MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

BOSTON ROAD (ROUTE 3A)

IN THE TOWN OF

BILLERICA

MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. STP/TAP/CMQ-0034(015)X

BILLERICA
BOSTON ROAD (ROUTE 3A)

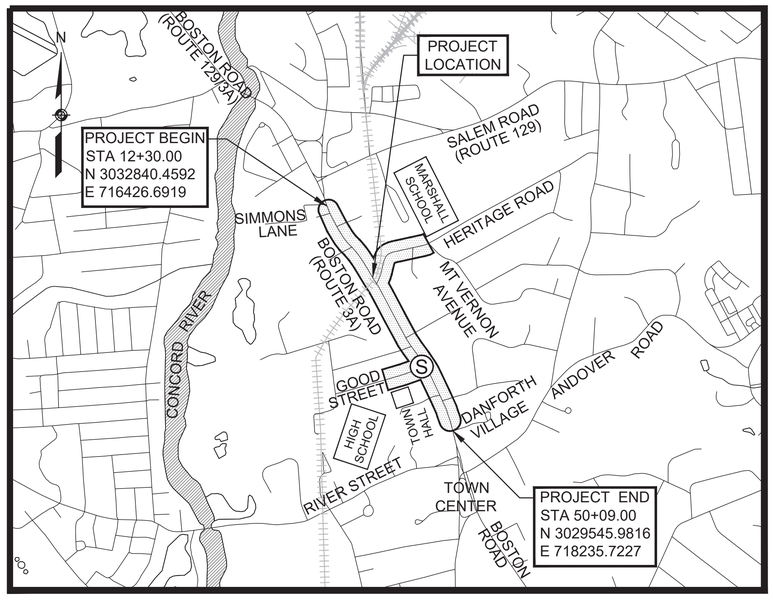
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	1	140
PROJECT FILE NO.	605178		

TITLE SHEET & INDEX

THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, 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.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	KEY PLAN & BORING LOG
4-6	TYPICAL SECTIONS & PAVEMENT NOTES
7	GENERAL NOTES
8-17	CONSTRUCTION DETAILS
18-28	CONSTRUCTION PLANS
29-34	PROFILE BOSTON ROAD
35-45	CURB TIE & GRADING PLANS
46-56	DRAINAGE PLANS
57-67	UTILITY PLANS
68-78	SIGN & PAVEMENT MARKINGS PLANS
79	RECTANGULAR RAPID FLASHING BEACON DETAILS
80-81	TRAFFIC SIGN SUMMARY
82-86	TRAFFIC SIGNAL PLANS
87-90	TEMPORARY TRAFFIC CONTROL PLANS
91-96	LIGHTING PLAN AND UNDERGROUND ELECTRICAL SERVICE CONNECTION
97-98	LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION DETAILS
99-140	CROSS SECTIONS



PROJECT LOCATION (S) SIGNALIZED LOCATION

0 1000 2000 3000 4000

SCALE: 1" = 1000'

BOSTON ROAD (ROUTE 3A) LENGTH OF PROJECT = 3675.00 FEET = 0.696 MILES
GOOD STREET LENGTH OF PROJECT = 601.00 FEET = 0.114 MILES
HERITAGE ROAD LENGTH OF PROJECT = 1017.00 FEET = 0.193 MILES

DESIGN DESIGNATION	BOSTON ROAD (ROUTE 3A)
DESIGN SPEED	40 MPH
ADT (2017)	20,530
ADT (2027)	22,680
K	8.6%
D	69% (NB)
T (PEAK HOUR)	1.9%
T (AVERAGE DAY)	2.3%
DHV	1,950
DDHV	1,346
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL

COMMONWEALTH OF MASSACHUSETTS
DARSHAN N. JHAVERI
CIVIL
No. 41441
PROFESSIONAL ENGINEER

Darshan N Jhaveri Digitally signed by Darshan N Jhaveri Date: 2022.03.09 08:31:10 -05'00'

BETA
www.BETA-Inc.com
315 NORWOOD PARK SOUTH
2ND FLOOR
NORWOOD, MA 02062

DATE	DESCRIPTION	REV #

massDOT
Massachusetts Department of Transportation
Highway Division

APPROVED

Carrie Lavallee, P.E. Digitally signed by Carrie Lavallee, P.E. Date: 2022.03.14 08:58:54 -04'00'

03/14/2022

CHIEF ENGINEER **DATE**

605178_HD(4722_TITLE).DWG Plotted on 7-Mar-22 2:34 PM

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
		RETAINING WALL (TYPE AS NOTED)
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENTATION BARRIER
		TREE LINE or LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT
BND	BND	HIGHWAY/PROPERTY BOUND (TYPE AS NOTED)
	TP-1	TEST PIT
	B-1/PC-1	BORING/PAVEMENT CORE
ECB	ECB	EROSION CONTROL BARRIER/COMPOST FILTER TUBES
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		CONSTRUCTION BASELINE
N00°00'00"E 000.00'		SURVEY LINE
		PEDESTRIAN CURB RAMP (PCR)
24" PINE		TREE (SIZE AND TYPE AS NOTED)
WF #XX		VEGETATED WETLAND

PAVEMENT MARKINGS AND SIGNING SYMBOLS

PROPOSED

CW	CROSSWALK, 2 - 12" WHITE LINES (WIDTH VARIES)
SL	STOP LINE - 12" WHITE LINE 4' BEHIND CW (TYP)
SWL	SOLID WHITE LINE - 6"
SWCHL	SOLID WHITE CHANNELIZING LINES - 12" (SPACING NOTED)
SWGL	SOLID WHITE GORE LINE 12" @ 45°, (SPACING NOTED)
SWPL	SOLID WHITE PARKING LINE - 6"
BWL	BROKEN WHITE LINE - 6" (10' LINE & 30' GAP)
DWLEx	DOTTED WHITE LANE EXTENSION LINE - 6" (2' LINE & 6' GAP)
DYLEx	DOTTED YELLOW LANE EXTENSION LINE - 6" (2' LINE & 6' GAP)
DYBL	DOTTED YELLOW BIKE LANE LINE - 6" WITH BLACK OUTSIDE BORDER (3' LINE & 9' GAP)
BYL	BROKEN YELLOW LINE - 6" (10' LINE & 30' GAP)
DBYL	DOUBLE YELLOW LINE - 2 - 6" LINES
SYL	SOLID YELLOW LINE - 6"
SYGL	SOLID YELLOW GORE LINE 12" @ 45°, (SPACING NOTED)
SYBL	SOLID YELLOW BIKE LANE LINE - 6" WITH BLACK OUTSIDE BORDER
SCHOOL	SCHOOL ZONE - WHITE
	ACCESSIBLE SYMBOL - WHITE
	PAVEMENT ARROW - WHITE
ONLY	LEGEND "ONLY" - WHITE

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

TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	
		CONTROL CABINET GROUND MOUNTED WITH FOUNDATION
		CONTROL CABINET POLE MOUNTED
	Ø2	CONTROLLER PHASE
	MA-1	MAST ARM, SHAFT & BASE (ARM LENGTH AS NOTED)
		VEHICULAR SIGNAL HEAD (ALPHA-NUMERIC DESIGNATION AS NOTED)
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		VEHICULAR SIGNAL HEAD (REMOVED & RESET)
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD
		PEDESTRIAN SIGNAL HEAD, OPTICALLY PROGRAMMED
HH		PULL BOX 12"x12" OR HANDHOLE
		LOOP DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		PRE-EMPTION DETECTOR
		PRE-EMPTION CONFIRMATION STROBE
		SIGNAL CONDUIT (SINGLE RUN)
		SIGNAL CONDUIT (DOUBLE RUN)
		SIGNAL POST & BASE
M	M	MAGNETIC DETECTOR
		SCHOOL ZONE SPEED LIMIT SIGN
		MICROWAVE OR ULTRASONIC DETECTOR
		VIDEO DETECTION CAMERA
		VIDEO DETECTION ZONE

TRAFFIC SIGNAL SYSTEMS

R	STEADY CIRCULAR RED
Y	STEADY CIRCULAR AMBER
G	STEADY CIRCULAR GREEN
FR	FLASHING CIRCULAR RED
FY	FLASHING CIRCULAR AMBER
←FY	FLASHING YELLOW LEFT ARROW
R→	STEADY RED RIGHT ARROW
Y→	STEADY AMBER RIGHT ARROW
G→	STEADY GREEN RIGHT ARROW
←R	STEADY RED LEFT ARROW
←Y	STEADY AMBER LEFT ARROW
←G	STEADY GREEN LEFT ARROW
W	STEADY WALK (PERSON WALKING) - LUNAR WHITE
DW	STEADY DON'T WALK (HAND) - PORTLAND ORANGE
FDW	FLASHING DON'T WALK (FLASHING HAND) - PORTLAND ORANGE

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
ALT	ALTERATION
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL (or ℄)	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BOW	BOTTOM OF WALL
BR.	BRIDGE
BSW	BACK OF SIDEWALK
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
CIT	CHANGE IN TYPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
COND	CONDUIT
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
DV	DIVERSION MANHOLE
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
FM	FORCE MAIN
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
IP	IRON PIPE
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE or LOW POINT
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
O.C.	ON CENTER
OHW	OVERHEAD WIRE
PCR	PEDESTRIAN CURB RAMP
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	2	140
PROJECT FILE NO.	605178		

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

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 or POLY-VINYL -CHLORIDE-PIPE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REL	RELOCATE
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
RRFB	RECTANGULAR RAPID FLASHING BEACON
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SD	SUBDRAIN
SHLD	SHOULDER
SHT	SHEET
SMH	SEWER MANHOLE
SP	STRAIN POLE
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
TOW	TOP OF WALL
T.S.	TRAFFIC SIGNAL
TSV&B	TAPPING SLEEVE, VALVE AND BOX
TYP	TYPICAL
UG	UNDERGROUND
UP	UTILITY POLE
UPL	UTILITY POLE w/ LIGHT
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VGC	VERTICAL GRANITE CURB
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
WQU	WATER QUALITY UNIT
X-SECT	CROSS SECTION

605178_HD(47'22_LEGEND).DWG Plotted on 7-Mar-22 8:19 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	3	140
PROJECT FILE NO.	605178		

KEY PLAN & BORING LOG

Bituminous Core Thickness Data
Boston Road, Billerica

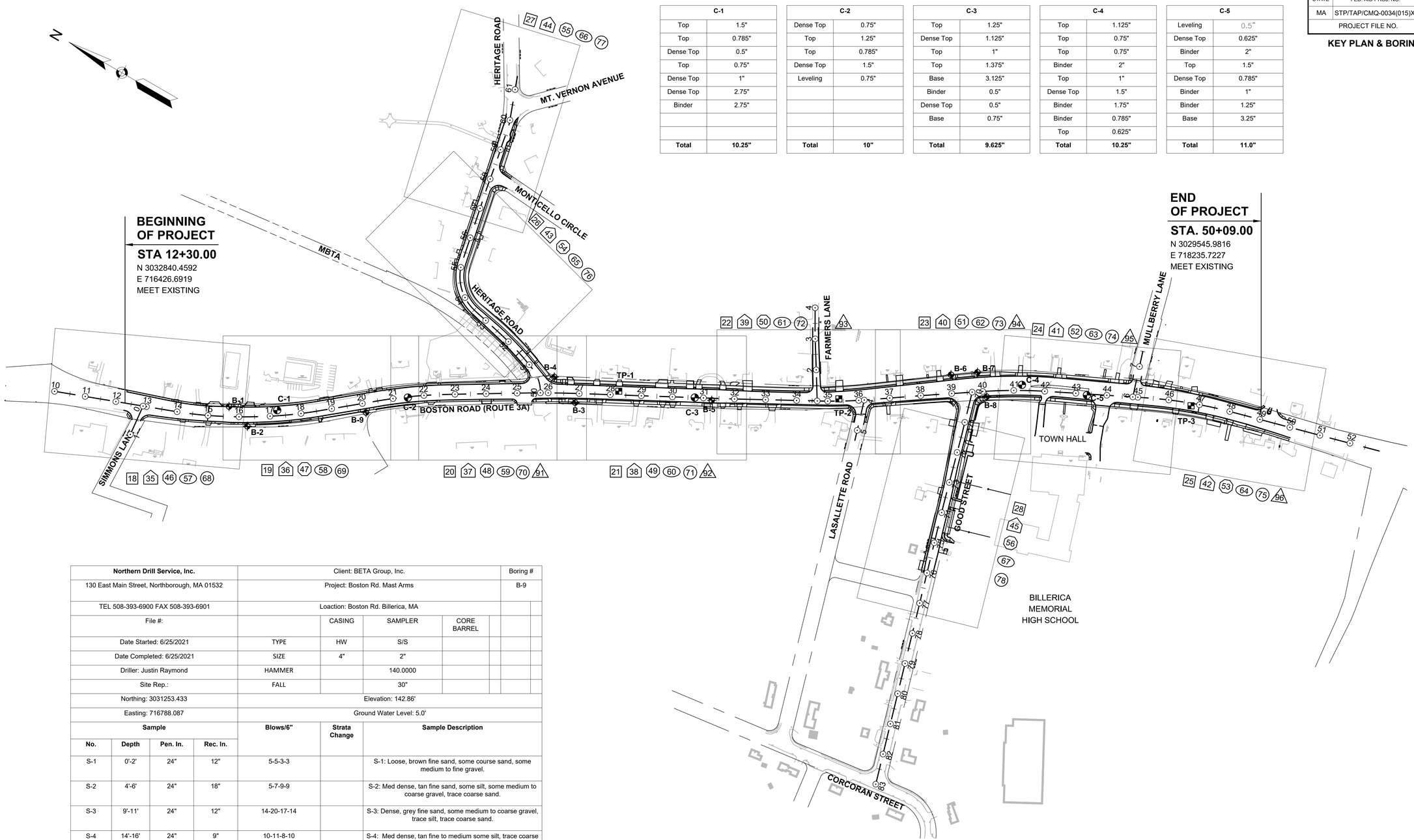
C-1	
Top	1.5"
Top	0.785"
Dense Top	0.5"
Top	0.75"
Dense Top	1"
Dense Top	2.75"
Binder	2.75"
Total	**10.25"**

C-2	
Dense Top	0.75"
Top	1.25"
Top	0.785"
Dense Top	1.5"
Leveling	0.75"
Total	**10"**

C-3	
Top	1.25"
Dense Top	1.125"
Top	1"
Top	1.375"
Base	3.125"
Binder	0.5"
Dense Top	0.5"
Base	0.75"
Total	**9.625"**

C-4	
Top	1.125"
Top	0.75"
Top	0.75"
Binder	2"
Top	1"
Dense Top	1.5"
Binder	1.75"
Binder	0.785"
Top	0.625"
Total	**10.25"**

C-5	
Leveling	0.5"
Dense Top	0.625"
Binder	2"
Top	1.5"
Dense Top	0.785"
Binder	1"
Binder	1.25"
Base	3.25"
Total	**11.0"**



Northern Drill Service, Inc.				Client: BETA Group, Inc.			Boring #
130 East Main Street, Northborough, MA 01532				Project: Boston Rd. Mast Arms			B-9
TEL 508-393-6900 FAX 508-393-6901				Loaction: Boston Rd. Billerica, MA			
File #:					CASING	SAMPLER	CORE BARREL
Date Started: 6/25/2021				TYPE	HW	S/S	
Date Completed: 6/25/2021				SIZE	4"	2"	
Driller: Justin Raymond				HAMMER		140.0000	
Site Rep.:				FALL		30"	
Northing: 3031253.433				Elevation: 142.86'			
Easting: 716788.087				Ground Water Level: 5.0'			
Sample				**Blows/6"**	**Strata Change**	**Sample Description**	
No.	**Depth**	**Pen. In.**	**Rec. In.**				
S-1	0'-2'	24"	12"	5-5-3-3		S-1: Loose, brown fine sand, some course sand, some medium to fine gravel.	
S-2	4'-6'	24"	18"	5-7-9-9		S-2: Med dense, tan fine sand, some silt, some medium to coarse gravel, trace coarse sand.	
S-3	9'-11'	24"	12"	14-20-17-14		S-3: Dense, grey fine sand, some medium to coarse gravel, trace silt, trace coarse sand.	
S-4	14'-16'	24"	9"	10-11-8-10		S-4: Med dense, tan fine to medium some silt, trace coarse gravel.	
S-5	19'-21'	0"	0"	100/0"		S-5: 2' boulder from 19'-21'	
S-6	24'-26'	2"	2"	100/2"		S-6: Very dense, gray weathered rock, some coarse sand.	
						Bottom of Exploration = 24'-2"	
Cohesionless Density Blows/ft: 0–10 Loose 10–30 Medium–Dense 30–50 Dense 50+ Very Dense						Note: Borings was moved 8' south west due to water line.	

0 150 300 450 600

SCALE: 1" = 150'

SHEET NUMBER LEGEND

- XX CONSTRUCTION PLAN
- XX CURB TIE & GRADING PLAN
- XX DRAINAGE UTILITY PLAN
- XX UTILITY PLAN
- XX SIGN & PAVEMENT MARKING PLAN
- XX LIGHTING PLAN

LEGEND

- PAVEMENT CORE (SEE SPECIAL PROVISION FOR BORING LOGS)
- TEST PIT
- TRAFFIC MAST ARM BORING LOCATION (SEE SPECIAL PROVISION FOR BORING LOGS)

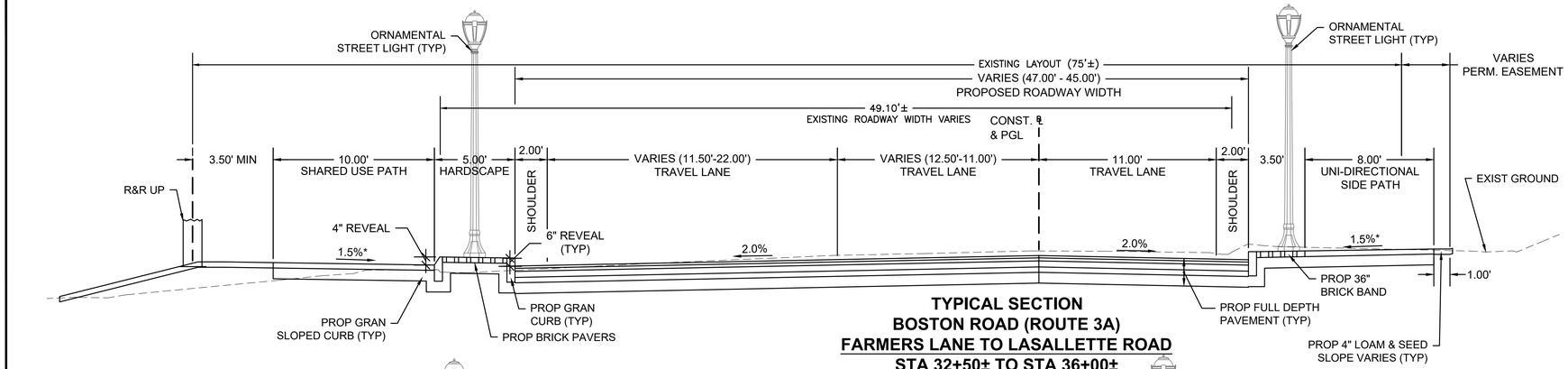
605178_HD(4722_KEYPLAN).DWG Plotted on 7-Mar-22 8:24 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

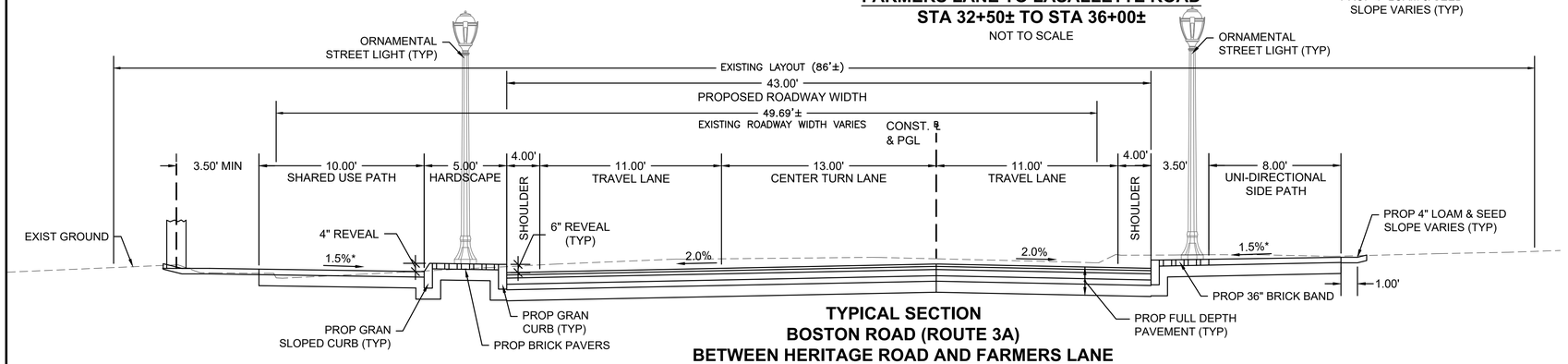
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	4	140
PROJECT FILE NO.	605178		

TYPICAL SECTIONS & PAVEMENT NOTES
BOSTON ROAD (ROUTE 3A)

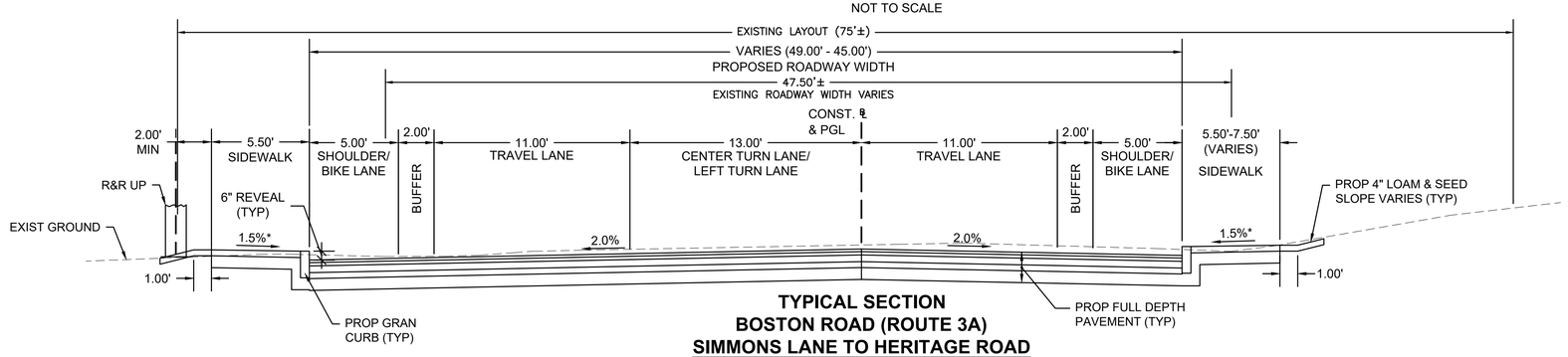
605178_HD(4722_TYP SEC).DWG Plotted on 7-Mar-22 8:24 PM



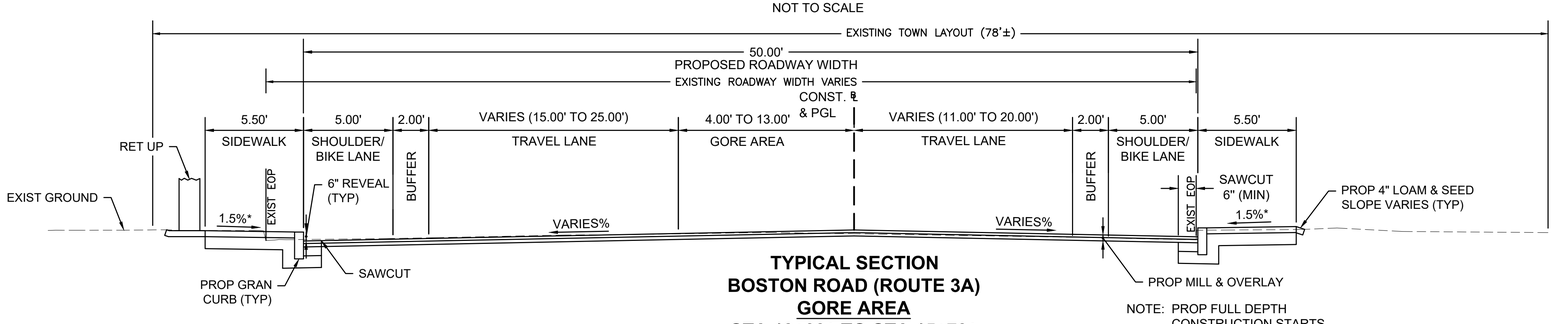
TYPICAL SECTION
BOSTON ROAD (ROUTE 3A)
FARMERS LANE TO LASALLETTE ROAD
STA 32+50± TO STA 36+00±
NOT TO SCALE



TYPICAL SECTION
BOSTON ROAD (ROUTE 3A)
BETWEEN HERITAGE ROAD AND FARMERS LANE
STA 26+00± TO STA 30+50±
NOT TO SCALE



TYPICAL SECTION
BOSTON ROAD (ROUTE 3A)
SIMMONS LANE TO HERITAGE ROAD
STA 15+70± TO STA 25+00±
NOT TO SCALE



TYPICAL SECTION
BOSTON ROAD (ROUTE 3A)
GORE AREA
STA 13+00± TO STA 15+70±
NOT TO SCALE

NOTE: PROP FULL DEPTH CONSTRUCTION STARTS AT STA 15+00

PAVEMENT NOTES

FULL DEPTH PAVEMENT & BOX WIDENING > 4' WIDE

SURFACE COURSE:	1-3/4" SUPERPAVE SURFACE COURSE - 12.5 POLYMER (SSC - 12.5-P) OVER
INTERMEDIATE COURSE:	2-1/4" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
BASE COURSE:	4-1/2" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER
SUB-BASE:	4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL BORROW, TYPE b

FULL DEPTH PAVEMENT BOX WIDENING ≤4' WIDE

SURFACE COURSE:	1-3/4" SUPERPAVE SURFACE COURSE - 12.5 POLYMER (SSC - 12.5-P) OVER
INTERMEDIATE COURSE:	2-1/4" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
BASE COURSE:	6" HES CEMENT CONCRETE BASE COURSE OVER
SUB-BASE:	8" GRAVEL BORROW, TYPE b

PAVEMENT MILLING AND OVERLAY (BOSTON ROAD & HERITAGE ROAD)

SURFACE COURSE:	1-3/4" SUPERPAVE SURFACE COURSE - 12.5 POLYMER (SSC - 12.5-P) OVER
INTERMEDIATE COURSE:	2-1/4" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
PAVEMENT MILLING:	1/2" TO 4" PAVEMENT STANDARD MILLING (VARIABLE DEPTH)

PAVEMENT MILLING AND OVERLAY (GOOD STREET & SIDE STREETS)

SURFACE COURSE:	1-3/4" SUPERPAVE SURFACE COURSE - 12.5 POLYMER (SSC - 12.5-P) OVER
PAVEMENT MILLING:	1-3/4" PAVEMENT STANDARD MILLING (VARIABLE DEPTH)

CEMENT CONCRETE SIDEWALKS, PEDESTRIAN CURB RAMPS, UNI-DIRECTIONAL SIDE PATH, AND SHARED USE PATHS

SURFACE:	4" CEMENT CONCRETE WALK SURFACE 4000 PSI, 3/4", 610 AIR ENTRAINED OVER
FOUNDATION:	8" GRAVEL BORROW, TYPE b

CEMENT CONCRETE SIDEWALKS AT DRIVEWAYS AND SHARED USE PATH PEDESTRIAN CURBRAMPS

SURFACE:	6" CEMENT CONCRETE WALK SURFACE 4000 PSI, 3/4", 610 AIR ENTRAINED OVER
FOUNDATION:	8" GRAVEL BORROW, TYPE b

BRICK ACCENT STRIP

SURFACE:	4"X8"X2 ¼" BRICK PAVER OVER 1" SAND BEDDING OVER
BASE:	4" CEMENT CONCRETE
FOUNDATION:	8" GRAVEL BORROW, TYPE b

HMA SIDEWALKS

SURFACE:	1-1/4" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1-3/4" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
FOUNDATION:	8" GRAVEL BORROW, TYPE b

HMA DRIVEWAYS

SURFACE:	1-1/2" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 2-1/2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
FOUNDATION:	8" GRAVEL BORROW, TYPE b

PAVEMENT NOTES

1. **ALL HMA FOR PATCHING. ASPHALT EMULSION FOR TACK COAT AND HMA JOINT SEALANT SHALL BE INSTALLED PER SECTION 450.**
2. **MILLING TO ESTABLISH 2% CROSS SLOPE TO MEET LINES AND GRADES AS DIRECTED BY ENGINEER.**
3. **HMA DRIVEWAYS - THE SURFACE COURSE SHALL BE A DRIVEWAY AND SIDEWALK RECIPE MIX OR 9.5mm SUPERPAVE SURFACE COURSE. IN AREAS OF HIGH TRAFFIC THE DRIVEWAY SURFACE COURSE SHALL BE 12.5mm SUPERPAVE SURFACE COURSE. THE MIXTURE TYPE AND PLACEMENT METHOD SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO COMMENCING WORK.**

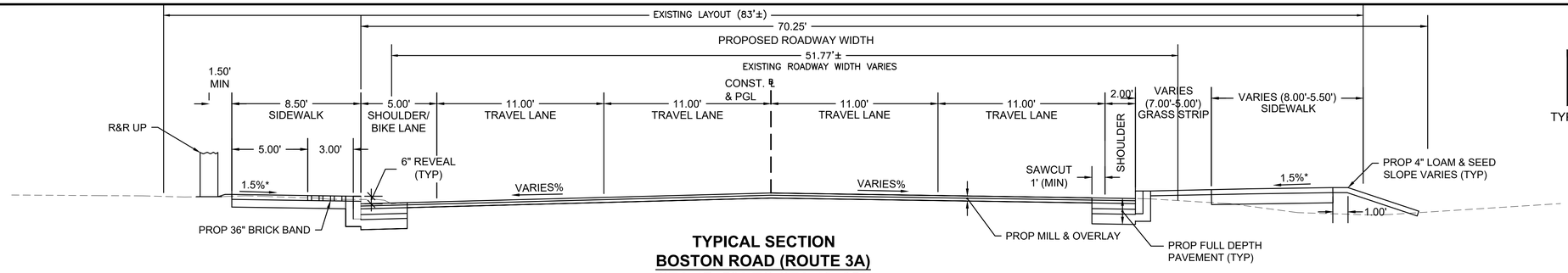
NOTES:

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

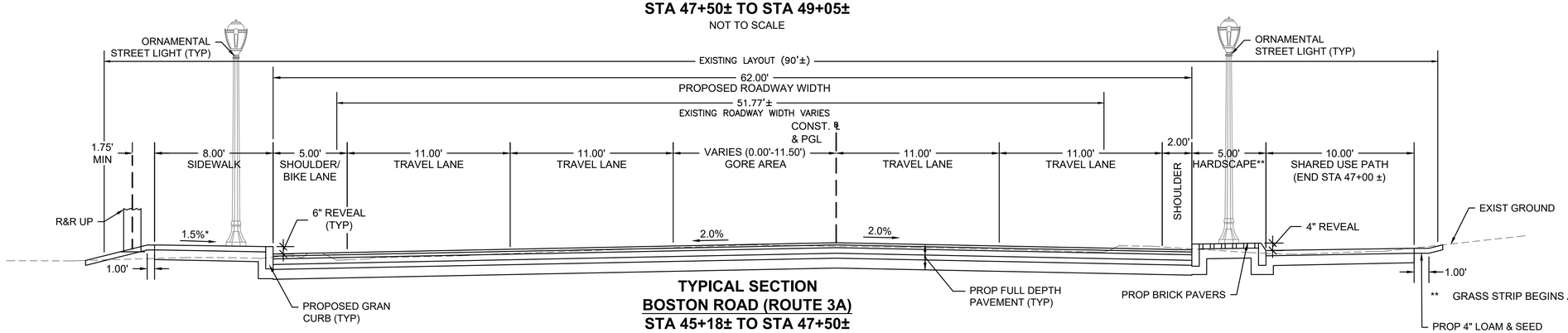
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	5	140
PROJECT FILE NO.	605178		

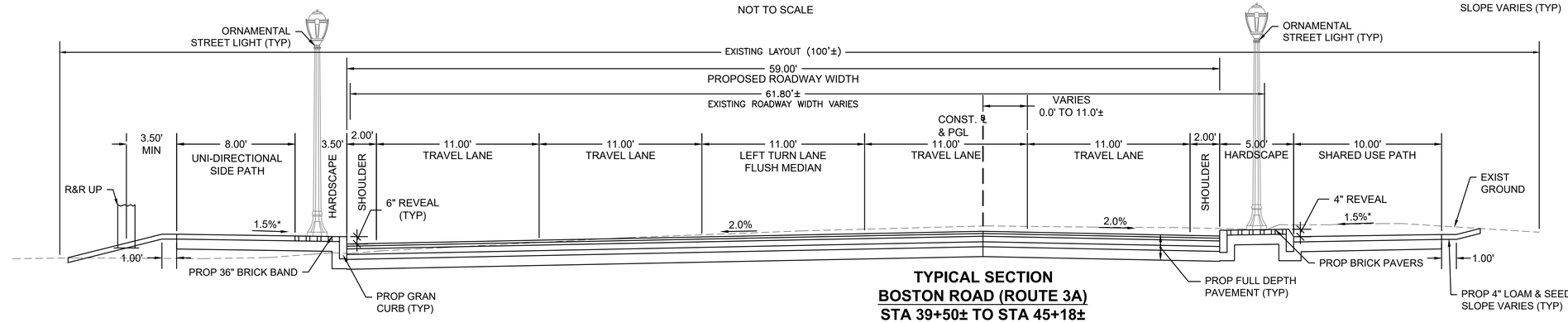
TYPICAL SECTIONS & PAVEMENT NOTES
BOSTON ROAD (ROUTE 3A)
GOOD STREET



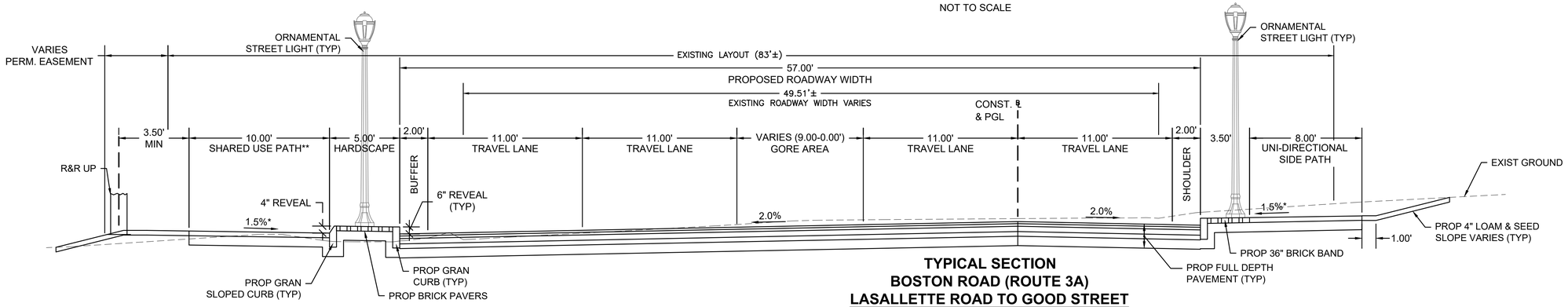
TYPICAL SECTION
BOSTON ROAD (ROUTE 3A)
STA 47+50± TO STA 49+05±
NOT TO SCALE



TYPICAL SECTION
BOSTON ROAD (ROUTE 3A)
STA 45+18± TO STA 47+50±
NOT TO SCALE



TYPICAL SECTION
BOSTON ROAD (ROUTE 3A)
STA 39+50± TO STA 45+18±
NOT TO SCALE



** SHARED USE PATH REGION ENDS AT STA 40+00± LT

TYPICAL SECTION
BOSTON ROAD (ROUTE 3A)
LASALLETTE ROAD TO GOOD STREET
STA 36+00± TO STA 39+50±
NOT TO SCALE

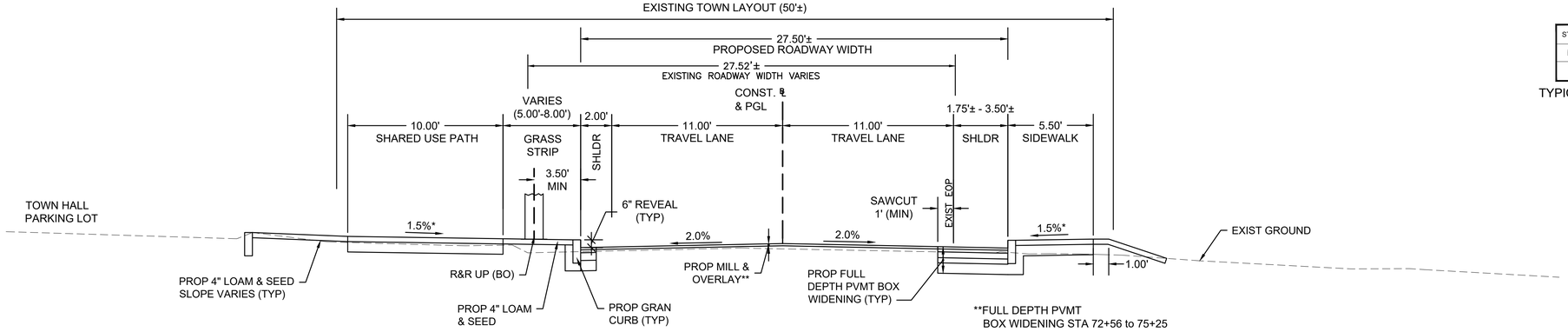
605178_HD(4722_TYP SEC).DWG Plotted on 7-Mar-22 8:24 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

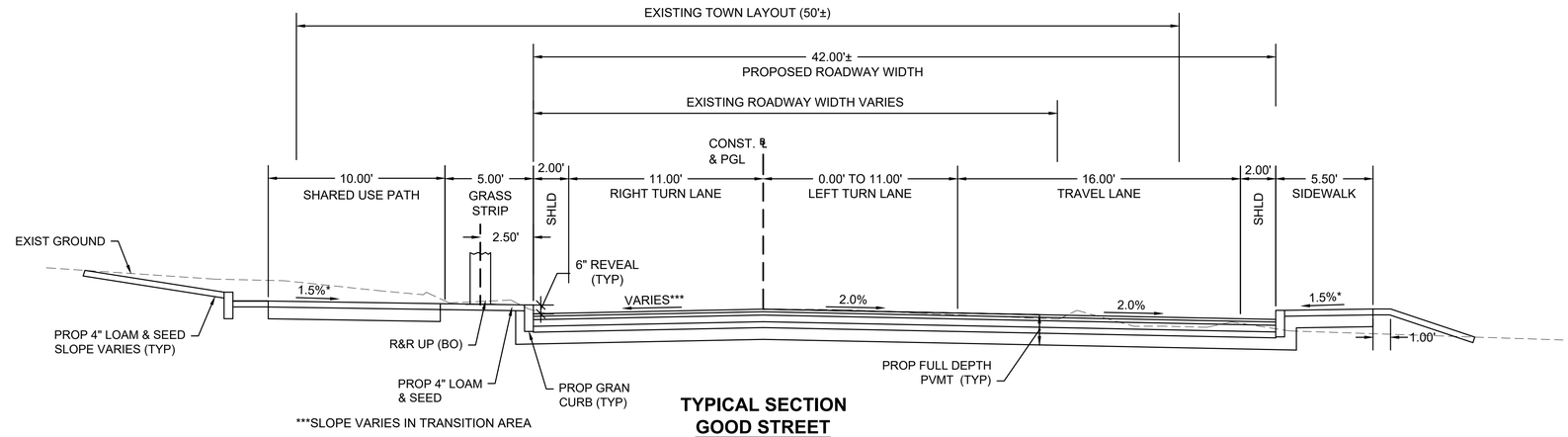
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	6	140
PROJECT FILE NO.	605178		

TYPICAL SECTIONS & PAVEMENT NOTES
GOOD STREET
HERITAGE ROAD

605178_HD(4722_TYP SEC).DWG Plotted on 7-Mar-22 8:24 PM

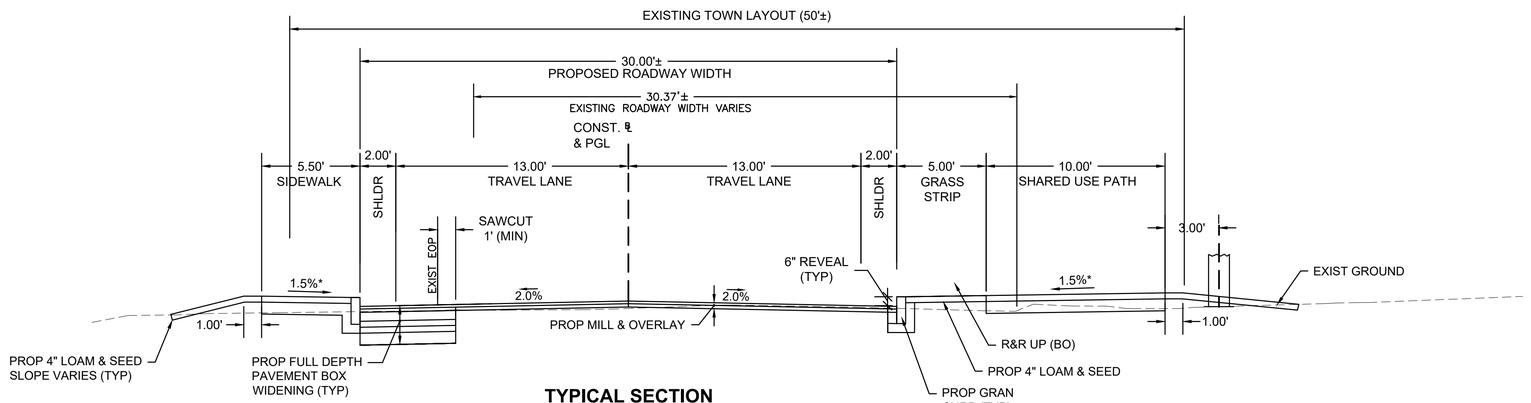


TYPICAL SECTION
GOOD STREET
STA 72+56± TO STA 76+00±
NOT TO SCALE

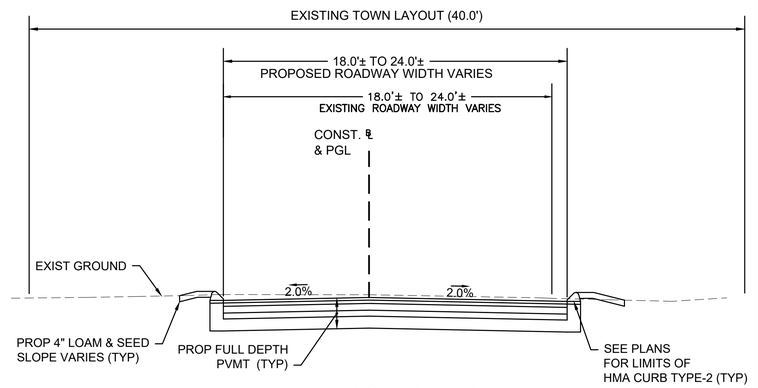


***SLOPE VARIES IN TRANSITION AREA

TYPICAL SECTION
GOOD STREET
STA 70+00± TO STA 72+56±
NOT TO SCALE



TYPICAL SECTION
HERITAGE ROAD
STA 50+00± TO STA 60+17±
NOT TO SCALE



TYPICAL SECTION
FARMERS LANE
STA 1+50± TO STA 3+36±
NOT TO SCALE

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	7	140
PROJECT FILE NO.	605178		

GENERAL NOTES

GENERAL NOTES

1. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY, AND ARE NOT WARRANTED TO BE CORRECT. UNDERGROUND UTILITIES ARE SHOWN BASED ON EITHER RECORD DATA PROVIDED BY THE OPERATING AUTHORITIES, VISUAL INSPECTION OF AVAILABLE ABOVEGROUND STRUCTURES, PHYSICAL SURFACE MARKINGS FOUND, OR DATA PROVIDED BY OTHERS. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT INDICATED ON THESE PLANS. ALL EXISTING UTILITIES SHALL BE VERIFIED FOR SERVICE, SIZE, INVERT ELEVATION, LOCATIONS, ETC. PRIOR TO NEW CONNECTIONS TO OR RELOCATION OF SAME. CONTRACTOR MUST NOTIFY DIG-SAFE AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION. NOTIFY THIS FIRM IN WRITING OF ANY AND ALL DISCREPANCIES PRIOR TO COMMENCING ANY WORK.
2. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.
3. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR THE RESOLUTION OF THE CONFLICT.
4. THE CONTRACTOR SHALL VERIFY TYPE OF EXISTING WATER MAIN MATERIAL BEFORE ORDERING ANY NEW REPLACEMENT MATERIAL.
5. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ABUTTING PROPERTIES AT ALL TIMES AND NOTIFY ALL ABUTTERS IN ADVANCE OF ANY INTERRUPTIONS TO ACCESS.
6. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SANITARY STRUCTURES AS NECESSARY FOR THE CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
7. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CABLE TV, FIRE ALARM AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES. ALL UTILITY CASTING SHALL BE ADJUSTED TO FINISH GRADE BY THEIR RESPECTIVE OWNERS.
8. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
9. THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
10. CATCH BASIN AND MANHOLE FRAMES AND GRATES/COVERS SHALL CLEARLY ALIGN WITH THE OPENINGS IN THE PRECAST STRUCTURES AND THE GRADE OF THE ROADWAY.
11. ALL EXISTING DRAINAGE PIPES THAT ARE NO LONGER BEING UTILIZED BY THE NEW DRAINAGE DESIGN WITHIN THE PROJECT LIMITS SHALL BE REMOVED.
12. WHERE DRAINAGE PIPES OR STRUCTURES ARE ABANDONED IN PLACE THE CONTRACTOR SHALL MAKE SURE THAT ALL CONNECTING PIPES, DOWN SPOUT FROM BUILDING, INLETS AND OUTLETS ARE PLUGGED. ALL LIVE CONNECTIONS SHALL BE CONNECTED TO THE NEW SYSTEM.
13. ALL CURB TIE DIMENSIONS ARE TO THE FACE OF THE CURB (GUTTER LINE) OR EDGE OF TRAVEL WAY.
14. CONSTRUCTION BASELINE TIES ARE SHOWN ON CURB TIE & GRADING PLANS.
15. PROPOSED SIDEWALKS AND CURB RAMPS SHALL BE CONSTRUCTED TO THE NEAREST SCORE LINE OR EXPANSION JOINT IN THE EXISTING ADJACENT WALK SURFACE AS DIRECTED BY THE ENGINEER.
16. IN ALL LOCATIONS WHERE PROPOSED SIDEWALK TRANSITIONS DOWN TO MEET EXISTING GRADE, EXISTING SIDEWALK OR PAVED AREA, SLOPE SHALL NOT EXCEED 1:12.
17. THE LOCATION OF THE PROPOSED DRIVEWAY OPENINGS ARE SHOWN ON TIE AND GRADING PLANS. EXACT LOCATIONS MAY BE ADJUSTED IF NECESSARY OR AS REQUIRED BY THE ENGINEERS IN THE FIELD.
18. CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, TREES, GRATE, POLES ETC.) TO BE SET WITHIN SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36" EXCLUDING THE CURB. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION WHICH CANNOT MEET THE CLEARANCE REQUIREMENTS.
19. SIGNS, POLES AND OTHER FEATURES LOCATED IN PROPOSED CEMENT CONCRETE SIDEWALK SHALL BE BOXED AND PROVIDED FLEXIBLE JOINT FILLER.
20. CONTRACTOR SHALL VERIFY EXISTING GRADES. IF ANY ADJUSTMENT IS REQUIRED DUE TO DIFFERENT EXISTING GRADES FOUND IN THE FIELD, THE CONTRACTOR SHALL NOTIFY AND SEEK THE APPROVAL OF THE ENGINEER PRIOR TO PERFORMING THE WORK.
21. IN AREAS OF NEW SIDEWALK, NEW EDGE OF PAVEMENT OR CURB WITHOUT SIDEWALK OR ANY WORK ADJACENT TO EXISTING GRASS AREAS, EVEN WHEN NO SLOPE-MATCHING OR GRADING IS NECESSARY AND THE EXISTING GRADE IS MET, LOAM BORROW AND SEED SHALL BE PROVIDED AS NECESSARY TO REPAIR AND COMPLETE ANY DAMAGE TO THE GRADE CAUSED BY THE CONSTRUCTION PROCESS.
22. WHEN WORKING NEXT TO EXISTING TREES, WALLS OR FENCES, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO DISTURB THE EXISTING WALL, TREES OR FENCE. IF THE CONTRACTOR DAMAGES EXISTING TREES, WALLS OR FENCES AS A RESULT OF THE CONSTRUCTION PROCESS, IT SHALL BE HIS/HER RESPONSIBILITY (THE CONTRACTOR) TO REPAIR ALL DAMAGES AS DIRECTED BY THE ENGINEER. ALL WORK ASSOCIATED WITH THE REPAIR OR REPLACEMENT OF EXISTING TREES, WALLS OR FENCES SHALL BE PERFORMED BY THE CONTRACTOR AT HIS/HER EXPENSE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED THEREFORE.
23. IN FILL AREAS, TOP SOIL SHALL BE REMOVED FOR A DEPTH OF 12" (MIN.) OR AS DIRECTED BY THE ENGINEER. SUBGRADE AREAS WILL BE COMPACTED PRIOR TO THE PLACEMENT OF FILL MATERIAL.
24. ALL NEW GRANITE CURB SHALL BE MASSDOT TYPE VA-4, UNLESS OTHERWISE NOTED ON THE PLANS.
25. ALL PROPOSED PAVEMENT MARKINGS ON ROADWAYS SHALL BE REFLECTORIZED WHITE AND YELLOW THERMOPLASTIC.
26. SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH MASSDOT REQUIREMENTS AND THE LATEST VERSION OF THE MUTCD.
27. TREES TO BE RETAINED WHICH RESTRICT SIGHT DISTANCE OR RESTRICT HORIZONTAL OR VERTICAL CLEARANCES SHALL BE TRIMMED AS REQUIRED BY THE ENGINEER.
28. NO TREE SHALL BE REMOVED PRIOR TO APPROVAL OF THE TOWN OF BILLERICA.
29. REMOVAL OF ALL EXISTING TREES, STUMP, SHRUBS, AND PLANTING WILL BE PAID FOR UNDER ITEM 101 CLEARING AND GRUBBING
30. WHEN WORKING NEXT TO EXISTING WALLS, BERMS, AND OTHER STRUCTURES, CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO DISTURB THE EXISTING STRUCTURES. ANY DAMAGE TO THE EXISTING STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
31. ALL PAVEMENT MARKINGS AND/OR SIGN NOTES ARE SHOWN ON THE SIGNS AND PAVEMENT MARKING PLANS.

CURB RAMP NOTES

1. ALL CURB RAMPS SHALL CONFORM TO THE REQUIREMENTS OF THE ARCHITECTURAL ACCESS BOARD (A.A.B.) AND THE AMERICANS WITH DISABILITIES ACT (A.D.A.). AND THE LATEST MASSDOT STANDARDS.
2. THE LOCATION OF PROPOSED CURB RAMPS ARE SHOWN ON CONSTRUCTION PLANS AND THE CURB RAMP DETAILS. EXACT LOCATIONS MAY BE ADJUSTED, IF NECESSARY, BY THE ENGINEER IN THE FIELD.
3. ALL PROPOSED CURB RAMPS SHALL HAVE DETECTABLE WARNING PANELS INSTALLED IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARD DRAWINGS (E 107.65). THE COLOR OF THE PANEL SHALL BE BRICK RED AND APPROVED BY THE ENGINEER.
4. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET, IS WITHIN THE ACTUAL CURB RAMP PATH, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OF THE STRUCTURE COVER SHALL BE FLUSH WITH THE RAMP SURFACE AND SHALL MATCH THE SLOPE OF THE NEW CURB RAMP AS DIRECTED BY THE ENGINEER.
5. THE TRANSITION SLOPE OF ANY CURB RAMP, EXCEPT MAXIMUM LENGTH HIGH SIDE TRANSITIONS, SHALL NOT EXCEED 7.5%, +/-0.5% FOR TOLERANCE OF CONSTRUCTION. PER AAB 521 CMR, FINISHED SLOPE MAY NOT EXCEED 8.33%. PROPOSED CURB RAMP SLOPES, ESPECIALLY HIGH SIDE TRANSITIONS, SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO POURING OF CONCRETE AND ADJUSTED, IF NECESSARY, AT THE DIRECTION OF THE ENGINEER.

SURVEY NOTES

1. PROJECT CONTROL PROVIDED BY MASSDOT HIGHWAY DIVISION, SURVEY SECTION, CONTROL POINT NUMBER 416P, 703, & 975 WERE OBSERVED ON MAY 9, 2014 (SEE MASSDOT BOOK 34262 PAGES 98-99).

NAME	NORTHING(USft)	EASTING(USft)	ELEVATION(USft)	COMBINED SCALE FACTOR
416P	3023356.824	722553.351	214.090	0.9999765694326
703	3030186.593	717954.357	213.543	0.9999786090326
975	3032822.213	716404.120	125.643	0.9999836226375

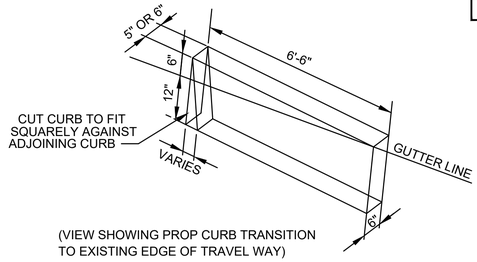
HORIZONTAL DATUM:
MASSACHUSETTS STATE PLANE - MAINLAND ZONE NAD83 (2011) EPOCH 2010.00 - US FEET

VERTICAL DATUM:
NORTH AMERICAN VERTICAL DATUM OF 1988 (GEOID 12A) - US FEET

2. ALL ON-THE-GROUND OBSERVATIONS WERE PERFORMED USING LEICA TS12 (3") ROBOTIC TOTAL STATIONS.
3. THIS SURVEY AND PLAN ARE BASED UPON AN ACTUAL ON THE GROUND INSTRUMENT SURVEY PERFORMED BY CUOCO & CORMIER IN MAY 2014. SUPPLEMENTAL SURVEYS PERFORMED BY LIGHTHOUSE LAND SURVEYING LLC IN JANUARY AND FEBRUARY 2018.
4. OWNERS NAMES SHOWN HEREON ARE BASED UPON ASSESSORS INFORMATION OBTAINED AS OF THE DATE OF SURVEY. IT DOES NOT REPRESENT A CERTIFICATION OF TITLE NOR DOES IT GUARANTEE THE OWNERSHIP OF LOCUS OR ABUTTING PROPERTIES.
5. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.

UTILITY UNDERGROUND AND SERVICE CONNECTION NOTES

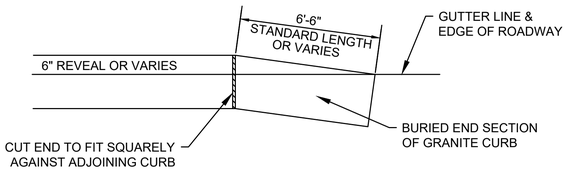
1. PROJECT REQUIRES UNDERGROUNDING OVERHEAD WIRES CROSSING BOSTON ROAD FROM HERITAGE ROAD TO DANFORTH VILLAGE. ALL UNDERGROUNDING CONDUITS AND DUCT WORK SHOWN ON UTILITY PLANS.
2. EXISTING UTILITY POLES FOR ENTIRE PROJECT SHALL BE REMOVED AND RESET BY THE UTILITY COMPANY. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR RELOCATION OF POLES. LIMITS OF POLE RELOCATIONS ARE SHOWN ON UTILITY PLANS.
3. EXISTING UTILITY POLES FROM STA 26+00 RT TO STA 49+00 RT SHALL BE RETAINED DURING CONSTRUCTION. POLES WILL BE REMOVED LATER BY THE UTILITY COMPANY THEREFORE ANY PROPOSED WORK IN AREA OF EXISTING POLES SHALL BE DONE WITH TEMPORARY HMA PATCH. LIMIT OF HMA PATCH SHALL BE AS DIRECTED BY THE ENGINEER. HMA PATCH WORK SHALL BE PAID FOR UNDER ITEM 472.
4. THE CONSTRUCTION OF UNDERGROUND INFRASTRUCTURE MUST BE DONE BY A CONTRACTOR OR SUBCONTRACTOR APPROVED BY THE RESPECTIVE UTILITY COMPANIES.
5. ALL UNDERGROUNDING CONDUITS AND STRUCTURES SHALL BE INSPECTED BY RESPECTIVE UTILITY COMPANIES AND THE ENGINEER. THE CONTRACTOR SHALL COORDINATE INSPECTION SCHEDULE WITH UTILITY COMPANIES WITHOUT ANY ADDITIONAL COMPENSATION.
6. LAYOUT OF UNDERGROUNDING DUCT BANKS, CONDUIT, AND STRUCTURES ARE SHOWN ON UTILITY PLANS. THE FINAL LOCATION SHALL BE VERIFIED IN THE FIELD AND ADJUSTED IF CONFLICT WITH EXISTING UTILITIES.
7. THE UTILITY POLE RELOCATION WILL BE PHASE I OF THE CONTRACT AND PHASE II WILL BE UNDERGROUNDING OVERHEAD WIRE CROSSING OF BOSTON ROAD FROM HERITAGE STREET TO DANFORTH VILLAGE.
8. LIGHTING DESIGN AND UNDERGROUND SERVICE CONVERSION PLANS AND DETAIILS ARE SHOWN ON SHEET 91 THRU 98
9. SEE LIGHTING PLAN FOR ADDITIONAL NOTES



(VIEW SHOWING PROP CURB TRANSITION TO EXISTING EDGE OF TRAVEL WAY)

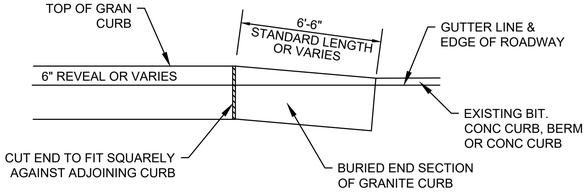
DETAIL FOR GRANITE TRANSITION CURB

NOT TO SCALE



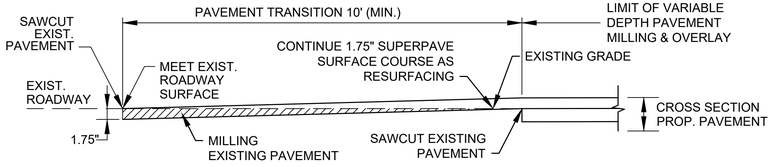
DETAIL FOR TRANSITION CURB
PROP CURB TO EXISTING EDGE OF TRAVEL WAY

NOT TO SCALE



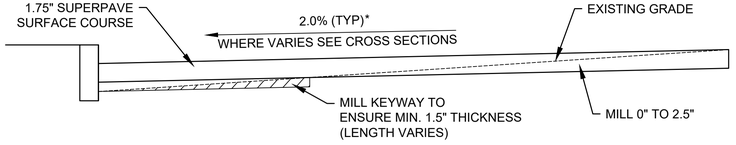
DETAIL FOR TRANSITION CURB
TRANSITION CURB - PROP CURB TO EXISTING CURB

NOT TO SCALE



DETAIL FOR PAVEMENT TRANSITION AT LIMIT OF WORK

NOT TO SCALE



DETAIL FOR VARIABLE DEPTH LEVELING

NOT TO SCALE

* TOLERANCE FOR CONSTRUCTION ±0.5%

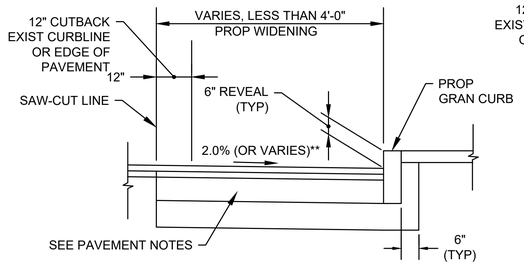
605178_HD(4722_DETAILS).DWG Plotted on 7-Mar-22 8:26 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

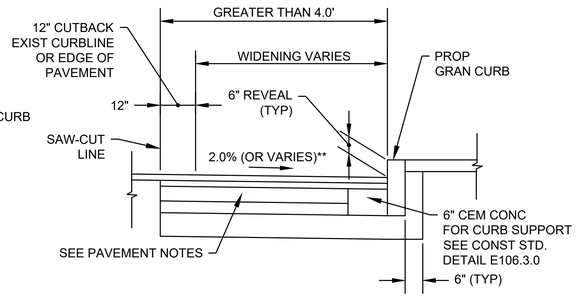
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	8	140
PROJECT FILE NO.	605178		

CONSTRUCTION DETAILS

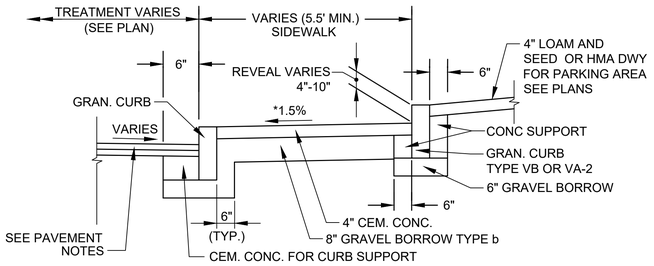
605178_HD(4722_DETAILS).DWG Plotted on 7-Mar-22 8:27 PM



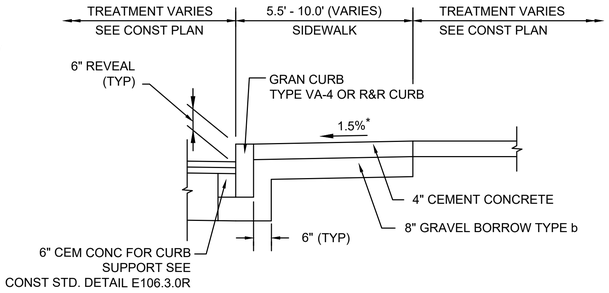
DETAIL FOR BOX WIDENING 4.0' OR LESS
NOT TO SCALE



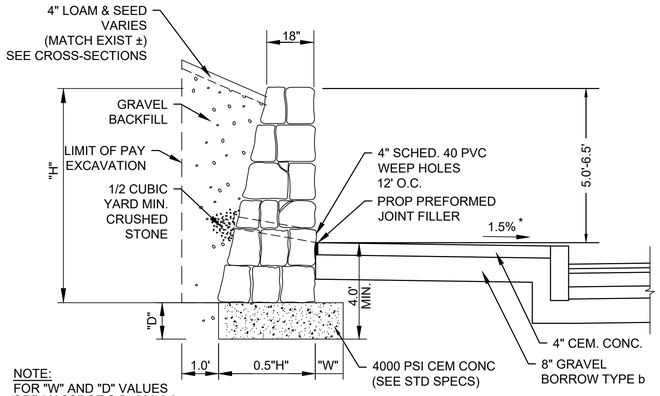
DETAIL FOR BOX WIDENING GREATER THAN 4.0'
NOT TO SCALE



DETAIL FOR GRANITE CURB AT BACK OF SIDEWALK
NOT TO SCALE

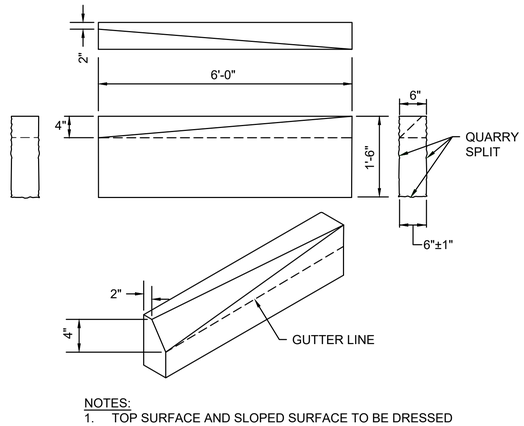


DETAIL FOR SIDEWALK WITH GRANITE CURB
NOT TO SCALE



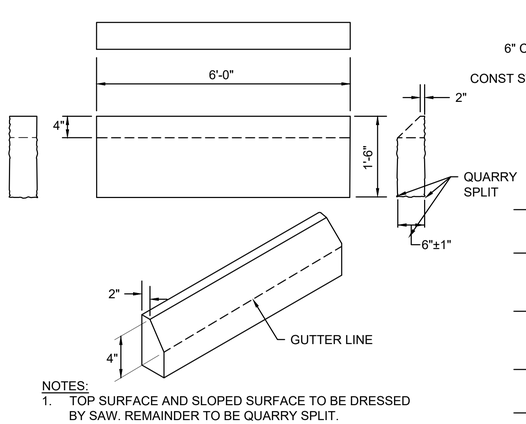
NOTE:
FOR "W" AND "D" VALUES
SEE MASSDOT S.D. 302.2.0.

DETAIL FOR SIDEWALK AT CEMENTED STONE MASONRY WALL
STA 20+29± TO 21+79± RT
SEE MASSDOT S.D. E302.2.0.
NOT TO SCALE



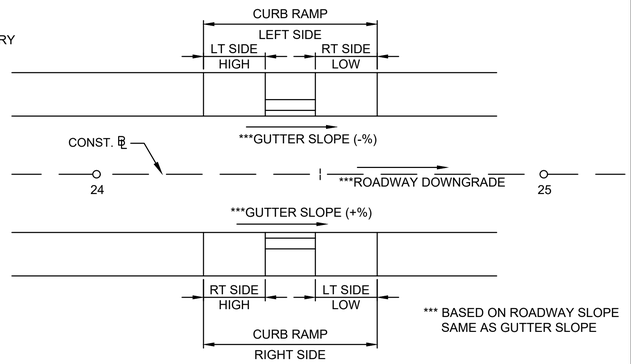
NOTES:
1. TOP SURFACE AND SLOPED SURFACE TO BE DRESSED BY SAW. REMAINDER TO BE QUARRY SPLIT.
2. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND.

GRANITE TRANSITION CURB- SLOPED
(ITEM 509.3)



NOTES:
1. TOP SURFACE AND SLOPED SURFACE TO BE DRESSED BY SAW. REMAINDER TO BE QUARRY SPLIT.

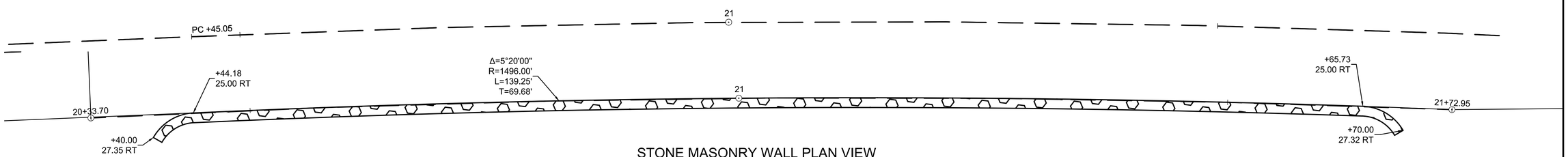
GRANITE CURB TYPE VA-4 - SLOPED EDGE
(ITEM 504.3)
NOT TO SCALE



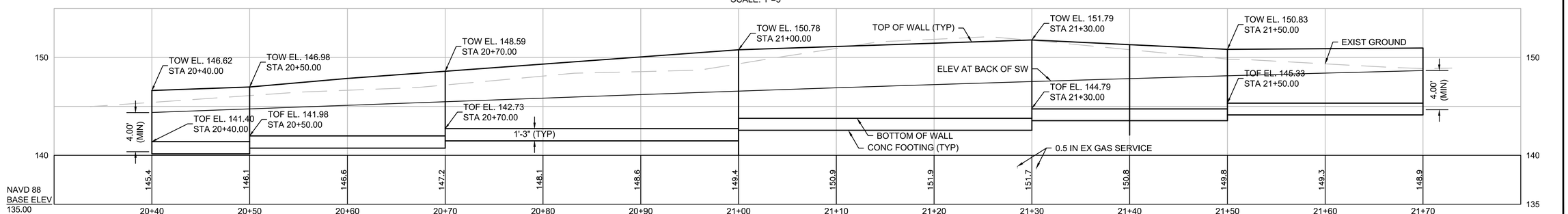
*** BASED ON ROADWAY SLOPE
SAME AS GUTTER SLOPE

GUTTER SLOPE DIAGRAM
NOT TO SCALE

* TOLERANCE FOR CONSTRUCTION ±0.5%



STONE MASONRY WALL PLAN VIEW
SCALE: 1"=5'



STONE MASONRY WALL PROFILE VIEW
SCALE: 1"=5'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	9	140
PROJECT FILE NO.	605178		

CONSTRUCTION DETAILS

CURB RAMP TYPE A DATA								
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	LENGTH OF PRIMARY RAMP L	WIDTH OF RAMP OPENING W	SIDEWALK WIDTH	LANDING AREA
		STATION	OFFSET					
5	BOSTON RD	16+15.3	34.8' LT	+2.7%	5.4' 4"R	4.0'	5.5'	> 5'
6	BOSTON RD	16+52.7	34.6' LT	+2.7%	11.0'	4.0'	5.5'	< 5'
8	BOSTON RD	25+49.1	24.8' RT	+2.0%	9.0'	8.0'	11.5'	< 5'
25	BOSTON RD	45+05.3	43.5' LT	+4.7%	10.0' 3"R	5.0'	8.5'	< 5'
34	BOSTON RD	14+94.1	33.9 LT	+1.2%	5.7' 4"R	4.3'	5.5'	> 5'
35	BOSTON RD	15+43.3	35.1 LT	+2.3%	11.0'	4.3'	5.5'	> 5'
39	HERITAGE RD	60+08	22.3 RT	-4.8%	4.7' (W/ GRASS STRIP)	5.0'	5.0'	> 5'

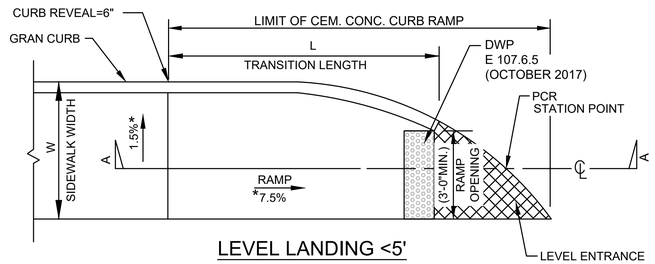
CURB RAMP TYPE B DATA								
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	WIDTH OF RAMP OPENING W	DEPTH OF LEVEL LANDING (MIN. 4.0')	TRANSITION LENGTH		SIDEWALK WIDTH
		STATION	OFFSET				LEFT	RIGHT	
1	SIMMONS LN	0+45.4	20.4' RT	2.5%	5.0'	6.0'	-	11.0'	6.0'
2	SIMMONS LN	0+37.6	13.1' LT	-3.3%	5.0'	5.5'	14.0'	-	5.5'
4	BOSTON RD	15+83.9	18.9' RT	-2.70%	5.0'	5.5'	11.0'	6.5'	5.5'
7	BOSTON RD	24+96.8	24.9' RT	+1.3%	5.0'	5.5'	-	6.5'	5.5'
9	BOSTON RD	25+33.5	37.3 LT	+2.1%	5.0'	5.5'	6.5'	11.0'	5.5'
26	BOSTON RD	48+92.7	31.1 LT	+2.3%	5.0'	VARIES (7.0' TO 7.3')	6.5'	11.0'	VARIES (6.1' TO 7.7')
33	GOOD ST	75+21.4	13.0' RT	+2.5%	5.0'	5.5'	6.5'	11.0'	5.5'
38	BOSTON RD	49+54.5	31.3' LT	+1.3%	5.0'	6.0'	-	9.0'	6.0'

CURB RAMP TYPE C DATA									
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	LENGTH OF PRIMARY RAMP L	WIDTH OF RAMP OPENING W	DEPTH OF LEVEL LANDING (MIN. 4.0')	TRANSITION LENGTH		SIDEWALK WIDTH
		STATION	OFFSET					LEFT	RIGHT	
3	BOSTON RD	15+83.1	31.7' LT	+2.7%	3.0'	5.0'	5.0'	6.5'	11.0'	8.0'
10**	BOSTON RD	26+03.6	37.6' LT	+2.5%	6.5'	5.0'	10.0'	9.0'	11.0'	5.5'
11**	BOSTON RD	26+49.9	16.2' RT	-2.6%	3.5'	10.0'	8.0'	11.0'	9.8' FLUSH	VARIES (8.0' AND 11.5')
14	BOSTON RD	35+79.8	21.8' RT	-3.7%	6.0'	5.0'	5.0'	14.0'	6.5'	BOSTON RD. 11.5' LASALLETTE RD. 9.4'
15	BOSTON RD	36+29.5	20.0' RT	+3.6%	6.4'	5.0'	6.6'	6.5'	7.0' 3"R	BOSTON RD. 11.5' LASALLETTE RD. 4' + 8' GRASS STRIP
16	BOSTON RD	39+09.7	24.6' RT	+6.5%	3.7'	10.0'	7.1'±	15.0'	6.5'	BOSTON RD. 13.5' GOOD ST. 9.3'
27	BOSTON RD	57+86.6	26.4' RT	-1.3%	VARIES (5.1' TO 5.5')	10.0'	VARIES (9.5' TO 10.5')	9.0'	6.5'	BOSTON RD. 10.0' MONTICELLO CIR. 14.5'
31**	GOOD ST	74+86.7	41.2' LT	+4.6%	5.0'	10.0'	10.0'	-	15.0'	HIGH SCHOOL PARKING LOT DWY VARIES 6.5' TO 15.0'

CURB RAMP TYPE D DATA								
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	WIDTH OF RAMP OPENING W	TRANSITION LENGTH		OPENING	SIDEWALK WIDTH
		STATION	OFFSET			LEFT	RIGHT		
12	BOSTON RD	34+48.3	36.5' LT	+3.3%	10.0'	15.0'	-	10.6'	10.0'
13	BOSTON RD	34+78.8	38.2' LT	+3.3%	10.0'	-	15.0'	9.6'	10.0'
20	BOSTON RD	41+86.5	25.1' RT	-4.5%	10.0'	-	15.0'	0'	10.0'
21	BOSTON RD	42+09.5	25.0' RT	-4.5%	10.0'	15.0'	-	12.0'	10.0'
23	BOSTON RD	44+15.9	30.4' RT	-4.7%	10.0'	15.0'	-	12.0'	10.0'

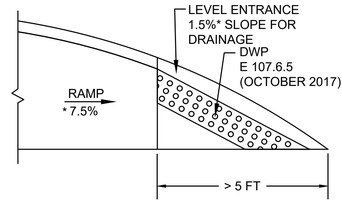
CURB RAMP TYPE E DATA									
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	WIDTH OF RAMP OPENING W	TRANSITION LENGTH		OPENING	SIDEWALK WIDTH
		STATION	OFFSET			LEFT	RIGHT		
22	BOSTON RD	43+62.7	28.8' RT	-4.7%	10.0'	10.0'	-	11.9'	10.0' (BOSTON RD) 5.0' (TOM GLAVIN WAY)

NOTE: SEE CURB RAMP NOTES ON SHEET 7

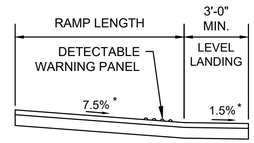


LEVEL LANDING <5'
NOT TO SCALE

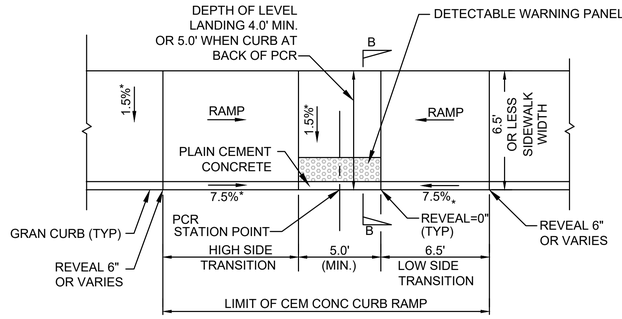
CURB RAMP TYPE "A"
SEE MASSDOT S.D. E107.6.0
NOT TO SCALE



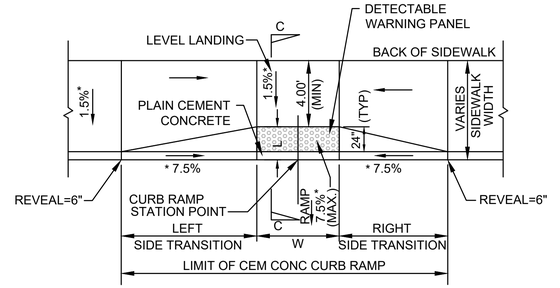
LEVEL LANDING >5'
NOT TO SCALE



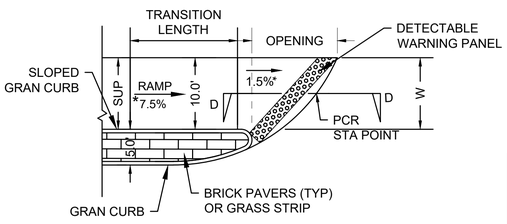
SECTION A-A
NOT TO SCALE



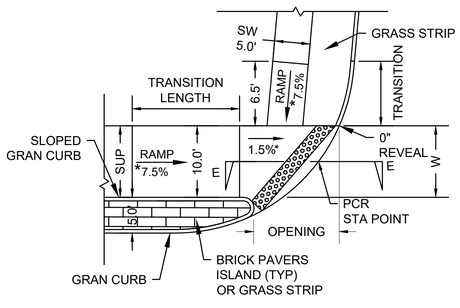
CURB RAMP DETAIL TYPE "B"
SEE MASSDOT S.D. E107.2.1
NOT TO SCALE



CURB RAMP DETAIL TYPE "C"
NOT TO SCALE

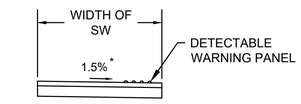


CURB RAMP DETAIL TYPE "D"
NOT TO SCALE

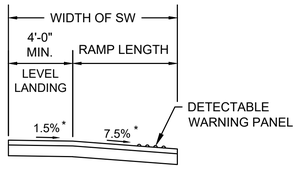


CURB RAMP DETAIL TYPE "E"
NOT TO SCALE

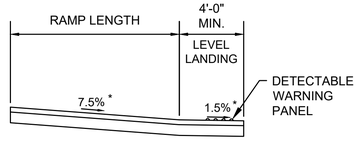
* TOLERANCE FOR CONSTRUCTION ±0.5%



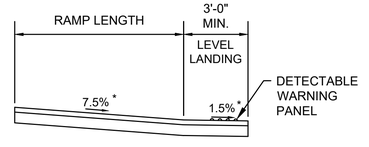
SECTION B-B
NOT TO SCALE



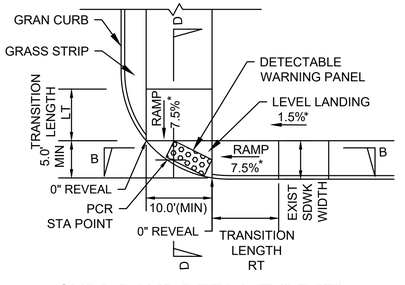
SECTION C-C
NOT TO SCALE



SECTION D-D
NOT TO SCALE



SECTION E-E
NOT TO SCALE



CURB RAMP DETAIL TYPE "F"
MODIFIED VERSION - SEE MASSDOT S.D. E107.6.4
NOT TO SCALE

TABLE I	
ROADWAY PROFILE GRADE	* HIGH SIDE TRANSITION LENGTH
%	ENGLISH UNITS
=0%	6'-6"
>0% TO 1%	7'-8"
>1% TO 2%	9'-0"
>2% TO 3%	11'-0"
>3% TO 4%	14'-0"
>4% TO 5%	15'-0" MAX.

CURB TRANSITION LENGTH
FOR CURB RAMPS

MASSDOT CONST. STD. DWG. NO. E107.9.0
*BASED ON A DESIGN SLOPE
OF 7.5% AND A REVEAL OF 6".

605178_HD(4722_DETAILS).DWG Plotted on 7-Mar-22 8:27 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	10	140
PROJECT FILE NO.	605178		

CONSTRUCTION DETAILS

CURB RAMP TYPE F DATA								
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	WIDTH OF RAMP OPENING W	DEPTH OF LEVEL LANDING (MIN. 4.0')	TRANSITION LENGTH		SIDEWALK WIDTH
		STATION	OFFSET				LEFT	RIGHT	
24	BOSTON RD	44+75.4	47.7' LT	-4.7%	5.0'	VARIES (4.0' TO 7.4')	6.5'	6.5'	11.5' (BOSTON RD) 5.0' (MULBERRY LN)
30	HERITAGE RD	59+14.2	15.6 LT	-3.8%	10.0'	6.0'	6.5'	-	5.7' (BOSTON RD) 10.0' (MARSHALL MIDDLE SCHOOL)

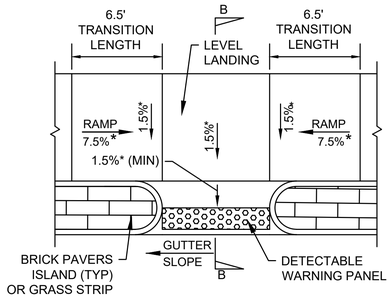
CURB RAMP TYPE G DATA								
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	WIDTH OF RAMP OPENING W	DEPTH OF LEVEL LANDING (MIN. 4.0')	TRANSITION LENGTH		SIDEWALK WIDTH
		STATION	OFFSET				LEFT	RIGHT	
17	BOSTON RD	39+79.5	20.3' RT	-3.1%	5.0'	17.5'	6.5'	6.5'	10.0'-10.5'
18	BOSTON RD	39+11.5	43.9' LT	+4.5%	10.0'	15.0'	6.5'	6.5'	10.0'
19	BOSTON RD	39+80.4	45.9' LT	+4.5%	10.0'	15.0'	6.5'	6.5'	10.0'
36	BOSTON RD	26+50.1	28.2' RT	+3.3%	10.0'	16.0'	6.5'	6.8'	10.0'

CURB RAMP TYPE H DATA									
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	WIDTH OF RAMP OPENING W	DEPTH OF LEVEL LANDING (MIN. 4.0')	TRANSITION LENGTH		SIDEWALK WIDTH
		STATION	OFFSET				LEFT	RIGHT	
28	HERITAGE RD	58+35.3	23.7' RT	+3.0%	10.0'	VARIES (4.0' TO 7.4')	11.0'	6.5'	10.0' (BOSTON RD) 5.0' (MONTICELLO CIR)

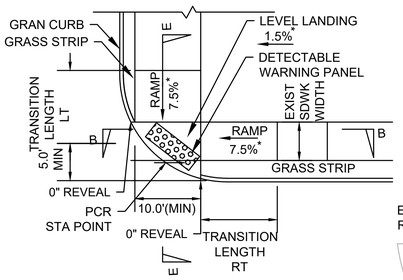
CURB RAMP TYPE I DATA									
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	WIDTH OF RAMP OPENING W	DEPTH OF LEVEL LANDING (MIN. 4.0')	TRANSITION LENGTH		SIDEWALK WIDTH
		STATION	OFFSET				LEFT	RIGHT	
29	HERITAGE RD	59+14.2	13.0' RT	-3.8%	10.0'	10.0'	14.0'	6.5'	VARIES (6.2'-10.0')

CURB RAMP TYPE J DATA									
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	LENGTH OF PRIMARY RAMP L	WIDTH OF RAMP OPENING W	DEPTH OF LEVEL LANDING (MIN. 4.0')	TRANSITION LENGTH		SIDEWALK WIDTH
		STATION	OFFSET					LEFT	RIGHT	
32	GOOD ST	75+10.4	41.8' LT	-2.8%	5.5'	5.0'	17.5'	-	3.25'	6.0'

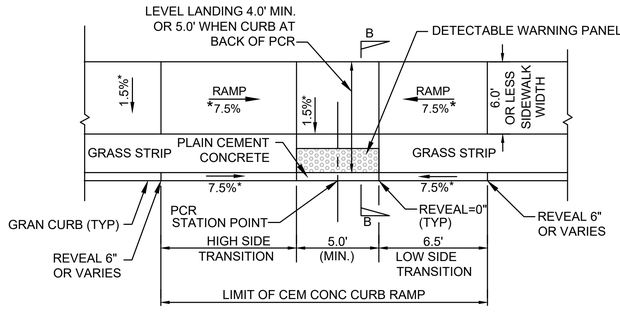
NOTE: SEE CURB RAMP NOTES ON SHEET 7



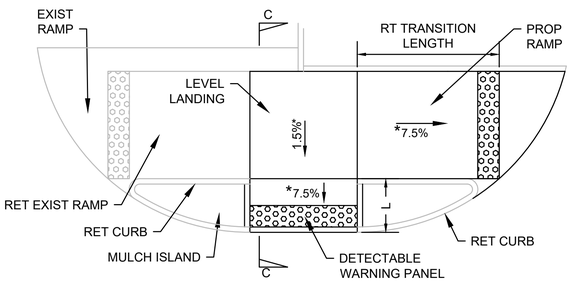
CURB RAMP DETAIL TYPE "G"
NOT TO SCALE



CURB RAMP DETAIL TYPE "H"
MODIFIED VERSION - SEE MASSDOT S.D. E107.6.4
NOT TO SCALE

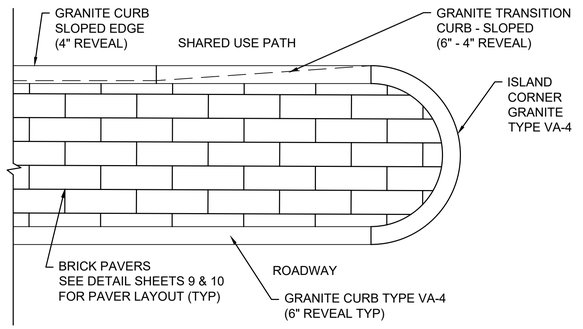


CURB RAMP DETAIL TYPE "I"
SEE MASSDOT S.D. E107.2.1
NOT TO SCALE

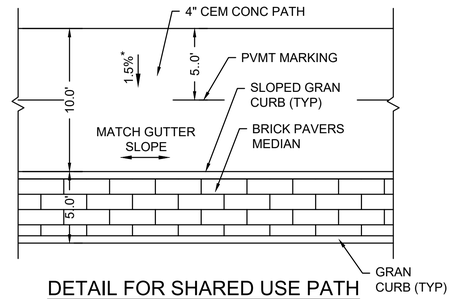


CURB RAMP DETAIL TYPE "J"
NOT TO SCALE

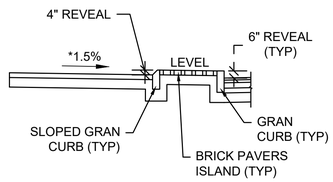
**CURB RAMP #37 DETAIL
NOT TO SCALE



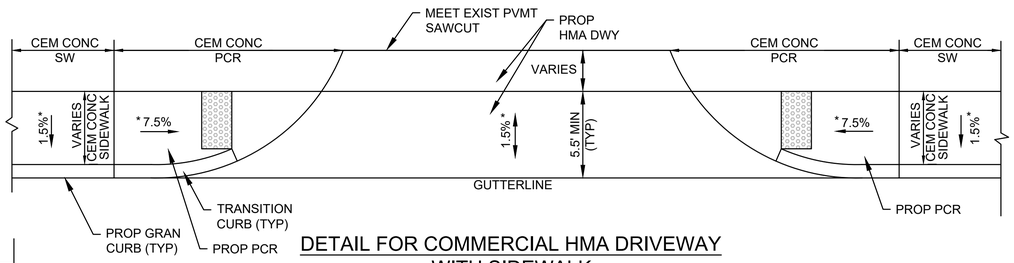
GRANITE ISLAND DETAIL AT SHARED USE PATH
NOT TO SCALE



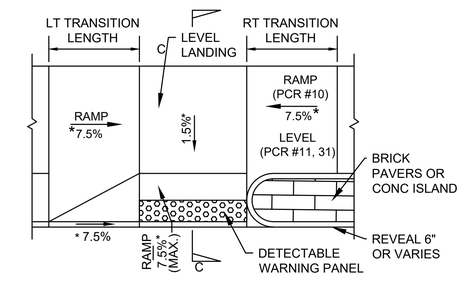
DETAIL FOR SHARED USE PATH
NOT TO SCALE



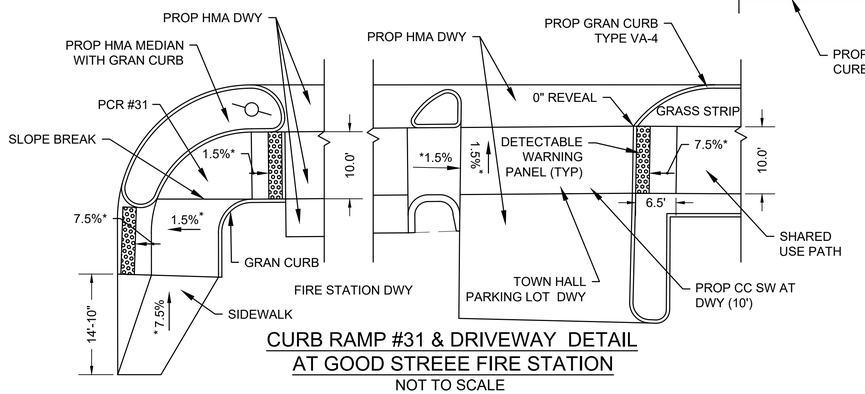
SHARED USE PATH - ELEV VIEW
NOT TO SCALE



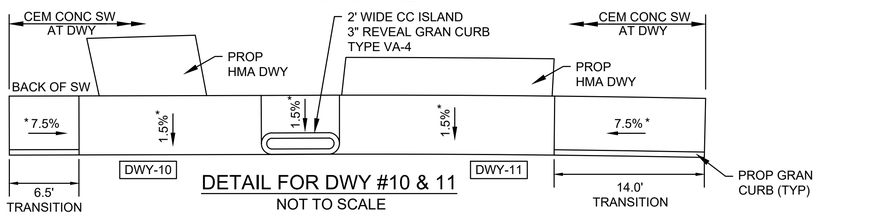
DETAIL FOR COMMERCIAL HMA DRIVEWAY WITH SIDEWALK
NOT TO SCALE



**CURB RAMP #10,11, & 31 DETAIL
NOT TO SCALE



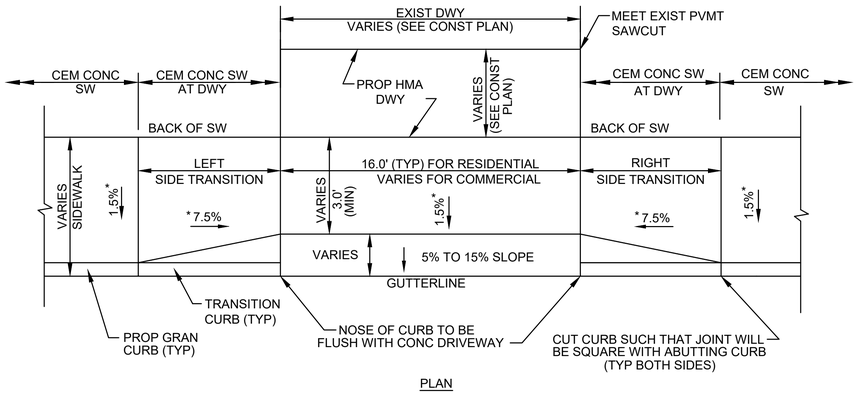
CURB RAMP #31 & DRIVEWAY DETAIL AT GOOD STREEE FIRE STATION
NOT TO SCALE



DETAIL FOR DWY #10 & 11
NOT TO SCALE

* TOLERANCE FOR CONSTRUCTION ±0.5%

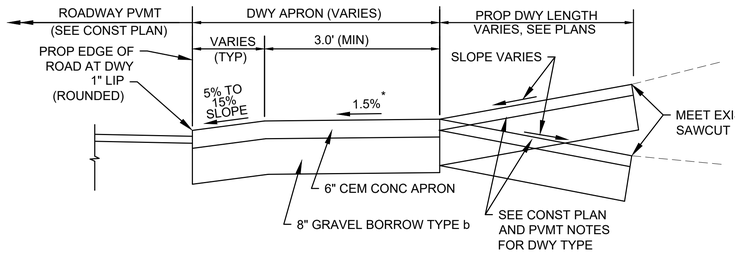
605178_HD(47'22_DETAILS).DWG Plotted on 7-Mar-22 8:27 PM



PLAN

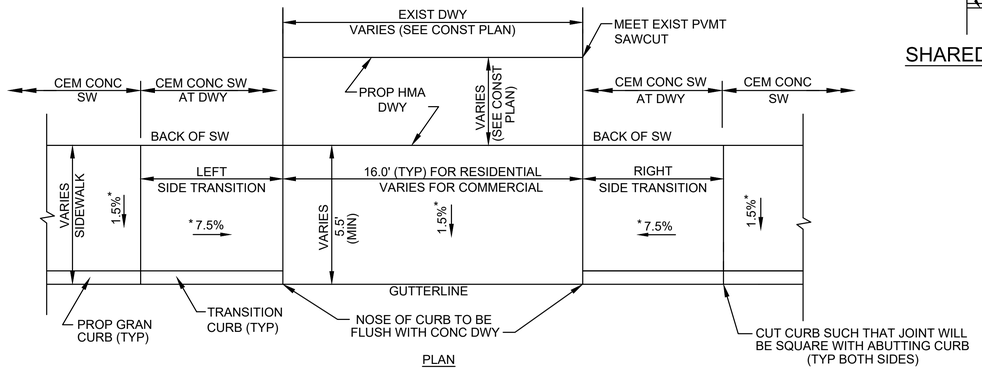
DETAIL FOR TYPICAL DRIVEWAY WITH SIDEWALK - TYPE A

NOT TO SCALE



SECTION FOR TYPICAL CEM. CONC. DRIVEWAY WITH SIDEWALK

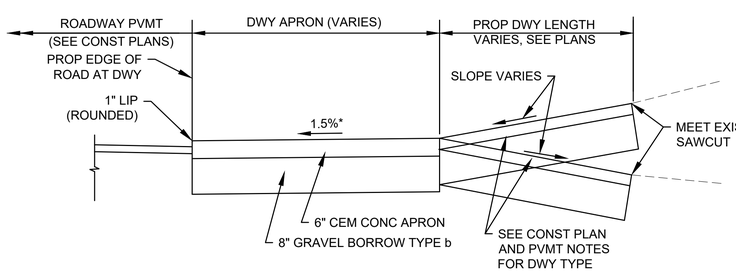
NOT TO SCALE



PLAN

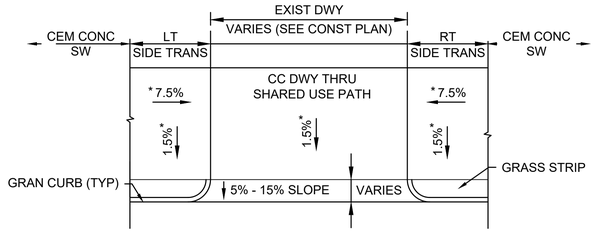
DETAIL FOR DEPRESSED DRIVEWAY WITH SIDEWALK - TYPE B

NOT TO SCALE



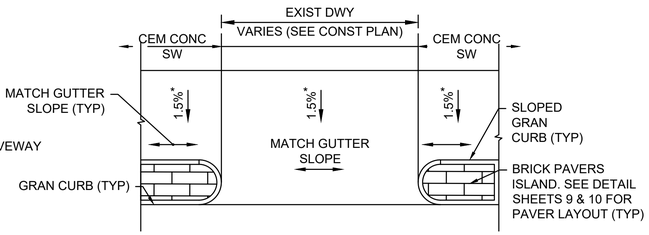
SECTION FOR DEPRESSED DRIVEWAY WITH SIDEWALK

NOT TO SCALE



SHARED USE PATH DRIVEWAY WITH GRASS STRIP

NOT TO SCALE



SHARED USE PATH DRIVEWAY WITH BRICK PAVERS ISLAND

NOT TO SCALE

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	11	140
PROJECT FILE NO.	605178		

CONSTRUCTION DETAILS

NOTE: FOR COMMERCIAL DWY WITH HMA APPROACH SEE CURB TIE PLAN AND CURB RAMP TABLE.

