

CITY OF NORTHAMPTON

PLAN AND PROFILE OF

MASS CENTRAL RAIL TRAIL

IN THE CITY OF

NORTHAMPTON

HAMPSHIRE COUNTY

**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

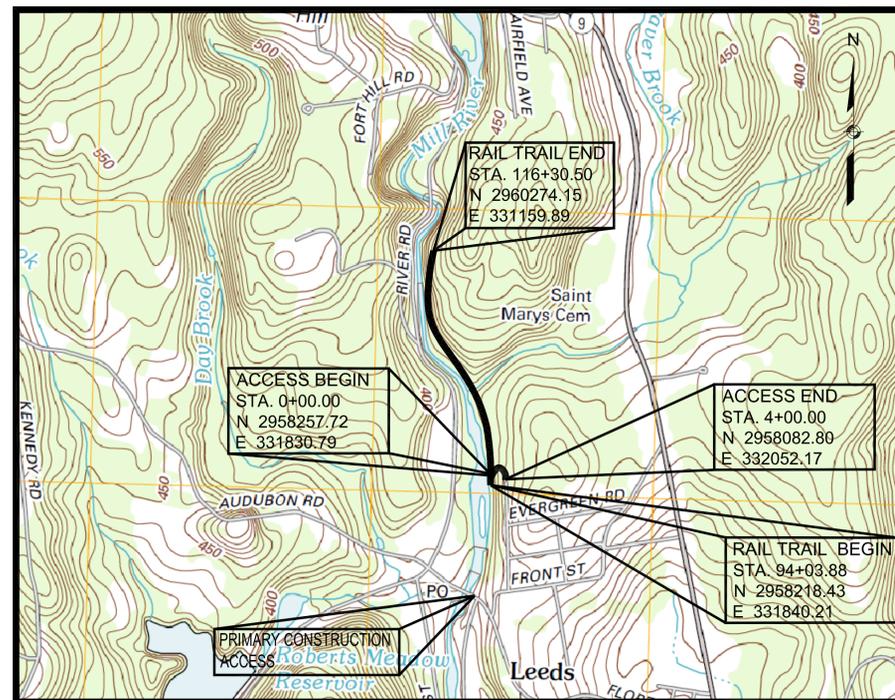
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	24
CONTRACT NO.		75-15	

TITLE SHEET

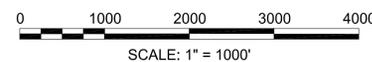
THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JUNE 15, 2012, INTERIM SUPPLEMENTAL SPECIFICATIONS DATED DECEMBER 12, 2014, THE 2012 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS, (AS RELATED TO TRAFFIC STANDARD DETAILS ONLY), THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

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MASS STATE PLANE MAINLAND (FEET)



TOTAL LENGTH OF PROJECT = 2626 FEET = 0.497 MILES

LENGTH OF RAIL TRAIL = 2226 FEET = 0.422 MILES

LENGTH OF GROVE AVENUE ACCESS = 400 FEET = 0.076 MILES

DATE	DESCRIPTION	REV #
4/2/2015	100% DESIGN SUBMISSION	0
2/25/2015	75% DESIGN SUBMISSION	A



CITY OF NORTHAMPTON



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Northampton, MA
(413) 587-4900

ProTerra
DESIGN GROUP, LLC

4 Bay Road
Building A, Suite 200
Hadley, MA 01035
(413) 320-4918
info@proterra-design.com

APPROVED

ADMINISTRATOR

DATE

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS
		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)
		BALANCE STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

PAVEMENT MARKINGS SYMBOLS

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

ABBREVIATIONS

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

CITY OF NORTHAMPTON
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MA	-	2	24
CONTRACT NO.		75-15	

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL	
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	24
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KEY PLANS

CENTERLINE STATIONING NOTE:

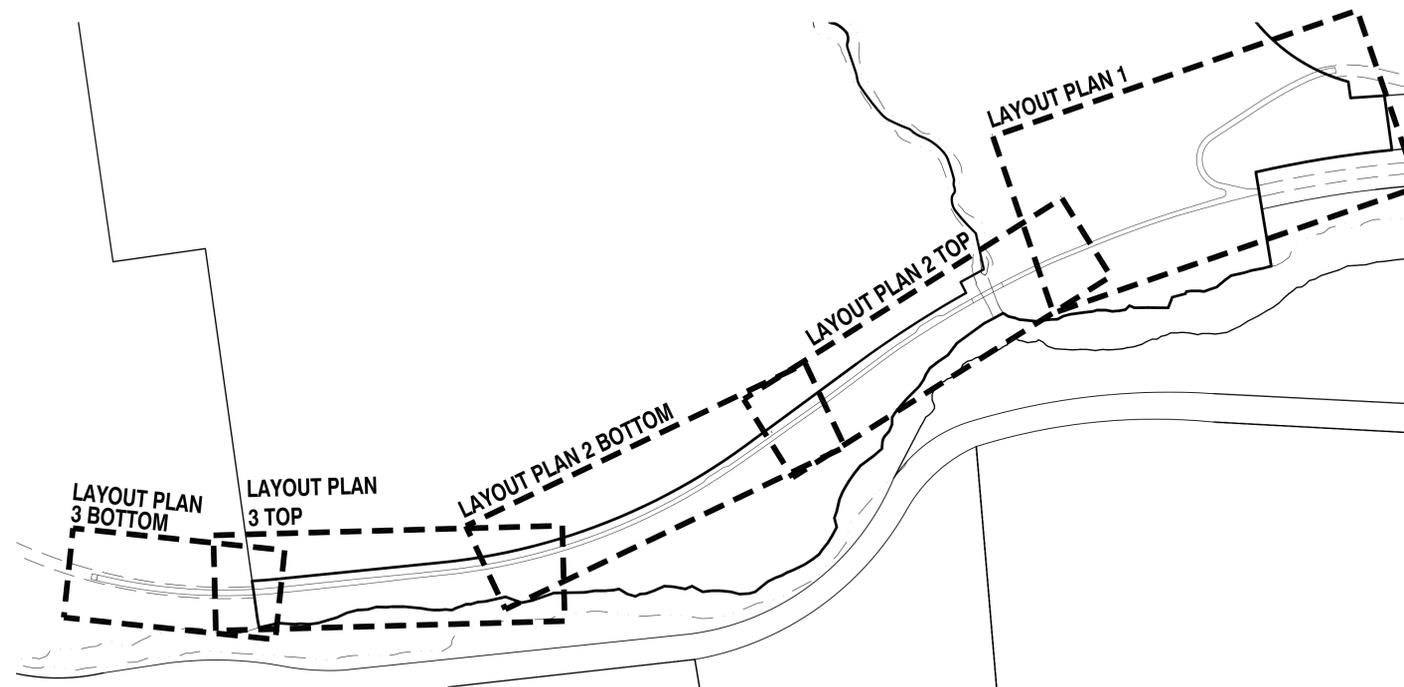
THE CENTERLINE STATIONING SHOWN HEREIN IS APPROXIMATED TO THE CENTERLINE STATIONING SHOWN IN A PLAN SET ENTITLED "PLAN AND PROFILE OF NORWOTTUCK BIKE PATH IN NORTHAMPTON" FEDERAL AID AND PROJECT NO. CM-001S(810)X PREPARED FOR THE COMMONWEALTH OF MASSACHUSETTS; MASSACHUSETTS HIGHWAY DEPARTMENT DATED JUNE 10, 2008. STATIONING ON SAID PLAN WAS CONVERTED FROM METERS TO US SURVEY FEET FOR USE HEREIN.

TREE REMOVAL NOTES:

CLEAR ALL TREES, SHRUBS & BRUSH (ITEM 101) WITHIN 8' OF PROPOSED RAIL TRAIL CENTERLINE AND WITHIN 20' OF BRIDGE ABUTMENTS. DISPOSE OF CUT TREES OFF-SITE.

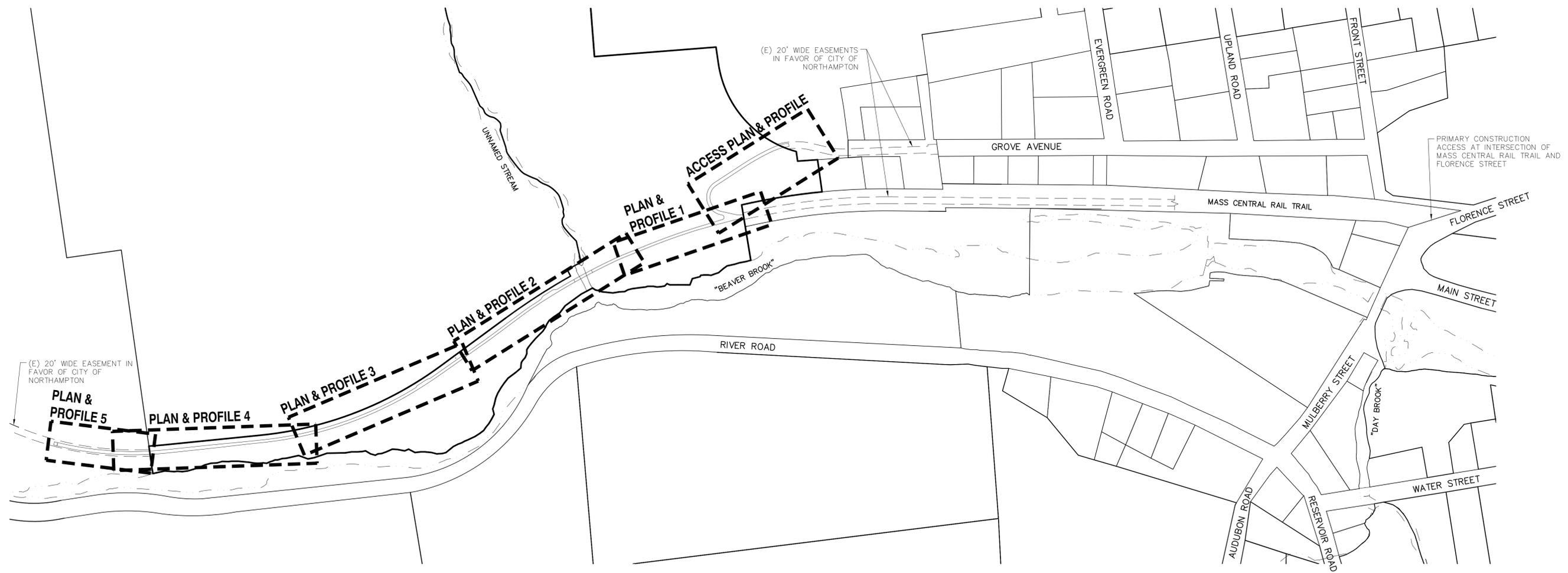
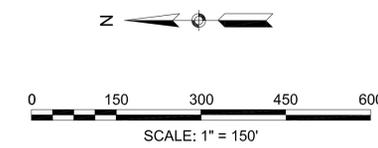
TRIM BRANCHES EXTENDING TO WITHIN 8' OF PROPOSED RAIL TRAIL CENTERLINE (ITEM 102) OR AS NOTED ON PLANS.

ANY ADDITIONAL CLEARING, GRUBBING, AND STUMP REMOVAL REQUIRED TO INSTALL THE IMPROVEMENTS SHALL BE INCIDENTAL TO THE BID ITEMS.



LAYOUT PLAN KEY

REFER TO LAYOUT PLAN SHEETS. SHEET NUMBER AS NOTED.

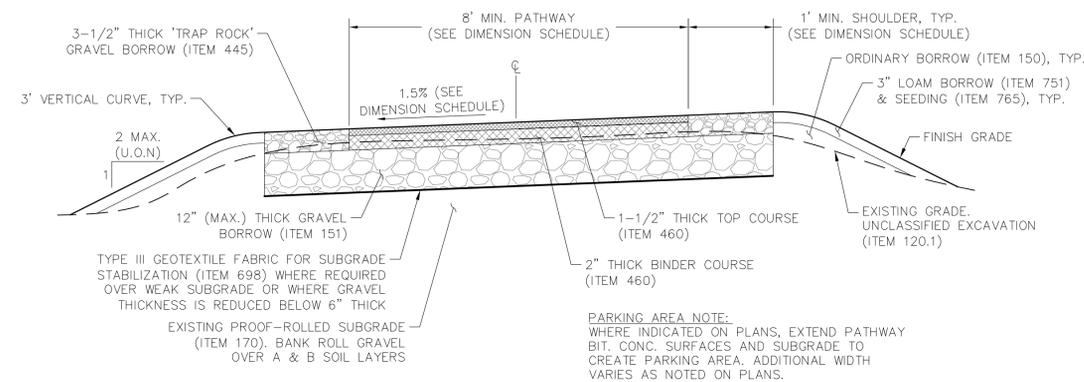


PLAN & PROFILE KEY

REFER TO PLAN & PROFILE SHEETS. SHEET NUMBER AS NOTED.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	24
CONTRACT NO.		75-15	

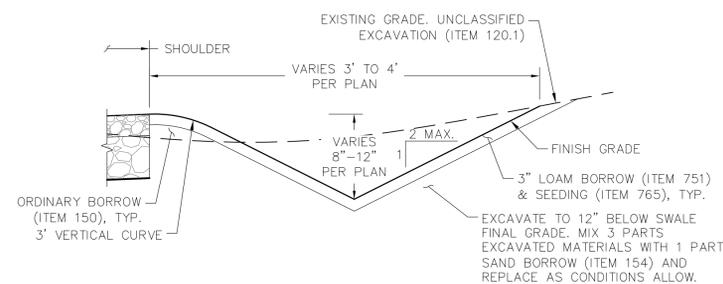
TYPICAL SECTIONS



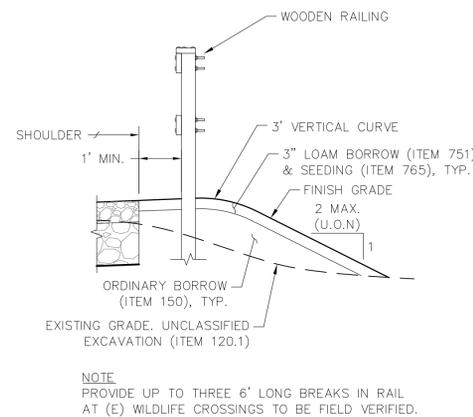
BITUMINOUS CONCRETE RAIL TRAIL

RAIL TRAIL PATHWAY DIMENSION SCHEDULE			
STATION	CONSTRUCTION	CROSS PITCH	PATHWAY WIDTH
94+03.89 TO 94+75.00	BIT. CONC.	LEFT	10'
94+75.00 TO 95+75.00	BIT. CONC.	LEFT	10' TO 8' TRANSITION
95+75.00 TO 98+93.00	BIT. CONC.	LEFT	8'
98+93.00 TO 99+43.00	CEMENT CONC.	LEFT	8'
99+43.00 TO 107+20.00	BIT. CONC.	LEFT	8'
107+20.00 TO 107+45.00	BIT. CONC.	LEFT TO RIGHT TRANSITION	8'
107+45.00 TO 109+05.00	BIT. CONC.	RIGHT	8'
109+05.00 TO 109+30.00	BIT. CONC.	RIGHT TO LEFT TRANSITION	8'
109+30.00 TO 110+60.00	BIT. CONC.	LEFT	8'
110+60.00 TO 111+60.00	BIT. CONC.	LEFT	8' TO 10' TRANSITION
111+60.00 TO 116+30.00	BIT. CONC.	LEFT	10'

RAIL TRAIL SHOULDER DIMENSION SCHEDULE		
STATION	LEFT SHOULDER WIDTH	RIGHT SHOULDER WIDTH
94+03.89 TO 94+75.00	2'	2'
94+75.00 TO 95+75.00	2' TO 1' TRANSITION	2' TO 1' TRANSITION
95+75.00 TO 100+40.00	1'	1'
100+40.00 TO 100+65.00	1' TO 2' TRANSITION	1'
100+65.00 TO 110+60.00	2'	1'
110+60.00 TO 110+85.00	2'	1' TO 2' TRANSITION
110+85.00 TO 112+90.00	2'	2'
112+90.00 TO 113+15.00	2'	2' TO 1' TRANSITION
113+15.00 TO 116+30.00	2'	1'



TYPICAL GRASS-LINED SWALE



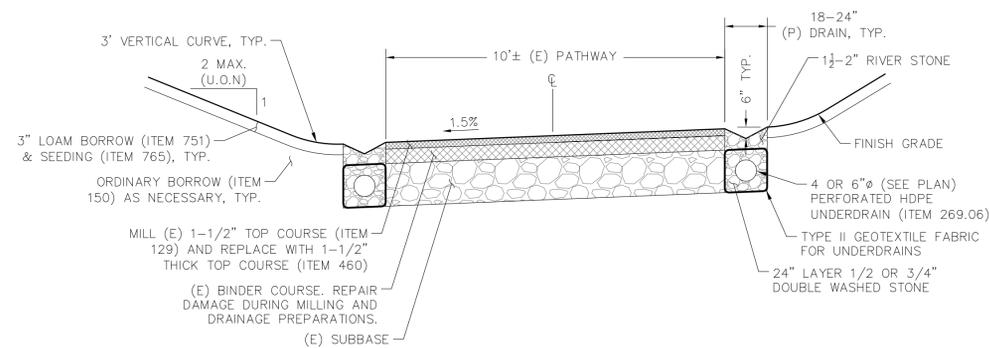
TYPICAL WOODEN RAILING

NOTES:

- ALL CUT AND FILL SLOPES TO BE COVERED WITH JUTE MESH EROSION CONTROL BLANKETS AND/OR HYDROSEEDED WITH NEW ENGLAND ROADSIDE MATRIX MIX AT 35LBS PER ACRE OR EQUAL. MIX SHALL BE APPROVED BY NORTHAMPTON CONSERVATION COMMISSION PRIOR TO APPLICATION.
- THE ACCURACY AND COMPLETENESS OF UNDERGROUND UTILITIES AS SHOWN ON THE PLAN IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATION, SIZE, TYPE, ETC. OF ALL UNDERGROUND UTILITIES WHICH MAY BE AFFECTED BY THE WORK. ALL TOWN OWNED UTILITIES WITHIN THE AREA AFFECTED BY THE WORK SHALL BE ADJUSTED TO THE NEW LINE AND GRADE AS DIRECTED BY THE TOWN. ANY UTILITY POLES AND GUY POLES WITHIN AREAS AFFECTED BY THE WORK SHALL BE REMOVED AND RESET BY THE RESPECTIVE UTILITY OWNERS. ALTERATION TO UTILITIES NOT OWNED BY THE TOWN SHALL BE MADE BY THE RESPECTIVE UTILITY OWNERS.

MATERIALS NOTES:

- ALL GRANULAR MATERIALS SHALL BE COMPACTED TO 95±% MAXIMUM DRY DENSITY BY STD. PROCTOR METHOD. CONTRACTOR SHALL PROVIDE 3RD PARTY TESTING AND REPORTING OF COMPACTION OF GRAVEL BORROW AND SUBGRADE UNDER PATHWAY.
- MATERIALS EXCAVATED AS PART OF UNCLASSIFIED EXCAVATION SHALL BE USED FOR FILLING AND REGRADING SLOPES. ORDINARY BORROW MAY BE USED IF INSUFFICIENT MATERIALS FROM EXCAVATION ARE AVAILABLE.
- IF THERE IS SUFFICIENT EXISTING CRUSHED STONE (BALLAST) AND SUITABLE CLEAN GRANULAR SUBBASE FROM THE EXISTING RAILBED, THE PROPOSED 12" OF GRAVEL SUBBASE MAY BE REDUCED TO 6" AS DIRECTED BY THE ENGINEER. IN THIS SITUATION, A GEOTEXTILE MAY BE WARRANTED BETWEEN RECYCLED SITE MATERIALS AND THE BORROW. GRAVEL BORROW SHALL CONFORM TO MASS DOT M1.03.0 TYPE B.
- BITUMINOUS CONCRETE SHALL CONFORM TO MASS DOT M3.11.06
- GEOTEXTILE REINFORCEMENT SHALL CONFORM TO MASS DOT M9.50.0 TYPE III.

