MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	58
PROJECT FILE NO.	608180		

TITLE SHEET & INDEX

PLAN AND PROFILE OF

INTERSECTION IMPROVEMENTS

ROUTE 9 (WORCESTER STREET) AT KINGSBURY STREET

IN THE TOWN OF

WELLESLEY

NORFOLK COUNTY

FEDERAL AID PROJECT NO.

100% SUBMITTAL

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2014 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

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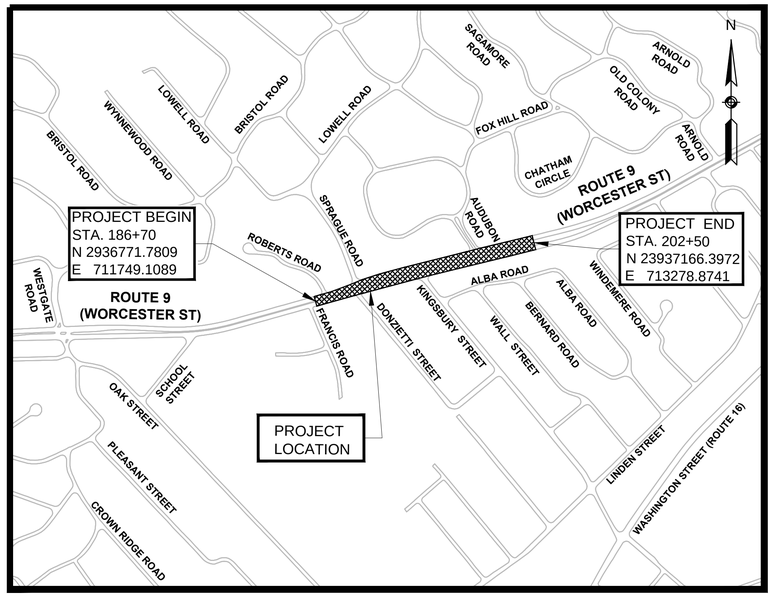

0 500 1000 1500 2000

SCALE: 1" = 500'

LENGTH OF PROJECT = 1,580.00 FEET = 0.299 MILES

DESIGN DESIGNATION

	ROUTE 9 (WORCESTER STREET)
DESIGN SPEED	50 MPH
ADT (2013)	41,600
ADT (2020)	44,500
K	8%
D	52%
T (PEAK HOUR)	6%
T (AVERAGE DAY)	8%
DHV	3,560
DDHV	1,850
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL

DATE	DESCRIPTION	REV #
6/29/2016	100% SUBMISSION	
1/6/2016	25% / 75% SUBMISSION	

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**

608180_HD1(TITLE).DWG Plotted on 29-Jun-2016 11:29 AM

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS (ON-THE-GROUND SURVEY DATA)
100 99		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

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

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
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	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
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

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

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MA	-	2	58
PROJECT FILE NO.	608180		

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

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

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT 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
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

608180_HD2(LEGEND).DWG Plotted on 29-Jun-2016 11:31 AM

608180_HD3(NOTES).DWG Plotted on 29-Jun-2016 11:37 AM

GENERAL NOTES

SURVEY:

1. THE COORDINATES ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1989 (NAD83) AS DEFINED BY THE MaCORS NETWORK STATIONS MATB, MAMA, MAMI, MANB, AND MAWR. SMC'S STAFF CONDUCTED THE GPS OBSERVATIONS USING TRIMBLE R8 RECEIVERS.

2. THE ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AS DEFINED BY THE MaCORS NETWORK.

3. THIS SURVEY HAS BEEN PREPARED FROM MOBILE LiDAR POINT CLOUD DATA AND IMAGERY CAPTURED WITH SMC'S TRIMBLE MX2® MOBILE LiDAR AND SPATIAL IMAGING SYSTEM ON NOVEMBER 9, 2015. AND A LIMITED FIELD SURVEY TO OBTAIN ELEVATIONS IN AREAS OBSCURED BY LEAVES AND DEBRIS. THE FIELD DERIVED SPOT ELEVATIONS ARE CONTAINED ON LAYER "EX-SV-GRND". THE LIDAR DERIVED SPOT ELEVATIONS ARE CONTAINED ON LAYER "EX-SV-PH-GRND".

4. THE LANE LINES AS SHOWN HERON, ARE REPRESENTED BY A LINETYPE "BROKEN LANE LINE". THE INDIVIDUAL DASHED LINES ARE NOT SHOWN.

5. SMC ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.

BEFORE DESIGNING FUTURE CONNECTIONS, THE APPROPRIATE UTILITIES MUST BE CONSULTED.

BEFORE CONSTRUCTION, ALL UTILITIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED (SEE MASSACHUSETTS GENERAL LAWS, CHAPTER 82 SECTION 40).
CALL "DIG SAFE" 1-888-DIG-SAFE. (888-344-7233).

6. POINTS 1 THROUGH 13 ARE THE ESTABLISHED HORIZONTAL CONTROL POINTS.

7. THE AVERAGE SCALE FACTOR FOR THE PROJECT IS 0.999966.

8. THE ROTATION FROM THE LAYOUT PLAN BEARING SYSTEM TO THE BASE PLAN IS 0-06'54"

9. THE RIGHT OF WAY WAS ESTABLISHED VIA CONVENTIONAL SURVEY UTILIZING RECORD MONUMENTS.

10. ABUTTING PROPERTY LINES ARE APPROXIMATE AND OBTAINED FROM MASS. GIS.

11. MASSDOT NOTEBOOK 27840 WAS UTILIZED BY BRYANT ASSOCIATES.

12. SURVEY DATA WITHIN ROUTE 9 RIGHT OF WAY WAS MAINLY SURVEYED VIA MOBILE LIDAR BY SMC.
SIDE STREET SURVEYS PERFORMED BY BRYANT ASSOCIATES VIA CONVENTIONAL FIELD SURVEY.

13. THE SURFACE EVIDENCE OF THE UTILITIES SHOWN HAS BEEN LOCATED BY FIELD SURVEY. THE LINEWORK REPRESENTING UNDERGROUND STRUCTURES AND PIPES HAS BEEN SHOWN HEREON IN ITS APPROXIMATE LOCATION BASED ON AVAILABLE RECORD PLANS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

14. MASSDOT FIELD BOOK 27840 AND BOOK 42703 WERE USED ON THE SURVEY.

TRAFFIC:

1. THE TEMPORARY TRAFFIC CONTROL PLANS INDICATE THE GENERAL REQUIREMENTS FOR THE VARIOUS PHASES OF WORK. THE CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC MANAGEMENT PLANS TO THE ENGINEER FOR APPROVAL.

2. THE FLOW OF TRAFFIC THROUGH THE SITE MUST BE MAINTAINED AS SHOWN ON THE TRAFFIC CONTROL PLANS AND SPECIFIED IN THE SPECIAL PROVISIONS. CONSTRUCTION EQUIPMENT AND MATERIALS SHALL NOT BE PARKED OR STOCKPILED SO AS TO OBSTRUCT THE FLOW OF VEHICLES.

3. ALL PROPOSED PAVEMENT MARKINGS TO BE 6 INCH WIDTH, UNLESS OTHERWISE NOTED.

SIDEWALKS AND WHEELCHAIR RAMPS:

1. DETECTABLE WARNING PANELS SHALL BE LOCATED NOT LESS THAN 6" OR MORE THAN 24" FROM THE ROADWAY EDGE (GUTTER LINE).

2. ROADWAY, GUTTER AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS AND TO AVOID PONDING AT ENTRANCE OF WHEELCHAIR RAMPS. ROADWAY GUTTER ADJUSTMENT AT WHEELCHAIR RAMP OPENING SHALL NOT BE STEEPER THAN 1:12.

3. ALL SIDEWALKS AND WALKS, REGARDLESS OF MATERIAL, SHALL BE CONSTRUCTED TO A CROSS SLOPE OF 1.5% WITH A CONSTRUCTION TOLERANCE OF ±0.5% ALLOWED.

4. WITHIN LOCATIONS OF PROPOSED SIDEWALK, AN UNOBSTRUCTED 3'-0" PATH OF TRAVEL, EXCLUDING CURB, MUST BE MAINTAINED PAST ANY SIDEWALK OBSTRUCTION, INCLUDING BUT NOT LIMITED TO UTILITY POLES, MAIL BOXES, TREES, TRAFFIC SIGNAL BASES PRE-CAST FOUNDATIONS AND OTHER SIGNAL HARDWARE, HYDRANTS, SIGNS AND POLES. REFER TO SIDEWALK CLEARANCE DIAGRAMS ON THIS SHEET.

CONSTRUCTION:

1. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES IN SERVICE AT ALL TIMES. IF THE CONTRACTOR DAMAGES UTILITY SYSTEMS, THE RESPECTIVE UTILITY COMPANY SHALL IMMEDIATELY BE NOTIFIED AND THE CONTRACTOR SHALL REPAIR/REPLACE THE AFFECTED SYSTEM AT HIS OWN EXPENSE

2. THE CONTRACTOR SHALL CONTACT "DIG SAFE" AT 1-888-DIG-SAFE AT LEAST 72 HOURS PRIOR TO COMMENCING WORK ON THE PROJECT.

3. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES WITH THE UTILITY COMPANIES.

4. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL SAFETY CODES AND LEGAL REQUIREMENTS IN THE CONSTRUCTION OF IMPROVEMENTS.

5. AREAS OUTSIDE OF THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE TO THEIR ORIGINAL CONDITION AND TO THE SATISFACTION OF THE ENGINEER.

6. IN AREAS OF ROADWAY AND SIDEWALK RECONSTRUCTION WHERE PROPOSED MEETS EXISTING MATERIAL, THE EXISTING MATERIAL SHALL BE SAWCUT TO OBTAIN A CLEAN VERTICAL FACE.

7. ALL EXISTING DRAINAGE SYSTEM TO BE RETAINED UNLESS OTHERWISE NOTED AND AT THE DIRECTION OF THE ENGINEER.

8. ALL EXISTING PIPING AND STRUCTURES EXPOSED DURING EXCAVATION SHALL BE ADEQUATELY SUPPORTED, BRACED OR OTHERWISE PROTECTED DURING CONSTRUCTION ACTIVITIES. EXCAVATIONS SHALL BE BACK FILLED DAILY AT THE COMPLETION OF WORK.

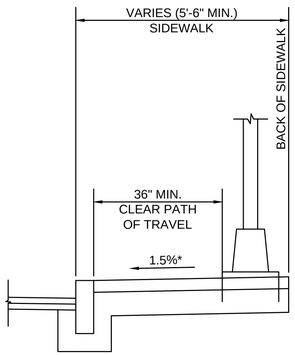
9. ALL MATERIALS TO BE REMOVED AND DISCARDED SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.

10. CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATION IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS AND THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE ITEMS.

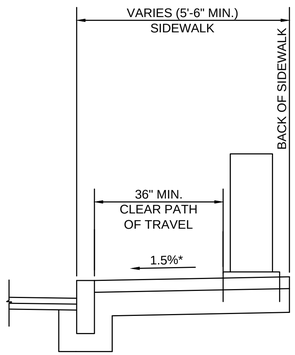
11. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE RETAINED UNLESS OTHERWISE APPROVED BY THE ENGINEER.

12. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, REUSING EXISTING MATERIALS IN SUITABLE CONDITION IDENTIFIED AS "REMOVE AND RESET" (R&R).

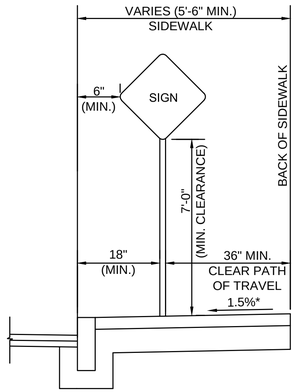
13. ALL EXISTING GRANITE CURB IN SUITABLE CONDITION AND LABELED "R&R" SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.



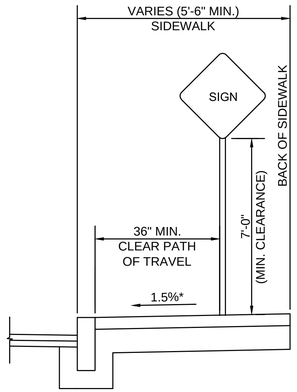
SIDEWALK CLEARANCE DIAGRAM
TRAFFIC SIGNAL FOUNDATION
NOT TO SCALE



SIDEWALK CLEARANCE DIAGRAM
TRAFFIC CONTROL CABINET
NOT TO SCALE



SIDEWALK CLEARANCE DIAGRAM
TRAFFIC SIGN - FRONT OF SIDEWALK
NOT TO SCALE



SIDEWALK CLEARANCE DIAGRAM
TRAFFIC SIGN - BACK OF SIDEWALK
NOT TO SCALE

* TOLERANCE FOR CONSTRUCTION ±0.5%

WELLESLEY
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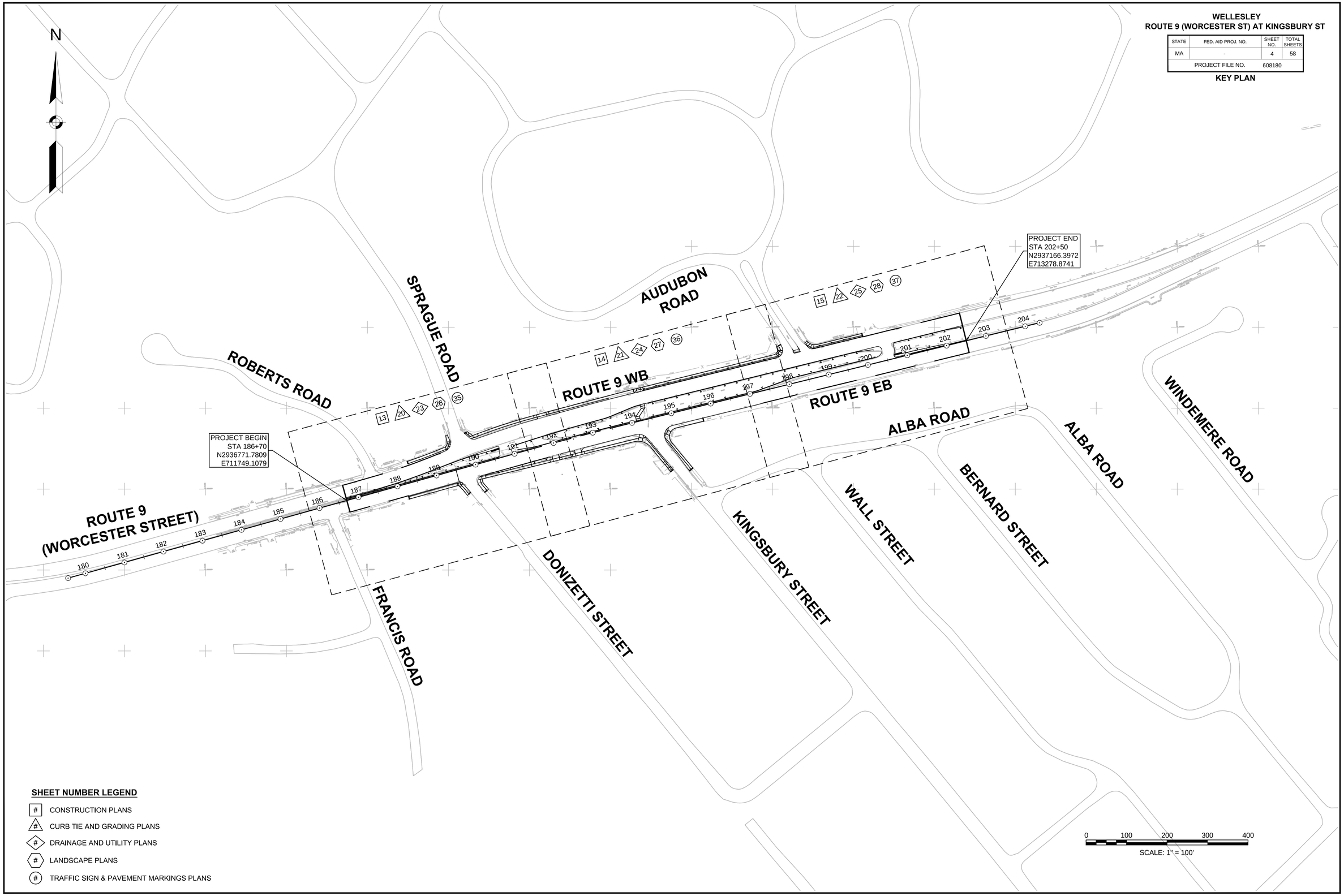
KEY PLAN



SHEET NUMBER LEGEND

- # CONSTRUCTION PLANS
- # CURB TIE AND GRADING PLANS
- # DRAINAGE AND UTILITY PLANS
- # LANDSCAPE PLANS
- # TRAFFIC SIGN & PAVEMENT MARKINGS PLANS

608180_HD4(KEYPLAN).DWG Plotted on 29-Jun-2016 11:10 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	58
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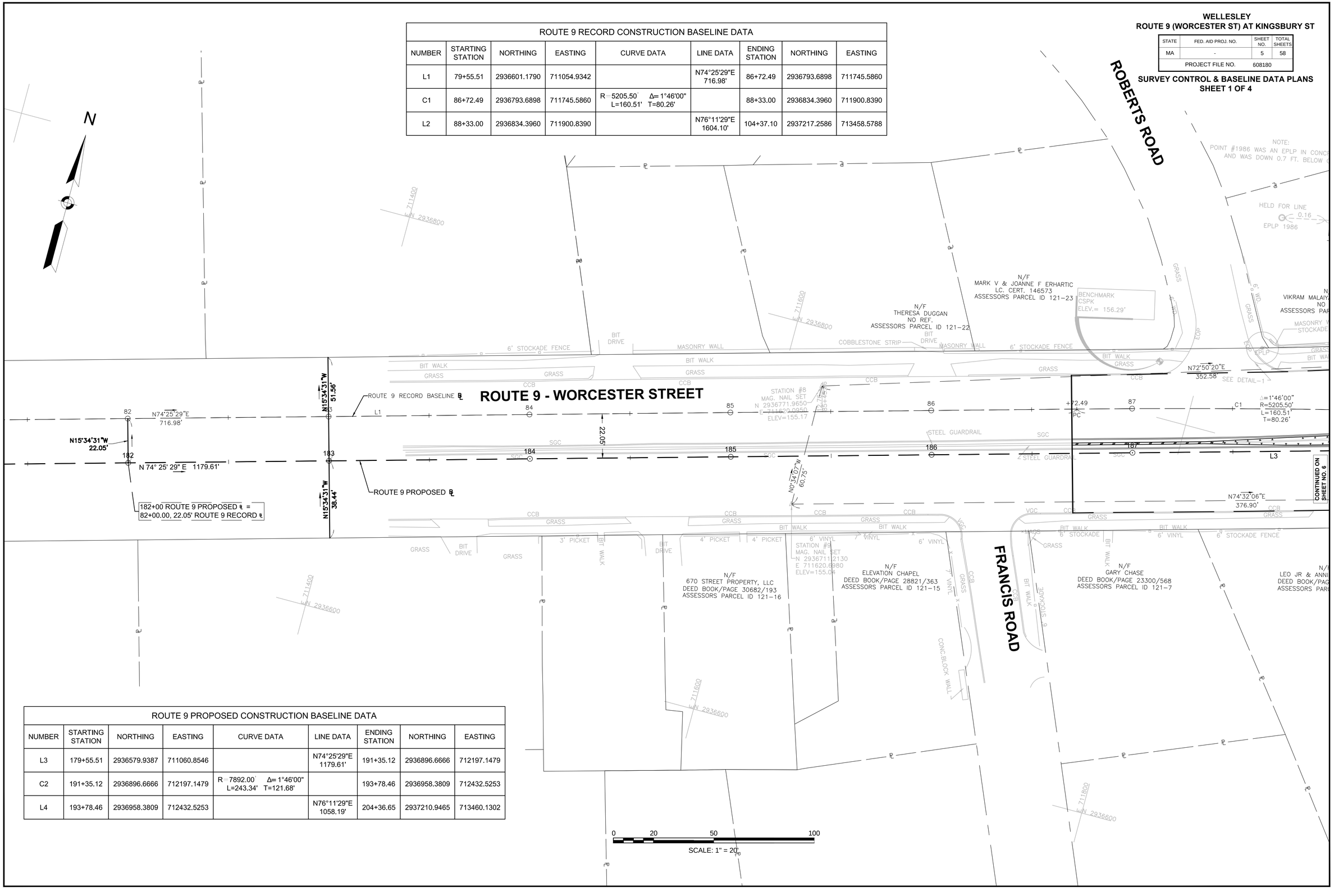
SURVEY CONTROL & BASELINE DATA PLANS
SHEET 1 OF 4

608180_HDS(SURVEYCONTROL).DWG Plotted on 29-Jun-2016 11:11 AM

ROUTE 9 RECORD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	79+55.51	2936601.1790	711054.9342		N74°25'29"E 716.98'	86+72.49	2936793.6898	711745.5860
C1	86+72.49	2936793.6898	711745.5860	R=5205.50' Δ=1°46'00" L=160.51' T=80.26'		88+33.00	2936834.3960	711900.8390
L2	88+33.00	2936834.3960	711900.8390		N76°11'29"E 1604.10'	104+37.10	2937217.2586	713458.5788



ROUTE 9 PROPOSED CONSTRUCTION BASELINE DATA

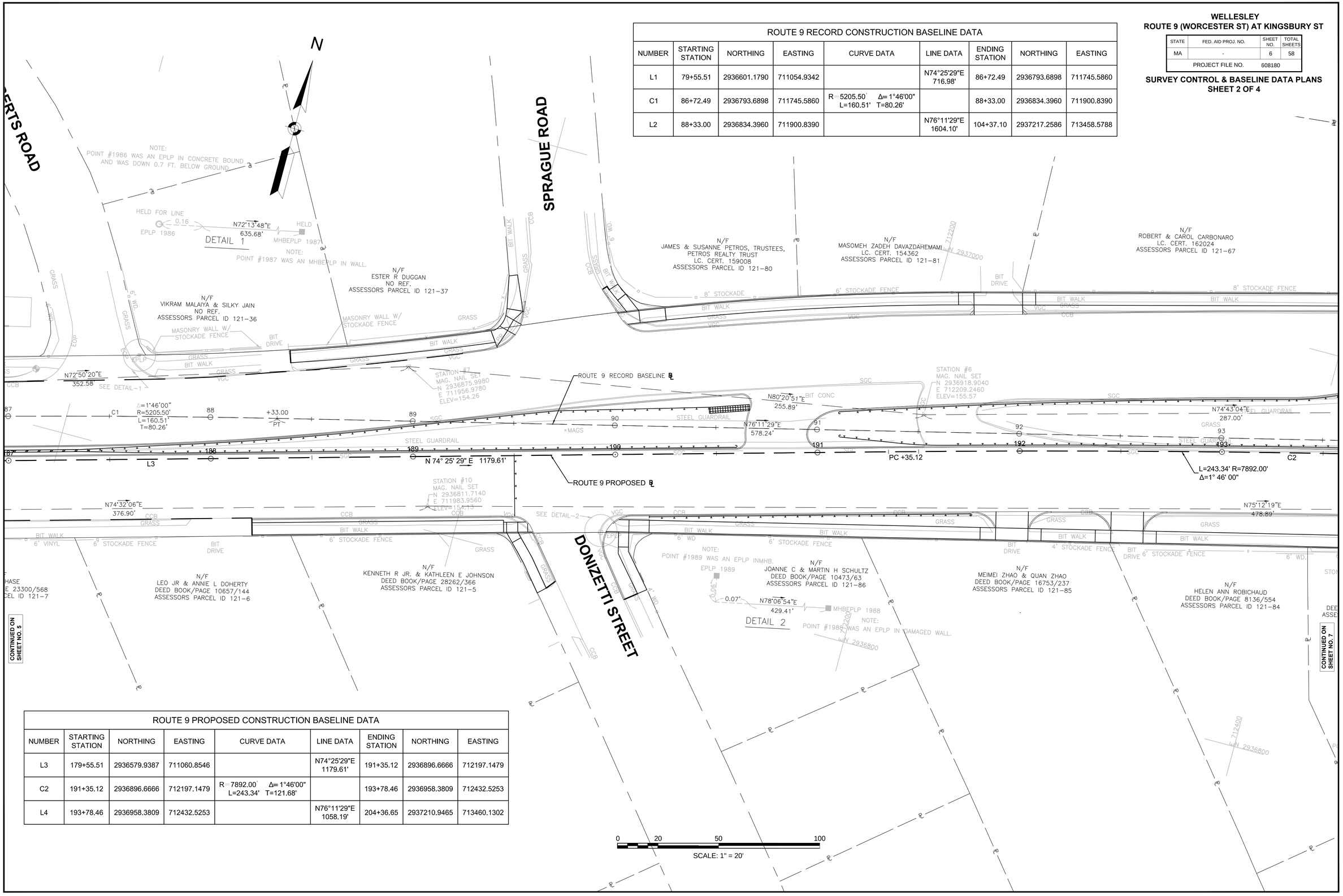
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	179+55.51	2936579.9387	711060.8546		N74°25'29"E 1179.61'	191+35.12	2936896.6666	712197.1479
C2	191+35.12	2936896.6666	712197.1479	R=7892.00' Δ=1°46'00" L=243.34' T=121.68'		193+78.46	2936958.3809	712432.5253
L4	193+78.46	2936958.3809	712432.5253		N76°11'29"E 1058.19'	204+36.65	2937210.9465	713460.1302

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	6	58
PROJECT FILE NO.	608180		

SURVEY CONTROL & BASELINE DATA PLANS
SHEET 2 OF 4

608180_HDS(SURVEYCONTROL).DWG Plotted on 29-Jun-2016 11:11 AM



ROUTE 9 RECORD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	79+55.51	2936601.1790	711054.9342		N74°25'29"E 716.98'	86+72.49	2936793.6898	711745.5860
C1	86+72.49	2936793.6898	711745.5860	R=5205.50' Δ=1°46'00" L=160.51' T=80.26'		88+33.00	2936834.3960	711900.8390
L2	88+33.00	2936834.3960	711900.8390		N76°11'29"E 1604.10'	104+37.10	2937217.2586	713458.5788

ROUTE 9 PROPOSED CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	179+55.51	2936579.9387	711060.8546		N74°25'29"E 1179.61'	191+35.12	2936896.6666	712197.1479
C2	191+35.12	2936896.6666	712197.1479	R=7892.00' Δ=1°46'00" L=243.34' T=121.68'		193+78.46	2936958.3809	712432.5253
L4	193+78.46	2936958.3809	712432.5253		N76°11'29"E 1058.19'	204+36.65	2937210.9465	713460.1302

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

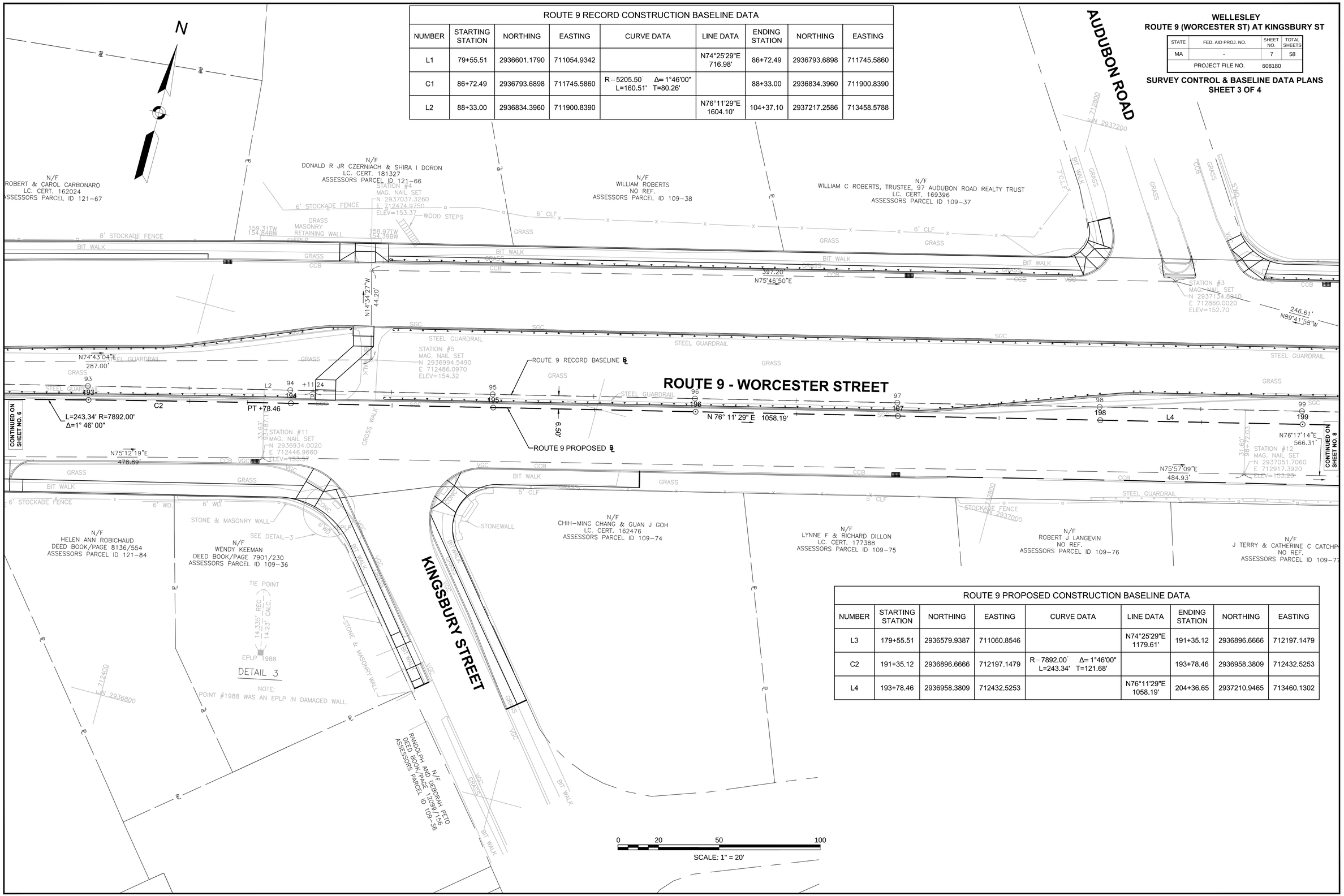
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	58
PROJECT FILE NO.	608180		

SURVEY CONTROL & BASELINE DATA PLANS
SHEET 3 OF 4

608180_HDS(SURVEYCONTROL).DWG Plotted on 29-Jun-2016 11:11 AM

ROUTE 9 RECORD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	79+55.51	2936601.1790	711054.9342		N74°25'29"E 716.98'	86+72.49	2936793.6898	711745.5860
C1	86+72.49	2936793.6898	711745.5860	R=5205.50' Δ=1°46'00" L=160.51' T=80.26'		88+33.00	2936834.3960	711900.8390
L2	88+33.00	2936834.3960	711900.8390		N76°11'29"E 1604.10'	104+37.10	2937217.2586	713458.5788



WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

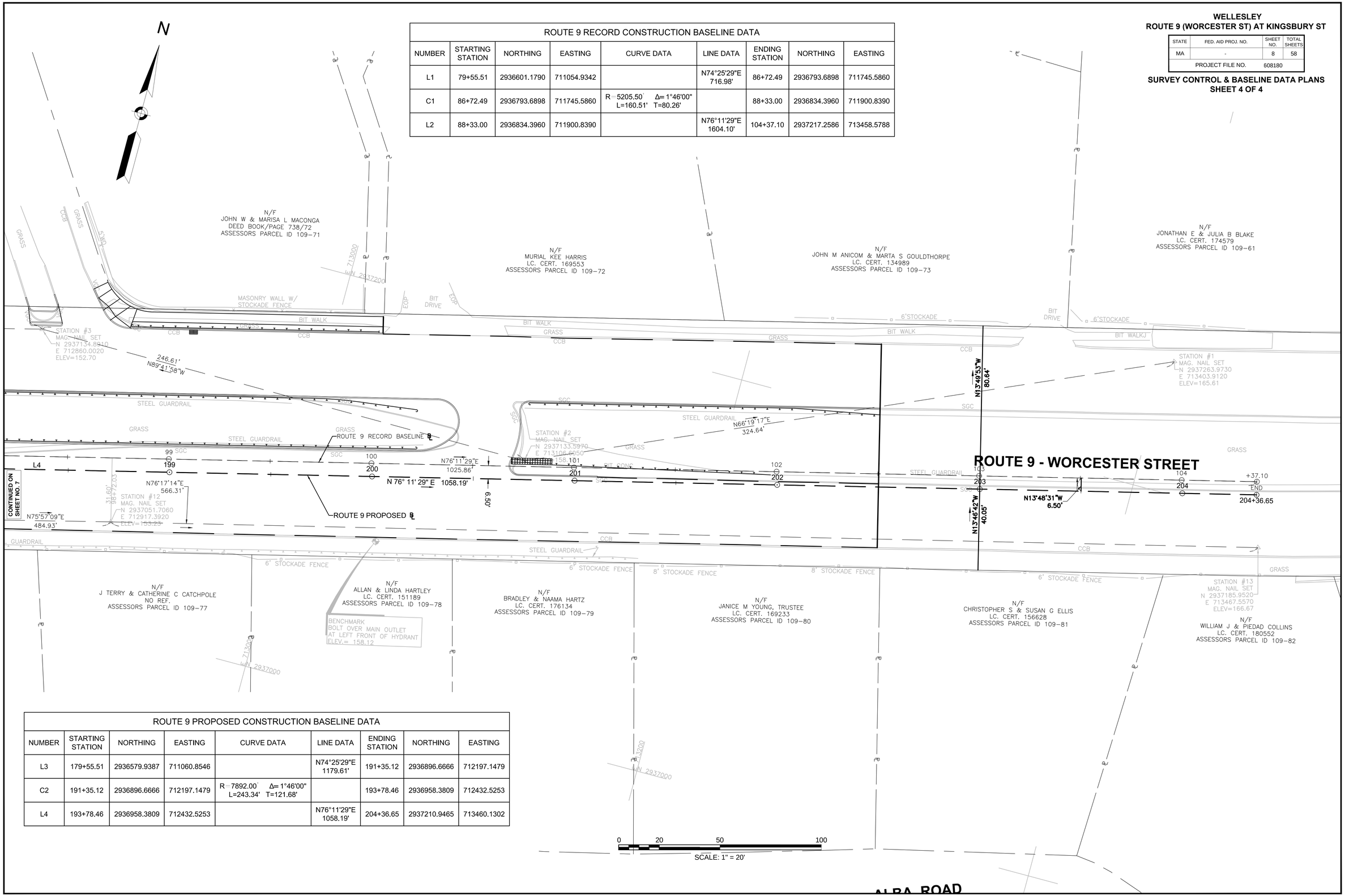
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	58
PROJECT FILE NO.	608180		

SURVEY CONTROL & BASELINE DATA PLANS
SHEET 4 OF 4

608180_HD5(SURVEYCONTROL).DWG Plotted on 29-Jun-2016 11:11 AM

ROUTE 9 RECORD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	79+55.51	2936601.1790	711054.9342		N74°25'29"E 716.98'	86+72.49	2936793.6898	711745.5860
C1	86+72.49	2936793.6898	711745.5860	R=5205.50' Δ=1°46'00" L=160.51' T=80.26'		88+33.00	2936834.3960	711900.8390
L2	88+33.00	2936834.3960	711900.8390		N76°11'29"E 1604.10'	104+37.10	2937217.2586	713458.5788