* TOLERANCE FOR CONSTRUCTION ±0.5%

DRIVEWAY TYPE A OPENING

DWY NO.	LOCATION	℄ DRIVEWAY OPENING AT GUTTER		GUTTER PROFILE SLOPE	OPENING WIDTH AT GUTTER	DEPTH OF GUTTER TO BACK OF SIDEWALK	PATH OF TRAVEL WIDTH ACROSS DRIVEWAY	TRANSITION LENGTH	
		STATION	OFFSET					LEFT	RIGHT
1	BOSTON RD	13+94.5	30.8' L	+1.0%	16.0'	5.50'	4.00'	6.5'	7.7'
15	BOSTON RD	26+41.5	16.3' R	-2.7%	28.0'	11.5'	8.00'	9.8' FLUSH	6.5'
16	BOSTON RD	27+07.3	15.2' R	-2.6%	40.0'	11.5'	8.00'	6.5' 3"R	6.5'
17	BOSTON RD	27+65.3	15.0' R	-2.8%	20.0'	11.5'	8.00'	11.0'	4.0' 3"R
18	BOSTON RD	28+84.7	15.0' R	-3.3%	20.0'	11.5'	8.00'	14.0'	6.5'
19	BOSTON RD	29+69.3	15.0' R	-3.3%	20.0'	11.5'	8.00'	-	6.5'
20	BOSTON RD	30+02.1	15.0' R	-3.3%	20.0'	11.5'	8.00'	14.0'	-
21	BOSTON RD	31+12.7	15.0' R	-3.3%	20.0'	11.5'	8.00'	7.0' 3"R	6.5'
23	BOSTON RD	32+17.1	13.2' R	-3.3%	18.0'	11.5'	8.00'	14.0'	6.5'
24	BOSTON RD	33+22.0	13.0' R	-3.3%	28.0'	11.5'	8.00'	14.0'	6.5'
25	BOSTON RD	36+93.57	13.0' R	-3.3%	20.0'	11.5'	8.00'	14.0'	6.5'
33	HERITAGE RD	58+02.3	14.1' L	+2.9%	23.0'	5.50'	5.50'	6.5'	11.0'
41	HERITAGE RD	53+28.5	13.3' L	-2.3%	28.0'	5.50'	3.00'	11.0'	6.5'

DRIVEWAY TYPE B OPENING

DWY NO.	LOCATION	℄ DRIVEWAY OPENING AT GUTTER		GUTTER PROFILE SLOPE	OPENING WIDTH AT GUTTER	DEPTH OF GUTTER TO BACK OF SIDEWALK	PATH OF TRAVEL WIDTH ACROSS DRIVEWAY	TRANSITION LENGTH	
		STATION	OFFSET					LEFT	RIGHT
2	BOSTON RD	14+21.8	21.2' R	-1.3%	18.0'	5.5'	5.5'	9.0'	6.5'
3	BOSTON RD	14+65.5	30.2' L	+1.7%	16.0'	5.5'	5.5'	6.5'	5.5' 3"R
4	BOSTON RD	15+04.0	18.4' R	-2.0%	18.0'	5.5'	5.5'	11.0'	6.5'
5	BOSTON RD	16+32.7	18.3' R	-2.7%	28.0'	5.5'	5.5'	11.0'	6.5'
6	BOSTON RD	17+88.4	18.0' R	-2.8%	24.0'	5.5'	5.5'	4.0' 3"R	6.5'
7	BOSTON RD	18+41.6	18.0' R	-3.1%	24.0'	5.5'	5.5'	14.0'	4.0' 3"R
8	BOSTON RD	18+81.8	31.0' L	+3.1%	30.0'	5.5'	5.5'	6.5'	14.0'
9	BOSTON RD	20+04.7	18.0' R	-3.3%	30.0'	7.0'	7.0'	14.0'	6.5'
10	BOSTON RD	20+36.0	31.0' L	+3.6%	17.0'	5.5'	5.5'	6.5'	MEDIAN
11	BOSTON RD	20+60.5	31.0' L	+3.6%	20.0'	5.5'	5.5'	MEDIAN	14.0'
12	BOSTON RD	22+24.7	18.0' R	-1.5%	33.0'	5.5'	5.5'	9.0'	6.5'
13	BOSTON RD	22+27.3	27.3' L	+1.4%	40.0'	5.5'	5.5'	6.5'	7.7'
14	BOSTON RD	24+01.1	18.2' R	-1.0%	31.0'	5.5'	5.5'	7.7'	6.5'
22	BOSTON RD	31+62.1	14.6' R	-3.3%	18.0'	11.5'	8.0'	14.0'	6.5' 3"R
26	BOSTON RD	45+52.4	37.0' L	+4.6%	21.0'	8.5'	8.5'	6.5' 3"R	7.5' 3"R
27	BOSTON RD	45+91.6	35.1' L	+4.3%	23.0'	8.5'	8.5'	3.25' 3"R	15.0'
28	BOSTON RD	46+78.3	31.1' L	+3.7%	28.0'	8.5'	8.5'	6.5'	11.0'
29	BOSTON RD	48+09.0	25.3' R	-3.7%	20.0'	15.0'	10.0'	6.5'	15.0'
30	HERITAGE RD	55+12.1	13.0' L	+3.0%	20.0'	5.5'	5.5'	6.5'	7.0' 3"R
31	HERITAGE RD	55+46.4	13.0' L	+3.0%	16.0'	5.5'	5.5'	3.3' 3"R	14.0'
32	HERITAGE RD	57+12.1	13.0' L	+3.0%	17.0'	5.5'	5.5'	6.5'	14.0'
34	GOOD ST	71+06.3	13.0' L	+1.7%	23.0'	15.0'	10.0'	6.50'	9.0'
35	GOOD ST	71+10.0	26.9' R	-4.3%	22.0'	5.5'	5.5'	15.0'	6.5'
36	GOOD ST	71+76.3	13.0' L	+2.7%	30.0'	15.0'	10.0'	6.5'	11'
37	GOOD ST	73+33.6	13.7' R	+0.4%	24.0'	5.5'	5.5'	7.7'	6.5'
38	GOOD ST	73+63.3	17.8' L	-0.4%	25.6'	15.0'	10.0'	6.5'	MEDIAN
39	GOOD ST	74+22.9	18.0' L	-1.0%	77.8'	15.2'	10.0'	7.6'	6.5'
40	GOOD ST	75+75.6	11.8' R	+1.8%	30.0'	5.5'-8.0'	5.5'	-	10.2'

SEE DETAIL ON SHEET 10

SEE DETAIL ON SHEET 10

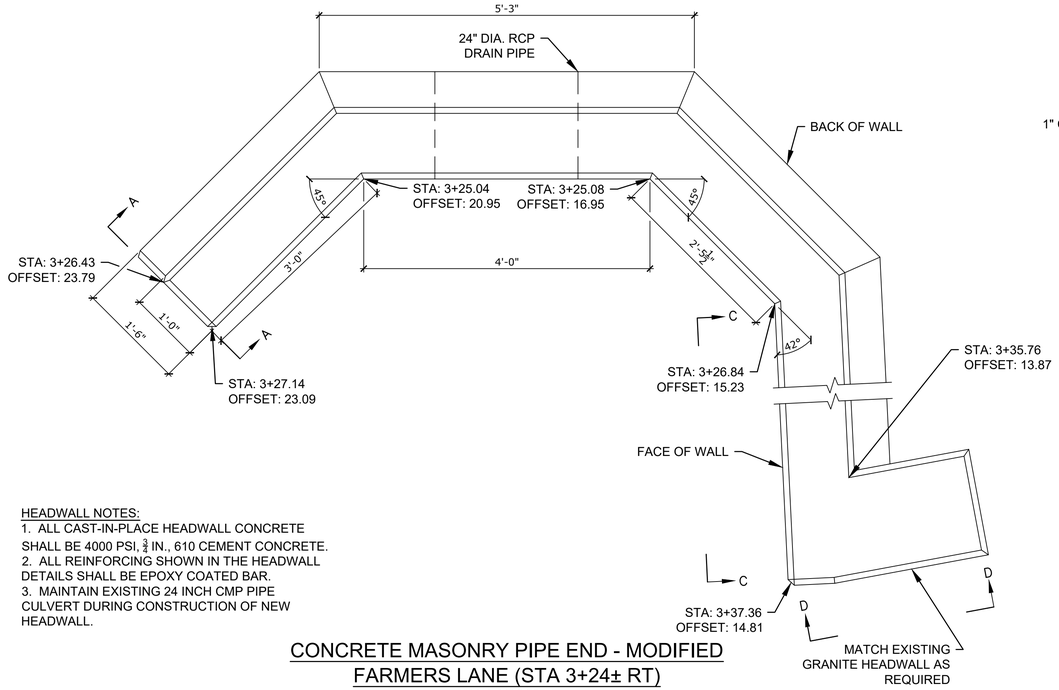
605178_HD(4722_DETAILS).DWG Plotted on 7-Mar-22 8:27 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	12	140
PROJECT FILE NO.	605178		

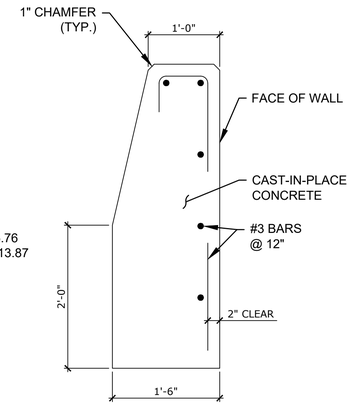
CONSTRUCTION DETAILS

605178_HD(4722_DETAILS).DWG Plotted on 7-Mar-22 8:27 PM

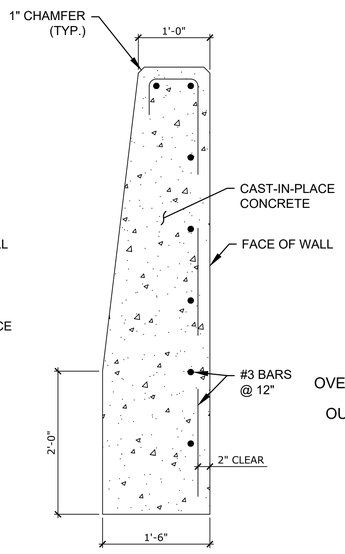


HEADWALL NOTES:
1. ALL CAST-IN-PLACE HEADWALL CONCRETE SHALL BE 4000 PSI, $\frac{3}{4}$ IN., 610 CEMENT CONCRETE.
2. ALL REINFORCING SHOWN IN THE HEADWALL DETAILS SHALL BE EPOXY COATED BAR.
3. MAINTAIN EXISTING 24 INCH CMP PIPE CULVERT DURING CONSTRUCTION OF NEW HEADWALL.

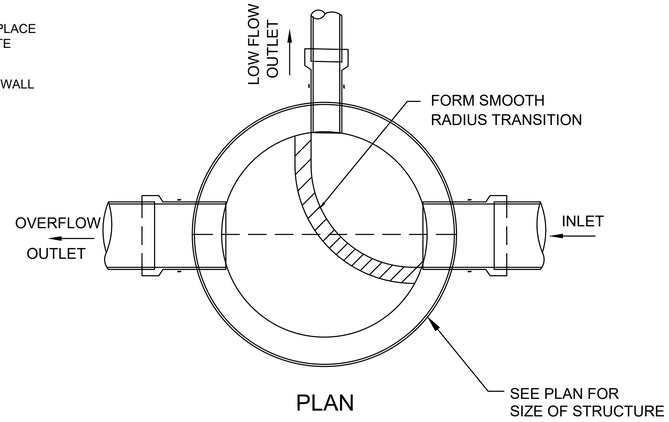
CONCRETE MASONRY PIPE END - MODIFIED
FARMERS LANE (STA 3+24± RT)
NOT TO SCALE



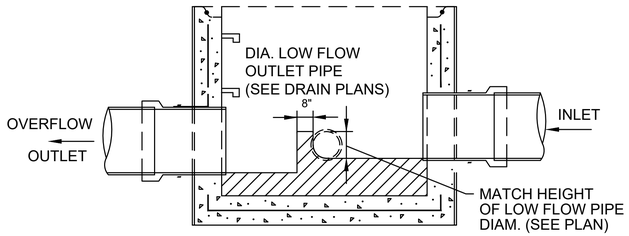
SECTION A-A



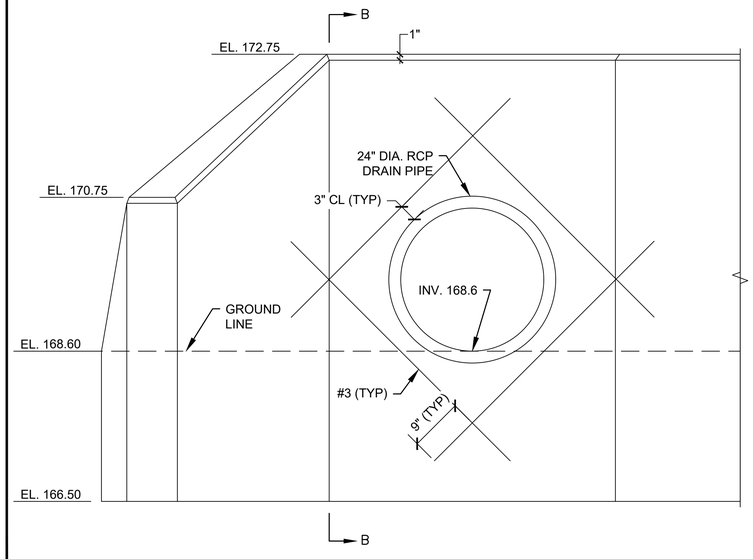
SECTION B-B



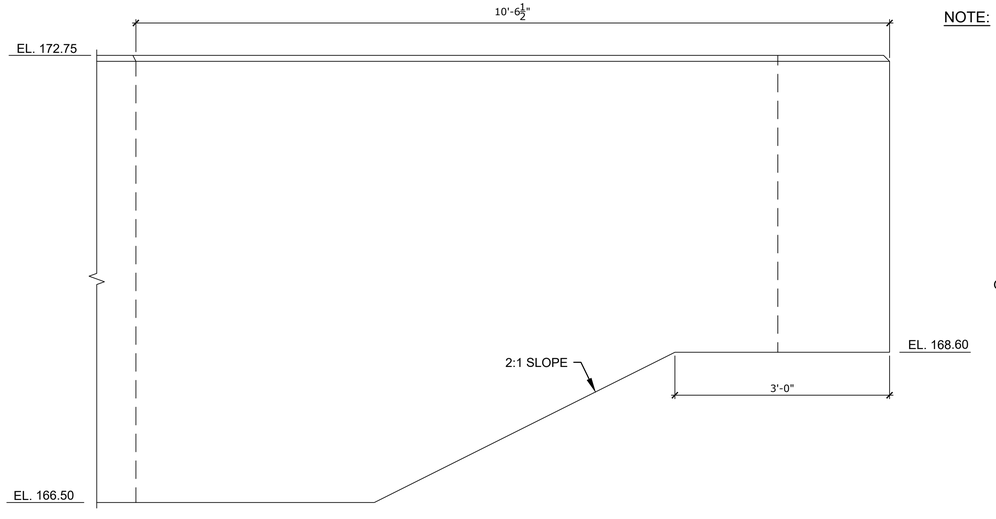
PLAN



SECTION



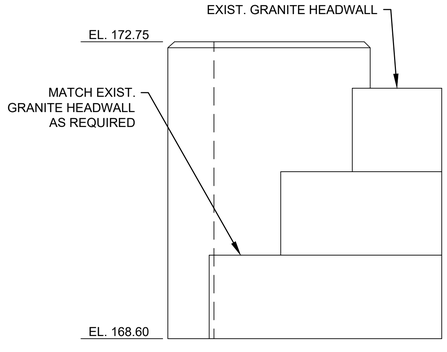
HEADWALL FRONT ELEVATION
NOT TO SCALE



SECTION C-C

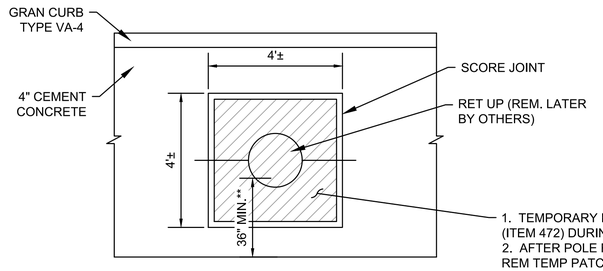
NOTE: 1. DETAIL TO MODIFY A DRAIN MANHOLE, SEE DRAIN MANHOLE DETAIL FOR ADDITIONAL INFORMATION

DIVERSION MANHOLE (ITEM 203.1)
NOT TO SCALE



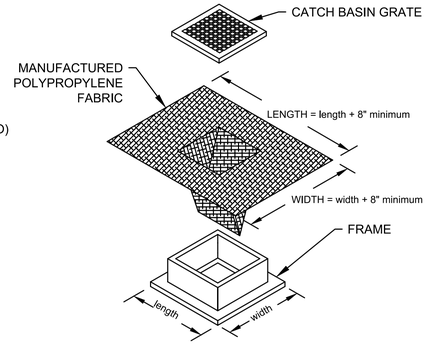
SECTION D-D

605178_HD(4722_DETAILS).DWG Plotted on 7-Mar-22 8:27 PM



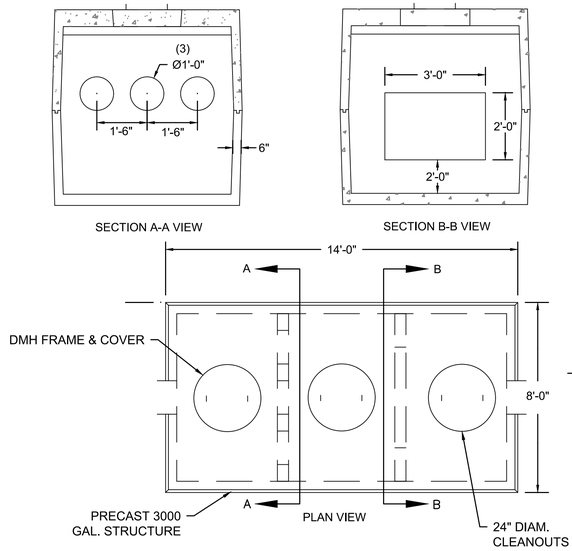
** IF 36" CLEARANCE IS NOT AVAILABLE PROVIDE TEMPORARY HMA PATCH CONFORMING TO AAB/ADA REQUIREMENTS TO ACHIEVE MINIMUM CLEARANCE. AFTER POLE REMOVAL (BO) REM TEMP PATCH AND SEE CONST PLAN FOR SURFACE TREATMENT.

PATCH AT UTILITY POLES (IF REQUIRED)
NOT TO SCALE

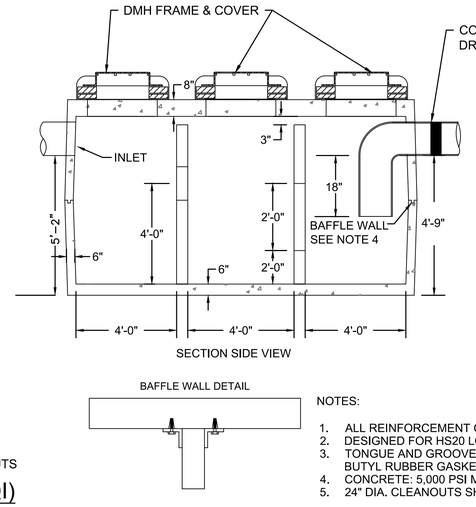


NOTES:
1. LENGTH AND WIDTH OF POLYPROPYLENE FABRIC MUST EXCEED EXISTING CATCH BASIN FRAME DIMENSIONS BY A MINIMUM OF 8".
2. REMOVE CATCH BASIN GRATE AND INSTALL POLYPROPYLENE FABRIC OVER CATCH BASIN FRAME. REPLACE CATCH BASIN GRATE TO SECURE POLYPROPYLENE FABRIC IN PLACE.

CATCH BASIN EROSION CONTROL PROTECTION (TYP)
NOT TO SCALE

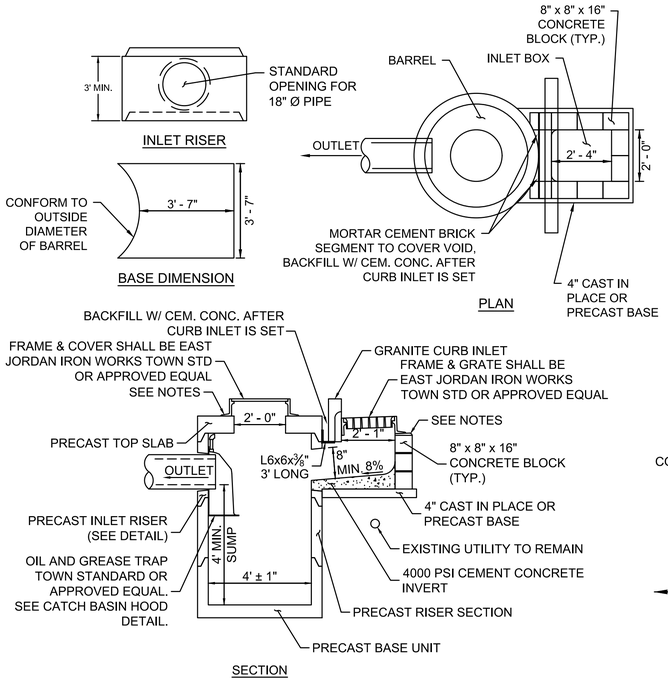


WATER QUALITY INLET (WQI)
NOT TO SCALE



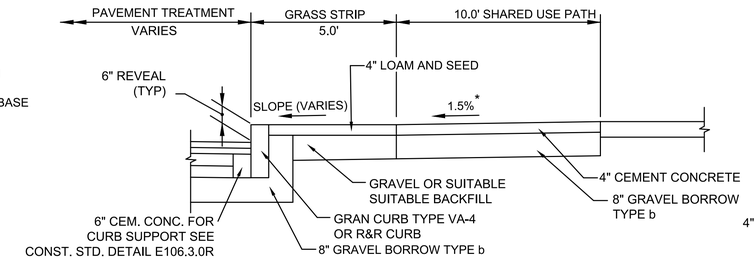
BAFFLE WALL DETAIL

NOTES:
1. ALL REINFORCEMENT GRADE 60 PER ASTM A615.
2. DESIGNED FOR HS20 LOADING.
3. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RUBBER GASKET.
4. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
5. 24" DIA. CLEANOUTS SHALL NOT BE TAPERED.

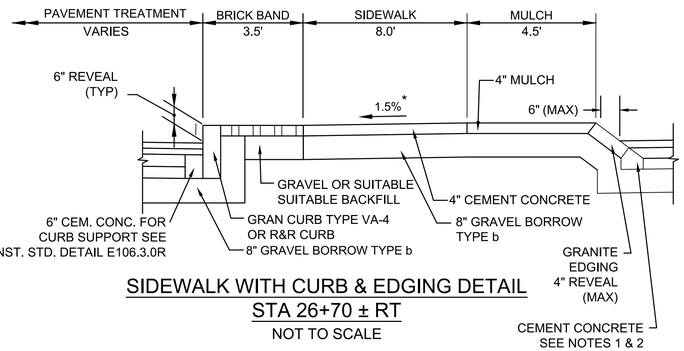


ALTERNATIVE TYPE CB
NOT TO SCALE

NOTES
1. THE 6x6x3/8 INCH ANGLE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.
2. BRICKS MAY BE USED TO ADJUST THE GRADE OF THE FRAMES.
3. THE CURB INLET SHALL BE SET IN A FULL BED OF MORTAR ON THE STEEL ANGLE. THE MINIMUM WIDTH OF BEARING OF THE CURB INLET ON THE STEEL ANGLE SHALL BE 3 INCHES.
4. THE OUTLET IS NOT NECESSARILY LOCATED WITHIN THE INLET RISER AND IS NOT NECESSARILY LOCATED OPPOSITE FROM THE INLET. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING THE RELATIVE LOCATIONS OF THE INLET AND OUTLET PRIOR TO ORDERING.
5. THE OUTLET PIPE SHALL NOT PROJECT MORE THAN 4 INCHES FROM THE FACE OF THE INTERIOR WALL ALONG THE CENTERLINE OF THE PIPE.
6. CONCRETE BLOCKS IN THE INLET BOX SHALL BE SET IN A FULL BED OF MORTAR. ALL HORIZONTAL AND VERTICAL JOINTS SHALL BE FLUSHED FULL OF MORTAR.
7. A MINIMUM CLEARANCE BETWEEN THE TOP OF THE 18-INCH OPENING IN THE INLET RISER AND THE INVERT OF THE INLET BOX IS 8 INCHES. THE NUMBER OF ROWS OF CONCRETE BLOCKS IN THE INLET BOX MAY BE MODIFIED DEPENDING ON THE ELEVATION OF THE UTILITY TO BE MAINTAINED.

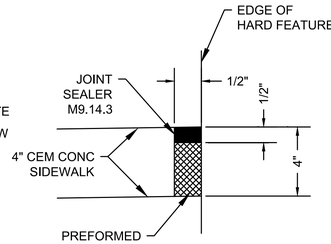


DETAIL FOR SHARED USE PATH WITH GRASS STRIP
NOT TO SCALE

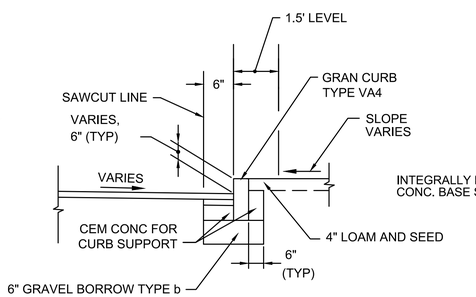


SIDEWALK WITH CURB & EDGING DETAIL STA 26+70 ± RT
NOT TO SCALE

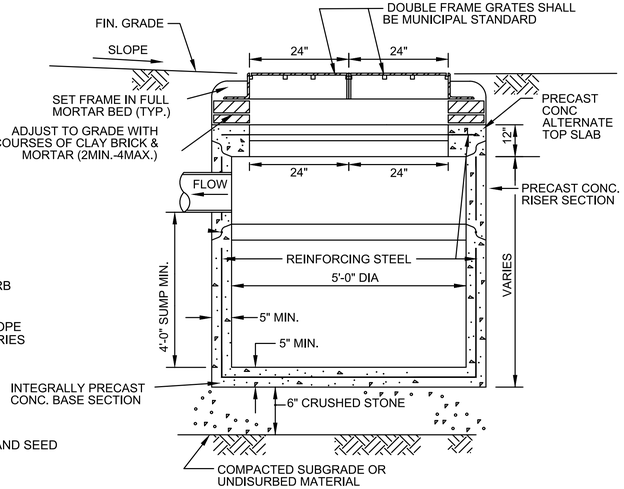
NOTE:
1. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE TO THE DEPARTMENT UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS; ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED A SUBSTITUTE
2. THE REVEAL IS TO BE A MAXIMUM OF 4" UNDER ALL CONDITIONS, THE ANGLE IS TO BE A MINIMUM OF 60° FROM THE VERTICAL UNDER ALL CONDITIONS



DETAIL FOR FLEXIBLE JOINT FILLER IN SIDEWALK
NOT TO SCALE



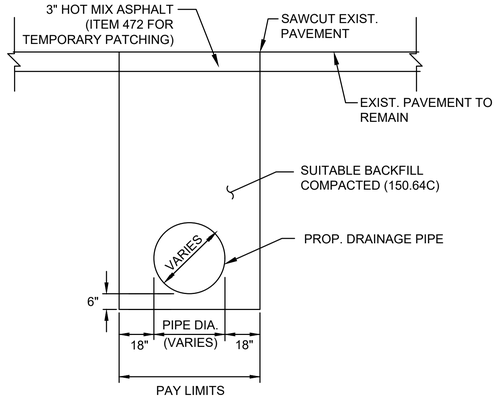
DETAIL FOR GRANITE CURB WITHOUT SIDEWALK IN MILLING AREA
NOT TO SCALE



NOTE: 1. PRECAST REINFORCED CONCRETE M.H. BASE, CONE AND RISER SECTION PER A.S.T.M. C-478
2. ALL PRECAST CONCRETE STRUCTURES TO BE SUFFICIENT TO WITHSTAND AASHTO HS20-44 LOADING

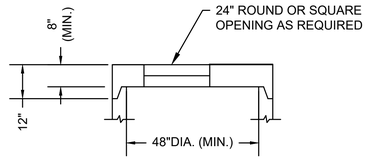
DOUBLE FRAME AND GRATE CATCH BASIN WITH DEEP SUMP (ITEM 201.1)
NOT TO SCALE

605178_HD(47'22_DETAILS).DWG Plotted on 7-Mar-22 8:27 PM



DETAIL FOR TEMPORARY TRENCH FOR DRAINAGE PIPE IN FULL DEPTH AREAS

NOT TO SCALE

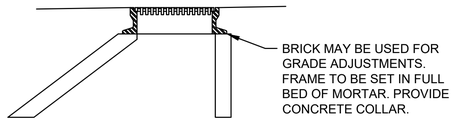


ALTERNATE TOP SLAB FOR CATCH BASIN OR DRAINAGE MANHOLE

NOT TO SCALE

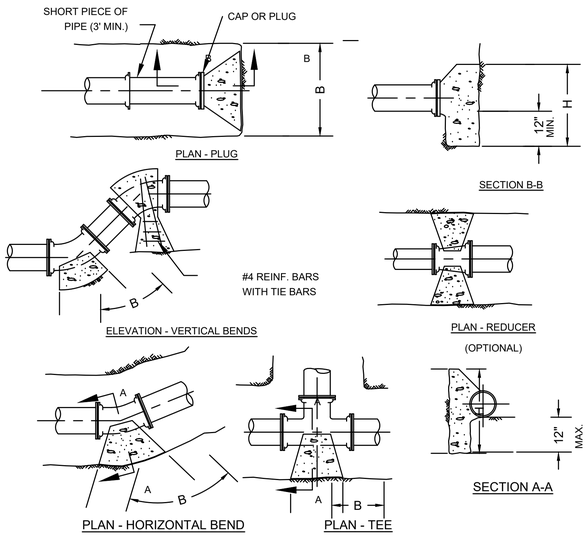
NOTES:

1. BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.



ALTERNATE ECCENTRIC CONE SECTION OR DRAINAGE MANHOLE

NOT TO SCALE

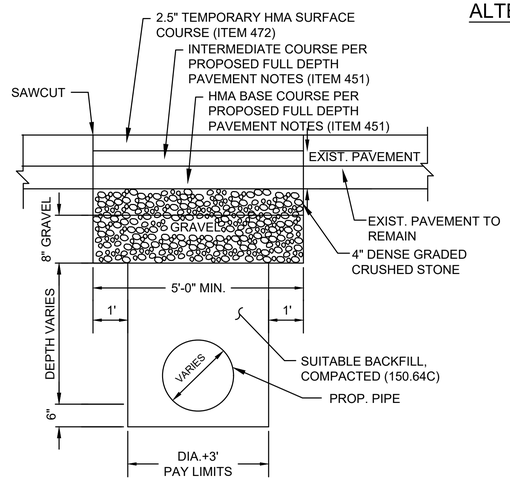


CONCRETE ANCHORAGE DETAILS

NOT TO SCALE

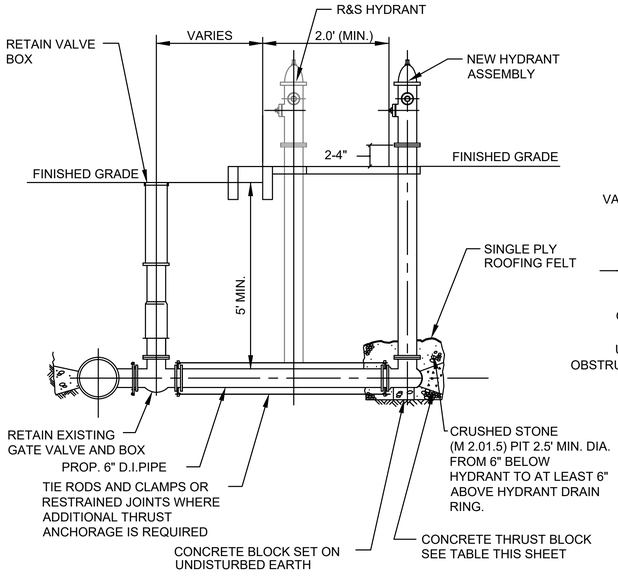
CONCRETE ANCHORAGE THRUST BLOCK REQUIREMENTS	
FITTING	MIN. BEARING AREA (H X B)
6" - 1/8 BEND	32" x 32"
8" - 1/8 BEND	24" x 24"
8" x 6" TEE	20" x 20"
12" - 1/8 BEND	32" x 32"
12" x 12" TEE	24" x 24"
12" x 6" TEE	24" x 24"
12" x 8" TEE	32" x 32"
16' x 12" TEE	24" x 24"
HYDRANT	24" x 24"
8" PLUG	32" x 32"
150 mm PLUG	24" x 24"
8" x 6" REDUCER	24" x 24"
8" - 1/16 BEND	20" x 20"
12' x 8" REDUCER	24" x 24"

NOTE:
ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH



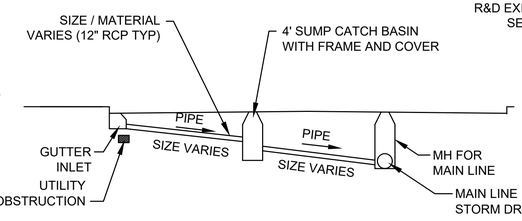
PERMANENT TRENCH PATCH DETAIL IN MILLED AREAS

NOT TO SCALE



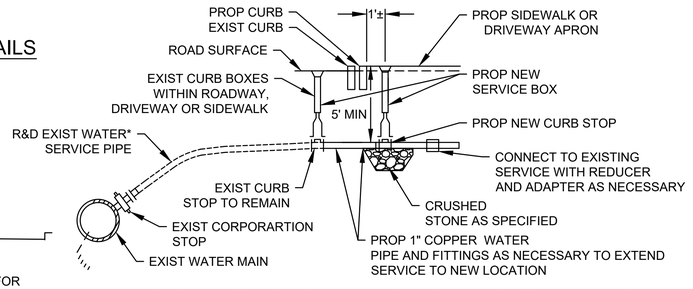
DETAIL FOR HYDRANT REMOVED AND RESET

NOT TO SCALE



CONTINGENCY DETAIL FOR STORM DRAIN LATERAL LINES

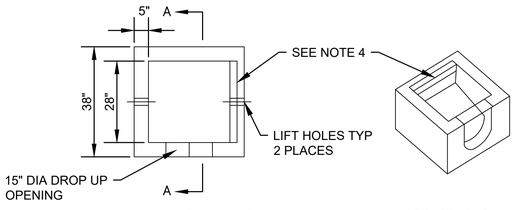
(USE ONLY IF OBSTRUCTION IS ENCOUNTERED)
NOT TO SCALE

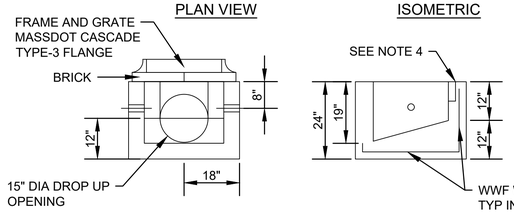


* IF EXISTING WATER SERVICE LINES IS NOT PLASTIC, CONTRACTOR SHALL INFORM BILLERICA WATER DEPARTMENT. NO CONNECTION SHALL BE MADE UNTIL THE BILLERICA WATER DEPARTMENT DETERMINES IF THE EXISTING LINE IS SUITABLE TO BE EXTENDED OR MUST BE REPLACE TO THE MAIN.

CURB STOP RELOCATION DETAIL

NOT TO SCALE



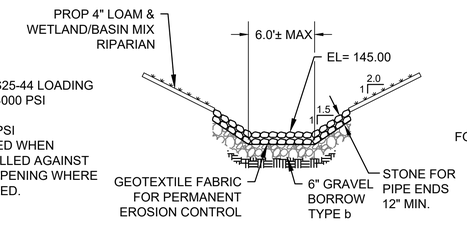


SPECIAL GUTTER INLET

NOT TO SCALE
(ITEM 204.11)

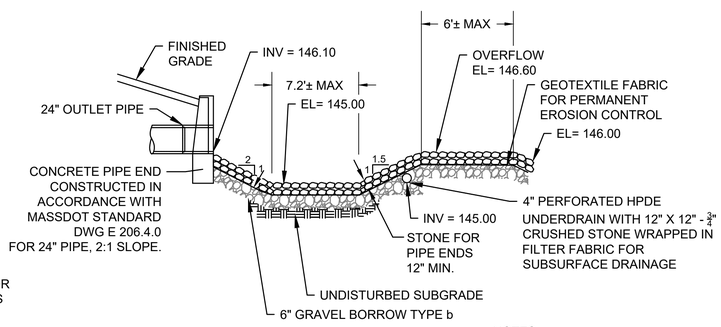
NOTES:

1. DESIGNED FOR AASHTO HS25-44 LOADING
2. CONCRETE STRENGTH fc=4000 PSI
3. REINFORCING STEEL: ASTM A185 (wwf) fy=60,000 PSI
4. CURB INLETS ARE REQUIRED WHEN GUTTER INLETS ARE INSTALLED AGAINST CURBING. PROVIDE 3"X6" OPENING WHERE CURB INLETS ARE PROPOSED.



OUTLET SEDIMENT TRAP SECTION VIEW STA. 52+26 HERITAGE ROAD

NOT TO SCALE

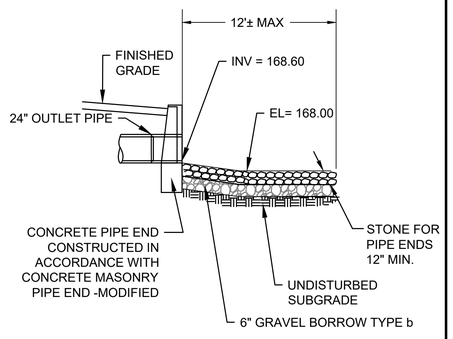


OUTLET SEDIMENT TRAP STA. 52+26 HERITAGE ROAD

NOT TO SCALE

NOTES:

1. SEE DRAINAGE PLAN FOR SEDIMENT TRAP DIMENSIONS



OUTLET STA. 3+25 FARMERS LANE

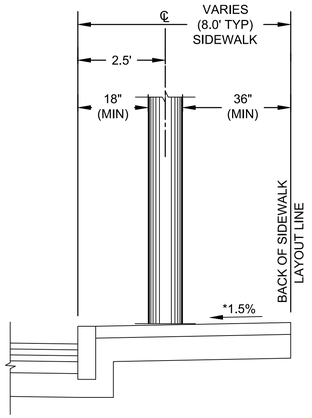
NOT TO SCALE

BILLERICA
BOSTON ROAD (ROUTE 3A)

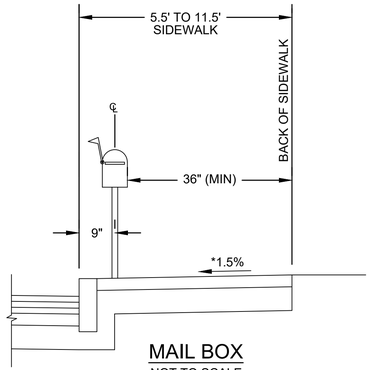
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	15	140
PROJECT FILE NO.	605178		

CONSTRUCTION DETAILS

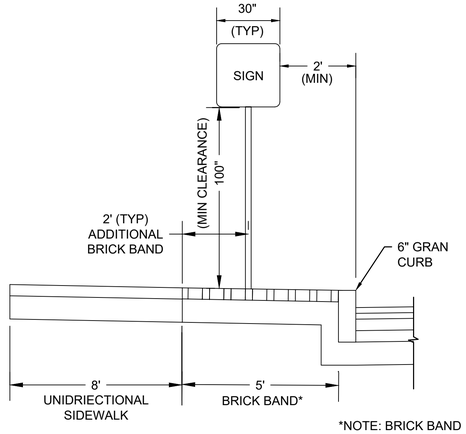
605178_HD(4722_DETAILS).DWG Plotted on 7-Mar-22 8:27 PM



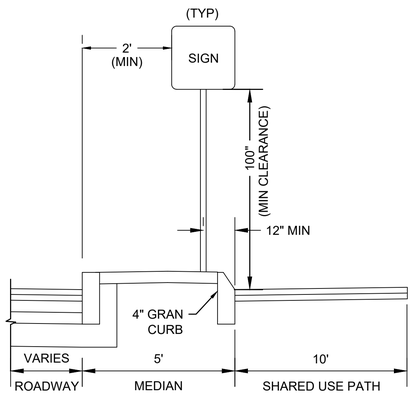
UTILITY POLE
NOT TO SCALE



MAIL BOX
NOT TO SCALE
SEE MASSDOT S.D. E504.1.0

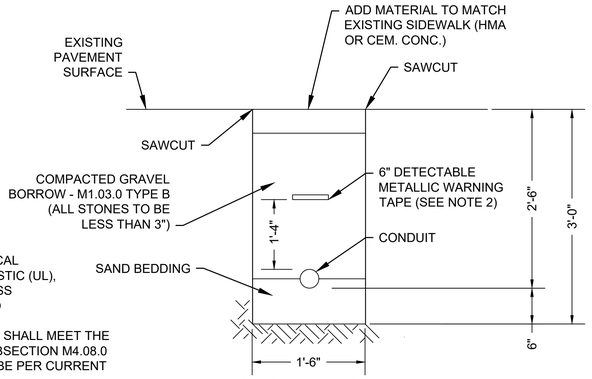


*NOTE: BRICK BAND BETWEEN DWA #21 & 22 SHALL BE 5 FT WIDE

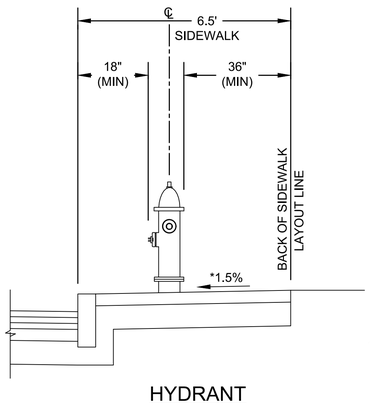


TRAFFIC SIGN IN SHARED USE PATH, MEDIAN OR BRICK BAND
NOT TO SCALE

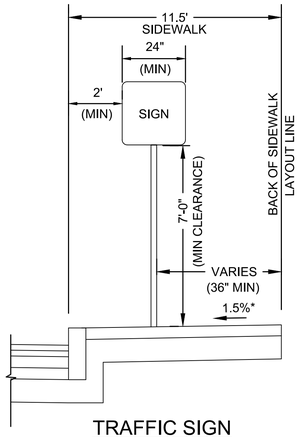
NOTES:
1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL), WITH PULL ROPE UNLESS OTHERWISE APPROVED BY MASSDOT.
2. CONTROL DENSITY FILL SHALL MEET THE REQUIREMENTS OF SUBSECTION M4.08.0
3. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.
4. CONDUIT DETAIL SHOWN HERE CAN BE USED FOR MULTIPLE CONDUIT TRENCH WITH APPROVED SPACING.
5. FOR ELECTRICAL AND OTHER UTILITIES CONDUIT INSTALLATION DETAILS, SEE SHEET 97 & 98.



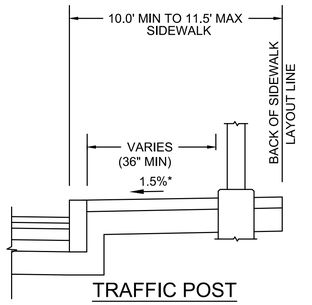
CONDUIT UNDER SIDEWALK AREAS
NOT TO SCALE



HYDRANT
NOT TO SCALE



TRAFFIC SIGN
NOT TO SCALE

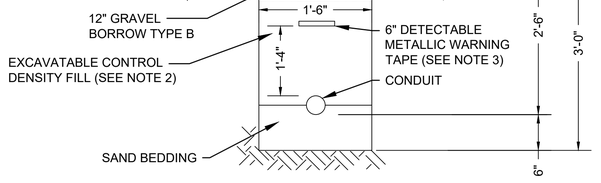


TRAFFIC POST
NOT TO SCALE

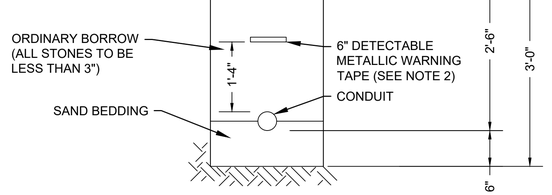
* TOLERANCE FOR CONSTRUCTION ±0.5%

DETAILS SHOWING SIDEWALK CLEARANCES

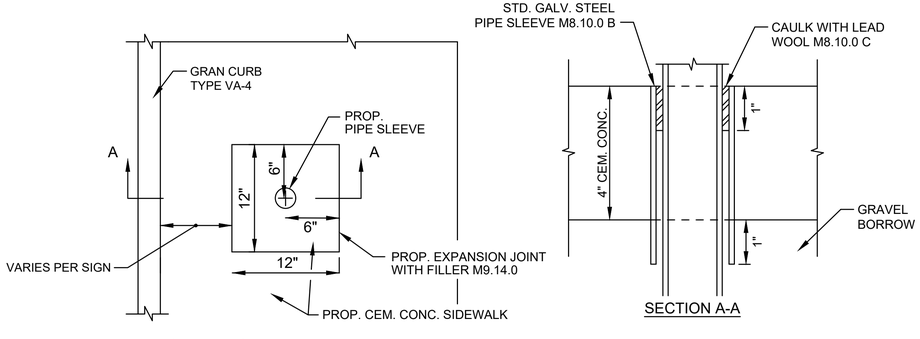
NOTES:
1. MINIMUM CLEAR PATH ON ALL SIDEWALKS SHALL BE 36 INCHES, EXCLUDING THE CURB.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, POLES ETC.) TO BE SET WITHIN SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36 INCHES NOT INCLUDING CURB. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION WHICH CANNOT MEET THE CLEARANCE REQUIREMENTS.



CONDUIT CROSSING ROADWAY
NOT TO SCALE

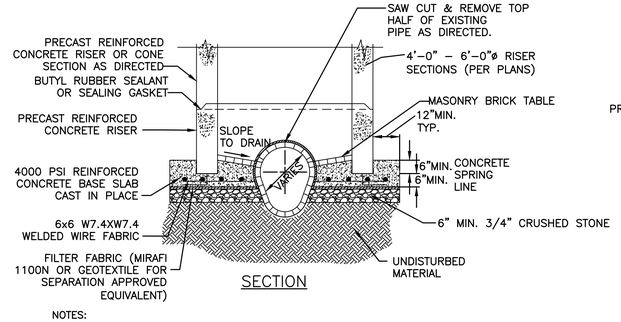


CONDUIT UNDER GRASS AREAS
NOT TO SCALE

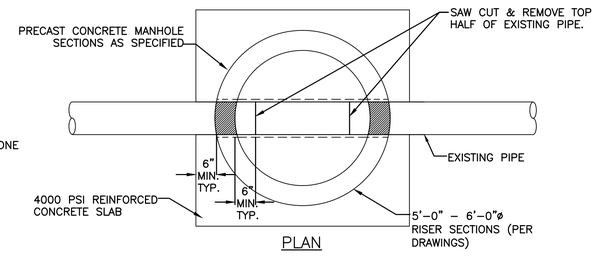


NOTE: IN BRICK BAND AREA PIPE SLEEVE SHALL BE FLUSH WITH CONC. BELOW BRICK.

SIGN POST PIPE SLEEVE IN CEM. CONC. SIDEWALK
NOT TO SCALE



NOTES:
1. PRECAST REINFORCED CONCRETE RISER SECTIONS PER ASTM C 478
2. GEOTEXTILE FOR SEPARATION PER AASHTO M 288



4'-0", 5'-0" OR 6'-0" "DOGHOUSE" MANHOLE OVER EXISTING BRICK DRAIN PIPE
NOTE TO SCALE

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	16	140
PROJECT FILE NO.	605178		

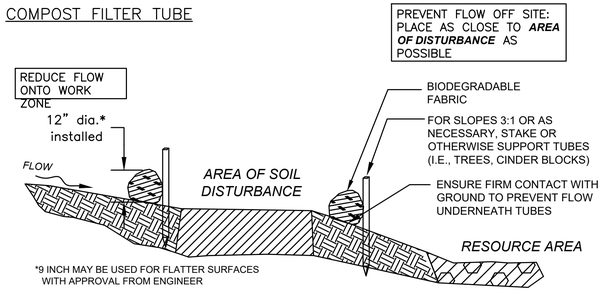
CONSTRUCTION DETAILS

605178_HD(4722_DETAILS).DWG Plotted on 7-Mar-22 8:28 PM

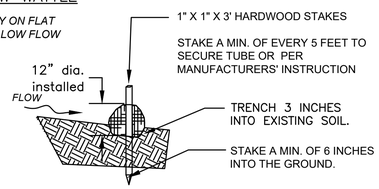
SEDIMENT BARRIERS - COMPOST FILTER TUBES & STRAW WATTLES

NOT TO SCALE

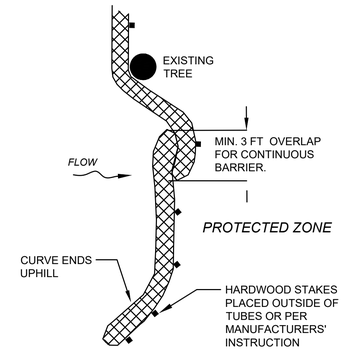
COMPOST FILTER TUBE



12 INCH STRAW WATTLE



SECTION

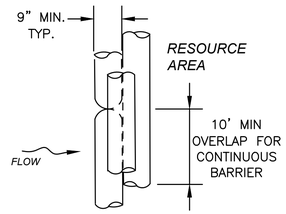


PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

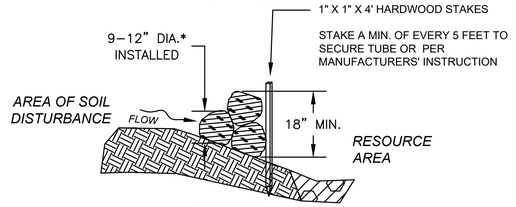
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

PLAN VIEW



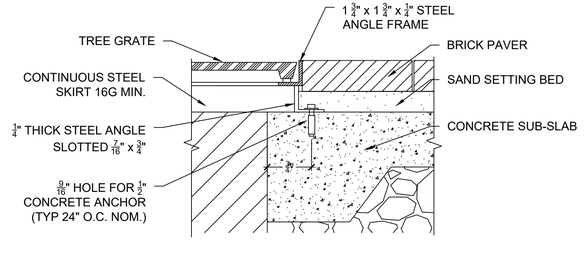
PLAN VIEW



SECTION

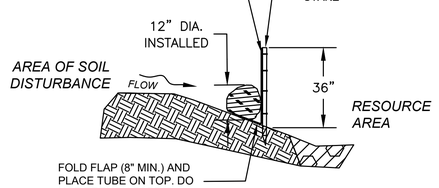
COMPOST FILTER TUBE BERM (SLOPES 2:1 OR STEEPER)

NOT TO SCALE

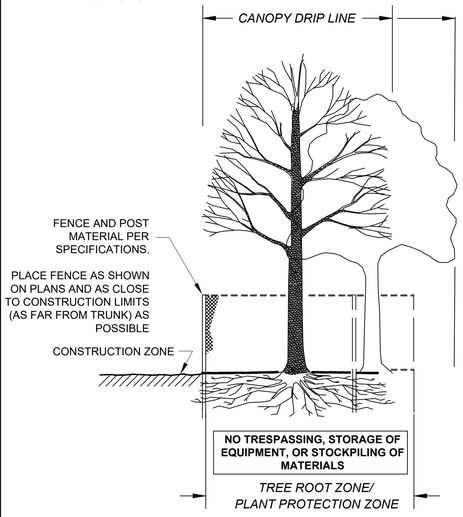


COMPOST FILTER TUBE & SILT FENCE

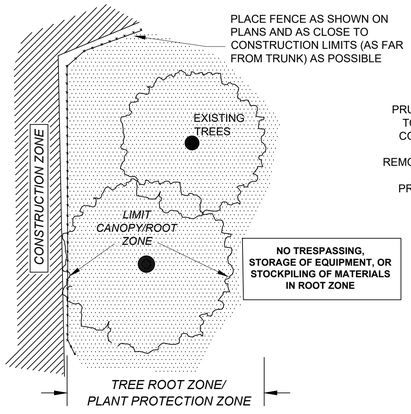
NOT TO SCALE



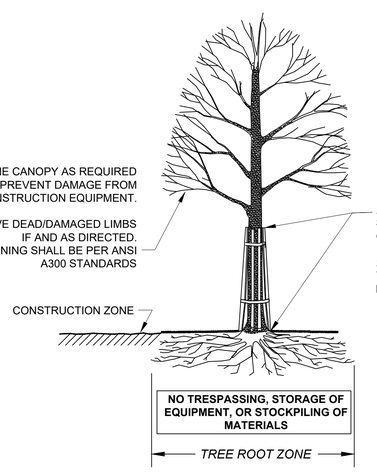
SECTION



SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE



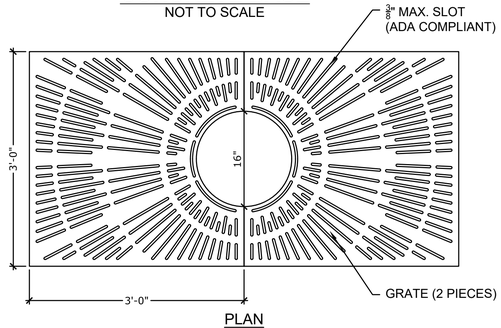
SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION DETAILS

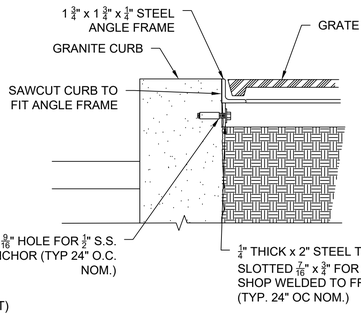
NOT TO SCALE

GRATE FRAME CONNECTION IN CONCRETE BASE

NOT TO SCALE

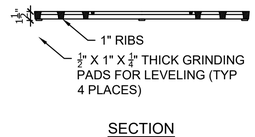


PLAN



GRATE FRAME CONNECTION DETAIL A

NOT TO SCALE



SECTION

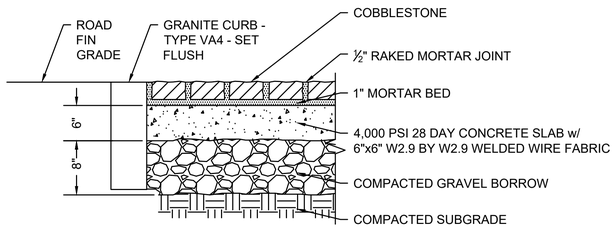
TREE GRATE

NOT TO SCALE

PLANT LIST - MASTER

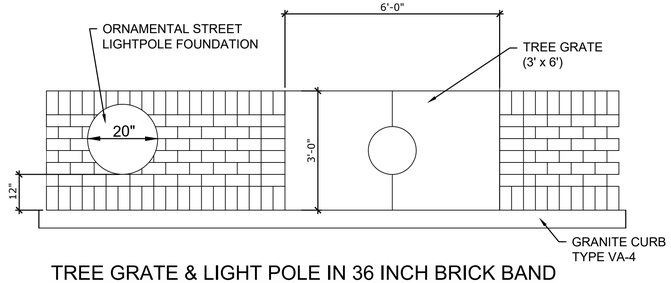
(SEE CONSTRUCTION PLANS FOR INDIVIDUAL SHEET PLANT LISTS)

KEY	QU.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	NOTES
TREES						
AC	4	ACER CAMPSTRE 'STREETSIDE'	MAPLE - HEDGE - 'STREETSIDE"	2-2.5" CAL	B&B	
AR	1	ACER RUBRUM 'OCTOBER GLORY'	MAPLE - RED - 'OCTOBER GLORY'	2-2.5" CAL	B&B	
LS	2	LIQUIDAMBAR STYRICIFLUA 'ROTUNDILOBA'	SWEETGUM - 'ROTUNDILOBA'	2-2.5" CAL	B&B	
MS	11	MALUS 'SPRING SNOW'	CRABAPPLE - 'SPRING SNOW'	2-2.5" CAL	B&B	
NS	5	NYSSA SYLVATICA 'FIRESTARTER'	TUPELO - 'FIRESTARTER'	2-2.5" CAL	B&B	
PS	10	PRUNUS SARGENTII 'PINK FLAIR'	CHERRY - 'PINK FLAIR'	2-2.5" CAL	B&B	
QA	1	QUERCUS ALBA	OAK - WHITE	2-2.5" CAL	B&B	
TC	2	TILIA CORDATA 'GREENSPIRE'	LINDEN - LITTLELEAF - 'GREENSPIRE'	2-2.5" CAL	B&B	
ZS	11	ZELKOVA SERRATA 'CITY SPRITE'	ZELKOVA - 'CITY SPRITE'	2-2.5" CAL	B&B	
SHRUBS						
CA	6	CLETHRA ALNIFOLIA	SUMMERSWEET SHRUB	3-4 FEET	CONT.	
CR	4	CORNUS AMOMUM	DOGWOOD - SILKY	2-3 FEET	CONT.	
VC	5	VACCINIUM CORYMBOSUM	BLUEBERRY - HIGHBUSH	2-3 FEET	CONT.	



COBBLESTONE PAVEMENT

NOT TO SCALE



TREE GRATE & LIGHT POLE IN 36 INCH BRICK BAND

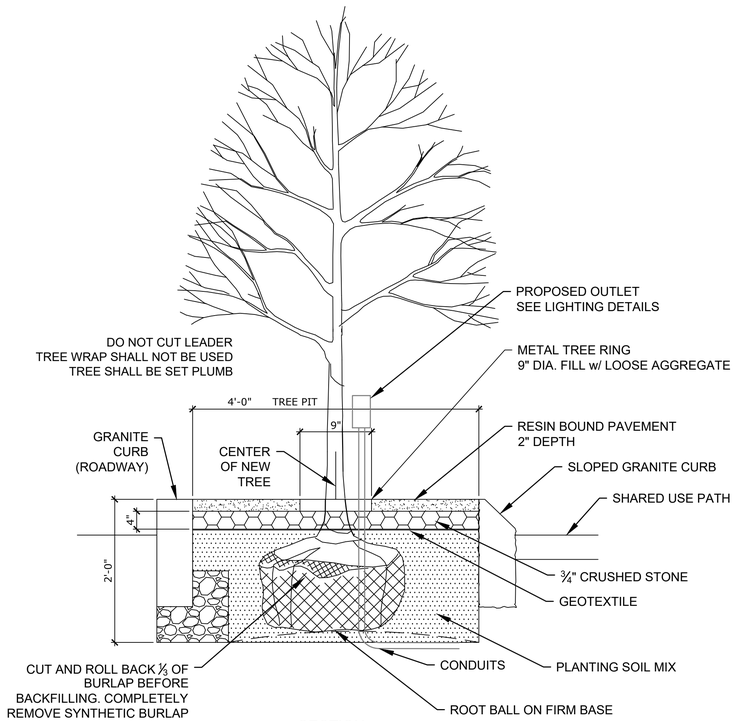
NOT TO SCALE

BILLERICA
BOSTON ROAD (ROUTE 3A)

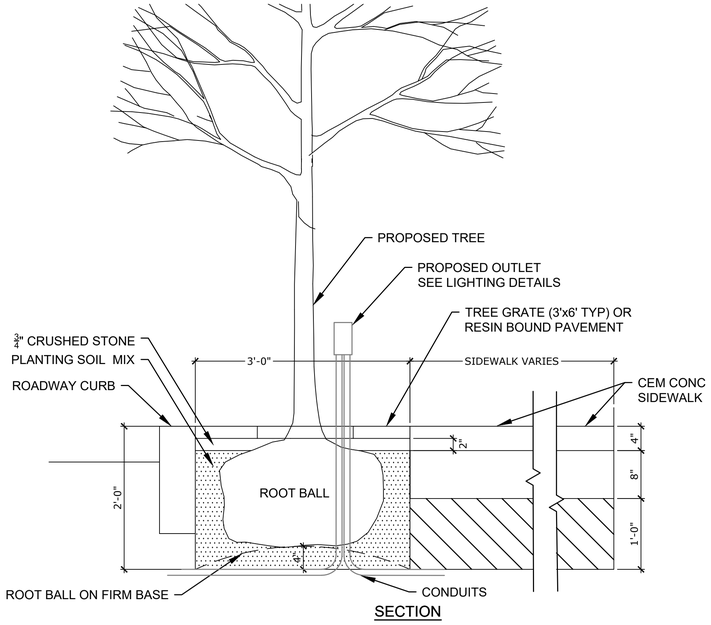
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	17	140
PROJECT FILE NO.	605178		

CONSTRUCTION DETAILS

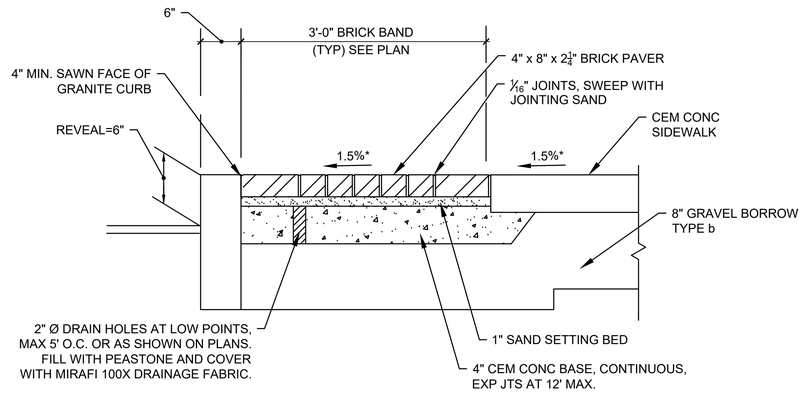
605178_HD(4722_DETAILS).DWG Plotted on 7-Mar-22 8:28 PM



SECTION

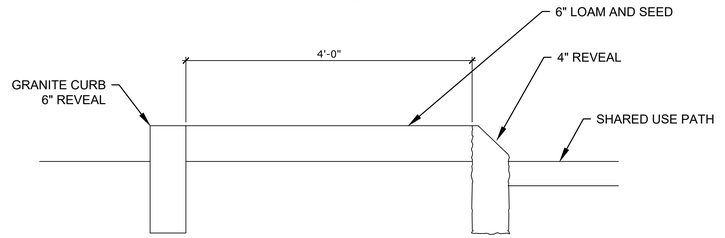


SECTION



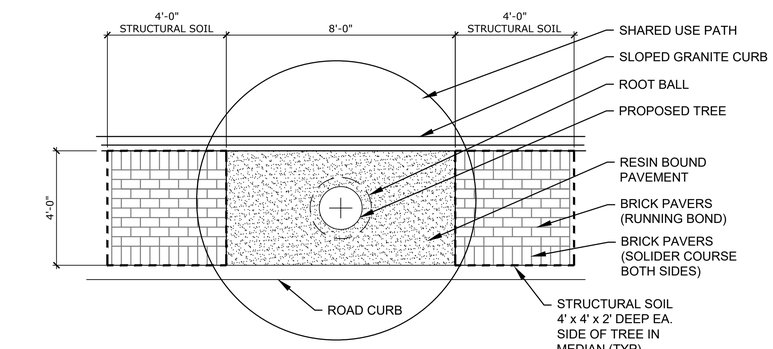
BRICK PAVERS IN CEM CONC SIDEWALK

NOT TO SCALE



GRASS MEDIAN AT SHARED USE PATH - SOUTH SIDE

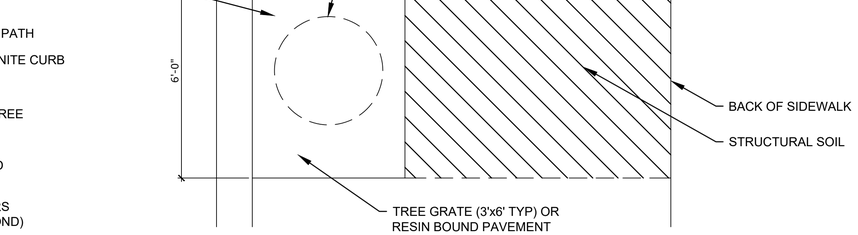
NOT TO SCALE



PLAN VIEW

5' WIDE MEDIAN TREE PLANTING w/ RESIN BOUND PAVEMENT

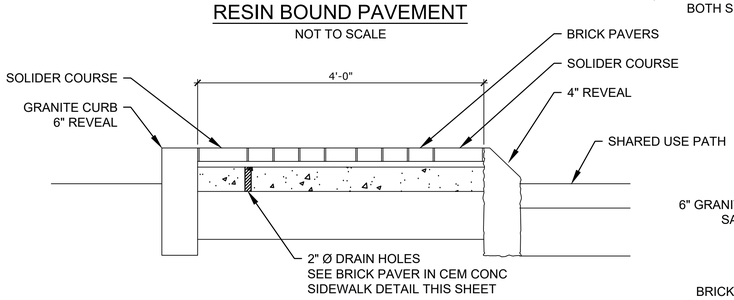
NOT TO SCALE



PLAN

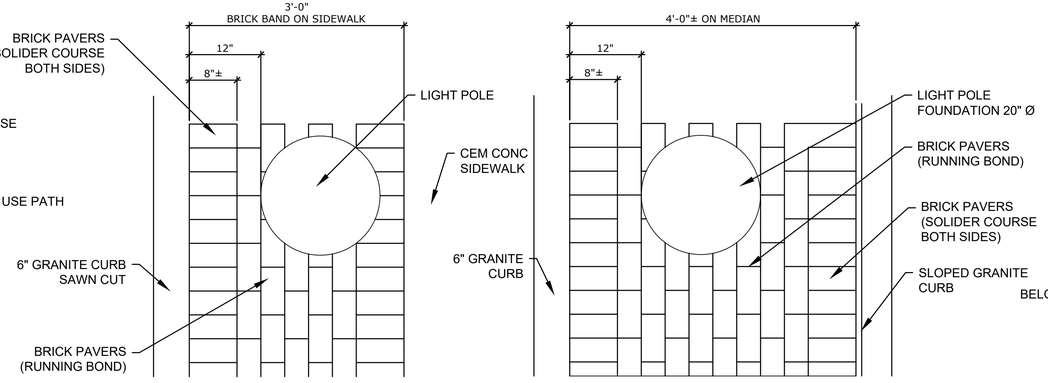
TREE PLANTING IN BRICK STRIP

NOT TO SCALE



5' WIDE MEDIAN - BRICK PAVERS NORTH & SOUTH SIDES

NOT TO SCALE



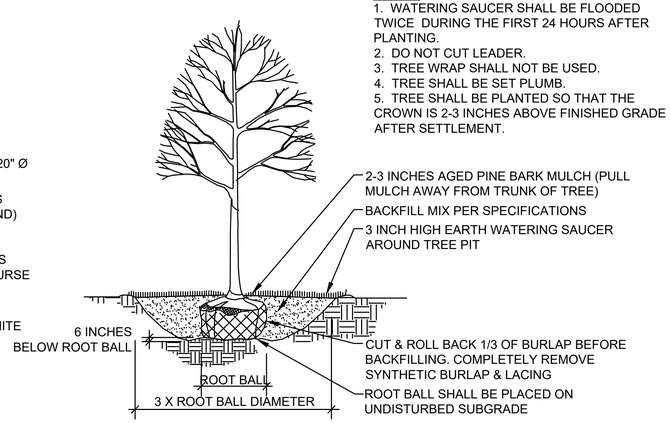
BRICK PAVERS IN CEM CONC SIDEWALK

NOT TO SCALE

BRICK PAVERS IN MEDAIN

NOT TO SCALE

NOTES:
1. WATERING SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING.
2. DO NOT CUT LEADER.
3. TREE WRAP SHALL NOT BE USED.
4. TREE SHALL BE SET PLUMB.
5. TREE SHALL BE PLANTED SO THAT THE CROWN IS 2-3 INCHES ABOVE FINISHED GRADE AFTER SETTLEMENT.



DECIDUOUS TREE PLANTING

NOT TO SCALE

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

CURB TIE & GRADING
35

WATER SUPPLY ALTERATIONS
NONE

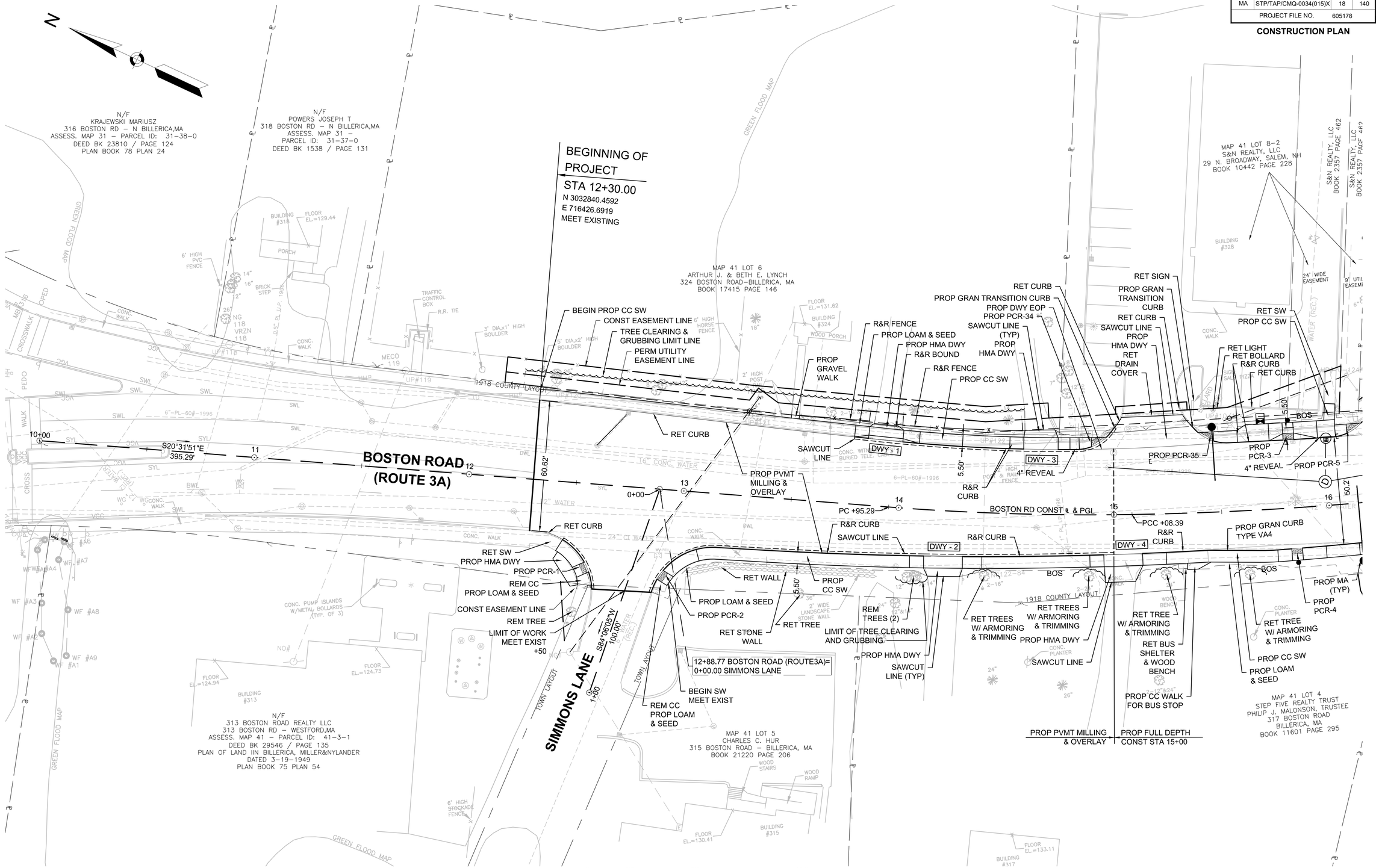
DRAINAGE & UTILITY PLANS
46 & 57

LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION PLAN
NONE

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	18	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN



CONTINUED ON SHEET NO. 19

FOR PROFILE SEE SHEET 29

605178_HDI(4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:40 PM

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

CURB TIE & GRADING
36

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE & UTILITY PLAN
47 & 58

LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION PLAN
NONE

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	19	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN

605178_HDI(4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:41 PM

CONTINUED ON SHEET NO. 18

CONTINUED ON SHEET NO. 20

MAP 41 LOT 8–2
S&N REALTY, LLC
29 N. BROADWAY, SALEM, NH
BOOK 10442 PAGE 228

S&N REALTY, LLC
BOOK 2357 PAGE 462

MAP 41 LOT 8–3 MU
MIDDLESEX COUNTY ANIMAL HOSPITAL & SCOTT E. HECKERLING AND JOSE MERCADO, TRUSTEES
330 BOSTON ROAD–BILLERICA, MA
BOOK 20206 PAGE 151

MAP 41 LOT 10–1
JM + SH REALTY LLC INC
336 BOSTON ROAD–BILLERICA, MA
BOOK 35110 PAGE 186

MAP 41 LOT 11
OLIVIA F. & KITHUNU PATHIRAJA
340 BOSTON ROAD–BILLERICA, MA
BOOK 31433 PAGE 136

NOTE: POTENTIAL TO ENCOUNTER PETROLEUM-IMPACTED SOIL ON EASTERN SHOULDER BETWEEN STA 18+50 TO STA 21+25. REFER TO CONTRACT DOCUMENTS SPECIAL PROVISIONS SECTION "SUMMARY OF POTENTIALLY IMPACTING RELEASES"

PROPOSED SITE DEVELOPMENT (BO)
#330–336

BUILDING #328
BUILDING #330
BUILDING #336 (UNDER DEVELOPMENT)
BUILDING #340
BUILDING #336
BUILDING #321
BUILDING #325
BUILDING #339

24' WIDE EASEMENT
9' UTILITY EASEMENT
15' UTILITY EASEMENT
5'–6' HIGH PVC FENCE
5' HIGH WIRE FENCE
OVERHANG
BRICK WALK
CONC. WALK
CONC. PAD FOR DRAINAGE
CONC. PLANTER
GARAGE FLOOR EL.=144.76
FLOOR EL.=154.11
FLOOR EL.=143.95
FLOOR EL.=133.64
FLOOR EL.=133.98
FLOOR EL.=140.24
FLOOR EL.=155.14

RET SW
PROP CC SW
RET LIGHT
RET BOLLARD
R&R CURB
RET CURB
RET SIGN
LIMIT OF WORK SAWCUT (TYP)
PROP HMA DWY
PROP CC WALK FOR BUS STOP
PROP PCR-3
4" REVEAL
PROP PCR-5
PROP PCR-6
PROP GRAN CURB TYPE VA4
PROP MA (TYP)
PROP PCR-4
RET TREE W/ ARMORING & TRIMMING
PROP LOAM & SEED
CONST EASEMENT LINE
PROP 11 PARKING SPACES (14 EXIST)
TREE CLEARING & GRUBBING LIMIT LINE
REM BOUND
CONST EASEMENT LINE
PROP HMA DWY
PERM UTILITY EASEMENT LINE
PROP LOAM & SEED
R&R MB
PROP 2' RAISED CONC ISLAND (3" REVEAL)
PROP HMA DWY
PROP HMA DWY
RET LP
R&R MB
REM SHRUBS
PROP CC SW
PROP LOAM & SEED
RET BOUND
PERM UTILITY EASEMENT LINE
PROP GRAN CURB TYPE VA4 =8°43'23" R=1521.00' L=231.57'
PROP GRAN CURB TYPE VA4
PROP FULL DEPTH CONST
S39°34'41"E 189.07'
PROP GRAN CURB TYPE VA4
PROP GRAN CURB TYPE VA4
PROP CC SW
PROP LOAM & SEED
TREE CLEARING & GRUBBING LIMIT LINE
CONTRACTOR SHALL USE CAUTION WHEN WORKING IN CLOSE PROXIMITY TO HISTORICAL HOUSE #329.
PROP STONE MASONRY RET WALL
R&R BALANCE STONE WALL
CONST EASEMENT LINE
REM TREE
PROP 8 PARKING SPACES (14 EXIST)
PROP HMA DWY SAWCUT LINE
PROP HMA DWY
PROP CC DWY APRON
RET SIGN
REM PARKING SPACE
CONST EASEMENT LINE
PROP GRAN CURB TYPE VA4 BACK OF SW
RET SIGN
PROP HMA ISLAND
PROP GRAN CURB TYPE VA4 BACK OF SW
PROP GRAN CURB TYPE VA4 BACK OF SW
LIMIT OF DWY WORK SAWCUT (TYP)
PROP HMA DWY
LIMIT OF DWY WORK SAWCUT (TYP)
CONST EASEMENT LINE
PROP GRAN CURB TYPE VA4
PROP CC SW
PROP LOAM & SEED

DWY - 5
DWY - 6
DWY - 7
DWY - 8
DWY - 9
DWY - 10
DWY - 11

BOS
EOS
PC +45.05
PT +55.97
PCC +62.39
+39.92
+78.51
BOSTON RD CONST ℄ & PGL
1918 COUNTY LAYOUT
1938 COUNTY LAYOUT
BOSTON ROAD (ROUTE 3A)
COLLINS REA LANE

MAP 41 LOT 4
STEP FIVE REALTY TRUST
PHILIP J. MALONSON, TRUSTEE
317 BOSTON ROAD
BILLERICA, MA
BOOK 11601 PAGE 295

MAP 41 LOT 19–1–MU
321 PLAZA CONDOMINIUM TRUST
321 BOSTON ROAD – BILLERICA, MA
LAND COURT DOC #83165

MAP 41 LOT 141
MICHAEL J & MAUREEN COLLINS REA
325 BOSTON ROAD – BILLERICA, MA
LAND COURT #27599

MAP 41 LOT 17–2
MICHAEL J & MAUREEN COLLINS REA
325 BOSTON ROAD
BILLERICA, MA
LAND COURT #27599

MAP 41 LOT 17–4
MICHAEL J & MAUREEN COLLINS REA
1 COLLINS REA LANE – BILLERICA, MA
LAND COURT #29529

TAXUS xMEDIA 'HATFIELDII'
THUJA OCCIDENTALIS 'NIGRA'

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 29

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

CURB TIE & GRADING
37

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE & UTILITY PLANS
48 & 59

LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION PLAN
91

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	20	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN

CONTINUED ON SHEET NO. 26

NOTE: POTENTIAL TO ENCOUNTER PETROLEUM-IMPACTED SOIL ON EASTERN SHOULDER PROXIMAL TO STA 24+00. REFER TO CONTRACT DOCUMENTS SPECIAL PROVISIONS SECTION "SUMMARY OF POTENTIALLY IMPACTING RELEASES"

MAP 41 LOT 11
OLIVIA F. & KITHUNU PATHIRAJA
340 BOSTON ROAD–BILLERICA, MA
BOOK 31433 PAGE 136

MAP 41 LOT 12
NSD REAL ESTATE, LLC.
BOOK 30515 PAGE 211

MAP 41 LOT 13
NSD REAL ESTATE, LLC.
BOOK 30519 PAGE 214

MAP 41 LOT 60–1
A&R REALTY TRUST
NAVIN C. PATEL TR
8 SHAKER HILL LANE–WOBURN, MA.
BOOK 20009 PAGE 167

MAP 41 LOT 60–2
KRISTINA M. BOLEBUCK
7 HERITAGE ROAD – BILLERICA, MA
BOOK L.C. 39512

PROPOSED SITE DEVELOPMENT (BO) #342–346

HERITAGE ROAD

BOSTON ROAD (ROUTE 3A)

25+74.90 BOSTON ROAD (ROUTE3A)=
50+00.00 HERITAGE ROAD

PC +24.27

PT +76.61

BOSTON RD CONST ℄ & PGL

BOS 1918 COUNTY LAYOUT

TOS

+78.51

+83.27

=8°43'23"
R=1521.00'
L=231.57'

=3°03'34"
R=2986.00'
L=159.44'

DWY - 12
DWY - 13
DWY - 14
DWY - 15
DWY - 16

CONST EASEMENT LINE
TREE CLEARING & GRUBBING LIMIT LINE
PROP LOAM & SEED
RET BOUND
PERM UTILITY EASEMENT LINE
SAWCUT MEET EXIST
REM SHRUBS
PROP CC SW
PROP GRAN CURB TYPE VA4
PROP GRAN CURB TYPE VA4
PROP GRAN CURB TYPE VA4
PROP FULL DEPTH CONST
R&D METAL SIGN (ITEM 120)
PERM UTILITY EASEMENT LINE
PROP HMA PVMT AT BSW MEET EXIST
PROP CC SW
PROP GRAN CURB TYPE VA-2
PROP CC WALK FOR BUS STOP
RET TREE
TREE CLEARING, GRUBBING, AND TRIMMING LIMIT LINE
PROP FULL DEPTH BOX WIDENING < 4'
PROP LOAM & SEED
PROP CC SW
RET TRACKS
REM RR TRACKS
CONST EASEMENT LINE
PROP PCR-9
PROP PVMT MILLING & OVERLAY
PROP FULL DEPTH CONST STA 51+50
RET CURB
SAWCUT LINE
PROP HMA DWY
PROP GRASS STRIP
PERM UTILITY EASEMENT LINE
PROP CC SHARED USE PATH
R&R BOUND
RET LP
RET CURB
PROP PCR-10
PROP BRICK PAVERS ISLAND
RET SIGN
REM SHRUB
CONST EASEMENT LINE
RET SHRUB
RET CURB
PROP HMA DWY
SAWCUT LINE
PROP HMA CURB TYPE 2
REM SHRUBS
PROP GRAN CURB ISLAND 3" REVEAL
PROP MULCH
PROP PCR-36
PROP PCR-11
PROP GRAN CURB TYPE VA4
R&D EDGING
PROP MA (TYP)
R&R FLAG POLE
PROP GRAN EDGING
PROP MULCH ISLAND
PROP GRAN CURB ISLAND 3" REVEAL
PROP HMA DWY
SAWCUT LINE
PROP ORNAMENTAL STREET LIGHT TYPE B (TYP)*
R&D EDGING
REM TREE
PROP GRAN CURB TYPE VA4
BEGIN 11.5' SW W/ 3' BRICK BAND
PROP PCR-8
RET FENCE
PROP HMA DWY
PROP HMA CURB TYPE 2
PROP HMA DWY LIMIT OF WORK SAWCUT (TYP)
PROP CC SW
PROP LOAM & SEED
PROP TREE (TYP)
PROP GRAN CURB TYPE VA4
RET TREE W/ ARMORING
RET LIGHT
PROP LOAM & SEED
PROP CC SW
RET BOLLARDS
RET SIGN
PROP HMA CURB TYPE 2
RET TREE
TREE TRIMMING LINE
CONST EASEMENT LINE
SAWCUT LINE
PROP HMA DWY
PROP HMA CURB TYPE 2
RET SIGN
RET TREES W/ FENCE PROTECTION
PROP PCR-7 END SW MEET EXIST
RET PARKING
RET BERM
CONST EASEMENT LINE
LIMIT OF WORK SAWCUT LINE
PROP HMA DWY
TREE CLEARING & GRUBBING LIMIT LINE
CONTRACTOR SHALL USE CAUTION WHEN WORKING IN CLOSE PROXIMITY TO HISTORICAL HOUSE #329.
PROP STONE MASONRY RET WALL
R&R BALANCE STONE WALL
CONST EASEMENT LINE

MAP 41 LOT 17–3
HENRY F. COLLINS
1 COLLINS REA LANE – BILLERICA, MA
LAND COURT #24884

MAP 41 LOT 17–4
MICHAEL J & MAUREEN COLLINS REA
1 COLLINS REA LANE – BILLERICA, MA
LAND COURT #29529

MAP 41 LOT 15–7
PRIMO 3A LLC
24 HEARTHSTONE – BURLINGTON, MA 01803–4125
LC 44359

MAP 41 LOT 15–8
333 BOSTON RD LLC
333 BOSTON RD– BILLERICA MA
LC 43703

MAP 41 LOT 145–3
CHARLES E. CARROLL REVOCABLE TRUST
350 BOSTON ROAD–BILLERICA,MA
BOOK 32837 PAGE 245

CONTINUED ON SHEET NO. 19

CONTINUED ON SHEET NO. 21

PLANT LIST

KEY	QU.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	NOTES
TREES						
AR	1	ACER RUBRUM 'OCTOBER GLORY'	MAPLE - RED - 'OCTOBER GLORY'	2-2.5" CAL	B&B	
NS	4	NYSSA SYLVATICA 'FIRESTARTER'	TUPELO - 'FIRESTARTER'	2-2.5" CAL	B&B	

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 30

605178_HDU4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:41 PM

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

CURB TIE & GRADING
38

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE & UTILITY PLANS
49 & 60

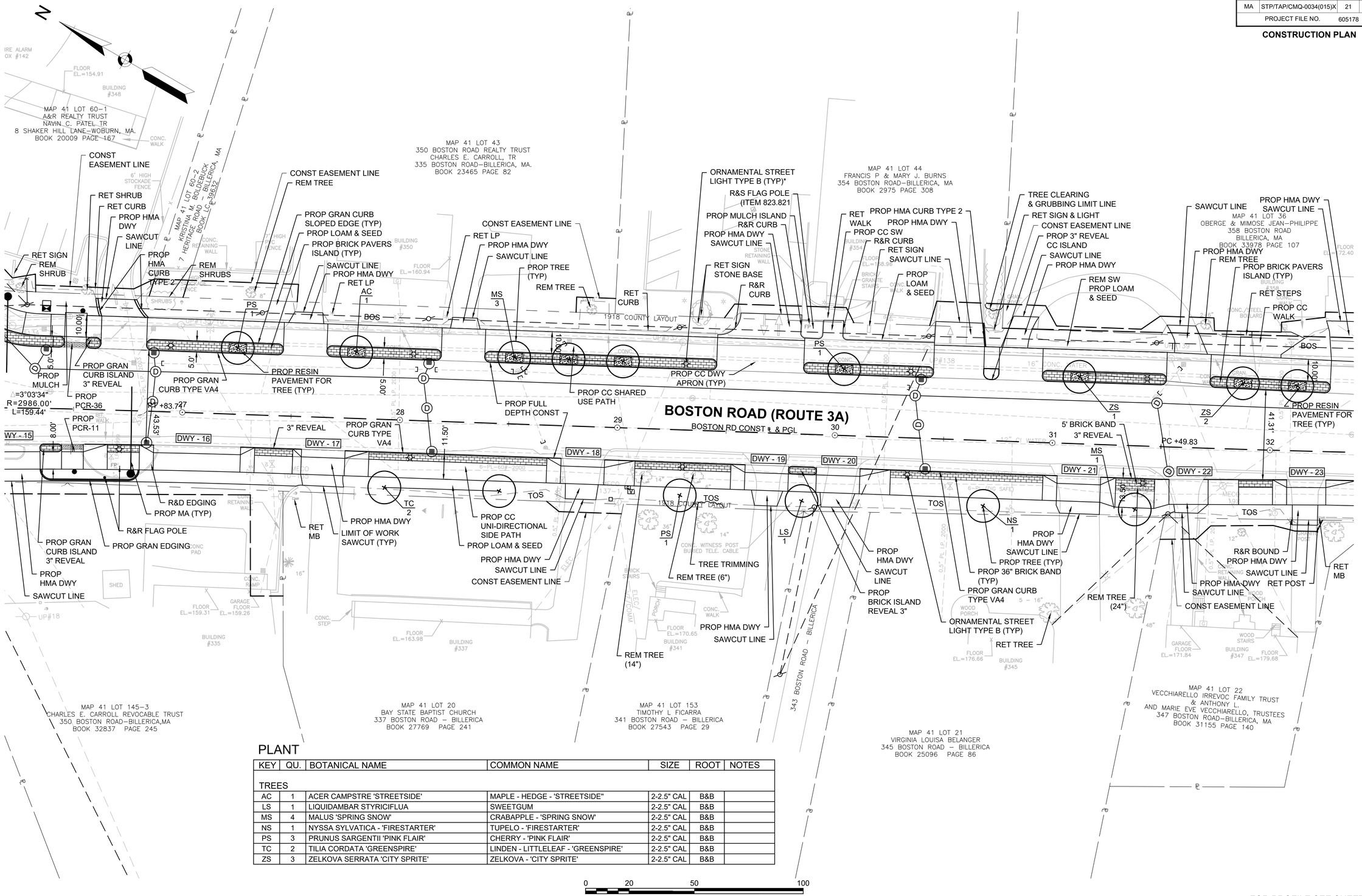
LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION PLAN
92

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	21	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN

605178_HDI(4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:42 PM



PLANT

KEY	QU.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	NOTES
TREES						
AC	1	ACER CAMPSTRE 'STREETSIDE'	MAPLE - HEDGE - 'STREETSIDE"	2-2.5" CAL	B&B	
LS	1	LIQUIDAMBAR STYRICIFLUA	SWEETGUM	2-2.5" CAL	B&B	
MS	4	MALUS 'SPRING SNOW'	CRABAPPLE - 'SPRING SNOW'	2-2.5" CAL	B&B	
NS	1	NYSSA SYLVATICA - 'FIRESTARTER'	TUPELO - 'FIRESTARTER'	2-2.5" CAL	B&B	
PS	3	PRUNUS SARGENTII 'PINK FLAIR'	CHERRY - 'PINK FLAIR'	2-2.5" CAL	B&B	
TC	2	TILIA CORDATA 'GREENSPIRE'	LINDEN - LITTLELEAF - 'GREENSPIRE'	2-2.5" CAL	B&B	
ZS	3	ZELKOVA SERRATA 'CITY SPRITE'	ZELKOVA - 'CITY SPRITE'	2-2.5" CAL	B&B	

0 20 50 100
SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

GUARDRAIL TANGENT END TREATMENT, TL-2 STA 2+93.8 RT
GUARDRAIL, TL-2 (SINGLE FACED - DEEP POST) STA 3+18.6 TO 3+59.0 RT
TRAILING ANCHORAGE STA 3+59.0 RT

TRAFFIC SIGNAL CONDUIT

NONE

CURB TIE & GRADING

39

LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION PLAN

93

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE & UTILITY PLANS

50 & 61

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	22	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN

PLANT LIST

KEY	QU.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	NOTES
TREES						
AC	3	ACER CAMPSTRE 'STREETSIDE'	MAPLE - HEDGE - 'STREETSIDE"	2-2.5" CAL	B&B	
LS	1	LIQUIDAMBAR STYRICIFLUA - 'ROUNDILOBA'	SWEETGUM - 'ROTUNDILOBA'	2-2.5" CAL	B&B	
MS	2	MALUS 'SPRING SNOW'	CRABAPPLE - 'SPRING SNOW'	2-2.5" CAL	B&B	
PS	6	PRUNUS SARGENTII 'PINK FLAIR'	CHERRY - 'PINK FLAIR'	2-2.5" CAL	B&B	
ZS	1	ZELKOVA SERRATA 'CITY SPRITE'	ZELKOVA - 'CITY SPRITE'	2-2.5" CAL	B&B	

NOTE: SCHEDULE OF R&D FENCE SHALL BE COORDINATED WITH #362 BOSTON ROAD OWNER. THE EXISTING FENCE SHALL BE MAINTAINED UNTIL OWNER IS READY TO INSTALL NEW FENCE.

NOTE: TEMPORARY R&R EXISTING WALL FOR UNDERGROUNDING CONDUIT INSTALLATION WORK. THE CONTRACTOR SHOULD NOTIFY OWNER AND PAY SPECIAL ATTENTION DURING R&R WALL PER SPECIAL PROVISIONS AND HISTORICAL COMMISSION DOCUMENT.

NOTE: IF GRADING IMPACTS ROOTS AND IT IS DETERMINED THAT TREE(S) NEED TO BE REMOVED, THE CONTRACTOR SHOULD NOTIFY TOWN AND CONFIRM BEFORE REMOVING.

SCALE: 1" = 20'

CONTINUED ON SHEET NO. 21

CONTINUED ON SHEET NO. 23

FOR PROFILE SEE SHEET 31 & 34

605178_HDI(4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:43 PM

HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	CURB TIE & GRADING	WATER SUPPLY ALTERATIONS	DRAINAGE & UTILITY PLANS	LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION PLAN
NONE	NONE	40	NONE	51 & 62	94

BILLERICA
BOSTON ROAD (ROUTE 3A)

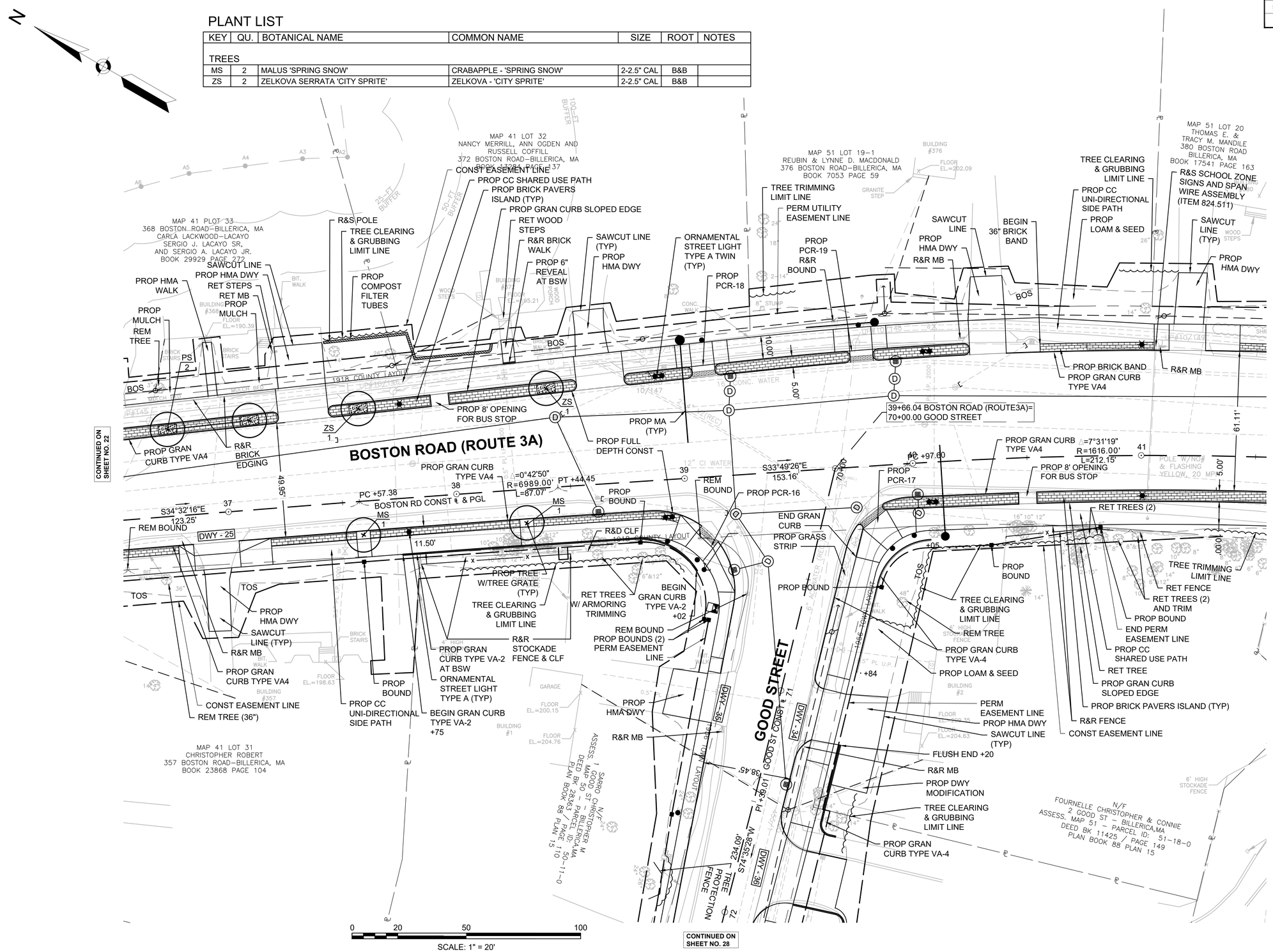
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	23	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN

605178_HDU4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:44 PM

PLANT LIST

KEY	QU.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	NOTES
TREES						
MS	2	MALUS 'SPRING SNOW'	CRABAPPLE - 'SPRING SNOW'	2-2.5" CAL	B&B	
ZS	2	ZELKOVA SERRATA 'CITY SPRITE'	ZELKOVA - 'CITY SPRITE'	2-2.5" CAL	B&B	



CONTINUED ON SHEET NO. 22

CONTINUED ON SHEET NO. 24

CONTINUED ON SHEET NO. 28

FOR PROFILE SEE SHEET 31

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

CURB TIE & GRADING
41

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE & UTILITY PLANS
52 & 63

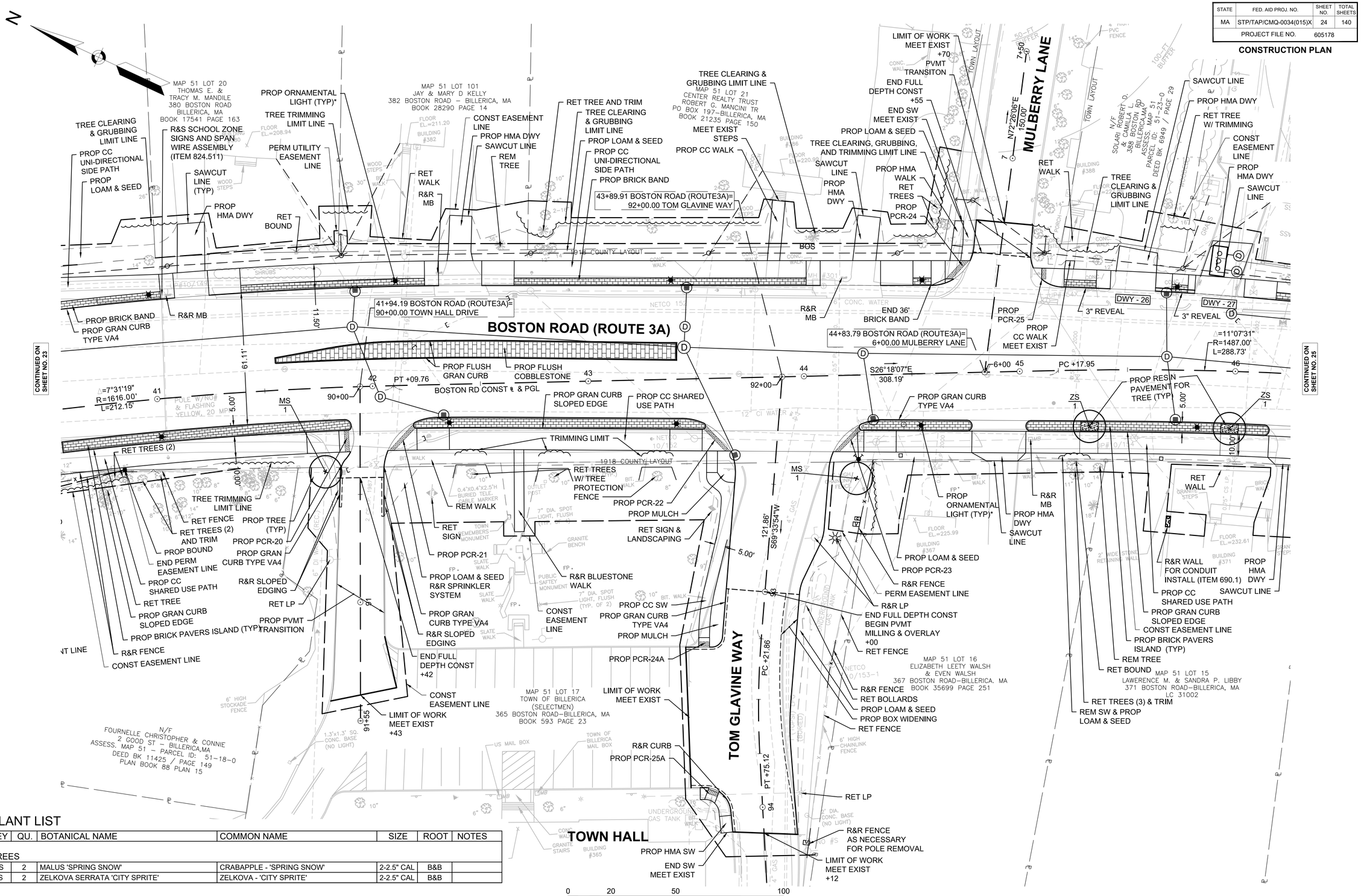
LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION PLAN
95

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	24	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN

605178_HDW4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:45 PM



PLANT LIST

KEY	QU.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	NOTES
TREES						
MS	2	MALUS 'SPRING SNOW'	CRABAPPLE - 'SPRING SNOW'	2-2.5" CAL	B&B	
ZS	2	ZELKOVA SERRATA 'CITY SPRITE'	ZELKOVA - 'CITY SPRITE'	2-2.5" CAL	B&B	

FOR PROFILE SEE SHEET 32

HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	CURB TIE & GRADING	WATER SUPPLY ALTERATIONS	DRAINAGE & UTILITY PLANS	LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION PLAN
NONE	NONE	42	NONE	53 & 64	96

BILLERICA
BOSTON ROAD (ROUTE 3A)

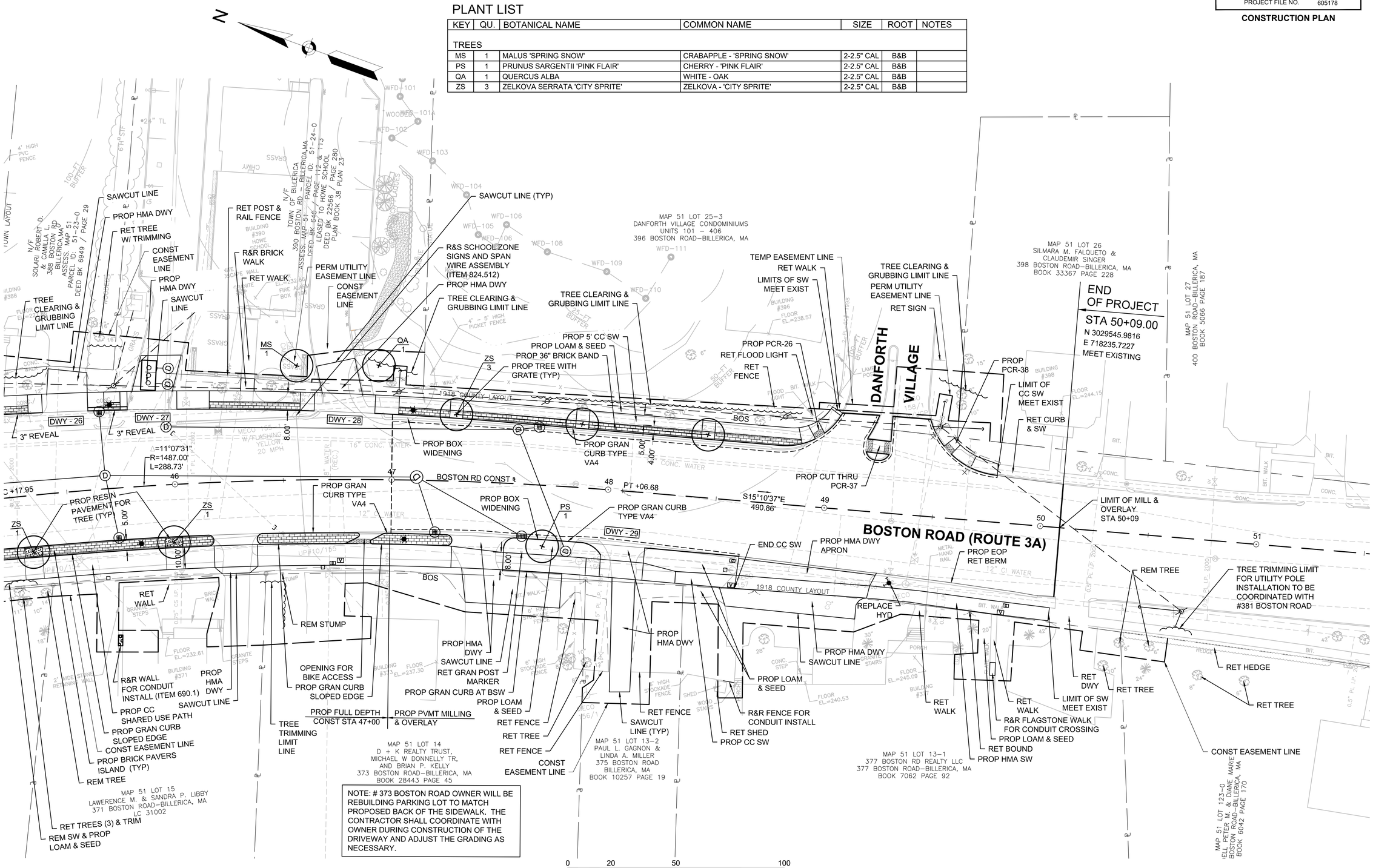
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	25	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN

605178_HDU4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:45 PM

PLANT LIST

KEY	QU.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	NOTES
TREES						
MS	1	MALUS 'SPRING SNOW'	CRABAPPLE - 'SPRING SNOW'	2-2.5" CAL	B&B	
PS	1	PRUNUS SARGENTII 'PINK FLAIR'	CHERRY - 'PINK FLAIR'	2-2.5" CAL	B&B	
QA	1	QUERCUS ALBA	WHITE - OAK	2-2.5" CAL	B&B	
ZS	3	ZELKOVA SERRATA 'CITY SPRITE'	ZELKOVA - 'CITY SPRITE'	2-2.5" CAL	B&B	



FOR PROFILE SEE SHEET 32

HIGHWAY GUARD DETAILS

TANGENT END TREATMENT STA 52+01.6 RT
GUARDRAIL, TL-2 (SINGLE FACED) STA 52+01.6 TO 52+84.0 RT
TRAILING ANCHORAGE STA 52+84.0 RT

TRAILING ANCHORAGE STA 53+51.5 LT
GUARDRAIL - CURVED, TL-2 (SINGLE FACED) 52+51.5 LT TO 54+34.6 LT
TRAILING ANCHORAGE STA 54+34.6 LT

TRAFFIC SIGNAL CONDUIT
NONE

CURB TIE & GRADING
43

WATER SUPPLY ALTERATIONS
54

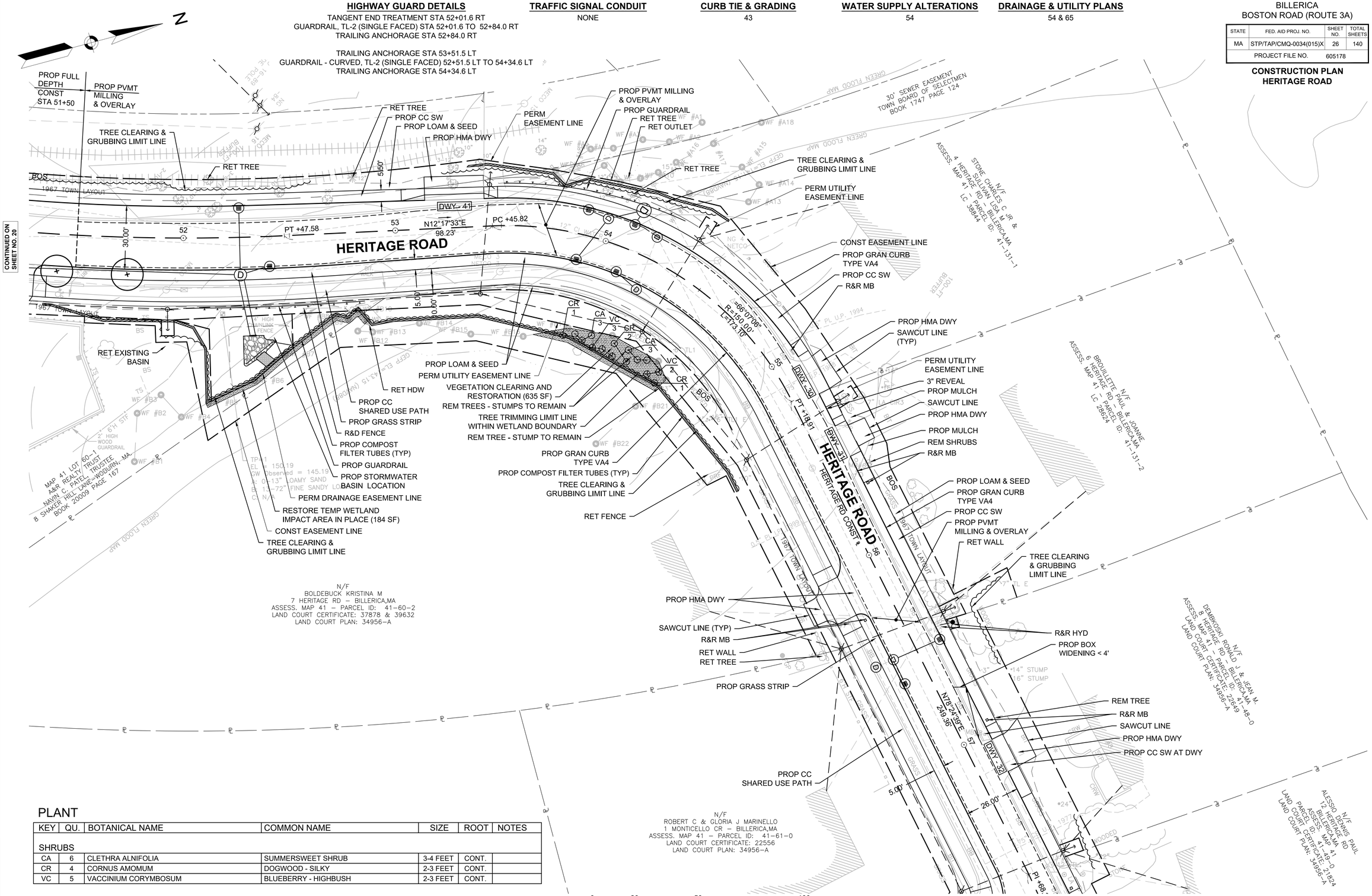
DRAINAGE & UTILITY PLANS
54 & 65

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	26	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN
HERITAGE ROAD

605178_HDU4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:46 PM



PLANT

KEY	QU.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	NOTES
SHRUBS						
CA	6	CLETHRA ALNIFOLIA	SUMMERSWEET SHRUB	3-4 FEET	CONT.	
CR	4	CORNUS AMOMUM	DOGWOOD - SILKY	2-3 FEET	CONT.	
VC	5	VACCINIUM CORYMBOSUM	BLUEBERRY - HIGHBUSH	2-3 FEET	CONT.	

