TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	18
PROJECT FILE NO.	607239		

TITLE SHEET & INDEX

607239_HD1(DESIGN-PLANS).DWG 15-Sep-2013

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

MONTAGUE CITY ROAD

IN THE TOWN OF

MONTAGUE

FRANKLIN COUNTY

FEDERAL AID PROJECT NO.

25% SUBMITTAL

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

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	TYPICAL SECTIONS
4	CONSTRUCTION BASELINE TIES
5	CONSTRUCTION PLANS - 1
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9	TRAFFIC SIGN & PAVEMENT MARKINGS
10	TEMPORARY TRAFFIC CONTROL PLANS - 1
11	TEMPORARY TRAFFIC CONTROL PLANS - 2
12	UTILITY SKETCH PLANS
13	UTILITY SKETCH PLANS
14	CONSTRUCTION DETAILS
15	CROSS SECTIONS - 1
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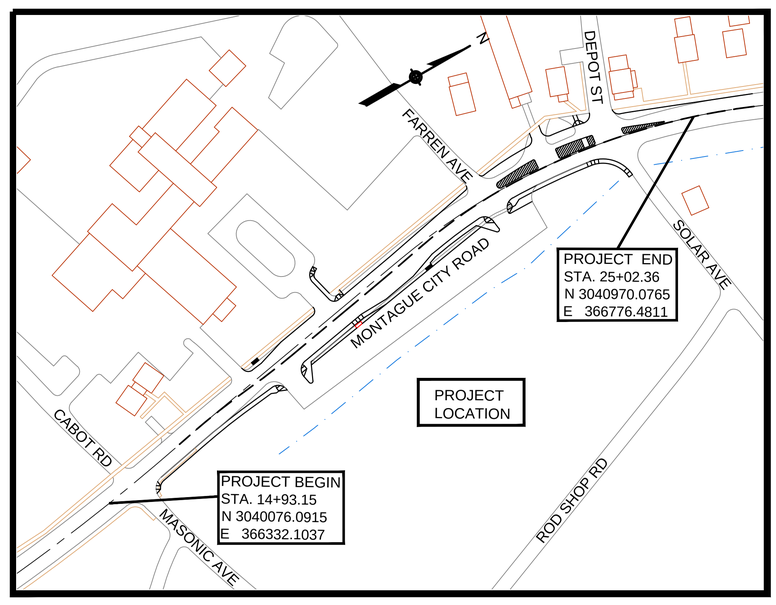
18	CROSS SECTIONS - 4



0 100 200 300 400

SCALE: 1" = 100'

LENGTH OF PROJECT = 1009.21 FEET = 0.191 MILES

DESIGN DESIGNATION (MONTAGUE CITY ROAD)

DESIGN SPEED	35 MPH
ADT (2013)	8,700
ADT (2033)	9,625
K	8%
D	55%
T (PEAK HOUR)	4.6%
T (AVERAGE DAY)	3.7%
DHV	730
DDHV	400
FUNCTIONAL CLASSIFICATION	URBAN MAJOR COLLECTOR

DATE	DESCRIPTION	REV #

massDOT
Massachusetts Department of Transportation
Highway Division

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER **DATE**

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR **DATE**

APPROVED

HIGHWAY ADMINISTRATOR **DATE**

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	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

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

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	18
PROJECT FILE NO.	607239		

LEGEND & ABBREVIATIONS

607239_HD1(DESIGN-PLANS).DWG 16-Sep-2013

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	18
PROJECT FILE NO.	607239		

TYPICAL SECTIONS

16-Sep-2013

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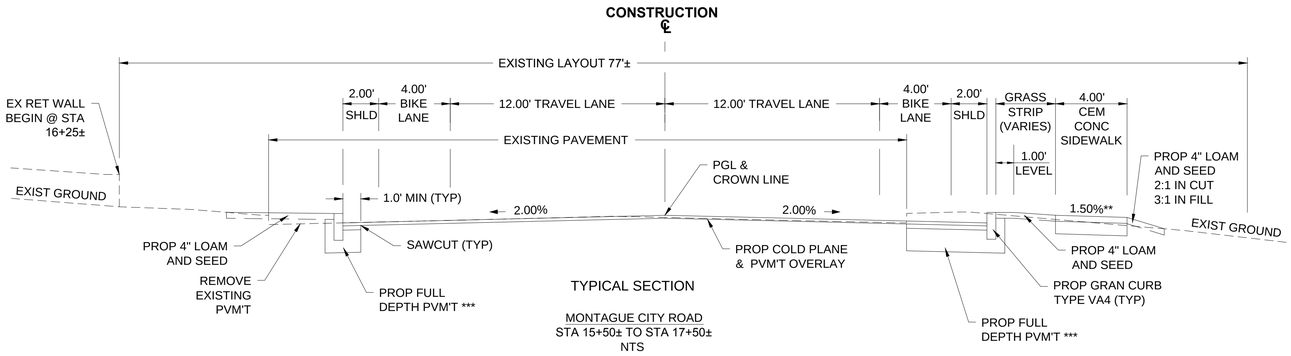
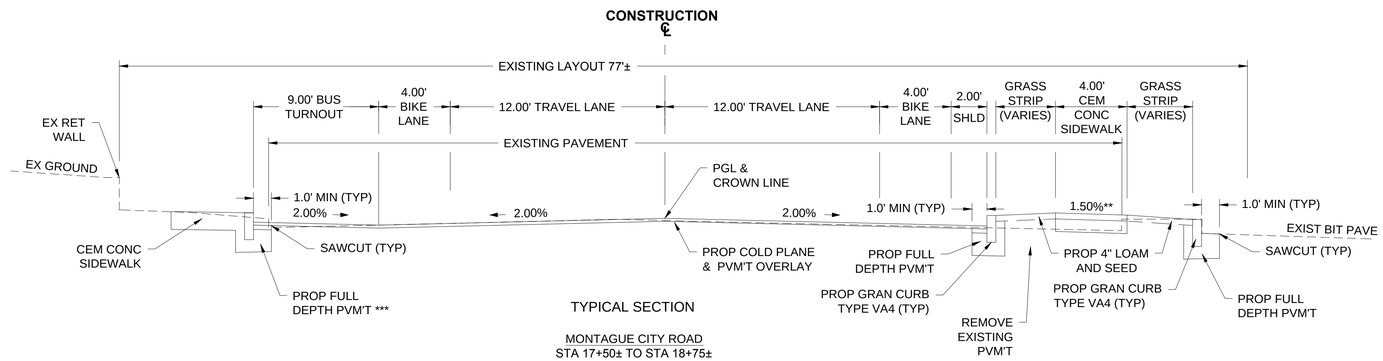


