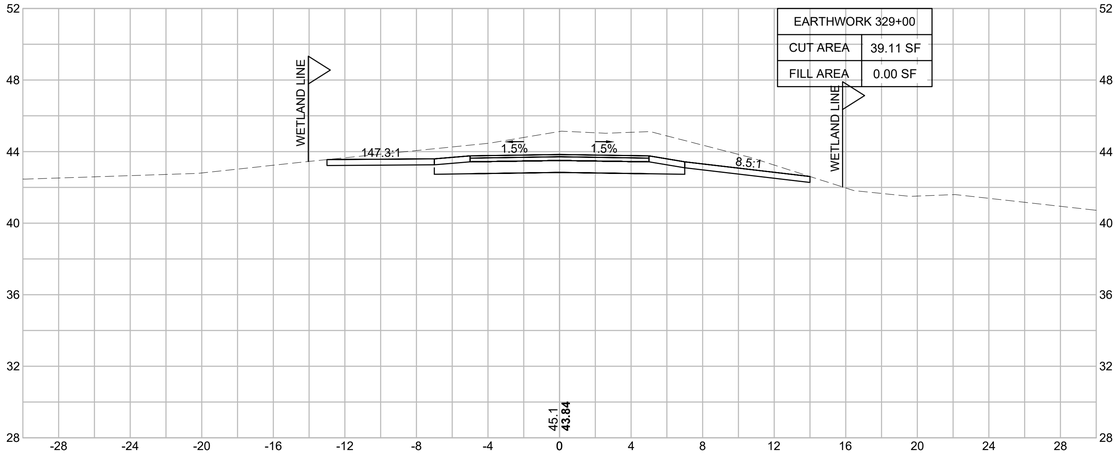
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	112	145
PROJECT FILE NO.	609211		

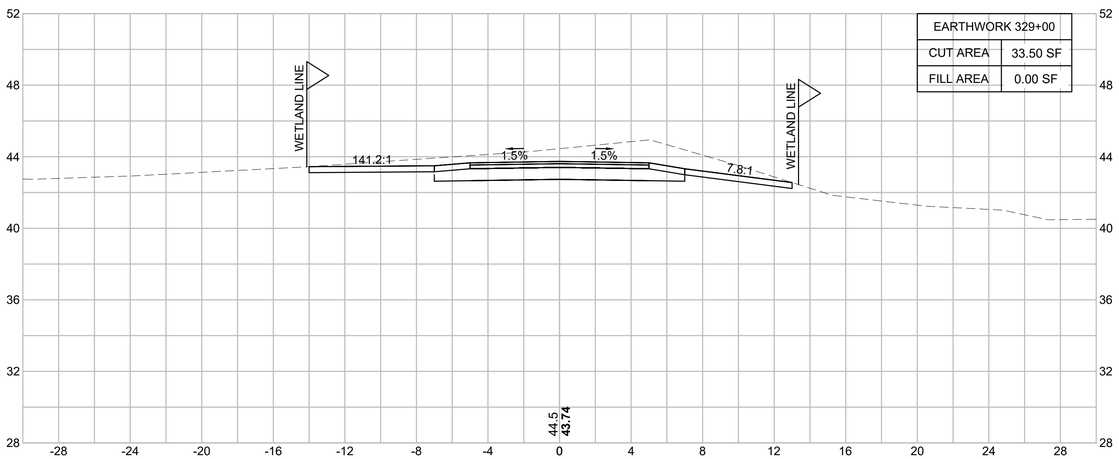
SECTION SHEET 33

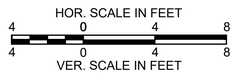
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:17 PM

329+00



328+50





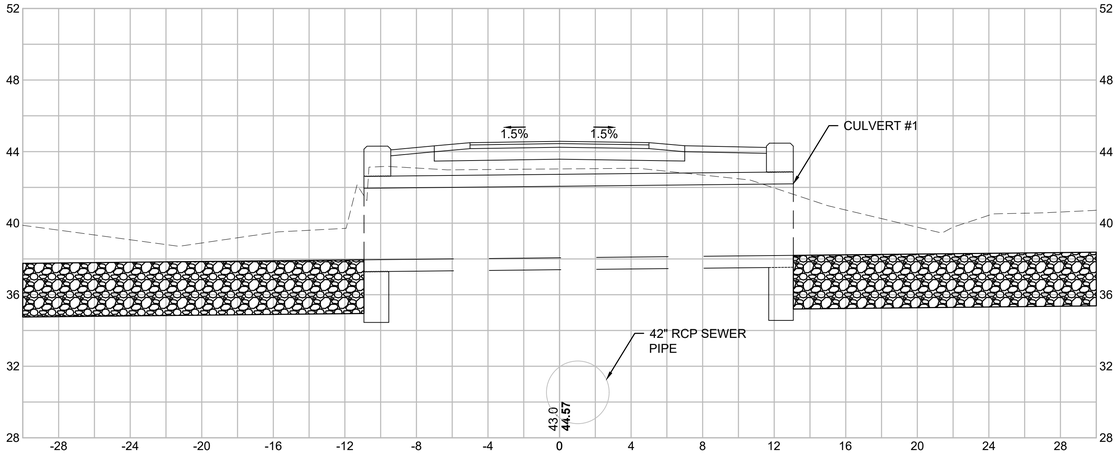
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	113	145
PROJECT FILE NO.	609211		

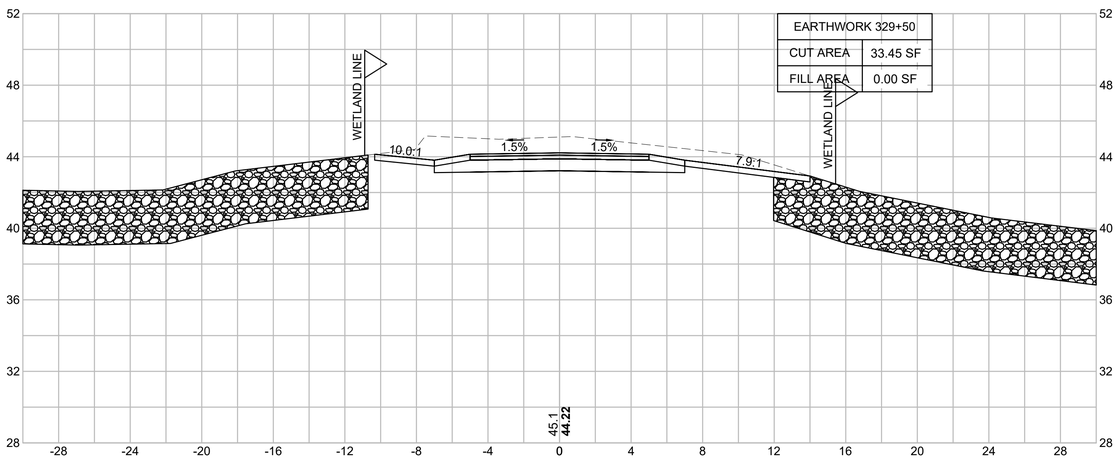
SECTION SHEET 34

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:17 PM

329+84.46



329+50



EARTHWORK 329+50	
CUT AREA	33.45 SF
FILL AREA	0.00 SF

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

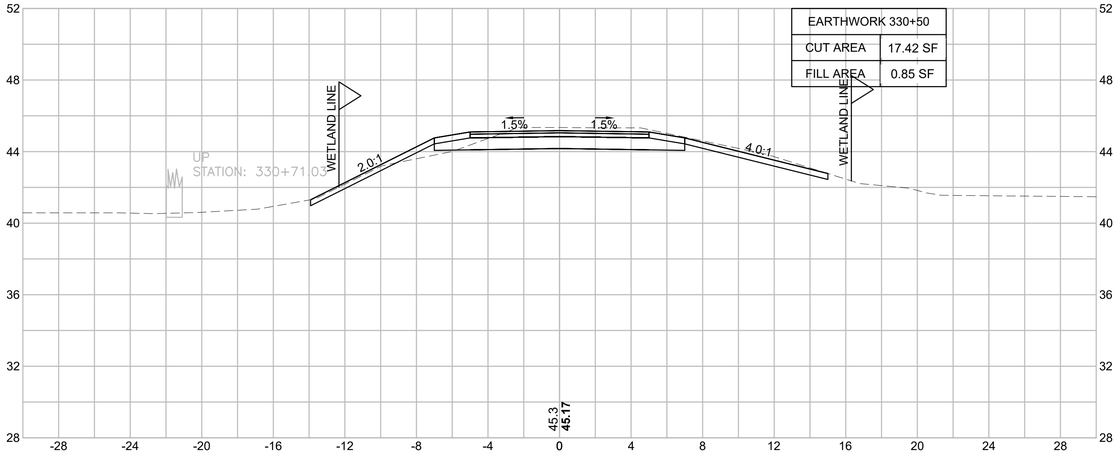
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	114	145
PROJECT FILE NO.	609211		

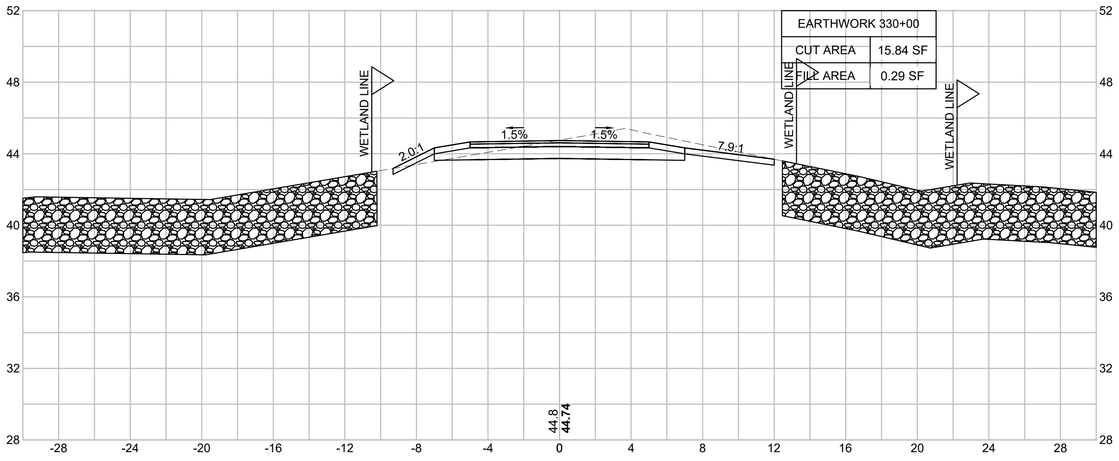
SECTION SHEET 35

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:18 PM

330+50



330+00



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

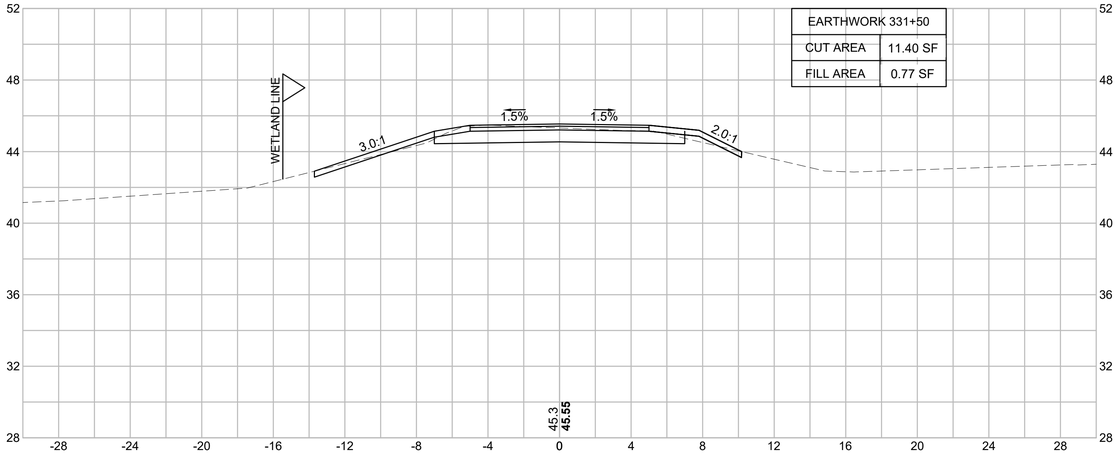
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	115	145
PROJECT FILE NO.	609211		

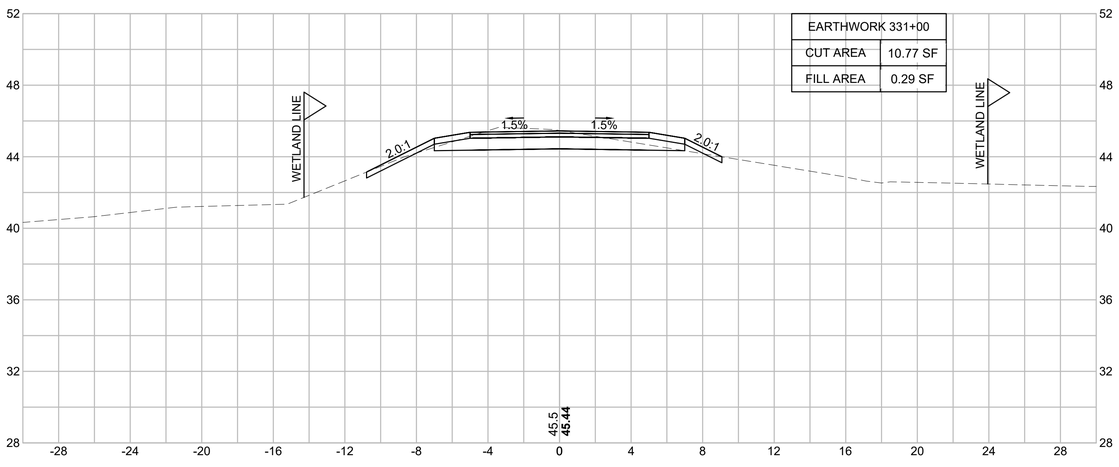
SECTION SHEET 36

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:18 PM

331+50



331+00



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

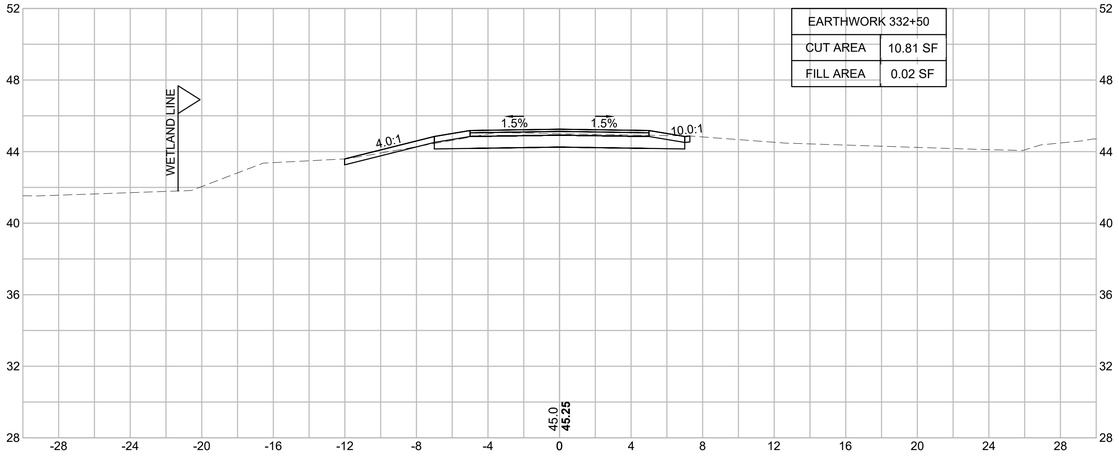
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	116	145
PROJECT FILE NO.	609211		