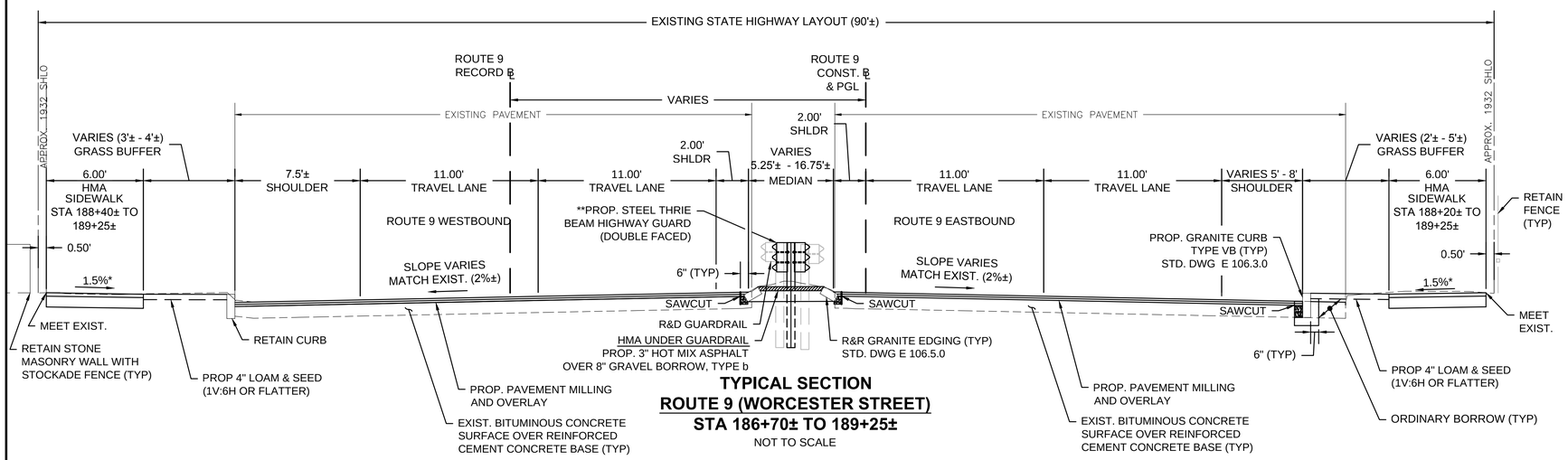
ROUTE 9 PROPOSED CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	179+55.51	2936579.9387	711060.8546		N74°25'29"E 1179.61'	191+35.12	2936896.6666	712197.1479
C2	191+35.12	2936896.6666	712197.1479	R=7892.00' Δ=1°46'00" L=243.34' T=121.68'		193+78.46	2936958.3809	712432.5253
L4	193+78.46	2936958.3809	712432.5253		N76°11'29"E 1058.19'	204+36.65	2937210.9465	713460.1302

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

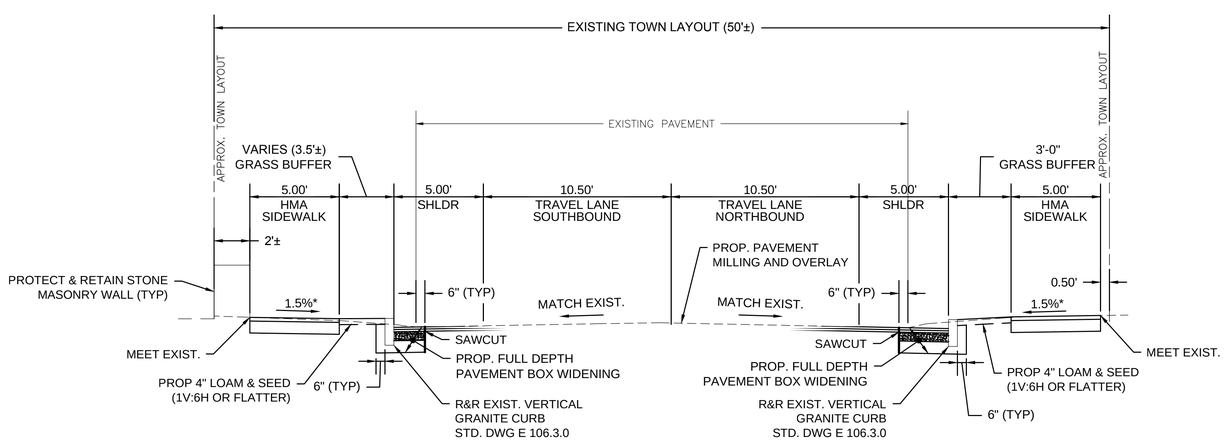
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	58
PROJECT FILE NO.	608180		

TYPICAL SECTIONS
SHEET 1 OF 4



TYPICAL SECTION
ROUTE 9 (WORCESTER STREET)
STA 186+70± TO 189+25±
NOT TO SCALE

** PROP. STEEL W BEAM HIGHWAY GUARD (SINGLE FACED) STA 187+36± TO STA 189+25



TYPICAL SECTION
KINGSBURY STREET
NOT TO SCALE

PAVEMENT NOTES

PROPOSED RESURFACING MILLING AND OVERLAY (MAINLINE)

SURFACE COURSE: 1.5" HMA SURFACE COURSE - ASPHALT RUBBER GAP GRADED (HMA-SC-ARGG) OVER
1/20 GAL ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

INTERMEDIATE COURSE: 1.5" HMA INTERMEDIATE COURSE - ASPHALT RUBBER GAP GRADED (HMA-IC-ARGG) OVER
1/15 GAL ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

PAVEMENT MILLING: 3.0" PAVEMENT MICROMILLING

PROPOSED FULL DEPTH CONSTRUCTION > 4 FEET WIDTH

SURFACE COURSE: 1.5" HMA SURFACE COURSE - ASPHALT RUBBER GAP GRADED (HMA-SC-ARGG) OVER
1/20 GAL ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

INTERMEDIATE COURSE: 1.5" HMA INTERMEDIATE COURSE - ASPHALT RUBBER GAP GRADED (HMA-IC-ARGG) OVER
1/15 GAL ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

SUB-BASE: VARIABLE DEPTH HMA FOR PATCHING COMPACTED LEVEL WITH TOP OF EXISTING REINFORCED CONCRETE BASE OVER
4.5" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER
8" GRAVEL BORROW, TYPE b

FULL DEPTH CONSTRUCTION < 4 FEET WIDTH

SURFACE COURSE: 1.5" HMA SURFACE COURSE - ASPHALT RUBBER GAP GRADED (HMA-SC-ARGG) OVER
1/20 GAL ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

INTERMEDIATE COURSE: 1.5" HMA INTERMEDIATE COURSE - ASPHALT RUBBER GAP GRADED (HMA-IC-ARGG) OVER
1/15 GAL ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

SUB-BASE: VARIABLE DEPTH HMA FOR PATCHING COMPACTED DOWN TO TOP OF EXIST. REINFORCED CONCRETE BASE OVER
6" HES CEM CONC BASE LEVEL WITH TOP OF EXIST. REINFORCED CONCRETE BASE) OVER
VARIABLE DEPTH DENSE GRADED CRUSHED STONE SUBBASE TO BOTTOM OF EXIST. REINFORCED CONCRETE BASE

PROPOSED HMA DRIVEWAY

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER

FOUNDATION: 8" GRAVEL BORROW, TYPE b

HMA SIDEWALK:

SURFACE: 2.5" HOT MIX ASPHALT WALK SURFACE OVER

FOUNDATION: 8" GRAVEL BORROW, TYPE b

CEMENT CONCRETE SIDEWALKS AND WHEELCHAIR RAMPS

SURFACE: 4" CEMENT CONCRETE WALK SURFACE 4000 PSI, 3/4", 610 OVER

FOUNDATION: 8" GRAVEL BORROW, TYPE b

NOTES:

1. PROP. RESURFACING MILLING AND OVERLAY SHALL EXTEND OVER BRIDGES AT WESTON ROAD AND CLIFF ROAD
2. BRIDGE CLEARANCES AT ALL UNDERPASSES SHALL BE MAINTAINED AND NOT BE REDUCED BY RESURFACING.
3. PAVEMENT MILLING SHALL PROVIDE A 2% CROSS SLOPE FOR ALL NORMAL SECTIONS AND SHALL MAINTAIN ALL EXIST. SUPERELEVATIONS AND TRANSITIONS.
4. ASPHALT EMULSION FOR TACK COAT SHALL BE GRADE RS-1H.

* SIDEWALK CROSS-SLOPE SHALL BE 1.5% WITH A CONSTRUCTION TOLERANCE OF 0.5%±

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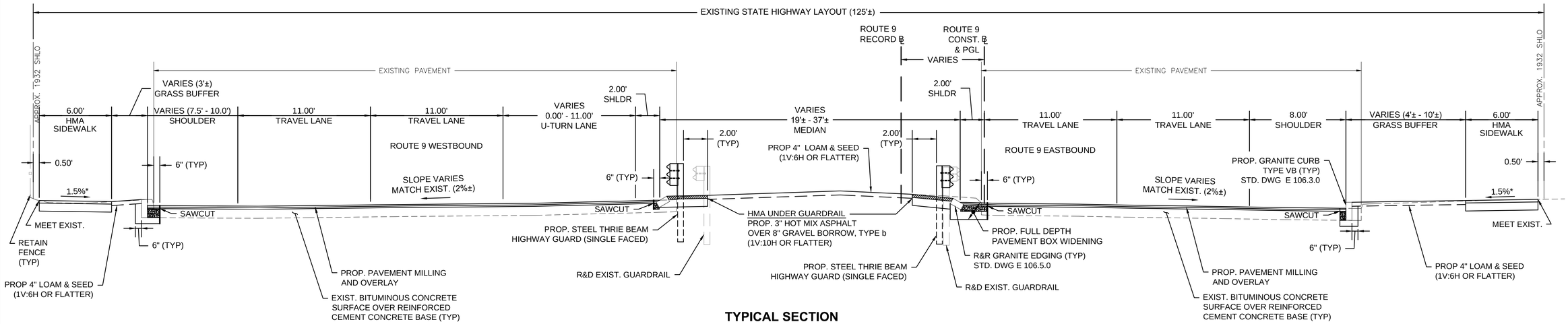
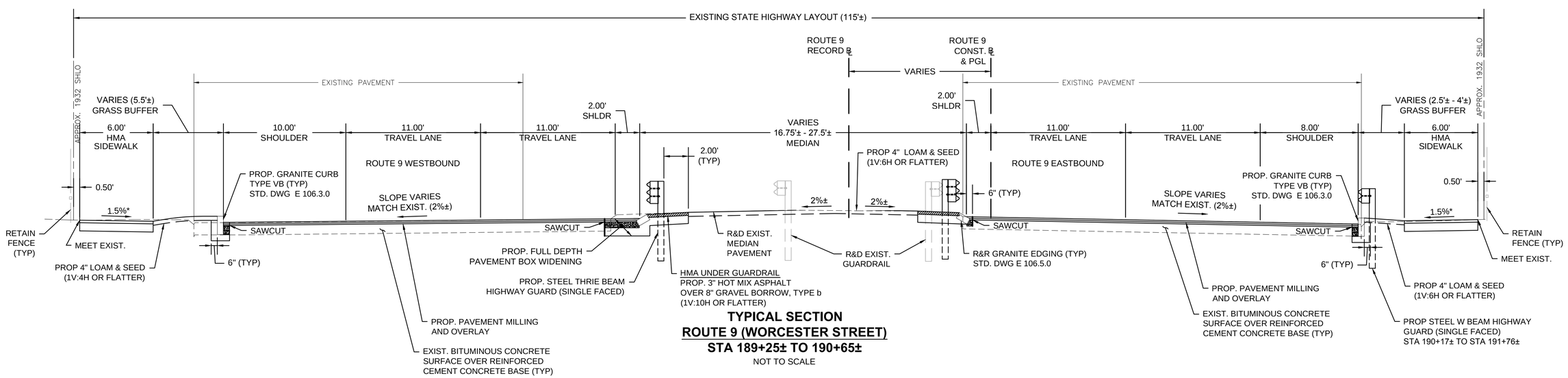
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	58
PROJECT FILE NO.	608180		

TYPICAL SECTIONS
SHEET 2 OF 4



TYPICAL SECTION
ROUTE 9 (WORCESTER STREET)
STA 190+65± TO 194+25±
NOT TO SCALE



TYPICAL SECTION
ROUTE 9 (WORCESTER STREET)
STA 189+25± TO 190+65±
NOT TO SCALE

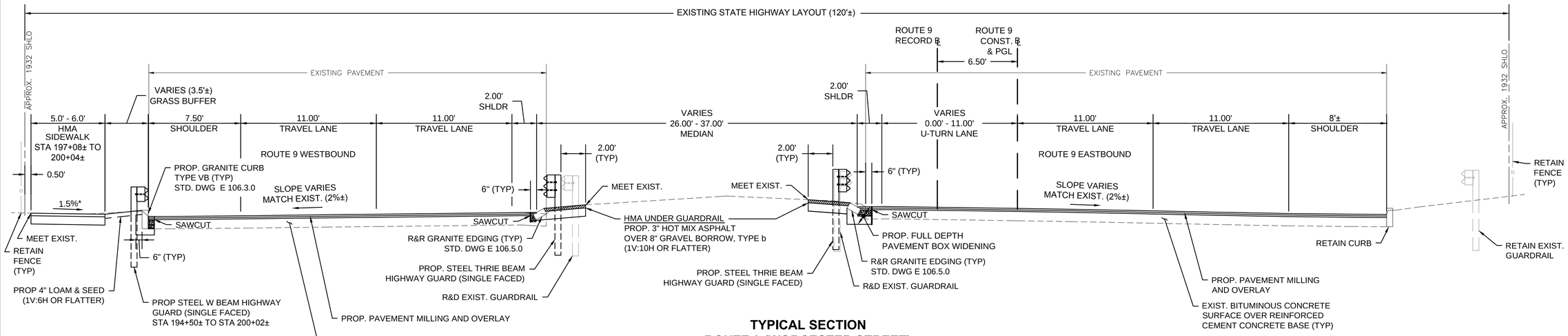
* SIDEWALK CROSS-SLOPE SHALL BE 1.5% WITH A CONSTRUCTION TOLERANCE OF 0.5%±

608180_HD6(TYPSEC).DWG Plotted on 29-Jun-2016 11:12 AM

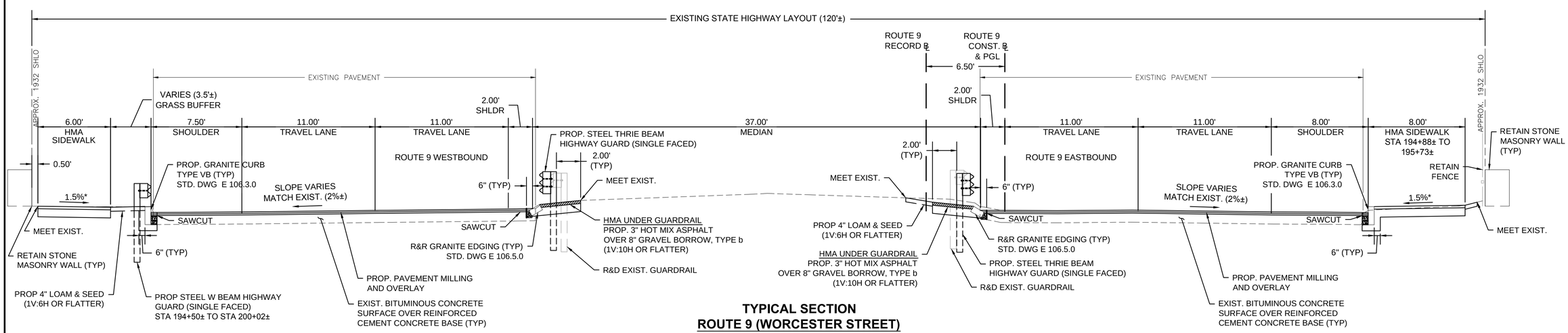
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	58
PROJECT FILE NO.	608180		

TYPICAL SECTIONS
SHEET 3 OF 4



TYPICAL SECTION
ROUTE 9 (WORCESTER STREET)
STA 197+08± TO 200+75±
NOT TO SCALE



TYPICAL SECTION
ROUTE 9 (WORCESTER STREET)
STA 194+25± TO 197+08±
NOT TO SCALE

* SIDEWALK CROSS-SLOPE SHALL BE 1.5% WITH A CONSTRUCTION TOLERANCE OF 0.5%±

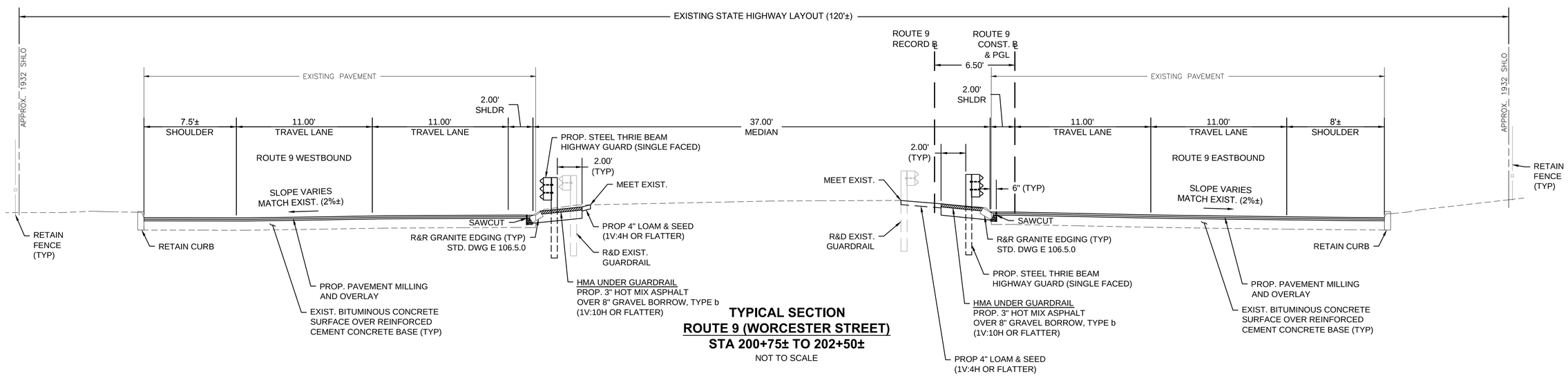
608180_HD6(TYPSEC).DWG Plotted on 29-Jun-2016 11:12 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	58
PROJECT FILE NO.	608180		

TYPICAL SECTIONS
SHEET 4 OF 4

608180_HD6(TYPSEC).DWG Plotted on 29-Jun-2016 11:12 AM



TYPICAL SECTION
ROUTE 9 (WORCESTER STREET)
STA 200+75± TO 202+50±
NOT TO SCALE

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

SEE SHEETS 39 & 41

WATER SUPPLY ALTERATIONS

NONE

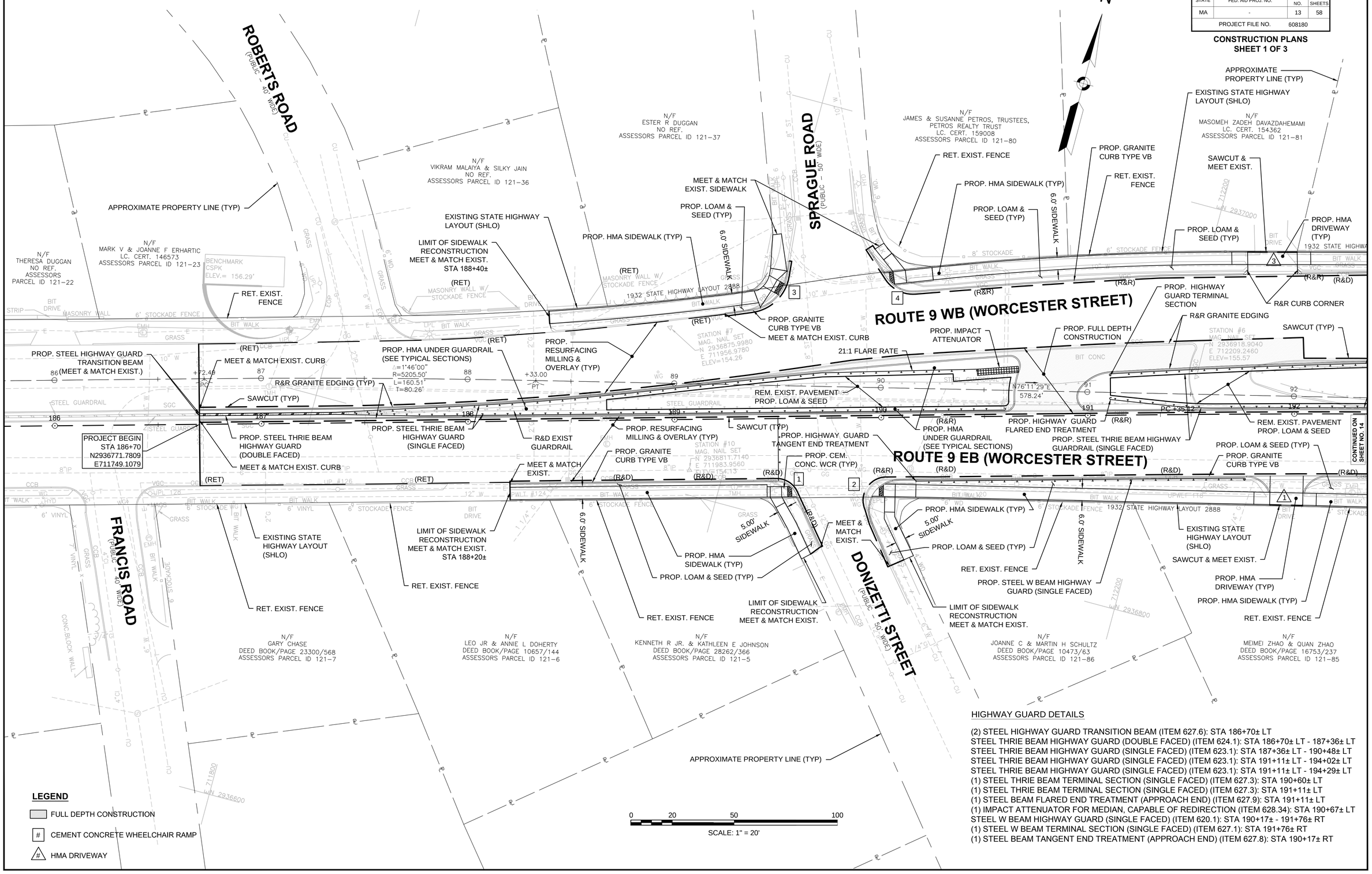
DRAINAGE DETAILS

SEE BELOW

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	58
PROJECT FILE NO.	608180		

CONSTRUCTION PLANS
SHEET 1 OF 3



LEGEND

- FULL DEPTH CONSTRUCTION
- # CEMENT CONCRETE WHEELCHAIR RAMP
- # HMA DRIVEWAY

HIGHWAY GUARD DETAILS

(2) STEEL HIGHWAY GUARD TRANSITION BEAM (ITEM 627.6): STA 186+70± LT
STEEL THRIE BEAM HIGHWAY GUARD (DOUBLE FACED) (ITEM 624.1): STA 186+70± LT - 187+36± LT
STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 187+36± LT - 190+48± LT
STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 191+11± LT - 194+02± LT
STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 191+11± LT - 194+29± LT
(1) STEEL THRIE BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.3): STA 190+60± LT
(1) STEEL THRIE BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.3): STA 191+11± LT
(1) STEEL BEAM FLARED END TREATMENT (APPROACH END) (ITEM 627.9): STA 191+11± LT
(1) IMPACT ATTENUATOR FOR MEDIAN, CAPABLE OF REDIRECTION (ITEM 628.34): STA 190+67± LT
STEEL W BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 620.1): STA 190+17± - 191+76± RT
(1) STEEL W BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.1): STA 191+76± RT
(1) STEEL BEAM TANGENT END TREATMENT (APPROACH END) (ITEM 627.8): STA 190+17± RT

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HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

SEE SHEETS 39 & 41

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

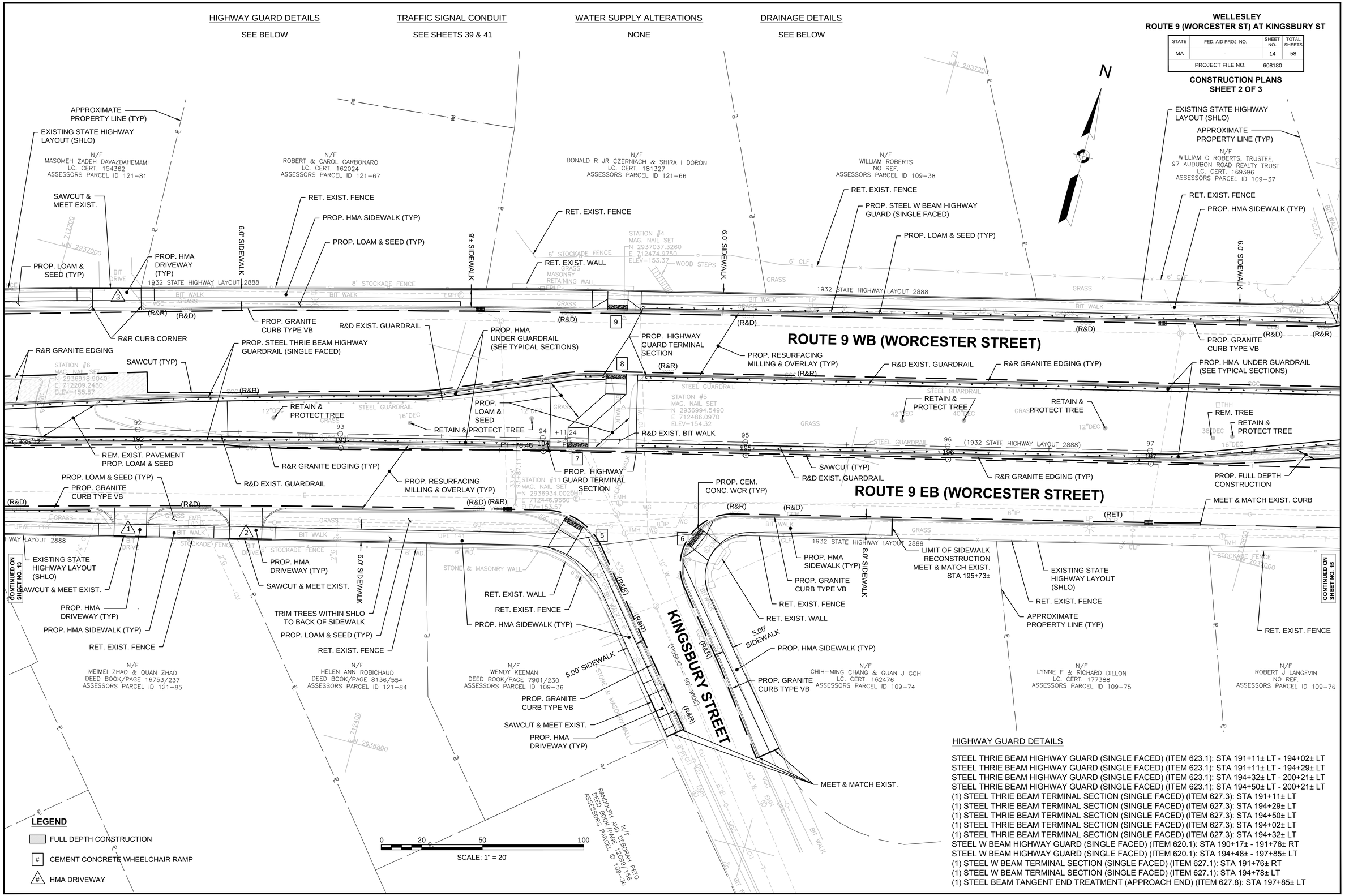
SEE BELOW

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	58
PROJECT FILE NO.	608180		

CONSTRUCTION PLANS
SHEET 2 OF 3

608180_HD7(CONST).DWG Plotted on 29-Jun-2016 11:13 AM



HIGHWAY GUARD DETAILS

STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 191+11± LT - 194+02± LT
STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 191+11± LT - 194+29± LT
STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 194+32± LT - 200+21± LT
STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 194+50± LT - 200+21± LT
(1) STEEL THRIE BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.3): STA 191+11± LT
(1) STEEL THRIE BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.3): STA 194+29± LT
(1) STEEL THRIE BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.3): STA 194+50± LT
(1) STEEL THRIE BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.3): STA 194+02± LT
(1) STEEL THRIE BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.3): STA 194+32± LT
STEEL W BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 620.1): STA 190+17± - 191+76± RT
STEEL W BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 620.1): STA 194+48± - 197+85± LT
(1) STEEL W BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.1): STA 191+76± RT
(1) STEEL W BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.1): STA 194+78± LT
(1) STEEL BEAM TANGENT END TREATMENT (APPROACH END) (ITEM 627.8): STA 197+85± LT

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

SEE SHEETS 39 & 41

WATER SUPPLY ALTERATIONS

NONE

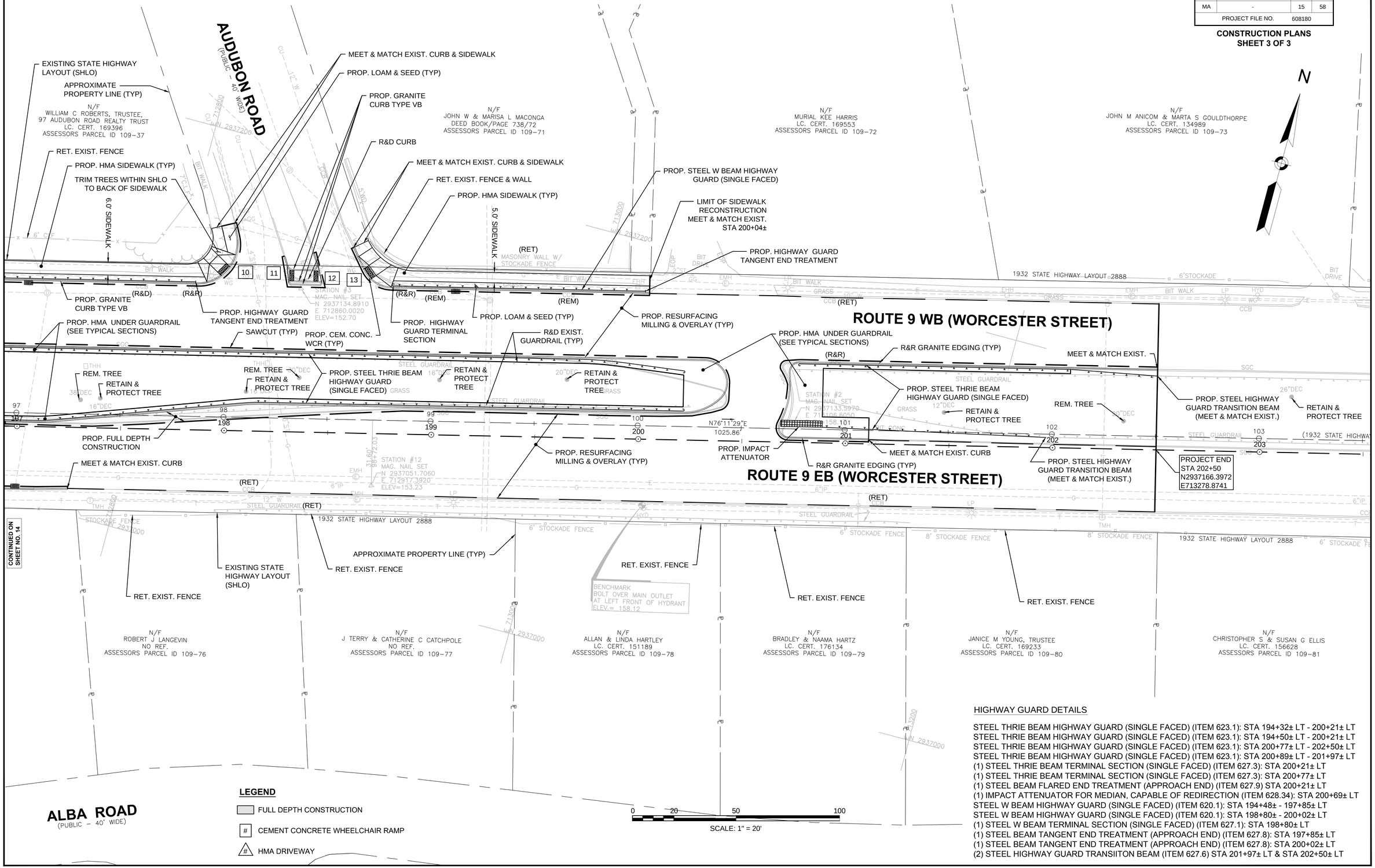
DRAINAGE DETAILS

SEE BELOW

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	58
PROJECT FILE NO.	608180		

CONSTRUCTION PLANS
SHEET 3 OF 3



CONTINUED ON SHEET NO. 14

LEGEND

- FULL DEPTH CONSTRUCTION
- # CEMENT CONCRETE WHEELCHAIR RAMP
- # HMA DRIVEWAY

HIGHWAY GUARD DETAILS

STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 194+32± LT - 200+21± LT
STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 194+50± LT - 200+21± LT
STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 200+77± LT - 202+50± LT
STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 623.1): STA 200+89± LT - 201+97± LT
(1) STEEL THRIE BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.3): STA 200+21± LT
(1) STEEL THRIE BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.3): STA 200+77± LT
(1) STEEL BEAM FLARED END TREATMENT (APPROACH END) (ITEM 627.9) STA 200+21± LT
(1) IMPACT ATTENUATOR FOR MEDIAN, CAPABLE OF REDIRECTION (ITEM 628.34): STA 200+69± LT
STEEL W BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 620.1): STA 194+48± - 197+85± LT
STEEL W BEAM HIGHWAY GUARD (SINGLE FACED) (ITEM 620.1): STA 198+80± - 200+02± LT
(1) STEEL W BEAM TERMINAL SECTION (SINGLE FACED) (ITEM 627.1): STA 198+80± LT
(1) STEEL BEAM TANGENT END TREATMENT (APPROACH END) (ITEM 627.8): STA 197+85± LT
(1) STEEL BEAM TANGENT END TREATMENT (APPROACH END) (ITEM 627.8): STA 200+02± LT
(2) STEEL HIGHWAY GUARD TRANSIITON BEAM (ITEM 627.6) STA 201+97± LT & STA 202+50± LT

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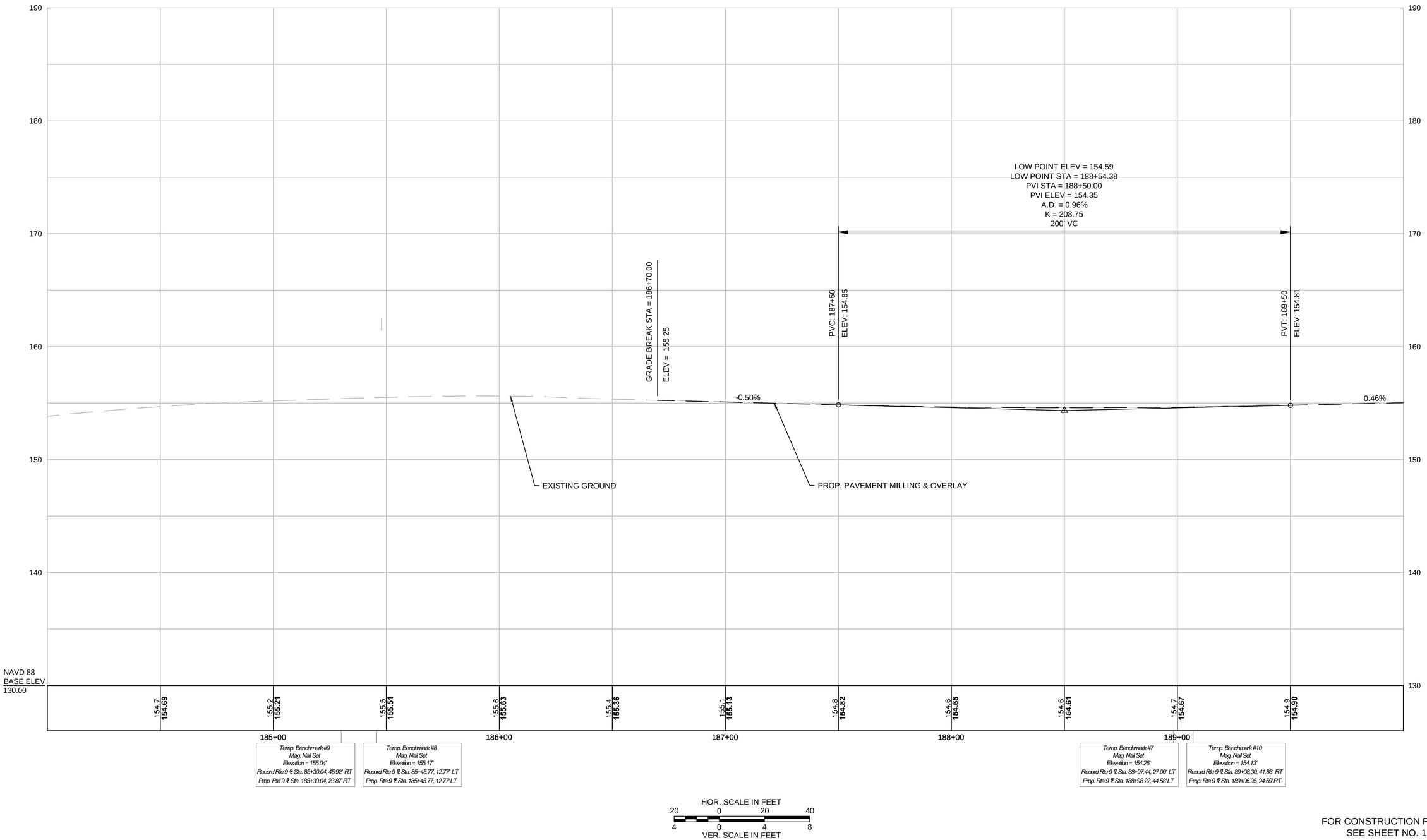
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	58
PROJECT FILE NO.	608180		

PROFILE - ROUTE 9
SHEET 1 OF 4

PROFILE - ROUTE 9 CONSTRUCTION BASELINE

NOTE:
PROFILE GEOMETRY AND ELEVATION DATA ARE FOR INFORMATIONAL PURPOSES ONLY. THE ACTUAL OVERLAY DEPTH IS TO BE CONSTRUCTED AS SHOWN ON THE TYPICAL SECTIONS.



