LANDSCAPE DETAILS
SEE SHEET 115

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

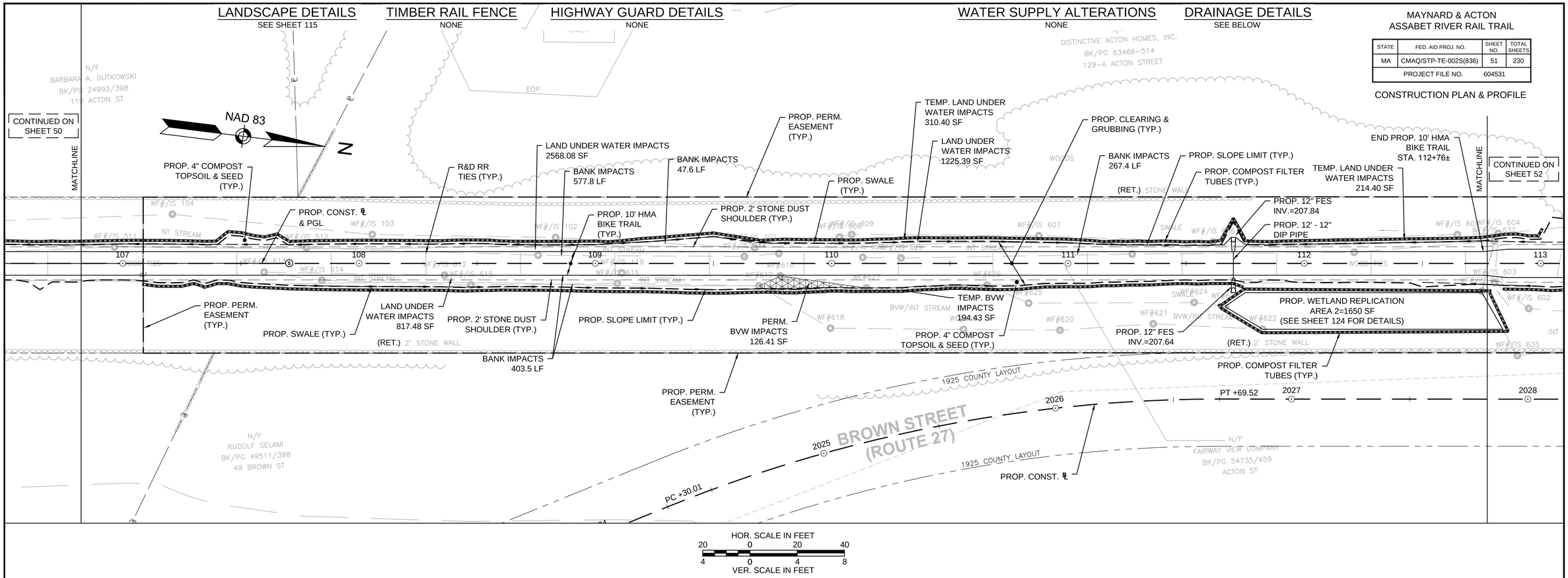
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

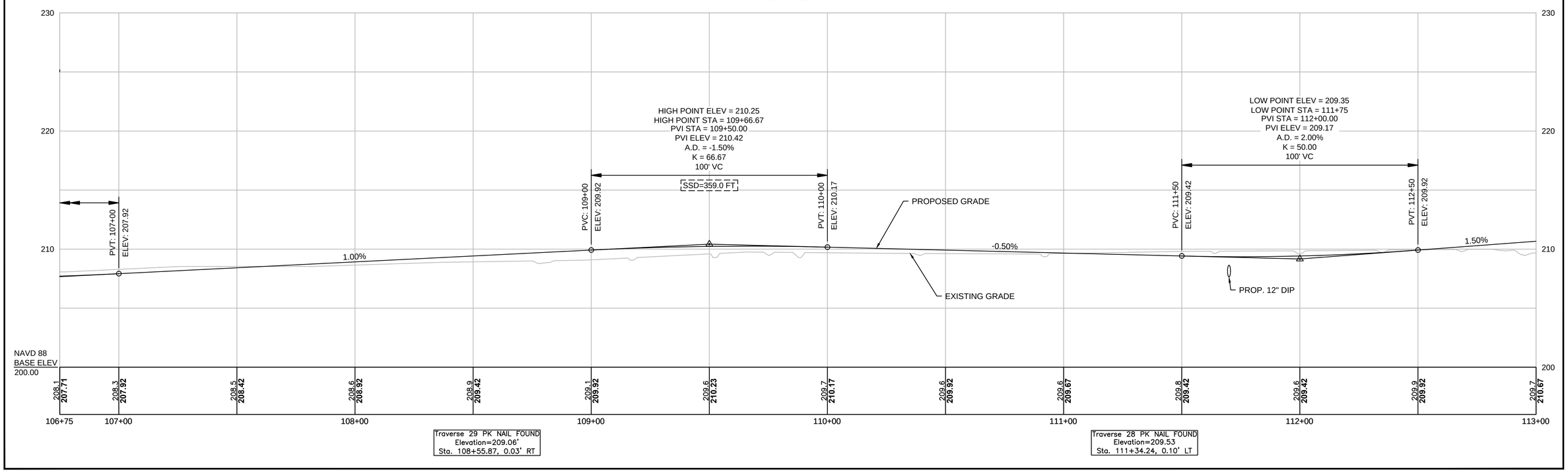
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

CONSTRUCTION PLAN & PROFILE



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



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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.

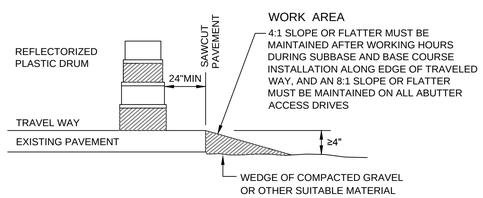
27. PLASTIC DRUMS MUST PASS THE CRITERIA SET FORTH IN NCHRP 350 "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES." IF THEY DO NOT MEET THESE CRITERIA, THEY MUST BE REMOVED FROM THE PROJECT.

28. TEMPORARY IMPACT ATTENUATORS MUST MEET THE PERFORMANCE STANDARDS OF NCHRP 350.

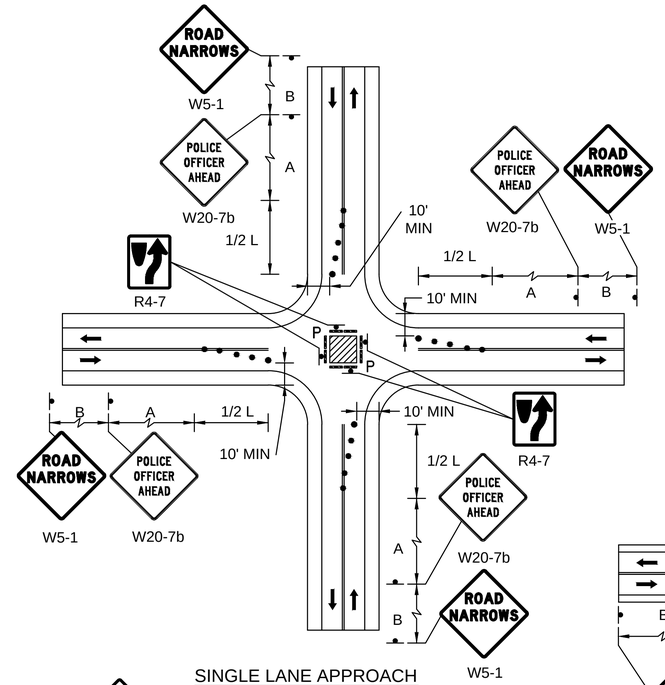
29. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY MUST PASS THE CRITERIA SET FORTH IN NCHRP 350 "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES." IF THEY DO NOT MEET THIS CRITERIA, THEY MUST BE REMOVED FROM THE PROJECT.

TRAFFIC MANAGEMENT LEGEND

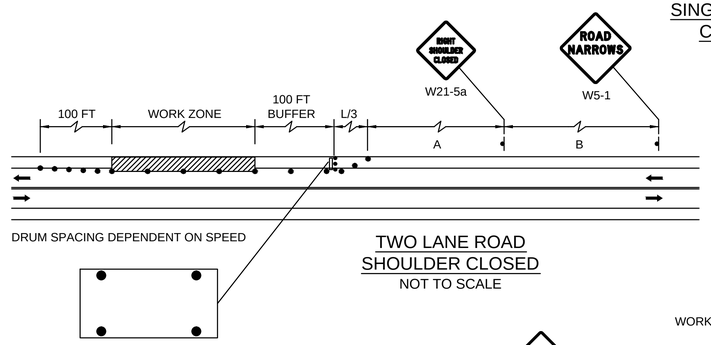
- WORK AREA
- DIRECTION OF TRAVEL
- REFLECTORIZED DRUM OR CONE
- A — REFLECTORIZED DRUM WITH TYPE 'A' FLASHING WARNING LIGHT
- P / — POLICE OFFICER OR FLAGGER CONTROL
- PORTABLE TYPE III BARRICADE (4' WIDE, MIN.)
- FLASHING ARROW BOARD (30"x 60" STD. SIZE WITH 13 LAMPS, MIN.)
- TEMPORARY PRECAST CONCRETE 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



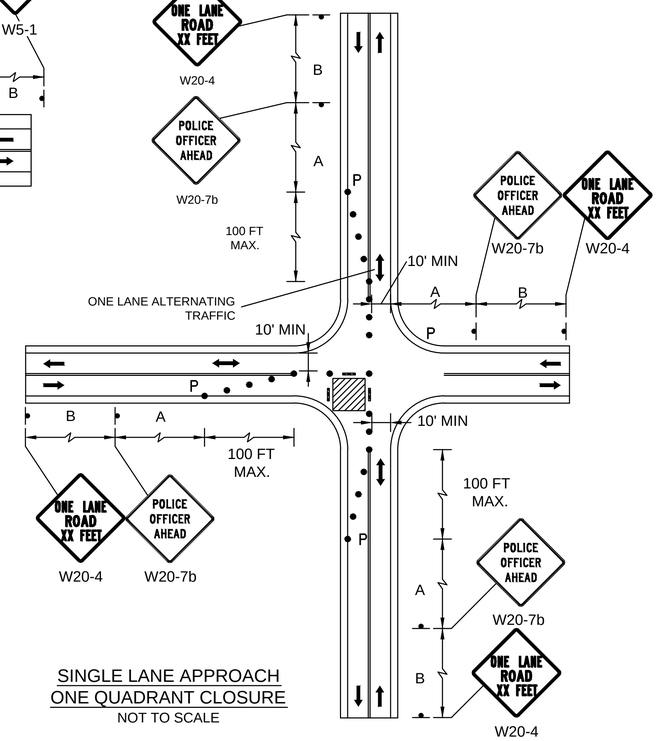
AFTER WORK HOURS TREATMENT FOR LATERAL SLOPING



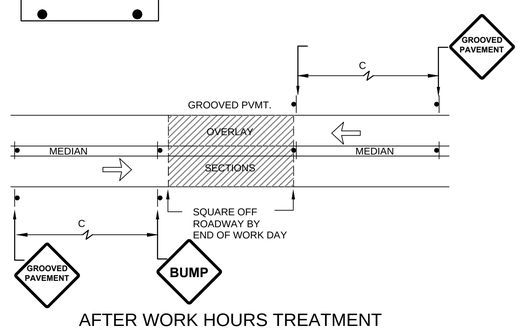
SINGLE LANE APPROACH
CENTER CLOSURE
NOT TO SCALE



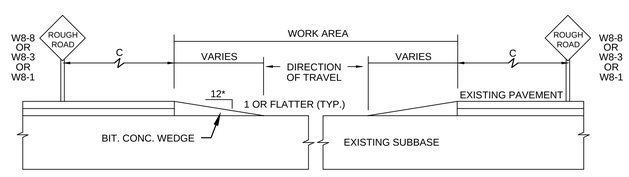
TWO LANE ROAD
SHOULDER CLOSED
NOT TO SCALE



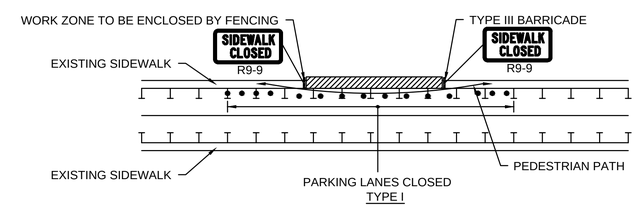
SINGLE LANE APPROACH
ONE QUADRANT CLOSURE
NOT TO SCALE

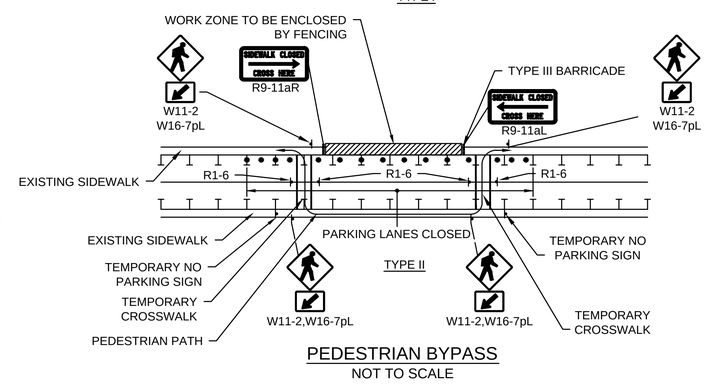


AFTER WORK HOURS TREATMENT
FOR AREAS RECEIVING OVERLAY



TEMPORARY RAMP





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.

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

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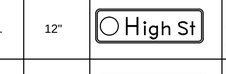
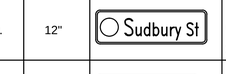
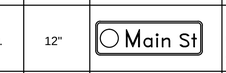
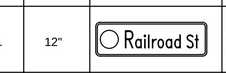
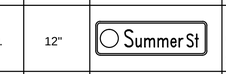
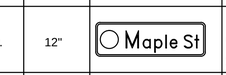
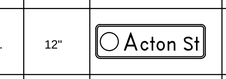
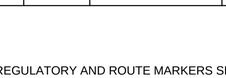
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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		TEXT	TEXT DIMENSIONS (INCHES)		NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING		BACK-GROUND	LEGEND	BORDER			
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"		MUTCD STANDARD		13	YELLOW	BLACK	BLACK	MNT w/W11-15	2.00	26.00
M4-6	12"	6"		MUTCD STANDARD		5	GREEN	WHITE	WHITE	MNT w/D11-1	0.50	2.50
M4-14	12"	6"		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"		MUTCD STANDARD		38	GREEN	WHITE	WHITE	P5 (38 REQ'D)	3.00	114.00
SP-1	30"	24"		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"		MUTCD STANDARD		1	WHITE	RED	RED	P5 (1 REQ'D)	3.75	3.75
I-2-2	24"	18"		MUTCD STANDARD		1	WHITE	RED	RED	P5 (1 REQ'D)	3.00	3.00

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)		NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING		BACK-GROUND	LEGEND	BORDER			
D3-1A (PBS)	VAR.	12"		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"		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"		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"		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"		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"		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"		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"		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"		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"		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"		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"		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"		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.

604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:28 PM

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

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)		NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING		BACK-GROUND	LEGEND	BORDER			
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 INDENT	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 INDENT	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

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)		NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING		BACK-GROUND	LEGEND	BORDER			
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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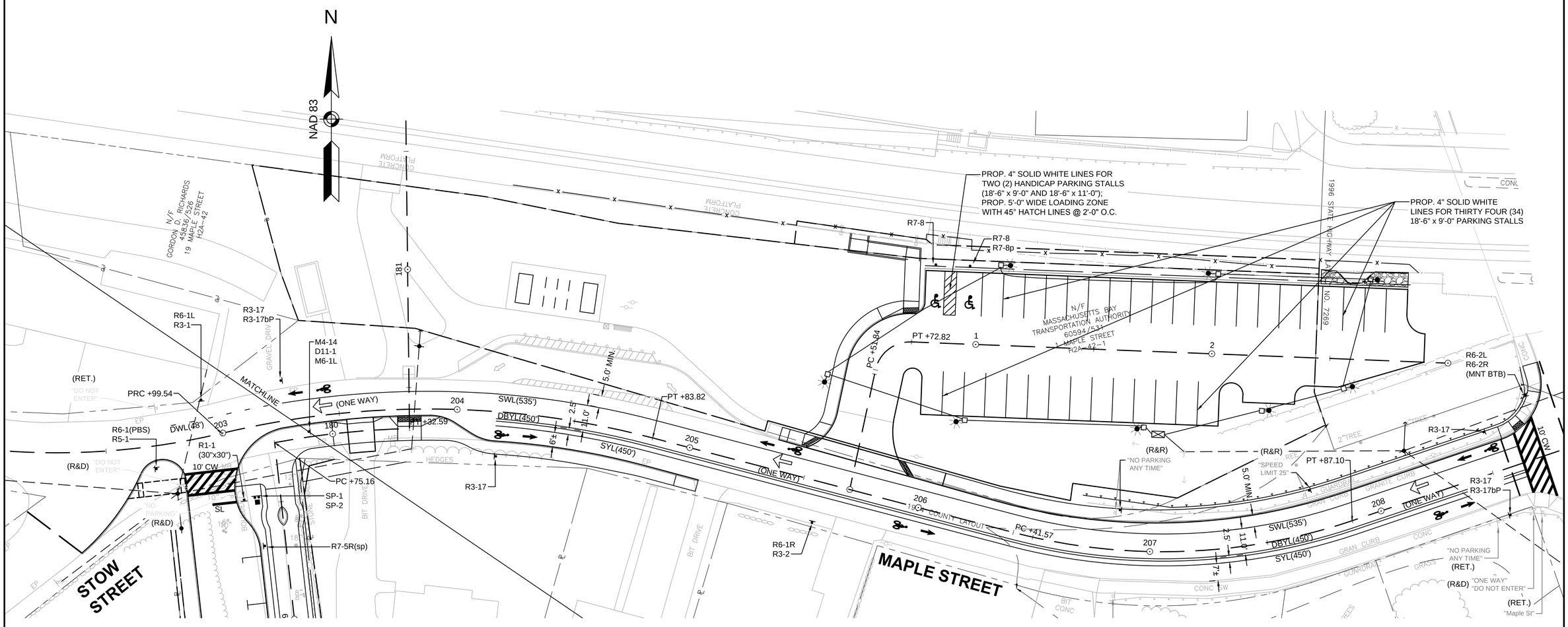
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	97	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS



CONTINUED ON SHEET 96

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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)	96	230
PROJECT FILE NO.	604531		

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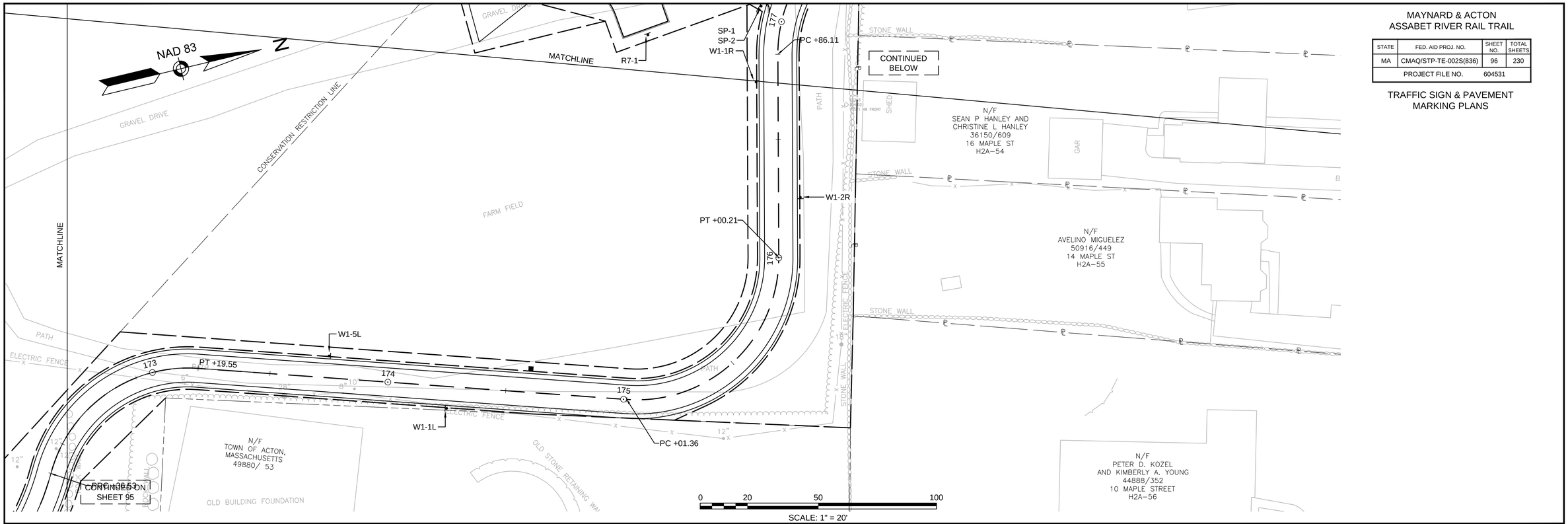

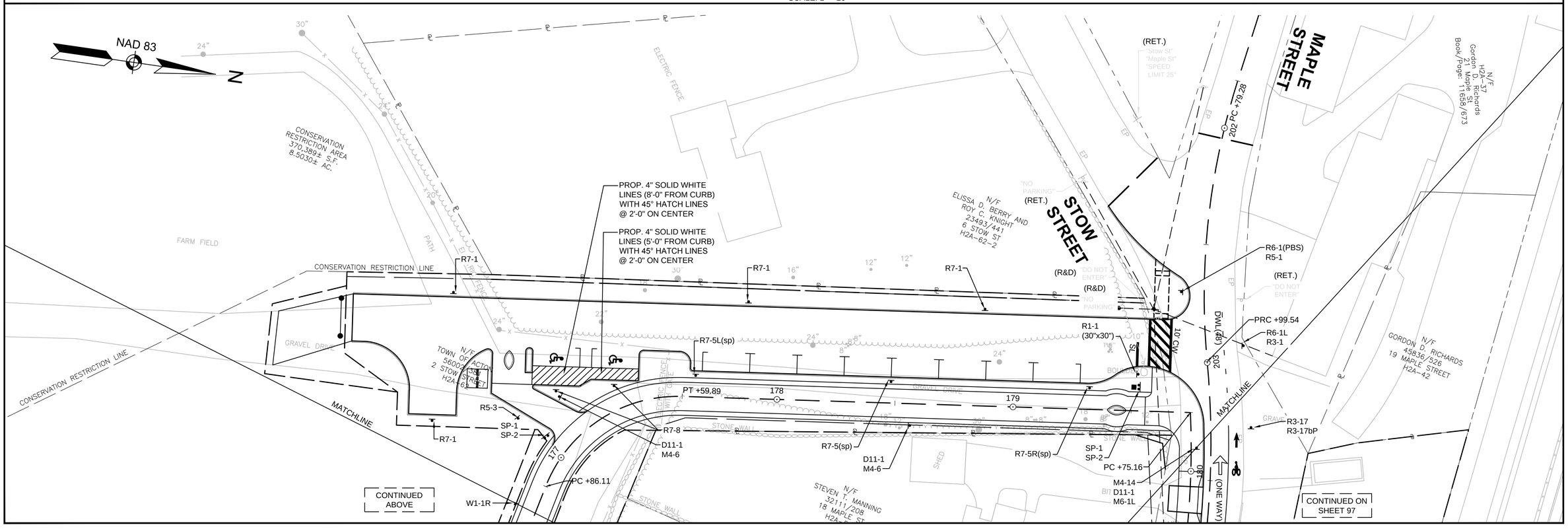

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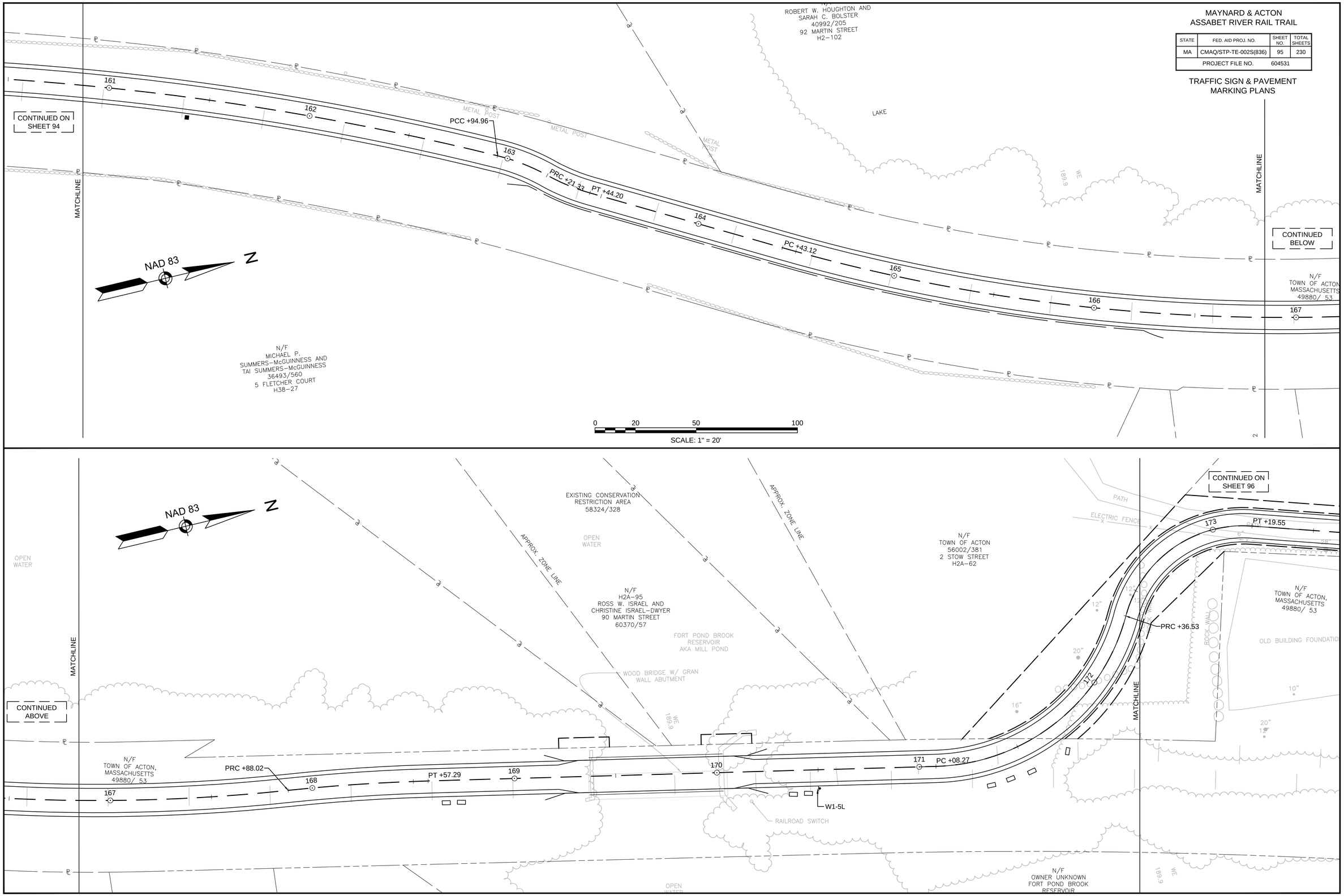
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	95	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS



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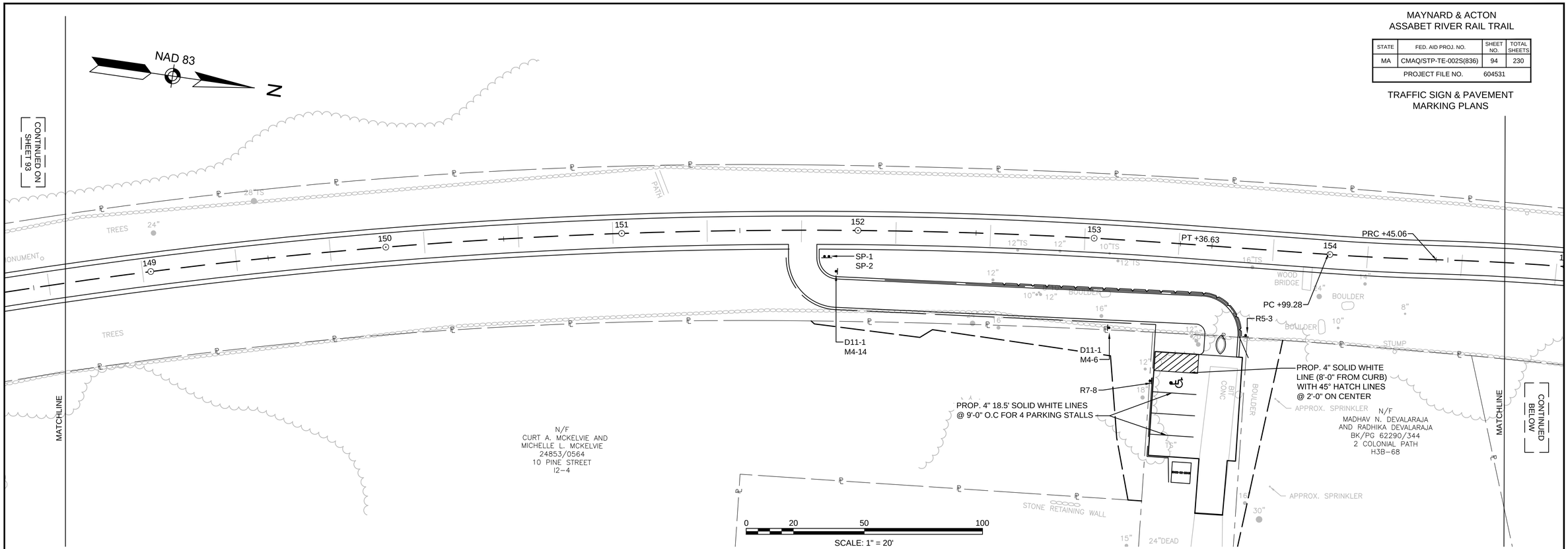
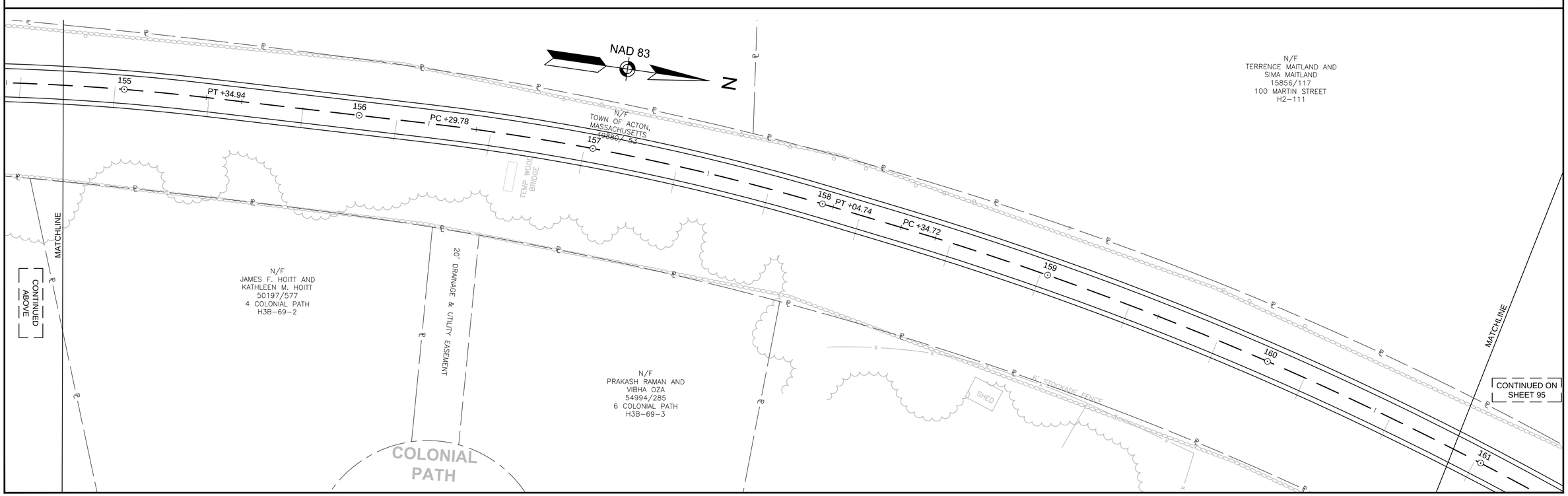
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	94	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS





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MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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MA	CMAQ/STP-TE-002S(836)	93	230
PROJECT FILE NO.	604531		

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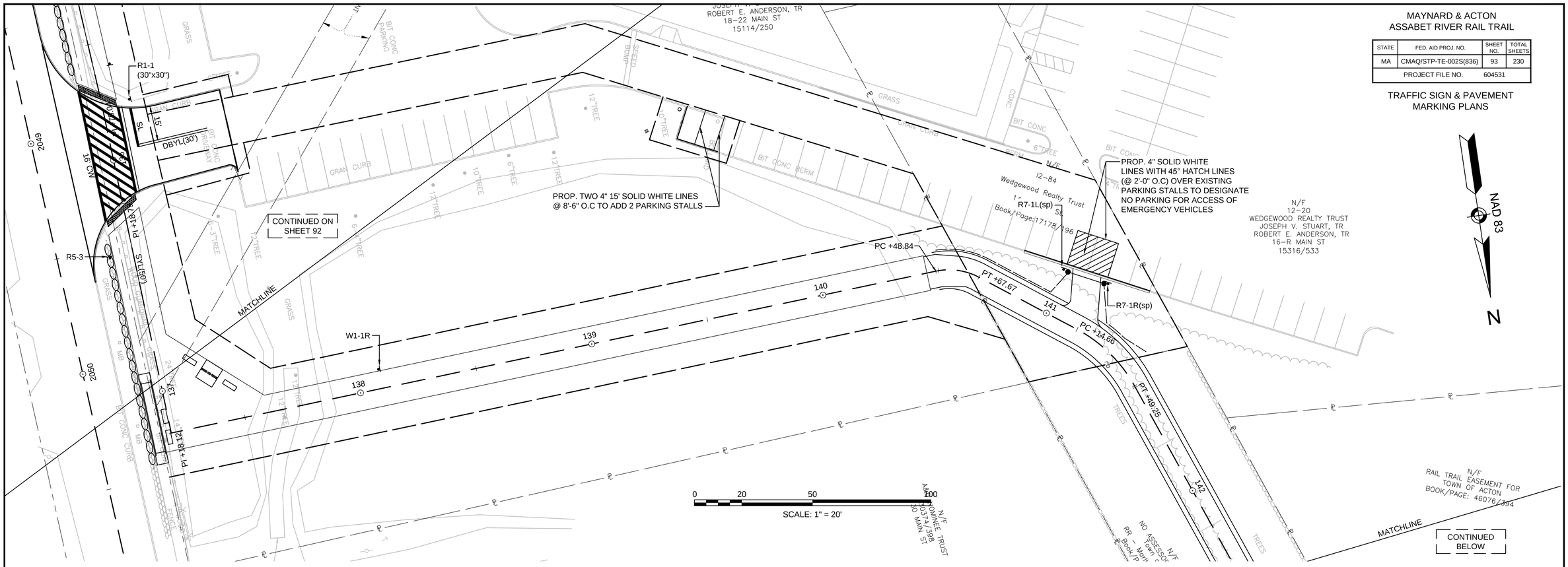

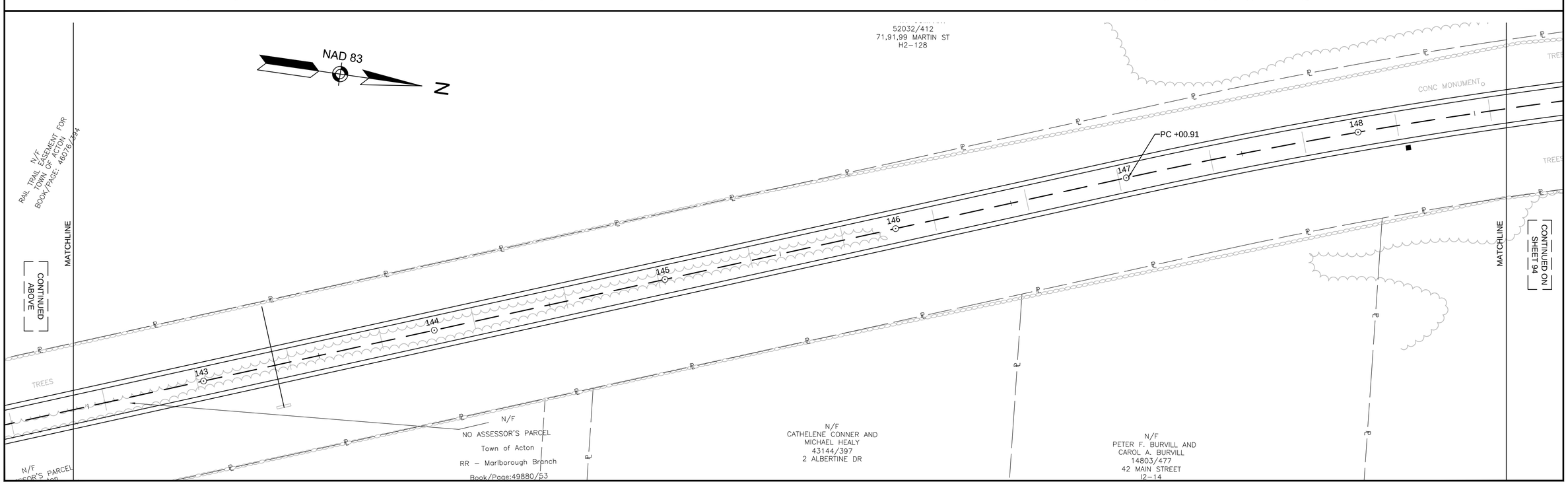

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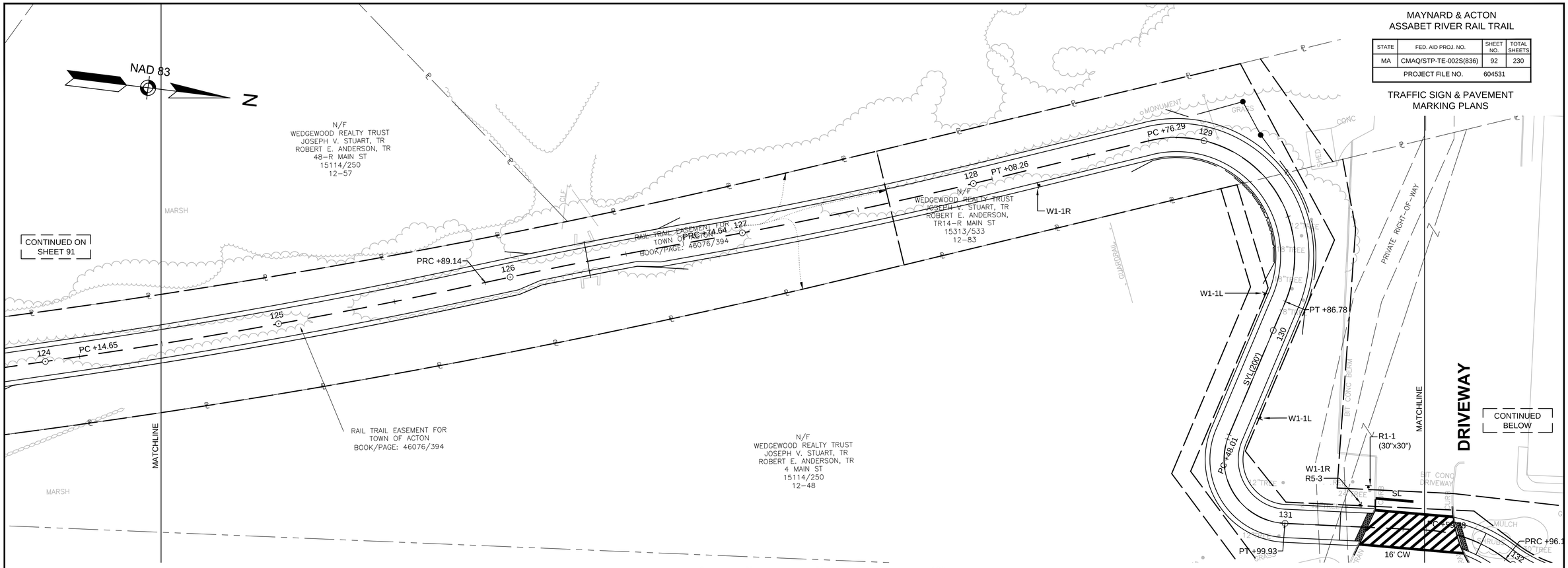
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	92	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS



604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:26 PM

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

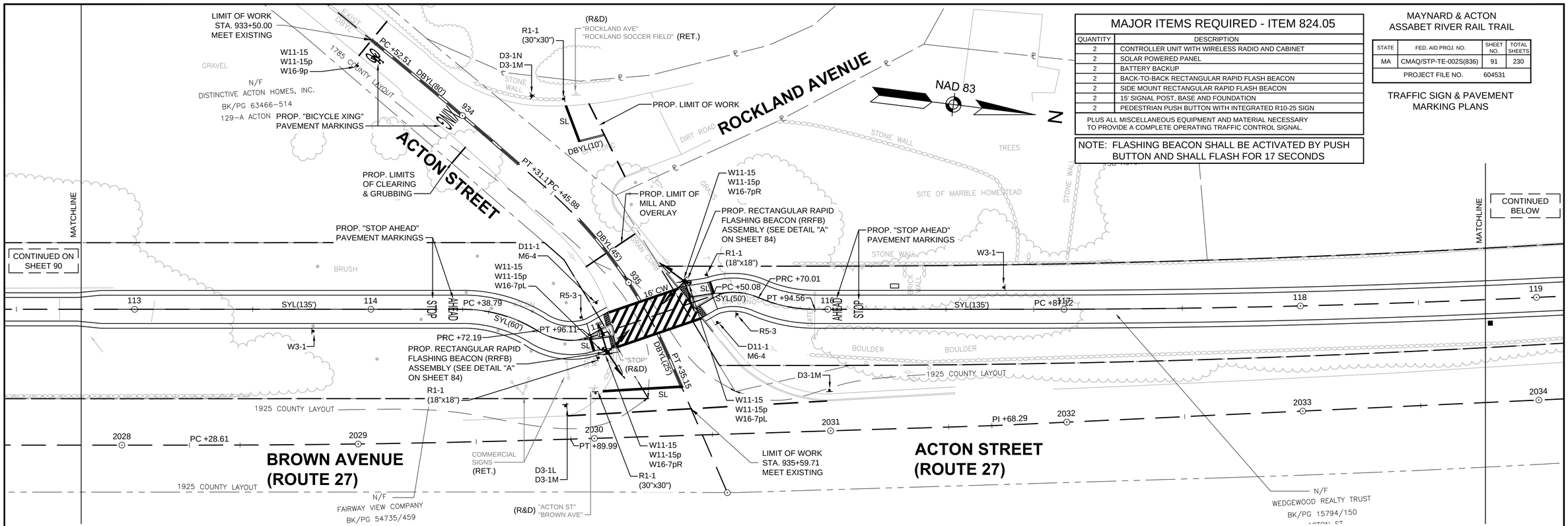
PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.

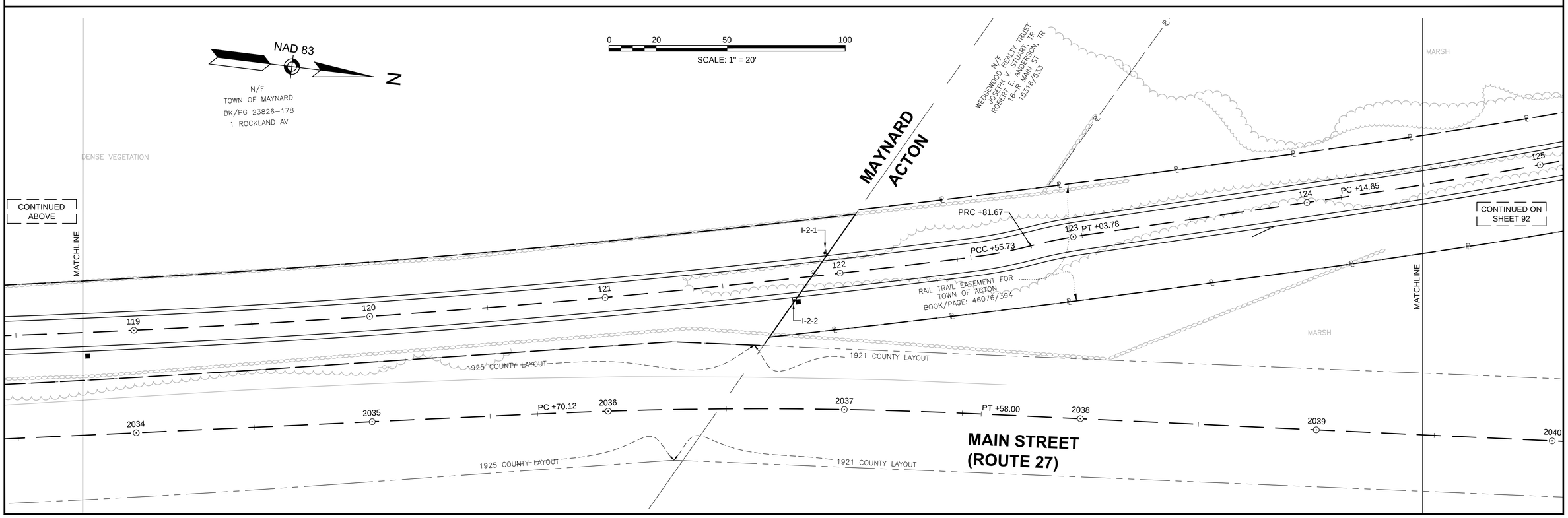
NOTE: FLASHING BEACON SHALL BE ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS

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





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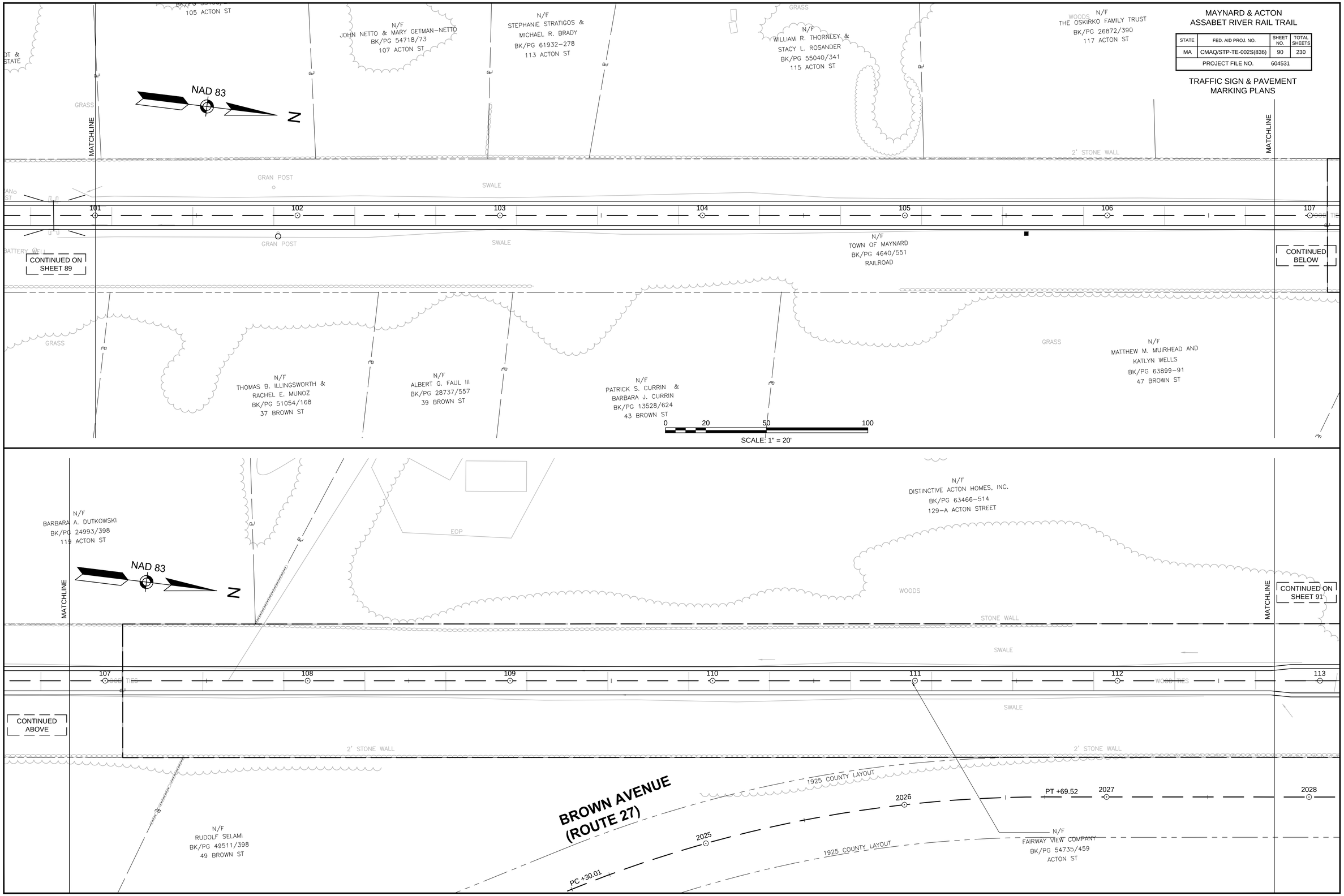
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	90	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS



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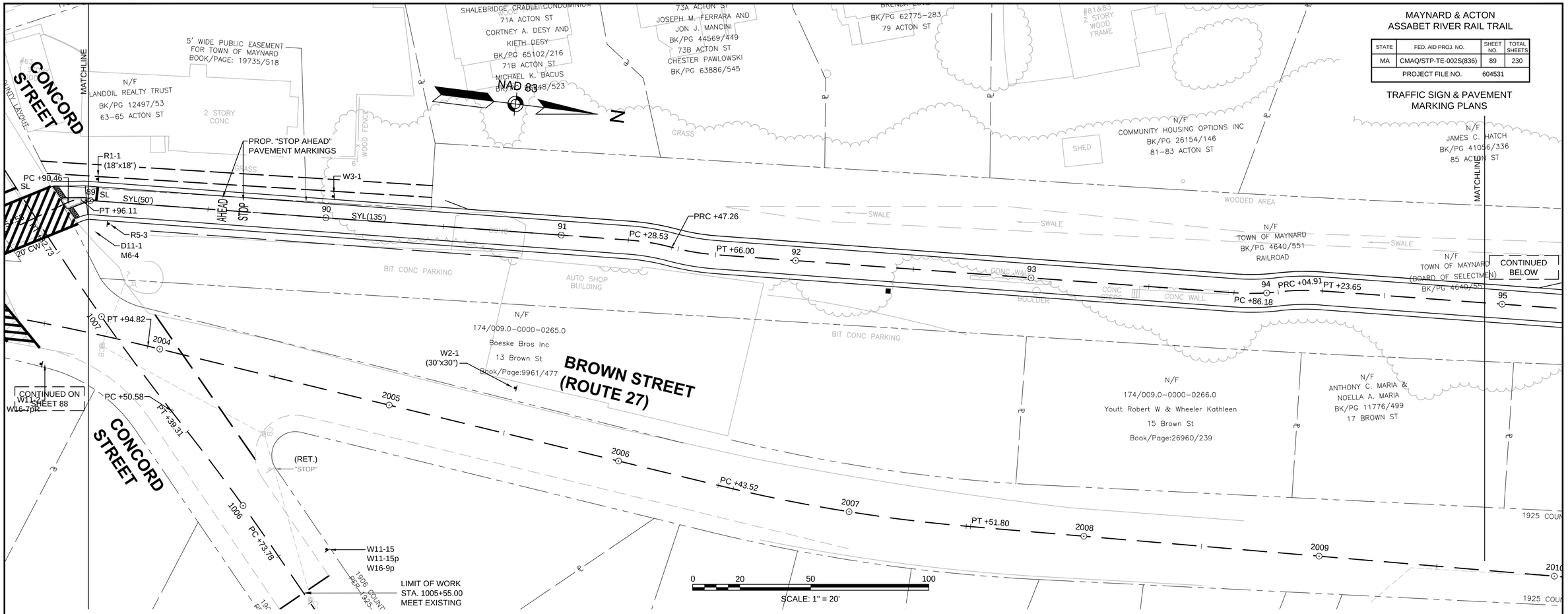
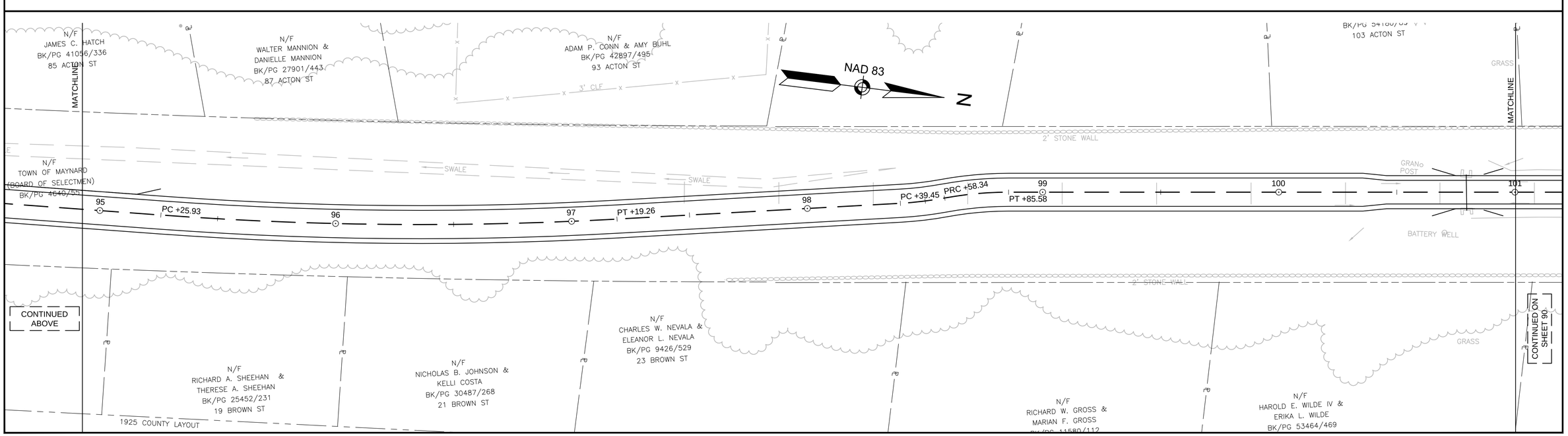
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	89	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS





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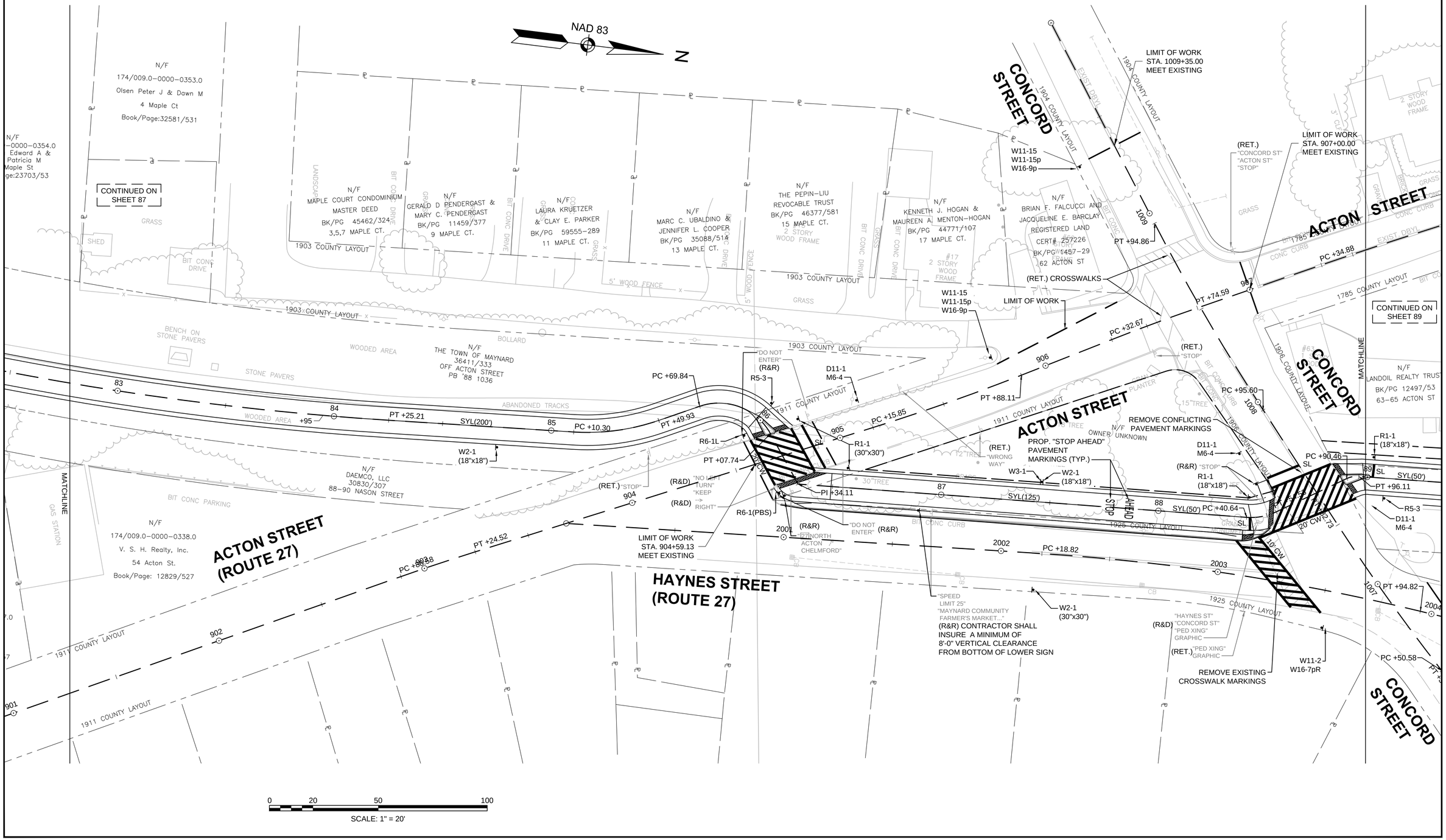
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	88	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS



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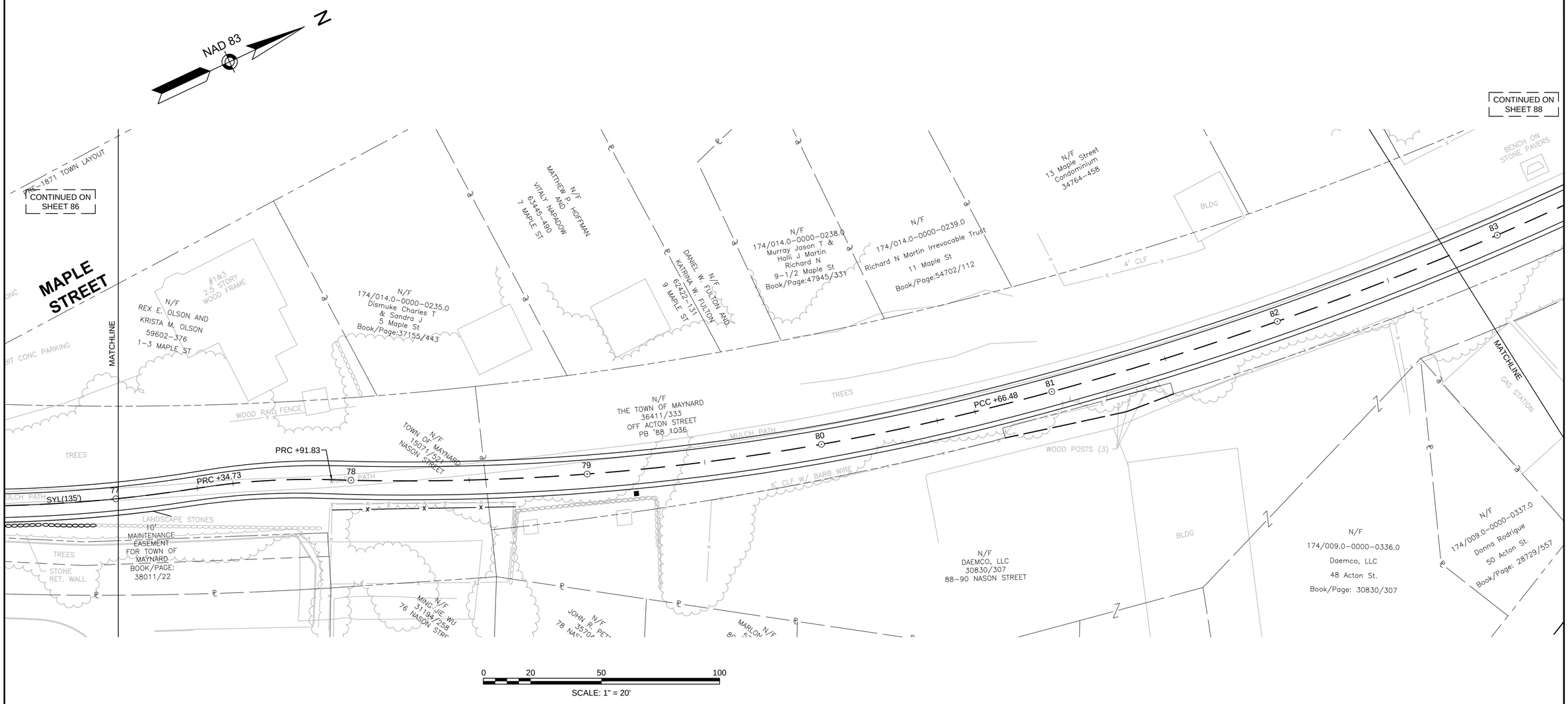
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	87	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT
MARKING PLANS

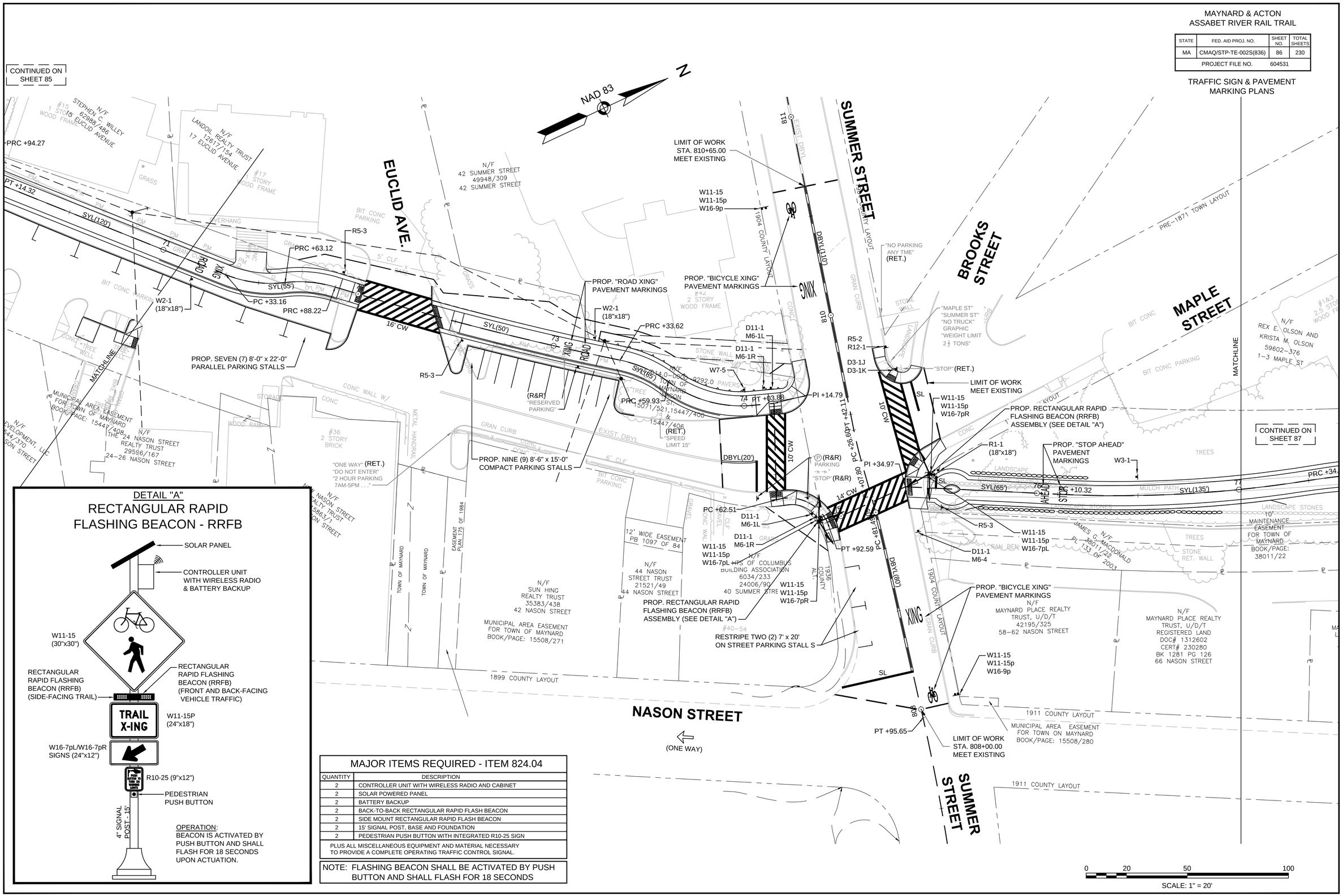
604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:25 PM



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



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.	

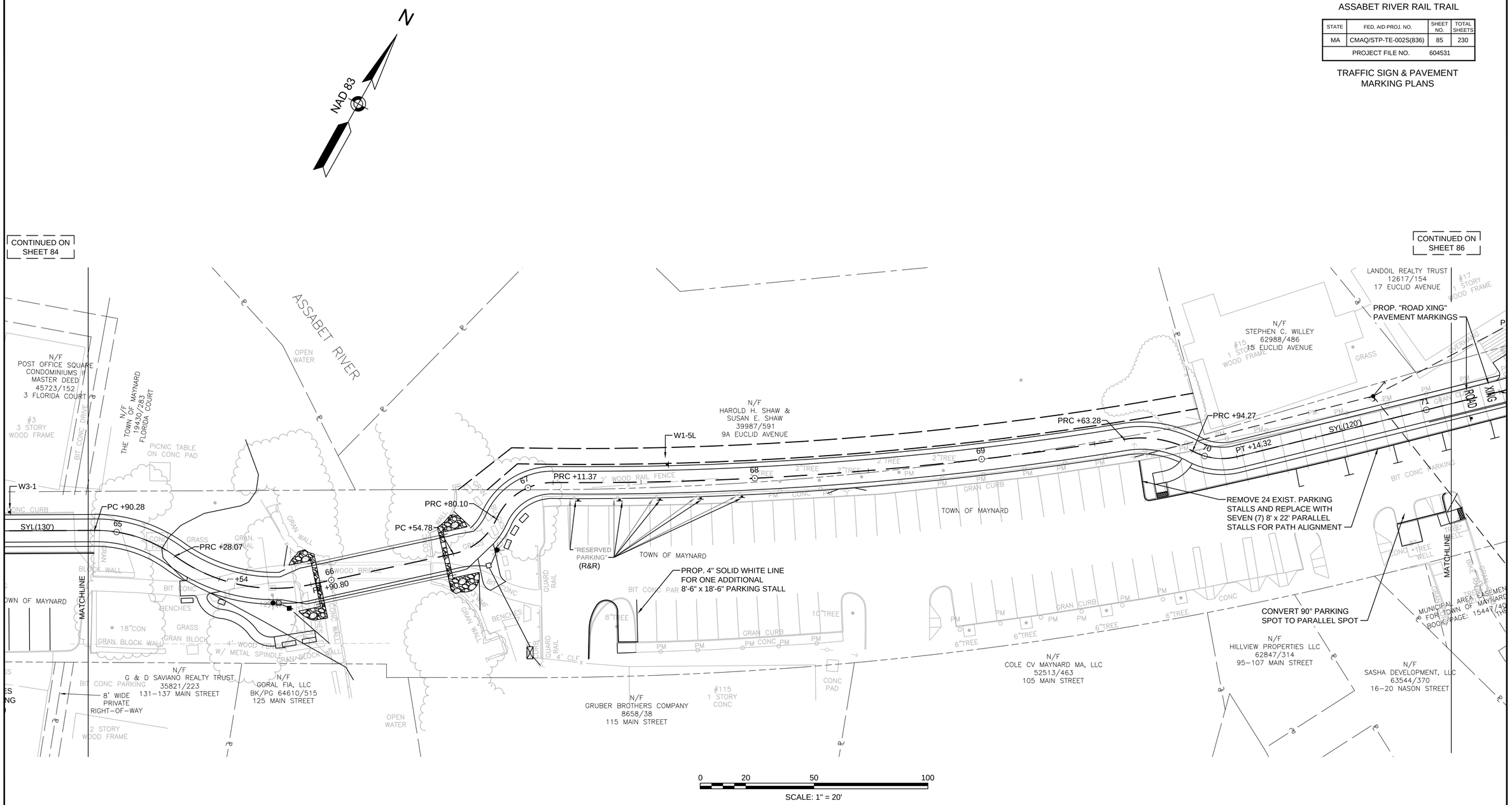
NOTE: FLASHING BEACON SHALL BE ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 18 SECONDS

604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:25 PM

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



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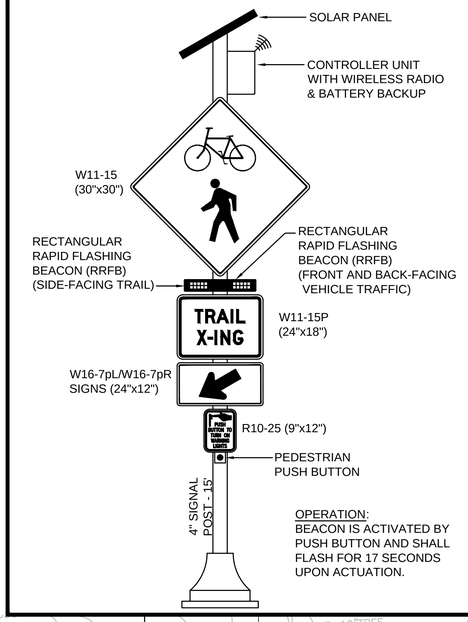
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	84	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

DETAIL "A"
RECTANGULAR RAPID FLASHING BEACON - RRFB



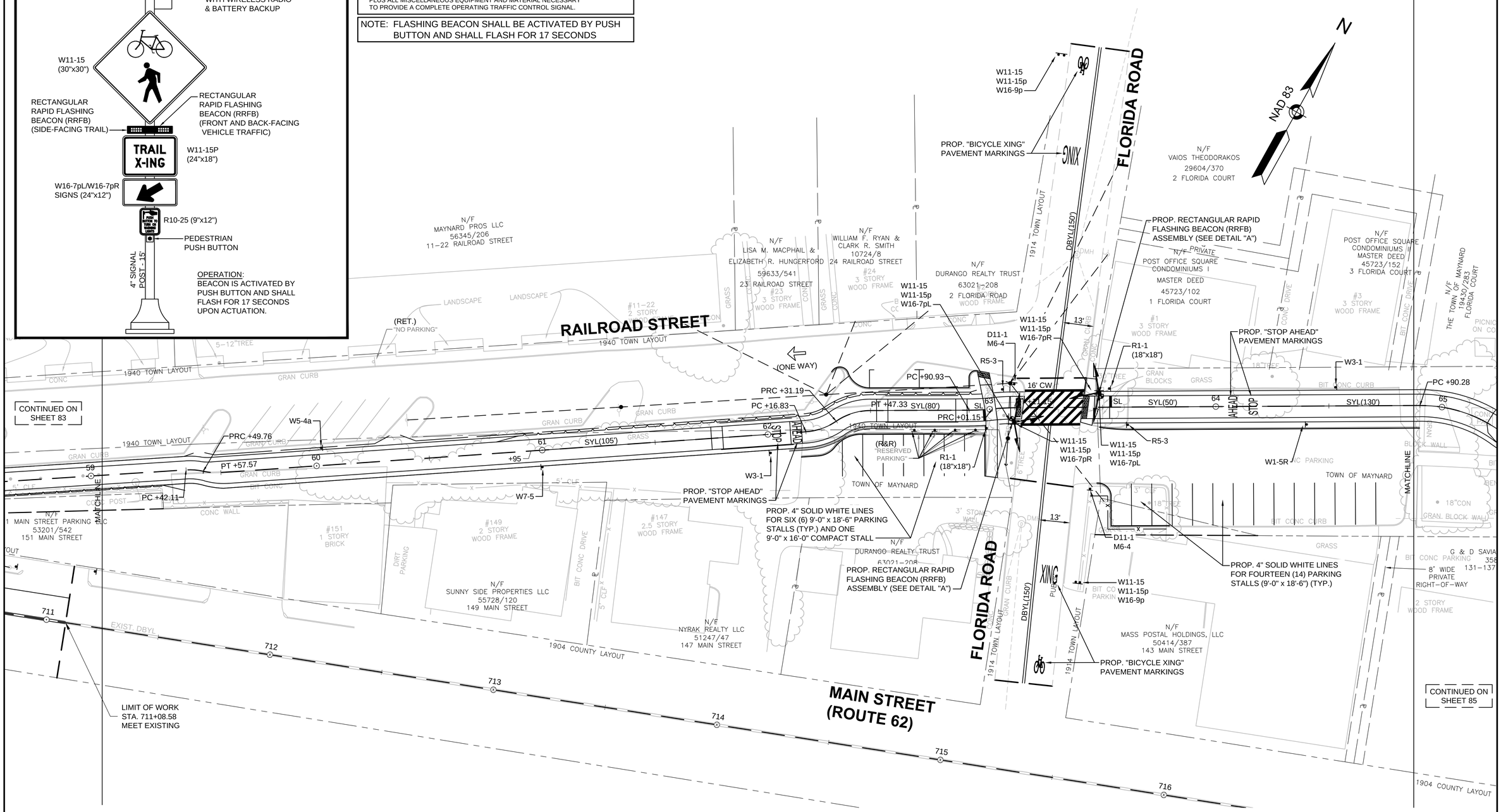
OPERATION:
BEACON IS ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS UPON ACTUATION.

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



604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:24 PM

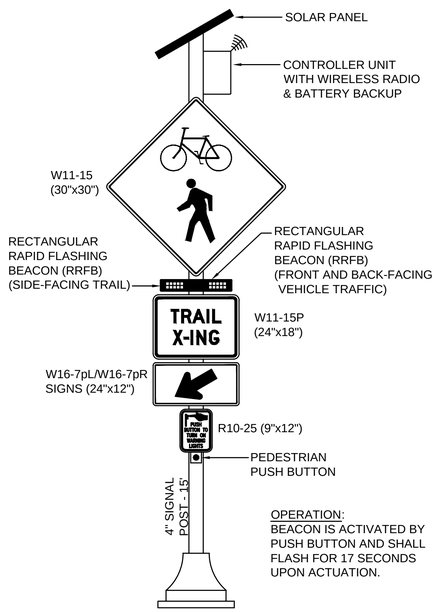
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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 8-Oct-2015 1:24 PM

DETAIL "A"
RECTANGULAR RAPID FLASHING BEACON - RRFB



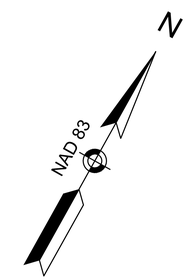
OPERATION:
BEACON IS ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS UPON ACTUATION.

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

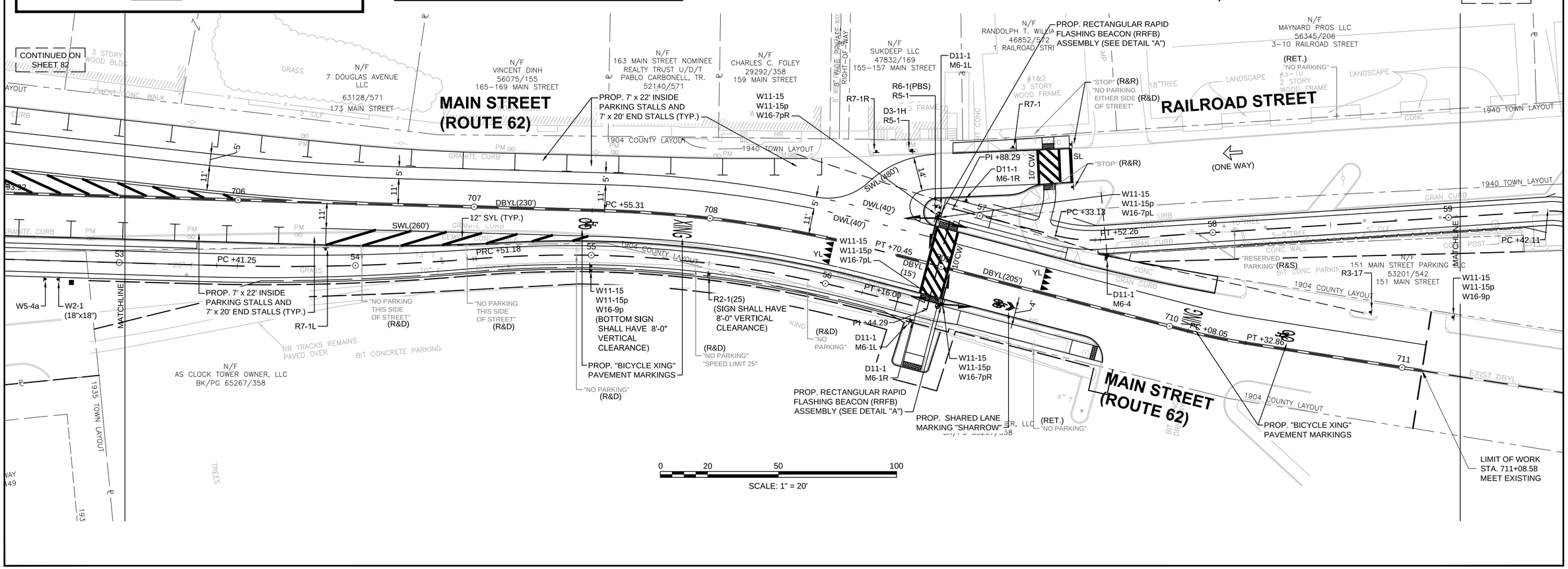
PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.

NOTE: FLASHING BEACON SHALL BE ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS



CONTINUED ON SHEET 84

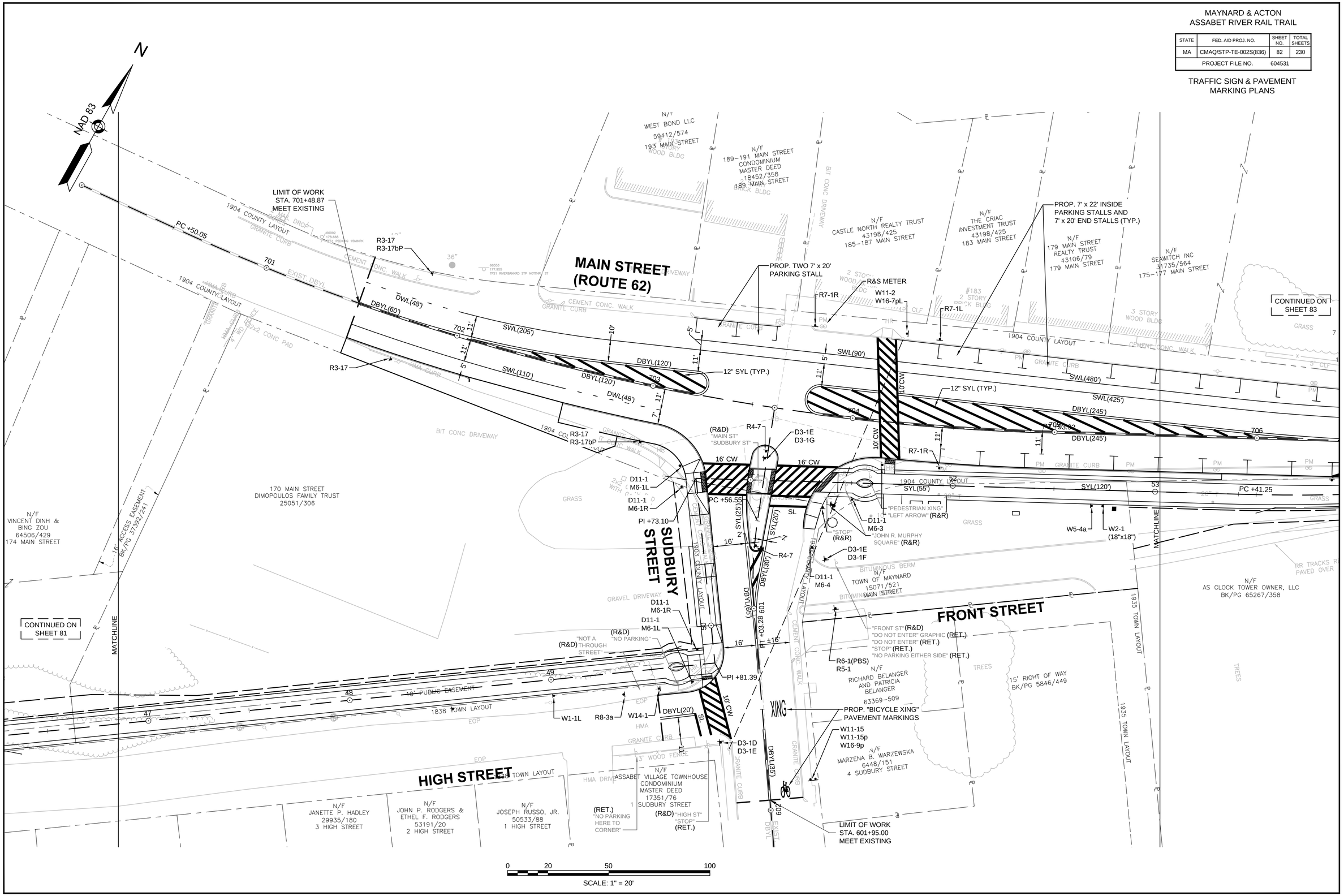
CONTINUED ON SHEET 82



MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	82	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

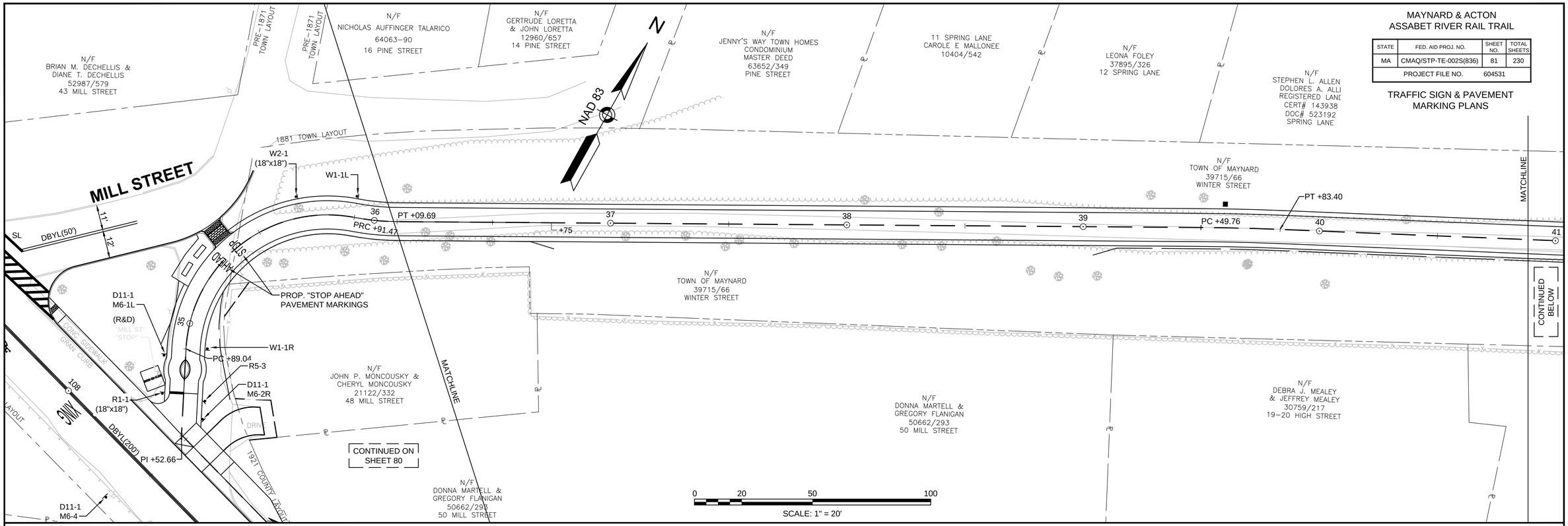


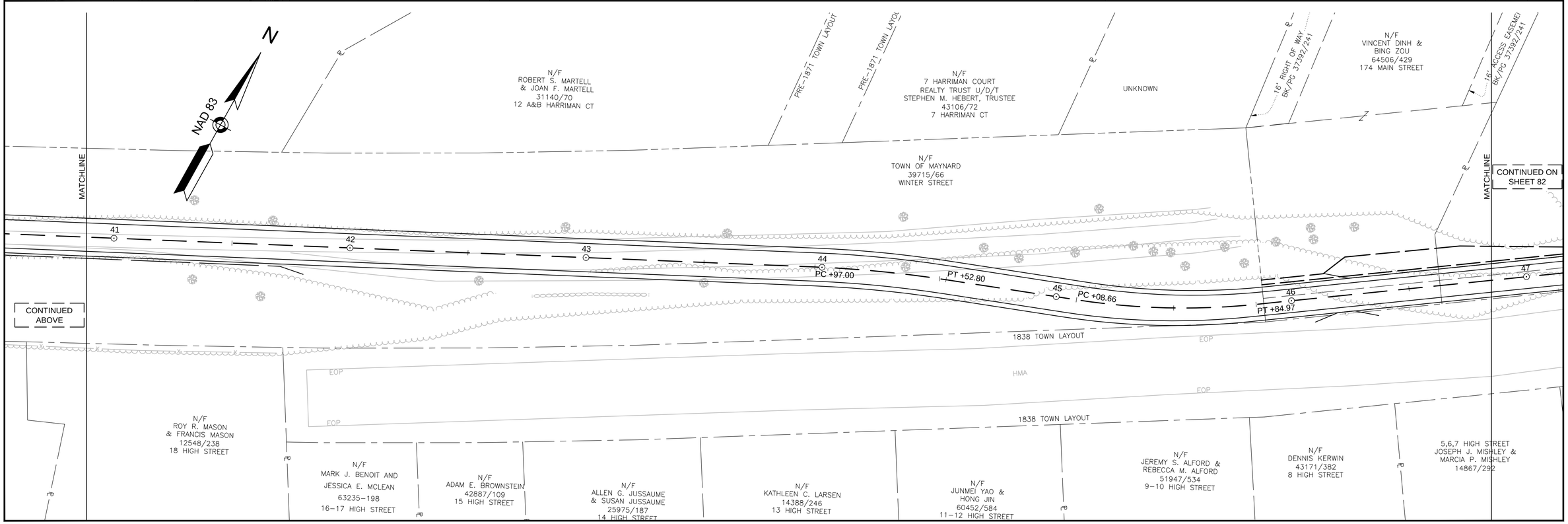
604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:24 PM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	81	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS





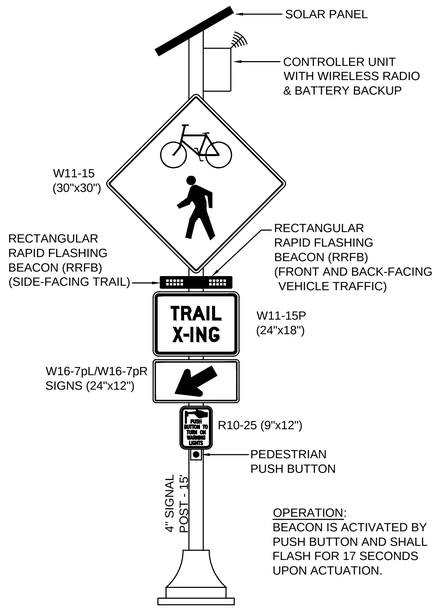
604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:24 PM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	80	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS

DETAIL "A"
RECTANGULAR RAPID FLASHING BEACON - RRFB



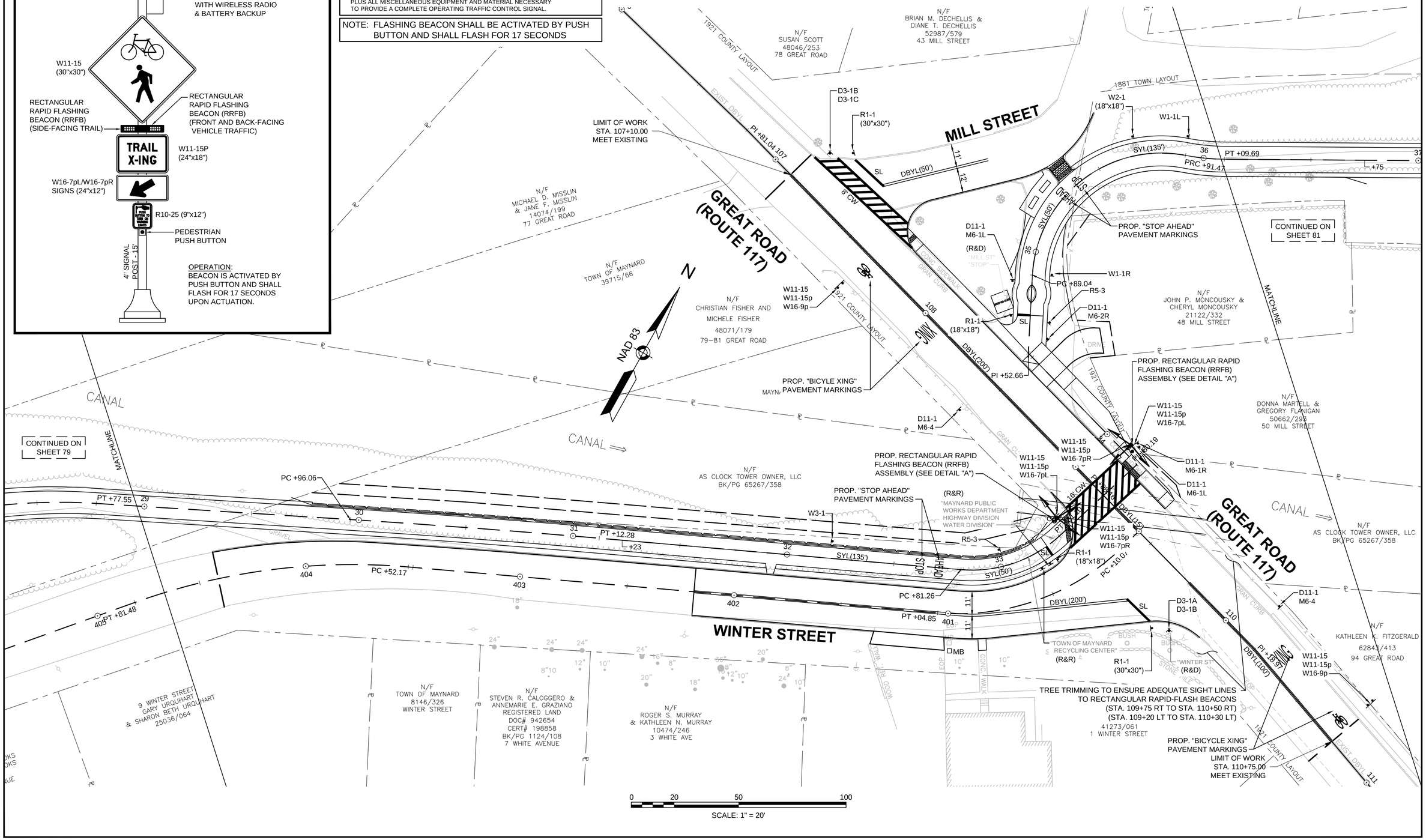
OPERATION:
BEACON IS ACTIVATED BY PUSH BUTTON AND SHALL FLASH FOR 17 SECONDS UPON ACTUATION.

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



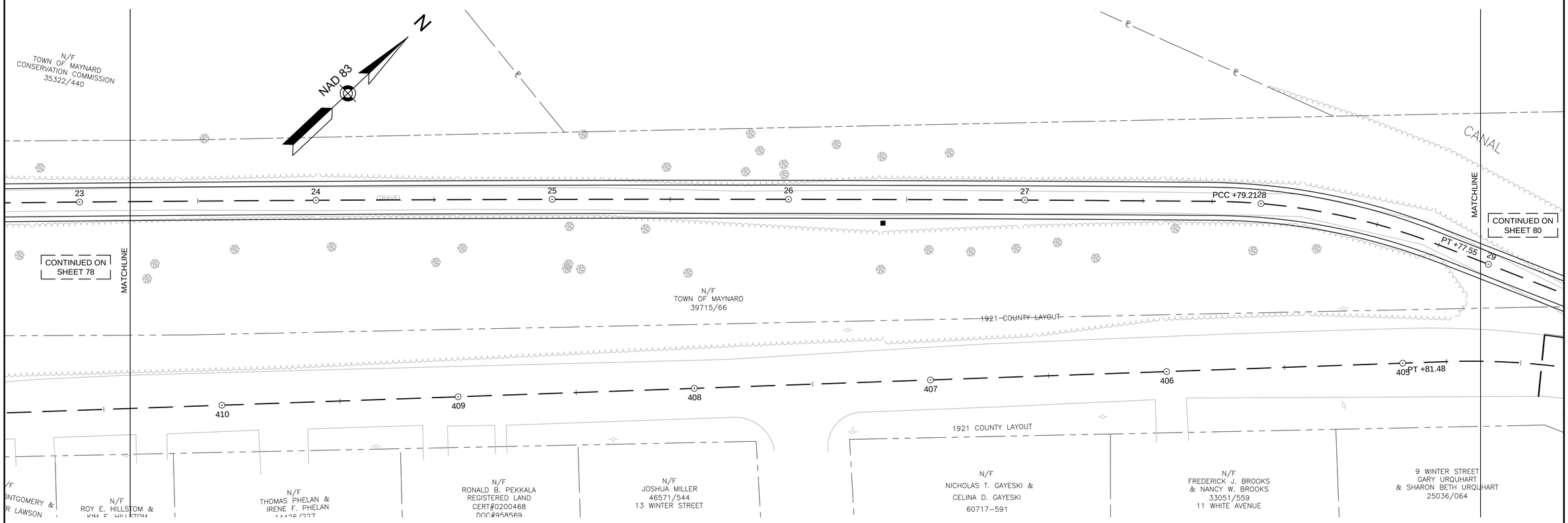
604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:24 PM

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	79	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT
MARKING PLANS

604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:23 PM



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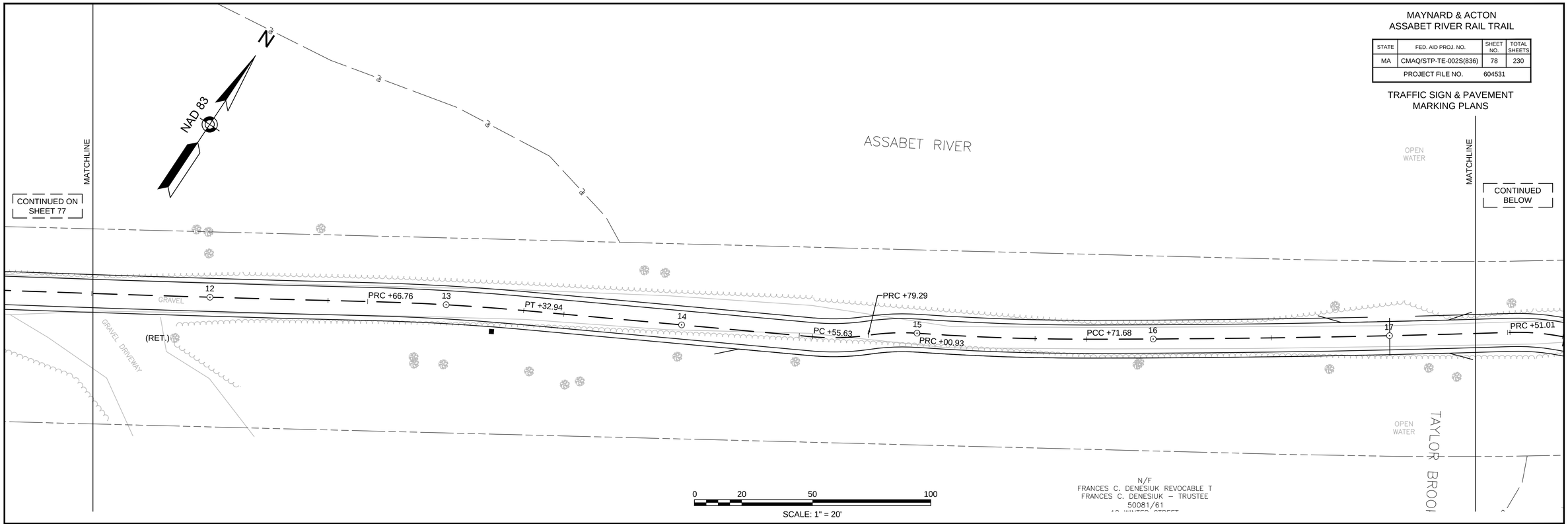
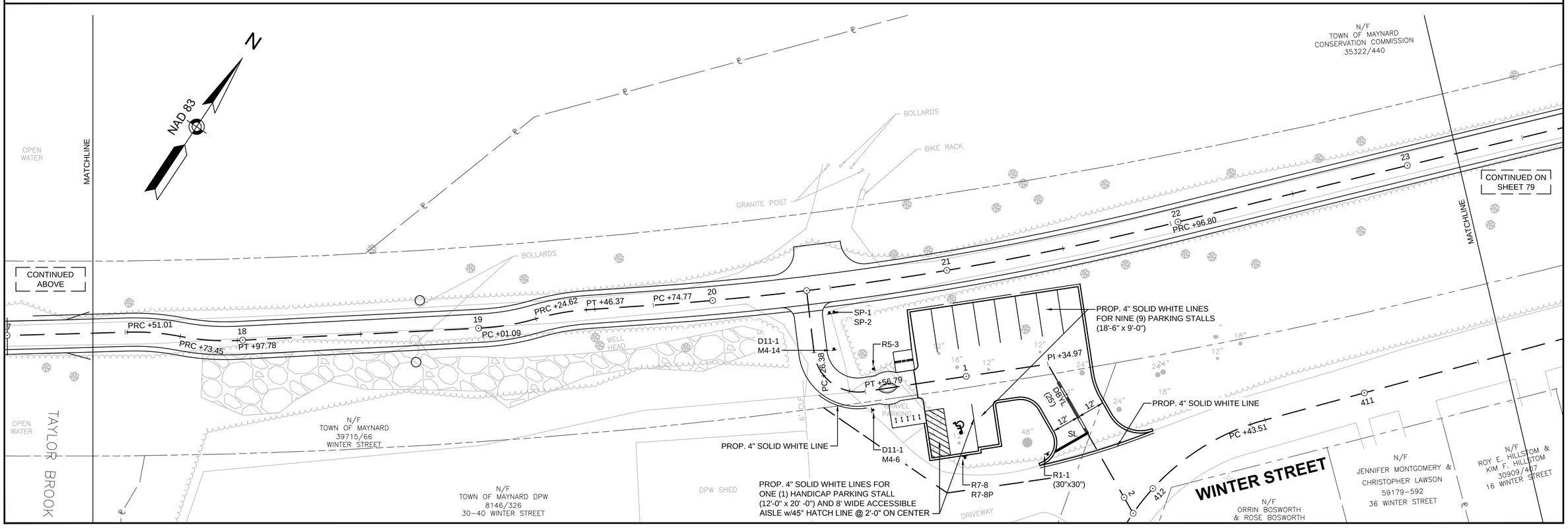
SCALE: 1" = 20'

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	78	230
PROJECT FILE NO.	604531		

TRAFFIC SIGN & PAVEMENT MARKING PLANS



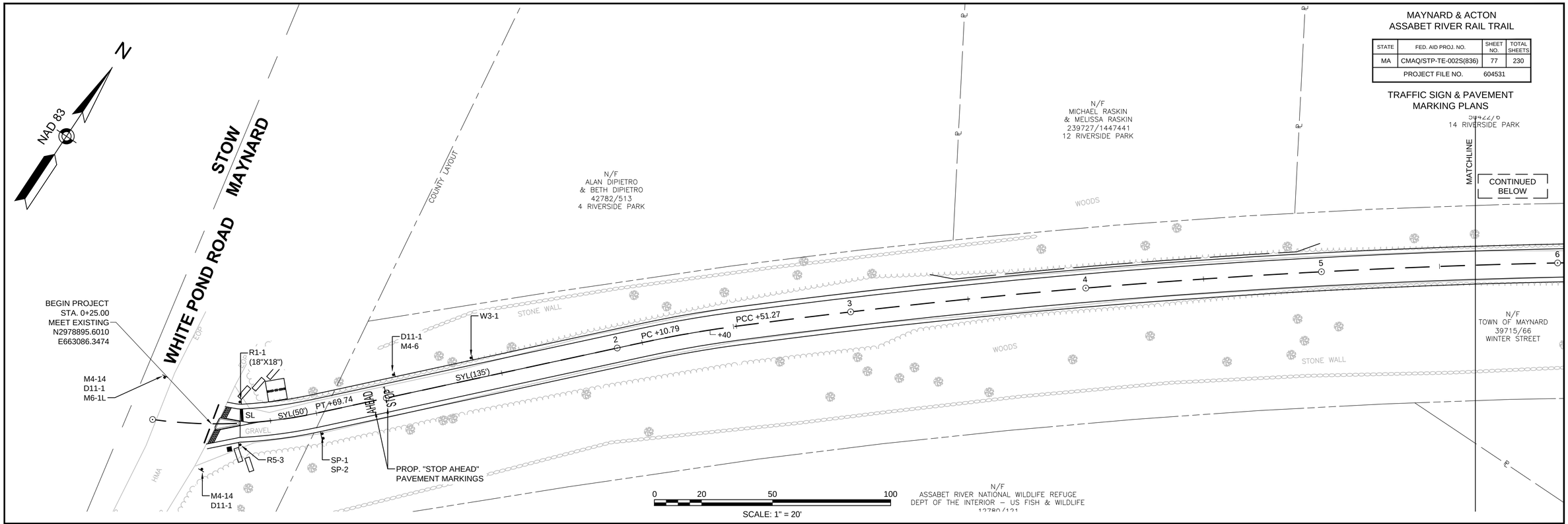


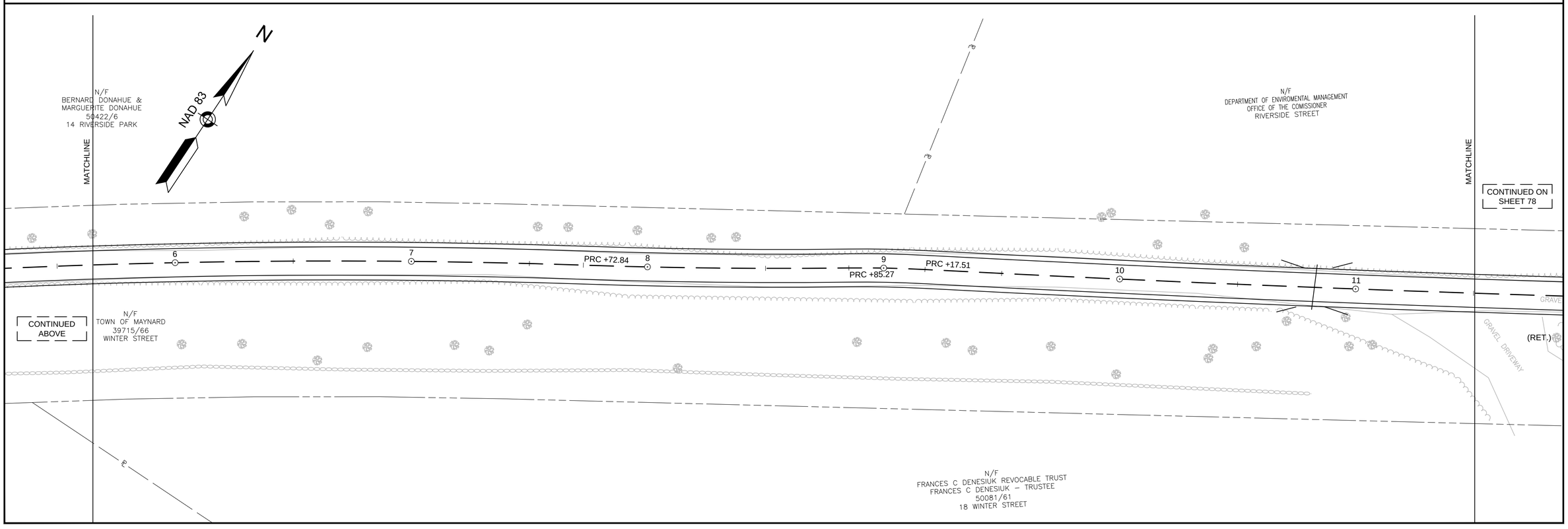
604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:23 PM

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		

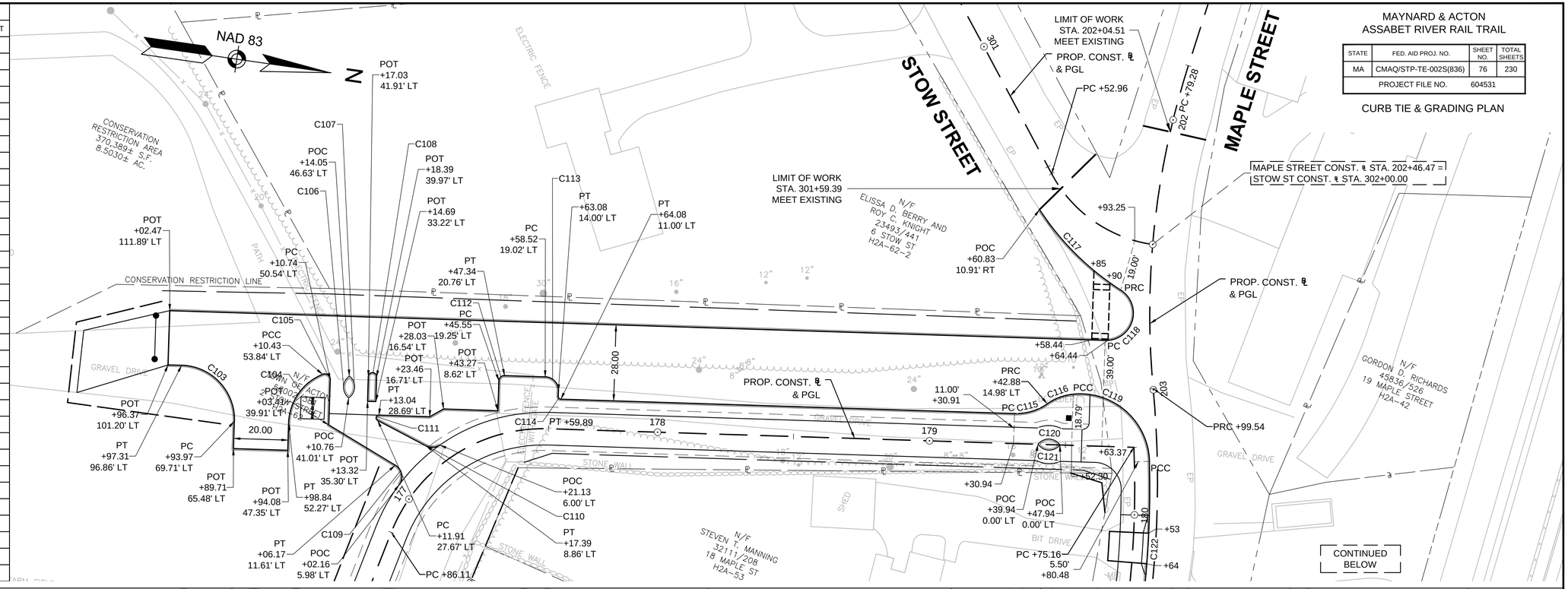
TRAFFIC SIGN & PAVEMENT MARKING PLANS

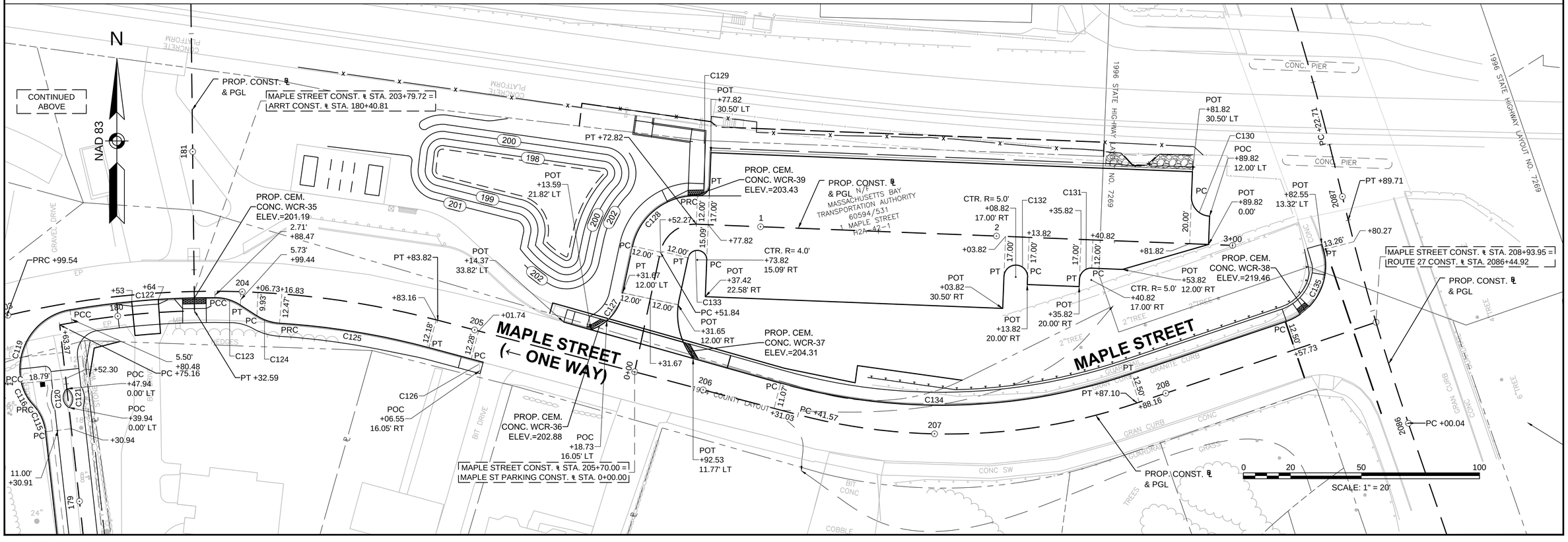




604531_HD(PM&S).DWG Plotted on 8-Oct-2015 1:23 PM

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
MA	CMAQ/STP-TE-002S(836)	76	230
PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

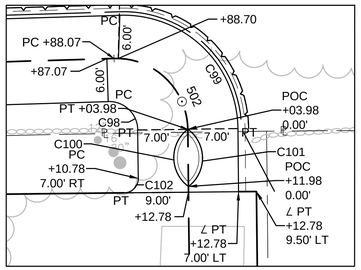
604531_HD(CT).DWG Plotted on 8-Oct-2015 1:22 PM