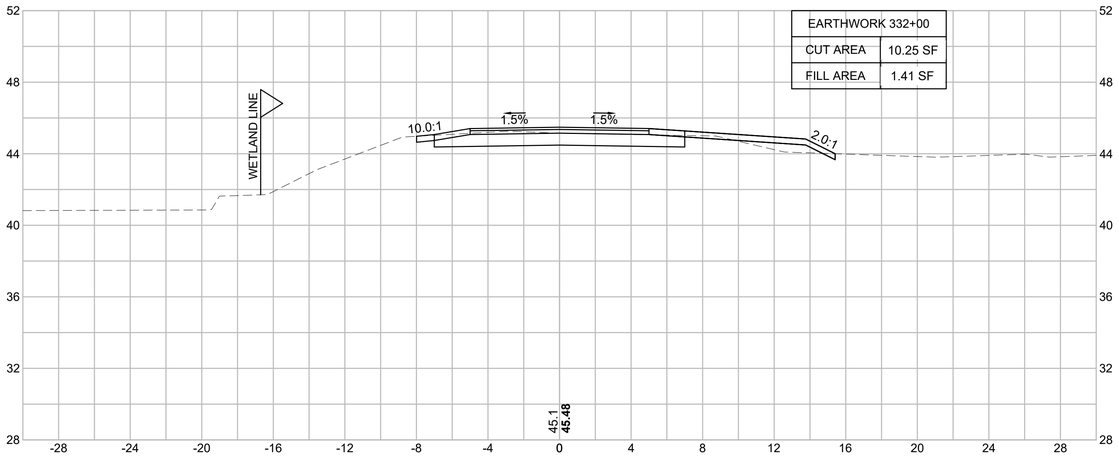
SECTION SHEET 37

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:18 PM

332+50



332+00



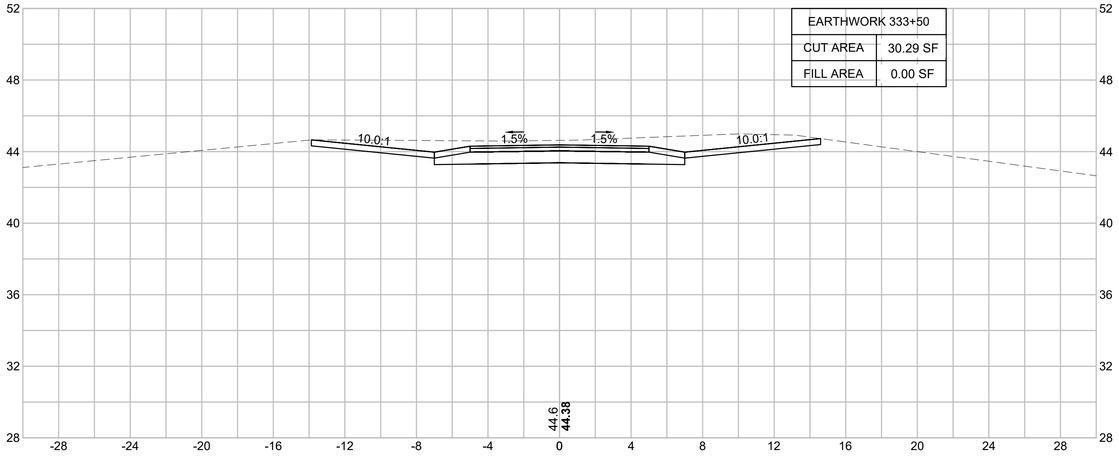
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	117	145
PROJECT FILE NO.	609211		

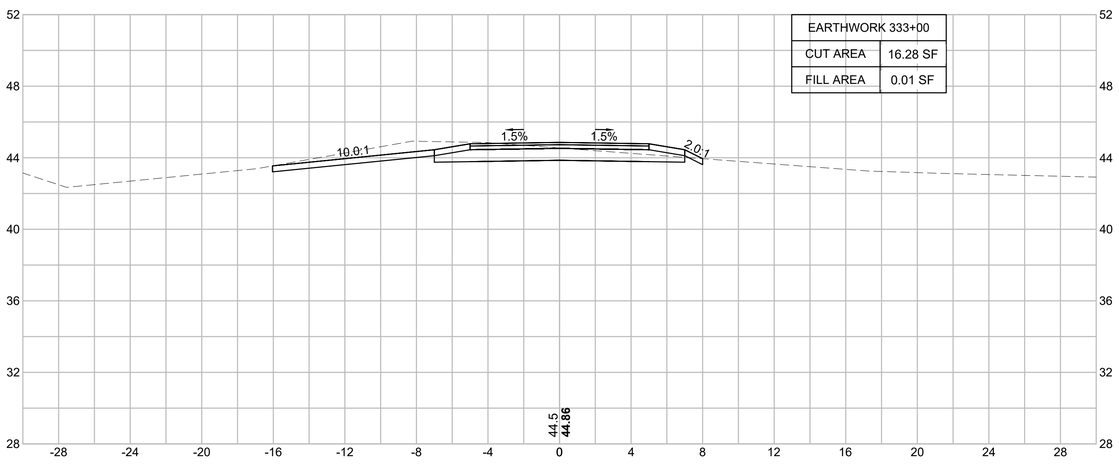
SECTION SHEET 38

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:18 PM

333+50



333+00



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

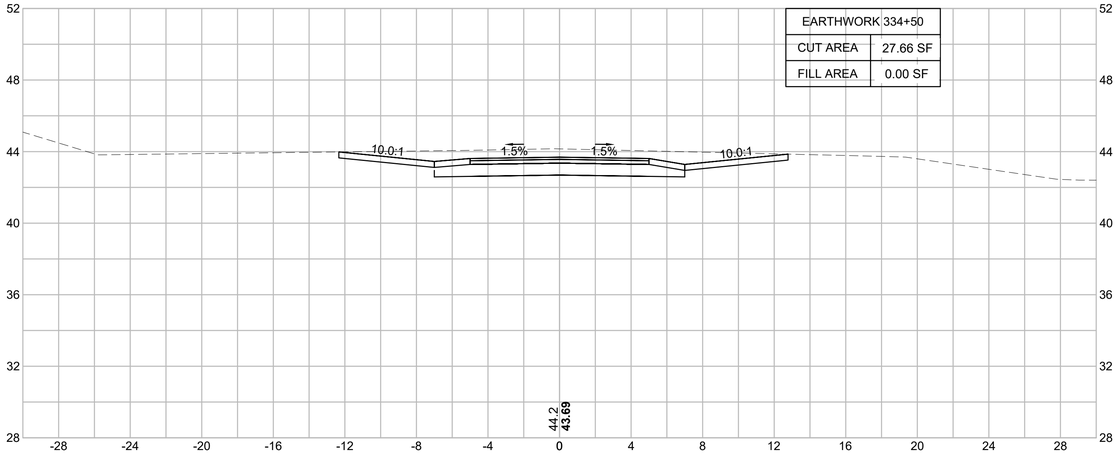
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	118	145
PROJECT FILE NO.	609211		

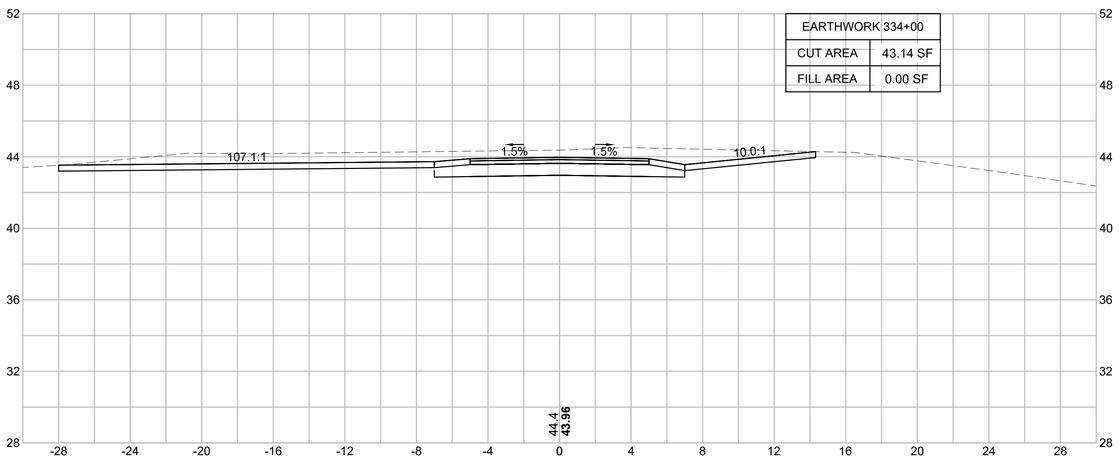
SECTION SHEET 39

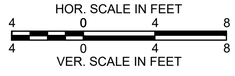
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:18 PM

334+50



334+00





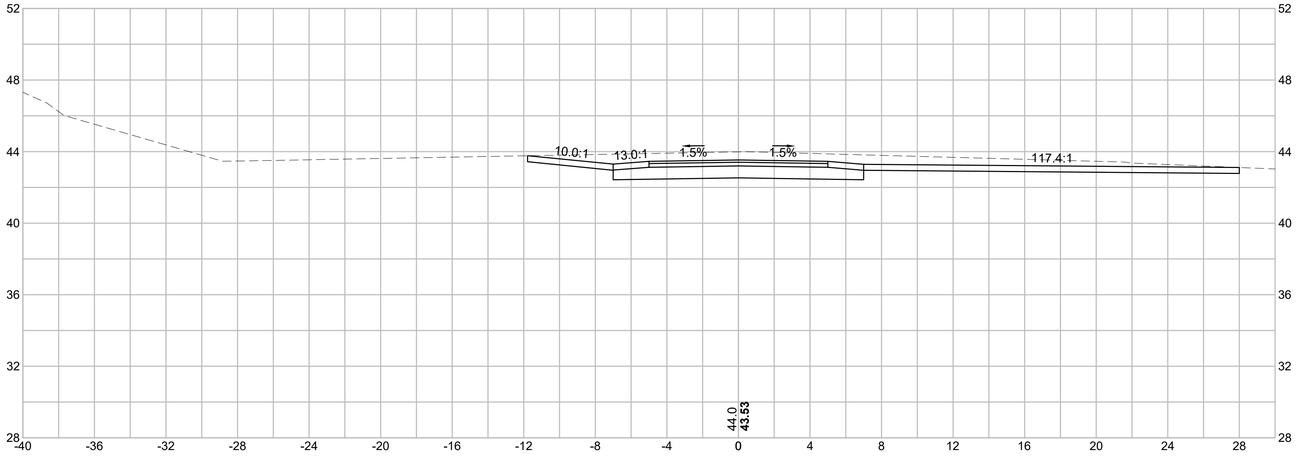
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	119	145
PROJECT FILE NO.	609211		

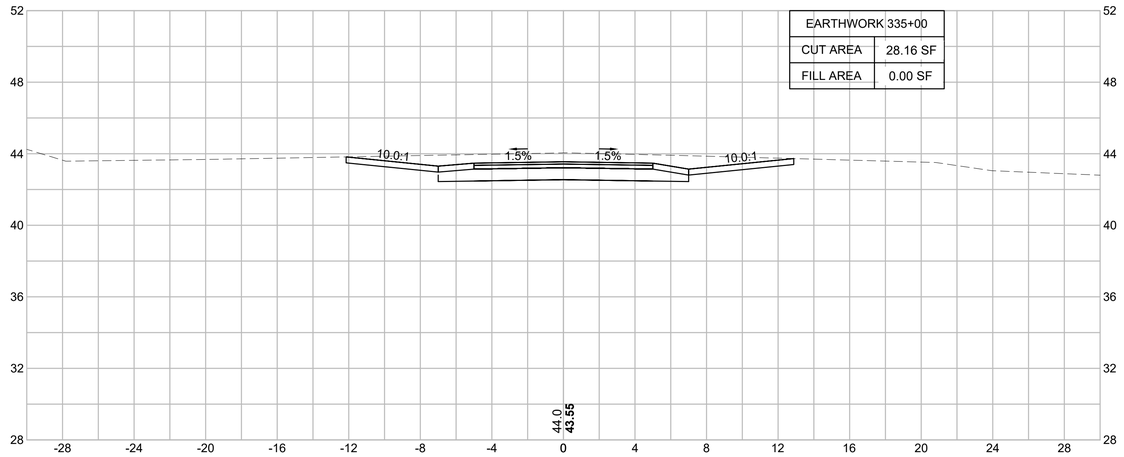
SECTION SHEET 40

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:19 PM

335+26



335+00



EARTHWORK	335+00
CUT AREA	28.16 SF
FILL AREA	0.00 SF

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

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

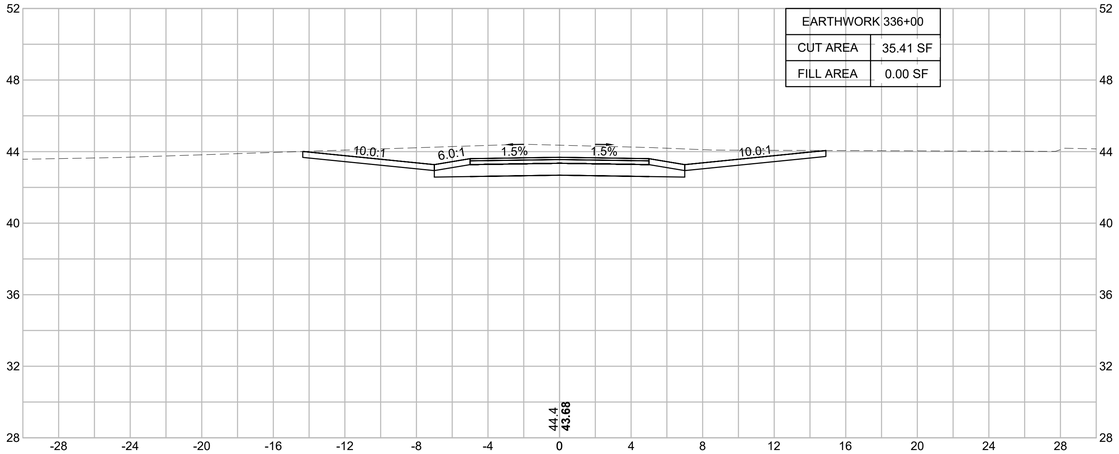
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	120	145
PROJECT FILE NO.	609211		

