MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

ASSABET RIVER RAIL TRAIL

(BRIDGE NOS. M-10-012, A-02-034 & A-02-042)

IN THE TOWNS OF

MAYNARD & ACTON

MIDDLESEX COUNTY

CMAQ/STP-TE-002S(836)

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	1	230
PROJECT FILE NO.	604531		

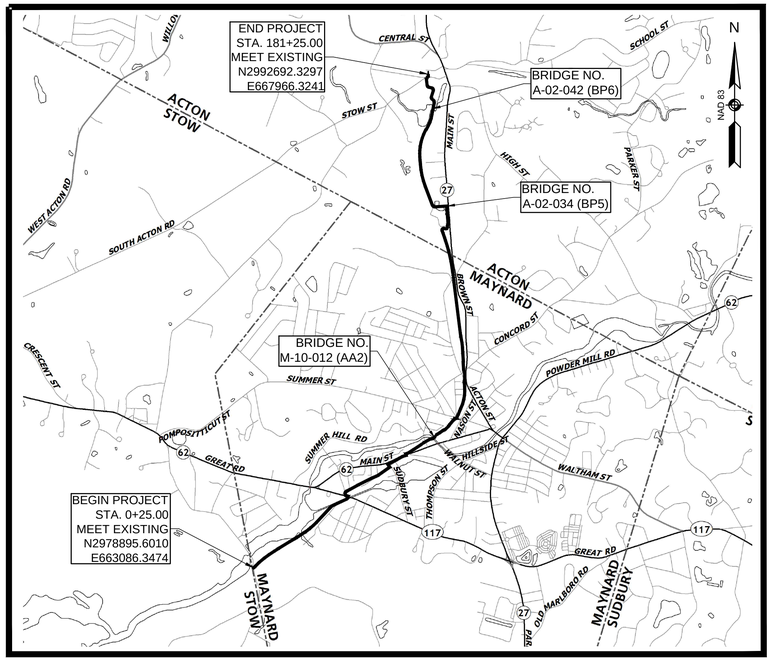
TITLE SHEET & INDEX

604531_HD(CS&LE).DWG Plotted on 18-Sep-2015 8:53 AM

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2014 CONSTRUCTION STANDARD DETAILS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, 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 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, THE 2012 AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

INDEX

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0 2000 4000 5000 6000

SCALE: 1" = 2000'

LENGTH OF PROJECT = 18,100 FEET = 3.428 MILES

TRAIL DESIGN DESIGNATION

DESIGN SPEED	18 MPH (12 MPH IN CONSTRAINED AREAS)
MINIMUM HORIZONTAL CURVE RADIUS	60' (27' IN CONSTRAINED AREAS)
MINIMUM LENGTH OF CREST VERTICAL CURVE	100'
MAXIMUM GRADE FOR LEVEL TERRAIN	4.5%

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services
181 Ballardvale Street, Suite 202, Wilmington, MA 01887
Tel: (978) 570-2999 Fax: (978) 658-3044
http://www.gpinet.com
Other Offices In: FL, MD, MI, NH, NJ, NY, OH, PA, VA, VT, WA

DATE	DESCRIPTION	REV #

massDOT Massachusetts Department of Transportation Highway Division

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER ____ DATE ____

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

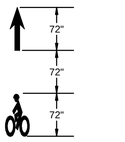
DIVISION ADMINISTRATOR ____ DATE ____

APPROVED

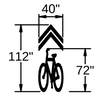
HIGHWAY ADMINISTRATOR ____ DATE ____

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
C	C	CABLE MANHOLE
D	D	DRAINAGE MANHOLE
E	E	ELECTRIC MANHOLE
G	G	GAS MANHOLE
M	M	MISC MANHOLE
S	S	SEWER MANHOLE
T	T	TELEPHONE MANHOLE
W	W	WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		TREE (UNKNOWN SIZE)
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		BIKE RACK
		OVERHEAD CABLE/WIRE
		CURBING
100 99		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
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		COMPOST FILTER TUBES
		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



BIKE LANE MARKING DETAIL
NOT TO SCALE

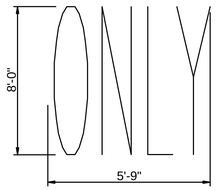


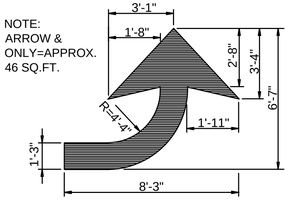
SHARED LANE "SHARROW" MARKING DETAIL
NOT TO SCALE

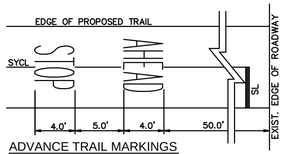
PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	BWL	BROKEN WHITE LINE
	BYL	BROKEN YELLOW LINE
	DWL	DOTTED WHITE LINE
	DYL	DOTTED YELLOW LINE
	DWLEx	DOTTED WHITE LINE EXTENSION
	DYLEx	DOTTED YELLOW LINE EXTENSION
	DBWL	DOUBLE WHITE LINE
	DBYL	DOUBLE YELLOW LINE

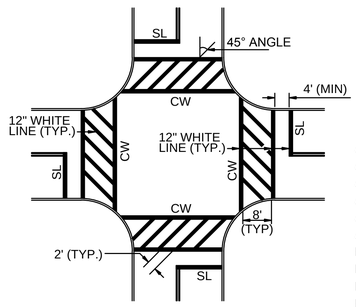
PAVEMENT MARKING WIDTH SHALL BE 6"



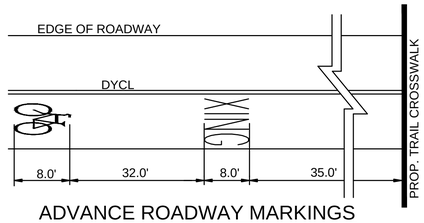




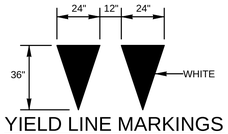
ADVANCE TRAIL MARKINGS
AT ROADWAY XING
NOT TO SCALE



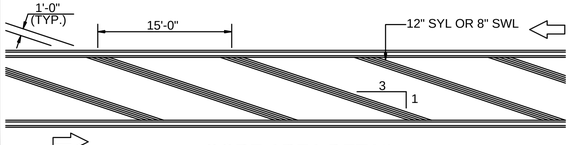
TYPICAL CROSSWALK MARKINGS
NOT TO SCALE



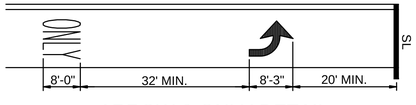
ADVANCE ROADWAY MARKINGS
AT TRAIL XING
NOT TO SCALE



YIELD LINE MARKINGS
NOT TO SCALE



GORE AREA DETAIL
NOT TO SCALE



ARROW & ONLY DETAIL
NOT TO SCALE

GENERAL NOTES

1. EXISTING CONDITIONS AND TOPOGRAPHICAL SURVEY PROVIDED BY THOMAS LAND SURVEYORS & ENGINEERING CONSULTANTS, INC., MARCH 23, 2006 AND UPDATED BY SUPPLEMENTAL SURVEY IN 2013-2015. HORIZONTAL DATUM IS BASED ON NAD83 MASSACHUSETTS STATE PLANE, MAINLAND ZONE - 2001. VERTICAL DATUM IS BASED ON NAVD88.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE EXACTLY AND TO PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CALL "DIG-SAFE" 1-888-DIGSAFE (344-7233) AT LEAST 72 HOURS BEFORE COMMENCING CONSTRUCTION.
3. WHERE AN EXISTING UNDERGROUND UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
4. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
5. THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS, OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE & RESET" (R&R).
6. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS NOTED OTHERWISE.
7. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
8. ALL EXISTING STATE, COUNTY, CITY AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.
9. ALL TRANSVERSE JOINTS, AND ALL LONGITUDINAL JOINTS BETWEEN NEW SURFACE PAVEMENT AND EXISTING SURFACE PAVEMENT TO REMAIN SHALL BE COATED WITH A HOT MIX ASPHALT JOINT SEALANT MEETING SPECIAL PROVISIONS ITEM 453.
10. ALL DISTURBED AREAS NOT DESIGNATED TO BE PAVED SHALL HAVE LOAM BORROW PLACED AND SEEDED. THE LOAM BORROW SHALL HAVE A MINIMUM DEPTH OF 4 INCHES AND SHALL BE PLACED FLUSH WITH THE TOP OF THE ADJACENT CURB, EDGING, BERM OR PAVEMENT SURFACE.
11. THE LIMIT OF WORK AREA SHALL BE THE STREET RIGHT OF WAY UNLESS SHOWN OTHERWISE.
12. ALL PROPERTY LINES BETWEEN ABUTTERS ARE APPROXIMATE ONLY.
13. PRIOR TO THE START OF ANY NEW UTILITY WORK, ALL ELEVATIONS OF EXISTING UTILITIES IN THOSE AREAS ARE TO BE VERIFIED. THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY SHOULD ANY DISCREPANCIES OCCUR.
14. ALL CASTINGS SHALL BE SET FLUSH WITH FINISHED GRADE.
15. ALL PUBLICLY OWNED GATE BOXES, SERVICE BOXES, MANHOLE FRAMES AND COVERS SHALL BE ADJUSTED TO GRADE BY THE CONTRACTOR.
16. ALL NEW SIDEWALKS AND DRIVEWAY GRADES SHALL MATCH EXISTING GRADES AT BACK OF SIDEWALK LINE UNLESS SHOWN OTHERWISE ON THE PLANS AND CROSS-SECTIONS.
17. THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PROTECT ALL EXISTING TREES AND ROOTS THAT ARE NOT DESIGNATED FOR REMOVAL.
18. CONTRACTOR TO CONTACT ENGINEER PRIOR TO INSTALLATION OF BOUNDS FOR FINAL LOCATIONS.
19. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	2	230
PROJECT FILE NO.	604531		

LEGEND & ABBREVIATIONS

GENERAL ABBREVIATIONS

AADT	ANNUAL AVERAGE DAILY TRAFFIC	EXC	EXCAVATION	PVI	POINT OF VERTICAL INTERSECTION
ABAN	ABANDON	F&C	FRAME AND COVER	PVT	POINT OF VERTICAL TANGENCY
ADJ	ADJUST	F&G	FRAME AND GRATE	PVMT	PAVEMENT
APPROX.	APPROXIMATE	FDN.	FOUNDATION	PWW	PAVED WATER WAY
A.C.	ASPHALT CONCRETE	FES	FLARED END STRUCTURE	R	RADIUS OF CURVATURE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE	FLDSTN	FIELDSTONE	R&D	REMOVE AND DISPOSE
BIT.	BITUMINOUS	GAR	GARAGE	RCP	REINFORCED CONCRETE PIPE
BC	BOTTOM OF CURB	GD	GROUND	RD	ROAD
BD.	BOUND	GG	GAS GATE	RDWY	ROADWAY
BL	BASELINE	GI	GUTTER INLET	REM	REMOVE
BLDG	BUILDING	GIP	GALVANIZED IRON PIPE	RET	RETAIN
BLSF	BORDERING LAND SUBJECT TO FLOODING	GRAN	GRANITE	RET WALL	RETAINING WALL
BM	BENCHMARK	GRAV	GRAVEL	ROW	RIGHT OF WAY
BO	BY OTHERS	GRD	GUARD	RR	RAILROAD
BOS	BOTTOM OF SLOPE	HDW	HEADWALL	R&R	REMOVE AND RESET
BR.	BRIDGE	HMA	HOT MIX ASPHALT	R&S	REMOVE AND STACK
BVW	BORDERING VEGETATED WETLAND	HOR	HORIZONTAL	RT	RIGHT
CB	CATCH BASIN	HYD	HYDRANT	SB	STONE BOUND
CBCI	CATCH BASIN WITH CURB INLET	INV	INVERT	SHLD	SHOULDER
CC	CEMENT CONCRETE	JCT	JUNCTION	SMH	SEWER MANHOLE
CCM	CEMENT CONCRETE MASONRY	L	LENGTH OF CURVE	ST	STREET
CEM	CEMENT	LB	LEACH BASIN	STA	STATION
CI	CURB INLET	LP	LIGHT POLE	SSD	STOPPING SIGHT DISTANCE
CIP	CAST IRON PIPE	LT	LEFT	SHLO	STATE HIGHWAY LAYOUT LINE
CLF	CHAIN LINK FENCE	MAX	MAXIMUM	SW	SIDEWALK
CL	CENTERLINE	MB	MAILBOX	T	TANGENT DISTANCE OF CURVE/TRUCK %
CMP	CORRUGATED METAL PIPE	MH	MANHOLE	TAN	TANGENT
CSP	CORRUGATED STEEL PIPE	MHB	MASSACHUSETTS HIGHWAY BOUND	TEMP	TEMPORARY
CO.	COUNTY	MIN	MINIMUM	TC	TOP OF CURB
CONC	CONCRETE	NIC	NOT IN CONTRACT	TOS	TOP OF SLOPE
CONT	CONTINUOUS	NO.	NUMBER	TYP	TYPICAL
CONST	CONSTRUCTION	PC	POINT OF CURVATURE	UP	UTILITY POLE
CR GR	CROWN GRADE	PCC	POINT OF COMPOUND CURVATURE	UPL	UTILITY POLE WITH LIGHT
DHV	DESIGN HOURLY VOLUME	P.G.L.	PROFILE GRADE LINE	VAR	VARIES/VARIABLE
DI	DROP INLET	PI	POINT OF INTERSECTION	VERT	VERTICAL
DIA	DIAMETER	POC	POINT ON CURVE	VC	VERTICAL CURVE
DIP	DUCTILE IRON PIPE	POT	POINT ON TANGENT	VGC	VERTICAL GRANITE CURB
DW	STEADY DON'T WALK - PORTLAND ORANGE	PRC	POINT OF REVERSE CURVATURE	WCR	WHEEL CHAIR RAMP
DWY	DRIVEWAY	PROJ	PROJECT	WG	WATER GATE
ELEV (or EL.)	ELEVATION	PROP	PROPOSED	WM	WATER METER/WATER MAIN
EMB	EMBANKMENT	PSB	PLANTABLE SOIL BORROW	X-SECT	CROSS SECTION
EOP	EDGE OF PAVEMENT	PT	POINT OF TANGENCY		
EXIST (or EX)	EXISTING	PVC	POINT OF VERTICAL CURVATURE		

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ASSABET RIVER RAIL TRAIL

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MA	CMAQ/STP-TE-002S(836)	3	230
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KEY PLAN & BORING LOCATIONS

SHEET REFERENCE:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Drawing Title:	Drawing Number:														
CONSTRUCTION BASELINE TIES	14	14	15	15	16	16	18	18	17	17	19	20	20	21	21
CONSTRUCTION PLANS & PROFILES	31	32	33	34	35	36-37	38	39	40-41	42	43	44	45	46	47
CURB TIE & GRADING PLANS	67	-	-	67	-	68	-	-	69	70	71	72	72	-	73
TRAFFIC SIGN & PAVEMENT MARKINGS	77	77	78	78	79	80	81	81	82	83	84	85	86	87	88
LANDSCAPING PLANS	106	106	107	107	108	108	109	109	110	110	111	111	112	112	113
WETLAND REPLICATION PLANS	-	-	123	-	-	-	-	-	-	-	-	-	-	-	-
BRIDGE PLANS	-	-	-	-	-	-	-	-	-	-	-	138-143	-	-	-

- BORING/TEST PIT LOCATION
B/BB-# = BORING NUMBER
(SEE BRIDGE PLANS FOR BRIDGE BORING LOGS)
TP-# = TEST PIT NUMBER

NAD 83 N

STOW
MAYNARD

WHITE POND RD.

GREAT RD. (RTE 117)

MILL ST.

PINE ST.

WINTER ST.

HIGH ST.

MAIN ST. (ROUTE 62)

FRONT ST.

SUDBURY ST.

RAILROAD ST.

FLORIDA RD.

FLORIDA CT.

BB-2
BB-2A
TP-1
TP-2

BB-1
TP-3
TP-3A

BRIDGE NO.
M-10-012 (AA2)

SUMMER ST.

MAPLE ST.

MAPLE CT.

CONCORD ST.

HAYNES ST.

ACTON ST.

NASON ST.

CONTINUED BELOW

CONTINUED ABOVE

NAD 83 N

BROWN ST. (ROUTE 27)

ACTON ST.

ROCKLAND AVE.

MAYNARD
ACTON

MAIN ST. (ROUTE 27)

BRIDGE NO.
A-02-034 (BP5)

STYLVIA ST.

COLONIAL PATH

BRIDGE NO.
A-02-042 (BP6)

BB-3
BB-4

TP-4
TP-5

STOW ST.

MAPLE ST.

MAIN ST. (ROUTE 27)

SHEET REFERENCE:	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Drawing Title:	Drawing Number:																
CONSTRUCTION BASELINE TIES	22	22	23	23	24	24	25	25	26	26	27	27	28	28			
CONSTRUCTION PLANS & PROFILES	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
CURB TIE & GRADING PLANS	-	-	-	-	73	-	74	74	74	-	75	-	-	-	-	76	76
TRAFFIC SIGN & PAVEMENT MARKINGS	89	89	90	90	91	91	92	92	93	93	94	94	95	95	96	96	97
LANDSCAPING PLANS	113	114	114	115	115	116	116	117	117	118	118	119	119	120	120	121	121
WETLAND REPLICATION PLANS	-	-	-	124	-	-	-	-	-	-		-	125	-	-	-	-
BRIDGE PLANS	-	-	-	-	-	-	-	144-153	144-153	-	-	-	-	154-160	-	-	-

0 100 200 300 400
SCALE: 1" = 100'

604531_HDK(KEY).DWG Plotted on 18-Sep-2015 8:54 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	4	230
PROJECT FILE NO.	604531		

BORING LOGS

604531_HDK(KEY).DWG Plotted on 18-Sep-2015 8:54 AM

Boring No. B-4 — Not to scale

NOBIS ENGINEERING, INC. 585 Middlesex Street Lowell, MA 01851 Phone: (978) 683-0891 Fax: (978) 683-0966 www.nobisengineering.com

City/Town: Acton & Maynard | Bridge: Winter Street | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: July 8, 2014 | Total Hours:
Groundwater Depth: 13' | Date & Time: 7/8/2014 1:00 PM | Date Completed: July 8, 2014 | 5
Coordinates: N 2980692.68 E 665438.23 | Driller's Name: Pat Schofield | Helper's Name:
Ground Elevation: ± 190 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	5 18 15 12	11"	S-1A (6"): Dry, dense, brown, FINE TO COARSE SAND, some fine gravel, some silt (FILL).	
S-2	2' - 4'	14 12 18 20	0"	S-2: No Recovery.	
S-3	4' - 6'	8 12 6 6	8"	S-3: Wet, medium dense, brown, FINE TO MEDIUM GRAVEL AND FINE TO COARSE SAND, some silt (FILL).	
S-4	6' - 8'	2 1 4 2	7"	S-4: Wet, loose, brown, FINE TO COARSE SAND, some silt, some fine to coarse gravel (FILL).	
S-5	8' - 10'	10 7 8 3	4"	S-5: Wet, medium dense, dark brown, FINE TO COARSE SAND AND SILT, some fine gravel, trace roots.	8'
S-6	10' - 12'	11 6 7 19	13"	S-6A (5"): Wet, medium dense, brown, FINE TO COARSE SAND, some silt, some fine to medium gravel.	10.4'
S-7	12' - 14'	23 23 26 20	15"	S-6B (8"): Wet, medium dense, dark brown/black, FINE SAND, some organic silt, trace root fibers, trace wood particles and fragments SAND WITH ORGANICS). S-7: Wet, dense, tan, FINE TO COARSE SAND, some silt, trace medium gravel. Drill action indicates probable intermittent cobbles between 14.5' and 19'.	12'
S-8	19'-21'	9 7 7 14	4"	S-8: Wet, medium dense, gray, FINE TO COARSE SAND AND FINE TO MEDIUM GRAVEL (rounded cobble fragments), trace silt.	24'
S-9	24'-26'	18 9 4 6	6"	S-9: Wet, medium dense, gray, SILT AND FINE TO COARSE SAND, some fine to medium gravel, trace silt. Increased drilling resistance between 28' and 29' indicating probable strata change.	28'
S-9	29'-29.1'	50/1"	1"	S-10: Wet, very dense, gray, FINE TO MEDIUM GRAVEL, some fine to coarse sand (weathered rock particles and fragments). Sample recovered from split spoon tip (WEATHERED BEDROCK). Bottom of Exploration = 29.1'	

Notes:
1. Ground surface elevation should be considered approximate.
2. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box: | Well Depth: Solid Pipe: | Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N=Sum of Second and Third 6" Blow Counts

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Diedrich D-50
Casing Type: HW Size: 4" Depth: 24'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

Boring No. B-5 — Not to scale

NOBIS ENGINEERING, INC. 585 Middlesex Street Lowell, MA 01851 Phone: (978) 683-0891 Fax: (978) 683-0966 www.nobisengineering.com

City/Town: Acton & Maynard | Bridge: Winter Street | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: July 8, 2014 | Total Hours:
Groundwater Depth: 11.3' | Date & Time: 7/9/2014 2:55 PM | Date Completed: July 9, 2014 | 5
Coordinates: N 2980759.22 E 665584.35 | Driller's Name: Mike D'Ambrosia | Helper's Name:
Ground Elevation: ± 186 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	12 11 7 6	12"	S-1A (6"): Moist, dense, dark brown to black, FINE TO COARSE SAND AND FINE TO MEDIUM GRAVEL, some silt, some asphalt fragments (FILL). S-1B (6"): Moist, medium dense, dark brown, FINE TO COARSE SAND, some silt, some medium gravel (FILL).	
S-2	2' - 4'	12 4 3 4	8"	S-2: Moist, loose, brown, FINE TO COARSE SAND AND SILT, some fine to medium gravel (FILL).	
S-3	4' - 6'	9 4 4 3	8"	S-3: Moist, loose, dark gray to black, SILT, some medium gravel (FILL).	
S-4	6' - 8'	4 5 4 2	5"	S-4: Wet, loose, light brown, FINE TO COARSE SAND AND SILT, some fine to medium gravel, trace roots (FILL).	
S-5	8' - 10'	9 7 9 7	11"	S-5a (3"): Wet, medium dense, dark brown, FINE TO COARSE SAND, trace root fibers, trace pockets of organic silt. S-5B (8"): Wet, medium dense, brown, FINE TO COARSE SAND AND SILT.	8' 10'
S-6	10' - 12'	5 71 17 10	10"	S-6: Wet, very dense, gray, MEDIUM GRAVEL, some fine to coarse sand, some silt. Increased drilling resistance at 14' indicating probable strata change.	14'
S-7	15' - 17'	15 22 21 17	14"	S-7: Wet, dense, gray, FINE TO MEDIUM SAND, some silt.	
S-8	20'-22'	19 14 9 7	2"	S-8: Wet, medium dense, gray, FINE TO COARSE SAND, some silt, some fine to medium gravel.	
S-9	22'-24'	7 7 5 5	8"	S-9: Wet, medium dense, gray, SILT, some fine sand, trace medium gravel. Increased drilling resistance at 27'.	
S-9	29'-31'	16 9 14 16	6 "	S-10: Wet, medium dense, gray, FINE TO COARSE SAND AND SILT, some fine to medium gravel. Bedrock fragments observed in drill cuttings from 31.5' to 32.5'. Bottom of Exploration = 32.5'	31.5'

Notes:
1. Ground surface elevation should be considered approximate.
2. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box: | Well Depth: Solid Pipe: | Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N=Sum of Second and Third 6" Blow Counts

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Acker AD2
Casing Type: HW Size: 4" Depth: 30'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

Boring No. B-6 — Not to scale

NOBIS ENGINEERING, INC. 585 Middlesex Street Lowell, MA 01851 Phone: (978) 683-0891 Fax: (978) 683-0966 www.nobisengineering.com

City/Town: Acton & Maynard | Bridge: Winter Street | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: July 9, 2014 | Total Hours:
Groundwater Depth: NR | Date & Time: N/A | Date Completed: July 9, 2014 | 5
Coordinates: N 2980828.29 E 665721.14 | Driller's Name: Mike D'Ambrosia | Helper's Name:
Ground Elevation: ± 186.5 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
				ASPHALT	0.3'
S-1	1' - 3'	21 8 8 22	7"	S-1: Dry, medium dense, brown, FINE TO COARSE SAND, some silt, some medium gravel (FILL).	
S-2	3' - 5'	10 8 6 5	15"	S-2: Dry, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel, some silt, trace asphalt particles and fragments (FILL).	
S-3	5' - 7'	6 7 7 13	3"	S-3: Dry, medium dense, brown, FINE TO MEDIUM GRAVEL AND FINE TO COARSE SAND, some silt, trace asphalt particles and fragments (FILL).	7'
S-4	7' - 9'	10 4 4 15	16"	S-4: Moist, loose, dark brown, FINE TO COARSE SAND, some organic silt, trace root fibers (SAND WITH ORGANICS).	9'
S-5	9' - 11'	31 16 17 12	10"	S-5: Wet, dense, brown, FINE TO COARSE SAND, some silt, some fine to medium gravel.	
S-6	15' - 17'	23 16 11 12	10"	S-6: Wet, medium dense, gray, SILT AND FINE TO MEDIUM SAND, trace medium gravel.	20'
S-7	20'-22'	13 12 15 15	7"	S-7: Wet, medium dense, gray, FINE TO MEDIUM GRAVEL AND FINE TO COARSE SAND, some silt, rock fragments in split spoon tip.	23'
				Drill action and cuttings indicate weathered bedrock from 23' to 25'.	25'
S-8	25'-25'	50/0"	0"	S-8: No Recovery. Bottom of Exploration = 25'	

Notes:
1. NR = Not Recorded.
2. Ground surface elevation should be considered approximate.
3. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box: | Well Depth: Solid Pipe: | Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N=Sum of Second and Third 6" Blow Counts

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Acker AD2
Casing Type: HW Size: 4" Depth: 25'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

Boring No. BB-2 — Not to scale

NOBIS ENGINEERING, INC. 585 Middlesex Street Lowell, MA 01851 Phone: (978) 683-0891 Fax: (978) 683-0966 www.nobisengineering.com

City/Town: Acton & Maynard | Bridge: Pedestrian Bridge, No. M-10-012 | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: August 20, 2014 | Total Hours:
Groundwater Depth: N/E | Date & Time: N/A | Date Completed: August 20, 2014 | 1
Coordinates: N 2982524.42 E 668096.84 | Driller's Name: Kenneth Smith | Helper's Name: Matt
Ground Elevation: ± 160.0 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	4 12 19 30	14"	S-1A (10"): Dry, dense, brown, FINE TO COARSE SAND, some fine to coarse gravel, some silt, trace fine gravel, trace roots. (TOPSOIL).	10"
S-2	2' - 2'11"	60 100/5"	5"	S-1B (4"): Dry, dense, light brown, FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, trace silt, trace asphalt fragments (FILL). S-2: Dry, very dense, light brown, FINE TO COARSE GRAVEL AND FINE TO COARSE SAND, some silt (FILL). Heavy drilling resistance (grinding) observed between 3' and 3'4". Bottom of Exploration = 3'5"	

Notes:
1. N/E = Not Encountered.
2. Ground surface elevation should be considered approximate.
3. Nearest existing bridge abutment top of footing measured to be approximately 9 feet below existing bridge deck. Assabet River is approximately 9'3" below existing bridge deck.
4. Bedrock outcrops observed at river bottom.
5. Borehole backfilled with drill cuttings and sand.

Protective Device - Stand: Box: | Well Depth: Solid Pipe: | Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N=Sum of Second and Third 6" Blow Counts

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Acker Soil Scout
Casing Type: HW Size: 4" Depth: 2'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: NX Size: 2.15"

Boring No. BB-2A — Not to scale

NOBIS ENGINEERING, INC. 585 Middlesex Street Lowell, MA 01851 Phone: (978) 683-0891 Fax: (978) 683-0966 www.nobisengineering.com

City/Town: Acton & Maynard | Bridge: Pedestrian Bridge, No. M-10-012 | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: August 20, 2014 | Total Hours:
Groundwater Depth: 8'6" | Date & Time: 8/20/2014 3:20 pm | Date Completed: August 20, 2014 | 7
Coordinates: N 2982521.99 E 668093.34 | Driller's Name: Kenneth Smith | Helper's Name: Matt
Ground Elevation: ± 160.0 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
				Casing advanced to 4' below ground surface and washed out for sampling. Subsurface conditions assumed to be similar to those encountered in Boring BB-2.	
S-1	4' - 6'	6 9 16 15	2"	S-1: Wet, medium dense, brown, FINE TO COARSE GRAVEL, trace fine to coarse sand, trace silt, trace wood fragments (FILL).	
S-2	6' - 8'	10 9 6 10	4"	S-2: Wet, medium dense, brown, FINE TO COARSE GRAVEL, some fine to coarse sand, some silt, trace roots (FILL).	
S-3	8' - 8'4"	100/3"	3"	S-3: Wet, very dense, brown, FINE TO COARSE SAND, some silt, some fine gravel (FILL).	8'6"
C-1	8'6" - 11'6"	5.8 8.8 13		Increased drilling resistance (grinding) observed between 8 and 8'6". Top of BEDROCK at 8'6" C-1 Hard, slightly to moderately weathered, extremely to slightly fractured, gray with brown staining, medium grained, GNEISS, very close to close, low to high angle open and closed joints. Percent Recovery = 100%, RQD = 14%.	
C-2	11'6" - 14'6"	6.8 7.8 15.3		C-2 Very hard, slightly weathered to fresh, moderately fractured to sound, gray, medium grained, GNEISS, very close to moderately close, low angle to moderately dipping open and closed joints. Percent Recovery = 100%, RQD = 85%. Bottom of Exploration = 14'6"	

Notes:
1. Ground surface elevation should be considered approximate.
2. Nearest existing bridge abutment top of footing measured to be approximately 9 feet below existing bridge deck. Assabet River is approximately 9'3" below existing bridge deck.
3. Bedrock outcrops observed at river bottom.
4. Borehole backfilled with drill cuttings and sand.

Protective Device - Stand: Box: | Well Depth: Solid Pipe: | Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N=Sum of Second and Third 6" Blow Counts

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Acker Soil Scout
Casing Type: HW Size: 4" Depth: 8'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: NX Size: 2.15"

TEST PIT LOG

Nobis — Engineering a Sustainable Future

PROJECT
Assabet River Rail Trail
Pedestrian Bridge Over Assabet River
Maynard, Massachusetts

TEST PIT NO. TP-1
SHEET 1 of 2
FILE NO. 87860.01
CHKD BY J. Kalafatis

Engineer Patrick Clarke
Contractor Crawford Drilling
Operator Alfred Alan
Weather Rain, 60's

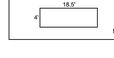
Make Caterpillar
Model 305C
Capacity 1/4 CY
Reach 10'

Ground El. ±160.0
Datum NAVD88
Time Start 7:45
Date 10/15/2014

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	4" TOPSOIL 6" SUBSOIL	4"- Brown, fine to medium SAND, little Silt, very few roots, dry (TOPSOIL). 6" Light brown, fine to medium SAND, little Silt, few tree roots, dry (SUBSOIL).	M		Tree Roots
2		1.5' 3' G-1: Light brown, fine SAND, little fine to coarse Gravel, trace Silt, very few cobbles, dry (FILL).	M (D on Granite)	-	Granite Blocks
3		Buried Asphalt (6") 2'			Asphalt
4				1A	
5	FILL 21' from east face of existing abutment	GRANITE BLOCKS G-2: Light brown, fine to medium SAND, little fine to coarse Gravel, little Silt, several boulders, few cobbles, dry (FILL).	M	2A, 1C	-
6					
7				2A	
8		Bottom of exploration on bedrock at depth of 7.5'			
9					
10					
11					
12					
13					
14					
15					

Notes: 1) Water not encountered in test pit. Water level in nearby river measured to be approximately 9'-10" below the existing bridge deck.
2) Test pit backfilled with native soil and reseeded with grass seed at ground surface.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

Nobis — Engineering a Sustainable Future

PROJECT
Assabet River Rail Trail
Pedestrian Bridge Over Assabet River
Maynard, Massachusetts

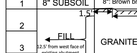
TEST PIT NO. TP-2
SHEET 1 of 1
FILE NO. 87860.01
CHKD BY J. Kalafatis

Engineer	Patrick Clarke	Make	Caterpillar	Ground El.	±159.5
Contractor	Crawford Drilling	Model	305C	Datum	NAVD88
Operator	Alfred Alan	Capacity	1/4 CY	Time Start	9:25
Weather	Rain, 60's	Reach	10'	Date	10/15/2014

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	4" TOPSOIL 8" SUBSOIL	4": Dark Brown, fine to medium SAND, some Silt, very few roots, dry (TOPSOIL). 8": Brown brown, fine to medium SAND, little Silt, few tree roots, dry (SUBSOIL).	E	-	Tree Roots
2	FILL	Light brown fine to medium SAND, some fine to coarse Gravel, little Silt, very few wood fragments, very few cobbles, dry (FILL).			-
3	BALLAST FILL	Dark brown to black, fine to coarse GRAVEL, little fine to coarse Sand, trace Silt, dry (BALLAST FILL).	M		
4	FILL	Light brown fine to medium SAND, some fine to coarse Gravel, little Silt, very few wood fragments, very few cobbles, dry (FILL).	E		
5					
6		Bottom of exploration depth of 5'			
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1) Water not encountered in test pit. Water level in nearby river measured to be approximately 9'-10" below the existing bridge deck.
2) Test pit backfilled with native soil and reseeded with grass seed at ground surface.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

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massDOT Highway

NOBIS ENGINEERING, INC.
585 Middlesex Street
Lowell, MA 01851
Phone: (978) 683-0891
Fax: (978) 683-0966
www.nobisengineering.com

Boring No. BB-1
Not to scale

City/Town: Acton & Maynard | Bridge: Pedestrian Bridge, No. M-10-012 | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: August 19, 2014 | Total Hours:
Groundwater Depth: 8'10" | Date & Time: 8/19/2014 1:05 pm | Date Completed: August 19, 2014 | 8
Coordinates: N 2982561.11 E 668171.28 | Driller's Name: Kenneth Smith | Helper's Name: Matt
Ground Elevation: ± 162.5 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	4 6 7 7	13"	S-1A (4"): Dry, medium dense, brown, FINE SAND, some silt, trace fine gravel, some roots, faint organic-like odor (TOPSOIL).	4"
S-2	2' - 4'	3 4 5 4	8"	S-1B (2"): Dry, medium dense, gray/brown, FINE TO MEDIUM SAND, some silt, some fine gravel, trace roots (FILL).	
S-3	4' - 6'	4 5 6 14	9"	S-1C (7"): Dry, medium dense, brown, FINE TO MEDIUM SAND AND FINE TO COARSE GRAVEL, trace silt, trace wood fragments (FILL).	
S-4	6' - 8'	8 4 5 16	12"	S-2: Dry, loose, tan/light brown, FINE TO COARSE SAND, some fine to coarse gravel, trace silt, trace wood fragments (FILL).	
S-5	8' - 9'4"	13 12 100/4"	8"	S-3: Dry, medium dense, tan/light brown, FINE TO COARSE SAND, some fine gravel, trace silt, trace wood fragments (FILL).	
C-1	9'4" - 12'	7 4.5 5		S-4: Dry, loose, tan/light brown, FINE TO COARSE SAND, trace silt, trace fine gravel, some wood fragments (FILL).	
C-2	12' - 15'6"	1.3 5 6.3 7		S-5: Dry, very dense, light brown with black mottling, FINE TO COARSE SAND, some fine to coarse gravel, some silt, trace wood particles (FILL).	9'4"
				Top of BEDROCK at 9'3"	
				C-1 Hard, moderately weathered, extremely to slightly fractured, light gray with brown staining, very fine to medium grained, GNEISS, very close to close, horizontal to low angle joints. Percent Recovery = 77%, RQD = 60%.	
				C-2 Hard, very slightly weathered, extremely fractured to sound, gray, fine grained, GNEISS, close, horizontal to low angle joints. Percent Recovery = 95%, RQD = 73%.	
				Bottom of Exploration = 15'6"	

Notes:
1. Ground surface elevation should be considered approximate.
2. Nearest existing bridge abutment top of footing measured to be approximately 10 feet below existing bridge deck. Assabet River is approximately 10'9" below existing bridge deck.
3. Bedrock outcrops observed at river bottom.
4. Borehole backfilled with drill cuttings, sand, and nearby crushed stone.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N=Sum of Second and Third 6" Blow Counts

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Acker Soil Scout
Casing Type: HW Size: 4" Depth: 9'4"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: NX Size: 2.15"

TEST PIT LOG

Nobis — Engineering a Sustainable Future

PROJECT
Assabet River Rail Trail
Pedestrian Bridge Over Assabet River
Maynard, Massachusetts

TEST PIT NO. TP-3
SHEET 1 of 1
FILE NO. 87860.01
CHKD BY J. Kalafatis

Engineer	Patrick Clarke	Make	Caterpillar	Ground El.	±162.0
Contractor	Crawford Drilling	Model	305C	Datum	NAVD88
Operator	Alfred Alan	Capacity	1/4 CY	Time Start	10:30
Weather	Rain, 60's	Reach	10'	Date	10/15/2014

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	4" TOPSOIL 8" SUBSOIL	4": Dark Brown, fine to medium SAND, some Silt, very few roots, dry 8": Brown brown, fine to medium SAND, some Silt, very few roots, dry	E	-	Roots
2	FILL	Brown, fine to coarse SAND, little Silt, trace fine to coarse Gravel, very few wood particles, fragments, and pieces (Railroad Tie), very few asphalt fragments, very few ceramic pieces (Ceramic Pipe), very few glass fragments, very few brick pieces, very few metal pieces (Rebar), dry	M	1C	-
3				1A	Rebar, Railroad Tie
4				-	Ceramic Pipe
5	BALLAST FILL	Black, fine to coarse Gravel, trace fine to coarse Sand, trace Silt, dry			Red Staining at 5' BGS
6	SAND	Tan, fine to medium SAND, trace Silt, trace fine Gravel, dry	E		
7					-
8					
9		Bottom of exploration depth of 8.5' BGS.			
10					
11					
12					
13					
14					
15					

Notes: 1) Water not encountered in test pit. Water level in nearby river measured to be approximately 9'-10" below the existing bridge deck.
2) Test pit backfilled with native soil.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

Nobis — Engineering a Sustainable Future

PROJECT
Assabet River Rail Trail
Pedestrian Bridge Over Assabet River
Maynard, Massachusetts

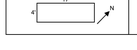
TEST PIT NO. TP-3A
SHEET 1 of 2
FILE NO. 87860.01
CHKD BY J. Kalafatis

Engineer	Patrick Clarke	Make	Caterpillar	Ground El.	±162.0
Contractor	Crawford Drilling	Model	305C	Datum	NAVD88
Operator	Alfred Alan	Capacity	1/4 CY	Time Start	12:00
Weather	Rain, 60's	Reach	10'	Date	10/15/2014

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	4" TOPSOIL 8" SUBSOIL	4": Dark Brown, fine to medium SAND, some Silt, very few roots, dry (TOPSOIL). 8": Brown brown, fine to medium SAND, some Silt, very few roots, dry (SUBSOIL).	E	-	Roots
2					
3	FILL	1.5' 5' 1.25' BGS 7' BGS 5' Brown, fine to coarse SAND, little Silt, trace fine to coarse Gravel, very few wood fragments, dry (FILL). GRANITE BLOCKS 12.5' from west face of existing abutment	E (D on Granite)	-	-
4					
5		Bottom of exploration depth of 3.5' BGS.			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1) Water not encountered in test pit. Water level in nearby river measured to be approximately 9'-10" below the existing bridge deck.
2) Test pit backfilled with native soil.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

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massDOT Highway

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Boring No. B-1
Not to scale

City/Town: Acton & Maynard | Bridge: Boardwalk, Winter Street | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: July 7, 2014 | Total Hours:
Groundwater Depth: NR | Date & Time: N/A | Date Completed: July 7, 2014 | 2
Coordinates: N 2988868.67 E 668480.60 | Driller's Name: Patrick Schofield | Helper's Name:
Ground Elevation: ± 200.5 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0.5' - 2.5'	5 10 8 9	15"	ASPHALT (4")	4"
S-2	2.5' - 4.5'	5 7 6 8	12"	S-1A (7"): Dry, medium dense, light brown, FINE TO COARSE SAND AND FINE TO MEDIUM GRAVEL, trace silt (FILL).	
S-3	4.5' - 6.5'	4 10 8 8	18"	S-1B (8"): Dry, medium dense, dark gray, FINE TO COARSE SAND AND FINE TO MEDIUM GRAVEL, some silt (FILL).	
S-4	6.5' - 6.8'	50/3"	3"	S-2: Moist, medium dense, gray, FINE TO COARSE SAND, some silt, some fine to medium gravel, faint organic odor (FILL).	
S-5	8' - 8.4'	50/5"	4"	S-3A (14"): Moist, medium dense, dark gray, FINE TO COARSE SAND, some fine to medium gravel, faint organic odor (FILL).	5.7'
				S-3B (4"): Moist, medium dense, gray, FINE TO COARSE SAND AND SILT, some medium gravel (GLACIAL TILL).	
				S-4: Wet, very dense, gray, FINE TO COARSE SAND AND SILT, some fine to medium gravel (GLACIAL TILL). Augered through inferred boulder/cobble between 6.8' and 8'.	
				S-5: Wet, very dense, gray, MEDIUM GRAVEL, some fine to coarse sand, some silt (GLACIAL TILL).	
				Bottom of Exploration = 8.4'	

Notes:
1. NR = Not Recorded.
2. Ground surface elevation should be considered approximate.
3. Water level in nearby pond approximately 3 feet below grade at boring location.
4. Auger refusal on probable boulder at 6.8' below grade. Borehole moved approximately 5.5' east and advanced to Sample B-5.
5. Borehole backfilled with native soil and asphalt patched at surface.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N=Sum of Second and Third 6" Blow Counts

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Diedrich D-50
Auger Type: HSA Size:2.25" Depth: 8'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

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Boring No. B-2
Not to scale

City/Town: Acton & Maynard | Bridge: Boardwalk, Winter Street | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: July 7, 2014 | Total Hours:
Groundwater Depth: 5.4' | Date & Time: 7/7/2014 11:15 AM | Date Completed: July 7, 2014 | 3
Coordinates: N 2988975.52 E 668424.47 | Driller's Name: Patrick Schofield | Helper's Name:
Ground Elevation: ± 199 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	1 1 1 2	11"	S-1: Moist, loose, black ORGANIC SILT, some fine sand, trace roots, trace wood particles and fragments, faint organic odor (TOPSOIL).	2'
S-2	2' - 4'	11 7 5 5	12"	S-2: Wet, stiff, dark brown to black, ORGANIC CLAYEY SILT, some fine to coarse sand, some medium gravel, trace roots, trace wood fragments, very faint organic odor, some silt (ORGANIC DEPOSITS).	4'
S-3	4' - 6'	1 WOH 3 5	5"	S-3: Wet, very loose, gray MEDIUM GRAVEL, some fine to coarse sand, some silt, trace pockets of organic silt, faint organic odor.	
S-4	6' - 8'	3 10 13 17	12"	S-4: Wet, medium dense, gray, FINE TO COARSE SAND AND SILT, some fine to medium gravel, trace organic silt, trace roots.	
S-5	8' - 10'	20 14 13 13	5"	S-5: Wet, medium dense, gray, FINE TO MEDIUM GRAVEL AND FINE TO COARSE SAND, some silt.	13.75'
				Heavy drilling resistance at 13.75' indicating probable strata change.	
S-5	15' - 17'	21 36 50 58	9"	S-6: Wet, very dense, gray, SILT AND FINE TO COARSE SAND, some fine to medium gravel (GLACIAL TILL). Increased drilling resistance between 17' and 18'.	
S-6	19' - 20.6'	32 19 32 50/1"	8"	S-7: Wet, very dense, gray, FINE TO COARSE SAND, some fine to coarse gravel, some silt. Angular, probable cobble fragments in bottom of split-spoon (GLACIAL TILL).	
				Bottom of Exploration = 20.6'	

Notes:
1. Ground surface elevation should be considered approximate.
2. Boring drilled adjacent to wetland areas to the west and east. Water level approximately 1' below ground surface at boring location.
3. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N=Sum of Second and Third 6" Blow Counts

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Diedrich D-50
Casing Type: HW Size: 4" Depth: 9'4"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight:
Fall: 30"
Core Barrel Type: Size:

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	5	230
PROJECT FILE NO.	604531		

BORING LOGS

604531_HDK(KEY).DWG Plotted on 18-Sep-2015 8:54 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	6	230
PROJECT FILE NO.	604531		

BORING LOGS

604531_HDK(EY).DWG Plotted on 18-Sep-2015 8:55 AM

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Boring No. B-3 | Not to scale

City/Town: Acton & Maynard | Bridge: Boardwalk, Winter Street | Project File No: 604531 | Contract No: 68386

Project: Assabet River Rail Trail | Date Started: July 7, 2014 | Total Hours:

Groundwater Depth: NR | Date & Time: N/A | Date Completed: July 7, 2014 | 3

Coordinates: N 2988971.97 | E 668148.16 | Driller's Name: Patrick Schofield | Helper's Name:

Ground Elevation: ± 202.5 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	4 6 7 6	8"	S-1A (5"): Dry, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel, trace silt, trace roots (TOPSOIL). S-1B (3"): Dry, medium dense, light brown, FINE TO COARSE SAND, some fine to medium gravel, trace silt, some plastic fragments (FILL).	5"
S-2	2' - 4'	6 5 6 6	0"	S-2: No Recovery.	
S-3	4' - 6'	7 9 13 13	9"	S-3: Wet, medium dense, gray, FINE TO COARSE SAND, some silt, some fine to medium gravel.	4'
S-4	6' - 8'	15 17 16 18	18"	S-4: Wet, dense, gray, FINE TO COARSE SAND, some fine to medium gravel, trace silt.	
S-5	10' - 12'	4 6 13 10	24"	S-5: Wet, medium dense, gray, FINE TO COARSE SAND, some fine gravel, trace silt.	
S-6	15' - 17'			S-6: Approximately 18" of hollow stem augers filled with running sand at bottom of hole. Auger grinding at depth of 17 feet BGS on inferred glacial till or cobble.	
				Bottom of Exploration = 20'	

Notes:
1. NR = Not Recorded.
2. Ground surface elevation should be considered approximate.
3. Split spoon for Sample S-6 contained 18" of blown in sand.
4. Borehole collapsed due to running sands at 20'.
5. Borehole backfilled with native soil.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Diedrich D-50
Auger Type: HSA Size:2.25" Depth: 20'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

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Boring No. B-3A | Not to scale

City/Town: Acton & Maynard | Bridge: Boardwalk, Winter Street | Project File No: 604531 | Contract No: 68386

Project: Assabet River Rail Trail | Date Started: July 10, 2014 | Total Hours:

Groundwater Depth: 6.7' | Date & Time: 7/10/2014 10:15 AM | Date Completed: July 10, 2014 | 5

Coordinates: N 2988973.88 | E 668142.47 | Driller's Name: Mike D'Ambrosia | Helper's Name:

Ground Elevation: ± 203 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	1' - 3'	4 6 5 3	12"	Dry, brown, FINE TO COARSE SAND, some fine to medium gravel, trace silt, trace roots (TOPSOIL). S-1: Dry, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel, some silt (FILL).	4"
S-2	3' - 5'	3 5 6 11	14"	S-2: Moist, medium dense, brown, FINE TO COARSE SAND, some fine gravel, trace silt, trace roots, tip of split spoon wet (FILL).	5'
S-3	5' - 7'	11 8 9 8	13"	S-3: Wet, medium dense, gray, FINE TO COARSE SAND, some fine gravel, some silt.	
S-4	7' - 9'	10 8 7 8	16"	S-4: Wet, medium dense, gray, FINE TO COARSE SAND, some fine gravel, trace silt.	
S-5	9' - 11'	5 7 8 10	22"	S-5: Wet, medium dense, gray, FINE TO COARSE SAND, some fine gravel, trace silt, trace medium gravel.	15'
S-6	15' - 15.7'	22 100/2"	7"	S-6: Wet, very dense, graybrown, FINE TO COARSE SAND, some fine to medium gravel, some silt (GLACIAL TILL).	
S-7	20'-22'	24 14 22 19	7"	S-7: Wet, dense, gray, MEDIUM GRAVEL, some fine to coarse sand, some silt (GLACIAL TILL). Increased drilling resistance observed at 23.5'. Rock fragments observed in cuttings between 23.5' and 25.4'.	
S-8	25'-25.4'	100/5"	4"	S-8: Wet, very dense, white and brown, MEDIUM GRAVEL (rounded quartz fragments), trace fine to coarse sand, trace fine gravel, trace silt (GLACIAL TILL). Bottom of Exploration = 25.4'	

Notes:
1. Ground surface elevation should be considered approximate.
2. Borehole hand excavated from 0' to 1' for utility clearance.
3. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Acker AD2
Casing Type: HW Size:4" Depth: 25'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

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Boring No. B-7 | Not to scale

City/Town: Acton | Sylvia Street Retaining Wall | Project File No: 604531 | Contract No: 68386

Project: Assabet River Rail Trail | Date Started: March 19, 2015 | Total Hours:

Groundwater Depth: 0.7' | Date & Time: 3/19/2015 10:42 am | Date Completed: March 19, 2015 | 2.8

Coordinates: N 2990090.72 | E 667768.05 | Driller's Name: Ben Cross | Helper's Name: Brett Raiche

Ground Elevation: ± 205 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	WOH 7 13 9	12"	S-1A (6"): Wet, medium dense, brown, FINE TO COARSE SAND, some organic silt, little fine to medium gravel, trace roots (TOPSOIL).	0.5'
S-2	2' - 4'	11 17 25 25	7"	S-1B (6"): Wet, medium dense, gray/light brown with orange staining, FINE TO COARSE SAND, some fine to medium gravel, some inorganic silt (GLACIAL TILL).	
S-3	4' - 6'	22 17 26 54	16"	S-2: Wet, dense, gray with orange staining, FINE TO COARSE SAND, some inorganic silt, trace fine gravel (GLACIAL TILL).	
S-4	6' - 6'4"	100/4"	4"	S-3: Wet, dense, gray with orange staining, FINE TO COARSE SAND, some inorganic silt, some fine to coarse gravel (GLACIAL TILL). S-4: Wet, very dense, gray with orange staining, FINE TO COARSE SAND; some inorganic silt, some fine to medium gravel (GLACIAL TILL).	
S-5	8' - 10'	55 59 38 48	14"	Increased drilling resistance observed at approximately 6.5 feet below ground surface.	10'
S-6	10' - 10'10"	46 100/4"	9.5"	S-5: Wet, very dense, gray with orange staining, FINE TO COARSE SAND, some fine to medium gravel, some inorganic silt (GLACIAL TILL).	
S-7	13' - 13'3"	100/3"	3"	S-6: Wet, very dense, dark brown/gray with orange staining, FINE TO COARSE GRAVEL, some fine to coarse sand, some inorganic silt (WEATHERED BEDROCK). S-7: Wet, very dense, gray with orange staining, FINE TO COARSE SAND, some inorganic silt, trace fine gravel (WEATHERED BEDROCK).	15'
				Increased drilling resistance and rock fragments observed in cuttings between approximately 15' and 18' below ground surface indicating probable transition into bedrock.	18'
				Bottom of Exploration = 18'	

Notes:
1. Ground surface elevation should be considered approximate.
2. Water induced during drilling process.
3. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Mobile B-53 (Track)
Casing Type: HW Size:4" Depth: 10'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

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Boring No. B-8 | Not to scale

City/Town: Acton | Sylvia Street Retaining Wall | Project File No: 604531 | Contract No: 68386

Project: Assabet River Rail Trail | Date Started: March 18, 2015 | Total Hours:

Groundwater Depth: 0.6' | Date & Time: 3/18/2015 2:45 pm | Date Completed: March 18, 2015 | 2.5

Coordinates: N 2990158.65 | E 667762.08 | Driller's Name: Ben Cross | Helper's Name: Brett Raiche

Ground Elevation: ± 203.5 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	1 5 10 12	15"	S-1A (5"): Wet, medium dense, dark brown, FINE TO COARSE SAND and fine to coarse gravel, some organic silt, trace roots (TOPSOIL). S-1B (10"): Moist, medium dense, light gray/light brown, FINE TO COARSE SAND, some inorganic silt, some fine to medium gravel, trace roots (GLACIAL TILL).	0.4'
S-2	2' - 4'	12 16 13 21	15"	S-2): Wet, medium dense, light gray with orange and red staining, INORGANIC SILT and fine to coarse sand, trace fine gravel (GLACIAL TILL). [Laboratory Analysis Performed: Sill: 55.5%, Sand: 40.5%, Gravel: 4%.]	
S-3	4' - 6'	18 23 52 80	14"	S-3): Moist, very dense, gray/light brown with orange staining, FINE TO COARSE SAND and fine to coarse gravel, some inorganic silt (GLACIAL TILL).	8'
S-4	6' - 7'10"	36 49 53 100/4"	12"	S-4): Moist, very dense, gray with white and orange staining, FINE TO COARSE SAND and fine to coarse gravel, some inorganic silt (GLACIAL TILL).	
S-5	10' - 10'	50/0"	0"	Increased drilling resistance and rock fragments observed in cuttings between approximately 8' and 13' below ground surface indicating probable transition into bedrock. S-5: No recovery.	13'
				Bottom of Exploration = 13'	

Notes:
1. Ground surface elevation should be considered approximate.
2. Water induced during drilling and coring processes.
3. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Mobile B-53 (Track)
Casing Type: HW Size:4" Depth: 10'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

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Phone: (978) 683-0891
Fax: (978) 683-0966
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Boring No. B-9 | Not to scale

City/Town: Acton | Sylvia Street Retaining Wall | Project File No: 604531 | Contract No: 68386

Project: Assabet River Rail Trail | Date Started: March 18, 2015 | Total Hours:

Groundwater Depth: 1.2' | Date & Time: 3/18/2015 11:50 am | Date Completed: March 18, 2015 | 3.3

Coordinates: N 2990209.35 | E 667774.06 | Driller's Name: Ben Cross | Helper's Name: Brett Raiche

Ground Elevation: ± 206 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	2 5 4 3	4"	S-1: Wet, loose, dark brown, FINE TO COARSE SAND and fine to coarse gravel, some organic silt, trace roots (TOPSOIL).	2'
S-2	2' - 4'	11 29 21 29	2"	S-2: Wet, dense, brown, INORGANIC SILT and fine to coarse sand, some fine to medium gravel, trace roots (GLACIAL TILL).	
S-3	4' - 6'	33 127 16 18	7.5"	S-3: Wet, very dense, brown, FINE TO COARSE SAND, some inorganic silt, trace fine to medium gravel, trace roots (GLACIAL TILL).	
S-4	6' - 8'	9 7 17 27	20"	S-4: Wet, medium dense, brown with some orange mottling, FINE TO COARSE SAND and inorganic silt, trace fine gravel, trace roots, (GLACIAL TILL).	8'
S-5	8' - 8'2"	100/2"	2"	S-5: Wet, very dense, gray/light brown, FINE TO MEDIUM GRAVEL and fine to coarse sand, some inorganic silt (WEATHERED BEDROCK).	8.2'
				Increased drilling resistance and rock fragments observed in cuttings between approximately 8' and 14' below ground surface indicating probable transition into bedrock.	
				Bottom of Exploration = 14'	14'

Notes:
1.Ground surface elevation should be considered approximate.
2. Water induced during drilling and coring processes.
3. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Mobile B-53 (Track)
Casing Type: HW Size:4" Depth: 8'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

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Boring No. BB-3 | Not to scale

City/Town: Acton | Bridge: A-02-042 (BP6) | Project File No: 604531 | Contract No: 68386

Project: Assabet River Rail Trail | Date Started: March 16, 2015 | Total Hours:

Groundwater Depth: 5'7" | Date & Time: 3/16/2015 1:25 pm | Date Completed: March 16, 2015 | 5.5

Coordinates: N 2991695.19 | E 668094.26 | Driller's Name: Ben Cross | Helper's Name: Brett Raiche

Ground Elevation: ± 196 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	2 5 4 3	7"	S-1A (5"): Wet, loose, brown, FINE TO COARSE GRAVEL and fine to coarse sand, some organic silt, trace roots (TOPSOIL).	0.4'
S-2	3'6" - 5'6"	32 18 11 9	2"	S-1B (2"): Wet, loose, light brown, FINE TO COARSE SAND, some inorganic silt, some fine to medium gravel, trace roots (FILL). S-2: Wet, medium dense, light brown, FINE TO COARSE SAND and fine to coarse gravel, some inorganic silt (FILL).	
S-3	5'6" - 7'6"	4 2 2 2	6"	S-3A (4"): Wet, very loose, light brown, FINE TO COARSE SAND and inorganic silt, some medium to coarse gravel (FILL).	
S-4	7'6" - 9'6"	4 WOH WOH WOH	11"	S-3B (2"): Wet, very loose, dark gray, FINE TO COARSE SAND and inorganic silt, trace roots (FILL).	
S-5	9'6" - 11'6"	11 11 5 4	9"	S-4: Wet, very loose, olive/gray/light brown, FINE TO COARSE SAND and inorganic silt, trace roots (FILL).	9.5'
S-6	11'6" - 13'6"	7 23 25 24	24"	S-5: Wet, medium dense, brown, INORGANIC SILT and fine sand (SILT). [Laboratory Analysis Performed: Sample determined to be non-plastic. Moisture Content = 38%.]	
S-7	13'6" - 15'6"	15 15 20 20	7"	S-6A (14"): Wet, dense, brown, INORGANIC SILT and fine sand, 2" of ORGANIC SILT observed at transition (SILT).	12.7'
				S-6B (10"): Wet, dense, gray, FINE TO COARSE SAND, some inorganic silt, some fine to coarse gravel, trace roots (GLACIAL TILL). S-7: Wet, dense, gray, FINE TO COARSE SAND, some inorganic silt, some fine to coarse gravel, trace roots (GLACIAL TILL). [Laboratory Analysis Performed: Sand: 45.1%, Silt: 27.8%, Gravel: 27.1%.]	
				Increased drilling resistance and cuttings observed indicate probable transition into weathered bedrock.	17'
S-8	18'6" - 18'7"	100/1"	1"	S-8: Wet, very dense, gray, FINE TO COARSE SAND, some fine to medium gravel, trace inorganic silt (WEATHERED BEDROCK).	19'
C-1	19' - 24'3"	9 3 4.3 4.8 8 2/3"	51"	C-1: Moderately hard, moderately weathered, extremely to slightly fractured, gray with dark gray bedding, very fine to medium grained GNEISS, very close to close, shallow to steeply dipping open and closed joints. Percent Recovery =81%, RQD = 38%	
C-2	24'3" - 29'3"	0.8 3.3 7 7.5 9.3	50.5"	C-2: Hard, slightly to very slightly weathered, extremely fractured to sound, gray with dark gray bedding, very fine to medium grained GNEISS, very close to moderately close, shallow to steeply dipping closed joints. Percent Recovery = 84%, RQD = 68%	29.3'
				Bottom of Exploration = 29'3"	

Notes:
1.Ground surface elevation should be considered approximate.
2. Boring drilled approximately 14'-7" south of existing railroad bridge south abutment.
3. Surface water in Mill Pond frozen and measured at approximately 6' below existing railroad bridge deck.
4. Water induced during drilling and coring processes.
5. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Mobile B-53 (Track)
Casing Type: HW Size: 4" Depth: 18'6"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: NX Size: 2.15"

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	7	230
PROJECT FILE NO.	604531		

BORING LOGS

604531_HDK(KEY).DWG Plotted on 18-Sep-2015 8:55 AM

massDOT Highway

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Boring No. BB-3
Not to scale

City/Town: Acton | Bridge: A-02-042 (BP6) | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: March 16, 2015 | Total Hours:
Groundwater Depth: 5'7" | Date & Time: 3/16/2015 1:25 pm | Date Completed: March 16, 2015 | 5.5
Coordinates: N 2991695.19 E 668094.26 | Driller's Name: Ben Cross | Helper's Name: Brett Raiche
Ground Elevation: ± 196 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	2 5 4 3	7"	S-1A (5"): Wet, loose, brown, FINE TO COARSE GRAVEL and fine to coarse sand, some organic silt, trace roots (TOPSOIL). S-1B (2"): Wet, loose, light brown, FINE TO COARSE SAND, some inorganic silt, some fine to medium gravel, trace roots (FILL).	0.4'
S-2	3'6" - 5'6"	32 18 11 9	2"	S-2: Wet, medium dense, light brown, FINE TO COARSE SAND and fine to coarse gravel, some inorganic silt (FILL).	
S-3	5'6" - 7'6"	4 2 2 2	6"	S-3A (4"): Wet, very loose, light brown, FINE TO COARSE SAND and inorganic silt, some medium to coarse gravel (FILL). S-3B (2"): Wet, very loose, dark gray, FINE TO COARSE SAND and inorganic silt, trace roots (FILL).	
S-4	7'6" - 9'6"	4 WOH WOH WOH	11"	S-4: Wet, very loose, olive/gray/light brown, FINE TO COARSE SAND and inorganic silt, trace roots (FILL).	
S-5	9'6" - 11'6"	11 11 5 4	9"	S-5: Wet, medium dense, brown, INORGANIC SILT and fine sand (SILT). [Laboratory Analysis Performed: Sample determined to be non-plastic. Moisture Content = 38%.]	9.5'
S-6	11'6" - 13'6"	7 23 25 24	24"	S-6A (14"): Wet, dense, brown, INORGANIC SILT and fine sand. 2" of ORGANIC SILT observed at transition (SILT).	
S-7	13'6" - 15'6"	15 15 20 20	7"	S-6B (10"): Wet, dense, gray, FINE TO COARSE SAND, some inorganic silt, some fine to coarse gravel, trace roots (GLACIAL TILL). S-7: Wet, dense, gray, FINE TO COARSE SAND, some inorganic silt, some fine to coarse gravel, trace roots (GLACIAL TILL). [Laboratory Analysis Performed: Sand: 45.1%, Silt: 27.8%, Gravel: 27.1%.]	12.7'
				Increased drilling resistance and cuttings observed indicate probable transition into weathered bedrock.	17'
S-8	18'6" - 18'7"	100/1"	1"	S-8: Wet, very dense, gray, FINE TO COARSE SAND, some fine to medium gravel, trace inorganic silt (WEATHERED BEDROCK).	19'
C-1	19' - 24'3"	9 3 4.3 4.8 8 2/3"	51"	C-1: Moderately hard, moderately weathered, extremely to slightly fractured, gray with dark gray bedding, very fine to medium grained GNEISS, very close to close, shallow to steeply dipping open and closed joints. Percent Recovery =81%, RQD = 38%	
C-2	24'3" - 29'3"	0.8 3.3 7 7.5 9.3	50.5"	C-2: Hard, slightly to very slightly weathered, extremely fractured to sound, gray with dark gray bedding, very fine to medium grained GNEISS, very close to moderately close, shallow to steeply dipping closed joints. Percent Recovery = 84%, RQD = 68%	
				Bottom of Exploration = 29'3"	29.3'

Notes:
1.Ground surface elevation should be considered approximate.
2. Boring drilled approximately 14'-7" south of existing railroad bridge south abutment.
3. Surface water in Mill Pond frozen and measured at approximately 6' below existing railroad bridge deck.
4. Water induced during drilling and coring processes.
5. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Mobile B-53 (Track)
Casing Type: HW Size: 4" Depth: 18'6"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight:
Fall: 30"
Core Barrel Type: NX Size: 2.15"

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Boring No. BB-4
Not to scale

City/Town: Acton | Bridge: A-02-042 (BP6) | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: March 17, 2015 | Total Hours:
Groundwater Depth: 6'0" | Date & Time: 3/17/2015 1:58 pm | Date Completed: March 17, 2015 | 5.5
Coordinates: N 2991783.81 E 668111.12 | Driller's Name: Pete LaBossiere | Helper's Name: Brett Raiche
Ground Elevation: ± 195.5 | Inspector's Name: Craig Marchionda | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	7 7 9 10	9"	S-1A (2"): Wet, medium dense, black, FINE TO COARSE SAND, some organic silt, trace fine to medium gravel (TOPSOIL). S-1B (7"): Moist, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel, some inorganic silt, trace root fibers (FILL).	0.2'
S-2	2' - 4'	14 13 12 16	17"	S-2: Moist, medium dense, brown, FINE TO COARSE SAND, some inorganic silt, trace fine to medium gravel (FILL).	
S-3	4' - 6'	14 16 15 30	7"	S-3A (2"): Moist, dense, brown, FINE TO COARSE SAND, some inorganic silt, some medium gravel (FILL). S-3B (5"): Moist, dense, brown/gray with some orange mottling, MEDIUM TO COARSE GRAVEL, some inorganic silt, trace fine sand (FILL).	
S-4	6' - 8'	33 36 77 112	11"	S-4: Wet, very dense, gray/brown with some orange mottling, FINE TO MEDIUM GRAVEL, some inorganic silt, some fine to coarse sand. Probable cobble or boulder particles and fragments at bottom of spoon (FILL).	9'
S-5	9' - 11'	13 3 3 11	16"	Roller bit through inferred cobbles/boulder and advance casing to depth of approximately 9' below ground surface.	9.5'
S-6	11' - 13'	10 12 13 14	6"	S-5A (6"): Wet, loose, black, INORGANIC SILT, trace medium gravel, trace fine sand, trace organic silt (SILT).	11'
S-7	14' - 16'	7 23 23 17	8"	S-5B (10"): Wet, loose, brown, FINE TO COARSE SAND and inorganic silt, trace fine gravel (SAND AND SILT). [Laboratory Analysis Performed: Sand: 57.9%, Silt: 41.1%, Gravel: 1%.]	
S-8	19' - 21'	54 18 17 11	0"	S-6: Wet, medium dense, gray, FINE TO COARSE SAND, some fine to medium gravel, trace inorganic silt (GLACIAL TILL). S-7: Wet, dense, gray, FINE TO COARSE SAND, some inorganic silt, some fine to medium gravel (GLACIAL TILL). [Laboratory Analysis Performed: Sand: 48.2%, Silt: 34.4%, Gravel: 17.4%.] S-8: No recovery.	22.5'
C-1	23' - 28'	2.5 2.8 2.3 2.8 2.8	60"	Increased drilling resistance observed indicating probable transition into weathered bedrock.	23'
C-2	28' - 33'	2.5 5.8 6 4.3 3	53"	C-1: Moderately hard to hard, moderately to very severely weathered, extremely fractured to sound, gray and black, GNEISS, close to moderately close, moderately dipping joints. Percent Recovery = 100%, RQD = 38% C-2: Moderately hard to hard, very slightly to very severely weathered, extremely fractured to sound, gray and black, GNEISS, close to moderately close, shallow dipping joints. Percent Recovery = 88%, RQD = 30%	
				Bottom of Exploration = 33'	33'

Notes:
1. Ground surface elevation should be considered approximate.
2. Boring drilled approximately 9'-6" north of existing railroad bridge north abutment.
3. Surface water in Mill Pond measured at approximately 6' below adjacent existing grade.
4. Water induced during drilling and coring processes.
5. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Mobile B-53 (Track)
Casing Type: HW Size: 4" Depth: 22'6"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight:
Fall: 30"
Core Barrel Type: NX Size: 2.15"

TEST PIT LOG

Nobis — Engineering a Sustainable Future

PROJECT: Assabet River Rail Trail
MassDOT Project File No. 604531
1A Maple Street, Acton, Massachusetts

TEST PIT NO. TP-4
SHEET 1 of 1
FILE NO. 87860.00
CHKD BY GM

Engineer: Patrick Clarke
Contractor: New Hampshire Boring, Inc.
Operator: Dave Thompson
Weather: Light Snow, 30's

Make: Kubota
Model: KX 057-4
Capacity: ~1/4 cy
Reach: ~12 feet

Ground El.: ± 201
Datum: NAVD88
Time Start: 8:10
Date: 1/30/2015

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	CRUSHED STONE	G-1) Gray/brown fine to coarse GRAVEL (3-inch minus crushed stone), little fine to coarse Sand, trace Silt, very few cobbles, dry.	D	-	G-1 NRCS: Extremely Gravelly, Loamy Sand
2	10"	G-2) Light to dark brown fine to coarse SAND, some Silt, little fine to coarse Gravel, few wood particles, fragments, pieces, and blocks (railroad ties), very few cobbles, very few brick fragments and pieces, moist (FILL).			G-2 NRCS: Sandy Loam
3			M	1B	
4	FILL	3.5'			G-2 NRCS: Loamy Sand
5	5'▽	G-3) Gray/brown with some orange staining beginning at depth of 5', fine to coarse SAND and Silt, trace fine to coarse Gravel, very few boulders, very few asphalt fragments, moist (FILL).	E	1A	G-3 NRCS: Sandy Loam
6				-	
7	▼ 7'				
	SAND	G-4) Gray with orange staining fine to medium SAND, little Silt, trace fine Gravel, wet.			G-4 NRCS: Loamy Sand
8		Bottom of excavation at 7.5 feet below ground surface.			
9					
10					
11					
12					
13					
14					
15					

Notes: 1) Frost depth approximately 2 feet.
2) Excavation backfilled with native soils.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater

5' × 3' — N

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

Nobis — Engineering a Sustainable Future

PROJECT: Assabet River Rail Trail
MassDOT Project File No. 604531
1A Maple Street, Acton, Massachusetts

TEST PIT NO. TP-5
SHEET 1 of 1
FILE NO. 87860.00
CHKD BY GM

Engineer: Patrick Clarke
Contractor: New Hampshire Boring, Inc.
Operator: Dave Thompson
Weather: Light Snow, 30's

Make: Kubota
Model: KX 057-4
Capacity: ~1/4 cy
Reach: ~12 feet

Ground El.: ± 200
Datum: NAVD88
Time Start: 11:15
Date: 1/30/2015

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	CRUSHED STONE	Gray/brown fine to coarse GRAVEL (3-inch minus crushed stone), little fine to coarse Sand, trace Silt, very few cobbles, dry.	D	-	Extremely Gravelly, Loamy Sand
2	10"	G-1) Brown fine to coarse SAND and Silt, little fine to coarse Gravel, very few cobbles, very few brick fragments and pieces, very few wood fragments and pieces, moist (FILL).			G-1 NRCS: Sandy Loam
3	FILL		M		
4		G-2) Gray/dark brown fine to coarse SAND, some Silt, little fine to coarse Gravel, very few wood fragments, moist (FILL).			G-2 NRCS: Loamy Sand
5	TOPSOIL ▽ 5'	G-3) Black ORGANIC SILT, some fine Sand, very few roots, very few wood particles and fragments, moist (TOPSOIL).	E		G-3 NRCS: Silt Loam
6	SAND ▼ 6'-4"	G-4) Gray with orange staining fine to medium SAND, little Silt, trace fine Gravel, moist to wet			G-4 NRCS: Loamy Sand
7					
8		Bottom of excavation at 7 feet below ground surface.			
9					
10					
11					
12					
13					
14					
15					

Notes: 1) Frost depth approximately 2 feet.
2) Excavation backfilled with native soils.

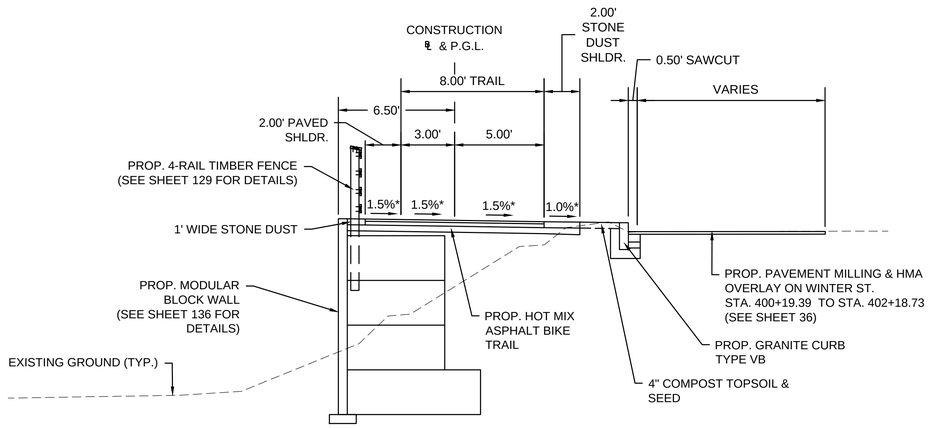
WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater

5' × 2.8' — N

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

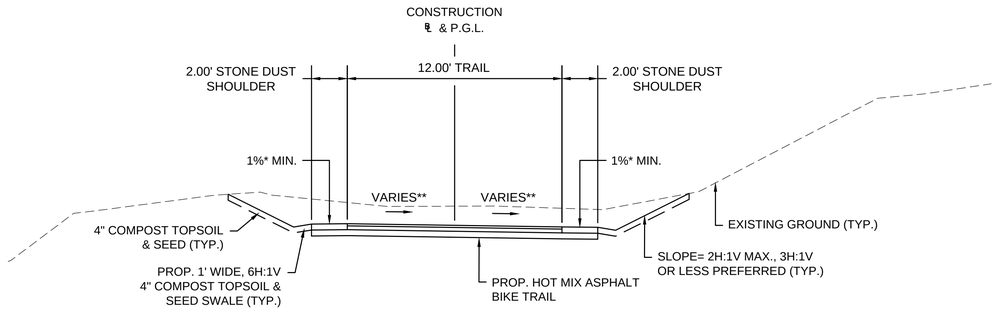
PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

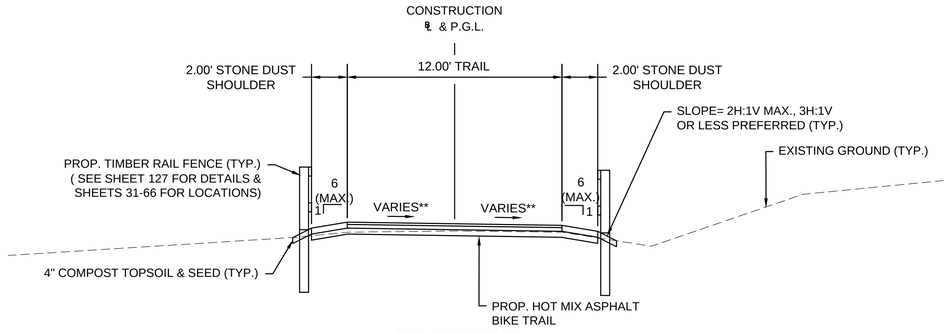


TYPICAL SECTION - 8' TRAIL WITH MODULAR BLOCK WALL (WINTER ST.)

SCALE 1" = 4'
STA. 29+78± - STA. 33+20±



CUT SECTION



FILL SECTION

TYPICAL SECTION - 12' WIDE TRAIL

SCALE 1" = 4'
STA. 0+38± - STA. 27+79±
STA. 34+85± - STA. 45+05±
STA. 77+92± - STA. 86+10±
STA. 88+85± - STA. 100+36±
STA. 112+86± - STA. 126+02±
STA. 126+64± - STA. 129+20±
STA. 129+70± - STA. 131+35±
STA. 140+62± - STA. 177+03±
STA. 500+06± - STA. 501+00± (SYLVIA ST)
STA. 0+06± - STA. 0+62± (ICEHOUSE LANDING)

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

*TOLERANCE OF CONSTRUCTION SHALL BE ± 0.5%
**CROSS SLOPES OF THE TRAIL VARIES, SEE THIS SHEET FOR SUPERELEVATION TABLE.

PAVEMENT NOTES

HOT MIX ASPHALT BIKE TRAIL

SURFACE COURSE: 1 1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
INTERMEDIATE COURSE: 2 1/2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER
FOUNDATION: 2" - 8" GRAVEL BORROW (M1.03.0 TYPE B) (SEE NOTE 2) OVER SPECIAL BORROW AS REQUIRED

FULL DEPTH HOT MIX ASPHALT CONSTRUCTION
(AT ROADWAY CROSSINGS AS SHOWN ON PLANS)

SURFACE COURSE: 1-1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER 2-1/2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER

BASE COURSE: 3-1/2" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL BORROW (M1.03.0 TYPE B) (OR TO DEPTH OF EXISTING GRAVEL SUBBASE, WHICHEVER IS GREATER)

FULL DEPTH WIDENING LESS THAN 4 FEET

SURFACE: 1-1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER 2-1/2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER

BASE: 6" HIGH-EARLY-STRENGTH CEMENT CONCRETE BASE COURSE OVER

SUBBASE: 8" GRAVEL BORROW (M1.03.0 TYPE B)

MILLING & HOT MIX ASPHALT OVERLAY

SURFACE COURSE: 1-1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER

SURFACE MILLING: 1-1/2" PAVEMENT MILLING TO MATCH EXISTING CROSS SLOPE

TACK COAT: ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT THE RATE OF 0.07 GAL/S.Y. FOR MILLED SURFACES AND 0.05 GAL/S.Y. FOR SMOOTH TIGHT PAVED SURFACES

STONE DUST SHOULDER

SURFACE: 4" STONE DUST OVER

FOUNDATION: 2" - 8" GRAVEL BORROW (M1.03.0 TYPE B) (SEE NOTE 2)

CEMENT CONCRETE SIDEWALKS, DRIVEWAYS, REST AREAS & WHEELCHAIR RAMPS:

SURFACE COURSE: 4" CEMENT CONCRETE (6" AT DRIVEWAYS) (AIR ENTRAINED 4000 PSI, 3/4", 610) OVER

SUBBASE: 8" GRAVEL BORROW (M1.03.0 TYPE B)

CEMENT CONCRETE SPLITTER ISLANDS:

SURFACE COURSE: 4" STAMPED CEMENT CONCRETE (AIR ENTRAINED 4000 PSI, 3/4", 610) OVER

SUBBASE: 8" GRAVEL BORROW (M1.03.0 TYPE B)

HOT MIX ASPHALT WALKS

SURFACE: 2 1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER

SUBBASE: 8" GRAVEL BORROW (M1.03.0 TYPE B OR EXISTING GRAVEL BORROW TO REMAIN)

HOT MIX ASPHALT PARKING LOTS & DRIVEWAYS

SURFACE COURSE: 1 1/2" SUPERPAVE SURFACE COURSE -9.5 (SSC-9.5) OVER

INTERMEDIATE COURSE: 2" SUPERPAVE INTERMEDIATE COURSE -19.0 (SIC-19.0) OVER

FOUNDATION: 8" GRAVEL BORROW (M1.03.0 TYPE B OR EXISTING GRAVEL BORROW TO REMAIN)

BRICK WALK

SURFACE: KILN FIRED BRICKS SET ON A BED OF MORTAR OVER

BASE: 4" CEMENT CONCRETE BASE OVER

SUBBASE: 8" GRAVEL BORROW (M1.03.0 TYPE B)

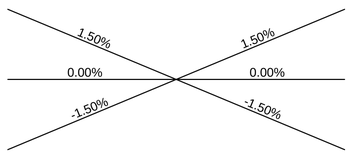
NOTE:
1. THE SECTIONS OF PROPOSED TRAIL NOT COVERED IN THE RANGE OF STATIONS ASSOCIATED WITH THE TYPICAL SECTIONS ARE EITHER AT INTERSECTIONS OR ARE IN AREAS OF TRANSITION AND THEREFORE HAVE NOT BEEN SHOWN. REFER TO SHEETS 161-230 FOR MORE DETAILS.

2. SUBBASE SHALL BE A MINIMUM OF 2" GRAVEL BORROW FOR LEVELING OVER RAILROAD BALLAST. SUBBASE SHALL BE 8" GRAVEL BORROW OVER MINIMUM 24" SPECIAL BORROW AT FILL SECTIONS IN AREAS OF WETLANDS AND OTHER UNSUITABLE MATERIAL IN ACCORDANCE WITH SECTIONS 150 AND 170 OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.

0+70 TO 10+70; 20+15 TO 33+39; 47+85 TO 50+78; 63+41 TO 64+90; 67+05 TO 74+21; 75+35 TO 77+20; 86+31 TO 88+56; 126+64 TO 131+35; 140+53 TO 169+22

0+65; 10+75; 20+10; 47+80; 64+95; 67+00; 77+25; 126+59; 134+53 TO 104+43

0+00 TO 0+60; 10+80 TO 20+05; 33+75 TO 47+75; 51+35 TO 63+15; 65+00 TO 66+95; 74+58 TO 74+97; 77+30 TO 86+08; 88+88 TO 126+54; 131+73 TO 134+43; 170+18 TO 180+00



0+00 TO 0+60; 10+80 TO 20+05; 33+75 TO 47+75; 51+35 TO 63+15; 65+00 TO 66+95; 74+58 TO 74+97; 77+30 TO 86+08; 88+88 TO 126+54; 131+73 TO 134+43; 170+18 TO 180+00

0+65; 10+75; 20+10; 47+80; 64+95; 67+00; 77+25; 126+59; 134+53 TO 104+43

0+70 TO 10+70; 20+15 TO 33+39; 47+85 TO 50+78; 63+41 TO 64+90; 67+05 TO 74+21; 75+35 TO 77+20; 86+31 TO 88+56; 126+64 TO 131+35; 140+53 TO 169+22

BIKE TRAIL SLOPING

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	8	230
PROJECT FILE NO.	604531		

TYPICAL SECTIONS

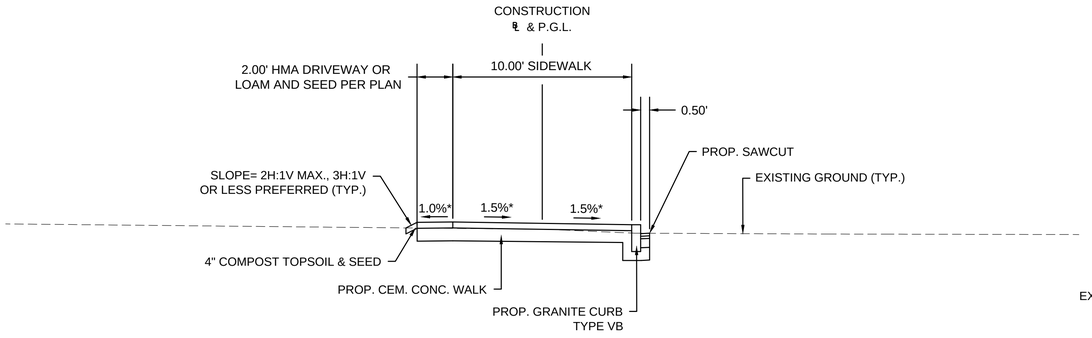
604531_HD(TYP).DWG Plotted on 18-Sep-2015 8:55 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	9	230
PROJECT FILE NO.	604531		

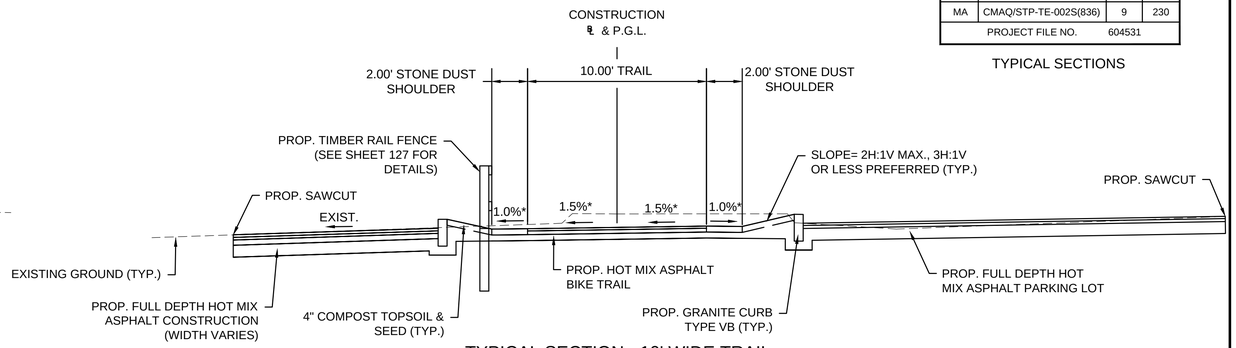
TYPICAL SECTIONS

Plotted on 18-Sep-2015 8:56 AM
604531_HD(TYP).DWG



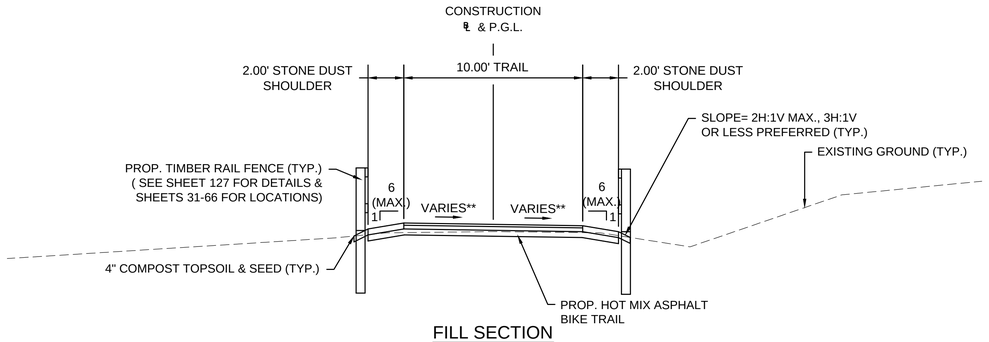
TYPICAL SECTION - 10' CEM. CONC. WALK (SUDBURY ST.)

SCALE 1" = 4'
STA 49+69± TO STA 50+73±

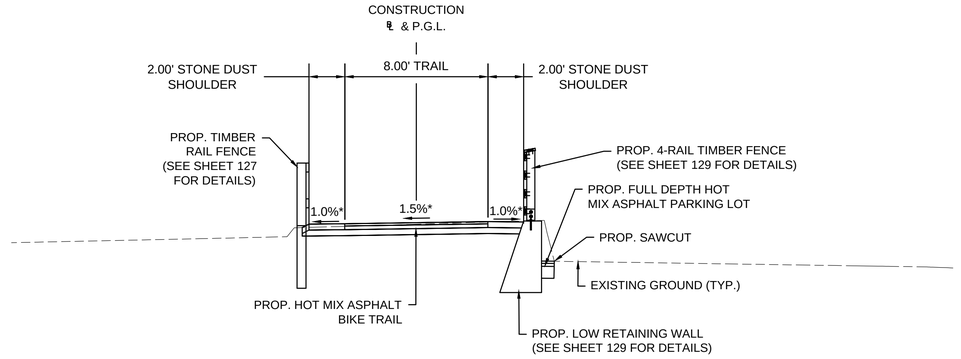


TYPICAL SECTION - 10' WIDE TRAIL (RAILROAD ST. & MAIN ST.)

SCALE 1" = 4'
STA 62+15± TO STA 62+95±

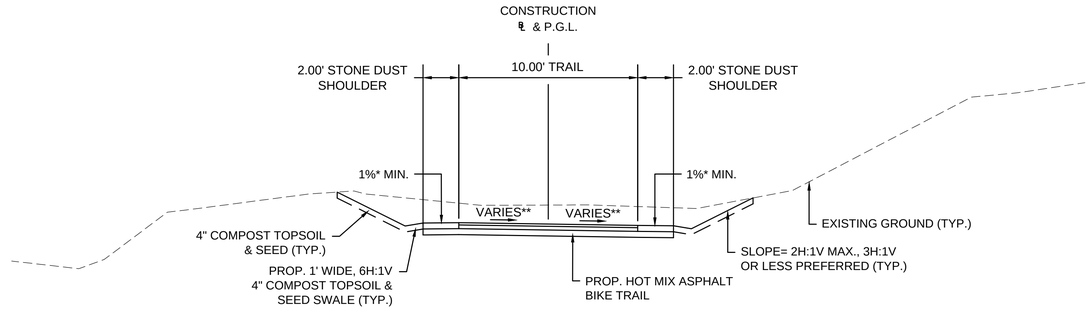


FILL SECTION



TYPICAL SECTION - 8' WIDE TRAIL WITH LOW RETAINING WALL (RAILROAD ST & MAIN ST)

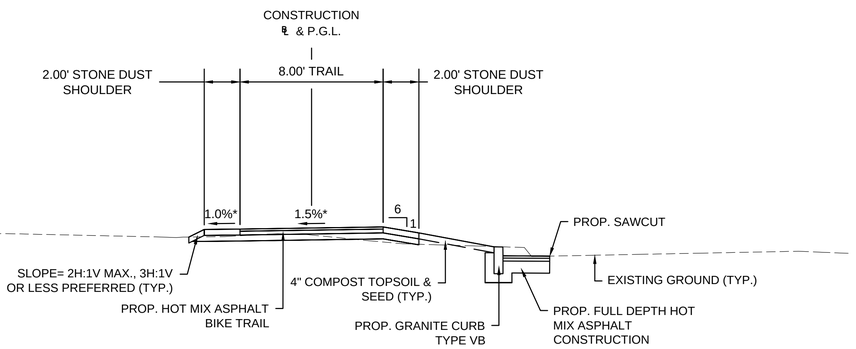
SCALE 1" = 4'
STA 58+10± TO STA 59+31±



CUT SECTION

TYPICAL SECTION - 10' WIDE TRAIL

SCALE 1" = 4'
STA. 28+81± - STA. 29+78±
STA. 33+20± - STA. 33+39±
STA. 45+85± - STA. 49+56±
STA. 59+58± - STA. 60+50±
STA. 62+95± - STA. 63+15±
STA. 64+90± - STA. 69+70±
STA. 75+65± - STA. 77+38±
STA. 100+46± - STA. 112+76±
STA. 131+73± - STA. 134+39±



TYPICAL SECTION - 8' WIDE TRAIL (RAILROAD ST. & MAIN ST.)

SCALE 1" = 4'
STA 56+93± TO STA 57+40±

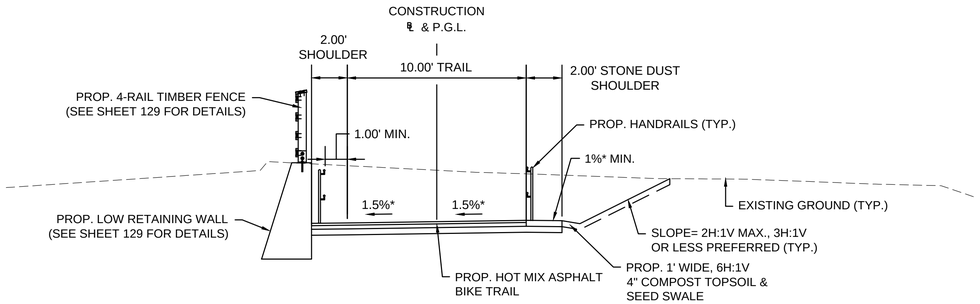
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

*TOLERANCE OF CONSTRUCTION SHALL BE ± 0.5%
**CROSS SLOPES OF THE TRAIL VARIES, SEE SHEET 8 FOR SUPERELEVATION TABLE.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

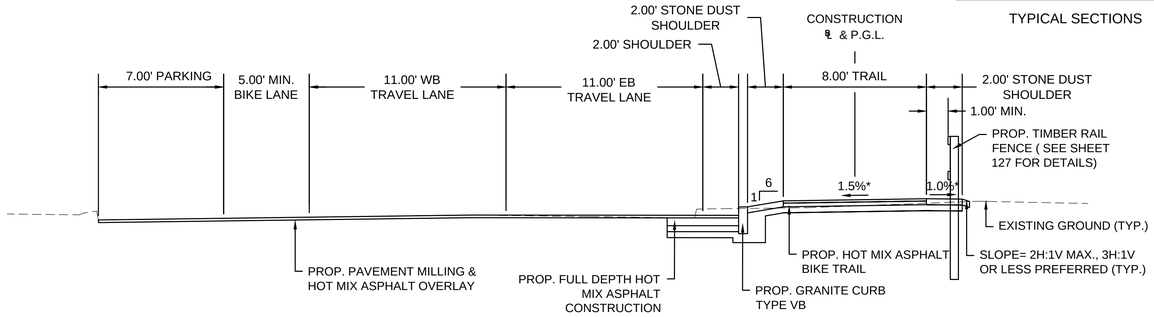
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	10	230
PROJECT FILE NO.	604531		

TYPICAL SECTIONS



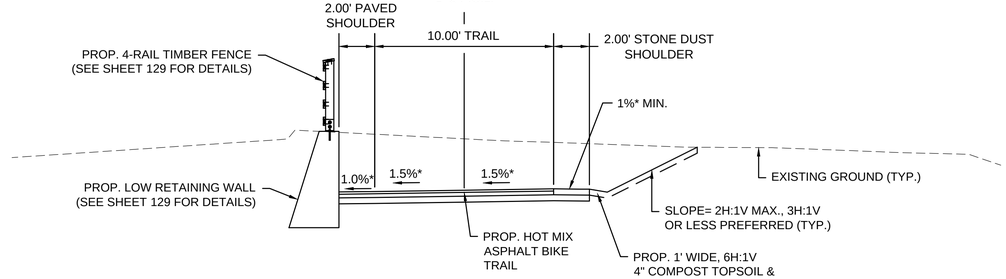
TYPICAL SECTION - 10' WIDE TRAIL
WITH LOW RETAINING WALL
AND HANDRAILS
(RAILROAD STREET)

SCALE 1" = 4'
STA 61+80± - STA. 62+11±
STA. 62+54± - STA. 62+86±



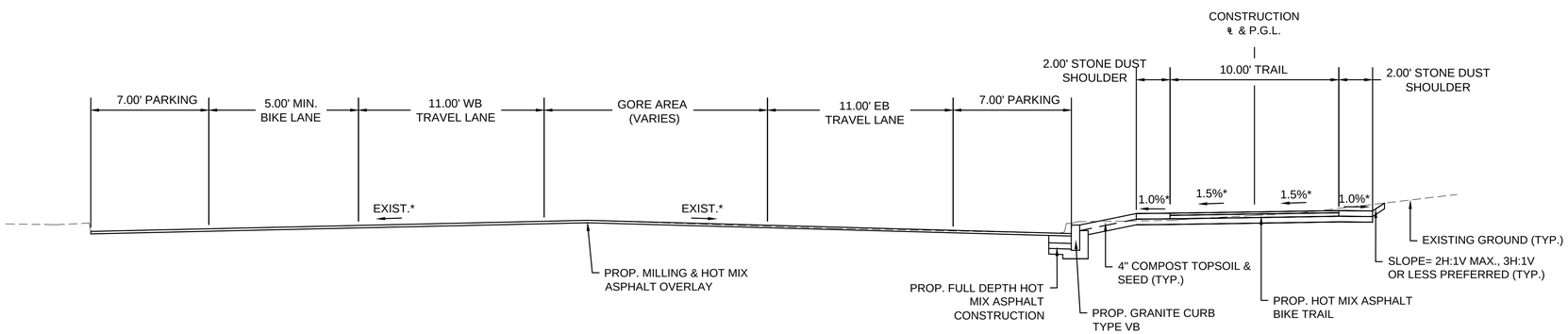
TYPICAL SECTION - 8' WIDE TRAIL
ADJACENT TO MAIN ST. WITH PARKING ON
ONE SIDE

SCALE 1" = 4'
STA. 54+54± - STA. 56+37±



TYPICAL SECTION - 10' WIDE TRAIL
WITH LOW RETAINING WALL
(RAILROAD STREET)

SCALE 1" = 4'
STA 60+90± - STA. 61+80±
STA. 62+11± - STA. 62+54±
STA. 62+86± - STA. 62+97±



TYPICAL SECTION - 10' WIDE TRAIL
ADJACENT TO MAIN ST. WITH PARKING ON
BOTH SIDES

SCALE 1" = 4'
STA. 51+50± - STA. 53+33±

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

NOTE:
*TOLERANCE OF CONSTRUCTION SHALL BE ± 0.5%

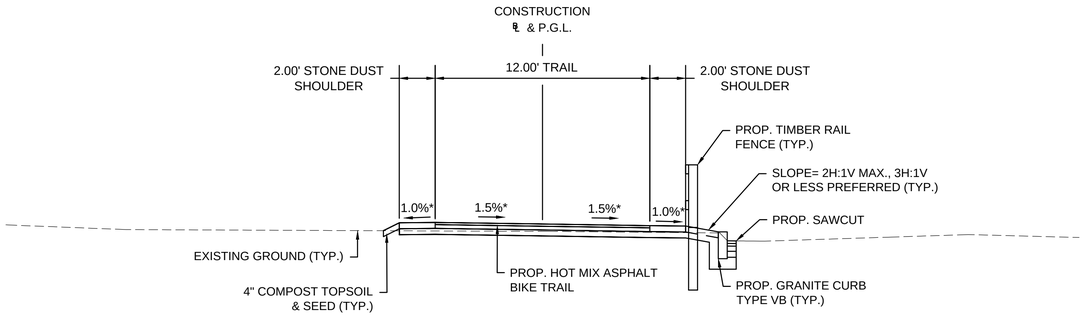
604531_HD(TYP).DWG Plotted on 18-Sep-2015 8:56 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	11	230
PROJECT FILE NO.	604531		

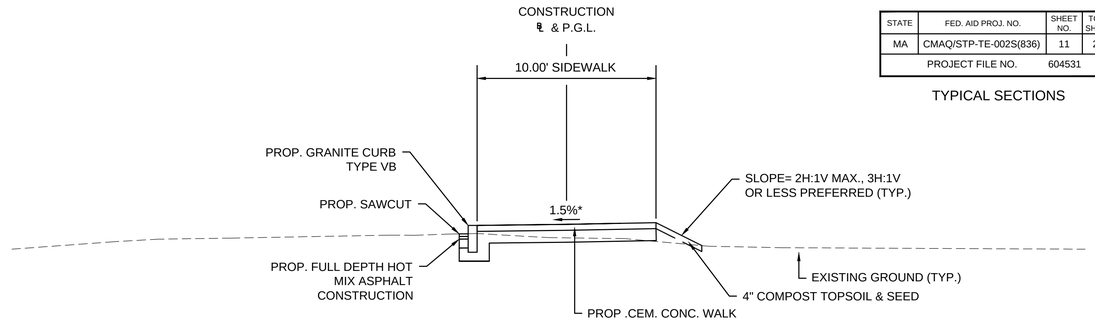
TYPICAL SECTIONS

604531_HD(TYP).DWG Plotted on 18-Sep-2015 8:56 AM



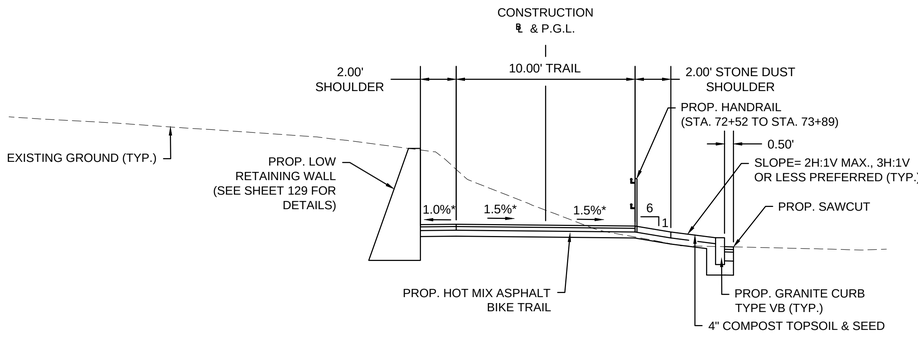
TYPICAL SECTION - 12' WIDE TRAIL (HAYNES ST.)

SCALE 1" = 4'
STA 86+34± TO STA 88+38±



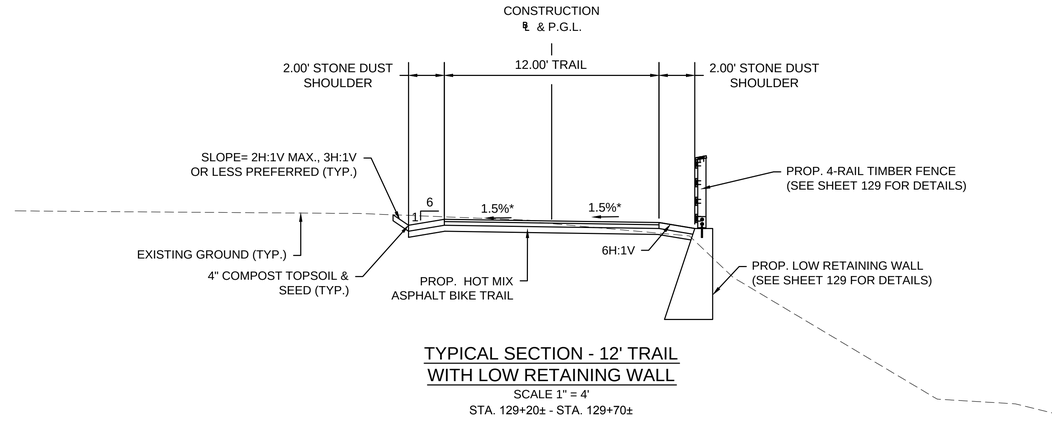
TYPICAL SECTION - 10' CEM .CONC. WALK (MAPLE ST.)

SCALE 1" = 4'
STA179+75± TO STA 180+33±



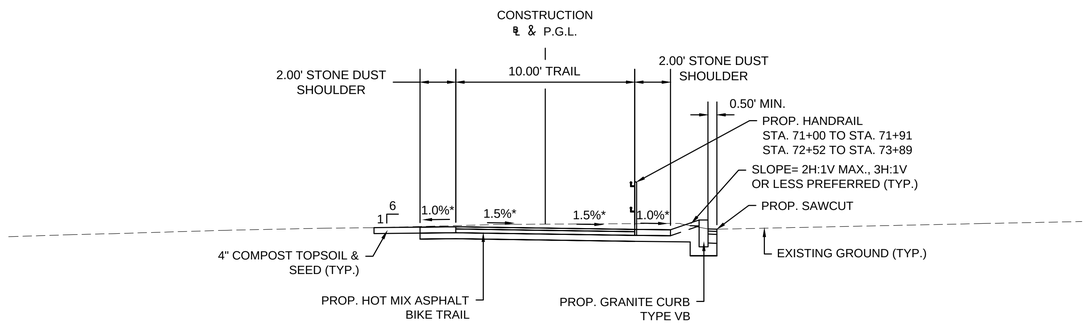
TYPICAL SECTION - 10' WIDE TRAIL WITH LOW RETAINING WALL

SCALE 1" = 4'
STA 73+26± TO STA 74+15±



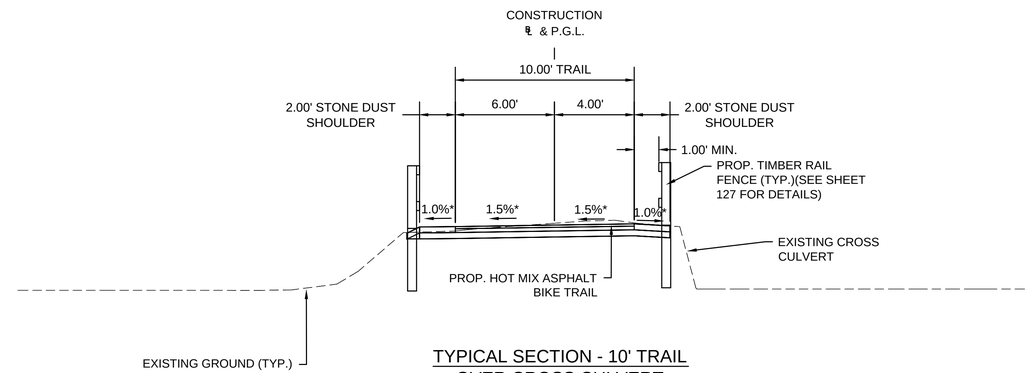
TYPICAL SECTION - 12' TRAIL WITH LOW RETAINING WALL

SCALE 1" = 4'
STA. 129+20± - STA. 129+70±



TYPICAL SECTION - 10' WIDE TRAIL (FLORIDA RD. & MUNICIPAL PARKING LOT)

SCALE 1" = 4'
STA 63+53± TO STA 64+90±
STA 69+70± TO STA 73+26±



TYPICAL SECTION - 10' TRAIL OVER CROSS CULVERT

SCALE 1" = 4'
STA. 126+12± - STA. 126+54±

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

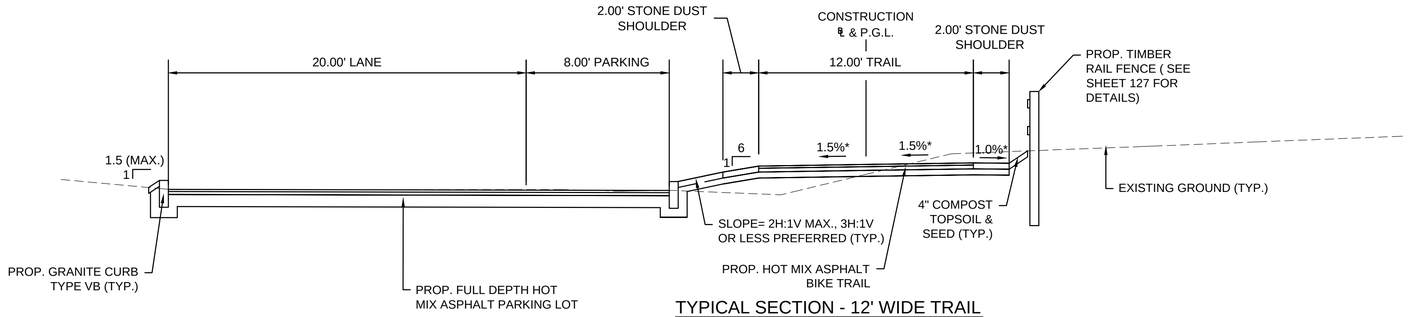
NOTE:
*TOLERANCE OF CONSTRUCTION SHALL BE ± 0.5%

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

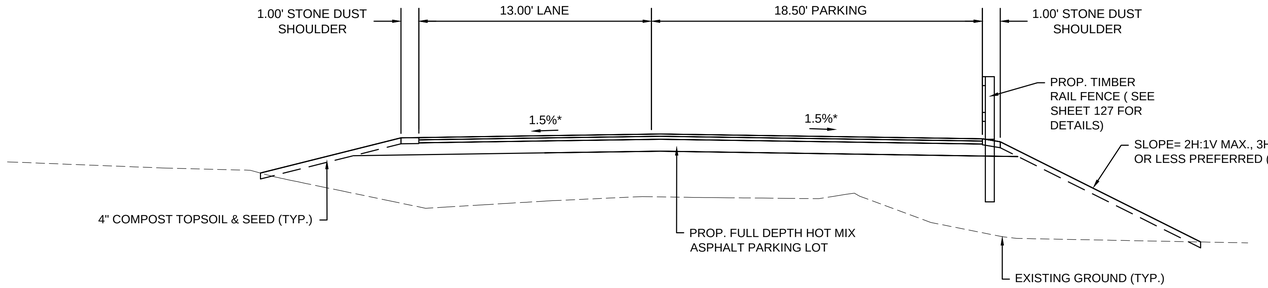
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	12	230
PROJECT FILE NO.	604531		

TYPICAL SECTIONS

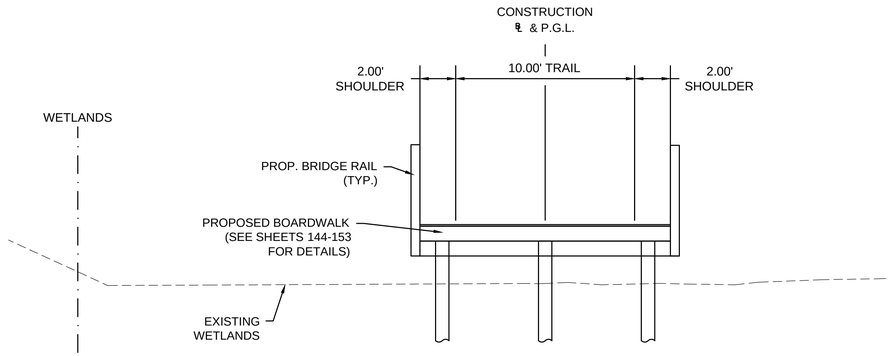
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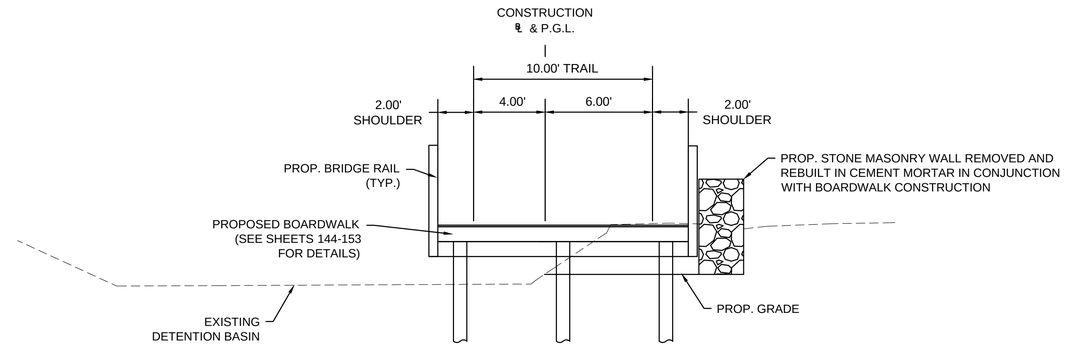
TYPICAL SECTION - 12' WIDE TRAIL
WITH ADJACENT PARKING LOT
SCALE 1" = 4'
STA 177+05± TO STA 179+40±



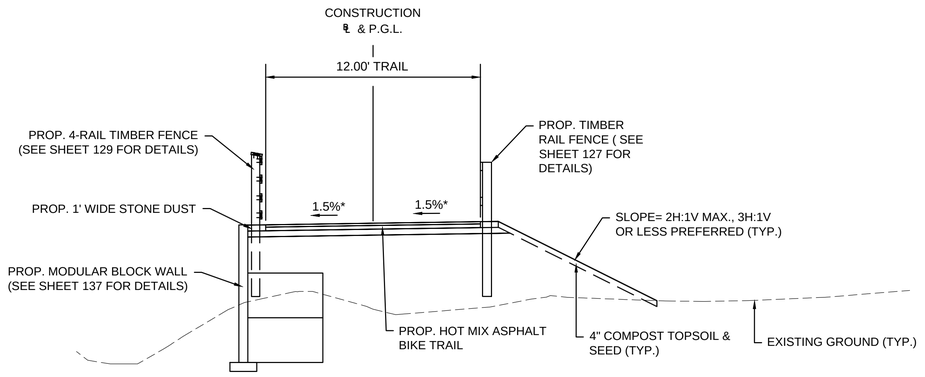
TYPICAL SECTION - PARKING LOT
(SYLVIA ST.)
SCALE 1" = 4'
STA. 502+12± - STA. 502+85± (SYLVIA ST.)



TYPICAL SECTION - 14' BOARDWALK
SCALE 1" = 4'
STA 137+18± TO STA 140+43±



TYPICAL SECTION - 14' BOARDWALK
WITH STONE MASONRY WALL
SCALE 1" = 4'
STA 134+53± TO STA 137+18±



TYPICAL SECTION - 12' TRAIL
WITH MODULAR BLOCK WALL
(SYLVIA ST.)
SCALE 1" = 4'
STA. 501+00± - STA. 502+04± (SYLVIA ST.)

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

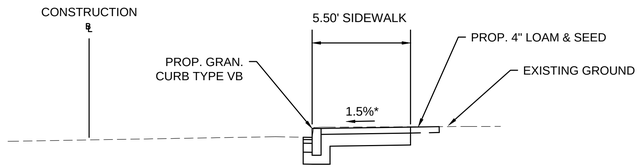
NOTE:
*TOLERANCE OF CONSTRUCTION SHALL BE ± 0.5%

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

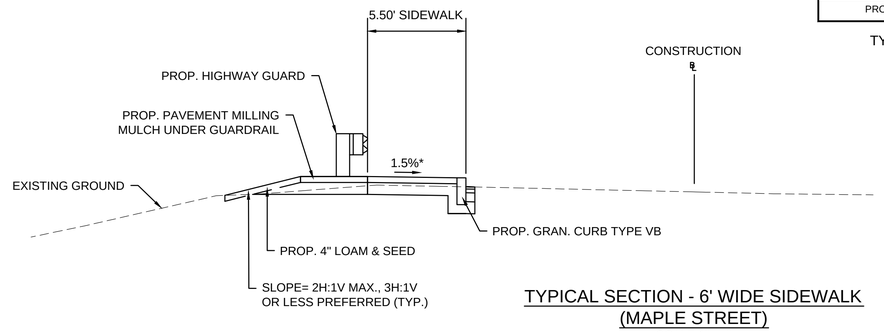
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	13	230
PROJECT FILE NO.	604531		

TYPICAL SECTIONS

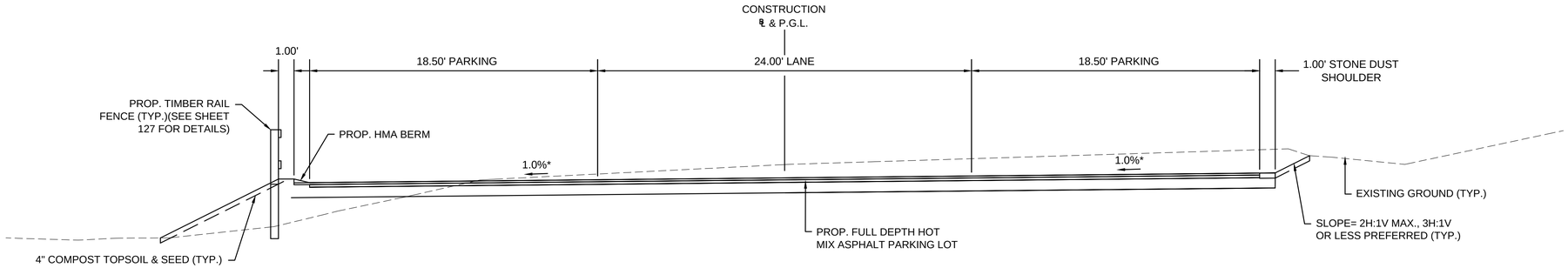
604531_HD(TYP).DWG Plotted on 18-Sep-2015 8:56 AM



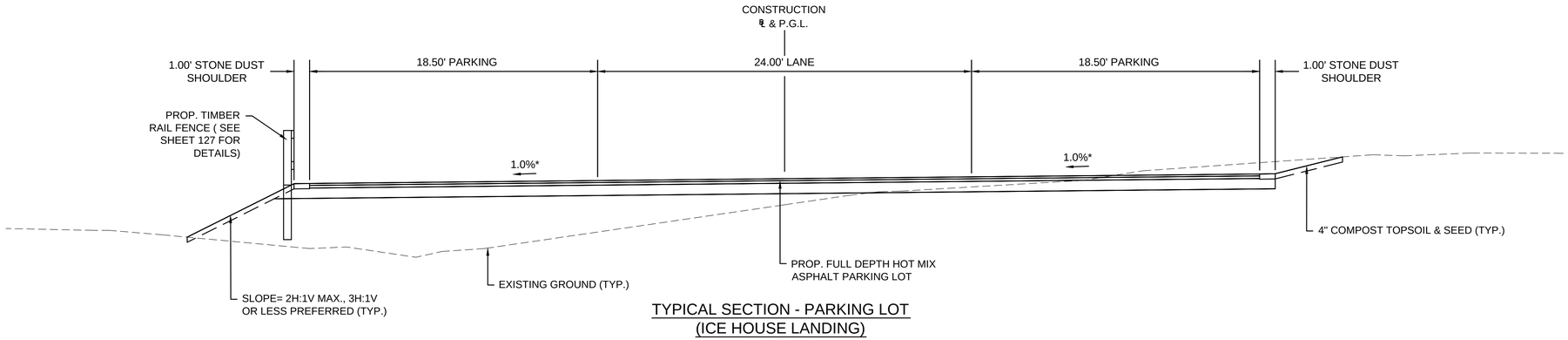
TYPICAL SECTION - 5.5' WIDE SIDEWALK
(MAPLE STREET)
SCALE 1" = 4'
STA. 204+08± - STA. 205±07



TYPICAL SECTION - 6' WIDE SIDEWALK
(MAPLE STREET)
SCALE 1" = 4'
STA. 206+85± - STA. 208+83±



TYPICAL SECTION - PARKING LOT
(MAPLE STREET PARKING)
SCALE 1" = 4'
STA. 0+78± - STA. 2+04± (MAPLE PARKING)



TYPICAL SECTION - PARKING LOT
(ICE HOUSE LANDING)
SCALE 1" = 4'
STA. 0+77± - STA.1+76± (ICEHOUSE LANDING)

NOTE:
*TOLERANCE OF CONSTRUCTION SHALL BE ± 0.5%

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

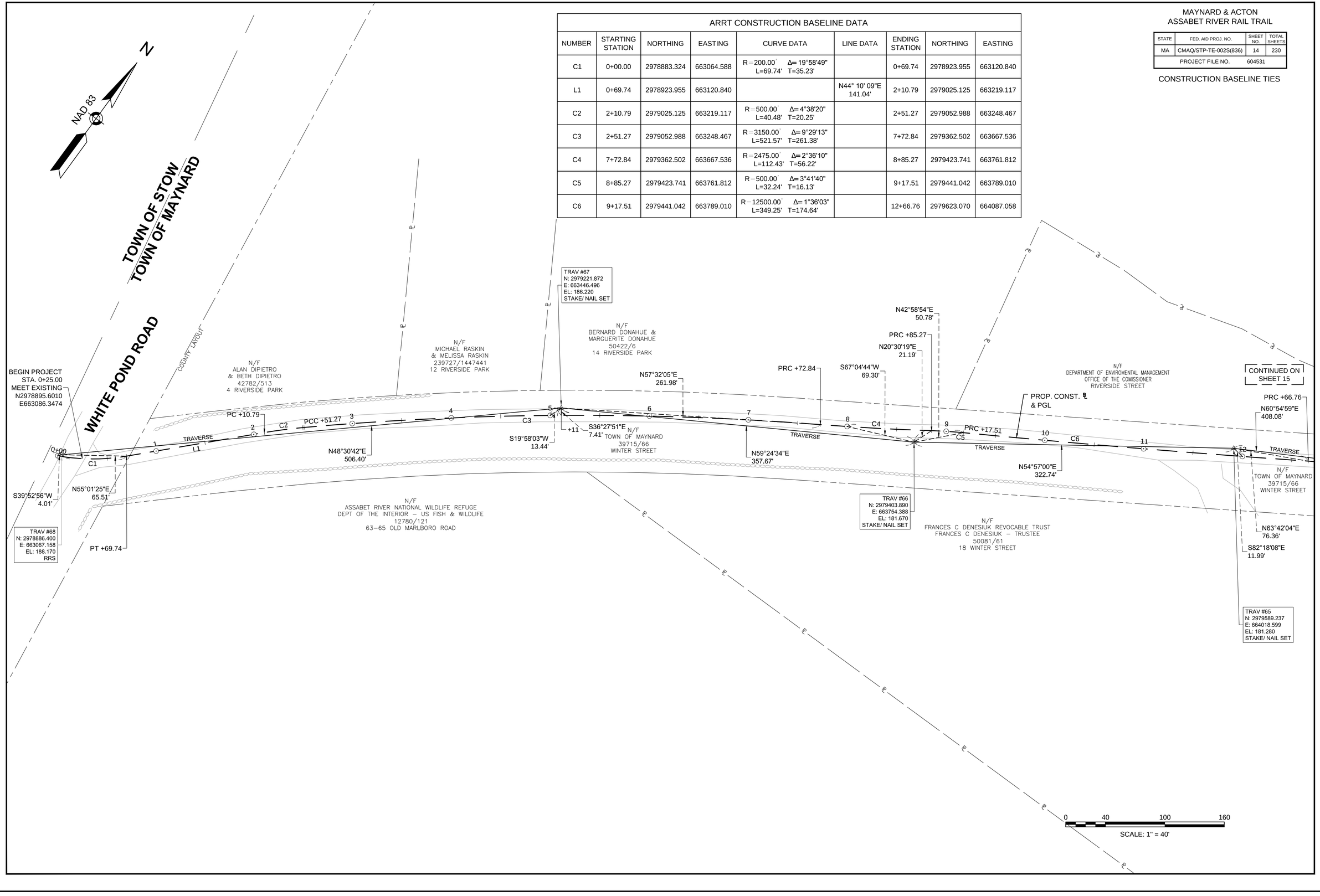
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	14	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C1	0+00.00	2978883.324	663064.588	R=200.00' Δ=19°58'49" L=69.74' T=35.23'		0+69.74	2978923.955	663120.840
L1	0+69.74	2978923.955	663120.840		N44° 10' 09"E 141.04'	2+10.79	2979025.125	663219.117
C2	2+10.79	2979025.125	663219.117	R=500.00' Δ=4°38'20" L=40.48' T=20.25'		2+51.27	2979052.988	663248.467
C3	2+51.27	2979052.988	663248.467	R=3150.00' Δ=9°29'13" L=521.57' T=261.38'		7+72.84	2979362.502	663667.536
C4	7+72.84	2979362.502	663667.536	R=2475.00' Δ=2°36'10" L=112.43' T=56.22'		8+85.27	2979423.741	663761.812
C5	8+85.27	2979423.741	663761.812	R=500.00' Δ=3°41'40" L=32.24' T=16.13'		9+17.51	2979441.042	663789.010
C6	9+17.51	2979441.042	663789.010	R=12500.00' Δ=1°36'03" L=349.25' T=174.64'		12+66.76	2979623.070	664087.058



604531_HD(SC).DWG Plotted on 18-Sep-2015 8:57 AM

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	15	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:57 AM

NAD 83

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C7	12+66.76	2979623.070	664087.058	R=1000.00' Δ=3°47'31" L=66.18' T=33.10'		13+32.94	2979656.472	664144.178
L2	13+32.94	2979656.472	664144.178		N61° 34' 39"E 122.68'	14+55.63	2979714.865	664252.073
C8	14+55.63	2979714.865	664252.073	R=100.00' Δ=13°33'24" L=23.66' T=11.89'		14+79.29	2979728.472	664271.362
C9	14+79.29	2979728.472	664271.362	R=100.00' Δ=12°23'58" L=21.64' T=10.86'		15+00.93	2979741.100	664288.884
C10	15+00.93	2979741.100	664288.884	R=1000.00' Δ=4°03'15" L=70.76' T=35.39'		15+71.68	2979778.175	664349.133
C11	15+71.68	2979778.175	664349.133	R=5700.00' Δ=1°48'09" L=179.33' T=89.67'		17+51.01	2979879.835	664496.856
C12	17+51.01	2979879.835	664496.856	R=100.00' Δ=12°51'07" L=22.43' T=11.26'		17+73.45	2979890.690	664516.431

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C13	17+73.45	2979890.690	664516.431	R=100.00' Δ=13°56'27" L=24.33' T=12.23'		17+97.78	2979902.662	664537.545
L3	17+97.78	2979902.662	664537.545		N53° 28' 29"E 103.32'	19+01.09	2979964.155	664620.570
C14	19+01.09	2979964.155	664620.570	R=100.00' Δ=13°28'47" L=23.53' T=11.82'		19+24.62	2979980.242	664637.663
C15	19+24.62	2979980.242	664637.663	R=100.00' Δ=12°27'42" L=21.75' T=10.92'		19+46.37	2979995.259	664653.337
L4	19+46.37	2979995.259	664653.337		N52° 27' 24"E 28.40'	19+74.77	2980012.566	664675.857
C16	19+74.77	2980012.566	664675.857	R=1270.00' Δ=10°00'59" L=222.02' T=111.30'		21+96.80	2980162.519	664839.206
C17	21+96.80	2980162.519	664839.206	R=27625.00' Δ=1°12'29" L=582.41' T=291.22'		27+79.21	2980588.154	665236.733

CONTINUED ON SHEET 14

N54°57'00"E 322.74'
PRC +66.76
N60°54'59"E 408.08'
TRAVERSE
12
13
C7
PT +32.94
14
L2
N63°42'04"E 76.36'
S82°18'08"E 11.99'
TRAV #65
N: 2979589.237
E: 664018.599
EL: 181.280
STAKE/ NAIL SET
PRC +00.93
ASSABET RIVER
PRC +79.29
PC +55.63
C8
C9
15
C10
S59°26'03"W 143.02'
S60°20'55"W 119.51'
S61°41'45"W 98.06'
TRAV #64
N: 2979787.597
E: 664375.223
EL: 179.770
STAKE/ NAIL SET
PCC +71.68
S70°08'38"W 27.74'
16
C11
17
TRAVERSE
N21°59'29"W 6.82'
C12
C13
18
L3
N54°41'46"E 331.36'
TAYLOR BROOK
PRC +97.78
PRC +73.45
PRC +51.01
19
PC +01.09
ARRT CONST. ℄ STA. 20+39.77 =
ICE HOUSE LANDING PARKING CONST. ℄ STA. 0+00.00
N42°43'27"E 130.84'
PC +74.77
PT +46.37
C15
N81°48'36"W 8.06'
PRC +24.62
S59°12'44"W 29.19'
C14
L4
20
TRAVERSE
N25°27'08"E 17.90'
TRAV #63
N: 2979979.093
E: 664645.643
EL: 180.810
STAKE/ NAIL SET
PC +26.38
PROP. CONST. ℄ & PGL
PT +56.79
S81°11'12"E 127.06'
S20°03'15"W 22.98'
TRAV #56
N: 2980075.211
E: 664734.412
EL: 180.990
STAKE/ NAIL SET
C16
21
N50°12'04"E 136.40'
L59
C92
1
L134
PI +34.97
TRAVERSE
N47°29'55"W 42.29'
S74°58'06"W 92.26'
L135
TRAV #64600
N: 2980055.743
E: 664859.972
EL: 186.320
S47°13'38"E 52.08'
PT +45.15
413
L65
414
PROP. CONST. ℄
PROP. CONST. ℄ & PGL
22
PRC +96.80
23
24
C17
N/F
TOWN OF MAYNARD
ENVIRONMENTAL COMMISSION
35322/440
CONTINUED ON SHEET 16
WINTER STREET
TRAVERSE
N40°30'54"E 743.65'
L64
409
410
411
C96
2
412
N/F
JENNIFER MONTGOMERY AND
CHRISTOPHER LAWSON
59179-592
36 WINTER STREET
N/F
ROY E. HILLSTOM AND
KIM F. HILLSTOM
30909/407
16 WINTER STREET
N/F
THOMAS PHELAN AND
IRENE F. PHELAN
14426/227
15 WINTER STREET
PC +43.51
N44°22'02"E 83.68'
WINTER STREET CONST. ℄ STA. 412+13.38 =
ICE HOUSE LANDING PARKING CONST. ℄ STA. 2+07.69
N83°12'18"W 34.07'

0 40 100 160
SCALE: 1" = 40'

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	16	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:57 AM

NAD 83

CONTINUED ON SHEET 15

GREAT ROAD (RTE 117)

MILL STREET

PINE STREET

WINTER STREET

GREAT ROAD (RTE 117)

N/F TOWN OF MAYNARD ENVIRONMENTAL COMMISSION 35322/440

N/F TOWN OF MAYNARD

N/F MELISSA GOPNIK 49676/90 71–73 GREAT ROAD

N/F MICHAEL D. MISSLIN & JANE F. MISSLIN 14074/199 77 GREAT ROAD

N/F SUSAN SCOTT 48046/253 78 GREAT ROAD

N/F BRIAN M. DECHELLIS AND DIANE T. DECHELLIS 52987/579 43 MILL STREET

N/F NICHOLAS AUFFINGER TALARICO 64063–90 16 PINE STREET

N/F GERTRUDE LORETTA AND JOHN LORETTA 12960/657 14 PINE STREET

N/F JENNY'S WAY TOWN HO CONDOMINIUM MASTER DEED 63652/349 PINE STREET

N/F CHRISTIAN FISHER AND MICHELE FISHER 48071/179 79–81 GREAT ROAD

N/F TOWN OF MAYNARD 39715/66

N/F JOHN P. MONCOUSKY AND CHERYL MONCOUSKY 21122/332 48 MILL STREET

N/F TOWN OF MAYNARD 39715/66 WINTER STREET

OWNER UNKN. 8120/220

N/F WELLESLEY/ROSEWOOD/MAYNARD MILLS LIMITED PARTNERSHIP 27896/474

N/F DONNA MARTELL AND GREGORY FLANIGAN 50662/293 50 MILL STREET

N/F TOWN OF MAYNARD 39715/66

N/F RONALD B. PEKKALA REGISTERED LAND CERT#0200468 DOC#958569 BK/PG 1132/118 14 WINTER STREET

N/F JOSHUA MILLER 46571/544 13 WINTER STREET

N/F NICHOLAS T. GAYESKI AND CELINA D. GAYESKI 60717–591 12 WINTER STREET

N/F FREDERICK J. BROOKS AND NANCY W. BROOKS 33051/559 11 WHITE AVENUE

N/F GARY URQUHART SHARON BETH URQUHART 25036/064 9 WINTER STREET

N/F TOWN OF MAYNARD 8146/326 WINTER STREET

N/F STEVEN R. CALOGGERO AND ANNEMARIE E. GRAZIANO REGISTERED LAND DOC# 942654 CERT# 198858 BK/PG 1124/108 7 WHITE AVENUE

N/F ROGER S. MURRAY AND KATHLEEN N. MURRAY 10474/246 3 WHITE AVE

N/F WOUTER LEEUWIS AND RACHAEL G FERRIS 41273/061 1 WINTER STREET

N/F KATHLEEN K. FITZGERALD 62843/413 94 GREAT ROAD

N/F ROY E. HILLSTOM AND KIM F. HILLSTOM 30909/407 16 WINTER STREET

N/F THOMAS PHELAN AND IRENE F. PHELAN 14426/227 15 WINTER STREET

PROP. CONST. ℄ & PGL

PROP. CONST. ℄

PCC +79.21

PT +77.55

PC +96.06

PI +81.04

PRC +91.47

PT +09.69

PC +89.04

PI +52.66

PC +52.17

PT +12.28

PC +81.26

PI +08.16

PT +31.10

PI +80.19

PC +10.07

PT +04.85

PI +18.97

1881 TOWN LAYOUT

PRE–1871 TOWN LAYOUT

1921 COUNTY LAYOUT

1927 COUNTY LAYOUT

CANAL

TRAVERSE N40°30'54"E 743.65' L64

TRAVERSE N60°50'32"E 519.81' L63

S72°47'24"W 117.33'

N48°01'02"W 36.52'

N46°37'46"E 109.83'

S57°29'38"E 13.09'

N58°45'03"E 133.57'

S75°45'25"W 55.31' L68

S85°32'50"W 50.91'

N88°00'20"W 73.30'

N71°13'22"W 70.37'

TRAV #64601 N: 2980621.095 E: 665343.082 EL: 194.970 MAGNAIL

TRAV #65065 N: 2980874.354 E: 665797.022 EL: 189.359 MAGNAIL

TRAV #155 N: 2980837.577 E: 665762.905 EL: 187.470 MAG NAIL SET

GREAT ROAD (ROUTE 117) CONST. ℄ STA. 109+18.58 = ARRT CONST. ℄ STA. 33+59.02

GREAT ROAD (ROUTE 117) CONST. ℄ STA. 109+42.00 = WINTER STREET CONST. ℄ STA. 400+00.00

CONTINUED ON SHEET 17

0 40 100 160

SCALE: 1" = 40'

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C17	21+96.80	2980162.519	664839.206	R=27625.00' Δ=1°12'29" L=582.41' T=291.22'		27+79.21	2980588.154	665236.733
C18	27+79.21	2980588.154	665236.733	R=270.00' Δ=20°52'05" L=98.34' T=49.72'		28+77.55	2980645.524	665315.934
L5	28+77.55	2980645.524	665315.934		N64° 30' 59"E 118.51'	29+96.06	2980696.515	665422.918
C74	29+96.06	2980696.515	665422.918	R=5000.00' Δ=1°19'54" L=116.22' T=58.11'		31+12.28	2980745.294	665528.400
L6	31+12.28	2980745.294	665528.400		N65° 50' 53"E 168.98'	32+81.26	2980814.435	665682.591
C75	32+81.26	2980814.435	665682.591	R=60.00' Δ=47°35'36" L=49.84' T=26.46'		33+31.10	2980850.388	665715.022
L7	33+31.10	2980850.388	665715.022		N18° 15' 18"E 49.09'	33+80.19	2980897.005	665730.398
L8	33+80.19	2980897.005	665730.398		N73° 21' 26"W 72.46'	34+52.66	2980917.759	665660.969
L9	34+52.66	2980917.759	665660.969		N26° 04' 11"W 36.38'	34+89.04	2980950.438	665644.981
C19	34+89.04	2980950.438	665644.981	R=60.00' Δ=97°49'00" L=102.43' T=68.80'		35+91.47	2981033.787	665680.084
C20	35+91.47	2981033.787	665680.084	R=100.00' Δ=10°26'26" L=18.22' T=9.14'		36+09.69	2981041.035	665696.775
L10	36+09.69	2981041.035	665696.775		N61° 18' 23"E 340.07'	39+49.76	2981204.310	665995.081

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	17	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L10	36+09.69	2981041.035	665696.775		N61° 18' 23"E 340.07'	39+49.76	2981204.310	665995.081
C76	39+49.76	2981204.310	665995.081	R=1000.00' Δ=1°55'40" L=33.65' T=16.83'		39+83.40	2981219.966	666024.862
L11	39+83.40	2981219.966	666024.862		N63° 14' 03"E 413.59'	43+97.00	2981406.224	666394.138
C77	43+97.00	2981406.224	666394.138	R=500.00' Δ=6°23'43" L=55.81' T=27.93'		44+52.80	2981428.528	666445.266
L12	44+52.80	2981428.528	666445.266		N69° 37' 46"E 55.85'	45+08.66	2981447.969	666497.626
C78	45+08.66	2981447.969	666497.626	R=300.00' Δ=14°34'30" L=76.31' T=38.36'		45+84.97	2981483.298	666565.038
L13	45+84.97	2981483.298	666565.038		N55° 03' 17"E 396.42'	49+81.39	2981710.367	666889.984

NAD 83

TRAV #75
N: 2981738.187
E: 666465.454
EL: 179.741
MAG NAIL SET

CONTINUED ON SHEET 16

CONTINUED ON SHEET 18

PINE STREET

HIGH STREET

MAIN STREET (ROUTE 62)

HARRIMAN COURT

GREAT ROAD (RTE 117)

1904 COUNTY LAYOUT

1838 TOWN LAYOUT

1921 COUNTY LAYOUT

PRE-1871 TOWN LAYOUT

PROP. CONST. ℄ & PGL

CANAL

10' PUBLIC EASEMENT

N/F
TOWN OF MAYNARD
39715/66
WINTER STREET

N/F
GERTRUDE LORETTA AND JOHN LORETTA
12960/257
14 PINE STREET

N/F
JENNY'S WAY TOWN HOMES CONDOMINIUM
MASTER DEED
63652/349
PINE STREET

N/F
CAROLE E MALLONEE
10404/542
11 SPRING LANE

N/F
LEONA FOLEY
37895/326
12 SPRING LANE

N/F
STEPHEN L. ALLEN AND DOLORES A. ALLEN
REGISTERED LAND
CERT# 143938
DOC# 523192
SPRING LANE

N/F
ROBERT S. MARTELL & JOAN F. MARTELL
31140/70
12 A&B HARRIMAN CT

N/F
7 HARRIMAN COURT REALTY TRUST U/D/T
STEPHEN M. HEBERT, TRUSTEE
43106/72
7 HARRIMAN CT

UNKNOWN

N/F
VINCENT DINH & BIND ZOU
55296/271
174 MAIN STREET

N/F
DIMOPOULOS FAMILY TRUST
25051/306
170 MAIN STREET

N/F
VINCENT DINH & BIND ZOU
55296/271
HIGH STREET

N/F
P. MONCOUSKY AND HERYL MONCOUSKY
21122/332
48 MILL STREET

N/F
DONNA MARTELL AND GREGORY FLANIGAN
50662/293
50 MILL STREET

N/F
DEBRA J. MEALEY AND JEFFREY MEALEY
30759/217
19-20 HIGH STREET

N/F
ROY R. MASON AND FRANCIS MASON
12548/238
18 HIGH STREET

N/F
MARK J. BENOIT AND JESSICA E. MCLEAN
63235-198
16-17 HIGH STREET

N/F
ADAM E. BROWNSTEIN
42887/109
15 HIGH STREET

N/F
ALLEN G. JUSSAUME AND SUSAN JUSSAUME
25975/187
14 HIGH STREET

N/F
KATHLEEN C. LARSEN
14388/246
13 HIGH STREET

N/F
JUNMEI YAO AND HONG JIN
60452/584
11-12 HIGH STREET

N/F
JEREMY S. ALFORD AND REBECCA M. ALFORD
51947/534
9-10 HIGH STREET

N/F
DENNIS KERWIN
43171/382
8 HIGH STREET

5,6,7 HIGH STREET
JOSEPH J. MISHLEY AND MARCIA P. MISHLEY
14867/292

N/F
ASHLEY J. KOBUSZEWSKI
63579-72
4 HIGH STREET

N/F
JANETTE P. HADLEY
29935/180
3 HIGH STREET

N/F
JOHN P. RODGERS & ETHEL F. RODGERS
53191/20
2 HIGH STREET

N/F
JOSEPH RUSSO, JR.
50533/88
HIGH STREET

N/F
WELLESLEY/ROSEWOOD/MAYNARD MILLS LIMITED PARTNERSHIP
27896/474

N/F
KATHLEEN K. FITZGERALD
62843/413
94 GREAT ROAD

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

0 40 100 160
SCALE: 1" = 40'

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:57 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

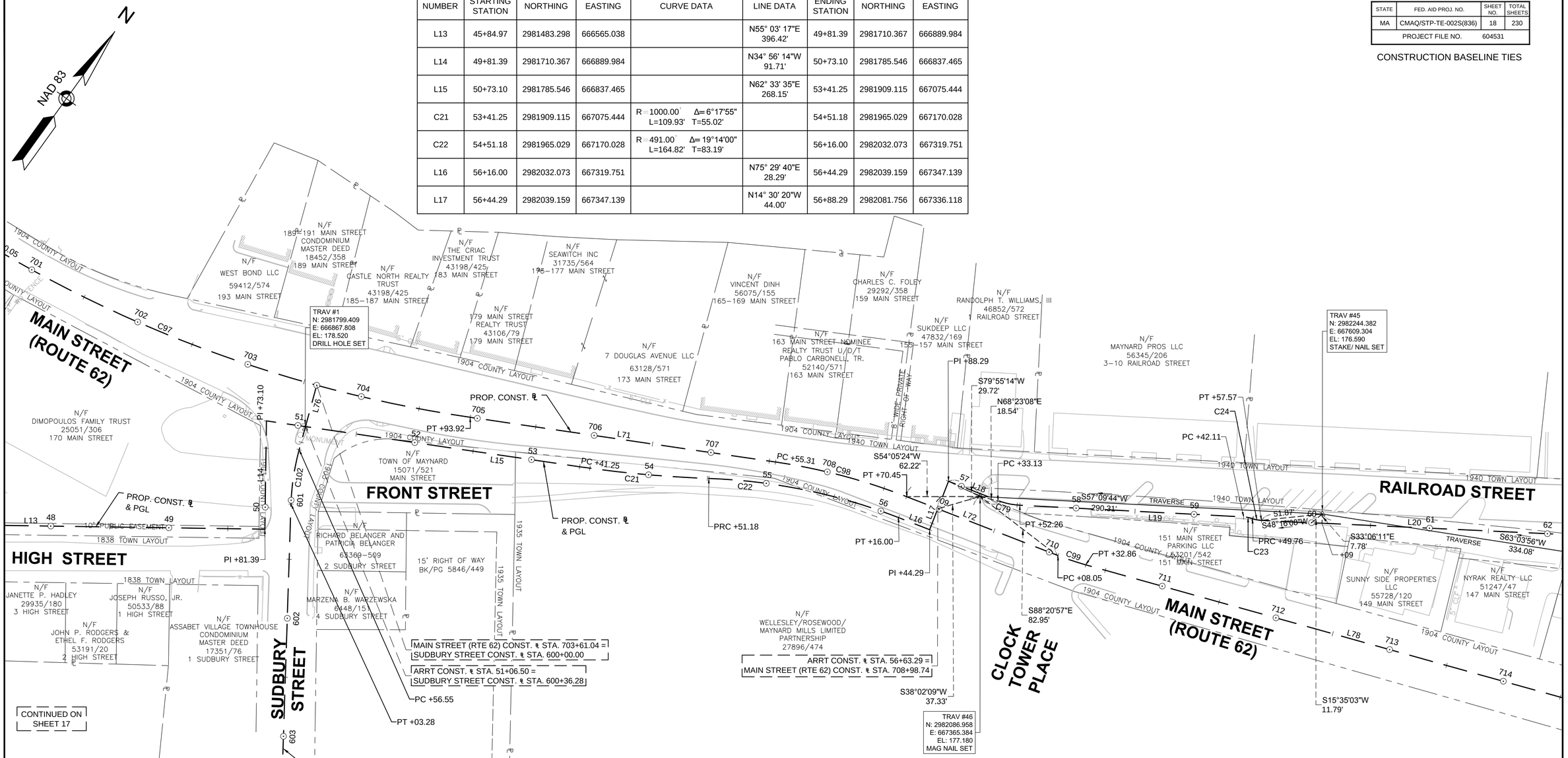
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	18	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:57 AM

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L13	45+84.97	2981483.298	666565.038		N55° 03' 17"E 396.42'	49+81.39	2981710.367	666889.984
L14	49+81.39	2981710.367	666889.984		N34° 56' 14"W 91.71'	50+73.10	2981785.546	666837.465
L15	50+73.10	2981785.546	666837.465		N62° 33' 35"E 268.15'	53+41.25	2981909.115	667075.444
C21	53+41.25	2981909.115	667075.444	R=1000.00' Δ=6°17'55" L=109.93' T=55.02'		54+51.18	2981965.029	667170.028
C22	54+51.18	2981965.029	667170.028	R=491.00' Δ=19°14'00" L=164.82' T=83.19'		56+16.00	2982032.073	667319.751
L16	56+16.00	2982032.073	667319.751		N75° 29' 40"E 28.29'	56+44.29	2982039.159	667347.139
L17	56+44.29	2982039.159	667347.139		N14° 30' 20"W 44.00'	56+88.29	2982081.756	667336.118



ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L18	56+88.29	2982081.756	667336.118		N75° 29' 40"E 44.84'	57+33.13	2982092.987	667379.529
C79	57+33.13	2982092.987	667379.529	R=60.00' Δ=18°16'22" L=19.14' T=9.65'		57+52.26	2982100.629	667396.983
L19	57+52.26	2982100.629	667396.983		N57° 13' 18"E 189.84'	59+42.11	2982203.407	667556.597
C23	59+42.11	2982203.407	667556.597	R=27.00' Δ=16°14'51" L=7.66' T=3.85'		59+49.76	2982206.590	667563.533
C24	59+49.76	2982206.590	667563.533	R=27.00' Δ=16°34'20" L=7.81' T=3.93'		59+57.57	2982209.857	667570.596
L20	59+57.57	2982209.857	667570.596		N56° 53' 49"E 259.26'	62+16.83	2982351.452	667787.778

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	19	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:58 AM

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L20	59+57.57	2982209.857	667570.596		N56° 53' 49"E 259.26'	62+16.83	2982351.452	667787.778
C25	62+16.83	2982351.452	667787.778	R=27.00' Δ=30°27'26" L=14.35' T=7.35'		62+31.19	2982362.048	667797.208
C26	62+31.19	2982362.048	667797.208	R=27.00' Δ=34°15'23" L=16.14' T=8.32'		62+47.33	2982373.571	667808.169
L21	62+47.33	2982373.571	667808.169		N60° 41' 47"E 43.60'	62+90.93	2982394.910	667846.189
C27	62+90.93	2982394.910	667846.189	R=100.00' Δ=5°51'17" L=10.22' T=5.11'		63+01.15	2982400.357	667854.829
C28	63+01.15	2982400.357	667854.829	R=100.00' Δ=5°43'57" L=10.01' T=5.01'		63+11.15	2982405.700	667863.284

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L22	63+11.15	2982405.700	667863.284		N60° 34' 27"E 179.12'	64+90.28	2982493.703	668019.298
C29	64+90.28	2982493.703	668019.298	R=60.00' Δ=36°05'10" L=37.79' T=19.55'		65+28.07	2982501.039	668055.735
C30	65+28.07	2982501.039	668055.735	R=75.00' Δ=47°55'26" L=62.73' T=33.33'		65+90.80	2982519.156	668113.898
L23	65+90.80	2982519.156	668113.898		N48° 44' 11"E 63.99'	66+54.78	2982561.357	668161.996
C31	66+54.78	2982561.357	668161.996	R=27.00' Δ=53°43'38" L=25.32' T=13.68'		66+80.10	2982584.002	668171.086
C32	66+80.10	2982584.002	668171.086	R=27.00' Δ=66°21'39" L=31.27' T=17.66'		67+11.37	2982610.049	668185.047

TRAV #45
N: 2982244.382
E: 667609.304
EL: 176.590
STAKE/ NAIL SET

TRAV #42
N: 2982798.091
E: 668539.324
EL: 164.720
MAG NAIL SET

TRAV #44
N: 2982395.709
E: 667907.141
EL: 164.750
MAG NAIL SET

TRAV #43
N: 2982560.140
E: 668175.341
EL: 162.690
MAG NAIL SET

CONTINUED ON SHEET 18

CONTINUED ON SHEET 20

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C33	67+11.37	2982610.049	668185.047	R=1500.00' Δ=9°37'19" L=251.90' T=126.25'		69+63.28	2982748.704	668395.002
C34	69+63.28	2982748.704	668395.002	R=47.00' Δ=37°47'11" L=31.00' T=16.09'		69+94.27	2982758.794	668423.718
C35	69+94.27	2982758.794	668423.718	R=27.00' Δ=42°32'49" L=20.05' T=10.51'		70+14.32	2982766.051	668441.917
L24	70+14.32	2982766.051	668441.917		N46° 59' 15"E 118.84'	71+33.16	2982847.117	668528.812
C36	71+33.16	2982847.117	668528.812	R=60.00' Δ=28°36'31" L=29.96' T=15.30'		71+63.12	2982872.072	668544.822
C37	71+63.12	2982872.072	668544.822	R=60.00' Δ=23°57'46" L=25.09' T=12.73'		71+88.22	2982893.567	668557.413

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C38	71+88.22	2982893.567	668557.413	R=1500.00' Δ=5°33'14" L=145.40' T=72.76'		73+33.62	2983005.614	668649.990
C39	73+33.62	2983005.614	668649.990	R=60.00' Δ=25°07'49" L=26.32' T=13.37'		73+59.93	2983022.619	668669.797

0 40 100 160
SCALE: 1" = 40'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

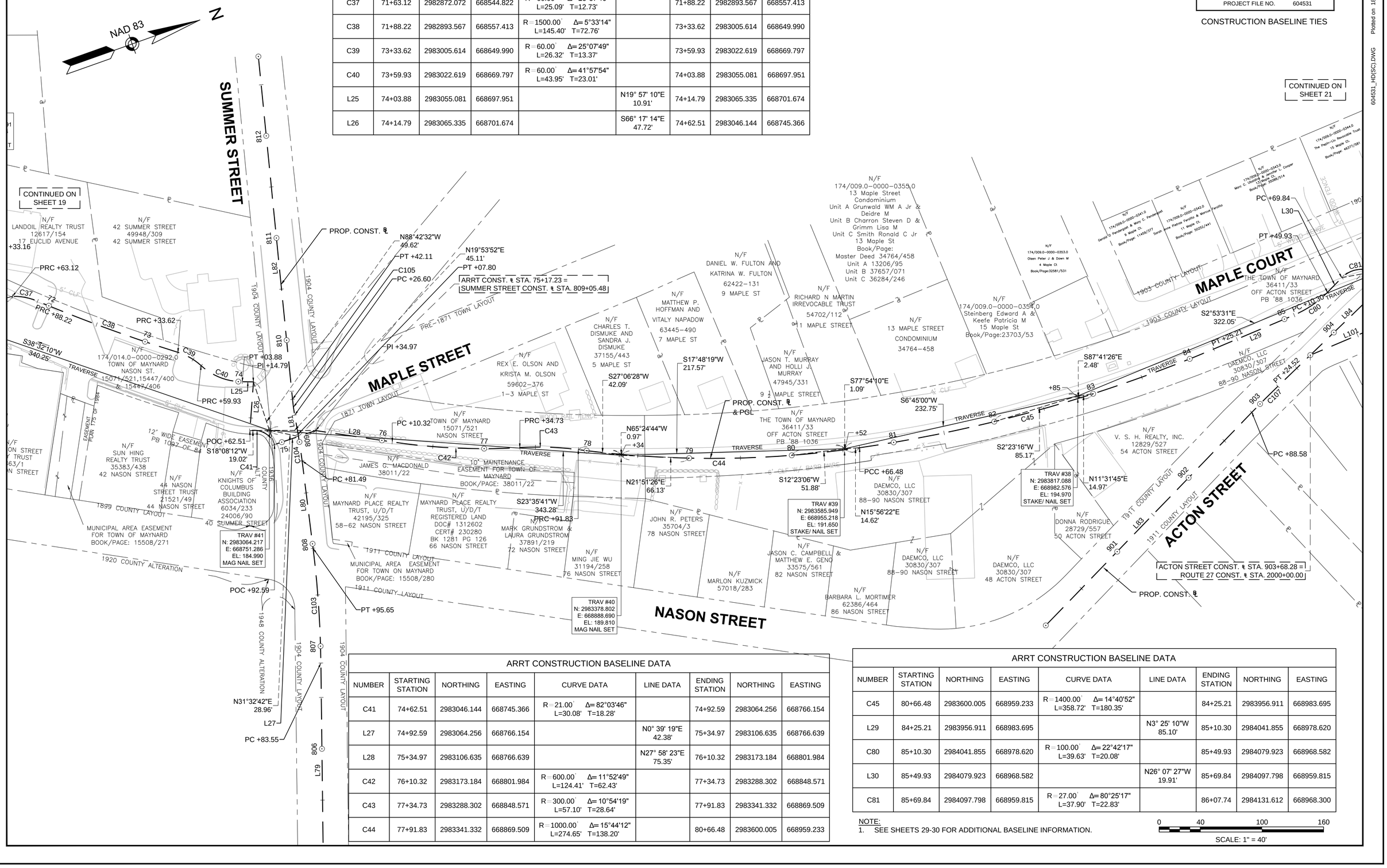
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	20	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:58 AM

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C37	71+63.12	2982872.072	668544.822	R=60.00' Δ=23°57'46" L=25.09' T=12.73'		71+88.22	2982893.567	668557.413
C38	71+88.22	2982893.567	668557.413	R=1500.00' Δ=5°33'14" L=145.40' T=72.76'		73+33.62	2983005.614	668649.990
C39	73+33.62	2983005.614	668649.990	R=60.00' Δ=25°07'49" L=26.32' T=13.37'		73+59.93	2983022.619	668669.797
C40	73+59.93	2983022.619	668669.797	R=60.00' Δ=41°57'54" L=43.95' T=23.01'		74+03.88	2983055.081	668697.951
L25	74+03.88	2983055.081	668697.951		N19° 57' 10"E 10.91'	74+14.79	2983065.335	668701.674
L26	74+14.79	2983065.335	668701.674		S66° 17' 14"E 47.72'	74+62.51	2983046.144	668745.366



ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C41	74+62.51	2983046.144	668745.366	R=21.00' Δ=82°03'46" L=30.08' T=18.28'		74+92.59	2983064.256	668766.154
L27	74+92.59	2983064.256	668766.154		N0° 39' 19"E 42.38'	75+34.97	2983106.635	668766.639
L28	75+34.97	2983106.635	668766.639		N27° 58' 23"E 75.35'	76+10.32	2983173.184	668801.984
C42	76+10.32	2983173.184	668801.984	R=600.00' Δ=11°52'49" L=124.41' T=62.43'		77+34.73	2983288.302	668848.571
C43	77+34.73	2983288.302	668848.571	R=300.00' Δ=10°54'19" L=57.10' T=28.64'		77+91.83	2983341.332	668869.509
C44	77+91.83	2983341.332	668869.509	R=1000.00' Δ=15°44'12" L=274.65' T=138.20'		80+66.48	2983600.005	668959.233

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C45	80+66.48	2983600.005	668959.233	R=1400.00' Δ=14°40'52" L=358.72' T=180.35'		84+25.21	2983956.911	668983.695
L29	84+25.21	2983956.911	668983.695		N3° 25' 10"W 85.10'	85+10.30	2984041.855	668978.620
C80	85+10.30	2984041.855	668978.620	R=100.00' Δ=22°42'17" L=39.63' T=20.08'		85+49.93	2984079.923	668968.582
L30	85+49.93	2984079.923	668968.582		N26° 07' 27"W 19.91'	85+69.84	2984097.798	668959.815
C81	85+69.84	2984097.798	668959.815	R=27.00' Δ=80°25'17" L=37.90' T=22.83'		86+07.74	2984131.612	668968.300

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

0 40 100 160
SCALE: 1" = 40'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	21	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

Plotted on 18-Sep-2015 8:58 AM
604531_HD(SC).DWG

NAD 83

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L29	84+25.21	2983956.911	668983.695		N3° 25' 10"W 85.10'	85+10.30	2984041.855	668978.620
C80	85+10.30	2984041.855	668978.620	R=100.00' Δ=22°42'17" L=39.63' T=20.08'		85+49.93	2984079.923	668968.582
L30	85+49.93	2984079.923	668968.582		N26° 07' 27"W 19.91'	85+69.84	2984097.798	668959.815
C81	85+69.84	2984097.798	668959.815	R=27.00' Δ=80°25'17" L=37.90' T=22.83'		86+07.74	2984131.612	668968.300
L31	86+07.74	2984131.612	668968.300		N54° 17' 50"E 26.37'	86+34.11	2984147.000	668989.712
L32	86+34.11	2984147.000	668989.712		N2° 48' 21"W 206.53'	88+40.64	2984353.284	668979.602

CONTINUED ON SHEET 20

TRAV #37
N: 2984138.730
E: 668966.327
EL: 199.540
MAG NAIL SET

TRAV #51
N: 2984872.062
E: 668664.862
EL: 220.230
MAG NAIL SET

TRAV #52
N: 2984487.066
E: 668824.826
EL: 205.940
MAG NAIL SET

TRAV #35
N: 2984565.460
E: 668941.200
EL: 204.780
STAKE/ NAIL SET

TRAV #50
N: 2985212.480
E: 668565.537
EL: 214.280
MAG NAIL SET

TRAV #33
N: 2985028.902
E: 668908.928
EL: 204.070
MAG NAIL SET

TRAV #34
N: 2984810.783
E: 668925.146
EL: 203.620
STAKE/ NAIL SET

TRAV #36
N: 2984350.801
E: 668954.436
EL: 201.040
MAG NAIL SET

ACTON STREET CONST. ℄ STA. 903+68.28 =
ROUTE 27 CONST. ℄ STA. 2000+00.00

ARRT CONST. ℄ STA. 86+19.32 =
ACTON STREET CONST. ℄ STA. 904+72.34

ACTON STREET CONST. ℄ STA. 906+75.94 =
CONCORD STREET CONST. ℄ STA. 1008+51.12

ARRT CONST. ℄ STA. 88+75.20 =
CONCORD STREET CONST. ℄ STA. 1007+50.39

CONCORD STREET CONST. ℄ STA. 1006+88.50 =
ROUTE 27 CONST. ℄ STA. 2003+81.50

ACTON STREET
HAYNES STREET (ROUTE 27)
BROWN STREET (ROUTE 27)
CONCORD STREET
MAPLE COURT

PROP. CONST. ℄
PROP. CONST. ℄ & PGL

1785 COUNTY LAYOUT
1903 COUNTY LAYOUT
1904 COUNTY LAYOUT
1906 COUNTY LAYOUT
1911 COUNTY LAYOUT
1925 COUNTY LAYOUT
1906 COUNTY LAYOUT LINE PER 1925 COUNTY LAYOUT

TRAVERSE
SWALE
3' WOOD FENCE
6' FENCE
3' CLF

N/F THE TOWN OF MAYNARD 36411/33 OFF ACTON STREET PB '88 1036
N/F DAEMCO, LLC 30830/307 88-90 NASON STREET
N/F 174/009.0-0000-0383.0 Town of Maynard Railroad Book/Page: 4640-551
N/F ADAM P. CONN AND AMY BUHL 42897/495
N/F NICHOLAS B. JOHNSON AND KELLI COSTA 30487/268
N/F Sarah Anne Pietras Ferolito & Marcus Ferolito 11 Maple Ct. Book/Page: 50252/441
N/F 174/009.0-0000-0343.0 Marc C. Ubaldina & Jennifer L. Cooper 13 Maple Ct. Book/Page: 35088/514
N/F 174/009.0-0000-0344.0 The Pepin-Liu Revocable Trust 15 Maple Ct. Book/Page: 46377/581
N/F 174/009.0-0000-0345.0 Kenneth J. Hogan & Maureen A. Hampton-Hogan 17 Maple Ct. Book/Page: 44771/107

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C82	88+40.64	2984353.284	668979.602	R=27.00' Δ=29°28'58" L=13.89' T=7.10'		88+54.53	2984366.385	668975.459
L33	88+54.53	2984366.385	668975.459		N32° 17' 19"W 35.92'	88+90.46	2984396.755	668956.269
C83	88+90.46	2984396.755	668956.269	R=11.00' Δ=29°26'11" L=5.65' T=2.89'		88+96.11	2984402.083	668954.581
L34	88+96.11	2984402.083	668954.581		N2° 51' 08"W 232.42'	91+28.53	2984634.217	668943.016
C46	91+28.53	2984634.217	668943.016	R=100.00' Δ=10°44'05" L=18.74' T=9.40'		91+47.26	2984652.907	668943.837
C47	91+47.26	2984652.907	668943.837	R=100.00' Δ=10°44'05" L=18.74' T=9.40'		91+66.00	2984671.597	668944.658

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L35	91+66.00	2984671.597	668944.658		N2° 51' 08"W 220.18'	93+86.18	2984891.503	668933.702
C48	93+86.18	2984891.503	668933.702	R=100.00' Δ=10°44'05" L=18.74' T=9.40'		94+04.91	2984910.019	668931.027
C49	94+04.91	2984910.019	668931.027	R=100.00' Δ=10°44'05" L=18.74' T=9.40'		94+23.65	2984928.535	668928.353
L36	94+23.65	2984928.535	668928.353		N2° 51' 08"W 102.28'	95+25.93	2985030.689	668923.263
C84	95+25.93	2985030.689	668923.263	R=1500.00' Δ=7°23'04" L=193.33' T=96.80'		97+19.26	2985222.623	668901.244

0 40 100 160
SCALE: 1" = 40'

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

CONTINUED ON SHEET 22

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	22	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

NAD 83

N

ACTON STREET

BROWN STREET (ROUTE 27)

TRAV #49
N: 2985550.992
E: 668512.025
EL: 209.880
MAG NAIL SET

TRAV #50
N: 2985212.480
E: 668565.537
EL: 214.280
MAG NAIL SET

TRAV #48
N: 2986076.208
E: 668456.708
EL: 211.470
MAG NAIL SET

TRAV #30
N: 2986029.891
E: 668789.893
EL: 207.750
MAG NAIL SET

TRAV #29
N: 2986348.774
E: 668750.513
EL: 209.060
PK NAIL FOUND

TRAV #32
N: 2985363.109
E: 668874.622
EL: 205.130
MAG NAIL SET

TRAV #31
N: 2985666.931
E: 668834.890
EL: 206.160
MAG NAIL SET

BENCH MARK #20
MAG NAIL SET IN
UTILITY POLE #225
N: 2986368.8376
E: 668762.5117
ELEV.: 213.97

CONTINUED ON SHEET 23

CONTINUED ON SHEET 21

ARRT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C84	95+25.93	2985030.689	668923.263	R=1500.00' Δ=7°23'04" L=193.33' T=96.80'		97+19.26	2985222.623	668901.244
L37	97+19.26	2985222.623	668901.244		N10° 14' 12"W 120.19'	98+39.45	2985340.905	668879.884
C50	98+39.45	2985340.905	668879.884	R=150.00' Δ=7°12'59" L=18.89' T=9.46'		98+58.34	2985359.236	668875.366
C51	98+58.34	2985359.236	668875.366	R=150.00' Δ=10°24'06" L=27.23' T=13.65'		98+85.58	2985385.810	668869.595
L38	98+85.58	2985385.810	668869.595		N7° 03' 05"W 1553.21'	114+38.79	2986927.274	668678.923

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

0 40 100 160
SCALE: 1" = 40'

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:58 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	23	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:58 AM

TRAV #47
N: 2986576.160
E: 668376.728
EL: 212.820
MAGNAIL

S4°27'25"E
90.31'

928 C113 L93 929 PC +10.11 930 C114 TRAVERSE

PT +12.61
PC +66.35
N9°05'20"W
506.31'

NAD 83

N36°19'16"E
67.88'

PT +61.42

931 L94 932 N33°12'19"E 544.24' 933 PC +52.51 934 C115 L95 PC +45.88 C116 935

PROP. CONST. ℄

ACTON STREET

BENCH MARK #19
MAG NAIL SET IN
UTILITY POLE #43A
N: 2987010.5373
E: 668648.1166
ELEV.: 213.59

ROCKLAND AVENUE

PT +31.17

S4°59'20"W
25.47'
N89°57'25"W
14.53'

PC +50.08
C54
N39°44'17"W
25.26'

TRAV #28
N: 2986625.014
E: 668716.205
EL: 209.530
PK NAIL FOUND

N/F
DISTINCTIVE ACTON HOMES, INC.
BK/PG 63466-514
129-A ACTON STREET

N/F
DISTINCTIVE ACTON HOMES, INC.
BK/PG 63466-514
129-A ACTON STREET

1785 COUNTY LAYOUT

N/F
TOWN OF MAYNARD SELECTMEN
23826/179

TRAV #24
N: 2987484.164
E: 668602.864
EL: 205.790
STAKE/ NAIL SET

S18°53'37"W
8.58'

S8°19'29"E
320.42'

CONTINUED ON SHEET 22

CONTINUED ON SHEET 24

EOP

PROP. CONST. ℄ & PGL

ARRT CONST. ℄ STA. 115+21.87 =
ACTON STREET CONST. ℄ STA. 935+17.18

N/F
Fairway View Company
54735/459

109 S7°04'46"E 278.36' L38 110 111 112 113 PC +38.79 114 C52 115 C53 116 L39 PRC +72.19 PT +96.11 PRC +70.01 PT +94.56 C55 L40 117 118 119 120 121 S13°58'36"E 306.63' C56

TRAVERSE

BENCH MARK #20
MAG NAIL SET IN
UTILITY POLE #225
N: 2986368.8376
E: 668762.5117
ELEV.: 213.97

S33°53'53"E
228.34'

N55°29'28"E
64.91'

S14°58'30"W
198.06'

S69°25'37"W
76.29'

N79°13'41"W
17.55'

S10°32'36"E
49.38'

N17°57'40"W
45.90'

PC +87.12

S34°14'44"W
98.06'

S16°30'53"E
342.68'

1925 COUNTY LAYOUT

S23°17'02"E
234.27'

S23°17'19"E
256.92'

2025 C123 2026 2027 L105 2028 PC +28.61 2029 C124 2030 PT +89.99 2031 L106 2032 2033 2034 L107 2035 2036 C125

PC +30.01

PT +69.52

S0°49'35"E
154.63'

PT +35.15

PI +68.29

PC +70.12

N23°35'39"E
73.65'

L104 2024

BROWN STREET (ROUTE 27)

MAIN STREET (ROUTE 27)

N13°38'24"W
167.84'

ROUTE 27 CONST. ℄ STA. 2030+45.72 =
ACTON STREET CONST. ℄ STA. 935+71.77

PROP. CONST. ℄

S2°34'31"W
92.66'

S7°47'46"W
218.67'

TRAV #27
N: 2986816.344
E: 668767.382
EL: 210.880
STAKE/ NAIL SET

TRAV #26
N: 2987031.536
E: 668674.778
EL: 210.990
MAG NAIL SET

N86°10'15"E
44.52'

N/F
WEDGEWOOD REALTY TRUST
BK/PG 15794/150
ACTON ST

TRAV #25
N: 2987248.180
E: 668704.440
EL: 207.220
DRILL HOLE SET

BENCH MARK #18
MAG NAIL SET IN
UTILITY POLE #48
N: 2987484.8582
E: 668620.5947
ELEV.: 207.56

TOWN OF MAYNARD
TOWN OF ACTON

0 40 100 160
SCALE: 1" = 40'

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L38	98+85.58	2985385.810	668869.595		N7° 03' 05"W 1553.21'	114+38.79	2986927.274	668678.923
C52	114+38.79	2986927.274	668678.923	R=60.00' Δ=31°54'05" L=33.41' T=17.15'		114+72.19	2986959.854	668684.024
C53	114+72.19	2986959.854	668684.024	R=27.00' Δ=50°44'36" L=23.91' T=12.80'		114+96.11	2986982.992	668683.813
L39	114+96.11	2986982.992	668683.813		N25° 53' 36"W 53.97'	115+50.08	2987031.547	668660.243
C54	115+50.08	2987031.547	668660.243	R=27.00' Δ=42°17'24" L=19.93' T=10.44'		115+70.01	2987050.959	668658.631
C55	115+70.01	2987050.959	668658.631	R=60.00' Δ=23°26'53" L=24.55' T=12.45'		115+94.56	2987075.262	668660.617
L40	115+94.56	2987075.262	668660.617		N7° 03' 05"W 92.56'	116+87.12	2987167.118	668649.255
C56	116+87.12	2987167.118	668649.255	R=4500.00' Δ=7°14'23" L=568.61' T=284.68'		122+55.73	2987725.522	668544.033

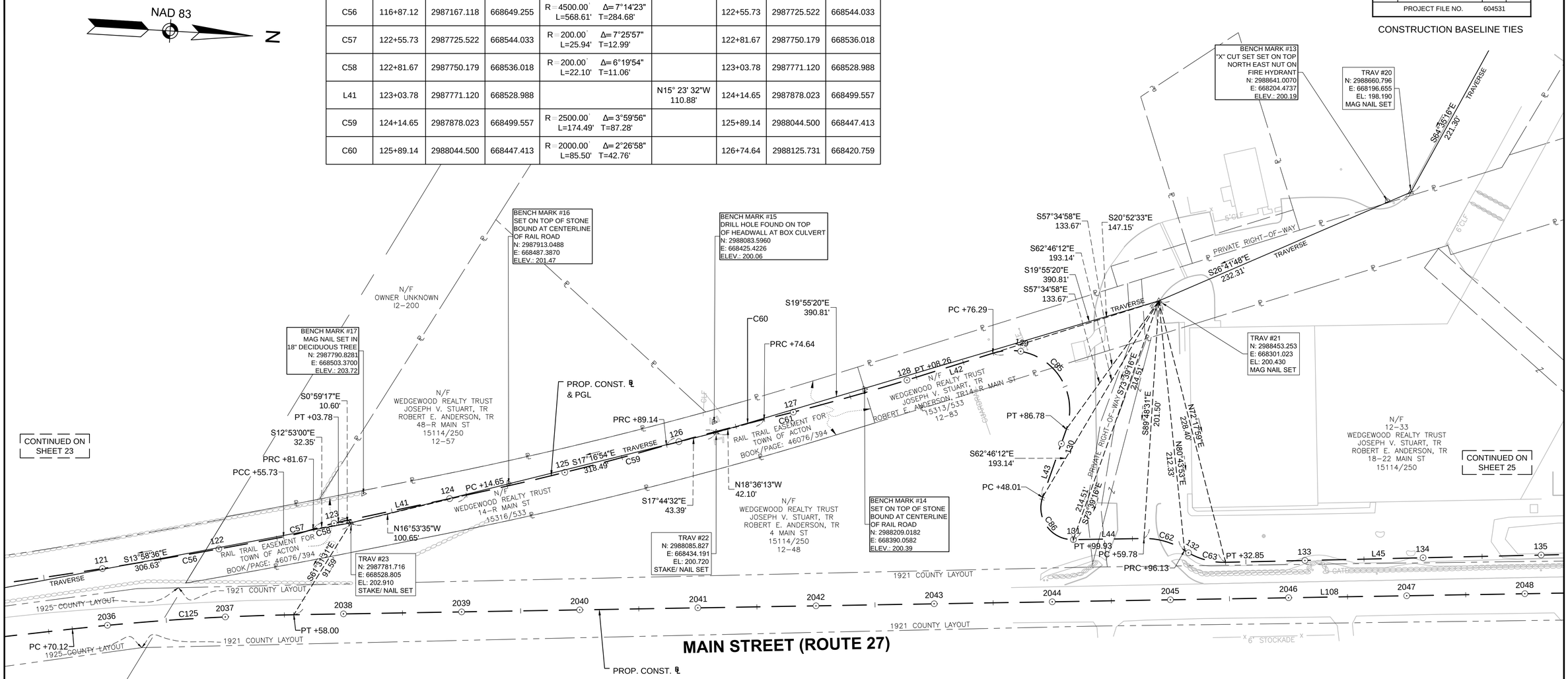
NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	24	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

ARRT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C56	116+87.12	2987167.118	668649.255	R=4500.00' Δ=7°14'23" L=568.61' T=284.68'		122+55.73	2987725.522	668544.033
C57	122+55.73	2987725.522	668544.033	R=200.00' Δ=7°25'57" L=25.94' T=12.99'		122+81.67	2987750.179	668536.018
C58	122+81.67	2987750.179	668536.018	R=200.00' Δ=6°19'54" L=22.10' T=11.06'		123+03.78	2987771.120	668528.988
L41	123+03.78	2987771.120	668528.988		N15° 23' 32"W 110.88'	124+14.65	2987878.023	668499.557
C59	124+14.65	2987878.023	668499.557	R=2500.00' Δ=3°59'56" L=174.49' T=87.28'		125+89.14	2988044.500	668447.413
C60	125+89.14	2988044.500	668447.413	R=2000.00' Δ=3°49'40" L=85.50' T=42.76'		126+74.64	2988125.731	668420.759



ARRT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C61	126+74.64	2988125.731	668420.759	R=2000.00' Δ=3°49'40" L=133.62' T=66.83'		128+08.26	2988252.153	668377.584
L42	128+08.26	2988252.153	668377.584		N20° 46' 11"W 68.03'	128+76.29	2988315.766	668353.458
C85	128+76.29	2988315.766	668353.458	R=50.00' Δ=126°36'52" L=110.49' T=99.45'		129+86.78	2988381.596	668413.861
L43	129+86.78	2988381.596	668413.861		S74° 09' 19"E 61.22'	130+48.01	2988364.881	668472.757
C86	130+48.01	2988364.881	668472.757	R=27.00' Δ=110°11'01" L=51.92' T=38.69'		130+99.93	2988392.897	668507.051
L44	130+99.93	2988392.897	668507.051		N4° 20' 20"W 59.85'	131+59.78	2988452.580	668502.523

ARRT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C62	131+59.78	2988452.580	668502.523	R=60.00' Δ=34°42'24" L=36.34' T=18.75'		131+96.13	2988487.452	668510.583
C63	131+96.13	2988487.452	668510.583	R=60.00' Δ=35°03'48" L=36.72' T=18.95'		132+32.85	2988522.697	668518.614
L45	132+32.85	2988522.697	668518.614		N4° 41' 44"W 342.19'	135+75.04	2988863.741	668490.601

0 40 100 160
SCALE: 1" = 40'

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:58 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	25	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:59 AM

NAD 83

N

BENCH MARK #13
"X" CUT SET SET ON TOP
NORTH EAST NUT ON
FIRE HYDRANT
N: 2988641.0070
E: 668204.4737
ELEV.: 200.19

TRAV #19
N: 2988755.761
E: 667996.771
EL: 201.680
MAG NAIL SET

TRAV #20
N: 2988660.796
E: 668196.655
EL: 198.190
MAG NAIL SET

TRAV #18
N: 2989041.433
E: 668077.753
EL: 204.040
MAG NAIL SET

TRAV #21
N: 2988453.253
E: 668301.023
EL: 200.430
MAG NAIL SET

TRAV #17
N: 2989383.294
E: 667948.887
EL: 207.350
MAG NAIL SET

N/F
12–32
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
16–R MAIN ST
LAND COURT CERT. #169451

N/F
12–20
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
16–R MAIN ST
15316/533

N/F
12–33
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
18–22 MAIN ST
15114/250

N/F
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
17178/196
14–R MAIN ST
12184

N/F
• 12–21–3
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
18–22 MAIN ST
15114/250

N/F
TOWN OF ACTON,
MASSACHUSETTS
49880/ 53

N/F
SIMEONE FAMIY LIMITED
LIABILITY COMPANY
52032/412

N/F
A&D NOMINEE TRUST
30374/398
30 MAIN ST

N/F
CATHELENE CONNER AND
MICHAEL HEALY
43144/397
2 ALBERTINE DR

N/F
PETER F. BURVILL AND
CAROL A. BURVILL
14803/477
42 MAIN STREET

S19°55'20"E
390.81'

TRAVERSE
S26°41'48"E
232.31'
TRAVERSE

S64°35'16"E
221.30'
TRAVERSE

TRAVERSE
S15°49'32"W
296.93'

N33°57'04"E
277.27'

N30°14'48"E
272.27'

N20°39'15"W
5.65'

S39°01'52"E
29.10'

PC +48.84

PT +67.67
C87

PC +14.66

PT +49.25

S20°39'15"E
365.34'
TRAVERSE

N20°46'35"W
85.08'

S19°02'09"E
125.75'

S19°41'08"E
14.92'

S20°01'54"E
317.13'
TRAVERSE

PC +00.91

PT +32.85
C63

PI +75.04

PI +18.79

PI +18.12

PROP. CONST. ℄
& PGL

PROP. CONST. ℄

20' TOWN DRAINAGE EASEMENT
BK/PG 11871/ 74

BENCH MARK #12
MAG NAIL SET IN
11" DECIDUOUS TREE
N: 2989111.0441
E: 668062.0101
ELEV.: 207.72

BENCH MARK #11
MAG NAIL SET IN
20" DECIDUOUS TREE
N: 2988411.2933
E: 667954.1812
ELEV.: 211.00

CONTINUED ON SHEET 24

CONTINUED ON SHEET 26

MAIN STREET (ROUTE 27)

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C63	131+96.13	2988487.452	668510.583	R=60.00' Δ=35°03'48" L=36.72' T=18.95'		132+32.85	2988522.697	668518.614
L45	132+32.85	2988522.697	668518.614		N4° 41' 44"W 342.19'	135+75.04	2988863.741	668490.601
L46	135+75.04	2988863.741	668490.601		N3° 29' 33"W 43.75'	136+18.79	2988907.411	668487.936
L47	136+18.79	2988907.411	668487.936		N3° 36' 09"W 99.33'	137+18.12	2989006.544	668481.694
L48	137+18.12	2989006.544	668481.694		S86° 23' 51"W 330.72'	140+48.84	2988985.763	668151.625
C87	140+48.84	2988985.763	668151.625	R=27.00' Δ=39°57'49" L=18.83' T=9.82'		140+67.67	2988990.967	668133.921
L133	140+67.67	2988990.967	668133.921		N53° 38' 20"W 46.99'	141+14.66	2989018.826	668096.080
C141	141+14.66	2989018.826	668096.080	R=60.00' Δ=33°01'31" L=34.58' T=17.79'		141+49.25	2989046.020	668075.494
L137	141+49.25	2989046.020	668075.494		N20° 36' 49"W 551.67'	147+00.91	2989562.365	667881.272
C88	147+00.91	2989562.365	667881.272	R=2200.00' Δ=16°33'23" L=635.72' T=320.09'		153+36.63	2990181.248	667745.931

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

0 40 100 160
SCALE: 1" = 40'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	26	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:59 AM

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C88	147+00.91	2989562.365	667881.272	R=2200.00' Δ=16°33'23" L=635.72' T=320.09'		153+36.63	2990181.248	667745.931
L50	153+36.63	2990181.248	667745.931		N4° 03' 27"W 62.65'	153+99.28	2990243.743	667741.498
C64	153+99.28	2990243.743	667741.498	R=1000.00' Δ=2°37'23" L=45.78' T=22.89'		154+45.06	2990289.319	667737.215
C65	154+45.06	2990289.319	667737.215	R=1000.00' Δ=5°08'58" L=89.88' T=44.97'		155+34.94	2990378.934	667730.782
L51	155+34.94	2990378.934	667730.782		N1° 31' 51"W 94.84'	156+29.78	2990473.745	667728.248
C89	156+29.78	2990473.745	667728.248	R=1000.00' Δ=10°01'28" L=174.96' T=87.70'		158+04.74	2990648.157	667738.859
L52	158+04.74	2990648.157	667738.859		N8° 29' 37"E 29.98'	158+34.72	2990677.808	667743.287
C66	158+34.72	2990677.808	667743.287	R=1400.00' Δ=18°50'08" L=460.24' T=232.22'		162+94.96	2991113.774	667884.195

NAD 83

N

S19°02'09"E
125.75'

TRAV #16
N: 2989681.236
E: 667840.258
EL: 208.460
MAG NAIL SET

BENCH MARK #10
SQUARE CUT SET ON
SOUTH WEST CORNER
OF CONC. BASE
N: 2989713.4982
E: 667839.7388
ELEV.: 208.76

TRAV #15
N: 2989974.471
E: 667766.597
EL: 206.650
MAG NAIL SET

BENCH MARK #9
MAG NAIL SET IN
14" DECIDUOUS TREE
N: 2989960.6948
E: 667738.1376
ELEV.: 207.46

ARRT CONST. ℄ STA. 151+76.58 =
SYLVIA ST CONST. ℄ STA. 500+00.00

TRAV #14
N: 2990280.626
E: 667735.488
EL: 205.290
MAG NAIL SET

TRAV #13
N: 2990544.505
E: 667732.000
EL: 204.080
MAG NAIL SET

N/F
SIMEONE FAMIY LIMITED
LIABILITY COMPANY
52032/412

N/F
SIMEONE FAMIY LIMITED
LIABILITY COMPANY
52032/412

N/F
SIMEONE FAMIY LIMITED
LIABILITY COMPANY
52032/412

CONTINUED ON
SHEET 25

CONTINUED ON
SHEET 27

N20°46'35"W
85.08'

S20°01'54"E
317.13'

PC +00.91

N16°20'37"W
67.91'

S14°06'04"E
302.35'

N/F
TOWN OF ACTON,
MASSACHUSETTS
49880/ 53

S16°15'39"E
34.62'

N80°32'03"E
3.83'

N4°15'15"W
47.81'

S5°48'07"E
307.73'

PROP. CONST. ℄
& PGL

PC +11.67

PT +34.53

PC +88.07

C137

C132

PROP. CONST. ℄
& PGL

APPROX. SPRINKLER

N/F
COLONIAL PATH, LLC
48365/272
APPROX. SPRINKLER

N11°14'14"E
8.86'

PT +36.63

PC +99.28

S9°15'19"E
37.37'

PT +03.98

PRC +45.06

PT +34.94

PC +29.78

S3°02'06"W
70.86'

N3°47'08"E
103.88'

PC +34.72

PT +04.74

S0°45'26"E
263.90'

S8°10'56"W
252.05'

S11°56'55"W
118.75'

N/F
CURT A. MCKELVIE AND
MICHELLE L. MCKELVIE
24853/564

N/F
JAMES F. HOITT AND
KATHLEEN M. HOITT
50197/577
4 COLONIAL PATH

N/F
PRAKASH RAMAN AND
VIBHA OZA
54994/285
6 COLONIAL PATH

20' DRAINAGE & UTILITY EASEMENT

COLONIAL
PATH

SYLVIA STREET
(PUBLIC)

BENCH MARK #8
MAG NAIL SET IN
16" DECIDUOUS TREE
N: 2990288.5756
E: 667756.4219
ELEV.: 207.94

BENCH MARK #7
MAG NAIL SET IN
8" DECIDUOUS TREE
N: 2990713.6689
E: 667743.3980
ELEV.: 205.79

TRAVERSE

0 40 100 160
SCALE: 1" = 40'

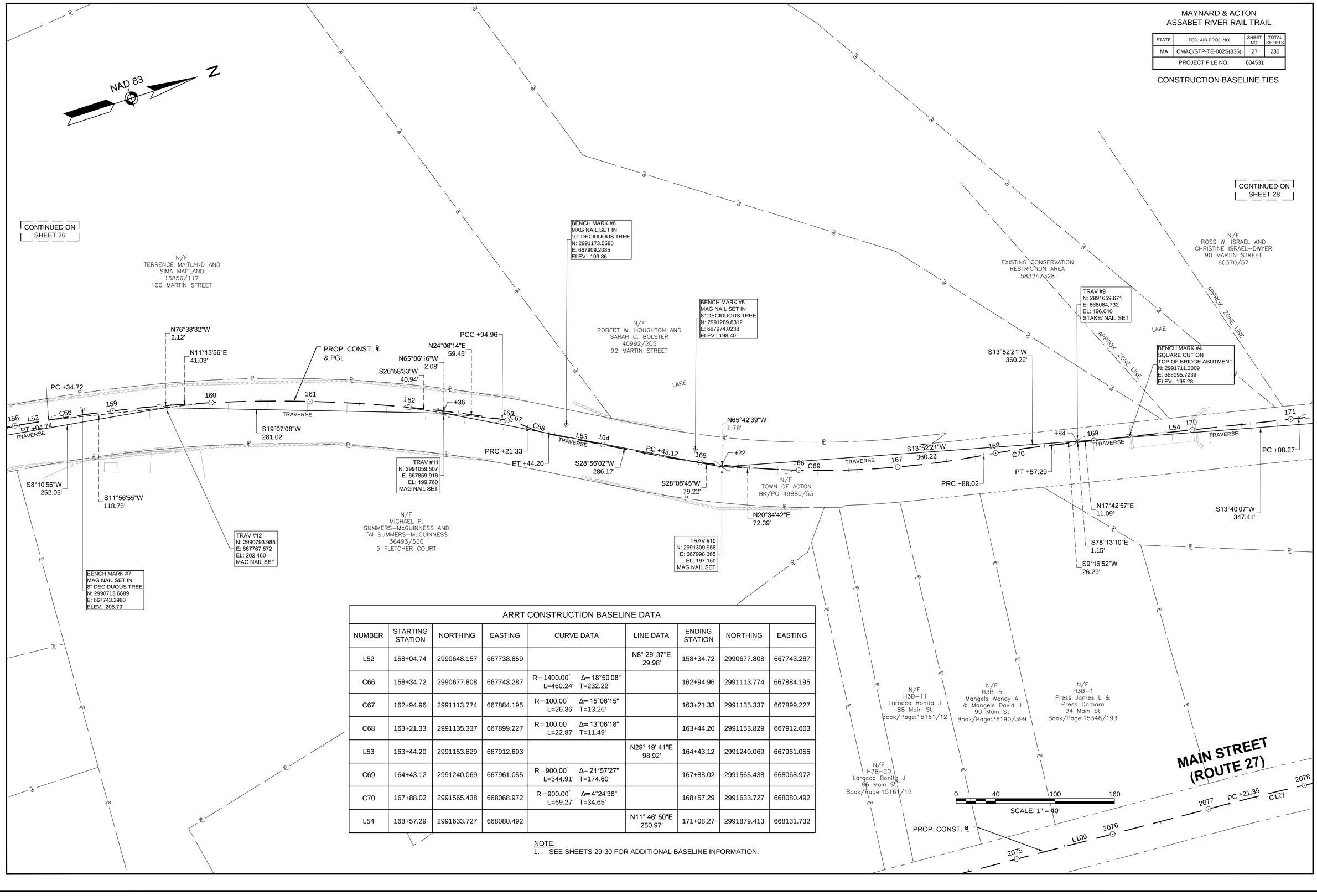
NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	27	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:59 AM



ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L52	158+04.74	2990648.157	667738.859		N8° 29' 37"E 29.98'	158+34.72	2990677.808	667743.287
C66	158+34.72	2990677.808	667743.287	R=1400.00' Δ=18°50'08" L=460.24' T=232.22'		162+94.96	2991113.774	667884.195
C67	162+94.96	2991113.774	667884.195	R=100.00' Δ=15°06'15" L=26.36' T=13.26'		163+21.33	2991135.337	667899.227
C68	163+21.33	2991135.337	667899.227	R=100.00' Δ=13°06'18" L=22.87' T=11.49'		163+44.20	2991153.829	667912.603
L53	163+44.20	2991153.829	667912.603		N29° 19' 41"E 98.92'	164+43.12	2991240.069	667961.055
C69	164+43.12	2991240.069	667961.055	R=900.00' Δ=21°57'27" L=344.91' T=174.60'		167+88.02	2991565.438	668068.972
C70	167+88.02	2991565.438	668068.972	R=900.00' Δ=4°24'36" L=69.27' T=34.65'		168+57.29	2991633.727	668080.492
L54	168+57.29	2991633.727	668080.492		N11° 46' 50"E 250.97'	171+08.27	2991879.413	668131.732

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	28	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C70	167+88.02	2991565.438	668068.972	R=900.00' Δ=4°24'36" L=69.27' T=34.65'		168+57.29	2991633.727	668080.492
L54	168+57.29	2991633.727	668080.492		N11° 46' 50"E 250.97'	171+08.27	2991879.413	668131.732
C71	171+08.27	2991879.413	668131.732	R=100.00' Δ=73°29'22" L=128.26' T=74.66'		172+36.53	2991987.884	668081.234
C72	172+36.53	2991987.884	668081.234	R=60.00' Δ=79°16'54" L=83.02' T=49.71'		173+19.55	2992058.832	668052.471
L55	173+19.55	2992058.832	668052.471		N17° 34' 23"E 181.80'	175+01.36	2992232.152	668107.361
C90	175+01.36	2992232.152	668107.361	R=60.00' Δ=94°23'54" L=98.85' T=64.79'		176+00.21	2992308.688	668063.836

ARRT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L56	176+00.21	2992308.688	668063.836		N76° 49' 31"W 85.90'	176+86.11	2992328.266	667980.196
C91	176+86.11	2992328.266	667980.196	R=60.00' Δ=70°27'06" L=73.78' T=42.37'		177+59.89	2992380.026	667934.242
L57	177+59.89	2992380.026	667934.242		N6° 22' 26"W 215.28'	179+75.16	2992593.972	667910.344
C73	179+75.16	2992593.972	667910.344	R=350.00' Δ=9°24'04" L=57.43' T=28.78'		180+32.59	2992599.928	667967.398
L58	180+32.59	2992599.928	667967.398		N0° 39' 57"W 161.99'	181+94.58	2992761.908	667965.516

BENCH MARK #4
SQUARE CUT ON
TOP OF BRIDGE ABUTMENT
N: 2991711.3009
E: 668095.7239
ELEV.: 195.28

TRAV #63000
N: 2992014.906
E: 668031.061
EL: 194.090
REBAR-CAP

TRAV #63001
N: 2992360.670
E: 667932.873
EL: 198.001
REBAR-CAP

TRAV #63003
N: 2992611.311
E: 667885.100
EL: 199.938
MAGNAIL

CONSERVATION RESTRICTION AREA
370,389± S.F.
8.5030± AC.