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

CURB TIE & GRADING
44

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE & UTILITY PLANS
55 & 66

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	27	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN
HERITAGE ROAD

605178_HDQ4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:47 PM

CONTINUED ON SHEET NO. 26

N

MARSHALL MIDDLE SCHOOL

N/F
DEMBKOSKI RONALD J & JEAN M.
8 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–48–0
LAND COURT CERTIFICATE: 22649
LAND COURT PLAN: 34956–A

N/F
ALESSIO DENNIS PAUL
12 HERITAGE RD
BILLERICA,MA
ASSESS. MAP 41
PARCEL ID: 41–49–0
LAND COURT CERTIFICATE: 21824
LAND COURT PLAN: 34956–A

N/F
JACMAR CONSTRUCTION
LAND COURT CERTIFICATE: 17188

N/F
DIMATTEO JASON P. & ALISHA D.
14 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–50–0
DEED BK 11361 / PAGE 178
LAND COURT CERTIFICATE: 193936
LAND COURT PLAN: 31951–B

N/F
LEVASSEUR DAVID R.
16 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–51–0
LAND COURT CERTIFICATE: 30708
LAND COURT PLAN: 31951–B

N/F
SENG SOKLEANG
18 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–52–0
LAND COURT CERTIFICATE: 39175
LAND COURT PLAN: 31951–B

N/F
SASSER LINDA C.
17 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–69–0
LAND COURT CERTIFICATE: 34710
LAND COURT PLAN: 31951–A

N/F
ROBERT C & GLORIA J MARINELLO
MONTICELLO CR – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–67–0
LAND COURT CERTIFICATE: 22356
LAND COURT PLAN: 34956–A

N/F
THE PORCARO FAMILY TRUST & JOHN A. AND SUSANN E. POCARO, TRUSTEES
2 MONTICELLO CR – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–66–0
LAND COURT CERTIFICATE: 291821
LAND COURT PLAN: 34956–A

N/F
ERIC JAMES RICHARD & HEATHER A. MAGEE
1 MOUNT VERNON AV – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–67–0
LAND COURT CERTIFICATE: 42451
LAND COURT PLAN: 34956–A

HERITAGE ROAD

MONTICELLO CIRCLE

MT VERNON AVENUE

1967 TOWN LAYOUT

PERM UTILITY EASEMENT LINE
TREE CLEARING, GRUBBING, AND TRIMMING LIMIT LINE
R&R MB
TREE CLEARING & GRUBBING LIMIT, AND TRIMMING LINE
REM VEGETATION
RET TREE
SAWCUT LINE
PROP HMA DWY
CONST EASEMENT LINE
PROP GRAN CURB TYPE VA4
PROP CC SW
REM TREE
R&R FENCE
BOS
RET TREE
PROP HMA CURB TYPE 2
PROP PVMT MILLING & OVERLAY
PROP HMA DWY APRON
END SHARED USE PATH MEET EXIST PATH
PROP PCR-30
SAWCUT LINE (TYP)
PROP HMA DWY
REM TREE
RET MB
RET CURB
LIMIT OF WORK MEET EXIST +17
END HMA CURB
PROP PCR-39
PROP LOAM & SEED
PROP CC SIDEWALK AT DWY
PERM UTILITY EASEMENT LINE
PROP CC SIDEWALK
PROP LOAM & SEED
PROP PCR-29
CONST EASEMENT LINE
TREE CLEARING & GRUBBING LIMIT LINE
RET SHRUBS
PROP GRASS STRIP
R&R BOUND
PROP PCR-28
PROP HMA SIDEWALK
RET TREE
END SW MEET EXIST
RET TREE AND TRIM
LIMIT OF WORK MEET EXIST
TREE CLEARING & GRUBBING LIMIT LINE
PROP CC SHARED USE PATH
PROP PCR-27
BEGIN HMA CURB
END SW MEET EXIST

DWY - 32
DWY - 33
N78°24'39"E 249.36'
PI +68.28
N80°10'19"E 88.63'
PI +56.91
N78°16'51"E 82.47'
PI +19.37
N79°53'23"E 46.42'
PC +65.79
Δ=10°15'43"
R=180.00'
L=32.24'
PT +98.03
N69°37'40"E 144.99'
26.00'
5.00'
10.00'
30.00'
21.4'
61
60
59
58
57

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 33

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

CURB TIE & GRADING
45

WATER SUPPLY ALTERATIONS
NONE

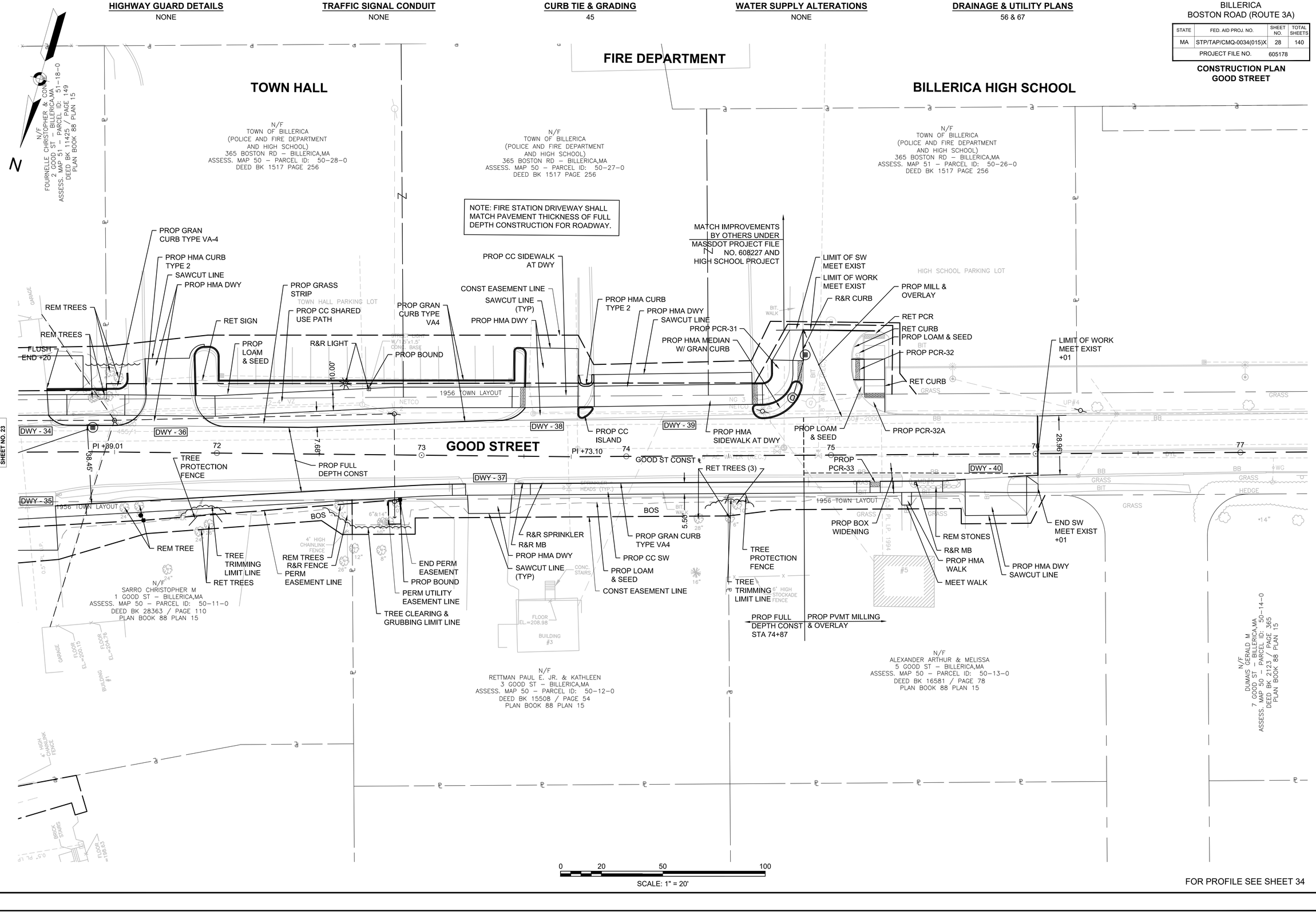
DRAINAGE & UTILITY PLANS
56 & 67

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	28	140
PROJECT FILE NO.	605178		

CONSTRUCTION PLAN
GOOD STREET

605178_HDW4722_CONST PLAN).DWG Plotted on 7-Mar-22 8:48 PM

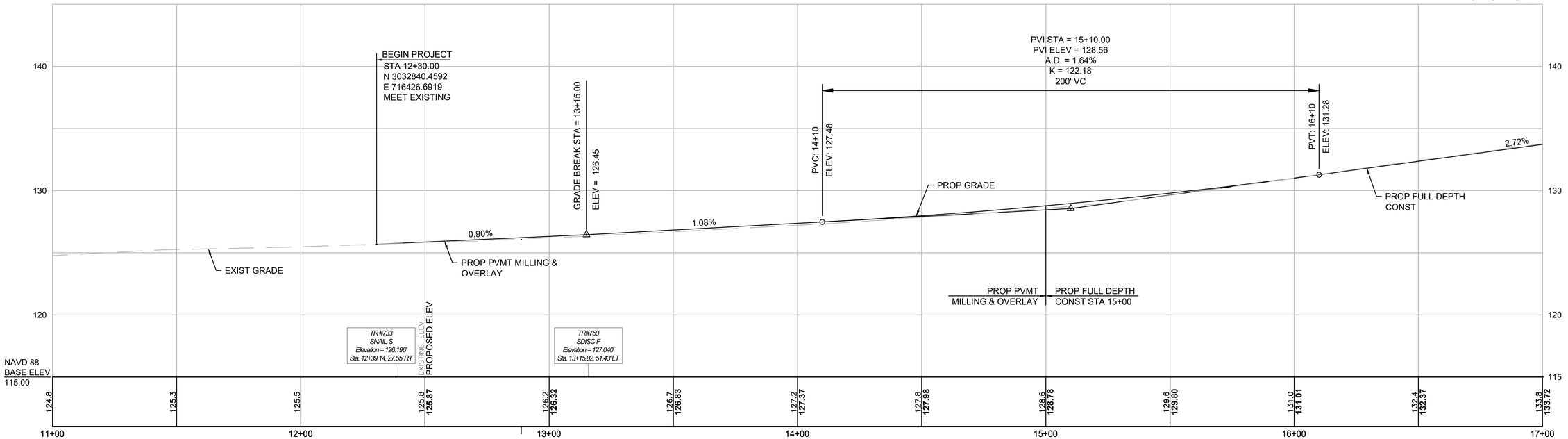


FOR PROFILE SEE SHEET 34

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	29	140
PROJECT FILE NO.	605178		

PROFILE
BOSTON ROAD

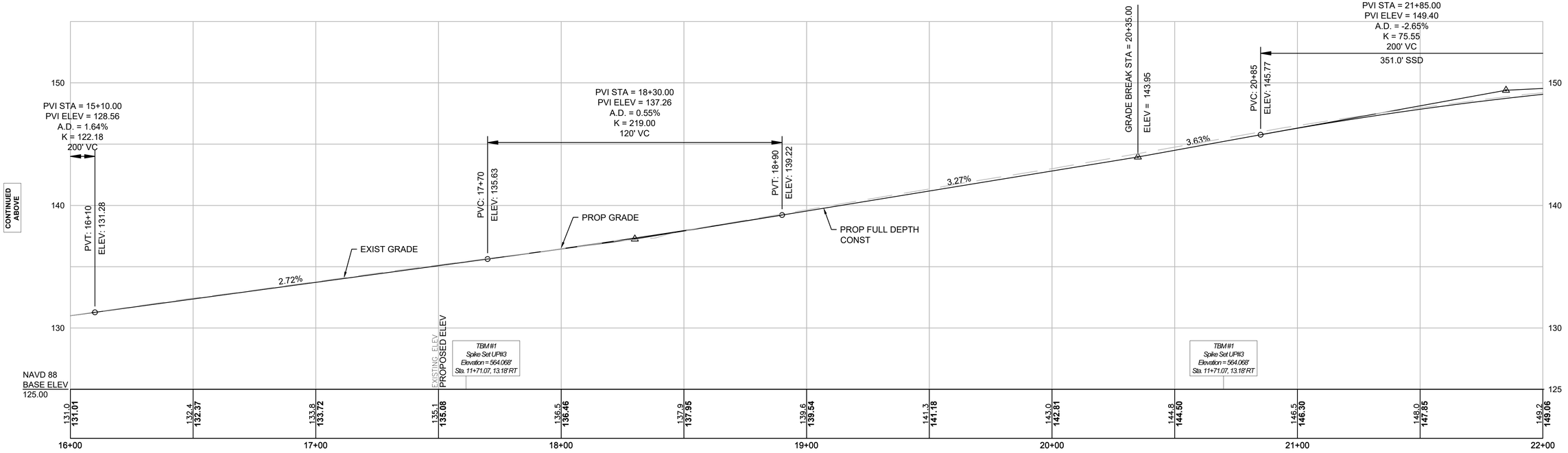


CONTINUED BELOW

STA. 12+88.77 BOSTON ROAD (ROUTE 3A) CONST. ℄ =
STA. 00+00.00 SIMMONS LANE CONST. ℄

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 18-19

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



CONTINUED ABOVE

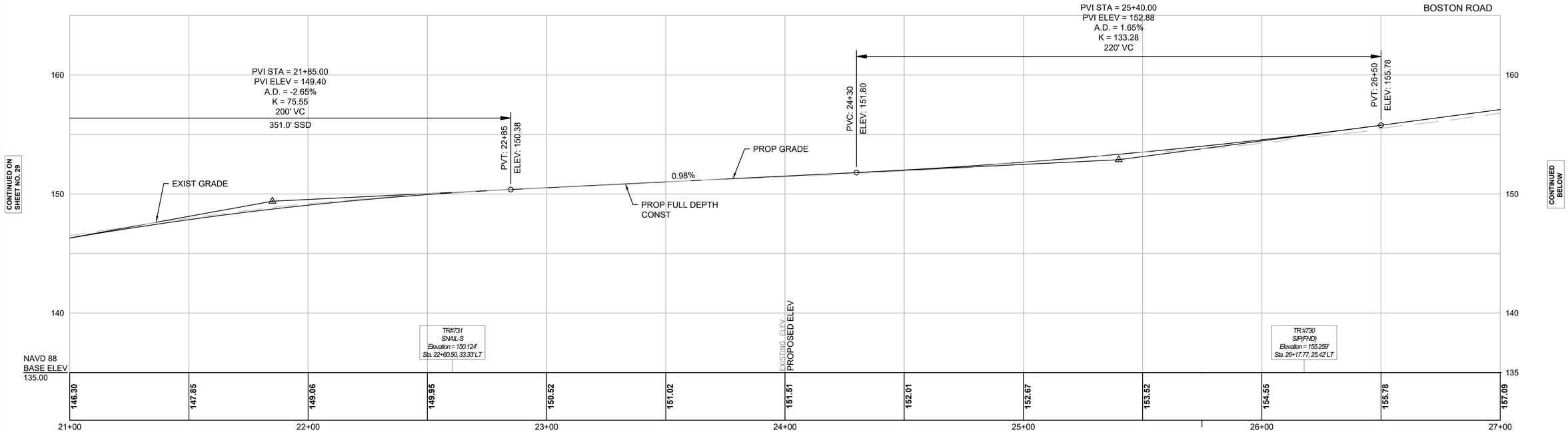
CONTINUED ON SHEET NO. 30

605178_HD(4722_PROFILE).DWG Plotted on 7-Mar-22 8:54 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	30	140
PROJECT FILE NO.	605178		

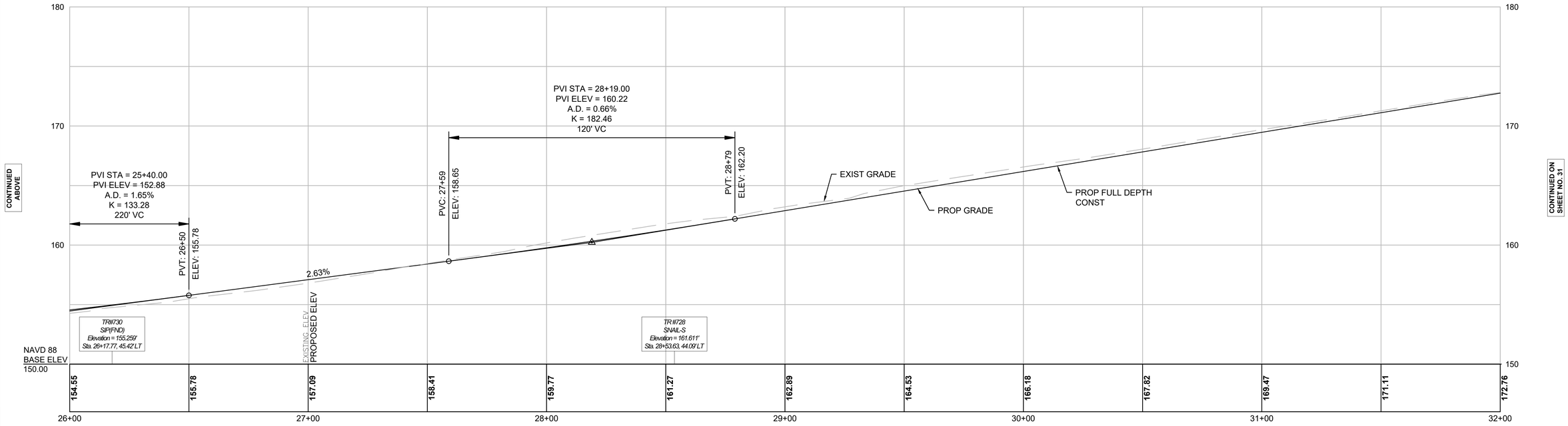
PROFILE
BOSTON ROAD



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 20 & 21

STA. 25+74.90 BOSTON ROAD (ROUTE 3A) CONST. ℄ =
STA. 50+00.00 HERITAGE ROAD CONST. ℄

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

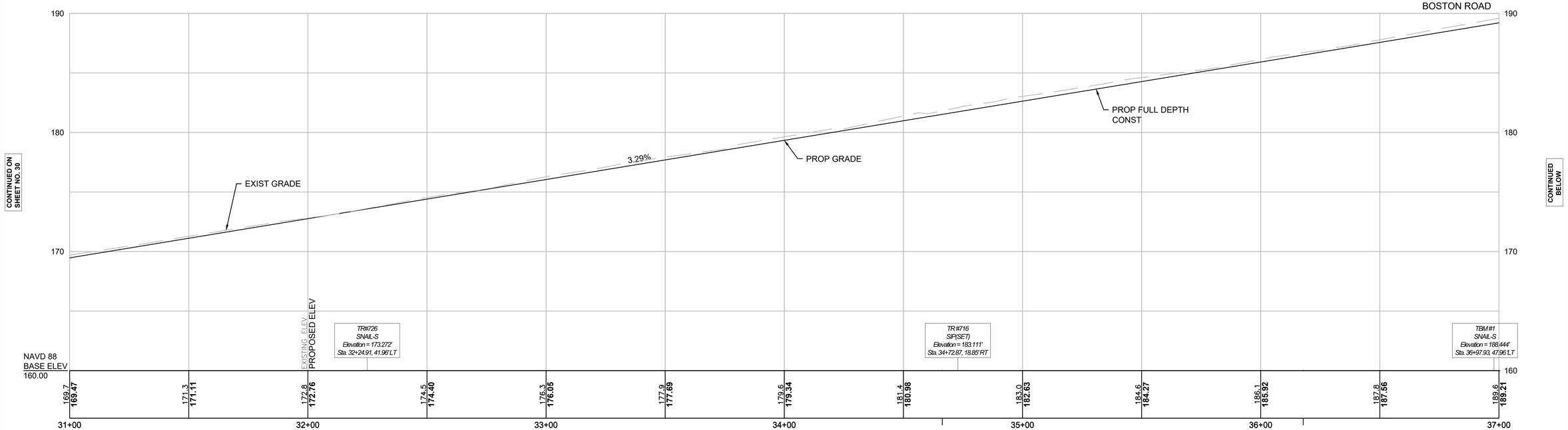


605178_HD(4722_PROFILE).DWG Plotted on 7-Mar-22 8:54 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	31	140
PROJECT FILE NO.	605178		

PROFILE
BOSTON ROAD

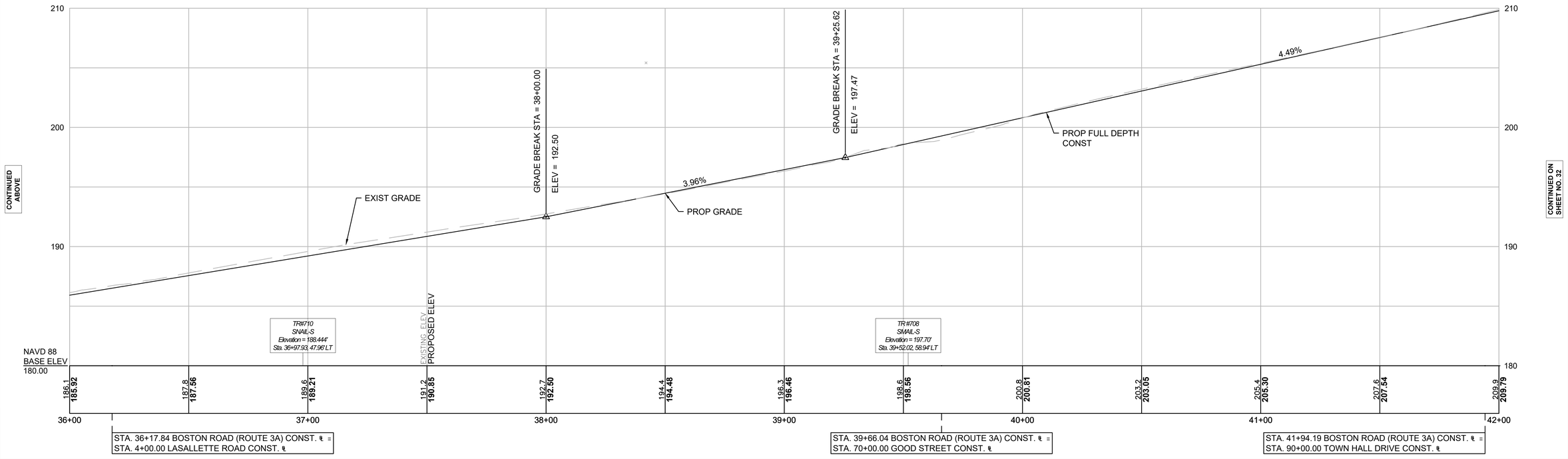


FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 22-23

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

STA. 34+66.32 BOSTON ROAD (ROUTE 3A) CONST. ℄ =
STA. 1+00.00 FARMERS LANE-EG CONST. ℄

STA. 36+17.84 BOSTON ROAD (ROUTE 3A) CONST. ℄ =
STA. 4+00.00 LASALLETTE ROAD CONST. ℄



STA. 36+17.84 BOSTON ROAD (ROUTE 3A) CONST. ℄ =
STA. 4+00.00 LASALLETTE ROAD CONST. ℄

STA. 39+66.04 BOSTON ROAD (ROUTE 3A) CONST. ℄ =
STA. 70+00.00 GOOD STREET CONST. ℄

STA. 41+94.19 BOSTON ROAD (ROUTE 3A) CONST. ℄ =
STA. 90+00.00 TOWN HALL DRIVE CONST. ℄

605178_HD(4722_PROFILE).DWG Plotted on 7-Mar-22 8:55 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	32	140
PROJECT FILE NO.	605178		

PROFILE
BOSTON ROAD

605178_HD(4722_PROFILE).DWG Plotted on 7-Mar-22 8:55 PM

CONTINUED ON SHEET NO. 31

CONTINUED BELOW

PVI STA = 47+05.00
PVI ELEV = 233.36
A.D. = -2.18%
K = 137.59
300' VC
454.8' SSD

PVC: 45+55
ELEV: 226.29

GRADE BREAK STA = 43+00.00
ELEV = 214.28

EXIST GRADE

PROP GRADE

PROP FULL DEPTH CONST

4.49%

4.71%

NAVD 88
BASE ELEV
205.00

TR #703
SNAIL-S
Elevation = 213.561'
Sta. 43+05.02, 35.36' RT

TR #704
SNAIL-S
Elevation = 221.696'
Sta. 44+77.83, 98.05' LT

TBM #268
SNAIL-S
Elevation = 224.472'
Sta. 45+12.28, 39.61' RT

EXISTING ELEV
PROPOSED ELEV

205.4	207.6	209.9	212.3	214.7	217.2	219.0	221.7	224.1	226.3	228.4	230.4	232.3
205.30	**207.54**	**209.79**	**212.03**	**214.28**	**216.64**	**218.99**	**221.35**	**223.70**	**226.06**	**228.34**	**230.44**	**232.36**

41+00 42+00 43+00 44+00 45+00 46+00 47+00

STA. 41+94.19 BOSTON ROAD (ROUTE 3A) CONST. ℄ = STA. 90+00.00 TOWN HALL DRIVE CONST. ℄

STA. 43+89.91 BOSTON ROAD (ROUTE 3A) CONST. ℄ = STA. 92+00.00 TOM GLAVINE WAY CONST. ℄

STA. 44+83.79 BOSTON ROAD (ROUTE 3A) CONST. ℄ = STA. 6+00.00 MULBERRY LANE CONST. ℄

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 24 & 25

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

CONTINUED ABOVE

END PROJECT
STA 50+09.00
N 3029545.9816
E 718235.7227
MEET EXISTING

PVI STA = 47+05.00
PVI ELEV = 233.36
A.D. = -2.18%
K = 137.59
300' VC
454.8' SSD

PVT: 48+55
ELEV: 237.15

GRADE BREAK STA = 49+50.00
ELEV = 239.56

EXIST GRADE

2.23%

2.53%

PROP PVMT MILLING & OVERLAY

PROP GRADE

PROP FULL DEPTH CONST

PROP FULL DEPTH CONST STA 47+00

PROP PVMT MILLING & OVERLAY

NAVD 88
BASE ELEV
220.00

TR #260
SNAIL-S
Elevation = 239.849'
Sta. 49+77.67, 28.60' LT

EXISTING ELEV
PROPOSED ELEV

228.4	230.4	232.3	234.0	235.6	237.0	238.3	239.6	240.7	241.8	242.9	244.1	245.0
228.34	**230.44**	**232.36**	**234.10**	**235.65**	**237.03**	**238.29**	**239.56**	**240.67**				

46+00 47+00 48+00 49+00 50+00 51+00 52+00

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	33	140
PROJECT FILE NO.	605178		

PROFILE
HERITAGE ROAD

CONTINUED ON SHEET NO. 32

CONTINUED BELOW

BOSTON ROAD

GRADE BREAK STA = 50+30.39
ELEV = 154.02

EXIST GRADE

-2.02%

PROP GRADE

PROP FULL DEPTH CONST | PROP PVMT MILLING & OVERLAY STA 50+95

GRADE BREAK STA = 52+59.63
ELEV = 149.40

-2.30%

PVC: 53+20.13
ELEV: 148.01

PROP PVMT MILLING & OVERLAY

LOW POINT ELEV = 147.00
LOW POINT STA = 54+07.75
PVI STA = 54+20.13
PVI ELEV = 145.71
A.D. = 5.25%
K = 38.10
200' VC
206.9' HSD

PVT: 55+20.13
ELEV: 148.66

TR#22128
BM SPK SET UP 1 FT
Elevation = 147.932'
Sta. 54+47.38, 16.87' LT

NAVD 88
BASE ELEV
140.00

EXISTING ELEV.
PROPOSED ELEV

50+00	51+00	52+00	53+00	54+00	55+00	56+00
153.8	153.3 / **153.63**	152.2 / **152.62**	151.1 / **151.61**	150.2 / **150.60**	149.3 / **149.60**	148.3 / **148.47**	147.4 / **147.44**	146.6 / **147.01**	147.1 / **147.24**	148.1 / **148.12**	149.4 / **149.54**	150.8 / **151.02**

STA. 50+00.00 HERITAGE ROAD CONST. ℄ =
STA. 25+75.45 BOSTON ROAD (ROUTE 3A) CONST. ℄

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 26 & 27

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

CONTINUED ABOVE

LOW POINT ELEV = 147.00
LOW POINT STA = 54+07.75
PVI STA = 54+20.13
PVI ELEV = 145.71
A.D. = 5.25%
K = 38.10
200' VC
206.9' HSD

PVT: 55+20.13
ELEV: 148.66

2.95%

EXIST GRADE

PROP PVMT MILLING & OVERLAY

PROP GRADE

PVC: 58+53.13
ELEV: 158.48

PVI STA = 59+33.13
PVI ELEV = 160.84
A.D. = 1.88%
K = 84.95
160' VC

END PROJECT
STA. 60+17.00
N 3032229.4785
E 717851.9866
MEET EXISTING

PVT: 60+13.13
ELEV: 164.71

4.83%

GRADE BREAK STA = 60+18.13
ELEV = 164.95

NAVD 88
BASE ELEV
145.00

EXISTING ELEV.
PROPOSED ELEV

55+00	56+00	57+00	58+00	59+00	60+00	61+00
148.1 / **148.12**	149.4 / **149.54**	150.8 / **151.02**	152.2 / **152.49**	153.8 / **153.97**	155.3 / **155.44**	156.8 / **156.92**	158.4 / **158.39**	159.9 / **160.00**	161.8 / **161.89**	164.1 / **164.09**	166.4	168.7

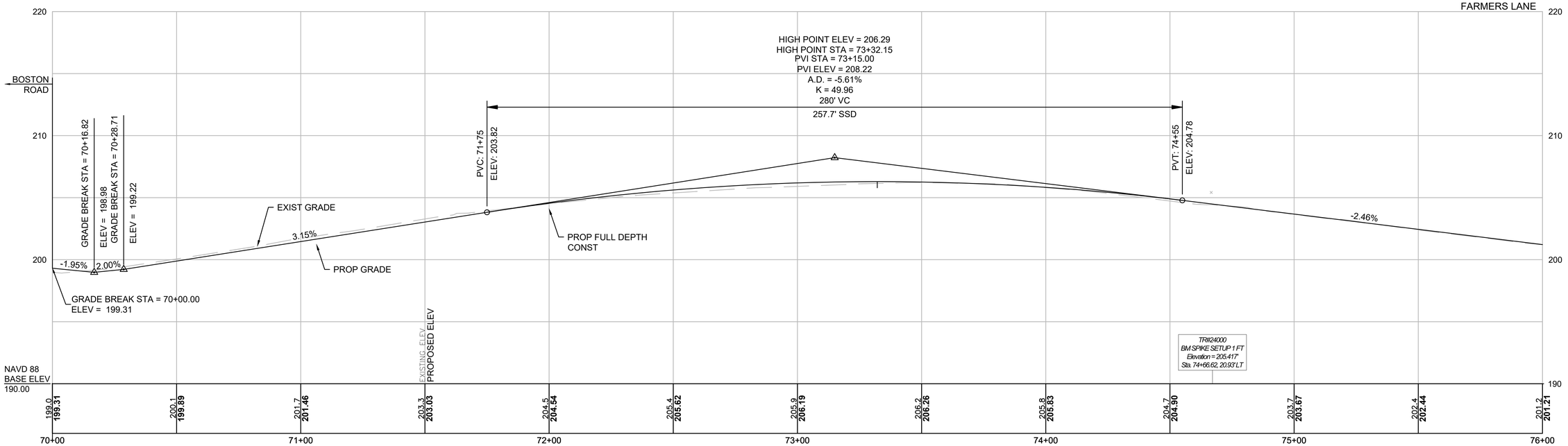
605178_HD(4722_PROFILE).DWG Plotted on 7-Mar-22 8:55 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	34	140
PROJECT FILE NO.	605178		

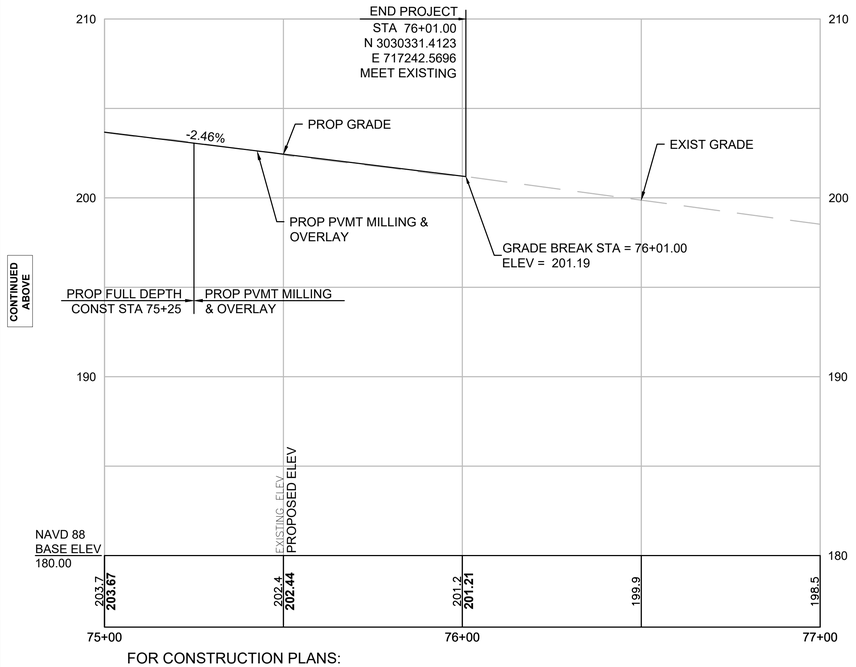
PROFILE GOOD STREET & FARMERS LANE

GOOD STREET

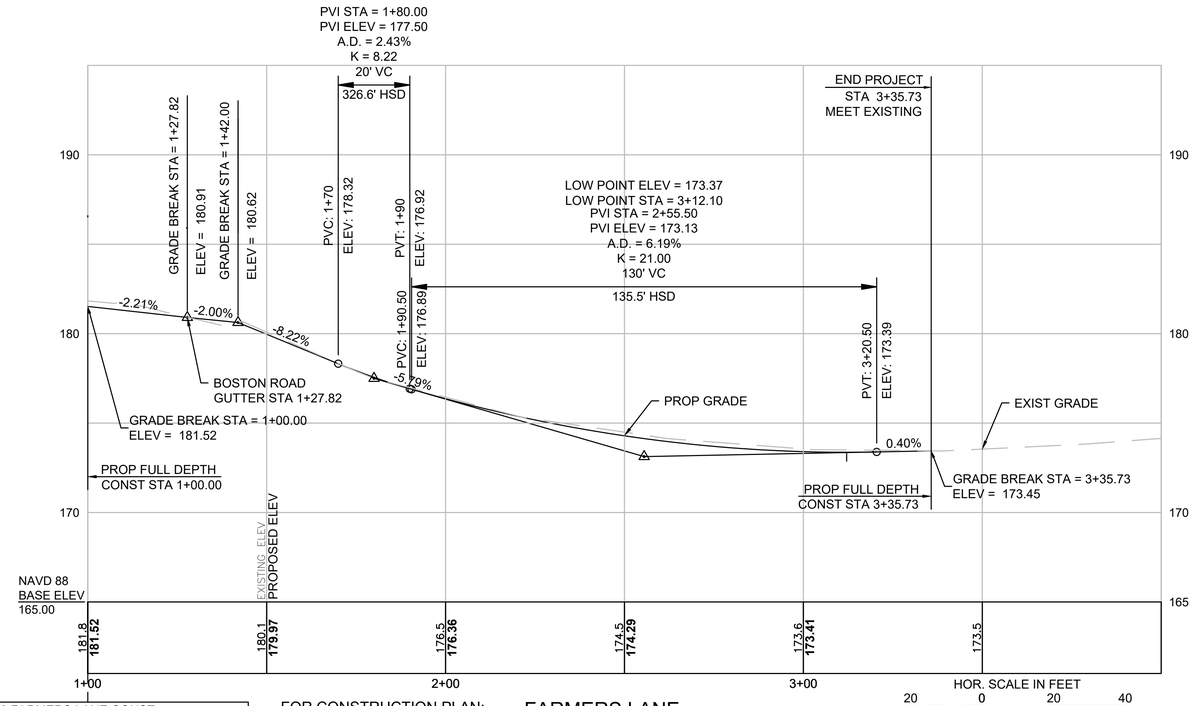


STA. 70+00.00 GOOD STREET CONST. ℄ =
STA. 39+66.59 BOSTON ROAD (ROUTE 3A) CONST. ℄

GOOD STREET



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 23 & 28



STA. 1+00.00 FARMERS LANE CONST. ℄ =
STA. 34+66.87 BOSTON ROAD (ROUTE 3A) CONST. ℄

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 22

FARMERS LANE

605178_HD(4722_PROFILE).DWG Plotted on 7-Mar-22 8:55 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	35	140
	PROJECT FILE NO. 605178		

CURB TIE & GRADING PLAN

605178_HDJ(4722_TIE).DWG Plotted on 7-Mar-2022 9:05 PM

BOSTON ROAD (ROUTE3A) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	10+00.00	3033055.8505	716346.0283		S20°31'51"E 395.29'	13+95.29	3032685.6723	716484.6592
C1	13+95.29	3032685.6723	716484.6592	R=1200.00' Δ=5°24'02" L=113.11' T=56.60'		15+08.39	3032581.7718	716529.2579
C2	15+08.39	3032581.7718	716529.2579	R=1513.00' Δ=5°49'54" L=153.99' T=77.06'		16+62.39	3032446.9453	716603.5241

SIMMONS LANE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L26	0+00.00	3032785.4198	716447.3040		S84°06'05"W 100.00'	1+00.00	3032775.1428	716347.8319

Point Table				
Point #	Northing	Easting	Elevation	Raw Description
27000	3032568.737	716577.431	129.146	T.MAGN

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C14	56°49'52"	28.00	27.77	15.15
C15	74°04'17"	30.00	38.78	22.64
C16	6°32'58"	1800.00	205.76	102.99
C17	5°47'04"	800.00	80.77	40.42
C20	51°59'54"	20.00	18.15	9.75
C22	50°09'49"	20.00	17.51	9.36
C23	0°25'19"	1500.00	11.04	5.52
C24	4°34'54"	100.00	8.00	4.00
C26	3°00'25"	1802.00	94.57	47.30
C28	50°29'59"	20.00	17.63	9.43

N/F
KRAJEWSKI MARIUSZ
316 BOSTON RD – N BILLERICA,MA
ASSESS. MAP 31 – PARCEL ID: 31–38–0
DEED BK 23810 / PAGE 124
PLAN BOOK 78 PLAN 24

N/F
POWERS JOSEPH T
318 BOSTON RD – N BILLERICA,MA
ASSESS. MAP 31 –
PARCEL ID: 31–37–0
DEED BK 1538 / PAGE 131

MAP 41 LOT 6
ARTHUR J. & BETH E. LYNCH
324 BOSTON ROAD–BILLERICA, MA
BOOK 17415 PAGE 146

MAP 41 LOT 8–2
S&N REALTY, LLC
29 N. BROADWAY, SALEM, NH
BOOK 10442 PAGE 228

S&N REALTY, LLC
BOOK 2357 PAGE 462

S&N REALTY, LLC
BOOK 2357 PAGE 462

N/F
313 BOSTON ROAD REALTY LLC
313 BOSTON RD – WESTFORD,MA
ASSESS. MAP 41 – PARCEL ID: 41–3–1
DEED BK 29546 / PAGE 135
PLAN OF LAND IIN BILLERICA, MILLER&NYLANDER
DATED 3–19–1949
PLAN BOOK 75 PLAN 54

MAP 41 LOT 5
CHARLES C. HUR
315 BOSTON ROAD – BILLERICA, MA
BOOK 21220 PAGE 206

MAP 41 LOT 4
STEP FIVE REALTY TRUST
PHILIP J. MALONSON, TRUSTEE
317 BOSTON ROAD
BILLERICA, MA
BOOK 11601 PAGE 295

BOSTON ROAD (ROUTE 3A)

SIMMONS LANE

1918 COUNTY LAYOUT

TOWN LAYOUT

27000
N: 3032568.737'
E: 716577.431'
EL: 129.146'
MAG NL(SET)

20
N: 3033034.495'
E: 716313.590'
EL: 124.985'
MAG NL(SET)

PC+99.65 30.64 LT
+77.04 31.27 LT
PCC+82.50 30.33 LT
PT+98.68 38.10 LT
+00.66 40.54 LT
PC+38.87 38.80 LT
+36.81 41.12 LT
PCC+54.58 31.89 LT
PCC+65.86 31.87 LT
PCC+03.90 31.53 LT
PROP PCR-5
PROP PCR-34
PROP PCR-35
PROP PCR-3
PROP PCR-4
PROP PCR-1
PROP PCR-2
PC +95.29
PCC +08.39
+41.77
PCC+45.63 26.86 RT
PT+60.91 48.72 RT
PC+88.73 47.33 RT
PT+17.12 24.97 RT
PC+39.54 24.50 RT
PT+42.88 17.56 RT
PCC+75.19 19.02 RT
PC+67.30 18.84 RT
(129.51) (129.15)
(124.33) (124.68)
125.03
124.52
124.95
125.85
128.07
129.26
130.48
16.0'
18.0'
L1
L26
C1
C2
C14
C15
C16
C17
C20
C22
C23
C24
C26
C28

DISC (FND) MASS GEODETIC #417X
6 X 6 GRN BND (FND) LOC CL BACK LEANING SLIGHTLY
DRILL HOLE (SET) ELEV. = 127.50'
PK NAIL (SET) IN DRILL HOLE MASS DOT GPS POINT
POINT SET FOR MASS DOT GPS CONTROL
6 X 6 GRN BND (FND) LOCATED CL BACK
NG122–84

BUILDING #318
BUILDING #324
BUILDING #328
BUILDING #313
BUILDING #315
BUILDING #317

24' WIDE EASEMENT
9' UTIL EASEM

S 66°23'00" E 110.05'
S 43°03'53" E 469.63'
N 24°21'02" W 529.27'
S 41°41'12" W 80.47'
S63°10'03"W 37.26'

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 36

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	36	140
	PROJECT FILE NO. 605178		

CURB TIE & GRADING PLAN

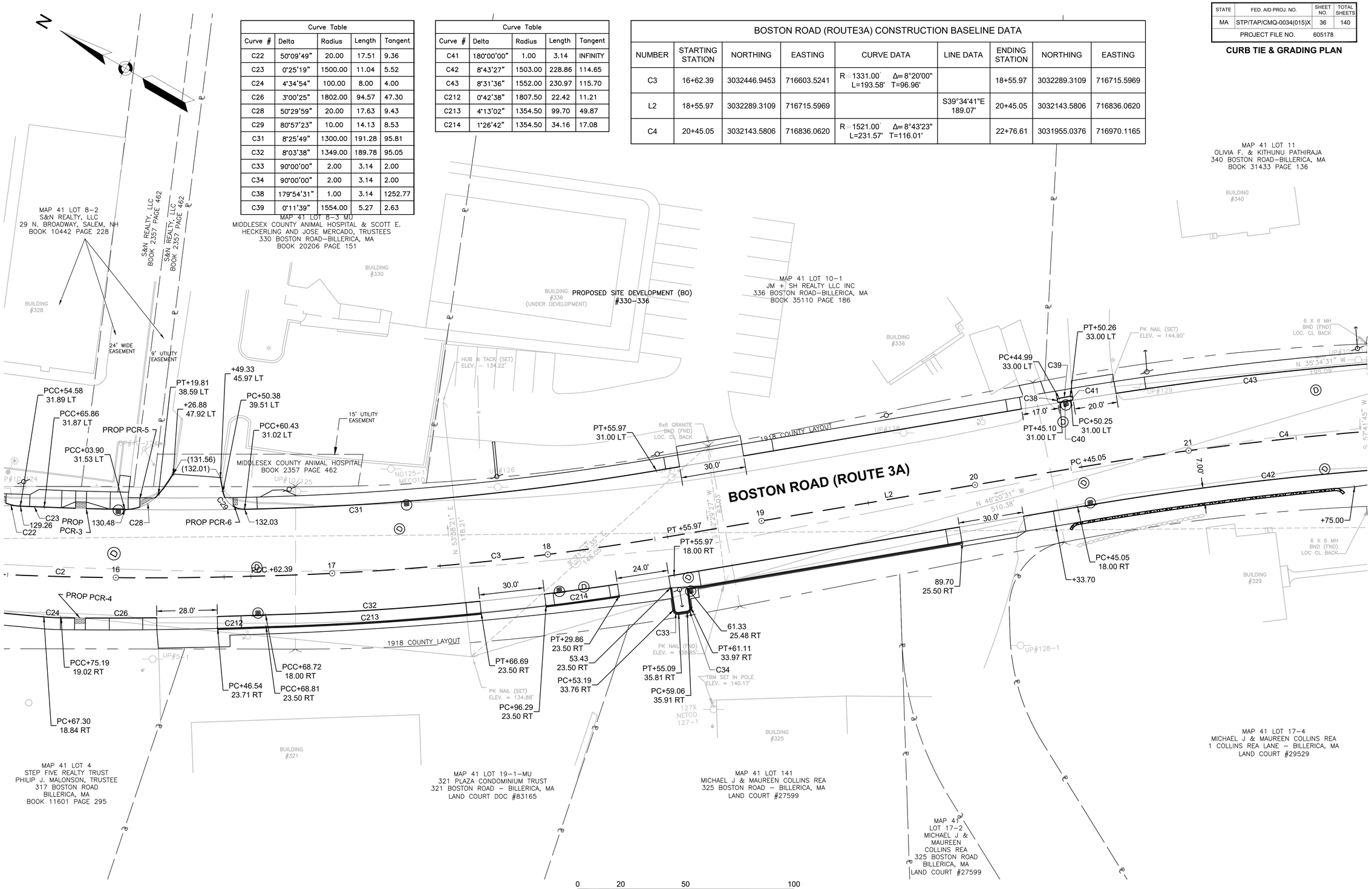
605178_HD(4722_TIE).DWG Plotted on 7-Mar-2022 9:05 PM

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C22	50°09'49"	20.00	17.51	9.36
C23	0°25'19"	1500.00	11.04	5.52
C24	4°34'54"	100.00	8.00	4.00
C26	3°00'25"	1802.00	94.57	47.30
C28	50°29'59"	20.00	17.63	9.43
C29	80°57'23"	10.00	14.13	8.53
C31	8°25'49"	1300.00	191.28	95.81
C32	8°03'38"	1349.00	189.78	95.05
C33	90°00'00"	2.00	3.14	2.00
C34	90°00'00"	2.00	3.14	2.00
C38	179°54'31"	1.00	3.14	1252.77
C39	0°11'39"	1554.00	5.27	2.63

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C41	180°00'00"	1.00	3.14	INFINITY
C42	8°43'27"	1503.00	228.86	114.65
C43	8°31'36"	1552.00	230.97	115.70
C212	0°42'38"	1807.50	22.42	11.21
C213	4°13'02"	1354.50	99.70	49.87
C214	1°26'42"	1354.50	34.16	17.08

BOSTON ROAD (ROUTE3A) CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C3	16+62.39	3032446.9453	716603.5241	R=1331.00' Δ=8°20'00" L=193.58' T=96.96'		18+55.97	3032289.3109	716715.5969
L2	18+55.97	3032289.3109	716715.5969		S39°34'41"E 189.07'	20+45.05	3032143.5806	716836.0620
C4	20+45.05	3032143.5806	716836.0620	R=1521.00' Δ=8°43'23" L=231.57' T=116.01'		22+76.61	3031955.0376	716970.1165



BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	37	140
	PROJECT FILE NO. 605178		

CURB TIE & GRADING PLAN

605178_HDI(4722_TIE).DWG Plotted on 7-Mar-2022 9:06 PM

MAP 41 LOT 11
OLIVIA F. & KITHUNU PATHIRAJA
340 BOSTON ROAD–BILLERICA, MA
BOOK 31433 PAGE 136

MAP 41 LOT 12
NSD REAL ESTATE, LLC.
BOOK 30515 PAGE 211

MAP 41 LOT 13
NSD REAL ESTATE, LLC.
BOOK 30519 PAGE 214

MAP 41 LOT 60–1
A&R REALTY TRUST
NAVIN C. PATEL, TR
8 SHAKER HILL LANE–WOBURN, MA.
BOOK 20009 PAGE 167

MAP 41 LOT 60–2
FATIMA M. BOUBEKRI
2 E ROAD – BILLERICA, MA
BOOK LC 39612

PROPOSED SITE DEVELOPMENT (BO)
#342–346

BUILDING #340
BUILDING #342
BUILDING #346
BUILDING #348
BUILDING #329
BUILDING #335

BOSTON ROAD (ROUTE 3A)

1918 COUNTY LAYOUT

149.68
PT+31.27
14.88 LT
PRC+35.83
15.05 RT
PC+30.92
20.03 RT
PC+03.28
15.02 RT
PT+95.46
20.01 RT
PC+85.83
15.16 RT
PRC+12.56
38.52 LT
PT+59.28
33.10 LT
PC+57.52
33.12 LT
PC+59.86
51.10 LT
C61
PT+61.72
43.08 LT
PC+10.12
37.95 LT
PROP PCR-10
PC+42.69
33.28 LT
PT+33.29
33.43 LT
PT+76.32
51.01 LT
PT+81.55
48.00 LT
PT+81.55
43.00 LT
PT+85.01
33.00 LT
PCC +83.71
152.02
PCC+86.53
15.03 LT
+44.23
40.01 LT
+62.23
40.00 LT
PC+16.99
31.00 LT
PT+76.61
31.00 LT
PROP PCR-9
152.32
153.85
PC+94.24
46.41 LT
PT+09.88
33.74 LT
PT+30.96
28.47 LT
154.72
PC+42.62
28.29 LT
PT+57.48
28.12 LT
PC+85.01
28.00 LT
156.14
PT+36.63
16.42 RT
PROP PCR-11
PT +83.71
PROP PCR-8
PC+47.10
29.41 RT
PC+84.37
19.05 RT
PT+99.20
33.67 RT
+99.22
34.25 RT
(153.09)
(153.40)
PT+61.69
17.77 RT
PC+80.76
17.47 RT
PC+36.70
19.92 RT
PC+43.12
16.30 RT
PT+43.18
19.80 RT
PCC+40.34
32.85 RT
PC+35.20
28.01 RT
PT+81.05
27.09 RT
PCC+76.10
32.18 RT
+85.63
18.00 RT
+16.63
18.33 RT
PT+76.61
18.00 RT
+75.00
PC +24.27
PT +76.61
PT+36.63
PT +83.71
25+74.90 BOSTON ROAD (ROUTE3A)=
50+00.00 HERITAGE ROAD

C42 C43 C4 C48 C46 C47 C50 C51 C52 C53 C54 C55 C56 C60 C61 C62 C63 C215 C216 C229 C230 C5 C49 C177 C178 C179 C180 C190

L3 L4

6 X 6 MH BND (FND) LOC. CL BACK
TBM SET IN POLE ELEV = 150.75
PK NAIL (SET) TRAV PT ELEV = 149.54
MECO 16–89 GUIDE POLE
NG 32–84
NG 131–1 PWR DWN
5/8" ROUND BOLT (FND)
CAP REBAR MARK TRAVERSE
MECO 131–1 PWR DWN
UP#17
UP#18
UP#131
UP#132
UP#133
UP#135/136
UP#137
UP#138
UP#139
UP#140
UP#141
UP#142
UP#143
UP#144
UP#145
UP#146
UP#147
UP#148
UP#149
UP#150
UP#151
UP#152
UP#153
UP#154
UP#155
UP#156
UP#157
UP#158
UP#159
UP#160
UP#161
UP#162
UP#163
UP#164
UP#165
UP#166
UP#167
UP#168
UP#169
UP#170
UP#171
UP#172
UP#173
UP#174
UP#175
UP#176
UP#177
UP#178
UP#179
UP#180
UP#181
UP#182
UP#183
UP#184
UP#185
UP#186
UP#187
UP#188
UP#189
UP#190
UP#191
UP#192
UP#193
UP#194
UP#195
UP#196
UP#197
UP#198
UP#199
UP#200
UP#201
UP#202
UP#203
UP#204
UP#205
UP#206
UP#207
UP#208
UP#209
UP#210
UP#211
UP#212
UP#213
UP#214
UP#215
UP#216
UP#217
UP#218
UP#219
UP#220
UP#221
UP#222
UP#223
UP#224
UP#225
UP#226
UP#227
UP#228
UP#229
UP#230
UP#231
UP#232
UP#233
UP#234
UP#235
UP#236
UP#237
UP#238
UP#239
UP#240
UP#241
UP#242
UP#243
UP#244
UP#245
UP#246
UP#247
UP#248
UP#249
UP#250
UP#251
UP#252
UP#253
UP#254
UP#255
UP#256
UP#257
UP#258
UP#259
UP#260
UP#261
UP#262
UP#263
UP#264
UP#265
UP#266
UP#267
UP#268
UP#269
UP#270
UP#271
UP#272
UP#273
UP#274
UP#275
UP#276
UP#277
UP#278
UP#279
UP#280
UP#281
UP#282
UP#283
UP#284
UP#285
UP#286
UP#287
UP#288
UP#289
UP#290
UP#291
UP#292
UP#293
UP#294
UP#295
UP#296
UP#297
UP#298
UP#299
UP#300
UP#301
UP#302
UP#303
UP#304
UP#305
UP#306
UP#307
UP#308
UP#309
UP#310
UP#311
UP#312
UP#313
UP#314
UP#315
UP#316
UP#317
UP#318
UP#319
UP#320
UP#321
UP#322
UP#323
UP#324
UP#325
UP#326
UP#327
UP#328
UP#329
UP#330
UP#331
UP#332
UP#333
UP#334
UP#335
UP#336
UP#337
UP#338
UP#339
UP#340
UP#341
UP#342
UP#343
UP#344
UP#345
UP#346
UP#347
UP#348
UP#349
UP#350
UP#351
UP#352
UP#353
UP#354
UP#355
UP#356
UP#357
UP#358
UP#359
UP#360
UP#361
UP#362
UP#363
UP#364
UP#365
UP#366
UP#367
UP#368
UP#369
UP#370
UP#371
UP#372
UP#373
UP#374
UP#375
UP#376
UP#377
UP#378
UP#379
UP#380
UP#381
UP#382
UP#383
UP#384
UP#385
UP#386
UP#387
UP#388
UP#389
UP#390
UP#391
UP#392
UP#393
UP#394
UP#395
UP#396
UP#397
UP#398
UP#399
UP#400
UP#401
UP#402
UP#403
UP#404
UP#405
UP#406
UP#407
UP#408
UP#409
UP#410
UP#411
UP#412
UP#413
UP#414
UP#415
UP#416
UP#417
UP#418
UP#419
UP#420
UP#421
UP#422
UP#423
UP#424
UP#425
UP#426
UP#427
UP#428
UP#429
UP#430
UP#431
UP#432
UP#433
UP#434
UP#435
UP#436
UP#437
UP#438
UP#439
UP#440
UP#441
UP#442
UP#443
UP#444
UP#445
UP#446
UP#447
UP#448
UP#449
UP#450
UP#451
UP#452
UP#453
UP#454
UP#455
UP#456
UP#457
UP#458
UP#459
UP#460
UP#461
UP#462
UP#463
UP#464
UP#465
UP#466
UP#467
UP#468
UP#469
UP#470
UP#471
UP#472
UP#473
UP#474
UP#475
UP#476
UP#477
UP#478
UP#479
UP#480
UP#481
UP#482
UP#483
UP#484
UP#485
UP#486
UP#487
UP#488
UP#489
UP#490
UP#491
UP#492
UP#493
UP#494
UP#495
UP#496
UP#497
UP#498
UP#499
UP#500
UP#501
UP#502
UP#503
UP#504
UP#505
UP#506
UP#507
UP#508
UP#509
UP#510
UP#511
UP#512
UP#513
UP#514
UP#515
UP#516
UP#517
UP#518
UP#519
UP#520
UP#521
UP#522
UP#523
UP#524
UP#525
UP#526
UP#527
UP#528
UP#529
UP#530
UP#531
UP#532
UP#533
UP#534
UP#535
UP#536
UP#537
UP#538
UP#539
UP#540
UP#541
UP#542
UP#543
UP#544
UP#545
UP#546
UP#547
UP#548
UP#549
UP#550
UP#551
UP#552
UP#553
UP#554
UP#555
UP#556
UP#557
UP#558
UP#559
UP#560
UP#561
UP#562
UP#563
UP#564
UP#565
UP#566
UP#567
UP#568
UP#569
UP#570
UP#571
UP#572
UP#573
UP#574
UP#575
UP#576
UP#577
UP#578
UP#579
UP#580
UP#581
UP#582
UP#583
UP#584
UP#585
UP#586
UP#587
UP#588
UP#589
UP#590
UP#591
UP#592
UP#593
UP#594
UP#595
UP#596
UP#597
UP#598
UP#599
UP#600
UP#601
UP#602
UP#603
UP#604
UP#605
UP#606
UP#607
UP#608
UP#609
UP#610
UP#611
UP#612
UP#613
UP#614
UP#615
UP#616
UP#617
UP#618
UP#619
UP#620
UP#621
UP#622
UP#623
UP#624
UP#625
UP#626
UP#627
UP#628
UP#629
UP#630
UP#631
UP#632
UP#633
UP#634
UP#635
UP#636
UP#637
UP#638
UP#639
UP#640
UP#641
UP#642
UP#643
UP#644
UP#645
UP#646
UP#647
UP#648
UP#649
UP#650
UP#651
UP#652
UP#653
UP#654
UP#655
UP#656
UP#657
UP#658
UP#659
UP#660
UP#661
UP#662
UP#663
UP#664
UP#665
UP#666
UP#667
UP#668
UP#669
UP#670
UP#671
UP#672
UP#673
UP#674
UP#675
UP#676
UP#677
UP#678
UP#679
UP#680
UP#681
UP#682
UP#683
UP#684
UP#685
UP#686
UP#687
UP#688
UP#689
UP#690
UP#691
UP#692
UP#693
UP#694
UP#695
UP#696
UP#697
UP#698
UP#699
UP#700
UP#701
UP#702
UP#703
UP#704
UP#705
UP#706
UP#707
UP#708
UP#709
UP#710
UP#711
UP#712
UP#713
UP#714
UP#715
UP#716
UP#717
UP#718
UP#719
UP#720
UP#721
UP#722
UP#723
UP#724
UP#725
UP#726
UP#727
UP#728
UP#729
UP#730
UP#731
UP#732
UP#733
UP#734
UP#735
UP#736
UP#737
UP#738
UP#739
UP#740
UP#741
UP#742
UP#743
UP#744
UP#745
UP#746
UP#747
UP#748
UP#749
UP#750
UP#751
UP#752
UP#753
UP#754
UP#755
UP#756
UP#757
UP#758
UP#759
UP#760
UP#761
UP#762
UP#763
UP#764
UP#765
UP#766
UP#767
UP#768
UP#769
UP#770
UP#771
UP#772
UP#773
UP#774
UP#775
UP#776
UP#777
UP#778
UP#779
UP#780
UP#781
UP#782
UP#783
UP#784
UP#785
UP#786
UP#787
UP#788
UP#789
UP#790
UP#791
UP#792
UP#793
UP#794
UP#795
UP#796
UP#797
UP#798
UP#799
UP#800
UP#801
UP#802
UP#803
UP#804
UP#805
UP#806
UP#807
UP#808
UP#809
UP#810
UP#811
UP#812
UP#813
UP#814
UP#815
UP#816
UP#817
UP#818
UP#819
UP#820
UP#821
UP#822
UP#823
UP#824
UP#825
UP#826
UP#827
UP#828
UP#829
UP#830
UP#831
UP#832
UP#833
UP#834
UP#835
UP#836
UP#837
UP#838
UP#839
UP#840
UP#841
UP#842
UP#843
UP#844
UP#845
UP#846
UP#847
UP#848
UP#849
UP#850
UP#851
UP#852
UP#853
UP#854
UP#855
UP#856
UP#857
UP#858
UP#859
UP#860
UP#861
UP#862
UP#863
UP#864
UP#865
UP#866
UP#867
UP#868
UP#869
UP#870
UP#871
UP#872
UP#873
UP#874
UP#875
UP#876
UP#877
UP#878
UP#879
UP#880
UP#881
UP#882
UP#883
UP#884
UP#885
UP#886
UP#887
UP#888
UP#889
UP#890
UP#891
UP#892
UP#893
UP#894
UP#895
UP#896
UP#897
UP#898
UP#899
UP#900
UP#901
UP#902
UP#903
UP#904
UP#905
UP#906
UP#907
UP#908
UP#909
UP#910
UP#911
UP#912
UP#913
UP#914
UP#915
UP#916
UP#917
UP#918
UP#919
UP#920
UP#921
UP#922
UP#923
UP#924
UP#925
UP#926
UP#927
UP#928
UP#929
UP#930
UP#931
UP#932
UP#933
UP#934
UP#935
UP#936
UP#937
UP#938
UP#939
UP#940
UP#941
UP#942
UP#943
UP#944
UP#945
UP#946
UP#947
UP#948
UP#949
UP#950
UP#951
UP#952
UP#953
UP#954
UP#955
UP#956
UP#957
UP#958
UP#959
UP#960
UP#961
UP#962
UP#963
UP#964
UP#965
UP#966
UP#967
UP#968
UP#969
UP#970
UP#971
UP#972
UP#973
UP#974
UP#975
UP#976
UP#977
UP#978
UP#979
UP#980
UP#981
UP#982
UP#983
UP#984
UP#985
UP#986
UP#987
UP#988
UP#989
UP#990
UP#991
UP#992
UP#993
UP#994
UP#995
UP#996
UP#997
UP#998
UP#999
UP#1000

CONTINUED ON SHEET NO. 36
CONTINUED ON SHEET NO. 38

MAP 41 LOT 17–3
HENRY F. COLLINS
1 COLLINS REA LANE – BILLERICA, MA
LAND COURT #24884

MAP 41 LOT 17–4
MICHAEL J & MAUREEN COLLINS REA
1 COLLINS REA LANE – BILLERICA, MA
LAND COURT #29529

MAP 41 LOT 145–3
CHARLES E. CARROLL REVOCABLE TRUST
350 BOSTON ROAD–BILLERICA,MA
BOOK 32837 PAGE 245

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C42	8°43'27"	1503.00	228.86	114.65
C43	8°31'36"	1552.00	230.97	115.70
C46	87°56'18"	15.00	23.02	14.47
C47	76°30'25"	15.00	20.03	11.83
C48	127°11'20"	25.00	55.50	50.35
C49	3°03'34"	2970.00	158.59	79.31
C50	48°46'12"	50.00	42.56	22.67
C51	100°50'28"	2.00	3.52	2.42
C52	78°44'27"	2.00	2.75	1.64
C53	24°55'58"	50.00	21.76	11.05
C54	89°57'06"	5.00	7.85	5.00

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C55	0°41'10"	2953.50	35.37	17.69
C56	89°14'51"	5.00	7.79	4.93
C61	11°15'00"	42.00	8.25	4.14
C62	21°17'13"	26.00	9.66	4.89
C63	180°00'00"	2.50	7.85	INFINITY
C177	54°18'54"	12.00	11.38	6.16
C178	89°42'50"	5.00	7.83	4.98
C179	9°57'22"	994.00	172.73	86.58
C180	8°28'14"	964.00	142.52	71.39
C215	179°42'30"	2.50	7.84	982.06
C216	180°00'00"	2.50	7.85	INFINITY

HERITAGE ROAD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C11	50+00.00	3031699.2738	717123.6062	R=121.00' Δ=39°38'14" L=83.71' T=43.61'		50+83.71	3031760.5422	717178.1791

BOSTON ROAD (ROUTE3A) CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	22+76.61	3031955.0376	716970.1165		S31°03'05"E 247.65'	25+24.27	3031742.8731	717097.8570
C5	25+24.27	3031742.8731	717097.8570	R=2986.00' Δ=3°03'34" L=159.44' T=79.74'		26+83.71	3031604.1470	717176.4138

0 20 50 100
SCALE: 1" = 20'

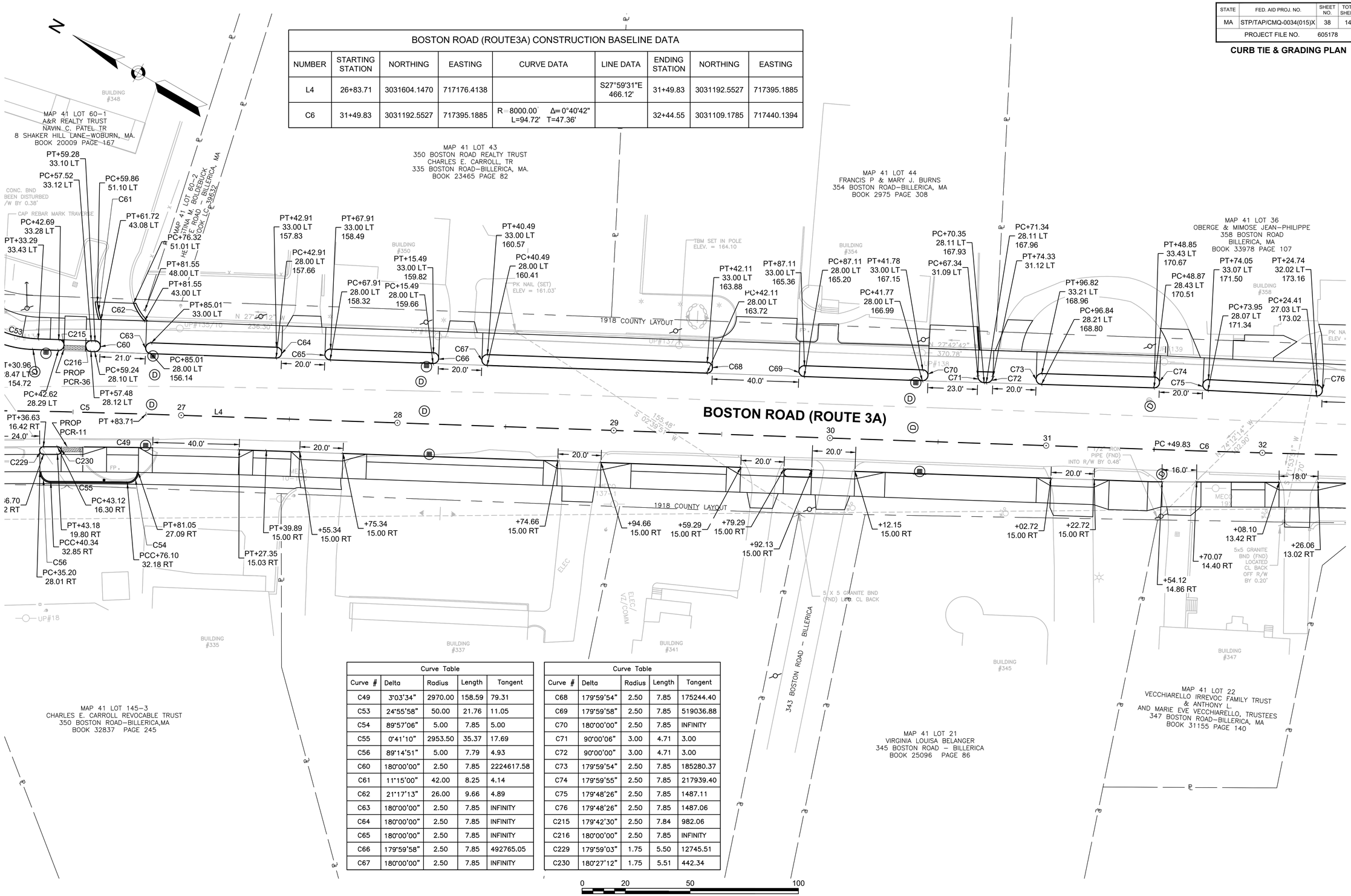
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	38	140
	PROJECT FILE NO. 605178		

CURB TIE & GRADING PLAN

605178_HD(4722_TIE).DWG Plotted on 7-Mar-2022 9:06 PM

BOSTON ROAD (ROUTE3A) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	26+83.71	3031604.1470	717176.4138		S27°59'31"E 466.12'	31+49.83	3031192.5527	717395.1885
C6	31+49.83	3031192.5527	717395.1885	R=8000.00' Δ=0°40'42" L=94.72' T=47.36'		32+44.55	3031109.1785	717440.1394



Curve Table				
Curve #	Delta	Radius	Length	Tangent
C49	3°03'34"	2970.00	158.59	79.31
C53	24°55'58"	50.00	21.76	11.05
C54	89°57'06"	5.00	7.85	5.00
C55	0°41'10"	2953.50	35.37	17.69
C56	89°14'51"	5.00	7.79	4.93
C60	180°00'00"	2.50	7.85	2224617.58
C61	11°15'00"	42.00	8.25	4.14
C62	21°17'13"	26.00	9.66	4.89
C63	180°00'00"	2.50	7.85	INFINITY
C64	180°00'00"	2.50	7.85	INFINITY
C65	180°00'00"	2.50	7.85	INFINITY
C66	179°59'58"	2.50	7.85	492765.05
C67	180°00'00"	2.50	7.85	INFINITY

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C68	179°59'54"	2.50	7.85	175244.40
C69	179°59'58"	2.50	7.85	519036.88
C70	180°00'00"	2.50	7.85	INFINITY
C71	90°00'06"	3.00	4.71	3.00
C72	90°00'00"	3.00	4.71	3.00
C73	179°59'54"	2.50	7.85	185280.37
C74	179°59'55"	2.50	7.85	217939.40
C75	179°48'26"	2.50	7.85	1487.11
C76	179°48'26"	2.50	7.85	1487.06
C215	179°42'30"	2.50	7.84	982.06
C216	180°00'00"	2.50	7.85	INFINITY
C229	179°59'03"	1.75	5.50	12745.51
C230	180°27'12"	1.75	5.51	442.34

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	39	140
	PROJECT FILE NO. 605178		

CURB TIE & GRADING PLAN

605178_HDI(4722_TIE).DWG Plotted on 7-Mar-2022 9:06 PM

FARMERS LANE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L15	1+00.00	3030914.6050	717546.5345		N58°10'10"E 219.01'	3+19.01	3031030.1135	717732.6093
L16	3+19.01	3031030.1135	717732.6093		N60°15'31"E 80.99'	4+00.00	3031070.2925	717802.9323

LASALLETTE RD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L17	4+00.00	3030784.8724	717624.6975		S73°05'16"W 133.42'	5+33.42	3030746.0609	717497.0525

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C74	179°59'55"	2.50	7.85	217939.40
C75	179°48'26"	2.50	7.85	1487.11
C76	179°48'26"	2.50	7.85	1487.06
C77	180°00'00"	2.50	7.85	INFINITY
C78	2°07'04"	2000.00	73.93	36.97
C79	2°22'21"	1995.00	82.61	41.31
C80	25°38'49"	22.00	9.85	5.01
C81	154°36'27"	1.50	4.05	6.66
C82	153°13'56"	1.50	4.01	6.30
C83	27°00'32"	20.00	9.43	4.80
C84	0°58'35"	1995.00	34.00	17.00
C86	180°00'00"	2.50	7.85	INFINITY
C87	3°00'56"	1524.00	80.21	40.11
C88	180°00'00"	2.50	7.85	INFINITY
C89	103°37'08"	30.00	54.25	38.14
C90	2°21'10"	1995.00	81.92	40.97
C91	3°56'58"	2000.00	137.87	68.96
C92	75°01'26"	25.00	32.74	19.19
C93	180°00'00"	2.50	7.85	INFINITY
C165	19°08'02"	22.00	7.35	3.71
C219	82°59'59"	3.00	4.35	2.65

BOSTON ROAD (ROUTE3A) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	32+44.55	3031109.1785	717440.1394		S28°40'13"E 234.84'	34+79.39	3030903.1320	717552.8081
C7	34+79.39	3030903.1320	717552.8081	R=1511.00' Δ=5°52'03" L=154.73' T=77.43'		36+34.13	3030771.4042	717633.8604
L6	36+34.13	3030771.4042	717633.8604		S34°32'16"E 123.25'	37+57.38	3030669.8760	717703.7373

34+66.32 BOSTON ROAD (ROUTE3A)= 1+00.00 FARMERS LANE

36+17.84 BOSTON ROAD (ROUTE3A)= 4+00.00 LASALLETTE RD

MAP 41 LOT 45
WISE MICHAEL F. & DARLENE R.
4 FARMERS LANE–BILLERICA
BOOK 8210 PAGE 31

MAP 51 LOT 19–1
REUBIN & LYNNE D. MACDONALD
376 BOSTON ROAD–BILLERICA, MA
BOOK 7053 PAGE 59

MAP 41 LOT 34
ROBERT A. &
JAIME Q. DESOUZA &
CAMILLE V. DINGS
364 BOSTON RD.
BILLERICA, MA BOOK 33409 PAGE 2

MAP 41 PLOT 33
368 BOSTON ROAD–BILLERICA, MA
CARLA LACKWOOD–LACAYO
SERGIO J. LACAYO SR,
AND SERGIO A. LACAYO JR.
BOOK 29929 PAGE 272

MAP 41 LOT 36
OBERGE & MIMOSE JEAN–PHILIPPE
358 BOSTON ROAD
BILLERICA, MA
BOOK 33978 PAGE 107

MAP 41 LOT 35
HAROLD W. JR. & GERADINE BLAKE
362 BOSTON ROAD–BILLERICA
BOOK 9067 PAGE 147

MAP 41 LOT 22
VECCHIARELLO IRREVOC FAMILY TRUST
& ANTHONY L.
AND MARIE EVE VECCHIARELLO, TRUSTEES
347 BOSTON ROAD–BILLERICA, MA
BOOK 31155 PAGE 140

MAP 41 LOT 31
CHRISTOPHER ROBERT
357 BOSTON ROAD–BILLERICA, MA
BOOK 23868 PAGE 104

FARMERS LANE

BOSTON ROAD (ROUTE 3A)

LASALLETTE ROAD

1918 COUNTY LAYOUT

TOWN LAYOUT

SEE DRAINAGE PLAN FOR PROP BASIN GRADING

CONTINUED ON SHEET NO. 38

CONTINUED ON SHEET NO. 40

SCALE: 1" = 20'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	40	140
PROJECT FILE NO.	605178		

CURB TIE & GRADING PLAN

605178_HDI(4722_TIE).DWG Plotted on 7-Mar-2022 9:06 PM

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C93	180°00'00"	2.50	7.85	INFINITY
C94	180°00'00"	2.50	7.85	INFINITY
C95	1°02'17"	6976.00	126.38	63.19
C96	180°00'00"	2.50	7.85	INFINITY
C97	180°00'00"	2.50	7.85	INFINITY
C98	64°55'52"	35.00	39.66	22.27
C99	180°00'00"	2.50	7.85	INFINITY
C100	180°00'02"	2.50	7.85	656911.97
C101	0°50'09"	6964.50	101.60	50.80
C102	11°20'55"	1662.00	329.20	165.14
C103	1°32'47"	1667.00	44.99	22.50
C104	179°34'42"	2.50	7.84	679.34
C105	21°35'33"	30.00	11.31	5.72
C106	158°24'27"	1.50	4.15	7.87
C107	73°47'28"	25.00	32.20	18.77

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C108	158°27'02"	1.50	4.15	7.88
C109	21°38'09"	30.00	11.33	5.73
C110	0°28'31"	6971.00	57.81	28.91
C111	0°23'20"	6976.00	47.34	23.67
C112	180°00'00"	2.50	7.85	INFINITY
C114	1°17'07"	1667.00	37.39	18.70
C115	180°00'00"	2.50	7.85	INFINITY
C117	4°45'19"	1595.00	132.37	66.23
C118	4°42'17"	1600.00	131.38	65.73
C167	90°00'00"	5.00	7.85	5.00
C168	54°18'53"	12.00	11.38	6.16
C169	48°11'23"	15.00	12.62	6.71
C171	91°44'10"	5.00	8.01	5.15
C220	61°53'38"	30.00	32.41	17.99

BOSTON ROAD (ROUTE3A) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C8	37+57.38	3030669.8760	717703.7373	R=6989.00' Δ=0°42'50" L=87.07' T=43.54'		38+44.45	3030597.8455	717752.6540
L7	38+44.45	3030597.8455	717752.6540		S33°49'26"E 153.16'	39+97.60	3030470.6109	717837.9071
C9	39+97.60	3030470.6109	717837.9071	R=1616.00' Δ=7°31'19" L=212.15' T=106.23'		42+09.76	3030287.1311	717944.1084

GOOD STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L18	70+00.00	3030496.8352	717820.3356		S73°42'20"W 139.01'	71+39.01	3030457.8322	717686.9075
L19	71+39.01	3030457.8322	717686.9075		S74°35'28"W 234.09'	73+73.10	3030395.6345	717461.2358

MAP 41 PLOT 33
368 BOSTON ROAD–BILLERICA
CARLA LACKWOOD–LACAYO
SERGIO J. LACAYO SR.
AND SERGIO A. LACAYO JR.
BOOK 29929 PAGE 272

MAP 51 LOT 19–1
REUBIN & LYNNE D. MACDONALD
376 BOSTON ROAD–BILLERICA, MA
BOOK 7053 PAGE 59

MAP 51 LOT 20
THOMAS E. &
TRACY M. MANDILE
380 BOSTON ROAD
BILLERICA, MA
BOOK 17541 PAGE 163

MAP 41 LOT 31
CHRISTOPHER ROBERT
357 BOSTON ROAD–BILLERICA, MA
BOOK 23868 PAGE 104

N/F
FOURNELLE CHRISTOPHER & CONNIE
2 GOOD ST – BILLERICA,MA
ASSESS. MAP 51 – PARCEL ID: 51–18–0
DEED BK 11425 / PAGE 149
PLAN BOOK 88 PLAN 15

BOSTON ROAD (ROUTE 3A)

GOOD STREET

39+66.04 BOSTON ROAD (ROUTE3A)=
70+00.00 GOOD STREET

CONTINUED ON SHEET NO. 39

CONTINUED ON SHEET NO. 41

CONTINUED ON SHEET NO. 45

0 20 50 100
SCALE: 1" = 20'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	41	140
	PROJECT FILE NO. 605178		

CURB TIE & GRADING PLAN

605178_HDI(4722_TIE).DWG Plotted on 7-Mar-2022 9:07 PM

BOSTON ROAD (ROUTE3A) CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	42+09.76	3030287.1311	717944.1084		S26°18'07"E 308.19'	45+17.95	3030010.8445	718080.6700
C10	45+17.95	3030010.8445	718080.6700	R=1487.00' Δ=11°07'31" L=288.73' T=144.82'		48+06.68	3029741.2468	718182.7548

MULBERRY LANE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L24	6+00.00	3030041.4644	718065.5353		N72°26'06"E 150.00'	7+50.00	3030086.7326	718208.5416

TOWN HALL DRIVE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L21	90+00.00	3030301.0551	717937.1424		S64°55'04"W 155.00'	91+55.00	3030235.3491	717796.7622

TOM GLAVINE WAY CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L22	92+00.00	3030125.6319	718023.9334		S69°33'54"W 121.86'	93+21.86	3030083.0859	717909.7451
C193	93+21.86	3030083.0859	717909.7451	R=400.00' Δ=7°37'46" L=53.26' T=26.67'		93+75.12	3030061.2255	717861.2165
L23	93+75.12	3030061.2255	717861.2165		S61°56'07"W 74.88'	94+50.00	3030025.9976	717795.1423

Point Table

Point #	Northing	Easting	Elevation	Raw Description
21044	3030075.979	718092.363	220.977	T.MAGN

Curve Table

Curve #	Delta	Radius	Length	Tangent
C102	11°20'55"	1662.00	329.20	165.14
C117	4°45'19"	1595.00	132.37	66.23
C118	4°42'17"	1600.00	131.38	65.73
C119	109°29'48"	3.00	5.73	4.24
C120	39°53'31"	10.00	6.96	3.63
C122	9°06'38"	200.50	31.88	15.97
C123	4°07'40"	1632.86	117.63	58.84
C124	2°08'12"	1653.72	61.67	30.84
C125	156°11'26"	1.50	4.09	7.12
C127	89°26'59"	25.00	39.03	24.76
C128	156°21'41"	1.50	4.09	7.17
C130	1°20'55"	1595.00	37.54	18.77
C131	0°54'53"	1600.00	25.55	12.77
C132	94°11'43"	25.00	41.10	26.90
C134	85°48'17"	25.00	37.44	23.23

Curve Table

Curve #	Delta	Radius	Length	Tangent
C135	20°58'40"	20.00	7.32	3.70
C136	20°58'40"	20.00	7.32	3.70
C137	85°17'04"	5.00	7.44	4.60
C138	9°02'06"	150.00	23.65	11.85
C139	51°28'51"	12.00	10.78	5.79
C140	180°00'00"	2.50	7.85	INFINITY
C141	64°50'58"	20.00	22.64	12.70
C142	92°38'56"	15.00	24.26	15.71
C143	180°00'00"	2.50	7.85	INFINITY
C144	8°08'13"	1665.00	236.46	118.43
C145	1°58'30"	1458.00	50.26	25.13
C146	8°42'01"	1463.00	222.15	111.29
C196	68°04'10"	15.00	17.82	10.13
C221	70°33'15"	1.50	1.85	1.06
C222	1°20'56"	1585.00	37.31	18.66

CONTINUED ON SHEET NO. 40

CONTINUED ON SHEET NO. 42

SCALE: 1" = 20'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	42	140
	PROJECT FILE NO. 605178		

CURB TIE & GRADING PLAN

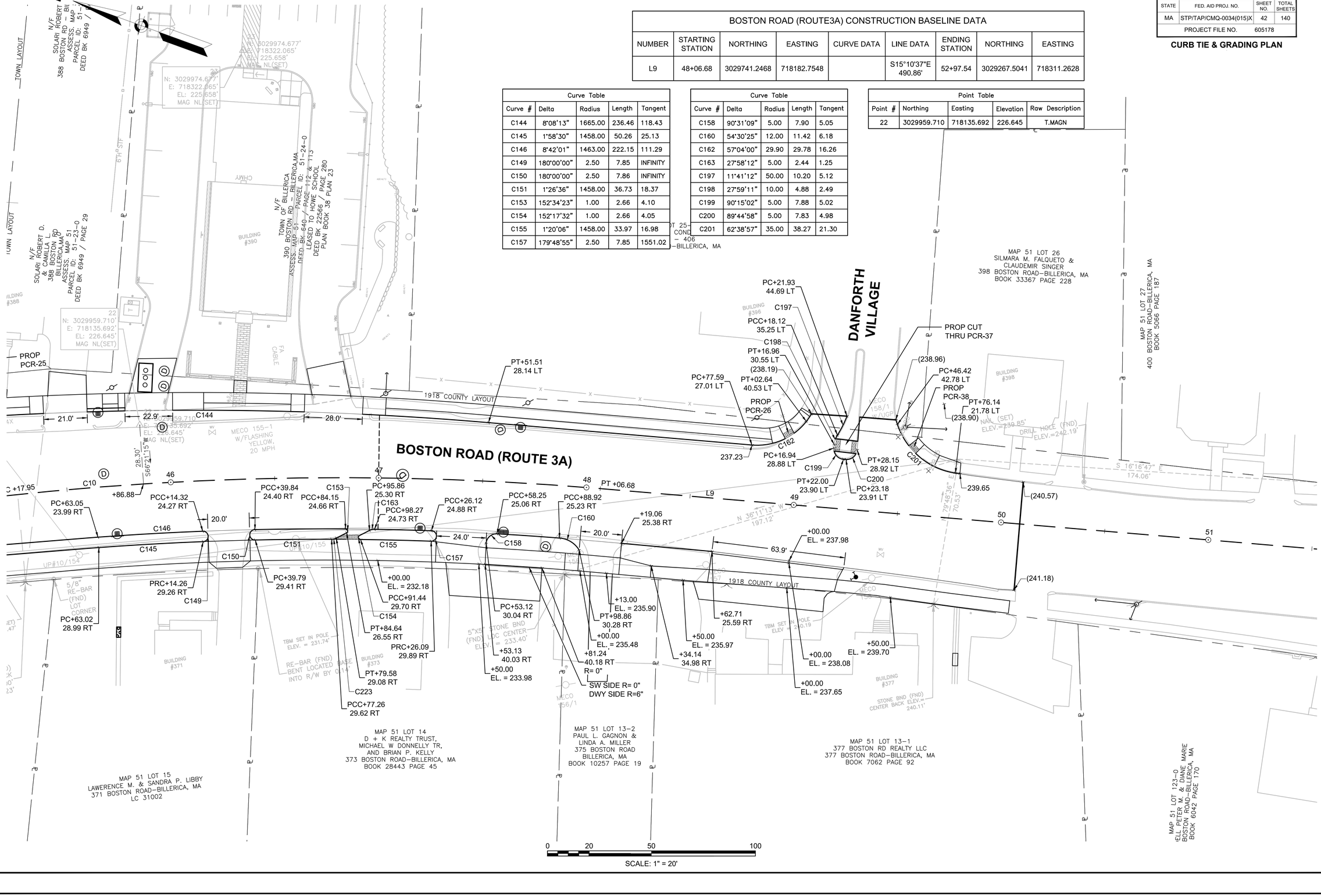
605178_HDI(4722_TIE).DWG Plotted on 7-Mar-2022 9:07 PM

BOSTON ROAD (ROUTE3A) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L9	48+06.68	3029741.2468	718182.7548		S15°10'37"E 490.86'	52+97.54	3029267.5041	718311.2628

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C144	8°08'13"	1665.00	236.46	118.43
C145	1°58'30"	1458.00	50.26	25.13
C146	8°42'01"	1463.00	222.15	111.29
C149	180°00'00"	2.50	7.85	INFINITY
C150	180°00'00"	2.50	7.86	INFINITY
C151	1°26'36"	1458.00	36.73	18.37
C153	152°34'23"	1.00	2.66	4.10
C154	152°17'32"	1.00	2.66	4.05
C155	1°20'06"	1458.00	33.97	16.98
C157	179°48'55"	2.50	7.85	1551.02

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C158	90°31'09"	5.00	7.90	5.05
C160	54°30'25"	12.00	11.42	6.18
C162	57°04'00"	29.90	29.78	16.26
C163	27°58'12"	5.00	2.44	1.25
C197	11°41'12"	50.00	10.20	5.12
C198	27°59'11"	10.00	4.88	2.49
C199	90°15'02"	5.00	7.88	5.02
C200	89°44'58"	5.00	7.83	4.98
C201	62°38'57"	35.00	38.27	21.30

Point Table				
Point #	Northing	Easting	Elevation	Raw Description
22	3029959.710	718135.692	226.645	T.MAGN

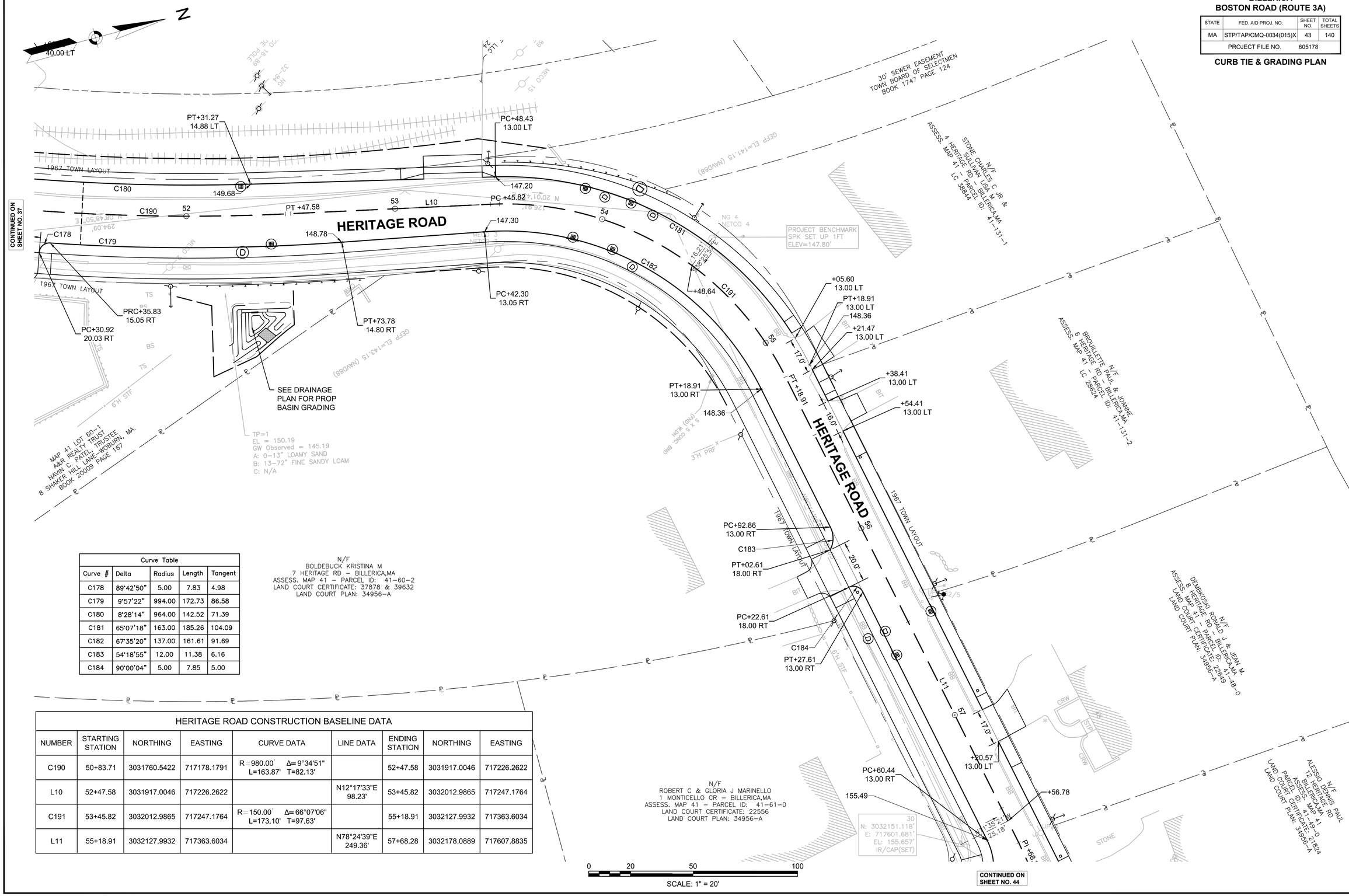


BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	43	140
	PROJECT FILE NO. 605178		

CURB TIE & GRADING PLAN

605178_HDI4722_TIE).DWG Plotted on 7-Mar-2022 9:07 PM



Curve Table				
Curve #	Delta	Radius	Length	Tangent
C178	89°42'50"	5.00	7.83	4.98
C179	9°57'22"	994.00	172.73	86.58
C180	8°28'14"	964.00	142.52	71.39
C181	65°07'18"	163.00	185.26	104.09
C182	67°35'20"	137.00	161.61	91.69
C183	54°18'55"	12.00	11.38	6.16
C184	90°00'04"	5.00	7.85	5.00

HERITAGE ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C190	50+83.71	3031760.5422	717178.1791	R=980.00' Δ=9°34'51" L=163.87' T=82.13'		52+47.58	3031917.0046	717226.2622
L10	52+47.58	3031917.0046	717226.2622		N12°17'33"E 98.23'	53+45.82	3032012.9865	717247.1764
C191	53+45.82	3032012.9865	717247.1764	R=150.00' Δ=66°07'06" L=173.10' T=97.63'		55+18.91	3032127.9932	717363.6034
L11	55+18.91	3032127.9932	717363.6034		N78°24'39"E 249.36'	57+68.28	3032178.0889	717607.8835

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	44	140
	PROJECT FILE NO. 605178		

CURB TIE & GRADING PLAN

605178_HDI(4722_TIE).DWG Plotted on 7-Mar-2022 9:07 PM

CONTINUED ON SHEET NO. 43

N

HERITAGE ROAD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L12	57+68.28	3032178.0889	717607.8835		N80°10'19"E 88.63'	58+56.91	3032193.2169	717695.2106
L13	58+56.91	3032193.2169	717695.2106		N78°18'51"E 62.47'	59+19.37	3032205.8696	717756.3839
C192	59+65.79	3032214.0182	717802.0822	R=180.00' Δ=10°15'43" L=32.24' T=16.16'		59+98.03	3032222.4819	717833.1452
L25	59+98.03	3032222.4819	717833.1452		N69°37'40"E 144.99'	61+43.02	3032272.9536	717969.0616

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C185	97°26'18"	30.00	51.02	34.17
C187	73°47'56"	30.00	38.64	22.52
C189	74°24'48"	5.02	6.52	3.81
C194	34°17'00"	10.00	5.98	3.08
C195	37°39'48"	10.00	6.57	3.41
C231	33°34'54"	10.00	5.86	3.02
C232	37°59'26"	10.01	6.63	3.44
C235	17°02'30"	45.42	13.51	6.80

N/F
DEMBKOSKI RONALD J & JEAN M.
8 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–48–0
LAND COURT CERTIFICATE: 22649
LAND COURT PLAN: 34956–A

N/F
ALESSIO DENNIS PAUL
12 HERITAGE RD
BILLERICA,MA
ASSESS. MAP 41
PARCEL ID: 41–49–0
LAND COURT CERTIFICATE: 21824
LAND COURT PLAN: 34956–A

N/F
DIMATTEO JASON P. & ALISHA D.
14 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–50–0
DEED BK 11361 / PAGE 178
LAND COURT CERTIFICATE: 193936
LAND COURT PLAN: 31951–B

N/F
LEVASSEUR DAVID R.
16 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–51–0
LAND COURT CERTIFICATE: 30708
LAND COURT PLAN: 31951–B

N/F
SENG SOKLEANG
18 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–52–0
LAND COURT CERTIFICATE: 39175
LAND COURT PLAN: 31951–B

N/F
SASSER LINDA C.
17 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–69–0
LAND COURT CERTIFICATE: 34710
LAND COURT PLAN: 31951–A

N/F
ROBERT C & GLORIA J MARINELLO
1 MONTICELLO CR – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–67–0
LAND COURT CERTIFICATE: 22356
LAND COURT PLAN: 34956–A

N/F
THE PORCARO FAMILY TRUST & JOHN A. AND SUSANN E. POCARO, TRUSTEES
2 MONTICELLO CR – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–66–0
LAND COURT CERTIFICATE: 291821
LAND COURT PLAN: 34956–A

N/F
ERIC JAMES RICHARD & HEATHER A. MAGEE
1 MOUNT VERNON AV – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–67–0
LAND COURT CERTIFICATE: 42451
LAND COURT PLAN: 34956–A

N/F
JACMAR CONSTRUCTION
LAND COURT CERTIFICATE: 17188

33
N: 3032426.669'
E: 717711.445'
EL: 161.723'
MAG NL(SET)

31
N: 3032278.318'
E: 717742.802'
EL: 162.378'
IR/CAP(SET)

30
N: 3032151.118'
E: 717691.681'
EL: 155.657'
IR/CAP(SET)

32
N: 3032240.727'
E: 717935.023'
EL: 168.875'
IR/CAP(SET)

HERITAGE ROAD
MONTICELLO CIRCLE
MT VERNON AVENUE
1967 TOWN LAYOUT
PROP PCR-27
PROP PCR-28
PROP PCR-29
PROP PCR-30
PROP PCR-39
BUILDING #1
CB/DH(FND)FLUSH

0 20 50 100
SCALE: 1" = 20'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	45	140
	PROJECT FILE NO. 605178		

CURB TIE & GRADING PLAN

605178_HDI(4722_TIE).DWG Plotted on 7-Mar-2022 9:08 PM

N

N/F
FOURNELLE CHRISTOPHER & CONNIE
2 GOOD ST – BILLERICA,MA
ASSESS. MAP 51 – PARCEL ID: 51–18–0
DEED BK 11425 / PAGE 149
PLAN BOOK 88 PLAN 15

TOWN HALL

N/F
TOWN OF BILLERICA
(POLICE AND FIRE DEPARTMENT
AND HIGH SCHOOL)
365 BOSTON RD – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50–28–0
DEED BK 1517 PAGE 256

FIRE DEPARTMENT

N/F
TOWN OF BILLERICA
(POLICE AND FIRE DEPARTMENT
AND HIGH SCHOOL)
365 BOSTON RD – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50–27–0
DEED BK 1517 PAGE 256

BILLERICA HIGH SCHOOL

GOOD STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L19	71+39.01	3030457.8322	717686.9075		S74°35'28"W 234.09'	73+73.10	3030395.6345	717461.2358
L20	73+73.10	3030395.6345	717461.2358		S73°37'57"W 926.51'	82+99.61	3030134.5461	716572.2720

PROJECT BENCHMARK
SPIKE SET UP 1FT
ELEV=205.42'

GOOD STREET

1956 TOWN LAYOUT

PT+93.32 52.06 LT
C224
PC+88.38 46.87 LT
PT+95.55 52.09 LT
C225
PT+00.60 47.14 LT
(206.39)
+89.11 28.00 LT
PI+00.73 35.64 LT
(205.98)
PC+92.94 18.00 LT
(206.13)
+99.04 18.00 LT
+86.09 33.08 LT
PT+50.55 50.07 LT
C227
PC+47.63 53.09 LT
PT+46.62 53.12 LT
C226
PC+44.57 51.10 LT
PI+44.72 37.23 LT
(206.47)
PT+50.42 23.79 LT
PC+38.40 17.42 LT
PROP PCR-39
(207.92)
PC+77.56 24.36 LT
(206.31)
PT+82.94 24.42 LT
C202
PT+76.52 23.38 LT
C203
PCC+83.80 22.89 LT
+71.65 46.66 LT
PT+71.66 40.05 LT
C228
PROP PCR-31
PC+66.69 35.04 LT
(205.58)
PT+66.77 25.04 LT
PCC+80.58 34.42 LT
(205.60)
C204
PCC+86.00 32.70 LT
(205.57)
PC+63.75 25.01 LT
C206
PCC+61.76 23.02 LT
+10.34 46.78 LT
PROP PCR-32
+11.28 36.78 LT
C168
C171
23.3'
25.7'
78.0'
C175
C207
C176
PROP PCR-32A
202.78
204.13
(201.13)
C169
202.78
C170
204.39
PT+04.12 13.00 LT
PI +39.01
L19
72
73
PI+33.23 17.34 LT
205.86
C173
PC+76.49 20.73 LT
C174
205.75
PCC+79.31 18.88 LT
PI +73.10
74
L20
+66.70
PCC+66.78 18.00 LT
N16°22'03"W
21.66'
S67°26'23"W 449.51'
75
76
77
(200.66)
22.0'
205.85
C172
24.0'
PT+19.95 13.89 LT
+89.57 21.80 RT
PC+94.72 14.95 RT
+64.49 33.24 RT
PK NAIL (SET) ELEV = 208.00
IRON PIPE (FND) ELEV = 204.55
1956 TOWN LAYOUT
PROP PCR-33
PI+54.41 13.00 RT
PI+01.00 10.50 RT
#5

CONTINUED ON SHEET NO. 40

N/F
SARRO CHRISTOPHER M
1 GOOD ST – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50–11–0
DEED BK 28363 / PAGE 110
PLAN BOOK 88 PLAN 15

N/F
RETTMAN PAUL E. JR. & KATHLEEN
3 GOOD ST – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50–12–0
DEED BK 15508 / PAGE 54
PLAN BOOK 88 PLAN 15

N/F
ALEXANDER ARTHUR & MELISSA
5 GOOD ST – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50–13–0
DEED BK 16581 / PAGE 78
PLAN BOOK 88 PLAN 15

N/F
DUMAIS GERALD M
7 GOOD ST – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50–14–0
DEED BK 2123 / PAGE 385
PLAN BOOK 88 PLAN 15

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C168	54°18'53"	12.00	11.38	6.16
C169	48°11'23"	15.00	12.62	6.71
C170	48°11'34"	15.00	12.62	6.71
C171	91°44'10"	5.00	8.01	5.15
C172	2°53'36"	500.00	25.25	12.63
C173	53°54'05"	15.00	14.11	7.63
C174	114°58'58"	2.00	4.01	3.14
C175	35°04'18"	10.00	6.12	3.16
C176	74°26'01"	20.00	25.98	15.19

Curve Table				
Curve #	Delta	Radius	Length	Tangent
C204	175°12'36"	2.85	8.71	68.10
C205	67°55'53"	15.00	17.78	10.10
C206	88°55'51"	2.01	3.12	1.97
C207	90°28'37"	5.00	7.90	5.04
C224	91°36'02"	5.00	7.99	5.14
C225	90°00'00"	5.00	7.85	5.00
C226	92°11'56"	2.00	3.22	2.08
C227	88°51'56"	3.00	4.65	2.94
C228	89°39'43"	5.00	7.82	4.97

0 20 50 100
SCALE: 1" = 20'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	46	140
PROJECT FILE NO.	605178		

DRAINAGE PLAN

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-1	16+00.84	31.4 L	130.41		I=126.90' (DMH-3)	OFFSET CB FLAT TOP
DMH-3	15+99	11.1 L	130.76	I=126.30' (DMH-4) I=126.60' (CBCI-1)	I=126.20' (EX-DMH-4)	OFFSET DMH 5' DIA. FLAT TOP
EX-CB-2	12+71.55	34.2 L	125.44		I=121.90' (EX-DMH-2)	
EX-DMH-2	12+58.16	18.1 L	125.66	I=121.15' (EXISTING) I=121.70' (EX-CB-2)	I=120.80' (EXISTING)	
EX-DMH-4	14+97.60	22.0 L	128.41	I=124.30' (DMH-3)	I=124.00' (EXISTING)	

N/F
KRAJEWSKI MARIUSZ
316 BOSTON RD – N BILLERICA,MA
ASSESS. MAP 31 – PARCEL ID: 31–38–0
DEED BK 23810 / PAGE 124
PLAN BOOK 78 PLAN 24

N/F
POWERS JOSEPH T
318 BOSTON RD – N BILLERICA,MA
ASSESS. MAP 31 –
PARCEL ID: 31–37–0
DEED BK 1538 / PAGE 131

BEGINNING OF PROJECT
STA 12+30.00
N 3032840.4592
E 716426.6919
MEET EXISTING

MAP 41 LOT 6
ARTHUR J. & BETH E. LYNCH
324 BOSTON ROAD–BILLERICA, MA
BOOK 17415 PAGE 146

MAP 41 LOT 8–2
S&N REALTY, LLC
29 N. BROADWAY, SALEM, NH
BOOK 10442 PAGE 228

S&N REALTY, LLC
BOOK 2357 PAGE 462

S&N REALTY, LLC
BOOK 2357 PAGE 462

BOSTON ROAD (ROUTE 3A)

1978 COUNTY LAYOUT

BOSTON RD CONST ℄ & PGL

10+00 11 12 13 14 15 16

PC +95.29

PCC +08.39

EX-CB-2 REM F&G PROP F&G

EX-CB REM F&G PROP F&G

EX-DMH REM F&C PROP F&C

EX-DMH-2 REM F&C PROP F&C

EX-DMH-4 REM F&C PROP F&C

21 LF - 10" DI

RET PIPE

ABAN PIPE
ADJ CB

CBCI-1
20 LF - 12" RCP
REM PIPE

DMH-3

101 LF - 18" RCP

ADJ

ADJ (BO)

LIMIT OF WORK MEET EXIST +50

SIMMONS LANE

TOWN LAYOUT

MATCHLINE

RELOCATE GAS MAIN (SEE UTILITY PLAN)

N/F
313 BOSTON ROAD REALTY LLC
313 BOSTON RD – WESTFORD,MA
ASSESS. MAP 41 – PARCEL ID: 41–3–1
DEED BK 29546 / PAGE 135
℄ OF LAND IN BILLERICA, MILLER&NYLANDER
DATED 3–19–1949
PLAN BOOK 75 PLAN 54

MAP 41 LOT 5
CHARLES C. HUR
315 BOSTON ROAD – BILLERICA, MA
BOOK 21220 PAGE 206

MAP 41 LOT 4
STEP FIVE REALTY TRUST
PHILIP J. MALONSON, TRUSTEE
317 BOSTON ROAD
BILLERICA, MA
BOOK 11601 PAGE 295

UTILITY LEGEND

- EXISTING CATV / PROPOSED CATV
- EXISTING RCP / PROPOSED RCP
- EXISTING ELECTRIC / PROPOSED ELECTRIC
- EXISTING OVERHEAD WIRES
- EXISTING GAS / PROPOSED GAS
- EXISTING SEWER / PROPOSED SEWER
- EXISTING TELEPHONE CONDUIT / PROPOSED TELEPHONE
- EXISTING WATER / PROPOSED WATER

NOTE:
IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OF THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACE.