SECTION SHEET 41

SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:19 PM

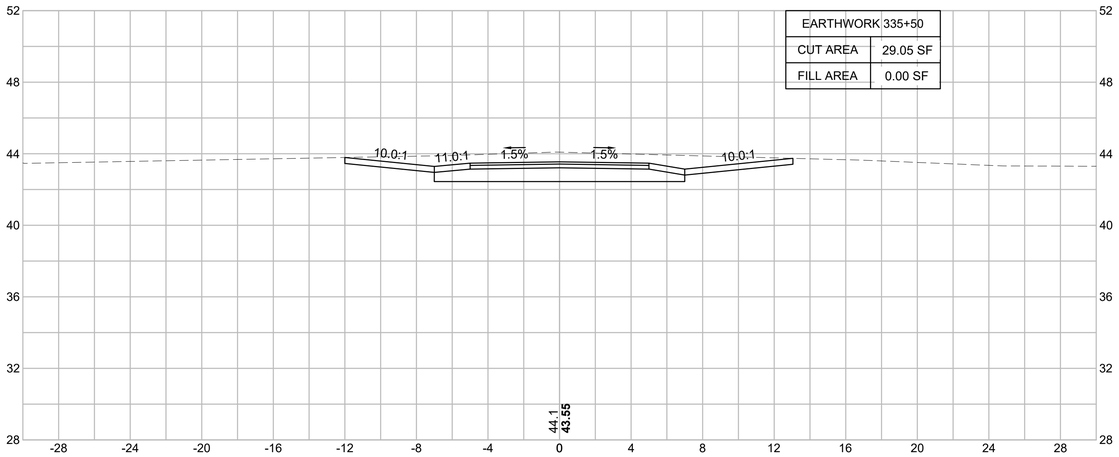
336+00

EARTHWORK	336+00
CUT AREA	35.41 SF
FILL AREA	0.00 SF



335+50

EARTHWORK	335+50
CUT AREA	29.05 SF
FILL AREA	0.00 SF



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

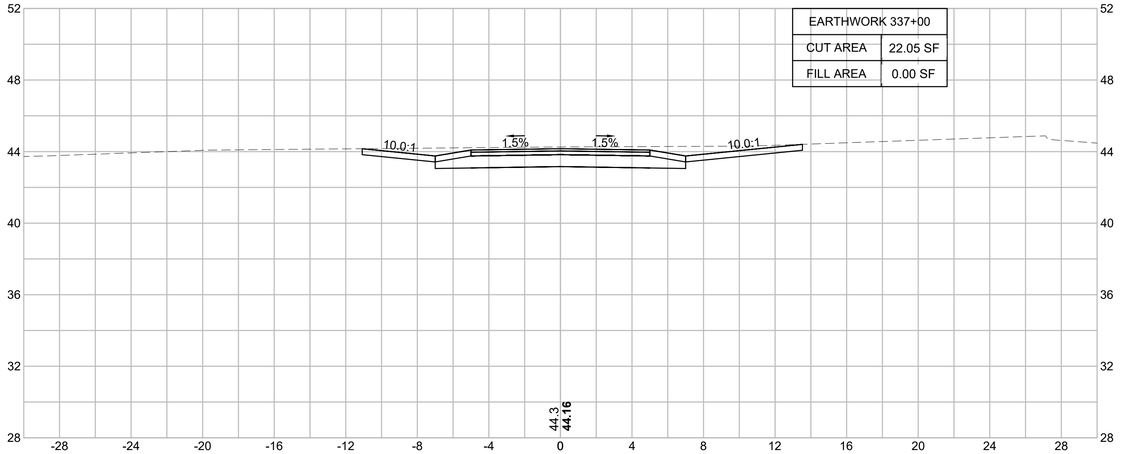
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	121	145
PROJECT FILE NO.	609211		

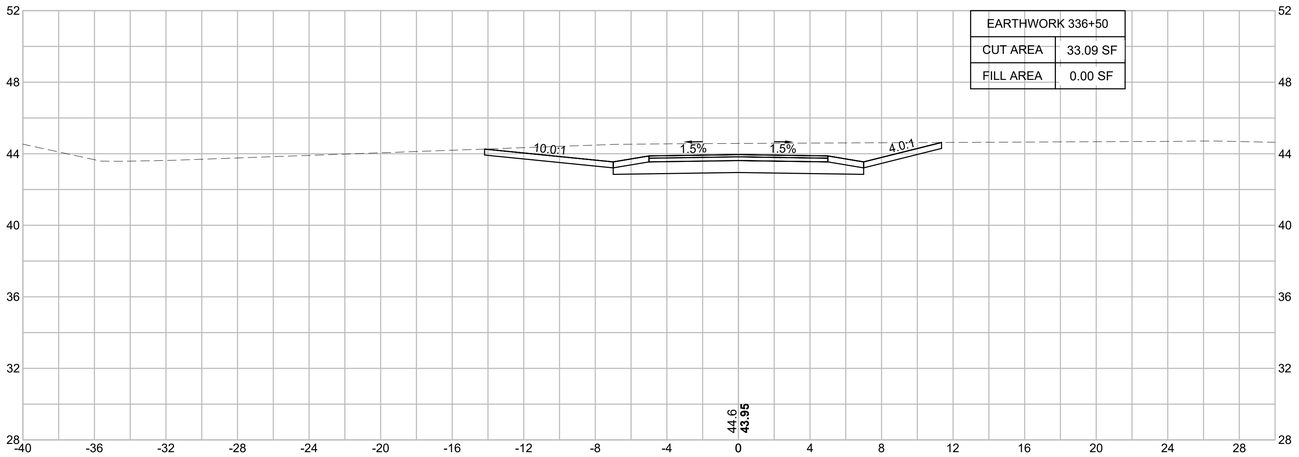
SECTION SHEET 42

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:19 PM

337+00



336+50



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

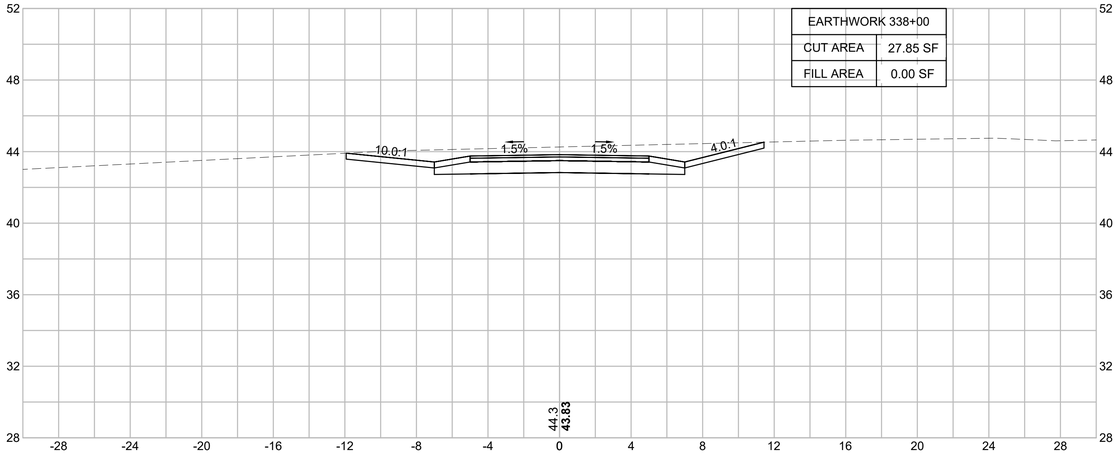
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	122	145
PROJECT FILE NO.	609211		

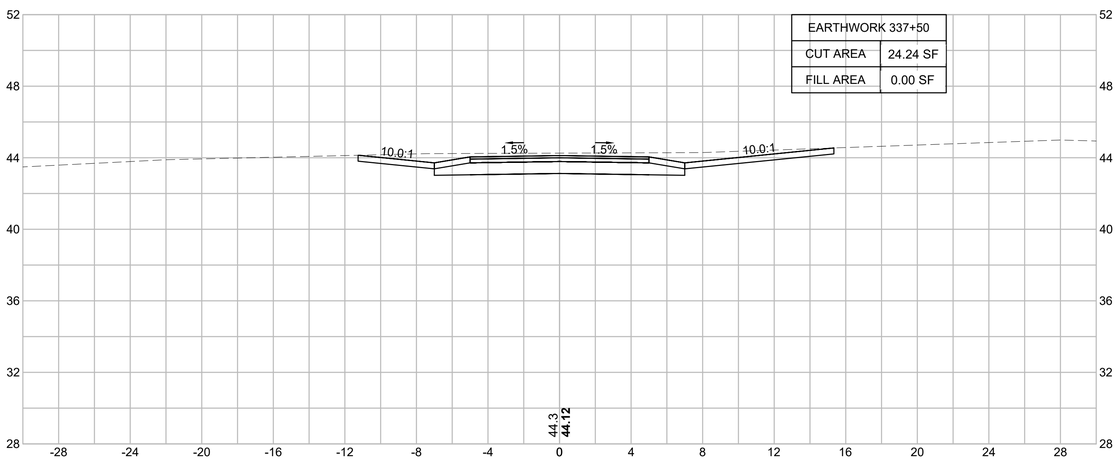
SECTION SHEET 43

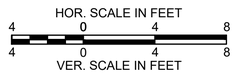
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:19 PM

338+00



337+50





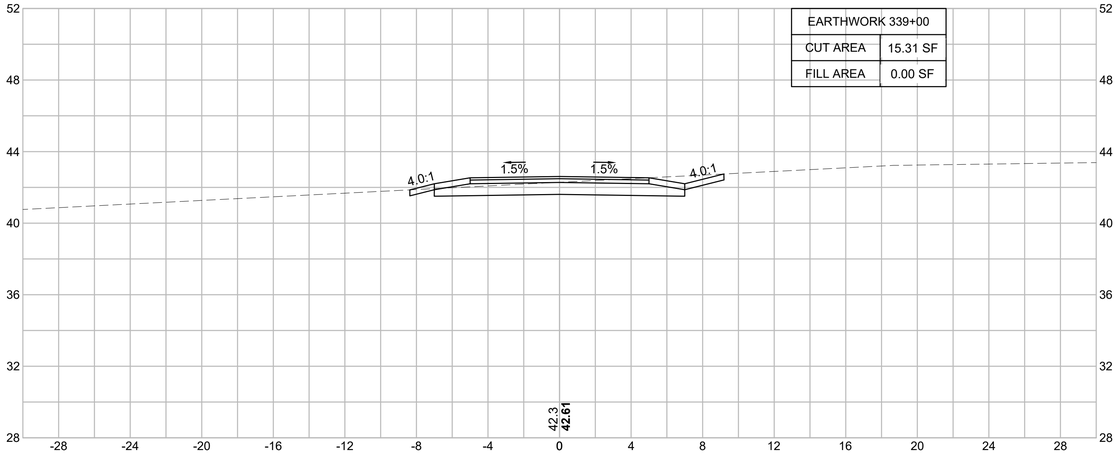
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	123	145
PROJECT FILE NO.	609211		

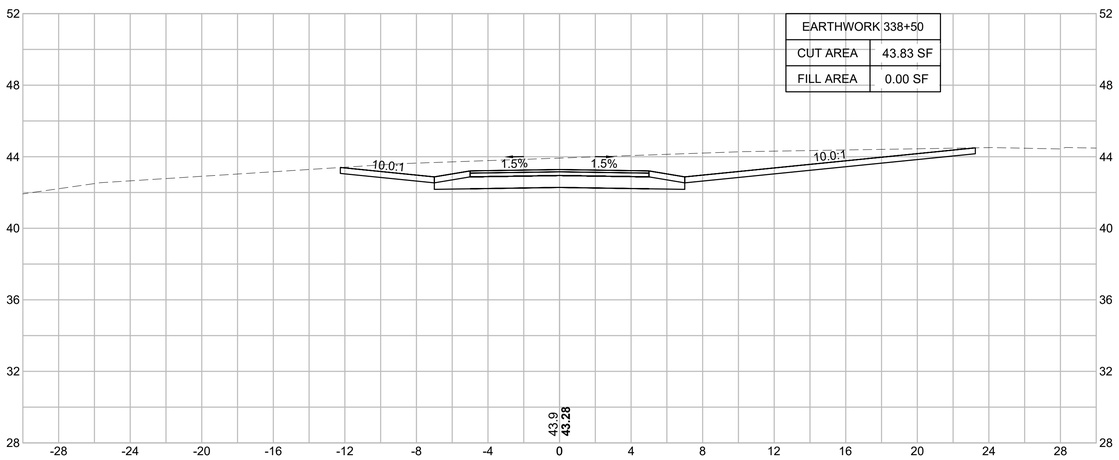
SECTION SHEET 44

SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:20 PM

339+00



338+50



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

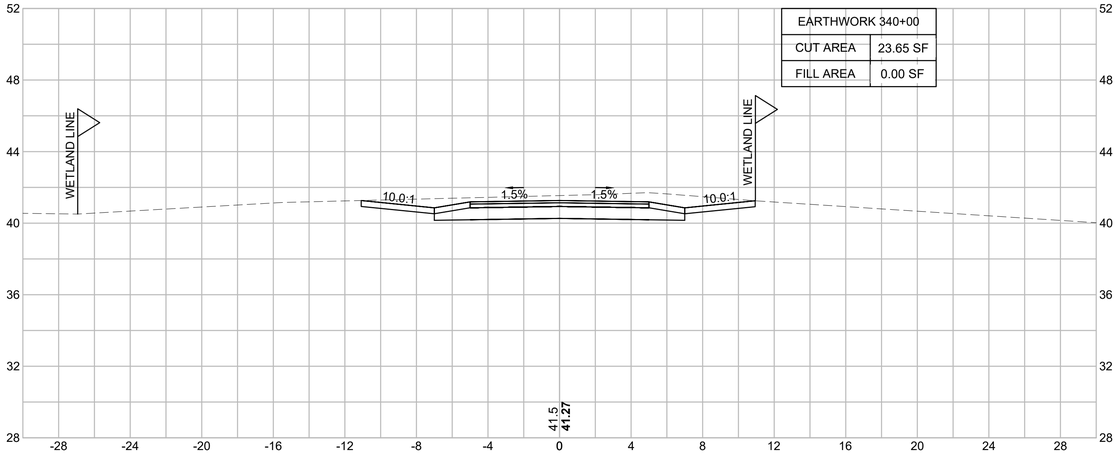
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	124	145
PROJECT FILE NO.	609211		