TYPICAL SECTION

MONTAGUE CITY ROAD
STA 15+50± TO STA 17+50±
NTS

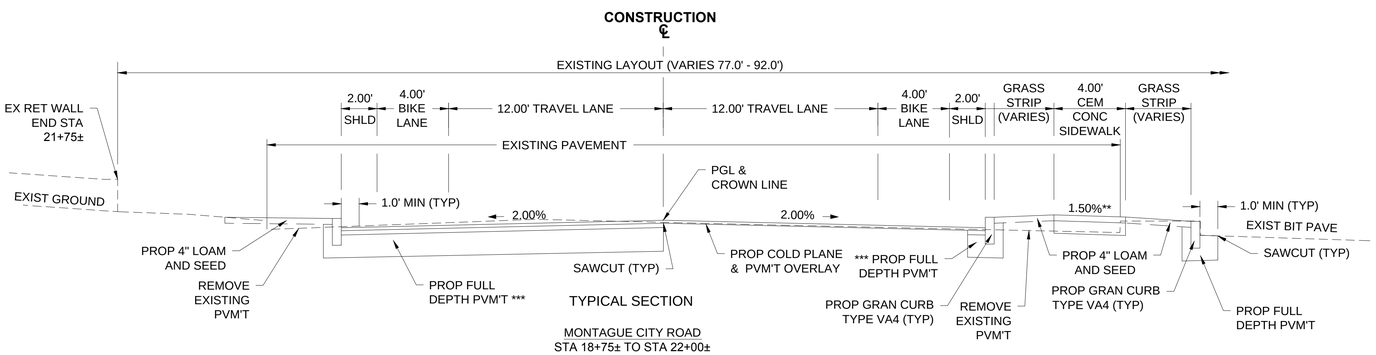
** TOLERANCE FOR CONSTRUCTION ±0.5%

*** PROP FULL DEPTH PVM'T:
2" HOT MIX ASPHALT
3" HOT MIX ASPHALT DENSE BINDER
12" GRAVEL BORROW



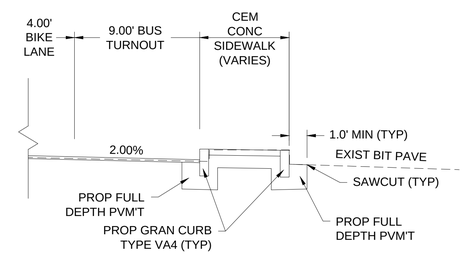
TYPICAL SECTION

MONTAGUE CITY ROAD
STA 17+50± TO STA 18+75±
NTS

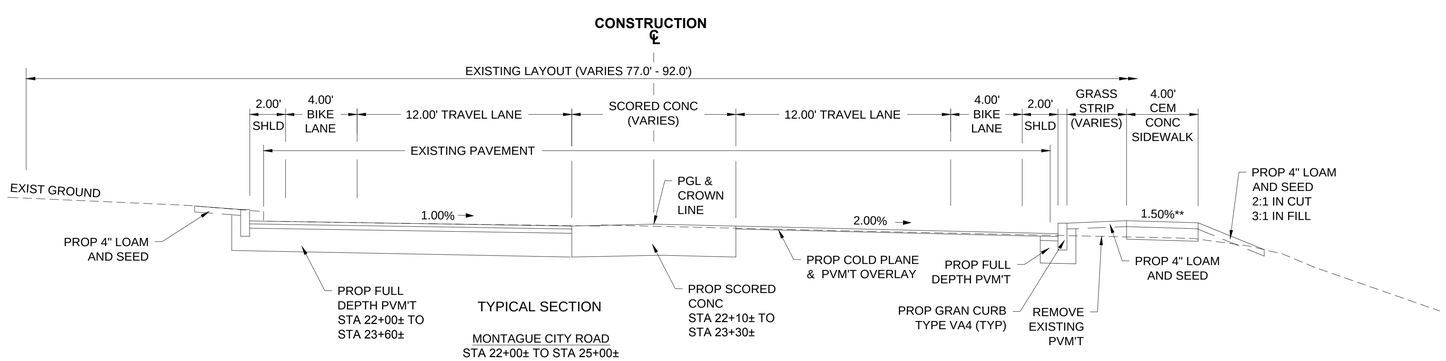


TYPICAL SECTION

MONTAGUE CITY ROAD
STA 18+75± TO STA 22+00±
NTS

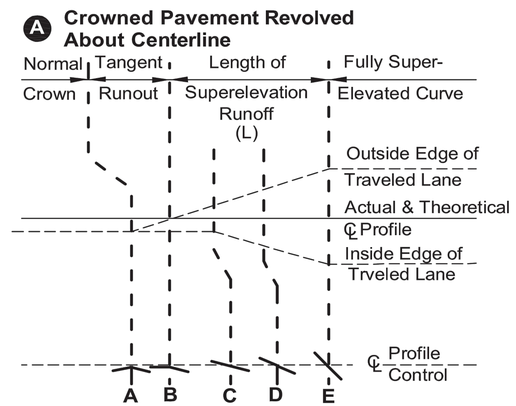


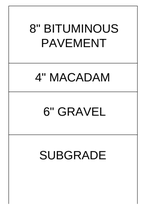
STA 19+50± TO STA 20+90±



TYPICAL SECTION

MONTAGUE CITY ROAD
STA 22+00± TO STA 25+00±
NTS





TEP-1

TEST PIT DUG ON 4/29/13 BY
TOWN OF MONTAGUE DPW
OBSERVED BY STANTEC

PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 4" HOT MIX ASPHALT (2" MODIFIED TOP COURSE MATERIAL OVER 2" 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 < 3.00' WIDE)

SURFACE: 2" HOT MIX ASPHALT MODIFIED TOP COURSE MATERIAL.

BASE: 6" HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE

SUBBASE: 12" GRAVEL BORROW, TYPE b.

PROPOSED COLD PLANE & PAVEMENT OVERLAY

SURFACE: 2" HOT MIX ASPHALT MODIFIED TOP COURSE MATERIAL.

BITUMEN FOR TACK COAT (RS-1) AT 0.10 GAL/SY OVER EXISTING PAVEMENT.

COLD PLANE VARIABLE DEPTH TO MEET PROPOSED GRADING

PROPOSED CEMENT CONCRETE WALK/ WHEELCHAIR RAMP

SURFACE: 4" CEMENT CONCRETE AIR ENTRAINED 4000 PSI, 3/4", 610

FOUNDATION: 8" GRAVEL BORROW, TYPE b

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

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MA	-	4	18
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CONSTRUCTION BASELINE TIES

16-Sep-2013

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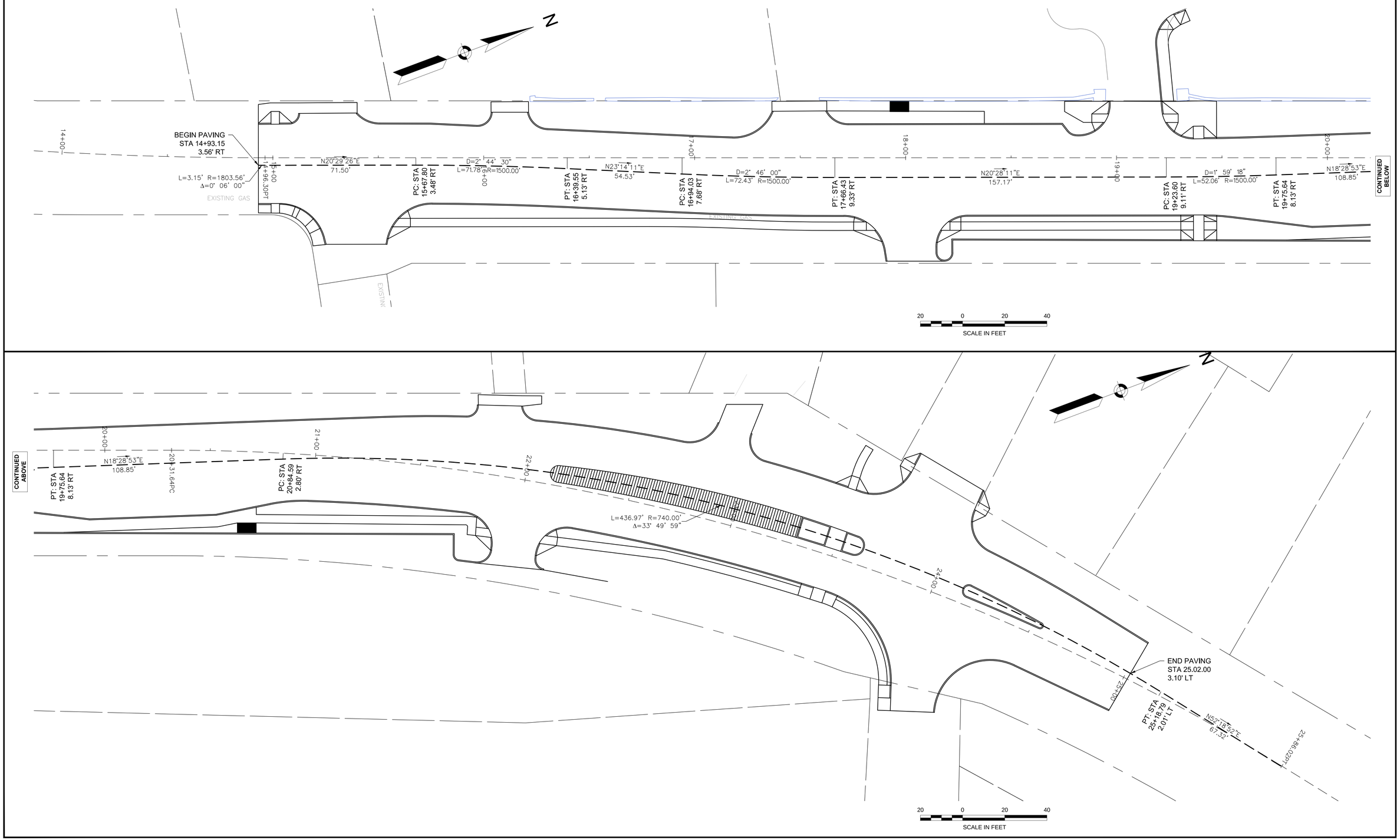

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	18
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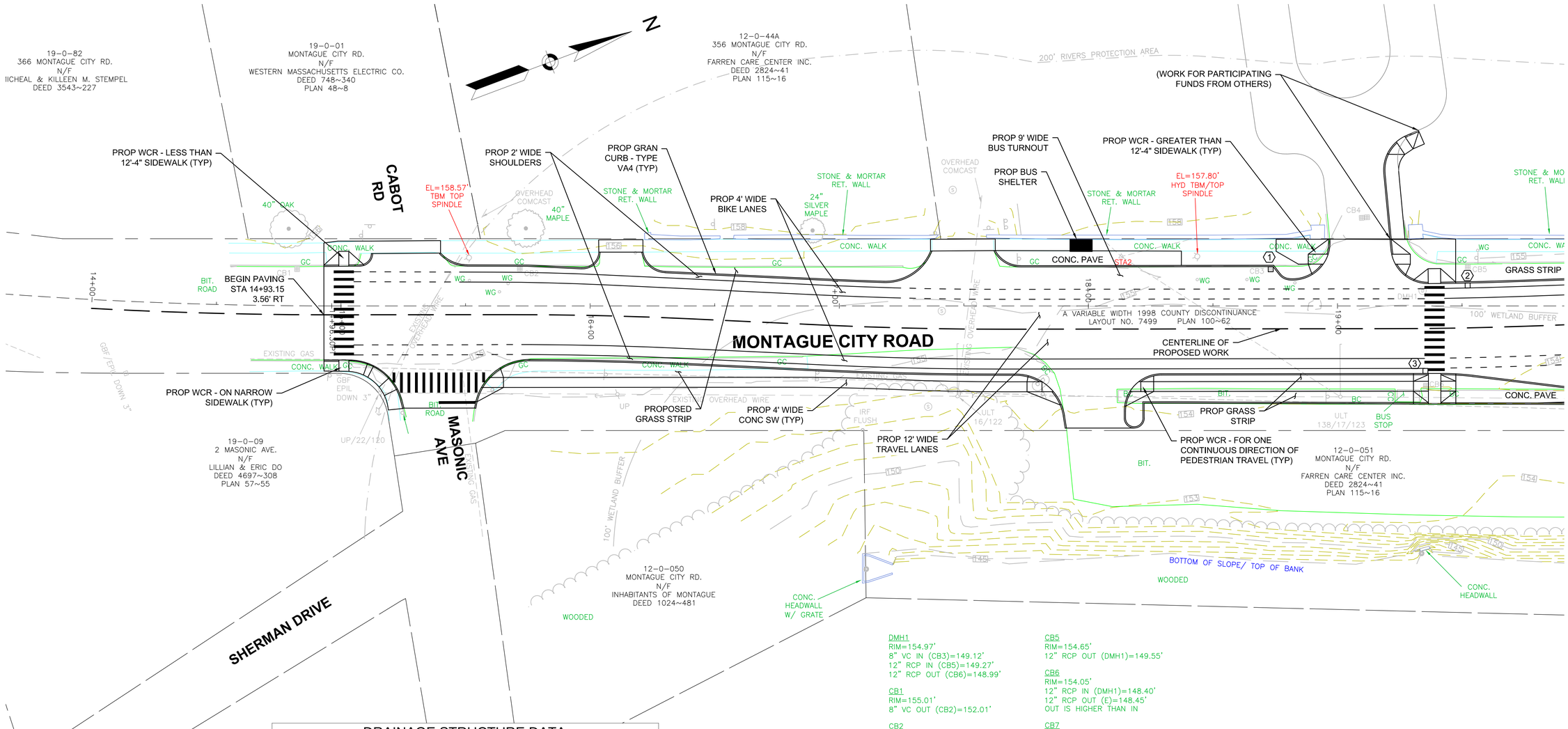
CONSTRUCTION PLANS