N/F
ROSS W. ISRAEL AND
CHRISTINE ISRAEL-DWYER
90 MARTIN STREET
60370/57

N/F
TOWN OF ACTON
56002/381
2 STOW STREET

N/F
ELISSA D. BERRY AND
ROY C. KNIGHT
23493/441
6 STOW ST
H2A-62-2

N/F
TOWN OF ACTON
56002/381

N/F
H2A-41-5
TOWN OF ACTON
28 MAPLE ST
37432/133

N/F
H2A-37
Gordon D. Richards
21 Maple St
Book/Page: 11658/673

N/F
GORDON D. RICHARDS
45836/526
19 MAPLE STREET

N/F
STEVEN T. MANNING
32111/208
18 MAPLE ST

N/F
SEAN P HANLEY AND
CHRISTINE L HANLEY
36150/609
16 MAPLE ST

N/F
AVELINO MIGUELEZ
50916/449
14 MAPLE ST

N/F
PETER D. KOZEL
AND KIMBERLY A. YOUNG
44888/352
10 MAPLE STREET

N/F
MASSACHUSETTS BAY
TRANSPORTATION
AUTHORITY 60594/531
1 MAPLE STREET

N/F
TOWN OF ACTON,
MASSACHUSETTS
49880/ 53

N/F
H3B-1
Press James L &
Press Damara
94 Main St
Book/Page:15346/193

N/F
H2A-38
Railroad Street Development LLC
9 Railroad St
Book/Page:34320/422

N/F
H2A-20
Railroad Street Development LLC
13 Railroad St
Book/Page:34320/423

N/F
H2A-78-1
Owner Unknown
7 Railroad St
Book/Page:Unknown

N/F
H2A-78
Kingswood Corp
3 Railroad St
Book/Page:45122/135

N/F
H2A-43-1
Town of Acton 6
Railroad St
Book/Page:31318/0060

N/F
H2A-39
Owner Unknown
128 Main St
Book/Page:10725/02

N/F
H2A-43
Chen Frank & Zhang Xiao Fan
124 Main St
Book/Page:43559/297

HIGHWAY AND BRIDGE EASEMENT FOR COMMONWEALTH OF MASSACHUSETTS
BOOK/PAGE: 12956/452

MAPLE STREET CONST. ℄ STA. 202+46.47 = STOW ST CONST. ℄ STA. 302+00.00

MAPLE STREET CONST. ℄ STA. 205+70.00 = MAPLE ST PARKING CONST. ℄ STA. 0+00.00

MAPLE STREET CONST. ℄ STA. 208+93.95 = ROUTE 27 CONST. ℄ STA. 2086+44.92

ARRT CONST. ℄ STA. 180+40.81 = MAPLE STREET CONST. ℄ STA. 203+79.72

END PROJECT
STA. 181+25.00
MEET EXISTING
N2992692.3297
E667966.3241

TRAV #8
N: 2991997.244
E: 668166.827
EL: 196.030
MAG NAIL SET

TRAV #7
N: 2992252.065
E: 668244.640
EL: 196.630
MAG NAIL SET

BENCH MARK #3
MAG NAIL SET IN
12" DECIDUOUS TREE
N: 2992201.3210
E: 668236.4977
ELEV.: 197.91

TRAV #2
N: 2993356.701
E: 668009.048
EL: 226.510
PK NAIL SET

TRAV #3
N: 2993315.914
E: 668148.902
EL: 235.440
MAG NAIL SET

TRAV #4
N: 2993061.095
E: 668334.951
EL: 225.530
PK NAIL FOUND

TRAV #6
N: 2992526.668
E: 668352.270
EL: 211.340
STAKE/ NAIL SET

TRAV #5
N: 2992591.849
E: 668495.160
EL: 219.930
DRILL HOLE SET

BENCH MARK #2
SQUARE CUT ON
LAMP POST BASE
N: 2992644.9938
E: 668483.3686
ELEV.: 222.47

PROP. CONST. ℄ & PGL

PROP. CONST. ℄

MAIN STREET (ROUTE 27)

MAIN STREET (ROUTE 27) (PUBLIC)

MAPLE STREET

STOW STREET

RAILROAD STREET (PUBLIC)

MATCHLINE

CONTINUED ON SHEET 27

NOTE:
1. SEE SHEETS 29-30 FOR ADDITIONAL BASELINE INFORMATION.

NAD 83

N

SCALE: 1" = 40'

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:59 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	29	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 8:59 AM

ICE HOUSE LANDING PARKING CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L59	0+00.00	2980053.624	664726.532		S40° 28' 32"E 26.38'	0+26.38	2980033.560	664743.653
C92	0+26.38	2980033.560	664743.653	R=19.00' Δ=91°42'26" L=30.41' T=19.57'		0+56.79	2980031.815	664770.864
L134	0+56.79	2980031.815	664770.864		N47° 49' 02"E 78.18'	1+34.97	2980084.312	664828.796
L135	1+34.97	2980084.312	664828.796		S63° 22' 03"E 72.72'	2+07.69	2980051.712	664893.804

WINTER STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L62	400+00.00	2980870.402	665746.269		S16° 28' 40"W 10.07'	400+10.07	2980860.746	665743.413
C94	400+10.07	2980860.746	665743.413	R=110.00' Δ=49°22'14" L=94.78' T=50.56'		401+04.85	2980791.576	665682.938
L63	401+04.85	2980791.576	665682.938		S65° 50' 53"W 247.31'	403+52.17	2980690.385	665457.273
C95	403+52.17	2980690.385	665457.273	R=300.00' Δ=24°41'51" L=129.32' T=65.68'		404+81.48	2980614.058	665354.125
L64	404+81.48	2980614.058	665354.125		S41° 09' 02"W 662.02'	411+43.51	2980115.566	664918.487
C96	411+43.51	2980115.566	664918.487	R=100.00' Δ=58°14'19" L=101.65' T=55.70'		412+45.15	2980020.377	664898.200
L65	412+45.15	2980020.377	664898.200		S17° 05' 17"E 176.67'	414+21.82	2979851.510	664950.112

GREAT ROAD (ROUTE 117) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L66	100+00.00	2981118.923	664837.733		S75° 10' 52"E 681.04'	106+81.04	2980944.738	665496.119
L67	106+81.04	2980944.738	665496.119		S73° 24' 08"E 227.12'	109+08.16	2980879.860	665713.777
L68	109+08.16	2980879.860	665713.777		S73° 31' 20"E 110.81'	110+18.97	2980848.430	665820.035
L69	110+18.97	2980848.430	665820.035		S69° 13' 19"E 581.03'	116+00.00	2980642.310	666363.277

MAIN STREET (RTE 62) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L70	700+00.00	2981764.482	666501.781		N85° 40' 46"E 50.05'	700+50.05	2981768.253	666551.690
C97	700+50.05	2981768.253	666551.690	R=1100.00' Δ=23°07'11" L=443.87' T=224.99'		704+93.92	2981888.886	666975.724
L71	704+93.92	2981888.886	666975.724		N62° 33' 35"E 261.40'	707+55.31	2982009.345	667207.713
C98	707+55.31	2982009.345	667207.713	R=510.00' Δ=12°56'05" L=115.13' T=57.81'		708+70.45	2982050.467	667314.992
L72	708+70.45	2982050.467	667314.992		N75° 29' 40"E 137.60'	710+08.05	2982084.933	667448.206
C99	710+08.05	2982084.933	667448.206	R=250.00' Δ=5°41'09" L=24.81' T=12.42'		710+32.86	2982092.327	667471.877
L78	710+32.86	2982092.327	667471.877		N69° 48' 31"E 751.28'	717+84.14	2982351.638	668176.985
C100	717+84.14	2982351.638	668176.985	R=1000.00' Δ=4°58'23" L=86.79' T=43.42'		718+70.93	2982378.026	668259.643
L75	718+70.93	2982378.026	668259.643		N74° 46' 53"E 424.48'	722+95.41	2982489.452	668669.234

SUDBURY STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L77	601+03.28	2981740.492	666895.532		S33° 54' 19"E 296.72'	604+00.00	2981494.225	667061.050
C102	600+56.55	2981781.952	666874.213	R=200.00' Δ=13°23'10" L=46.73' T=23.47'		601+03.28	2981740.492	666895.532
L76	600+00.00	2981834.916	666854.390		S20° 31' 09"E 56.55'	600+56.55	2981781.952	666874.213

SUMMER STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L79	800+00.00	2982815.208	669628.731		N71° 10' 44"W 683.55'	806+83.55	2983035.730	668981.732
C103	806+83.55	2983035.730	668981.732	R=1000.00' Δ=6°25'22" L=112.10' T=56.11'		807+95.65	2983065.879	668873.823
L80	807+95.65	2983065.879	668873.823		N77° 36' 06"W 85.84'	808+81.49	2983084.309	668789.984
C104	808+81.49	2983084.309	668789.984	R=500.00' Δ=3°00'53" L=26.31' T=13.16'		809+07.80	2983089.279	668764.151
C105	809+26.60	2983092.345	668745.598	R=200.00' Δ=4°26'36" L=15.51' T=7.76'		809+42.11	2983095.465	668730.409
L82	809+42.11	2983095.465	668730.409		N76° 10' 24"W 335.52'	812+77.63	2983175.648	668404.614

CONCORD STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L97	1008+94.86	2984294.769	668850.788		S55° 38' 08"W 103.60'	1009+98.46	2984236.291	668765.269
C119	1007+95.60	2984354.770	668929.813	R=1000.00' Δ=5°41'14" L=99.26' T=49.67'		1008+94.86	2984294.769	668850.788
L98	1007+32.73	2984395.225	668977.937		S49° 56' 53"W 62.87'	1007+95.60	2984354.770	668929.813
C118	1006+50.58	2984450.771	669038.424	R=937.71' Δ=5°01'10" L=82.15' T=41.10'		1007+32.73	2984395.225	668977.937
L99	1006+39.31	2984458.748	669046.382		S44° 55' 44"W 11.27'	1006+50.58	2984450.771	669038.424
C117	1005+73.78	2984503.595	669094.149	R=1000.00' Δ=3°45'17" L=65.53' T=32.78'		1006+39.31	2984458.748	669046.382
L100	1000+00.00	2984882.415	669525.101		S48° 41' 01"W 573.78'	1005+73.78	2984503.595	669094.149

STOW ST CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L117	300+00.00	2992459.307	667691.694		N53° 45' 35"E 152.96'	301+52.96	2992549.734	667815.065
C135	301+52.96	2992549.734	667815.065	R=50.00' Δ=53°54'06" L=47.04' T=25.42'		302+00.00	2992590.185	667835.506

SYLVIA ST CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L120	500+00.00	2990022.154	667763.050		N81° 46' 28"E 11.67'	500+11.67	2990023.824	667774.603
C132	500+11.67	2990023.824	667774.603	R=15.00' Δ=87°18'30" L=22.86' T=14.31'		500+34.53	2990040.116	667787.387
L121	500+34.53	2990040.116	667787.387		N5° 32' 02"W 153.54'	501+88.07	2990192.942	667772.581
C137	501+88.07	2990192.942	667772.581	R=10.00' Δ=91°09'21" L=15.91' T=10.20'		502+03.98	2990203.877	667781.771
L136	502+03.98	2990203.877	667781.771		N85° 37' 19"E 196.34'	504+00.32	2990218.865	667977.536

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	30	230
PROJECT FILE NO.	604531		

CONSTRUCTION BASELINE TIES

604531_HD(SC).DWG Plotted on 18-Sep-2015 9:00 AM

ACTON STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L83	900+00.00	2983712.996	669182.879		N26° 28' 23"W 288.58'	902+88.58	2983971.321	669054.235
C107	902+88.58	2983971.321	669054.235	R=1000.00' Δ=2°03'33" L=35.94' T=17.97'		903+24.52	2984003.771	669038.797
L84	903+24.52	2984003.771	669038.797		N24° 24' 50"W 191.33'	905+15.85	2984177.993	668959.715
C108	905+15.85	2984177.993	668959.715	R=1000.00' Δ=4°08'24" L=72.26' T=36.14'		905+88.11	2984242.652	668927.500
L85	905+88.11	2984242.652	668927.500		N28° 33' 14"W 44.56'	906+32.67	2984281.796	668906.199
C109	906+32.67	2984281.796	668906.199	R=1000.00' Δ=2°24'06" L=41.92' T=20.96'		906+74.59	2984319.022	668886.941
L86	906+74.59	2984319.022	668886.941		N26° 09' 08"W 60.29'	907+34.88	2984373.139	668860.369
C110	907+34.88	2984373.139	668860.369	R=2000.00' Δ=8°24'13" L=293.34' T=146.94'		910+28.22	2984644.974	668750.814
L87	910+28.22	2984644.974	668750.814		N17° 44' 55"W 318.30'	913+46.52	2984948.122	668653.784
L88	913+46.52	2984948.122	668653.784		N16° 41' 42"W 153.96'	915+00.48	2985095.596	668609.553
C111	915+00.48	2985095.596	668609.553	R=2000.00' Δ=1°06'30" L=38.69' T=19.34'		915+39.17	2985132.758	668598.798
L89	915+39.17	2985132.758	668598.798		S15° 35' 12"E 64.08'	916+03.25	2985194.486	668581.579
C112	916+03.25	2985194.486	668581.579	R=100.00' Δ=7°43'01" L=13.47' T=6.74'		916+16.72	2985207.664	668578.843
L90	916+16.72	2985207.664	668578.843		N7° 52' 11"W 99.80'	917+16.53	2985306.528	668565.178
L91	917+16.53	2985306.528	668565.178		N9° 01' 43"W 476.89'	921+93.42	2985777.510	668490.341
L92	921+93.42	2985777.510	668490.341		N9° 00' 03"W 572.94'	927+66.35	2986343.392	668400.707
C113	927+66.35	2986343.392	668400.707	R=1000.00' Δ=2°39'01" L=46.25' T=23.13'		928+12.61	2986389.228	668394.530
L93	928+12.61	2986389.228	668394.530		N6° 21' 02"W 97.50'	929+10.11	2986486.128	668383.745
C114	929+10.11	2986486.128	668383.745	R=225.00' Δ=38°31'54" L=151.31' T=78.64'		930+61.42	2986630.850	668416.932
L94	930+61.42	2986630.850	668416.932		N32° 10' 52"E 291.09'	933+52.51	2986877.215	668571.964
C115	933+52.51	2986877.215	668571.964	R=2500.00' Δ=1°48'10" L=78.66' T=39.33'		934+31.17	2986943.122	668614.899
L95	934+31.17	2986943.122	668614.899		N33° 59' 02"E 14.71'	934+45.88	2986955.318	668623.121
C116	934+45.88	2986955.318	668623.121	R=200.00' Δ=25°34'26" L=89.27' T=45.39'		935+35.15	2987015.954	668687.626
L96	935+35.15	2987015.954	668687.626		N59° 33' 29"E 63.21'	935+98.36	2987047.982	668742.125

MAPLE STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L114	200+00.00	2992623.399	667591.730		S80° 29' 45"E 179.28'	201+79.28	2992593.797	667768.551
C132	201+79.28	2992593.797	667768.551	R=300.00' Δ=22°58'01" L=120.25' T=60.95'		202+99.54	2992597.922	667887.930
C133	202+99.54	2992597.922	667887.930	R=375.00' Δ=28°09'23" L=184.28' T=94.04'		204+83.82	2992595.962	668070.354
L115	204+83.82	2992595.962	668070.354		S75° 18' 23"E 157.75'	206+41.57	2992555.948	668222.946
C134	206+41.57	2992555.948	668222.946	R=250.00' Δ=33°21'11" L=145.53' T=74.89'		207+87.10	2992560.912	668366.343
L116	207+87.10	2992560.912	668366.343		N71° 20' 27"E 106.85'	208+93.95	2992595.097	668467.575

ROUTE 27 CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L101	2000+00.00	2984043.614	669020.711		N3° 25' 22"W 218.82'	2002+18.82	2984262.047	669007.646
C120	2002+18.82	2984262.047	669007.646	R=1000.00' Δ=10°05'03" L=176.00' T=88.23'		2003+94.82	2984437.750	669012.613
L102	2003+94.82	2984437.750	669012.613		N6° 39' 40"E 248.70'	2006+43.52	2984684.767	669041.461
C121	2006+43.52	2984684.767	669041.461	R=700.00' Δ=8°51'46" L=108.28' T=54.25'		2007+51.80	2984792.856	669045.670
L103	2007+51.80	2984792.856	669045.670		N2° 12' 06"W 1261.14'	2020+12.93	2986053.061	668997.222
C122	2020+12.93	2986053.061	668997.222	R=480.00' Δ=26°57'47" L=225.88' T=115.07'		2022+38.82	2986268.535	668936.723
L104	2022+38.82	2986268.535	668936.723		N29° 09' 52"W 191.19'	2024+30.01	2986435.489	668843.551
C123	2024+30.01	2986435.489	668843.551	R=620.00' Δ=22°08'00" L=239.51' T=121.26'		2026+69.52	2986661.733	668769.613
L105	2026+69.52	2986661.733	668769.613		N7° 01' 52"W 159.09'	2028+28.61	2986819.625	668750.138
C124	2028+28.61	2986819.625	668750.138	R=5000.00' Δ=1°50'58" L=161.39' T=80.70'		2029+89.99	2986979.453	668727.801
L106	2029+89.99	2986979.453	668727.801		N8° 52' 50"W 178.30'	2031+68.29	2987155.616	668700.276
L107	2031+68.29	2987155.616	668700.276		N9° 44' 01"W 401.82'	2035+70.12	2987551.653	668632.341
C125	2035+70.12	2987551.653	668632.341	R=2000.00' Δ=5°22'57" L=187.88' T=94.01'		2037+58.00	2987738.049	668609.314
L108	2037+58.00	2987738.049	668609.314		N4° 21' 04"W 2590.70'	2063+48.69	2990321.277	668412.758
L108	2037+58.00	2987738.049	668609.314		N4° 21' 04"W 2590.70'	2063+48.69	2990321.277	668412.758
C126	2063+48.69	2990321.277	668412.758	R=1400.00' Δ=7°42'23" L=188.30' T=94.29'		2065+36.99	2990509.429	668411.122
L109	2065+36.99	2990509.429	668411.122		N3° 21' 18"E 1184.36'	2077+21.35	2991691.755	668480.435
C127	2077+21.35	2991691.755	668480.435	R=2400.00' Δ=9°26'07" L=395.23' T=198.06'		2081+16.58	2992082.622	668535.875
L110	2081+16.58	2992082.622	668535.875		N12° 47' 26"E 50.12'	2081+66.69	2992131.494	668546.969
C128	2081+66.69	2992131.494	668546.969	R=500.00' Δ=31°50'00" L=277.80' T=142.59'		2084+44.49	2992405.324	668532.013
L111	2084+44.49	2992405.324	668532.013		N19° 02' 34"W 155.56'	2086+00.04	2992552.368	668481.259
C129	2086+00.04	2992552.368	668481.259	R=1000.00' Δ=5°08'15" L=89.66' T=44.86'		2086+89.71	2992638.323	668455.840
L112	2086+89.71	2992638.323	668455.840		N13° 54' 20"W 33.00'	2087+22.71	2992670.354	668447.910
C130	2087+22.71	2992670.354	668447.910	R=1000.00' Δ=6°32'04" L=114.05' T=57.09'		2088+36.76	2992779.258	668414.255
L113	2088+36.76	2992779.258	668414.255		N20° 26' 24"W 233.05'	2090+69.81	2992997.636	668332.868
C131	2090+69.81	2992997.636	668332.868	R=1300.00' Δ=7°25'32" L=168.48' T=84.36'		2092+38.29	2993151.262	668263.978
L123	2092+38.29	2993151.262	668263.978		N27° 51' 56"W 397.11'	2096+35.40	2993502.322	668078.371

LANDSCAPE DETAILS
SEE SHEET 106

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 3+35 LT TO STA. 5+00 LT

HIGHWAY GUARD DETAILS
NONE

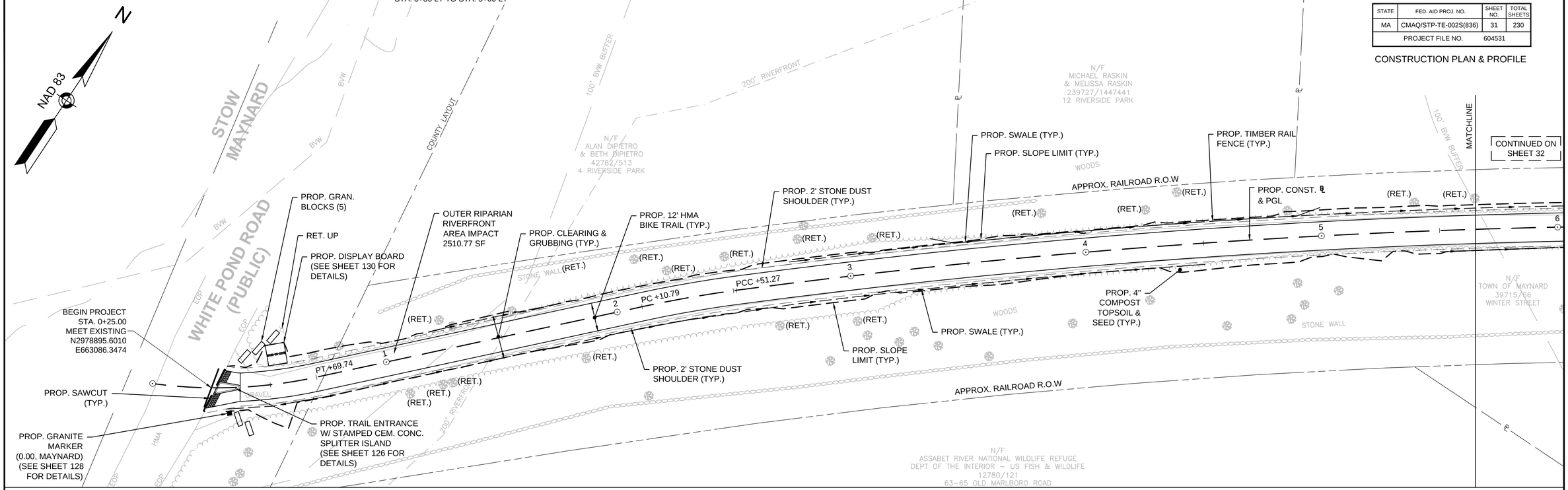
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

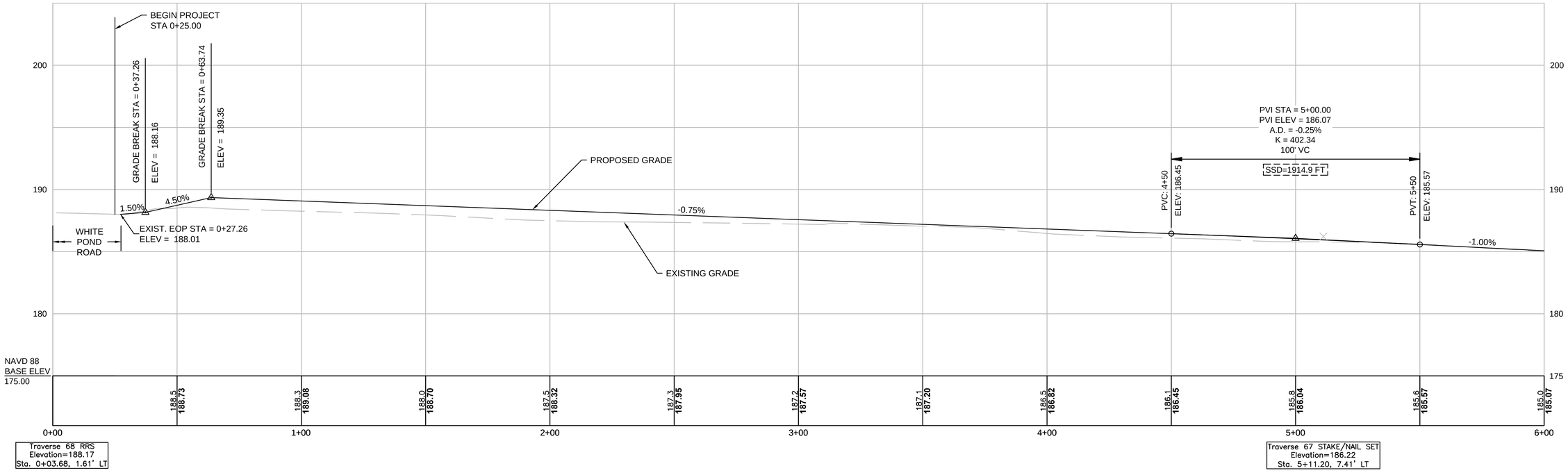
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	31	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



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



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:24 AM

LANDSCAPE DETAILS
SEE SHEET 106

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 10+67 RT TO STA. 10+97 RT
STA. 10+68 LT TO STA. 10+98 LT

HIGHWAY GUARD DETAILS
NONE

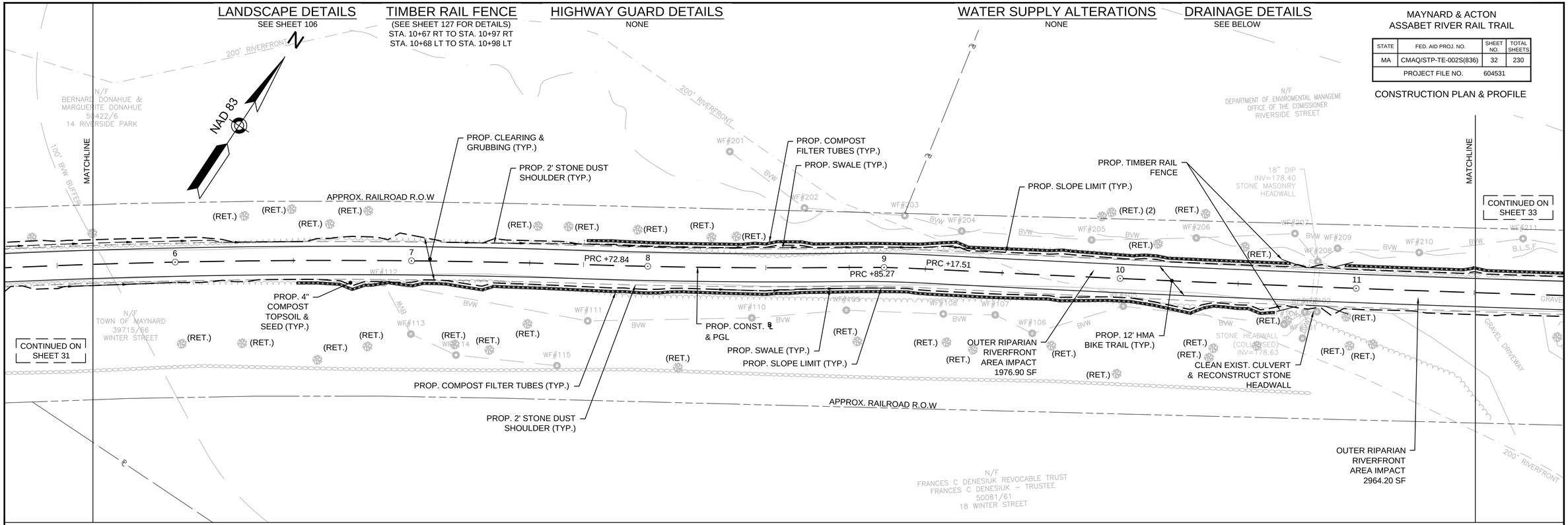
WATER SUPPLY ALTERATIONS
NONE

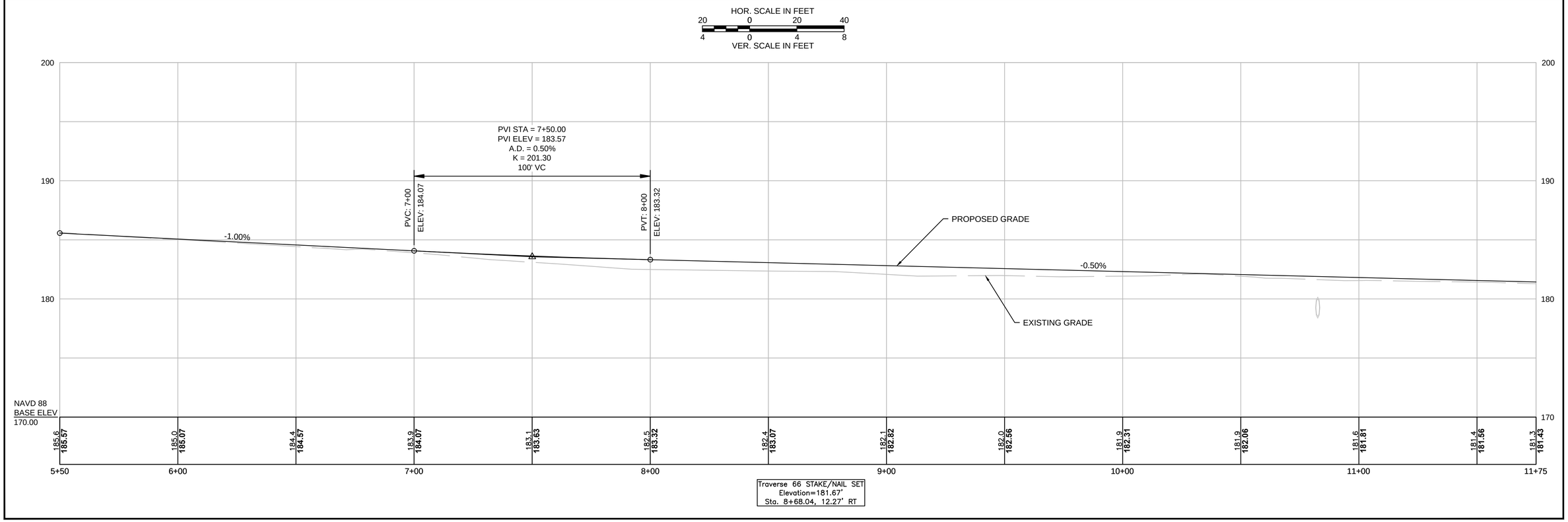
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	32	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE





604531_HD(CO).DWG Plotted on 18-Sep-2015 11:24 AM

LANDSCAPE DETAILS
SEE SHEET 107

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 14+15 RT TO STA. 17+35 RT
STA. 16+70 LT TO STA. 17+35 LT

HIGHWAY GUARD DETAILS
NONE

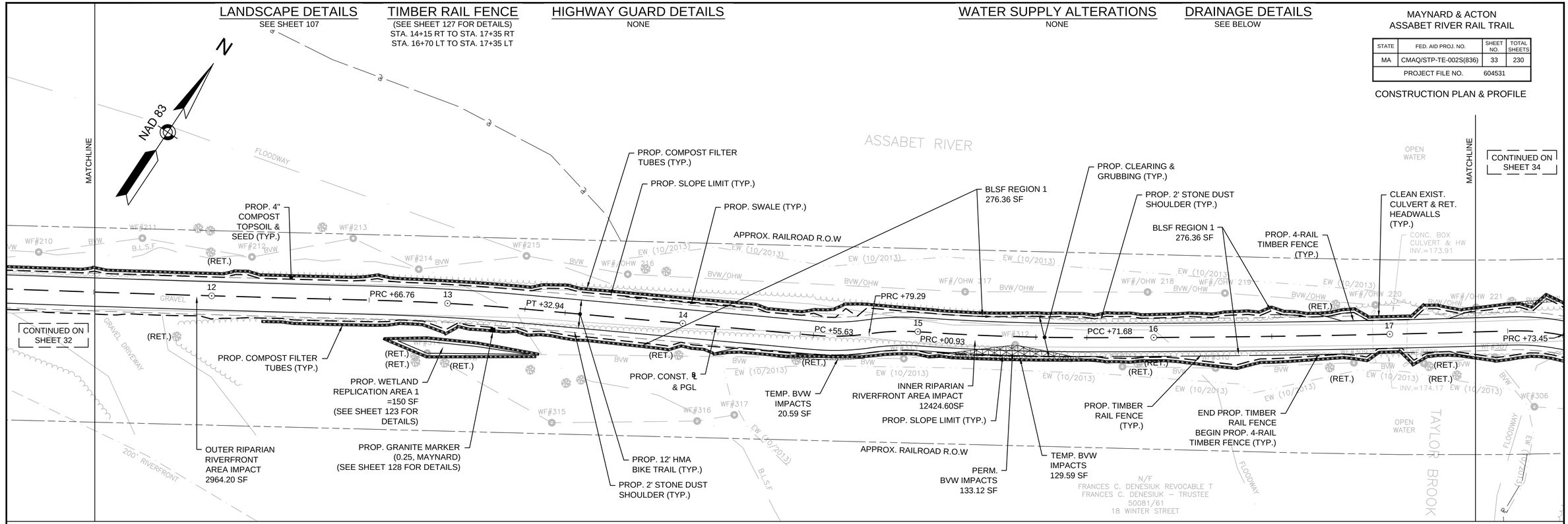
WATER SUPPLY ALTERATIONS
NONE

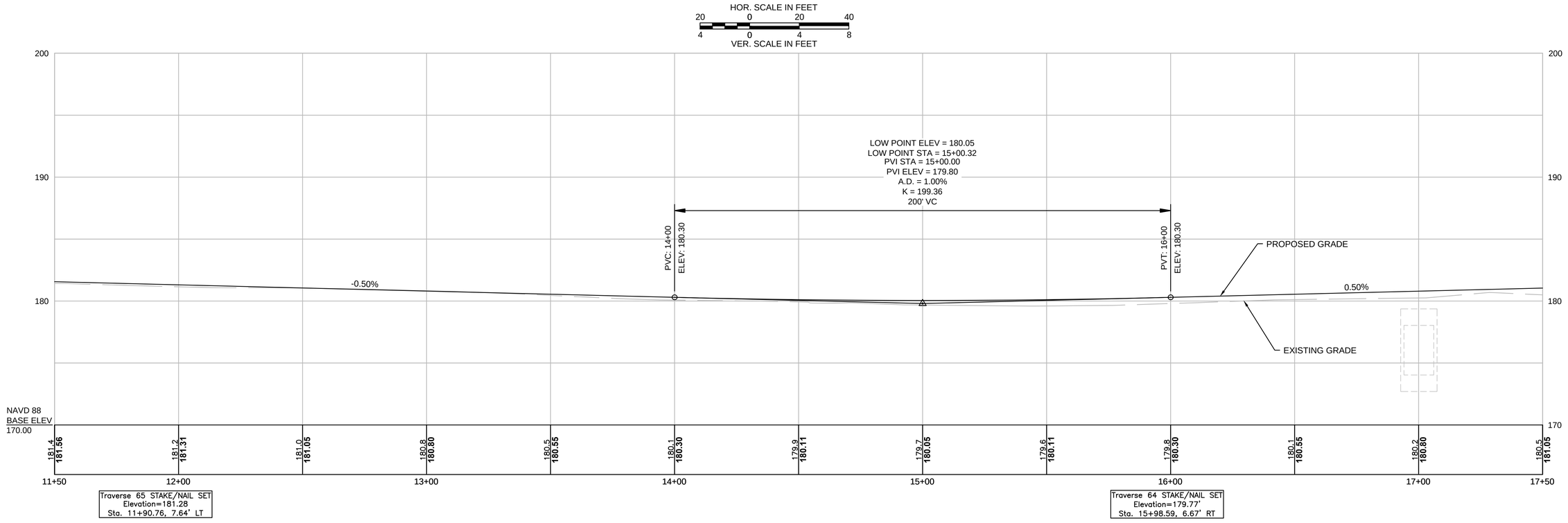
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	33	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE





604531_HD(CO).DWG Plotted on 18-Sep-2015 11:25 AM

LANDSCAPE DETAILS
SEE SHEET 107

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 20+82 RT TO STA. 21+53 RT

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

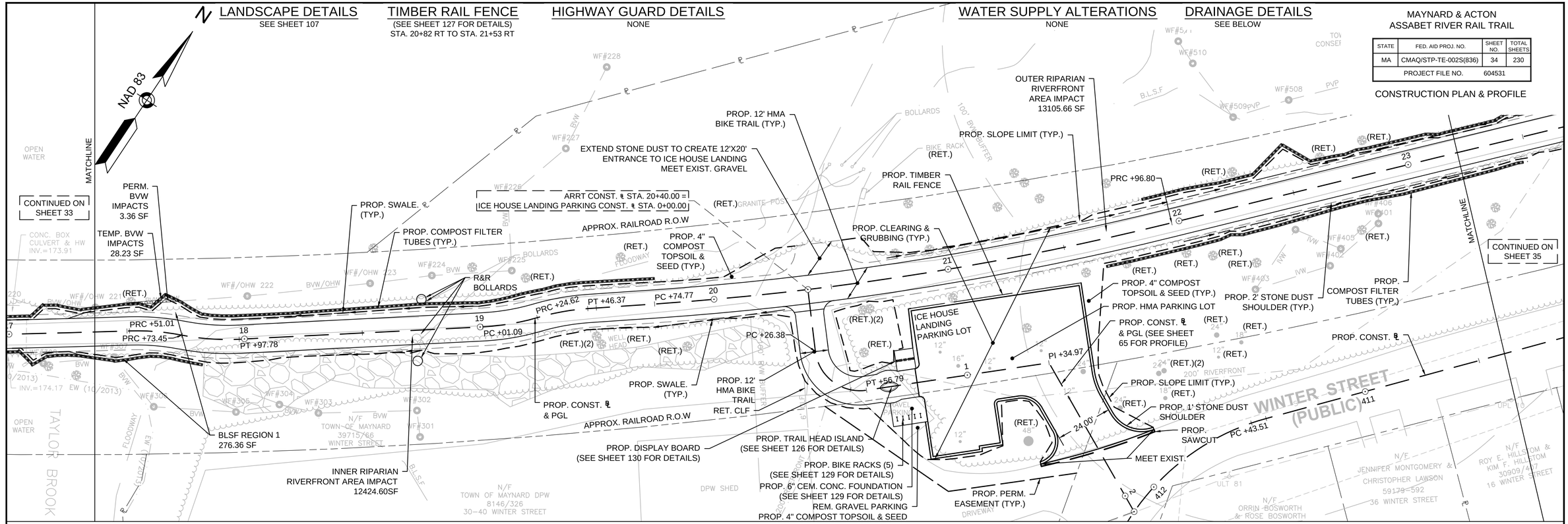
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

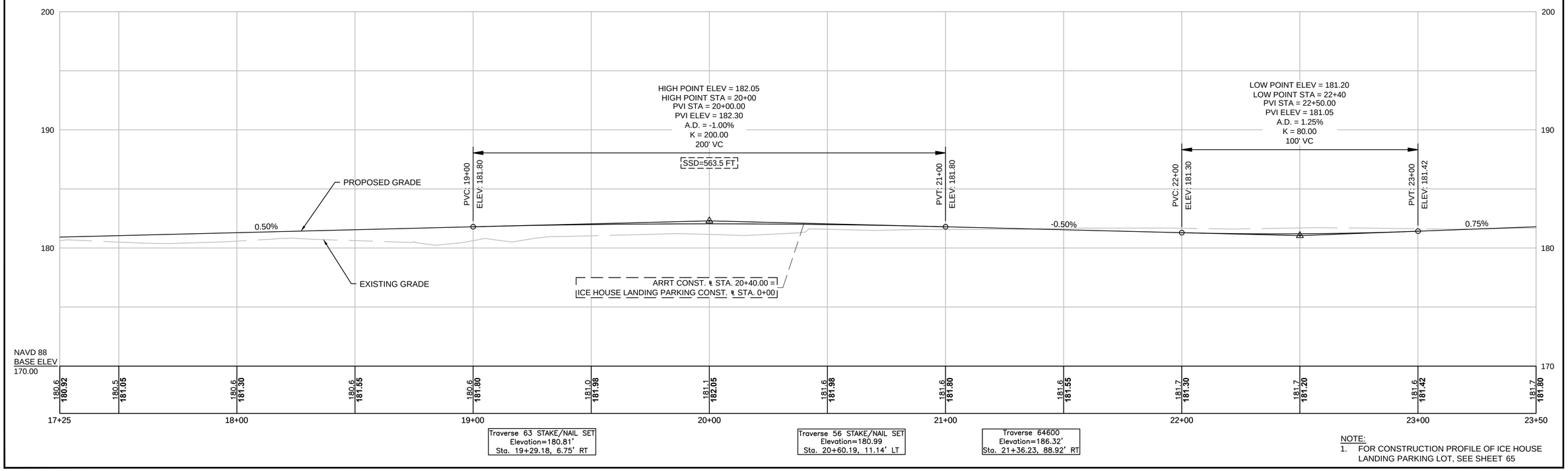
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	34	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:25 AM



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



Traverse 63 STAKE/NAIL SET
Elevation=180.81'
Sta. 19+29.18, 6.75' RT

Traverse 56 STAKE/NAIL SET
Elevation=180.99
Sta. 20+60.19, 11.14' LT

Traverse 64600
Elevation=186.32'
Sta. 21+36.23, 88.92' RT

NOTE:
1. FOR CONSTRUCTION PROFILE OF ICE HOUSE LANDING PARKING LOT, SEE SHEET 65

LANDSCAPE DETAILS
SEE SHEET 108

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

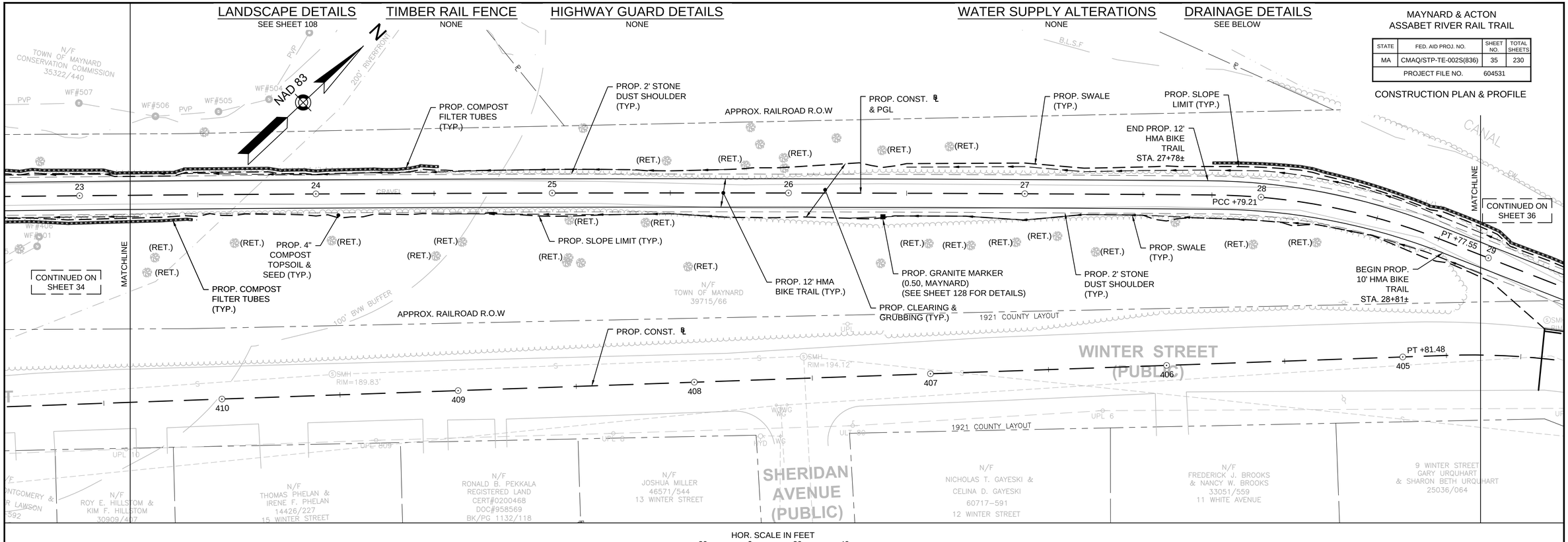
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

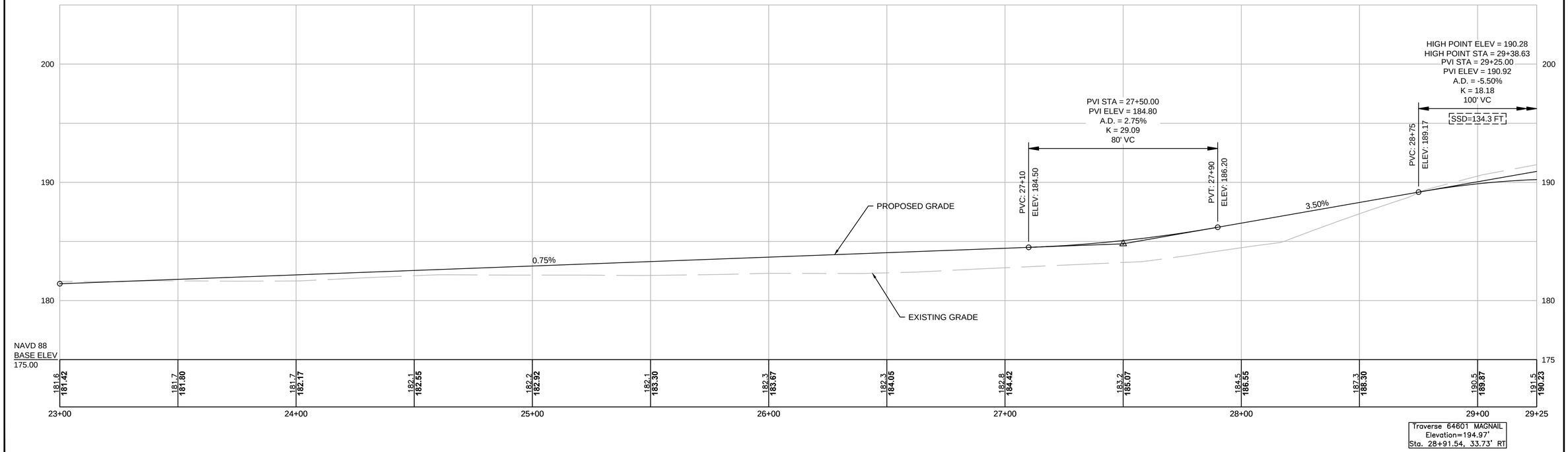
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	35	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



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



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:26 AM

LANDSCAPE DETAILS
SEE SHEET 108-109

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 29+68 LT TO STA. 33+31 LT (4-RAIL)
STA. 34+89 LT TO STA. 35+16 LT
STA. 35+19 RT TO STA. 36+76 RT

HIGHWAY GUARD DETAILS
STA. 33+33 LT - ITEM 627.1
STA. 33+33 LT TO STA. 33+42 LT - ITEM 620.3

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	36	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET	RIM	INCOMING PIPES	OUTGOING PIPES	REMARKS
GICI-1	401+39	11.0' RT	186.39		I=183.89' (CB-2)	
CB-2	401+35	5.5' RT	186.49	I=183.39' (GICI-1)	I=183.39' (DMH-2A)	F&C
DMH-2A	400+66	1.0' LT	186.82	I=182.80' (CB-2)	I=182.80' (EX-CB-3)	
EX-CB-3	109+44	16.1' LT	186.35	I=182.00' (DMH-2A		ADJ.

NAD 83

GREAT ROAD (RTE 117) (PUBLIC)

WINTER STREET (PUBLIC)

MILL STREET (PUBLIC)

PINE STREET (PUBLIC)

APPROX. RAILROAD R.O.W

MATCHLINE

CANAL

PROP. 2' STONE DUST SHOULDER (TYP.)
PROP. 12' HMA BIKE TRAIL (TYP.)
PROP. CURB CORNER (TYP.)
REM. EXIST. PAVEMENT
PROP. 4" COMPOST TOPSOIL & SEED
PROP. LIMIT OF WORK STA. 107+70.00 MEET EXIST.
PROP. MILLING & HMA OVERLAY
R&R GRAN. CURB
PROP. LIMIT OF WORK STA. 107+10.00 MEET EXIST.
PROP. FULL DEPTH HMA CONSTRUCTION
PROP. CONST. ℄
PROP. GRAN. CURB TYPE VB (TYP)
PROP. CEM. CONC. WCR-3
PROP. 5' CEM. CONC. SIDEWALK
PROP. DISPLAY BOARD(SEE SHEET 130 FOR DETAILS)
PROP. TRAIL HEAD ISLAND (SEE SHEET 126 FOR DETAILS)
PROP. GRAN. CURB TYPE VB (TYP)
PROP. MILLING & HMA OVERLAY
ARRT CONST. ℄ STA. 33+59.02 = GREAT ROAD (ROUTE 117) CONST. ℄ STA. 109+18.58
MEET EXIST. GRAN. CURB & HIGHWAY GUARD
END PROP. MODULAR BLOCK RETAINING WALL STA. 33+20, 6.5' LT BEGIN PROP. 10' HMA BIKE TRAIL
PROP. W-BEAM HWY GUARD
PROP. TERM-END SECTION
PROP. 8' HMA BIKE TRAIL W/ 2' PAVED LT SHLDR
PROP. 8' BRICK WALK
PROP. BENCHES (2) (SEE SHEET 128 FOR DETAILS)
PROP. TIMBER RAIL FENCE (TYP.)
PC +89.04
END PROP. 6' STOCKADE FENCE, STA. 34+69 TO STA. 35+19 (SEE SHEET 126 FOR DETAILS); BEGIN TIMBER RAIL FENCE
RET. FENCE
PROP. 2' STONE DUST SHOULDER (TYP.)
END CEM. CONC. SIDEWALK BEGIN HMA BIKE TRAIL
REMOVE EXISTING PAVEMENT
PROP. 4" COMPOST TOPSOIL & SEED
PROP. FULL DEPTH HMA DRIVEWAY
PROP. TEMP. EASEMENT (TYP.)
R&S EXIST. CURB STOP AND SERVICE BOX
PROP. CURB STOP AND SERVICE BOX
PROP. CEM. CONC. SIDEWALK AT DRIVEWAY
PROP. 8' CEM. CONC. SIDEWALK
PROP. 4" COMPOST TOPSOIL & SEED
PROP. RRFB
PI +80.19
PI +08.16
PROP. CEM. CONC. WCR-2
PROP. CLF
R&D CLF
PROP. SAWCUT (TYP.)
MEET EXIST.
GREAT ROAD (ROUTE 117) CONST. ℄ STA. 109+42.00 = WINTER STREET CONST. ℄ STA. 400+00.00
PT +31.10
PC +10.07
R&D HIGHWAY GUARD
PROP. 77' - 12" RCP CONN. TO EXIST.
PROP. 2' - 12" DIP
PROP. 64' - 12" RCP
PT +04.85
PROP. MILLING & HMA OVERLAY
PROP. CEM. CONC. WALK
PROP. GRAN. CURB TYPE VB (TYP.)
PROP. FULL DEPTH HMA CONSTRUCTION
PROP. TREE TRIMMING WITHIN LAYOUT TO ENSURE ADEQUATE SIGHT LINES TO RECTANGULAR RAPID-FLASH BEACONS (STA. 109+75 RT TO STA. 110+50 RT) (STA. 109+20 LT TO STA. 110+30 LT)
PROP. LIMIT OF WORK STA. 110+75.00 MEET EXIST.
PROP. 4-RAIL TIMBER FENCE (TYP.)
PROP. SLOPE LIMIT (TYP.)
PROP. 2' STONE DUST SHOULDER
BEGIN PROP. MODULAR BLOCK RETAINING WALL STA. 29+78, 6.5' LT (SEE SHEET 136 FOR DETAILS)
BEGIN PROP. 8' FULL DEPTH HMA BIKE TRAIL W/ 2' PAVED LT SHLD
PROP. 1' STONEDUST SHOULDER ALONG WALL
PROP. COMPOST FILTER TUBES (TYP.)
TEMP. LUW IMPACTS 56.19 SF
BANK IMPACTS 32.8 LF
PROP. TEMP. EASEMENT (TYP.)
PROP. PERM. EASEMENT (TYP.)
PROP. CLEARING & GRUBBING (TYP.)
PROP. CONST. ℄ & PGL
PC +96.06
PT +12.28
PC +52.17
PROP. 4" COMPOST TOPSOIL & SEED (TYP.)
PROP. 2' STONE DUST SHOULDER (TYP.)
PROP. 4" COMPOST TOPSOIL & SEED (TYP.)
PROP. CONST. ℄
END PROP. MILL & OVERLAY STA. 402+19± MEET EXIST.
PROP. GRAN. CURB TYPE VB (TYP.)
PROP. SAWCUT (TYP.)
PROP. LIMIT OF WORK STA. 404+41.14 MEET EXIST.
PAVE HMA TRAIL TO CURB AT LOW POINT FOR DRAINAGE
PROP. GRAN. CURB TYPE VB (TYP.)
PROP. FULL DEPTH HMA DRIVEWAY
PT +81.48
PC +81.26
PROP. 8' HMA BIKE TRAIL W/ 2' PAVED LT SHLDR
PROP. 2' - 12" DIP
PROP. 64' - 12" RCP
PROP. MILLING & HMA OVERLAY
PROP. FULL DEPTH HMA CONSTRUCTION
PROP. GRAN. CURB TYPE VB (TYP.)
PROP. CEM. CONC. WALK
PROP. TEMP. EASEMENT (TYP.)
PROP. 4" COMPOST TOPSOIL & SEED
PROP. FULL DEPTH HMA DRIVEWAY
PROP. CEM. CONC. SIDEWALK AT DRIVEWAY
PROP. 8' CEM. CONC. SIDEWALK
PROP. RRFB
PROP. CEM. CONC. WCR-2
PROP. CLF
R&D CLF
PROP. SAWCUT (TYP.)
MEET EXIST.
PI +18.97
PROP. LIMIT OF WORK STA. 110+75.00 MEET EXIST.

CONTINUED ON SHEET 35
CONTINUED ON SHEET 38

N/F MELISSA GOPNIK 49676/90 71–73 GREAT ROAD
N/F MICHAEL D. MISSLIN & JANE F. MISSLIN 14074/199 77 GREAT ROAD
N/F TOWN OF MAYNARD 39715/66
N/F CHRISTIAN FISHER AND MICHELE FISHER 48071/179 79–81 GREAT ROAD
N/F MAYNARD INDUSTRIES, INC.
N/F SUSAN SCOTT 48046/253 78 GREAT ROAD
N/F BRIAN M. DECHELLIS & DIANE T. DECHELLIS 52987/579 43 MILL STREET
N/F NICHOLAS AUFFINGER 64063–90 16 PINE STRI
N/F JOHN P. MONCOUSKY & CHERYL MONCOUSKY 21122/332 48 MILL STREET
N/F DONNA MARTELL & GREGORY FLANAGAN 50662/258 50 MILL STREET
N/F KATHLEEN A. FITZGERALD 62841/413 94 GREAT ROAD
N/F AS CLOCK TOWER OWNER, LLC BK/PG 65267/358
N/F 9 WINTER STREET GARY URQUHART & SHARON BETH URQUHART 25036/064
N/F TOWN OF MAYNARD 8146/326 WINTER STREET
N/F STEVEN R. CALOGGERO & ANNEMARIE E. GRAZIANO REGISTERED LAND DOC# 942654 CERT# 198858 BK/PG 1124/108 7 WHITE AVENUE
N/F ROGER S. MURRAY & KATHLEEN N. MURRAY 10474/246 3 WHITE AVE
N/F WOUTER LEEUWIS & RACHAEL G FERRIS 41273/061 1 WINTER STREET

1921 COUNTY LAYOUT
1881 TOWN LAYOUT
PRE-1871 TOWN LAYOUT

0 20 50 100
SCALE: 1" = 20'

NOTE:
1. FOR PROFILE SEE SHEET 37 AND SHEET 66

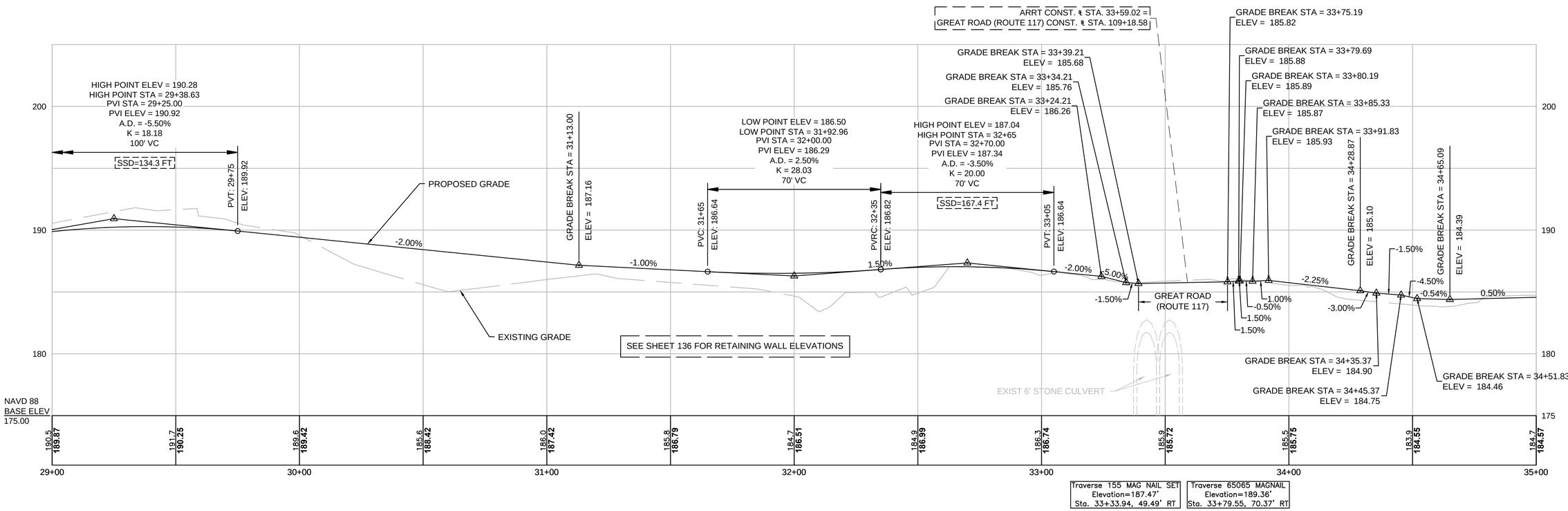
604531_HD(CO).DWG Plotted on 18-Sep-2015 11:26 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	37	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:27 AM



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

NOTE:
1. FOR CONSTRUCTION PLAN SEE SHEET 36

LANDSCAPE DETAILS
SEE SHEET 109

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 35+19 RT TO STA. 36+76 RT
STA. 39+04 RT TO STA. 41+81 RT

HIGHWAY GUARD DETAILS
NONE

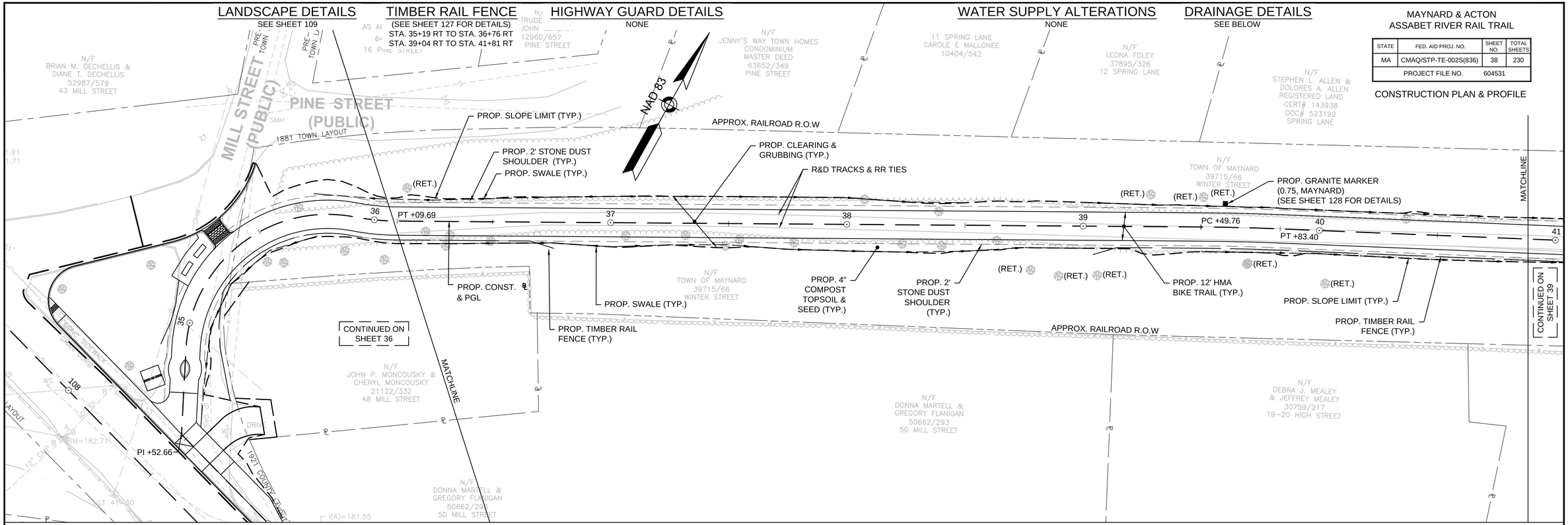
WATER SUPPLY ALTERATIONS
NONE

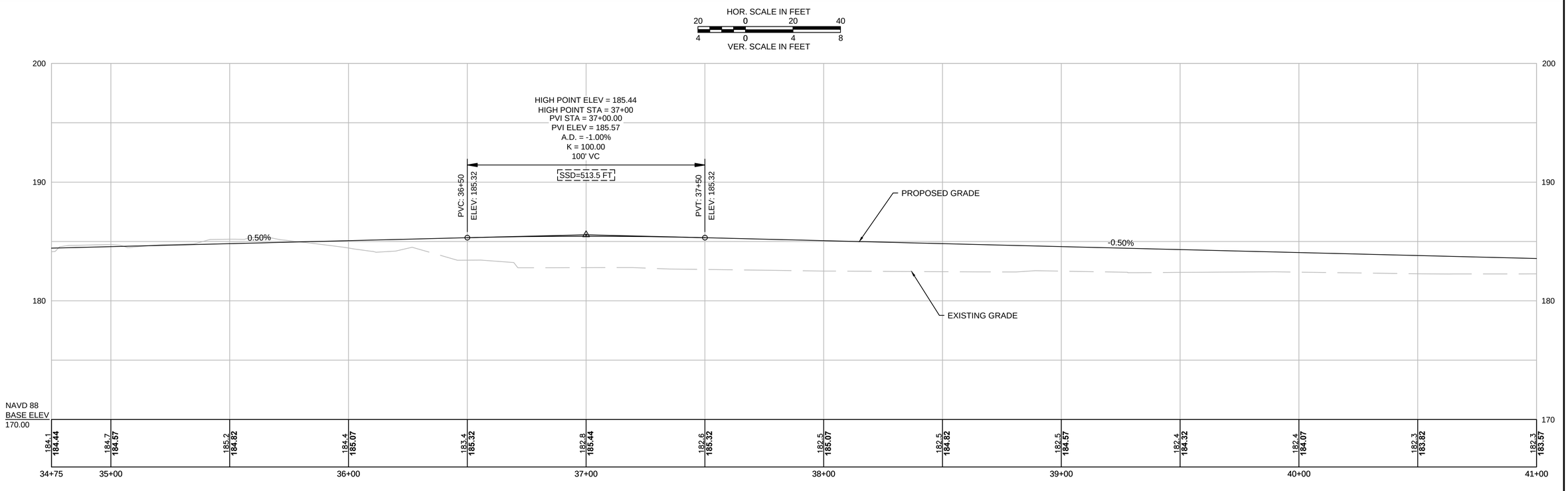
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	38	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE





604531_HD(CO).DWG Plotted on 18-Sep-2015 11:28 AM

LANDSCAPE DETAILS
SEE SHEET 109

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 39+04 RT TO STA. 41+81 RT
STA. 46+09 RT TO STA. 46+36 RT
STA. 46+15 LT TO STA. 49+66 LT

HIGHWAY GUARD DETAILS
NONE

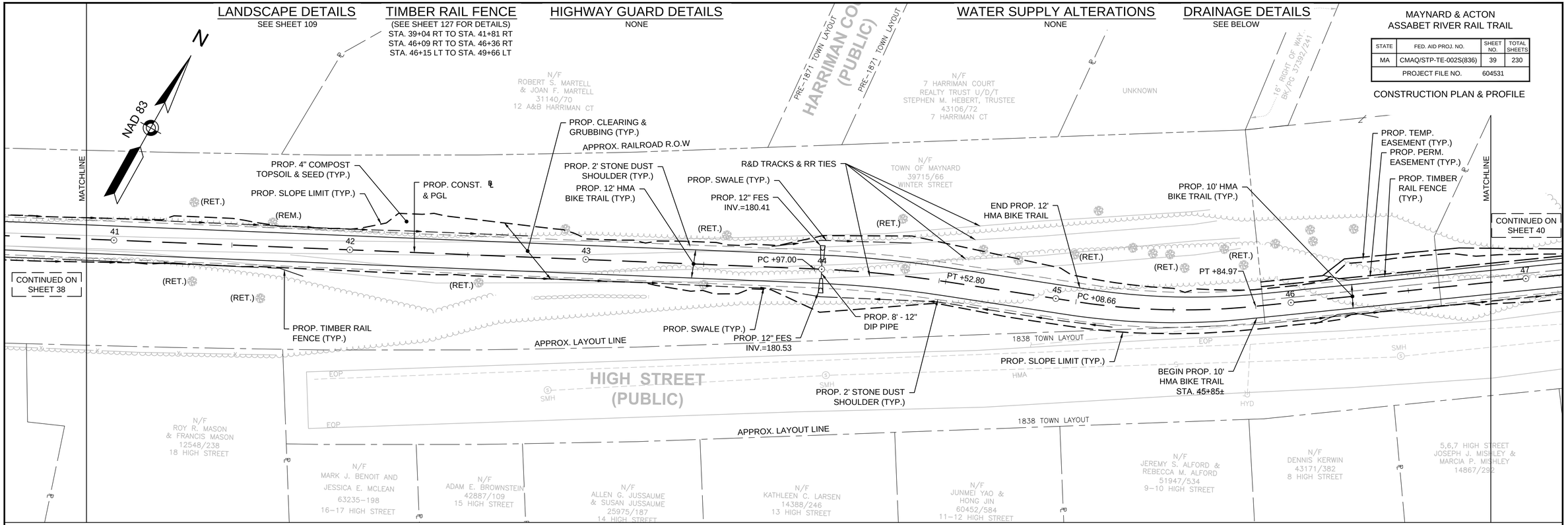
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

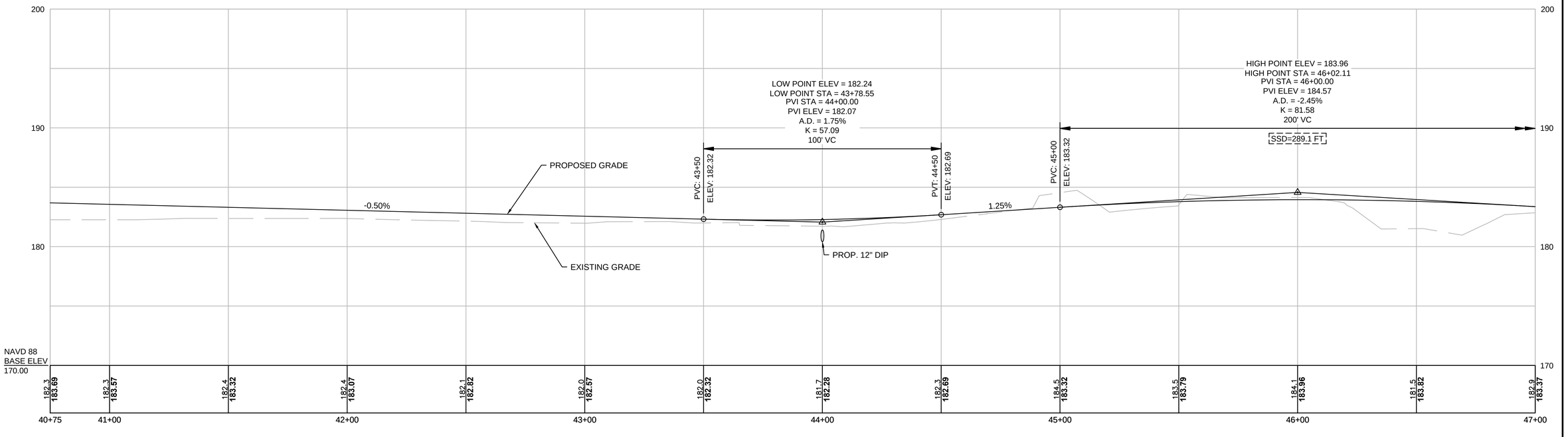
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	39	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



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



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:28 AM

LANDSCAPE DETAILS
SEE SHEET 110

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 46+15 LT TO STA. 49+66 LT
STA. 53+50 RT TO STA. 56+37 RT

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	40	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:28 AM

N

NAD 83

PROP. LIMIT OF WORK STA. 701+48.87 MEET EXIST.

PROP. MILLING & HMA OVERLAY

PC +50.05

701

1904 COUNTY LAYOUT

MAIN STREET (ROUTE 62) (PUBLIC)

SUDBURY STREET CONST. ℄ STA. 600+00.00 = MAIN STREET (RTE 62) CONST. ℄ STA. 703+61.04

ARRT CONST. ℄ STA. 51+06.50 = SUDBURY STREET CONST. ℄ STA. 600+36.28

PROP. CONST. ℄

PROP. SAWCUT (TYP.)

PROP. 12' - 12" RCP

MEET EXIST.

PROP. EOP (TYP.)

PROP. GRAN. CURB TYPE VB (TYP.)

PROP. HMA DRIVEWAY

PROP. CURB CORNER

PROP. CEM. CONC. ISLANDS W/GRAN. EDGING TYPE SB

PROP. TRAIL HEAD ISLAND (SEE SHEET 126 FOR DETAILS)

PROP. MILLING & HMA OVERLAY

PROP. CEM. CONC. WCR-8

PT +93.92

PROP. 2' STONE DUST SHOULDER (TYP.)

PROP. SAWCUT (TYP.)

PROP. BENCHES (2) (SEE SHEET 128 FOR DETAILS)

R&S PARKING METER (SEE NOTE 2)

R&R HISTORIC MONUMENT (SEE NOTE 1)

PROP. CEM. CONC. WCR-6

REMODEL EXIST. CB

(RET.)

PROP. GRAN. CURB TYPE VB (TYP.)

PROP. 4" LOAM & SEED (TYP.)

R&R PARKING METERS (TYP.)

(R&R)

MATCHLINE

CONTINUED ON SHEET 42

PROP. 10.0' CEM. CONC. WALK

PROP. HMA DRIVEWAY

REM. CEM. CONC. SIDEWALK

PROP. 4" COMPOST TOPSOIL & SEED

PROP. CEM. CONC. WCR-5

PROP. SLOPE LIMIT (TYP.)

PROP. 10.0' CEM. CONC. WALK

PROP. GRAN. CURB TYPE VB (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY

PROP. 2' HMA DRIVEWAY MEET EXIST. GRAVEL DRIVEWAY

PROP. GRAN CURB TYPE VB REVEAL VARIES (SEE SHEET 135 FOR GRADES)

END HMA BIKE TRAIL BEGIN CEM. CONC. SIDEWALK

PROP. TRAIL HEAD ISLAND (SEE SHEET 126 FOR DETAILS)

PROP. 10' HMA BIKE TRAIL (TYP.)

PROP. PERM. EASEMENT (TYP.)

PROP. TEMP. EASEMENT (TYP.)

PROP. CONST. ℄ & PGL

PROP. 4" COMPOST TOPSOIL & SEED (TYP.)

R&R GRAN. CURB

R&D CURB CORNER

PC +56.55

MEET EXIST.

PROP. OVERHEAD WIRE (TYP.)

PROP. CEM. CONC. WCR-7

R&R UP, B.O. R&R LIGHT

PROP. BIKE RACKS(3) (SEE SHEET 126 FOR DETAILS)

PROP. CLEARING & GRUBBING (TYP.)

PROP. 10' HMA BIKE TRAIL

PROP. SWALE (TYP.)

END CEM. CONC. SIDEWALK BEGIN 10' HMA BIKE TRAIL

PROP. INTERPRETIVE SIGN (SEE SHEET 128 FOR DETAILS)

PROP. GRANITE MARKER (1.00, MAYNARD) (SEE SHEET 128 FOR DETAILS)

PROP. SLOPE LIMIT (TYP.)

PROP. TEMP. EASEMENT (TYP.)

PROP. MILLING & HMA OVERLAY

PROP. PERM. EASEMENT (TYP.)

PROP. SLOPE LIMIT (TYP.)

PROP. LIMIT OF WORK MEET EXIST.

PROP. CEM. CONC. WCR-4

PROP. LIMIT OF WORK STA. 601+95 MEET EXIST.

PROP. CONST. ℄

PI +81.39

PT +03.28

PI +73.10

CONTINUED ON SHEET 39

MATCHLINE

DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET	RIM	INCOMING PIPES	OUTGOING PIPES	REMARKS
CBCI-4	703+05	18.0' RT	177.07		I=174.46' (EX-CB-5)	
EX-CB-5	703+04	30.9' RT	176.84	I=174.39' (CBCI-4)	I=174.39' (EX-CB)	CIT

0 20 50 100

SCALE: 1" = 20'

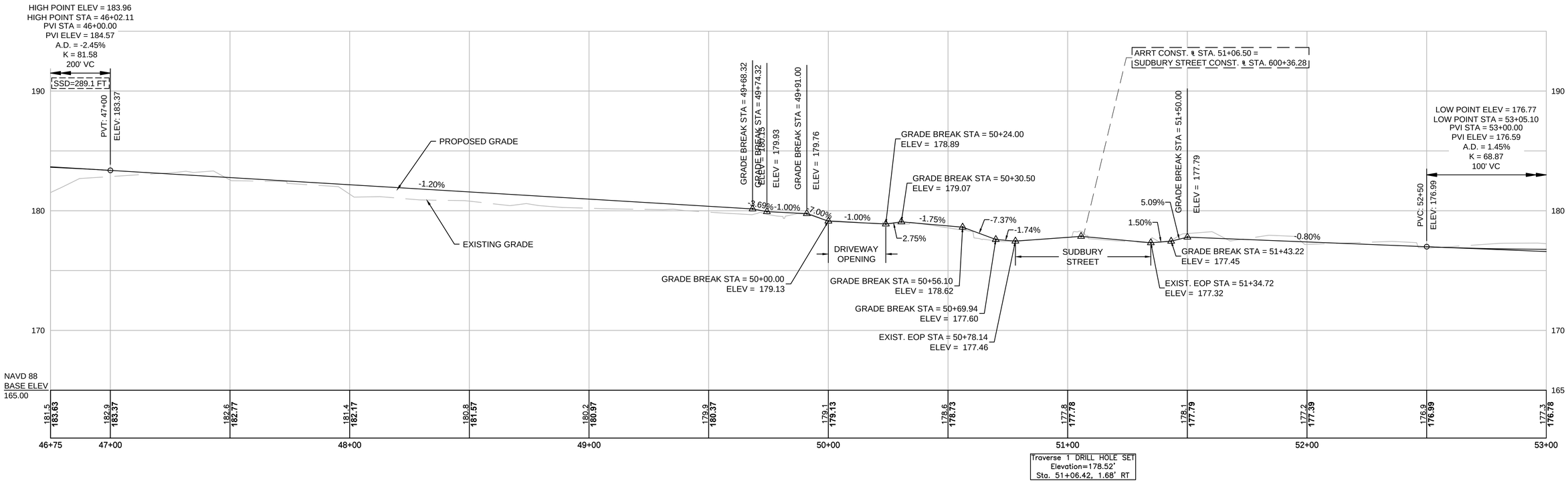
NOTES:
1. THE CONTRACTOR SHALL CAREFULLY REMOVE, STORE, AND RESET THE MONUMENT WITHIN TOWN LAND, 5' BEHIND THE PROPOSED SIDEWALK.
2. DOUBLE PARKING METER SHALL BE STACKED AND A SINGLE PARKING METER SHALL BE RESET FROM THOSE REMOVED BETWEEN STATIONS 67+00 AND 73+50.
3. FOR PROFILE SEE SHEET 41

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	41	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:29 AM



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

NOTE:
1. FOR CONSTRUCTION PLAN SEE SHEET 40

LANDSCAPE DETAILS
SEE SHEET 110

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 53+50 RT TO STA. 56+37 RT
STA. 57+40 LT TO STA. 59+45 LT
STA. 57+54 RT TO STA. 59+41 RT (4-RAIL)

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

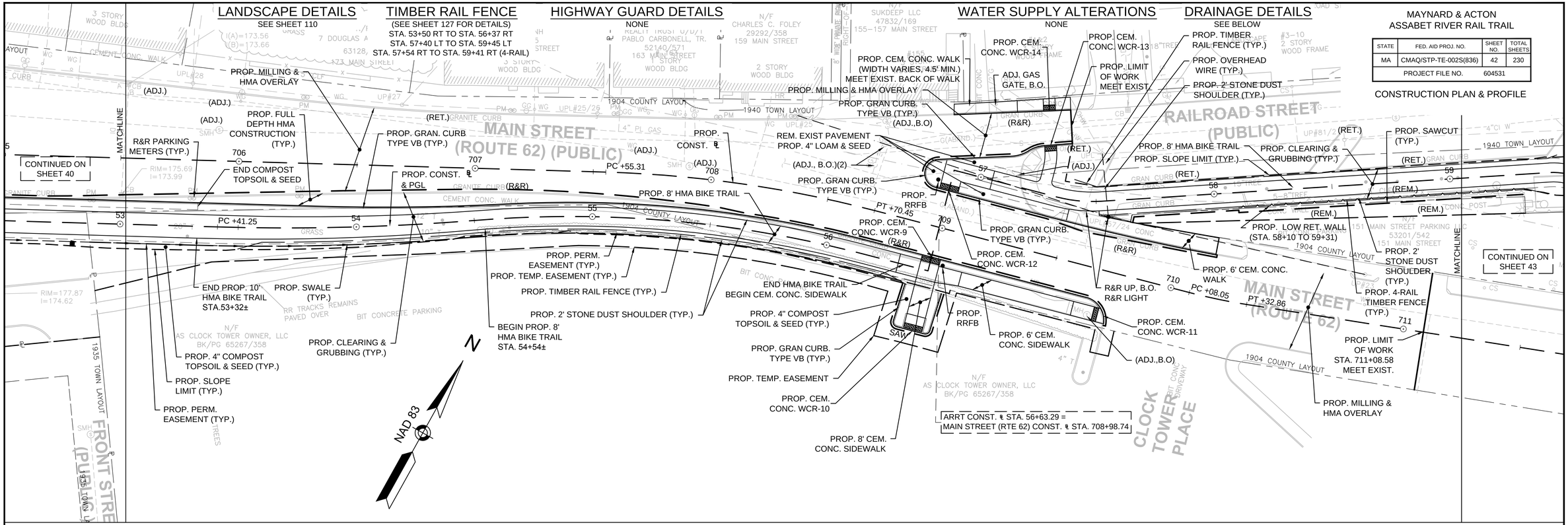
DRAINAGE DETAILS
SEE BELOW

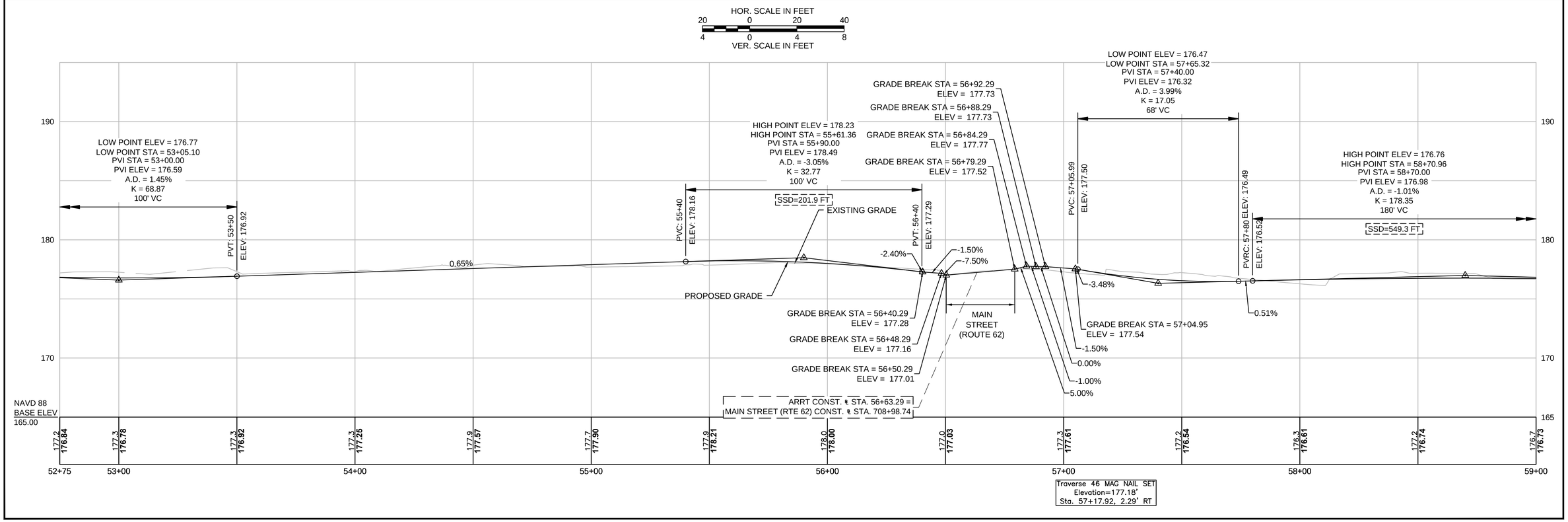
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	42	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:30 AM





LANDSCAPE DETAILS
SEE SHEET 111

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 57+54 RT TO STA. 59+41 RT (4-RAIL)
STA. 57+40 LT TO STA. 59+45 LT
STA. 59+49 LT TO STA. 60+33 LT
STA. 60+38 LT TO STA. 62+95 LT (4-RAIL)
STA. 62+09 RT TO STA. 62+56 RT

HIGHWAY GUARD DETAILS
NONE

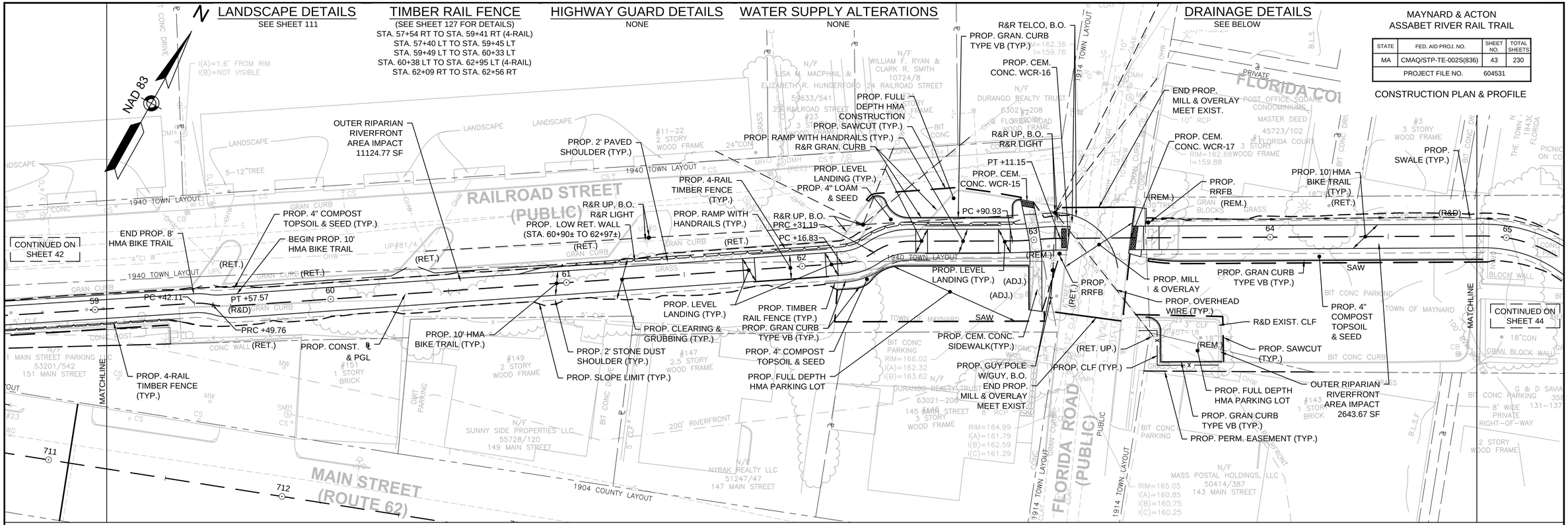
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

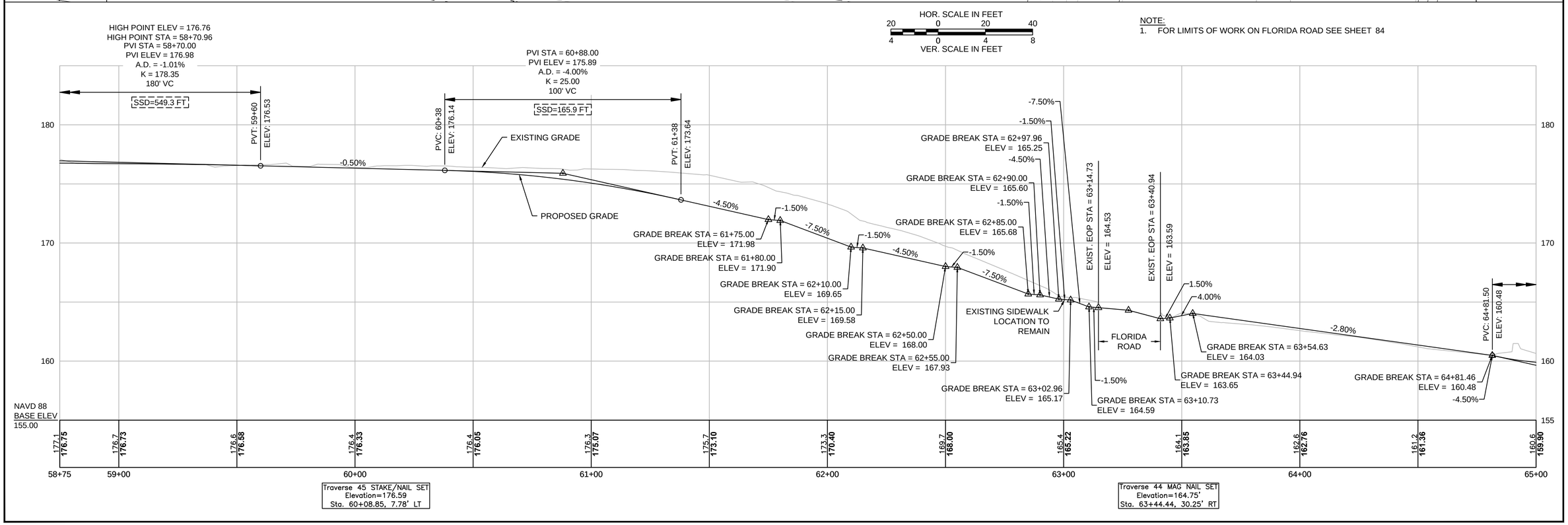
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	43	230
PROJECT FILE NO. 604531			

CONSTRUCTION PLAN & PROFILE



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

NOTE:
1. FOR LIMITS OF WORK ON FLORIDA ROAD SEE SHEET 84



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:30 AM

LANDSCAPE DETAILS
SEE SHEET 111

TIMBER RAIL FENCE
STA. 68+31 RT TO STA. 68+48 RT

HIGHWAY GUARD DETAILS
NONE

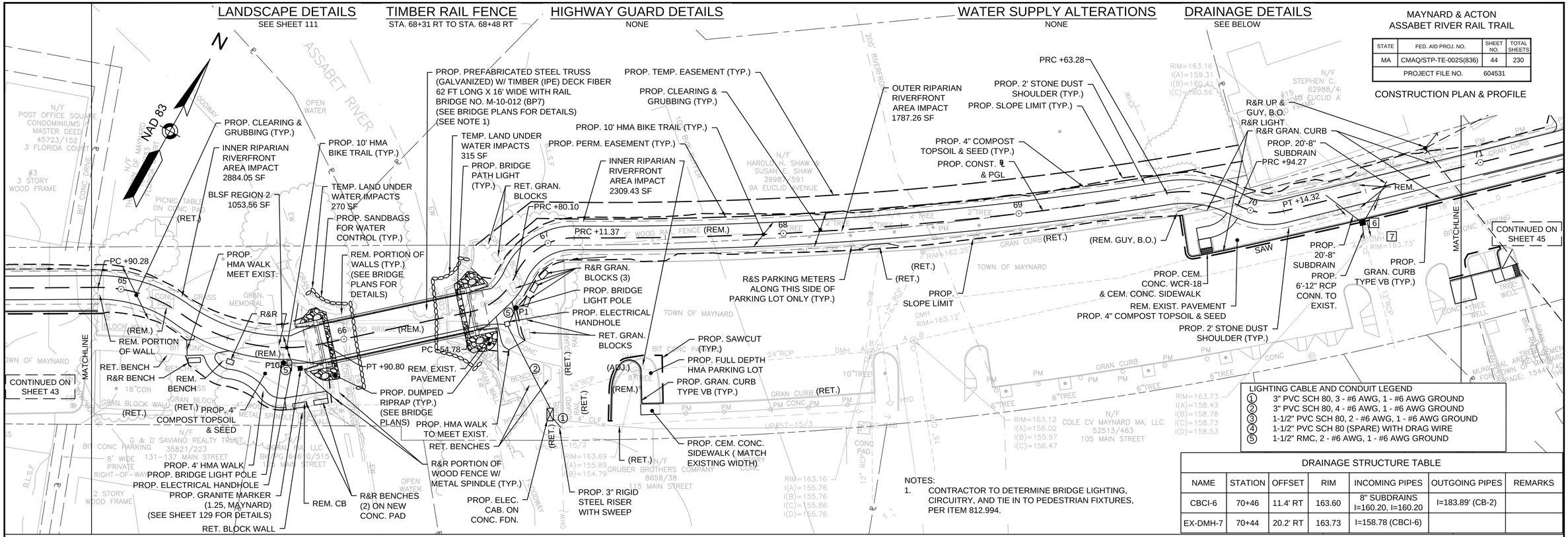
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	44	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE


NAD 83
ASSABET RIVER
PROP. CLEARING & GRUBBING (TYP.)
INNER RIPARIAN RIVERFRONT AREA IMPACT 2884.05 SF
BLSF REGION 2 1053.56 SF
PROP. 10' HMA BIKE TRAIL (TYP.)
TEMP. LAND UNDER WATER IMPACTS 270 SF
PROP. SANDBAGS FOR WATER CONTROL (TYP.)
PROP. PREFABRICATED STEEL TRUSS (GALVANIZED) W/ TIMBER (IPE) DECK FIBER 62 FT LONG X 16' WIDE WITH RAIL BRIDGE NO. M-10-012 (BP7) (SEE BRIDGE PLANS FOR DETAILS) (SEE NOTE 1)
TEMP. LAND UNDER WATER IMPACTS 315 SF
PROP. BRIDGE PATH LIGHT (TYP.)
RET. GRAN. BLOCKS
PROP. TEMP. EASEMENT (TYP.)
PROP. CLEARING & GRUBBING (TYP.)
PROP. 10' HMA BIKE TRAIL (TYP.)
PROP. PERM. EASEMENT (TYP.)
INNER RIPARIAN RIVERFRONT AREA IMPACT 2309.43 SF
OUTER RIPARIAN RIVERFRONT AREA IMPACT 1787.26 SF
PROP. 2' STONE DUST SHOULDER (TYP.)
PROP. SLOPE LIMIT (TYP.)
PROP. 4" COMPOST TOPSOIL & SEED (TYP.)
PROP. CONST. & PGL
R&R UP & GUY, B.O.
R&R LIGHT
R&R GRAN. CURB
PROP. 20'-8" SUBDRAIN
PRC +94.27
PRC +63.28
PRC +80.10
PRC +11.37
PC +90.28
PT +90.80
PC 54+78
PT +14.32
PROP. HMA WALK MEET EXIST.
REM. PORTION OF WALLS (TYP.) (SEE BRIDGE PLANS FOR DETAILS)
R&R GRAN. BLOCKS (3)
PROP. BRIDGE LIGHT POLE
PROP. ELECTRICAL HANDHOLE
RET. GRAN. BLOCKS
R&S PARKING METERS ALONG THIS SIDE OF PARKING LOT ONLY (TYP.)
PROP. SLOPE LIMIT
PROP. SAWCUT (TYP.)
PROP. FULL DEPTH HMA PARKING LOT
PROP. GRAN. CURB TYPE VB (TYP.)
PROP. CEM. CONC. WCR-18 & CEM. CONC. SIDEWALK
REM. EXIST. PAVEMENT
PROP. 4" COMPOST TOPSOIL & SEED
PROP. 2' STONE DUST SHOULDER (TYP.)
PROP. 6'-12" RCP CONN. TO EXIST.
PROP. GRAN. CURB TYPE VB (TYP.)
REM. GUY, B.O.
REM. EXIST. PAVEMENT
REM. PORTION OF WALL
RET. BENCH
R&R BENCH
REM. BENCH
PROP. 4' COMPOST TOPSOIL & SEED
PROP. DUMPED RIPRAP (TYP.) (SEE BRIDGE PLANS)
PROP. HMA WALK TO MEET EXIST.
RET. BENCHES
R&R PORTION OF WOOD FENCE W/ METAL SPINDLE (TYP.)
PROP. 4' HMA WALK
PROP. BRIDGE LIGHT POLE
PROP. ELECTRICAL HANDHOLE
PROP. GRANITE MARKER (1.25, MAYNARD) (SEE SHEET 129 FOR DETAILS)
RET. BLOCK WALL
REM. CB
R&R BENCHES (2) ON NEW CONC. PAD
PROP. ELEC. CAB. ON CONC. FDN.
PROP. 3" RIGID STEEL RISER WITH SWEEP
PROP. CEM. CONC. SIDEWALK (MATCH EXISTING WIDTH)
MATCHLINE
CONTINUED ON SHEET 43
CONTINUED ON SHEET 45
REM. CONC. WCR-18
REM.
SAW
N/F POST OFFICE SQUARE CONDOMINIUMS MASTER DEED 4523/152 3 FLORIDA COURT
N/F MAYNARD & ACTON RAILROAD CORP.
N/F HAROLD H. SHAW & SUSAN E. SHAW 3998/291 9A EUCLID AVENUE
N/F STEPHEN C. 62988/4 #15 EUCLID A
TOWN OF MAYNARD
N/F G & D SAVIANO REALTY TRUST 35821/223 131-137 MAIN STREET
N/F GRUBER BROTHERS COMPANY 8658/38 115 MAIN STREET
N/F COLE CV MAYNARD MA, LLC 52513/463 105 MAIN STREET
#3 3 STORY WOOD FRAME
2 STORY WOOD FRAME
PICNIC TABLE ON CONC PAD
GRAN. MEMORIAL
GRAN. BLOCK WALL
BIT CONC PARKING
8' WIDE PRIVATE RIGHT-OF-WAY
BIT CONC DRIVE
CONC PAD
OPEN WATER
200' RIVERFRONT
100' BUFFER ZONE
OHW
EW
BLS.F
BIT CONC PATH
GRAN CURB
CONC
TREE WELL
DMH RIM=163.12'
DMH RIM=163.73'
RIM=162.22
RIM=163.16 I(A)=159.31 I(B)=160.41 I(C)=160.56
RIM=163.69 I(A)=155.89 I(B)=154.79
RIM=163.16 I(A)=155.76 I(B)=155.76 I(C)=155.86 I(D)=155.76
RIM=163.73 I(A)=158.43 I(B)=158.78 I(C)=158.73 I(D)=158.53
RIM=163.12 I(A)=156.02 I(B)=155.97 I(C)=156.47
24"RCP
12"RCP
10"TREE
6"TREE
2"TREE
8"TREE
UP#57-15/3
UP#57-15/2
REM. CONC. PAD
REM. CONC. WALL
REM. WOOD RAIL FENCE
REM. WOOD BRIDGE
REM. WOOD RAMP
REM. WOOD BENCH
REM. CLF
REM. WOOD BOARD
REM. WOOD POST
REM. WOOD FENCE
REM. CONC. PAD
REM. CONC. WALL
REM. CONC. CURB
REM. CONC. SIDEWALK
REM. CONC. STEPS
REM. CONC. RAMP
REM. CONC. WING WALL
REM. CONC. FOOTING
REM. CONC. BENCH
REM. CONC. BOARD
REM. CONC. POST
REM. CONC. FENCE
REM. CONC. BRIDGE

LANDSCAPE DETAILS
SEE SHEET 112

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 75+65 RT TO STA. 77+22 RT

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

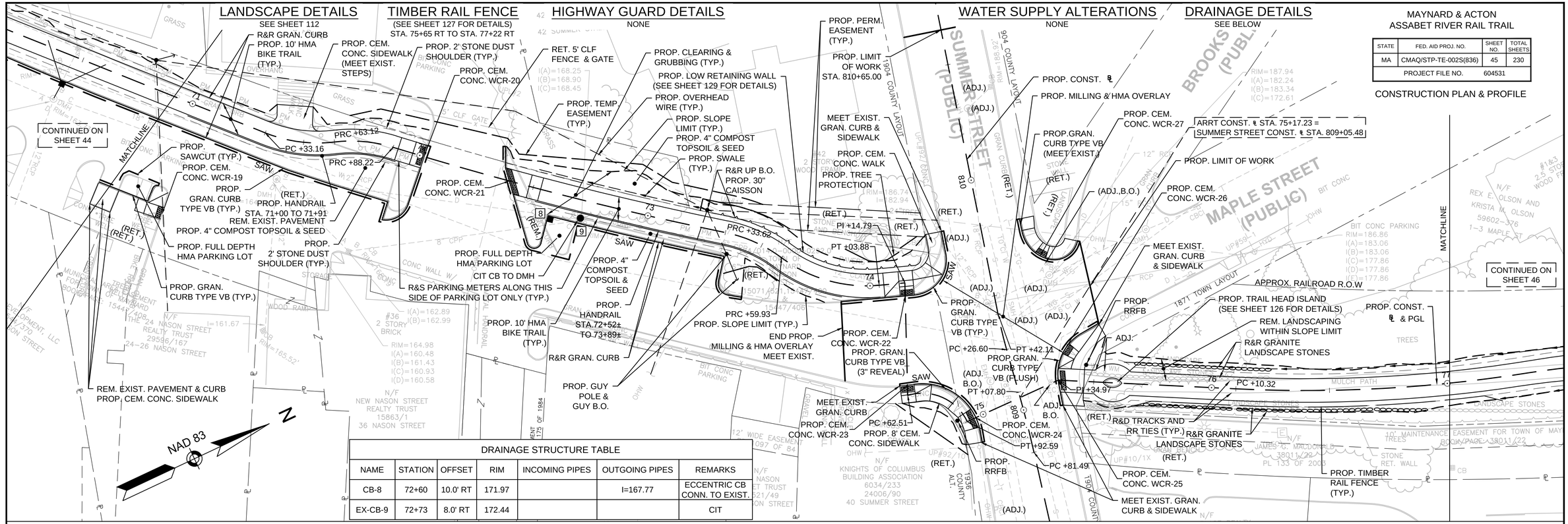
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	45	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:31 AM

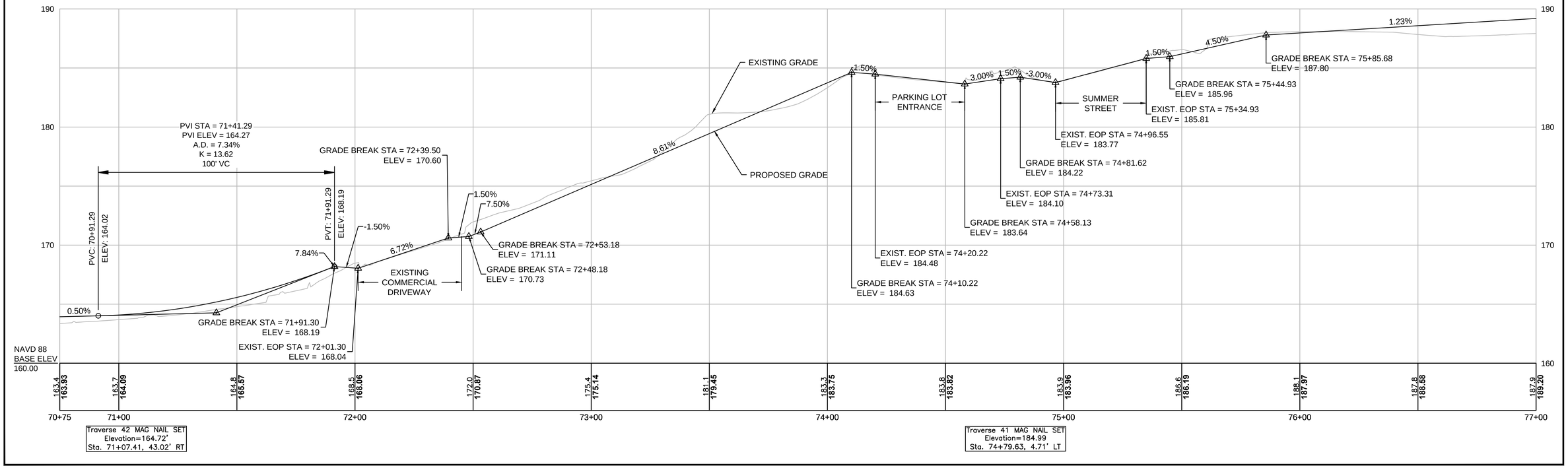


DRAINAGE STRUCTURE TABLE

NAME	STATION	OFFSET	RIM	INCOMING PIPES	OUTGOING PIPES	REMARKS
CB-8	72+60	10.0' RT	171.97		I=167.77	ECCENTRIC CB CONN. TO EXIST.
EX-CB-9	72+73	8.0' RT	172.44			CIT

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

NOTE:
1. FOR LIMITS OF WORK ON SUMMER STREET SEE SHEET 86



LANDSCAPE DETAILS
SEE SHEET 112

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

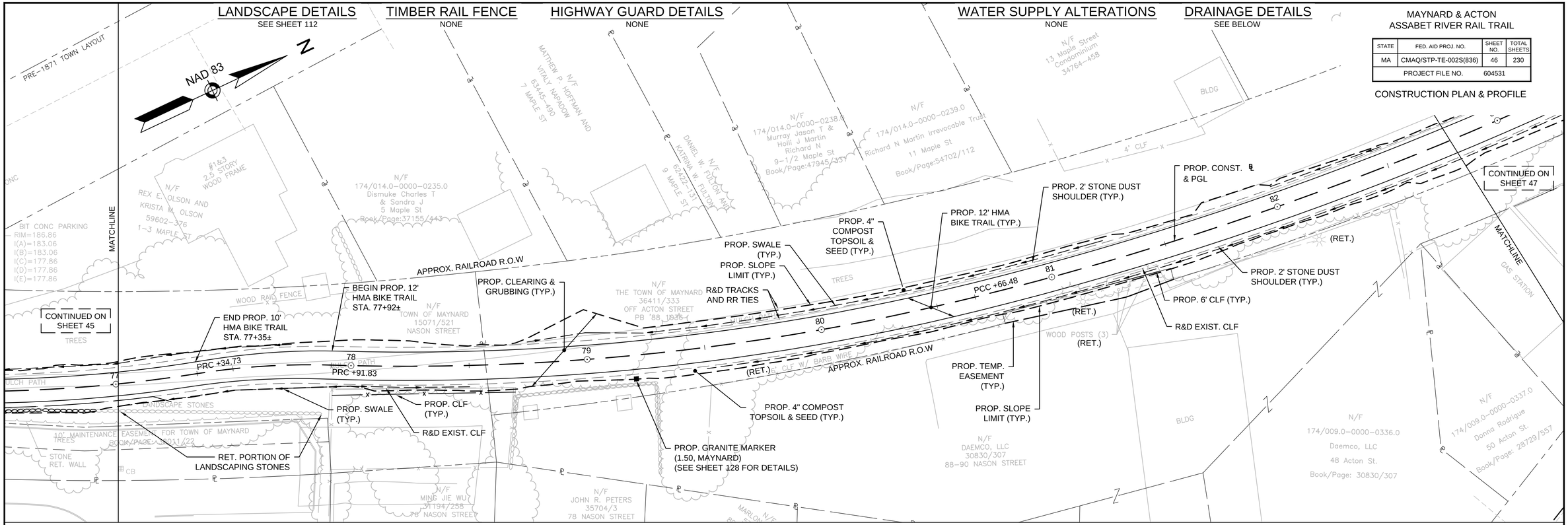
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

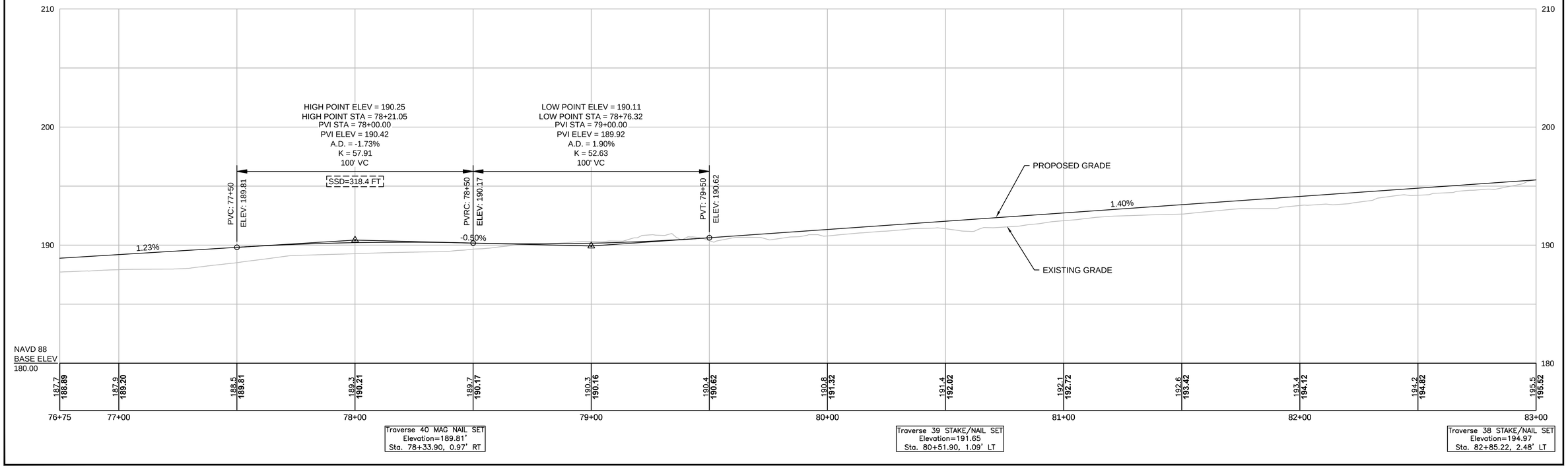
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	46	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:32 AM



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



LANDSCAPE DETAILS
SEE SHEET 113

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 86+34 RT TO STA. 88+41 RT
STA. 89+20 RT TO STA. 90+82 RT

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

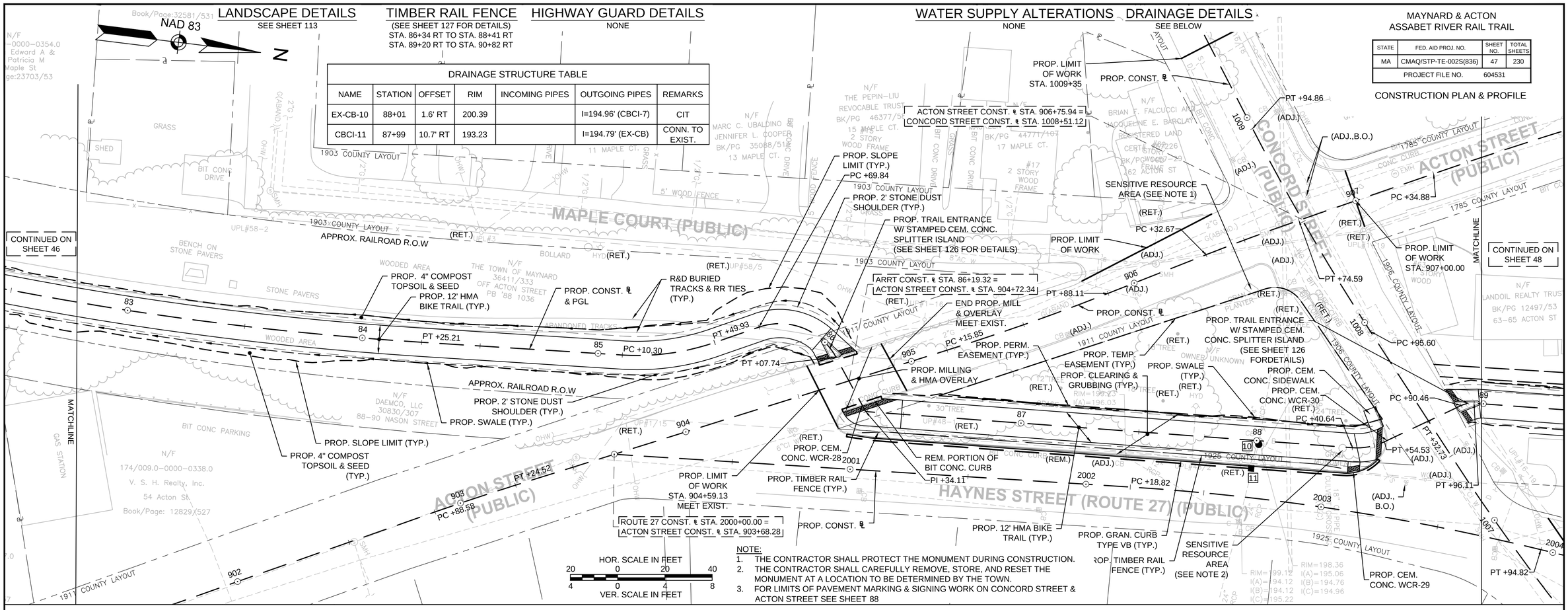
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	47	230
PROJECT FILE NO.	604531		

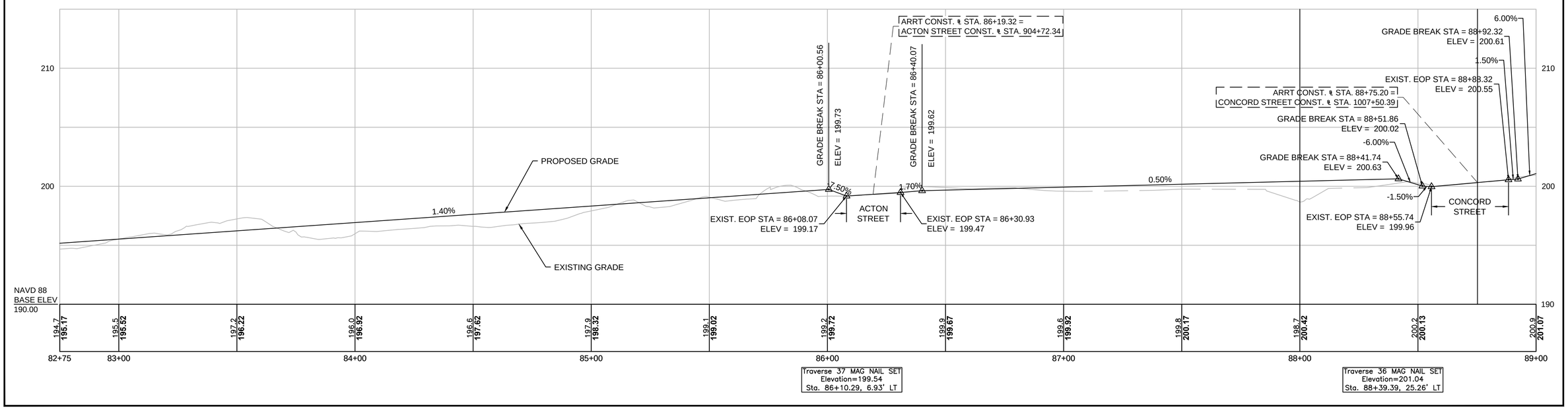
CONSTRUCTION PLAN & PROFILE

DRAINAGE STRUCTURE TABLE

NAME	STATION	OFFSET	RIM	INCOMING PIPES	OUTGOING PIPES	REMARKS
EX-CB-10	88+01	1.6' RT	200.39		I=194.96' (CBCI-7)	CIT
CBCI-11	87+99	10.7' RT	193.23		I=194.79' (EX-CB)	CONN. TO EXIST.



NOTE:
1. THE CONTRACTOR SHALL PROTECT THE MONUMENT DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL CAREFULLY REMOVE, STORE, AND RESET THE MONUMENT AT A LOCATION TO BE DETERMINED BY THE TOWN.
3. FOR LIMITS OF PAVEMENT MARKING & SIGNING WORK ON CONCORD STREET & ACTON STREET SEE SHEET 88



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:33 AM

LANDSCAPE DETAILS
SEE SHEET 113

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 90+50 LT TO STA. 95+25 LT

HIGHWAY GUARD DETAILS
NONE

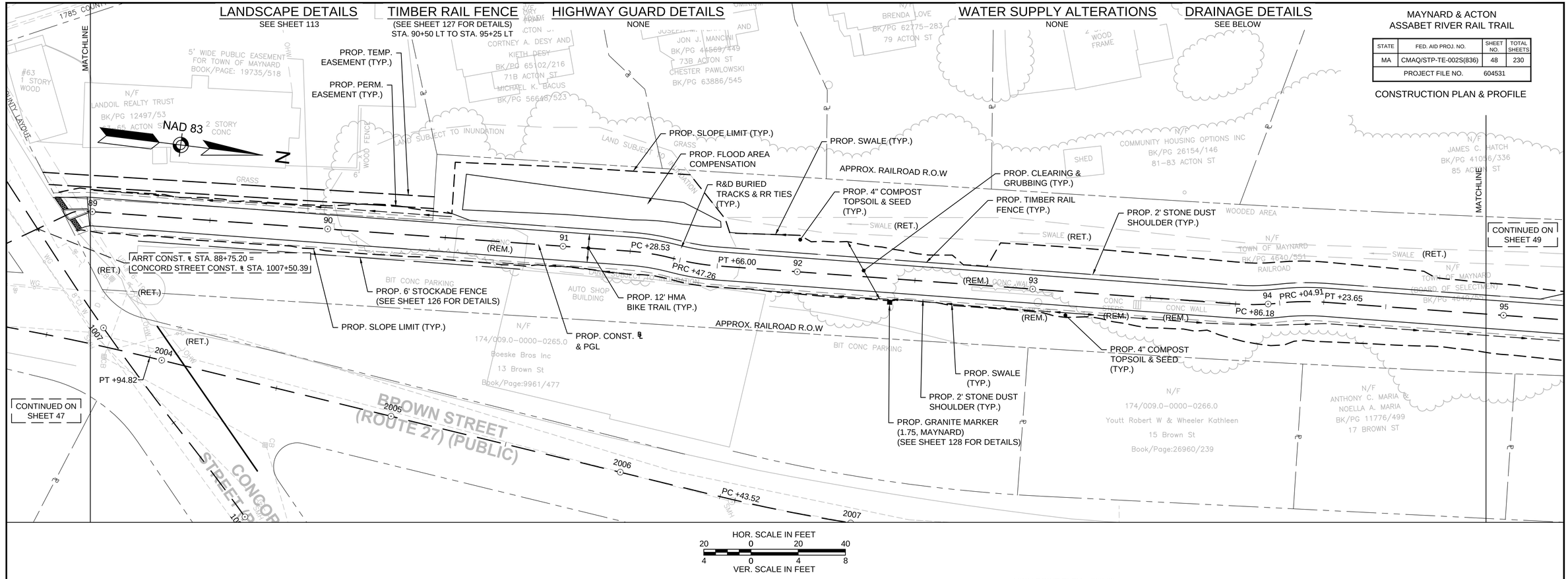
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

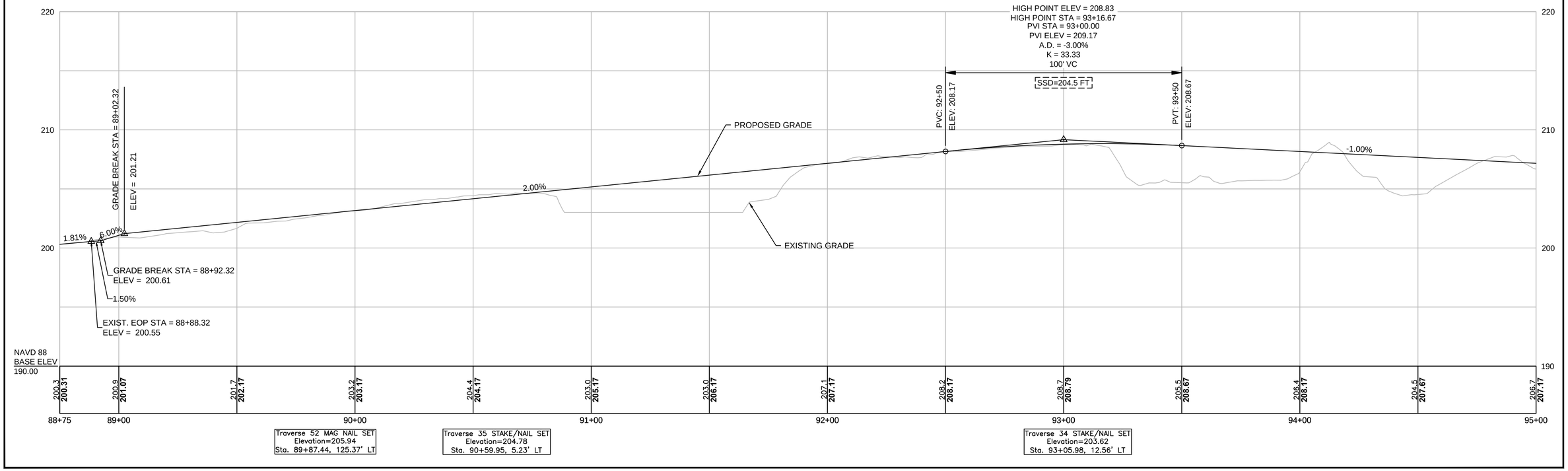
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	48	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



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



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:33 AM

LANDSCAPE DETAILS
SEE SHEET 114

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 90+50 LT TO STA. 95+25 LT
STA. 100+65 RT TO STA. 100+95 RT
STA. 100+65 LT TO STA. 100+95 LT

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

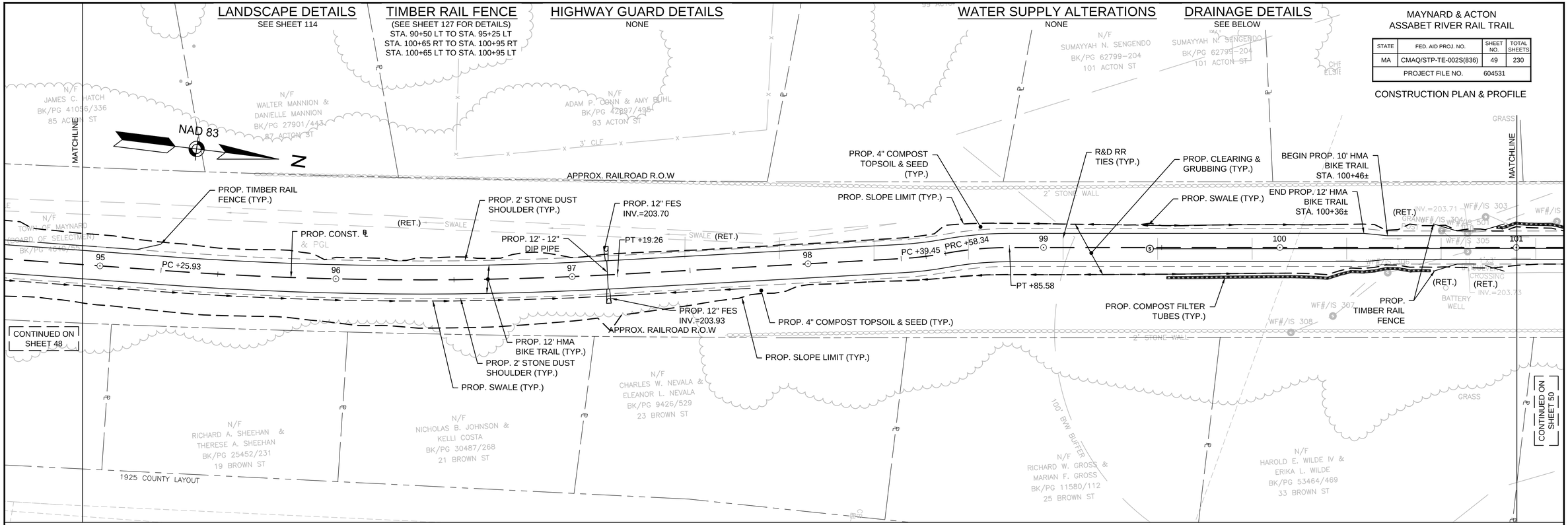
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

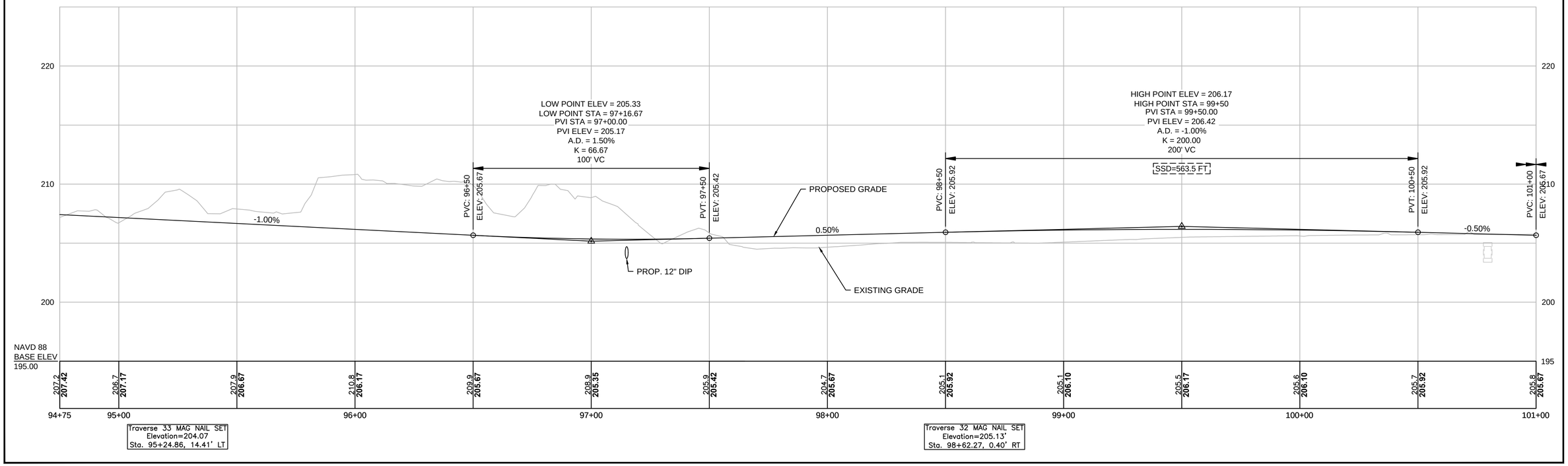
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	49	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:34 AM



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



LANDSCAPE DETAILS
SEE SHEET 114

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

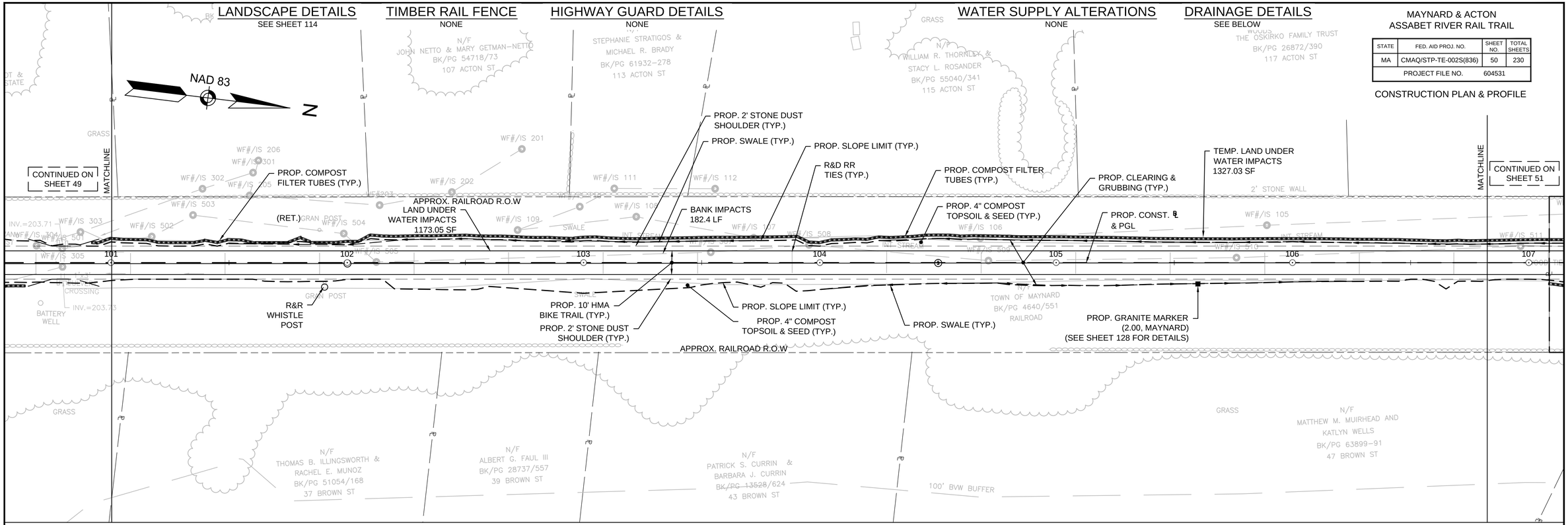
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

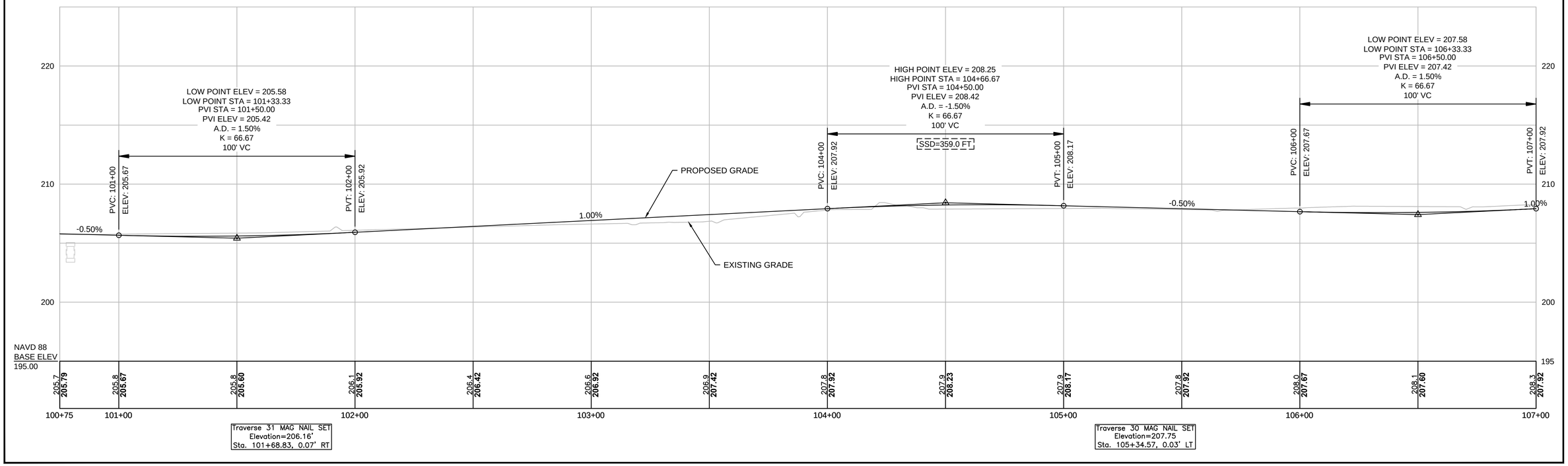
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	50	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



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



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:34 AM

LANDSCAPE DETAILS
SEE SHEET 115

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

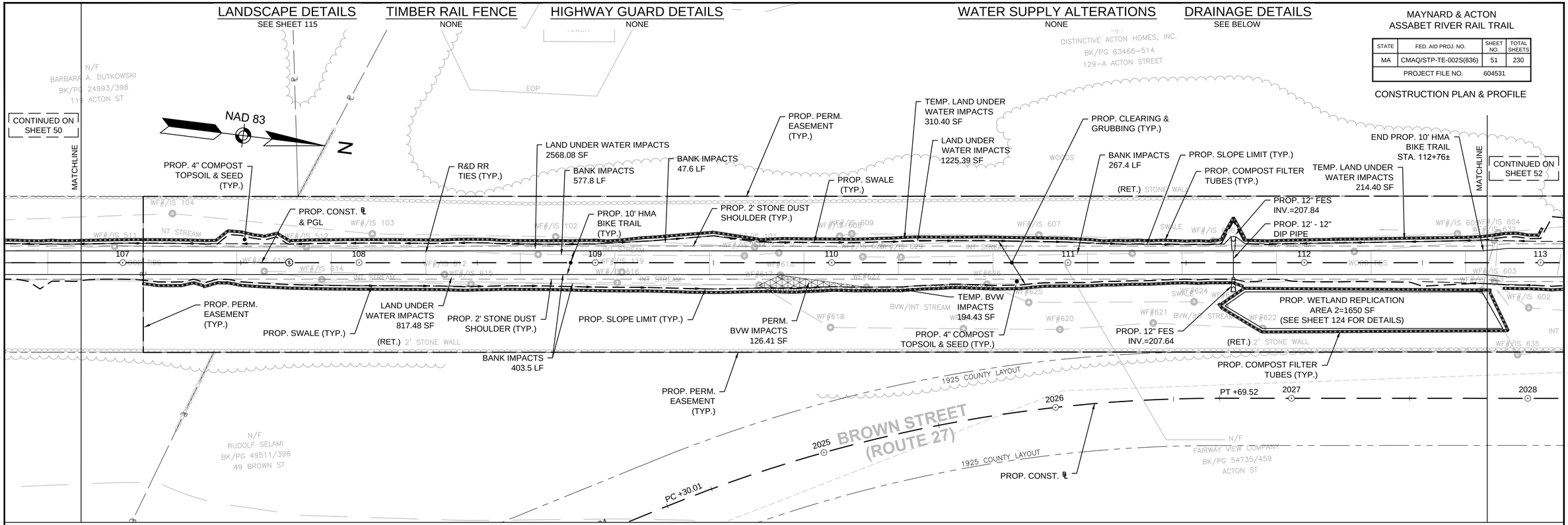
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

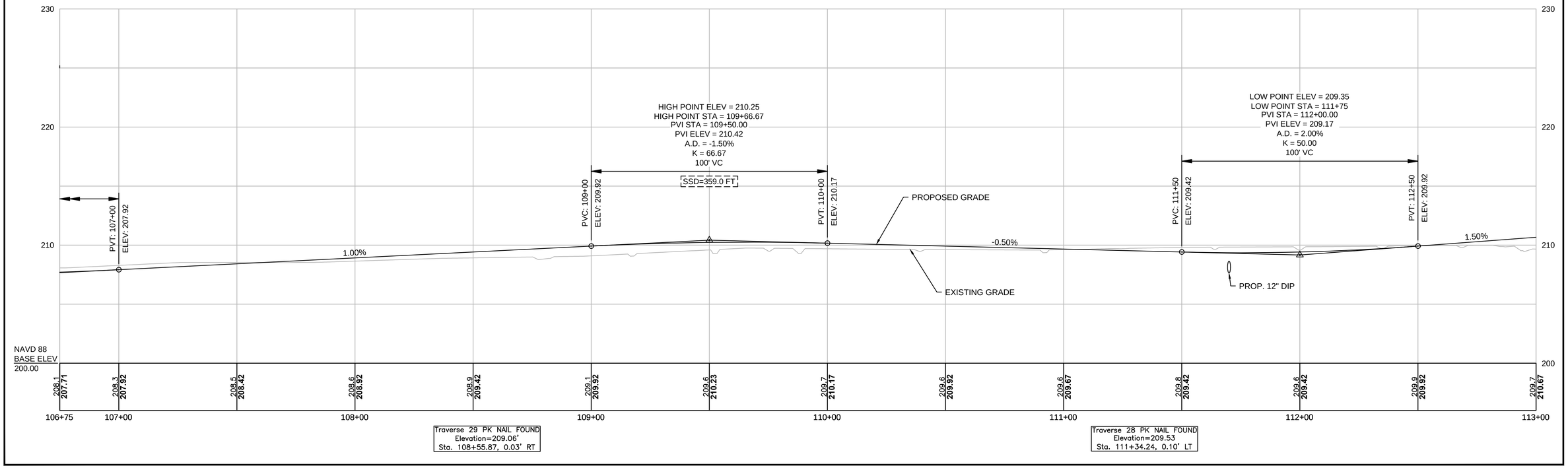
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	51	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:35 AM



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



Traverse 29 PK NAIL FOUND
Elevation=209.06'
Sta. 108+55.87, 0.03' RT

Traverse 28 PK NAIL FOUND
Elevation=209.53
Sta. 111+34.24, 0.10' LT

LANDSCAPE DETAILS
SEE SHEET 115

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

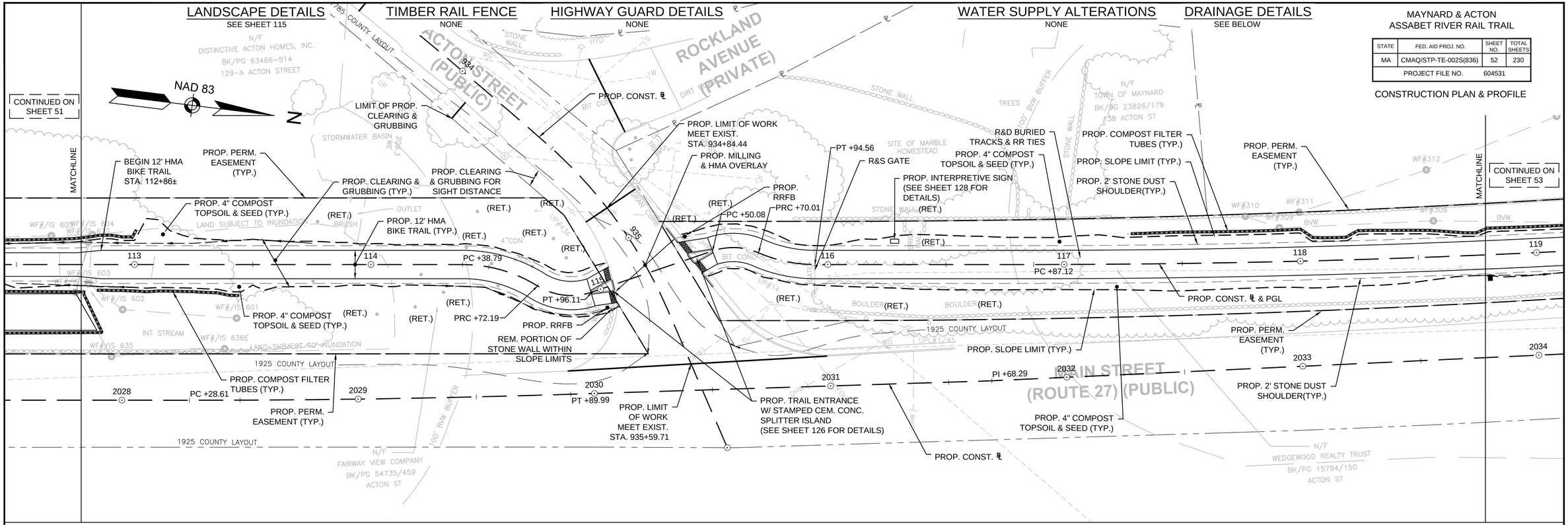
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

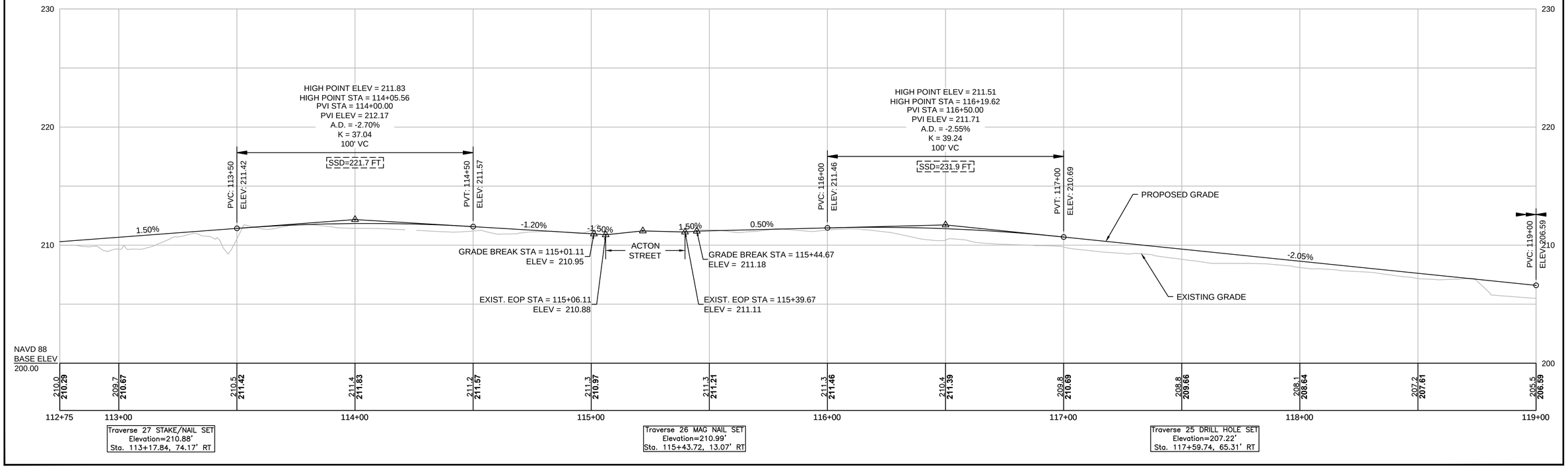
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	52	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



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



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:35 AM

LANDSCAPE DETAILS
SEE SHEET 116

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 123+75 RT TO STA. 126+75 RT

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

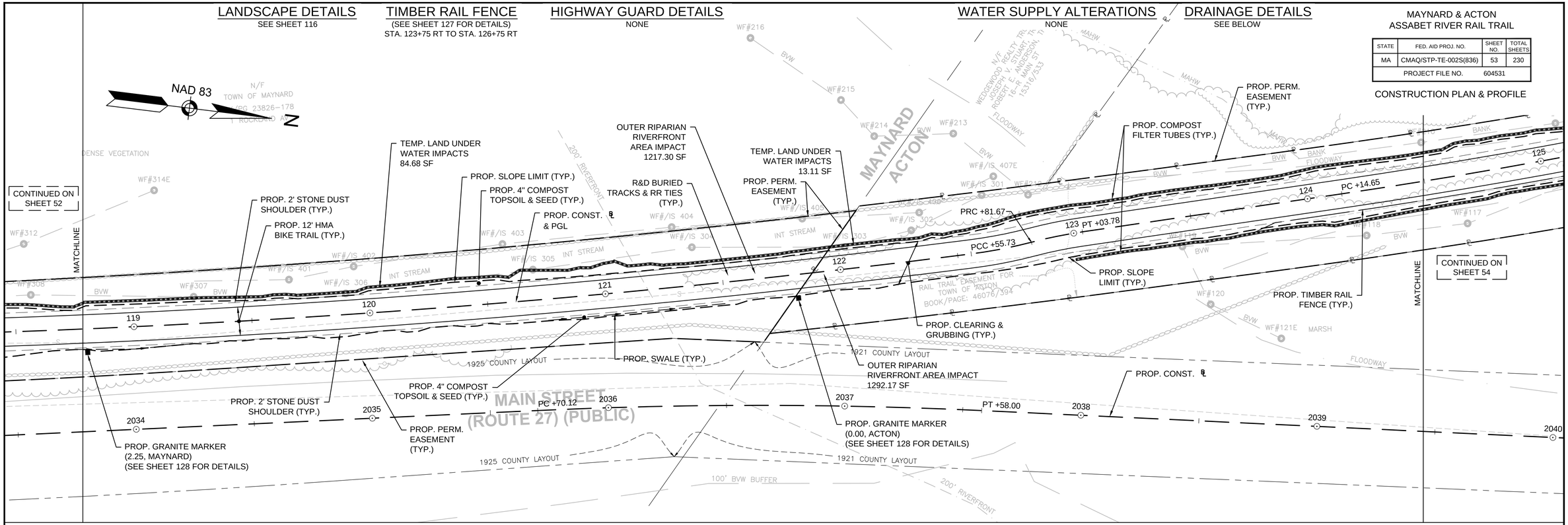
DRAINAGE DETAILS
SEE BELOW

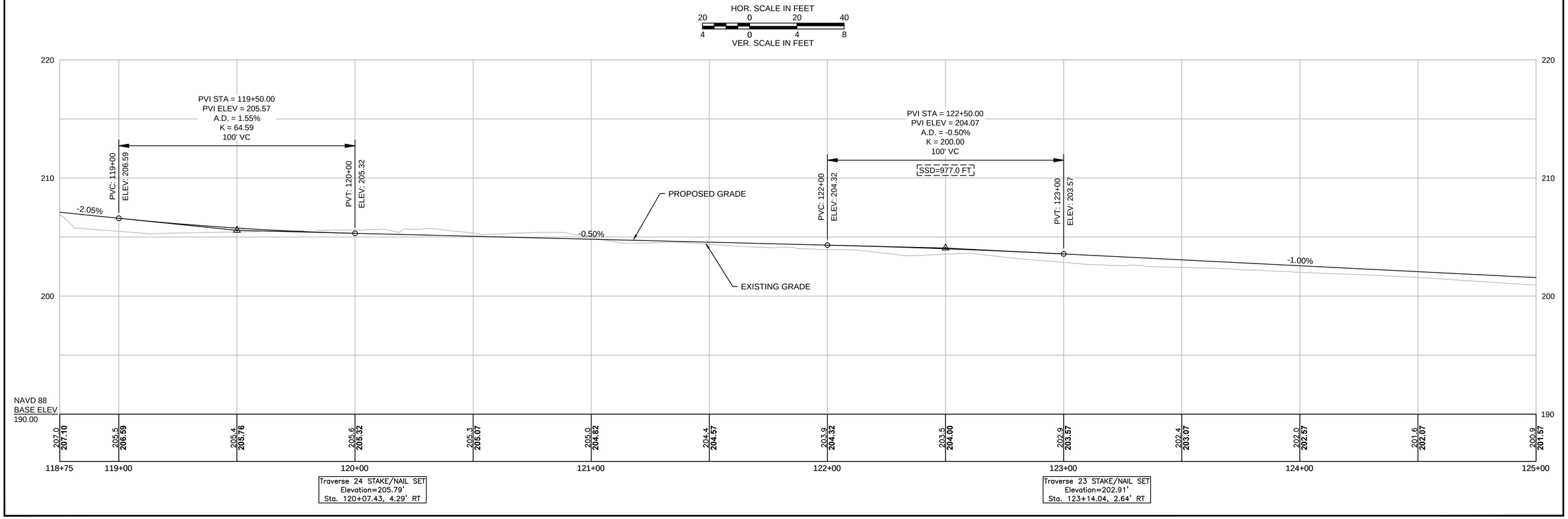
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	53	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:36 AM





LANDSCAPE DETAILS
SEE SHEET 116

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 123+75 RT TO STA. 126+75 RT
STA. 126+00 LT TO STA. 126+75 LT
STA. 128+66 RT TO STA. 129+82 RT (4-RAIL)
STA. 128+85 LT TO STA. 129+09 LT
STA. 129+19 LT TO STA. 129+97 LT

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	54	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:36 AM

NAD 83

CONTINUED ON SHEET 53

MATCHLINE

N/F WEDGEWOOD REALTY TRUST JOSEPH V. STUART, TR ROBERT E. ANDERSON, TR 48-R MAIN ST 15114/250 12-57

N/F WEDGEWOOD REALTY TRUST JOSEPH V. STUART, TR ROBERT E. ANDERSON, TR 4 MAIN ST 15114/250 12-48

N/F WEDGEWOOD REALTY TRUST JOSEPH V. STUART, TR ROBERT E. ANDERSON, TR TR14-R MAIN ST 15313/333 12-83

RAIL TRAIL EASEMENT FOR TOWN OF ACTON BOOK/PAGE: 46076/394

MARSH

FLOODWAY

BANK

BVW

INV.=196.72

PROP. 12' HMA BIKE TRAIL (TYP.)

PROP. CONST. ℄ & PGL

PROP. PERM. EASEMENT (TYP.)

PROP. SLOPE LIMIT (TYP.)

INNER RIPARIAN RIVERFRONT AREA IMPACT 9207.55 SF

PROP. COMPOST FILTER TUBES (TYP.)

PROP. 12' HMA BIKE TRAIL (TYP.)

PROP. 2' STONE DUST SHOULDER (TYP.)

R&D BURIED TRACKS & RR TIES (TYP.)

PROP. CLEARING & GRUBBING (TYP.)

PROP. TIMBER RAIL FENCE (TYP.)

R&R GATE

PC +76.29

PT +08.26

PRC +89.14

PRC +74.64

PROP. 4" COMPOST TOPSOIL & SEED (TYP.)

TEMP. BVW IMPACTS 38.22 SF

TEMP. BVW IMPACTS 16.23 SF

PROP. SLOPE LIMIT (TYP.)

PROP. 10' HMA BIKE TRAIL FROM STA. 126+12 TO 126+54 WITH 10' TRANSITION TO AVOID CROSS CULVERT

PROP. TIMBER RAIL FENCE (TYP.)

PROP. 2' STONE DUST SHOULDER (TYP.)

PROP. PERM. EASEMENT (TYP.)

PROP. COMPOST FILTER TUBES (TYP.)

PROP. 4-RAIL TIMBER FENCE (TYP.)

PROP. LOW RET.WALL (STA. 129+20 TO 129+70)

PROP. TEMP. EASEMENT (TYP.)

OUTER RIPARIAN RIVERFRONT AREA IMPACT 9477.32 SF

PROP. 4" COMPOST TOPSOIL & SEED (TYP.)

PROP. SWALE (TYP.)

PROP. TEMP. EASEMENT (TYP.)

PROP. PERM. EASEMENT (TYP.)

PT +86.78

PROP. GRAN. CURB TYPE VB (TYP.)

PC +48.01

RET. TREES (3)

PT +99.93

PROP. CEM. CONC. WCR-31

(R&R)

(REM.)

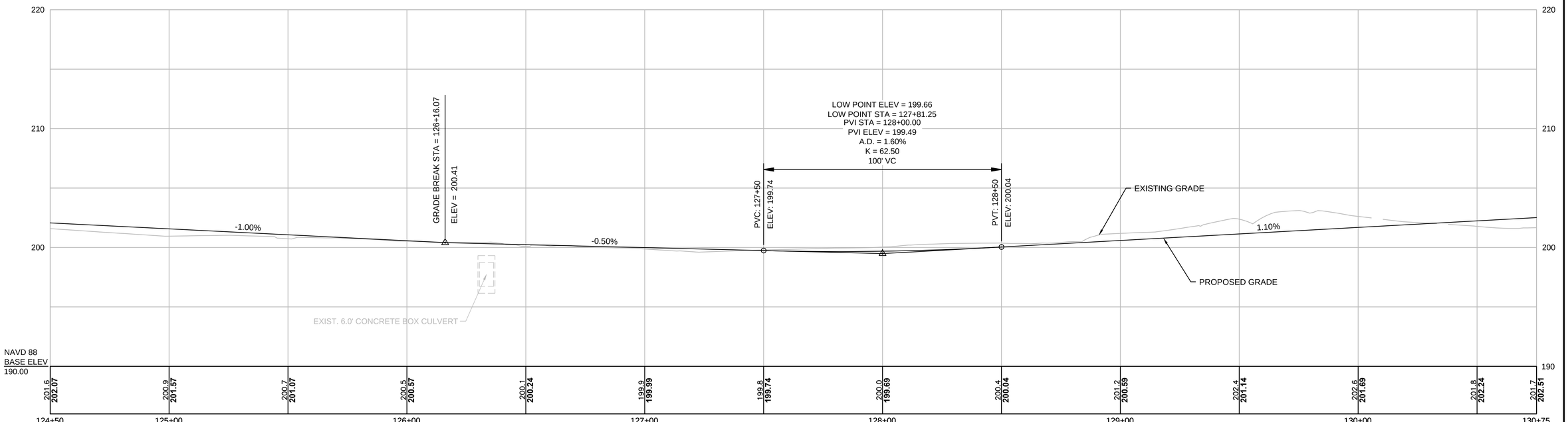
(RET.)

CONTINUED ON SHEET 55

100' BVW BUFFER

200' RIVERFRONT

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



Traverse 22 STAKE/NAIL SET
Elevation=200.72'
Sta. 126+32.54, 0.78' RT

Traverse 21 MAG NAIL SET
Elevation=200.43
Sta. 129+38.37, 105.50' LT

LANDSCAPE DETAILS
SEE SHEET 117

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

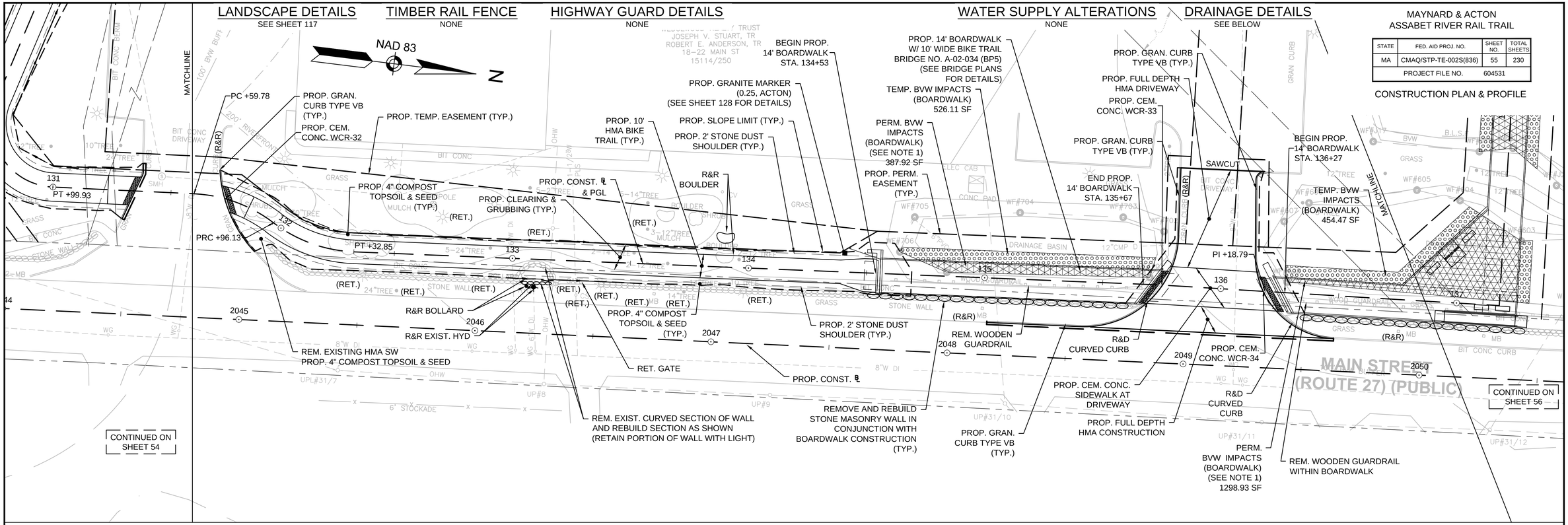
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

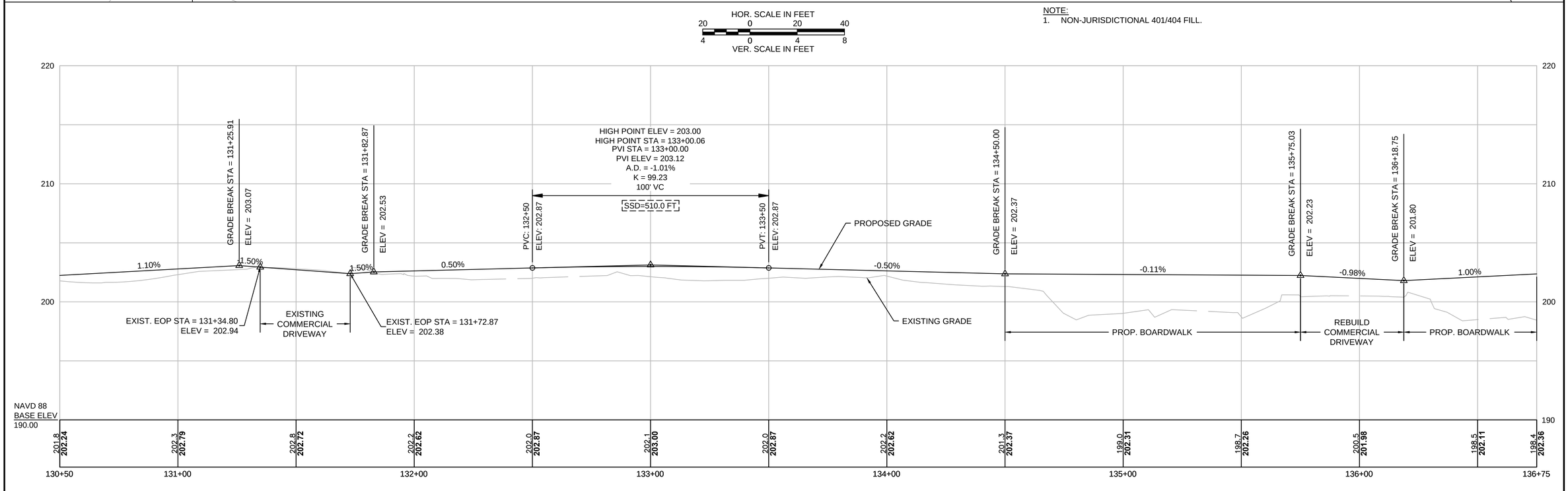
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	55	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



NOTE:
1. NON-JURISDICTIONAL 401/404 FILL.



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:37 AM

LANDSCAPE DETAILS
SEE SHEET 117

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
SEE BELOW

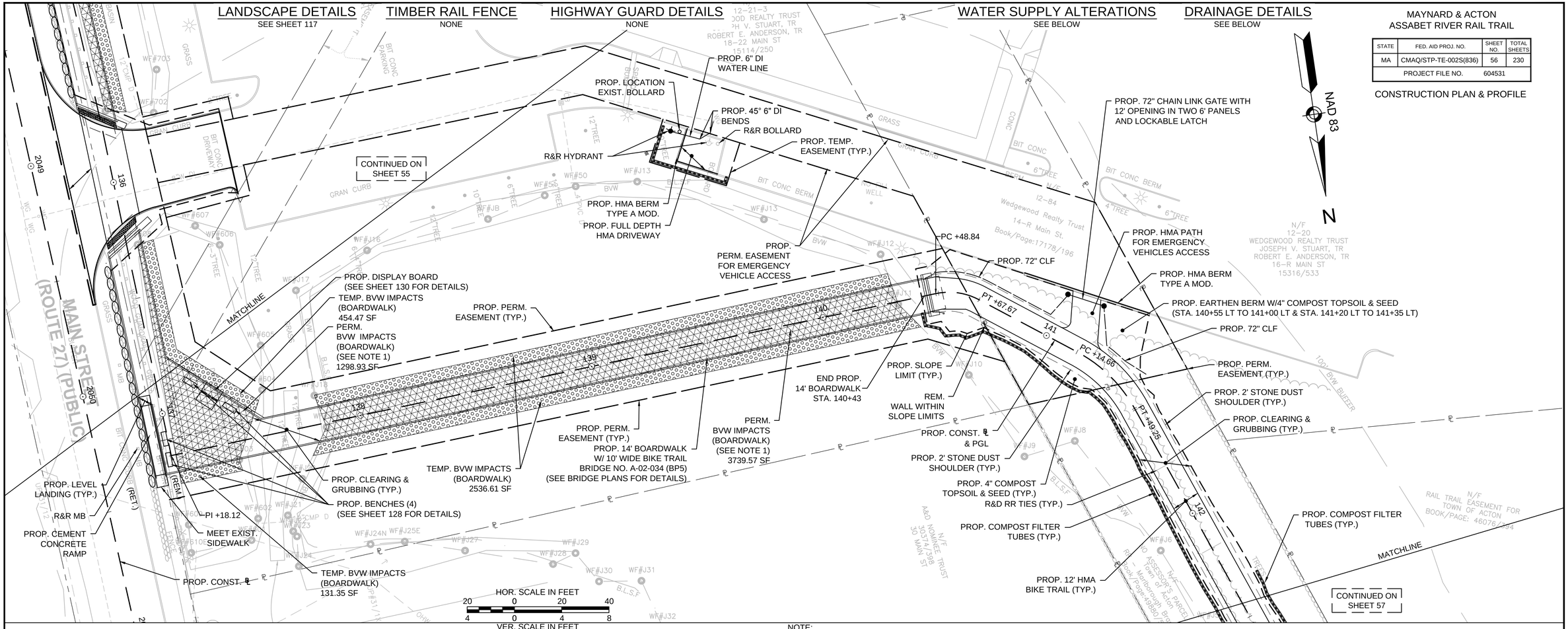
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

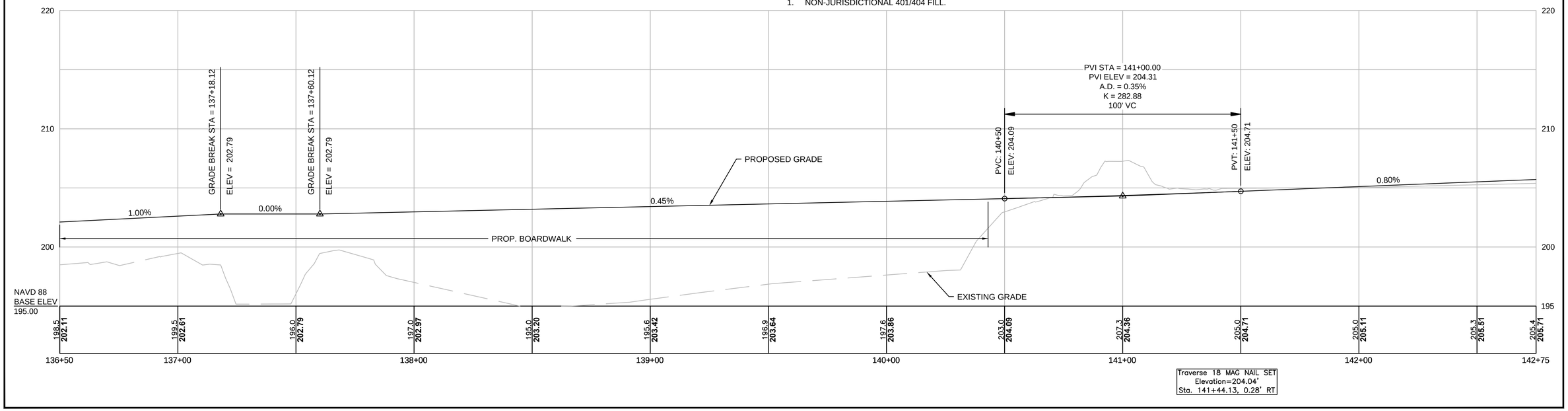
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	56	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:38 AM



NOTE:
1. NON-JURISDICTIONAL 401/404 FILL.