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 8-Oct-2015 1:22 PM



INSET "B"
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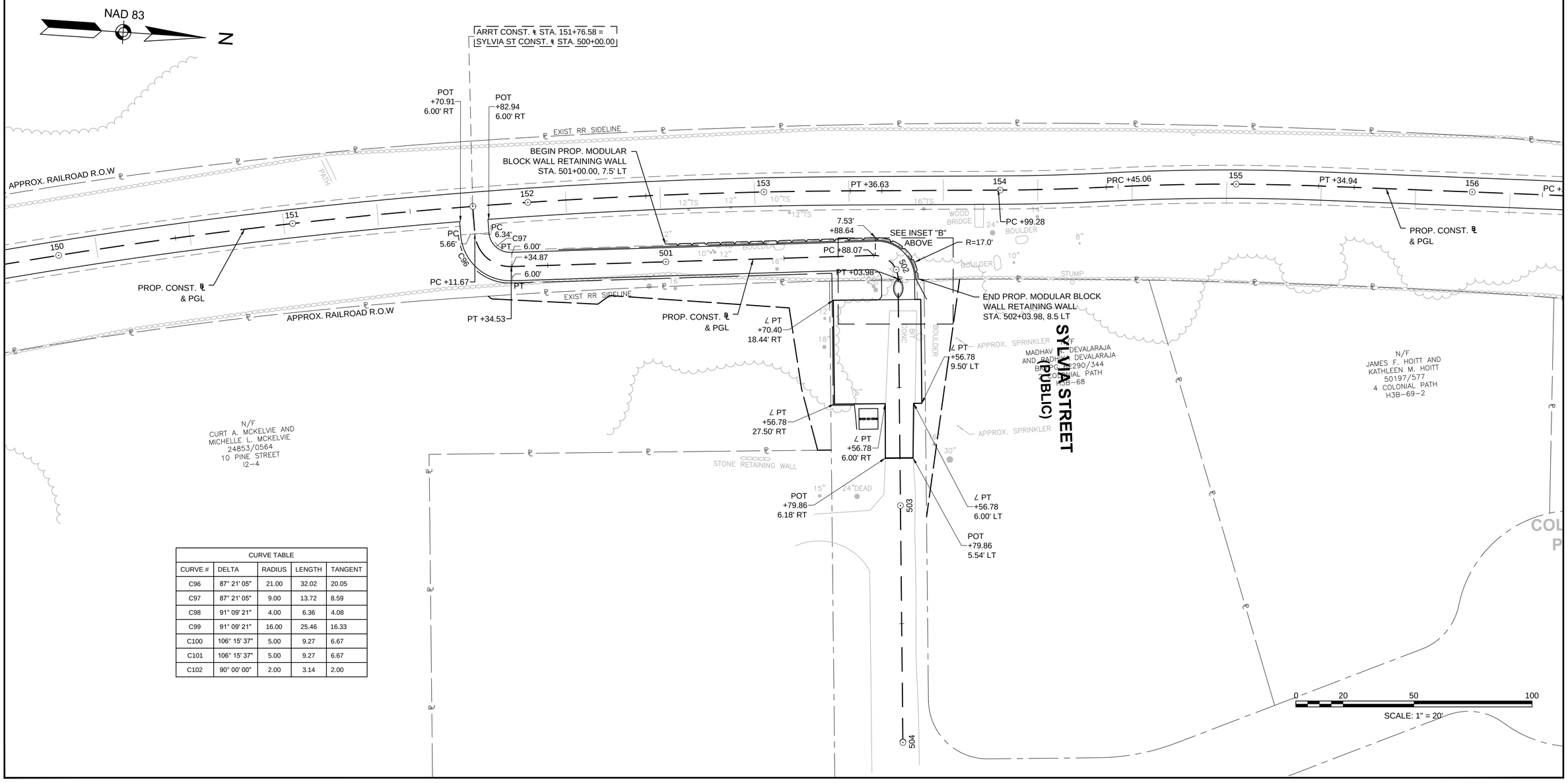
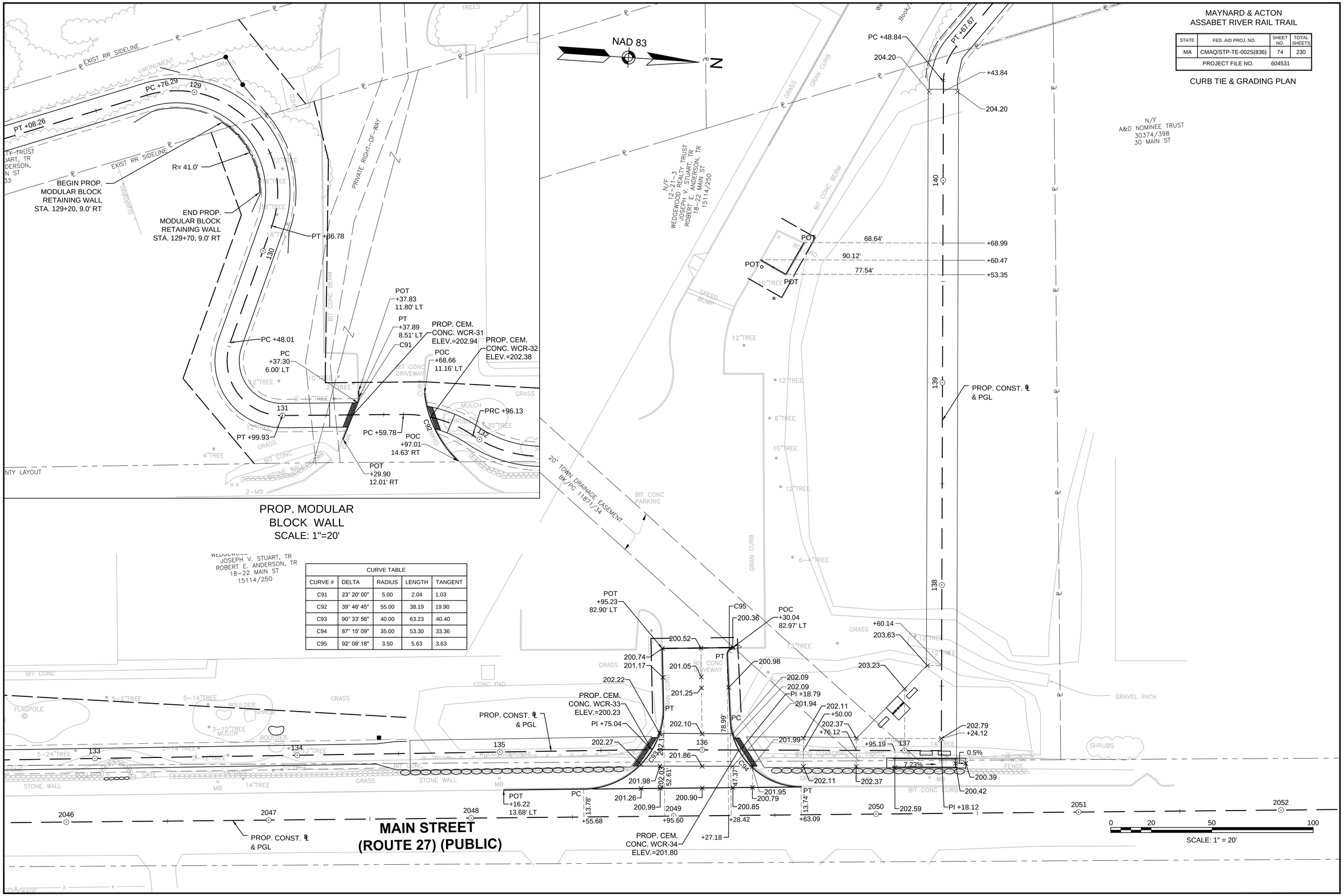


CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C96	87° 21' 05"	21.00	32.02	20.05
C97	87° 21' 05"	9.00	13.72	8.59
C98	91° 09' 21"	4.00	6.36	4.08
C99	91° 09' 21"	16.00	25.46	16.33
C100	106° 15' 37"	5.00	9.27	6.67
C101	106° 15' 37"	5.00	9.27	6.67
C102	90° 00' 00"	2.00	3.14	2.00

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



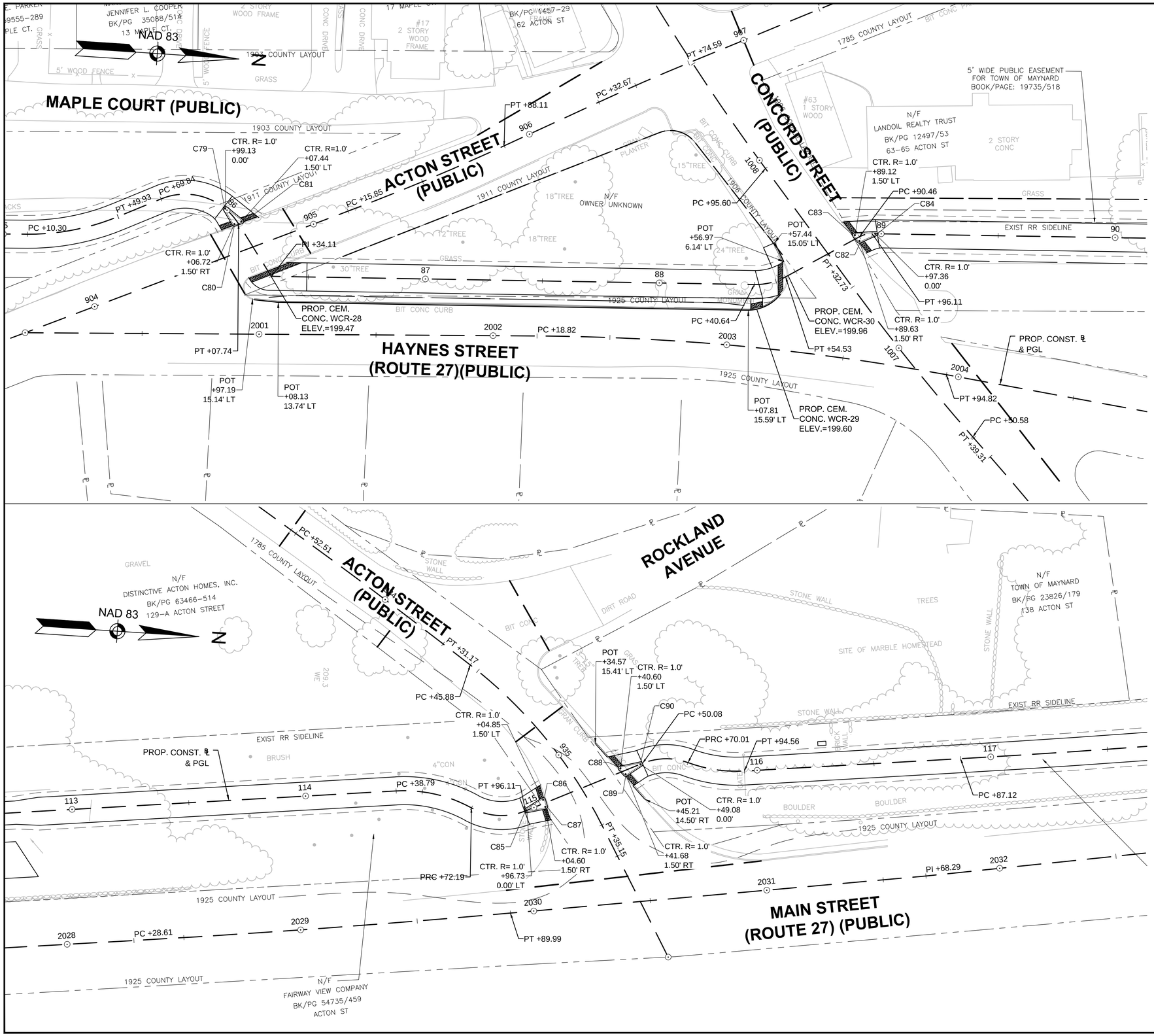
CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C91	23° 20' 00"	5.00	2.04	1.03
C92	39° 46' 45"	55.00	38.19	19.90
C93	90° 33' 56"	40.00	63.23	40.40
C94	87° 15' 09"	35.00	53.30	33.36
C95	92° 08' 18"	3.50	5.63	3.63

604531_HD(CT).DWG Plotted on 8-Oct-2015 1:21 PM

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



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'

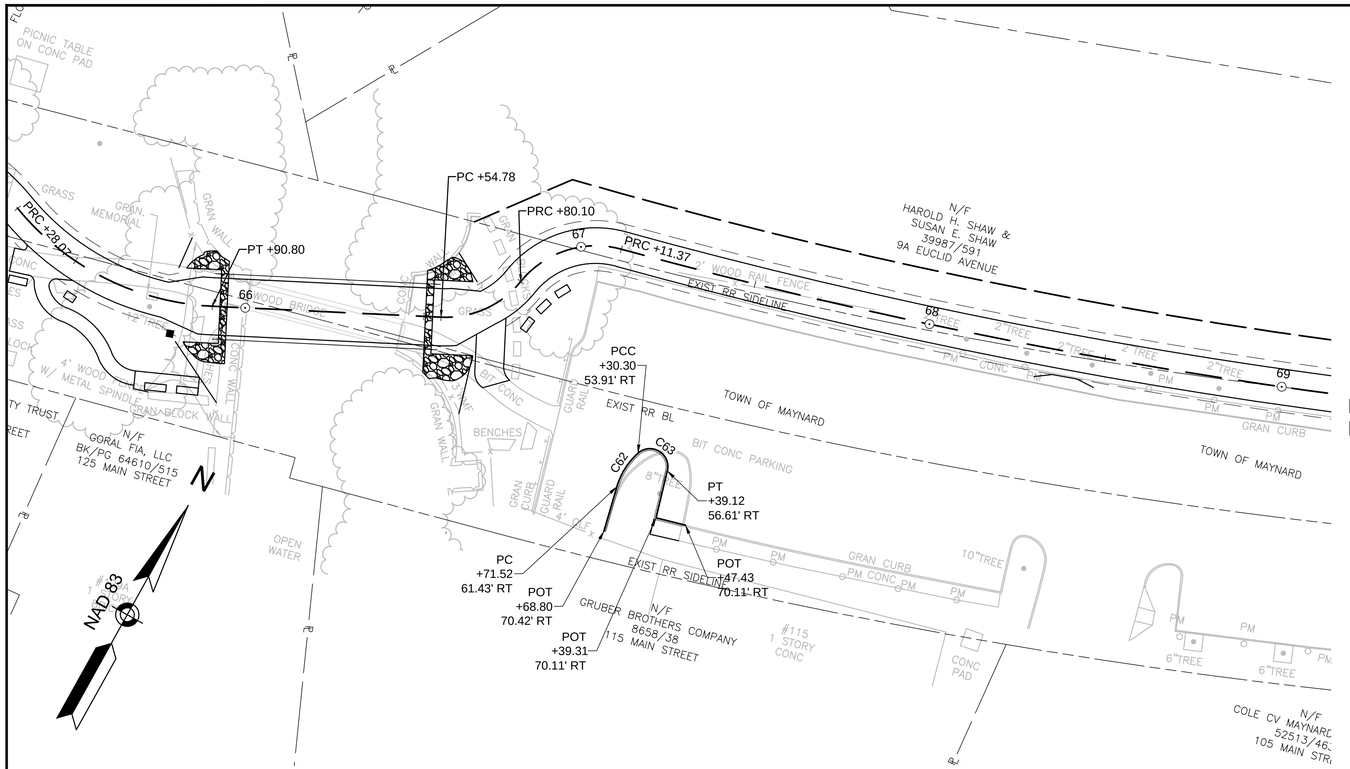
604531_HD(CT).DWG Plotted on 8-Oct-2015 1:21 PM

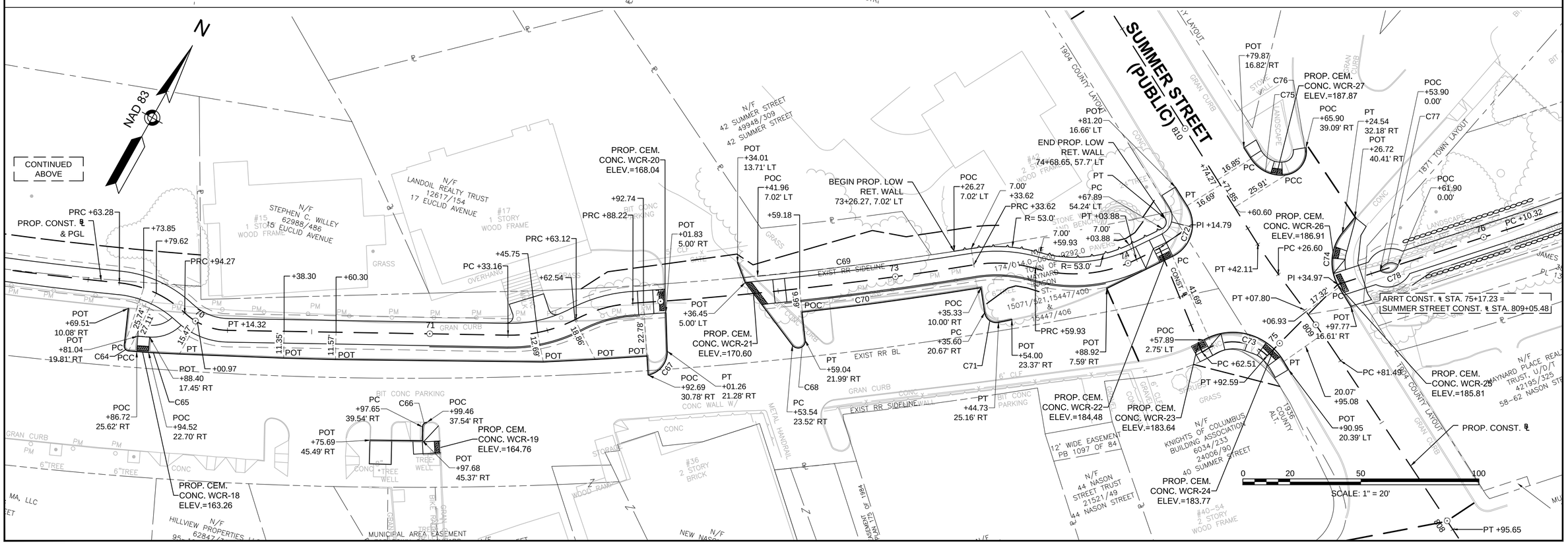
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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





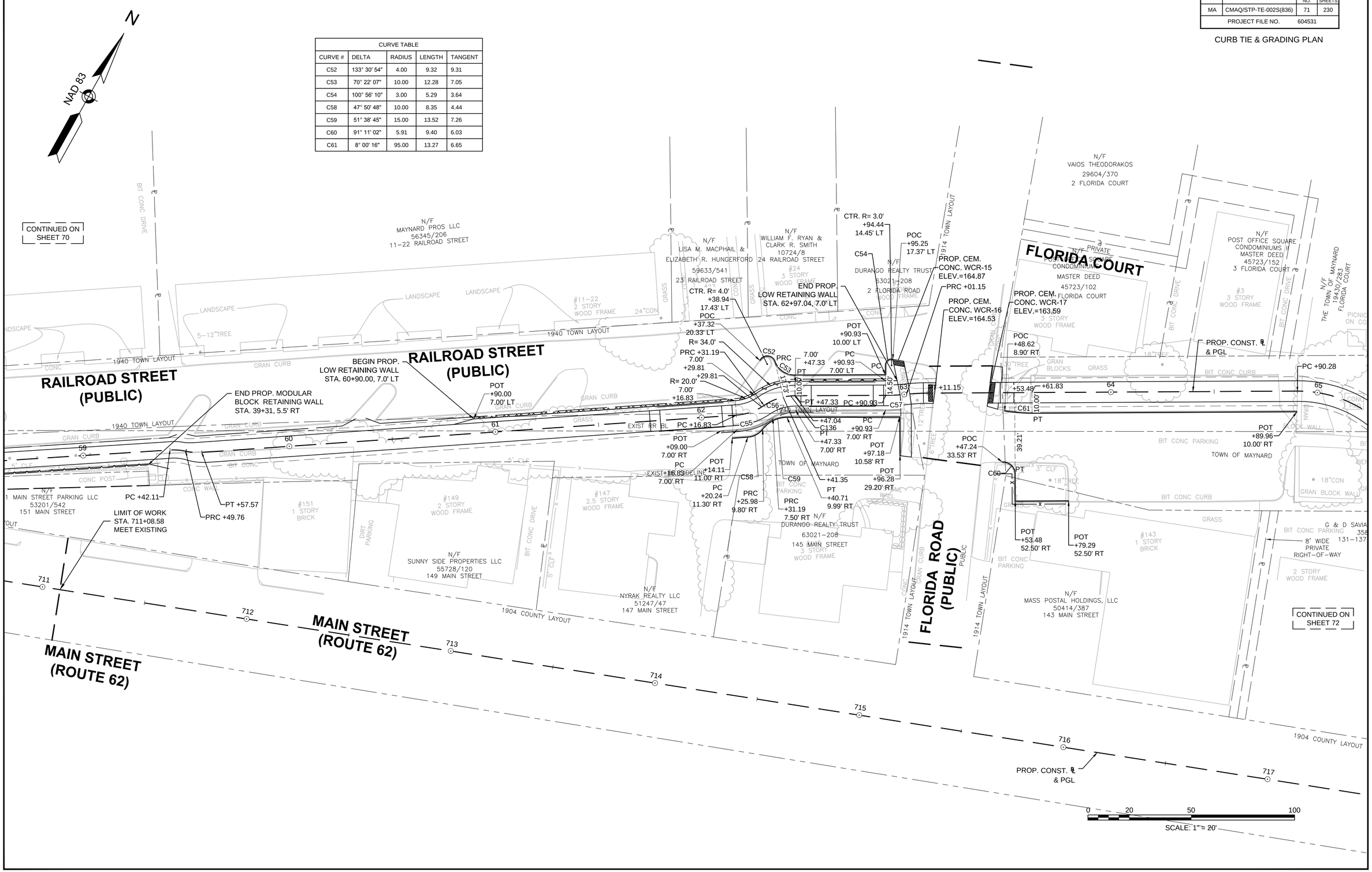
604531_HD(CT).DWG Plotted on 8-Oct-2015 1:21 PM

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

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

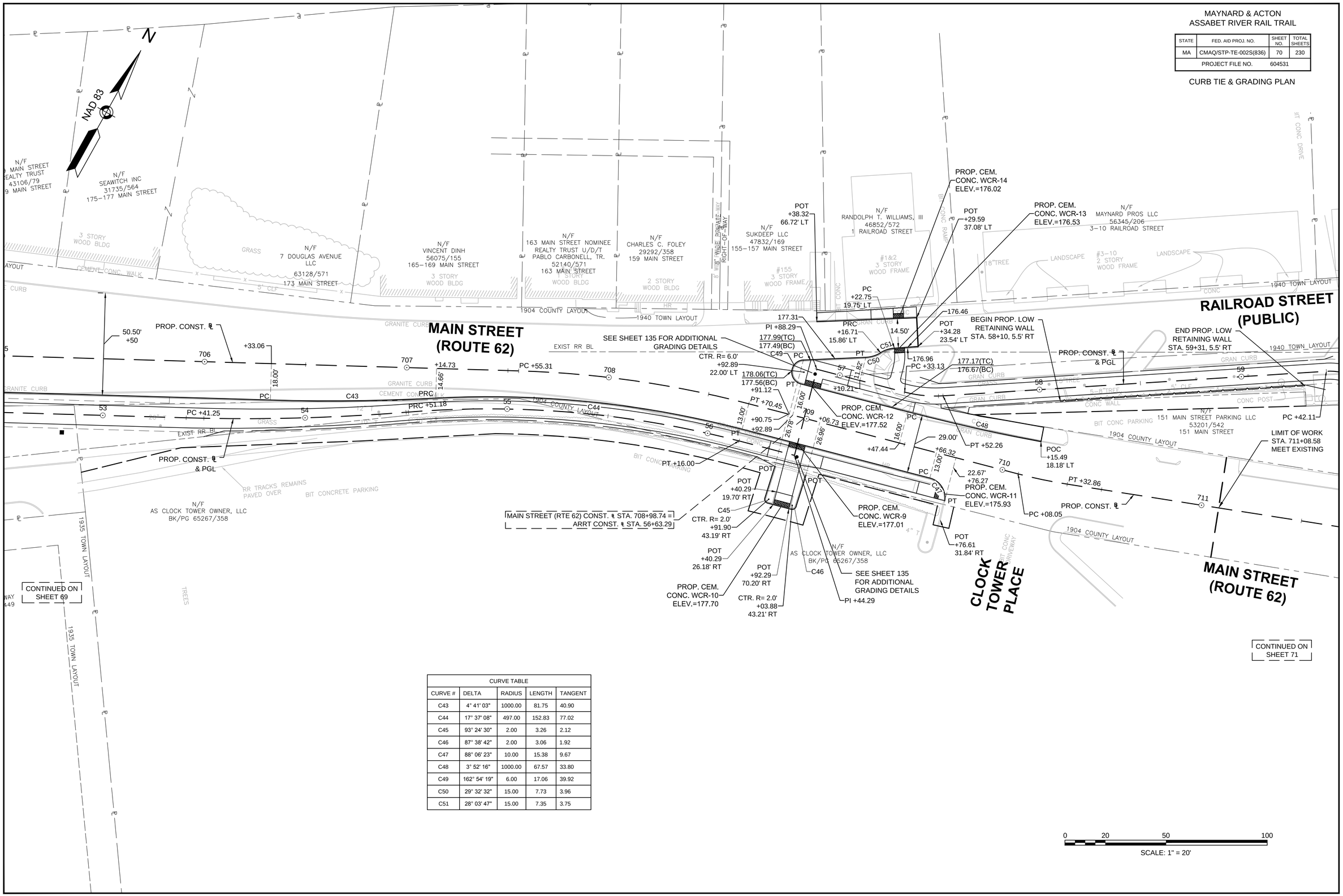


604531_HD(CT).DWG Plotted on 8-Oct-2015 1:20 PM

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



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

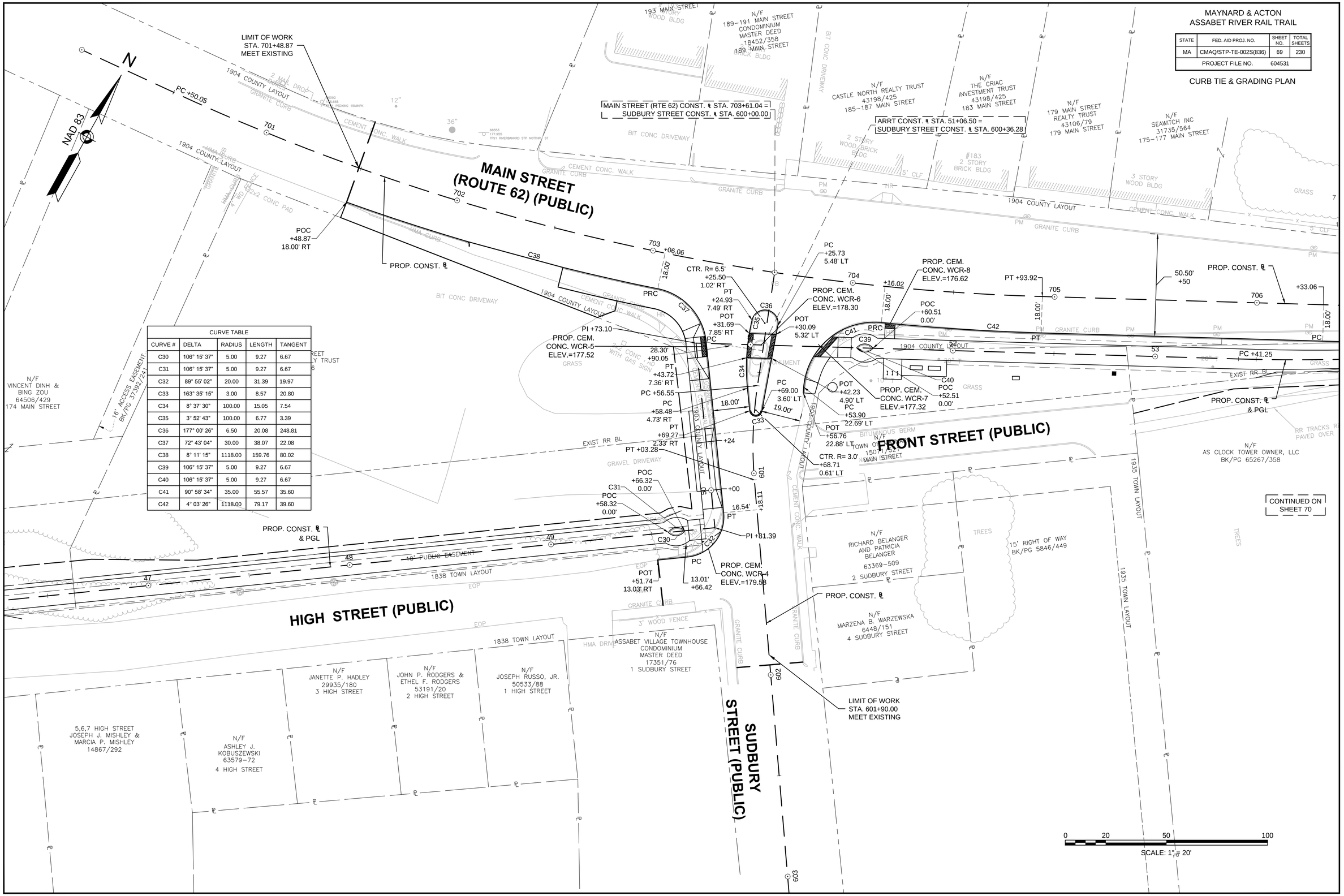
604531_HD(CT).DWG Plotted on 8-Oct-2015 1:20 PM

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 8-Oct-2015 1:20 PM



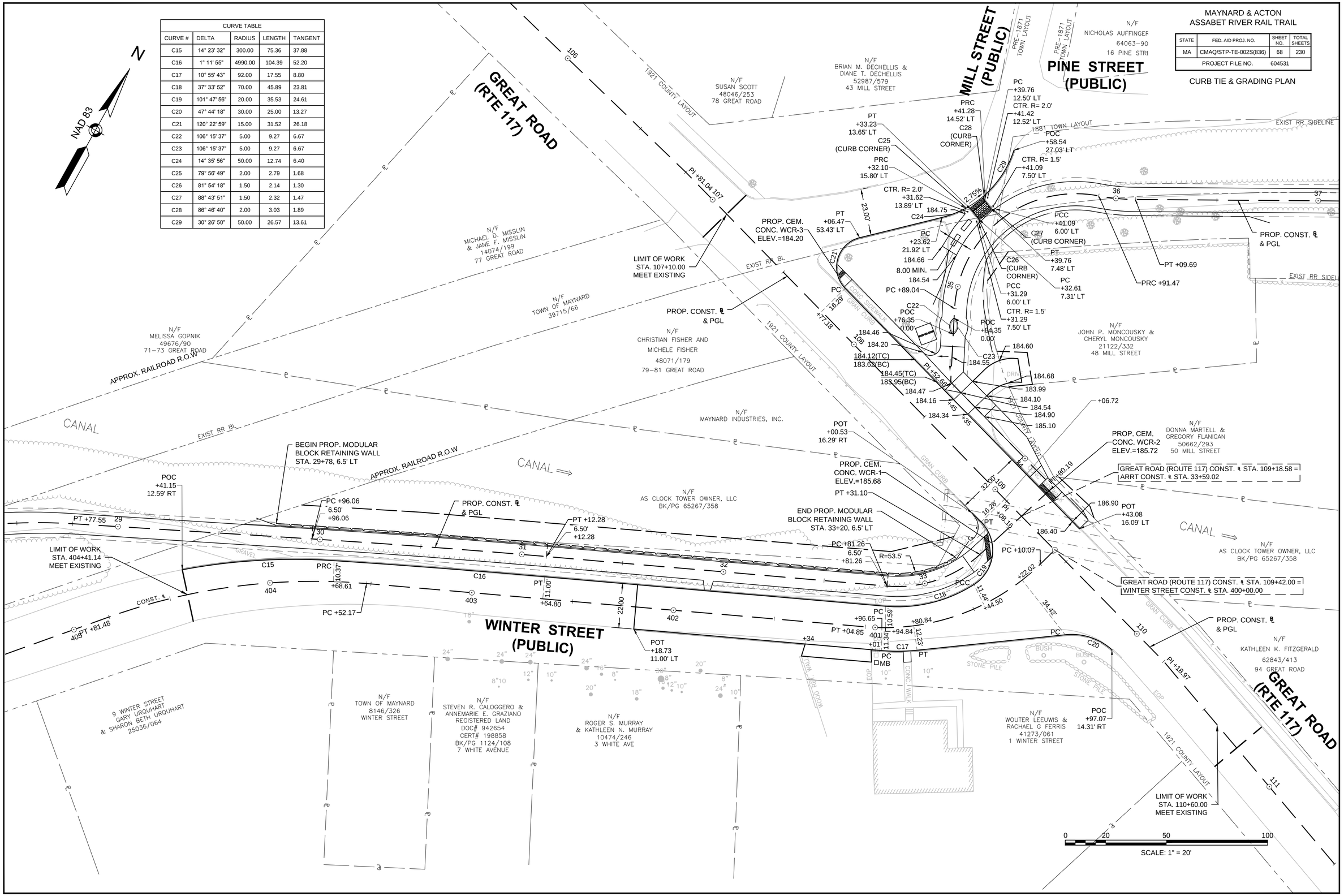
CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C30	106° 15' 37"	5.00	9.27	6.67
C31	106° 15' 37"	5.00	9.27	6.67
C32	89° 55' 02"	20.00	31.39	19.97
C33	163° 35' 15"	3.00	8.57	20.80
C34	8° 37' 30"	100.00	15.05	7.54
C35	3° 52' 43"	100.00	6.77	3.39
C36	177° 00' 26"	6.50	20.08	248.81
C37	72° 43' 04"	30.00	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)	68	230
PROJECT FILE NO.	604531		