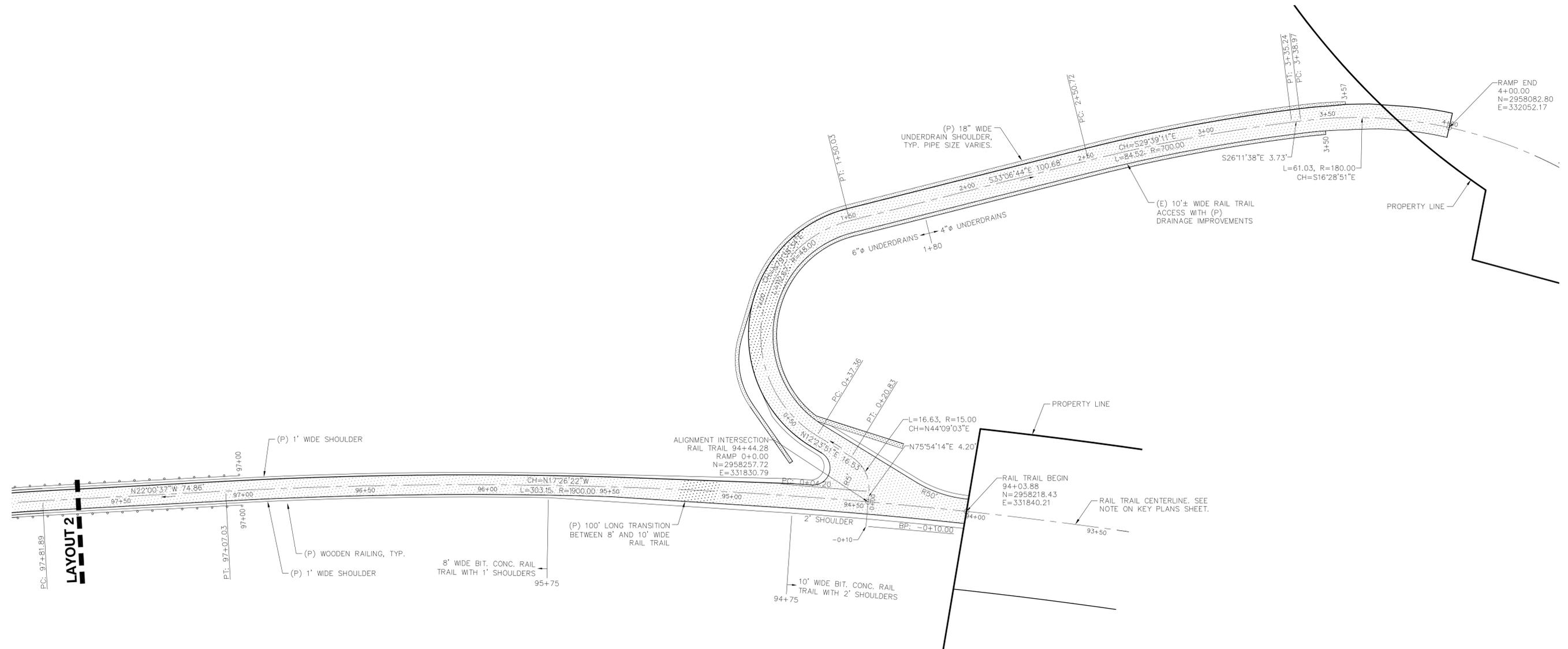


BITUMINOUS CONCRETE SECTION

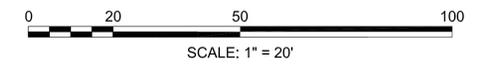
CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	24
CONTRACT NO.		75-15	

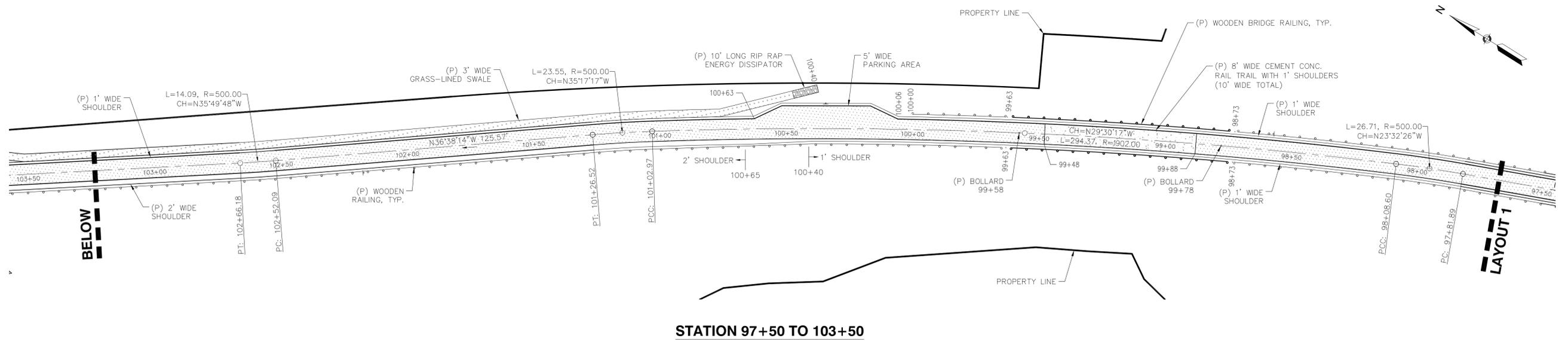
RAIL TRAIL EXTENSION & ACCESS
LAYOUT PLAN 1



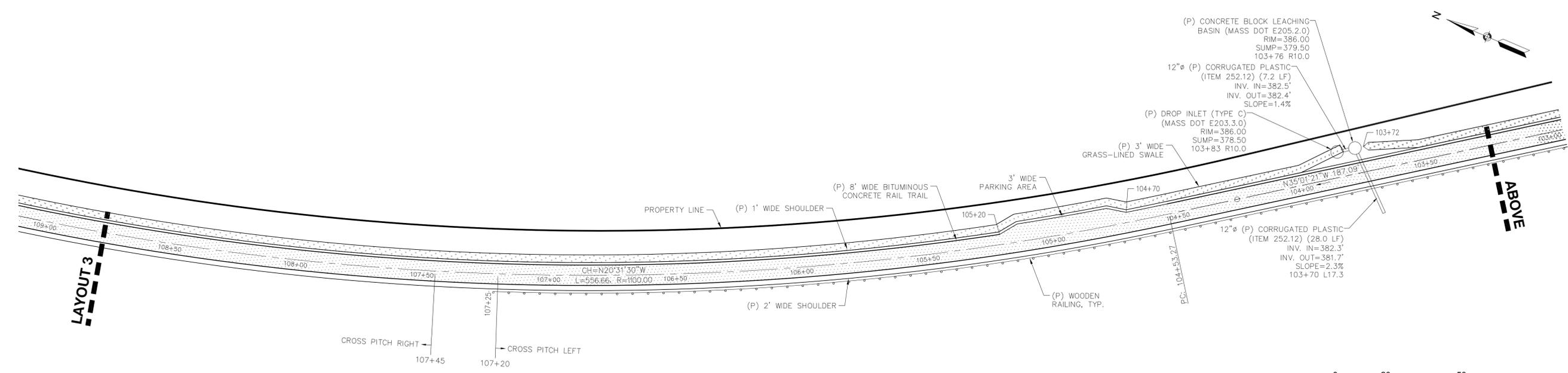
RAIL TRAIL STATION 93+50 TO 98+00
ACCESS STATION 0+00 TO 4+00



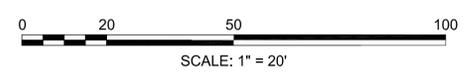
LAYOUT 2



STATION 97+50 TO 103+50



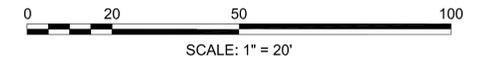
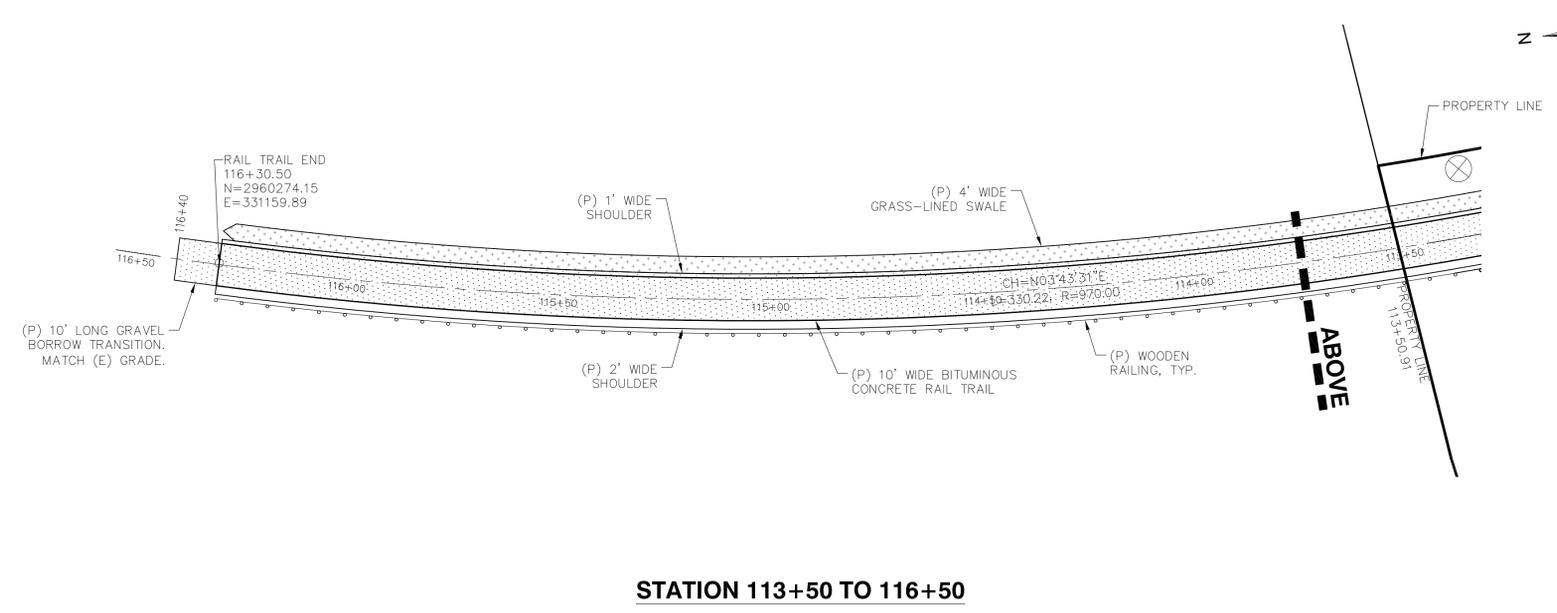
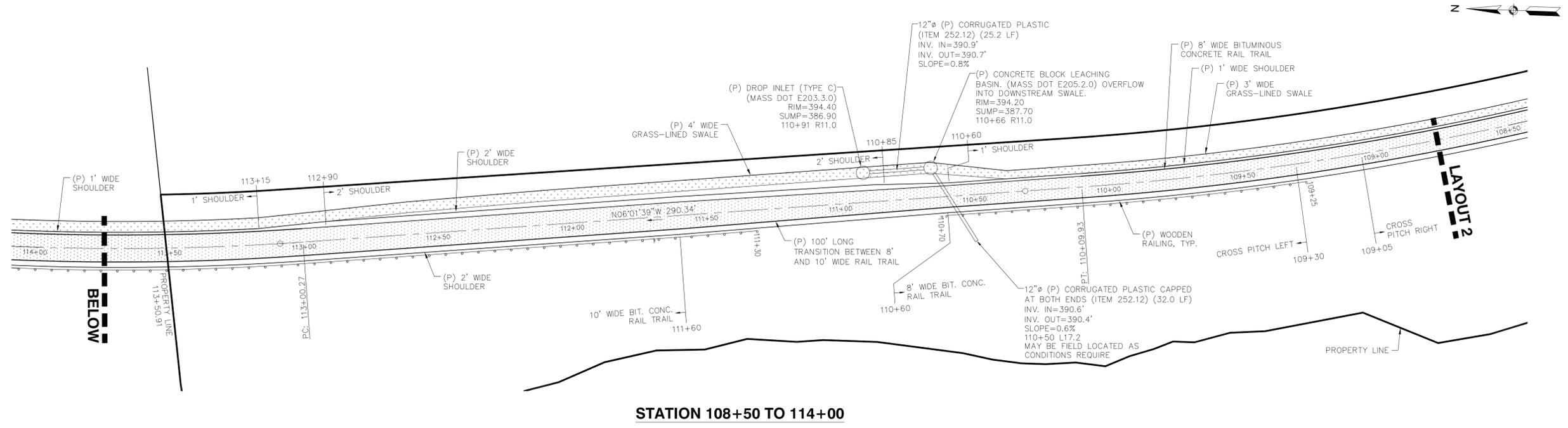
STATION 103+00 TO 109+00



CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	24
CONTRACT NO.		75-15	

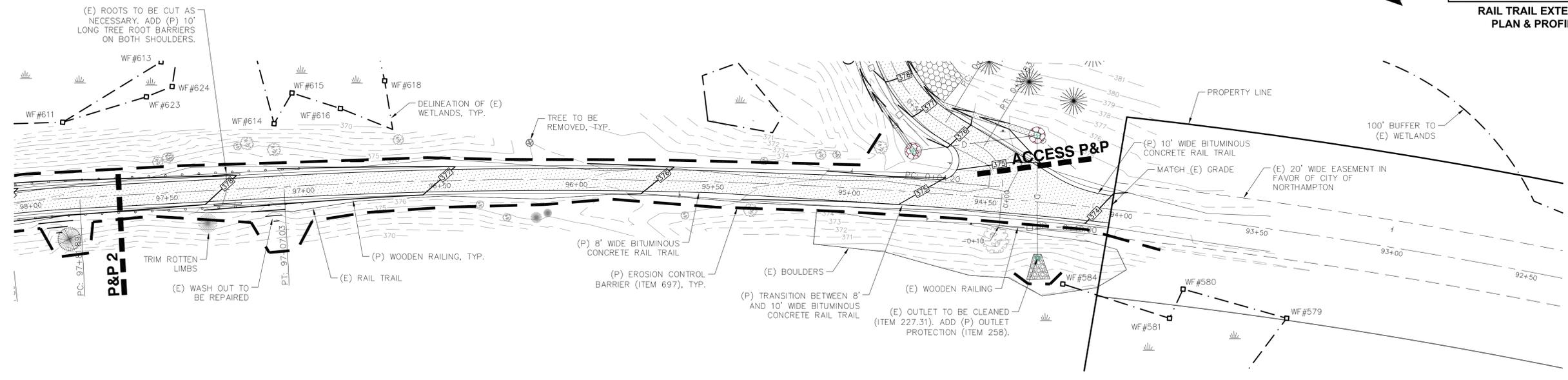
RAIL TRAIL EXTENSION & ACCESS
LAYOUT PLAN 3



**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

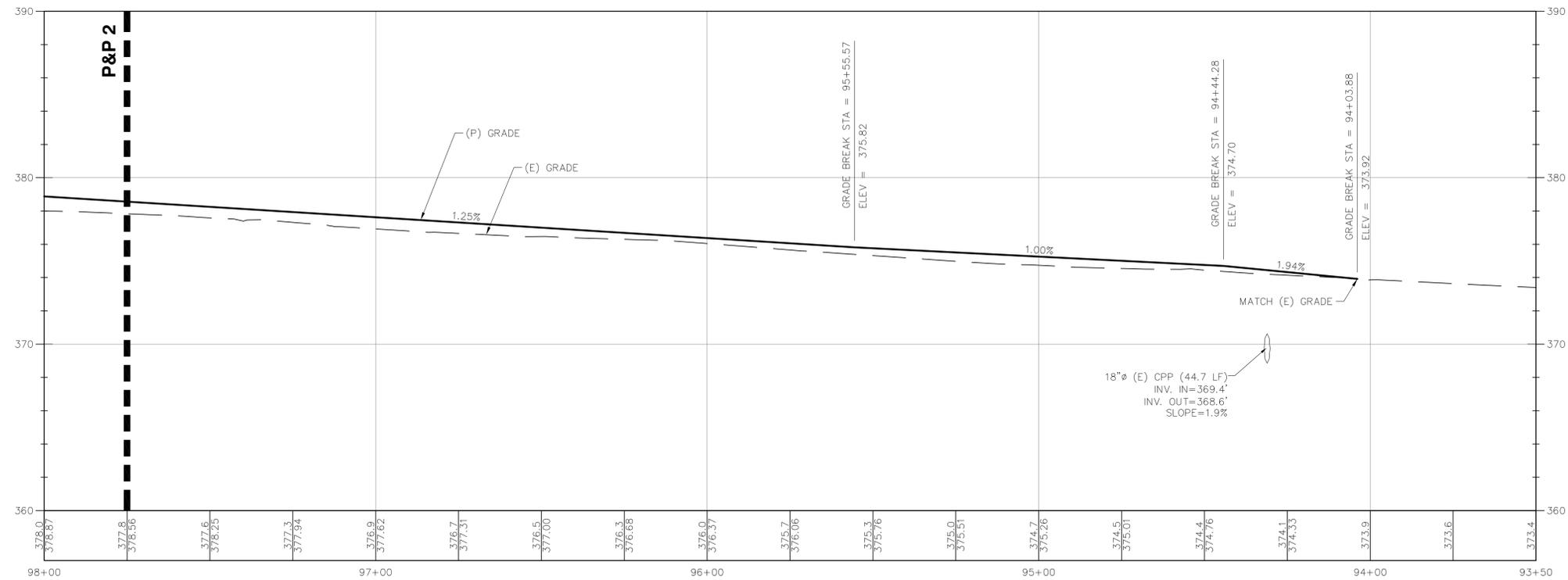
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MA	-	8	24
CONTRACT NO.		75-15	

**RAIL TRAIL EXTENSION
PLAN & PROFILE 1**



PLAN

RAIL TRAIL STATION 93+50 TO 98+00



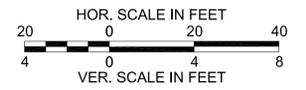
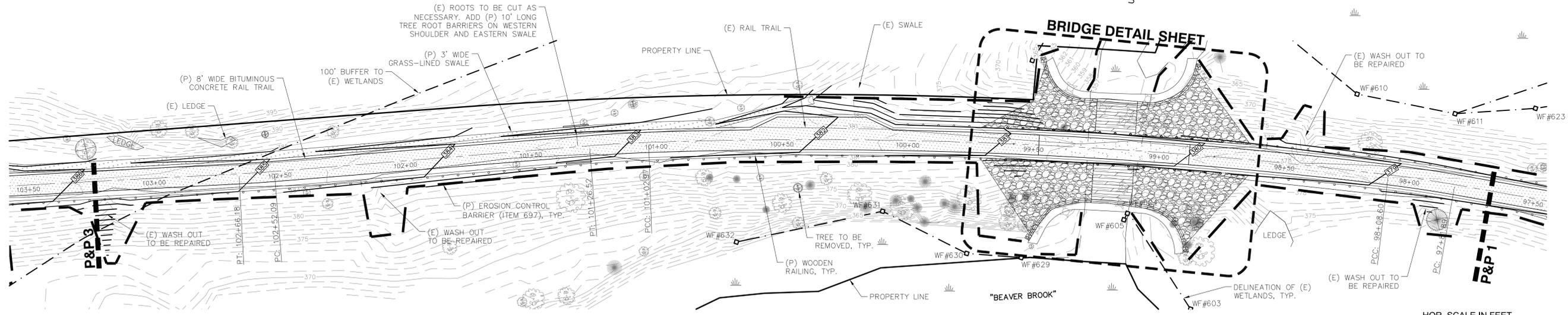
CENTERLINE PROFILE

RAIL TRAIL STATION 93+50 TO 98+00

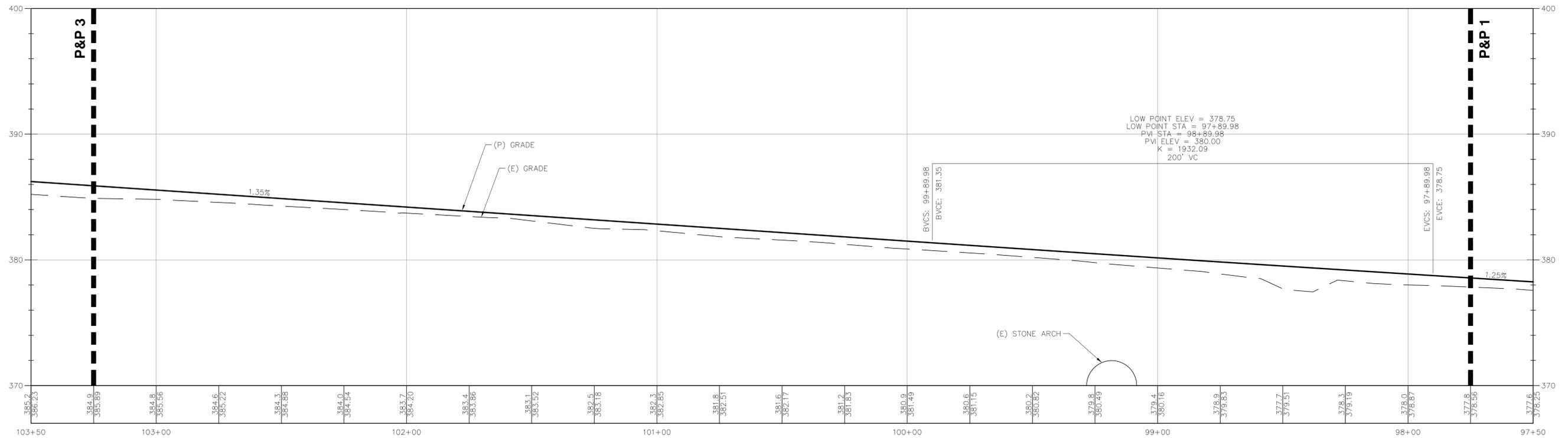
**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	24
CONTRACT NO.		75-15	