LANDSCAPE DETAILS
SEE SHEET 118

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

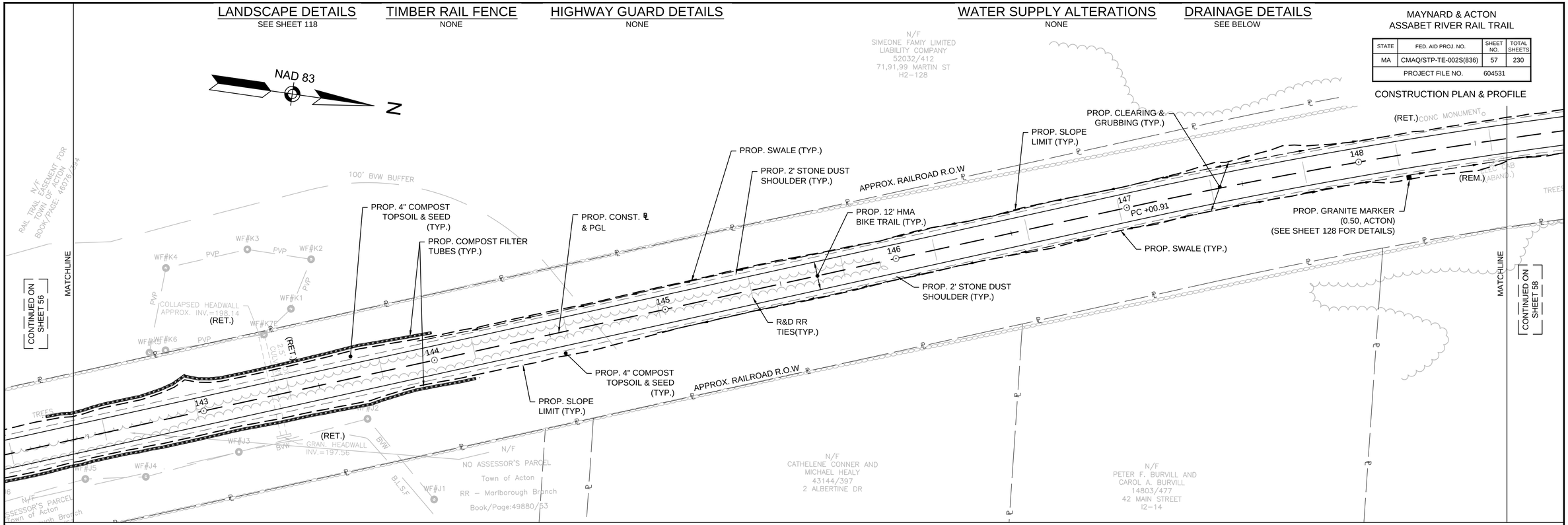
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

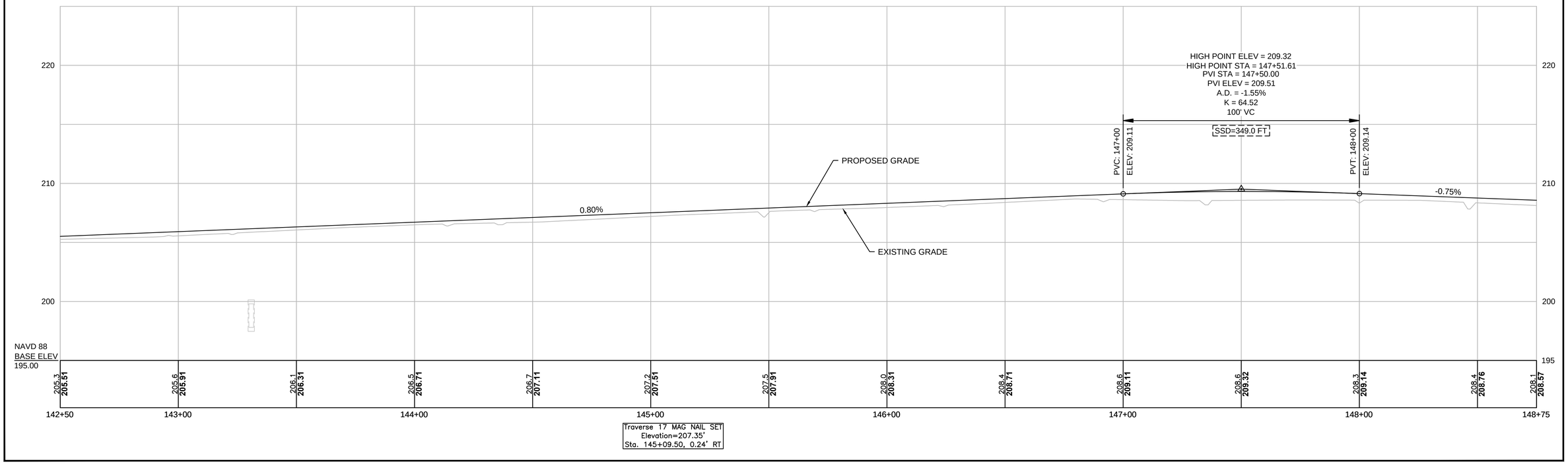
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	57	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



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



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:38 AM

LANDSCAPE DETAILS
SEE SHEET 118

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 500+12 RT TO STA. 502+78 RT
STA. 500+55 LT TO STA. 502+13 LT (4-RAIL)

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

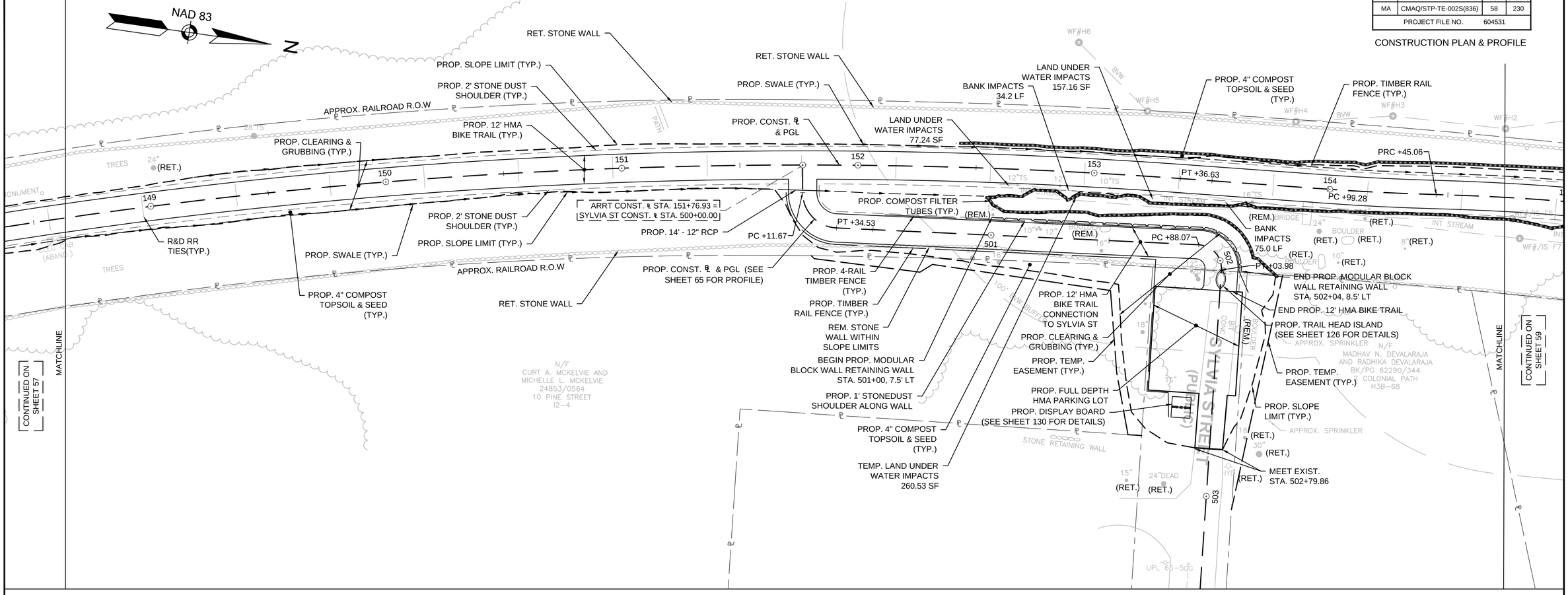
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

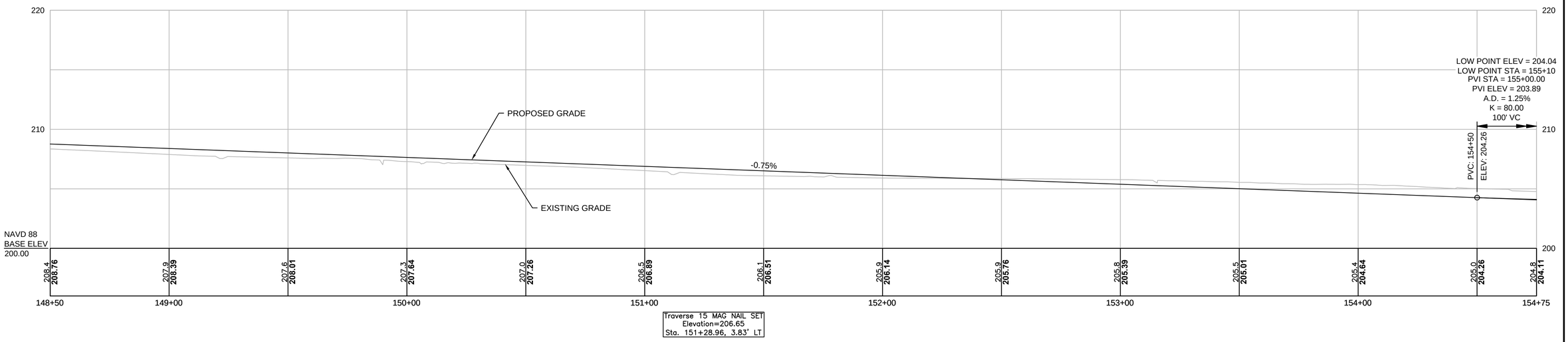
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	58	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:39 AM



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



Traverse 15 MAG NAIL SET
Elevation=206.65
Sta. 151+28.96, 3.83' LT

LANDSCAPE DETAILS
SEE SHEET 119

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	59	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

NAD 83

PROP. COMPOST FILTER TUBES (TYP.)
PROP. CONST. ℄ & PGL
RET. WALL
R&D RR TIES(TYP.)
PROP. SLOPE LIMIT (TYP.)
PROP. SWALE (TYP.)
PROP. 2' STONE DUST SHOULDER (TYP.)
PROP. 12' HMA BIKE TRAIL (TYP.)
PROP. 4" COMPOST TOPSOIL & SEED (TYP.)
LAND UNDER WATER IMPACTS 19.64 SF
TEMP. LAND UNDER WATER IMPACTS 168.68 SF
BANK IMPACTS 20.6 LF
PROP. SLOPE LIMIT (TYP.)
PROP. CLEARING & GRUBBING (TYP.)
PROP. COMPOST FILTER TUBES (TYP.)
PROP. 4" COMPOST TOPSOIL & SEED (TYP.)
PROP. 2' STONE DUST SHOULDER (TYP.)
RET. WALL
(REM.)
(RET.)

155 PT +34.94
156
PC +29.78
157
158 PT +04.74
PC +34.72
159
160
161

APPROX. RAILROAD R.O.W
MATCHLINE
CONTINUED ON SHEET 58
CONTINUED ON SHEET 60
20' DRAINAGE & UTILITY EASEMENT
100' BVW BUFFER
STOCKADE FENCE
SHED
TEMP WORK BRIDGE

WF#H1 WF#H2 WF#IS F5 WF#IS F6 WF#IS F7 WF#IS F8 WF#IS F9 WF#IS F10 WF#IS F11 WF#IS F12 WF#IS F16
INT. STREAM
BVW

N/F
TERRENCE MAITLAND AND SIMA MAITLAND
15856/117
100 MARTIN STREET
H2-111

N/F
TOWN OF ACTON, CONSERVATION LAND

N/F
JAMES F. HOITT AND KATHLEEN M. HOITT
50197/577
4 COLONIAL PATH
H3B-69-2

N/F
PRAKASH RAMAN AND VIBHA OZA
54994/285
6 COLONIAL PATH
H3B-69-3

COLONIAL PATH

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

LOW POINT ELEV = 204.04
LOW POINT STA = 155+10
PVI STA = 155+00.00
PVI ELEV = 203.89
A.D. = 1.25%
K = 80.00
100' VC

HIGH POINT ELEV = 204.80
HIGH POINT STA = 157+16.67
PVI STA = 157+50.00
PVI ELEV = 205.14
A.D. = -1.50%
K = 133.33
200' VC
SSD=409.0 FT

PVT: 155+50 ELEV: 204.14
PVC: 156+50 ELEV: 204.64
PVT: 158+50 ELEV: 204.14

0.50%
-1.00%
PROPOSED GRADE
EXISTING GRADE

220
210
200
190

NAVD 88
BASE ELEV
190.00

154+50	155+00	156+00	157+00	158+00	159+00	160+00	160+75
205.0 **204.26**	204.7 **204.04**	204.5 **204.14**	204.3 **204.39**	203.8 **204.64**	203.2 **204.79**	203.3 **204.76**	203.2 **204.54**	202.8 **204.14**	201.9 **203.64**	201.2 **203.14**	201.2 **202.64**	201.4 **202.14**	201.1 **201.89**

Traverse 13 MAG NAIL SET
Elevation=204.06'
Sta. 157+00.70, 3.14' RT

Traverse 12 MAG NAIL SET
Elevation=202.46'
Sta. 159+53.58, 2.12' RT

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:39 AM

LANDSCAPE DETAILS
SEE SHEET 119

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 163+04 RT TO STA. 166+35 RT

HIGHWAY GUARD DETAILS
NONE

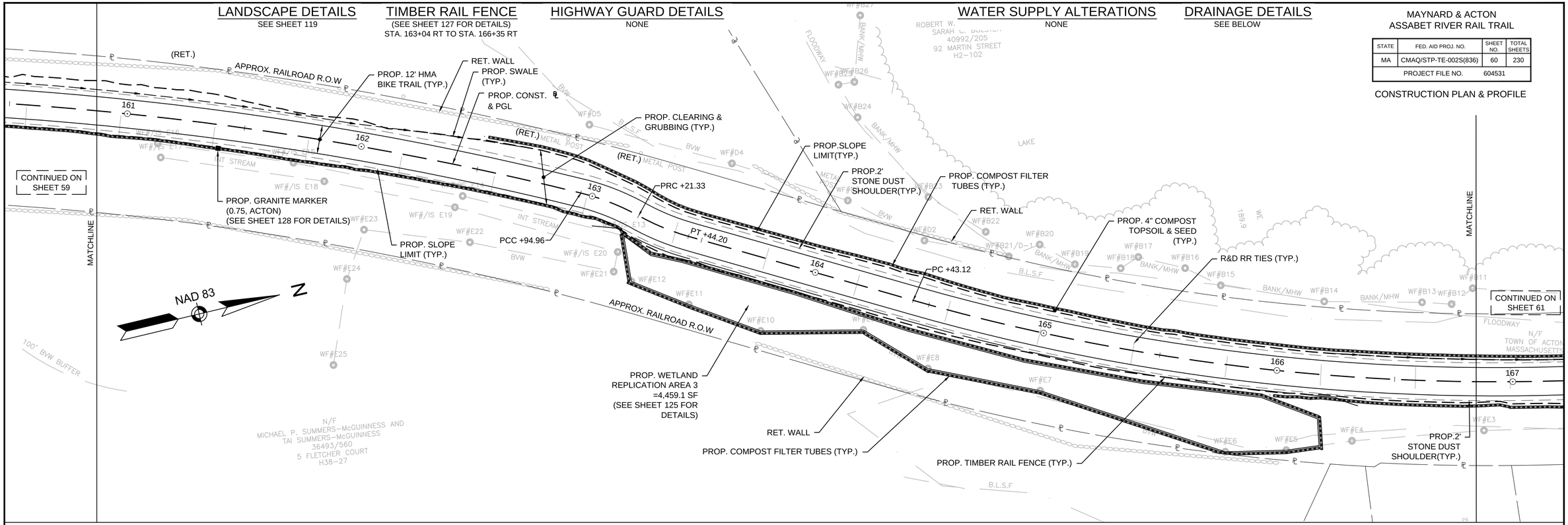
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

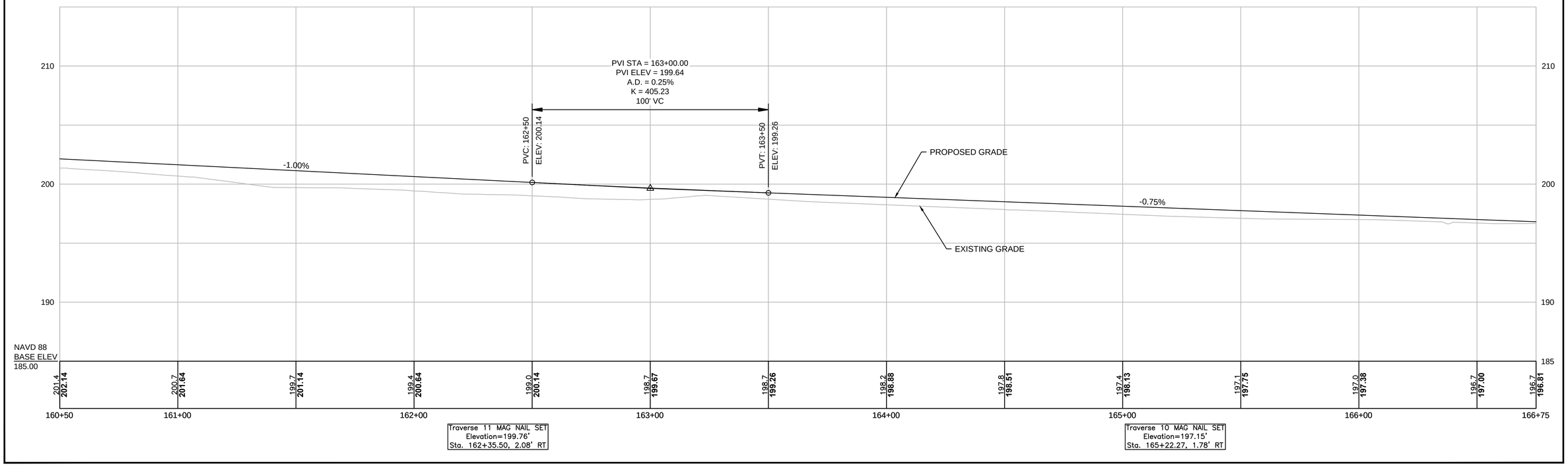
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	60	230
PROJECT FILE NO. 604531			

CONSTRUCTION PLAN & PROFILE



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



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:40 AM

LANDSCAPE DETAILS
SEE SHEET 120

TIMBER RAIL FENCE
STA. 169+15 LT TO STA. 169+36 LT (4-RAIL)
STA. 169+15 RT. TO STA. 169+36 RT(4-RAIL)
STA. 170+04 RT TO STA. 170+25 RT(4-RAIL)
STA. 170+04 LT TO STA. 170+25 LT(4-RAIL)

HIGHWAY GUARD DETAILS
NONE

WATER SUPPLY ALTERATIONS
NONE

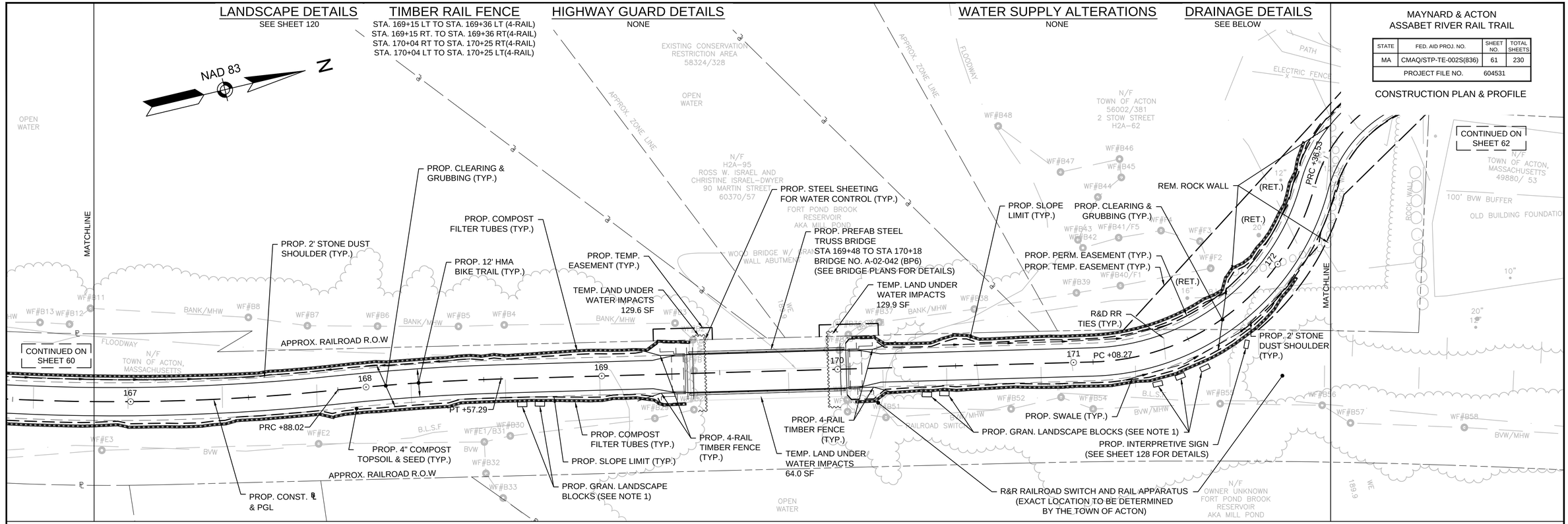
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	61	230
PROJECT FILE NO.	604531		

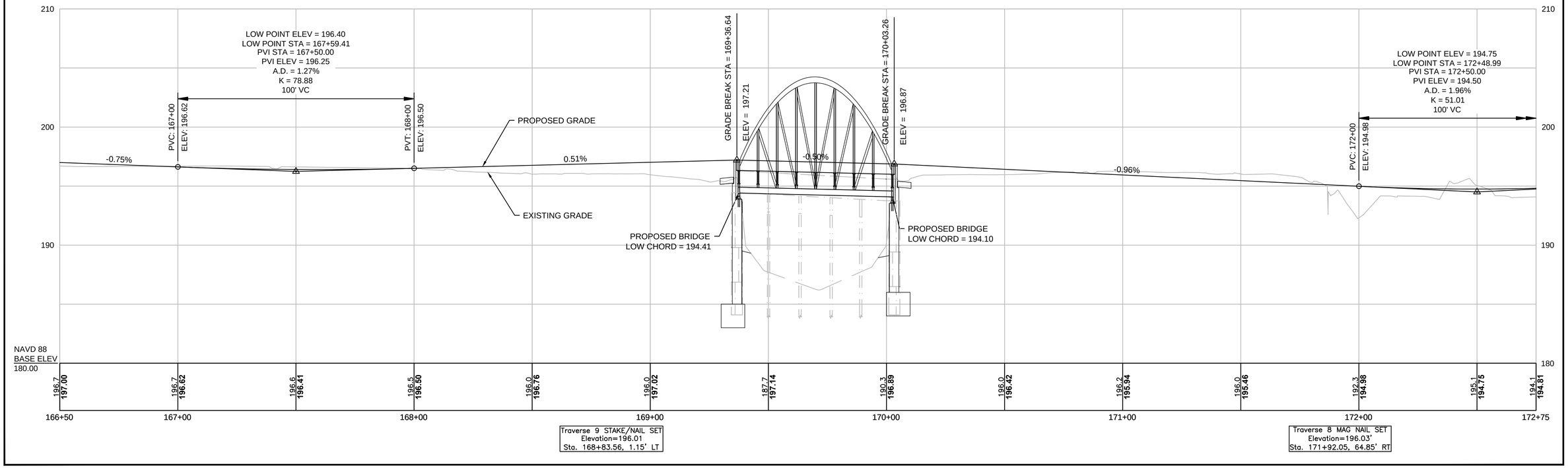
CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:40 AM



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

NOTES:
1. GRANITE LANDSCAPE BLOCKS SHALL BE BLOCKS REMOVED FROM ABUTMENT DEMOLITION. QUANTITY AND LOCATION WILL BE BASED ON AVAILABLE BLOCKS AND FIELD CONDITIONS. BLOCKS MUST REMAIN AT LEAST 3' FROM PAVED TRAIL SURFACE AND WITHIN THE LAYOUT.SEE SPECIAL PROVISIONS FOR DETAILS.



LANDSCAPE DETAILS
SEE SHEET 120

TRAFFIC SIGNAL CONDUIT
NONE

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

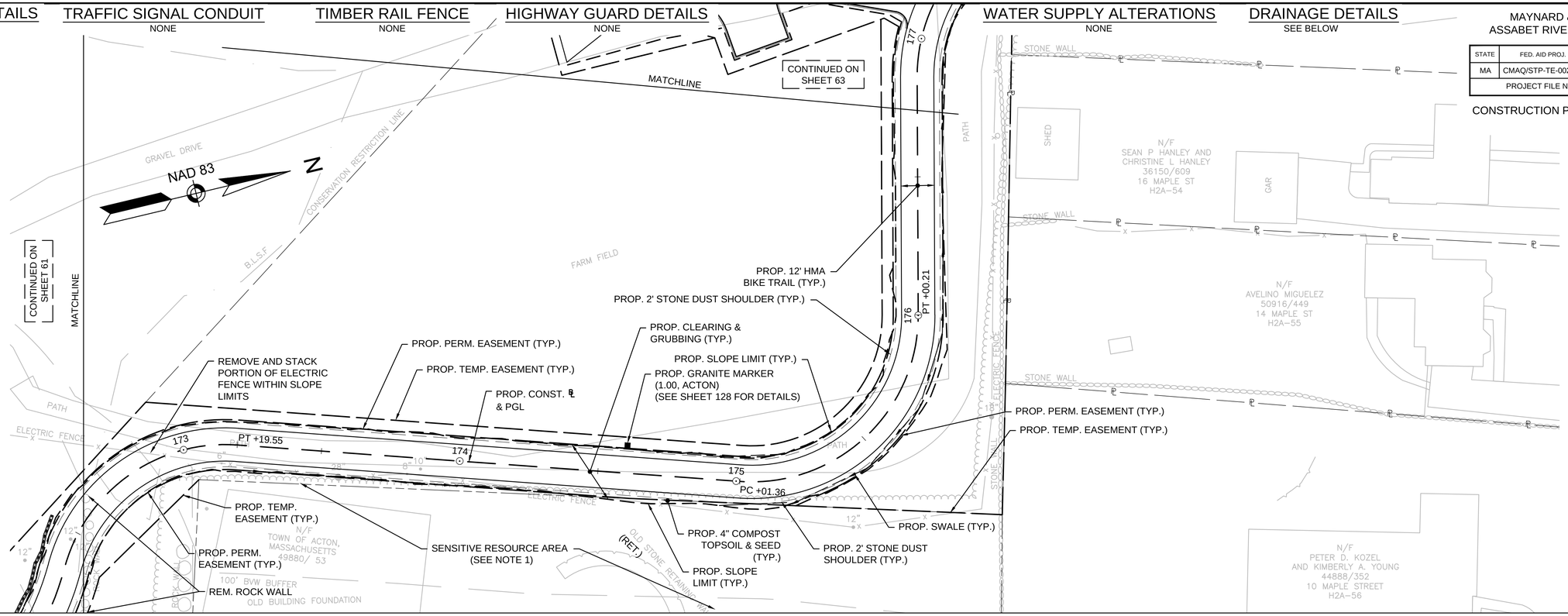
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

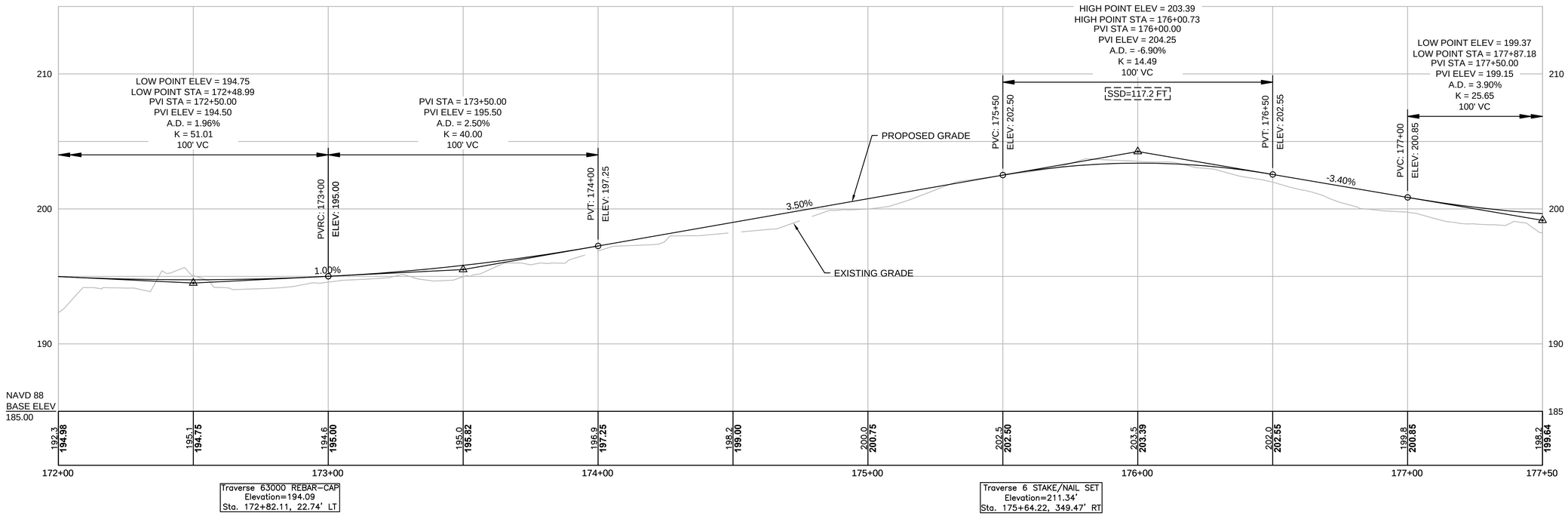
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	62	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



NOTE:
1. THE CONTRACTOR SHALL AVOID & PROTECT THIS SENSITIVE RESOURCE AREA DURING CONSTRUCTION.

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



604531_HD(CO).DWG Plotted on 18-Sep-2015 11:41 AM

LANDSCAPE DETAILS
SEE SHEET 121

TIMBER RAIL FENCE
(SEE SHEET 127 FOR DETAILS)
STA. 177+49 RT TO STA. 179+87 RT

HIGHWAY GUARD DETAILS
NONE

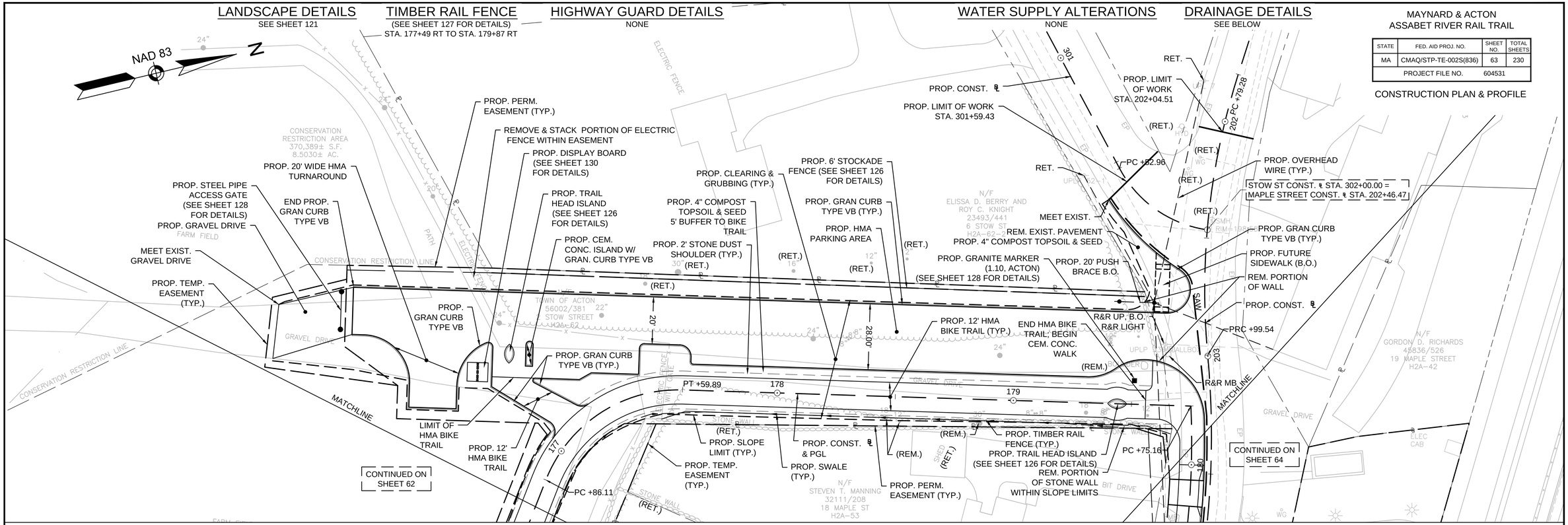
WATER SUPPLY ALTERATIONS
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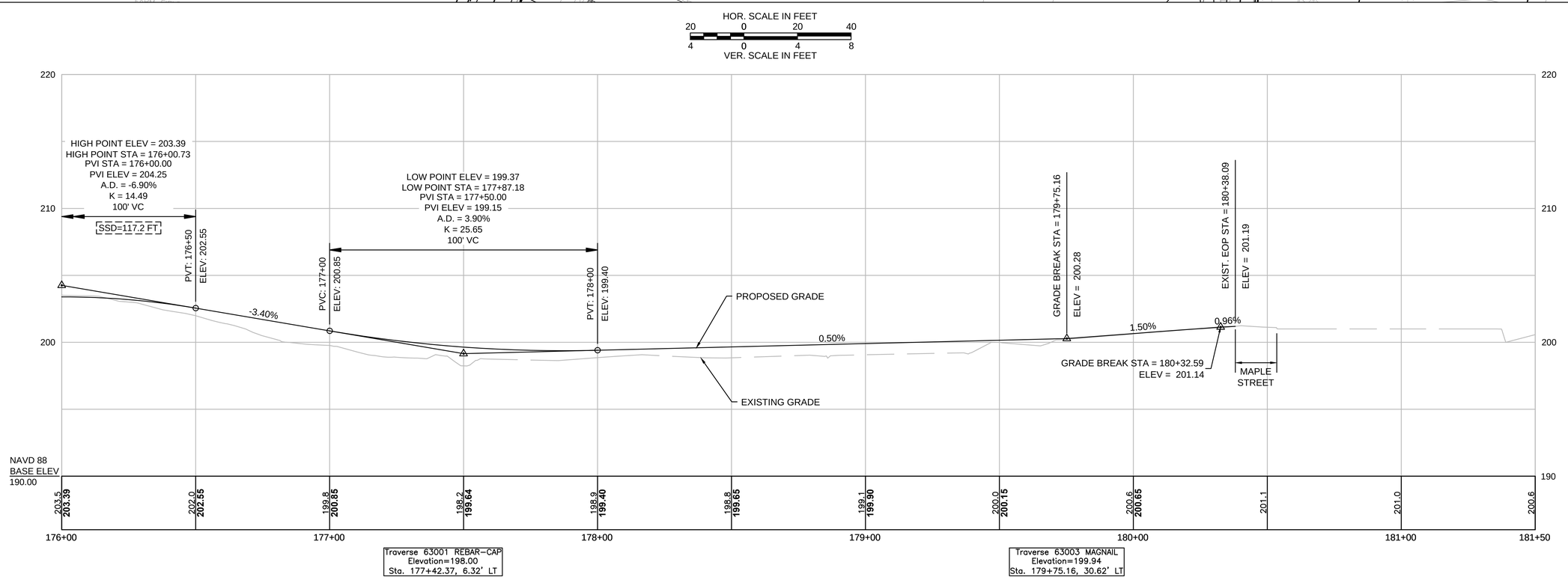
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	63	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE





604531_HD(CO).DWG Plotted on 18-Sep-2015 11:41 AM

LANDSCAPE DETAILS
SEE SHEET 121

TIMBER RAIL FENCE
STA. 0+77 LT TO STA. 2+56 LT
STA. 2+56 LT TO STA. 2+63 LT (4-RAIL)
STA. 2+63 LT TO STA. 2+83 LT
(MAPLE ST. PARKING)

HIGHWAY GUARD DETAILS
STA. 206+68 LT TO STA. 207+09 LT - ITEM 620.4
STA. 207+09 LT TO STA. 208+58 LT - ITEM 620.1
STA. 208+58 LT TO STA. 208+75 LT - ITEM 620.3

WATER SUPPLY ALTERATIONS
NONE

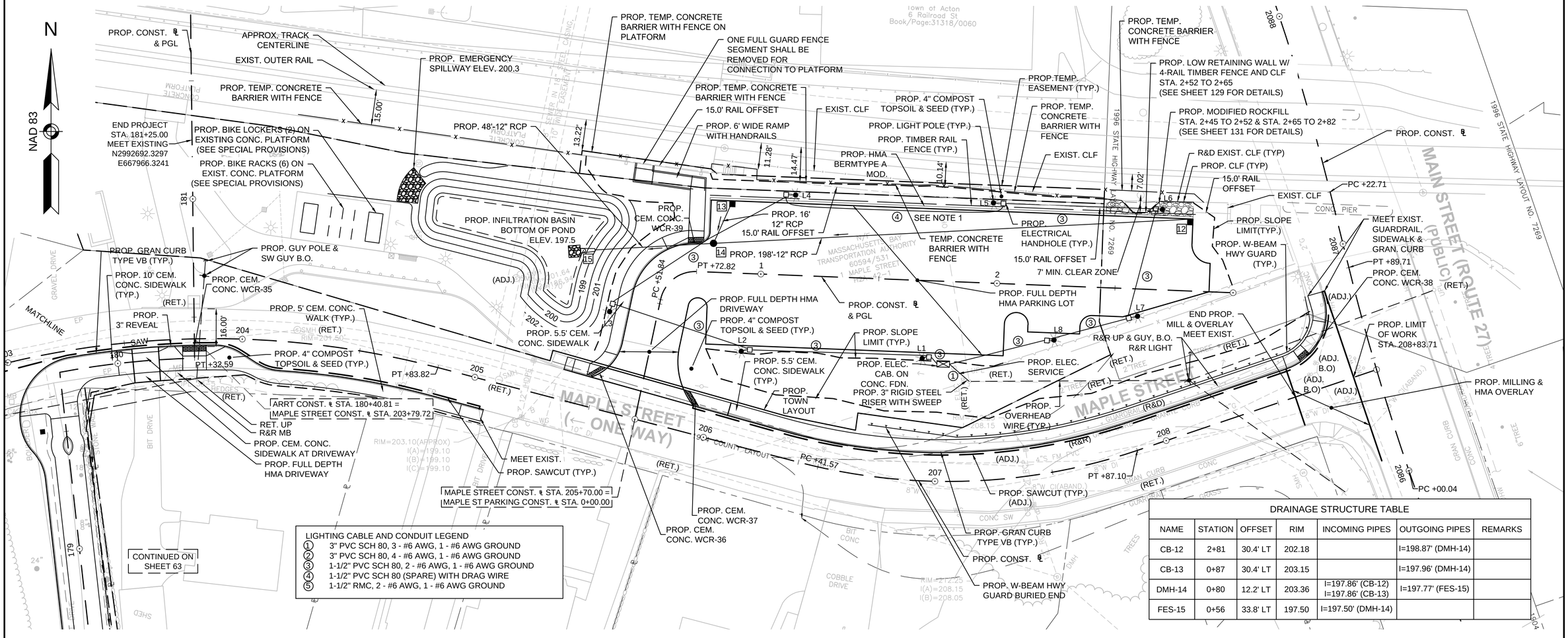
DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	64	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:42 AM



DRAINAGE STRUCTURE TABLE

NAME	STATION	OFFSET	RIM	INCOMING PIPES	OUTGOING PIPES	REMARKS
CB-12	2+81	30.4' LT	202.18		I=198.87' (DMH-14)	
CB-13	0+87	30.4' LT	203.15		I=197.96' (DMH-14)	
DMH-14	0+80	12.2' LT	203.36	I=197.86' (CB-12) I=197.86' (CB-13)	I=197.77' (FES-15)	
FES-15	0+56	33.8' LT	197.50	I=197.50' (DMH-14)		

NOTES:
1. CONTRACTOR SHALL INSTALL A DRAG LINE IN ALL SPARE CONDUIT AND THE COST SHALL BE INCLUDED IN THE COST OF THE VARIOUS CONDUIT ITEMS.
2. AS SHOWN IN THE LIGHTING DETAILS, BETWEEN EACH HANDHOLE AND ADJACENT LIGHT POLE, RUN 1-1/2" RMC, 2 - #6 AWG, AND 1 - #6 AWG GROUND (CALLOUT #5 IN THE LEGEND).
3. CONTRACTOR TO PROVIDE RAILROAD FLAGGERS WHILE PERFORMING WORK WITHIN 15' OF MBTA RAIL. APPROXIMATE LIMITS OF 15' RAIL OFFSET ARE SHOWN ON THIS SHEET.

0 20 50 100
SCALE: 1" = 20'

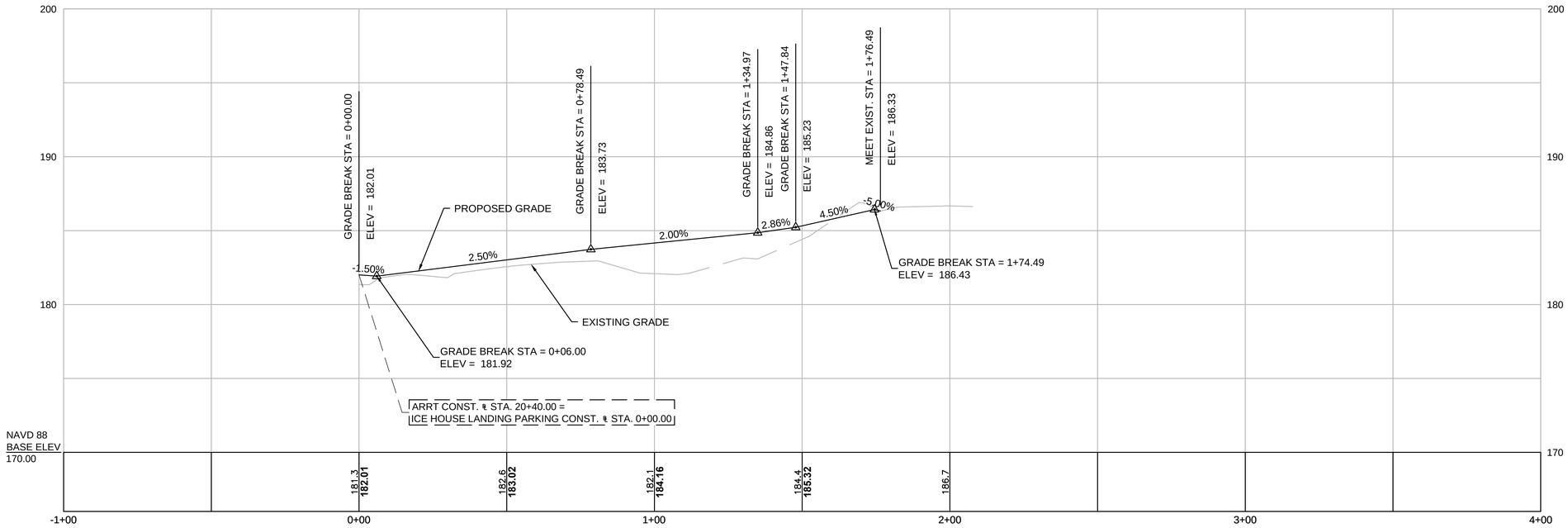
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	65	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

604531_HD(CO).DWG Plotted on 18-Sep-2015 11:42 AM

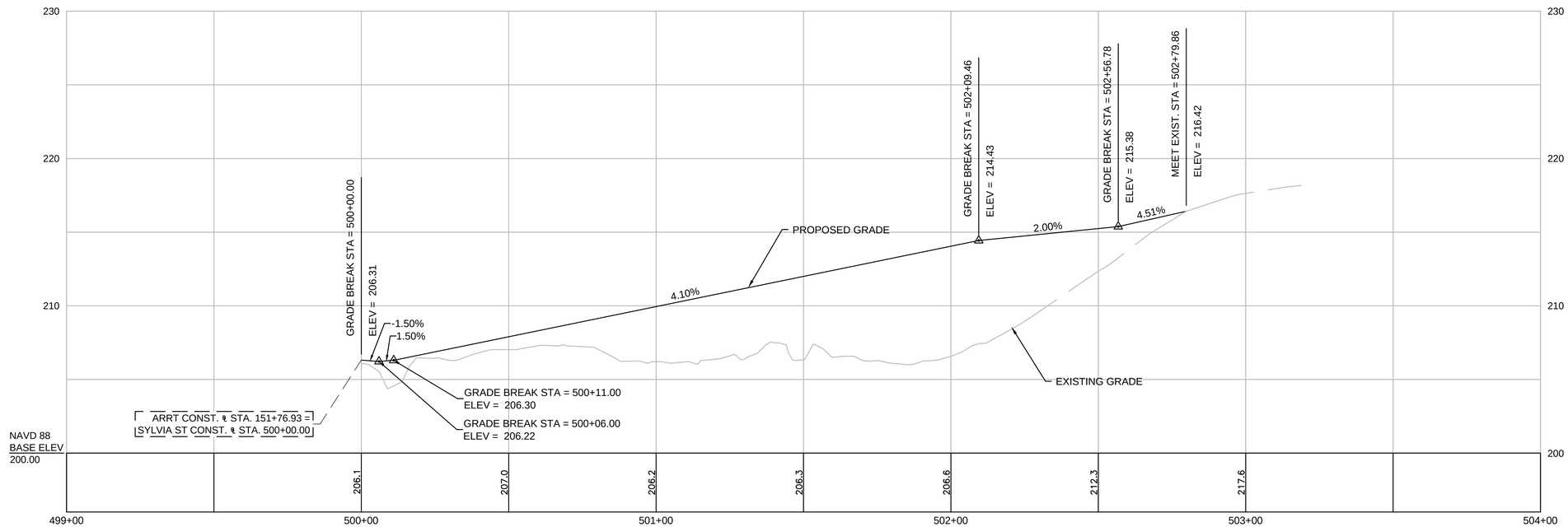
ICE HOUSE LANDING PARKING



NOTE:
1. FOR CONSTRUCTION PLAN SEE SHEET 34

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

SYLVIA ST.



NOTE:
1. FOR CONSTRUCTION PLAN SEE SHEET 58

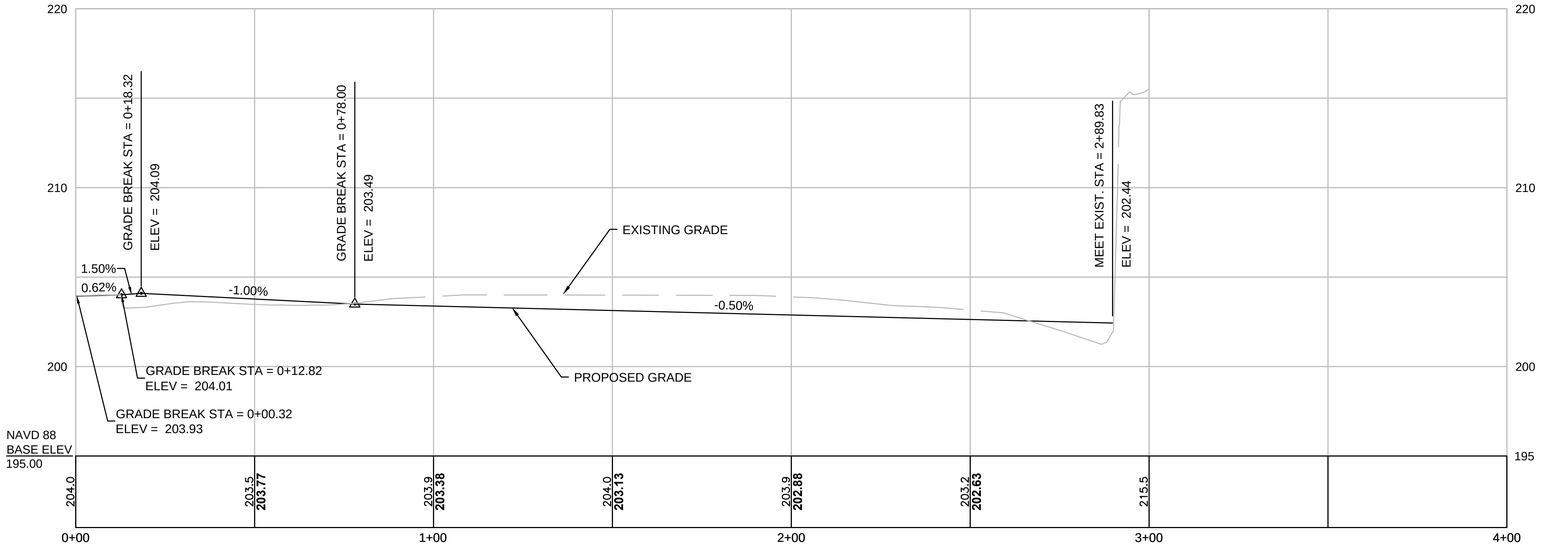
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	66	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE

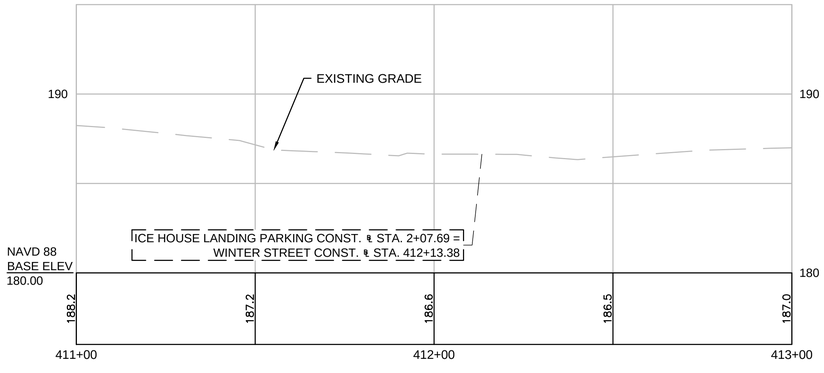
604531_HD(CO).DWG Plotted on 18-Sep-2015 11:42 AM

MAPLE ST. PARKING



NOTE:
1. FOR CONSTRUCTION PLAN SEE SHEET 64

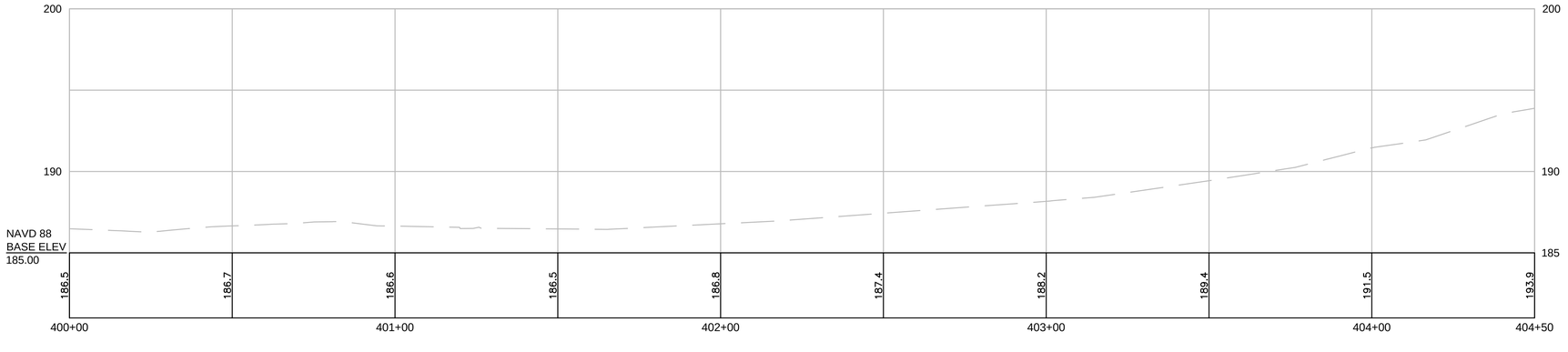
WINTER STREET



NOTE:
1. FOR CONSTRUCTION PLAN SEE SHEET 34

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

WINTER STREET



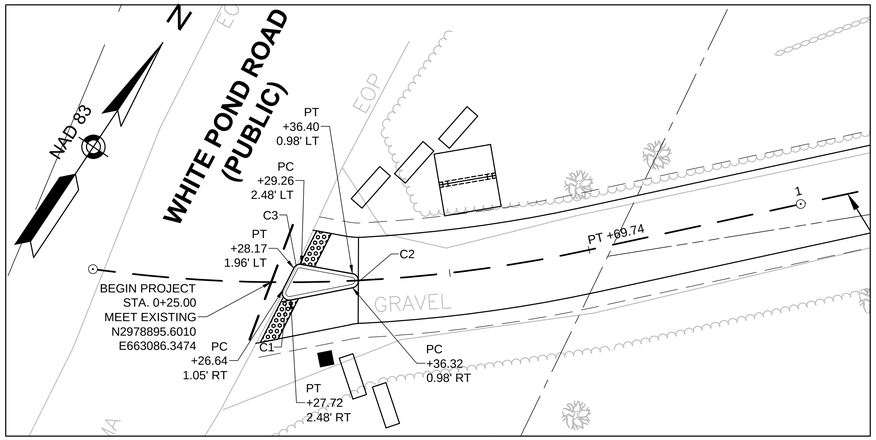
NOTE:
1. FOR CONSTRUCTION PLAN SEE SHEET 36

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	67	230
PROJECT FILE NO. 604531			

CURB TIE & GRADING PLAN

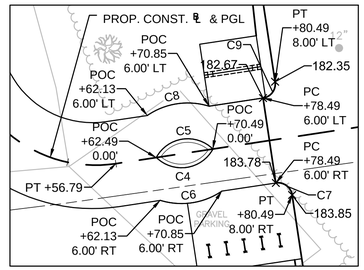
604531_HD(CT).DWG Plotted on 18-Sep-2015 9:22 AM



BEGINNING OF PROJECT

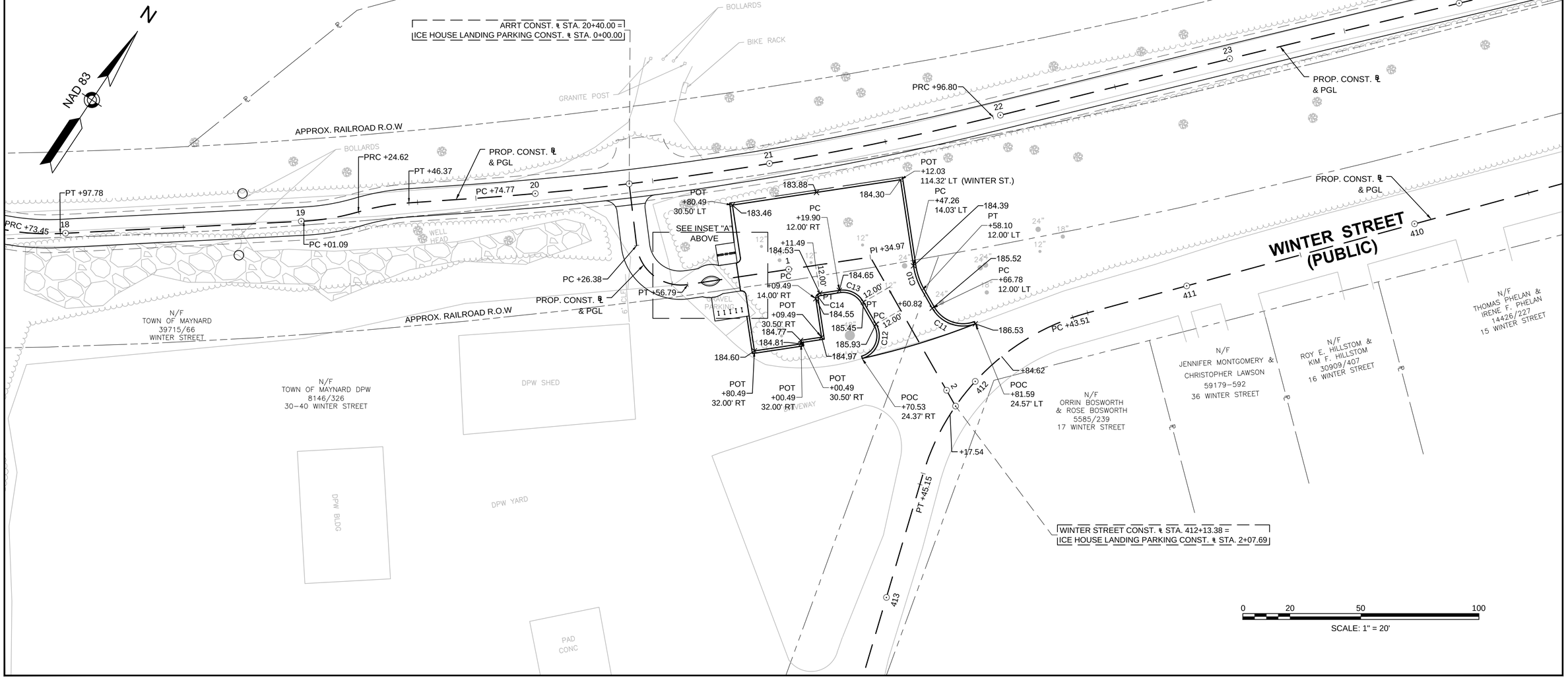
0 10 20 30 40

SCALE: 1" = 10'



INSET "A"
SCALE: 1"=10'

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C1	128° 02' 58"	1.00	2.23	2.05
C2	158° 26' 52"	1.00	2.77	5.25
C3	73° 30' 10"	1.00	1.28	0.75
C4	106° 15' 37"	5.00	9.27	6.67
C5	106° 15' 37"	5.00	9.27	6.67
C6	51° 41' 02"	10.00	9.02	4.84
C7	90° 00' 00"	2.00	3.14	2.00
C8	51° 41' 02"	10.00	9.02	4.84
C9	90° 00' 00"	2.00	3.14	2.00
C10	21° 11' 04"	30.00	11.09	5.61
C11	80° 41' 04"	15.00	21.12	12.74
C12	103° 44' 10"	10.00	18.11	12.74
C13	68° 48' 56"	10.00	12.01	6.85
C14	90° 00' 00"	2.00	3.14	2.00



0 20 50 100

SCALE: 1" = 20'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	68	230
PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

604531_HD(CT).DWG Plotted on 18-Sep-2015 9:22 AM

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C15	14° 23' 32"	300.00	75.36	37.88
C16	1° 11' 55"	4990.00	104.39	52.20
C17	10° 55' 43"	92.00	17.55	8.80
C18	37° 33' 52"	70.00	45.89	23.81
C19	101° 47' 56"	20.00	35.53	24.61
C20	47° 44' 18"	30.00	25.00	13.27
C21	120° 22' 59"	15.00	31.52	26.18
C22	106° 15' 37"	5.00	9.27	6.67
C23	106° 15' 37"	5.00	9.27	6.67
C24	14° 35' 56"	50.00	12.74	6.40
C25	79° 56' 49"	2.00	2.79	1.68
C26	81° 54' 18"	1.50	2.14	1.30
C27	88° 43' 51"	1.50	2.32	1.47
C28	86° 46' 40"	2.00	3.03	1.89
C29	30° 26' 50"	50.00	26.57	13.61

N

NAD 83

GREAT ROAD (RTE 117)

MILL STREET (PUBLIC)

PINE STREET (PUBLIC)

PRE-1871 TOWN LAYOUT

1921 COUNTY LAYOUT

1881 TOWN LAYOUT

N/F NICHOLAS AUFFINGER 64063-90 16 PINE STRE

N/F BRIAN M. DECHELLIS & DIANE T. DECHELLIS 52987/579 43 MILL STREET

N/F SUSAN SCOTT 48046/253 78 GREAT ROAD

N/F MICHAEL D. MISSLIN & JANE F. MISSLIN 14074/199 77 GREAT ROAD

N/F TOWN OF MAYNARD 39715/66

N/F MELISSA GOPNIK 49676/90 71-73 GREAT ROAD

N/F CHRISTIAN FISHER AND MICHELE FISHER 48071/179 79-81 GREAT ROAD

N/F MAYNARD INDUSTRIES, INC.

N/F JOHN P. MONCOUSKY & CHERYL MONCOUSKY 21122/332 48 MILL STREET

N/F DONNA MARTELL & GREGORY FLANIGAN 50662/293 50 MILL STREET

N/F AS CLOCK TOWER OWNER, LLC BK/PG 65267/358

N/F AS CLOCK TOWER OWNER, LLC BK/PG 65267/358

N/F KATHLEEN K. FITZGERALD 62843/413 94 GREAT ROAD

N/F WOUTER LEEUWIS & RACHAEL G FERRIS 41273/061 1 WINTER STREET

9 WINTER STREET GARY URQUHART & SHARON BETH URQUHART 25036/064

N/F TOWN OF MAYNARD 8146/326 WINTER STREET

N/F STEVEN R. CALOGGERO & ANNEMARIE E. GRAZIANO REGISTERED LAND DOC# 942654 CERT# 198858 BK/PG 1124/108 7 WHITE AVENUE

N/F ROGER S. MURRAY & KATHLEEN N. MURRAY 10474/246 3 WHITE AVE

WINTER STREET (PUBLIC)

APPROX. RAILROAD R.O.W

CANAL

EXIST RR BL

EXIST RR SIDELINE

GRAVEL

CONC. SIDEWALK

GRAN CURB

CONC. WALK

EOP

WOOD RET. WALL

STONE PILE

BUSH

PROP. CEM. CONC. WCR-3 ELEV.=184.20

PROP. CEM. CONC. WCR-2 ELEV.=185.72

PROP. CEM. CONC. WCR-1 ELEV.=185.68

LIMIT OF WORK STA. 107+10.00 MEET EXISTING

PROP. CONST. ℄ & PGL

BEGIN PROP. MODULAR BLOCK RETAINING WALL STA. 29+78, 6.5' LT

END PROP. MODULAR BLOCK RETAINING WALL STA. 33+20, 6.5' LT

LIMIT OF WORK STA. 404+41.14 MEET EXISTING

LIMIT OF WORK STA. 110+60.00 MEET EXISTING

PI +81.04.107

PI +52.68

PI +18.97

PC +39.76 12.50' LT CTR. R= 2.0' +41.42 12.52' LT

PRC +41.28 14.52' LT

PT +33.23 13.65' LT

C25 (CURB CORNER)

PRC +32.10 15.80' LT

C28 (CURB CORNER)

C29

CTR. R= 1.5' +41.09 7.50' LT

POC +58.54 27.03' LT

CTR. R= 2.0' +31.62 13.89' LT

2.75%

184.75

C24

PT +06.47 53.43' LT

23.00'

PC +23.62 21.92' LT

184.66

8.00 MIN.

184.54

PC +89.04

C21

16.29'

+77.18

PCC +41.09 6.00' LT

C27 (CURB CORNER)

PT +39.76 7.48' LT

C26 (CURB CORNER)

PC +32.61 7.31' LT

PCC +31.29 6.00' LT

CTR. R= 1.5' +31.29 7.50' LT

PT +09.69

PRC +91.47

PROP. CONST. ℄ & PGL

C22

POC +76.35 0.00'

POC +84.35 0.00'

184.46

184.20

184.12(TC)

183.62(BC)

184.45(TC)

183.95(BC)

184.47

184.16

184.34

C23

184.55

184.60

184.68

183.99

184.10

184.54

184.90

185.10

+06.72

POT +00.53 16.29' RT

PT +31.10

PC +81.26 6.50' +81.26

R=53.5'

PC +10.07

+22.02

POC +41.15 12.59' RT

PC +96.06 6.50' +96.06

PT +77.55

PT +12.28 6.50' +12.28

PRC +68.61 10.37'

PC +52.17

C15

C16

PT +64.80 11.00'

22.00'

404

403

402

405 PT +81.48

CONST. ℄

POT +18.73 11.00' LT

PC +96.65 10.59'

PT +04.85

+94.84

+80.84 12.23'

PC MB

C17

C18

C19

PCC +44.50 11.44'

34.42'

C20

PT +80.19

32.00'

16.28'

PT +08.16

186.90

POT +43.08 16.09' LT

186.40

GREAT ROAD (ROUTE 117) CONST. ℄ STA. 109+18.58 = ARRT CONST. ℄ STA. 33+59.02

GREAT ROAD (ROUTE 117) CONST. ℄ STA. 109+42.00 = WINTER STREET CONST. ℄ STA. 400+00.00

POC +97.07 14.31' RT

108

109

110

111

SCALE: 1" = 20'

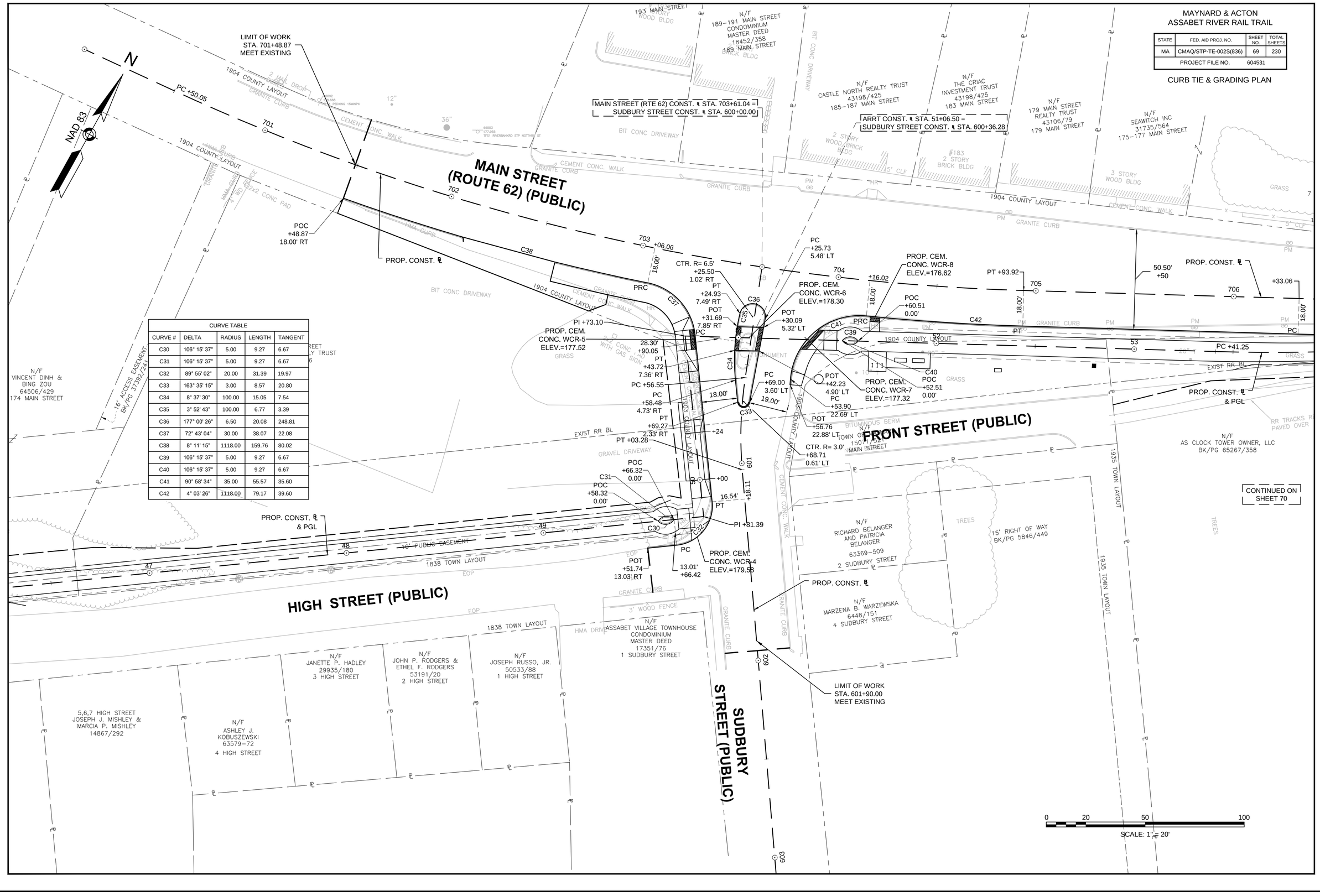
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	69	230
PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

604531_HD(CT).DWG Plotted on 18-Sep-2015 9:22 AM

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C30	106° 15' 37"	5.00	9.27	6.67
C31	106° 15' 37"	5.00	9.27	6.67
C32	89° 55' 02"	20.00	31.39	19.97
C33	163° 35' 15"	3.00	8.57	20.80
C34	8° 37' 30"	100.00	15.05	7.54
C35	3° 52' 43"	100.00	6.77	3.39
C36	177° 00' 26"	6.50	20.08	248.81
C37	72° 43' 04"	30.00	38.07	22.08
C38	8° 11' 15"	1118.00	159.76	80.02
C39	106° 15' 37"	5.00	9.27	6.67
C40	106° 15' 37"	5.00	9.27	6.67
C41	90° 58' 34"	35.00	55.57	35.60
C42	4° 03' 26"	1118.00	79.17	39.60



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	70	230
PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

604531_HD(CT).DWG Plotted on 18-Sep-2015 9:22 AM

N

NAD 83

MAIN STREET (ROUTE 62)

RAILROAD STREET (PUBLIC)

CLOCK TOWER PLACE

MAIN STREET (ROUTE 62)

N/F 7 DOUGLAS AVENUE LLC 63128/571 173 MAIN STREET

N/F SEAWITCH INC 31735/564 175-177 MAIN STREET

N/F VINCENT DINH 56075/155 165-169 MAIN STREET

N/F 163 MAIN STREET NOMINEE REALTY TRUST U/D/T PABLO CARBONELL, TR. 52140/571 163 MAIN STREET

N/F CHARLES C. FOLEY 29292/358 159 MAIN STREET

N/F SUKDEEP LLC 47832/169 155-157 MAIN STREET

N/F RANDOLPH T. WILLIAMS, III 46852/572 1 RAILROAD STREET

N/F MAYNARD PROS LLC 56345/206 3-10 RAILROAD STREET

N/F 151 MAIN STREET PARKING LLC 53201/542 151 MAIN STREET

N/F AS CLOCK TOWER OWNER, LLC BK/PG 65267/358

3 STORY WOOD BLDG

2 STORY WOOD BLDG

#155 3 STORY WOOD FRAME

#1&2 3 STORY WOOD FRAME

#3-10 2 STORY WOOD FRAME

8" WIDE PRIVATE WAY RIGHT-OF-WAY

1904 COUNTY LAYOUT

1940 TOWN LAYOUT

1935 TOWN LAYOUT

PROP. CONST. ℄ & PGL

EXIST RR BL

RR TRACKS REMAINS PAVED OVER

BIT CONCRETE PARKING

GRANITE CURB

CEMENT CONC WALK

GRASS

TREES

LANDSCAPE

18" TREE

BIT CONC DRIVE

CONC WALL

CONC POST

BIT CONC PARKING

BIT CONC DRIVEWAY

4" THICK CONC RAMP

PROP. CEM. CONC. WCR-14 ELEV.=176.02

PROP. CEM. CONC. WCR-13 ELEV.=176.53

PROP. CEM. CONC. WCR-12 ELEV.=177.52

PROP. CEM. CONC. WCR-11 ELEV.=175.93

PROP. CEM. CONC. WCR-10 ELEV.=177.70

PROP. CEM. CONC. WCR-9 ELEV.=177.01

POT +38.32 66.72' LT

POT +29.59 37.08' LT

PC +22.75 19.75' LT

PRC +16.71 15.86' LT

POT +34.28 23.54' LT

BEGIN PROP. LOW RETAINING WALL STA. 58+10, 5.5' RT

END PROP. LOW RETAINING WALL STA. 59+31, 5.5' RT

PC +33.13

PT +10.21

PC +41.25

PRC +51.18

PT +16.00

PI +88.29

CTR. R= 6.0'

PT +70.45

PT +52.26

POC +15.49 18.18' LT

PC +42.11

PT +32.86

PC +08.05

LIMIT OF WORK STA. 711+08.58 MEET EXISTING

POT +40.29 19.70' RT

POT +92.89 22.00' LT

POT +40.29 19.70' RT

POT +40.29 26.18' RT

POT +92.29 70.20' RT

POT +76.61 31.84' RT

PC +55.31

PC +06.73

PT +91.12

PT +90.75

PT +92.89

PC +47.44

PT +76.27 22.67'

PC +66.32

PT +76.27

PC +90.75

PT +90.75

PT +92.89

PC +03.88

PT +03.88

PI +44.29

C43 C44 C45 C46 C47 C48 C49 C50 C51

MAIN STREET (RTE 62) CONST. ℄ STA. 708+98.74 = ARRT CONST. ℄ STA. 56+63.29

SEE SHEET 135 FOR ADDITIONAL GRADING DETAILS

SEE SHEET 135 FOR ADDITIONAL GRADING DETAILS

CONTINUED ON SHEET 69

CONTINUED ON SHEET 71

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C43	4° 41' 03"	1000.00	81.75	40.90
C44	17° 37' 08"	497.00	152.83	77.02
C45	93° 24' 30"	2.00	3.26	2.12
C46	87° 38' 42"	2.00	3.06	1.92
C47	88° 06' 23"	10.00	15.38	9.67
C48	3° 52' 16"	1000.00	67.57	33.80
C49	162° 54' 19"	6.00	17.06	39.92
C50	29° 32' 32"	15.00	7.73	3.96
C51	28° 03' 47"	15.00	7.35	3.75

0 20 50 100

SCALE: 1" = 20'

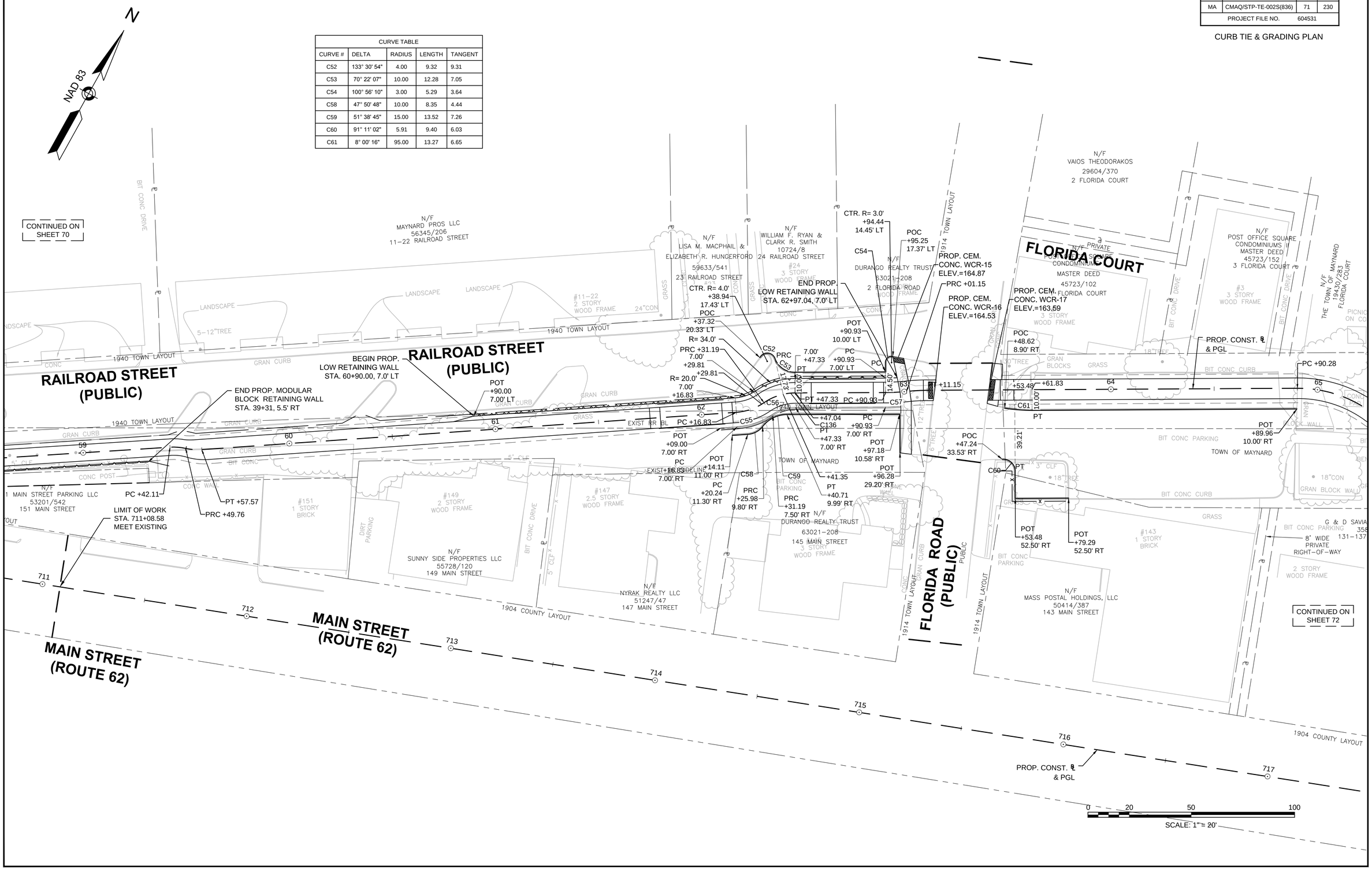
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	71	230
PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

604531_HD(CT).DWG Plotted on 18-Sep-2015 9:22 AM

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C52	133° 30' 54"	4.00	9.32	9.31
C53	70° 22' 07"	10.00	12.28	7.05
C54	100° 56' 10"	3.00	5.29	3.64
C58	47° 50' 48"	10.00	8.35	4.44
C59	51° 38' 45"	15.00	13.52	7.26
C60	91° 11' 02"	5.91	9.40	6.03
C61	8° 00' 16"	95.00	13.27	6.65



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	72	230
PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C62	32° 03' 22"	20.00	11.19	5.75
C63	145° 10' 38"	5.00	12.67	15.94
C64	91° 32' 33"	2.00	3.20	2.05
C65	2° 28' 25"	500.00	21.59	10.80
C66	84° 54' 07"	2.00	2.96	1.83
C67	80° 31' 59"	10.00	14.06	8.47
C68	149° 25' 13"	3.00	7.82	10.97
C69	3° 13' 14"	1493.00	83.92	41.97
C70	2° 50' 03"	1546.48	76.50	38.26
C71	93° 38' 15"	5.00	8.17	5.33
C72	95° 56' 46"	15.00	25.12	16.64
C73	88° 44' 55"	25.00	38.72	24.46
C74	70° 26' 55"	20.00	24.59	14.12
C75	66° 17' 10"	15.00	17.35	9.79
C76	90° 33' 19"	10.00	15.80	10.10
C77	106° 15' 37"	5.00	9.27	6.67
C78	106° 15' 37"	5.00	9.27	6.67

CONTINUED BELOW

CONTINUED ABOVE

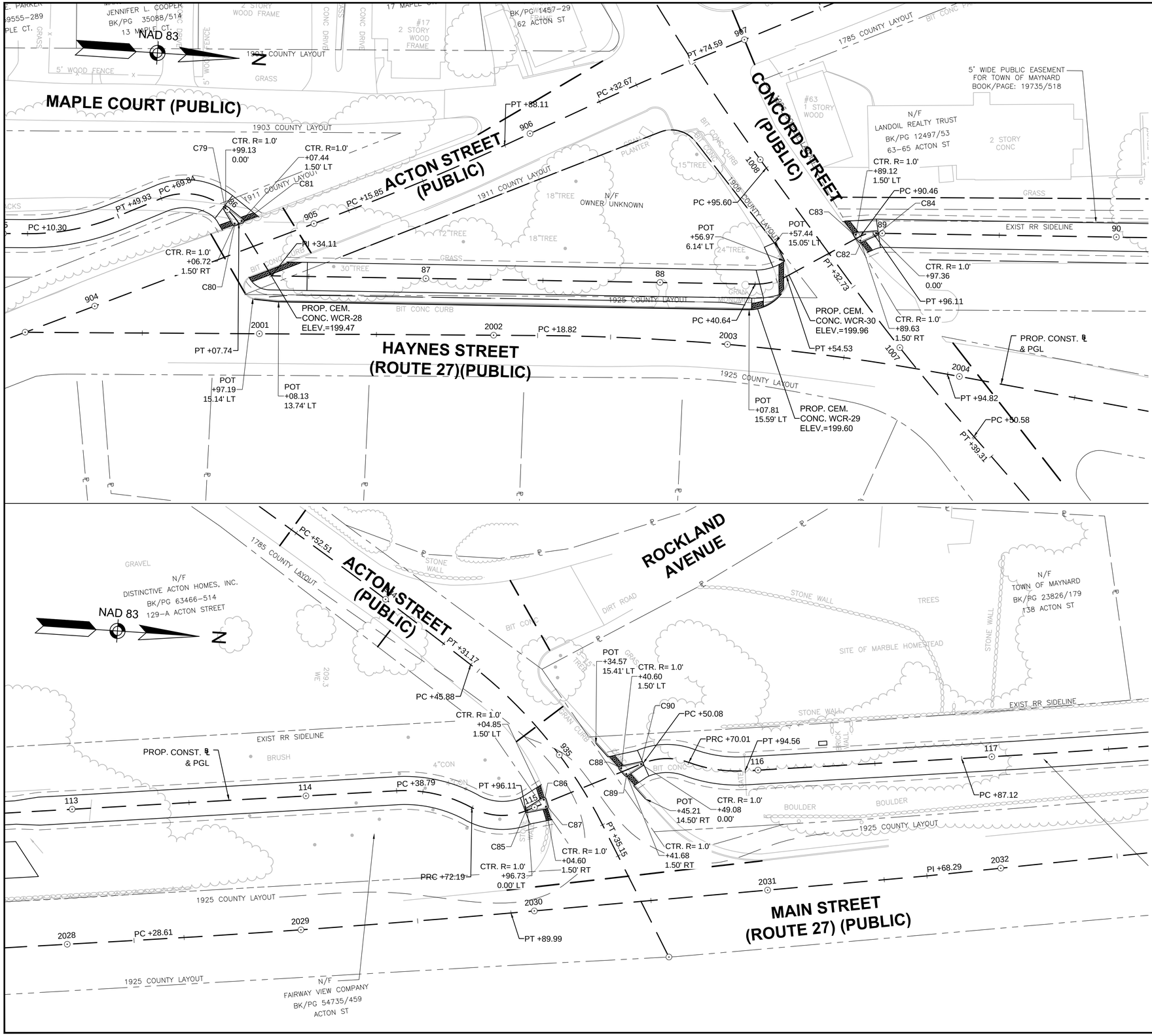
604531_HD(CT).DWG Plotted on 18-Sep-2015 9:23 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	73	230
PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

604531_HD(CT).DWG Plotted on 18-Sep-2015 9:23 AM



CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C79	159° 28' 22"	1.00	2.78	5.52
C80	79° 06' 05"	1.00	1.38	0.83
C81	121° 25' 33"	1.00	2.12	1.78
C82	76° 08' 52"	1.00	1.33	0.78
C83	123° 57' 33"	1.00	2.16	1.88
C84	159° 53' 35"	1.00	2.79	5.64
C85	158° 44' 45"	1.00	2.77	5.33
C86	105° 18' 58"	1.00	1.84	1.31
C87	95° 56' 16"	1.00	1.67	1.11
C88	119° 44' 37"	1.00	2.09	1.72
C89	81° 45' 05"	1.00	1.43	0.87
C90	158° 30' 18"	1.00	2.77	5.27

0 20 50 100

SCALE: 1" = 20'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	74	230
PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

604531_HD(CT).DWG Plotted on 18-Sep-2015 9:24 AM

NAD 83

N

PROP. MODULAR
BLOCK WALL
SCALE: 1"=20'

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C91	23° 20' 00"	5.00	2.04	1.03
C92	39° 46' 45"	55.00	38.19	19.90
C93	90° 33' 56"	40.00	63.23	40.40
C94	87° 15' 09"	35.00	53.30	33.36
C95	92° 08' 18"	3.50	5.63	3.63

MAIN STREET
(ROUTE 27) (PUBLIC)

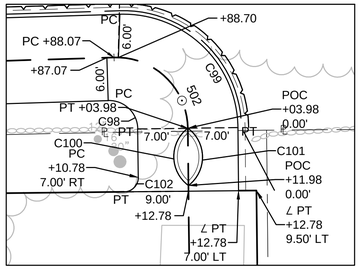
SCALE: 1" = 20'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

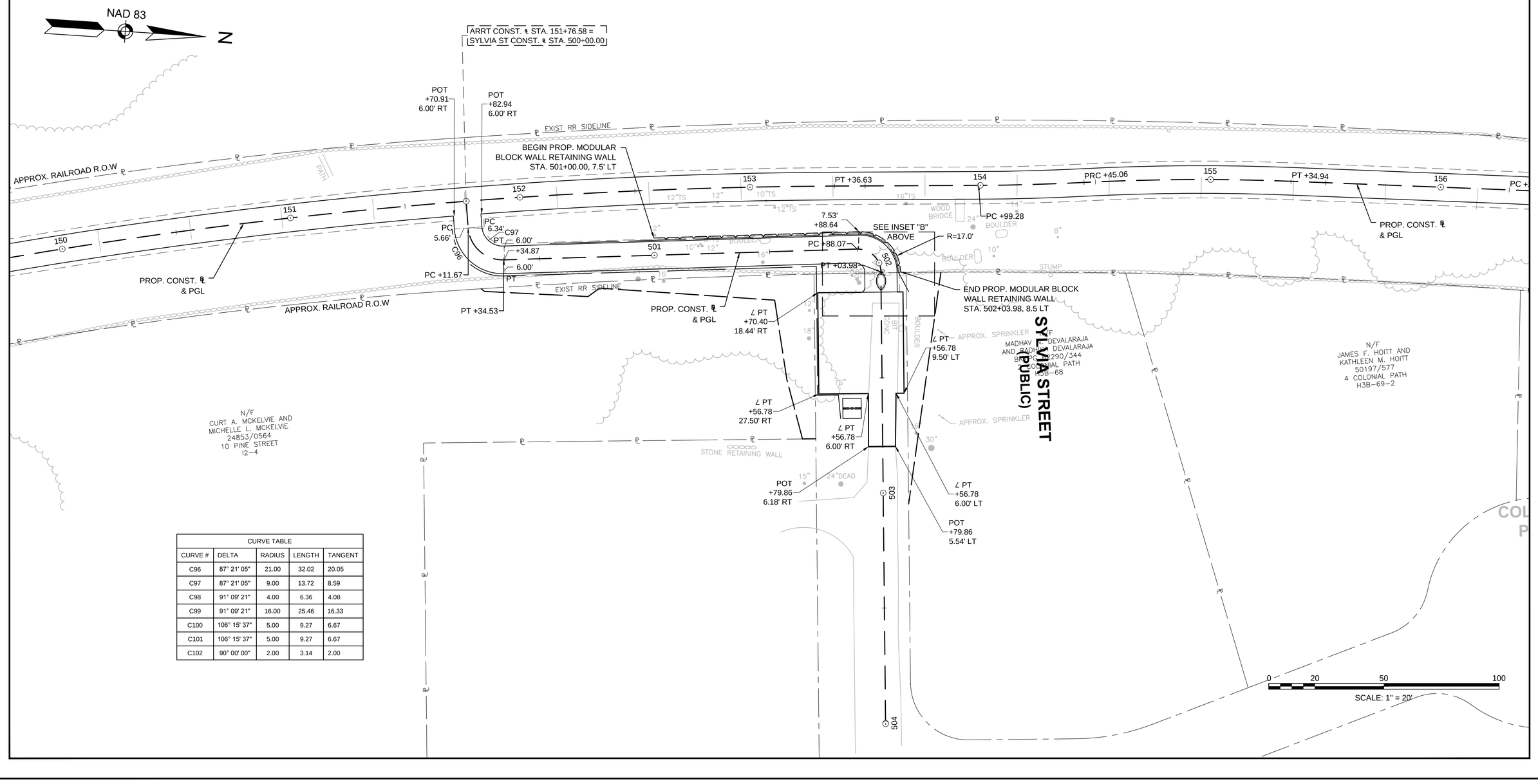
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	75	230
PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

604531_HD(CT).DWG Plotted on 18-Sep-2015 9:24 AM



INSET "B"
SCALE: 1"=10'



CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C96	87° 21' 05"	21.00	32.02	20.05
C97	87° 21' 05"	9.00	13.72	8.59
C98	91° 09' 21"	4.00	6.36	4.08
C99	91° 09' 21"	16.00	25.46	16.33
C100	106° 15' 37"	5.00	9.27	6.67
C101	106° 15' 37"	5.00	9.27	6.67
C102	90° 00' 00"	2.00	3.14	2.00

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C103	90° 00' 00"	20.00	31.42	20.00
C104	66° 15' 11"	20.00	23.13	13.05
C105	113° 44' 49"	2.00	3.97	3.06
C106	106° 15' 37"	5.00	9.27	6.67
C107	106° 15' 37"	5.00	9.27	6.67
C108	180° 00' 00"	1.50	4.71	INFINITY
C109	93° 07' 20"	5.00	8.13	5.28
C110	61° 00' 44"	5.00	5.32	2.95
C111	154° 01' 50"	1.00	2.69	4.34
C112	90° 00' 00"	2.00	3.14	2.00
C113	90° 00' 00"	5.00	7.85	5.00
C114	90° 00' 00"	1.00	1.57	1.00
C115	36° 45' 44"	20.00	12.83	6.65
C116	29° 25' 06"	20.00	10.27	5.25
C117	24° 16' 56"	100.00	42.38	21.51
C118	149° 09' 57"	10.00	26.03	36.26
C119	93° 55' 39"	25.50	41.80	27.31
C120	106° 15' 37"	5.00	9.27	6.67
C121	106° 15' 37"	5.00	9.27	6.67
C122	9° 56' 40"	355.50	61.70	30.93
C123	32° 41' 16"	20.00	11.41	5.87
C124	29° 19' 00"	20.00	10.23	5.23
C125	11° 29' 21"	320.00	64.17	32.19
C126	75° 24' 32"	5.00	6.58	3.87
C127	37° 06' 40"	20.00	12.95	6.71
C128	80° 09' 21"	27.00	37.77	22.72
C129	90° 00' 00"	5.00	7.85	5.00
C130	89° 59' 59"	8.00	12.57	8.00
C131	90° 00' 00"	5.00	7.85	5.00
C132	180° 00' 00"	5.00	15.71	INFINITY
C133	170° 09' 21"	4.00	11.88	46.45
C134	34° 23' 50"	250.00	150.09	77.38
C135	87° 11' 37"	25.00	38.05	23.80

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

604531_HD(CT).DWG Plotted on 18-Sep-2015 9:24 AM

NAD 83

N

LIMIT OF WORK STA. 202+04.51 MEET EXISTING

PROP. CONST. ℄ & PGL

PC +52.96

STOW STREET

MAPLE STREET

LIMIT OF WORK STA. 301+59.39 MEET EXISTING

MAPLE STREET CONST. ℄ STA. 202+46.47 = STOW ST CONST. ℄ STA. 302+00.00

CONSERVATION RESTRICTION AREA 370,389± S.F. 8.5030± AC.

CONSERVATION RESTRICTION LINE

ELECTRIC FENCE

PATH

GRAVEL DRIVE

STONE WALL

SHED

CONCRETE PLATFORM

BIT DRIVE

CONC PIER

1996 STATE HIGHWAY LAYOUT NO. 7269

N/F ELISSA D. BERRY AND ROY C. KNIGHT 23493/441 6 STOW ST H2A-62-2

N/F GORDON D. RICHARDS 45836/526 19 MAPLE STREET H2A-42

N/F STEVEN T. MANNING 32111/208 18 MAPLE ST H2A-53

N/F MASSACHUSETTS BAY TRANSPORTATION AUTHORITY 60594/531 1 MAPLE STREET H2A-42-1

N/F TOWN OF ACTON 2400/334 39 MAPLE STREET 61

POT +17.03 41.91' LT

C107 POC +14.05 46.63' LT

C106

C108 POT +18.39 39.97' LT

POT +14.69 33.22' LT

C113 PT +63.08 14.00' LT

PT +64.08 11.00' LT

POT +02.47 111.89' LT

PC +10.74 50.54' LT

PC +58.52 19.02' LT

PT +47.34 20.76' LT

C112 PC

C105 PCC +10.43 53.84' LT

POT +45.55 19.25' LT

POT +28.03 16.54' LT

POT +23.46 16.71' LT

PT +13.04 28.69' LT

POT +43.27 8.62' LT

28.00

C103

C104

POT +96.37 101.20' LT

PT +97.31 96.86' LT

PC +93.97 69.71' LT

POT +89.71 65.48' LT

POT +03.43 39.91' LT

20.00

POC +10.76 41.01' LT

POT +13.32 35.30' LT

PT +98.84 52.27' LT

POT +94.08 47.35' LT

C111

C114 PT +59.89

178

179

C109

PT +06.17 11.61' LT

POC +02.16 5.98' LT

177

PC +11.91 27.67' LT

PC +86.11

POC +21.13 6.00' LT

C110

PT +17.39 8.86' LT

POT +92.53 11.77' LT

PROP. CONST. ℄ & PGL

11.00' +30.91

PRC +42.88 14.98' LT

C116 PCC

C119

PC C115

C120

C121

18.79'

+63.37

PCC

+30.94

POC +39.94 0.00' LT

POC +47.94 0.00' LT

180

+53

C122

PC +75.16 5.50' +80.48

+64

C135

PRC +99.54

203

+93.25

C117

+85

+90

19.00'

PRC

POC +60.83 10.91' RT

+58.44

+64.44

PC C118

39.00'

+52.30

+79.28

202

PC +79.28

MAPLE STREET CONST. ℄ STA. 203+79.72 = ARRT CONST. ℄ STA. 180+40.81

PROP. CONST. ℄ & PGL

PROP. CEM. CONC. WCR-35 ELEV.=201.19

2.71' +88.47

5.73' +99.44

PT +83.82

POT +14.37 33.82' LT

+83.16

+01.74

204

205

+06.73

+16.83

9.93'

12.47'

12.18'

12.28'

PC

PRC

PT

C125

C123

C124

PT +32.59

MAPLE STREET (← ONE WAY)

0+00

+31.67

C126

POC +06.55 16.05' RT

PROP. CEM. CONC. WCR-36 ELEV.=202.88

POC +18.73 16.05' LT

MAPLE STREET CONST. ℄ STA. 205+70.00 = MAPLE ST PARKING CONST. ℄ STA. 0+00.00

206

207

PC +41.57

+31.03

11.07'

C134

PT +87.10

208

+88.16

PROP. CONST. ℄ & PGL

PROP. CEM. CONC. WCR-37 ELEV.=204.31

PROP. CEM. CONC. WCR-39 ELEV.=203.43

C129 POT +77.82 30.50' LT

PT +72.82

PRC

PC

C126

+52.27

12.00'

15.09'

17.00'

+77.82

CTR. R= 4.0' +73.82 15.09' RT

POT +37.42 22.58' RT

PC +51.84

C133

POT +31.65 12.00' RT

POT +31.67 12.00' LT

C127

PT

1

2

CTR. R= 5.0' +08.82 17.00' RT

C132

+35.82

C131

+03.82

+13.82

+40.82

+81.82

3+00

POT +03.82 30.50' RT

POT +13.82 20.00' RT

POT +35.82 20.00' RT

CTR. R= 5.0' +40.82 17.00' RT

POT +53.82 12.00' RT

POT +81.82 30.50' LT

C130

POC +89.82 12.00' LT

POT +89.82 0.00'

POT +82.55 13.32' LT

PT +89.71

2087

+80.27

13.26'

PT

MAPLE STREET CONST. ℄ STA. 208+93.95 = ROUTE 27 CONST. ℄ STA. 2086+44.92

PROP. CEM. CONC. WCR-38 ELEV.=219.46

PROP. CONST. ℄ & PGL

PC +00.04

2086

PC +22.71

PC 12.50'

+57.73

PT +89.71

CONTINUED ABOVE

CONTINUED BELOW

SCALE: 1" = 20'

0 20 50 100

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	77	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:25 AM

N

NAD 83

STOW

MAYNARD

WHITE POND ROAD

COUNTY LAYOUT

EOP

HMA

GRAVEL

STONE WALL

WOODS

N/F
ALAN DIPIETRO
& BETH DIPIETRO
42782/513
4 RIVERSIDE PARK

N/F
MICHAEL RASKIN
& MELISSA RASKIN
239727/1447441
12 RIVERSIDE PARK

N/F
BERNARD DONAHUE &
MARGUERITE DONAHUE
50422/6
14 RIVERSIDE PARK

N/F
TOWN OF MAYNARD
39715/66
WINTER STREET

N/F
DEPARTMENT OF ENVIROMENTAL MANAGEMENT
OFFICE OF THE COMISSIONER
RIVERSIDE STREET

N/F
ASSABET RIVER NATIONAL WILDLIFE REFUGE
DEPT OF THE INTERIOR – US FISH & WILDLIFE
12780/121

N/F
FRANCES C DENESIUK REVOCABLE TRUST
FRANCES C DENESIUK – TRUSTEE
50081/61
18 WINTER STREET

MATCHLINE

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET 78

BEGIN PROJECT
STA. 0+25.00
MEET EXISTING
N2978895.6010
E663086.3474

M4-14
D11-1
M6-1L

R1-1
(18"X18")

D11-1
M4-6

W3-1

SL

SYL(50')

PT/+69.74

SYL(135')

PC +10.79

+40

PCC +51.27

PRC +72.84

PRC +85.27

PRC +17.51

2

3

4

5

6

7

8

9

10

11

R5-3

SP-1
SP-2

PROP. "STOP AHEAD"
PAVEMENT MARKINGS

M4-14
D11-1

0 20 50 100

SCALE: 1" = 20'

(RET.)

GRAVEL DRIVEWAY

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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Plotted on 18-Sep-2015 9:25 AM
604531_HD(PM&S).DWG

N
NAD 83

MATCHLINE

CONTINUED ON SHEET 77

ASSABET RIVER

OPEN WATER

GRAVEL

GRAVEL DRIVEWAY

(RET.)

12
PRC +66.76
13
PT +32.94
14
PC +55.63
PRC +79.29
15
PRC +00.93
PCC +71.68
16
17
PRC +51.01

MATCHLINE

CONTINUED BELOW

OPEN WATER

TAYLOR BROOK

N/F
FRANCES C. DENESIUK REVOCABLE T
FRANCES C. DENESIUK – TRUSTEE
50081/61
[illegible] WINTER STREET

0 20 50 100
SCALE: 1" = 20'

N
NAD 83

OPEN WATER

MATCHLINE

CONTINUED ABOVE

PRC +51.01
18
PT +97.78
PRC +73.45
19
PC +01.09
PRC +24.62
PT +46.37
PC +74.77
20
21
22
PRC +96.80
23

CONTINUED ON SHEET 79

BOLLARDS
BIKE RACK
GRANITE POST
BOLLARDS

WELL HEAD

SP-1
SP-2
D11-1
M4-14
R5-3
PC +26.38
PT +56.79
PI +34.97
1
PROP. 4" SOLID WHITE LINES FOR NINE (9) PARKING STALLS (18'-6" x 9'-0")
PROP. 4" SOLID WHITE LINE
PROP. 4" SOLID WHITE LINE
D11-1
M4-6
R7-8
R7-8P
R1-1
(30"x30")
PROP. 4" SOLID WHITE LINES FOR ONE (1) HANDICAP PARKING STALL (12'-0" x 20'-0") AND 8' WIDE ACCESSIBLE AISLE w/45° HATCH LINE @ 2'-0" ON CENTER
DBVL (25)
SL
411
PC +43.51
412

N/F
TOWN OF MAYNARD
CONSERVATION COMMISSION
35322/440

N/F
TOWN OF MAYNARD
39715/66
WINTER STREET

N/F
TOWN OF MAYNARD DPW
8146/326
30–40 WINTER STREET

DPW SHED

DRIVEWAY

WINTER STREET

N/F
ORRIN BOSWORTH
& ROSE BOSWORTH

N/F
JENNIFER MONTGOMERY &
CHRISTOPHER LAWSON
59179–592
36 WINTER STREET

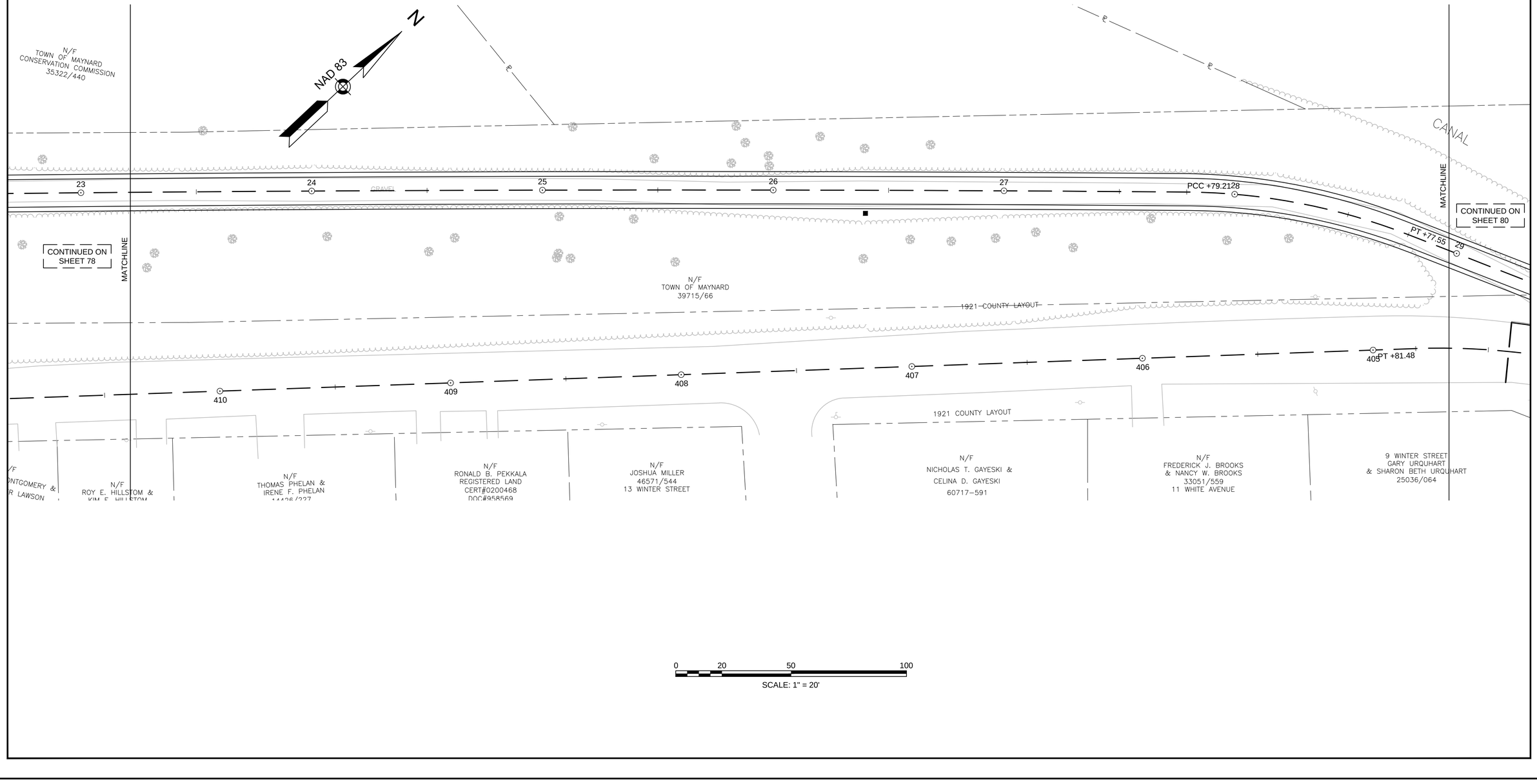
N/F
ROY E. HILLSTOM &
KIM F. HILLSTOM
30909/407
16 WINTER STREET

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT
MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:26 AM



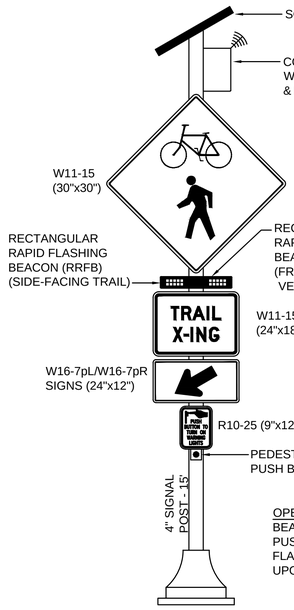
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:26 AM

DETAIL "A"
RECTANGULAR RAPID FLASHING BEACON - RRFB



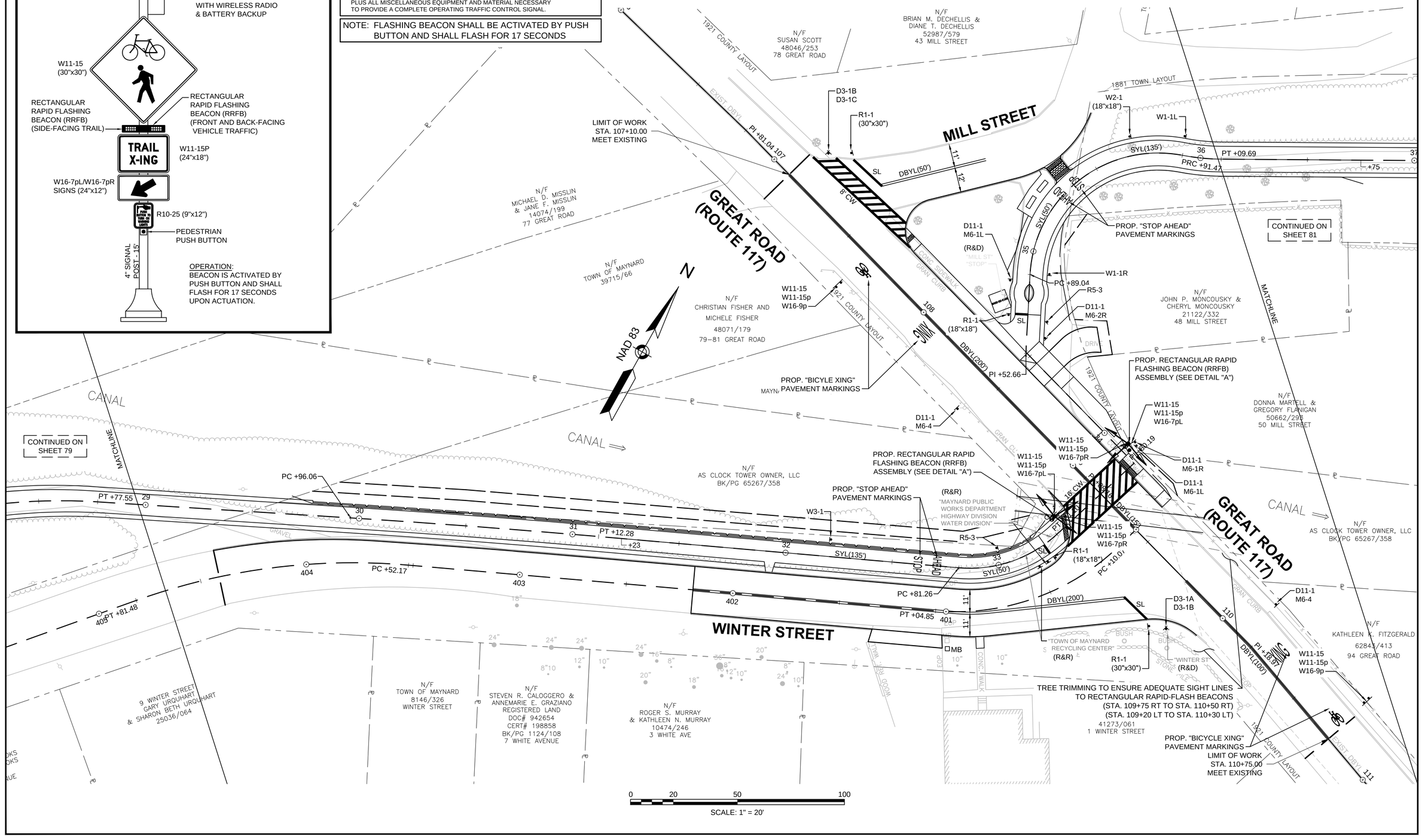
OPERATION:
BEACON IS ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS UPON ACTUATION.

MAJOR ITEMS REQUIRED - ITEM 824.01

QUANTITY	DESCRIPTION
2	CONTROLLER UNIT WITH WIRELESS RADIO AND CABINET
2	SOLAR POWERED PANEL
2	BATTERY BACKUP
2	BACK-TO-BACK RECTANGULAR RAPID FLASH BEACON
2	SIDE MOUNT RECTANGULAR RAPID FLASH BEACON
2	15' SIGNAL POST, BASE AND FOUNDATION
2	PEDESTRIAN PUSH BUTTON WITH INTEGRATED R10-25 SIGN

PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.

NOTE: FLASHING BEACON SHALL BE ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:26 AM

N/F
BRIAN M. DECHELLIS &
DIANE T. DECHELLIS
52987/579
43 MILL STREET

PRE-1871 TOWN LAYOUT

N/F
NICHOLAS AUFFINGER TALARICO
64063-90
16 PINE STREET

N/F
GERTRUDE LORETTA
& JOHN LORETTA
12960/657
14 PINE STREET

N/F
JENNY'S WAY TOWN HOMES
CONDOMINIUM
MASTER DEED
63652/349
PINE STREET

11 SPRING LANE
CAROLE E MALLONEE
10404/542

N/F
LEONA FOLEY
37895/326
12 SPRING LANE

N/F
STEPHEN L. ALLEN
DOLORES A. ALLI
REGISTERED LANE
CERT# 143938
DOC# 523192
SPRING LANE

N
NAD 83

1881 TOWN LAYOUT

MILL STREET

W2-1
(18"x18")

W1-1L

11'
12'

SL DBYL(50')

36 PT +09.69
PRC +91.47
37 +75
38
39
PC +49.76
40 PT +83.40
41

MATCHLINE

N/F
TOWN OF MAYNARD
39715/66
WINTER STREET

CONTINUED BELOW

D11-1
M6-1L
(R&D)

"MILL ST"
"STOP"

LONG SIDEWALK
GRAN CURB

35

PROP. "STOP AHEAD"
PAVEMENT MARKINGS

W1-1R

PC +89.04
R5-3
D11-1
M6-2R

108

R1-1
(18"x18")

DBYL(200')

PI +52.66

DRIVE

N/F
JOHN P. MONCOUSKY &
CHERYL MONCOUSKY
21122/332
48 MILL STREET

CONTINUED ON
SHEET 80

N/F
DONNA MARTELL &
GREGORY FLANIGAN
50662/293
50 MILL STREET

N/F
DEBRA J. MEALEY
& JEFFREY MEALEY
30759/217
19-20 HIGH STREET

1927 COUNTY LAYOUT

D11-1
M6-4

0 20 50 100
SCALE: 1" = 20'

N
NAD 83

N/F
ROBERT S. MARTELL
& JOAN F. MARTELL
31140/70
12 A&B HARRIMAN CT

PRE-1871 TOWN LAYOUT

PRE-1871 TOWN LAYOUT

N/F
7 HARRIMAN COURT
REALTY TRUST U/D/T
STEPHEN M. HEBERT, TRUSTEE
43106/72
7 HARRIMAN CT

UNKNOWN

16' RIGHT OF WAY
BK/PG 37392/241

N/F
VINCENT DINH &
BING ZOU
64506/429
174 MAIN STREET

16' ACCESS EASEMEI
BK/PG 37392/241

MATCHLINE

N/F
TOWN OF MAYNARD
39715/66
WINTER STREET

CONTINUED ON
SHEET 82

MATCHLINE

CONTINUED
ABOVE

41
42
43
44 PC +97.00
PT +52.80
45 PC +08.66
46 PT +84.97
47

1838 TOWN LAYOUT

EOP

HMA

EOP

EOP

1838 TOWN LAYOUT

N/F
ROY R. MASON
& FRANCIS MASON
12548/238
18 HIGH STREET

N/F
MARK J. BENOIT AND
JESSICA E. MCLEAN
63235-198
16-17 HIGH STREET

N/F
ADAM E. BROWNSTEIN
42887/109
15 HIGH STREET

N/F
ALLEN G. JUSSAUME
& SUSAN JUSSAUME
25975/187
14 HIGH STREET

N/F
KATHLEEN C. LARSEN
14388/246
13 HIGH STREET

N/F
JUNMEI YAO &
HONG JIN
60452/584
11-12 HIGH STREET

N/F
JEREMY S. ALFORD &
REBECCA M. ALFORD
51947/534
9-10 HIGH STREET

N/F
DENNIS KERWIN
43171/382
8 HIGH STREET

5,6,7 HIGH STREET
JOSEPH J. MISHLEY &
MARCIA P. MISHLEY
14867/292

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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MA	CMAQ/STP-TE-002S(836)	82	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:26 AM

N

NAD 83

MAIN STREET (ROUTE 62)

LIMIT OF WORK
STA. 701+48.87
MEET EXISTING

PC +50.05

701

1904 COUNTY LAYOUT

EXIST DBYL

R3-17
R3-17bP

DWL(48')

DBYL(60')

SWL(205')

SWL(110')

DBYL(120')

DWL(48')

702

703

12" SYL (TYP.)

R3-17

R3-17
R3-17bP

BIT CONC DRIVEWAY

PROP. TWO 7' x 20'
PARKING STALL

R7-1R

R&S METER
W11-2
W16-7pL

R7-1L

PROP. 7' x 22' INSIDE
PARKING STALLS AND
7' x 20' END STALLS (TYP.)

SWL(90')

SWL(480')

SWL(425')

DBYL(245')

704

705

706

10' CW

R4-7

(R&D)
"MAIN ST"
"SUDBURY ST"

D3-1E
D3-1G

16' CW

D11-1
M6-1L

D11-1
M6-1R

PC +56.55

PI +73.10

SUDBURY STREET

SYL(25')

SYL(20')

DBYL(30')

DBYL(65')

SYL(55')

1904 COUNTY LAYOUT

"PEDESTRIAN XING"
"LEFT ARROW" (R&R)

"STOP"
(R&R)

D11-1
M6-3
"JOHN R. MURPHY
SQUARE" (R&R)

D3-1E
D3-1F

D11-1
M6-4

SYL(120')

PC +41.25

W5-4a

W2-1
(18"x18")

MATCHLINE

BITUMINOUS BERM

MAIN STREET

FRONT STREET

1935 TOWN LAYOUT

"FRONT ST"(R&D)
"DO NOT ENTER" GRAPHIC (RET.)
"DO NOT ENTER" (RET.)
"STOP" (RET.)
"NO PARKING EITHER SIDE" (RET.)

R6-1(PBS)
R5-1

PROP. "BICYCLE XING"
PAVEMENT MARKINGS

W11-15
W11-15p
W16-9p

XING

D3-1D
D3-1E

DBYL(35')

PI +81.39

PI +03.28 601

±16'

16'

(R&D)
"NO PARKING"

(R&D)
"NOT A
THROUGH
STREET"

W1-1L

R8-3a

W14-1

DBYL(20')

SL

10' CW

HIGH STREET

1838 TOWN LAYOUT

(RET.)
"NO PARKING
HERE TO
CORNER"

(R&D) "HIGH ST"
"STOP"
(RET.)

LIMIT OF WORK
STA. 601+95.00
MEET EXISTING

CONTINUED ON SHEET 83

CONTINUED ON SHEET 81

N/F
WEST BOND LLC
59412/574
193 MAIN STREET
3 STORY WOOD BLDG

N/F
189-191 MAIN STREET
CONDOMINIUM
MASTER DEED
18452/358
189 MAIN STREET
BRICK BLDG

N/F
CASTLE NORTH REALTY TRUST
43198/425
185-187 MAIN STREET
2 STORY WOOD BLDG

N/F
THE CRIAC
INVESTMENT TRUST
43198/425
183 MAIN STREET
#183
2 STORY
BRICK BLDG

N/F
179 MAIN STREET
REALTY TRUST
43106/79
179 MAIN STREET
3 STORY
WOOD BLDG

N/F
SEAWITCH INC
31735/564
175-177 MAIN STREET

170 MAIN STREET
DIMOPOULOS FAMILY TRUST
25051/306

N/F
VINCENT DINH &
BING ZOU
64506/429
174 MAIN STREET

16' ACCESS EASEMENT
BK/PG 37392/241

N/F
TOWN OF MAYNARD
15071/521
MAIN STREET

N/F
AS CLOCK TOWER OWNER, LLC
BK/PG 65267/358

N/F
RICHARD BELANGER
AND PATRICIA
BELANGER
63369-509

15' RIGHT OF WAY
BK/PG 5846/449

N/F
MARZENA B. WARZEWSKA
6448/151
4 SUDBURY STREET

N/F
ASSABET VILLAGE TOWNHOUSE
CONDOMINIUM
MASTER DEED
17351/76
1 SUDBURY STREET

N/F
JANETTE P. HADLEY
29935/180
3 HIGH STREET

N/F
JOHN P. RODGERS &
ETHEL F. RODGERS
53191/20
2 HIGH STREET

N/F
JOSEPH RUSSO, JR.
50533/88
1 HIGH STREET

0 20 50 100

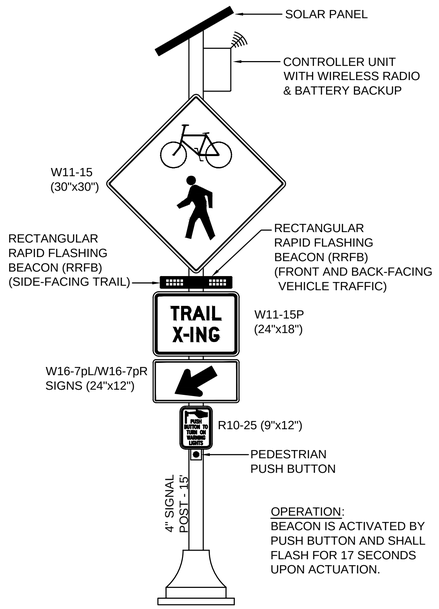
SCALE: 1" = 20'

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	83	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:26 AM

DETAIL "A"
RECTANGULAR RAPID FLASHING BEACON - RRFB



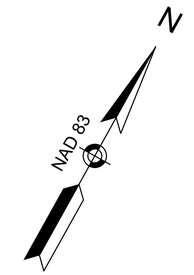
OPERATION:
BEACON IS ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS UPON ACTUATION.

MAJOR ITEMS REQUIRED - ITEM 824.02

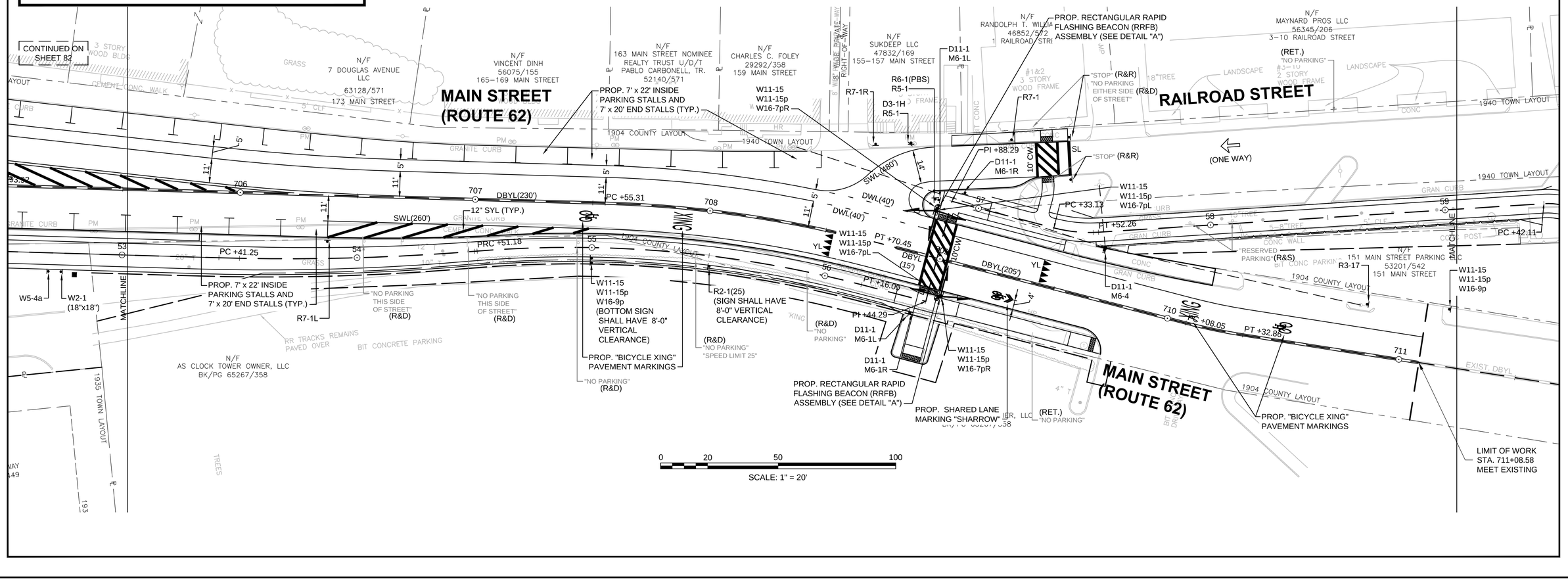
QUANTITY	DESCRIPTION
2	CONTROLLER UNIT WITH WIRELESS RADIO AND CABINET
2	SOLAR POWERED PANEL
2	BATTERY BACKUP
2	BACK-TO-BACK RECTANGULAR RAPID FLASH BEACON
2	SIDE MOUNT RECTANGULAR RAPID FLASH BEACON
2	15' SIGNAL POST, BASE AND FOUNDATION
2	PEDESTRIAN PUSH BUTTON WITH INTEGRATED R10-25 SIGN

PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.

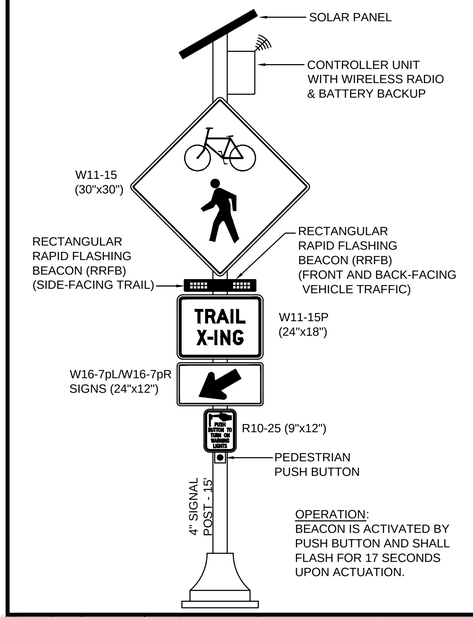
NOTE: FLASHING BEACON SHALL BE ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS



CONTINUED ON SHEET 84



DETAIL "A"
RECTANGULAR RAPID FLASHING BEACON - RRFB



OPERATION:
BEACON IS ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS UPON ACTUATION.

MAJOR ITEMS REQUIRED - ITEM 824.03

QUANTITY	DESCRIPTION
2	CONTROLLER UNIT WITH WIRELESS RADIO AND CABINET
2	SOLAR POWERED PANEL
2	BATTERY BACKUP
2	BACK-TO-BACK RECTANGULAR RAPID FLASH BEACON
2	SIDE MOUNT RECTANGULAR RAPID FLASH BEACON
2	15' SIGNAL POST, BASE AND FOUNDATION
2	PEDESTRIAN PUSH BUTTON WITH INTEGRATED R10-25 SIGN

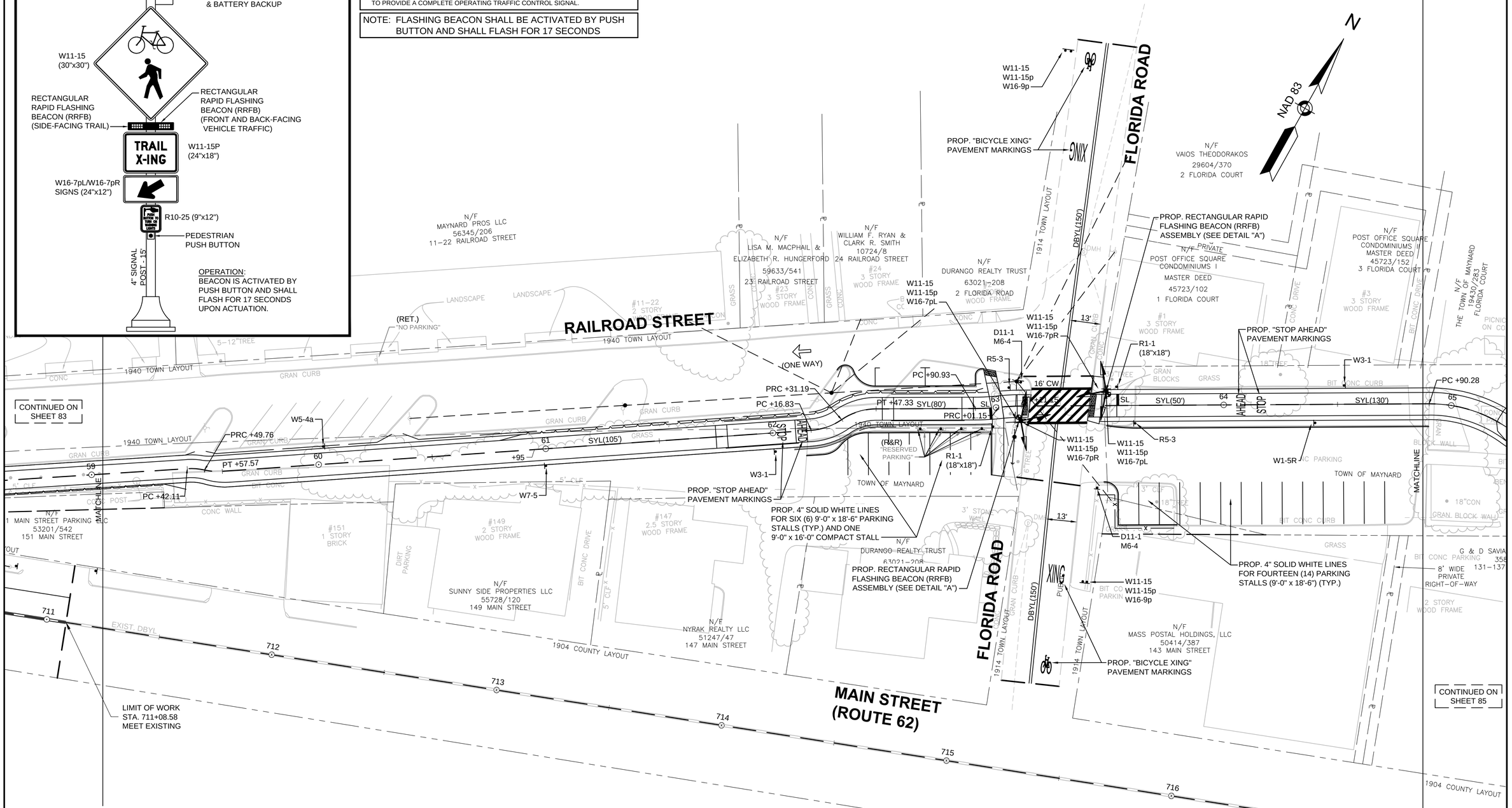
PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.

NOTE: FLASHING BEACON SHALL BE ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	84	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS



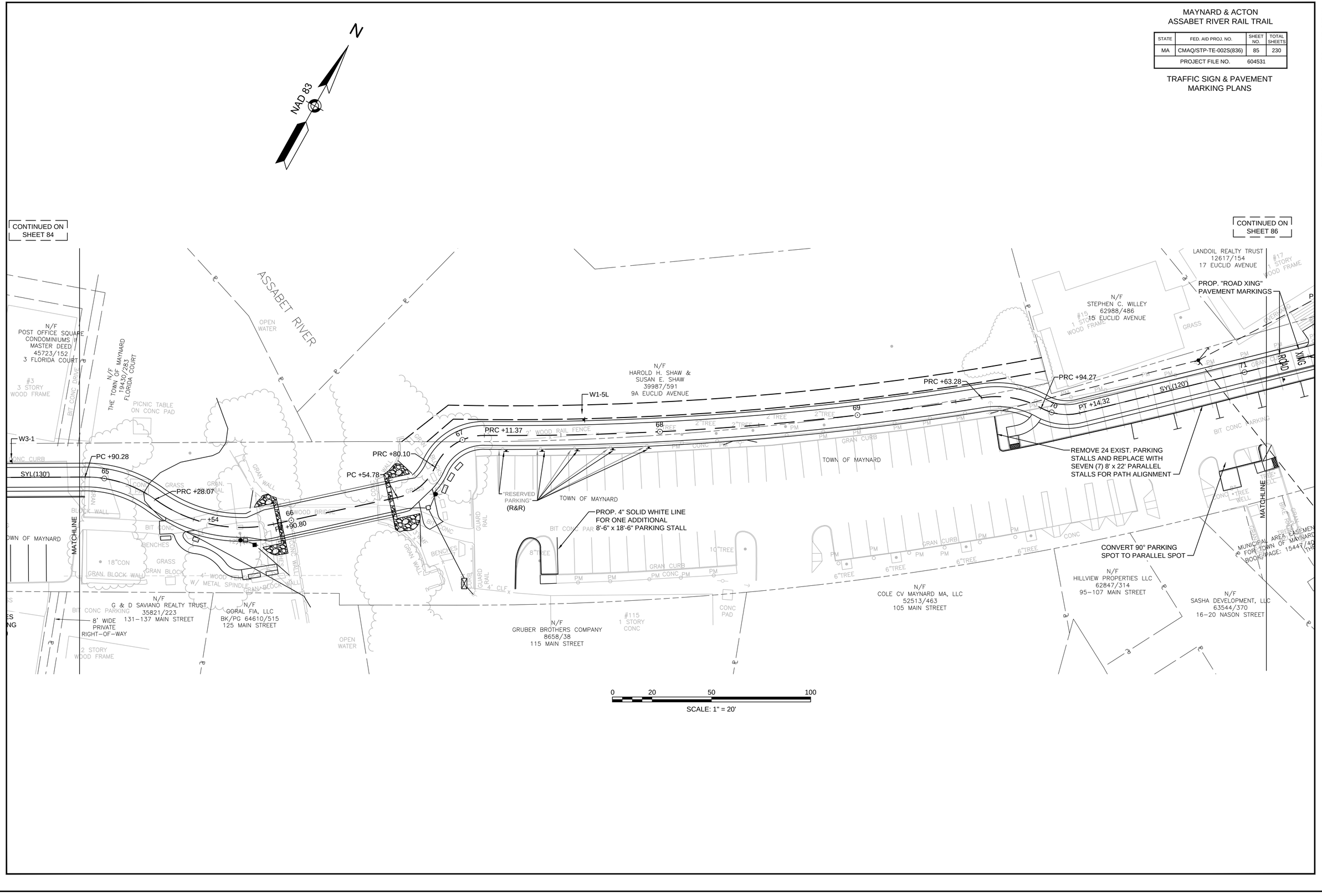
604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:27 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	85	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:27 AM



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	86	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:27 AM

CONTINUED ON SHEET 85

CONTINUED ON SHEET 87

NAD 83 N

EUCLID AVE.

SUMMER STREET

BROOKS STREET

MAPLE STREET

NASON STREET

(ONE WAY)

1899 COUNTY LAYOUT

1904 COUNTY LAYOUT

1911 COUNTY LAYOUT

1936 COUNTY ALT.

PRE-1871 TOWN LAYOUT

MATCHLINE

PRC +94.27

PT +14.32

SYL(120')

R5-3

PRC +63.12

PC +33.16

PRC +88.22

W2-1 (18"x18")

XING

ROAD

16' CW

PROP. SEVEN (7) 8'-0" x 22'-0" PARALLEL PARKING STALLS

PROP. "ROAD XING" PAVEMENT MARKINGS

PROP. "BICYCLE XING" PAVEMENT MARKINGS

W2-1 (18"x18")

PRC +33.62

SYL(50')

SYL(185')

PRC +59.93

PT +03.88

PI +14.79

D11-1 M6-1L

D11-1 M6-1R

W7-5

(R&R) "RESERVED PARKING"

PROP. NINE (9) 8'-6" x 15'-0" COMPACT PARKING STALLS

DBYL(20')

DBYL(110')

LIMIT OF WORK STA. 810+65.00 MEET EXISTING

W11-15 W11-15p W16-9p

R5-2 R12-1

D3-1J D3-1K

"NO PARKING ANY TME" (RET.)

"MAPLE ST" "SUMMER ST" "NO TRUCK" GRAPHIC "WEIGHT LIMIT 2½ TONS"

"STOP" (RET.)

LIMIT OF WORK MEET EXISTING

W11-15 W11-15p W16-7pR

SL

10' CW

PC +26.69 PT +42.11

PROP. RECTANGULAR RAPID FLASHING BEACON (RRFB) ASSEMBLY (SEE DETAIL "A")

R1-1 (18"x18")

PROP. "STOP AHEAD" PAVEMENT MARKINGS

W3-1

PI +34.97

PC +10.32

PRC +34

SYL(65')

SYL(135')

14' CW

PC +62.51

PT +92.59

PI +18.80

D11-1 M6-1L

D11-1 M6-1R

W11-15 W11-15p W16-7pL

W11-15 W11-15p W16-7pR

D11-1 M6-4

R5-3

W11-15 W11-15p W16-7pL

PROP. "BICYCLE XING" PAVEMENT MARKINGS

PROP. RECTANGULAR RAPID FLASHING BEACON (RRFB) ASSEMBLY (SEE DETAIL "A")

RESTRIPE TWO (2) 7' x 20' ON STREET PARKING STALL S

W11-15 W11-15p W16-9p

PT +95.65

LIMIT OF WORK STA. 808+00.00 MEET EXISTING

MUNICIPAL AREA EASEMENT FOR TOWN OF MAYNARD BOOK/PAGE: 15508/280

MUNICIPAL AREA EASEMENT FOR TOWN OF MAYNARD BOOK/PAGE: 15447/406

"ONE WAY" (RET.) "DO NOT ENTER" "2 HOUR PARKING 7AM-5PM . . ."

"SPEED LIMIT 15" (RET.)

"STOP" (R&R)

12' WIDE EASEMENT PB 1097 OF 84

EASEMENT PLAN 72 OF 1984

TOWN OF MAYNARD

N/F STEPHEN C. WILLEY 62588/456 15 EUCLID AVENUE

N/F LANDOIL REALTY TRUST 12617/154 17 EUCLID AVENUE

N/F 42 SUMMER STREET 49948/309 42 SUMMER STREET

N/F DEVELOPMENT, LLC 44/370 NASON STREET

N/F NASON STREET REALTY TRUST 29596/167 24-26 NASON STREET

N/F NASON STREET REALTY TRUST 15963/1 NASON STREET

N/F SUN HING REALTY TRUST 35383/438 42 NASON STREET

N/F 44 NASON STREET TRUST 21521/49 44 NASON STREET

N/F HTS OF COLUMBUS BUILDING ASSOCIATION 6034/233 24006/90 40 SUMMER STRE

N/F JAMES G. MACDONALD PL 38011/22 133 OF 2003

N/F MAYNARD PLACE REALTY TRUST, U/D/T 42195/325 58-62 NASON STREET

N/F MAYNARD PLACE REALTY TRUST, U/D/T REGISTERED LAND DOC# 1312602 CERT# 230280 BK 1281 PG 126 66 NASON STREET

N/F REX E. OLSON AND KRISTA M. OLSON 59602-376 1-3 MAPLE ST

10' MAINTENANCE EASEMENT FOR TOWN OF MAYNARD BOOK/PAGE: 38011/22

#15 1 STORY WOOD FRAME

#17 2½ STORY WOOD FRAME

#36 2 STORY BRICK

#40-54 2 STORY WOOD FRAME

#42 2 STORY WOOD FRAME

#1&3 2.5 STORY WOOD FRAME

GRASS

BIT CONC PARKING

CONC WALL W/ METAL HANDRAIL

GRAN CURB

EXIST. DBYL

6" CLF

5' CLF

STONE WALL

LANDSCAPE STONES

MULCH PATH

TREES

SHRUBS

CONC PAD

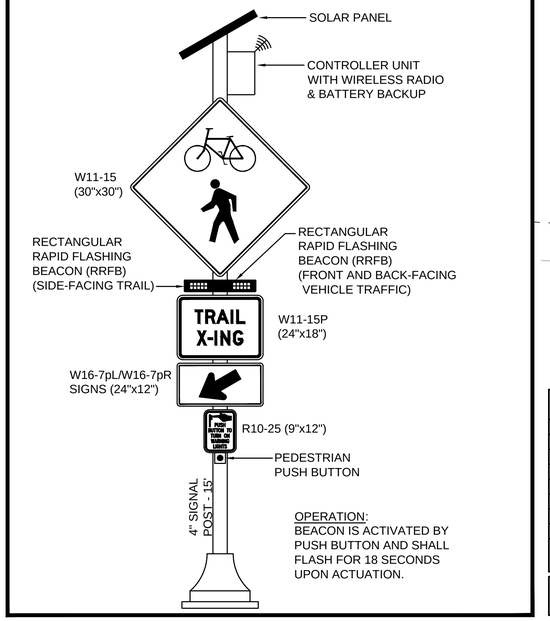
STORAGE

WOOD RAMP

OVERHANG

DETAIL "A"

RECTANGULAR RAPID FLASHING BEACON - RRFB



OPERATION:
BEACON IS ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 18 SECONDS UPON ACTUATION.

MAJOR ITEMS REQUIRED - ITEM 824.04

QUANTITY	DESCRIPTION
2	CONTROLLER UNIT WITH WIRELESS RADIO AND CABINET
2	SOLAR POWERED PANEL
2	BATTERY BACKUP
2	BACK-TO-BACK RECTANGULAR RAPID FLASH BEACON
2	SIDE MOUNT RECTANGULAR RAPID FLASH BEACON
2	15' SIGNAL POST, BASE AND FOUNDATION
2	PEDESTRIAN PUSH BUTTON WITH INTEGRATED R10-25 SIGN

PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.

NOTE: FLASHING BEACON SHALL BE ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 18 SECONDS

0 20 50 100

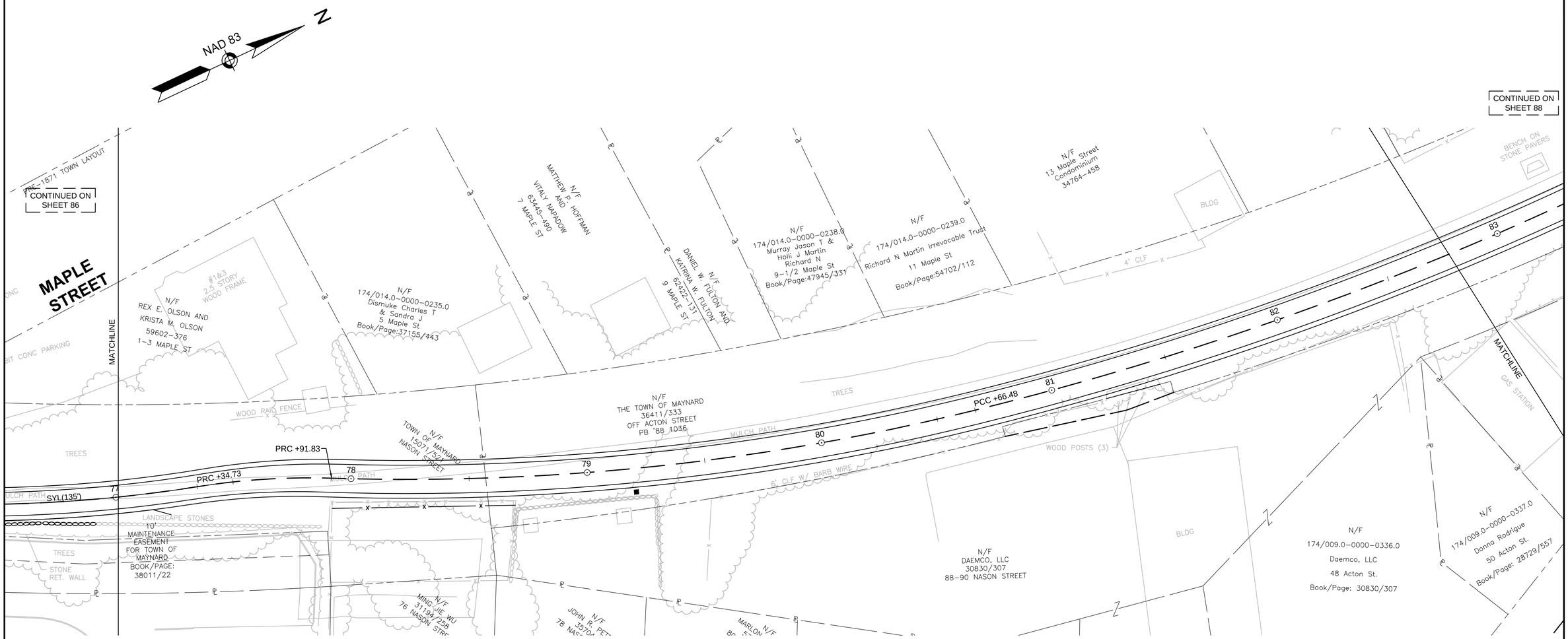
SCALE: 1" = 20'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	87	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:27 AM



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	88	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:27 AM

NAD 83

N

N/F
174/009.0-0000-0353.0
Olsen Peter J & Dawn M
4 Maple Ct
Book/Page:32581/531

N/F
-0000-0354.0
Edward A &
Patricia M
Maple St
ge:23703/53

CONTINUED ON SHEET 87

N/F
MAPLE COURT CONDOMINIUM
MASTER DEED
BK/PG 45462/324
3,5,7 MAPLE CT.

N/F
GERALD D PENDERGAST &
MARY C. PENDERGAST
BK/PG 11459/377
9 MAPLE CT.

N/F
LAURA KRUETZER
& CLAY E. PARKER
BK/PG 59555-289
11 MAPLE CT.

N/F
MARC C. UBALDINO &
JENNIFER L. COOPER
BK/PG 35088/514
13 MAPLE CT.

N/F
THE PEPIN-LIU
REVOCABLE TRUST
BK/PG 46377/581
15 MAPLE CT.
2 STORY
WOOD FRAME

N/F
KENNETH J. HOGAN &
MAUREEN A. MENTON-HOGAN
BK/PG 44771/107
17 MAPLE CT.
#17
2 STORY
WOOD
FRAME

N/F
BRIAN F. FALCUCCI AND
JACQUELINE E. BARCLAY
REGISTERED LAND
CERT# 257226
BK/PG 1457-29
62 ACTON ST

N/F
THE TOWN OF MAYNARD
36411/333
OFF ACTON STREET
PB '88 1036

N/F
DAEMCO, LLC
30830/307
88-90 NASON STREET

N/F
174/009.0-0000-0338.0
V. S. H. Realty, Inc.
54 Acton St.
Book/Page: 12829/527

N/F
LANDOIL REALTY TRUST
BK/PG 12497/53
63-65 ACTON ST

CONTINUED ON SHEET 89

CONCORD STREET

ACTON STREET (ROUTE 27)

HAYNES STREET (ROUTE 27)

ACTON STREET

CONCORD STREET

1903 COUNTY LAYOUT
1904 COUNTY LAYOUT
1911 COUNTY LAYOUT
1925 COUNTY LAYOUT
1785 COUNTY LAYOUT
1906 COUNTY LAYOUT
1908 COUNTY LAYOUT

LIMIT OF WORK
STA. 1009+35.00
MEET EXISTING

LIMIT OF WORK
STA. 907+00.00
MEET EXISTING

LIMIT OF WORK
STA. 904+59.13
MEET EXISTING

(RET.) CROSSWALKS

REMOVE CONFLICTING
PAVEMENT MARKINGS

REMOVE EXISTING
CROSSWALK MARKINGS

PROP. "STOP AHEAD"
PAVEMENT
MARKINGS (TYP.)

(R&R) CONTRACTOR SHALL
INSURE A MINIMUM OF
8'-0" VERTICAL CLEARANCE
FROM BOTTOM OF LOWER SIGN

"SPEED
LIMIT 25"
"MAYNARD COMMUNITY
FARMER'S MARKET..."

"HAYNES ST"
"CONCORD ST"
"PED XING"
GRAPHIC

"DO NOT
ENTER"
(R&R)

"NO LEFT
TURN"
"KEEP
RIGHT"

"NORTH
ACTON
CHELMFORD"

"WRONG
WAY"

"STOP"

"ACTON ST"

"CONCORD ST"

W11-15
W11-15p
W16-9p

D11-1
M6-4

R5-3

R6-1L

R6-1(PBS)

R1-1
(30"x30")

R1-1
(18"x18")

W2-1
(18"x18")

W3-1

W2-1
(30"x30")

W11-2
W16-7pR

PC +69.84
PT +49.93
PT +07.74
PI +34.11
PC +15.85
PT +88.11
PC +95.60
PC +90.46
PT +96.11
PC +40.64
PT +94.82
PC +50.58
PT +74.59
PC +32.67
PT +94.86
PC +34.88
PT +25.21
SYL(200')
PC +10.30
SYL(125')
SYL(50')
PT +24.52
PC +00.38

10 CW
20 CW
5 CW

0 20 50 100
SCALE: 1" = 20'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	89	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:28 AM

CONCORD STREET

MATCHLINE

5' WIDE PUBLIC EASEMENT FOR TOWN OF MAYNARD BOOK/PAGE: 19735/518

N/F
LANDOIL REALTY TRUST
BK/PG 12497/53
63-65 ACTON ST

2 STORY CONC

SHALEBRIDGE CRADLE II CONDOMINIUM
71A ACTON ST
CORTNEY A. DESY AND KIETH DESY
BK/PG 65102/216
71B ACTON ST
MICHAEL K. BACUS
BK/PG 62648/523
73A ACTON ST
JOSEPH M. FERRARA AND JON J. MANCINI
BK/PG 44569/449
73B ACTON ST
CHESTER PAWLOWSKI
BK/PG 63886/545
BRENDA [illegible]
BK/PG 62775-283
79 ACTON ST

#81&83 2 STORY WOOD FRAME

NAD 83

N

WOOD FENCE

GRASS

SHED

N/F
COMMUNITY HOUSING OPTIONS INC
BK/PG 26154/146
81-83 ACTON ST

N/F
JAMES C. HATCH
BK/PG 41056/336
85 ACTON ST

WOODED AREA

PROP. "STOP AHEAD" PAVEMENT MARKINGS

R1-1 (18"x18")

W3-1

PC +90.46 SL

SL

SYL(50')

PT +96.11

AHEAD

STOP

90

SYL(135')

SWALE

SWALE

SWALE

SIGNS

91

PC +28.53

PRC +47.26

PT +66.00

92

R5-3

D11-1

M6-4

20' CW 273

BIT CONC PARKING

AUTO SHOP BUILDING

N/F
TOWN OF MAYNARD
BK/PG 4640/551
RAILROAD

CONC WALL

93

BOULDER

CONC STEPS

CONC WALL

94 PRC +04.91

PT +23.65

PC +86.18

95

CONTINUED BELOW

N/F
TOWN OF MAYNARD
(BOARD OF SELECTMEN)
BK/PG 4640/551

1007

PT +94.82

2004

W2-1 (30"x30")

N/F
174/009.0-0000-0265.0
Boeske Bros Inc
13 Brown St
Book/Page:9961/477

BROWN STREET (ROUTE 27)

2005

CONTINUED ON SHEET 88

W11-2
W16-7p

PC +50.58

PT +39.31

2006

PC +43.52

2007

PT +51.80

2008

2009

2010

1925 COUNTY LAYOUT

N/F
174/009.0-0000-0266.0
Youtt Robert W & Wheeler Kathleen
15 Brown St
Book/Page:26960/239

N/F
ANTHONY C. MARIA & NOELLA A. MARIA
BK/PG 11776/499
17 BROWN ST

CONCORD STREET

1006

PC +73.78

(RET.)
"STOP"

W11-15
W11-15p
W16-9p

LIMIT OF WORK
STA. 1005+55.00
MEET EXISTING

1905 COUNT
PER 1925

0 20 50 100
SCALE: 1" = 20'

N/F
JAMES C. HATCH
BK/PG 41056/336
85 ACTON ST

MATCHLINE

N/F
WALTER MANNION & DANIELLE MANNION
BK/PG 27901/443
87 ACTON ST

N/F
ADAM P. CONN & AMY BUHL
BK/PG 42897/495
93 ACTON ST

3' CLF

NAD 83

N

BK/PG 54180/[illegible]
103 ACTON ST

GRASS

MATCHLINE

2' STONE WALL

N/F
TOWN OF MAYNARD
(BOARD OF SELECTMEN)
BK/PG 4640/551

SWALE

SWALE

GRANITE POST

95

PC +25.93

96

97

PT +19.26

98

PC +39.45 PRC +58.34

99

PT +85.58

100

101

BATTERY WELL

2' STONE WALL

CONTINUED ABOVE

N/F
RICHARD A. SHEEHAN & THERESE A. SHEEHAN
BK/PG 25452/231
19 BROWN ST

N/F
NICHOLAS B. JOHNSON & KELLI COSTA
BK/PG 30487/268
21 BROWN ST

N/F
CHARLES W. NEVALA & ELEANOR L. NEVALA
BK/PG 9426/529
23 BROWN ST

N/F
RICHARD W. GROSS & MARIAN F. GROSS
BK/PG 11580/112

N/F
HAROLD E. WILDE IV & ERIKA L. WILDE
BK/PG 53464/469

GRASS

CONTINUED ON SHEET 90

1925 COUNTY LAYOUT

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	90	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:28 AM

105 ACTON ST

N/F
JOHN NETTO & MARY GETMAN-NETTO
BK/PG 54718/73
107 ACTON ST

N/F
STEPHANIE STRATIGOS &
MICHAEL R. BRADY
BK/PG 61932-278
113 ACTON ST

GRASS

N/F
WILLIAM R. THORNLEY &
STACY L. ROSANDER
BK/PG 55040/341
115 ACTON ST

WOODS

N/F
THE OSKIRKO FAMILY TRUST
BK/PG 26872/390
117 ACTON ST

NAD 83

N

MATCHLINE

2' STONE WALL

GRAN POST

SWALE

101 102 103 104 105 106 107

CONTINUED ON SHEET 89

CONTINUED BELOW

N/F
TOWN OF MAYNARD
BK/PG 4640/551
RAILROAD

GRASS

N/F
THOMAS B. ILLINGSWORTH &
RACHEL E. MUNOZ
BK/PG 51054/168
37 BROWN ST

N/F
ALBERT G. FAUL III
BK/PG 28737/557
39 BROWN ST

N/F
PATRICK S. CURRIN &
BARBARA J. CURRIN
BK/PG 13528/624
43 BROWN ST

N/F
MATTHEW M. MUIRHEAD AND
KATLYN WELLS
BK/PG 63899-91
47 BROWN ST

0 20 50 100

SCALE: 1" = 20'

N/F
BARBARA A. DUTKOWSKI
BK/PG 24993/398
119 ACTON ST

EOP

N/F
DISTINCTIVE ACTON HOMES, INC.
BK/PG 63466-514
129-A ACTON STREET

NAD 83

N

MATCHLINE

WOODS

STONE WALL

SWALE

107 108 109 110 111 112 113

WOOD TIES

CONTINUED ABOVE

CONTINUED ON SHEET 91

2' STONE WALL

1925 COUNTY LAYOUT

BROWN AVENUE
(ROUTE 27)

PC +30.01

2025 2026 PT +69.52 2027 2028

N/F
RUDOLF SELAMI
BK/PG 49511/398
49 BROWN ST

N/F
FAIRWAY VIEW COMPANY
BK/PG 54735/459
ACTON ST

MAJOR ITEMS REQUIRED - ITEM 824.05

QUANTITY	DESCRIPTION
2	CONTROLLER UNIT WITH WIRELESS RADIO AND CABINET
2	SOLAR POWERED PANEL
2	BATTERY BACKUP
2	BACK-TO-BACK RECTANGULAR RAPID FLASH BEACON
2	SIDE MOUNT RECTANGULAR RAPID FLASH BEACON
2	15' SIGNAL POST, BASE AND FOUNDATION
2	PEDESTRIAN PUSH BUTTON WITH INTEGRATED R10-25 SIGN

PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.

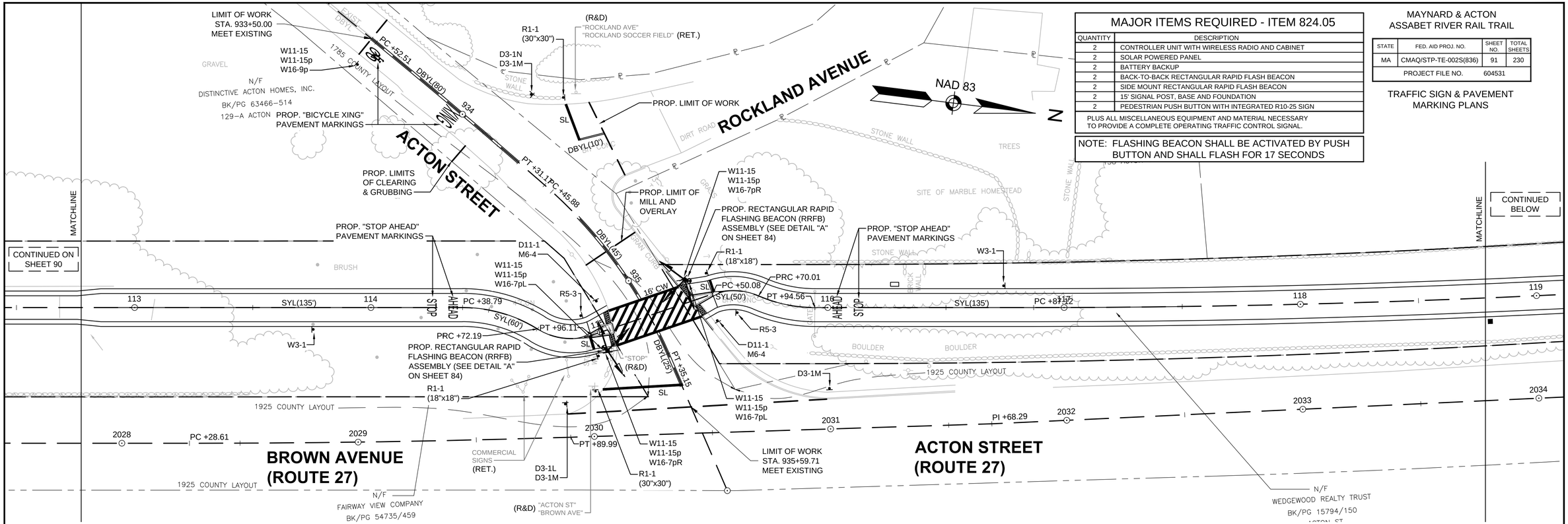
NOTE: FLASHING BEACON SHALL BE ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS

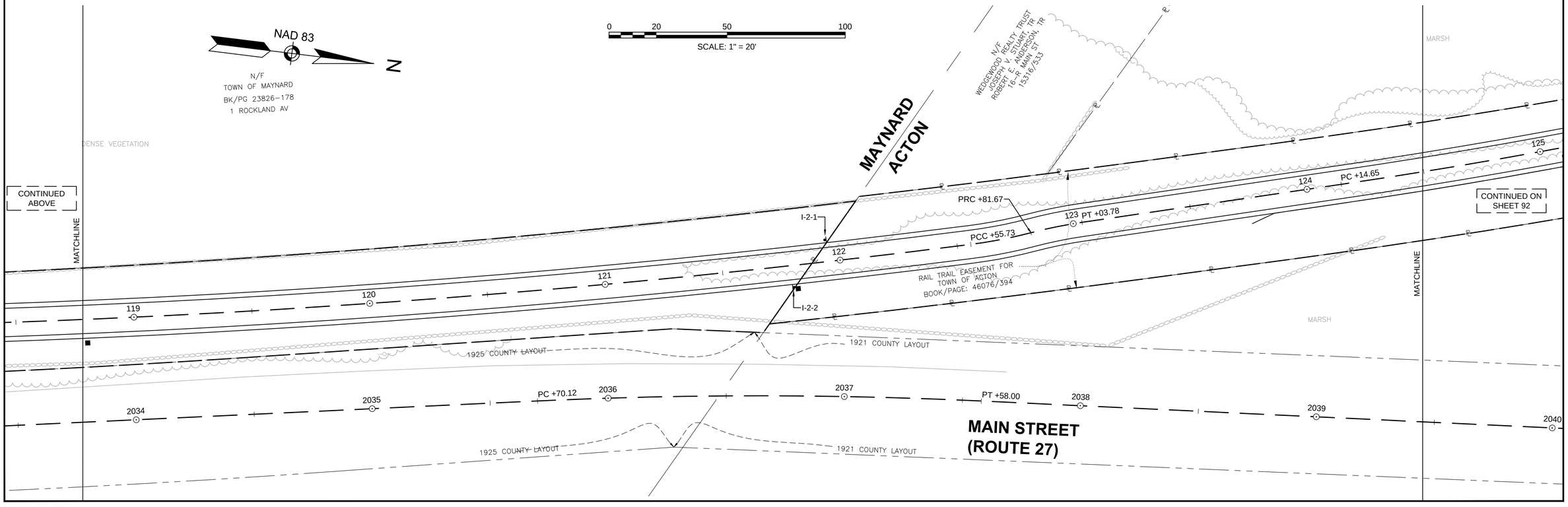
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	91	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:28 AM





MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	92	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:29 AM

NAD 83

N

SCALE: 1" = 20'

0 20 50 100

N/F
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
48-R MAIN ST
15114/250
12-57

N/F
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON,
TR14-R MAIN ST
15313/533
12-83

N/F
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
4 MAIN ST
15114/250
12-48

N/F
12-33
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
18-22 MAIN ST
15114/250

RAIL TRAIL EASEMENT FOR
TOWN OF ACTON
BOOK/PAGE: 46076/394

JRAINAGE EASEMENT
V/PG 11871/34

CONTINUED ON SHEET 91

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET 93

MATCHLINE

DRIVEWAY

MAIN STREET
(ROUTE 27)

PRIVATE RIGHT-OF-WAY

PC +14.65
PRC +89.14
PRC +14.64
PC +76.29
PT +08.26
PT +86.78
PC +48.01
PT +99.93
PRC +96.13
PT +32.85
PC +50.08
PRC +96.13
PT +18.79
PI +18.12

124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
2045
2046
2047
2048
2049
2050

W1-1L
W1-1R
R1-1 (30"x30")
R5-3
SL
SYL(200')
SYL(395')
SYL(50')
16' CW
15'
DBYL(30')

(R&R B.O.)
COMMERCIAL SIGN
COMMERCIAL SIGN (RET.)

MARSH
MARSH
MONUMENT
GRASS
CONC
STEEL
CURB
BIT CONC
BIT CONC BERM
BIT CONC DRIVEWAY
BIT CONC PARKING
GRAN CURB
CONC PAD
GUARDRAIL
WOOD GUARDRAIL
STONE WALL
GATE
FLAGPOLE
BOULDER
SHRUBS
MULCH
GRASS
2"TREE
3"TREE
6"TREE
12"TREE
14"TREE
24"TREE
5-24"TREE
2-12"TREE
3-12"TREE
6-3"TREE
MB
6' STOCKADE

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	93	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:29 AM

R1-1 (30"x30")

DBYL(30')

SYL(50')

R5-3

W1-1R

PROP. TWO 4" 15' SOLID WHITE LINES @ 8'-6" O.C TO ADD 2 PARKING STALLS

PROP. 4" SOLID WHITE LINES WITH 45° HATCH LINES (@ 2'-0" O.C) OVER EXISTING PARKING STALLS TO DESIGNATE NO PARKING FOR ACCESS OF EMERGENCY VEHICLES

R7-1L(sp)

R7-1R(sp)

CONTINUED ON SHEET 92

MATCHLINE

PC +48.84

PT +67.67

PC +14.66

PT +49.25

PC +00.91

PI 1+18.84

PI 2+18.84

N/F
ROBERT E. ANDERSON, TR
18–22 MAIN ST
15114/250

N/F
12–84
Wedgewood Realty Trust
Book/Page:17178/196

N/F
12–20
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
16–R MAIN ST
15316/533

N/F
RAIL TRAIL EASEMENT FOR
TOWN OF ACTON
BOOK/PAGE: 46076/394

N/F
NO ASSESSOR'S PARCEL
Town of Acton
RR – Marlborough Branch
Book/Page:49880/53

N/F
DOMINIC TRUST
10371/398
30 MAN ST

52032/412
71,91,99 MARTIN ST
H2–128

N/F
CATHELENE CONNER AND
MICHAEL HEALY
43144/397
2 ALBERTINE DR

N/F
PETER F. BURVILL AND
CAROL A. BURVILL
14803/477
42 MAIN STREET
I2–14

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET 94

NAD 83

N

SCALE: 1" = 20'

0 20 50 100

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	94	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:29 AM

NAD 83

N

CONTINUED ON SHEET 93

MATCHLINE

149 150 151 152 153 154

PT +36.63

PRC +45.06

PC +99.28

SP-1
SP-2

D11-1
M4-14

D11-1
M4-6

R5-3

R7-8

PROP. 4" SOLID WHITE LINE (8'-0" FROM CURB) WITH 45° HATCH LINES @ 2'-0" ON CENTER

PROP. 4" 18.5' SOLID WHITE LINES @ 9'-0" O.C FOR 4 PARKING STALLS

TREES 24" 28"TS 12"TS 12" 10"TS 12"TS 16"TS 14" 12" 10" 12" 16" 16" 12" 12" 18" 15" 16" 30" 15" 24"DEAD

PATH

BOULDER

WOOD BRIDGE

STUMP

CONC. TBL

APPROX. SPRINKLER

APPROX. SPRINKLER

STONE RETAINING WALL

N/F
CURT A. MCKELVIE AND
MICHELLE L. MCKELVIE
24853/0564
10 PINE STREET
I2-4

N/F
MADHAV N. DEVALARAJA
AND RADHIKA DEVALARAJA
BK/PG 62290/344
2 COLONIAL PATH
H3B-68

MATCHLINE

CONTINUED BELOW

0 20 50 100

SCALE: 1" = 20'

NAD 83

N

155 156 157 158 159 160 161

PT +34.94

PC +29.78

PT +04.74

PC +34.72

N/F
TOWN OF ACTON,
MASSACHUSETTS
19880/ 53

TEMP WOOD BRIDGE

N/F
TERRENCE MAITLAND AND
SIMA MAITLAND
15856/117
100 MARTIN STREET
H2-111

MATCHLINE

CONTINUED ABOVE

N/F
JAMES F. HOITT AND
KATHLEEN M. HOITT
50197/577
4 COLONIAL PATH
H3B-69-2

20' DRAINAGE & UTILITY EASEMENT

N/F
PRAKASH RAMAN AND
VIBHA OZA
54994/285
6 COLONIAL PATH
H3B-69-3

6' STOCKADE FENCE

SHED

COLONIAL PATH

MATCHLINE

CONTINUED ON SHEET 95

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	95	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:30 AM

CONTINUED ON SHEET 94

MATCHLINE

161

162

163

164

165

166

167

PCC +94.96

PRC +21.33

PT +44.20

PC +43.12

NAD 83

N

N/F
ROBERT W. HOUGHTON AND
SARAH C. BOLSTER
40992/205
92 MARTIN STREET
H2-102

METAL POST

LAKE

WE 189.9

CONTINUED BELOW

N/F
TOWN OF ACTON
MASSACHUSETTS
49880/ 53

N/F
MICHAEL P.
SUMMERS-McGUINNESS AND
TAI SUMMERS-McGUINNESS
36493/560
5 FLETCHER COURT
H38-27

0 20 50 100

SCALE: 1" = 20'

CONTINUED ABOVE

MATCHLINE

OPEN WATER

EXISTING CONSERVATION RESTRICTION AREA
58324/328

APPROX. ZONE LINE

N/F
H2A-95
ROSS W. ISRAEL AND
CHRISTINE ISRAEL-DWYER
90 MARTIN STREET
60370/57

FORT POND BROOK
RESERVOIR
AKA MILL POND

WOOD BRIDGE W/ GRAN WALL ABUTMENT

N/F
TOWN OF ACTON
56002/381
2 STOW STREET
H2A-62

PATH

ELECTRIC FENCE

CONTINUED ON SHEET 96

173

PT +19.55

PRC +36.53

ROCK WALL

OLD BUILDING FOUNDATIO

N/F
TOWN OF ACTON,
MASSACHUSETTS
49880/ 53

N/F
TOWN OF ACTON,
MASSACHUSETTS
49880/ 53

PRC +88.02

168

PT +57.29

169

170

171

PC +08.27

172

W1-5L

RAILROAD SWITCH

N/F
OWNER UNKNOWN
FORT POND BROOK
RESERVOIR

OPEN WATER

WE 189.9

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	96	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:30 AM

NAD 83

MATCHLINE

CONSERVATION RESTRICTION LINE

GRAVEL DRIVE

FARM FIELD

PATH

ELECTRIC FENCE

STONE WALL

SHED

GAR

OLD BUILDING FOUNDATION

OLD STONE RETAINING WALL

SP-1
SP-2
W1-1R
R7-1
PC +86.11
177
176
PT +00.21
W1-2R
W1-5L
173
PT +19.55
174
175
W1-1L
PC +01.36

CONTINUED BELOW

CONTINUED ON SHEET 95

N/F
SEAN P HANLEY AND
CHRISTINE L HANLEY
36150/609
16 MAPLE ST
H2A–54

N/F
AVELINO MIGUELEZ
50916/449
14 MAPLE ST
H2A–55

N/F
PETER D. KOZEL
AND KIMBERLY A. YOUNG
44888/352
10 MAPLE STREET
H2A–56

N/F
TOWN OF ACTON,
MASSACHUSETTS
49880/ 53

0 20 50 100
SCALE: 1" = 20'

NAD 83

CONSERVATION RESTRICTION AREA
370,389± S.F.
8.5030± AC.

CONSERVATION RESTRICTION LINE

MATCHLINE

FARM FIELD

ELECTRIC FENCE

PATH

GRAVEL DRIVE

STONE WALL

SHED

PROP. 4" SOLID WHITE LINES (8'-0" FROM CURB) WITH 45° HATCH LINES @ 2'-0" ON CENTER

PROP. 4" SOLID WHITE LINES (5'-0" FROM CURB) WITH 45° HATCH LINES @ 2'-0" ON CENTER

R7-1
R7-5L(sp)
R7-8
D11-1
M4-6
R5-3
SP-1
SP-2
W1-1R
177
PC +86.11
PT +59.89
178
179
R7-5(sp)
R7-5R(sp)
D11-1
M4-6
PC +75.16
M4-14
D11-1
M6-1L
180
R1-1
(30"x30")
R6-1(PBS)
R5-1
PRC +99.54
R6-1L
R3-1
R3-17
R3-17bP
202
PC +79.28

CONTINUED ABOVE

CONTINUED ON SHEET 97

MAPLE STREET

STOW STREET

(RET.)
"Stow St"
"Maple St"
"SPEED LIMIT 25"

(RET.)
"NO PARKING"

(R&D)
"DO NOT ENTER"
"NO PARKING"

DWL(18)

10' CW

(ONE WAY)

N/F
ELISSA D. BERRY AND
ROY C. KNIGHT
23493/441
6 STOW ST
H2A–62–2

N/F
TOWN OF ACTON
56003/ 335
2 STOW STREET
H2A–61

N/F
GORDON D. RICHARDS
45836/526
19 MAPLE STREET
H2A–42

N/F
Gordon D. Richards
21 Maple St
Book/Page: 11658/673
H2A–37

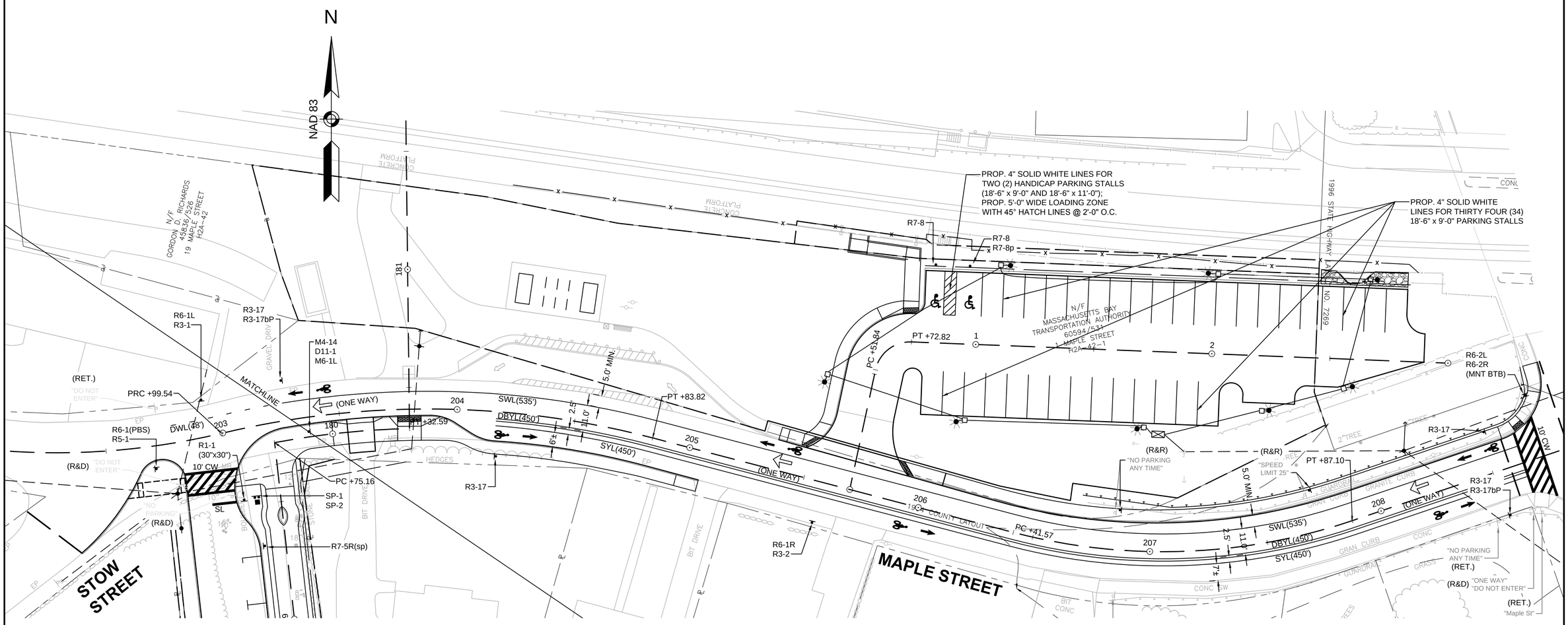
STEVEN T. MANNING
32111/208
18 MAPLE ST
H2A–

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	97	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

604531_HD(PM&S).DWG Plotted on 18-Sep-2015 9:30 AM



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	98	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN SUMMARY SHEET

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
R1-1	18"	18"	STOP	MUTCD STANDARD		10	RED	WHITE	WHITE	P5 (10 REQ'D)	2.25	22.50
R1-1	30"	30"	STOP	MUTCD STANDARD		10	RED	WHITE	WHITE	P5 (10 REQ'D)	6.25	62.50
R2-1(25)	24"	30"	SPEED LIMIT 25	MUTCD STANDARD		1	WHITE	BLACK	WHITE	P5 (1 REQ'D)	5.00	5.00
R3-1	24"	24"		MUTCD STANDARD		1	WHITE	RED CIRCLE & DIAGONAL; BLACK ARROW	BLACK	MNT w/R6-1L	4.00	4.00
R3-2	24"	24"		MUTCD STANDARD		1	WHITE	RED CIRCLE & DIAGONAL; BLACK ARROW	BLACK	MNT w/R6-1R	4.00	4.00
R3-17	24"	18"	BIKE LANE	MUTCD STANDARD		8	BLACK/ WHITE	WHITE SYMBOL; BLACK LEGEND	BLACK	P5 (8 REQ'D)	3.00	24.00
R3-17bP	24"	8"	ENDS	MUTCD STANDARD		4	WHITE	BLACK	BLACK	MNT w/R3-17	1.33	5.33
R4-7	24"	30"		MUTCD STANDARD		2	WHITE	BLACK	BLACK	P5 (2 REQ'D)	5.00	10.00
R5-1	30"	30"	DO NOT ENTER	MUTCD STANDARD		4	WHITE	RED SYMBOL; WHITE LEGEND	-	1 ON P5; 3 MNT w/R6-1(PBS)	6.25	25.00
R5-2	24"	24"		MUTCD STANDARD		1	WHITE	BLACK & RED SYMBOL	BLACK	P5 (1 REQ'D)	4.00	4.00
R5-3	24"	24"	NO MOTOR VEHICLES	MUTCD STANDARD		19	WHITE	BLACK	BLACK	18 ON P5; 1 MNT w/W1-1R	4.00	76.00
R6-1(PBS)	36"	12"	ONE WAY	MUTCD STANDARD		4	BLACK	BLACK; WHITE ARROW	WHITE	P5 (4 REQ'D)	3.00	12.00
R6-1L	36"	12"	ONE WAY	MUTCD STANDARD		2	BLACK	BLACK; WHITE ARROW	WHITE	P5 (2 REQ'D)	3.00	6.00
R6-1R	36"	12"	ONE WAY	MUTCD STANDARD		1	BLACK	BLACK; WHITE ARROW	WHITE	P5 (1 REQ'D)	3.00	3.00
R6-2L	24"	30"	ONE WAY	MUTCD STANDARD		1	WHITE	BLACK	BLACK	P5 (1 REQ'D)	5.00	5.00
R6-2R	24"	30"	ONE WAY	MUTCD STANDARD		1	WHITE	BLACK	BLACK	MNT BTB w/R6-2L	5.00	5.00
R7-1	12"	18"	NO PARKING ANY TIME	MUTCD STANDARD		5	WHITE	RED	RED	P5 (5 REQ'D)	1.50	7.50
R7-1L	12"	18"	NO PARKING ANY TIME	MUTCD STANDARD		2	WHITE	RED	RED	P5 (2 REQ'D)	1.50	3.00
R7-1R	12"	18"	NO PARKING ANY TIME	MUTCD STANDARD		3	WHITE	RED	RED	P5 (3 REQ'D)	1.50	4.50
R7-1L(sp)	18"	24"	NO PARKING EMERGENCY ACCESS R=1.5" 0.375" BORDER 0.375" INSERT	3"C 3"B 3"B 3"B USE R7-1 ARROW	2" 1.5" 1.5" 1.5" 1.25" 2"	1	WHITE	RED	RED	P5 (1 REQ'D)	3.00	3.00
R7-1R(sp)	18"	24"	NO PARKING EMERGENCY ACCESS R=1.5" 0.375" BORDER 0.375" INSERT	3"C 3"B 3"B 3"B USE R7-1 ARROW	2" 1.5" 1.5" 1.5" 2.5" 3"	1	WHITE	RED	RED	P5 (1 REQ'D)	3.00	3.00
R7-5(sp)	12"	18"	TRAIL USE PARKING ONLY	2"C 2"C 2"C 2"C USE R7-5 ARROW	2.25" 1.25" 1.25" 1.25" 1.5" 2.5"	1	WHITE	GREEN	GREEN	P5 (1 REQ'D)	1.50	1.50
R7-5L(sp)	12"	18"	TRAIL USE PARKING ONLY	2"C 2"C 2"C 2"C USE R7-5 ARROW	2.25" 1.25" 1.25" 1.25" 1.5" 2.5"	1	WHITE	GREEN	GREEN	P5 (1 REQ'D)	1.50	1.50
R7-5R(sp)	12"	18"	TRAIL USE PARKING ONLY	2"C 2"C 2"C 2"C USE R7-5 ARROW	2.25" 1.25" 1.25" 1.25" 1.5" 2.5"	1	WHITE	GREEN	GREEN	P5 (1 REQ'D)	1.50	1.50
R7-8	12"	18"	RESERVED PARKING	MUTCD STANDARD		6	WHITE	GREEN TEXT; BLUE & WHITE SYMBOL	GREEN	P5 (6 REQ'D)	1.50	9.00
R7-8p	18"	9"	VAN ACCESSIBLE	MUTCD STANDARD		2	WHITE	GREEN	GREEN	MNT w/R7-8	1.125	2.25
R8-3a	18"	24"	NO PARKING	MUTCD STANDARD		1	WHITE	RED	RED	P5 (1 REQ'D)	3.00	3.00
R12-1	24"	30"	WEIGHT LIMIT 2½ TONS	MUTCD STANDARD		1	WHITE	BLACK	BLACK	MNT w/R5-2	5.00	5.00
W1-1L	18"	18"		MUTCD STANDARD		5	YELLOW	BLACK	BLACK	P5 (5 REQ'D)	2.25	11.25
W1-1R	18"	18"		MUTCD STANDARD		5	YELLOW	BLACK	BLACK	P5 (5 REQ'D)	2.25	11.25
W1-2R	18"	18"		MUTCD STANDARD		1	YELLOW	BLACK	BLACK	P5 (1 REQ'D)	2.25	2.25
W1-5L	18"	18"		MUTCD STANDARD		3	YELLOW	BLACK	BLACK	P5 (3 REQ'D)	2.25	6.75
W1-5R	18"	18"		MUTCD STANDARD		1	YELLOW	BLACK	BLACK	P5 (1 REQ'D)	2.25	2.25
W2-1	18"	18"		MUTCD STANDARD		6	YELLOW	BLACK	BLACK	P5 (6 REQ'D)	2.25	13.50
W2-1	30"	30"		MUTCD STANDARD		2	YELLOW	BLACK	BLACK	P5 (2 REQ'D)	6.25	12.50
W3-1	18"	18"		MUTCD STANDARD		9	YELLOW	BLACK	BLACK	8 ON P5; 1MNT BTB w/W2-1	2.25	20.25
W5-4a	18"	18"	PATH NARROWS	MUTCD STANDARD		2	YELLOW	BLACK	BLACK	P5 (2 REQ'D)	2.25	4.50
W7-5	18"	18"		MUTCD STANDARD		2	YELLOW	BLACK	BLACK	P5 (2 REQ'D)	2.25	4.50
W11-2	30"	30"		MUTCD STANDARD		2	FLOURES-CENT YELLOW	BLACK SYMBOL	BLACK	P5 (2 REQ'D)	6.25	12.50
W11-15	30"	30"		MUTCD STANDARD		33	YELLOW	BLACK SYMBOL	BLACK	20 MNT ON SIGNAL POST	PAY UNDER ITEMS 824.01-824.05	
										13 ON 2-P5	6.25	81.25
W11-15p	24"	18"	TRAIL X-ING	MUTCD STANDARD		33	YELLOW	BLACK	BLACK	20 MNT ON SIGNAL POST	PAY UNDER ITEMS 824.01-824.05	
										13 MNT w/W11-15	3.00	39.00
W14-1	30"	30"	DEAD END	MUTCD STANDARD		1	YELLOW	BLACK SYMBOL	BLACK	P5 (1 REQ'D)	6.25	6.25

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MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	99	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN SUMMARY SHEET

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
W16-7pL	24"	12"		MUTCD STANDARD		11	YELLOW	BLACK SYMBOL	BLACK	10 MNT ON SIGNAL POST 1 MNT w/W11-2	PAY UNDER ITEMS 824.01-824.05 2.00	 2.00
W16-7pR	24"	12"		MUTCD STANDARD		11	YELLOW	BLACK SYMBOL	BLACK	10 MNT ON SIGNAL POST 1 MNT w/W11-2	PAY UNDER ITEMS 824.01-824.05 2.00	 2.00
W16-9p	24"	12"	AHEAD	MUTCD STANDARD		13	YELLOW	BLACK	BLACK	MNT w/W11-15	2.00	26.00
M4-6	12"	6"	END	MUTCD STANDARD		5	GREEN	WHITE	WHITE	MNT w/D11-1	0.50	2.50
M4-14	12"	6"	BEGIN	MUTCD STANDARD		5	GREEN	WHITE	WHITE	MNT w/D11-1	0.50	2.50
M6-1L	12"	9"		MUTCD STANDARD		10	GREEN	WHITE	WHITE	MNT w/D11-1	0.75	7.50
M6-1R	12"	9"		MUTCD STANDARD		7	GREEN	WHITE	WHITE	MNT w/D11-1	0.75	5.25
M6-2R	12"	9"		MUTCD STANDARD		1	GREEN	WHITE	WHITE	MNT w/D11-1	0.75	0.75
M6-3	12"	9"		MUTCD STANDARD		1	GREEN	WHITE	WHITE	MNT w/D11-1	0.75	0.75
M6-4	12"	9"		MUTCD STANDARD		12	GREEN	WHITE	WHITE	MNT w/D11-1	0.75	9.00
D11-1	24"	18"	BIKE ROUTE	MUTCD STANDARD		38	GREEN	WHITE	WHITE	P5 (38 REQ'D)	3.00	114.00
SP-1	30"	24"	Assabet River Rail Trail (R=3.0" 1.0" BORDER)	4"D 4"D 4"D	3" 3" 3" 3"	5	BROWN	WHITE	WHITE	2-P5 (5 REQ'D)	5.00	25.00
SP-2	24"	36"	TRAIL RULES SIGN (REF. SPEC 832.1)			5	WHITE	BLACK	BLACK	MNT w/SP-1	PAY UNDER ITEM 832.1	
I-2-1	30"	18"	Maynard TOWN LINE	MUTCD STANDARD		1	WHITE	RED	RED	P5 (1 REQ'D)	3.75	3.75
I-2-2	24"	18"	Acton TOWN LINE	MUTCD STANDARD		1	WHITE	RED	RED	P5 (1 REQ'D)	3.00	3.00

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
D3-1A (PBS)	VAR.	12"	Winter St	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	1	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	MNT w/D3-1B	PAY UNDER ITEM 874.	
D3-1B (PBS)	VAR.	12"	Great Rd	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	2	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	P5 (2 REQ'D)	PAY UNDER ITEM 874.	
D3-1C (PBS)	VAR.	12"	Mill St	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	1	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	MNT w/D3-1B	PAY UNDER ITEM 874.	
D3-1D (PBS)	VAR.	12"	High St	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	1	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	MNT w/D3-1E	PAY UNDER ITEM 874.	
D3-1E (PBS)	VAR.	12"	Sudbury St	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	3	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	P5 (3 REQ'D)	PAY UNDER ITEM 874.	
D3-1F (PBS)	VAR.	12"	Front St	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	1	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	MNT w/D3-1E	PAY UNDER ITEM 874.	
D3-1G (PBS)	VAR.	12"	Main St	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	1	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	MNT w/D3-1E	PAY UNDER ITEM 874.	
D3-1H (PBS)	VAR.	12"	Railroad St	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	1	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	MNT w/R5-1	PAY UNDER ITEM 874.	
D3-1J (PBS)	VAR.	12"	Summer St	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	1	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	P5 (1 REQ'D)	PAY UNDER ITEM 874.	
D3-1K (PBS)	VAR.	12"	Maple St	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	1	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	MNT w/D3-1J	PAY UNDER ITEM 874.	
D3-1L (PBS)	VAR.	12"	Brown Ave	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	1	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	MNT w/D3-1M	PAY UNDER ITEM 874.	
D3-1M (PBS)	VAR.	12"	Acton St	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	3	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	P5 (3 REQ'D)	PAY UNDER ITEM 874.	
D3-1N (PBS)	VAR.	12"	Rockland Ave	6"C/4.5"C 4.5"C (INCL. TOWN SEAL)	3" 3"	1	GREEN H/I	SILVER/ WHITE H/I	WHITE H/I	MNT w/D3-1M	PAY UNDER ITEM 874.	