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 47

FOR PROFILE SEE SHEET 29

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:19 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

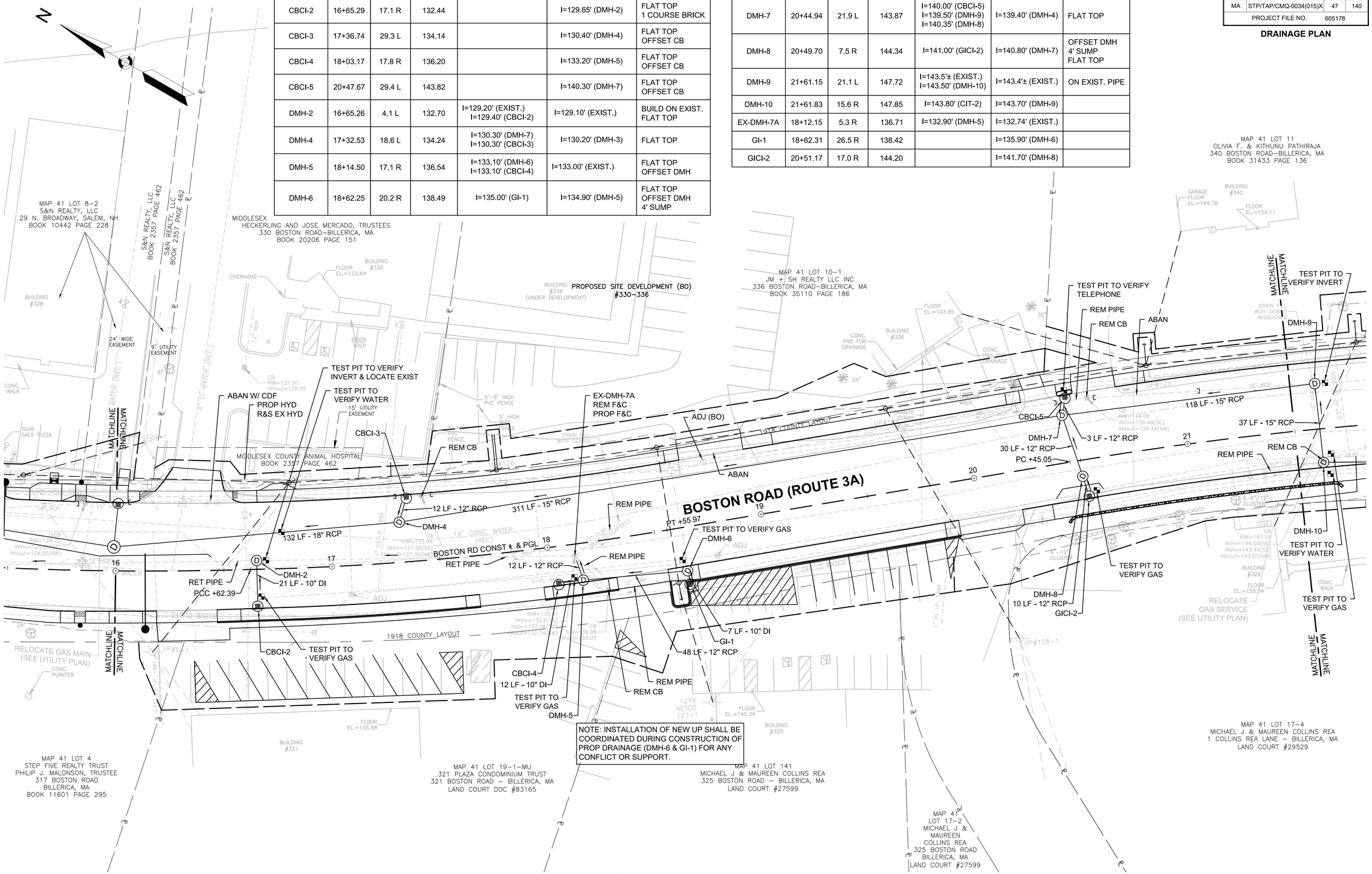
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	47	140
PROJECT FILE NO.	605178		

DRAINAGE PLAN

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:20 PM

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-2	16+65.29	17.1 R	132.44		I=129.65' (DMH-2)	FLAT TOP 1 COURSE BRICK
CBCI-3	17+36.74	29.3 L	134.14		I=130.40' (DMH-4)	FLAT TOP OFFSET CB
CBCI-4	18+03.17	17.8 R	136.20		I=133.20' (DMH-5)	FLAT TOP OFFSET CB
CBCI-5	20+47.67	29.4 L	143.82		I=140.30' (DMH-7)	FLAT TOP OFFSET CB
DMH-2	16+65.26	4.1 L	132.70	I=129.20' (EXIST.) I=129.40' (CBCI-2)	I=129.10' (EXIST.)	BUILD ON EXIST. FLAT TOP
DMH-4	17+32.53	18.6 L	134.24	I=130.30' (DMH-7) I=130.30' (CBCI-3)	I=130.20' (DMH-3)	FLAT TOP
DMH-5	18+14.50	17.1 R	136.54	I=133.10' (DMH-6) I=133.10' (CBCI-4)	I=133.00' (EXIST.)	FLAT TOP OFFSET DMH
DMH-6	18+62.25	20.2 R	138.49	I=135.00' (GI-1)	I=134.90' (DMH-5)	FLAT TOP OFFSET DMH 4' SUMP

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DMH-7	20+44.94	21.9 L	143.87	I=140.00' (CBCI-5) I=139.50' (DMH-9) I=140.35' (DMH-8)	I=139.40' (DMH-4)	FLAT TOP
DMH-8	20+49.70	7.5 R	144.34	I=141.00' (GICI-2)	I=140.80' (DMH-7)	OFFSET DMH 4' SUMP FLAT TOP
DMH-9	21+61.15	21.1 L	147.72	I=143.5'± (EXIST.) I=143.50' (DMH-10)	I=143.4'± (EXIST.)	ON EXIST. PIPE
DMH-10	21+61.83	15.6 R	147.85	I=143.80' (CIT-2)	I=143.70' (DMH-9)	
EX-DMH-7A	18+12.15	5.3 R	136.71	I=132.90' (DMH-5)	I=132.74' (EXIST.)	
GI-1	18+62.31	26.5 R	138.42		I=135.90' (DMH-6)	
GICI-2	20+51.17	17.0 R	144.20		I=141.70' (DMH-8)	



CONTINUED ON SHEET NO. 46
CONTINUED ON SHEET NO. 48
FOR PROFILE SEE SHEET 29

CONTINUED ON SHEET NO. 54

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	48	140
	PROJECT FILE NO. 605178		

DRAINAGE PLAN

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:21 PM

CONTINUED ON SHEET NO. 47

CONTINUED ON SHEET NO. 49

BOSTON ROAD (ROUTE 3A)

BOSTON RD CONST ℄ & PGL

HERITAGE ROAD
52 HERITAGE RD CONST ℄

MAP 41 LOT 11
OLIVIA F. & KITHUNU PATHIRAJA
340 BOSTON ROAD–BILLERICA, MA
BOOK 31433 PAGE 136

MAP 41 LOT 12
NSD REAL ESTATE, LLC.
BOOK 30515 PAGE 211

MAP 41 LOT 13
NSD REAL ESTATE, LLC.
BOOK 30519 PAGE 214

MAP 41 LOT 60–1
A&R REALTY TRUST
NAVIN C. PATEL TR
8 SHAKER HILL LANE–WOBURN, MA.
BOOK 20009 PAGE 167

MAP 41 LOT 60–2
KRISTINA M. BOUBEBUCK
7 HERITAGE ROAD – BILLERICA, MA
BOOK LC 39512

MAP 41 LOT 17–3
HENRY F. COLLINS
1 COLLINS REA LANE – BILLERICA, MA
LAND COURT #24884

MAP 41 LOT 15–7
PRIMO 3A LLC
24 HEARTHSTONE – BURLINGTON, MA 01803–4125
LC 44359

MAP 41 LOT 15–8
333 BOSTON RD LLC
333 BOSTON RD– BILLERICA MA
LC 43703

MAP 41 LOT 145–3
CHARLES E. CARROLL REVOCABLE TRUST
350 BOSTON ROAD–BILLERICA,MA
BOOK 32837 PAGE 245

PROPOSED SITE DEVELOPMENT (BO)
#342–346

TEST PIT TO VERIFY INVERT

TEST PIT TO VERIFY INVERT & LOCATE EXIST

TEST PIT TO VERIFY WATER

TEST PIT TO VERIFY GAS

TEST PIT TO VERIFY TELEPHONE

TEST PIT TO VERIFY WATER

TEST PIT TO VERIFY WATER

TEST PIT TO VERIFY GAS

RELOCATE GAS SERVICE (SEE UTILITY PLAN)

RELOCATE GAS MAIN (SEE UTILITY PLAN)

CONTRACTOR TO SUPPLY SUPPORT FOR WATER MAIN DURING LIGHT POLE FOUNDATION INSTALLATION

31 LF - 10" DI

244 LF - 18" RCP

PCC +83.71

PC +24.27

PT +83.71

PT +76.61

CBCI-7
10 LF - 12" RCP
DMH-11

40 LF - 12" RCP

CIT-2
REMODEL

CBCI-6
145 LF - 12" RCP

CB-1 (LP)

PROP HYD
R&S EX HYD
121 LF - 10" DI

PROP HYD
- EXCLUDING
COST OF HYD
R&S EX HYD

REM PIPE
REM CB
REM DMH
REM PIPE
REM CB
REM CB
REM PIPE

ABAN
ABAN W/ CDF
ABAN
ABAN

RET PIPE
RET PIPE

ADJ

CB-36
10 LF - 12" RCP
DMH-12

55 LF - 18" RCP
DMH-13
14 LF - 12" RCP
DMH-14

CB-2
9 LF - 12" RCP

GI-2
18 LF - 12" RCP

25+74.90 BOSTON ROAD (ROUTE3A)=
50+00.00 HERITAGE ROAD

1918 COUNTY LAYOUT

MATCHLINE

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-1	24+29.11	30.4 R	151.50		I=148.00' (CIT-2)	FLAT TOP LOW POINT
CB-2	26+85.99	27.0 L	156.18		I=152.50' (DMH-13)	FLAT TOP
CB-36	26+36.94	26.8 L	154.90		I=151.40' (DMH-12)	OFFSET CB FLAT TOP
CBCI-6	22+90.37	17.0 R	150.09		I=146.50' (DMH-11)	FLAT TOP
CBCI-7	22+91.13	30.0 L	149.84		I=146.30' (DMH-11)	FLAT TOP
CIT-2	23+08.33	21.6 R	150.79	I=145.29' (EXIST.) I=147.30' (CB-1)	I=145.20' (DMH-10)	CHANGE IN TYPE REMODEL

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DMH-11	22+85.40	22.4 L	149.93	I=146.20' (CBCI-7) I=146.20' (CBCI-6)	I=144.1'± (EXIST.)	5' DIA FLAT TOP
DMH-12	26+31.97	18.2 L	154.95	I=150.60' (DMH-13) I=151.10' (CB-36)	I=149.60' (DMH-44)	
DMH-13	26+87.08	18.3 L	156.39	I=152.10' (DMH-15) I=152.40' (DMH-14) I=152.40' (CB-2)	I=152.00' (DMH-12)	
DMH-14	26+86.17	4.5 L	156.64	I=153.30' (GI-2)	I=152.60' (DMH-13)	FLAT TOP 4' SUMP
GI-2	26+84.07	14.5 R	156.38		I=153.90' (DMH-14)	

0 20 50 100

SCALE: 1" = 20'

FOR PROFILE SEE SHEET 30

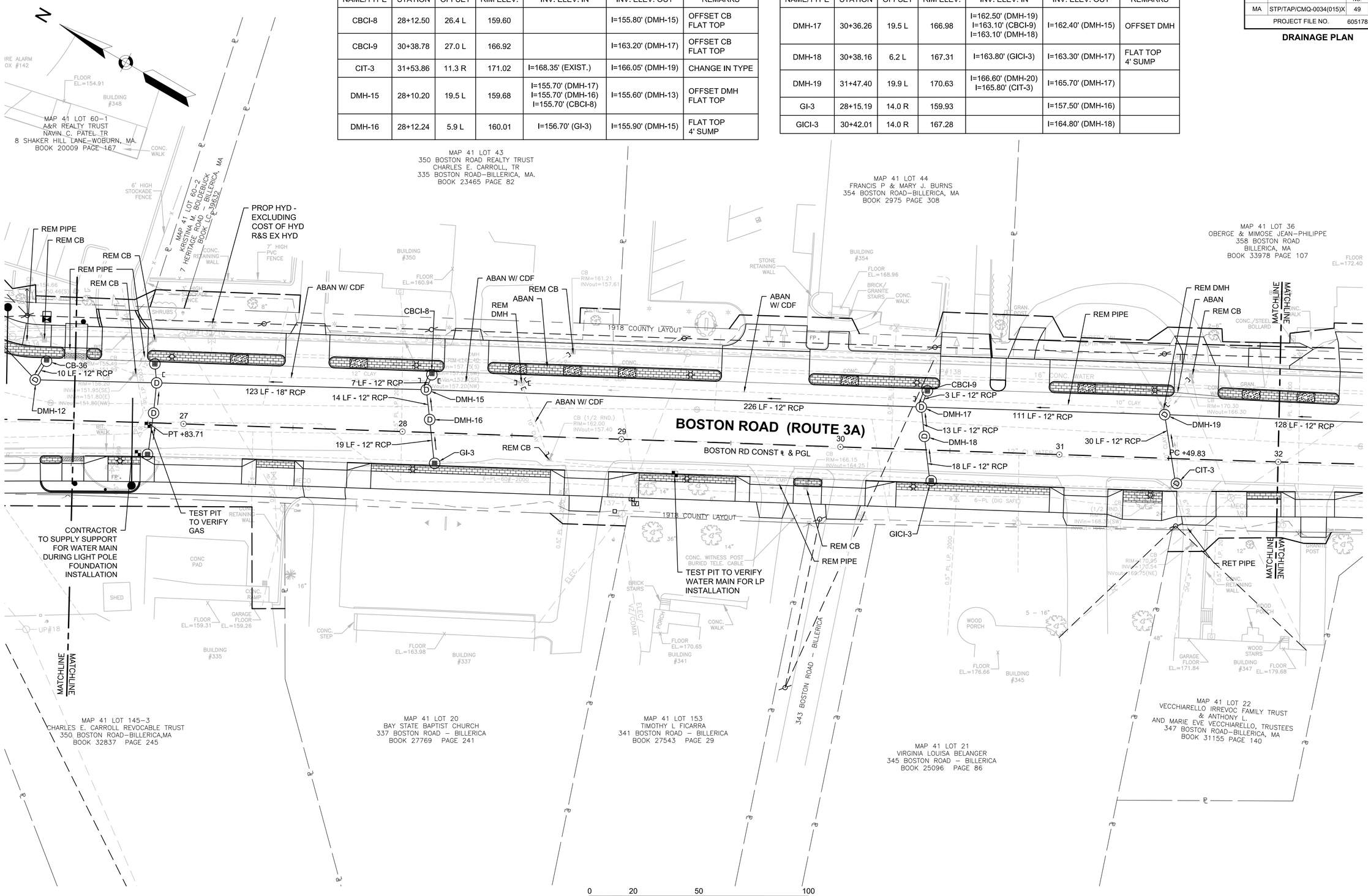
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	49	140
PROJECT FILE NO.	605178		

DRAINAGE PLAN

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-8	28+12.50	26.4 L	159.60		I=155.80' (DMH-15)	OFFSET CB FLAT TOP
CBCI-9	30+38.78	27.0 L	166.92		I=163.20' (DMH-17)	OFFSET CB FLAT TOP
CIT-3	31+53.86	11.3 R	171.02	I=168.35' (EXIST.)	I=166.05' (DMH-19)	CHANGE IN TYPE
DMH-15	28+10.20	19.5 L	159.68	I=155.70' (DMH-17) I=155.70' (DMH-16) I=155.70' (CBCI-8)	I=155.60' (DMH-13)	OFFSET DMH FLAT TOP
DMH-16	28+12.24	5.9 L	160.01	I=156.70' (GI-3)	I=155.90' (DMH-15)	FLAT TOP 4' SUMP

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DMH-17	30+36.26	19.5 L	166.98	I=162.50' (DMH-19) I=163.10' (CBCI-9) I=163.10' (DMH-18)	I=162.40' (DMH-15)	OFFSET DMH
DMH-18	30+38.16	6.2 L	167.31	I=163.80' (GICI-3)	I=163.30' (DMH-17)	FLAT TOP 4' SUMP
DMH-19	31+47.40	19.9 L	170.63	I=166.60' (DMH-20) I=165.80' (CIT-3)	I=165.70' (DMH-17)	
GI-3	28+15.19	14.0 R	159.93		I=157.50' (DMH-16)	
GICI-3	30+42.01	14.0 R	167.28		I=164.80' (DMH-18)	



FOR PROFILE SEE SHEET 30

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:22 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	50	140
PROJECT FILE NO.	605178		

DRAINAGE PLAN

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-4	35+84.94	27.0 R	186.00		I=182.00' (CIT-4)	
CB-5	36+44.24	12.1 R	187.13		I=183.60' (DMH-27)	FLAT TOP
CBCI-10	32+78.56	25.0 L	174.84		I=171.30' (DMH-20)	FLAT TOP
CBCI-11	32+86.15	12.0 R	175.35		I=171.80' (DMH-20)	FLAT TOP
CIT-4	35+78.03	14.1 R	184.97	I=181.76' (CB-4)	I=181.66' (DMH-26)	CHANGE IN TYPE
DMH-20	32+75.53	18.5 L	174.87	I=171.20' (CBCI-11) I=171.20' (CBCI-10)	I=171.10' (DMH-19)	FLAT TOP
DMH-21	3+03.34	18.7 R	173.33	I=169.10' (DMH-22)	I=169.00' (OF-2)	FLAT TOP 1 COURSE BRICK
DMH-22	34+59.43	180.7 L	173.57	I=169.80' (DMH-23)	I=169.50' (DMH-21)	FLAT TOP 4" FRAME
DMH-23	34+68.94	34.3 L	180.79	I=176.80' (DMH-24)	I=175.90' (DMH-22)	FLAT TOP
DMH-24	34+70.22	13.8 L	181.37	I=177.40' (DMH-25) I=177.45' (EX-CB-3)	I=177.30' (DMH-23)	6' DIA FLAT TOP
DMH-25	35+02.84	15.2 L	182.42	I=178.40' (DMH-26) I=178.40' (DMH-25A)	I=178.30' (DMH-24)	FLAT TOP
DMH-25A	35+03.04	22.1 L	182.29	I=178.80' (GI-4)	I=178.60' (DMH-25)	FLAT TOP 4' SUMP
DMH-26	35+73.34	17.2 L	184.70	I=180.40' (DMH-27) I=180.40' (CIT-4)	I=180.30' (DMH-25)	ON EXIST. PIPE

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DMH-27	36+39.64	18.0 L	186.86	I=183.10' (DMH-29) I=183.10' (CB-5) I=183.10' (DMH-28)	I=183.00' (DMH-26)	FLAT TOP
DMH-28	36+42.20	24.9 L	186.81	I=183.30' (GICI-4)	I=183.20' (DMH-27)	4' SUMP FLAT TOP
EX-CB-3	34+84.80	12.0 R	181.89		I=178.60' (DMH-24)	REMODEL EXIST. CB
GI-4	35+03.22	28.5 L	182.17		I=179.65' (DMH-25A)	
GICI-4	36+43.57	33.7 L	186.68		I=184.15' (DMH-28)	
OF-2	3+24.81	19.0 R		I=168.60' (DMH-21)		

LIMIT OF WORK MEET EXIST +36
TEMP STREAMBED IMPACT (17 SF)
BANK IMPACT (12 LF)
MAP 51 LOT 19-1
REUBIN & LYNNE D. MACDONALD
376 BOSTON ROAD-BILLERICA, MA
BOOK 7053 PAGE 59
MAP 41 LOT 45
WISE MICHAEL F.
4 FARMERS LAN
BOOK 8210
RET AND MAINTAIN EXISTING 36" CMP PIPE DURING CONSTRUCTION OF PIPE ENDS
PROP STONE FOR PIPE ENDS
GW Observed = 169.22
A: 0-8" Loamy sand
B: 8-32" Fine Sandy loam
C: 32-60" Fine Sandy Loam
OF-2
PROP CONCRETE MASONRY PIPE END MODIFIED - SEE DETAIL SHT 12
21 LF - 24" RCP
DMH-21
RET HYD
ADJ
27 LF - 24" RCP
PROP COMPOST FILTER TUBES (TYP)
DMH-22
ABAN W/ CDF
RELOCATE GAS MAIN (SEE UTILITY PLAN)
TEST PIT TO VERIFY WATER
FARMERS LANE
MAP 41 LOT 34
ROBERT A. & JAIME Q. DESOUZA & CAMILLE V. DINGS
364 BOSTON RD.
BILLERICA, MA BOOK 33409 PAGE 273
147 LF - 18" DI
RELOCATE 12" WATER LINE, IF NECESSARY, TO ACCOMODATE PROP 18" DRAIN LINE
MAP 41 PLOT 33
368 BOSTON ROAD-BILLERICA, MA
CARLA LACKWOOD-LACAYO
SERGIO J. LACAYO SR,
AND SERGIO A. LACAYO JR.
BOOK 29929 PAGE 272
MAP 41 LOT 36
OBERGE & MIMOSE JEAN-PHILIPPE
358 BOSTON ROAD
BILLERICA, MA
BOOK 33978 PAGE 107
MAP 41 LOT 35
HAROLD W. JR. & GERADINE BLAKE
362 BOSTON ROAD-BILLERICA
BOOK 9067 PAGE 147
TEST PIT TO VERIFY WATER
TEST PIT TO VERIFY TELEPHONE
DMH-23
TEST PIT TO VERIFY WATER
36+17.84 BOSTON ROAD (ROUTE3A)= 4+00.00 LASALLETTE RD
TEST PIT TO VERIFY WATER
ABAN W/ CDF
REM PIPE
REM CB
ABAN W/ CDF
REM CB
GI-4
TEST PIT TO VERIFY WATER
ABAN W/ CDF
MATCHLINE
MATCHLINE
6' HIGH CHAINLINK FENCE
6' TO 4' HIGH CHAINLINK FENCE
4' HIGH CHAINLINK FENCE
4' TO 3' HIGH CHAINLINK FENCE
CONC./STEEL BOLLARD
STONE STEP
1918 COUNTY LAYOUT
UP#140
UP#141
UP#142
UP#143
UP#144
CBCI-10
6 LF - 12" RCP
DMH-20
31 LF - 12" RCP
TEST PIT TO VERIFY WATER
21 LF - 18" RCP
REM DMH
DMH-24
32 LF - 18" RCP
6 LF - 12" RCP
DMH-25A
70 LF - 18" RCP
7 LF - 12" RCP
DMH-25
66 LF - 18" RCP
DMH-26
RET PIPE
ABAN
REM DMH
GICI-4
DMH-28
DMH-27
9 LF - 12" RCP
7 LF - 12" RCP
30 LF - 12" RCP
PC +49.83
32
PT +44.55
33
BOSTON RD CONST & PGL
34
PC +79.39
35
36
PT +34.13
37
1+00
4+00
BOSTON ROAD (ROUTE 3A)
TOS
CBCI-11
TEST PIT TO VERIFY WATER
CHISELED "X" IN GRANITE WALL
GRANITE WALL
GRANITE POST
RELOCATE GAS MAIN (SEE UTILITY PLAN)
REMODEL WMH
EX-CB-3
REM F&G
PROP F&G
TEST PIT TO VERIFY WATER
30 LF - 12" RCP
PROP HYD
R&S EX HYD
CIT-4
15 LF - 12" RCP
CB-4
ABAN
REM CB
CB-5
ABAN
REM DMH
LIMIT OF WORK MEET EXIST +77
LASALLETTE ROAD
S-33.42
34+66.32 BOSTON ROAD (ROUTE3A)= 1+00.00 FARMERS LANE
MAP 41 LOT 22
VECCHIARELLO IRREVOC FAMILY TRUST
& ANTHONY L.
ND MARIE EVE VECCHIARELLO, TRUSTEES
347 BOSTON ROAD-BILLERICA, MA
BOOK 31155 PAGE 140
MAP 41 LOT 23-3
THOMAS M. & JULIE A. TODD
349 BOSTON ROAD-BILLERICA, MA
BOOK 11627 PAGE 208
MAP 41 LOT 29
TAPAN HIMANSHU PALKHIWALA
1 LASALLETTE ROAD-BILLERICA, MA
BOOK 28560 PAGE 1
MAP 41 LOT 31
CHRISTOPHER ROBERT
357 BOSTON ROAD-BILLERICA, MA
BOOK 23868 PAGE 104
CONTINUED ON SHEET NO. 49
CONTINUED ON SHEET NO. 51
0 20 50 100
SCALE: 1" = 20'
FOR PROFILE SEE SHEET 31

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:23 PM

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-6	40+01.32	13.8 R	200.59		I=197.20' (DMH-32)	FLAT TOP
CBCI-13	38+61.40	12.0 R	194.69		I=190.70' (DMH-29)	
CBCI-15	70+53.60	32.4 R	198.62		I=194.90' (DMH-31)	FLAT TOP
CBCI-16	71+39.26	11.9 L	202.61		I=198.60' (DMH-31)	
CIT-5	39+21.37	17.0 R	197.25	I=193.70' (CIT-6) I=193.70' (DMH-31)	I=193.60' (DMH-30)	CHANGE IN TYPE
CIT-6	39+74.24	17.7 R	199.56	I=196.14' (DMH-32)	I=195.60' (CIT-5)	CHANGE IN TYPE
DMH-29	38+45.26	30.5 L	194.58	I=189.70' (DMH-30) I=189.70' (CBCI-13)	I=189.60' (DMH-27)	
DMH-30	39+21.28	28.5 L	196.73	I=192.60' (DMH-30A) I=192.60' (CIT-5) I=192.60' (DMH-33)	I=192.50' (DMH-29)	5' DIA FLAT TOP

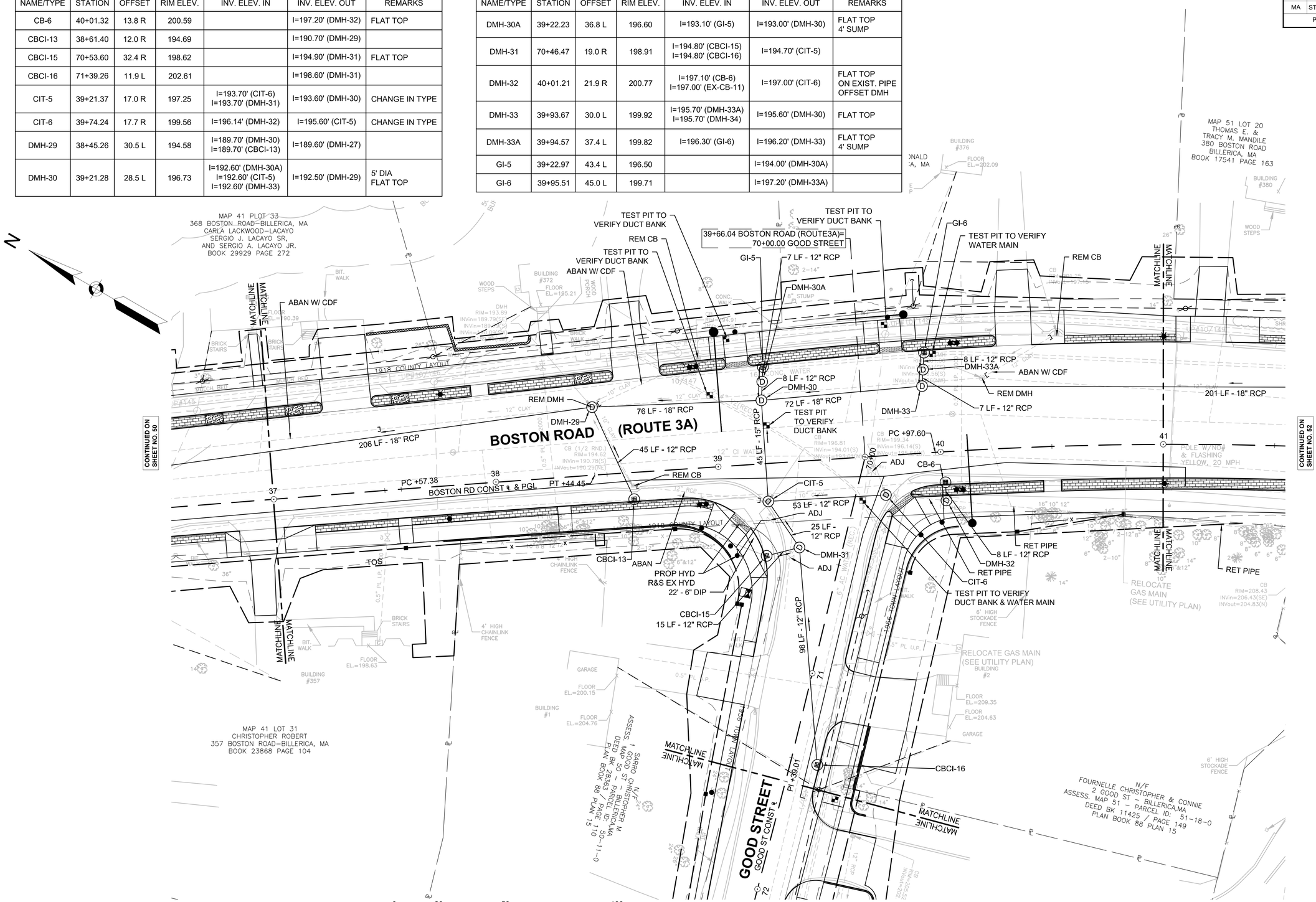
DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DMH-30A	39+22.23	36.8 L	196.60	I=193.10' (GI-5)	I=193.00' (DMH-30)	FLAT TOP 4' SUMP
DMH-31	70+46.47	19.0 R	198.91	I=194.80' (CBCI-15) I=194.80' (CBCI-16)	I=194.70' (CIT-5)	
DMH-32	40+01.21	21.9 R	200.77	I=197.10' (CB-6) I=197.00' (EX-CB-11)	I=197.00' (CIT-6)	FLAT TOP ON EXIST. PIPE OFFSET DMH
DMH-33	39+93.67	30.0 L	199.92	I=195.70' (DMH-33A) I=195.70' (DMH-34)	I=195.60' (DMH-30)	FLAT TOP
DMH-33A	39+94.57	37.4 L	199.82	I=196.30' (GI-6)	I=196.20' (DMH-33)	FLAT TOP 4' SUMP
GI-5	39+22.97	43.4 L	196.50		I=194.00' (DMH-30A)	
GI-6	39+95.51	45.0 L	199.71		I=197.20' (DMH-33A)	

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	51	140
PROJECT FILE NO.	605178		

DRAINAGE PLAN

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:24 PM

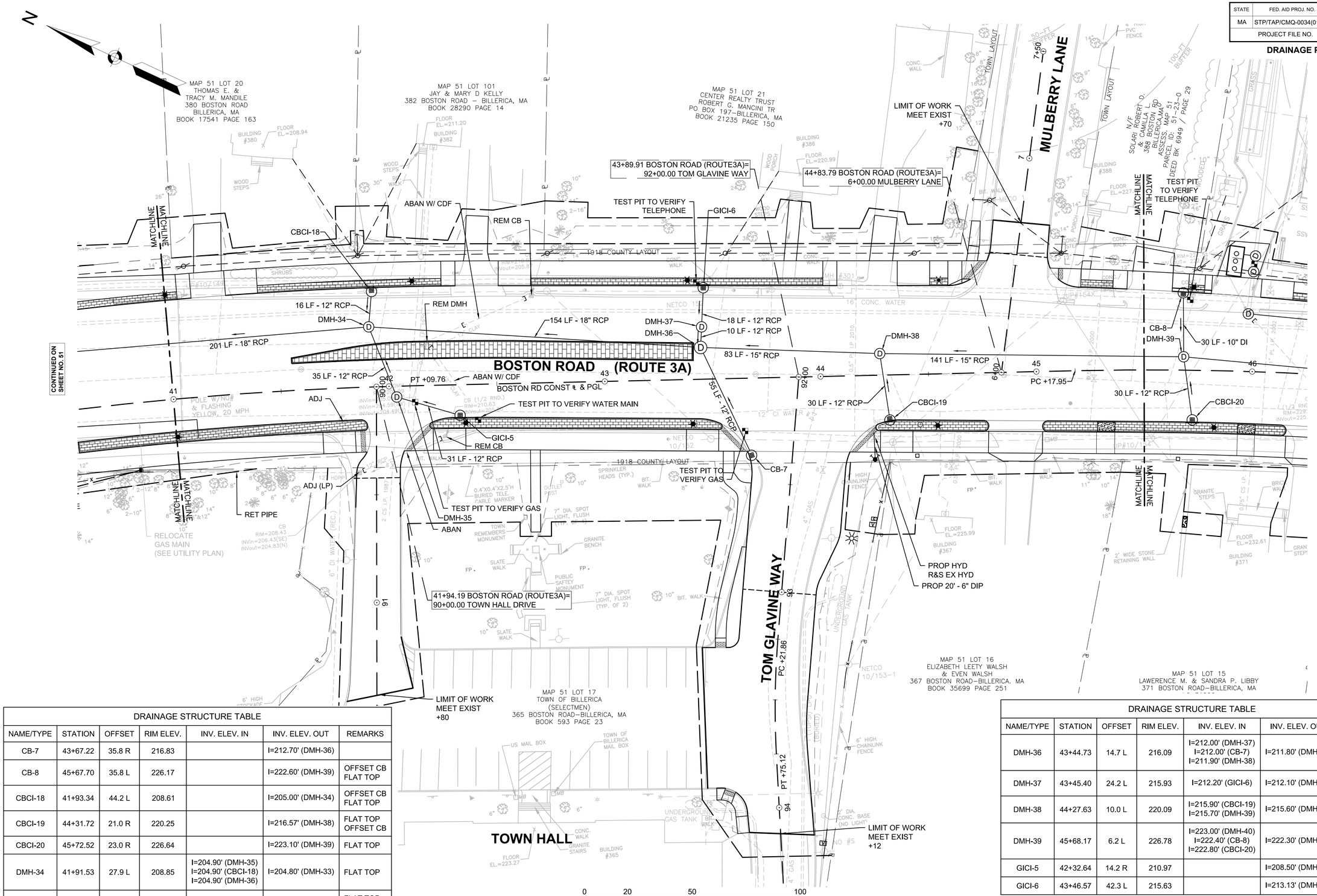


BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	52	140
PROJECT FILE NO.	605178		

DRAINAGE PLAN

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:25 PM



DRAINAGE STRUCTURE TABLE

NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-7	43+67.22	35.8 R	216.83		I=212.70' (DMH-36)	
CB-8	45+67.70	35.8 L	226.17		I=222.60' (DMH-39)	OFFSET CB FLAT TOP
CBCI-18	41+93.34	44.2 L	208.61		I=205.00' (DMH-34)	OFFSET CB FLAT TOP
CBCI-19	44+31.72	21.0 R	220.25		I=216.57' (DMH-38)	FLAT TOP OFFSET CB
CBCI-20	45+72.52	23.0 R	226.64		I=223.10' (DMH-39)	FLAT TOP
DMH-34	41+91.53	27.9 L	208.85	I=204.90' (DMH-35) I=204.90' (CBCI-18) I=204.90' (DMH-36)	I=204.80' (DMH-33)	FLAT TOP
DMH-35	42+03.45	5.0 R	209.84	I=206.30' (GICI-5)	I=206.20' (DMH-34)	FLAT TOP 4' SUMP

DRAINAGE STRUCTURE TABLE

NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DMH-36	43+44.73	14.7 L	216.09	I=212.00' (DMH-37) I=212.00' (CB-7) I=211.90' (DMH-38)	I=211.80' (DMH-34)	5' DIA, FLAT TOP
DMH-37	43+45.40	24.2 L	215.93	I=212.20' (GICI-6)	I=212.10' (DMH-36)	4' SUMP FLAT TOP
DMH-38	44+27.63	10.0 L	220.09	I=215.90' (CBCI-19) I=215.70' (DMH-39)	I=215.60' (DMH-36)	
DMH-39	45+68.17	6.2 L	226.78	I=223.00' (DMH-40) I=222.40' (CB-8) I=222.80' (CBCI-20)	I=222.30' (DMH-38)	FLAT TOP
GICI-5	42+32.64	14.2 R	210.97		I=208.50' (DMH-35)	
GICI-6	43+46.57	42.3 L	215.63		I=213.13' (DMH-37)	

FOR PROFILE SEE SHEET 32

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	53	140
PROJECT FILE NO.	605178		

DRAINAGE PLAN

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-9	47+20.53	23.8 R	232.02		I=228.60' (DMH-40)	FLAT TOP
CB-10	47+61.32	24.1 R	234.00		I=230.40' (DMH-40)	5' DIA. DOUBLE GRATE FLAT TOP
CBCI-21	47+66.71	26.6 L	233.87		I=229.80' (CIT-7)	
CIT-7	47+57.24	25.0 L	233.62	I=229.30' (CIT-8) I=229.70' (CBCI-21)	I=229.10' (DMH-42)	CHANGE IN TYPE
CIT-8	47+82.32	29.8 R	235.18		I=230.02' (CIT-7)	REMODEL CHANGE IN TYPE
DMH-40	47+11.49	1.4 L	232.74	I=228.60' (CB-10) I=228.40' (CB-9)	I=228.30' (DMH-39)	5' DIA.
DMH-41	45+99.82	53.6 L	228.30	I=222.25' (DVM-1) I=222.25' (WQU-1)	I=222.25' (EXIST.)	ON EXIST PIPE
DMH-42	45+97.38	26.7 L	227.69	I=223.50' (CIT-7)	I=222.70' (EXIST.)	FLAT TOP

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
DVM-1	45+99.18	46.3 L	227.58	I=222.45' (DMH-42)	I=222.45' (DMH-41) I=222.45' (WQU-1)	ON EXIST PIPE
WQU-1	45+90.90	50.9 L	227.80	I=222.35' (DVM-1)	I=222.35' (DMH-41)	

WORK TO BE DONE BY OTHERS - UNDER SEPARATE CONTRACT

WQU-1
9 LF - 8" PVC
DMH-41
RET
TEST PIT TO VERIFY TELEPHONE
TEST PIT TO LOCATE DRAIN PIPE AND CONFIRM INVERT
DVM-1
RET
CIT-7
9 LF - 12" RCP
CBCI-21
163 LF - 18" RCP
9 LF - 8" PVC
DMH-42
REM DMH
ADJ
144 LF - 15" RCP
DMH-40
ABAN W/ CDF
REM CB
27 LF - 12" RCP
56 LF - 12" RCP
60 LF - 15" RCP
CB-9
CB-10
CIT-8
PROP HYD
R&S EXIST HYD

BOSTON ROAD (ROUTE 3A)
BOSTON RD CONST ℄
PT +06.68
1918 COUNTY LAYOUT

END OF PROJECT
STA 50+09.00
N 3029545.9816
E 718235.7227
MEET EXISTING

MAP 51 LOT 25-3
DANFORTH VILLAGE CONDOMINIUMS
UNITS 101 – 406
396 BOSTON ROAD–BILLERICA, MA

MAP 51 LOT 26
SILMARA M. FALQUETO &
CLAUDEMIR SINGER
398 BOSTON ROAD–BILLERICA, MA
BOOK 33367 PAGE 228

MAP 51 LOT 27
400 BOSTON ROAD–BILLERICA, MA
BOOK 5066 PAGE 187

MAP 51 LOT 15
LAWERENCE M. & SANDRA P. LIBBY
371 BOSTON ROAD–BILLERICA, MA
LC 31002

MAP 51 LOT 14
D + K REALTY TRUST,
MICHAEL W DONNELLY TR,
AND BRIAN P. KELLY
373 BOSTON ROAD–BILLERICA, MA
BOOK 28443 PAGE 45

MAP 51 LOT 13-2
PAUL L. GAGNON &
LINDA A. MILLER
375 BOSTON ROAD
BILLERICA, MA
BOOK 10257 PAGE 19

MAP 51 LOT 13-1
377 BOSTON RD REALTY LLC
377 BOSTON ROAD–BILLERICA, MA
BOOK 7062 PAGE 92

MAP 51 LOT 123-0
ELL PETER M. & DIANE MARIE
BOSTON ROAD–BILLERICA, MA
BOOK 6042 PAGE 170

CONTINUED ON SHEET NO. 52

FOR PROFILE SEE SHEET 32

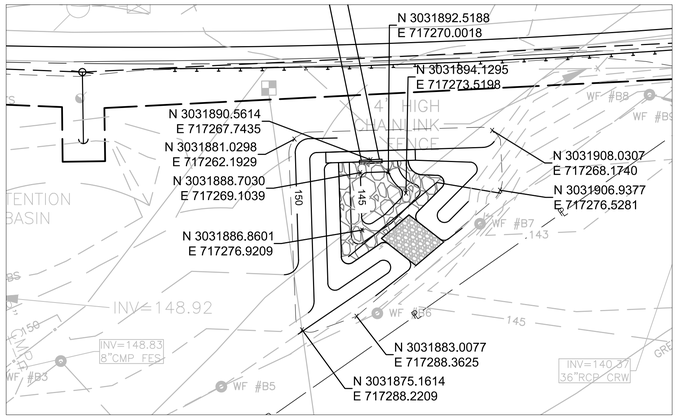
0 20 50 100
SCALE: 1" = 20'

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:26 PM

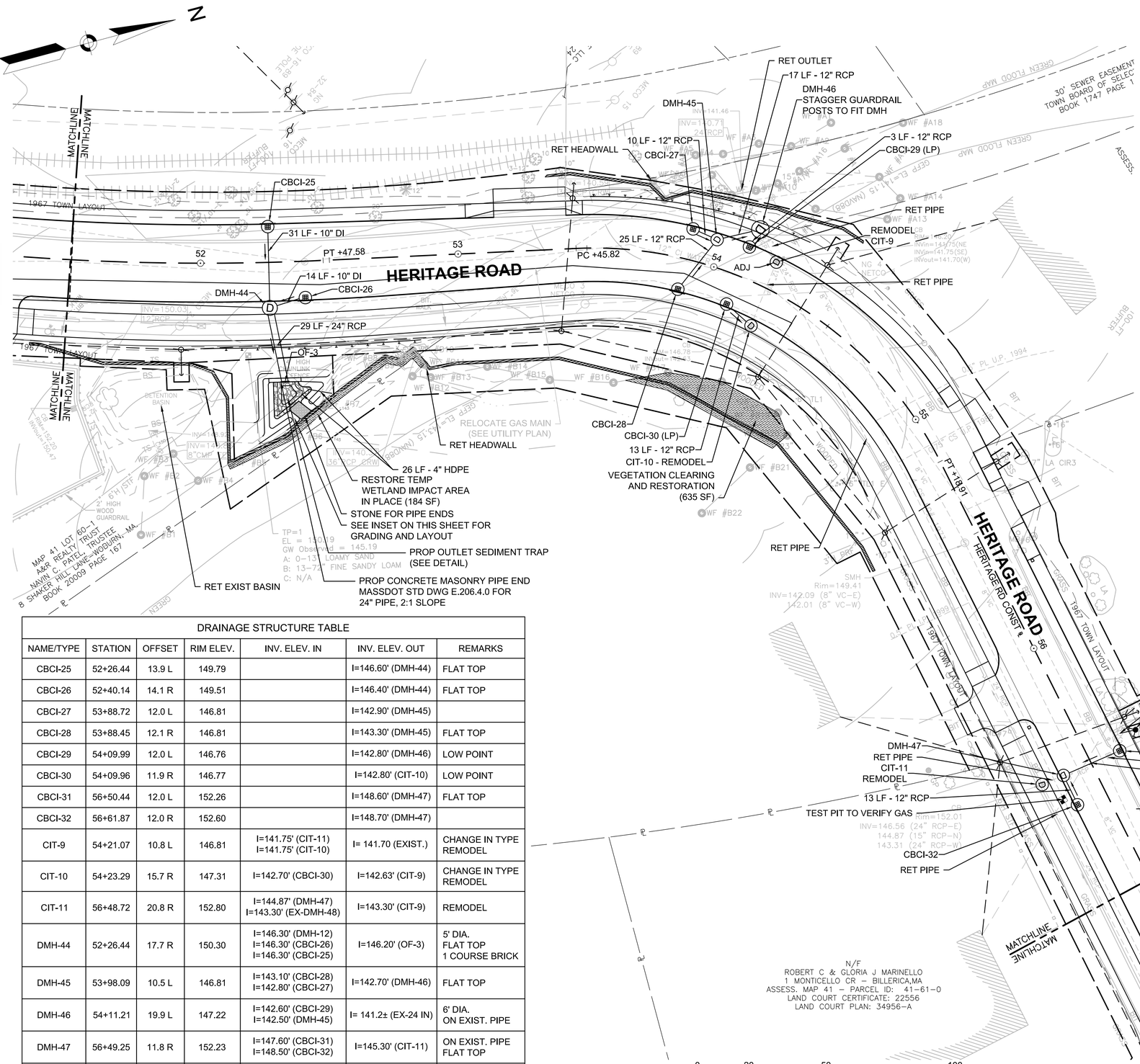
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	54	140
PROJECT FILE NO.	605178		

DRAINAGE PLAN
HERITAGE ROAD



INSET
SCALE: 1"=10'



DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-25	52+26.44	13.9 L	149.79		I=146.60' (DMH-44)	FLAT TOP
CBCI-26	52+40.14	14.1 R	149.51		I=146.40' (DMH-44)	FLAT TOP
CBCI-27	53+88.72	12.0 L	146.81		I=142.90' (DMH-45)	
CBCI-28	53+88.45	12.1 R	146.81		I=143.30' (DMH-45)	FLAT TOP
CBCI-29	54+09.99	12.0 L	146.76		I=142.80' (DMH-46)	LOW POINT
CBCI-30	54+09.96	11.9 R	146.77		I=142.80' (CIT-10)	LOW POINT
CBCI-31	56+50.44	12.0 L	152.26		I=148.60' (DMH-47)	FLAT TOP
CBCI-32	56+61.87	12.0 R	152.60		I=148.70' (DMH-47)	
CIT-9	54+21.07	10.8 L	146.81	I=141.75' (CIT-11) I=141.75' (CIT-10)	I= 141.70 (EXIST.)	CHANGE IN TYPE REMODEL
CIT-10	54+23.29	15.7 R	147.31	I=142.70' (CBCI-30)	I=142.63' (CIT-9)	CHANGE IN TYPE REMODEL
CIT-11	56+48.72	20.8 R	152.80	I=144.87' (DMH-47) I=143.30' (EX-DMH-48)	I=143.30' (CIT-9)	REMODEL
DMH-44	52+26.44	17.7 R	150.30	I=146.30' (DMH-12) I=146.30' (CBCI-26) I=146.30' (CBCI-25)	I=146.20' (OF-3)	5' DIA. FLAT TOP 1 COURSE BRICK
DMH-45	53+98.09	10.5 L	146.81	I=143.10' (CBCI-28) I=142.80' (CBCI-27)	I=142.70' (DMH-46)	FLAT TOP
DMH-46	54+11.21	19.9 L	147.22	I=142.60' (CBCI-29) I=142.50' (DMH-45)	I= 141.2± (EX-24 IN)	6' DIA. ON EXIST. PIPE
DMH-47	56+49.25	11.8 R	152.23	I=147.60' (CBCI-31) I=148.50' (CBCI-32)	I=145.30' (CIT-11)	ON EXIST. PIPE FLAT TOP
OF-3	52+31.35	46.6 R		I=146.10' (DMH-44)		

FOR PROFILE SEE SHEET 33

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:27 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	55	140
PROJECT FILE NO.	605178		

DRAINAGE PLAN
HERITAGE ROAD

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:28 PM

DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-33	57+90.88	32.2 R	156.72		I=153.20' (CIT-12)	FLAT TOP
CB-34	59+49.83	15.4 L	161.58		I=157.90' (CIT-13)	FLAT TOP
CIT-12	57+86.01	42.2 R	157.24	I=153.10' (CB-33)	I=153.03' (EXIST.)	CHANGE IN TYPE REMODEL
CIT-13	59+42.37	11.7 L	161.35	I=157.80' (CB-34)	I=157.71' (EXIST.)	CHANGE IN TYPE
CIT-15	58+38.76	27.0 R	158.12		I=152.75' (EXIST.) I=153.10'(EXIST.)	CHANGE IN TYPE

N

MARSHALL MIDDLE SCHOOL

N/F
DEMBKOSKI RONALD J & JEAN M.
8 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–48–0
LAND COURT CERTIFICATE: 22649
LAND COURT PLAN: 34956–A

N/F
ALESSIO DENNIS PAUL
12 HERITAGE RD
BILLERICA,MA
ASSESS. MAP 41
PARCEL ID: 41–49–0
LAND COURT CERTIFICATE: 21824
LAND COURT PLAN: 34956–A

N/F
DIMATTEO JASON P. & ALISHA D.
14 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–50–0
DEED BK 11361 / PAGE 178
LAND COURT CERTIFICATE: 193936
LAND COURT PLAN: 31951–B

N/F
LEVASSEUR DAVID R.
16 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–51–0
LAND COURT CERTIFICATE: 30708
LAND COURT PLAN: 31951–B

N/F
SENG SOKLEANG
18 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–52–0
LAND COURT CERTIFICATE: 39175
LAND COURT PLAN: 31951–B

N/F
SASSER LINDA C.
17 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–69–0
LAND COURT CERTIFICATE: 34710
LAND COURT PLAN: 31951–A

N/F
ROBERT C. & GLORIA J. MARINELLO
1 MONTICELLO CR – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–61–0
LAND COURT CERTIFICATE: 22356
LAND COURT PLAN: 34956–A

N/F
THE PORCARO FAMILY TRUST & JOHN A. AND SUSANN E. POCARO, TRUSTEES
2 MONTICELLO CR – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–66–0
LAND COURT CERTIFICATE: 291821
LAND COURT PLAN: 34956–A

N/F
ERIC JAMES RICHARD & HEATHER A. MAGEE
1 MOUNT VERNON AV – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–67–0
LAND COURT CERTIFICATE: 42451
LAND COURT PLAN: 34956–A

N/F
CONSTRUCTION SERVICES
JACMAR LAND COURT CERTIFICATE: 17188

HERITAGE ROAD
MONTICELLO CIRCLE
MT VERNON AVENUE

CONTINUED ON SHEET NO. 54

MATCHLINE MATCHLINE
MATCHLINE MATCHLINE

REM CB
CB-33
11 LF - 10" DI
CIT-12 - REMODEL
RET PIPE
CIT-13
9 LF - 12" RCP
CB-34
1967 TOWN LAYOUT
ADJ
RET PIPE
RET
ADJ CB
ADJ EX-DMH-40
CIT-15
RET
RET PIPE
LIMIT OF WORK MEET EXIST
LIMIT OF WORK MEET EXIST
STA 60+18
N 3032229.4785
E 717851.9866

PI +68.28
PI +56.91
PI +19.37
PC +65.79
PT +98.03
57
58
59
60
61
61+43.02

1967 TOWN LAYOUT

SMH
Rim=157.50
INV=149.62 (8" VC–E)
149.76 (8" VC–S)
149.56 (8" VC–W)

SMH
Rim=165.88
INV=157.21 (8" VC–E)
157.22 (8" VC–S)
157.20 (8" VC–W)
163.74 (12" RCP–SW)

CB
Rim=161.26
INV=157.71 (24" RCP–S)

CB
Rim=169.09
INV=164.91 (12" RCP–W)
164.95 (12" RCP–E)

CB
Rim=166.76
INV=162.11 (24" RCP–S)
162.08 (12" RCP–NE)
162.08 (12" RCP–E)
162.06 (15" RCP–W)

CB
Rim=167.32
INV=163.94 (12" RCP–W)
163.90 (24" RCP–S)
163.48 (24" RCP–N)

CB
Rim=156.43
INV= 153.03 (12" RCP–NE)

DMH
Rim=157.82
INV=152.29 (36" RCP–E)
152.27 (12" RCP–S)
152.32 (12" RCP–SW)
152.17 (36" RCP–W)

CB
Rim=157.10
INV=153.10 (12" RCP–S)
152.75 (12" RCP–N)

CB
Rim=160.91
INV=156.21 (15" RCP–E)
156.66 (24" RCP–N)
155.45 (24" RCP–W)

CB
Rim=167.33
INV=164.67 (12" RCP–E)

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 33

BILLERICA
BOSTON ROAD (ROUTE 3A)

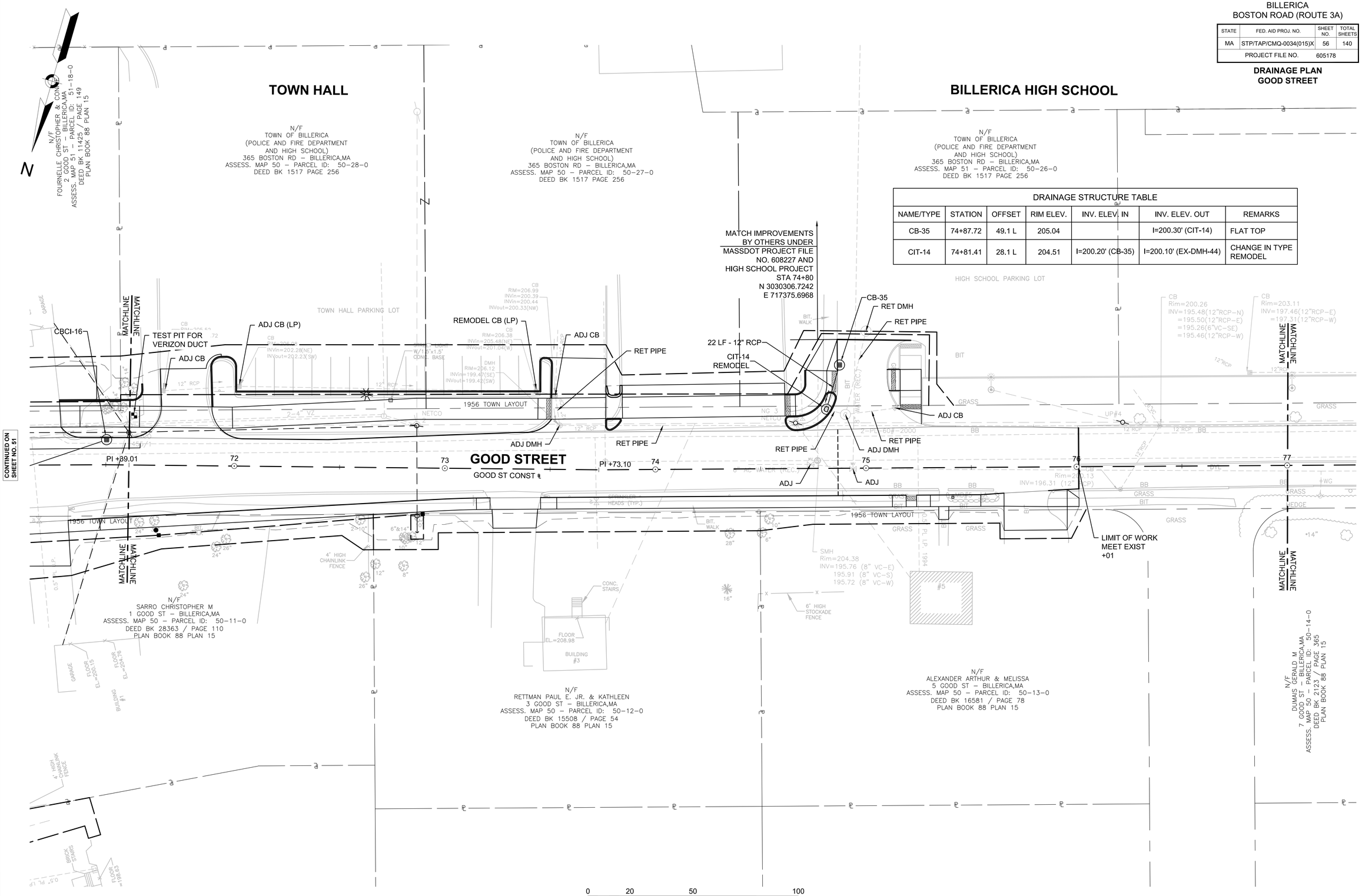
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	56	140
PROJECT FILE NO.	605178		

DRAINAGE PLAN
GOOD STREET

605178_HD(4722_DRAIN).DWG Plotted on 7-Mar-22 9:29 PM

DRAINAGE STRUCTURE TABLE

NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-35	74+87.72	49.1 L	205.04		I=200.30' (CIT-14)	FLAT TOP
CIT-14	74+81.41	28.1 L	204.51	I=200.20' (CB-35)	I=200.10' (EX-DMH-44)	CHANGE IN TYPE REMODEL

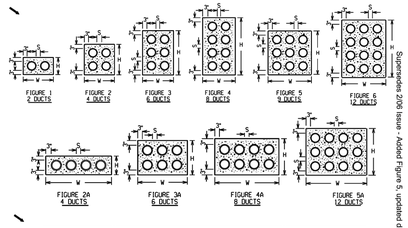


FOR PROFILE SEE SHEET 34

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	57	140
PROJECT FILE NO.	605178		

UTILITY PLAN



Supersedes 2006 Issue - Added Figure 6, updated dimensions in Table 2.

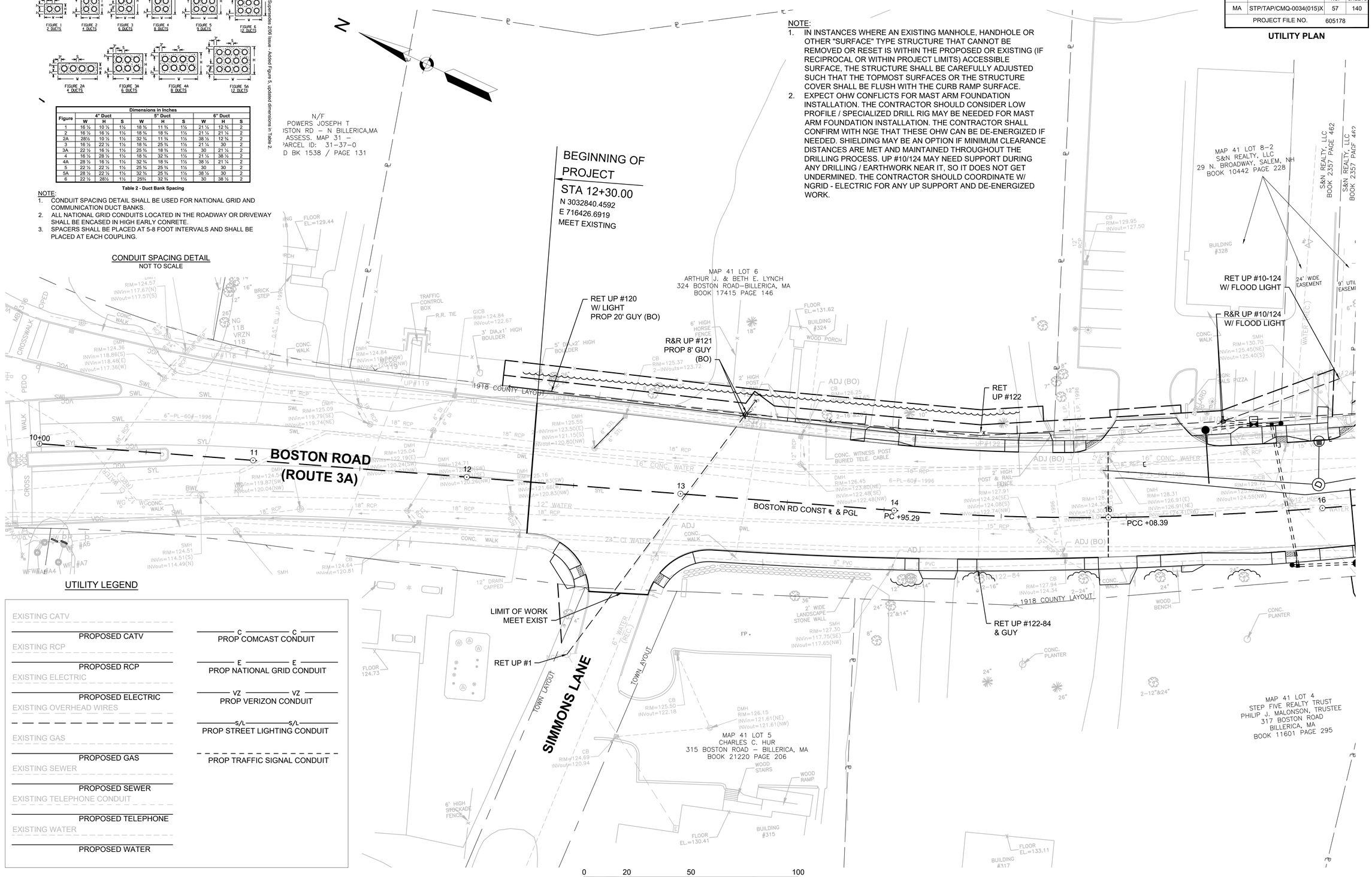
Figure	Dimensions in Inches								
	4" Duct			5" Duct			6" Duct		
	W	H	S	W	H	S	W	H	S
1	16 ½	10 ¾	1½	18 ¾	11 ¾	1½	21 ¼	12 ¾	2
2	16 ½	16 ½	1½	18 ¾	18 ¾	1½	21 ¼	21 ¼	2
2A	28½	10 ¾	1½	32 ¾	11 ¾	1½	38 ½	12 ¾	2
3	16 ½	22 ½	1½	18 ¾	25 ¾	1½	21 ¼	30	2
3A	22 ½	16 ½	1½	25 ¾	18 ¾	1½	30	21 ¼	2
4	16 ½	28 ½	1½	18 ¾	32 ¾	1½	21 ¼	38 ½	2
4A	28 ½	16 ½	1½	32 ¾	18 ¾	1½	38 ½	21 ¼	2
5	22 ½	22 ½	1½	25 ¾	25 ¾	1½	30	30	2
5A	28 ½	22 ½	1½	32 ¾	25 ¾	1½	38 ½	30	2
6	22 ½	28½	1½	25¾	32 ¾	1½	30	38 ½	2

Table 2 - Duct Bank Spacing

NOTE:
1. CONDUIT SPACING DETAIL SHALL BE USED FOR NATIONAL GRID AND COMMUNICATION DUCT BANKS.
2. ALL NATIONAL GRID CONDUITS LOCATED IN THE ROADWAY OR DRIVEWAY SHALL BE ENCASED IN HIGH EARLY CONRETE.
3. SPACERS SHALL BE PLACED AT 5-8 FOOT INTERVALS AND SHALL BE PLACED AT EACH COUPLING.

CONDUIT SPACING DETAIL
NOT TO SCALE

NOTE:
1. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACE.
2. EXPECT OHW CONFLICTS FOR MAST ARM FOUNDATION INSTALLATION. THE CONTRACTOR SHOULD CONSIDER LOW PROFILE / SPECIALIZED DRILL RIG MAY BE NEEDED FOR MAST ARM FOUNDATION INSTALLATION. THE CONTRACTOR SHALL CONFIRM WITH NGE THAT THESE OHW CAN BE DE-ENERGIZED IF NEEDED. SHIELDING MAY BE AN OPTION IF MINIMUM CLEARANCE DISTANCES ARE MET AND MAINTAINED THROUGHOUT THE DRILLING PROCESS. UP #10/124 MAY NEED SUPPORT DURING ANY DRILLING / EARTHWORK NEAR IT, SO IT DOES NOT GET UNDERMINED. THE CONTRACTOR SHOULD COORDINATE W/ NGRID - ELECTRIC FOR ANY UP SUPPORT AND DE-ENERGIZED WORK.



UTILITY LEGEND

EXISTING CATV	
PROPOSED CATV	C C PROP COMCAST CONDUIT
EXISTING RCP	
PROPOSED RCP	E E PROP NATIONAL GRID CONDUIT
EXISTING ELECTRIC	
PROPOSED ELECTRIC	VZ VZ PROP VERIZON CONDUIT
EXISTING OVERHEAD WIRES	
	S/L S/L PROP STREET LIGHTING CONDUIT
EXISTING GAS	
PROPOSED GAS	PROP TRAFFIC SIGNAL CONDUIT
EXISTING SEWER	
PROPOSED SEWER	
EXISTING TELEPHONE CONDUIT	
PROPOSED TELEPHONE	
EXISTING WATER	
PROPOSED WATER	

0 20 50 100
SCALE: 1" = 20'

605178_HDI(4722_UTIL).DWG Plotted on 7-Mar-22 9:39 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	58	140
PROJECT FILE NO.	605178		

UTILITY PLAN

605178_HDU4722_UTIL).DWG Plotted on 7-Mar-22 9:40 PM

CONTINUED ON SHEET NO. 57

CONTINUED ON SHEET NO. 59

MAP 41 LOT 8–2
S&N REALTY, LLC
29 N. BROADWAY, SALEM, NH
BOOK 10442 PAGE 228

S&N REALTY, LLC
BOOK 2357 PAGE 462

S&N REALTY, LLC
BOOK 2357 PAGE 462

MAP 41 LOT 8–3 MU
MIDDLESEX COUNTY ANIMAL HOSPITAL & SCOTT E. HECKERLING AND JOSE MERCADO, TRUSTEES
330 BOSTON ROAD–BILLERICA, MA
BOOK 20206 PAGE 151

MAP 41 LOT 10–1
JM + SH REALTY LLC INC
336 BOSTON ROAD–BILLERICA, MA
BOOK 35110 PAGE 186

MAP 41 LOT 11
OLIVIA F. & KITHUNU PATHIRAJA
340 BOSTON ROAD–BILLERICA, MA
BOOK 31433 PAGE 136

BUILDING #328

BUILDING #330

FLOOR EL.=133.64

OVERHANG

BUILDING #336 (UNDER DEVELOPMENT)

PROPOSED SITE DEVELOPMENT (BO) #330–336

BUILDING #336

FLOOR EL.=143.95

BUILDING #340

GARAGE FLOOR EL.=144.76

FLOOR EL.=154.11

RET UP #10-124
W/ FLOOD LIGHT

R&R UP #10/124
W/ FLOOD LIGHT

24' WIDE EASEMENT

9' UTILITY EASEMENT

R&R UP #10/125 W/ LIGHT & TRANSFORMER (1) (BO)

RET UP #125-1
W/ FLOOD LIGHT

15' UTILITY EASEMENT

R&R UP #126
W/ TRANSFORMER (1)
PROP 16' PUSH BRACE (BO)
R&R LIGHT

R&R UP #127 (BO)

R&R UP #128 (BO)
ADD RELOCATED LIGHT

R&R UP #129
W/ TRANSFORMER (1)
PROP 10' GUY (BO)

R&R UP #130
PROP 10' GUY (BO)
R&R LIGHT

MIDDLESEX COUNTY ANIMAL HOSPITAL
BOOK 2357 PAGE 462

BOSTON ROAD (ROUTE 3A)

BOSTON RD CONST & PGL

1918 COUNTY LAYOUT

1938 COUNTY LAYOUT

PROP OHW (BO) (TYP)

PC +45.05

PT +55.97

POC +62.39

PROP UP #127-1
& 8' GUY (BO)

RET UP #128-1

RET UP #5-1

ABANDON UP #127-1
RET LIGHT &
ANTENNA

MAP 41 LOT 4
STEP FIVE REALTY TRUST
PHILIP J. MALONSON, TRUSTEE
317 BOSTON ROAD
BILLERICA, MA
BOOK 11601 PAGE 295

MAP 41 LOT 19–1–MU
321 PLAZA CONDOMINIUM TRUST
321 BOSTON ROAD – BILLERICA, MA
LAND COURT DOC #83165

MAP 41 LOT 141
MICHAEL J & MAUREEN COLLINS REA
325 BOSTON ROAD – BILLERICA, MA
LAND COURT #27599

MAP 41
LOT 17–2
MICHAEL J & MAUREEN COLLINS REA
325 BOSTON ROAD
BILLERICA, MA
LAND COURT #27599

MAP 41 LOT 17–4
MICHAEL J & MAUREEN COLLINS REA
1 COLLINS REA LANE – BILLERICA, MA
LAND COURT #29529

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 29

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	59	140
PROJECT FILE NO.	605178		

UTILITY PLAN

CONTINUED ON SHEET NO. 65

CONTINUED ON SHEET NO. 58

CONTINUED ON SHEET NO. 60

N

REPLACE UP #16 (BO)
RETAIN UP #132-84
REPLACE UP #16-89 (BO)
MECO 16-89 GUIDE POLE

R&R UP #2 W/ TRANSFORMER (3)/ 3 RISERS (1 EMPTY RISER) PROP 10' GUY & ADD RELOCATED LIGHT

R&R UP #134 & VERIZON RISER PROP 12" GUY (BO), RISER FOR TRAFFIC LIGHT, FIBER OPTICS & R&R LIGHT

R&R UP #1 W/ 3 RISERS NGRID (1-3") & VERIZON (2-3") PROP 12' GUY (BO) & ADD RELOCATED LIGHT

REM GUY WIRE

R&R UP #135/10 W/ TRANS (1), NGRID (2) & VERIZON (1) RISERS (BO)

REM OHW (BO)

R&R UP #10/132 & TRANSFORMER (1) (BO) R&R LIGHT

RELOCATE & REPLACE UP #17 PROP 20' GUY (BO)

R&R UP #133 PROP 15' GUY (BO)

PROPOSED SITE DEVELOPMENT (BO) #342–346

R&R UP #131 PROP 6' GUY (BO)

R&R UP #130 PROP 10' GUY (BO) R&R LIGHT

RELOCATE & REPLACE UP #18 PROP 18' PUSHBRACE & REM ANCHOR (BO)

RET UP #131-1

RET UP #133-1

BOSTON ROAD (ROUTE 3A)

BOSTON RD CONST ℄ & PGL

PT +76.61

PC +24.27

PT +83.71

25+74.90 BOSTON ROAD (ROUTE3A)= 50+00.00 HERITAGE ROAD

HERITAGE ROAD
HERITAGE RD CONST ℄

MAP 41 LOT 11
OLIVIA F. & KITHUNU PATHIRAJA
340 BOSTON ROAD–BILLERICA, MA
BOOK 31433 PAGE 136

MAP 41 LOT 12
NSD REAL ESTATE, LLC.
BOOK 30515 PAGE 211

MAP 41 LOT 13
NSD REAL ESTATE, LLC.
BOOK 30519 PAGE 214

MAP 41 LOT 60–1
A&R REALTY TRUST
NAVIN C. PATEL, TR
8 SHAKER HILL LANE–WOBURN, MA.
BOOK 20009 PAGE 167

MAP 41 LOT 60–2
KRISTINA M. BOUDEBUCK
HERITAGE ROAD – BILLERICA, MA
BOOK LC 39612

MAP 41 LOT 17–3
HENRY F. COLLINS
1 COLLINS REA LANE – BILLERICA, MA
LAND COURT #24884

MAP 41 LOT 17–4
MICHAEL J & MAUREEN COLLINS REA
1 COLLINS REA LANE – BILLERICA, MA
LAND COURT #29529

MAP 41 LOT 15–7
PRIMO 3A LLC
24 HEARTHSTONE – BURLINGTON, MA 01803–4125
LC 44359

MAP 41 LOT 15–8
333 BOSTON RD LLC
333 BOSTON RD– BILLERICA MA
LC 43703

MAP 41 LOT 145–3
CHARLES E. CARROLL REVOCABLE TRUST
350 BOSTON ROAD–BILLERICA,MA
BOOK 32837 PAGE 245

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 30

605178_HDI(4722_UTIL).DWG Plotted on 7-Mar-22 9:40 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	60	140
PROJECT FILE NO.	605178		

UTILITY PLAN

605178_HDI(4722_UTIL).DWG Plotted on 7-Mar-22 9:40 PM

N

MAP 41 LOT 60-1
A&R REALTY TRUST
NAVIN C. PATEL, TR
8 SHAKER HILL LANE-WOBURN, MA.
BOOK 20009 PAGE 167

MAP 41 LOT 60-2
KRISTINA M. GOLDEBLACK
7 HERITAGE ROAD - BILLERICA, MA
BOOK LC 39032

MAP 41 LOT 43
350 BOSTON ROAD REALTY TRUST
CHARLES E. CARROLL, TR
335 BOSTON ROAD-BILLERICA, MA.
BOOK 23465 PAGE 82

MAP 41 LOT 44
FRANCIS P & MARY J. BURNS
354 BOSTON ROAD-BILLERICA, MA
BOOK 2975 PAGE 308

MAP 41 LOT 36
OBERGE & MIMOSE JEAN-PHILIPPE
358 BOSTON ROAD
BILLERICA, MA
BOOK 33978 PAGE 107

R&R UP #135/10
W/ TRANS (1), NGRID (2)
& VERIZON (1) RISERS
(BO)

1-3" CONDUIT (COMCAST)

R&R UP #136
W/ TRANSFORMER (1) (BO)
R&R LIGHT

R&R UP #137
W/ TRANSFORMER (1),
NGRID (2), VERIZON
(1) & COMCAST (1)
RISERS (BO)

R&R UP #138
W/ TRANSFORMER (1),
NGRID (2), VERIZON (1)
RISERS (BO)
R&R LIGHT

1-4" CONDUIT (NGRID)
1-2" CONDUIT (VERIZON)

R&R UP #139 (BO)
NGRID (1), VERIZON (1),
COMCAST (1) RISERS

REM OHW (BO)

1-4" CONDUIT (VERIZON)

2-3" SECONDARY CONDUIT (NGRID)

1-3" SECONDARY CONDUIT (NGRID)

2-3" SECONDARY CONDUIT (NGRID)

1-3" CONDUIT (COMCAST)
1-4" CONDUIT (VERIZON)

1-3" SECONDARY CONDUIT (NGRID)

1-3" CONDUIT (COMCAST)
1-3" CONDUIT (VERIZON)

1-3" COMCAST CONDUIT

1-3" SECONDARY CONDUIT (NGRID)

1-4" CONDUIT (VERIZON)

REM OHW (BO)

BOSTON ROAD (ROUTE 3A)

BOSTON RD CONST ℄ & PGL

PT +83.71

PC +49.83

RELOCATE & REPLACE UP #18
PROP 18' PUSHBRACE
& REM ANCHOR (BO)

RET UP #10-135
W/ NGRID (2) &
VERIZON (1) RISERS

PROP 3" CONDUIT (COMCAST)

RET OHW

1-3" SECONDARY CONDUIT (NGRID)

SECONDARY HH
E-1 (NGRID)
STA 28+98.1, 33.0'RT

R&R UP #137-1 & GUY WIRE
W/ NGRID (1), VERIZON (1)
& COMCAST (1) RISERS (BO)

RET EX-UG
ELECT SERVICE

RET OHW

RET UP #138-1

NEW UP #137-3
NGRID (1), VERIZON (1),
COMCAST (1) RISERS (BO)

TEMP OHW PER
#343 WORKORDER

R&R UP #19X (BO)
NGRID (1), VERIZON (1),
COMCAST (1) RISERS

PROP OHW
CONNECTION

343 BOSTON ROAD - BILLERICA

1918 COUNTY LAYOUT

MAP 41 LOT 145-3
CHARLES E. CARROLL REVOCABLE TRUST
350 BOSTON ROAD-BILLERICA,MA
BOOK 32837 PAGE 245

MAP 41 LOT 20
BAY STATE BAPTIST CHURCH
337 BOSTON ROAD - BILLERICA
BOOK 27769 PAGE 241

MAP 41 LOT 153
TIMOTHY L FICARRA
341 BOSTON ROAD - BILLERICA
BOOK 27543 PAGE 29

MAP 41 LOT 21
VIRGINIA LOUISA BELANGER
345 BOSTON ROAD - BILLERICA
BOOK 25096 PAGE 86

MAP 41 LOT 22
VECCHIARELLO IRREVOC FAMILY TRUST
& ANTHONY L.
AND MARIE EVE VECCHIARELLO, TRUSTEES
347 BOSTON ROAD-BILLERICA, MA
BOOK 31155 PAGE 140

CONTINUED ON SHEET NO. 59

CONTINUED ON SHEET NO. 61

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 30

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	61	140
PROJECT FILE NO.	605178		

UTILITY PLAN

605178_HDI(4722_UTIL).DWG Plotted on 7-Mar-22 9:40 PM

N

LIMIT OF WORK MEET EXIST +36

MAP 41 LOT 45
WISE MICHAEL F. & DARLENE R.
4 FARMERS LANE–BILLERICA
BOOK 8210 PAGE 31

MAP 51 LOT 19–1
REUBIN & LYNNE D. MACDONALD
376 BOSTON ROAD–BILLERICA, MA
BOOK 7053 PAGE 59

TP=2
EL=173.22
GW Observed = 169.22
A: 0–8" Loamy sand
B: 8–32" Fine Sandy loam
C: 32–60" Fine Sandy Loam

GEFP EL NOT DETERMINED
NO FILL PROPOSED

FARMERS LANE

REM EXIST UP UPGRADE (NEW) UP #21/1 (BO)

MAP 41 LOT 34
ROBERT A. & JAIME Q. DESOUZA & CAMILLE V. DINGS
364 BOSTON RD.
BILLERICA, MA BOOK 33409 PAGE 273

MAP 41 PLOT 33
368 BOSTON ROAD–BILLERICA, MA
CARLA LACKWOOD–LACAYO
SERGIO J. LACAYO SR.
AND SERGIO A. LACAYO JR.
BOOK 29929 PAGE 272

MAP 41 LOT 36
OBERGE & MIMOSE JEAN–PHILIPPE
358 BOSTON ROAD
BILLERICA, MA
BOOK 33978 PAGE 107

R&R UP #139 (BO)
NGRID (1), VERIZON (1),
COMCAST (1) RISERS

R&R UP #141 & TRANSFORMER (1) (BO)
NGRID (1), VERIZON (1),
COMCAST (1) RISERS
R&R LIGHT

MAP 41 LOT 35
HAROLD W. JR. & GERADINE BLAKE
362 BOSTON ROAD–BILLERICA
BOOK 9067 PAGE 147

REM & REPLACE 12" DI WATER MAIN IF IN CONFLICT WITH DRAINAGE INSTALLATION

36+17.84 BOSTON ROAD (ROUTE3A)=
4+00.00 LASALLETTE RD

1-3" CONDUIT (COMCAST)

2-4" PRIMARY CONDUIT (NGRID)

R&R UP #145 (BO)
NGRID (2) & COMCAST (1) RISERS
R&R LIGHT

R&R UP #140 (BO)

R&R UP #143
PROP 20' PUSH BRACE (BO)

R&R UP #144 (BO)

REM UP #142 (BO)

1-4" CONDUIT (VERIZON)

REM OHW (BO)

1-3" COMCAST CONDUIT

1-3" SECONDARY CONDUIT (NGRID)

REM OHW (BO)

REM OHW (BO)

BOSTON ROAD (ROUTE 3A)

PC +49.83

PT +44.55

1-4" VERIZON CONDUIT

BOSTON RD CONST & & PGL

PC +79.39

PT +34.13

ADJ DMH

TOS

TOS

R&R UP #19X (BO)
NGRID (1), VERIZON (1),
COMCAST (1) RISERS

CHISELED "X" IN GRANITE WALL

PROP OHW CONNECTION

PROP HH
C-1 (COMCAST)
STA 33+94.1, 26.8'RT

PROP HH
D-1 (VERIZON)
STA 33+98.7, 25.6'RT

SECONDARY HH
E-2 (NGRID)
STA 34+04.1, 26.6'RT

REM UP #142-1 W/ RISER
CONNECT SERVICE
UNDERGROUND (BO)

REM GUY UP #143-8 (BO)

34+66.32 BOSTON ROAD (ROUTE3A)=
1+00.00 FARMERS LANE

R&R UP #454/1
PROP 10' GUY (BO)
NGRID (2), COMCAST
(1) RISERS AND
STREET LIGHT RISER

LIMIT OF WORK MEET EXIST +77

LASALLETTE ROAD

MAP 41 LOT 22
VECCHIARELLO IRREVOC FAMILY TRUST
& ANTHONY L.
ND MARIE EVE VECCHIARELLO, TRUSTEES
347 BOSTON ROAD–BILLERICA, MA
BOOK 31155 PAGE 140

MAP 41 LOT 23–3
THOMAS M. & JULIE A. TODD
349 BOSTON ROAD–BILLERICA, MA
BOOK 11627 PAGE 208

MAP 41 LOT 29
TAPAN HIMANSHU PALKHIWALA
1 LASALLETTE ROAD–BILLERICA, MA
BOOK 28560 PAGE 1

MAP 41 LOT 31
CHRISTOPHER ROBERT
357 BOSTON ROAD–BILLERICA, MA
BOOK 23868 PAGE 104

30' WIDE WATER MAIN EASEMENT

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 60

CONTINUED ON SHEET NO. 62

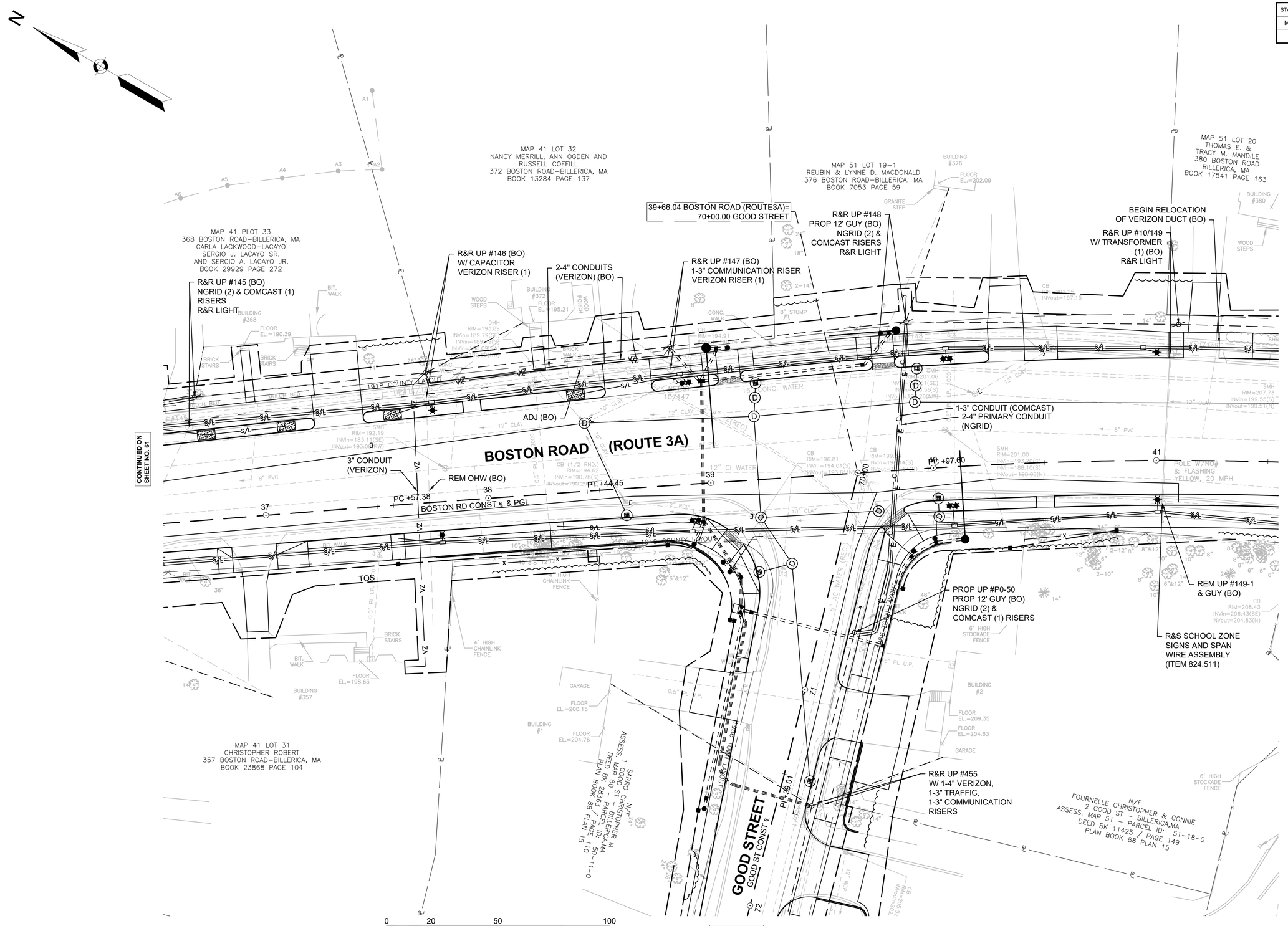
FOR PROFILE SEE SHEET 31

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	62	140
PROJECT FILE NO.	605178		

UTILITY PLAN

605178_HDI4722_UTIL).DWG Plotted on 7-Mar-22 9:41 PM



FOR PROFILE SEE SHEET 31

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	63	140
PROJECT FILE NO.	605178		

UTILITY PLAN

CONTINUED ON SHEET NO. 64

CONTINUED ON SHEET NO. 62

CONTINUED ON SHEET NO. 64

N

MAP 51 LOT 20
THOMAS E. &
TRACY M. MANDILE
380 BOSTON ROAD
BILLERICA, MA
BOOK 17541 PAGE 163

MAP 51 LOT 101
JAY & MARY D KELLY
382 BOSTON ROAD – BILLERICA, MA
BOOK 28290 PAGE 14

MAP 51 LOT 21
CENTER REALTY TRUST
ROBERT G. MANCINI TR
PO BOX 197–BILLERICA, MA
BOOK 21235 PAGE 150

N/F
SOLARI ROBERT D.
& CAMILLA L.
388 BOSTON RD
BILLERICA,MA
ASSESS. MAP 51
PARCEL ID: 51–21–0
DEED BK 6949 / PAGE 29

BEGIN RELOCATION OF VERIZON DUCT (BO)

R&R UP #10/149
W/ TRANSFORMER
(1) (BO)
R&R LIGHT

R&R UP #10/150
& LOAD BREAK SWITCH (1)
PROP 10' GUY (BO)
R&R LIGHT

41+94.19 BOSTON ROAD (ROUTE3A)=
90+00.00 TOWN HALL DRIVE

43+89.91 BOSTON ROAD (ROUTE3A)=
92+00.00 TOM GLAVINE WAY

R&R UP #10/151 (BO)
R&R LIGHT

R&R UP #152/152X
& RISER (BO)
R&R LIGHT

44+83.79 BOSTON ROAD (ROUTE3A)=
6+00.00 MULBERRY LANE

PROP UP #153
NGRID (1), VERIZON (2)
& COMCAST (1) RISERS

R&R UP #154X
PROP 8' GUY (BO)
R&R LIGHT FACING
TOWARDS MULBERRY LANE

LIMIT OF WORK
MEET EXIST
+70

UPGRADE UP #1
PROP 8' SW GUY

RETAIN OHW

RETAIN UG

RET UP #154-5

REM OHW (BO)

ADJ (BO)

2-4" CONDUIT (VERIZON)

1-3" SECONDARY CONDUIT (NGRID)

1-3" CONDUIT (COMCAST)

BOSTON ROAD (ROUTE 3A)

BOSTON RD CONST ℄ & PGL

PT +09.76

PC +17.95

REM OHW (BO)

POLE W/NO# & FLASHING YELLOW, 20 MPH

REM UP #149-1 & GUY (BO)

R&S SCHOOL ZONE SIGNS AND SPAN WIRE ASSEMBLY (ITEM 824.511)

RET LIGHT POLE

R&R SPRINKLER

REM UP #10/152 (BO)

R&R SPRINKLER

REM UP #10/153 (BO)
R&S LIGHT

SECONDARY HH
E-3 (NGRID)
STA 44+44.0, 37.7'RT

1-3" SECONDARY CONDUIT (NGRID)

1-2" COMCAST CONDUIT

1-2" VERIZON CONDUIT

SECONDARY HH
C-2 (COMCAST)
STA 44+23.4, 66.4RT

PROP HH
D-2 (VERIZON)
STA 44+22.6, 69.2'RT

1-3" SECONDARY CONDUIT (NGRID)

SECONDARY HH
E-4 (NGRID)
STA 45+66.0, 41.1'RT

REM UP #10/154 W/ TRANSFORMER (BO)

1-2" CONDUIT (VERIZON)

1-2" CONDUIT (COMCAST)

R&R LIGHT POLE

REM UP #10/153-1 (BO)

4" VERIZON CONDUIT

LIMIT OF WORK
MEET EXIST
+80

LIMIT OF WORK
MEET EXIST
+12

TOM GLAVINE WAY

PC +21.86

PT +75.12

RET LIGHT POLE

PROP HH
D-6 (VERIZON)
STA 94+17.5, 19.4'LT

REM UP #10/153-2 (BO)
CONNECT TO UG

TOWN HALL

MAP 51 LOT 17
TOWN OF BILLERICA
(SELECTMEN)
365 BOSTON ROAD–BILLERICA, MA
BOOK 593 PAGE 23

MAP 51 LOT 16
ELIZABETH LEETY WALSH
& EVEN WALSH
367 BOSTON ROAD–BILLERICA. MA
BOOK 35699 PAGE 251

MAP 51 LOT 15
LAWERENCE M. & SANDRA P. LIBBY
371 BOSTON ROAD–BILLERICA, MA
LC 31002

N/F
FOURNELLE CHRISTOPHER & CONNIE
2 GOOD ST – BILLERICA,MA
ASSESS. MAP 51 – PARCEL ID: 51–18–0
DEED BK 11425 / PAGE 149
PLAN BOOK 88 PLAN 15

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 32

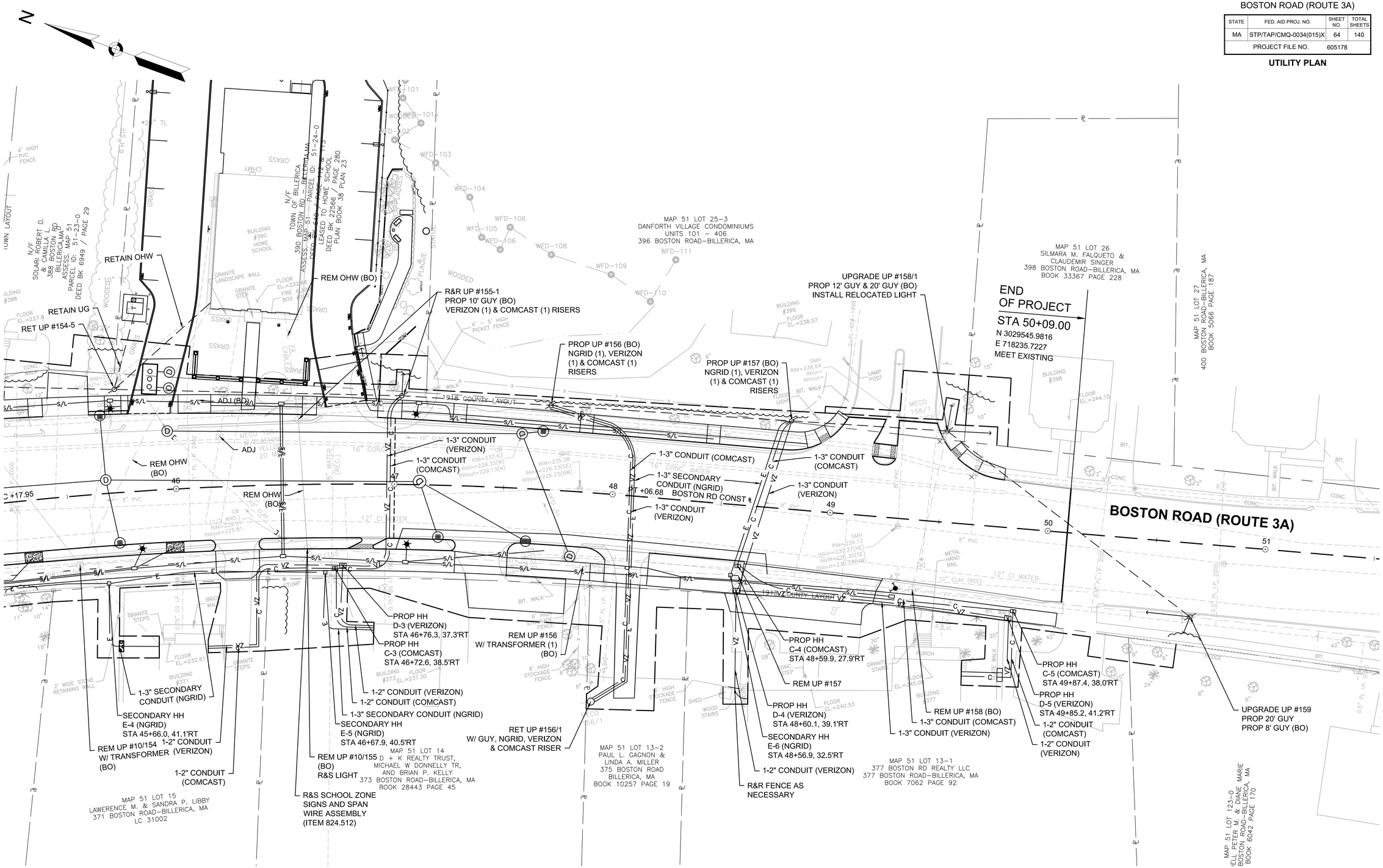
605178_HDI4722_UTIL).DWG Plotted on 7-Mar-22 9:41 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	64	140
PROJECT FILE NO.	605178		

UTILITY PLAN

605178_HDI4722_UTIL).DWG Plotted on 7-Mar-22 9:41 PM



CONTINUED ON SHEET NO. 63

FOR PROFILE SEE SHEET 32

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	65	140
PROJECT FILE NO.	605178		

UTILITY PLAN
HERITAGE ROAD

605178_HDI(4722_UTIL).DWG Plotted on 7-Mar-22 9:41 PM

N

REPLACE UP #16-89
RETAIN UP #132-84
REPLACE UP #16

PROP UP #3-84
PROP 6' GUY (BO)

30' SEWER EASEMENT
TOWN BOARD OF SELECTMEN
BOOK 1747 PAGE 124

N/F
STONE CHARLES C JR & SULLIVAN LISA M
4 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41-131-1
LC 38644

PROP UP #4-84
PROP 6' GUY (BO)
R&R LIGHT FROM UP #4

REM UP #4
& GUY (BO)

CONTINUED ON SHEET NO. 59

1967 TOWN LAYOUT

PT +47.58

PC +45.82

HERITAGE ROAD

R&R METER (BO)

R&R UP #3
W/ EMPTY 4" RISER (BO)
ADD RELOCATED LIGHT

PROP UP #4 (BO)
ADD RELOCATED LIGHT
CONNECT TO EXIST GAS (BO)

R&R UP #2
W/ TRANSFORMER (3)
/3 RISERS (1 EMPTY RISER)
PROP 10' GUY (BO)
ADD RELOCATED LIGHT

PROP UP #4-50-84
PROP 6' GUY
(BO)

N/F
BROUILLETTE RAUL & JOANNE
6 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41-131-2
LC 28624

PROP UP #4-50
W/ TRANSFORMER (BO)
ADD RELOCATED
LIGHT

REM UP #762/5
(BO)

PROP UP #5-84
PROP 6' GUY (BO)

PT +18.91

HERITAGE ROAD

HERITAGE RD CONST ℄

MAP 41 LOT 60-1
A&R REALTY TRUST
NAVIN C. PATEL, TRUSTEE
8 SHAKER HILL LANE-WOBURN, MA.
BOOK 20009 PAGE 167

TP=1
EL = 150.19
GW Observed = 145.19
A: 0-13" LOAMY SAND
B: 13-72" FINE SANDY LOAM
C: N/A

N/F
BOLDEBUCK KRISTINA M
7 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41-60-2
LAND COURT CERTIFICATE: 37878 & 39632
LAND COURT PLAN: 34956-A

PROP UP #5
PROP LIGHT (BO)

N/F
DEMBROSKI RONALD J & JEAN M.
8 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41-48-0
LAND COURT CERTIFICATE: 22649
LAND COURT PLAN: 34956-A

PROP UP #6-84
PROP 6' GUY (BO)
R&R LIGHT FROM UP #6

REM UP #6 (BO)

PROP UP #6
W/ TRANSFORMER (1 (BO)
ADD RELOCATED LIGHT

N/F
ROBERT C & GLORIA J MARINELLO
1 MONTICELLO CR – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41-61-0
LAND COURT CERTIFICATE: 22556
LAND COURT PLAN: 34956-A

N/F
ALESSIO DENNIS PAUL
12 HERITAGE RD
BILLERICA,MA
ASSESS. MAP 41
PARCEL ID: 41-49-0
LAND COURT CERTIFICATE: 21824
LAND COURT PLAN: 34956-A

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 66

FOR PROFILE SEE SHEET 33

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	66	140
PROJECT FILE NO.	605178		

UTILITY PLAN
HERITAGE ROAD

605178_HDI(4722_UTIL).DWG Plotted on 7-Mar-22 9:42 PM

N

MARSHALL MIDDLE SCHOOL

N/F
DEMBKOSKI RONALD J & JEAN M.
8 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–48–0
LAND COURT CERTIFICATE: 22649
LAND COURT PLAN: 34956–A

N/F
ALESSIO DENNIS PAUL
12 HERITAGE RD
BILLERICA,MA
ASSESS. MAP 41
PARCEL ID: 41–49–0
LAND COURT CERTIFICATE: 21824
LAND COURT PLAN: 34956–A

N/F
JACMAR CONSTRUCTION
LAND COURT CERTIFICATE: 17188

N/F
DIMATTEO JASON P. & ALISHA D.
14 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–50–0
DEED BK 11361 / PAGE 178
LAND COURT CERTIFICATE: 193936
LAND COURT PLAN: 31951–B

N/F
LEVASSEUR DAVID R.
16 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–51–0
LAND COURT CERTIFICATE: 30708
LAND COURT PLAN: 31951–B

N/F
SENG SOKLEANG
18 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–52–0
LAND COURT CERTIFICATE: 39175
LAND COURT PLAN: 31951–B

CONTINUED ON SHEET NO. 65

PROP UP #6-84
PROP 6' GUY (BO)
R&R LIGHT FROM UP #6

REM UP #6 (BO)

R&R UP #7
PROP 6' GUY (BO)
PROP TRAFFIC LIGHT RISER
ADD RELOCATED LIGHT

LIMIT OF WORK
MEET EXIST
+17

PROP UP #6
W/ TRANSFORMER (1) (BO)
ADD RELOCATED LIGHT

PROP UP #6-50
W/ TRANSFORMER (1)
PROP 10' GUY (BO)

UPGRADE UP #8 & MB
PROP 12' GUY (BO)
R&R LIGHT

UPGRADE UP #73/1
PROP 12' GUY
(BO)

LIMIT OF WORK
MEET EXIST

1967 TOWN LAYOUT

HERITAGE ROAD

MONTICELLO CIRCLE

MT VERNON AVENUE

PI +68.28
PI +56.91
PI +19.37
PC +65.79
61+43.02

N/F
ROBERT C & GLORIA J MARINELLO
1 MONTICELLO CR – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–61–0
LAND COURT CERTIFICATE: 22556
LAND COURT PLAN: 34956–A

N/F
THE PORCARO FAMILY TRUST & JOHN A. AND SUSANN E. POCARO, TRUSTEES
2 MONTICELLO CR – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–66–0
LAND COURT CERTIFICATE: 291821
LAND COURT PLAN: 34956–A

N/F
ERIC JAMES RICHARD & HEATHER A. MAGEE
1 MOUNT VERNON AV – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–67–0
LAND COURT CERTIFICATE: 42451
LAND COURT PLAN: 34956–A

N/F
SASSER LINDA C.
17 HERITAGE RD – BILLERICA,MA
ASSESS. MAP 41 – PARCEL ID: 41–69–0
LAND COURT CERTIFICATE: 34710
LAND COURT PLAN: 31951–A

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 33

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	67	140
PROJECT FILE NO. 605178			

UTILITY PLAN
GOOD STREET

605178_HDI(4722_UTIL).DWG Plotted on 7-Mar-22 9:42 PM

N

N/F
FOURNELLE CHRISTOPHER & CONNIE
2 GOOD ST – BILLERICA,MA
ASSESS. MAP 51 – PARCEL ID: 51-18-0
DEED BK 11425 / PAGE 149
PLAN BOOK 88 PLAN 15

TOWN HALL

N/F
TOWN OF BILLERICA
(POLICE AND FIRE DEPARTMENT
AND HIGH SCHOOL)
365 BOSTON RD – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50-28-0
DEED BK 1517 PAGE 256

N/F
TOWN OF BILLERICA
(POLICE AND HIGH SCHOOL)
365 BOSTON RD – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50-27-0
DEED BK 1517 PAGE 256

BILLERICA HIGH SCHOOL

N/F
TOWN OF BILLERICA
(POLICE AND FIRE DEPARTMENT
AND HIGH SCHOOL)
365 BOSTON RD – BILLERICA,MA
ASSESS. MAP 51 – PARCEL ID: 50-26-0
DEED BK 1517 PAGE 256

RET UP

MATCH IMPROVEMENTS BY OTHERS UNDER MASSDOT PROJECT FILE NO. 608227 AND HIGH SCHOOL PROJECT

R&R UP #455
W/ 1-4" VERIZON RISER
1-3" TRAFFIC
1-3" COMMINICATION
(BO)

TEST PIT FOR VERIZON DUCT

R&R LIGHT POLE

REPLACE UP #2 W/ VERIZON (2) RISERS (BO)

REPLACE UP #3 (BO)

LIMIT OF WORK MEET EXIST +01

REPLACE UP #4 (BO)

TOWN HALL PARKING LOT

HIGH SCHOOL PARKING LOT

CB RIM=205.52 INVout=202.72

CB RIM=206.99 INVin=200.39 INVin=200.44 INVout=200.33(NW)

CB RIM=206.38 INVin=205.48(NE) INVout=201.04(W)

DMH RIM=206.12 INVin=199.47(SE) INVout=199.42(SW)

CB RIM=200.26 INV=195.48(12"RCP-N) =195.50(12"RCP-E) =195.26(6"VC-SE) =195.46(12"RCP-W)

CB Rim=203.11 INV=197.46(12"RCP-E) =197.31(12"RCP-W)

CB Rim=204.13 INV=196.31 (12" RCP)

SMH RIM=206.28 INVin=197.73(NE) INVout=197.58(SW)

SMH Rim=204.38 INV=195.76 (8" VC-E) 195.91 (8" VC-S) 195.72 (8" VC-W)

12" RCP

1956 TOWN LAYOUT

RELOCATE GAS MAIN (BO)

ADJ TMH (BO)

PROP UP #2-84
& 8' GUY
REM EX TREE GUY
(BO)

GOOD STREET

PI +89.01

PI +73.10

GOOD ST CONST ℄

72 73 74 75 76 77

8" PVC WATER (REC.)