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 13

608180_HDB(PROFILE).DWG Plotted on 29-Jun-2016 11:13 AM

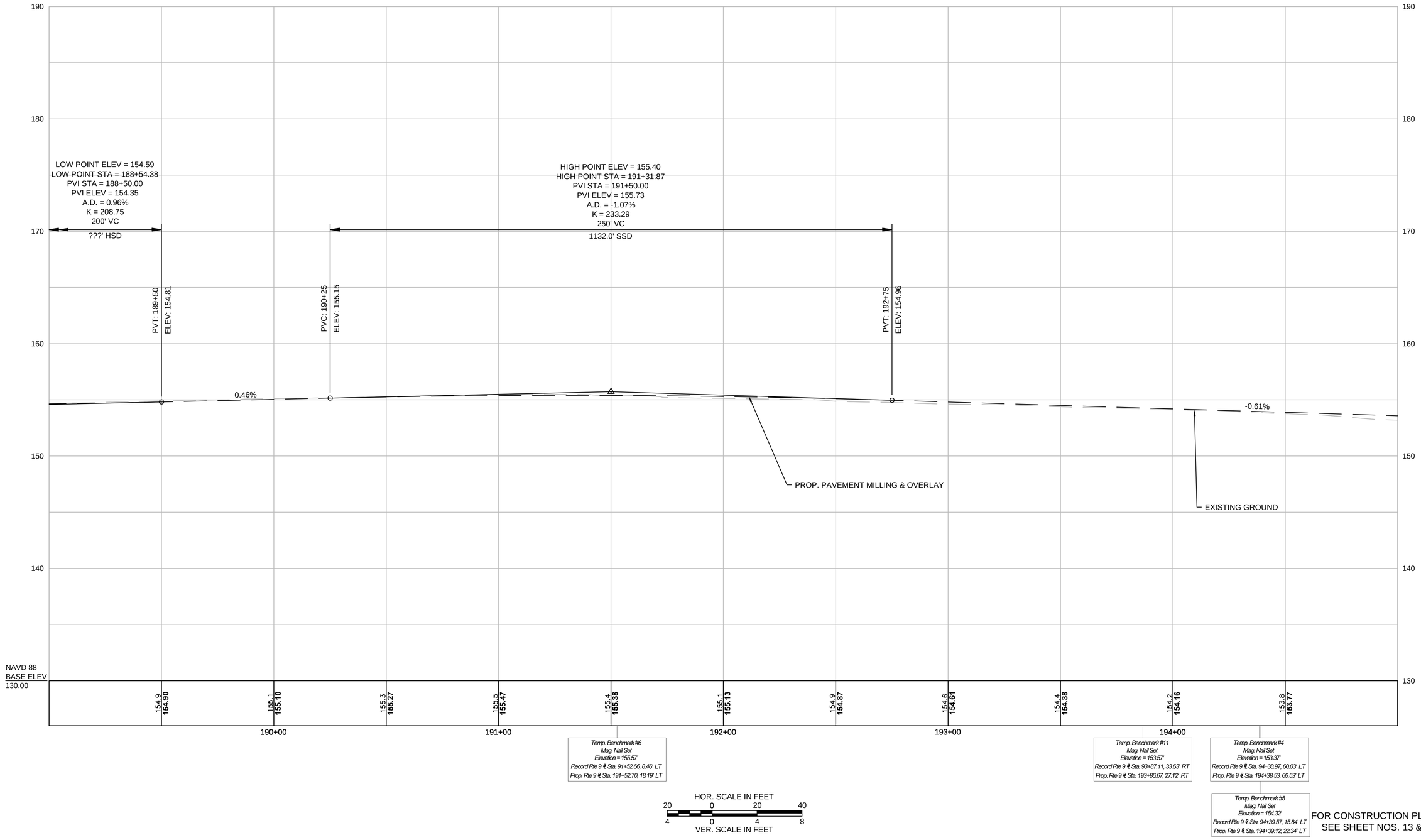
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	58
PROJECT FILE NO.	608180		

PROFILE - ROUTE 9
SHEET 2 OF 4

PROFILE - ROUTE 9 CONSTRUCTION BASELINE

NOTE:
PROFILE GEOMETRY AND ELEVATION DATA ARE FOR INFORMATIONAL PURPOSES ONLY. THE ACTUAL OVERLAY DEPTH IS TO BE CONSTRUCTED AS SHOWN ON THE TYPICAL SECTIONS.



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 13 & 14

608180_HDB(PROFILE).DWG Plotted on 29-Jun-2016 11:13 AM

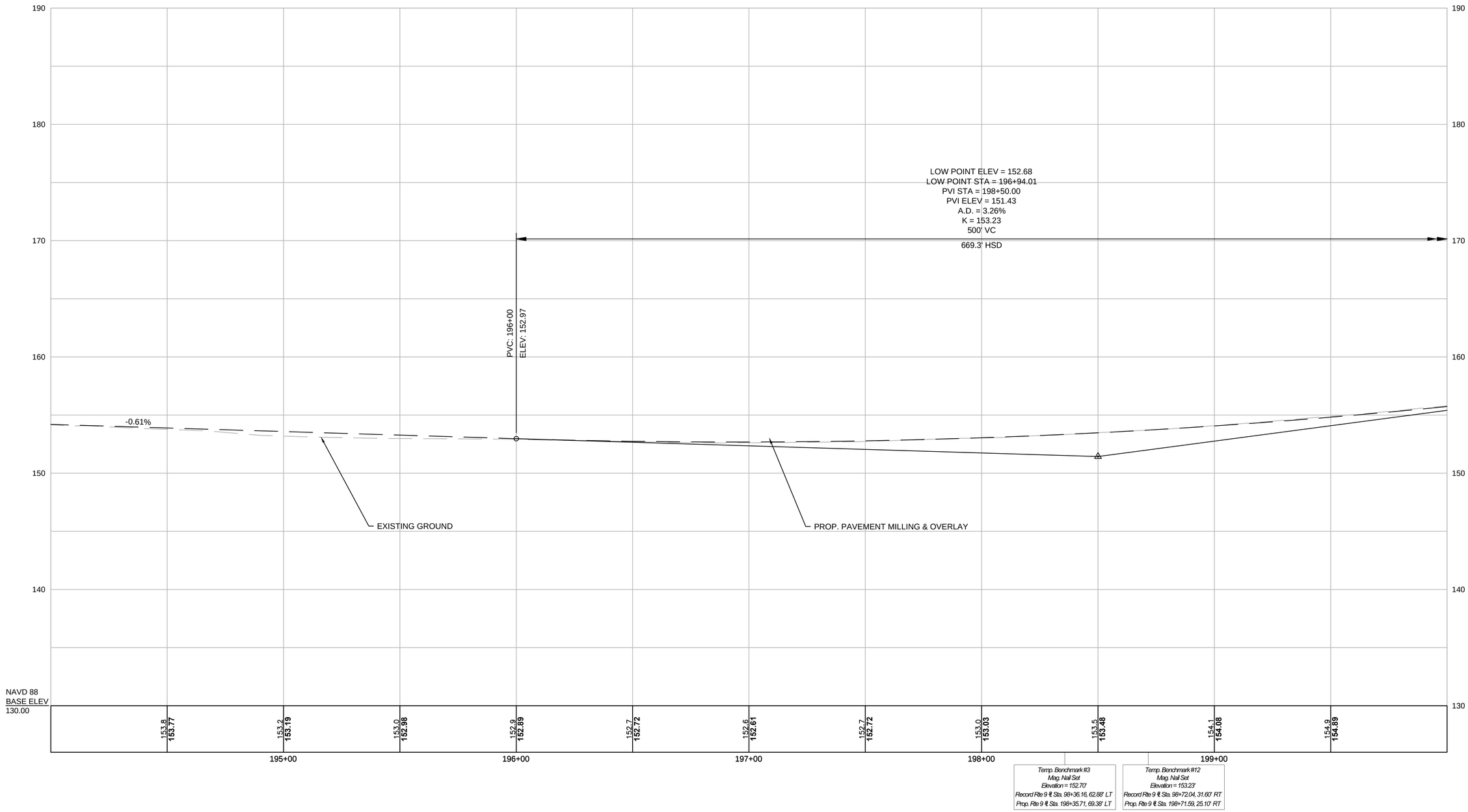
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	58
PROJECT FILE NO.	608180		

PROFILE - ROUTE 9
SHEET 3 OF 4

PROFILE - ROUTE 9 CONSTRUCTION BASELINE

NOTE:
PROFILE GEOMETRY AND ELEVATION DATA ARE FOR INFORMATIONAL PURPOSES ONLY. THE ACTUAL OVERLAY DEPTH IS TO BE CONSTRUCTED AS SHOWN ON THE TYPICAL SECTIONS.



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

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 14 & 15

608180_HDB(PROFILE).DWG Plotted on 29-Jun-2016 11:14 AM

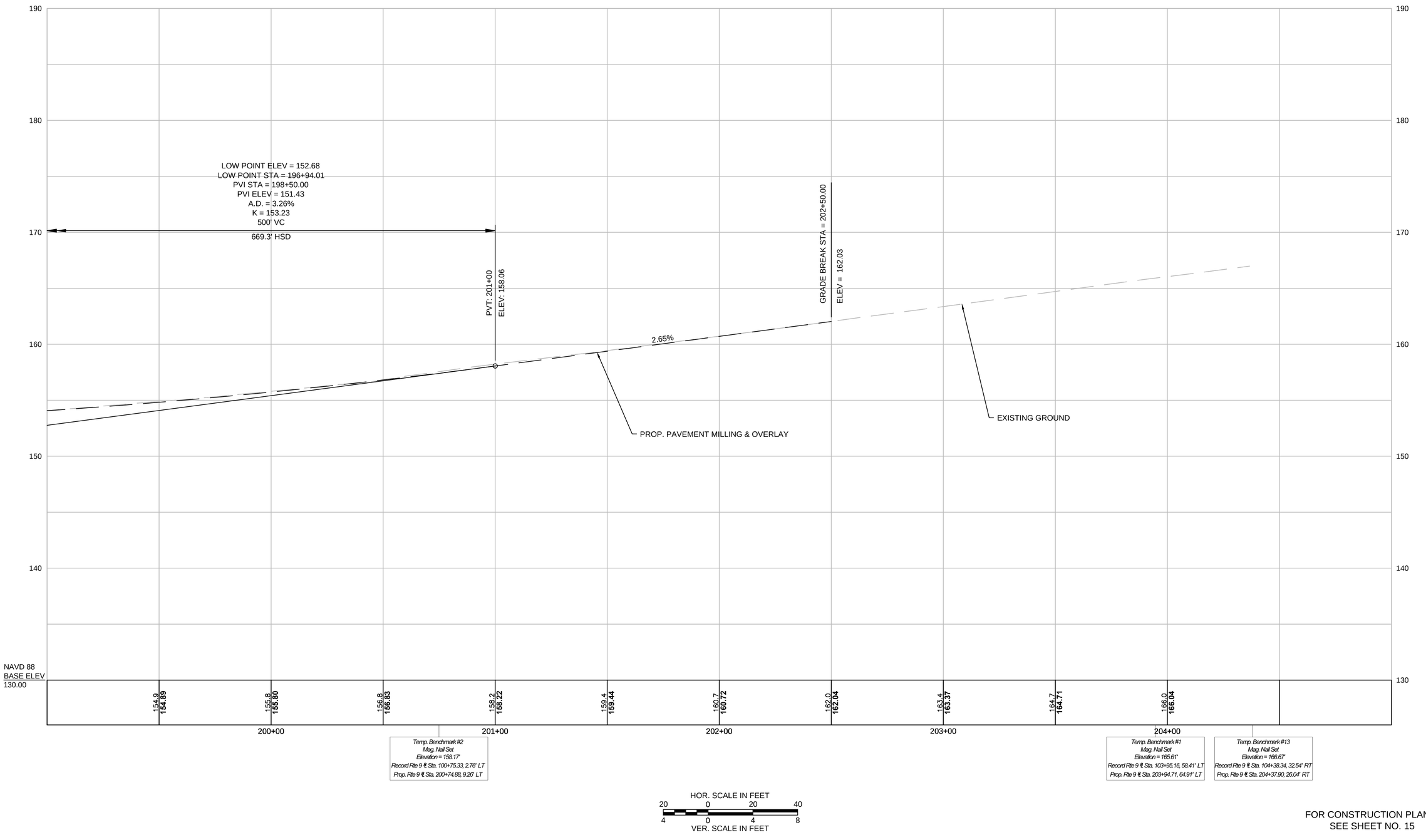
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	58
PROJECT FILE NO.	608180		

PROFILE - ROUTE 9
SHEET 4 OF 4

PROFILE - ROUTE 9 CONSTRUCTION BASELINE

NOTE:
PROFILE GEOMETRY AND ELEVATION DATA ARE FOR INFORMATIONAL PURPOSES ONLY. THE ACTUAL OVERLAY DEPTH IS TO BE CONSTRUCTED AS SHOWN ON THE TYPICAL SECTIONS.



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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 15

608180_HD8(PROFILE).DWG Plotted on 29-Jun-2016 11:14 AM

CURVE TABLE				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
1	1502.00	157.11	78.62	5° 59' 35"
2	3798.00	170.40	85.21	2° 34' 14"
3	37.00	15.70	7.97	24° 18' 56"
4	7.00	15.60	14.25	127° 41' 30"
5	20.00	17.32	9.24	49° 36' 50"
6	3787.00	225.46	112.76	3° 24' 40"
7	20.00	25.29	14.65	72° 26' 53"
8	15.00	16.08	8.91	61° 24' 36"
9	3832.00	118.49	59.25	1° 46' 18"
10	10.00	11.49	6.47	65° 48' 59"

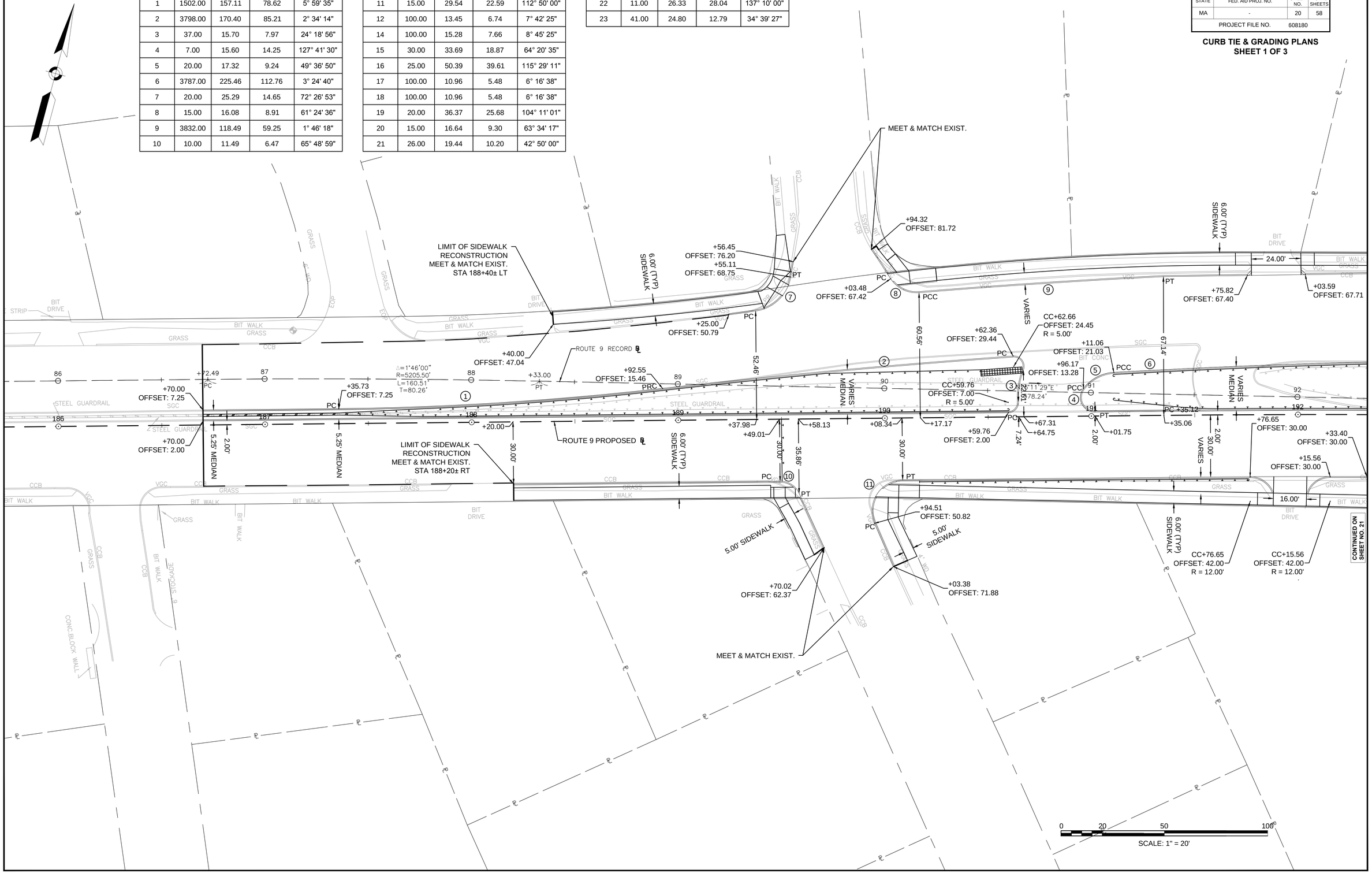
CURVE TABLE				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
11	15.00	29.54	22.59	112° 50' 00"
12	100.00	13.45	6.74	7° 42' 25"
14	100.00	15.28	7.66	8° 45' 25"
15	30.00	33.69	18.87	64° 20' 35"
16	25.00	50.39	39.61	115° 29' 11"
17	100.00	10.96	5.48	6° 16' 38"
18	100.00	10.96	5.48	6° 16' 38"
19	20.00	36.37	25.68	104° 11' 01"
20	15.00	16.64	9.30	63° 34' 17"
21	26.00	19.44	10.20	42° 50' 00"

CURVE TABLE				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
22	11.00	26.33	28.04	137° 10' 00"
23	41.00	24.80	12.79	34° 39' 27"

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	58
PROJECT FILE NO.	608180		

CURB TIE & GRADING PLANS
SHEET 1 OF 3



608180_HD9(CURBTIE-GRADE).DWG Plotted on 29-Jun-2016 11:14 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	58
PROJECT FILE NO.	608180		

CURB TIE & GRADING PLANS
SHEET 2 OF 3

CURVE TABLE				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
1	1502.00	157.11	78.62	5° 59' 35"
2	3798.00	170.40	85.21	2° 34' 14"
3	37.00	15.70	7.97	24° 18' 56"
4	7.00	15.60	14.25	127° 41' 30"
5	20.00	17.32	9.24	49° 36' 50"
6	3787.00	225.46	112.76	3° 24' 40"
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CURVE TABLE				
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11	15.00	29.54	22.59	112° 50' 00"
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14	100.00	15.28	7.66	8° 45' 25"
15	30.00	33.69	18.87	64° 20' 35"
16	25.00	50.39	39.61	115° 29' 11"
17	100.00	10.96	5.48	6° 16' 38"
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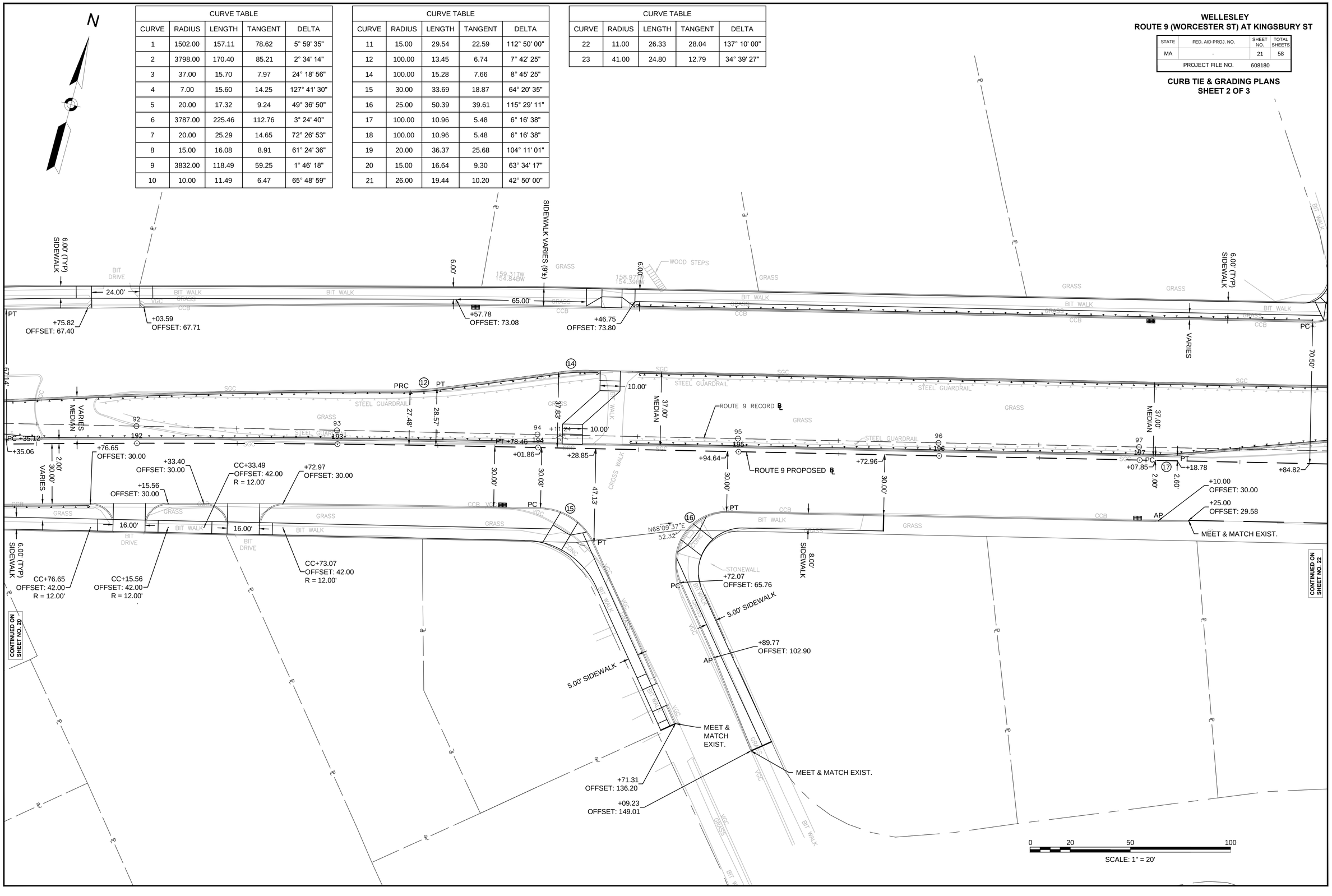

608180_HD9(CURBTIE-GRADE).DWG Plotted on 29-Jun-2016 11:14 AM

CURVE TABLE				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
1	1502.00	157.11	78.62	5° 59' 35"
2	3798.00	170.40	85.21	2° 34' 14"
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CURVE TABLE				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
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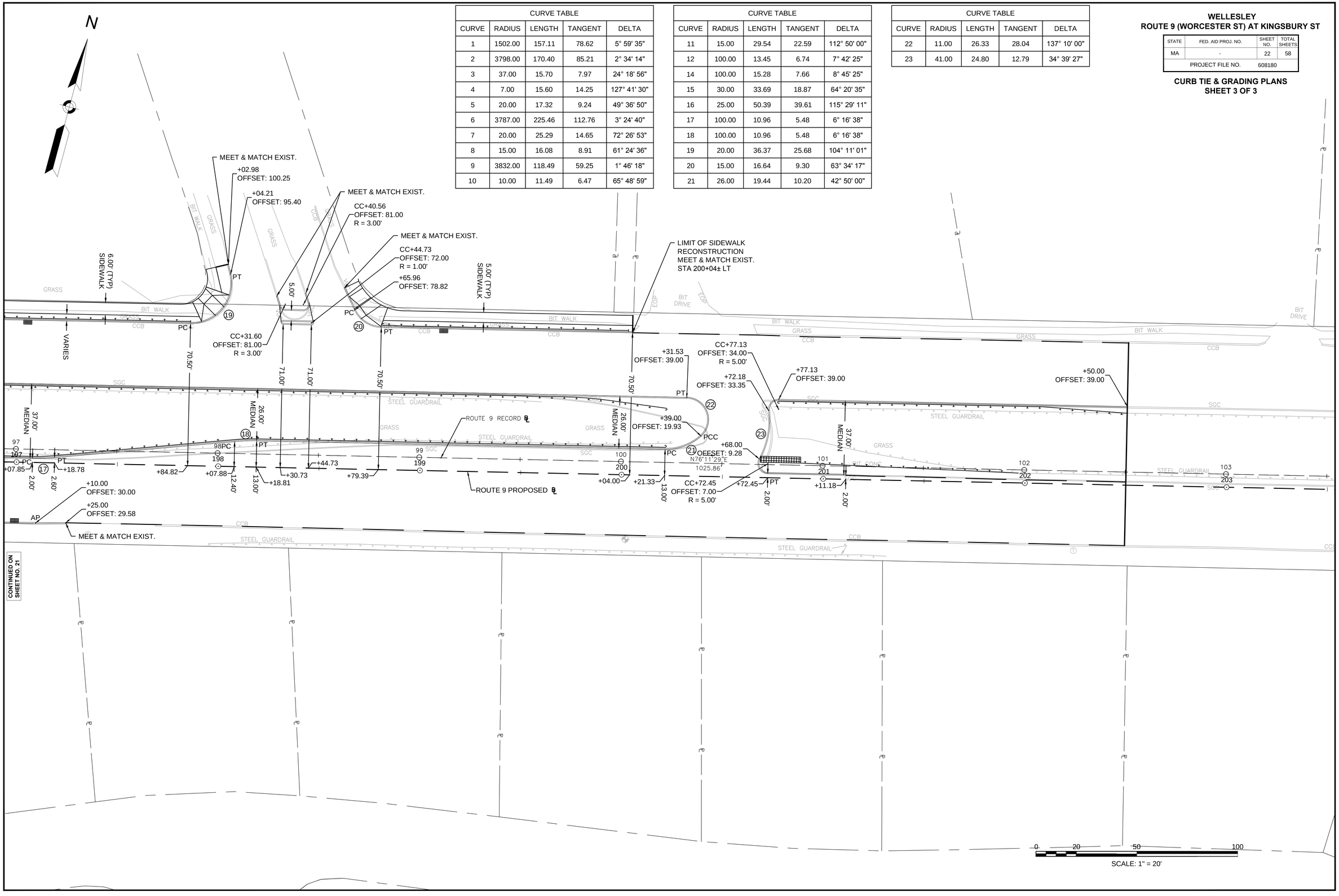
23	41.00	24.80	12.79	34° 39' 27"

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	58
PROJECT FILE NO.	608180		

CURB TIE & GRADING PLANS
SHEET 3 OF 3

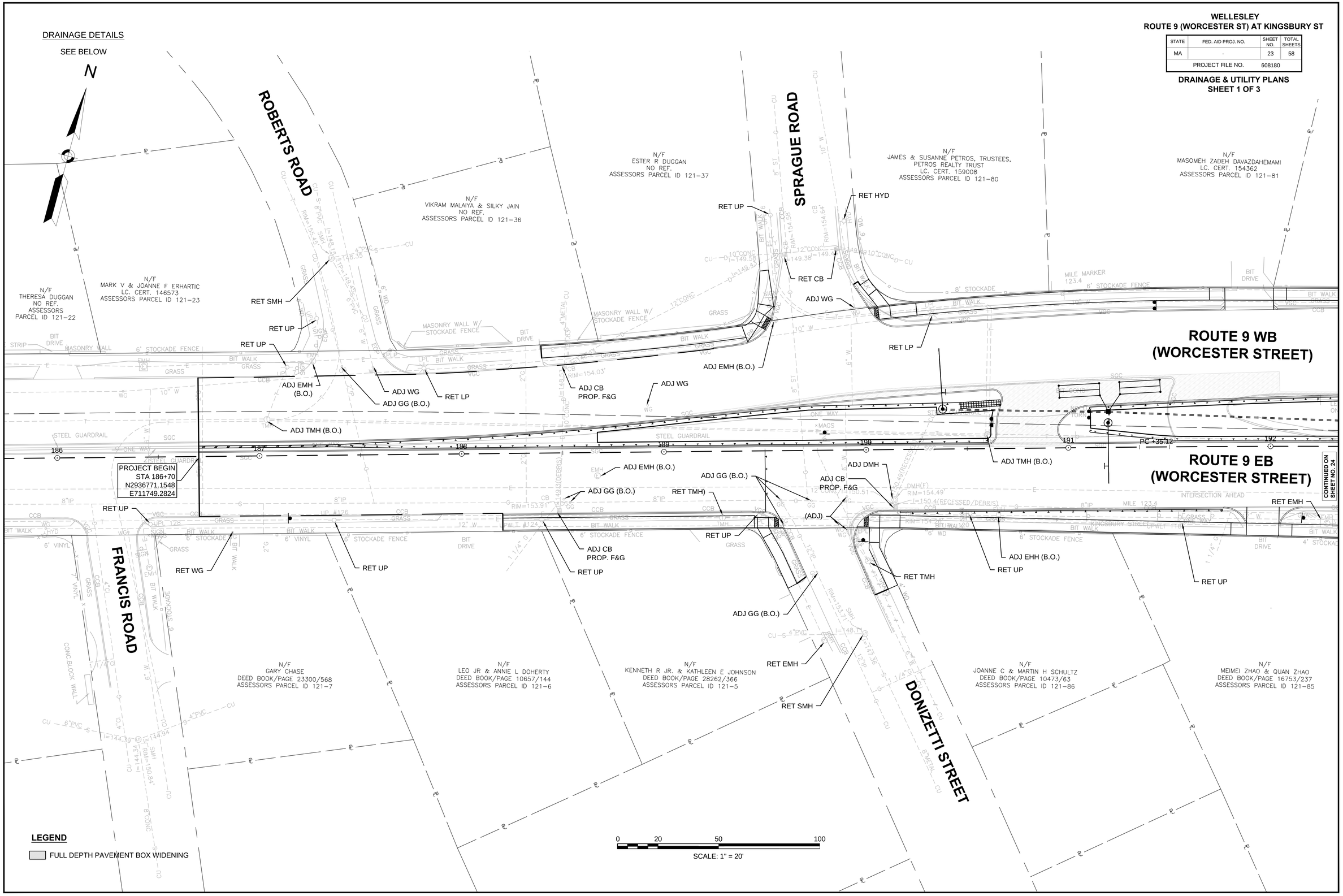


608180_HD9(CURBTIE-GRADE).DWG Plotted on 29-Jun-2016 11:15 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	58
PROJECT FILE NO.	608180		