**RAIL TRAIL EXTENSION
PLAN & PROFILE 2**



PLAN
RAIL TRAIL STATION 97+50 TO 103+50

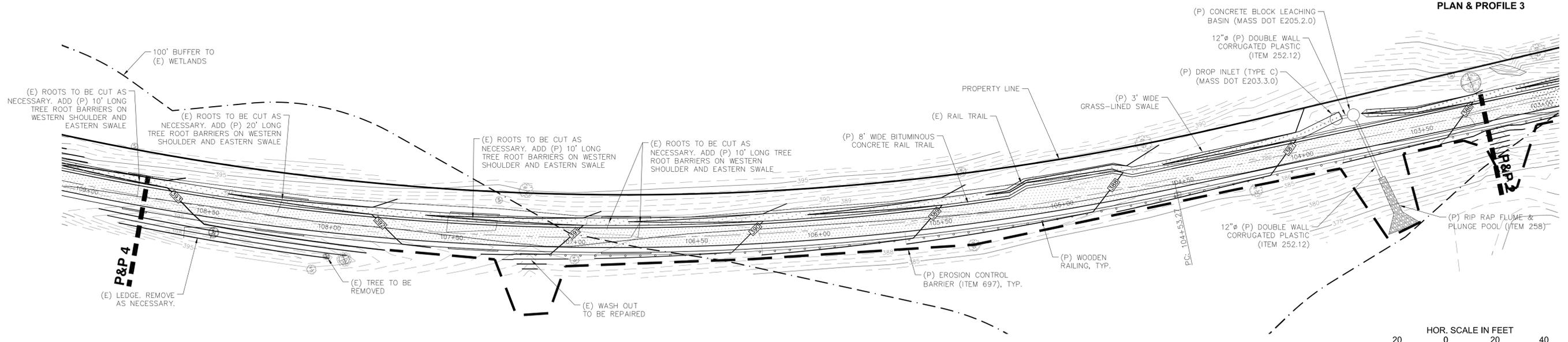


CENTERLINE PROFILE
RAIL TRAIL STATION 97+50 TO 103+50

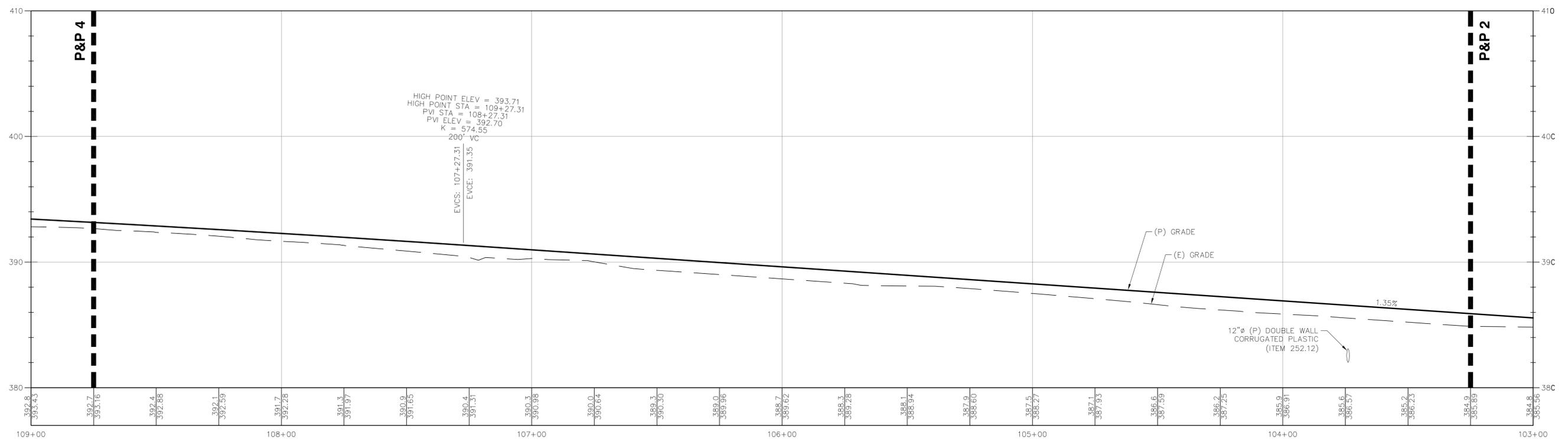
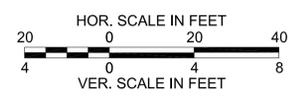
**CITY OF NORTHAMPTON
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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	24
CONTRACT NO.		75-15	

**RAIL TRAIL EXTENSION
PLAN & PROFILE 3**



PLAN
RAIL TRAIL STATION 103+00 TO 109+00

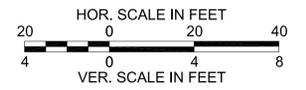
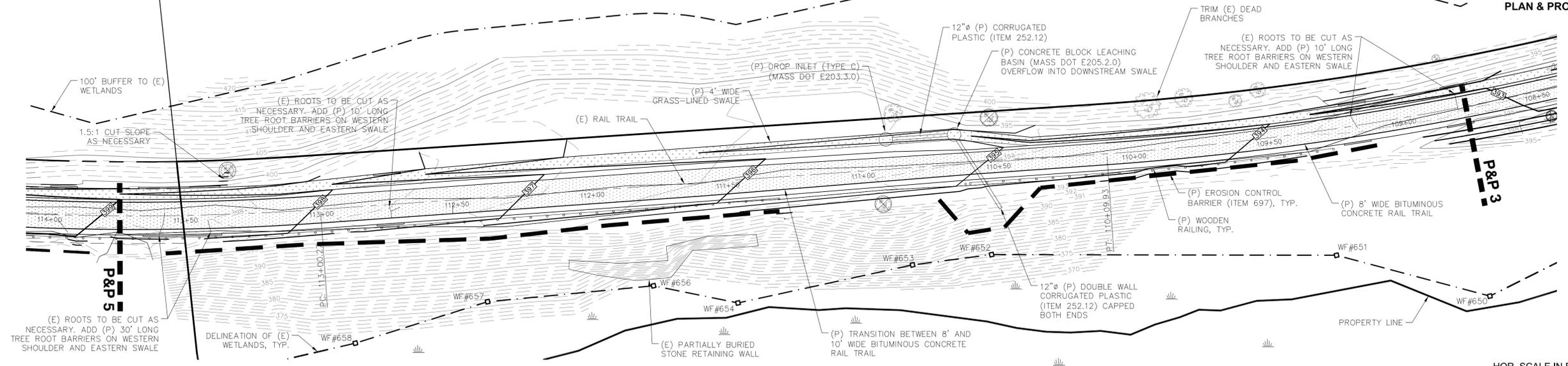


CENTERLINE PROFILE
RAIL TRAIL STATION 103+00 TO 109+00

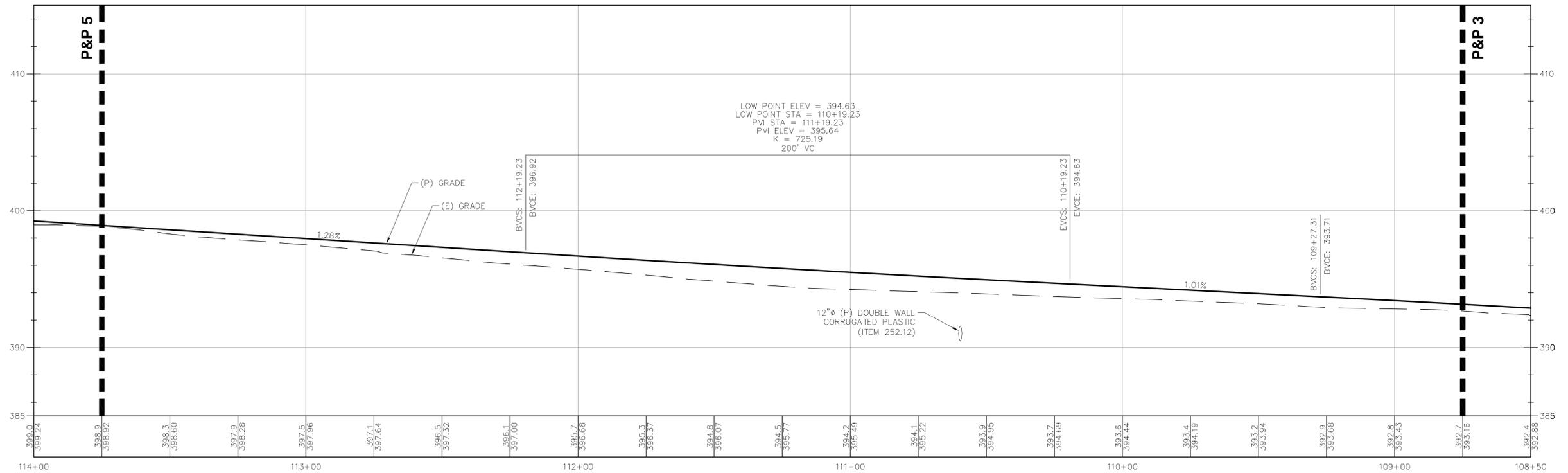
**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	24
CONTRACT NO.		75-15	

**RAIL TRAIL EXTENSION
PLAN & PROFILE 4**



PLAN
RAIL TRAIL STATION 108+50 TO 114+00

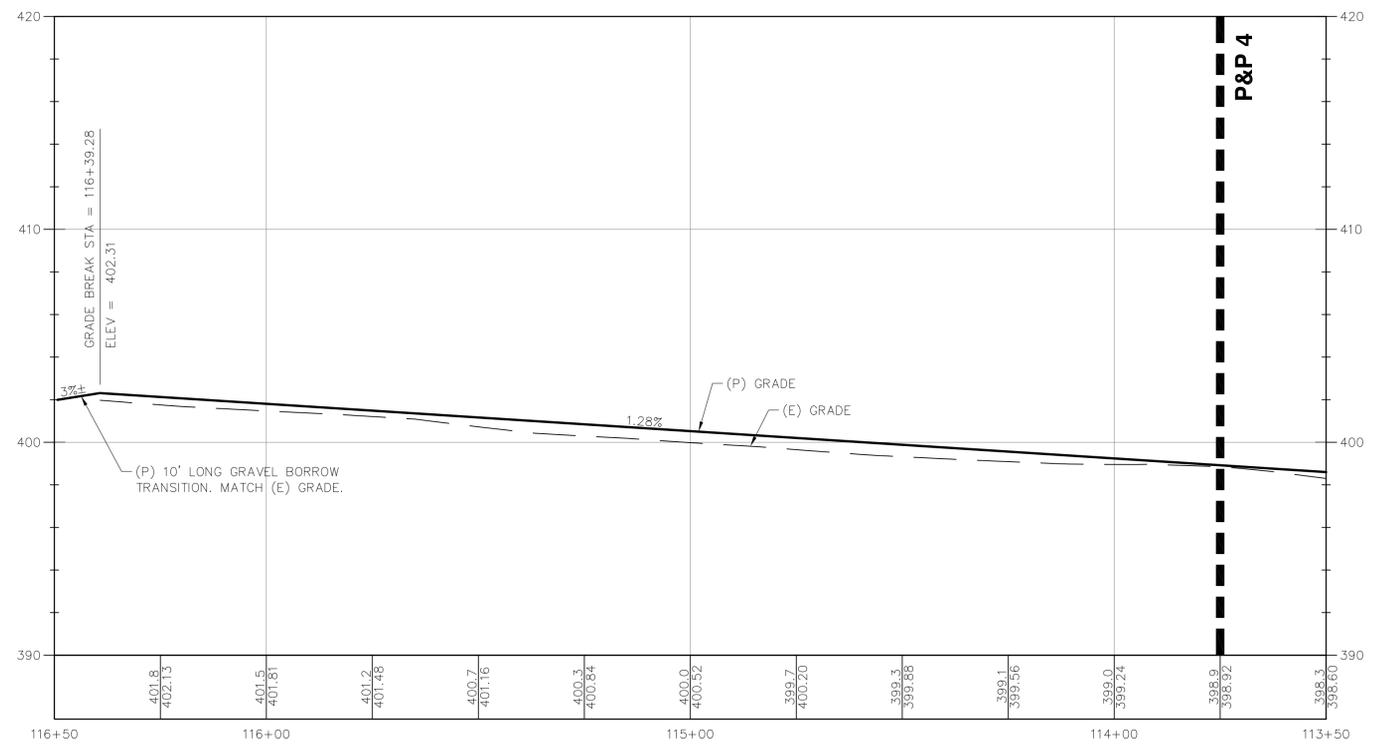
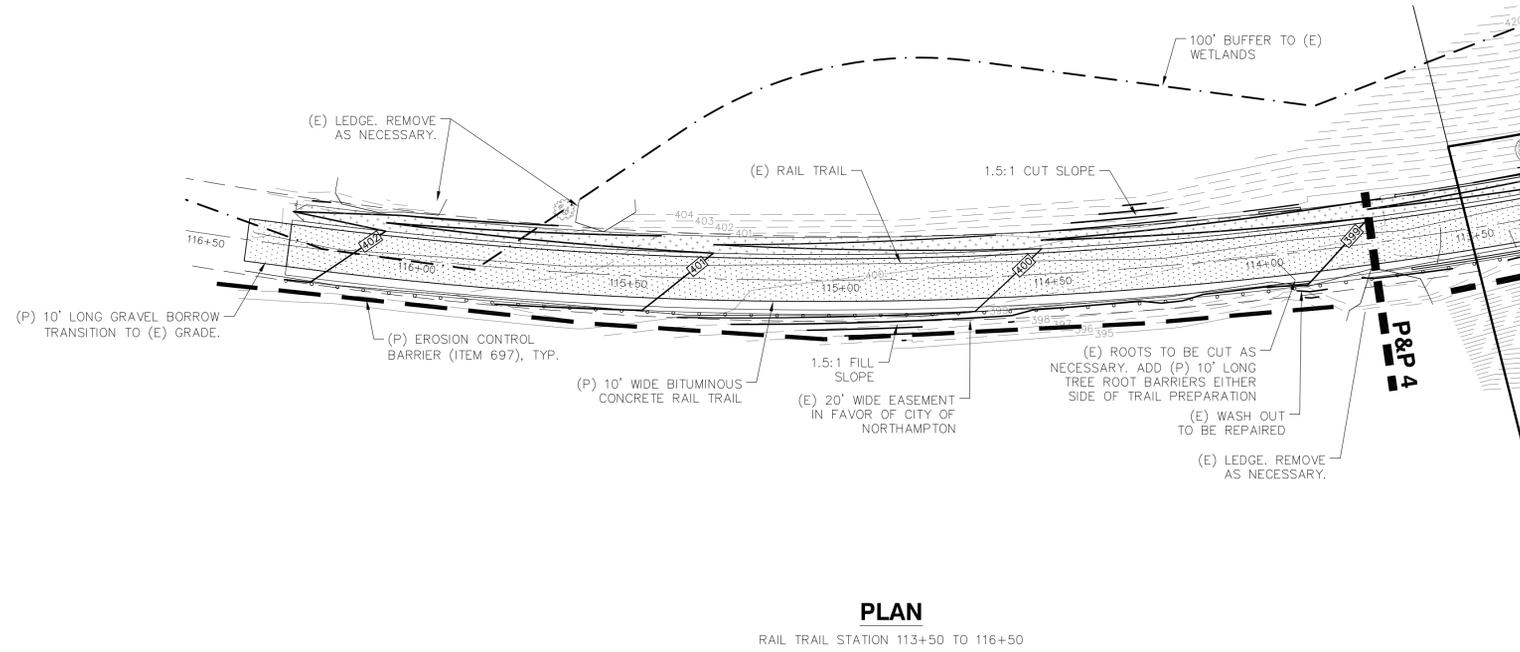


CENTERLINE PROFILE
RAIL TRAIL STATION 108+50 TO 114+00

**CITY OF NORTHAMPTON
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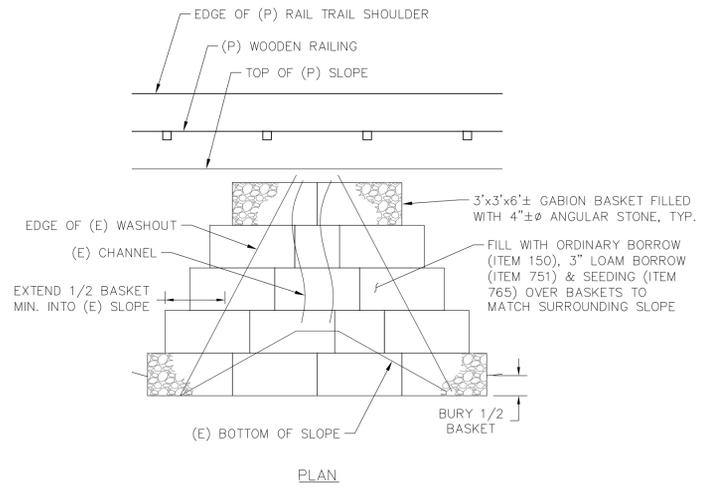
**RAIL TRAIL EXTENSION
PLAN & PROFILE 5**



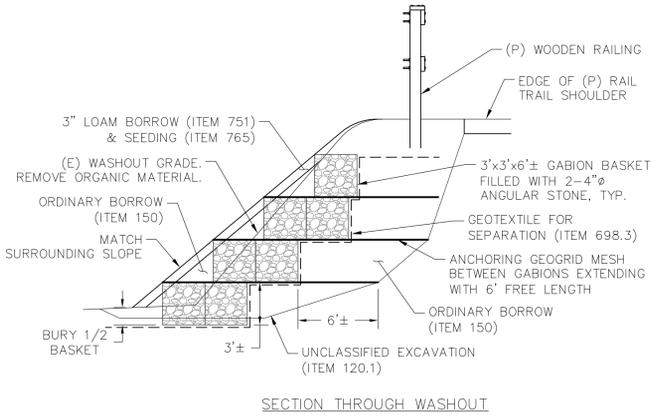
**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	24
CONTRACT NO.		75-15	

CONSTRUCTION DETAILS 1

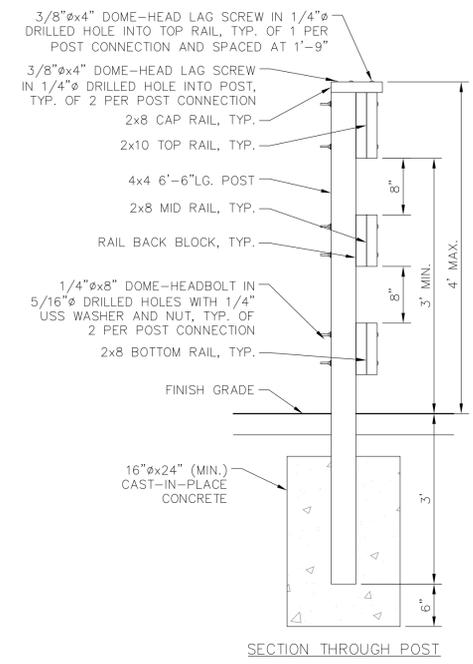


PLAN

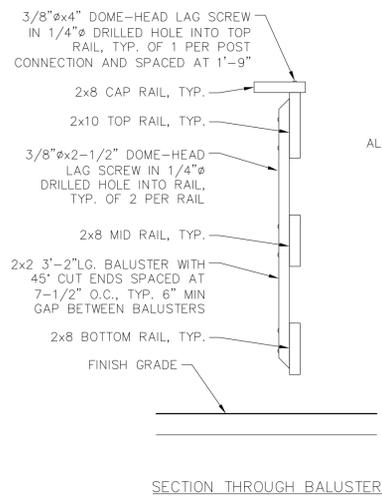


SECTION THROUGH WASHOUT

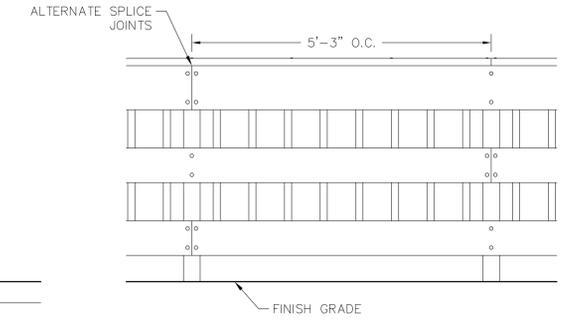
WASHOUT REPAIR



SECTION THROUGH POST



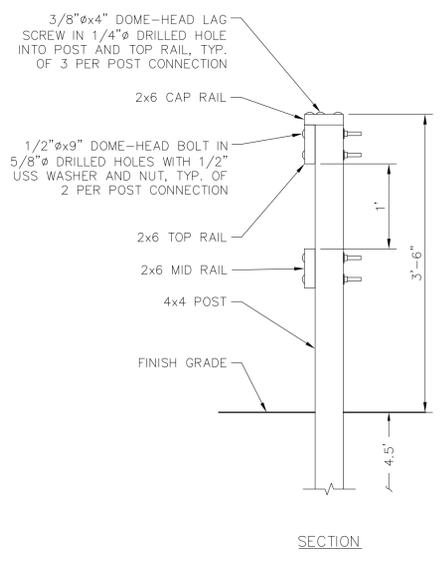
SECTION THROUGH BALUSTER



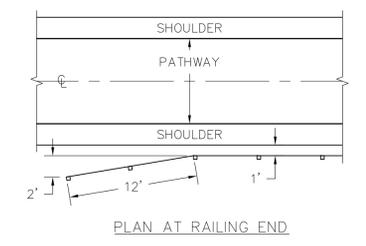
PROFILE

- NOTES:
1. ALL WOOD TO BE PRESSURE TREATED, SELECT PINE GRADE 'B' OR BETTER
 2. ALL HARDWARE TO BE GALVANIZED
 3. MAINTAIN MINIMUM EDGE DISTANCE OF 1" ON ALL DRILLED HOLES
 4. SAND AND PREP TOP, BOTTOM, AND INSIDE FACE OF ALL RAIL
 5. CONSTRUCT A 20' LONG MOCKUP OF EACH TYPE OF RAILING FOR APPROVAL BY THE CITY AND ENGINEER PRIOR TO THE CONSTRUCTION OF THE FULL RAILING.