NOTES:

1. ALL WARNING, REGULATORY AND ROUTE MARKERS SHALL BE FABRICATED WITH HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING (SEE SECTION M9.30.0) TYPE III OR IV.
2. ALL SIGNS NOTED AS "(R&R)" SHALL BE MOUNTED ON NEW P5 POSTS OR AS OTHERWISE INDICATED.
3. ALL P5 POSTS SHALL BE TELESCOPIC SQUARE TYPE POSTS.
4. QUANTITIES OF SIGNS AND POSTS SHOWN ON THIS SHEET MAY DIFFER FROM THE PAVEMENT MARKING AND SIGNING PLANS. WHERE DIFFERENCES OCCUR, THE PAVEMENT MARKINGS AND SIGNING PLANS SHALL PREVAIL.
5. ALL STOP AND YIELD SIGNS PROPOSED IN THIS CONTRACT ARE SUBJECT TO FIELD INVESTIGATION BY THE DISTRICT OFFICE OF MASSDOT TO JUSTIFY WARRANTS BEFORE INSTALLATION. NUMERICAL LIMITS AND JUSTIFICATION FOR THE LIMITS AND JUSTIFICATION FOR THE SPEED AND ADVISORY EXIT SPEED AND ADVISORY EXIT SPEED SIGNS SHALL BE OBTAINED FROM THE SPEED ZONING UNIT OF THE TRAFFIC DEPARTMENT BEFORE FABRICATION AND/OR ERECTION.

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TRAFFIC MANAGEMENT NOTES

GENERAL

1. ALL TRAFFIC MANAGEMENT AND WORK ZONE TRAFFIC CONTROL MEASURES SHALL CONFORM TO THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), MASSDOT - HIGHWAY DIVISION'S "STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TRAFFIC MANAGEMENT PLANS", THE STANDARD SPECIFICATIONS, AND THE FOLLOWING NOTES.

2. THE TEMPORARY TRAFFIC CONTROL PLANS CONTAINED HEREIN ARE GIVEN AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS FOR THE TYPES OF WORK ANTICIPATED FOR THIS PROJECT. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY CHOOSE TO EMPLOY. WORK ZONE TRAFFIC CONTROL FOR OTHER CONSTRUCTION OPERATIONS OR OTHER TRAFFIC SITUATIONS IF APPLICABLE SHALL BE IN ACCORDANCE WITH THE REFERENCES LISTED IN NOTE NO. 1 AND AS APPROVED OR DIRECTED BY THE ENGINEER.

3. WITH THE EXCEPTION OF THE PERMANENT LANE CLOSURES REQUIRED FOR STAGED CONSTRUCTION, LANE RESTRICTIONS MAY NOT REMAIN OVERNIGHT OR DURING NON-WORKING HOURS. AFTER EACH WORKING DAY, TRAFFIC CONTROL DEVICES THAT ARE NOT REQUIRED SHALL BE MOVED OFF THE ROADWAY OR FULL DEPTH CONSTRUCTION AREA AND PLACED SO AS NOT TO IMPEDE PEDESTRIAN AREAS, ABUTTER ACCESS OR CAUSE CONFUSION TO MOTORISTS. IN CERTAIN CIRCUMSTANCES, AND ONLY WITH THE APPROVAL OF MASSDOT AND THE ENGINEER, LANE RESTRICTIONS MAY REMAIN OVERNIGHT.

4. CONTRACTOR SHALL PROVIDE A SAFE TEMPORARY PEDESTRIAN ACCESS WHERE EXISTING SIDEWALKS OR OTHER PEDESTRIAN AREAS ARE AFFECTED BY CONSTRUCTION WORK. CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.

5. PLACE ALL CONSTRUCTION SIGNING, TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS FOR EACH PHASE PRIOR TO COMMENCEMENT OF CONSTRUCTION.

6. ONE (1) THRU TRAVEL LANE HAVING A MINIMUM WIDTH OF 10'-0" MUST BE PROVIDED FOR BOTH DIRECTIONS (LANE MAY BE SHARED AND DIRECTION OF TRAVEL TO ALTERNATE UNDER POLICE OFFICER OR FLAGGER CONTROL) DURING ALL PHASES OF CONSTRUCTION AS SHOWN ON THE TEMPORARY TRAFFIC CONTROL PLANS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. MINIMUM LANE WIDTH IS MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.

7. WHEN WORK INFRINGES UPON THE TRAVELED WAY, WORK SHALL BE RESTRICTED TO OFF-PEAK HOURS ONLY (NORMALLY 9:00am TO 4:00pm, MONDAY TO FRIDAY). THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF ROAD CLOSURE.

8. TAPER LENGTH FORMULAE FOR CHANNELIZATION DEVICES: ENGLISH UNITS:
   L = WxS FOR SPEED EQUAL TO OR GREATER THAN 45 M.P.H.
   L = WS^2 /60 FOR SPEED EQUAL TO OR LESS THAN 40 M.P.H.
   WHERE: L = MIN. LENGTH OF TAPER, S = POSTED SPEED, W = OFFSET WIDTH.

9. ADVISORY SPEED LIMIT, IF USED, SHALL BE SET IN THE FIELD BY THE ENGINEER. W13-1P PLATES SHALL BE USED WHERE APPROPRIATE.

10. FLASHING ARROW PANEL SHALL BE SET IN "ARROW MODE" WHEN USED FOR ACTUAL LANE CLOSURES ONLY. FOR SHOULDER CLOSURES, BULBS TO BE ILLUMINATED IN A NON-DIRECTIONAL CAUTION CONFIGURATION TO AVOID UNNECESSARY LANE SHIFTS.

11. DISTANCES SHOWN ON THE TEMPORARY TRAFFIC CONTROL PLANS ARE A GUIDE ONLY, AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.

GRADE DIFFERENCES

12. WHERE THERE IS A LONGITUDINAL DIFFERENCE IN ELEVATION BETWEEN EXISTING PAVEMENT AND ADJACENT TRAVEL SURFACE (UNDER REPAIR OR RECONSTRUCTION), THE CONTRACTOR SHALL PATCH A TEMPORARY HMA WEDGE WITH A 12:1 (OR FLATTER) SLOPE FOR SMOOTH TRANSITION. SEE DETAIL, THIS SHEET.

13. CROSS-SECTIONAL GRADE DIFFERENCES IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF REFLECTORIZED DRUMS.

14. CROSS-SECTIONAL GRADE DIFFERENCES IN EXCESS OF 4" DURING NON-WORKING HOURS SHALL BE PROTECTED BY BACKFILLING WITH A WEDGE OF EARTHWORK TO BE COMPACTED AT 4:1 SLOPE AND WILL ALSO REQUIRE DELINEATION BY USE OF DRUMS.

15. A MINIMUM SLOPE OF 4:1 MUST BE MAINTAINED AFTER WORKING HOURS DURING SUBBASE AND BASE COURSE INSTALLATION ALONG EDGE OF THE TRAVELWAY (SEE DETAIL, THIS SHEET). A MAXIMUM SLOPE OF 8:1 MUST BE MAINTAINED ON ALL ABUTTER ACCESS DRIVES AND A MAXIMUM SLOPE OF 12:1 MUST BE MAINTAINED ON ALL SIDEWALKS.

CONSTRUCTION SIGNING

16. ALL CONSTRUCTION SIGNS SHALL BE BLACK LEGEND ON A REFLECTORIZED ORANGE BACKGROUND UNLESS OTHERWISE NOTED.

17. CONSTRUCTION SIGNING SHOWN ON THE ADVANCE SIGNING PLAN SHALL ONLY BE USED WHEN WORK IS BEING DONE WHICH RESTRICTS TRAFFIC.

18. STANDARD ORANGE OR FLUORESCENT RED-ORANGE FLAGS (16"x16" MIN.) MAY BE ATTACHED TWO (2) EACH ON ALL ADVANCE WARNING SIGNS. FLAGS SHALL NOT INTERFERE WITH A CLEAR VIEW OF THE SIGN FACE. IF USED, THE COST FOR THE FLAGS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE SIGNS WITH NO ADDITIONAL PAYMENT.

19. EXISTING GUIDE SIGNS SHALL BE TEMPORARILY RESET AS DIRECTED BY THE ENGINEER.

20. ALL SIGNS, INCLUDING EXISTING, THAT ARE NOT REPRESENTATIVE OF ACTUAL WORK CONDITIONS SHALL BE EITHER COVERED OR REMOVED WHEN NOT APPLICABLE.

21. IF USED, ALL W20-4 AND W20-5 SIGNS SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH DAY UNLESS LANE RESTRICTIONS ARE PERMITTED TO REMAIN OVERNIGHT IN ACCORDANCE WITH NOTE NO. 3 ABOVE.

22. USE W20-7b OR W20-7a SIGNS ONLY WHILE POLICE OR FLAGGERS ARE DIRECTING TRAFFIC. THEY SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH DAY OR WHEN NOT IN USE.

PAVEMENT MARKINGS

23. PAVEMENT MARKINGS WHICH ARE NO LONGER APPLICABLE SHALL BE REMOVED. APPLY TEMPORARY MARKINGS WHERE SHOWN ON THE TEMPORARY TRAFFIC CONTROL PLANS.

24. ON PROJECTS WHERE PAVEMENT OVERLAY IS NOT DESIGNATED, EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROLS SHOULD BE COVERED TEMPORARILY WITH BLACKOUT TAPE, AS DIRECTED BY THE ENGINEER, FOR THE FULL DURATION OF THE PHASE IN PROGRESS. TEMPORARY PAINTED OR REMOVABLE TAPE MARKINGS SHALL BE USED AS NECESSARY FOR ALL PHASES OF CONSTRUCTION.

CHANNNELIZATION

25. THE MAXIMUM SPACING BETWEEN CHANNELIZATION DEVICES (DRUMS OR CONES) SHALL BE APPROXIMATELY EQUAL IN FEET TO THE POSTED SPEED LIMIT.

26. REFLECTORIZED CONES SHALL BE 36" HIGH.

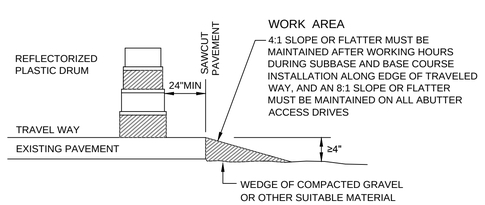
27. PLASTIC DRUMS MUST PASS THE CRITERIA SET FORTH IN NCHRP 350 "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES." IF THEY DO NOT MEET THESE CRITERIA, THEY MUST BE REMOVED FROM THE PROJECT.

28. TEMPORARY IMPACT ATTENUATORS MUST MEET THE PERFORMANCE STANDARDS OF NCHRP 350.

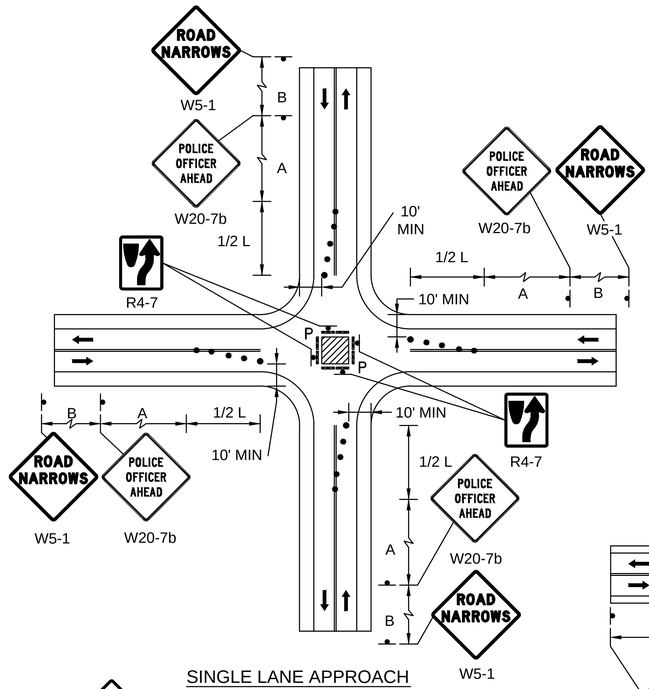
29. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY MUST PASS THE CRITERIA SET FORTH IN NCHRP 350 "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES." IF THEY DO NOT MEET THIS CRITERIA, THEY MUST BE REMOVED FROM THE PROJECT.

TRAFFIC MANAGEMENT LEGEND

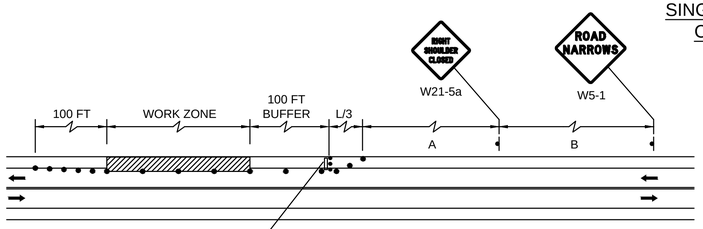
- WORK AREA
- DIRECTION OF TRAVEL
- REFLECTORIZED DRUM OR CONE
- A — REFLECTORIZED DRUM WITH TYPE 'A' FLASHING WARNING LIGHT
- P / — POLICE OFFICER OR FLAGGER CONTROL
- PORTABLE TYPE III BARRICADE (4' WIDE, MIN.)
- FLASHING ARROW BOARD (30"x 60" STD. SIZE WITH 13 LAMPS, MIN.)
- TEMPORARY PRECAST CONCRETE BARRIER WITH TEMPORARY FENCE & WHITE REFLECTORS
- TEMPORARY IMPACT ATTENUATOR
- PAVEMENT MARKINGS TO COVER OR REMOVE (SEE NOTES 23 & 24)
- PORTABLE CHANGEABLE MESSAGE SIGN
- MOVABLE IMPACT ATTENUATOR



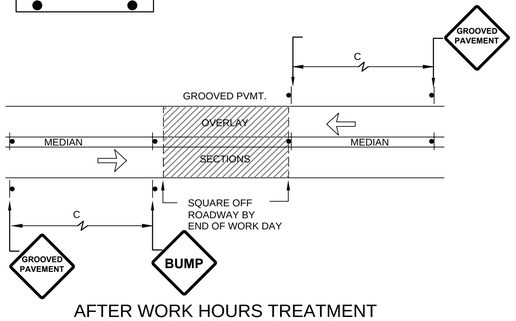
AFTER WORK HOURS TREATMENT FOR LATERAL SLOPING



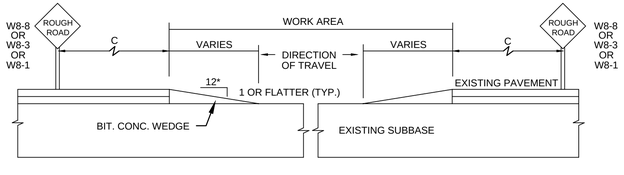
SINGLE LANE APPROACH
CENTER CLOSURE
NOT TO SCALE



TWO LANE ROAD
SHOULDER CLOSED
NOT TO SCALE



AFTER WORK HOURS TREATMENT
FOR AREAS RECEIVING OVERLAY

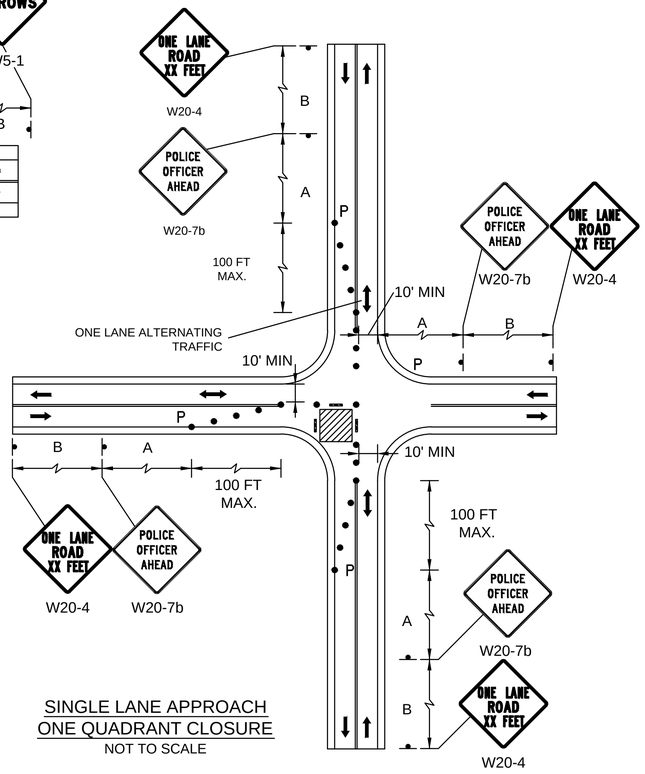


TEMPORARY RAMP

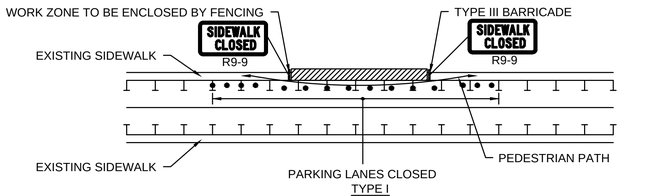
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	100	230
PROJECT FILE NO.	604531		

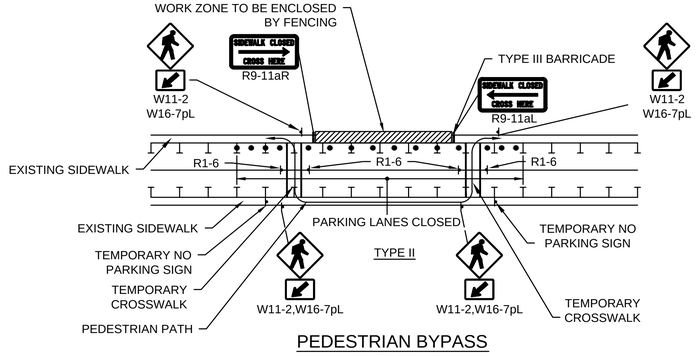
TEMPORARY TRAFFIC CONTROL PLANS



SINGLE LANE APPROACH
ONE QUADRANT CLOSURE
NOT TO SCALE



TYPE I



TYPE II

PEDESTRIAN BYPASS
NOT TO SCALE

NOTES
1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.

2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.

3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.

4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHOULD BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER.

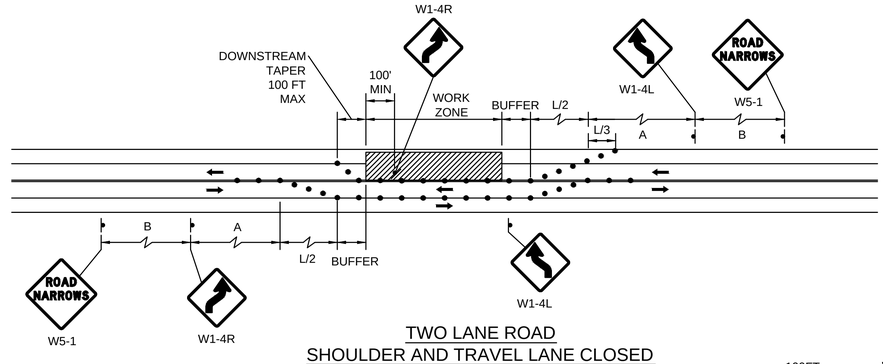
5. BYPASS IS TO BE USED IN CONJUCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.

6. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THIS WALKWAY EXCEEDS 200 FEET THEN A 5 FOOT X 5 FOOT PASSING ZONE IS REQUIRED.

604531_HD(TM).DWG Plotted on 18-Sep-2015 9:30 AM

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES) WIDTH	HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	LEGEND	BORDER	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
R1-6	12	36	STATE LAW / TO / STOP WHEN FLASHING	MASSDOT STANDARD			4	MASSDOT STANDARD			3.00	12.00
R2-10a	36	24	WORK ZONE SPEEDING FINES DOUBLED	MASSDOT STANDARD			26	MASSDOT STANDARD			6.00	156.00
R2-10e	36	48	END ROAD WORK DOUBLE FINES END	MASSDOT STANDARD			29	MASSDOT STANDARD			12.00	228.00
R4-7	30	30					4				6.25	25.00
R9-9	24	12	SIDEWALK CLOSED				2				2.00	4.00
R9-11aL	24	12	SIDEWALK CLOSED CROSS HERE				1				2.00	2.00
R9-11aR	24	12	SIDEWALK CLOSED CROSS HERE				1				2.00	2.00
R11-2f	48	30	PATH CLOSED				2				10.00	20.00
W1-4L	36	36					2				9.00	18.00
W1-4R	36	36					2				9.00	18.00
W5-1	36	36	ROAD NARROWS	MUTCD STANDARD			6	MUTCD STANDARD			9.00	54.00
W8-1	36	36	BUMP				4				9.00	36.00
W8-3	36	36	PAVEMENT ENDS				2				9.00	18.00
W8-8	36	36	ROUGH ROAD				2				9.00	18.00
W8-15	36	36	GROOVED PAVEMENT				2				9.00	18.00
W11-2	30	30					4				6.25	25.00
W13-1P	24	30	XX M.P.H.				2				5.00	10.00
W16-7pL	24	12					4				2.00	8.00
W20-1	36	36	ROAD WORK AHEAD				30				9.00	270.00
W20-4	36	36	ONE LANE ROAD XX FT				4				9.00	36.00



TWO LANE ROAD
SHOULDER AND TRAVEL LANE CLOSED
NOT TO SCALE

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

Based on: Table 6C-1 MUTCD latest edition

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

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

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTCP SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (i.e. THE W20-1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT.

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

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

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

SIGN SPACING MAY NEED TO BE INCREASED IF ADDITIONAL SIGNS ARE REQUIRED PER THE DETAIL/TYPICAL SETUP FIGURES.

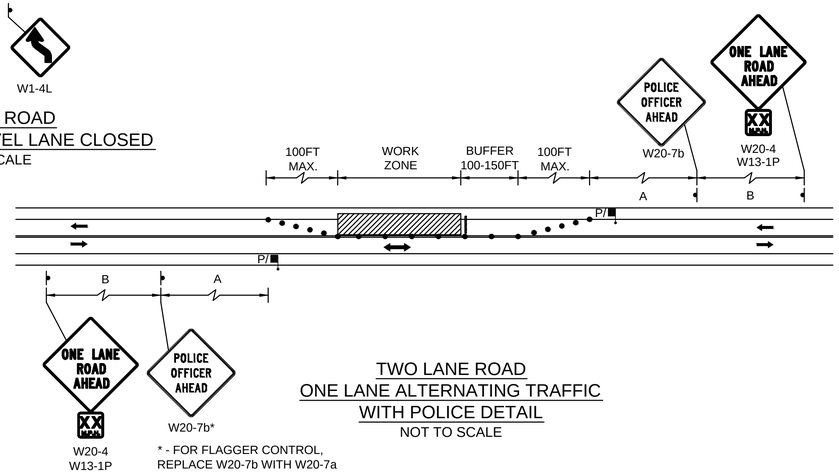
BUFFER SPACING	
SPEED* (MPH)	DISTANCE (FT)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

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

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	101	230
PROJECT FILE NO.	604531		

TEMPORARY TRAFFIC CONTROL PLANS



* - FOR FLAGGER CONTROL, REPLACE W20-7b WITH W20-7a

TWO LANE ROAD
ONE LANE ALTERNATING TRAFFIC
WITH POLICE DETAIL
NOT TO SCALE

TRAFFIC SIGN SUMMARY

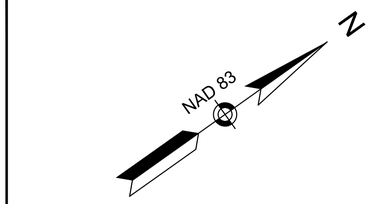
IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES) WIDTH	HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	LEGEND	BORDER	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
W20-7a	36"	36"	FLAGGER	MUTCD STANDARD			2	MUTCD STANDARD			9.00	18.00
W20-7b	36	36	POLICE OFFICER AHEAD				4				9.00	36.00
W21-5a	36	36	RIGHT SHOULDER CLOSED				1				9.00	9.00
M4-8a	24	18	END DETOUR				2				3.00	6.00
M4-9b	30	24	DETOUR				3				5.00	15.00
M4-9bL	30	24	DETOUR				6				5.00	35.00
M4-9bR	30	24	DETOUR				6				5.00	35.00

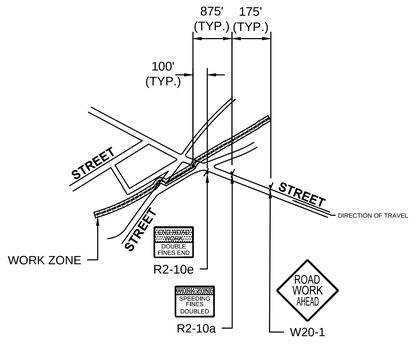
604531_HD(TM).DWG Plotted on 18-Sep-2015 9:30 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

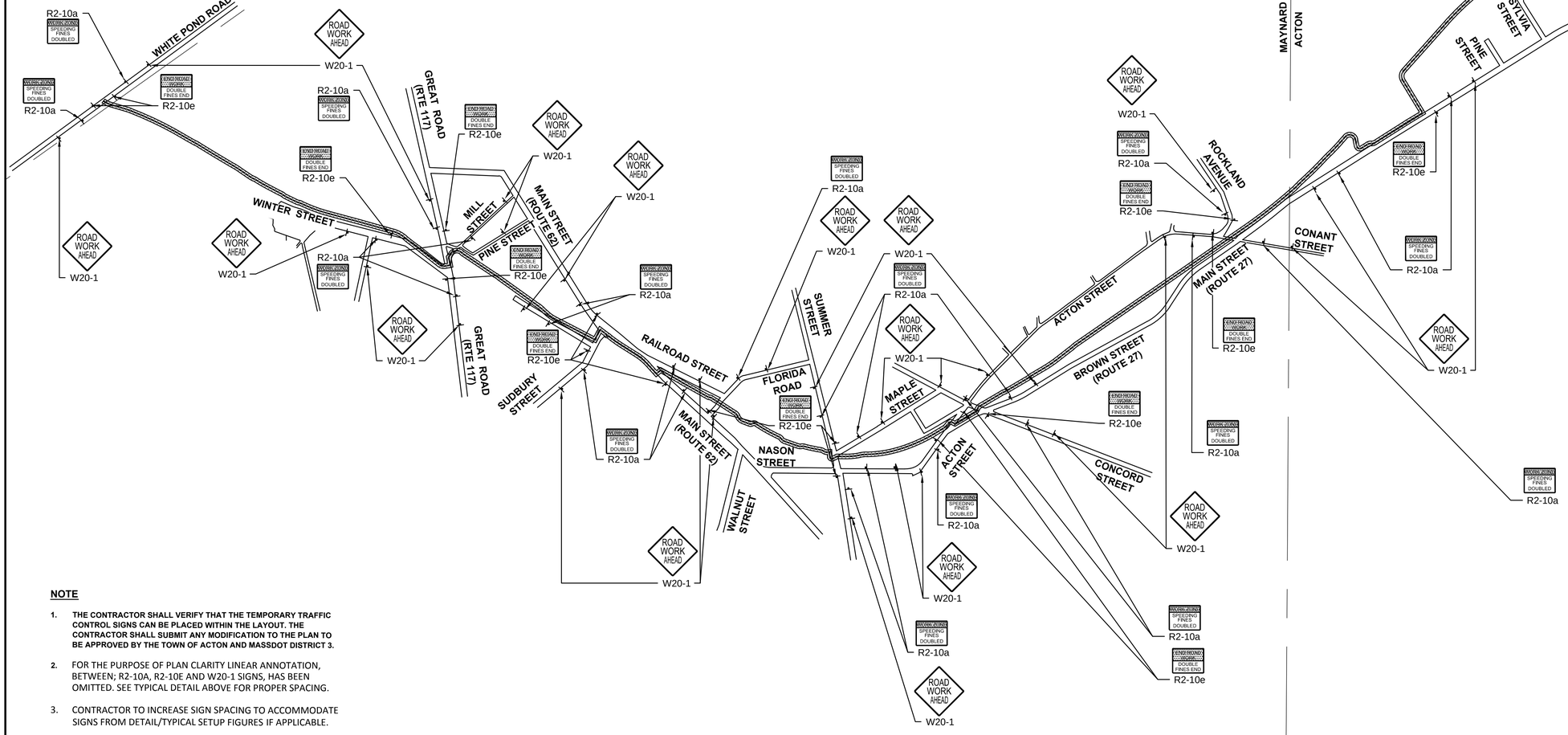
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	102	230
PROJECT FILE NO.	604531		

TEMPORARY TRAFFIC CONTROL PLANS





TYPICAL ADVANCED WARNING SIGN SPACING
NOT TO SCALE



ADVANCE WARNING SIGNING PLAN
NOT TO SCALE

NOTE

1. **THE CONTRACTOR SHALL VERIFY THAT THE TEMPORARY TRAFFIC CONTROL SIGNS CAN BE PLACED WITHIN THE LAYOUT. THE CONTRACTOR SHALL SUBMIT ANY MODIFICATION TO THE PLAN TO BE APPROVED BY THE TOWN OF ACTON AND MASSDOT DISTRICT 3.**
2. FOR THE PURPOSE OF PLAN CLARITY LINEAR ANNOTATION, BETWEEN; R2-10A, R2-10E AND W20-1 SIGNS, HAS BEEN OMITTED. SEE TYPICAL DETAIL ABOVE FOR PROPER SPACING.
3. CONTRACTOR TO INCREASE SIGN SPACING TO ACCOMMODATE SIGNS FROM DETAIL/TYPICAL SETUP FIGURES IF APPLICABLE.

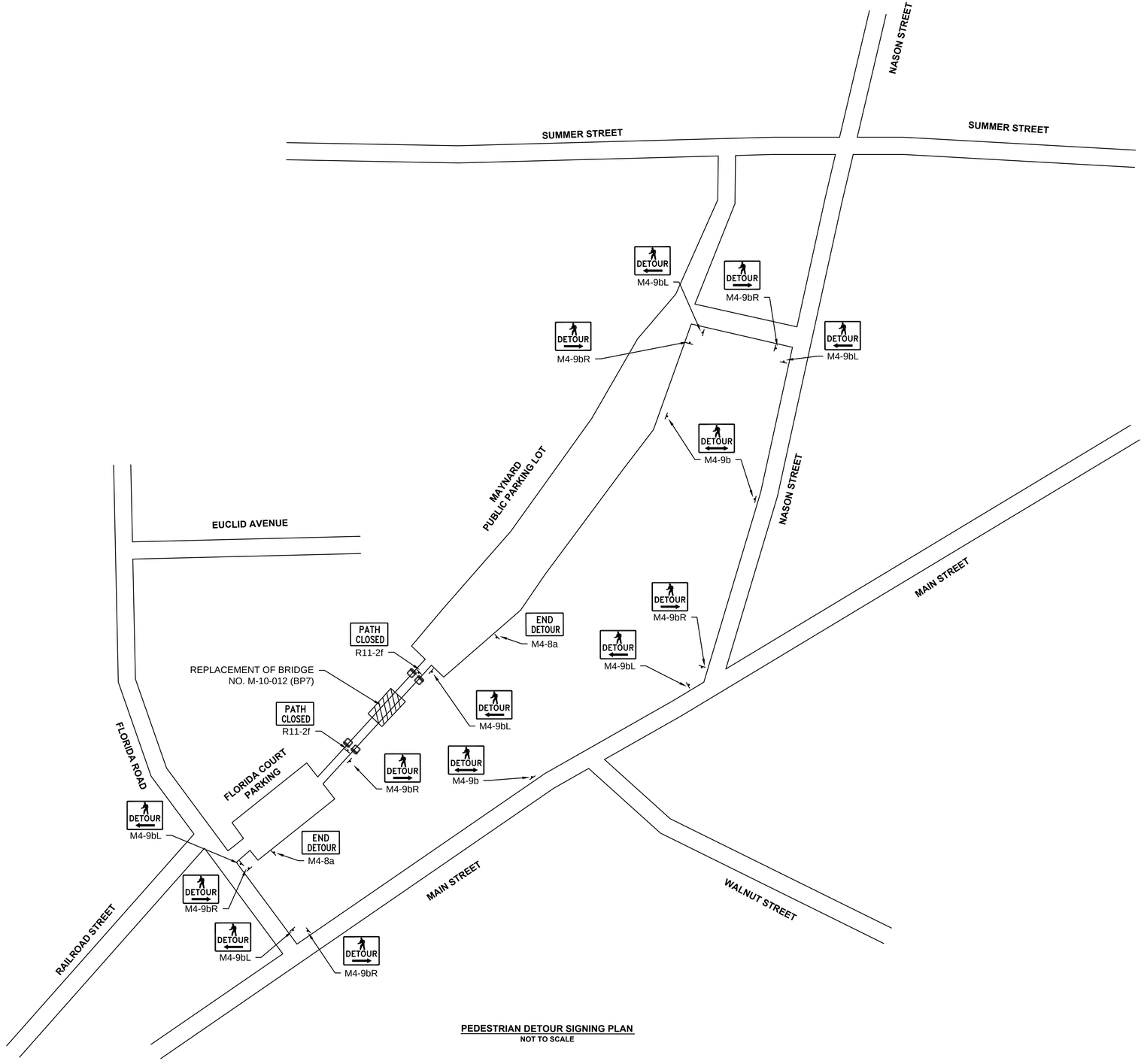
604531_HD(TM).DWG Plotted on 18-Sep-2015 9:31 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

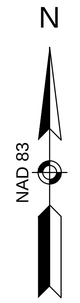
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	103	230
PROJECT FILE NO.	604531		

TEMPORARY TRAFFIC CONTROL PLANS

604531_HD(TM).DWG Plotted on 18-Sep-2015 9:31 AM



PEDESTRIAN DETOUR SIGNING PLAN
NOT TO SCALE



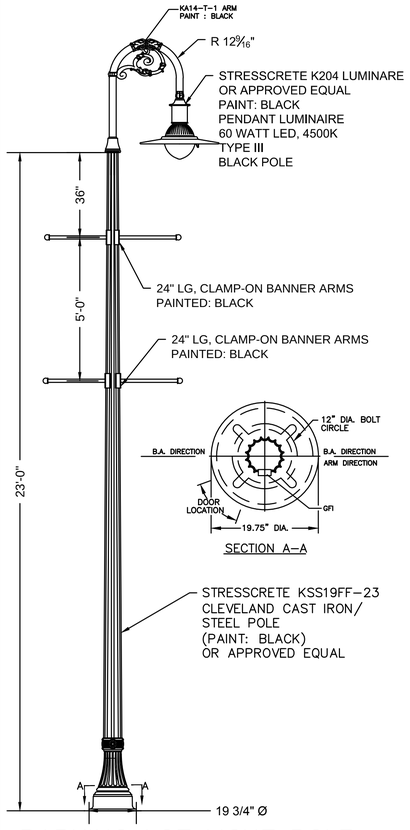
NOTE

1. THE CONTRACTOR SHALL VERIFY THAT THE TEMPORARY TRAFFIC CONTROL SIGNS CAN BE PLACED WITHIN THE LAYOUT. THE CONTRACTOR SHALL SUBMIT ANY MODIFICATION TO THE PLAN TO BE APPROVED BY THE TOWN OF ACTON AND MASSDOT DISTRICT 3.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	104	230
PROJECT FILE NO.	604531		

LIGHTING DETAILS

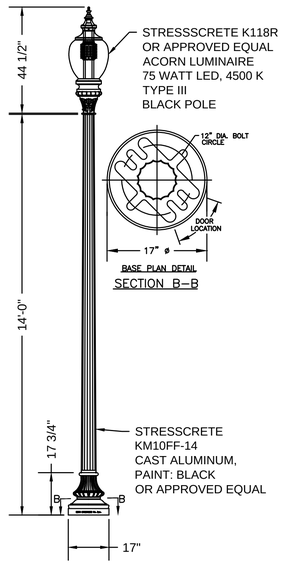
604531_HDL(TD).DWG Plotted on 18-Sep-2015 9:31 AM



PARKING LOT LIGHT POLE
N.T.S.

ELECTRICAL INSTALLATION NOTES:

1. THIS DRAWING IS FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS, DEVICES, MATERIALS AND EQUIPMENT PRIOR TO MAKING ANY MODIFICATIONS OR ADDITIONS.
2. ALL MATERIALS FURNISHED UNDER THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS OF ANSI, NEMA, OSHA, UL NFPA-70, AND THE MASS ELECTRICAL CODE WITH REGARDS TO MATERIAL, DESIGN, CONSTRUCTION AND TESTING.
3. CONTRACTOR SHALL NOTIFY DIG SAFE PRIOR TO ANY EXCAVATION.
4. CONTRACTOR SHALL INSPECT SITE AND FOLLOW ALL DIG SAFE MARKINGS. CONTRACTOR SHALL NOTIFY ALL UTILITIES PRIOR TO EXCAVATION.
5. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO ORIGINAL CONDITIONS.
6. CONTRACTOR TO PERFORM ALL WORK AS SHOWN.

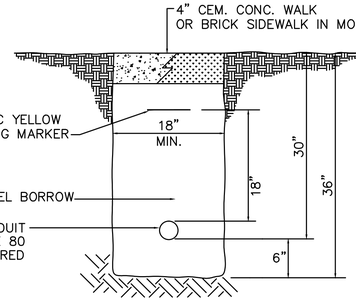


PEDESTRIAN LIGHT POLE
N.T.S.

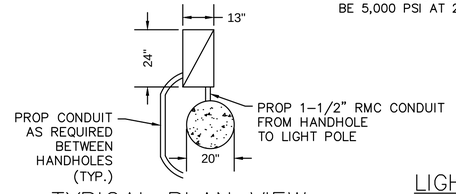
MAYNARD FIXTURE SCHEDULE				
luminaire #	ID	CKT	VOLTAGE	WATTAGE
P1	PED	1m	240	60
W2	PATH	2m	240	TBD
W3	PATH	1m	240	TBD
P4	PED	2m	240	60

ACTON FIXTURE SCHEDULE				
luminaire #	ID	CKT	VOLTAGE	WATTAGE
L1	LOT	1a	240	60
L2	LOT	1a	240	60
L3	LOT	1a	240	60
L4	LOT	1a	240	60
L5	LOT	2a	240	60
L6	LOT	2a	240	60
L7	LOT	2a	240	60
L8	LOT	2a	240	60

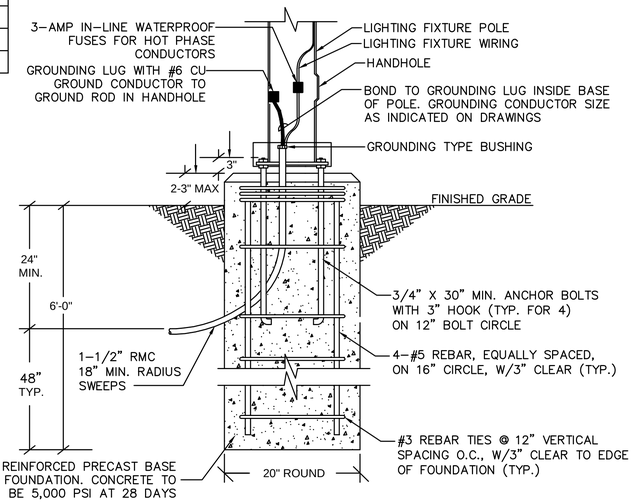
LIGHTING FIXTURE SCHEDULE						
ID	DESCRIPTION	LAMP	TYPE IES	WATTAGE	TEMP	POLE HEIGHT (FT)
W	WALLPACK PER CONTRACTOR. SEE SPECIFICATIONS. ITEM 812.994	LED, 240 VOLT	-		4200 (+/-)	-
P	DECORATIVE ACORN PEDESTRIAN LUMINAIRE W/ POLE STRESSCRETE K118R & KM10FF-14 OR APPROVED EQUAL	75W, LED, 240 VOLT	III	75	4500	14
L	DECORATIVE AREA PENDANT LUMINAIRE W/ POLE STRESSCRETE 204 & KSS19FF23 OR APPROVED EQUAL	60W, LED, 240VOLT	III	60	4500	23



TYPICAL STREET LIGHT CONDUIT TRENCH
N.T.S.



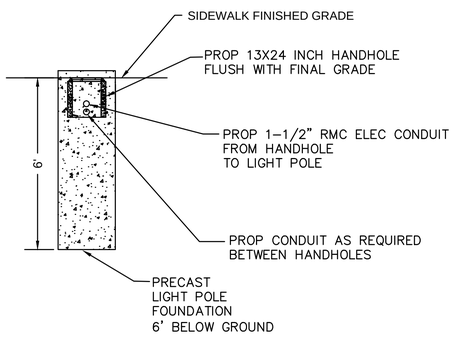
TYPICAL PLAN VIEW
PULLBOX AND FOUNDATION
FOR LIGHTING
N.T.S.



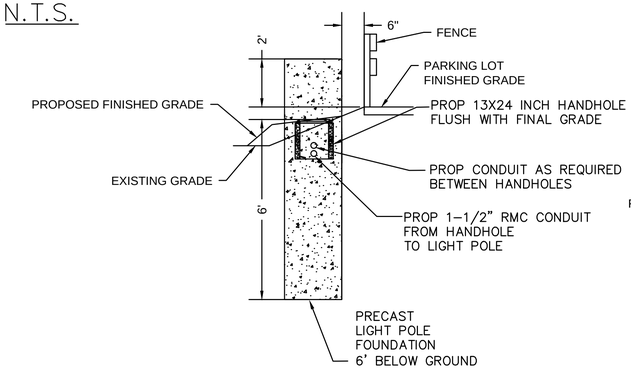
LIGHT POLE FOUNDATION NOTES:

1. BOLT PATTERN SHOWN IS TYPICAL AND NOT FOR CONSTRUCTION CONTRACTOR TO PROVIDE BOLT PATTERN AND ANCHOR BOLT DETAILS BASED ON SELECTED MANUFACTURER.
2. PROVIDE REBAR DETAIL FROM PRECAST CONCRETE VENDOR FOR APPROVAL.
3. CONDUIT LOCATIONS SHOWN ARE TYPICAL.

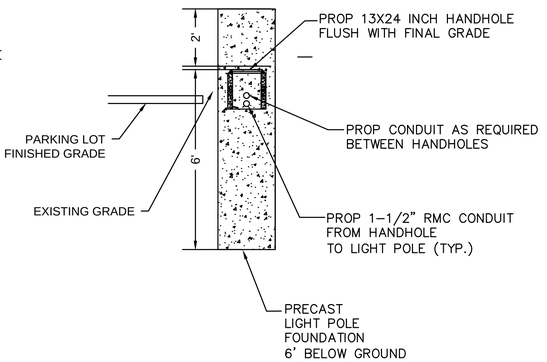
LIGHT POLE FOUNDATION DETAIL
N.T.S.



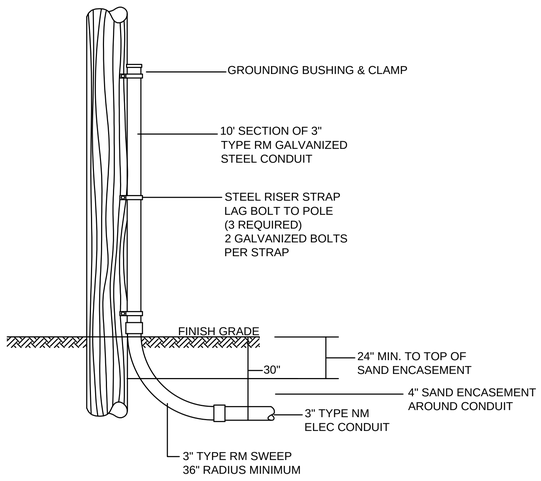
LEVEL GROUND
FOUNDATION AND PULLBOX
N.T.S.



SLOPE BEHIND FENCE
FOUNDATION AND PULLBOX
N.T.S.



SLOPE WITHOUT FENCE
FOUNDATION AND PULLBOX
N.T.S.



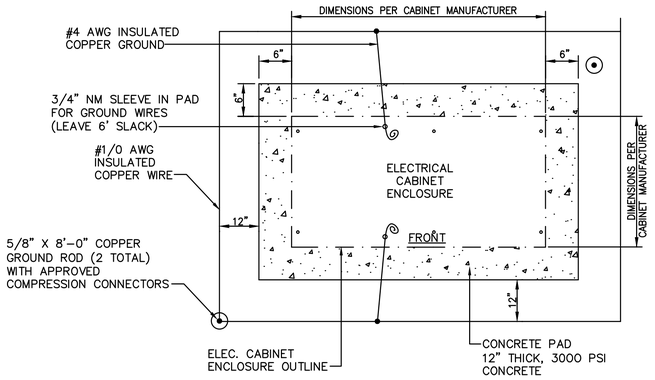
TYPICAL UTILITY
RISER POLE DETAIL
N.T.S.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

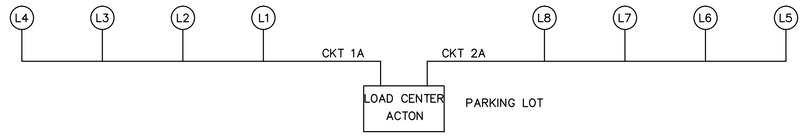
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	105	230
PROJECT FILE NO.	604531		

LIGHTING DETAILS

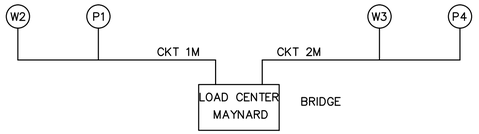
604531_HDLTD.DWG Plotted on 18-Sep-2015 9:31 AM



ELECTRICAL CABINET FOUNDATION PLAN
N.T.S.

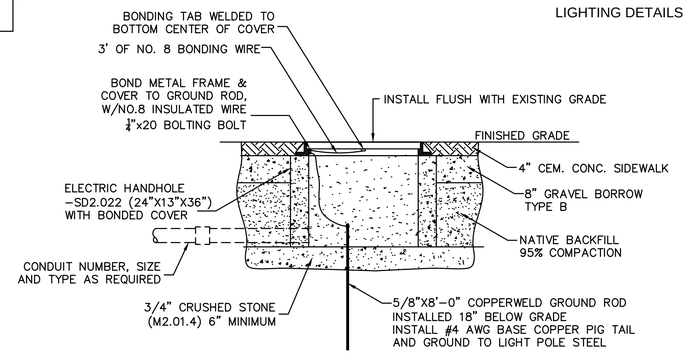


LIGHT CIRCUIT WIRED AT 240V, 1 PHASE



LIGHT CIRCUIT WIRED AT 240V, 1 PHASE

SINGLE LINE CIRCUIT DIAGRAMS
N.T.S.



HANDHOLE INSTALLATION NOTES:

1. HANDHOLE ORIENTATION TO BE SUCH THAT ALL SUPPLY DUCTS ENTER ON SAME SHORT SIDE.
2. SIZE AND NUMBER OF CONDUITS AS REQUIRED.
3. CONDUIT LOCATIONS SHOWN ARE TYPICAL.
4. ALL HANDHOLES SHALL BE LOCATED OUTSIDE OF THE PROPOSED WALKS AND SHARED USE PATH.

INSTALLATION DETAIL
ELECTRIC HANDHOLE
N.T.S.

MAYNARD DISTRIBUTION PANEL SCHEDULE

PHASE: 1 WIRES: 3 VOLTAGE: 120/240V MAINS: 200A MCB

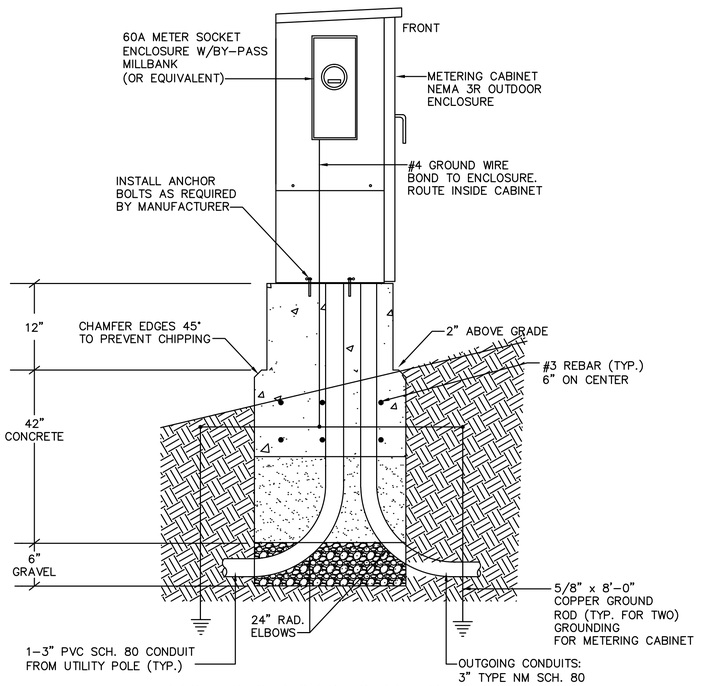
CIRCUIT	BREAKER FRAME	BREAKER POLES(N-NEUTRAL)	BREAKER TRIP	DESCRIPTION OF LOAD	CABLE	CONDUIT
M	100	2P	60	MAIN CIRCUIT BREAKER	3W#6AWG & #6 GND	(1) 3"NM SCH80
1	20	2P	15	LIGHTING CKT A	2W#6AWG & #6 GND	(1) 1-1/2"NM SCH80
2	20	2P	15	LIGHTING CKT B	2W#6AWG & #6 GND	(1) 1-1/2"NM SCH80
3	20	1P	20	RECEPTACLE IN CABINET	2W#12AWG & #12 GND	(1) 3/4" EMT
4	20	1P	20	ON/OFF/AUTO LIGHTING CONTACTOR	2W#12AWG & #12 GND	(1) 3/4" EMT
5	20	1P	20	TIMECLOCK 120VAC POWER	2W#12AWG & #12 GND	(1) 3/4" EMT
6						
7						
8						

ACTON DISTRIBUTION PANEL SCHEDULE

PHASE: 1 WIRES: 3 VOLTAGE: 120/240V MAINS: 200A MCB

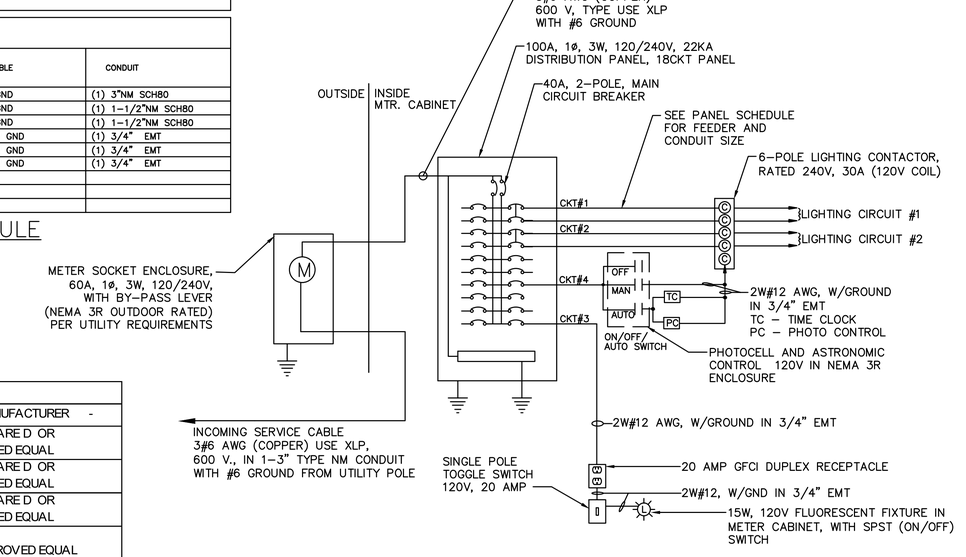
CIRCUIT	BREAKER FRAME	BREAKER POLES(N-NEUTRAL)	BREAKER TRIP	DESCRIPTION OF LOAD	CABLE	CONDUIT
M	100	2P	60	MAIN CIRCUIT BREAKER	3W#6AWG & #6 GND	(1) 3"NM SCH80
1	20	2P	15	LIGHTING CKT A	2W#6AWG & #6 GND	(1) 1-1/2"NM SCH80
2	20	2P	15	LIGHTING CKT B	2W#6AWG & #6 GND	(1) 1-1/2"NM SCH80
3	20	1P	20	RECEPTACLE IN CABINET	2W#12AWG & #12 GND	(1) 3/4" EMT
4	20	1P	20	ON/OFF/AUTO LIGHTING CONTACTOR	2W#12AWG & #12 GND	(1) 3/4" EMT
5	20	1P	20	TIMECLOCK 120VAC POWER	2W#12AWG & #12 GND	(1) 3/4" EMT
6						
7						
8						

ELECTRICAL PANEL SCHEDULE



LIGHTING LOAD CENTER DETAIL
SECTION A-A
N.T.S.

MAYNARD AND ACTON ELECTRICAL EQUIPMENT SCHEDULE		
ITEM	DESCRIPTION	MANUFACTURER -
METER SOCKET 120/240V	1 PHASE 3 WIRE, 120/240V, 60 AMP W/BY-PASS IN NEMA 3R ENCLOSURE	GE, SQUARE D OR APPROVED EQUAL
LIGHTING CONTACTOR 600 VOLT, 6 POLE, 30 AMP	6 POLE, 240V, 30 AMP, 120V COIL, FRAME IN NEMA 3R ENCLOSURE	GE, SQUARE D OR APPROVED EQUAL
MAIN 120/240V PANELBOARD	1 PHASE, 3 WIRE, 100 AF, 40 AT, 18 POLES IN NEMA 3R ENCLOSURE	GE, SQUARE D OR APPROVED EQUAL
ASTRONOMICAL TIMER	PHOTOCELL AND ASTRONOMIC CONTROL, 120V, 1 PHASE 3 WIRE IN NEMA 3R ENCLOSURE	TORK OR APPROVED EQUAL
20 AMP DUPLEX CONVENIENCE RECEPTACLE	120 VOLT 20 AMP, GFCI DUPLEX RECEPTACLE	HUBBLE GFST20I OR APPROVED EQUAL
LIGHT SWITCH	120 VOLT 20 AMP, SINGLE POLE TOGGLE SWITCH	HUBBLE SNAP 120INA OR APPROVED EQUAL
FLUORESCENT LIGHT	15W, 120V FLUORESCENT IN SIDE CABINET	GE, PHILLIPS OR APPROVED EQUAL



LIGHTING LOAD CENTER
ELECTRICAL RISER DETAIL
N.T.S.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	106	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
AA	3	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE	AUTUMN BRILLIANCE SERVICEBERRY	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
CC	4	CERCIS CANADENSIS	EASTERN REDBUD	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		EVERGREEN TREES		
PS	3	PINUS STROBUS	EASTERN WHITE PINE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND

NAD 83

STOW
MAYNARD

COUNTY LAYOUT

N/F
ALAN DIPIETRO
& BETH DIPIETRO
42782/513
4 RIVERSIDE PARK

N/F
MICHAEL RASKIN
& MELISSA RASKIN
239727/1447441
12 RIVERSIDE PARK

N/F
BERNARD DONAHUE &
MARGUERITE DONAHUE
50422/6
14 RIVERSIDE PARK

WHITE POND ROAD
(PUBLIC)

EOP

EOP

GRAVEL

STONE WALL

WOODS

PROP. CONST. ℄
& PGL

PT +69.74

PC +10.79

PCC +51.27

PRC +72.84

PRC +85.27

PRC +17.51

BEGIN PROJECT
STA. 0+25.00
MEET EXISTING
N2978895.6010
E663086.3474

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET 107

N/F
TOWN OF MAYNARD
39715/66
WINTER STREET

N/F
ASSABET RIVER NATIONAL WILDLIFE REFUGE
DEPT OF THE INTERIOR – US FISH & WILDLIFE
12780/121

N/F
DEPARTMENT OF ENVIROMENTAL MANAGEMENT
OFFICE OF THE COMISSIONER
RIVERSIDE STREET

GRAVEL DRIVEWAY

N/F
FRANCES C DENESIUK REVOCABLE TRUST
FRANCES C DENESIUK – TRUSTEE
50081/61
18 WINTER STREET

0 20 50 100
SCALE: 1" = 20'

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
2. FINAL LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLANTING.
3. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME & SIZE.
4. ALL PLANTS WILL BE MULCHED PER THE PLANTING SPECIFICATIONS AND DETAILS. PLANTING DETAILS AND SPECIAL PROVISIONS.
5. ALL DISTURBED AREAS WILL BE LOAMED AND SEEDED UNLESS NOTED OTHERWISE.

PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:32 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

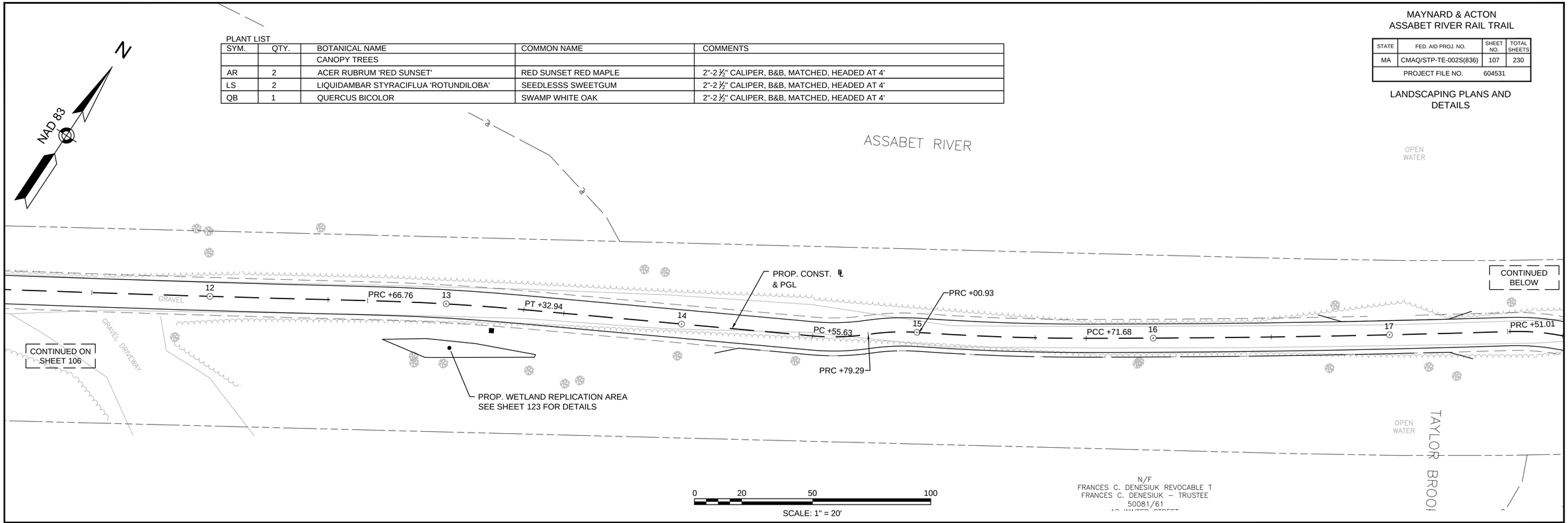
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	107	230
PROJECT FILE NO.	604531		

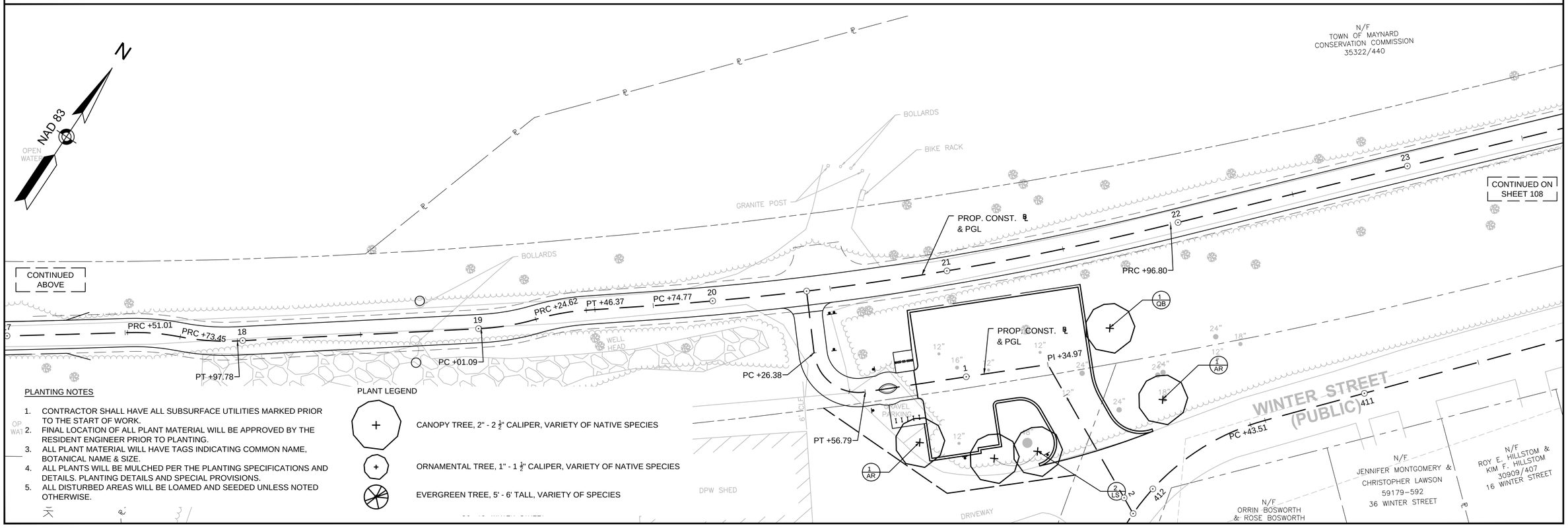
LANDSCAPING PLANS AND DETAILS

Plotted on 18-Sep-2015 9:32 AM
604531_HD(LD).DWG

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		CANOPY TREES		
AR	2	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
LS	2	LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA'	SEEDLESSS SWEETGUM	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
QB	1	QUERCUS BICOLOR	SWAMP WHITE OAK	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'





PLANTING NOTES

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PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

NOTE: PLANTINGS ARE NOT PROPOSED IN THE AREA COVERED BY THIS SHEET

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	108	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:32 AM

N/F
TOWN OF MAYNARD
CONSERVATION COMMISSION
35322/440

NAD 83

PROP. CONST. ℄ & PGL

CANAL

GRAVEL

23 24 25 26 27 28 29

PT +77.55

PCC +79.21

CONTINUED ON SHEET 107

N/F
TOWN OF MAYNARD
39715/66

1921 COUNTY LAYOUT

CONTINUED BELOW

WINTER STREET (PUBLIC)

405 406 407 408 409 410

PT +81.48

N/F
NICHOLAS T. GAYESKI &
CELINA D. GAYESKI
60717-591

N/F
FREDERICK J. BROOKS
& NANCY W. BROOKS
33051/559
11 WHITE AVENUE

9 WINTER STREET
GARY URQUHART
& SHARON BETH URQUHART
25036/064

N/F
JOSHUA MILLER
46571/544
13 WINTER STREET

N/F
RONALD B. PEKKALA
REGISTERED LAND
CERT#0200468
DOC#958569

N/F
THOMAS PHELAN &
IRENE F. PHELAN

N/F
ROY E. HILLSTOM &

SHERIDAN AVENUE (PUBLIC)

0 20 50 100
SCALE: 1" = 20'

N/F
MELISSA GOPNIK
49676/90
71-73 GREAT ROAD

N/F
CHRISTIAN FISHER AND
MICHELE FISHER
48071/179
79-81 GREAT ROAD

N/F
MAYNARD INDUSTRIES, INC.

N/F
AS CLOCK TOWER OWNER, LLC
BK/PG 65267/358

PROP. TEMP. EASEMENT (TYP.)

PROP. PERM. EASEMENT (TYP.)

PROP. CONST. ℄ & PGL

CONTINUED ABOVE

PT +77.55 29

30 31 32 33

PT +12.28

PC +96.06

PC +52.17

404 403 402

PT +81.48

PC +81.26

WINTER STREET (PUBLIC)

1921 COUNTY LAYOUT

I(A)=179.21
I(B)=179.93

I(A)=179.51
I(B)=179.21

GREAT ROAD (RTE 117) (PUBLIC)

108 109 110

PC +89.04

PI +52.66

PI +80.19

PI +08.16

PC +31.10

PC +10.07

PI +18.97

PROP. TEMP. EASEMENT (TYP.)

N/F
JOHN P. MONCOUSKY &
CHERYL MONCOUSKY
21122/332
48 MILL STREET

CONTINUED ON SHEET 109

N/F
DONNA MARTELL &
GREGORY FLANIGAN
50662/293
50 MILL STREET

I(A)=181.55
I(B)=181.85

I=185.49

N/F
AS CLOCK TOWER OWNER, LLC
BK/PG 65267/358

N/F
KATHLEEN K. FITZGERALD
62843/413
94 GREAT ROAD

N/F
WOUTER LEEUWIS &
RACHAEL G FERRIS
41273/061
1 WINTER STREET

N/F
ROGER S. MURRAY
& KATHLEEN N. MURRAY
10474/246
3 WHITE AVE

BK/PG 1124/108

CONC. WALK

GRAN. CURB

EOP

MB

DRIVE

STONE PILE

BUSH

WOOD FENCE

PLANTING NOTES

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5. ALL DISTURBED AREAS WILL BE LOAMED AND SEEDED UNLESS NOTED OTHERWISE.

PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

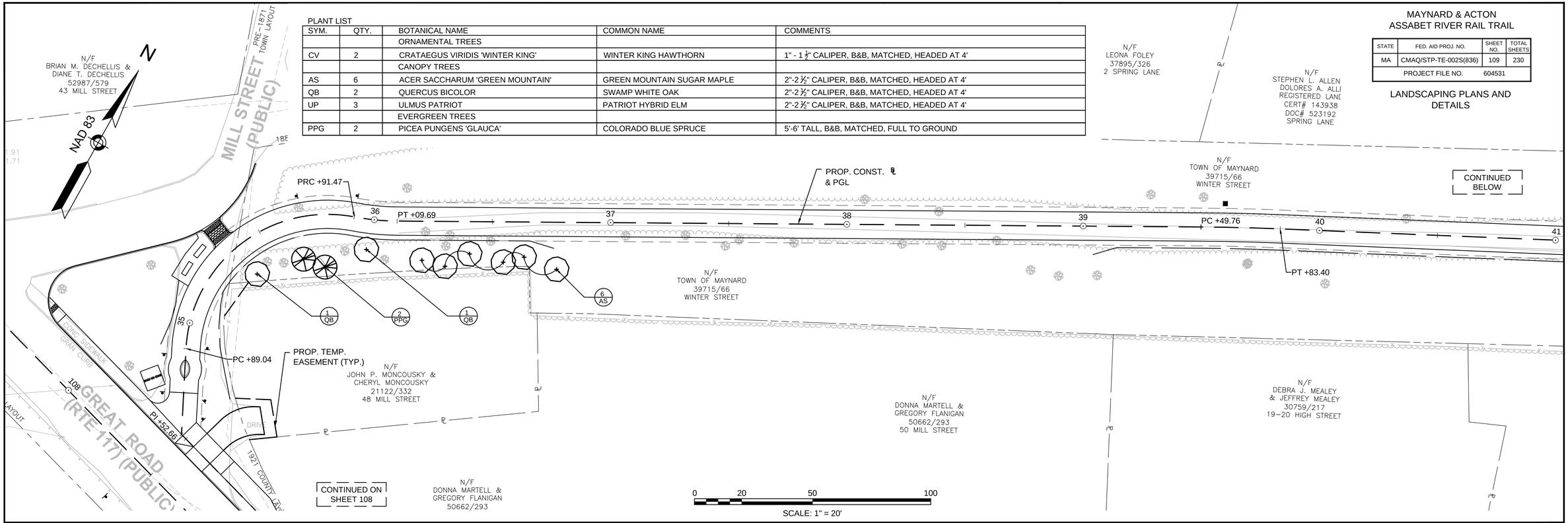
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

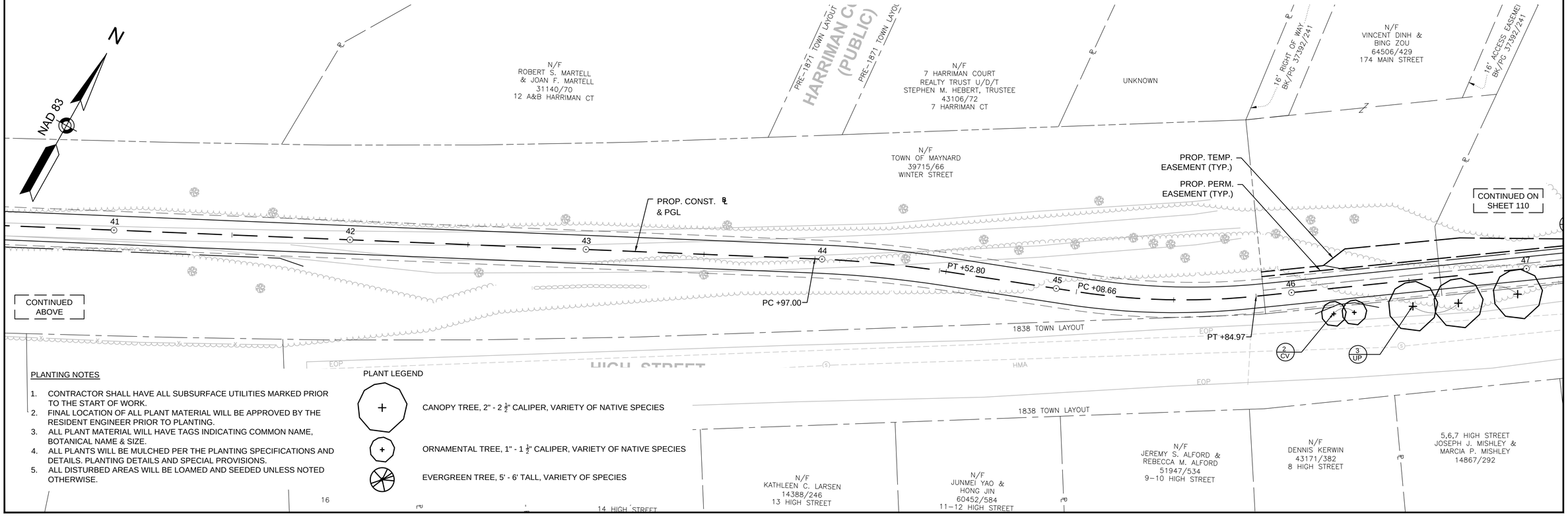
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	109	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
CV	2	CRATAEGUS VIRIDIS 'WINTER KING'	WINTER KING HAWTHORN	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		CANOPY TREES		
AS	6	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
QB	2	QUERCUS BICOLOR	SWAMP WHITE OAK	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
UP	3	ULMUS PATRIOT	PATRIOT HYBRID ELM	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		EVERGREEN TREES		
PPG	2	PICEA PUNGENS 'GLAUCA'	COLORADO BLUE SPRUCE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND





PLANTING NOTES

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PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:32 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	110	230
PROJECT FILE NO.	604531		

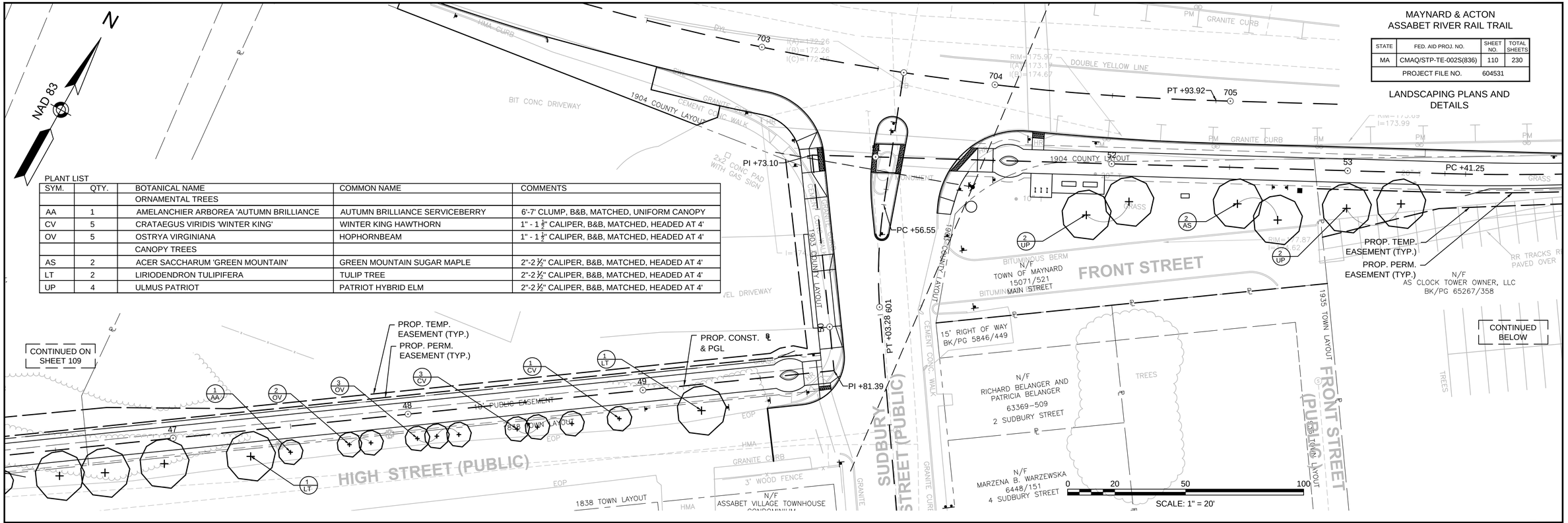
LANDSCAPING PLANS AND DETAILS

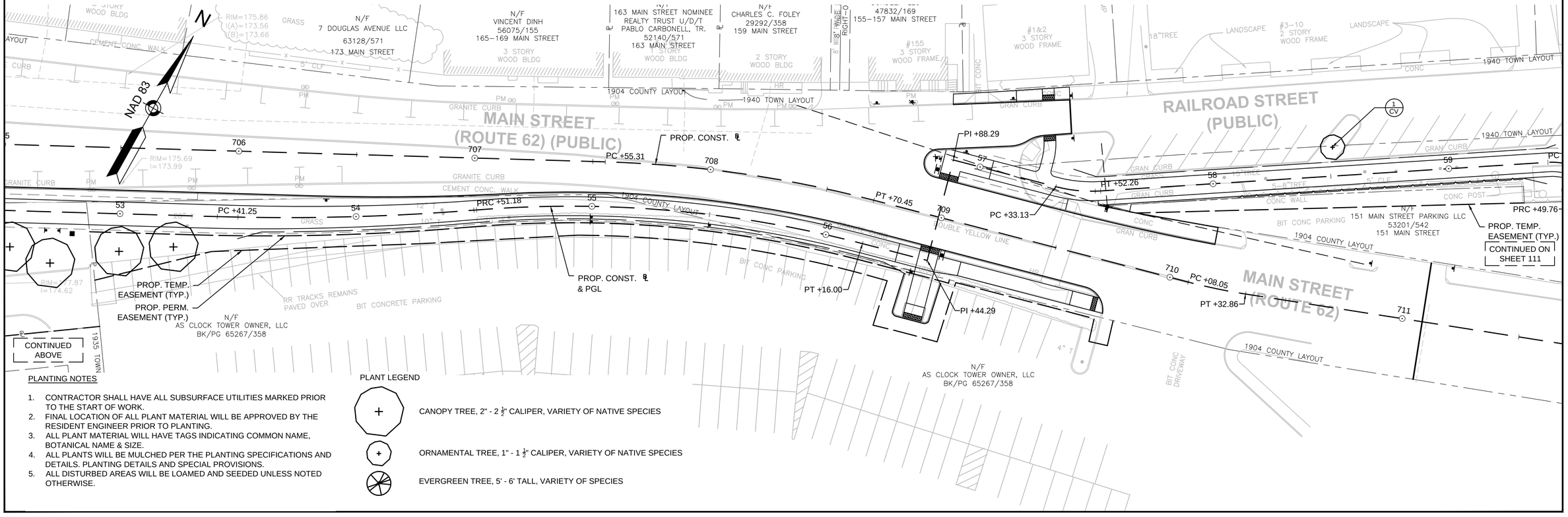
604531_HD(LD).DWG Plotted on 18-Sep-2015 9:33 AM

NAD 83

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
AA	1	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE	AUTUMN BRILLIANCE SERVICEBERRY	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
CV	5	CRATAEGUS VIRIDIS 'WINTER KING'	WINTER KING HAWTHORN	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
OV	5	OSTRYA VIRGINIANA	HOPHORNBEAM	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		CANOPY TREES		
AS	2	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
LT	2	LIRIODENDRON TULIPIFERA	TULIP TREE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
UP	4	ULMUS PATRIOT	PATRIOT HYBRID ELM	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'





PLANTING NOTES

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PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	111	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

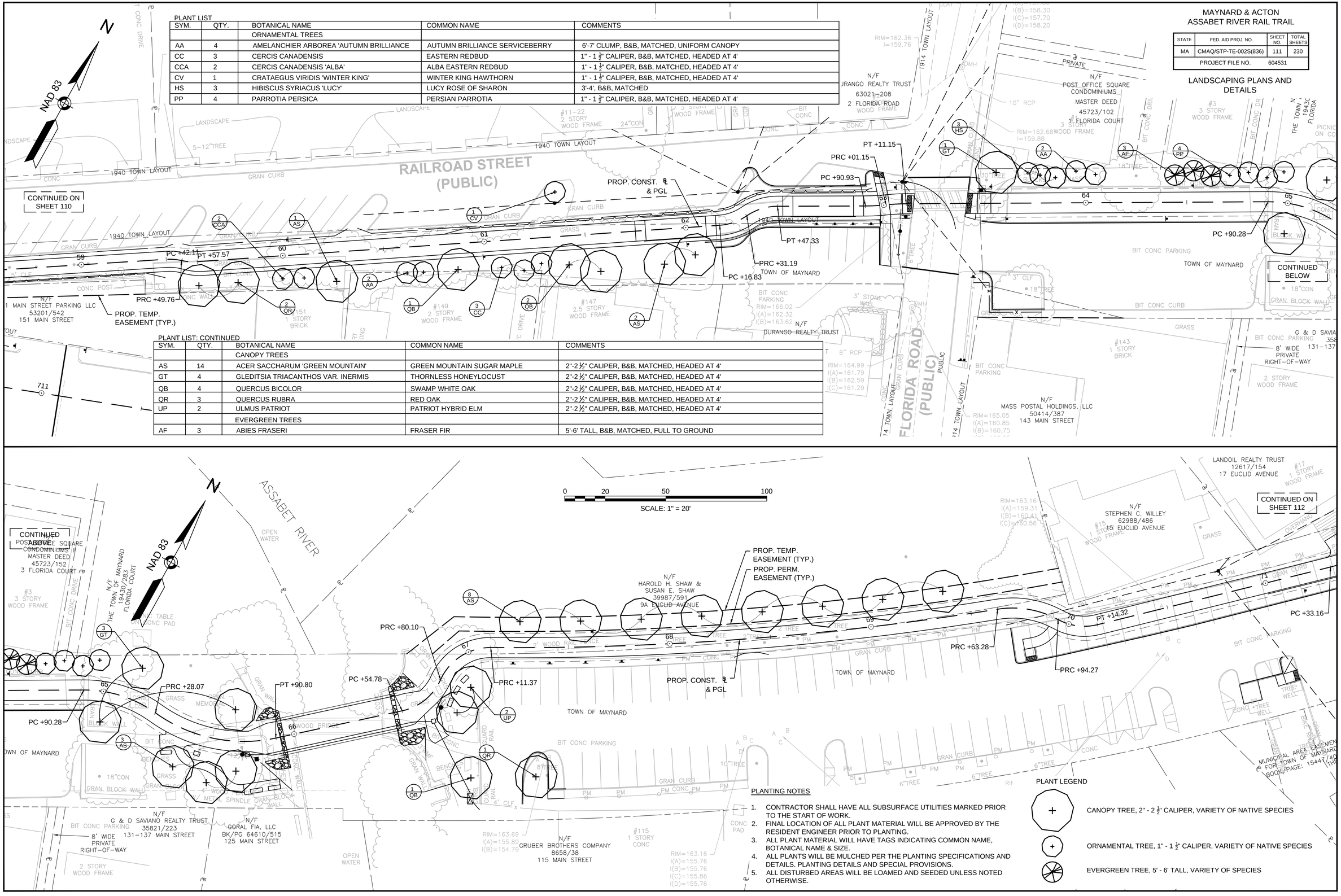
604531_HD(LD).DWG Plotted on 18-Sep-2015 9:33 AM

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
AA	4	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE	AUTUMN BRILLIANCE SERVICEBERRY	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
CC	3	CERCIS CANADENSIS	EASTERN REDBUD	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
CCA	2	CERCIS CANADENSIS 'ALBA'	ALBA EASTERN REDBUD	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
CV	1	CRATAEGUS VIRIDIS 'WINTER KING'	WINTER KING HAWTHORN	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
HS	3	HIBISCUS SYRIACUS 'LUCY'	LUCY ROSE OF SHARON	3'-4', B&B, MATCHED
PP	4	PARROTIA PERSICA	PERSIAN PARROTIA	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'

PLANT LIST: CONTINUED

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		CANOPY TREES		
AS	14	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
GT	4	GLEDITSIA TRIACANTHOS VAR. INERMIS	THORNLESS HONEYLOCUST	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
QB	4	QUERCUS BICOLOR	SWAMP WHITE OAK	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
QR	3	QUERCUS RUBRA	RED OAK	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
UP	2	ULMUS PATRIOT	PATRIOT HYBRID ELM	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		EVERGREEN TREES		
AF	3	ABIES FRASERI	FRASER FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND



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PLANT LEGEND

- CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES
- ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES
- EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

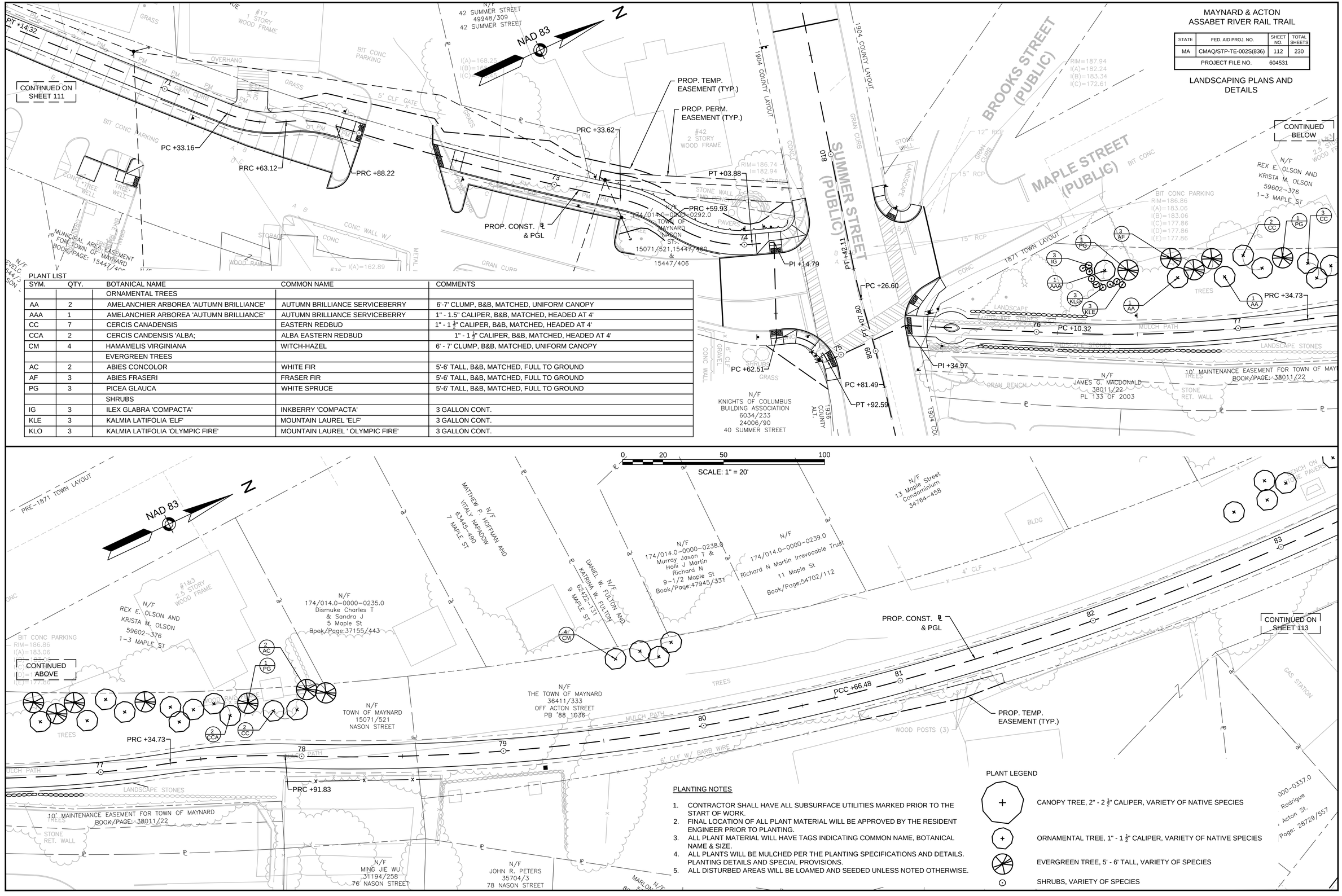
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MA	CMAQ/STP-TE-002S(836)	112	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:33 AM

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
AA	2	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
AAA	1	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	1" - 1.5" CALIPER, B&B, MATCHED, HEADED AT 4'
CC	7	CERCIS CANADENSIS	EASTERN REDBUD	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
CCA	2	CERCIS CANDENSIS 'ALBA;	ALBA EASTERN REDBUD	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
CM	4	HAMAMELIS VIRGINIANA	WITCH-HAZEL	6' - 7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
		EVERGREEN TREES		
AC	2	ABIES CONCOLOR	WHITE FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
AF	3	ABIES FRASERI	FRASER FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PG	3	PICEA GLAUCA	WHITE SPRUCE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
		SHRUBS		
IG	3	ILEX GLABRA 'COMPACTA'	INKBERRY 'COMPACTA'	3 GALLON CONT.
KLE	3	KALMIA LATIFOLIA 'ELF'	MOUNTAIN LAUREL 'ELF'	3 GALLON CONT.
KLO	3	KALMIA LATIFOLIA 'OLYMPIC FIRE'	MOUNTAIN LAUREL ' OLYMPIC FIRE'	3 GALLON CONT.



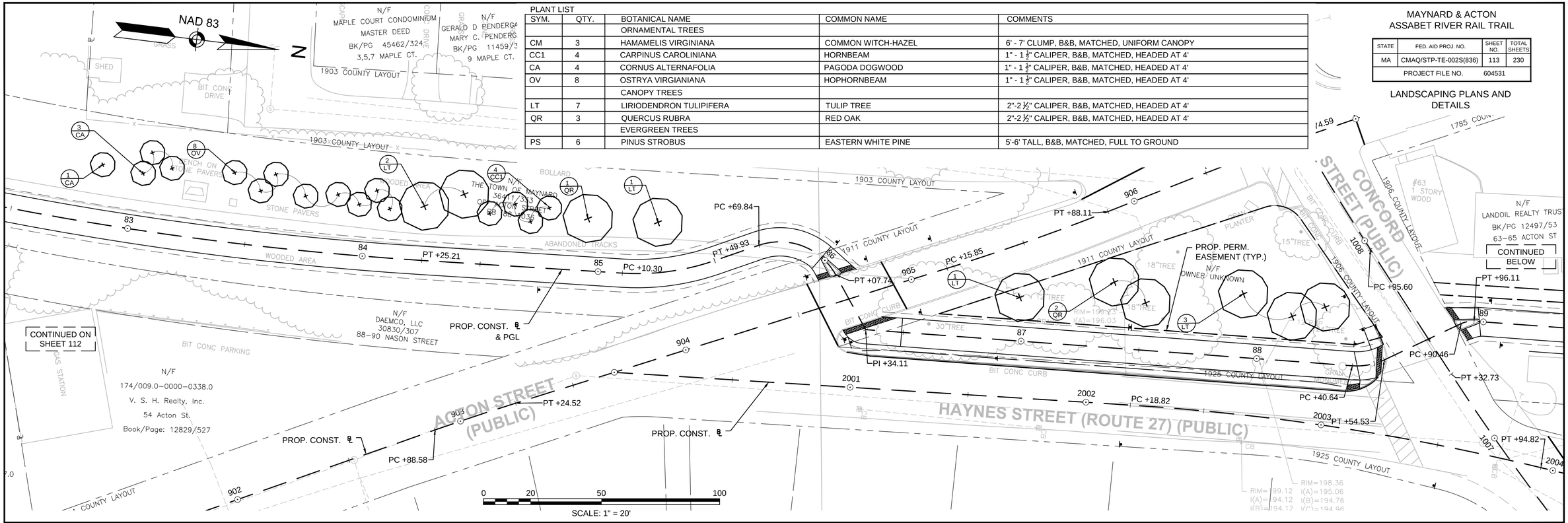
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

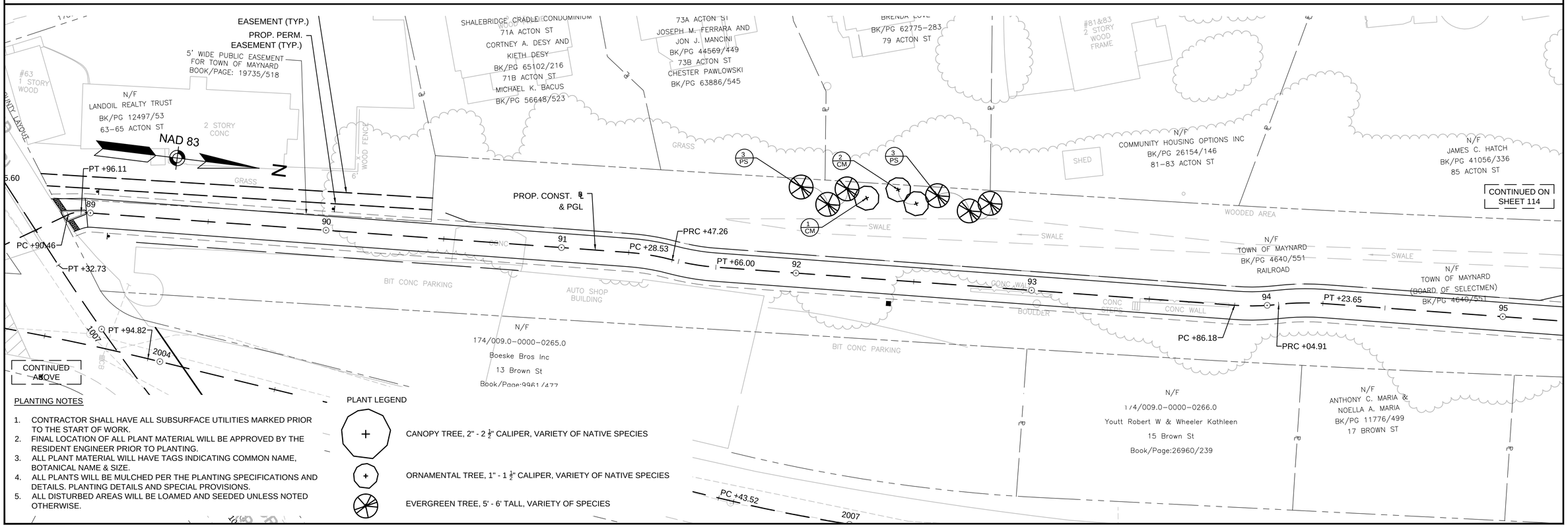
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	113	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
CM	3	HAMAMELIS VIRGINIANA	COMMON WITCH-HAZEL	6' - 7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
CC1	4	CARPINUS CAROLINIANA	HORNBEAM	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
CA	4	CORNUS ALTERNAFOLIA	PAGODA DOGWOOD	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
OV	8	OSTRYA VIRGIANIANA	HOPHORNBEAM	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		CANOPY TREES		
LT	7	LIRIODENDRON TULIPIFERA	TULIP TREE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
QR	3	QUERCUS RUBRA	RED OAK	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		EVERGREEN TREES		
PS	6	PINUS STROBUS	EASTERN WHITE PINE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND





PLANTING NOTES

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PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:33 AM

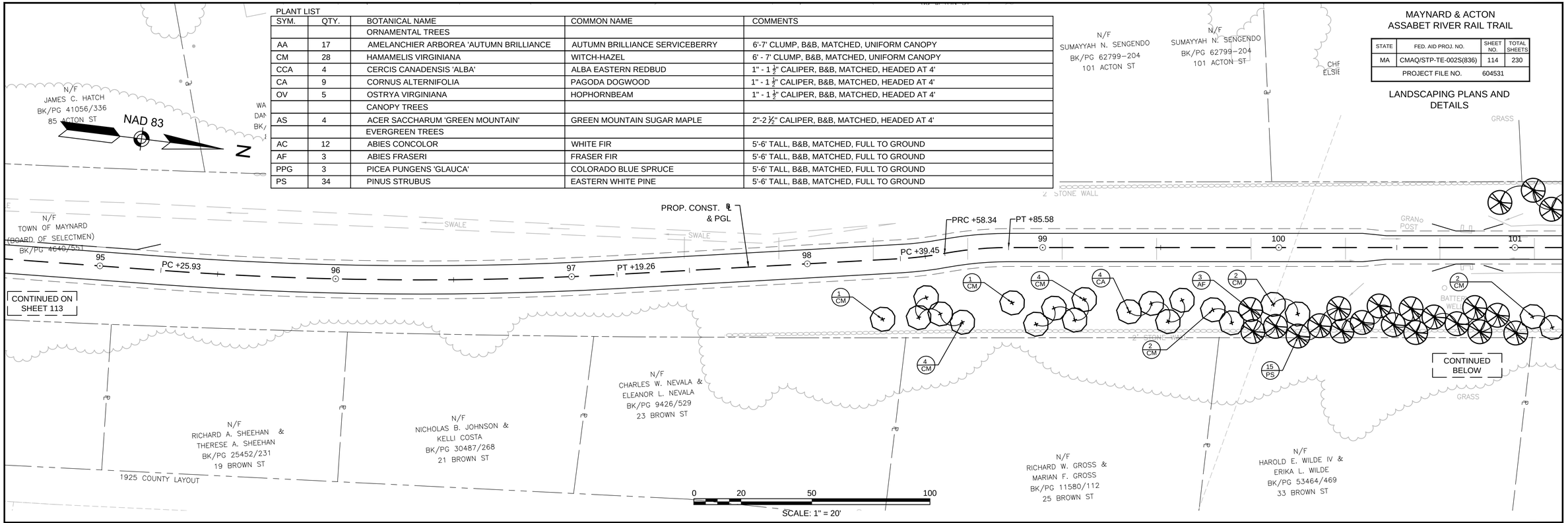
PLANT LIST

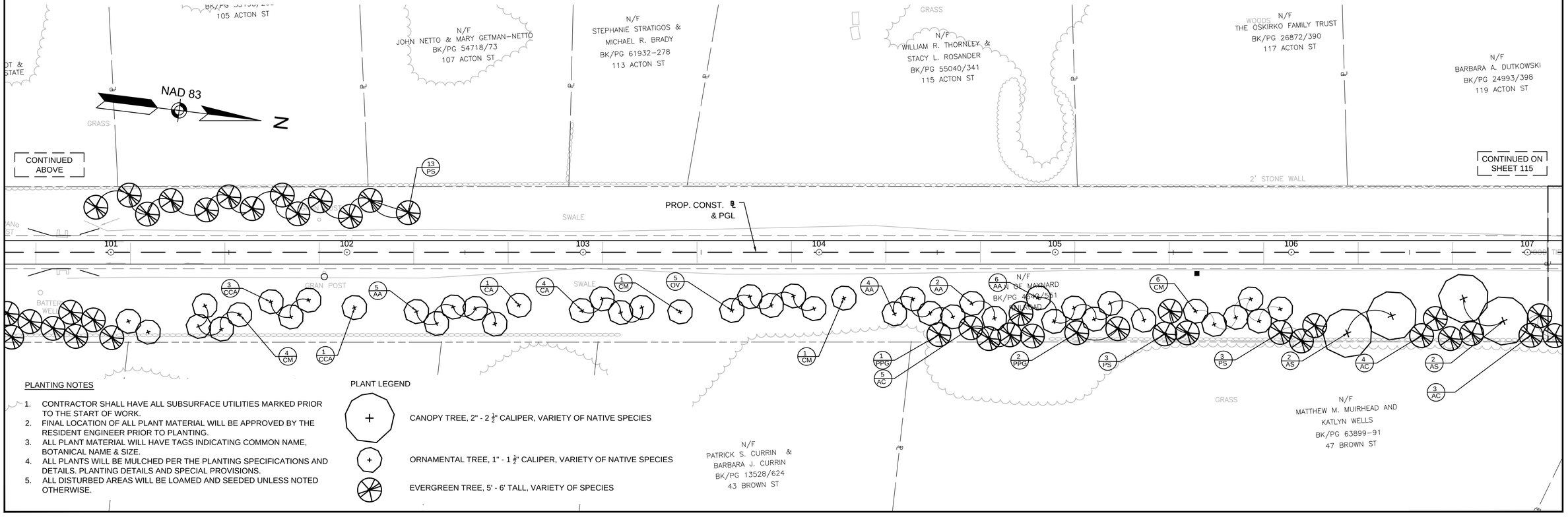
SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
AA	17	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE	AUTUMN BRILLIANCE SERVICEBERRY	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
CM	28	HAMAMELIS VIRGINIANA	WITCH-HAZEL	6' - 7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
CCA	4	CERCIS CANADENSIS 'ALBA'	ALBA EASTERN REDBUD	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
CA	9	CORNUS ALTERNIFOLIA	PAGODA DOGWOOD	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
OV	5	OSTRYA VIRGINIANA	HOPHORNBEAM	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		CANOPY TREES		
AS	4	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		EVERGREEN TREES		
AC	12	ABIES CONCOLOR	WHITE FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
AF	3	ABIES FRASERI	FRASER FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PPG	3	PICEA PUNGENS 'GLAUCA'	COLORADO BLUE SPRUCE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PS	34	PINUS STRUBUS	EASTERN WHITE PINE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	114	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS





PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
2. FINAL LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLANTING.
3. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME & SIZE.
4. ALL PLANTS WILL BE MULCHED PER THE PLANTING SPECIFICATIONS AND DETAILS. PLANTING DETAILS AND SPECIAL PROVISIONS.
5. ALL DISTURBED AREAS WILL BE LOAMED AND SEEDED UNLESS NOTED OTHERWISE.

PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:34 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
CMAQ/STP-TE-002S(836)	115	230
PROJECT FILE NO. 604531		

LANDSCAPING PLANS AND DETAILS

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:34 AM

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
AA	8	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE	AUTUMN BRILLIANCE SERVICEBERRY	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
CV	2	CRATAEGUS VIRIDIS 'WINTER KING'	WINTER KING HAWTHORN	1" - 1 ½" CALIPER, B&B, MATHCED, HEADED AT 4'
NS	5	NYSSA SYLVATICA	TUPELO	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		CANOPY TREES		
LT	4	LIRIODENDRON TULIPIFERA	TULIP TREE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		EVERGREEN TREES		
AC	8	ABIES CONCOLOR	WHITE FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PS	20	PINUS STROBUS	EASTERN WHITE PINE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND

N/F
BARBARA A. DUTKOWSKI
BK/PG 24993/398
119 ACTON ST

N/F
STON HOMES, INC.
63466-514
ACTON STREET

NAD 83

STONE WALL
SWALE
PROP. PERM. EASEMENT (TYP.)
PROP. CONST. ℄ & PGL
WOOD TIES
CONTINUED BELOW
CONTINUED ON SHEET 114
2" STONE WALL
PROP. WETLAND REPLICATION AREA SEE SHEET 124 FOR DETAILS
PROP. PERM. EASEMENT (TYP.)
1925 COUNTY LAYOUT
PT +69.52
PC +30.01
BROWN STREET (ROUTE 27)
N/F
RUDOLF SELAMI
BK/PG 49511/398
49 BROWN ST
N/F
FAIRWAY VIEW COMPANY
BK/PG 54735/459
ACTON ST

0 20 50 100
SCALE: 1" = 20'

GRAVEL
N/F
DISTINCTIVE ACTON HOMES, INC.
BK/PG 63466-514
129-A ACTON STREET
COUNTY LAYOUT
STONE WALL
DIRT ROAD
BIT CONC
TREES
GRASS
SITE OF MARBLE HOMESTEAD
N/F
TOWN OF MAYNARD
BK/PG 23826/179
138 ACTON ST
DENSE VEGETATION
PT +31.17
PC +45.88
PROP. PERM. EASEMENT (TYP.)
CONTINUED ABOVE
BRUSH
4"CON
PROP. CONST. ℄ & PGL
PC +50.08
PT +94.56
PC +87.12
BRICK WALL
BOULDER
PC +38.79
PRC +72.19
PT +96.11
PT +35.15
PRC +70.01
1925 COUNTY LAYOUT
PI +68.29
MAIN STREET (ROUTE 27) (PUBLIC)
CONTINUED ON SHEET 116
N/F
WEDGEWOOD REALTY TRUST
BK/PG 15794/150
ACTON ST

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
2. FINAL LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLANTING.
3. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME & SIZE.
4. ALL PLANTS WILL BE MULCHED PER THE PLANTING SPECIFICATIONS AND DETAILS. PLANTING DETAILS AND SPECIAL PROVISIONS.
5. ALL DISTURBED AREAS WILL BE LOAMED AND SEEDED UNLESS NOTED OTHERWISE.

PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	116	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		EVERGREEN TREES		
PS	6	PINUS STROBUS	EASTERN WHITE PINE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND

N/F
TOWN OF MAYNARD
BK/PG 23826-178
1 ROCKLAND AV

NAD 83

DENSE VEGETATION

MAYNARD
ACTON

WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
16-R MAIN ST
15313/533

PROP. PERM. EASEMENT (TYP.)

PROP. CONST. ℄ & PGL

PROP. PERM. EASEMENT (TYP.)

PROP. PERM. EASEMENT (TYP.)

PRC +81.67

PC +14.65

PT +03.78

PCC +55.73

RAIL TRAIL EASEMENT FOR TOWN OF ACTON BOOK/PAGE: 46076/394

CONTINUED ON SHEET 115

CONTINUED BELOW

MARSH

1925 COUNTY LAYOUT

1921 COUNTY LAYOUT

MAIN STREET (ROUTE 27) (PUBLIC)

PC +70.12

PT +58.00

0 20 50 100

SCALE: 1" = 20'

NAD 83

N/F
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
48-R MAIN ST
15114/250
12-57

MARSH

PROP. PERM. EASEMENT (TYP.)

CONTINUED ABOVE

RAIL TRAIL EASEMENT FOR TOWN OF ACTON BOOK/PAGE: 46076/394

PRC +74.64

PRC +89.14

PC +14.65

PROP. CONST. ℄ & PGL

PROP. PERM. EASEMENT (TYP.)

N/F
WEDGEWOOD REALTY TRUST
JOSEPH V. STUART, TR
ROBERT E. ANDERSON, TR
TR14-R MAIN ST
15313/533
12-83

PT +08.26

PC +76.29

PROP. TEMP. EASEMENT (TYP.)

PROP. PERM. EASEMENT (TYP.)

PT +86.78

PC +48.01

PRIVATE RIGHT-OF-WAY

BIT CONC DRIVEWAY

CONTINUED ON SHEET 117

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
2. FINAL LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLANTING.
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PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:34 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	117	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:34 AM

CONTINUED ON SHEET 116

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET 118

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		CANOPY TREES		
AS	5	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
QR	3	QUERCUS RUBRA	NORTHERN RED OAK	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'

NAD 83

PROP. TEMP. EASEMENT (TYP.)

PROP. PERM. EASEMENT (TYP.)

PROP. CONST. ℄ & PGL

PT +99.93

PC +59.78

PRC +96.13

PT +32.85

PI +75.04

PI +18.79

PI +18.12

PC +48.84

PT +67.67

PT +49.25

MAIN STREET (ROUTE 27) (PUBLIC)

N/F 12–33 ROBERT E. ANDERSON, TR 18–22 MAIN ST 15114/250

N/F 12–84 Wedgewood Realty Trust 14–R Main St. Book/Page:17178/196

N/F 12–20 WEDGEWOOD REALTY TRUST JOSEPH V. STUART, TR ROBERT E. ANDERSON, TR 16–R MAIN ST 15316/533

N/F RAIL TRAIL EASEMENT FOR TOWN OF ACTON BOOK/PAGE: 46076/394

N/F NO ASSESSOR'S PARCEL TOWN OF Acton RR – Northborough Br ℄ Book/Page:45880/

0 20 50 100

SCALE: 1" = 20'

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
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PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

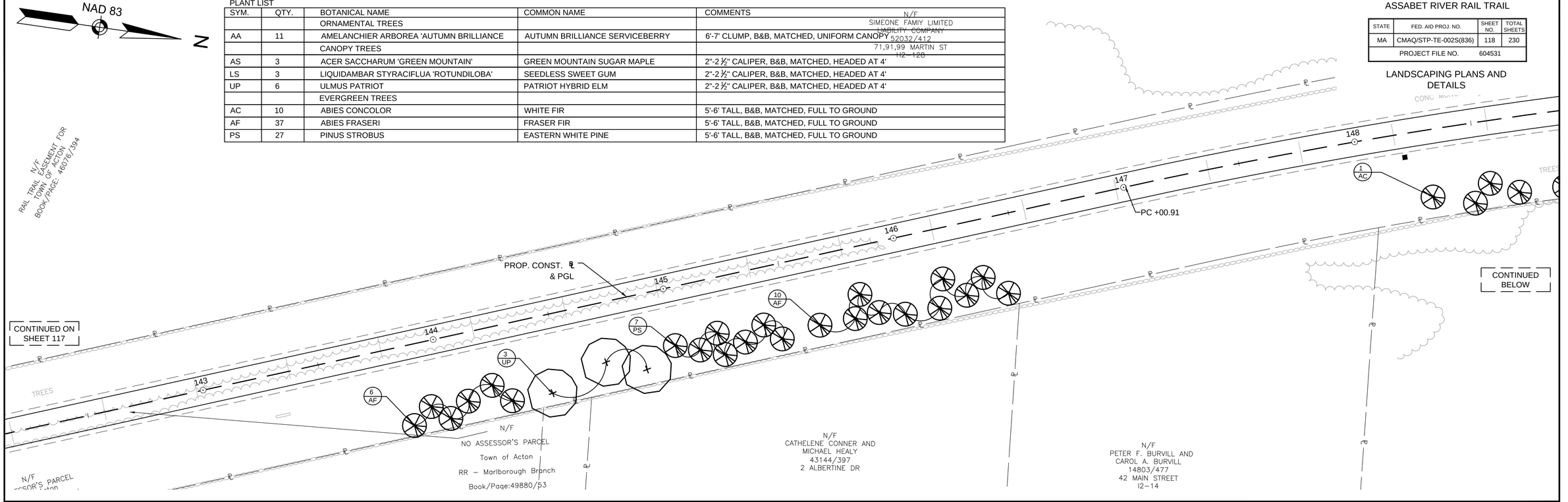
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

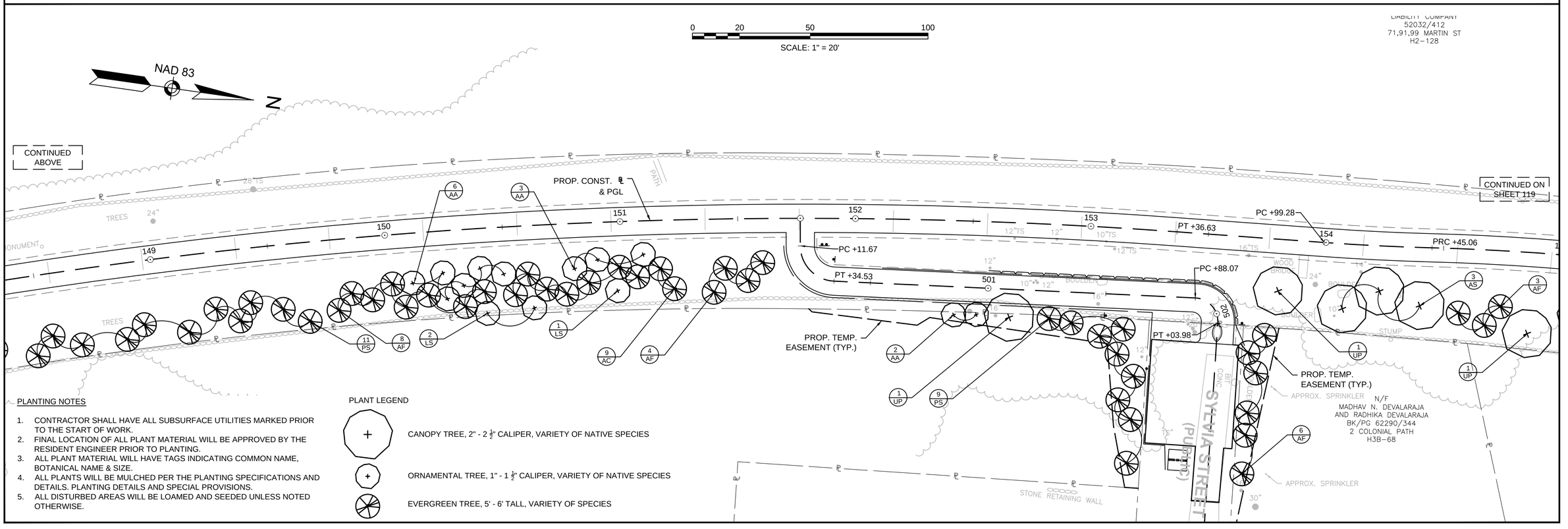
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	118	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
AA	11	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE	AUTUMN BRILLIANCE SERVICEBERRY	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
		CANOPY TREES		
AS	3	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
LS	3	LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA'	SEEDLESS SWEET GUM	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
UP	6	ULMUS PATRIOT	PATRIOT HYBRID ELM	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		EVERGREEN TREES		
AC	10	ABIES CONCOLOR	WHITE FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
AF	37	ABIES FRASERI	FRASER FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PS	27	PINUS STROBUS	EASTERN WHITE PINE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND





PLANTING NOTES

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5. ALL DISTURBED AREAS WILL BE LOAMED AND SEEDED UNLESS NOTED OTHERWISE.

PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:35 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	119	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:35 AM

NAD 83

CANOPY TREES

EVERGREEN TREES

PROP. CONST. ℄ & PGL

N/F
TOWN OF ACTON,
MASSACHUSETTS
49880/ 53

N/F
TERRENCE MAITLAND AND
SIMA MAITLAND
15856/117
100 MARTIN STREET
H2–111

N/F
JAMES F. HOITT AND
KATHLEEN M. HOITT
50197/577
4 COLONIAL PATH
H3B–69–2

CONTINUED ON SHEET 118

CONTINUED BELOW

TEMP WOOD BRIDGE

20' DRAINAGE & UTILI

6' STOCKADE FENCE

SHED

COLONIAL PATH

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
AR	5	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
UP	4	ULMUS PATRIOT	PATRIOT HYBRID ELM	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
AC	20	ABIES CONCOLOR	WHITE FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PG	31	PICEA GLAUCA	WHITE SPRUCE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PS	25	PINUS STROBUS	EASTERN WHITE PINE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND

0 20 50 100

SCALE: 1" = 20'

N/F
ROBERT W. HOUGHTON AND
SARAH C. BOLSTER
40992/205
92 MARTIN STREET
H2–102

OPEN WATER

LAKE

METAL POST

WE 189.9

CONTINUED ABOVE

CONTINUED ON SHEET 120

PCC +94.96

PRC +21.33

PROP. WETLAND REPLICATION AREA
SEE SHEET 125 FOR DETAILS

NAD 83

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
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PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	120	230
PROJECT FILE NO. 604531			

LANDSCAPING PLANS AND DETAILS

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
AA	7	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE	AUTUMN BRILLIANCE SERVICEBERRY	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
		EVERGREEN TREES		
PS	13	PINUS STROBUS	EASTERN WHITE PINE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND

NAD 83 N

OPEN WATER

CONTINUED ON SHEET 119

N/F TOWN OF ACTON, MASSACHUSETTS 49880/ 53

N/F H2A–95 ROSS W. ISRAEL AND CHRISTINE ISRAEL–DWYER 90 MARTIN STREET 60370/57

N/F TOWN OF ACTON 56002/381 2 STOW STREET H2A–62

TOWN ZONE LINE

FORT POND BROOK RESERVOIR AKA MILL POND

WOOD BRIDGE W/ GRAN WALL ABUTMENT

WE 189.9

PROP. CONST. ℄ & PGL

PRC +88.02

PT +57.29

PC +08.27

PRC +36.53

CONTINUED BELOW N/F TOWN OF ACTON, MASSACHUSETTS 49880/ 53

ROCK WALL

OLD BUILDING FOUNDATION

RAILROAD SWITCH

N/F OWNER UNKNOWN FORT POND BROOK RESERVOIR

PATH

ELECTRIC FENCE

0 20 50 100

SCALE: 1" = 20'

CONTINUED ON SHEET 121

PC +86.11

PT +00.21

PT +19.55

PC +01.36

PRC +36.53

GRAVEL DRIVE

CONSERVATION RESTRICTION LINE

FARM FIELD

STONE WALL

SHED

GAR

BIT DRIVE

N/F SEAN P HANLEY AND CHRISTINE L HANLEY 36150/609 16 MAPLE ST H2A–54

OLD STONE RETAINING WALL

CONTINUED ABOVE

PROP. PERM. EASEMENT (TYP.)

PROP. TEMP. EASEMENT (TYP.)

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
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PLANT LEGEND

CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES

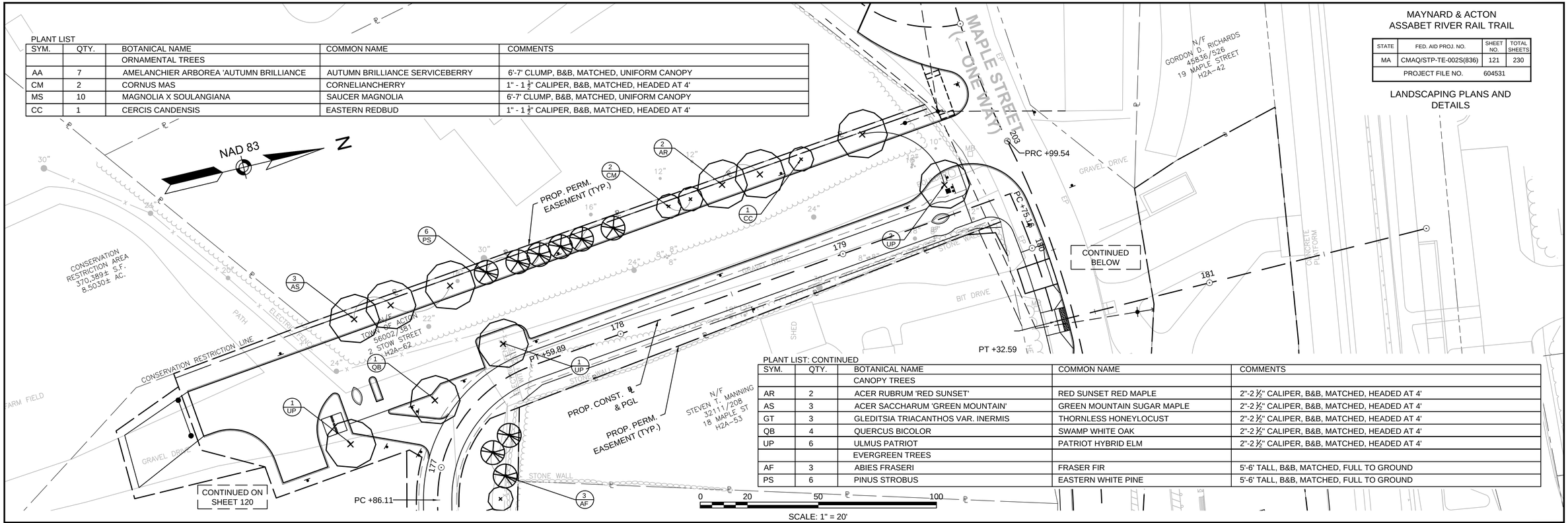
ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES

EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

604531_HD(LD).DWG Plotted on 18-Sep-2015 9:35 AM

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
AA	7	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE	AUTUMN BRILLIANCE SERVICEBERRY	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
CM	2	CORNUS MAS	CORNELIANCHERRY	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
MS	10	MAGNOLIA X SOULANGIANA	SAUCER MAGNOLIA	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
CC	1	CERCIS CANDENSIS	EASTERN REDBUD	1" - 1 ½" CALIPER, B&B, MATCHED, HEADED AT 4'



PLANT LIST: CONTINUED

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		CANOPY TREES		
AR	2	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
AS	3	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
GT	3	GLEDITSIA TRIACANTHOS VAR. INERMIS	THORNLESS HONEYLOCUST	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
QB	4	QUERCUS BICOLOR	SWAMP WHITE OAK	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
UP	6	ULMUS PATRIOT	PATRIOT HYBRID ELM	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		EVERGREEN TREES		
AF	3	ABIES FRASERI	FRASER FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PS	6	PINUS STROBUS	EASTERN WHITE PINE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	121	230
PROJECT FILE NO.	604531		

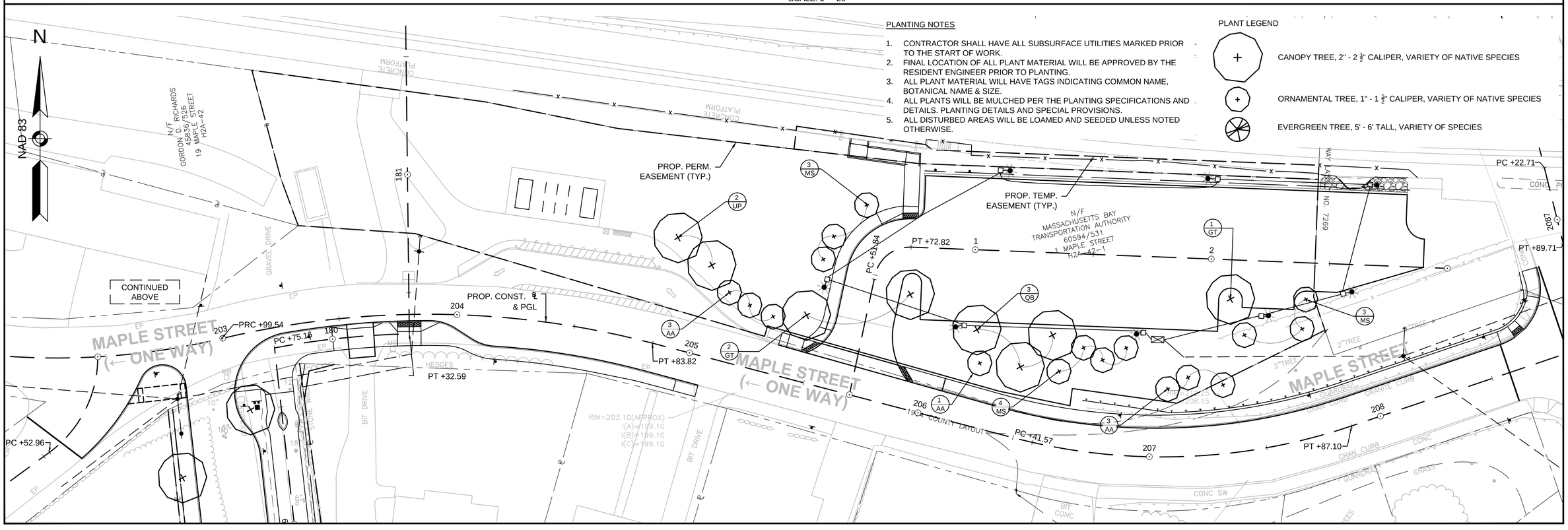
LANDSCAPING PLANS AND DETAILS

PLANTING NOTES

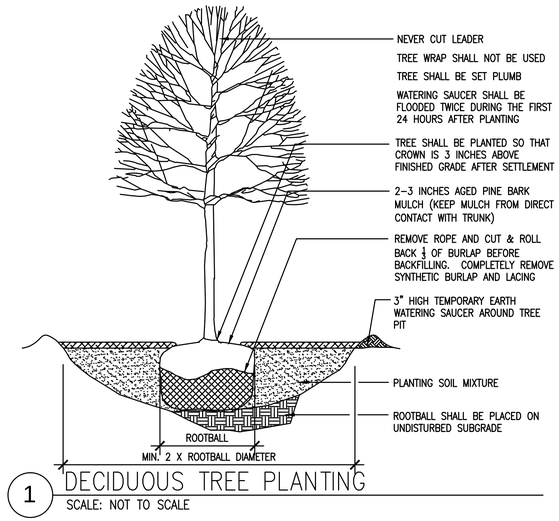
1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
2. FINAL LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLANTING.
3. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME & SIZE.
4. ALL PLANTS WILL BE MULCHED PER THE PLANTING SPECIFICATIONS AND DETAILS. PLANTING DETAILS AND SPECIAL PROVISIONS.
5. ALL DISTURBED AREAS WILL BE LOAMED AND SEEDED UNLESS NOTED OTHERWISE.

PLANT LEGEND

- CANOPY TREE, 2" - 2 ½" CALIPER, VARIETY OF NATIVE SPECIES
- ORNAMENTAL TREE, 1" - 1 ½" CALIPER, VARIETY OF NATIVE SPECIES
- EVERGREEN TREE, 5' - 6' TALL, VARIETY OF SPECIES

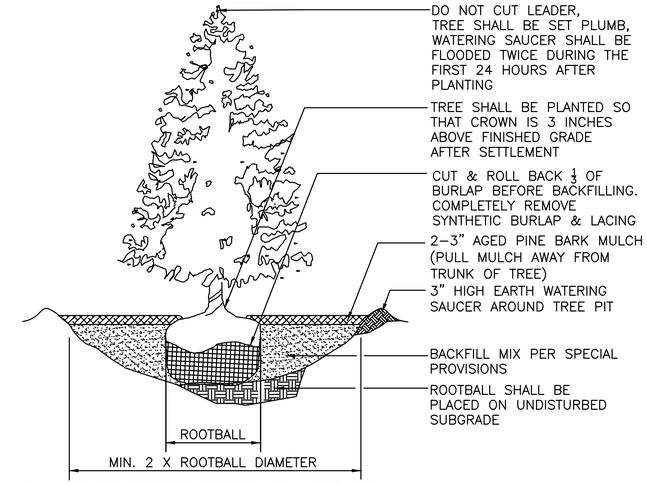


604531_HD(LD).DWG Plotted on 18-Sep-2015 9:35 AM



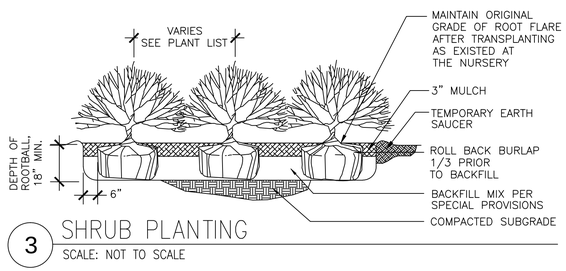
1 DECIDUOUS TREE PLANTING

SCALE: NOT TO SCALE



2 EVERGREEN TREE PLANTING

SCALE: NOT TO SCALE



3 SHRUB PLANTING

SCALE: NOT TO SCALE

MASTER PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
		ORNAMENTAL TREES		
AA	60	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE	AUTUMN BRILLIANCE SERVICEBERRY	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
AAA	1	AMELANCHIER ARBOREA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	1" - 1.5" CALIPER, B&B, MATCHED, HEADED AT 4'
CC1	4	CARPINUS CAROLINIANA	HORNBEAM	1" - 1.5" CALIPER, B&B, MATCHED, HEADED AT 4'
CC	15	CERCIS CANADENSIS	EASTERN REDBUD	1" - 1.5" CALIPER, B&B, MATCHED, HEADED AT 4'
CCA	8	CERCIS CANADENSIS 'ALBA'	ALBA EASTERN REDBUD	1" - 1.5" CALIPER, B&B, MATCHED, HEADED AT 4'
CA	13	CORNUS ALTERNAFOLIA	PAGODA DOGWOOD	1" - 1.5" CALIPER, B&B, MATCHED, HEADED AT 4'
CV	10	CRATAEGUS VIRIDIS 'WINTER KING'	WINTER KING HAWTHORN	1" - 1.5" CALIPER, B&B, MATCHED, HEADED AT 4'
CM	37	HAMAMELIS VIRGINIANA	COMMON WITCH-HAZEL	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
MS	10	MAGNOLIA X SOULANGIANA	SAUCER MAGNOLIA	6'-7' CLUMP, B&B, MATCHED, UNIFORM CANOPY
NS	5	NYSSA SYLVATICA	TUPELO	1" - 1.5" CALIPER, B&B, MATCHED, HEADED AT 4'
OV	18	OSTRYA VIRGINIA	HOPHORNBEAM	1" - 1.5" CALIPER, B&B, MATCHED, HEADED AT 4'
PP	4	PARROTIA PERSICA	PERSIAN PARROTIA	1" - 1.5" CALIPER, B&B, MATCHED, HEADED AT 4'
		CANOPY TREES		
AR	9	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
AS	37	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
GT	7	GLEDITSIA TRIACANTHOS VAR. INERMIS	THORNLESS HONEYLOCUST	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
LS	5	LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA'	SEEDLESS SWEET GUM	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
LT	13	LIRIODENDRON TULIPIFERA	TULIP TREE	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
QB	11	QUERCUS BICOLOR	SWAMP WHITE OAK	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
QR	9	QUERCUS RUBRA	RED OAK	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
UP	25	ULMUS PATRIOT	PATRIOT HYBRID ELM	2"-2 ½" CALIPER, B&B, MATCHED, HEADED AT 4'
		EVERGREEN TREES		
AC	52	ABIES CONCOLOR	WHITE FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
AF	49	ABIES FRASERI	FRASER FIR	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PG	34	PICEA GLAUCA	WHITE SPRUCE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PPG	5	PICEA PUNGENS 'GLAUCA'	COLORADO BLUE SPRUCE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
PS	140	PINUS STROBUS	EASTERN WHITE PINE	5'-6' TALL, B&B, MATCHED, FULL TO GROUND
		SHRUBS		
HS	3	HIBISCUS SYRIACUS 'LUCY'	LUCY ROSE OFSHARON	5 GALLON CONT., 3'-4' HT.
IG	3	ILEX GLABRA 'COMPACTA'	INKBERRY 'COMPACTA'	3 GALLON CONT.
KLE	3	KALMIA LATIFOLIA 'ELF'	MOUNTAIN LAUREL 'ELF'	3 GALLON CONT.
KLO	3	KALMIA LATIFOLIA 'OLYMPIC FIRE'	MOUNTAIN LAUREL ' OLYMPIC FIRE'	3 GALLON CONT.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	122	230
PROJECT FILE NO.	604531		

LANDSCAPING PLANS AND DETAILS

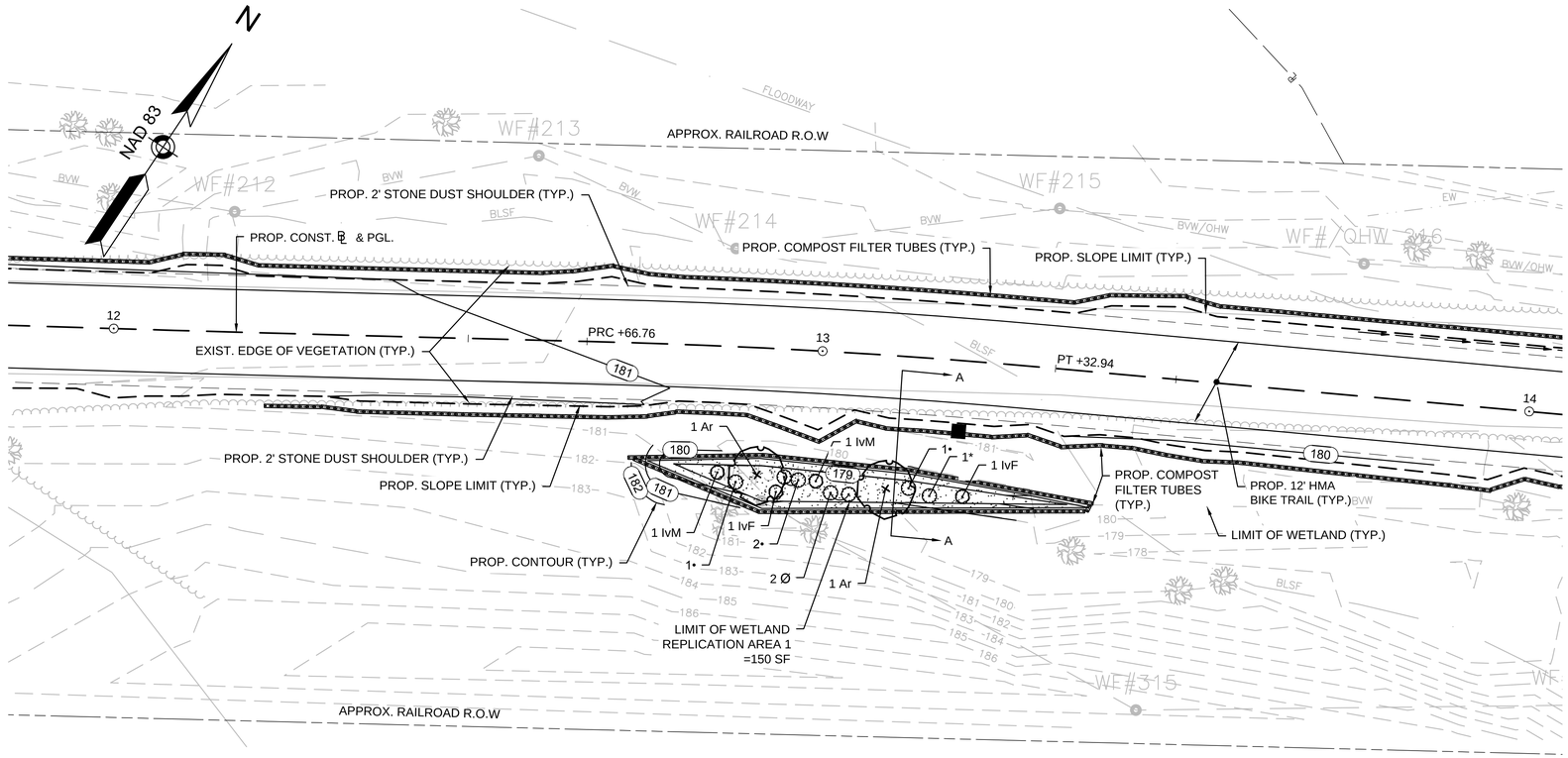
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MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	123	230
PROJECT FILE NO.	604531		

WETLAND REPLICATION PLANS AND DETAILS

604531_HD(WET).DWG Plotted on 18-Sep-2015 9:36 AM



PLANTING PLAN

0 10 20 30 40

SCALE: 1" = 10'

PLANTING LEGEND

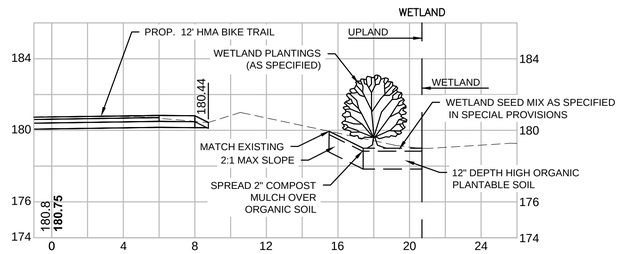
- PROPOSED DECIDUOUS SHRUB
- PROPOSED DECIDUOUS TREE
- PROPOSED FERN/ HERBACEOUS

NOTES

1. FOR BORDERING VEGETATED WETLAND IMPACTS SEE CONSTRUCTION PLANS & PROFILES .
2. SEE SPECIAL PROVISIONS FOR PLANTING INSTALLATION INSTRUCTIONS.

PLANTING SPECIFICATIONS: AREA 1

PLANT TYPE	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	QTY
SHRUBS	IvF	ILEX VERTICILLATA	WINTERBERRY- FEMALE	24-30"	2
	IvM	ILEX VERTICILLATA	WINTERBERRY- MALE	24-30"	2
TREES	Ar	ACER RUBRUM	RED MAPLE	1"-1.5" CAL	2
FERN/ HERB ACEOUS	•	OSMUNDA CINNAMOMEA	CINNAMON FERN	PLUG	4
	*	ONOCLEA SENSIBILIS	SENSITIVE FERN	PLUG	1
	Ø	OSMUNDA REGALIS	ROYAL FERN	PLUG	2



TYPICAL CROSS SECTION OF WETLAND REPLICATION AREA 1 SECTION A-A

HOR. SCALE IN FEET

4 0 4 8

4 0 4 8

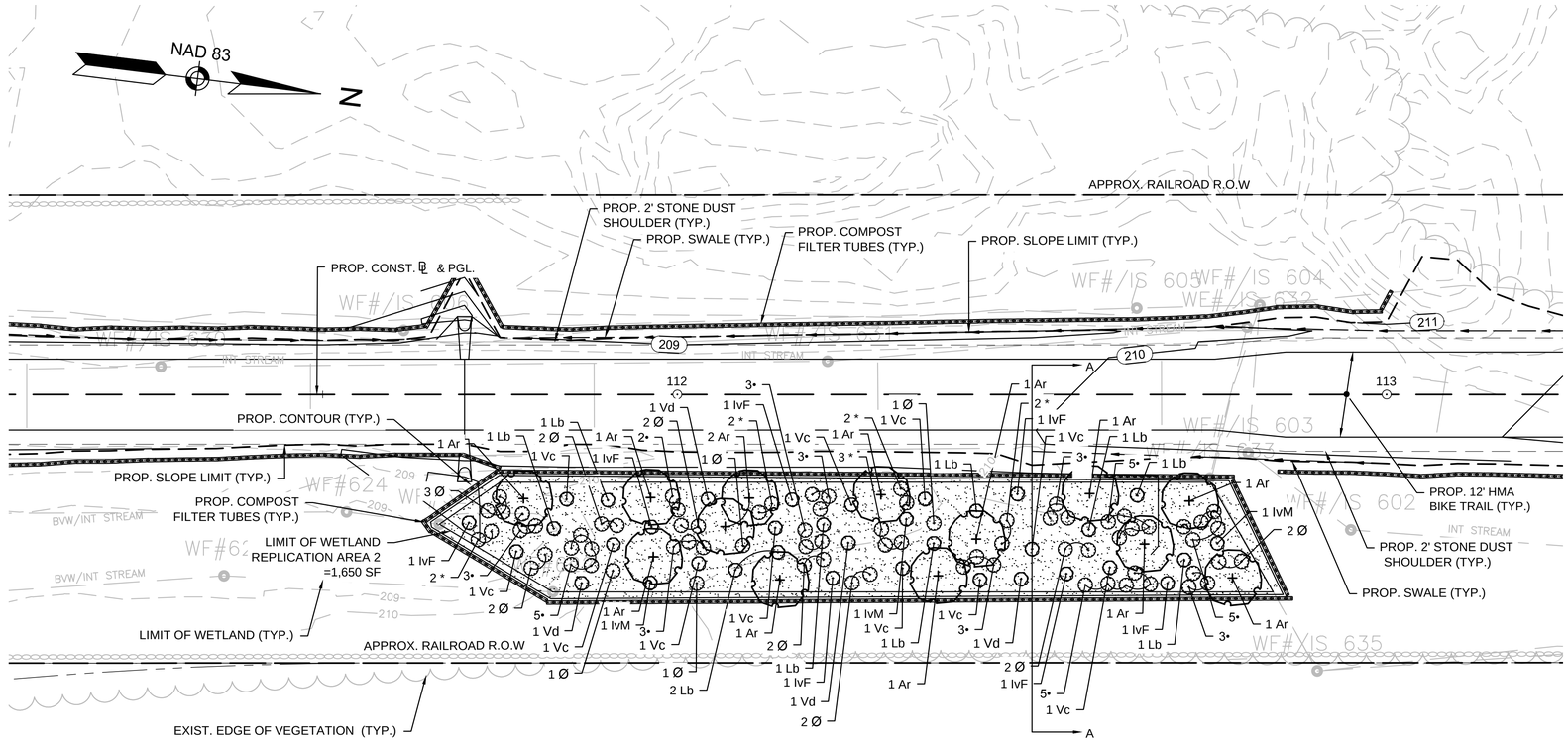
VER. SCALE IN FEET

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	124	230
PROJECT FILE NO.	604531		

WETLAND REPLICATION PLANS
AND DETAILS

604531_HD(WET).DWG Plotted on 18-Sep-2015 9:37 AM



PLANTING LEGEND

- PROPOSED DECIDUOUS SHRUB
- PROPOSED DECIDUOUS TREE
- PROPOSED FERN/ HERBACEOUS

NOTES

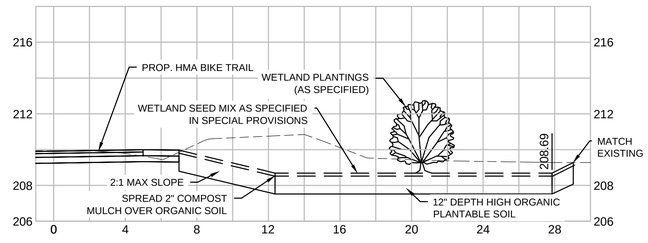
1. FOR BORDERING VEGETATED WETLAND IMPACTS SEE CONSTRUCTION PLANS & PROFILES.
2. SEE SPECIAL PROVISIONS FOR PLANTING INSTALLATION INSTRUCTIONS.

PLANTING PLAN

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

PLANTING SPECIFICATIONS: AREA 2

PLANT TYPE	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	QTY
SHRUBS	Vc	VACCINIUM CORYMBOSUM	BLUEBERRY HIGHBUSH	18-24"	11
	Vd	VIBURNUM DENTATUM	ARROWWOOD	18-24"	4
	IvF	ILEX VERTICILLATA	WINTERBERRY- FEMALE	24-30"	7
	IvM	ILEX VERTICILLATA	WINTERBERRY- MALE	24-30"	3
	Lb	LINDERA BENZOIN	SPICEBUSH	15-18"	10
TREES	Ar	ACER RUBRUM	RED MAPLE	1"-1.5" CAL	13
FERN/ HERB ACEOUS	•	OSMUNDA CINNAMOMEA	CINNAMON FERN	PLUG	43
	*	ONOCLEA SENSIBILIS	SENSITIVE FERN	PLUG	11
	Ø	OSMUNDA REGALIS	ROYAL FERN	PLUG	21



TYPICAL CROSS SECTION OF WETLAND REPLICATION AREA 2 SECTION A-A

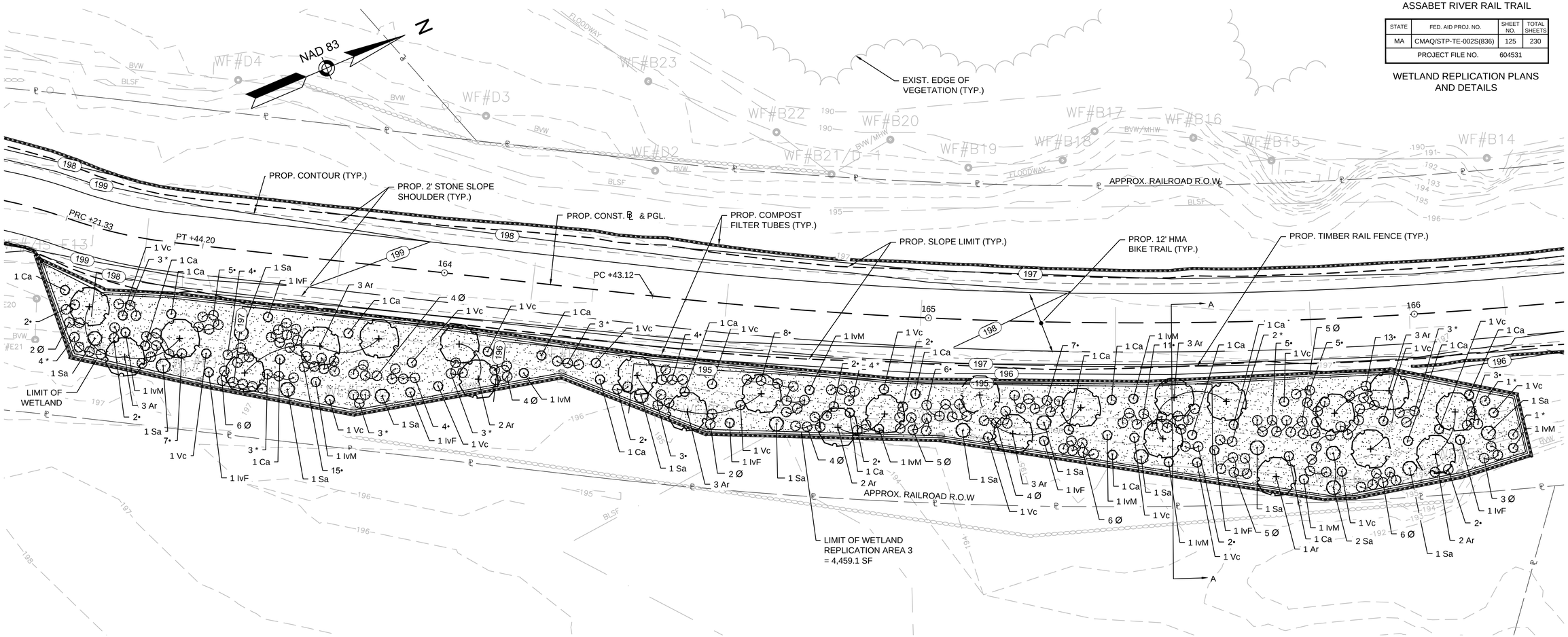
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	125	230
PROJECT FILE NO.	604531		

WETLAND REPLICATION PLANS AND DETAILS

604531_HDWET).DWG Plotted on 18-Sep-2015 9:37 AM



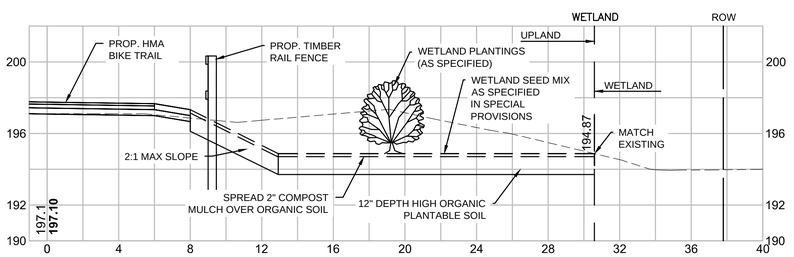
PLANTING PLAN

0 10 20 30 40

SCALE: 1" = 10'

PLANTING SPECIFICATIONS: AREA 3

PLANT TYPE	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	QTY
SHRUBS	Ca	CLETHRA ALNIFOLIA	SUMMERSWEET SHRUB	18-24"	19
	IvF	ILEX VERTICILLATA	WINTERBERRY- FEMALE	24-30"	7
	IvM	ILEX VERTICILLATA	WINTERBERRY- MALE	24-30"	10
	Sa	CORNUS AMOMUM	SILKY DOGWOOD	2-3'	15
	Vc	VACCINIUM CORYMBOSUM	BLUEBERRY HIGHBUSH	18-24"	18
TREES	Ar	ACER RUBRUM	RED MAPLE	1"-1.5" CAL	25
FERN/ HERBACEOUS	•	OSMUNDA CINNAMOMEA	CINNAMON FERN	PLUG	116
	*	ONOCLEA SENSIBILIS	SENSITIVE FERN	PLUG	30
	Ø	OSMUNDA REGALIS	ROYAL FERN	PLUG	57



TYPICAL CROSS SECTION OF WETLAND REPLICATION AREA 3 SECTION A-A

HOR. SCALE IN FEET

4 0 4 8

4 0 4 8

VER. SCALE IN FEET

PLANTING LEGEND

- PROPOSED DECIDUOUS SHRUB
- PROPOSED DECIDUOUS TREE
- PROPOSED FERN/ HERBACEOUS

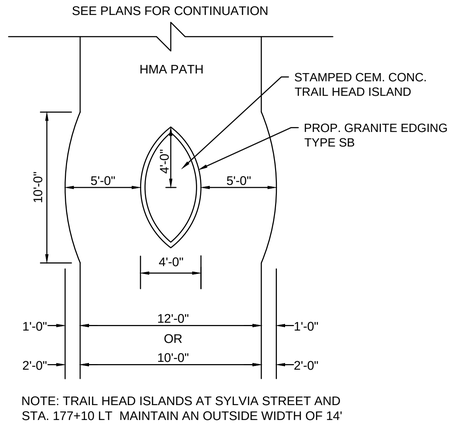
NOTES

1. FOR BORDERING VEGETATED WETLAND IMPACTS SEE CONSTRUCTION PLANS & PROFILES.
2. SEE SPECIAL PROVISIONS FOR PLANTING INSTALLATION INSTRUCTIONS.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	126	230
PROJECT FILE NO.	604531		

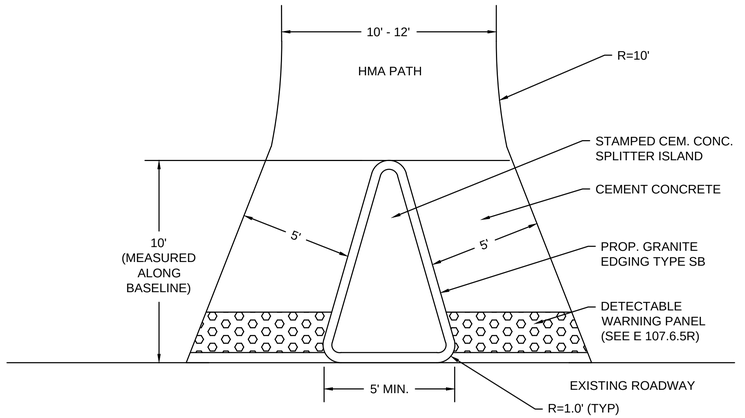
CONSTRUCTION DETAILS

604531_HD(CD).DWG Plotted on 18-Sep-2015 9:38 AM

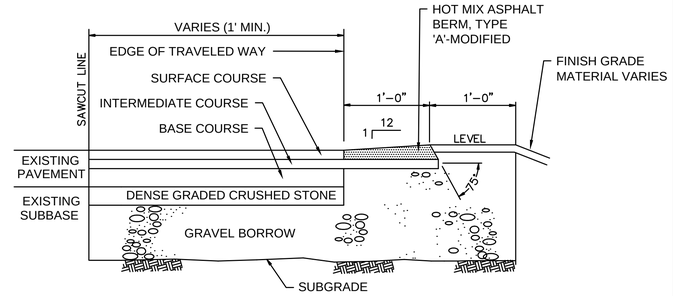


NOTE: TRAIL HEAD ISLANDS AT SYLVIA STREET AND STA. 177+10 LT MAINTAIN AN OUTSIDE WIDTH OF 14'

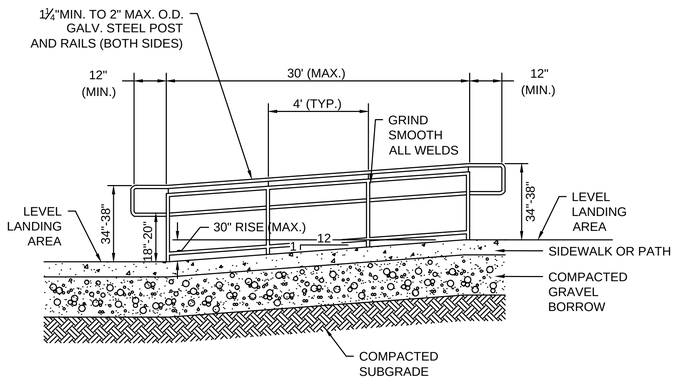
TRAIL HEAD ISLAND DETAIL
(TO BE USED AT PATH OPENINGS NOT ABUTTING ROADWAYS)
N.T.S.

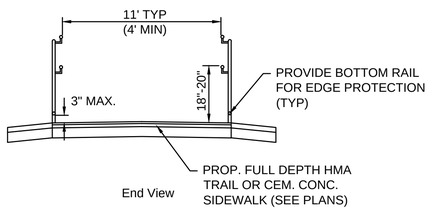


CEMENT CONCRETE TRAIL ENTRANCE WITH SPLITTER ISLAND
N.T.S.



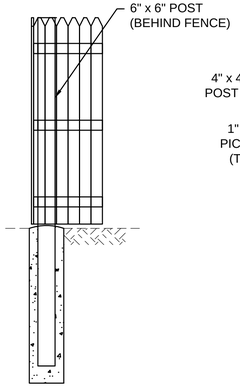
HOT MIX ASPHALT BERM, TYPE 'A' MODIFIED
N.T.S.



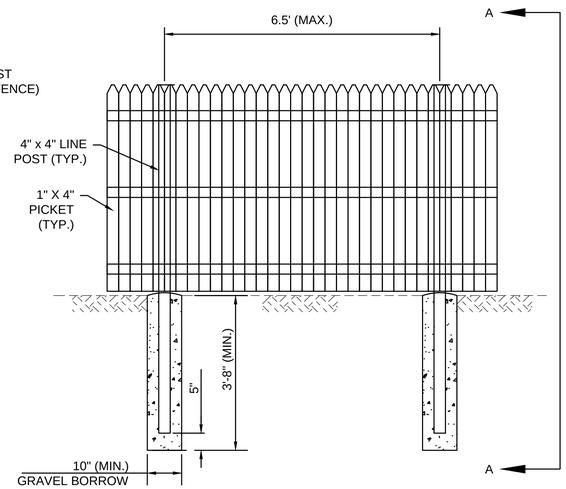


NOTE:
1. FOR ADDITIONAL DETAIL SEE 521 CMR 24.00 RAMPS.

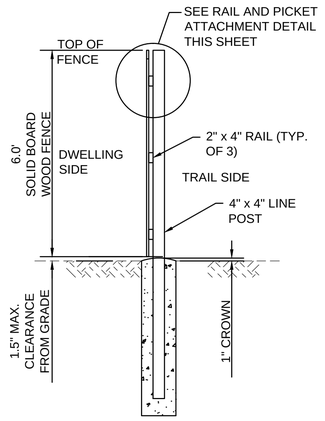
RAMP WITH HANDRAIL
N.T.S.



CORNER POST
N.T.S.

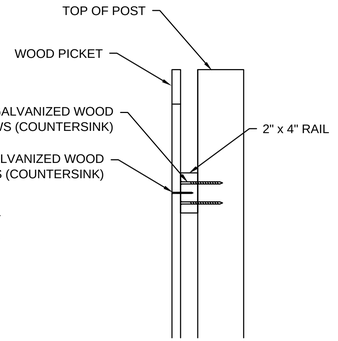


ELEVATION
N.T.S.



SECTION A-A
N.T.S.

STOCKADE FENCE
N.T.S.



RAIL AND PICKET ATTACHMENT DETAIL
N.T.S.

TYPICAL STOCKADE FENCING

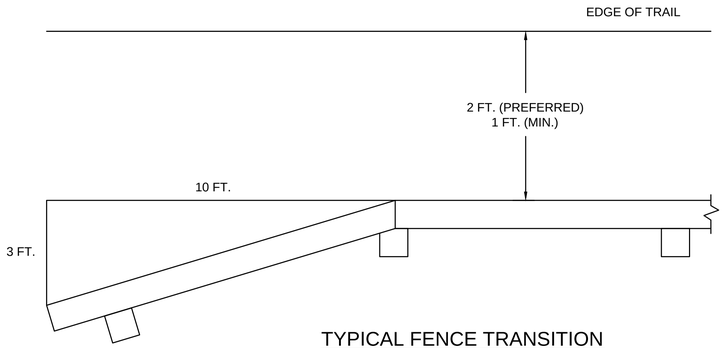
1. ALL WOOD FENCE POSTS AND RAILS TO BE NO. 2 PINE PRESSURE TREATED LUMBER.
2. PICKETS TO BE 1" THICK CEDAR. CORNER AND GATE POSTS TO BE 6" X 6" NO. 2 PINE PRESSURE TREATED LUMBER.
3. LINE POSTS TO BE 4" X 4" NO. 2 PINE PRESSURE TREATED LUMBER.
4. ALL HARDWARE TO BE HOT DIP GALVANIZED.
5. PICKETS SHALL ALWAYS FACE DWELLINGS.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

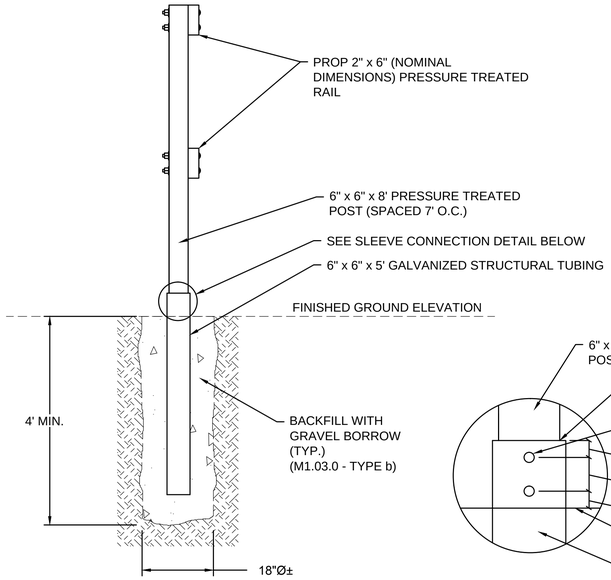
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	127	230
PROJECT FILE NO.	604531		

CONSTRUCTION DETAILS

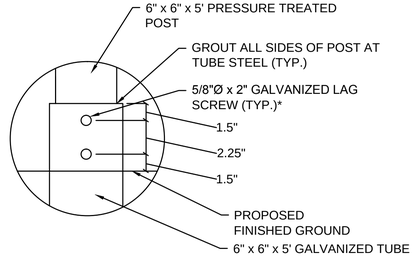
604531_HD(CD).DWG Plotted on 18-Sep-2015 9:38 AM



TYPICAL FENCE TRANSITION
AT FENCE APROACHES
N.T.S.

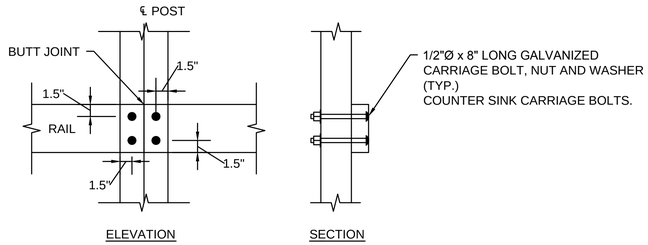


TIMBER RAIL FENCE TUBE STEEL SLEEVE
(FOR USE IN SATURATED LOCATIONS)
N.T.S.

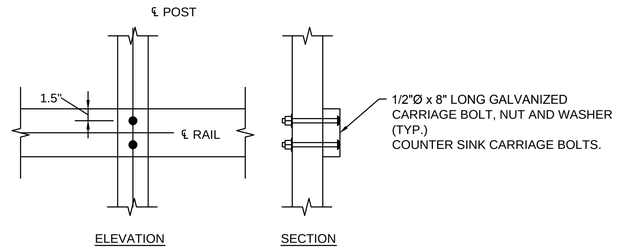


*SAME SCREWS OPPOSITE SIDE.

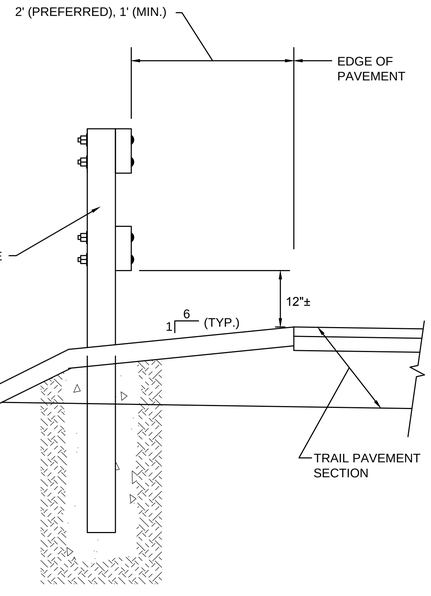
SLEEVE CONNECTION DETAIL
N.T.S.



BUTT JOINT CONNECTION
N.T.S.



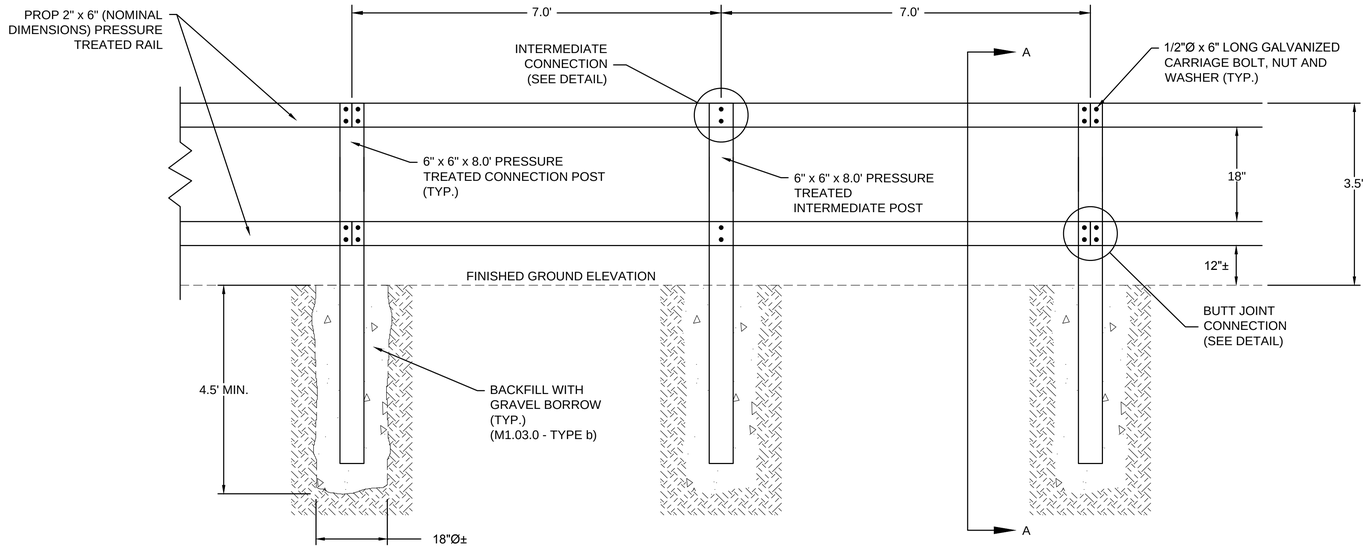
INTERMEDIATE CONNECTION
N.T.S.



SECTION A-A

SUGGESTED TIMBER RAIL FENCE CONSTRUCTION SEQUENCE

1. AUGER OR DIG POST HOLE TO REQUIRED DIMENSIONS.
2. IF GROUND IS SATURATED, USE TUBE STEEL SLEEVE. SEE DETAIL ON THIS SHEET.
3. BACKFILL BOTTOM 6"± OF HOLE WITH GRAVEL AND COMPACT THOROUGHLY.
4. SET POST AND HOLD PLUMB DURING BACKFILLING.
5. BACKFILL WITH GRAVEL IN 12" LIFTS. COMPACT EACH LIFT THOROUGHLY.
6. CLAMP RAILS TO POSTS AND FIELD DRILL BOLT HOLES.
7. SET BOLTS, WASHERS AND NUTS.
8. IF CCA PRESSURE TREATED LUMBER IS NOT READILY AVAILABLE AT THE TIME OF CONSTRUCTION OR IT IS DEEMED ENVIRONMENTALLY UNACCEPTABLE FOR COMMERCIAL USES BY THE EPA, USE ACQ PRESSURE TREATED LUMBER.



TIMBER RAIL FENCE ELEVATION
N.T.S.
SEE PLANS FOR LOCATIONS

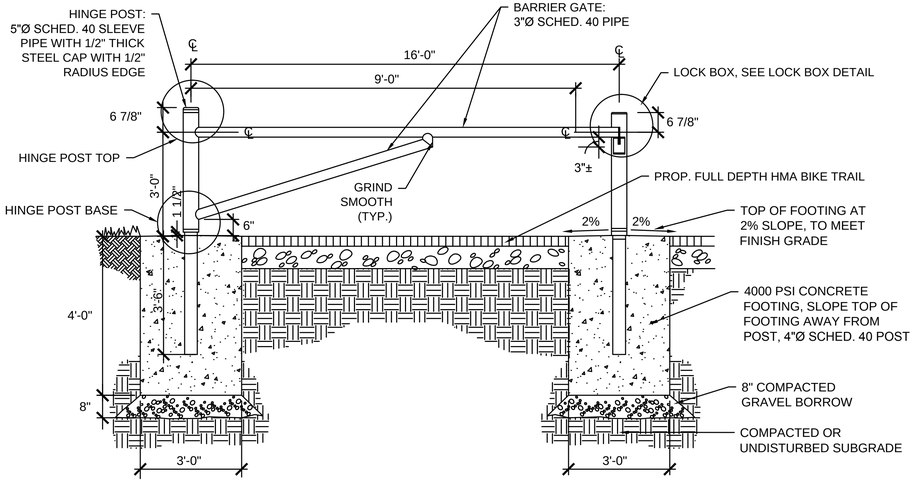
NOTES:
1. FOR RADII LESS THAN 165', USE CONNECTION POSTS SET AT 7.0' O.C. AND SHORTEN RAILS ACCORDINGLY.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	128	230
PROJECT FILE NO.	604531		

CONSTRUCTION DETAILS

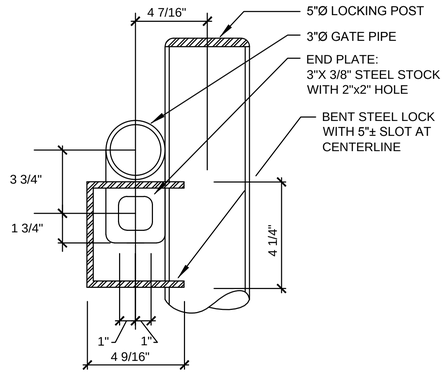
604531_HD(CD).DWG Plotted on 18-Sep-2015 9:38 AM



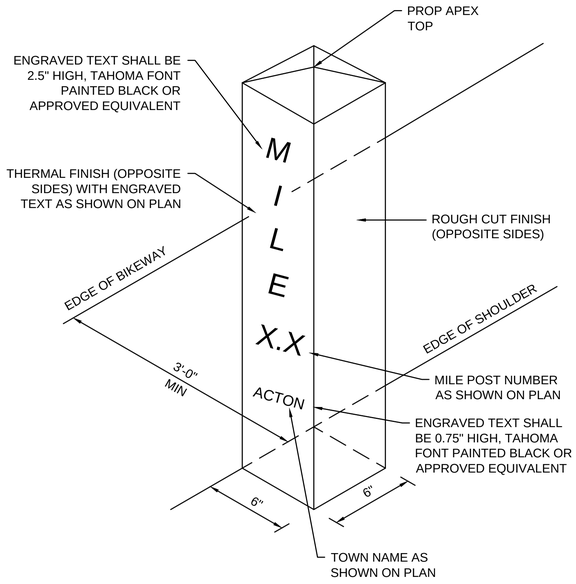
STEEL PIPE ACCESS GATE
N.T.S.

NOTES:

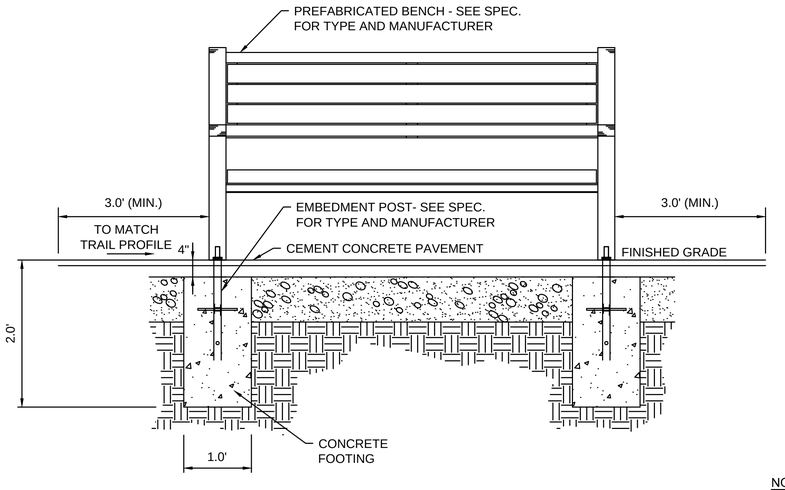
1. ALL STEEL SHALL BE GALVANIZED INSIDE AND OUT.
2. PROVIDE 1/2"Ø WEEP HOLES AT WELDED CONNECTIONS (3 PLACES).
3. INSTALL BRASS BUSHINGS AFTER GALVANIZING.

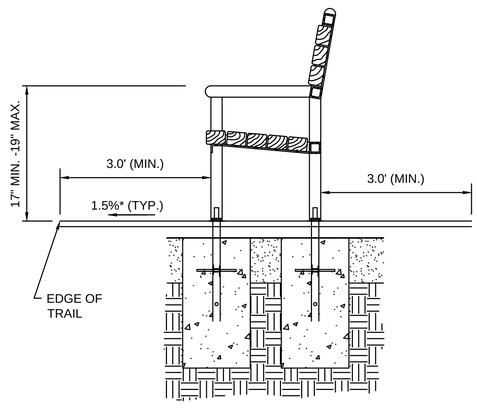


LOCK BOX DETAIL
N.T.S.



GRANITE MARKER
N.T.S.

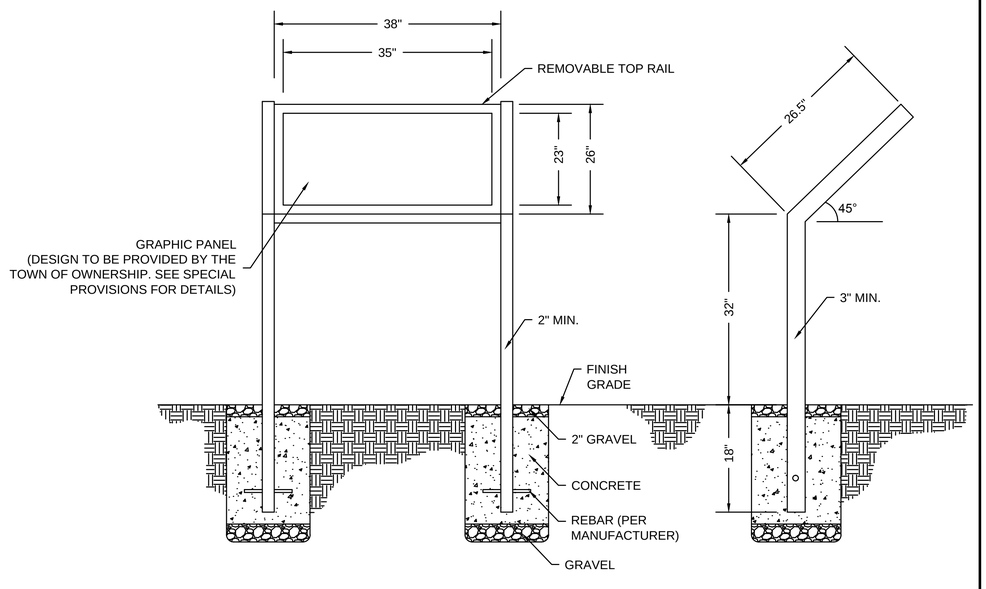




BENCH
N.T.S.

NOTES:
1. MINIMUM SETBACK OF 3' FROM TRAIL SURFACE
2. INSTALLATION OF BENCHES LOCATED ON BOARDWALK SHALL BE COORDINATED WITH BOARDWALK MATERIAL MANUFACTURER

*TOLERANCE OF CONSTRUCTION SHALL BE ± 0.5%

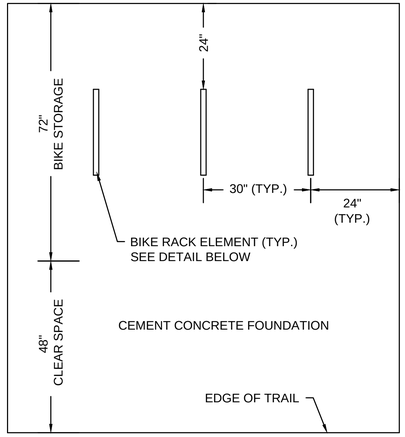


INTERPRETIVE SIGN
N.T.S.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	129	230
PROJECT FILE NO.	604531		

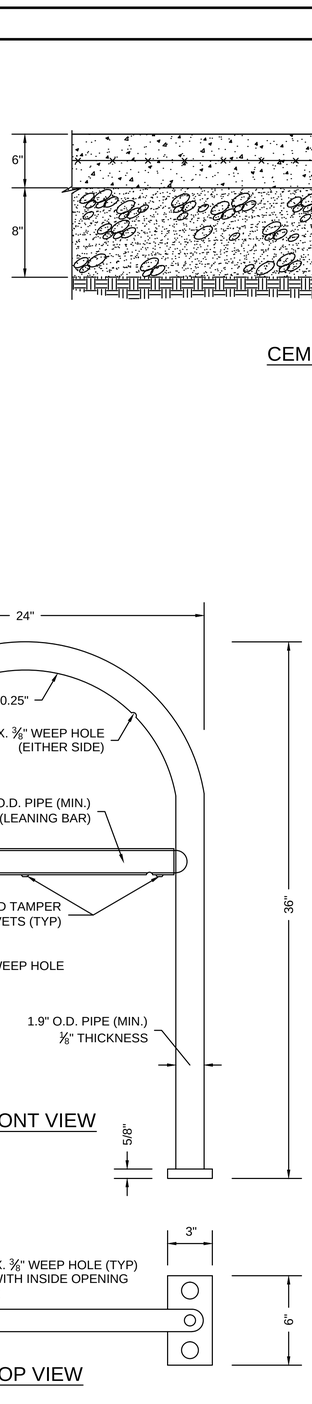
CONSTRUCTION DETAILS

604531_HD(CD).DWG Plotted on 18-Sep-2015 9:39 AM



NOTES:
- ALL DIMENSIONS MINIMUM
- SEE PLANS FOR QUANTITY OF BIKE RACK ELEMENTS

BICYCLE RACK PLACEMENT

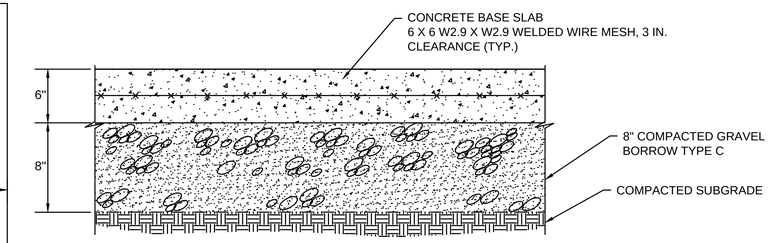


FRONT VIEW

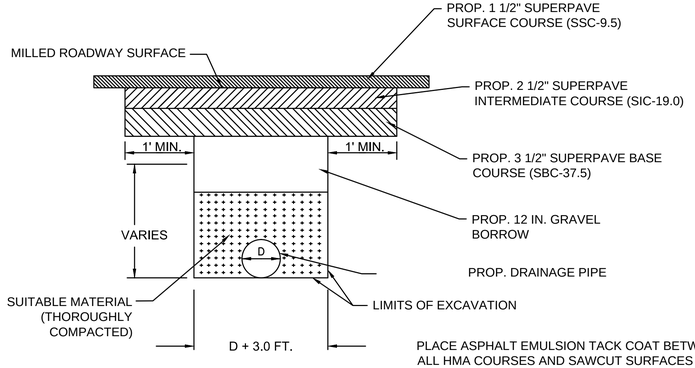
TOP VIEW

NOTE:
DIMENSIONS ARE APPROXIMATE AND WILL BE DETERMINED IN COORDINATION WITH THE MANUFACTURER. BIKE RACK ELEMENTS TO BE OF THE INVERTED "U" OR "A" TYPE AS DEFINED IN "BICYCLE PARKING GUIDELINES" BY ASSOCIATION OF PEDESTRIAN AND BICYCLE PROFESSIONALS. EACH BIKE RACK ELEMENT SHALL ACCOMMODATE TWO BICYCLES.

BICYCLE RACK ELEMENT DETAIL
N.T.S.