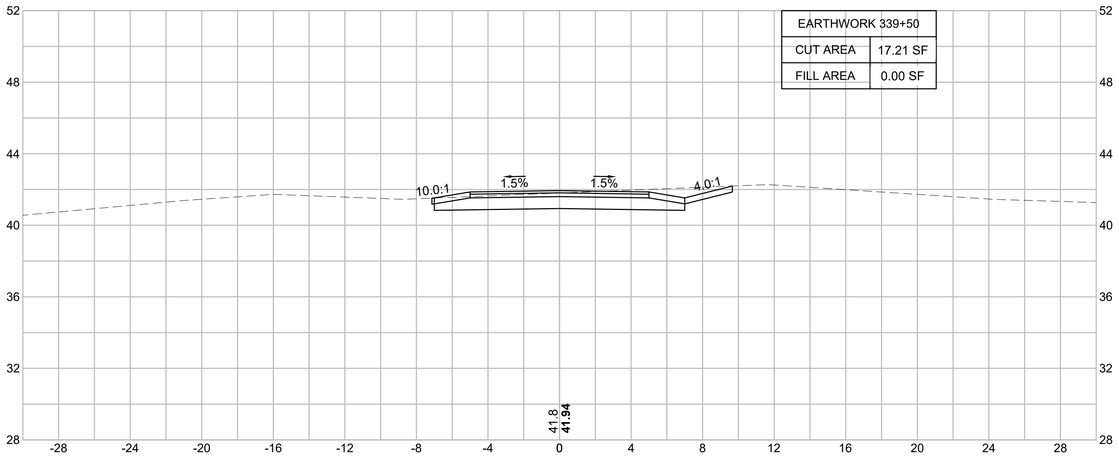
SECTION SHEET 45

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:20 PM

340+00



339+50



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

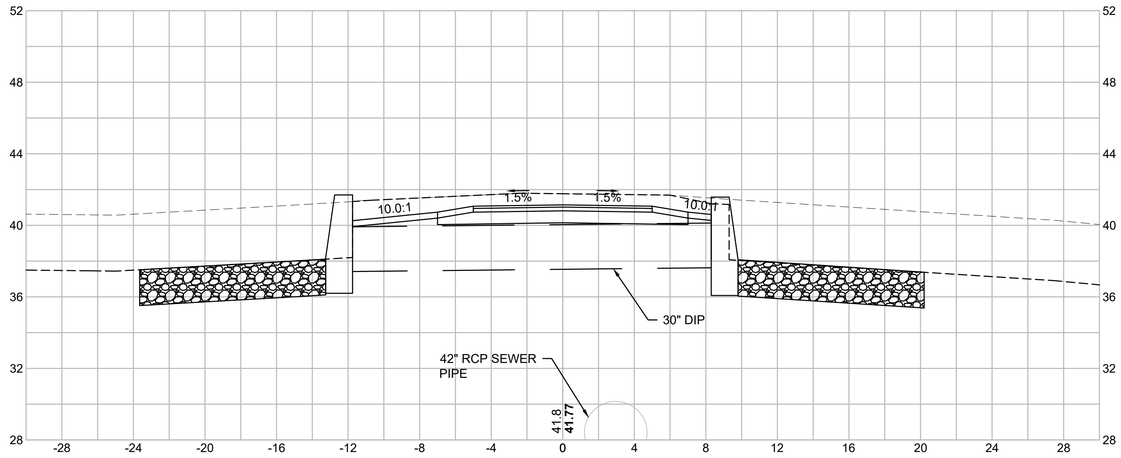
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	125	145
	PROJECT FILE NO. 609211		

SECTION SHEET 46

SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:20 PM

340+09



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

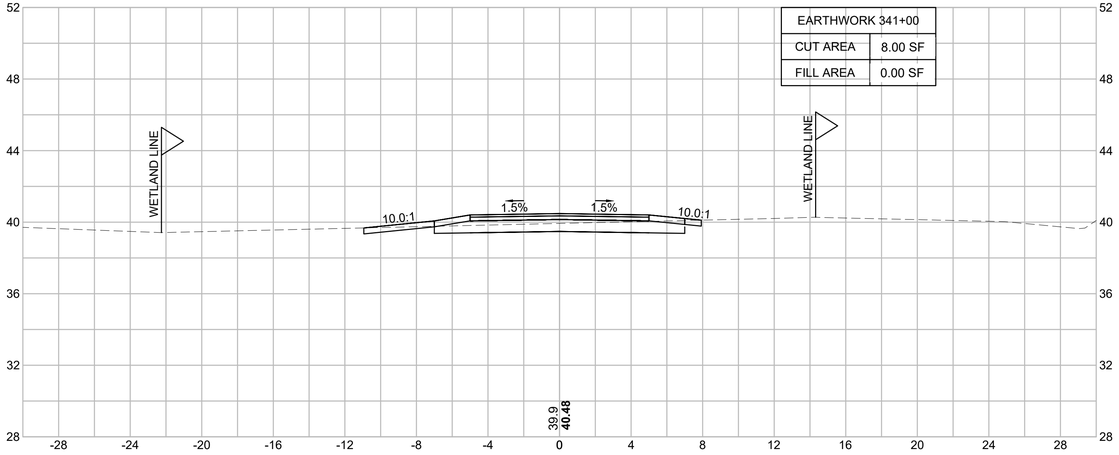
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	126	145
PROJECT FILE NO.	609211		

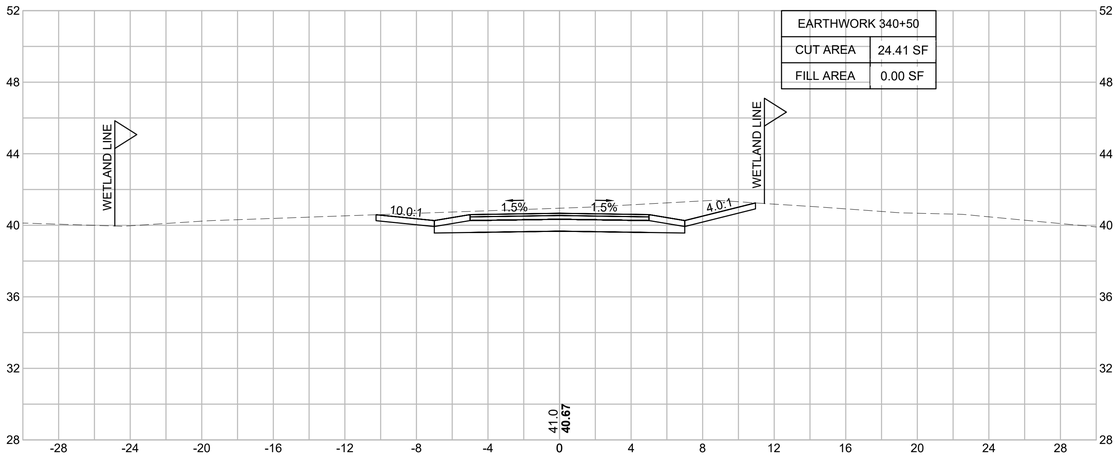
SECTION SHEET 47

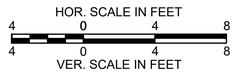
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:20 PM

341+00



340+50





PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

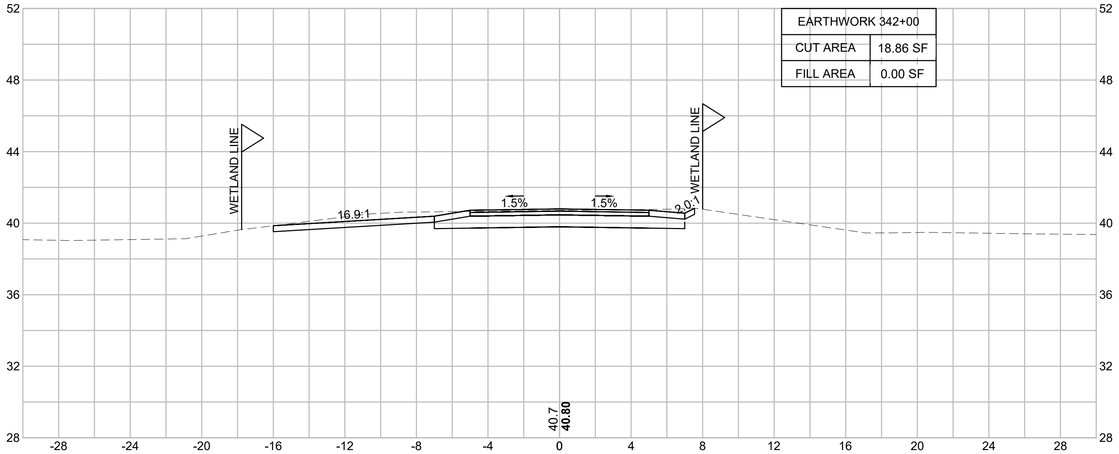
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	127	145
PROJECT FILE NO.	609211		

SECTION SHEET 48

SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:20 PM

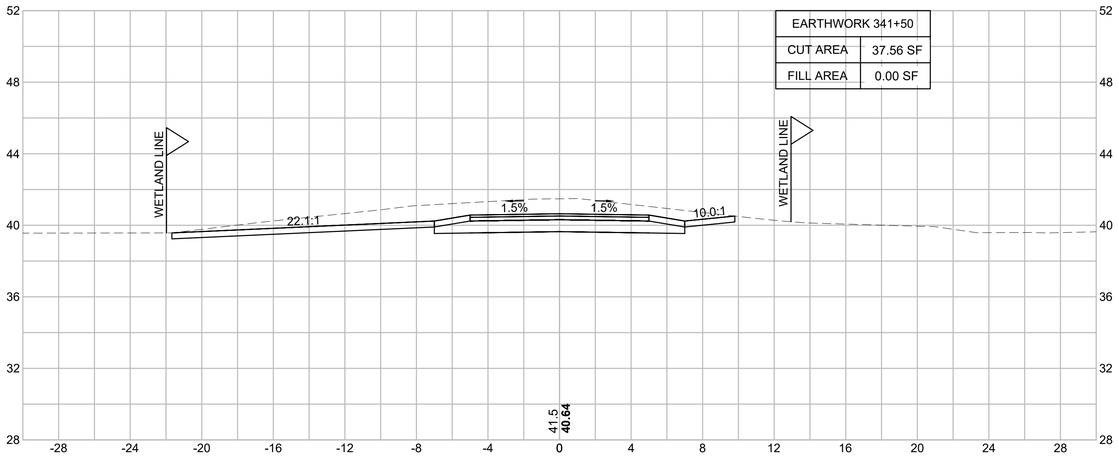
342+00

EARTHWORK 342+00	
CUT AREA	18.86 SF
FILL AREA	0.00 SF



341+50

EARTHWORK 341+50	
CUT AREA	37.56 SF
FILL AREA	0.00 SF



HOR. SCALE IN FEET
4 0 4 8

VER. SCALE IN FEET
4 0 4 8

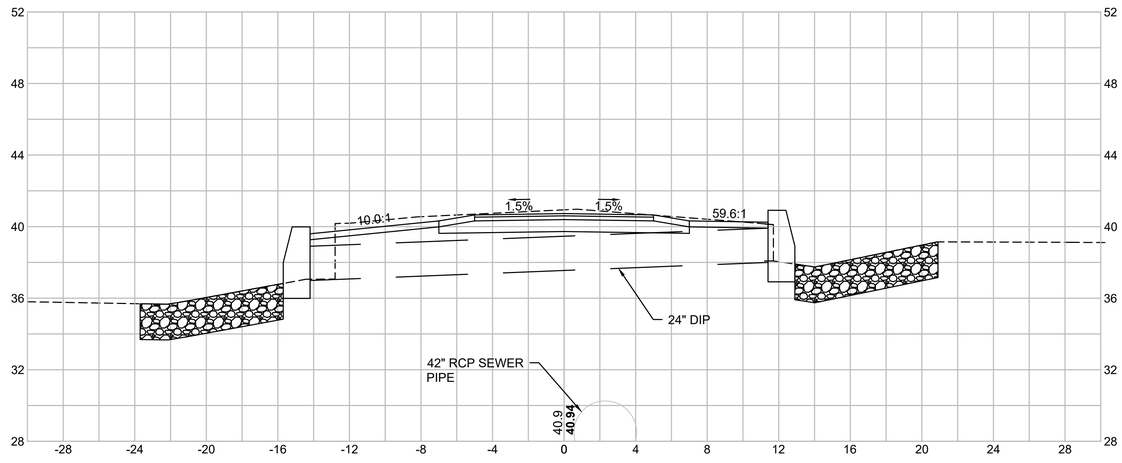
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	128	145
	PROJECT FILE NO. 609211		

SECTION SHEET 49

SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:21 PM

342+25



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

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

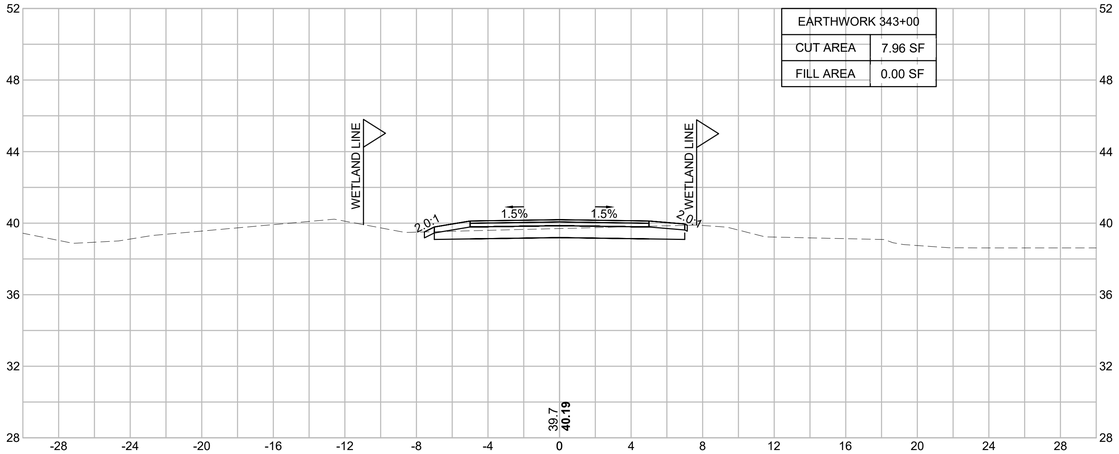
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	129	145
PROJECT FILE NO.	609211		

SECTION SHEET 50

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:21 PM

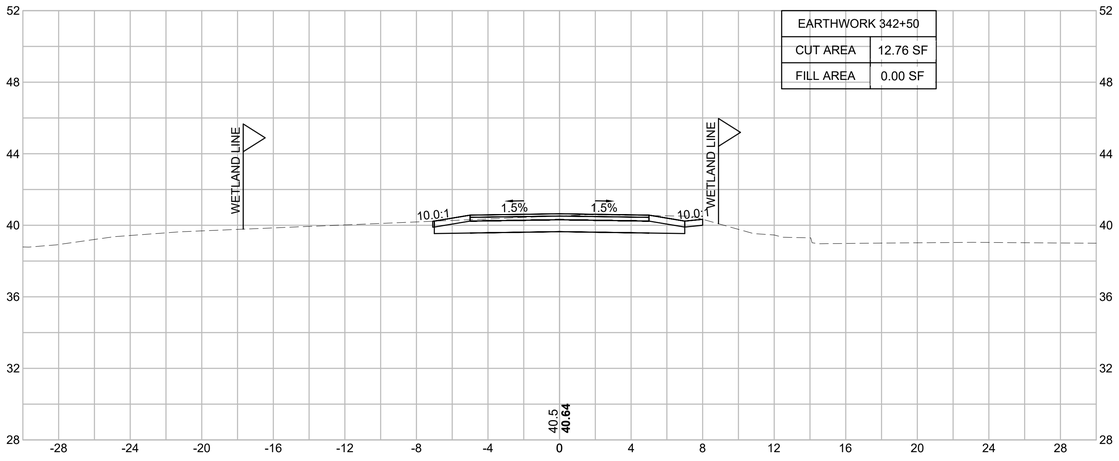
343+00

EARTHWORK 343+00	
CUT AREA	7.96 SF
FILL AREA	0.00 SF



342+50

EARTHWORK 342+50	
CUT AREA	12.76 SF
FILL AREA	0.00 SF



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

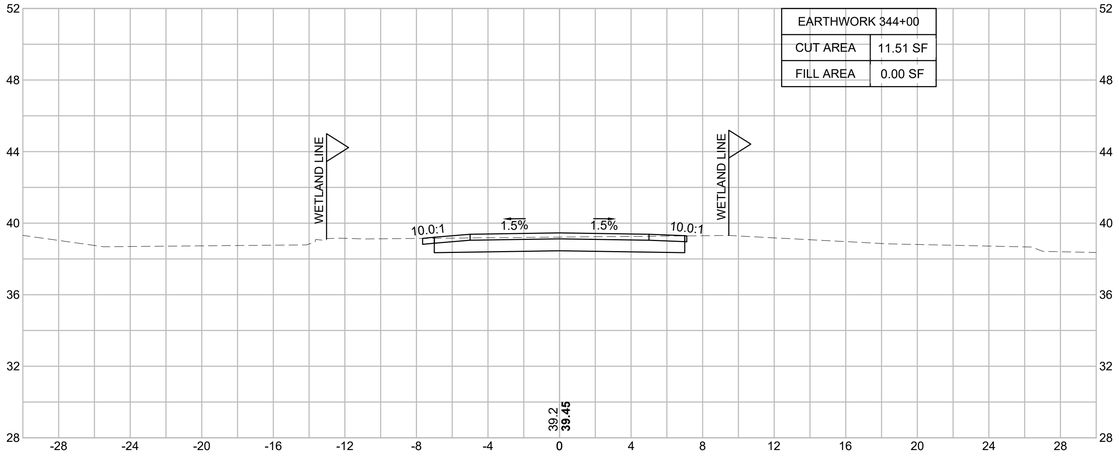
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	130	145
PROJECT FILE NO.	609211		