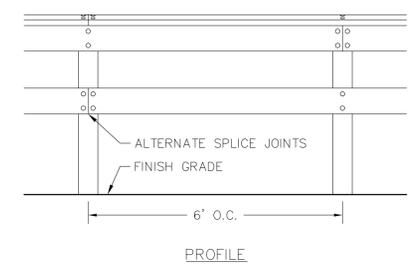
TYPICAL WOODEN BRIDGE RAILING



SECTION



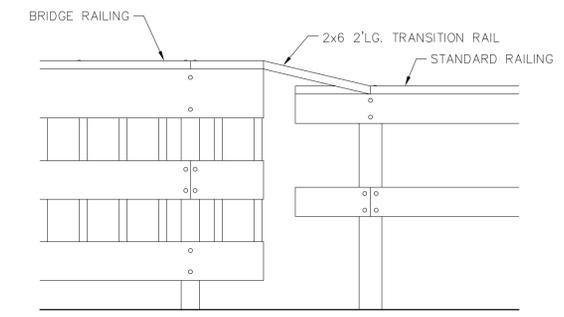
PLAN AT RAILING END



PROFILE

- NOTES:
1. ALL WOOD TO BE PRESSURE TREATED, SELECT PINE GRADE 'B' OR BETTER
 2. ALL HARDWARE TO BE GALVANIZED
 3. MAINTAIN MINIMUM EDGE DISTANCE OF 1" ON ALL DRILLED HOLES
 4. SAND AND PREP TOP, BOTTOM, AND INSIDE FACE OF ALL RAIL
 5. CONSTRUCT A 20' LONG MOCKUP OF EACH TYPE OF RAILING FOR APPROVAL BY THE CITY AND ENGINEER PRIOR TO THE CONSTRUCTION OF THE FULL RAILING.

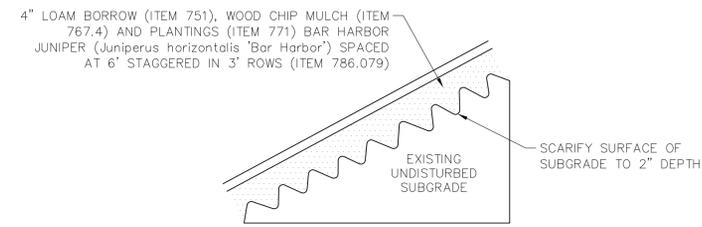
STANDARD WOODEN RAILING



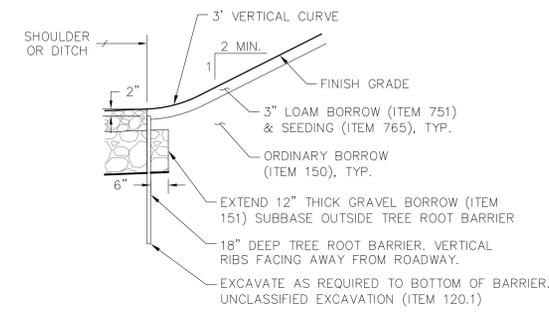
BRIDGE RAILING TO STANDARD RAILING TRANSITION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	24
CONTRACT NO.		75-15	

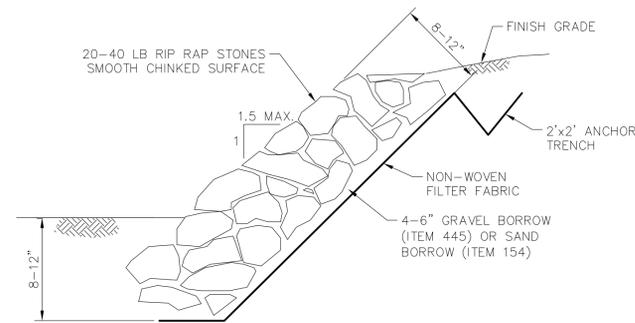
CONSTRUCTION DETAILS 2



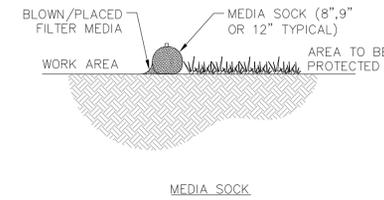
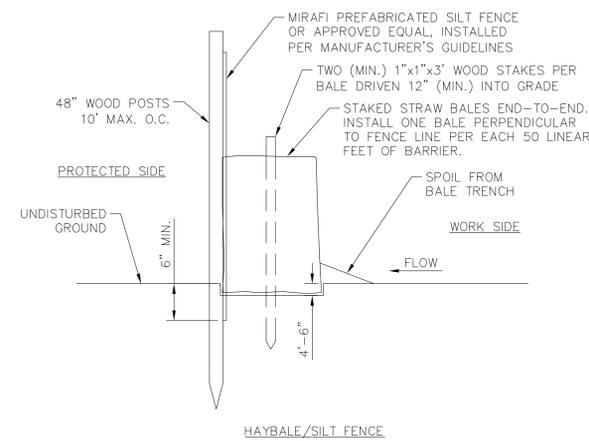
VEGETATED SLOPE PROTECTION



TREE ROOT BARRIER

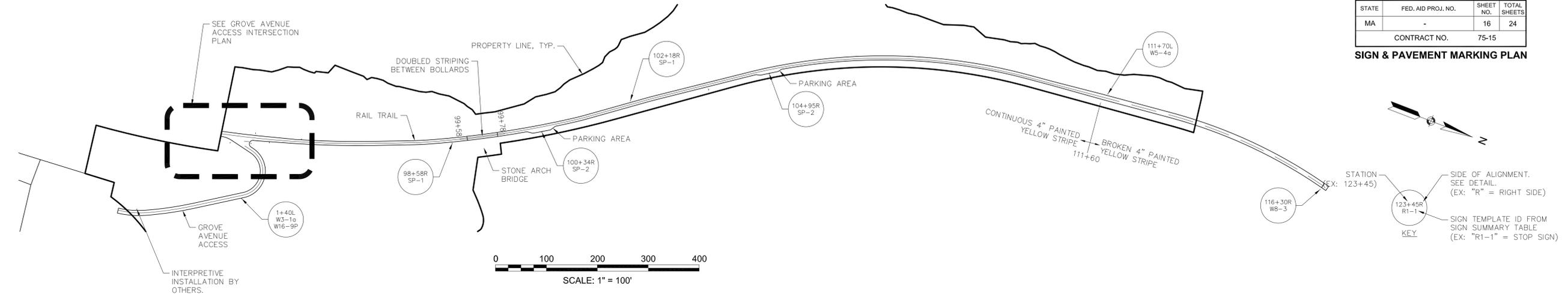


DECORATIVE STONE SLOPE TREATMENT



- NOTES:
- HAYBALES FOR EROSION CONTROL (ITEM 767)
 - USE MEDIA SOCK WHERE CONDITIONS DO NOT ALLOW STAKES TO BE DRIVEN.
 - STRAW BALES TO BE TIED W/BIODEGRADABLE TWINE.
 - MEDIA FILL TO MEET SPECIFICATIONS AND APPLICATION REQUIREMENTS OF MANUFACTURER.
 - MEDIA SOCK MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

EROSION CONTROL BARRIER

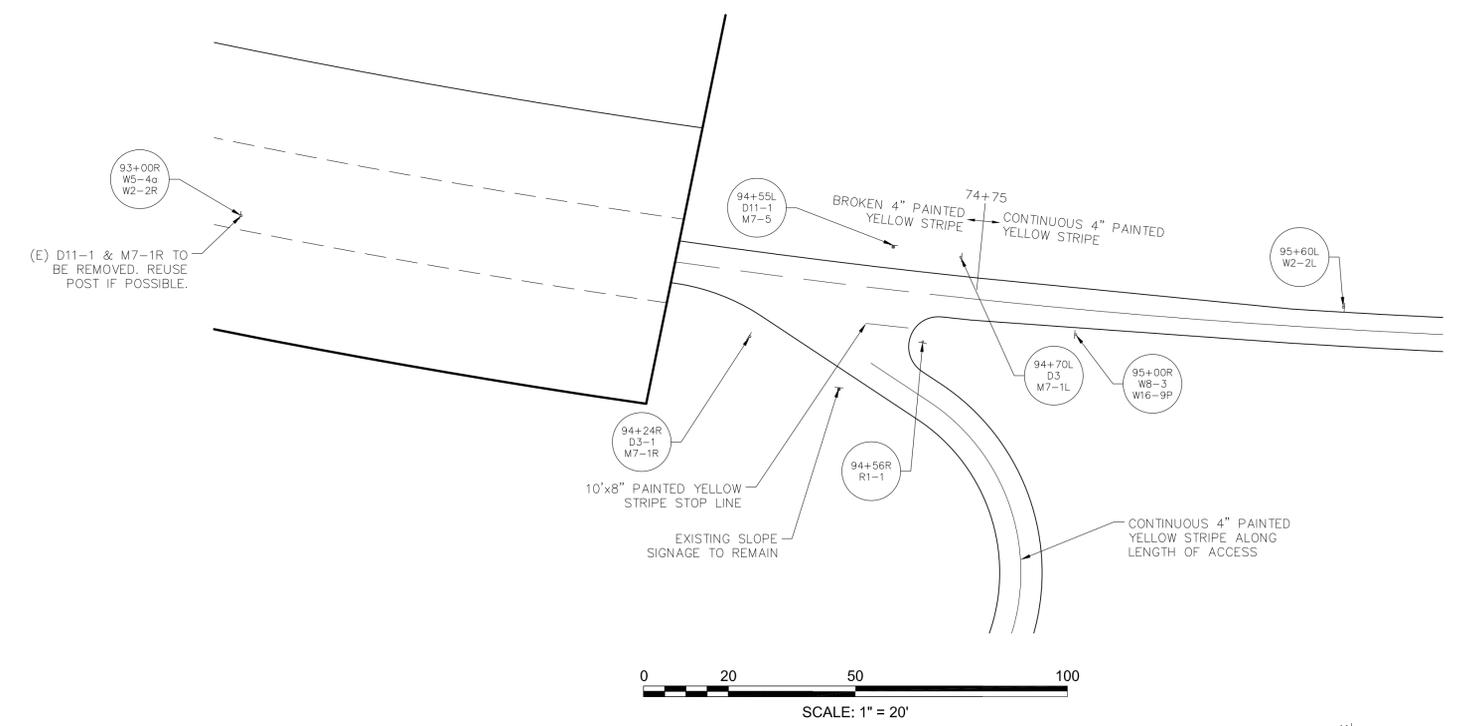


SIGNAGE OVERVIEW

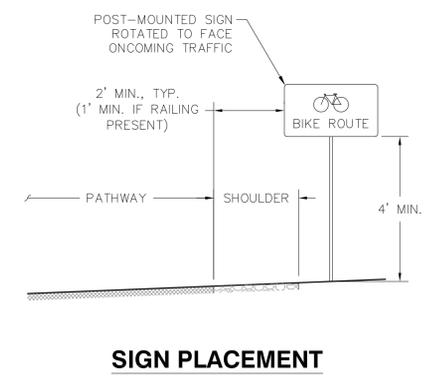
ID	SIGN DIMENSIONS		TEXT	TEXT DIMENSIONS			SIGN QUANTITY REQUIRED	COLOR			POST SIZE & QUANTITY	SIGN AREA	TOTAL AREA
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW		BACK-GROUND	LEGEND	BORDER			
R1-1	18"	18"	STOP	PER 1	2009	MUTCD	1	PER	2009	MUTCD	P-5 1	1.86 SF	1.86 SF
D3	24"	8"	GROVE ST	6" & 4"			2				P-5 2	2.00 SF	4.00 SF
D11-1	24"	18"	BIKE ROUTE				1				P-5 1	3.00 SF	3.00 SF
W16-9P	24"	12"	AHEAD				1	Y/G (RETRO)	BLACK	BLACK	WITH W8-3	2.00 SF	2.00 SF
M7-1R	12"	9"	→				1				MOUNT WITH D3-1	0.75 SF	0.75 SF
M7-1L	12"	9"	←				1				MOUNT WITH D3-1	0.75 SF	0.75 SF
M7-5	12"	9"	↔				1				MOUNT WITH W11-1	0.75 SF	0.75 SF
W2-2R	18"	18"	↘				1				WITH W5-4a	2.25 SF	2.25 SF
W2-2L	18"	18"	↙				1				P-5 1	2.25 SF	2.25 SF
W3-1a	18"	18"	STOP AHEAD				1				P-5 1	2.25 SF	2.25 SF
W5-4a	18"	18"	PATH NARROWS				2				P-5 2	2.25 SF	4.50 SF
W8-3	18"	18"	PAVEMENT ENDS				2				P-5 2	2.25 SF	4.50 SF
SP-1	24"	12"	DO NOT PARK ON BRIDGE REST AREA AHEAD	2" C	10"	N/A	2	Y/G (RETRO)	BLACK	BLACK	P-5 2	2.00 SF	4.00 SF
SP-2	12"	18"	PARKING	3" C	N/A	N/A	2	WHITE (RETRO)	GREEN	GREEN	P-5 2	1.50 SF	3.00 SF

SIGN SUMMARY TABLE

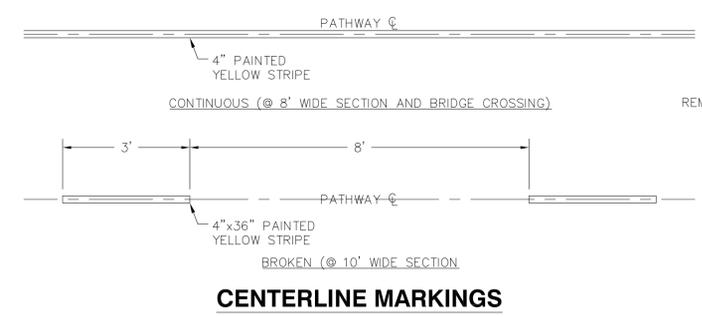
- STRIPING & SIGNAGE NOTES**
1. ANY EXISTING RAILROAD SIGNAGE WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND STACKED.
 2. SEE TRAFFIC MANAGEMENT PLAN FOR TEMPORARY CONSTRUCTION SIGNAGE
 3. SIGNAGE COMPENSATED FOR UNDER ITEM 828
 4. REFLECTORIZED PAVEMENT MARKINGS COMPENSATED UNDER ITEM 860



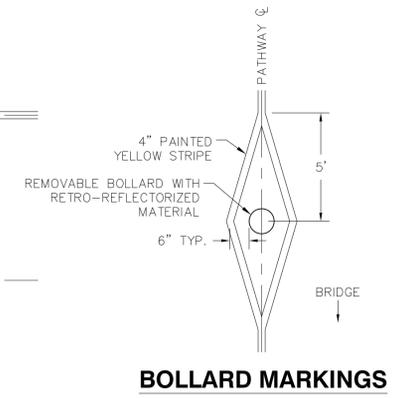
GROVE AVENUE ACCESS INTERSECTION



SIGN PLACEMENT



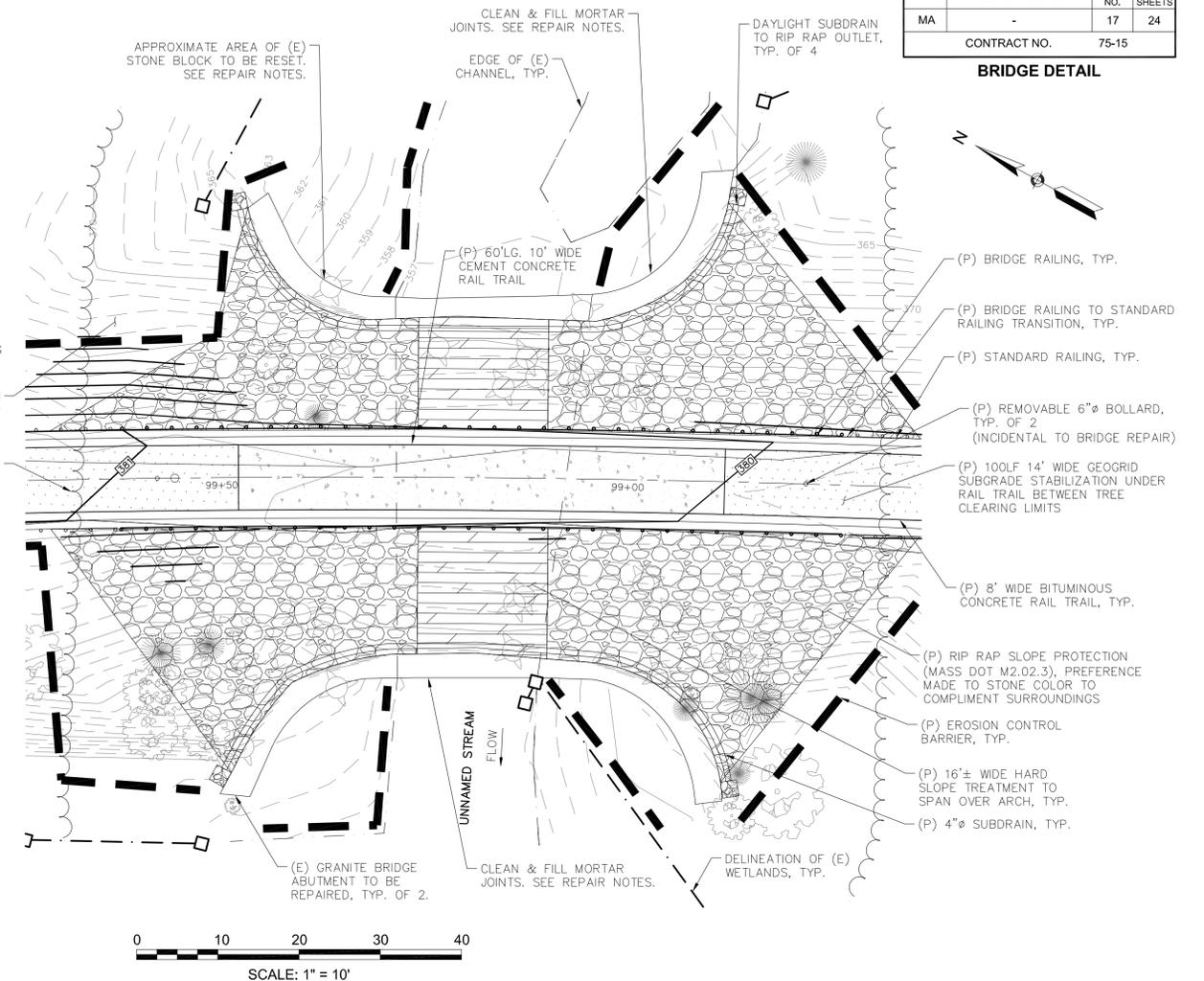
CENTERLINE MARKINGS



BOLLARD MARKINGS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	24
CONTRACT NO.		75-15	

BRIDGE DETAIL



BRIDGE PLAN

BLOCK REPAIR NOTES

BRIDGE REPAIRS ARE TO BE PERFORMED IN ACCORDANCE WITH LETTER REGARDING "LEEDS BIKE PATH BRIDGE, PROJECT #12108" PREPARED BY ROBERT LEET, PE OF WHETSTONE ENGINEERING ADDRESSED TO WAYNE FEIDEN, DIRECTOR OF PLANNING AND DEVELOPMENT, CITY OF NORTHAMPTON DATED APRIL 9, 2013.