CURB TIE & GRADING PLAN

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



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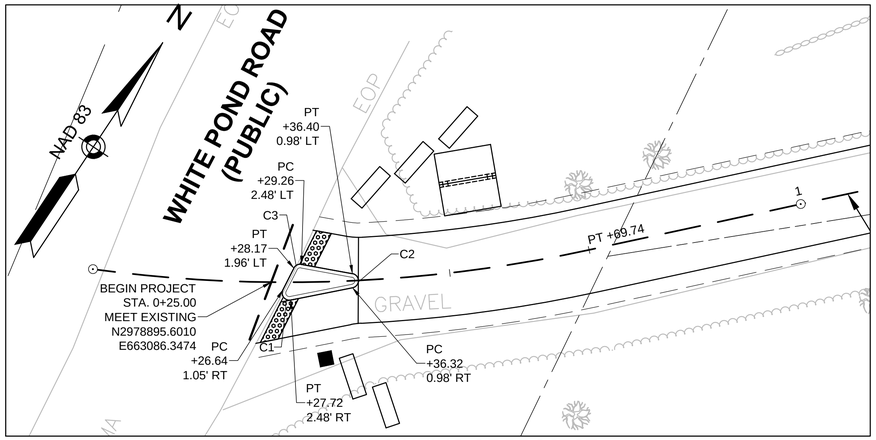
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

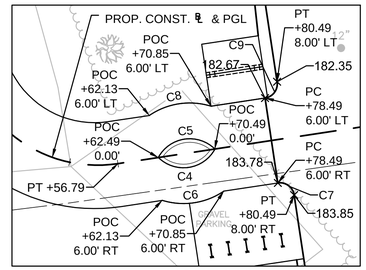
CURB TIE & GRADING PLAN



BEGINNING OF PROJECT

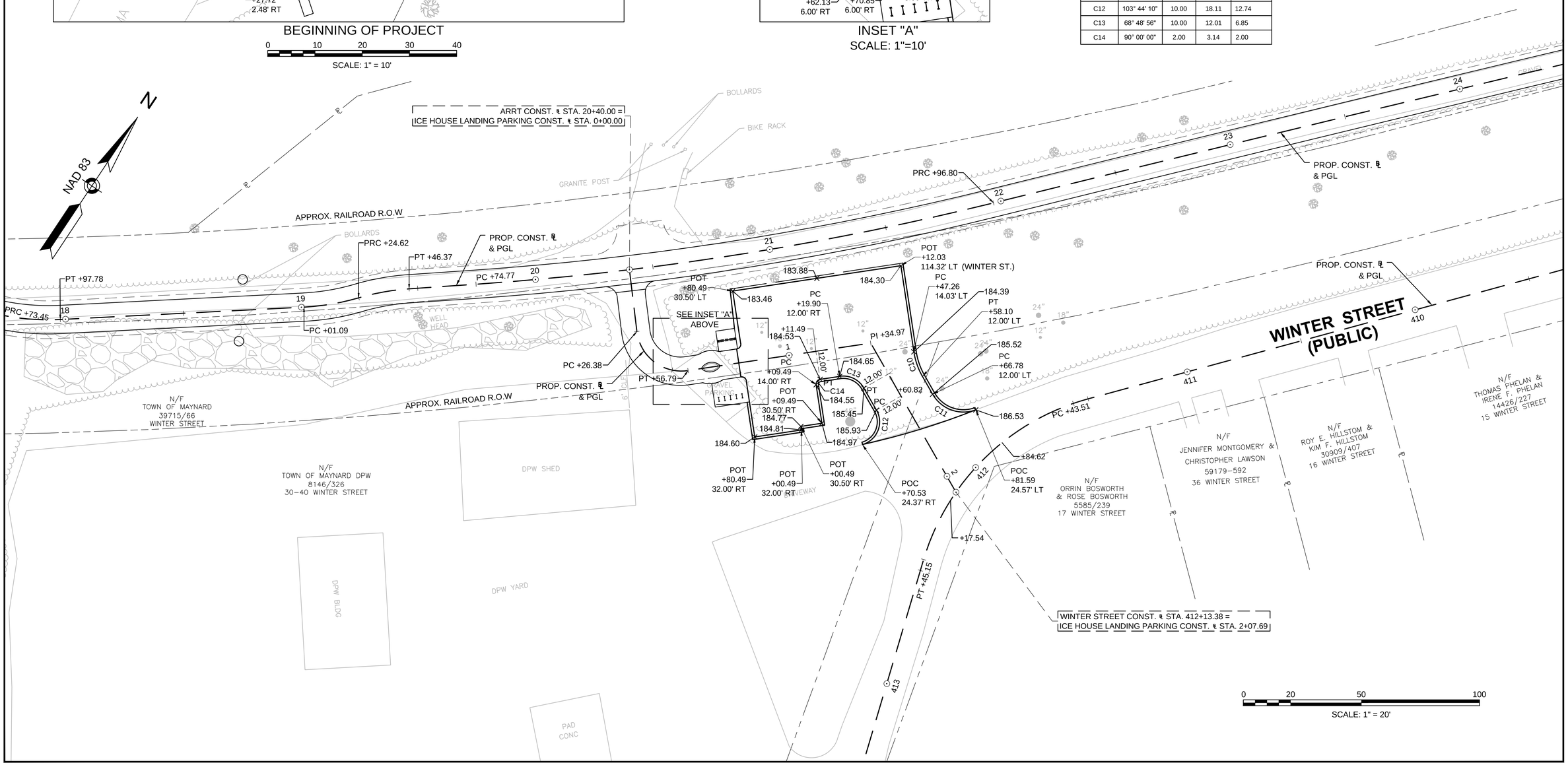
0 10 20 30 40

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



604531_HD(CT).DWG Plotted on 8-Oct-2015 1:20 PM

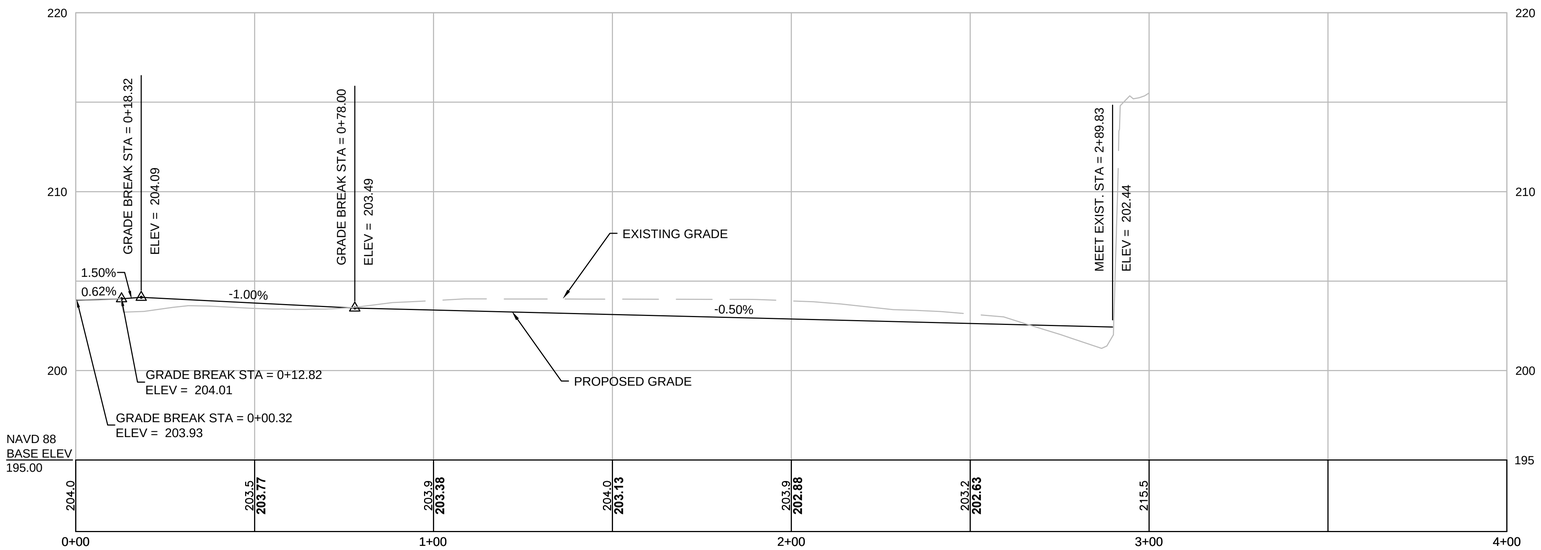
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

CONSTRUCTION PLAN & PROFILE

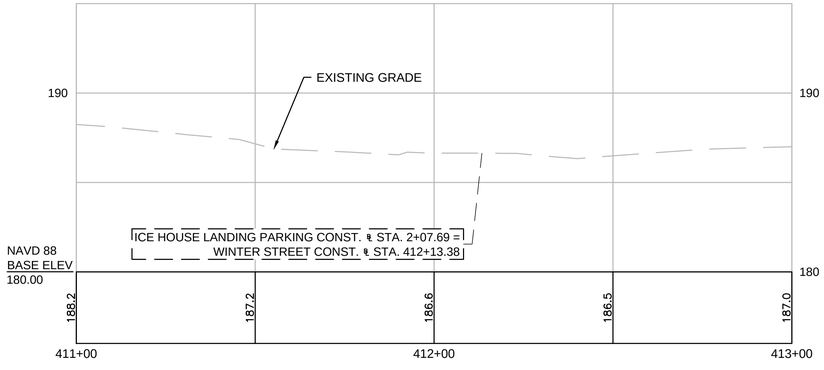
604531_HD(CO).DWG Plotted on 8-Oct-2015 1:18 PM

MAPLE ST. PARKING



NOTE:
1. FOR CONSTRUCTION PLAN SEE SHEET 64

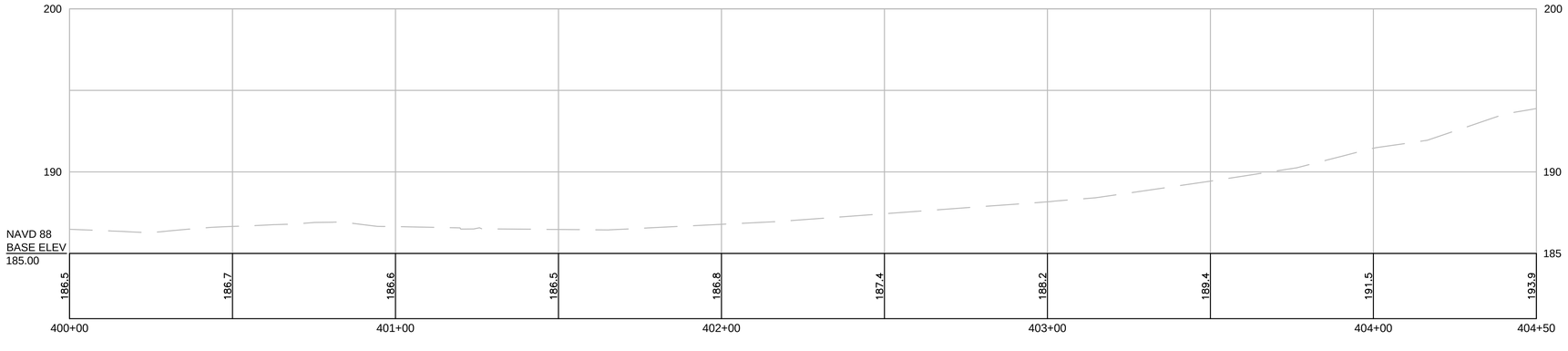
WINTER STREET



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



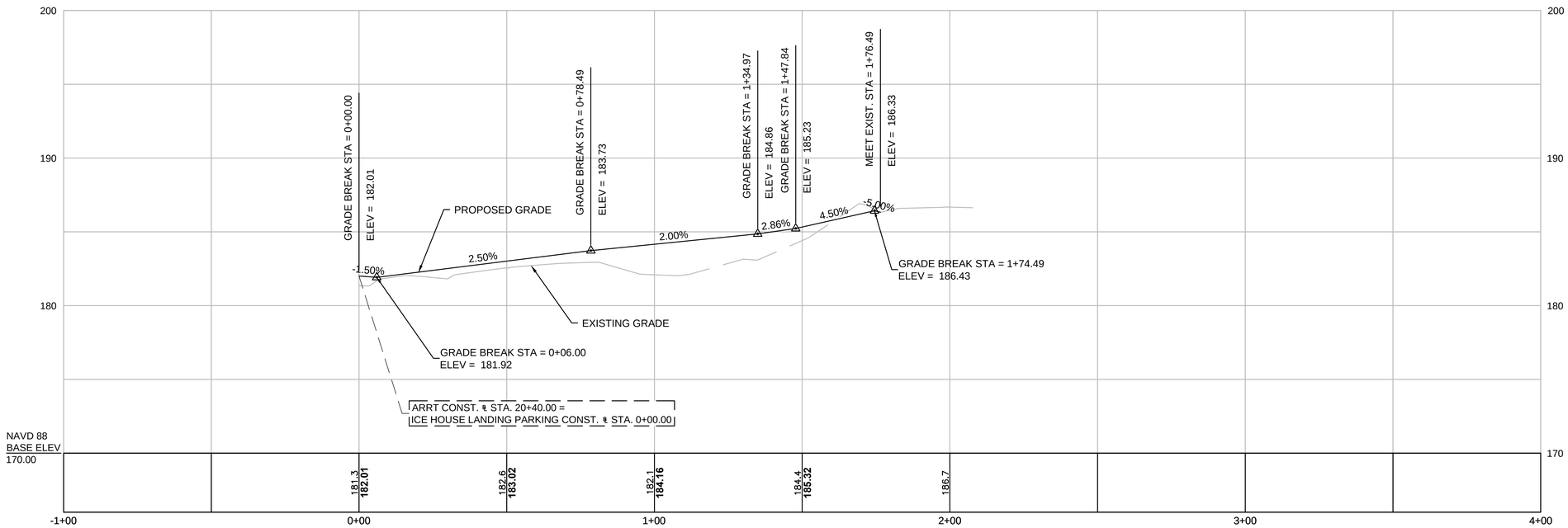
NOTE:
1. FOR CONSTRUCTION PLAN SEE SHEET 36

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

CONSTRUCTION PLAN & PROFILE

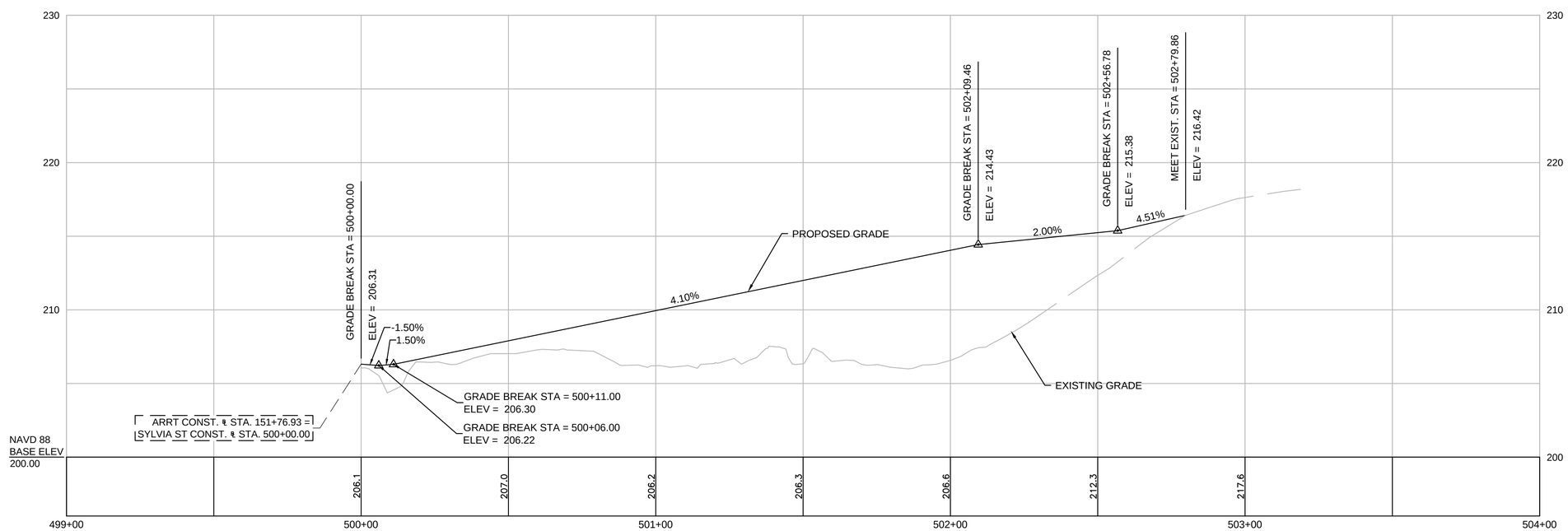
ICE HOUSE LANDING PARKING



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

604531_HD(CO).DWG Plotted on 8-Oct-2015 1:18 PM

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

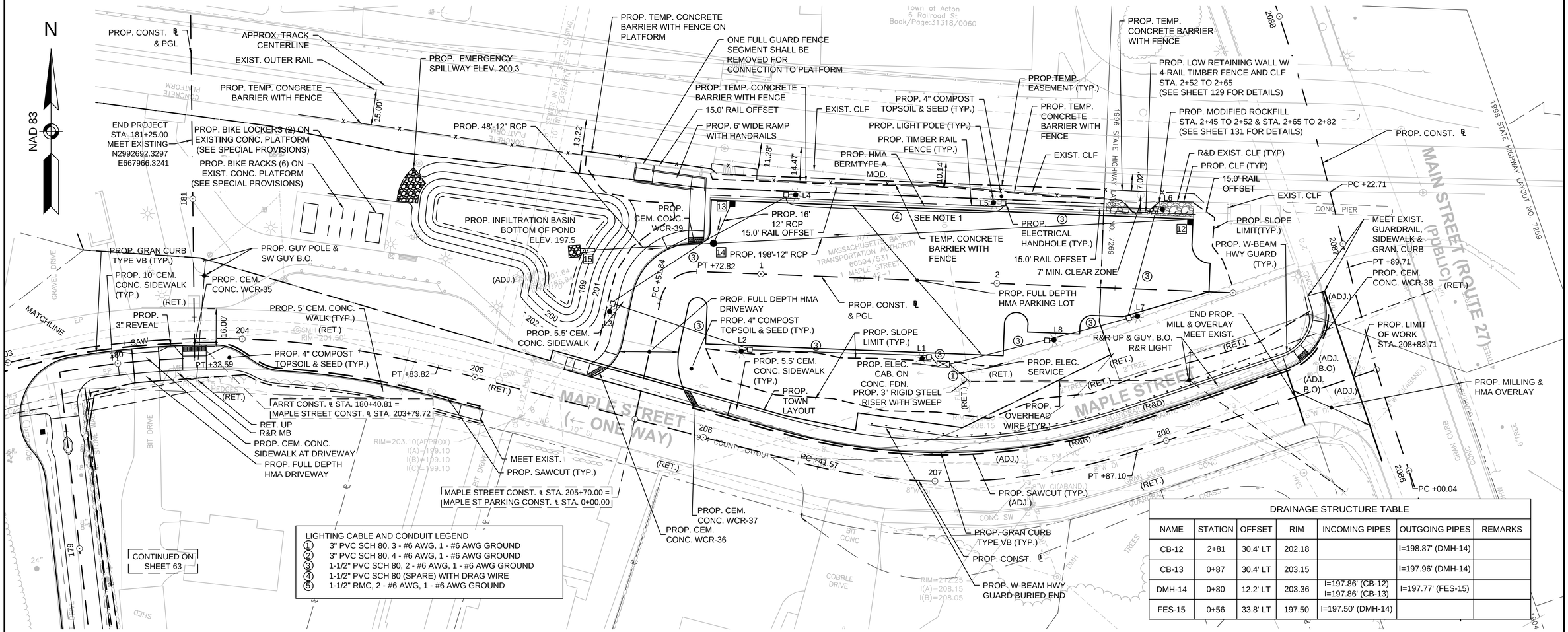
WATER SUPPLY ALTERATIONS
NONE

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



LIGHTING CABLE AND CONDUIT LEGEND
1. 3" PVC SCH 80, 3 - #6 AWG, 1 - #6 AWG GROUND
2. 3" PVC SCH 80, 4 - #6 AWG, 1 - #6 AWG GROUND
3. 1-1/2" PVC SCH 80, 2 - #6 AWG, 1 - #6 AWG GROUND
4. 1-1/2" PVC SCH 80 (SPARE) WITH DRAG WIRE
5. 1-1/2" RMC, 2 - #6 AWG, 1 - #6 AWG GROUND

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'

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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

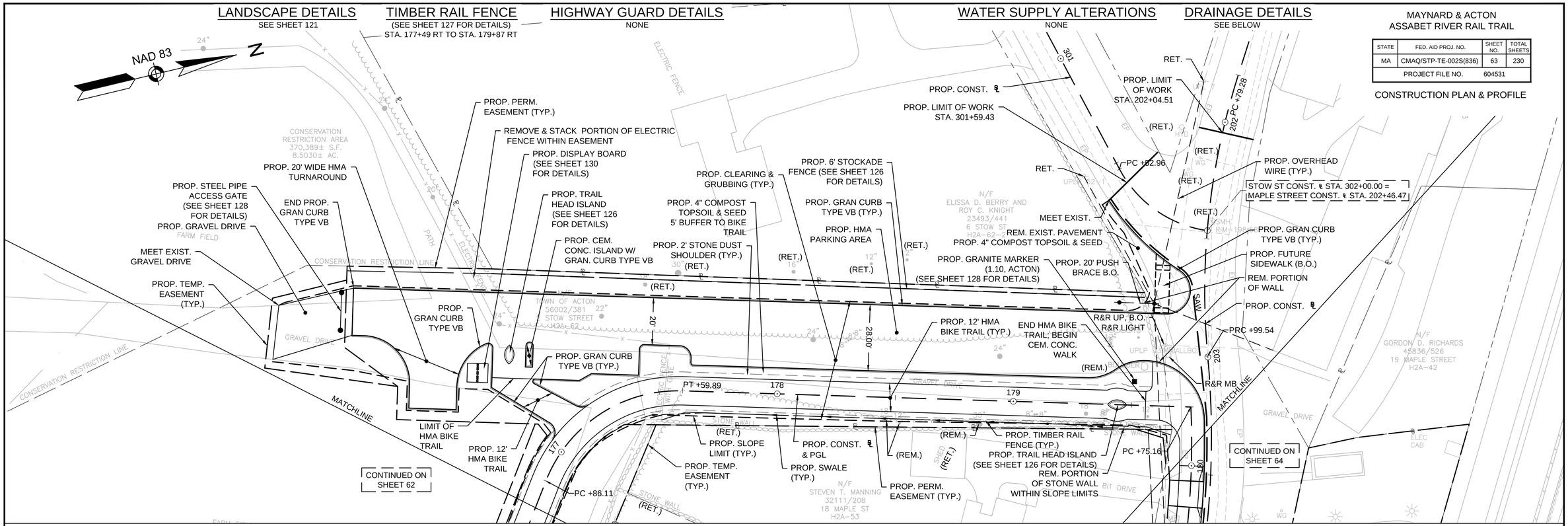
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

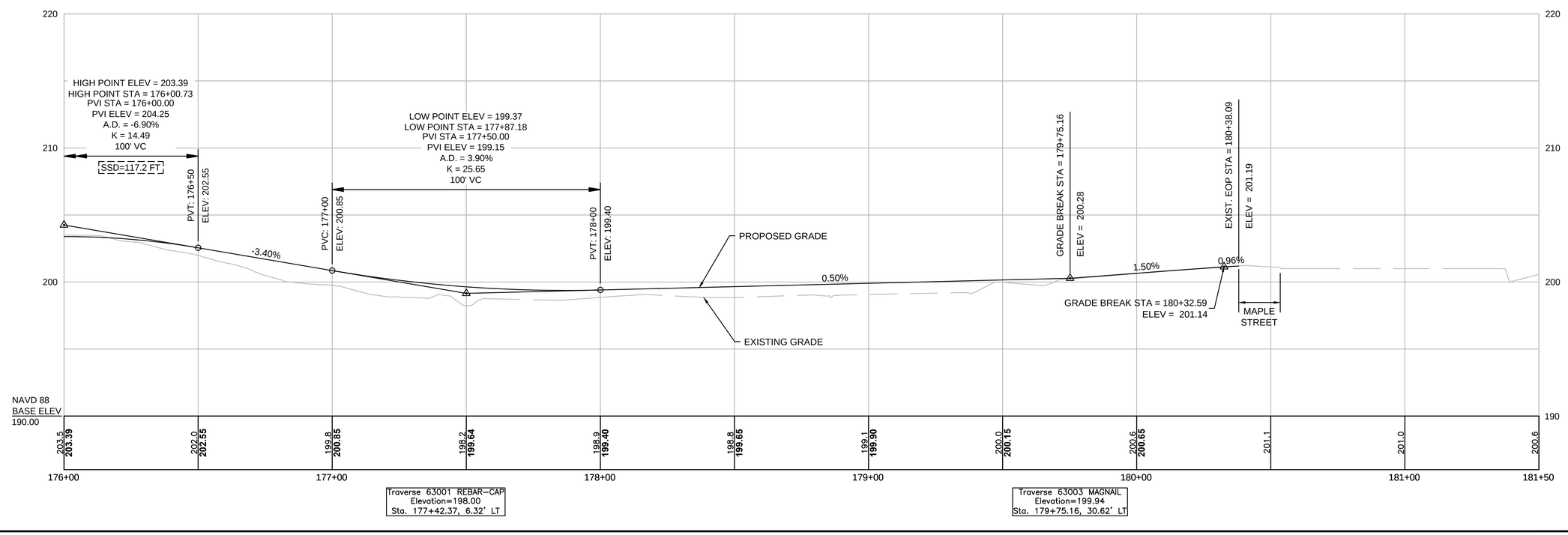
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

CONSTRUCTION PLAN & PROFILE



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



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LANDSCAPE DETAILS
SEE SHEET 120

TRAFFIC SIGNAL CONDUIT
NONE

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

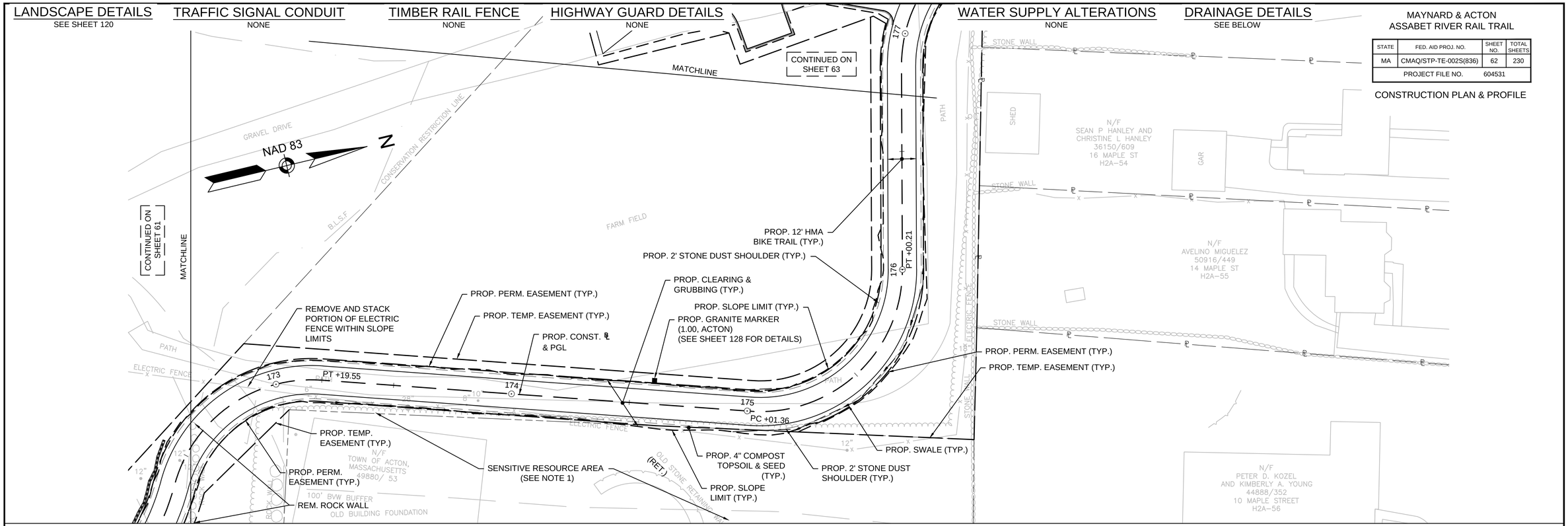
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