CEMENT CONCRETE FOUNDATION

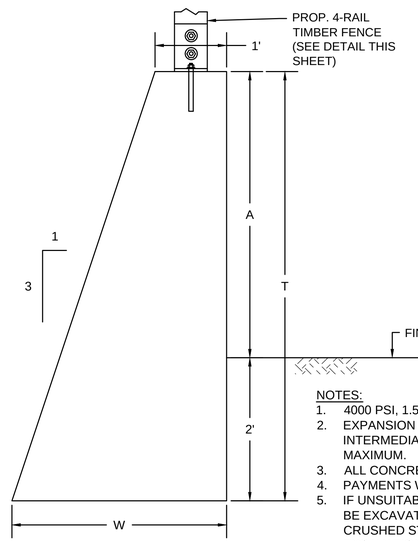


PERMANENT PATCH
N.T.S.
(IN AREAS OF MILLING AND HMA OVERLAY)

PLACE ASPHALT EMULSION TACK COAT BETWEEN ALL HMA COURSES AND SAWCUT SURFACES PRIOR TO PLACING HMA. SEE PAVEMENT NOTES-FULL DEPTH CONSTRUCTION FOR DEPTH OF HMA COURSES.

AN ALTERNATIVE TO A MULTI-LAYER HMA REPAIR CONSISTING OF A COMPACTED DEPTH OF SSC-9.5 OVER SIC-19.0 OVER SBC-37.5, IS TO CONSTRUCT A 3 LAYERS COMPACTED LIFTS OF SIC-12.5.

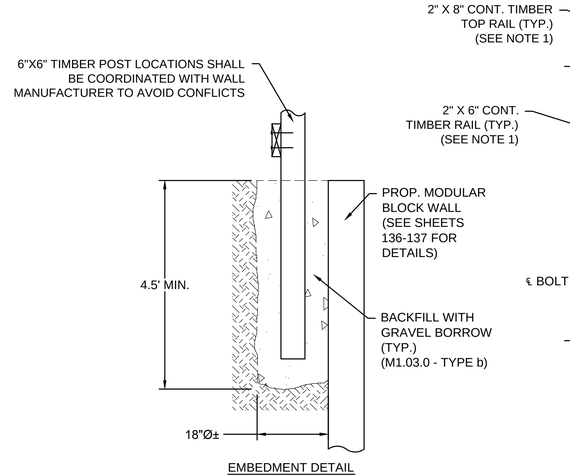
DRAINAGE TRENCH DETAIL
N.T.S.



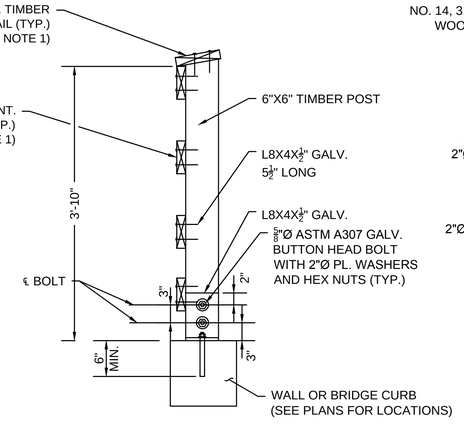
NOTES:
1. 4000 PSI, 1.5 IN., 565 CEMENT CONCRETE TO BE USED.
2. EXPANSION JOINTS TO BE PLACED 90' O.C. MAXIMUM WITH INTERMEDIATE CONSTRUCTION JOINTS PLACED AT 30' O.C. MAXIMUM.
3. ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM.
4. PAYMENTS WILL BE BASED ON TABLE BELOW.
5. IF UNSUITABLE MATERIALS ARE ENCOUNTERED, THEY SHALL BE EXCAVATED TO SOUND MATERIAL AND BACKFILLED WITH CRUSHED STONE. COSTS ASSOCIATED WITH OVER EXCAVATION ARE TO BE PAID UNDER ITEMS 141. AND 156.
6. AREAS WITH TIMBER FENCE AND CHAIN LINK FENCE SHALL LOCATE POSTS TO AVOID CONFLICTS.

HEIGHTS		WIDTH	AREA SQ. FT.	CU. YDS. PER LIN. FT.
A	T	W		
2'-0"	4'-0"	2'-4"	6.667	0.247
2'-6"	4'-6"	2'-6"	7.875	0.292
3'-0"	5'-0"	2'-8"	9.165	0.339
3'-6"	5'-6"	2'-10"	10.541	0.390
4'-0"	6'-0"	3'-0"	12.000	0.444
4'-6"	6'-6"	3'-2"	13.541	0.502
5'-0"	7'-0"	3'-4"	15.162	0.562

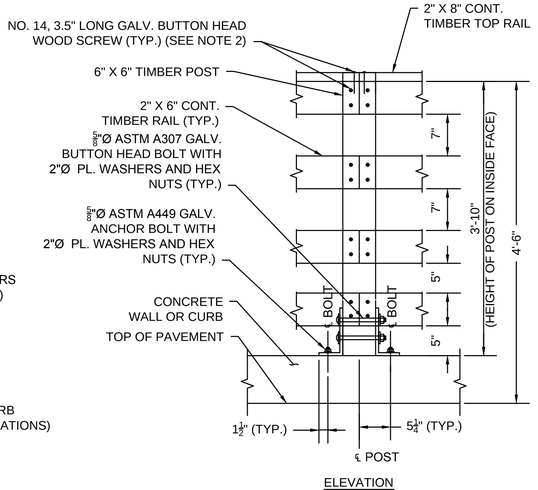
LOW RETAINING WALL
N.T.S.



EMBEDMENT DETAIL
(FOR USE AT PROPOSED MODULAR BLOCK WALLS)



TRANSVERSE SECTION



ELEVATION

NOTES:
1. TIMBER RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE POSTS WHERE POSSIBLE.
2. ELEVATION SHOWN REFLECTS LOCATION OF RAIL BUTT JOINT, AT INTERMEDIATE JOINT ONLY TWO WOOD SCREWS REQUIRED PER RAILING.

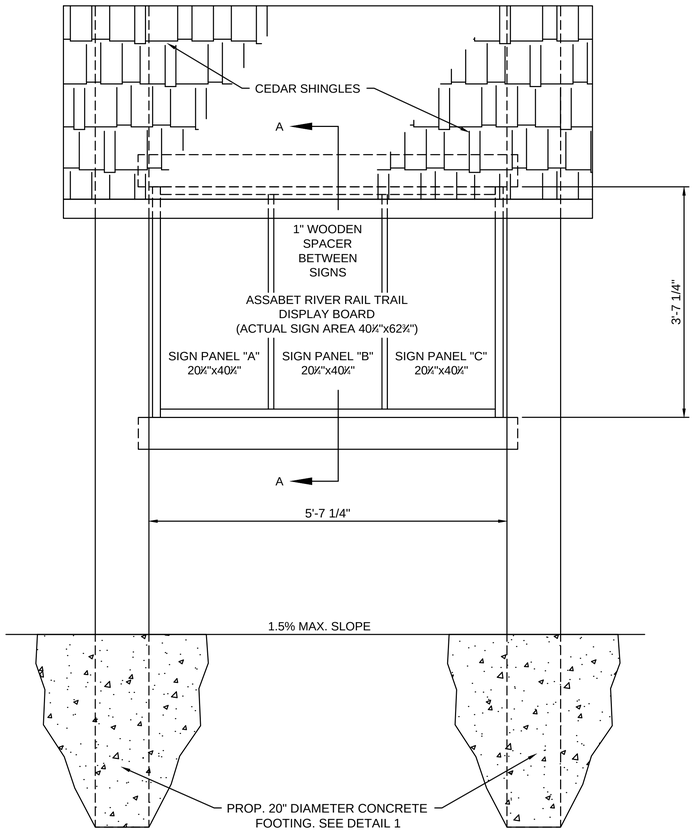
4-RAIL TIMBER FENCE DETAILS
N.T.S.

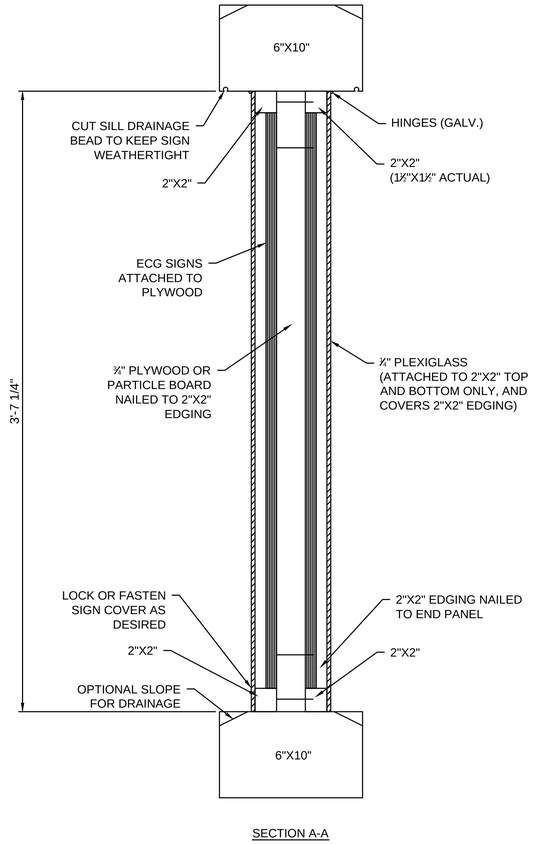
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	130	230
PROJECT FILE NO.	604531		

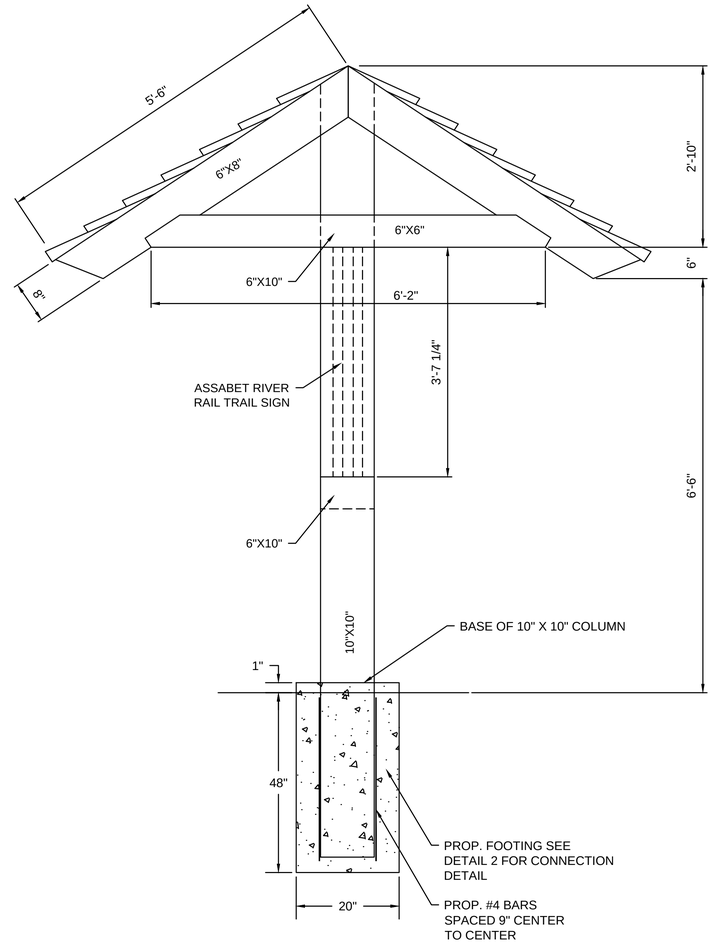
CONSTRUCTION DETAILS

604531_HD(CD).DWG Plotted on 18-Sep-2015 9:39 AM



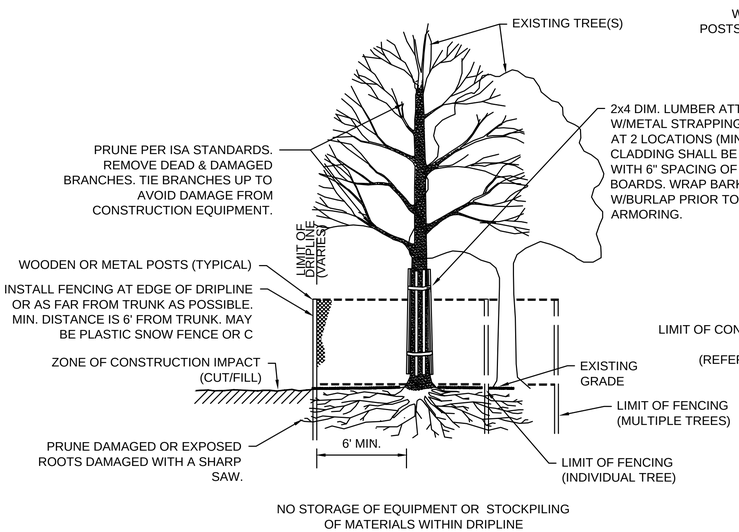


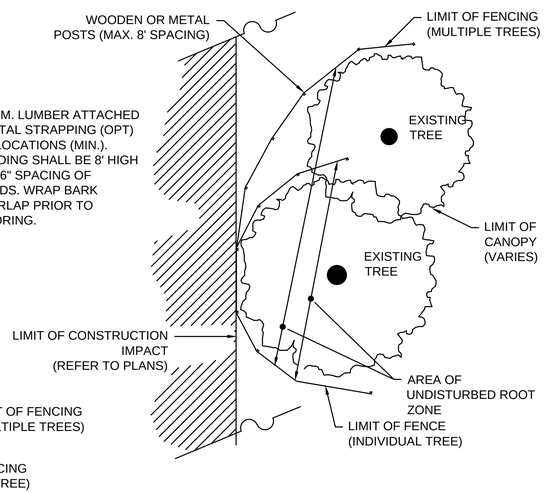
SECTION A-A



NOTES:
1. INSTALLATION OF DISPLAY BOARD LOCATED ON BOARDWALK SHALL BE COORDINATED WITH BOARDWALK MATERIAL MANUFACTURER

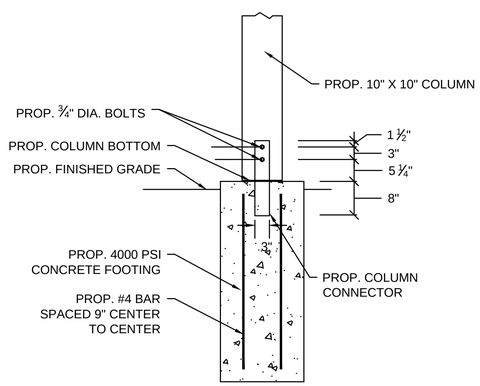
DISPLAY BOARD DETAILS
N.T.S.



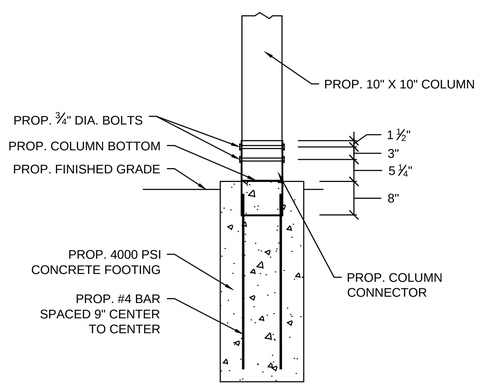


PLAN VIEW

TREE PROTECTION PLAN
N.T.S.



COLUMN BASE - DETAIL 1
N.T.S.



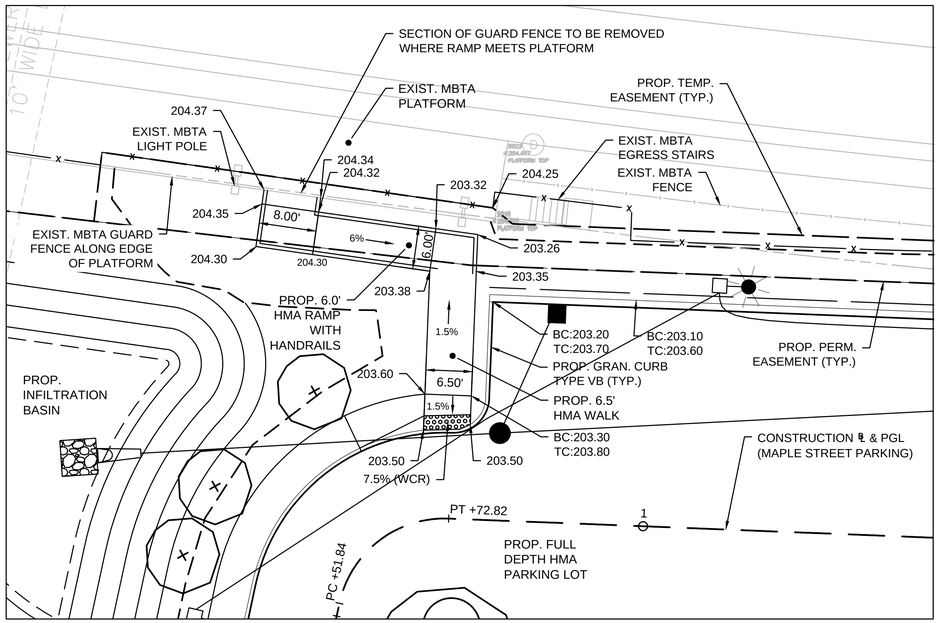
COLUMN BASE - DETAIL 2
N.T.S.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	131	230
PROJECT FILE NO.	604531		

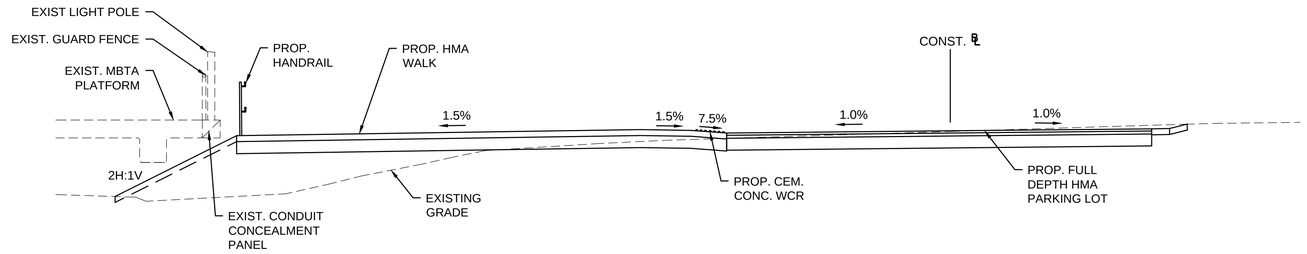
CONSTRUCTION DETAILS

604531_HD(CD).DWG Plotted on 18-Sep-2015 9:40 AM



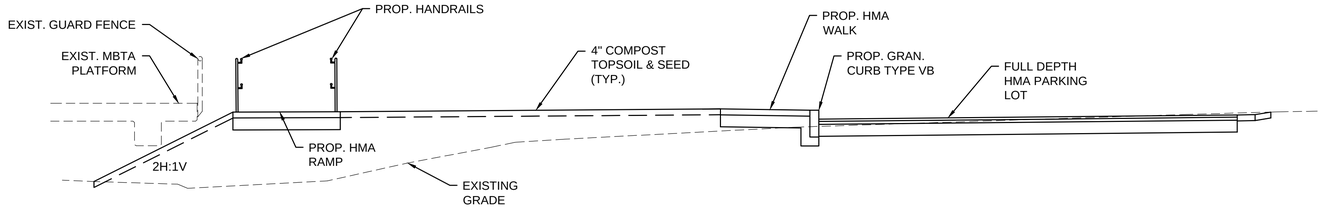
HMA WALK AND RAMP AT MBTA PLATFORM (MAPLE STREET PARKING)

SCALE: 1" = 10'



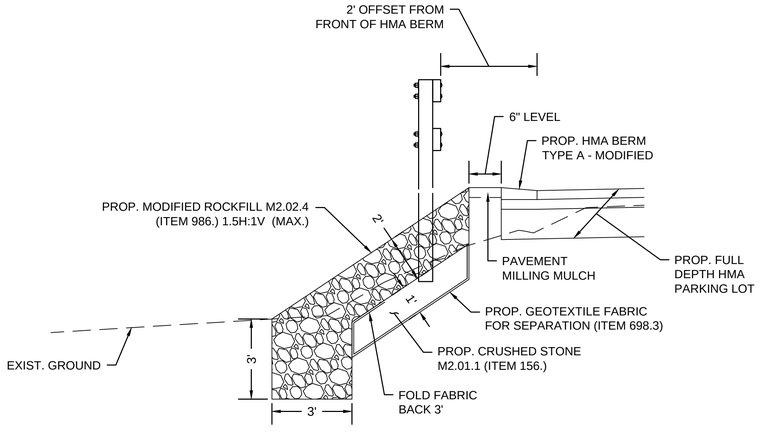
SECTION AT WALKWAY ENTRANCE / RAMP LANDING (MAPLE ST. PARKING STA. 0+75)

SCALE: 1" = 4'



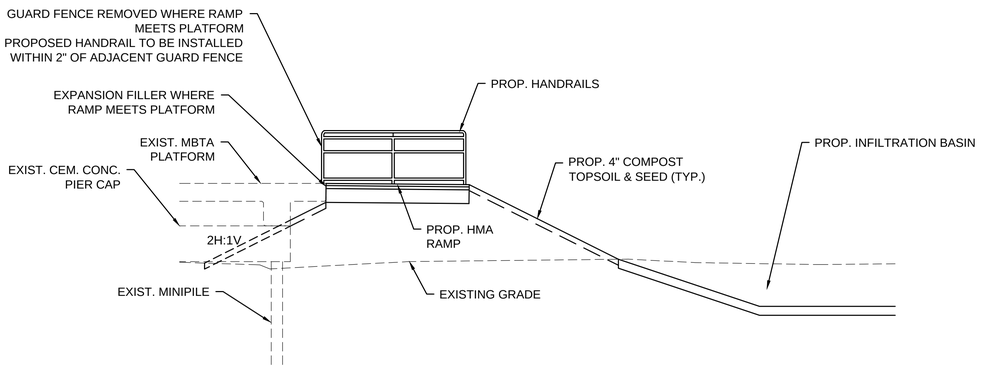
SECTION THROUGH RAMP AT MIDPOINT

SCALE: 1" = 4'



MODIFIED ROCKFILL

FOR SLOPES STEEPER THAN 2H TO 1V
NOT TO SCALE



SECTION THROUGH END OF RAMP AT MBTA PLATFORM

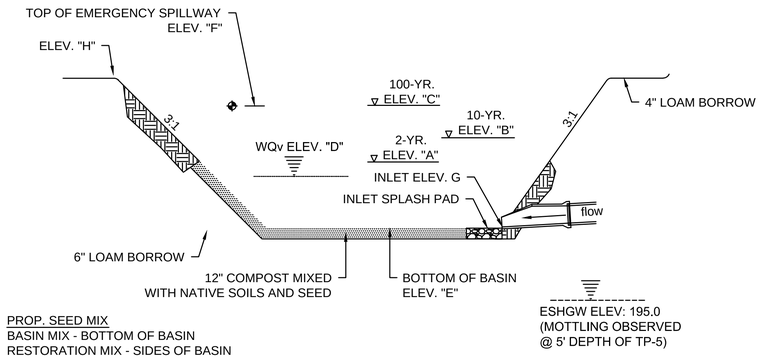
SCALE: 1" = 4'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	132	230
PROJECT FILE NO.	604531		

CONSTRUCTION DETAILS

604531_HD(IB).DWG Plotted on 18-Sep-2015 9:40 AM

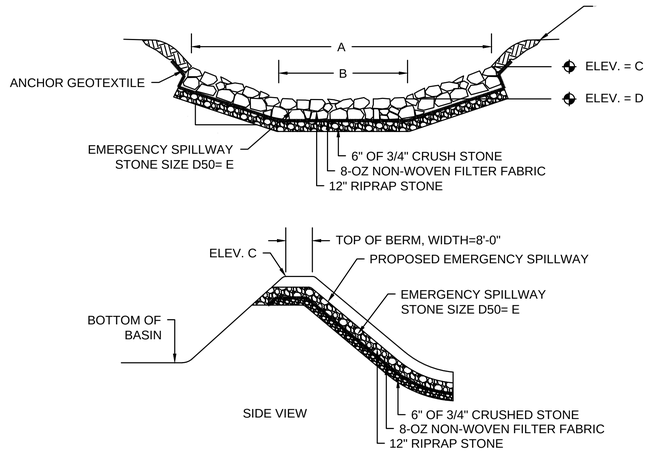


PROP. SEED MIX
BASIN MIX - BOTTOM OF BASIN
RESTORATION MIX - SIDES OF BASIN

BASIN DESIGN TABLE								
	A	B	C	D	E	F	G	H
INFILTRATION BASIN	198.70	199.65	200.37	197.93	197.50	200.30	197.60	201.3

TYPICAL INFILTRATION/ EXTENDED DETENTION BASIN CROSS-SECTION

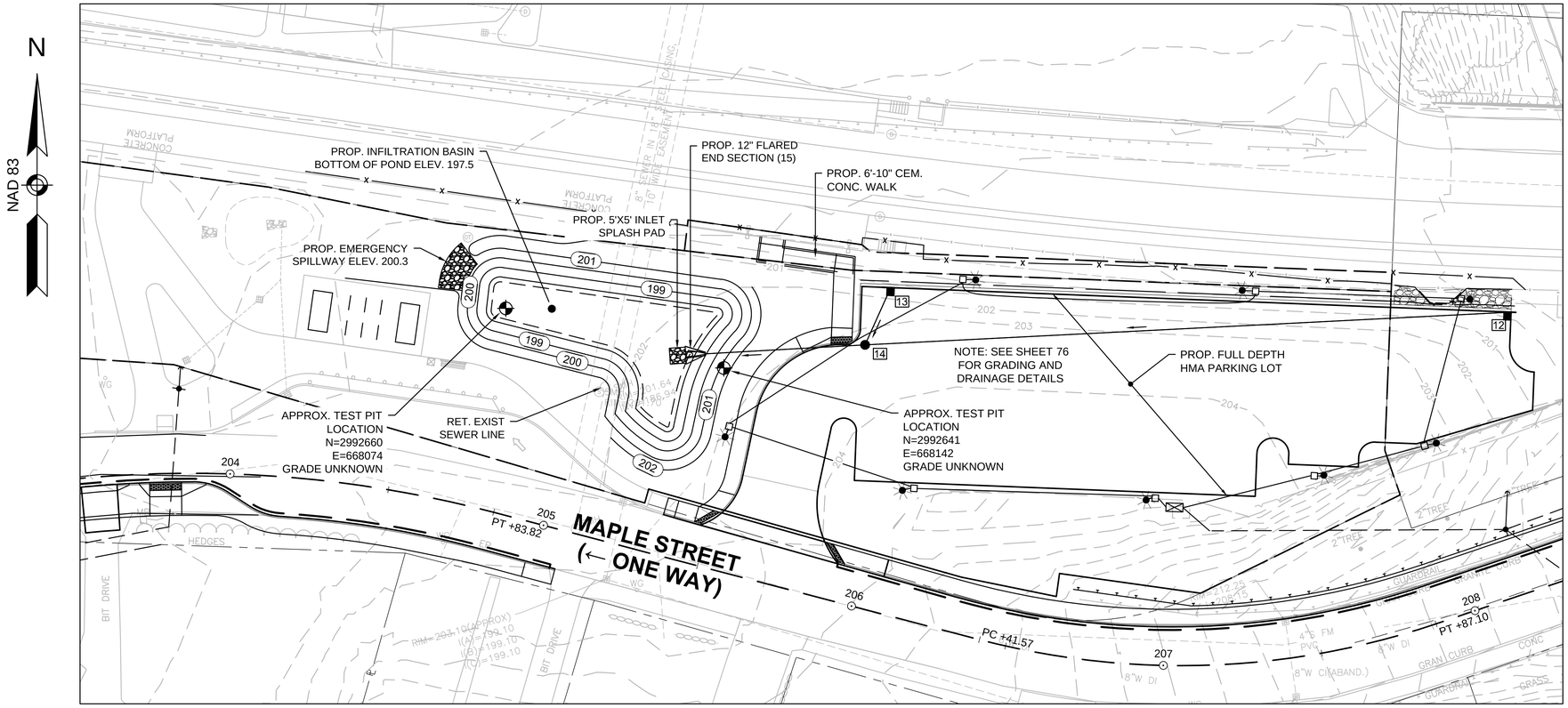
NTS



SPILLWAY DESIGN TABLE					
	A	B	C	D	E
IB-1	12'	6'	201.30	200.30	4"

SPILLWAY CROSS-SECTION

NTS



0 20 50 100

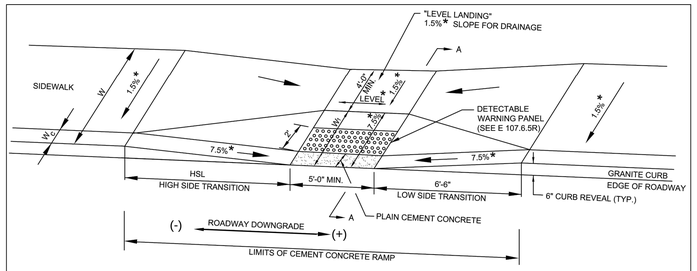
SCALE: 1" = 20'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	133	230
PROJECT FILE NO.	604531		

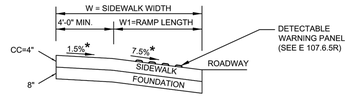
WHEELCHAIR RAMP DRIVEWAY DETAILS

604531_HD(WCR).DWG Plotted on 18-Sep-2015 9:41 AM



LEGEND

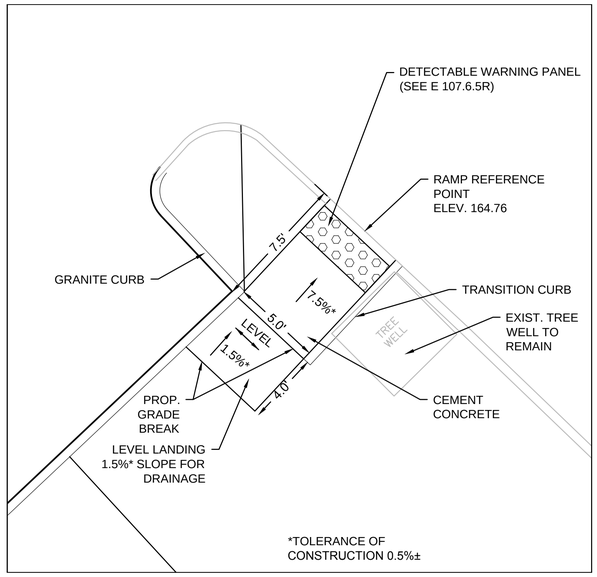
HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0R)
W = SIDEWALK WIDTH
W_c = CURB WIDTH
W_1 = PERPENDICULAR RAMP LENGTH
CC = CEMENT CONCRETE
★ = TOLERANCE FOR CONSTRUCTION ±0.5%
USABLE SIDEWALK WIDTH PER AAB = W-Wc
RAMP LENGTH, W1 = W-4'-0" Min



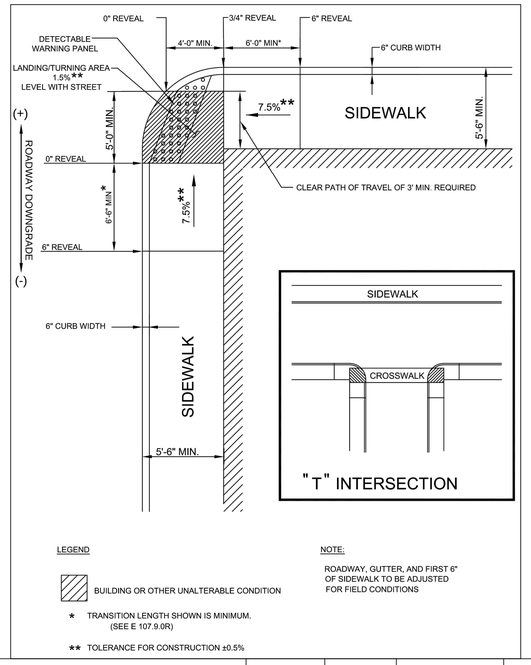
SECTION A-A

WCR #	RAMP REFERENCE POINT			LENGTH OF PRIMARY RAMP (W1)	WIDTH OF SIDEWALK	WIDTH OF RAMP MIN. 5'-0"	DEPTH OF LEVEL LANDING MIN. 4'-0"	ROADWAY GUTTER SLOPE	TRANSITION LENGTH		
	BASELINE	STATION	OFFSET						LEFT SIDE	RIGHT SIDE	
4	ARRT	49+77	10' RT	SEE DETAIL ON SHEET 135							
5	ARRT	50+78	0'	6.0'	10.0'	10.0'	4.0'	2.9%±	11.0'	6.5'	
12	ARRT	56+80	0'	SEE DETAIL ON SHEET 135							
22	ARRT	74+21	0'	6.5'	10.5'	6.0'	4.0'	-7.7%±	6.5'	15.0'	
23	ARRT	74+58	0'	4.0'	7.5'	6.0'	4.0'	6.7%±	7.5'*	N/A	*3" CURB REVEAL
26	ARRT	75+38	13.5' LT	5.0'	9.0'	5.0'	4.0'	5.5%±	15.0'	N/A	*FLUSH GRANITE CURB AT RIGHT SIDE
29	ARRT	88+41	10.5' RT	SEE DETAIL ON SHEET 135							
35	ARRT	180+38	0'	4.5'	10.5'	10.0'	6.0'	0.8%±	7.67'	3.25'*	*3" CURB REVEAL

WHEELCHAIR RAMP LESS THAN 12'-4" SIDEWALK



WCR-19 WHEELCHAIR RAMP DETAIL
STA. 71+06



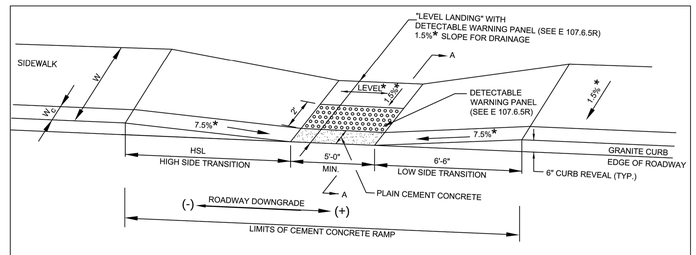
LEGEND

BUILDING OR OTHER UNALTERABLE CONDITION
★ TRANSITION LENGTH SHOWN IS MINIMUM. (SEE E 107.9.0R)
★★ TOLERANCE FOR CONSTRUCTION ±0.5%

NOTE:

ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS

WCR #	RAMP REFERENCE POINT			WIDTH OF SIDEWALK	WIDTH OF OPENING	ROADWAY GUTTER SLOPE	LENGTH OF RAMP (W1)
	BASELINE	STATION	OFFSET				
36	MAPLE ST. PARKING	0+15.96	18.60' LT	5.5'	5.0'	-2.7%±	6.5'
"T" INTERSECTION WHEELCHAIR RAMP							

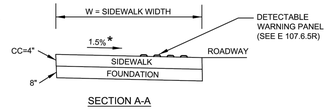


LEGEND

HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0R)
W = SIDEWALK WIDTH
W_c = CURB WIDTH
CC = CEMENT CONCRETE
★ = TOLERANCE FOR CONSTRUCTION ±0.5%
USABLE SIDEWALK WIDTH PER AAB = W-Wc
USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'0"
SEE E 107.6.5R FOR DETAILS OF DETECTABLE WARNING PANEL

NOTE:

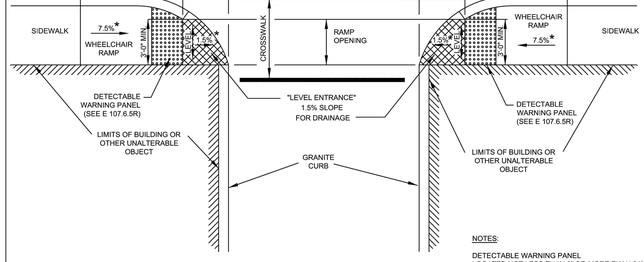
ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS



SECTION A-A

WCR #	RAMP REFERENCE POINT			WIDTH OF SIDEWALK	WIDTH OF RAMP MIN. 5'-0"	ROADWAY GUTTER SLOPE	TRANSITION LENGTH		
	BASELINE	STATION	OFFSET				LEFT SIDE	RIGHT SIDE	
2	ARRT	33+75	0'	6.5'	10.0'	-3.3%±	6.5'	14.0'	
14	ARRT	57+21	34.5' LT	VARIES	5.0'	2.0%±	11.0'	6.5'	
24	ARRT	74+97	0'	6.5'	8.0'	-5.6±	6.5'	7.5'*	*3" CURB REVEAL
27	ARRT	74+81	72.5' LT	5.5'	5.0'	2.6%± (L) -4.3%± (R)	11.0'	15.0'	
38	MAPLE STREET	208+60	13' LT	5.5'	5.0'	-4.9%±	6.5'	15.0'	
39	MAPLE STREET PARKING	0+72	12' LT	5.5'	5.0'	1.0%±	9.0'	6.5'	

WHEELCHAIR RAMP ON NARROW SIDEWALK WITH DETECTABLE WARNING PANEL



LEGEND

HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0R)
★ = TOLERANCE FOR CONSTRUCTION ±0.5%

NOTES:

DETECTABLE WARNING PANEL LOCATED NOT LESS THAN 6" OR MORE THAN 24" FROM ROADWAY EDGE (GUTTER LINE). TRUNCATED DOMES TO BE ALIGNED WITH DIRECTION OF TRAVEL.

FOR DETAILS OF TRUNCATED DOMES SEE DRAWING E 107.6.5R.

ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS.

WCR #	RAMP REFERENCE POINT			WIDTH OF SIDEWALK	WIDTH OF OPENING	ROADWAY GUTTER SLOPE	TRANSITION LENGTH
	BASELINE	STATION	OFFSET				
1	ARRT	33+39	0'	10.0'	10.0'	-2.8%±	11.0'
3	ARRT	34+97	60.1' LT	5.0'	3.0'	-0.8%±	6.5'
11	ARRT	57+51	48.5' RT	6.0'	6.0'	2.7%±	11.0'
16	ARRT	63+15	0'	10.0'	10.0'	0%	6.5'*
20	ARRT	72+02	0'	10.0'	10.0'	0%	6.5'*
21	ARRT	72+40	0'	10.0'	10.0'	0%	6.5'*
28	ARRT	86+31	0'	12.0'	12.0'	0.8%±	7.67'±
31	ARRT	131+35	0'	12.0'	12.0'	0%	6.5'*
32	ARRT	131+73	0'	10.0'	10.0'	0%	6.5'*
33	ARRT	135+75	0'	10.0'	10.0'	0%	6.5'*
34	ARRT	136+18	0'	16.5'	16.5'	0%	6.5'*
37	MAPLE STREET	205+92	14.5' RT	5.5'	5.0'	3.9%±	14.0'

WHEELCHAIR RAMP FOR ONE CONTINUOUS DIRECTION OF PEDESTRIAN TRAVEL

*LANDSCAPING SEPARATION / NO ADJACENT ROADWAY

ROADWAY PROFILE GRADE	*HIGH SIDE TRANSITION LENGTH
%	ENGLISH UNITS
=0%	6'-6"
>0% TO 1%	7'-8"
>1% TO 2%	9'-0"
>2% TO 3%	11'-0"
>3% TO 4%	14'-0"
>4% TO 5%	15'-0" Max

NOTE:

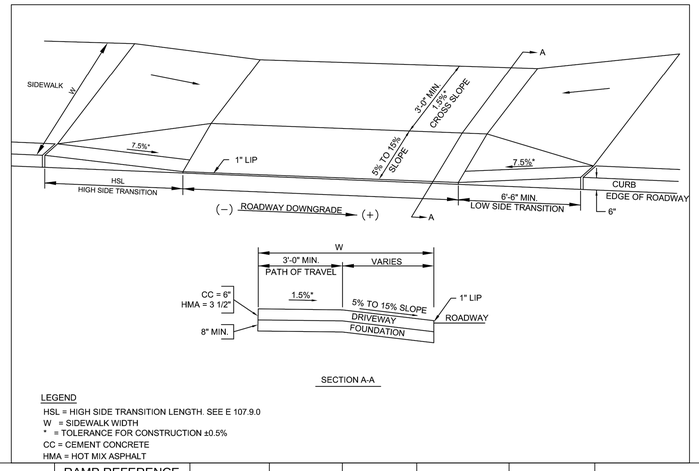
*BASED ON A DESIGN SLOPE OF 7.5% AND A REVEAL OF 6".

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	134	230
PROJECT FILE NO.	604531		

WHEELCHAIR RAMP DRIVEWAY DETAILS

604531_HD(WCR).DWG Plotted on 18-Sep-2015 9:41 AM



LEGEND

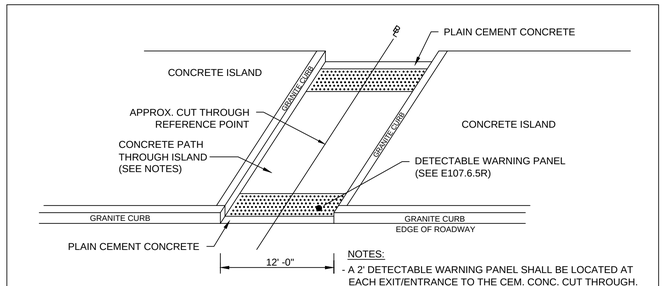
HSL = HIGH SIDE TRANSITION LENGTH. SEE E 107.9.0
W = SIDEWALK WIDTH
* = TOLERANCE FOR CONSTRUCTION ±0.5%
CC = CEMENT CONCRETE
HMA = HOT MIX ASPHALT

	RAMP REFERENCE POINT		DRIVEWAY APRON	WIDTH OF SIDEWALK (W)	WIDTH OF DRIVEWAY (L)	DEPTH OF TRAVEL PATH MIN. 3'-3"	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
BASELINE	STATION	OFFSET						LEFT SIDE	RIGHT SIDE
ARRT	34+40	5' LT	5.0'	8.0'	10.0'	8.0'	-1.8%±	6.5'	6.5'*
ARRT	50+12	5' LT	2.5'	10.0'	24.0'	7.5'	1.2%±	9.0'	6.5'
MAIN STREET (ROUTE 27)	2049+12	14' LT	11.0'	16.0'	102.0'	16.0'	0.10%±	N/A	N/A
MAPLE STREET	203+58.5	2.75' RT	2.0'	10.5'	11.0'	8.0'	0.9%±	3.84"*	6.5'

SIDEWALK THROUGH DRIVEWAYS WITHOUT CURB RETURNS

*TRANSITION IS PARALEL TO ROADWAY WITH 5' GRASS STRIP (SEE CONSTRUCTION PLAN FOR LOCATION)

*3" CURB REVEAL



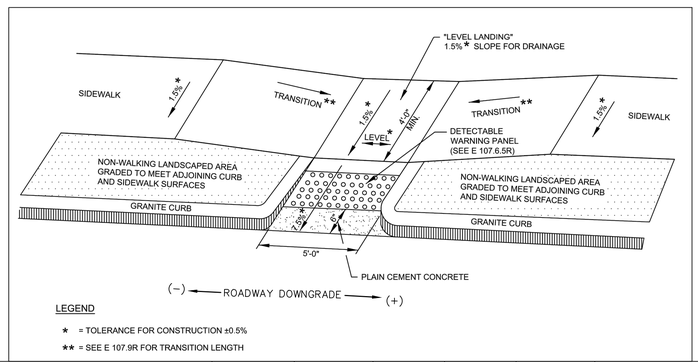
NOTES:
- A 2' DETECTABLE WARNING PANEL SHALL BE LOCATED AT EACH EXIT/ENTRANCE TO THE CEM. CONC. CUT THROUGH.

-THE CEM. CONC. PATH THROUGH THE ISLAND SHALL BE ADA COMPLIANT IN TERMS OF MAX. RUNNING SLOPE AND CROSS SLOPE.

WCR #	RAMP REFERENCE POINT			WITH OF CUT THROUGH
	BASELINE	STATION	OFFSET	
6	ARRT	51+05	0'	12.0'

1. WHEELCHAIR RAMPS ARE TO BE CEMENT CONCRETE.
2. CONCRETE RAMPS ARE TO BE TEXTURED BY GROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.

CEMENT CONCRETE ISLAND WITH SIDEWALK 'CUT THROUGH'



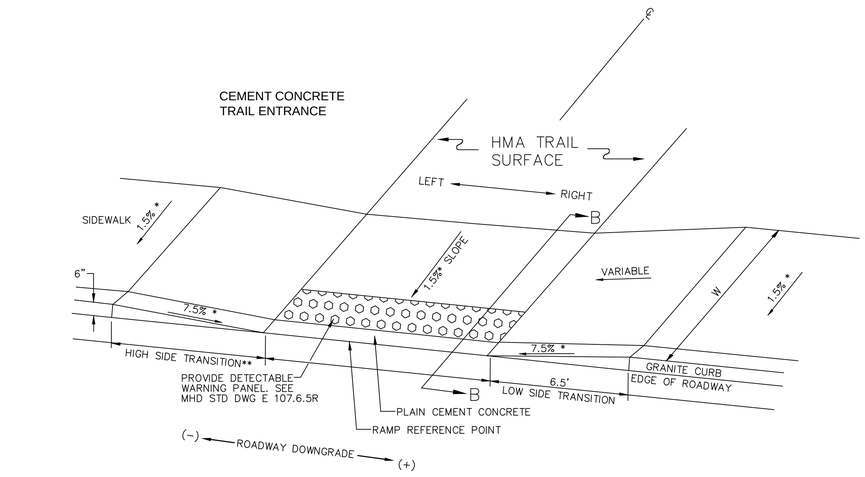
LEGEND

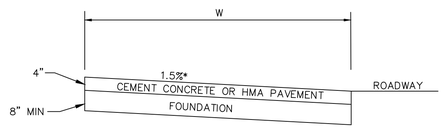
* = TOLERANCE FOR CONSTRUCTION ±0.5%
** = SEE E 107.9R FOR TRANSITION LENGTH

WCR #	RAMP REFERENCE POINT			LENGTH OF PRIMARY RAMP (W1)	WIDTH OF SIDEWALK	WIDTH OF RAMP MIN. 5'-0"	DEPTH OF LEVEL LANDING MIN. 4'-0"	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
	BASELINE	STATION	OFFSET						LEFT SIDE	RIGHT SIDE
8	ARRT	51+69	12.5' LT	6.0'	8.0'	5.0'	>10.0'	0%	N/A	N/A
9	ARRT	56+50	SEE DETAIL ON SHEET 135							
10	ARRT	56+42	26' RT	2.0'	N/A	8.0'	4.0'	-0.2%±	N/A	N/A
13	ARRT	57+25	20.56' LT	2.0'	8.0'	5.0'	14.3'	-1.7%±	N/A	N/A
15	ARRT	62+98	17' LT	2.0'	10.0'	5.0'	>10.0'	-1.2%±	N/A	N/A
18	ARRT	69+91	24' RT	6.0'	5.0'	5.0'	5.0'	-0.31%±	N/A	N/A

WHEELCHAIR RAMP WITH LANDSCAPING STRIP

CEMENT CONCRETE TRAIL ENTRANCE





SECTION B–B

NOTES:

* CONSTRUCTION TOLERANCE ±0.5%
SEE CONSTRUCTION STANDARD M/E 107.2.0
** SEE CONSTRUCTION STANDARD M/E 107.9.0

WCR #	RAMP REFERENCE POINT			WIDTH OF SIDEWALK (W)	DEPTH OF LEVEL LANDING MIN. 4'-0"	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
	BASELINE	STATION	OFFSET				LEFT SIDE	RIGHT SIDE
7	ARRT	51+35	0'	SEE DETAIL ON SHEET 135				
17	ARRT	63+41	0'	5'±	10.0'	-2.3%±	6.5'	N/A
25	ARRT	75+35	0'	9'±	10.0'	8%	N/A*	6.5'
30	ARRT	88+56	0'	12.0'	12.0'	-1.6%±	N/A	9.0'

SIDEWALK THROUGH TRAIL (WITHOUT SPLITTER ISLAND)

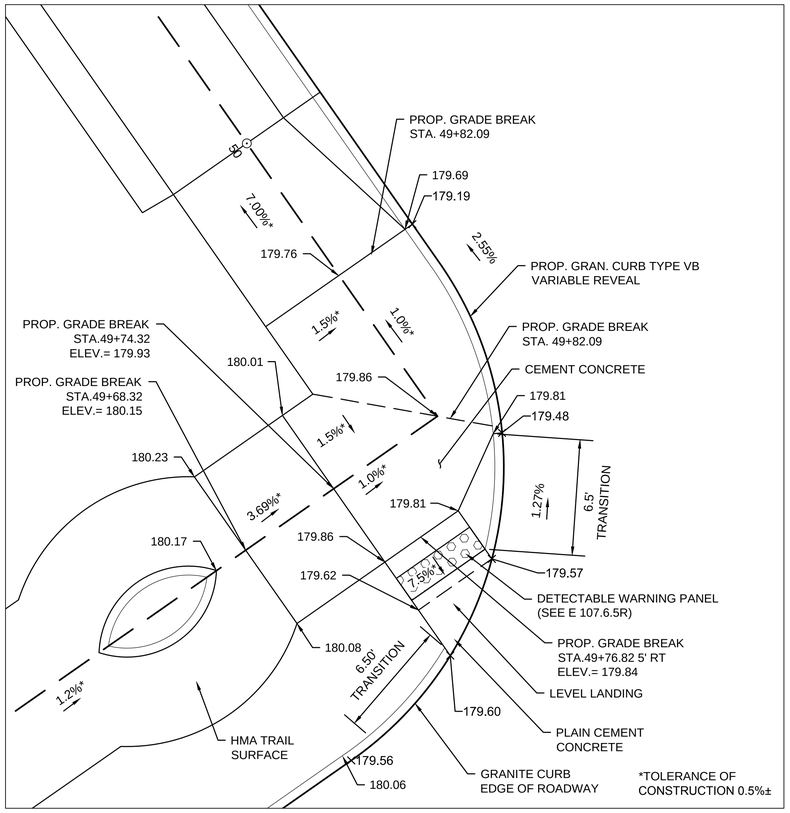
*FLUSH GRANITE CURB AT LEFT SIDE PER PLAN

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

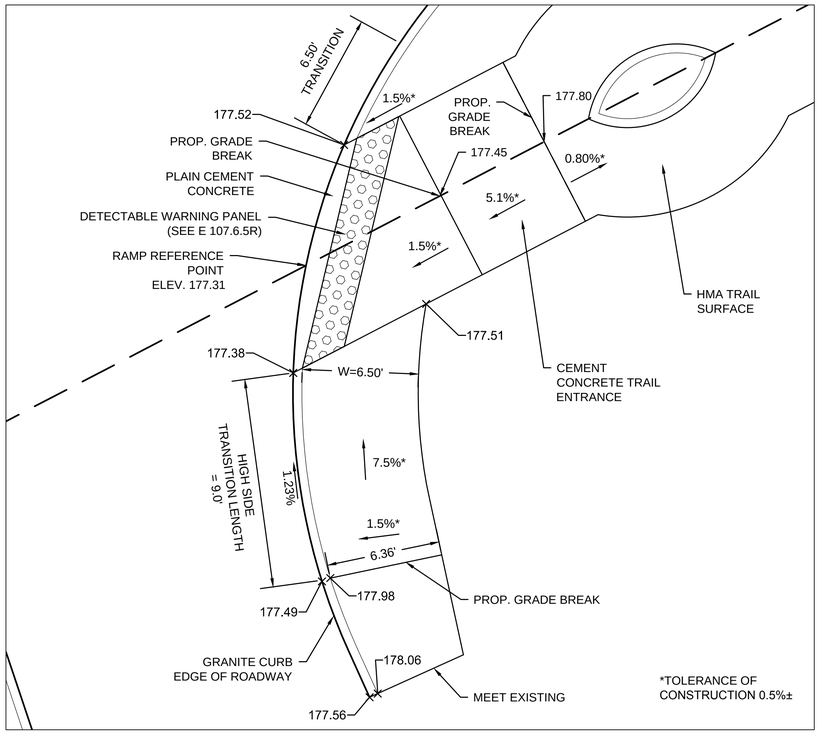
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	135	230
PROJECT FILE NO.	604531		

WHEELCHAIR RAMP DRIVEWAY DETAILS

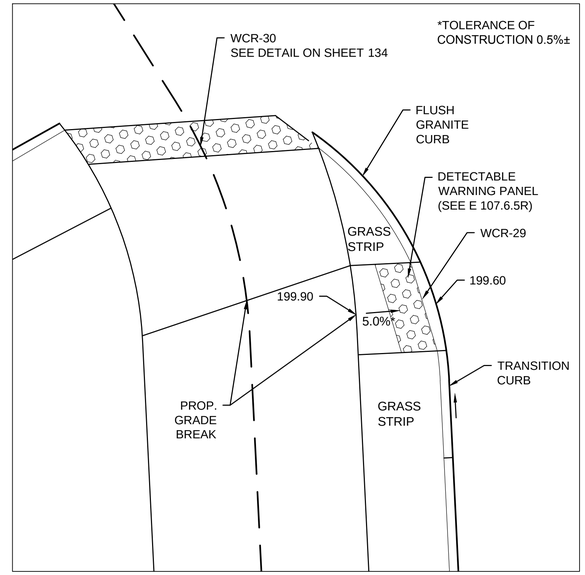
604531_HD(WCR).DWG Plotted on 18-Sep-2015 9:41 AM



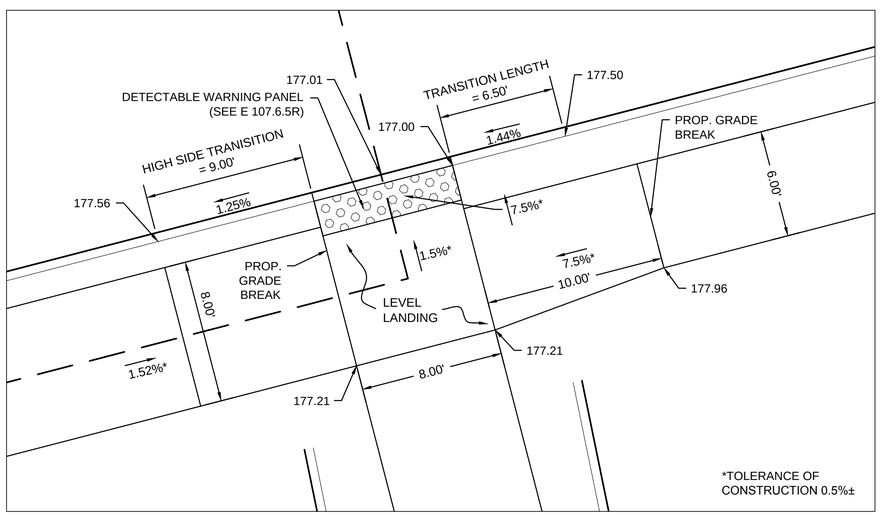
WCR-4 WHEELCHAIR RAMP DETAIL
STA. 49+77 10' RT



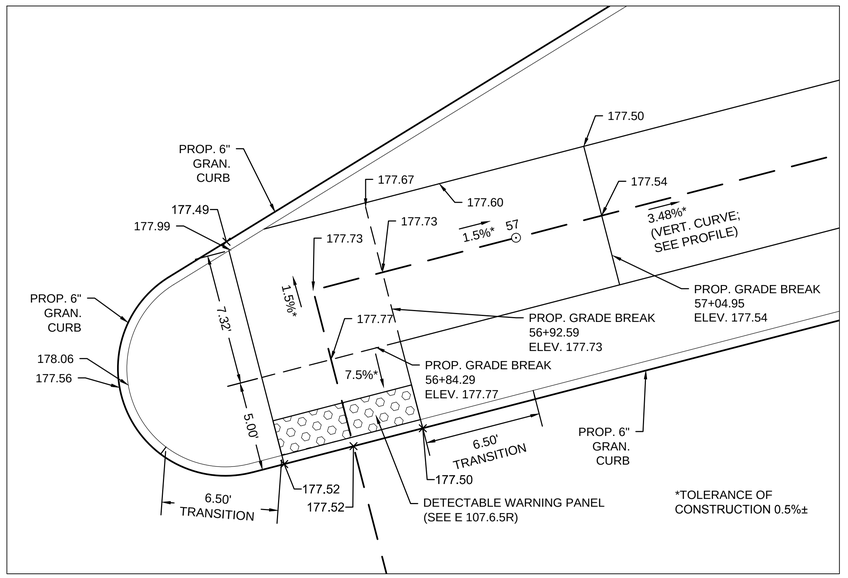
WCR-7 WHEELCHAIR RAMP DETAIL
STA. 51+34



WCR-29 WHEELCHAIR RAMP DETAIL
STA. 88+41 10.5' RT



WCR-9 WHEELCHAIR RAMP DETAIL
STA. 56+50



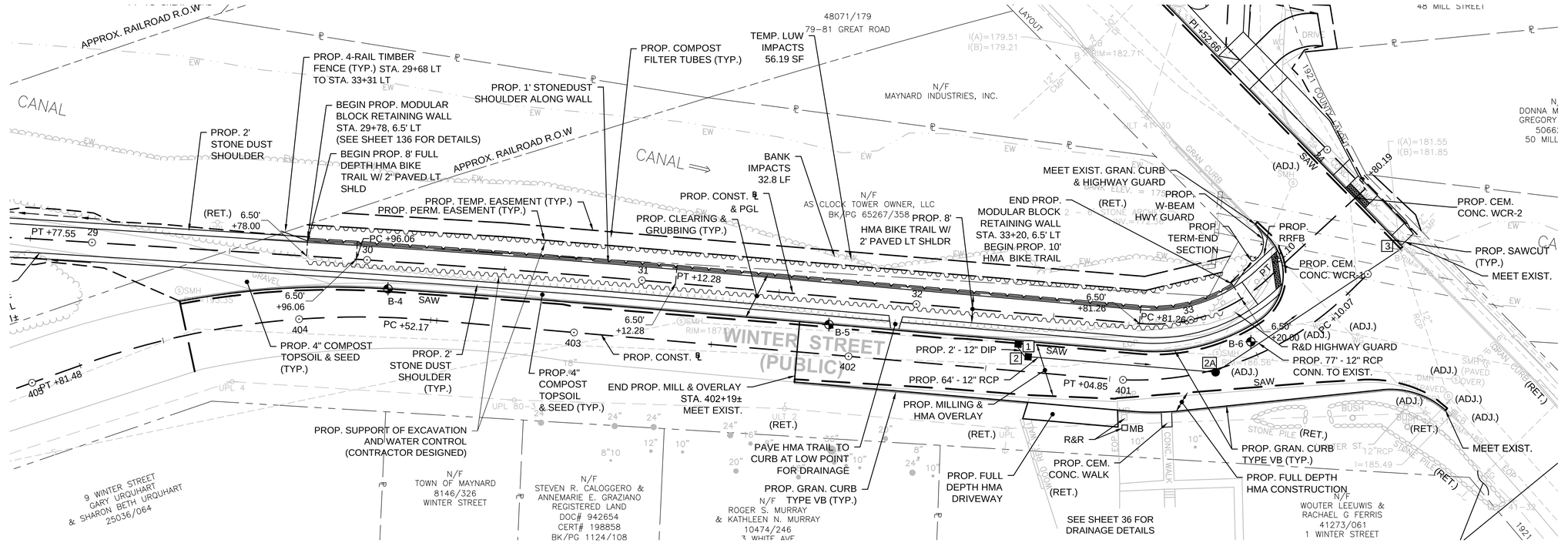
WCR-12 WHEELCHAIR RAMP DETAILS
WCR-12: STA. 56+80.0

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

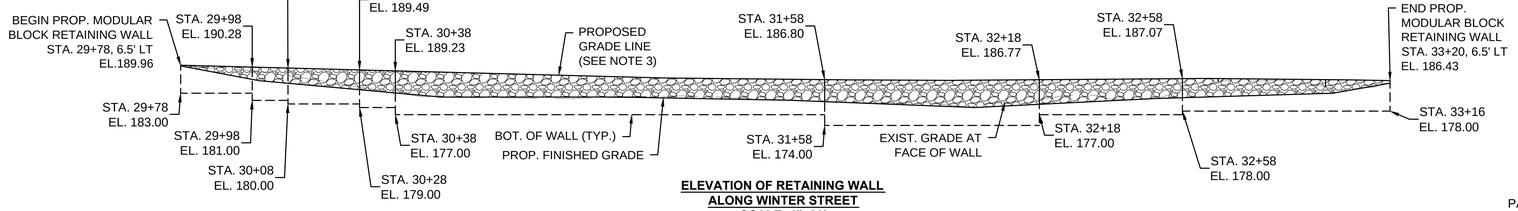
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	136	230
PROJECT FILE NO.	604531		

RETAINING WALL DETAILS
WINTER STREET

604531_HD(RW).DWG Plotted on 18-Sep-2015 9:43 AM



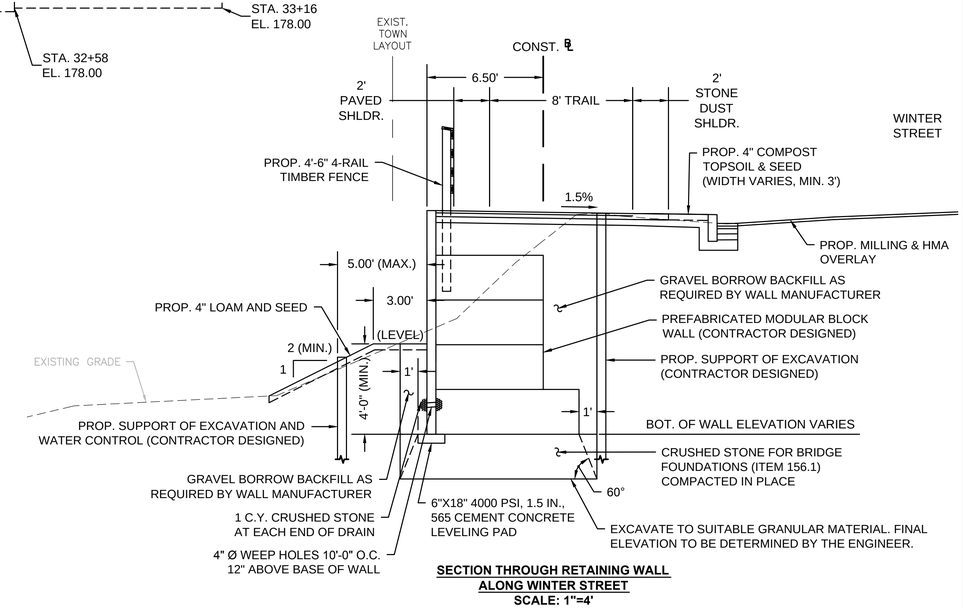
PLAN OF RETAINING WALL #1
SCALE: 1"=20'



ELEVATION OF RETAINING WALL ALONG WINTER STREET
SCALE: 1"=20'

WALL NOTES:

1. PREFABRICATED MODULAR BLOCK RETAINING WALL SHALL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
2. SEE SPECIAL PROVISIONS FOR DESIGN REQUIREMENTS OF PREFABRICATED MODULAR BLOCK WALL . IF UNSUITABLE MATERIALS SUCH AS FILL AND ORGANICS ARE ENCOUNTERED, THEY SHALL BE EXCAVATED TO SOUND MATERIAL AND BACKFILLED WITH CRUSHED STONE FOR BRIDGE FOUNDATIONS (ITEM 156.1). COSTS ASSOCIATED WITH OVER EXCAVATION ARE TO BE PAID UNDER ITEM 140. BRIDGE EXCAVATION.
3. THE EXISTING AND PROPOSED GRADE LINES SHOWN BELOW ARE LOCATED AT THE FACE OF THE WALL.
4. FOUNDATION STEPS ARE SCHEMATIC ONLY AND CAN BE MODIFIED TO SUIT THE TYPE OF WALL AND SITE GEOMETRY AS LONG AS 4 FEET MINIMUM COVER IS MAINTAINED ACROSS THE ENTIRE LENGTH OF FOOTING WITH THE GRADING REQUIREMENTS AS SHOWN ON THE TYPICAL SECTION.
5. TOP OF WALL SHALL BE SLOPED TO MATCH THE PROFILE. SPOT ELEVATIONS ARE SHOWN BELOW. SEE CONSTRUCTION PROFILES FOR MORE INFORMATION.
6. ALL TIES ARE FROM THE BASELINE TO THE TOP FACE OF THE PROPOSED WALL.
7. ANY SUPPORT OF EXCAVATION OR WATER CONTROL STRUCTURE THAT EXTENDS WITHIN THE ZONE OF INFLUENCE OF THE FOOTING SHALL REMAIN IN PLACE. ANY SUPPORT OF EXCAVATION OR WATER CONTROL STRUCTURE TO REMAIN IN PLACE SHALL BE CUT OFF 2 FEET BELOW THE FINISH GROUND LINE.
8. THE ZONE OF INFLUENCE IS DEFINED AS A PLANE ORIGINATING AT THE PERIMETER OF THE BOTTOM OF THE FOOTING AND PROJECTING DOWN AND AWAY FROM THE FOOTING AT AN ANGLE OF 45°.



SECTION THROUGH RETAINING WALL ALONG WINTER STREET
SCALE: 1"=4'

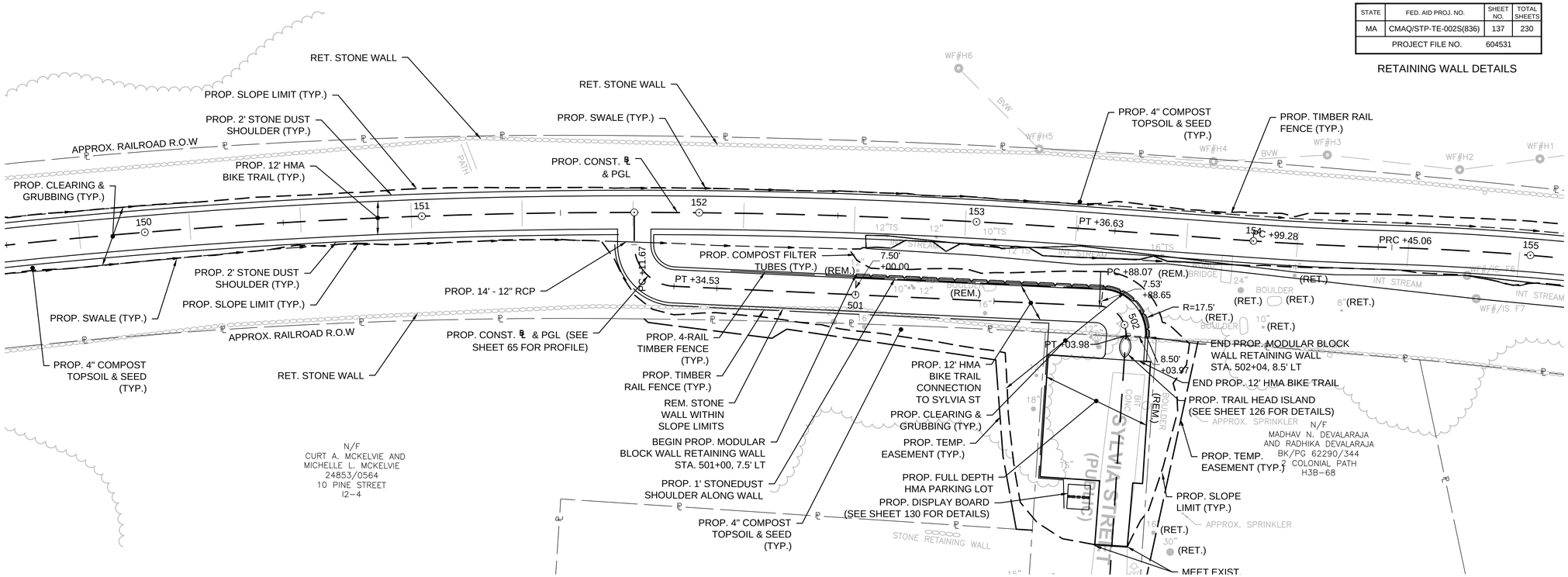
0 20 50 100
SCALE: 1" = 20'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

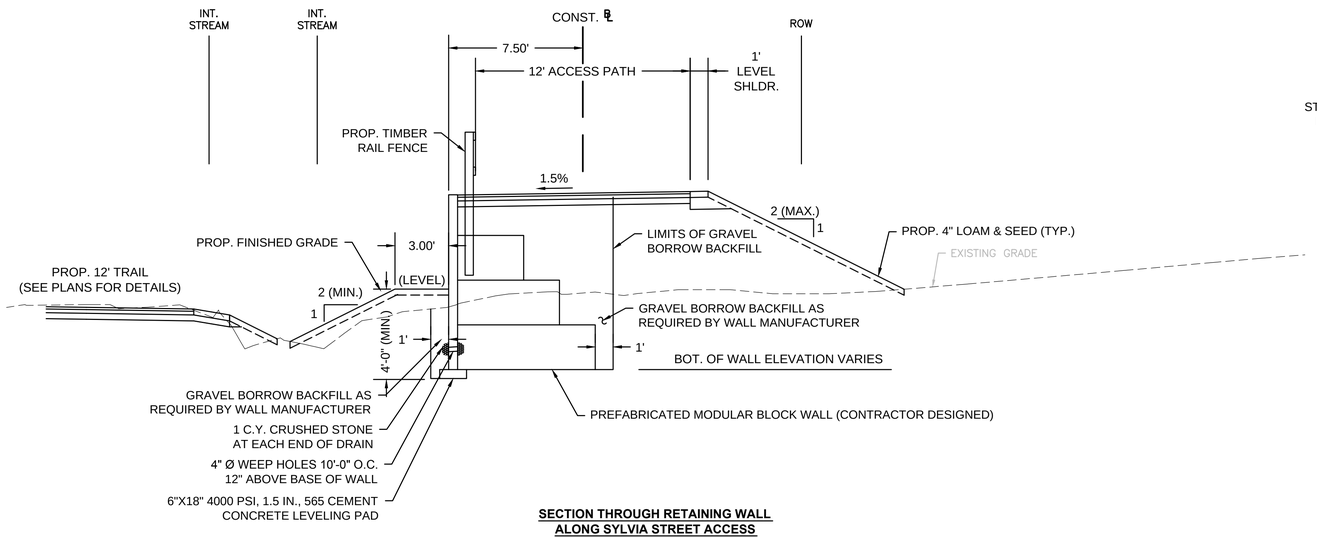
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	137	230
PROJECT FILE NO.	604531		

RETAINING WALL DETAILS

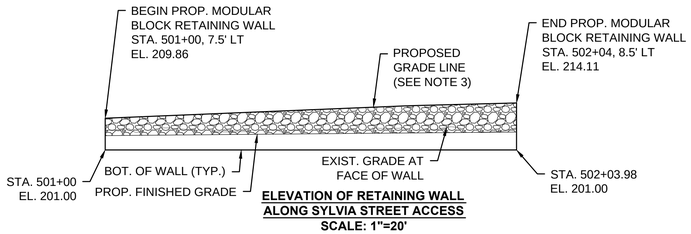
Plotted on 18-Sep-2015 9:44 AM
604531_HD(RW).DWG



PLAN OF RETAINING WALL ALONG SYLVIA STREET ACCESS
SCALE: 1"=20'



SECTION THROUGH RETAINING WALL ALONG SYLVIA STREET ACCESS
SCALE: 1"=4'

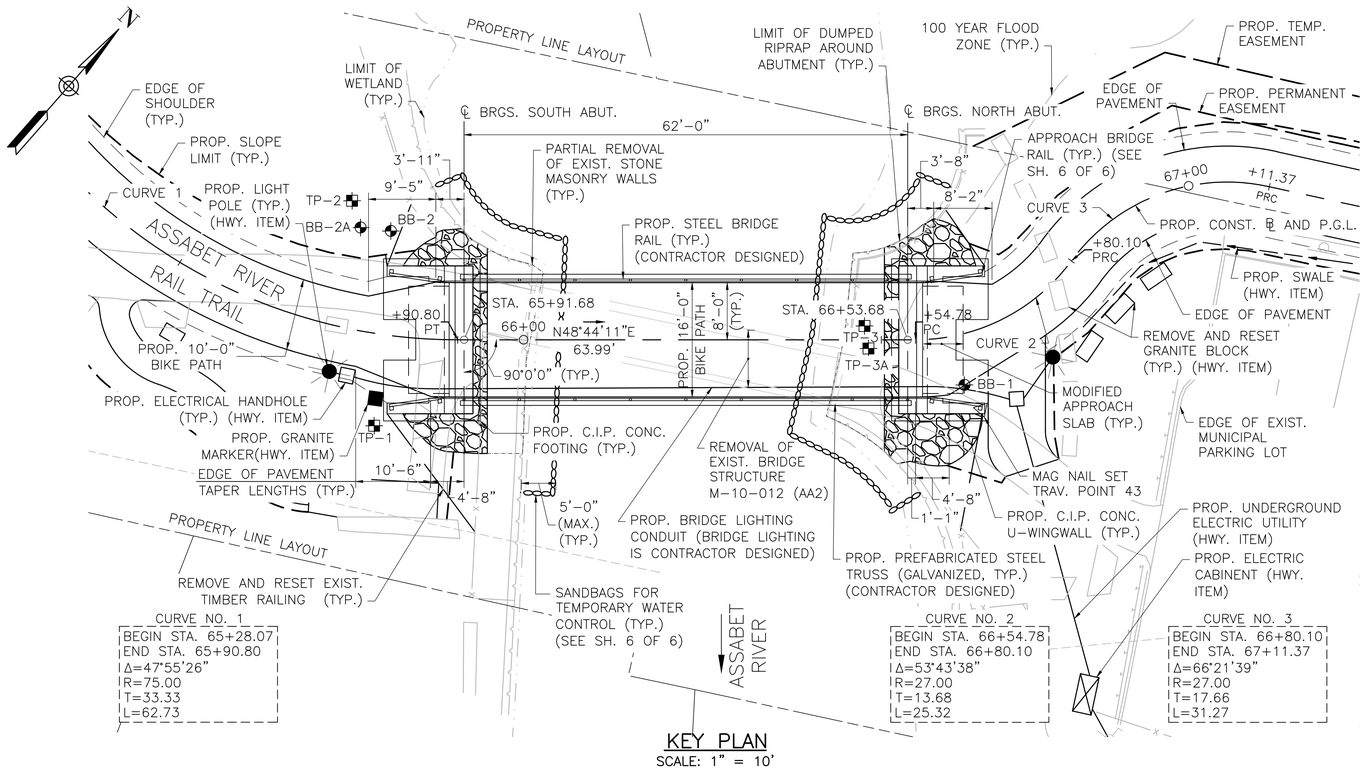


ELEVATION OF RETAINING WALL ALONG SYLVIA STREET ACCESS
SCALE: 1"=20'

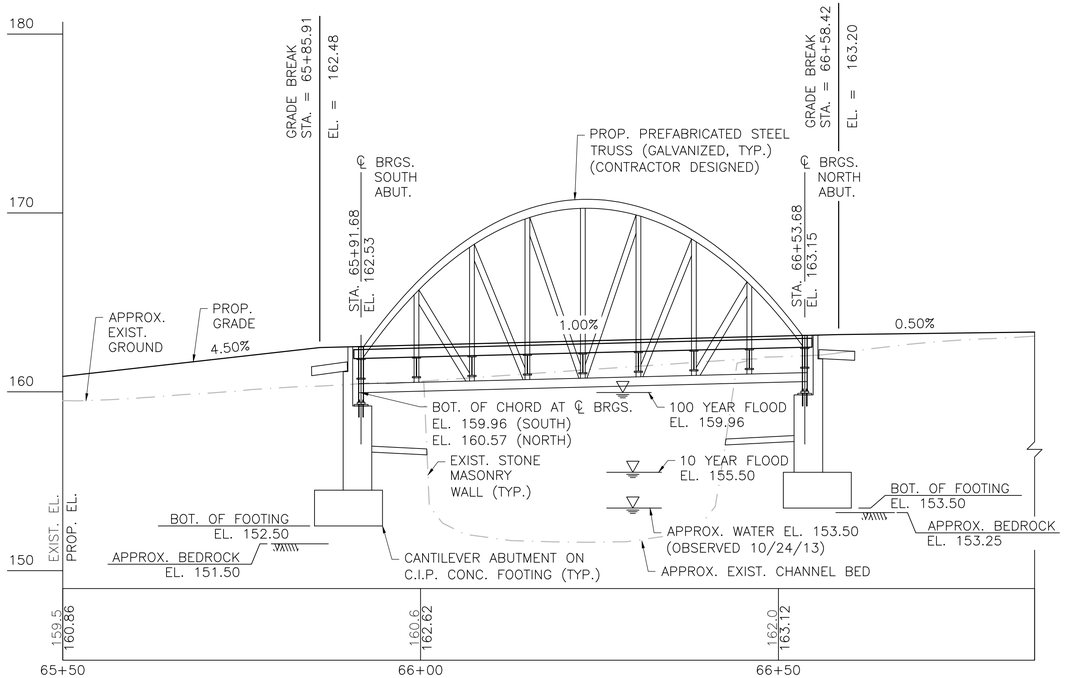
WALL NOTES:

1. PREFABRICATED MODULAR BLOCK RETAINING WALL SHALL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
2. SEE SPECIAL PROVISIONS FOR DESIGN REQUIREMENTS OF PREFABRICATED MODULAR BLOCK WALL . IF UNSUITABLE MATERIALS SUCH AS FILL AND ORGANICS ARE ENCOUNTERED, THEY SHALL BE EXCAVATED TO SOUND MATERIAL AND BACKFILLED WITH GRAVEL BORROW FOR BRIDGE FOUNDATIONS (ITEM 151.1). COSTS ASSOCIATED WITH OVER EXCAVATION ARE TO BE PAID UNDER ITEM 140. BRIDGE EXCAVATION.
3. THE EXISTING AND PROPOSED GRADE LINES SHOWN BELOW ARE LOCATED AT THE FACE OF THE WALL.
4. FOUNDATION STEPS ARE SCHEMATIC ONLY AND CAN BE MODIFIED TO SUIT THE TYPE OF WALL AND SITE GEOMETRY AS LONG AS 4 FEET MINIMUM COVER IS MAINTAINED ACROSS THE ENTIRE LENGTH OF FOOTING WITH THE GRADING REQUIREMENTS AS SHOWN ON THE TYPICAL SECTION.
5. TOP OF WALL SHALL BE SLOPED TO MATCH THE PROFILE. SPOT ELEVATIONS ARE SHOWN BELOW. SEE CONSTRUCTION PROFILES FOR MORE INFORMATION.
6. ALL TIES ARE FROM THE SYLVIA STREET ACCESS BASELINE TO THE TOP FACE OF THE PROP. WALL.

0 20 50 100
SCALE: 1" = 20'

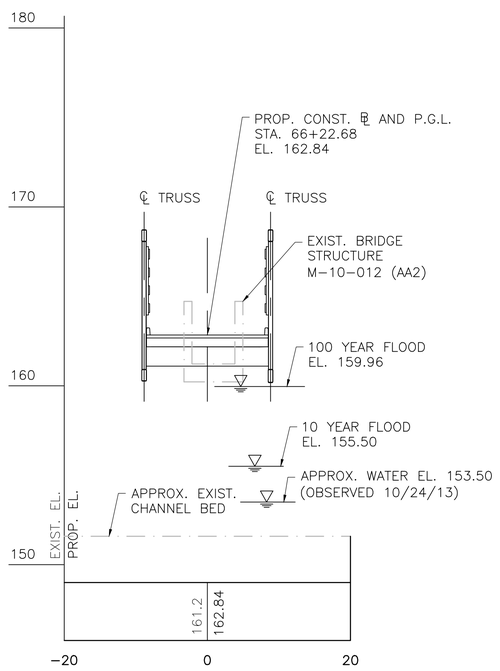


KEY PLAN
SCALE: 1" = 10'



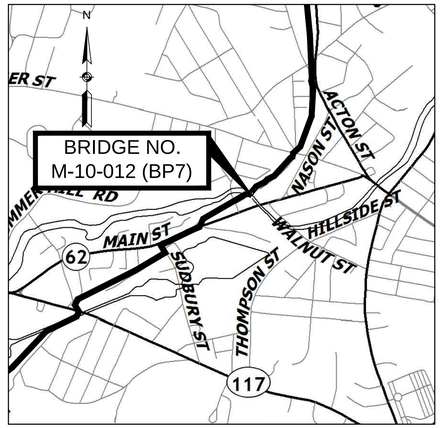
PROFILE – ALONG CONST. ℄ & P.G.L.

SCALE: 1" = 10' HORIZ.
¼" = 1'-0" VERT.



PROFILE – ALONG ASSABET RIVER

SCALE: 1" = 10' HORIZ.
¼" = 1'-0" VERT.



LOCUS
SCALE: 1" = 1000'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	138	230
PROJECT FILE NO. 604531			

KEY PLAN, LOCUS MAP, AND PROFILES

INDEX OF BRIDGE SHEETS:

1. KEY PLAN, LOCUS MAP, AND PROFILES
2. GENERAL NOTES AND ESTIMATED QUANTITIES
3. BORING LOGS
4. ELEVATION AND CROSS SECTION
5. ABUTMENT AND WINGWALL DETAILS
6. APPROACH SLAB AND MISC. DETAILS

NOTE:
FOR GENERAL NOTES, SEE SHEET 2.

SEPT. 19, 2015	ISSUED FOR CONSTRUCTION

MassDOT Massachusetts Department of Transportation Highway Division

PROPOSED BRIDGE
MAYNARD
ASSABET RIVER RAIL TRAIL
OVER ASSABET RIVER
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

Greenman-Pedersen, Inc.
GPI
181 Ballardvale Street, Suite 202
Wilmington, MA 01887

TITLE: CHIEF ENGINEER

604531_(M10012)BR1_2.DWG Plotted on 18-Sep-2015 9:45 AM
Final Structural Submittal (SF) 19-September-2015

GENERAL NOTES

DESIGN:
IN ACCORDANCE WITH THE 2014 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS AND THE 2009 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, FOR H10 LOADING AND 90 PSF PEDESTRIAN LOADING.

MASSDOT BENCH MARK:
BENCH MARK – MAG NAIL SET, TRAV. POINT 43
N 2982560.14 E 668175.34
STA. 66+61.43 10.86' RT
EL. 162.69'

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

MASSDOT SURVEY NOTEBOOKS:
COPIES OF ELECTRONIC SURVEY FILES MAY BE OBTAINED FROM THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION – HIGHWAY DIVISION.

SCALES:
SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZED PRINTS. DIVIDE SCALES BY 2 FOR HALF–SIZE PRINTS (A3).

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

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

SEISMIC GROUND SHAKING HAZARD:
DESIGN RETURN PERIOD: 1000 YEARS

DESIGN SPECTRA:

As = 0.086
S_{DS} = 0.178
S_{D1} = 0.067

SITE CLASS = C

SEISMIC DESIGN CATEGORY (SDC) = A

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

REINFORCEMENT:
REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60 (EPOXY COATED). UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS
1. NONE	21"	26"
2. 12" OF CONCRETE BELOW BAR	29"	36"
3. COATED BARS, COVER < 3db, OR CLEAR SPACING < 6db	31"	39"
4. COATED BARS, ALL OTHER CASES	25"	31"
5. CONDITION 2. AND 3.	35"	44"
6. CONDITION 2. AND 4.	34"	43"

IF THE ABOVE BARS ARE SPACED 6" OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF THE LAP LENGTH GIVEN ABOVE. ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

CONCRETE MIXES:

(1)	(2)	(3)	TO BE USED IN CONSTRUCTION OF:
3000	$\frac{1}{2}$	470	ABUTMENT SUB–GRADE MATERIAL
4000	$1\frac{1}{2}$	565	ABUTMENTS, WINGWALLS, FOOTINGS, AND APPROACH SLABS
4000	$\frac{3}{4}$	610	ABUTMENT BACKWALLS

(1) 28 DAY COMPRESSIVE STRENGTH (PSI)
(2) MAXIMUM AGGREGATE SIZE (INCH)
(3) CEMENTITIOUS CONTENT (POUNDS/C.Y.)

CONTRACTOR DESIGNED SUPERSTRUCTURE:
STRUCTURAL STEEL TRUSS (INCLUDING CAMBER), TIMBER (IPE) DECK, BEARINGS, ANCHOR BOLTS, STEEL RAILINGS, AND DECK JOINTS SHALL BE CONTRACTOR DESIGNED IN ACCORDANCE WITH THE 2014 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS AND THE 2009 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, FOR H10 LOADING AND 90 PSF PEDESTRIAN LOADING . STEEL SHALL BE GALVANIZED AND UNPAINTED. THE ABUTMENT DESIGN IS FOR A TOTAL MAXIMUM SUPERSTRUCTURE DEAD LOAD OF 54 KIPS (SERVICE LOAD). IF THE WEIGHT OF THE SUPERSTRUCTURE EXCEEDS THE SPECIFIED MAXIMUM LOAD, THE ABUTMENT DESIGN (STABILITY AND REINFORCING) SHALL BE CHECKED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS. THE CALCULATIONS PERFORMED SHALL BE SUPPLIED TO THE ENGINEER FOR APPROVAL.

TEST PITS:
LOCATION OF TEST PITS SHOWN ON PLAN THUS: ✜ TP–1
REFER TO HIGHWAY DRAWINGS FOR TEST PIT LOGS.

HYDRAULIC DESIGN DATA:

DRAINAGE AREA:	115.0 SQUARE MILES
DESIGN FLOOD DISCHARGE:	2240 CUBIC FEET PER SECOND
DESIGN FLOOD FREQUENCY:	10 YEARS
DESIGN FLOOD VELOCITY:	11.15 FEET PER SECOND
DESIGN FLOOD ELEVATION:	155.50 FEET
BASE (100 YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE:	3950 CUBIC FEET PER SECOND
BASE FLOOD ELEVATION:	159.96 FEET
DESIGN AND CHECK SCOUR	
DESIGN SCOUR EVENT RETURN FREQUENCY:	25 YEARS
CHECK SCOUR EVENT RETURN FREQUENCY:	50 YEARS
FLOOD OF RECORD	
DISCHARGE:	UNKNOWN
FREQUENCY:	UNKNOWN
MAXIMUM ELEVATION:	UNKNOWN
DATE:	UNKNOWN
HISTORY OF ICE FLOES:	NONE DOCUMENTED IN NBIS DATABASE
EVIDENCE OF SCOUR OR EROSION:	NONE OBSERVED

ESTIMATED QUANTITIES
(NOT GUARANTEED)

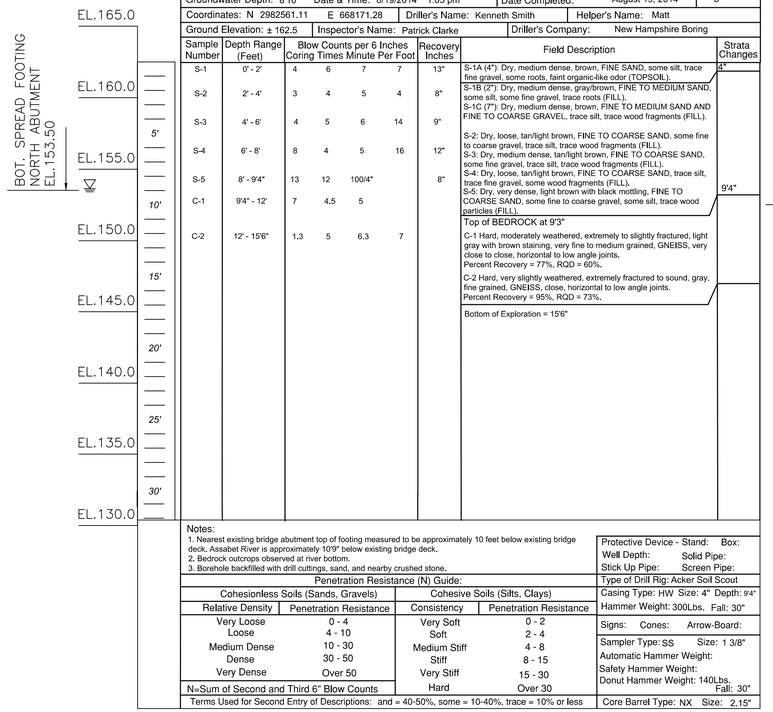
ITEM DESCRIPTION	QUANTITY	UNIT
DEMOLITION OF SUPERSTRUCTURE BRIDGE NO. M–10–012 (AA2)	1	LS
BRIDGE EXCAVATION	170	CY
CLASS B ROCK EXCAVATION	170	CY
GRAVEL BORROW FOR BRIDGE FOUNDATION	45	CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	95	CY
CRUSHED STONE	20	TON
SPINDLE FENCE REMOVE AND RESET	80	FT
SPINDLE FENCE ON WALL	30	FT
STONE MASONRY WALL REMOVED	60	CY
3000 PSI, 1.5 IN., 470 CEMENT CONCRETE	25	CY
DUMPED RIPRAP	75	TON
CONTROL OF WATER–STRUCTURE NO. M–10–012 (BP7)	1	LS
BRIDGE STRUCTURE, BRIDGE NO. M–10–012 (BP7)	1	LS

DATE	DESCRIPTION
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
USE ONLY PRINTS OF LATEST DATE	

604531_(M10012)BR1_2.DWG Plotted on 18-Sep-2015 9:45 AM
Final Structural Submittal (SF) 19-September-2015

BORING LOGS

BORING BB-1



massDOT Highway

NOBIS ENGINEERING, INC.
585 Middlesex Street
Lowell, MA 01851

Phone: (978) 683-0891
Fax: (978) 683-0966
www.nobisengineering.com

Boring No. BB-1
Scale 1" = 5'

City/Town: Acton & Maynard | Bridge: Pedestrian Bridge, No. M-10-012 | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: August 19, 2014 | Total Hours:
Groundwater Depth: 8'10" | Date & Time: 8/19/2014 1:05 pm | Date Completed: August 19, 2014 | 8
Coordinates: N 2982561.11 E 668171.28 | Driller's Name: Kenneth Smith | Helper's Name: Matt
Ground Elevation: ± 162.5 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	4 6 7 7	13"	S-1A (4"): Dry, medium dense, brown, FINE SAND, some silt, trace fine gravel, some roots, faint organic-like odor (TOPSOIL).	4"
S-2	2' - 4'	3 4 5 4	8"	S-1B (2"): Dry, medium dense, gray/brown, FINE TO MEDIUM SAND, some silt, some fine gravel, trace roots (FILL).	
S-3	4' - 6'	4 5 6 14	9"	S-1C (7"): Dry, medium dense, brown, FINE TO MEDIUM SAND AND FINE TO COARSE GRAVEL, trace silt, trace wood fragments (FILL).	
S-4	6' - 8'	8 4 5 16	12"	S-2: Dry, loose, tan/light brown, FINE TO COARSE SAND, some fine to coarse gravel, trace silt, trace wood fragments (FILL).	
S-5	8' - 9'4"	13 12 100/4"	8"	S-3: Dry, medium dense, tan/light brown, FINE TO COARSE SAND, some fine gravel, trace silt, trace wood fragments (FILL).	
C-1	9'4" - 12'	7 4.5 5		S-4: Dry, loose, tan/light brown, FINE TO COARSE SAND, trace silt, trace fine gravel, some wood fragments (FILL).	
				S-5: Dry, very dense, light brown with black mottling, FINE TO COARSE SAND, some fine to coarse gravel, some silt, trace wood particles (FILL).	9'4"
				Top of BEDROCK at 9'3"	
C-2	12' - 15'6"	1,3 5 6.3 7		C-1 Hard, moderately weathered, extremely to slightly fractured, light gray with brown staining, very fine to medium grained, GNEISS, very close to close, horizontal to low angle joints. Percent Recovery = 77%, RQD = 60%.	
				C-2 Hard, very slightly weathered, extremely fractured to sound, gray, fine grained, GNEISS, close, horizontal to low angle joints. Percent Recovery = 95%, RQD = 73%.	
				Bottom of Exploration = 15'6"	

Notes:
1. Nearest existing bridge abutment top of footing measured to be approximately 10 feet below existing bridge deck. Assabet River is approximately 10'9" below existing bridge deck.
2. Bedrock outcrops observed at river bottom.
3. Borehole backfilled with drill cuttings, sand, and nearby crushed stone.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

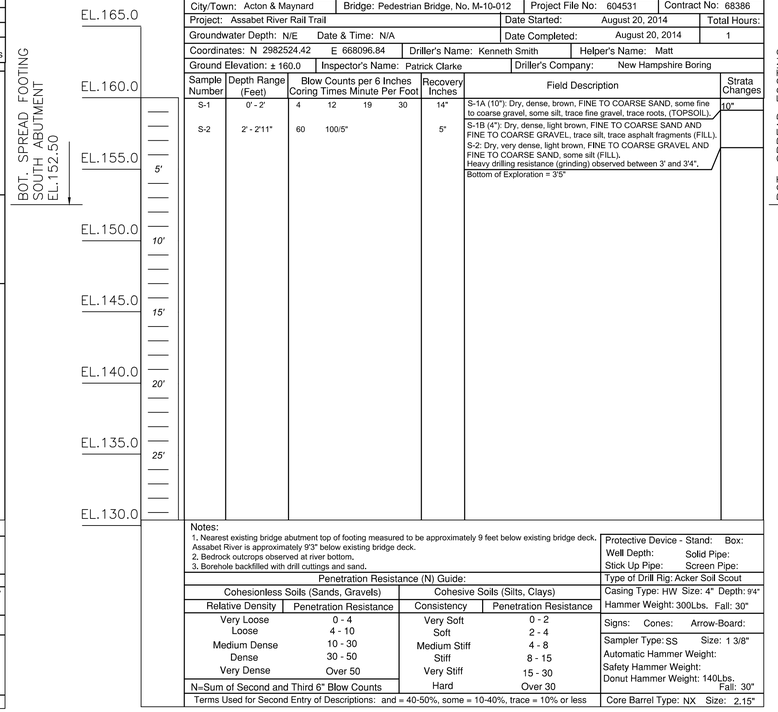
Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Acker Soil Scout
Casing Type: HW Size: 4" Depth: 9'4"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight:
Donut Hammer Weight: 140Lbs. Fall: 30"
Core Barrel Type: NX Size: 2.15"

BORING BB-2



massDOT Highway

NOBIS ENGINEERING, INC.
585 Middlesex Street
Lowell, MA 01851

Phone: (978) 683-0891
Fax: (978) 683-0966
www.nobisengineering.com

Boring No. BB-2
Scale 1" = 5'

City/Town: Acton & Maynard | Bridge: Pedestrian Bridge, No. M-10-012 | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: August 20, 2014 | Total Hours:
Groundwater Depth: N/E | Date & Time: N/A | Date Completed: August 20, 2014 | 1
Coordinates: N 2982524.42 E 668096.84 | Driller's Name: Kenneth Smith | Helper's Name: Matt
Ground Elevation: ± 160.0 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	4 12 19 30	14"	S-1A (10"): Dry, dense, brown, FINE TO COARSE SAND, some fine to coarse gravel, some silt, trace fine gravel, trace roots, (TOPSOIL).	10"
S-2	2' - 2'11"	60 100/5"	5"	S-1B (4"): Dry, dense, light brown, FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, trace silt, trace asphalt fragments (FILL).	
				S-2: Dry, very dense, light brown, FINE TO COARSE GRAVEL AND FINE TO COARSE SAND, some silt (FILL). Heavy drilling resistance (grinding) observed between 3' and 3'4".	
				Bottom of Exploration = 3'5"	

Notes:
1. Nearest existing bridge abutment top of footing measured to be approximately 9 feet below existing bridge deck. Assabet River is approximately 9'3" below existing bridge deck.
2. Bedrock outcrops observed at river bottom.
3. Borehole backfilled with drill cuttings and sand.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

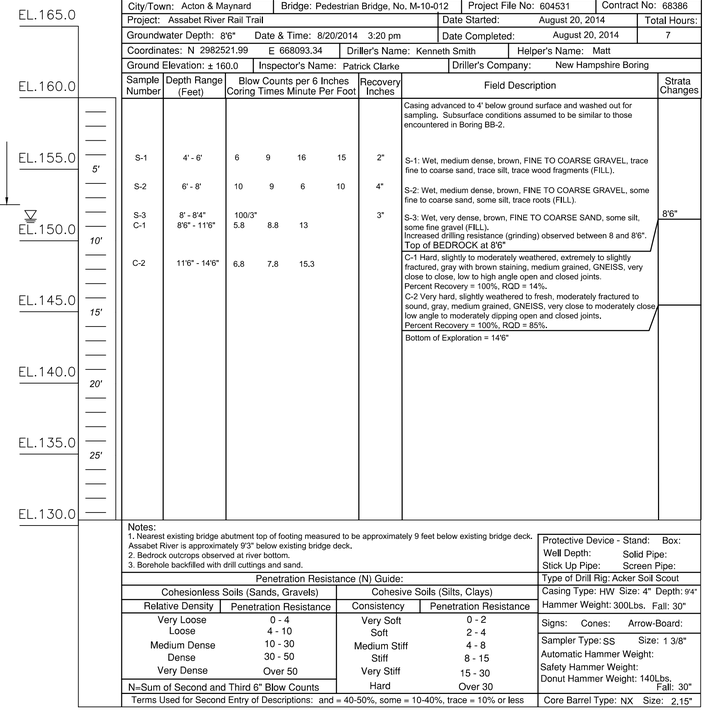
Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Acker Soil Scout
Casing Type: HW Size: 4" Depth: 9'4"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight:
Donut Hammer Weight: 140Lbs. Fall: 30"
Core Barrel Type: NX Size: 2.15"

BORING BB-2A



massDOT Highway

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Lowell, MA 01851

Phone: (978) 683-0891
Fax: (978) 683-0966
www.nobisengineering.com

Boring No. BB-2A
Scale 1" = 5'

City/Town: Acton & Maynard | Bridge: Pedestrian Bridge, No. M-10-012 | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: August 20, 2014 | Total Hours:
Groundwater Depth: 8'6" | Date & Time: 8/20/2014 3:20 pm | Date Completed: August 20, 2014 | 7
Coordinates: N 2982521.99 E 668093.34 | Driller's Name: Kenneth Smith | Helper's Name: Matt
Ground Elevation: ± 160.0 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
				Casing advanced to 4' below ground surface and washed out for sampling. Subsurface conditions assumed to be similar to those encountered in Boring BB-2.	
S-1	4' - 6'	6 9 16 15	2"	S-1: Wet, medium dense, brown, FINE TO COARSE GRAVEL, trace fine to coarse sand, trace silt, trace wood fragments (FILL).	
S-2	6' - 8'	10 9 6 10	4"	S-2: Wet, medium dense, brown, FINE TO COARSE GRAVEL, some fine to coarse sand, some silt, trace roots (FILL).	
S-3	8' - 8'4"	100/3"	3"	S-3: Wet, very dense, brown, FINE TO COARSE SAND, some silt, some fine gravel (FILL).	
C-1	8'6" - 11'6"	5.8 8.8 13		Increased drilling resistance (grinding) observed between 8 and 8'6". Top of BEDROCK at 8'6"	8'6"
C-2	11'6" - 14'6"	6.8 7.8 15.3		C-1 Hard, slightly to moderately weathered, extremely to slightly fractured, gray with brown staining, medium grained, GNEISS, very close to close, low to high angle open and closed joints. Percent Recovery = 100%, RQD = 14%.	
				C-2 Very hard, slightly weathered to fresh, moderately fractured to sound, gray, medium grained, GNEISS, very close to moderately close low angle to moderately dipping open and closed joints. Percent Recovery = 100%, RQD = 85%.	
				Bottom of Exploration = 14'6"	

Notes:
1. Nearest existing bridge abutment top of footing measured to be approximately 9 feet below existing bridge deck. Assabet River is approximately 9'3" below existing bridge deck.
2. Bedrock outcrops observed at river bottom.
3. Borehole backfilled with drill cuttings and sand.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
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Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Acker Soil Scout
Casing Type: HW Size: 4" Depth: 9'4"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight:
Donut Hammer Weight: 140Lbs. Fall: 30"
Core Barrel Type: NX Size: 2.15"

BORING NOTES

1. LOCATION OF BORINGS SHOWN ON THE PLAN THUS: ⊕ BB-1
2. BORINGS ARE 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 IN THE COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1⅜" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
5. BORING SAMPLES ARE STORED AT A STORAGE FACILITY LOCATED ON ROUTE 114 (219 WINTHROP AVENUE) LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA BOSTON, MA.
6. BORINGS BB-1, BB-2, AND BB-2A WERE MADE IN AUGUST, 2014.
7. BORINGS WERE MADE BY NEW HAMPSHIRE BORINGS, INC. OF DERRY, NH UNDER THE GUIDANCE OF NOBIS ENGINEERING, INC.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
9. GROUND SURFACE ELEVATIONS ARE APPROXIMATE.

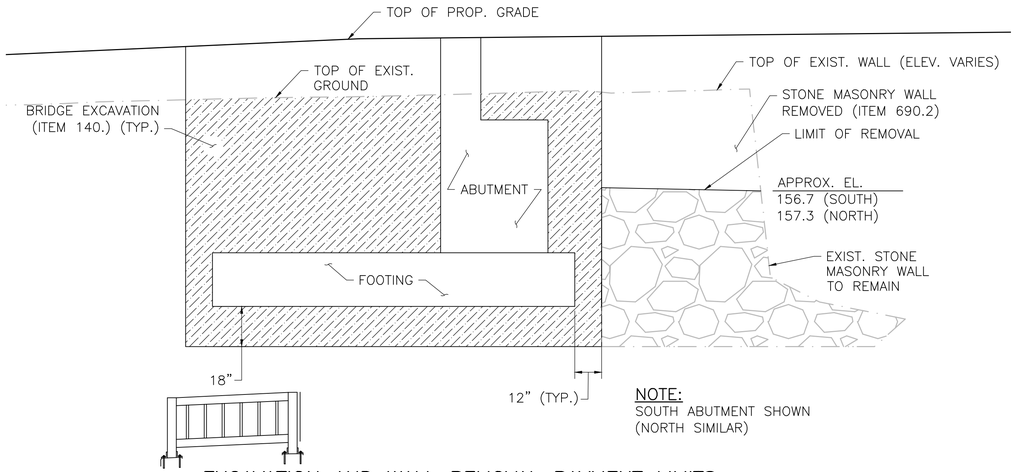
DATE	DESCRIPTION
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
USE ONLY PRINTS OF LATEST DATE	

604531_(M1012)BR3.DWG Plotted on 18-Sep-2015 9:45 AM
Final Structural Submittal (SF) 19-September-2015

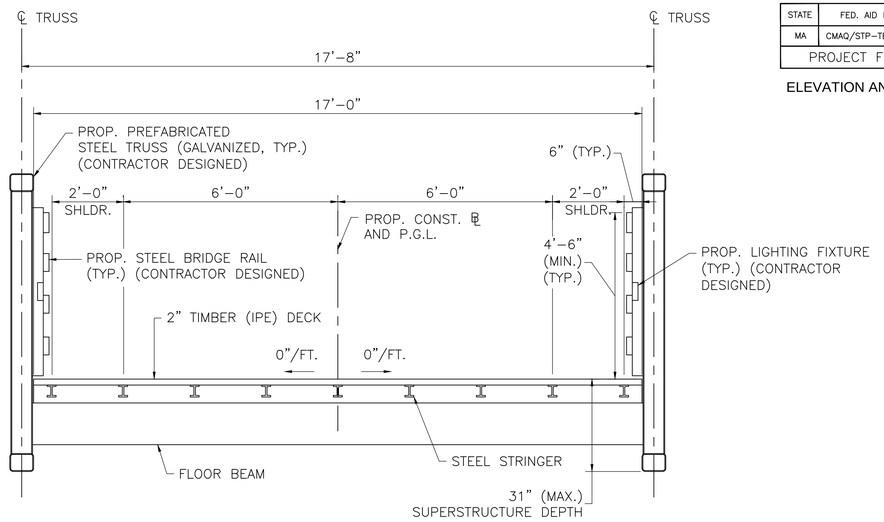
ACTON & MAYNARD
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	141	230
PROJECT FILE NO. 604531			

ELEVATION AND CROSS SECTION



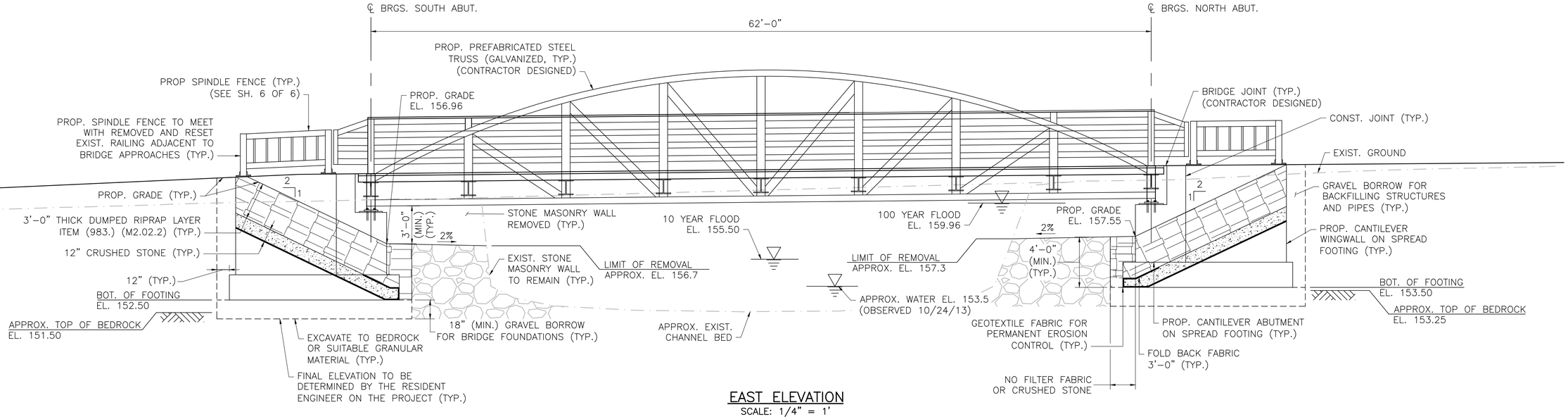
EXCAVATION AND WALL REMOVAL PAYMENT LIMITS
SCALE: 1/2" = 1'-0"



PROPOSED CROSS SECTION
SCALE: 1/2" = 1'-0"

NOTES:

1. BEDROCK ELEVATION IS BASED ON BORINGS BB-1 AND BB-2A. ROCK ELEVATION VARIES WITHIN THE FOOTPRINT OF PROPOSED ABUTMENTS. MATERIAL BENEATH FOOTING VARIES FROM ROCK TO SAND. FOOTINGS SHALL BEAR ENTIRELY ON LEVEL BEDROCK OR ENTIRELY ON STRUCTURAL FILL. FOR A FOOTING PARTIALLY ON ROCK, OVER-EXCAVATE ALL MATERIAL 18" (MIN.) BELOW PROPOSED BOTTOM OF FOOTING AND REPLACE WITH GRAVEL BORROW FOR BRIDGE FOUNDATIONS. ALTERNATIVELY, THE CONTRACTOR MAY ELECT TO PLACE A MINIMUM OF 6" OF LEAN CONCRETE BETWEEN BOTTOM OF PROPOSED FOOTING AND BEDROCK. LEAN CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.
2. TEMPORARY WATER CONTROL NOT SHOWN FOR CLARITY. SEE DETAIL ON SHEET 6 OF 6.



EAST ELEVATION
SCALE: 1/4" = 1'

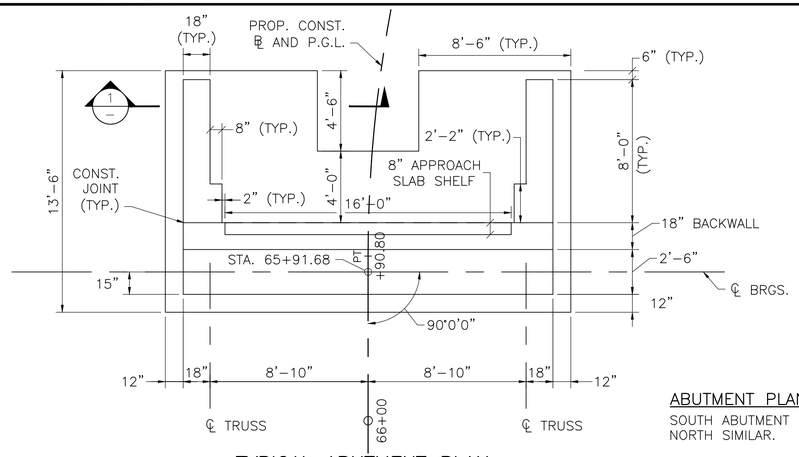
DATE	DESCRIPTION
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
USE ONLY PRINTS OF LATEST DATE	

604531_(M10012)BR4.DWG Plotted on 18-Sep-2015 9:45 AM
Final Structural Submittal (SF) 19-September-2015

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	142	230
PROJECT FILE NO. 604531			

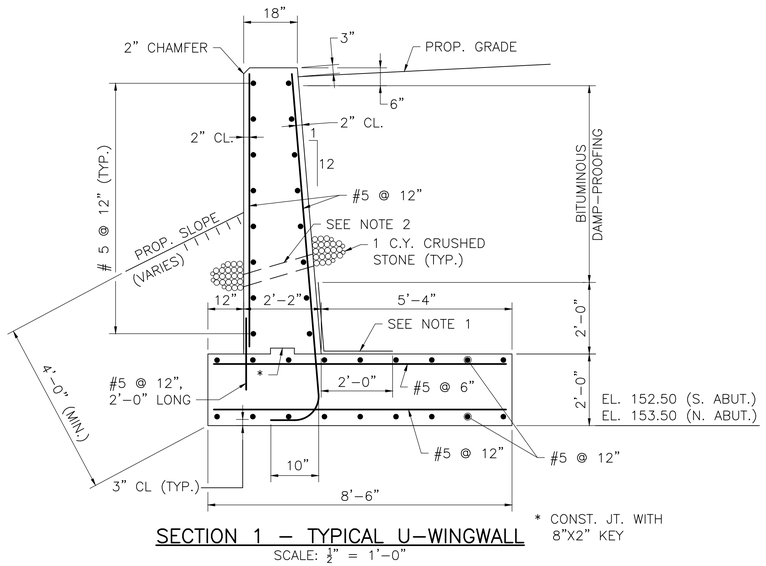
ABUTMENT AND WINGWALL DETAILS



TYPICAL ABUTMENT PLAN

SCALE: $\frac{1}{4}$" = 1'-0"

ABUTMENT PLAN NOTE:
SOUTH ABUTMENT SHOWN, NORTH SIMILAR.



SECTION 1 – TYPICAL U–WINGWALL

SCALE: $\frac{1}{2}$" = 1'-0"

* CONST. JT. WITH 8"X2" KEY

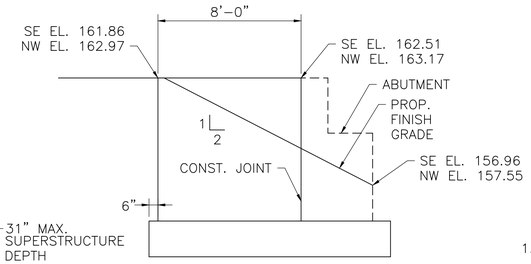
WINGWALL NOTES:

1. MEMBRANE WATERPROOFING AND 8"x16"x2", 4000 PSI, $\frac{3}{4}$ IN, 610 CEMENT CONCRETE BLOCKS LAID IN MORTAR OR OTHER WATERPROOFING PROTECTIVE COURSE, MIN. 2" THICK AS SPECIFIED IN MHD STANDARD SPECIFICATIONS.
2. 4" ø WEEP HOLES 10'–0" O.C. (JUST ABOVE PROTECTIVE COURSE). PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
3. ALL CONCRETE SHALL BE 4000 PSI, $1\frac{1}{2}$ IN, 565 CEMENT CONCRETE.
4. THE FACTORED BEARING PRESSURE = 2.54 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.

   FACTORED BEARING RESISTANCE = 8.0 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.

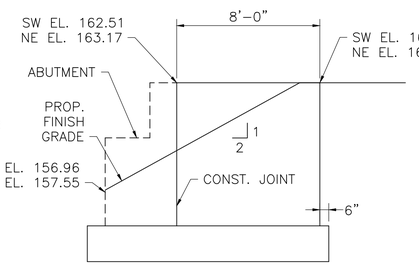
DETAILS AT ABUTMENT NOTES:

1. ALL REINFORCEMENT SHOWN IN THIS DETAIL SHALL BE COATED.
2. ALL BACKWALL CONCRETE ABOVE THE CONSTRUCTION JOINT LOCATED AT THE BRIDGE SEAT SHALL BE 4000 PSI, $\frac{3}{4}$ IN, 610 CEMENT CONCRETE. THE CONSTRUCTION JOINT SHALL BE GIVEN A RAKE FINISH WITH A $\frac{1}{4}$" MINIMUM AMPLITUDE.
3. TOP OF BACKWALL SHALL BE TROWELLED SMOOTH PARALLEL TO THE PROFILE GRADE.
4. THE DECK JOINT SHALL CONFORM TO ADA/AAB REQUIREMENTS.



SOUTHEAST & NORTHWEST WINGWALL ELEVATION

SCALE: $\frac{1}{4}$" = 1'-0"



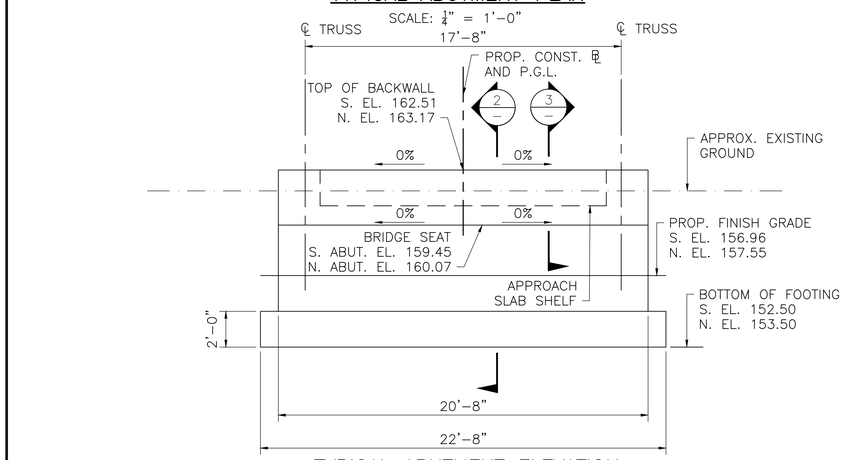
SOUTHWEST & NORTHEAST WINGWALL ELEVATION

SCALE: $\frac{1}{4}$" = 1'-0"

ABUTMENT NOTES:

1. MEMBRANE WATERPROOFING AND 8"x16"x2", 4000 PSI, $\frac{3}{4}$ IN, 610 CEMENtCONCRETE BLOCKS LAID IN MORTAR OR OTHER WATERPROOFING PROTECTIVE COURSE, MIN. 2" THICK AS SPECIFIED IN MHD STANDARD SPECIFICATIONS.
2. 4" ø WEEP HOLES 10'–0" O.C. (JUST ABOVE PROTECTIVE COURSE). PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
3. ALL CONCRETE SHALL BE 4000 PSI, $1\frac{1}{2}$ IN, 565 CEMENT CONCRETE EXCEPT THE BACKWALL, WHICH SHALL BE 4000 PSI, $\frac{3}{4}$ IN, 610 CEMENT CONCRETE.
4. THE FACTORED BEARING PRESSURE = 2.98 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.

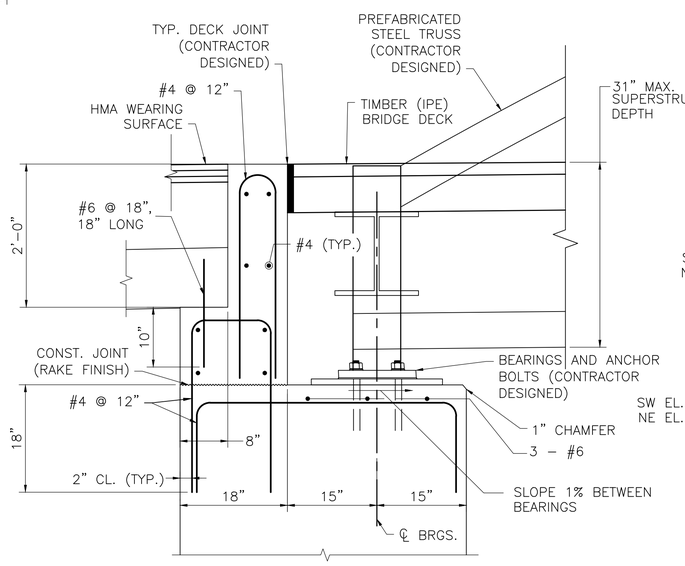
   FACTORED BEARING RESISTANCE = 8.75 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.



* CONST. JT. WITH 12"x12"X2" SHEAR KEYS @ 3'-0" O.C.

SECTION 2 – TYPICAL ABUTMENT

SCALE: $\frac{1}{2}$" = 1'-0"



SECTION 3 – DETAILS AT ABUTMENT

SCALE: 1" = 1'-0"

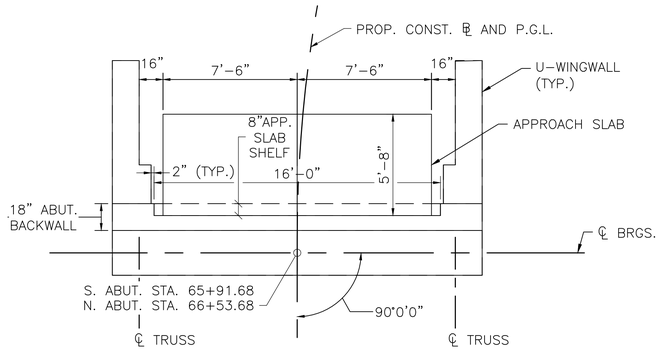
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

604531_(M10012)BR5.DWG Plotted on 18-Sep-2015 9:46 AM
Final Structural Submittal (SF) 19-September-2015

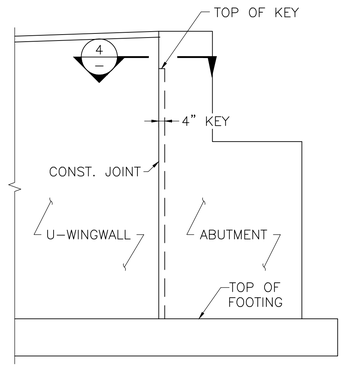
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	143	230
PROJECT FILE NO. 604531			

APPROACH SLAB AND MISC. DETAILS

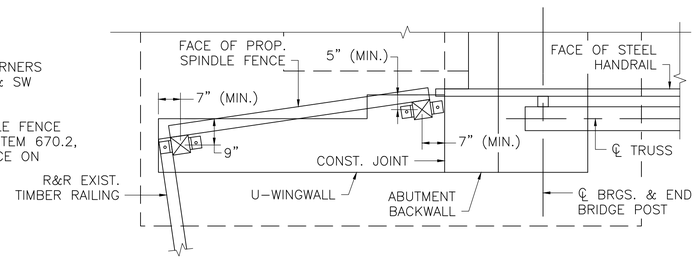


TYPICAL APPROACH SLAB PLAN
SCALE: $\frac{1}{4}$" = 1'-0"

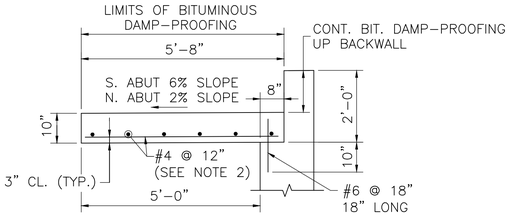


WINGWALL ELEVATION
SCALE: $\frac{1}{2}$" = 1'-0"

NOTES:
1. NW & SE CORNERS SHOWN. NE & SW SIMILAR
2. PROP. SPINDLE FENCE PAID UNDER ITEM 670.2, SPINDLE FENCE ON WALL.

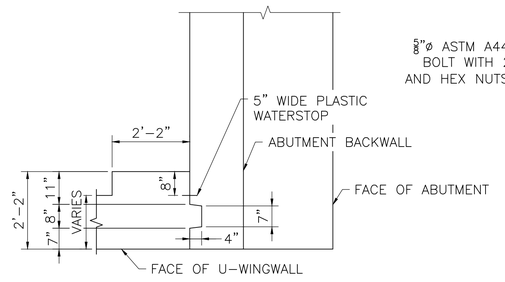


TYPICAL SPINDLE FENCE – PLAN
SCALE: $\frac{1}{2}$" = 1'-0"

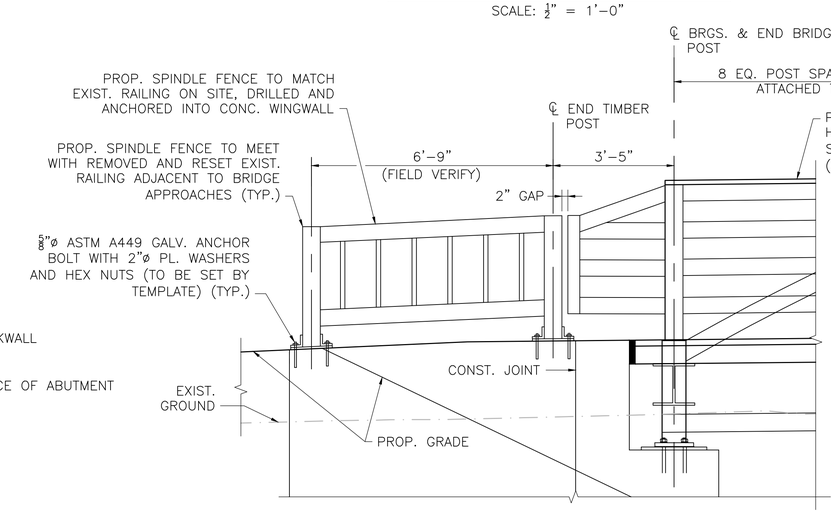


NOTES:
1. APPROACH SLAB TO BE 4000 PSI, $1\frac{1}{2}$ IN, 565 CEMENT CONCRETE.
2. PLACE LONGITUDINAL REINFORCEMENT PERPENDICULAR TO THE ABUTMENT.
3. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.

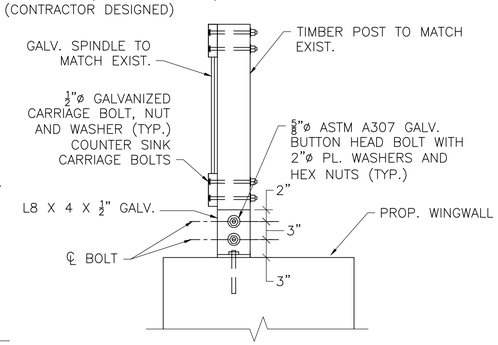
TYPICAL APPROACH SLAB DETAILS
SCALE: $\frac{1}{2}$" = 1'-0"



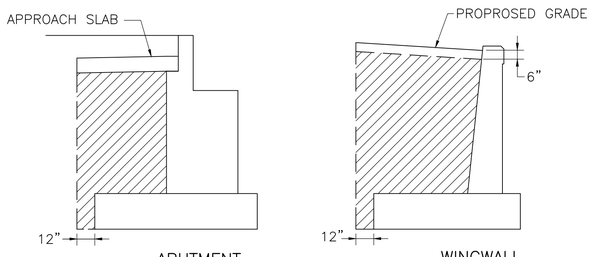
SECTION 4 – CONSTRUCTION JOINT
SCALE: $\frac{1}{2}$" = 1'-0"



TYPICAL SPINDLE FENCE – ELEVATION
SCALE: $\frac{1}{2}$" = 1'-0"



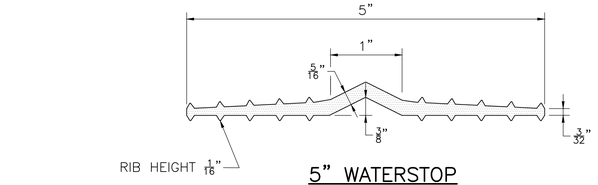
TYPICAL SPINDLE FENCE – SECTION
SCALE: 1" = 1'-0"



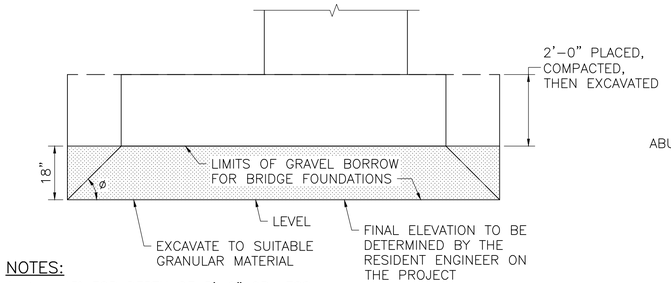
ABUTMENT WINGWALL

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

LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES
SCALE: $\frac{1}{4}$" = 1'-0"

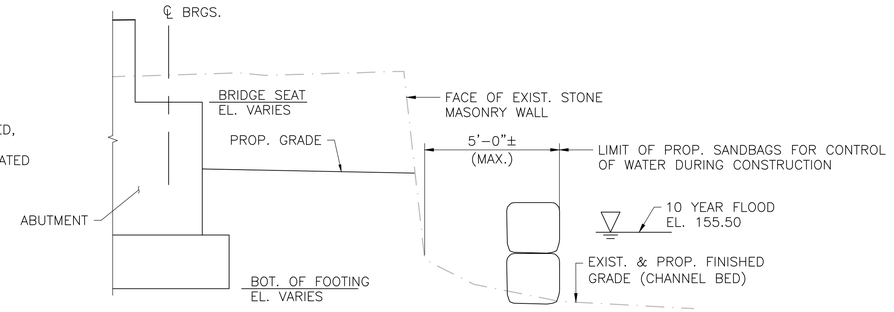


5" WATERSTOP
NOT TO SCALE



NOTES:
1. ø = 45° FOR DEPTH OF 5'-0" OR LESS.
   ø = 60° FOR DEPTH OVER 5'-0".
2. SAME TREATMENT IS TO BE USED AT ENDS OF WALLS, PIERS, AND ABUTMENTS.

LIMITS OF GRAVEL BORROW FOR BRIDGE FOUNDATIONS
NOT TO SCALE



TYPICAL CONTROL OF WATER DETAIL
SCALE: $\frac{3}{8}$" = 1'-0"

DATE	DESCRIPTION
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
USE ONLY PRINTS OF LATEST DATE	

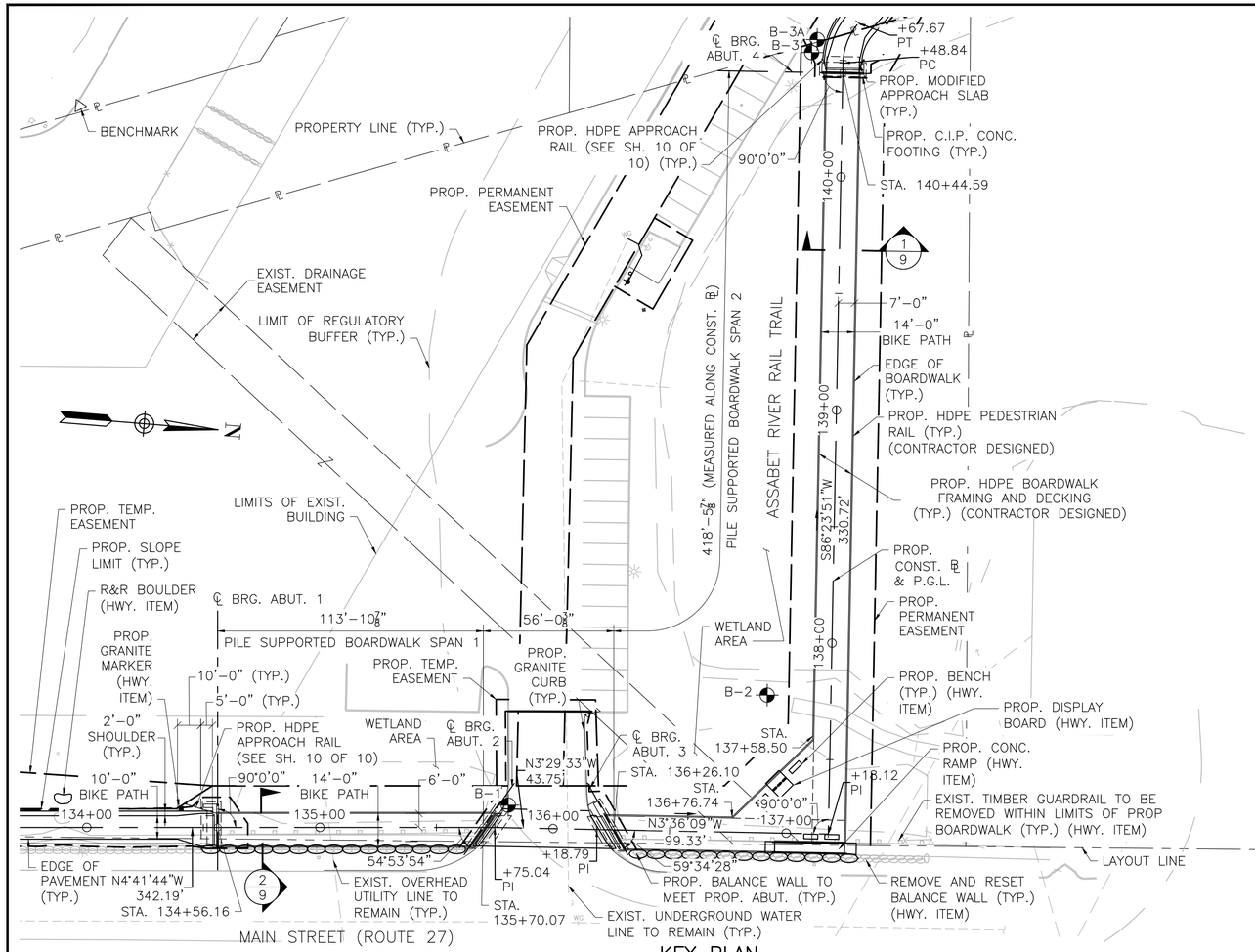
SHEET 6 OF 6 SHEETS BRIDGE NO. M-10-012 (BP7)

604531_(M10012)BR6.DWG Plotted on 18-Sep-2015 9:47 AM
Final Structural Submittal (SF) 19-September-2015

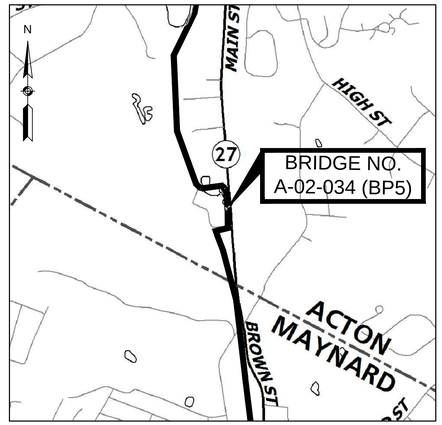
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	144	230
PROJECT FILE NO. 604531			

KEY PLAN, LOCUS MAP, AND PROFILE



KEY PLAN
SCALE: 1" = 30'

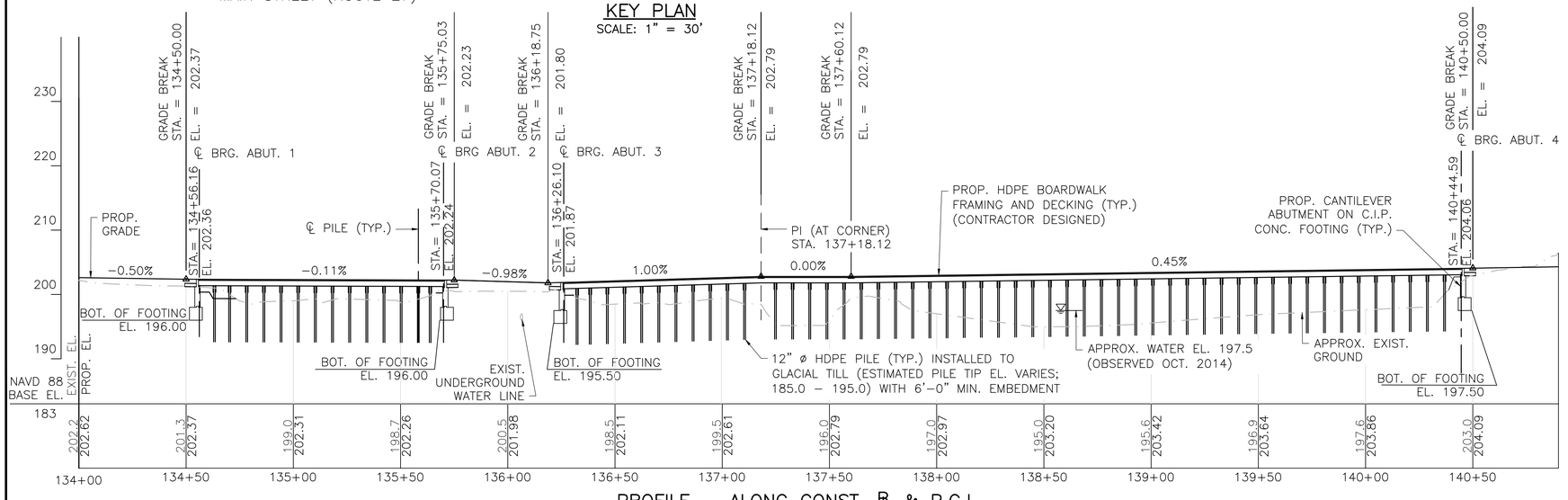


LOCUS
SCALE: 1" = 1000'

INDEX OF BRIDGE SHEETS:

1. KEY PLAN, LOCUS MAP, AND PROFILE
2. GENERAL NOTES AND ESTIMATED QUANTITIES
3. BORING LOGS
4–6. PLAN AND ELEVATION
7. ABUTMENT PLAN & ELEVATION
8. ABUTMENT PLAN, ELEVATION & SECTIONS
9. CROSS SECTION, PILE ELEVATION & MISC. DETAILS
10. APPROACH RAIL PLAN & ELEVATION

NOTE:
FOR GENERAL NOTES, SEE SHEET 2.



PROFILE – ALONG CONST. ℄ & P.G.L.
SCALE: 1" = 30' HORIZ.
1" = 10' VERT.

	SEPT. 19, 2015 — ISSUED FOR CONSTRUCTION

massDOT Highway Division

PROPOSED BOARDWALK
ACTON
ASSABET RIVER RAIL TRAIL
OVER VEGETATED WETLANDS

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

Greenman-Pedersen, Inc.
GPI
181 Ballardvale Street, Suite 202
Wilmington, MA 01887

TITLE: CHIEF ENGINEER

604531_(A02034)BR1_2.DWG Plotted on 18-Sep-2015 9:49 AM
Final Structural Submittal (SF) 19-September-2015

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	145	230
PROJECT FILE NO. 604531			

GENERAL NOTES AND ESTIMATED QUANTITIES

GENERAL NOTES

DESIGN:
IN ACCORDANCE WITH THE 2014 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS AND THE 2009 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, FOR H5 LOADING AND 90 PSF PEDESTRIAN LOADING.

MASSDOT BENCH MARK:
BENCH MARK – MAG NAIL SET, TRAV. POINT 20
N 2988660.80 E 668196.65
STA. 133+96.84 309.57' LT
EL. 198.20'

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

MASSDOT SURVEY NOTEBOOKS:
COPIES OF ELECTRONIC SURVEY FILES MAY BE OBTAINED FROM THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION – HIGHWAY DIVISION.

SCALES:
SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZED PRINTS. DIVIDE SCALES BY 2 FOR HALF–SIZE PRINTS (A3).

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

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

SEISMIC GROUND SHAKING HAZARD:
DESIGN RETURN PERIOD: 1000 YEARS

DESIGN SPECTRA:

$A_S = 0.116$
$S_{DS} = 0.239$
$S_{D1} = 0.095$

SITE CLASS = D

SEISMIC DESIGN CATEGORY (SDC) = A

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

REINFORCEMENT:
REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60 (EPOXY COATED). UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS
1. NONE	21"	26"
2. 12" OF CONCRETE BELOW BAR	29"	36"
3. COATED BARS, COVER < 3db, OR CLEAR SPACING < 6db	31"	39"
4. COATED BARS, ALL OTHER CASES	25"	31"
5. CONDITION 2. AND 3.	35"	44"
6. CONDITION 2. AND 4.	34"	43"

IF THE ABOVE BARS ARE SPACED 6" OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF THE LAP LENGTH GIVEN ABOVE. ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

CONCRETE MIXES:

(1)	(2)	(3)	TO BE USED IN CONSTRUCTION OF:
4000	$1\frac{1}{2}$	565	FOOTINGS AND APPROACH SLABS
4000	$\frac{3}{4}$	610	ABUTMENT STEMS, ABUTMENT RETURNS, WINGWALLS, AND BACKWALLS

(1) 28 DAY COMPRESSIVE STRENGTH (PSI)
(2) MAXIMUM AGGREGATE SIZE (INCH)
(3) CEMENTITIOUS CONTENT (POUNDS/C.Y.)

CONTRACTOR DESIGNED SUPERSTRUCTURE:
HIGH DENSITY POLYETHYLENE (HDPE) FRAMING, HDPE DECKING, CONNECTIONS, BEARINGS, ANCHOR BOLTS, HDPE RAILINGS, AND DECK JOINTS SHALL BE CONTRACTOR DESIGNED IN ACCORDANCE WITH THE 2014 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS AND THE 2009 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, FOR H5 LOADING AND 90 PSF PEDESTRIAN LOADING.

CONSTRUCTION ACCESS RESTRICTION:
THE CONTRACTOR IS DIRECTED TO SUPPLEMENTAL SPECIFICATION SECTION 901.67 AND 960.61 FOR RESTRICTIONS OF LOADING ON THE NEWLY CONSTRUCTED BOARDWALK. ANY LOADING EXCEEDING THE DESIGN LOADING SHALL BE RESTRICTED FROM TRAVELING OVER THE BOARDWALK. THE CONTRACTOR MAY ELECT TO SUBMIT CALCULATIONS STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS TO THE ENGINEER FOR APPROVAL, WHICH DEMONSTRATE THAT CONSTRUCTION LOADS CAN SAFELY TRAVEL OVER THE STRUCTURE.

ESTIMATED QUANTITIES
(NOT GUARANTEED)

ITEM DESCRIPTION	QUANTITY	UNIT
BRIDGE EXCAVATION	235	CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	50	CY
CRUSHED STONE FOR BRIDGE FOUNDATIONS	90	TON
12" BLACK HIGH DENSITY POLYETHYLENE (HDPE) PILES	3800	FT
HIGH DENSITY POLYETHYLENE (HDPE) APPROACH RAIL (4 RAIL)	30	EA
CONTROL OF WATER – STRUCTURE NO. A–02–034 (BP5)	1	LS
BRIDGE STRUCTURE, BRIDGE NO. A–02–034 (BP5)	1	LS

SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

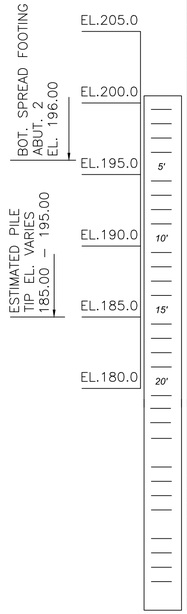
604531_(A02034)BR1_2.DWG Plotted on 18-Sep-2015 9:49 AM
Final Structural Submittal (SF) 19-September-2015

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	146	230
PROJECT FILE NO. 604531			

BORING LOGS

BORING B-1



massDOT Highway

NOBIS ENGINEERING, INC.
585 Middlesex Street
Lowell, MA 01851
Phone: (978) 683-0891
Fax: (978) 683-0966
www.nobisengineering.com

Boring No. B-1
Not to scale

City/Town: Acton & Maynard | Bridge: Boardwalk, Winter Street | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: July 7, 2014 | Total Hours:
Groundwater Depth: NR | Date & Time: N/A | Date Completed: July 7, 2014 | 2
Coordinates: N 2988868.67 E 668480.60 | Driller's Name: Patrick Schofield | Helper's Name:
Ground Elevation: ± 200.5 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0.5' - 2.5'	5 10 8 9	15"	ASPHALT (4") S-1A (7"): Dry, medium dense, light brown, FINE TO COARSE SAND AND FINE TO MEDIUM GRAVEL, trace silt (FILL). S-1B (8"): Dry, medium dense, dark gray, FINE TO COARSE SAND AND FINE TO MEDIUM GRAVEL, some silt (FILL).	4"
S-2	2.5' - 4.5'	5 7 6 8	12"	S-2: Moist, medium dense, gray, FINE TO COARSE SAND, some silt, some fine to medium gravel, faint organic odor (FILL).	
S-3	4.5' - 6.5'	4 10 8 8	18"	S-3A (14"): Moist, medium dense, dark gray, FINE TO COARSE SAND, some fine to medium gravel, faint organic odor (FILL).	5.7'
S-4	6.5' - 6.8'	50/3"	3"	S-3B (4"): Moist, medium dense, gray, FINE TO COARSE SAND AND SILT, some medium gravel (GLACIAL TILL).	
S-5	8' - 8.4'	50/5"	4"	S-4: Wet, very dense, gray, FINE TO COARSE SAND AND SILT, some fine to medium gravel (GLACIAL TILL). Augered through inferred boulder/cobble between 6.8' and 8'.	
				S-5: Wet, very dense, gray, MEDIUM GRAVEL, some fine to coarse sand, some silt (GLACIAL TILL).	
				Bottom of Exploration = 8.4'	

Notes:
1. NR = Not Recorded.
2. Ground surface elevation should be considered approximate.
3. Water level in nearby pond approximately 3 feet below grade at boring location.
4. Auger refusal on probable boulder at 6.8' below grade. Borehole moved approximately 5.5' east and advanced to Sample B-5.
5. Borehole backfilled with native soil and asphalt patched at surface.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

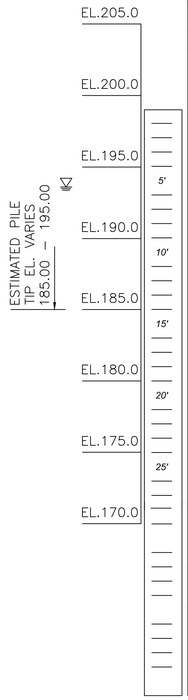
Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Diedrich D-50
Auger Type: HSA Size: 2.25" Depth: 8'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

BORING B-2



massDOT Highway

NOBIS ENGINEERING, INC.
585 Middlesex Street
Lowell, MA 01851
Phone: (978) 683-0891
Fax: (978) 683-0966
www.nobisengineering.com

Boring No. B-2
Not to scale

City/Town: Acton & Maynard | Bridge: Boardwalk, Winter Street | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: July 7, 2014 | Total Hours:
Groundwater Depth: 5.4' | Date & Time: 7/7/2014 11:15 AM | Date Completed: July 7, 2014 | 3
Coordinates: N 2988975.52 E 668424.47 | Driller's Name: Patrick Schofield | Helper's Name:
Ground Elevation: ± 199 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	1 1 1 2	11"	S-1: Moist, loose, black ORGANIC SILT, some fine sand, trace roots, trace wood particles and fragments, faint organic odor (TOPSOIL).	2'
S-2	2' - 4'	11 7 5 5	12"	S-2: Wet, stiff, dark brown to black, ORGANIC CLAYEY SILT, some fine to coarse sand, some medium gravel, trace roots, trace wood fragments, very faint organic odor, some silt (ORGANIC DEPOSITS).	4'
S-3	4' - 6'	1 WOH 3 5	5"	S-3: Wet, very loose, gray MEDIUM GRAVEL, some fine to coarse sand, some silt, trace pockets of organic silt, faint organic odor.	
S-4	6' - 8'	3 10 13 17	12"	S-4: Wet, medium dense, gray, FINE TO COARSE SAND AND SILT, some fine to medium gravel, trace organic silt, trace roots,	
S-5	8' - 10'	20 14 13 13	5"	S-5: Wet, medium dense, gray, FINE TO MEDIUM GRAVEL AND FINE TO COARSE SAND, some silt.	13.75'
				Heavy drilling resistance at 13.75' indicating probable strata change.	
S-5	15' - 17'	21 36 50 58	9"	S-6: Wet, very dense, gray, SILT AND FINE TO COARSE SAND, some fine to medium gravel (GLACIAL TILL).	
				Increased drilling resistance between 17' and 18'.	
S-6	19' - 20.6'	32 19 32 50/1"	8"	S-7: Wet, very dense, gray, FINE TO COARSE SAND, some fine to coarse gravel, some silt, Angular, probable cobble fragments in bottom of split-spoon (GLACIAL TILL).	
				Bottom of Exploration = 20.6'	

Notes:
1. Ground surface elevation should be considered approximate.
2. Boring drilled adjacent to wetland areas to the west and east. Water level approximately 1' below ground surface at boring location.
3. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

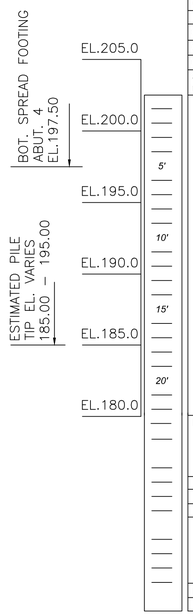
Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Diedrich D-50
Casing Type: HW Size: 4" Depth: 9'4"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

BORING B-3



massDOT Highway

NOBIS ENGINEERING, INC.
585 Middlesex Street
Lowell, MA 01851
Phone: (978) 683-0891
Fax: (978) 683-0966
www.nobisengineering.com

Boring No. B-3
Not to scale

City/Town: Acton & Maynard | Bridge: Boardwalk, Winter Street | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: July 7, 2014 | Total Hours:
Groundwater Depth: NR | Date & Time: N/A | Date Completed: July 7, 2014 | 3
Coordinates: N 2988971.97 E 668148.16 | Driller's Name: Patrick Schofield | Helper's Name:
Ground Elevation: ± 202.5 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	4 6 7 6	8"	S-1A (5"): Dry, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel, trace silt, trace roots (TOPSOIL).	5"
S-2	2' - 4'	6 5 6 6	0"	S-1B (3"): Dry, medium dense, light brown, FINE TO COARSE SAND, some fine to medium gravel, trace silt, some plastic fragments (FILL). S-2: No Recovery.	
S-3	4' - 6'	7 9 13 13	9"	S-3: Wet, medium dense, gray, FINE TO COARSE SAND, some silt, some fine to medium gravel.	4'
S-4	6' - 8'	15 17 16 18	18"	S-4: Wet, dense, gray, FINE TO COARSE SAND, some fine to medium gravel, trace silt.	
S-5	10' - 12'	4 6 13 10	24"	S-5: Wet, medium dense, gray, FINE TO COARSE SAND, some fine gravel, trace silt.	
S-6	15' - 17'			S-6: Approximately 18" of hollow stem augers filled with running sand at bottom of hole. Auger grinding at depth of 17 feet BGS on inferred glacial till or cobble.	
				Bottom of Exploration = 20'	

Notes:
1. NR = Not Recorded.
2. Ground surface elevation should be considered approximate.
3. Split spoon for Sample S-6 contained 18" of blown in sand.
4. Borehole collapsed due to running sands at 20'.
5. Borehole backfilled with native soil.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

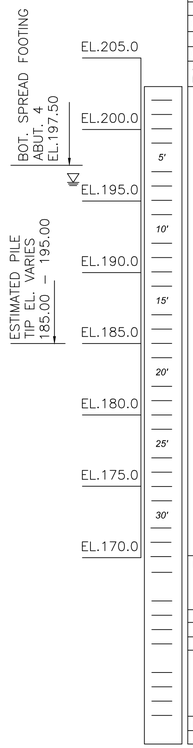
Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Diedrich D-50
Auger Type: HSA Size: 2.25" Depth: 20'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

BORING B-3A



massDOT Highway

NOBIS ENGINEERING, INC.
585 Middlesex Street
Lowell, MA 01851
Phone: (978) 683-0891
Fax: (978) 683-0966
www.nobisengineering.com

Boring No. B-3A
Not to scale

City/Town: Acton & Maynard | Bridge: Boardwalk, Winter Street | Project File No: 604531 | Contract No: 68386
Project: Assabet River Rail Trail | Date Started: July 10, 2014 | Total Hours:
Groundwater Depth: 6.7' | Date & Time: 7/10/2014 10:15 AM | Date Completed: July 10, 2014 | 5
Coordinates: N 2988973.88 E 668142.47 | Driller's Name: Mike D'Ambrosia | Helper's Name:
Ground Elevation: ± 203 | Inspector's Name: Patrick Clarke | Driller's Company: New Hampshire Boring, Inc.

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	1' - 3'	4 6 5 3	12"	Dry, brown, FINE TO COARSE SAND, some fine to medium gravel, trace silt, trace roots (TOPSOIL).	4'
S-2	3' - 5'	3 5 6 11	14"	S-1: Dry, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel, some silt (FILL). S-2: Moist, medium dense, brown, FINE TO COARSE SAND, some fine gravel, trace silt, trace roots, tip of split spoon wet (FILL).	5'
S-3	5' - 7'	11 8 9 8	13"	S-3: Wet, medium dense, gray, FINE TO COARSE SAND, some fine gravel, some silt.	
S-4	7' - 9'	10 8 7 8	16"	S-4: Wet, medium dense, gray, FINE TO COARSE SAND, some fine gravel, trace silt.	
S-5	9' - 11'	5 7 8 10	22"	S-5: Wet, medium dense, gray, FINE TO COARSE SAND, some fine gravel, trace silt, trace medium gravel.	
S-6	15' - 15,7'	22 100/2"	7"	S-6: Wet, very dense, gray/brown, FINE TO COARSE SAND, some fine to medium gravel, some silt (GLACIAL TILL).	15'
S-7	20'-22'	24 14 22 19	7"	S-7: Wet, dense, gray, MEDIUM GRAVEL, some fine to coarse sand, some silt (GLACIAL TILL). Increased drilling resistance observed at 23.5'. Rock fragments observed in cuttings between 23.5' and 25,4'.	
S-8	25'-25,4'	100/5"	4"	S-8: Wet, very dense, white and brown, MEDIUM GRAVEL (rounded quartz fragments), trace fine to coarse sand, trace fine gravel, trace silt (GLACIAL TILL).	
				Bottom of Exploration = 25.4'	

Notes:
1. Ground surface elevation should be considered approximate.
2. Borehole hand excavated from 0' to 1' for utility clearance.
3. Borehole backfilled with drill cuttings.

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck / Acker AD2
Casing Type: HW Size: 4" Depth: 25'
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

BORING NOTES

1. LOCATION OF BORINGS SHOWN ON THE PLAN THUS: ⌖ B-1
2. BORINGS ARE 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 IN THE COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1⅜" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
5. BORING SAMPLES ARE STORED AT A STORAGE FACILITY LOCATED ON ROUTE 114 (219 WINTHROP AVENUE) IN LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.
6. BORINGS B-1, B-2, B-3 AND B-3A WERE MADE IN JULY, 2014.
7. BORINGS WERE MADE BY NEW HAMPSHIRE BORINGS, INC. D.B.A NEW ENGLAND BORING CONTRACTORS OF DERRY, NH UNDER THE GUIDANCE OF NOBIS ENGINEERING, INC.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
9. GROUND SURFACE ELEVATIONS ARE APPROXIMATE.

SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

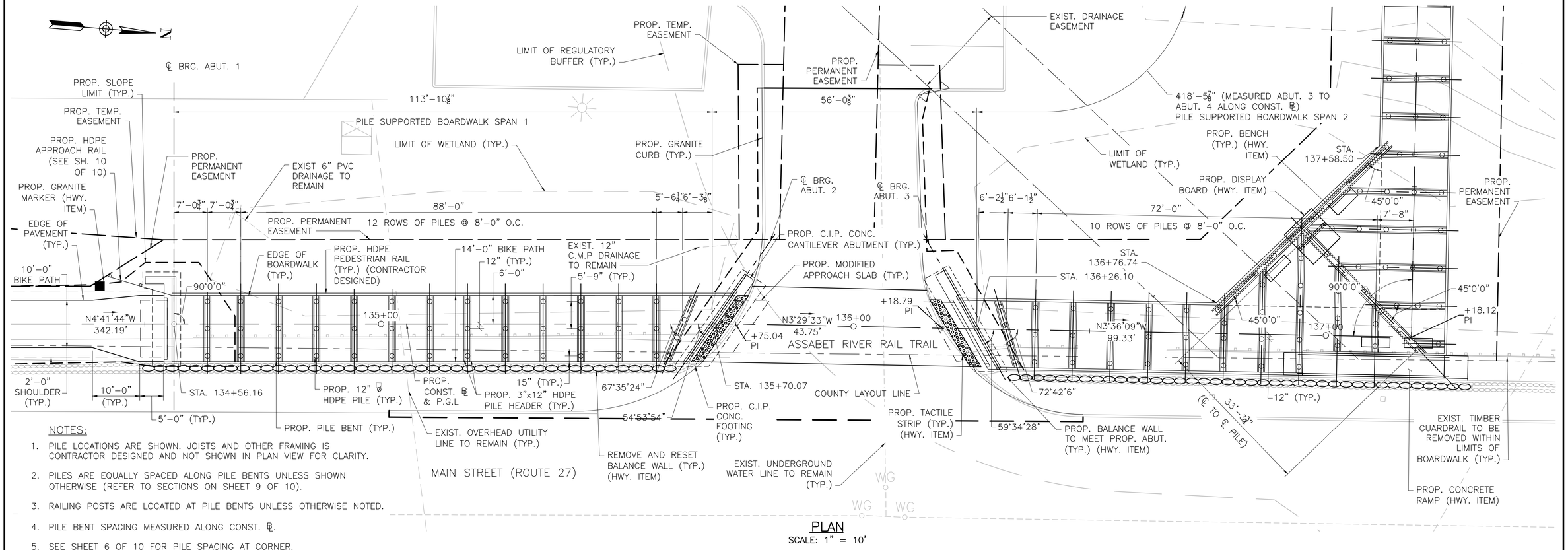
604531_(A02034)BR3.DWG Plotted on 18-Sep-2015 9:49 AM
Final Structural Submittal (SF) 19-September-2015

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	147	230
PROJECT FILE NO. 604531			

CONTINUED ON SHEET 5

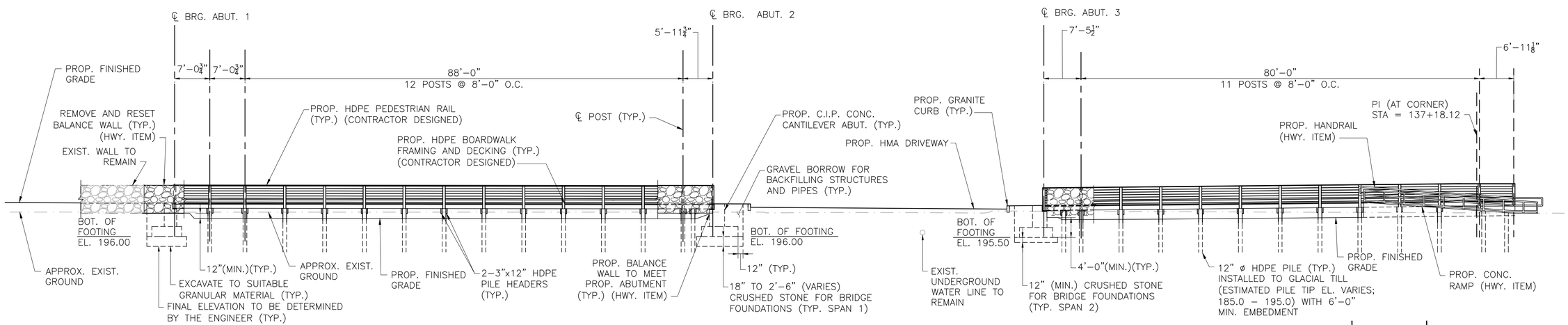
PLAN AND ELEVATION



NOTES:

1. PILE LOCATIONS ARE SHOWN. JOISTS AND OTHER FRAMING IS CONTRACTOR DESIGNED AND NOT SHOWN IN PLAN VIEW FOR CLARITY.
2. PILES ARE EQUALLY SPACED ALONG PILE BENTS UNLESS SHOWN OTHERWISE (REFER TO SECTIONS ON SHEET 9 OF 10).
3. RAILING POSTS ARE LOCATED AT PILE BENTS UNLESS OTHERWISE NOTED.
4. PILE BENT SPACING MEASURED ALONG CONST. ℄.
5. SEE SHEET 6 OF 10 FOR PILE SPACING AT CORNER.

PLAN
SCALE: 1" = 10'



EAST ELEVATION
SCALE: 1" = 10'

SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

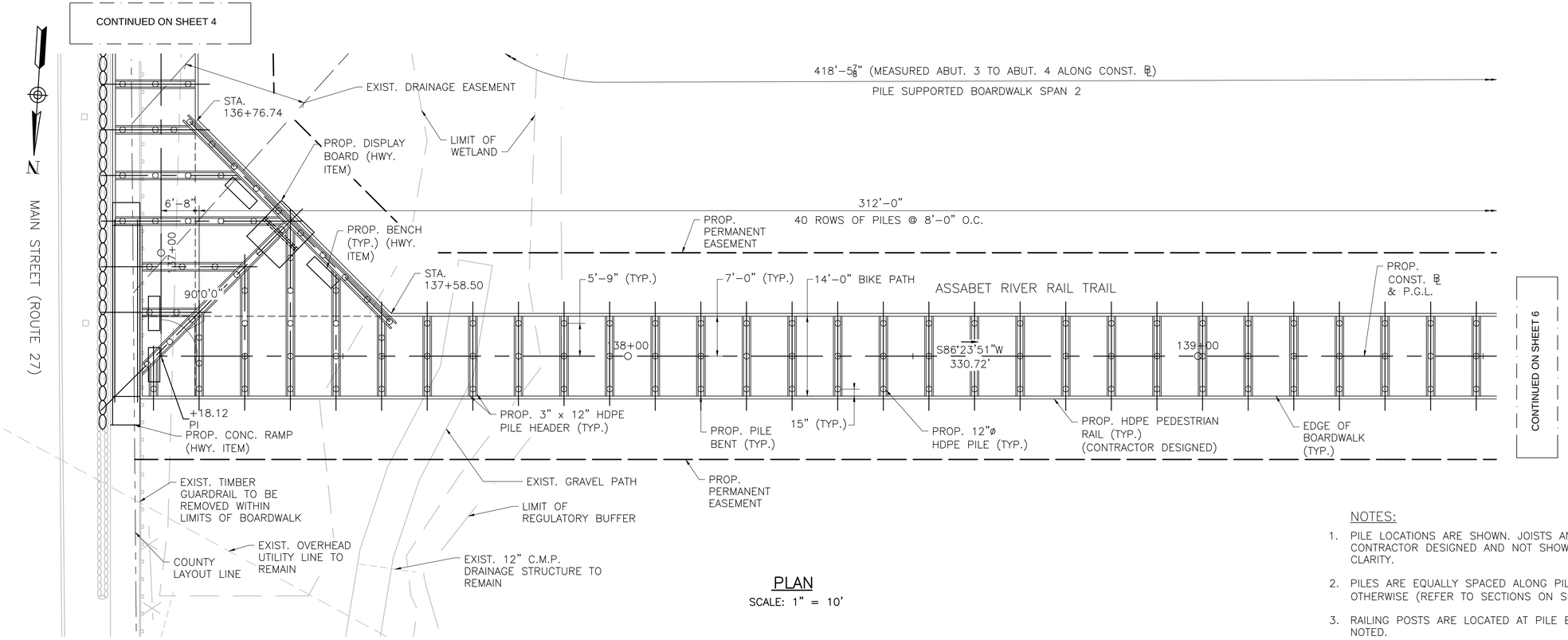
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Final Structural Submittal (SF) 19-September-2015

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	148	230
PROJECT FILE NO. 604531			

PLAN AND ELEVATION

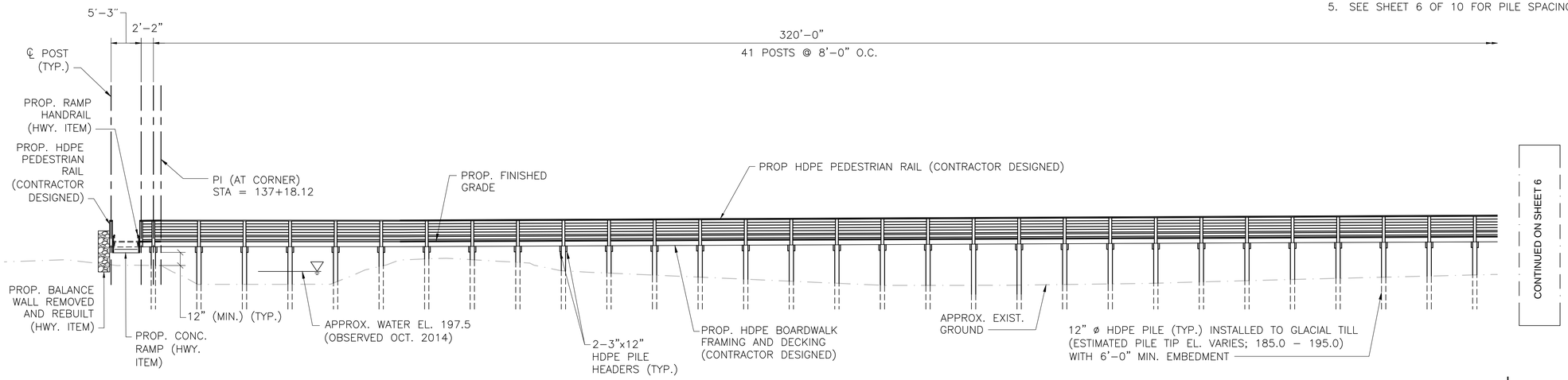
604531_(A02034)BR4_6.DWG Plotted on 18-Sep-2015 9:51 AM



PLAN
SCALE: 1" = 10'

NOTES:

1. PILE LOCATIONS ARE SHOWN. JOISTS AND OTHER FRAMING IS CONTRACTOR DESIGNED AND NOT SHOWN IN PLAN VIEW FOR CLARITY.
2. PILES ARE EQUALLY SPACED ALONG PILE BENTS UNLESS SHOWN OTHERWISE (REFER TO SECTIONS ON SHEET 9 OF 10).
3. RAILING POSTS ARE LOCATED AT PILE BENTS UNLESS OTHERWISE NOTED.
4. PILE BENT SPACING MEASURED ALONG CONST. ℄.
5. SEE SHEET 6 OF 10 FOR PILE SPACING AT CORNER.



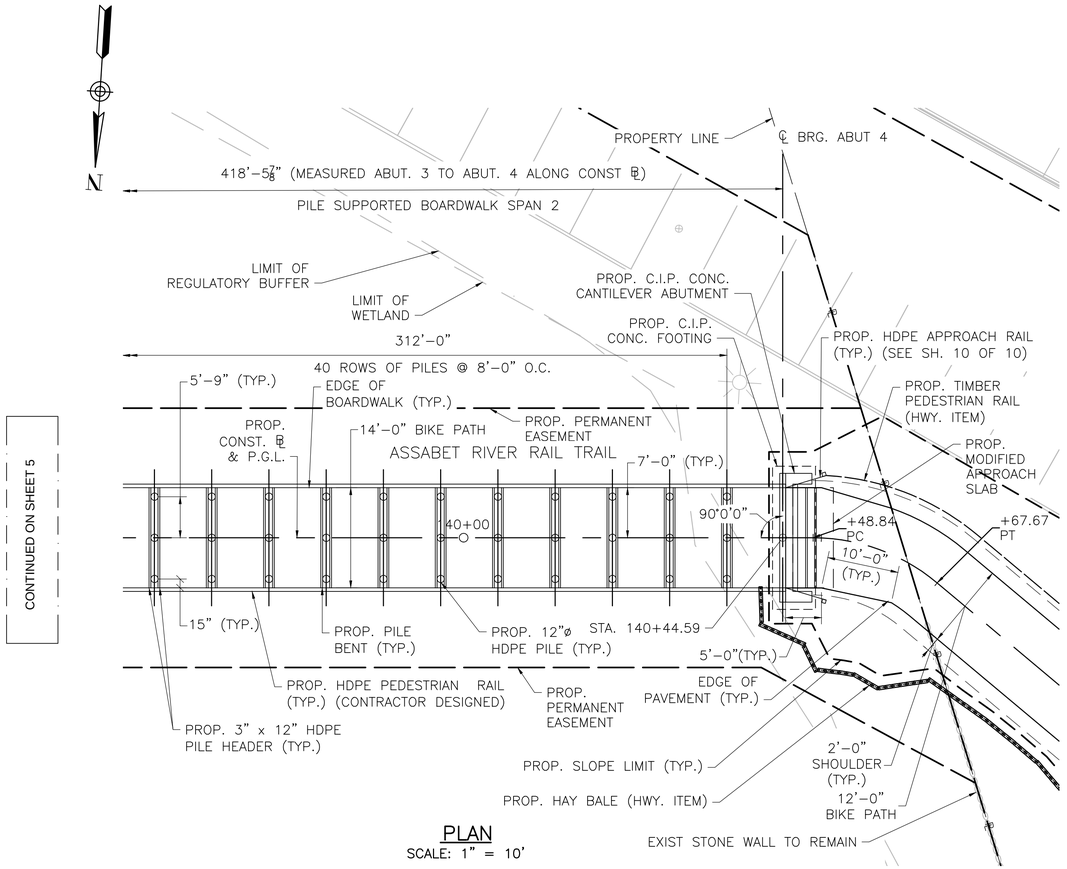
NORTH ELEVATION
SCALE: 1" = 10'

DATE	DESCRIPTION
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
USE ONLY PRINTS OF LATEST DATE	

Final Structural Submittal (SF) 19-September-2015

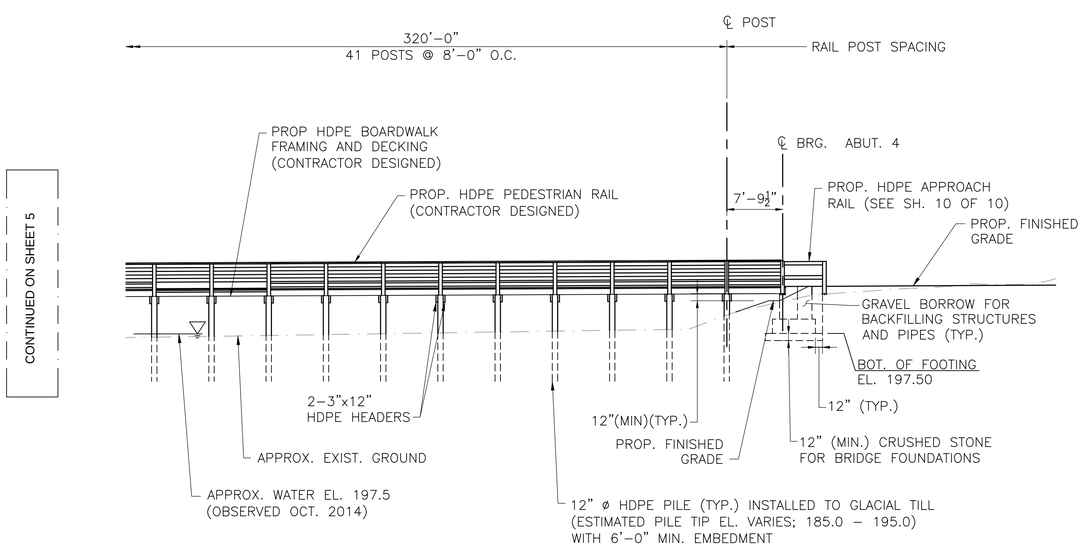
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	149	230
PROJECT FILE NO. 604531			



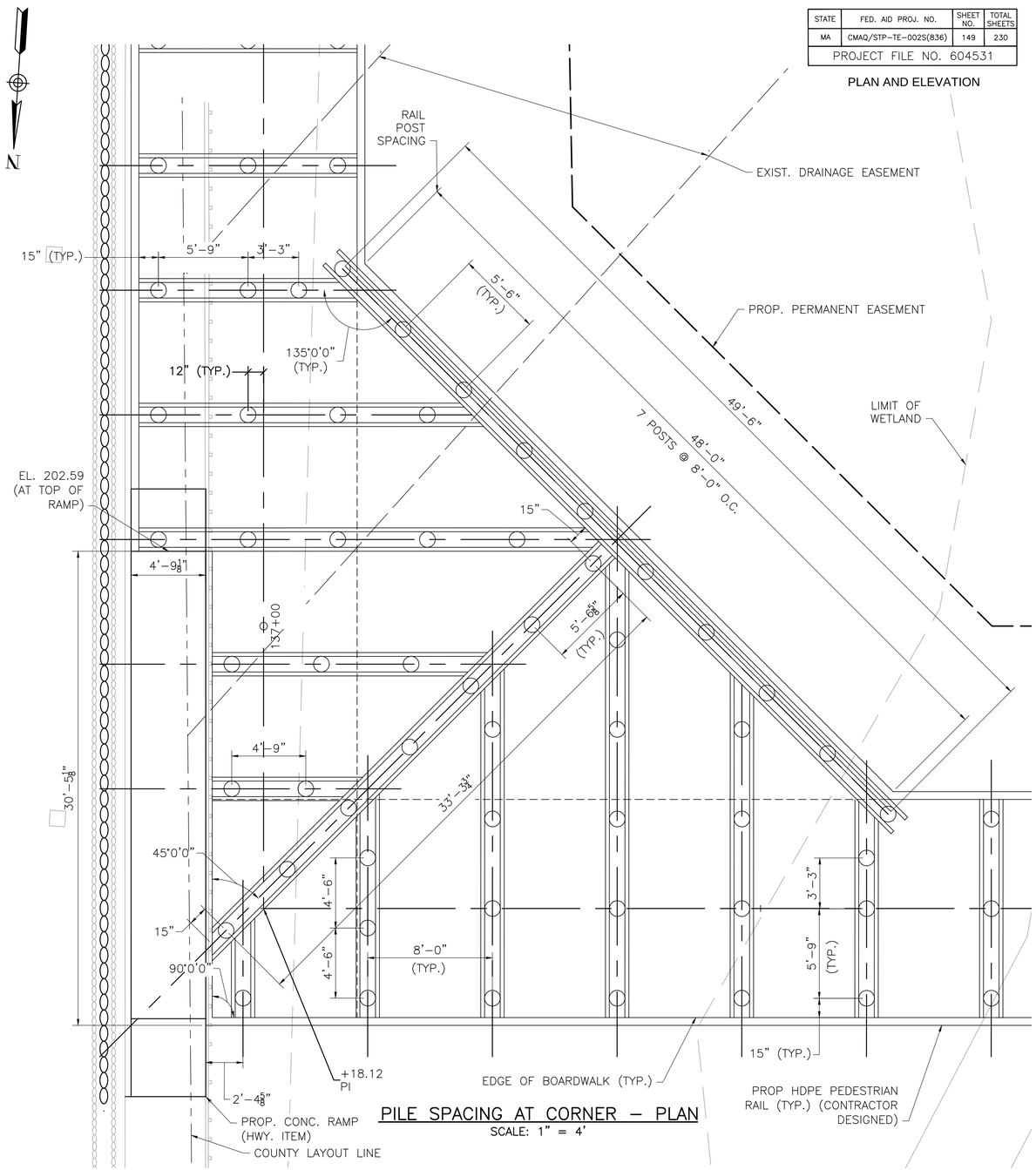
CONTINUED ON SHEET 5

PLAN
SCALE: 1" = 10'



CONTINUED ON SHEET 5

NORTH ELEVATION
SCALE: 1" = 10'



PILE SPACING AT CORNER – PLAN
SCALE: 1" = 4'

NOTES:

1. PILE LOCATIONS ARE SHOWN. JOISTS AND OTHER FRAMING IS CONTRACTOR DESIGNED AND NOT SHOWN IN PLAN VIEW FOR CLARITY.
2. PILES ARE EQUALLY SPACED ALONG PILE BENTS UNLESS SHOWN OTHERWISE (REFER TO SECTIONS ON SHEET 9 OF 10).
3. RAILING POSTS ARE LOCATED AT PILE BENTS UNLESS OTHERWISE NOTED.
4. PILE BENT SPACING MEASURED ALONG CONST. ℄.

DATE	DESCRIPTION
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
USE ONLY PRINTS OF LATEST DATE	

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Final Structural Submittal (SF) 19-September-2015

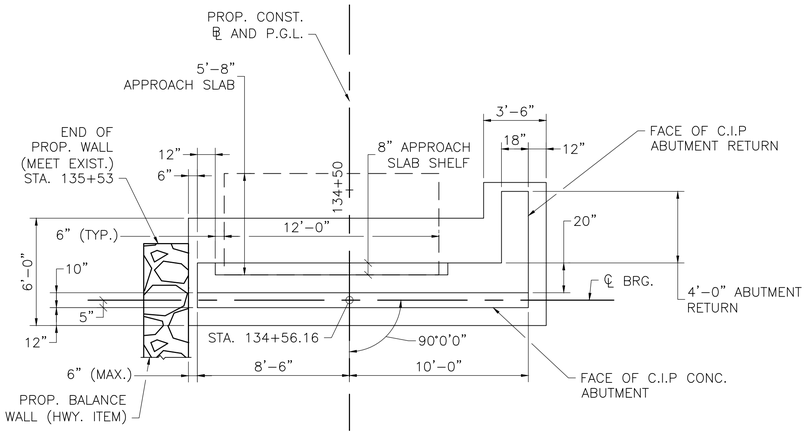
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	150	230
PROJECT FILE NO. 604531			

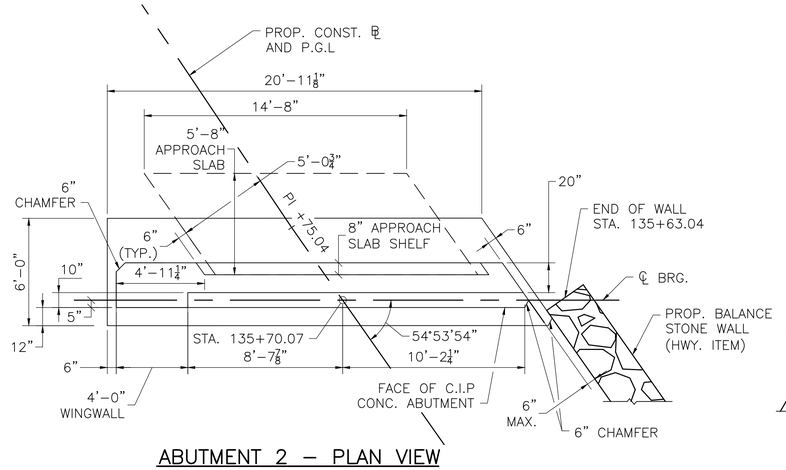
ABUTMENT PLAN & ELEVATION

NOTES:

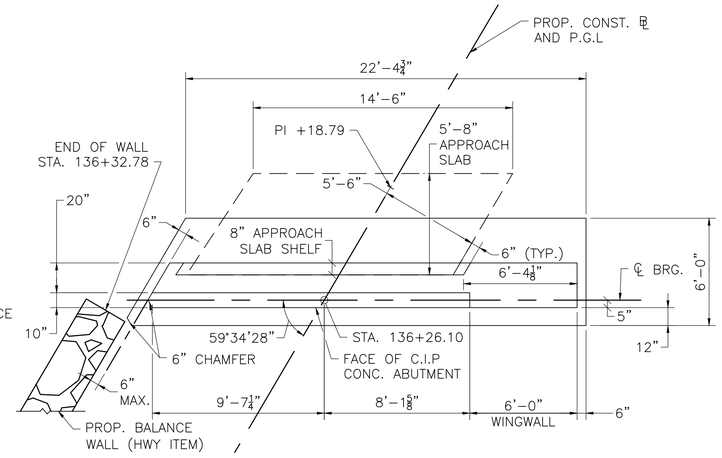
1. HDPE JOISTS ARE TO BE CONTRACTOR DESIGNED AND ARE NOT SHOWN IN ABUTMENT PLAN VIEW FOR CLARITY.