AS NOTED IN THE ABOVE-MENTIONED LETTER, A SINGLE BLOCK ON THE NORTHEAST TOP CORNER OF THE ABUTMENT REQUIRES RESETTING. THE FOLLOWING PROCEDURE IS RECOMMENDED.

INSPECTION & DOCUMENTATION

1. BLOCK IS TO BE LOCATED BASED UPON PHOTO IN THE ABOVE-MENTIONED LETTER.
2. PHOTOGRAPHS OF THE EXISTING CONDITIONS OF THE BLOCK SHALL BE TAKEN SHOWING ALL EXPOSED FACES.

RELOCATION OF BLOCK

3. SOIL, DEBRIS, AND ROOTS ARE TO BE REMOVED FROM THE BLOCK.
4. BLOCK IS TO BE LIFTED FROM THE WALL AND STORED IN A PROTECTED AREA. LIFTING MEANS SHALL NOT DAMAGE THE BLOCK.

MORTAR REPLACEMENT

5. EXISTING MORTAR & DEBRIS IS TO BE REMOVED FROM THE FACES OF ABUTTING BLOCKS. CLEANING MEANS SHALL NOT DAMAGE THE ABUTTING BLOCKS.
6. FACES OF ABUTTING BLOCKS ARE TO BE WASHED WITH LOW-PRESSURE WATER AND ALLOWED TO DRY.
7. NON-SHRINK CEMENT-BASED MORTAR COLORED TO MATCH EXISTING MORTAR SHALL BE PREPARED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
8. MORTAR SHALL BE APPLIED TO THE FACES OF ABUTTING BLOCKS.
9. BLOCK IS TO BE RESET IN ITS ORIGINAL LOCATION.
10. EXPOSED FACE OF MORTAR SHALL BE TEXTURED TO MATCH THE EXISTING BRIDGE AS PRACTICABLE AND SHAPED TO PREVENT POOLING OF WATER.
11. MEASURES SHALL BE UNDERTAKEN TO SHIELD MORTAR FROM WEATHER TO ENSURE MANUFACTURER'S RECOMMENDED CURING TIME AND CONDITIONS.

FINAL DOCUMENTATION

12. PHOTOGRAPHS OF THE FINAL CONDITIONS OF THE BLOCK SHALL BE TAKEN SHOWING ALL EXPOSED FACES.
13. ALL PHOTOGRAPHS SHALL BE SUBMITTED TO THE ENGINEER.

MORTAR JOINT REPAIR NOTES

AREAS OF LARGE GAPS BETWEEN BLOCKS WERE IDENTIFIED WHICH REQUIRE FILLING. THE FOLLOWING PROCEDURE IS RECOMMENDED.

INSPECTION & DOCUMENTATION

1. JOINTS BETWEEN STONE BLOCKS SHALL BE INSPECTED FOR SPREADING.
2. ANY SINGLE JOINT SPREAD WIDER THAN 1/2" AND LONGER THAN 2" AND DEEPER THAN 1" SHALL BE IDENTIFIED FOR REPAIR.
3. SAID JOINTS SHALL BE MARKED WITH A TEMPORARY MARKING. MARKING SHALL BE MAINTAINED THROUGHOUT REPAIR PROCEDURE.
4. THE WIDTH, LENGTH, AND DEPTH OF SAID JOINTS SHALL BE MEASURED.
5. A LOG OF JOINT LOCATIONS WITH MEASUREMENTS AND PHOTOGRAPHS FOR EACH JOINT SHALL BE PREPARED AND SUBMITTED TO THE ENGINEER.

CLEANING

6. SELECTED JOINTS SHALL BE CLEANED INTERNALLY WITH COLD-WATER AT 40PSI OR LESS. A PRESSURE WASHER SHALL NOT BE USED.
7. CLEANING SHALL REMOVE ORGANIC MATERIAL, DIRT, MORTAR CHIPS, ETC.
8. CARE SHALL BE UNDERTAKEN NOT TO DAMAGE COMPETENT MORTAR.
9. EXCESS WATER SHALL BE REMOVED FROM EACH JOINT WITH A RAG OR COMPRESSED AIR.
10. FINAL RESULT OF CLEANING PROCEDURE SHALL BE INTERNAL SURFACES MEETING MORTAR MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION.

JOINT REPAIR

11. NON-SHRINK CEMENT-BASED MORTAR COLORED TO MATCH EXISTING MORTAR SHALL BE PREPARED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
12. JOINTS SHALL BE FILLED WITH A MORTAR BAG. HORIZONTAL JOINTS SHALL BE FILLED FROM THE DEEPEST POINT OF THE FRACTURE OUTWARD. VERTICAL JOINTS SHALL BE FILLED FROM TOP TO BOTTOM.
13. FACE OF MORTAR SHALL BE TEXTURED TO MATCH THE EXISTING BRIDGE AS PRACTICABLE AND SHAPED TO PREVENT POOLING OF WATER.
14. MEASURES SHALL BE UNDERTAKEN TO SHIELD MORTAR FROM WEATHER TO ENSURE MANUFACTURER'S RECOMMENDED CURING TIME AND CONDITIONS.
15. IN AREAS THAT COULD PREVENT TRAPPED WATER FROM EXITING, WEEPING TUBES SHALL BE ADDED AS NECESSARY TO DRAIN.

FINAL DOCUMENTATION

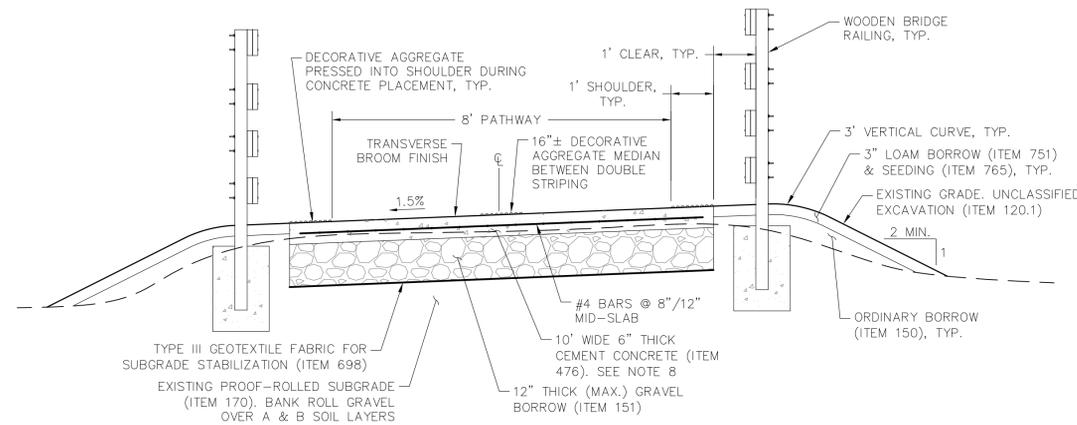
16. A FINAL PHOTOGRAPHIC LOG OF EACH JOINT SHALL BE TAKEN.
17. ALL PHOTOGRAPHS SHALL BE SUBMITTED TO THE ENGINEER.

NOTES:

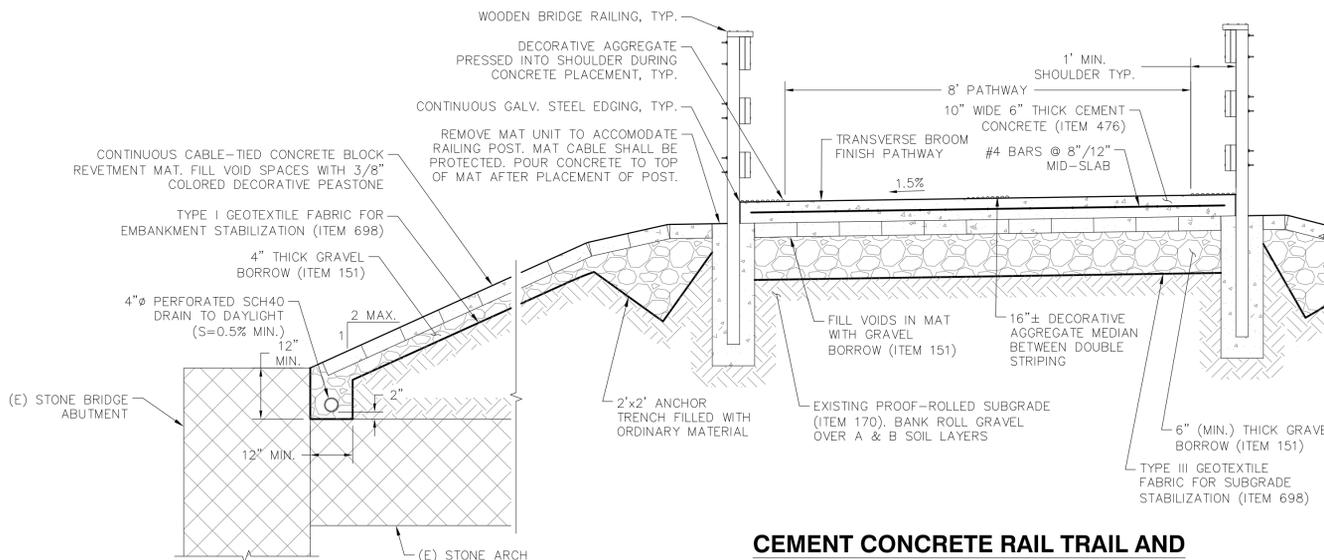
1. ALL GRANULAR MATERIALS SHALL BE COMPACTED TO 95±% MAXIMUM DRY DENSITY BY STD. PROCTOR METHOD.
2. ALL CUT AND FILL SLOPES TO BE COVERED WITH JUTE MESH EROSION CONTROL BLANKETS AND/OR HYDROSEEDED WITH NEW ENGLAND ROADSIDE MATRIX MIX AT 35LBS PER ACRE OR EQUAL.
3. CONCRETE SHALL BE 4000 PSI PORTLAND CEMENT WITH 6% AIR ENTRAINMENT AND 3/8" AGGREGATE.
4. SAW CUT 1-1/2"x1/4" TRANSVERSE CONTRACTION JOINTS SPACED AT 5' WITHIN 12 HOURS OF PLACEMENT.
5. MATERIALS EXCAVATED AS PART OF UNCLASSIFIED EXCAVATION SHALL BE USED FOR FILLING AND REGRADING SLOPES. ORDINARY BORROW MAY BE USED IF INSUFFICIENT MATERIALS FROM EXCAVATION ARE AVAILABLE.
6. IF THERE IS SUFFICIENT EXISTING CRUSHED STONE (BALLAST) FROM THE EXISTING RAILBED, THE PROPOSED 12" OF GRAVEL SUBBASE, MAY BE REDUCED TO 4" AS DIRECTED BY THE ENGINEER. GRAVEL BORROW SHALL CONFORM TO MASS DOT M1.03.0 TYPE B.
7. GEOTEXTILE REINFORCEMENT SHALL CONFORM TO MASS DOT M9.50.0 TYPE III.
8. CONCRETE SHALL BE COLORED DARK GRAY TO MATCH REVEIMENT AND (E) STONE BLOCKS.
9. SEAL CEMENT CONCRETE WITH SEALANT CONFORMING TO MASS DOT M9.15.0.

STABILIZE CLEARED AREAS WITH 2" LOAM AND SEED. COVER SEEDING AREA WITH JUTE MESH.

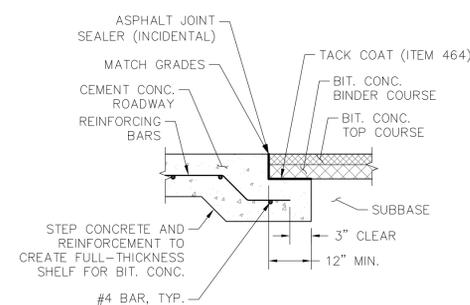
CLEAR ALL TREES, REMOVE ORGANICS, GRUB & PREPARE SURFACE WITHIN 20' OF BRIDGE ABUTMENTS. REMOVE 6" (MIN.) OF MATERIAL AND STOCKPILE FOR REUSE. REMOVE OR GRIND STUMPS IN PLACE. DO NOT CLEAR INTO WETLAND AREA. STOCKPILE TOP 6" OF SOIL FOR REUSE AS NEEDED.



CEMENT CONCRETE RAIL TRAIL



CEMENT CONCRETE RAIL TRAIL AND HARD SLOPE TREATMENT

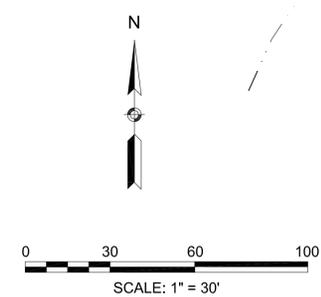
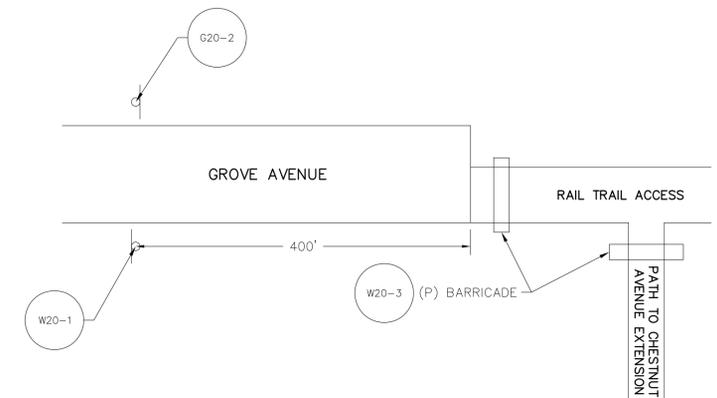
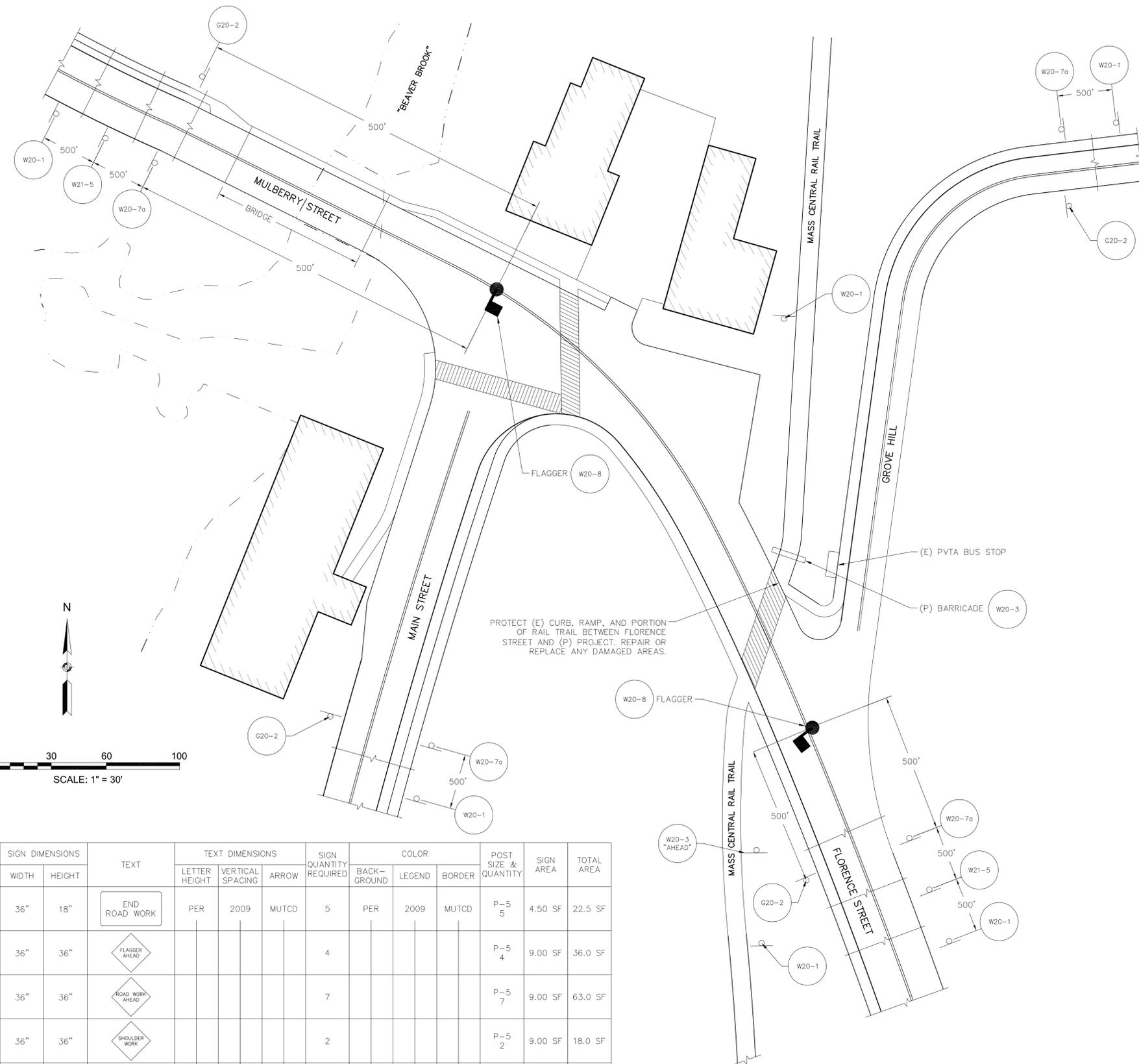


CEMENT CONCRETE TO BITUMINOUS CONCRETE TRANSITION

**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	24
CONTRACT NO.		75-15	

TRAFFIC MANAGEMENT PLAN



TRAFFIC NOTES

1. THE INTENT OF THE TRAFFIC MANAGEMENT DETAILED HEREON IS TO SUPPORT CONSTRUCTION VEHICLES TURNING ON TO AND OFF OF THE MASS CENTRAL RAIL TRAIL NORTH OF FLORENCE AND MULBERRY STREETS.
2. VEHICLE AND PEDESTRIAN TRAFFIC MAY BE BRIEFLY STOPPED ON FLORENCE AND MULBERRY STREETS DURING VEHICLE TURNING OPERATIONS. CONSTRUCTION VEHICLES SHALL NOT LOITER OR PARK WITHIN THE ROADWAY OR SHOULDER.
3. TRAFFIC SHALL BE ALLOWED TO FLOW FREELY OUTSIDE OF VEHICLE TURNING OPERATIONS.
4. BLOCKING, PARKING WITHIN, LOITERING ON, OR TURNING INTO ABUTTER DRIVEWAYS IS STRICTLY PROHIBITED.
5. SUFFICIENT TIME SHALL BE ALLOWED BETWEEN TURNING OPERATIONS FOR QUEUED TRAFFIC TO CLEAR THE AFFECTED INTERSECTIONS.
6. PVTA BUS STOP SHALL NOT BE BLOCKED AT ANY TIME.
7. ALL CONSTRUCTION SIGNING, PAVEMENT MARKINGS AND BARRICADES SHALL CONFORM TO PART VI OF THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.)
8. ALL CONSTRUCTION SIGNS WHICH ARE APPLICABLE ONLY DURING CONSTRUCTION HOURS SHALL BE COVERED DURING ALL NON-CONSTRUCTION HOURS.
9. THE CONTRACTOR SHALL NOT PARK THEIR EQUIPMENT NOR STORE MATERIAL OVERNIGHT WHERE IT IS DEEMED BY THE ENGINEER TO BE SAFETY HAZARD TO TRAFFIC.
10. THE COST OF PROVIDING AND MAINTAINING SAFE AND ADEQUATE INGRESS AND EGRESS TO AND FROM INTERSECTING HIGHWAYS, HOMES AND COMMERCIAL ESTABLISHMENTS AT ALL TIMES TO THE SATISFACTION OF THE ENGINEER SHALL BE BORNE BY THE CONTRACTOR.
11. THERE SHALL BE NO TRAFFIC STOPPAGES OR LANE CLOSURES DURING THE PEAK HOURS (7am - 9am AND 4pm - 6pm), BEFORE SUNRISE, AFTER SUNSET, OR WHEN VISIBILITY IS REDUCED TO LESS THAN 1000 FT.
12. IF ENGINEER NOTIFIES THE CONTRACTOR OR THEIR SUPERINTENDENT OF ANY HAZARDOUS CONSTRUCTION PRACTICES, ALL OPERATIONS IN THAT AREA SHALL BE DISCONTINUED & IMMEDIATE REMEDIAL ACTION SHALL BE TAKEN TO THE SATISFACTION OF THE ENGINEER BEFORE WORK IS RESUMED.
13. IN ORDER TO MAINTAIN EFFECTIVE TRAFFIC CONTROL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE, MAKING SURE ALL SIGNS, CONES, FLASHERS, DRUMS, ETC. ARE IN PLACE & IN GOOD CONDITION. THE SOLE JUDGE OF THE EFFECTIVENESS OF THE CONTRACTOR'S EFFORTS TOWARDS THE PROTECTION OF TRAFFIC & PERSONNEL SHALL BE THE ENGINEER.
14. PEDESTRIAN ACCESS SHALL BE BLOCKED FROM THE PORTION OF THE MASS CENTRAL RAIL TRAIL NORTH OF FLORENCE STREET AND THE GROVE AVENUE ACCESS WITH BARRICADES AND SIGNAGE AS SHOWN FOR THE DURATION OF CONSTRUCTION. PEDESTRIAN ACCESS TO THE MASS CENTRAL RAIL TRAIL SOUTH OF FLORENCE STREET AND THE SIDEWALKS ALONG FLORENCE STREET, MULBERRY STREET, AND GROVE HILL SHALL NOT BE IMPEDED EXCEPT DURING TURNING OPERATIONS AS NECESSARY.
15. IT IS UP TO THE CONTRACTOR TO VERIFY POLICE DETAIL AND FLAGGER REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION. ANY POLICE DETAILS AND ASSOCIATED COSTS ARE THE REQUIREMENT OF THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL.

