MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

ASSABET RIVER RAIL TRAIL

IN THE TOWNS OF

MAYNARD & ACTON

MIDDLESEX COUNTY

MAYNARD - ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	45
PROJECT FILE NO.	604531		

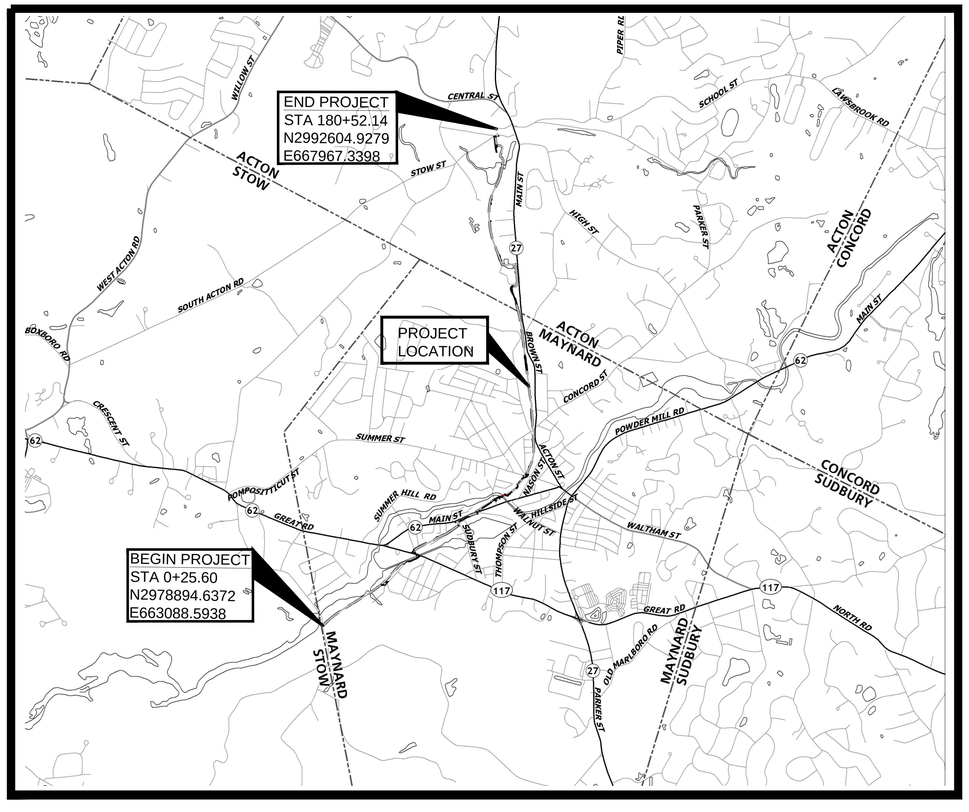
TITLE SHEET & INDEX

604531_01_TITLE.DWG 23-Apr-2013

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED FEBRUARY 25, 2010, THE 2010 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO TRAFFIC STANDARD DETAILS ONLY), THE 2003 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	GENERAL NOTES
4	KEY PLAN
5-7	TYPICAL SECTIONS
8-28	CONSTRUCTION PLANS & PROFILES
29-39	TRAFFIC SIGN & PAVEMENT MARKINGS
40	TRAFFIC SIGN SUMMARY SHEET
41-42	TMP TYPICAL SET UP PLAN
43	CONSTRUCTION SIGN SUMMARY
44-45	CONSTRUCTION DETAILS



2000 0 2000 4000

SCALE 1" = 2000'

LENGTH OF PROJECT = 18,030 FEET = 3.415 MILES

25% SUBMITTAL

APRIL 2013

DESIGN DESIGNATION (STREET/RTE # OR NAME)

DESIGN SPEED	15 MPH
ADT (YYYY)	NA
ADT (YYYY)	NA
K	NA
D	NA
T (PEAK HOUR)	NA
T (AVERAGE DAY)	NA
DHV	NA
DDHV	NA
FUNCTIONAL CLASSIFICATION	GREENWAY PATH

DATE	DESCRIPTION	REV #
4/22/13	REVISED 25% SUBMISSION PER MASSDOT COMMENTS	2
11/8/11	25% SUBMITTAL W/ INCREASED PROJECT LIMITS	1
10/06	INITIAL 25% SUBMISSION	0

TRANSPORTATION AECOM

AECOM TECHNICAL SERVICES, Inc.
250 Apollo Drive
Chelmsford, Massachusetts 01824
T 978.905.2100 F 978.905.2101 www.aecom.com

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER **DATE**

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR **DATE**

APPROVED

HIGHWAY ADMINISTRATOR **DATE**

LEGEND

GENERAL SYMBOLS

EXISTING	PROPOSED	
JB OR BRJB	JB OR BRJB	JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
CB	CB	CATCH BASIN
CI	CI	CURB INLET
	BUOY	BUOY
	FPL	FLAG POLE
		GAS PUMP
DI	DI	DROP INLET
MB	MB	MAIL BOX
GR	GRAN POST	GRANITE POST
PLN	PLANTER	PLANTER
PST	POST	POST
TBH	TBH	TELEPHONE BOOTH
VLT	VLT	VAULT
VLV	VLV	VALVE
WELL	WELL	WELL
EHH	EHH	ELECTRIC MANHOLE (HANDHOLE)
FCGA		GATE POST
FL	FL	FLOW LINE
GG		GAS GATE
BH	BH	BORING HOLE
		MONITORING WELL
	TEP	TEST PIT
HC	CONC. HDWL	CONCRETE HEADWALL
HH		HANDHOLE
HS	STONE DHWL	STONE HEADWALL
HYD	HYD	HYDRANT
LPL	LPL	LIGHT POLE
CO. BD.	CO. BD.	COUNTY BOUND
GPS		GPS POINT
CMH		CABLE MANHOLE
DMH	D	DRAINAGE MANHOLE
EMH		ELECTRIC MANHOLE
GMH		GAS MANHOLE
MMH		MISC MANHOLE
OMH		OTHER MANHOLE
SMH	S	SEWER MANHOLE
TMH		TELEPHONE MANHOLE
WMH		WATER MANHOLE
MHB	MHB	MHD BOUND
MON	MON	MONUMENT
SB	SB	STONE BOUND
TOWN OR CITY BD.	TOWN OR CITY BD.	TOWN OR CITY BOUND
	TSN	TRAVERSE OR TRIANGULATION STATION
TPL OR GUY	TPL OR GUY	TROLLEY POLE OR GUY POLE
TRNP		TRANS. POLE
UFB	UFB	UP W ITH FIREBOX
	LPDL	POLE WITH DOUBLE LIGHT
ULT	ULT	UP W ITH 1 LIGHT
UPL	UPL	UTILITY POLE
	BUSH	BUSH
	TREE	TREE
STUMP		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
FA	FA	FIRE ALARM BOX
PM	PM	PARKING METER
		ELECTRICAL GROUND
	GV	GATE VALVE
		RIP RAP
		OVERHEAD CABLE
		DIRECT BURIAL CABLE
		CURBING
185	185	CONTOURS
		DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		ELECTRIC DUCT " "
		GAS MAIN " "
		SEWER MAIN " "
		TELEPHONE DUCT " "
		WATER MAIN " "
		BALANCE STONE WALL
		CULVERT
		GUARD RAIL
		GUTTER LINE AT DRIVEWAYS
CLF		CHAIN LINK FENCE
		STOCKADE FENCE

GENERAL SYMBOLS (CONT.)

EXISTING	PROPOSED	
		HAY BALES/SILT FENCE
		RETAINING WALL
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLAN & OVERLAY
		BANK OF RIVER OR STREAM
WF-#		BORDER OF WETLAND
		100 FT WETLAND OR 200 FT RIVERFRONT BUFFER
DATE OF LAYOUT		STATE HIGHWAY LAYOUT
DATE OF LAYOUT		TOWN OR CITY LAYOUT
DATE OF LAYOUT		COUNTY LAYOUT
R.R. S/L		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
P OR APPROX. P		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6'X 6' TYPICAL UNLESS OTHERWISE SPECIFIED)
		VIDEO SURVEILLANCE CAMERA
		MICROWAVE DETECTOR
		MAGNETOMETER (2 SHOWN)
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	*	OPTICOM CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD (TYPE AS NOTED OR AS SPECIFIED)
		PEDESTRIAN SIGNAL HEAD, OPTICALLY PROGRAMMED
		PEDESTRIAN SIGNAL POST AND BASE
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	STEEL OR ALUMINUM MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (TWO POSTS)
	20'	SIGNAL AND LIGHTING MAST ARM (OPTICOM)
		EMERGENCY PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL & METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"X12" (AND AS NOTED)
		ELECTRIC HANDHOLE 12" X 24"
		TRAFFIC SIGNAL INTERCONNECT CONDUIT
		TRAFFIC SIGNAL CONDUIT (TYPE AS NOTED)

PAVEMENT MARKINGS AND SIGNING SYSBOLS

EXISTING	PROPOSED	
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE - 12"
	CW	CROSSWALK
	SWLL	SOLID WHITE LANE LINE
	BWLL	BROKEN WHITE LANE LINE (10' LINE, 30' SPACE TYP.)
	SWEL	SOLID WHITE EDGE LINE
	YGL	YELLOW GORE LINE - 12"
	DYCL	DOUBLE YELLOW CENTER LINE
	SWCHL	SOLID WHITE CHANNELIZATION LINE - 8"
	WGL	WHITE GORE LINE - 12"
	SYEL	SOLID YELLOW EDGE LINE
	BYCL	BROKEN YELLOW CENTER LINE (10' LINE, 30' SPACE TYP.) - 4"
	SYCL	SOLID YELLOW CENTER LINE
	DWLL	DOTTED WHITE LANE LINE - 4" (2' LINE, 4' SPACE)
		DIRECTION OF TRAFFIC FLOW

ABBREVIATIONS

GENERAL

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

MAYNARD - ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	45
PROJECT FILE NO.	604531		

LEGEND & ABBREVIATIONS

GENERAL (CONT.)

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

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK - PORTLAND ORANGE
FDW	FLASHING DON'T WALK - PORTLAND ORANGE
FYV	FLASHING AMBER VERTICAL ARROW
FR	FLASHING CIRCULAR RED
FW	FLASHING WALK - LUNAR WHITE
FY	FLASHING CIRCULAR AMBER
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FRV	FLASHING RED VERTICAL ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
OP	OPTICOM
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RV	STEADY RED VERTICAL ARROW
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK - LUNAR WHITE
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW
YR	STEADY AMBER RIGHT ARROW
YV	STEADY AMBER VERTICAL ARROW

22-Apr-2013

604531_02-03_LEGEND-GEN NOTES.DWG

GENERAL NOTES

1. PEDESTRIAN AND VEHICLE ACCESS TO ABUTTING PREMISES MUST BE MAINTAINED IN A SAFE CONDITION AT ALL TIMES.

2. GRANITE CURBING IS TO BE SET WITH A 6 INCH REVEAL AFTER FINAL PAVING. IN SOME LOCATIONS CONTROL GRADES ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL BE REQUIRED TO MEET WITH THESE GRADES WHILE PROVIDING A SMOOTH VERTICAL TRANSITION BETWEEN CONTROL ELEVATIONS.

3. EXISTING PAVEMENTS AND/OR SIDEWALKS SHALL BE SAW CUT WHERE THEY MEET PROPOSED SURFACE TREATMENTS. SAW CUTS SHALL BE SMOOTH AND STRAIGHT. WHERE NEW BITUMINOUS CONCRETE MEETS EXISTING BITUMINOUS CONCRETE SURFACES, SAW CUT EDGES ARE TO BE SEALED WITH BITUMEN AND BACKSANDED.

4. AREAS OUTSIDE THE LIMITS OF WORK DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE EXPENSE OF THE CONTRACTOR.

5. ALL MUNICIPALLY OWNED UTILITY STRUCTURES INCLUDING MANHOLES, CATCH BASINS, AND GATE BOXES SHALL BE ADJUSTED OR REMODELED TO FINISHED GRADE BY THE CONTRACTOR. ALL PRIVATELY OWNED UTILITY STRUCTURES SHALL BE ADJUSTED OR REMODELED BY THE OWNER.

6. LIMITS OF WORK HAVE BEEN SET ON THE PLANS, HOWEVER, THESE MAY BE EXTENDED OR REDUCED AT THE DISCRETION OF THE ENGINEER TO MEET WITH FIELD CONDITIONS.

7. AT ALL POSTS AND POLES, PROPOSED CEMENT CONCRETE SIDEWALK SHALL BE BOXED AND PROVIDED WITH EXPANSION JOINT FILLER. ALSO, EXPANSION JOINT FILLER SHALL BE USED AT ALL BACK OF SIDEWALK LOCATIONS WHERE LOCATIONS MEET EXISTING BUILDINGS, WALLS OR OTHER STRUCTURES AND AS OTHERWISE DIRECTED BY THE ENGINEER.

8. ALL PROPOSED GRANITE CURB SHALL BE TYPE VB OR EXISTING CURB, REMOVED AND RESET, UNLESS OTHERWISE NOTED.

9. ALL EXISTING SURFACES, i.e. CEMENT CONCRETE, BITUMINOUS CONCRETE PAVEMENT, BRICK, ETC., SHALL BE COMPLETELY REMOVED FROM AREAS OF PROPOSED WORK INCLUDING PROPOSED PLANTING AREAS.

10. THE CONTRACTOR SHALL COORDINATE AND BE RESPONSIBLE FOR ALL SAFETY SIGNING, BARRIERS AND TEMPORARY PAVEMENT MARKINGS NECESSARY TO PROVIDE A SMOOTH AND PROPER TRANSITION FOR TRAFFIC FLOW.

11. IF REQUIRED BY THE CONTRACTOR, OVERHEAD LINES SHALL BE RELOCATED BY THE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE. CONTRACTOR MADE AWARE THAT EXISTING UTILITY POLES ON PLANS HAVE BEEN RELOCATED BY THEIR RESPECTIVE UTILITY COMPANIES.

12. THE CONTRACTOR SHALL FIELD CHECK ALL DIMENSIONS, AND ELEVATIONS BEFORE PROCEEDING WITH NEW WORK. THE CONTRACTOR SHALL EXCAVATE TO VERIFY PERTINENT DRAINAGE INVERTS AND POTENTIAL UTILITY CONFLICTS. ANY DISCREPANCIES OR CONFLICTS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

13. ALL CURB TIES WHICH ARE NOTED BY A STATION ARE FROM THE CONSTRUCTION BASELINE.

14. CURB CORNERS AT DRIVEWAYS SHALL BE GRANITE CURB CORNER, TYPE B, UNLESS NOTED OTHERWISE.

15. LOCATIONS OF PROPOSED SIGNS, TREES, ETC. ARE APPROXIMATE ONLY; THE EXACT LOCATION SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

16. ALL CEMENT CONCRETE SUBBASE SURFACES SHALL BE TREATED WITH A BITUMEN TACK COAT PRIOR TO THE APPLICATION OF A BITUMINOUS CONCRETE MATERIAL.

SURVEY NOTES

1. SURVEY PERFORMED BY THOMAS LAND SURVEYORS & ENGINEERING CONSULTANTS, INC., MARCH 23, 2006.

2. EXISTING UTILITY LINES SHOWN ON THIS DRAWING ARE FROM AVAILABLE INFORMATION AND ARE APPROXIMATE LOCATIONS. THERE MAY BE EXISTING LINES OTHER THAN THOSE INDICATED. LOCATION OF ALL UTILITIES AND SUBSURFACE STRUCTURES ARE FROM SURVEY AND RECORDS OF THE TOWN OR PRIVATE UTILITY COMPANIES AND ARE CONSIDERED APPROXIMATE BOTH AS TO SIZE AND LOCATION, AND ARE INDICATED ON THESE DRAWINGS TO GIVE BIDDERS A GENERAL IDEA OF EXISTING CONDITIONS TO BE INVESTIGATED BY THE BIDDER. IT IS UNDERSTOOD AND AGREED THAT EACH BIDDER WILL NOT RELY UPON THESE DRAWINGS FOR SUCH INFORMATION, BUT THAT EACH BIDDER SHALL MAKE EXAMINATIONS IN THE FIELD BY VARIOUS AVAILABLE RECORDS, UTILITY CORPORATIONS AND INDIVIDUALS AS TO THE LOCATION OF ALL SUBSURFACE STRUCTURES.

3. HORIZONTAL CONTROL IS BASED UPON THE NORTH AMERICAN DATUM OF 1983, (NAD-83-96), MASSACHUSETTS STATE PLANE COORDINATE SYSTEM MAINLAND ZONE.

4. VERTICAL CONTROL IS BASED UPON THE NGVD OF 1929. THE PROPERTY LINES SHOWN HEREON ARE APPROXIMATE ONLY AND ARE BASED UPON ASSESSORS INFORMATION SUPPLIED FOR THIS PROJECT. ALL DISTANCES, ELEVATIONS AND DIMENSIONS SHOWN HEREON ARE BASED UPON ENGLISH UNITS.

MAYNARD - ACTON
ASSABET RIVER RAIL TRAIL

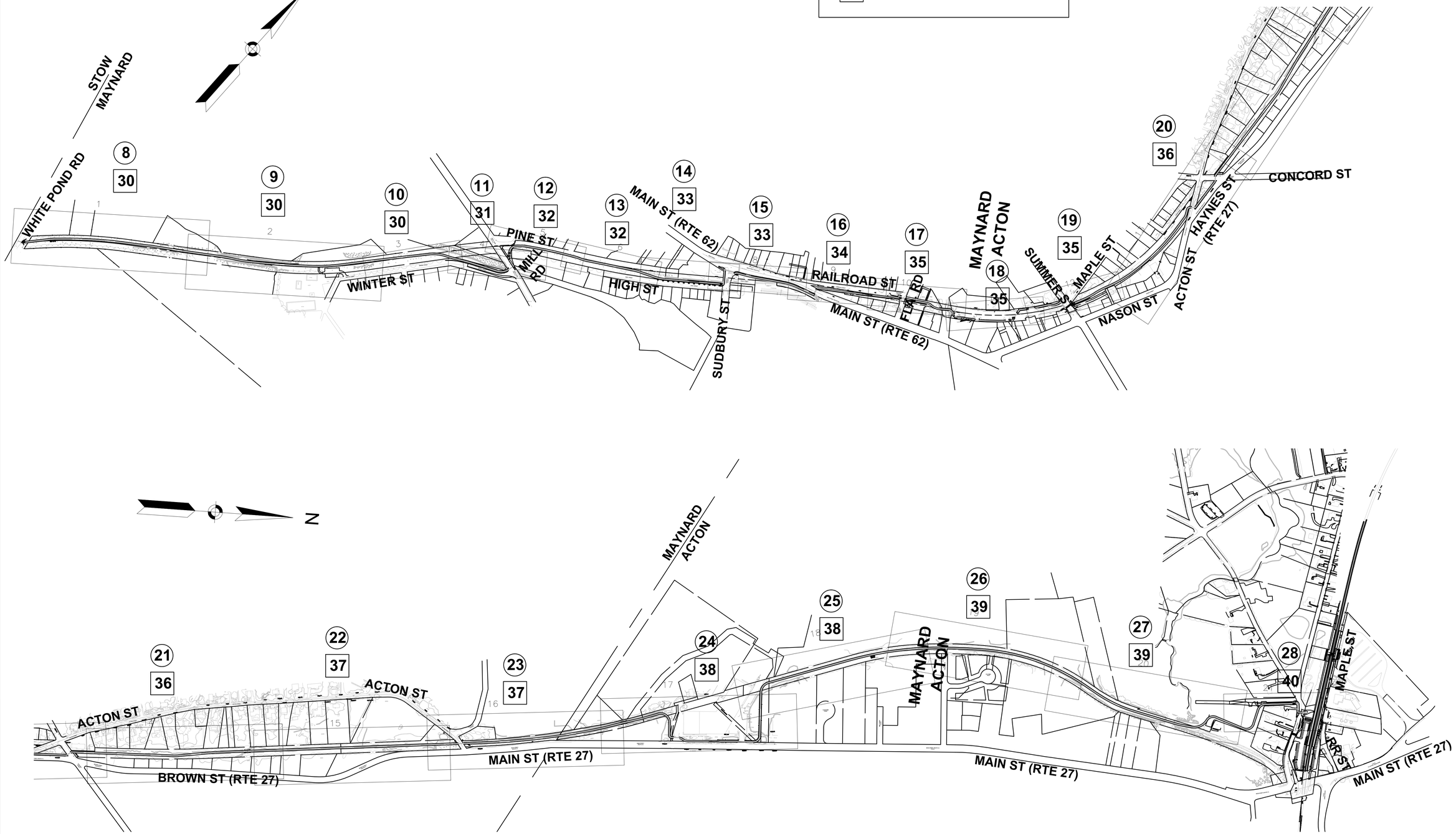
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	45
PROJECT FILE NO.	604531		

KEY PLAN

LEGEND

(#) CONSTRUCTION PLANS

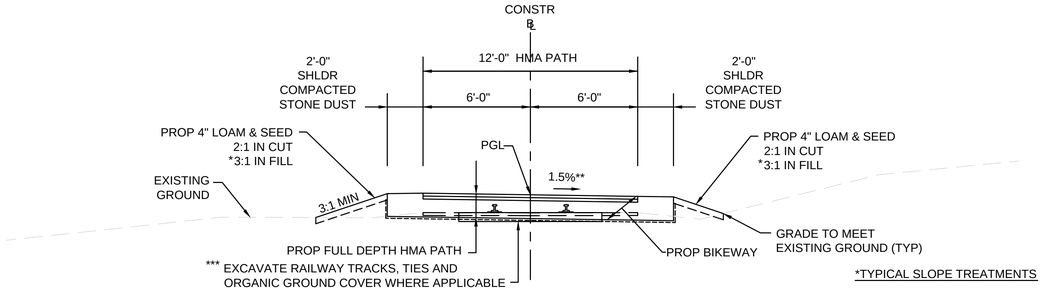
[#] SIGNING & PAVEMENT MARKING PLANS



604531_04_KEY PLAN.DWG 23-Apr-2013

CITY/TOWN STREET/ROUTE # OR NAME			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	45
PROJECT FILE NO.	604531		

TYPICAL SECTIONS

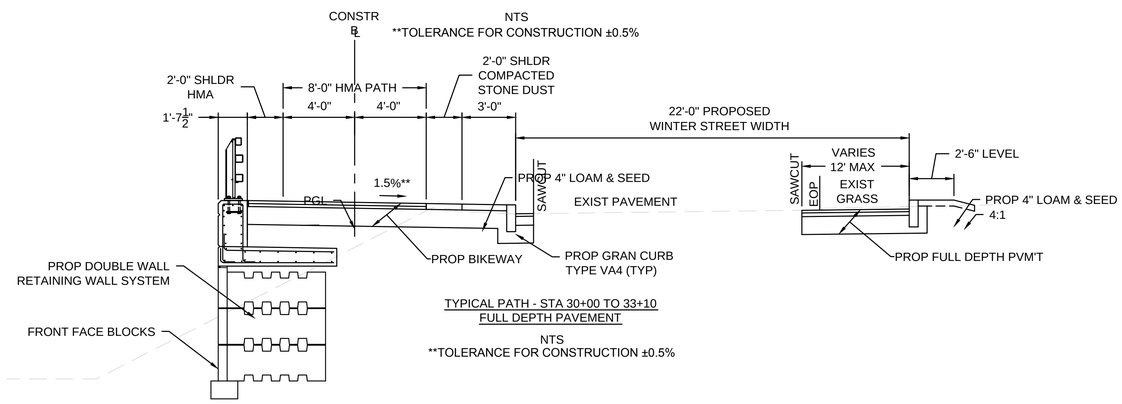


*** AREAS OF TRACK EXCAVATION
- STA 00+25 TO 28+50
-STA 35+50 TO 44+00
-STA 76+20 TO 86+60
- STA 89+60 TO 115+60
- STA 116+10 TO 129+60
- STA 141+20 TO 169+50
- STA 170+20 TO 171+80

TYPICAL PATH - STA 0+25 TO 30+00
TYPICAL PATH - STA 34+50 TO 45+60
TYPICAL PATH - STA 76+20 TO 86+60
TYPICAL PATH - STA 89+50 TO 115+60
TYPICAL PATH - STA 116+10 TO 131+50
TYPICAL PATH - STA 140+50 TO 169+50
TYPICAL PATH - STA 170+20 TO 177+25
FULL DEPTH PAVEMENT

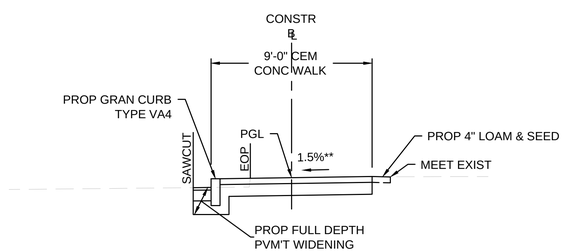
*TYPICAL SLOPE TREATMENTS

1:1 RIP-RAP SLOPE AT THE FOLLOWING STATIONS:
STA 16+25 TO 18+75
STA 110+75 TO 111+25 RT
STA 118+00 TO 131+00 LT & RT
STA 154+00 TO 172+00 LT & RT



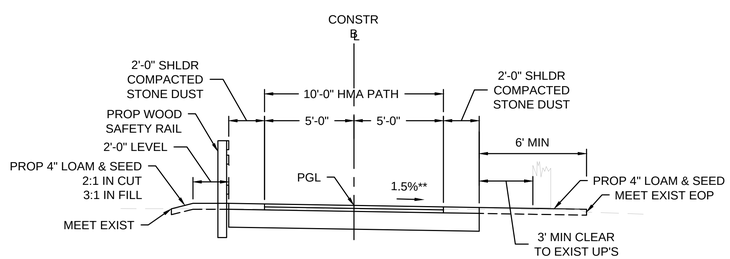
TYPICAL PATH - STA 30+00 TO 33+10
FULL DEPTH PAVEMENT

NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL PATH - STA 33+75 TO 34+60
CEM CONC WALK

**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL PATH - STA 45+60 TO 49+60
FULL DEPTH PAVEMENT

NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%

HOT MIX ASPHALT PATH

SURFACE COURSE: 4" HOT MIX ASPHALT PLACED IN TWO LAYERS:
2" MODIFIED TOP COURSE MATERIAL OVER
2" DENSE BINDER COURSE MATERIAL.

SUBBASE: 12" GRAVEL BORROW TYPE B OVER FILTER FABRIC

HOT MIX ASPHALT DRIVEWAY

SURFACE COURSE: 3 1/2" HOT MIX ASPHALT
PLACED IN TWO LAYERS, 1-3/4" MODIFIED TOP COURSE
MATERIAL OVER 1-3/4" DENSE BINDER COURSE MATERIAL

SUBBASE: 8" GRAVEL BORROW TYPE B

CEMENT CONCRETE WALK

SURFACE COURSE: 4" CEMENT CONCRETE

SUBBASE: 8" GRAVEL BORROW TYPE B

CEMENT CONCRETE SIDEWALK @ DRIVEWAYS

SURFACE COURSE: 6" CEMENT CONCRETE

SUBBASE: 8" GRAVEL BORROW TYPE B

PROPOSED FULL DEPTH PAVEMENT

SURFACE COURSE: 3.5" HOT MIX ASPHALT
(1.75" MODIFIED TOP COURSE MATERIAL OVER
1.75" INTERMEDIATE (BINDER) COURSE MATERIAL).