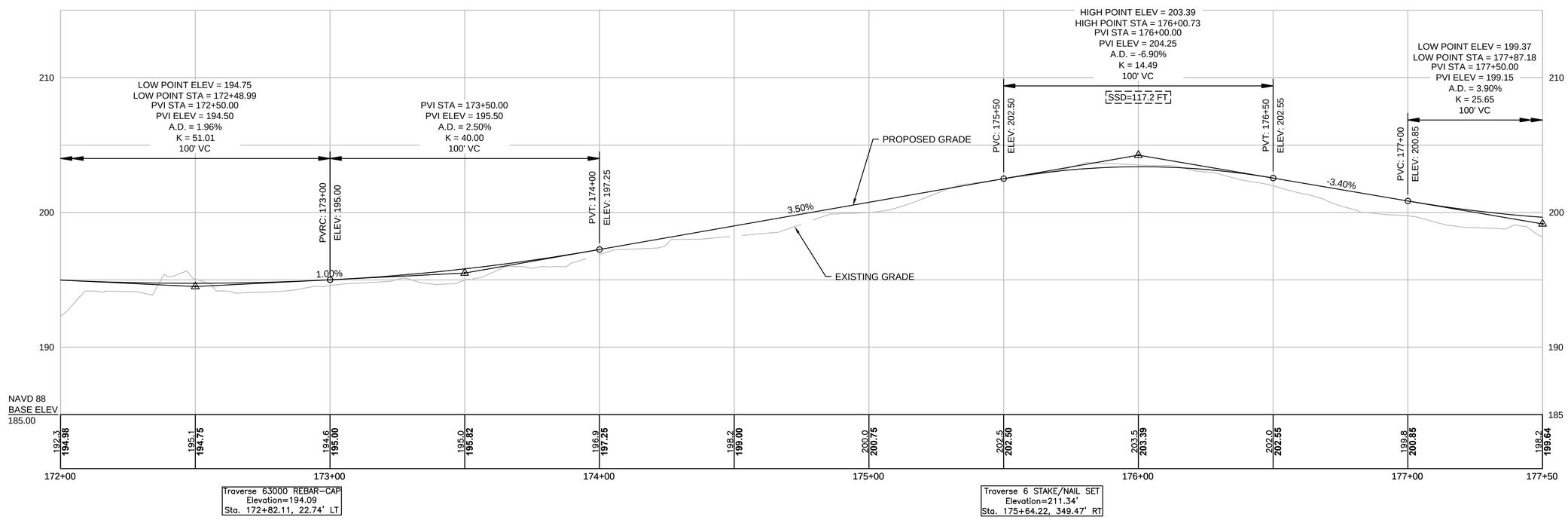
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	62	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



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

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



604531_HD(CO).DWG Plotted on 8-Oct-2015 1:17 PM

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

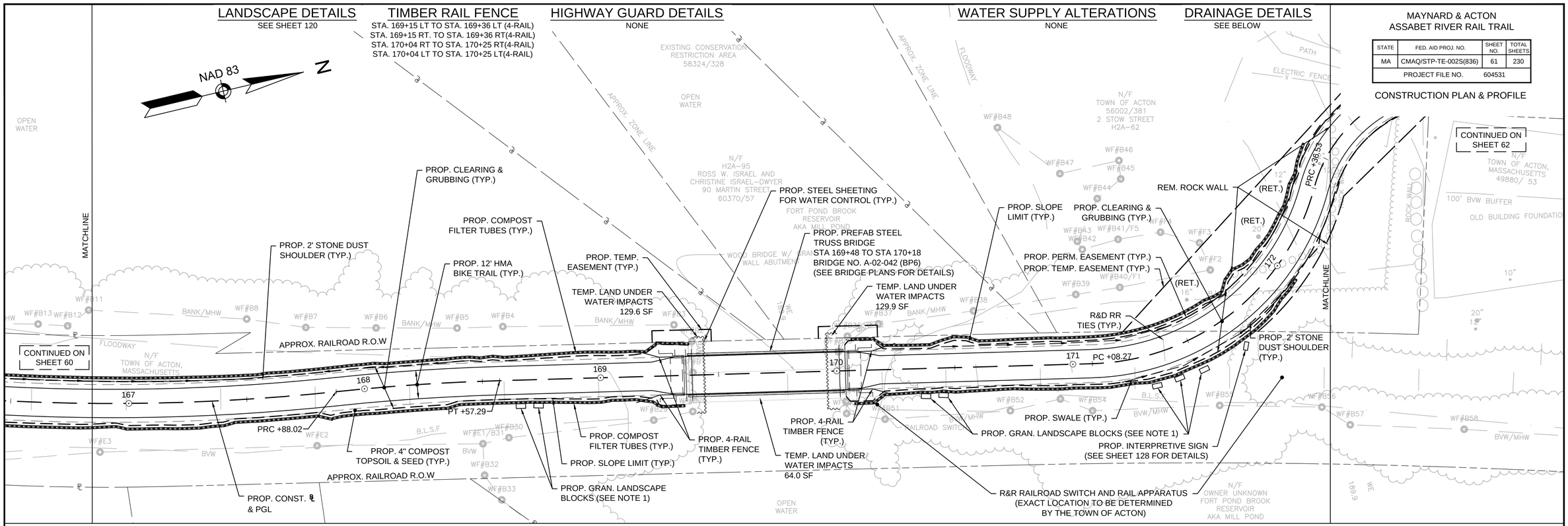
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

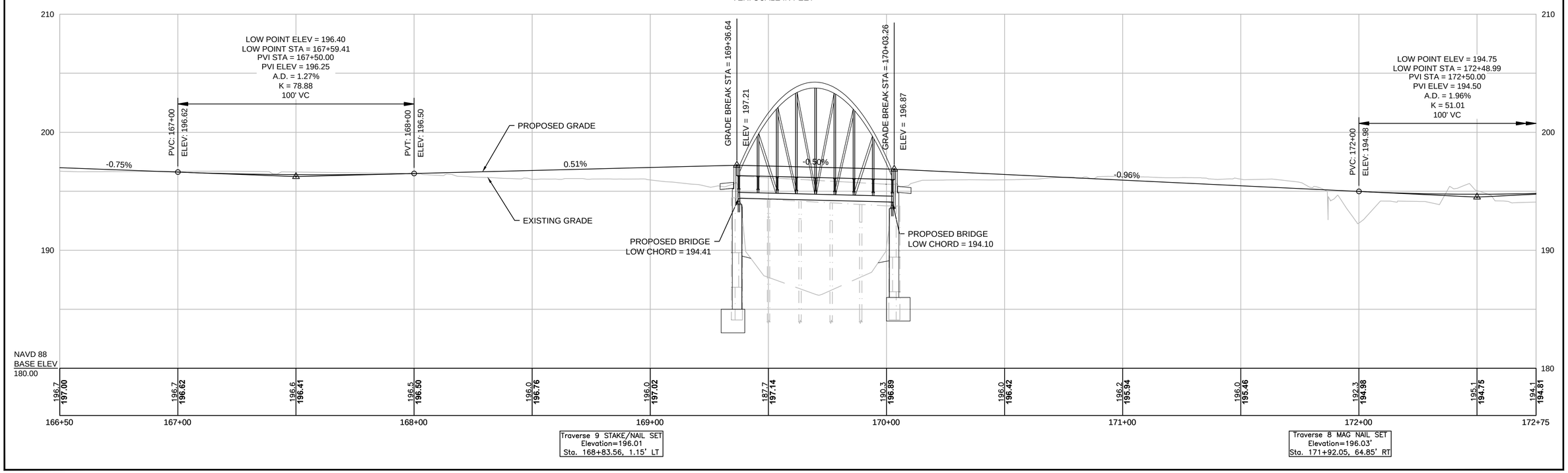
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMAQ/STP-TE-002S(836)	61	230
PROJECT FILE NO.	604531		

CONSTRUCTION PLAN & PROFILE



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

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.



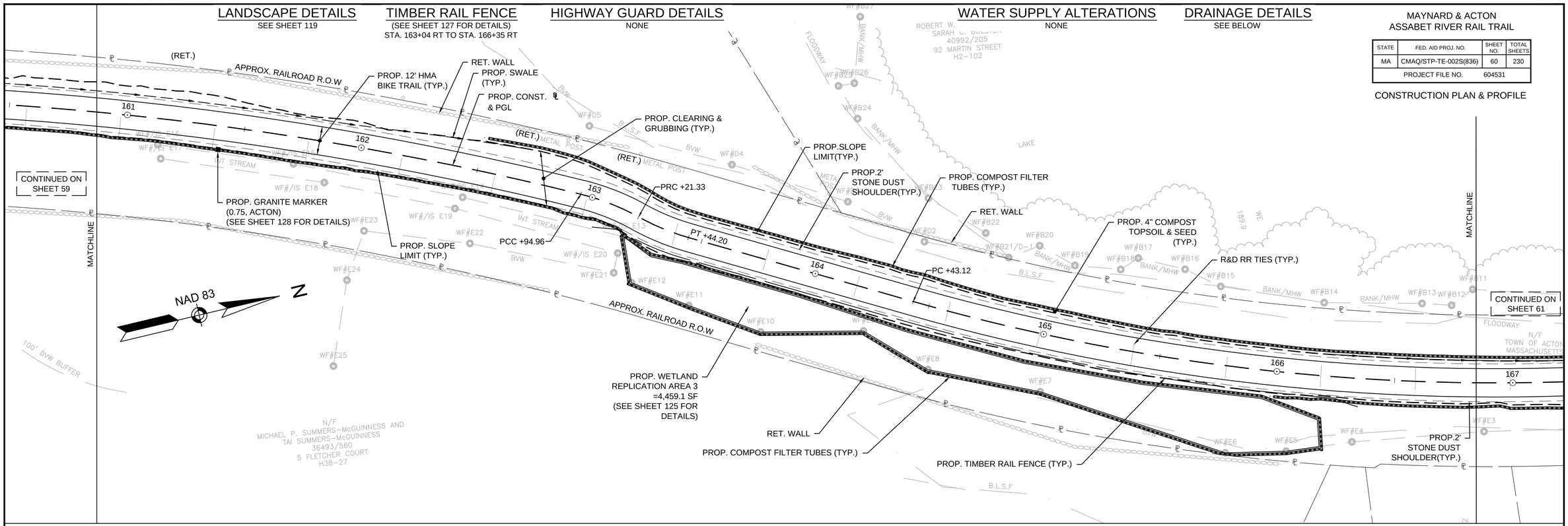
604531_HD(CO).DWG Plotted on 8-Oct-2015 1:16 PM

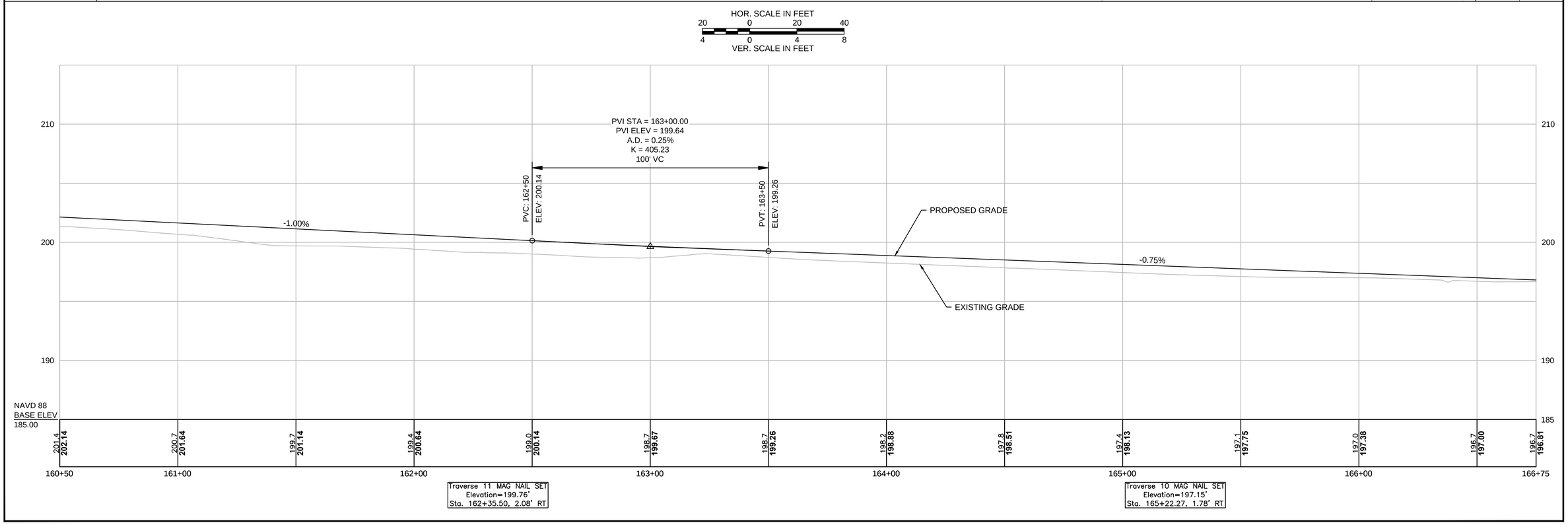
LANDSCAPE DETAILS	TIMBER RAIL FENCE	HIGHWAY GUARD DETAILS	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
SEE SHEET 119	(SEE SHEET 127 FOR DETAILS) STA. 163+04 RT TO STA. 166+35 RT	NONE	NONE	SEE BELOW

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





604531_HD(CO).DWG Plotted on 8-Oct-2015 1:16 PM

LANDSCAPE DETAILS
SEE SHEET 119

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

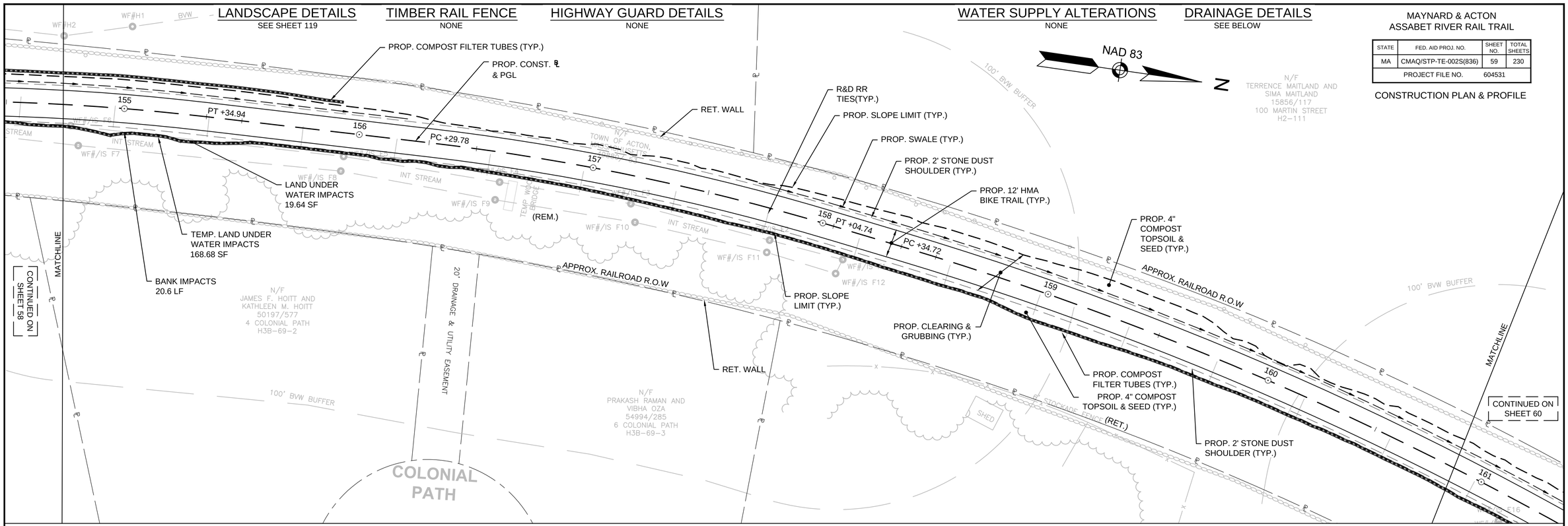
WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

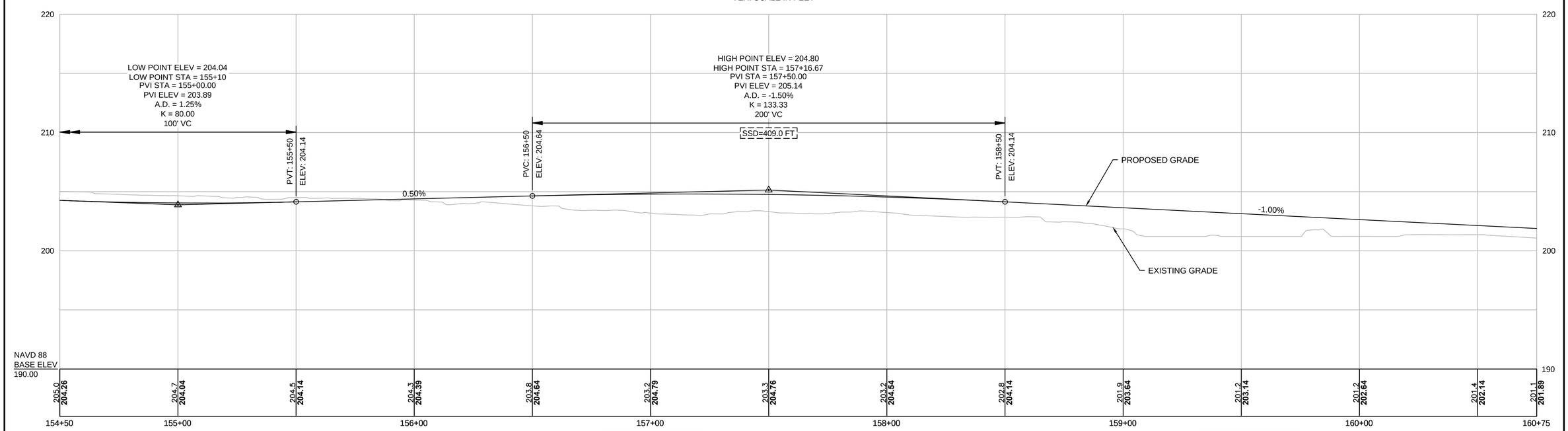
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

CONSTRUCTION PLAN & PROFILE



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



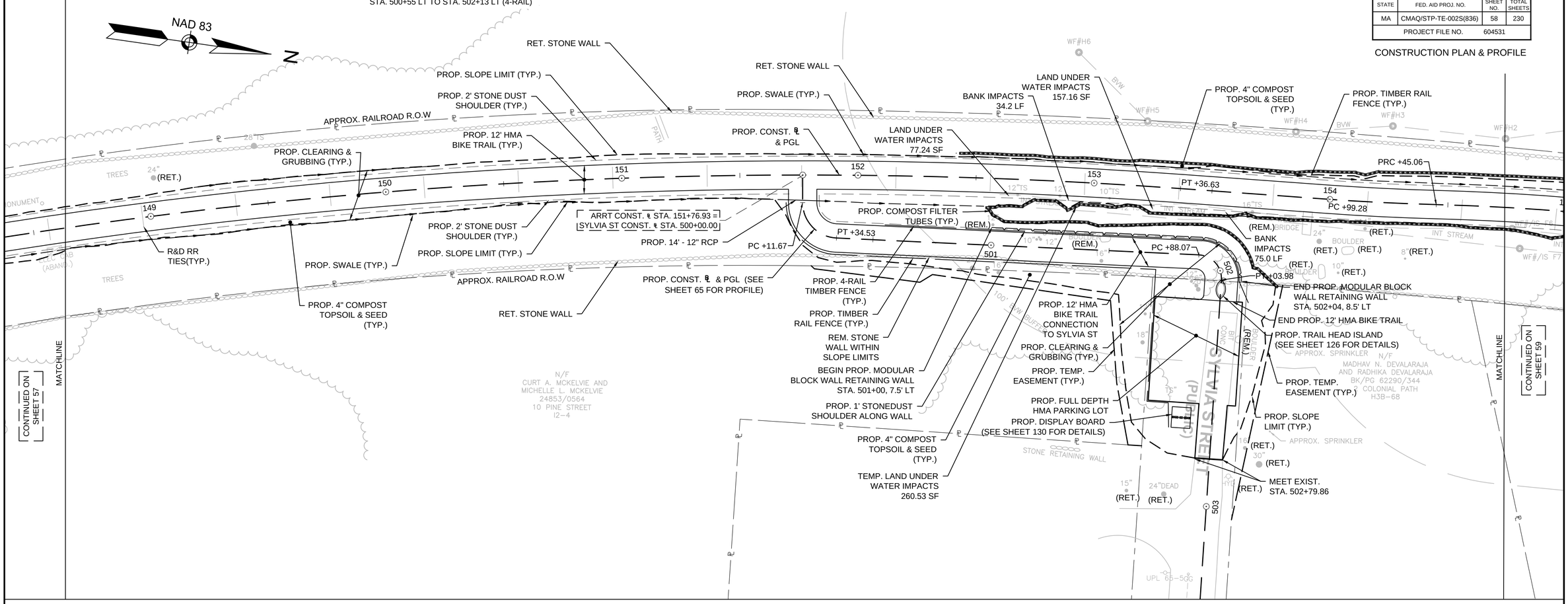
604531_HD(CO).DWG Plotted on 8-Oct-2015 1:15 PM

LANDSCAPE DETAILS	TIMBER RAIL FENCE	HIGHWAY GUARD DETAILS	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
SEE SHEET 118	(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)	NONE	NONE	SEE BELOW

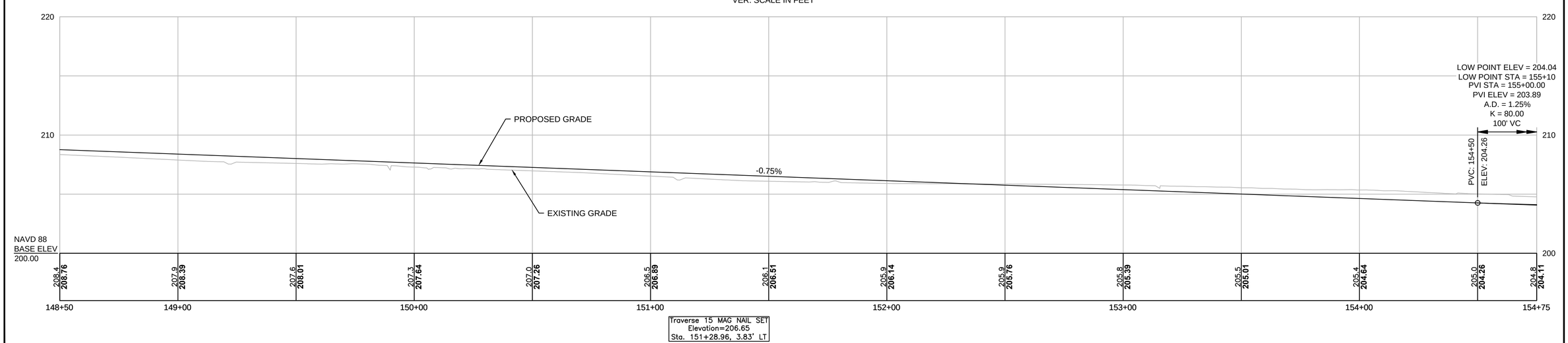
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

CONSTRUCTION PLAN & PROFILE



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



604531_HD(CO).DWG Plotted on 8-Oct-2015 1:15 PM

LANDSCAPE DETAILS
SEE SHEET 118

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

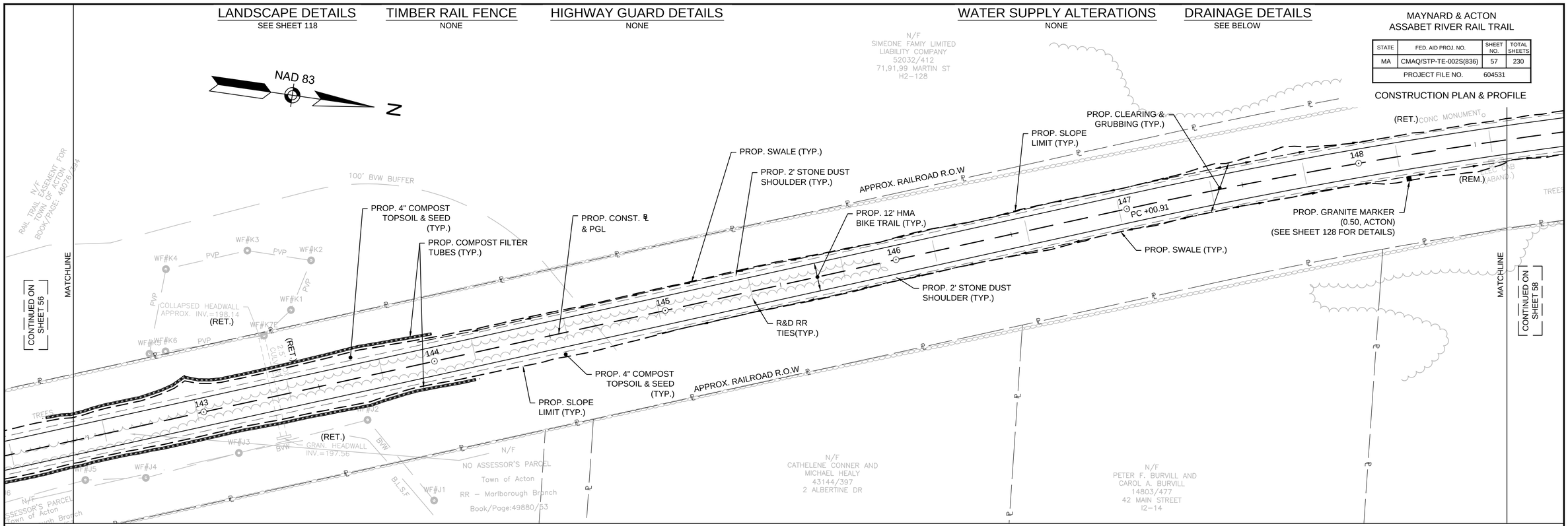
WATER SUPPLY ALTERATIONS
NONE

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



604531_HD(CO).DWG Plotted on 8-Oct-2015 1:14 PM

LANDSCAPE DETAILS
SEE SHEET 117

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

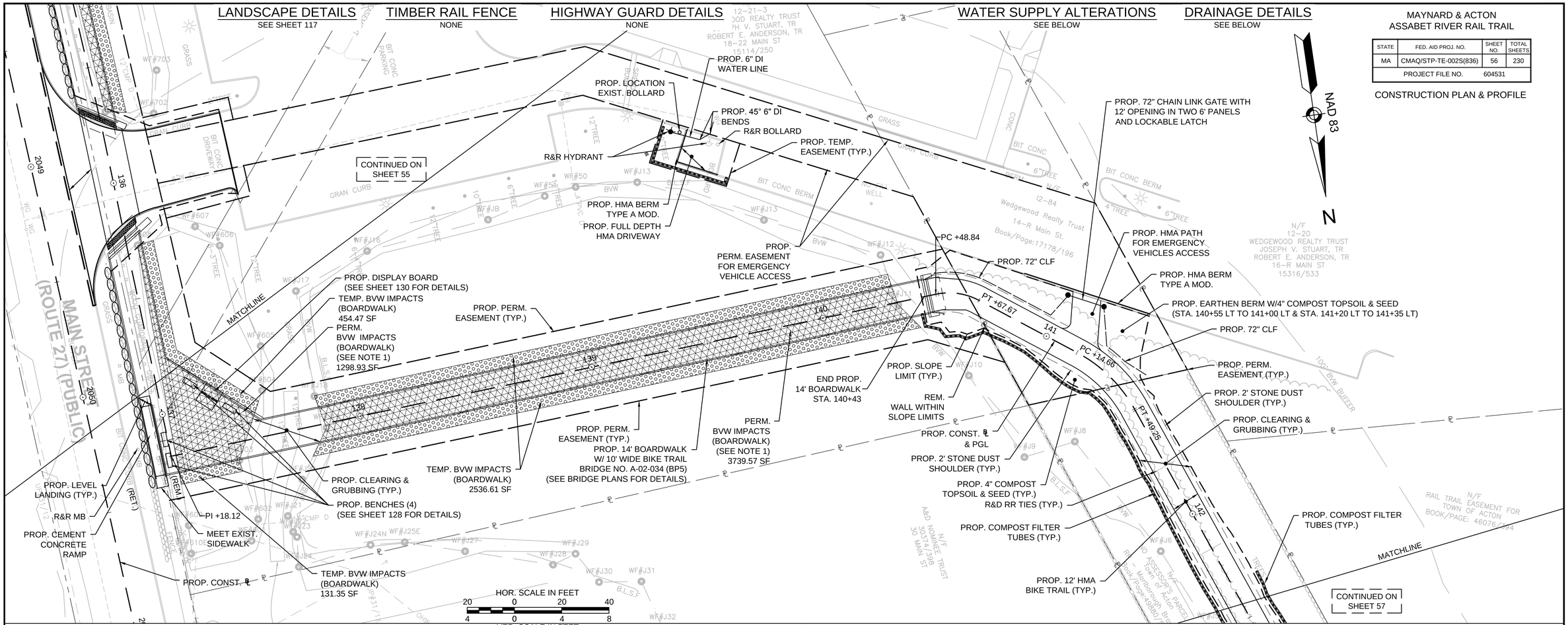
WATER SUPPLY ALTERATIONS
SEE BELOW

DRAINAGE DETAILS
SEE BELOW

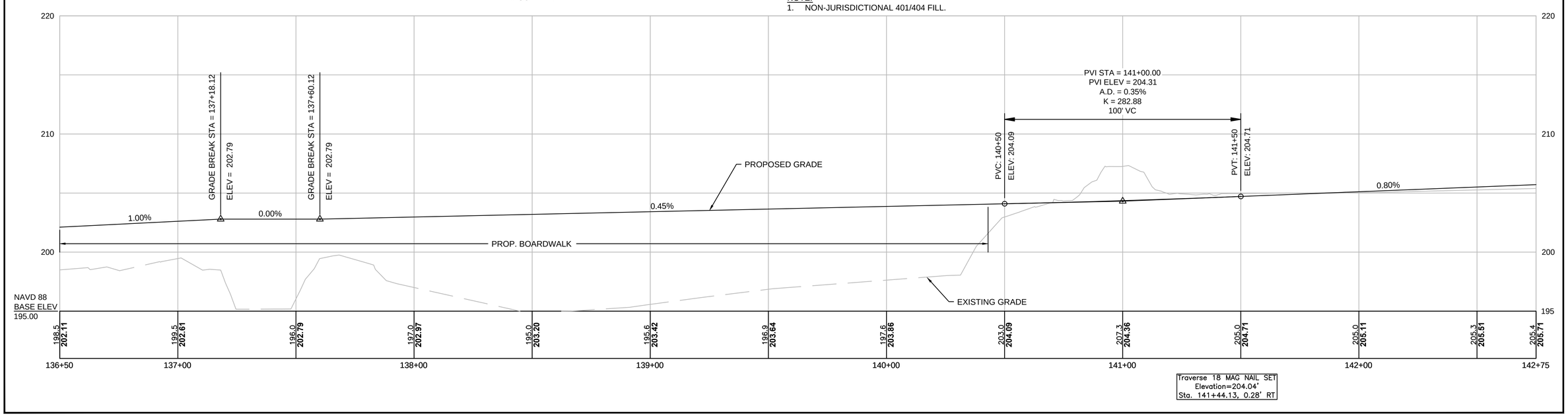
MAYNARD & ACTON
ASSABET RIVER RAIL TRAIL