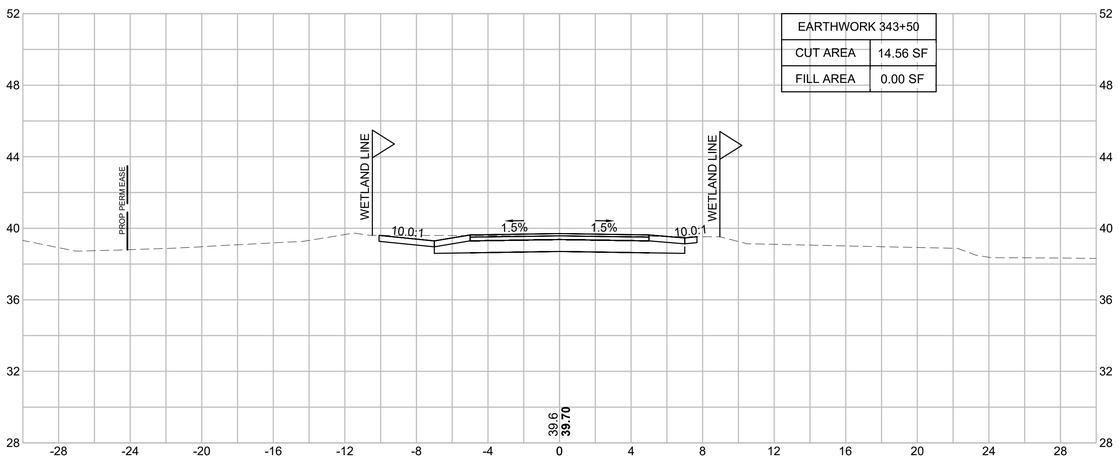
SECTION SHEET 51

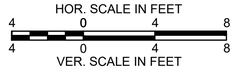
SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:21 PM

344+00



343+50





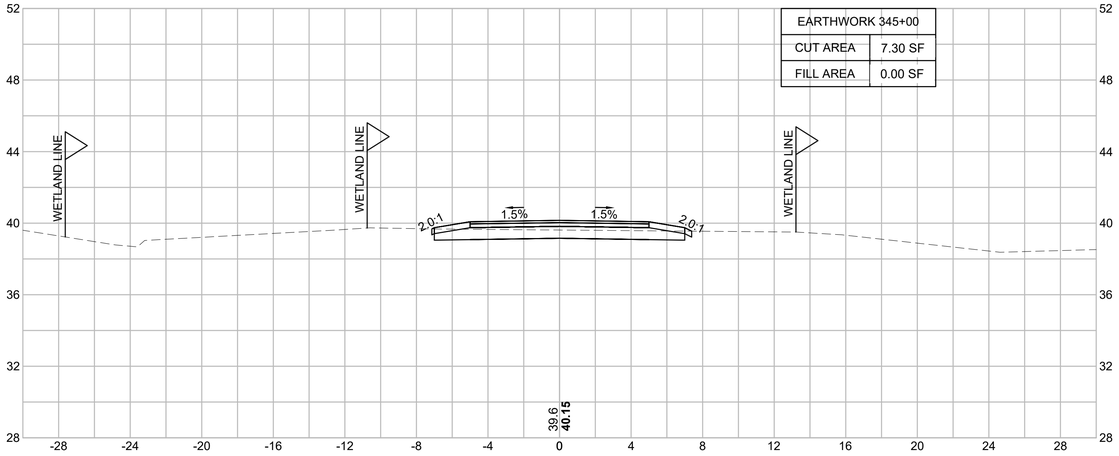
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	131	145
PROJECT FILE NO.	609211		

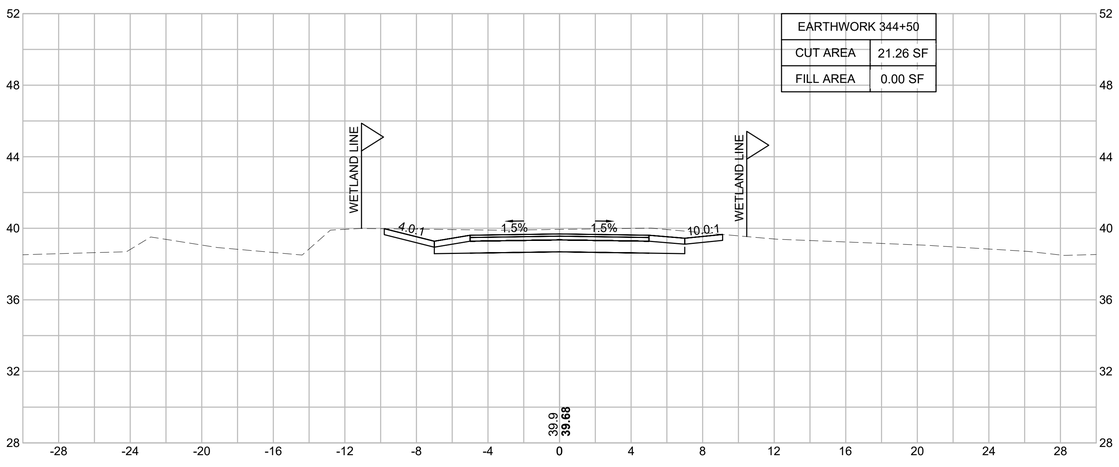
SECTION SHEET 52

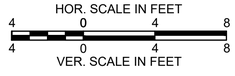
SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:21 PM

345+00



344+50





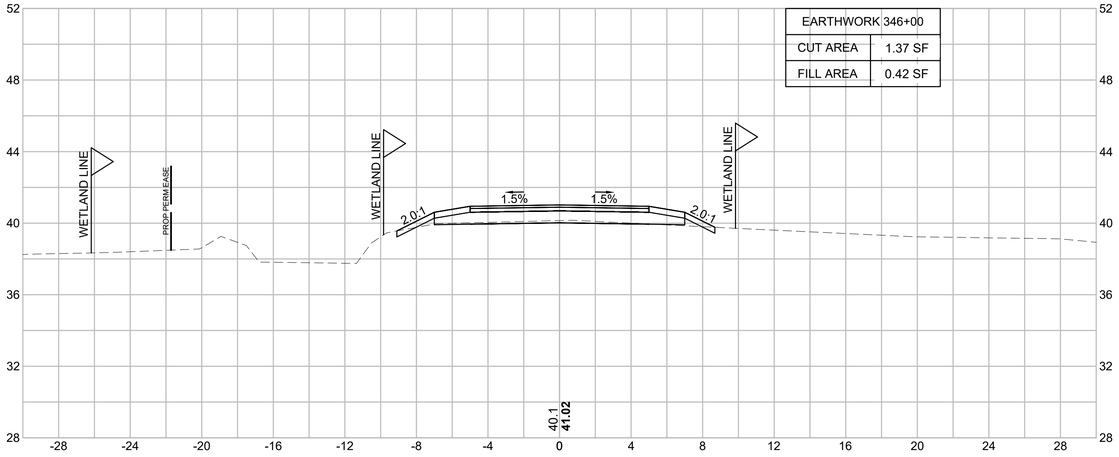
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	132	145
PROJECT FILE NO.	609211		

SECTION SHEET 53

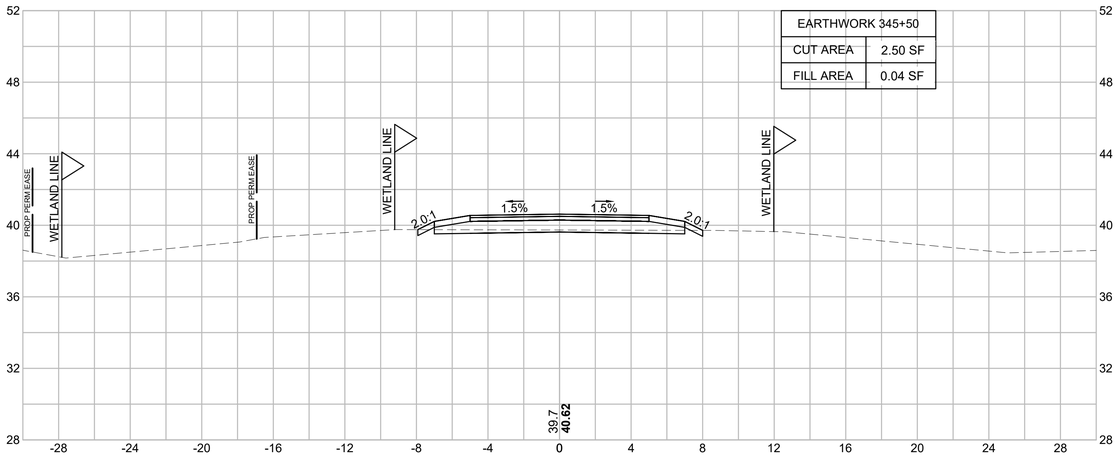
SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:22 PM

346+00

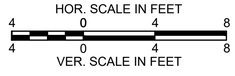


EARTHWORK 346+00	
CUT AREA	1.37 SF
FILL AREA	0.42 SF

345+50



EARTHWORK 345+50	
CUT AREA	2.50 SF
FILL AREA	0.04 SF



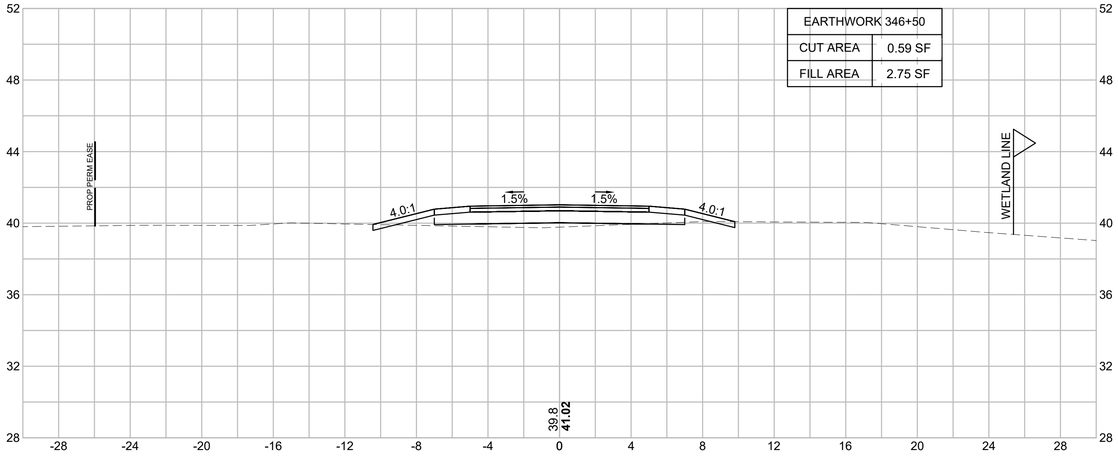
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	133	145
PROJECT FILE NO.	609211		

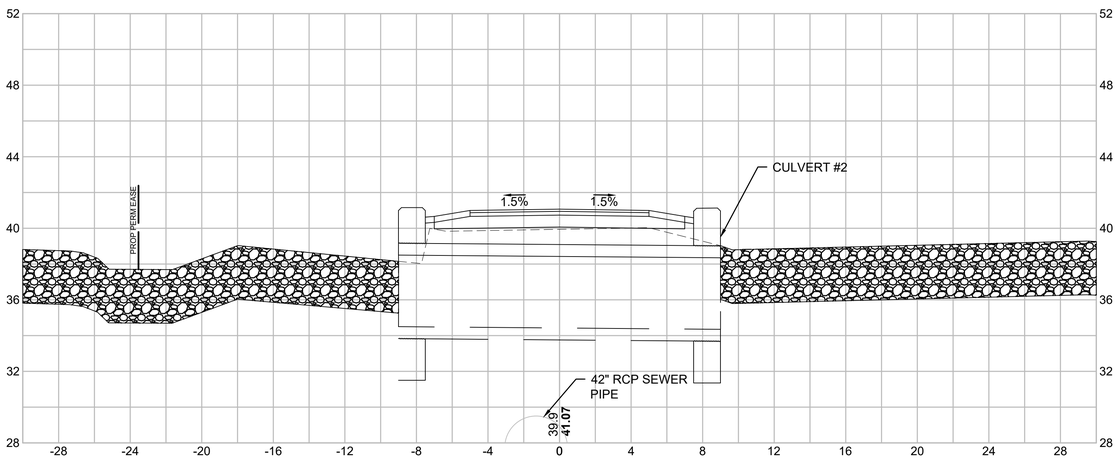
SECTION SHEET 54

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:22 PM

346+50



346+19.72



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

PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

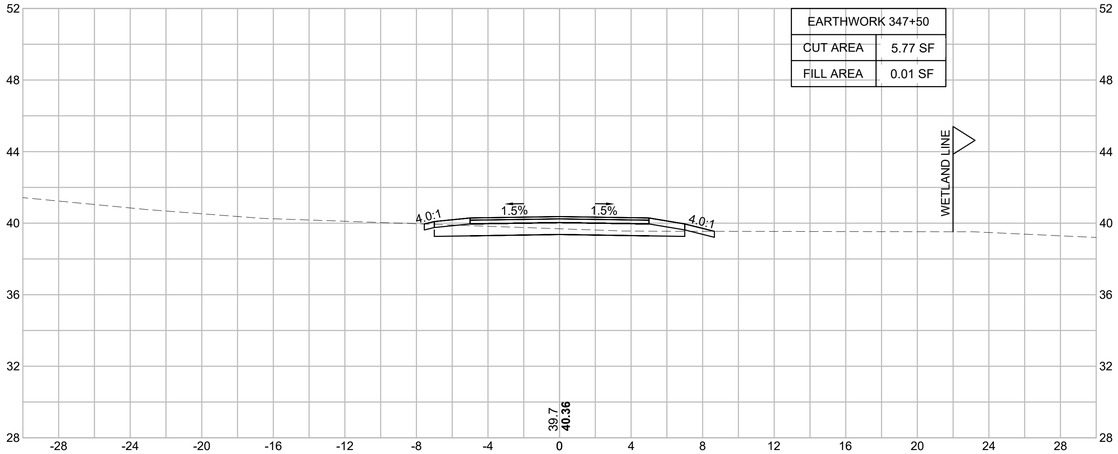
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	134	145
PROJECT FILE NO.	609211		