15-Sep-2013

607239_HDJ(DESIGN-PLANS).DWG

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



CONTINUED ON SHEET NO. 6

DMH1
RIM=154.97'
8" VC IN (CB3)=149.12'
12" RCP IN (CB5)=149.27'
12" RCP OUT (CB6)=148.99'

CB1
RIM=155.01'
8" VC OUT (CB2)=152.01'

CB2
RIM=155.17'
8" VC IN (CB1)=150.87'
12" VC OUT (E) DEBRIS AT 151.29'

CB3
RIM=154.71'
8" VC OUT (DMH1)=149.47'

CB4
RIM=154.84'
8" VC IN (E)=152.21'
8" VC OUT (W)=152.00'

CB5
RIM=154.65'
12" RCP OUT (DMH1)=149.55'

CB6
RIM=154.05'
12" RCP IN (DMH1)=148.40'
12" RCP OUT (E)=148.45'
OUT IS HIGHER THAN IN

CB7
RIM=153.05'
12" RCP IN (CB8)=148.21'
12" RCP OUT (E)=148.37'
OUT IS HIGHER THAN IN

CB8
RIM=154.22'
12" RCP OUT (CB7)=149.09'

12-0-052
ROD SHOP RD.
N/F
GEORGE R. NANCY MARCHACOS
DEED 4982~327

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	EX CB	18+73.20, 15.8' LT	154.46	--	EXIST	ADJUST EX RIM
2	CB	19+52.24, 9.2' LT	154.11	--	149.71	
3	CB	19+35.29, 27.1' RT	154.29	EXIST	EXIST	CONST. OVER EX PIPE
4	CB	20+69.15, 14.0' LT	153.62	--	5 EXIST	CONST. OVER EX PIPE
5	CB	20+71.23, 26.1' RT	153.53	4 EXIST	EXIST	CONST. OVER EX PIPE
6	CB	23+69.00, 41.3' LT	152.40	--	EXIST	CONST. OVER EX PIPE
7	CB	24+11.70, 30.0' LT	152.60	EXIST	1A 149.00	
1A	EX CB	24+15.70, 21.0' LT	152.67	7 148.86	EXIST	CONVERT CB11 TO DMH
8	CB	23+92.80, 37.4' RT	151.40	--	2A 146.30	
2A	DMH	23+81.10, 37.8' RT	152.05	8 146.20	146.10	CONST. OVER EX PIPE

FOR PROFILE: SEE SHEET NO. 7

20 0 20 40
SCALE IN FEET

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

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MA	-	6	18
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CONSTRUCTION PLANS

607239_HD1(DESIGN-PLANS).DWG 16-Sep-2013

HIGHWAY GUARD DETAILS

STA 23+58, 24' RT TO STA 23+97, 73' RT (67 LF)
STA 24+37, 70' RT TO STA 24+50, 18' RT (70 LF)

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

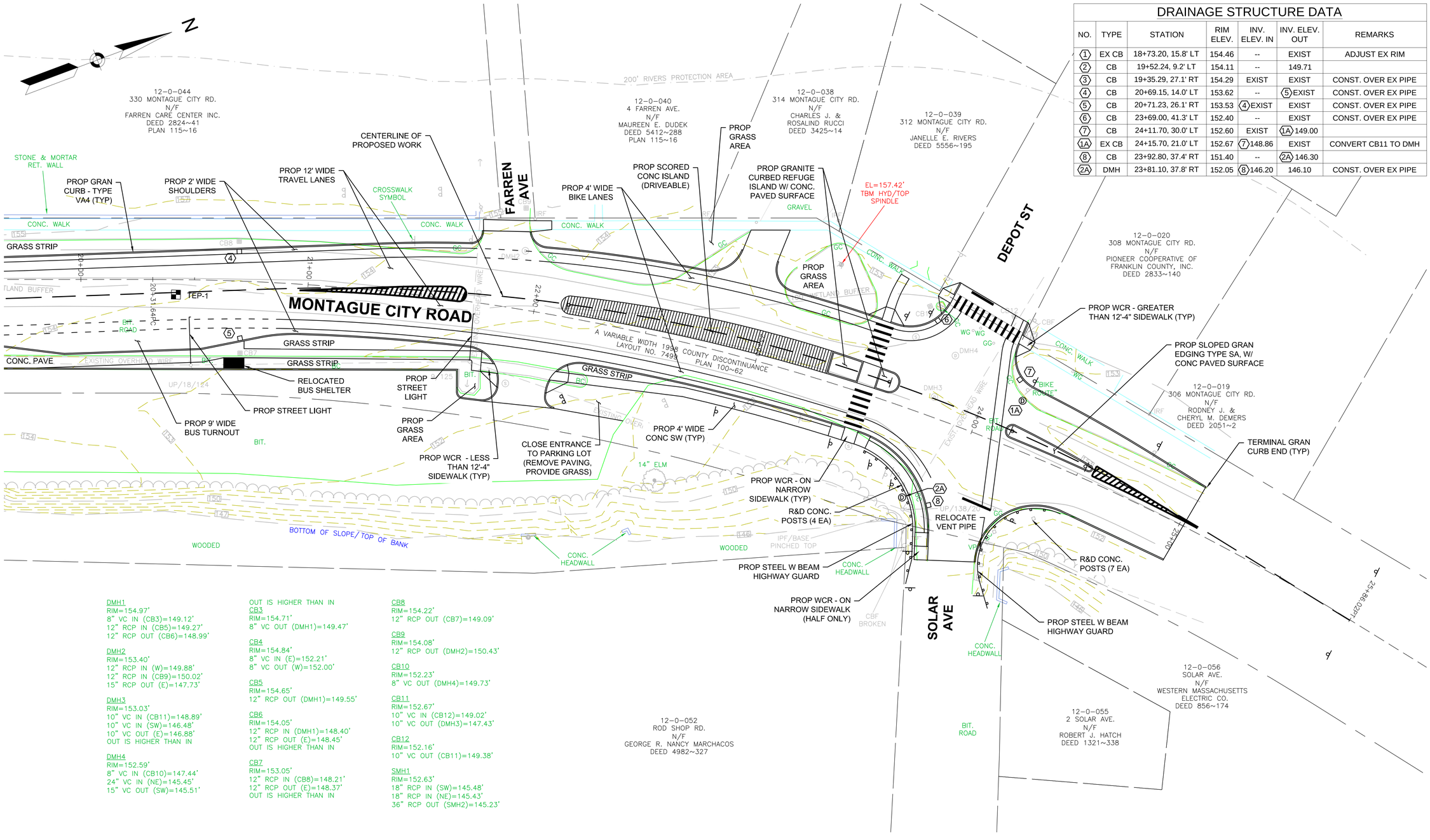
NONE

DRAINAGE DETAILS

SEE BELOW

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	EX CB	18+73.20, 15.8' LT	154.46	--	EXIST	ADJUST EX RIM
2	CB	19+52.24, 9.2' LT	154.11	--	149.71	
3	CB	19+35.29, 27.1' RT	154.29	EXIST	EXIST	CONST. OVER EX PIPE
4	CB	20+69.15, 14.0' LT	153.62	--	5 EXIST	CONST. OVER EX PIPE
5	CB	20+71.23, 26.1' RT	153.53	4 EXIST	EXIST	CONST. OVER EX PIPE
6	CB	23+69.00, 41.3' LT	152.40	--	EXIST	CONST. OVER EX PIPE
7	CB	24+11.70, 30.0' LT	152.60	EXIST	1A 149.00	
1A	EX CB	24+15.70, 21.0' LT	152.67	7 148.86	EXIST	CONVERT CB11 TO DMH
8	CB	23+92.80, 37.4' RT	151.40	--	2A 146.30	
2A	DMH	23+81.10, 37.8' RT	152.05	8 146.20	146.10	CONST. OVER EX PIPE



DMH1
RIM=154.97'
8" VC IN (CB3)=149.12'
12" RCP IN (CB5)=149.27'
12" RCP OUT (CB6)=148.99'

DMH2
RIM=153.40'
12" RCP IN (W)=149.88'
12" RCP IN (CB9)=150.02'
15" RCP OUT (E)=147.73'

DMH3
RIM=153.03'
10" VC IN (CB11)=148.89'
10" VC IN (SW)=146.48'
10" VC OUT (E)=146.88'
OUT IS HIGHER THAN IN

DMH4
RIM=152.59'
8" VC IN (CB10)=147.44'
24" VC IN (NE)=145.45'
15" VC OUT (SW)=145.51'
OUT IS HIGHER THAN IN

CB3
RIM=154.71'
8" VC OUT (DMH1)=149.47'

CB4
RIM=154.84'
8" VC IN (E)=152.21'
8" VC OUT (W)=152.00'

CB5
RIM=154.65'
12" RCP OUT (DMH1)=149.55'

CB6
RIM=154.05'
12" RCP IN (DMH1)=148.40'
12" RCP OUT (E)=148.45'
OUT IS HIGHER THAN IN

CB7
RIM=153.05'
12" RCP IN (CB8)=148.21'
12" RCP OUT (E)=148.37'
OUT IS HIGHER THAN IN

CB8
RIM=154.22'
12" RCP OUT (CB7)=149.09'

CB9
RIM=154.08'
12" RCP OUT (DMH2)=150.43'

CB10
RIM=152.23'
8" VC OUT (DMH4)=149.73'

CB11
RIM=152.67'
10" VC IN (CB12)=149.02'
10" VC OUT (DMH3)=147.43'

CB12
RIM=152.16'
10" VC OUT (CB11)=149.38'

SMH1
RIM=152.63'
18" RCP IN (SW)=145.48'
18" RCP IN (NE)=145.43'
36" RCP OUT (SMH2)=145.23'

CONTINUED ON SHEET NO. 5

NOTES:

1. BASELINE AS TAKEN FROM A VARIABLE WIDTH 1998 COUNTY DISCONTINUANCE LAYOUT NO. 7499, PLAN 100-62.
2. CENTERLINE IS FOR THE PROPOSED WORK.
3. SEE THE CONSTRUCTION BASELINE TIES ON SHEET NO. 4 FOR CENTERLINE OFFSETS FROM BASELINE.