8" PVC WATER (REC.)

AC WATER (REC.)

2-PL-60#-2000

SPRINKLER HEADS (TYP.)

4' HIGH CHAINLINK FENCE

6' HIGH STOCKADE FENCE

CONC. STAIRS

FLOOR EL.=208.98

BUILDING #3

GARAGE FLOOR EL.=204.16

BUILDING #1

BRICK STAIRS

FLOOR EL.=198.53

#5

GRASS

BIT

BB

WG

HEDGE

N/F
SARRO CHRISTOPHER M
1 GOOD ST – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50-11-0
DEED BK 28363 / PAGE 110
PLAN BOOK 88 PLAN 15

N/F
RETTMAN PAUL E. JR. & KATHLEEN
3 GOOD ST – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50-12-0
DEED BK 15508 / PAGE 54
PLAN BOOK 88 PLAN 15

N/F
ALEXANDER ARTHUR & MELISSA
5 GOOD ST – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50-13-0
DEED BK 16581 / PAGE 78
PLAN BOOK 88 PLAN 15

N/F
DUMAIS GERALD M
7 GOOD ST – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50-14-0
DEED BK 2123 / PAGE 365
PLAN BOOK 88 PLAN 15

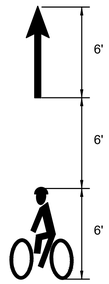
CONTINUED ON SHEET NO. 62

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 34

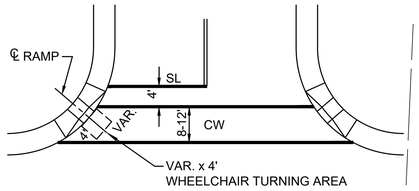
PAVEMENT MARKING & SIGN NOTES

1. ALL EXISTING SIGNS AND SIGN POSTS WITHIN THE PROJECT LIMITS SHALL BE R&D UNLESS OTHERWISE NOTED ON PLANS.
2. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC. ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED BY AN APPROVED METHOD.
3. ALL PROPOSED SIGN POSTS SHALL BE P-5 TYPE (TELESCOPIC POST).
4. UNLESS OTHERWISE PROVIDED FOR IN THE MUTCD, ALL SIGNS SHOULD BE 90° TO THE CURB AND FACING THE FLOW OF TRAFFIC. ALL R7 SIGNS SHALL BE MOUNTED AT AN ANGLE OF 45° TO THE CURB AND FACING THE FLOW OF TRAFFIC. ALL W1-8 SIGNS SHALL BE MOUNTED AT AN ANGLE TO FACE THE FLOW OF ONCOMING TRAFFIC.
5. STREET NAME SIGNS SHALL BE MOUNTED PARALLEL WITH THE STREET.
6. ALL R&R SIGNS SHALL BE MOUNTED ON NEW POSTS.
7. SIGNS TO BE MOUNTED NEAR THE CURB LINE IN AREAS WITHOUT SIDEWALK SHALL BE SET BACK 2' FROM THE EDGE OF THE SIGN PANEL TO THE CURB LINE. NO SIGN SHALL OVERHANG THE CURB LINE. SIGNS TO BE MOUNTED NEAR THE SHARED-USE PATH OR UNI-DIRECTIONAL SIDE PATH SHALL BE SET BACK 2' FROM THE EDGE OF THE SIGN PANEL TO THE EDGE OF THE PATH. NO SIGNS SHALL BE INSTALLED IN THE THE SHARED-USE PATH OR UNI-DIRECTIONAL SIDE PATH.
8. ALL SIGNS SHALL BE MOUNTED TO PROVIDE A 7' MINIMUM CLEARANCE BETWEEN THE BOTTOM OF THE SIGN AND FINISHED GRADE. ALL W1-8 SIGNS SHALL BE MOUNTED 4' ABOVE FINISHED GRADE.



BICYCLE LANE MARKING DETAIL

NOT TO SCALE



CROSSWALK LOCATION DETAIL

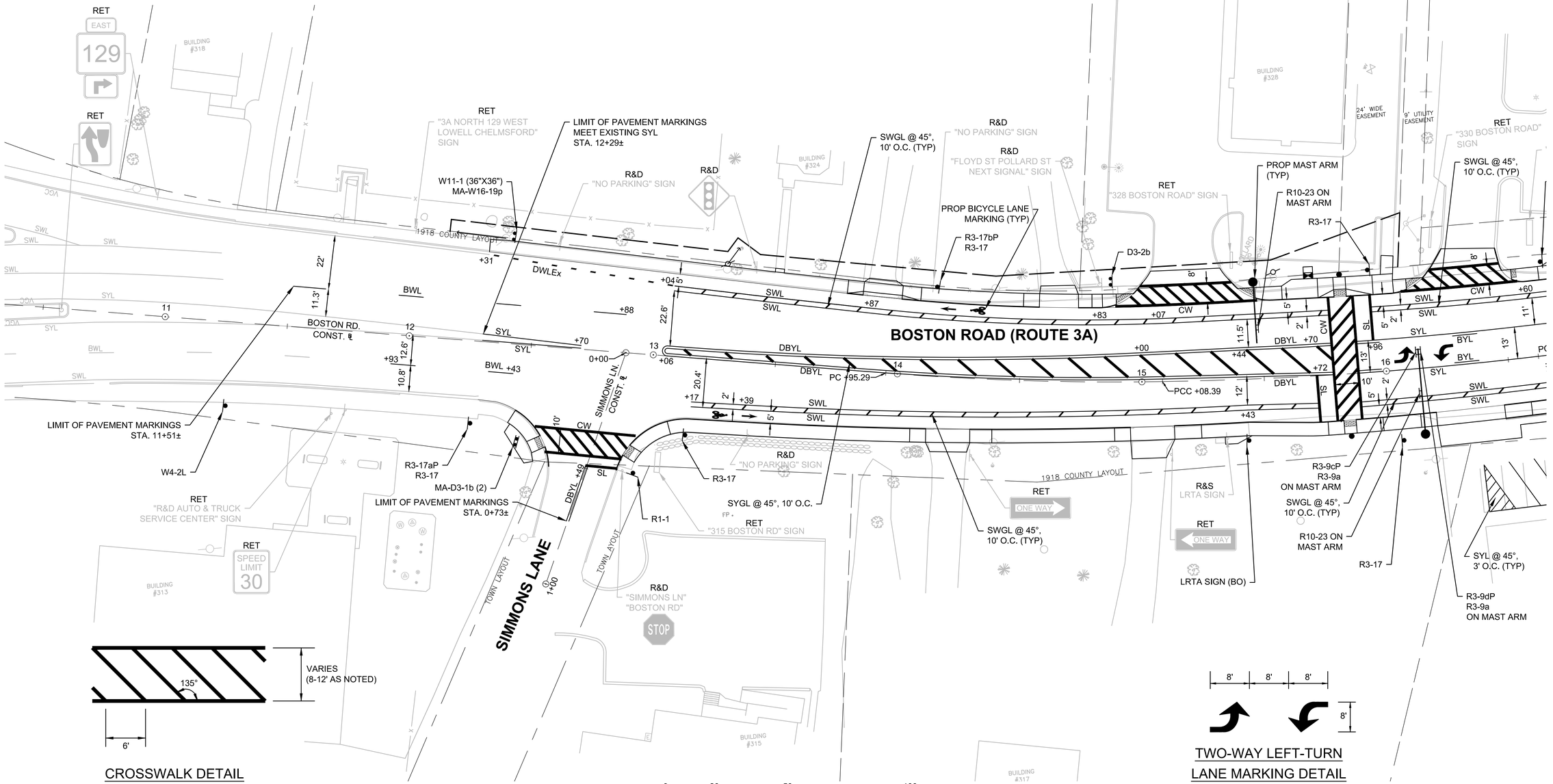
NOT TO SCALE

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	68	140
PROJECT FILE NO.	605178		

SIGN & PAVEMENT MARKINGS PLAN

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:54 PM



CROSSWALK DETAIL

NOT TO SCALE

TWO-WAY LEFT-TURN LANE MARKING DETAIL

NOT TO SCALE

0 20 50 100

SCALE: 1" = 20'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	69	140
PROJECT FILE NO.	605178		

SIGN & PAVEMENT MARKINGS PLAN

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:54 PM

CONTINUED ON SHEET NO. 68

CONTINUED ON SHEET NO. 70

N

BUILDING #328

BUILDING #330

BUILDING #336 (UNDER DEVELOPMENT)

PROPOSED SITE DEVELOPMENT (BO) #330–336

BUILDING #340

24' WIDE EASEMENT

9' UTILITY EASEMENT

15' UTILITY EASEMENT

RET "330 BOSTON ROAD" SIGN

RET "MIDDLESEX COUNTY ANIMAL HOSPITAL" SIGN

LRTA SIGN (BO)

R&S LRTA SIGN

R&D SPEED LIMIT 30

R&D SPEED LIMIT 35

BUILDING #329

BUILDING #325

BUILDING #324

RET "CYCLE WORKS" SIGN

RET "COLLINS BOWLADOME" SIGN

PROP MAST ARM (TYP)

R10-23 ON MAST ARM

R3-17

SWGL @ 45°, 10' O.C. (TYP)

R3-9cP R3-9a ON MAST ARM

R3-9dP R3-9a ON MAST ARM

M2-1 MA-M1-5a(129)

R2-1 (30)

R2-1 (35)

R3-9b

PROP BICYCLE LANE MARKING (TYP)

SYL @ 45°, 3' O.C. (TYP)

SWL @ 45°, 3' O.C. (TYP)

REM EXIST MARKINGS

R5-1

SYL (TYP)

1918 COUNTY LAYOUT

BOSTON ROAD (ROUTE 3A)

BOSTON RD. CONST. ℄

PC +45.05

PT +55.97

PCC +62.39

DBYL +70

DBYL +72

+96

+60

+69

SWL

SYL

BYL

CW

SL

16

17

18

19

20

21

8'

5'

2'

11'

13'

10'

9'

18'

22'

0 20 50 100

SCALE: 1" = 20'

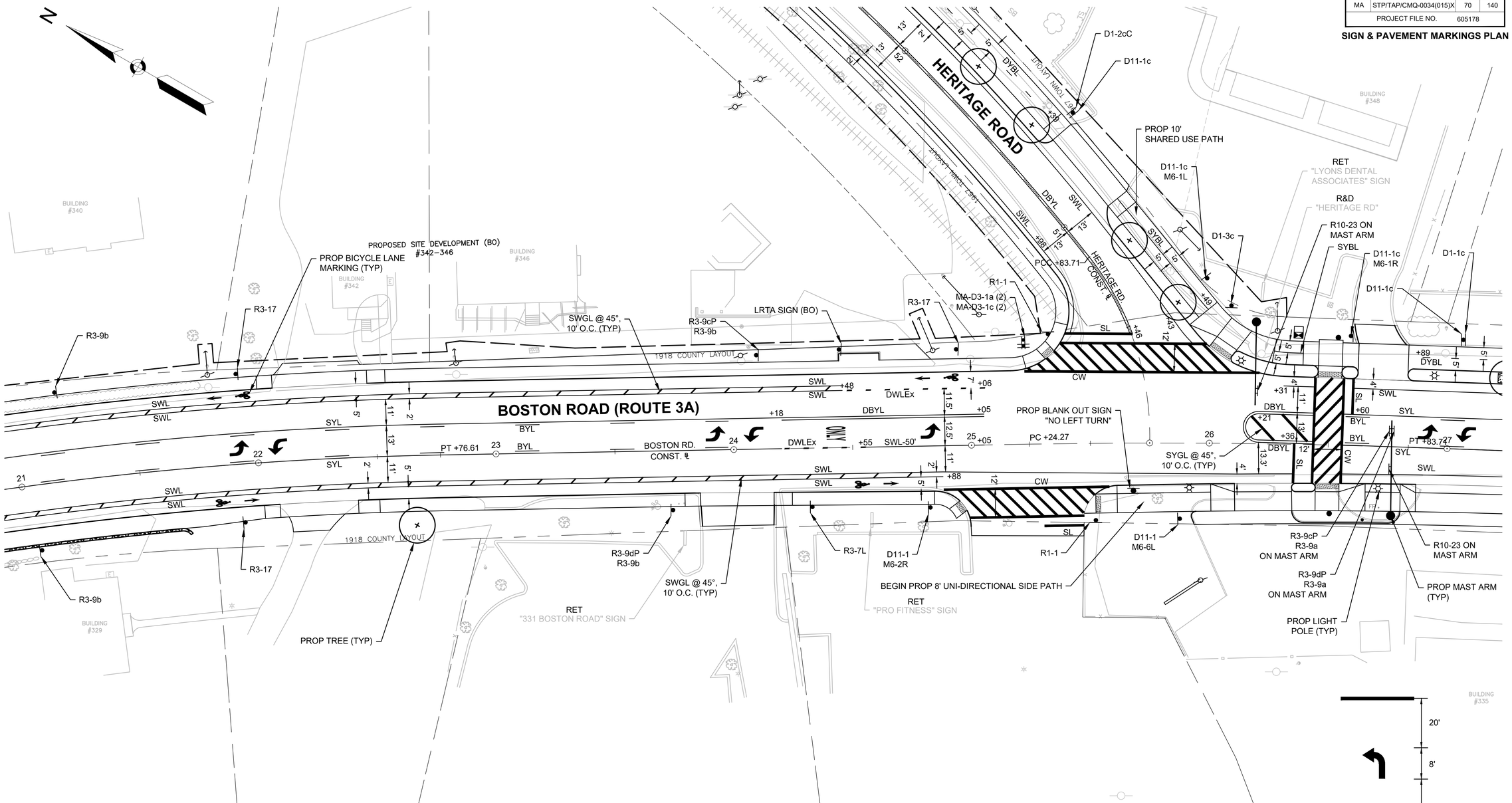
CONTINUED ON SHEET NO. 76

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	70	140
PROJECT FILE NO.	605178		

SIGN & PAVEMENT MARKINGS PLAN

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:55 PM



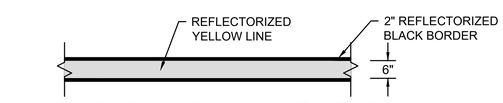
CONTINUED ON SHEET NO. 69

CONTINUED ON SHEET NO. 71



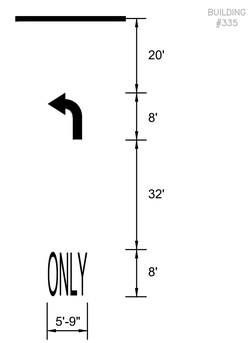
DOTTED YELLOW BIKE LINE (DYBL) DETAIL

NOT TO SCALE



SOLID YELLOW BIKE LINE (SYBL) DETAIL

NOT TO SCALE



ARROW & "ONLY" DETAIL

NOT TO SCALE

0 20 50 100

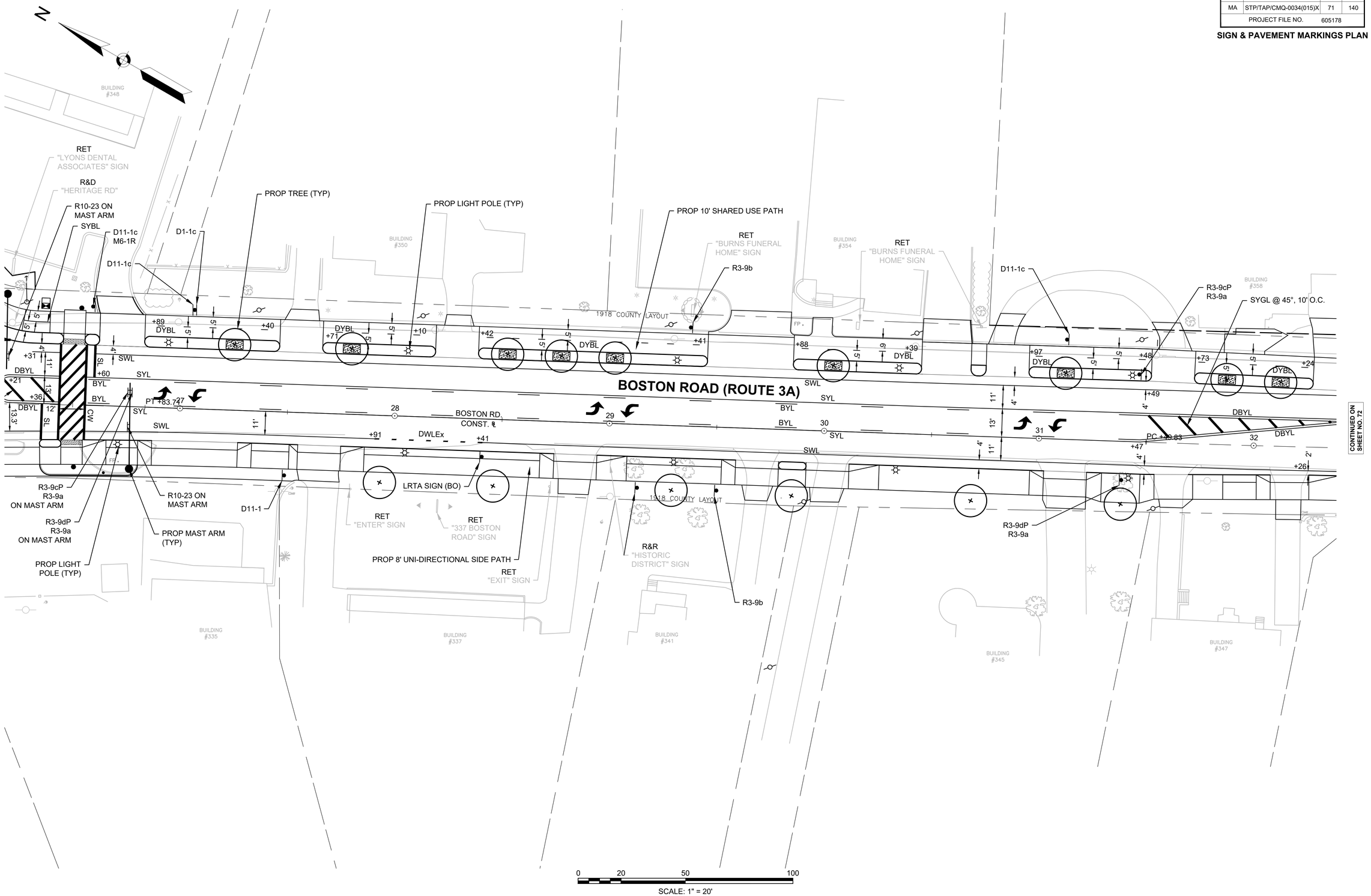
SCALE: 1" = 20'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	71	140
PROJECT FILE NO.	605178		

SIGN & PAVEMENT MARKINGS PLAN

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:55 PM



BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	72	140
PROJECT FILE NO.	605178		

SIGN & PAVEMENT MARKINGS PLAN

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:55 PM

N

BOSTON ROAD (ROUTE 3A)

FARMERS LANE

FARMERS LN. CONST. ℄

3+19.01

GEFP EL NOT DETERMINED
NO FILL PROPOSED

LIMIT OF PAVEMENT MARKINGS
STA. 1+73±

PROP 10' SHARED USE PATH

PROP LIGHT POLE (TYP)

SYGL @ 45°, 10' O.C.

R&D
"FARMERS LN"
"DEAD END STREET"

R1-1

R&S
"LRTA" SIGN

MA-D3-1d (2)

11.5'

DBYL

SL

CW

R&D
NO PARKING ANY TIME

D11-1c

BUILDING #358

BUILDING #362

BUILDING #364

BUILDING #368

1918 COUNTY LAYOUT

+48 +49 +73 +24 +58 +57 +56 +26 +03 +38 +57 +18

5' DBYL SYBL SWL SWL SWL

2' 4' 11.5' 2.6' 2.9' 11' 2' 11' 11'

DBYL +42 +51 +61 +51 +81 +05 +37 DBYL +78 +90

PC +29.83 PT +44.55 PT +34.13

32 33 34 35 36 37

BWL BWL SWL

+26 1+00 PC +79.39 +59 +47 +01

BOSTON RD. CONST. ℄ 4+00

MA-D3-1e (2) CW

SL DBYL +30

"LASALLETTE ROAD"

R1-1

15.4' 15.8'

R&D STOP

RET
"NO PARKING"

LASALLETTE RD. CONST. ℄ 5+33.42

LASALLETTE ROAD

PROP TREE (TYP)

PROP 8' UNI-DIRECTIONAL SIDE PATH

D3-2a

R&D AHEAD

R&D

R&S
"LRTA" SIGN

LIMIT OF PAVEMENT MARKINGS
STA. 4+77±

30' WIDE WATER MAIN EASEMENT

TOWN LAYOUT

TOWN LAYOUT

BUILDING #347

BUILDING #349

BUILDING #1

BUILDING #357

CONTINUED ON SHEET NO. 71

CONTINUED ON SHEET NO. 73

0 20 50 100

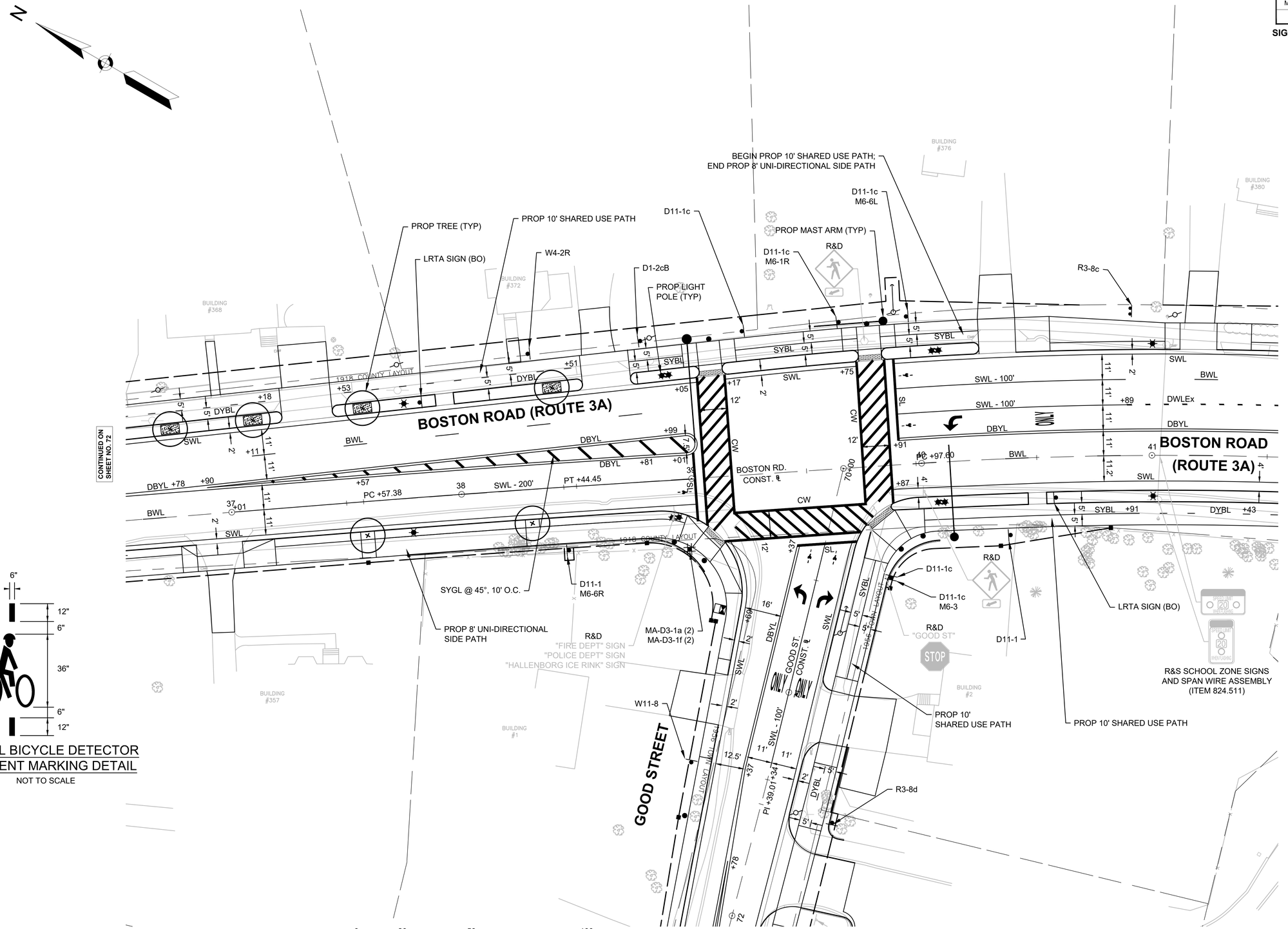
SCALE: 1" = 20'

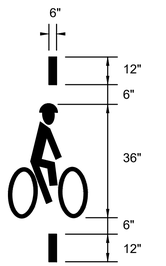
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	73	140
PROJECT FILE NO.	605178		

SIGN & PAVEMENT MARKINGS PLAN

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:55 PM





TYPICAL BICYCLE DETECTOR PAVEMENT MARKING DETAIL

NOT TO SCALE

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	74	140
PROJECT FILE NO.	605178		

SIGN & PAVEMENT MARKINGS PLAN

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:55 PM

CONTINUED ON SHEET NO. 73

CONTINUED ON SHEET NO. 75

N

BOSTON ROAD (ROUTE 3A)

BOSTON ROAD (ROUTE 3A)

MULBERRY LANE

TOWN HALL DRIVE

TOM GLAVINE WAY

1918 COUNTY LAYOUT

TOWN LAYOUT

PROP LIGHT POLE (TYP)

LIMIT OF PAVEMENT MARKINGS STA. 6+70±

BEGIN PROP 8' UNI-DIRECTIONAL SIDE PATH

R&D "MULBERRY LN"

MULBERRY LN. CONST. ℄

R&R "HEAVY TRUCKS EXCLUDED" SIGN

MA-D3-1h (2)

R&D AHEAD "STOP LINE"

M4-14
D11-1
M6-2R

R3-8c

R1-1

D11-1

D3-2a

SYGL @ 45°, 10' O.C.

R&D

R3-8c

BOSTON RD. CONST. ℄

PT +09.76

R5-1

90+00 +86

R6-1
R5-1
R3-2
PROP 10' SHARED USE PATH

R1-1

D11-1

R7-11R

LRTA SIGN (BO)

R&S SCHOOL ZONE SIGNS AND SPAN WIRE ASSEMBLY (ITEM 824.511)

PROP 10' SHARED USE PATH

SWGL @ 45°, 10' O.C.

RET "BILLERICA TOWN OFFICES" SIGN

RET "ONE WAY DO NOT ENTER 6:30AM-7:15AM" SIGN

RET "BILLERICA MEMORIAL HIGH SCHOOL" SIGN

R&D "TOM GLAVINE WAY"

MA-D3-1g (2)

R7-1L

R7-1

SWGL @ 45°, 10' O.C.

LIMIT OF PAVEMENT MARKINGS

RET "TOWN HALL PARKING" SIGN

R&S LRTA SIGN

R1-1

R3-8d

PROP TREE (TYP)

SYGL @ 45°, 10' O.C.

LIMIT OF PAVEMENT MARKINGS MEET EXISTING STA. 94+25±

RET "NO THRU WAY" SIGN "DO NOT ENTER" SIGN

TOM GLAVINE WAY CONST. ℄ PC +21.86 PT +75.12

BUILDING #380
BUILDING #382
BUILDING #386
BUILDING #387
BUILDING #367
BUILDING #371
BUILDING #365

0 20 50 100

SCALE: 1" = 20'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	75	140
PROJECT FILE NO.	605178		

SIGN & PAVEMENT MARKINGS PLAN

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:55 PM

CONTINUED ON SHEET NO. 74

N

R&S SCHOOL ZONE SIGNS AND SPAN WIRE ASSEMBLY (ITEM 824.512)

M4-14
D11-1
M6-2R

PROP BICYCLE LANE MARKING (TYP)

PROP TREE (TYP)

RET
"RIGHT TURN ONLY" SIGN

RET
"ENTER ONLY" SIGN

LIMIT OF PAVEMENT MARKINGS MEET EXISTING STA. 50+09±

R3-17

R3-17aP
R3-17

R2-1 (35)

DANFORTH VILLAGE

BOSTON ROAD (ROUTE 3A)

1918 COUNTY LAYOUT

SWL
BWL
DBYL
DWLEx
CW
BOSTON RD. CONST. ℄
PT +06.68

SYGL @ 45°, 10' O.C.

M4-6
D11-1

W11-1 (36"X36")
MA-W16-19p

PROP 10' SHARED USE PATH

END PROP 10' SHARED USE PATH

RET
SPEED LIMIT 30

RET
NO PARKING ANY TIME

BUILDING #371
BUILDING #373
BUILDING #377
BUILDING #388
BUILDING #390
BUILDING #396
BUILDING #398

WOODED
GRASS
CHMY
BENCH BEYOR PLAQUES
PLAQUE
STATE
24" TL
6" H.P. STF
10" W
12"

0 20 50 100
SCALE: 1" = 20'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	76	140
PROJECT FILE NO.	605178		

SIGN & PAVEMENT MARKINGS PLAN
HERITAGE ROAD

CONTINUED ON SHEET NO. 70

HERITAGE ROAD
PT +47.58
PC +45.82
+39
+67
+72
+43
+91
+15
+23
+56
+28
+60
+61
PI +68.
1967 TOWN LAYOUT
DBYL
SWL
DYBL
SYBL
HERITAGE RD CONST R
R&D
W1-8L
W1-8R
D1-2cC
D11-1c
PROP 10' SHARED USE PATH
W11-15
W16-9p
30' SEWER EASEMENT
TOWN BOARD OF SELECTMEN
BOOK 1747 PAGE 124
GEPP EL=143.15 (NAVD88)
GEPP EL=141.15 (NAVD88)
6'H STF
3'H PRF
7" LA CIR3
7" TL E
14" STUMP
16" STUMP
WOODED
GRASS
BIT
CRW
STN
STONE
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 77

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:56 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	77	140
PROJECT FILE NO.	605178		

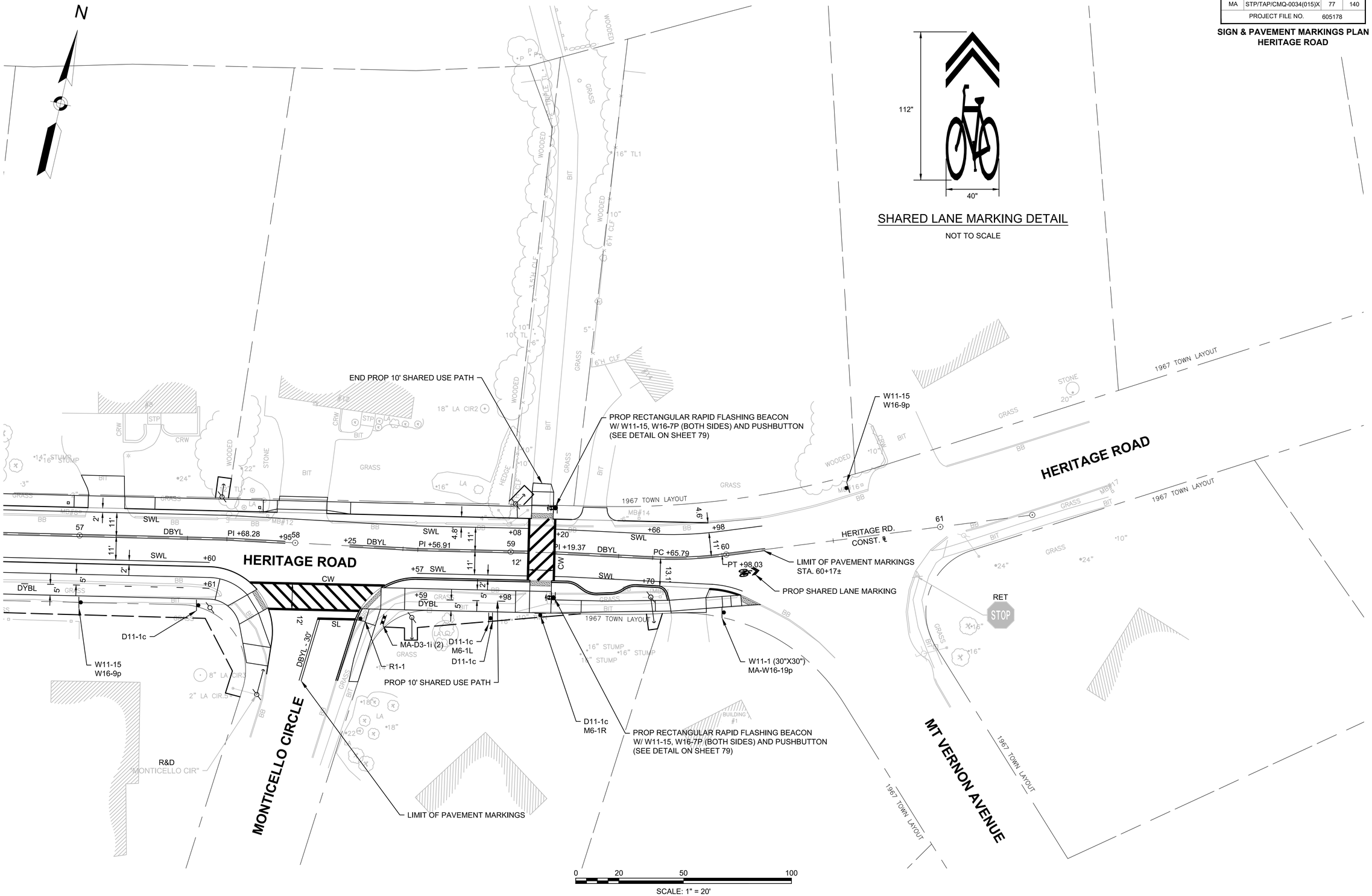
SIGN & PAVEMENT MARKINGS PLAN
HERITAGE ROAD

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:56 PM

SHARED LANE MARKING DETAIL

NOT TO SCALE

CONTINUED ON SHEET NO. 76



BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	78	140
PROJECT FILE NO.	605178		

SIGN & PAVEMENT MARKINGS PLAN
GOOD STREET

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:56 PM

CONTINUED ON SHEET NO. 73

N

GOOD STREET

RET
"NO STUDENT PARKING
TOWN EMPLOYEES ONLY
YOU WILL BE TOWED" SIGN
TOWN HALL PARKING LOT

PROP 10' SHARED USE PATH
SYGL @ 45°, 10' O.C.
R3-8d
D1-2cA
R7-1
R&D
NO PARKING ANY TIME

MATCH IMPROVEMENTS BY OTHERS UNDER MASSDOT PROJECT FILE NO. 608227 AND HIGH SCHOOL PROJECT
R&D
"BILLERICA FIRE DEPT. PARKING ONLY" SIGN
HIGH SCHOOL PARKING LOT
D11-1c
M6-1R
BEGIN PROP SHARED USE PATH
D11-1c
M6-1L
W11-2
W16-7pL
LIMIT OF PAVEMENT MARKINGS MEET EXISTING STA. 76+01±
W11-2
W16-9p

SWL - 100' +34 PI +39.01 +37 +78 +57 +17 +35 +53 PI +73.10 +73 +86 +95 +20 +39 +81
72 73 74 75 76 77
DBYL
SWL
CW
1956 TOWN LAYOUT
GOOD ST. CONST. ℄
BIT
GRASS
BB
HEDGE
+14"
BUILDING #1
#5

W11-8
R7-1
R&D
NO PARKING ANY TIME
W11-2
W16-9p
R&D
"VISITORS BUS ENTRANCE" SIGN
W11-2
W16-7pL
R&D
NO PARKING ANY TIME
R7-1

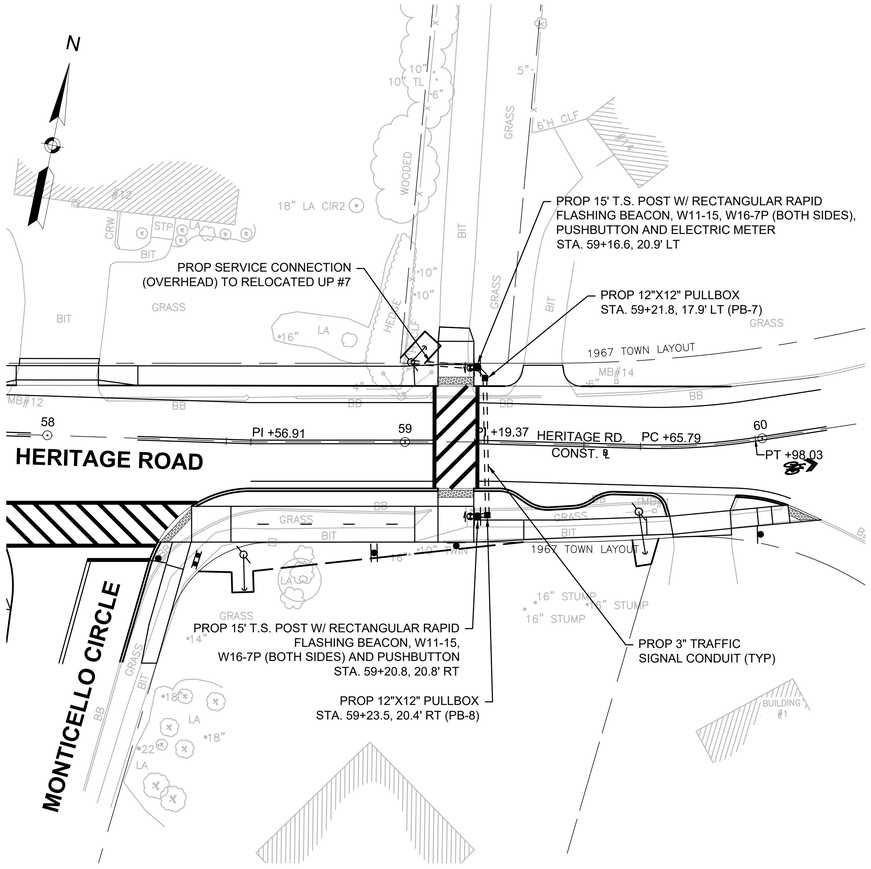
0 20 50 100
SCALE: 1" = 20'

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	79	140
PROJECT FILE NO.	605178		

RECTANGULAR RAPID FLASHING BEACON DETAILS

605178_HD(4722_SIGN PMRK).DWG Plotted on 7-Mar-22 9:56 PM



PROPOSED BEACON LAYOUT

0 20 50 100

SCALE: 1" = 20'

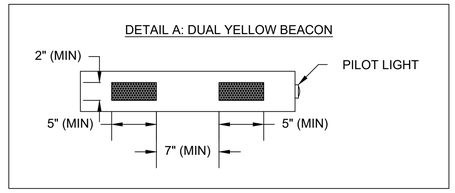
NOTES:

1. ACCESS TO ALL PEDESTRIAN ACTUATED CONTROLS SHALL BE ADA/AAB COMPLIANT.
2. *0.5% CONSTRUCTION TOLERANCE FOR CROSS-SLOPE.

RRFB TIMING AND OPERATIONS TABLE

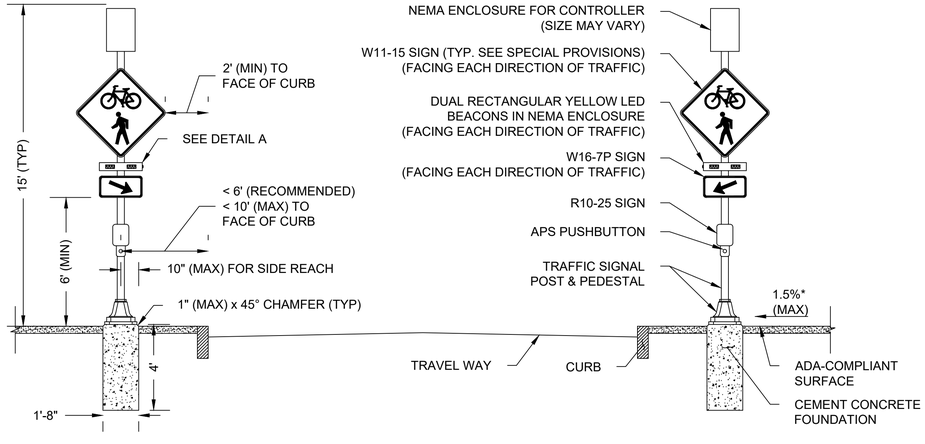
LOCATION	FLASHING CYCLE TIME	MINIMUM TIME BETWEEN ACTUATIONS
LOCATION 1 (STA 59+16± HERITAGE ROAD)	15 SECONDS	60 SECONDS

DETAIL A: DUAL YELLOW BEACON



MAJOR ITEMS - RRFB LOCATION 1 - HERITAGE ROAD (STA. 59+16±)

ITEM NO.	QUANTITY	DESCRIPTION
824.211	2	NEMA ENCLOSURES FOR ALL COMPONENTS NEEDED TO MEET FUNCTIONAL REQUIREMENTS PER SPECIAL PROVISIONS
	2	TRAFFIC SIGNAL POST AND BASE STANDARD WITH FOUNDATION - 15' STEEL
	4	DUAL RECTANGULAR YELLOW LED BEACONS IN NEMA ENCLOSURES
	2	APS PUSHBUTTON SYSTEMS
	2	R10-25 SIGNS (9" x 12")
	4	W11-15 SIGNS (30" x 30")
	2	W16-7pL SIGNS (24" x 12")
	2	W16-7pR SIGNS (24" x 12")
	1	SERVICE CONNECTION (OVERHEAD)
804.3	61 FT	3" TRAFFIC SIGNAL CONDUIT
811.31	2	PULL BOX, 12" X 12"
PLUS ALL MOUNTING AND SUPPORTING HARDWARE AND WIRING NECESSARY TO COMPLETE A WORKING SYSTEM.		



RRFB DETAIL - LOCATION 1 (HERITAGE RD STA 59+16) (FACING EASTBOUND)

NOT TO SCALE

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	80	140
PROJECT FILE NO.	605178		

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	DIMENSIONS (in) LETTER HEIGHT	DIMENSIONS (in) VERTICAL SPACING	DIMENSIONS (in) ARROW	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
R1-1	30 in	30 in	STOP				9	RED	WHITE	WHITE	P-5 9	6.25	56.25
R2-1 (30)	30 in	36 in	SPEED LIMIT 30				1	WHITE	BLACK	BLACK	P-5 1	7.5	7.5
R2-1 (35)	30 in	36 in	SPEED LIMIT 35				2	WHITE	BLACK	BLACK	P-5 2	7.5	15
R3-2	24 in	24 in					1	WHITE	RED/ BLACK	BLACK	MOUNT W/ R5-1	4.0	4.0
R3-7L	36 in	36 in	LEFT LANE MUST TURN LEFT				1	WHITE	BLACK	BLACK	P-5 1	9.0	9.0
R3-8c	48 in	30 in	ONLY ONLY ONLY				2	WHITE	BLACK	BLACK	P-5 (2) 2	10.0	20.0
R3-8d	36 in	30 in	ONLY ONLY				2	WHITE	BLACK	BLACK	P-5 2	7.5	15.0
R3-9a	30 in	36 in	CENTER LANE ONLY				6	WHITE	BLACK	BLACK	MOUNT ON MA	7.5	45.0
R3-9b	24 in	36 in					8				P-5 8	6.0	48.0
R3-9cP	30 in	12 in	BEGIN				4	WHITE	BLACK	BLACK	MOUNT 3 W/ R3-9a 1 W/ R3-9b	2.5	10.0
R3-9dP	30 in	12 in	END				4	WHITE	BLACK	BLACK	MOUNT 3 W/ R3-9a 1 W/ R3-9b	2.5	10.0
R3-17aP	24 in	8 in	AHEAD				2	WHITE	BLACK	BLACK	MOUNT W/ R3-17	1.33	2.66
R3-17bP	24 in	8 in	ENDS				1	WHITE	BLACK	BLACK	MOUNT W/ R3-17	1.33	1.33
R3-17	24 in	18 in	BIKE LANE				10	WHITE	BLACK	BLACK	P-5 10	3.0	30.0
R5-1	30 in	30 in	DO NOT ENTER				3	WHITE	RED/ BLACK	BLACK	P-5 3	6.25	18.75
R6-1 (PBS)	36 in	12 in	ONE WAY				1	WHITE	BLACK	BLACK	MOUNT W/ R5-1	3.0	3.0
R7-1	12 in	18 in	NO PARKING ANY TIME				4	WHITE	RED	RED	P-5 4	1.5	6.0
R7-1L	12 in	18 in	NO PARKING ANY TIME				1	WHITE	RED	RED	P-5 1	1.5	1.5
R7-11R	12 in	18 in	NO PARKING HERE TO CORNER				1	WHITE	RED	RED	P-5 1	1.5	1.5
R10-23	24 in	30 in	CROSSWALK STOP ON RED				4	WHITE	BLACK	BLACK	MOUNT ON MAST ARM	5.0	20.0
R10-25	9 in	12 in	PUSH BUTTON TO TURN ON WARNING LIGHTS				2	WHITE	BLACK	BLACK	MOUNT ON RRFB	-	-
W1-8L	18 in	24 in					5	YELLOW	BLACK	BLACK	P-5 5	3.0	15.0
W1-8R	18 in	24 in					5	YELLOW	BLACK	BLACK	P-5 5	3.0	15.0
W4-2L	36 in	36 in					1	YELLOW	BLACK	BLACK	P-5 1	9.0	9.0
W4-2R	36 in	36 in					1	YELLOW	BLACK	BLACK	P-5 1	9.0	9.0
W11-1	36 in	36 in					2	FY	BLACK	BLACK	P-5 (2) 2	9.0	18.0
	30 in	30 in					1				P-5 1	6.25	6.25
W11-2	30 in	30 in					4	FY	BLACK	BLACK	P-5 4	6.25	25.0
W11-8	30 in	30 in					1	FY	BLACK	BLACK	P-5 1	6.25	6.25
W11-15	30 in	30 in					6	FY	BLACK	BLACK	MOUNT 4 ON RRFB 2 ON P-5	6.25	37.5
W16-7pL	24 in	12 in					4	FY	BLACK	BLACK	MOUNT 2 ON RRFB 2 W/ W11-2	2.0	8.0
W16-7pR	24 in	12 in					2	FY	BLACK	BLACK	MOUNT ON RRFB	-	-
W16-9p	24 in	12 in	AHEAD				4	FY	BLACK	BLACK	MOUNT 2 W/ W11-2 2 W/ W11-15	2.0	8.0
MA-W16-19p	24 in	18 in	ON ROADWAY				3	FY	BLACK	BLACK	MOUNT W/ W11-1	3.0	9.0
MA-M1-5a(129)	30 in	24 in	129				1	WHITE	BLACK	BLACK	MOUNT W/ M2-1	5.0	5.0
M2-1	21 in	15 in	JCT				1	WHITE	BLACK	BLACK	P-5 1	2.2	2.2
M4-6	12 in	6 in	END				1	GREEN	WHITE	WHITE	MOUNT W/ D11-1	0.5	0.5
M4-14	12 in	6 in	BEGIN				1				MOUNT W/ D11-1	0.5	0.5
M6-1L	12 in	9 in					3				MOUNT W/ D11-1c	0.75	2.25
M6-1R	12 in	9 in					4				MOUNT W/ D11-1c	0.75	3.0
M6-2R	12 in	9 in					2				MOUNT W/ D11-1	0.75	1.5
M6-3	12 in	9 in					1				MOUNT W/ D11-1c	0.75	0.75

SEE 2009 MUTCD STANDARDS

SEE MASSDOT STANDARDS

SEE 2009 MUTCD STANDARDS

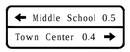
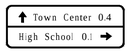
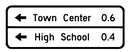
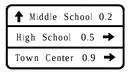
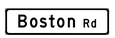
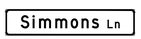
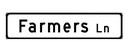
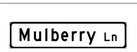
SEE 2009 MUTCD STANDARDS

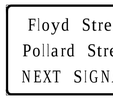
605178_HDI(4722_TSS).DWG Plotted on 7-Mar-22 9:58 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	81	140
PROJECT FILE NO.	605178		

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	DIMENSIONS (in) LETTER HEIGHT	DIMENSIONS (in) VERTICAL SPACING	DIMENSIONS (in) ARROW	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
M6-6L	12 in	9 in		SEE 2009 MUTCD STANDARDS			2	GREEN	WHITE	WHITE	MOUNT 1 W/ D11-1 1 W/ D11-1c	0.75	1.5
M6-6R	12 in	9 in					1				MOUNT W/ D11-1	0.75	0.75
D1-1c	33 in	6 in		2D	2 2	ARROW 3X2@0°	1				MOUNT W/ D11-1c	1.375	1.375
D1-2cA	33 in	12 in		2D 2D	2.125 3.75 2.125	ARROW 3X2@180° ARROW 3X2@0°	1				P-5 1	2.75	2.75
D1-2cB	33 in	12 in		2D 2D	2.125 3.75 2.125	ARROW 3X2@90° ARROW 3X2@0°	1				P-5 1	2.75	2.75
D1-2cC	33 in	12 in		2D 2D	2.125 3.75 2.125	ARROW 3X2@180° ARROW 3X2@180°	1				MOUNT W/ D11-1c	2.75	2.75
D1-3c	33 in	18 in		2D 2D 2D	2.125 3.875 3.875 2.125	ARROW 3X2@90° ARROW 3X2@0° ARROW 3X2@0°	1				P-5 1	4.125	4.125
MA-D3-1a	48 in	12 in		6/4D	3 3		4				MOUNT 2 W/ MA-D3-1c 2 W/ MA-D3-1f	EACH	EACH
MA-D3-1b	54 in	12 in		6/4D	3 3		2				P-5 (2) 1	EACH	EACH
MA-D3-1c	54 in	12 in		6/4D	2.75 3.25		2				1 - P-5 (2) 1 - P-5	EACH	EACH
MA-D3-1d	48 in	12 in		6/4D	3 3		2				P-5 1	EACH	EACH
MA-D3-1e	60 in	12 in		6/4D	3 3		2				P-5 (2) 1	EACH	EACH
MA-D3-1f	36 in	12 in		6/4D	3 3		2				P-5 1	EACH	EACH
MA-D3-1g	66 in	12 in		6/4D	2.75 3.25		2				P-5 (2) 1	EACH	EACH
MA-D3-1h	54 in	12 in		6/4D	3 3		2				P-5 (2) 1	EACH	EACH
MA-D3-1i	60 in	12 in		6/4D	3 3		2				P-5 (2) 1	EACH	EACH

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	DIMENSIONS (in) LETTER HEIGHT	DIMENSIONS (in) VERTICAL SPACING	DIMENSIONS (in) ARROW	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
D3-2a	66 in	30 in		6D 6D	6 6 6		2	GREEN	WHITE	WHITE	P-5 (2) 2	13.75	27.5
D3-2b	66 in	42 in		6D 6D 6D	6 6 6 6		1				P-5 (2) 1	19.25	19.25
D11-1	24 in	18 in		SEE 2009 MUTCD STANDARDS			9				P-5 9	3.0	27.0
D11-1c	24 in	18 in		2.5C	1.75 1.25 1.5	11" SYMBOL	19				P-5 17	3.0	57.0

NOTES:
1. HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING CONFORMING TO SECTION M9:30.0, TYPE III OR IV, OF THE MASSDOT STANDARD SPECIFICATIONS SHALL BE USED FOR ALL SIGNS.
2. ALL P5 POSTS SHALL BE TELESCOPIC, RECTANGULAR TYPE POSTS, CONFORMING TO THE DIMENSIONS AND REQUIREMENTS OF THE MASSDOT "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS" (LATEST EDITION).
3. SEE THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" FOR THE LATEST SPECIFICATIONS ON TEXT DIMENSIONS AND COLOR. (ALSO SEE SECTION M9.30.0 TYPE III MASSDOT STANDARD SPECIFICATION, THE "MASSACHUSETTS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES," AND "GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS" (LATEST EDITIONS) BY THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION).
4. ALL STREET NAME SIGNS SHALL BE PAINTED ONE SIDE AND SHALL USE TWO SIGNS MOUNTED BACK TO BACK WITH BOLT-THROUGH METHOD.
5. FY: FLUORESCENT YELLOW.
6. PBS: PAINTED BOTH SIDES.

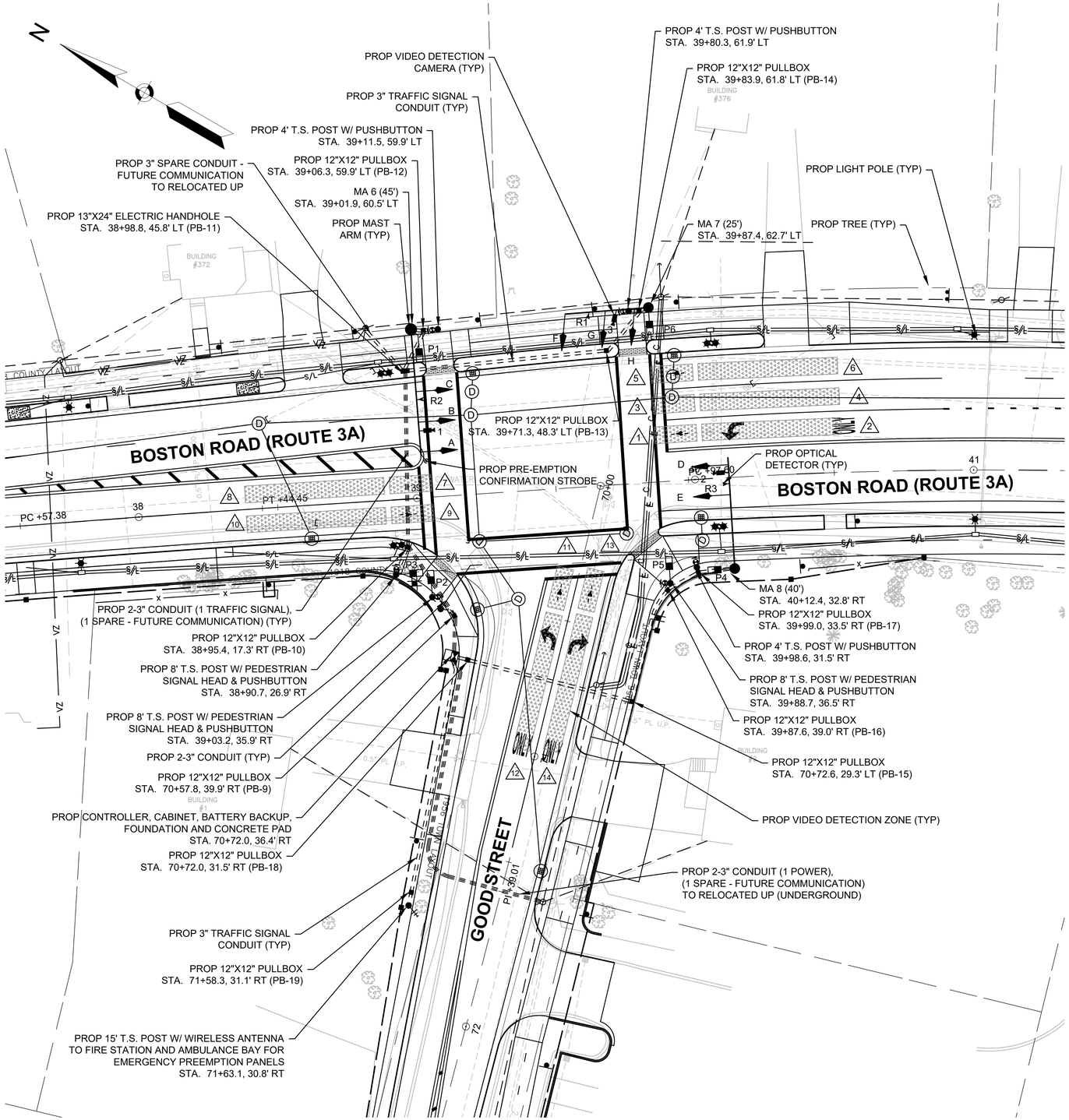
605178_HD(4722_TSS).DWG Plotted on 7-Mar-22 9:58 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	82	140
PROJECT FILE NO.	605178		

TRAFFIC SIGNAL PLAN
LOCATION 1:
BOSTON ROAD (ROUTE 3A)
AT GOOD STREET

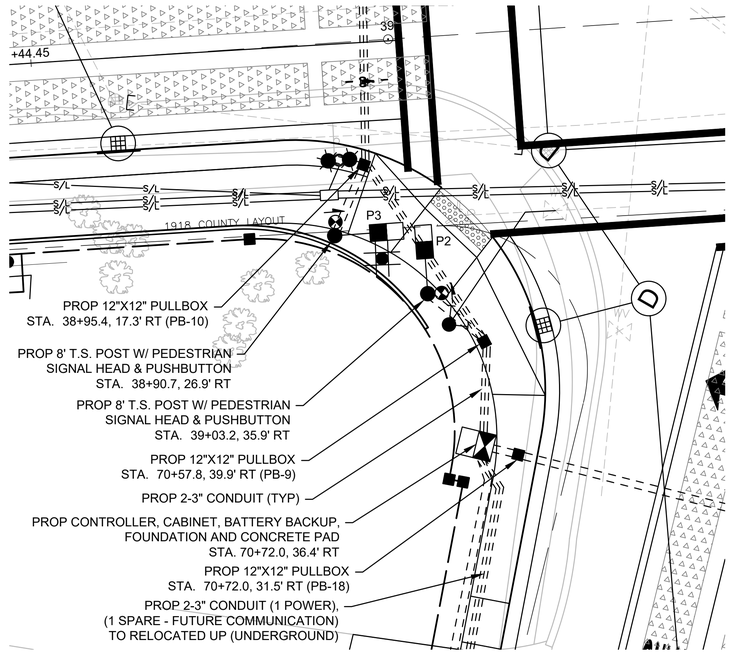
605178_HDU4722_SIGNAL).DWG Plotted on 7-Mar-22 10:08 PM



PROPOSED SIGNAL LAYOUT

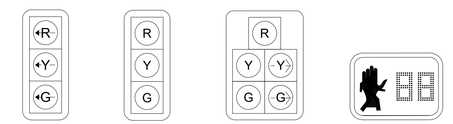
CONTINUED ON SHEET NO. 83

0 20 50 100
SCALE: 1" = 20'



SIGNAL EQUIPMENT DETAIL

SCALE: 1" = 10'



SIGNAL HEAD DESIGNATIONS

NOT TO SCALE

SIGNAL HEAD NOTES

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES AND TUNNEL VISORS.
2. ALL SIGNAL BACKPLATES SHALL BE 5" LOUVERED WITH 3" YELLOW RETROREFLECTIVE BORDER.
3. ALL SIGNAL LENSES SHALL BE 12" DIA. LED.
4. ALL PEDESTRIAN SIGNAL HEADS SHALL DISPLAY INTERNATIONAL SYMBOLS - (HAND)/(PERSON WALKING) WITH COUNTDOWN DISPLAYS.
5. ALL PEDESTRIAN SIGNAL HEADS SHALL HAVE 16" LED LENSES AND SUN VISORS.
6. ALL SIGNAL HEADS SHALL BE FIXED MOUNTED.

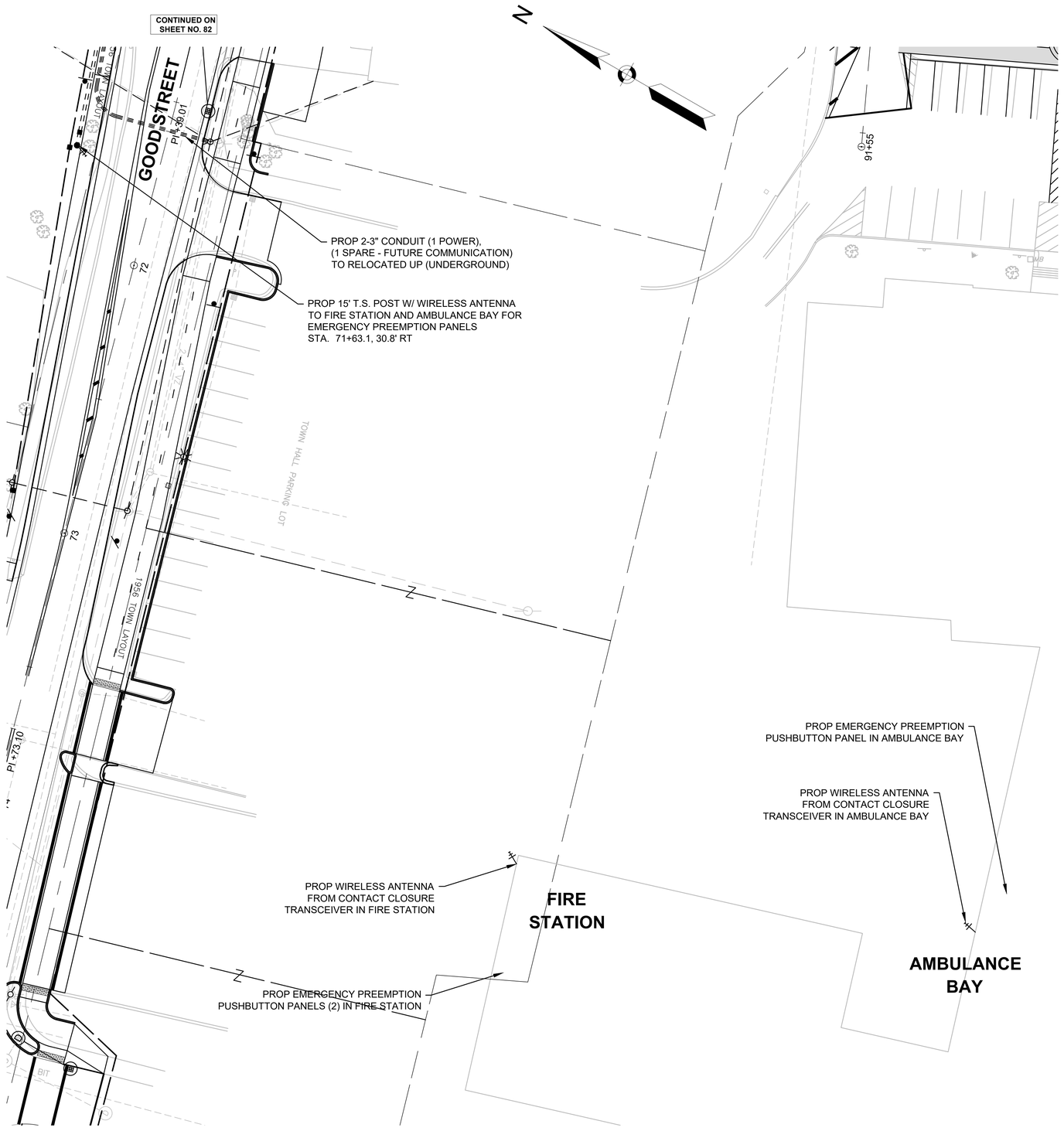
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	83	140
PROJECT FILE NO.	605178		

TRAFFIC SIGNAL PLAN
LOCATION 1:
BOSTON ROAD (ROUTE 3A)
AT GOOD STREET

605178_HDU4722_SIGNAL).DWG Plotted on 7-Mar-22 10:08 PM

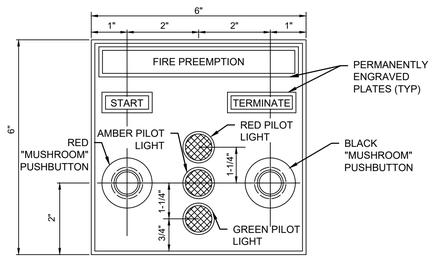
CONTINUED ON SHEET NO. 82



PROPOSED SIGNAL LAYOUT

0 20 50 100

SCALE: 1" = 20'



EMERGENCY PREEMPTION
PUSHBUTTON PANEL DETAIL

(NEMA ENCLOSURE)
NOT TO SCALE

PANEL NOTES

1. ALL BUTTON LOCATIONS SHALL BE COORDINATED WITH STATION COMMANDER

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	84	140
PROJECT FILE NO.	605178		

TRAFFIC SIGNAL PLAN
LOCATION 1:
BOSTON ROAD (ROUTE 3A)
AT GOOD STREET

605178_HD4722_SIGNAL).DWG Plotted on 7-Mar-22 10:08 PM

SEQUENCE AND TIMING CHART FOR FULLY ACTUATED SIGNAL CONTROL (ISOLATED)																	
PHASE/EMERGENCY PRE-EMPTION			Ø2			Ø4			Ø5			Ø6			Ø9			FLASH OPER.
STREET	DIRECTION	HOUSINGS	4	5	6	7	8	9	10	11	12	13	14	15	19	20	21	
BOSTON ROAD	NB	A	←R	←R	←R	←R	←R	←R	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←FR
BOSTON ROAD	NB	B,C	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
BOSTON ROAD	SB	D,E	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	FY
GOOD STREET	EB	F,G	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FR
GOOD STREET	EB	H	R	R	R	G	Y	R	R G→	R Y→	R	R	R	R	R	R	R	FR
PEDESTRIAN	ALL	P1-P6	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	OFF
TIMING IN SECONDS																		
MINIMUM GREEN			10			7			6			10						EMERGENCY ONLY
VEHICLE EXTENSION			4			2			2			4						
MAXIMUM GREEN I (ALL OTHER TIMES)			40			25			10			40						
MAXIMUM GREEN II (6:00 AM - 10:00 AM MON - FRI)			55			25			10			55						
CLEARANCE INTERVAL				4	1		3	3		3.5	2.5		4	1				
WALK/CLEARANCE/BUFFER INTERVAL															7	20	4	
DETECTOR MEMORY			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			LOCK			
RECALL SWITCH			SOFT			OFF			OFF			SOFT			OFF			

TRAFFIC SIGNAL 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. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT TRAFFIC MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.
3. FLASHING OPERATION IS FOR EMERGENCY OPERATION ONLY. THE SIGNAL SHALL PROVIDE STOP AND GO OPERATION 24 HOURS DAILY.
4. PEDESTRIAN PHASE TO BE ACTIVATED BY PEDESTRIAN PUSH-BUTTON ONLY.
5. OPTICAL DETECTORS SHALL BE LOCATED FOR OPTIMUM SIGHT DISTANCE.
6. PEDESTRIAN PUSHBUTTONS AND SIGNS SHALL BE LOCATED IN ACCORDANCE WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (FIG. 4E-4) AND POINTED PARALLEL TO THE CROSSWALK.

PRE-EMPTION PHASING & PRIORITY

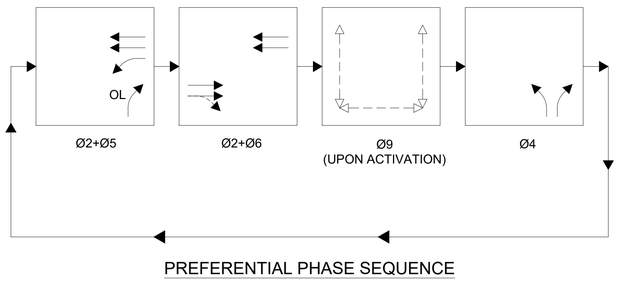
RECEIVER AND PRIORITY	PRE-EMPT PHASE ASSIGNMENT	MOVEMENT	VEHICLE PHASE ASSIGNMENT
R1	1	EB	Ø4
R2	2	NB	Ø2 & Ø5
R3	3	SB	Ø6

MAST ARM FOUNDATIONS

MAST ARM	ARM LENGTH	POLE HEIGHT	LOCATION		FOUNDATION SIZE			
			STATION	OFFSET	DIAMETER	DEPTH	VERT. BARS	TIE BARS
MA 6	45'	22'-0"	39+01.9	60.5' LT	4'-0"	11'-6"	18-#9	#5 @ 9"
MA 7	25'	22'-0"	39+87.4	62.7' LT	3'-6"	9'-0"	18-#8	#5 @ 12"
MA 8	40'	22'-0"	40+12.4	32.8' RT	4'-0"	11'-0"	19-#9	#5 @ 9"

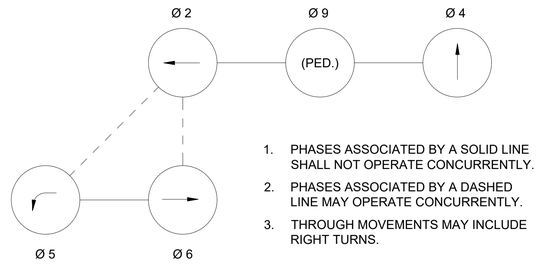
EMERGENCY PREEMPTION NOTES:

1. UPON PREEMPTION ACTIVATION, PHASE(S) BEING SERVICED SHALL IMMEDIATELY BEGIN CLEARANCE (I.E., YELLOW AND ALL RED) AS DESIGNED, EXCEPT FOR WHEN PHASE(S) CALLED BY PREEMPTION ARE CURRENTLY IN SERVICE. WHEN PHASE(S) CURRENTLY IN SERVICE MATCH PHASE(S) CALLED BY PREEMPTION, SIGNAL INDICATIONS ARE MAINTAINED. HOWEVER, PREEMPTION OPERATION (I.E. TIMING) SUPERCEDES NORMAL TRAFFIC SIGNAL CONTROL.
2. AFTER THE PREEMPTION SEQUENCE HAS TERMINATED, THE SIGNAL SHALL RETURN TO THE BEGINNING OF Ø2 & Ø6.
3. THE PREEMPTION STROBE SHALL BE ILLUMINATED ONLY WHEN THE PREEMPTED PHASE IS DISPLAYING A GREEN INDICATION.
4. A SEPARATE CABLE SHALL BE RUN FOR THE PREEMPTION STROBE. IT MAY NOT BE RUN ON THE SPARE SIGNAL CABLE.
5. EMERGENCY PREEMPTION SHALL COME ON A FIRST-COME FIRST-SERVED BASIS.
6. EMERGENCY PREEMPTION CALLS VIA OPTICAL DETECTOR SHALL HAVE A 15 SECOND MINIMUM AND 60 SECOND MAX TIME. MINIMUM PREEMPTION TIME SHALL BE VERIFIED WITH THE STATION COMMANDER.
7. EMERGENCY PREEMPTION CALLS VIA FIRE STATION PUSHBUTTON PANEL SHALL CALL THE MAXIMUM GREEN FOR PHASE 4. CALL MAY BE TERMINATED VIA THE "TERMINATE" PUSHBUTTON ON THE PANEL.



PREFERENTIAL PHASE SEQUENCE

NEMA DUAL RING PHASING NOTES:



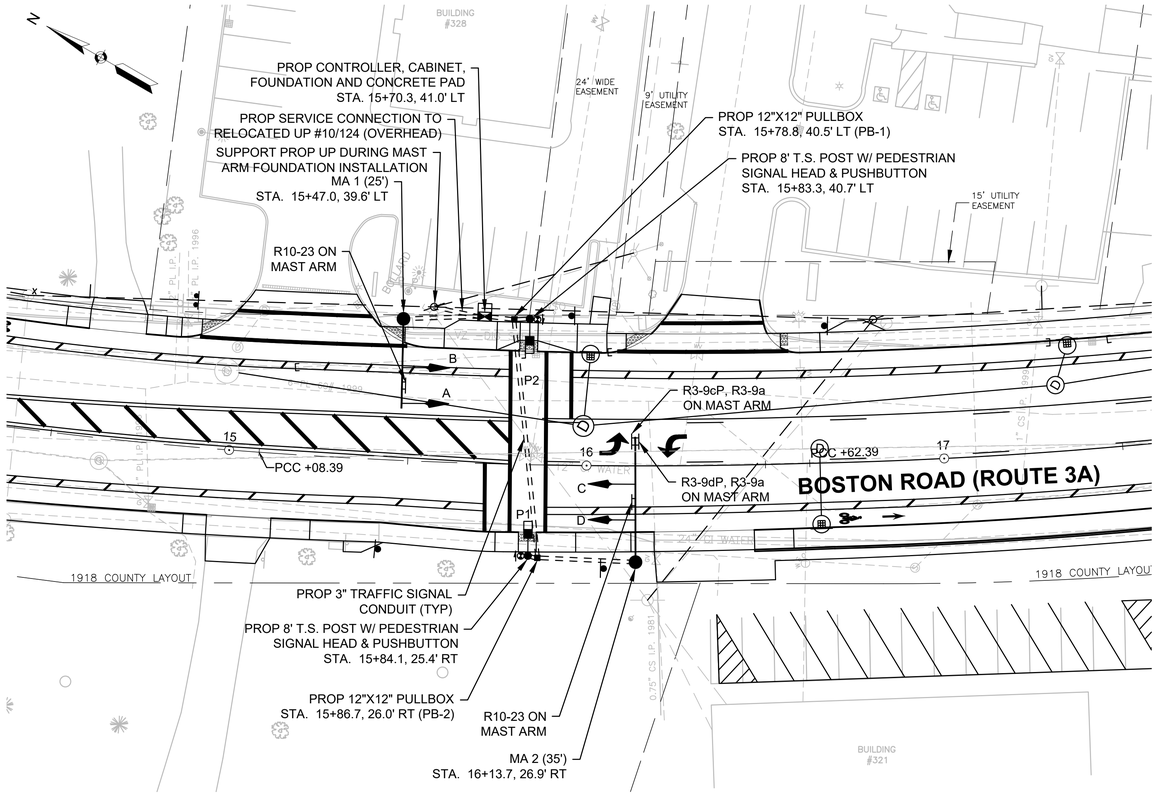
1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.

DETECTOR DATA

DETECTOR NO.	VIDEO CAMERA NO.	NO. SECTION/ SIZE	OPERATIONS	EXTENSION (SECONDS)	CALL DELAY (SECONDS)	CALL PHASE	SWITCH	EXTEND PHASE
1	1	1 - 6'x15'	PRESENCE/BICYCLE	0	0	Ø5	-	Ø5
2	1	1 - 6'x50'	PRESENCE	0	0	Ø5	-	Ø5
3	1	1 - 6'x15'	PRESENCE	0	0	Ø2	-	Ø2
4	1	1 - 6'x50'	PRESENCE	0	0	Ø2	-	Ø2
5	1	1 - 6'x15'	PRESENCE/BICYCLE	0	0	Ø2	-	Ø2
6	1	1 - 6'x50'	PRESENCE	0	0	Ø2	-	Ø2
7	2	1 - 6'x15'	PRESENCE	0	0	Ø6	-	Ø6
8	2	1 - 6'x50'	PRESENCE	0	0	Ø6	-	Ø6
9	2	1 - 6'x15'	PRESENCE/BICYCLE	0	0	Ø6	-	Ø6
10	2	1 - 6'x50'	PRESENCE	0	0	Ø6	-	Ø6
11	3	1 - 6'x15'	PRESENCE/BICYCLE	0	0	Ø4	-	Ø4
12	3	1 - 6'x50'	PRESENCE	0	0	Ø4	-	Ø4
13	3	1 - 6'x15'	PRESENCE/BICYCLE	0	5	Ø4	-	Ø4
14	3	1 - 6'x50'	PRESENCE	0	5	Ø4	-	Ø4

MAJOR ITEMS (LOCATION 1)

ITEM NO.	QUANTITY	DESCRIPTION
815.1	1	TRAFFIC SIGNAL CONTROLLER (TS2, TYPE 1), LOCATED IN BASE MOUNTED CABINET WITH FOUNDATION AND CONCRETE PAD
	1	45' MAST ARM, TYPE II, ORNAMENTAL STEEL MONOLEVER WITH FOUNDATION
	1	40' MAST ARM, TYPE II, ORNAMENTAL STEEL MONOLEVER WITH FOUNDATION
	1	25' MAST ARM, TYPE II, ORNAMENTAL STEEL MONOLEVER WITH FOUNDATION
	1	TRAFFIC SIGNAL POST AND BASE STANDARD - 15' STEEL
	3	TRAFFIC SIGNAL POST AND BASE STANDARD - 8' ORNAMENTAL STEEL
	3	TRAFFIC SIGNAL POST AND BASE STANDARD - 4' STEEL
	1	SIGNAL HEAD, 1-WAY, 5 SECTION, 12" LENSES
	7	SIGNAL HEAD, 1-WAY, 3 SECTION, 12" LENSES
	1	5" 5-SECTION BACKPLATES WITH 3" YELLOW RETROREFLECTIVE YELLOW BORDER
	7	5" 3-SECTION BACKPLATES WITH 3" YELLOW RETROREFLECTIVE YELLOW BORDER
	6	PEDESTRIAN SIGNAL HEAD, 1-WAY, 1 SECTION, 16" WITH COUNTDOWN
	6	AUDIBLE & VIBRO-TACTILE PEDESTRIAN PUSHBUTTON INTEGRATED SIGN & SADDLE WITH LED CONFIRMATION LIGHT
	2	VIDEO PROCESSOR (2 CHANNEL)
	3	VIDEO DETECTION CAMERA
	1	9" VIDEO DETECTION MONITOR
	1	SIDE MOUNT BATTERY BACKUP SYSTEM
	1	SERVICE CONNECTION (OVERHEAD)
	3	OPTICAL DETECTOR, UNIDIRECTIONAL, SINGLE CHANNEL
	1	4 CHANNEL PHASE SELECTOR
	1	CARD RACK
	1	EMERGENCY PRE-EMPTION CONFIRMATION STROBE (WHITE)
	3	WIRELESS CONTACT CLOSURE TRANSCEIVER AND ANTENNA
	3	EMERGENCY PREEMPTION PUSHBUTTON PANEL
815.11	1	MANAGED FIBER/ETHERNET SWITCH (FOR FUTURE USE)
804.3	827 FT	3" TRAFFIC SIGNAL CONDUIT
811.22	1	ELECTRIC HANDHOLE - SD2.022
811.31	10	PULL BOX, 12" X 12"
PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.		



PROPOSED PEDESTRIAN HYBRID BEACON LAYOUT

0 20 50 100

SCALE: 1" = 20'

MAST ARM FOUNDATIONS

MAST ARM	ARM LENGTH	POLE HEIGHT	LOCATION		FOUNDATION SIZE			
			STATION	OFFSET	DIAMETER	DEPTH	VERT. BARS	TIE BARS
MA 1	25'	22'-0"	15+47.0	39.6' LT	3'-6"	9'-0"	18-#8	#5 @ 12"
MA 2	35'	22'-0"	16+13.7	26.9' RT	3'-6"	10'-6"	18-#8	#5 @ 9"

MAJOR ITEMS (LOCATION 2)

ITEM NO.	QUANTITY	DESCRIPTION
815.2	1	TRAFFIC SIGNAL CONTROLLER (TS2, TYPE 1), LOCATED IN BASE MOUNTED CABINET (SIZE 5) WITH FOUNDATION AND CONCRETE PAD
	1	35' MAST ARM, TYPE II, STEEL MONOLEVER WITH FOUNDATION
	1	25' MAST ARM, TYPE II, STEEL MONOLEVER WITH FOUNDATION
	2	TRAFFIC SIGNAL POST AND BASE STANDARD - 8' STEEL
	4	SIGNAL HEAD, 1-WAY, 3 SECTION, 12" LENSES
	4	5" 3-SECTION BACKPLATES WITH 3" YELLOW RETROREFLECTIVE YELLOW BORDER
	2	PEDESTRIAN SIGNAL HEAD, 1-WAY, 1 SECTION, 16" WITH COUNTDOWN
	2	AUDIBLE & VIBRO-TACTILE PEDESTRIAN PUSHBUTTON INTEGRATED SIGN & SADDLE WITH LED CONFIRMATION LIGHT
	1	SERVICE CONNECTION (OVERHEAD)
804.3	135 FT	3" TRAFFIC SIGNAL CONDUIT
811.31	2	PULL BOX, 12" X 12"
PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.		

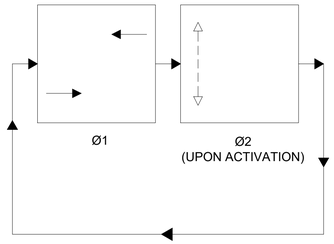


SIGNAL HEAD DESIGNATIONS

NOT TO SCALE

SIGNAL HEAD NOTES

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES AND TUNNEL VISORS.
2. ALL SIGNAL BACKPLATES SHALL BE 5" LOUVERED WITH 3" YELLOW RETROREFLECTIVE BORDER.
3. ALL SIGNAL LENSES SHALL BE 12" DIA. LED.
4. ALL PEDESTRIAN SIGNAL HEADS SHALL DISPLAY INTERNATIONAL SYMBOLS - (HAND)/(PERSON WALKING) WITH COUNTDOWN DISPLAYS.
5. ALL PEDESTRIAN SIGNAL HEADS SHALL HAVE 16" LED LENSES AND SUN VISORS.
6. ALL SIGNAL HEADS SHALL BE FIXED MOUNTED.



PREFERENTIAL PHASE SEQUENCE

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	85	140
PROJECT FILE NO.	605178		

TRAFFIC SIGNAL PLAN
LOCATION 2:
BOSTON ROAD (ROUTE 3A)
STA. 15+84±

PEDESTRIAN HYBRID BEACON NOTES:

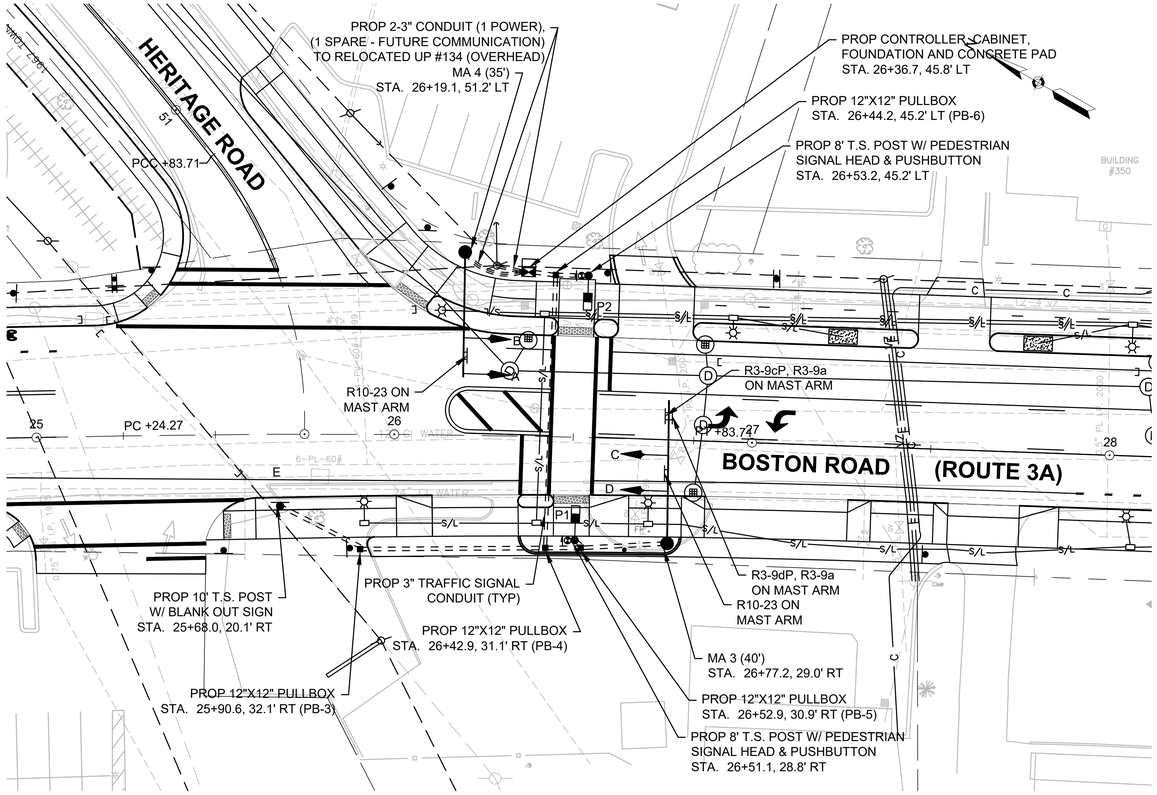
1. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
2. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT TRAFFIC MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.
3. PEDESTRIAN PHASE TO BE ACTIVATED BY PEDESTRIAN PUSH-BUTTON ONLY.
4. PEDESTRIAN PUSHBUTTONS AND SIGNS SHALL BE LOCATED IN ACCORDANCE WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (FIG. 4E-4) AND POINTED PARALLEL TO THE CROSSWALK.

SEQUENCE AND TIMING CHART FOR PEDESTRIAN HYBRID BEACON (HAWK) SIGNAL									
PHASE			Ø1				Ø2		
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	
BOSTON ROAD	NB	A,B	OUT*	FY	SY	SR	SR	FR	FR
BOSTON ROAD	SB	C,D	OUT*	FY	SY	SR	SR	FR	FR
PEDESTRIAN	ALL	P1-P2	DW	DW	DW	DW	W	FDW	DW
TIMING IN SECONDS									
MINIMUM GREEN			45						
PASSAGE TIME			-						
MAXIMUM 1			-						
MAXIMUM 2			-						
CLEARANCE INTERVAL				3	3	1			4
WALK/CLEARANCE/BUFFER INTERVAL							7	11	
DETECTOR MEMORY			NON-LOCK				LOCK		
RECALL SWITCH			MAX				OFF		
* DARK UNTIL ACTIVATED									

SEQUENCE FOR PEDESTRIAN HYBRID BEACON (HAWK) SIGNAL

R R Y	1. DARK UNTIL ACTIVATED.		1. DON'T WALK.
R R FY	2. FLASHING YELLOW UPON ACTIVATION.		2. DON'T WALK.
R R SY	3. STEADY YELLOW FOR VEHICLE CLEARANCE		3. DON'T WALK.
SR SR Y	4. STEADY RED DURING BUFFER INTERVAL.		4. DON'T WALK.
SR SR Y	5. STEADY RED DURING PEDESTRIAN WALK INTERVAL.		5. WALK.
FR R Y R FR Y	6. ALTERNATING FLASHING RED DURING PEDESTRIAN CLEARANCE INTERVAL.		6. FLASHING DON'T WALK WITH COUNTDOWN.
FR R Y R FR Y	7. ALTERNATING FLASHING RED DURING PEDESTRIAN BUFFER INTERVAL.		7. DON'T WALK.
R R Y	8. DARK UNTIL ACTIVATED AGAIN .		8. DON'T WALK.

605178_HDU4722_SIGNAL).DWG Plotted on 7-Mar-22 10:09 PM



PROPOSED PEDESTRIAN HYBRID BEACON LAYOUT

0 20 50 100

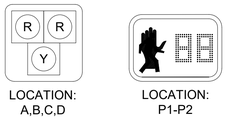
SCALE: 1" = 20'

MAST ARM FOUNDATIONS

MAST ARM	ARM LENGTH	POLE HEIGHT	LOCATION		FOUNDATION SIZE			
			STATION	OFFSET	DIAMETER	DEPTH	VERT. BARS	TIE BARS
MA 3	40'	22'-0"	26+77.2	29.0' RT	3'-6"	10'-6"	18-#8	#5 @ 9"
MA 4	35'	22'-0"	26+19.1	51.2' LT	3'-6"	14'-6"	18-#8	#5 @ 9"

MAJOR ITEMS (LOCATION 3)

ITEM NO.	QUANTITY	DESCRIPTION
815.3	1	TRAFFIC SIGNAL CONTROLLER (TS2, TYPE 1), LOCATED IN BASE MOUNTED CABINET (SIZE 5) WITH FOUNDATION
	1	40' MAST ARM, TYPE II, ORNAMENTAL STEEL MONOLEVER WITH FOUNDATION
	1	35' MAST ARM, TYPE II, ORNAMENTAL STEEL MONOLEVER WITH FOUNDATION
	1	TRAFFIC SIGNAL POST AND BASE STANDARD - 10' ORNAMENTAL STEEL
	2	TRAFFIC SIGNAL POST AND BASE STANDARD - 8' ORNAMENTAL STEEL
	4	SIGNAL HEAD, 1-WAY, 3 SECTION, 12" LENSES
	4	5" 3-SECTION BACKPLATES WITH 3" YELLOW RETROREFLECTIVE YELLOW BORDER
	1	CHANGEABLE MESSAGE SIGN (LED)
	2	PEDESTRIAN SIGNAL HEAD, 1-WAY, 1 SECTION, 16" WITH COUNTDOWN
	2	AUDIBLE & VIBRO-TACTILE PEDESTRIAN PUSHBUTTON INTEGRATED SIGN & SADDLE WITH LED CONFIRMATION LIGHT
	1	SERVICE CONNECTION (OVERHEAD)
804.3	226 FT	3" TRAFFIC SIGNAL CONDUIT
811.31	4	PULL BOX, 12" X 12"
PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.		

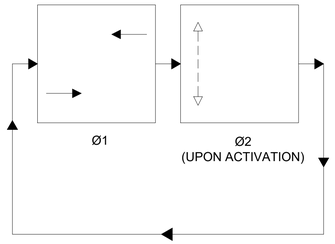


SIGNAL HEAD DESIGNATIONS

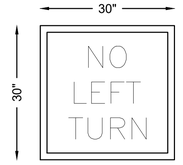
NOT TO SCALE

SIGNAL HEAD NOTES

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES AND TUNNEL VISORS.
2. ALL SIGNAL BACKPLATES SHALL BE 5" LOUVERED WITH 3" YELLOW RETROREFLECTIVE BORDER.
3. ALL SIGNAL LENSES SHALL BE 12" DIA. LED.
4. ALL PEDESTRIAN SIGNAL HEADS SHALL DISPLAY INTERNATIONAL SYMBOLS - (HAND)/(PERSON WALKING) WITH COUNTDOWN DISPLAYS.
5. ALL PEDESTRIAN SIGNAL HEADS SHALL HAVE 16" LED LENSES AND SUN VISORS.
6. ALL SIGNAL HEADS SHALL BE FIXED MOUNTED.



PREFERENTIAL PHASE SEQUENCE



CHANGEABLE MESSAGE SIGN

NOT TO SCALE

CHANGEABLE MESSAGE SIGN NOTES

1. CHANGEABLE MESSAGE SIGN SHALL BE ILLUMINATED DURING THE WALK INTERVAL OF THE CROSSWALK ONLY.
2. CHANGEABLE MESSAGE SIGN SHALL DISPLAY THE WORDS "NO LEFT TURN."
3. THE WORDS "NO LEFT TURN" SHALL BE WHITE ROUND LEDS.
4. CHANGEABLE MESSAGE SIGN SHALL BE FIXED MOUNTED.

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	86	140
PROJECT FILE NO.	605178		

TRAFFIC SIGNAL PLAN
LOCATION 3:
BOSTON ROAD (ROUTE 3A)
STA. 26+50±

PEDESTRIAN HYBRID BEACON 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. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT TRAFFIC MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.
3. PEDESTRIAN PHASE TO BE ACTIVATED BY PEDESTRIAN PUSH-BUTTON ONLY.
4. PEDESTRIAN PUSHBUTTONS AND SIGNS SHALL BE LOCATED IN ACCORDANCE WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (FIG. 4E-4) AND POINTED PARALLEL TO THE CROSSWALK.

SEQUENCE AND TIMING CHART FOR PEDESTRIAN HYBRID BEACON (HAWK) SIGNAL

PHASE			Ø1				Ø2		
STREET	DIRECTION	HOUSINGS	1	2	3	4	4	5	6
BOSTON ROAD	NB	A,B	OUT*	FY	SY	SR	SR	FR	FR
BOSTON ROAD	SB	C,D	OUT*	FY	SY	SR	SR	FR	FR
HERITAGE ROAD	WB	E	OUT*	OUT*	OUT*	OUT*	NLT	NLT	OUT*
PEDESTRIAN	ALL	P1-P2	DW	DW	DW	DW	W	FDW	DW
TIMING IN SECONDS									
MINIMUM GREEN			45						
PASSAGE TIME			-						
MAXIMUM 1			-						
MAXIMUM 2			-						
CLEARANCE INTERVAL				3	3	1			4
WALK/CLEARANCE/BUFFER INTERVAL							7	10	
DETECTOR MEMORY			NON-LOCK				LOCK		
RECALL SWITCH			MAX				OFF		

* DARK UNTIL ACTIVATED

NLT = NO LEFT TURN



SEQUENCE FOR PEDESTRIAN HYBRID BEACON (HAWK) SIGNAL

R R Y	1. DARK UNTIL ACTIVATED.		1. DON'T WALK.
R R FY	2. FLASHING YELLOW UPON ACTIVATION.		2. DON'T WALK.
R R SY	3. STEADY YELLOW FOR VEHICLE CLEARANCE		3. DON'T WALK.
SR SR Y	4. STEADY RED DURING BUFFER INTERVAL.		4. DON'T WALK.
SR SR Y	5. STEADY RED DURING PEDESTRIAN WALK INTERVAL.		5. WALK.
FR R Y R FR Y	6. ALTERNATING FLASHING RED DURING PEDESTRIAN CLEARANCE INTERVAL.		6. FLASHING DON'T WALK WITH COUNTDOWN.
FR R Y R FR Y	7. ALTERNATING FLASHING RED DURING PEDESTRIAN BUFFER INTERVAL.		7. DON'T WALK.
R R Y	8. DARK UNTIL ACTIVATED AGAIN .		8. DON'T WALK.