SECTION SHEET 55

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:22 PM

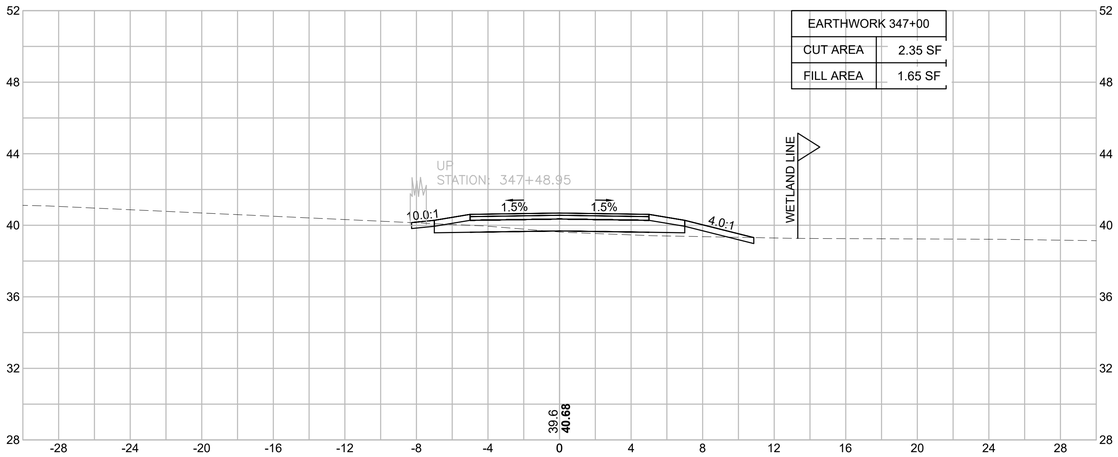
347+50

EARTHWORK 347+50	
CUT AREA	5.77 SF
FILL AREA	0.01 SF



347+00

EARTHWORK 347+00	
CUT AREA	2.35 SF
FILL AREA	1.65 SF



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

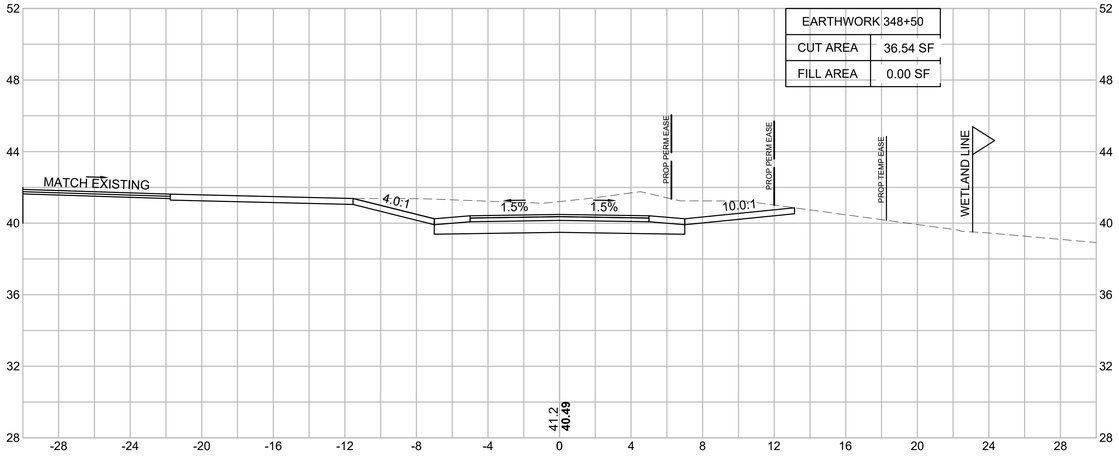
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	135	145
	PROJECT FILE NO. 609211		

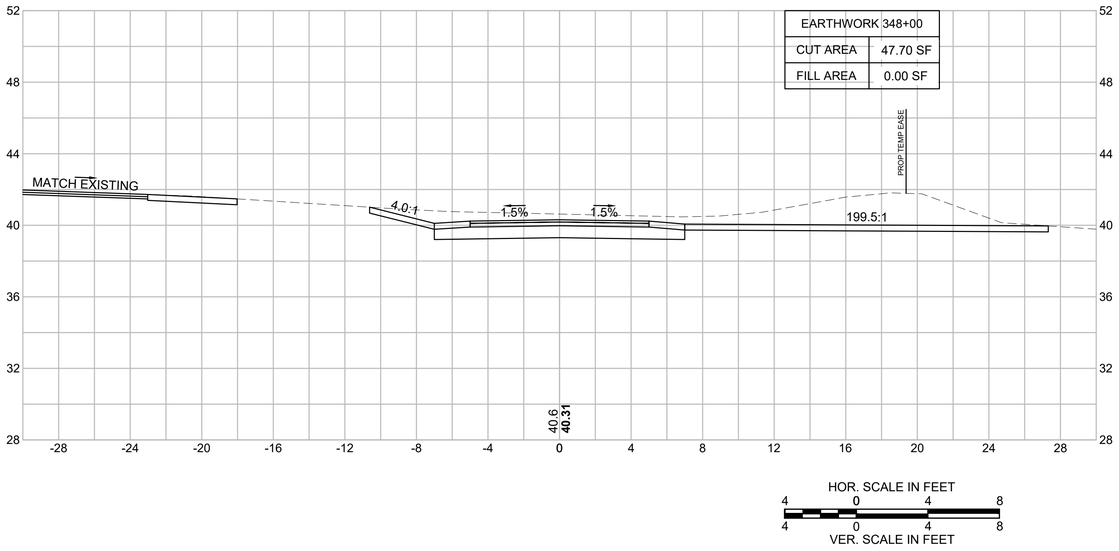
SECTION SHEET 56

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:22 PM

348+50



348+00



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

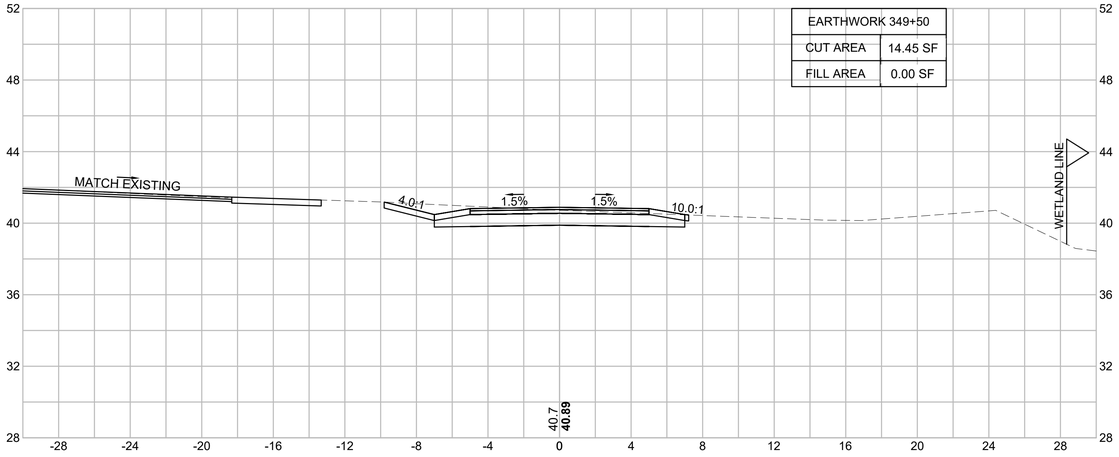
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	136	145
PROJECT FILE NO.	609211		

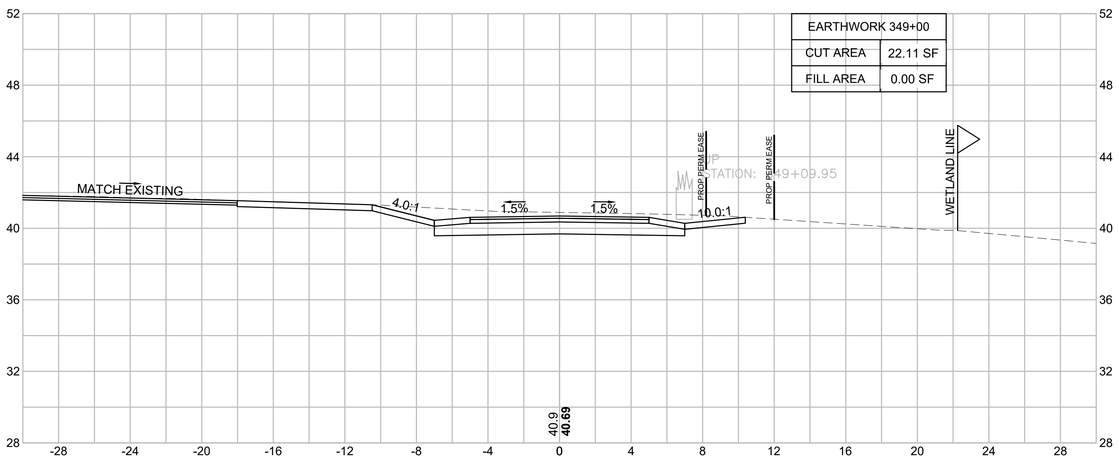
SECTION SHEET 57

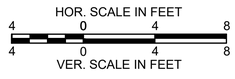
SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:23 PM

349+50



349+00





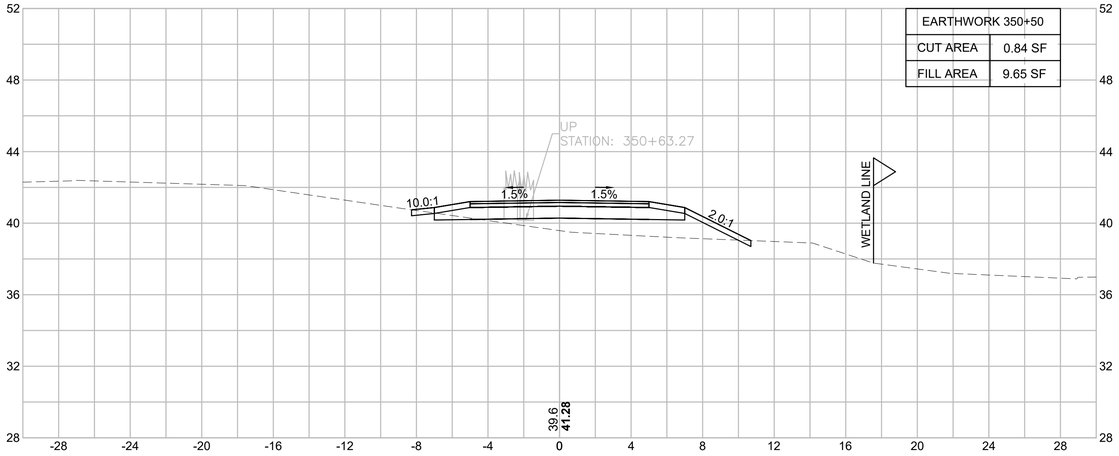
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	137	145
	PROJECT FILE NO. 609211		

SECTION SHEET 58

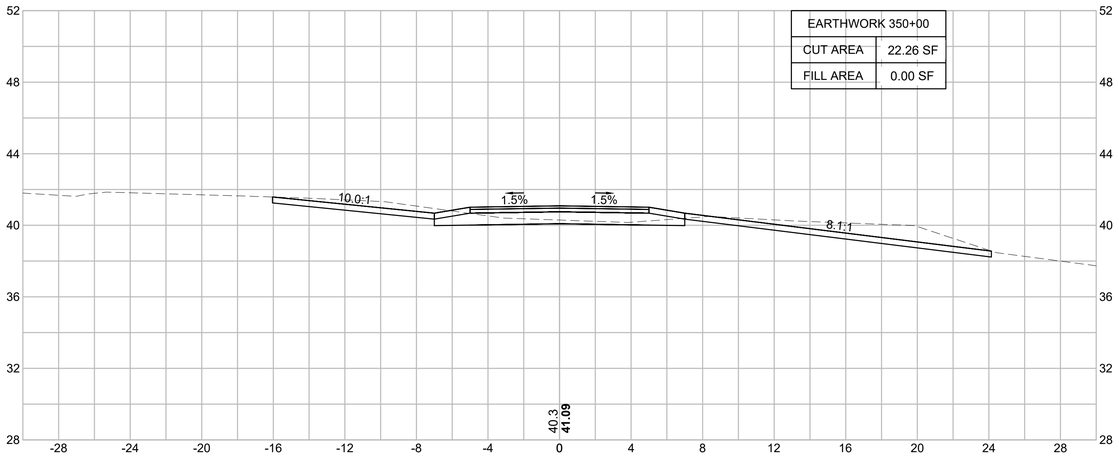
SHT016_HD\CROSS SECTIONS\.DWG Plotted on 16-Jul-2025 5:23 PM

350+50



EARTHWORK 350+50	
CUT AREA	0.84 SF
FILL AREA	9.65 SF

350+00



EARTHWORK 350+00	
CUT AREA	22.26 SF
FILL AREA	0.00 SF

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

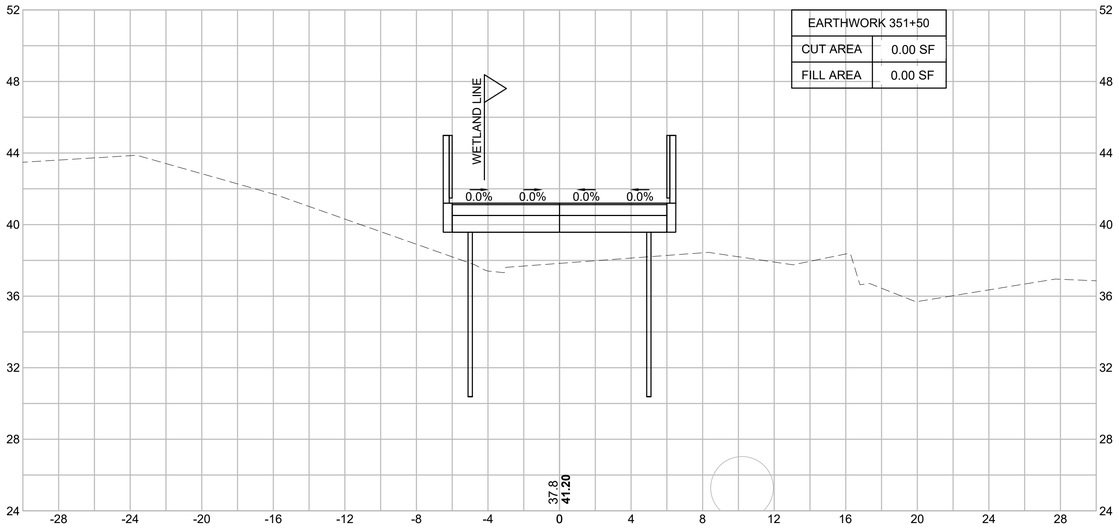
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	138	145
	PROJECT FILE NO. 609211		