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

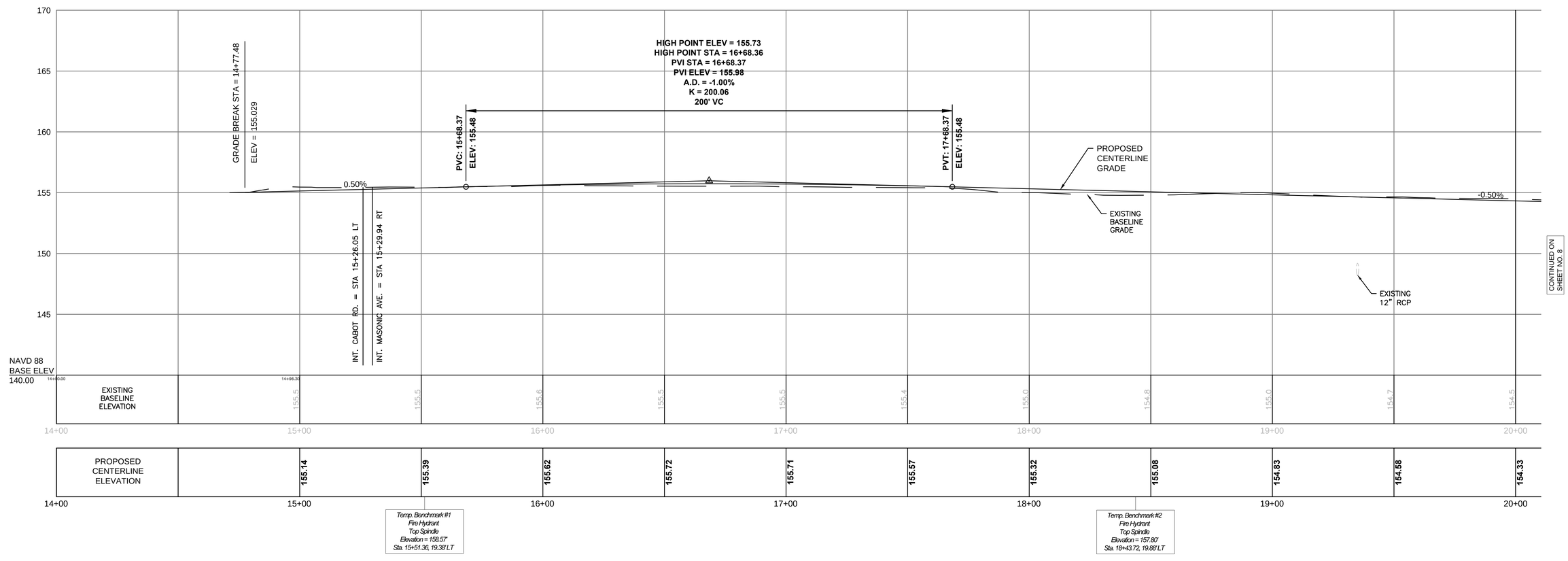
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	18
PROJECT FILE NO.	607239		

PROFILE - 1

16-Sep-2013

607239_HD1(DESIGN-PLANS).DWG

Alignment - Exist BL



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 5

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

NOTES:

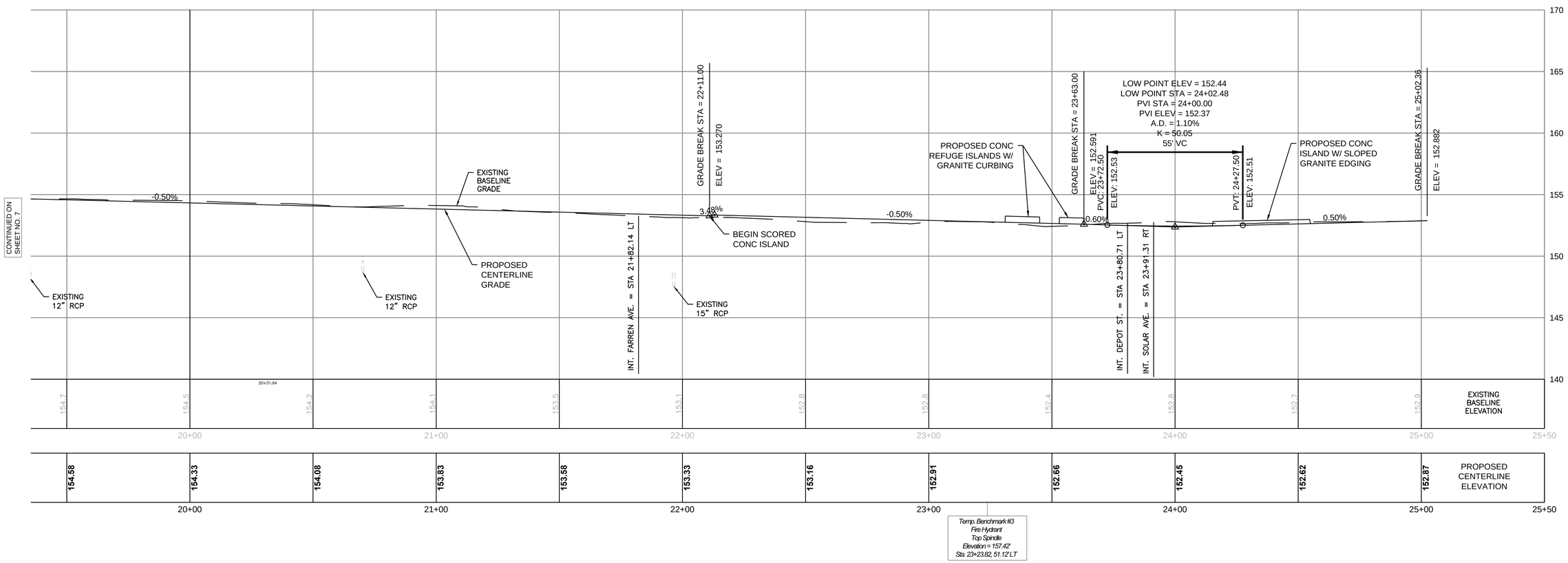
1. BASELINE AS TAKEN FROM A VARIABLE WIDTH 1998 COUNTY DISCONTINUANCE LAYOUT NO. 7499, PLAN 100~62.
2. CENTERLINE IS FOR THE PROPOSED WORK.
3. SEE THE CONSTRUCTION BASELINE TIES ON SHEET NO. 4 FOR CENTERLINE OFFSETS FROM BASELINE.

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	18
PROJECT FILE NO.	607239		

PROFILE - 2

607239_HD1(DESIGN-PLANS).DWG 16-Sep-2013



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 6

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

NOTES:

DBYL	DOUBLE YELLOW LINE (4 INCH REFLECTORIZED THERMOPLASTIC)
DWL	DOTTED WHITE LINE (4 INCH REFLECTORIZED THERMOPLASTIC)
SWL	SOLID WHITE LINE (4 INCH REFLECTORIZED THERMOPLASTIC)
SYL	SOLID YELLOW LINE (4 INCH REFLECTORIZED THERMOPLASTIC)

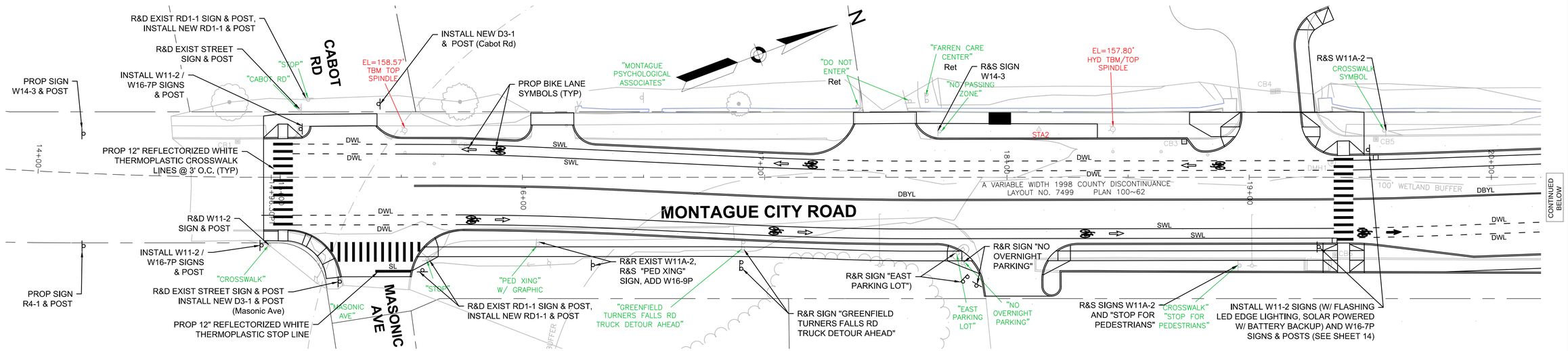
TOWN OF MONTAGUE
MONTAGUE CITY ROAD

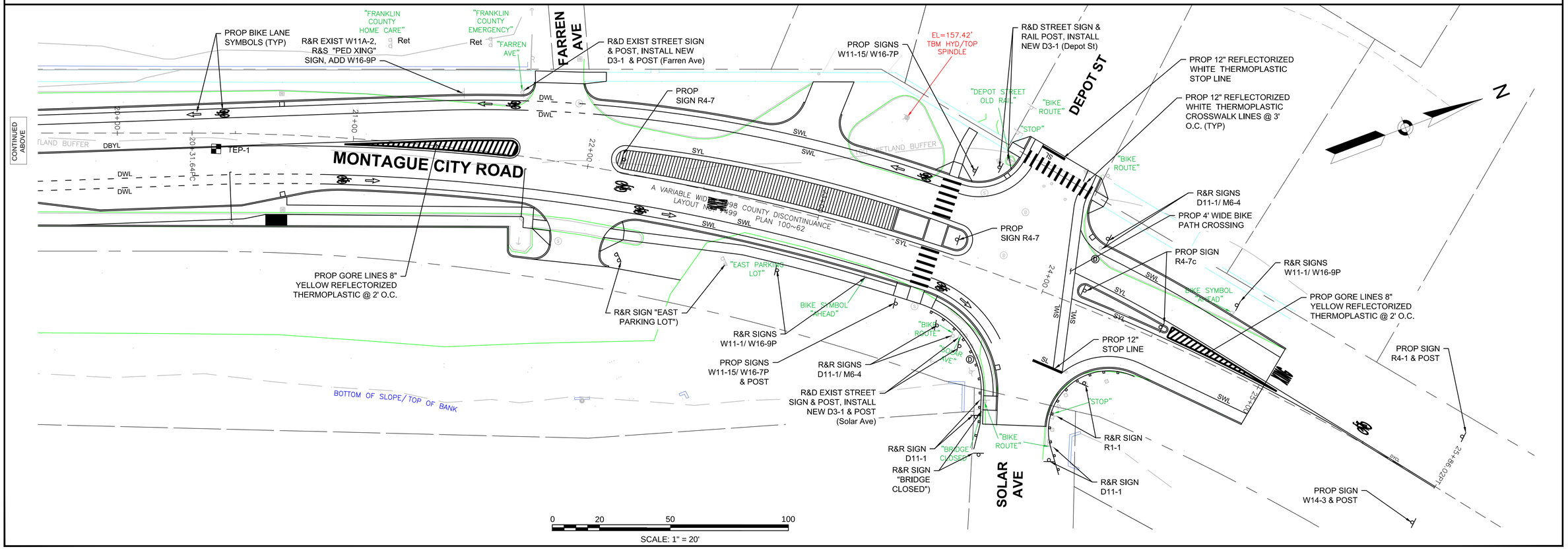
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	18
PROJECT FILE NO.	607239		