BASE: 3.5" HOT MIX ASPHALT BASE COURSE MATERIAL
PLACED IN ONE COURSE.

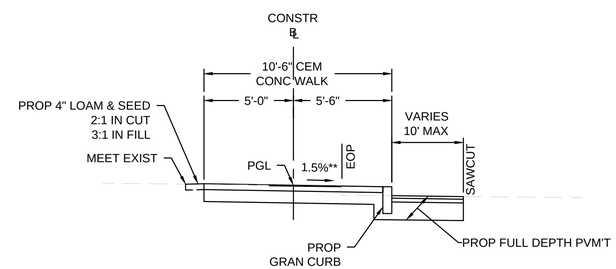
SUBBASE:
4" DENSE GRADED CRUSHED STONE
OVER 8" GRAVEL BORROW, TYPE b.

PROPOSED FULL DEPTH PAVEMENT - WIDENING (LESS THAN 3.00' WIDE)

SURFACE COURSE: 1.75" HOT MIX ASPHALT
MODIFIED TOP COURSE MATERIAL

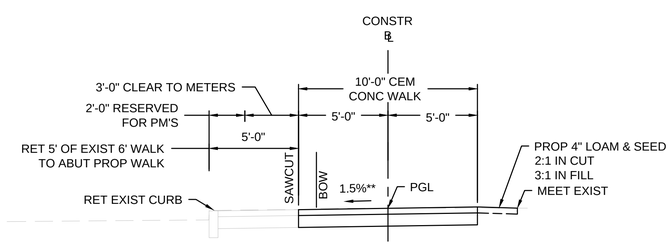
BASE: 6" HIGH EARLY STRENGTH CEMENT
CONCRETE BASE COURSE

SUBBASE: 12" GRAVEL BORROW TYPE B



TYPICAL PATH - STA 49+60 TO 50+80
CEM CONC WALK

**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL PATH - STA 51+50 TO 54+45
CEM CONC WALK

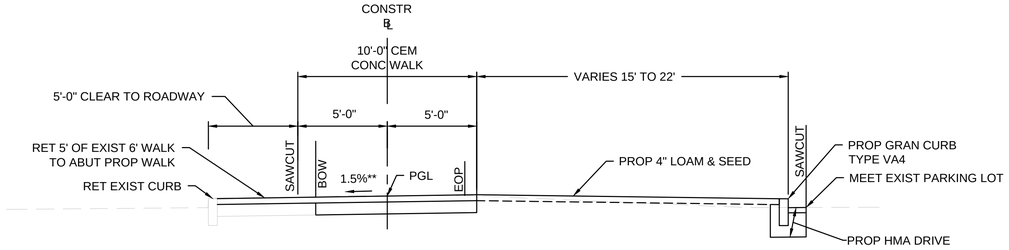
**TOLERANCE FOR CONSTRUCTION ±0.5%

604531_05_TYP SECTS.DWG 22-Apr-2013

CITY/TOWN
STREET/ROUTE # OR NAME

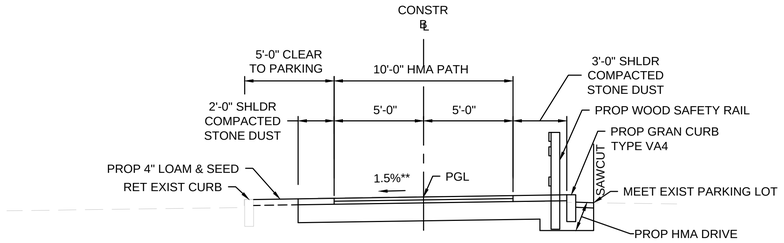
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	6	46
PROJECT FILE NO.	604531		

TYPICAL SECTIONS



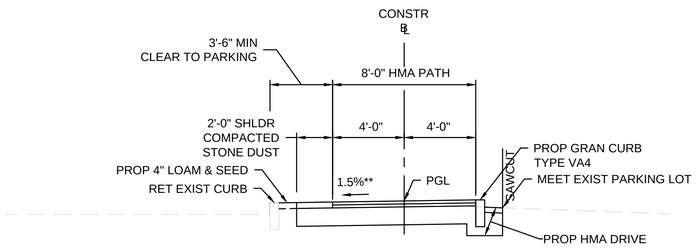
TYPICAL PATH - STA 54+45 TO 57+05
CEM CONC WALK

**TOLERANCE FOR CONSTRUCTION ±0.5%



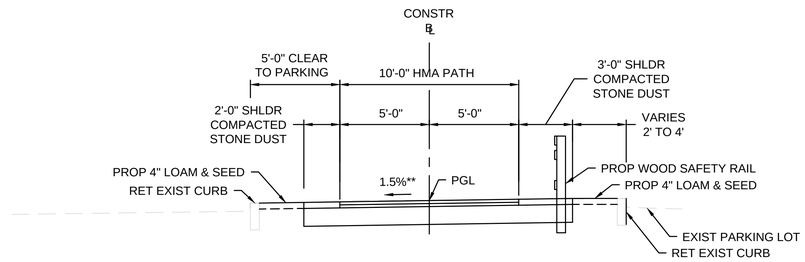
TYPICAL PATH - STA 62+25 TO 62+70
FULL DEPTH PAVEMENT

**TOLERANCE FOR CONSTRUCTION ±0.5%



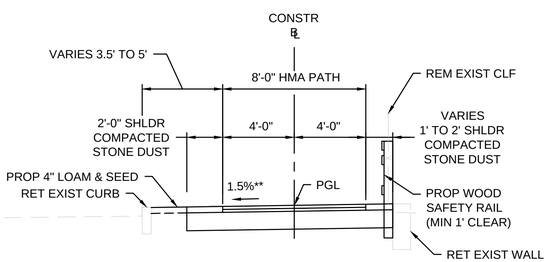
TYPICAL PATH - STA 57+60 TO 58+25
FULL DEPTH PAVEMENT

**TOLERANCE FOR CONSTRUCTION ±0.5%



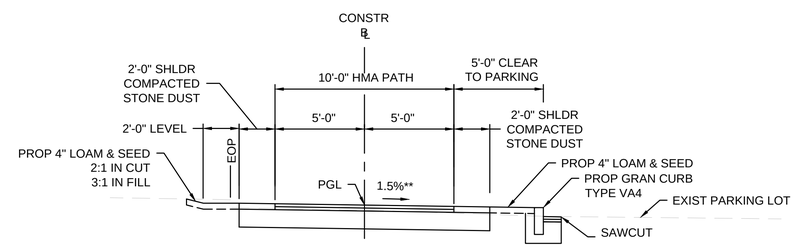
TYPICAL PATH - STA 62+70 TO 63+10
FULL DEPTH PAVEMENT

**TOLERANCE FOR CONSTRUCTION ±0.5%



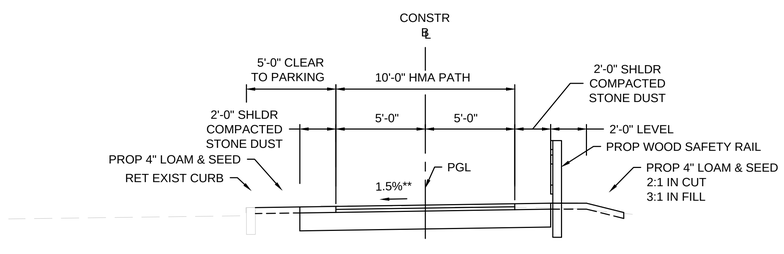
TYPICAL PATH - STA 58+25 TO 59+45
FULL DEPTH PAVEMENT

**TOLERANCE FOR CONSTRUCTION ±0.5%



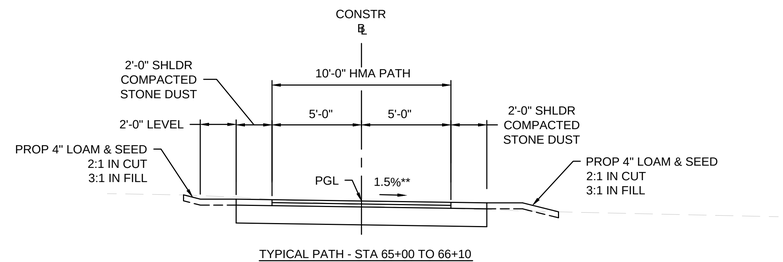
TYPICAL PATH - STA 63+60 TO 65+00
FULL DEPTH PAVEMENT

**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL PATH - STA 59+45 TO 62+25
FULL DEPTH PAVEMENT

**TOLERANCE FOR CONSTRUCTION ±0.5%

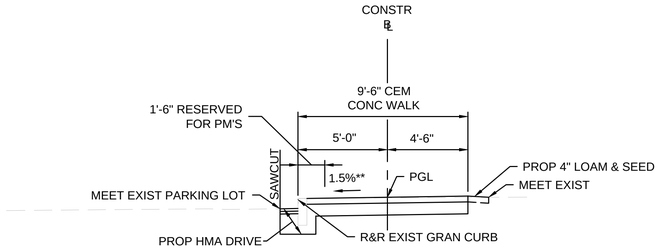


TYPICAL PATH - STA 65+00 TO 66+10
TYPICAL PATH - STA 66+60 TO 67+10
TYPICAL PATH - STA 132+00 TO 134+85
FULL DEPTH PAVEMENT

604531_05_TYP SECTS.DWG 22-Apr-2013

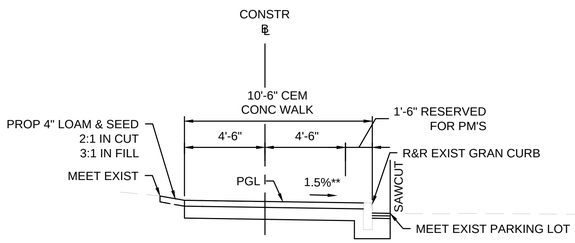
CITY/TOWN STREET/ROUTE # OR NAME			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	46
PROJECT FILE NO.	604531		

TYPICAL SECTIONS



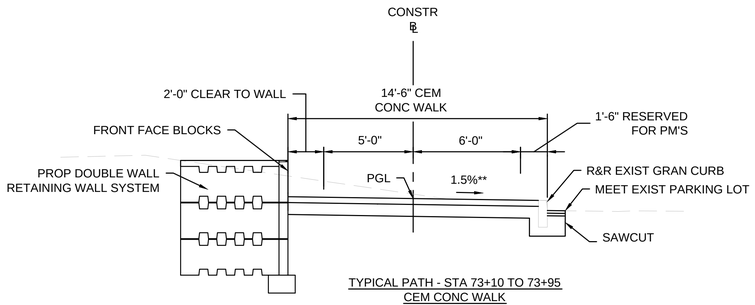
TYPICAL PATH - STA 67+40 TO 71+15
CEM CONC WALK

**TOLERANCE FOR CONSTRUCTION ±0.5%



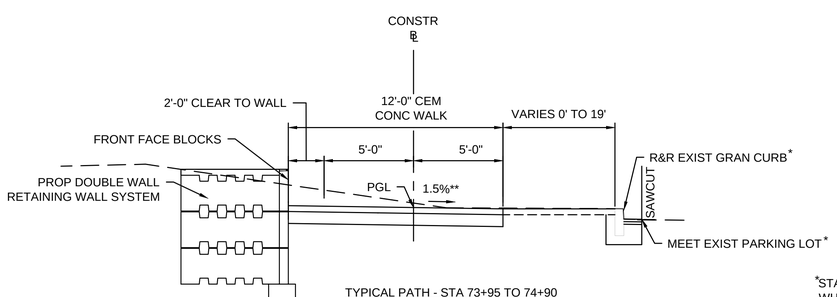
TYPICAL PATH - STA 72+05 TO 72+60
CEM CONC WALK

**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL PATH - STA 73+10 TO 73+95
CEM CONC WALK

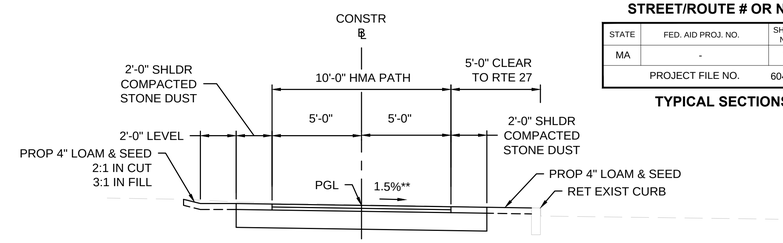
**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL PATH - STA 73+95 TO 74+90
CEM CONC WALK

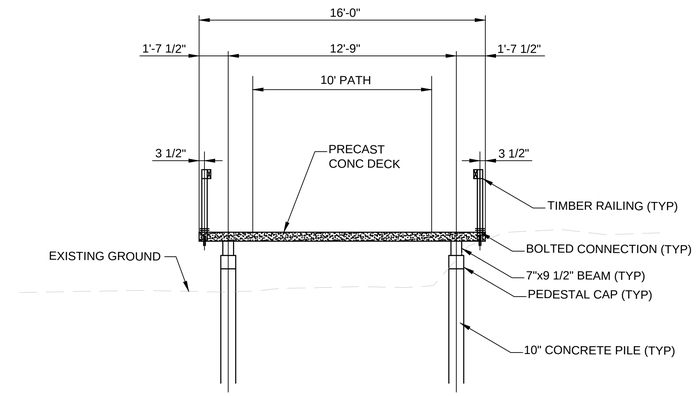
**TOLERANCE FOR CONSTRUCTION ±0.5%

*STA 74+65 TO STA 74+90
WHERE WALK MEETS
EXIST CURB



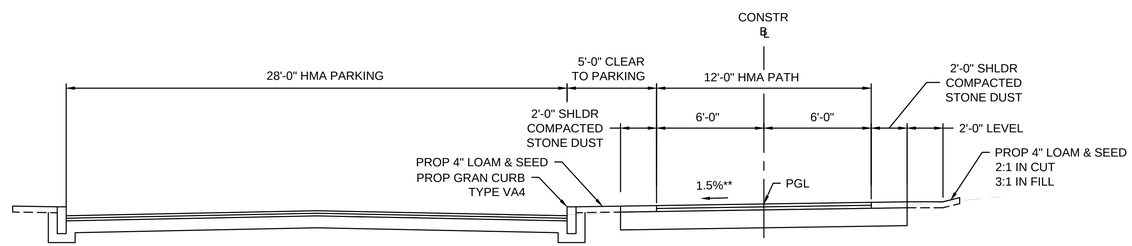
TYPICAL PATH - STA 87+00 TO 89+05
FULL DEPTH PAVEMENT

**TOLERANCE FOR CONSTRUCTION ±0.5%



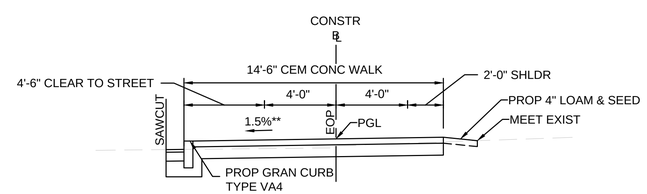
TYPICAL PATH - STA 134+85 TO 140+55
BOARDWALK

**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL PATH - STA 177+25 TO 179+90
FULL DEPTH PAVEMENT

**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL PATH - STA 179+94 TO 180+44
CEM CONC WALK

**TOLERANCE FOR CONSTRUCTION ±0.5%

604531_05_TYP SECTS.DWG 22-Apr-2013

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

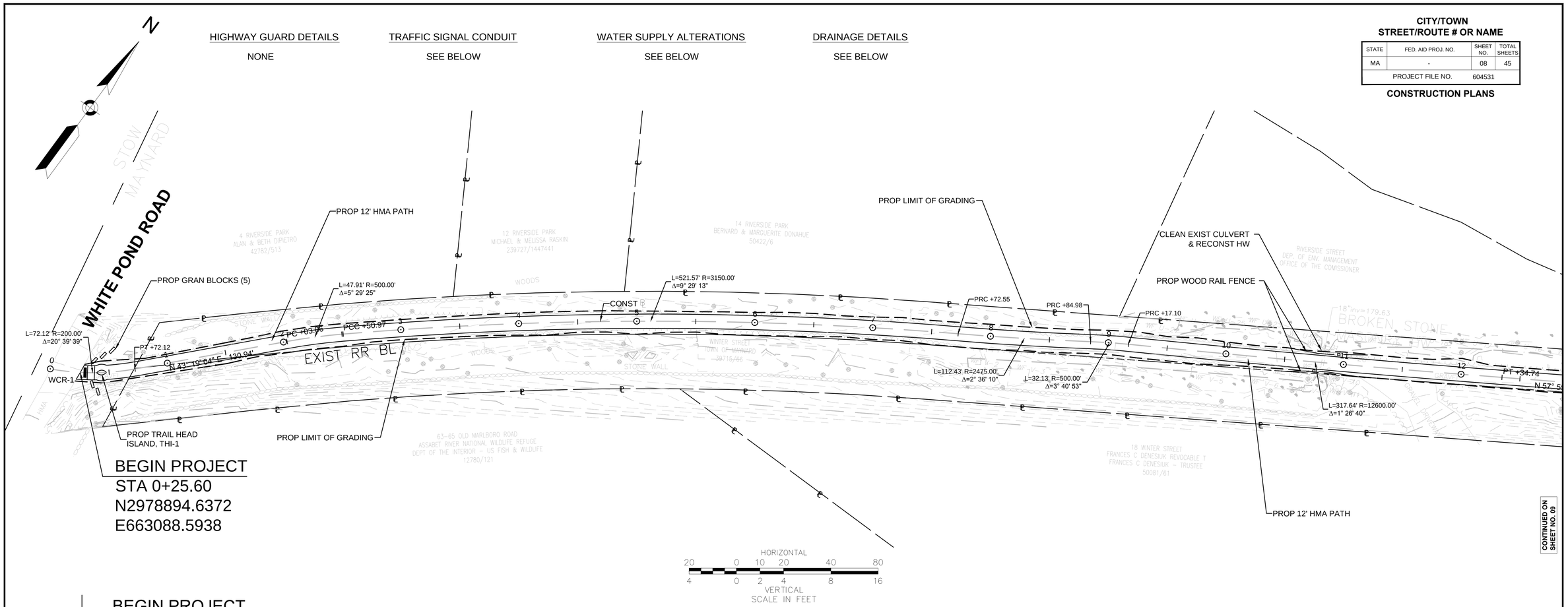
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	08	45
PROJECT FILE NO.	604531		

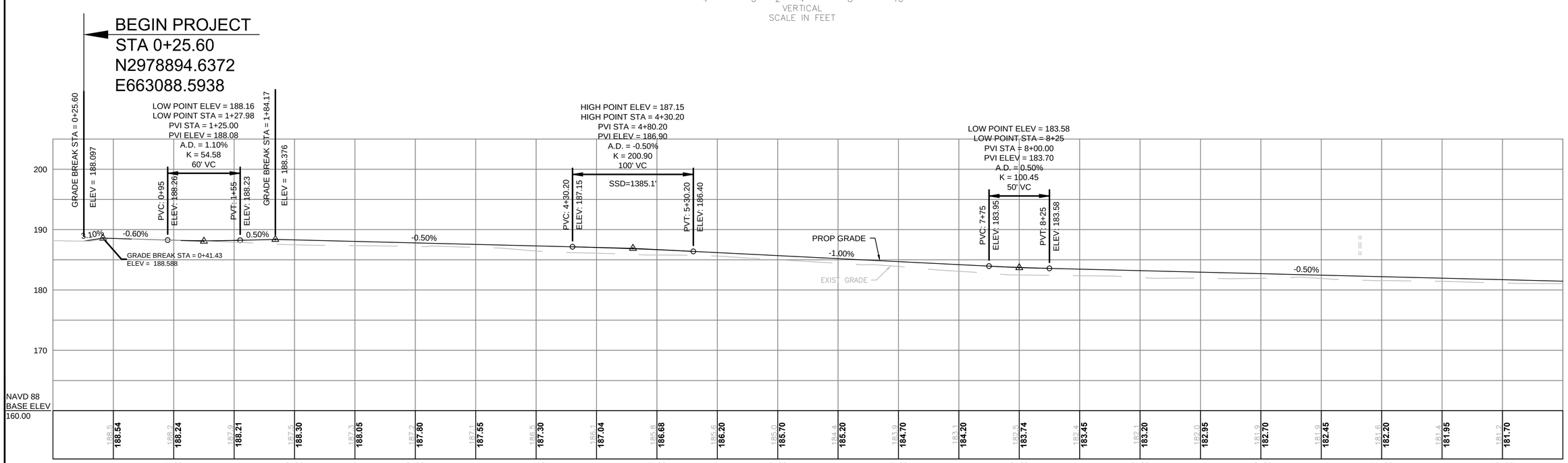
CONSTRUCTION PLANS

23-Apr-2013

604531_CONST PLAN-PROF.DWG



CONTINUED ON SHEET NO. 09



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

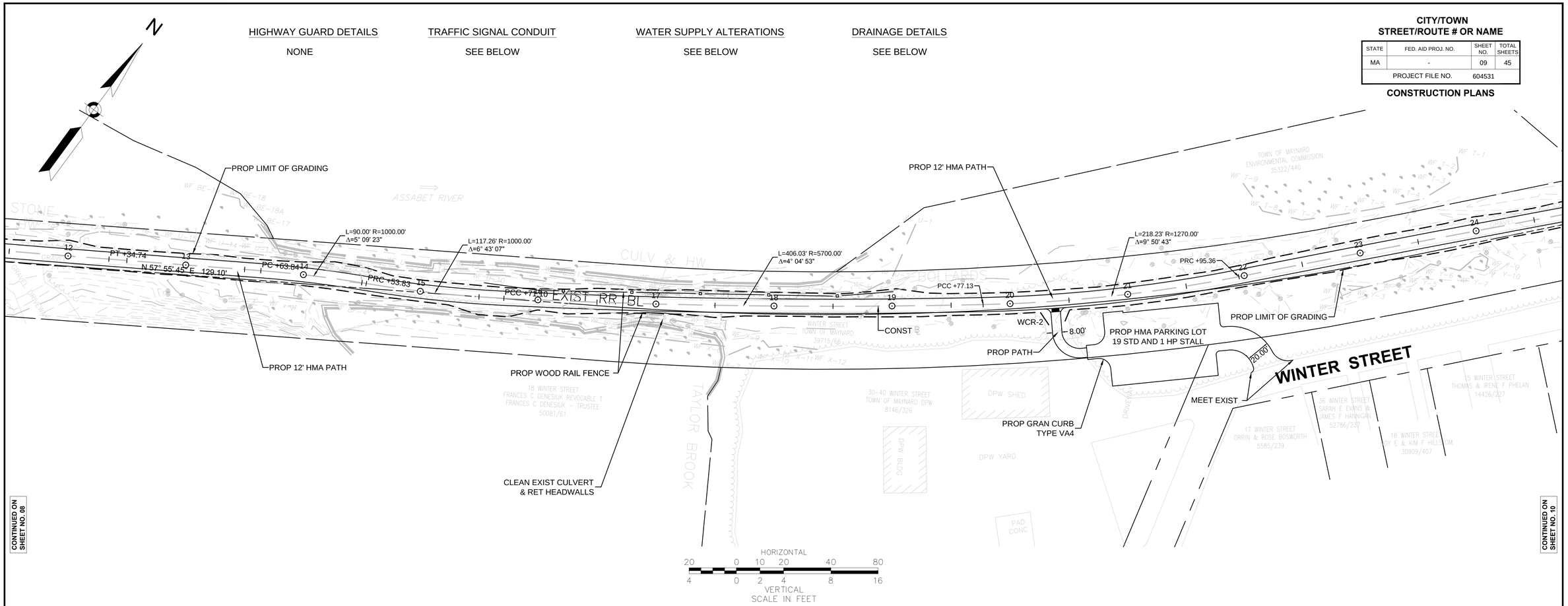
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	09	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