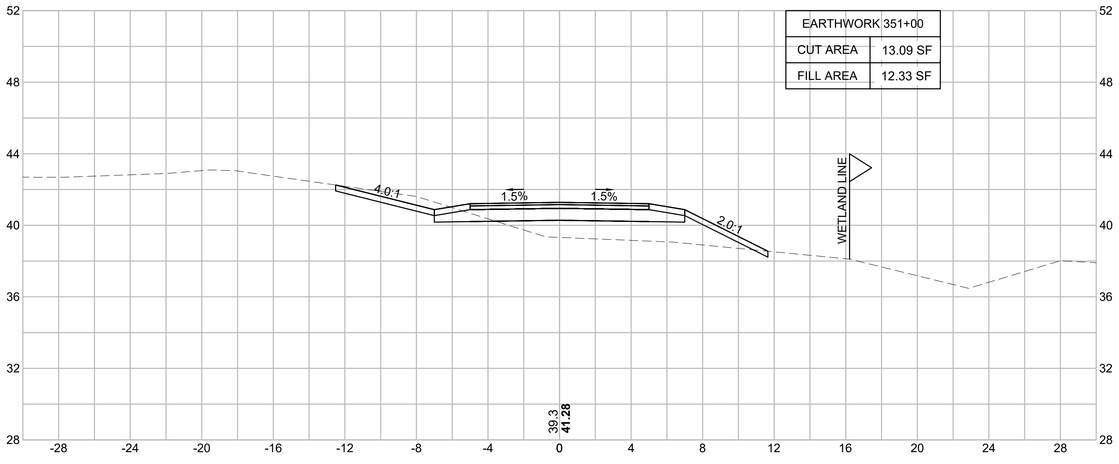
SECTION SHEET 59

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:23 PM

351+50



351+00



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

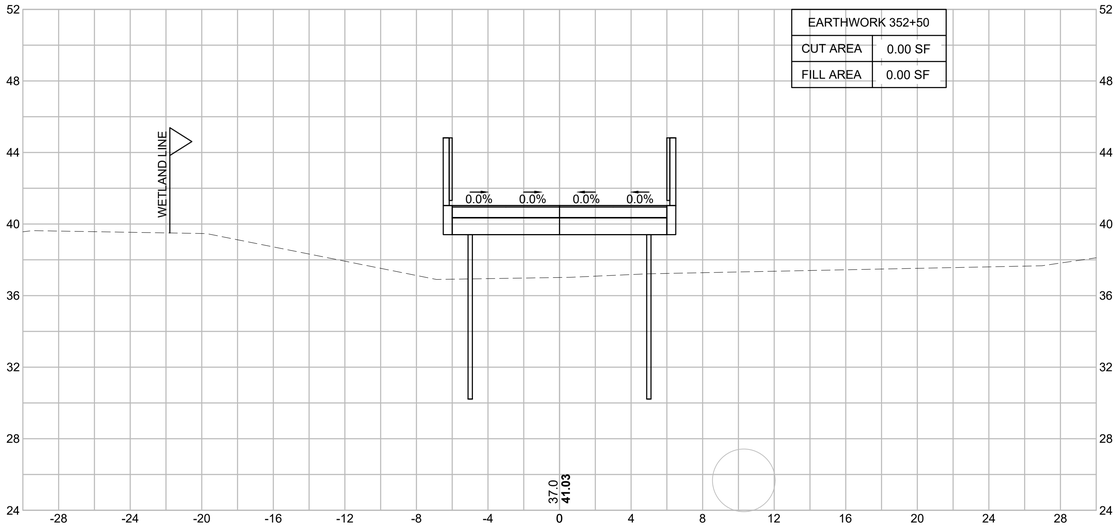
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	139	145
PROJECT FILE NO.	609211		

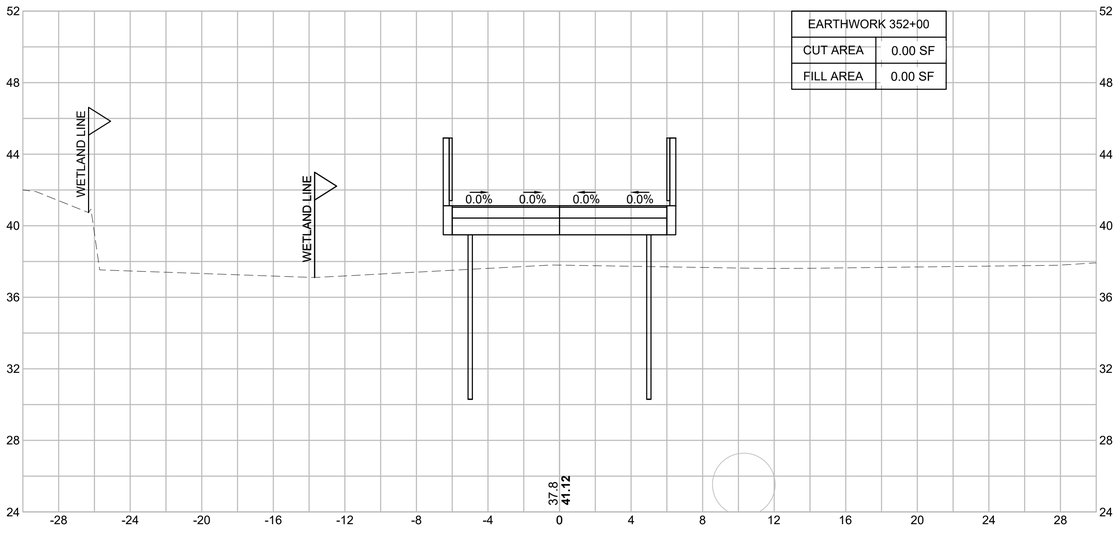
SECTION SHEET 60

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:23 PM

352+50



352+00



HOR. SCALE IN FEET

4 0 4 8

4 0 4 8

VER. SCALE IN FEET

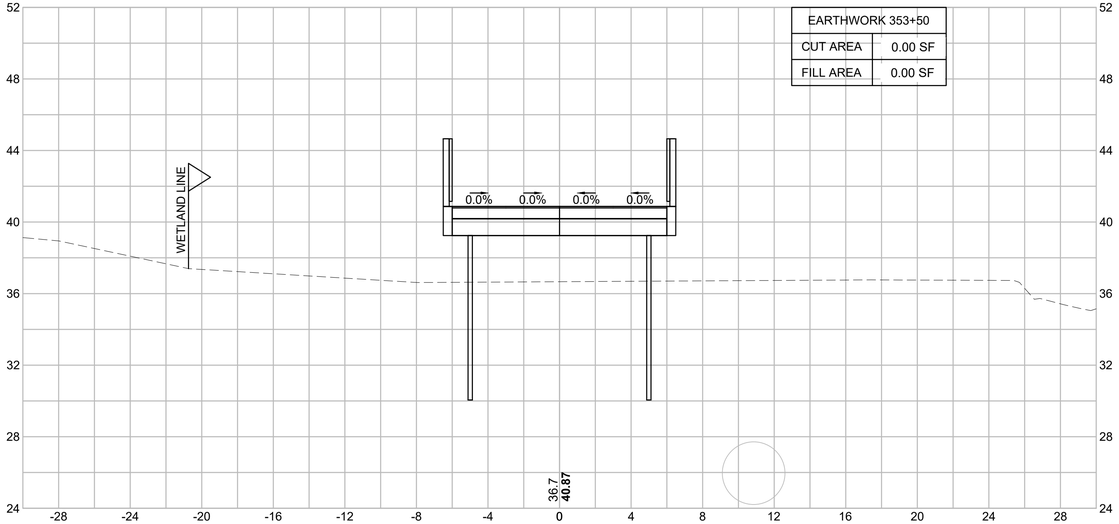
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	140	145
PROJECT FILE NO.	609211		

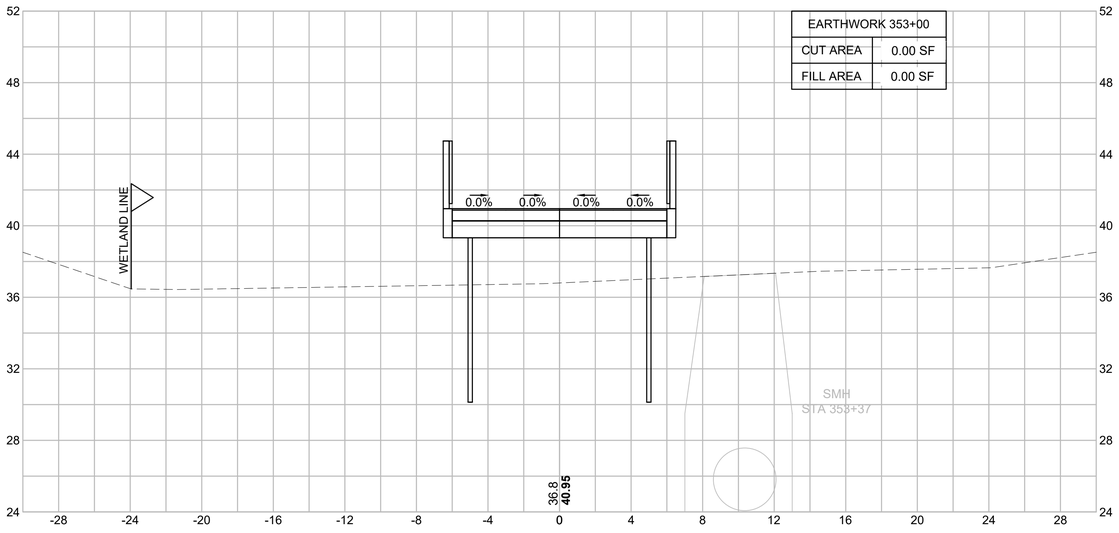
SECTION SHEET 61

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:24 PM

353+50



353+00



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

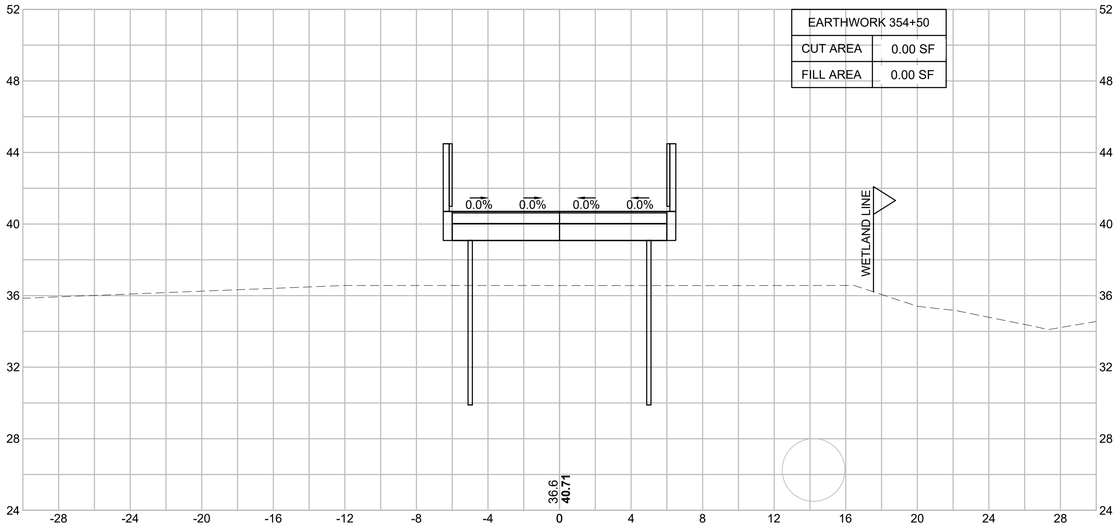
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	141	145
PROJECT FILE NO.	609211		

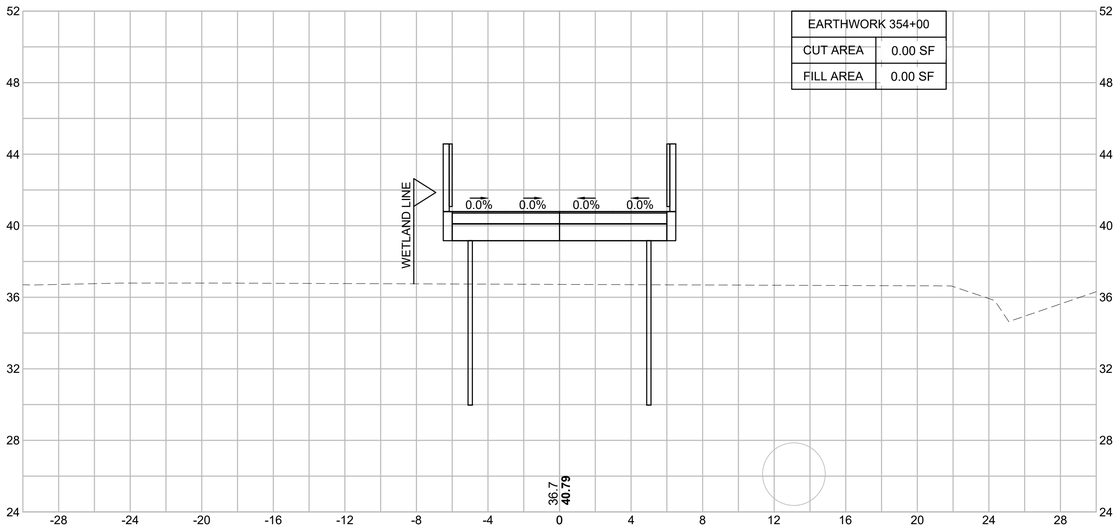
SECTION SHEET 62

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:24 PM

354+50



354+00



HOR. SCALE IN FEET
4 0 4 8

4 0 4 8
VER. SCALE IN FEET

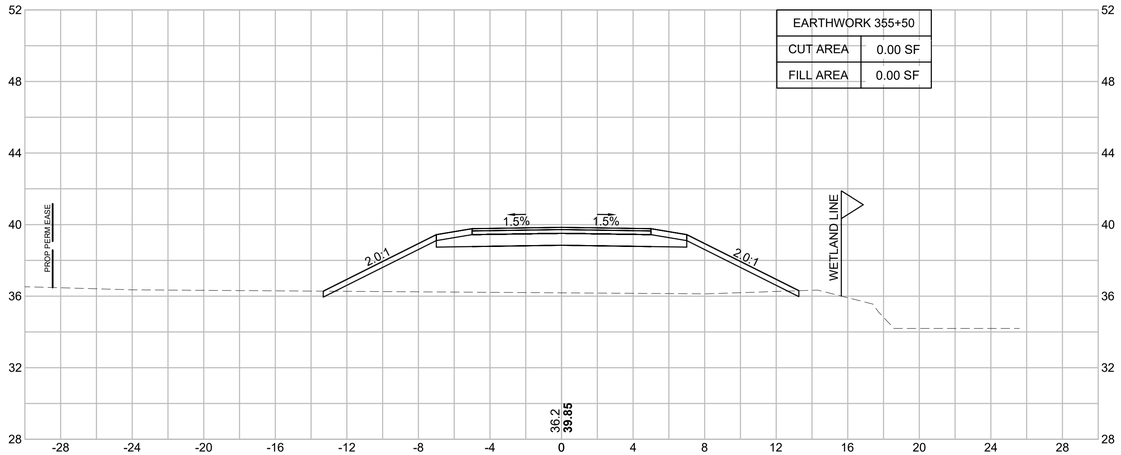
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	142	145
PROJECT FILE NO.	609211		