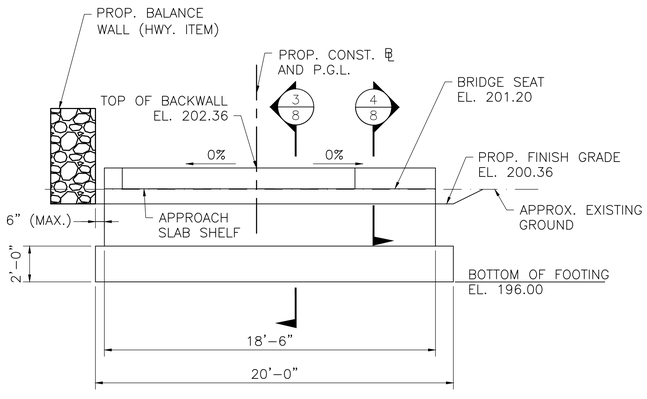
ABUTMENT 1 – PLAN VIEW
SCALE: 1/4" = 1'-0"



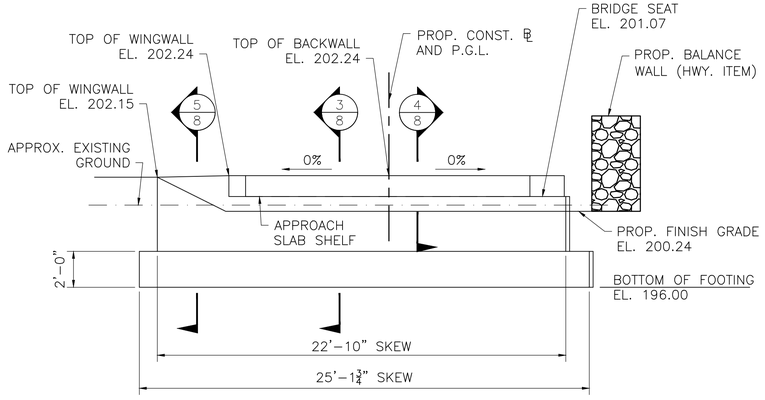
ABUTMENT 2 – PLAN VIEW
SCALE: 1/4" = 1'-0"



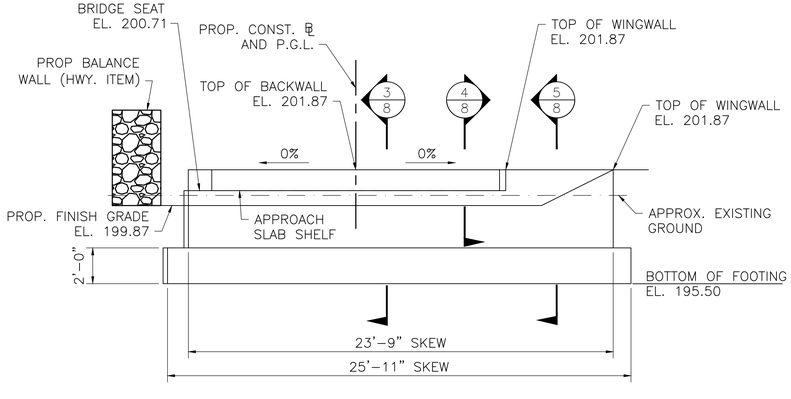
ABUTMENT 3 – PLAN VIEW
SCALE: 1/4" = 1'-0"



ABUTMENT 1 – ELEVATION
SCALE: 1/4" = 1'-0"



ABUTMENT 2 – ELEVATION
SCALE: 1/4" = 1'-0"



ABUTMENT 3 – ELEVATION
SCALE: 1/4" = 1'-0"

SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

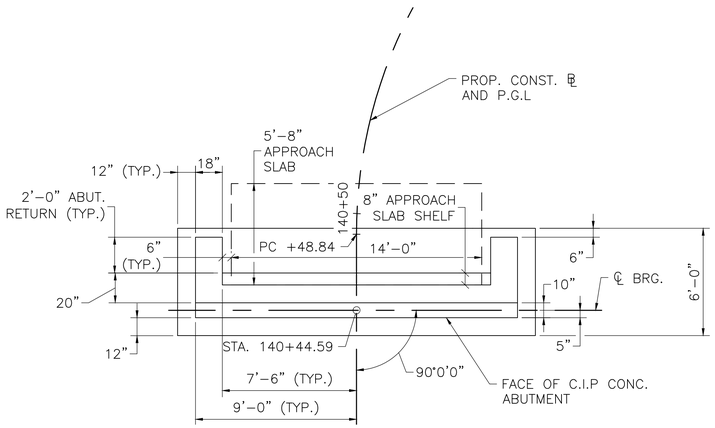
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Final Structural Submittal (SF) 19-September-2015

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	151	230
PROJECT FILE NO. 604531			

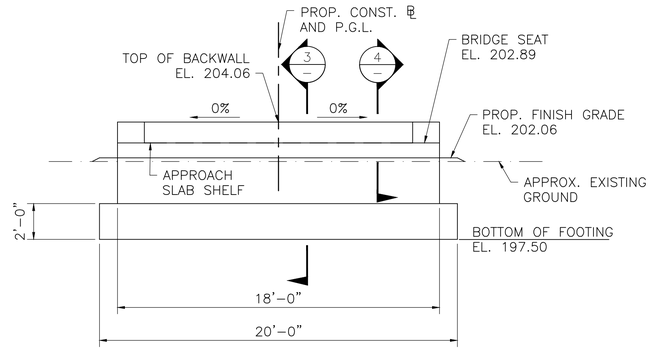
ABUTMENT PLAN, ELEVATION & SECTIONS

NOTES:

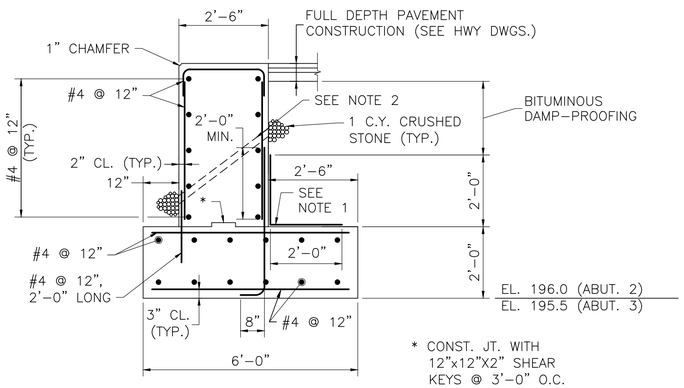
1. HDPE JOISTS ARE TO BE CONTRACTOR DESIGNED AND ARE NOT SHOWN IN ABUTMENT PLAN VIEW FOR CLARITY.



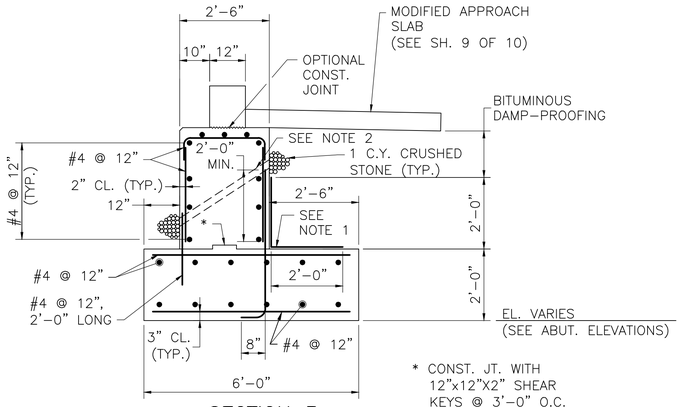
ABUTMENT 4 – PLAN VIEW
SCALE: 1/4" = 1'-0"



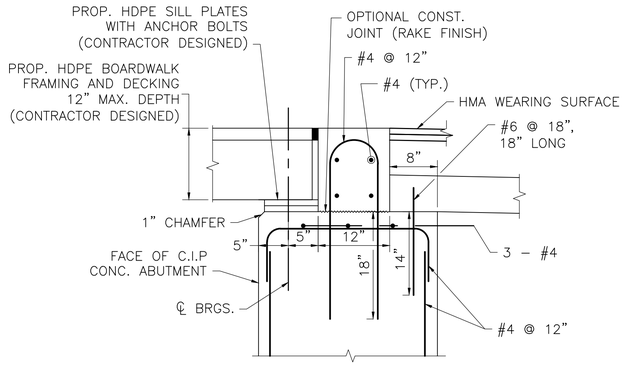
ABUTMENT 4 – ELEVATION
SCALE: 1/4" = 1'-0"



SECTION 5
SCALE: 1/2" = 1'-0"



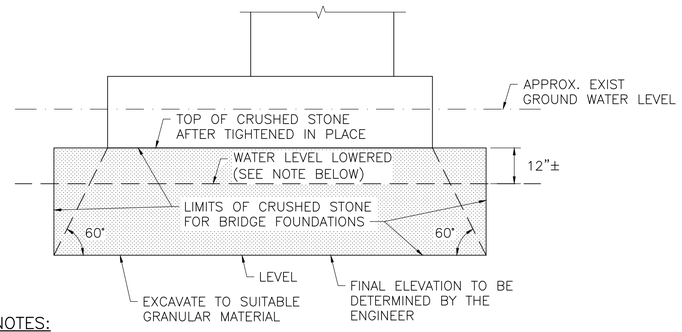
SECTION 3
SCALE: 1/2" = 1'-0"



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

DETAILS AT ABUTMENT NOTES:

1. ALL REINFORCEMENT SHOWN IN THIS DETAIL SHALL BE EPOXY COATED.
2. ALL BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT LOCATED AT THE BRIDGE SEAT SHALL BE 4000 PSI, ¾ IN, 610 CEMENT CONCRETE. THE CONSTRUCTION JOINT SHALL BE GIVEN A RAKE FINISH WITH A ¼" MINIMUM AMPLITUDE.
3. TOP OF BACKWALL SHALL BE TROWELLED SMOOTH PARALLEL TO THE PROFILE GRADE.
4. THE DECK JOINT SHALL CONFORM TO ADA/AAB REQUIREMENTS.



NOTES:

1. LOWER WATER LEVEL AS MUCH AS POSSIBLE WITHOUT DISTURBING THE GRANULAR SOIL (SIDES AND BOTTOM) AND TIGHTEN THE CRUSHED STONE IN PLACE (SEE STANDARD SPECIFICATIONS).
2. SAME TREATMENT IS TO BE USED AT ENDS OF WALLS AND ABUTMENTS.

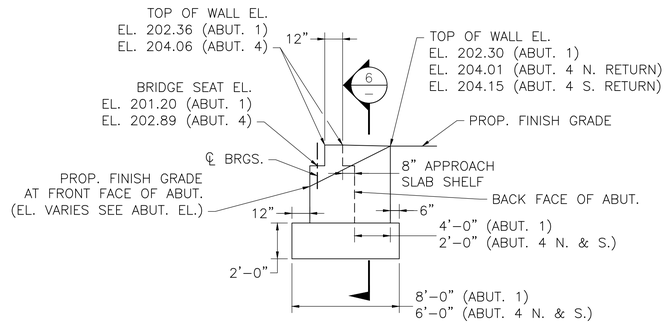
LIMITS OF CRUSHED STONE FOR BRIDGE FOUNDATIONS
SCALE: 1/2" = 1'-0"

ABUTMENT NOTES:

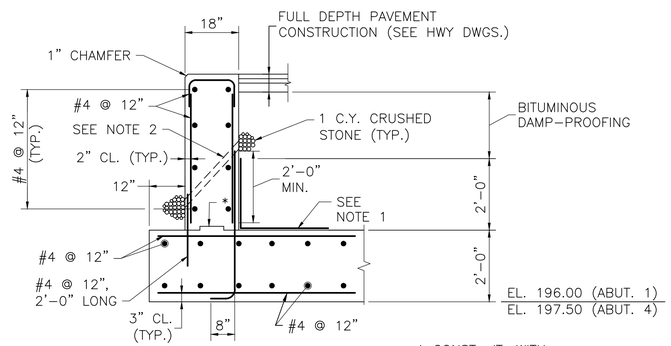
1. MEMBRANE WATERPROOFING AND 8"x16"x2", 4000 PSI, ¾ IN, 610 CEMENT CONCRETE BLOCKS LAID IN MORTAR OR OTHER WATERPROOFING PROTECTIVE COURSE, MIN. 2" THICK AS SPECIFIED IN MHD STANDARD SPECIFICATIONS.
2. 4" ø WEEP HOLES 10'-0" O.C. (JUST ABOVE PROTECTIVE COURSE). PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
3. ABUTMENT STEM AND BACKWALL CONCRETE SHALL BE 4000 PSI, ¾ IN, 610 CEMENT CONCRETE. ABUTMENT FOOTING CONCRETE SHALL BE 4000 PSI, 1½ IN, 565 CEMENT CONCRETE.
4. THE FACTORED BEARING PRESSURE = 1.77 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.

   ABUTMENTS 1, 2 & 3:
   FACTORED BEARING RESISTANCE = 8.80 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.

   ABUTMENT 4:
   FACTORED BEARING RESISTANCE = 8.30 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.



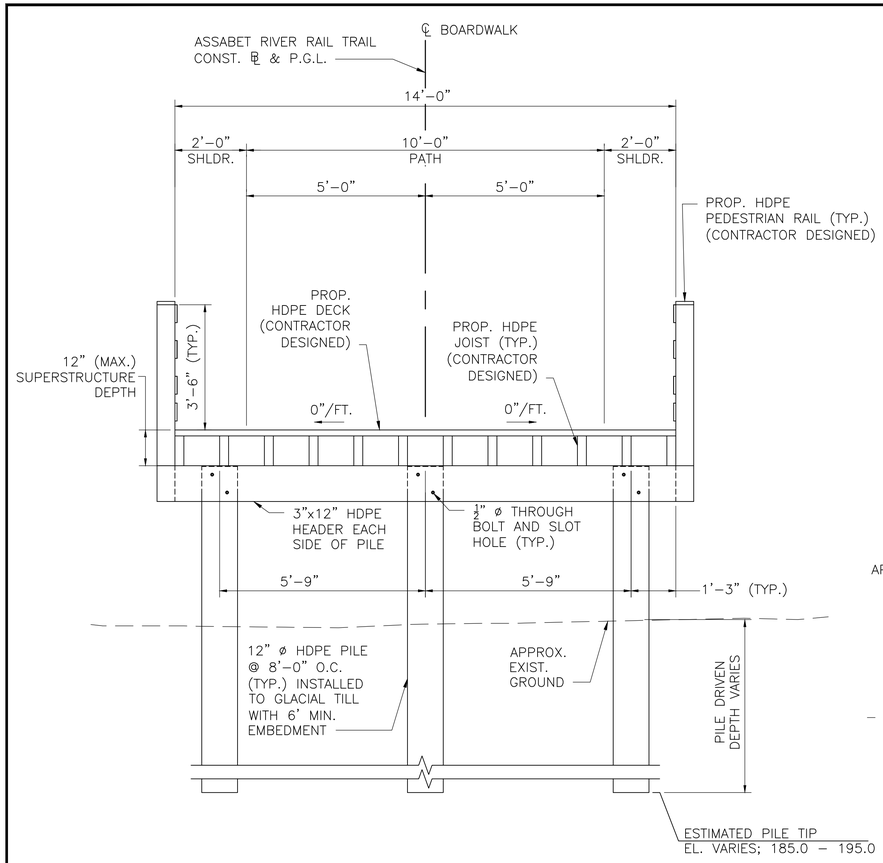
TYPICAL ABUTMENT RETURN – ELEVATION
SCALE: 1/4" = 1'-0"



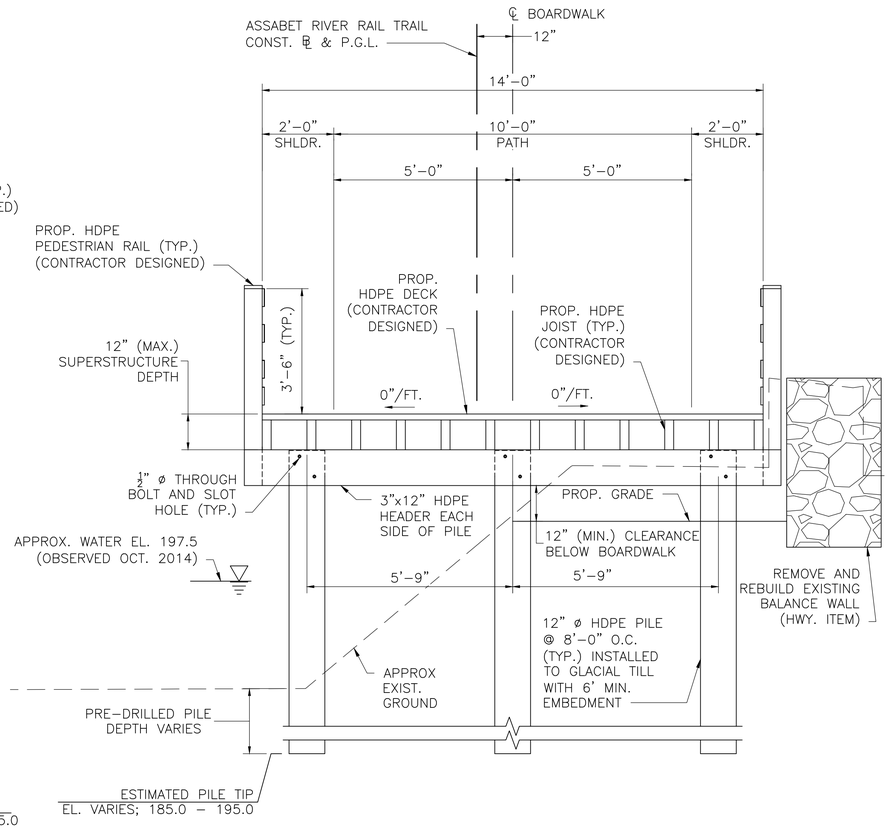
SECTION 6
SCALE: 1/2" = 1'-0"

SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

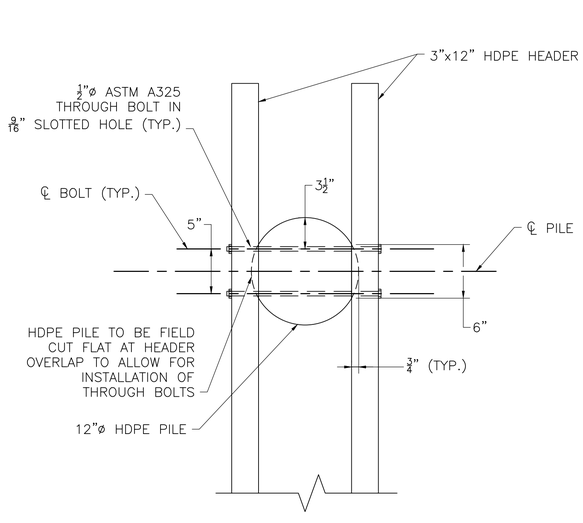
604531_(A02034)BR7_8.DWG Plotted on 18-Sep-2015 9:55 AM
Final Structural Submittal (SF) 19-September-2015



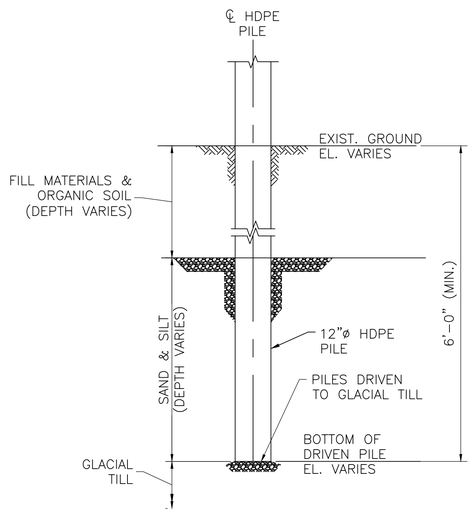
SECTION 1 (SEE SHEET 1 FOR LOCATION)
SCALE: 1/2" = 1'–0"



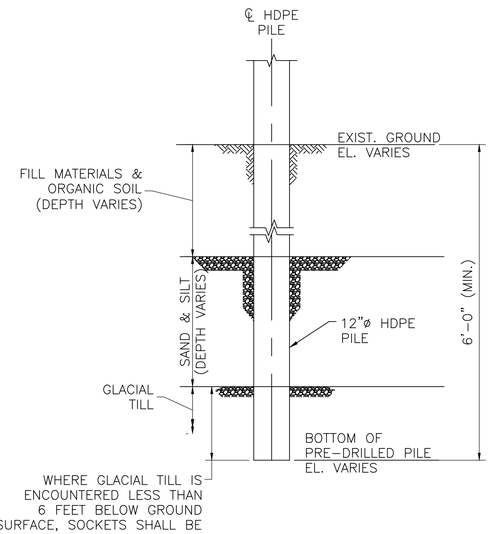
SECTION 2 (SEE SHEET 1 FOR LOCATION)
SCALE: 1/2" = 1'–0"



TYPICAL PILE CONNECTION DETAIL
SCALE: 1 1/2" = 1'–0"



PILE ELEVATION DETAIL AT SECTION 1
SCALE: N.T.S

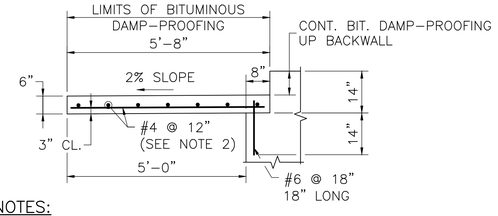


PILE ELEVATION DETAIL AT SECTION 2
SCALE: N.T.S

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP–TE–002S(836)	152	230
PROJECT FILE NO. 604531			

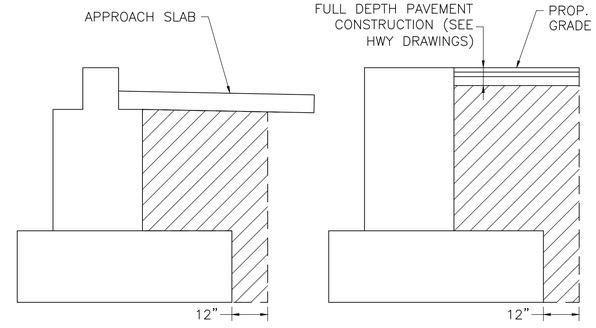
CROSS SECTION, PILE ELEVATION & MISC. DETAILS



NOTES:

1. APPROACH SLAB TO BE 4000 PSI, 1½ IN, 565 CEMENT CONCRETE.
2. PLACE LONGITUDINAL REINFORCEMENT PERPENDICULAR TO THE ABUTMENT.
3. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
4. SEE ABUTMENT PLAN VIEWS FOR APPROACH SLAB PLAN DETAIL.

TYPICAL APPROACH SLAB SECTION
SCALE: 1/2" = 1'–0"



ABUTMENTS WINGWALLS

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

LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES
SCALE: 1/2" = 1'–0"

PILE NOTES:

1. THE FACTORED AXIAL DESIGN LOAD PER PILE IS 13.44 KIPS AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.

   THE FACTORED STRUCTURAL RESISTANCE PER PILE IS 45.5 KIPS AND IS THE PRODUCT OF THE NOMINAL STRUCTURAL RESISTANCE OF 50.5 KIPS AND A RESISTANCE FACTOR OF 0.9.
2. THE FACTORED GEOTECHNICAL PILE RESISTANCE IS 15.1 KIPS AND IS THE PRODUCT OF THE NOMINAL GEOTECHNICAL RESISTANCE OF 33.6 KIPS AND A RESISTANCE FACTOR OF 0.45. THE ESTIMATED TIP ELEVATION VARIES FROM 185 TO 195 FEET.
3. DETERMINATION OF THE DRIVEN PILE RESISTANCE, PILE DRIVING CRITERIA, AND PILE INTEGRITY SHALL BE PERFORMED USING THE STATIC LOAD TESTING METHOD ON A SACRIFICIAL HDPE PILE PRIOR TO THE ORDERING OF PRODUCTION PILES.
4. DYNAMIC PILE TESTING USING A PILE DRIVING ANALYZER (PDA) SHALL BE USED TO CONFIRM PRODUCTION PILES WITH A RESISTANCE FACTOR OF 0.65. PILES SHALL BE INSTALLED TO ACHIEVE A FACTORED DRIVEN RESISTANCE EQUAL TO OR GREATER THAN THE FACTORED AXIAL DESIGN LOAD. ONE INDICATOR PILE WITHIN SPAN 1 AND 4 EQUALLY SPACED INDICATOR PILES WITH SPAN 2 SHALL BE TESTED DURING THE END OF INITIAL DRIVING WITH A PDA FOLLOWED BY A CAPWAP ANALYSIS TO DETERMINE THE PILE DRIVING ACCEPTANCE CRITERIA.
5. THE CONTRACTOR SHALL SUBMIT A PILE SCHEDULE, PILE INSTALLATION, AND PILE DRIVING/TESTING PLAN FOR REVIEW AND APPROVAL OF THE ENGINEER.

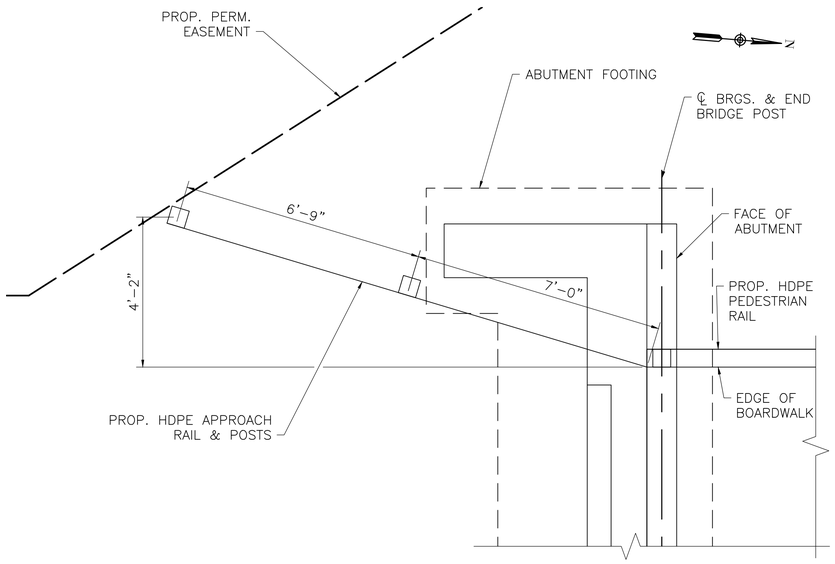
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

604531_(A02034)BR9.DWG Plotted on 18-Sep-2015 9:55 AM
Final Structural Submittal (SF) 19-September-2015

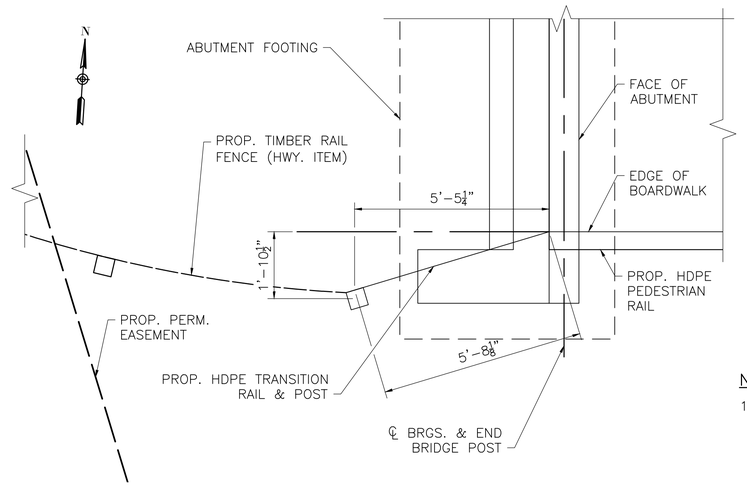
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	153	230
PROJECT FILE NO. 604531			

APPROACH RAIL PLAN & ELEVATION



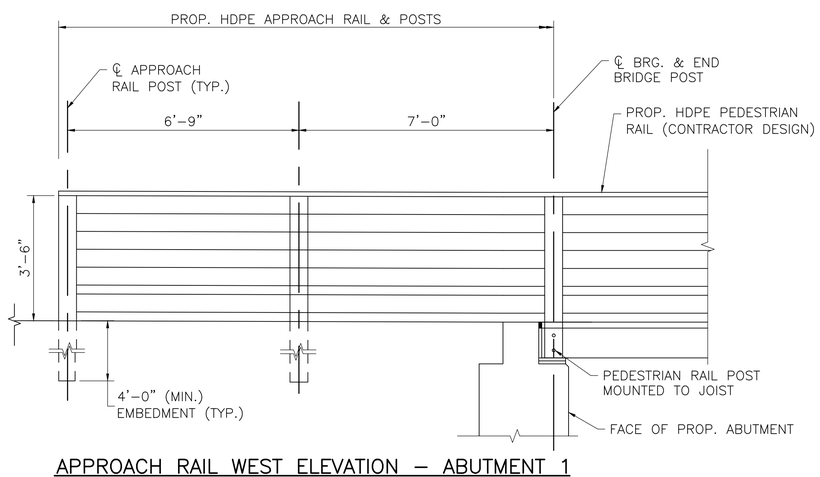
APPROACH RAIL PLAN – ABUTMENT 1
SCALE: 1/2" = 1'-0"



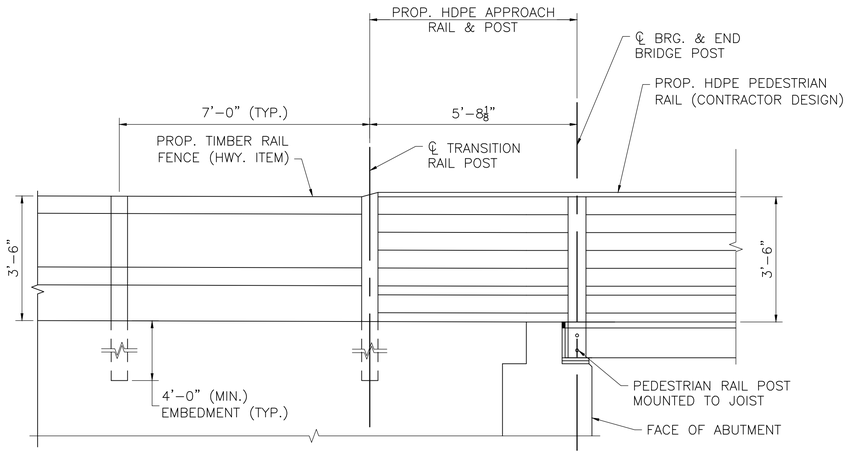
APPROACH RAIL PLAN – ABUTMENT 4
SCALE: 1/2" = 1'-0"

NOTE:

1. ABUTMENT 4 SOUTH SIDE SHOWN, NORTH SIDE SIMILAR.



APPROACH RAIL WEST ELEVATION – ABUTMENT 1
SCALE: 1/2" = 1'-0"



APPROACH RAIL ELEVATION – ABUTMENT 4
SCALE: 1/2" = 1'-0"

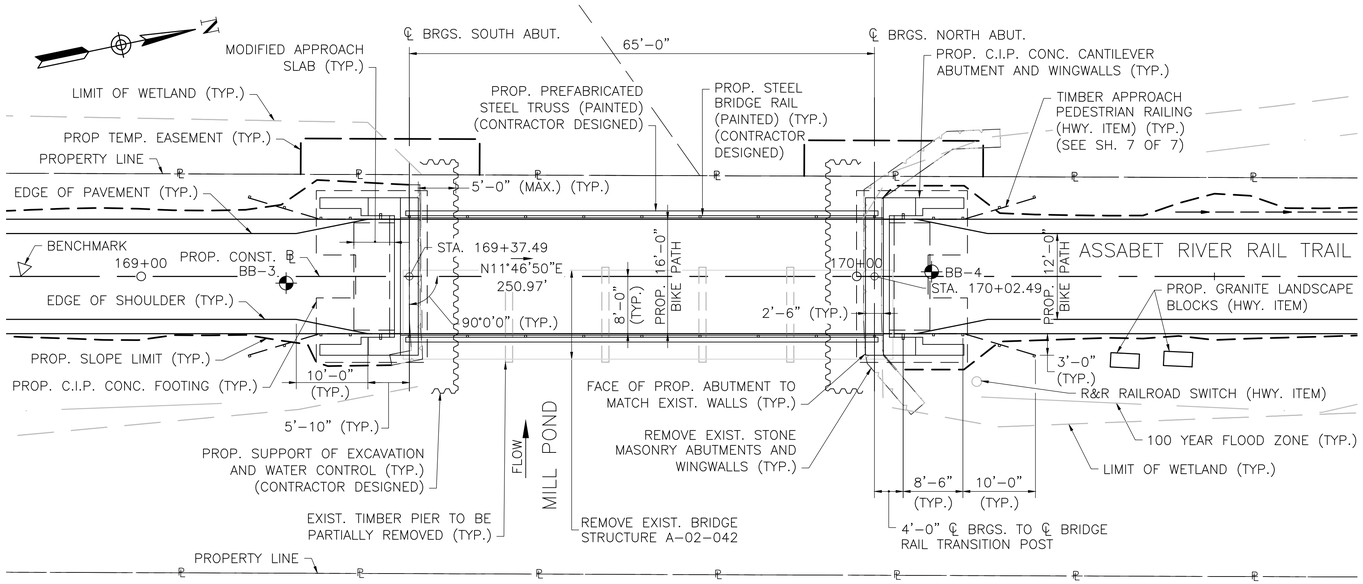
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

604531_(A02034)BR10.DWG Plotted on 18-Sep-2015 9:57 AM
Final Structural Submittal (SF) 19-September-2015

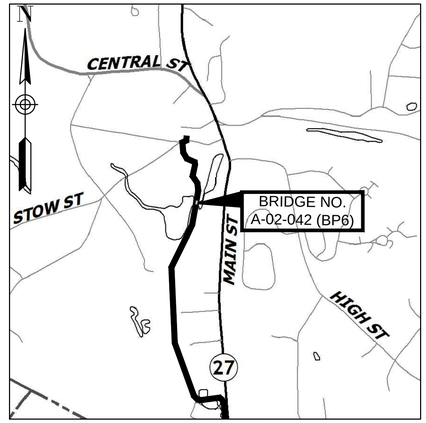
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	154	230
PROJECT FILE NO. 604531			

KEY PLAN, LOCUS MAP, AND PROFILES



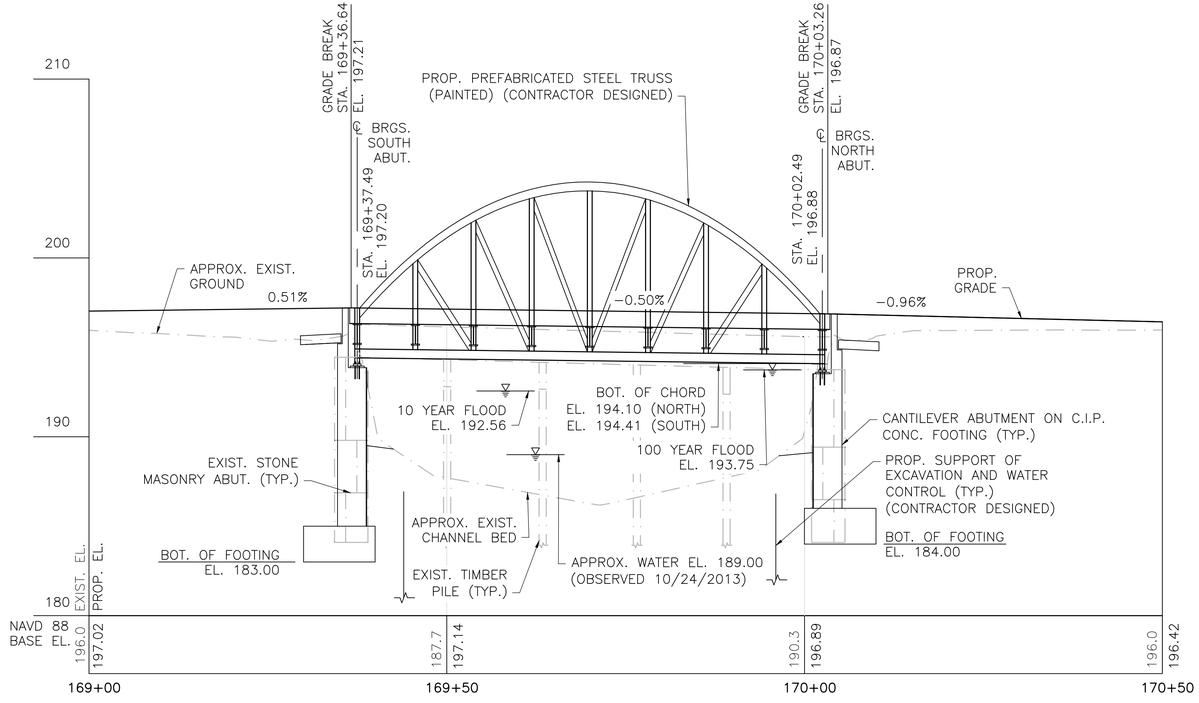
KEY PLAN
SCALE: 1" = 10'



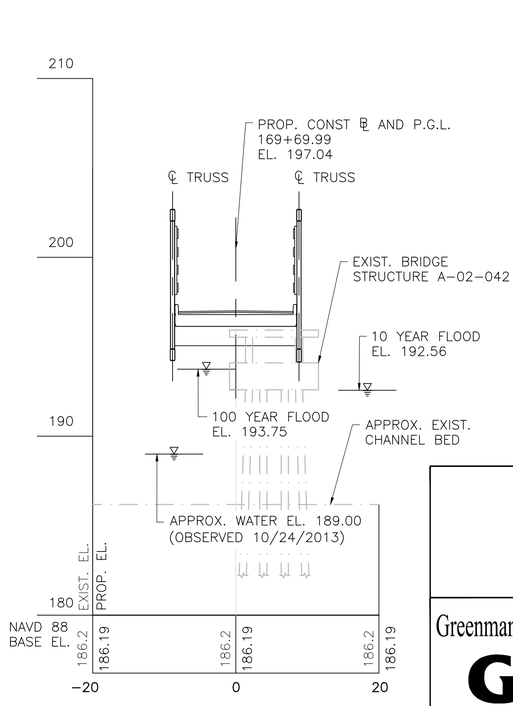
LOCUS
SCALE: 1" = 1000'

INDEX OF BRIDGE SHEETS:

1. KEY PLAN, LOCUS MAP, AND PROFILES
2. GENERAL NOTES AND ESTIMATED QUANTITIES
3. BORING LOGS
4. ELEVATION AND CROSS SECTION
5. ABUTMENT DETAILS
6. WINGWALL AND FORM LINER DETAILS
7. APPROACH SLAB AND MISC. DETAILS



PROFILE – ALONG CONST. ℄ & P.G.L.
SCALE: 1" = 10' HORIZ.
¼" = 1'-0" VERT.



PROFILE – ALONG MILL POND
SCALE: 1" = 10' HORIZ.
¼" = 1'-0" VERT.

NOTE:
FOR GENERAL NOTES, SEE SHEET 2.

SEPT. 19, 2015	ISSUED FOR CONSTRUCTION

MassDOT Highway Division

PROPOSED BRIDGE
ACTON
ASSABET RIVER RAIL TRAIL
OVER MILL POND
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

Greenman-Pedersen, Inc.
GPI
181 Ballardvale Street, Suite 202
Wilmington, MA 01887

TITLE: _____ CHIEF ENGINEER

604531_(A02042)BR1_2.DWG Plotted on 18-Sep-2015 9:58 AM
Final Structural Submittal (SF) 19-September-2015

GENERAL NOTES

DESIGN:
IN ACCORDANCE WITH THE 2014 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS AND THE 2009 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, FOR H10 LOADING AND 90 PSF PEDESTRIAN LOADING.

MASSDOT BENCH MARK:
BENCH MARK – MAG NAIL SET, TRAV. POINT 9
N 2991659.67 E 668084.73
STA. 168+83.55 1.15' LT
EL. 196.01'

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

MASSDOT SURVEY NOTEBOOKS:
COPIES OF ELECTRONIC SURVEY FILES MAY BE OBTAINED FROM THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION – HIGHWAY DIVISION.

SCALES:
SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZED PRINTS. DIVIDE SCALES BY 2 FOR HALF–SIZE PRINTS (A3).

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

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

SEISMIC GROUND SHAKING HAZARD:
DESIGN RETURN PERIOD: 1000 YEARS

DESIGN SPECTRA:

$A_S = 0.116$
$S_{DS} = 0.240$
$S_{D1} = 0.095$

SITE CLASS = D

SEISMIC DESIGN CATEGORY (SDC) = A

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

REINFORCEMENT:
REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60 (EPOXY COATED). UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS
1. NONE	21"	26"
2. 12" OF CONCRETE BELOW BAR	29"	36"
3. COATED BARS, COVER < 3db, OR CLEAR SPACING < 6db	31"	39"
4. COATED BARS, ALL OTHER CASES	25"	31"
5. CONDITION 2. AND 3.	35"	44"
6. CONDITION 2. AND 4.	34"	43"

IF THE ABOVE BARS ARE SPACED 6" OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF THE LAP LENGTH GIVEN ABOVE. ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

CONCRETE MIXES:

(1)	(2)	(3)	TO BE USED IN CONSTRUCTION OF:
4000	1½	565	WINGWALLS, FOOTINGS, AND APPROACH SLABS
4000	¾	610	ABUTMENT STEMS, ABUTMENT RETURNS, AND BACKWALLS
4000	¾	585HP	DECK AND CURBS

(1) 28 DAY COMPRESSIVE STRENGTH (PSI)
(2) MAXIMUM AGGREGATE SIZE (INCH)
(3) CEMENTITIOUS CONTENT (POUNDS/C.Y.)

CONTRACTOR DESIGNED SUPERSTRUCTURE:
STRUCTURAL STEEL TRUSS (INCLUDING CAMBER AND TOP OF FORM ELEVATIONS), CONCRETE DECK, CONCRETE CURBS, BEARINGS, ANCHOR BOLTS, STEEL RAILINGS, AND DECK JOINTS SHALL BE CONTRACTOR DESIGNED IN ACCORDANCE WITH THE 2014 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS AND THE 2009 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, FOR H10 LOADING AND 90 PSF PEDESTRIAN LOADING. STEEL TRUSS AND BRIDGE RAIL SHALL BE PAINTED TO MATCH COLOR CHIP NO. 30045 OF FEDERAL STANDARD 595B.

THE ABUTMENT DESIGN ASSUMES NORMAL WEIGHT (150 PCF) REINFORCED CONCRETE AND STEEL TRUSS DEAD LOAD WITHIN A RANGE OF 28 KIPS TO 35 KIPS (SERVICE LOAD). IF THE WEIGHT OF THE CONTRACTOR DESIGNED TRUSS IS NOT WITHIN THE SPECIFIED RANGE, THE ABUTMENT AND BACKWALL DESIGN (STABILITY AND REINFORCING) SHALL BE COMPLETED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS. THE CALCULATIONS PERFORMED SHALL BE SUPPLIED TO THE ENGINEER FOR APPROVAL.

CONSTRUCTION ACCESS RESTRICTION:
THE CONTRACTOR IS DIRECTED TO SUPPLEMENTAL SPECIFICATION SECTION 901.67 AND 960.61 FOR RESTRICTIONS OF LOADING ON THE NEWLY CONSTRUCTED BRIDGE. ANY LOADING EXCEEDING THE DESIGN LOADING SHALL BE RESTRICTED FROM TRAVELING OVER THE BRIDGE. THE CONTRACTOR MAY ELECT TO SUBMIT CALCULATIONS STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS TO THE ENGINEER FOR APPROVAL, WHICH DEMONSTRATE THAT CONSTRUCTION LOADS CAN SAFELY TRAVEL OVER THE STRUCTURE.

HYDRAULIC DATA

HYDRAULIC DESIGN DATA

DRAINAGE AREA: 20.5 SQUARE MILES
DESIGN FLOOD DISCHARGE: 545 CUBIC FEET PER SECOND
DESIGN FLOOD FREQUENCY: 10 YEARS
DESIGN FLOOD VELOCITY: 1.6 FEET PER SECOND
DESIGN FLOOD ELEVATION: 192.56 FEET, NAVD

BASE (100 YEAR) FLOOD DATA

BASE FLOOD DISCHARGE: 955 CUBIC FEET PER SECOND
BASE FLOOD ELEVATION: 193.75 FEET, NAVD

DESIGN AND CHECK SCOUR DATA

DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY: 25 YEARS
CHECK SCOUR FLOOD EVENT RETURN FREQUENCY: 50 YEARS

FLOOD OF RECORD

DISCHARGE: UNKNOWN
FREQUENCY: UNKNOWN
MAXIMUM ELEVATION: UNKNOWN
DATE: UNKNOWN

HISTORY OF ICE FLOES: NONE DOCUMENTED IN NBIS DATABASE
EVIDENCE OF SCOUR AND EROSION: NONE OBSERVED

ESTIMATED QUANTITIES
(NOT GUARANTEED)

ITEM DESCRIPTION	QUANTITY	UNIT
DEMOLITION OF SUPERSTRUCTURE BRIDGE NO. A–02–042	1	LS
BRIDGE EXCAVATION	320	CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	160	CY
CRUSHED STONE FOR BRIDGE FOUNDATIONS	85	TON
SUPERPAVE BRIDGE SURFACE COURSE – 12.5 (SSC–B–12.5)	10	TON
SUPERPAVE BRIDGE PROTECTIVE COURSE – 12.5 (SPC–B–12.5)	8	TON
TIMBER FENCE POST ON WALL	4	EA
STONE MASONRY WALL REMOVED	80	CY
TEMPORARY SHORING	1	LS
CONTROL OF WATER – STRUCTURE NO. A–02–042 (BP6)	1	LS
BRIDGE STRUCTURE, BRIDGE NO. A–02–042 (BP6)	1	LS

SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
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USE ONLY PRINTS OF LATEST DATE	

604531_(A02042)BR1_2.DWG Plotted on 18-Sep-2015 9:58 AM
Final Structural Submittal (SF) 19-September-2015

BORING BB–3

massDOT Highway	NOBIS ENGINEERING, INC. 585 Middlesex Street Lowell, MA 01851	Phone: (978) 683-0891 Fax: (978) 683-0966 www.nobisengineering.com	Boring No. BB-3 Not to scale
City/Town: Acton	Bridge: A-02-042 (BP6)	Project File No: 604531	Contract No: 68386
Project: Assabet River Rail Trail		Date Started: March 16, 2015	Total Hours:
Groundwater Depth: 5'7"	Date & Time: 3/16/2015 1:25 pm	Date Completed: March 16, 2015	5.5
Coordinates: N 2991695.19	E 668094.26	Driller's Name: Ben Cross	Helper's Name: Brett Raiche
Ground Elevation: ± 196	Inspector's Name: Patrick Clarke	Driller's Company: New Hampshire Boring, Inc.	

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	2 5 4 3	7"	S-1A (5"): Wet, loose, brown, FINE TO COARSE GRAVEL and fine to coarse sand, some organic silt, trace roots (TOPSOIL). S-1B (2"): Wet, loose, light brown, FINE TO COARSE SAND, some inorganic silt, some fine to medium gravel, trace roots (FILL).	0.4'
S-2	3'6" - 5'6"	32 18 11 9	2"	S-2: Wet, medium dense, light brown, FINE TO COARSE SAND and fine to coarse gravel, some inorganic silt (FILL).	
S-3	5'6" - 7'6"	4 2 2 2	6"	S-3A (4"): Wet, very loose, light brown, FINE TO COARSE SAND and inorganic silt, some medium to coarse gravel (FILL). S-3B (2"): Wet, very loose, dark gray, FINE TO COARSE SAND and inorganic silt, trace roots (FILL).	
S-4	7'6" - 9'6"	4 WOH WOH WOH	11"	S-4: Wet, very loose, olive/gray/light brown, FINE TO COARSE SAND and inorganic silt, trace roots (FILL).	9.5'
S-5	9'6" - 11'6"	11 11 5 4	9"	S-5: Wet, medium dense, brown, INORGANIC SILT and fine sand (SILT). [Laboratory Analysis Performed: Sample determined to be non-plastic. Moisture Content = 38%.]	
S-6	11'6" - 13'6"	7 23 25 24	24"	S-6A (14"): Wet, dense, brown, INORGANIC SILT and fine sand. 2" of ORGANIC SILT observed at transition (SILT).	12.7'
S-7	13'6" - 15'6"	15 15 20 20	7"	S-6B (10"): Wet, dense, gray, FINE TO COARSE SAND, some inorganic silt, some fine to coarse gravel, trace roots (GLACIAL TILL). S-7: Wet, dense, gray, FINE TO COARSE SAND, some inorganic silt, some fine to coarse gravel, trace roots (GLACIAL TILL). [Laboratory Analysis Performed: Sand: 45.1%, Silt: 27.8%, Gravel: 27.1%.]	
				Increased drilling resistance and cuttings observed indicate probable transition into weathered bedrock.	17'
S-8	18'6" - 18'7"	100/1"	1"	S-8: Wet, very dense, gray, FINE TO COARSE SAND, some fine to medium gravel, trace inorganic silt (WEATHERED BEDROCK).	19'
C-1	19' - 24'3"	9 3 4.3 4.8 8 2/3"	51"	C-1: Moderately hard, moderately weathered, extremely to slightly fractured, gray with dark gray bedding, very fine to medium grained GNEISS, very close to close, shallow to steeply dipping open and closed joints. Percent Recovery =81%, RQD = 38%	
C-2	24'3" - 29'3"	0.8 3.3 7 7.5 9.3	50.5"	C-2: Hard, slightly to very slightly weathered, extremely fractured to sound, gray with dark gray bedding, very fine to medium grained GNEISS, very close to moderately close, shallow to steeply dipping closed joints. Percent Recovery = 84%, RQD = 68%	
					29.3'
				Bottom of Exploration = 29'3"	

Notes:
1.Ground surface elevation should be considered approximate.
2. Boring drilled approximately 14'-7" south of existing railroad bridge south abutment.
3. Surface water in Mill Pond frozen and measured at approximately 6' below existing railroad bridge deck.
4. Water induced during drilling and coring processes.
5. Borehole backfilled with drill cuttings.

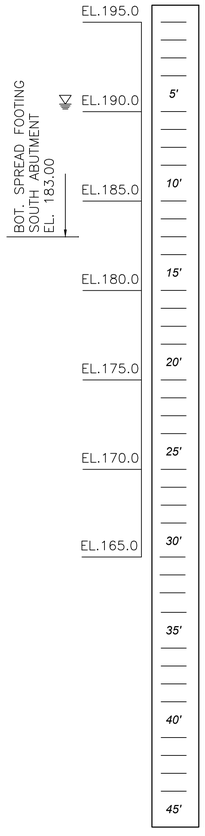
Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Mobile B-53 (Track)
Casing Type: HW Size: 4" Depth: 18'6"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: NX Size: 2.15"



BORING BB–4

massDOT Highway	NOBIS ENGINEERING, INC. 585 Middlesex Street Lowell, MA 01851	Phone: (978) 683-0891 Fax: (978) 683-0966 www.nobisengineering.com	Boring No. BB-4 Not to scale
City/Town: Acton	Bridge: A-02-042 (BP6)	Project File No: 604531	Contract No: 68386
Project: Assabet River Rail Trail		Date Started: March 17, 2015	Total Hours:
Groundwater Depth: 6'0"	Date & Time: 3/17/2015 1:58 pm	Date Completed: March 17, 2015	5.5
Coordinates: N 2991783.81	E 668111.12	Driller's Name: Pete LaBossiere	Helper's Name: Brett Raiche
Ground Elevation: ± 195.5	Inspector's Name: Craig Marchionda	Driller's Company: New Hampshire Boring, Inc.	

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
S-1	0' - 2'	7 7 9 10	9"	S-1A (2"): Wet, medium dense, black, FINE TO COARSE SAND, some organic silt, trace fine to medium gravel (TOPSOIL).	0.2'
S-2	2' - 4'	14 13 12 16	17"	S-1B (7"): Moist, medium dense, brown, FINE TO COARSE SAND, some fine to medium gravel, some inorganic silt, trace root fibers (FILL). S-2: Moist, medium dense, brown, FINE TO COARSE SAND, some inorganic silt, trace fine to medium gravel (FILL).	
S-3	4' - 6'	14 16 15 30	7"	S-3A (2"): Moist, dense, brown, FINE TO COARSE SAND, some inorganic silt, some medium gravel (FILL).	
S-4	6' - 8'	33 36 77 112	11"	S-3B (5"): Moist, dense, brown/gray with some orange mottling, MEDIUM TO COARSE GRAVEL, some inorganic silt, trace fine sand (FILL).	
S-5	9' - 11'	13 3 3 11	16"	S-4: Wet, very dense, gray/brown with some orange mottling, FINE TO MEDIUM GRAVEL, some inorganic silt, some fine to coarse sand. Probable cobble or boulder particles and fragments at bottom of spoon (FILL).	9' 9.5'
S-6	11' - 13'	10 12 13 14	6"	Roller bit through inferred cobbles/boulder and advance casing to depth of approximately 9' below ground surface.	11'
				S-5A (6"): Wet, loose, black, INORGANIC SILT, trace medium gravel, trace fine sand, trace organic silt (SILT).	
S-7	14' - 16'	7 23 23 17	8"	S-5B (10"): Wet, loose, brown, FINE TO COARSE SAND and inorganic silt, trace fine gravel (SAND AND SILT). [Laboratory Analysis Performed: Sand: 57.9%, Silt: 41.1%, Gravel: 1%.]	
				S-6: Wet, medium dense, gray, FINE TO COARSE SAND, some fine to medium gravel, trace inorganic silt (GLACIAL TILL). S-7: Wet, dense, gray, FINE TO COARSE SAND, some inorganic silt, some fine to medium gravel (GLACIAL TILL). [Laboratory Analysis Performed: Sand: 48.2%, Silt: 34.4%, Gravel: 17.4%.]	
S-8	19' - 21'	54 18 17 11	0"	S-8: No recovery.	22.5'
C-1	23' - 28'	2.5 2.8 2.3 2.8 2.8	60"	Increased drilling resistance observed indicating probable transition into weathered bedrock.	23'
				C-1: Moderately hard to hard, moderately to very severely weathered, extremely fractured to sound, gray and black, GNEISS, close to moderately close, moderately dipping joints. Percent Recovery = 100%, RQD = 38%	
C-2	28' - 33'	2.5 5.8 6 4.3 3	53"	C-2: Moderately hard to hard, very slightly to very severely weathered, extremely fractured to sound, gray and black, GNEISS, close to moderately close, shallow dipping joints. Percent Recovery = 88%, RQD = 30%	
				Bottom of Exploration = 33'	33'

Notes:
1. Ground surface elevation should be considered approximate.
2. Boring drilled approximately 9'-6" north of existing railroad bridge north abutment.
3. Surface water in Mill Pond measured at approximately 6' below adjacent existing grade.
4. Water induced during drilling and coring processes.
5. Borehole backfilled with drill cuttings.

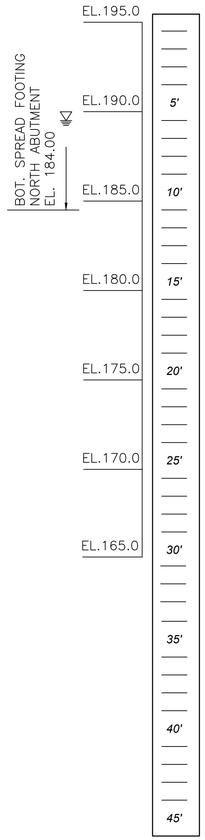
Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
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Dense	30 - 50	Stiff	8 - 15
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N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Mobile B-53 (Track)
Casing Type: HW Size: 4" Depth: 22'6"
Hammer Weight: 300Lbs. Fall: 30"
Signs: Cones: Arrow-Board:
Sampler Type: SS Size: 1 3/8"
Automatic Hammer Weight:
Safety Hammer Weight: 140Lbs.
Donut Hammer Weight: Fall: 30"
Core Barrel Type: NX Size: 2.15"



BORING NOTES

1. LOCATION OF BORINGS SHOWN ON THE PLAN THUS: ⌖ BB–3
2. BORINGS ARE 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 IN THE COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A $1\frac{3}{8}$" 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 AVENUE) LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA BOSTON, MA.
6. BORINGS BB–3 AND BB–4 WERE MADE IN MARCH 2015.
7. BORINGS WERE MADE BY NEW HAMPSHIRE BORINGS, INC. OF DERRY, NH UNDER THE GUIDANCE OF NOBIS ENGINEERING, INC.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
9. GROUND SURFACE ELEVATIONS ARE APPROXIMATE.

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP–TE–002S(836)	156	230
PROJECT FILE NO. 604531			

BORING LOGS

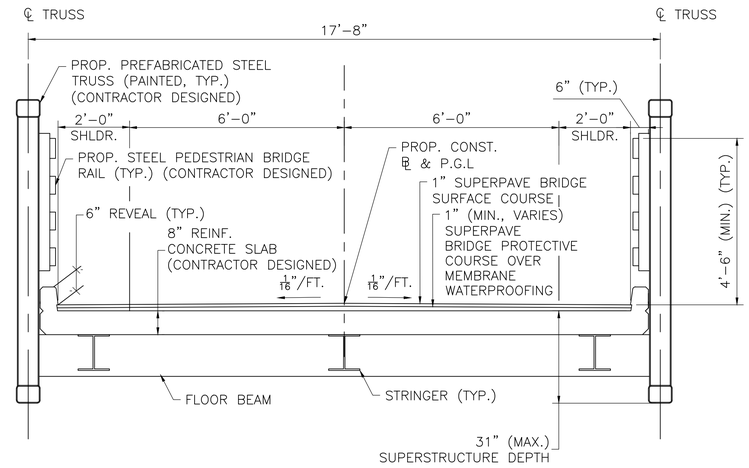
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

604531_(A02042)BR3.DWG Plotted on 18-Sep-2015 9:58 AM
Final Structural Submittal (SF) 19-September-2015

ACTON & MAYNARD
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	157	230
PROJECT FILE NO. 604531			

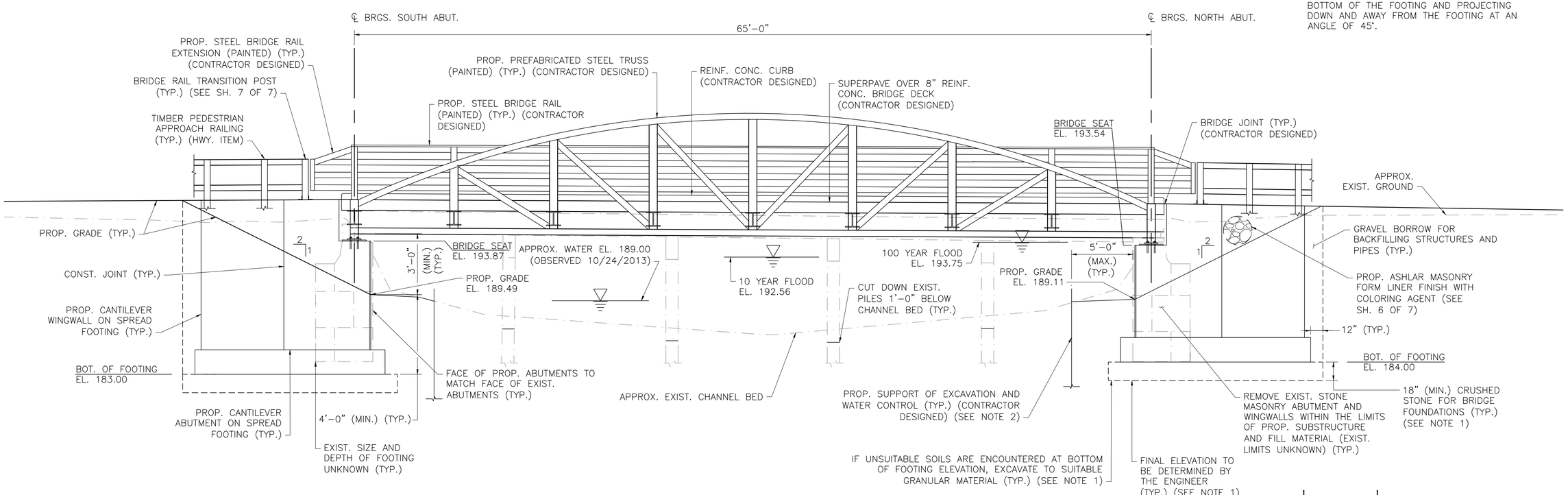
ELEVATION AND CROSS SECTION



PROPOSED CROSS SECTION
SCALE: 1/2" = 1'-0"

NOTES:

1. FOOTINGS SHALL BE PLACED AT ELEVATIONS SHOWN. FOOTINGS MAY BE PLACED DIRECTLY ON UNDISTURBED GLACIAL TILL. IF UNDISTURBED GLACIAL TILL IS NOT ENCOUNTERED AT THE BOTTOM OF FOOTING ELEVATION (DETERMINED BY ENGINEER) THE CONTRACTOR SHALL EXCAVATE TO SUITABLE GRANULAR MATERIAL AND THE FOOTINGS SHALL BE PLACED ON 18" (MIN.) CRUSHED STONE FOR BRIDGE FOUNDATIONS. ALL FOOTINGS SHALL BEAR ON A UNIFORM MATERIAL.
2. ANY WATER CONTROL STRUCTURE THAT EXTENDS WITHIN THE ZONE OF INFLUENCE OF THE FOOTING SHALL REMAIN IN PLACE. ANY WATER CONTROL STRUCTURE TO REMAIN IN PLACE SHALL BE CUT OFF 2 FEET BELOW THE FINISH GROUND LINE.
3. THE ZONE OF INFLUENCE IS DEFINED AS A PLANE ORIGINATING AT THE PERIMETER OF THE BOTTOM OF THE FOOTING AND PROJECTING DOWN AND AWAY FROM THE FOOTING AT AN ANGLE OF 45°.



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

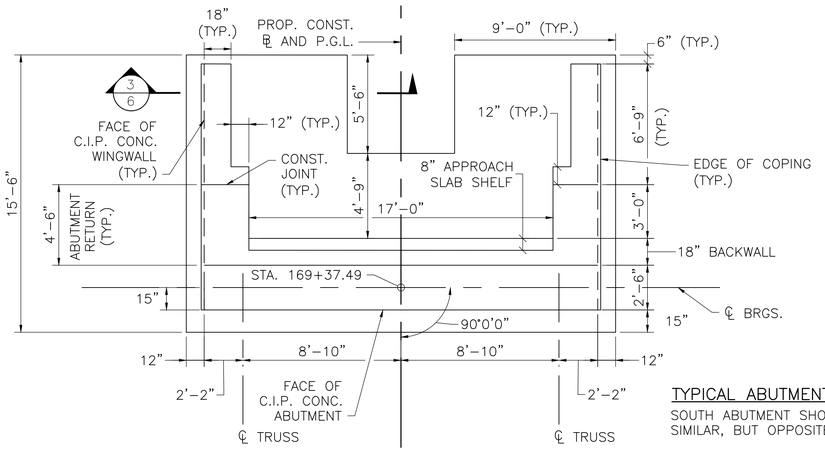
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

604531_(A02042)BR4.DWG Plotted on 18-Sep-2015 9:58 AM
Final Structural Submittal (SF) 19-September-2015

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	158	230
PROJECT FILE NO. 604531			

ABUTMENT DETAILS

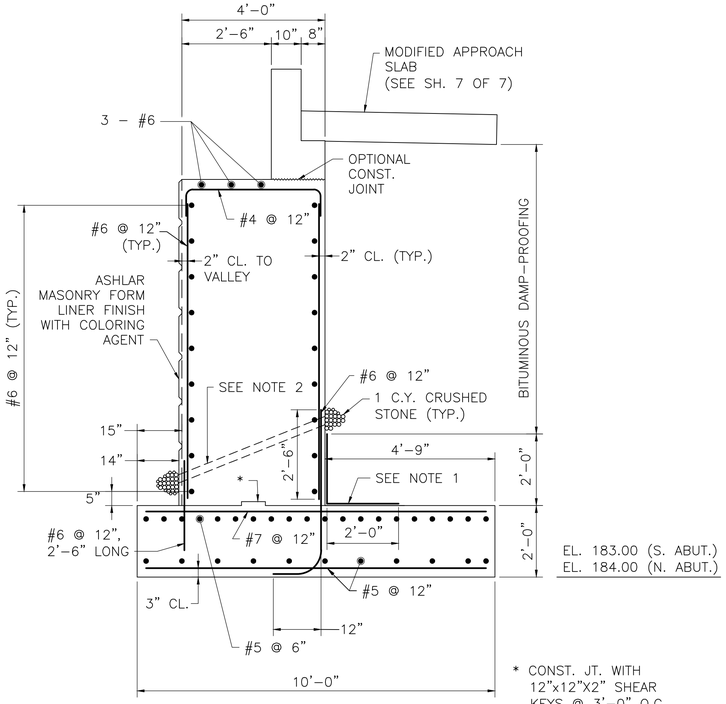


TYPICAL ABUTMENT PLAN

SCALE: $\frac{1}{4}$" = 1'-0"

TYPICAL ABUTMENT PLAN NOTE:

SOUTH ABUTMENT SHOWN, NORTH SIMILAR, BUT OPPOSITE.



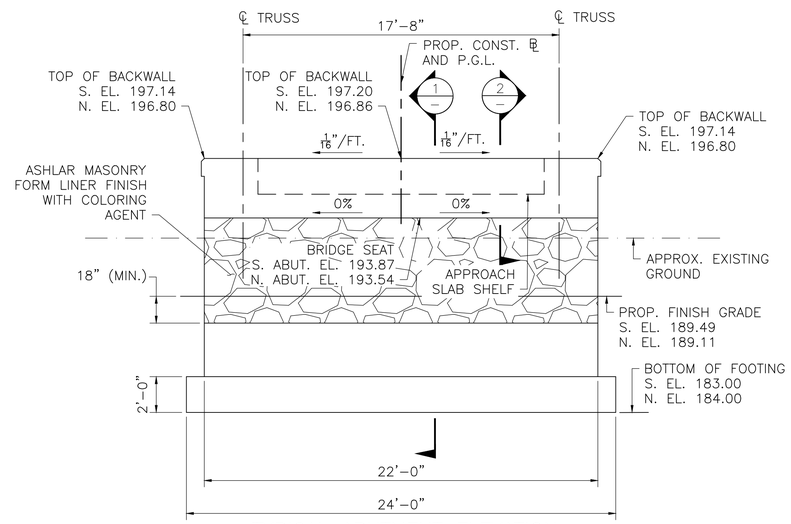
SECTION 1 – TYPICAL ABUTMENT

SCALE: $\frac{1}{2}$" = 1'-0"

ABUTMENT NOTES:

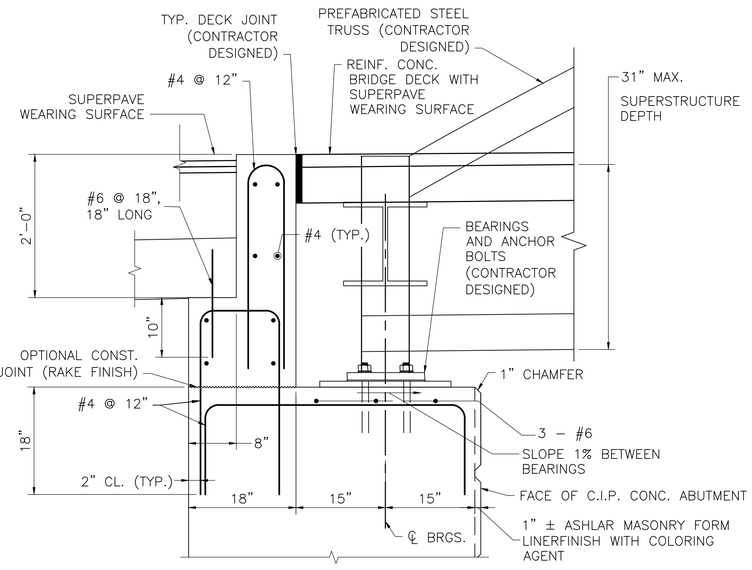
1. MEMBRANE WATERPROOFING AND 8"x16"x2", 4000 PSI, $\frac{3}{4}$ IN, 610 CEMENT CONCRETE BLOCKS LAID IN MORTAR OR OTHER WATERPROOFING PROTECTIVE COURSE, MIN. 2" THICK AS SPECIFIED IN MHD STANDARD SPECIFICATIONS.
2. 4" ø WEEP HOLES 10'-0" O.C. (JUST ABOVE PROTECTIVE COURSE). PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
3. ABUTMENT STEM AND BACKWALL CONCRETE SHALL BE 4000 PSI, $\frac{3}{4}$ IN, 610 CEMENT CONCRETE. ABUTMENT FOOTING CONCRETE SHALL BE 4000 PSI, $1\frac{1}{2}$ IN, 565 CEMENT CONCRETE.
4. THE FACTORED BEARING PRESSURE = 5.21 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.

   FACTORED BEARING RESISTANCE = 9.00 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.



TYPICAL ABUTMENT ELEVATION

SCALE: $\frac{1}{4}$" = 1'-0"



SECTION 2 – DETAILS AT ABUTMENT

SCALE: 1" = 1'-0"

DETAILS AT ABUTMENT NOTES:

1. ALL REINFORCEMENT SHOWN IN THIS DETAIL SHALL BE EPOXY COATED.
2. ALL BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT LOCATED AT THE BRIDGE SEAT SHALL BE 4000 PSI, $\frac{3}{4}$ IN, 610 CEMENT CONCRETE. THE CONSTRUCTION JOINT SHALL BE GIVEN A RAKE FINISH WITH A $\frac{1}{4}$" MINIMUM AMPLITUDE.
3. TOP OF BACKWALL SHALL BE TROWELLED SMOOTH PARALLEL TO THE PROFILE GRADE.
4. THE DECK JOINT SHALL CONFORM TO ADA/AAB REQUIREMENTS.

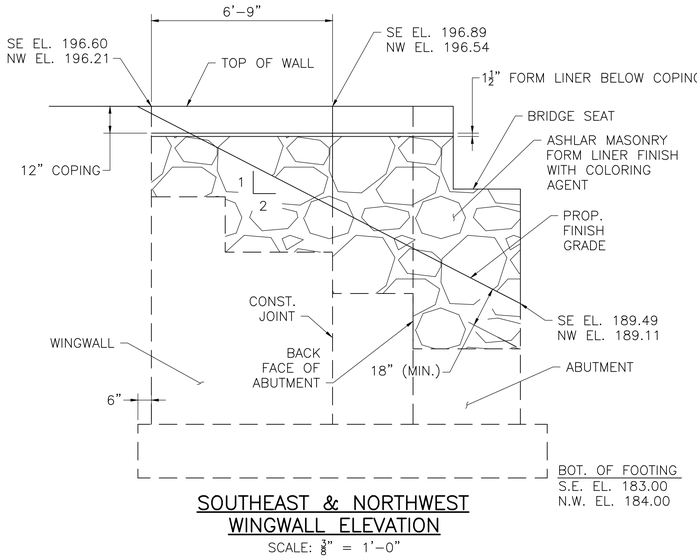
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

604531_(A02042)BR5_6.DWG Plotted on 18-Sep-2015 9:59 AM
Final Structural Submittal (SF) 19-September-2015

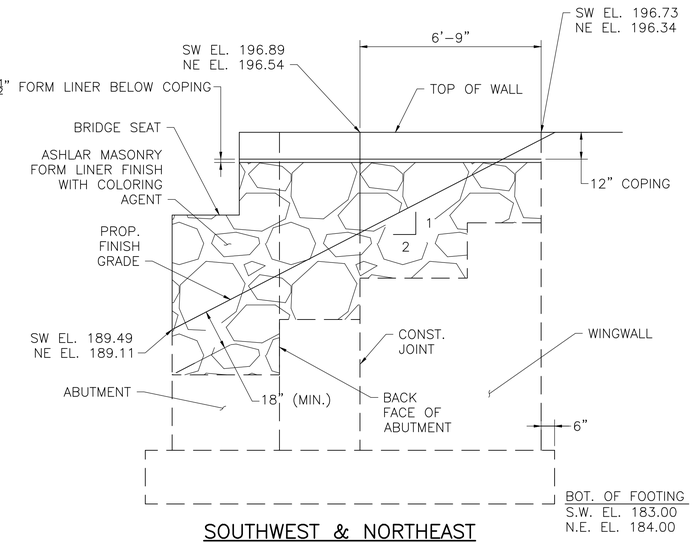
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	159	230
PROJECT FILE NO. 604531			

WINGWALL AND FORM LINER DETAILS



SOUTHEAST & NORTHWEST WINGWALL ELEVATION
SCALE: ⅜" = 1'-0"

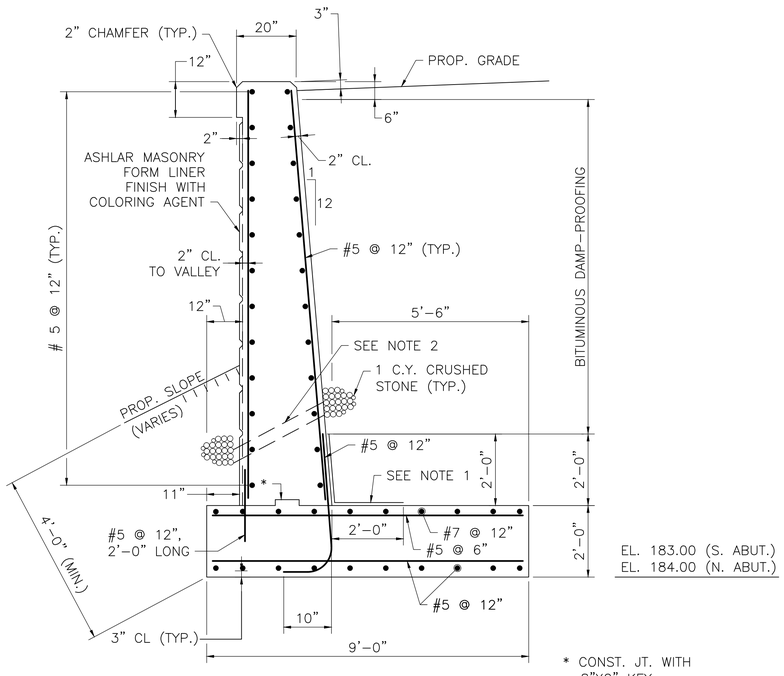


SOUTHWEST & NORTHEAST WINGWALL ELEVATION
SCALE: ⅜" = 1'-0"

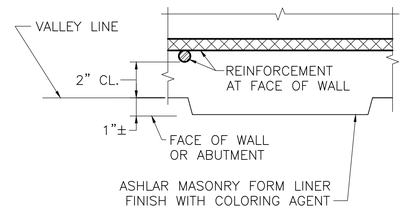
WINGWALL NOTES:

1. MEMBRANE WATERPROOFING AND 8"x16"x2", 4000 PSI, ¾ IN, 610 CEMENT CONCRETE BLOCKS LAID IN MORTAR OR OTHER WATERPROOFING PROTECTIVE COURSE, MIN. 2" THICK AS SPECIFIED IN MHD STANDARD SPECIFICATIONS.
2. 4" ø WEEP HOLES 10'-0" O.C. (JUST ABOVE PROTECTIVE COURSE). PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
3. ALL CONCRETE SHALL BE 4000 PSI, 1½ IN, 565 CEMENT CONCRETE.
4. THE FACTORED BEARING PRESSURE = 4.76 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.

   FACTORED BEARING RESISTANCE = 7.75 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.



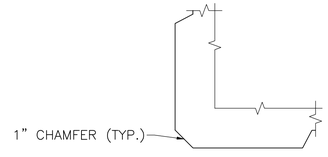
SECTION 3 – TYPICAL U-WINGWALL
SCALE: ½" = 1'-0"



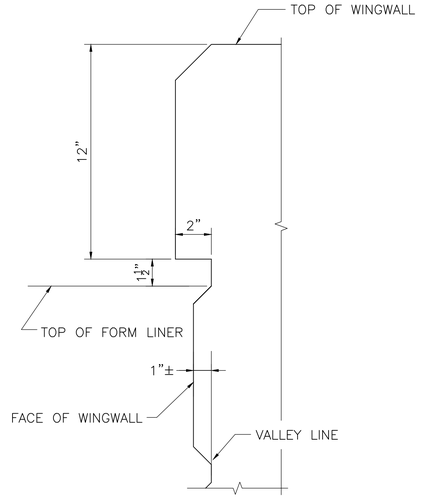
NOTES:

1. FORM LINERS SHALL BE PLACED SUCH THAT THERE ARE NO HORIZONTAL OR VERTICAL FORM LINER JOINTS, EXCEPT AT THE CONSTRUCTION JOINT. THE FORM LINER PANELS SHALL BE INSTALLED END TO END WITHOUT CREATNG A VISIBLE SAM IN THE FINAL CAST CONCRETE.
2. FORM LINERS SHALL BE MATCHED TO MINIMIZE THE APPEARANCE OF THE CONST. JOINT.

TYPICAL FORM LINER DETAIL
SCALE: 3" = 1'-0"



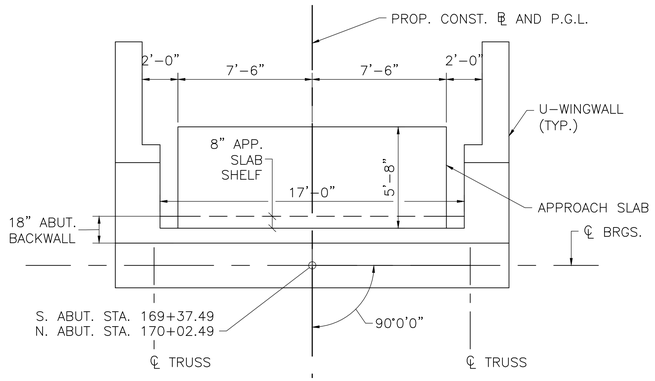
FORM LINER DETAIL AT WALL CORNER
SCALE: 3" = 1'-0"



FORM LINER DETAIL AT TOP OF WINGWALL
SCALE: 3" = 1'-0"

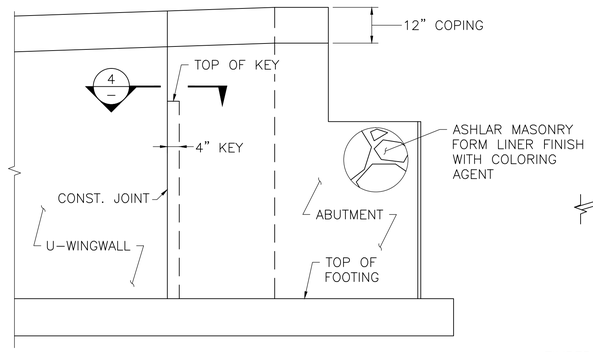
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
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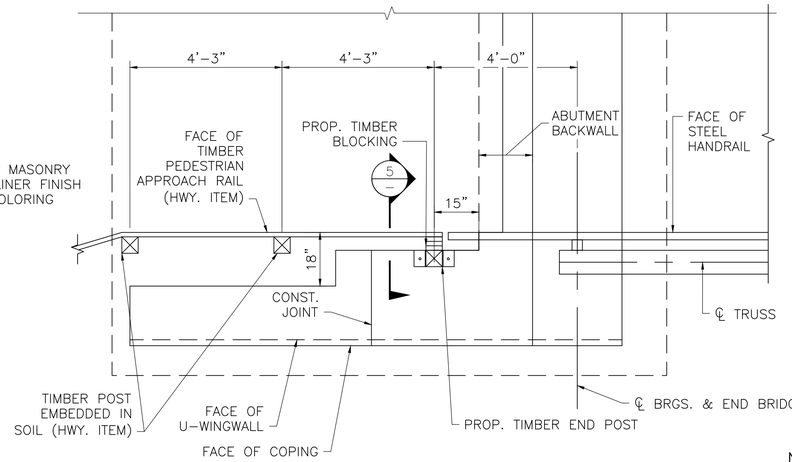
TYPICAL APPROACH SLAB PLAN

SCALE: $\frac{1}{4}$" = 1'-0"



WINGWALL ELEVATION

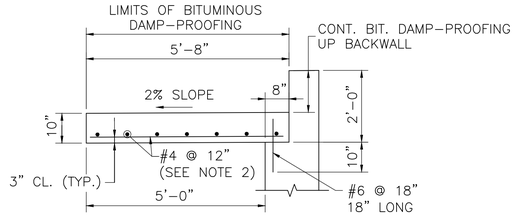
SCALE: $\frac{1}{2}$" = 1'-0"



TYPICAL BRIDGE RAIL TRANSITION – PLAN

SCALE: $\frac{1}{2}$" = 1'-0"

NOTE:
NW & SE CORNERS SHOWN.
NE & SW SIMILAR.

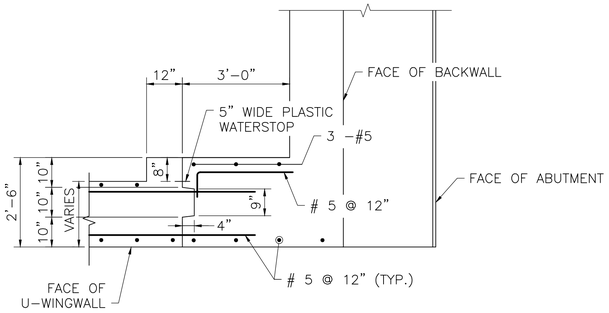


NOTES:

1. APPROACH SLAB TO BE 4000 PSI, $1\frac{1}{2}$ IN, 565 CEMENT CONCRETE.
2. PLACE LONGITUDINAL REINFORCEMENT PERPENDICULAR TO THE ABUTMENT.
3. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.

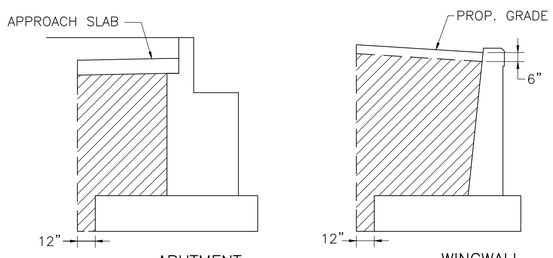
TYPICAL APPROACH SLAB DETAILS

SCALE: $\frac{1}{2}$" = 1'-0"



SECTION 4 – CONSTRUCTION JOINT

SCALE: $\frac{1}{2}$" = 1'-0"

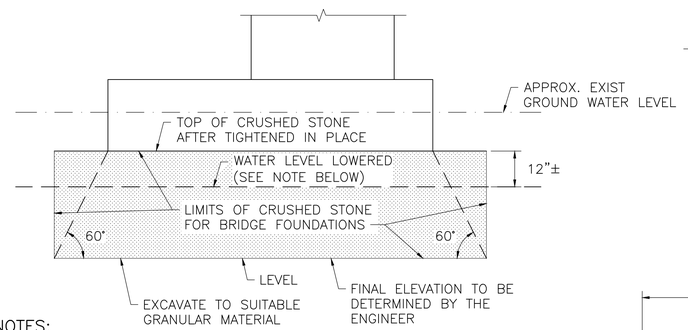


ABUTMENT WINGWALL

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

LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES

SCALE: $\frac{1}{4}$" = 1'-0"

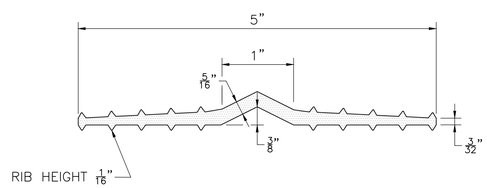


NOTES:

1. LOWER WATER LEVEL AS MUCH AS POSSIBLE WITHOUT DISTURBING THE GRANULAR SOIL (SIDES AND BOTTOM) AND TIGHTEN THE CRUSHED STONE IN PLACE (SEE STANDARD SPECIFICATIONS).
2. SAME TREATMENT IS TO BE USED AT ENDS OF WALLS AND ABUTMENTS.

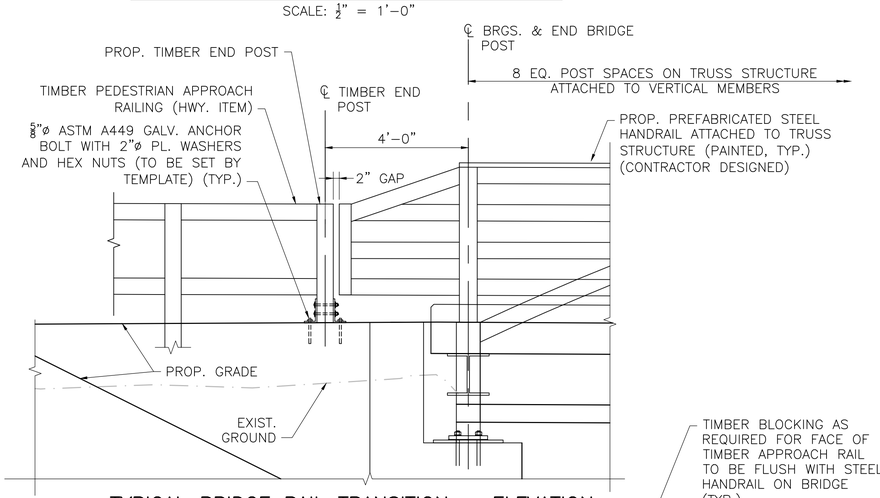
LIMITS OF CRUSHED STONE FOR BRIDGE FOUNDATIONS

NOT TO SCALE



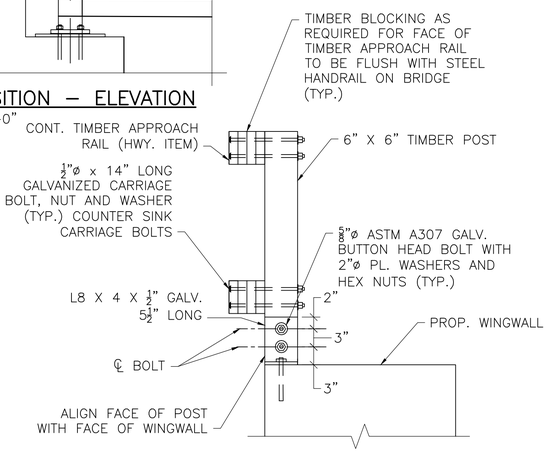
5" WATERSTOP

NOT TO SCALE



TYPICAL BRIDGE RAIL TRANSITION – ELEVATION

SCALE: $\frac{1}{2}$" = 1'-0"



SECTION 5 – TYPICAL BRIDGE RAIL TRANSITION

SCALE: 1" = 1'-0"

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	160	230
PROJECT FILE NO. 604531			

APPROACH SLAB AND MISC. DETAILS

DATE	DESCRIPTION
SEPT. 19, 2015	ISSUED FOR CONSTRUCTION
USE ONLY PRINTS OF LATEST DATE	

SHEET 7 OF 7 SHEETS BRIDGE NO. A-02-042 (BP6)

604531_(A02042)BR7.DWG Plotted on 18-Sep-2015 10:00 AM

Final Structural Submittal (SF) 19-September-2015

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

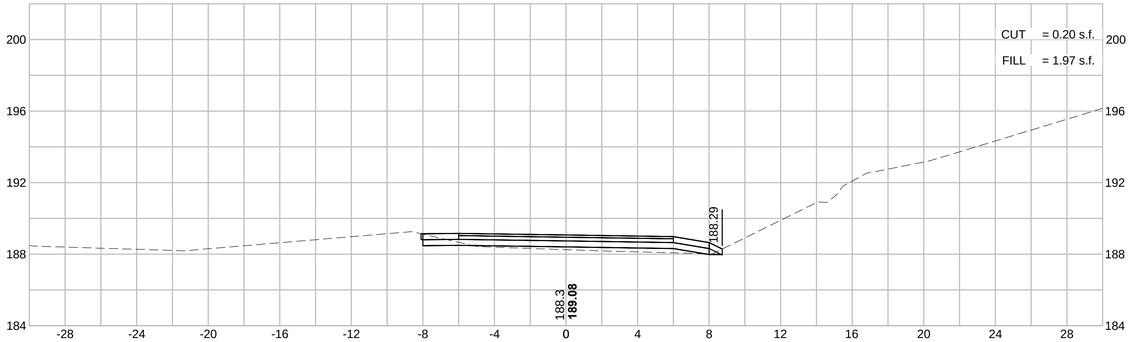
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	161	230
PROJECT FILE NO.	604531		

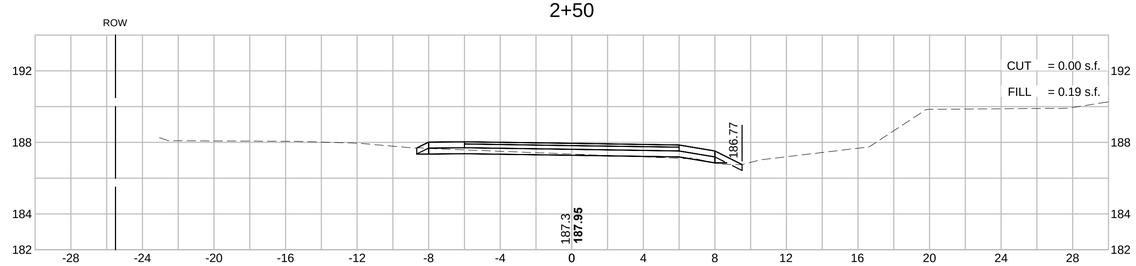
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:02 AM

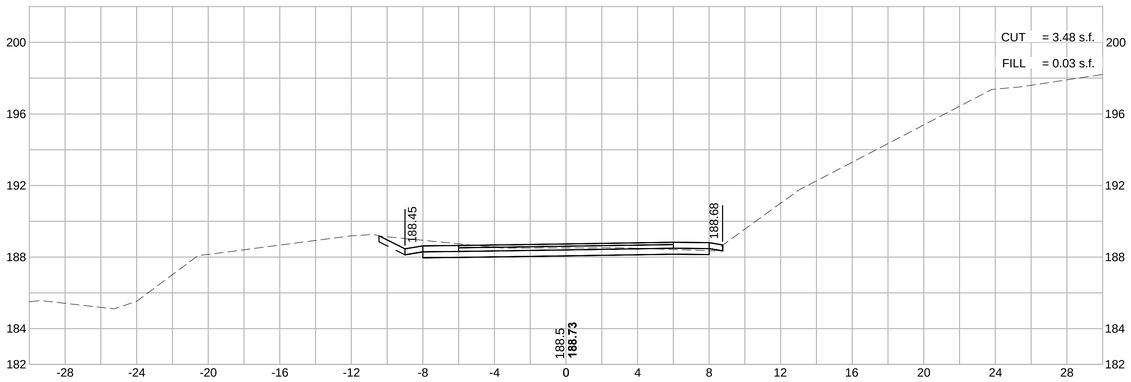
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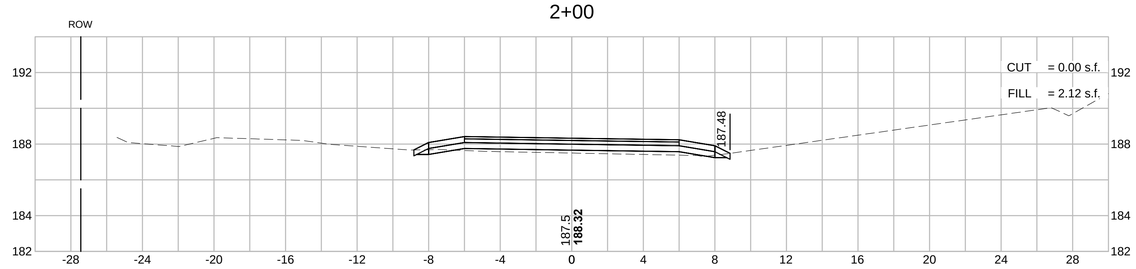
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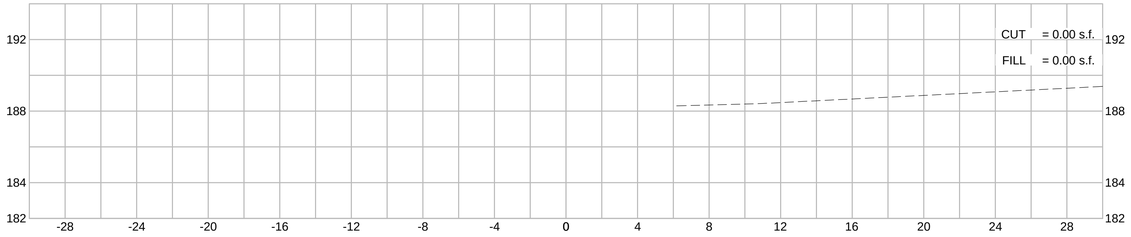
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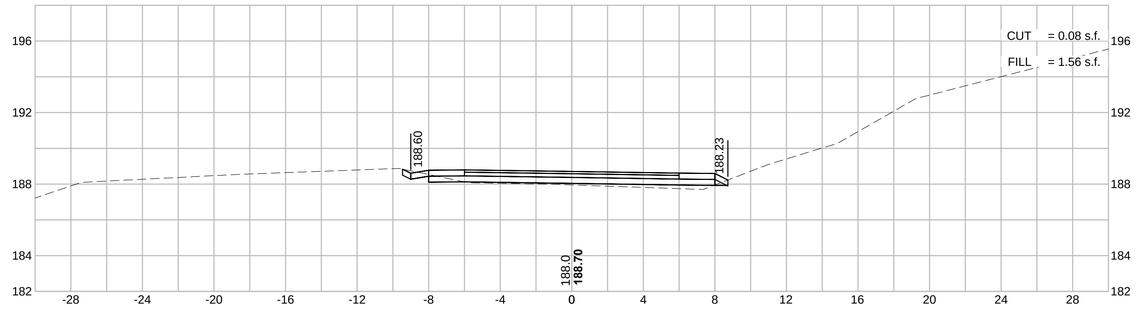
2+00



0+00



1+50



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

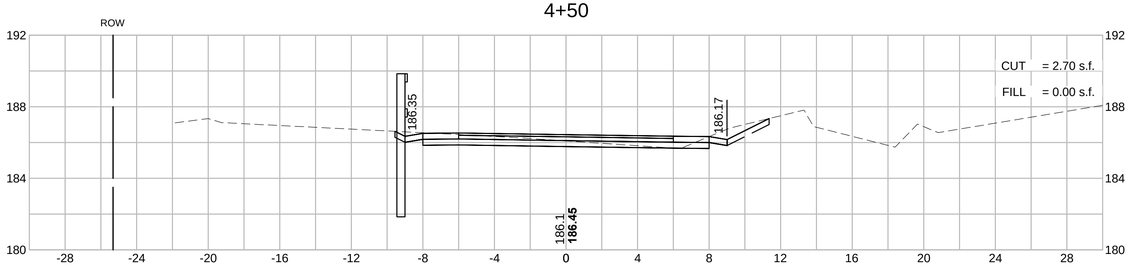
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	162	230
PROJECT FILE NO.	604531		

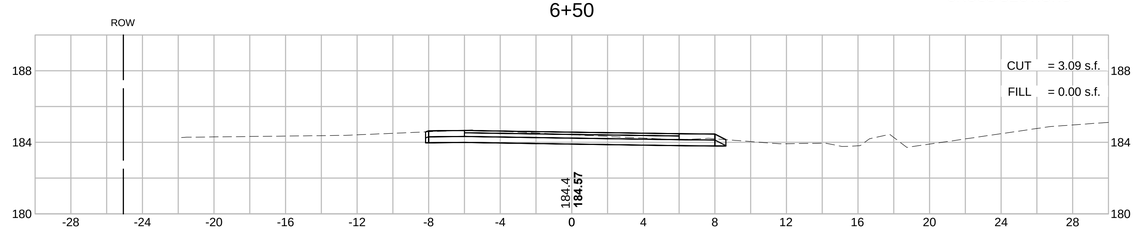
CROSS SECTIONS

Plotted on 18-Sep-2015 10:03 AM
604531_HD(XS).DWG

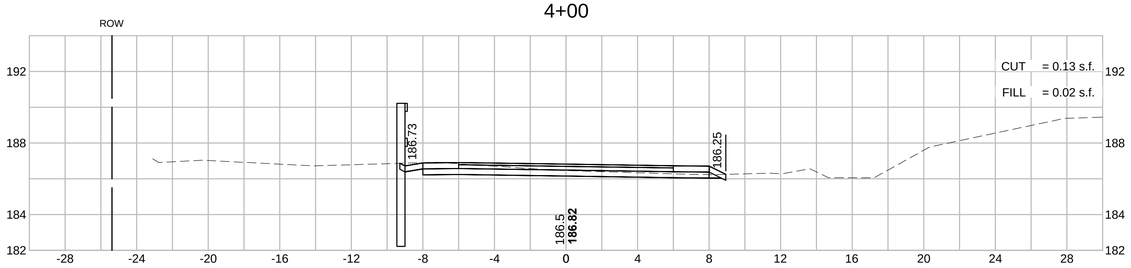
4+50



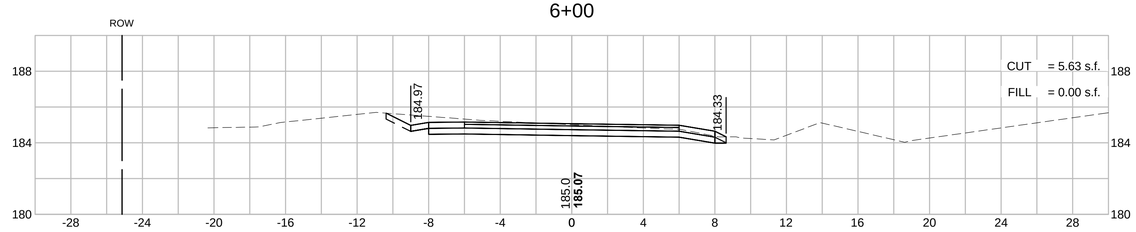
6+50



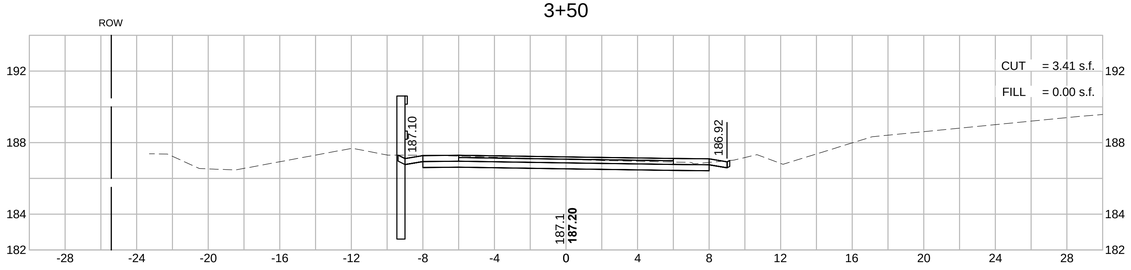
4+00



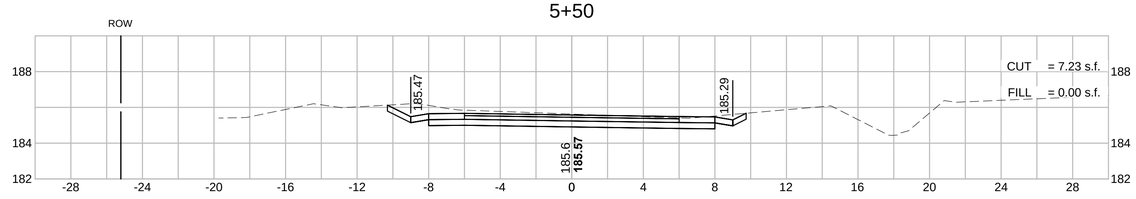
6+00



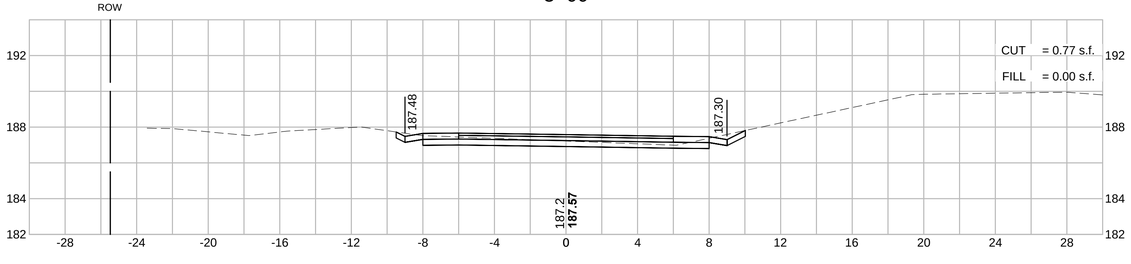
3+50



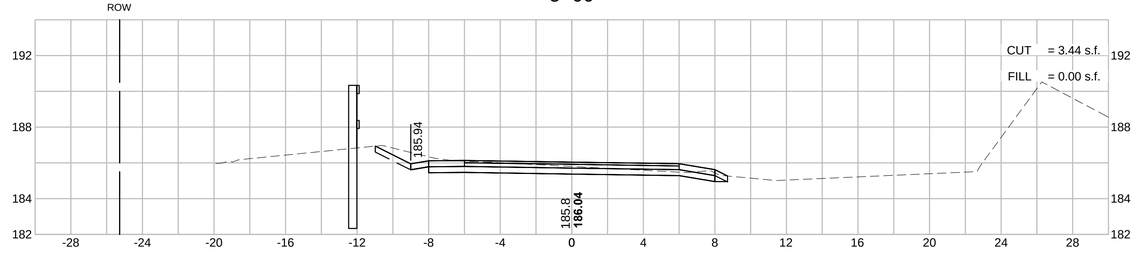
5+50



3+00



5+00

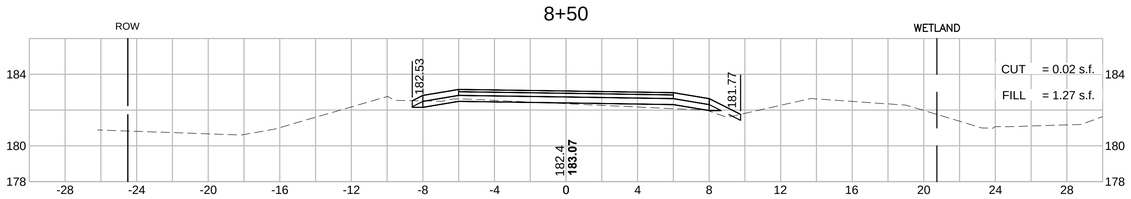


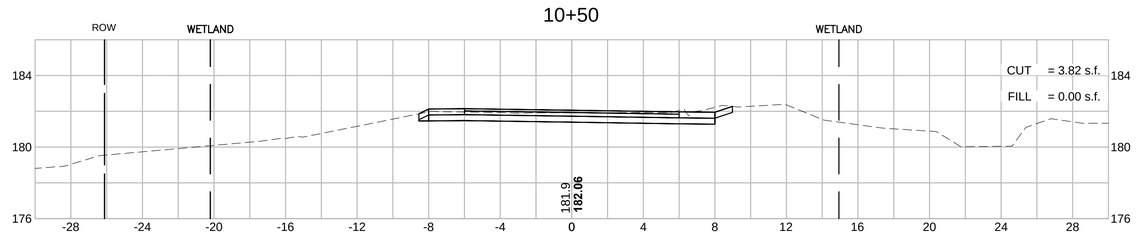
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

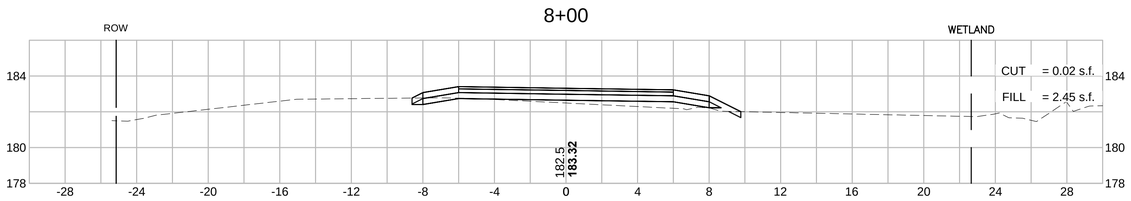
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

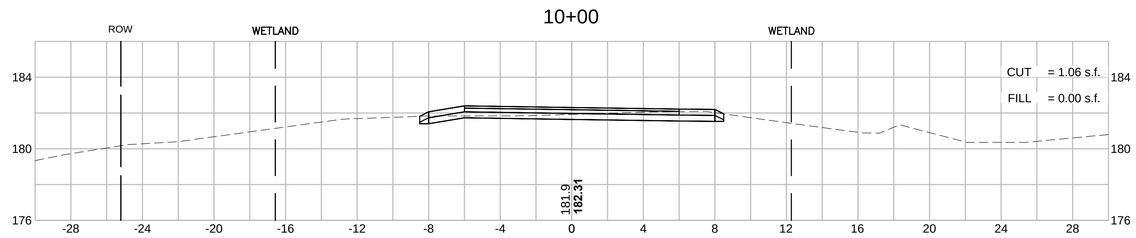
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	163	230
PROJECT FILE NO.	604531		

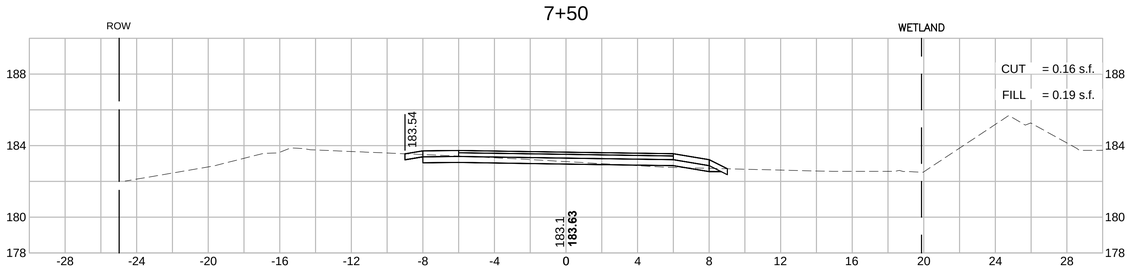
CROSS SECTIONS

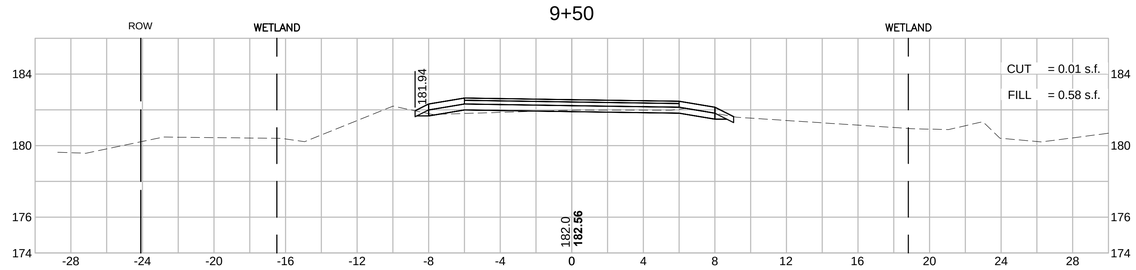


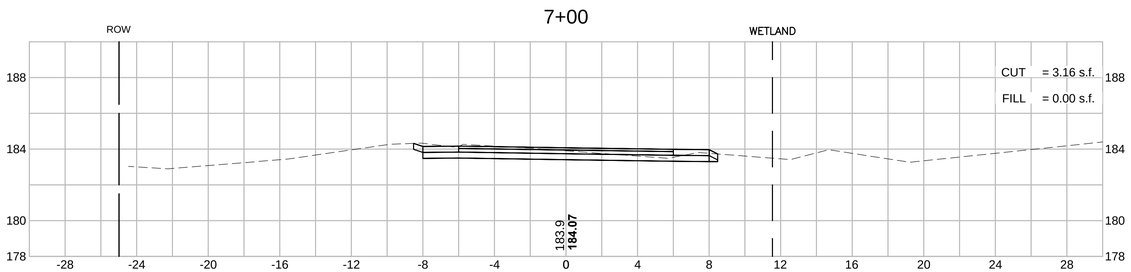


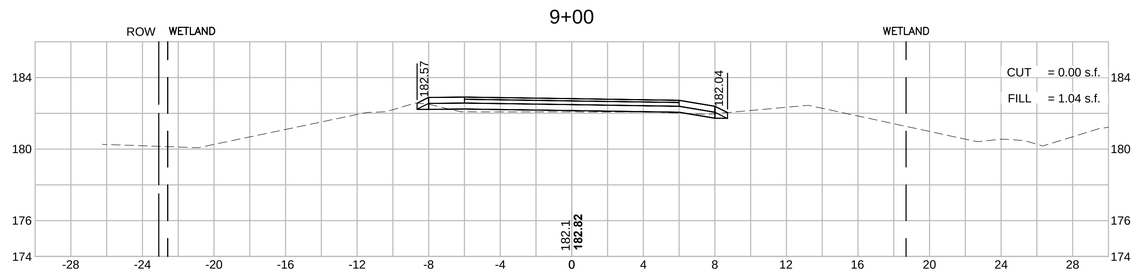












604531_HD(XS).DWG Plotted on 18-Sep-2015 10:03 AM

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

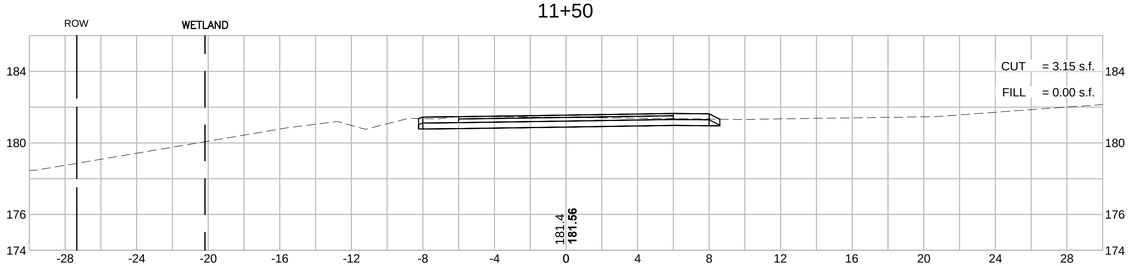
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	164	230
PROJECT FILE NO.	604531		

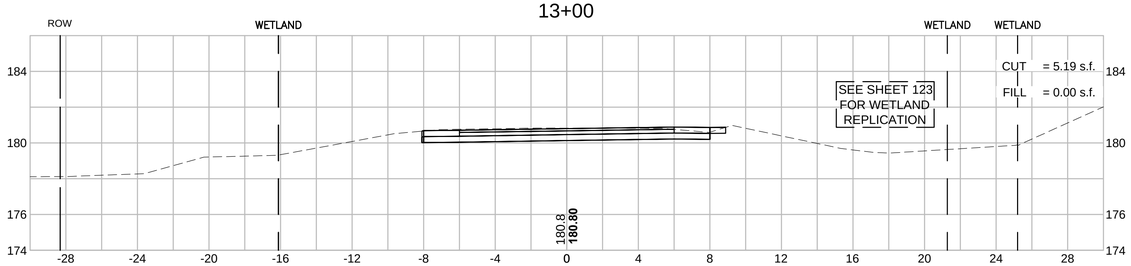
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:04 AM

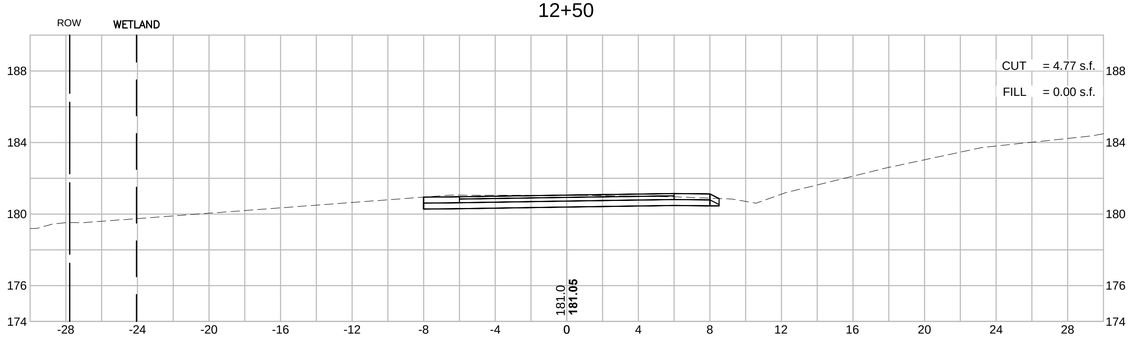
11+50



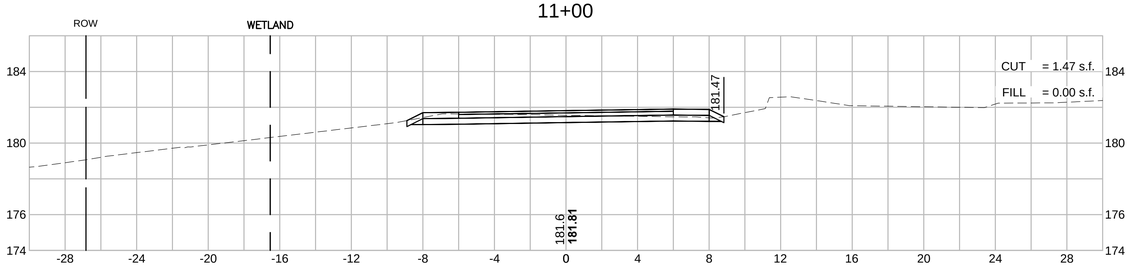
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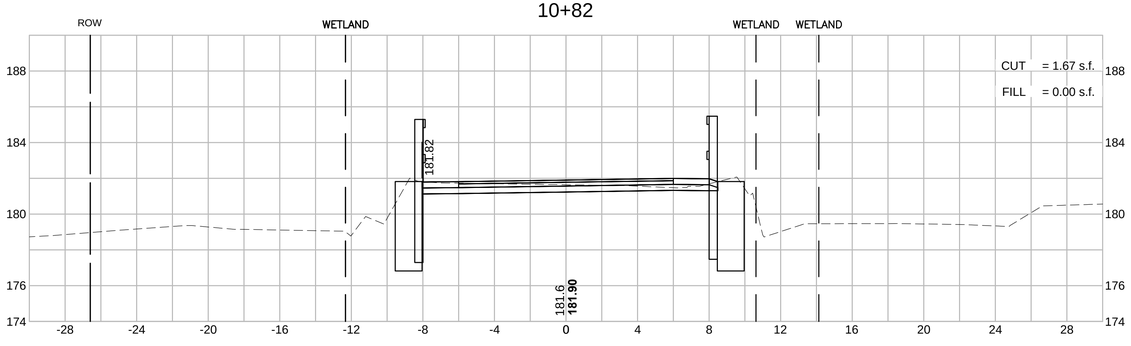
12+50



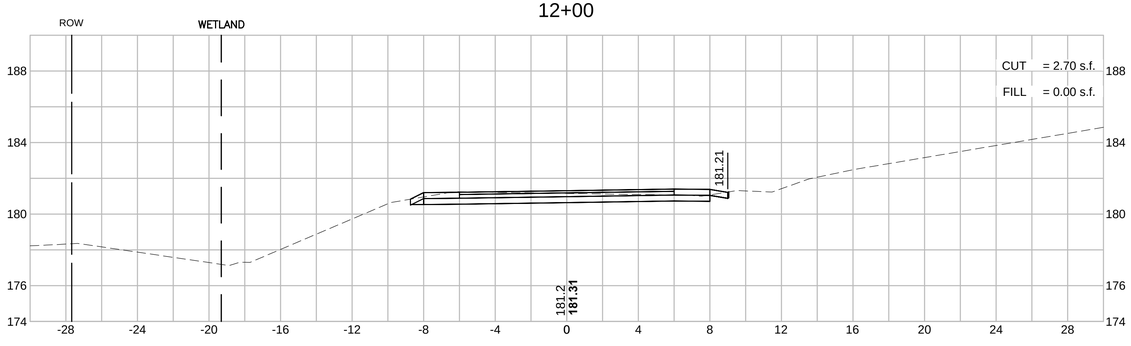
11+00



10+82



12+00



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

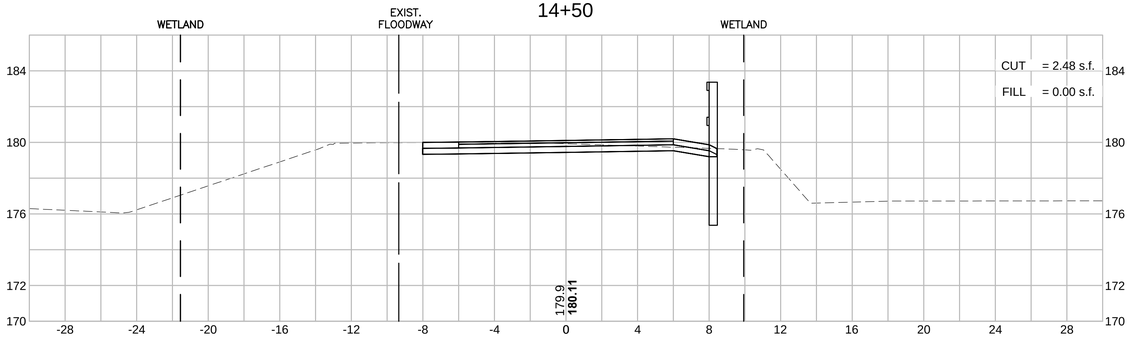
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	165	230
PROJECT FILE NO.	604531		

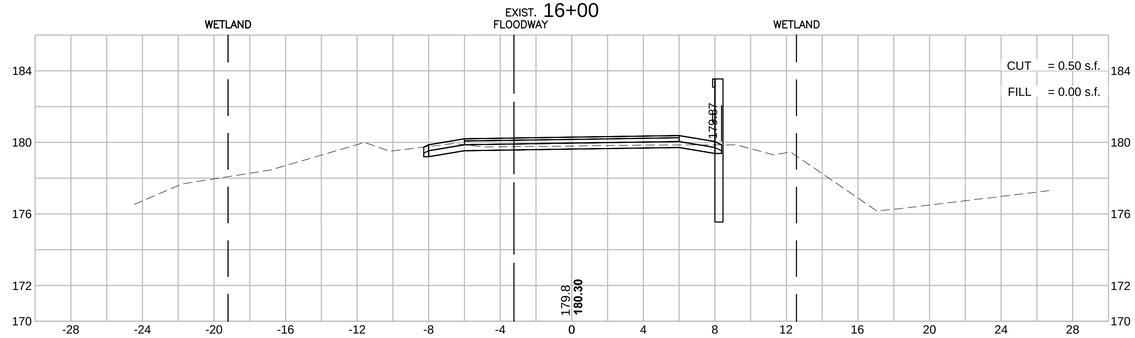
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:04 AM

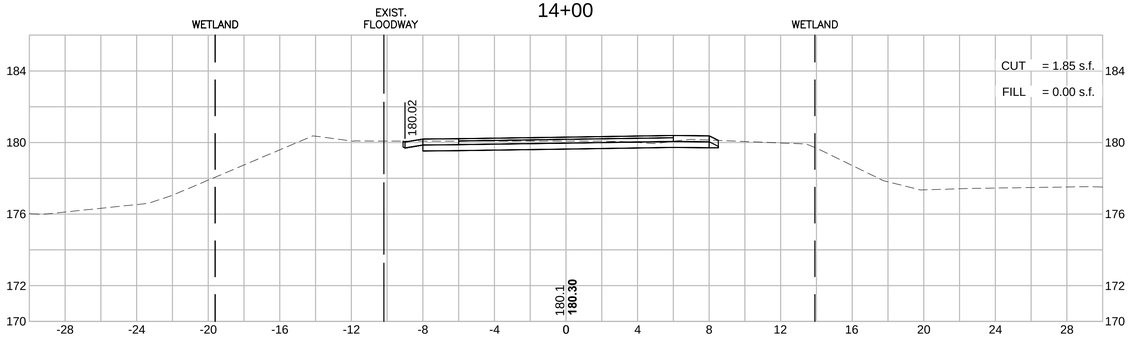
14+50



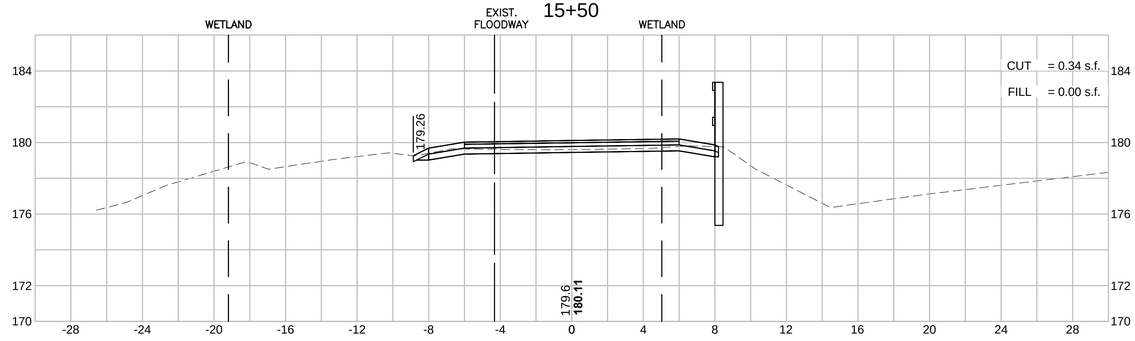
EXIST. 16+00



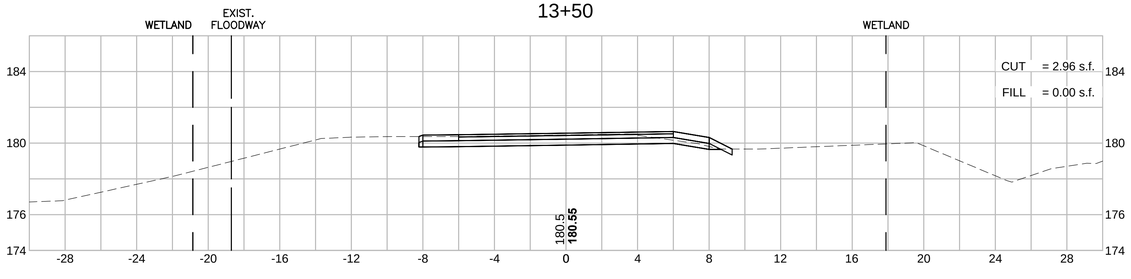
14+00



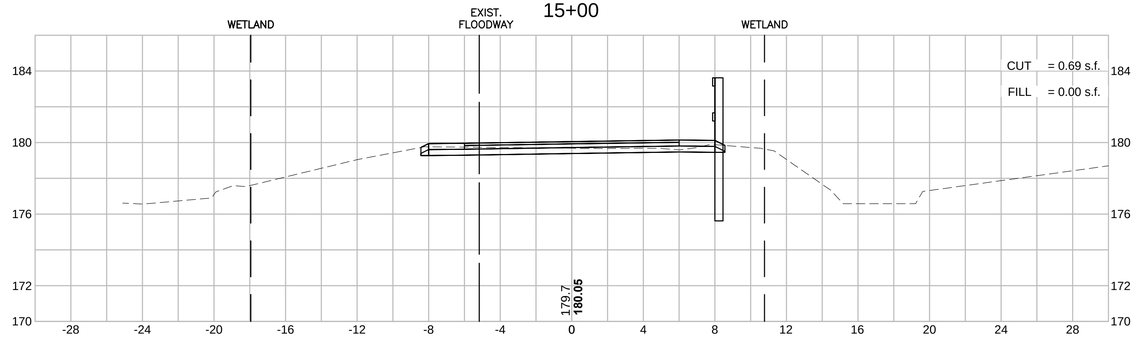
15+50



13+50



15+00



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

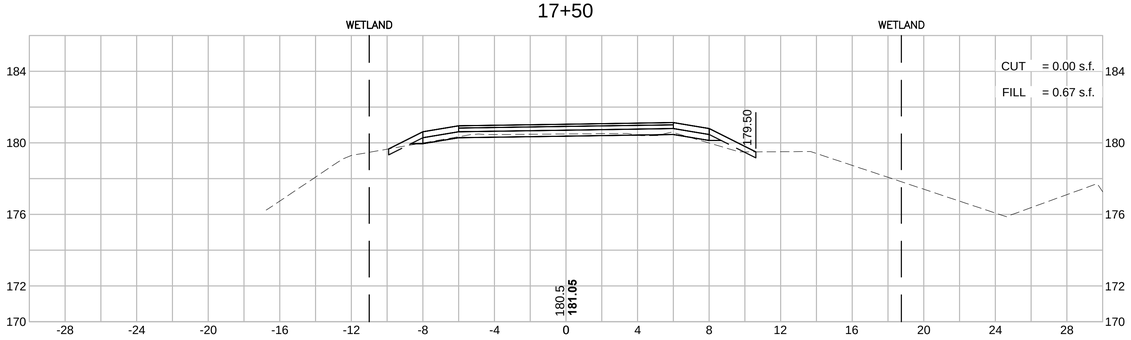
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	166	230
PROJECT FILE NO.	604531		

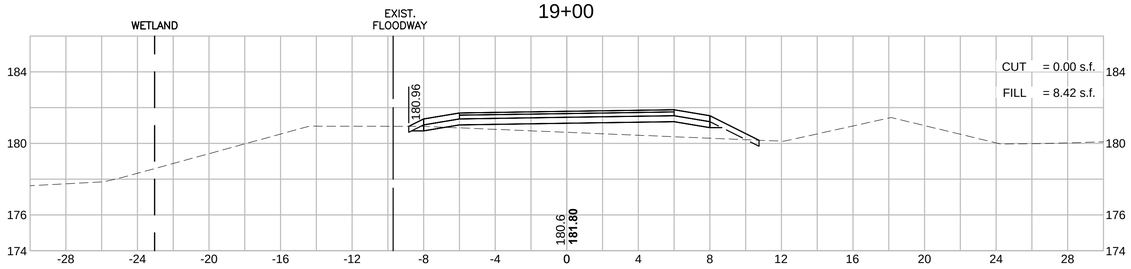
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:05 AM

17+50

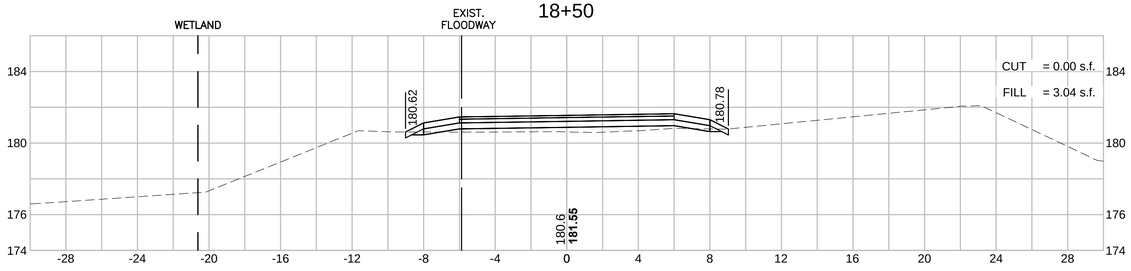


19+00



17+00

18+50



16+50

18+00

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

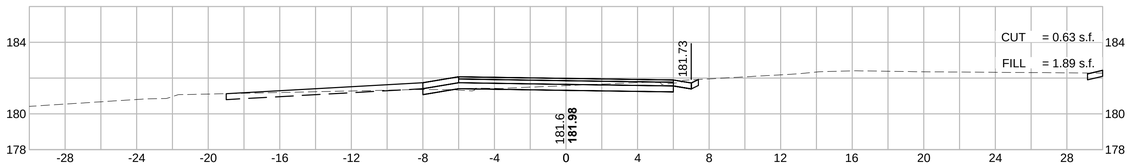
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	167	230
PROJECT FILE NO.	604531		

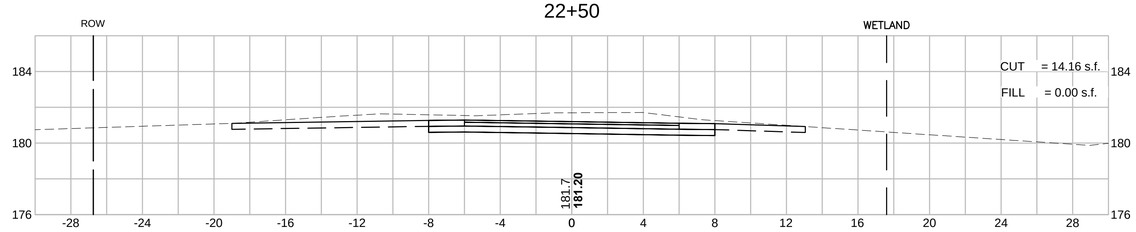
CROSS SECTIONS

Plotted on 18-Sep-2015 10:05 AM
604531_HD(XS).DWG

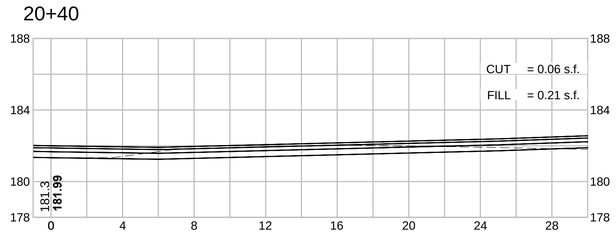
20+50



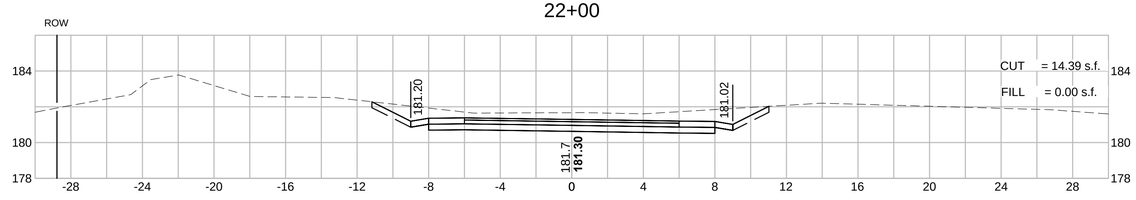
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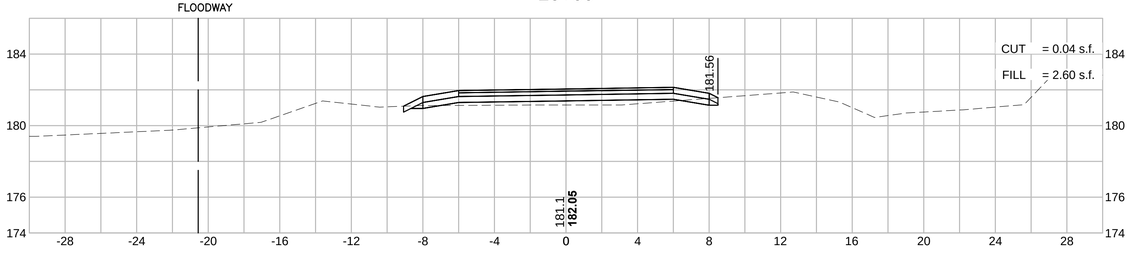
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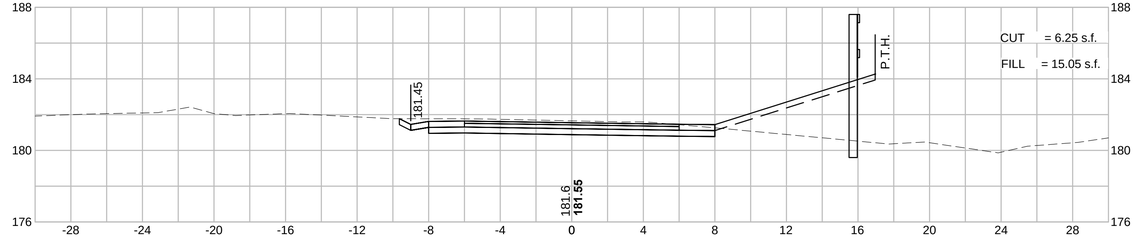
22+00



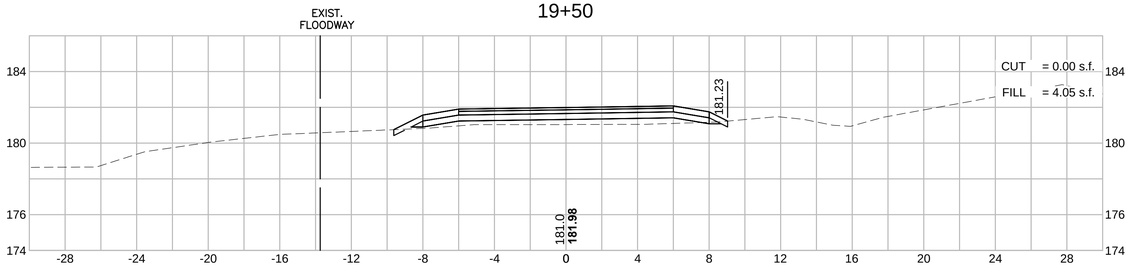
20+00



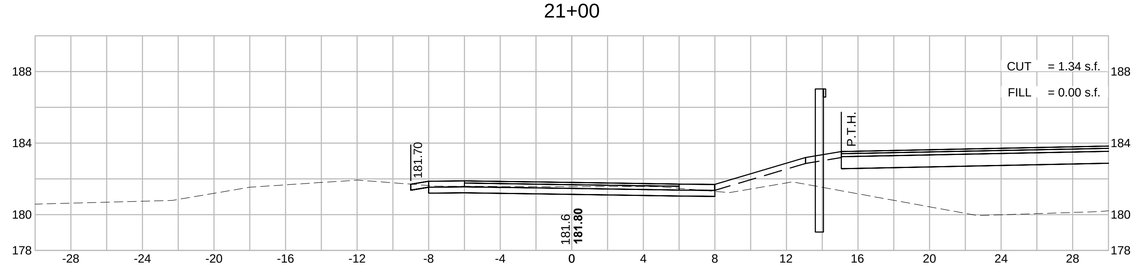
21+50



19+50



21+00



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

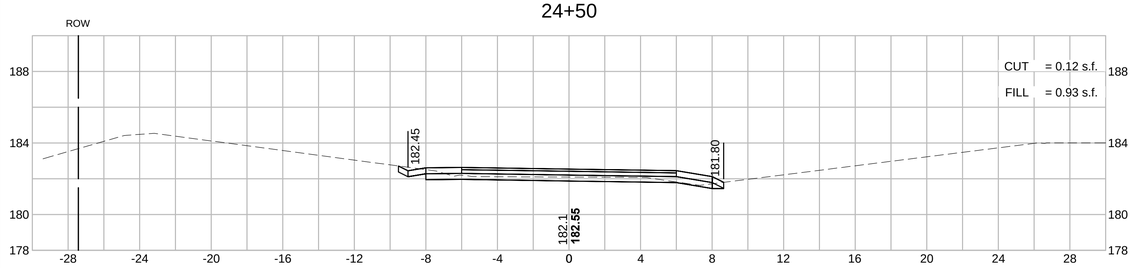
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	168	230
PROJECT FILE NO.	604531		

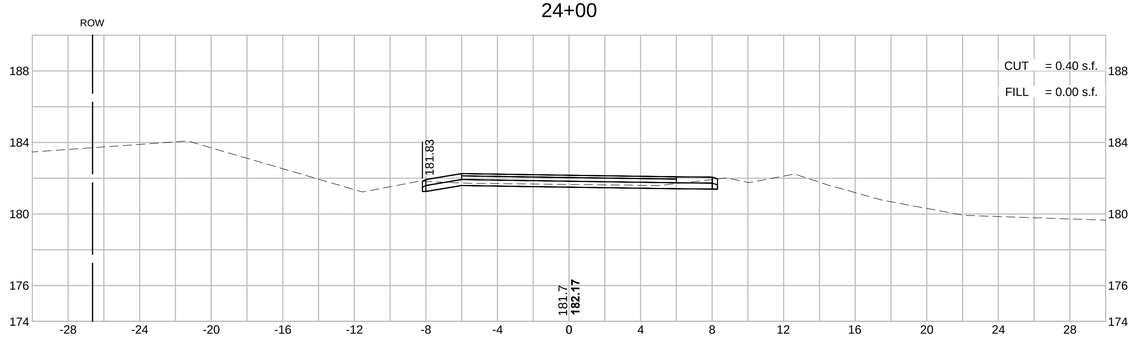
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:06 AM

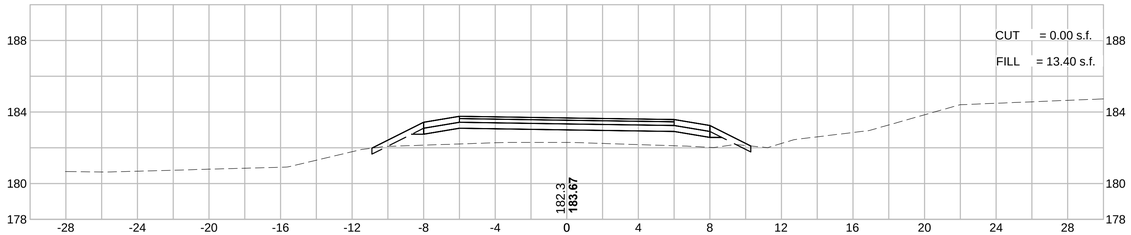
24+50



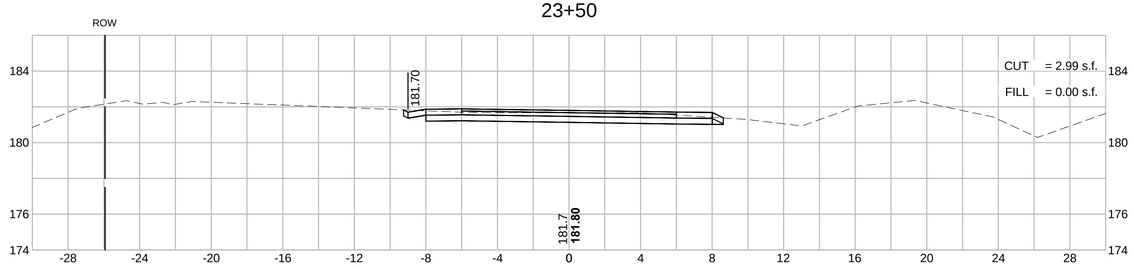
24+00



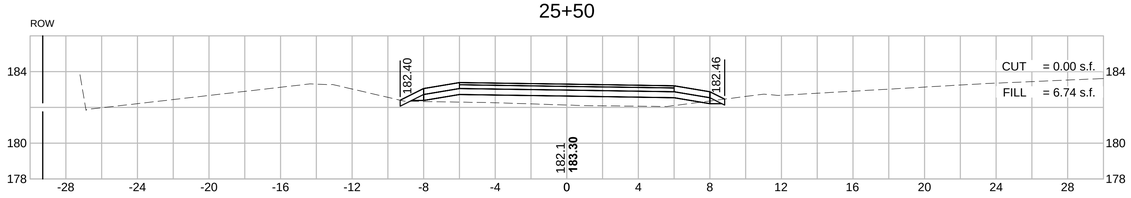
26+00



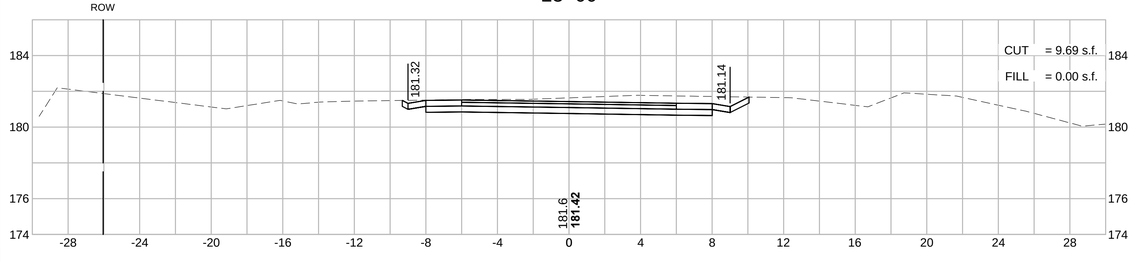
23+50



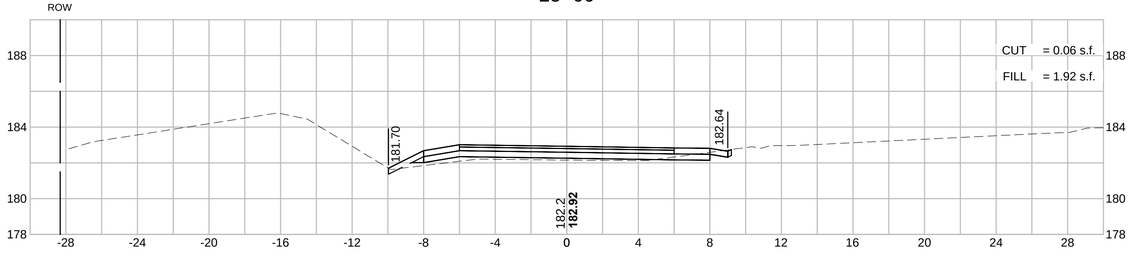
25+50



23+00



25+00



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

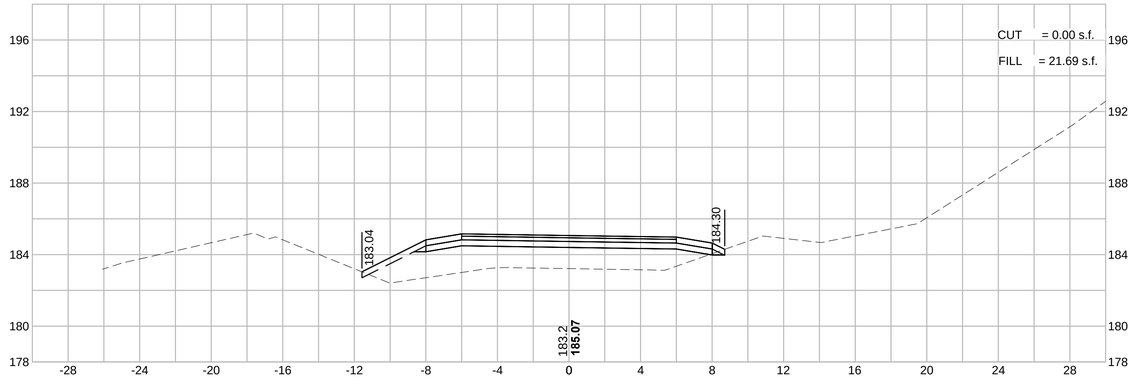
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	169	230
PROJECT FILE NO.	604531		

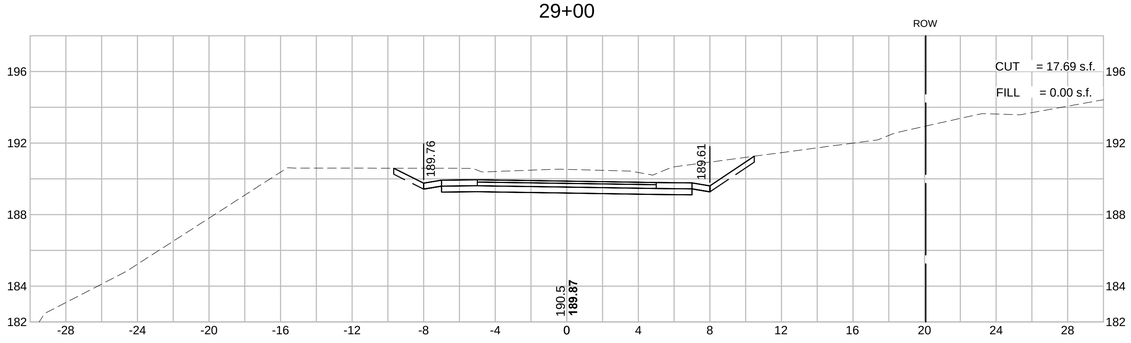
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:07 AM

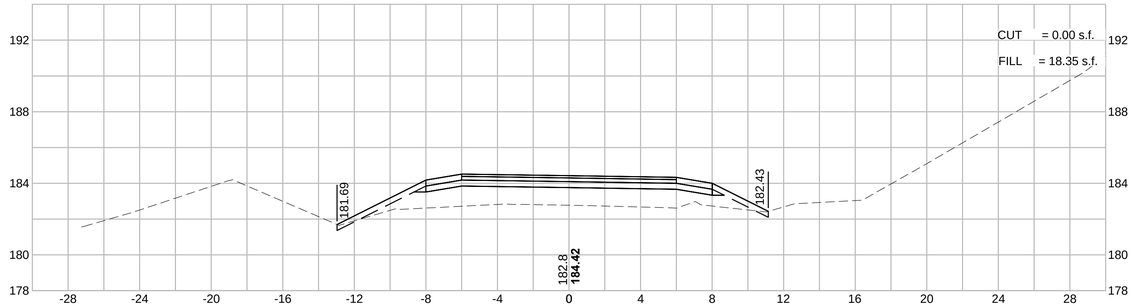
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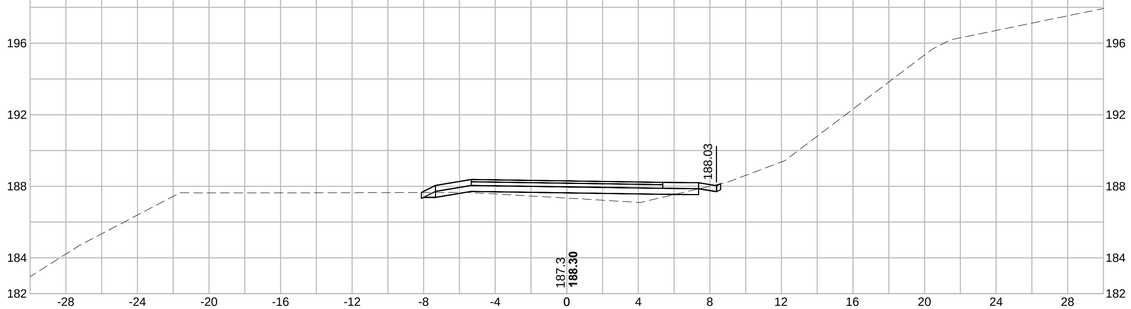
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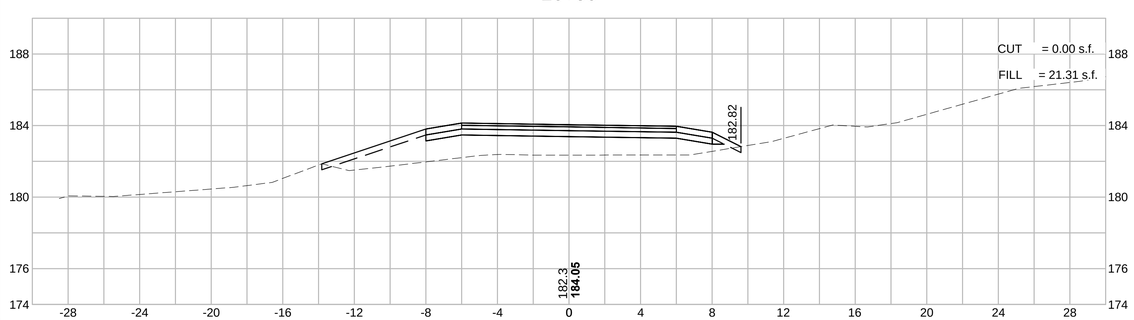
27+00



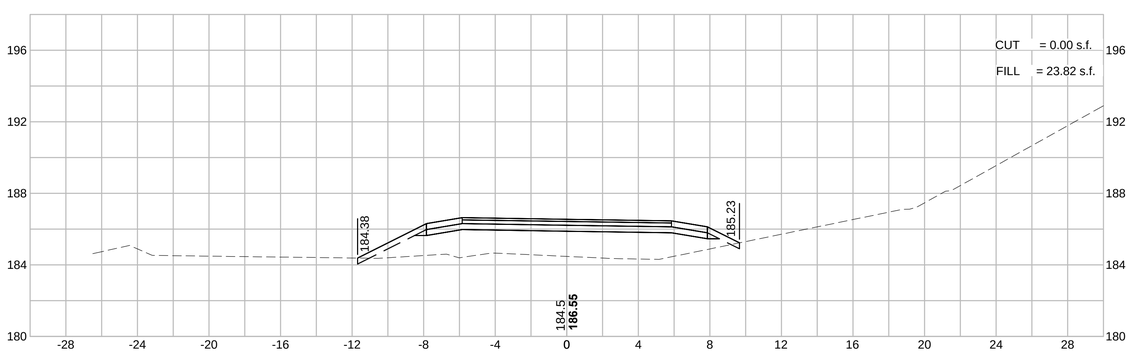
28+50



26+50



28+00



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

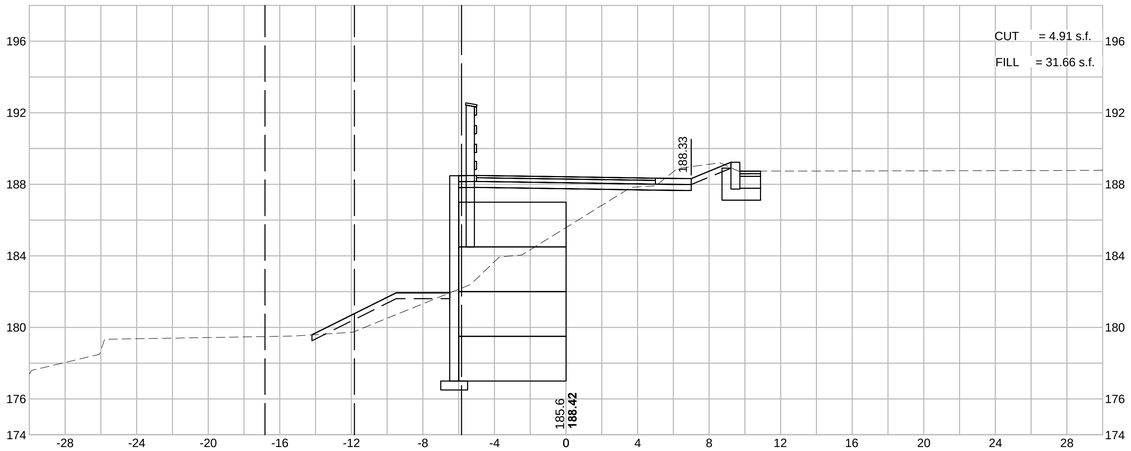
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	170	230
PROJECT FILE NO.	604531		

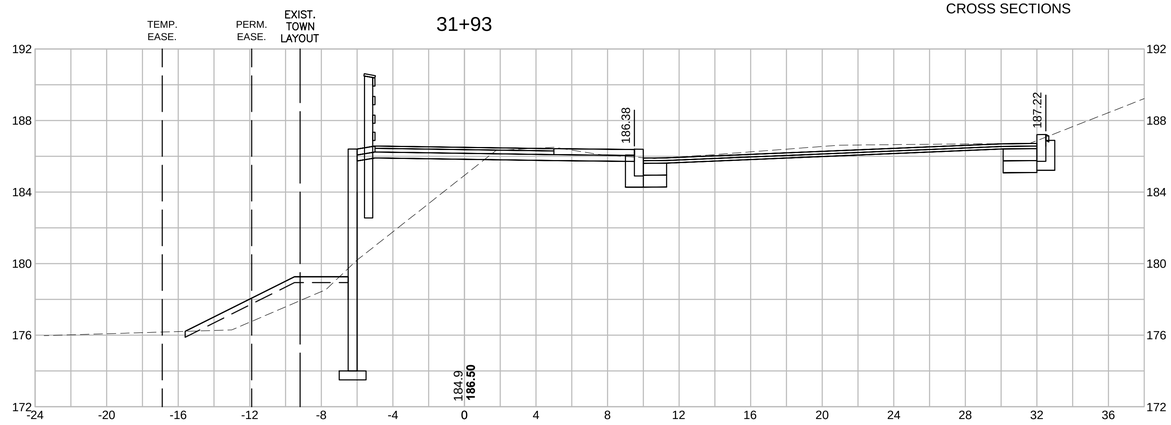
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:07 AM

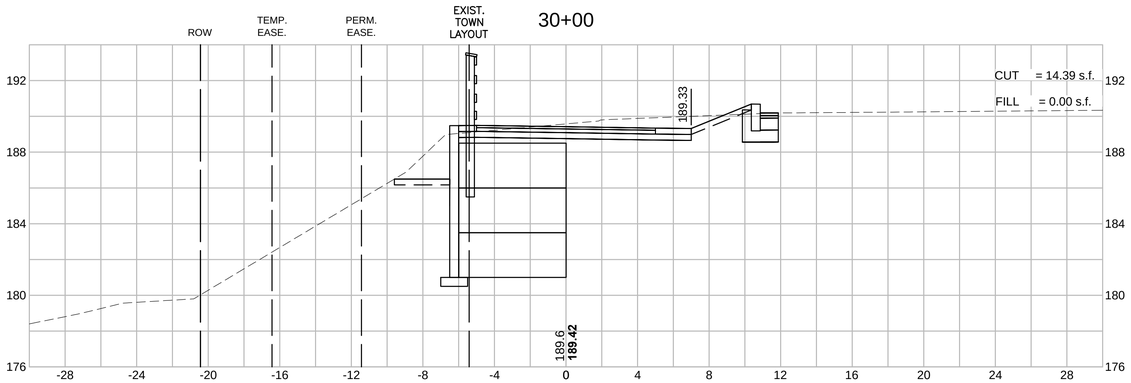
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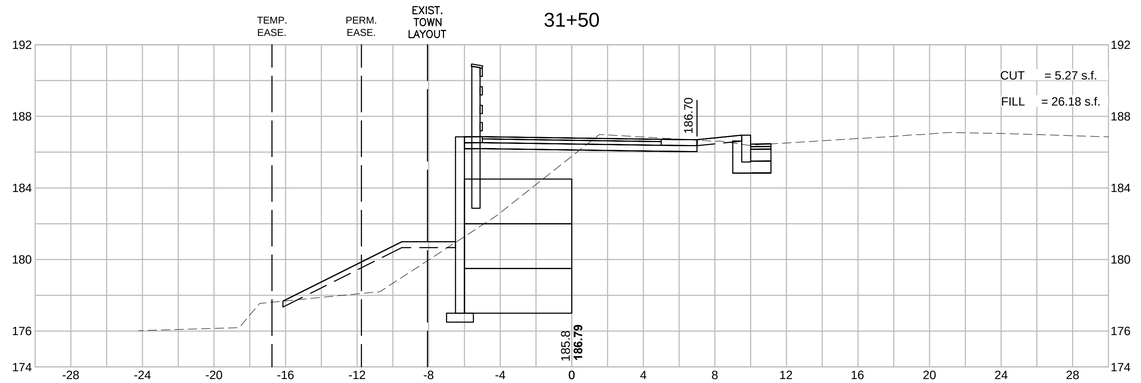
31+93



30+00

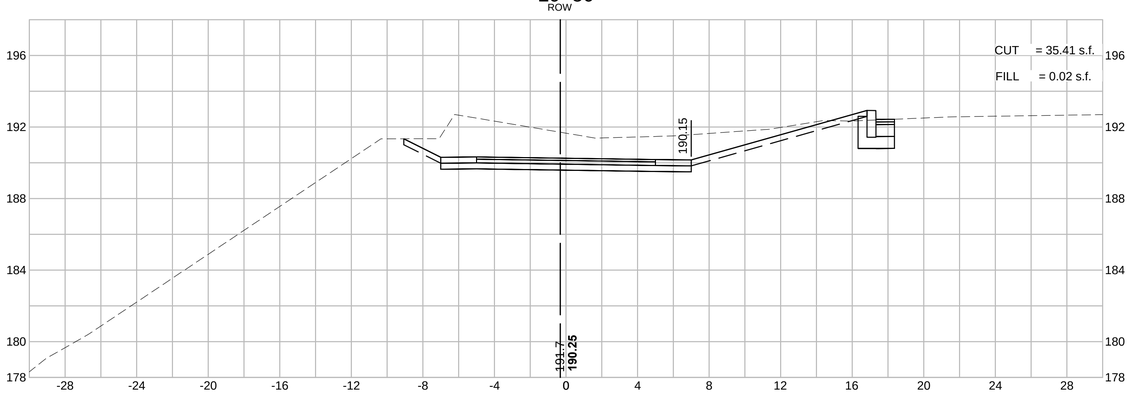


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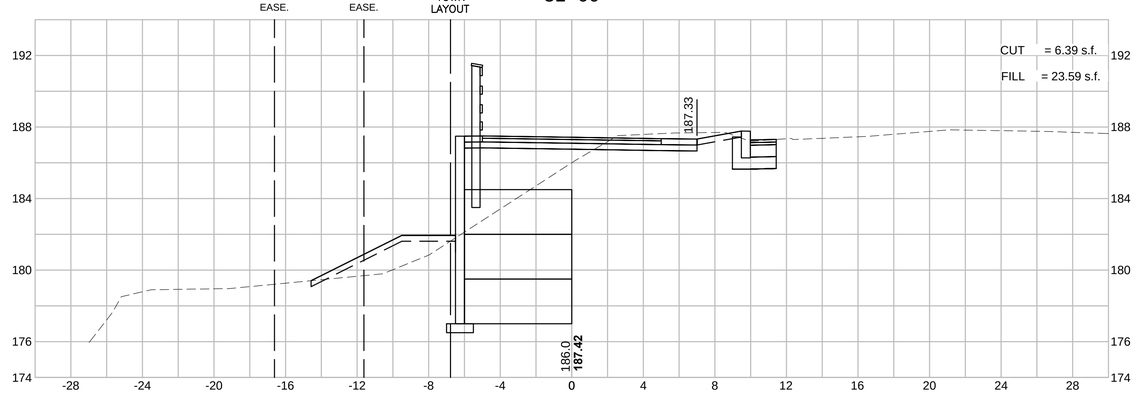


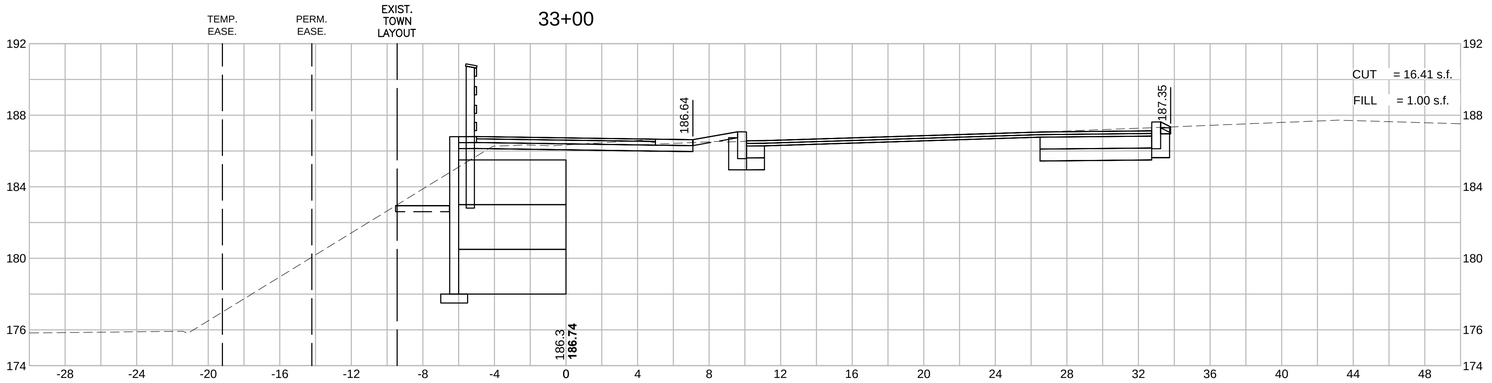
UPL
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10' L

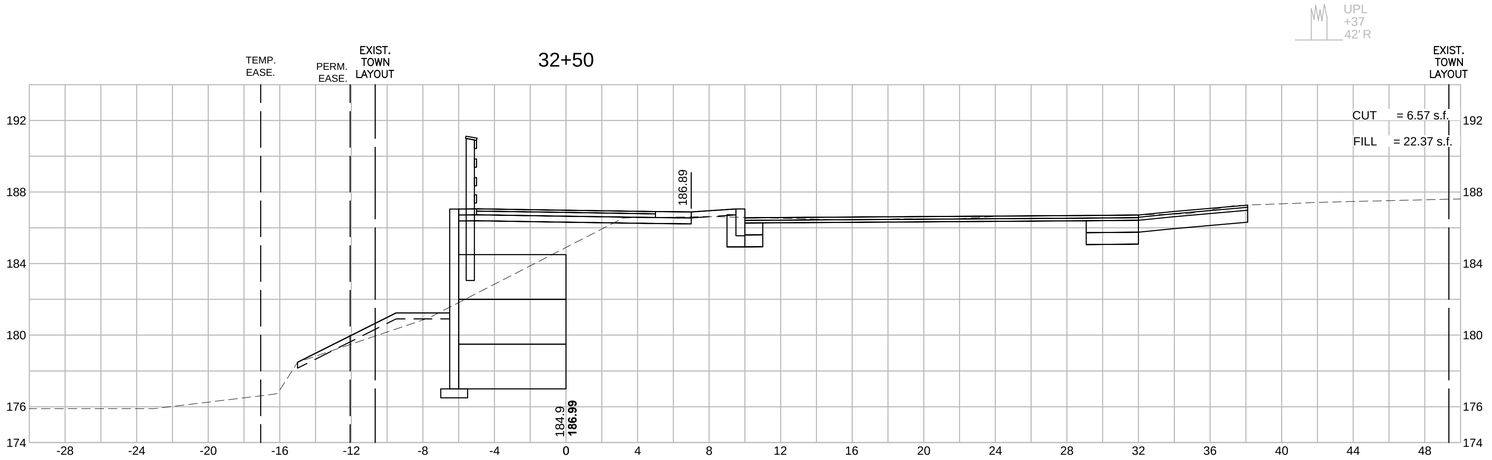
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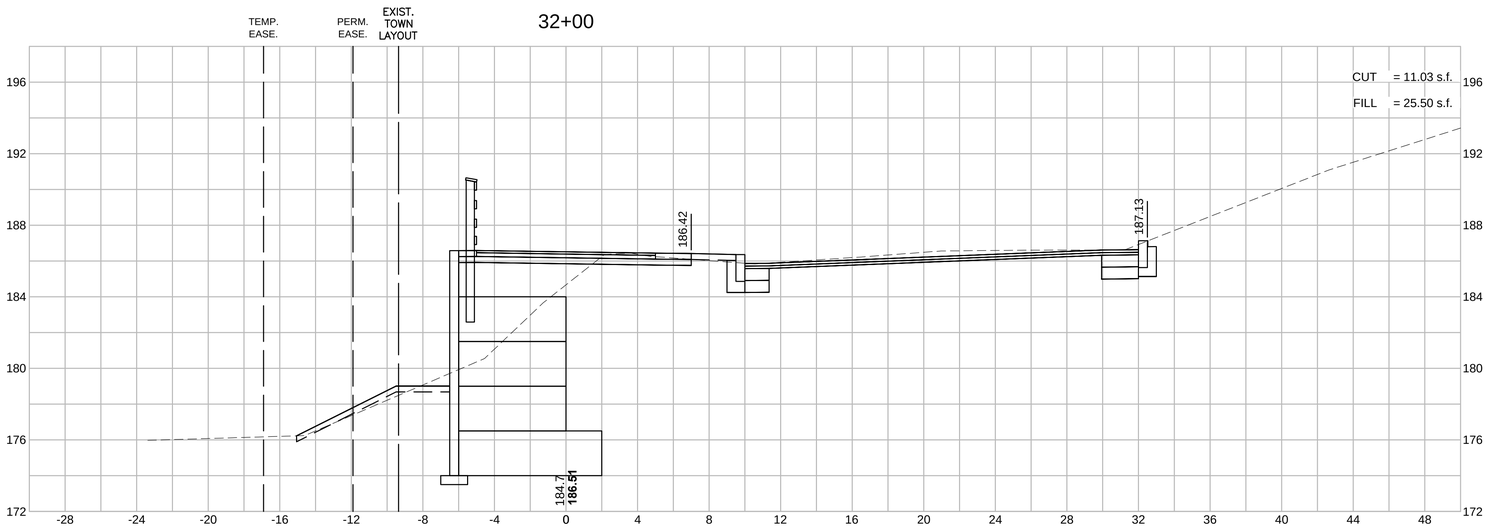


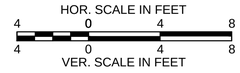
31+00











MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	171	230
PROJECT FILE NO.	604531		

CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:08 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

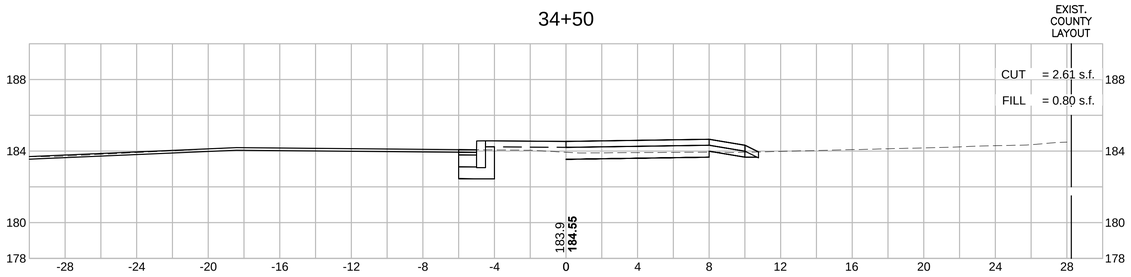
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	172	230
PROJECT FILE NO.	604531		

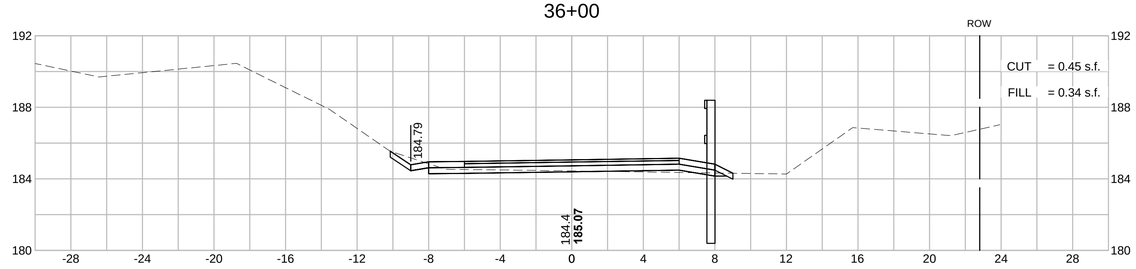
CROSS SECTIONS

Plotted on 18-Sep-2015 10:08 AM
604531_HD(XS).DWG

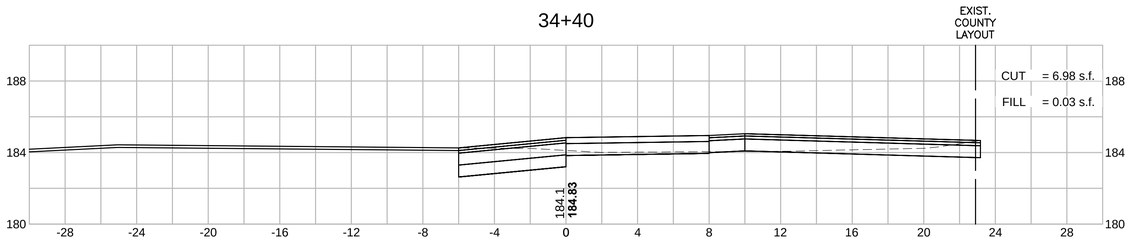
34+50



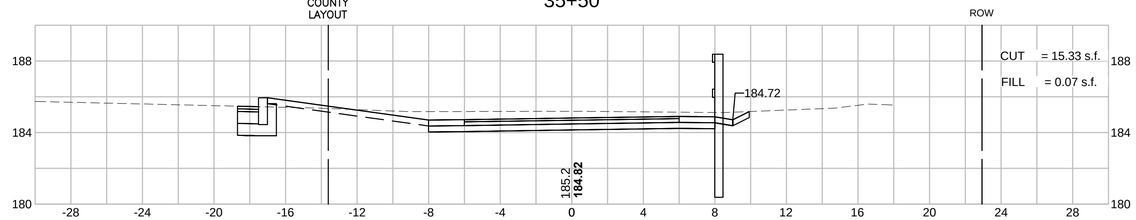
36+00



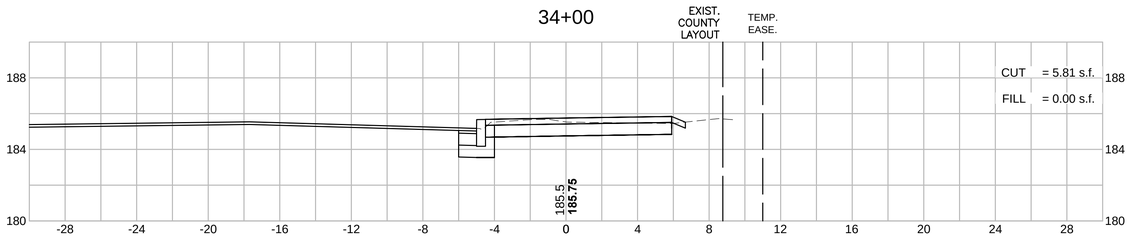
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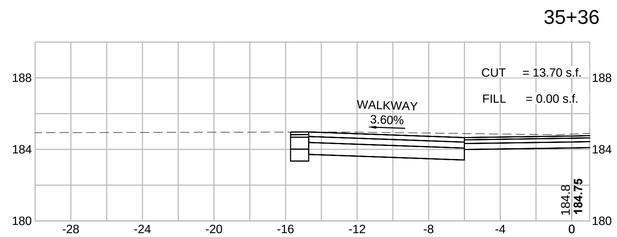
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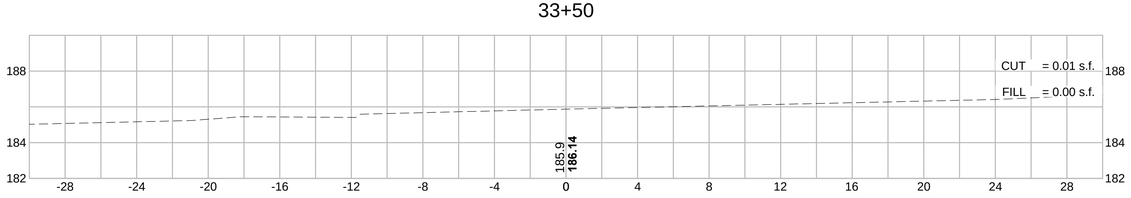
34+00



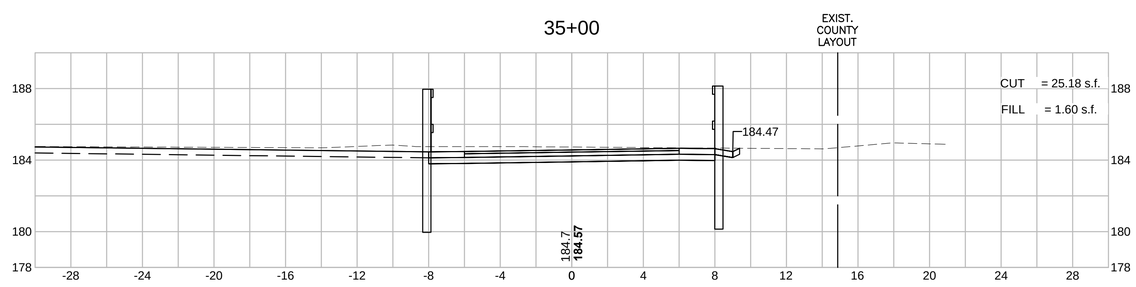
35+36



33+50



35+00



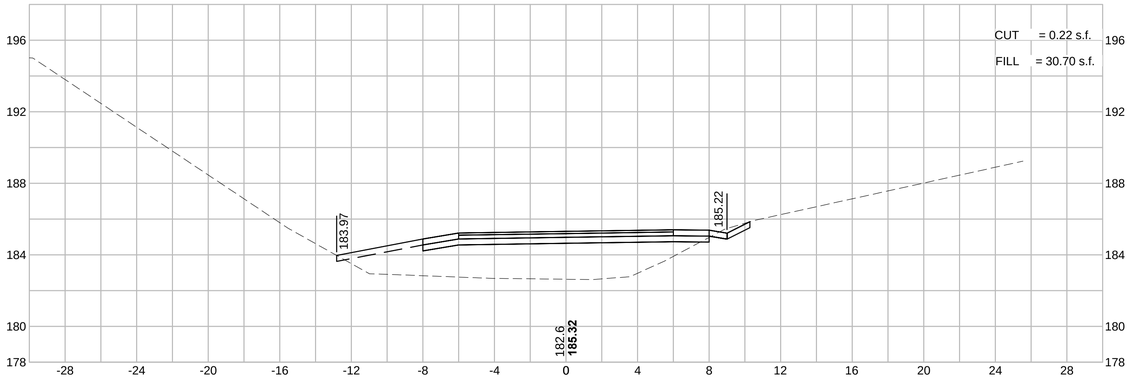
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

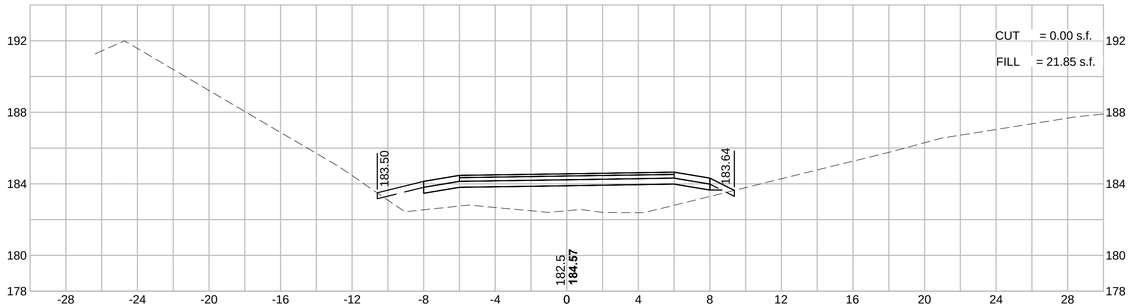
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	173	230
PROJECT FILE NO.	604531		

CROSS SECTIONS

37+50



39+00



37+00

38+50

36+50

38+00

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:09 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

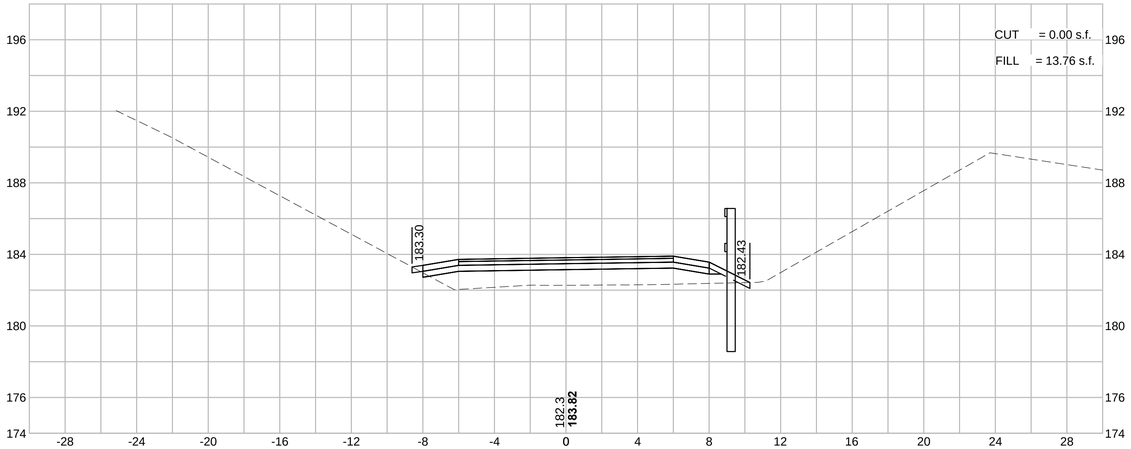
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	174	230
PROJECT FILE NO.	604531		