DRAINAGE & UTILITY PLANS
SHEET 1 OF 3



608180_HD10(DRAIN-UTIL).DWG Plotted on 29-Jun-2016 11:15 AM

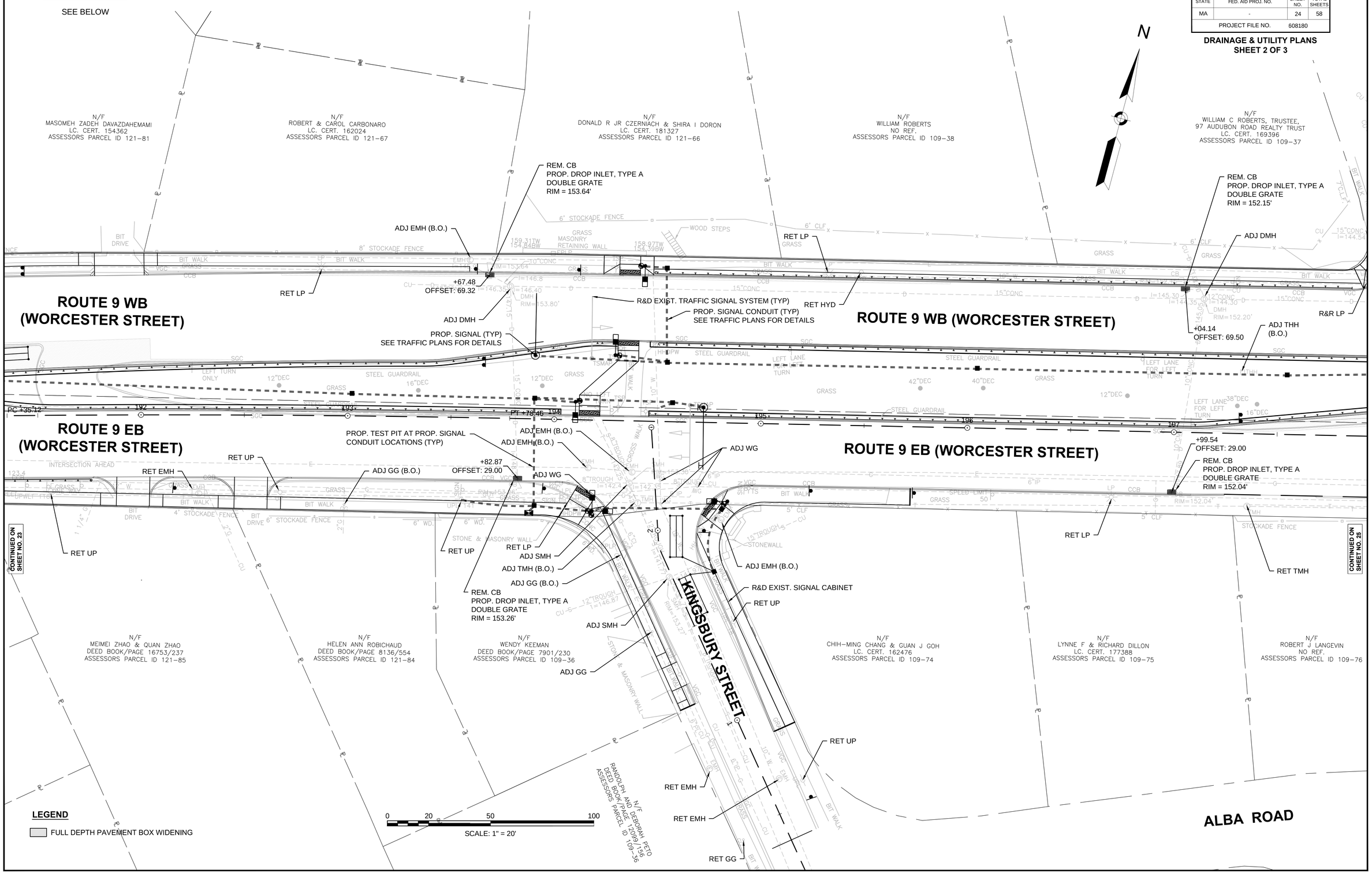
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	58
PROJECT FILE NO.	608180		

DRAINAGE & UTILITY PLANS
SHEET 2 OF 3

DRAINAGE DETAILS

SEE BELOW

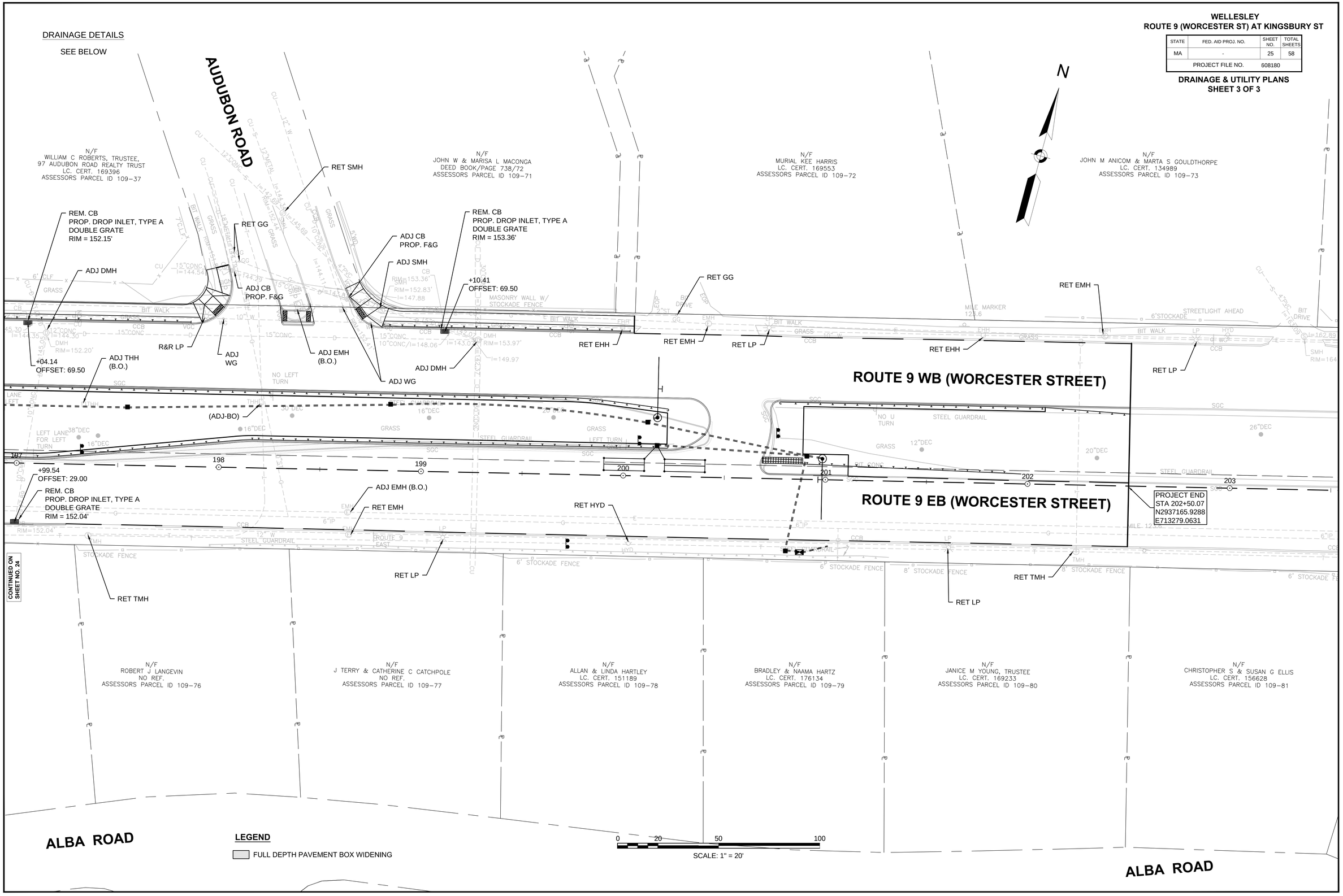


608180_HD10(DRAIN-UTIL).DWG Plotted on 29-Jun-2016 11:15 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	25	58
PROJECT FILE NO.	608180		

DRAINAGE & UTILITY PLANS
SHEET 3 OF 3



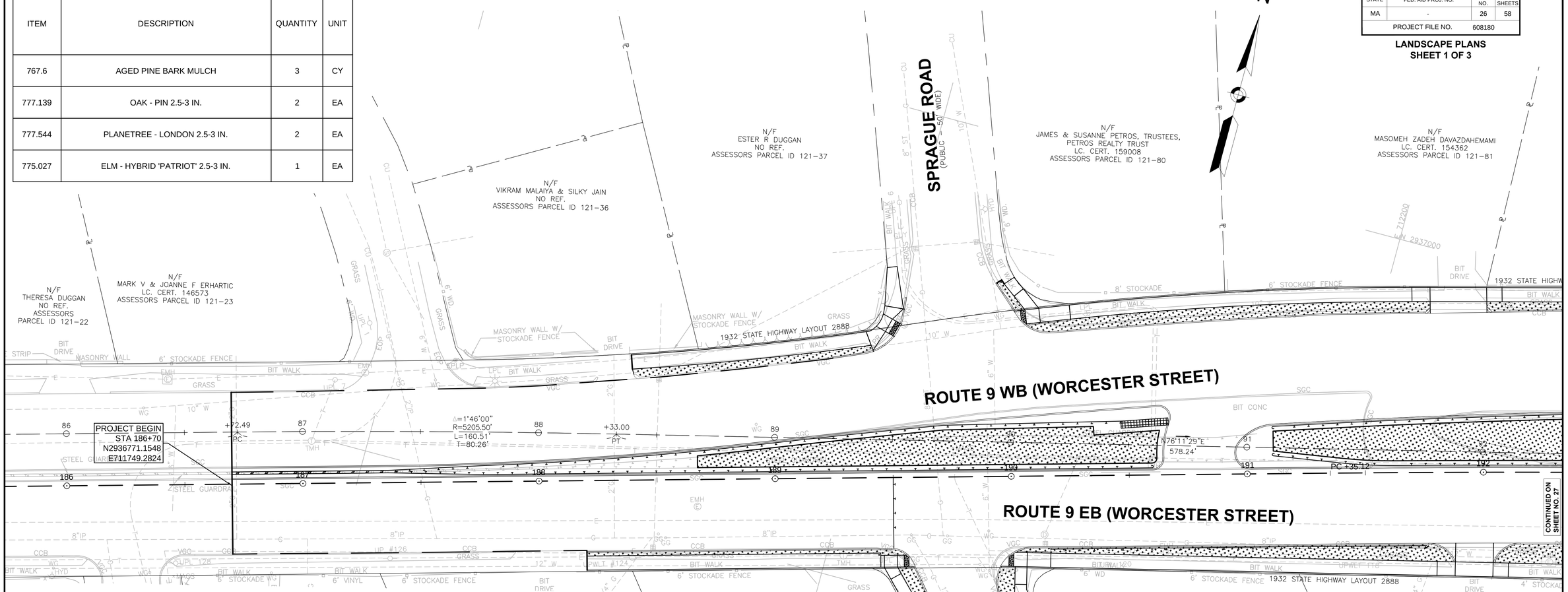
608180_HD10(DRAIN-UTIL).DWG Plotted on 29-Jun-2016 11:15 AM

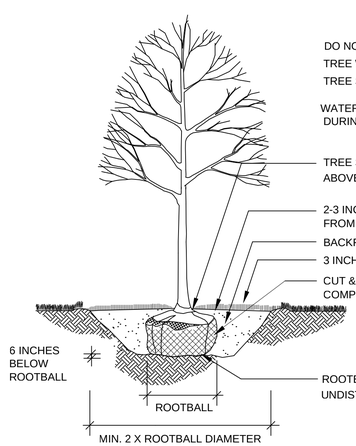
	PLANT SCHEDULE		
ITEM	DESCRIPTION	QUANTITY	UNIT
767.6	AGED PINE BARK MULCH	3	CY
777.139	OAK - PIN 2.5-3 IN.	2	EA
777.544	PLANETREE - LONDON 2.5-3 IN.	2	EA
775.027	ELM - HYBRID 'PATRIOT' 2.5-3 IN.	1	EA

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	26	58
PROJECT FILE NO.	608180		

LANDSCAPE PLANS
SHEET 1 OF 3





DO NOT CUT LEADER
TREE WRAP SHALL NOT BE USED
TREE SHALL BE SET PLUMB

WATERING SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING

TREE SHALL BE PLANTED SO THAT CROWN IS 3 INCHES ABOVE FINISHED GRADE AFTER SETTLEMENT

2-3 INCHES AGED PINE BARK MULCH (PULL MULCH AWAY FROM TRUNK OF TREE)

BACKFILL MIX PER SPECIAL PROVISIONS

3 INCH HIGH EARTH WATERING SAUCER AROUND TREE PIT

CUT & ROLL BACK 1/3 OF BURLAP BEFORE BACKFILLING. COMPLETELY REMOVE SYNTHETIC BURLAP & LACING

ROOTBALL SHALL BE PLACED ON UNDISTURBED SUBGRADE

DECIDUOUS TREE PLANTING
NOT TO SCALE

LEGEND

PROPOSED LOAM & SEED

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
2. FINAL LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLANTING.
3. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME & SIZE.
4. ALL PLANTS WILL BE MULCHED PER THE PLANTING SPECIFICATIONS AND DETAILS. PLANTING DETAILS AND SPECIAL PROVISIONS.
5. ALL DISTURBED AREAS WILL BE LOAMED AND SEEDED UNLESS NOTED OTHERWISE.

608180_LA1(LANDSCAPE).DWG Plotted on 29-Jun-2016 11:16 AM

HIGHWAY GUARD DETAILS

TRAFFIC SIGNAL CONDUIT

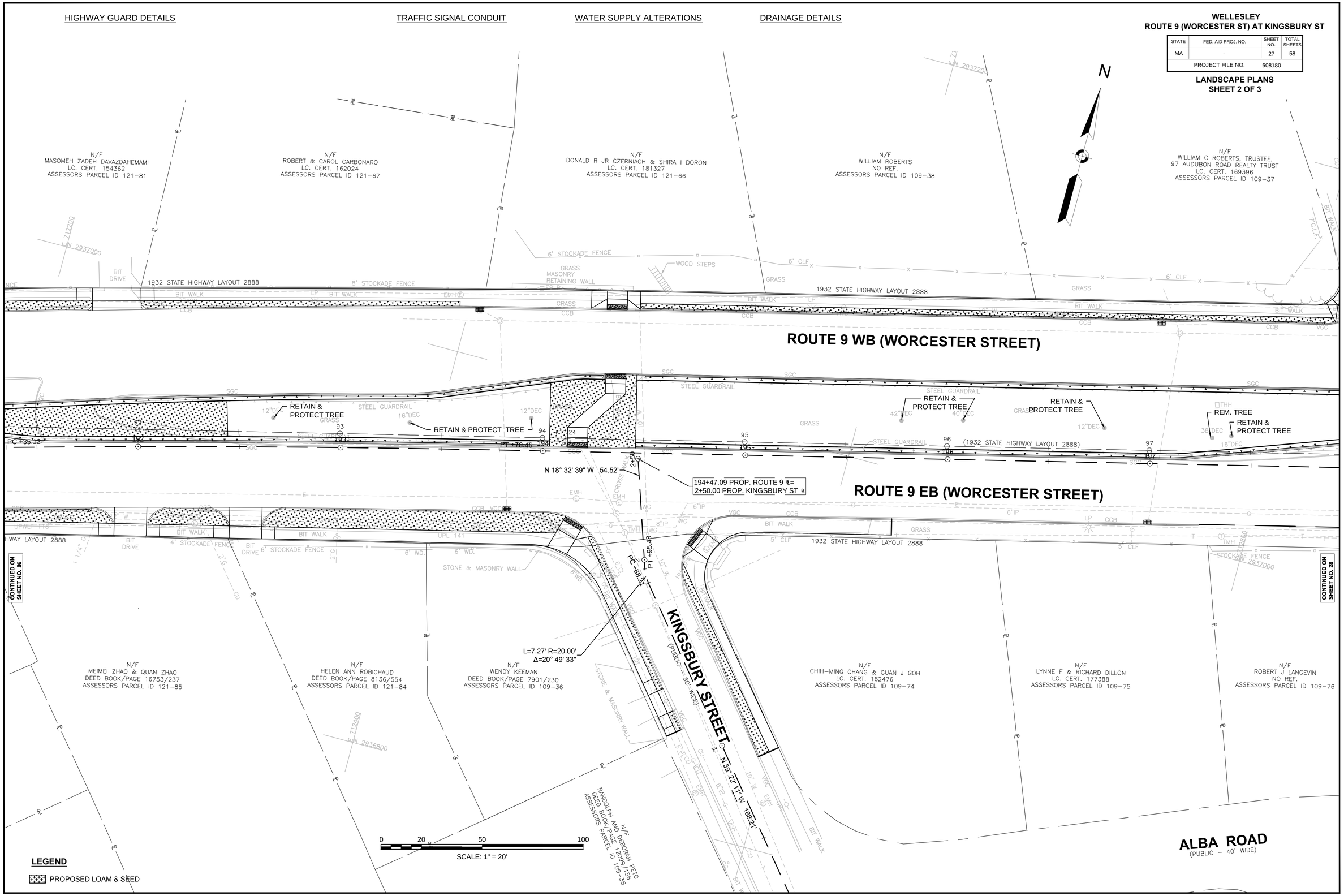
WATER SUPPLY ALTERATIONS

DRAINAGE DETAILS

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	27	58
PROJECT FILE NO.	608180		

LANDSCAPE PLANS
SHEET 2 OF 3



608180_LA1(LANDSCAPE).DWG Plotted on 29-Jun-2016 11:16 AM

HIGHWAY GUARD DETAILS

TRAFFIC SIGNAL CONDUIT

WATER SUPPLY ALTERATIONS

NONE

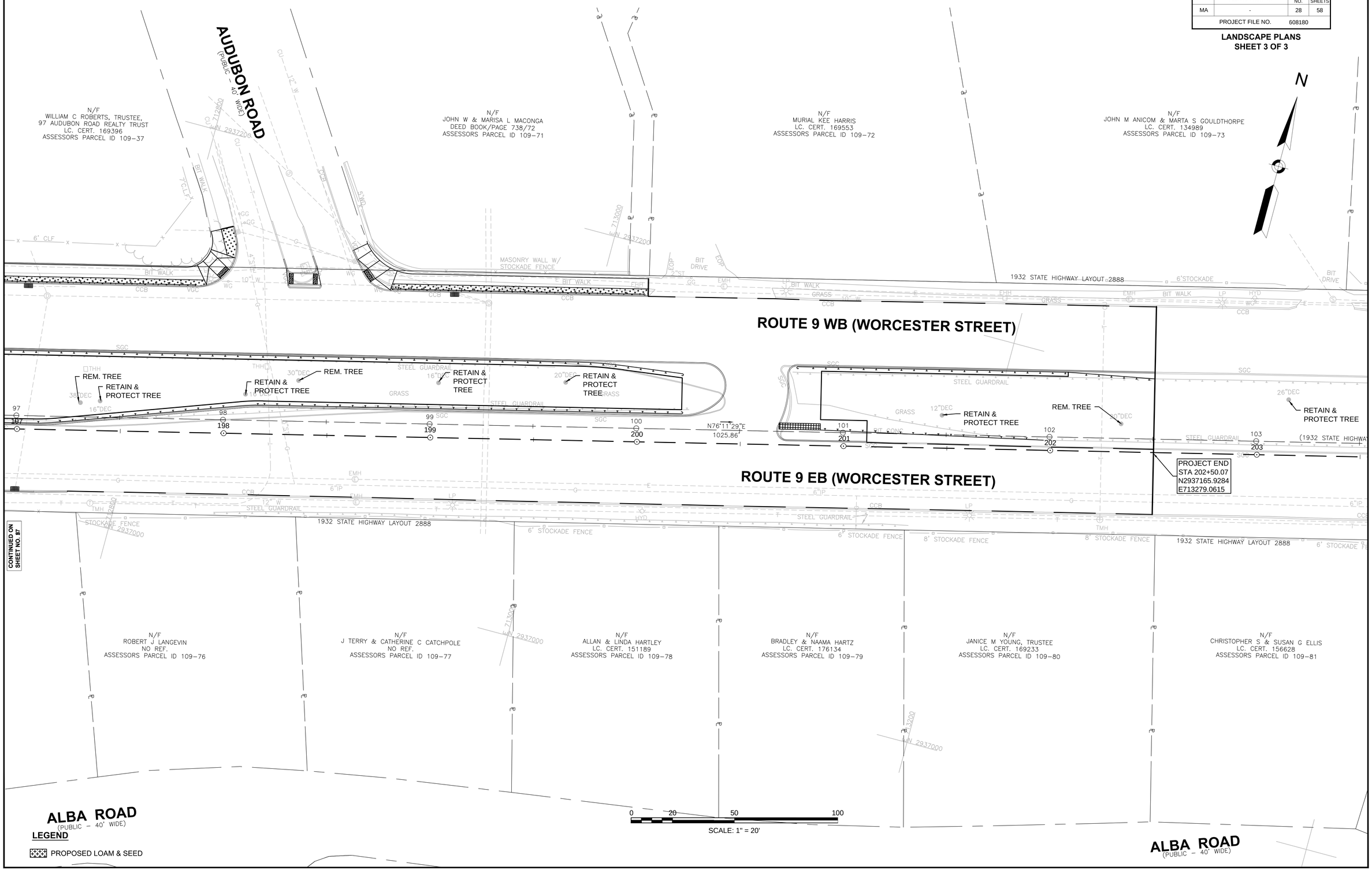
DRAINAGE DETAILS

SEE BELOW

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	28	58
PROJECT FILE NO.	608180		

LANDSCAPE PLANS
SHEET 3 OF 3



LEGEND

PROPOSED LOAM & SEED

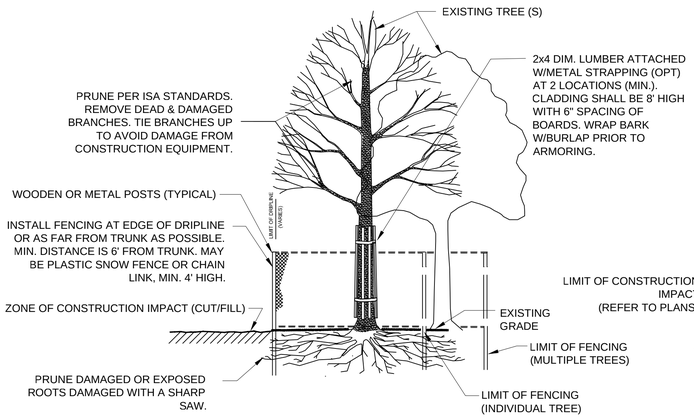
608180_LA1(LANDSCAPE).DWG Plotted on 29-Jun-2016 11:16 AM

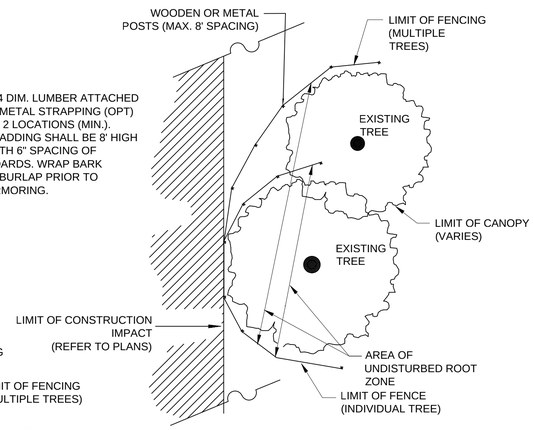
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	29	58
PROJECT FILE NO.	608180		

CONSTRUCTION DETAILS
SHEET 1 OF 6

608180_HD11(DETAILS).DWG Plotted on 29-Jun-2016 11:17 AM

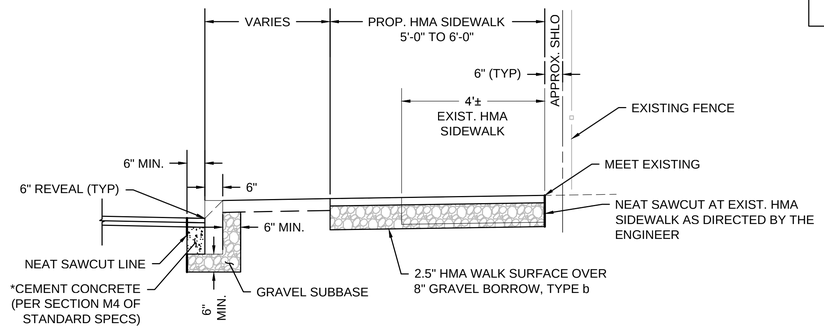




PLAN VIEW

TREE PROTECTION-EXISTING TREE(S)

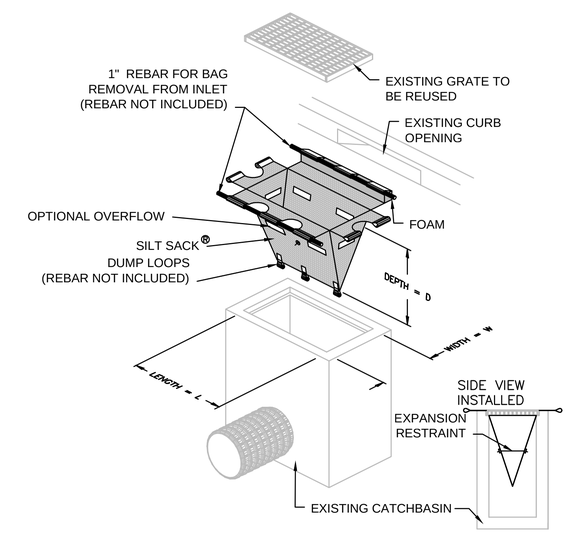
NOT TO SCALE



TYPICAL SIDEWALK & CURB INSTALLATION

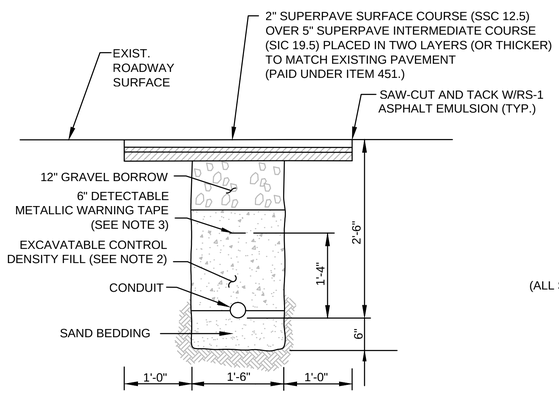
NOT TO SCALE

* PAYMENT PER FOOT OF CURB IS INCLUSIVE OF ALL ITEMS OF WORK REQUIRED TO COMPLETE PROPER INSTLLATION OF CURB



CATCH BASIN W/ SILTSACK INLET PROTECTION

NOT TO SCALE

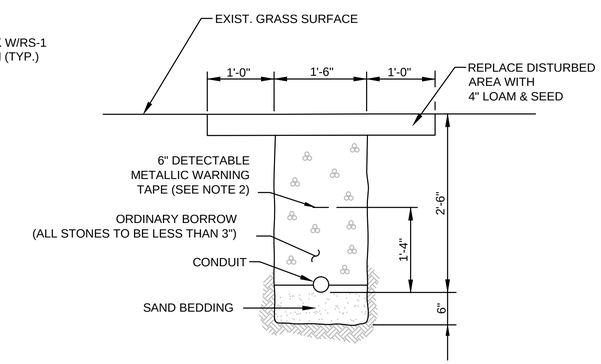


NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL), WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT.
2. CONTROL DENSITY FILL SHALL BE TYPE 2E AND MEET THE REQUIREMENTS OF SUBSECTION M4.08.0
3. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

CONDUIT CROSSING ROADWAY

NOT TO SCALE

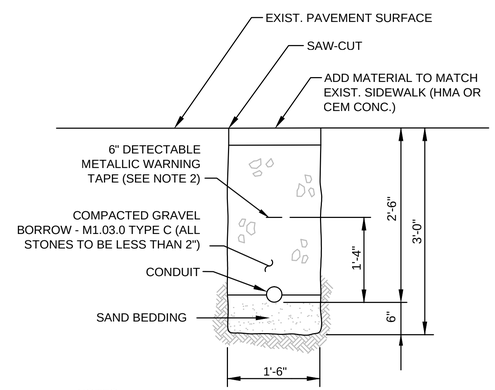


NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL), WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT.
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

CONDUIT UNDER GRASS AREAS

NOT TO SCALE

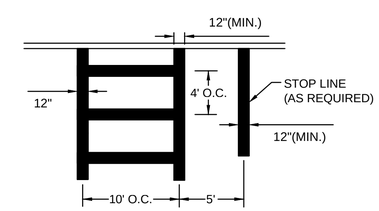


NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL), WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT.
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

CONDUIT UNDER SIDEWALK

NOT TO SCALE



NOTES:

1. ALL PROPOSED STOP LINES AND CROSSWALKS SHALL BE REFLECTORIZED THERMOPLASTIC.

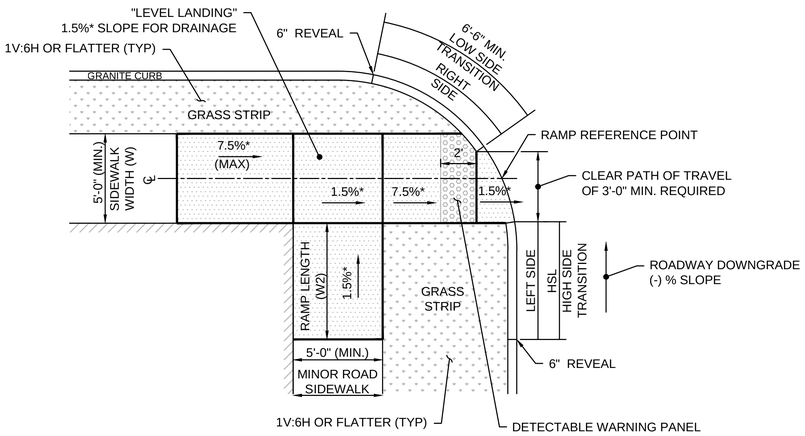
CROSSWALK & STOP LINE

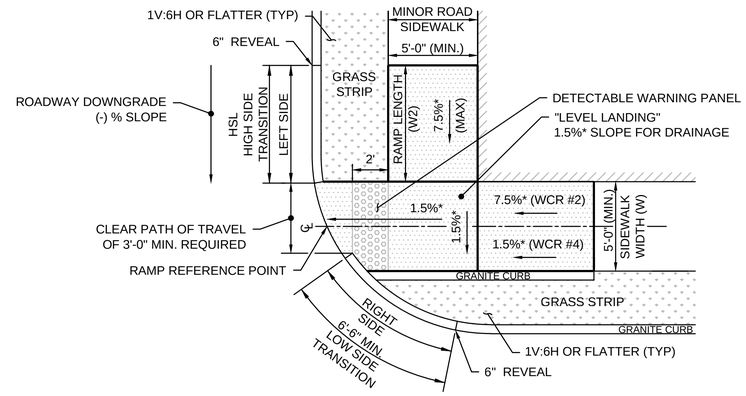
NOT TO SCALE

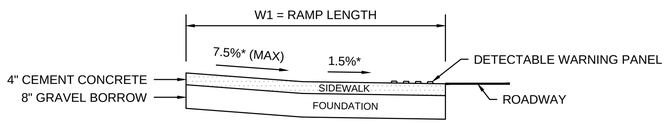
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	30	58
PROJECT FILE NO.	608180		

CONSTRUCTION DETAILS
SHEET 2 OF 6
WHEELCHAIR RAMP DETAILS

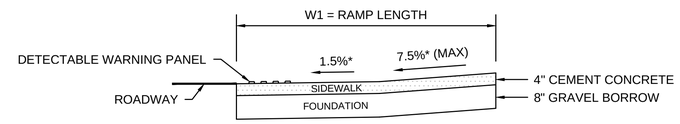






RAMP ℄ SECTION

WHEELCHAIR RAMP DETAIL - TYPE A-1
"T" INTERSECTION WITH GRASS STRIP
NOT TO SCALE



RAMP ℄ SECTION

WHEELCHAIR RAMP DETAIL - TYPE A-2
"T" INTERSECTION WITH GRASS STRIP
NOT TO SCALE

WHEELCHAIR RAMP DATA

WCR #	WCR TYPE	STATION	OFFSET	℄ RAMP LENGTH (W1)	℄ SIDEWALK WIDTH (W)	℄ RAMP OPENING WIDTH	MINOR ROAD RAMP LENGTH (W2)	MINOR ROAD SIDEWALK WIDTH	ROADWAY GUTTER SLOPE (±)	CURB TRANSITION LENGTH	
										LEFT SIDE	RIGHT SIDE
1	A-1	189+57.92	35.44' RT	13'-6"	5'-0"	4'-0"	4'-6"	5'-0"	-1.30%	6'-6"	9'-0" (HSL)

WHEELCHAIR RAMP DATA

WCR #	WCR TYPE	STATION	OFFSET	℄ RAMP LENGTH (W1)	℄ SIDEWALK WIDTH (W)	℄ RAMP OPENING WIDTH	MINOR ROAD RAMP LENGTH (W2)	MINOR ROAD SIDEWALK WIDTH	ROADWAY GUTTER SLOPE (±)	CURB TRANSITION LENGTH	
										LEFT SIDE	RIGHT SIDE
2	A-2	189+97.08	35.09' RT	19'-4"	6'-0"	4'-0"	7'-6"	5'-0"	-0.75%	7'-8" (HSL)	6'-6"
4	A-2	190+03.68	67.12' LT	22'-0"	6'-0"	4'-0"	9'-0"	5'-0"	-1.80%	9'-0" (HSL)	6'-6"

LEGEND:

HSL =HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
W =SIDEWALK WIDTH
W1 =PERPENDICULAR RAMP LENGTH
* =TOLERANCE FOR CONSTRUCTION 0.5%

KEY:

AREA OF CEMENT CONCRETE WHEELCHAIR RAMP (ITEM 701.2)

NOTES:

1. DETECTABLE WARNING PANELS SHALL BE INSTALLED ON ALL TRANSITION RAMPS ACCORDING TO CONSTRUCTION STANDARD DETAIL E 107.6.5.

2. DETECTABLE WARNING PANELS FOR ALL PEDESTRIAN RAMPS SHALL BE YELLOW.

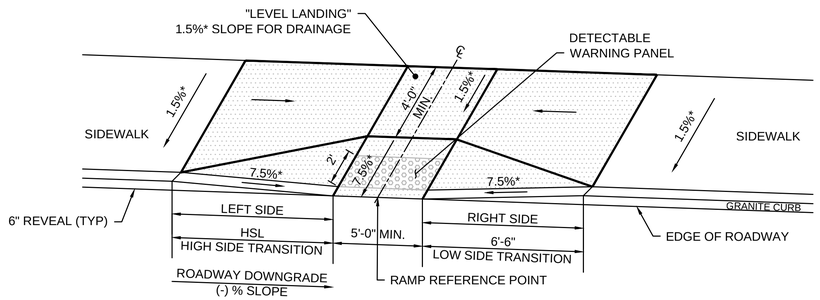
3. TRANSITION CURB FROM 0" REVEAL TO 6" REVEAL AS SHOWN IN TABLES. SLOPE TOPSOIL TO MEET EDGE OF RAMP.