605178_HDU4722_SIGNAL).DWG Plotted on 7-Mar-22 10:09 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	87	140
PROJECT FILE NO.	605178		

TEMPORARY TRAFFIC CONTROL PLAN

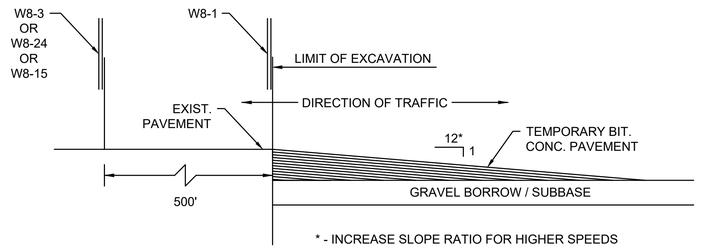
605178_HD(4722_TTCP).DWG Plotted on 7-Mar-22 10:11 PM

NOTES:

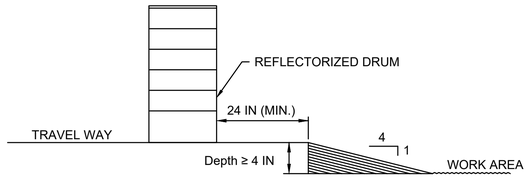
1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS.
2. ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD, EXCEPT THAT BACKGROUND COLOR SHALL BE FLUORESCENT ORANGE, IN ACCORDANCE WITH MASSDOT SPECIFICATIONS.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, AND REFLECTORIZED PLASTIC DRUMS WITH LIGHTING DEVICES MOUNTED ON THEM, MUST PASS THE CRITERIA SET FORTH IN THE "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
6. CONTRACTORS 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. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
11. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
13. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL NOT COVERED IN THE PLAN SHALL REFER TO MASSDOT "2017 STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TRAFFIC MANAGEMENT PLANS".
14. NO WORK, INCLUDING THE SETTING UP AND TAKING DOWN OF WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE DONE ON ROADWAYS BETWEEN 7AM-9AM AND 4PM-6PM.

LEGEND:

●	REFLECTORIZED PLASTIC DRUM
	TYPE III BARRICADE
	FLASHING ARROW PANNEL
	FLASHING ARROW PANNEL
	WORK ZONE
	DIRECTION OF TRAFFIC
	IMPACT ATTENUATOR
	MEDIAN BARRIER
	MEDIAN BARRIER WITH WARNING LIGHTS
	WORK VEHICLE
	TRUCK MOUNTED ATTENUATOR
	TRAFFIC OR PEDESTRIAN SIGNAL
	SIGN
P	POLICE DETAIL
F	FLAGGER



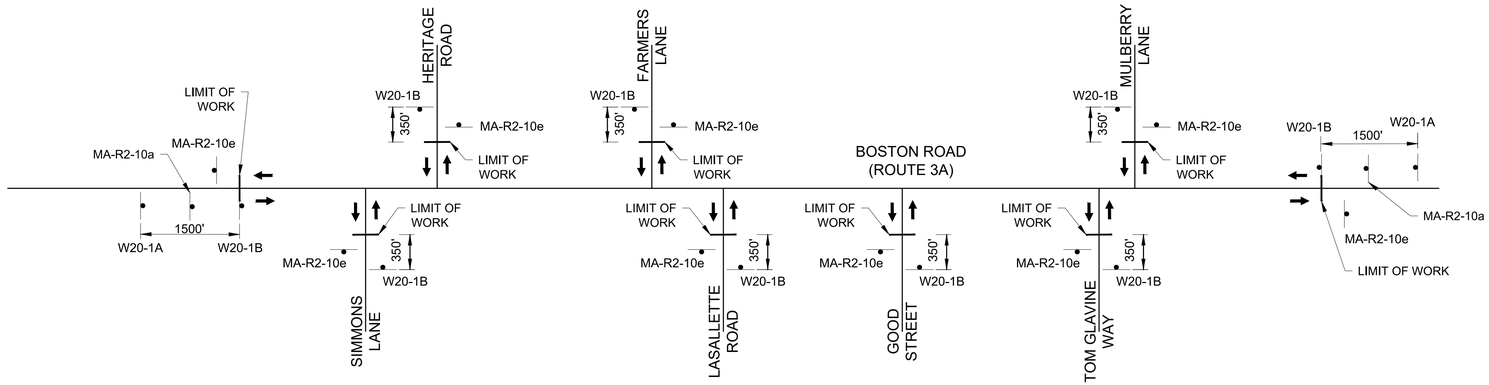
LONGITUDINAL DROP-OFF DETAIL
NOT TO SCALE



LATERAL DROP-OFF DETAIL
NOT TO SCALE

GENERAL CONSTRUCTION STAGES

1. UTILITY WORK
   a. CONSTRUCT ALL PROPOSED UTILITIES AND ADJUST, ABANDON, REMOVE, OR REMOVE AND RESET, ALL EXISTING UTILITIES, AS SHOWN ON THE PLANS.
   b. CONSTRUCT UNDERGROUNDING OF SERVICES CONDUITS AND DUCT BOXES.
2. WIDENING
   SET CURBING AND PERFORM BOX WIDENING.
3. FULL DEPTH CONSTRUCTION/BOX WIDENING
   a. EXCAVATE ROADWAY FOR WIDENING; PLACE THE GRAVEL SUBBASE, WHILE MAINTAINING TRAFFIC IN EACH DIRECTION ON THE EXISTING ROADWAY.
   b. PLACE CRUSHED STONE AND HOT MIX ASPHALT BASE COURSE OR H.E.S. CONCRETE ON ENTIRE WIDENING ROADWAY.
4. TRAFFIC CONTROL
   INSTALL ALL TRAFFIC SIGNAL EQUIPMENT.
5. SIDEWALKS
   CONSTRUCT SIDEWALKS
6. TOP COURSE AND BINDER COURSE
   PLACE BINDER COURSE (WHERE REQUIRED) FOLLOWED BY TOP COURSE FOR THE ENTIRE LENGTH OF THE PROJECT.
7. PAVEMENT MARKINGS
   INSTALL PAVEMENT MARKINGS.



INTERSECTION PROJECT LIMIT SIGNING
NOT TO SCALE

WORK ZONE SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS (IN FEET) *			PROJECT ROADWAY CLASSIFICATION
	A	B	C	
LOCAL/LOW VOLUME ROADWAYS	350	350	350	SIMMONS LANE HERITAGE ROAD FARMERS LANE LASALLETTE ROAD GOOD STREET TOM GLAVINE WAY MULBERRY LANE
MOST OTHER ROADWAYS	500	500	500	BOSTON ROAD
FREEWAYS AND EXPRESSWAYS	1,000	1,000	1,000	

* A = DISTANCE FROM TRANSITION/POINT OF RESTRICTION TO FIRST SIGN
B = DISTANCE BETWEEN FIRST AND SECOND SIGN
C = DISTANCE BETWEEN SECOND AND THIRD SIGN (INITIAL WARNING SIGN)

TAPER LENGTH

SPEED LIMIT	FORMULA	POSTED SPEED/ 85TH PERCENTILE
40 MPH OR LESS	$L = (W*S^2) / 60$	40 MPH (85TH PERCENTILE) BOSTON ROAD
45 MPH OR GREATER	L = W*S	N/A

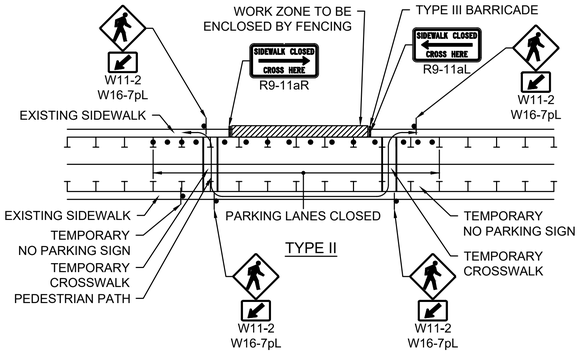
WHERE: L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING IN MPH

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	88	140
PROJECT FILE NO.	605178		

TEMPORARY TRAFFIC CONTROL PLAN

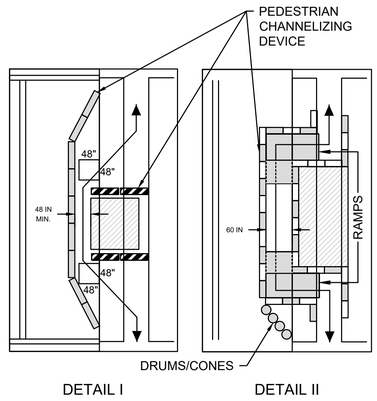
605178_HD(4722_TTCP).DWG Plotted on 7-Mar-22 10:11 PM



NOTES:

1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHOULD BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS, AND AS DIRECTED BY THE ENGINEER. TEMPORARY CURB RAMPS WILL BE REQUIRED AT ALL TEMPORARY CROSSWALK LOCATIONS.
5. BYPASS IS TO BE USED IN CONJUCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.
6. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THIS WALKWAY EXCEEDS 200 FEET THEN A 5 FOOT X 5 FOOT PASSING ZONE.

PEDESTRIAN BYPASS DETAILS
NOT TO SCALE



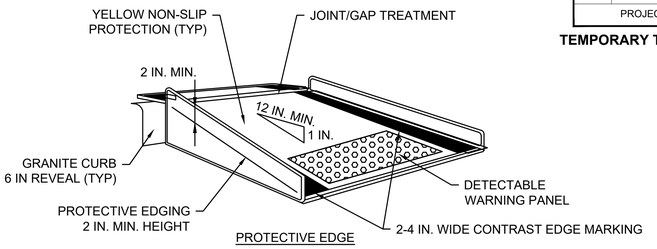
DETAIL I DETAIL II

NOTES:

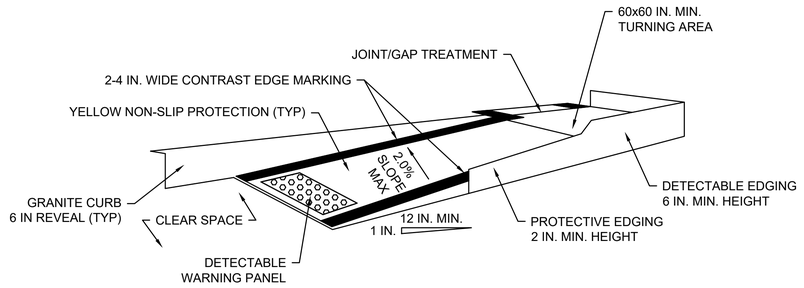
- DETAIL I IS CONSIDERED AN EXAMPLE OF A SHORT TERM CLOSURE AND PEDESTRIAN ASSISTANCE (PERSONEL) TO NAVIGATE AROUND THE CLOSURE/WORK AREA COULD BE CONSIDERED AS AN OPTION IN PLACE OF PROVIDING ADA/AAB DEVICES. DETAIL II IS CONSIDERED AN EXAMPLE OF A LONG TERM CLOSURE THAT WOULD REQUIRE ADDITIONAL ADA/AAB COMPLIANT DEVICES. IF A SIDEWALK CLOSURE OR RESTRICTION LASTS FOR MORE THAN ONE (1) WORK SHIFT THEN ADA/AAB COMPLIANCE SHALL BE FOLLOWED.
- WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
- A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (SEE FIGURES).
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
- THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THE SIDEWALK EXEEDS 200 FEET THEN A 5 FOOT BE 5 FOOT PASSING ZONE SHALL BE PROVIDED.
- THE PROTECTIVE REQUIREMENTS OF A TTC WORK ZONE MAY HAVE AN IMPACT IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN PROVIDING PEDESTRIAN DELINEATION SHOULD BE BASED ON ENGINEERING JUDGMENT .
- CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN; VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE. THESE DETAILS ARE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DETERMINED BY THE ENGINEER.
- AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MIDBLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.
- EXISTING AUDIBLE DEVICES NO LONGER APPLICABLE DUE TO CONSTRUCTION SHALL BE DISABLED.

AUDIBLE DEVICES:

- FOR LONG TERM SIDEWALK CLOSURES (AT A MINIMUM OVERNIGHT) A FORM OF SPEECH MESSAGING FOR PEDESTRIANS WITH VISUAL DISABILITIES SHALL BE PROVIDED. AUDIBLE INFORMATION DEVICES SUCH AS DETECTABLE BARRIERS OR BARRICADES AND OTHER PASSIVE PEDESTRIAN ACTIVATION (MOTION ACTIVATED) DEVICES SHOULD BE CONSIDERED FOR THESE CASES. THESE AUDIBLE DEVICES CAN BE MOUNTABLE OR STAND ALONE.



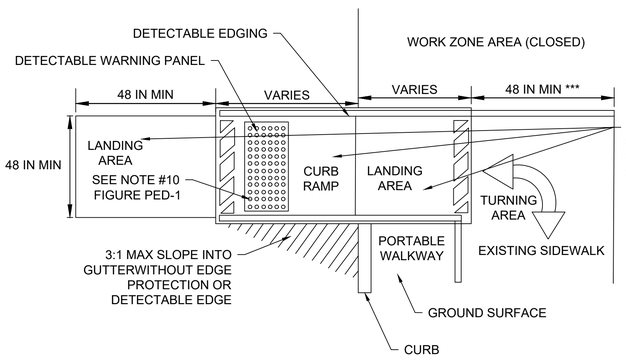
TEMPORARY CURB RAMP-PERPENDICULAR TO CURB
NOT TO SCALE



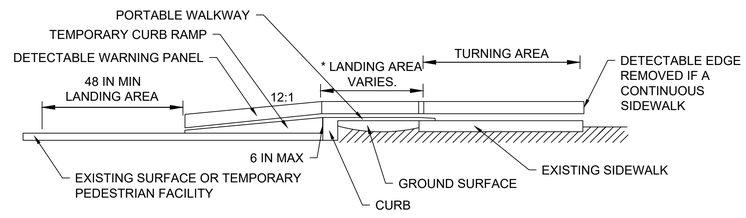
TEMPORARY CURB RAMP-PARALLEL TO CURB
NOT TO SCALE

NOTES:

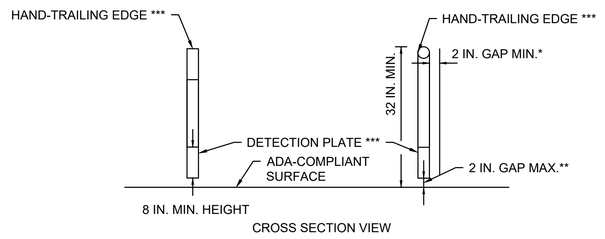
1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD 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. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
6. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
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.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



TEMPORARY CURB RAMP
NOT TO SCALE



* LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.
** DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.
*** 60 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK



PEDESTRIAN CHANNELIZING DEVICE
NOT TO SCALE

NOTES:

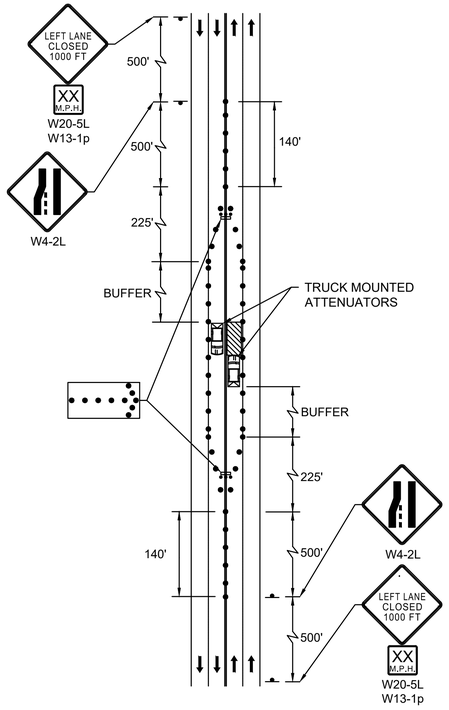
* THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.
** A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.
*** THE HAND-TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH A LONG CANE CAN FOLLOW IT.

BILLERICA
BOSTON ROAD (ROUTE 3A)

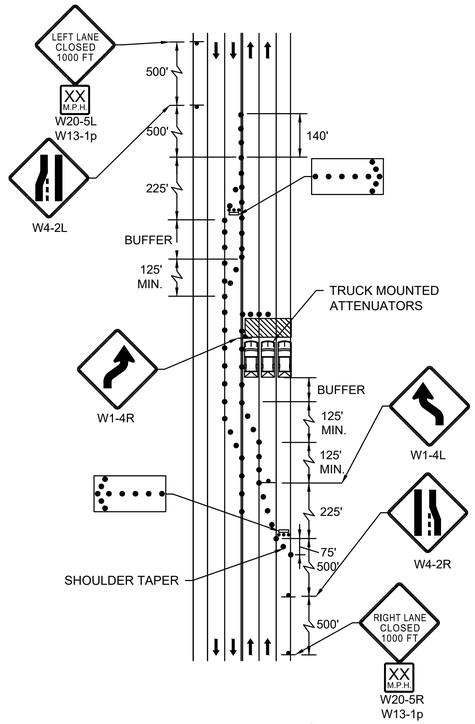
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	89	140
PROJECT FILE NO.	605178		

TEMPORARY TRAFFIC CONTROL PLAN

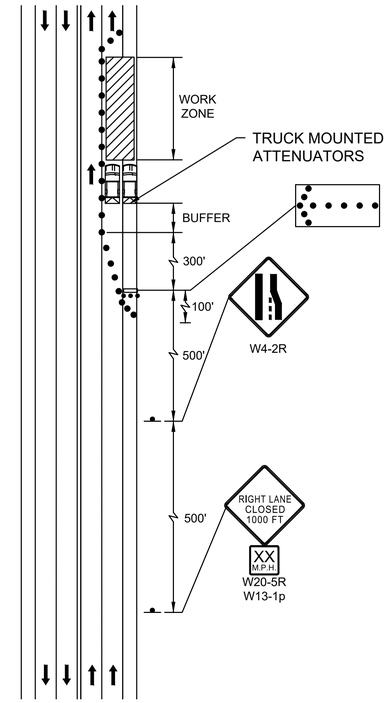
605178_HD(4722_TTCP).DWG Plotted on 7-Mar-22 10:11 PM



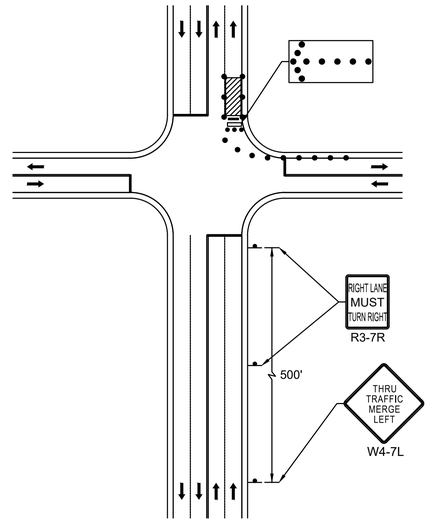
MULTIPLE LANE ROAD
INTERIOR LANE CLOSURE
NOT TO SCALE



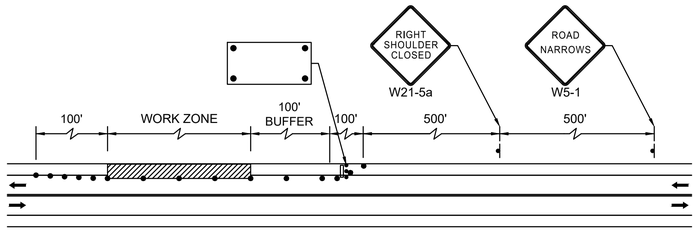
MULTIPLE LANE ROAD
HALF ROAD CLOSURE
NOT TO SCALE



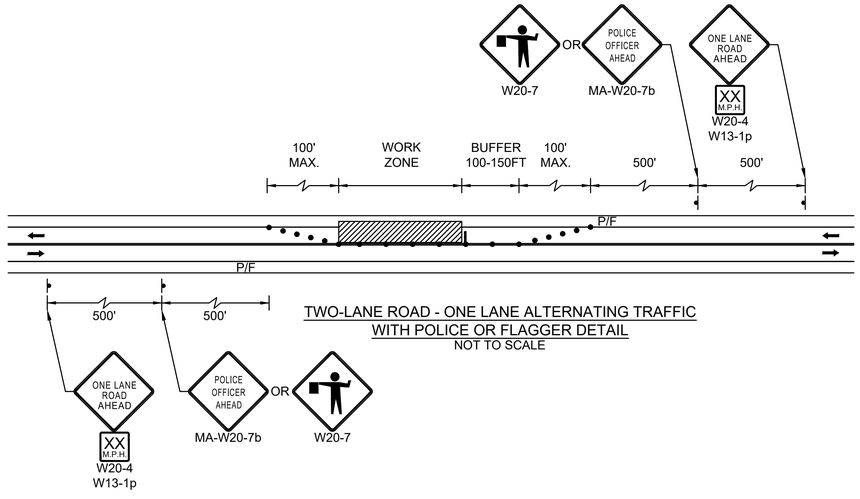
MULTIPLE LANE ROADWAY - RIGHT LANE CLOSED
NOT TO SCALE



DOUBLE LANE APPROACH
FAR SIDE CLOSURE RIGHT LANE
NOT TO SCALE



TWO-LANE ROAD - SHOULDER CLOSED
NOT TO SCALE



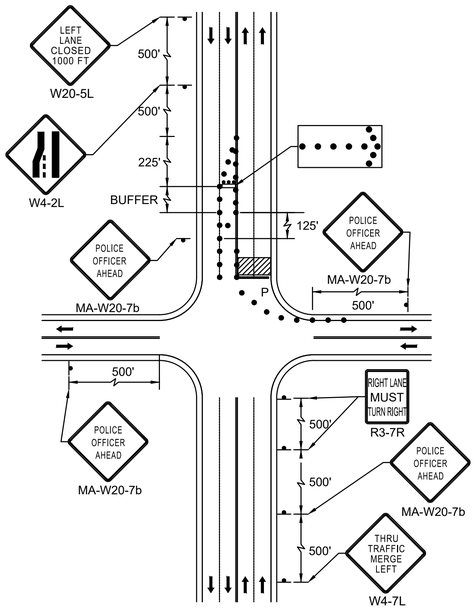
TWO-LANE ROAD - ONE LANE ALTERNATING TRAFFIC
WITH POLICE OR FLAGGER DETAIL
NOT TO SCALE

BILLERICA
BOSTON ROAD (ROUTE 3A)

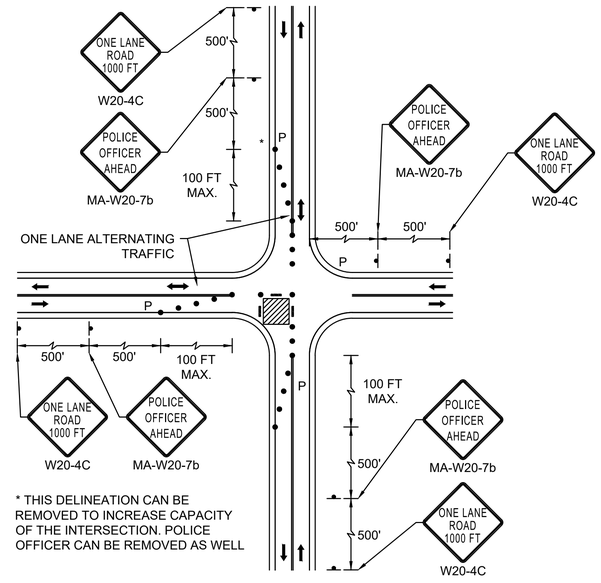
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	90	140
PROJECT FILE NO.	605178		

TEMPORARY TRAFFIC CONTROL PLAN

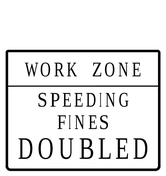
605178_HD(4722_TTCP).DWG Plotted on 7-Mar-22 10:11 PM



DOUBLE LANE APPROACH
HALF ROAD CLOSURE
NOT TO SCALE

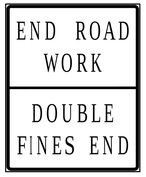


SINGLE LANE APPROACH ONE QUADRANT CLOSURE
NOT TO SCALE



MA-R2-10a

NOTE:
"WORK ZONE"
BLACK ON ORANGE;
"SPEEDING FINES DOUBLED"
BLACK ON WHITE



MA-R2-10e

NOTE:
"END ROAD WORK"
BLACK ON ORANGE;
"DOUBLE FINES END"
BLACK ON WHITE



W8-1
36" x 36"



W8-3
36" x 36"



W8-15
36" x 36"



W8-24
36" x 36"



W20-1A
36" x 36"



W20-1B
36" x 36"



W21-5aR
30" x 30"

CONSTRUCTION SIGNS
NOT TO SCALE

SAFETY SIGNING FOR CONSTRUCTION OPERATIONS

LEGEND	TYPE	SIZE	COLOR			UNIT AREA	NO. SIGNS	TOTAL AREA	POSTS
			BACKGROUND	LEGEND	BORDER				
WORK ZONE SPEEDING FINES...	MA-R2-10a	48" x 36"	WHITE/ORANGE**	BLACK	BLACK	12 SF	2	24 SF	P-5: 2
END ROAD WORK	MA-R2-10e	36" x 48"	WHITE/ORANGE**	BLACK	BLACK	12 SF	9	108 SF	P-5: 9
RIGHT LANE MUST TURN RIGHT	R3-7R	24" x 30"	WHITE	BLACK	BLACK	5 SF	2	10 SF	P-5: 2
SIDEWALK CLOSED CROSS HERE	R9-11a	48" x 24"	WHITE	BLACK	BLACK	8 SF	2	16 SF	P-5: 2
REVERSE CURVE LEFT	W1-4L	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	P-5: 2
REVERSE CURVE RIGHT	W1-4R	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	P-5: 2
LEFT LANE ENDS	W4-2L	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	P-5: 2
RIGHT LANE ENDS	W4-2R	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	P-5: 2
THRU TRAFFIC MERGE LEFT	W4-7L	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	P-5: 2
ROAD NARROWS	W5-1	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	P-5: 2
BUMP	W8-1	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	4	36 SF	P-5: 4
PAVEMENT ENDS	W8-3	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	4	36 SF	P-5: 4
GROOVED PAVEMENT	W8-15	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	4	36 SF	P-5: 4
STEEL PLATE AHEAD	W8-24	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	4	36 SF	P-5: 4
PEDESTRIAN	W11-2	30" x 30"	FYG***	BLACK	BLACK	6.3 SF	4	25 SF	P-5: 4
ADVISORY SPEED	W13-1p	24" x 24"	ORANGE**	BLACK	BLACK	4 SF	2	8 SF	P-5: 0
DOWNWARD LEFT DIAGONAL ARROW	W16-7pL	24" x 12"	FYG***	BLACK	BLACK	2 SF	4	8 SF	P-5: 0
ROAD WORK 1500 FT	W20-1A	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	P-5: 4
ROAD WORK AHEAD	W20-1B	36" x36"	ORANGE**	BLACK	BLACK	9 SF	9	81 SF	P-5: 9
ONE LANE ROAD AHEAD	W20-4	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	4	36 SF	P-5: 4
ONE LANE ROAD 1000 FT	W20-4C	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	4	36 SF	P-5: 4
LEFT LANE CLOSED 1000 FT	W20-5L	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	P-5: 2
RIGHT LANE CLOSED 1000 FT	W20-5R	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	P-5: 2
FLAGGER	W20-7	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	4	36 SF	P-5: 4
POLICE OFFICER AHEAD	MA-W20-7b	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	4	36 SF	P-5: 4
RIGHT SHOULDER CLOSED	W21-5aR	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	P-5: 2
					TOTAL AREA OF SIGNS:			748 SF	P-5: 82

* NO. OF SIGNS ARE ESTIMATED FOR BIDDING PURPOSES ONLY

** ALL CONSTRUCTION SIGNAGE SHALL HAVE FLUORESCENT ORANGE BACKGROUND

*** FLUORESCENT YELLOW GREEN

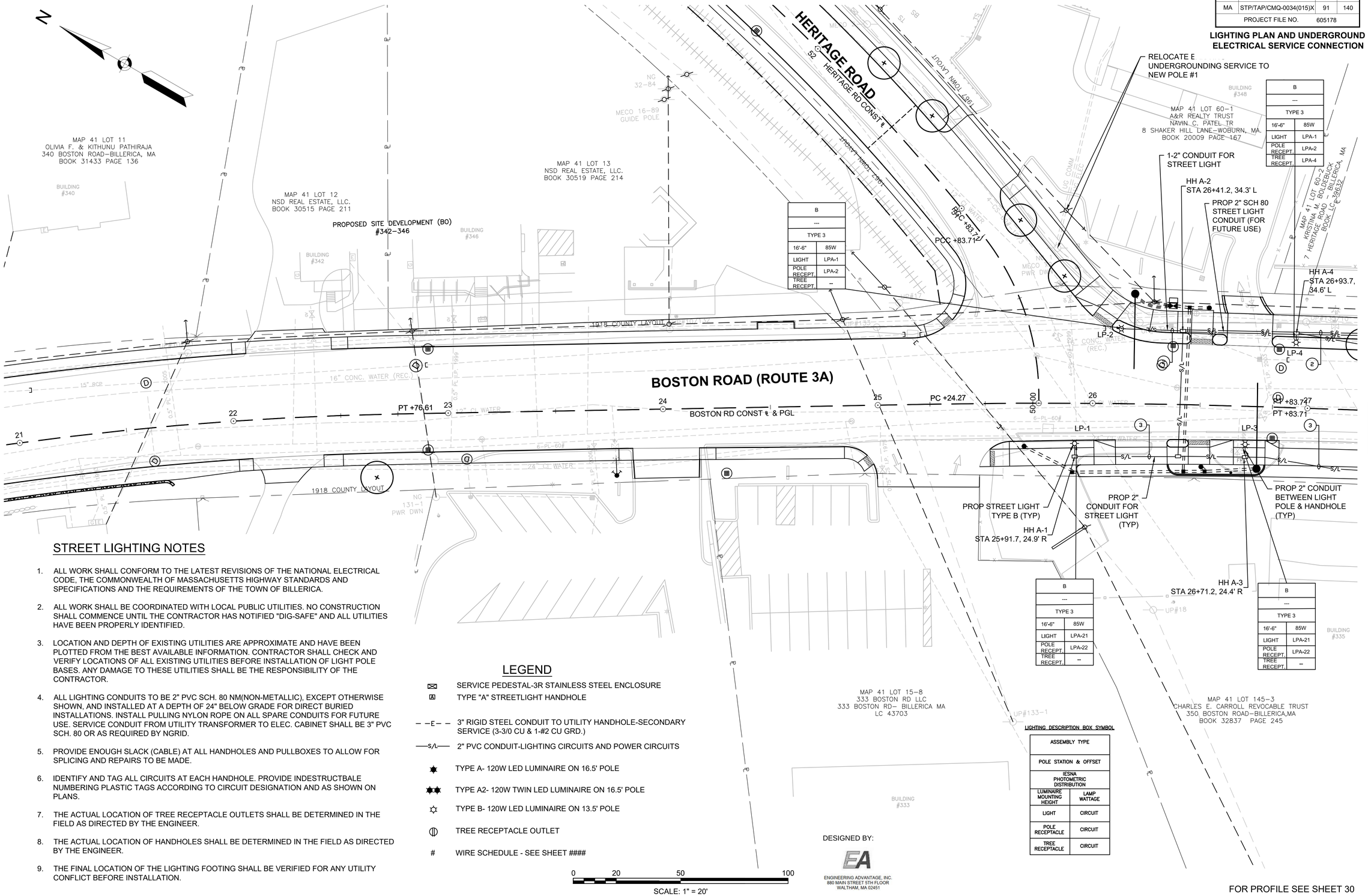
CONTINUED ON SHEET NO. 97

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	91	140
PROJECT FILE NO.	605178		

LIGHTING PLAN AND UNDERGROUND ELECTRICAL SERVICE CONNECTION

605178_HDI4722_LIGHTING).DWG Plotted on 7-Mar-22 10:22 PM



B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-1
POLE RECEPT.	LPA-2
TREE RECEPT.	--

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-1
POLE RECEPT.	LPA-2
TREE RECEPT.	LPA-4

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-21
POLE RECEPT.	LPA-22
TREE RECEPT.	--

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-21
POLE RECEPT.	LPA-22
TREE RECEPT.	--

STREET LIGHTING NOTES

1. ALL WORK SHALL CONFORM TO THE LATEST REVISIONS OF THE NATIONAL ELECTRICAL CODE, THE COMMONWEALTH OF MASSACHUSETTS HIGHWAY STANDARDS AND SPECIFICATIONS AND THE REQUIREMENTS OF THE TOWN OF BILLERICA.
2. ALL WORK SHALL BE COORDINATED WITH LOCAL PUBLIC UTILITIES. NO CONSTRUCTION SHALL COMMENCE UNTIL THE CONTRACTOR HAS NOTIFIED "DIG-SAFE" AND ALL UTILITIES HAVE BEEN PROPERLY IDENTIFIED.
3. LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL CHECK AND VERIFY LOCATIONS OF ALL EXISTING UTILITIES BEFORE INSTALLATION OF LIGHT POLE BASES. ANY DAMAGE TO THESE UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. ALL LIGHTING CONDUITS TO BE 2" PVC SCH. 80 NM(NON-METALLIC), EXCEPT OTHERWISE SHOWN, AND INSTALLED AT A DEPTH OF 24" BELOW GRADE FOR DIRECT BURIED INSTALLATIONS. INSTALL PULLING NYLON ROPE ON ALL SPARE CONDUITS FOR FUTURE USE. SERVICE CONDUIT FROM UTILITY TRANSFORMER TO ELEC. CABINET SHALL BE 3" PVC SCH. 80 OR AS REQUIRED BY NGRID.
5. PROVIDE ENOUGH SLACK (CABLE) AT ALL HANDHOLES AND PULLBOXES TO ALLOW FOR SPLICING AND REPAIRS TO BE MADE.
6. IDENTIFY AND TAG ALL CIRCUITS AT EACH HANDHOLE. PROVIDE INDESTRUCTBALE NUMBERING PLASTIC TAGS ACCORDING TO CIRCUIT DESIGNATION AND AS SHOWN ON PLANS.
7. THE ACTUAL LOCATION OF TREE RECEPTACLE OUTLETS SHALL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER.
8. THE ACTUAL LOCATION OF HANDHOLES SHALL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER.
9. THE FINAL LOCATION OF THE LIGHTING FOOTING SHALL BE VERIFIED FOR ANY UTILITY CONFLICT BEFORE INSTALLATION.

LEGEND

- SERVICE PEDESTAL-3R STAINLESS STEEL ENCLOSURE
- TYPE "A" STREETLIGHT HANDHOLE
- –E– 3" RIGID STEEL CONDUIT TO UTILITY HANDHOLE-SECONDARY SERVICE (3-3/0 CU & 1-#2 CU GRD.)
- S/L 2" PVC CONDUIT-LIGHTING CIRCUITS AND POWER CIRCUITS
- TYPE A- 120W LED LUMINAIRE ON 16.5' POLE
- TYPE A2- 120W TWIN LED LUMINAIRE ON 16.5' POLE
- TYPE B- 120W LED LUMINAIRE ON 13.5' POLE
- TREE RECEPTACLE OUTLET
- # WIRE SCHEDULE - SEE SHEET ####

LIGHTING DESCRIPTION BOX SYMBOL

ASSEMBLY TYPE	
POLE STATION & OFFSET	
IESNA PHOTOMETRIC DISTRIBUTION	
LUMINAIRE MOUNTING HEIGHT	LAMP WATTAGE
LIGHT	CIRCUIT
POLE RECEPTACLE	CIRCUIT
TREE RECEPTACLE	CIRCUIT

DESIGNED BY:

ENGINEERING ADVANTAGE, INC.
880 MAIN STREET 5TH FLOOR
WALTHAM, MA 02451

FOR PROFILE SEE SHEET 30

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	92	140
PROJECT FILE NO.	605178		

LIGHTING PLAN AND UNDERGROUND ELECTRICAL SERVICE CONNECTION

605178_HD(4722_LIGHTING).DWG Plotted on 7-Mar-22 10:23 PM

RELOCATE EXISTING UNDERGROUNDING SERVICE TO NEW POLE #1

MAP 41 LOT 60-1
A&R REALTY TRUST
NAVIN C. PATEL, TR
8 SHAKER HILL LANE-WOBURN, MA.
BOOK 20009 PAGE 167

1-2" CONDUIT FOR STREET LIGHT

HH A-2
STA 26+41.2, 34.3' L

PROP 2" SCH 80 STREET LIGHT CONDUIT (FOR FUTURE USE)

MAP 41 LOT 60-2
KRISTINA M. GOLDEBIAK
7 HERITAGE ROAD BILLERICA, MA
BOOK LC # 39032

HH A-4
STA 26+93.7, 34.6' L

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-1
POLE RECEPT.	LPA-2
TREE RECEPT.	LPA-4

LP-4

MAP 41 LOT 43
350 BOSTON ROAD REALTY TRUST
CHARLES E. CARROLL, TR
335 BOSTON ROAD-BILLERICA, MA.
BOOK 23465 PAGE 82

HH A-6
STA 28+05.3, 36.6' L

PROP STREET LIGHT TYPE B (TYP)

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-1
POLE RECEPT.	LPA-2
TREE RECEPT.	LPA-4

LP-6

PROP 1" CONDUIT BETWEEN HH & GFCI RECEPTACLE AT TREE (TYP)

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-1
POLE RECEPT.	LPA-2
TREE RECEPT.	LPA-4

HH A-8
STA 29+32.7, 34.7' L

LP-8

MAP 41 LOT 44
FRANCIS P & MARY J. BURNS
354 BOSTON ROAD-BILLERICA, MA
BOOK 2975 PAGE 308

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-3
POLE RECEPT.	LPA-6
TREE RECEPT.	LPA-4

HH A-10
STA 30+33.8, 37.2' L

LP-10

RELOCATE EXISTING UNDERGROUND SERVICE TO NEW POLE #138

HH A-12
STA 31+42.3, 37.1' L

LP-12

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-3
POLE RECEPT.	LPA-6
TREE RECEPT.	LPA-8

MAP 41 LOT 36
OBERGE & MIMOSE JEAN-PHILIPPE
358 BOSTON ROAD
BILLERICA, MA
BOOK 33978 PAGE 107

2-2" CONDUIT FOR STREET LIGHT

2-2" CONDUIT FOR STREET LIGHT

2-2" CONDUIT FOR STREET LIGHT

1918 COUNTY LAYOUT

BOSTON ROAD (ROUTE 3A)

BOSTON RD CONST ℄ & PGL

PC 29.83

PT +83.77
PT +83.71

LP-3

LP-5

LP-7

LP-9

LP-11

PROP 2" CONDUIT BETWEEN LIGHT POLE & HANDHOLE (TYP)

HH A-3
STA 26+71.2, 24.4' R

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-21
POLE RECEPT.	LPA-22
TREE RECEPT.	--

HH A-5
STA 28+06.8, 25.5' R

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-21
POLE RECEPT.	LPA-22
TREE RECEPT.	--

HH A-7
STA 29+30.0, 24.1' R

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-21
POLE RECEPT.	LPA-22
TREE RECEPT.	--

HH A-9
STA 30+33.9, 25.3' R

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-23
POLE RECEPT.	LPA-20
TREE RECEPT.	--

HH A-11
STA 31+42.3, 25.8' R

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-23
POLE RECEPT.	LPA-20
TREE RECEPT.	--

PROP 2" CONDUIT FOR STREET LIGHT (TYP)

#337 BOSTON ROAD CONTRACTOR TO PROVIDE NEW CONDUIT FROM EXISTING POLE #137-1 TO NEW HANDHOLE. PROVIDE ELECTRICAL CONDUCTORS AND CONNECT UG ELECTRICAL SERVICE

CONNECT TO EXISTING OVERHEAD SERVICE TO NEW UNDERGROUND SECONDARY SERVICE FROM NGRID UP #138

343 BOSTON ROAD - BILLERICA

MAP 41 LOT 145-3
CHARLES E. CARROLL REVOCABLE TRUST
350 BOSTON ROAD-BILLERICA,MA
BOOK 32837 PAGE 245

MAP 41 LOT 20
BAY STATE BAPTIST CHURCH
337 BOSTON ROAD - BILLERICA
BOOK 27769 PAGE 241

MAP 41 LOT 153
TIMOTHY L FICARRA
341 BOSTON ROAD - BILLERICA
BOOK 27543 PAGE 29

MAP 41 LOT 21
VIRGINIA LOUISA BELANGER
345 BOSTON ROAD - BILLERICA
BOOK 25096 PAGE 86

MAP 41 LOT 22
VECCHIARELLO IRREVOC FAMILY TRUST
& ANTHONY L.
AND MARIE EVE VECCHIARELLO, TRUSTEES
347 BOSTON ROAD-BILLERICA, MA
BOOK 31155 PAGE 140

BUILDING #348
BUILDING #350
BUILDING #354
BUILDING #358
BUILDING #335
BUILDING #337
BUILDING #341
BUILDING #345
BUILDING #347

UP#18

CONTINUED ON SHEET NO. 91

CONTINUED ON SHEET NO. 93

LIGHTING DESCRIPTION BOX SYMBOL

ASSEMBLY TYPE	
POLE STATION & OFFSET	
IESNA PHOTOMETRIC DISTRIBUTION	
LUMINAIRE MOUNTING HEIGHT	LAMP WATTAGE
LIGHT	CIRCUIT
POLE RECEPTACLE	CIRCUIT
TREE RECEPTACLE	CIRCUIT

0 20 50 100
SCALE: 1" = 20'

DESIGNED BY:

ENGINEERING ADVANTAGE, INC.
880 MAIN STREET 5TH FLOOR
WALTHAM, MA 02451

FOR PROFILE SEE SHEET 30

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	93	140
	PROJECT FILE NO. 605178		

LIGHTING PLAN AND UNDERGROUND ELECTRICAL SERVICE CONNECTION

605178_HD(4722_LIGHTING).DWG Plotted on 7-Mar-22 10:23 PM

N

MAP 41 LOT 45
WISE MICHAEL F. & DARLENE R.
4 FARMERS LANE–BILLERICA
BOOK 8210 PAGE 31

MAP 51 LOT 19–1
REUBIN & LYNNE D. MACDONALD
376 BOSTON ROAD–BILLERICA, MA
BOOK 7053 PAGE 59

LIMIT OF WORK MEET EXIST +36

TP=2
EL=173.22
GW Observed = 169.22
A: 0–8" Loamy sand
B: 8–32" Fine Sandy loam
C: 32–60" Fine Sandy Loam

GEFP EL NOT DETERMINED
NO FILL PROPOSED

PI +19.01

FARMERS LANE

MAP 41 LOT 36
OBERGE & MIMOSE JEAN–PHILIPPE
358 BOSTON ROAD
BILLERICA, MA
BOOK 33978 PAGE 107

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-3
POLE RECEPT.	LPA-6
TREE RECEPT.	LPA-8

MAP 41 LOT 35
HAROLD W. JR. & GERADINE BLAKE
362 BOSTON ROAD–BILLERICA
BOOK 9067 PAGE 147

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-3
POLE RECEPT.	LPA-6
TREE RECEPT.	LPA-8

MAP 41 LOT 34
ROBERT A. &
JAIME Q. DESOUZA &
CAMILLE V. DINGS
364 BOSTON RD.
BILLERICA, MA BOOK 33409 PAGE 273

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-3
POLE RECEPT.	LPA-6
TREE RECEPT.	--

MAP 41 PLOT 33
368 BOSTON ROAD–BILLERICA, MA
CARLA LACKWOOD–LACAYO
SERGIO J. LACAYO SR.
AND SERGIO A. LACAYO JR.
BOOK 29929 PAGE 272

A	

TYPE 3	
16'-6"	120W
LIGHT	LPA-5
POLE RECEPT.	LPA-10
TREE RECEPT.	LPA-26

BUILDING #358
BUILDING #362
BUILDING #364
BUILDING #368
BUILDING #347
BUILDING #349
BUILDING #357
BUILDING #1

2-2" CONDUIT FOR STREET LIGHT

HH A-14
STA 32+73.8,
34.7' L

PROP STREET LIGHT TYPE B (TYP)

HH A-16
STA 33+96.9,
34.2' L

HH A-18
STA 35+17.8,
38.9' L

PROP STREET LIGHT TYPE A (TYP)

HH A-20
STA 36+53.5,
43.2' L

2-2" CONDUIT FOR STREET LIGHT

2-2" CONDUIT FOR STREET LIGHT

CONTINUED ON SHEET NO. 92

CONTINUED ON SHEET NO. 94

1918 COUNTY LAYOUT

BOSTON ROAD (ROUTE 3A)

PC +49.83
PT +44.55
PC +79.39
PT +34.13

BOSTON RD CONST & PGL

LP-13
LP-14
LP-15
LP-16
LP-17
LP-18
LP-19
LP-20

TOS

TOS HH A-15
STA 33+97.4,
21.9' R

1-2" CONDUIT & 1-2" PVC EMPTY FUTURE USE

1-2" CONDUIT & 1-2" PVC EMPTY FUTURE USE

HH A-19
STA 36+51.4,
18.2' R
24"x24"x36"
PER ITEM 811.23

6-2" CONDUIT FOR STREET LIGHT

HH A-40
STA 36+25.3,
55.8' R

HH A-17
STA 35+18.2,
21.8' R

PROP 2" CONDUIT FOR STREET LIGHT (TYP)

CHISELED "X" IN GRANITE WALL

PROP 2" CONDUIT BETWEEN LIGHT POLE & HANDHOLE (TYP)

HH A-13
STA 32+73.5,
23.2' R

PROP 1" CONDUIT BETWEEN HH & GFCI RECEPTACLE AT TREE (TYP)

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-23
POLE RECEPT.	LPA-20
TREE RECEPT.	--

B	

TYPE 3	
16'-6"	85W
LIGHT	LPA-23
POLE RECEPT.	LPA-20
TREE RECEPT.	LPA-24

A	

TYPE 3	
16'-6"	120W
LIGHT	LPA-19
POLE RECEPT.	LPA-16
TREE RECEPT.	--

#349 BOSTON ROAD
CONTRACTOR TO PROVIDE NEW CONDUITS FROM EXISTING POLE #142-1 TO NEW HANDHOLES FOR 3 UTILITIES. PROVIDE ELECTRICAL CONDUCTORS AND TRANSFER ALL ELECTRICAL SERVICES. (TYP.)

LIGHTING DESCRIPTION BOX SYMBOL

ASSEMBLY TYPE	
POLE STATION & OFFSET	
IESNA PHOTOMETRIC DISTRIBUTION	
LUMINAIRE MOUNTING HEIGHT	LAMP WATTAGE
LIGHT	CIRCUIT
POLE RECEPTACLE	CIRCUIT
TREE RECEPTACLE	CIRCUIT

MAP 41 LOT 22
VECCHIARELLO IRREVOC FAMILY TRUST
& ANTHONY L.
ND MARIE EVE VECCHIARELLO, TRUSTEES
347 BOSTON ROAD–BILLERICA, MA
BOOK 31155 PAGE 140

MAP 41 LOT 23–3
THOMAS M. & JULIE A. TODD
349 BOSTON ROAD–BILLERICA, MA
BOOK 11627 PAGE 208

MAP 41 LOT 29
TAPAN HIMANSHU PALKHIWALA
1 LASALLETTE ROAD–BILLERICA, MA
BOOK 28560 PAGE 1

MAP 41 LOT 31
CHRISTOPHER ROBERT
357 BOSTON ROAD–BILLERICA, MA
BOOK 23868 PAGE 104

LASALLETTE ROAD

5+33.42

30' WIDE WATER MAIN EASEMENT

PROP STREET LIGHTING CONTROLLER #1 PANEL LPA W/ 3" PVC CONDUIT TO NGRID UP-454-1 W/ ELEC SERVICE CABLE. SEE DETAIL ON SHEET 98

LIMIT OF WORK MEET EXIST +77

0 20 50 100
SCALE: 1" = 20'

DESIGNED BY:

ENGINEERING ADVANTAGE, INC.
880 MAIN STREET 5TH FLOOR
WALTHAM, MA 02451

FOR PROFILE SEE SHEET 31

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	94	140
PROJECT FILE NO.	605178		

LIGHTING PLAN AND UNDERGROUND ELECTRICAL SERVICE CONNECTION

605178_HD\4722_LIGHTING).DWG Plotted on 7-Mar-22 10:23 PM

N

MAP 41 LOT 32
NANCY MERRILL, ANN OGDEN AND
RUSSELL COFFILL
372 BOSTON ROAD–BILLERICA, MA
BOOK 13284 PAGE 137

MAP 41 PLOT 33
368 BOSTON ROAD–BILLERICA, MA
CARLA LACKWOOD–LACAYO
SERGIO J. LACAYO SR.
AND SERGIO A. LACAYO JR.
BOOK 29929 PAGE 272

MAP 51 LOT 19–1
REUBIN & LYNNE D. MACDONALD
376 BOSTON ROAD–BILLERICA, MA
BOOK 7053 PAGE 59

MAP 51 LOT 20
THOMAS E. &
TRACY M. MANDILE
380 BOSTON ROAD
BILLERICA, MA
BOOK 17541 PAGE 163

BUILDING #368
BUILDING #372
BUILDING #376
BUILDING #380
BUILDING #357
BUILDING #1
BUILDING #2

2-2" CONDUIT FOR STREET LIGHT

HH A-22
STA 37+77.8,
44.8' L

HH A-24
STA 38+89.3,
49.6' L

HH A-26
STA 40+08.6,
53.1' L

HH A-28
STA 40+94.4,
50.6' L

PROP STREET LIGHT
TYPE A (TYP)

LP-22 LP-24 LP-26 LP-28

BOSTON ROAD (ROUTE 3A)

1918 COUNTY ROUTE

BOSTON RD CONST ℄ & PGL

PC +57.38 PT +44.45 PT +44.45

PC +97.60 PC +97.60

1-2" CONDUIT &
1-2" PVC EMPTY
FUTURE USE

LP-21 LP-23 LP-25 LP-27

HH A-19
STA 36+51.4,
18.2' R
24"x24"x36"
PER ITEM 811.23

HH A-21
STA 37+78.1,
18.4' R

2-2" CONDUIT
FOR STREET
LIGHT

PROP 1" CONDUIT
BETWEEN HH &
GFCI RECEPTACLE
AT TREE (TYP)

HH A-23
STA 38+90.3,
21.2' R

PROP STREET LIGHT
TYPE A TWIN (TYP)

HH A-25
STA 40+07.9,
26.3' R

2-2" CONDUIT
FOR STREET
LIGHT

PROP 2" CONDUIT
BETWEEN LIGHT
POLE & HANDHOLE
(TYP)

HH A-27
STA 41+00.6,
23.2' R

GOOD STREET
GOOD ST CONST ℄
PI 38.01

A	

TYPE 3	
16'-6"	120W
LIGHT	LPA-5
POLE RECEPT.	LPA-10
TREE RECEPT.	LPA-26

A2	

TYPE 3	
17'-6"	240W
LIGHT	LPA-5
POLE RECEPT.	LPA-10
TREE RECEPT.	LPA-26

A2	

TYPE 3	
17'-6"	240W
LIGHT	LPA-7
POLE RECEPT.	LPA-10
TREE RECEPT.	--

A	

TYPE 3	
16'-6"	120W
LIGHT	LPA-7
POLE RECEPT.	LPA-12
TREE RECEPT.	--

A	

TYPE 3	
16'-6"	120W
LIGHT	LPA-19
POLE RECEPT.	LPA-16
TREE RECEPT.	--

A	

TYPE 3	
16'-6"	120W
LIGHT	LPA-19
POLE RECEPT.	LPA-16
TREE RECEPT.	LPA-18

A2	

TYPE 3	
17'-6"	240W
LIGHT	LPA-19
POLE RECEPT.	LPA-16
TREE RECEPT.	LPA-18

A2	

TYPE 3	
17'-6"	240W
LIGHT	LPA-17
POLE RECEPT.	LPA-16
TREE RECEPT.	--

A	

TYPE 3	
16'-6"	120W
LIGHT	LPA-17
POLE RECEPT.	LPA-16
TREE RECEPT.	--

N/F
SARRO CHRISTOPHER M
1 GOOD ST – BILLERICA,MA
ASSESS. MAP 50 – PARCEL ID: 50–11–0
DEED BK 28363 / PAGE 110
PLAN BOOK 88 PLAN 15

N/F
FOURNELLE CHRISTOPHER & CONNIE
2 GOOD ST – BILLERICA,MA
ASSESS. MAP 51 – PARCEL ID: 51–18–0
DEED BK 11425 / PAGE 149
PLAN BOOK 88 PLAN 15

MAP 41 LOT 31
CHRISTOPHER ROBERT
357 BOSTON ROAD–BILLERICA, MA
BOOK 23868 PAGE 104

CONTINUED ON SHEET NO. 93
CONTINUED ON SHEET NO. 95
CONTINUED ON SHEET NO. 99

DESIGNED BY:

ENGINEERING ADVANTAGE, INC.
880 MAIN STREET 5TH FLOOR
WALTHAM, MA 02451

0 20 50 100
SCALE: 1" = 20'

LIGHTING DESCRIPTION BOX SYMBOL

ASSEMBLY TYPE	
POLE STATION & OFFSET	
IESNA PHOTOMETRIC DISTRIBUTION	
LUMINAIRE MOUNTING HEIGHT	LAMP WATTAGE
LIGHT	CIRCUIT
POLE RECEPTACLE	CIRCUIT
TREE RECEPTACLE	CIRCUIT

FOR PROFILE SEE SHEET 31

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	95	140
PROJECT FILE NO.	605178		

LIGHTING PLAN AND UNDERGROUND ELECTRICAL SERVICE CONNECTION

605178_HD(4722_LIGHTING).DWG Plotted on 7-Mar-22 10:23 PM

N

MAP 51 LOT 20
THOMAS E. & TRACY M. MANDILE
380 BOSTON ROAD
BILLERICA, MA
BOOK 17541 PAGE 163

MAP 51 LOT 101
JAY & MARY D KELLY
382 BOSTON ROAD – BILLERICA, MA
BOOK 28290 PAGE 14

MAP 51 LOT 21
CENTER REALTY TRUST
ROBERT G. MANCINI TR
PO BOX 197–BILLERICA, MA
BOOK 21235 PAGE 150

LIMIT OF WORK MEET EXIST +70

TOWN LAYOUT

7+50

MULBERRY LANE

N/F
SOLARI ROBERT D. & CAMILLA L.
388 BOSTON RD
BILLERICA, MA
ASSESS. MAP 51
PARCEL ID: 51–21–0
DEED BK 6949 / PAGE 29

BUILDING #380
BUILDING #382
BUILDING #386
BUILDING #388

HH A-28
STA 40+94.4,
50.6' L

HH A-30
STA 42+11.6,
52.2' L

HH A-32
STA 43+39.5,
48.7' L

HH A-34
STA 44+55.8,
46.0' L

HH A-36
STA 45+72.7,
42.4' L

1918 COUNTY LAYOUT

LP-28 LP-30 LP-32 LP-34 LP-36

LP-30 & LP-32 WILL REQUIRE SPREAD FOOTING DUE TO VERIZON DUCT CONFLICT SEE DETAIL ON SHEET 97

PROP STREET LIGHT TYPE A (TYP)

CONTINUED ON SHEET NO. 94

CONTINUED ON SHEET NO. 96

BOSTON ROAD (ROUTE 3A)

BOSTON RD CONST ℄ & PGL

PT +09.76

PC +17.95

2-2" CONDUIT FOR STREET LIGHT

2-2" STREET LIGHTING CONDUIT

LP-27 LP-29 LP-31 LP-33 LP-35

2-2" CONDUIT FOR STREET LIGHT

PROP 2" CONDUIT BETWEEN LIGHT POLE & HANDHOLE (TYP)

HH A-27
STA 41+00.6,
23.2' R

HH A-29
STA 42+36.9,
28.6' R

HH A-31
STA 43+35.2,
31.2' R

HH A-33
STA 44+52.1,
34.2' R

HH A-35
STA 45+78.4,
35.1' R

3" SEE DETAIL

RUN UNDER STONE WALL

PROP 1" CONDUIT BETWEEN HH & GFCI RECEPTACLE AT TREE (TYP)

2" PVC TO COMCAST HH NEW CABLE BY COMCAST

2" PVC TO VERIZON HH NEW CABLE BY VERIZON

RE-FEED EXISTING METER SOCKET. REMOVE OVERHEAD SERVICE, CONDUIT AND PROVIDE BLANK ON TOP OF SOCKET.

2-2" CONDUIT FOR STREET LIGHT

TOM GLAVINE WAY

PC +21.86

PT +75.12

LIMIT OF WORK MEET EXIST +80

LIMIT OF WORK MEET EXIST +12

N/F
FOURNELLE CHRISTOPHER & CONNIE
2 GOOD ST – BILLERICA,MA
ASSESS. MAP 51 – PARCEL ID: 51–18–0
DEED BK 11425 / PAGE 149
PLAN BOOK 88 PLAN 15

MAP 51 LOT 17
TOWN OF BILLERICA
(SELECTMEN)
365 BOSTON ROAD–BILLERICA, MA
BOOK 593 PAGE 23

MAP 51 LOT 16
ELIZABETH LEETY WALSH
& EVEN WALSH
367 BOSTON ROAD–BILLERICA. MA
BOOK 35699 PAGE 251

MAP 51 LOT 15
LAWERENCE M. & SANDRA P. LIBBY
371 BOSTON ROAD–BILLERICA, MA
LC 31002

NEW METER SOCKET ON SIDE OF HOUSE #367 BOSTON ROAD
MILBANK #U3791N–RXL–200BL
OR EQUAL W/ 200A 2P MAIN BREAKER

REMOVE OVERHEAD SERVICE CONDUIT. RE-FEED EXISTING SERVICE EQUIPMENT IN BASEMENT THROUGH EXISTING SERVICE L.B. WITH 3#3/0

3#3/0 – 3" PVC TO NGRID HANDHOLE. SPLICE BY NGRID.

TOWN HALL

BUILDING #365 BUILDING #367 BUILDING #371

UNDERGROUND GAS TANK

NETCO 152 NETCO 10/153–1

A

TYPE 3
16'-6" 120W
LIGHT LPA-7
POLE RECEPT. LPA-12
TREE RECEPT. --

A

TYPE 3
16'-6" 120W
LIGHT LPA-13
POLE RECEPT. LPA-12
TREE RECEPT. --

A

TYPE 3
16'-6" 120W
LIGHT LPA-13
POLE RECEPT. LPA-12
TREE RECEPT. --

A

TYPE 3
16'-6" 120W
LIGHT LPA-17
POLE RECEPT. LPA-16
TREE RECEPT. --

A

TYPE 3
16'-6" 120W
LIGHT LPA-17
POLE RECEPT. LPA-14
TREE RECEPT. LPA-18

A

TYPE 3
16'-6" 120W
LIGHT LPA-15
POLE RECEPT. LPA-14
TREE RECEPT. --

A

TYPE 3
16'-6" 120W
LIGHT LPA-15
POLE RECEPT. LPA-14
TREE RECEPT. --

A

TYPE 3
16'-6" 120W
LIGHT LPA-15
POLE RECEPT. LPA-14
TREE RECEPT. --

LIGHTING DESCRIPTION BOX SYMBOL

ASSEMBLY TYPE	
POLE STATION & OFFSET	
IESNA PHOTOMETRIC DISTRIBUTION	
LUMINAIRE MOUNTING HEIGHT	LAMP WATTAGE
LIGHT	CIRCUIT
POLE RECEPTACLE	CIRCUIT
TREE RECEPTACLE	CIRCUIT

DESIGNED BY:

ENGINEERING ADVANTAGE, INC.
880 MAIN STREET 5TH FLOOR
WALTHAM, MA 02451

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 32

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	96	140
PROJECT FILE NO.	605178		

LIGHTING PLAN AND UNDERGROUND ELECTRICAL SERVICE CONNECTION

605178_HD\4722_LIGHTING).DWG Plotted on 7-Mar-22 10:24 PM

CONTINUED ON SHEET NO. 95

N

N/F
SOLARI, ROBERT D.
& CAMILLA L.
388 BOSTON RD
BILLERICA, MA
ASSESS.: MAP 51
PARCEL ID: 51-23-0
DEED BK 6949 / PAGE 29

N/F
TOWN OF BILLERICA
390 BOSTON RD. - BILLERICA,MA
ASSESS: MAP 51 PARCEL ID: 51-24-0
DEED BK 640 / PAGE 112 & 113
LEASED TO HOME SCHOOL
DEED BK 22566 / PAGE 280
PLAN BOOK 38 PLAN 23

MAP 51 LOT 25-3
DANFORTH VILLAGE CONDOMINIUMS
UNITS 101 - 406
396 BOSTON ROAD-BILLERICA, MA

MAP 51 LOT 26
SILMARA M. FALQUETO &
CLAUDEMIR SINGER
398 BOSTON ROAD-BILLERICA, MA
BOOK 33367 PAGE 228

MAP 51 LOT 27
400 BOSTON ROAD-BILLERICA, MA
BOOK 5066 PAGE 187

END
OF PROJECT
STA 50+09.00
N 3029545.9816
E 718235.7227
MEET EXISTING

BOSTON ROAD (ROUTE 3A)

A

TYPE 3
16'-6" 120W
LIGHT LPA-13
POLE RECEPT. LPA-12
TREE RECEPT. --

HH A-36
STA 45+72.7,
42.4' L

HH A-38
STA 46+48.9,
37.2' L

1-2" STREET
LIGHTING CONDUIT
1-2" PVC EMPTY
FUTURE USE

A

TYPE 3
16'-6" 120W
LIGHT LPA-13
POLE RECEPT. LPA-12
TREE RECEPT. LPA-24

HH A-42
STA 47+10.5,
37.4' L

PROP 1" CONDUIT
FOR TREE
RECEPTACLES

19TE COUNTY LAYOUT

LP-36

LP-38

PROP STREET
LIGHT TYPE A (TYP)

LP-35

LP-37

HH A-35
STA 45+78.4,
35.1' R

3'
SEE DETAIL
RUN UNDER
STONE WALL

PROP 1" CONDUIT
BETWEEN HH &
GFCI RECEPTACLE
AT TREE
(TYP)

A

TYPE 3
16'-6" 120W
LIGHT LPA-15
POLE RECEPT. LPA-14
TREE RECEPT. --

RE-FEED EXISTING
METER SOCKET.
REMOVE OVERHEAD
SERVICE, CONDUIT
AND PROVIDE BLANK
ON TOP OF SOCKET.

MAP 51 LOT 15
LAWERENCE M. & SANDRA P. LIBBY
371 BOSTON ROAD-BILLERICA, MA
LC 31002

2-2" CONDUIT FOR
STREET LIGHT

HH A-37
STA 46+48.2,
32.7' R

2"PVC TO VERIZON HH
NEW CABLE BY VERIZON

RE-FEED EXISTING
MULTI METER UNIT
WITH 3#4/0.
REMOVE OVERHEAD
SERVICE, CONDUIT
AND PROVIDE BLANK ON
TOP OF SOCKET.

2"PVC TO VERIZON HH
NEW CABLE BY VERIZON

MAP 51 LOT 14
D + K REALTY TRUST,
MICHAEL W DONNELLY TR,
AND BRIAN P. KELLY
373 BOSTON ROAD-BILLERICA, MA
BOOK 28443 PAGE 45

3#4/0 3"

2"PVC TO COMCAST HH
NEW CABLE BY COMCAST

PROP 2" CONDUIT
FOR FUTURE
CONNECTION

HH A-43
STA 47+05.6,
35.6' R

A

TYPE 3
16'-6" 120W
LIGHT LPA-15
POLE RECEPT. LPA-14
TREE RECEPT. LPA-24

MAP 51 LOT 13-2
PAUL L. GAGNON &
LINDA A. MILLER
375 BOSTON ROAD
BILLERICA, MA
BOOK 10257 PAGE 19

CONNECT TO EXISTING OVERHEAD
SERVICE TO NEW UNDERGROUND
SECONDARY SERVICE FROM NGRID
UP #156

MAP 51 LOT 13-1
377 BOSTON RD REALTY LLC
377 BOSTON ROAD-BILLERICA, MA
BOOK 7062 PAGE 92

HH A-39
PROP STREETLIGHT
STA 49+31.2, 35.9' R

#377 BOSTON ROAD
CONTRACTOR TO PROVIDE NEW CONDUIT
FROM EXISTING POLE #157 TO NEW HANDHOLE.
PROVIDE ELECTRICAL CONDUCTORS AND
CONNECT UG ELECTRICAL SERVICE

MAP 51 LOT 123-0
ELL PETER M. & DIANE MARIE
BOSTON ROAD-BILLERICA, MA
BOOK 6042 PAGE 170

LIGHTING DESCRIPTION BOX SYMBOL

ASSEMBLY TYPE	
POLE STATION & OFFSET	
IESNA PHOTOMETRIC DISTRIBUTION	
LUMINAIRE MOUNTING HEIGHT	LAMP WATTAGE
LIGHT	CIRCUIT
POLE RECEPTACLE	CIRCUIT
TREE RECEPTACLE	CIRCUIT

0 20 50 100
SCALE: 1" = 20'

DESIGNED BY:

ENGINEERING ADVANTAGE, INC.
880 MAIN STREET 5TH FLOOR
WALTHAM, MA 02451

FOR PROFILE SEE SHEET 32

PANEL LPA SCHEDULE

CONNECTED LOAD: 11,620 WATTS
44.25 AMPS
120/240 VOLTS 1Φ 3W
*HANDLE LOCKS
MAINS: 100A MCB

CKT NO	DESCRIPTION	CKT BKR AMP	P	CONNECTED LOAD WATTS A	CONNECTED LOAD WATTS B	CKT BKR AMP	P	DESCRIPTION	CKT NO
1	4 LIGHTS (B)	20	1	340		20	1	(4) POLE RECEPTS	2
3	5 LIGHTS (B)	20	1	425	600	20	1	(6) TREE RECEPTS	4
5	4 LIGHTS (A)	20	1	480	600	20	1	(5) POLE RECEPTS	6
7	4 LIGHTS (A)	20	1	480	600	20	1	(6) TREE RECEPTS	8
9	CONTROL CIRCUIT	20	1	100	500	20	1	(5) POLE RECEPTS	10
11	CAB. LTG & RECEPT	20	1	850	500	20	1	(5) POLE RECEPTS	12
13	3 LIGHTS (A)	20	1	360	500	20	1	(4) POLE RECEPTS	14
15	3 LIGHTS (A)	20	1	360	500	20	1	(5) POLE RECEPTS	16
17	4 LIGHTS (A)	20	1	480	500	20	1	(5) TREE RECEPTS	18
19	4 LIGHTS (A)	20	1	480	500	20	1	(5) POLE RECEPTS	20
21	4 LIGHTS (B)	20	1	340	400	20	1	(4) POLE RECEPTS	22
23	5 LIGHTS (B)	20	1	425	500	20	1	(5) TREE RECEPTS	24
25	SPARE	20	1		500	20	1	(5) TREE RECEPTS	26
27	SPARE	20	1		500	20	1	(5) TREE RECEPTS	28
29	SPARE	20	1			20	1	SPARE	30
31	SPACE		1				1	SPACE	32
33	SPACE		1				1	SPACE	34
35	SPACE		1				1	SPACE	36
	TOTAL			5300	6120				

VOLTAGE DROP CALCULATIONS

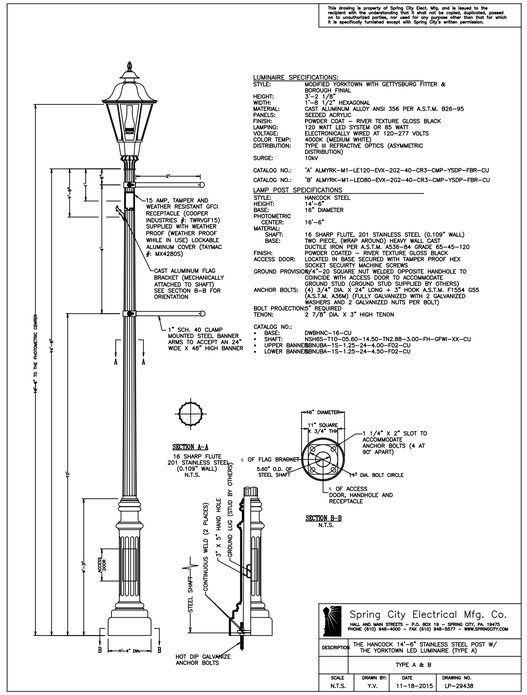
% VD = AMPS X DISTANCE (100') X FACTOR /120

CIR#	AMPS	DIST.	WIRE SIZE	% VD
LPA-1	2.8	1000'	#6	2.3%
LPA-3	3.5	500'	#8	2.2%
LPA-5	4.0	300'	#8	1.5%
LPA-7	4.0	650'	#6	2.1%
LPA-13	3.0	900'	#6	2.2%
LPA-15	3.0	850'	#6	2.1%
LPA-17	4.0	600'	#6	1.9%
LPA-19	4.0	250'	#8	1.3%
LPA-21	2.8	900'	#6	2.0%
LPA-23	3.5	400'	#8	1.8%

WIRE SCHEDULE

1. 5#8 & 1#8GND. – 2" PVC
2. 5#6 & 1#6GND. – 2" PVC
3. 4#6 & 1#6GND. – 2" PVC
4. 6#6 & 1#6GND. – 2" PVC
5. 7#6 & 1#6GND. – 2" PVC
6. 4#8 & 1#8GND. – 2" PVC
7. 6#8 & 1#8GND. – 2" PVC
8. 2#6 & 1#6GND. – 2" PVC

This drawing is property of Spring City Elect. Mfg. and is issued to the recipient with the understanding that it shall not be loaned, duplicated, passed on to others, or used in any way for any purpose other than that for which it is specifically furnished except with Spring City's written permission.



LUMINAIRE SPECIFICATIONS:
STYLE: MODIFIED YORKTOWN WITH GETTYSBURG FITTER & BOROUGH FINIAL
HEIGHT: 3'-2 1/8"
WIDTH: 1'-8 1/2" HEXAGONAL
MATERIAL: CAST ALUMINUM ALLOY ANSI 356 PER A.S.T.M. B26-95
FINISH: DECIDED LATER
FINISH: POWDER COAT – RIVER TEXTURE GLOSS BLACK
LAMPING: 120 WATT LED SYSTEM OR 85 WATT
VOLTAGE: ELECTRONICALLY WIRED AT 120-277 VOLTS
COLOR TEMP: 4000K (MEDIUM WHITE)
DISTRIBUTION: TYPE III REFRACTIVE OPTICS (ASYMMETRIC DISTRIBUTION)
SURGE: 10kV
CATALOG NO.: "A" ALMYRK-M1-LE120-EVK-202-40-CR3-CMP-YSDP-FBR-CU
CATALOG NO.: "B" ALMYRK-M1-LE080-EVK-202-40-CR3-CMP-YSDP-FBR-CU

LAMP POST SPECIFICATIONS
STYLE: HANCOCK STEEL
HEIGHT: 14'-6"
BASE: 16" DIAMETER
PHOTOMETRIC CENTER: 16'-6"
MATERIAL: 16 SHARP FLUTE, 201 STAINLESS STEEL (0.109" WALL)
SHAFT: TWO PIECE, (WRAP AROUND) HEAVY WALL CAST
BASE: DUCTILE IRON PER A.S.T.M. A536-84 GRADE 65-45-120
FINISH: POWDER COATED – RIVER TEXTURE GLOSS BLACK
ACCESS DOOR: LOCATED IN BASE SECURED WITH TAMPER PROOF HEX SOCKET SECURITY MACHINE SCREWS
GROUND PROVISION: (4)"-20 SQUARE NUT WELDED OPPOSITE HANDHOLE TO CONCIDE WITH ACCESS DOOR TO ACCOMMODATE GROUND STUD (GROUND ROD SUPPLIED BY CONTRACTOR OR OTHERS)
ANCHOR BOLTS: (4) 3/4" DIA. X 24" LONG = 3" HOOK A.S.T.M. F1554 GS5 (A.S.T.M. A36M) (FULLY GALVANIZED WITH 2 GALVANIZED WASHERS AND 2 GALVANIZED NUTS PER BOLT)
BOLT PROJECTIONS" REQUIRED
TENON: 2 7/8" DIA. X 3" HIGH TENON

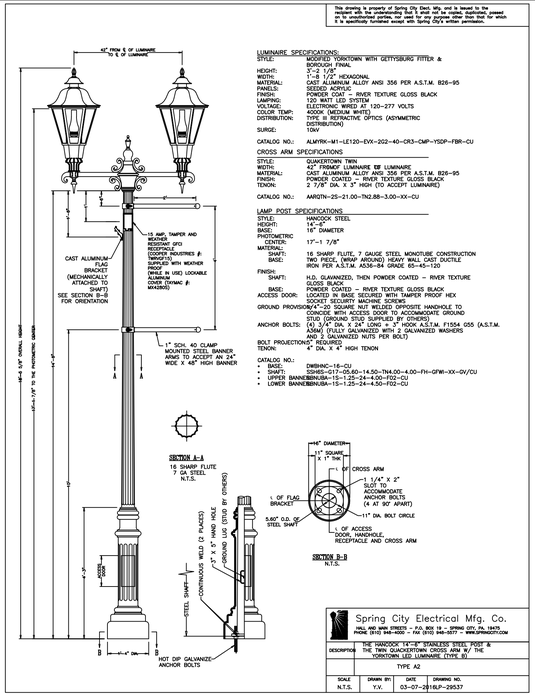
CATALOG NO.:
- BASE: DWBHNC-16-CU
- SHAFT: NSHSS-T10-05.60-14.50-TN2.88-3.00-FH-GFWI-XX-CU
- UPPER BANNER: BNBUA-15-1.25-24-4.00-F02-CU
- LOWER BANNER: BNBUA-15-1.25-24-4.50-F02-CU

Spring City Electrical Mfg. Co.
HALL AND MAIN STREETS – P.O. BOX 19 – SPRING CITY, PA. 19475
PHONE (610) 948-4000 – FAX (610) 948-5577 – WWW.SPRINGCITY.COM

DESCRIPTION	THE HANCOCK 14'-6" STAINLESS STEEL POST W/ THE YORKTOWN LED LUMINAIRE (TYPE A)
	TYPE A & B

SCALE	DRAWN BY:	DATE	DRAWING NO.
N.T.S.	Y.V.	11-18-2015	LP-29438

This drawing is property of Spring City Elect. Mfg. and is issued to the recipient with the understanding that it shall not be loaned, duplicated, passed on to others, or used in any way for any purpose other than that for which it is specifically furnished except with Spring City's written permission.



LUMINAIRE SPECIFICATIONS:
STYLE: MODIFIED YORKTOWN WITH GETTYSBURG FITTER & BOROUGH FINIAL
HEIGHT: 3'-2 1/8"
WIDTH: 1'-8 1/2" HEXAGONAL
MATERIAL: CAST ALUMINUM ALLOY ANSI 356 PER A.S.T.M. B26-95
FINISH: DECIDED LATER
FINISH: POWDER COAT – RIVER TEXTURE GLOSS BLACK
LAMPING: 120 WATT LED SYSTEM
VOLTAGE: ELECTRONIC WIRED AT 120-277 VOLTS
COLOR TEMP: 4000K (MEDIUM WHITE)
DISTRIBUTION: TYPE III REFRACTIVE OPTICS (ASYMMETRIC DISTRIBUTION)
SURGE: 10kV
CATALOG NO.: ALMYRK-M1-LE120-EVK-202-40-CR3-CMP-YSDP-FBR-CU

CROSS ARM SPECIFICATIONS
STYLE: QUAKERTOWN TWIN
WIDTH: 42" FROM/OF LUMINAIRE TO/OF LUMINAIRE
MATERIAL: CAST ALUMINUM ALLOY ANSI 356 PER A.S.T.M. B26-95
FINISH: POWDER COATED – RIVER TEXTURE GLOSS BLACK
TENON: 2 7/8" DIA. X 3" HIGH (TO ACCEPT LUMINAIRE)
CATALOG NO.: AARQTN-25-21.00-TN2.88-3.00-XX-CU

LAMP POST SPECIFICATIONS
STYLE: HANCOCK STEEL
HEIGHT: 14'-6"
BASE: 16" DIAMETER
PHOTOMETRIC CENTER: 17'-1 7/8"
MATERIAL: 16 SHARP FLUTE, 7 GAUGE STEEL MONOTUBE CONSTRUCTION
SHAFT: TWO PIECE, (WRAP AROUND) HEAVY WALL CAST DUCTILE
BASE: IRON PER A.S.T.M. A536-84 GRADE 65-45-120
FINISH: H.D. GALVANIZED, THEN POWDER COATED – RIVER TEXTURE GLOSS BLACK
BASE: POWDER COATED – RIVER TEXTURE GLOSS BLACK
ACCESS DOOR: LOCATED IN BASE SECURED WITH TAMPER PROOF HEX SOCKET SECURITY MACHINE SCREWS
GROUND PROVISION: (4)"-20 SQUARE NUT WELDED OPPOSITE HANDHOLE TO CONCIDE WITH ACCESS DOOR TO ACCOMMODATE GROUND STUD (GROUND ROD SUPPLIED BY CONTRACTOR OR OTHERS)
ANCHOR BOLTS: (4) 3/4" DIA. X 24" LONG = 3" HOOK A.S.T.M. F1554 055 (A.S.T.M. A36M) (FULLY GALVANIZED WITH 2 GALVANIZED WASHERS AND 2 GALVANIZED NUTS PER BOLT)
BOLT PROJECTIONS" REQUIRED
TENON: 4" DIA. X 4" HIGH TENON

CATALOG NO.:
- BASE: DWBHNC-16-CU
- SHAFT: SSHSS-017-05.60-14.50-TN4.00-4.00-FH-GFWI-XX-GV/CU
- UPPER BANNER: BNBUA-15-1.25-24-4.00-F02-CU
- LOWER BANNER: BNBUA-15-1.25-24-4.50-F02-CU

Spring City Electrical Mfg. Co.
HALL AND MAIN STREETS – P.O. BOX 19 – SPRING CITY, PA. 19475
PHONE (610) 948-4000 – FAX (610) 948-5577 – WWW.SPRINGCITY.COM

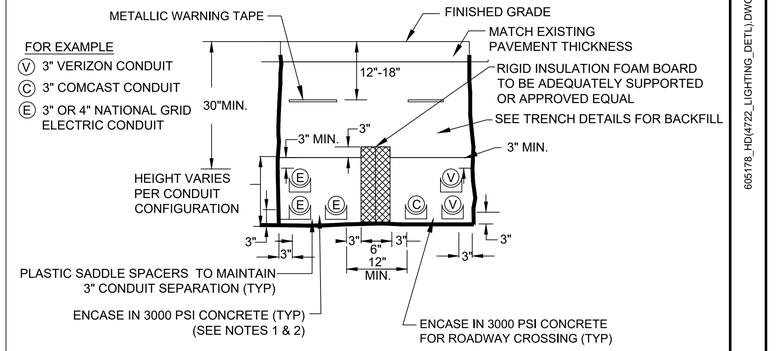
DESCRIPTION	THE HANCOCK 14'-6" STAINLESS STEEL POST & THE TWIN QUAKERTOWN CROSS ARM W/ THE YORKTOWN LED LUMINAIRE (TYPE B)
	TYPE A2

SCALE	DRAWN BY:	DATE	DRAWING NO.
N.T.S.	Y.V.	03-07-2016	LP-29537

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	97	140
	PROJECT FILE NO. 605178		

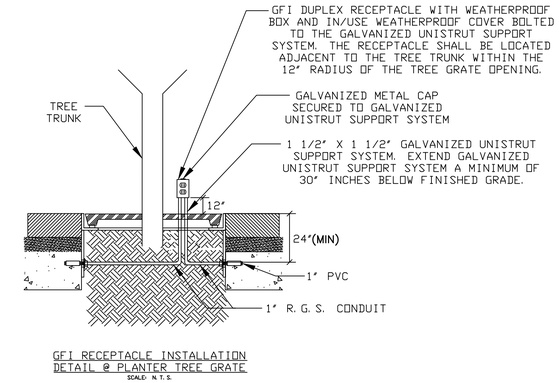
LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION DETAILS



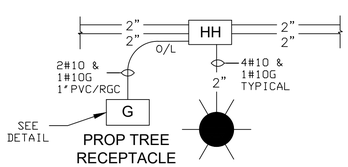
FOR EXAMPLE
- (V) 3" VERIZON CONDUIT
- (C) 3" COMCAST CONDUIT
- (E) 3" OR 4" NATIONAL GRID ELECTRIC CONDUIT

NOTES:
1. ALL ELECTRICAL CONDUIT LOCATED IN ROADWAY OR DRIVEWAY SHALL BE ENCASED IN HIGH EARLY CONCRETE.
2. ALL COMMUNICATIONS CONDUIT UNDER ROADWAY SURFACES SHALL BE BACKFILLED WITH CONTROL DENSITY FILL (EXCAVATABLE).
3. PAY LIMITS SHALL BE SUM OF ALL CONDUIT & CLEARANCES PLUS 3" EACH SIDE.

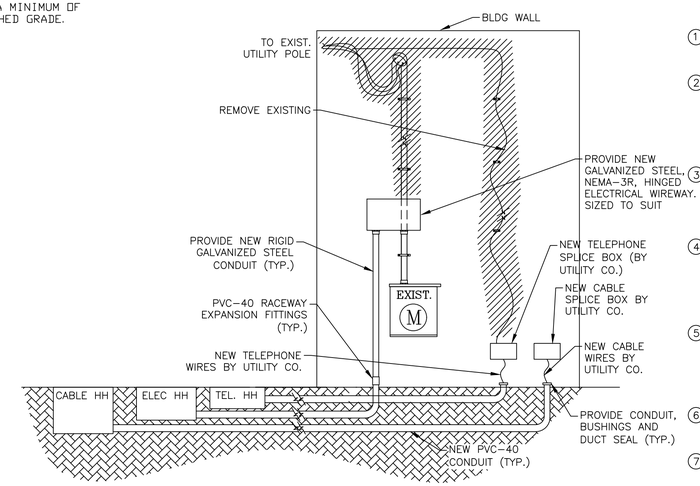
TYPICAL COMBINED UTILITY DUCT TRENCH DETAIL (WITH NGRID DUCT)
NOT TO SCALE



GFI RECEPTACLE INSTALLATION DETAIL @ PLANTER TREE GRATE
SCALE: N. T. S.



STREET LIGHT AND TREE LIGHTING CONDUIT DETAIL
NOT TO SCALE

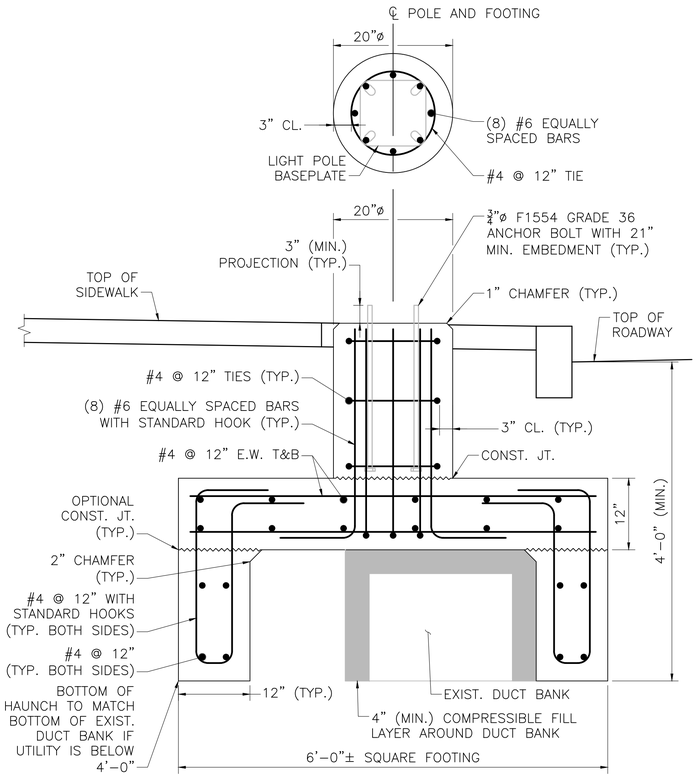


TYPICAL ELECTRICAL SERVICE CONNECTION DETAIL
SCALE: N.T.S.

3

BUILDING ELECTRIC UTILITIES SERVICES DEMOLITION AND NEW WORK NOTES

1. THE CONTRACTOR SHALL FIELD REVIEW THE EXISTING ELECTRIC UTILITIES SERVICES IN ORDER TO SELECTIVELY DEMOLISH.
2. THE CONTRACTOR SHALL CONTACT ALL ELECTRIC UTILITIES AS PART OF THE ELEC WORK IN ORDER TO COORDINATE THE EXIST AND NEW ELEC SERVICES. THIS INCLUDES DEVELOPING SERVICES OUTAGES, ETC. THE CONTRACTOR SHALL ASSUME THE ELEC SERVICE OUTAGES SHALL BE COMPLETED DURING THE NORMAL BUSINESS HOURS.
3. THE CONTRACTOR SHALL DEVELOP A DETAILED CONSTRUCTION PHASING PLAN WHICH WILL BE SUBMITTED FOR REVIEW/APPROVAL. THE CONTRACTOR SHALL ALSO PROVIDE WRITTEN NOTIFICATIONS TO ALL BLDG OCCUPANTS.
4. THE CONTRACTOR SHALL FURNISH/INSTALL NEW PWR/TELE/CATV ELEC DUCTBANK WITH 1 @ 4" PWR, 1 @ 2" TELE AND 1 @ 2" CATV. CONTRACTOR SHALL FIELD ROUTE AND COORDINATE WITH THE EXISTING CONDITIONS. CC SHALL FURNISH/INSTALL ALL EXCAVATION, BACK FILL, CONCRETE, ETC.
5. THE CONTRACTOR SHALL FURNISH/INSTALL ALL POWER CABLES FROM THE ELECTRICAL HANDHOLE TO THE NEW SITE PWR SERVICE WIREWAY. THE POWER CABLES SHALL MATCH THE EXISTING BLDG INTERIOR WIRES. THE PWR COMPANY SHALL MAKE THE PWR WIRES CONNECTIONS IN THE ELEC SITE HANDHOLE.
6. EC SHALL FURNISH/INSTALL FACTORY SUPPLIED WIRE SPLICE KITS WITH COMPRESSION CONNECTIONS AND HEAT SHRINK SLEEVES.
7. THE TELE AND CATV UTILITY COMPANIES SHALL FURNISH/INSTALL ALL NEW TELE AND CATV SERVICE CABLES TO THE EXISTING TELE AND CATV SERVICE EQUIPMENT. NOTE THE CONTRACTOR SHALL PROVIDE ALL TELE/CATV EMPTY CONDUITS WITH PULL STRINGS INCLUDING CONDUIT BUSHINGS, DUCT SEALS, ALL CORING, ETC.



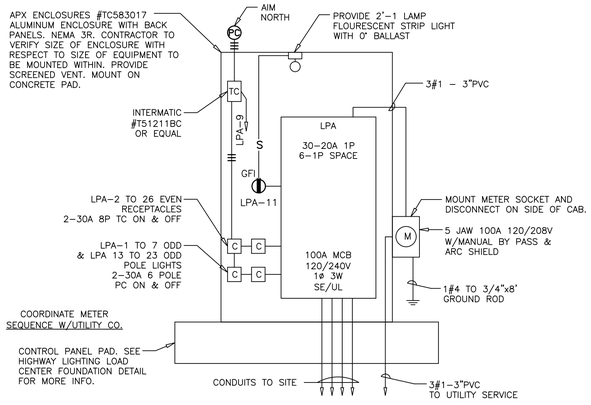
LIGHT POST FOUNDATION OVER UTILITY DUCT BANK
SCALE: 1" = 1'-0"

605178_HDV4722_LIGHTING_DETL).DWG Plotted on 7-Mar-22 10:24 PM

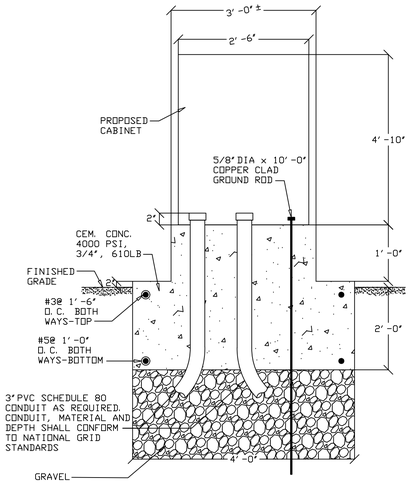
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	98	140
PROJECT FILE NO.	605178		

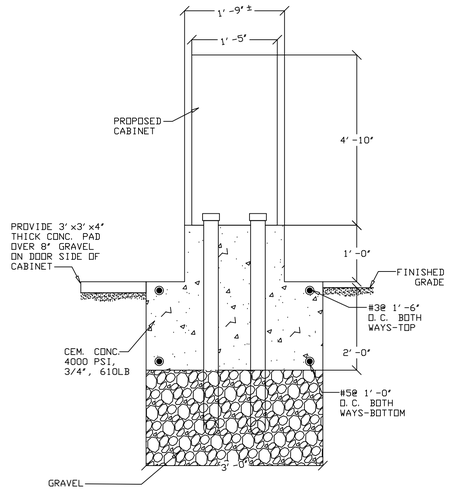
LIGHTING AND UNDERGROUND ELECTRICAL SERVICE CONNECTION DETAILS



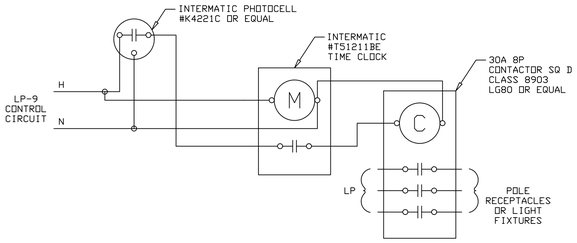
LIGHTING CABINET NO.1
NOT TO SCALE



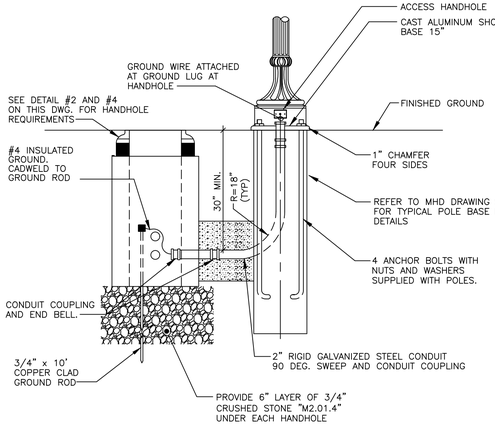
HIGHWAY LIGHTING LOAD CENTER FOUNDATION
FRONT VIEW
NOT TO SCALE



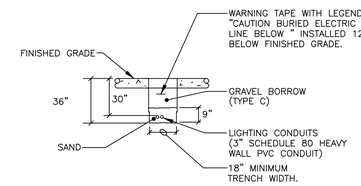
HIGHWAY LIGHTING LOAD CENTER FOUNDATION
SIDE VIEW
NOT TO SCALE



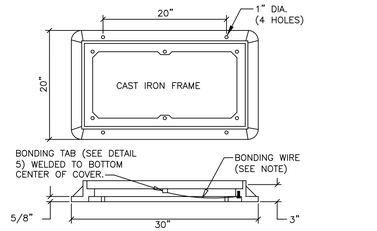
CONTACTOR WIRING DIAGRAM
NOT TO SCALE

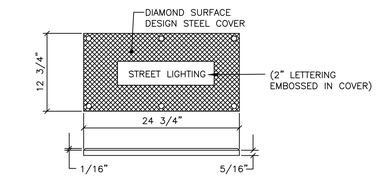


TYPICAL POLE BASE, HANDHOLE AND POLE FOUNDATION
NOT TO SCALE

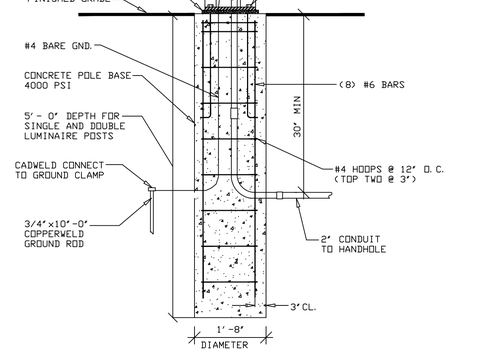


SECTION A
TYPICAL CONDUIT TRENCH
NOT TO SCALE



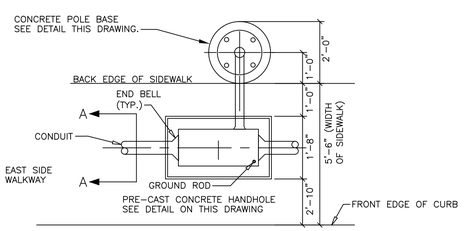


(2) TYPICAL HANDHOLE COVER
NOT TO SCALE

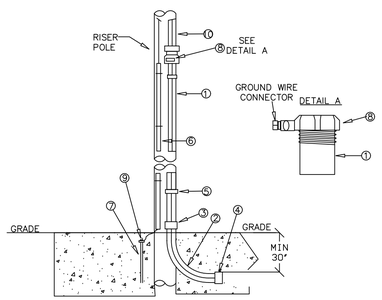


POLE BASE DETAIL
STANDARD FOUNDATION
NOT TO SCALE

COORDINATE LOCATIONS OF HANDHOLES WITH EXISTING UNDERGROUND PIPING AND UTILITIES

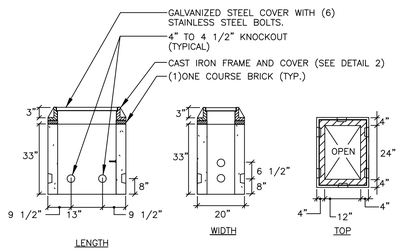


TYPICAL POLE BASE AND HANDHOLE ARRANGEMENT
NOT TO SCALE

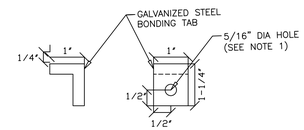


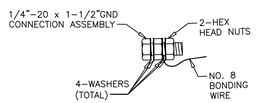
ITEM	MATERIAL DESCRIPTION
1	3" DIA. GALV. STEEL CONDUIT 10' LENGTH 1 EA.
2	3" DIA. GALV. STEEL BEND 36"-RAD.
3	3" DIA. GALV. STEEL COUPLING
4	3" DIA. STEEL TO PVC ADAPTER
5	3" DIA. STEEL STRAP 4 EA.
6	#6 AWG, BARE COPPER WIRE & MOULDING
7	5/8" X 10' COPPERWELD GROUND ROD
8	INSULATED GROUNDING BUSHING
9	GROUND ROD CLAMP
10	4"FIBERGLASS U-DUCT

PRIMARY RISER POLE DETAIL
NOT TO SCALE



(4) TYPICAL PRE-CAST CONCRETE HANDHOLE
NOT TO SCALE





(5) GALVANIZED STEEL BONDING TAB
NOT TO SCALE

NOTES:
1. ATTACH 3 FOOT LENGTH OF NO. 8 BONDING WIRE TO GALVANIZED STEEL BONDING TAB WITH 1/4"-20 x 1-1/2" LONG STAINLESS STEEL HEX HEAD BOLT, STAINLESS STEEL FLAT WASHERS AND 2 HEX NUTS. ATTACH FREE END OF BONDING WIRE TO BONDING WIRE ROUTED THROUGH PULL BOX.