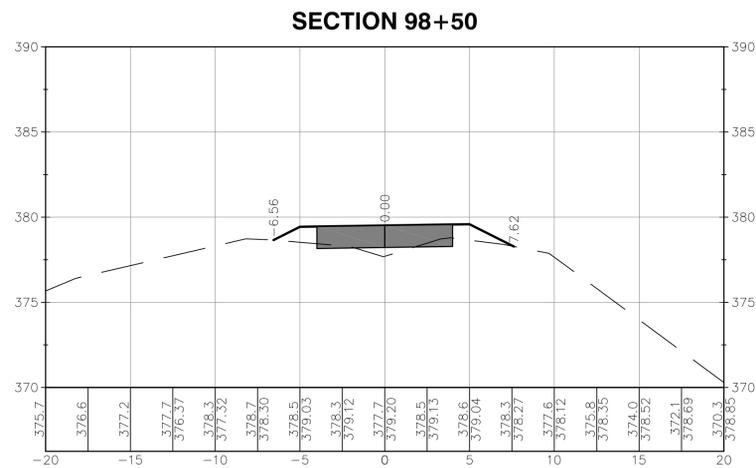
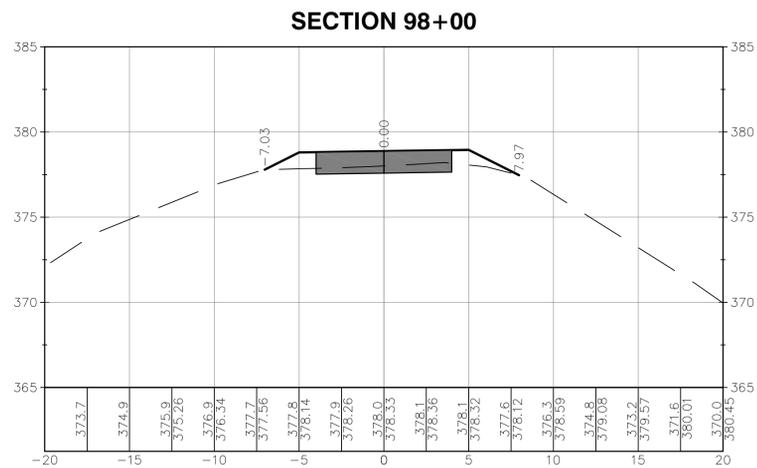
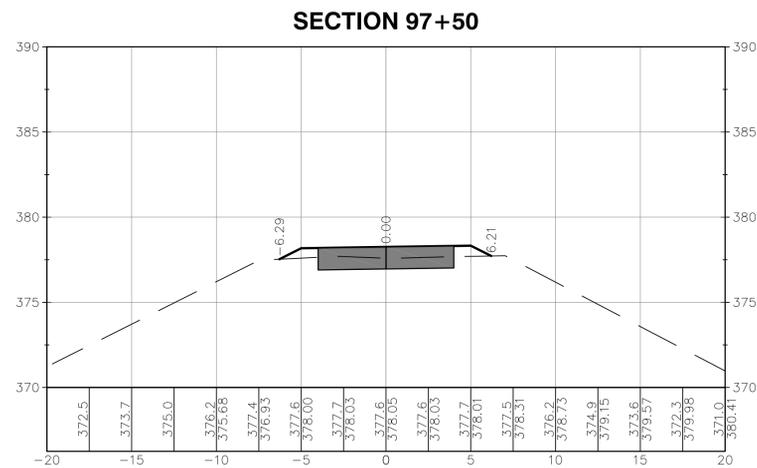
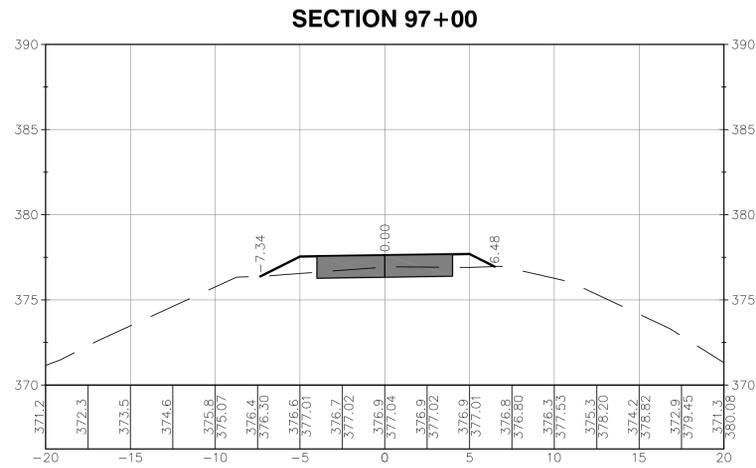
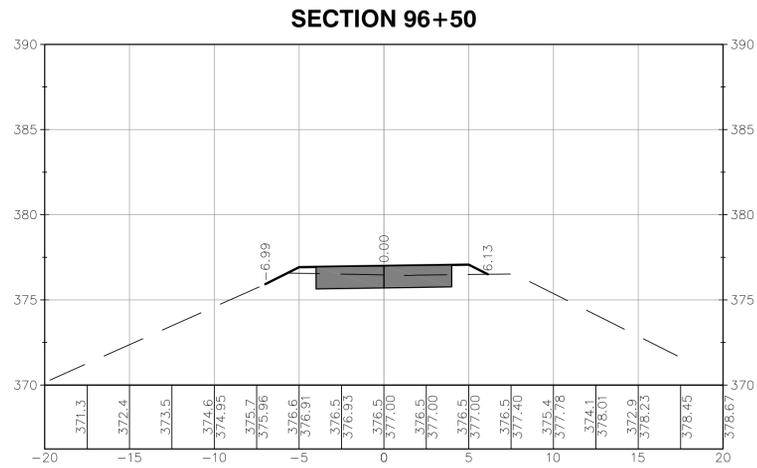
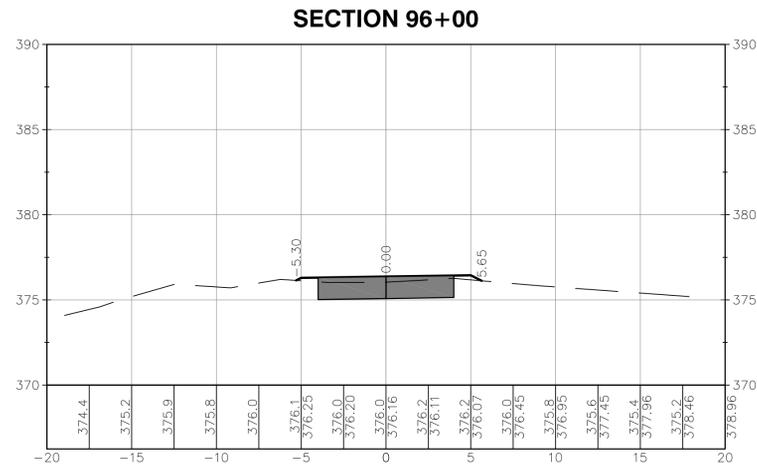
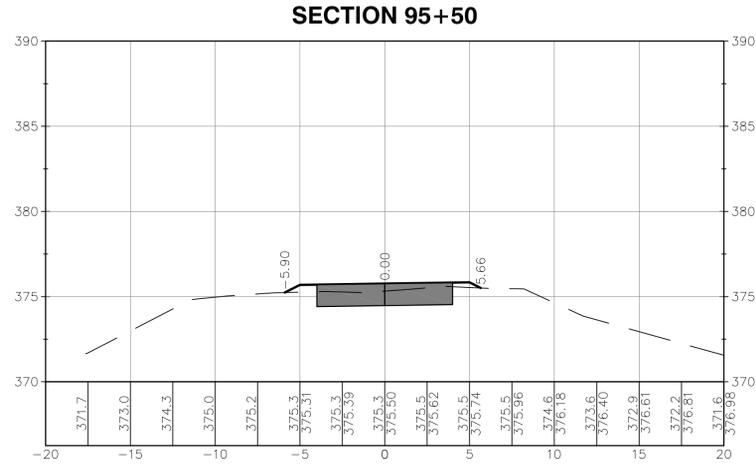
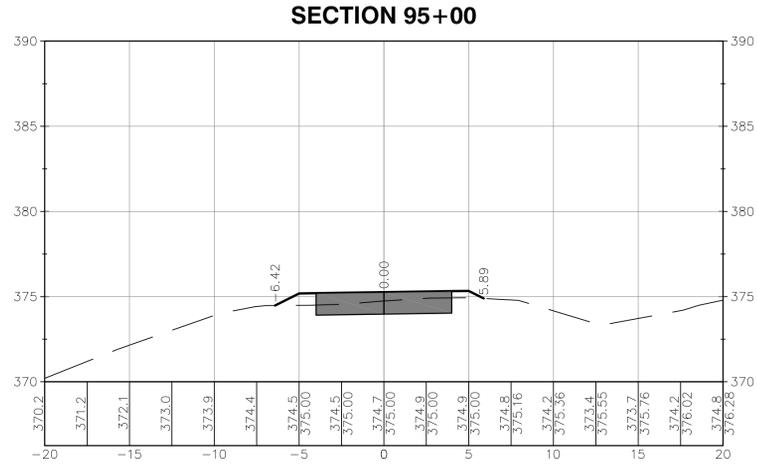
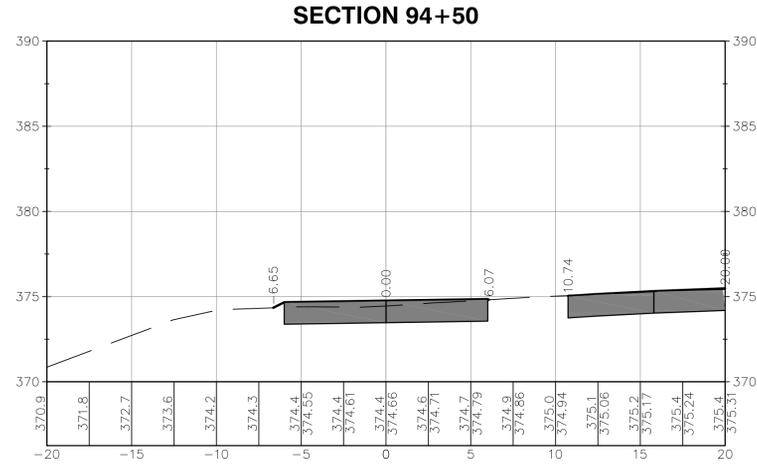
ID	SIGN DIMENSIONS		TEXT	TEXT DIMENSIONS			SIGN QUANTITY REQUIRED	COLOR			POST SIZE & QUANTITY	SIGN AREA	TOTAL AREA
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW		BACK-GROUND	LEGEND	BORDER			
G20-2	36"	18"	END ROAD WORK	PER	2009	MUTCD	5	PER	2009	MUTCD	P-5 5	4.50 SF	22.5 SF
W20-7a	36"	36"	FLAGGER AHEAD				4				P-5 4	9.00 SF	36.0 SF
W20-1	36"	36"	ROAD WORK AHEAD				7				P-5 7	9.00 SF	63.0 SF
W21-5	36"	36"	SHOULDER WORK				2				P-5 2	9.00 SF	18.0 SF
W20-3	30"	30"	ROAD CLOSED				3				ON BARRIER	6.25 SF	18.75 SF
W20-8	18"	18"	STOP SLOW				2 PAIRS				ON PADDLE	3.72 SF	7.44 SF

SIGN SUMMARY TABLE

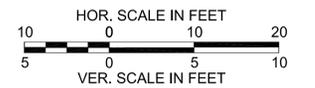
**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	24
CONTRACT NO.		75-15	

**RAIL TRAIL EXTENSION
CROSS SECTIONS 1**



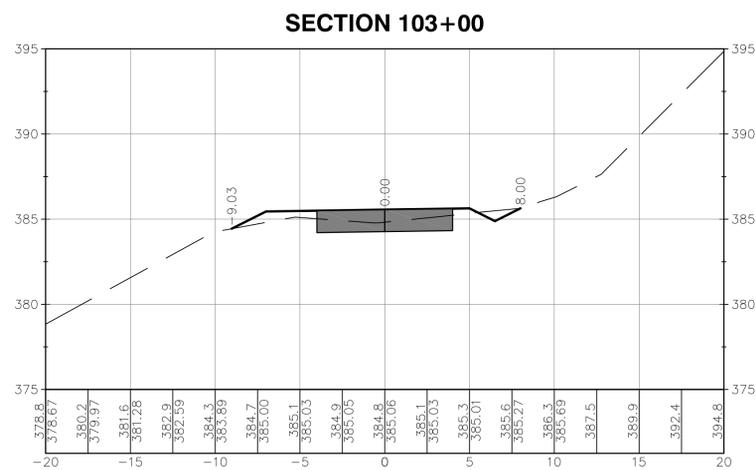
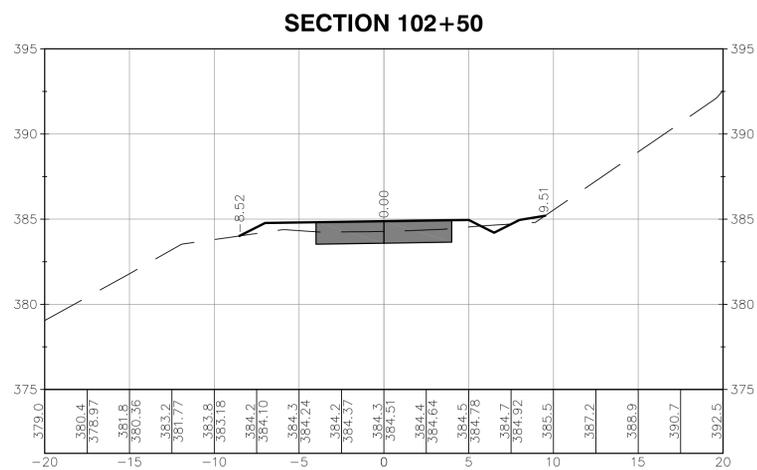
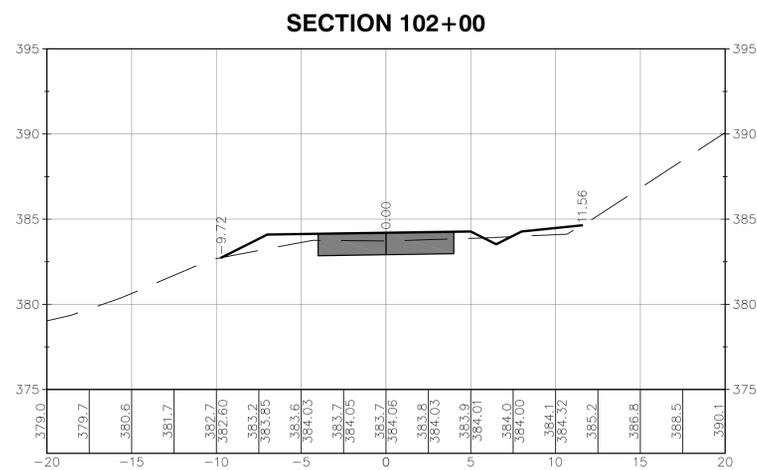
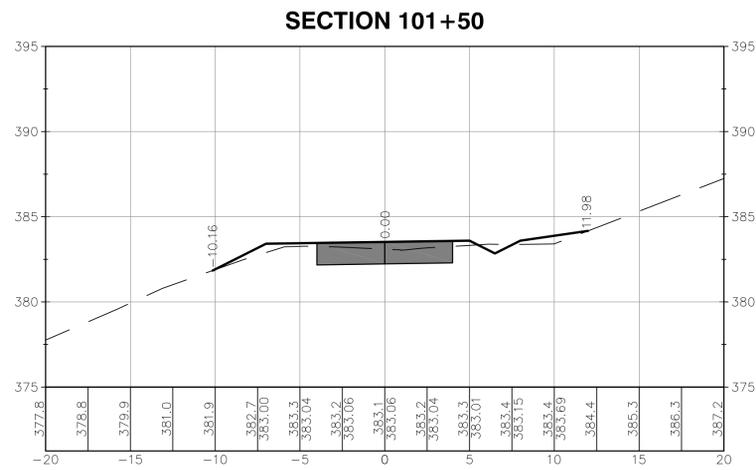
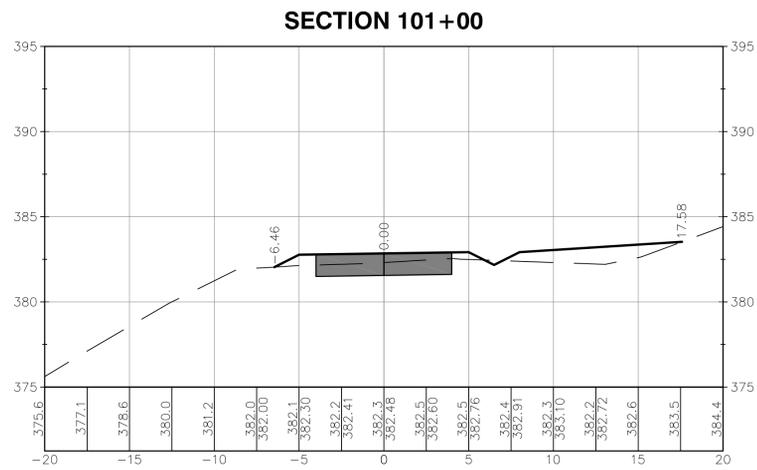
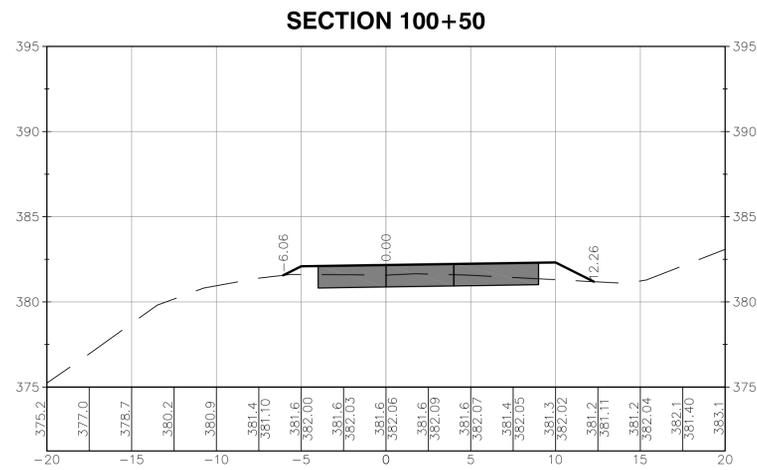
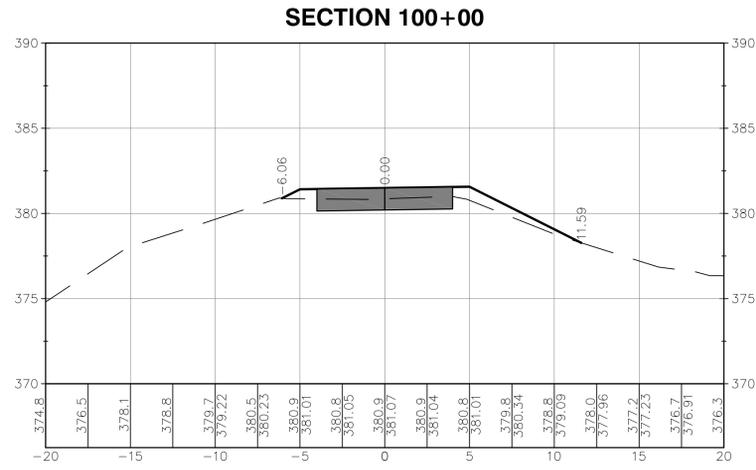
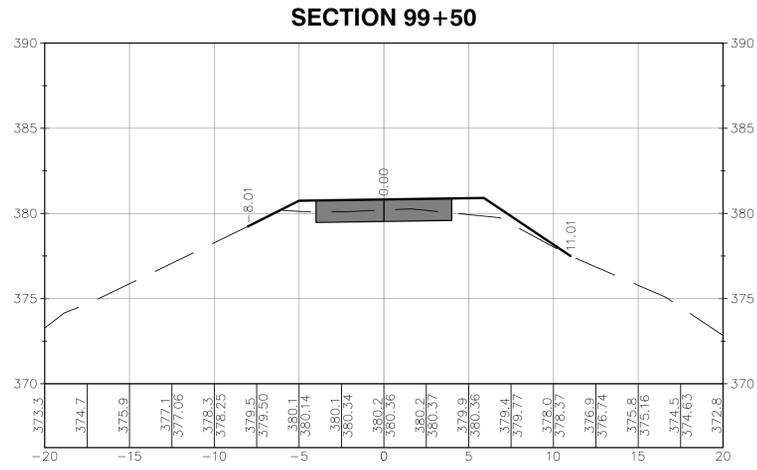
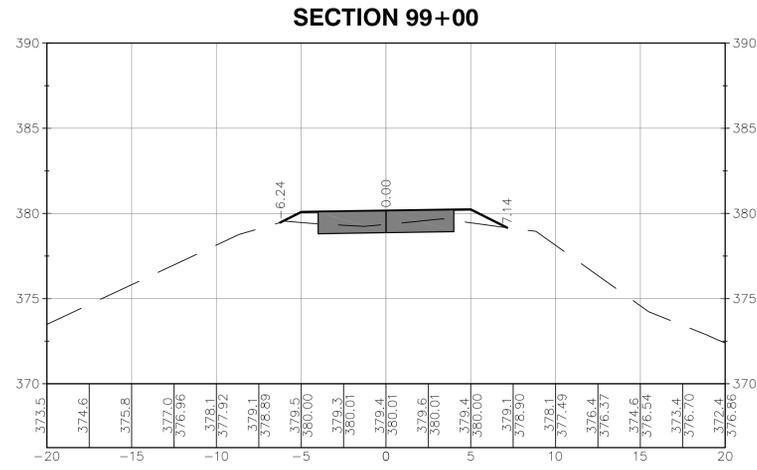
RAIL TRAIL SECTIONS