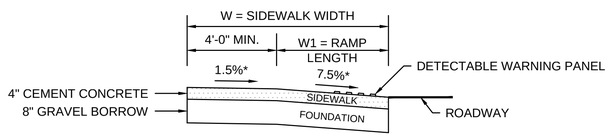
608180_HD11(DETAILS).DWG Plotted on 29-Jun-2016 11:17 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	31	58
PROJECT FILE NO.	608180		

CONSTRUCTION DETAILS
SHEET 3 OF 6
WHEELCHAIR RAMP DETAILS

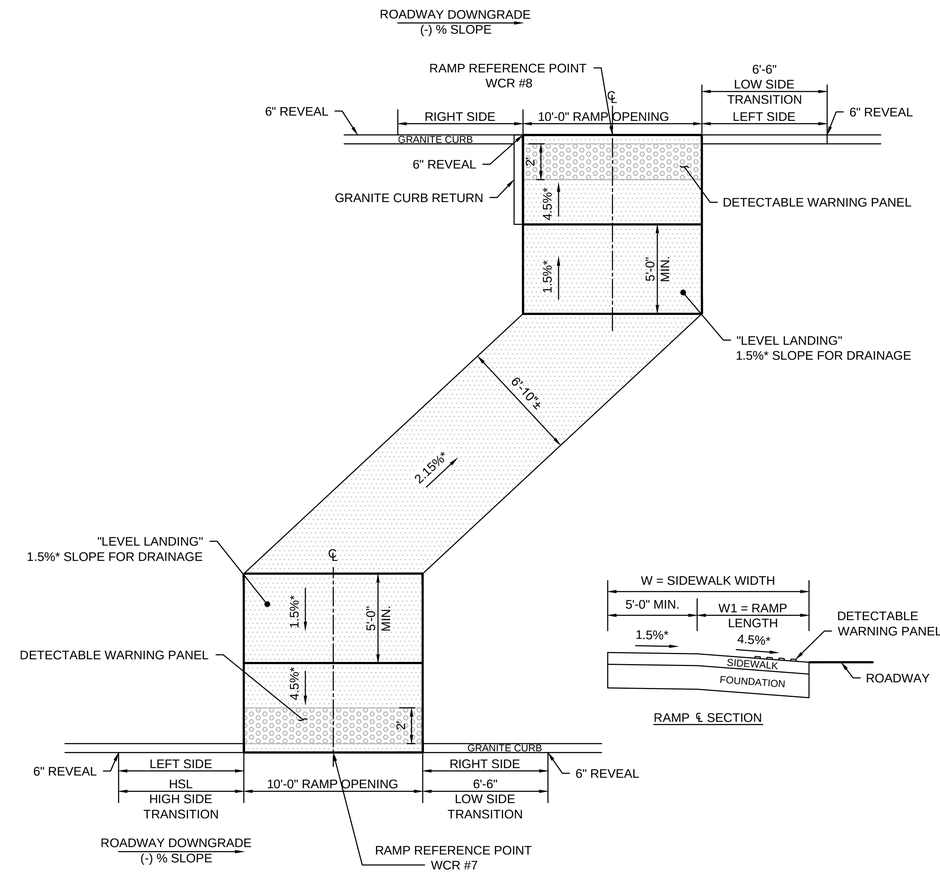




RAMP ℄ SECTION

WHEELCHAIR RAMP DETAIL - TYPE B
STANDARD DETAIL E 107.2.0
LESS THAN 12'-4" SIDEWALK
NOT TO SCALE

WHEELCHAIR RAMP DATA									
WCR #	WCR TYPE	STATION	OFFSET	℄ RAMP LENGTH (W1)	℄ SIDEWALK WIDTH (W)	℄ RAMP OPENING WIDTH	ROADWAY GUTTER SLOPE (±)	CURB TRANSITION LENGTH	
								LEFT SIDE	RIGHT SIDE
3	B	189+52.73	62.26' LT	4'-6"	8'-6"	6'-0"	-2.80%	11'-0" (HSL)	6'-6"
9	B	194+35.26	70.50' LT	5'-4"	9'-4"	10'-0"	-0.80%	7'-8" (HSL)	6'-6"
10	B	197+99.34	76.75' LT	8'-4"	12'-4"	6'-0"	-1.00%	7'-8" (HSL)	6'-6"
13	B	198+67.21	76.75' LT	3'-6"	11'-2"	6'-0"	-2.60%	6'-6"	11'-0" (HSL)



RAMP ℄ SECTION

WHEELCHAIR RAMP DETAIL - TYPE C
MEDIAN WHEELCHAIR RAMP
NOT TO SCALE

WHEELCHAIR RAMP DATA									
WCR #	WCR TYPE	STATION	OFFSET	℄ RAMP LENGTH (W1)	℄ SIDEWALK WIDTH (W)	℄ RAMP OPENING WIDTH	ROADWAY GUTTER SLOPE (±)	CURB TRANSITION LENGTH	
								LEFT SIDE	RIGHT SIDE
7	C	194+16.99	2.00' LT	5'-0"	10'-0"	10'-0"	-1.30%	9'-0" (HSL)	6'-6"
8	C	194+35.26	39.00' LT	5'-0"	10'-0"	10'-0"	-0.70%	6'-6"	N/A

LEGEND:

HSL =HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
W =SIDEWALK WIDTH
W1 =PERPENDICULAR RAMP LENGTH
* =TOLERANCE FOR CONSTRUCTION 0.5%

KEY:

AREA OF CEMENT CONCRETE WHEELCHAIR RAMP (ITEM 701.2)

NOTES:

1. DETECTABLE WARNING PANELS SHALL BE INSTALLED ON ALL TRANSITION RAMPS ACCORDING TO CONSTRUCTION STANDARD DETAIL E 107.6.5.

2. DETECTABLE WARNING PANELS FOR ALL PEDESTRIAN RAMPS SHALL BE YELLOW.

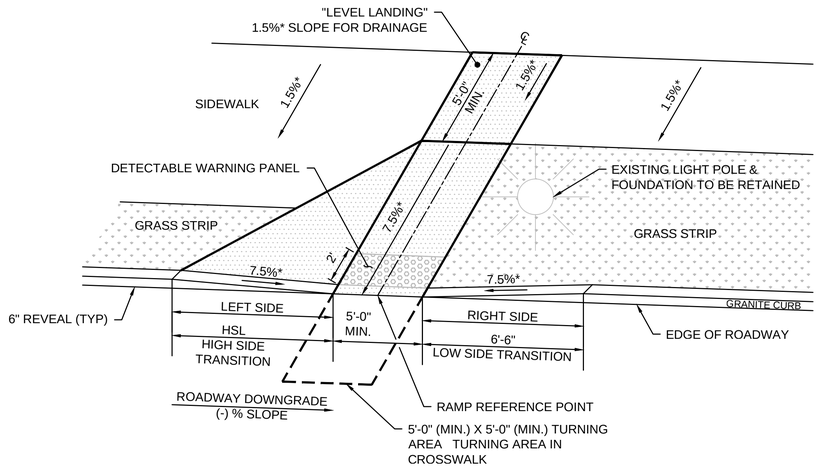
3. TRANSITION CURB FROM 0" REVEAL TO 6" REVEAL AS SHOWN IN TABLES. SLOPE TOPSOIL TO MEET EDGE OF RAMP.

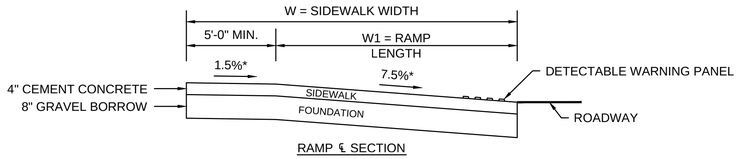
608180_HD11(DETAILS).DWG Plotted on 29-Jun-2016 11:17 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	32	58
PROJECT FILE NO.	608180		

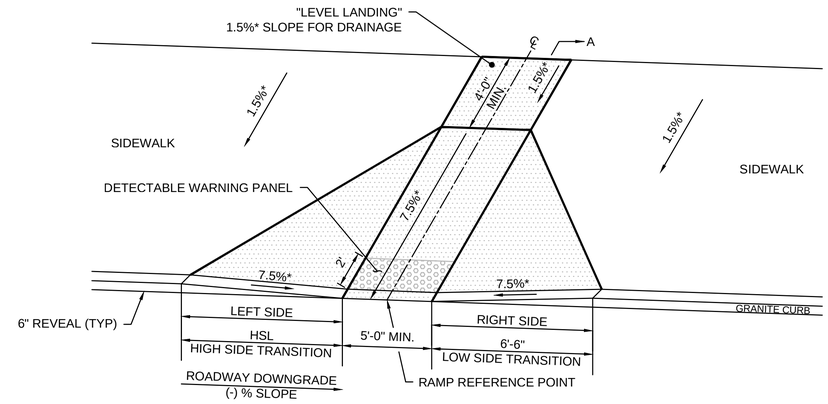
CONSTRUCTION DETAILS
SHEET 4 OF 6
WHEELCHAIR RAMP DETAILS

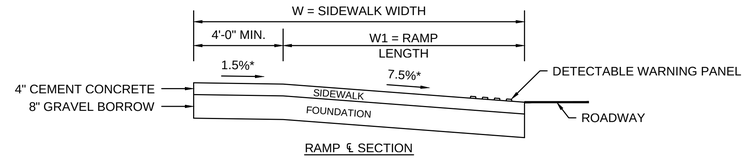




RAMP ℄ SECTION

WHEELCHAIR RAMP DETAIL - TYPE D
GREATER THAN 12'-4" SIDEWALK
WITH GRASS STRIP
NOT TO SCALE





RAMP ℄ SECTION

WHEELCHAIR RAMP DETAIL - TYPE E
STANDARD DETAIL E 107.3.0
GREATER THAN 12'-4" SIDEWALK
NOT TO SCALE

WHEELCHAIR RAMP DATA

WCR #	WCR TYPE	STATION	OFFSET	℄ RAMP LENGTH (W1)	℄ SIDEWALK WIDTH (W)	℄ RAMP OPENING WIDTH	ROADWAY GUTTER SLOPE (±)	CURB TRANSITION LENGTH	
								LEFT SIDE	RIGHT SIDE
5	D	194+16.55	33.93' LT	9'-4"	17'±	10'-0"	-0.70%	7'-8" (HSL)	6'-6"

WHEELCHAIR RAMP DATA

WCR #	WCR TYPE	STATION	OFFSET	℄ RAMP LENGTH (W1)	℄ SIDEWALK WIDTH (W)	℄ RAMP OPENING WIDTH	ROADWAY GUTTER SLOPE (±)	CURB TRANSITION LENGTH	
								LEFT SIDE	RIGHT SIDE
6	E	194+74.60	40.05' LT	5'-0"	12'-9"±	10'-0"	-0.90%	7'-8" (HSL)	6'-6"

LEGEND:

HSL =HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
W =SIDEWALK WIDTH
W1 =PERPENDICULAR RAMP LENGTH
* =TOLERANCE FOR CONSTRUCTION 0.5%

KEY:

AREA OF CEMENT CONCRETE WHEELCHAIR RAMP (ITEM 701.2)

NOTES:

1. DETECTABLE WARNING PANELS SHALL BE INSTALLED ON ALL TRANSITION RAMPS ACCORDING TO CONSTRUCTION STANDARD DETAIL E 107.6.5.

2. DETECTABLE WARNING PANELS FOR ALL PEDESTRIAN RAMPS SHALL BE YELLOW.

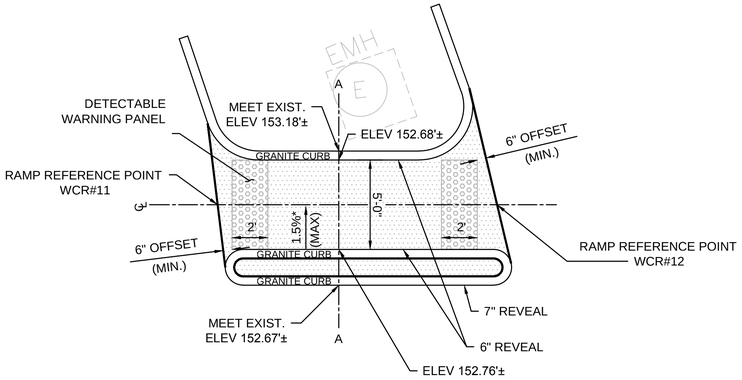
3. TRANSITION CURB FROM 0" REVEAL TO 6" REVEAL AS SHOWN IN TABLES. SLOPE TOPSOIL TO MEET EDGE OF RAMP.

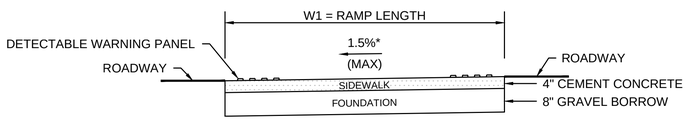
608180_HD11(DETAILS).DWG Plotted on 29-Jun-2016 11:17 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

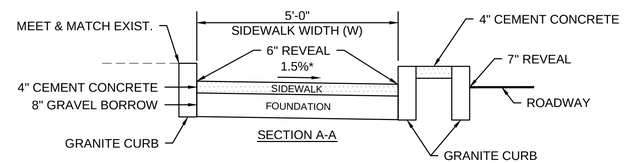
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	33	58
PROJECT FILE NO.	608180		

CONSTRUCTION DETAILS
SHEET 5 OF 6
WHEELCHAIR RAMP DETAILS





RAMP ℄ SECTION



SECTION A-A

WHEELCHAIR RAMP DETAIL - TYPE F
RAMPS 11 & 12
NOT TO SCALE

WHEELCHAIR RAMP DATA						
WCR #	WCR TYPE	STATION	OFFSET	℄ RAMP LENGTH (W1)	A-A SIDEWALK WIDTH (W)	℄ RAMP OPENING WIDTH
11	F	198+29.31	75.50' LT	15'-7"	5'-0"	5'-0"
12	F	198+44.93	75.50' LT			

LEGEND:

HSL =HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
W =SIDEWALK WIDTH
W1 =PERPENDICULAR RAMP LENGTH
* =TOLERANCE FOR CONSTRUCTION 0.5%

KEY:

AREA OF CEMENT CONCRETE WHEELCHAIR RAMP (ITEM 701.2)

NOTES:

1. DETECTABLE WARNING PANELS SHALL BE INSTALLED ON ALL TRANSITION RAMPS ACCORDING TO CONSTRUCTION STANDARD DETAIL E 107.6.5.

2. DETECTABLE WARNING PANELS FOR ALL PEDESTRIAN RAMPS SHALL BE YELLOW.

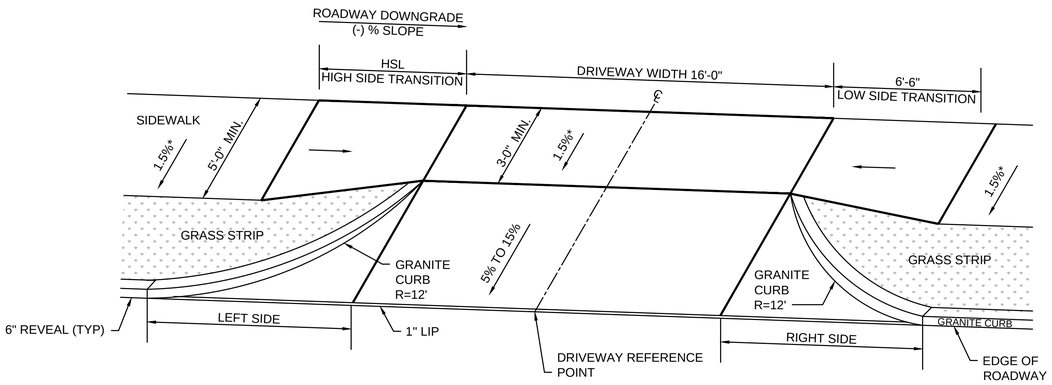
3. TRANSITION CURB FROM 0" REVEAL TO 6" REVEAL AS SHOWN IN TABLES. SLOPE TOPSOIL TO MEET EDGE OF RAMP.

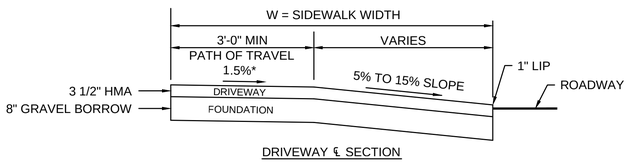
608180_HD11(DETAILS).DWG Plotted on 29-Jun-2016 11:17 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	34	58
PROJECT FILE NO.	608180		

CONSTRUCTION DETAILS
SHEET 6 OF 6
DRIVEWAY DETAILS

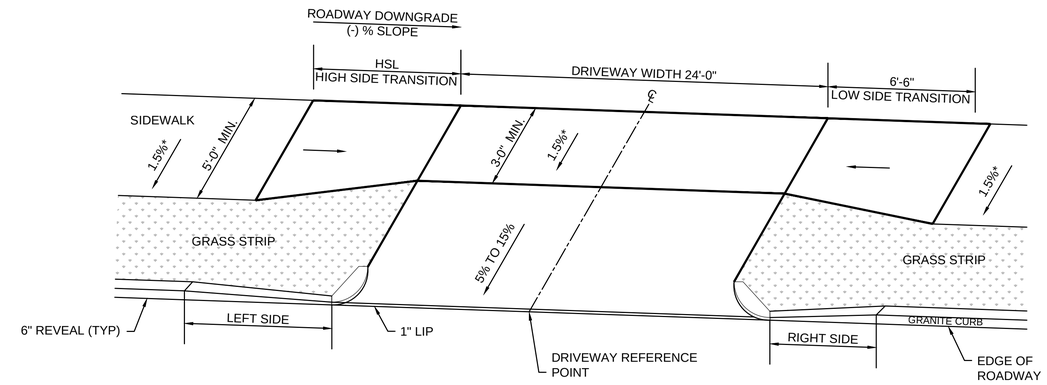


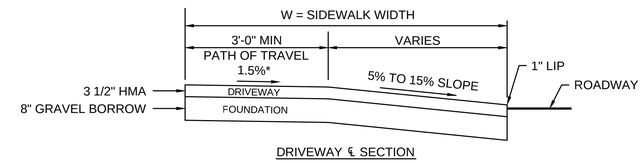


DRIVEWAY ℄ SECTION

DRIVEWAY DETAIL - TYPE A
SIDEWALK THROUGH DRIVEWAY
WITH GRASS STRIP
NOT TO SCALE

DRIVEWAY DATA - TYPE A									
DRIVEWAY NUMBER	DRIVEWAY TYPE	STATION	OFFSET	SIDEWALK WIDTH	PATH OF TRAVEL (3.0' MIN.)	DRIVEWAY ENTRANCE SLOPE	ROADWAY GUTTER SLOPE (±)	CURB TRANSITION LENGTH	
								LEFT SIDE	RIGHT SIDE
1	A	191+96.24	30.00' LT	14'-1"	6'-0"	4.50%±	-0.60%	6'-6"	7'-8" (HSL)
2	A	192+53.40	30.00' LT	15'-4"	6'-0"	4.50%±	-0.70%	6'-6"	7'-8" (HSL)





DRIVEWAY ℄ SECTION

DRIVEWAY DETAIL - TYPE B
SIDEWALK THROUGH DRIVEWAY
WITH CURB RETURNS & GRASS STRIP
NOT TO SCALE

DRIVEWAY DATA - TYPE A									
DRIVEWAY NUMBER	DRIVEWAY TYPE	STATION	OFFSET	SIDEWALK WIDTH	PATH OF TRAVEL (3.0' MIN.)	DRIVEWAY ENTRANCE SLOPE	ROADWAY GUTTER SLOPE (±)	CURB TRANSITION LENGTH	
								LEFT SIDE	RIGHT SIDE
3	B	191+89.71	67.54' LT	10'-9"	6'-0"	3.75%±	-0.45%	7'-8" (HSL)	6'-6"

LEGEND:

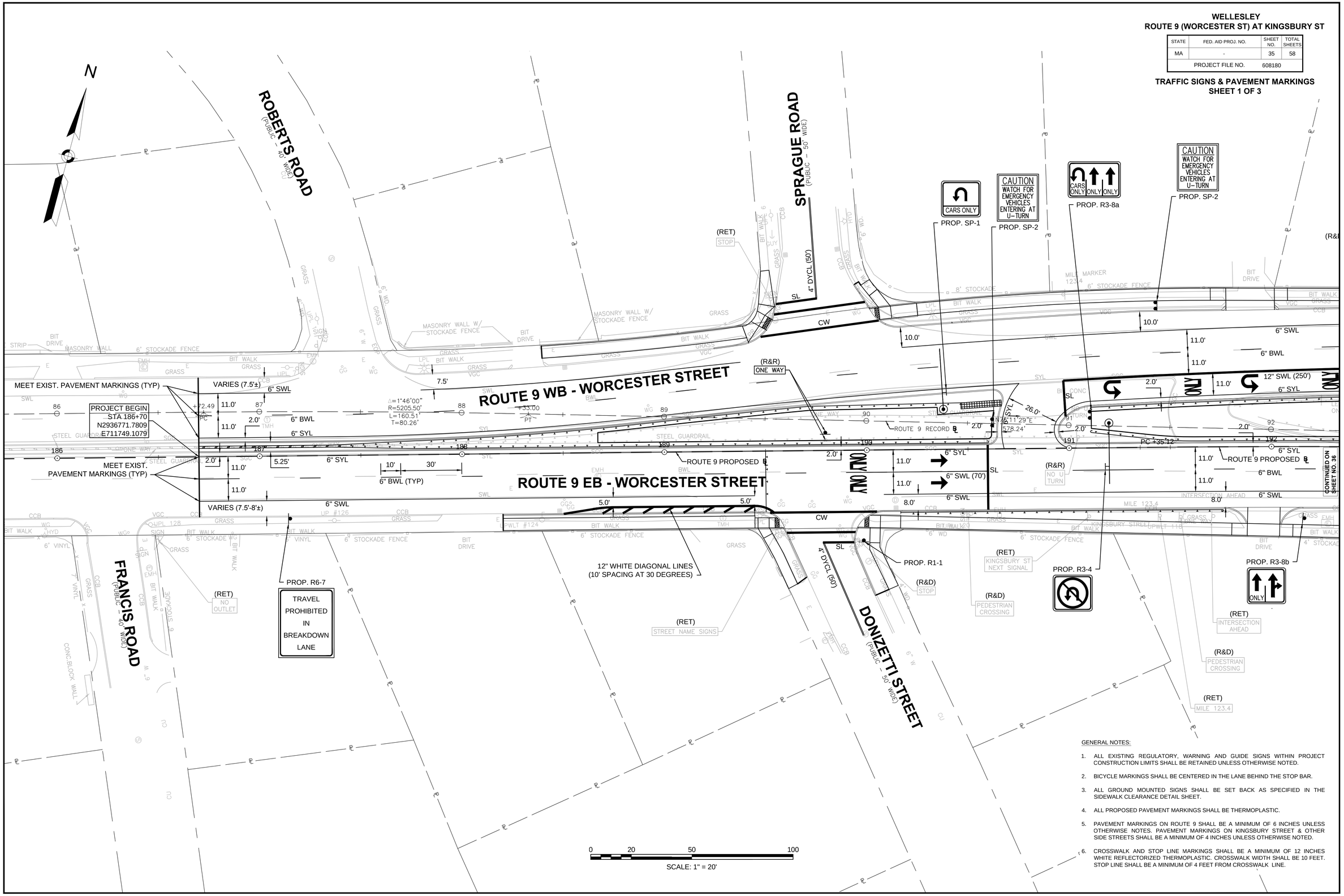
HSL =HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
W =SIDEWALK WIDTH
HMA =HOT MIX ASPHALT
* =TOLERANCE FOR CONSTRUCTION 0.5%

608180_HD11(DETAILS).DWG Plotted on 29-Jun-2016 11:17 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	35	58
PROJECT FILE NO.	608180		

TRAFFIC SIGNS & PAVEMENT MARKINGS
SHEET 1 OF 3



GENERAL NOTES:

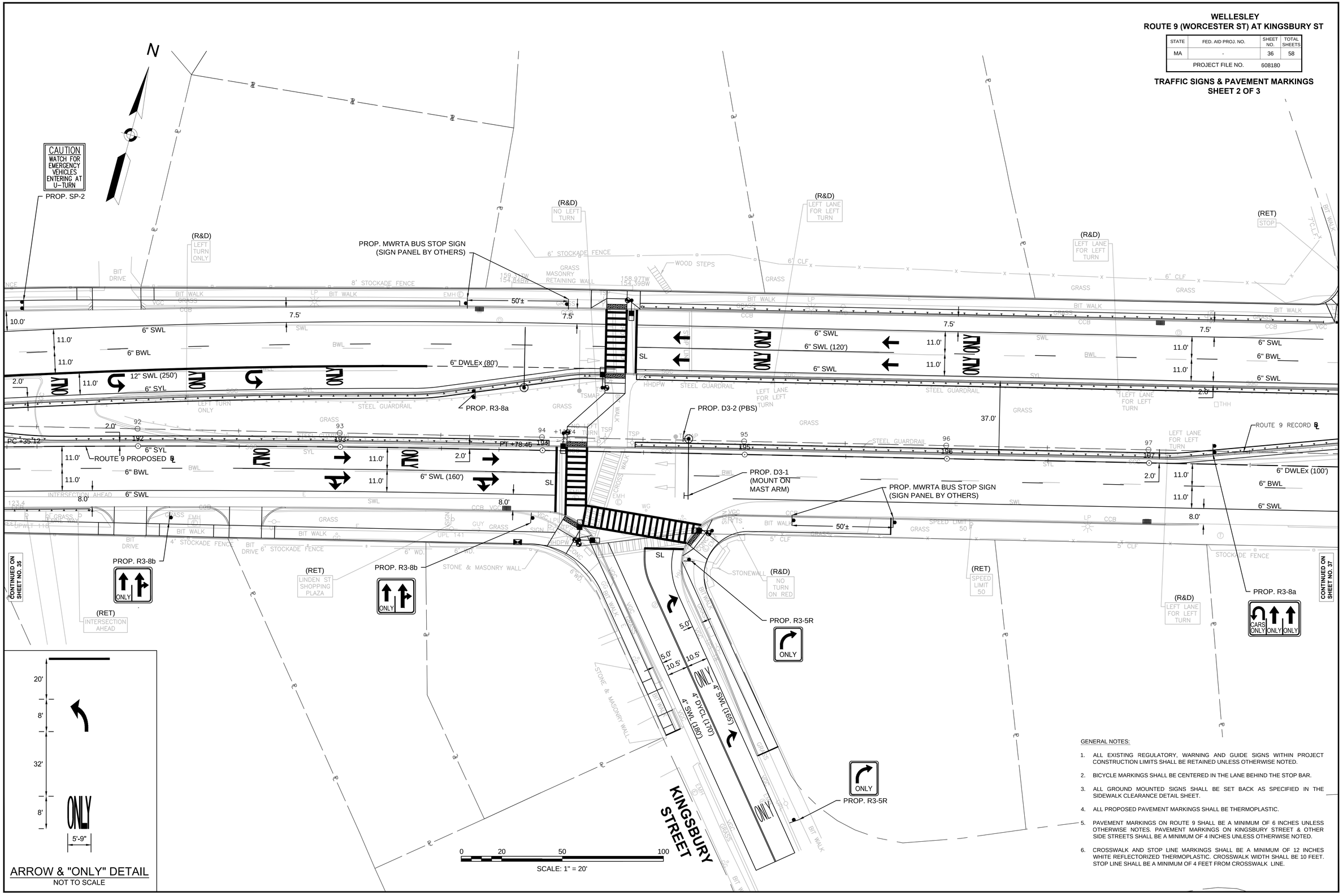
1. ALL EXISTING REGULATORY, WARNING AND GUIDE SIGNS WITHIN PROJECT CONSTRUCTION LIMITS SHALL BE RETAINED UNLESS OTHERWISE NOTED.
2. BICYCLE MARKINGS SHALL BE CENTERED IN THE LANE BEHIND THE STOP BAR.
3. ALL GROUND MOUNTED SIGNS SHALL BE SET BACK AS SPECIFIED IN THE SIDEWALK CLEARANCE DETAIL SHEET.
4. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
5. PAVEMENT MARKINGS ON ROUTE 9 SHALL BE A MINIMUM OF 6 INCHES UNLESS OTHERWISE NOTES. PAVEMENT MARKINGS ON KINGSBURY STREET & OTHER SIDE STREETS SHALL BE A MINIMUM OF 4 INCHES UNLESS OTHERWISE NOTED.
6. CROSSWALK AND STOP LINE MARKINGS SHALL BE A MINIMUM OF 12 INCHES WHITE REFLECTORIZED THERMOPLASTIC. CROSSWALK WIDTH SHALL BE 10 FEET. STOP LINE SHALL BE A MINIMUM OF 4 FEET FROM CROSSWALK LINE.

608180_TR1(SIGN PMRK).DWG Plotted on 29-Jun-2016 11:18 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	36	58
PROJECT FILE NO.	608180		

TRAFFIC SIGNS & PAVEMENT MARKINGS
SHEET 2 OF 3



GENERAL NOTES:

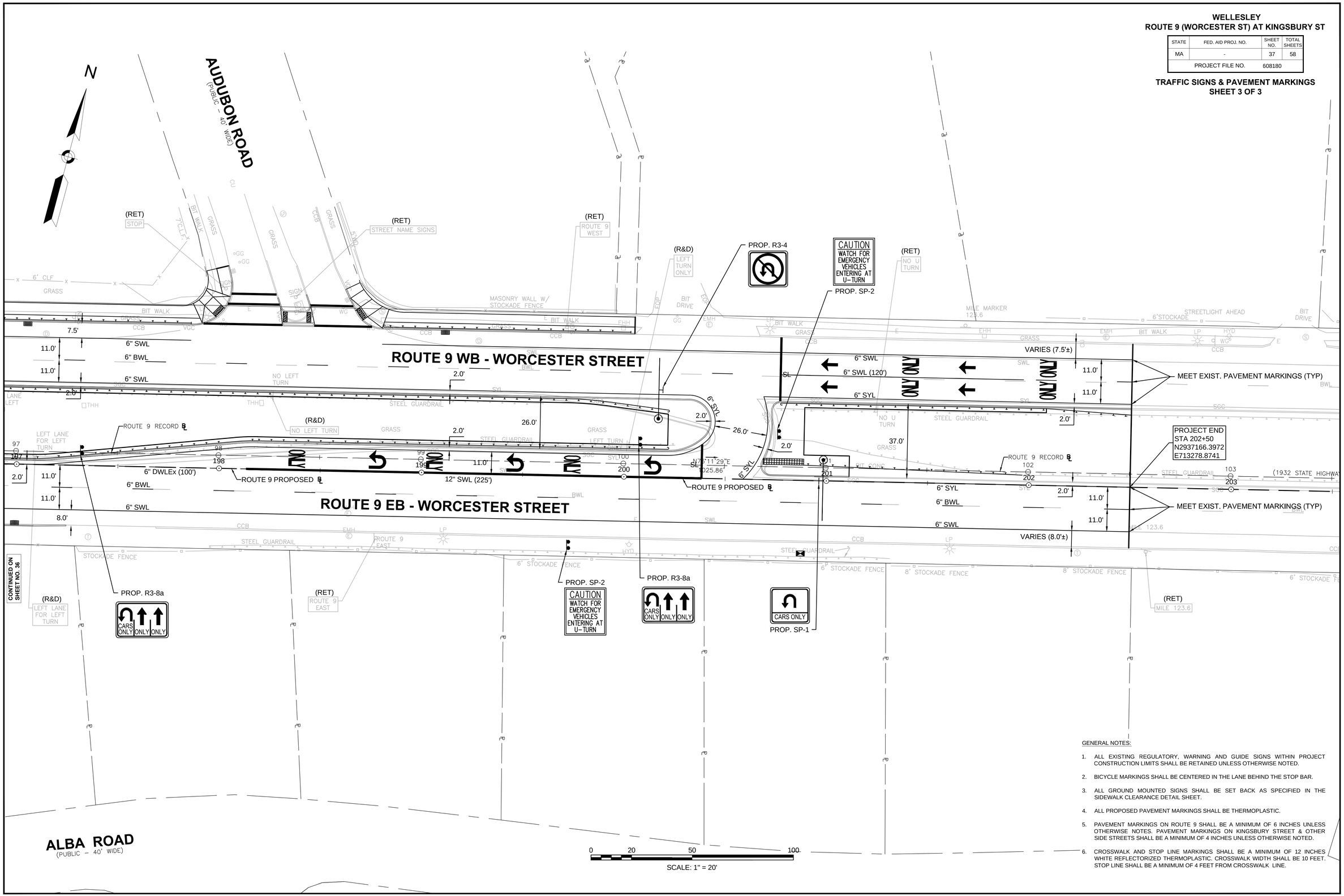
1. ALL EXISTING REGULATORY, WARNING AND GUIDE SIGNS WITHIN PROJECT CONSTRUCTION LIMITS SHALL BE RETAINED UNLESS OTHERWISE NOTED.
2. BICYCLE MARKINGS SHALL BE CENTERED IN THE LANE BEHIND THE STOP BAR.
3. ALL GROUND MOUNTED SIGNS SHALL BE SET BACK AS SPECIFIED IN THE SIDEWALK CLEARANCE DETAIL SHEET.
4. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
5. PAVEMENT MARKINGS ON ROUTE 9 SHALL BE A MINIMUM OF 6 INCHES UNLESS OTHERWISE NOTES. PAVEMENT MARKINGS ON KINGSBURY STREET & OTHER SIDE STREETS SHALL BE A MINIMUM OF 4 INCHES UNLESS OTHERWISE NOTED.
6. CROSSWALK AND STOP LINE MARKINGS SHALL BE A MINIMUM OF 12 INCHES WHITE REFLECTORIZED THERMOPLASTIC. CROSSWALK WIDTH SHALL BE 10 FEET. STOP LINE SHALL BE A MINIMUM OF 4 FEET FROM CROSSWALK LINE.

608180_TR1(SIGN PMRK).DWG Plotted on 29-Jun-2016 11:18 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	37	58
PROJECT FILE NO.	608180		

TRAFFIC SIGNS & PAVEMENT MARKINGS
SHEET 3 OF 3



GENERAL NOTES:

1. ALL EXISTING REGULATORY, WARNING AND GUIDE SIGNS WITHIN PROJECT CONSTRUCTION LIMITS SHALL BE RETAINED UNLESS OTHERWISE NOTED.
2. BICYCLE MARKINGS SHALL BE CENTERED IN THE LANE BEHIND THE STOP BAR.
3. ALL GROUND MOUNTED SIGNS SHALL BE SET BACK AS SPECIFIED IN THE SIDEWALK CLEARANCE DETAIL SHEET.
4. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
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6. CROSSWALK AND STOP LINE MARKINGS SHALL BE A MINIMUM OF 12 INCHES WHITE REFLECTORIZED THERMOPLASTIC. CROSSWALK WIDTH SHALL BE 10 FEET. STOP LINE SHALL BE A MINIMUM OF 4 FEET FROM CROSSWALK LINE.