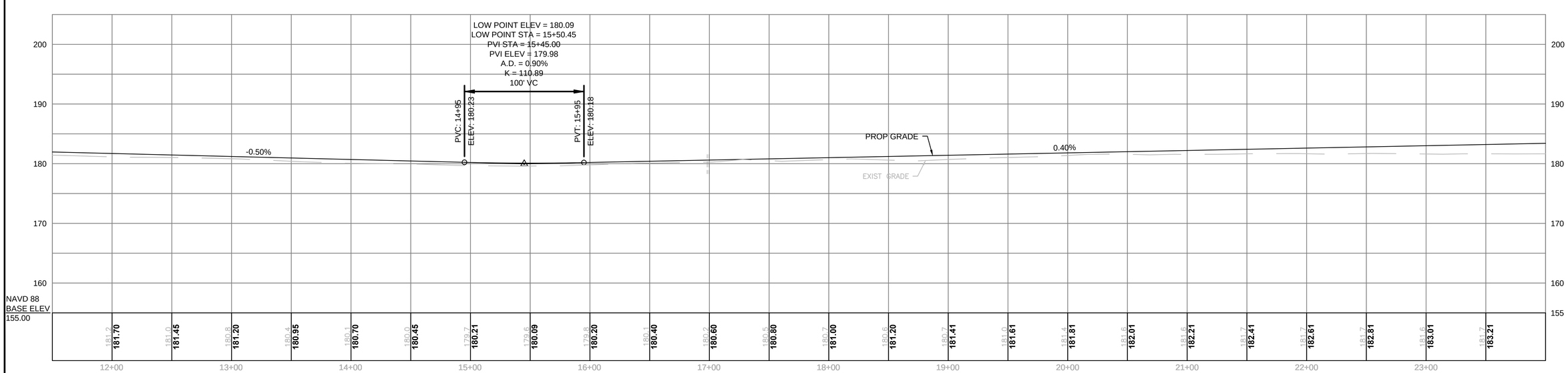
23-Apr-2013

604531_CONST PLAN-PROF.DWG



CONTINUED ON SHEET NO. 08

CONTINUED ON SHEET NO. 10



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

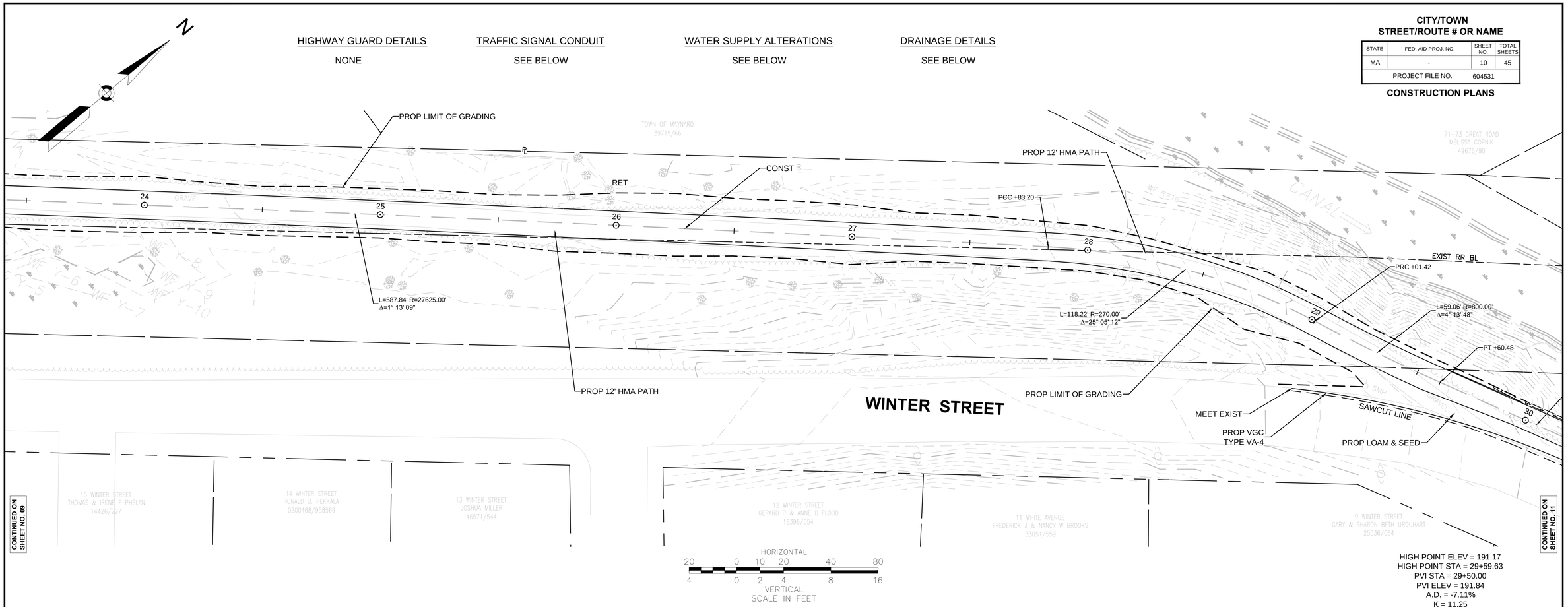
CITY/TOWN
STREET/ROUTE # OR NAME

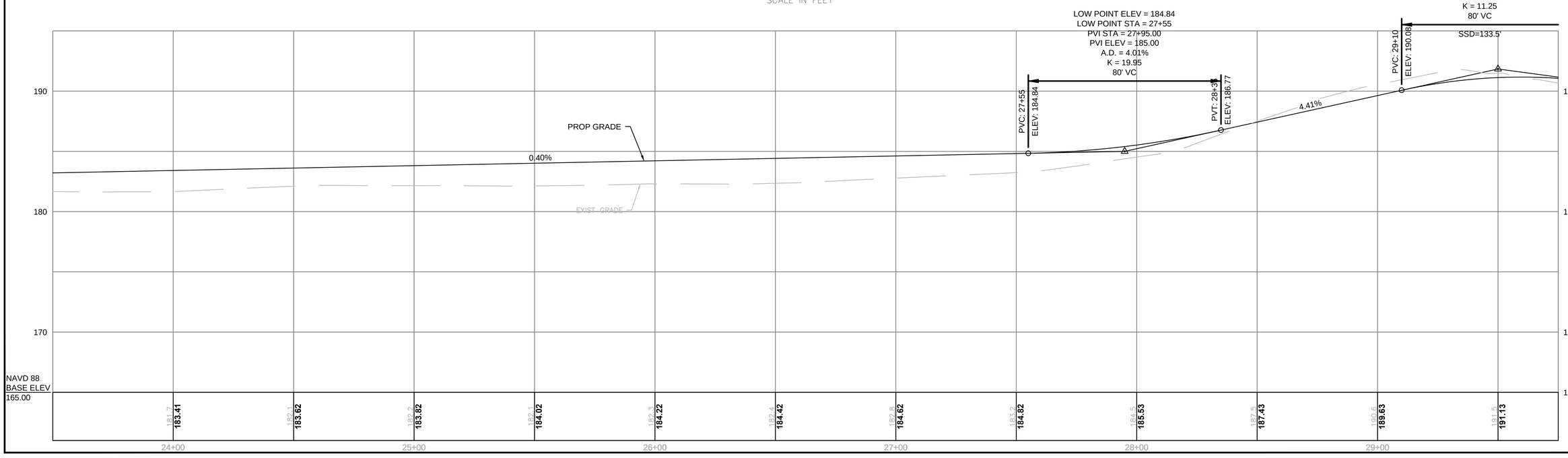
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

23-Apr-2013

604531_CONST PLAN-PROF.DWG





CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

23-Apr-2013

604531_CONST PLAN-PROF.DWG

HIGHWAY GUARD DETAILS

STA 29+82 LT TO 29+85 LT - ITEM 627.1 - STEEL W BEAM TERMINAL SECTION (SINGLE FACED)
STA 29+85 LT TO 33+40 LT - ITEM 620.1 - STEEL W BEAM HIGHWAY GUARD (SINGLE FACED)
STA 33+40 LT TO 33+43 LT - ITEM 627.1 - STEEL W BEAM TERMINAL SECTION (SINGLE FACED)

TRAFFIC SIGNAL CONDUIT

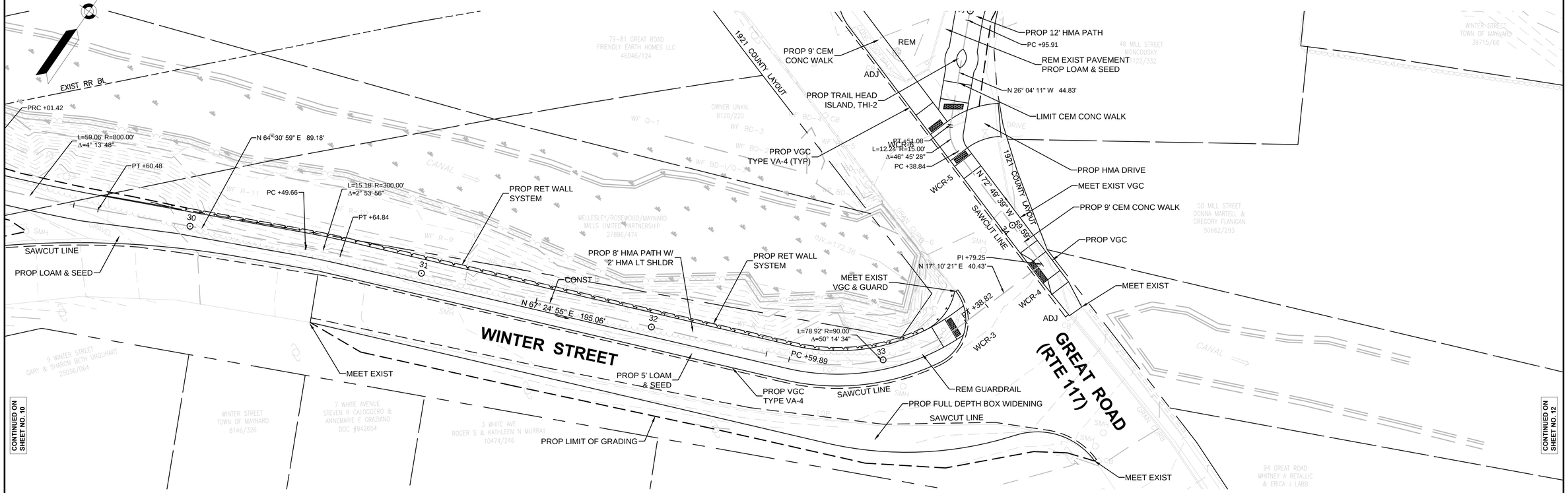
SEE BELOW

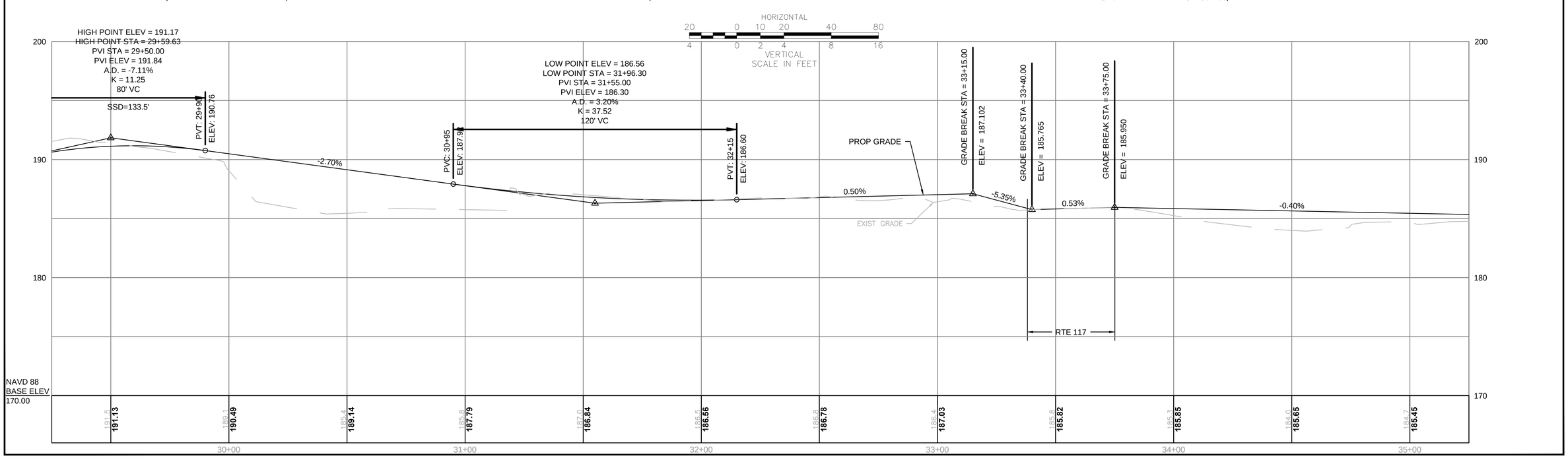
WATER SUPPLY ALTERATIONS

SEE BELOW

DRAINAGE DETAILS

SEE BELOW



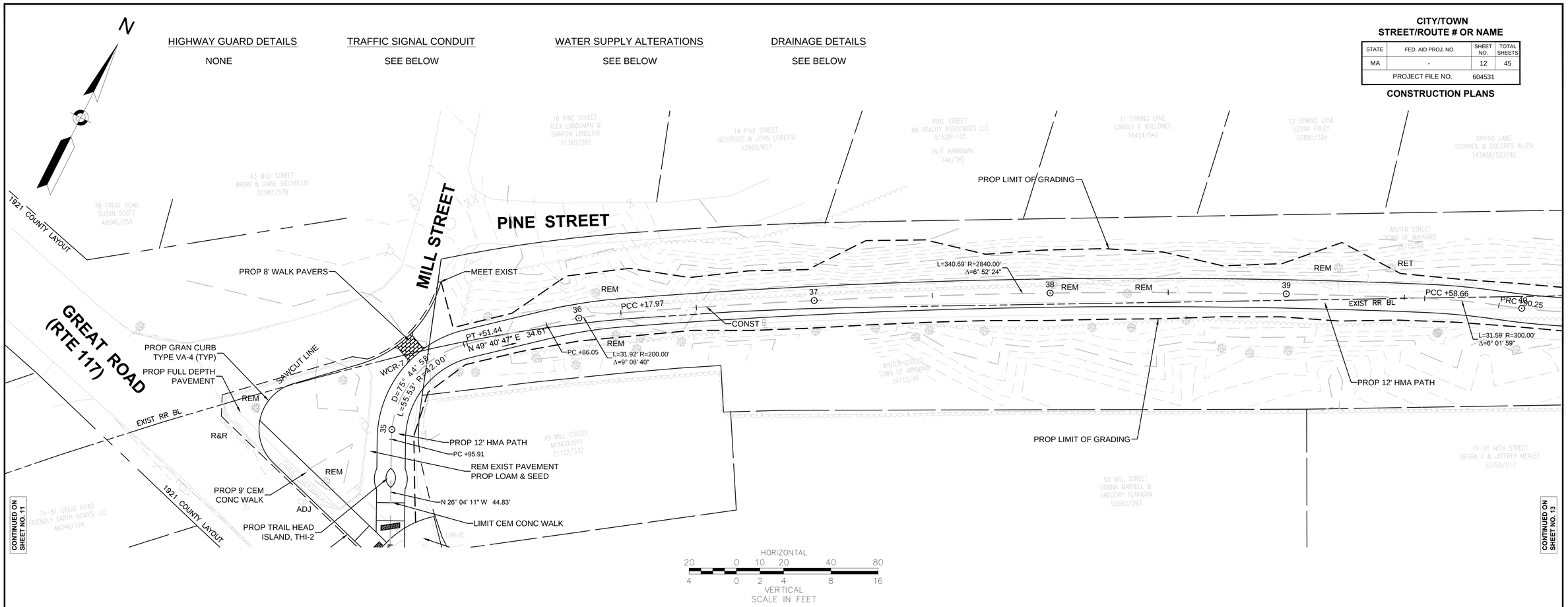


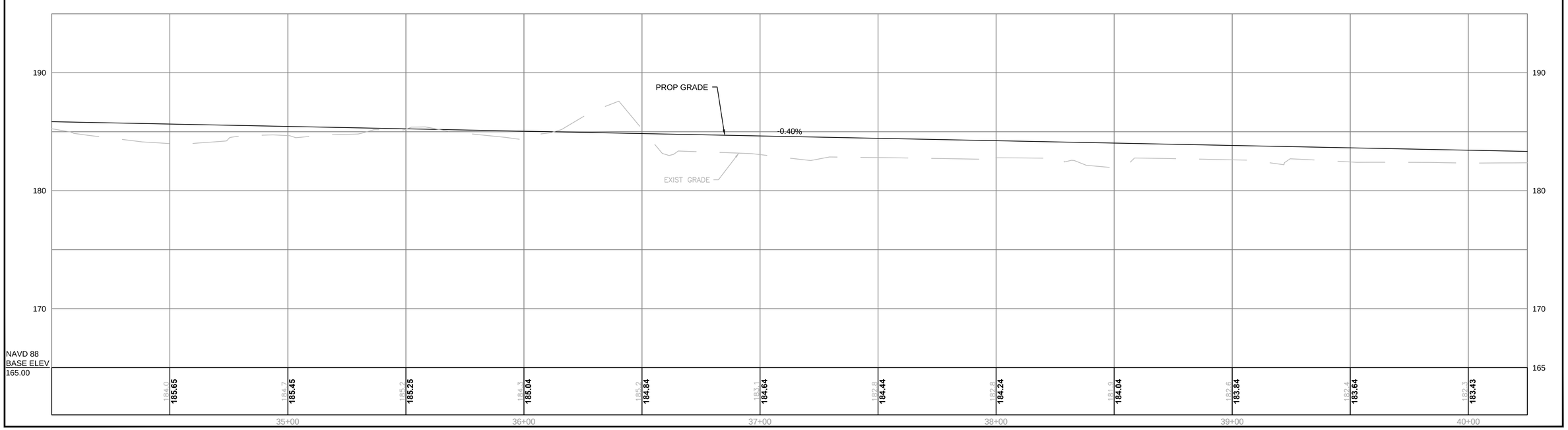
HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	SEE BELOW	SEE BELOW	SEE BELOW

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS





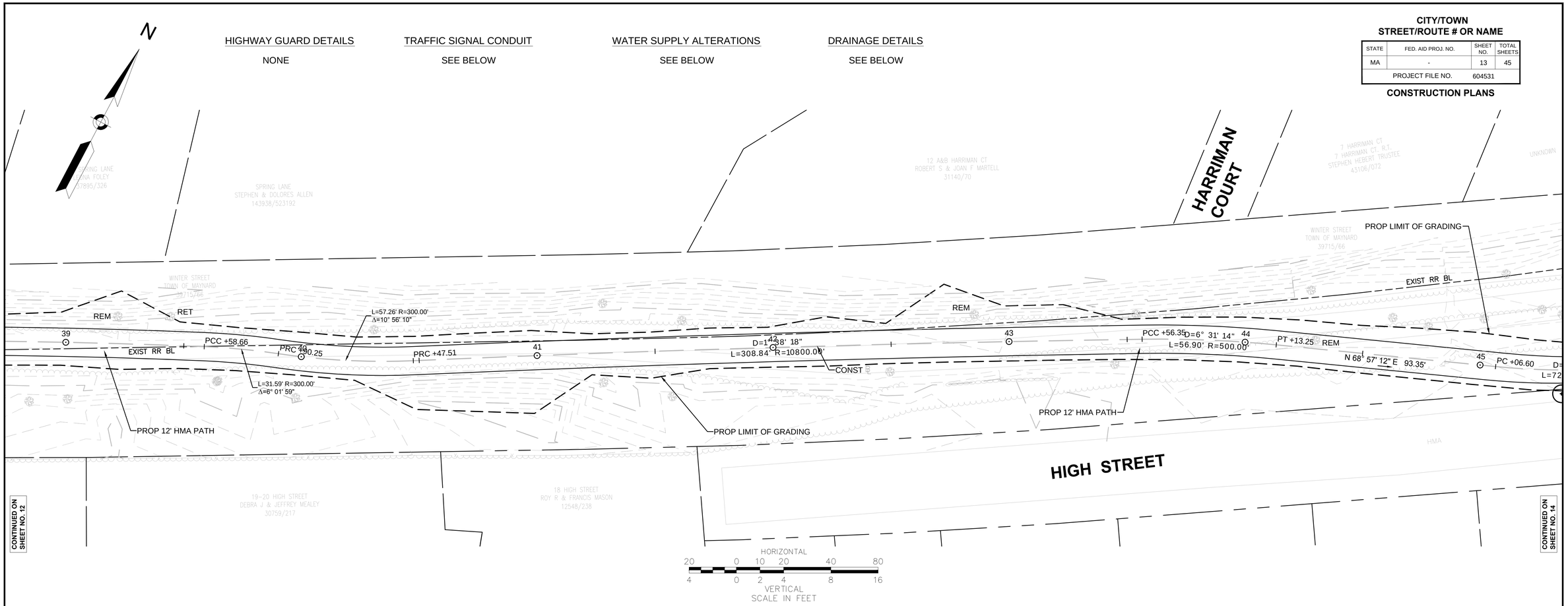
604531_CONST PLAN-PROF.DWG 23-Apr-2013

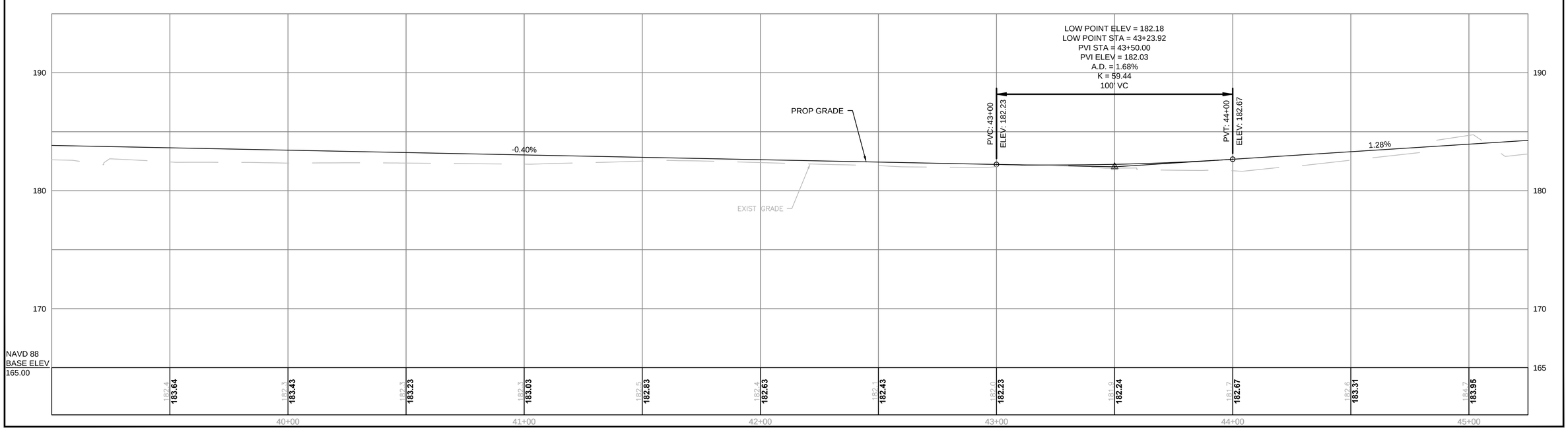
HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	SEE BELOW	SEE BELOW	SEE BELOW

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS





604531_CONST PLAN-PROF.DWG 23-Apr-2013

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

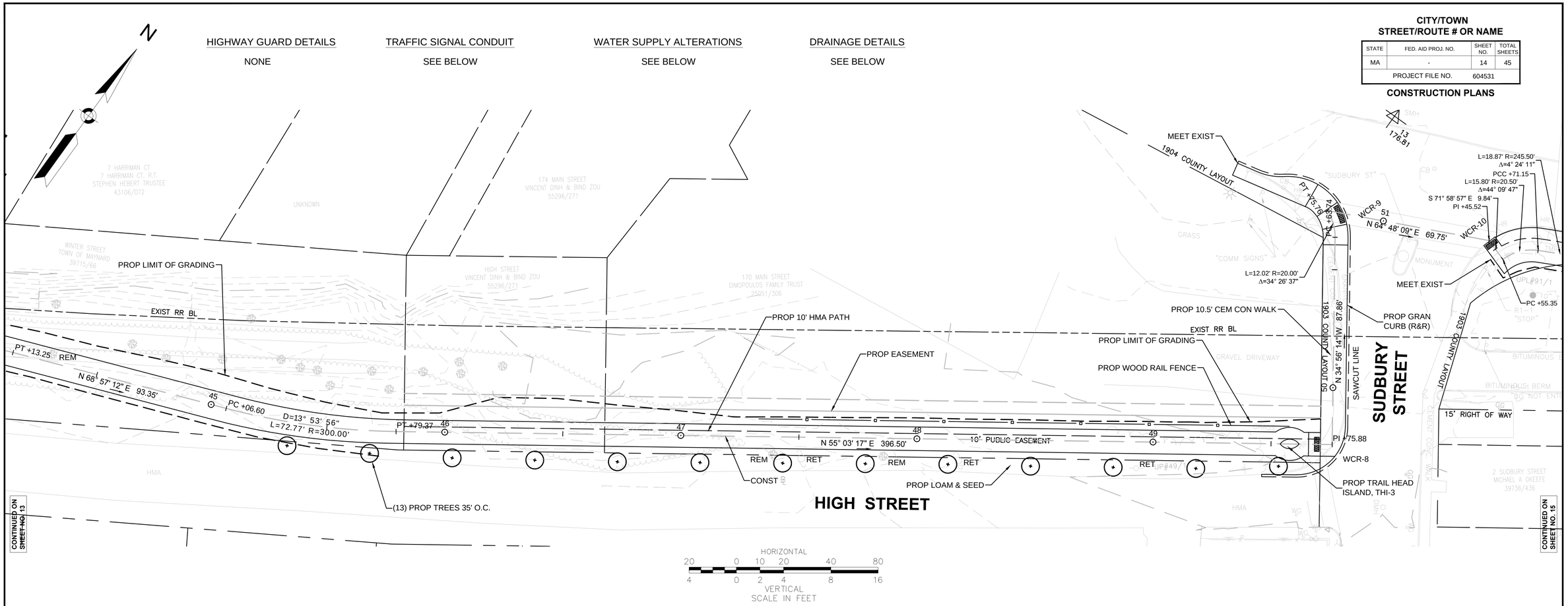
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	45
PROJECT FILE NO.	604531		

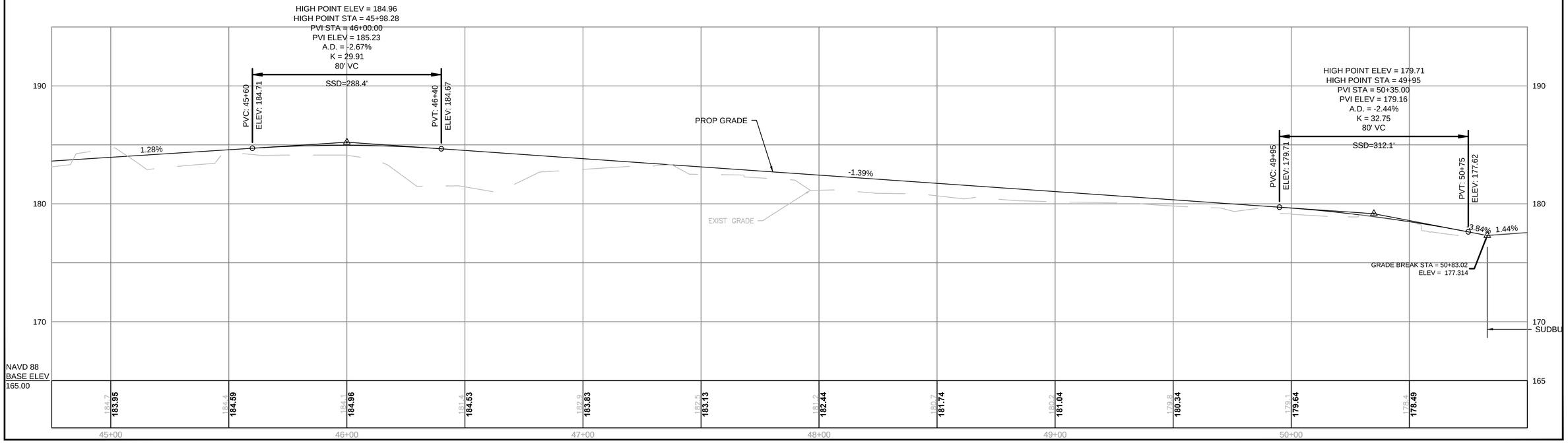
CONSTRUCTION PLANS

23-Apr-2013

604531_CONST PLAN-PROF.DWG



HORIZONTAL
20 0 10 20 40 80
4 0 2 4 8 16
VERTICAL
SCALE IN FEET

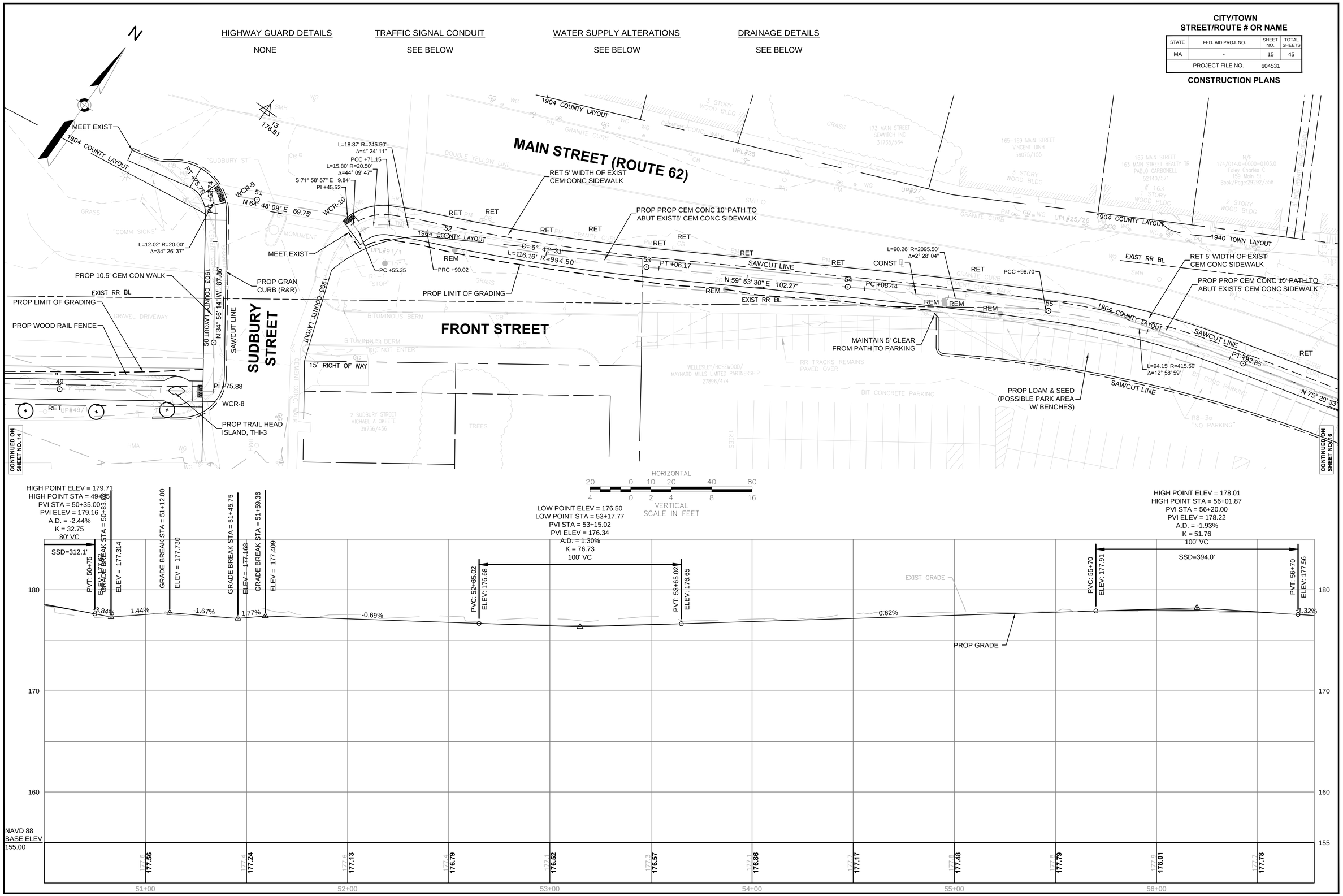


HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	SEE BELOW	SEE BELOW	SEE BELOW