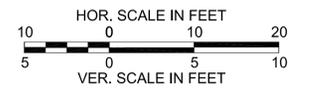
**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	24
CONTRACT NO.		75-15	

**RAIL TRAIL EXTENSION
CROSS SECTIONS 2**



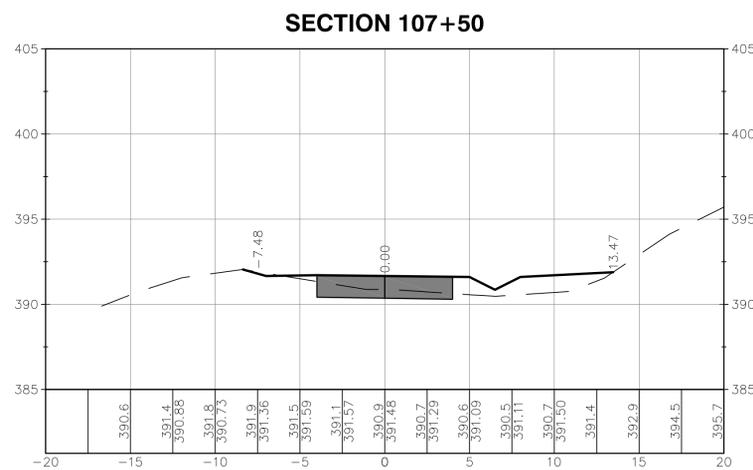
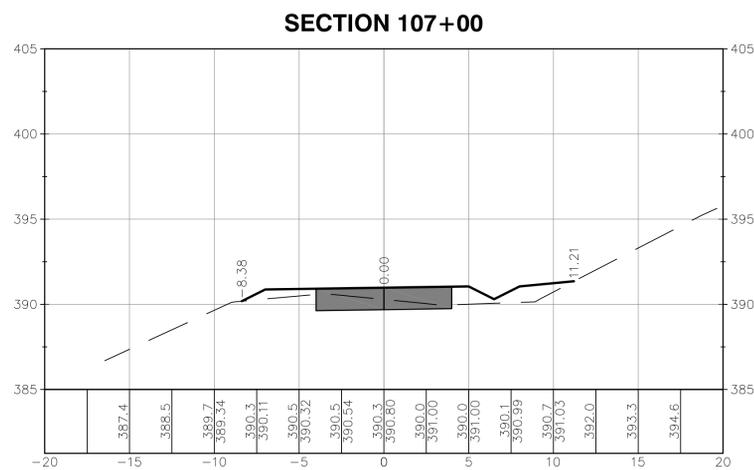
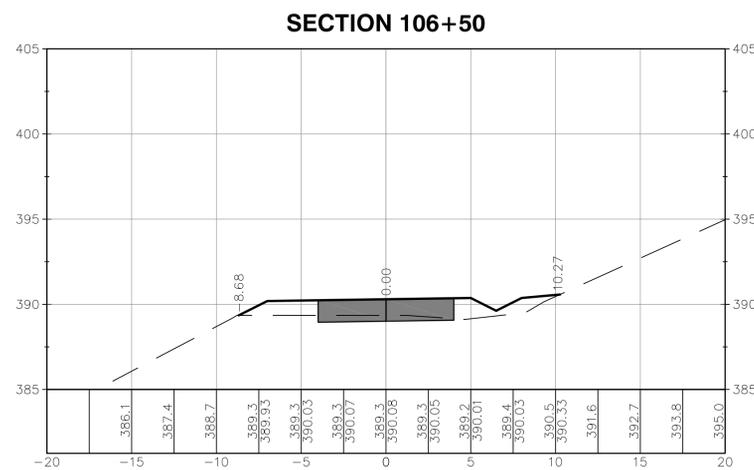
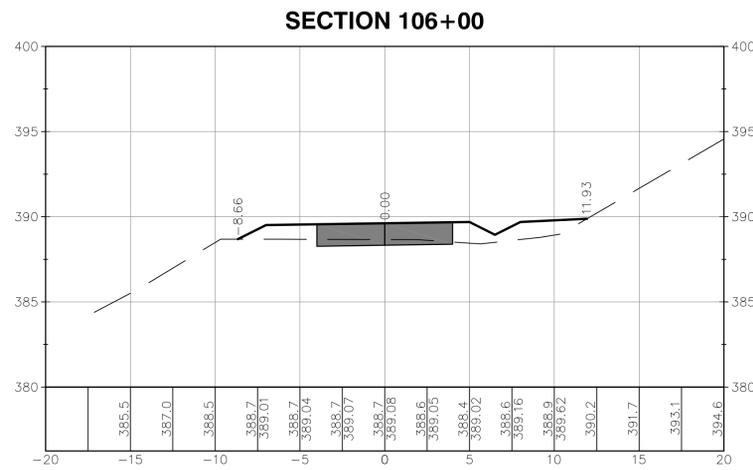
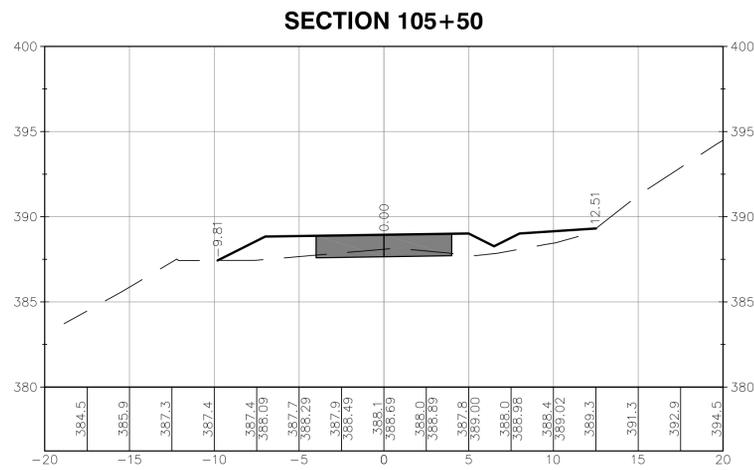
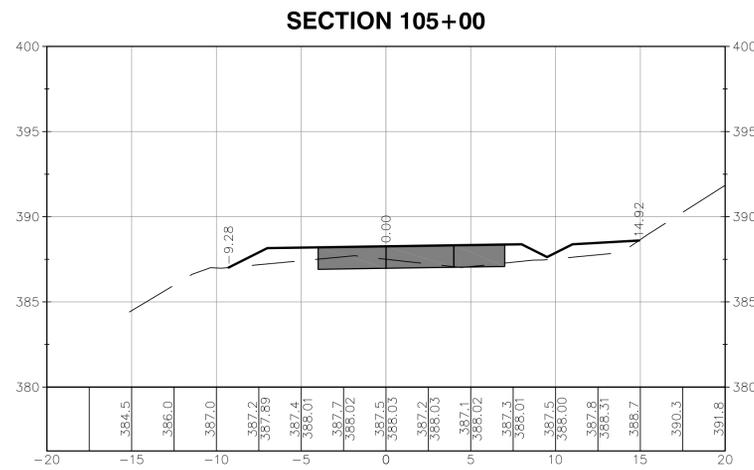
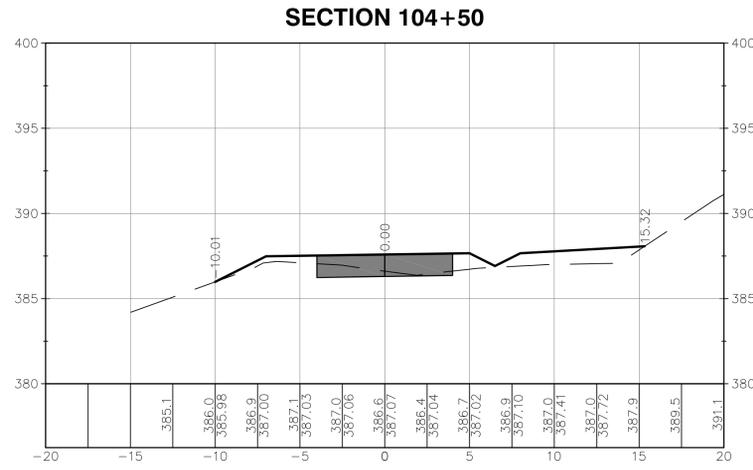
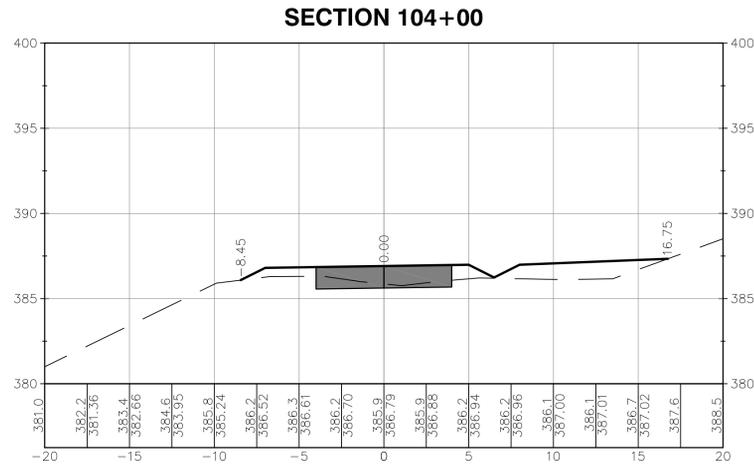
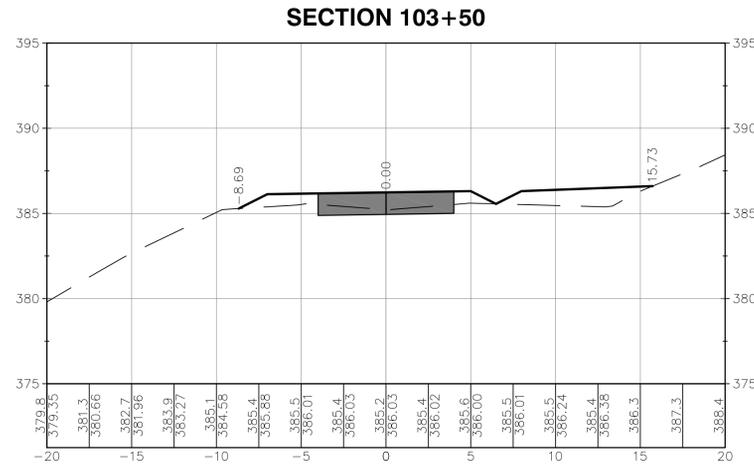
RAIL TRAIL SECTIONS



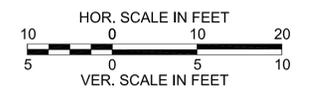
**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	24
CONTRACT NO.		75-15	

**RAIL TRAIL EXTENSION
CROSS SECTIONS 3**



RAIL TRAIL SECTIONS

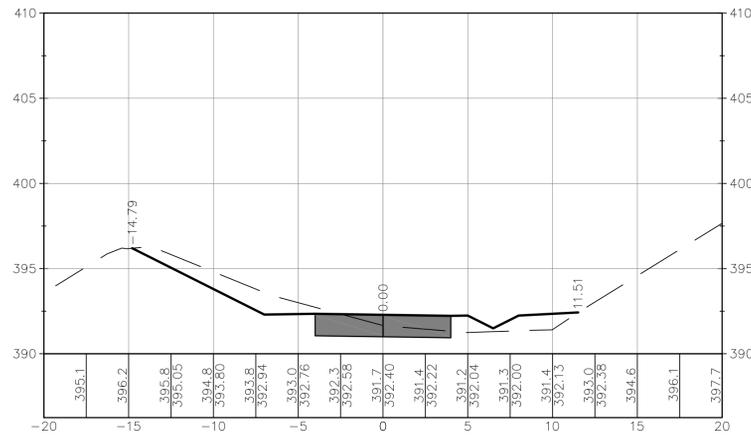


**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

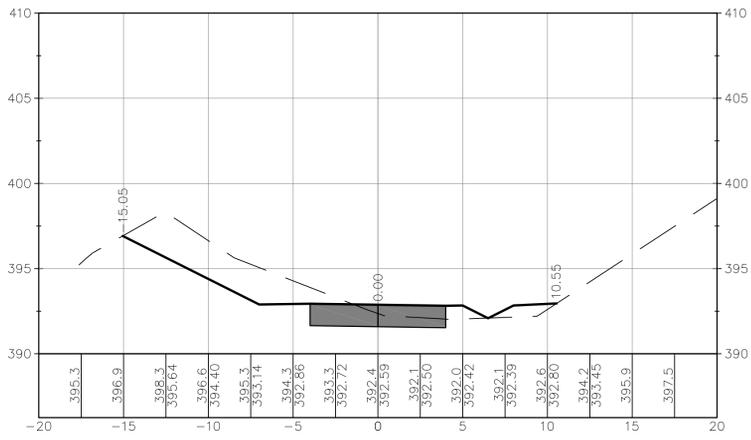
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	24
CONTRACT NO.		75-15	

**RAIL TRAIL EXTENSION
CROSS SECTIONS 4**

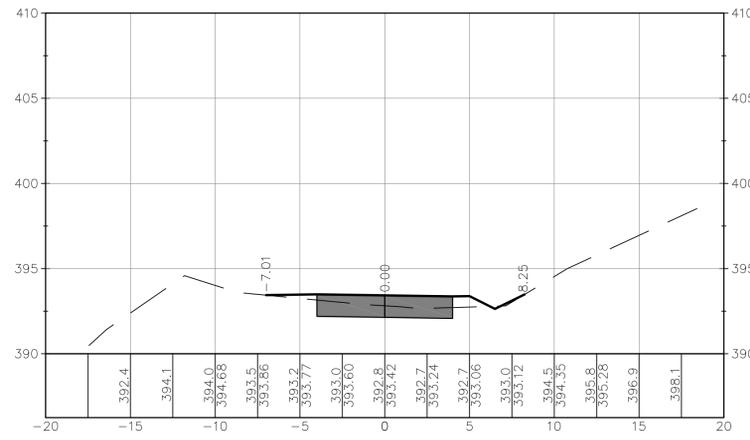
SECTION 108+00



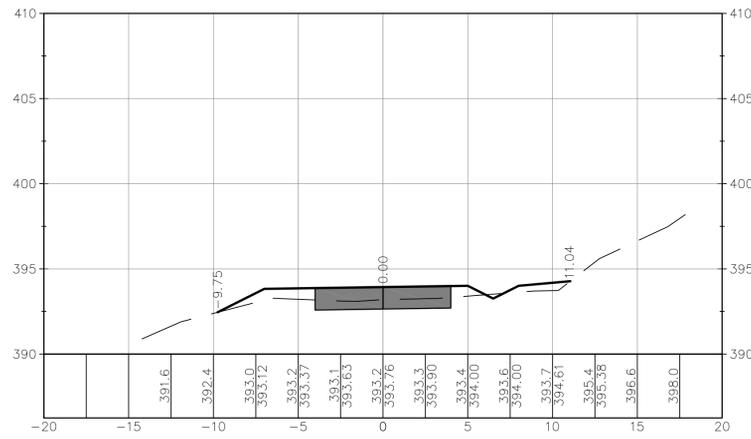
SECTION 108+50



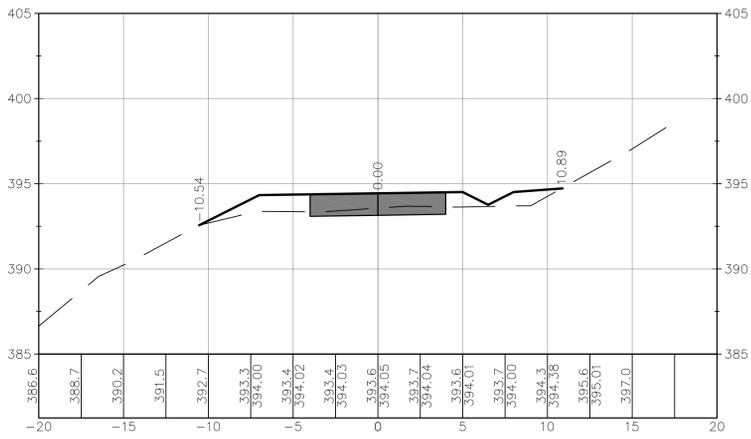
SECTION 109+00



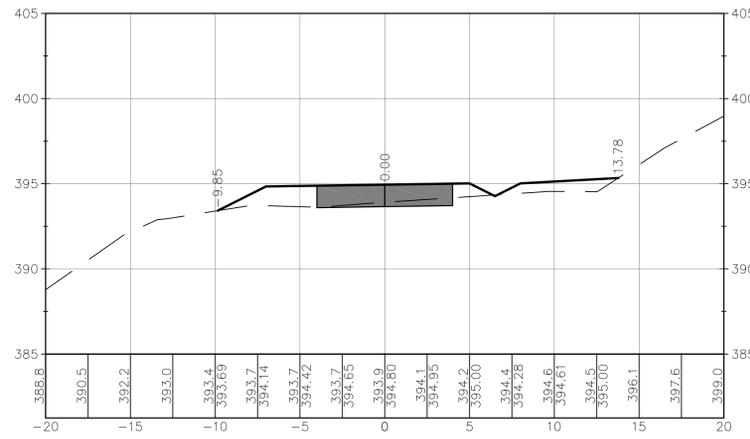
SECTION 109+50



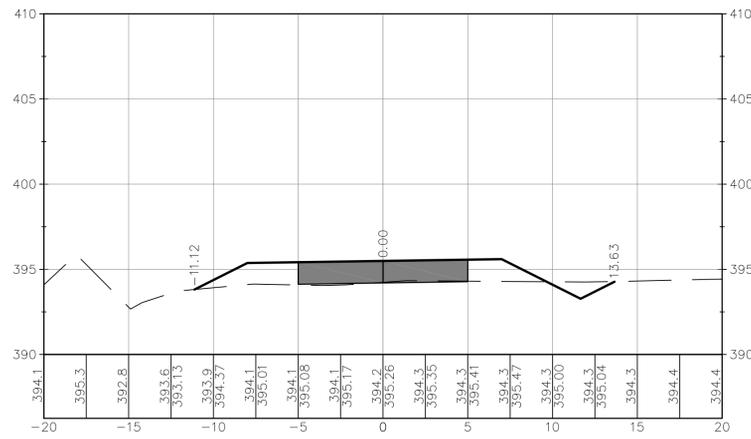
SECTION 110+00



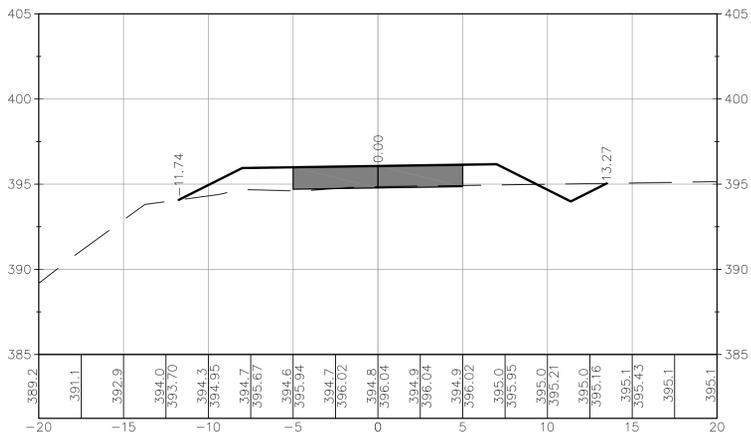
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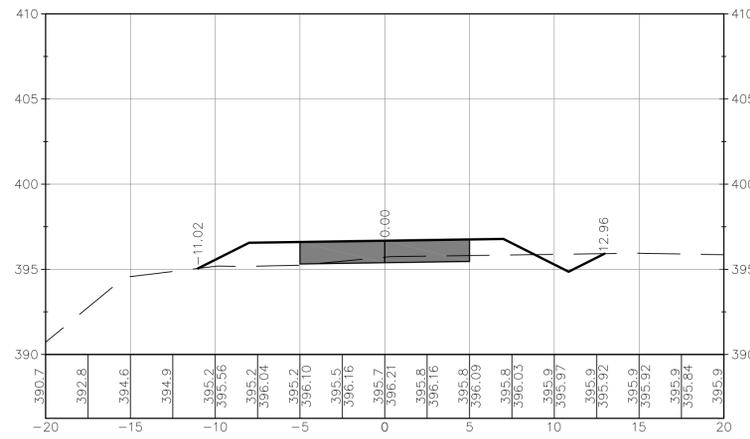
SECTION 111+00