608180_TR1(SIGN PMRK).DWG Plotted on 29-Jun-2016 11:18 AM

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			
R1-1	36"	36"	STOP	①	①	①	1	RED	WHITE	WHITE	P5-1	7.5	7.5
R3-4	36"	36"					2	WHITE	RED/ BLACK	BLACK	2 MTD ON TS MAST ARM	9.0	18.0
R3-5R	30"	36"	ONLY				2	WHITE	BLACK	BLACK	P5-2	7.5	15.0
R3-8a	60"	36"	CARS ONLY ONLY ONLY				4	WHITE	BLACK	BLACK	P5-8	15.0	60.0
R3-8b	40"	36"	ONLY				2	WHITE	BLACK	BLACK	P5-2	10.0	20.0
R6-7	36"	48"	TRAVEL PROHIBITED IN BREAKDOWN LANE	②	②	②	1	WHITE	BLACK	–	P5-2	12.0	12.0
D3-1	VARIES	18"	Kingsbury St				1	GREEN	WHITE	WHITE	MOUNT ON MAST ARM	--	EACH
D3-2	VARIES	18"	Worchester St				1	GREEN	WHITE	WHITE	MOUNT ON MAST ARM	--	EACH
SP-1	30"	36"	CARS ONLY				2	WHITE	BLACK	BLACK	2 MTD ON TS MAST ARM	7.5	15.0
SP-2	36"	48"	CAUTION WATCH FOR EMERGENCY VEHICLES ENTERING AT U-TURN	6C 0.5 4C 4C 4C 4C 4C	3.8 2.5 2 2.5 2.5 2.5 2.5 2.5 3.2		4	YELLOW	BLACK	BLACK	P5-8	12.0	48.0

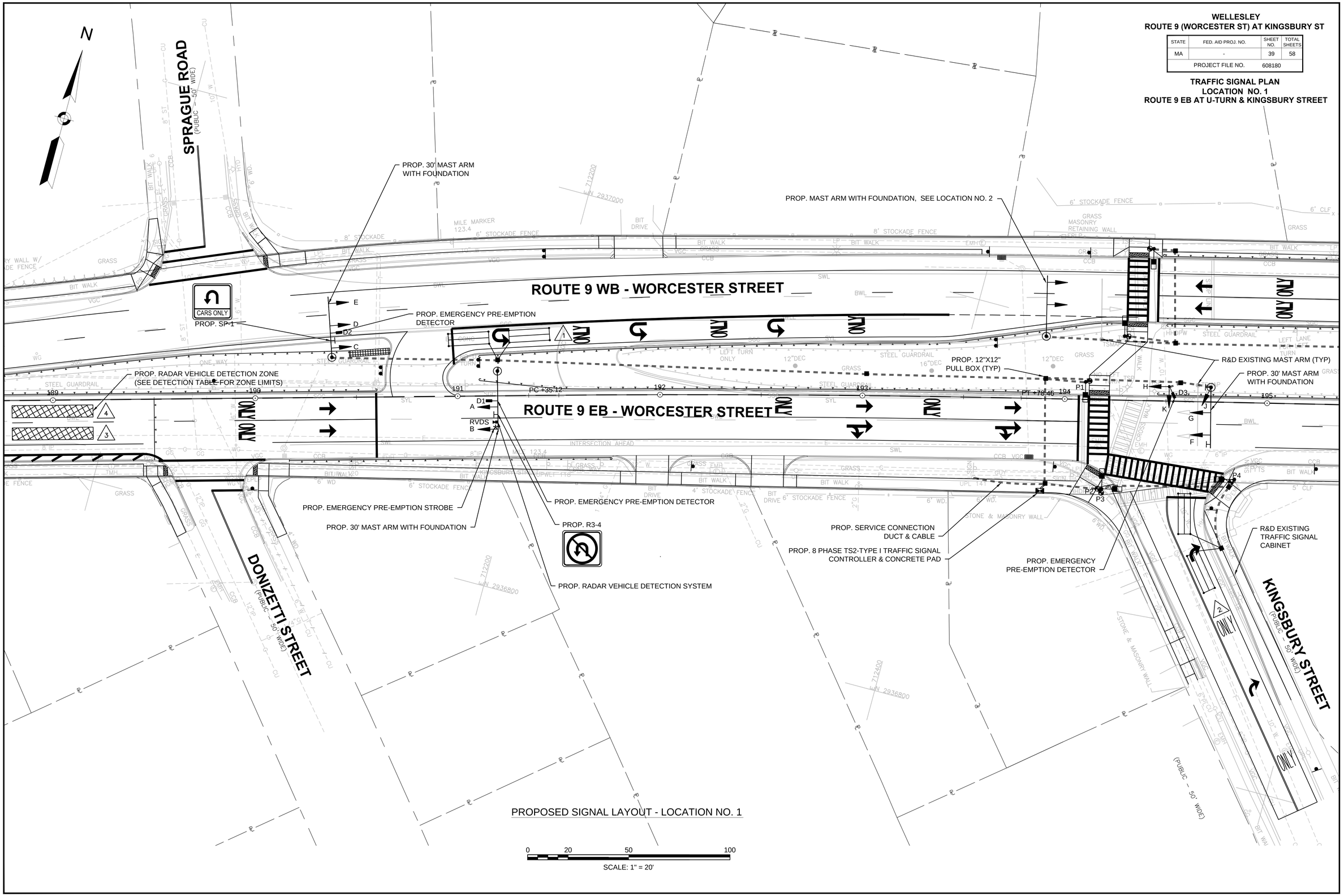
① SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS
② SEE MASSDOT STANDARDS

608180_TR2(SIGNSUMM).DWG Plotted on 29-Jun-2016 11:43 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	39	58
PROJECT FILE NO.	608180		

TRAFFIC SIGNAL PLAN
LOCATION NO. 1
ROUTE 9 EB AT U-TURN & KINGSBURY STREET



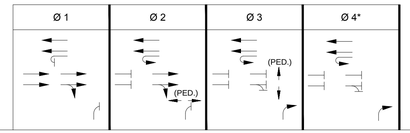
PROPOSED SIGNAL LAYOUT - LOCATION NO. 1

608180_TR3(SIGNAL-LOC#1).DWG Plotted on 29-Jun-2016 11:47 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	40	58
PROJECT FILE NO.	608180		

TRAFFIC SIGNAL DATA SHEET
LOCATION NO. 1
ROUTE 9 EB AT U-TURN & KINGSBURY STREET



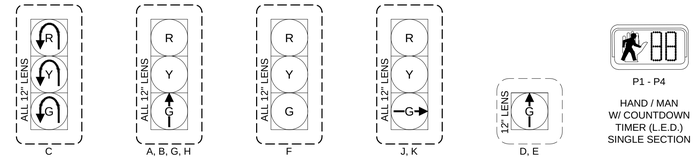
SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (ISOLATED)

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	FLASH OPER.
ROUTE 9	EB	A,B		Y	R	R	R	R	R	R	R	R	R	R	FY
ROUTE 9	EB	G,H		Y	R		Y	R	R	R	R	R	R	R	FY
ROUTE 9	EB	F	G	Y	R	G	Y	R	R	R	R	R	R	R	FY
ROUTE 9	WB	C	R	R	R	G	Y	R	G	Y	R	G	Y	R	FR
ROUTE 9	WB	D,E													–
KINGSBURY ST	NB	J,K	R	R	R	R	R	R	G	Y	R	G	Y	R	FR
PEDESTRIAN X–ING	NB–SB	P1,P2	DW	DW	DW	DW	DW	DW	W/FDW	DW	DW	DW	DW	DW	OUT
PEDESTRIAN X–ING	EB–WB	P3,P4	DW	DW	DW	W/FDW	DW	DW	DW	DW	DW	DW	DW	DW	OUT

TIMING IN SECONDS

	1	2	3	4	5	6	7	8	9	10	11	12	EMERGENCY ONLY
MINIMUM GREEN (INITIAL)	20			6						6			
PASSAGE TIME (VEHICLE)	2			2						2			
MAXIMUM 1	70			24						16			
MAXIMUM 2	–			–						–			
YELLOW CLEARANCE		4			4			3			3		
RED CLEARANCE			2			1			1			3	
PEDESTRIAN INTERVAL				7/15			7/15						
DETECTOR	NON–LOCK			NON–LOCK			LOCK			NON–LOCK			
RECALL	SOFT			OFF			–			OFF			

SIGNAL IDENTIFICATION



P1 - P4

HAND / MAN
W/ COUNTDOWN
TIMER (L.E.D.)
SINGLE SECTION

NOTES:

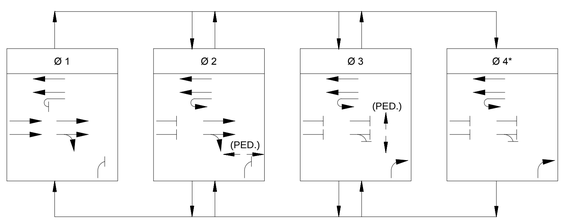
1. ALL PROPOSED SIGNAL HEADS SHALL BE RIGID MOUNTED WITH BACK PLATES AND TUNNEL VISORS.

2. ALL SIGNAL BACK PLATES SHALL BE 5"± NON-LOUVERED WITH 3" YELLOW RETROREFLECTIVE BORDER

3. ALL PROPOSED SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.

	ITEM 815.1 MAJOR ITEMS REQUIRED	
PAY ITEM	QUANTITY	ITEM
815.1	1	8Ø TS 2 TYPE 1 CONTROLLER IN A TYPE 6 BASE MOUNTED CABINET INCL. FOUNDATION AND CONCRETE PAD
	3	SIGNAL MAST ARM 30 FT (TYPE II, STEEL MONOLEVER WITH FOUNDATION)
	4	TS POST 8' STANDARD INCL. FOUNDATION
	1	TS POST 10' STANDARD INCL. FOUNDATION
	8	SIGNAL HEAD, 3-SECTION, 12" LENSES WITH 5" BACKPLATE
	2	SIGNAL HEAD, 1-SECTION, 12" LENS
	4	COUNTDOWN PEDESTRIAN SIGNAL HEAD (P1 THRU P4)
	3	APS PEDESTRIAN PUSH BUTTON W/R10-3f AND SIGN SADDLE
	8	PULL BOX - 12"X12"
	4	WIRE LOOP DETECTOR
	1	LOOP AMPLIFIER - DUAL CHANNEL
	1	RADAR DETECTION SYSTEM & CABLE (DILEMMA ZONE DETECTION)
	3	EMERGENCY PRE-EMPTION OPTICAL DETECTORS & DETECTOR CABLE
	1	EMERGENCY PRE-EMPTION 4 CHANNEL PHASE SELECTOR
	1	EMERGENCY PRE-EMPTION SYSTEM CHASSIS
	1	EMERGENCY PRE-EMPTION STROBE (WHITE LENS)
	1	SERVICE CONNECTION (OVERHEAD)
		PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIALAND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING TRAFFIC CONTROL SIGNAL.

PREFERENTIAL PHASING SEQUENCE



*Ø4 TO COME WITH DELAYED SETTING & IF RIGHT TURNING TRAFFIC FROM KINGSBURY STREET CANNOT FIND GAP

SEQUENCE & TIMING NOTES:

1. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.

2. THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASED.

3. IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.

4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DUURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.

FIRE PREEMPTION SCHEDULE

DETECTOR & PRIORITY	PREEMPTION PHASE	MOVEMENT	VEHICLE PHASE ASSIGNMENT
D1	1		Ø 1
D2	2		Ø 2
D3	3		Ø 4

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATION AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.

2. PREEMPTION SIGNAL FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.

3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLERANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.

4. PREEMPTION MINIMUM GREENS SHALL BE SIX SECONDS.

5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.

6. ACTUAL TIMMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MASSDOT PRIOR TO OPERATION.

DETECTOR DATA

DETECTOR NUMBER	NO. SECTION / SIZE	NO. OF TURNS	OPERATIONS	DELAY / EXTEND	CALL PHASE	LOOP CONNECTIONS
1	2 - 6'X20' QUADRUPOLE	2 -4 - 2	PRESENCE	0	Ø 2	SERIES
2	2 - 6'X20' QUADRUPOLE	2 -4 - 2	PRESENCE	20	Ø 4	SERIES

NOTE: DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY

RADAR DETECTOR SYSTEM DATA

DETECTOR NUMBER	BEGIN ZONE	END ZONE	RVDS #	DELAY / EXTEND	CALL PHASE
3	100' FROM EB SL	400' FROM EB SL	1	0	Ø 1
4	100' FROM EB SL	400' FROM EB SL	1	0	Ø 1

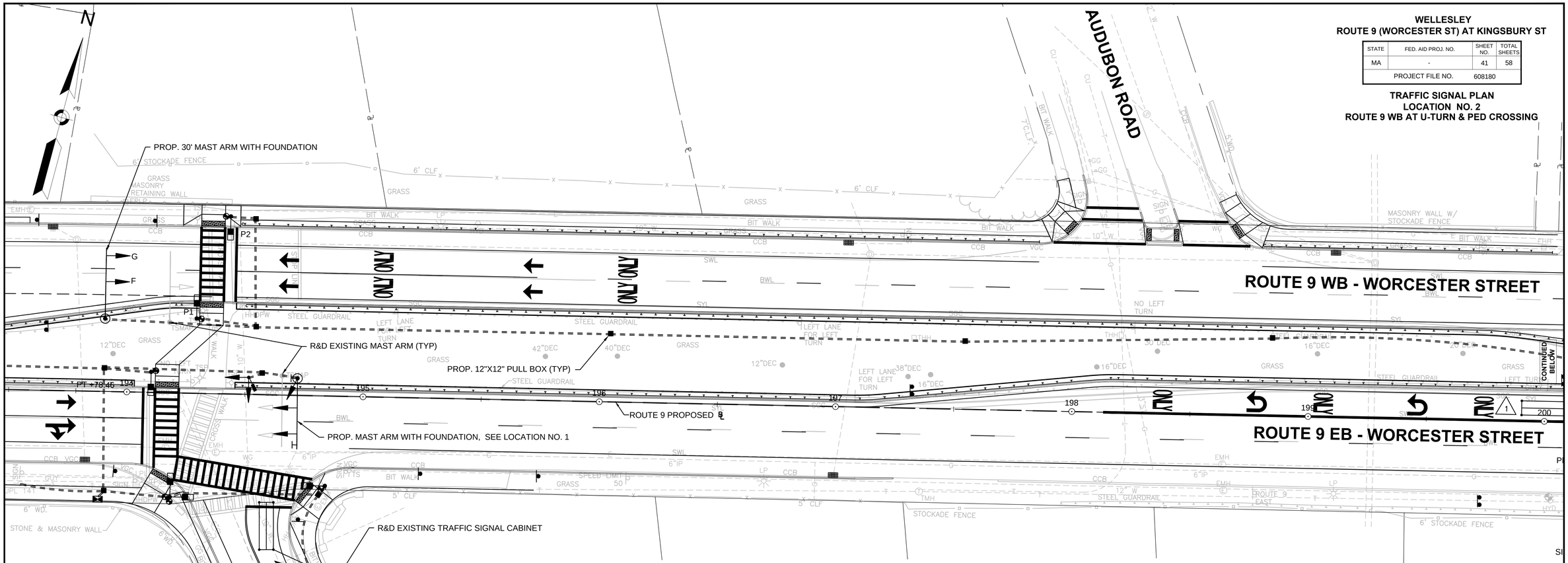
NOTE: DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY

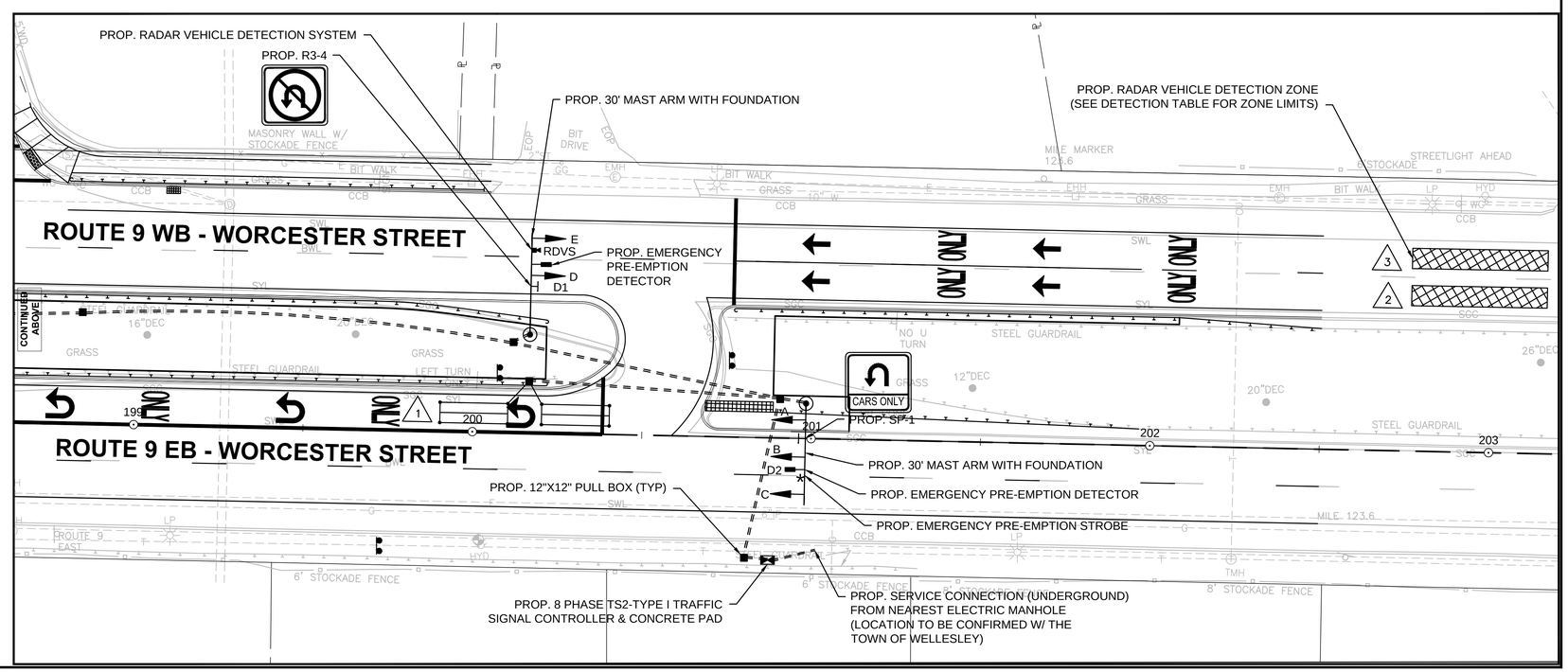
608180_TR3(SIGNAL-LOC#1).DWG Plotted on 29-Jun-2016 11:47 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	41	58
PROJECT FILE NO.	608180		

TRAFFIC SIGNAL PLAN
LOCATION NO. 2
ROUTE 9 WB AT U-TURN & PED CROSSING





PROPOSED SIGNAL LAYOUT - LOCATION NO. 2

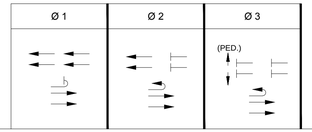
0 20 50 100
SCALE: 1" = 20'

608180_TR4(SIGNAL-LOC#2).DWG Plotted on 29-Jun-2016 11:48 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	42	58
PROJECT FILE NO.	608180		

TRAFFIC SIGNAL DATA SHEET
LOCATION NO. 2
ROUTE 9 WB AT U-TURN & PED CROSSING



SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (ISOLATED)

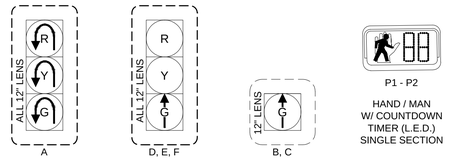
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	FLASH OPER.
ROUTE 9	EB	A	R	R	R	G	Y	R	G	Y	R	FR
ROUTE 9	EB	B,C	Y	Y	Y	Y	Y	Y	Y	Y	Y	–
ROUTE 9	WB	D,E	Y	Y	R	R	R	R	R	R	R	FY
ROUTE 9	WB	F,G	Y	Y	R	Y	Y	R	R	R	R	FY
PEDESTRIAN X–ING	NB–SB	P1–P2	DW	DW	DW	DW	DW	DW	W/FDW	DW	DW	OUT

TIMING IN SECONDS

	1	2	3	4	5	6	7	8	9	
MINIMUM GREEN (INITIAL)	20			6						
PASSAGE TIME (VEHICLE)	2			2						
MAXIMUM 1	70			24						
MAXIMUM 2	–			–						
YELLOW CLEARANCE		4			4			3		
RED CLEARANCE			2			1			1	
PEDESTRIAN INTERVAL							7/14			
DETECTOR	NON–LOCK			NON–LOCK			LOCK			
RECALL	SOFT			OFF			–			

EMERGENCY ONLY

SIGNAL IDENTIFICATION



NOTES:

1. ALL PROPOSED SIGNAL HEADS SHALL BE RIGID MOUNTED WITH BACK PLATES AND TUNNEL VISORS.

2. ALL SIGNAL BACK PLATES SHALL BE 5"± NON-LOUVERED WITH 3" YELLOW RETROREFLECTIVE BORDER

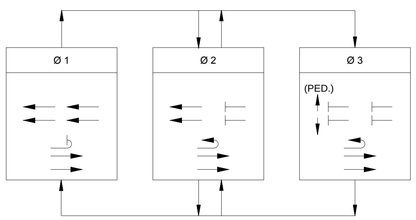
3. ALL PROPOSED SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.

ITEM 815.2
MAJOR ITEMS REQUIRED

PAY ITEM	QUANTITY	ITEM
815.2	1	8Ø TS 2 TYPE 1 CONTROLLER IN A TYPE 6 BASE MOUNTED CABINET INCL. FOUNDATION AND CONCRETE PAD
	3	SIGNAL MAST ARM 30 FT (TYPE II, STEEL MONOLEVER WITH FOUNDATION)
	2	TS POST 8' STANDARD INCL. FOUNDATION
	4	SIGNAL HEAD, 3-SECTION, 12" LENSES WITH 5" BACKPLATE
	2	SIGNAL HEAD, 1-SECTION, 12" LENS
	2	COUNTDOWN PEDESTRIAN SIGNAL HEAD (P1 THRU P4)
	2	APS PEDESTRIAN PUSH BUTTON W/R10-3f AND SIGN SADDLE
	8	PULL BOX - 12"X12"
	2	WIRE LOOP DETECTOR
	1	LOOP AMPLIFIER - DUAL CHANNEL
	1	RADAR DETECTION SYSTEM & CABLE (DILEMMA ZONE DETECTION)
	2	EMERGENCY PRE-EMPTION OPTICAL DETECTORS & DETECTOR CABLE
	1	EMERGENCY PRE-EMPTION 4 CHANNEL PHASE SELECTOR
	1	EMERGENCY PRE-EMPTION SYSTEM CHASSIS
	1	EMERGENCY PRE-EMPTION STROBE (WHITE LENS)
	1	SERVICE CONNECTION (UNDERGROUND)

PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIALAND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING TRAFFIC CONTROL SIGNAL.

PREFERENTIAL PHASING SEQUENCE



SEQUENCE & TIMING NOTES:

1. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.

2. THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASED.

3. IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.

4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DUURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.

FIRE PREEMPTION SCHEDULE

DETECTOR & PRIORITY	PREEMPTION PHASE	MOVEMENT	VEHICLE PHASE ASSIGNMENT
D1	1		Ø 1
D2	2		Ø 2

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATION AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.

2. PREEMPTION SIGNAL FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.

3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLERANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.

4. PREEMPTION MINIMUM GREENS SHALL BE SIX SECONDS.

5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.

6. ACTUAL TIMMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MASSDOT PRIOR TO OPERATION.

DETECTOR DATA

DETECTOR NUMBER	NO. SECTION / SIZE	NO. OF TURNS	OPERATIONS	DELAY / EXTEND	CALL PHASE	LOOP CONNECTIONS
1	2 - 6'X20' QUADRUPOLE	2 -4 - 2	PRESENCE	0	Ø 2	SERIES

NOTE: DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY

RADAR DETECTOR SYSTEM DATA

DETECTOR NUMBER	BEGIN ZONE	END ZONE	RVDS #	DELAY / EXTEND	CALL PHASE
2	100' FROM WB SL	400' FROM WB SL	1	0	Ø 1
3	100' FROM WB SL	400' FROM WB SL	1	0	Ø 1

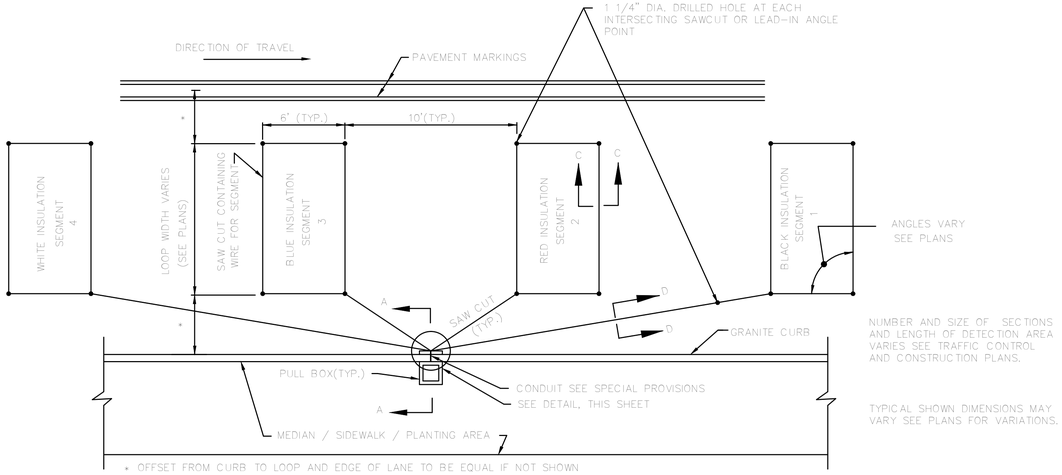
NOTE: DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY

608180_TR4(SIGNAL-LOC#2).DWG Plotted on 29-Jun-2016 11:48 AM

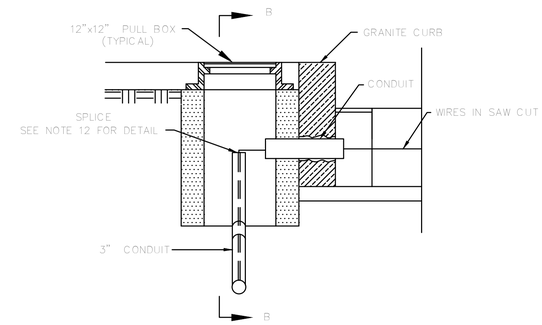
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	43	58
PROJECT FILE NO.	608180		

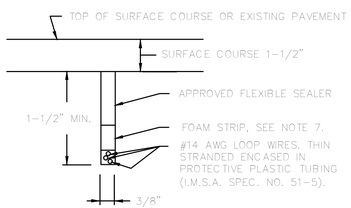
TRAFFIC SIGNAL DETAILS - 1
VEHICLE LOOP DETECTOR



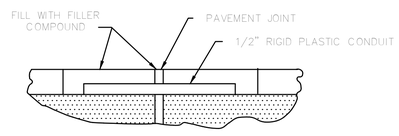
PLAN OF SEGMENTED DETECTOR DETAIL
NOT TO SCALE



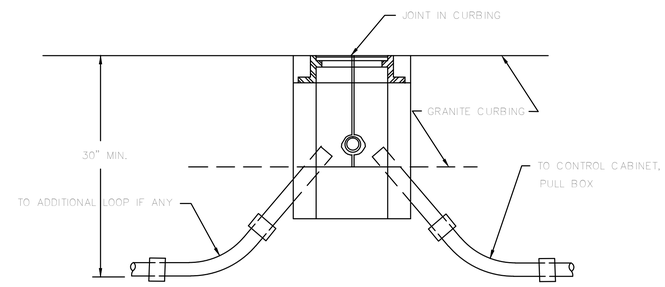
SECTION A–A
NOT TO SCALE



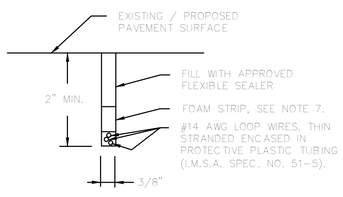
SECTION C–C & D–D
LOOPS IN BINDER COURSE OR EXISTING PAVEMENT TO BE RESURFACED.
NOT TO SCALE



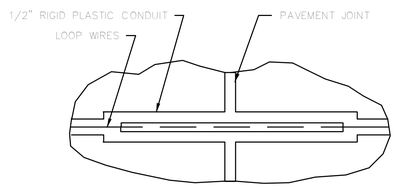
VERTICAL SECTION
TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



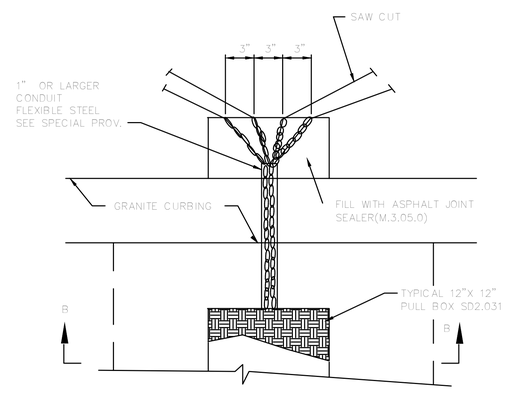
SECTION B–B
NOT TO SCALE



SECTION C–C & D–D
LOOPS IN SURFACE COURSE
(FOR AREAS OUTSIDE LIMITS OF PAVEMENT WORK ONLY)
NOT TO SCALE



PLAN
TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



DETAIL – PLAN VIEW
NOT TO SCALE

DETECTOR NOTES

1. IN HANDHOLE, SPLICE ALL SEGMENTS TO TYPE II–SHIELDED LOOP DETECTOR LEAD–IN CABLE. SEGMENTS SHALL BE SPLICED IN PARALLEL, IN SERIES, OR IN A COMBINATION OF PARALLEL & SERIES AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. NUMBER OF TURNS OF WIRE SHALL ALSO BE AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. SEE NOTE 12.

2. SEE SPECIAL PROVISIONS FOR REQUIREMENTS OF DETECTOR AMPLIFIER.

3. LEAD IN WIRES SHALL BE TWISTED FROM SEGMENT TO SPLICE WITH SHIELDED CABLE. FIVE TURNS PER FOOT. LEAD–IN SHALL BE TYPE II (M8.16. II).

4. BEFORE STARTING ANY SPLICING, THE ELECTRICAL CONTRACTOR SHALL FURNISH DATA SHEETS ON THE MATERIALS AND/OR METHODS TO BE USED IN ACCORDANCE WITH THE DEPARTMENTS STANDARD OPERATING PROCEDURES FOR APPROVAL OF SHOP DRAWINGS, SEE SECTION 815.64, ESPECIALLY PARAGRAPH 1.

5. THE METALLIC SHIELD WHICH SHALL ENCASE THE DETECTOR LEADS FROM A SPLICE (TYPICALLY LOCATED IN A PULL BOX NEAR THE ROADWAY COMPONENT OF THE DETECTOR) TO THE CONTROLLER, AND THE DRAIN WIRE UNDER THE METALLIC SHIELD, SHALL NOT BE GROUNDED TO THE EARTH GROUNDING BUS IN THE CONTROLLER, AND THE SHIELD AND DRAIN WIRE SHALL BE CAREFULLY INSULATED FROM THE TRANSFORMER NEUTRAL OR FROM EARTH GROUND AT ALL OTHER POINTS ALONG ITS LENGTH. SPECIFICALLY, THIS INCLUDES CAREFUL INSULATION OF THE EXPOSED PORTION OF THE SHIELD AND THE DRAIN WIRE AT THE END AWAY FROM THE CONTROLLER WHERE IT IS SPLICED TO WIRES LEADING TO THE ROADWAY COMPONENT OF THE DETECTOR. THIS IS IMPORTANT TO AVOID A GROUND RETURN LOOP.

6. FILL ALL CONDUIT OPENINGS WITH DUCT SEAL.

7. AFTER SAW CUTS ARE COMPLETE, BLOW OUT WATER WITH OIL–FREE COMPRESSED AIR UNTIL CUTS ARE CLEAN AND DRY. INSERT WIRE INTO CLEAN SLOT WITH A BLUNT, SMOOTH, ROUND–EDGED TOOL OF WOOD OR PLASTIC SUCH AS PAINT STIRRER. DO NOT USE A SCREWDRIVER. THEN INSERT FOAM PLASTIC HOLD DOWN STRIPS, SIMILAR TO ETHA FOAM 5B. STRIPS SHALL BE ABOUT 2" LONG, PLACED IN THE SLOT ABOUT EVERY 2 FEET THEN POUR SEALER, TAKING CARE TO ELIMINATE BUBBLES.

8. THE COMBINED ROADWAY LOOP, TWISTED LEAD–IN WIRES, SPLICE AND SHIELDED LEAD–IN CABLE SHALL HAVE A RESISTANCE TO GROUND AT LEAST 100 MEGAOHMS. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

9. DETAIL IS THE SAME FOR INSTALLATION OF SINGLE (ONE SEGMENT) SMALL WIRE LOOP DETECTOR.

10. CUT LOOPS IN BINDER AND FILL WITH APPROVED FLEXIBLE SEALER.

11. DETECTOR WIRE SHALL BE A DIFFERENT COLOR FOR EACH SEGMENT OF A DETECTOR GROUP. SEE DETAIL.

12. SPLICING PATTERN P= SERIES/PARALLEL: SPLICE SEGMENTS 1 AND 3 OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE SEGMENTS 2 AND 4 IN SERIES. SPLICE THE RESULTANT TWO GROUPS IN PARALLEL. SPLICE THE RESULTANT COMBINATION TO ONE LEAD–IN CABLE. CONNECT THIS CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.

    SPLICING PATTERN S= SERIES: SPLICE ALL SEGMENTS (TYPICALLY FOUR, BUT MAY BE LESS) OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE THE RESULTANT COMBINATION TO ONE LEAD–IN CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.

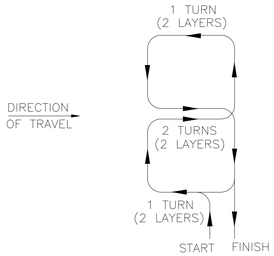
608180_TRS(DETAILS-TRAFFIC).DWG Plotted on 29-Jun-2016 11:48 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

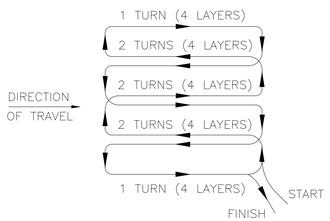
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	44	58
PROJECT FILE NO.	608180		

TRAFFIC SIGNAL DETAILS - 2
BICYCLE LOOP DETECTOR

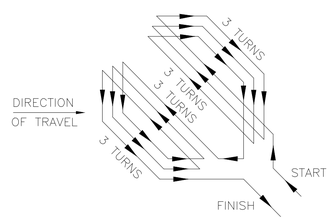
WINDING DETAILS



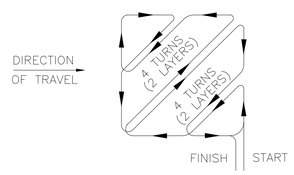
TYPE Q DETECTOR



TYPE D-Q DETECTOR

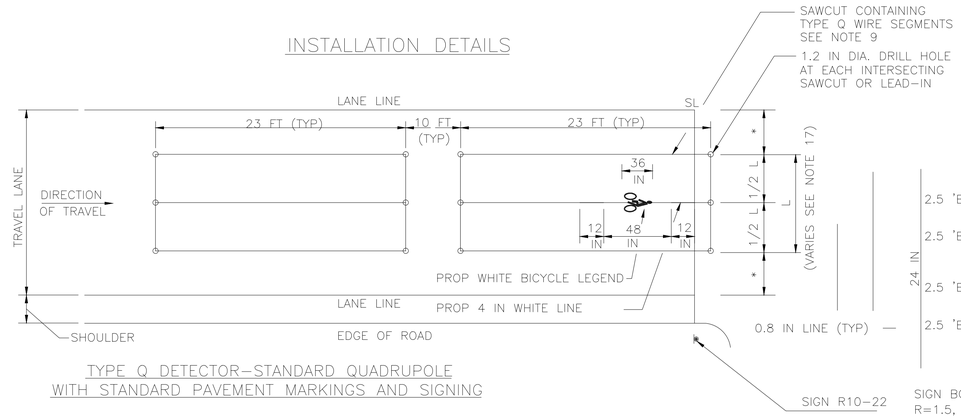


TYPE D-1 DETECTOR

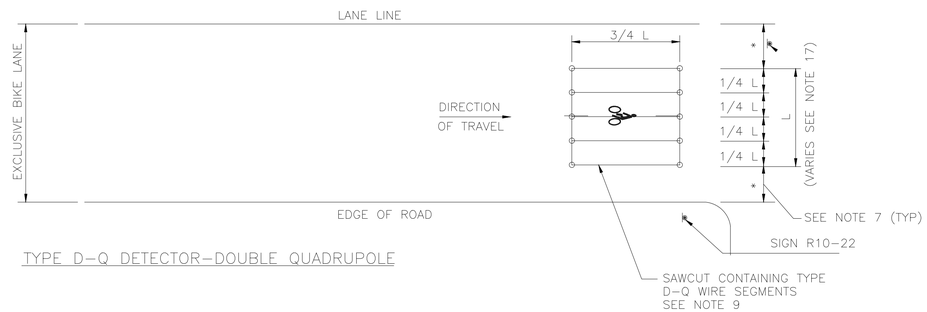


TYPE D-2 DETECTOR

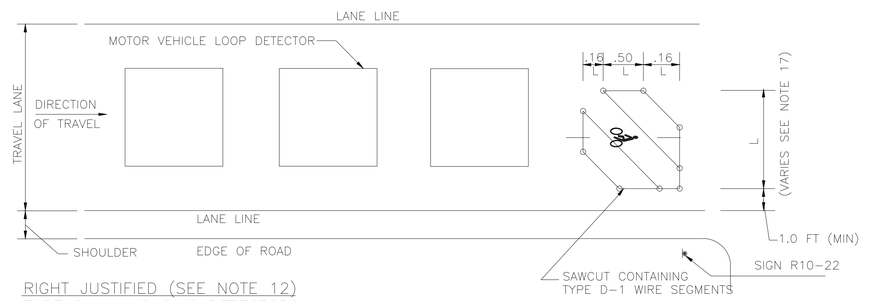
INSTALLATION DETAILS



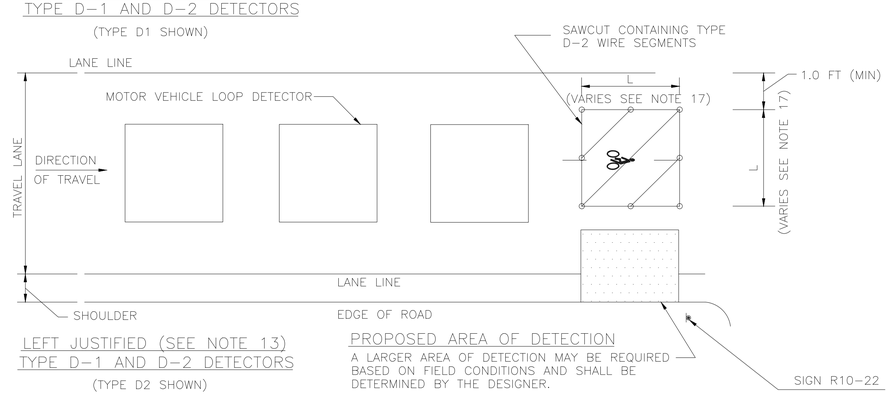
TYPE Q DETECTOR-STANDARD QUADRUPOLE
WITH STANDARD PAVEMENT MARKINGS AND SIGNING



TYPE D-Q DETECTOR-DOUBLE QUADRUPOLE



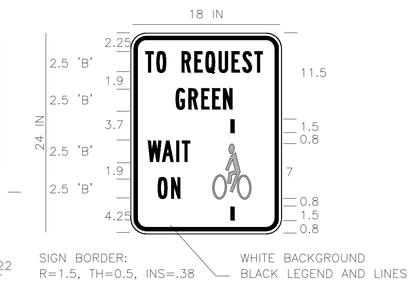
RIGHT JUSTIFIED (SEE NOTE 12)
TYPE D-1 AND D-2 DETECTORS
(TYPE D1 SHOWN)



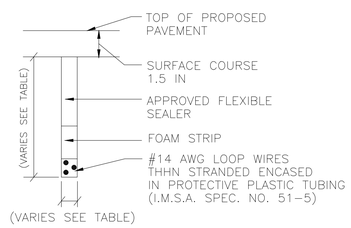
LEFT JUSTIFIED (SEE NOTE 13)
TYPE D-1 AND D-2 DETECTORS
(TYPE D2 SHOWN)

PROPOSED AREA OF DETECTION
A LARGER AREA OF DETECTION MAY BE REQUIRED BASED ON FIELD CONDITIONS AND SHALL BE DETERMINED BY THE DESIGNER.