TRAFFIC SIGNS & PAVEMENT MARKINGS

16-Sep-2013

607239_HDJ(DESIGN-PLANS).DWG

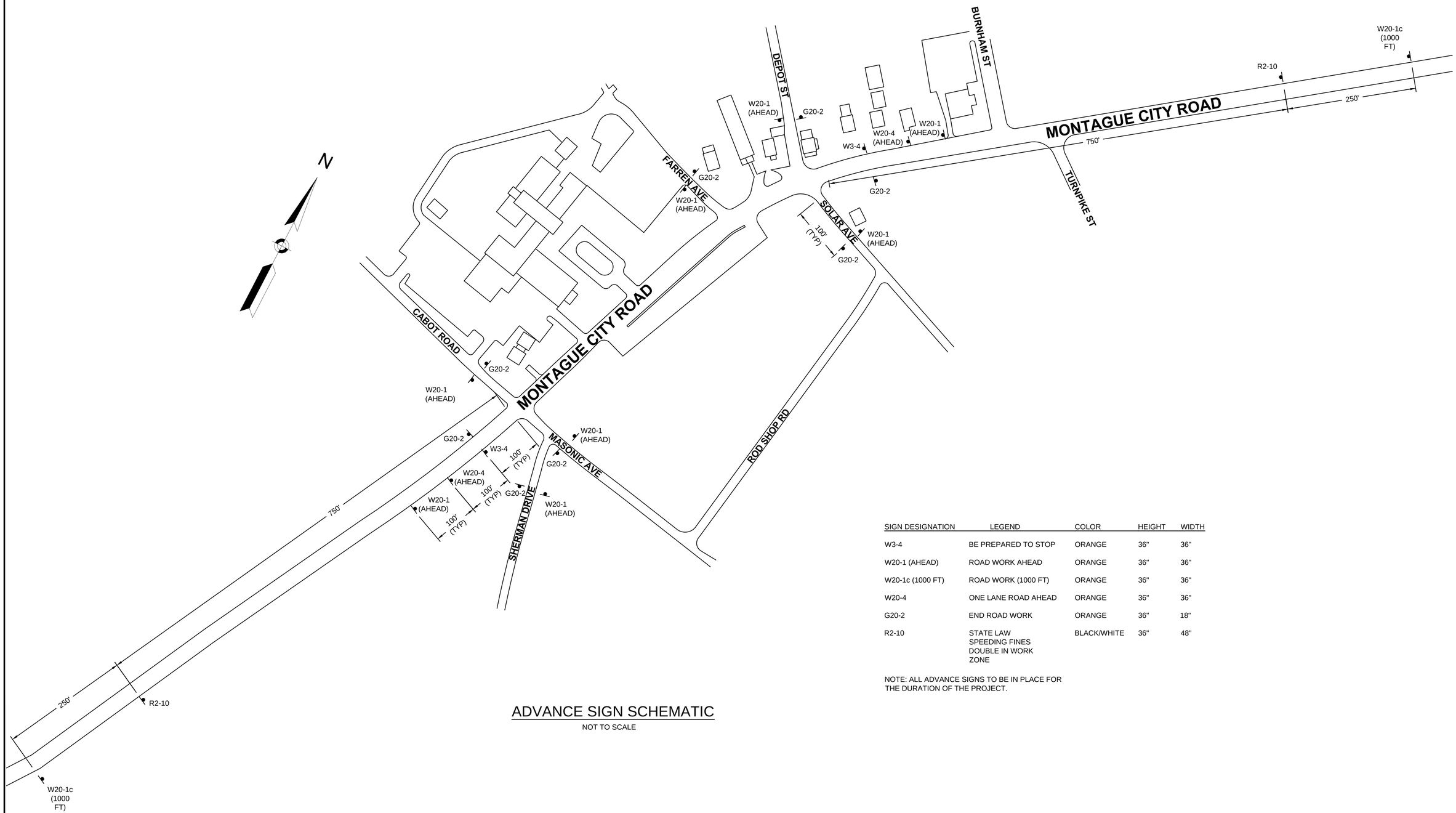




TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	18
PROJECT FILE NO.		607239	

TEMPORARY TRAFFIC CONTROL PLANS - 1



ADVANCE SIGN SCHEMATIC

NOT TO SCALE

SIGN DESIGNATION	LEGEND	COLOR	HEIGHT	WIDTH
W3-4	BE PREPARED TO STOP	ORANGE	36"	36"
W20-1 (AHEAD)	ROAD WORK AHEAD	ORANGE	36"	36"
W20-1c (1000 FT)	ROAD WORK (1000 FT)	ORANGE	36"	36"
W20-4	ONE LANE ROAD AHEAD	ORANGE	36"	36"
G20-2	END ROAD WORK	ORANGE	36"	18"
R2-10	STATE LAW SPEEDING FINES DOUBLE IN WORK ZONE	BLACK/WHITE	36"	48"

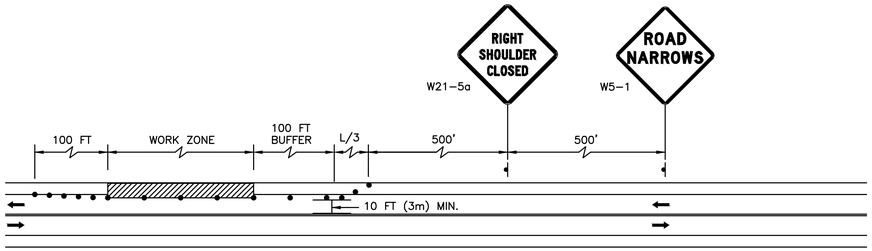
NOTE: ALL ADVANCE SIGNS TO BE IN PLACE FOR THE DURATION OF THE PROJECT.

607239_TR1(TRAFFIC-PLANS).DWG Plotted on 16-Sep-2013 2:33 PM

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	18
PROJECT FILE NO.	607239		

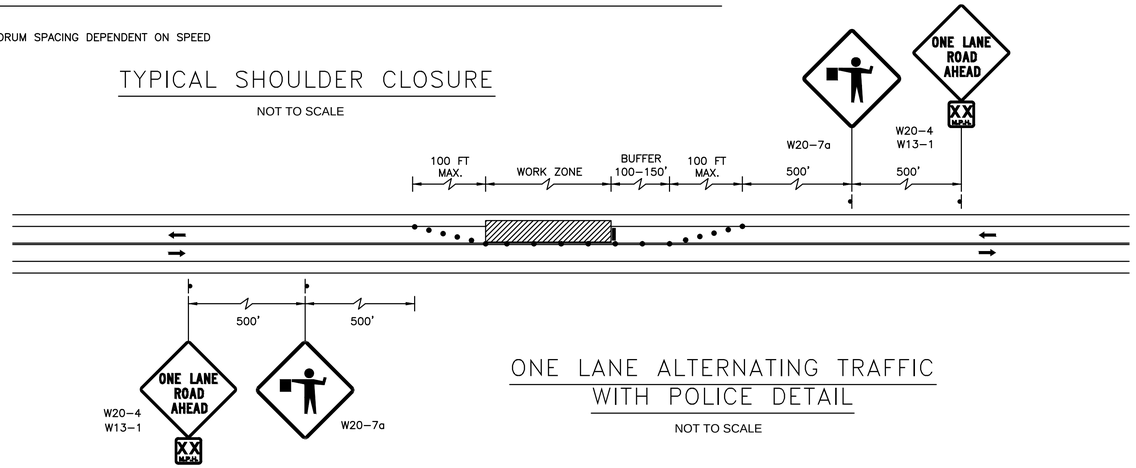
TEMPORARY TRAFFIC CONTROL PLANS - 2



DRUM SPACING DEPENDENT ON SPEED

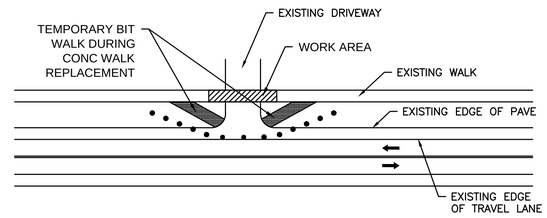
TYPICAL SHOULDER CLOSURE

NOT TO SCALE



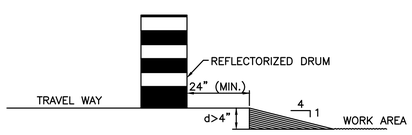
ONE LANE ALTERNATING TRAFFIC WITH POLICE DETAIL

NOT TO SCALE



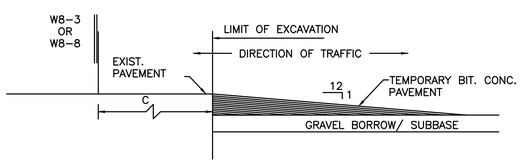
PEDESTRIAN BYPASS AT SIDEWALK REPLACEMENT AT DRIVEWAYS

NOT TO SCALE



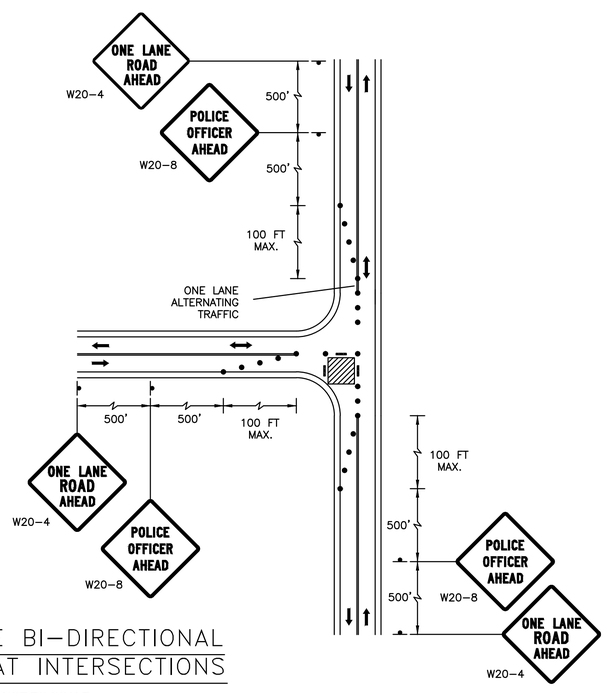
LATERAL DROP-OFF DETAIL

NOT TO SCALE



LONGITUDINAL DROP-OFF DETAIL

NOT TO SCALE



ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS

NOT TO SCALE

NOTES:

1. ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES AND OTHER DEVICES SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AS AMENDED.