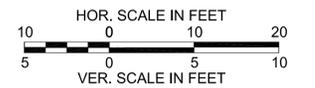
SECTION 111+50



SECTION 112+00



RAIL TRAIL SECTIONS

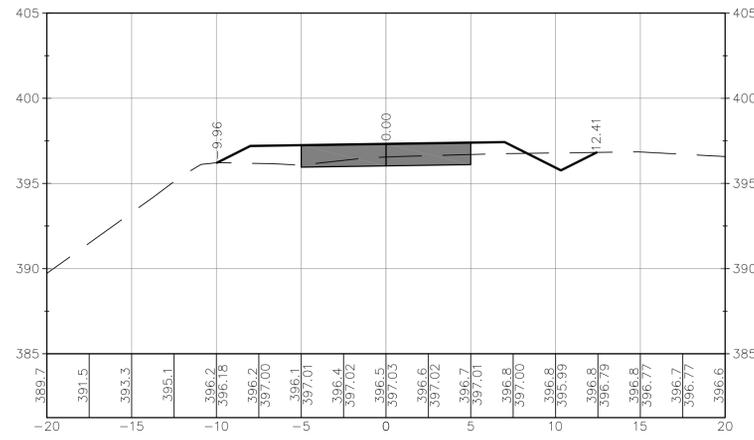


**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

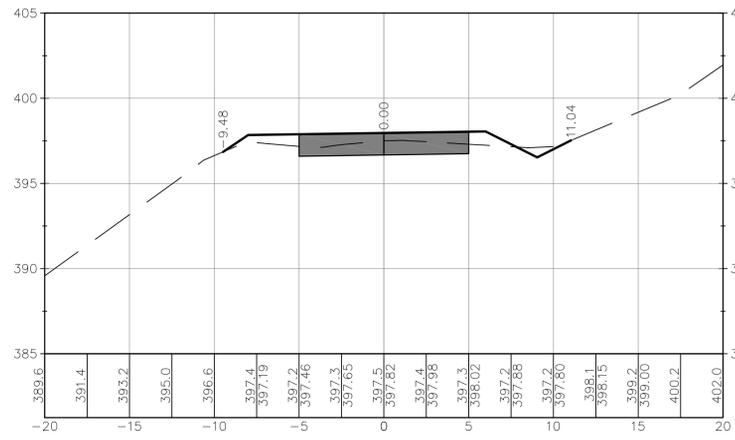
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	24
CONTRACT NO.		75-15	

**RAIL TRAIL EXTENSION
CROSS SECTIONS 5**

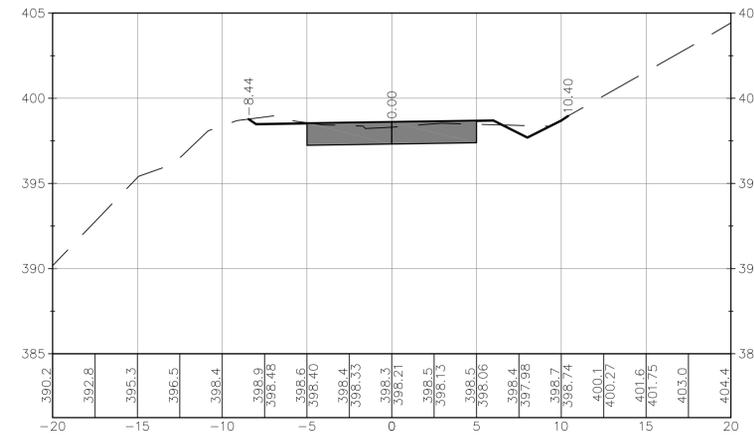
SECTION 112+50



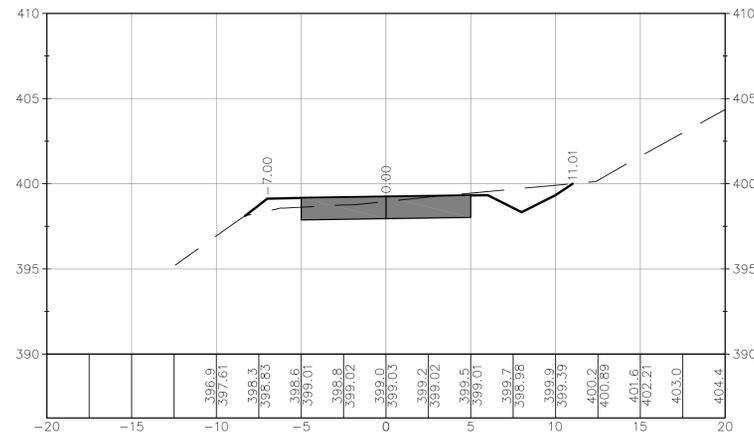
SECTION 113+00



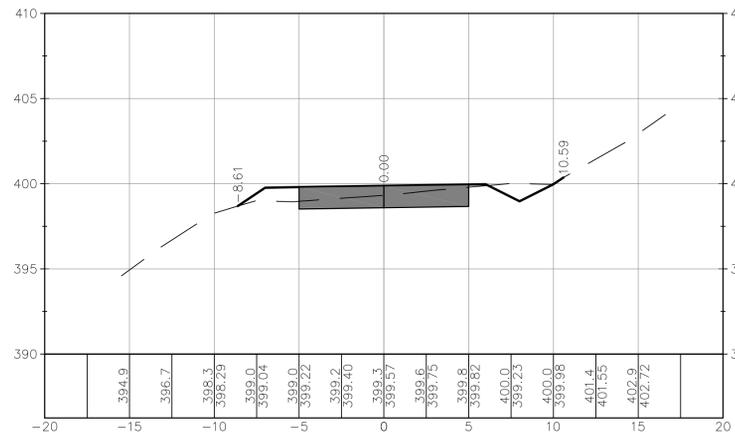
SECTION 113+50



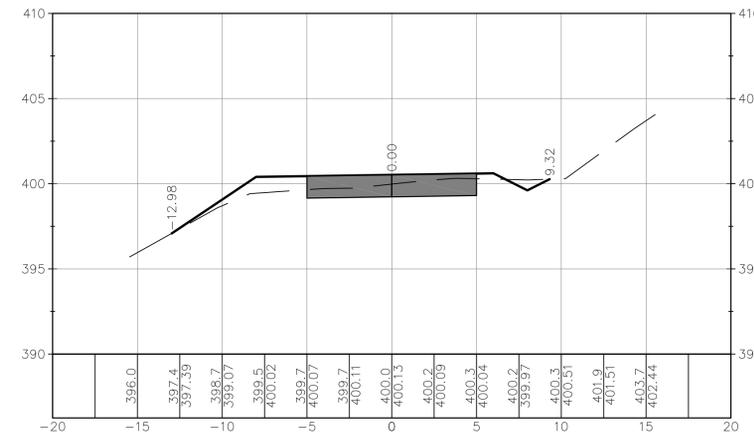
SECTION 114+00



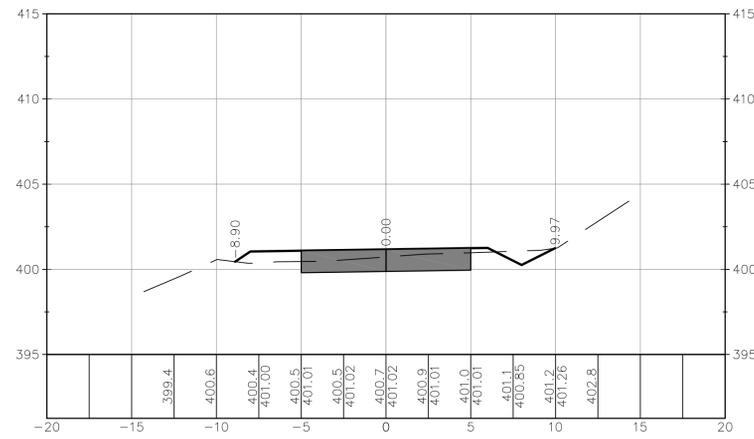
SECTION 114+50



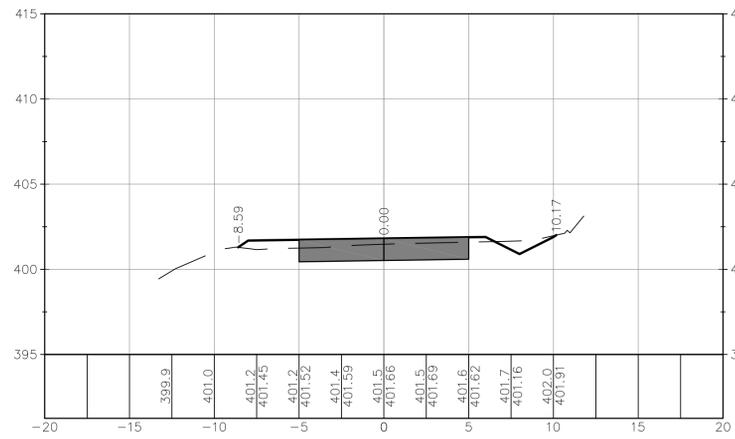
SECTION 115+00



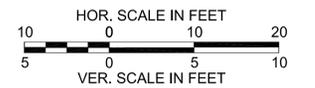
SECTION 115+50



SECTION 116+00



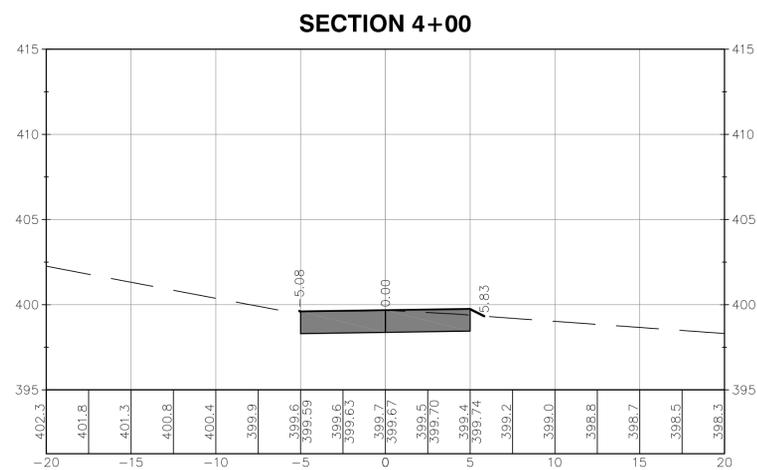
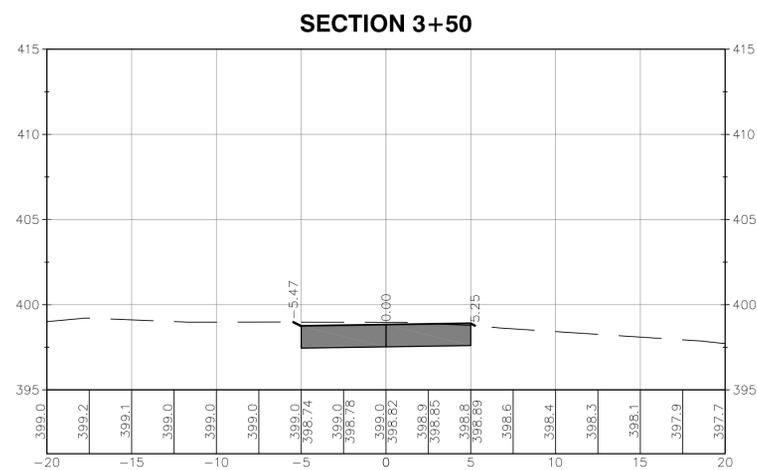
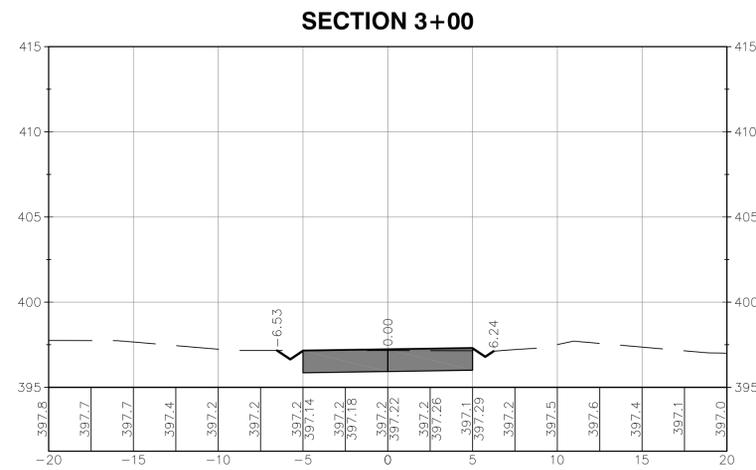
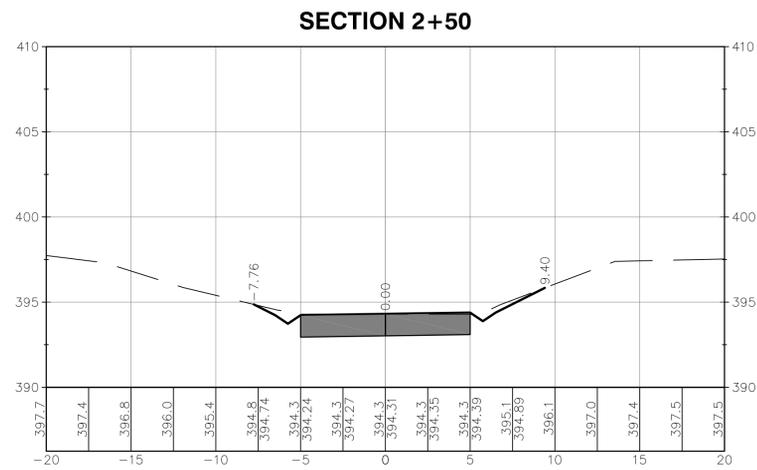
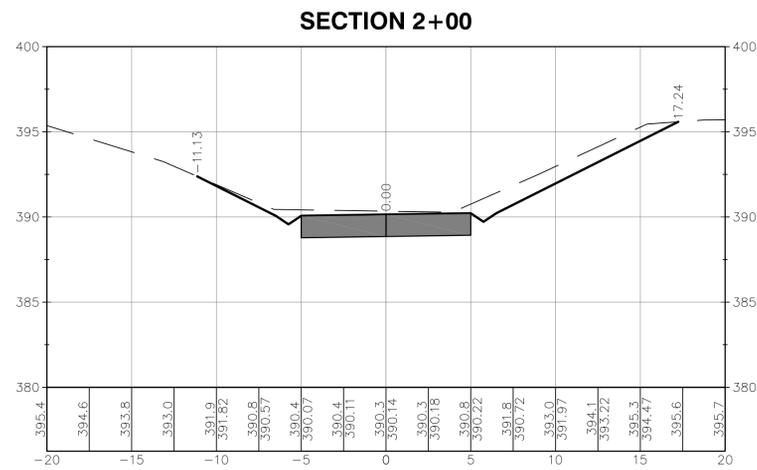
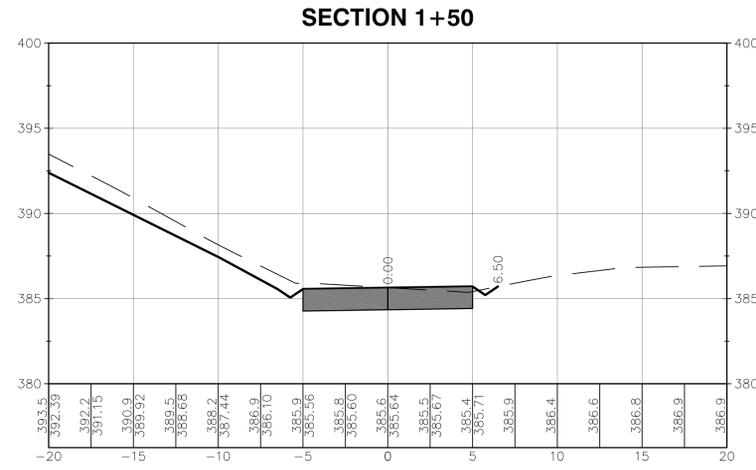
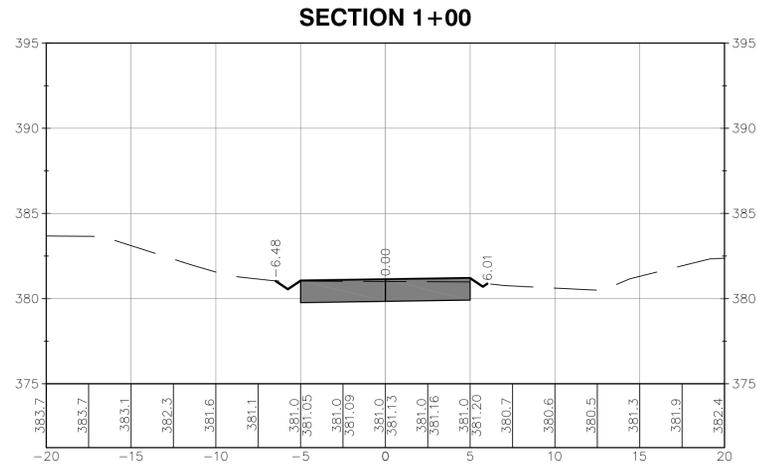
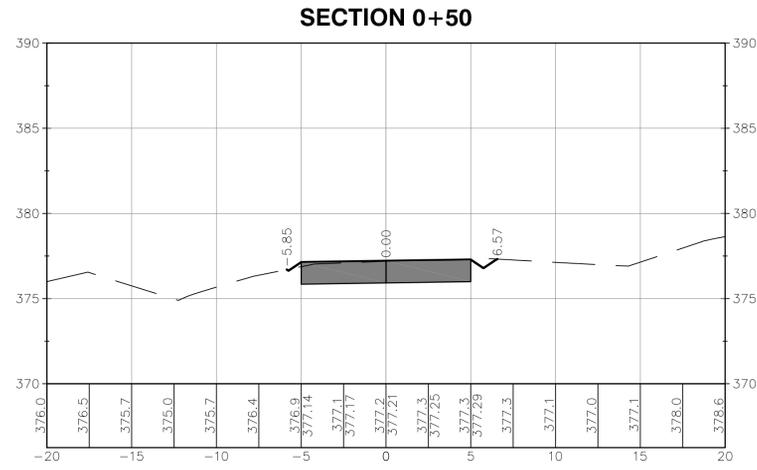
RAIL TRAIL SECTIONS



**CITY OF NORTHAMPTON
MASS CENTRAL RAIL TRAIL**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	24
CONTRACT NO.		75-15	

**GROVE AVENUE ACCESS
CROSS SECTIONS**



GROVE AVENUE ACCESS DRAINAGE IMPROVEMENT SECTIONS