SIGN R10-22



NOTE: ALL SIGN DIMENSIONS IN INCHES
NOTE: SIGN PANEL NOT SHOWN TO SCALE



SECTION THRU LOOP DETECTOR

SAWCUT SLOT DEPTH GUIDE		
TURNS OF WIRE	SLOT SIZE	
	DEPTH (IN)	WIDTH (IN)
1	1.5	0.5
2	1.5	0.5
3	1.5	0.5
4	2.0	0.5
5	2.0	0.5
6	2.0	0.5
7	2.0	0.5
8	2.0	0.5

BICYCLE LOOP DETECTOR DETAILS

NOTES:

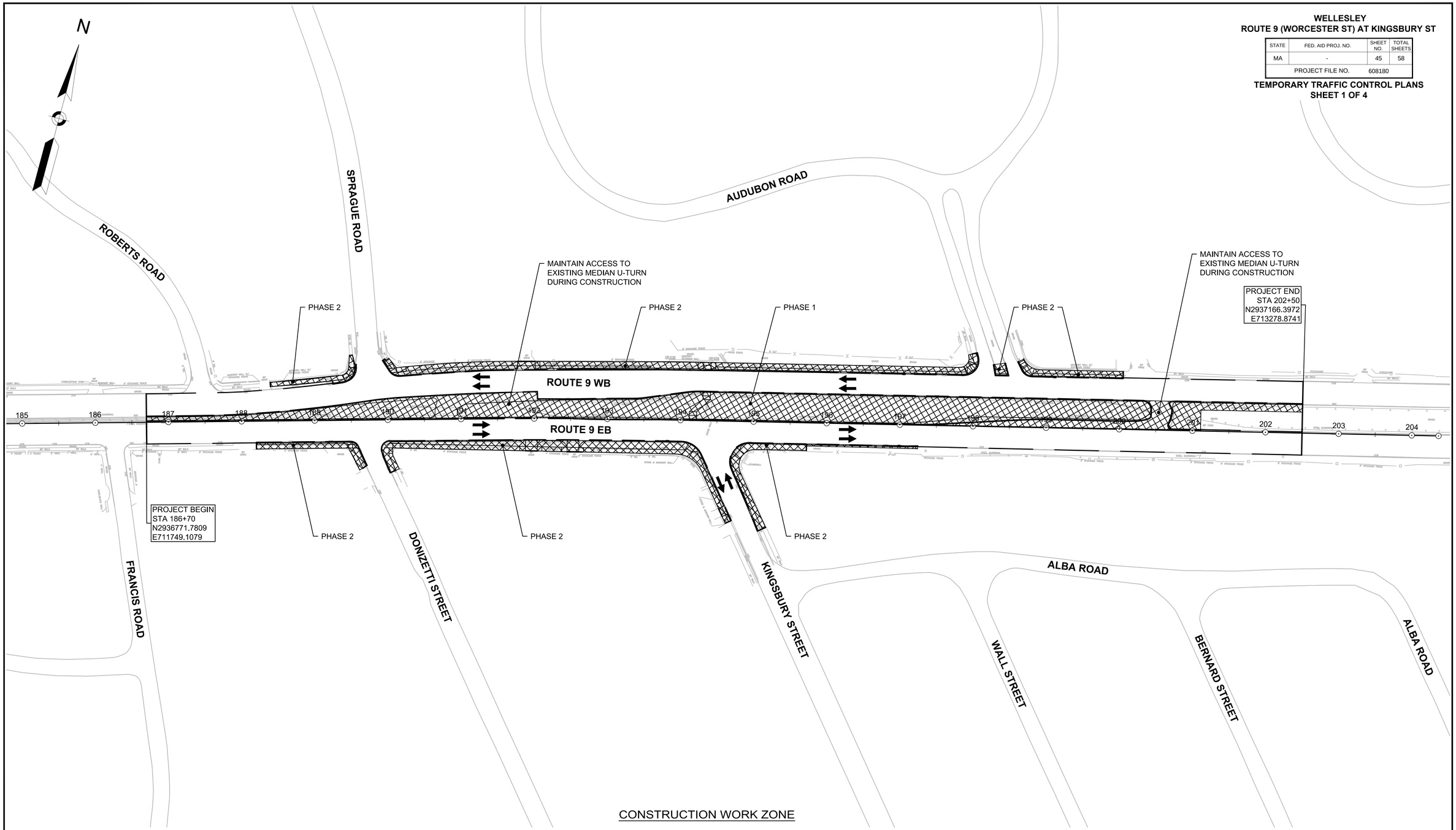
1. REFER TO VEHICLE LOOP DETECTOR DETAIL SHEET FOR ADDITIONAL NOTES AND CONSTRUCTION DETAILS.
2. ALL DETAILS ARE GRAPHICAL WITH NO SCALE.
3. THE NUMBER, SIZE, LOCATION AND LENGTH OF DETECTION AREA VARIES AND SHALL BE DETERMINED BY THE DESIGNER REFER TO TRAFFIC SIGNAL PLAN.
4. BICYCLE LOOPS SHALL BE CONNECTED TO SEPARATE LOOP DETECTOR AMPLIFIERS CAPABLE OF HIGHER LEVELS OF SENSITIVITY.
5. BICYCLE LOOPS SHALL BE INSTALLED IN THE BASE COURSE OF EXISTING PAVEMENT. THE EXISTING PAVEMENT SHALL BE COLD PLANED TO THE BASE COURSE AND SAWCUT FOR LOOP INSTALLATION.
6. SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED FOR ALL BICYCLE DETECTORS TO INFORM CYCLISTS OF THE DETECTION AREA.
7. * OFFSETS FROM LANE LINE EQUAL UNLESS OTHERWISE NOTED. SEE PLANS.
8. TYPE Q DETECTORS SHALL BE WIRED IN A FIGURE EIGHT PATTERN WITH A DOUBLE LAYER DESIGN ("2-4-2") WITH 2 TURNS IN THE PERIMETER SLOTS AND 4 TURNS IN THE CENTER SLOT AS SHOWN IN THE WINDING DETAIL.
9. BICYCLES WILL BE DETECTED WITHIN 4 IN. OF THE INTERIOR LONGITUDINAL LOOP WIRES FOR TYPE Q AND D-Q DETECTORS.
10. PROVIDE 3 TURNS FOR TYPE D-1 DETECTORS.
11. INSTALL 2 LAYERS OF WIRE WOUND IN THE SAME DIRECTION IN BOTH LAYERS FOR TYPE D-2 DETECTORS. THE RESULT IS 4 TURNS IN EACH DIAGONAL.
12. RIGHT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
    a) BICYCLE STOPPING ON THE RIGHT SIDE OF A THRU TRAVEL LANE.
    b) BICYCLE STOPPING ON THE RIGHT SIDE OF AN EXCLUSIVE LEFT TURN LANE.
13. LEFT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
    a) BICYCLE STOPPING ON THE LEFT SIDE OF A SHARED LEFT/THRU LANE.
    b) BICYCLE STOPPING JUST TO THE RIGHT OF THE CENTERLINE WHEN TURNING LEFT ON A TWO-LANE ROADWAY.
14. RECTANGULAR LOOP DETECTORS SHALL BE CONSIDERED FOR BICYCLES STOPPING ON EITHER THE LEFT OR RIGHT SIDE OF A TWO-LANE ROADWAY. THE MINIMUM OFFSET FROM LANE LINE OR CURB LINE SHALL BE 1.0 FT.
15. PAVEMENT CORES OR TEST PITS MAY BE REQUIRED TO DETERMINE THE DEPTH OF EXISTING PAVEMENT AND CONFIRM THAT THE DETECTION OPTION CHOSEN AND CORRESPONDING WINDING PATTERN CAN BE ACCOMMODATED.
16. THESE DETAILS APPLY TO BICYCLE LOOPS INSTALLED IN ROADWAYS. PUSH BUTTON ACTUATION SHALL BE CONSIDERED FOR RECREATIONAL BIKE PATHS.
17. THE MINIMUM DIMENSION FOR L SHALL BE 6 FT MIN. FOR DETECTORS TYPE D-Q, D-1 & D-2. FINAL DIMENSIONS SHALL BE DETERMINED BY THE DESIGN ENGINEER.

608180_TRS(DETAILS-TRAFFIC).DWG Plotted on 29-Jun-2016 11:48 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	45	58
PROJECT FILE NO.	608180		

TEMPORARY TRAFFIC CONTROL PLANS
SHEET 1 OF 4



CONSTRUCTION WORK ZONE

0 60 100 200 300

SCALE: 1" = 60'

PHASE 1: INCLUDES MEDIAN WORK ALONG ROUTE 9
PHASE 2: INCLDUES WORK ON ROUTE 9 OUTSIDE SHOULDER AND INTERSECTING STREET CORNERS

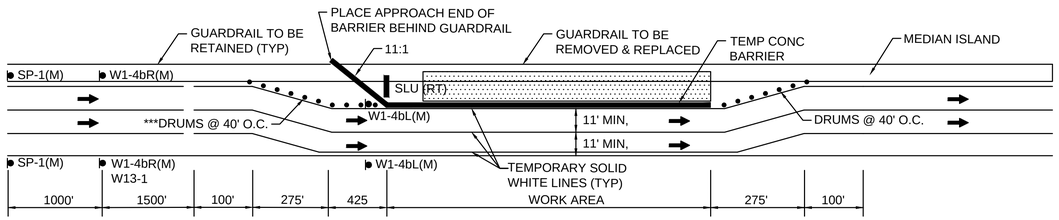
KEY:

- LIMIT OF WORK
- DIRECTION OF TRAVEL
- SIGN
- WORK ZONE

608180_TR6(TTCP-OVERVIEW).DWG Plotted on 29-Jun-2016 11:51 AM

OPERATIONAL SIGNING

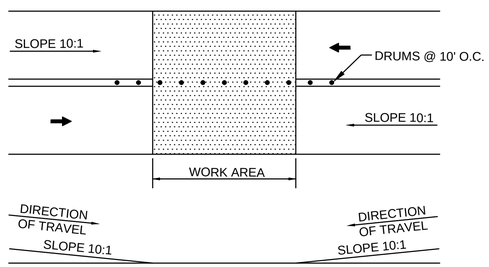
LANE CLOSURES SHOWN ARE FOR TEMPORARY CONSTRUCTION.
ALL DRUMS AND SIGNS ARE SHOWN AS THEY SHOULD APPEAR DURING
THE WORKING DAY, OR WHILE OPERATING IN THE WORK ZONE.



*** SEE NOTE 16

PERMANENT LANE SHIFT - MEDIAN WORK ZONE

NOT TO SCALE



SQUARE OFF THE FULL WIDTH OF THE ROADWAY AT THE END OF WORK DAY

TEMPORARY PAVEMENT TRANSITION DETAIL

NOT TO SCALE

LEGEND:

- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- P/F POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- TEMPORARY TRAFFIC CONTROL SIGN

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	46	58
PROJECT FILE NO.	608180		

TEMPORARY TRAFFIC CONTROL PLANS
SHEET 2 OF 4

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

TYPE OF TAPER	TAPER LENGTH (L)*
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN.(15 m) 100 FT(30 m) MAX.
DOWNSTREAM TAPER	50 FT MIN.(15 m) 100 FT MAX.(30 m) PER LANE

FORMULAS FOR DETERMINING TAPER LENGTHS

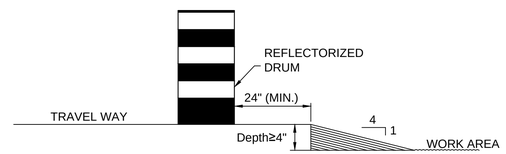
SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	L= WS

SPEED LIMIT (S)	TAPER LENGTH (L) Meters
60 KM/H OR LESS	$L = \frac{WS^2}{155}$
70 KM/H OR MORE	$L = \frac{WS}{1.6}$

WHERE: L = TAPER LENGTH IN FEET (METERS)

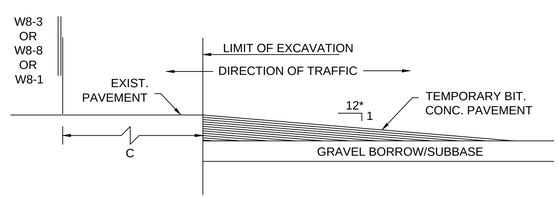
W = WIDTH OF OFFSET IN FEET (METERS)

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICAPATED OPERATING SPEED IN MPH (KM/H)



LATERAL DROP-OFF DETAIL

NOT TO SCALE

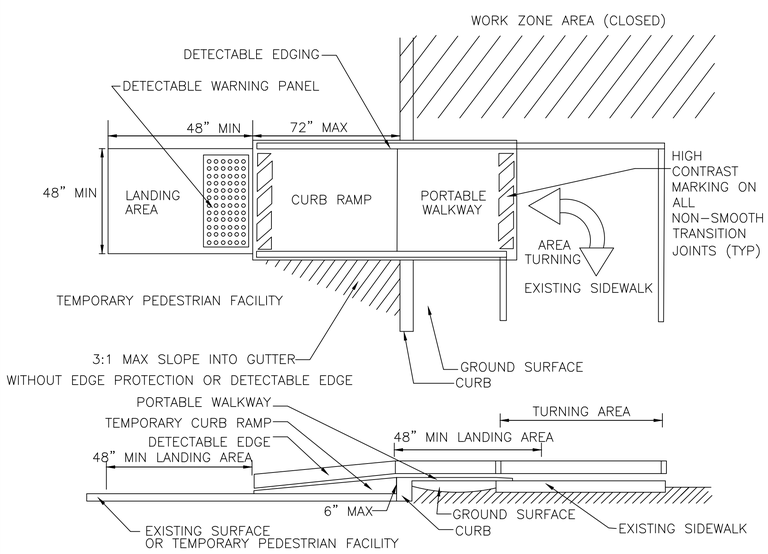


LONGITUDINAL DROP-OFF DETAIL

NOT TO SCALE

TRAFFIC MANAGEMENT NOTES

1. ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES AND OTHER DEVICES SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED. ALL ROADSIDE ELEMENTS SHALL CONFORM TO THE LATEST REVISION OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) ROADSIDE DESIGN GUIDE.
2. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) REQUIREMENTS.
3. WORK HOURS SHALL BE 9:30AM TO 3:00PM MONDAY THRU FRIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER. WORK SHALL NOT AFFECT TRAFFIC PATTERNS DURING PEAK TRAFFIC PERIODS. PEAK TRAFFIC PERIODS ARE DEFINED AS MONDAY THRU FRIDAY 7:00AM-9:00AM AND 3:00PM-6:00PM.
4. ALL DRUMS SHALL BE SET AT 20' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
5. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
6. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
7. GRADE SEPARATIONS IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS.
8. 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 4:1 SLOPE.
9. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED.
10. NON-ESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
11. ADVISORY SPEED PLATES (W13-1) SHALL BE USED IF APPROPRIATE AND AS REQUESTED BY THE ENGINEER WITH SUBMISSION OF AN ENGINEERING STUDY TO MASSDOT.
12. SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT ABOVE THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN
13. SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT ABOVE THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
14. SIGNS MOUNTED ON P5 POSTS REQUIRE A MINIMUM 7 FOOT MOUNTING HEIGHT ABOVE THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN.
15. W20-1c SIGNS SHOWN ON ADVANCE SIGN SCHEMATIC MAY BE USED IN LIEU OF W20-1c SIGNS SHOWN ON DETAILS IF MINIMUM SIGN SPACING IS MET.
16. THE FIRST THREE (3) REFLECTORIZED DRUMS OF ANY TAPER SHALL HAVE TYPE C (STEADY BURN) LIGHTS FOR NIGHT-TIME CONSTRUCTION OPERATIONS.
17. SPECIAL LIGHTING UNITS (SLU) SHALL BE REQUIRED FOR ALL NIGHT-TIME CONSTRUCTION OPERATIONS ONLY IN ACCORDANCE WITH THE MUTCD OR AS REQUESTED BY THE ENGINEER.
18. W8-15 SIGNS SHALL BE INSTALLED IN ADVANCE OF COLD PLANED OR MICRO-MILLED AREAS OR AS DIRECTED BY THE ENGINEER.
19. NO WORK SHALL OCCUR WITHIN THE PUBLIC WAY ON STATE RECOGNIZED HOLIDAYS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
20. ALL REFLECTORIZED TRAFFIC CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
21. 36" HIGH CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPERS.



TEMPORARY CURB RAMP-TYPE 2

NOTES:

1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
5. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
6. THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR 2 TO 4 IN. WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.

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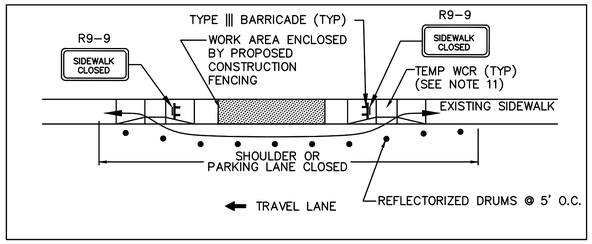
608180_TR7(TTCP).DWG Plotted on 29-Jun-2016 11:52 AM

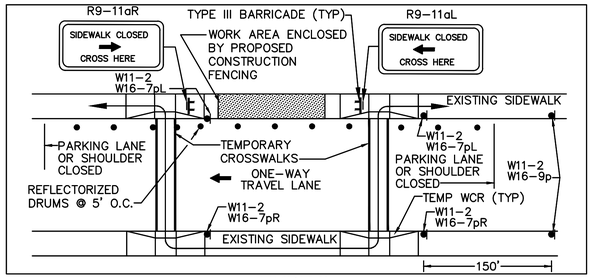
PEDESTRIAN BYPASS

TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING AND AS DIRECTED BY THE ENGINEER.



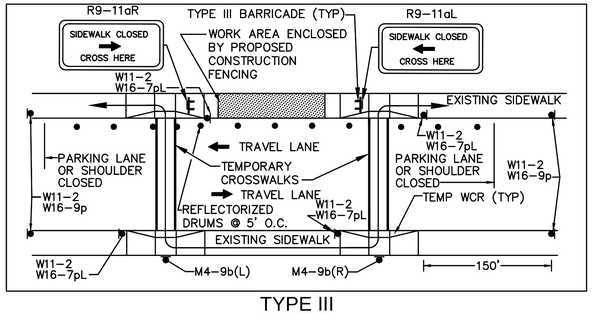
TYPE I

NOT TO SCALE



TYPE II

NOT TO SCALE

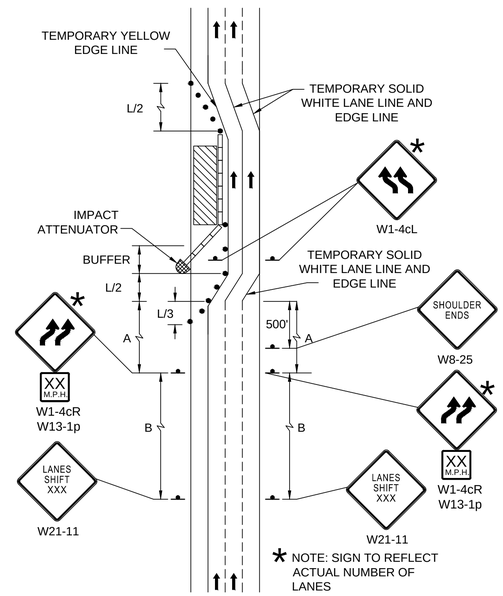


TYPE III

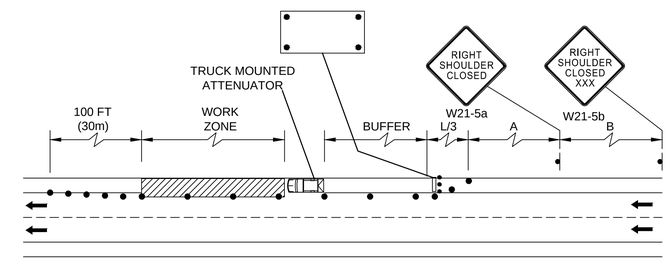
NOT TO SCALE

NOTES:

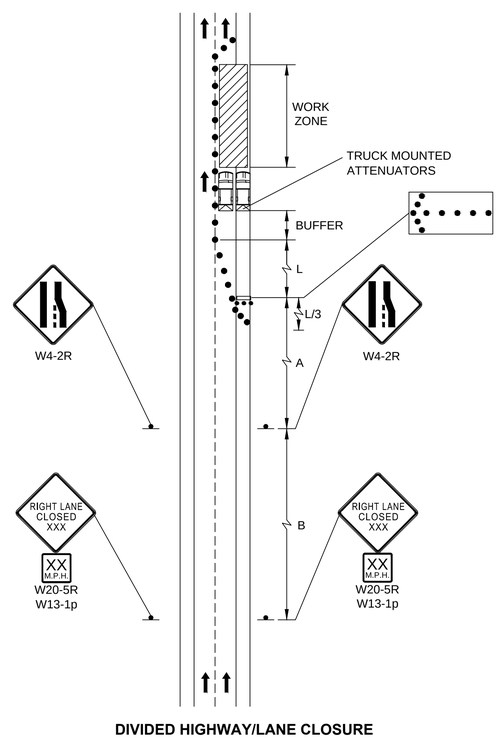
1. ADDITIONAL ADVANCE WARNING SIGNS MAY BE NECESSARY AS DETERMINED BY THE ENGINEER.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. ←——→ INDICATES DIRECTION OF PEDESTRIAN TRAVEL.
5. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHALL BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II AND TYPE III, AND AS DIRECTED BY THE ENGINEER.
6. PROPOSED TEMPORARY CROSSWALKS SHALL BE 12" WIDE SURFACE APPLIED TAPE OR REFLECTORIZED PAINT AS DIRECTED BY THE ENGINEER.
7. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MAAB AND ADAAG REQUIREMENTS.
8. CONTRACTOR SHALL MAINTAIN AS WIDE OF A PEDESTRIAN ACCESS AS POSSIBLE AT ALL TIMES. EXCEPT WHERE NECESSARY, THE CONTRACTOR MAY TEMPORARILY REDUCE PEDESTRIAN PATHWAYS TO 4 FEET IN WIDTH (EXCLUDING CURB) FOR NO MORE THAN 200 LINEAR FEET AT A TIME IN ACCORDANCE WITH ALL STANDARDS.
9. TEMPORARY WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSDOT, MAAB, AND ADAAG REQUIREMENTS.
10. W16-7pR OR W16-7pL SIGNS SHALL BE USED IN COMBINATION WITH W11-2 SIGNS AS DIRECTED BY THE ENGINEER.
11. EXISTING WHEELCHAIR RAMPS (WCR) MAY BE USED IN LIEU OF TEMPORARY WHEELCHAIR RAMPS FOR TEMPORARY DETOURS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



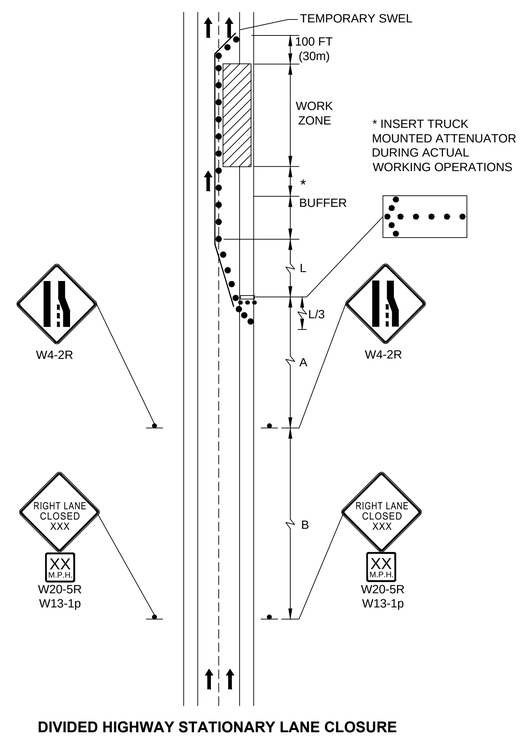
DIVIDED HIGHWAY MULTIPLE LANE SHIFT WITH BARRIER



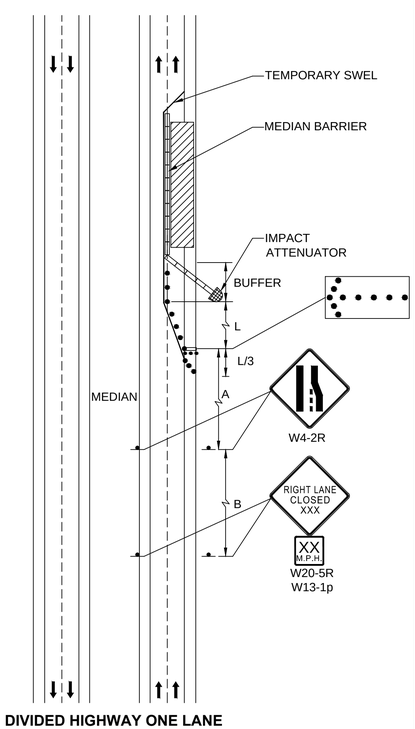
DIVIDED HIGHWAY SHOULDER CLOSED



DIVIDED HIGHWAY/LANE CLOSURE (SHORT TERM)



DIVIDED HIGHWAY STATIONARY LANE CLOSURE (LONG TERM AND INTERMEDIATE)



DIVIDED HIGHWAY ONE LANE CLOSED WITH BARRIER

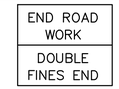
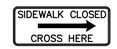
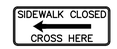
CONSTRUCTION TRAFFIC SIGN SUMMARY

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	48	58
PROJECT FILE NO.	608180		

TEMPORARY TRAFFIC CONTROL PLANS
SHEET 4 OF 4

IDENTIFICATION NUMBER	SIZE OF SIGN		SIGN DIAGRAM	# REQ'D *	UNIT AREA S.F.	AREA IN SQUARE FEET
	WIDTH	HEIGHT				
W1-4L	36"	36"		2	9.00	18.00
W1-4R	36"	36"		2	9.00	18.00
W1-4bL	36"	36"		2	9.00	18.00
W1-4bR	36"	36"		2	9.00	18.00
W4-2L	36"	36"		2	9.00	18.00
W4-2R	36"	36"		2	9.00	18.00
W5-1	36"	36"		2	9.00	18.00
W13-1p	24"	24"		2	4.00	8.00
W20-1	36"	36"		4	9.00	36.00
W20-4	36"	36"		2	9.00	18.00
W20-7	36"	36"		2	9.00	18.00
W20-5L	36"	36"		2	9.00	18.00
W20-7b	36"	36"		4	9.00	36.00
W21-5a	36"	36"		2	9.00	18.00

IDENTIFICATION NUMBER	SIZE OF SIGN		SIGN DIAGRAM	# REQ'D *	UNIT AREA S.F.	AREA IN SQUARE FEET
	WIDTH	HEIGHT				
R2-10a	30"	24"		6	5.00	30.00
R2-10e	30"	48"		6	10.00	60.00
R4-7	24"	30"		2	5.00	10.00
R9-9	24"	12"		4	2.00	8.00
R9-11R	24"	18"		2	3.00	6.00
R9-11L	24"	18"		2	3.00	6.00
W11-2	30"	30"		4	6.25	25.00
W16-7PL	24"	18"		4	3.00	12.00

* NO. OF SIGNS ARE ESTIMATED FOR BIDDING PURPOSES ONLY

608180_TR6(TTCP-OVERVIEW).DWG Plotted on 29-Jun-2016 11:53 AM

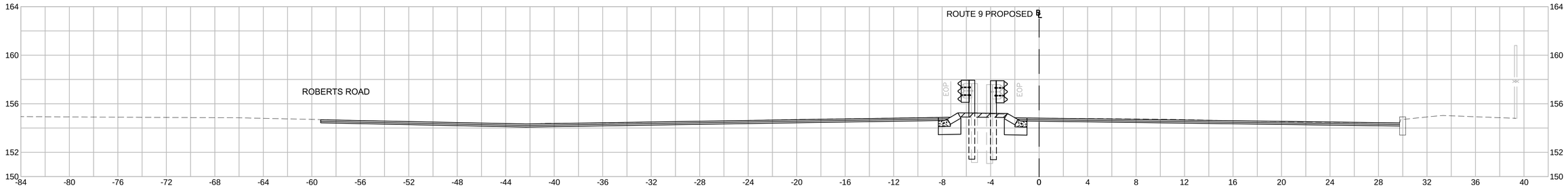
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	49	58
PROJECT FILE NO.	608180		

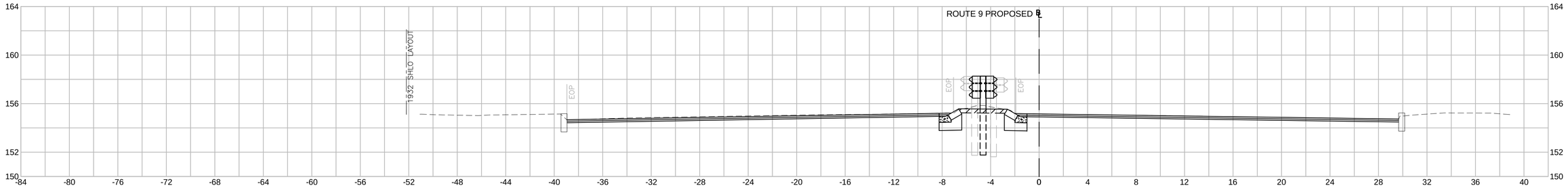
CROSS SECTIONS
SHEET 1 OF 10

Plotted on 29-Jun-2016 11:23 AM
608180_HD12(SECTIONS).DWG

187+50

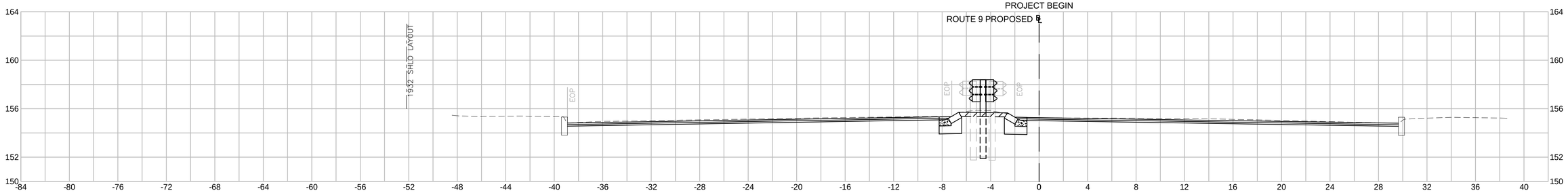


187+00

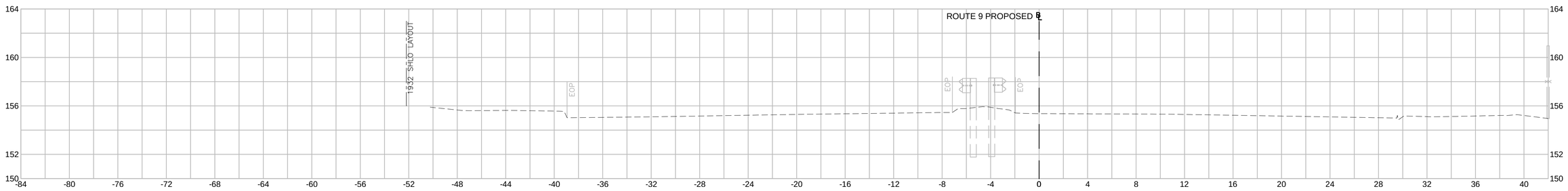


186+70

PROJECT BEGIN



186+50



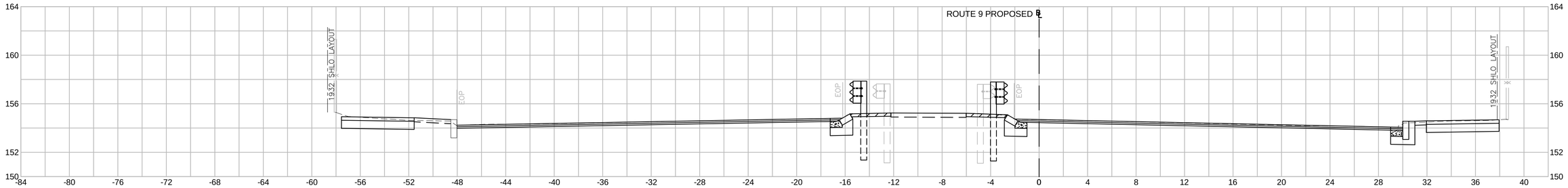
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