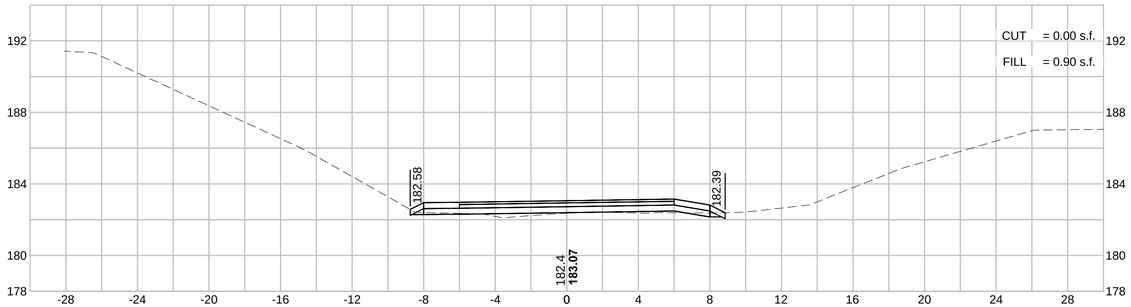
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:10 AM

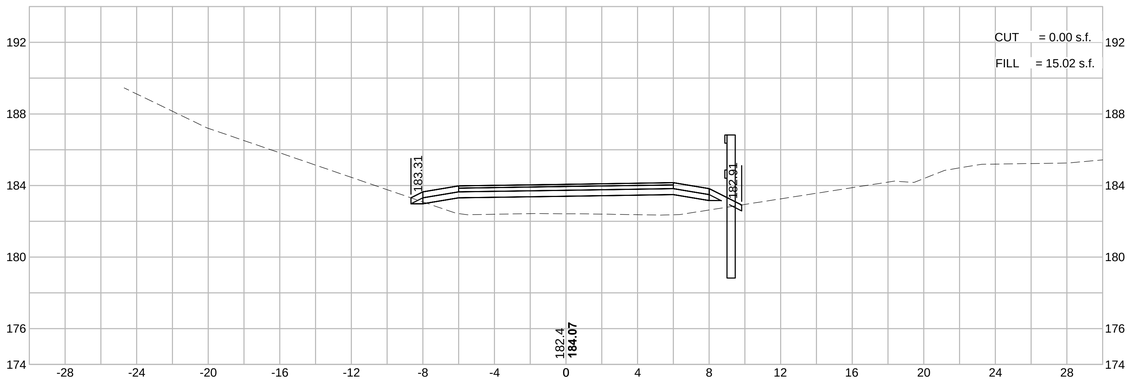
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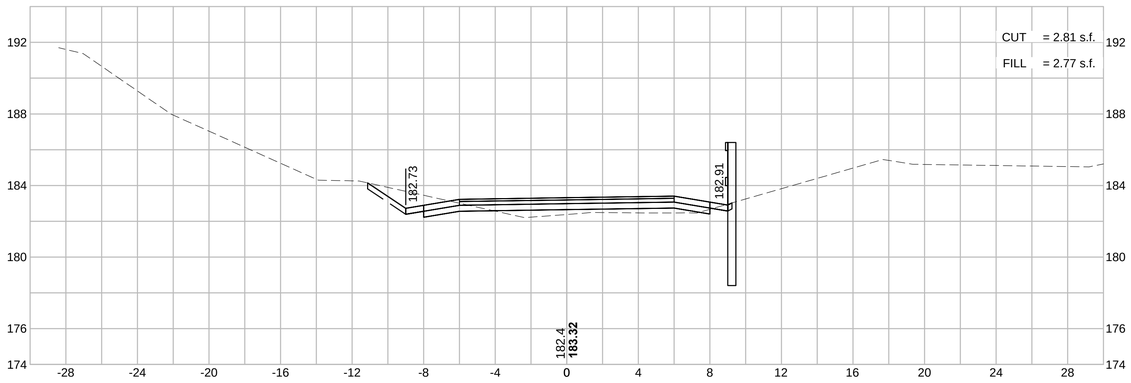
42+00



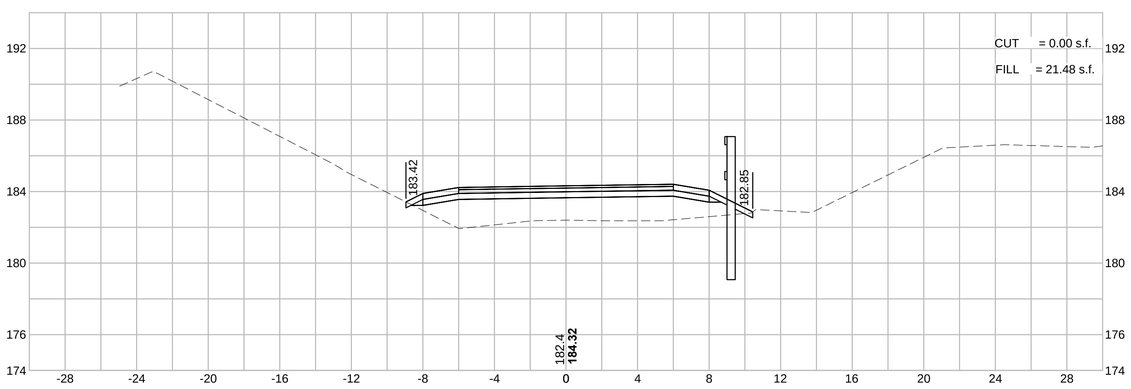
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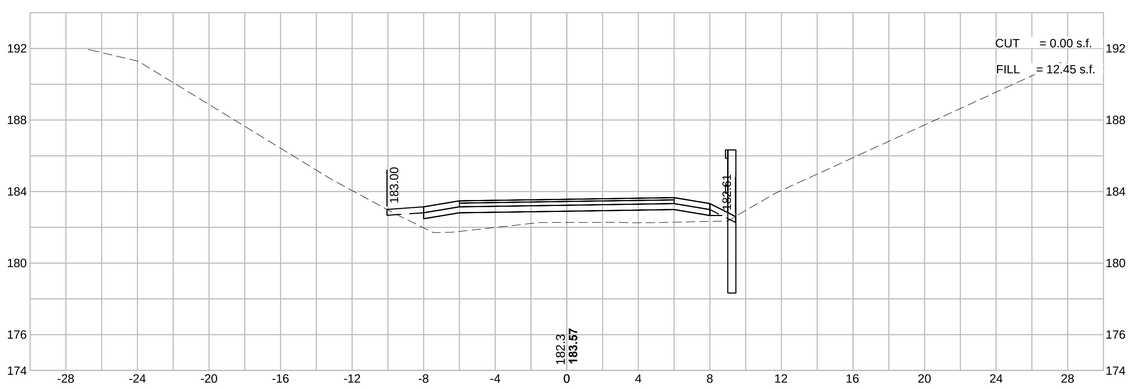
41+50



39+50



41+00



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

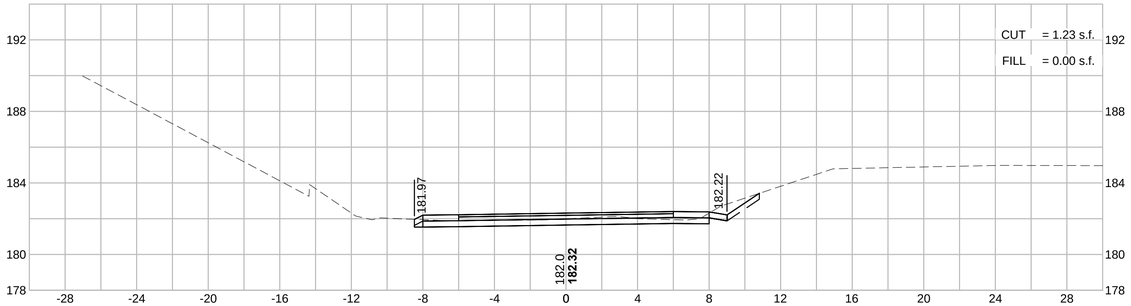
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	175	230
PROJECT FILE NO.	604531		

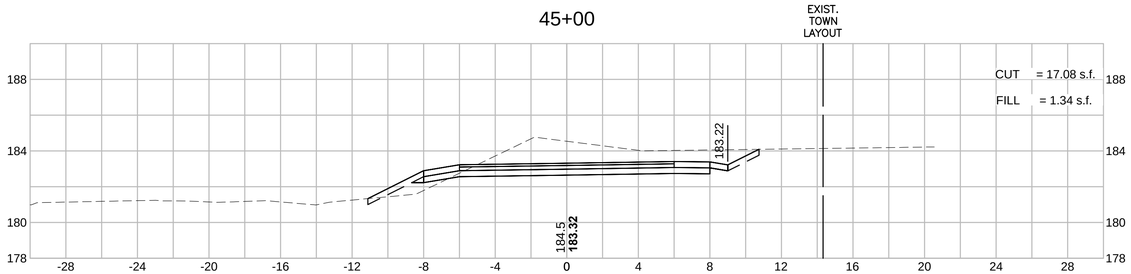
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:10 AM

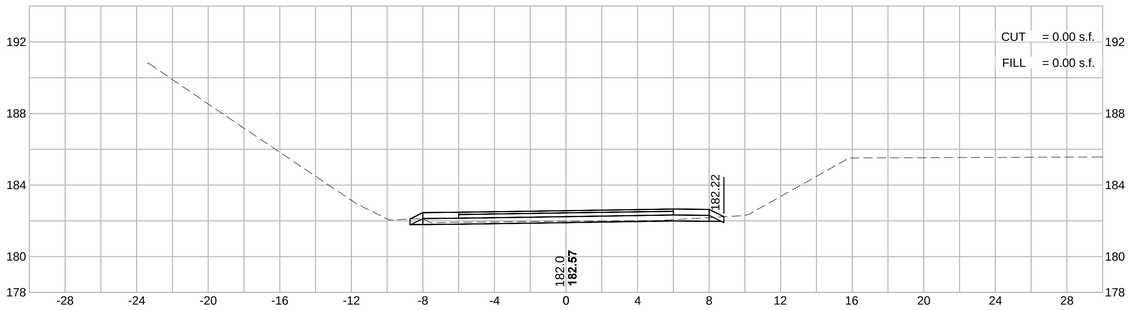
43+50



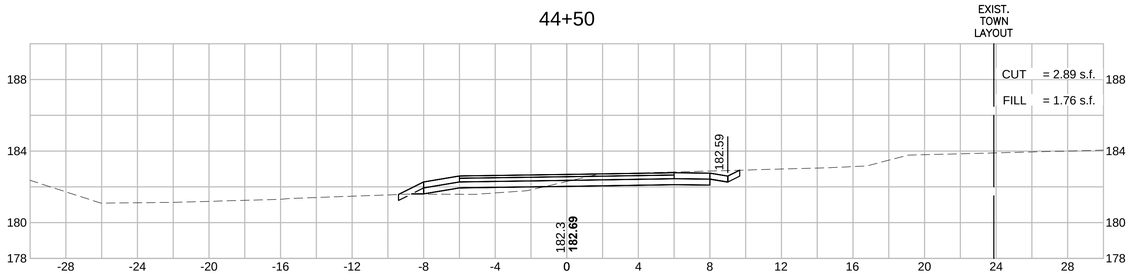
45+00



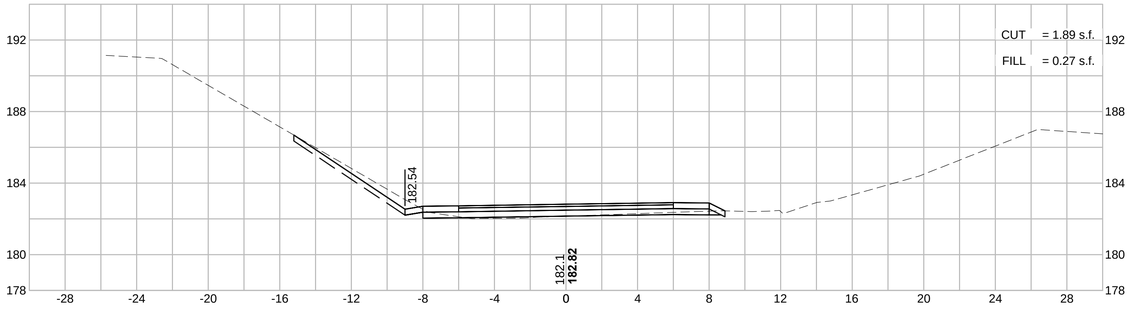
43+00



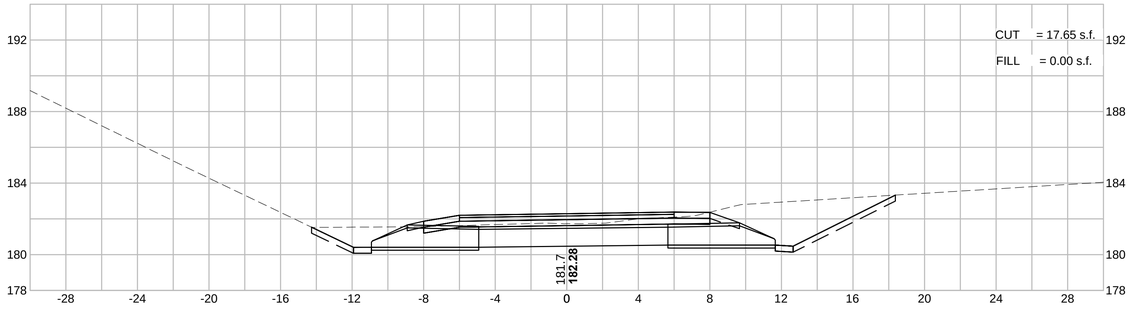
44+50



42+50



44+00



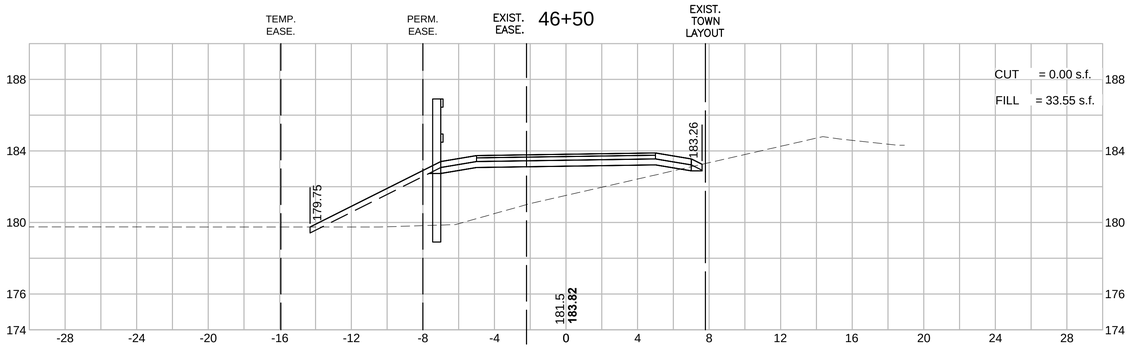
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

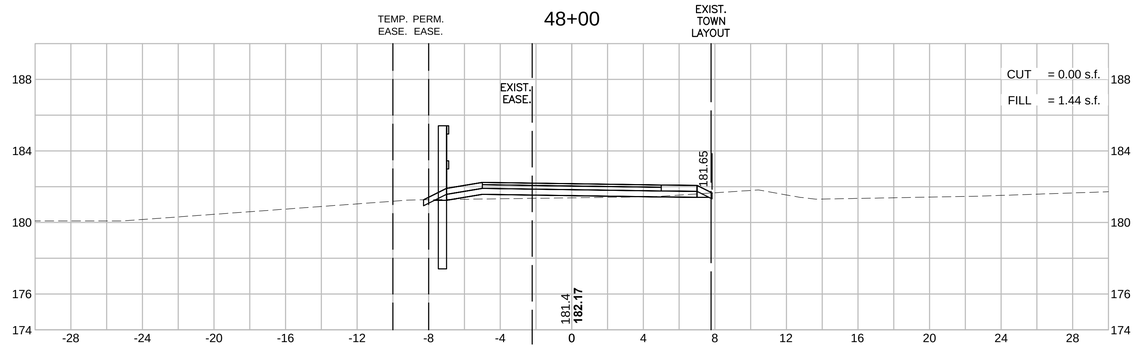
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

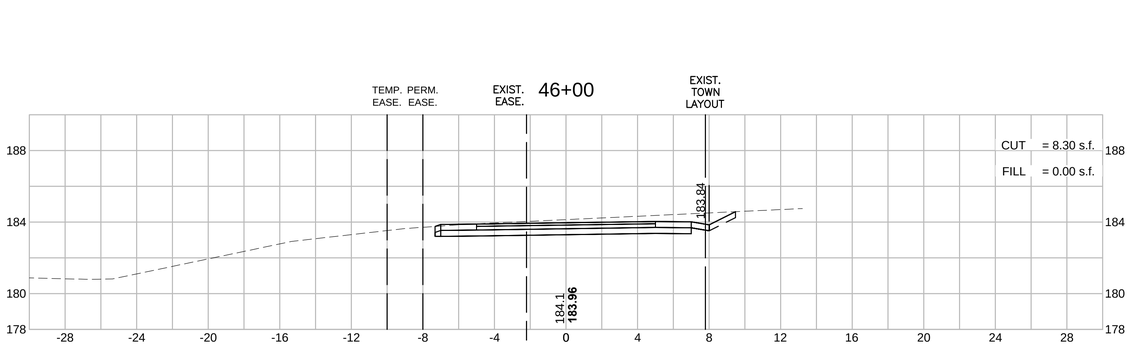
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	176	230
PROJECT FILE NO.	604531		

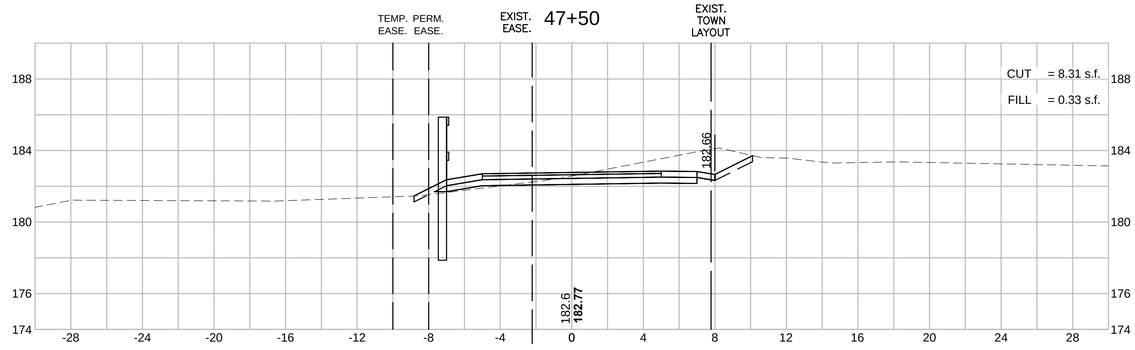
CROSS SECTIONS

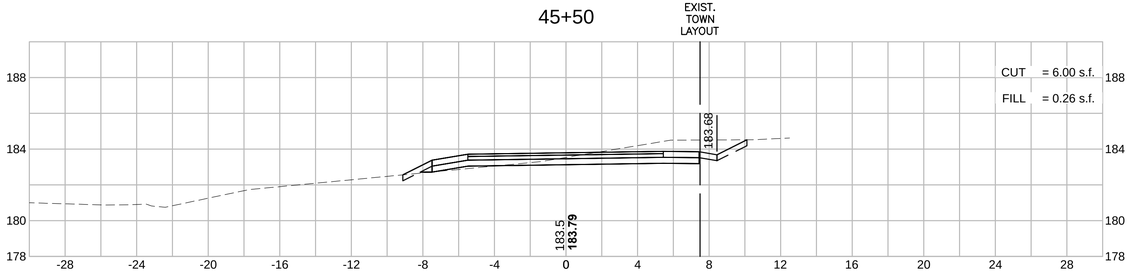
604531_HD(XS).DWG Plotted on 18-Sep-2015 10:11 AM

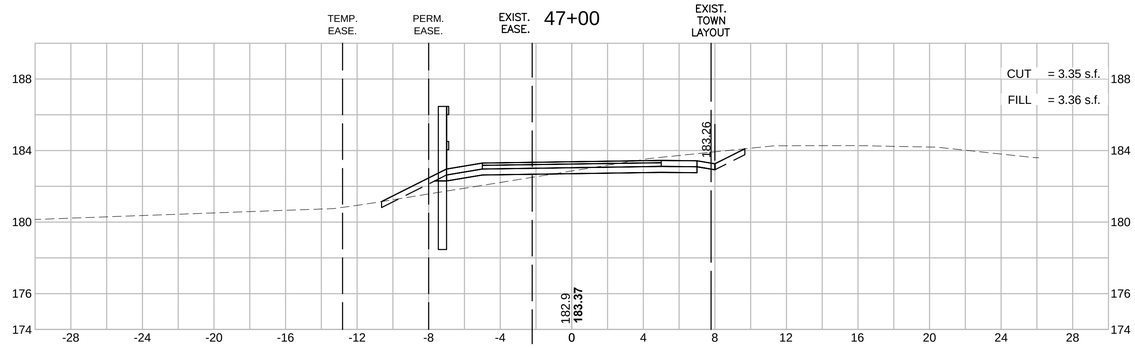












MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

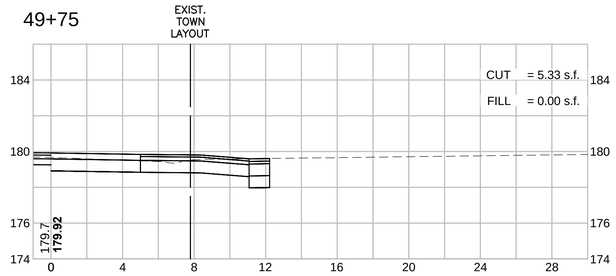
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	177	230
PROJECT FILE NO.	604531		

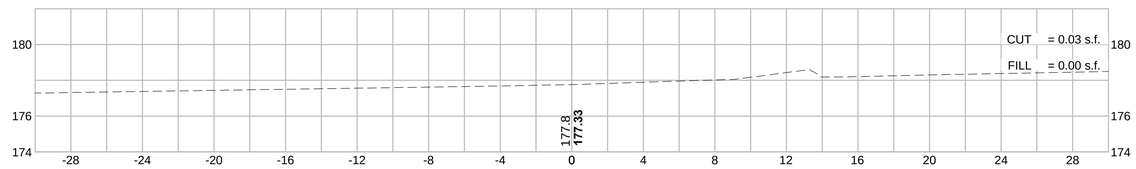
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:11 AM

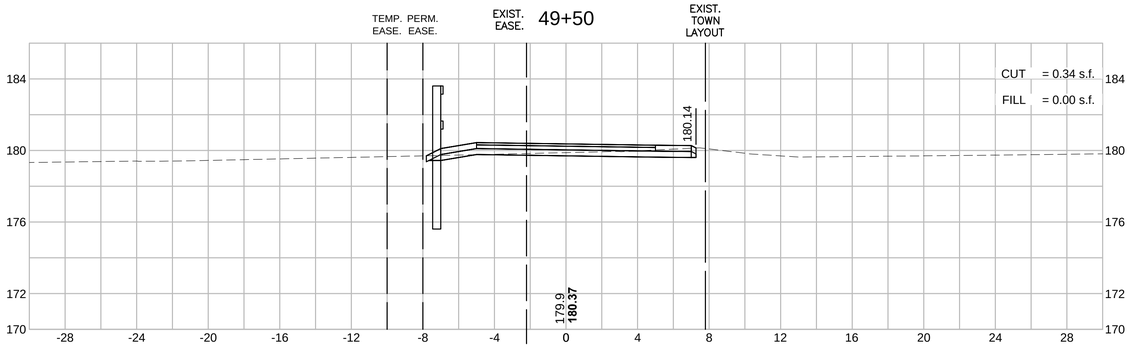
49+75



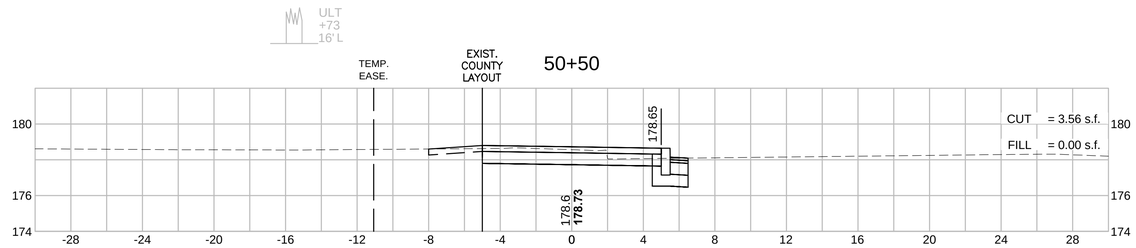
51+00



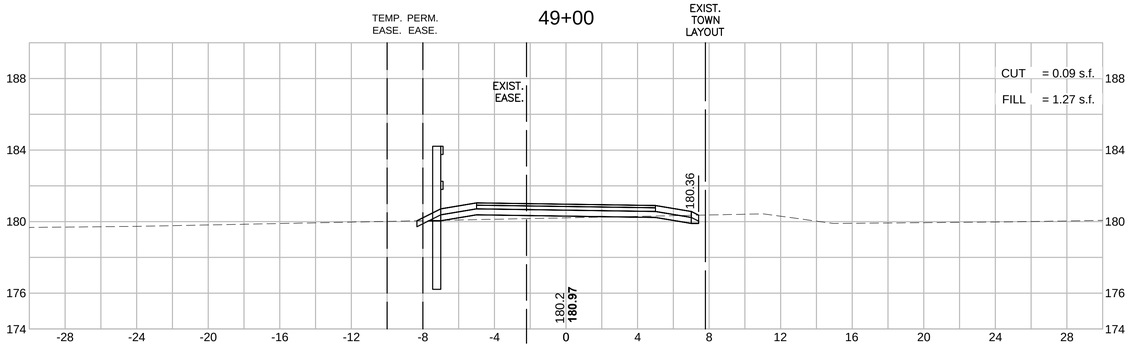
49+50



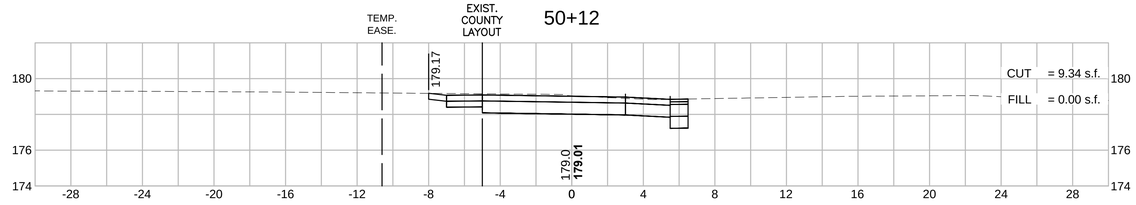
50+50



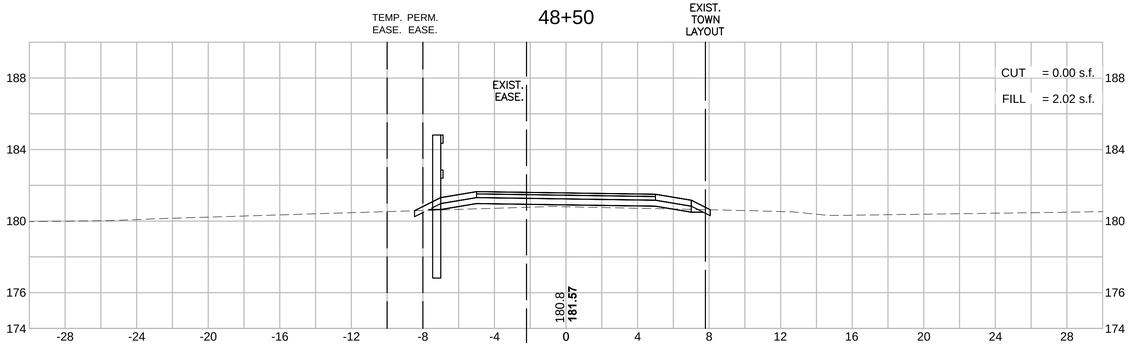
49+00



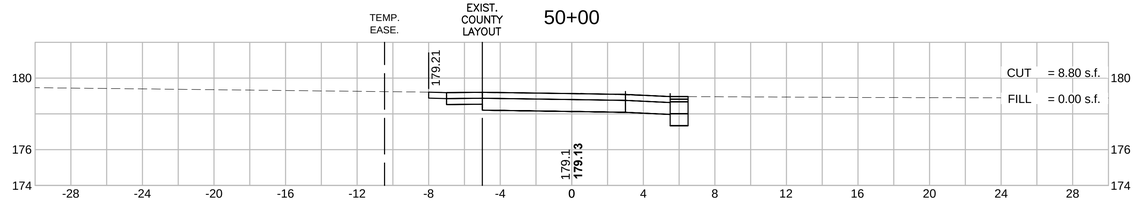
50+12



48+50



50+00



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

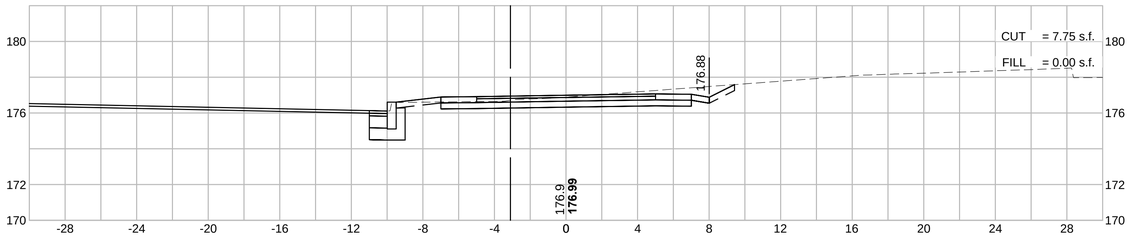
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	178	230
PROJECT FILE NO.	604531		

CROSS SECTIONS

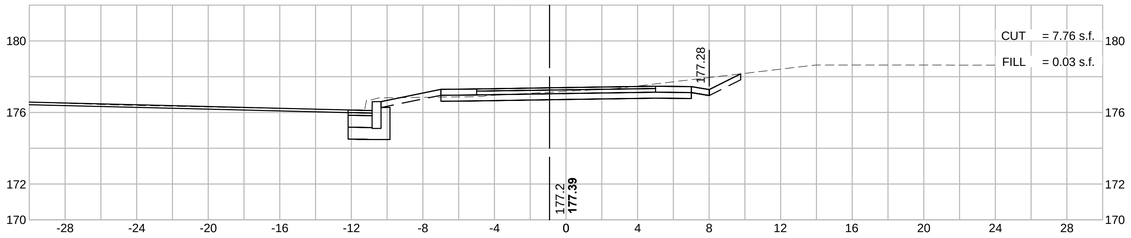
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:12 AM

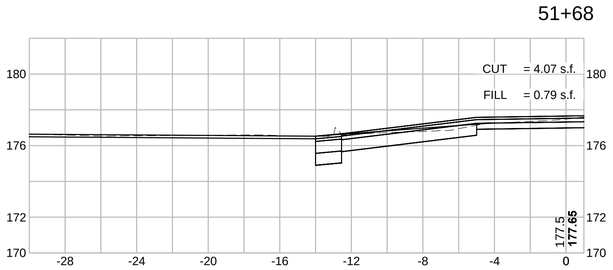
EXIST. COUNTY LAYOUT 52+50



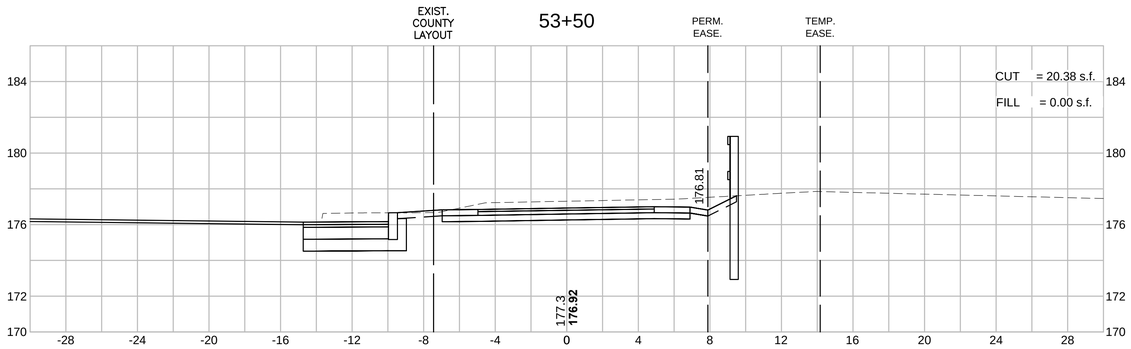
EXIST. COUNTY LAYOUT 52+00



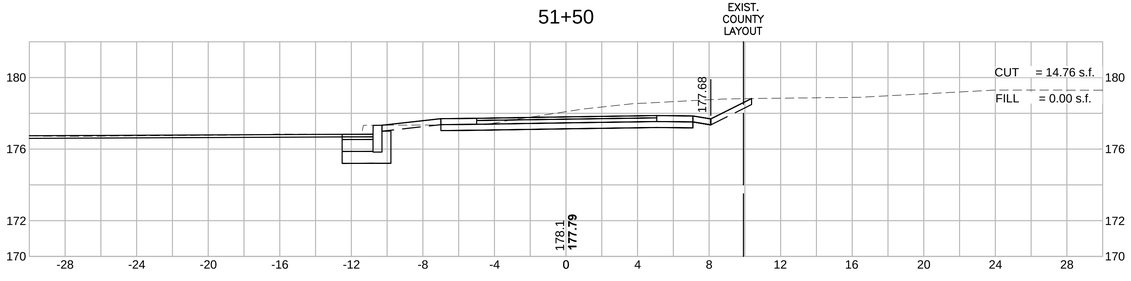
51+68



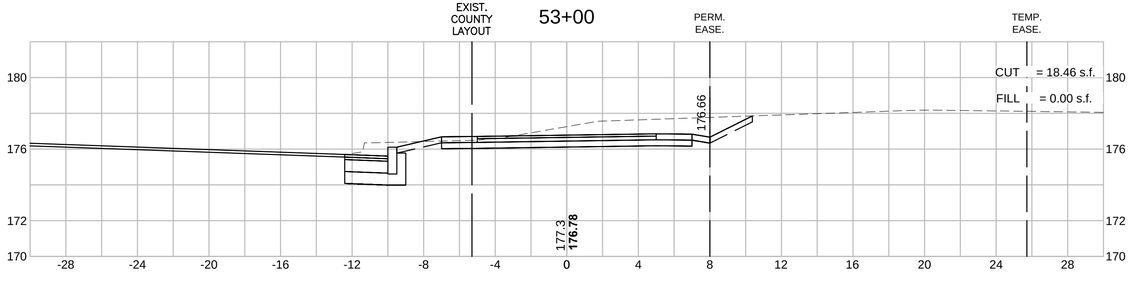
EXIST. COUNTY LAYOUT 53+50 PERM. EASE. TEMP. EASE.



51+50 EXIST. COUNTY LAYOUT



EXIST. COUNTY LAYOUT 53+00 PERM. EASE. TEMP. EASE.



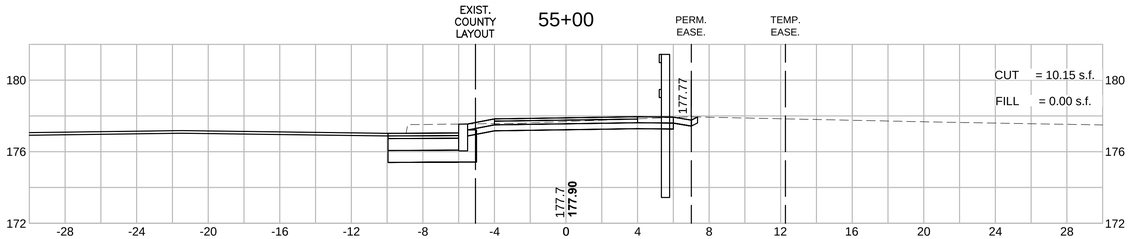
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

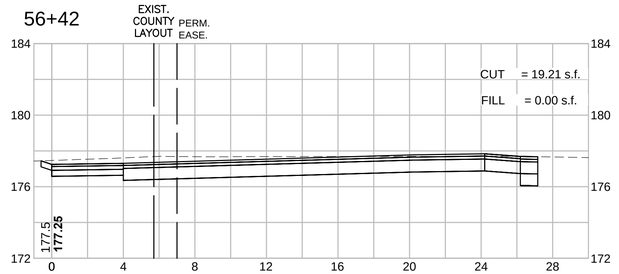
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

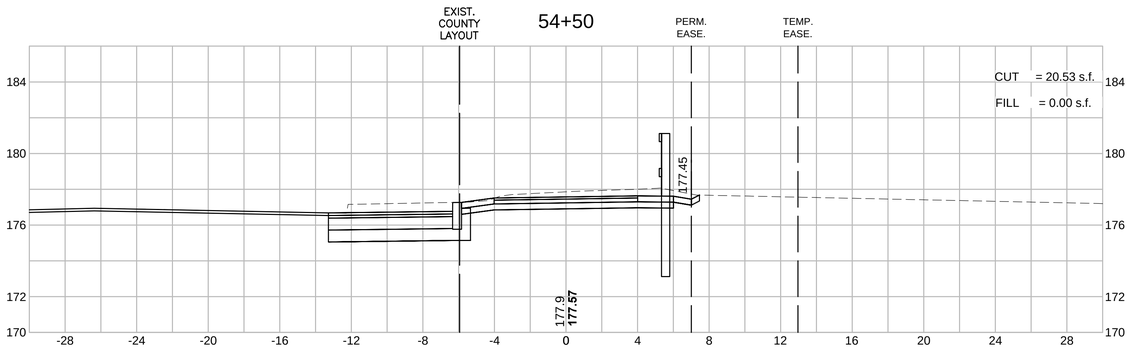
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	179	230
PROJECT FILE NO. 604531			

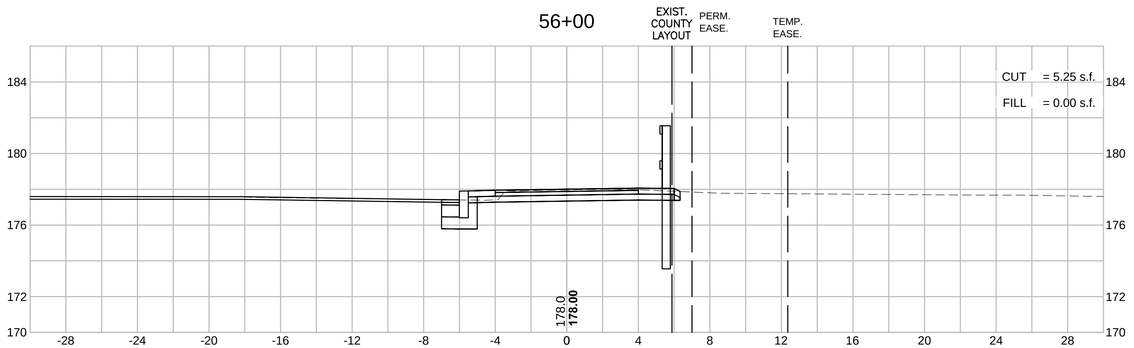
CROSS SECTIONS

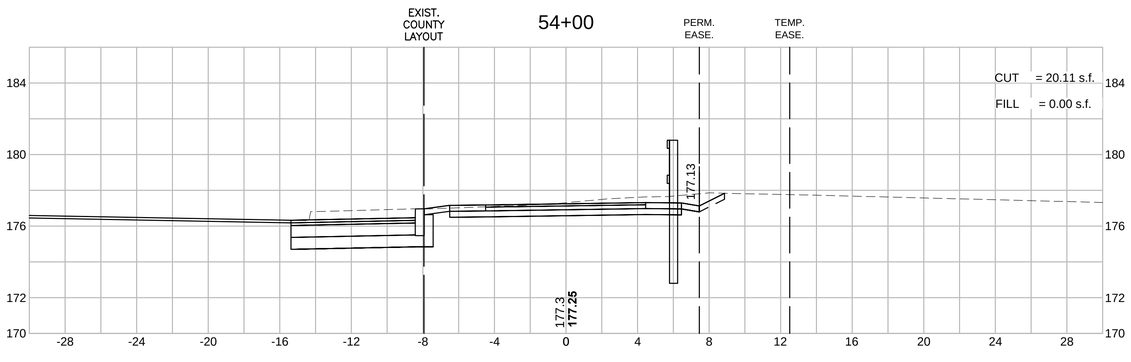
604531_HD(XS).DWG Plotted on 18-Sep-2015 10:13 AM

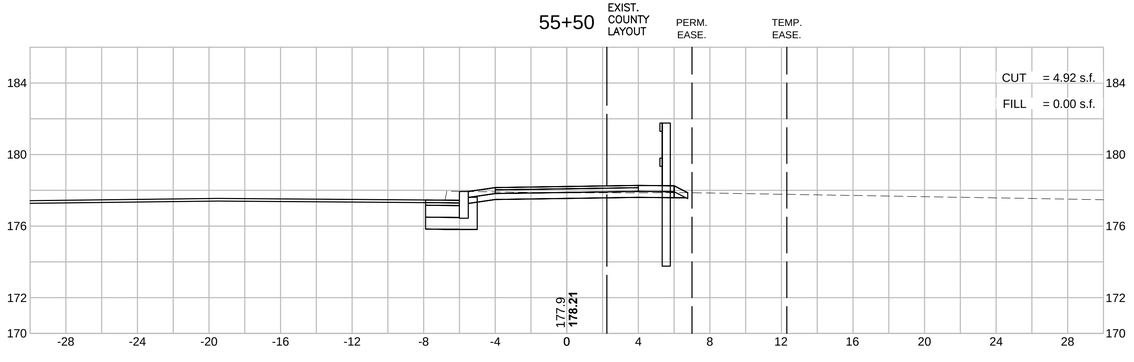












MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	180	230
PROJECT FILE NO.	604531		

CROSS SECTIONS

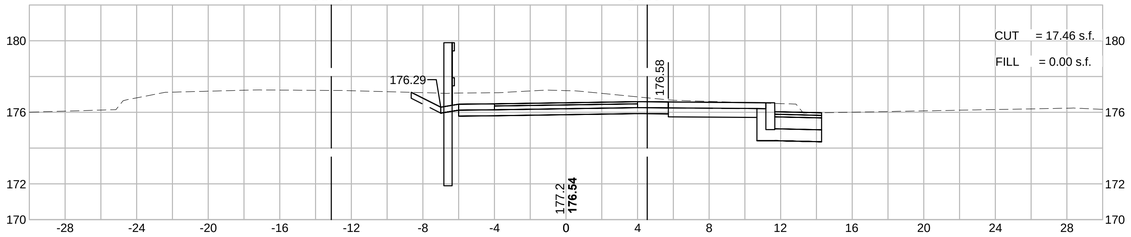
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:13 AM

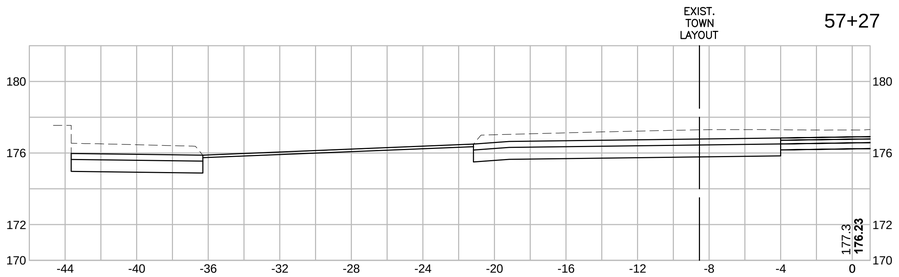
UPL +54 20' L

UPL +46 3' R

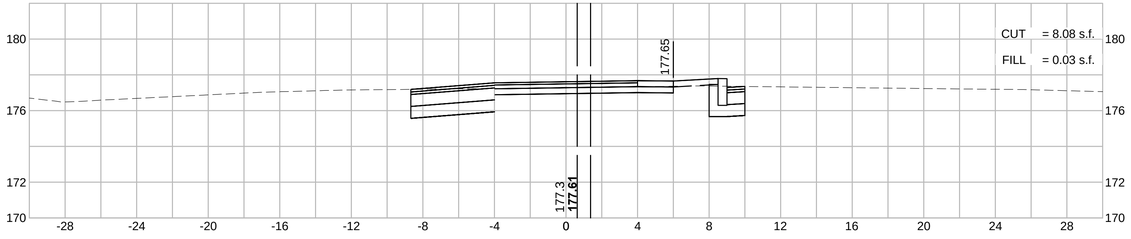
57+50



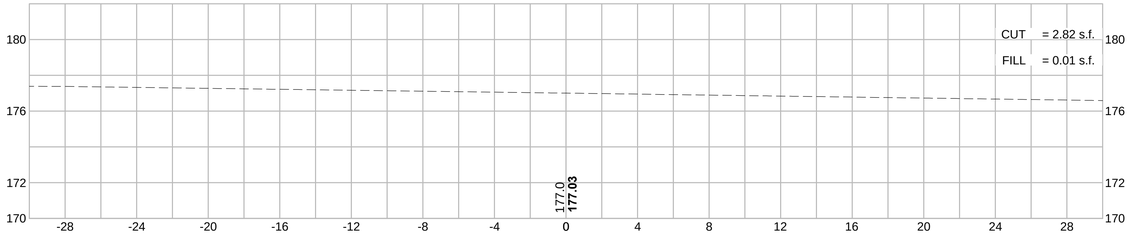
57+27



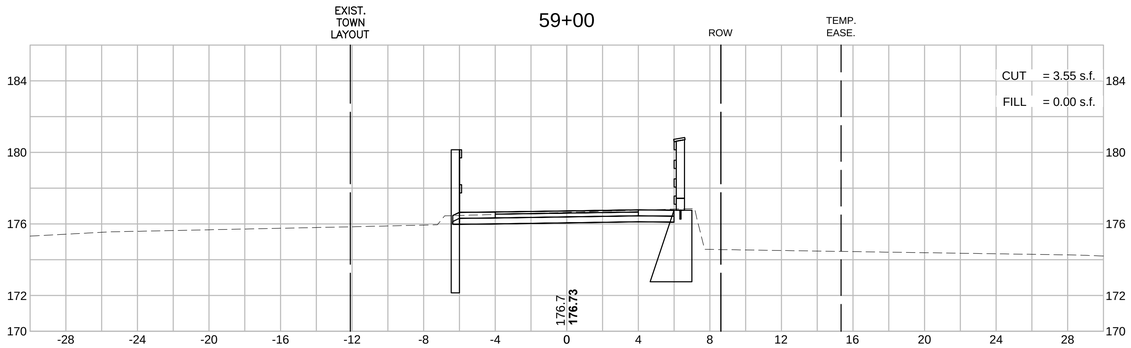
57+00



56+50

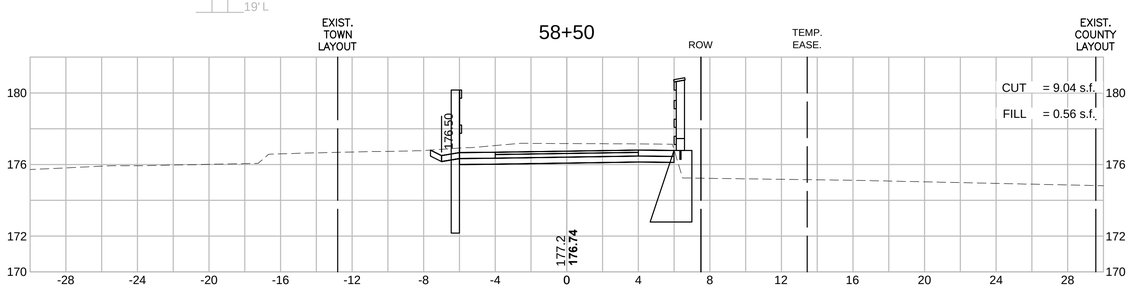


59+00

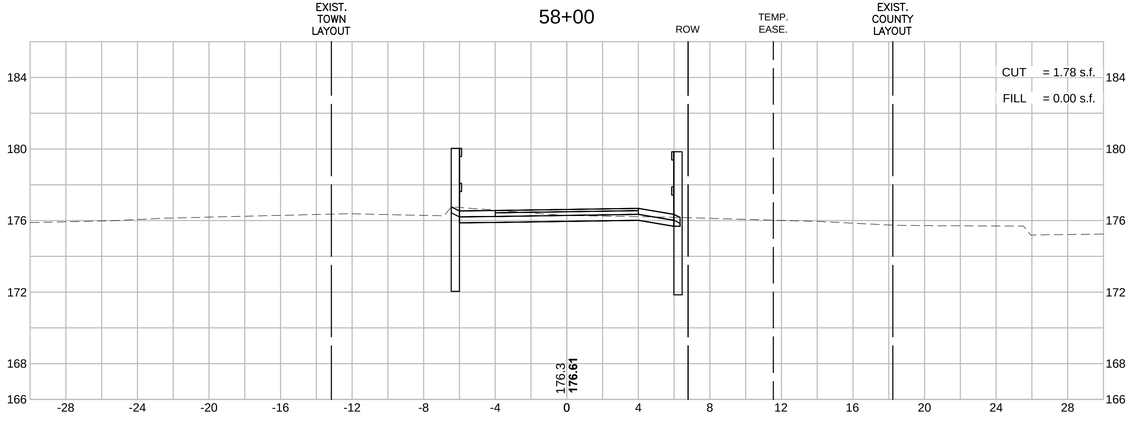


UP +56 19' L

58+50



58+00



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

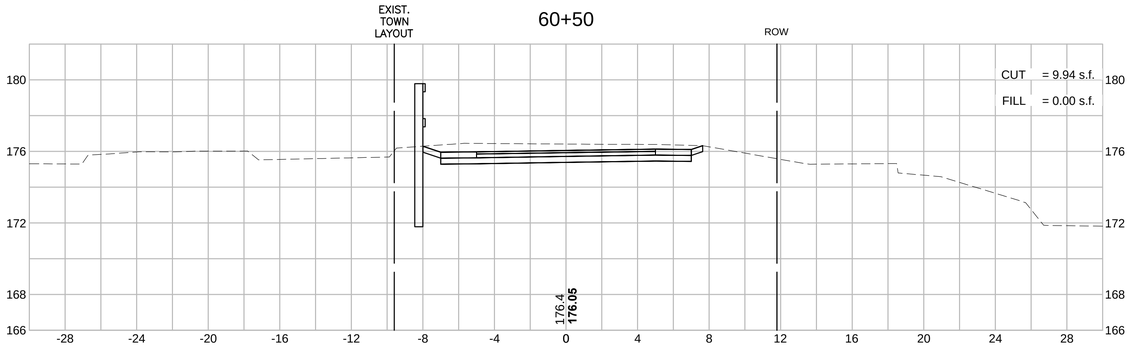
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	181	230
PROJECT FILE NO.	604531		

CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:14 AM

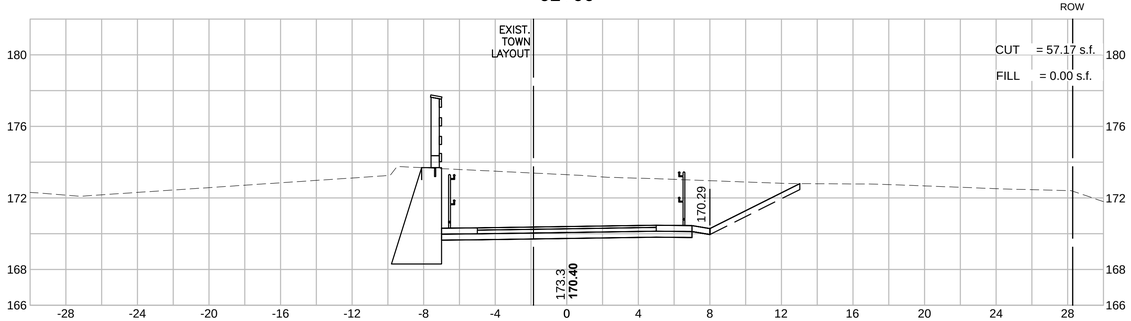
UP +41 17'L

60+50

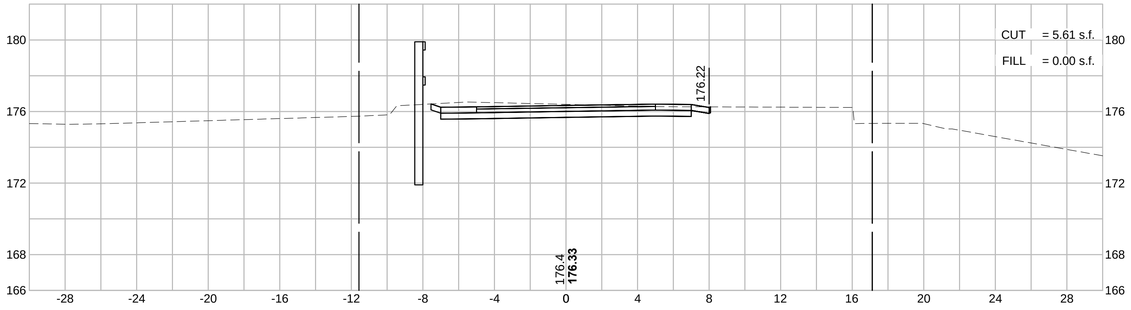


UP +23 13'L

62+00

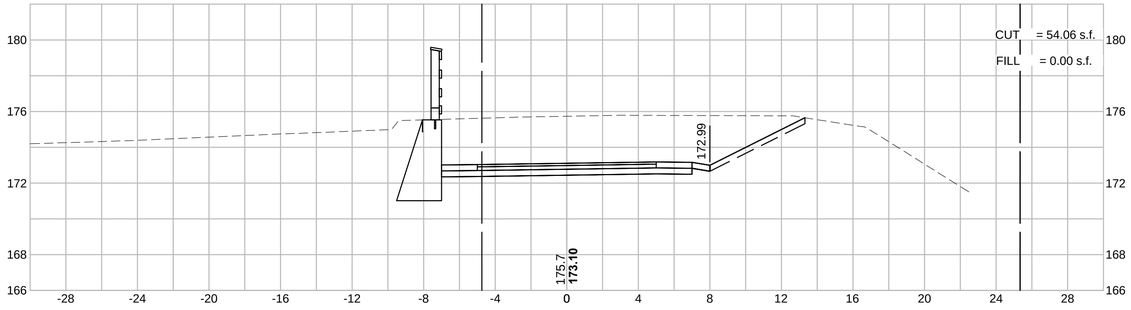


60+00



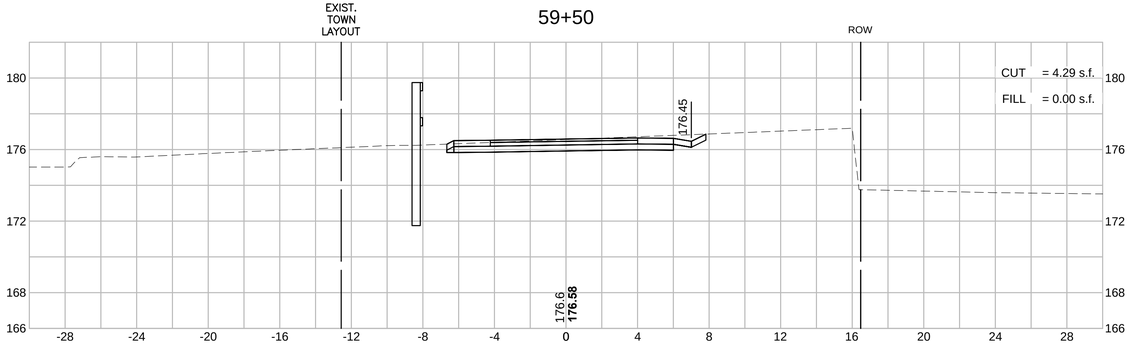
UPL +35 15'L

61+50

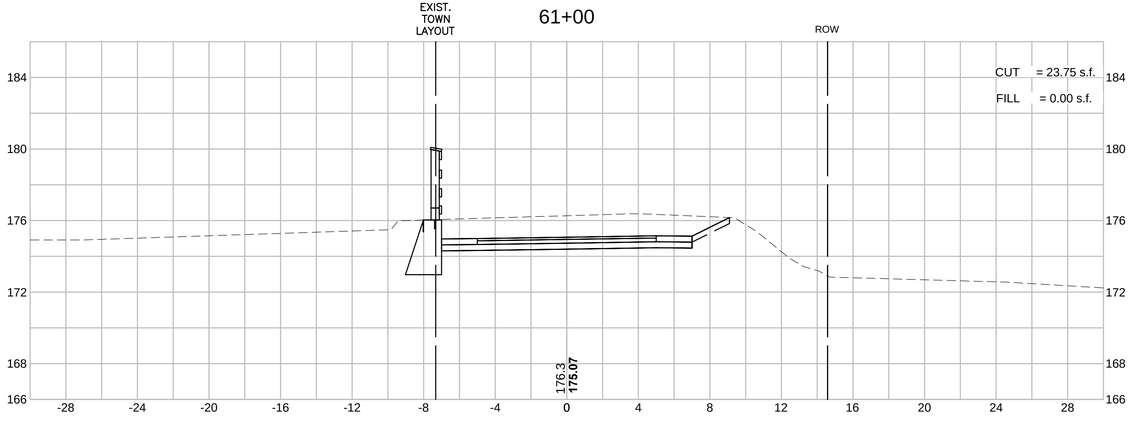


UPL +47 18'L

59+50



61+00



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

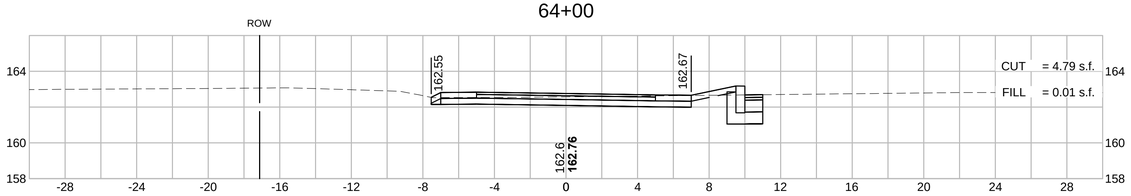
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	182	230
PROJECT FILE NO.	604531		

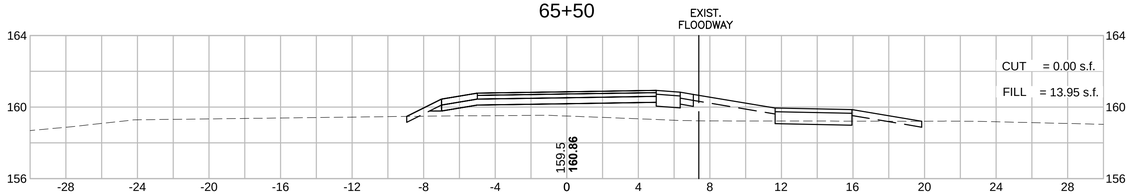
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:14 AM

64+00

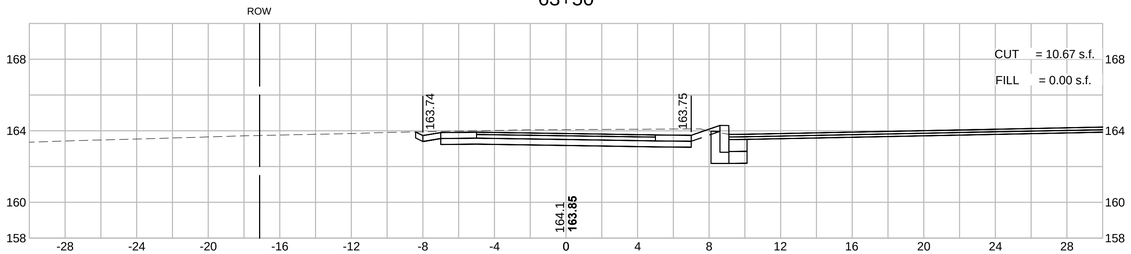


65+50

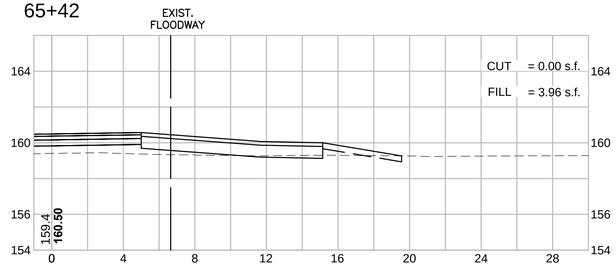


HYD
+42
15'L

63+50

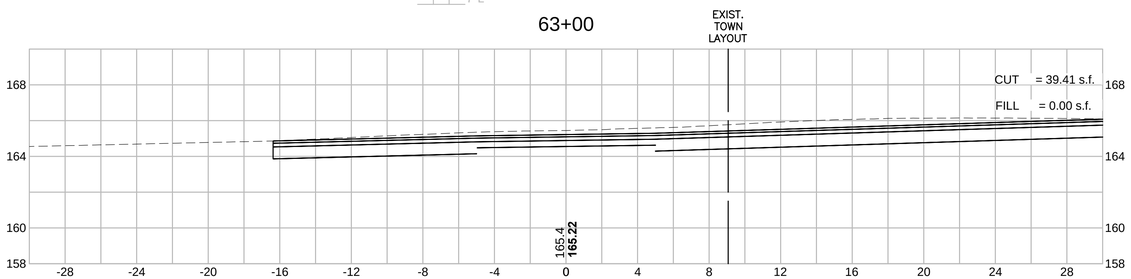


65+42

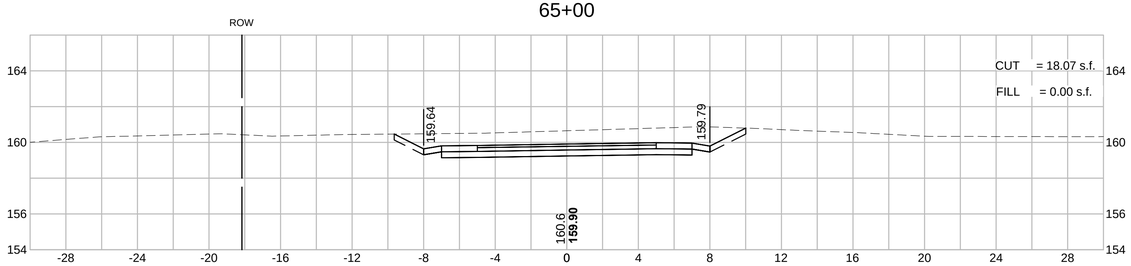


UPL
+11
7'L

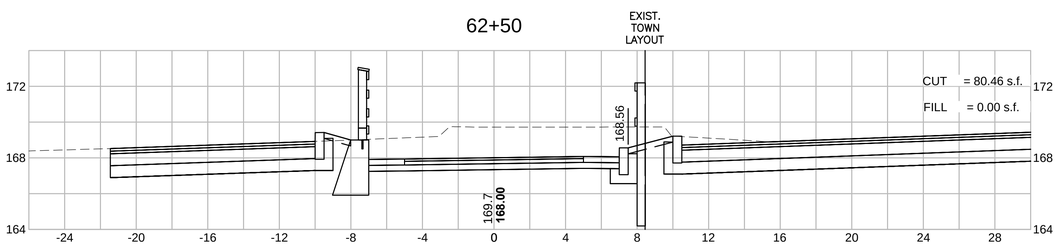
63+00



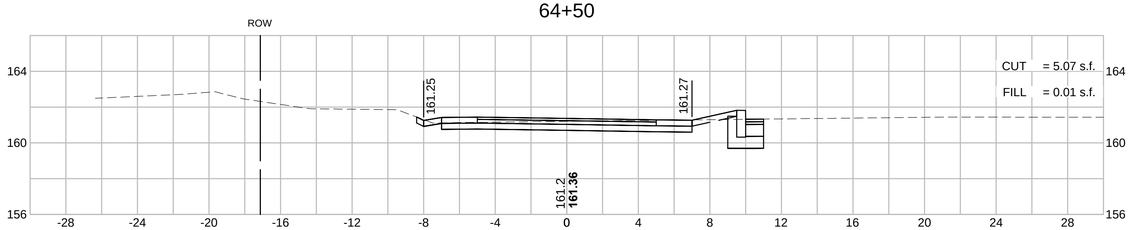
65+00



62+50



64+50



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

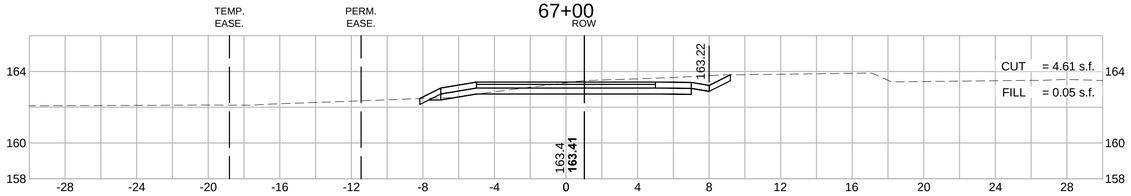
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	183	230
PROJECT FILE NO.	604531		

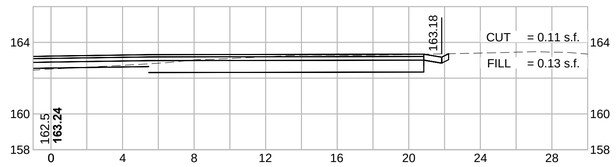
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:15 AM

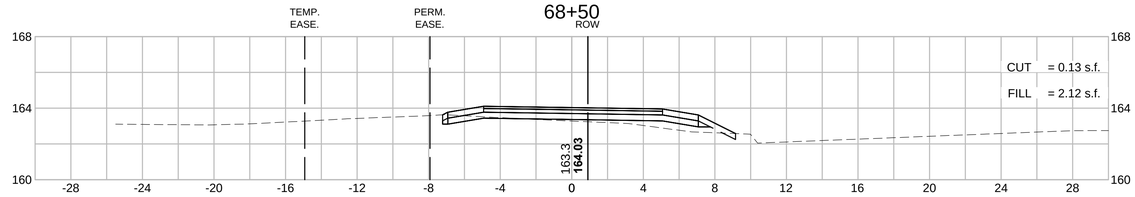
67+00



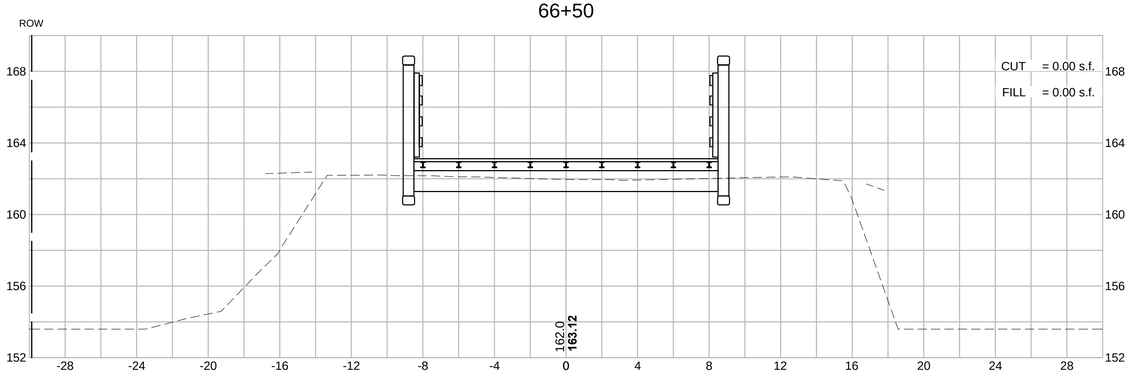
66+65



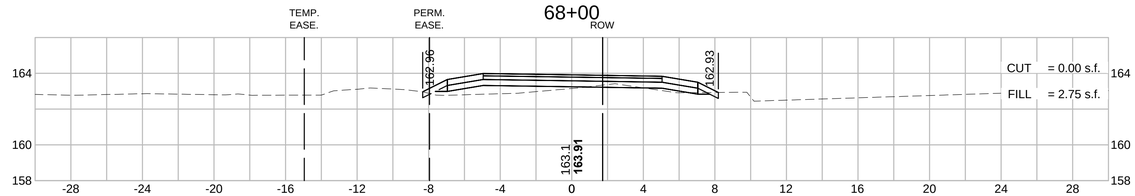
68+50



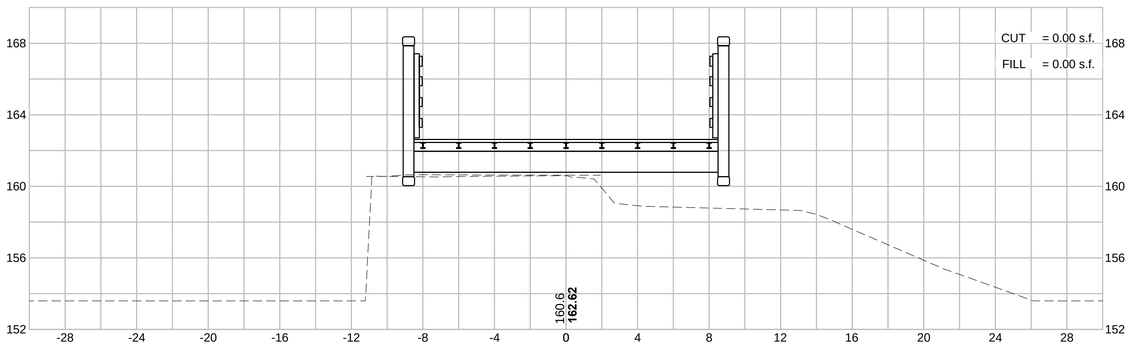
66+50



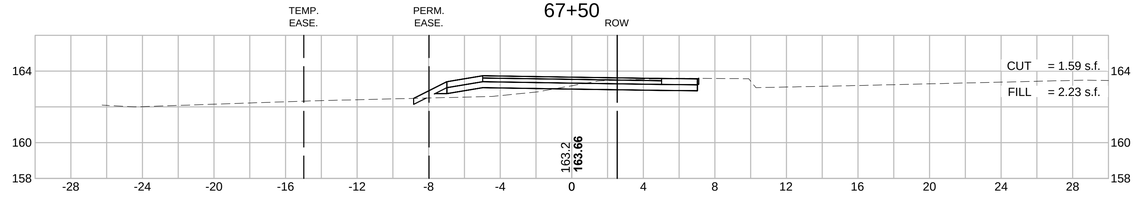
68+00



66+00



67+50



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

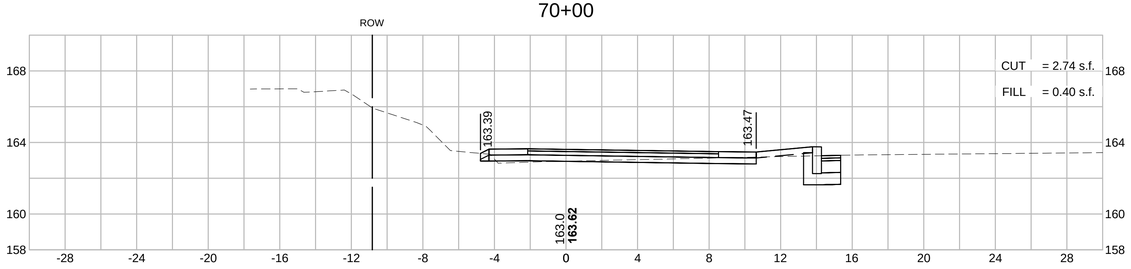
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	184	230
PROJECT FILE NO.	604531		

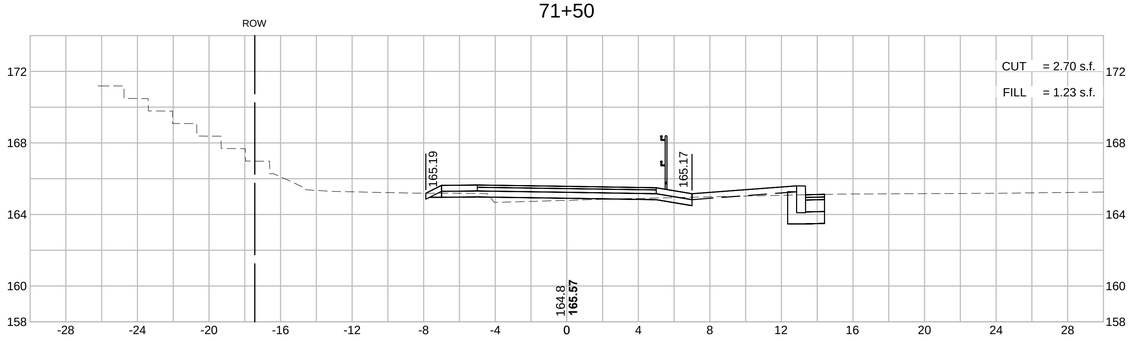
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:15 AM

70+00

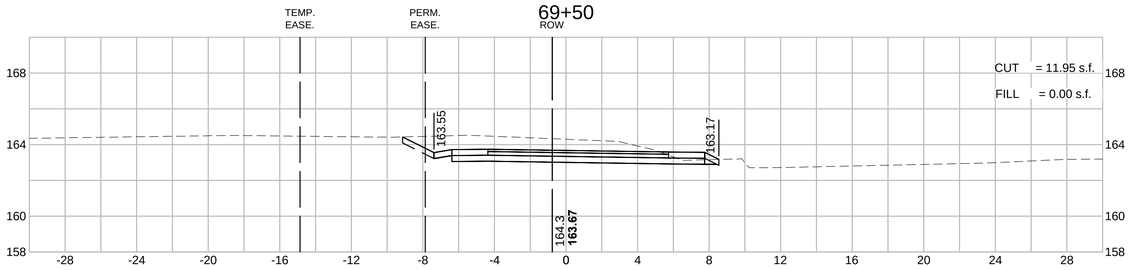


71+50



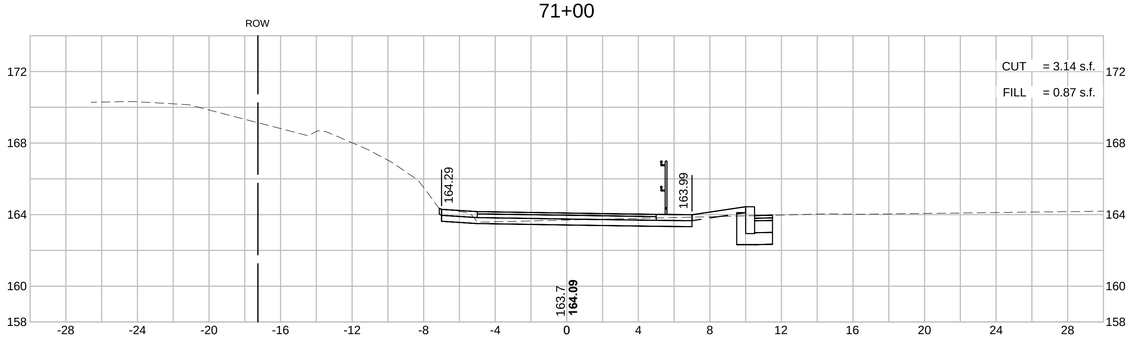
UPL
+67
8' R

69+50

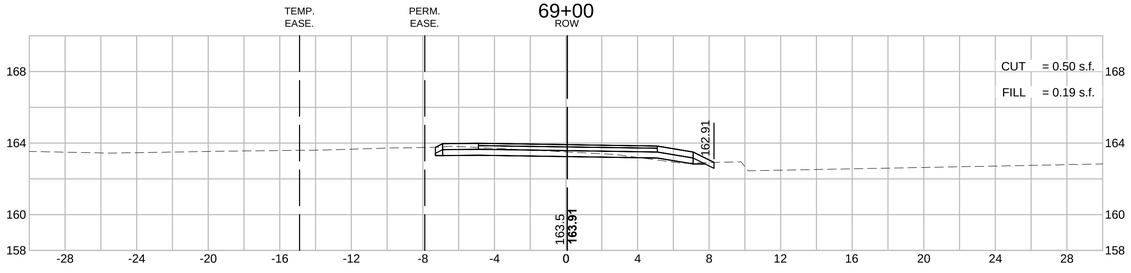


UPLP
+78
10' L

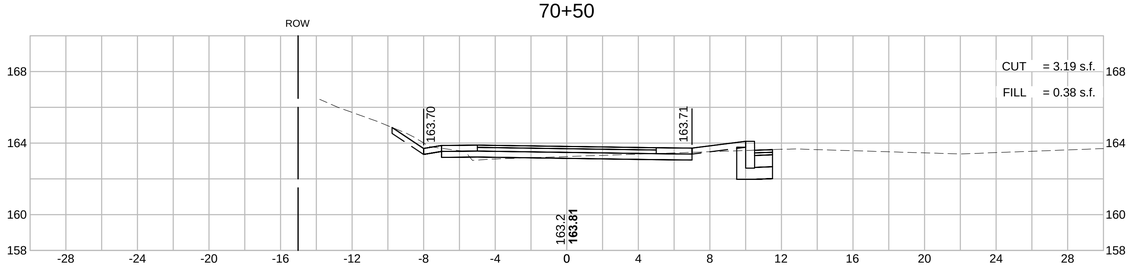
71+00



69+00



70+50



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

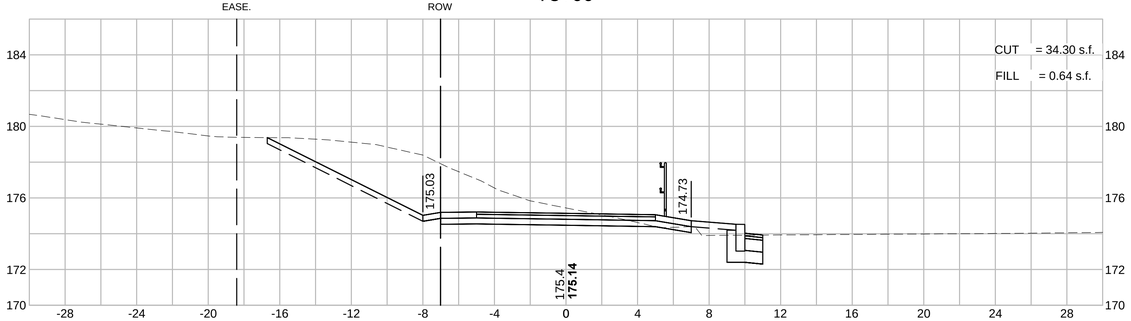
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	185	230
PROJECT FILE NO.	604531		

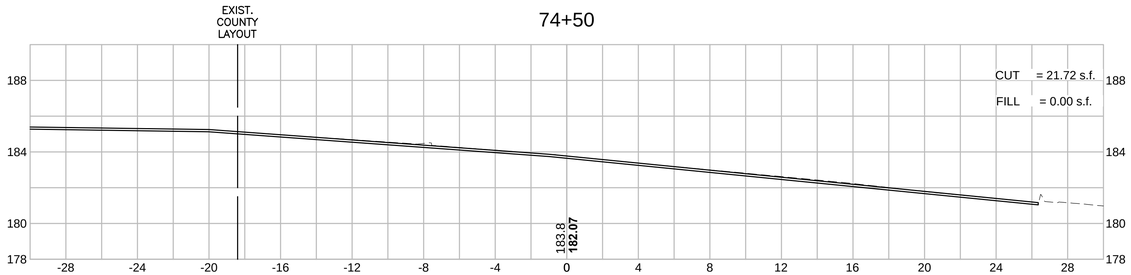
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:16 AM

73+00

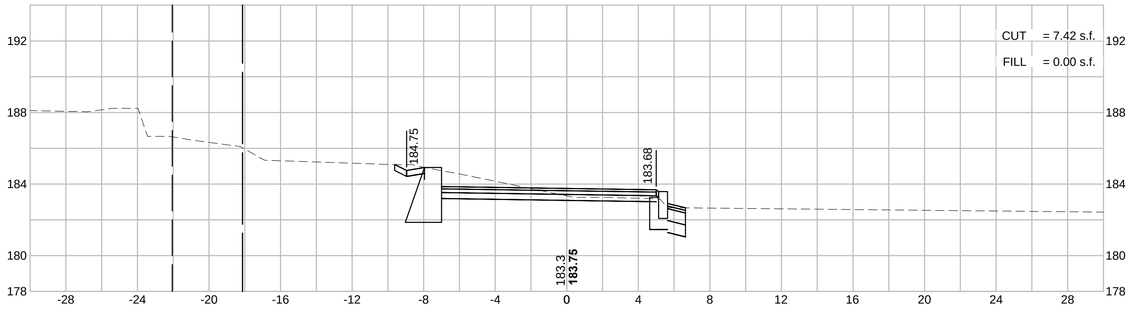


74+50

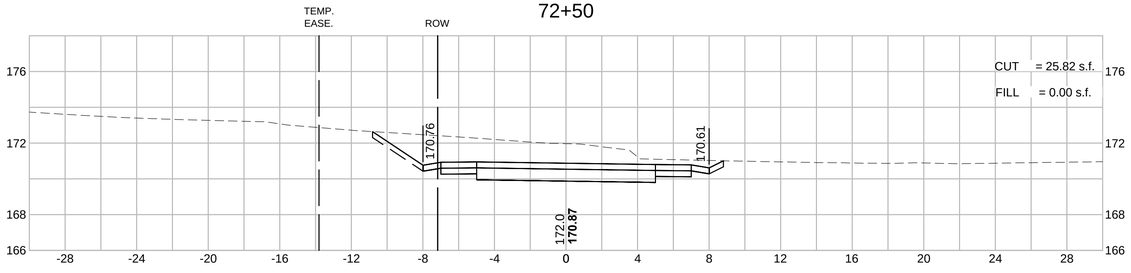


UPL +15 27' L
UP +15 25' L

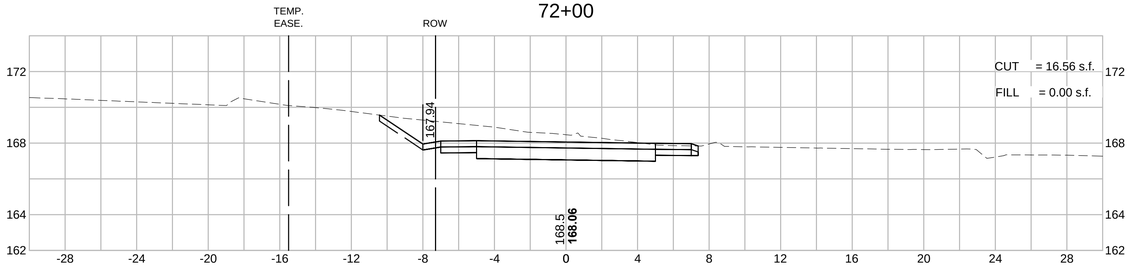
74+00



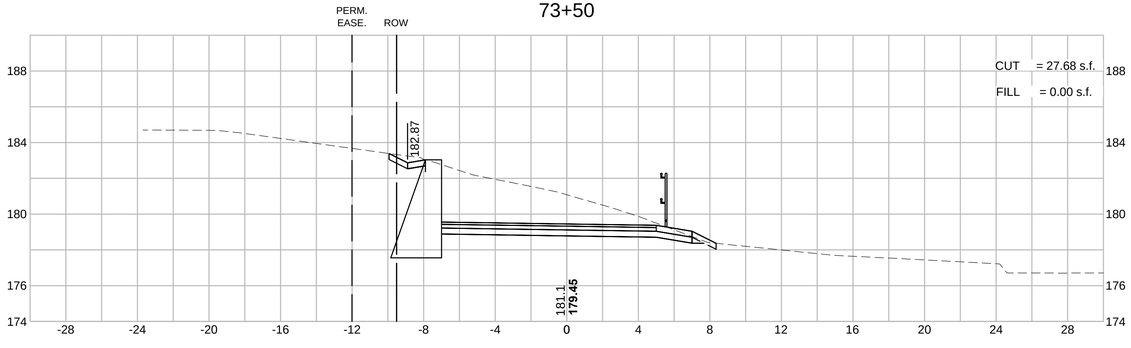
72+50



72+00



73+50



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

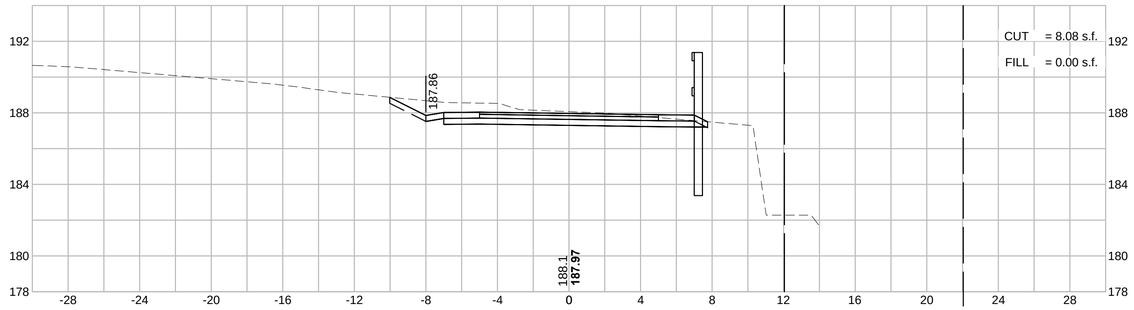
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	186	230
PROJECT FILE NO.	604531		

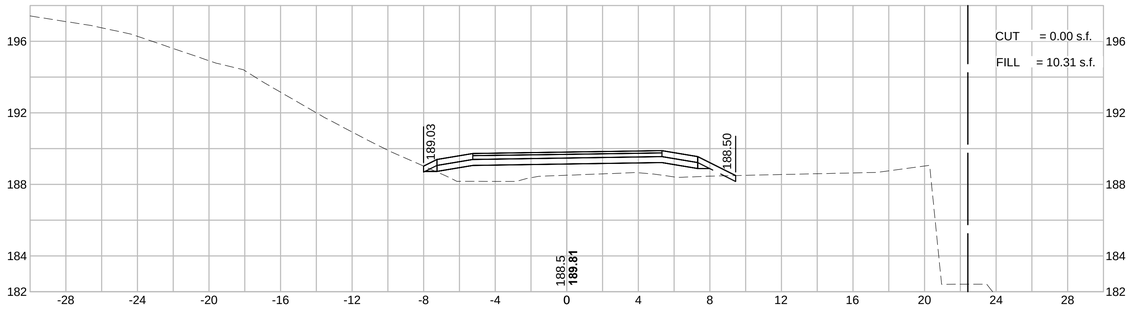
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:17 AM

76+00

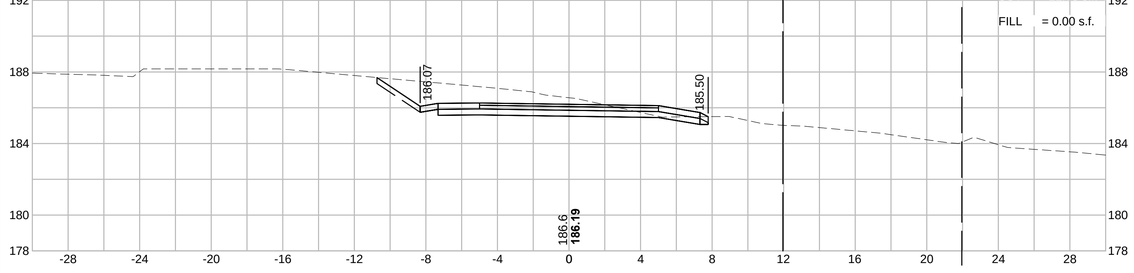


77+50

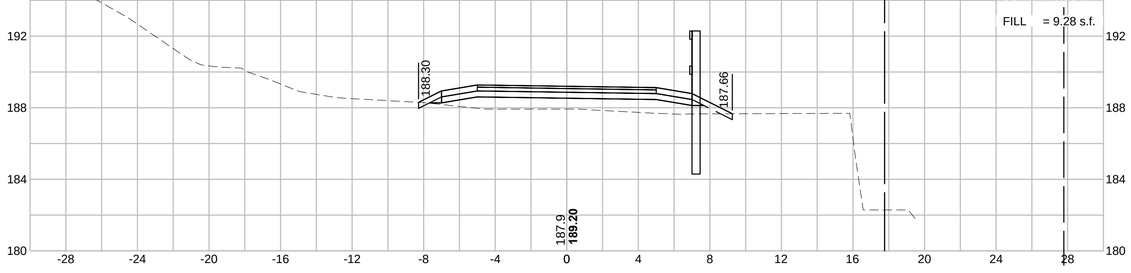


UP
+55
17° R

75+50

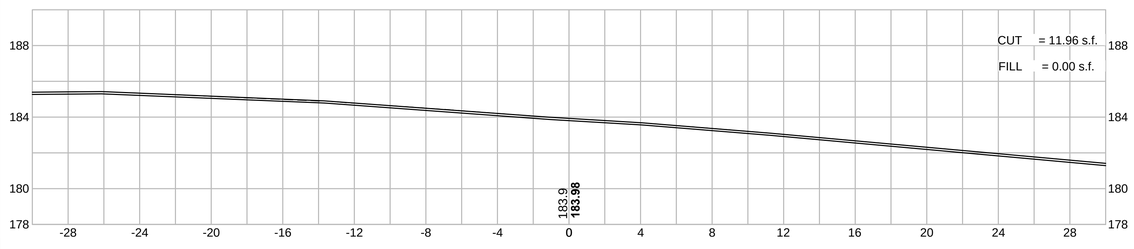


77+00

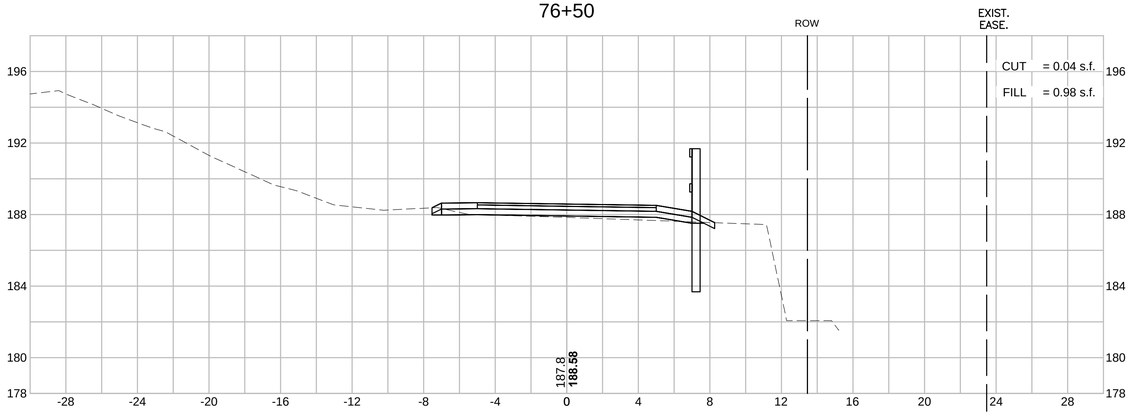


UP
+93
12° R

75+00



76+50



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

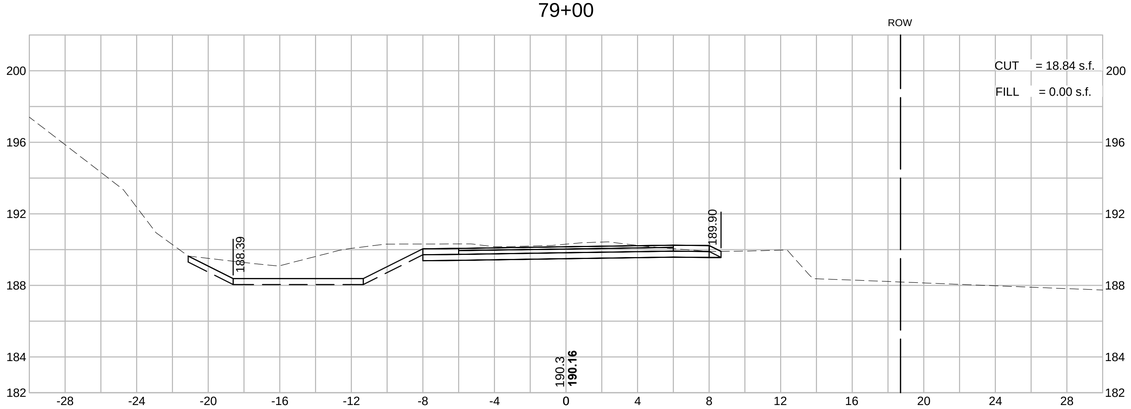
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	187	230
PROJECT FILE NO.	604531		

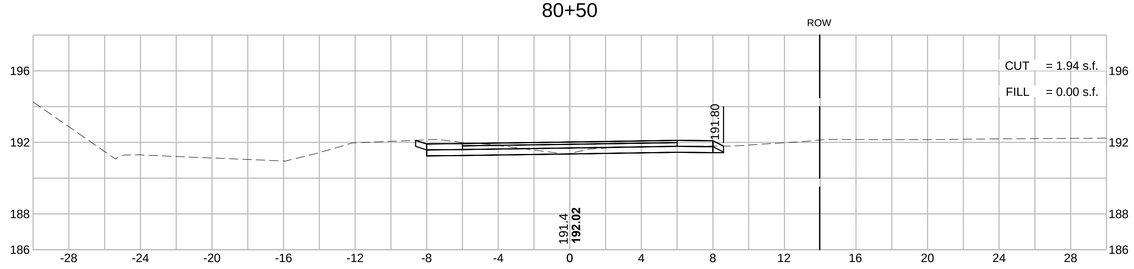
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:17 AM

79+00



80+50



78+50

80+00

78+00

79+50

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

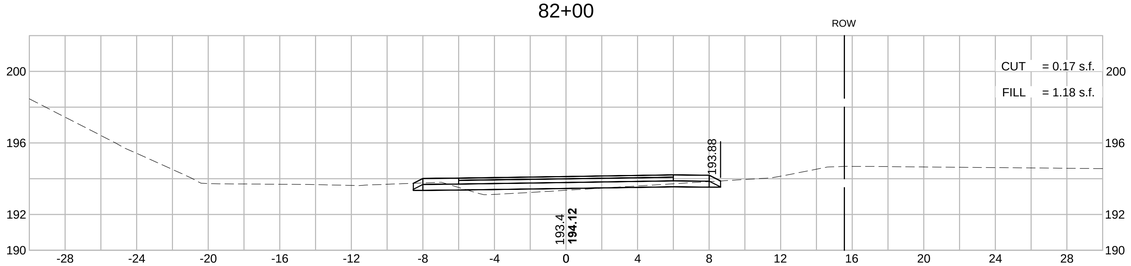
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	188	230
PROJECT FILE NO.	604531		

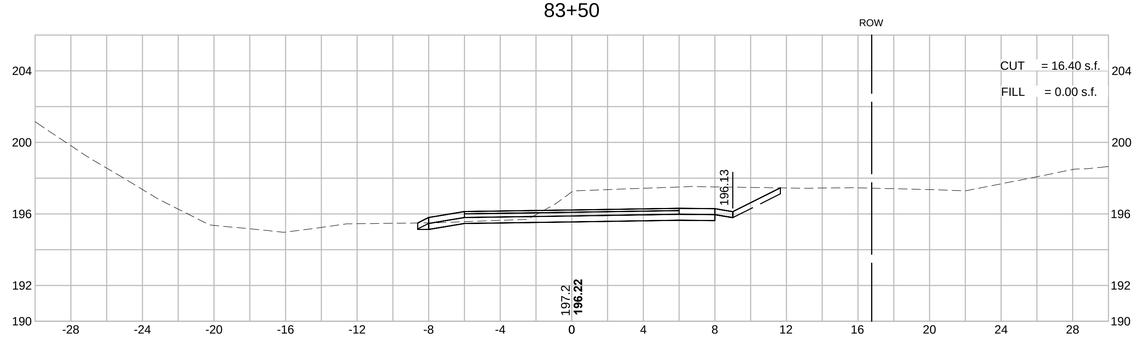
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:18 AM

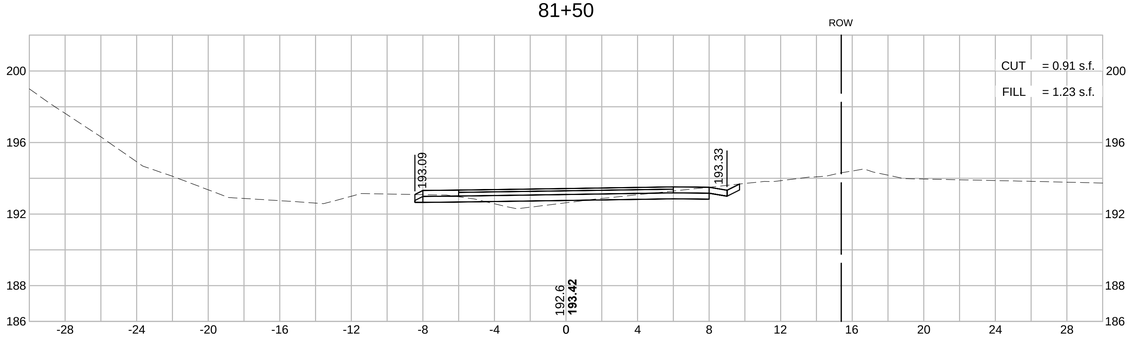
82+00



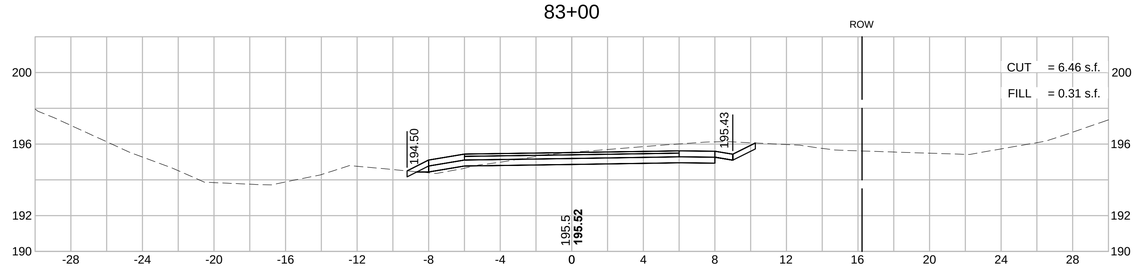
83+50



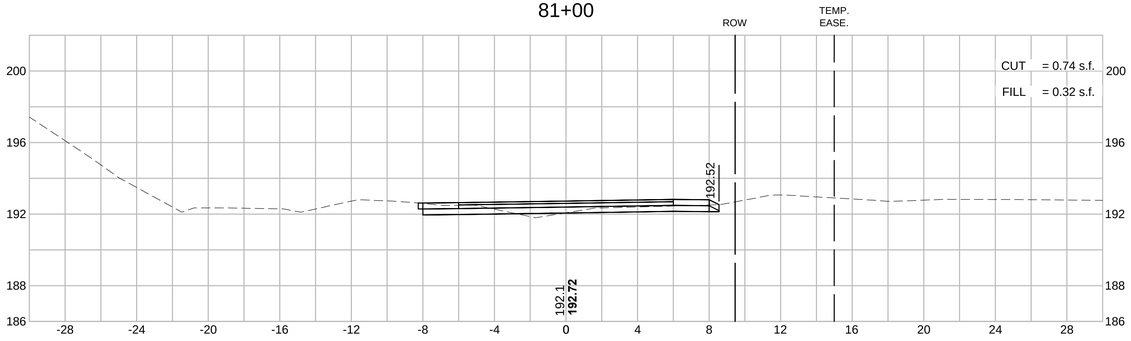
81+50



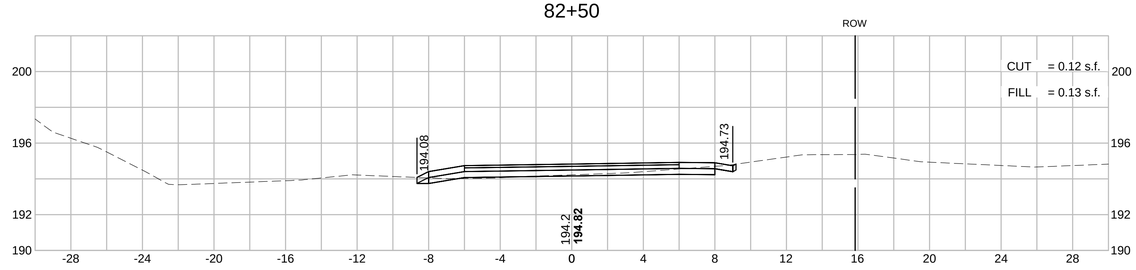
83+00



81+00



82+50



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

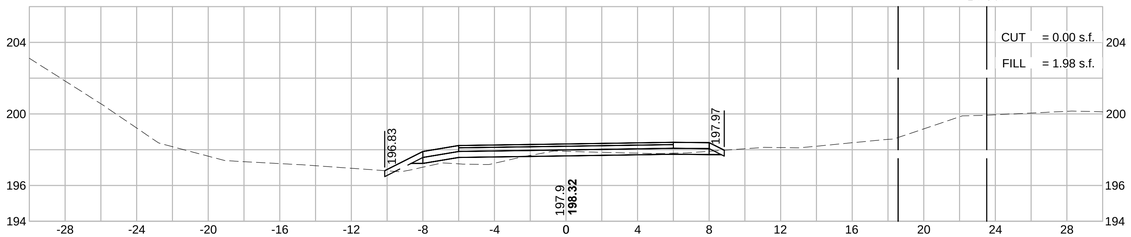
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	189	230
PROJECT FILE NO.	604531		

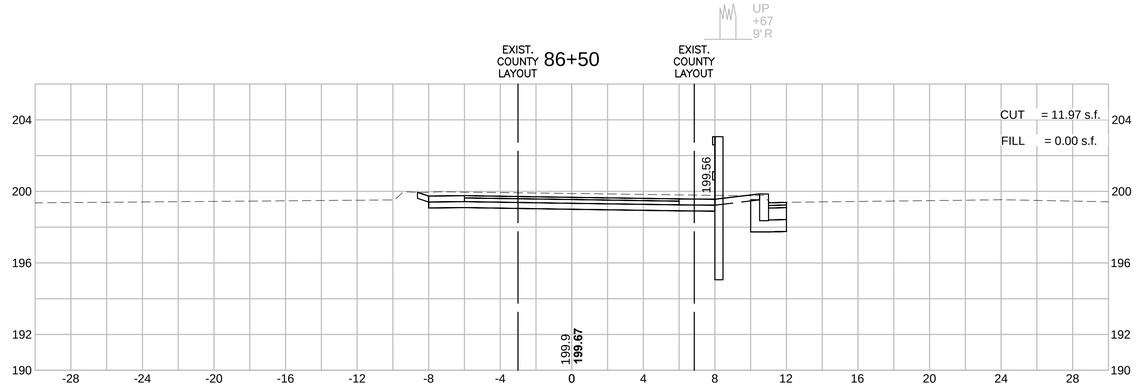
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:18 AM

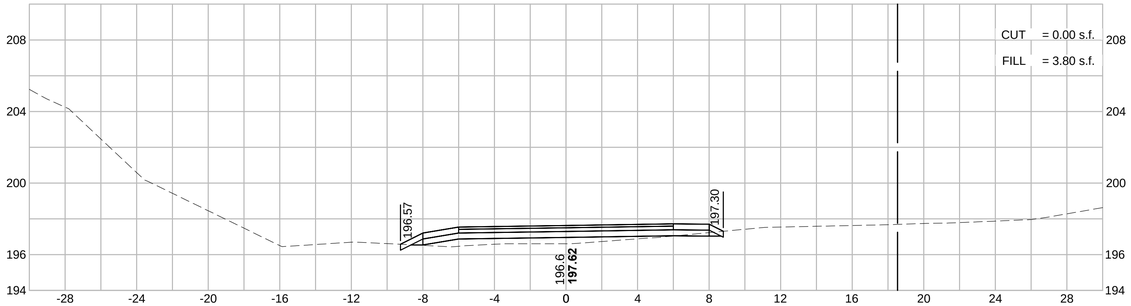
85+00



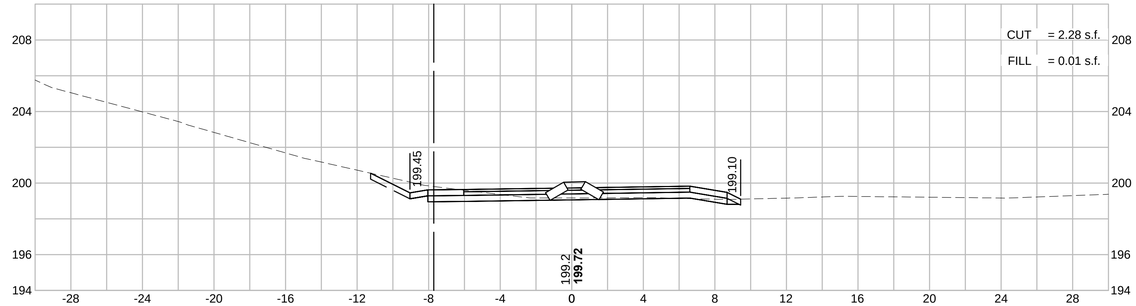
86+50



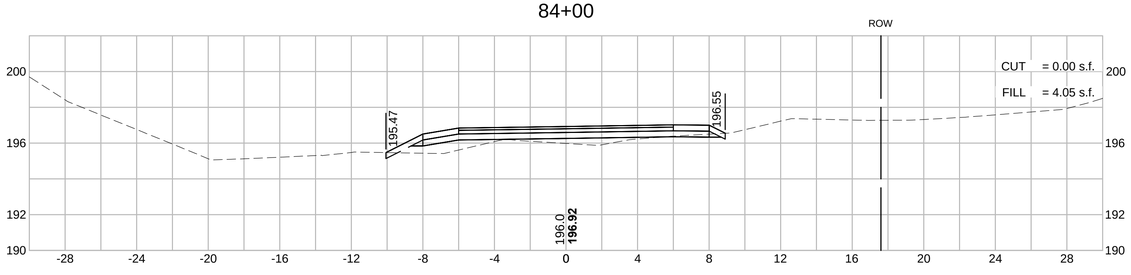
84+50



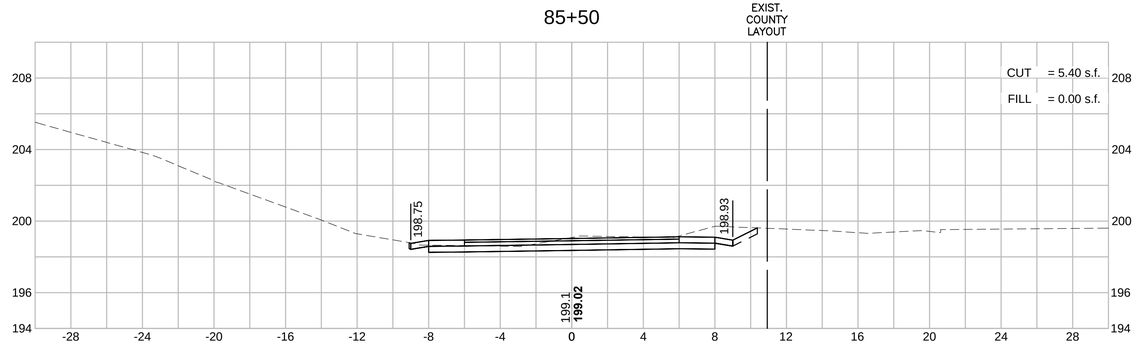
86+00

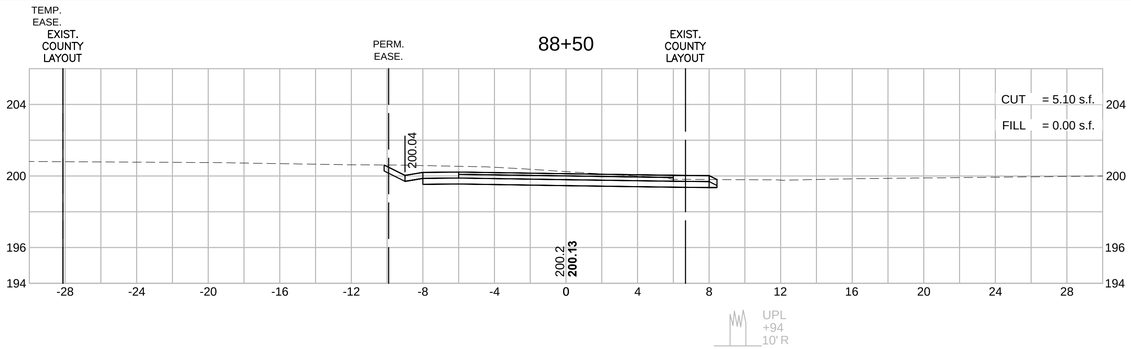


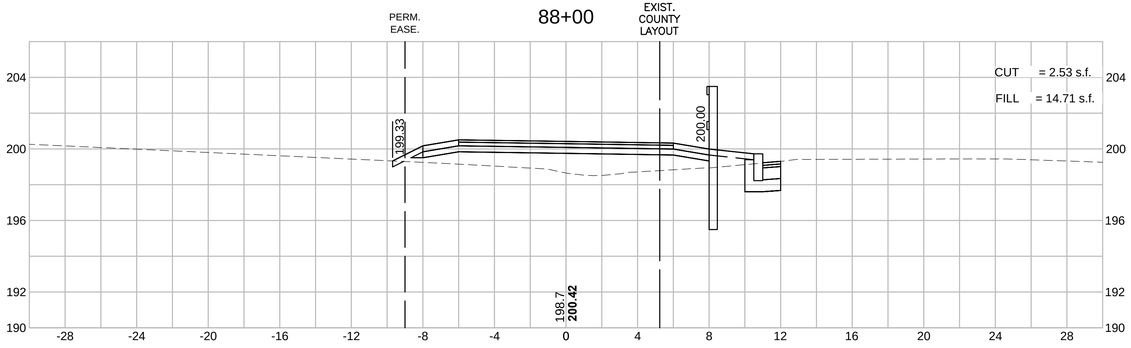
84+00

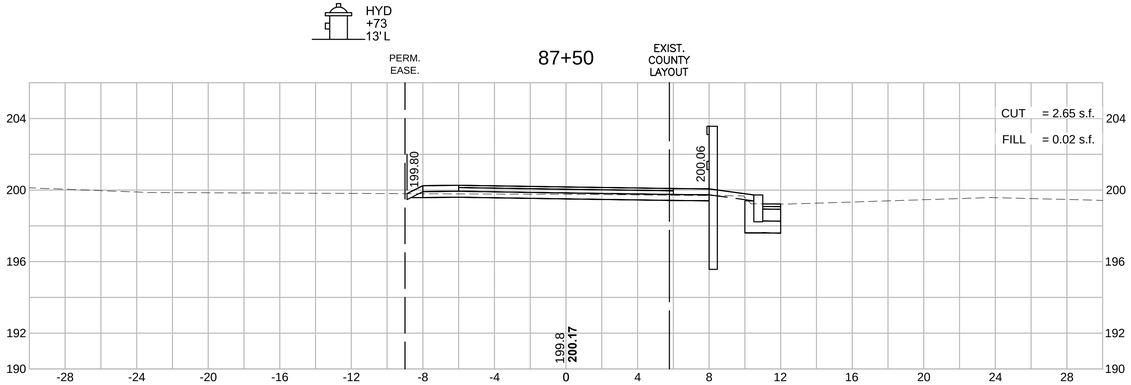


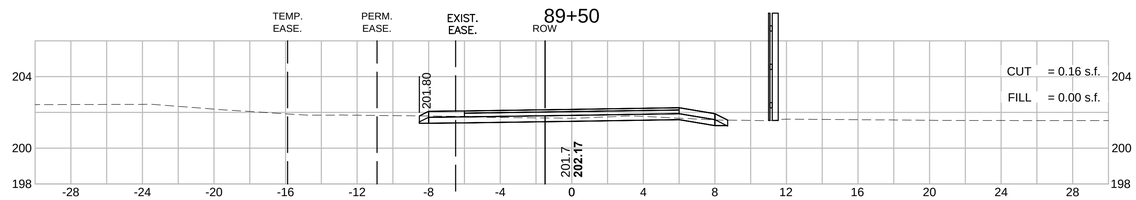
85+50

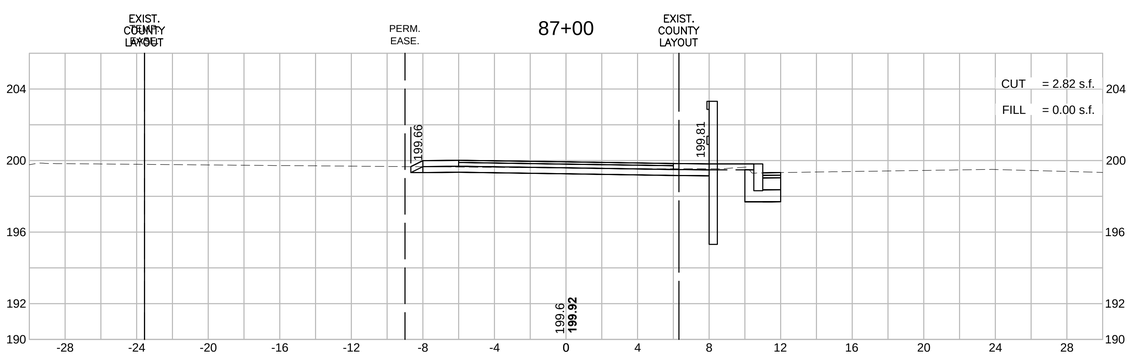


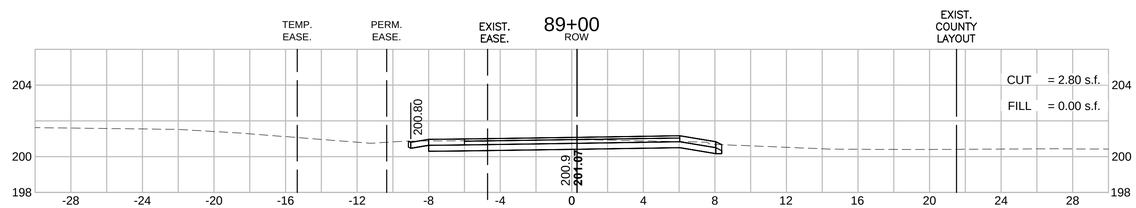


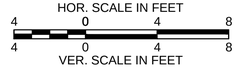












MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	190	230
PROJECT FILE NO.	604531		

CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:19 AM

HOR. SCALE IN FEET

4 0 4 8

4 0 4 8

VER. SCALE IN FEET

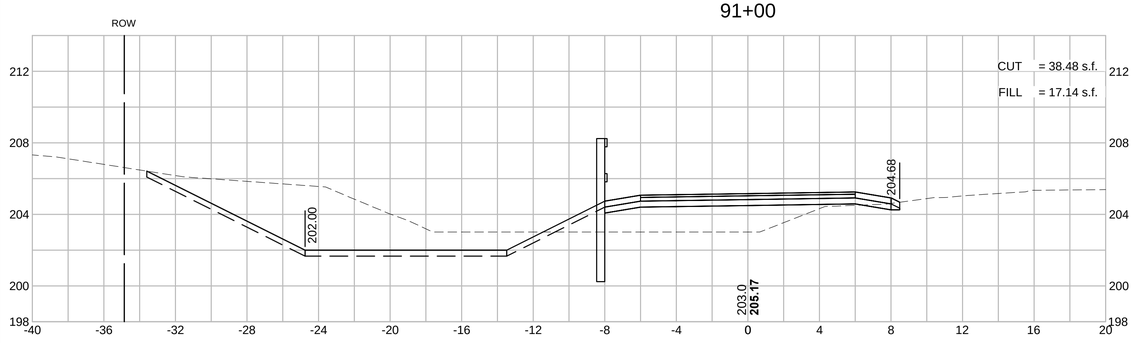
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	191	230
PROJECT FILE NO.	604531		

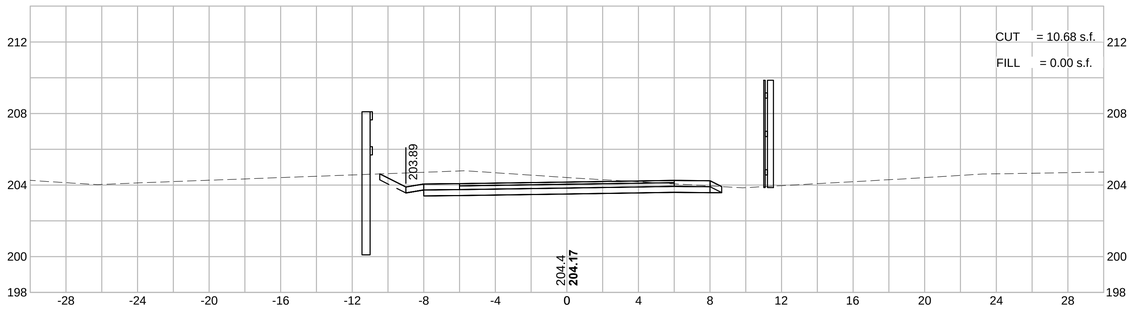
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:20 AM

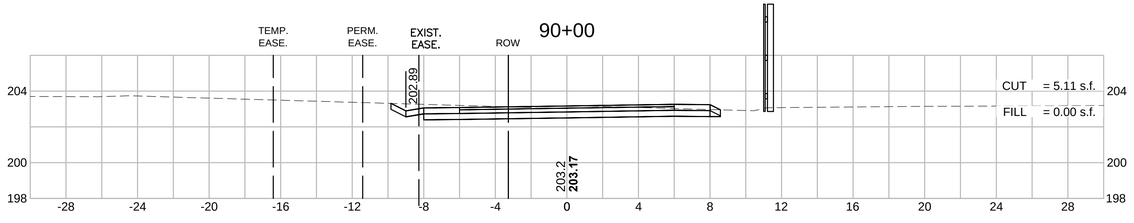
91+00



90+50



90+00



HOR. SCALE IN FEET

4 0 4 8

4 0 4 8

VER. SCALE IN FEET

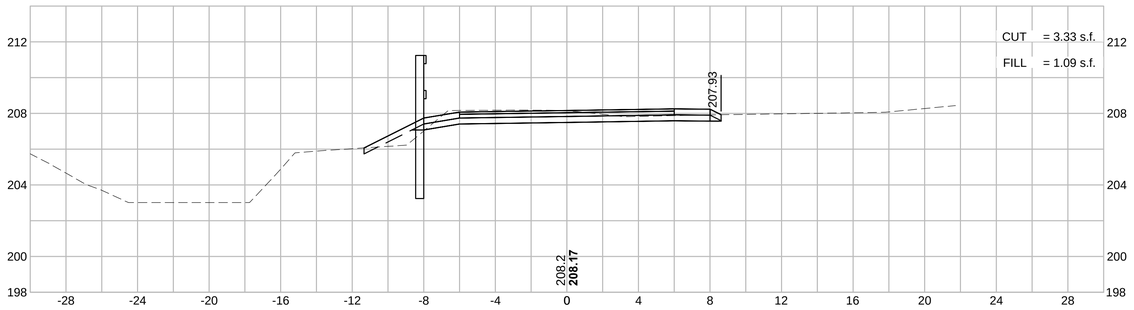
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	192	230
PROJECT FILE NO.	604531		

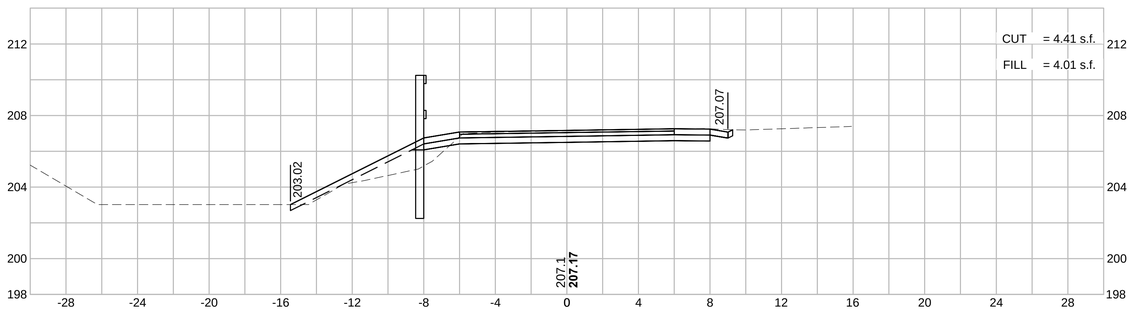
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:20 AM

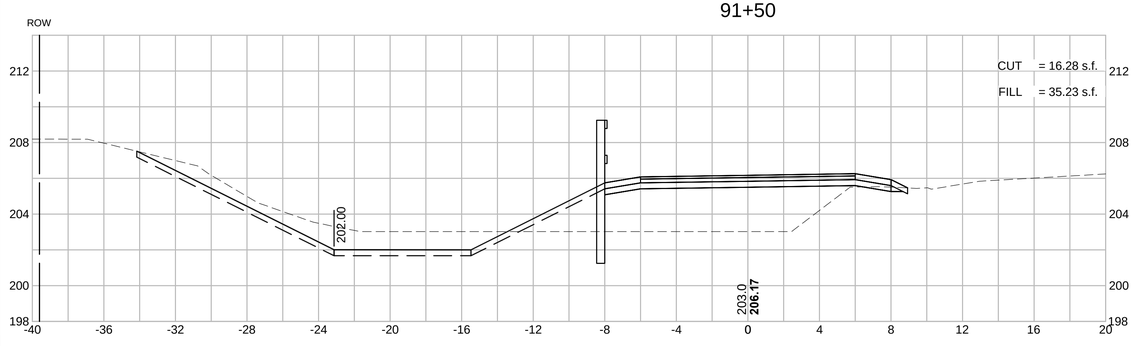
92+50



92+00



91+50



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

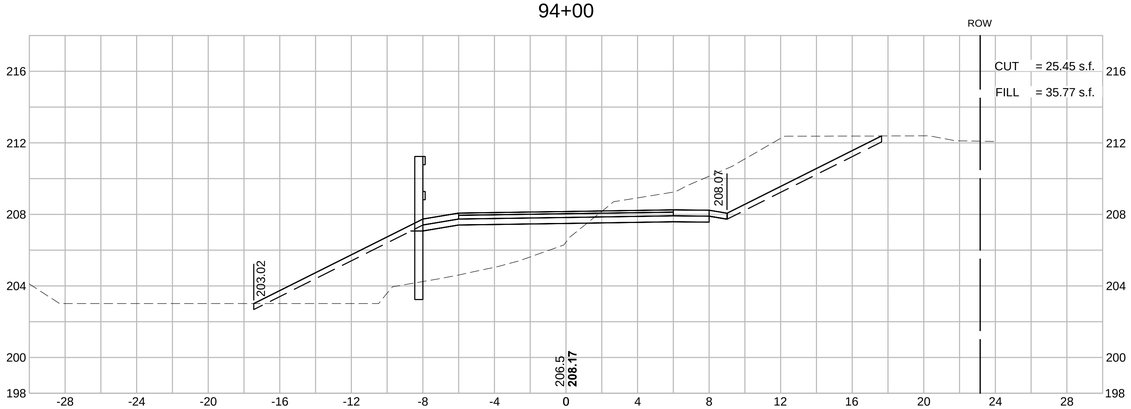
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	193	230
PROJECT FILE NO.	604531		

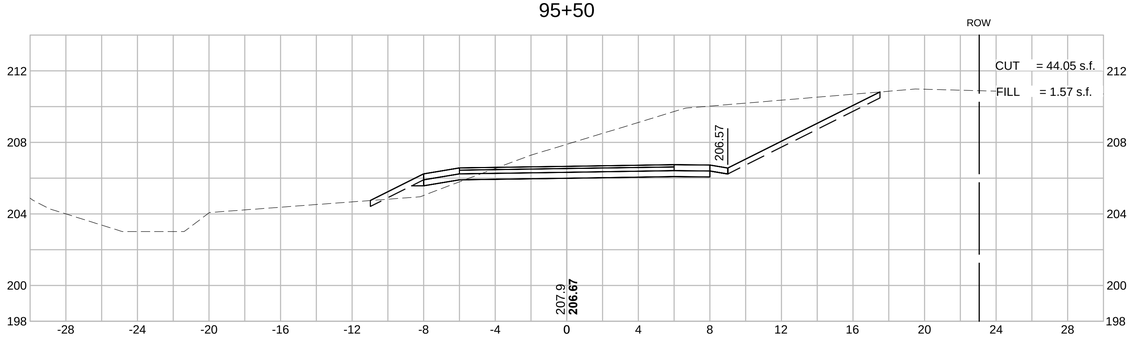
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:21 AM

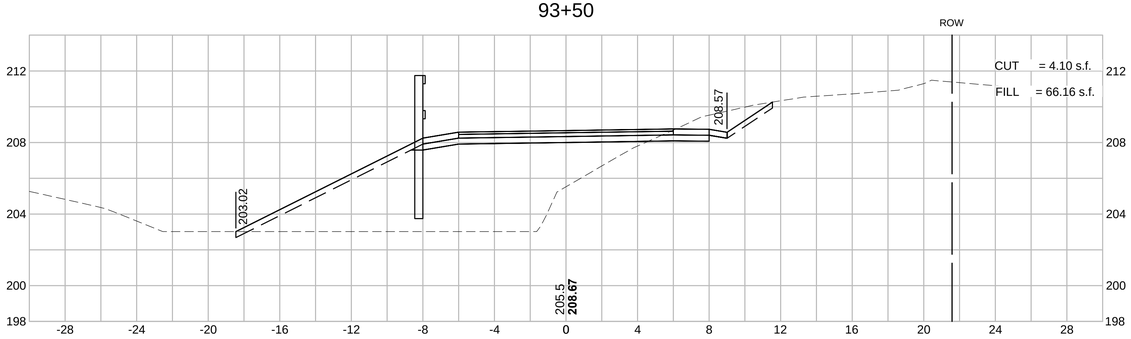
94+00



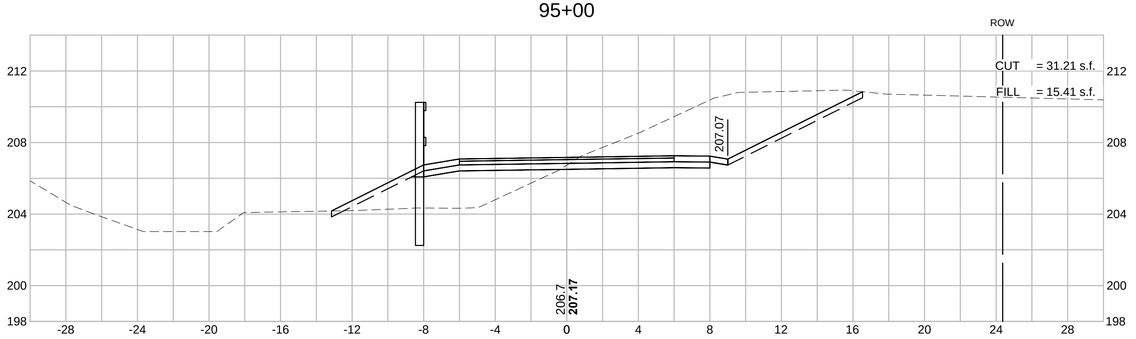
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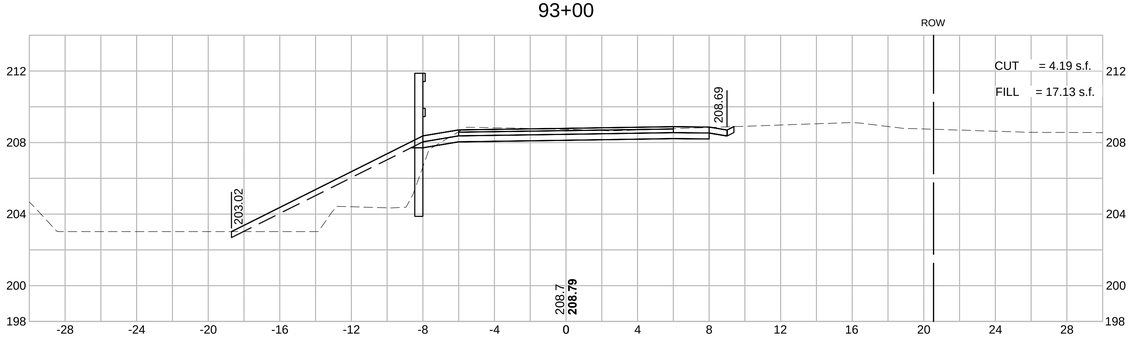
93+50



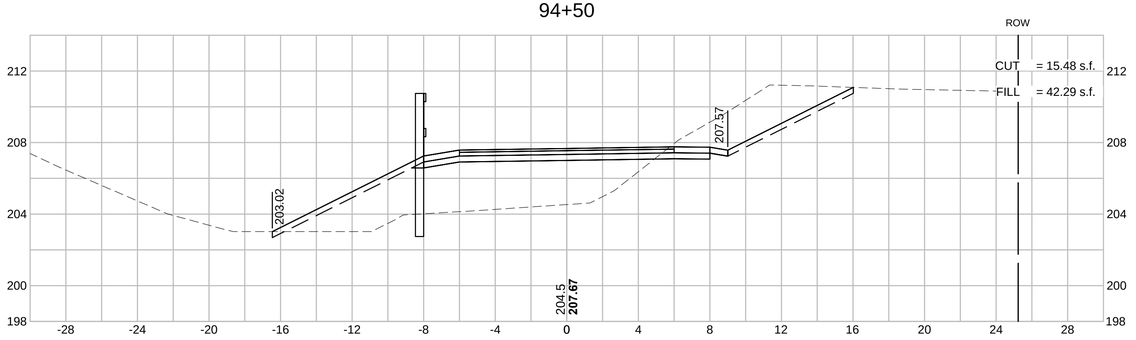
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93+00



94+50



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

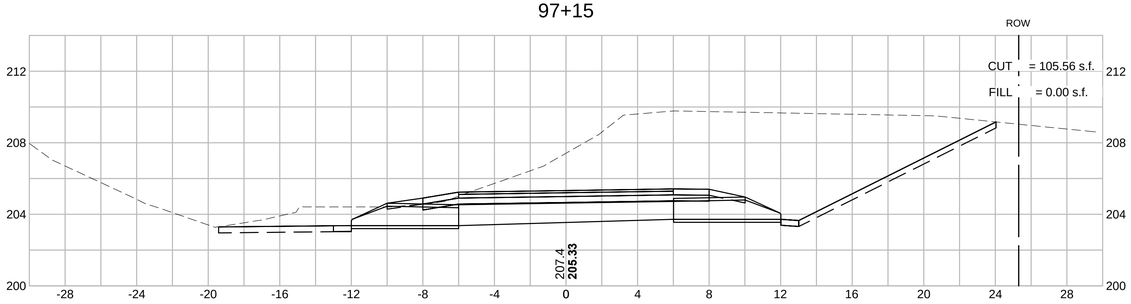
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	194	230
PROJECT FILE NO.	604531		

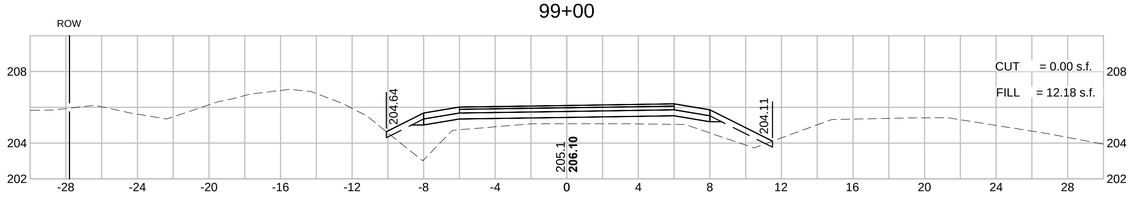
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:21 AM

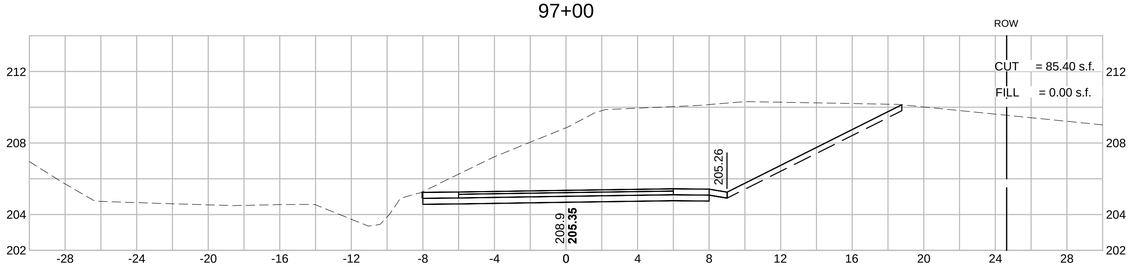
97+15



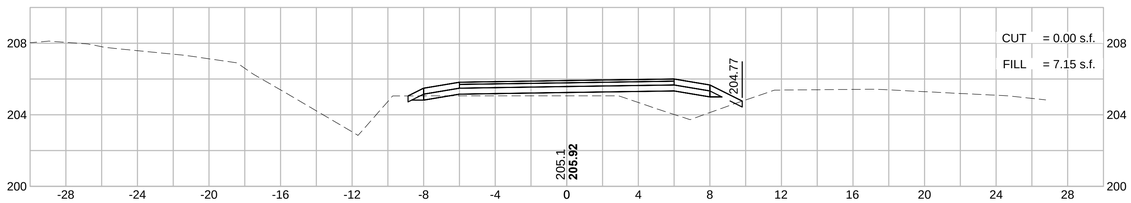
99+00



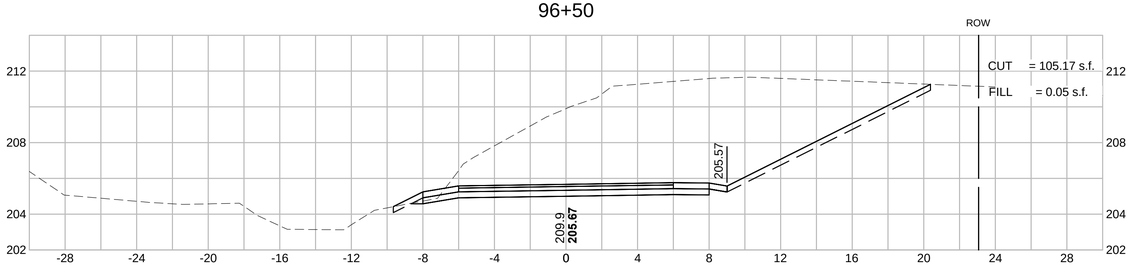
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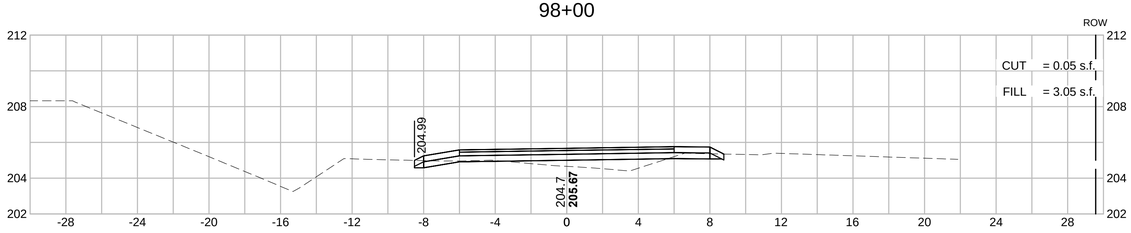
98+50



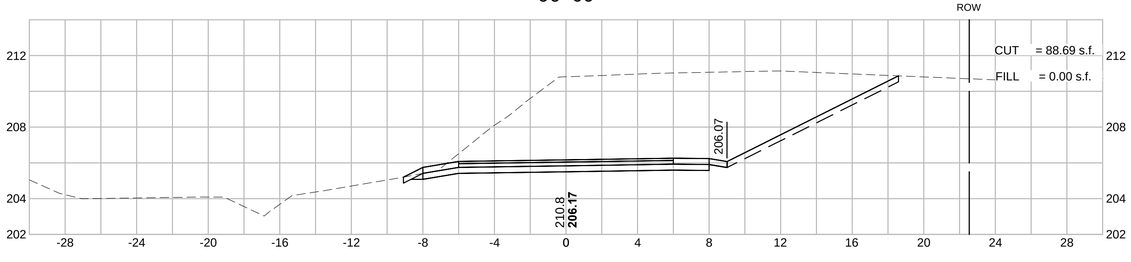
96+50



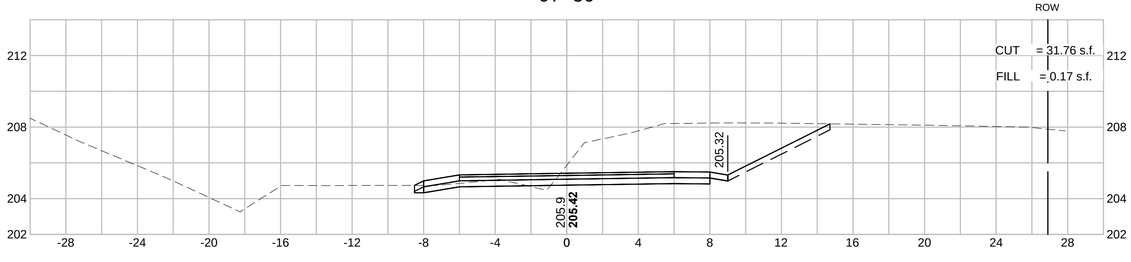
98+00



96+00



97+50



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

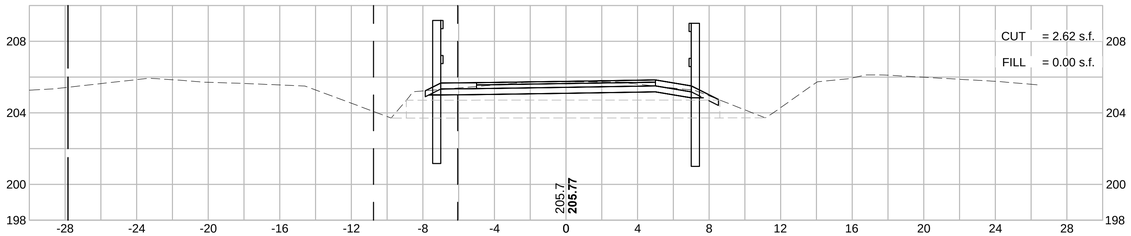
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	195	230
PROJECT FILE NO.	604531		

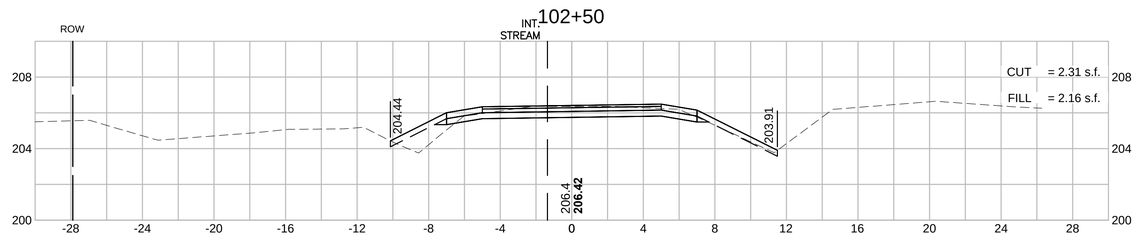
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:22 AM

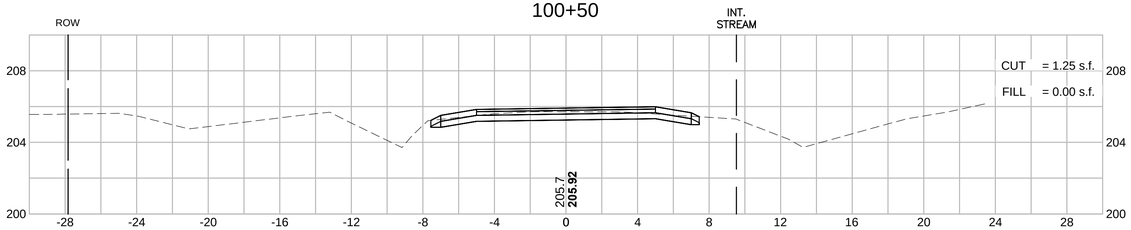
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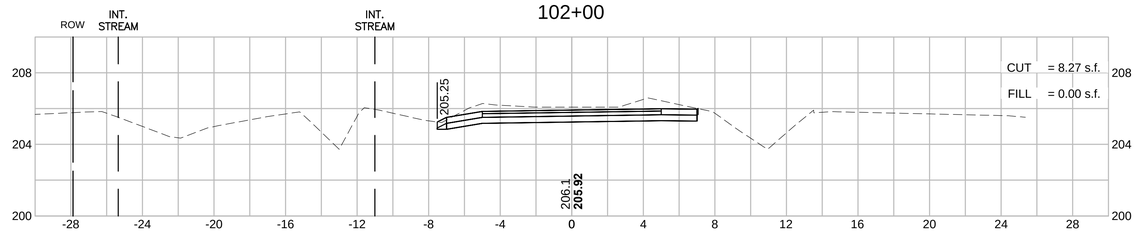
102+50



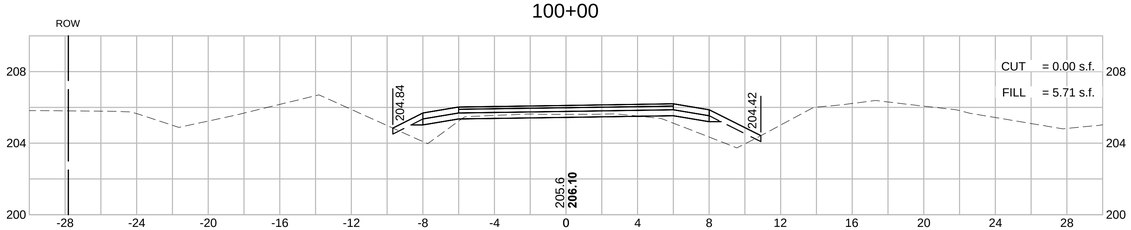
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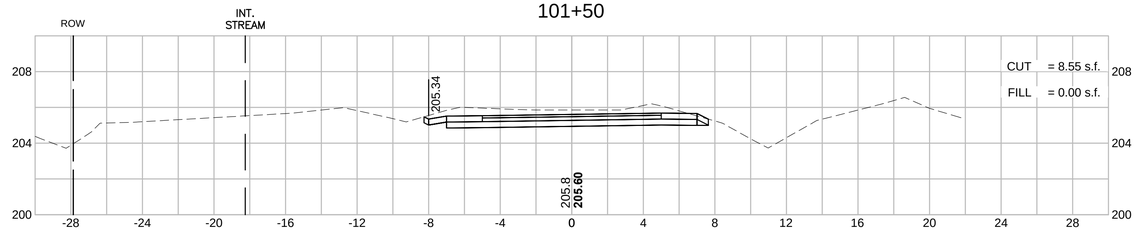
102+00



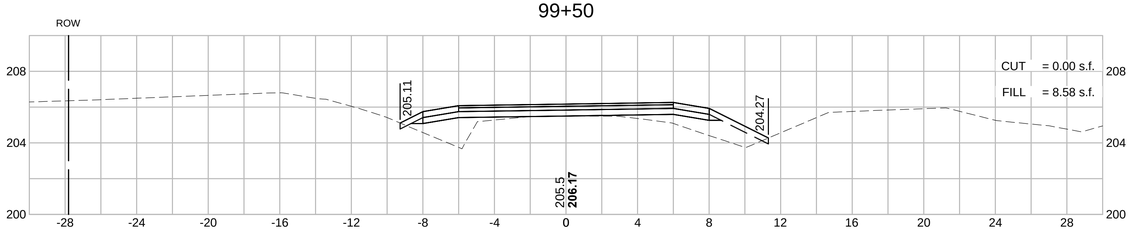
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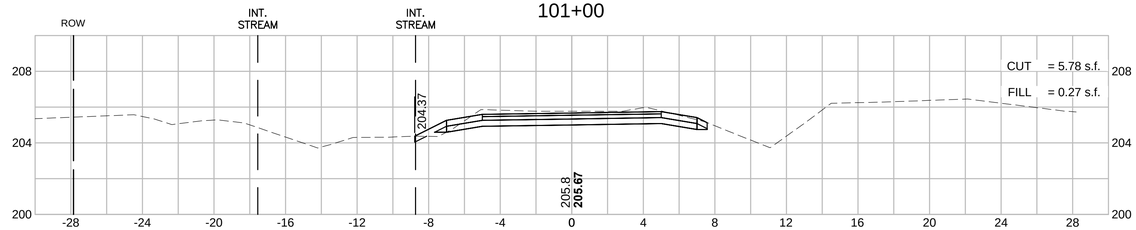
101+50



99+50



101+00



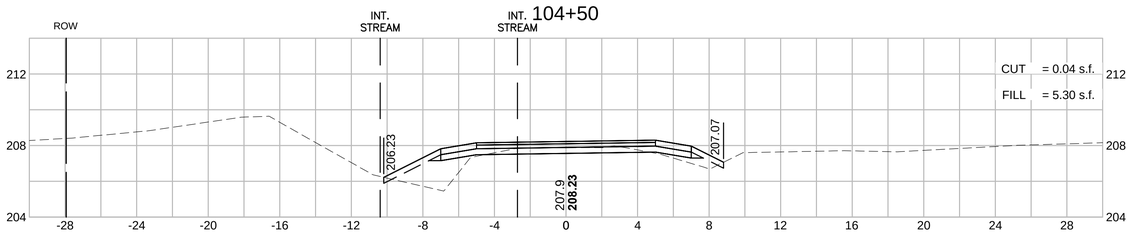
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

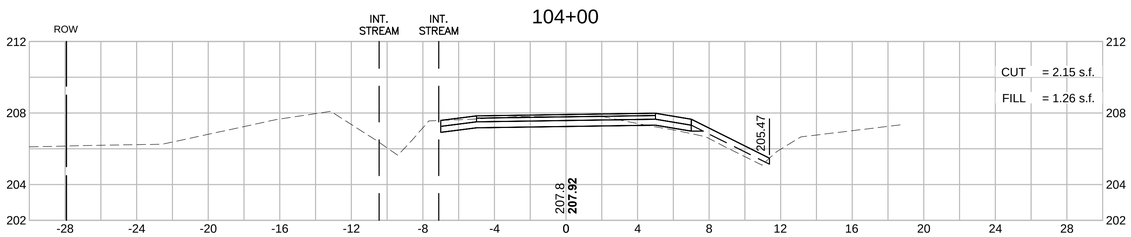
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

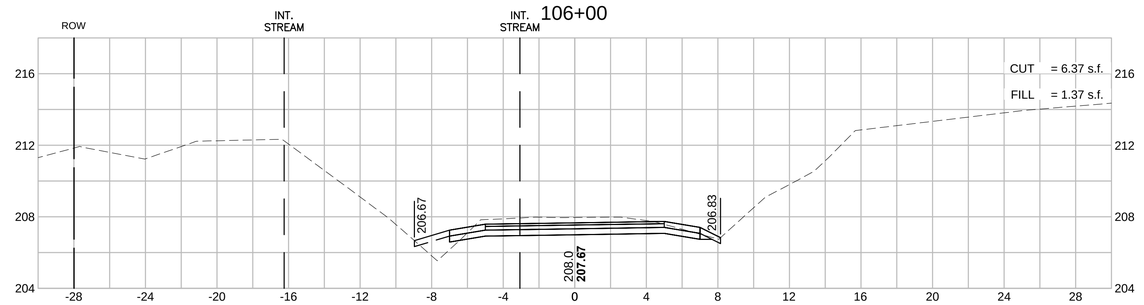
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	196	230
PROJECT FILE NO.	604531		

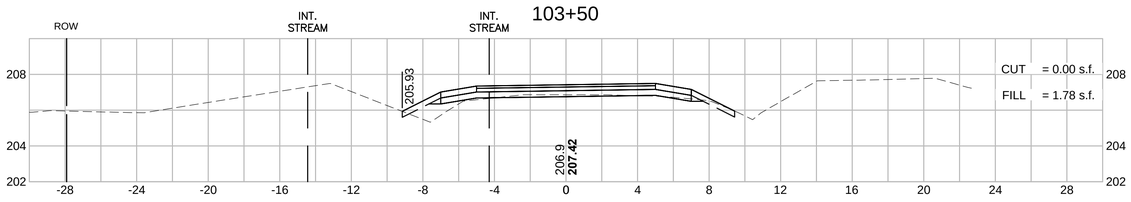
CROSS SECTIONS

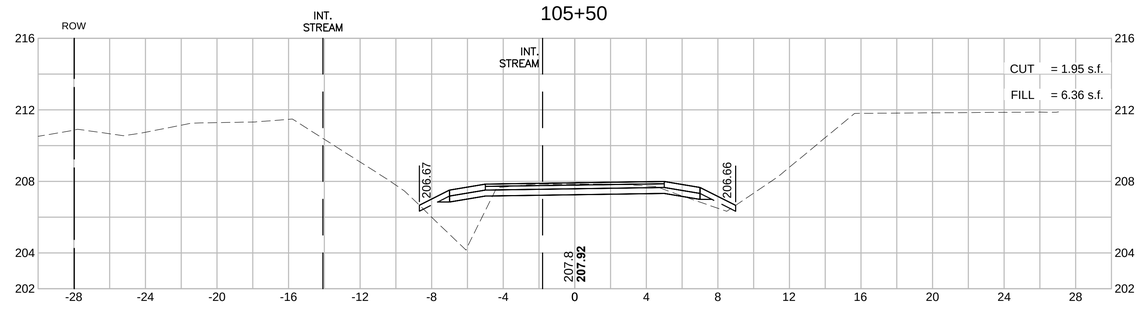
604531_HD(XS).DWG Plotted on 18-Sep-2015 10:22 AM

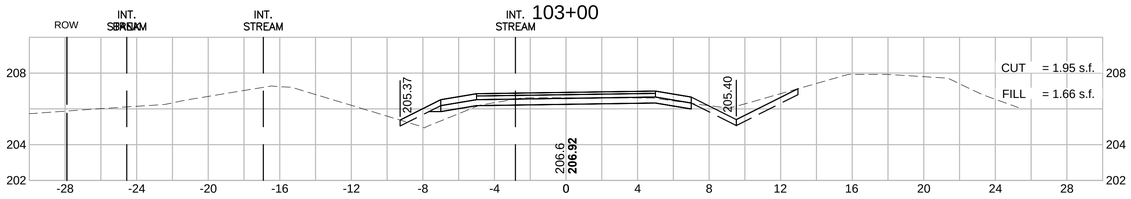


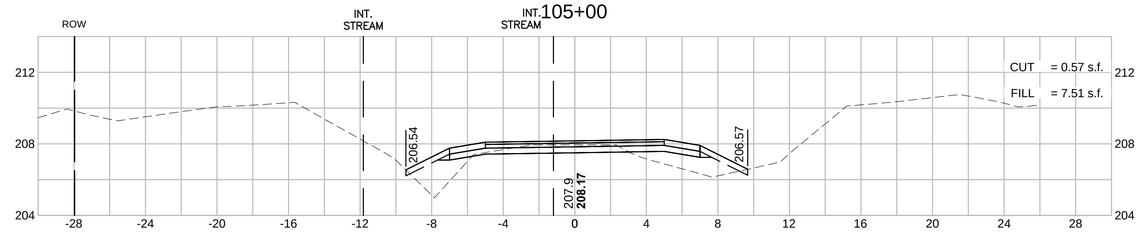












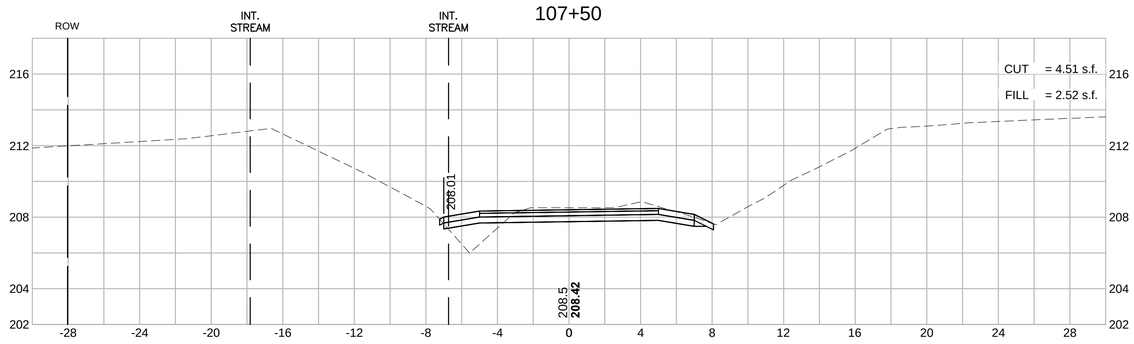
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

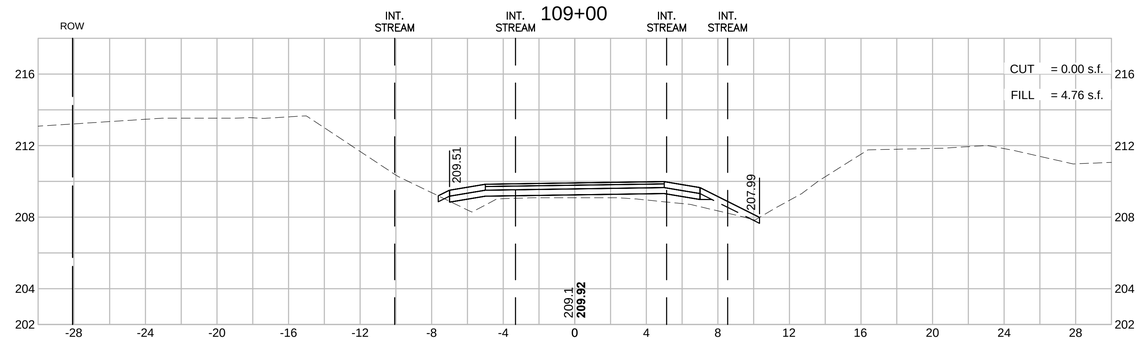
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

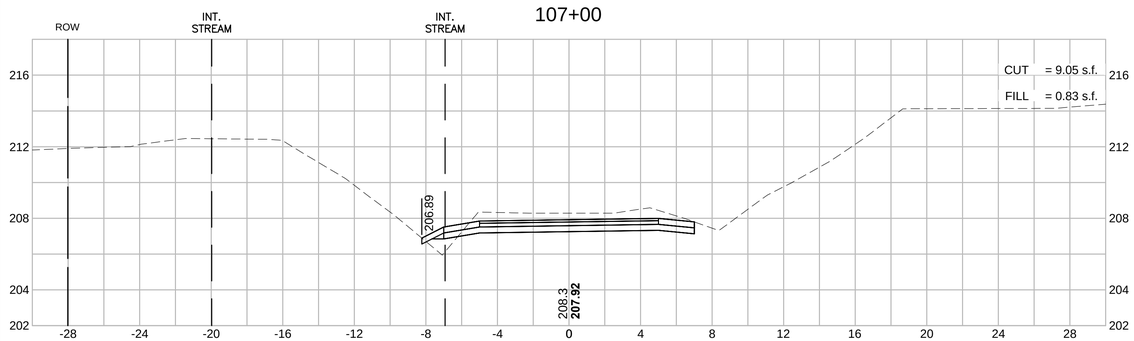
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	197	230
PROJECT FILE NO.	604531		

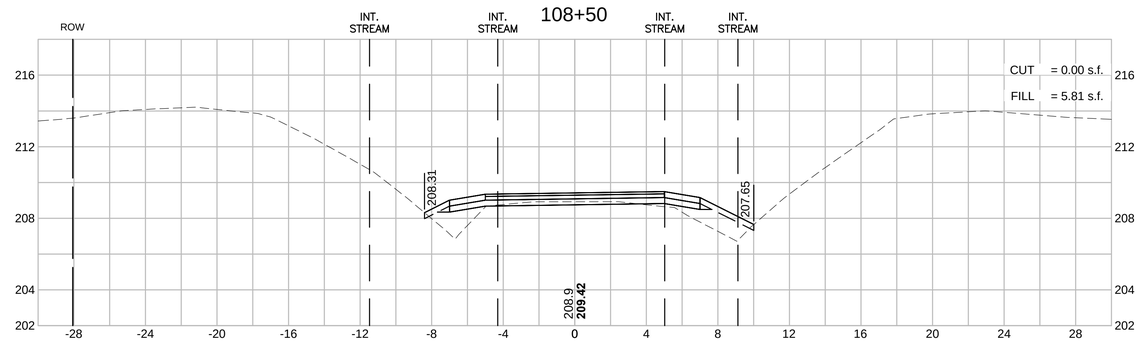
CROSS SECTIONS

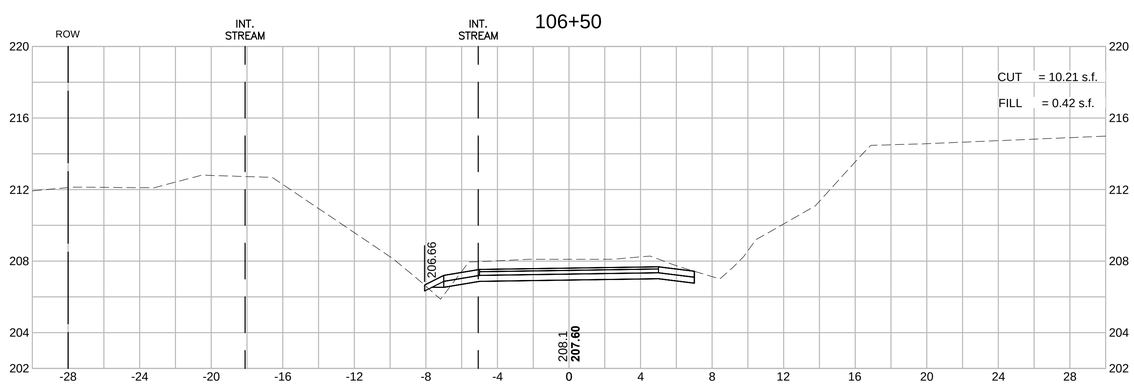
604531_HD(XS).DWG Plotted on 18-Sep-2015 10:23 AM

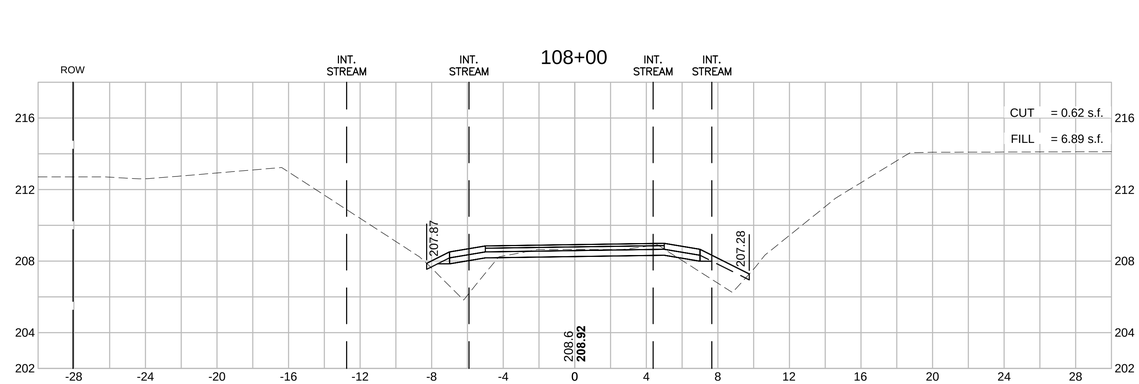












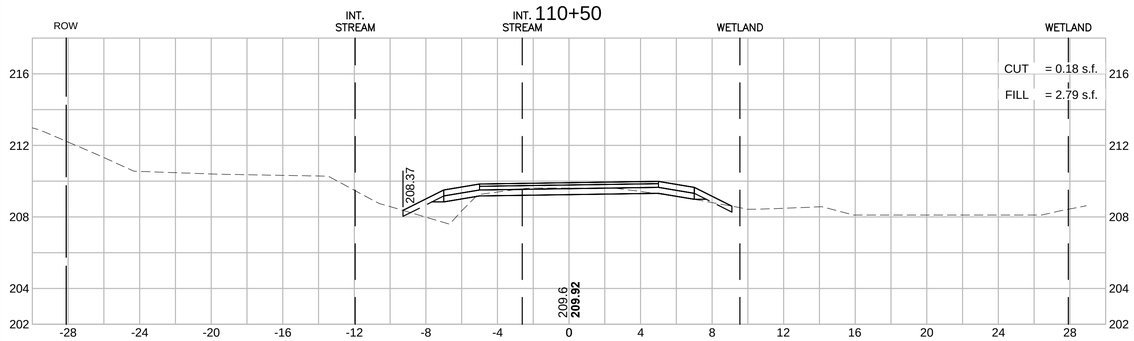
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

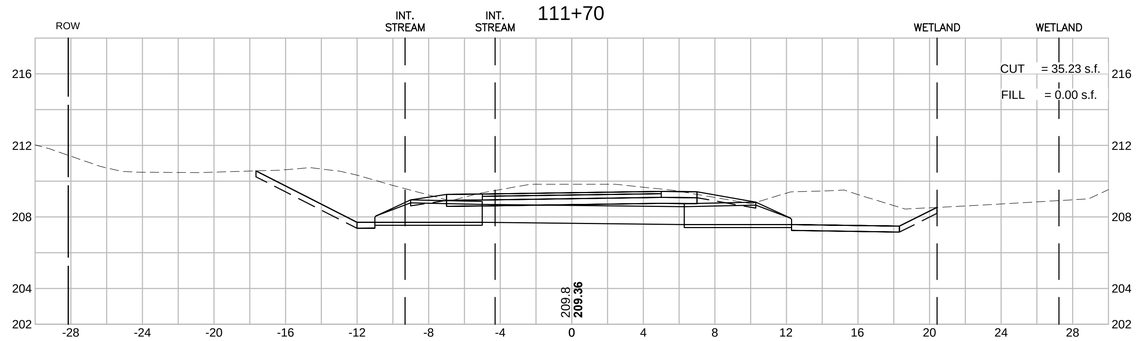
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

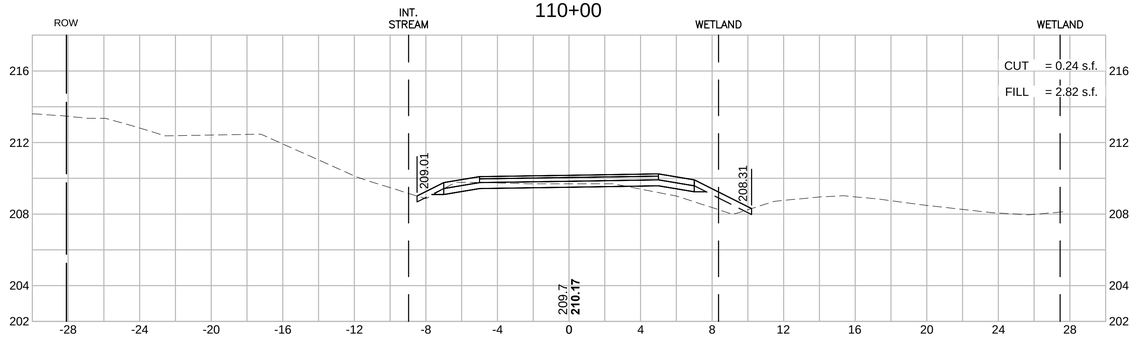
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	198	230
PROJECT FILE NO.	604531		

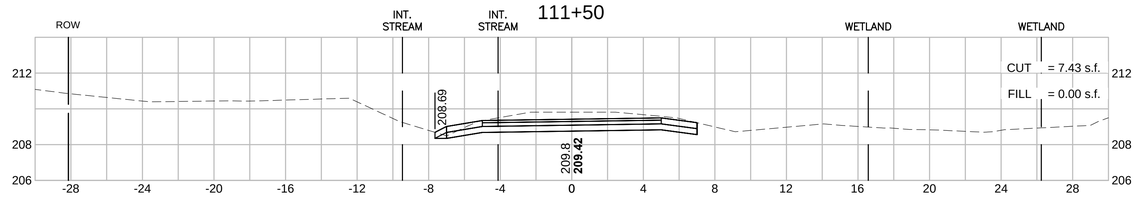
CROSS SECTIONS

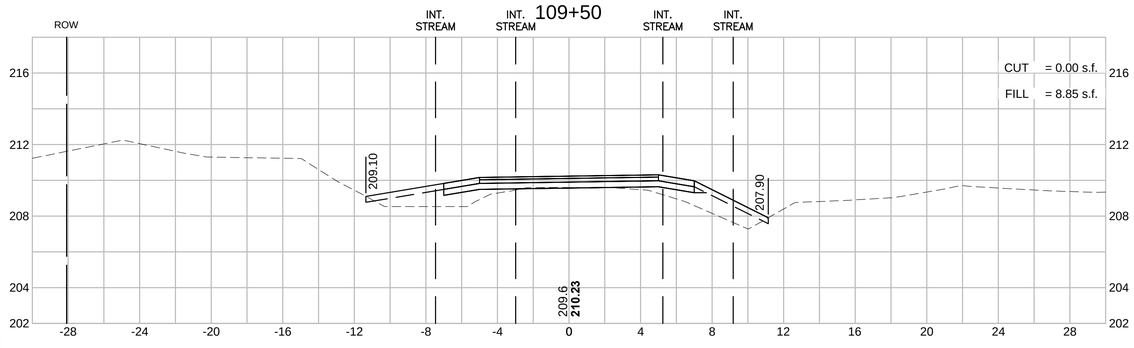
604531_HD(XS).DWG Plotted on 18-Sep-2015 10:24 AM

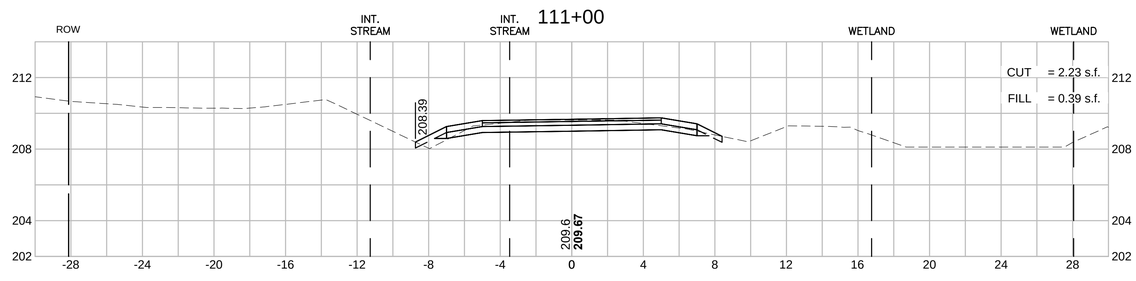












MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

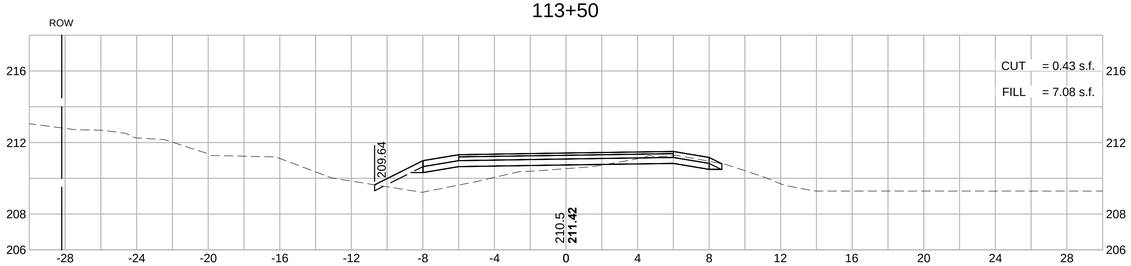
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	199	230
PROJECT FILE NO.	604531		

CROSS SECTIONS

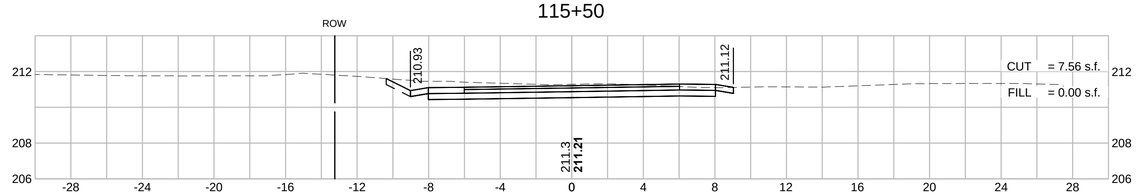
Plotted on 18-Sep-2015 10:24 AM
604531_HD(XS).DWG

UP
+36
20' L

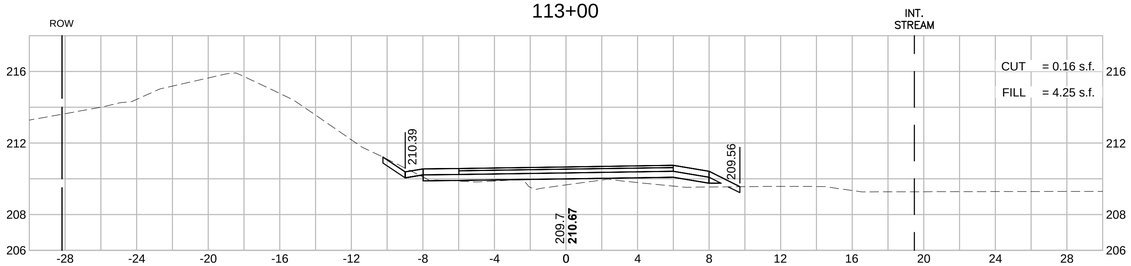
113+50



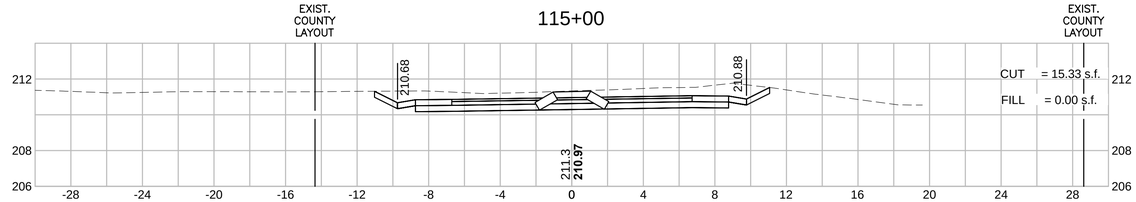
115+50



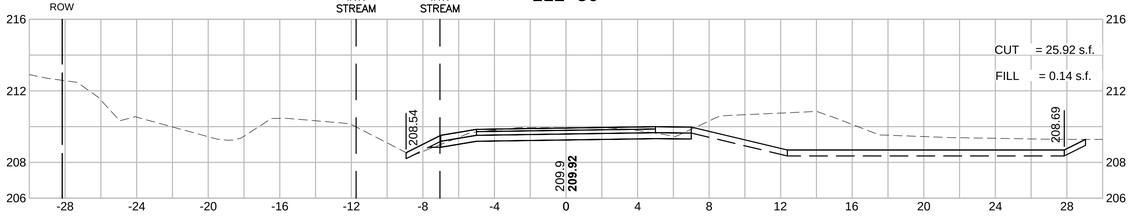
113+00



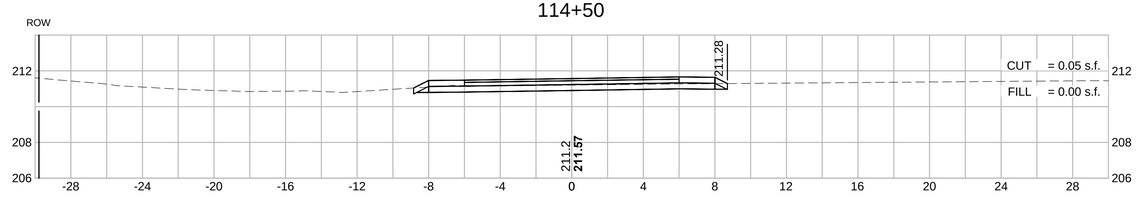
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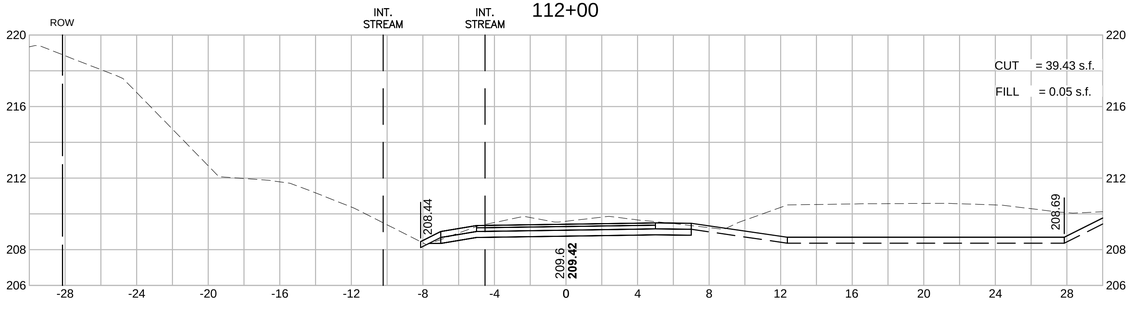
112+50



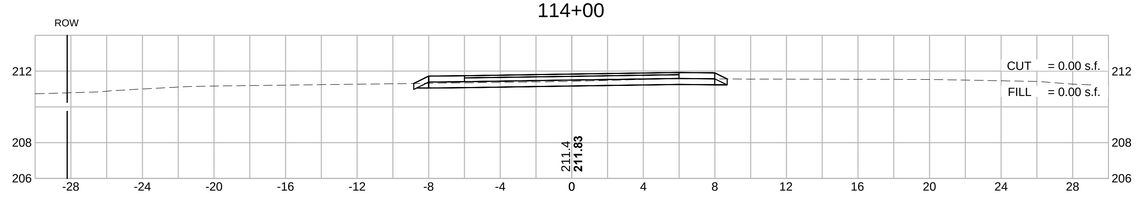
114+50



112+00



114+00



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

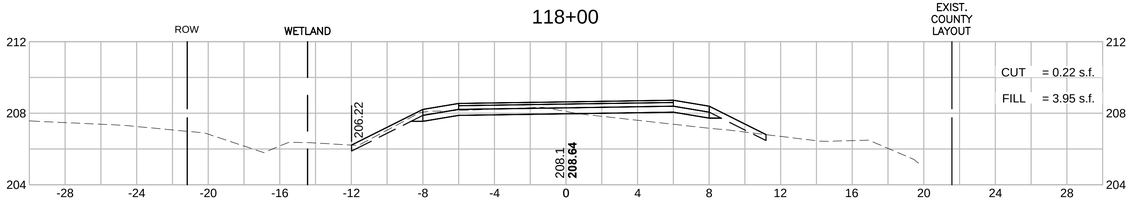
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	200	230
PROJECT FILE NO.	604531		

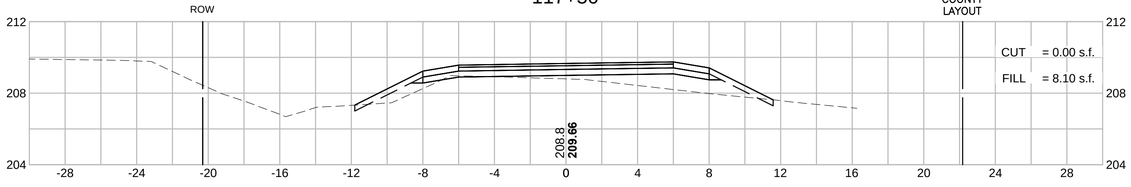
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:25 AM