2. ALL DRUMS SHALL BE SET AT 20' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.

3. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES.

4. CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 48 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. A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON TWO WAY STREETS SHALL BE MAINTAINED AT ALL TIMES, EXCEPT DURING WORKING HOURS, TRAFFIC MAY BE REDUCED TO ONE LANE UNDER POLICE CONTROL FOR SHORT TIME PERIODS WHEN REQUIRED FOR THE WORK, AS SHOWN.

6. GRADE SEPARATIONS IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS.

7. EXCAVATION EDGES IN EXCESS OF 4" DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF GRAVEL OR SOIL TO COMPACTED 1:4 SLOPE.

8. 10' MINIMUM LANE WIDTHS SHALL BE MAINTAINED.

9. NON-ESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.

10. ADVISORY SPEED PLATES (W13-1) SHALL BE USED IF APPROPRIATE AND AS DIRECTED BY THE ENGINEER.

11. CONSTRUCTION SIGNS ASSOCIATED WITH THE DAILY LANE CLOSURES AND SHOULDER WORK AREAS WILL NOT BE MEASURED FOR PAYMENT MORE THAN ONCE REGARDLESS OF THE NUMBER OF TIMES THE SIGNS ARE REUSED.

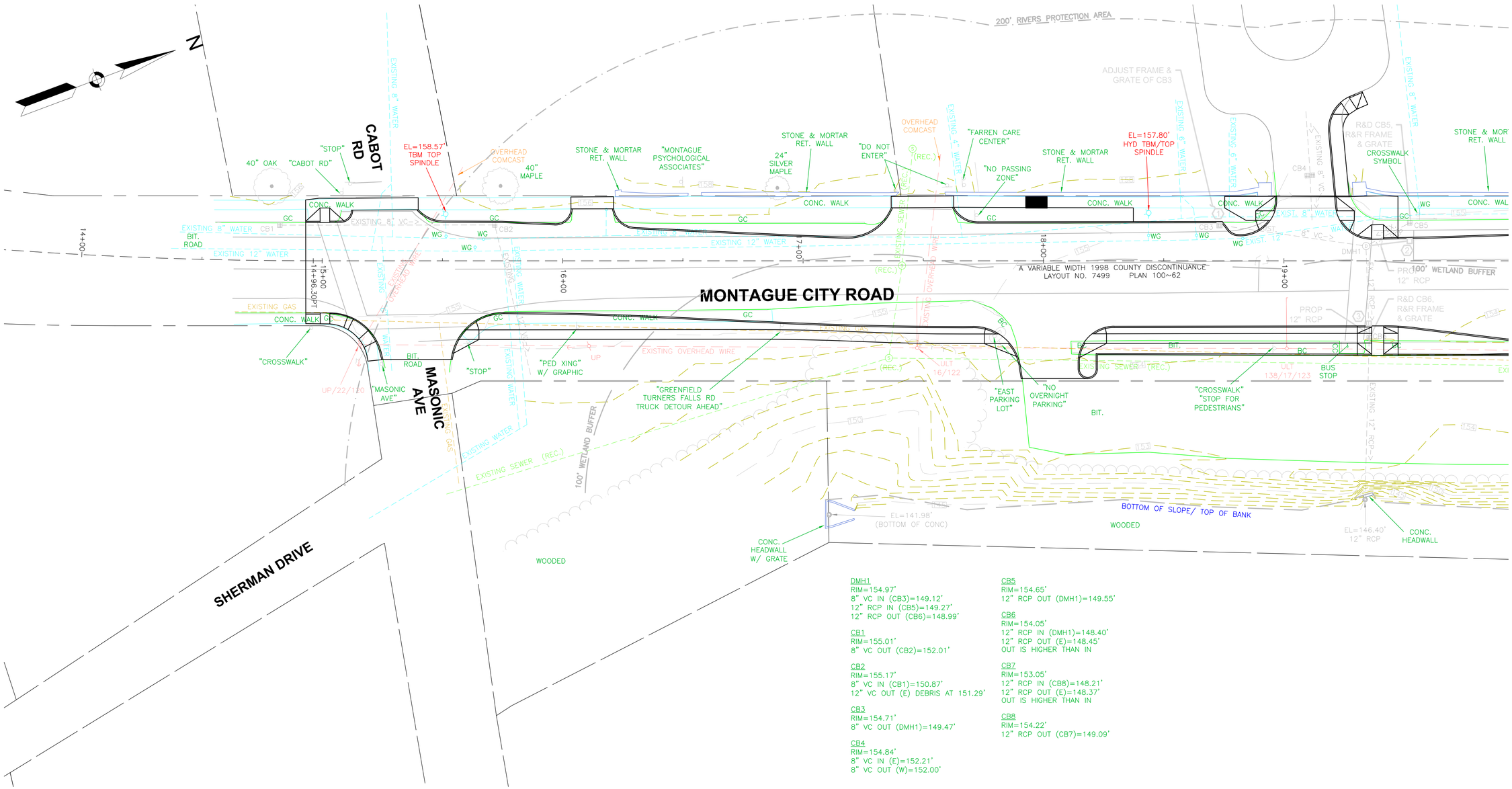
12. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.

607239_TR1(TRAFFIC-PLANS).DWG Plotted on 16-Sep-2013 2:35 PM

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	18
PROJECT FILE NO.	607239		

UTILITY SKETCH PLAN



CONTINUED ON SHEET NO.13

DMH1
RIM=154.97'
8" VC IN (CB3)=149.12'
12" RCP IN (CB5)=149.27'
12" RCP OUT (CB6)=148.99'

CB1
RIM=155.01'
8" VC OUT (CB2)=152.01'

CB2
RIM=155.17'
8" VC IN (CB1)=150.87'
12" VC OUT (E) DEBRIS AT 151.29'

CB3
RIM=154.71'
8" VC OUT (DMH1)=149.47'

CB4
RIM=154.84'
8" VC IN (E)=152.21'
8" VC OUT (W)=152.00'

CB5
RIM=154.65'
12" RCP OUT (DMH1)=149.55'

CB6
RIM=154.05'
12" RCP IN (DMH1)=148.40'
12" RCP OUT (E)=148.45'
OUT IS HIGHER THAN IN

CB7
RIM=153.05'
12" RCP IN (CB8)=148.21'
12" RCP OUT (E)=148.37'
OUT IS HIGHER THAN IN

CB8
RIM=154.22'
12" RCP OUT (CB7)=149.09'

massDOT Massachusetts Department of Transportation Highway Division

PREPARED BY:
Stantec Consulting Services Inc.
136 West Street, Suite 203
Northampton MA U.S.A.
01060
Tel. 413.584.4776
Fax. 413.584.3157
www.stantec.com

REVISIONS

REV.	COMMENTS	DATE

SCALE: 20 FEET TO THE INCH

FILE NAME: 607239_UT1(Utility-Plans).dwg
FIELD BOOK. NO: XXXX
DISTRICT (2) UTILITY ENGINEER: XXXXXX
FIELD CHIEF: XXXXX PARS. NO: XXXXXXX