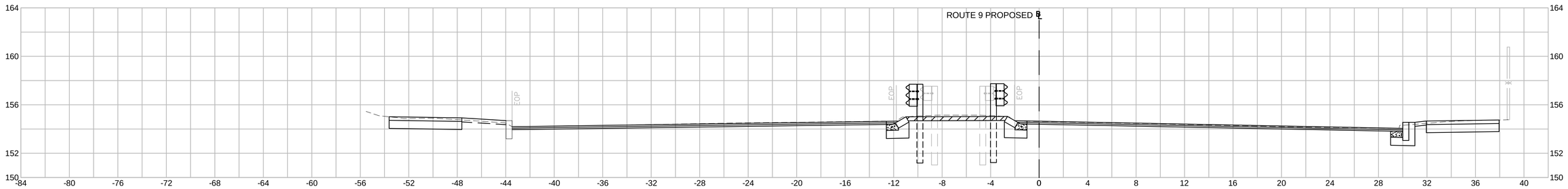
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	50	58
PROJECT FILE NO.	608180		

CROSS SECTIONS
SHEET 2 OF 10

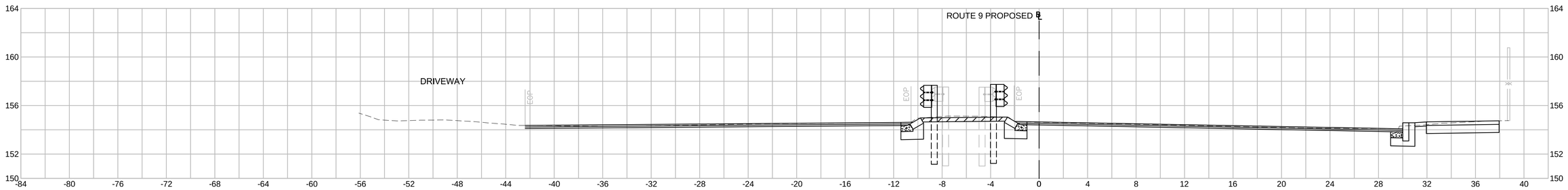
189+00



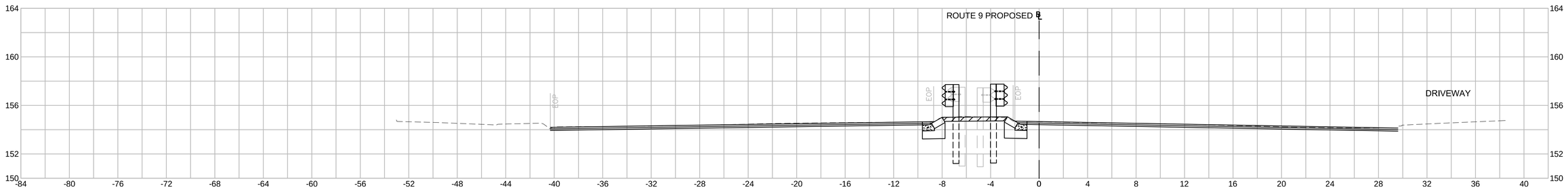
188+50



188+33



188+00



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

608180_HD12(SECTIONS).DWG Plotted on 29-Jun-2016 11:23 AM

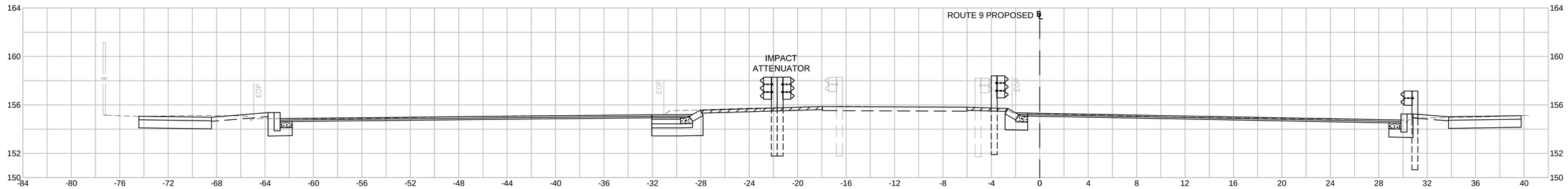
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	51	58
PROJECT FILE NO.	608180		

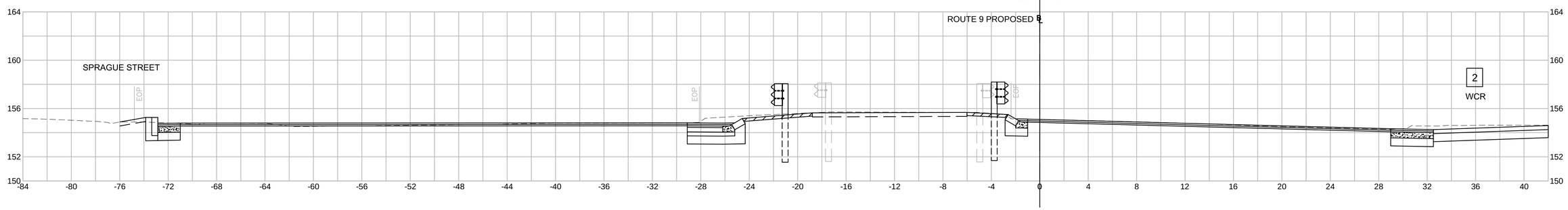
CROSS SECTIONS
SHEET 3 OF 10

608180_HD12(SECTIONS).DWG Plotted on 29-Jun-2016 11:23 AM

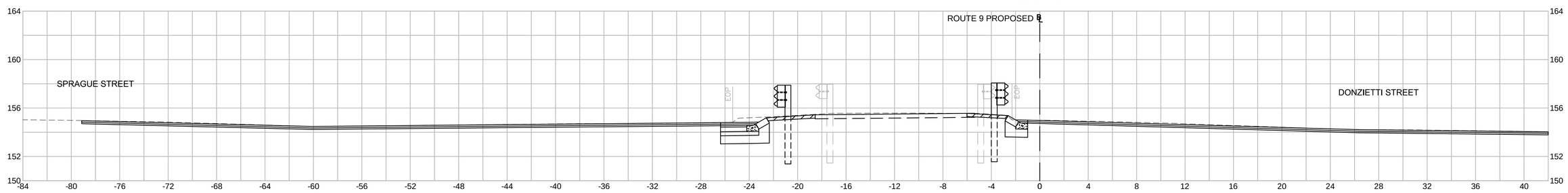
190+50



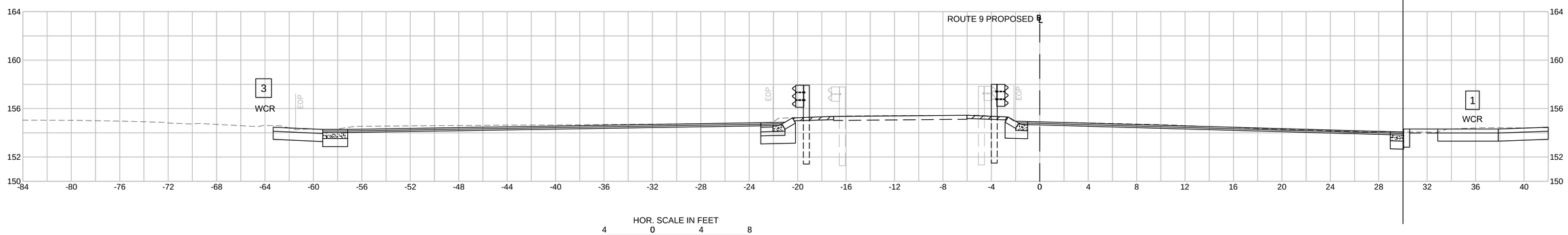
190+00



189+75



189+50



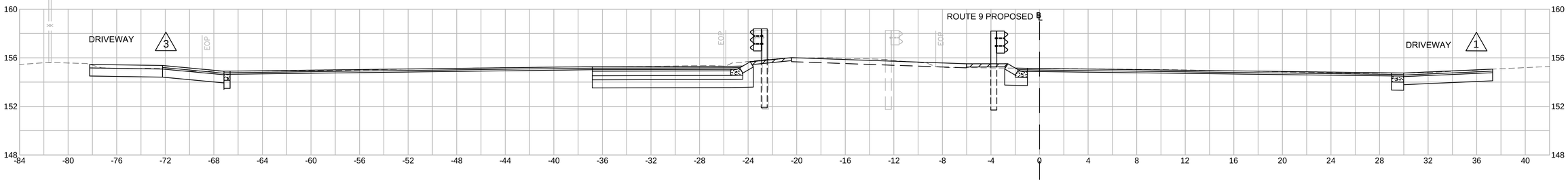
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

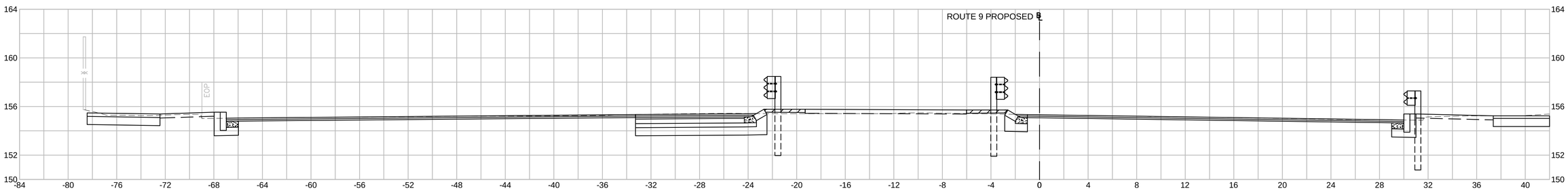
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	52	58
PROJECT FILE NO.	608180		

CROSS SECTIONS
SHEET 4 OF 10

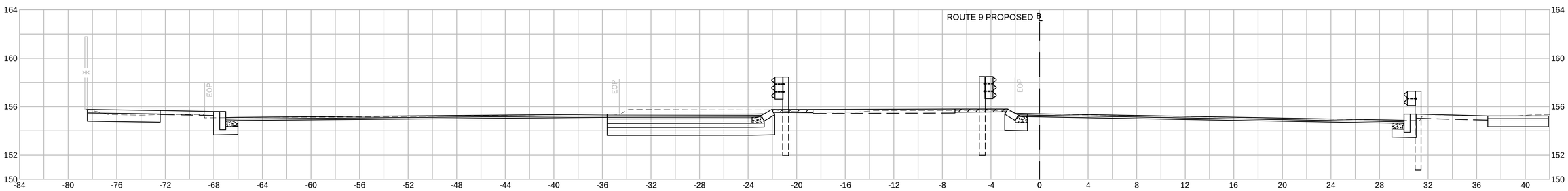
192+00



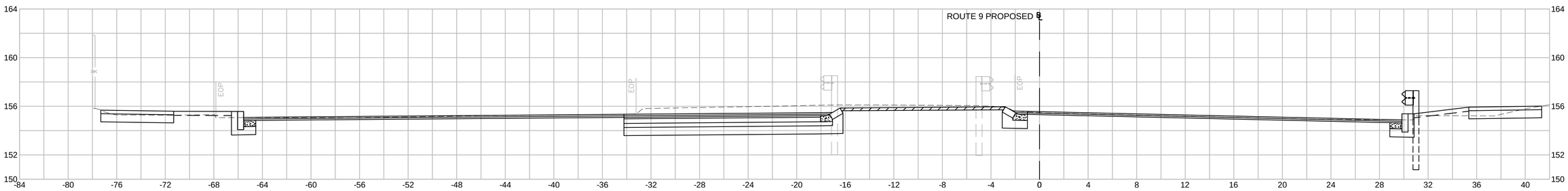
191+67



191+50



191+00



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

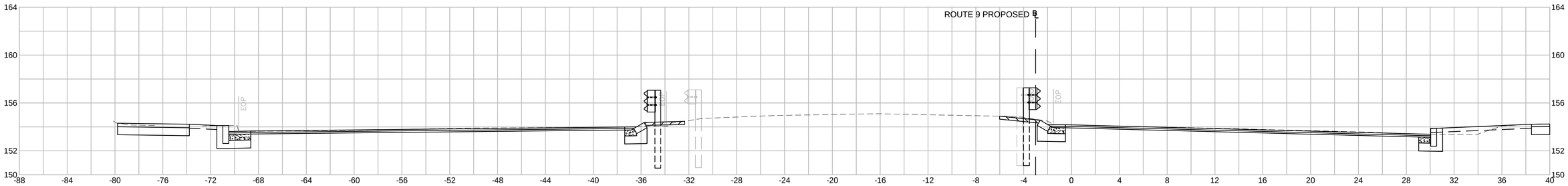
Plotted on 29-Jun-2016 11:23 AM
608180_HD12(SECTIONS).DWG

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

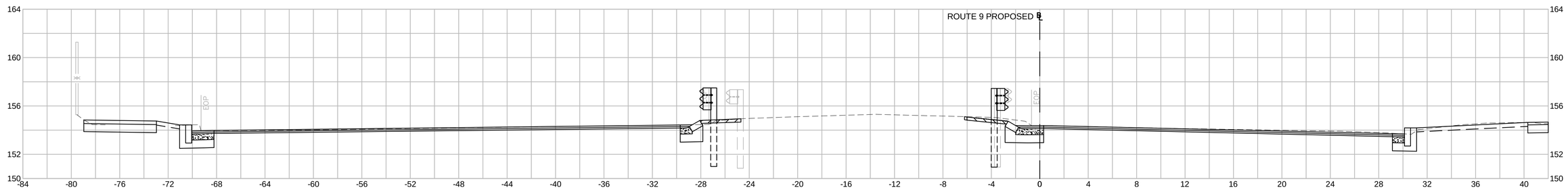
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	53	58
PROJECT FILE NO.	608180		

CROSS SECTIONS
SHEET 5 OF 10

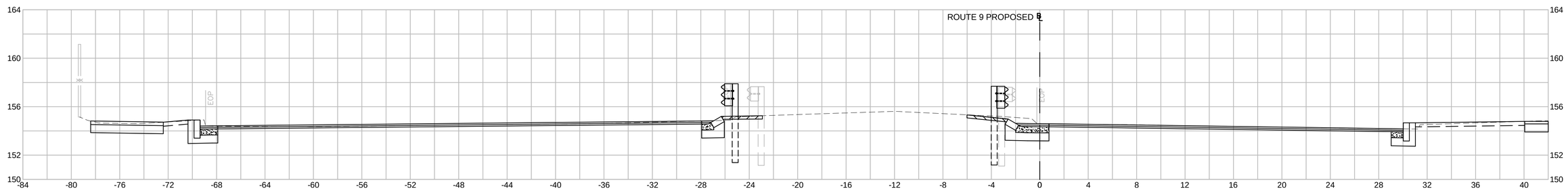
194+00



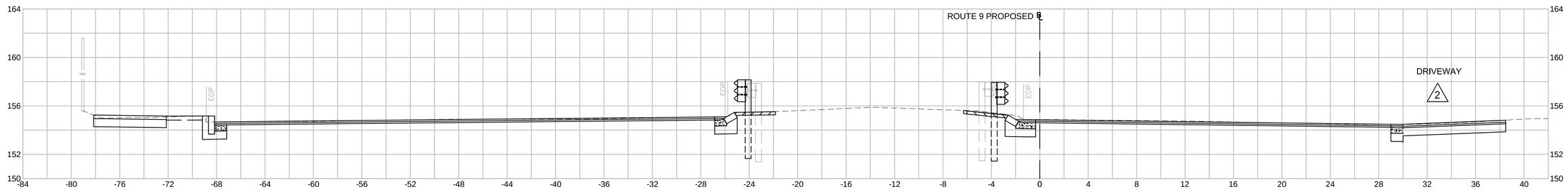
193+50



193+00



192+50



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

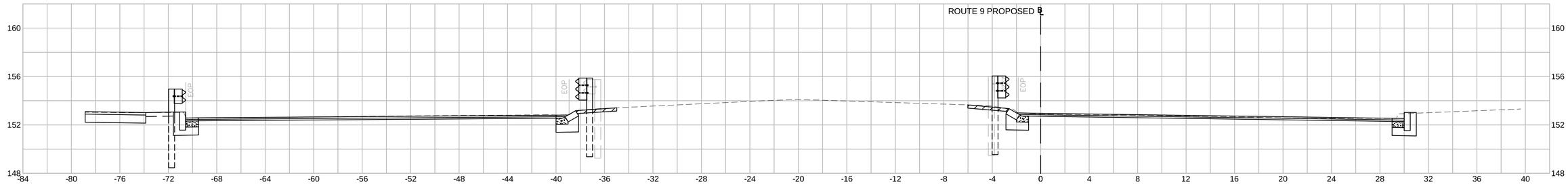
608180_HD12(SECTIONS).DWG Plotted on 29-Jun-2016 11:24 AM

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

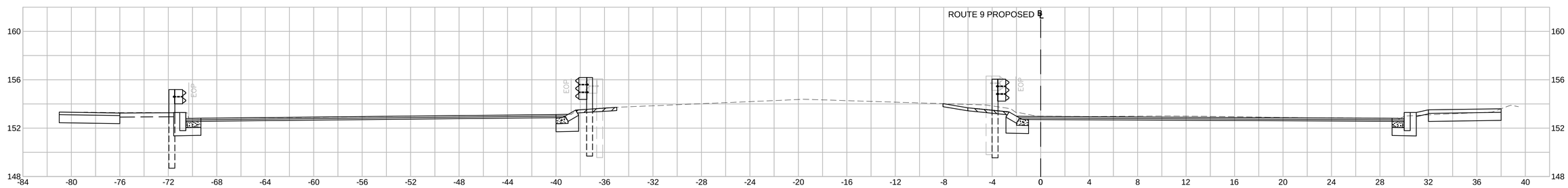
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	54	58
PROJECT FILE NO.	608180		

CROSS SECTIONS
SHEET 6 OF 10

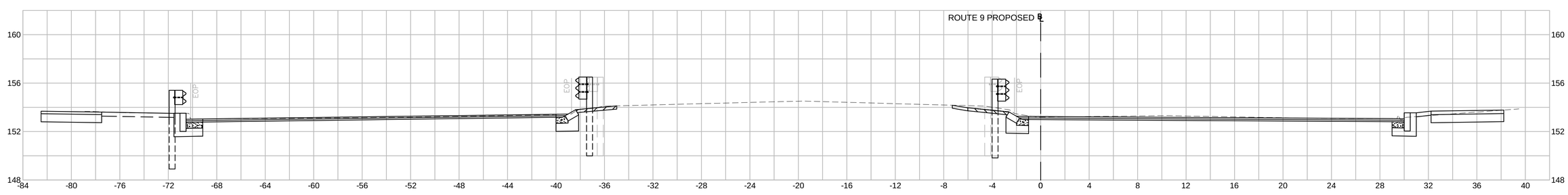
196+00



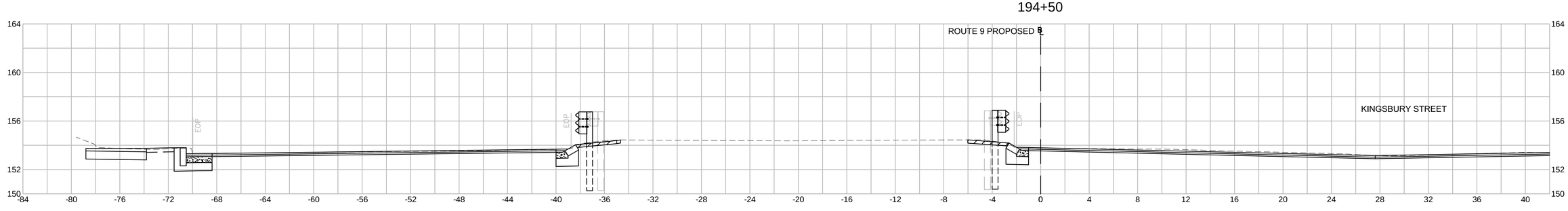
195+50



195+00



194+50



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

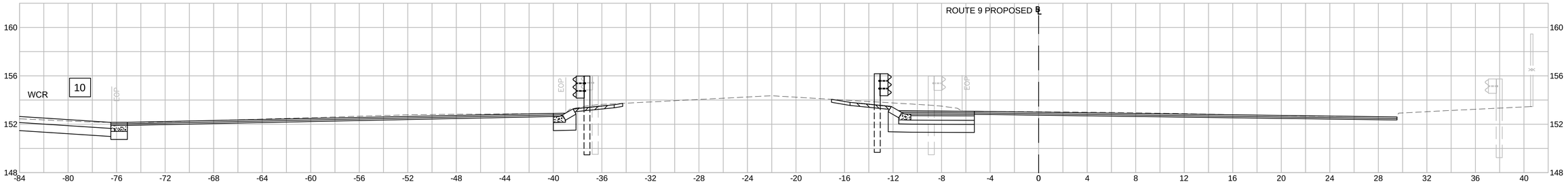
Plotted on 29-Jun-2016 11:24 AM
608180_HD12(SECTIONS).DWG

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

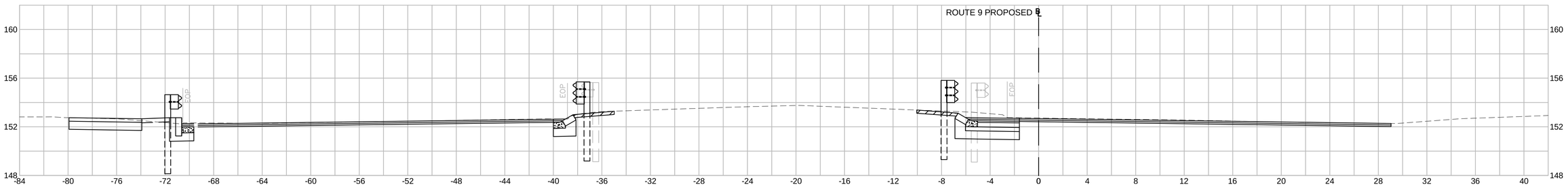
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	55	58
PROJECT FILE NO.	608180		

CROSS SECTIONS
SHEET 7 OF 10

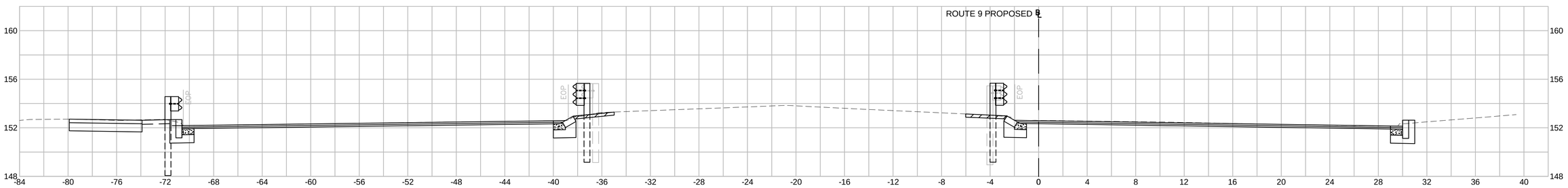
198+00



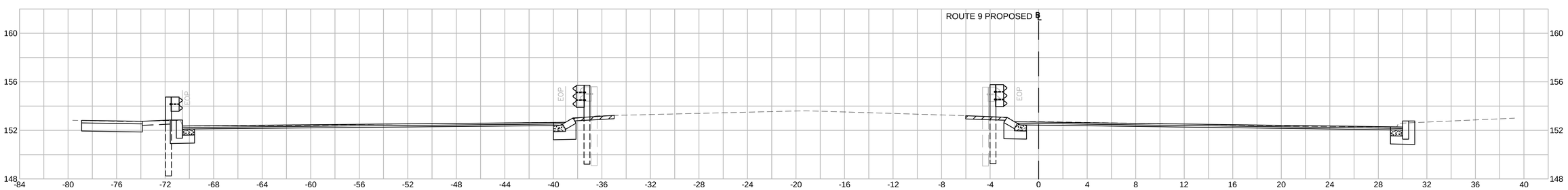
197+50



197+00



196+50



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

Plotted on 29-Jun-2016 11:24 AM
608180_HD12(SECTIONS).DWG

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

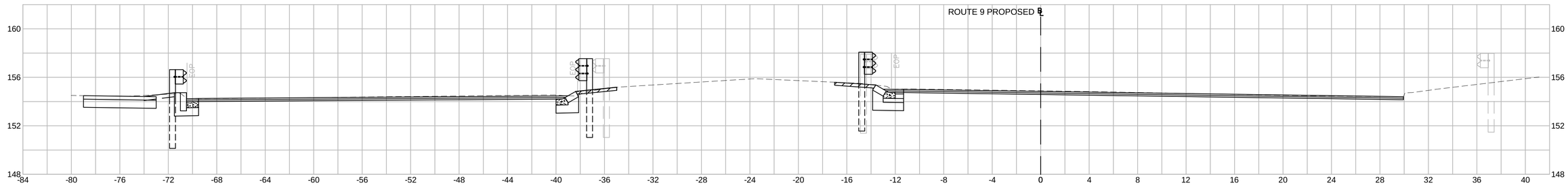
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	56	58
PROJECT FILE NO.	608180		

CROSS SECTIONS
SHEET 8 OF 10

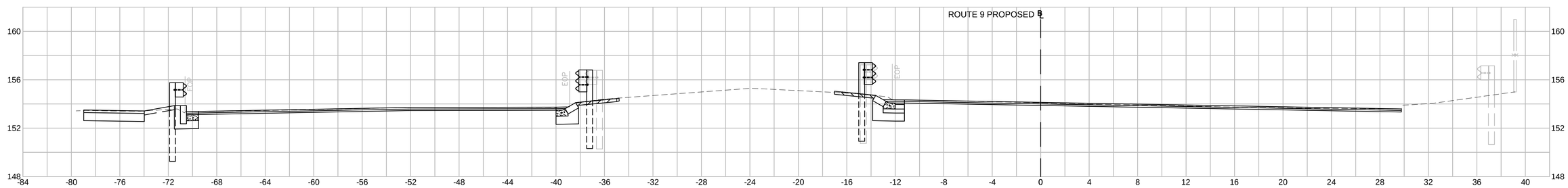
Plotted on 29-Jun-2016 11:24 AM

608180_HD12(SECTIONS).DWG

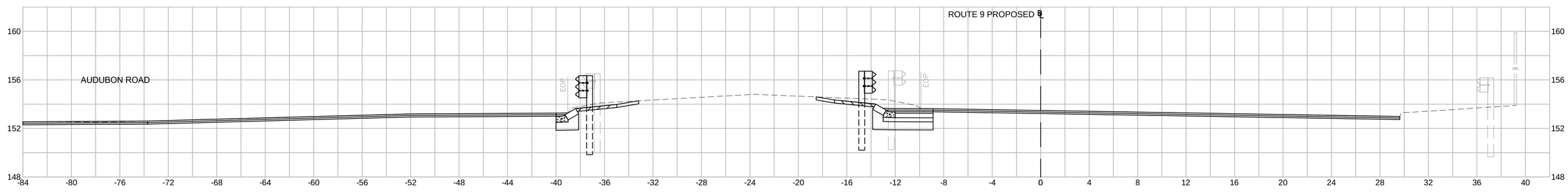
199+50



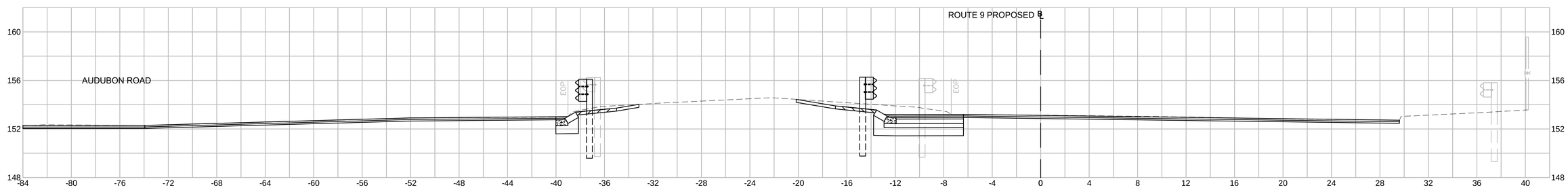
199+00



198+50



198+15



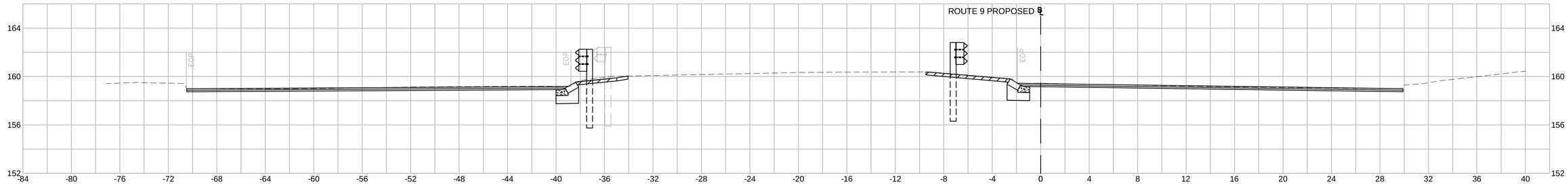
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

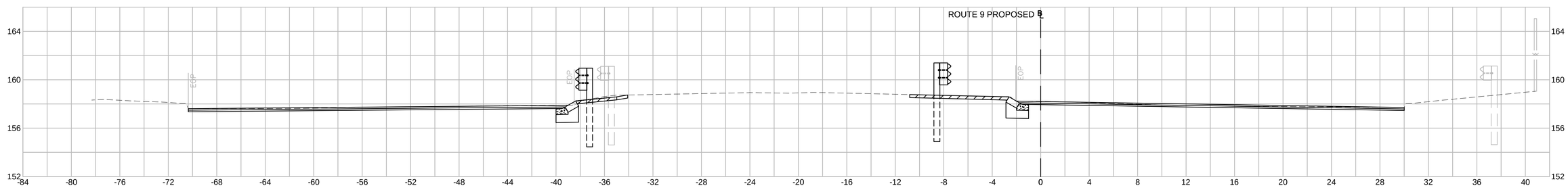
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	57	58
PROJECT FILE NO.	608180		

CROSS SECTIONS
SHEET 9 OF 10

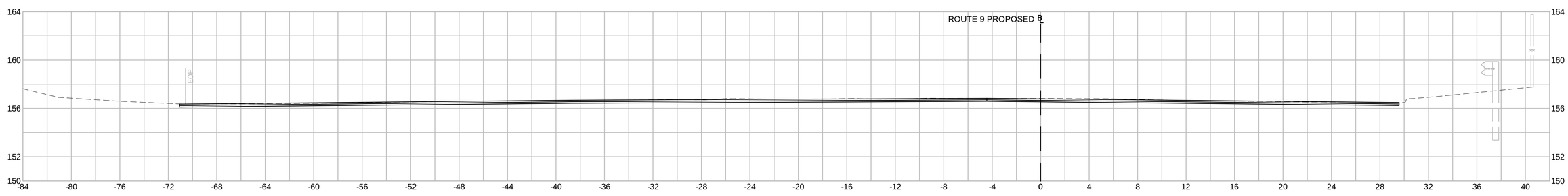
201+50



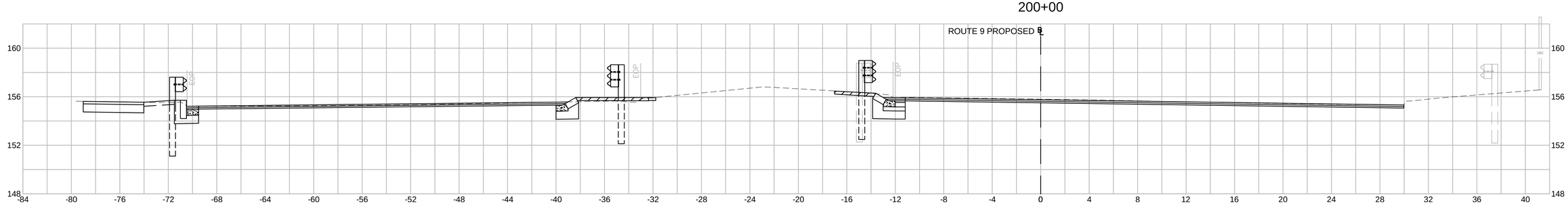
201+00



200+50



200+00



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

Plotted on 29-Jun-2016 11:24 AM
608180_HD12(SECTIONS).DWG

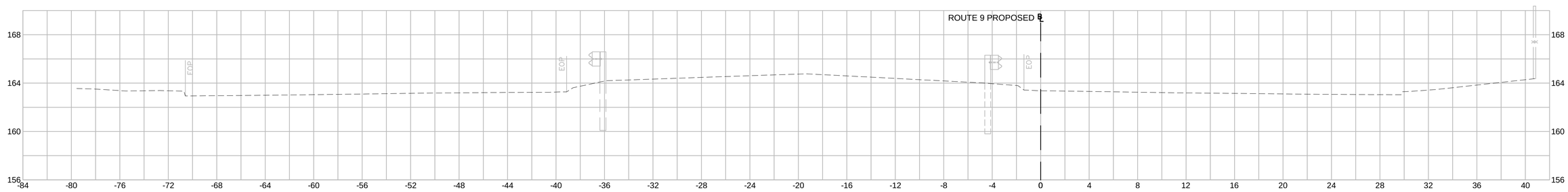
WELLESLEY
ROUTE 9 (WORCESTER ST) AT KINGSBURY ST

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	58	58
PROJECT FILE NO.	608180		

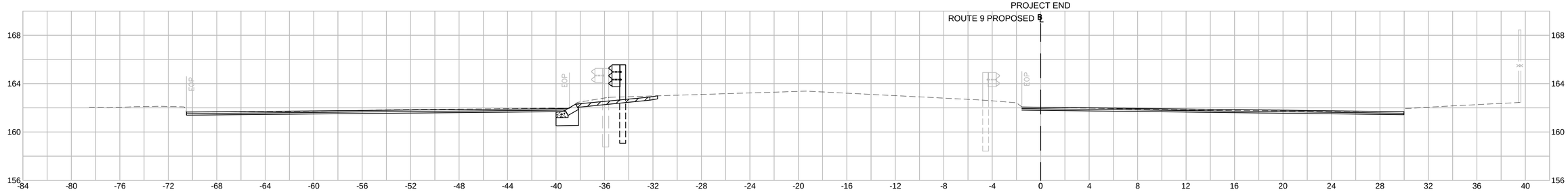
CROSS SECTIONS
SHEET 10 OF 10

608180_HD12(SECTIONS).DWG Plotted on 29-Jun-2016 11:24 AM

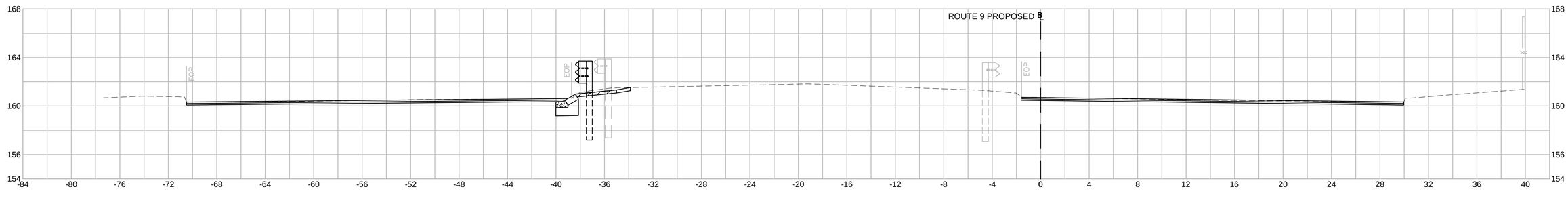
203+00



202+50
PROJECT END



202+00



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