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS



604531_CONST PLAN-PROF.DWG 23-Apr-2013

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

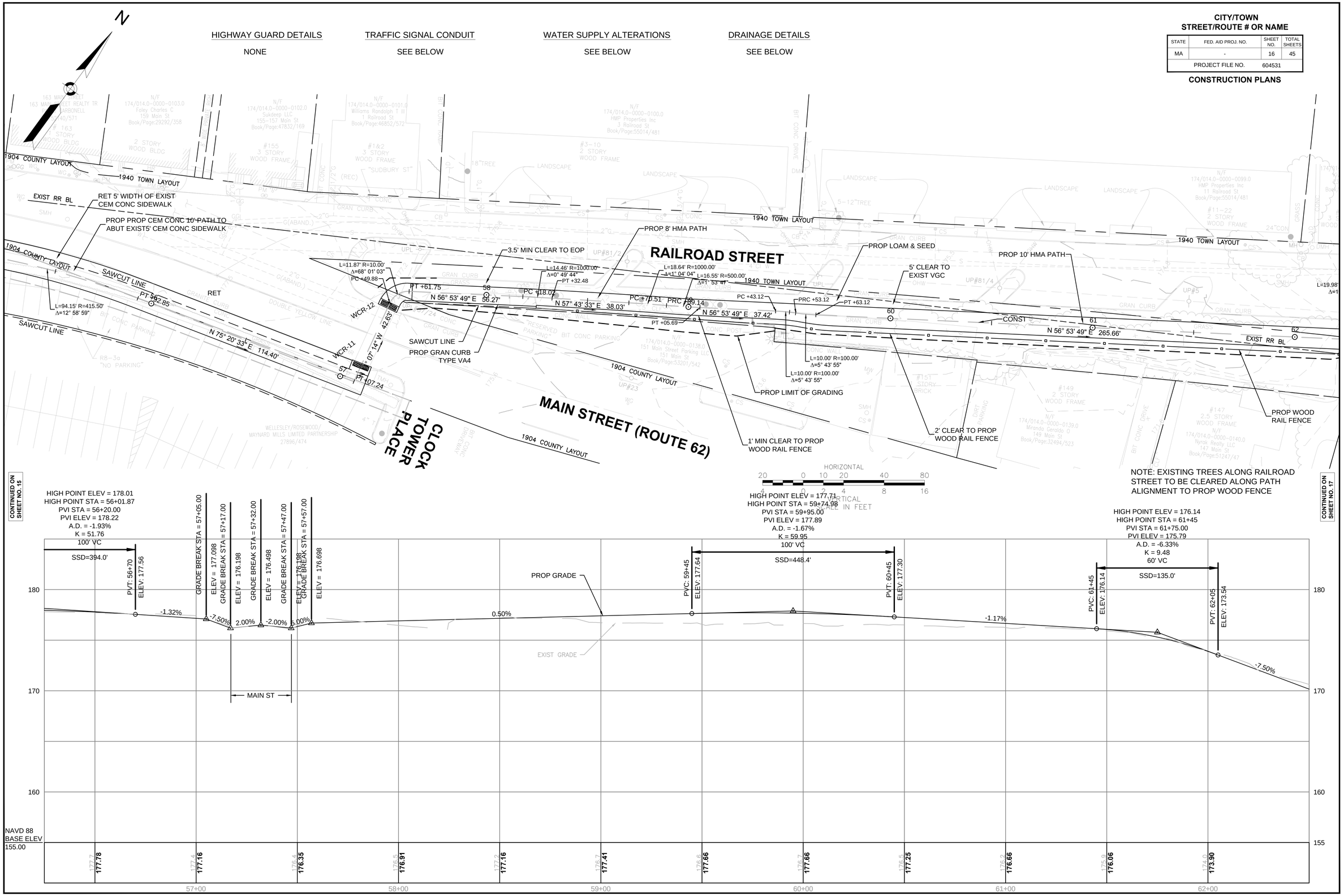
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

23-Apr-2013

604531_CONST PLAN-PROF.DWG



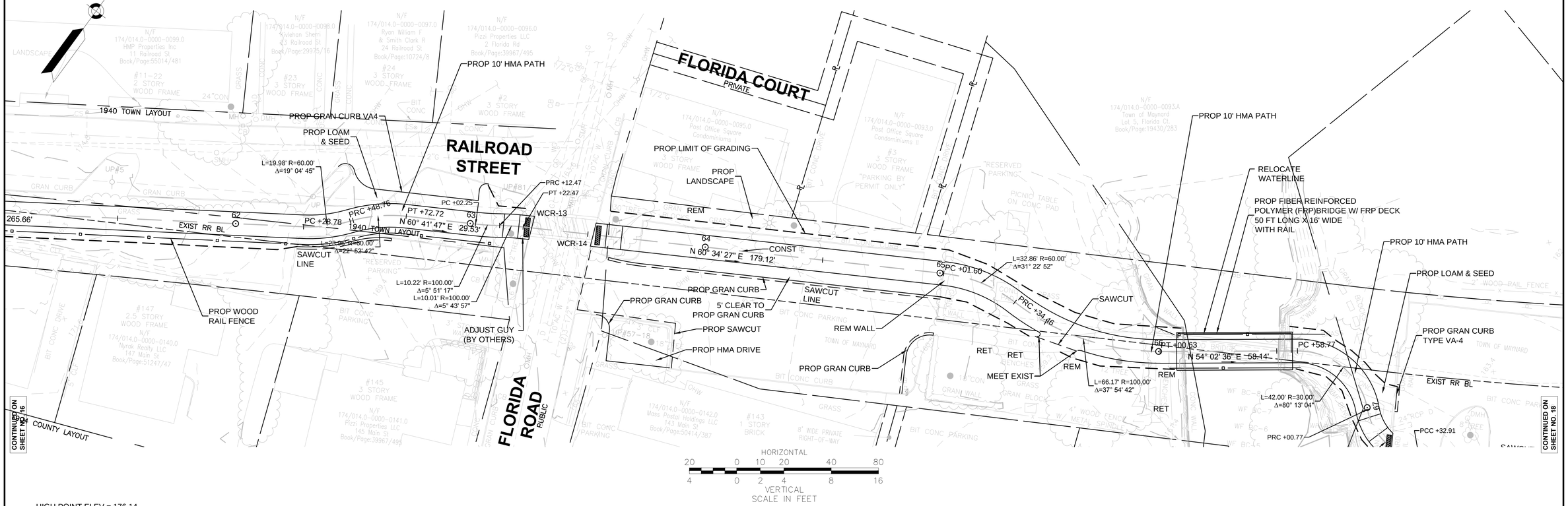
HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	SEE BELOW	SEE BELOW	SEE BELOW

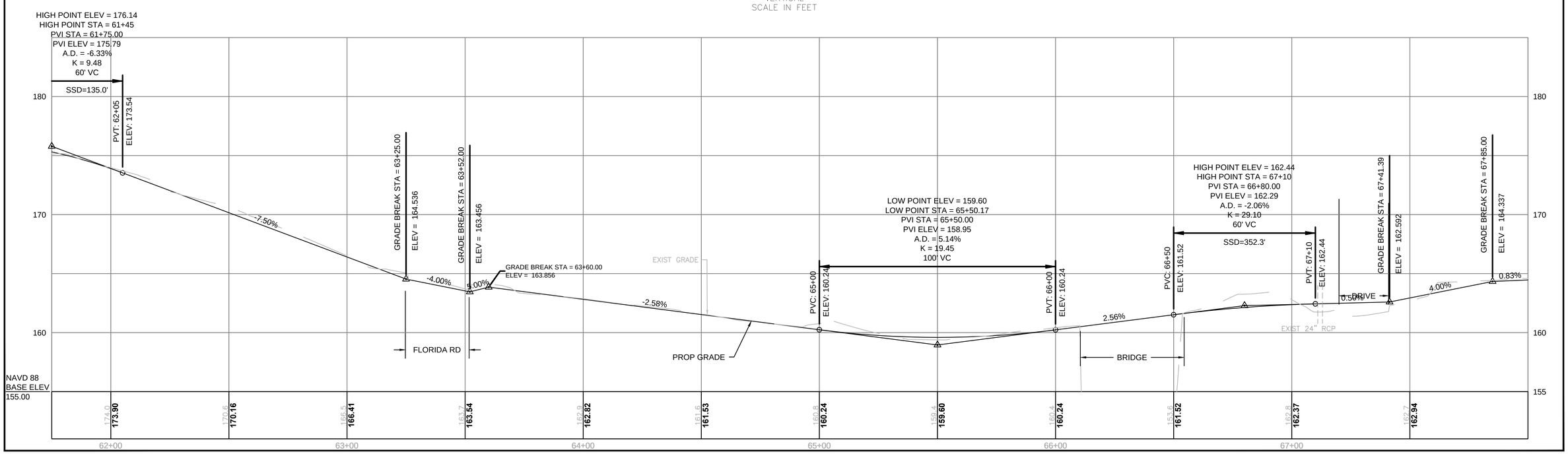
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

604531_CONST PLAN-PROF.DWG 23-Apr-2013





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

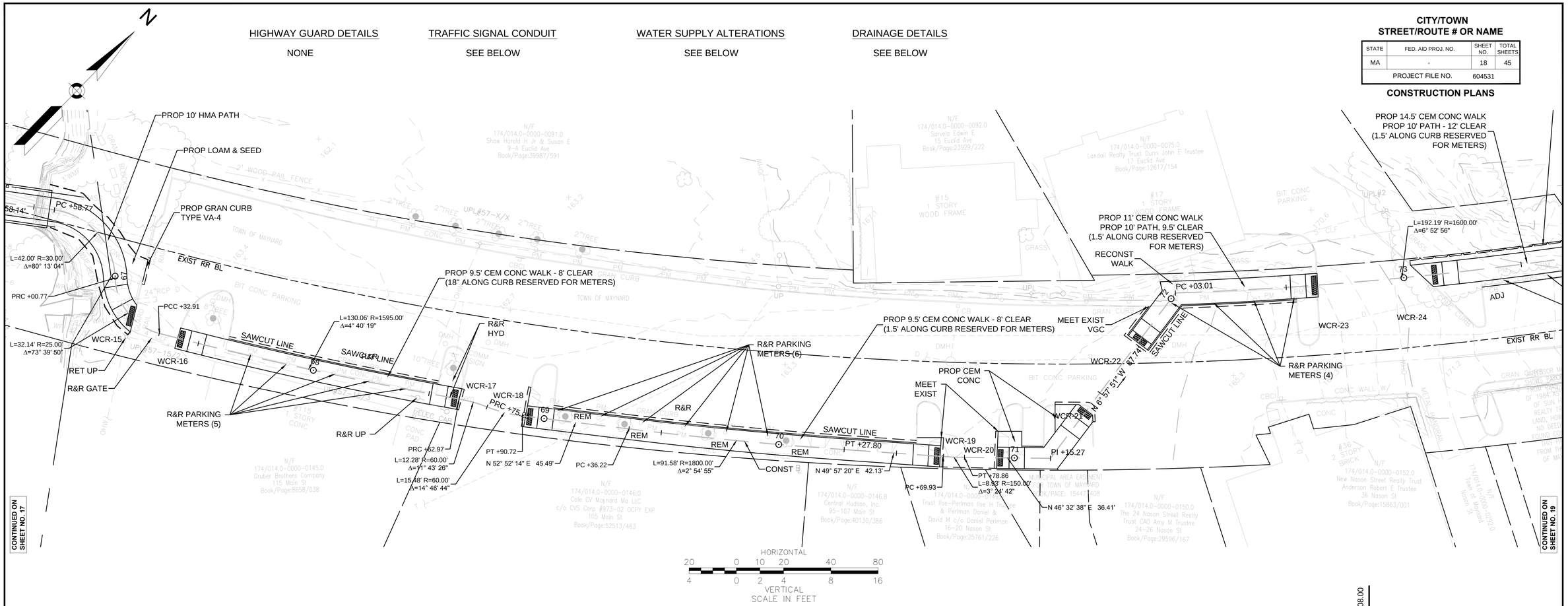
CITY/TOWN
STREET/ROUTE # OR NAME

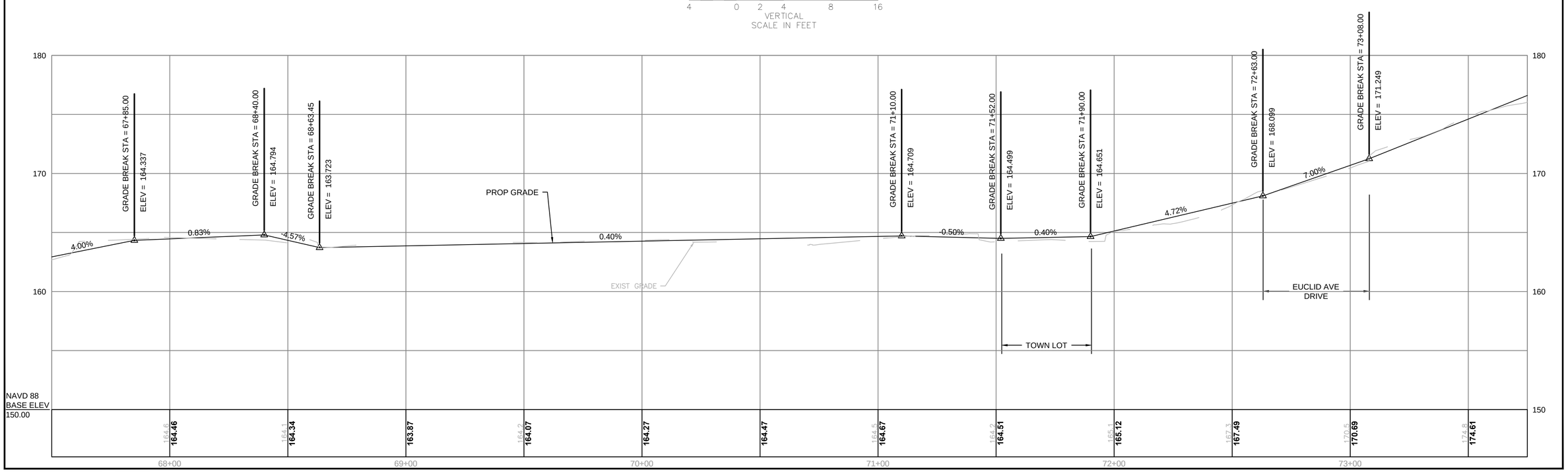
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

23-Apr-2013

604531_CONST PLAN-PROF.DWG



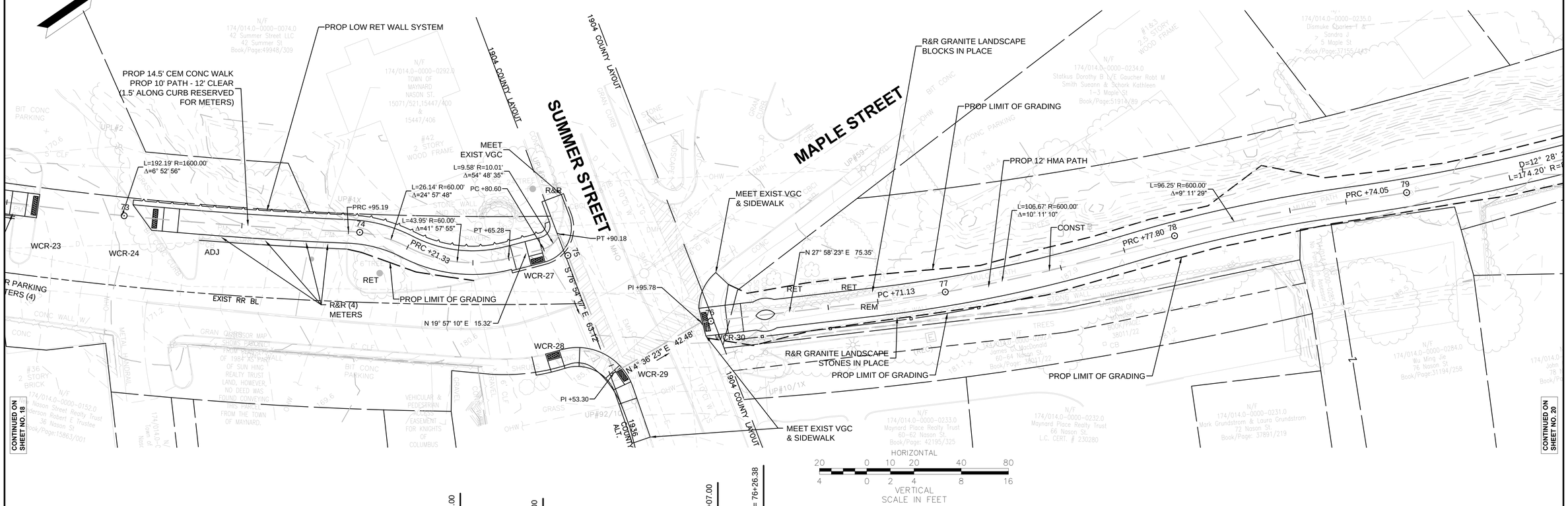


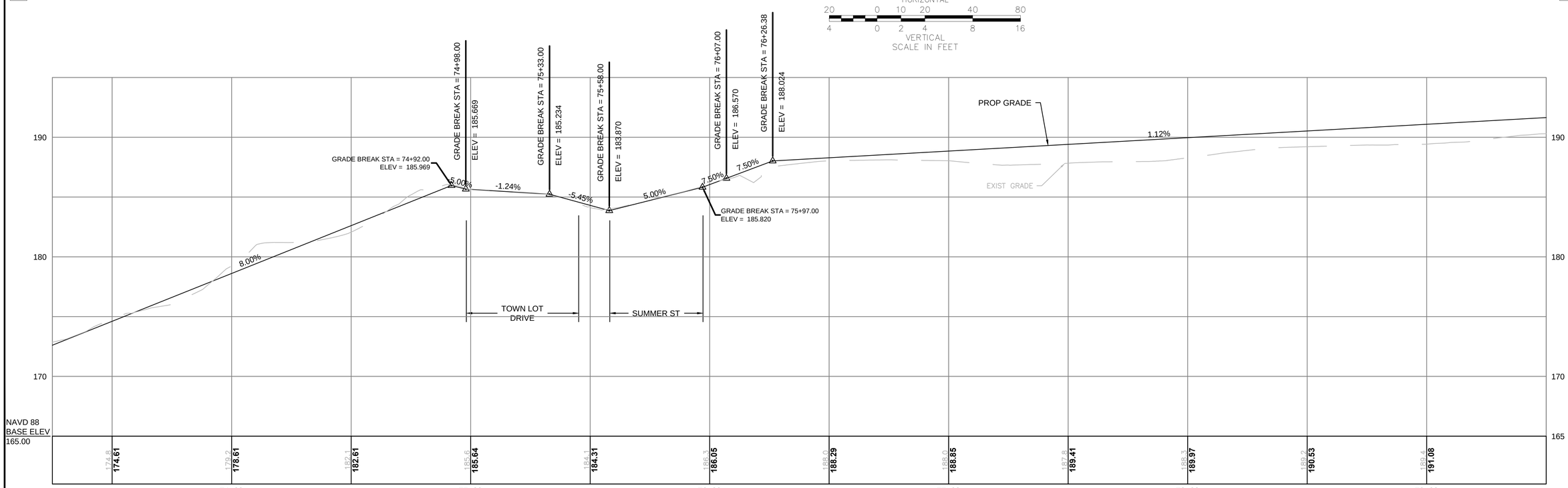
HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	SEE BELOW	SEE BELOW	SEE BELOW

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS





604531_CONST PLAN-PROF.DWG 23-Apr-2013

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

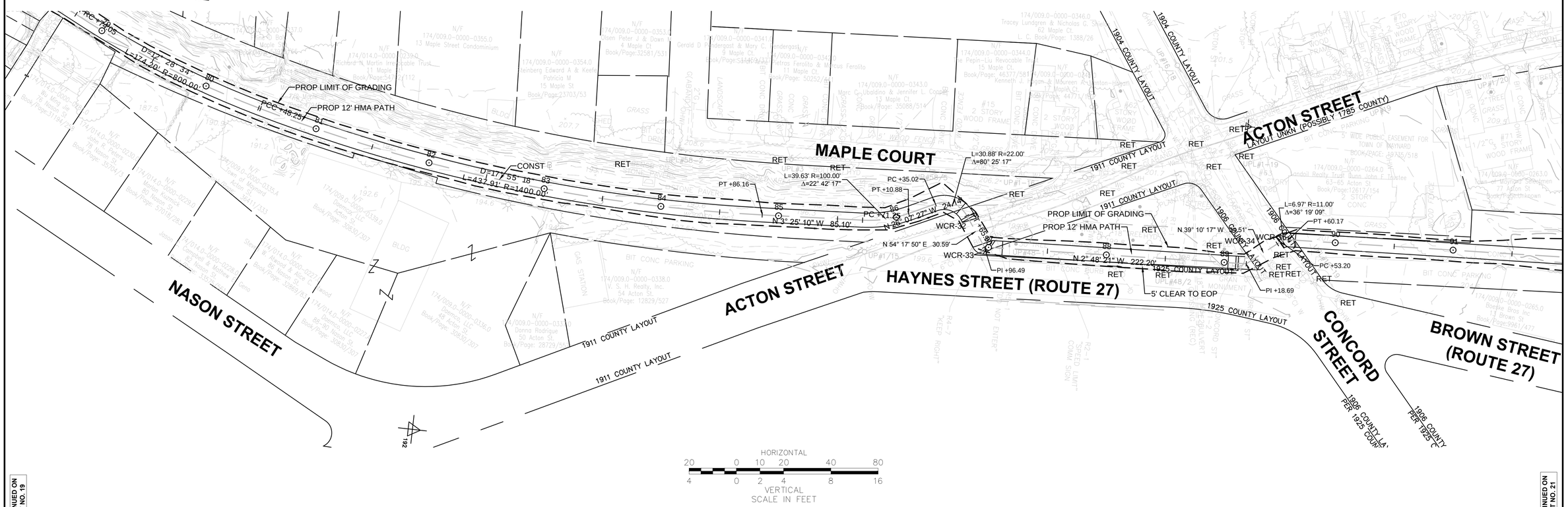
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