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
DUCE UTILITY SKETCH PLAN

MONTAGUE CITY ROAD

IN THE TOWN OF

MONTAGUE

BASED OFF 25% SUBMISSION
PROJECT #607239

DATE: SEPTEMBER 10, 2013

607239_UT1(UTILITY-PLANS).DWG 16-Sep-2013

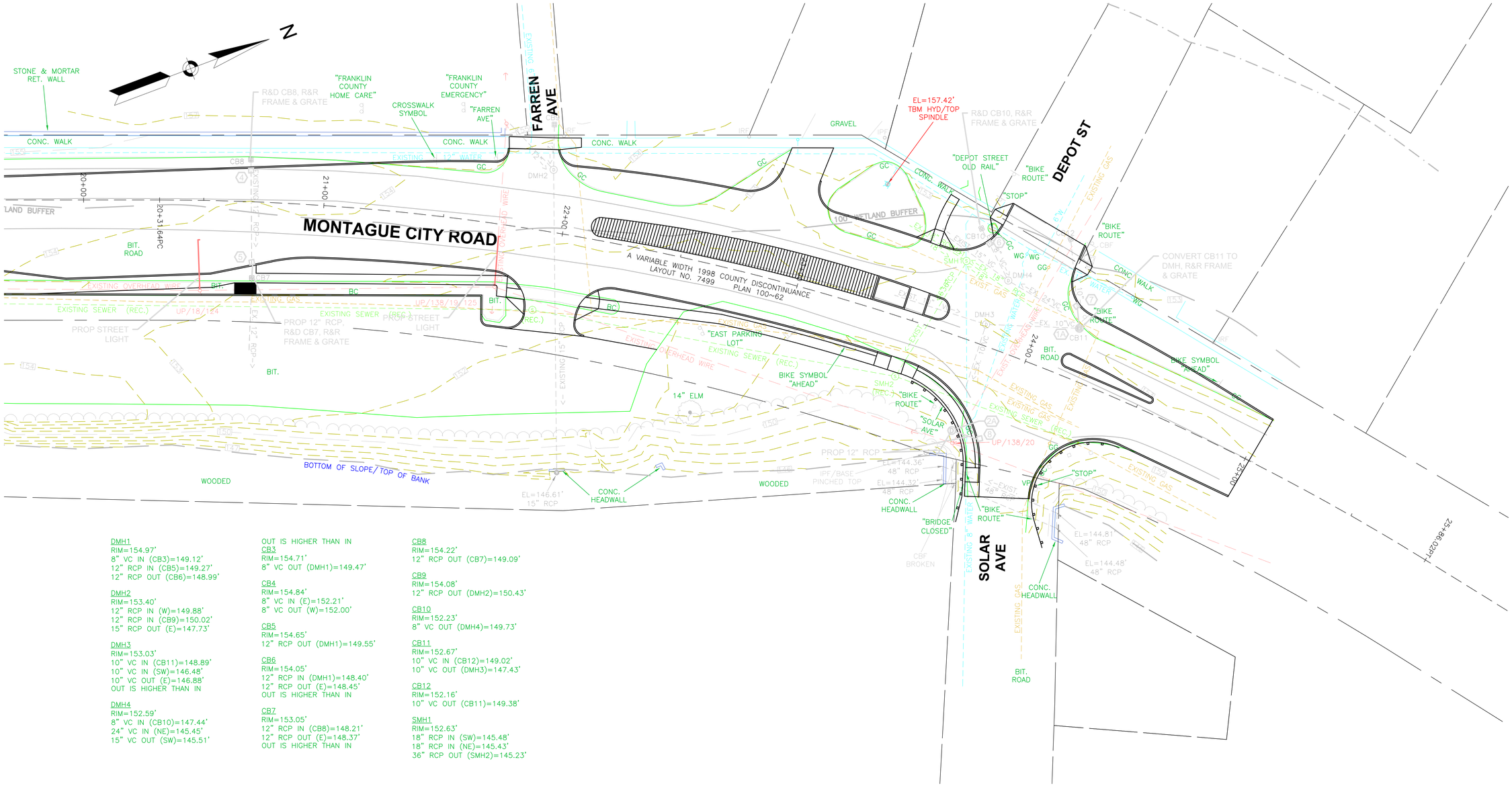
TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	18
PROJECT FILE NO.	607239		

UTILITY SKETCH PLAN

16-Sep-2013

607239_UT1(UTILITY-PLANS).DWG



CONTINUED ON SHEET NO. 12

DMH1
RIM=154.97'
8" VC IN (CB3)=149.12'
12" RCP IN (CB5)=149.27'
12" RCP OUT (CB6)=148.99'

DMH2
RIM=153.40'
12" RCP IN (W)=149.88'
12" RCP IN (CB9)=150.02'
15" RCP OUT (E)=147.73'

DMH3
RIM=153.03'
10" VC IN (CB11)=148.89'
10" VC IN (SW)=146.48'
10" VC OUT (E)=146.88'
OUT IS HIGHER THAN IN

DMH4
RIM=152.59'
8" VC IN (CB10)=147.44'
24" VC IN (NE)=145.45'
15" VC OUT (SW)=145.51'
OUT IS HIGHER THAN IN

CB3
RIM=154.71'
8" VC OUT (DMH1)=149.47'

CB4
RIM=154.84'
8" VC IN (E)=152.21'
8" VC OUT (W)=152.00'

CB5
RIM=154.65'
12" RCP OUT (DMH1)=149.55'

CB6
RIM=154.05'
12" RCP IN (DMH1)=148.40'
12" RCP OUT (E)=148.45'
OUT IS HIGHER THAN IN

CB7
RIM=153.05'
12" RCP IN (CB8)=148.21'
12" RCP OUT (E)=148.37'
OUT IS HIGHER THAN IN

CB8
RIM=154.22'
12" RCP OUT (CB7)=149.09'

CB9
RIM=154.08'
12" RCP OUT (DMH2)=150.43'

CB10
RIM=152.23'
8" VC OUT (DMH4)=149.73'

CB11
RIM=152.67'
10" VC IN (CB12)=149.02'
10" VC OUT (DMH3)=147.43'

CB12
RIM=152.16'
10" VC OUT (CB11)=149.38'

SMH1
RIM=152.63'
18" RCP IN (SW)=145.48'
18" RCP IN (NE)=145.43'
36" RCP OUT (SMH2)=145.23'

20 0 20 40
SCALE IN FEET

massDOT
Massachusetts Department of Transportation
Highway Division

PREPARED BY:
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REVISIONS

REV.	COMMENTS	DATE

SCALE: 20 FEET TO THE INCH

FILE NAME: 607239_UT1(Utility-Plans).dwg
FIELD BOOK. NO: XXXX
DISTRICT (2) UTILITY ENGINEER: XXXXXX
FIELD CHIEF: XXXXX PARS. NO: XXXXXXX

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
DUCE UTILITY SKETCH PLAN

MONTAGUE CITY ROAD

IN THE TOWN OF

MONTAGUE

BASED OFF 25% SUBMISSION
PROJECT #607239

DATE: SEPTEMBER 10, 2013

SHEET 2 OF 2

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	18
PROJECT FILE NO.	607239		

CONSTRUCTION DETAILS

Pedestrian Crossing (W11-2)

.080 aluminum construction

TS40
Pedestrian and School Crossing
Flashing LED Edge Lit Signs
MUTCD Compliant

General Description
The TS40 conforms to the specifications of the Federal Highway Administration (FHWA) set forth in the Manual on Uniform Traffic Control Devices (MUTCD). Using the latest advances in LED technology, the TS40 employs a set of synchronized high-intensity LEDs to extend the range of visibility of the sign during the day or night. Furthermore, the LEDs are flashed, which increases driver awareness of the sign and allows drivers to act sooner in advance of the crosswalk.

Typical applications include: mid-block crosswalks, school zones, parks, playgrounds, shopping malls and hospitals.

W11-2

(WITH FLASHING LED EDGE
LIGHTING, SOLAR POWERED
W/ BATTERY BACKUP)

607239_HD1(DESIGN-PLANS).DWG 16-Sep-2013

NOTES:

1. BASELINE AS TAKEN FROM A VARIABLE WIDTH 1998 COUNTY DISCONTINUANCE LAYOUT NO. 7499, PLAN 100~62.

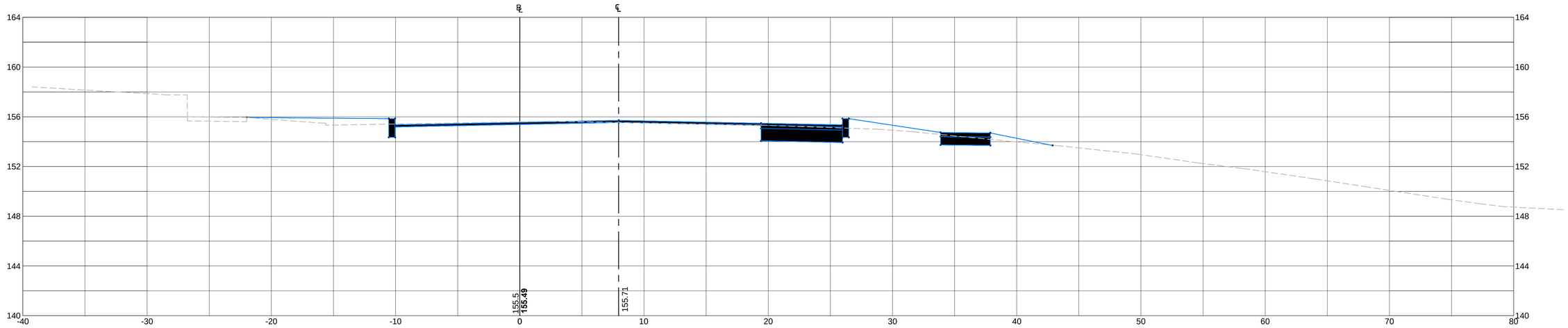
2. CENTERLINE IS FOR THE PROPOSED WORK.

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

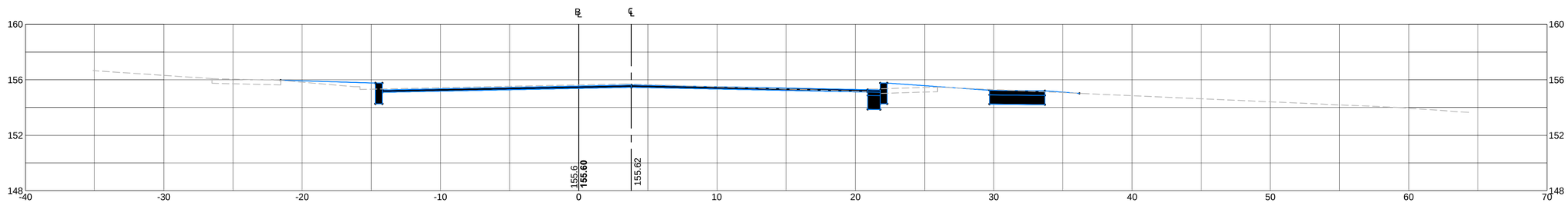
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	18
PROJECT FILE NO.	607239		

CROSS SECTIONS - 1

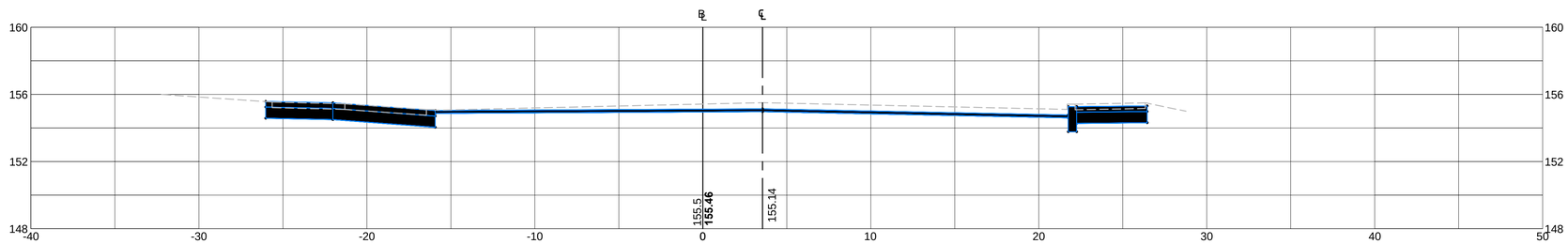
17+00

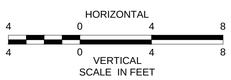


16+00



15+00





607239_HD1(DESIGN-PLANS).DWG 16-Sep-2013

NOTES:

1. BASELINE AS TAKEN FROM A VARIABLE WIDTH 1998 COUNTY DISCONTINUANCE LAYOUT NO. 7499, PLAN 100~62.
2. CENTERLINE IS FOR THE PROPOSED WORK.
3. STATION 18+00 OVERLAY THICKNESS WILL VARY FROM 2" TO 10"±.