2. BONDING TAB WELDED TO BOTTOM CENTER OF COVER.

605178_HDU4722_LIGHTING_DETL).DWG Plotted on 7-Mar-22 10:24 PM

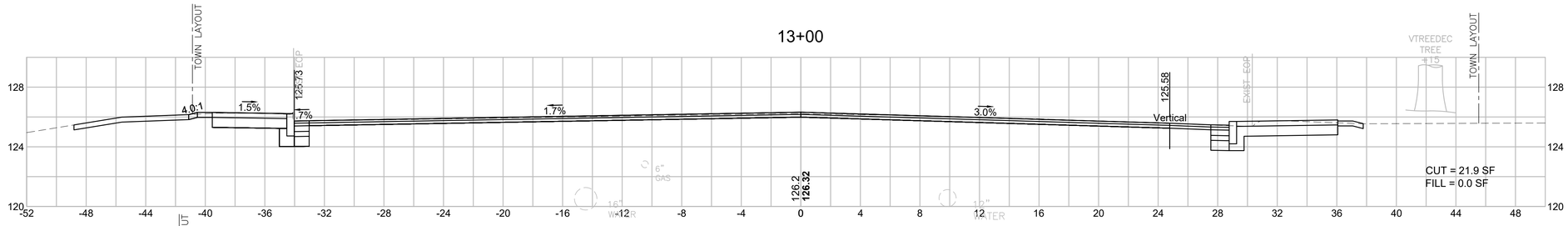
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	99	140
PROJECT FILE NO.	605178		

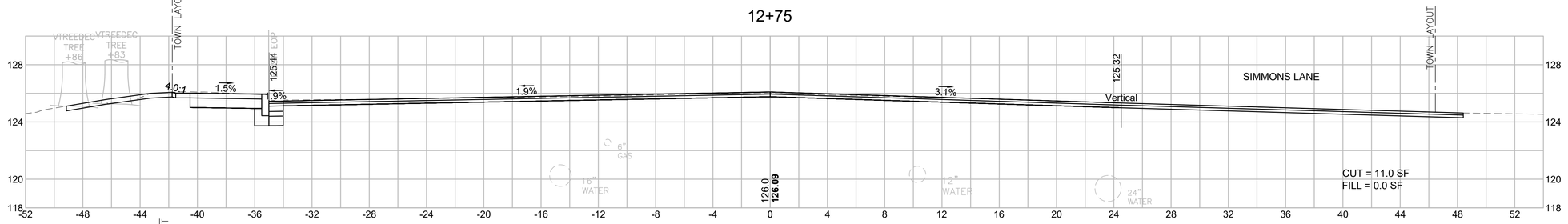
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:28 PM

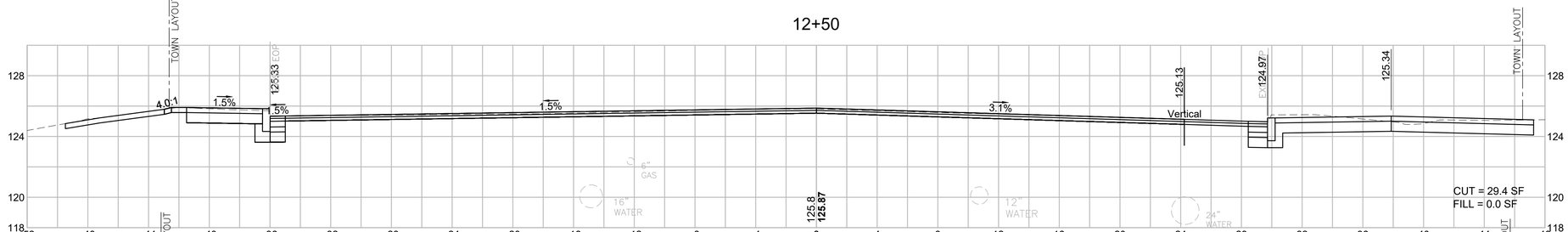
13+00



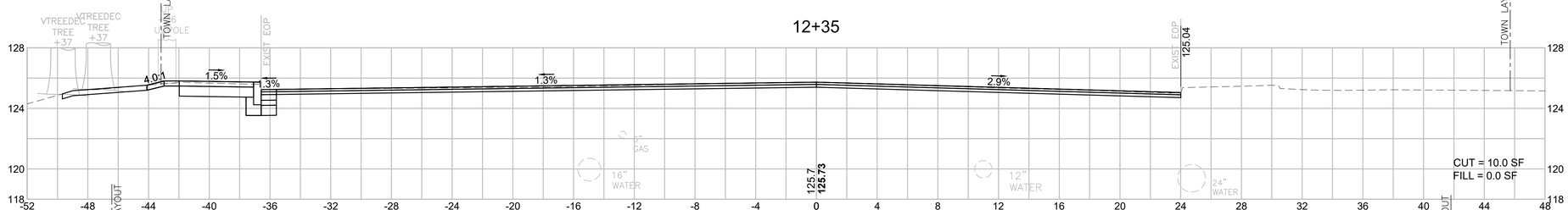
12+75



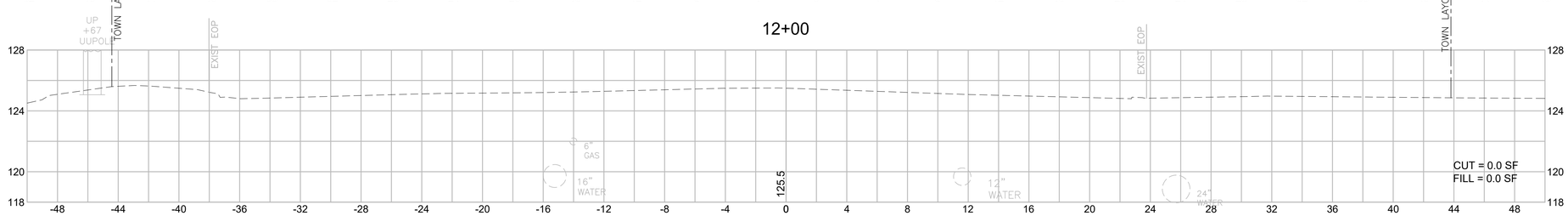
12+50



12+35



12+00



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

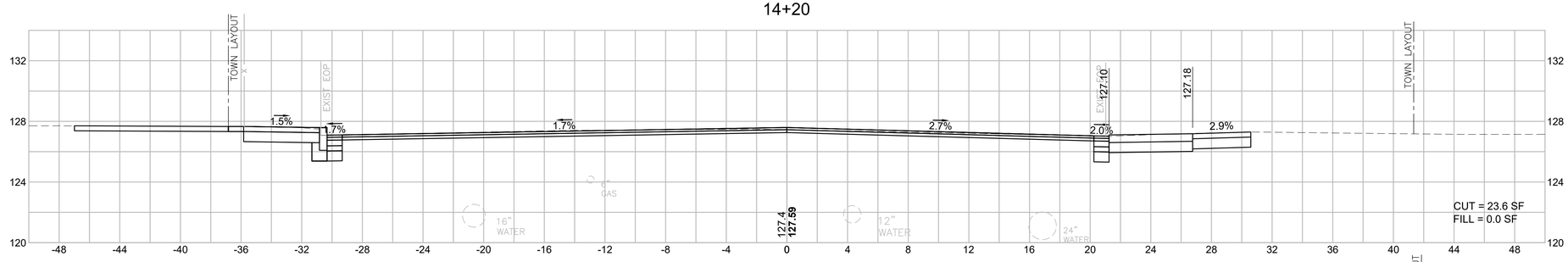
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	100	140
PROJECT FILE NO.	605178		

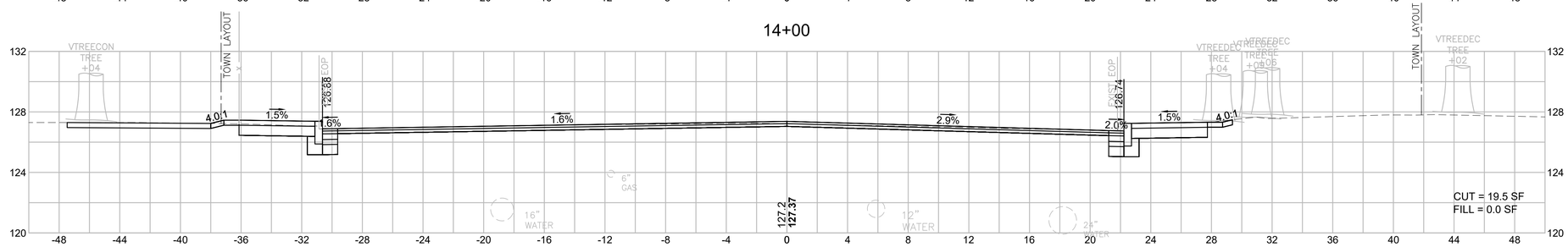
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:28 PM

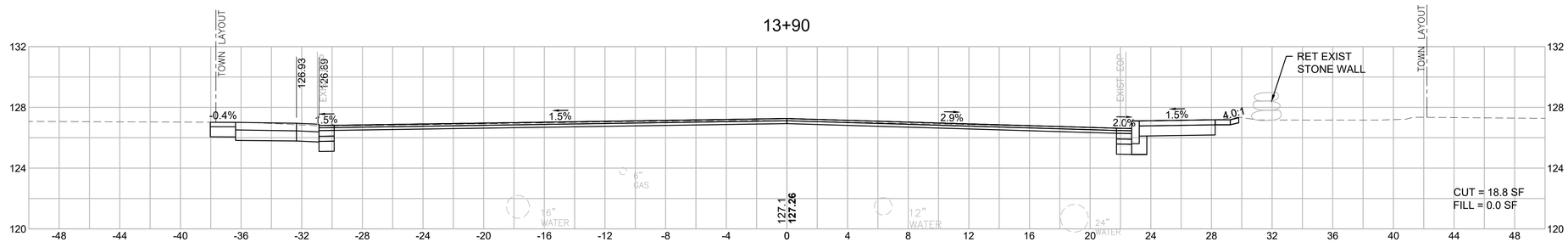
14+20



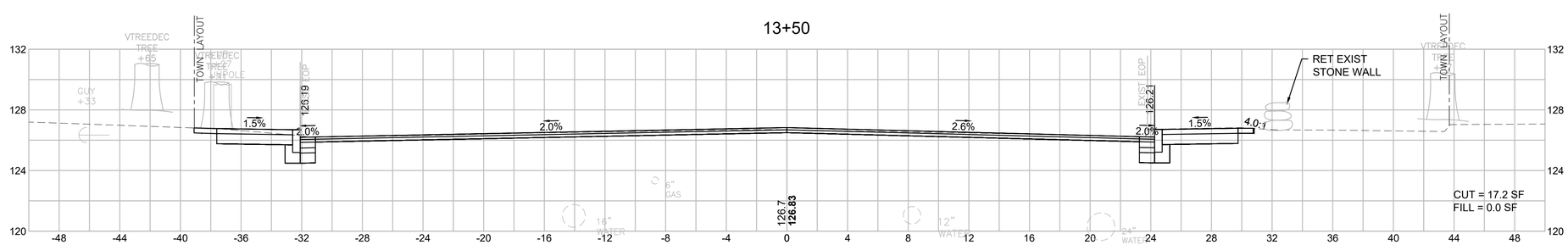
14+00



13+90



13+50



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

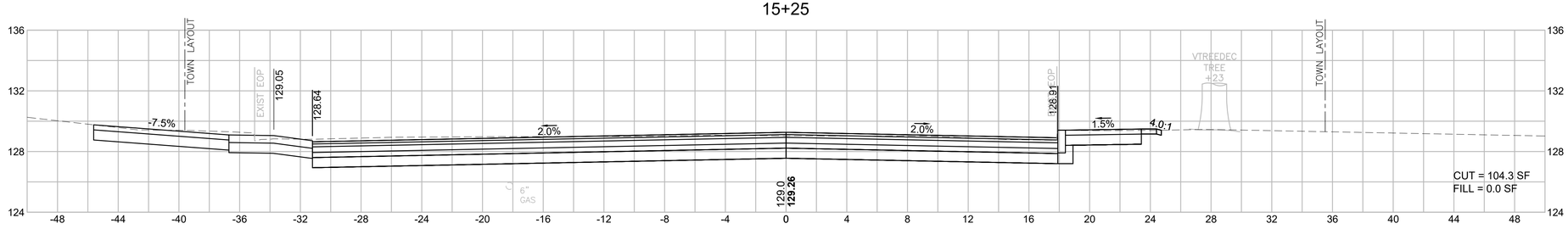
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	101	140
PROJECT FILE NO.	605178		

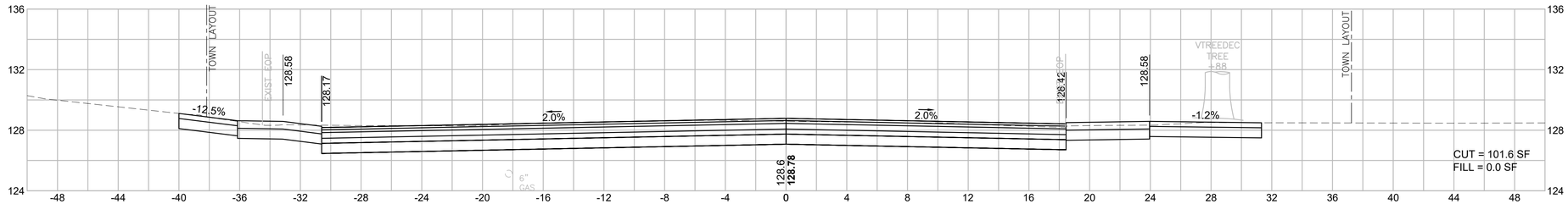
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:29 PM

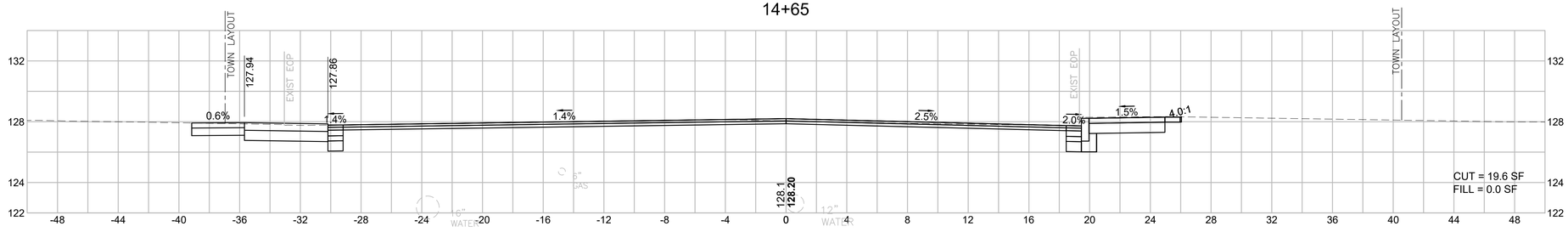
15+25



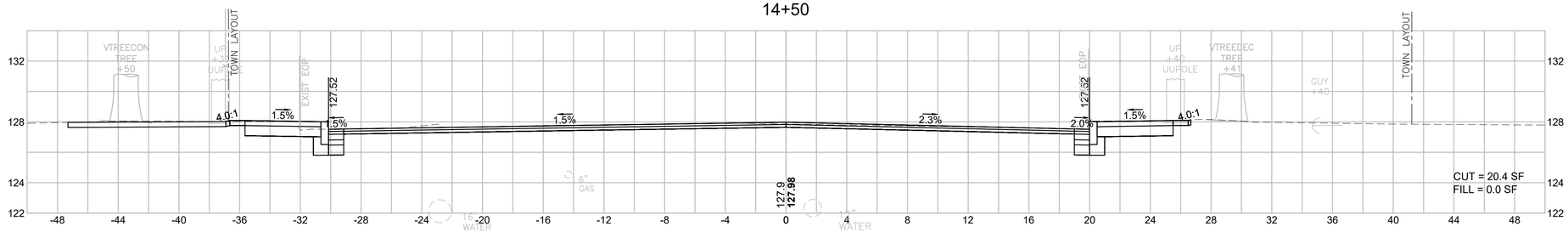
15+00



14+65



14+50



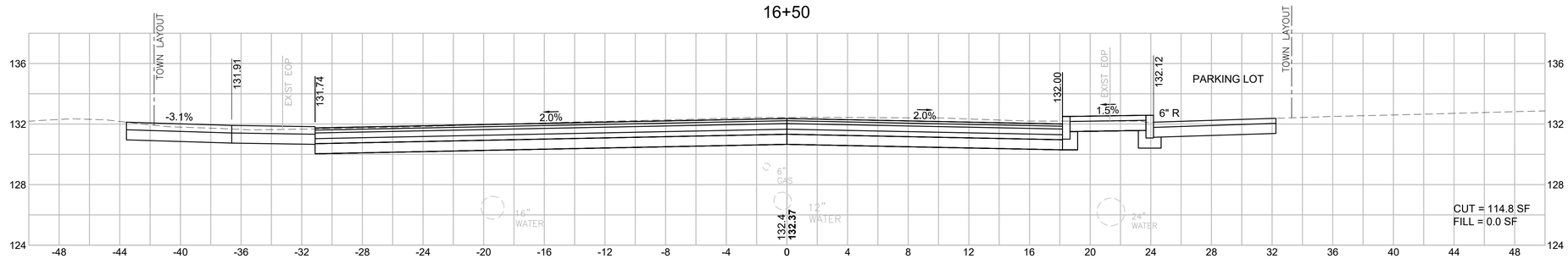
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

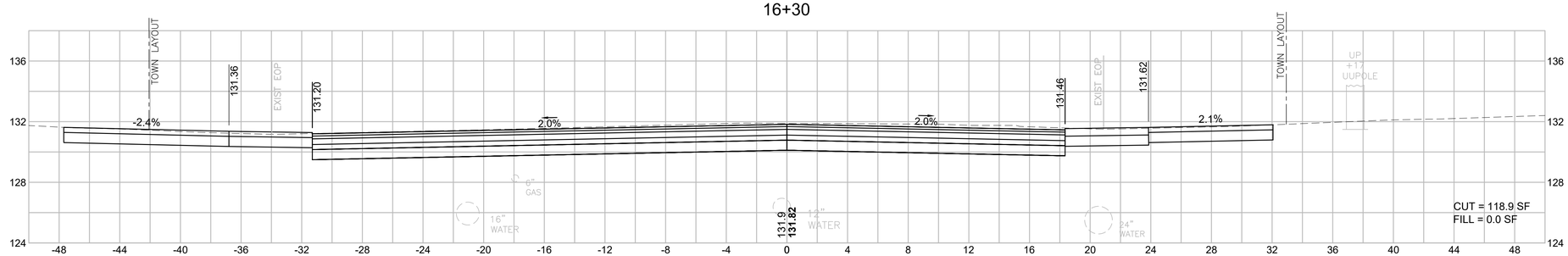
BILLERICA
BOSTON ROAD (ROUTE 3A)

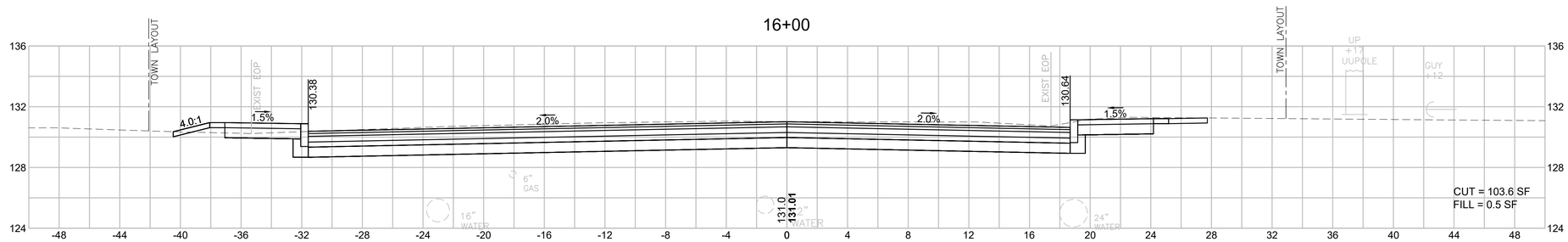
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	102	140
PROJECT FILE NO.	605178		

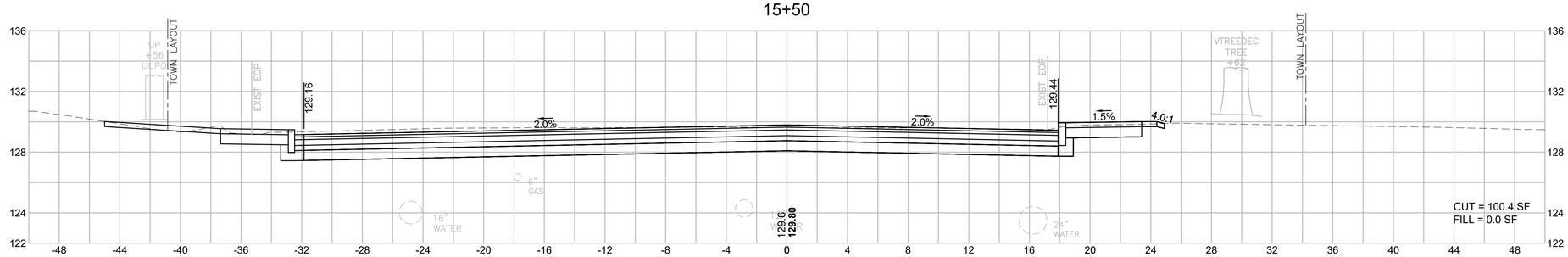
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:29 PM









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

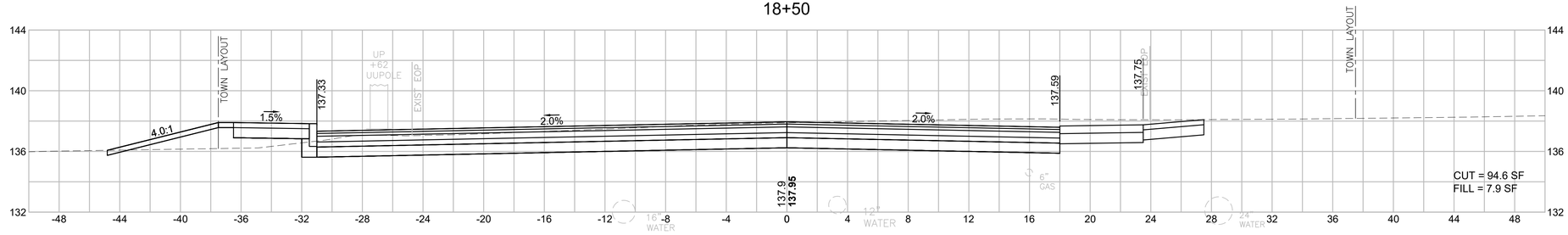
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	103	140
PROJECT FILE NO.	605178		

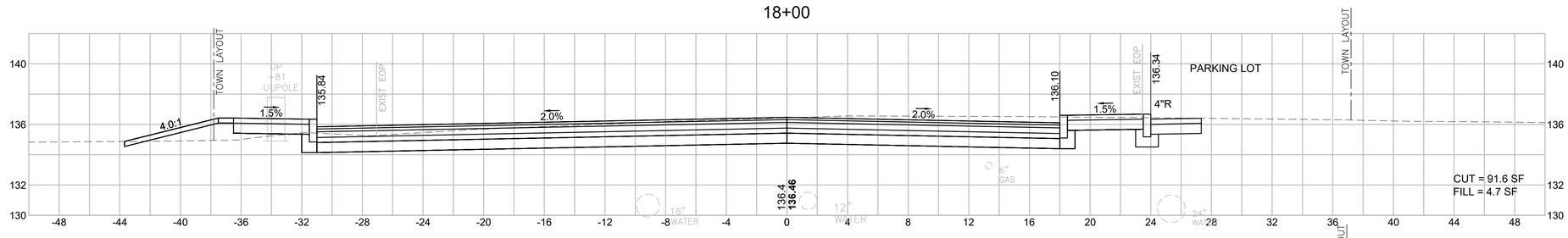
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:29 PM

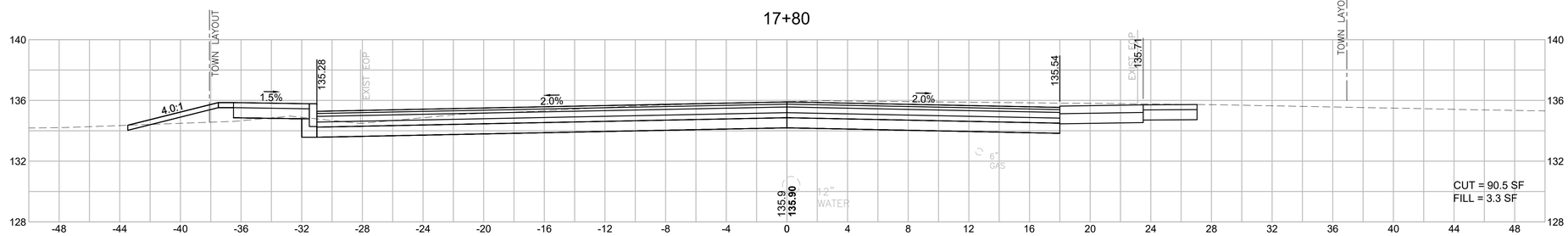
18+50



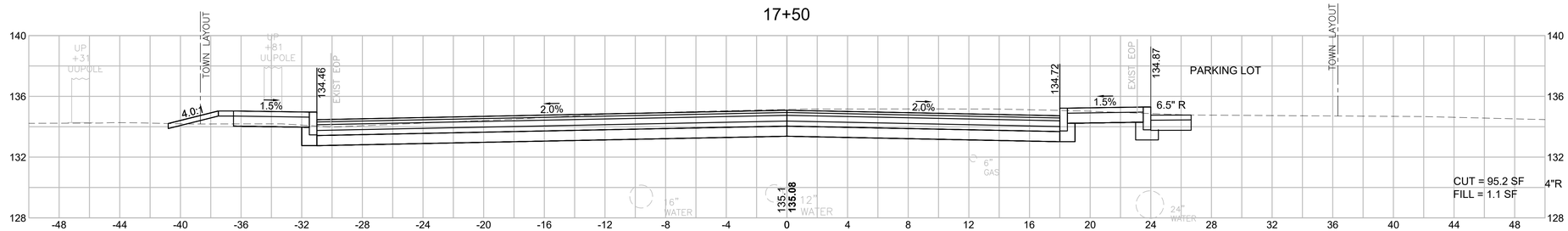
18+00



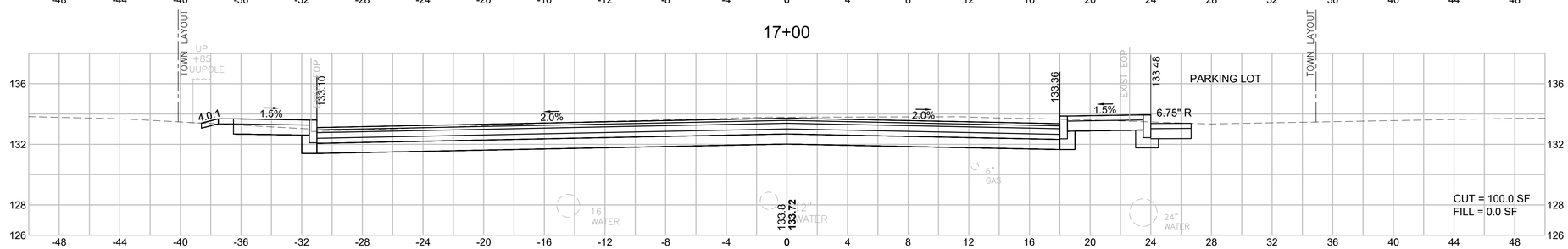
17+80



17+50



17+00



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

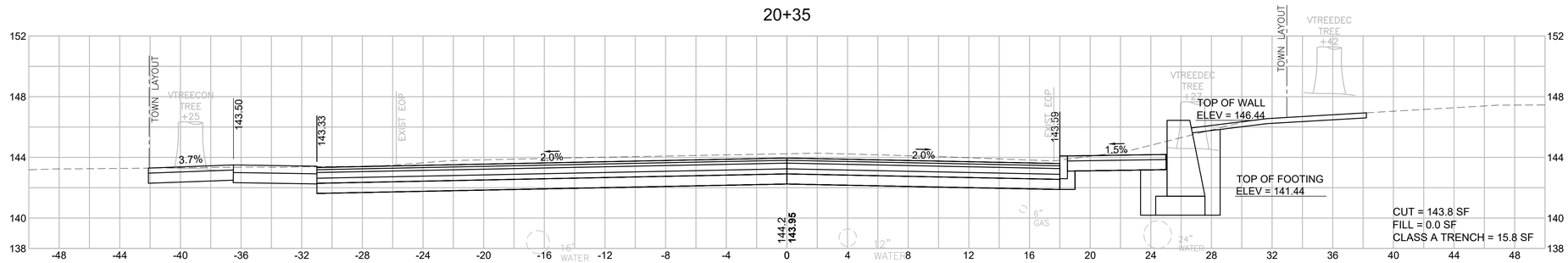
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	104	140
PROJECT FILE NO.	605178		

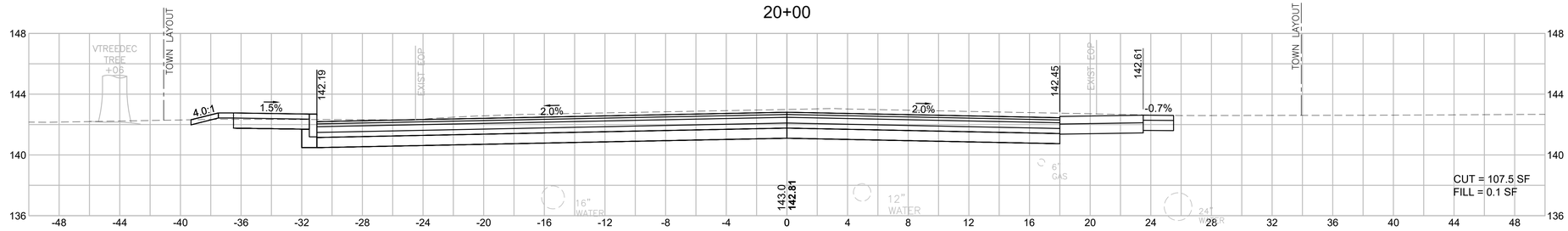
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:30 PM

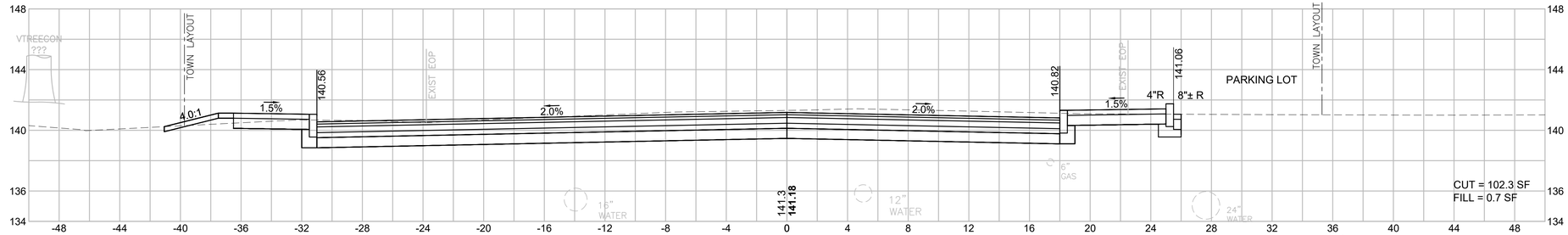
20+35



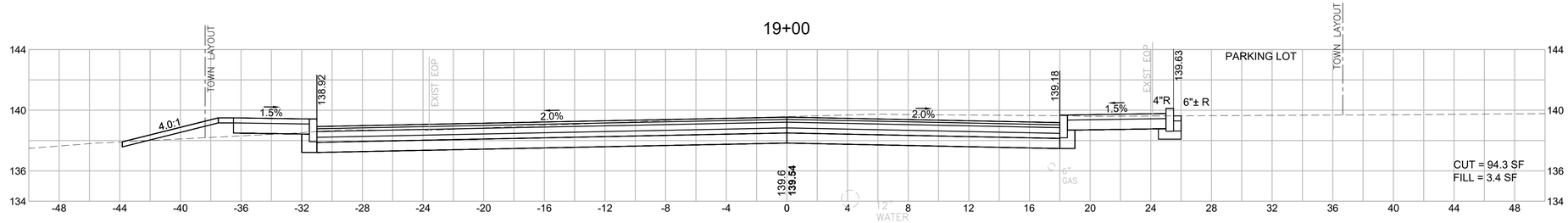
20+00



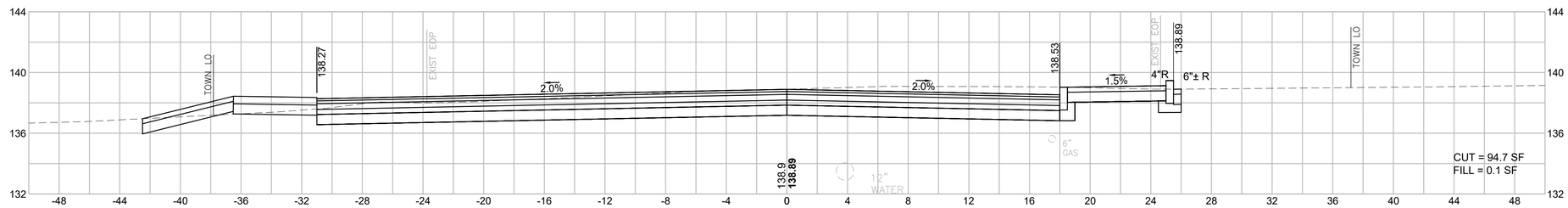
19+50



19+00



18+80



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

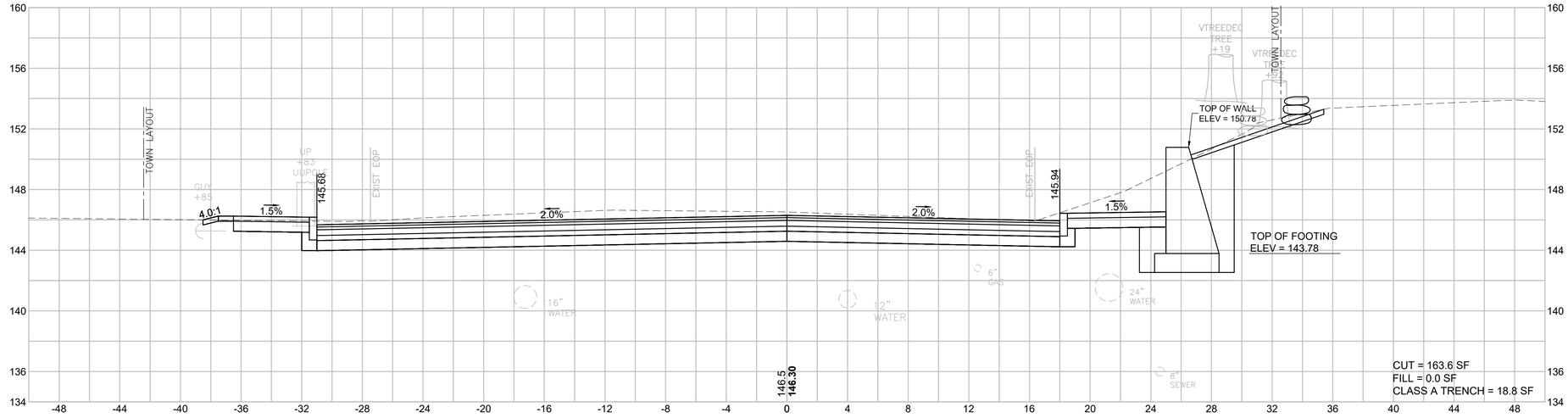
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	105	140
PROJECT FILE NO.	605178		

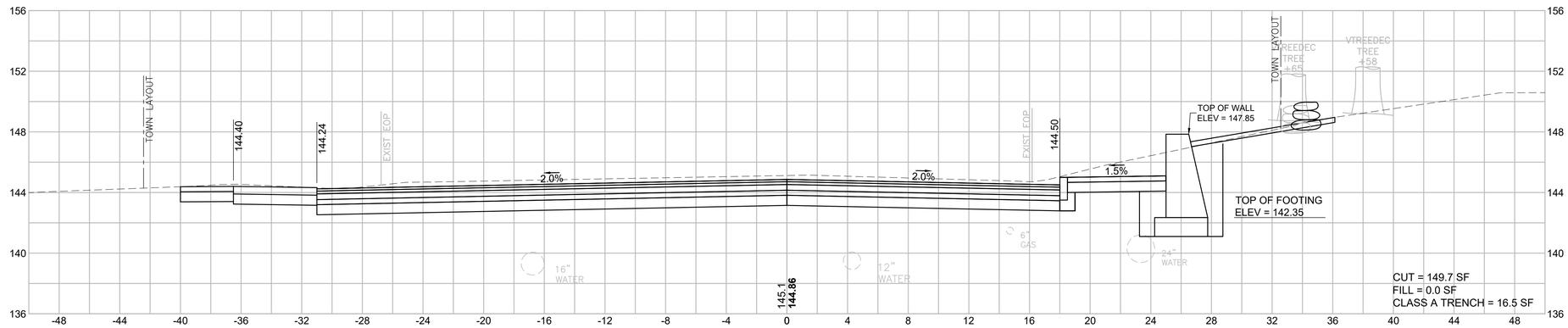
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:30 PM

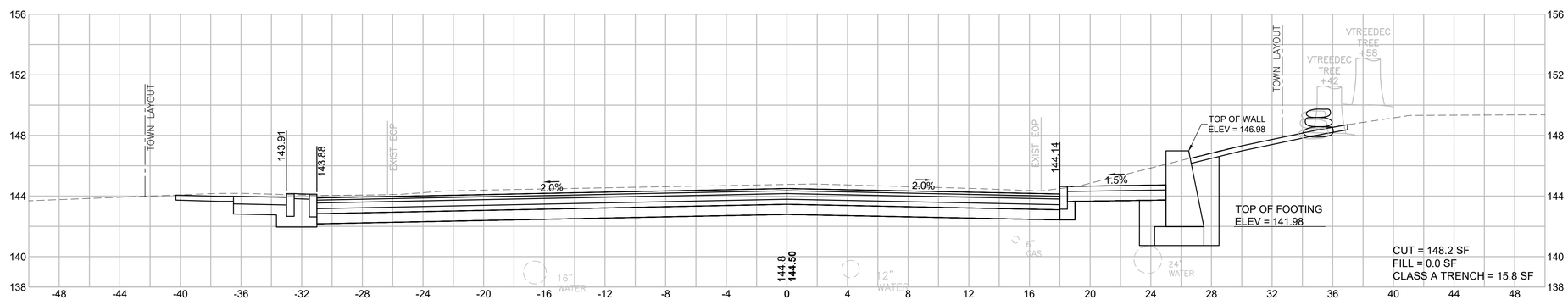
21+00



20+60



20+50



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

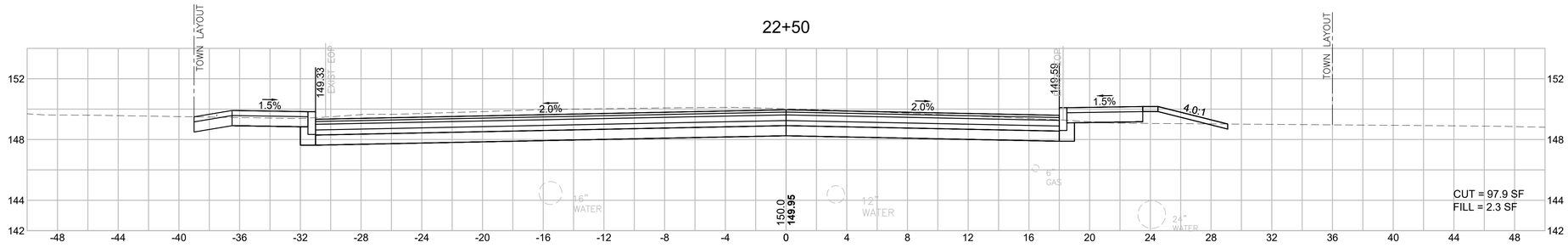
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	106	140
PROJECT FILE NO.	605178		

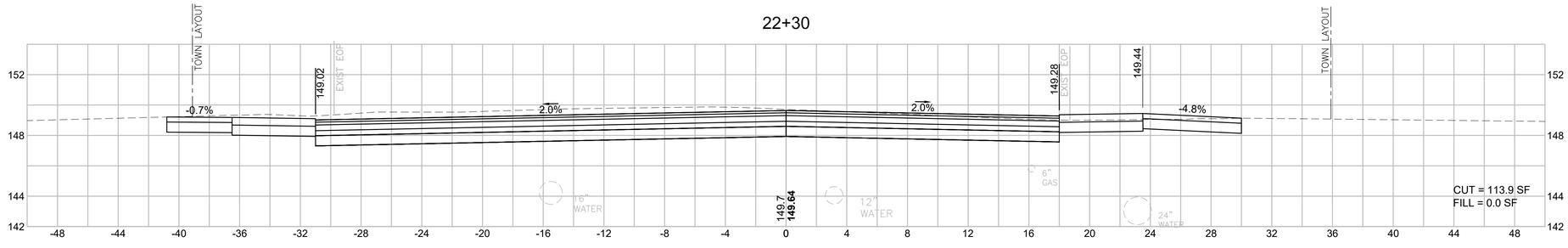
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:30 PM

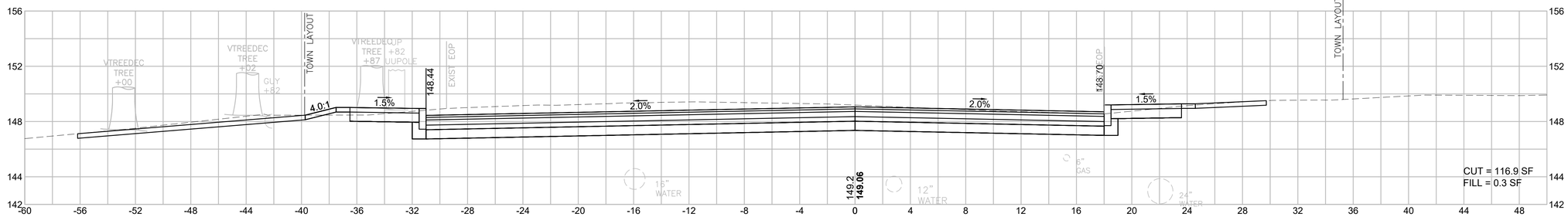
22+50



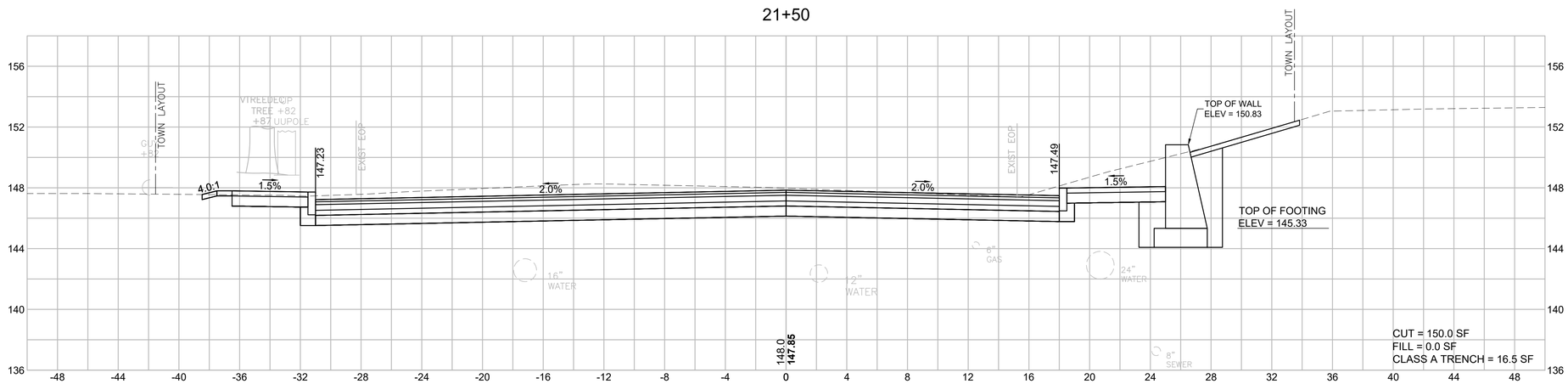
22+30



22+00



21+50



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

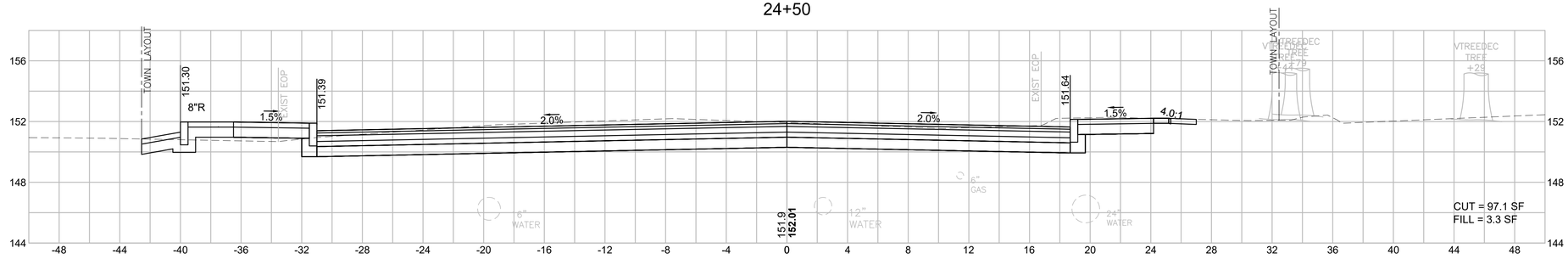
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	107	140
PROJECT FILE NO.	605178		

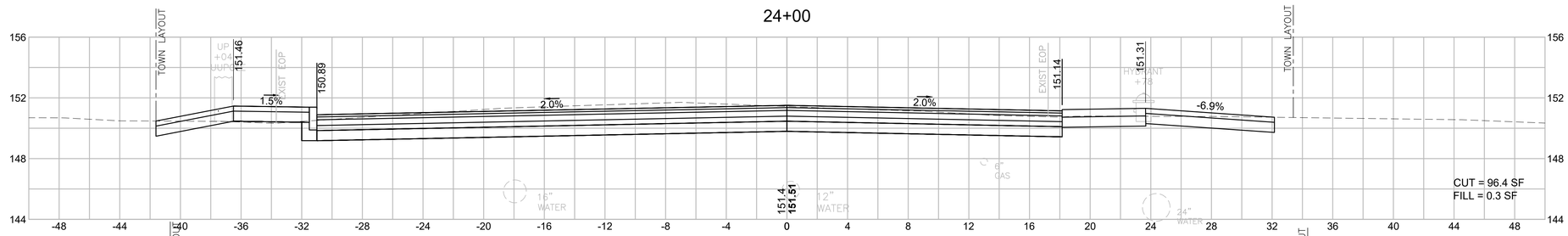
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:31 PM

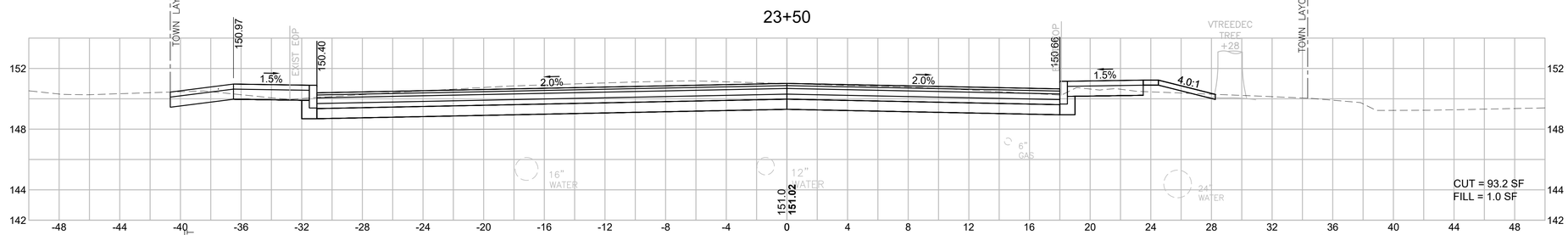
24+50



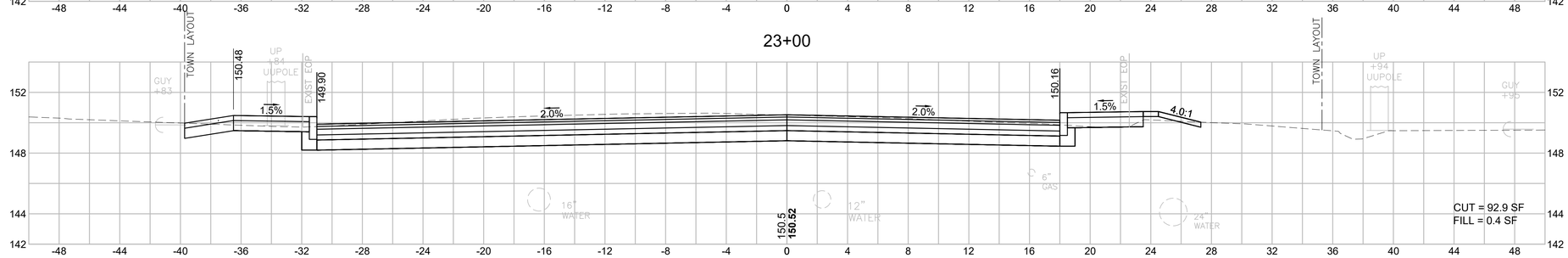
24+00



23+50



23+00



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

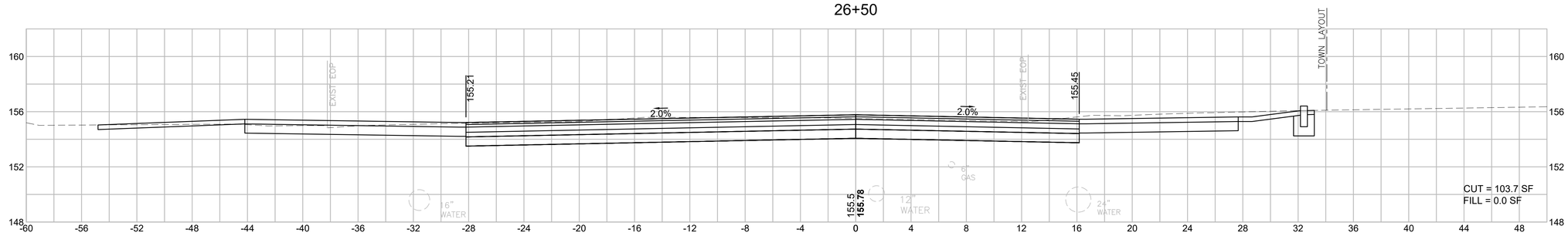
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	108	140
PROJECT FILE NO.	605178		

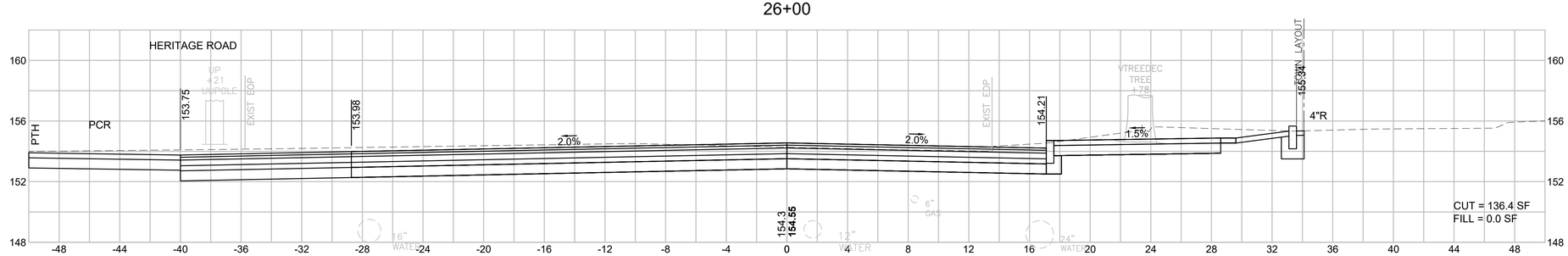
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:31 PM

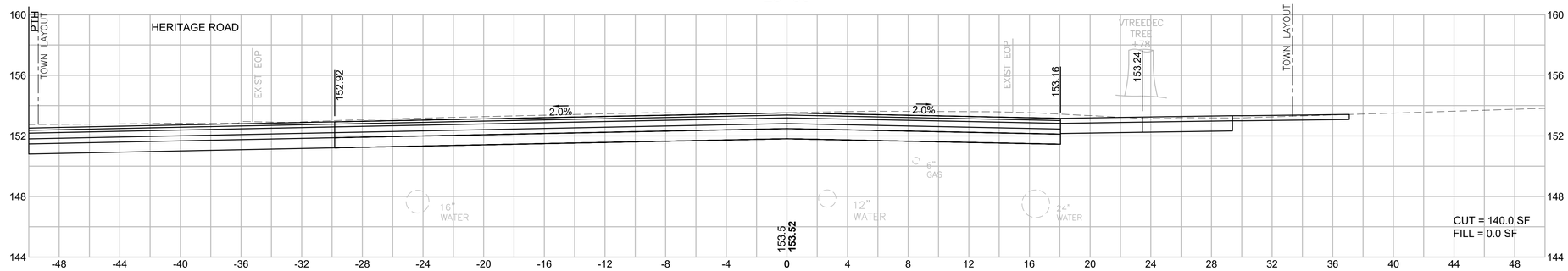
26+50



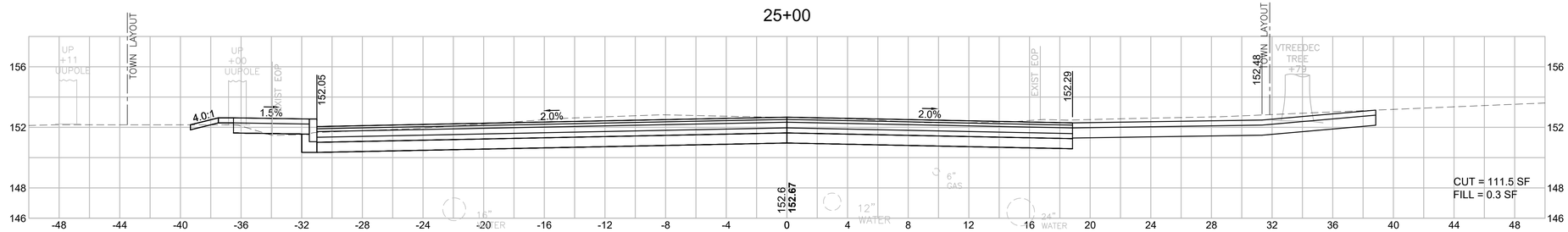
26+00



25+50



25+00



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

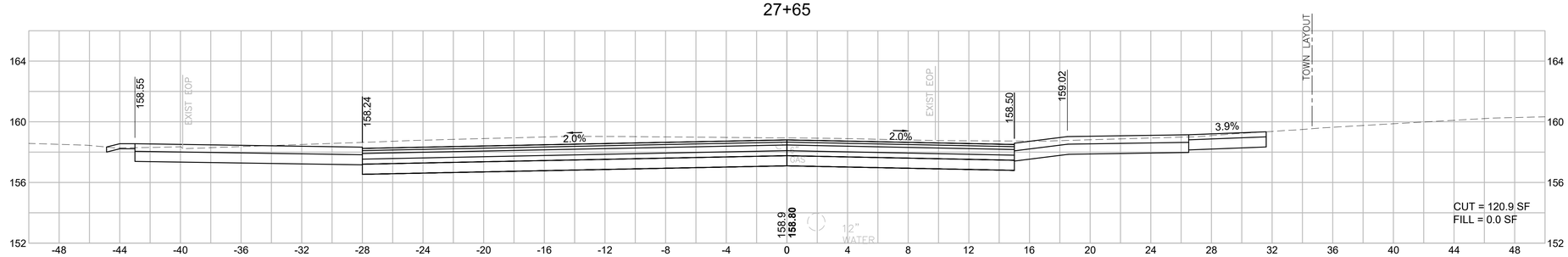
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	109	140
PROJECT FILE NO.	605178		

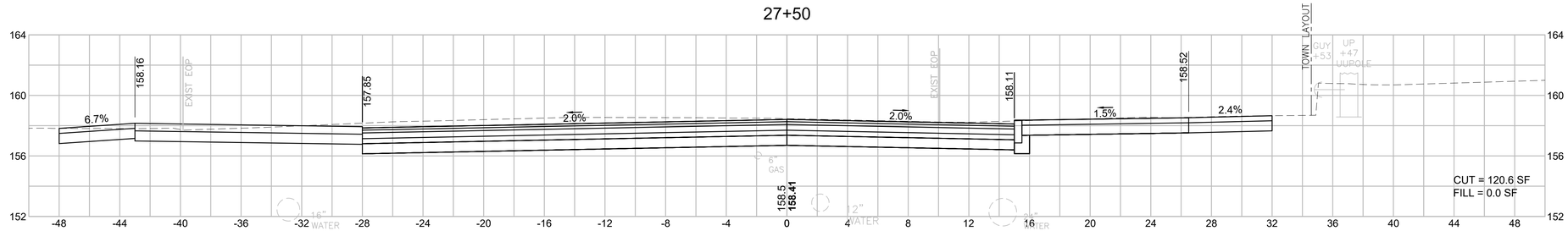
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:31 PM

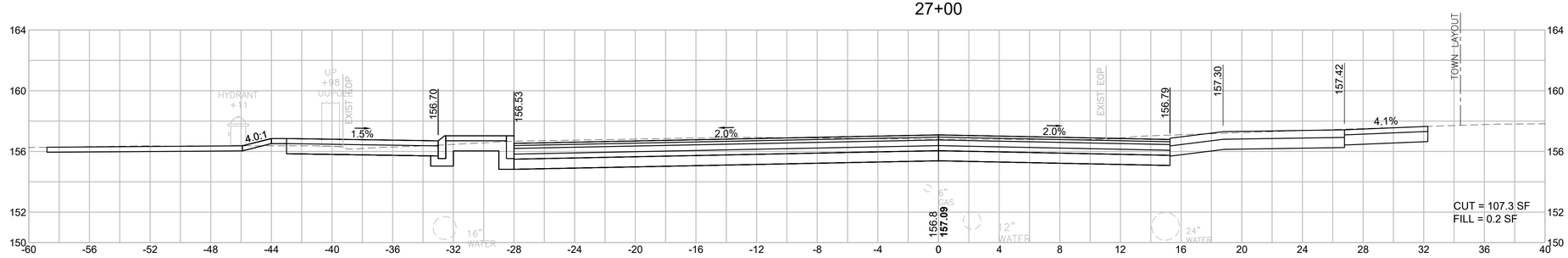
27+65



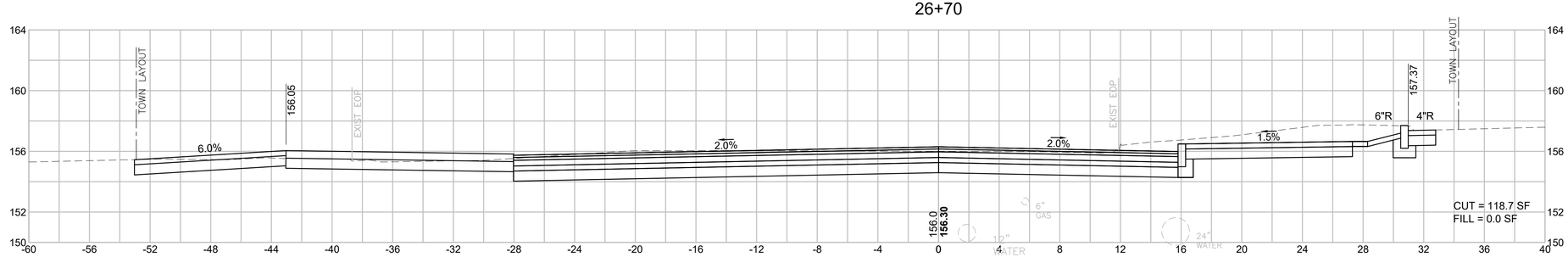
27+50



27+00



26+70



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

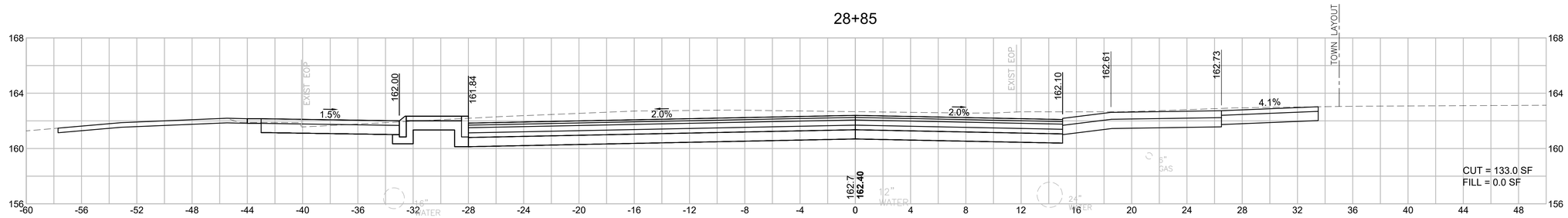
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	110	140
PROJECT FILE NO.	605178		

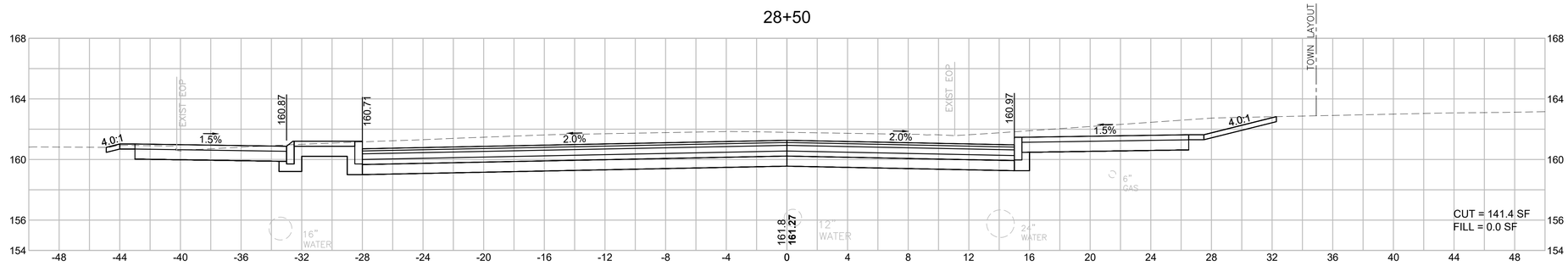
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:32 PM

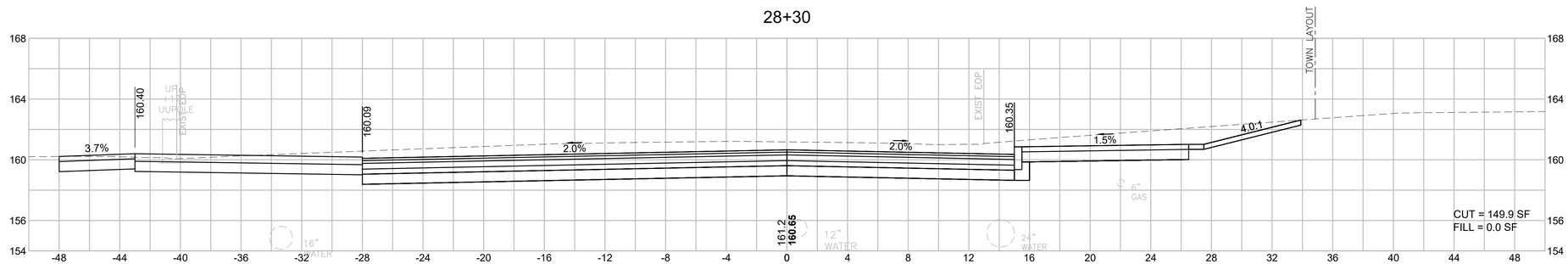
28+85



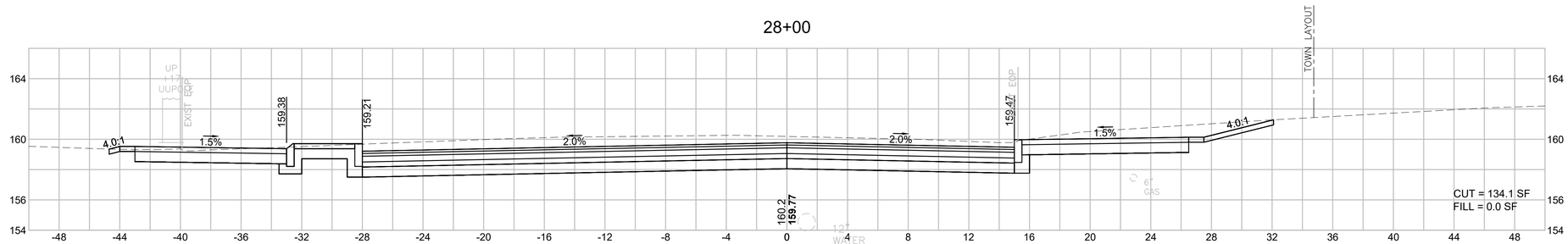
28+50



28+30



28+00



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

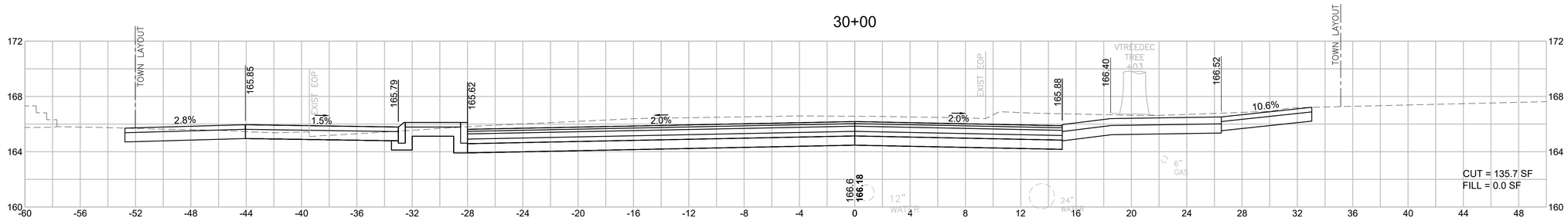
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	111	140
PROJECT FILE NO.	605178		

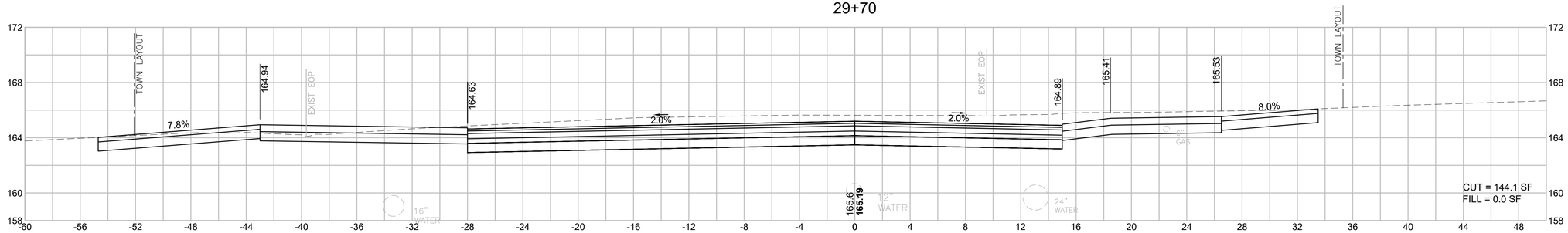
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:32 PM

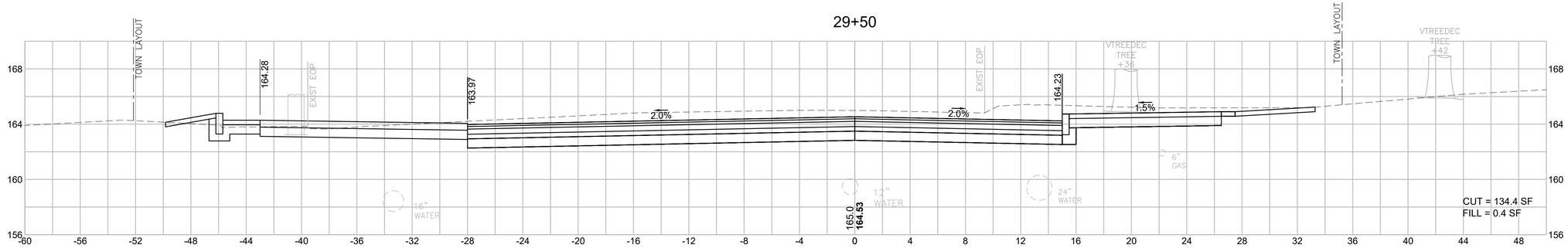
30+00



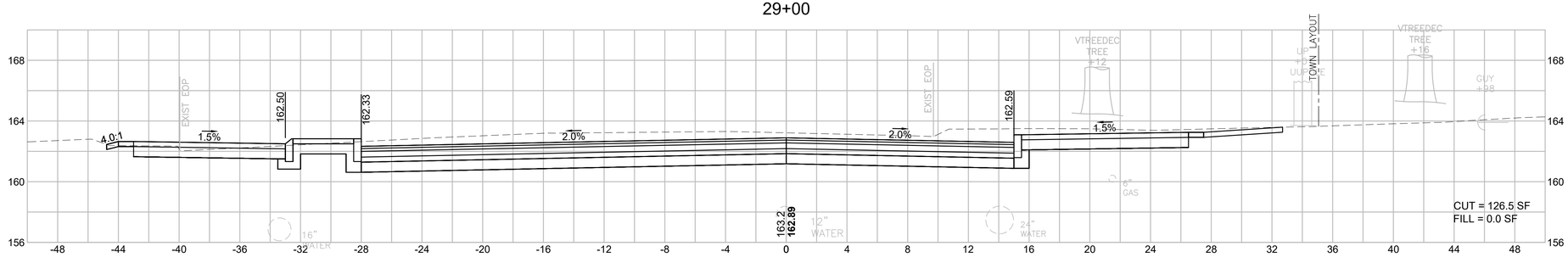
29+70



29+50



29+00



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

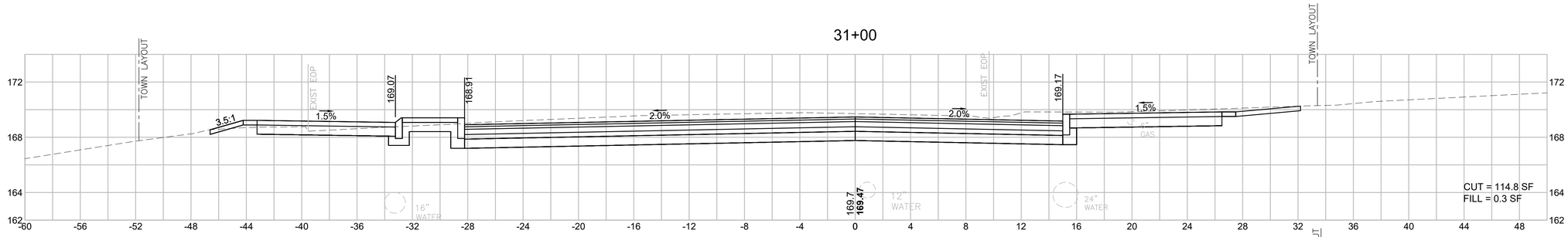
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	112	140
PROJECT FILE NO.	605178		

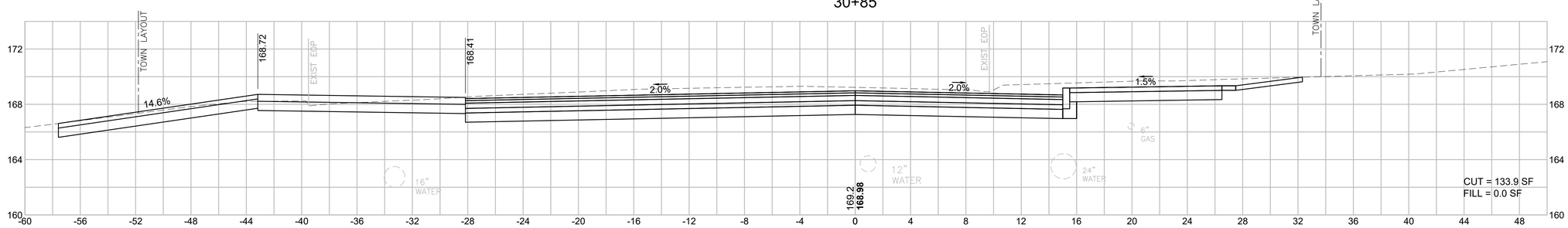
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:32 PM

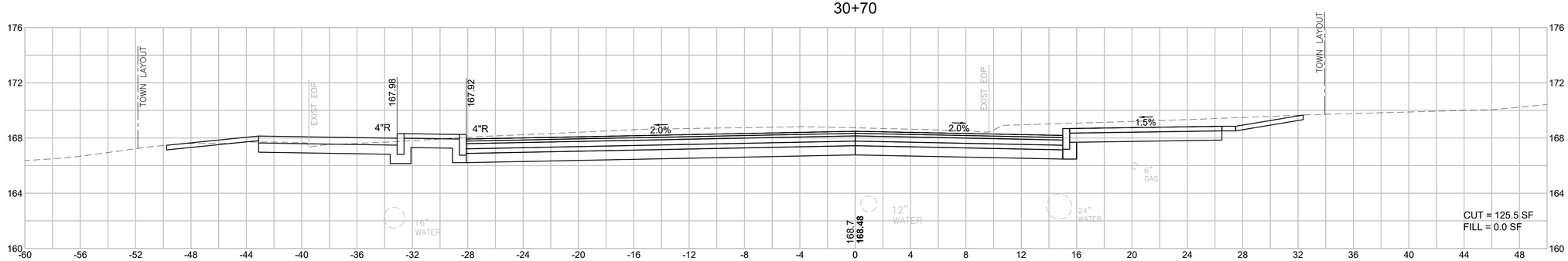
31+00



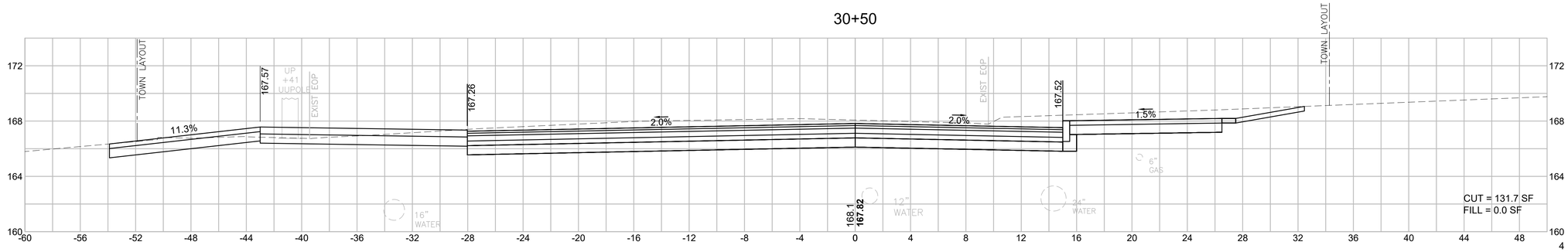
30+85



30+70



30+50



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

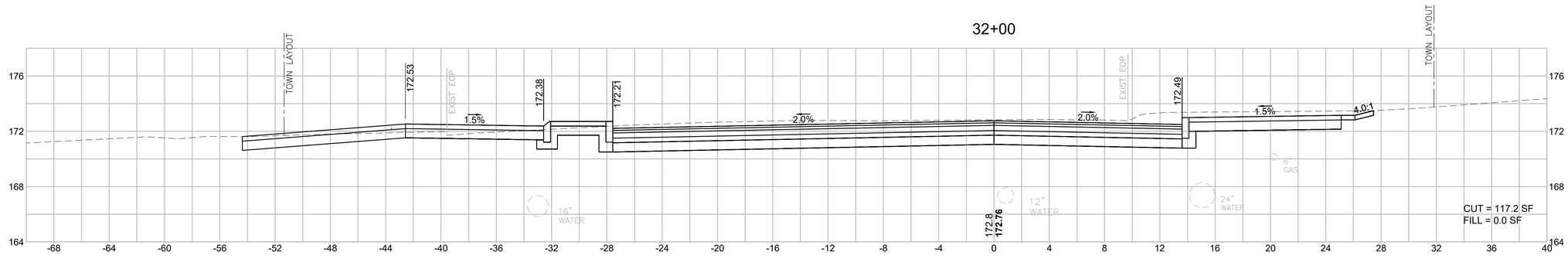
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	113	140
PROJECT FILE NO.	605178		

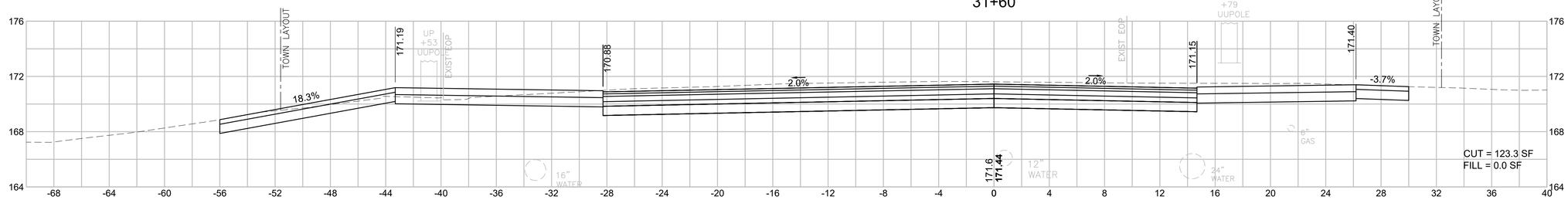
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:33 PM

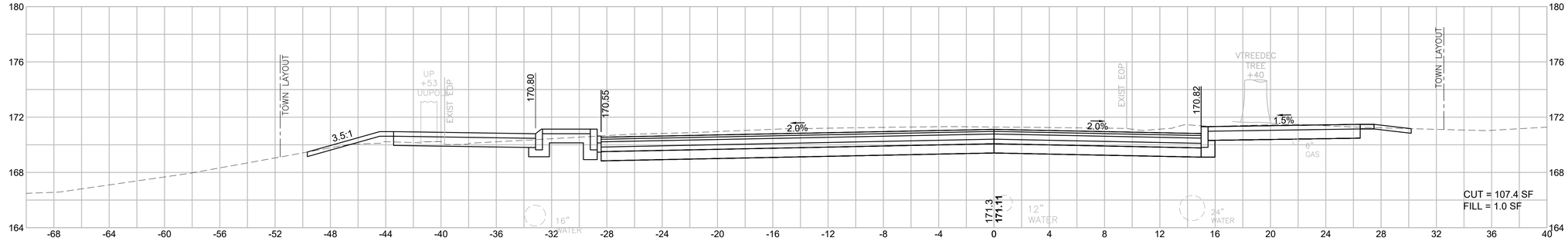
32+00



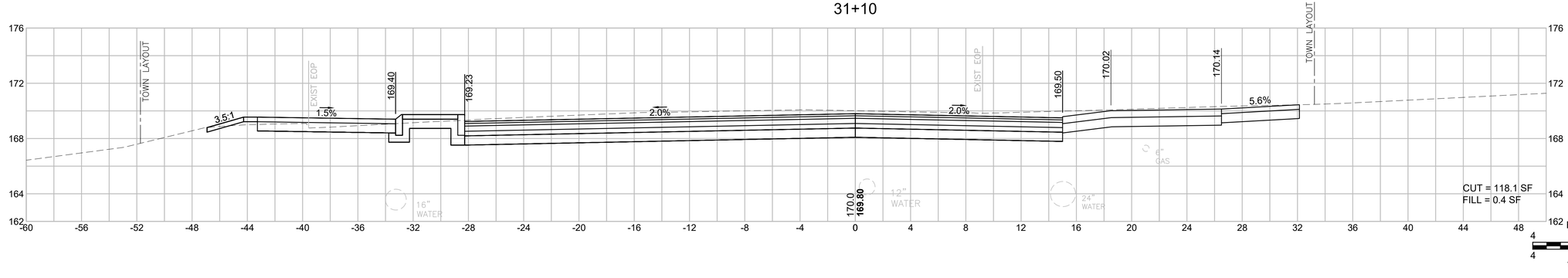
31+60



31+50



31+10



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

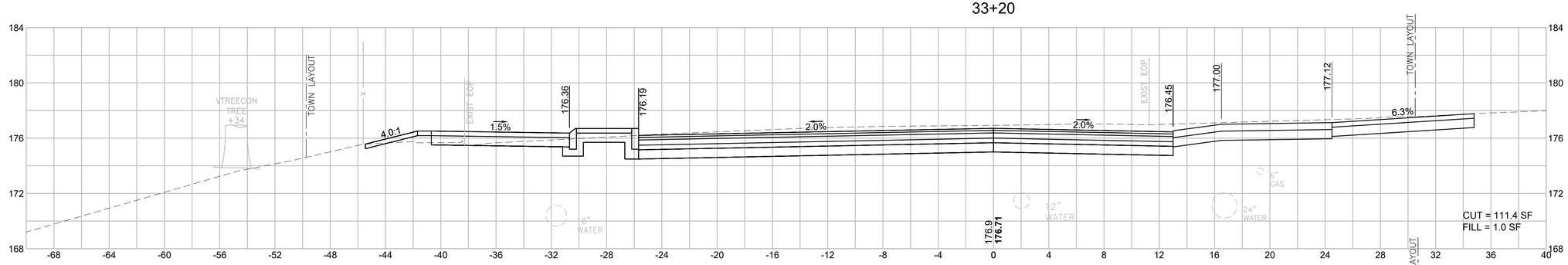
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	114	140
PROJECT FILE NO.	605178		

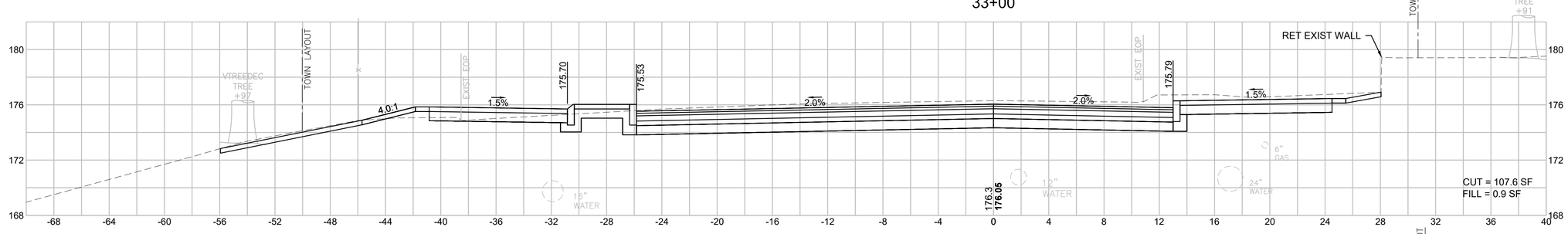
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:33 PM

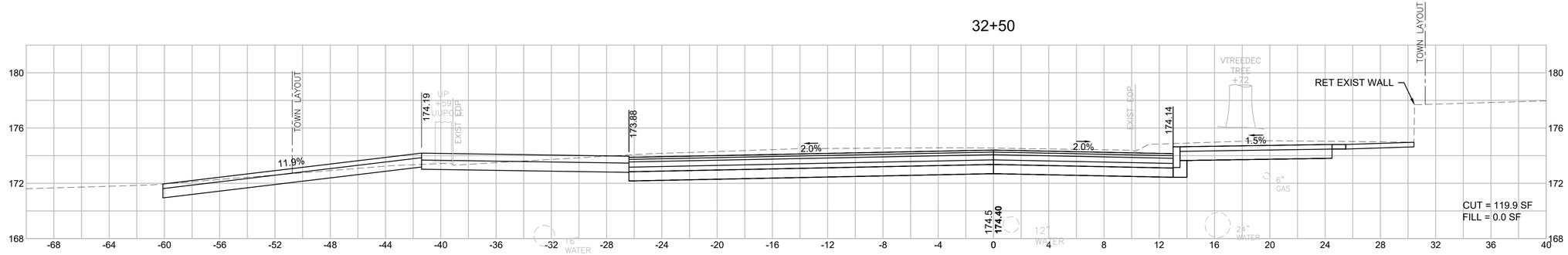
33+20



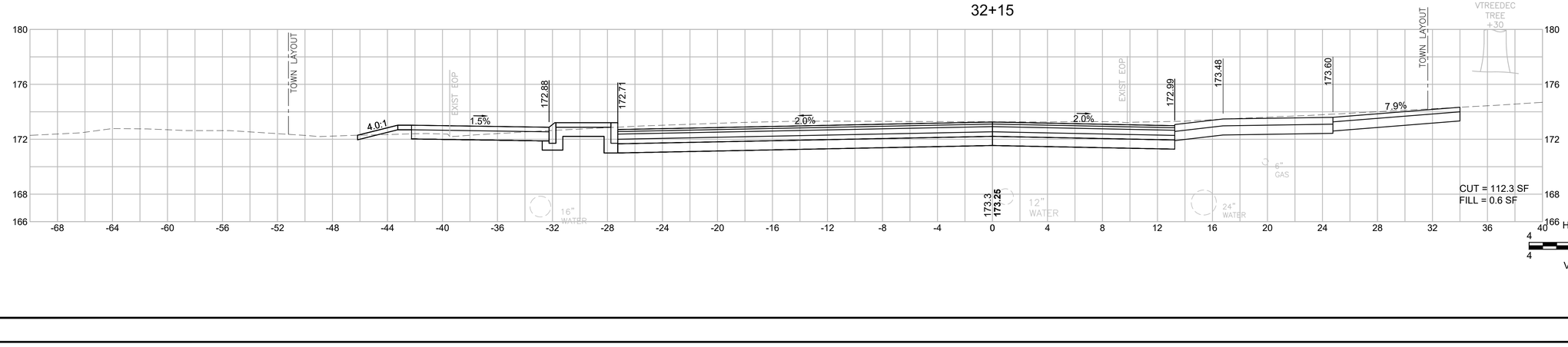
33+00



32+50



32+15



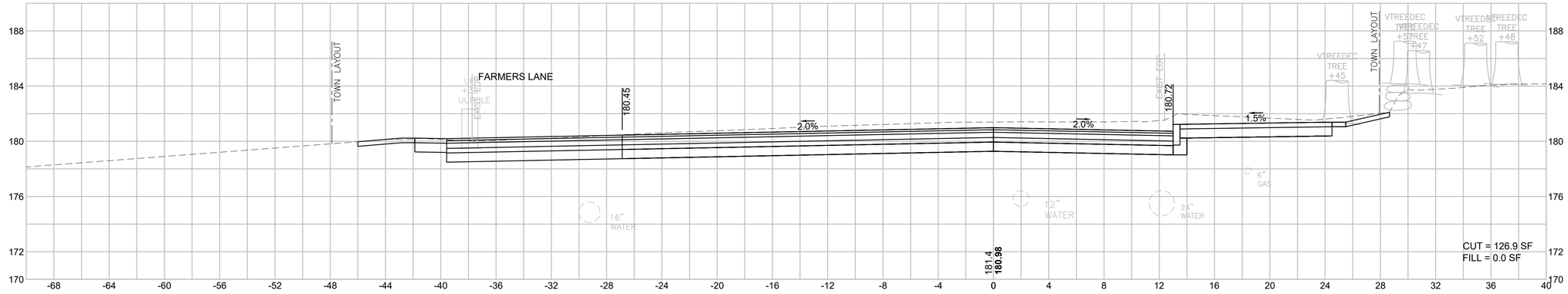
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	115	140
PROJECT FILE NO.	605178		

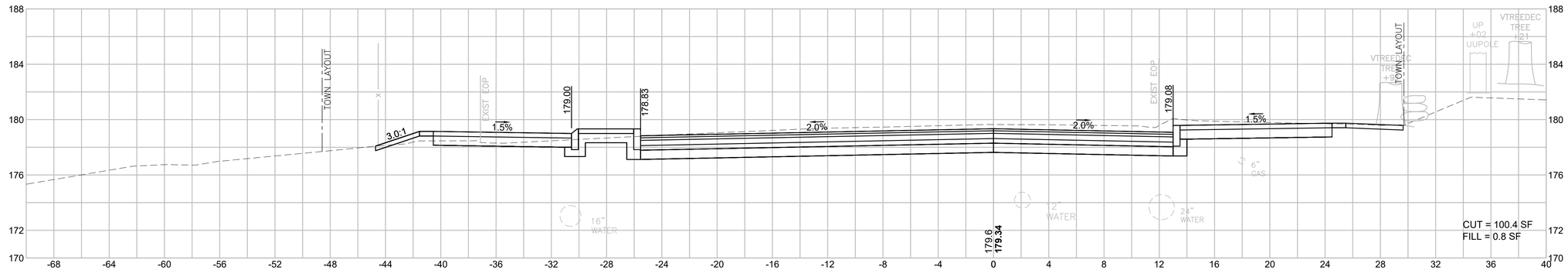
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:33 PM

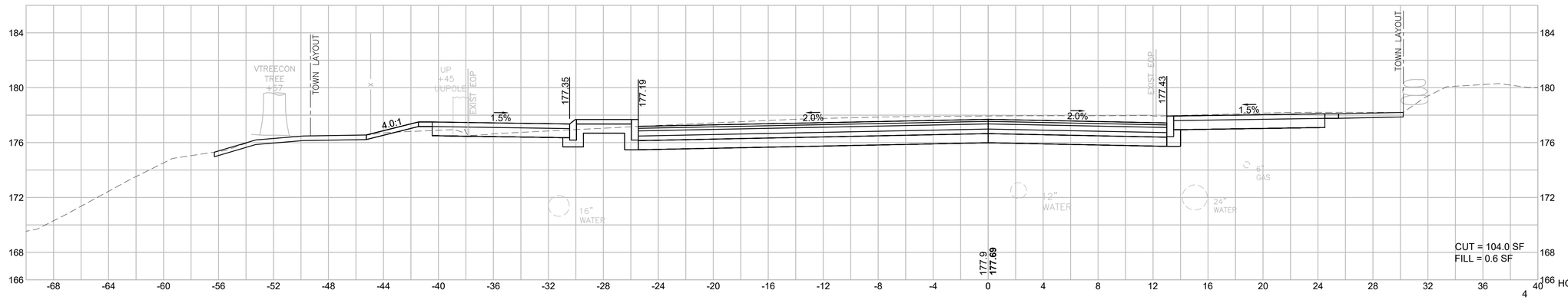
34+50



34+00



33+50



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

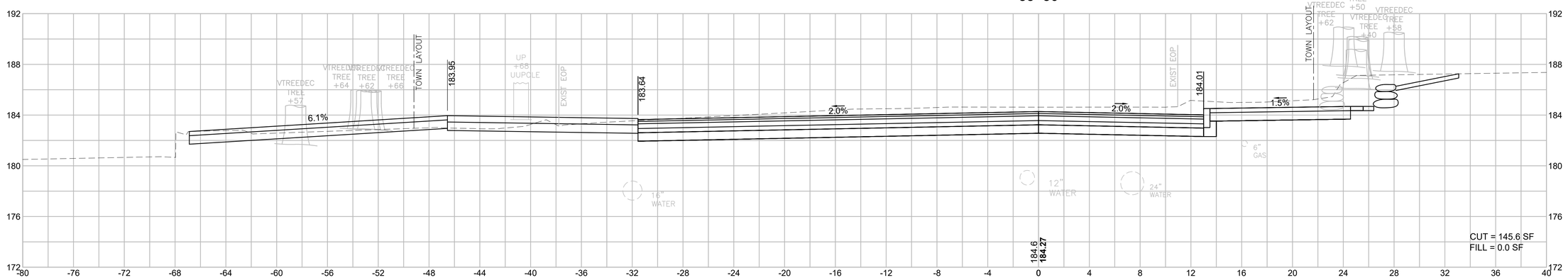
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	116	140
PROJECT FILE NO.	605178		

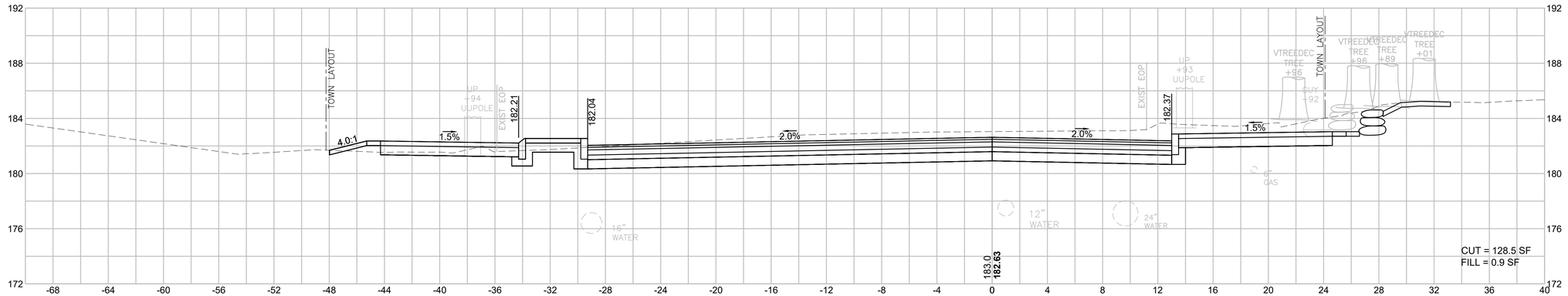
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:34 PM

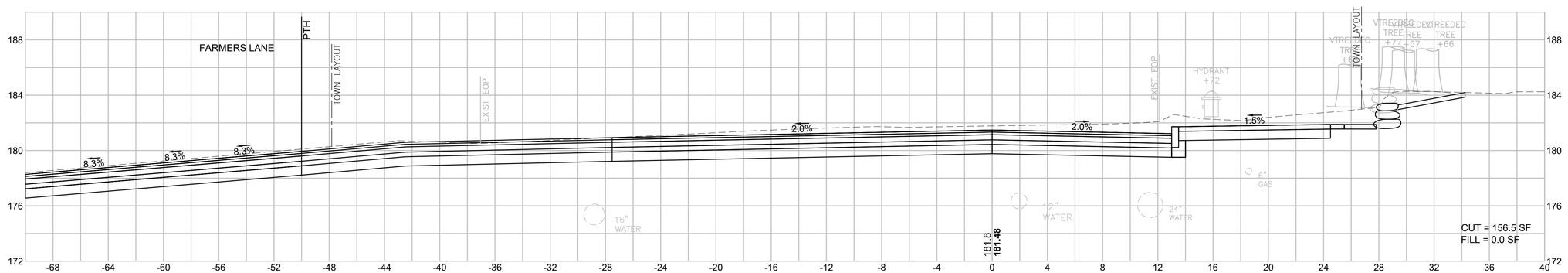
35+50



35+00



34+65



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

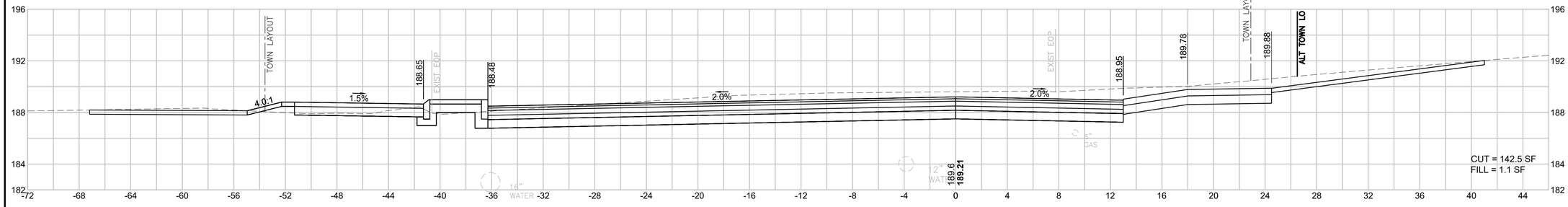
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	117	140
PROJECT FILE NO.	605178		

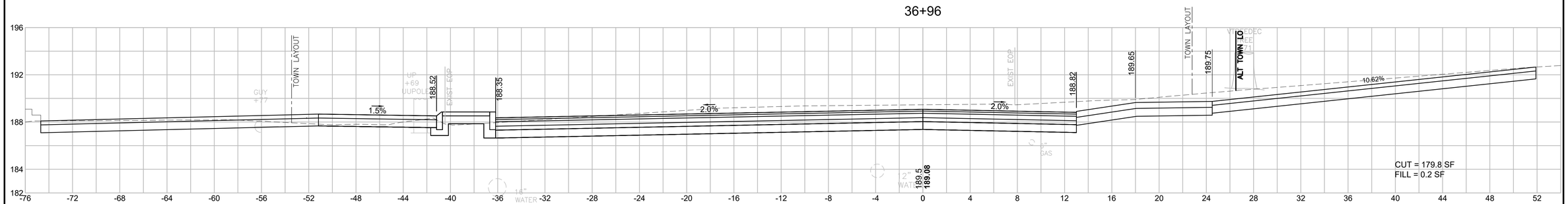
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:34 PM

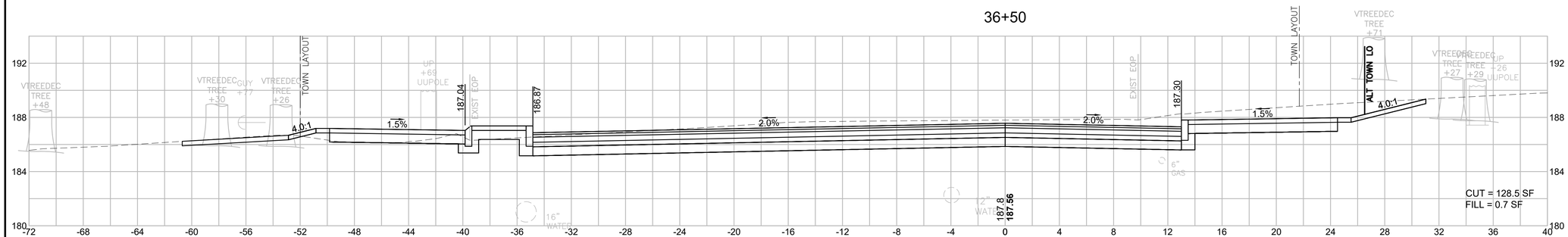
37+00



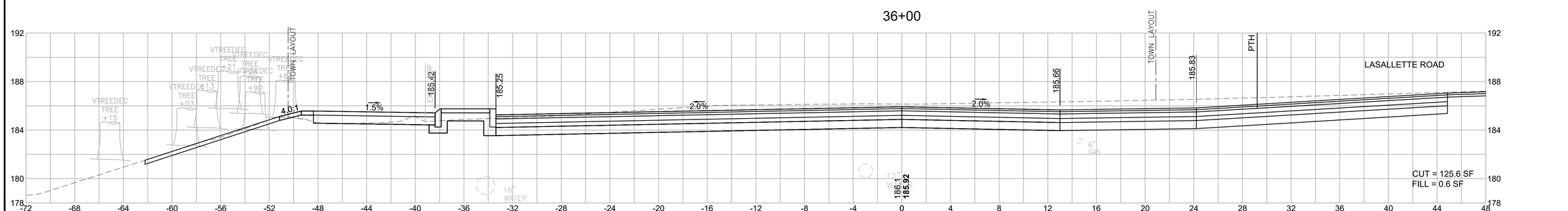
36+96



36+50



36+00



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

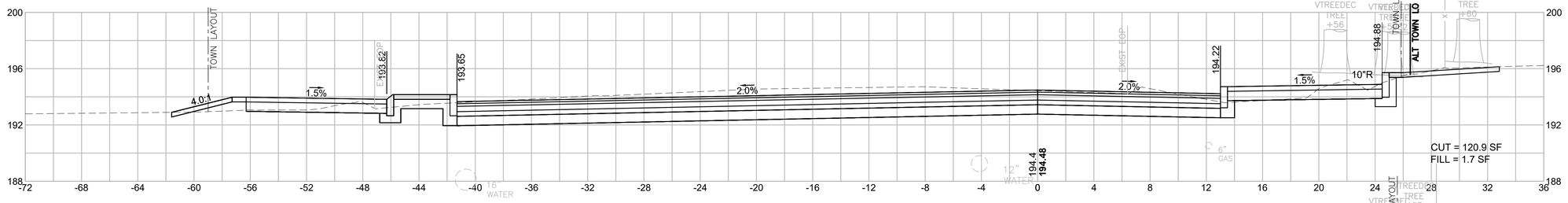
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	118	140
PROJECT FILE NO.	605178		

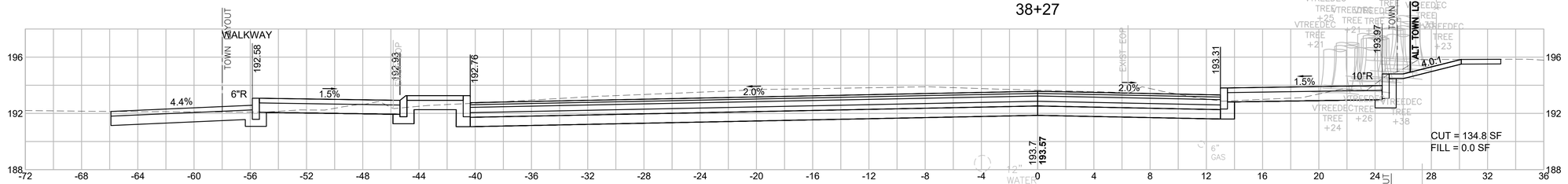
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:34 PM

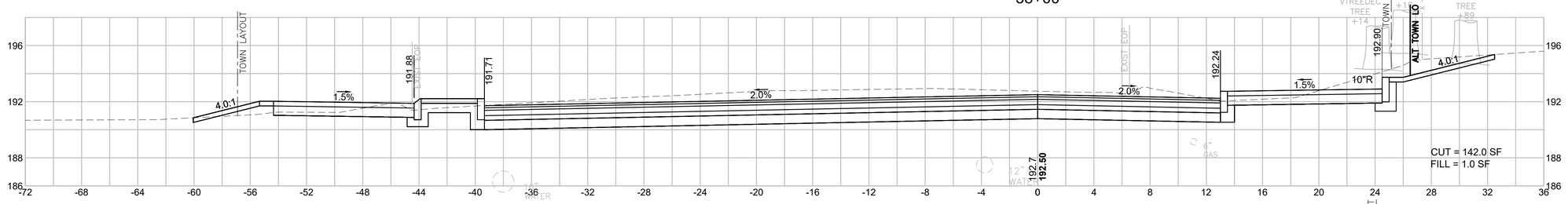
38+50



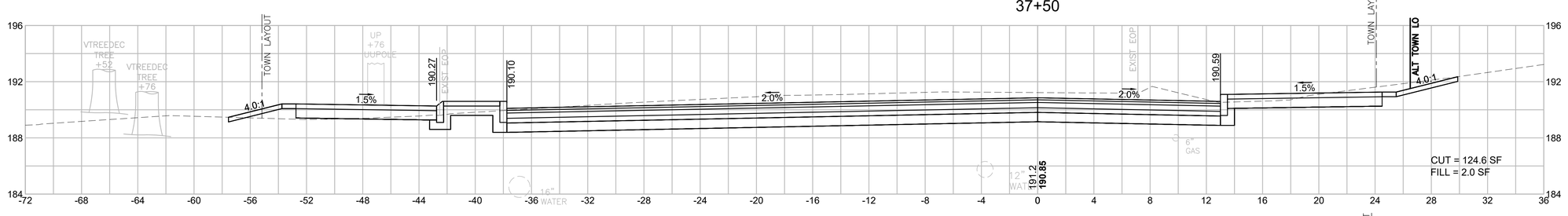
38+27



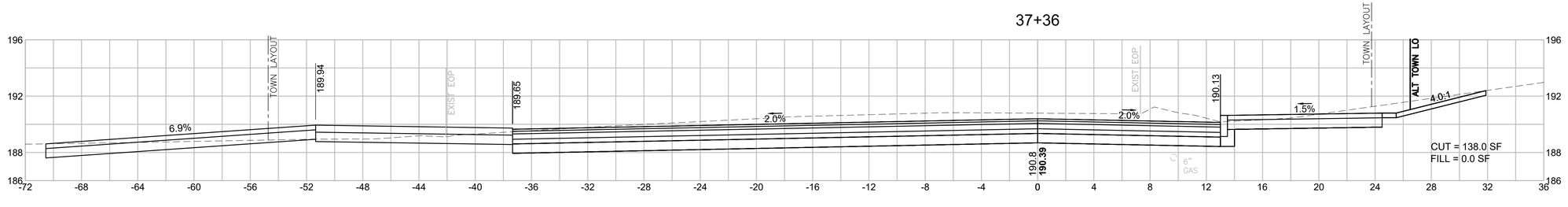
38+00



37+50



37+36



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

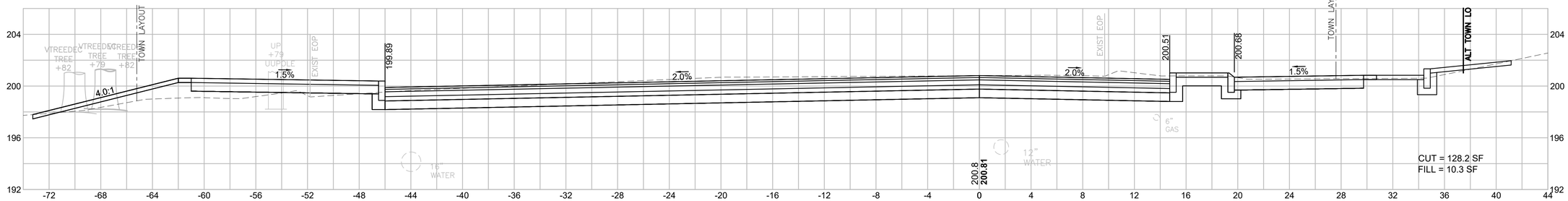
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	119	140
PROJECT FILE NO.	605178		