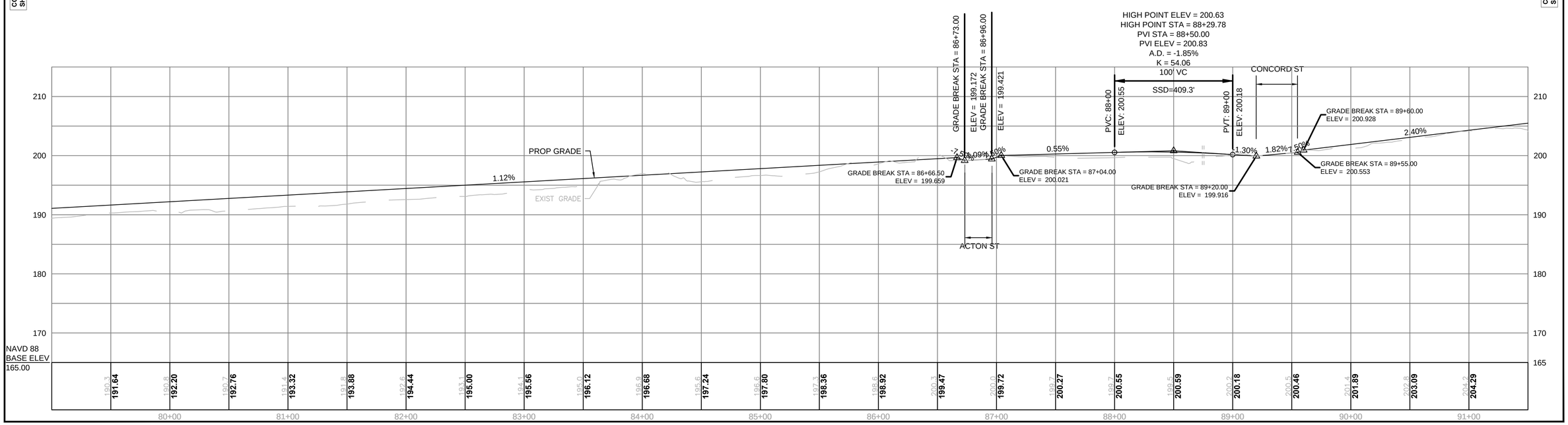
23-Apr-2013

604531_CONST PLAN-PROF.DWG



CONTINUED ON SHEET NO. 19

CONTINUED ON SHEET NO. 21



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

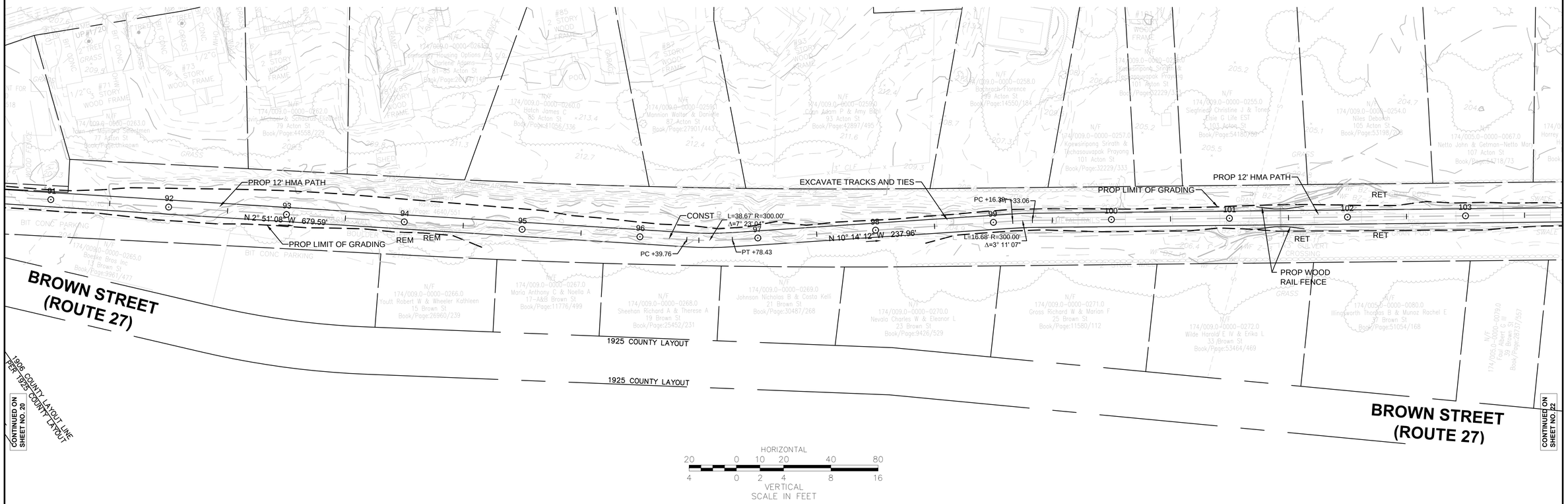
CITY/TOWN
STREET/ROUTE # OR NAME

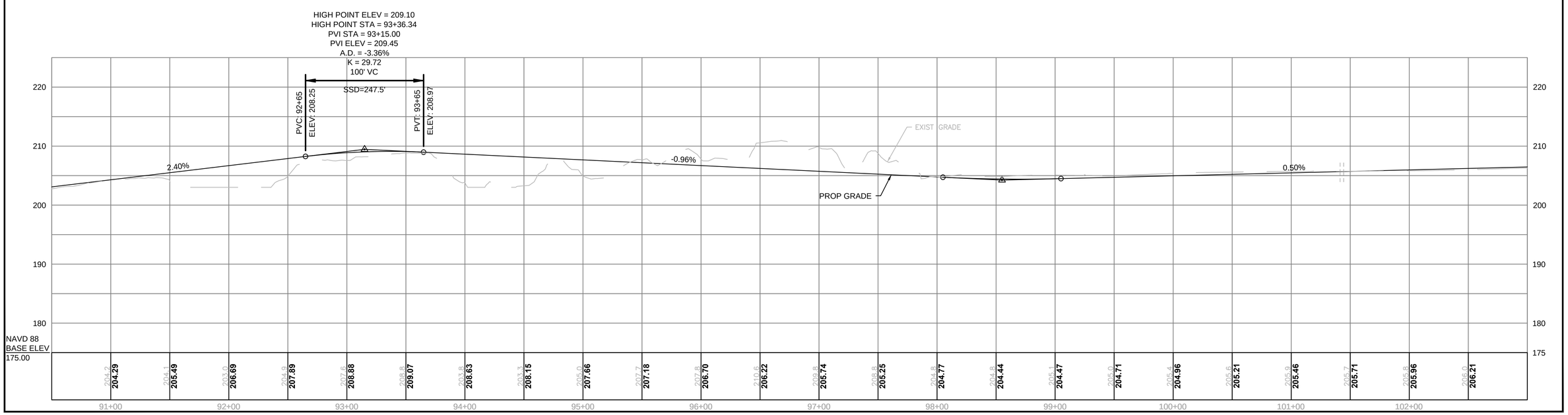
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

23-Apr-2013

604531_CONST PLAN-PROF.DWG



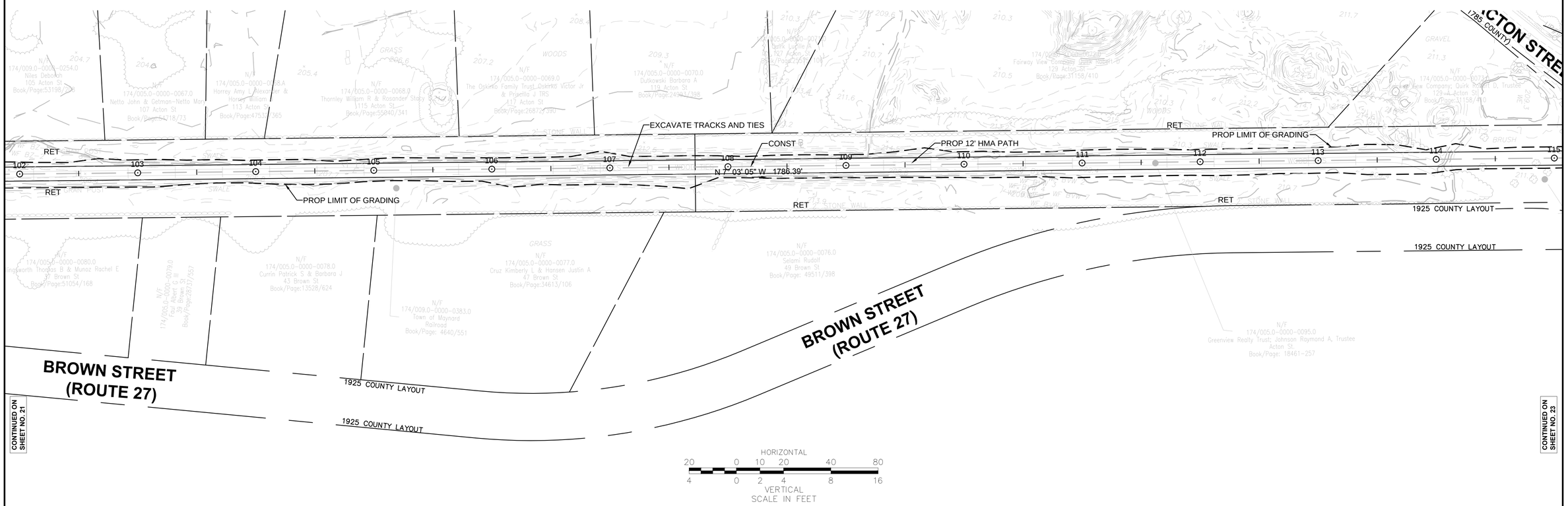


HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	SEE BELOW	SEE BELOW	SEE BELOW

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	45
PROJECT FILE NO.	604531		

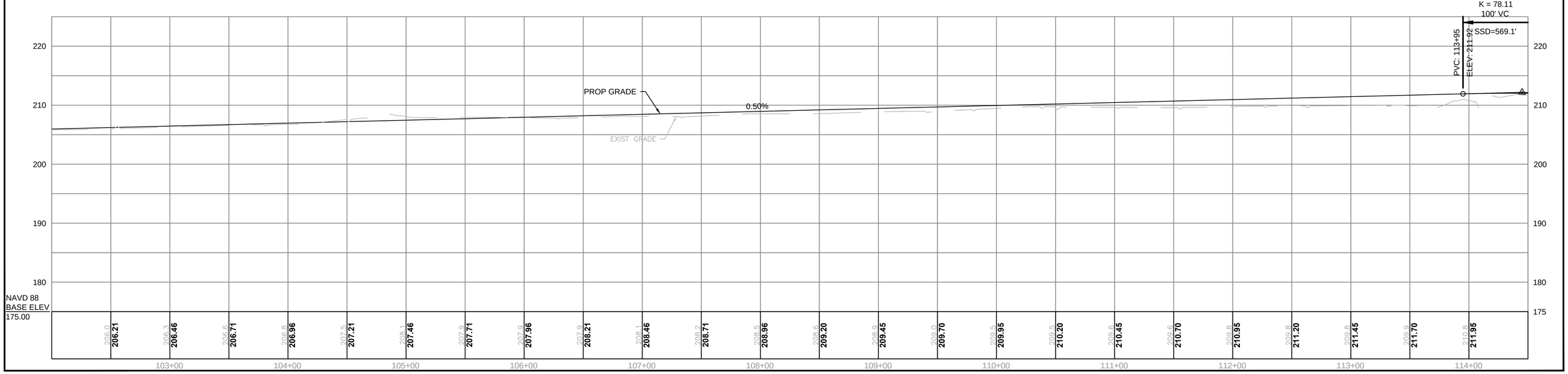
CONSTRUCTION PLANS



CONTINUED ON SHEET NO. 21

CONTINUED ON SHEET NO. 23

HIGH POINT ELEV = 212.02
HIGH POINT STA = 114+33.97
PVI STA = 114+45.00
PVI ELEV = 212.17
A.D. = -1.28%
K = 78.11
100' VC



23-Apr-2013

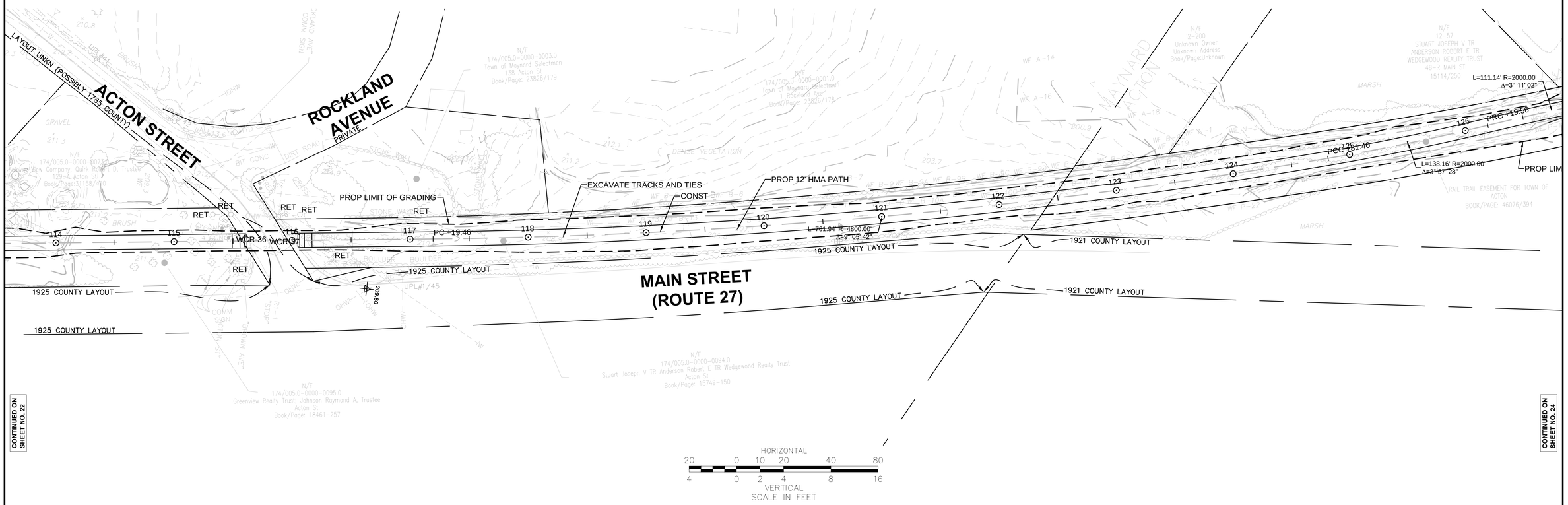
604531_CONST PLAN-PROF.DWG

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

CITY/TOWN
STREET/ROUTE # OR NAME

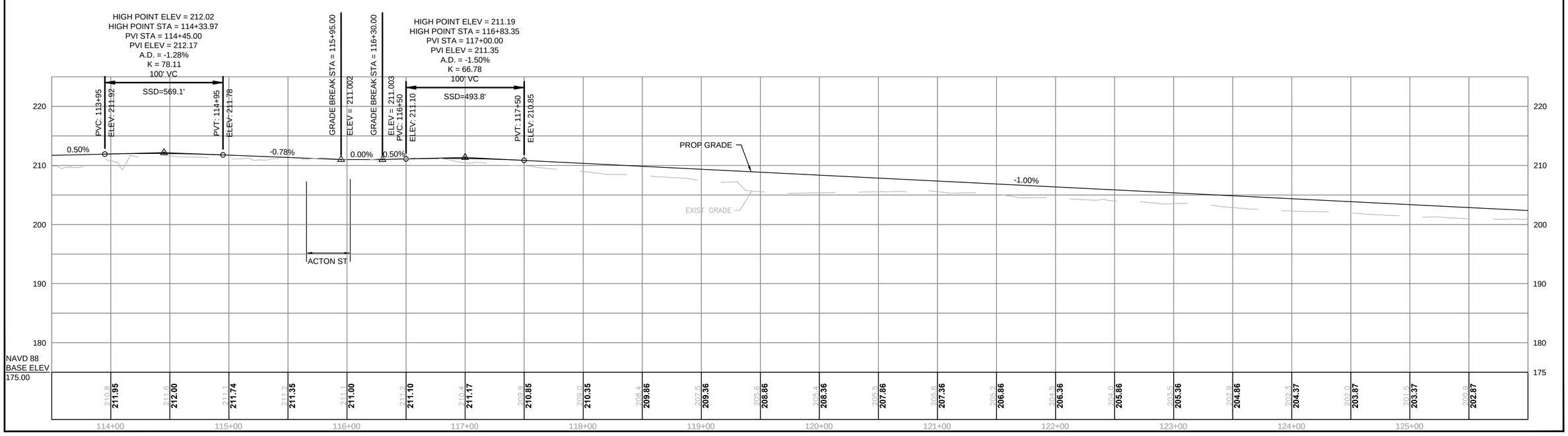
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS



CONTINUED ON SHEET NO. 22

CONTINUED ON SHEET NO. 24



604531_CONST PLAN-PROF.DWG 23-Apr-2013

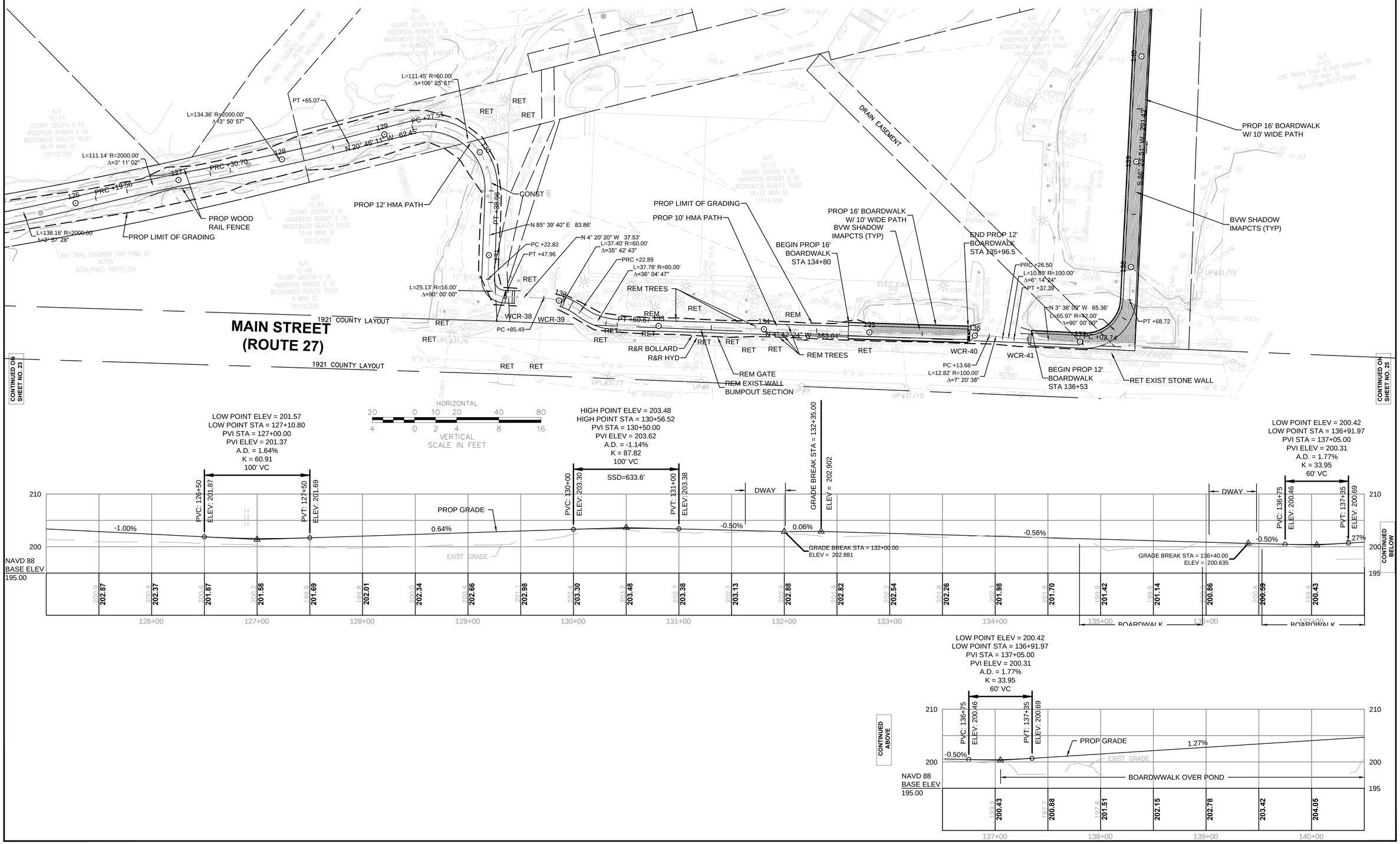
HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	SEE BELOW	SEE BELOW	SEE BELOW

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

604531_CONST PLAN-PROF.DWG 23-Apr-2013



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

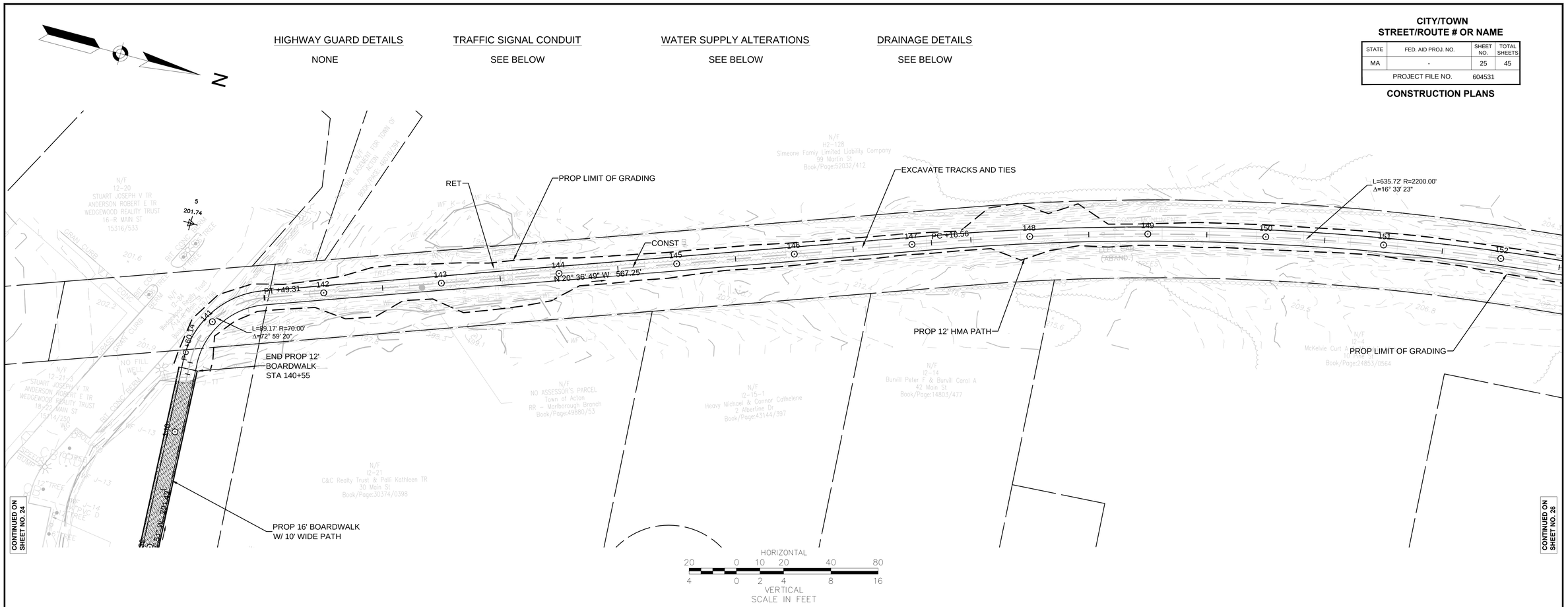
CITY/TOWN
STREET/ROUTE # OR NAME

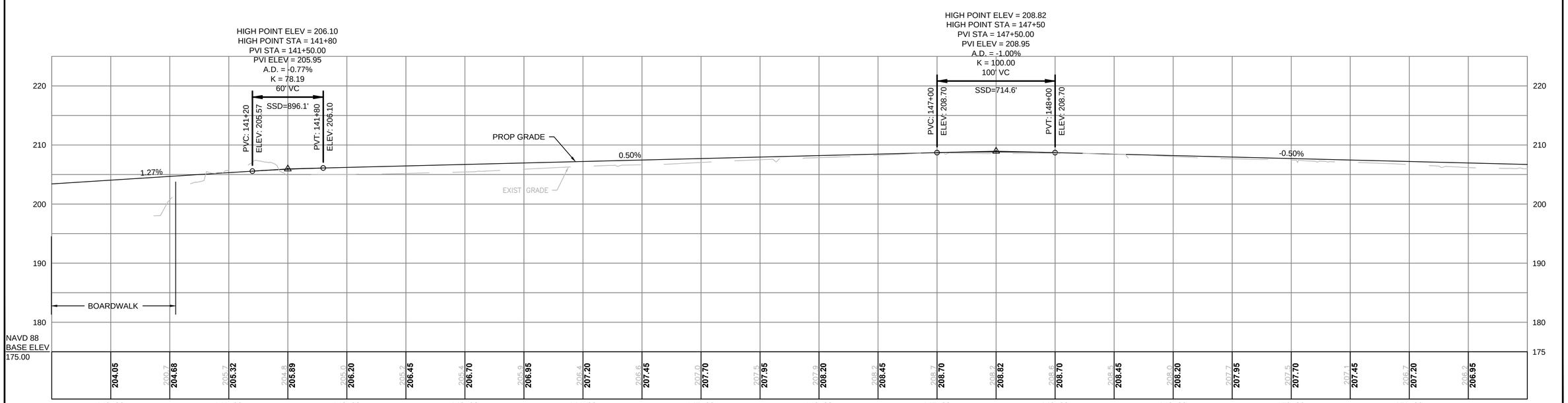
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	25	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

23-Apr-2013

604531_CONST PLAN-PROF.DWG





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

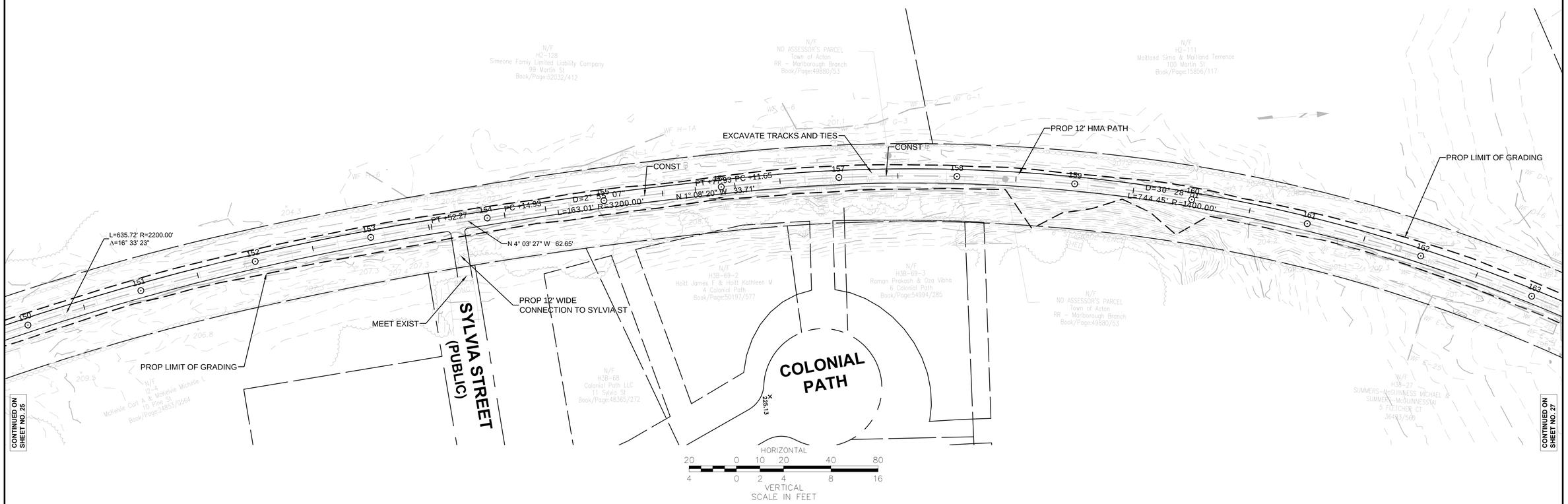
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	26	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