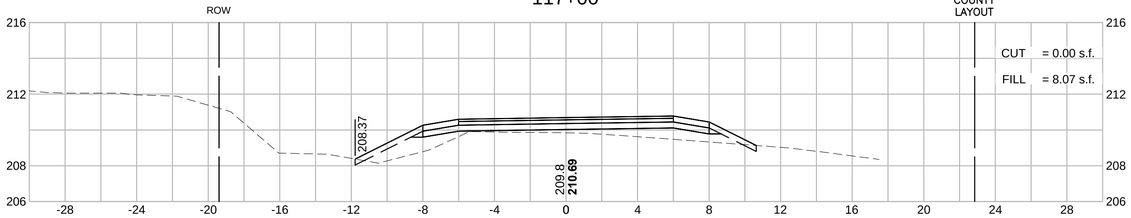
118+00



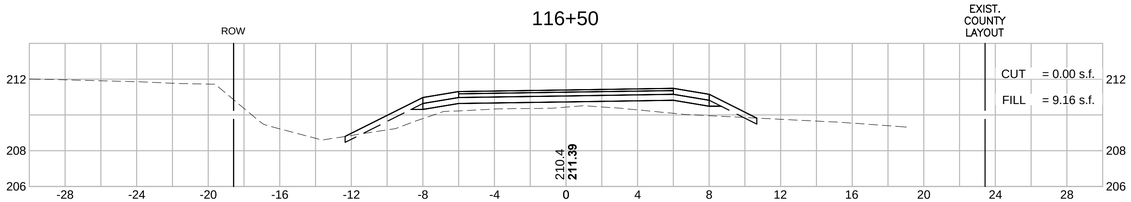
117+50



117+00

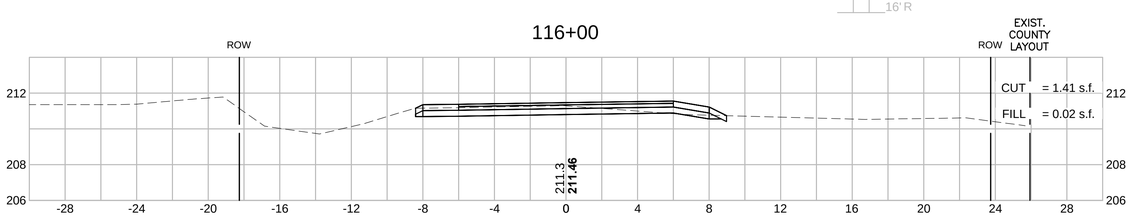


116+50

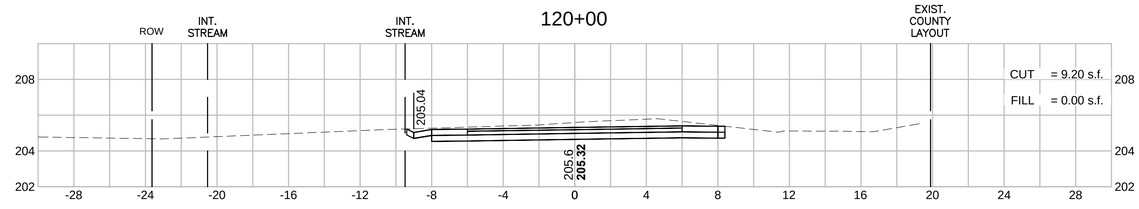


UP
+80
16° R

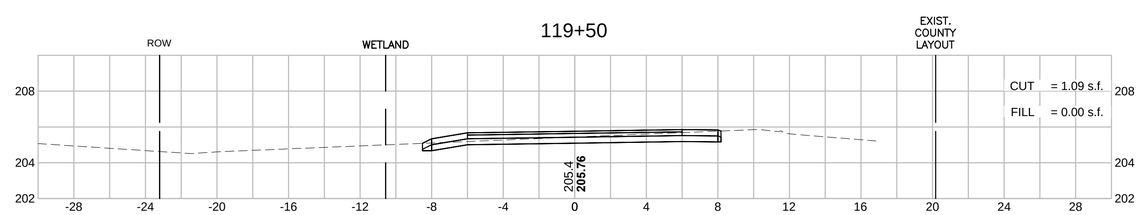
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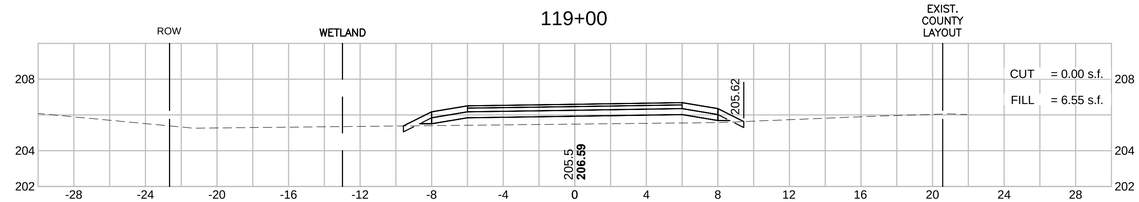
120+00



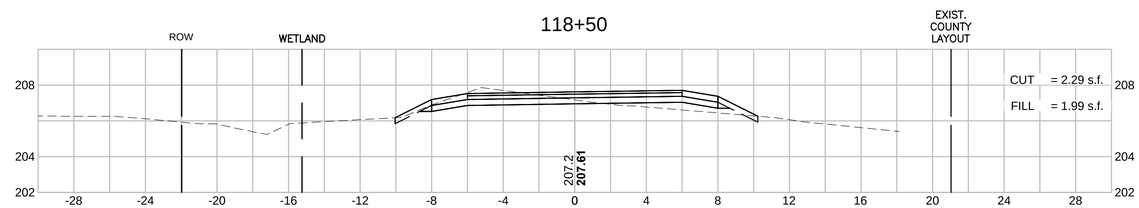
119+50



119+00



118+50

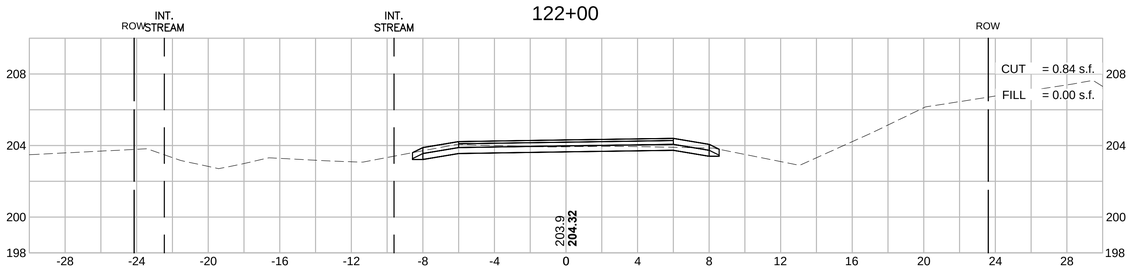


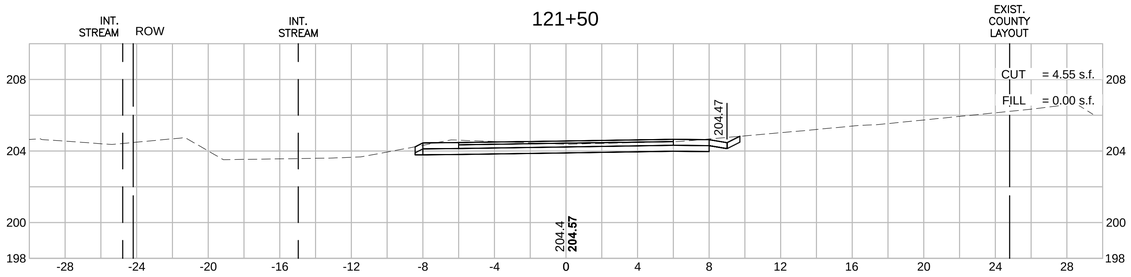
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

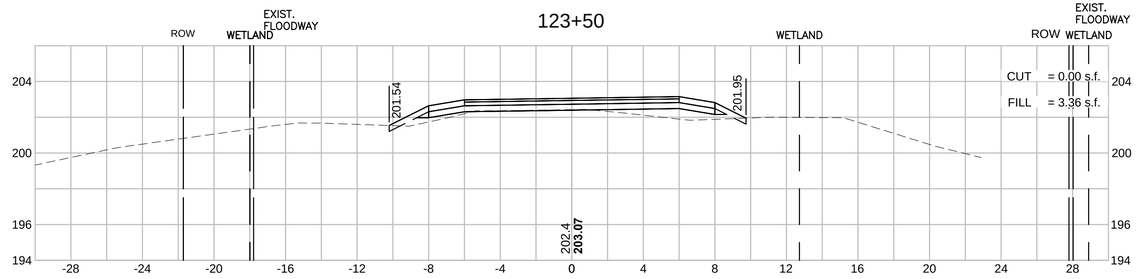
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

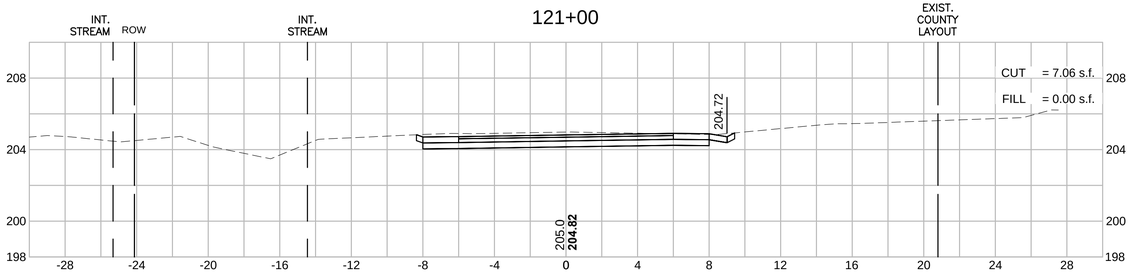
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	201	230
PROJECT FILE NO.	604531		

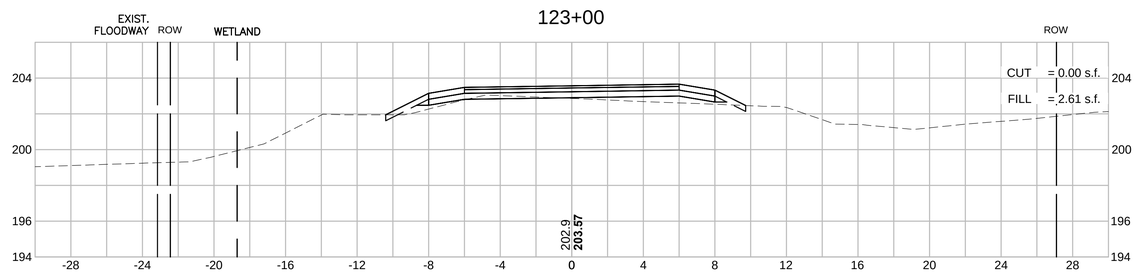
CROSS SECTIONS

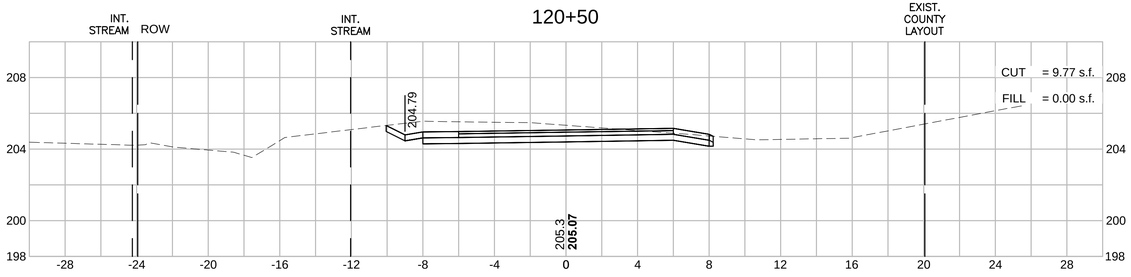


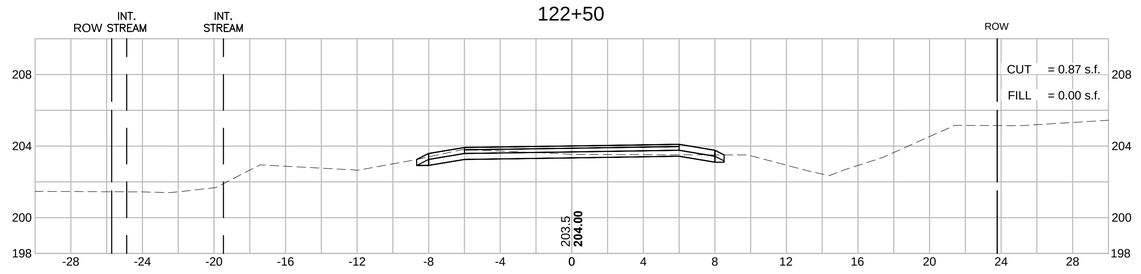












604531_HD(XS).DWG Plotted on 18-Sep-2015 10:25 AM

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

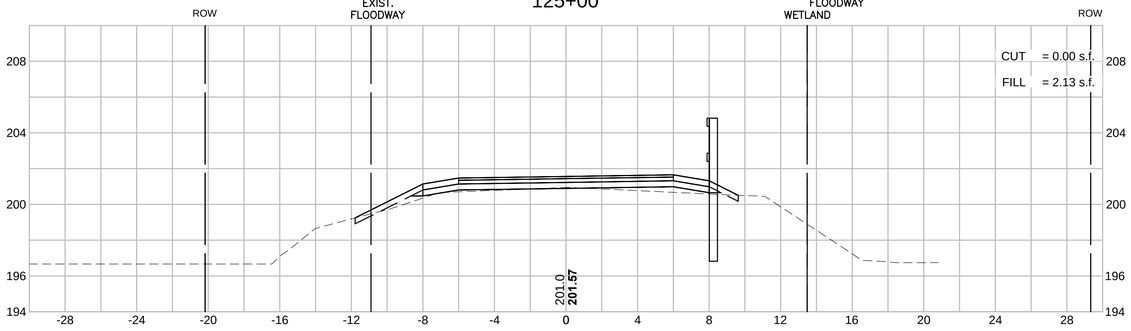
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	202	230
PROJECT FILE NO.	604531		

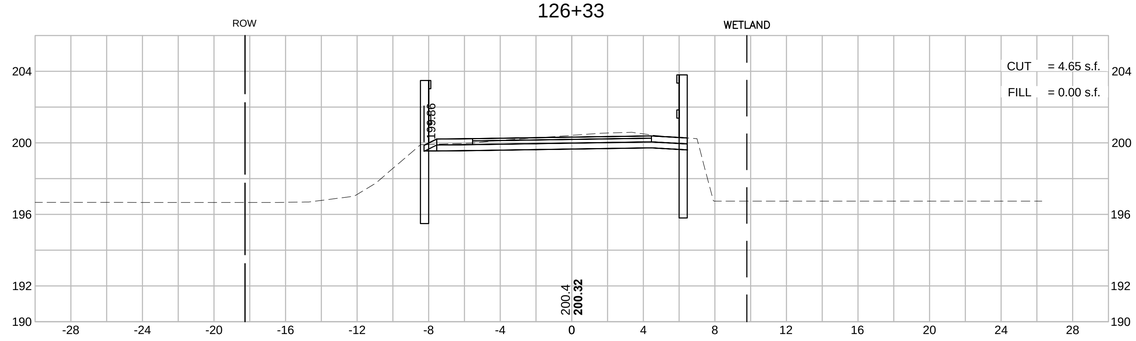
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:26 AM

125+00



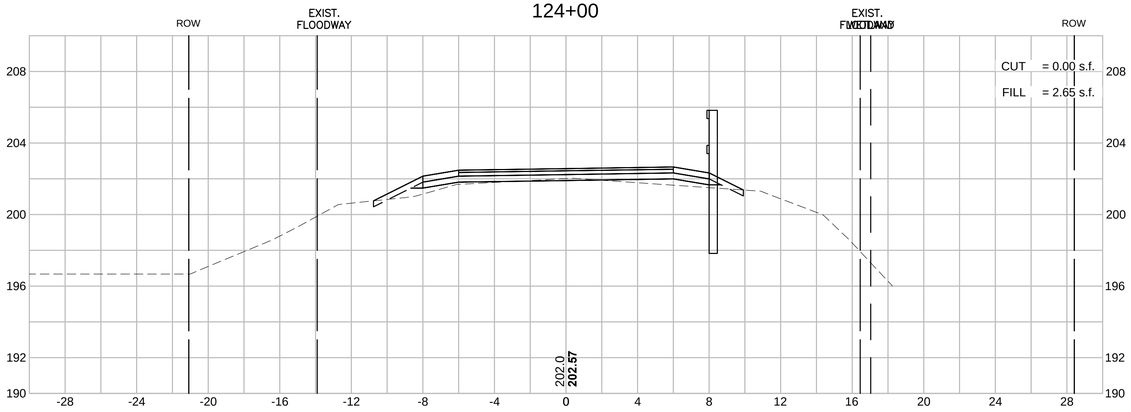
126+33



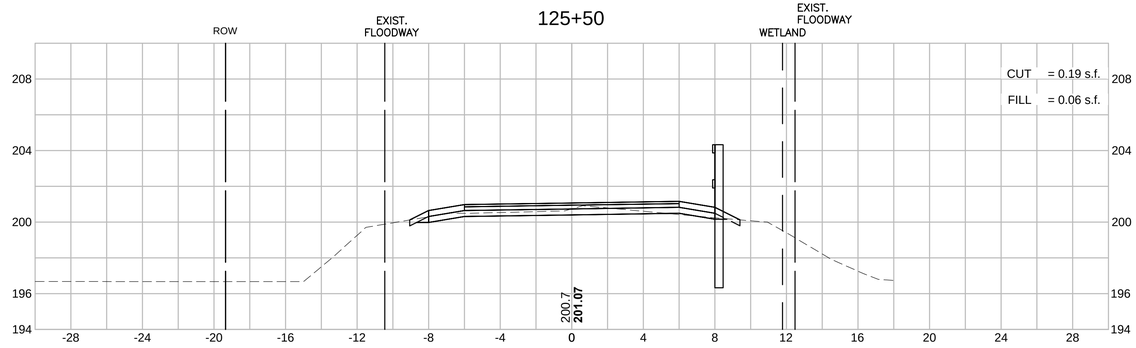
124+50

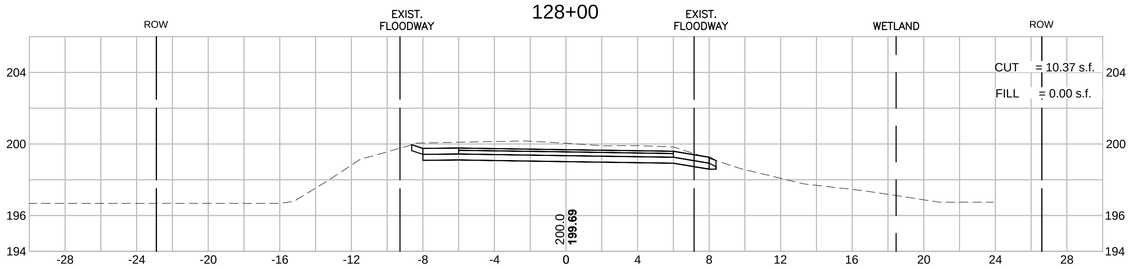
126+00

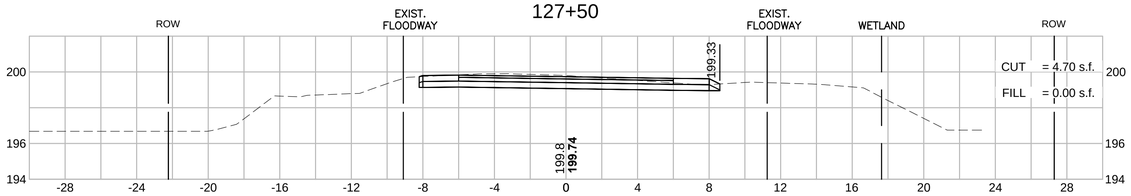
124+00

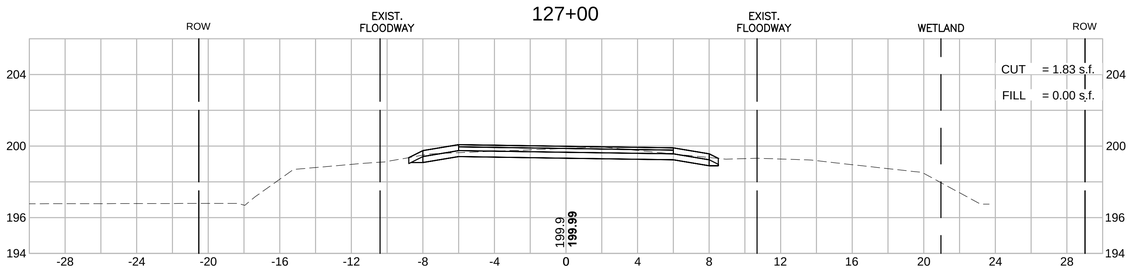


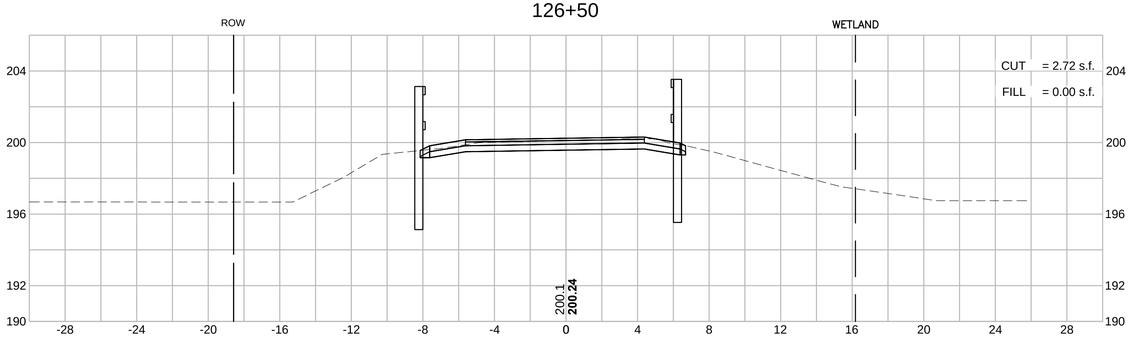
125+50

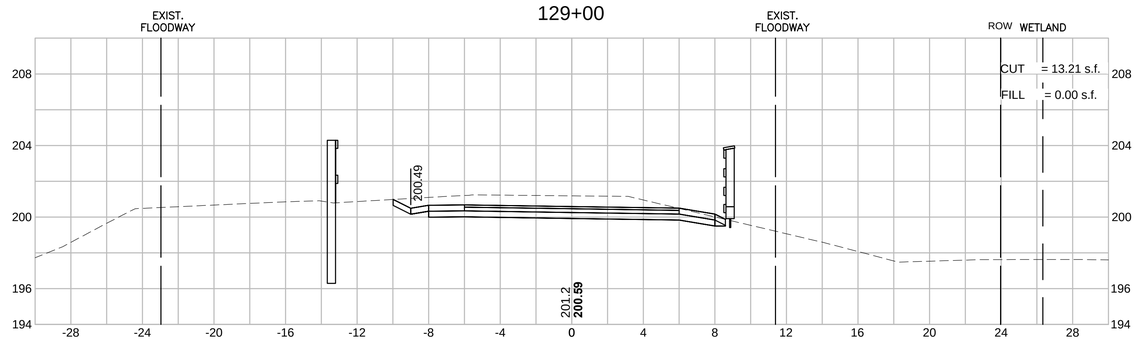


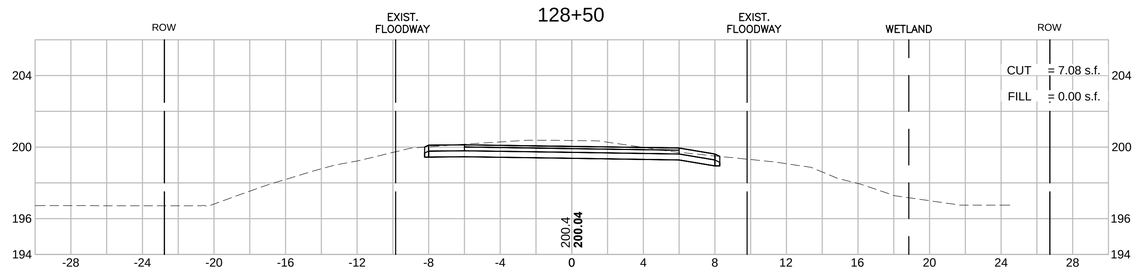












HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	203	230
PROJECT FILE NO. 604531			

CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:27 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

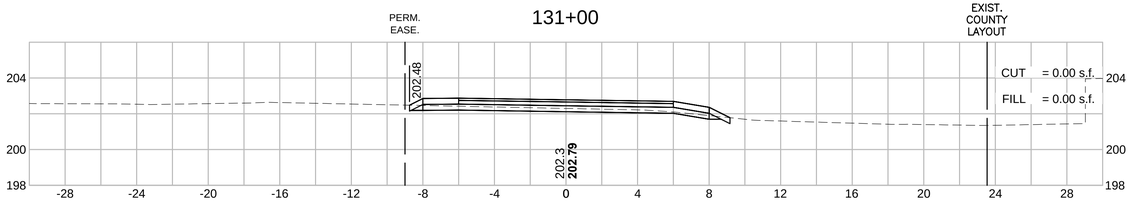
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	204	230
PROJECT FILE NO.	604531		

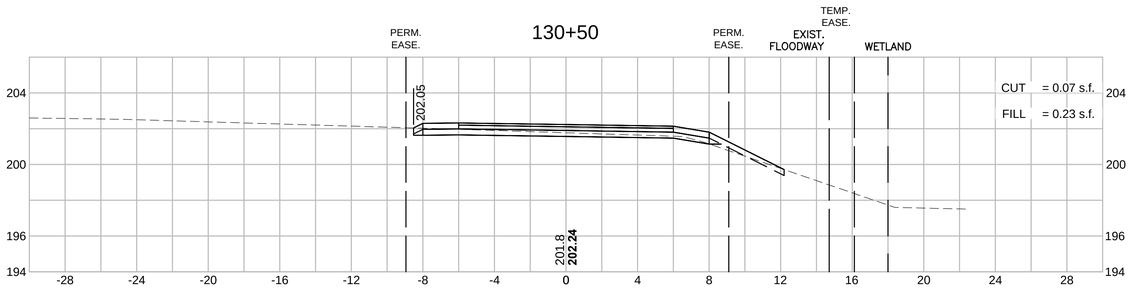
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:27 AM

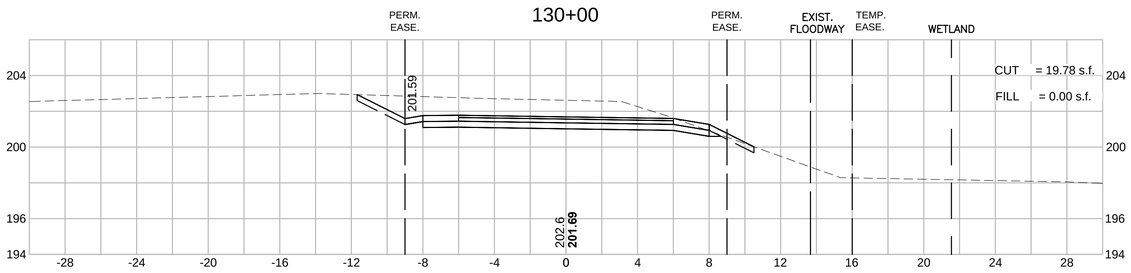
131+00



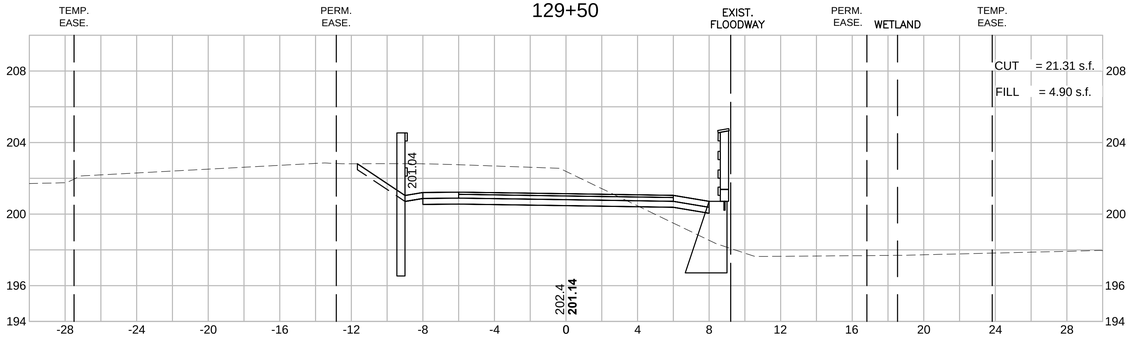
130+50



130+00

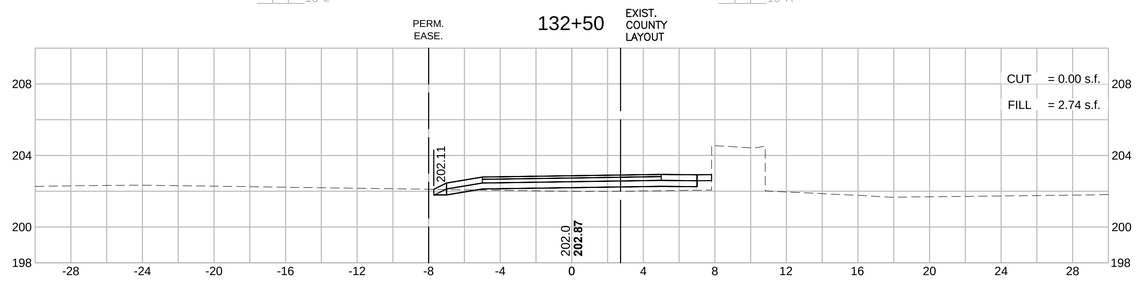


129+50



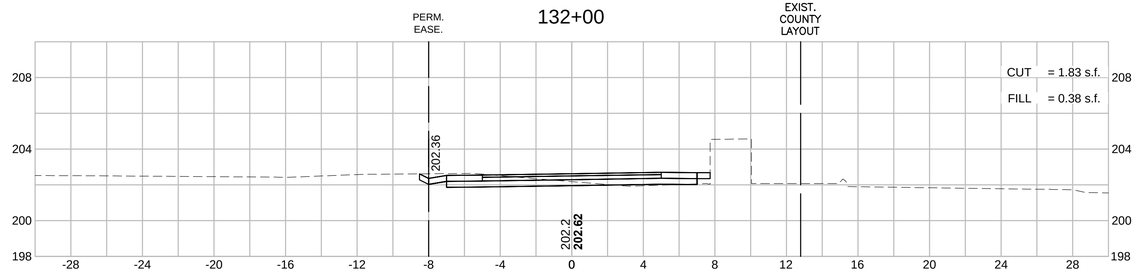
LP +70 16' L
LP +37 10' R

132+50

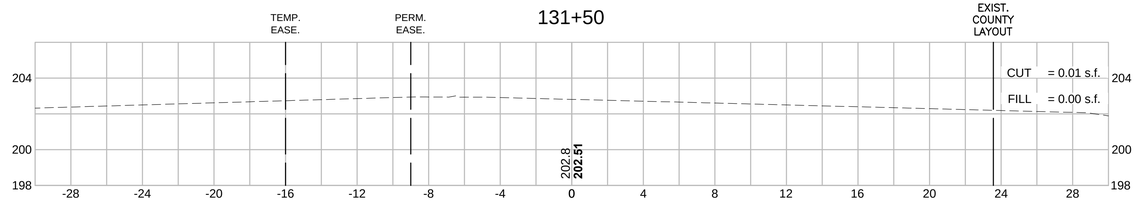


LP +87 25' L

132+00



131+50

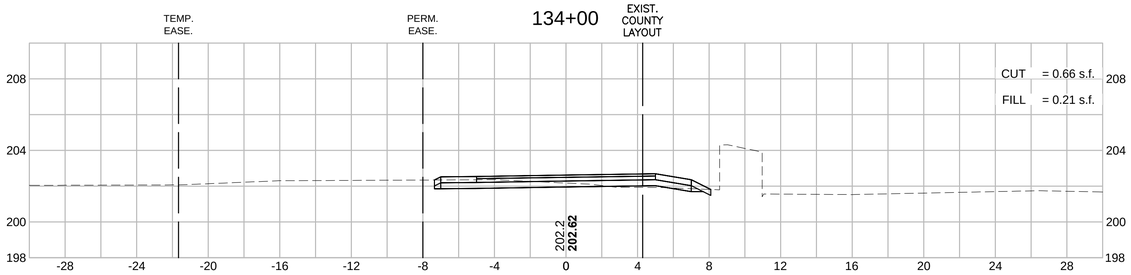


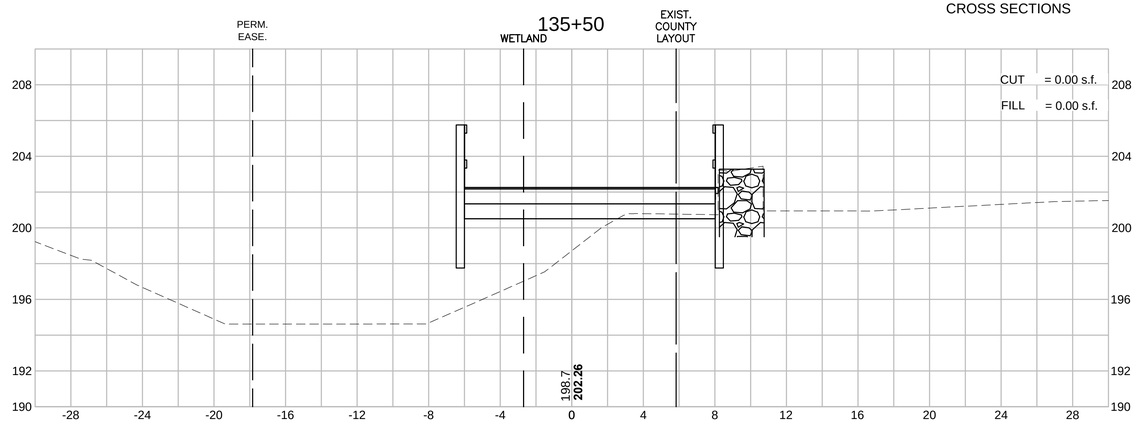
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

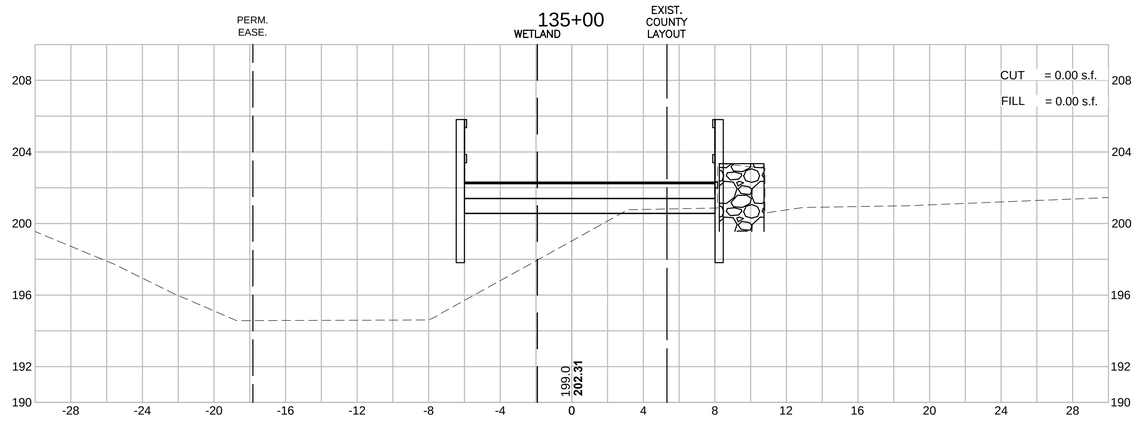
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	205	230
PROJECT FILE NO.	604531		

CROSS SECTIONS



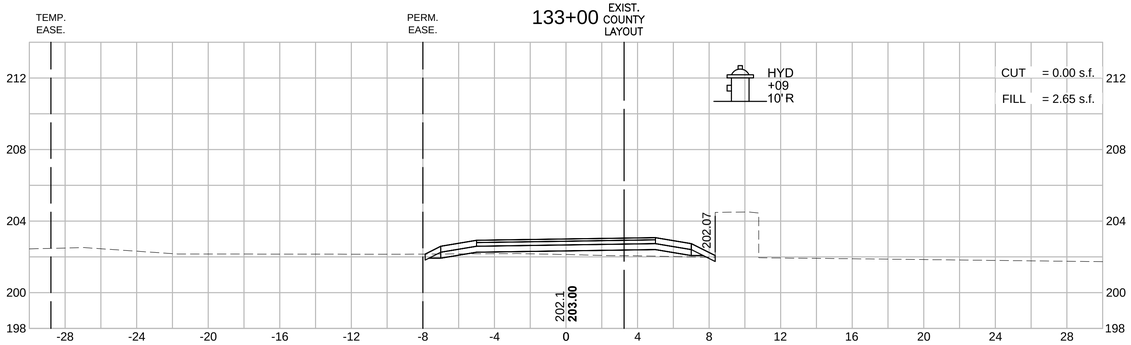


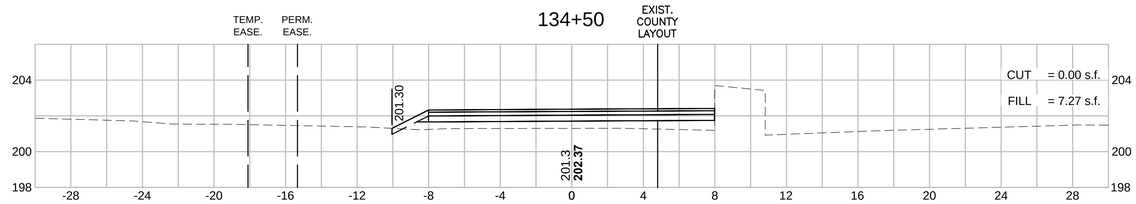












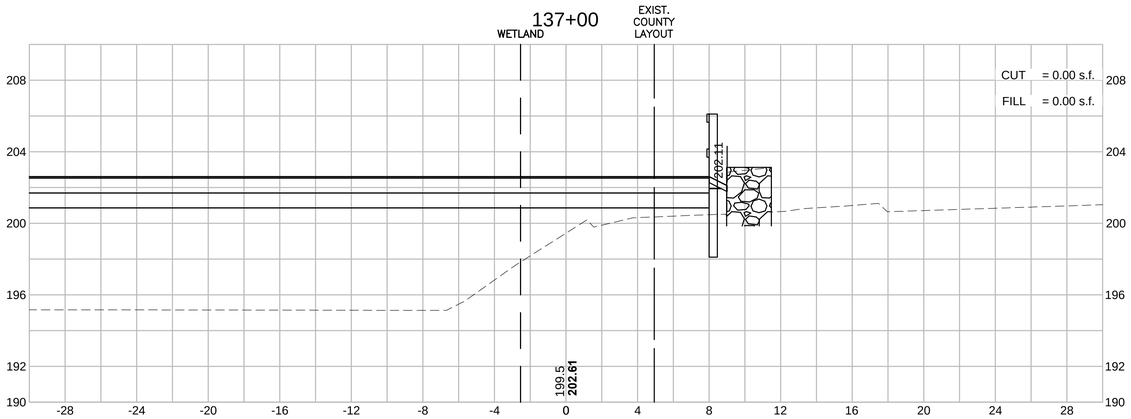
604531_HD(XS).DWG Plotted on 18-Sep-2015 10:28 AM

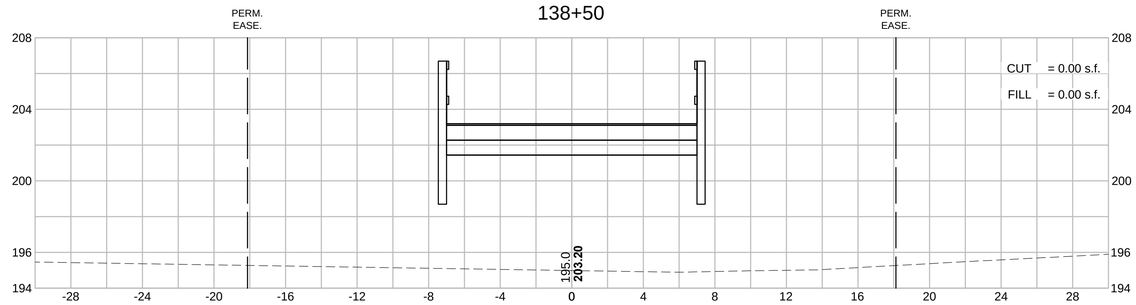
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

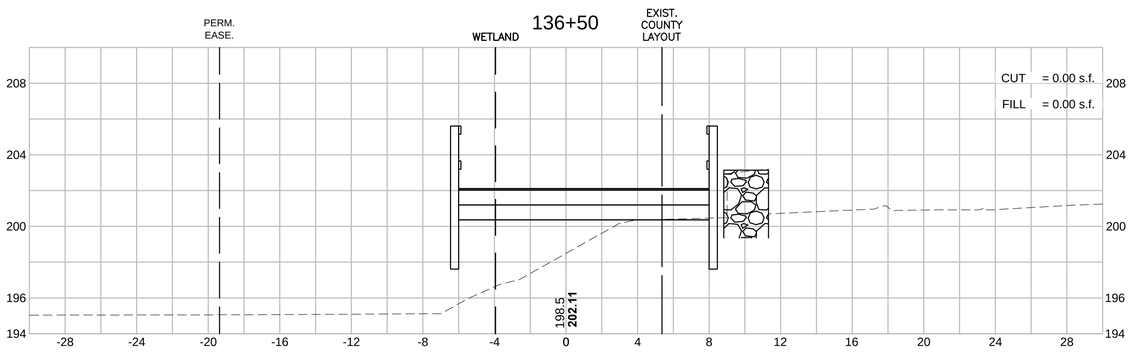
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

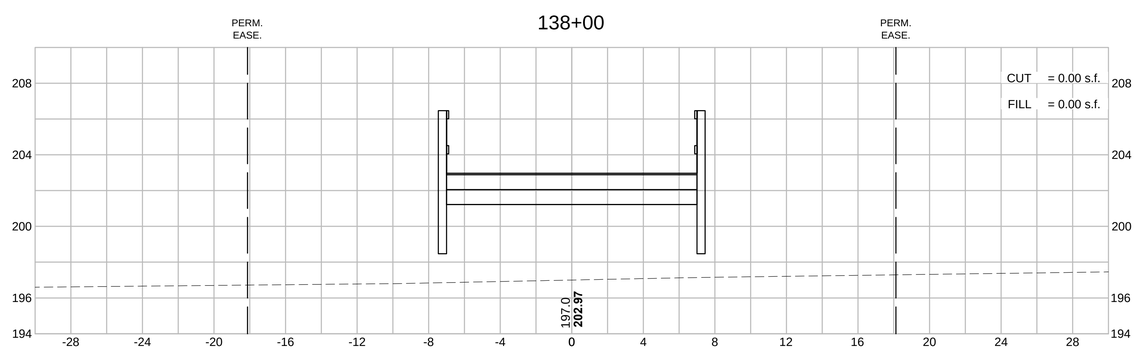
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	206	230
PROJECT FILE NO.	604531		

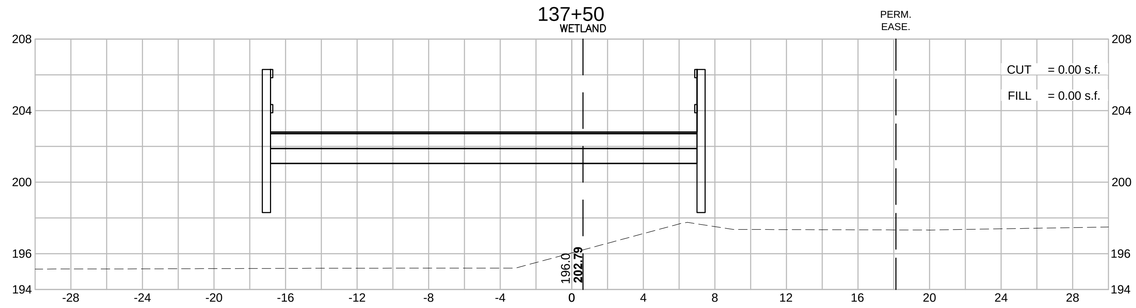
CROSS SECTIONS

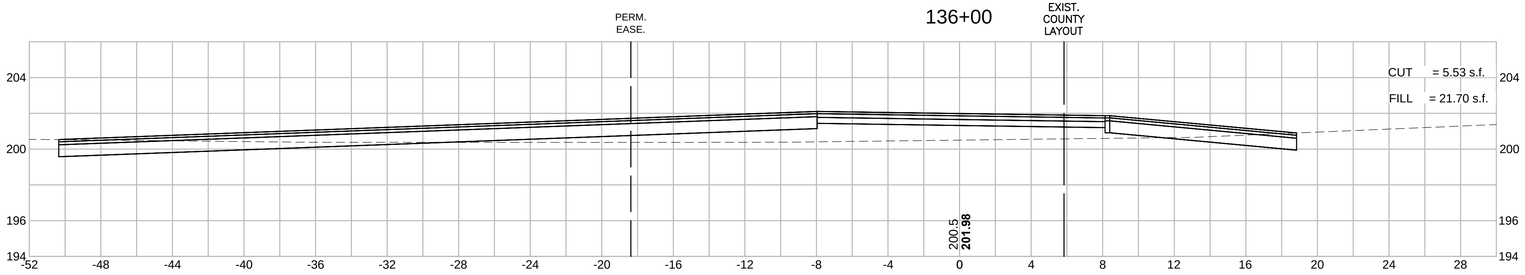












604531_HD(XS).DWG Plotted on 18-Sep-2015 10:28 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

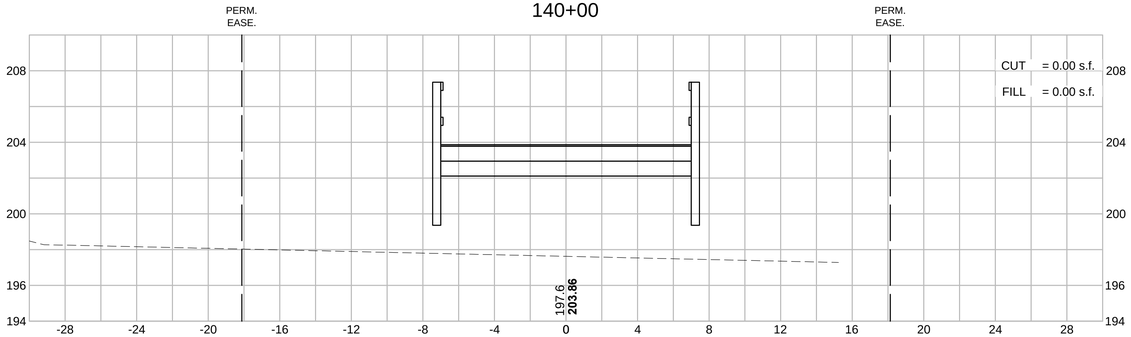
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	207	230
PROJECT FILE NO.	604531		

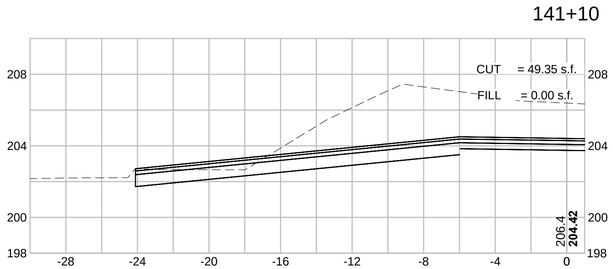
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:29 AM

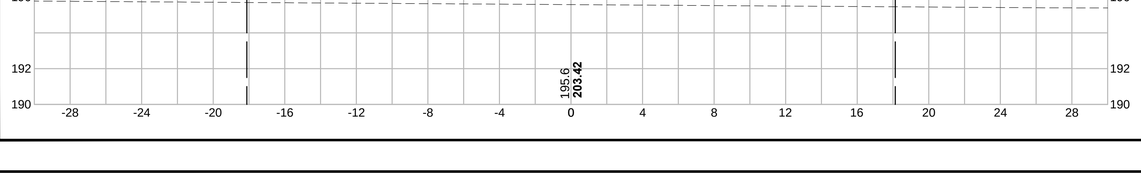
140+00



141+10



139+50



141+00

139+00

140+50

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

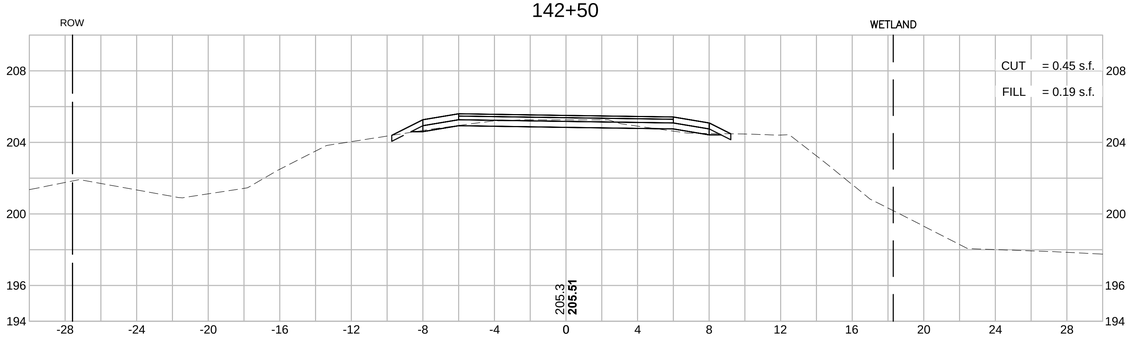
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	208	230
PROJECT FILE NO.	604531		

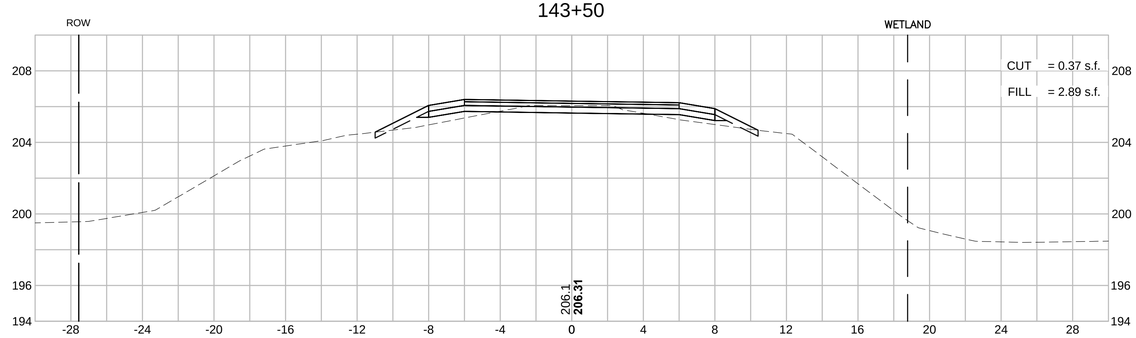
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:29 AM

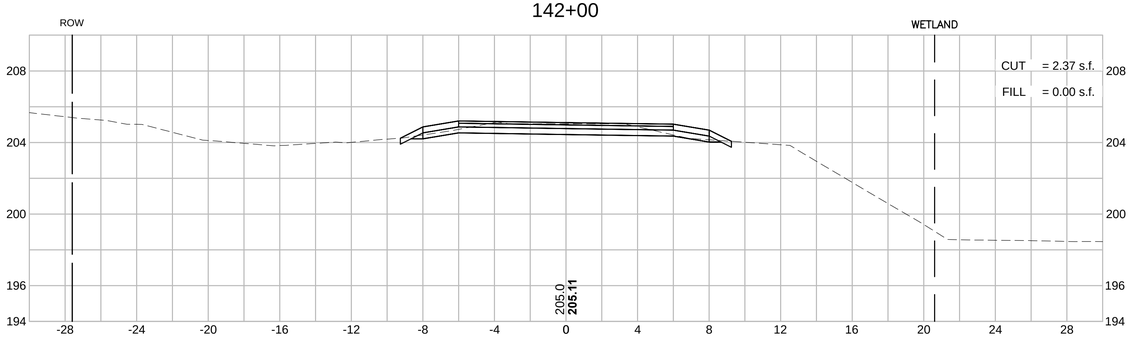
142+50



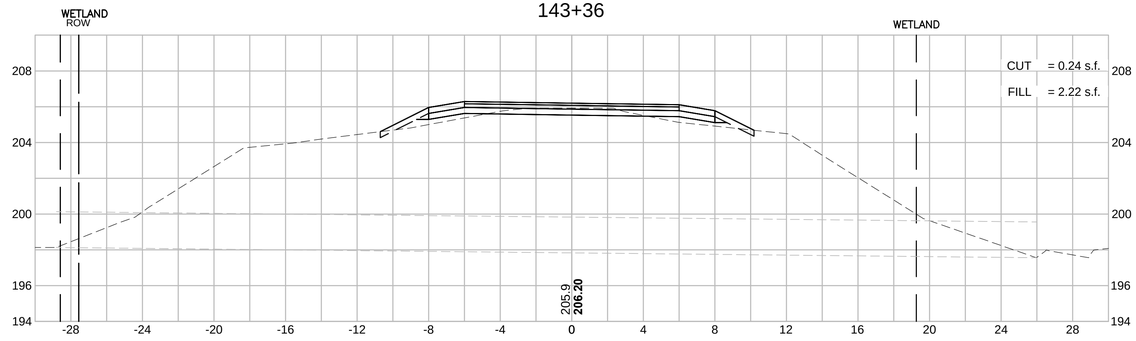
143+50



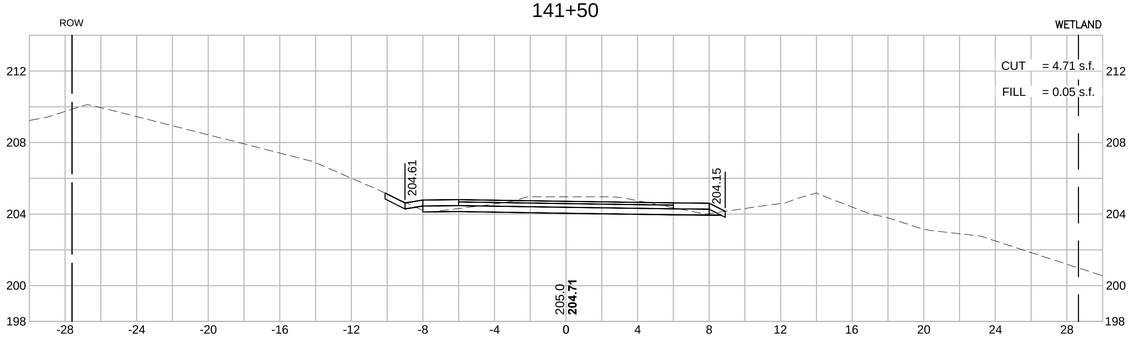
142+00



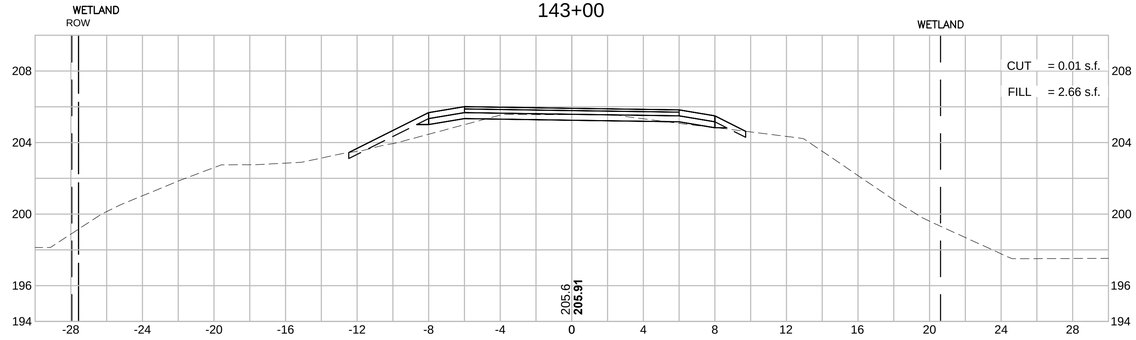
143+36



141+50



143+00



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

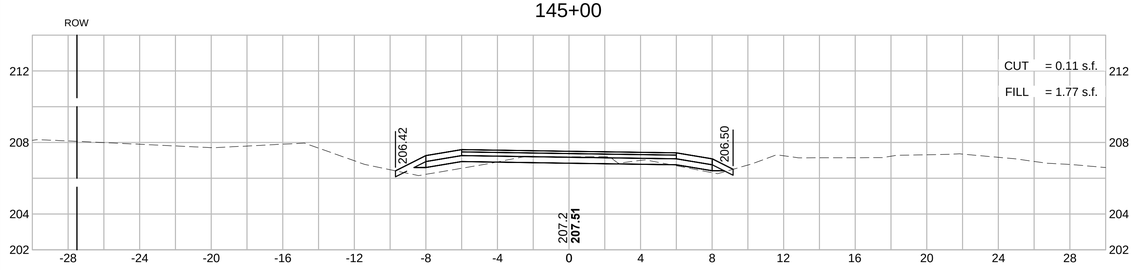
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	209	230
PROJECT FILE NO.	604531		

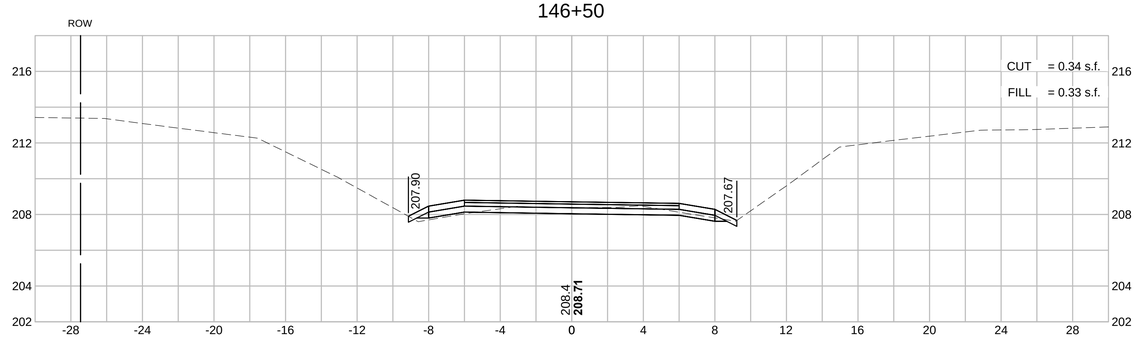
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:30 AM

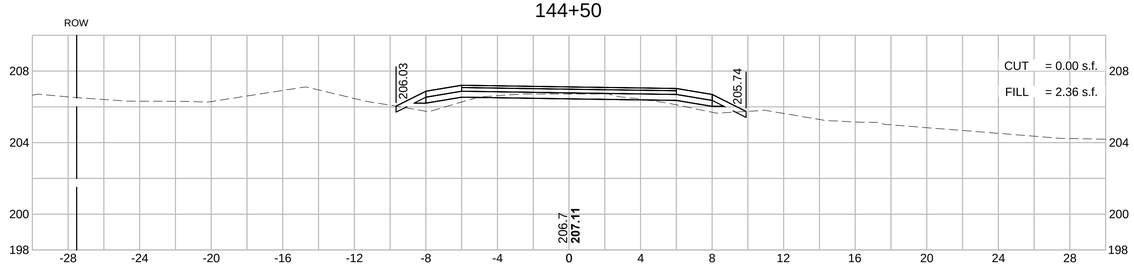
145+00



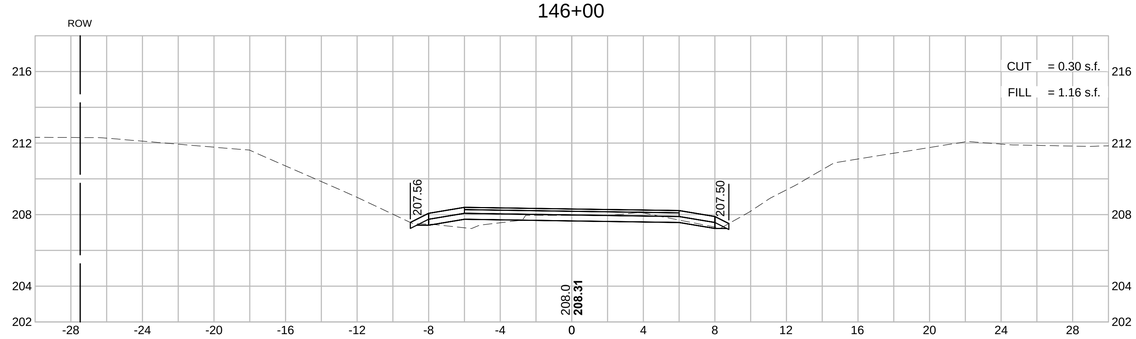
146+50



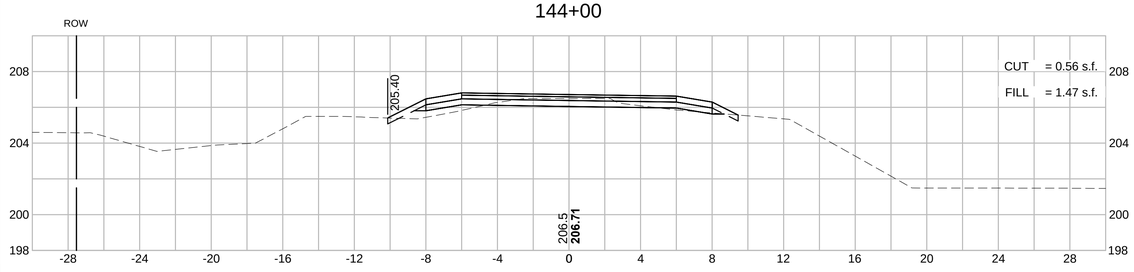
144+50



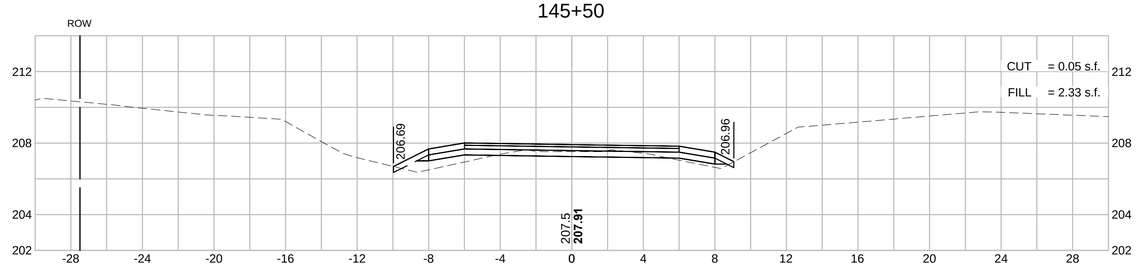
146+00



144+00



145+50



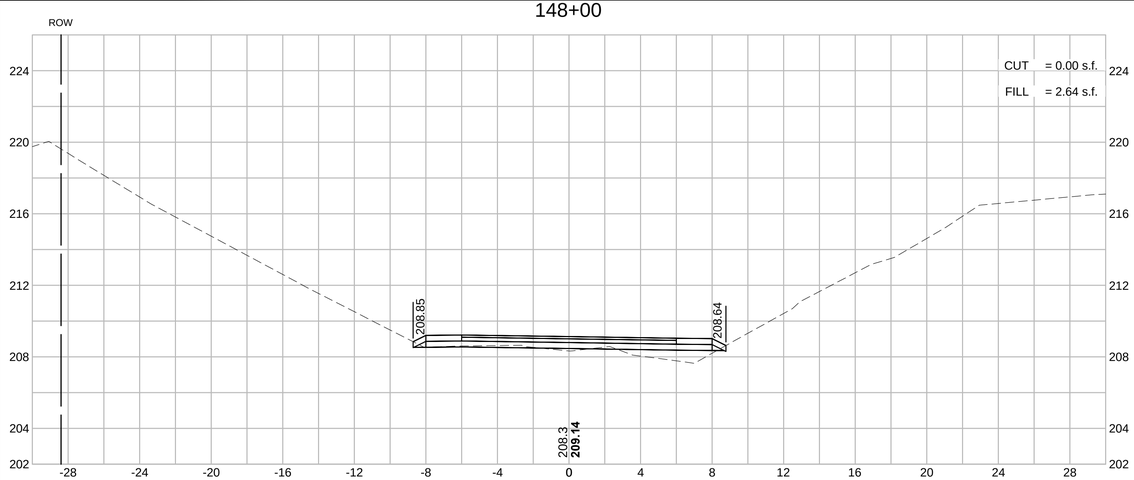
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

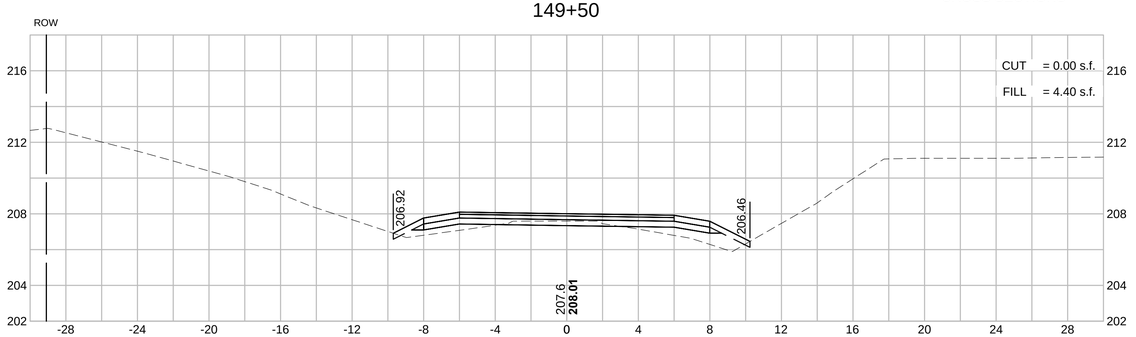
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	210	230
PROJECT FILE NO.	604531		

CROSS SECTIONS

148+00



149+50



147+50

149+00

147+00

148+50

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:31 AM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

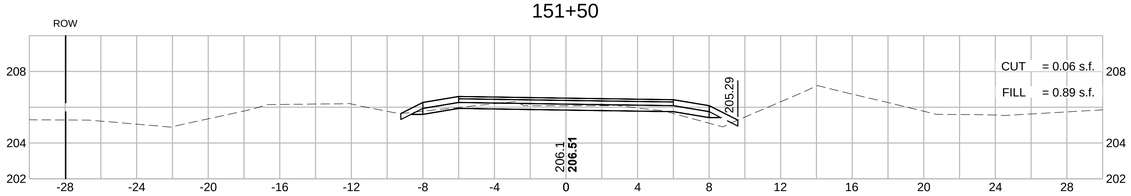
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	211	230
PROJECT FILE NO. 604531			

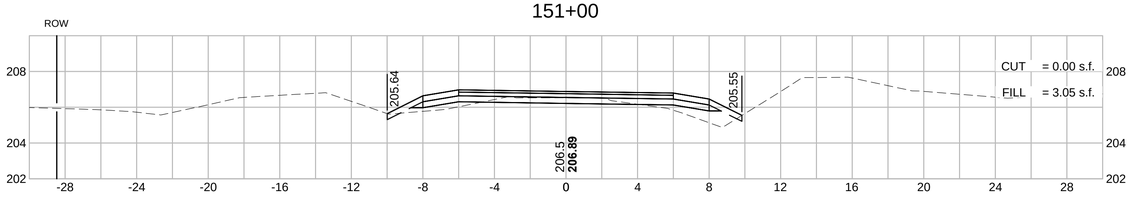
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:31 AM

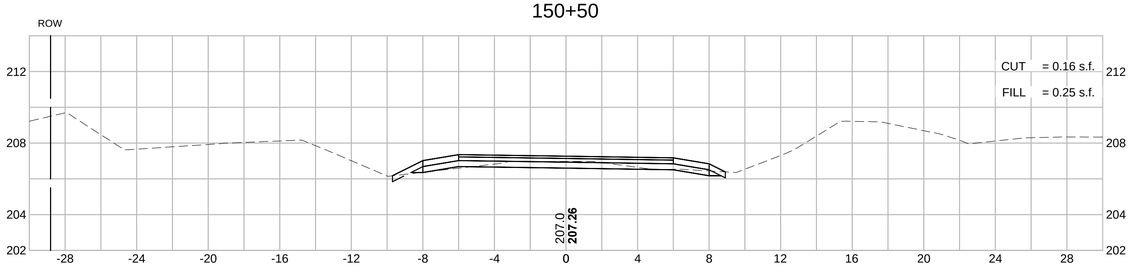
151+50



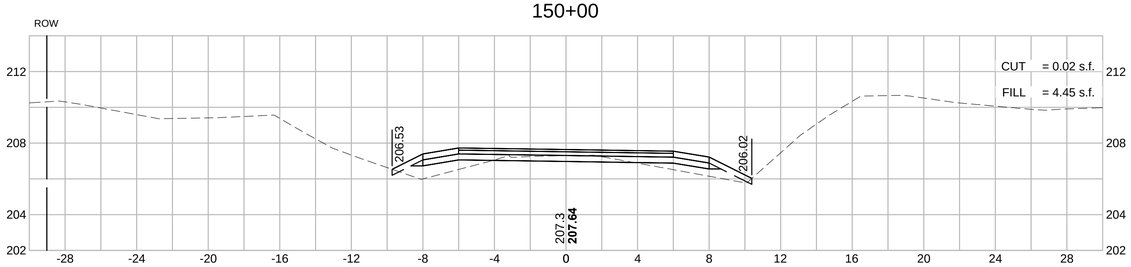
151+00



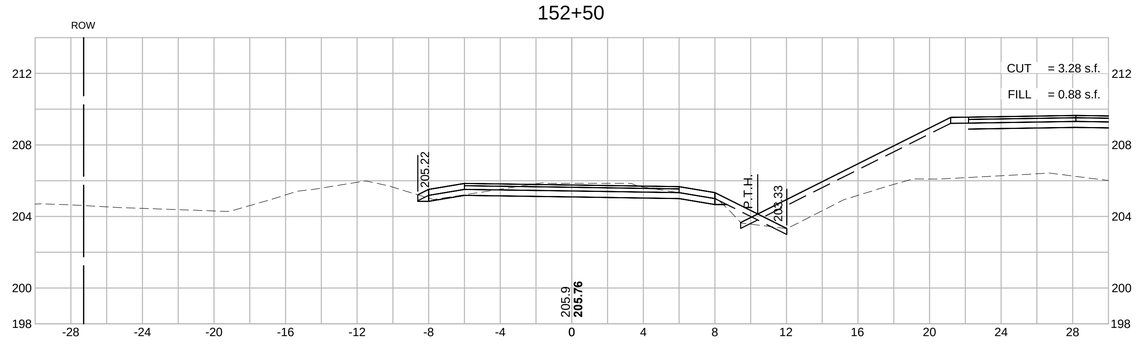
150+50



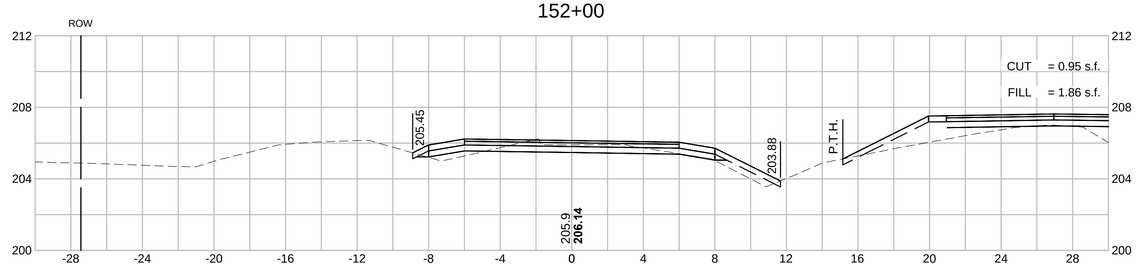
150+00



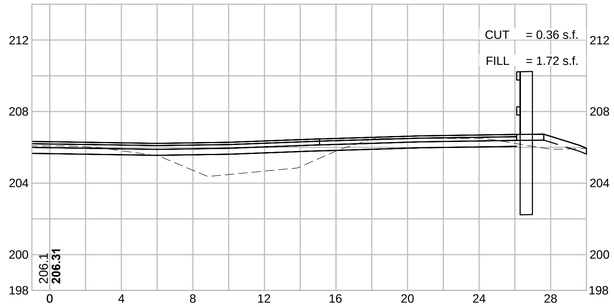
152+50



152+00



151+77



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

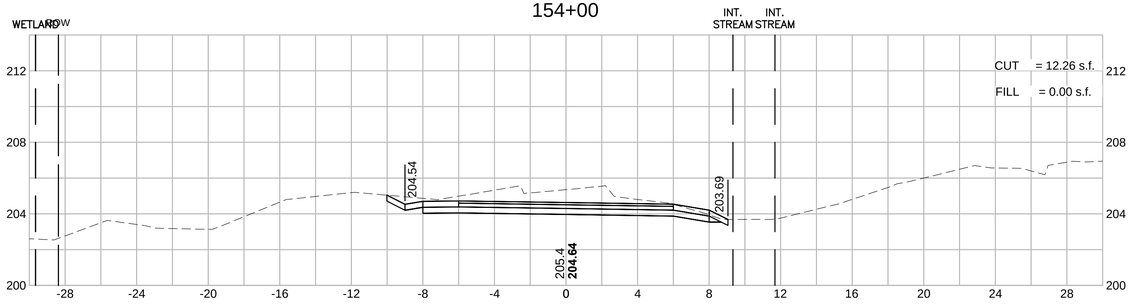
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	212	230
PROJECT FILE NO.	604531		

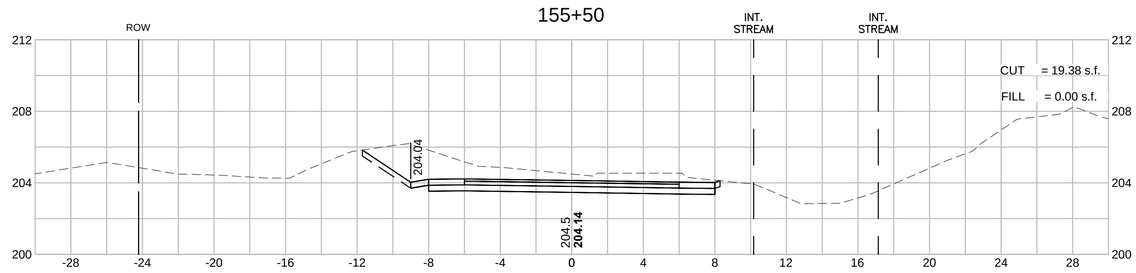
CROSS SECTIONS

Plotted on 18-Sep-2015 10:32 AM
604531_HD(XS).DWG

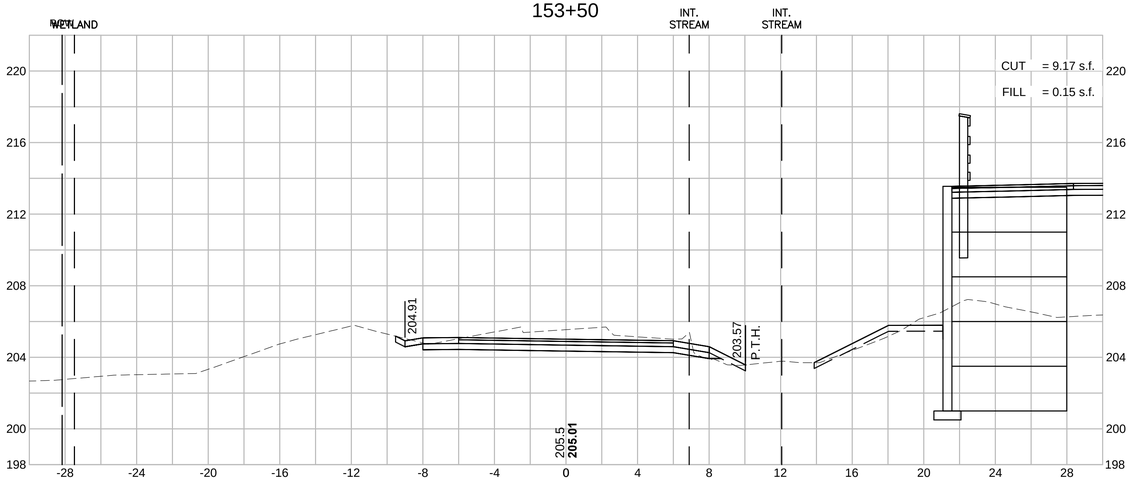
154+00



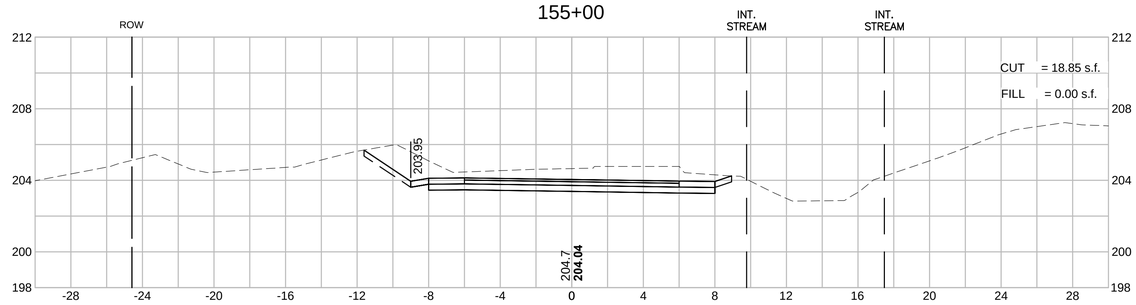
155+50



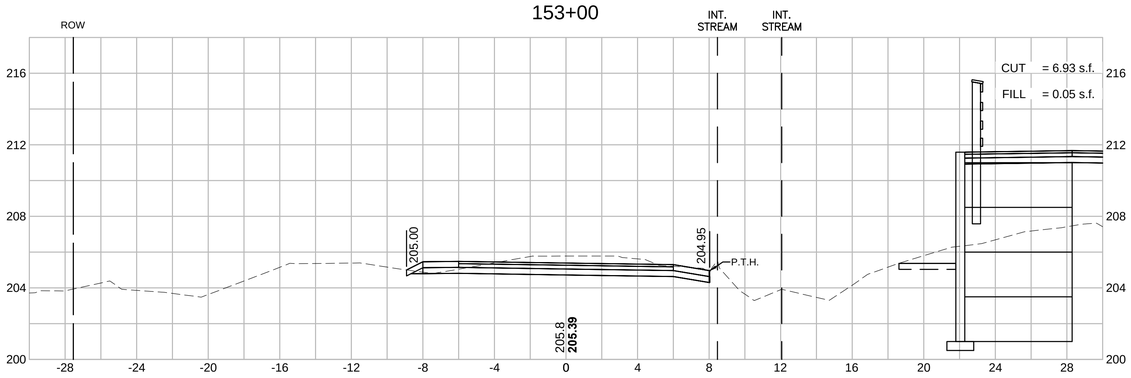
153+50



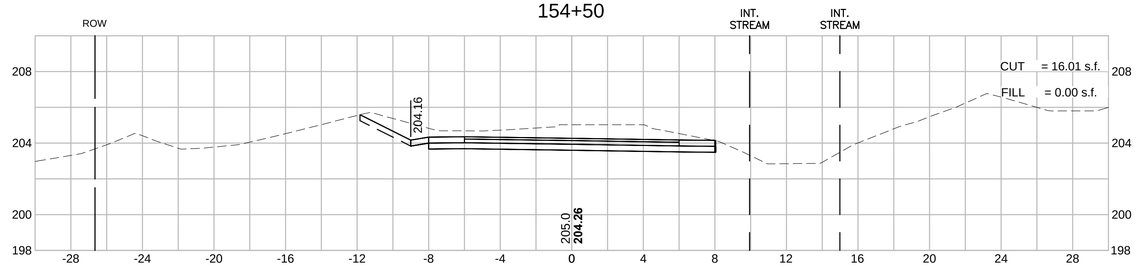
155+00



153+00



154+50



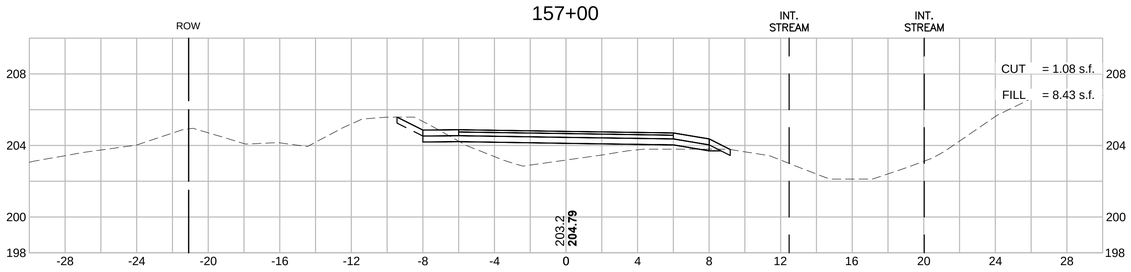
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

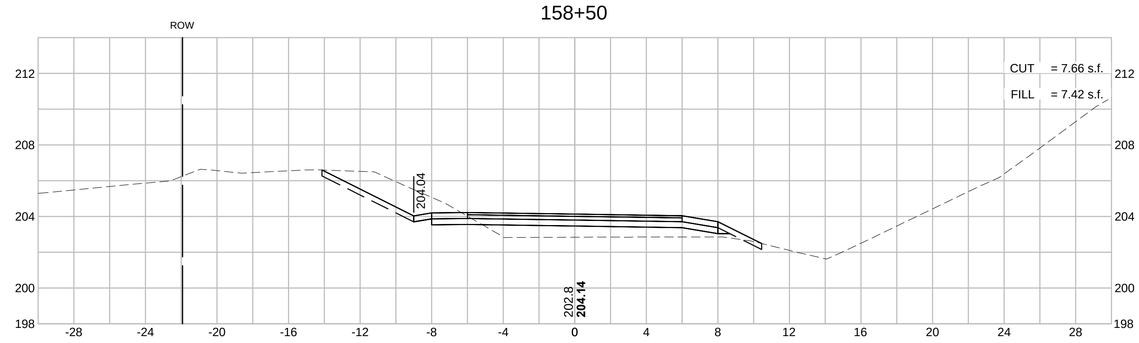
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

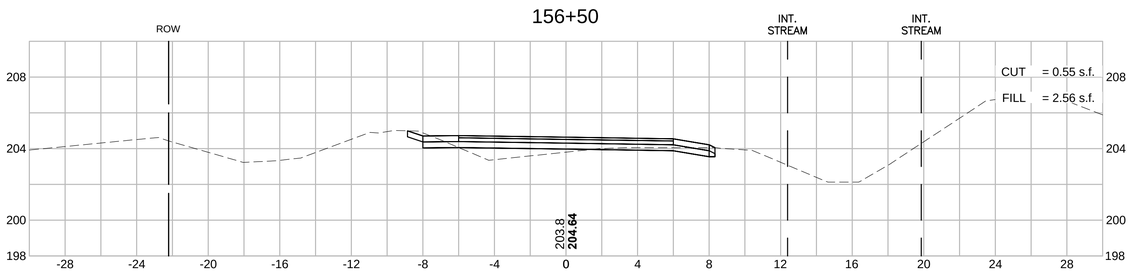
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	213	230
PROJECT FILE NO.	604531		

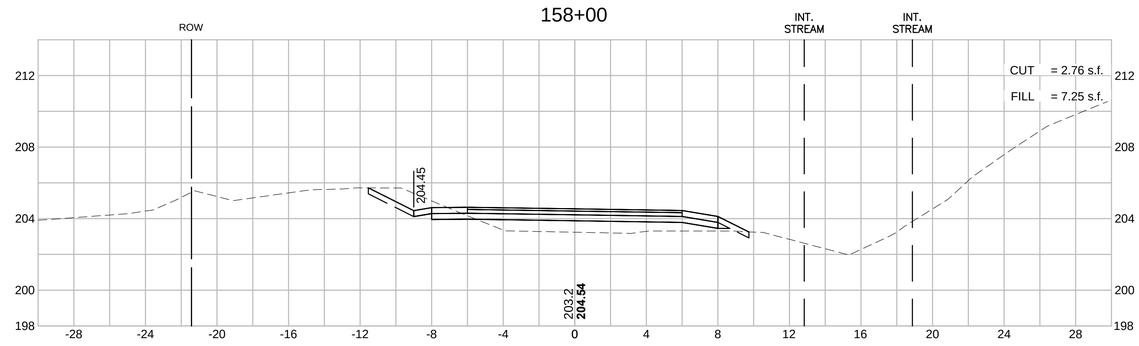
CROSS SECTIONS

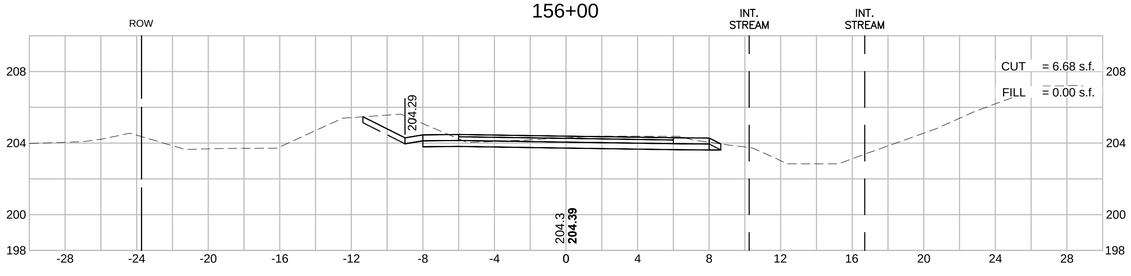
604531_HD(XS).DWG Plotted on 18-Sep-2015 10:32 AM

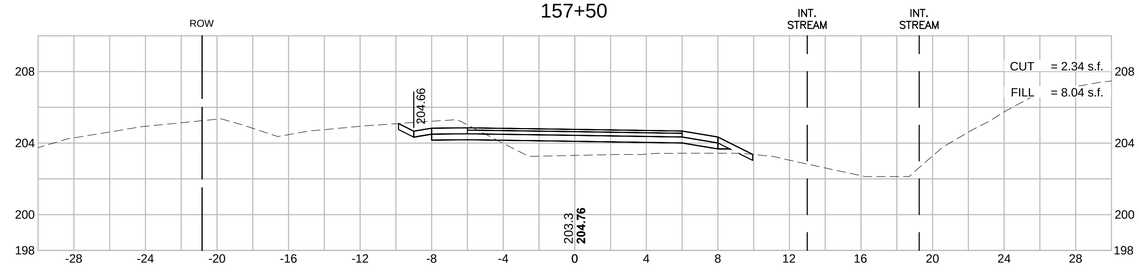












HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

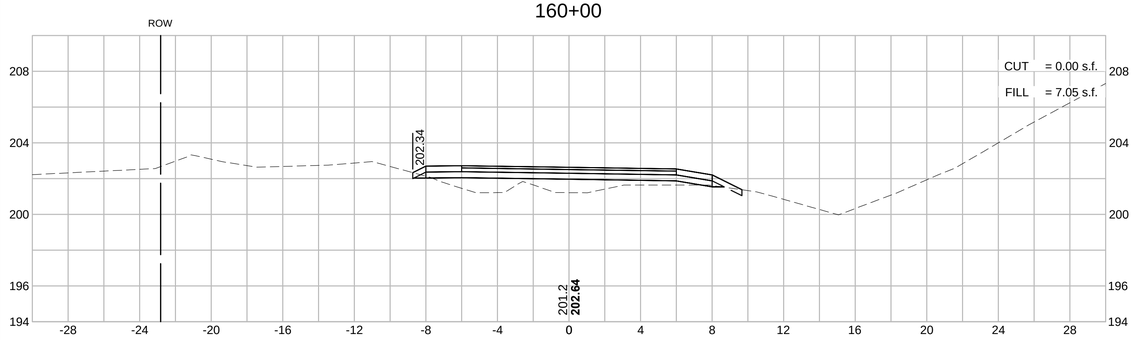
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	214	230
PROJECT FILE NO.	604531		

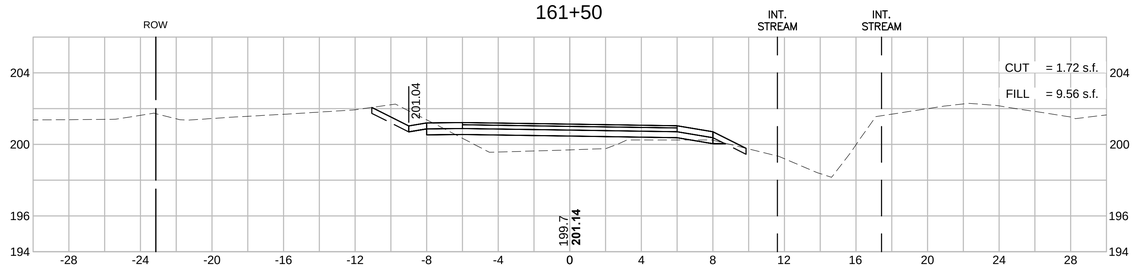
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:33 AM

160+00



161+50



159+50

161+00

159+00

160+50

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

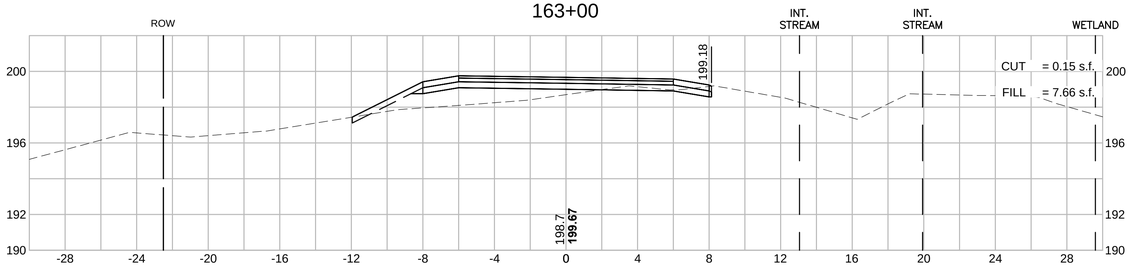
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	215	230
PROJECT FILE NO.	604531		

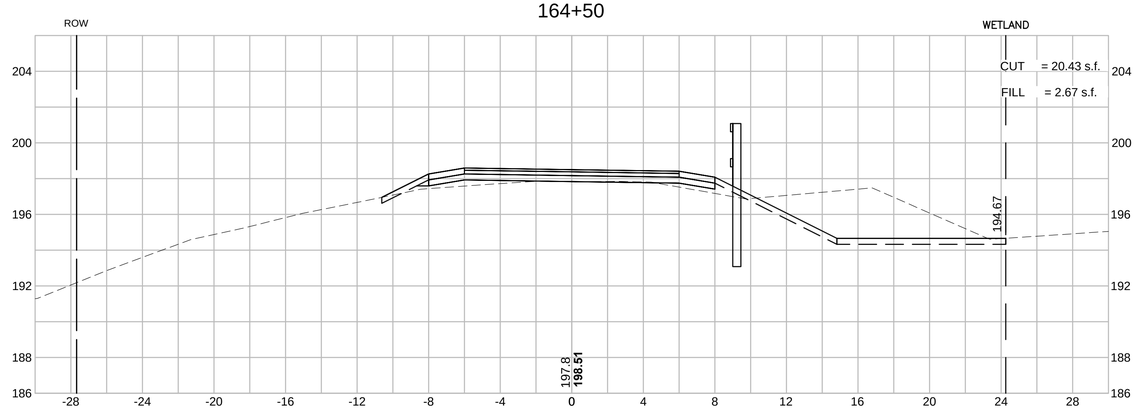
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:34 AM

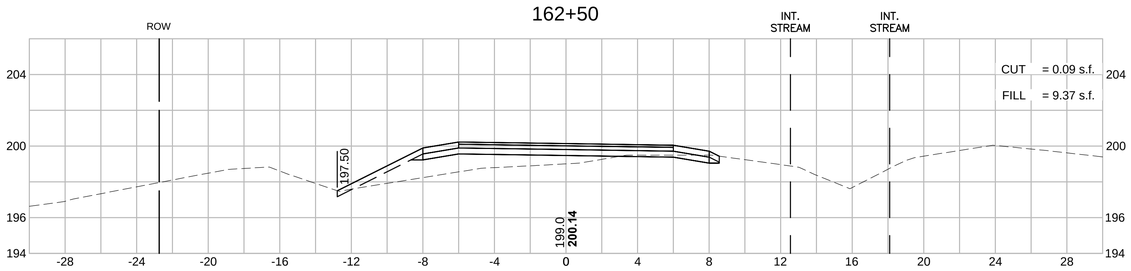
163+00



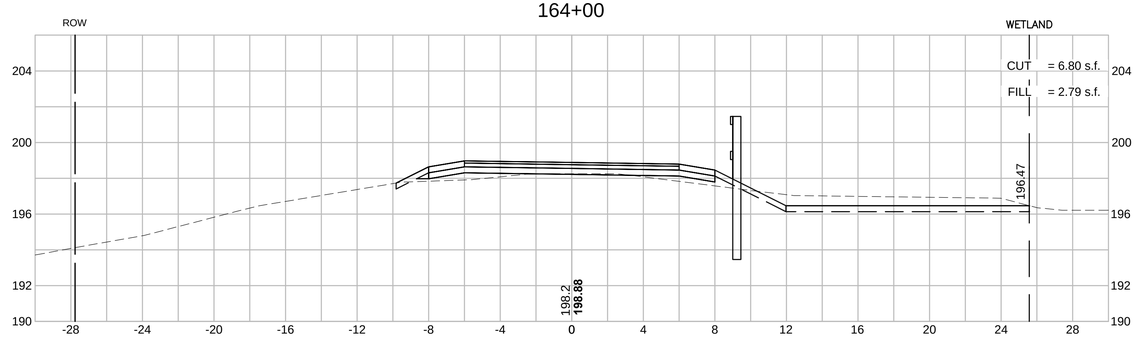
164+50



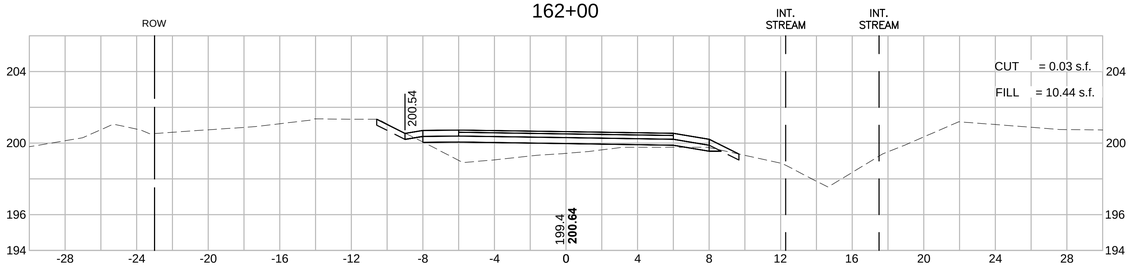
162+50



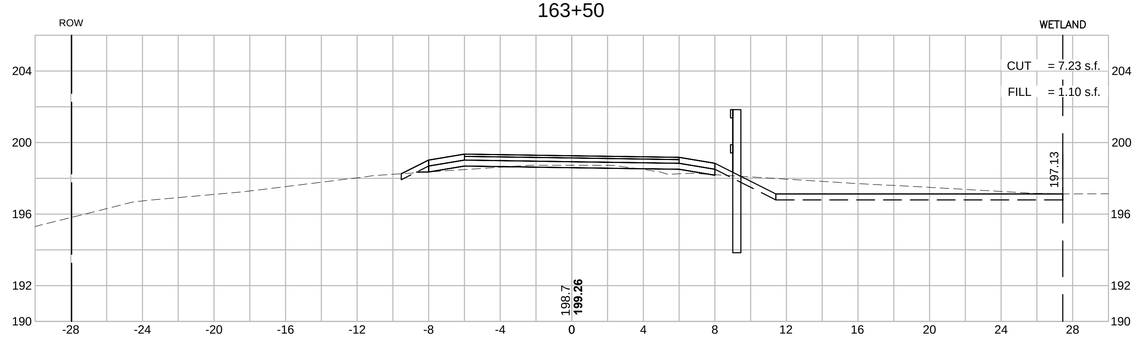
164+00



162+00



163+50



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

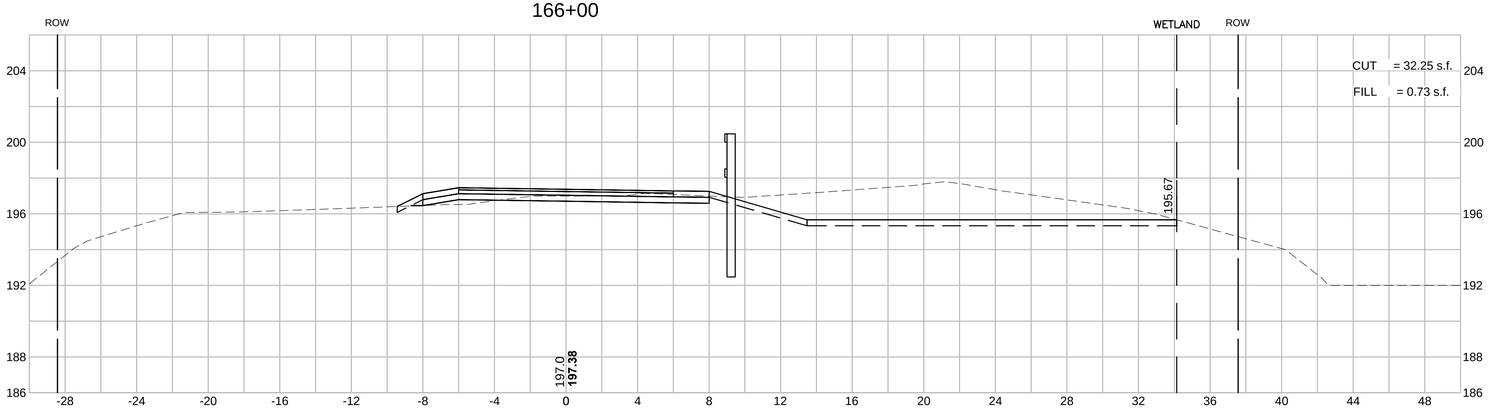
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	216	230
PROJECT FILE NO.	604531		

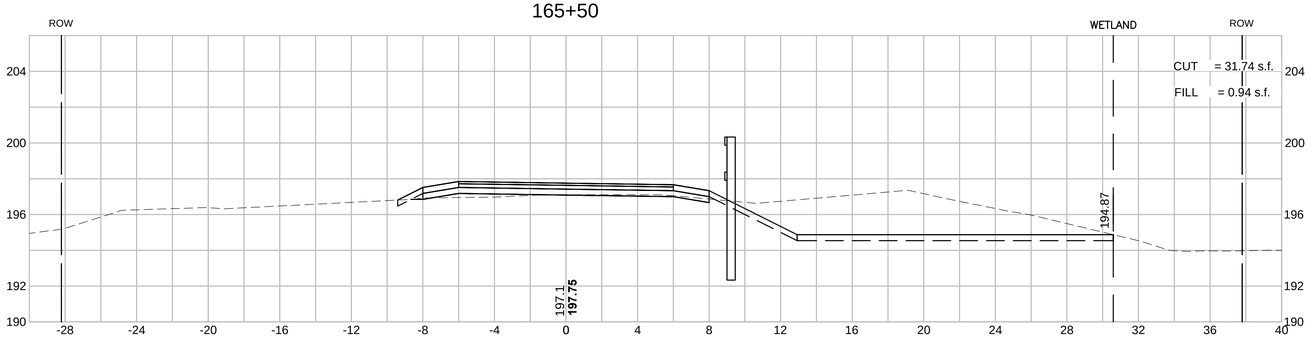
CROSS SECTIONS

Plotted on 18-Sep-2015 10:34 AM
604531_HD(XS).DWG

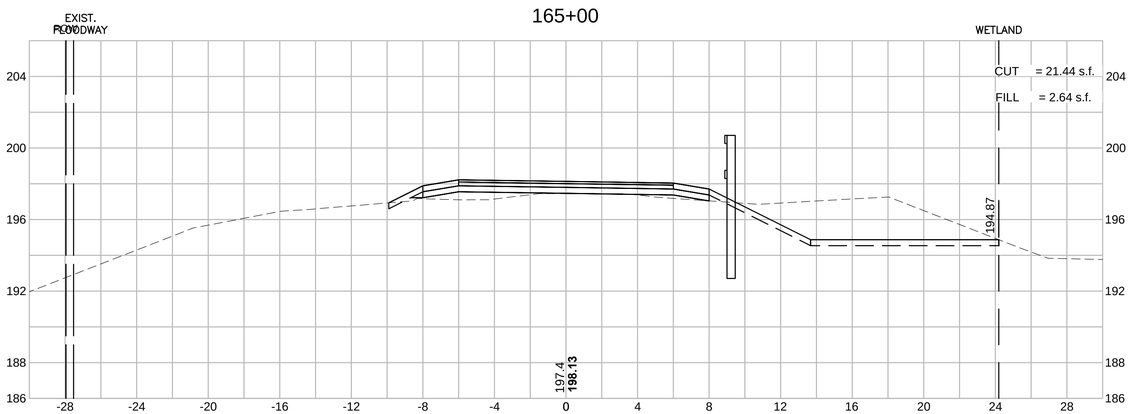
166+00



165+50



165+00



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

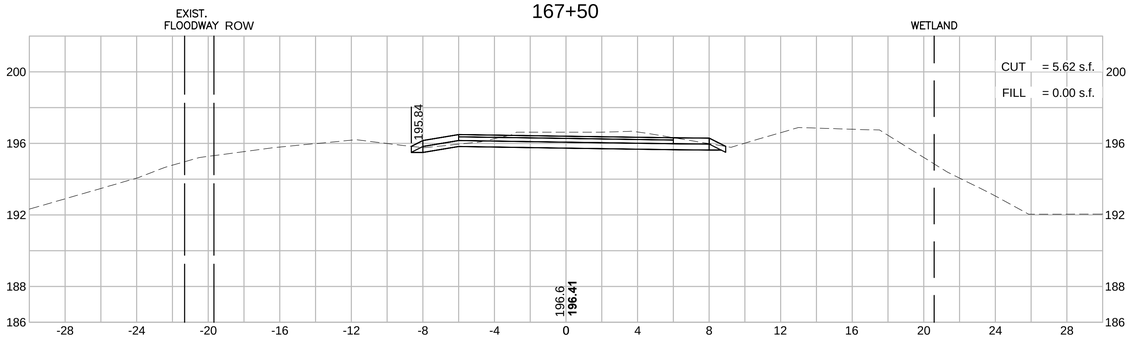
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	217	230
PROJECT FILE NO.	604531		

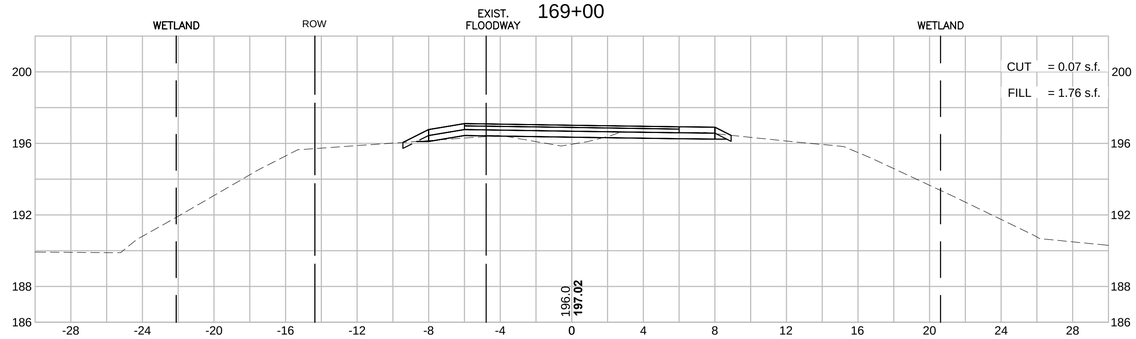
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:35 AM

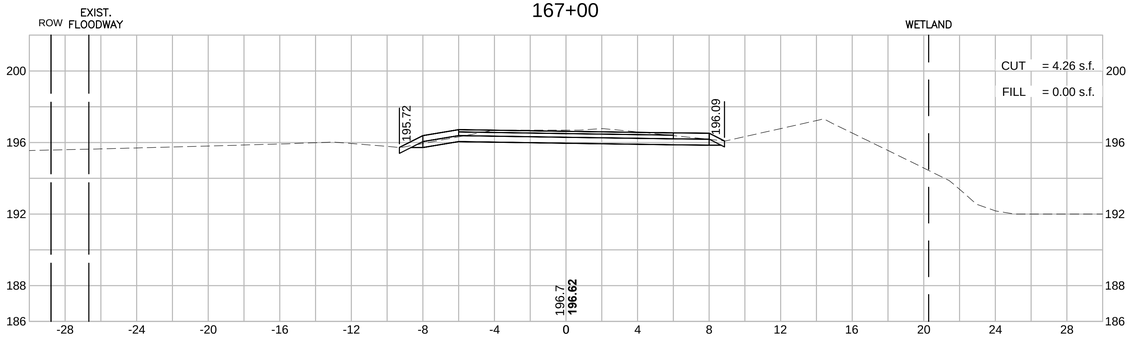
167+50



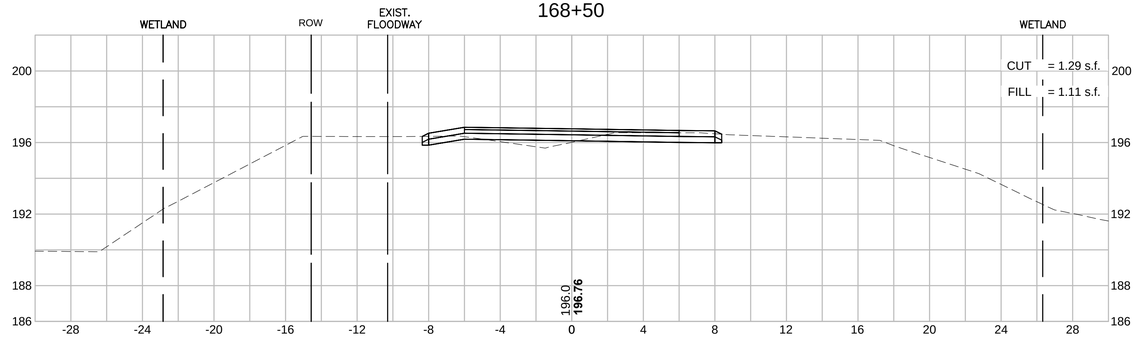
169+00



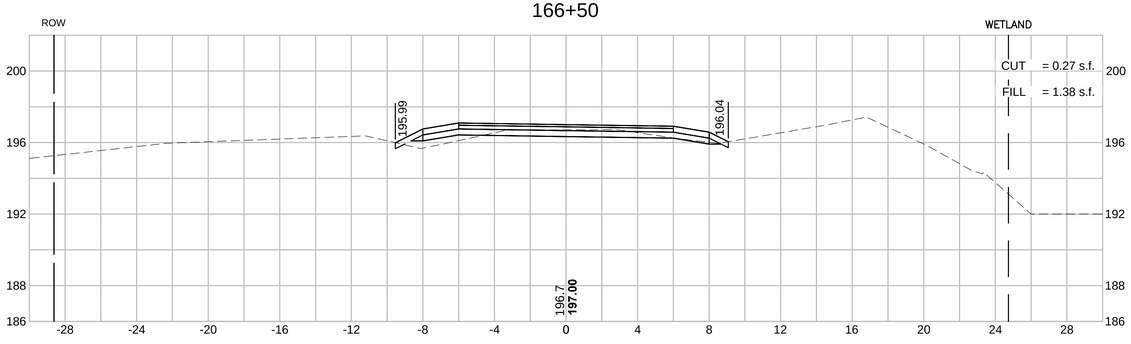
167+00



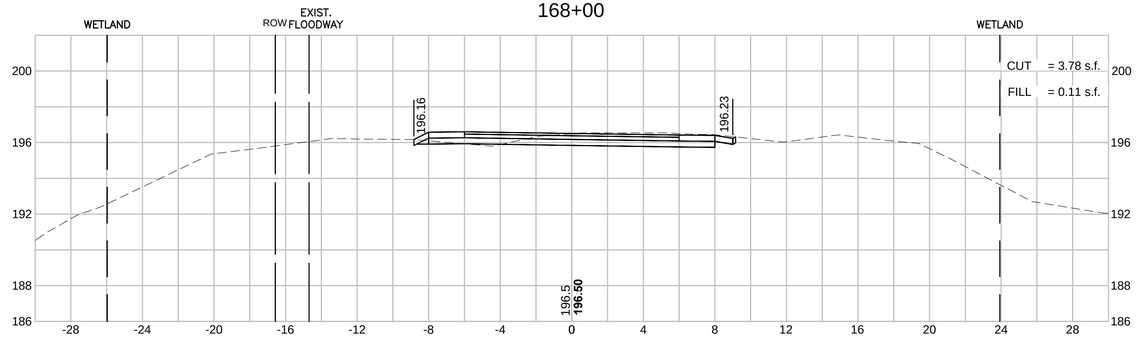
168+50



166+50



168+00

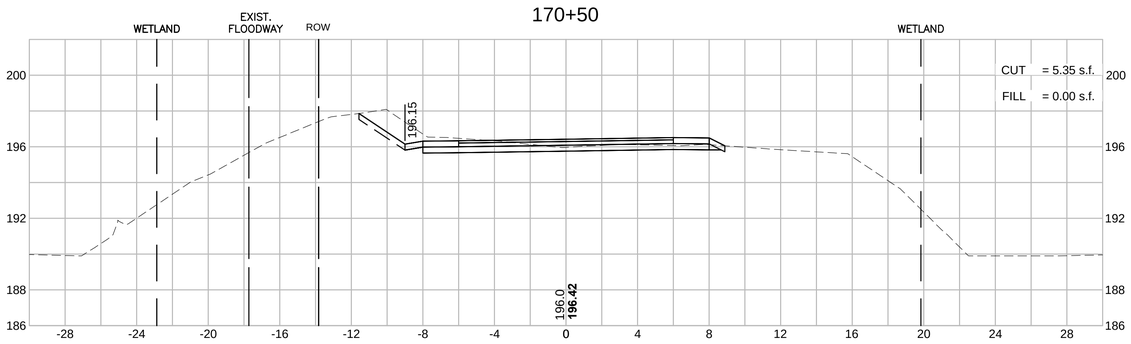


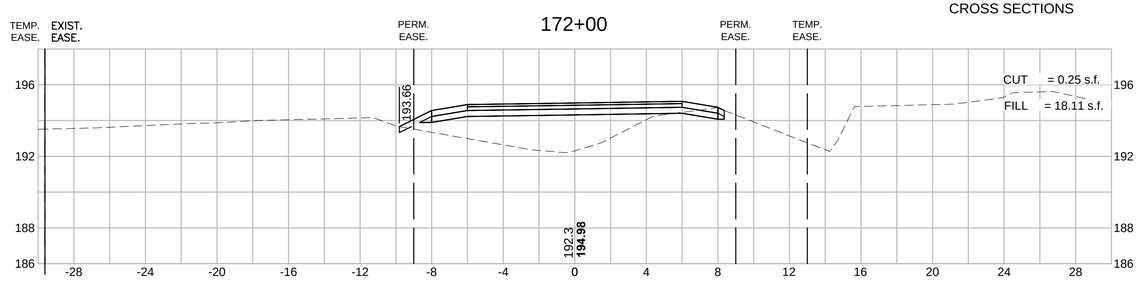
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

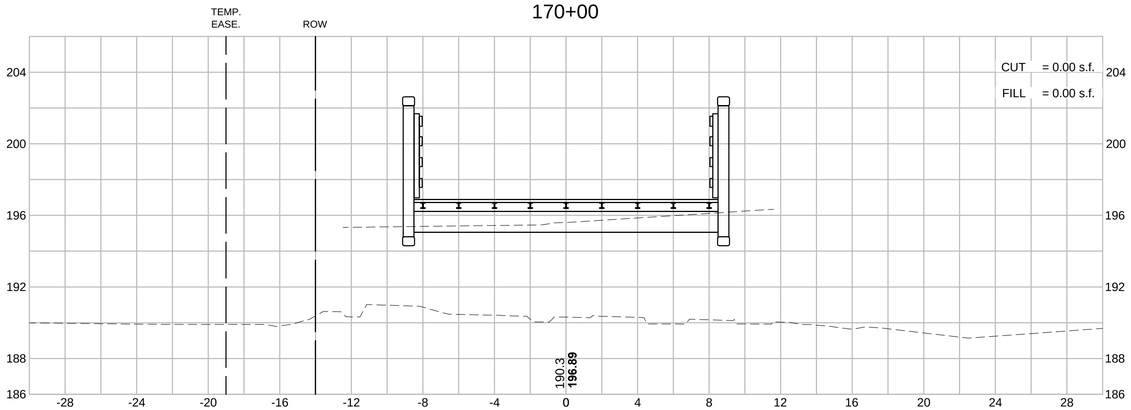
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

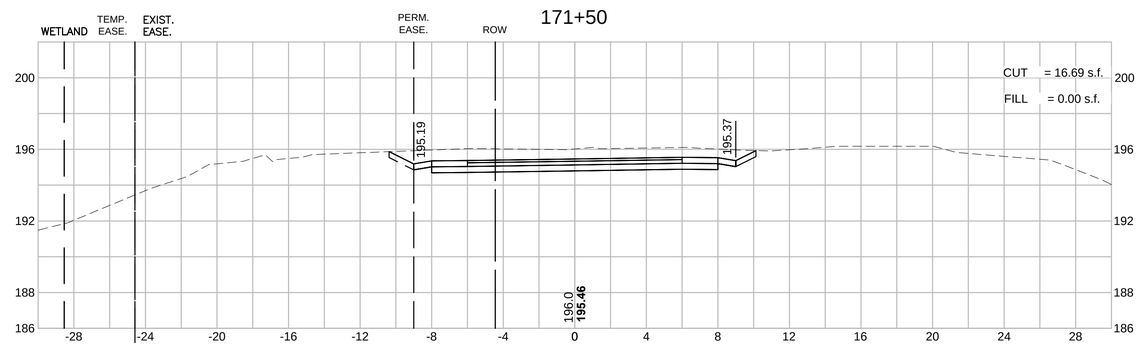
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	218	230
PROJECT FILE NO.	604531		

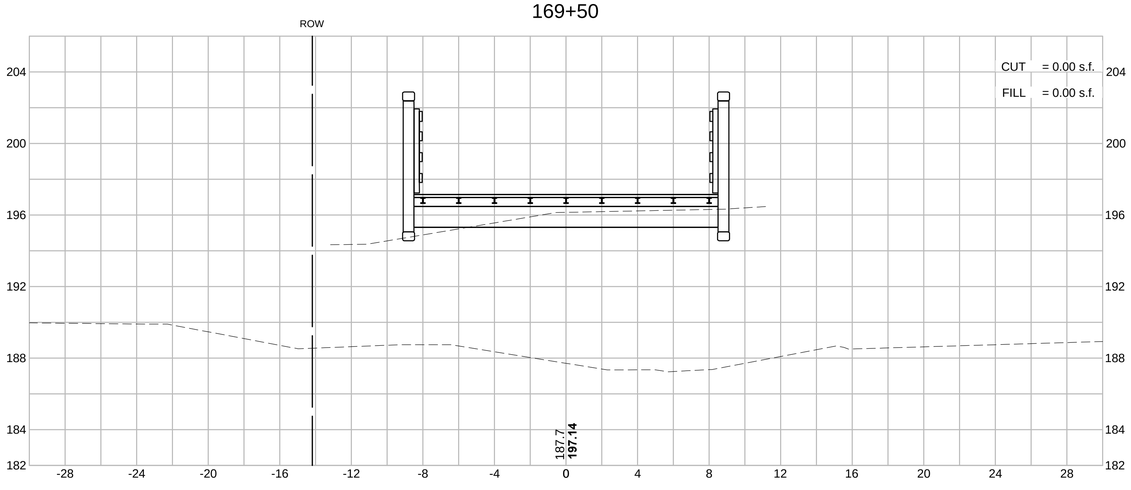
CROSS SECTIONS

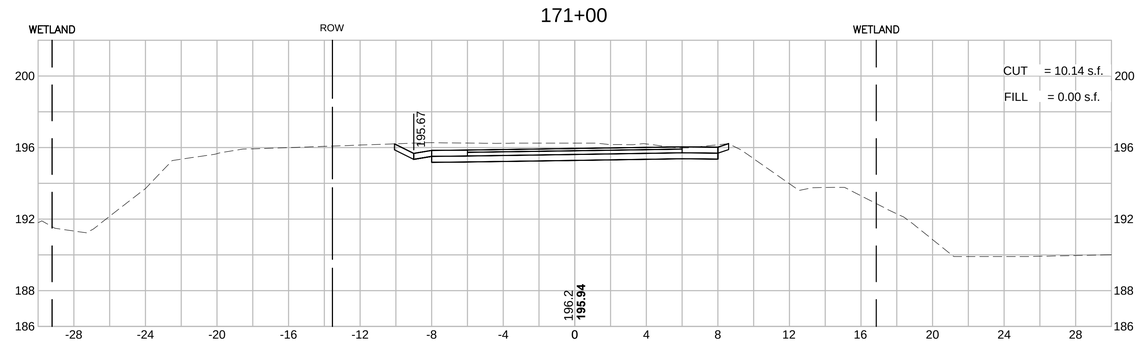












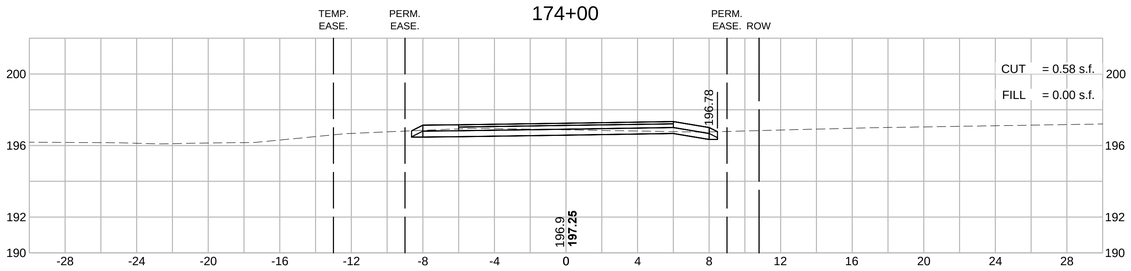
Plotted on 18-Sep-2015 10:35 AM
604531_HD(XS).DWG

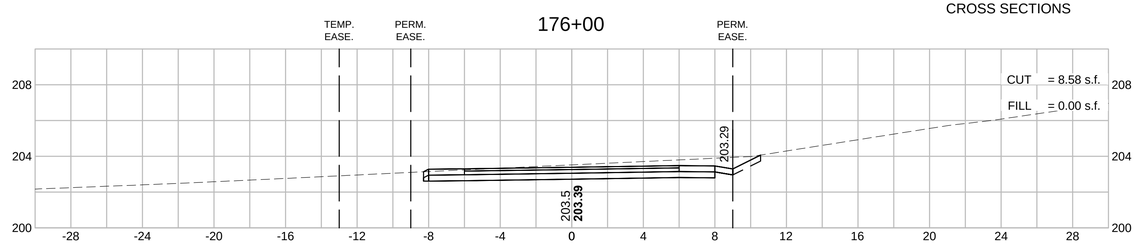
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

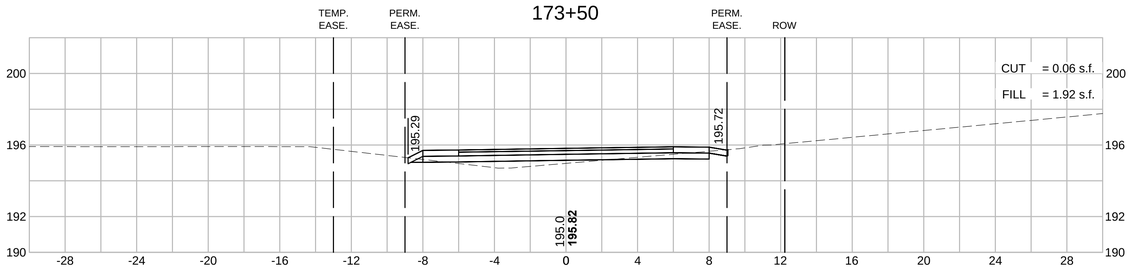
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

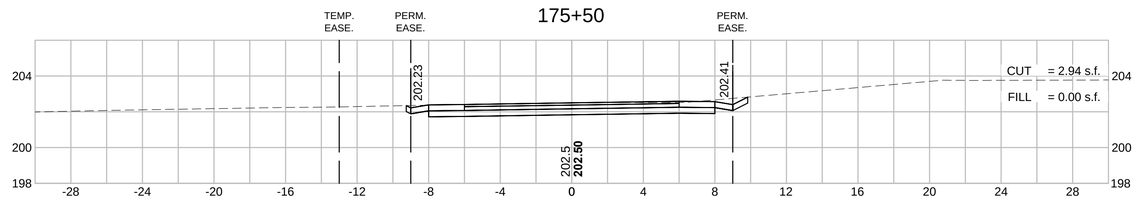
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	219	230
PROJECT FILE NO.	604531		

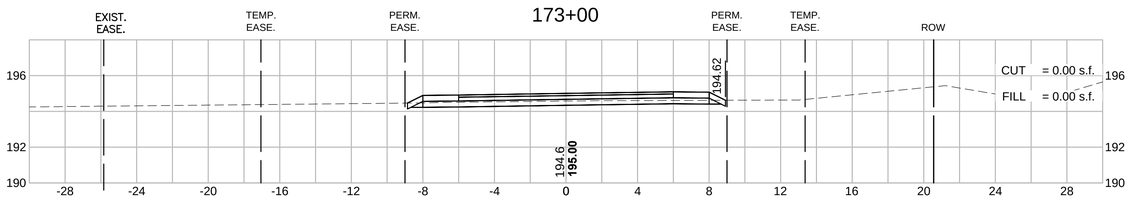
CROSS SECTIONS

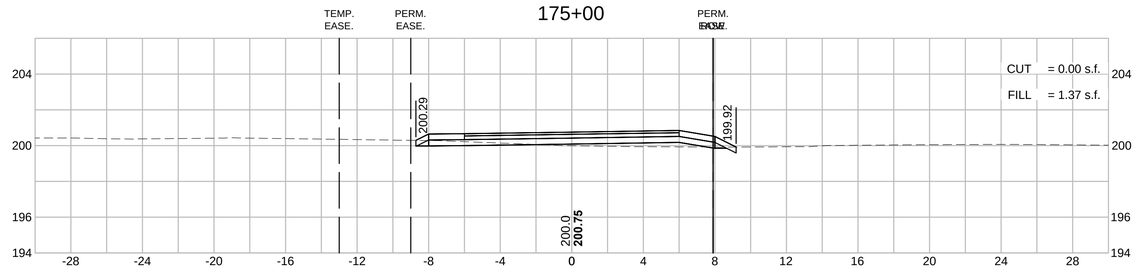


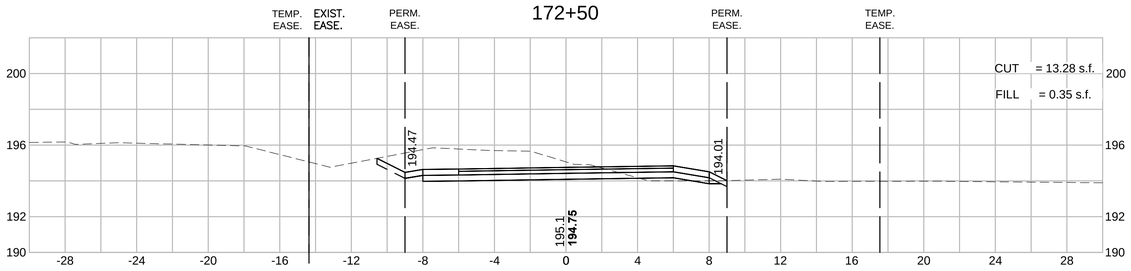


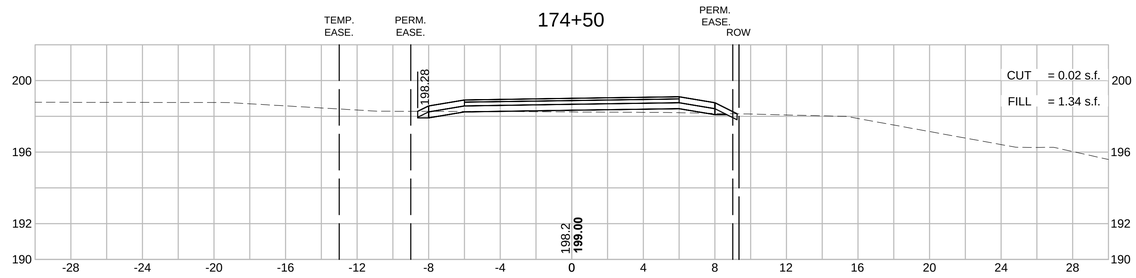






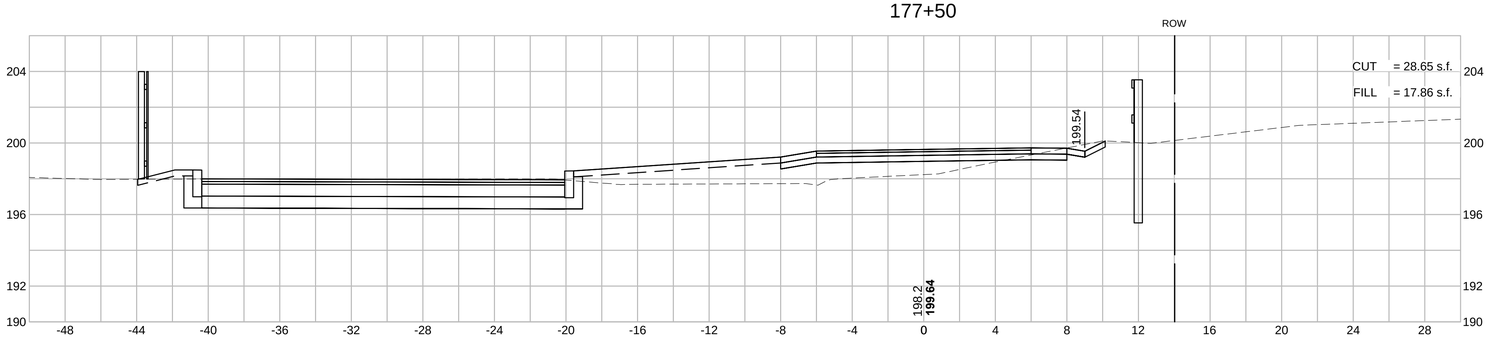




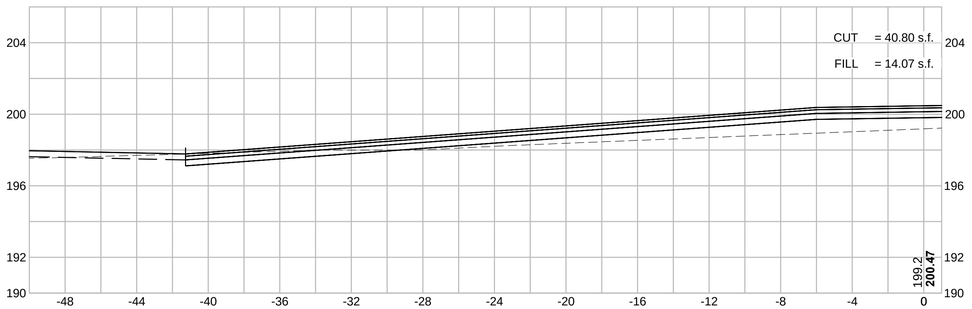


Plotted on 18-Sep-2015 10:36 AM
604531_HD(XS).DWG

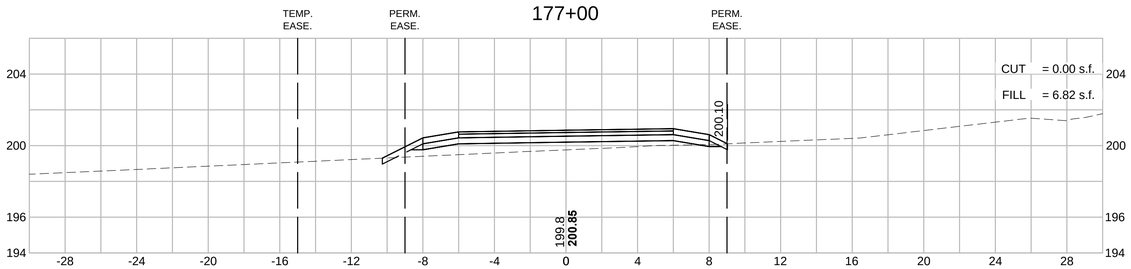
177+50



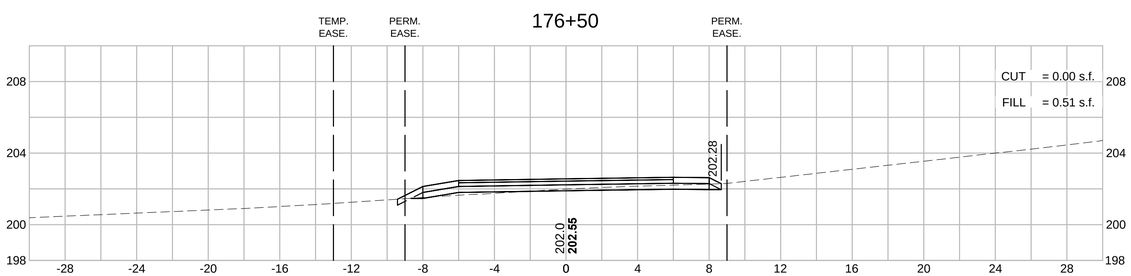
177+12



177+00



176+50



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

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	220	230
PROJECT FILE NO.	604531		

CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:37 AM

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

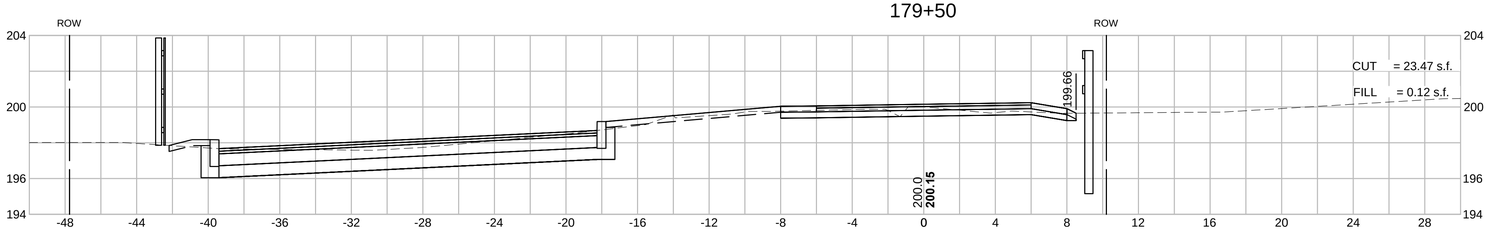
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	221	230
PROJECT FILE NO.	604531		

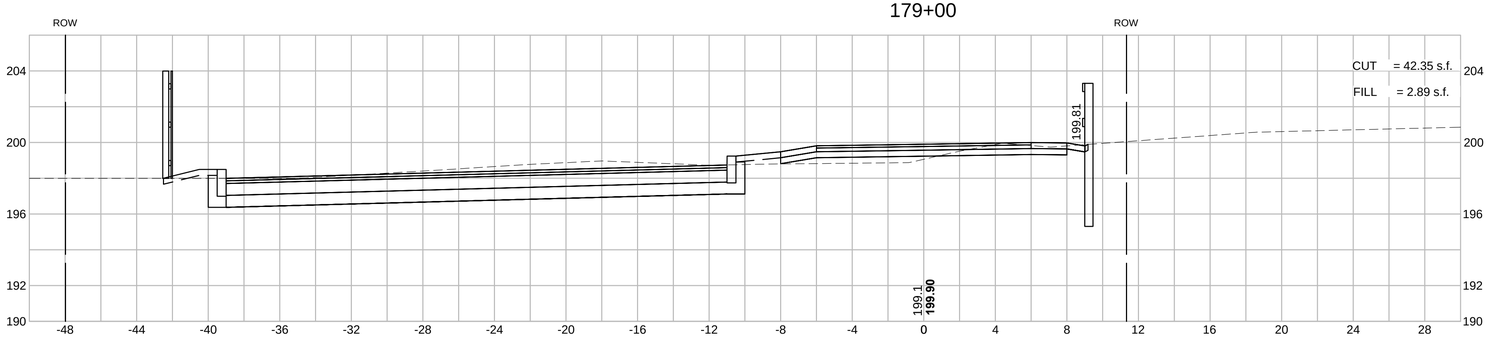
CROSS SECTIONS

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:37 AM

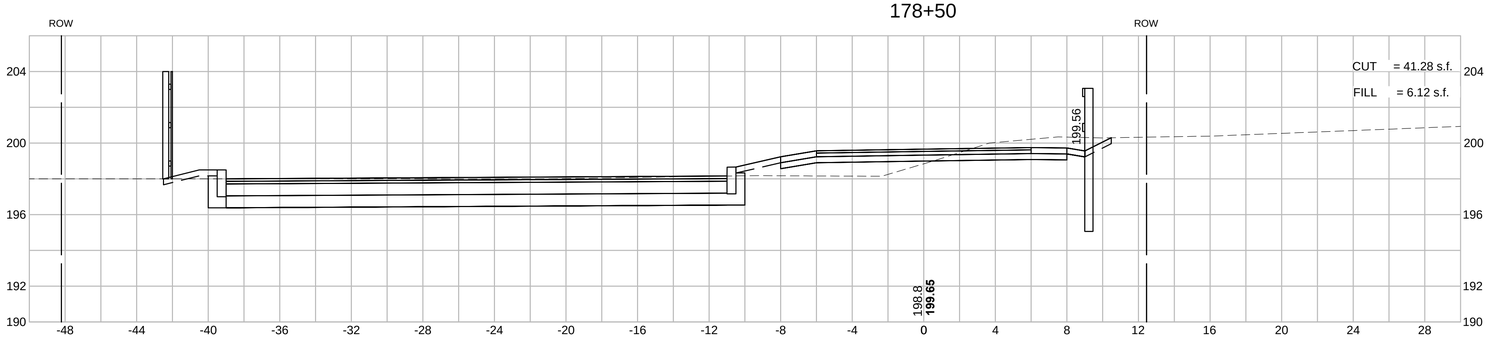
179+50



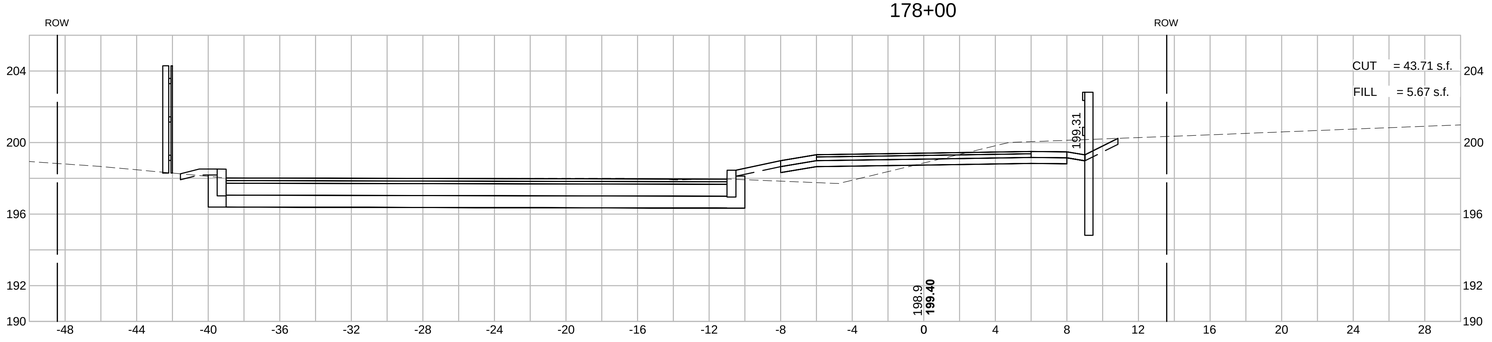
179+00



178+50



178+00

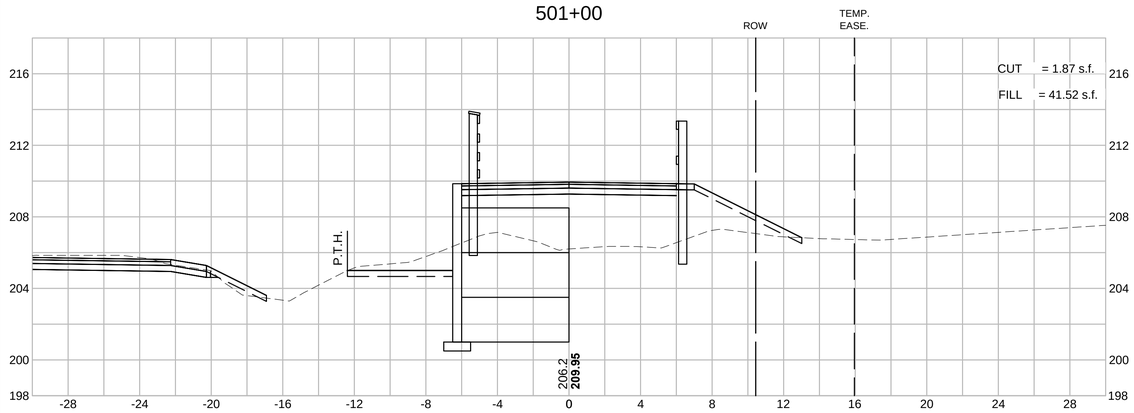


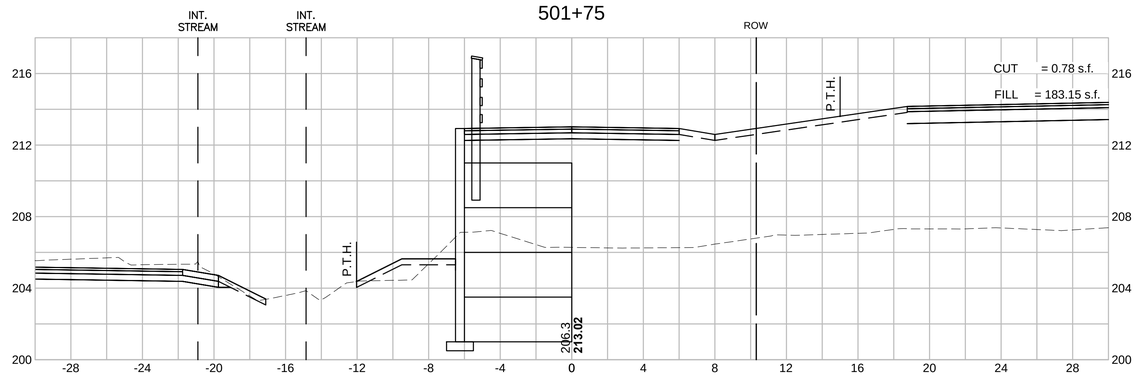
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	222	230
PROJECT FILE NO.	604531		

CROSS SECTIONS
SYLVIA STREET





Plotted on 18-Sep-2015 10:38 AM
604531_HD(XS).DWG

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

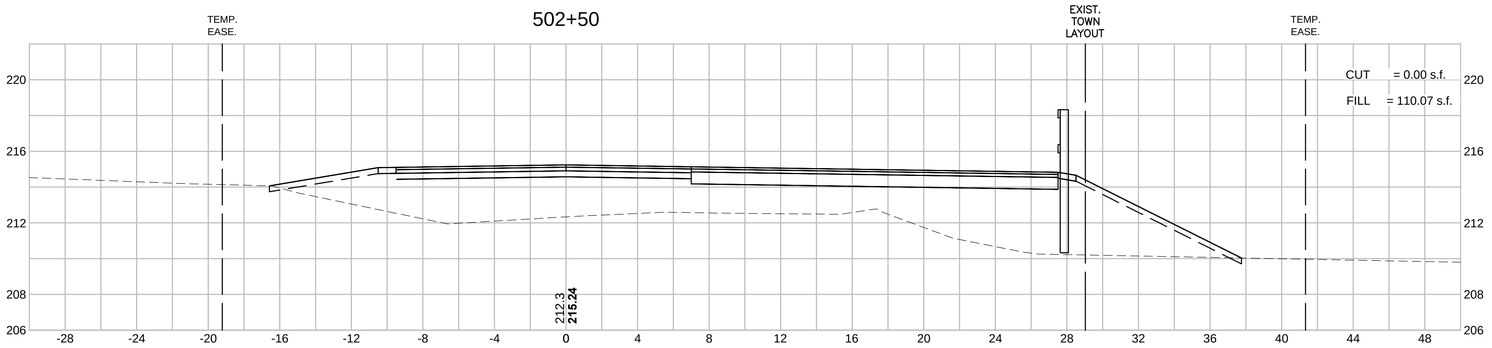
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	223	230
PROJECT FILE NO.	604531		

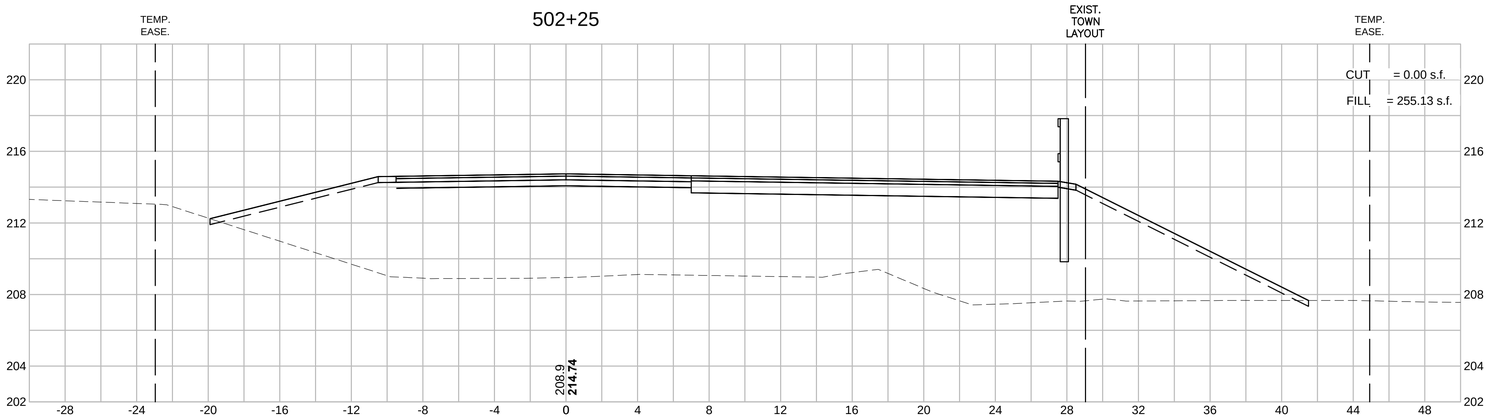
CROSS SECTIONS
SYLVIA STREET

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:38 AM

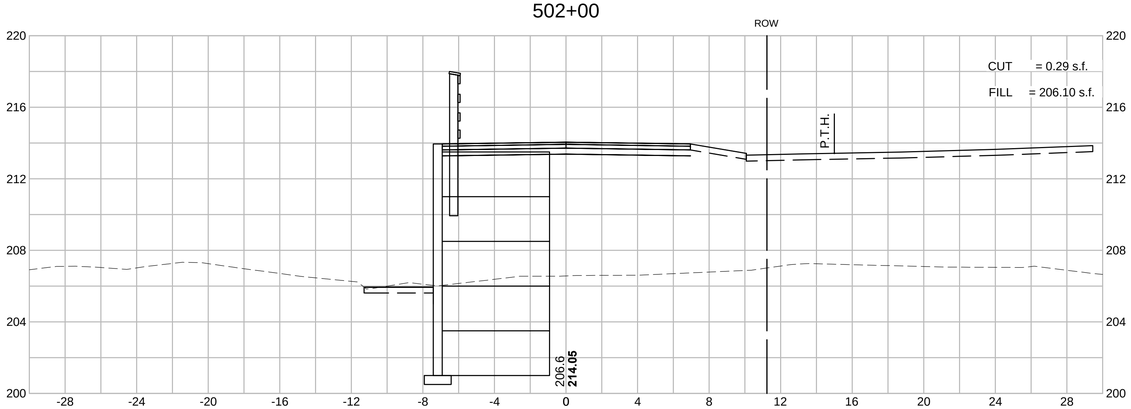
502+50



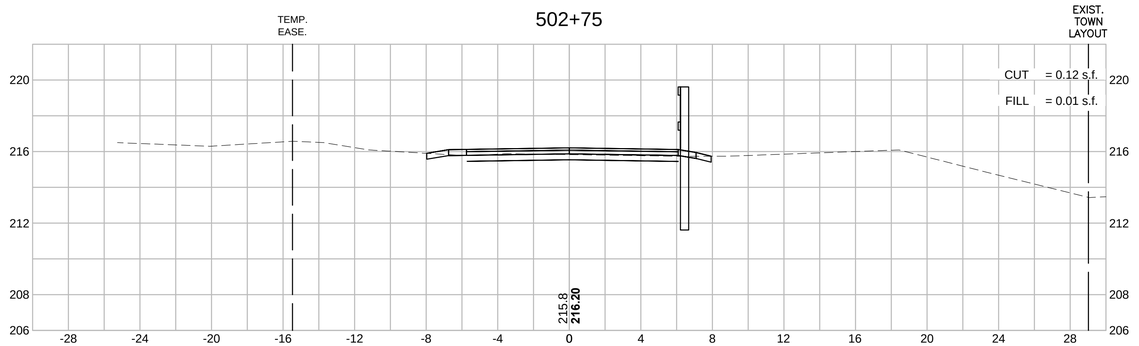
502+25



502+00



502+75



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

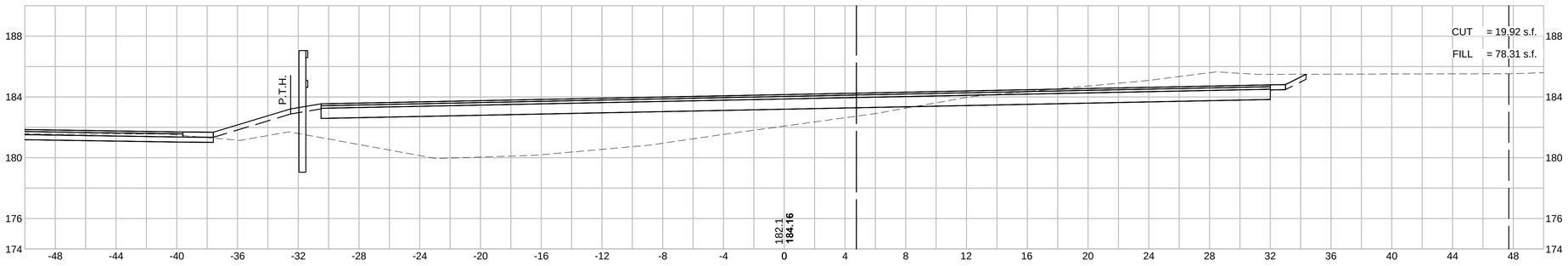
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	224	230
PROJECT FILE NO.	604531		

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

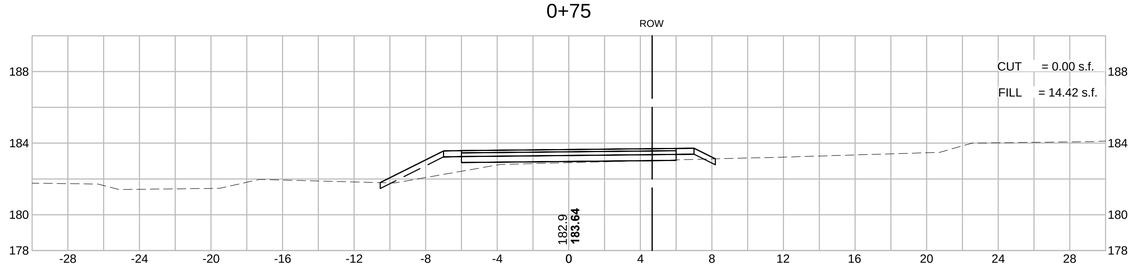
CROSS SECTIONS
ICE HOUSE LANDING PARKING LOT

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:39 AM

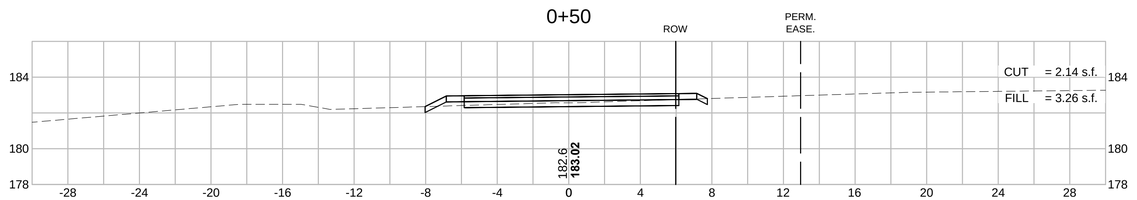
1+00



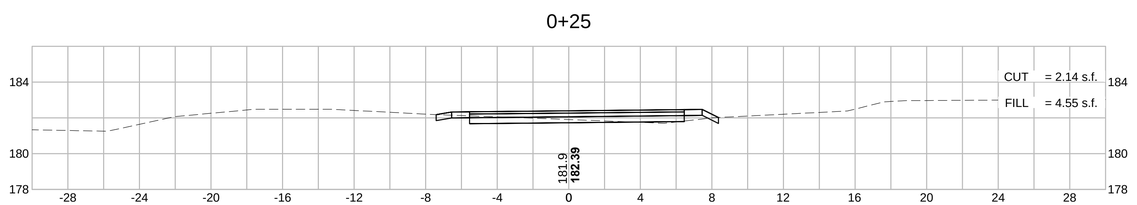
0+75



0+50



0+25



HOR. SCALE IN FEET

4 0 4 8

4 0 4 8

VER. SCALE IN FEET

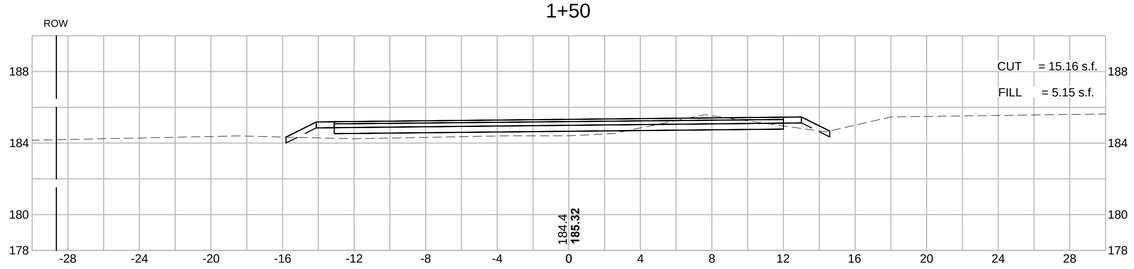
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	225	230
PROJECT FILE NO.	604531		

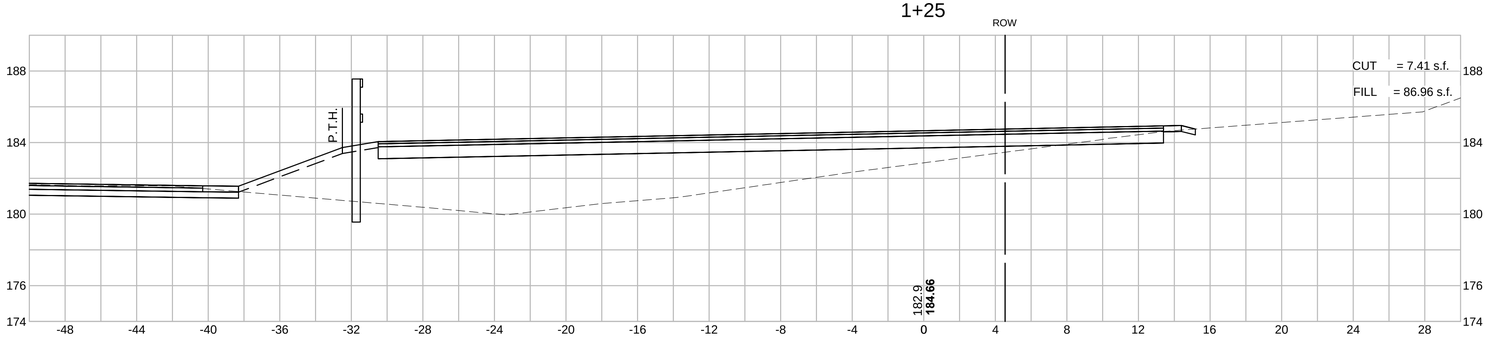
CROSS SECTIONS
ICE HOUSE LANDING PARKING LOT

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:39 AM

1+50



1+25



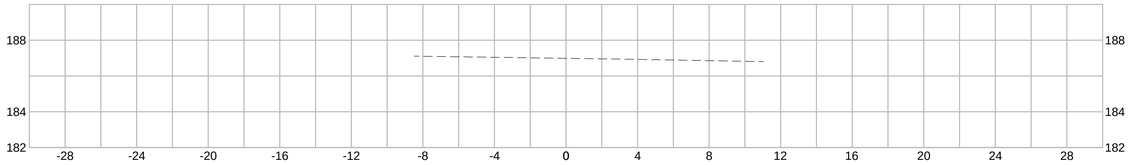
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	226	230
PROJECT FILE NO.	604531		

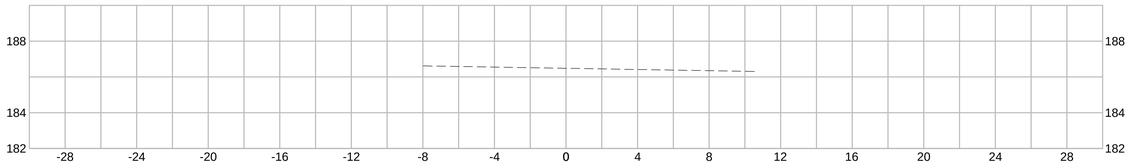
CROSS SECTIONS WINTER STREET

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:40 AM

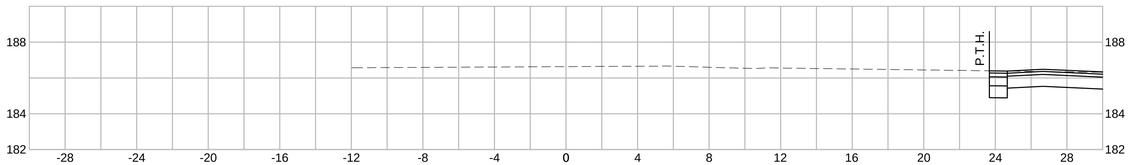
413+00



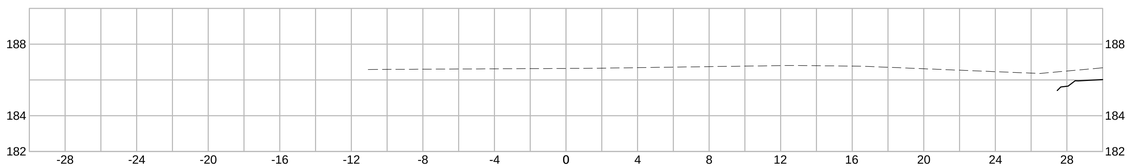
412+50



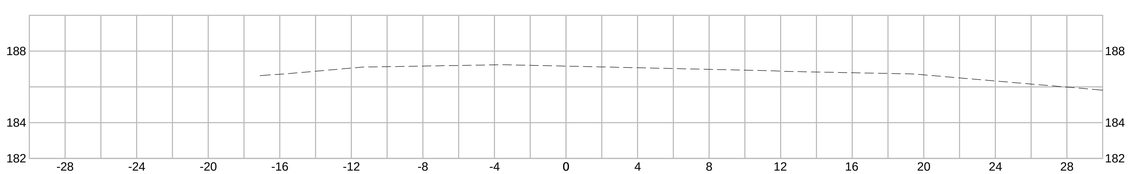
412+13.37



412+00



411+50



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

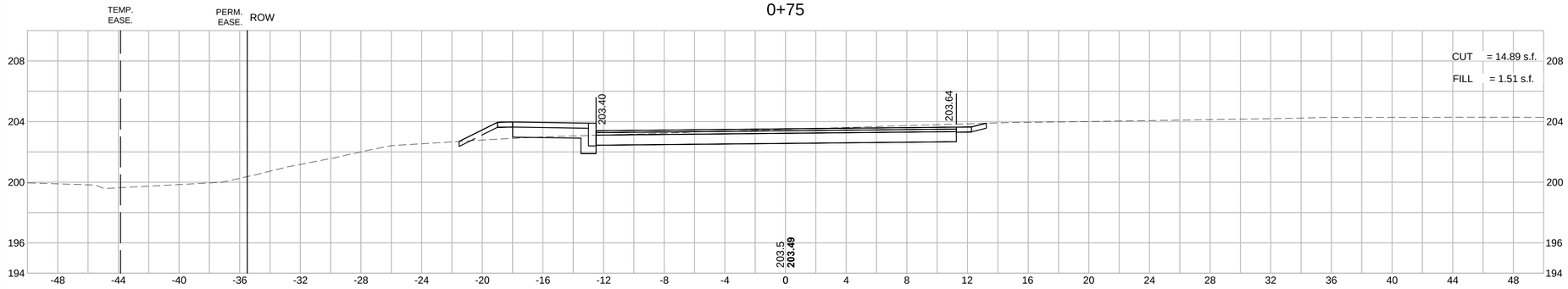
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	227	230
PROJECT FILE NO.	604531		

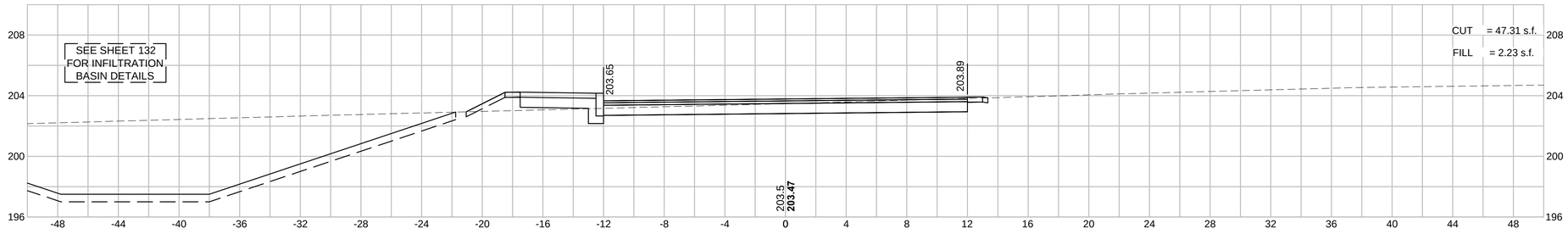
CROSS SECTIONS
MAPLE STREET PARKING LOT

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:41 AM

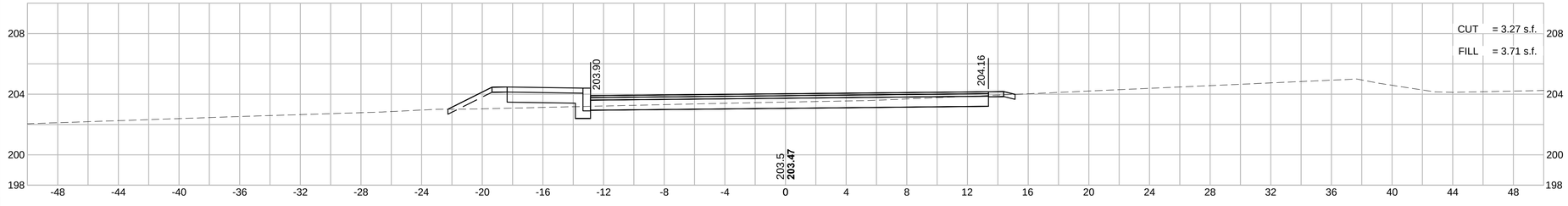
0+75



0+50



0+25



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

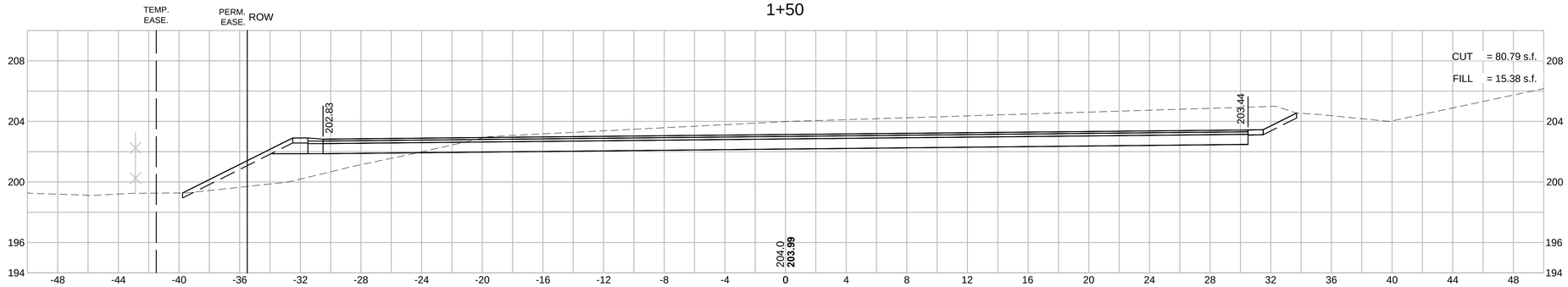
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	228	230
PROJECT FILE NO.	604531		

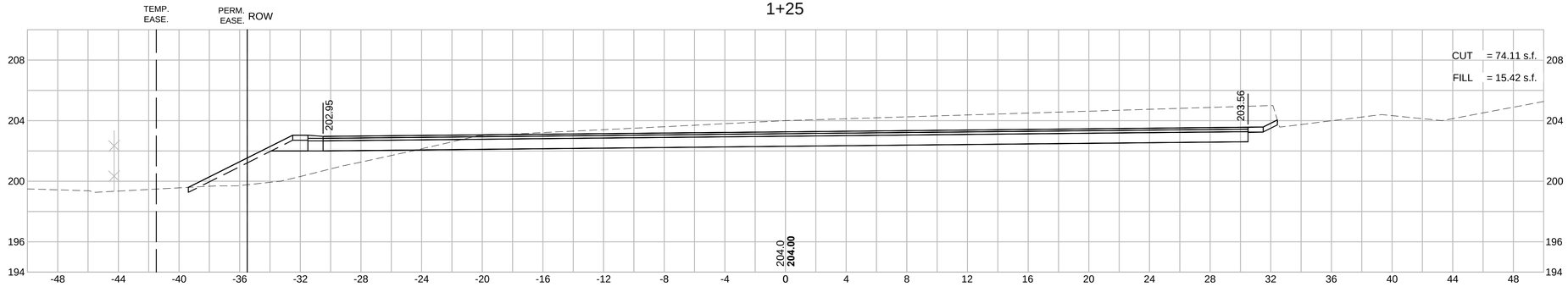
CROSS SECTIONS
MAPLE STREET PARKING LOT

604531_HD(XS).DWG Plotted on 18-Sep-2015 10:41 AM

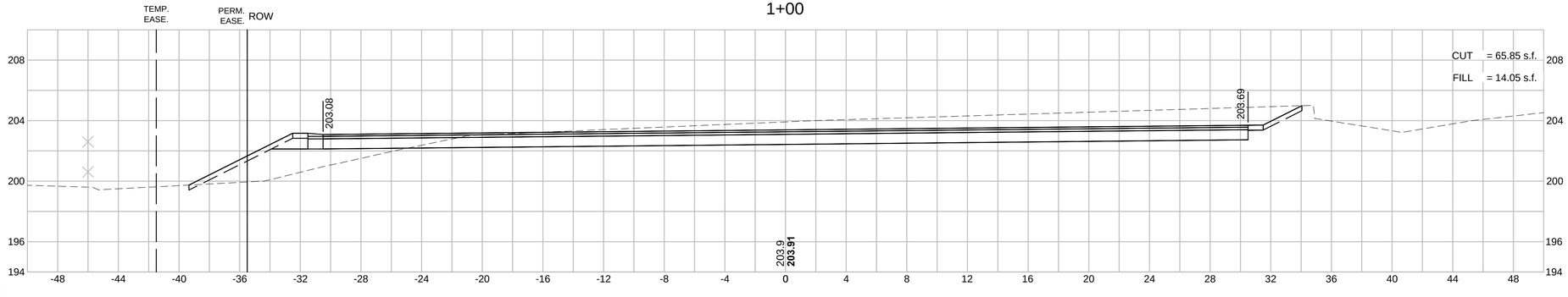
1+50



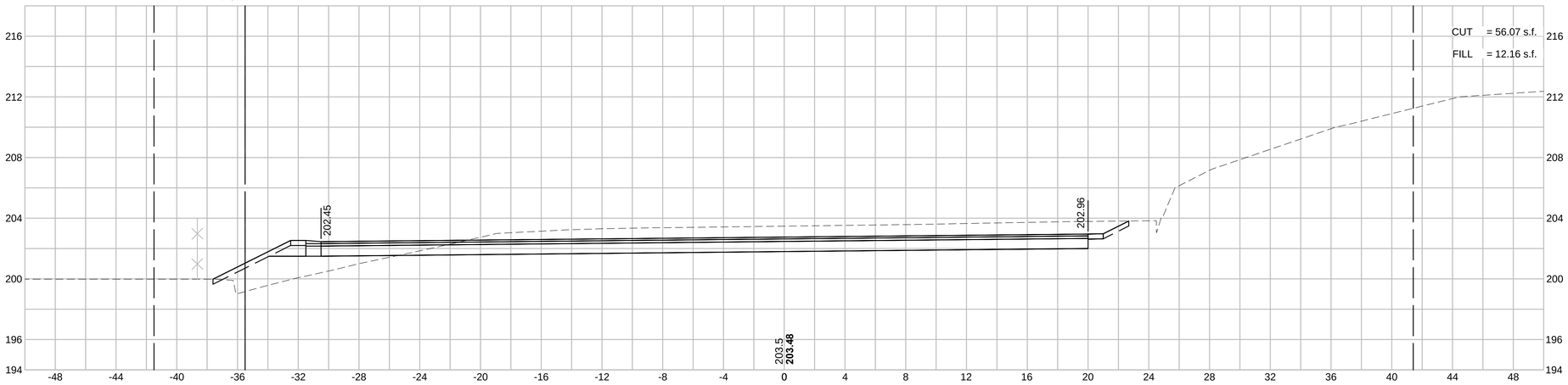
1+25



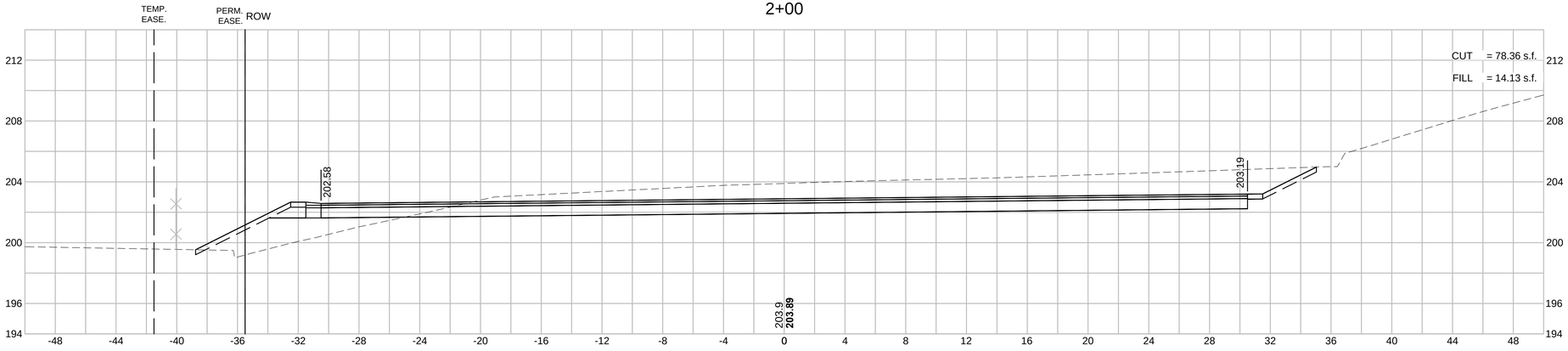
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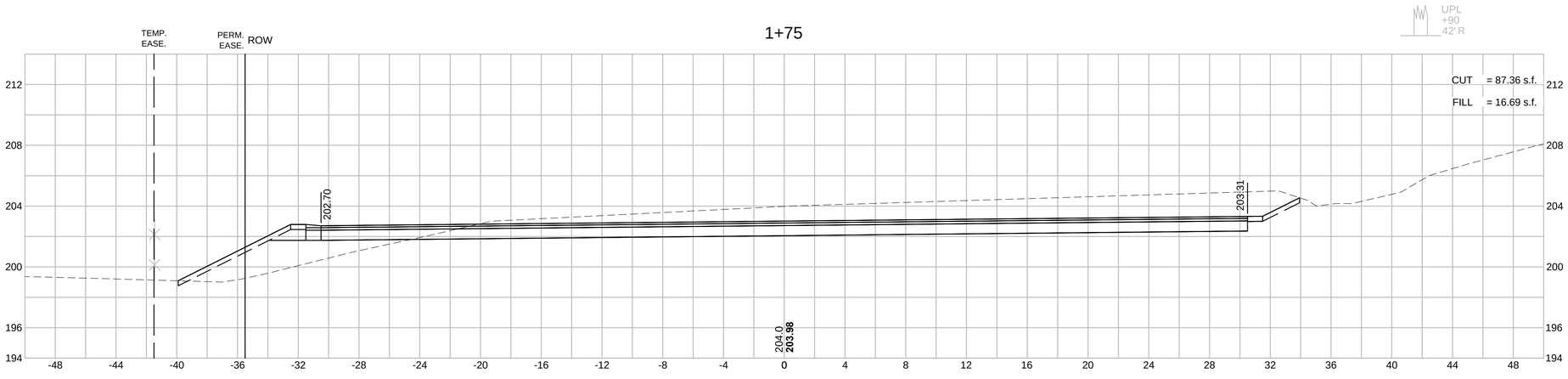
2+25



2+00



1+75



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

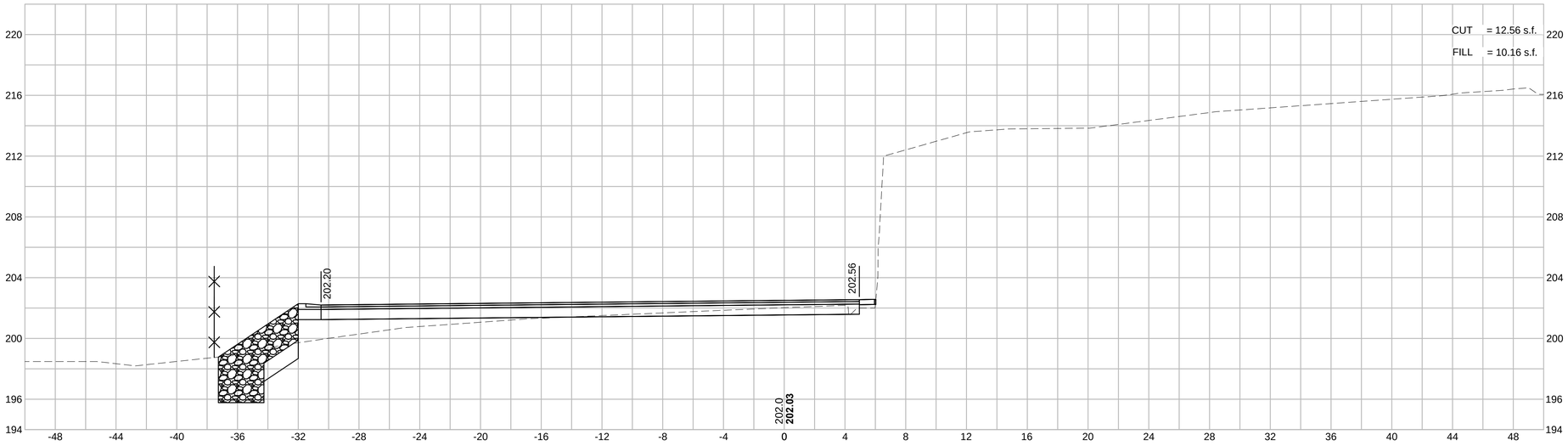
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	229	230
PROJECT FILE NO.	604531		

CROSS SECTIONS
MAPLE STREET PARKING LOT

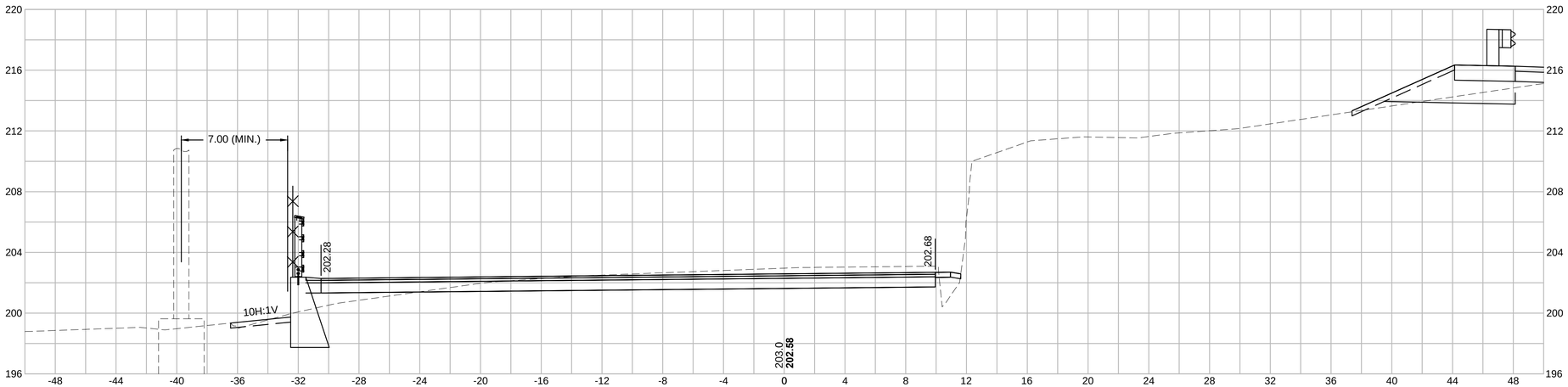
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

Plotted on 18-Sep-2015 10:42 AM
604531_HD(XS).DWG

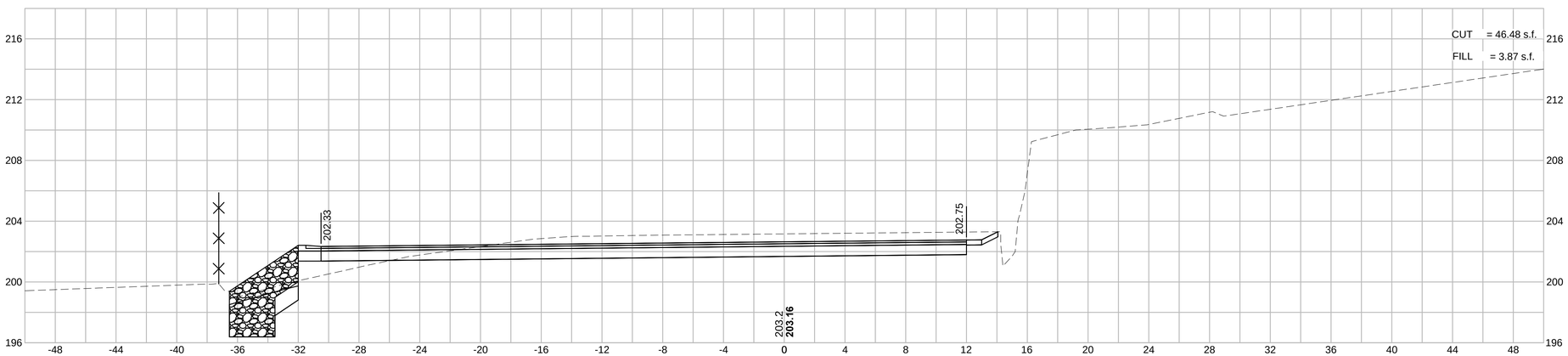
2+75



2+60



2+50



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	230	230
PROJECT FILE NO.	604531		

CROSS SECTIONS
MAPLE STREET PARKING LOT

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

Plotted on 18-Sep-2015 10:42 AM
604531_HD(XS).DWG