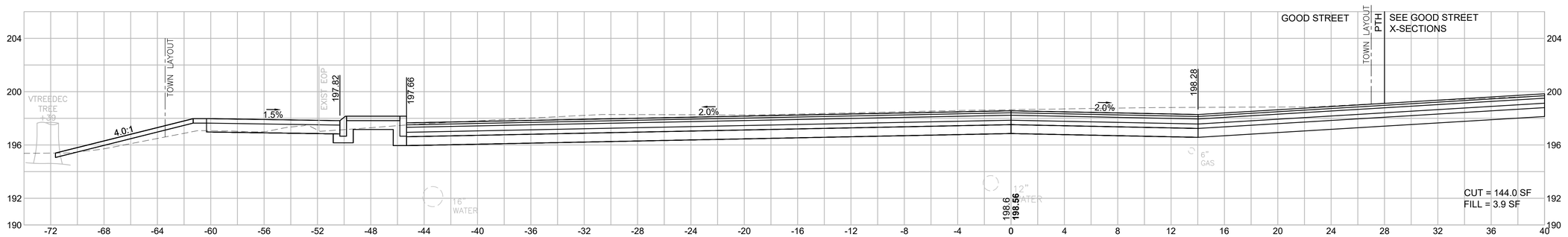
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

Plotted on 7-Mar-22 10:35 PM
605178_HD(4722_XS-3A).DWG

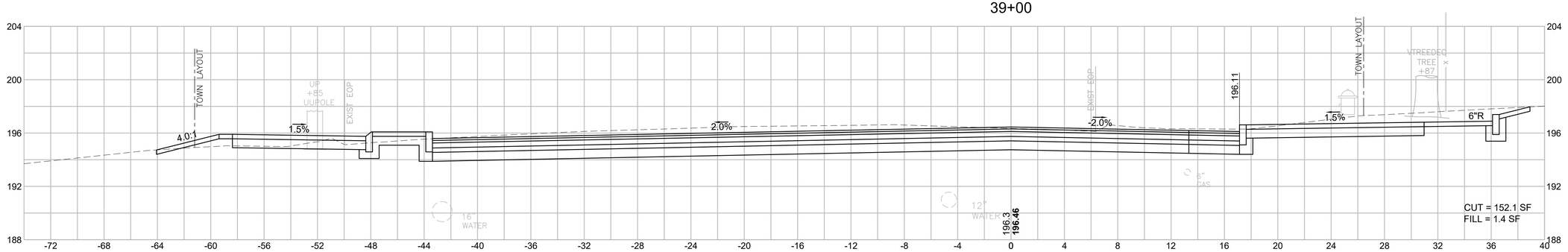
40+00



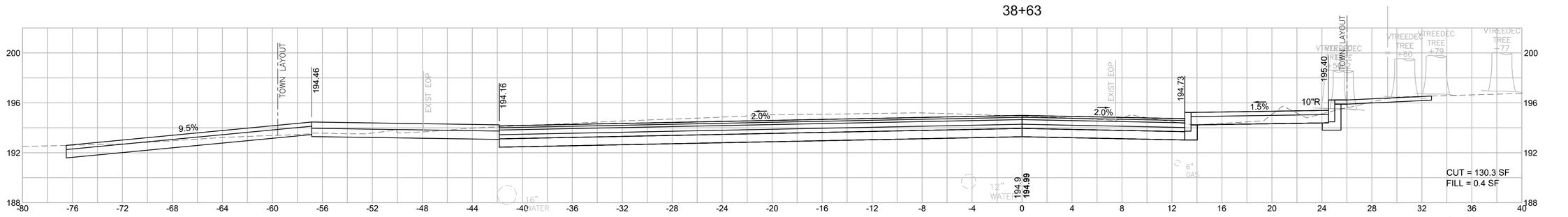
39+50



39+00



38+63



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

BILLERICA
BOSTON ROAD (ROUTE 3A)

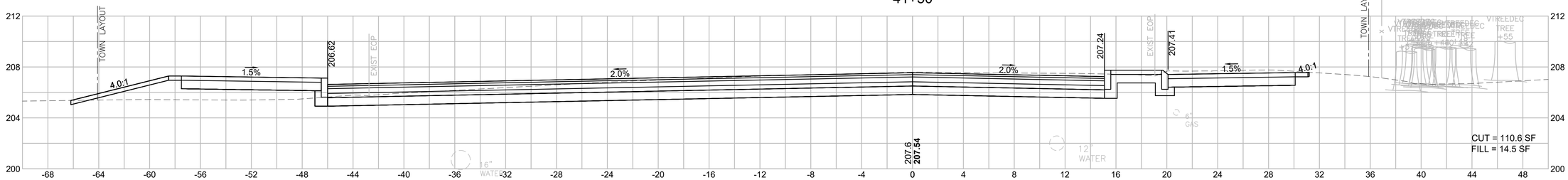
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	120	140
PROJECT FILE NO.	605178		

CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

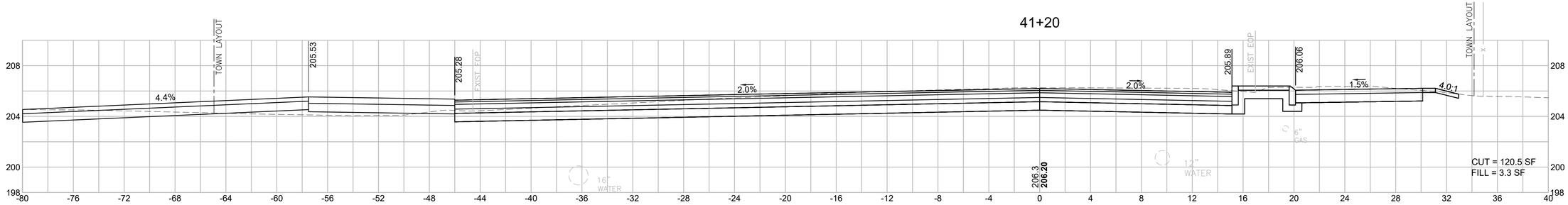
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

Plotted on 7-Mar-22 10:35 PM
605178_HD(4722_XS-3A).DWG

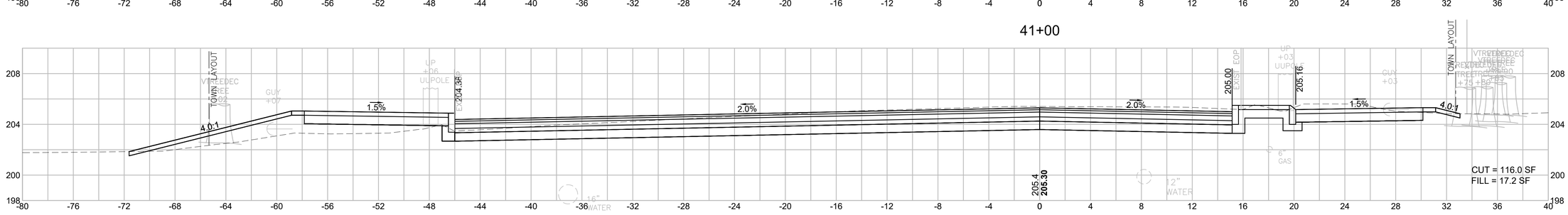
41+50



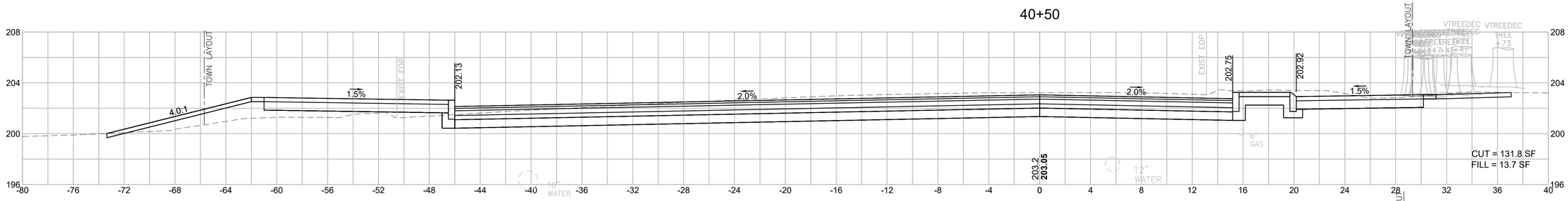
41+20



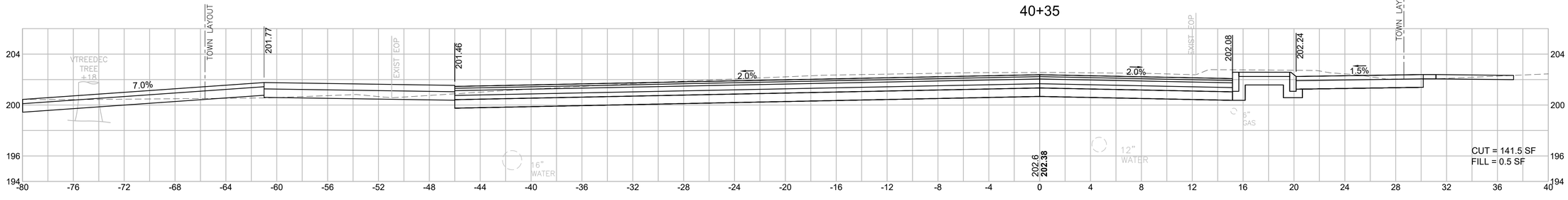
41+00



40+50



40+35



BILLERICA
BOSTON ROAD (ROUTE 3A)

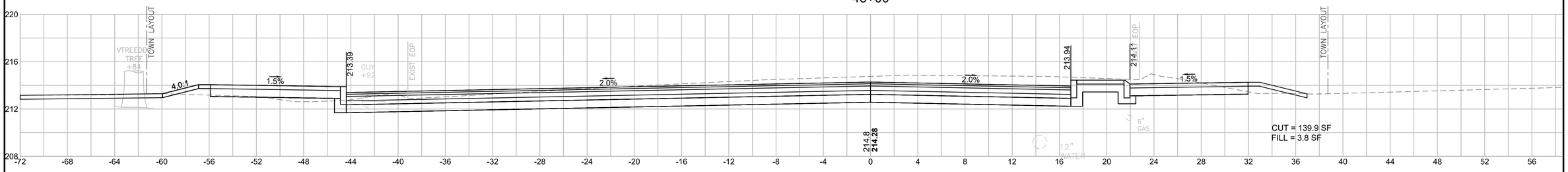
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	121	140
PROJECT FILE NO.	605178		

CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

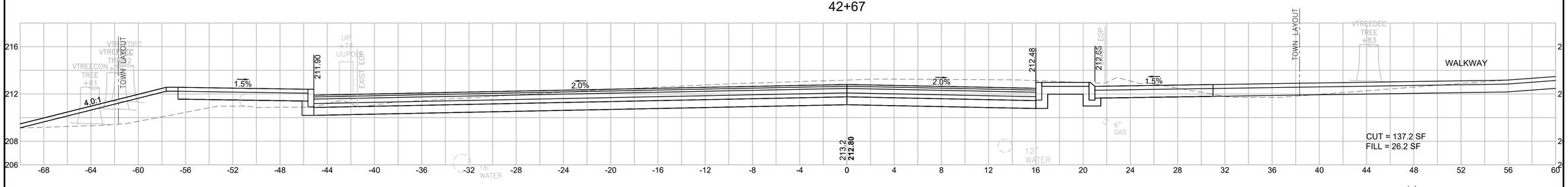
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

Plotted on 7-Mar-22 10:35 PM
605178_HD(4722_XS-3A).DWG

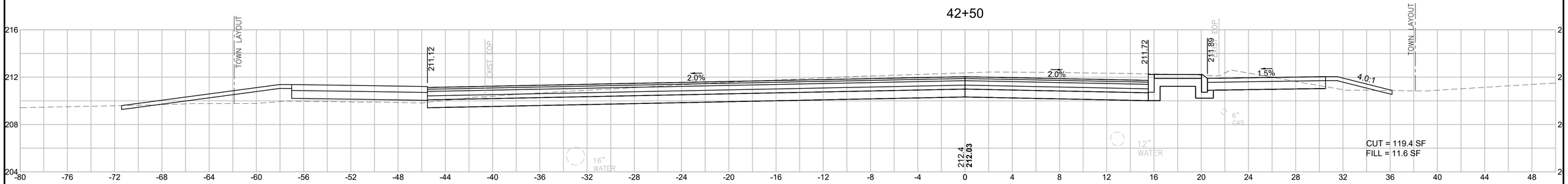
43+00



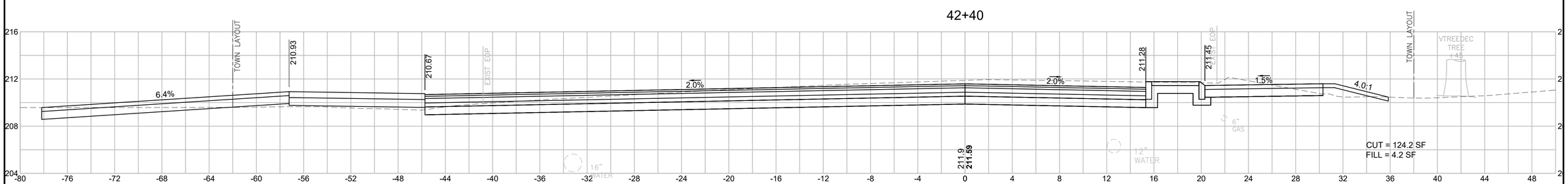
42+67



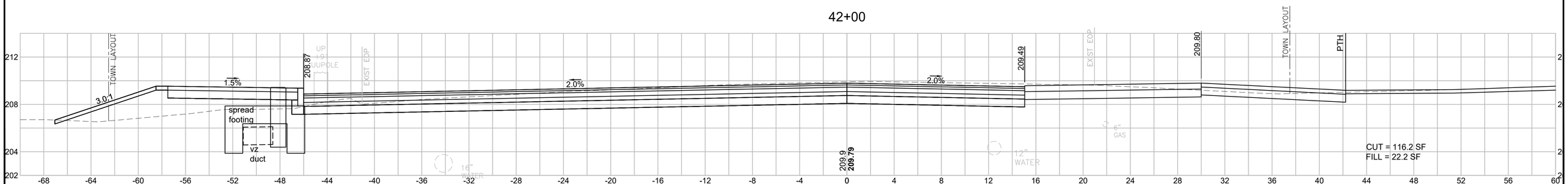
42+50



42+40



42+00



BILLERICA
BOSTON ROAD (ROUTE 3A)

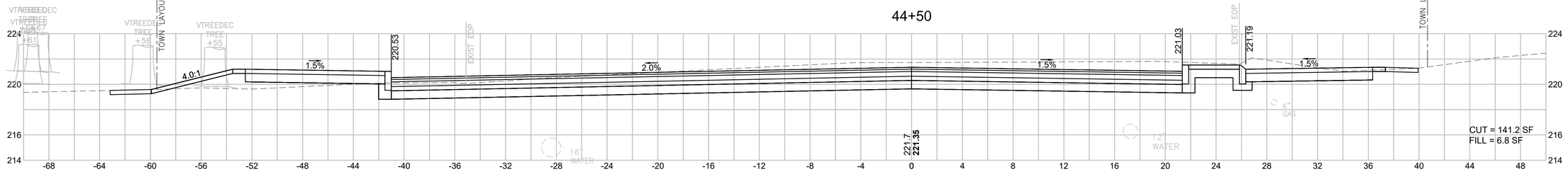
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	122	140
PROJECT FILE NO.	605178		

CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

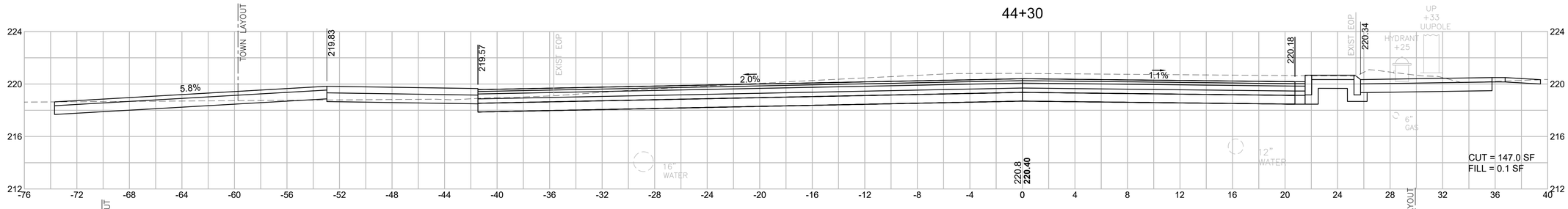
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

605178_HD(4722_XS-3A).DWG Plotted on 7-Mar-22 10:36 PM

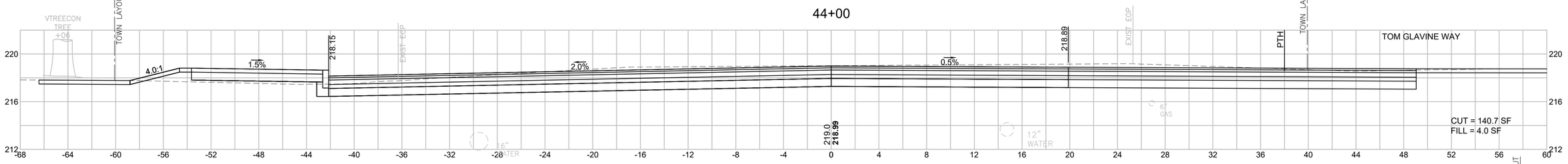
44+50



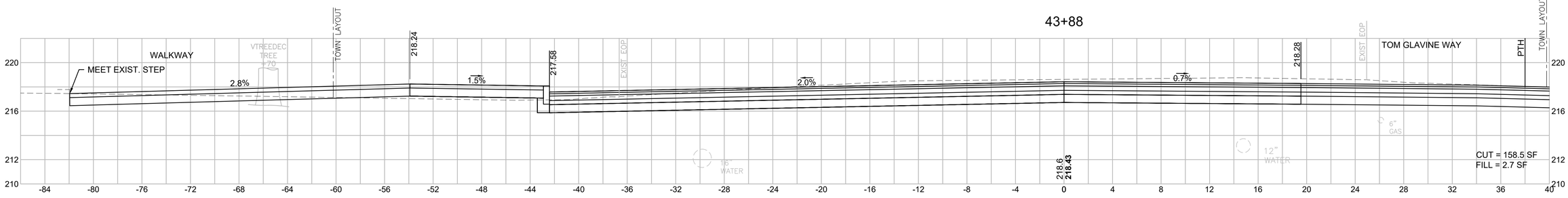
44+30



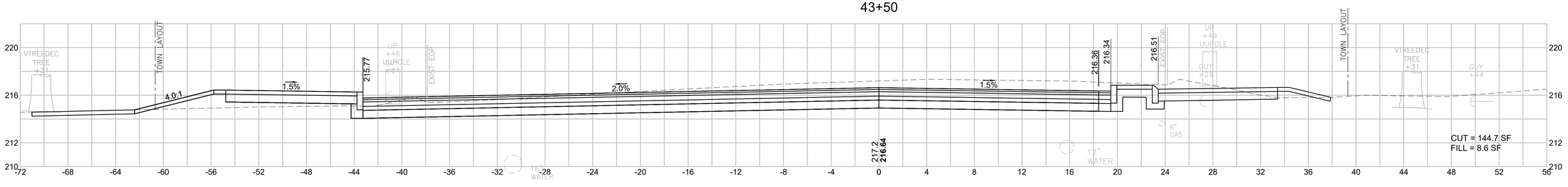
44+00



43+88



43+50

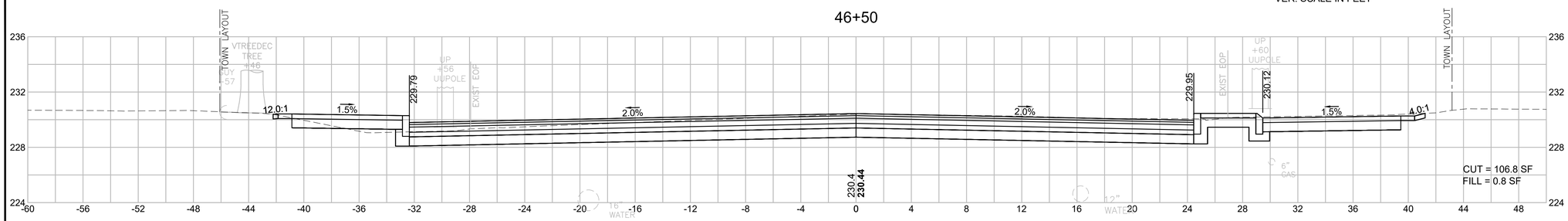


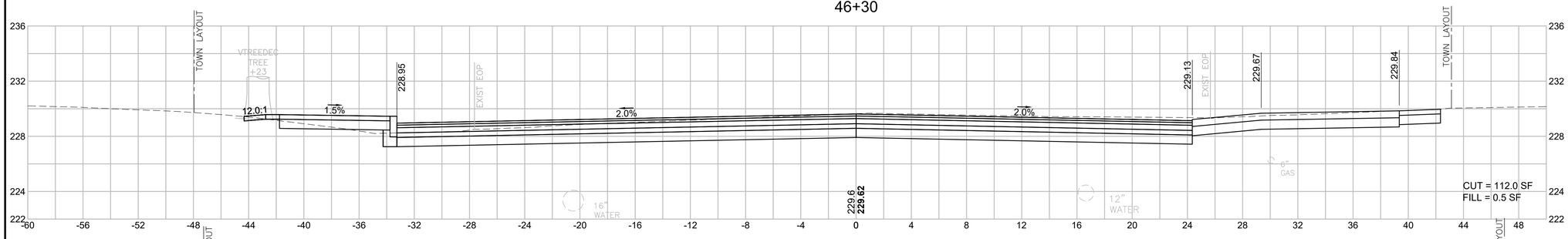
BILLERICA
BOSTON ROAD (ROUTE 3A)

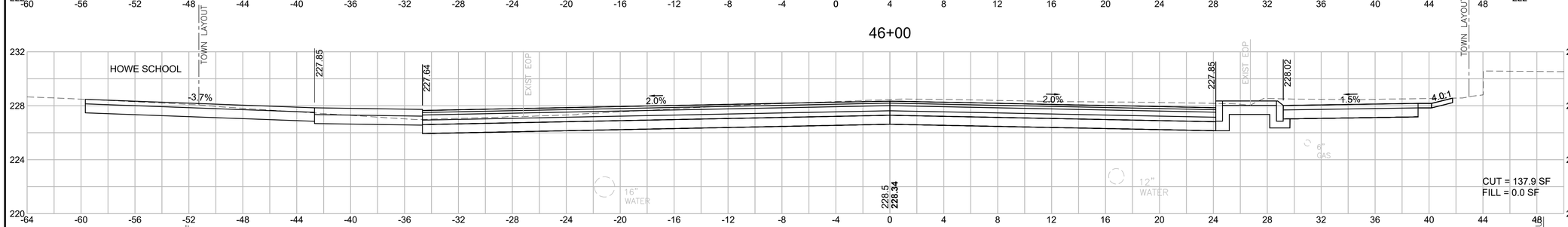
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	123	140
PROJECT FILE NO.	605178		

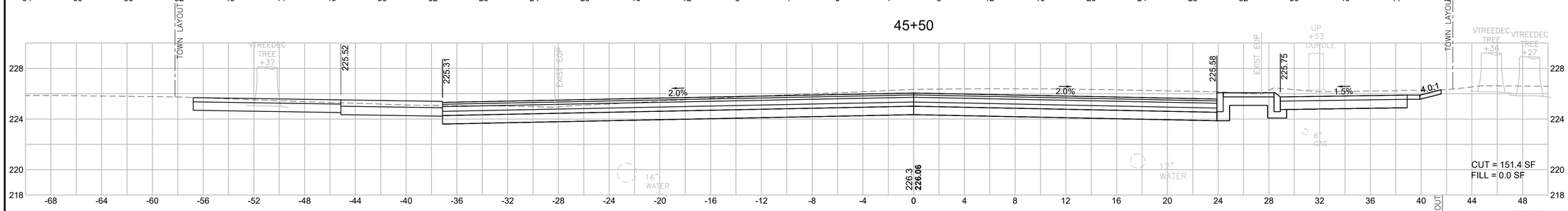
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

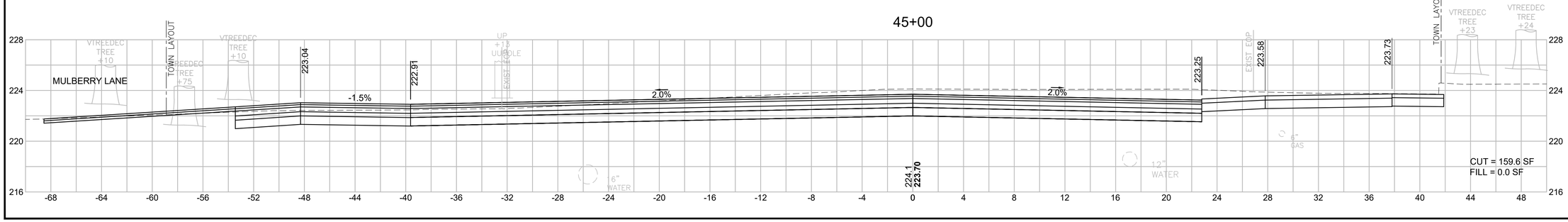
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8











605178_HD(4722_XS-3A).DWG Plotted on 3-Mar-22 1:52 PM

BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	124	140
PROJECT FILE NO.	605178		

CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

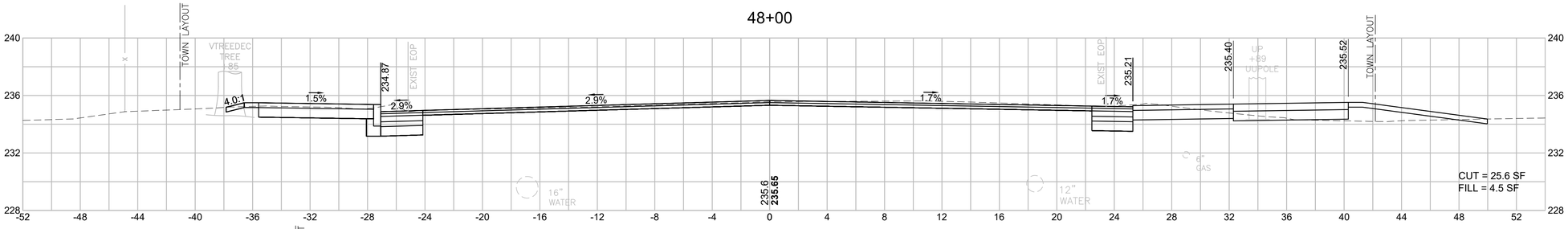
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

605178_HD(4722_XS-3A).DWG Plotted on 3-Mar-22 1:55 PM

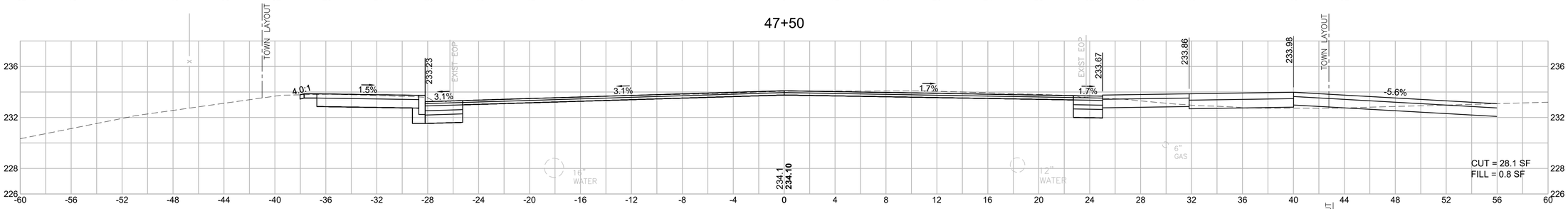
48+13



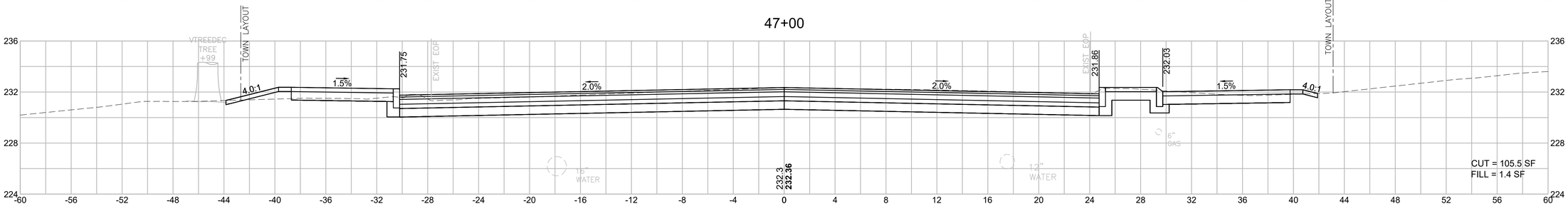
48+00



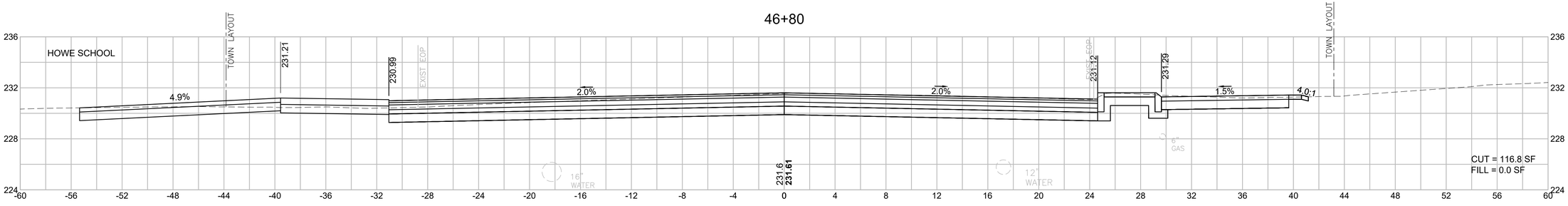
47+50



47+00



46+80



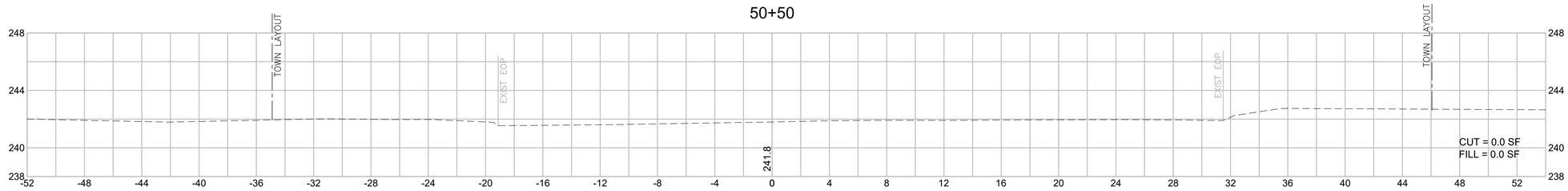
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	125	140
PROJECT FILE NO.	605178		

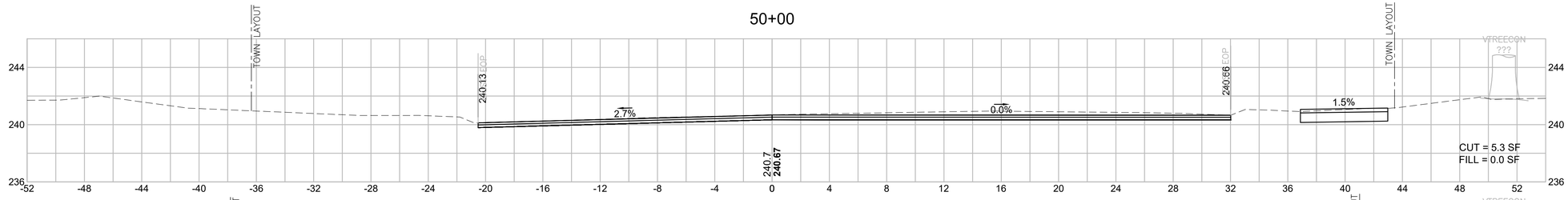
CROSS SECTIONS
BOSTON ROAD (ROUTE 3A)

605178_HD(4722_XS-3A).DWG Plotted on 3-Mar-22 1:57 PM

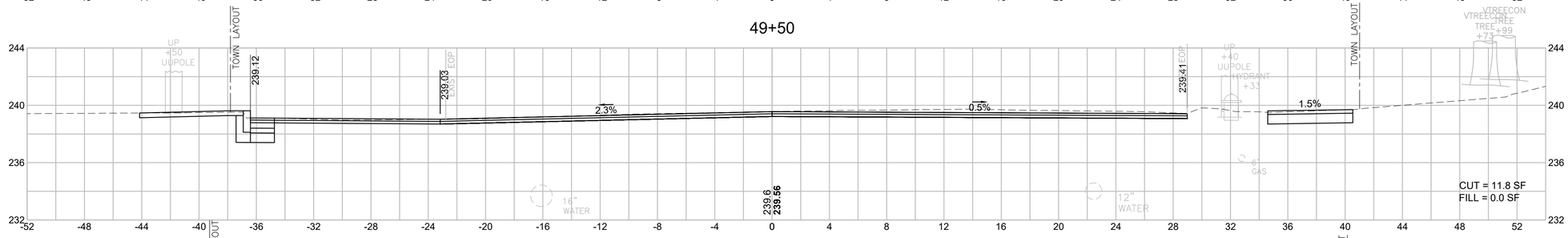
50+50



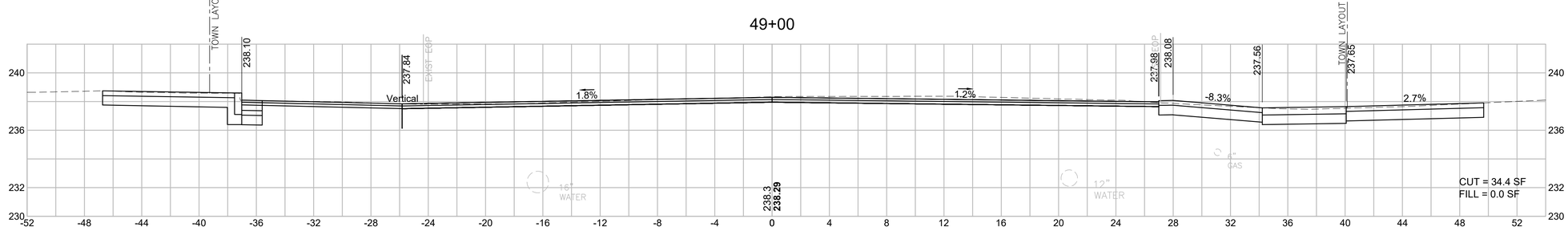
50+00



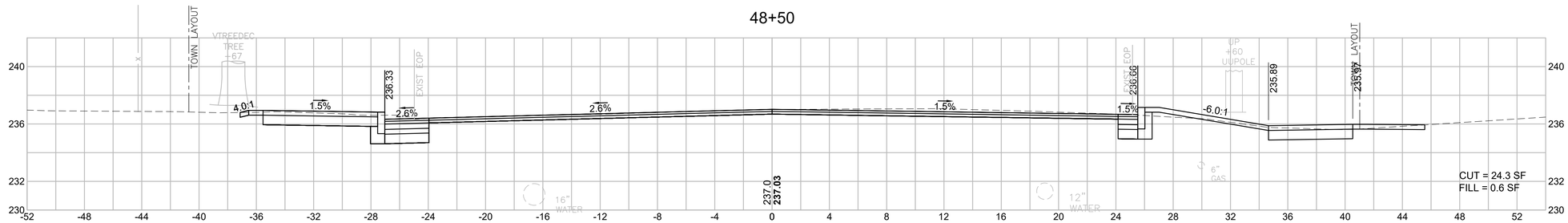
49+50



49+00



48+50



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

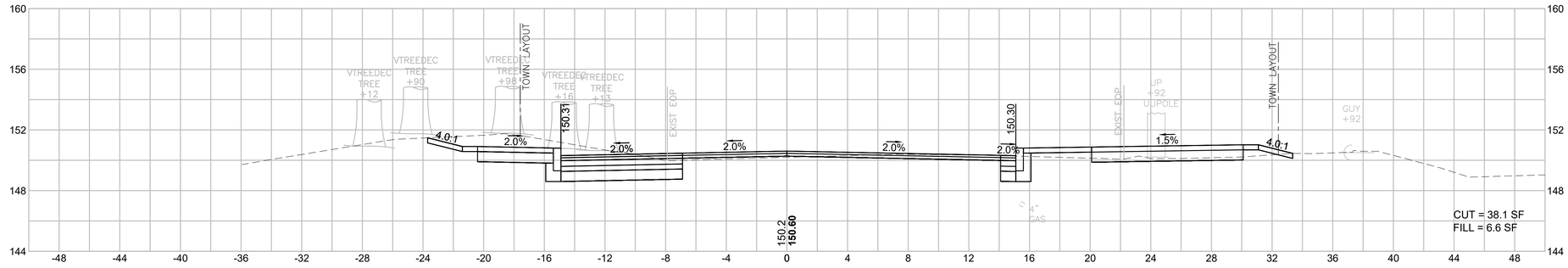
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	126	140
PROJECT FILE NO.	605178		

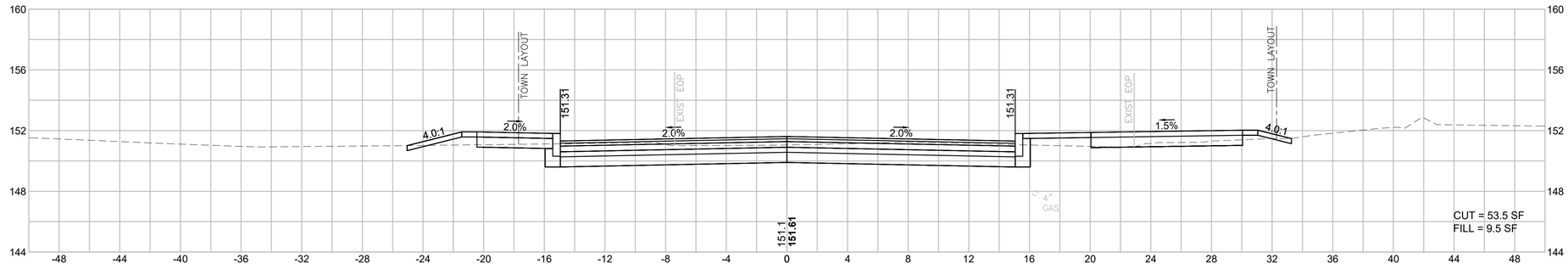
CROSS SECTIONS
HERITAGE ROAD

605178_HDI\4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:41 PM

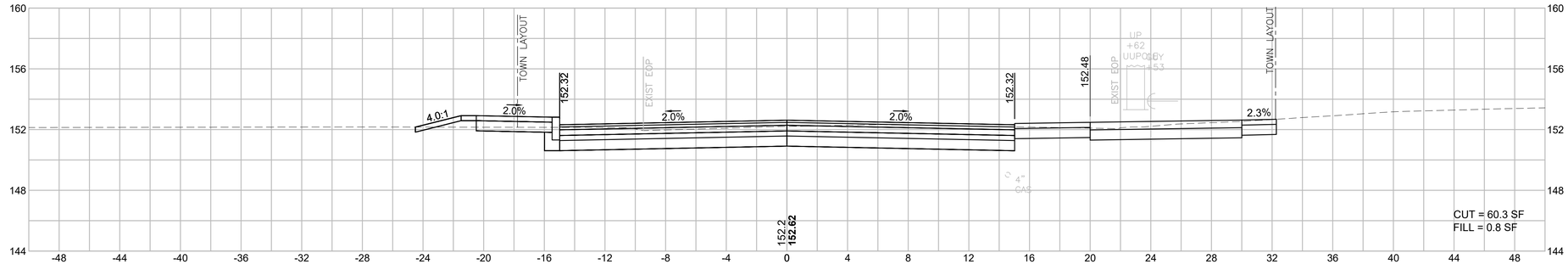
52+00



51+50



51+00



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

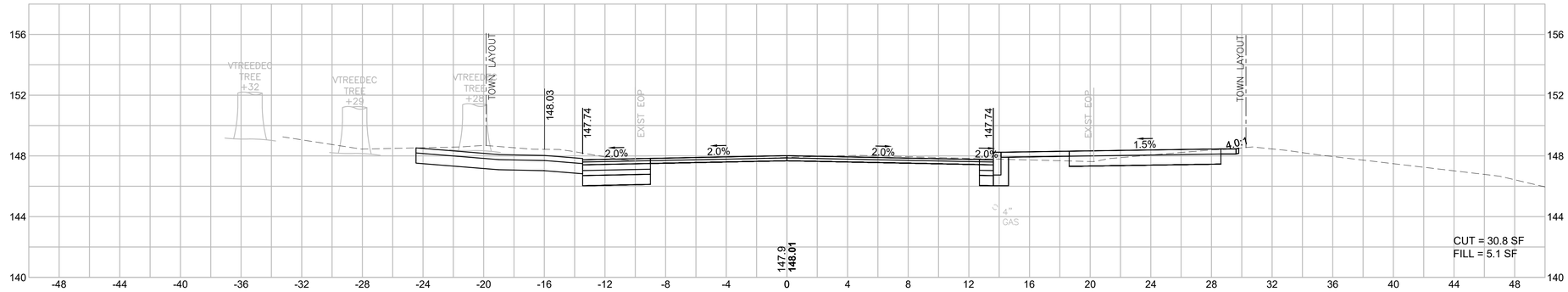
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	127	140
PROJECT FILE NO.	605178		

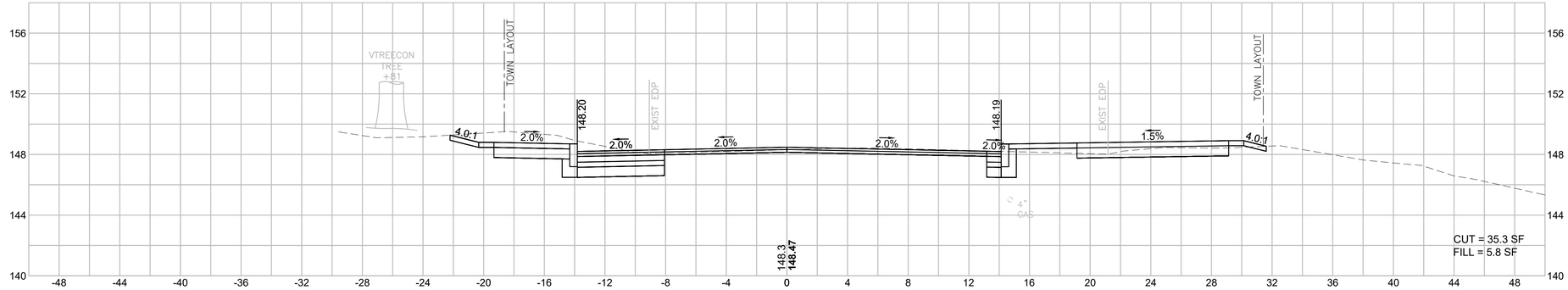
CROSS SECTIONS
HERITAGE ROAD

605178_HD\4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:41 PM

53+20



53+00



52+50



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

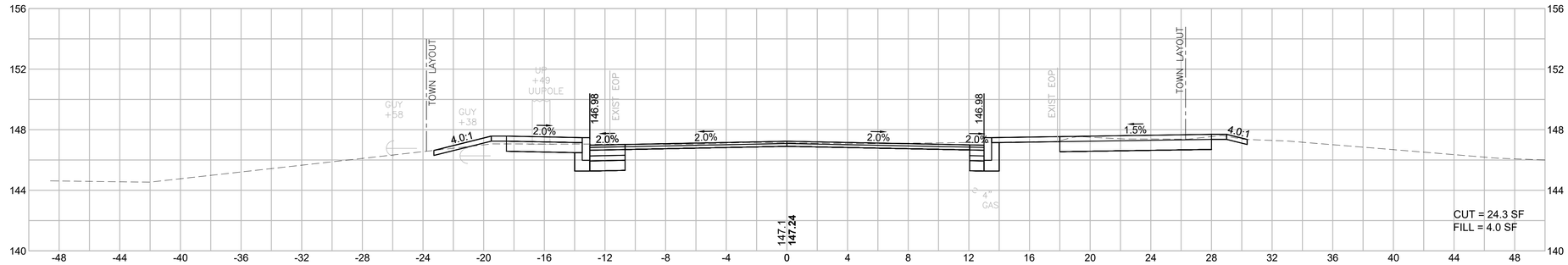
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	128	140
PROJECT FILE NO.	605178		

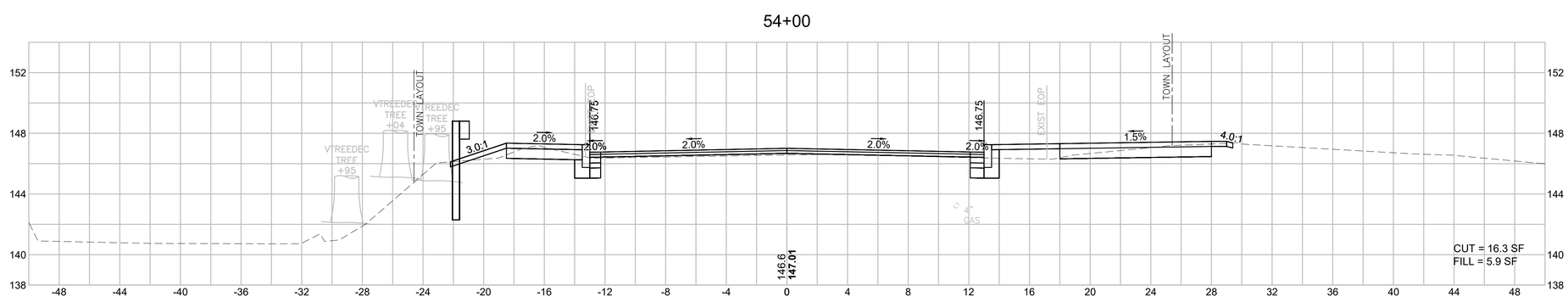
CROSS SECTIONS
HERITAGE ROAD

605178_HD\4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:41 PM

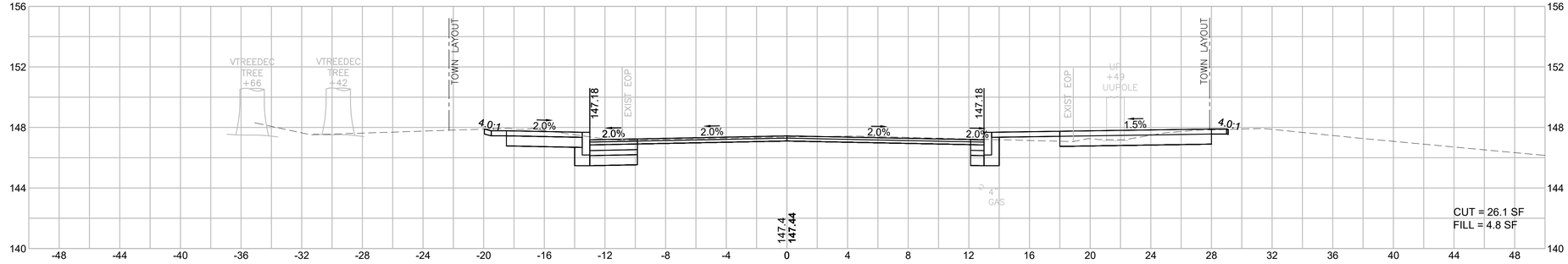
54+50



54+00



53+50



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

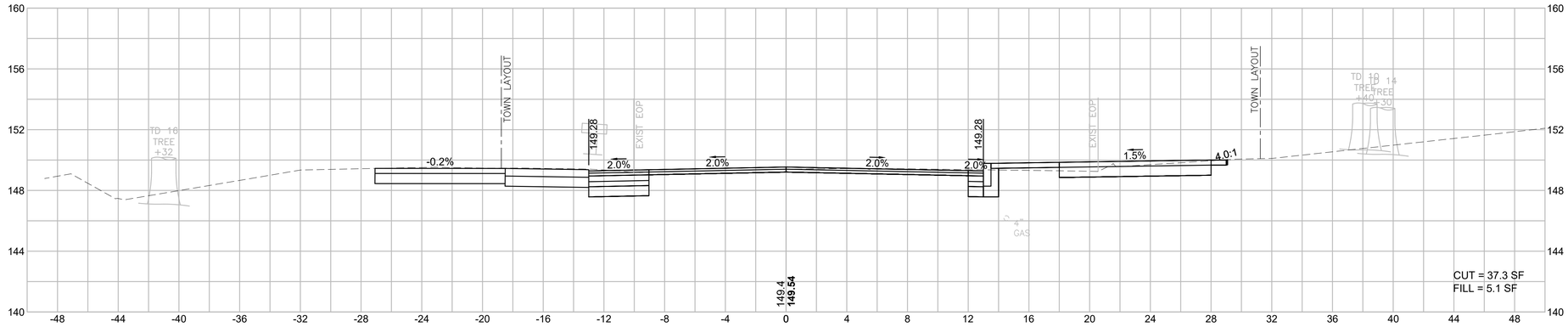
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	129	140
PROJECT FILE NO.	605178		

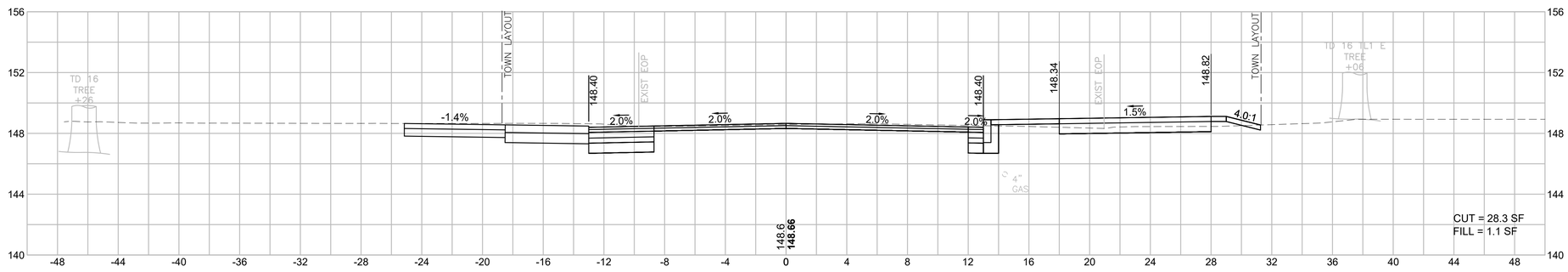
CROSS SECTIONS
HERITAGE ROAD

605178_HD\4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:42 PM

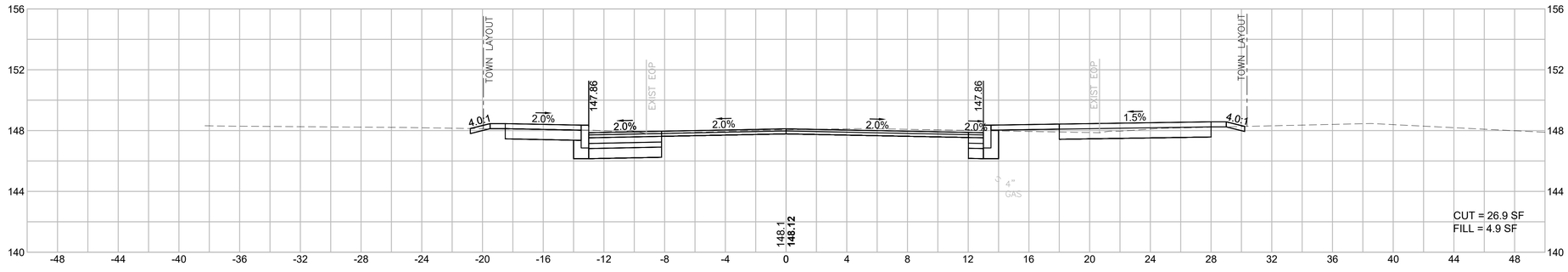
55+50



55+20



55+00



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

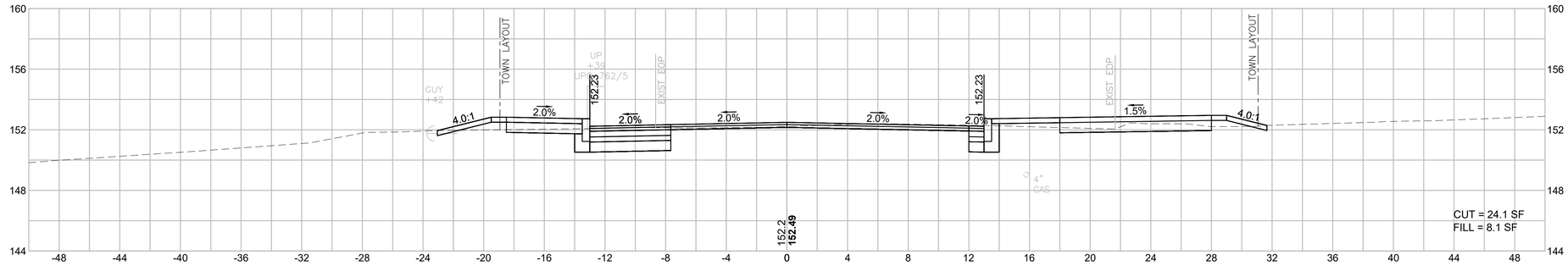
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	130	140
PROJECT FILE NO.	605178		

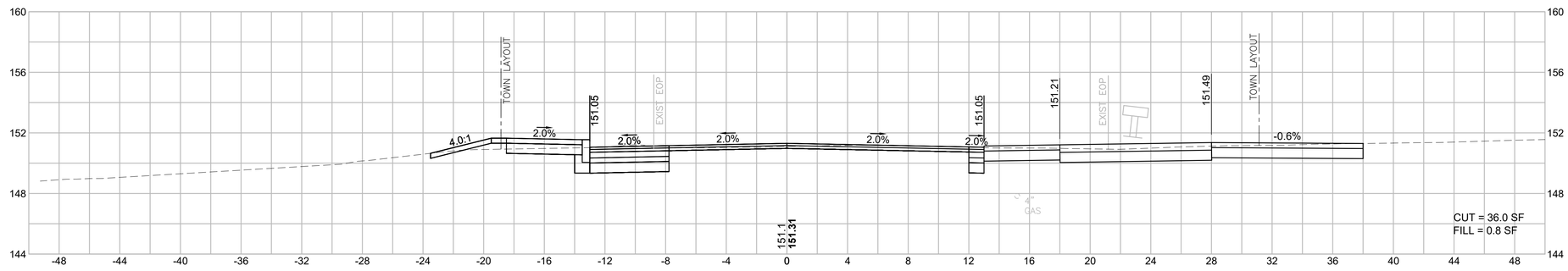
CROSS SECTIONS
HERITAGE ROAD

605178_HD\4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:42 PM

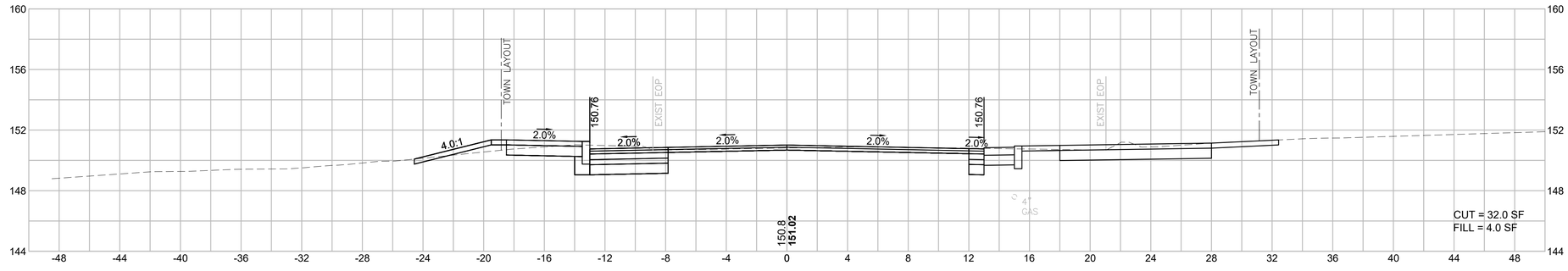
56+50



56+10



56+00



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

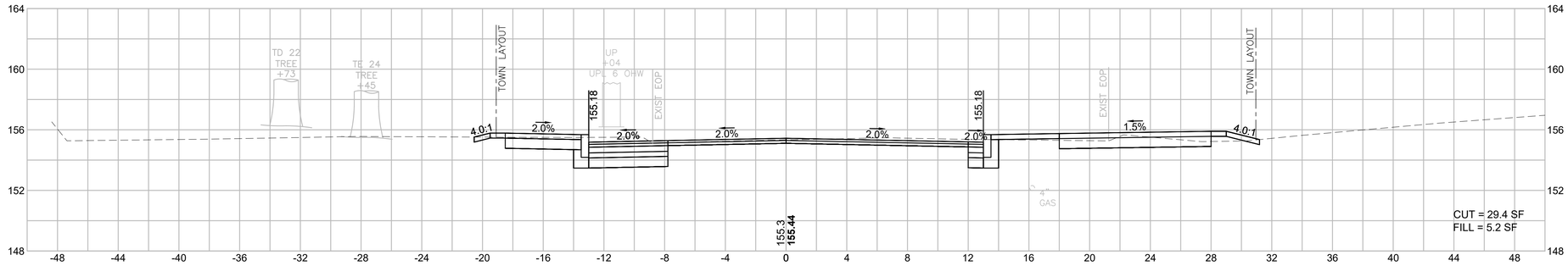
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	131	140
PROJECT FILE NO.	605178		

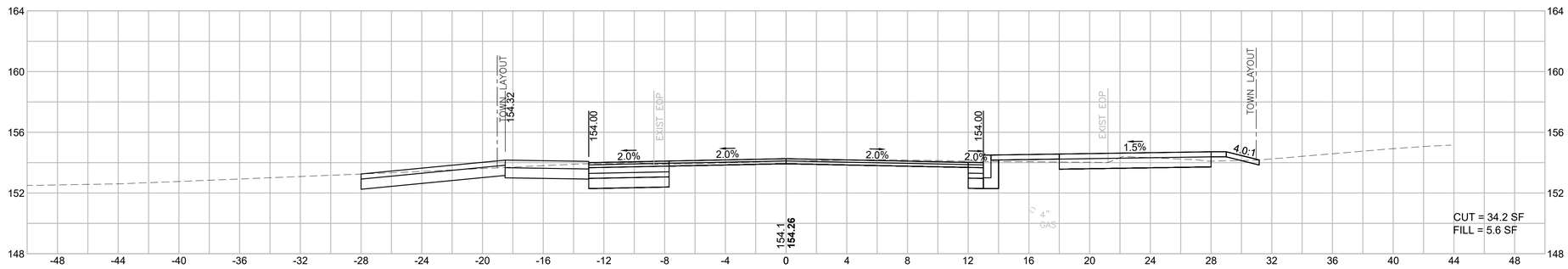
CROSS SECTIONS
HERITAGE ROAD

605178_HDJ4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:42 PM

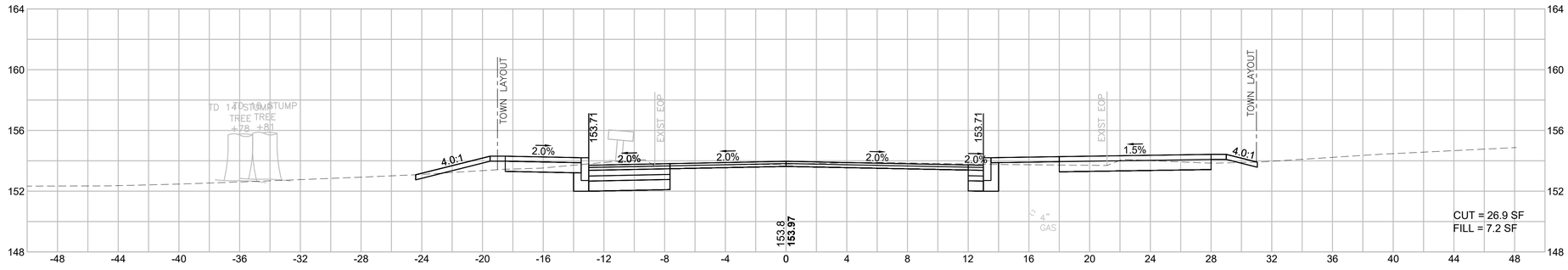
57+50



57+10



57+00



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

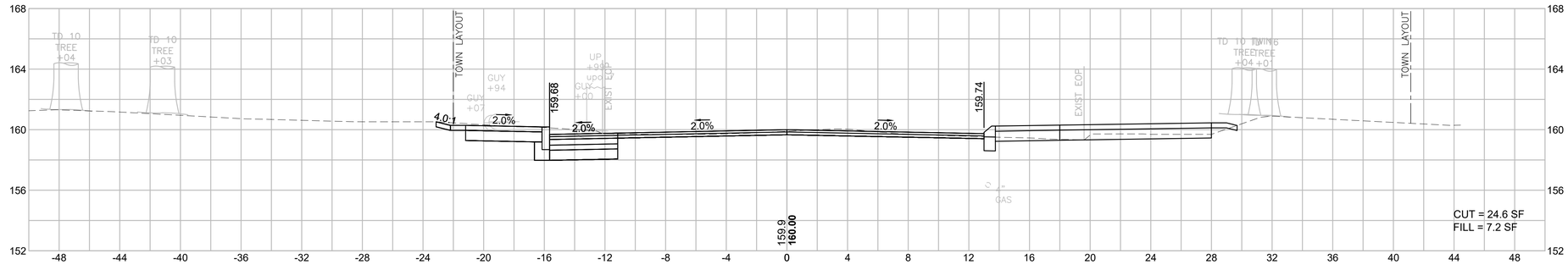
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	132	140
PROJECT FILE NO.	605178		

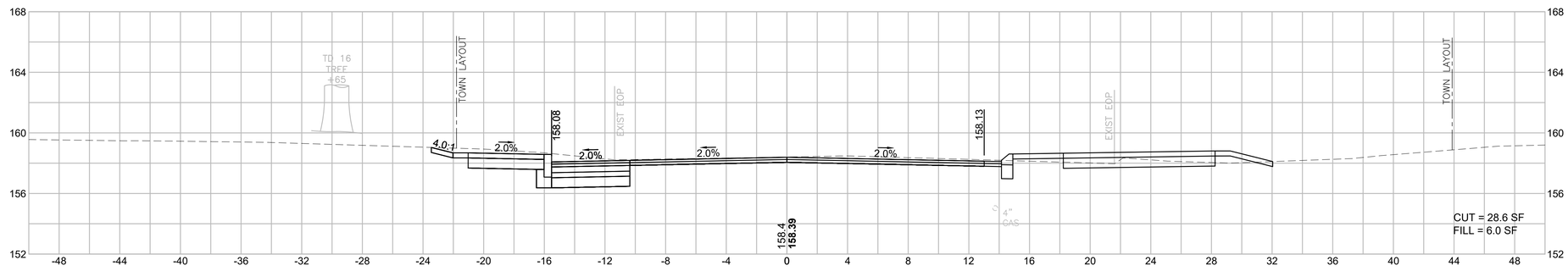
CROSS SECTIONS
HERITAGE ROAD

605178_HD\4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:43 PM

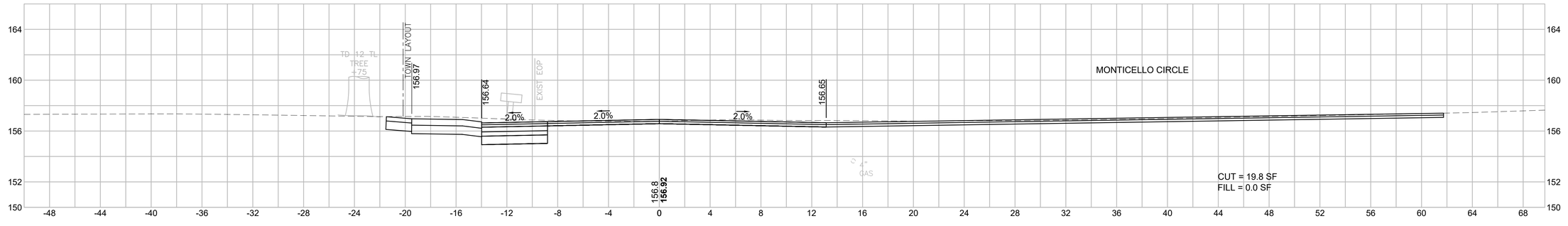
59+00



58+50



58+00



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

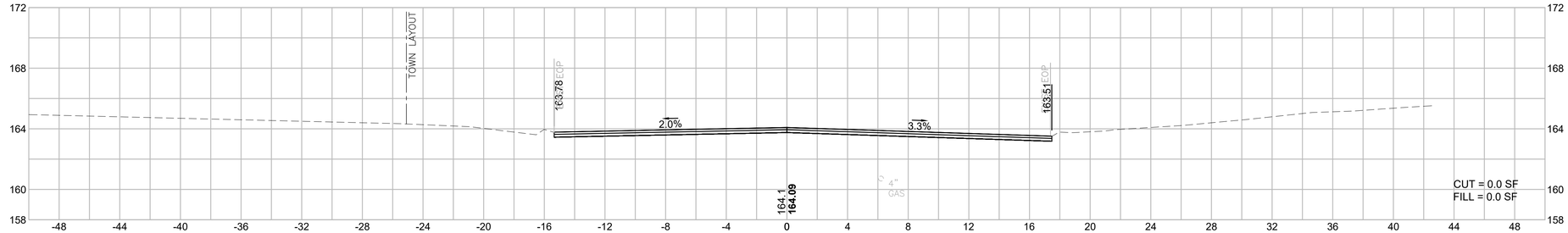
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	133	140
PROJECT FILE NO.	605178		

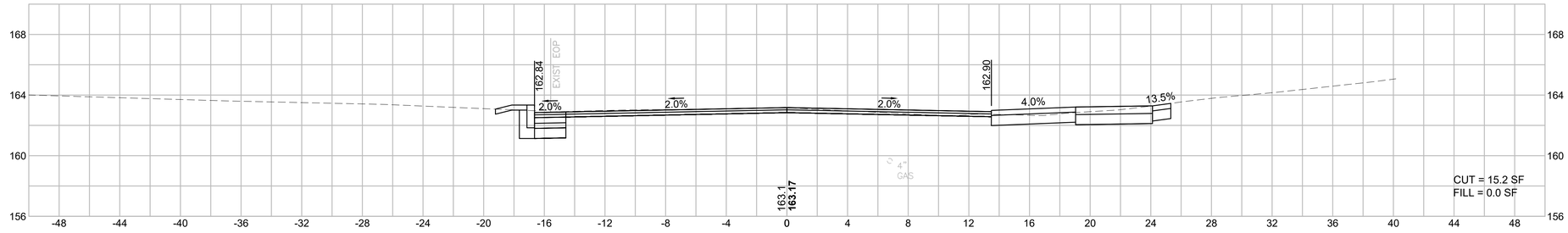
CROSS SECTIONS
HERITAGE ROAD

605178_HD\4722_XS-SIDESTREET(S).DWG Plotted on 7-Mar-22 10:43 PM

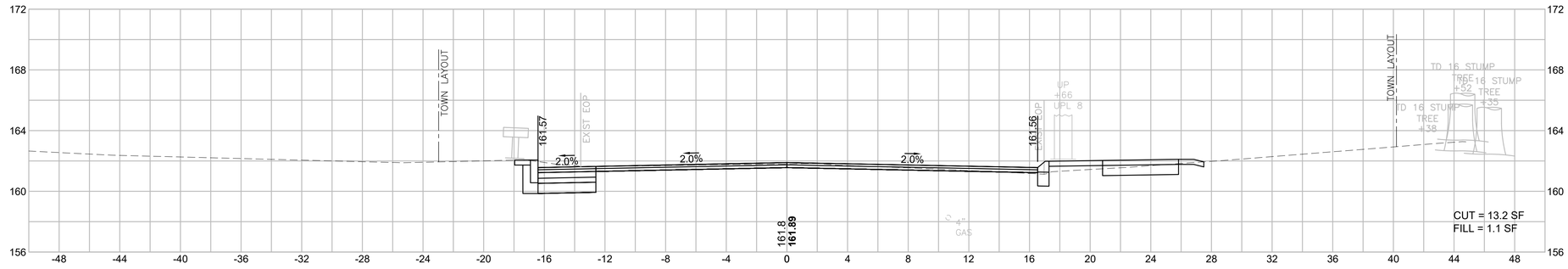
60+00



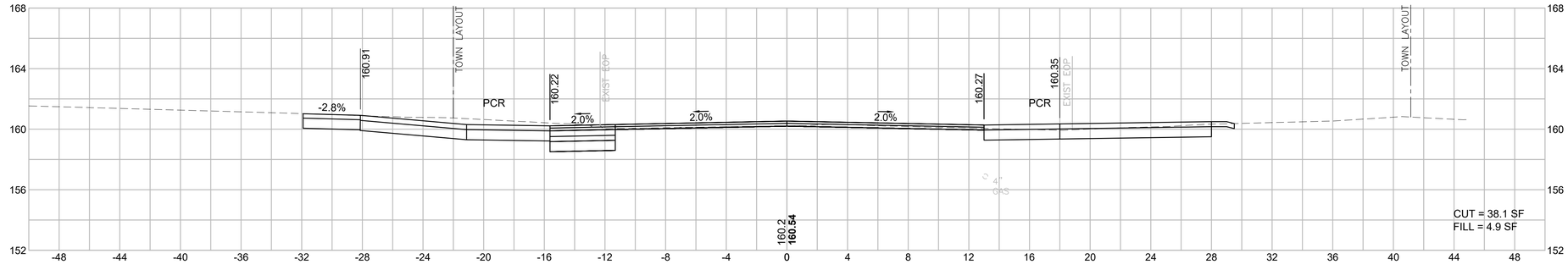
59+80



59+50



59+15



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

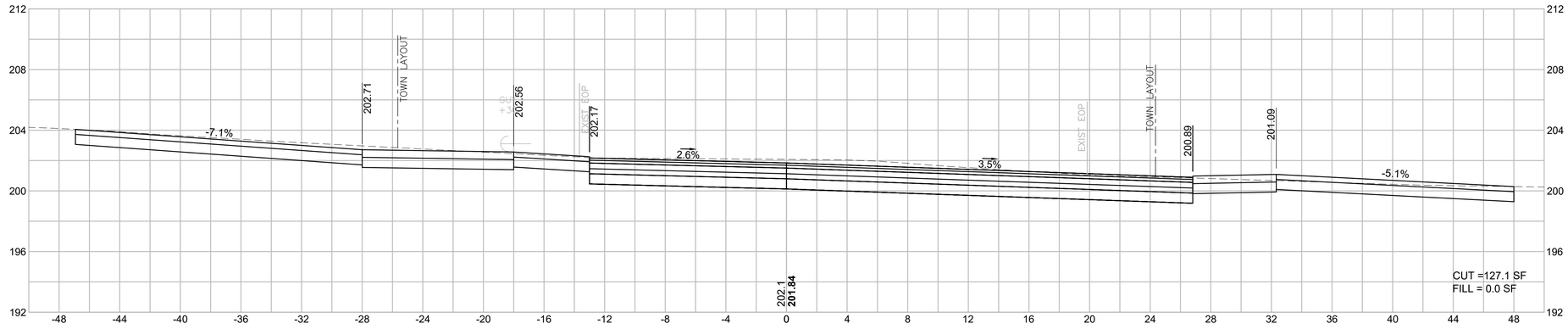
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	134	140
PROJECT FILE NO.	605178		

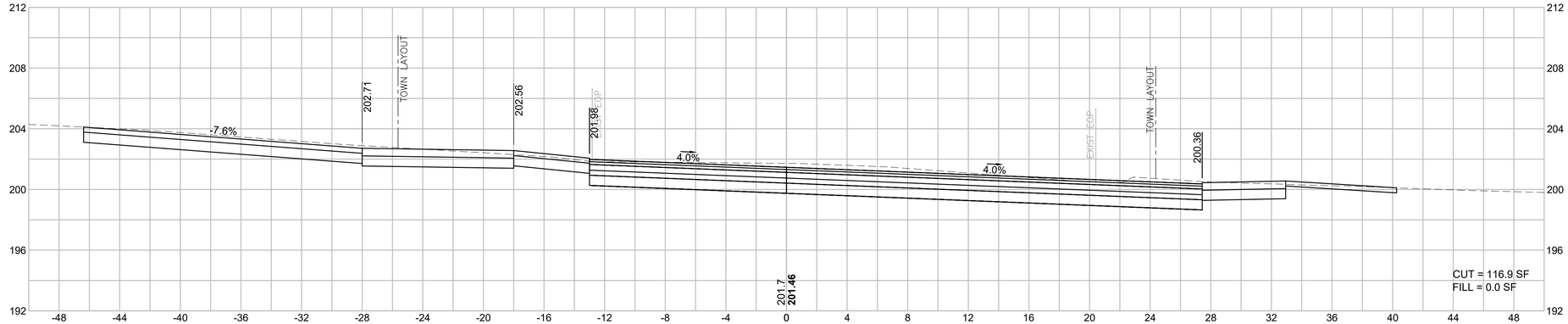
CROSS SECTIONS
GOOD STREET

605178_HD\4722_XS-SIDESTREET(S).DWG Plotted on 7-Mar-22 10:43 PM

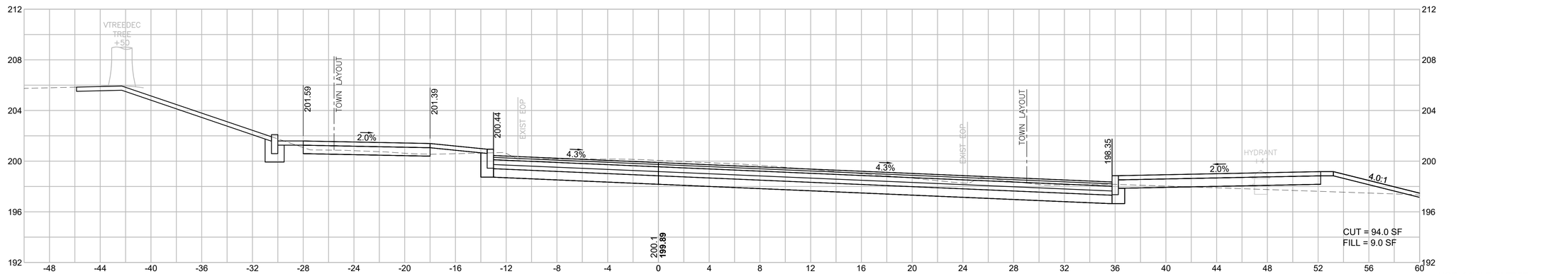
71+12



71+00



70+50



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

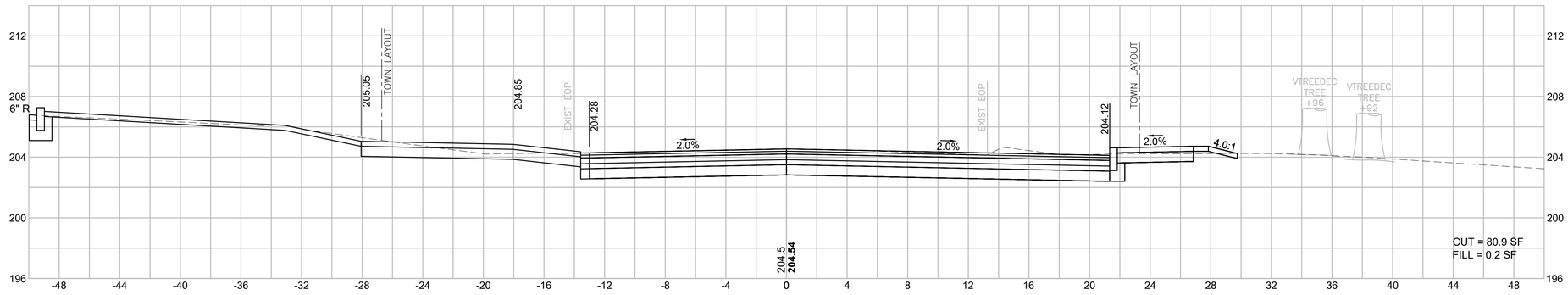
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	135	140
PROJECT FILE NO.	605178		

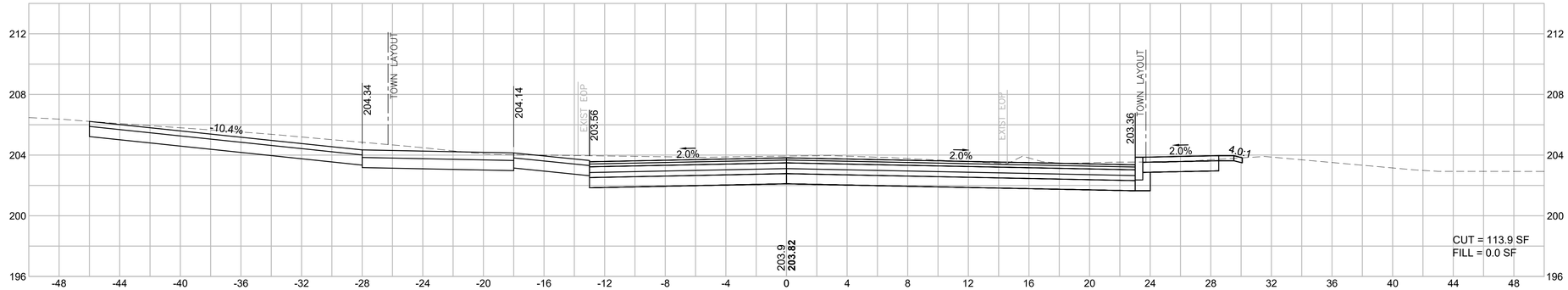
CROSS SECTIONS
GOOD STREET

605178_HDI(4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:44 PM

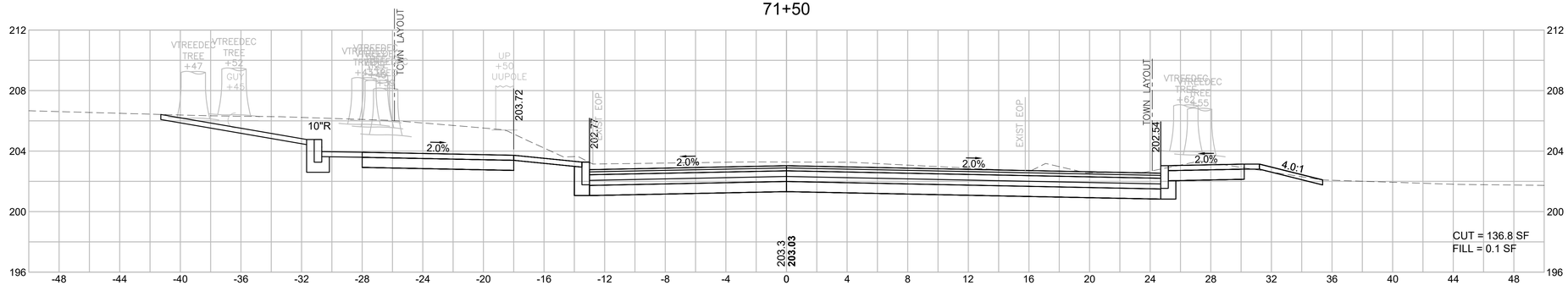
72+00



71+75



71+50



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

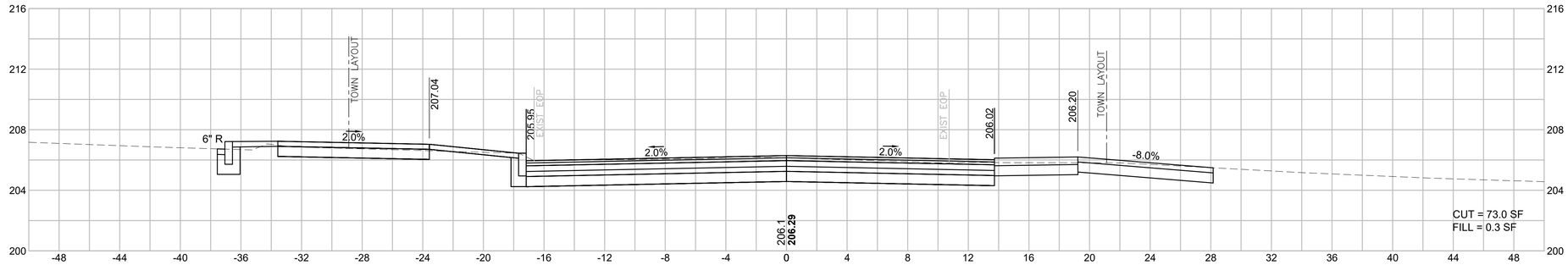
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	136	140
PROJECT FILE NO.	605178		

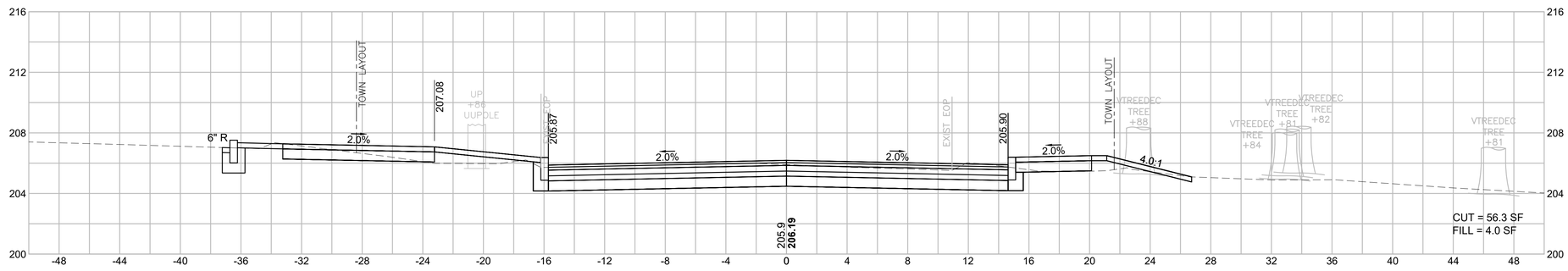
CROSS SECTIONS
GOOD STREET

605178_HDI4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:44 PM

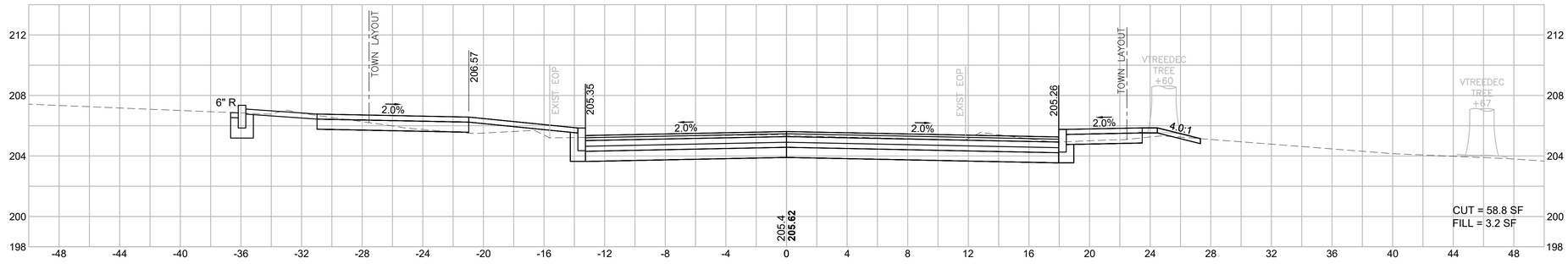
73+30



73+00



72+50



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

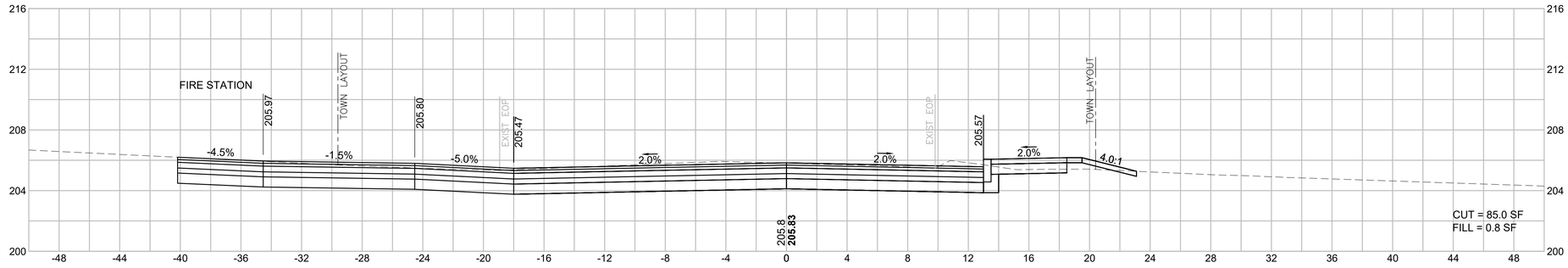
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	137	140
PROJECT FILE NO.	605178		

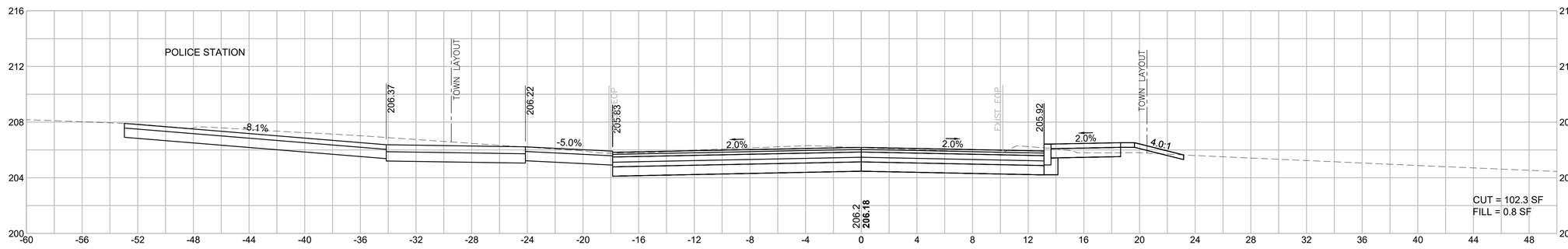
CROSS SECTIONS
GOOD STREET

605178_HDI4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:44 PM

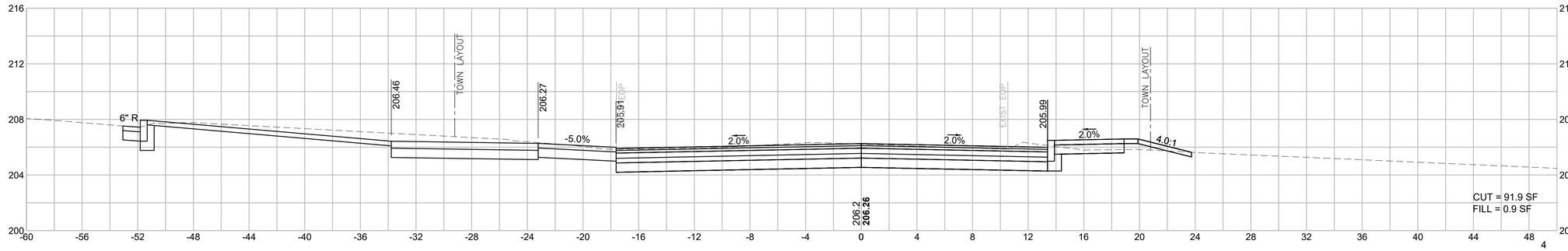
74+00



73+65



73+50



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

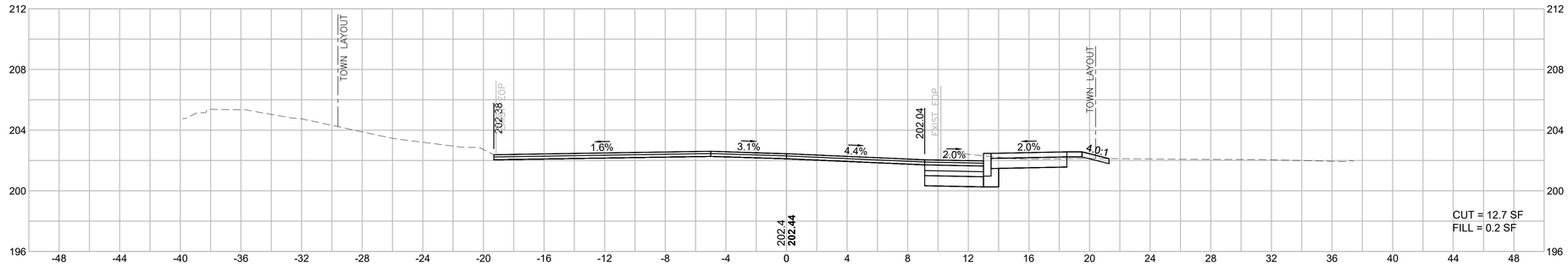
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	138	140
PROJECT FILE NO.	605178		

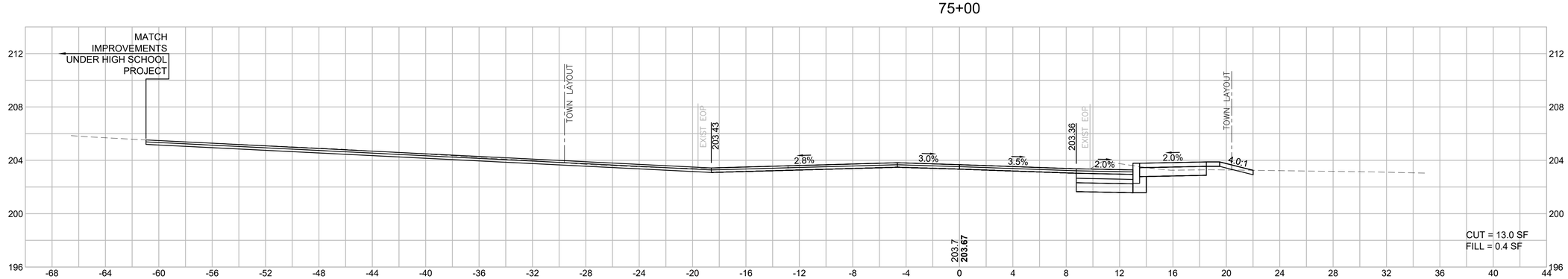
CROSS SECTIONS
GOOD STREET

605178_HDI4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:45 PM

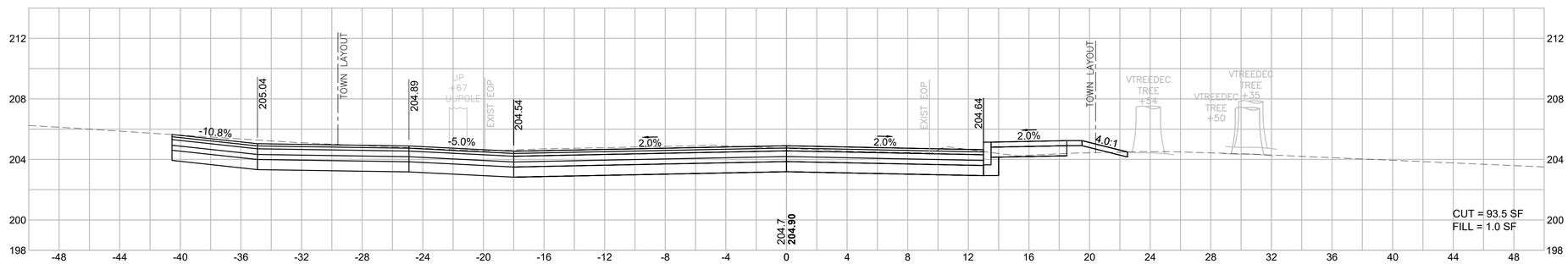
75+50



75+00



74+50



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

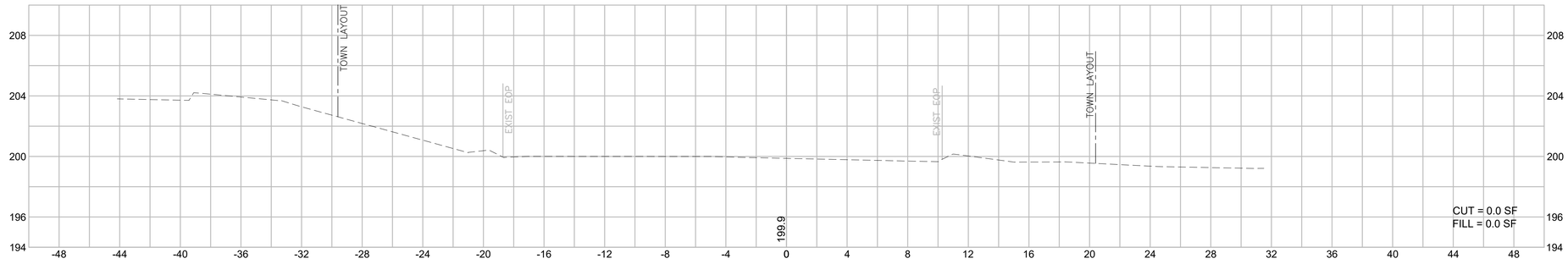
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	139	140
PROJECT FILE NO.	605178		

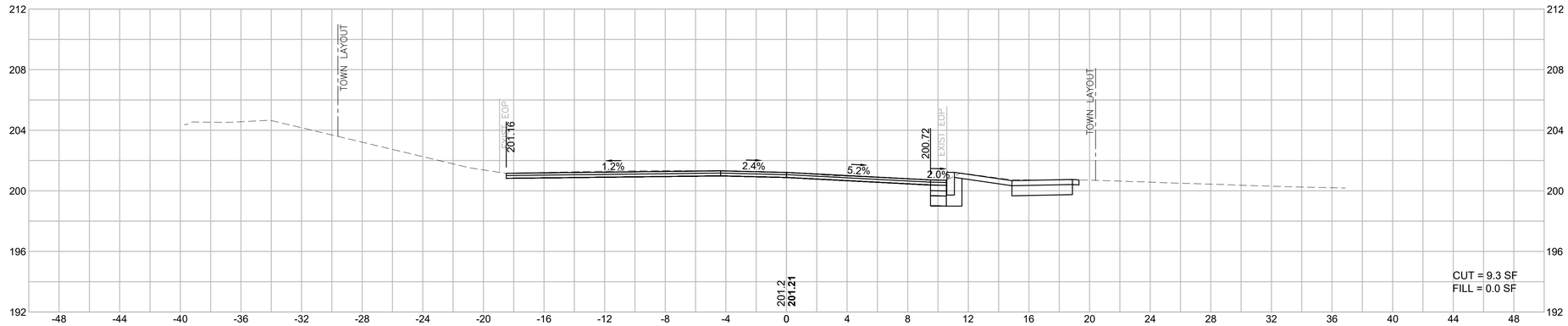
CROSS SECTIONS
GOOD STREET

605178_HD(4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:45 PM

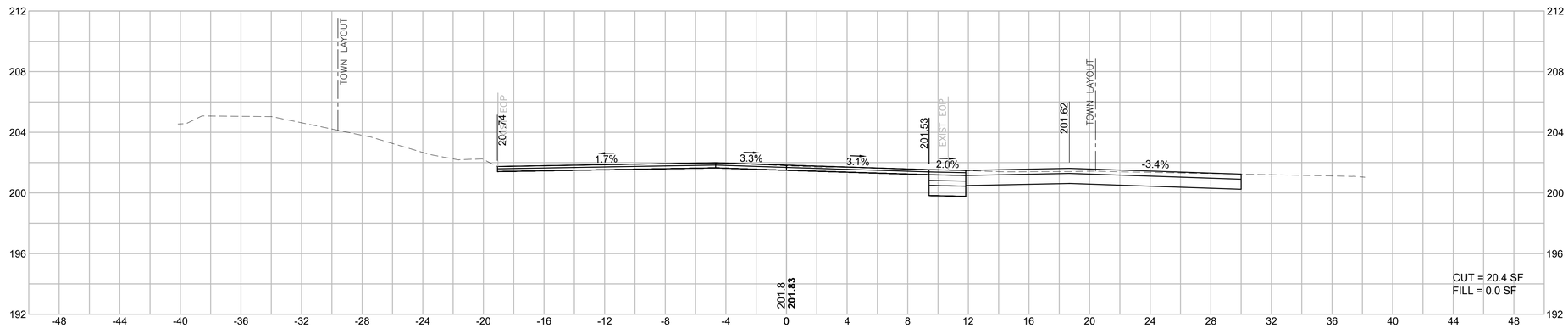
76+50



76+00



75+75



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

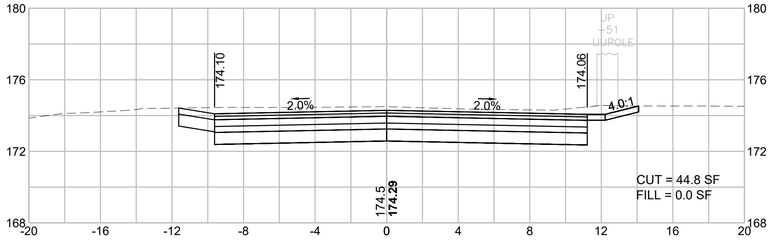
BILLERICA
BOSTON ROAD (ROUTE 3A)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TAP/CMQ-0034(015)X	140	140
PROJECT FILE NO.	605178		

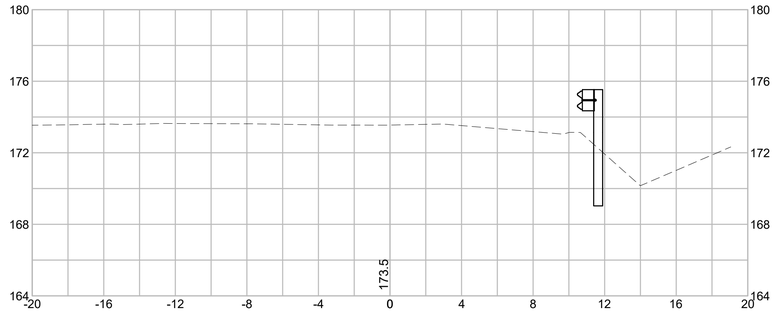
CROSS SECTIONS
FARMERS LANE

605178_HDI(4722_XS-SIDESTREETS).DWG Plotted on 7-Mar-22 10:45 PM

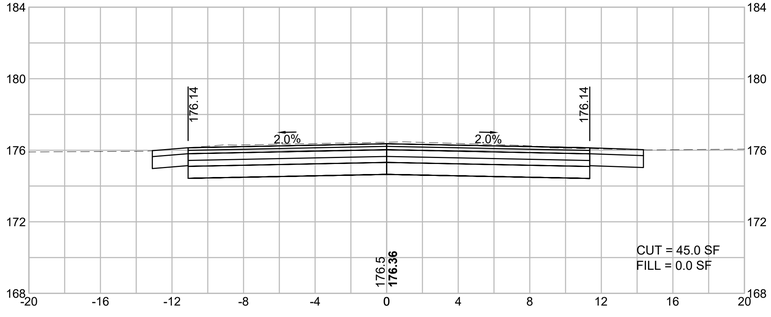
2+50



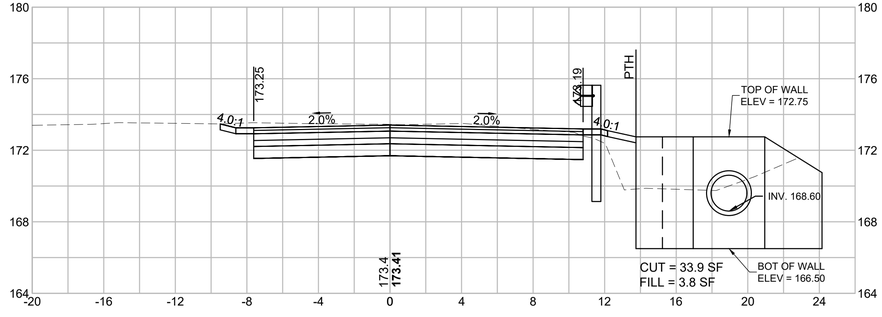
3+50



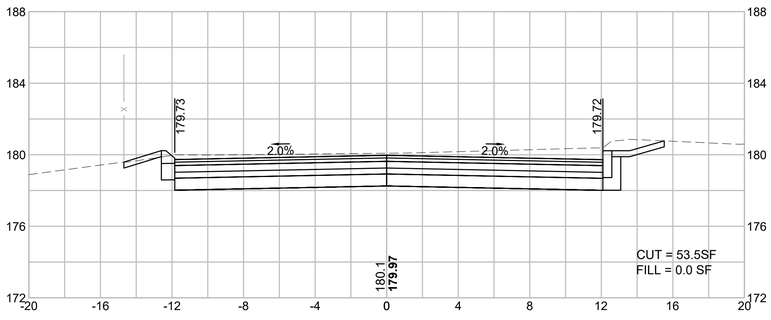
2+00



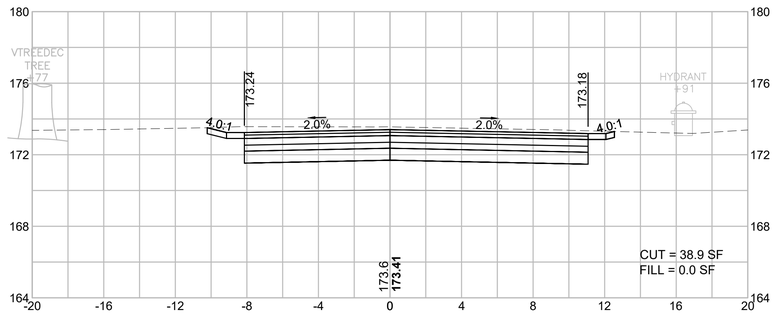
3+25



1+50



3+00



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