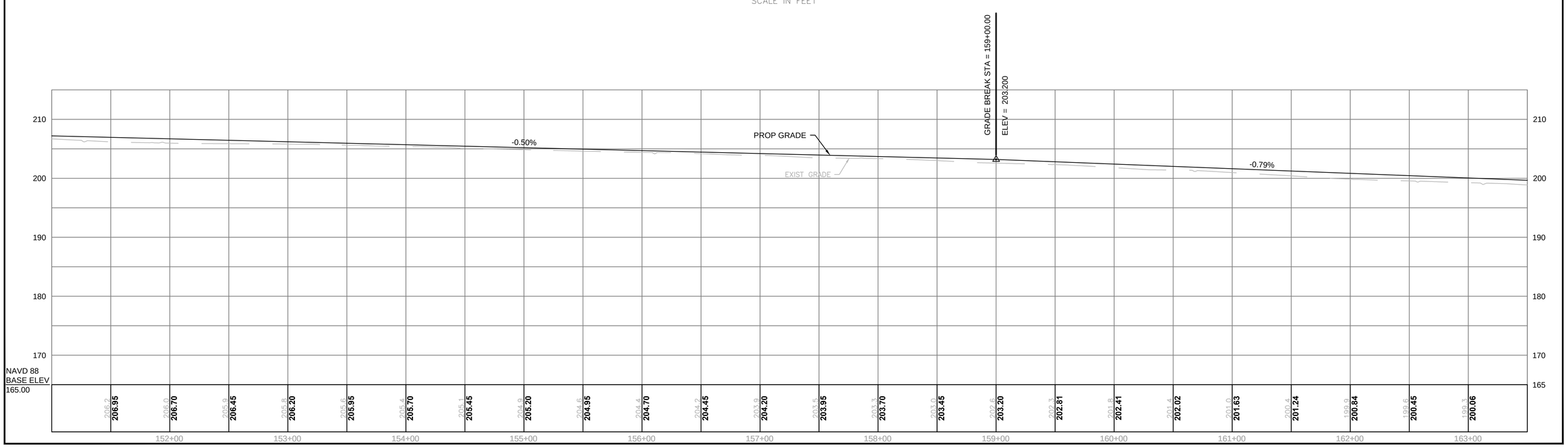
23-Apr-2013

604531_CONST PLAN-PROF.DWG



CONTINUED ON SHEET NO. 25

CONTINUED ON SHEET NO. 27



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

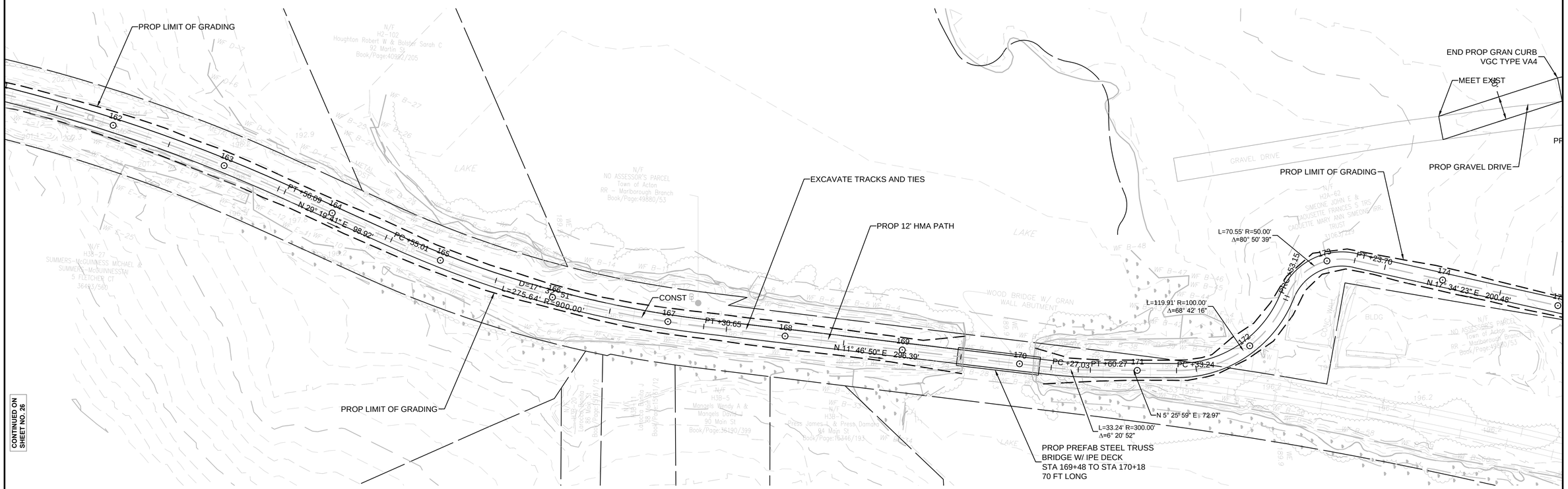
CITY/TOWN
STREET/ROUTE # OR NAME

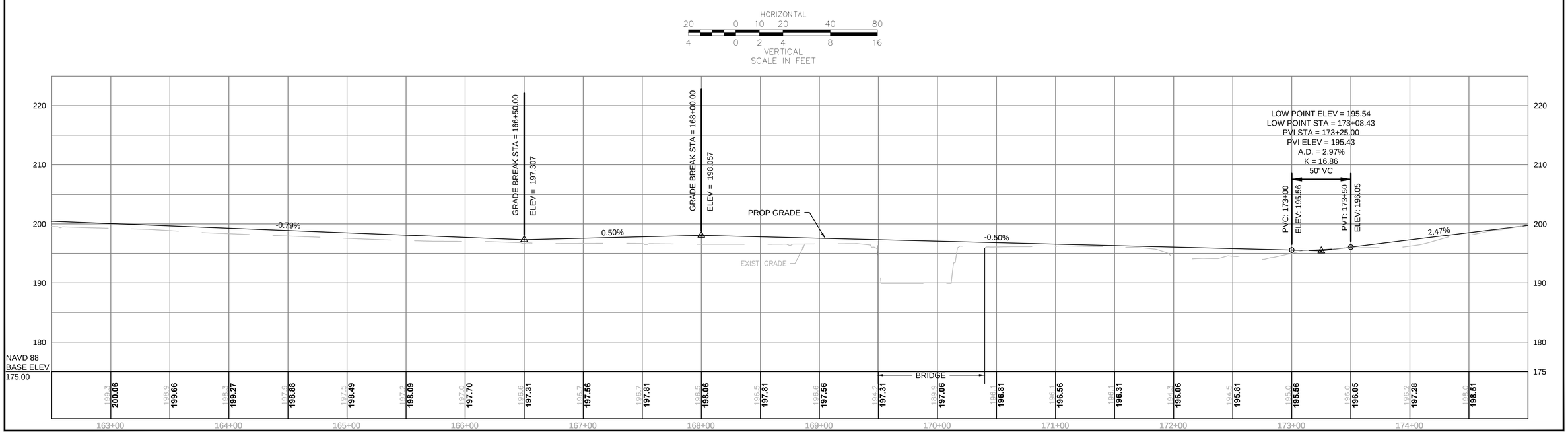
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	27	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS

23-Apr-2013

604531_CONST PLAN-PROF.DWG



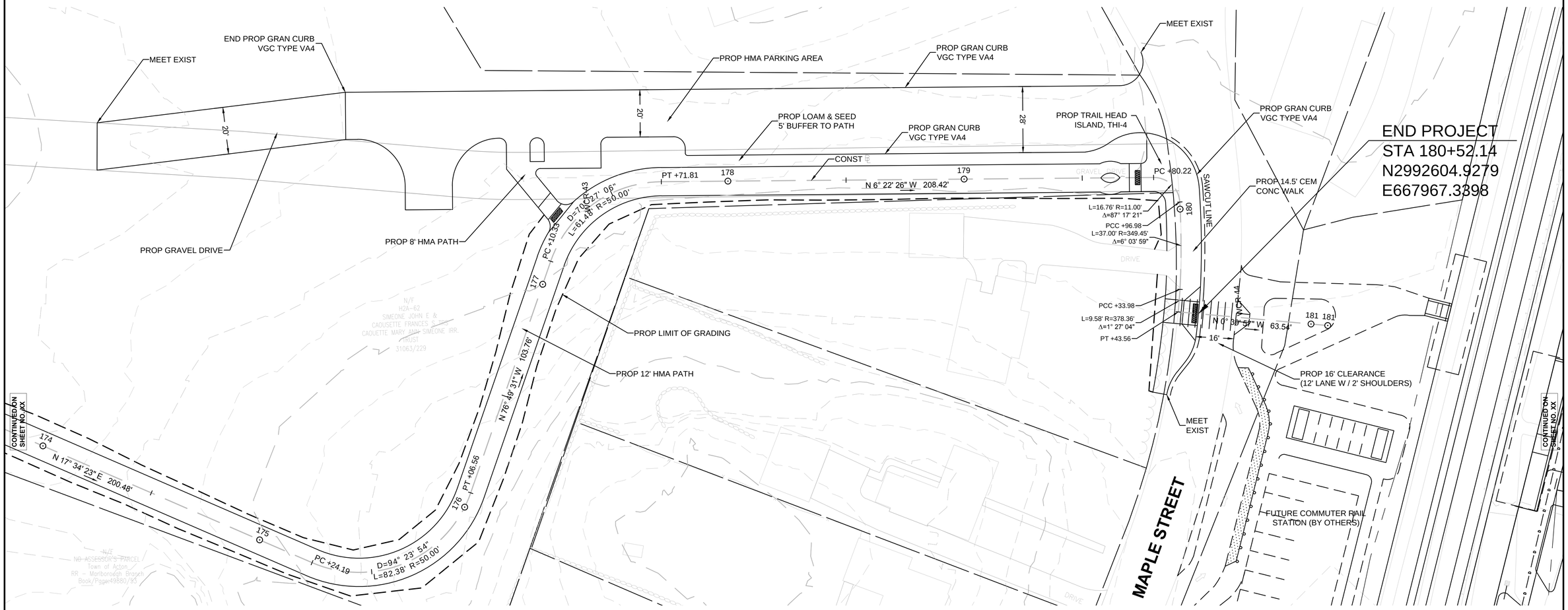


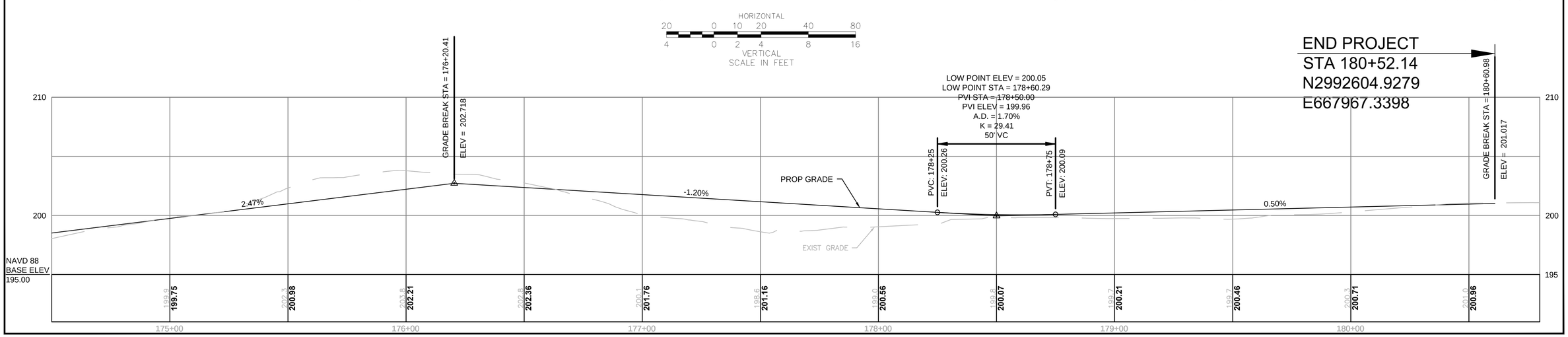
HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	SEE BELOW	SEE BELOW	SEE BELOW

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	28	45
PROJECT FILE NO.	604531		

CONSTRUCTION PLANS





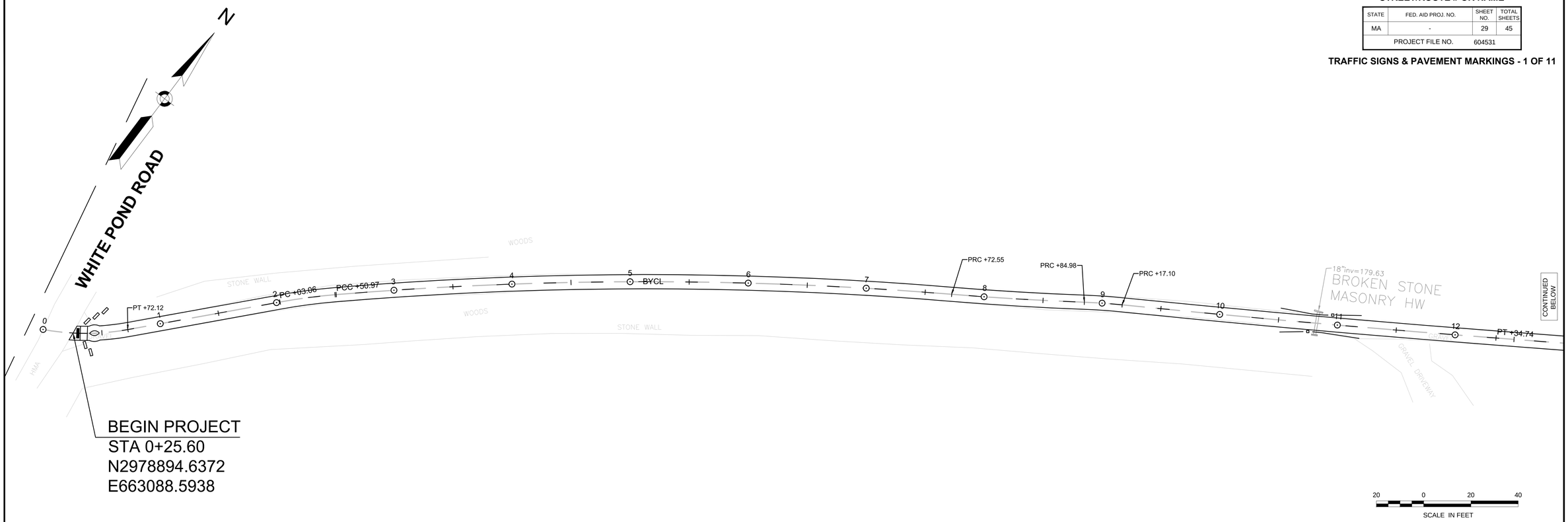
604531_CONST PLAN-PROF.DWG 23-Apr-2013

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	29	45
PROJECT FILE NO.	604531		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 1 OF 11

604531_TRAF_SIGN PVMK PLAN.DWG 23-Apr-2013



NOTES:

- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

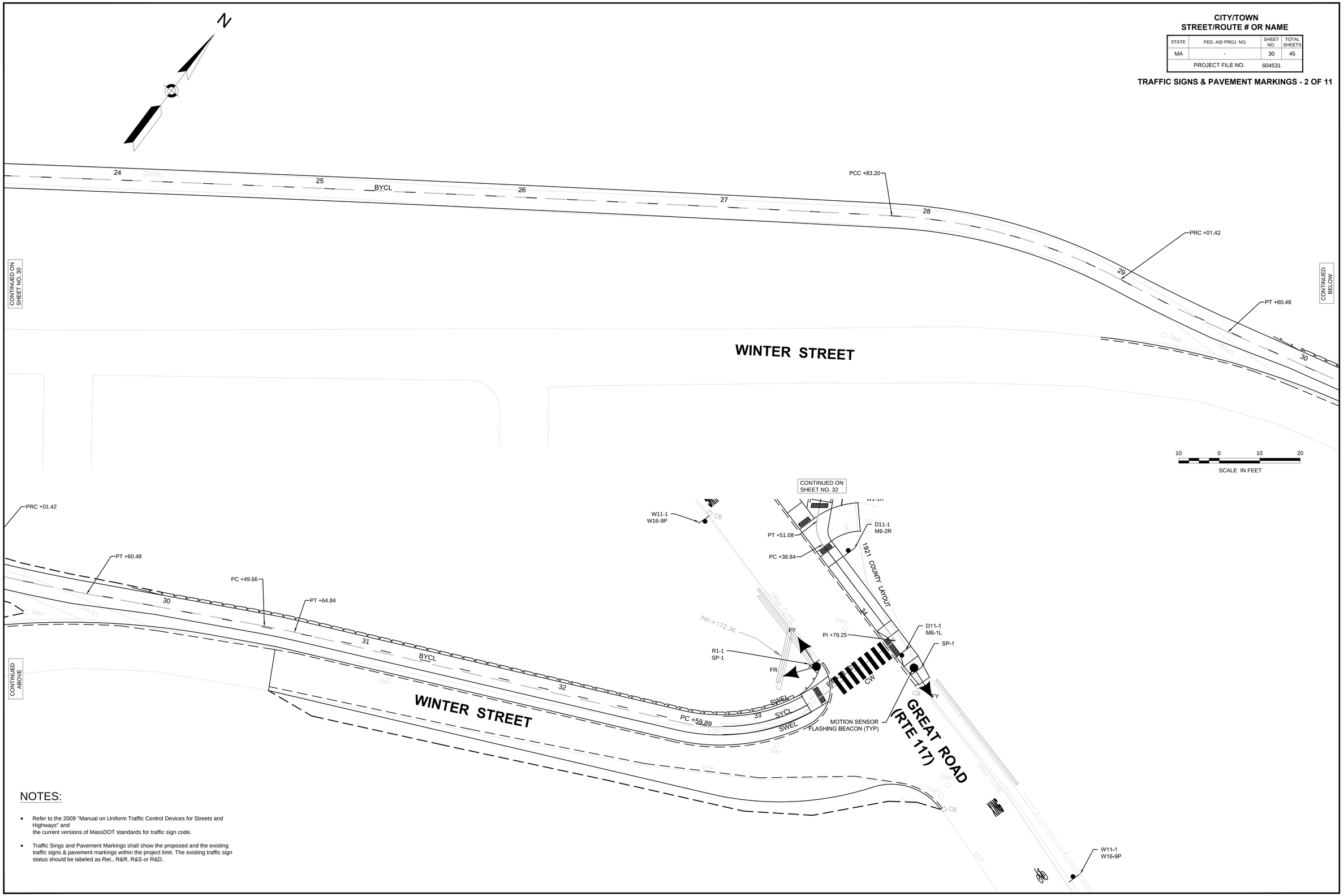
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	30	45
PROJECT FILE NO.	604531		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 2 OF 11

23-Apr-2013

604531_TRAF_SIGN PVMK PLAN.DWG



NOTES:

- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

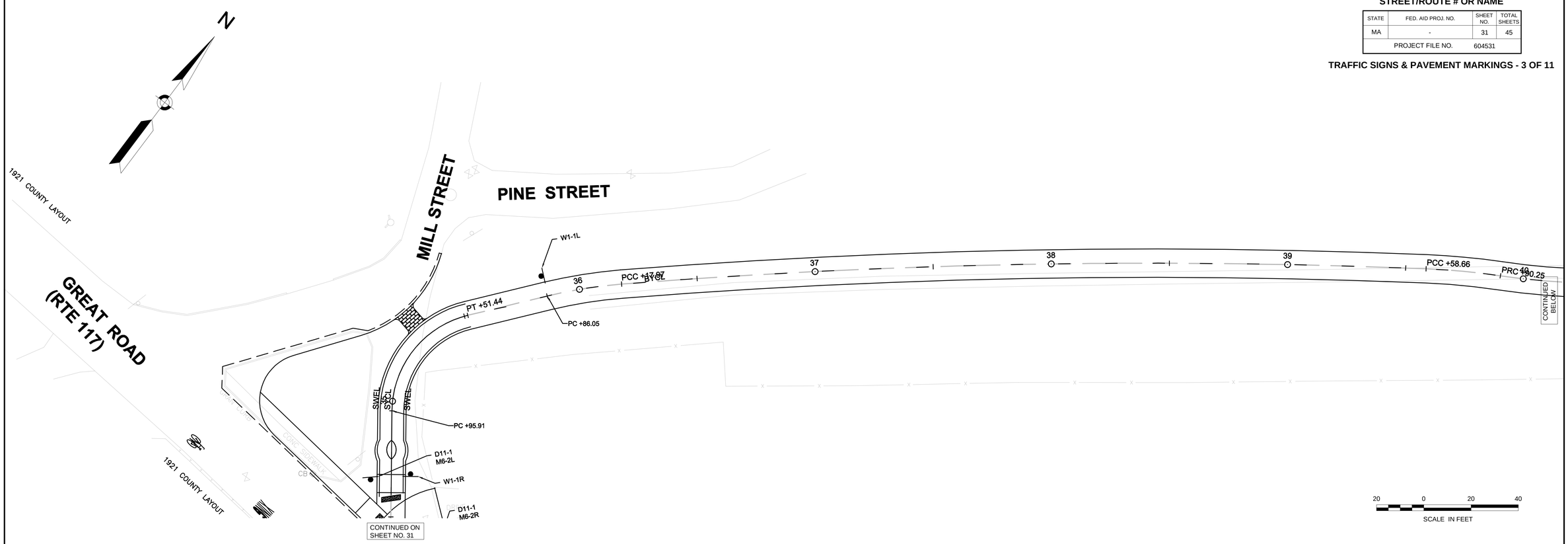
CITY/TOWN
STREET/ROUTE # OR NAME

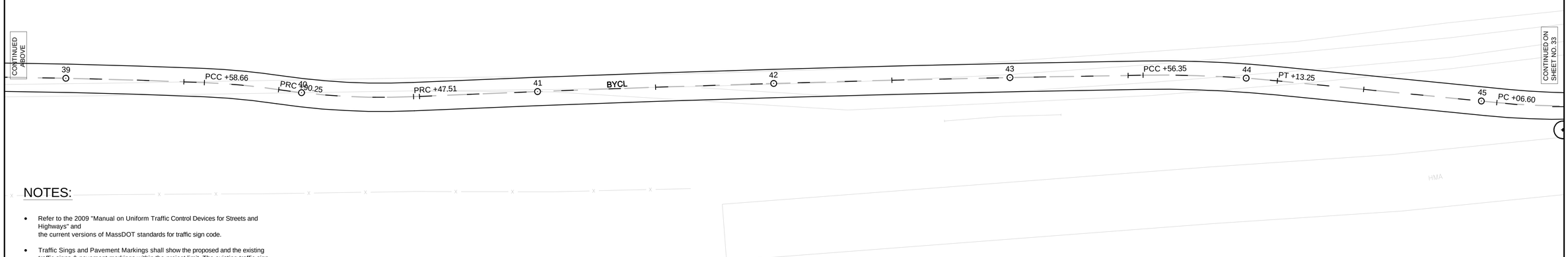
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	31	45
PROJECT FILE NO.	604531		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 3 OF 11

23-Apr-2013

604531_TRAF_SIGN PVMK PLAN.DWG





NOTES:

- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and
  the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

NOTES:

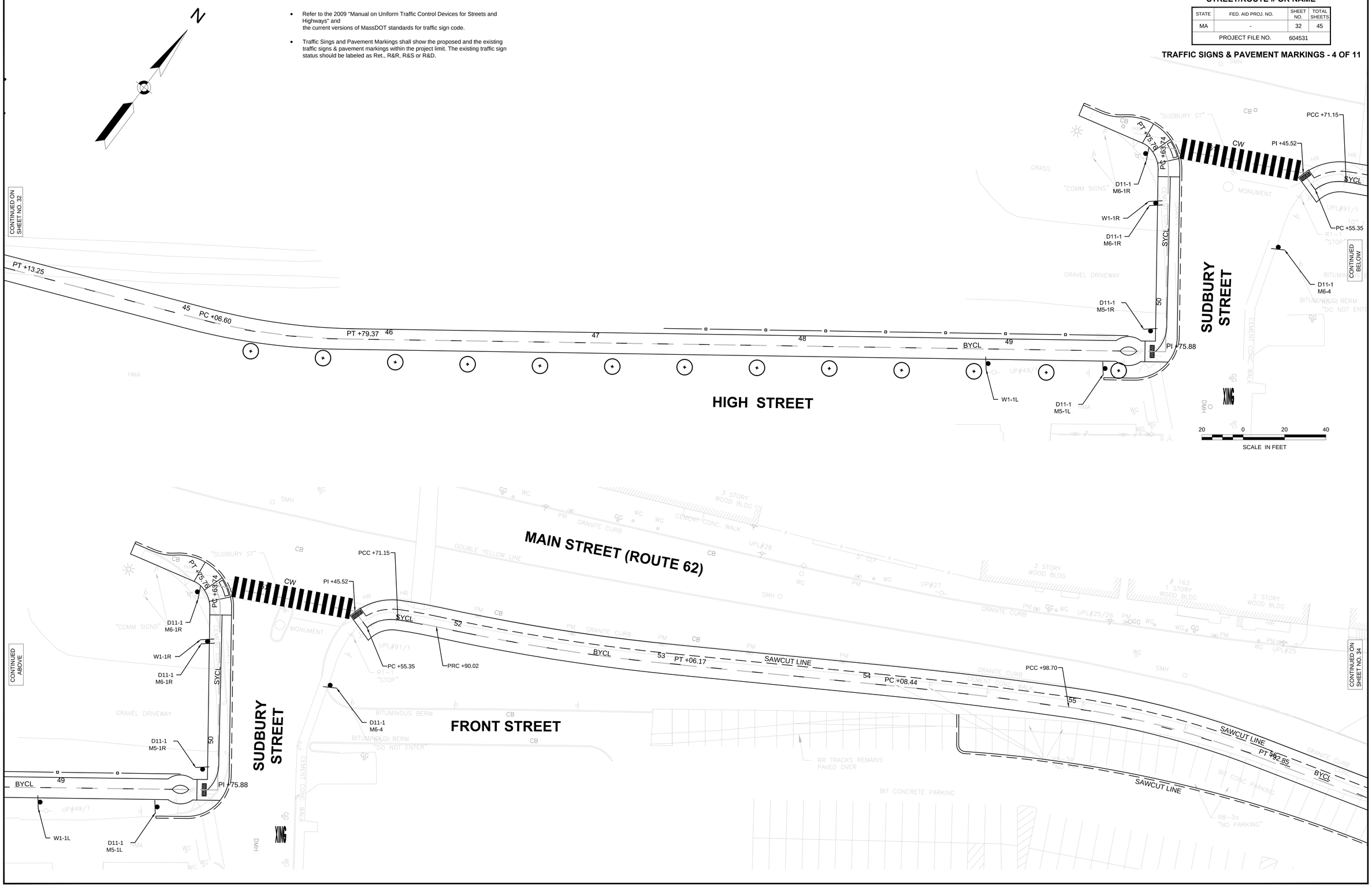
- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	32	45
PROJECT FILE NO.	604531		