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

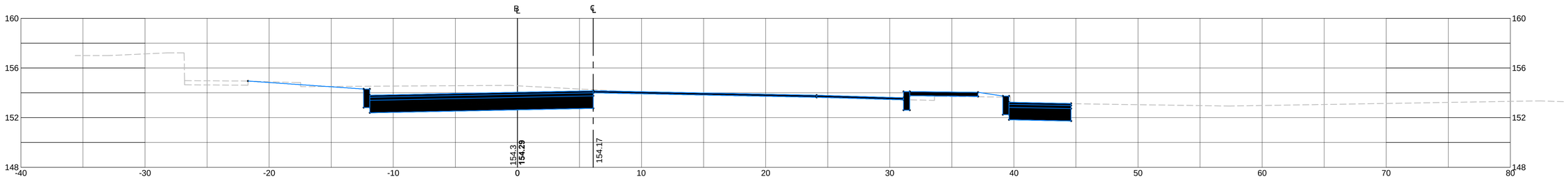
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	18
PROJECT FILE NO.	607239		

CROSS SECTIONS - 2

16-Sep-2013

607239_HD1(DESIGN-PLANS).DWG

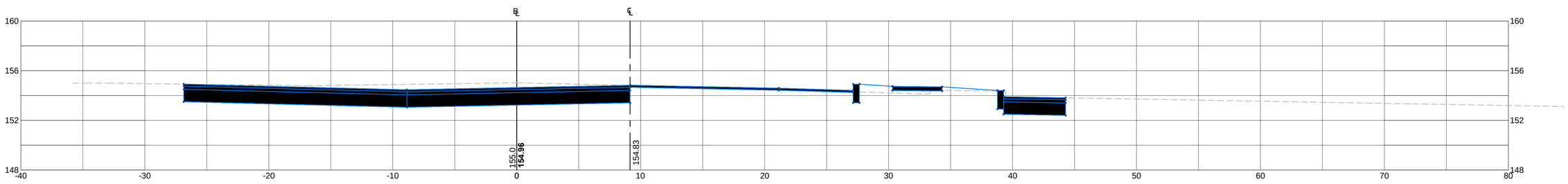
20+31.64



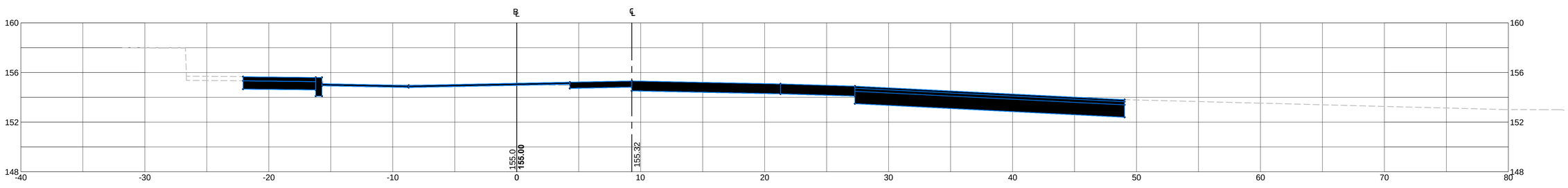
SUPERELEVATION:

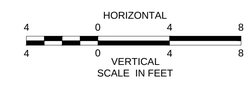
PC STA 20+84.59
R = 740.00'
BANK = 1.0%

19+00



18+00





NOTES:

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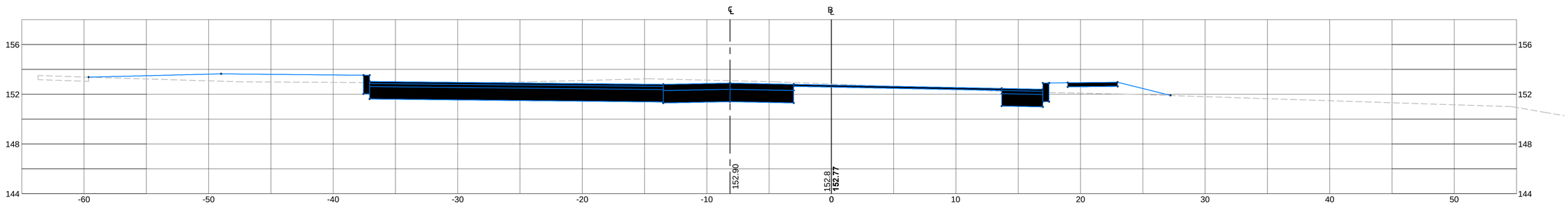
2. CENTERLINE IS FOR THE PROPOSED WORK.

TOWN OF MONTAGUE
MONTAGUE CITY ROAD

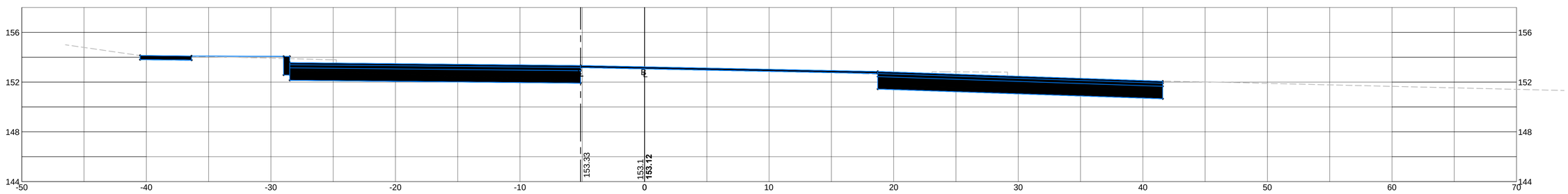
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	18
PROJECT FILE NO.	607239		

CROSS SECTIONS - 3

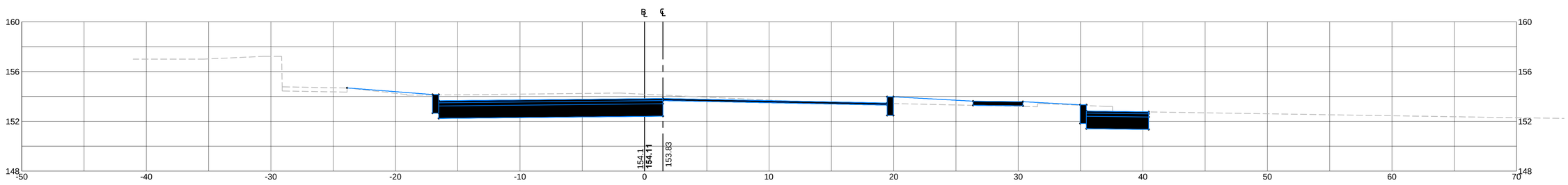
23+00



22+00



21+00



SUPERELEVATION:

PC STA 20+84.59
R = 740.00'
BANK = 1.0%

HORIZONTAL
4 0 4 8
4 0 4 8
VERTICAL
SCALE IN FEET

607239_HD1(DESIGN-PLANS).DWG 16-Sep-2013

NOTES:

1. BASELINE AS TAKEN FROM A VARIABLE WIDTH 1998 COUNTY DISCONTINUANCE LAYOUT NO. 7499, PLAN 100~62.

2. CENTERLINE IS FOR THE PROPOSED WORK.

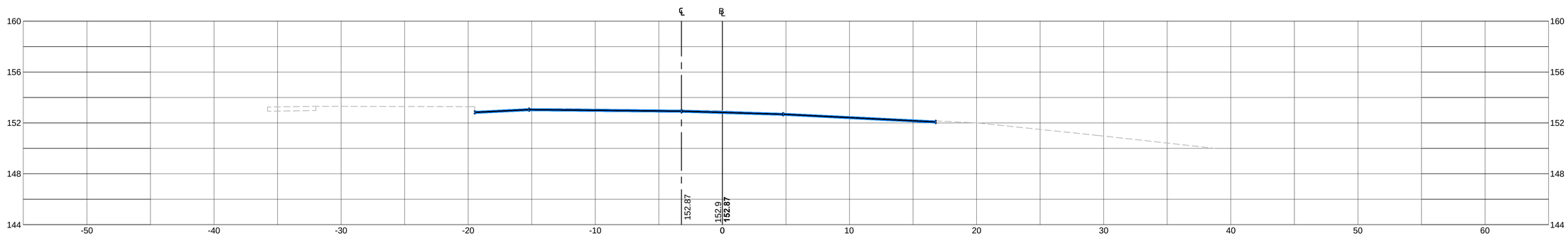
TOWN OF MONTAGUE
MONTAGUE CITY ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	18
PROJECT FILE NO.	607239		

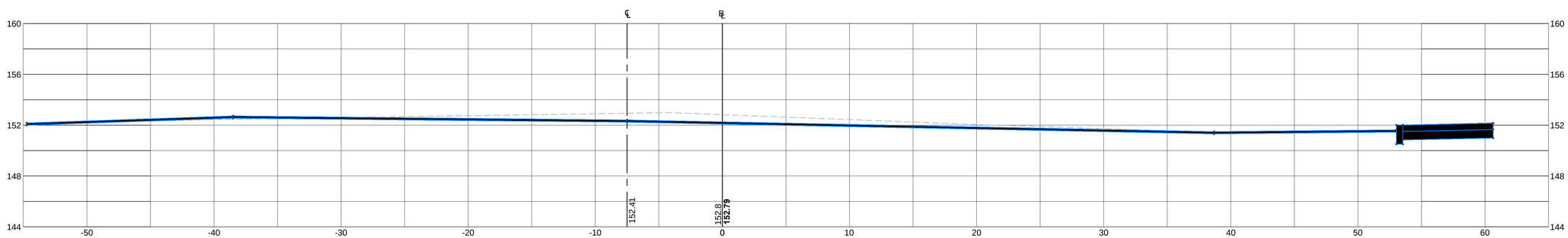
CROSS SECTIONS - 4

607239_HD1(DESIGN-PLANS).DWG 16-Sep-2013

25+00



24+00



SUPERELEVATION:

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HORIZONTAL
4 0 4 8
4 0 4 8
VERTICAL
SCALE IN FEET