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

CONSTRUCTION PLAN & PROFILE



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



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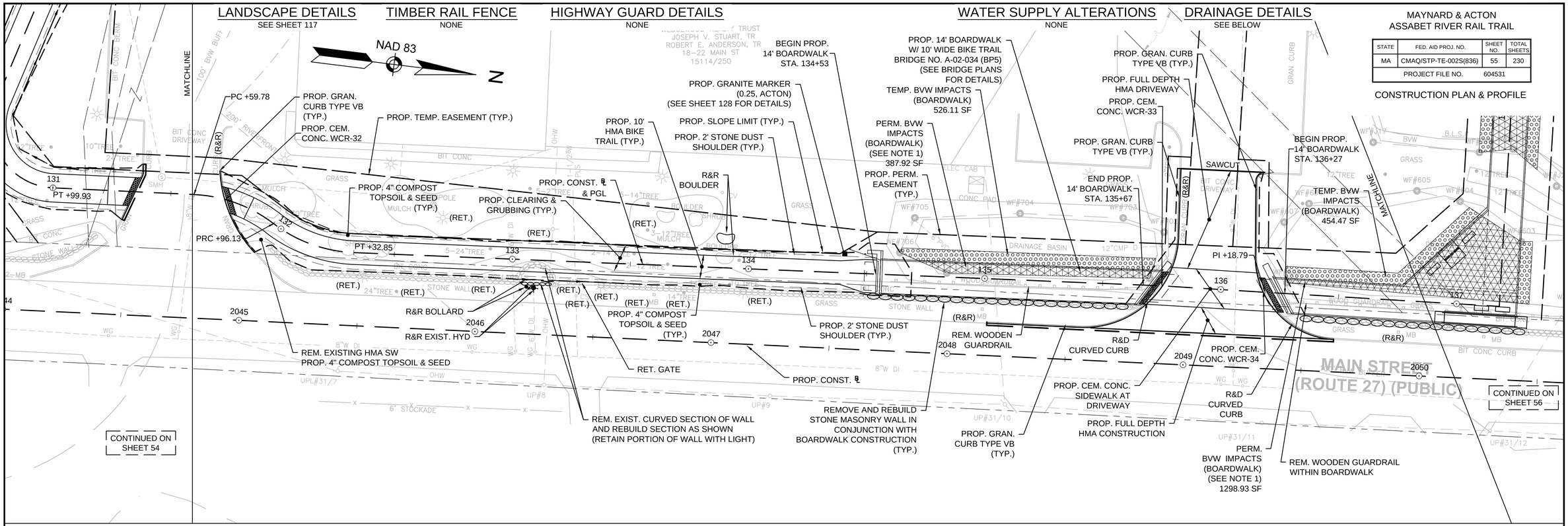
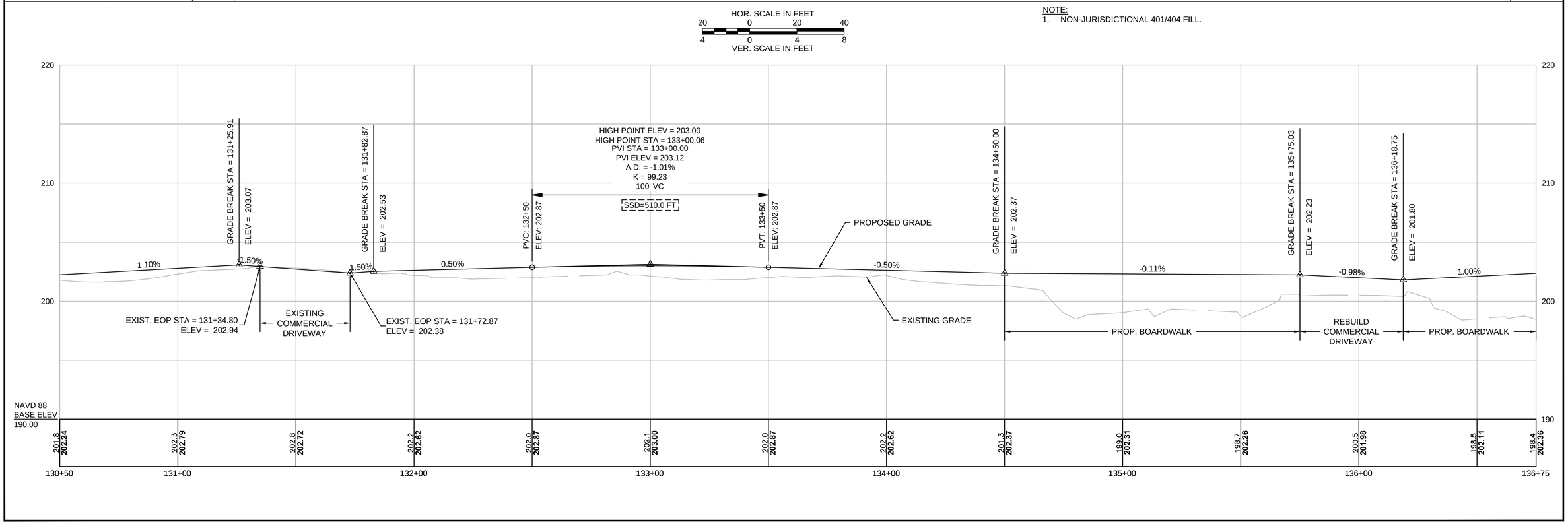




604531_HD(CO).DWG Plotted on 8-Oct-2015 1:13 PM

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

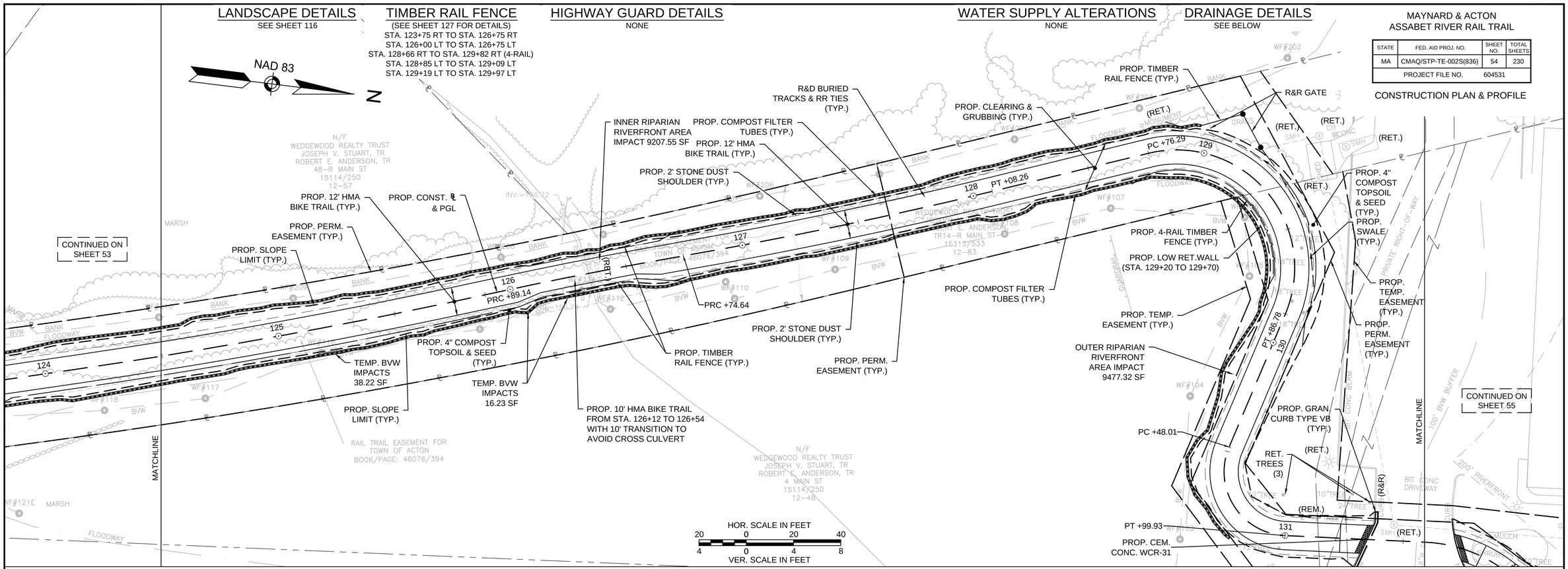
WATER SUPPLY ALTERATIONS
NONE

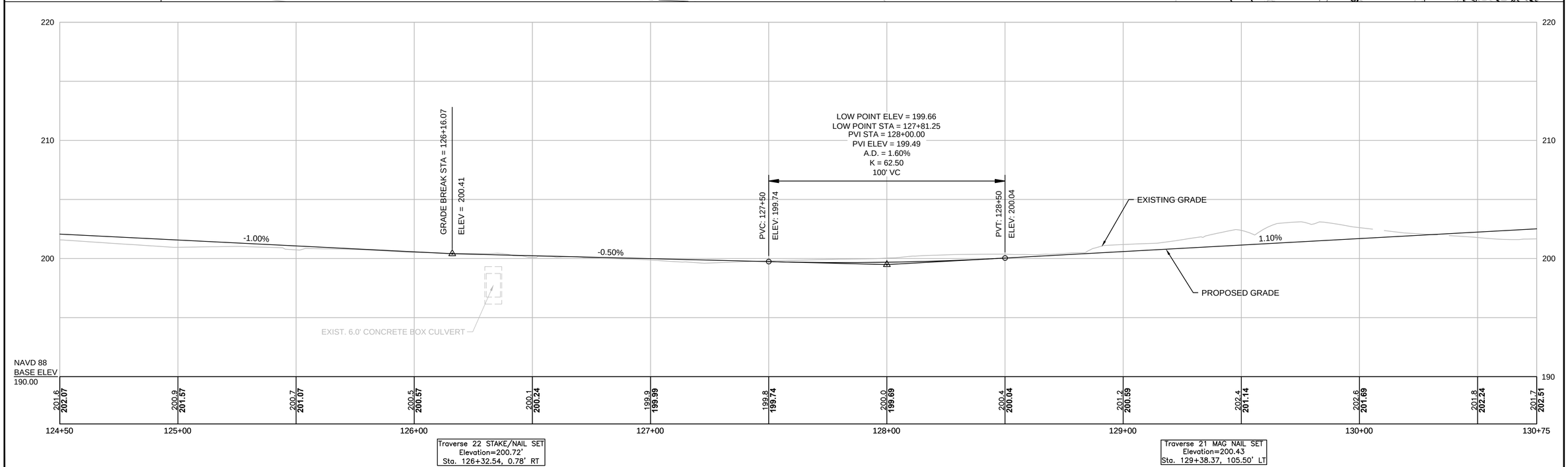
DRAINAGE DETAILS
SEE BELOW

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 8-Oct-2015 1:12 PM

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

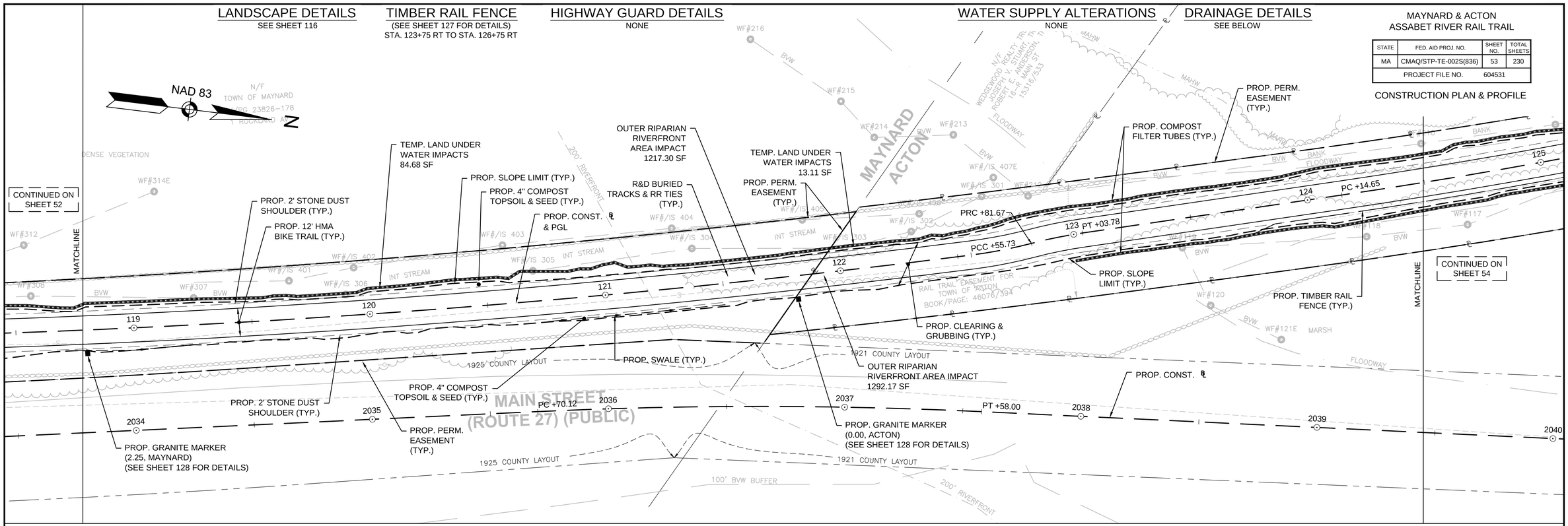
WATER SUPPLY ALTERATIONS
NONE

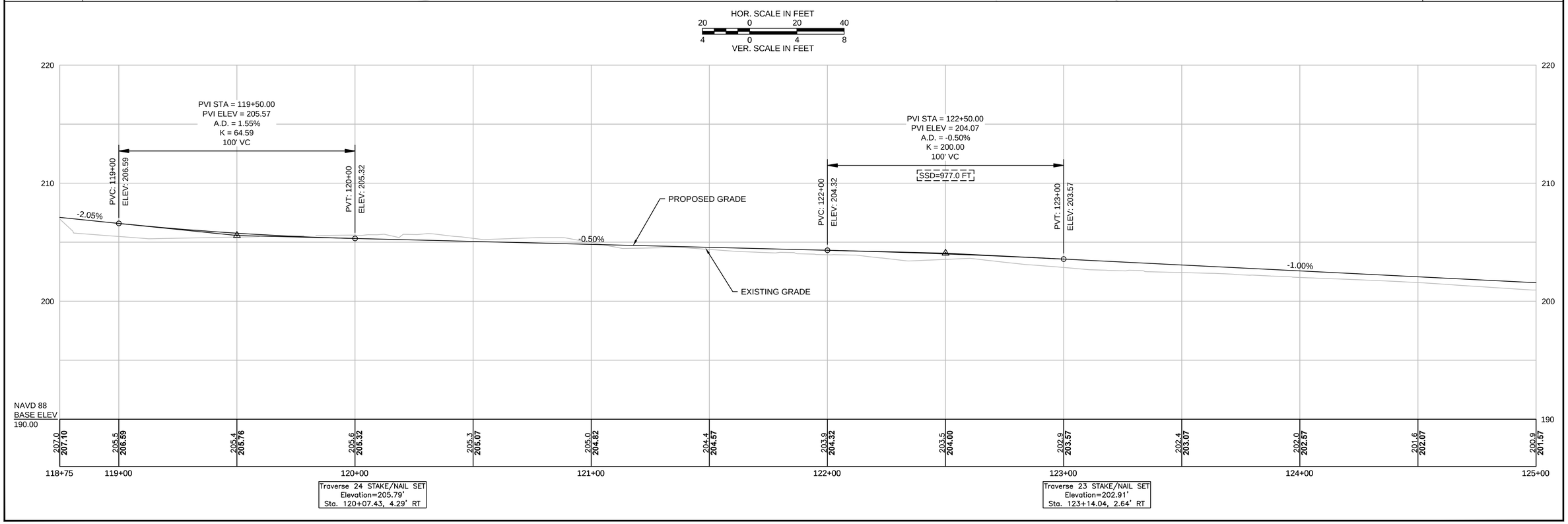
DRAINAGE DETAILS
SEE BELOW

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 8-Oct-2015 1:12 PM

LANDSCAPE DETAILS
SEE SHEET 115

TIMBER RAIL FENCE
NONE

HIGHWAY GUARD DETAILS
NONE

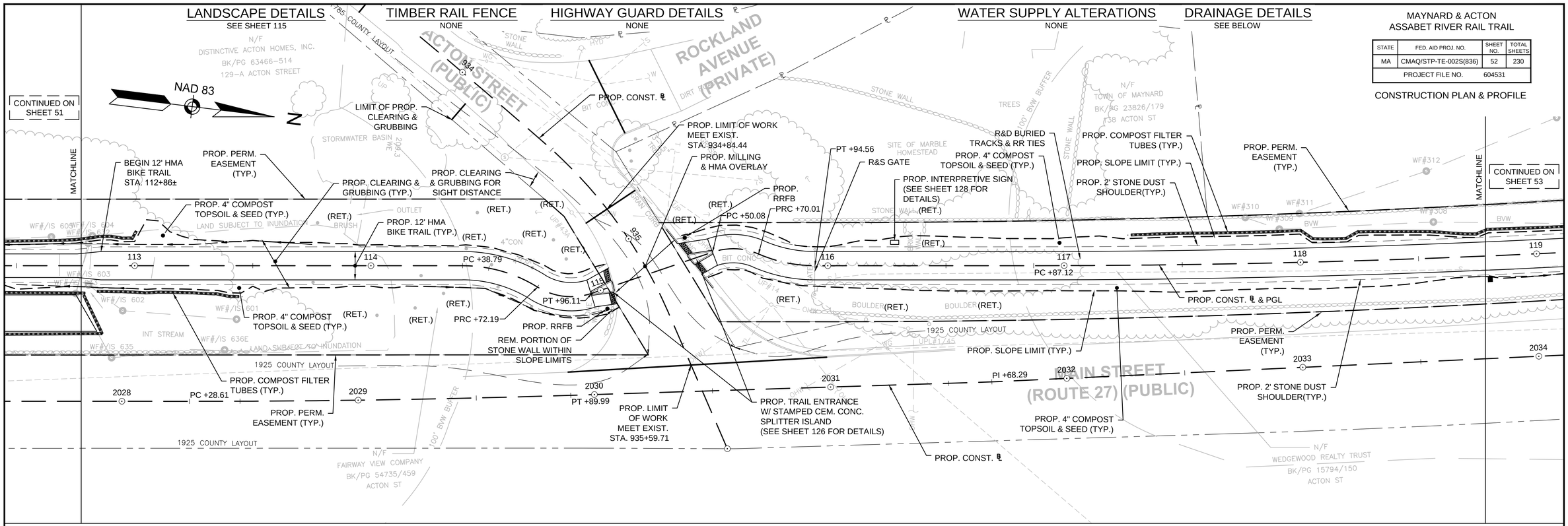
WATER SUPPLY ALTERATIONS
NONE

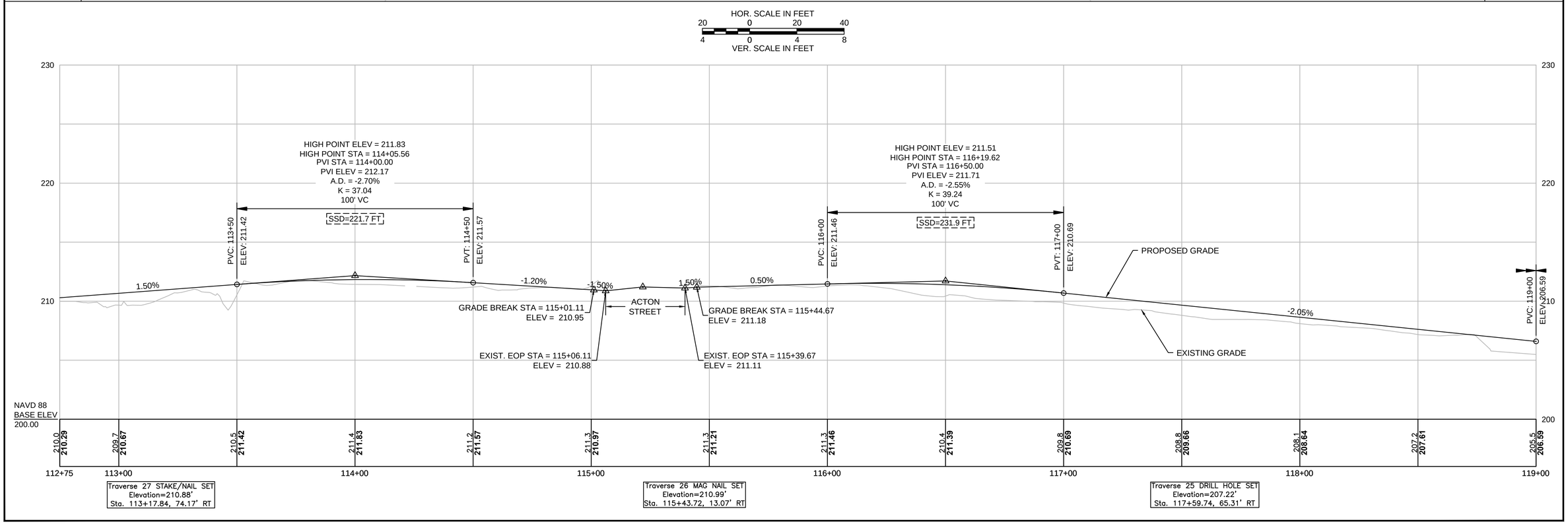
DRAINAGE DETAILS
SEE BELOW

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





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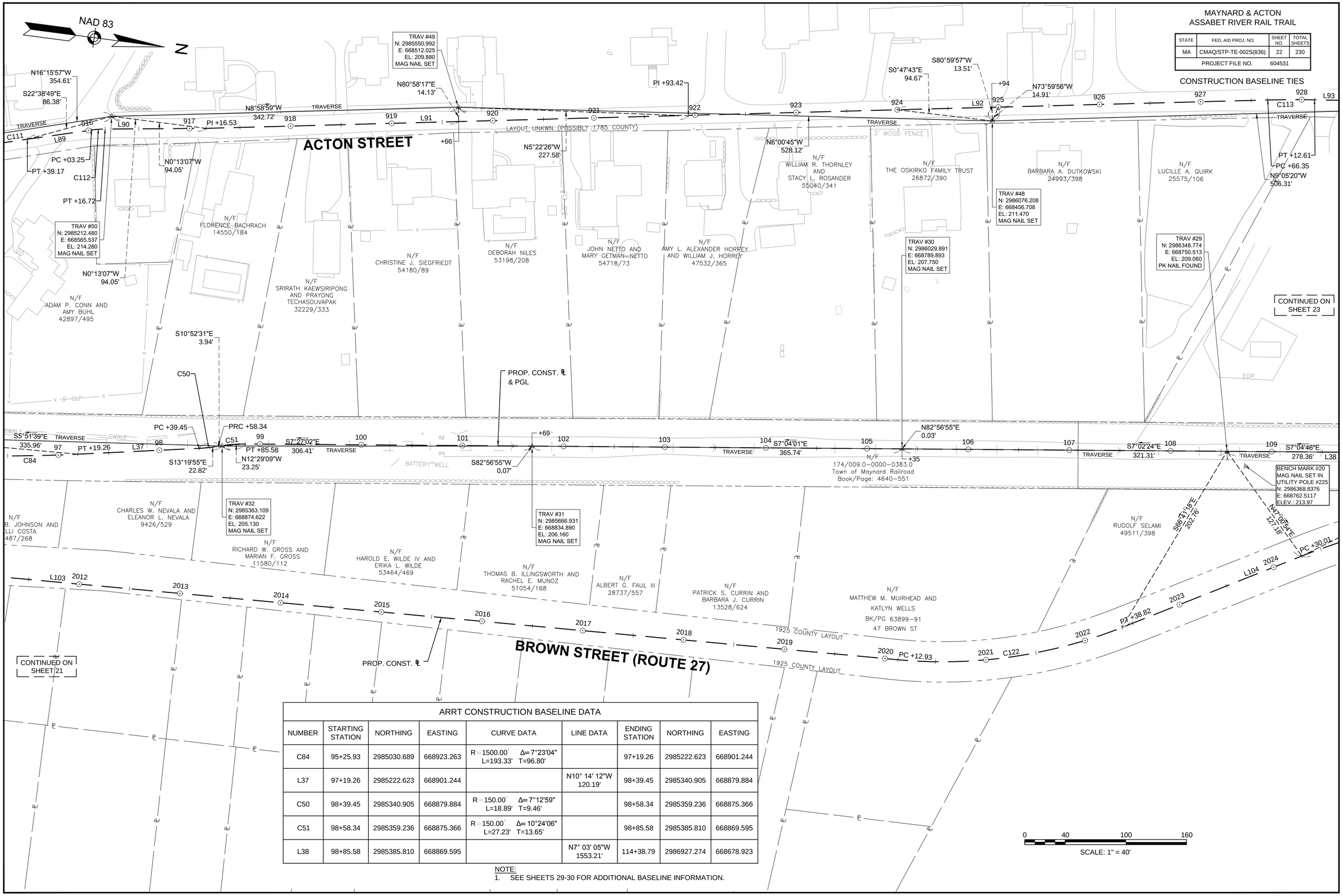

ARRT CONSTRUCTION BASELINE DATA

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.