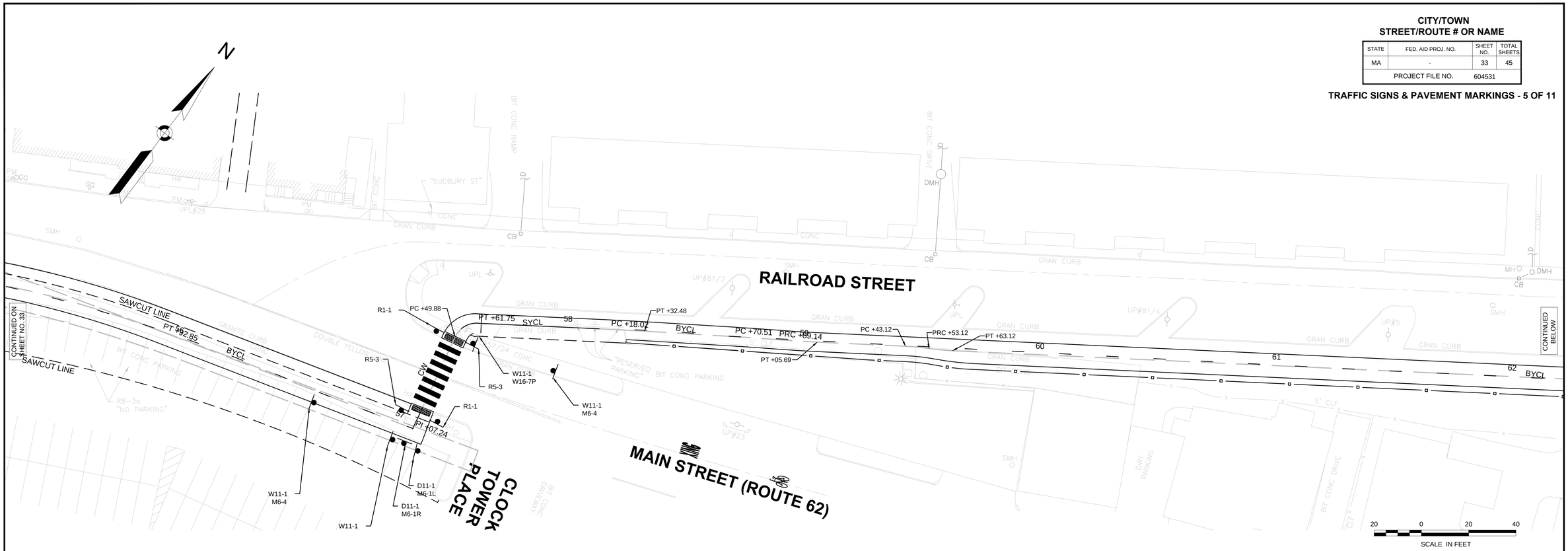
TRAFFIC SIGNS & PAVEMENT MARKINGS - 4 OF 11

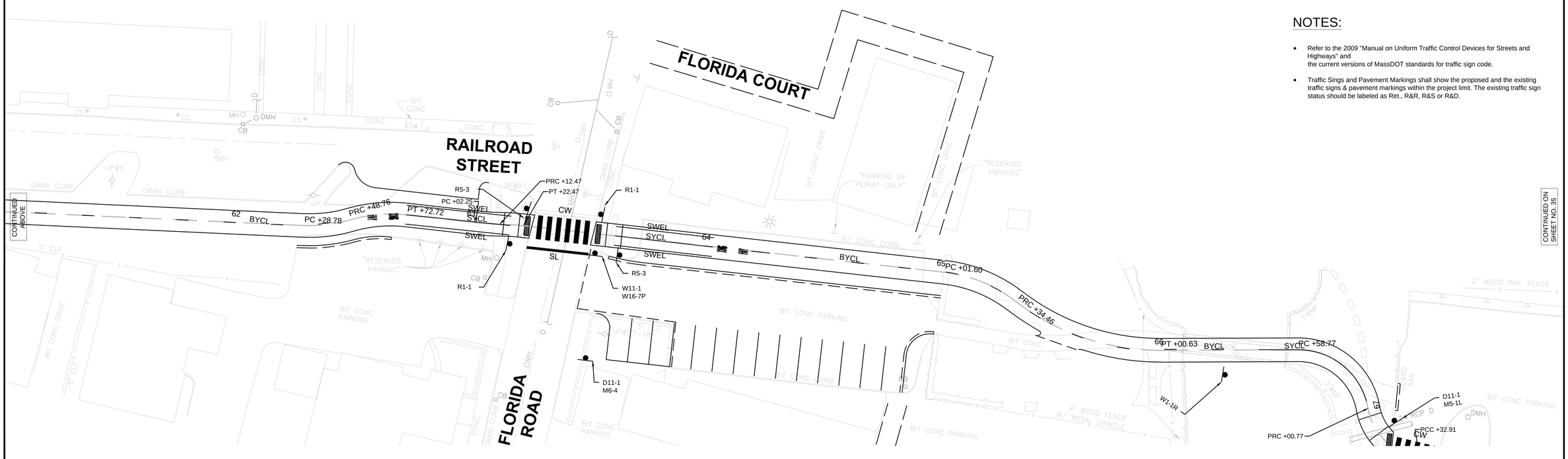
604531_TRAF_SIGN PVMK PLAN.DWG 23-Apr-2013



CITY/TOWN STREET/ROUTE # OR NAME			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	33	45
PROJECT FILE NO.	604531		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 5 OF 11





NOTES:

- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

604531_TRAF_SIGN PVMK PLAN.DWG 23-Apr-2013

NOTES:

- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

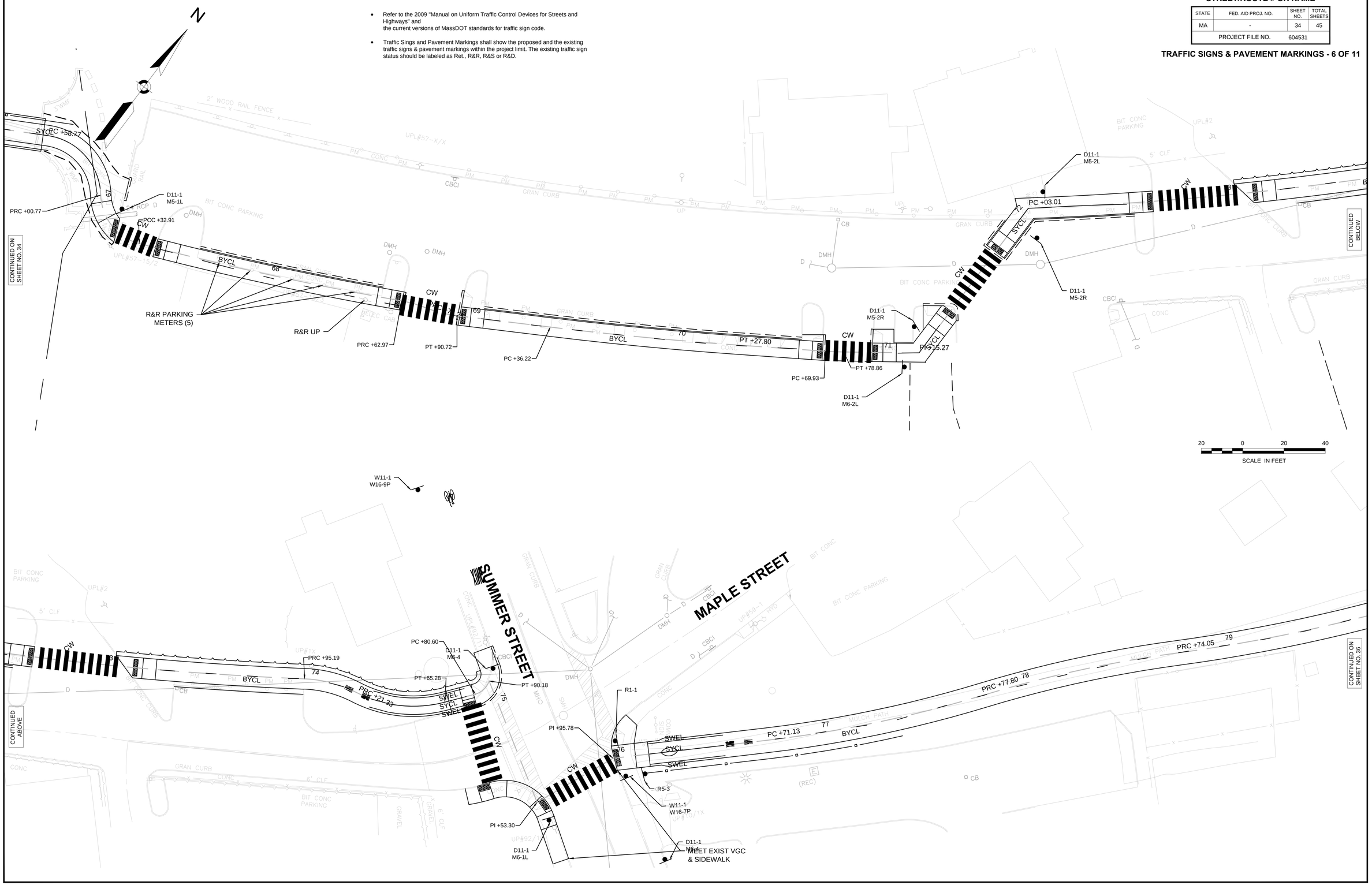
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	34	45
PROJECT FILE NO.	604531		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 6 OF 11

23-Apr-2013

604531_TRAF_SIGN PVMK PLAN.DWG



NOTES:

- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

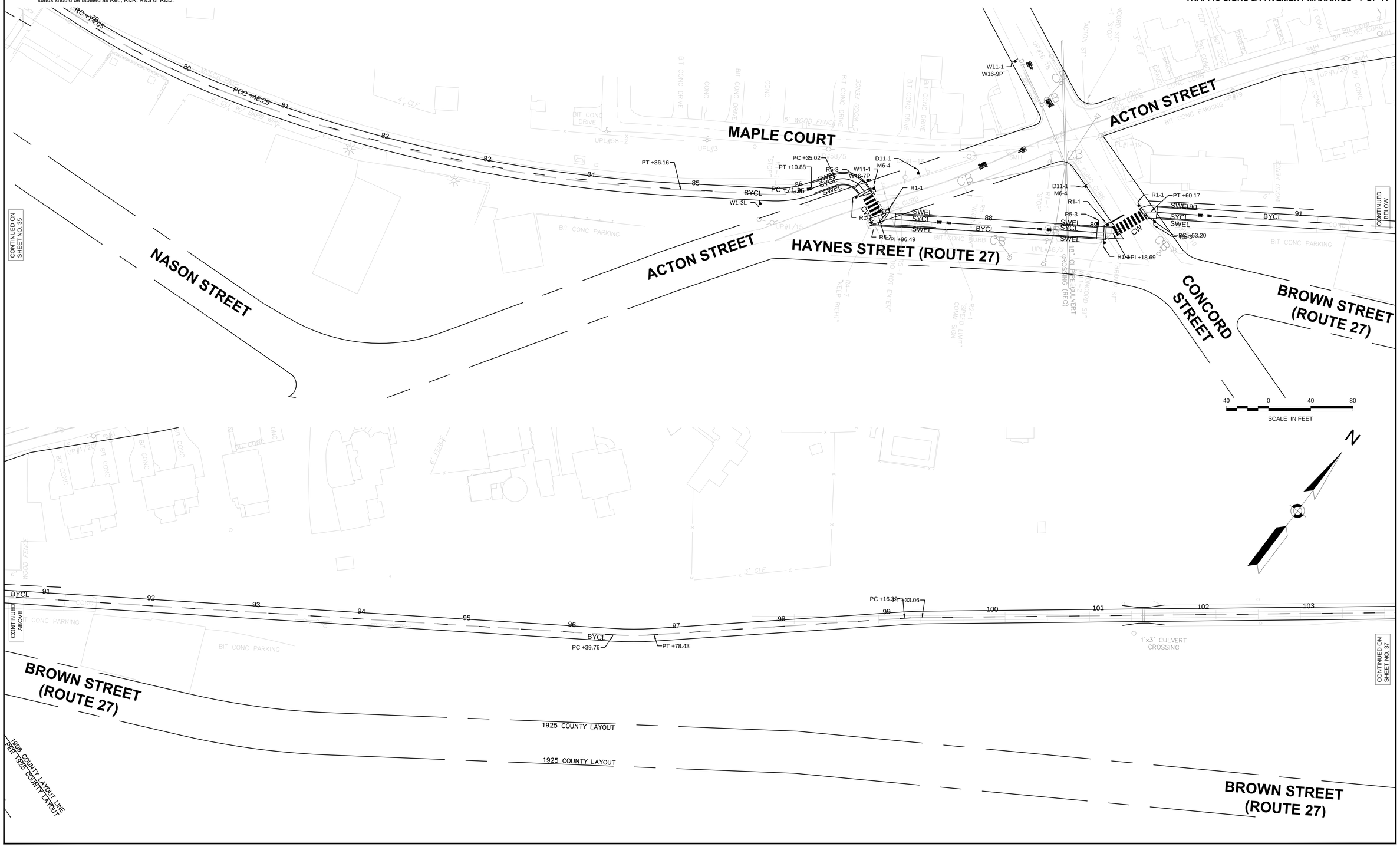
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	35	45
PROJECT FILE NO.	604531		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 7 OF 11

23-Apr-2013

604531_TRAF_SIGN PVMK PLAN.DWG



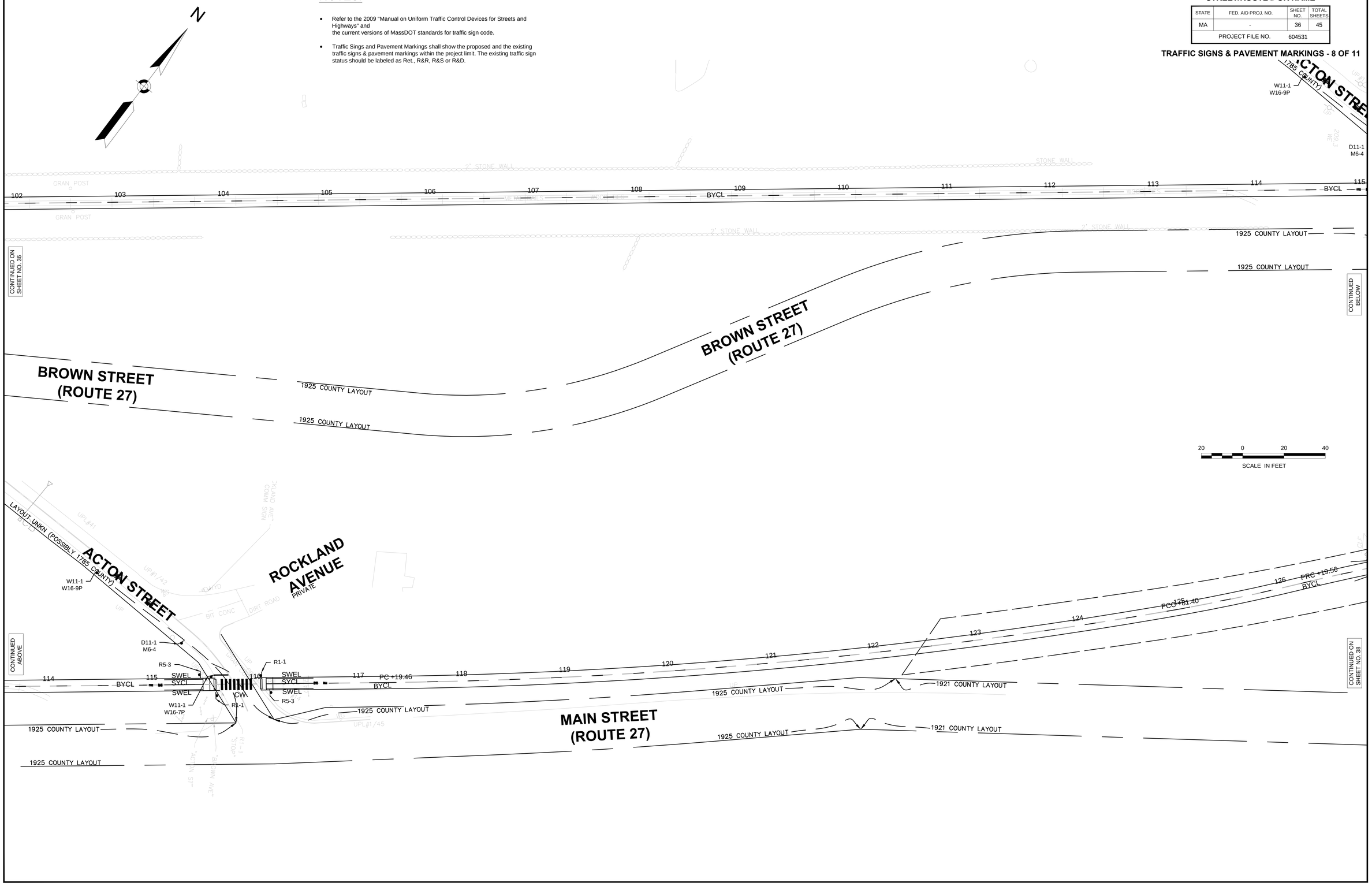
NOTES:

- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and
  the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	36	45
PROJECT FILE NO.	604531		

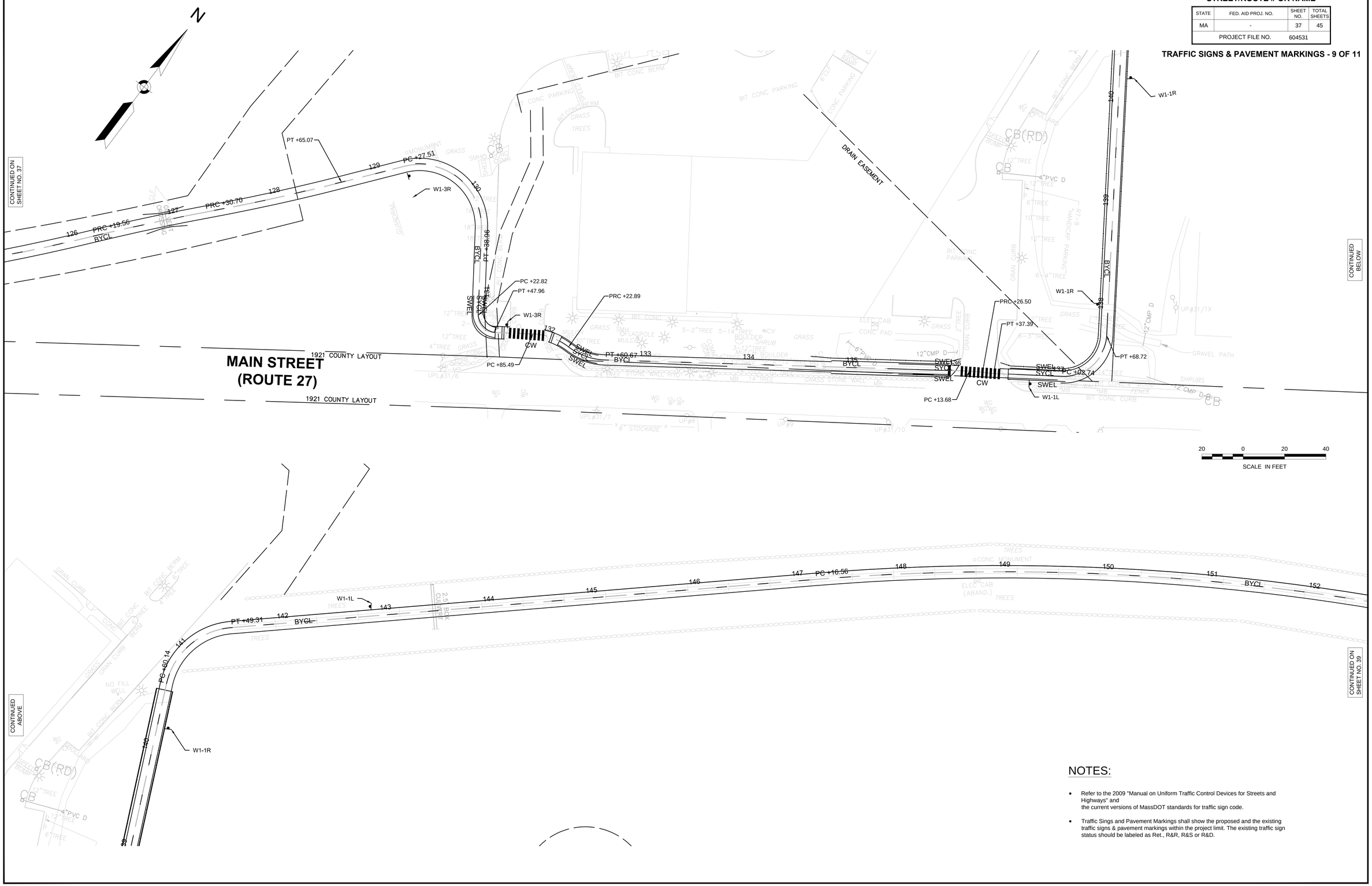
TRAFFIC SIGNS & PAVEMENT MARKINGS - 8 OF 11



604531_TRAF_SIGN PVMK PLAN.DWG 23-Apr-2013

CITY/TOWN STREET/ROUTE # OR NAME			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	37	45
PROJECT FILE NO.	604531		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 9 OF 11



NOTES:

- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

604531_TRAF_SIGN PVMK PLAN.DWG 23-Apr-2013

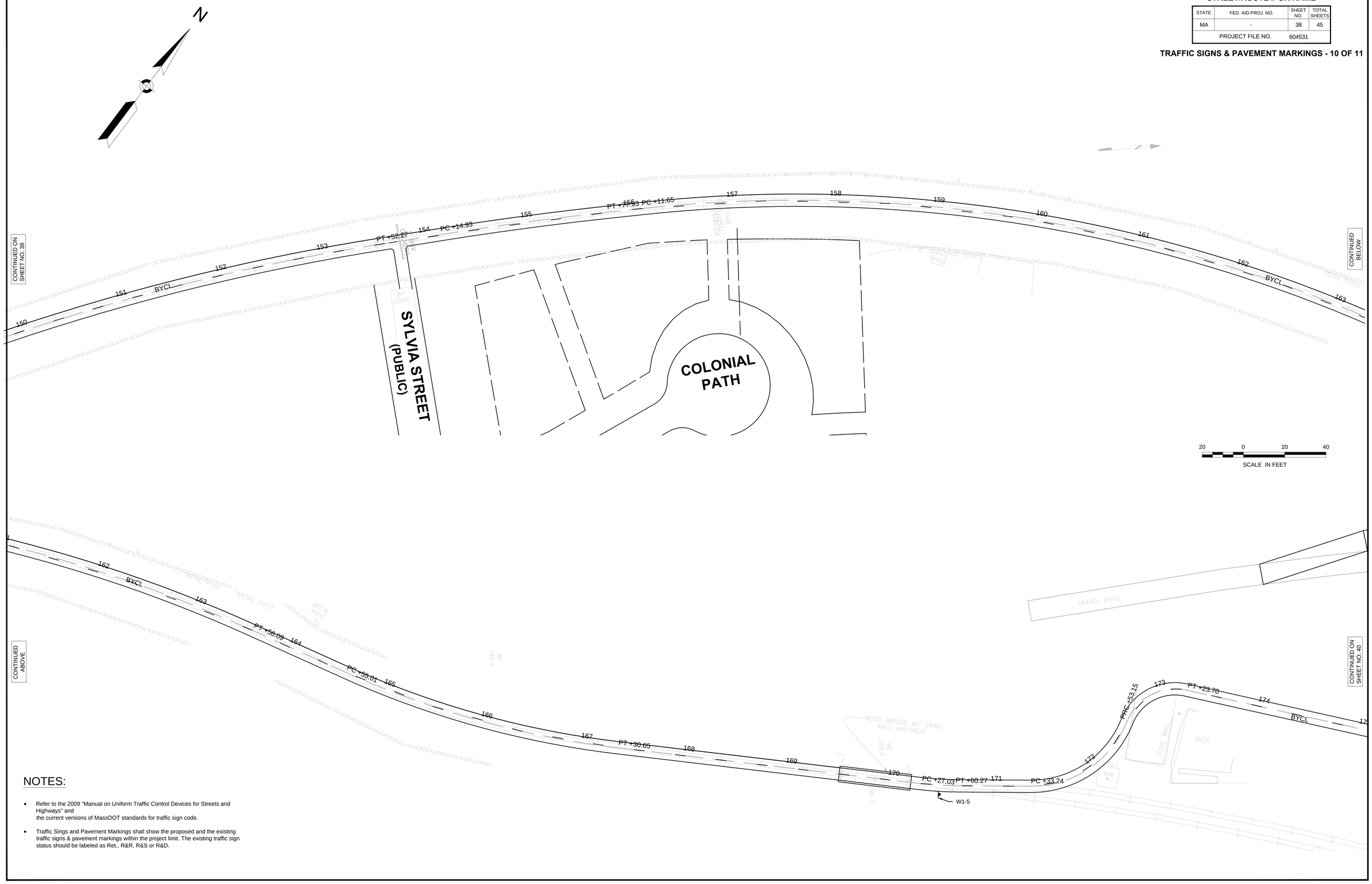
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	38	45
PROJECT FILE NO.	604531		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 10 OF 11

23-Apr-2013

604531_TRAF_SIGN PVMK PLAN.DWG



NOTES:

- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

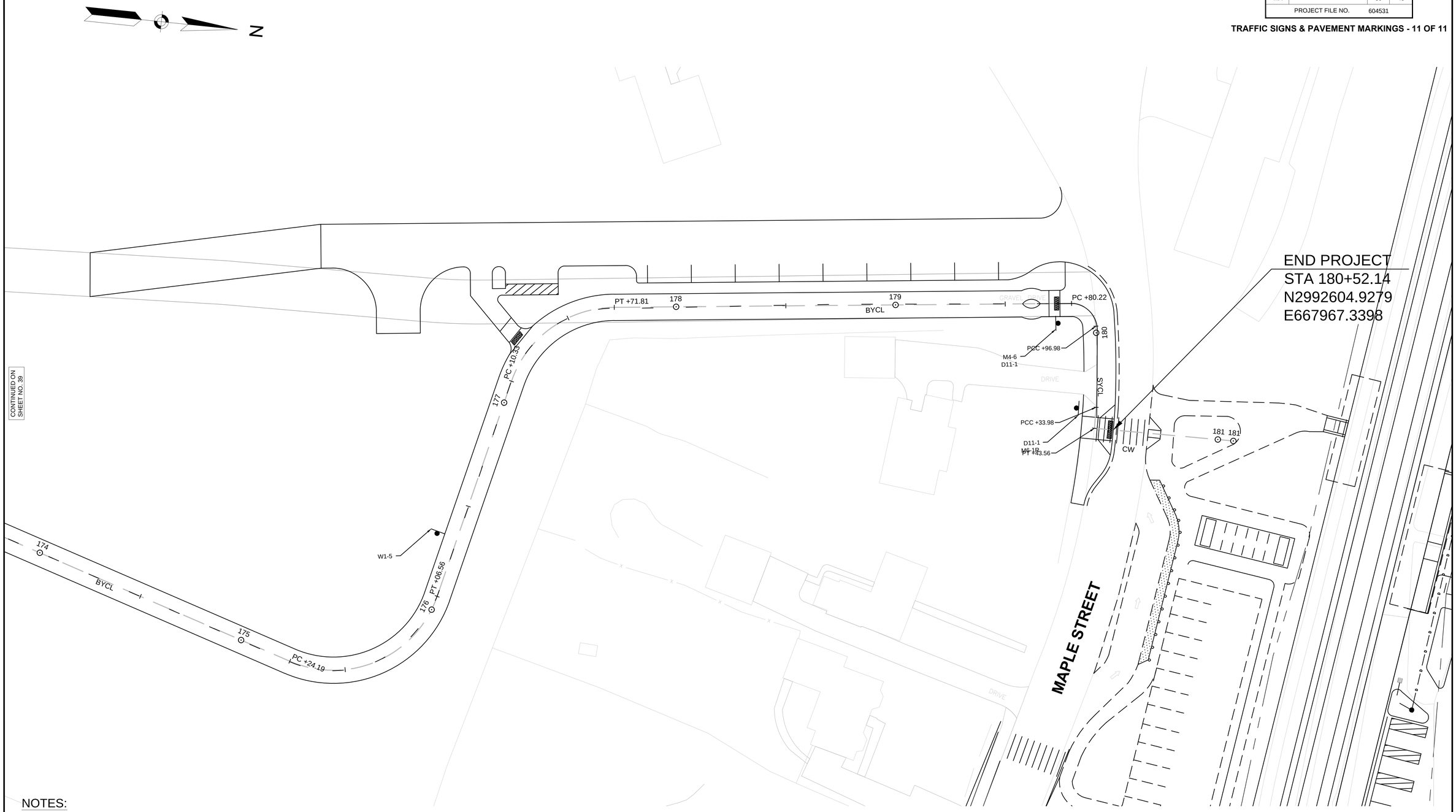
CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	39	45
PROJECT FILE NO.	604531		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 11 OF 11

23-Apr-2013

604531_TRAF_SIGN PVMK PLAN.DWG



CONTINUED ON SHEET NO. 39

NOTES:

- Refer to the 2009 "Manual on Uniform Traffic Control Devices for Streets and Highways" and the current versions of MassDOT standards for traffic sign code.
- Traffic Sings and Pavement Markings shall show the proposed and the existing traffic signs & pavement markings within the project limit. The existing traffic sign status should be labeled as Ret., R&R, R&S or R&D.