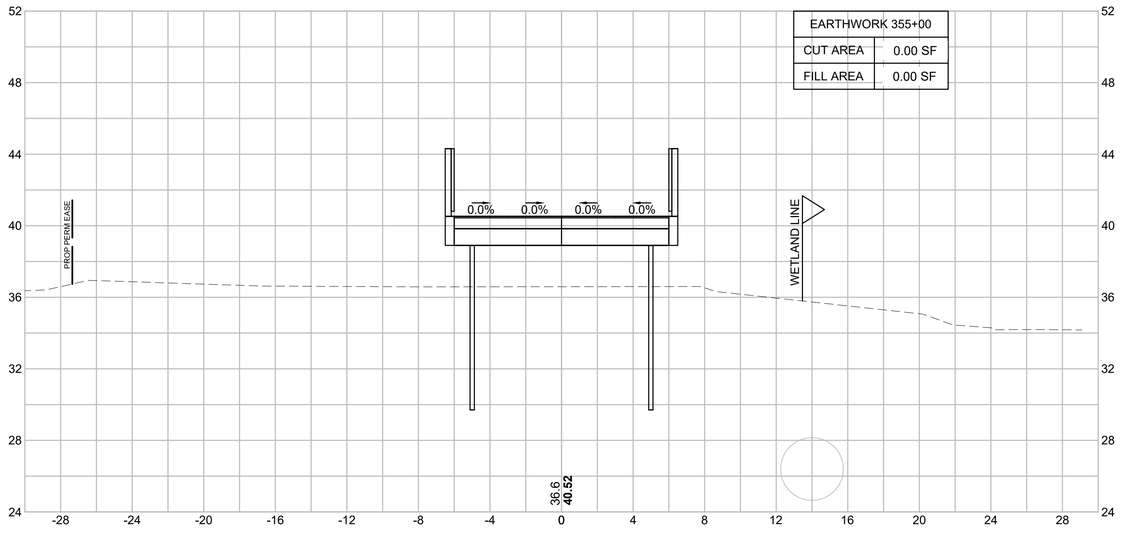
SECTION SHEET 63

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:24 PM

355+50



355+00



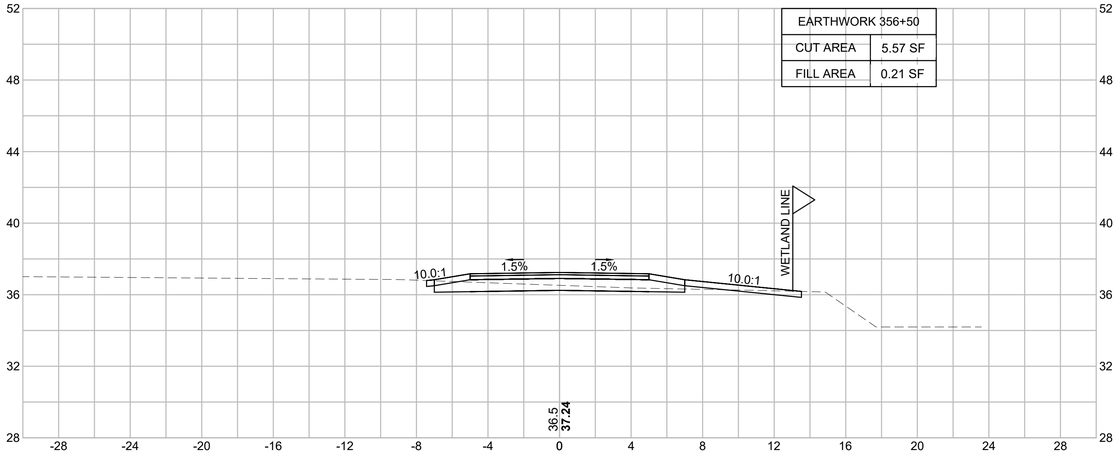
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	143	145
PROJECT FILE NO.	609211		

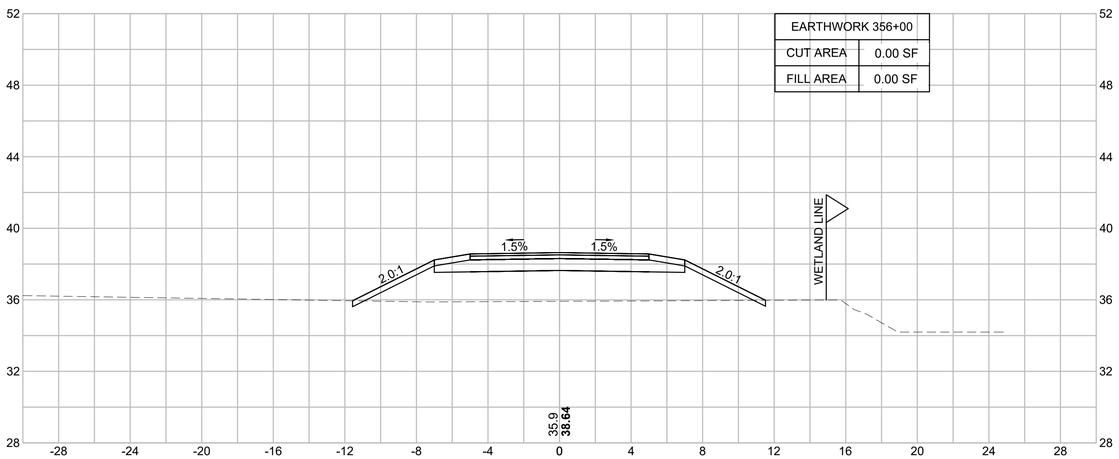
SECTION SHEET 64

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:24 PM

356+50



356+00



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

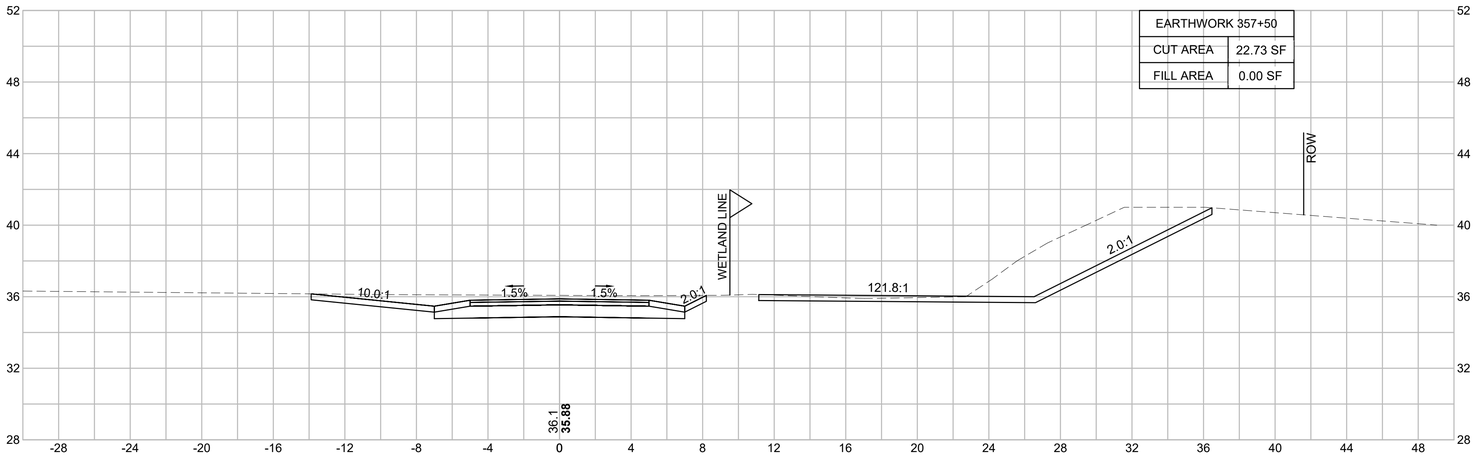
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	144	145
PROJECT FILE NO.	609211		

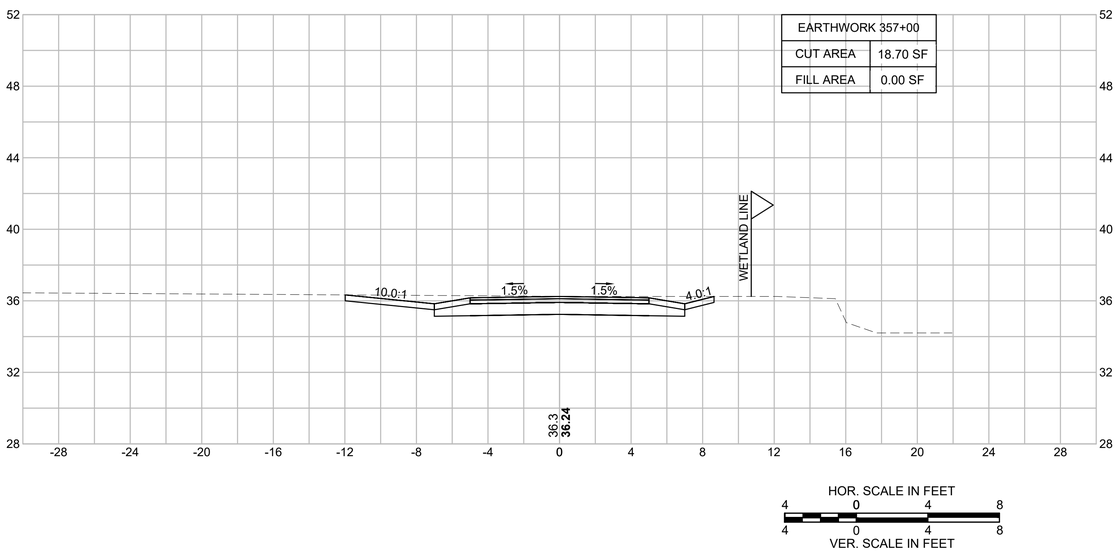
SECTION SHEET 65

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:24 PM

357+50



357+00



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

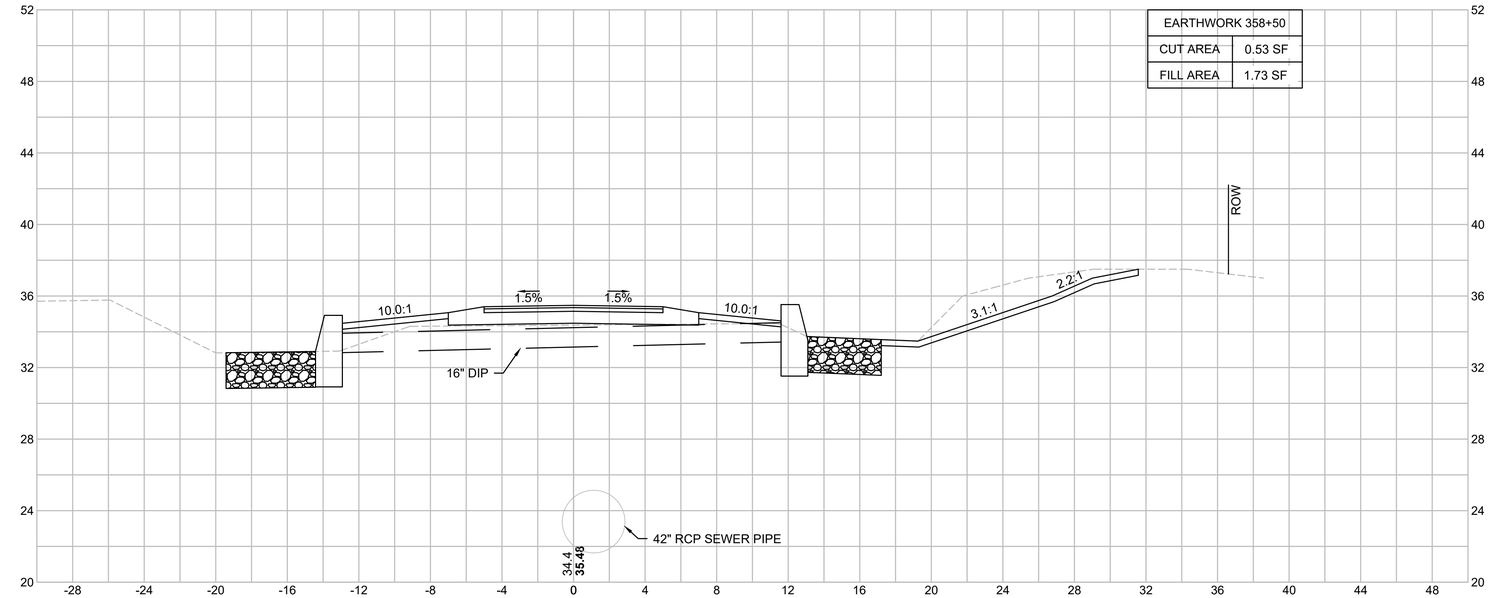
PEABODY, MA
INDEPENDENCE GREENWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/CMQ-0034(027)X	145	145
PROJECT FILE NO.	609211		

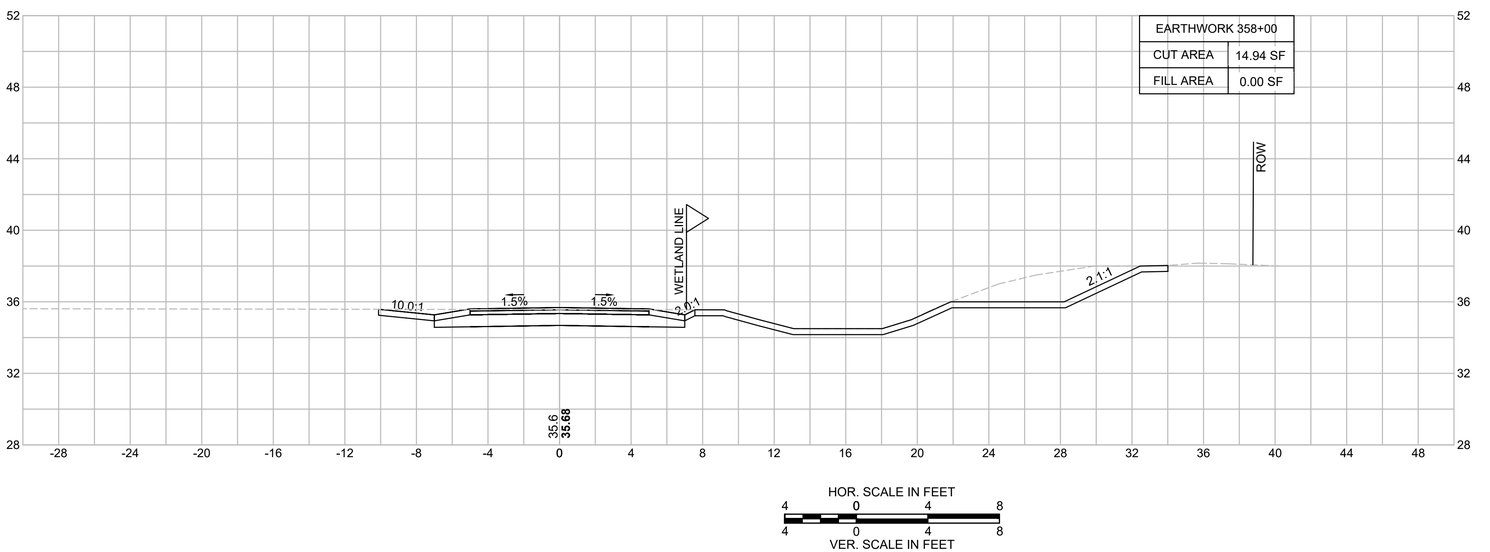
SECTION SHEET 66

SHT016_HD(CROSS SECTIONS).DWG Plotted on 16-Jul-2025 5:25 PM

358+50



358+00



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