20 0 20 40

SCALE IN FEET

MAYNARD - ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	40	45
PROJECT FILE NO.	605431		

TRAFFIC SIGN SUMMARY SHEET

TRAFFIC SIGN SUMMARY

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
D11-1	24"	18"	BIKE ROUTE				X				X	X	X
R1-1	18"	18"	STOP				X				X	X	X
R5-3	24"	24"	NO MOTOR VEHICLES				X				X	4.00	X
W1-1L	18"	18"					X				X	2.25	X
W1-1R	18"	18"					X				X	2.25	X
W1-3L	18"	18"					X				X	2.25	X
W1-3R	18"	18"					X				X	2.25	X
W1-5	18"	18"					X				X	2.25	X
W11-1	24"	24"					X				X	4.00	X
W16-7P	24"	12"					X				X	2.00	X
W16-9P	24"	12"	AHEAD				X				X	2.00	X
M4-6	24"	12"	END				X				X	2.00	X
M5-1L	12"	9"					X				X	0.75	X
M5-1R	12"	9"					X				X	0.75	X
M5-2L	12"	9"					X				X	0.75	X
M5-2R	12"	9"					X				X	0.75	X
M6-1L	12"	9"					X				X	0.75	X
M6-1R	12"	9"					X				X	0.75	X
M6-3	12"	9"									X	0.75	X
M6-4	12"	9"					X				X	0.75	X
SP-1	24"	12"	WHEN FLASHING	↓	↓	↓	X	↓	↓	↓	X	2.00	X

(1) SEE MUTCD 1988 EDITION, 1979 STD. HWY. SIGNS AND SECTION M9.30.0 TYPE III OF THE MHD STANDARD SPECIFICATION FOR TEXT DIMENSIONS AND COLOR.

(2) SEE MASS. HIGHWAY DEPARTMENT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, 1990.

PBS = PRINT BOTH SIDES

NOTE: HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. THE 1988 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE 1990 MDPW "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS", AND ALL ADMENDMENTS WILL GOVERN.

NOTE: ALL STOP AND YIELD SIGNS PROPOSED IN THIS CONTRACT ARE SUBJECT TO FIELD INVESTIGATION BY THE DISTRICT OFFICE OF THE MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS TO JUSTIFY WARRANTS BEFORE INSTALLATION.
NUMERICAL LIMITS AND JUSTIFCATION FOR SPEED & ADVISORY EXIT SPEED SIGNS SHALL BE OBTAINED FROM THE SPEED ZONING UNIT OF THE TRAFFIC ENGINEERING SECTION, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS, BEFORE FABRICATION AND/OR ERECTION.

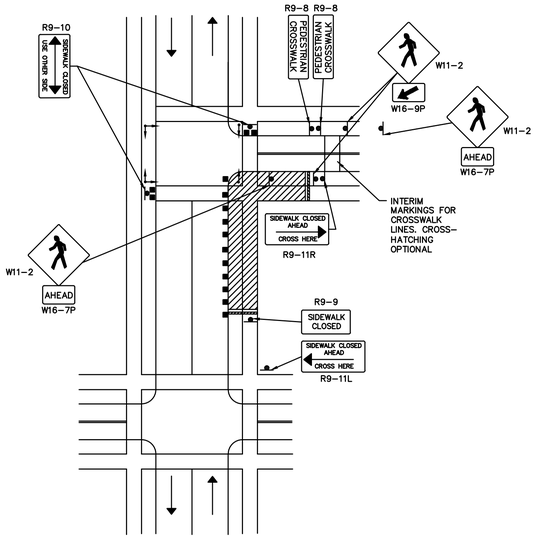
605431_TRAF_SIGN SUMMARY.DWG 23-Apr-2013

MAYNARD - ACTON
ASSABET RIVER RAIL TRAIL

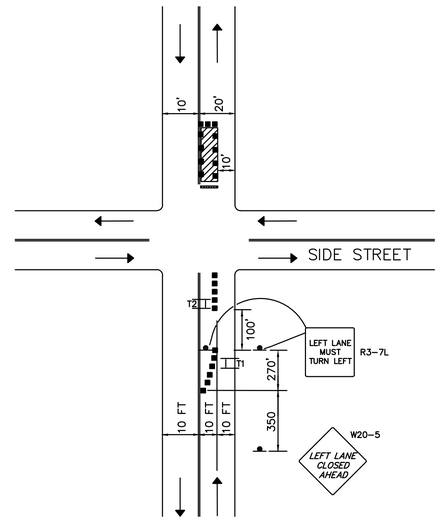
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	41	45
PROJECT FILE NO.	604531		

TRAFFIC MANAGEMENT PLANS
TYPICAL SETUP DETAIL

604531_TMP_SETUP.DWG 22-Apr-2013



TYPICAL CROSSWALK CLOSURE
AND PEDESTRIAN DETOUR PLAN
NOT TO SCALE



TYPICAL TRAFFIC MANAGEMENT PLAN
FOR 4 STREET INTERSECTION
NOT TO SCALE

TABLE 1
ADVANCED WARNING SIGN PLACEMENT

ROAD TYPE	DISTANCE BETWEEN SIGNS (FT)		
	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

TABLE 2
BUFFER LENGTHS

SPEED* (MPH)	LENGTH (FT)
25	155
30	200
35	250
40	305
45	360

* POSTED SPEED, OFF-PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH.

FORMULAS FOR L **

SPEED	FORMULA
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR GREATER	$L = W \times S$

* SPEED CATEGORY TO BE DETERMINED BY STATE HIGHWAY AGENCY IN COOPERATION WITH LOCAL JURISDICTIONS.
** L = TAPER LENGTH IN FEET.
W = WIDTH OF OFFSET IN FEET.
S = POSTED SPEED, THE OFF-PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH.

KEY

- CHANNELIZING DEVICES (DRUMS)
- TEMPORARY PRECAST CONCRETE BARRIER
- WORK ZONE
- P/F POLICE OFFICER/FLAGGER
- SIGN
- FLASHING ARROW PANEL
- CHANGEABLE MESSAGE SIGN
- BRIDGE

NOTES

1. REFERENCE TABLE 2 ABOVE FOR RECOMMENDED BUFFER LENGTHS.
2. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO 1.0 TIMES THE SPEED LIMIT (MPH).
3. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES ON THE TANGENT SHOULD BE APPROXIMATELY EQUAL IN FEET TO 2.0 TIMES THE SPEED LIMIT (MPH).

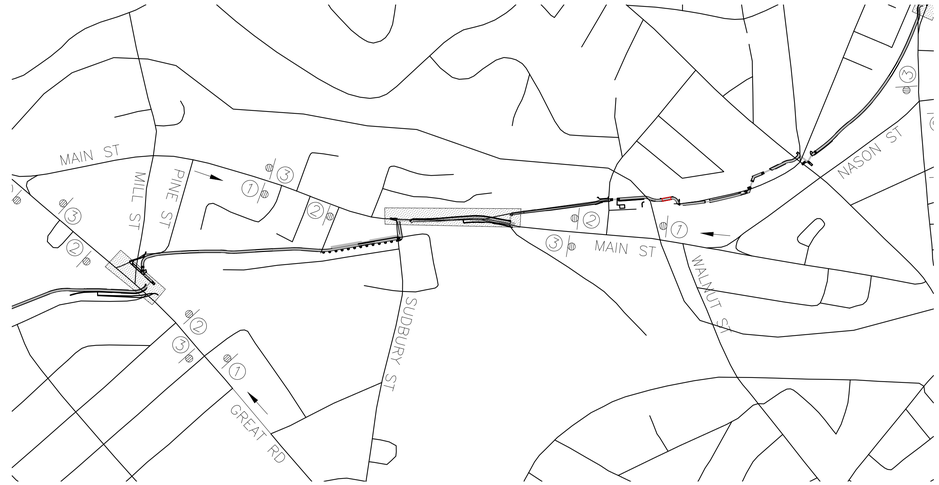
MAYNARD - ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	42	45
PROJECT FILE NO.	604531		

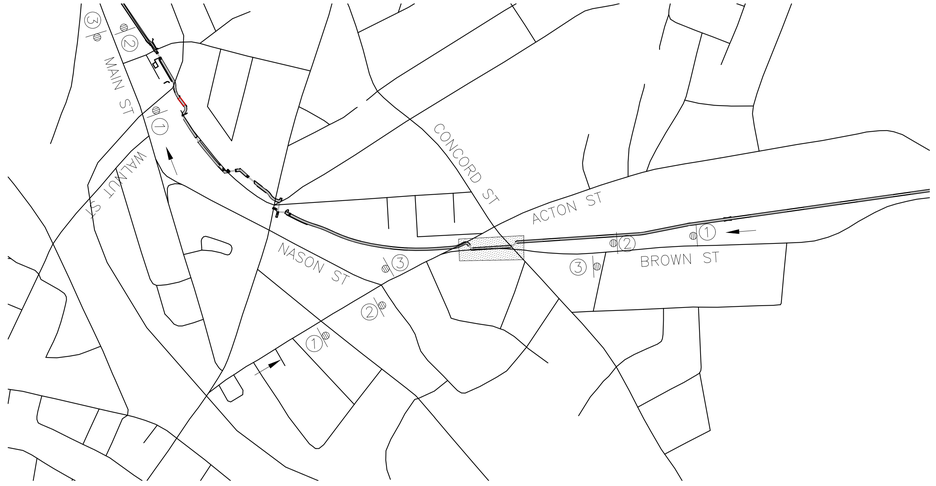
TRAFFIC MANAGEMENT PLANS
TYPICAL SETUP DETAIL

604531_TMP_SETUP.DWG 22-Apr-2013

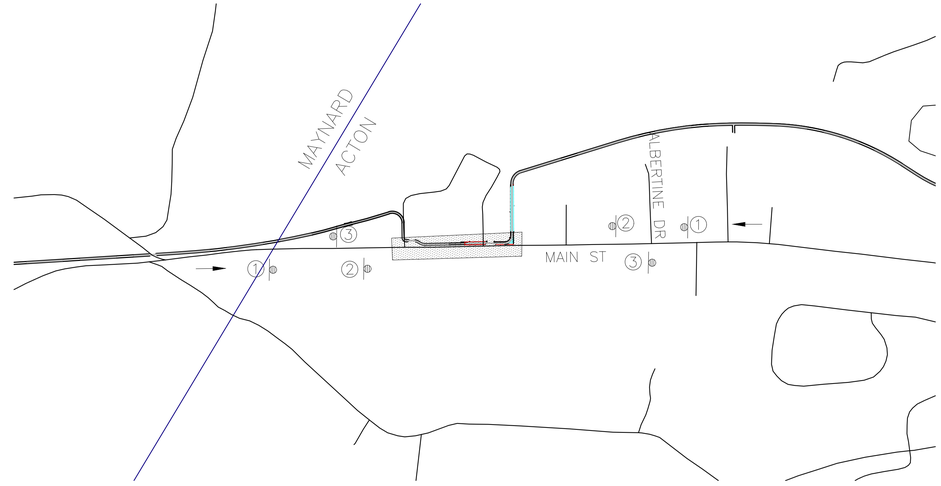
TYPICAL ADVANCED CONSTRUCTION SIGNING
NTS



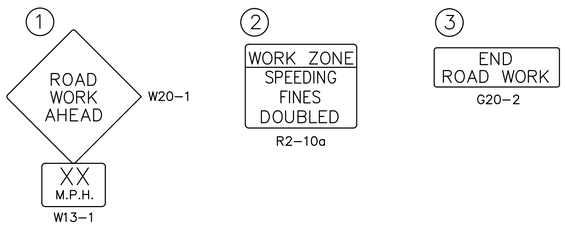
TYPICAL ADVANCED CONSTRUCTION SIGNING
NTS



TYPICAL ADVANCED CONSTRUCTION SIGNING
NTS



TYPICAL ADVANCED CONSTRUCTION SIGNING
NTS



LEGEND

WORK ZONE

TRAFFIC FLOW

NOTES FOR ADVANCED CONSTRUCTION SIGNING

1. EXACT LOCATION OF SIGNS SHOWN ABOVE SHALL BE APPROVED BY THE ENGINEER.
2. ADVANCED CONSTRUCTION SIGNS SHALL BE INSTALLED PRIOR TO THE START OF WORK.

CITY/TOWN
STREET/ROUTE # OR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	43	45
PROJECT FILE NO.	604531		

CONSTRUCTION SIGN SUMMARY SHEET

CONSTRUCTION SIGN SUMMARY

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
G20-2	36"	18"	END ROAD WORK	①	①	①	8	①	①	①	8	4.50	36
R2-10a*	48"	36"	WORK ZONE SPEEDING FINES DOUBLED				8				16	12.00	96
W13-1*	18"	18"	XX M.P.H.				8				0 8 MTD W/OTHERS	2.25	18
W20-1*	36"	36"	ROAD WORK AHEAD				8				8	9.00	72

PBS = PRINT BOTH SIDES

NOTE: HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. THE 1988 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE 1990 MDPW "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS", AND ALL ADMENDMENTS WILL GOVERN.

NOTE: ALL STOP AND YIELD SIGNS PROPOSED IN THIS CONTRACT ARE SUBJECT TO FIELD INVESTIGATION BY THE DISTRICT OFFICE OF THE MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS TO JUSTIFY WARRANTS BEFORE INSTALLATION.
NUMERICAL LIMITS AND JUSTIFCATION FOR SPEED & ADVISORY EXIT SPEED SIGNS SHALL BE OBTAINED FROM THE SPEED ZONING UNIT OF THE TRAFFIC ENGINEERING SECTION, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS, BEFORE FABRICATION AND/OR ERECTION.

* PER MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD DETAILS FOR THE DEVELOPMENT OF TEMPORARY CONTROL PLANS.

① SEE MUTCD 1988 EDITION, 1979 STD. HWY. SIGNS AND SECTION M9.30.0 TYPE III OF THE MHD STANDARD SPECIFICATION FOR TEXT DIMENSIONS AND COLOR.

② SEE MASS. HIGHWAY DEPARTMENT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, 1990.

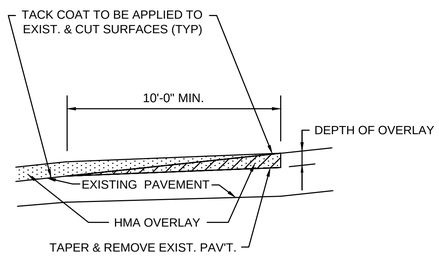
604531_TRAF_CSS.DWG 23-Apr-2013

MAYNARD - ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	44	45
PROJECT FILE NO.	604531		

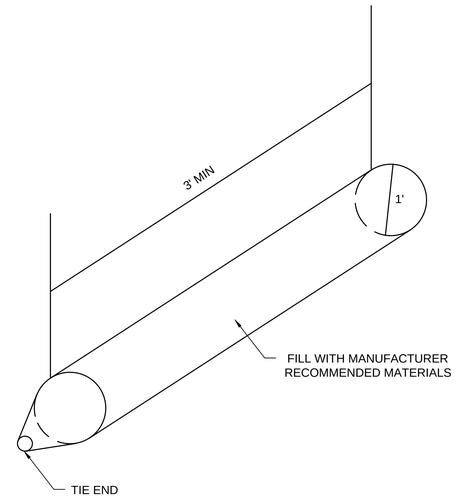
CONSTRUCTION DETAILS - 1 OF 2

604531_CONST_DET.DWG 23-Apr-2013



KEYWAY IN EXIST. PAVEMENT AT LIMITS OF OVERLAY

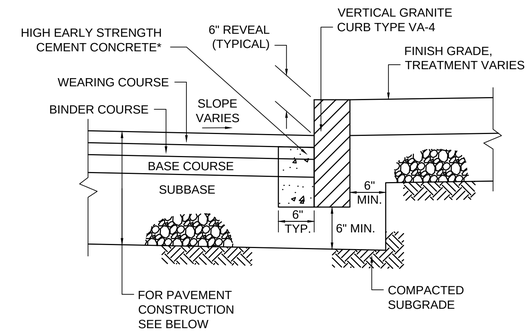
NTS



SILT SOCK

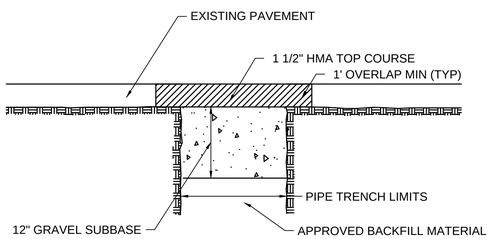
NTS

NOTE: SILT SOCK SHALL BE ANCORED WITH SAND BAGS AS REQUIRED TO ENSURE IT IS NOT SHIFTED DURING CONSTRUCTION



VERTICAL GRANITE CURB DETAIL

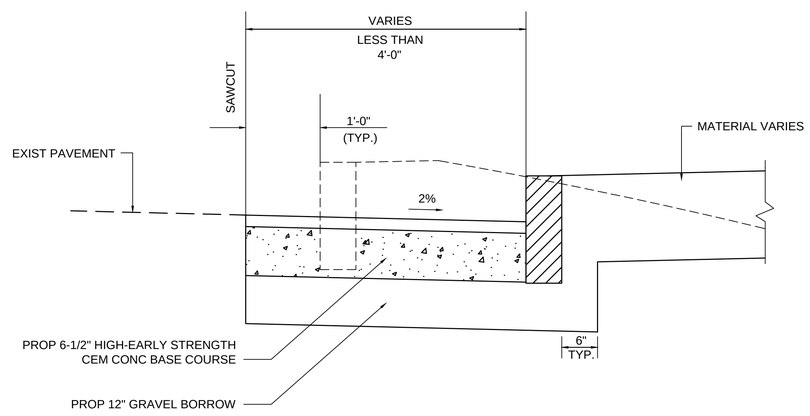
NTS



DETAIL

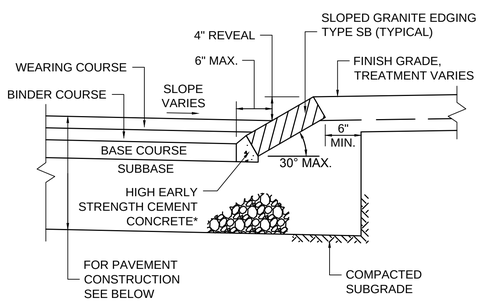
PAVEMENT PATCH DETAIL

NTS



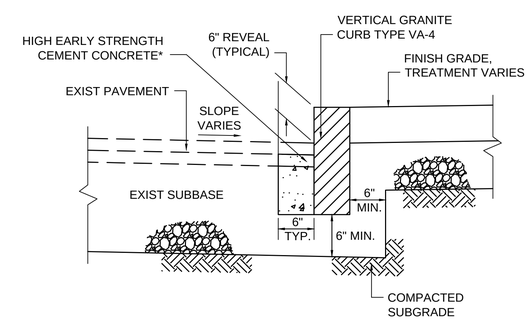
ROADWAY WIDENING DETAIL <4'-0"

NTS



SLOPED GRANITE EDGING

NTS



GRANITE CURB RESETTING DETAIL

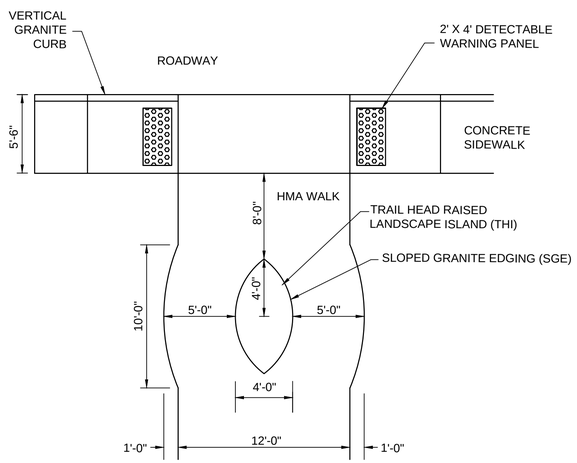
NTS

MAYNARD - ACTON
ASSABET RIVER RAIL TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	45	45
PROJECT FILE NO.	604531		

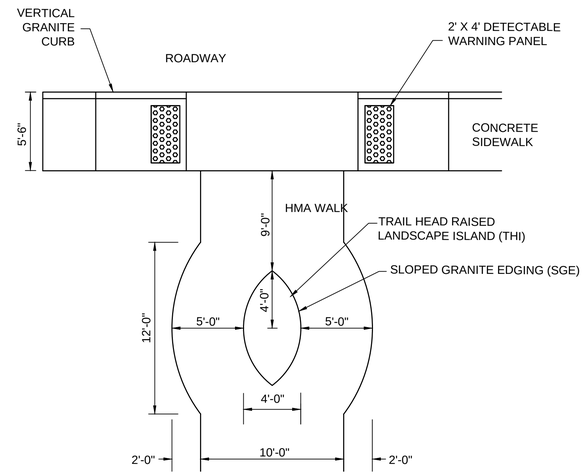
CONSTRUCTION DETAILS - 2 OF 2

604531_CONST_DET.DWG 23-Apr-2013



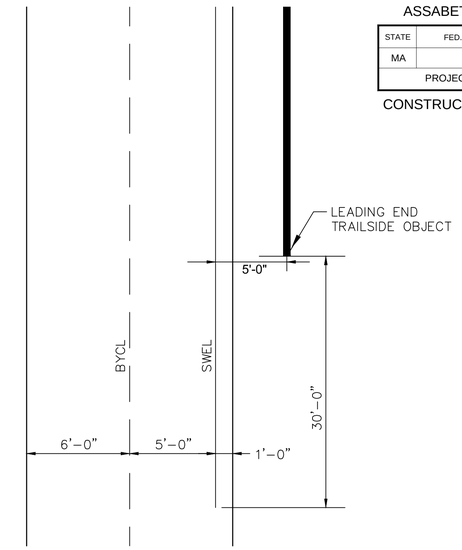
TRAIL HEAD ISLAND DETAIL

NTS

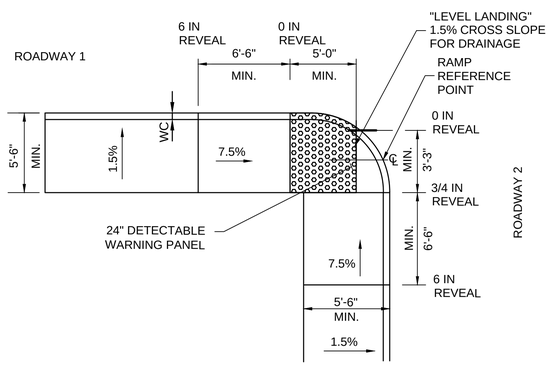


TRAIL HEAD ISLAND DETAIL @ SUDBURY AND HIGH STREET

NTS



WHITE EDGE LINE AT TRAILSIDE OBJECT

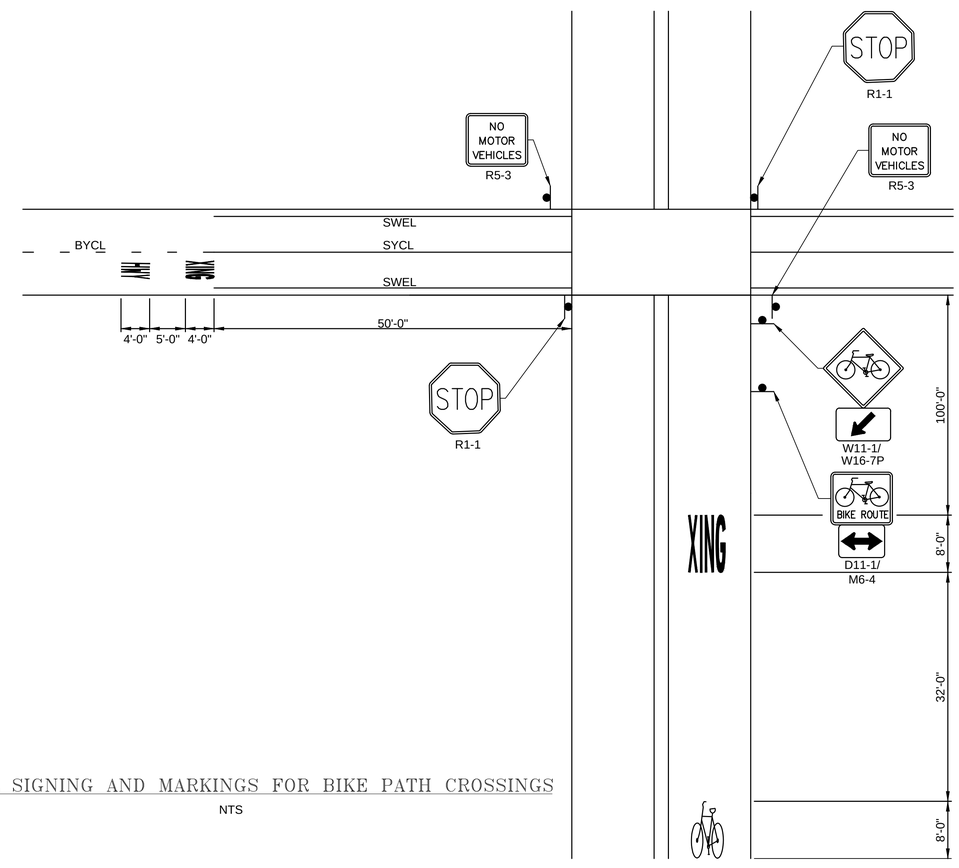


"T' INTERSECTION WHEELCHAIR RAMP

NTS

NOTE: SEE MASSDOT CONST STD E 107.6.4
SEE MASSDOT CONST STD 107.6.5R
SEE MASSDOT CONST STD E 107.9.0

WR #	RAMP REFERENCE POINT		LEVEL LANDING LENGTH	RAMP WIDTH	ROADWAY 1 WIDTH OF SIDEWALK	TRANSITION 1 LENGTH		ROADWAY 2 WIDTH OF SIDEWALK	TRANSITION 2 LENGTH	
	STATION	OFFSET				GUTTER GRADE	L1		GUTTER GRADE	L2
WCR-1										
WCR-3										



TYPICAL SIGNING AND MARKINGS FOR BIKE PATH CROSSINGS

NTS